

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

THE FORD-FLEISCHER FILE OF MINERALOGICAL REFERENCES,
1982-1987 INCLUSIVE

by

Michael Fleischer¹ and Mary Woodruff²

Open-File Report 88-689

This report is preliminary and has not been reviewed for
conformity with U.S. Geological Survey editorial standards.

¹Dept. Mineral Sciences, National Museum of Natural History, Smithsonian
Institution, Washington, D.C. 20560

²U.S. Geological Survey, MS 959, 12201 Sunrise Valley, Reston, VA 22092

The Ford-Fleischer File of Mineralogical References

1982-1987 Inclusive

In 1916, Prof. W.E. Ford of Yale University, having just published the Third Appendix to Dana's System of Mineralogy, 6th Edition, began to plan for the 7th Edition. He decided to create a file with a separate folder for each mineral (or for each mineral group) into which he would place a citation to any paper that contained data that should be considered in the revision of the 6th Edition. The file was maintained in duplicate with one copy going to Harvard University. In the early 1930's Palache, Berman, and Frondel at Harvard were designated chief revisionists. Assistants for the project included C.W. Wolfe and M.A. Peacock who were to gather crystallographic data at Harvard; and their counterpart, Michael Fleischer, who was to collect and evaluate chemical data at Yale.

After Prof. Ford's death in March 1939, one set of his files came to the U.S. Geological Survey, and the literature has been covered since then by Michael Fleischer. Copies of the literature survey are maintained at the U.S. Geological Survey in Reston, Va., Denver, Colo., and Menlo Park, Calif., and at the U.S. National Museum, Washington, D.C. In addition, the complete file through 1977 has been published as Open-File Report 81-1169, available in microfiche for \$66.75. Since 1978, the references have been entered into a computer with open-file reports published from alphabetized computer printouts. The first such update of this survey, covering additions to the file from 1978 through 1980, is available as Open-File Report 81-1174 in paper for \$37.25 and on microfiche for \$3.50. The second update, which covers additions from 1981 through 1982 is published as Open-File Report 83-615, available in paper for \$54.50 and on microfiche for \$3.50. A copy of these reports can be obtained from Book and Open-File Reports, U.S. Geological Survey, Federal Center, Bldg. 810, Box 25425 Denver, Colorado 80225; phone: (303) 236-7476, or FTS 776-7476.

Coverage of the Files

From its inception, it has been intended that the file should contain indicative abstracts of every paper that contains significant data on the physical and chemical properties of minerals. In recent years especially, the attempt has been made to include references to studies on synthesis and on stability relations of minerals. Needless to say, there are probably many pertinent references that have been missed. Also to some extent, carelessness in the use of the files has very likely caused the irretrievable loss of some references

During the Ford years, the most important mineralogical journals (Mineral. Mag., Am. Mineral., Can. Mineral., Bull. Soc. Fr. Mineral. Cristallogr. (now Bull. Mineral.), Z. Kristallogr., Tschermaks Mineral. Petrogr. Mitt., Periodico Mineral., Neues Jahrb. Mineral., Monatsh., Neues Jahrb. Mineral., Beil.-Bd. (now Abh.), and others were covered directly. In addition, abstract journals were covered (Mineral. Abstr., Neues Jahrb. Mineral., Ref. (later Zentralbl. Mineral. and Z. Kristallogr.).

Since 1939, the important mineralogical journals have been covered, with heavy reliance on Chemical Abstracts and Mineralogical Abstracts. Sections of Chemical Abstracts covered are Nos. 49 (Industrial Inorganic Chemicals), 53 (Mineralogical and Geological Chemistry), 68 (Equilibrium), 69 (Thermodynamics), 75 (Crystallography), and 78 (Inorganic Chemical Reactions). The sections on Magnetism and Spectroscopy, which have occasional references to data on minerals, are not usually checked, in the hope that Mineralogical Abstracts will report these.

It has become evident in the past few years that the coverage of the primary journals listed above is no longer sufficient. This is mainly because of the widespread use of the electron microprobe. Petrological papers, which ten years ago might have a few mineral analyses, now commonly contain many microprobe analyses (a paper with 50 analyses of 8 different minerals is not unusual), but these analyses are often not mentioned in the abstract journals. In the interest of thoroughness, beginning in 1980, such journals as Contrib. Mineral. Petrol., Chem. Geol., J. Petrol., Lithos, and others of that ilk have been regularly checked.

There is usually a summary of occurrences for each mineral or mineral group for each listing prior to 1940. These were prepared by Prof. Ford in the early 1930's, after he had checked specimens in the leading museums of the U.S., England, France, Germany, Austria, and Italy. Many folders have summaries of the chemistry, prepared by Fleischer about 1935. Summaries of the optical properties, especially in relation to composition, were published in U.S. Geol. Survey Bull. 1627 (1984).

U.S. Geological Survey call numbers appear in some entries.

- ABELSONITE. Storm et al., (Science 223, 1075-1076) (1984), Mineral. Abstr. 38, 87M/2866 (1987) Abelsonite, a C_{31} nickel-porphyrin of the deoxyphylloerythroetioporphyrin type has methyl group in 2,3,7,12, 18 positions and ethyl groups in the 8 and 17 positions
- ABHURITE. Matzko et al., (Can. Mineral. 23, 233-240) (1985) New mineral, $Sn^{+2}_3O(OH)_2Cl_2$ Trigonal, a 10.0175, c 44.014A Analyses, X-ray data G 4.29 Corrosion product of tin in Red Sea
- ACANTHITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (1) from Sark, Channel Islands.
- ACANTHITE. Kaspar et al. (N. Jb. Miner., Mh. 19-28) (1985) (Eng) Analysis (1) from Trebsko, Czechoslovakia, a 4.227, b 6.927, c 7.857A, beta 99.63 degrees.
- ACANTHITE. Leonard and Christian, (Mineral. Petrol. 36, 151-168) (1987) Analysis from Thunder Mt. complex, Idaho
- ACANTHITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg.
- ACANTHITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- ACANTHITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis N.E. U.S.S.R.
- ACANTHITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1980)) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various wavelengths. Analyses.
- ADAMITE. Braithwaite, Mineral. Mag. 47, 51-57 (1983). Infra-red spectroscopy.
- ADAMITE. Chisholm (Phys. Chem. Miner. 12, 185-190) (1985). Infra-red study. Cation segregation and O-H stretching vibration.
- ADMONTITE. Walenta, Schweiz. Mineral. Petrogr. Mitt. 62, 177-183 (1982). Formula is $Mg B_6 O_{10} \cdot 7H_2O$.
- AENIGMATITE. Collerson, Contrib. Mineral. Petrol. 81, 126-147 (1982). Microprobe analyses (1) from granites, Labrador.
- AENIGMATITE. Cruriscchio, et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983) (English). Microprobe analyses (1) from Alkalic rocks, Kenya.
- AENIGMATITE. Ike, (J. African Earth Sci. 3, 101-105) (1985). Microprobe analyses (4) from Burra ring dike, Nigeria.
- AENIGMATITE. Jones, Mineral. Mag. 48, 1-12 (1984). Microprobe analyses (4) from nepheline syenites, S. Greenland.
- AESCHYNITE-(ND). Zhang and Tao, (Dizhi Kexue, no. 4, 424-428 (1982)(Chinese)) Chem. Abstr. 98, no. 20, 164080 (1983). New mineral, (Nd,Ce,Ca,Th) (Ti,Nb) $_2$ (O,OH) $_6$, from Bayun-Obo,, Mongolia. Orth., n 2.1-2.4, G 4.60-5.04.
- AESCHYNITE-(ND). (Abstr. in Am. Mineral. 69, 565) (1984). Abstract of original description.
- AESCHYNITE. Popova and Bazhenova, (Mineral. Issled. Il'menskom Zapov., 18-29 (1981)) Chem. Abstr. 98, no. 18, 146714 (1983). Analysis from Il'men Mts., Urals.
- AESCHYNITE. Povarenykh (Nov. Dannye Miner. SSSR 32, 82-90) (1985) (Russ), Chem. Abstr. 103, no. 8, 56931 (1985). Analysis from carbonatite, Chernigov.
- AFWILLITE. Passaglia and Turconi, (Riv. Mineral. Ital., no. 4, 97-110 (1982)) Chem. Abstr. 98, no. 20, 164141 (1983). Occurrence at Montaldo di Castro, Italy.

- AGARDITE-(Ce). Fehr and Hochleitner (Lapis 1, 22, 37) (1984)(German), Abstr. in Am. Mineral. 70, 871 (1985). Analyses from Lavrion, Greece (not in abstr.).
- AGARDITE-(La). Fehr and Hochleitner (Lapis 1, 22, 37) (1984)(German), abstr. in Am. Mineral. 70, 871 (1985). Analyses from Lavrion, Greece (not in abstr.).
- AGUILARITE. Sugaki et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe analysis from Hokkaido.
- AGUILARITE. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not in abs.) from Koryu mine, Hokkaido, Japan
- AIKINITE. Boldyreva (Zap. Vses. Mineral. O-va. 114, 43-49) (1985)(Russ.). Optics from Zambaraks deposit, E. Karamazar.
- AIKINITE. Forster et al, (Chem Erde 45, 203-211) (1986) Microprobe analysis from Altenberg tin deposit, East Germany
- AIKINITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (8) from Spissko-Gemer ore deposits, Slovakia.
- AIKINITE. Kovalenker and Geinke, Izv. Akad. Nauk SSSR 5, 91-104 (1984)(Russian). Microprobe analyses (2) from Kuranin Ridge, Tien-shan.
- AIKINITE. Kovalenker et al., (Gold and silver deposits, "Nauka", Moscow, 91- 110) (1986) (Russian) 431 M365 Microprobe analyses (1) from Bulgaria
- AIKINITE. Kovlenker, (Gold and silver deposits "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 (10) analyses from gold-silver deposits
- AIKINITE. Makovicky and Karup-Moller, Can. Mineral. 22, 565-575 (1984). Microprobe analyses (3) from Ivigtut, Greenland.
- AIKINITE. Stoinova and Begizov, (Izv. Vyssh. Uchebn. Zaved., Geol. Razved., 25, no. 10, 69-74 (1982)) Chem. Abstr. 98, no. 10, 75501 (1983). Analysis, X-ray, optics from northern Rhodopes, Bulgaria.
- AIKINITE. Vinogradova et al. (Zap. Vses. Mineral. O-va. 114, 340-344) (1985)(Russ.). Microprobe analysis (1) from Tyrong Auz, Caucasus.
- AIKINITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-9) (1987) (Eng) Polarization color indexes
- AINALITE. Khvostova et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 9, 89- 100 (1982)) Chem. Abstr. 98, no. 6, 37784 (1983). Analyses and unit cell from Kazakhstan.
- AKAGANEITE. Chambaere and DeGrove (Phys. Chem. Miner. 12, 176-184) (1985). TGA, Mossbauer, and x-ray study of transformation to hematite.
- AKAGANEITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples.
- AKAGANEITE. Holm (Origins of Life 15, 131-139) (1985), Chem. Abstr. 103, no. 6, 39978 (1985). T.E.M. study shows a tubular structure.
- AKAGANEITE. Walenta, (Aufschluss 33, 367-373 (1982)) Mineral. Abstr. 34, 217-218 (1983). Occurrence in Black Forest contains WO3 17.7%, a 10.48, c 3.023A.
- AKTASHITE. Kaplunnik and Pobedimskaya, Deposited Doc. VINITI 6348-82, 18-22 (1982)(Russian). Unit cell data.
- AKTASHITE. Podeminskaya, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 49-58 (1980)(Russian) (Sulfosalt Vol.). Structure. Trigonal, a 13.730, c 9.329 A, Z=3, R3.

- ALABANDITE. Beran (Fortschr. Mineral. 62, Beih. 1, 21) (1984) (abstr.). Reflectivity, 400-700 nm.
- ALABANDITE. Lazur et al. (Dokl. Akad. Nauk SSSR, Earth Sci. Sec. 256, 118-120) (1982), Mineral. Abstr. 36, 88 (1985). Analyses (3) from Kursk magnetic anomaly.
- ALABANDITE. McCannon, et al., Phys. Chem. Miner. 11, 182-193 (1984). Stability in system FeS-MnS.
- ALABANDITE. Rubin (Earth Planet. Sci. Lett. 67, 273-284) (1984). Electron microprobe analyses (4) from Blithfield meteorite.
- ALABANDITE. Tornroos, Neues Jahrb. Mineral., Abh., 144, 107-123 (1982) (English). Microprobe analyses (3) from Finland, a 5.225-5.208 (decreasing with Fe content), G 4.03-4.085 (increasing with Fe).
- ALABANDITE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984). Microprobe analyses (2) from Oka complex, Quebec.
- ALBRECHTSCHRAUFITE. Mereiter, (Acta Crystallogr., Sect. A, A40, 247) (1984) (Abs). Structure. Triclinic, a 15.562, b 13.406, c 11.636 Å, alpha 115.75 degrees, beta 107 degrees 66 minutes, gamma 92.80 degrees, Z=2, $Ca_4Mg(UO_2)_2(CO_3)_6F_2 \cdot 17H_2O$
- ALFORSITE. Abstr. in Bull. Mineral. 106, 625 (1983). Abstract of original description.
- ALFORSITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- ALLANITE. Broska, (Geol. Zbornik Bratislava 37, 693-707) (1986) (Russian) Analyses (4) from granitic rocks, Mala Fatra Mts.
- ALLANITE. Campbell and Ethier (Can. Mineral. 22, 507-511) (1984). Microprobe analyses (6) from Sullivan, Brit. Columbia.
- ALLANITE. Kay, et al., Contrib. Mineral. Petrol. 82, 99-116 (1983). Microprobe analyses (1) from Finger Bay pluton, Alaska.
- ALLANITE. Pe-piper, Neues Jahrb. Mineral., Abh. 149, 163-178 (1984) (English). Microprobe analyses (1) from volcanic rocks, Greece.
- ALLANITE. Rimsaite, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 269-280 (1982). Microprobe analyses (2) from Bancroft, Ont.
- ALLANITE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (1), St. Paul's rocks, Atlantic Ocean.
- ALLANITE. Roeder (Can. Mineral. 23, 263-271) (1985). Microprobe analysis of rare-earth elements.
- ALLANITE. Serdyuchenko (Dokl. Akad. Nauk SSSR, Earth Sci. Sect. 252, 126-128) (1980) Mineral. Abstr. 35, 76, (1984). Substitutions in.
- ALLANITE. Troneva and Rub, (Mineral. Zh. 9(2), 60-67) (1987) (Russian) Microprobe analyses (5) from granites (zoned crystals)
- ALLANITE. Visoni and Zerpolo (Moderna, Italy), Neues Jahrb. Mineral., Monatsh. 6, 413-423 (1984). Analyses (2) from granite, Iseltal, Austria.
- ALLARGENTUM. Kovalenkar, (Gold and silver deposits "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 (5) analyses from gold-silver deposits
- ALLARGENTUM. Nekrasova et al., (Dokl. Acad. Sci. USSR, Earth Sci. Sect., 232, 161-164 (1978)) Mineral. Abstr. 344, 174 (1983). Analysis with up to 0.95% Hg, 3.0% Au.
- ALLARGENTUM. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd., 1983, 37-48 (Russian) (410M662). Microprobe analysis, N.E. U.S.S.R.
- ALLARGENTUM. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.

- ALLEGHANYITE. Dunn (Am. Mineral. 70, 379-387) (1985). Microprobe analyses (23) from Franklin and Sterling Hill, N.J. Partial solid solution with chondrodite.
- ALLEGHANYITE. Francis, Am. Mineral. 70, 182-185 (1985). Structure of magnesian Alleghanyite ($Mn_{0.57}Mg_{0.39}Zn_{0.09}$), Monoclinic, space group P_21/b , a 4.815, b 10.574, c 8.083 Å, alpha 108.74 degrees.
- ALLEGHANYITE. Mottano, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganiferous cherts, Alps
- ALLEGHANYITE. Petersen, et al., Mineral. Rec. 15, 299-302 (1984). Analysis of magnesian variety ($Mn_{3.17}Mg_{1.68}Zn_{6.19}Fe_{0.02}$) from Sterling Hill, N.J., monoclinic, P_21/b , a 4.827, b 10.663, c 8.116 Å, alpha 108.65 degrees, Z=2 X-ray data, optics.
- ALLOCLASE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982) Reflectance and hardness.
- ALLOPHANE. Guowa and Pelczar, (Mineral. Polsk. Karpat., 9-11) 120(578) G934m (Polish) Analyses (4) from Polish Carpathians
- ALLAUDITE. Stone and George, Proc. Ussher Soc. 5, 428-431 (1983). Analysis, X-ray data, Megilliger Rocks, Cornwall.
- ALTAITE. Berger et al., (Cryst. Res. Technol. 20(4), 579-581) (1985), Chem. Abstr. 100, no. 14, 112472 (1984). X-ray study of defects in crystals.
- ALTAITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian) 201In391g. Microprobe analysis from Norilsk deposit.
- ALTAITE. Fujii, et al., (Solid State Commun. 49, 135-139) (1984) (English), Chem. Abstr. 100, no. 100, 77658 (1984). Transition to cubic CaCl-type at 16 +/- GPa.
- ALTAITE. Harris et al., Can. Mineral. 21, 137-143 (1983). Occurrence at Ashley deposit, Ont.
- ALTAITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian) 410M662. Dielectric constant, resistivity.
- ALTAITE. Lutoshko et al. (Tr. Komi Fil. Akad. Nauk SSSR 45, 609-66 (1984) G(570) AK144+). Analyses from Polar Urals.
- ALTAITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984) (English). Microprobe analyses, Glava, Sweden
- ALTAITE. Paar and Chen, (Karinthin 87, 371-381 (1982)) Chem. Abstr. 98, no. 12, 129419 (1983). Microprobe analysis from Schellgaden Au deposit, Austria.
- ALTAITE. Smorodina, et al., (Cryst. Res. Technol. 19, 601-605) (1984) (English), Chem Abstr. 100, no. 26 219237 (1984). Effect of impurities on shape of crystals.
- ALTMARKITE. Compare lead amalgam
- ALUMINITE. Ankinovich and Zazubina, (Vopr. Metallog. Strukt. Osob Veshchestv. Sostava Mestorozhd. Kaz., 9-15) (1982), Chem. Abstr. 100, no. 16, 124256 (1984). Analysis from Karatau, G 1.66, optics
- ALUMINITE. Toth et al. (Magyarallumi Foldt Intezet. Evi Jelentese, 423-430) (1982) (publ. 1984) ((534) A4). Analysis, DTA from bauxite, Csordakut, Hungary.
- ALUMINUM. Dombrozskaia, et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 10, 75-84 (1984), Chem. Abstr. 102, no. 2, 9880 (1985). Analyses from gibbsite rocks, W. Baikal. X-ray data, a 4.03-4.04 Å.
- ALUMINUM. Oleinikov et al. (Zap. Vses Mineral. Ova. 113, 210-215) (1984). New mineral, Al Optics, X-ray data.
- ALUMINUM. Oleinikov et al., Abstract in Mineral. Abstr. 36, 92 (1985). Abstract of original description.

- ALUMOHYDROCALCITE. Roberts and Bonardi, (Pap. Geol. Surv. Can. 83-1A, 477-479 (1983)) Chem. Abstr. 98, no. 16, 129381 (1983). Mineralog. Abstr. 34, 474 (1983) Analysis from Japan with Cr_2O_3 11.1%, a 6.498, b 14.457, c 5.678A, alpha 95.83, beta 93.23, gamma 82.240 deg., Z=2, G 2.24.
- ALUMOTANTITE. Erat et al., Geol. Assoc. Can. - Programs with Abstr. 8, 21 (1983). New occurrences, Brazil and Bikita, Zimbabwe, a 4.473, b 11.308, c 4.775A, Pbcn.
- ALUNITE. Aoki, (Sci. Rep. Hirosaki Univ. v 30, 132-141) (1983)(Japanese), Chem. Abstr. 100, no. 24., 195209 (1984). Analyses (not in abstr.) from Osorezan geothermal area, Japan.
- ALUNITE. Aslanyan et al., (Dokl. Bolg. Akad. Nauk 35, no. 8, 1093-1096 (1982)) Chem. Abstr. 98, no. 6, 37807 (1983). Substitution of Al^{+3} and Ga^{+3} in alunite structure.
- ALUNITE. Bobrov, (Nov. Neboksitovye Vidy Glinozemnogo Syr'ya, 100-106 (1982)) Chem. Abstr. 98, no. 26, 219016 (1983). Review of occurrences of alunite in sedimentary rocks of USSR.
- ALUNITE. Haertig, et al., (Z. Anorg. Allg. Chem. 568, 159-164) (1984), Chem. Abstr. 100, no. 14, 112660 (1984). Analyses, x-ray, thermal data on synthetic alunite and jarosite. Possibility of solid solutions.
- ALUNITE. Huang and Chang, Acta Geol. Taiwanica 21, 1-13 (1982)(English). Analyses (11) from Chinkuashih Au-Cu deposit, Taiwan. Unit cells.
- ALUNITE. Shakhtakhtinskii, et al., (Deposited Doc. VINITI 36; 83, 1-14) (1982), Chem. Abstr. 100, no. 16 124233 (1984). Thermodynamic analysis of dehydration reactions.
- ALUNITE. Stoffregen and Alpers, (Can. Mineral. 25, 201-211) (1987) Microprobe analyses (5) from 5 ore deposits
- ALUNITE. Velinov and Aslanian (Compt. Rend. Bulgar Acad. Sci. 34(10), 1417-1419) (1981), Mineral. Abstr. 35, 85-86 (1984). Analysis, optics, from Bulgaria.
- AMBLYGONITE. Greiner and Bloss, (Am. Mineral. 72, 617-624) (1987) Optics of 11 crystals of amblygonite - montebrasite series Equation for calculation of F content from 2V or indices
- AMBLYGONITE. London and Burt, Mineral. Assoc. Canada Short Course no. 8, 99-133 (1982). Review of occurrence and properties in granite pegmatites.
- AMESITE. Shirozu and Ishida, (Mineral. J. 11, 161-171 (1982)(English)) Chem. Abstr. 98, no. 20, 164086 (1983). Infra-red study.
- AMESITE. Taner and Laurent (Can. Mineral. 22, 437-442) (1984) Analyses (2), optics, x-ray dat of iron-rich amesite (FeO 21.76, 22.48%) from Beach Lake Quebec
- AMMONIOJAROSITE. Arana et al., (Bol. Soc. Espanola Mineral. 8, 117-123) (1985) (Spanish), Mineral. Abstr. 38, 87M/2509 (1985) Synthesis DTA X-ray data
- AMMONIOJAROSITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 325-328 (1983) (G(533)G78mb). Occurrence at Muttlkogel, Styria, x-ray, infra-red data.
- AMMONIOLEUCITE. Mineral. Abstr. 38, 87M/3184 (1987) Abstract of original description
- AMPHIBOLE. James and Hawke, Can. Mineral. 22, 93-109 (1984). Microprobe analyses (2) from Kanichee complex, Ont.
- AMPHIBOLE. Abdusalomov and Dusmatov, (Mineral. Zh. 7(4), 49-) (1985) (Russian) Analyses (21) from alkaline rocks Gissar-Alai
- AMPHIBOLE. Allan and Carmichael, Contrib. Mineral. Petrol. 88, 203-216 (1984). Microprobe analyses (4) from lavas, Colima, Mexico.
- AMPHIBOLE. Allen and Boettcher, Am. Mineral. 68, 307-314 (1983). Formation from andesite and basalt at high pressures. Analyses.

- AMPHIBOLE. Anan'ev and Sknyrev, Dokl. Akad. Nauk SSSR 274, 402-406 (1984) (Russian). Microprobe analyses (4) from melt inclusions in olivine, Koudach Volcano, Kamchatka.
- AMPHIBOLE. Andersen (Lithos 17, 153-170) (1984) (Eng.). Microprobe analyses (8) from larviksite, Norway.
- AMPHIBOLE. Andreeva and Troneva, (Rock-forming minerals of magmatic rocks, Nauka, 148-164) (1986) (Russian) [170(570)Os5] Analysis (18) from alkalic rocks, Vitim
- AMPHIBOLE. Andrew, J. Metamorph. Geol. 2, no. 2, 143-163 (1984). Microprobe analyses (3), NS Wales.
- AMPHIBOLE. Arculus, et al., J. Volcanol. Geothermal. Res. 18, 215-247 (1983). Microprobe analyses (32) from Mt. Lamington, Papua, New Guinea.
- AMPHIBOLE. Arkai, Acta Mineral.-Petrogr. 26, no. 2, 129-153 (1984) (English). G(534)S22am. Microprobe analysis (1) from crystalline basement, Hungary.
- AMPHIBOLE. Armienti, et al., J. Volcanol. Geothermal Res. 17 289-311 (1983) (English). Microprobe analyses (1) from Phlegrean Fields, Italy.
- AMPHIBOLE. Asami and Shiraishi, Proc. 3rd Symp. Antarctic Geosci., 198-214 (1983) (502(990)J27SS no. 28). Microprobe analyses (11) from Yamamoto Mts. E. Antarctica.
- AMPHIBOLE. Ayuso and Brown, Can. Mineral. 22, 327-331 (1984). Analyses (3) from Gouverneur, N.Y. tremolite
- AMPHIBOLE. Baker et al., (Jour. Metamorph. Geol. 5, 357-370) (1987) Microprobe analyses (4) from W. Australia
- AMPHIBOLE. Barberi et al. (Bull. Volcanol. 47, 125-141) (1984) (Eng.). Microprobe analyses (3) from Latera caldera, Italy.
- AMPHIBOLE. Barink, Lithos 17, 247-258 (1984) (English). Microprobe analyses (2) from metagabbro, Quebec.
- AMPHIBOLE. Barton and van Bergen (Mineral. Mag. 48, 449-456) (1984). Microprobe analysis from dolerite, Rogeland, SW Norway.
- AMPHIBOLE. Beccaluva, et al., Contrib. Mineral. Petrol. 85, 253-271 (1984). Microprobe analysis (1) from Vourinos ophiolite.
- AMPHIBOLE. Beck, (Soc. Geol. Nord Publ. 14, 191-280) (1986) (French) G(540)qN77p Microprobe analyses (22) from near Caracas, Venezuela (glaucophane)
- AMPHIBOLE. Berg and Wiebe (Contrib. Mineral. Petrol. 90, 226-235) (1985). Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- AMPHIBOLE. Black, et al., J. Metamorph. Geol. 1, 277-303 (1983). Microprobe analyses (5) from Field Islands, Antarctica.
- AMPHIBOLE. Bojadziev, (Geokhim., Mineral., Petrol. 12, 57-68) (1980), Mineral. Abstr. 34, 465-466 (1983). Analyses (not in abstr.) from Bulgarian granitic rocks.
- AMPHIBOLE. Boscardin and Orlandi (Riv. Miner. Ital. 3, 103-106) (1984), Chem. Abstr. 102, no. 14, 116711 (1985). Analysis (not in abstr.), x-ray, infra-red data from Oropa, Italy (glaucophane)
- AMPHIBOLE. Brastad (Tschermaks Mineral. Petrogr. Mitt. 34, 87-103) (1985) (Eng.). Microprobe analyses (8) from eclogite, W. Norway, SrO up to 0.22%.
- AMPHIBOLE. Brooks et al., Greenland Geosci. 7, 1-35 (1982) (English). Analyses (11) from Werner Bjerger complex, Greenland.
- AMPHIBOLE. Brown and Ghent, Am. Mineral. 68, 365-372 (1983). Microprobe analyses (3) from blueschists, N. Calif.
- AMPHIBOLE. Bucher-Nurminen, J. Petrol. 23, 325-343 (1982). Microprobe analyses (8), E. Greenland.
- AMPHIBOLE. Calanchi et al. (Mineral. Petrogr. Acta 27, 15-34) (1983) (Ital.). Microprobe analyses (7) from volcanic rocks, Java.
- AMPHIBOLE. Chem. Acta Geol. Taiwanica 21, 33-62 (1982) (English). Microprobe analyses (6), Kuanyishan volcano, Taiwan.

- AMPHIBOLE. Childs and Baker-Sherman (N.Z. Soil Bur. Sci. Rept. 66, 1-50) (1984). P(890)qSo3n. Mossbauer study of standard samples. (anningtomite)
- AMPHIBOLE. Chistofides and Sapountzis, (Neues Jahrb. Mineral., Monatsh., no. 1, 1-12 (1983) (English)) Chem. Abstr. 98, no. 12, 92762 (1983). Analysis from granites, Xanthi, Greece. Distribution Fe-Mg between biotite and amphibole.
- AMPHIBOLE. Chopin, (Geol. Soc. Am. Mem. 164, 31-42) (1986) Microprobe analyses (3) from Dora Maira massif, W. Alps
- AMPHIBOLE. Cijolini and Kudo, (Contrib. Mineral. Petrol. 96, 381-390) (1987) Microprobe analyses (2) from basaltic andesites, Arenal Volcano, Costa Rica
- AMPHIBOLE. Clarke, et al., Contrib. Mineral. Petrol. 83, 117-127 (1983). Microprobe analyses (2) from W. Greenland.
- AMPHIBOLE. Cocheme and Silva-Mora (Bull. Volcanol. 46, 55-69) (1983). Analysis (1) from lavas of Chichonel, Mexico.
- AMPHIBOLE. Coey et al., (J. Appl. Phys. 53(11, pt. 2) 8320-8325. (1982) (English)) Chem. Abstr. 98, no. 4, 19623 (1983). Magnetic properties, Mossbauer, and neutron diffraction of crocidolite.
- AMPHIBOLE. Collerson, Contrib. Mineral. Petrol. 81, 126-147. Dobretsov, et al., Miner. Slovaca 16, no. 1, 87-94 (1984) (English). Microprobe analyses (3) from pyrope peridotites, Bohemia.
- AMPHIBOLE. Dobrokhotova, (Rock-forming minerals of magmatic rocks, Nauka, 5-101) (1986) (Russian) (170(570)Oss) A review of composition, optics of hornblendes and alkali-calcium amphiboles
- AMPHIBOLE. Dorting and Zussman, (Mineral. Polonica 15, 11-19) (1984), Mineral. Abstr. 38, 87M/3065 (1987) Zincian actinolite (ZnO 5.98%), Franklin, N.J., a 9.871, b 18.153, c 5.287 Å, beta 104.79 deg.
- AMPHIBOLE. Duda, (Bochum Geol. Geotecon Arb. 16, 24-40) (1984). (G(530)qB628). Microprobe analyses (8) from W. Eifel, Germany, alkaline rocks.
- AMPHIBOLE. Dungen, et al., Contrib. Mineral. Petrol. 82, 131-146 (1983). Microprobe analyses (5) from green schists and blue schists, Cascades, Wash.
- AMPHIBOLE. Dzagoeva, (Deposited Doc. VINITI 6348-82, 10-17) (1982) (Russian), Chem. Abstr. 100, no. 24, 195183 (1984). Amphiboles from Tryny-Auz deposit.
- AMPHIBOLE. Eggins and Hensen, (Lithos 20, 295-310) (1987) Microprobe analyses (3) from granodiorites, Barrington Top batholith, E. Australia
- AMPHIBOLE. Ehrenberg, J. Petrol. 23, 507-547 (1982). Microprobe analyses (1) from Navajo volcanic field.
- AMPHIBOLE. Embey-Isztin et al. (Tschermarks Mineral. Petrogr. Mitt. 34, 49-66) (1985) (Eng.). Microprobe analysis (1) from andesites and granites, Hungary.
- AMPHIBOLE. Enami, J. Metamorph. Geol. 1, 141-166 (1983). Microprobe analyses (3) from Sanbagawa, Japan.
- AMPHIBOLE. Eremenko et al., (Mineral. Zh. 7(6), 9-18) (1985) (Russian) Analyses (3) from Kursk magnetic anomaly richterite
- AMPHIBOLE. Ernst and Harnish, Proc. Geol. Soc. China (Taiwan) 26 99-112 (1983) (English). Microprobe analyses (9) from green schist rocks, Taiwan
- AMPHIBOLE. Esperanca and Holloway (Kimberlites 11B, 219-227) (1984). (150.3 D493). Microprobe analyses (4) from potassic latites, Carefree, Ariz.
- AMPHIBOLE. Eto and Anderson, Contrib. Mineral. Petrol. 82, 371-388 (1983). Microprobe analyses (40) from Mid-Cagnan Rise.
- AMPHIBOLE. Ewart, J. Petrol. 23, 344-382 (1982). Microprobe analyses (1) from volcanic rocks, Queensland, Australia.
- AMPHIBOLE. Farver (Geochim. Cosmochim. Acta 49(6), 1403-1411) (1985), Chem. Abstr. 103, no. 8, 56927 (1985). Diffusion of O in hornblende, actinolite, and richterite.
- AMPHIBOLE. Faryad, (Geol. Zbornik Bratislava 37, 729-746) (1986) (Eng.) Microprobe analyses (11) from gneiss, Klatov region, Czechoslovakia

- AMPHIBOLE. Foden, J. *Petrol.* 24, 98-130 (1983). Microprobe analyses (5) from Rindjani Volcano, Indonesia.
- AMPHIBOLE. Frank, *Schweiz. Mineral. Petrogr. Mitt.* 63, 37-93 (1983) (English). Microprobe analyses (13) from western Lepontine, Alps.
- AMPHIBOLE. Frechen (*Neues Jahrb. Mineral., Abh.* 150, 65-93) (1984). Microprobe analyses (3) from the Eifel, Germany
- AMPHIBOLE. Frey, et al., *Contrib. Mineral. Petrol.* 88, 133-149 (1984). Microprobe analyses (4) from volcanic rocks, Laguna del Maule, Chile.
- AMPHIBOLE. Friend and Janardhan, *Mineral. Mag.* 48, 181-193 (1984). Microprobe analyses (9) from shonkinites, Salem, India.
- AMPHIBOLE. Frietsch (*Geol. Foeren. Stockholm Foerh.* 106, 219-230) (1984) (Eng). Analyses (8) from skarn Fe ores, northern Sweden.
- AMPHIBOLE. Frost (*J. Petrol.* 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- AMPHIBOLE. Gamble et al., (*Bull. Roy. Soc. New Zealand* 23, 344-365) (1986) Microprobe analyses (7) from volcanic rocks, Campbell Plateau
- AMPHIBOLE. Gamble, *Contrib. Mineral. Petrol.* 88, 173-187 (1984). Microprobe analyses (4) from teschenite, N.S. Wales.
- AMPHIBOLE. Gibbons and Horak, *J. Metamorph. Geol.* 2, 95-113 (1984). Microprobe analyses (18) from hornblende granodiorite, Corsica.
- AMPHIBOLE. Girardeau et al. (*Contrib. Mineral. Petrol.* 90, 309-321) (1985). Microprobe analyses (13) from Xigaze ophiolite, Tibet.
- AMPHIBOLE. Glikson, (*Trans. Geol. Soc. S. Africa* 89, 263-283) (1986) Microprobe analyses (12) from granulite-anorthosite, central Australia
- AMPHIBOLE. Gole et al., (*Contrib. Mineral. Petrol.* 96,, 151-162) (1987) Av. compositions in metamorphosed komatites, Australia (tremolite and cummingtonite)
- AMPHIBOLE. Gomez-Pugnaic and Fernandez-Soler, (*Contrib. Mineral. Petrol.* 95, 231-244) (1987) Microprobe analyses (20) from metabasites, SE Spain) (zoned)
- AMPHIBOLE. Graham and Powell, *J. Metamorph. Geol.* 2, 13-31 (1984). Microprobe analyses (5) from Pelona schist, SS. Calif. (hbl)
- AMPHIBOLE. Griffin et al. (*J. Petrol.* 25, 53-87) (1984). Microprobe analyses (7) from ultramafic xenoliths, Victoria, Australia.
- AMPHIBOLE. Grozdanov, et al., (*Geokhim., Mineral., Petrol.* 13, 45-60) (1980), *Mineral. Abstr.* 34, 466 (1983). Magnesioriebeckite and richterite from Bulgaria. Unit cells, Mossbauer data.
- AMPHIBOLE. Grozdanov, (*Geokhim., Mineral., Petrol.* 12, 38-47) (1980), *Mineral. Abstr.* 34, 465 (1983). Tschermakite and magnesio-hastingsite from Bulgaria. Optics.
- AMPHIBOLE. Gucwa and Pelczar, (*Mineral. Polsk. Karpat.,* 11-17) 120(578) G934m (Polish) Analyses (10) from Polish Carpathians
- AMPHIBOLE. Guiraud and Burg (*Neues Jahrbuch Mineral., Abh.,* 149(1), 1-12) (1984) (Eng.). Microprobe analyses (10) from blue schist, Czechoslovakia.
- AMPHIBOLE. Hall and Ahmed (*Chem. Erde* 43, 45-56) (1984) (Eng). Microprobe analyses (12) from charnockites, India and Sri Lanka
- AMPHIBOLE. Hansen et al., (*Contrib. Mineral. Petrol.* 96, 225-244) (1987) Microprobe analyses (12) from charnockites, India and Sri Lanka
- AMPHIBOLE. Helingwerf (*Econ. Geol.* 79, 696-715) (1984). Microprobe analyses (12) from sulfide skarn ore, Bergalagen, Sweden.
- AMPHIBOLE. Helper, (*Geol. Soc. Am. Mem.* 164, 125-141) (1986) Microprobe analyses (4) from blueschists, Klamath Mts., Cal. and Ore. crossite, actinolite, ferrobarrosite, riebeckite

- AMPHIBOLE. Helvacı, *Econ. Geol.* 79, 354-371 (1984). Microprobe analyses (7) from magnetite-apatite deposit, Avnik, Turkey.
- AMPHIBOLE. Henderson and Gibb, (*Trans. Roy. Soc. Edinburgh* 77, 325-347) (1987) Microprobe analyses (6) from Lugar sill, SW Scotland kaersutite
- AMPHIBOLE. Henken-Mellies, (*Neues Jahrbuch Miner. Abh.* 156, 303-324) (1987) (German) Microprobe analyses (15) from Black Forest, Germany, amphibolite
- AMPHIBOLE. Herbert, *Geotekton. Forsch.* no. 65, 1-77 (1983). Microprobe analyses (12) from crystalline rocks, Ecuador.
- AMPHIBOLE. Hernandez, (*Jour. African Earth Sci.* 5, 381-399) (1986) Microprobe analyses (8) from Guilliz massif, Morocco
- AMPHIBOLE. Hinterlechner-Ravnik, *Razprave Geol. Porocila* 25, 270-272 (1982). Analyses (1), optics, unit cells from eclogite, Pohorje, Yugoslavia.
- AMPHIBOLE. Hirajima et al. (*Nor. Geol. Tidsskr.* 64, 267-274) (1984)(Eng.). Microprobe analyses (3) from Spitsbergen (glaucophane).
- AMPHIBOLE. Hogarth and Lapointe, *Can. Mineral.* 22, 281-295 (1984). Analyses (18) of sodic from fenite, Cantley, Que.
- AMPHIBOLE. Hoinke, Schweiz. Mineral. Petrogr. Mitt. 63, 95-114 (1983)(English). Microprobe analyses (5) from Tyrol.
- AMPHIBOLE. Hoshino and Shiida, *Rep. African Stud., Nagoya Univ.*, 6, 127-138 (1981)(English). Microprobe analysis from phonolite, Tanzania (kaersutite).
- AMPHIBOLE. Hoyos et al. (*Bol. Soc. Espanola Mineral.* 7, 37-40) (1983) *Mineral. Abstr.* 36, 200 (1985). Analysis of hornblende from Valverde volcano, Spain, a 9.931, b 18.125, c 5.327, beta 105.25 degrees.
- AMPHIBOLE. Huang, (*Geochemistry (China)* 4, 268-279) (1985) (Eng) Analyses (4) from Songsbugon metamorphosed ultramafic rocks, China
- AMPHIBOLE. Hwang and Meyer, *Mem. Geol. Soc. China* 5, 67-84 (1983)(English)(G(611)(G292m). Microprobe analyses (8) from dacite-andesite, N. Taiwan.
- AMPHIBOLE. Hyndman et al., *Mem. - Mont., Bur. Mines Geol.*, 49, 1-37 (1982). Analyses (14) from Philipsburg batholith.
- AMPHIBOLE. Ike, (*J. African Earth Sci.* 3, 101-105) (1985). Microprobe analysis (1) from Burra ring dike, Nigeria. (Arfvedsonite).
- AMPHIBOLE. Imeokparia (*Lithos* 17, 103-115) (1984)(Eng.). Microprobe analyses (5) from granite, northern Nigeria.
- AMPHIBOLE. Ionov et al. (*Dokl. Akad. Nauk SSSR* 276, 238-242) (1984), *Chem. Abstr.* 101, no. 10, 76136 (1984). Analysis (not in abstr.) from xenoliths of alkali basalt from mantle.
- AMPHIBOLE. Irving and Frey (*Geochim. Cosmochim. Acta* 48, 1201-1221) (1984). Microprobe analyses (12) of megacrysts in basalts. Trace elements.
- AMPHIBOLE. Ishibashi, (*Sci. Rep. - Dep. Geol., Kyushu Univ.*, 13, 209-216) (1980) *Mineral. Abstr.* 34, 167 (1983). Analysis (2) (not in abstr.) from Kyushu. (riebeckites).
- AMPHIBOLE. Ishida, (*J. Mineral. Soc. Jpn.* 15, 47-61) (1981)(Japanese), *Mineral. Abstr.* 35, 136 (1984). Cation distribution in 7 of tirodite-dannemorite series by infra-red and Mossbauer study.
- AMPHIBOLE. Ito et al., *Rep. African Stud., Nagoya Univ.*, 6, 101-110 (1981)(English). Electron probe analyses (2) from peridotite, Kenya.
- AMPHIBOLE. Ivanitskii, et al., (*Problem Kristalloghim Genezis Miner.*, 113-124) (1983), *Chem. Abstr.* 100, no. 6, 37237 (1984). Analyses, Mossbauer study.
- AMPHIBOLE. Jenkins, (*Contrib. Mineral. Petrol.* 83, 375-384) (1983), *Mineral. Abstr.* 35, 159 (1984). Hydrothermal stability in system $H_2O-CaO-MgO-SiO_2$, 5-20 kb.
- AMPHIBOLE. Jobstraizer and De Pieri (*Rend. Soc. Ital. Mineral. Petrol.* 39, 123-143) (1984)(Eng.), *Chem. Abstr.* 102, no. 14, 116735 (1985). Crystal chemistry of amphiboles from gabbroic to granodioritic rocks, Adamello.

- AMPHIBOLE. Karakida and Yamamoto (Mem. Geol. Soc. Japan 21, 173-187) (1982) (G(620)G29m). Analysis (1) from amphibolite, Kyushu).
- AMPHIBOLE. Kay and Kay (Contrib. Mineral. Petrol. 90, 276-290) (1985). Microprobe analyses (8) from Aleutian volcanic rocks.
- AMPHIBOLE. Kay, et al., Contrib. Mineral. Petrol. 82, 99-116 (1983). Microprobe analyses (2) from Finger Bay pluton, Alaska.
- AMPHIBOLE. Kiji (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 75-80) (1987) (Jap) Microprobe analyses (3) from ultramafic rocks, SW Japan
- AMPHIBOLE. Kimball and Spear, Can. Mineral. 22, 605-619 (1984). Microprobe analyses (27) from Jackson Co. iron formation, Wis. Actinolite, hornblende, cummingtonite.
- AMPHIBOLE. Kine, (Can. Mineral. 22, 391-399) (1984). Iron-rich hornblende from Chibougamau, Quebec, 13 analyses.
- AMPHIBOLE. Kiseleva, et al., (Geokhimiia, no. 12, 1745-1755) (1983), Chem. Abstr. 100, no. 8, 54703 (1984). Heat of solution. Calcn. of heat of formation and enthalpy of formation of tremolite.
- AMPHIBOLE. Klein and Wimmenauer, Neues Jahrb. Mineral., Monatsh., 25-38 (1984) (English). Analyses (1) from eclogite, Black Forest.
- AMPHIBOLE. Koepke and Seidel, Tschermaks Mineral. Petrogr. Mitt. 33, 263-286 (1984). Microprobe analyses (9) from ophiolite, Crete.
- AMPHIBOLE. Korytkova et al., (Mineral. Sb. (Lvov) 35, 81-83 (1981)) Chem. Abstr. 98, no. 10, 75522 (1983). Hydrothermal synthesis of fibrous amphiboles.
- AMPHIBOLE. Kostyukin (Tr. Komi Fil. Akad. Nauk SSSR 45, 28-35) (1894) (G(570)Ak144+). Analyses (16) from gabbros and syenites, northern Taiwan.
- AMPHIBOLE. Krivdik, (Mineral. Zh. 8(3), 74-78) (1986) (Russian) Analyses (28) from alkalic rock, Dniester region, hastingsite, magnesiotaramite, katophorite.
- AMPHIBOLE. Krivdik et al., (Mineral. Zh. 8(4), 40-46) (1986) (Russian) Microprobe analyses (24) from syenites, Ukrainian Shield
- AMPHIBOLE. Krogh, Lithos 15, 305-321 (1982) (English). Probe analyses (16) from Norwegian eclogites.
- AMPHIBOLE. Krupka, (Diss. Pa. State Univ., 1-396) (1984); Diss. Abstr. 1984B, 45, no. 6, p. 1704. Thermodynamic analysis of equil. in system $MgO-SiO_2-H_2O$.
- AMPHIBOLE. Krupka et al. (Am. Mineral. 70, 261-271) (1985). High-temp. heat capacities and derived thermodynamic properties. (tremolite)
- AMPHIBOLE. Kuroda et al., (Sci. Rep. - Dep. Geol., Kyushu Univ., 13, 191-200 (1980)) Mineral. Abstr. 34, 167 (1983). Relation of water content to ratio $Fe/(Fe+Mg)$.
- AMPHIBOLE. Labotha, Northeast. Geol. 4, 85-94 (1982). Microprobe analyses (12) from Iona Island, N.Y.
- AMPHIBOLE. Lalonde and Martin, Can. Mineral. 21, 81-91 (1983). Microprobe analyses (11) from syenite complex, Quebec.
- AMPHIBOLE. Lan; Proc. Geol. Soc. China 25, 38-52 (1982) (English) (G(611)G292p). Microprobe analyses (3) from gneiss, NE Taiwan.
- AMPHIBOLE. Lapidés, (Mineral. Zh. 8(3), 18-25) (1986) (Russian) Mossbauer study of 16 riebeckites, arfvedsonites, katophorites
- AMPHIBOLE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (5) from carbonatite, Yenisen region
- AMPHIBOLE. Larsons, Econ. Geol. 79, 1880-1896 (1984). Microprobe analyses (5) from Bruce Cu-Zn ores, Arizona.
- AMPHIBOLE. Le Bel et al. (J. Petrol. 26, 124-148) (1985). Microprobe analyses (2) from Lima, Peru (Andes).
- AMPHIBOLE. Lee, Sci. Rep. Tohoku Univ., Ser. 3, 15, 177-256 (1982) (English). Microprobe analyses (4) from Jeju volcanic rocks, Korea (kaersutite).

- AMPHIBOLE. Liou and Maruyama, (Jour. Metamorph. Geol. 5, 371-395) (1987)
Microprobe analyses (28) from Franciscan, Cazadero, Calif.
- AMPHIBOLE. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$.
- AMPHIBOLE. Lippard, Mineral. Mag. 48, 13-20 (1984). Microprobe analyses (3) from Oman Mts., Arabia.
- AMPHIBOLE. Litvin et al. (Mineral. Paragenesis Mineral. Mestorozhd. Urala, 63-68) (1983), Chem. Abstr. 102, no. 24, 206685 (1985). Analyses of tschermakite, optics, a 9.758, 9.800; b 17.952; 18.021; c 5.298, 5.32A; beta 104 degrees 46 minutes, 105 degrees 5 minutes.
- AMPHIBOLE. Luhr and Carmichael, Contrib. Mineral. Petrol. 90, 142-161) (1985). Microprobe analyses (2) from Jorullo volcano, Mexico.
- AMPHIBOLE. Luhr and Carmichael, Contrib. Mineral. Petrol. 71, 348-372 (1980). Microprobe analyses (6) and minor elements from Colima Volcano, Mexico.
- AMPHIBOLE. Luhr et al., J. Volcanol. Geotherm. 23, 69-108 (1984). Microprobe analysis (1) from El Chichon Volcano, Mexico. hornblende
- AMPHIBOLE. Mahabaleswar and Kumer, Acta Mineral.-Petrogr. 26, 115-123 (1983) (English). G(534)S22am. Analyses of 15 hornblendes from charnockites, Kanataka, India.
- AMPHIBOLE. Mansy, (Soc. Geol. Nord Publ. 13(1), 291-344) (1986) (French) Microprobe analyses (24) from Omineca Mts., Brit. Columbia G(540)qn77p
- AMPHIBOLE. Maruyama and Liou, Am. Mineral. 70, 16-29 (1985). Microprobe analyses (7) from Shikoku, Japan. (actinolite and riebeckite)
- AMPHIBOLE. Maruyama et al., (Geol. Soc. Am. Mem. 164, 1-16) (1986) Stability in system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ at 300-450 deg. Analyses of glaucophane, tremolite, magnesian riebeckite.
- AMPHIBOLE. Matson, et al., Geochim. Cosmochim. Acta 48, 1629-1636 (1984). Microprobe analyses (100) from ultramafic xenoliths, Grand Canyon, Ariz., including F, Cl, and other volatiles.
- AMPHIBOLE. Matsueda, et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983) (English) (502(990)J27SS no. 28). Microprobe analyses (3) from skarn, Antarctica.
- AMPHIBOLE. Mazzucchelli, Neues Jahrb. Mineral., Abh., 146, 101-116 (1983) (English). Microprobe analyses (1) from Ivrea-Verbano complex, Italy.
- AMPHIBOLE. McCaig, J. Metamorph. Geol. 2, 129-141 (1984). Microprobe analysis (1) from Pyrenees.
- AMPHIBOLE. Medaris, Contrib. Mineral. Petrol. 87, 72-86 (1984). Microprobe analyses (4) from garnet peridotites, W. Norway. (zoned)
- AMPHIBOLE. Medvedev and Ivanova, (Dokl. Akad. Nauk SSSR 278, no. 3, 735-737) (1984), Chem. Abstr. 102, no. 4, 28663 (1985). Mobility of H and O at 450-550 degrees, 1000 atm.
- AMPHIBOLE. Meinert, Econ. Geol. 79, 869-882 (1984). Analyses (6) from skarns, W. British Columbia.
- AMPHIBOLE. Melchior, (Rep. - Geol. Surv. Greenl., no. 103, 31-37 (1981) (English)) Chem. Abstr. 98, no. 16, 129430 (1983). Analyses (1) from Ilimaussaq.
- AMPHIBOLE. Microprobe analyses (9) from gabbros, Liguria, Italy (sodic, Na_2O 6.2-7.9%) + 11 calcic.
- AMPHIBOLE. Mezger and Okrusch (Tschermaks Mineral. Petrogr. Mitt. 34, 67-82) (1985). Microprobe analyses (2) from metamorphosed dolomites, Samos, Greece.
- AMPHIBOLE. Mezger et al. (Contrib. Mineral. Petrol. 90, 353-366) (1985). Microprobe analyses (21) from Samos, Greece.

- AMPHIBOLE. Mitchell and Lewis, *Can. Mineral.* 21, 59-64 (1983). Microprobe analyses (11) from peridotite, Arkansas (richterite).
- AMPHIBOLE. Miyake (J. *Metamorph. Geol.* 2, no. 2, 165-177) (1984). Microprobe analyses (7) from gneisses, Kenya.
- AMPHIBOLE. Miyano and Klein (*Kozan Chishitsu* 33, 213-222) (1983)(Eng.), *Chem. Abstr.* 103, no. 6, 39964 (1985). Stability relations of riebeckite and grunerite in system Na-Fe-Mg-Si-O-H as applied to metamorphosed iron formations.
- AMPHIBOLE. Miyano and Klein, *Am. Mineral.* 68, 517-529 (1983). Microprobe analyses (7) of riebeckite, W. Australia.
- AMPHIBOLE. Mongkolkeha and Ashworth, *Am. Mineral.* 68, 143-155 (1983). Microprobe analyses (4) from western Scotland.
- AMPHIBOLE. Moore, J. *Petrol.* 25, 126-150 (1984). Microprobe analyses (6) from blue schist, NE Diablo Range, Calif.
- AMPHIBOLE. Morikiya (*Ganseki Kobutsu Kosho Gakkaishi* 79, 503-508) (1984)(Eng.), *Chem. Abstr.* 103, no. 8, 56922 (1985). Analysis (not in abstr.) from Hokkaido, Optics, x-ray of magnesioriebeckite.
- AMPHIBOLE. Morikiya, (J. *Jap. Assoc. Mineral., Petrol., Econ. Geol.* 79, 503-508) (1984), *Mineral. Abstr.* 38, 87M/3062 (1987) Analysis (not in abs.) from Hokkaido
- AMPHIBOLE. Morris, J. *Volcanol. and Geothermal Research* 21, 119-148 (1984). Microprobe analyses (1) from Campbell Island, SW Pacific.
- AMPHIBOLE. Moser (*Mitteilungen. - Abt. Mineral. Landesmus. Joanneum* 52, 19-22) (1984). (G(533)G78mb). Analysis, optics, G 3.12, of magnesiohornblende from Wies, Styria, a 9.839, b 17.948, c 5.289A, Beta 105.05 degrees.
- AMPHIBOLE. Mottana, (*Geol. Soc. Am. Mem.* 164, 267-299) (1986) Analyses (8) from manganiferous cherts, Alps (tirodite, dannemorite, winchite, crossite, K-richterite, etc.)
- AMPHIBOLE. Mposkos and Perdikatsis (*Neues Jahrbuch Mineral., Abh.*, 149, no. 1, 43-63) (1984)(Eng.). Microprobe analyses (22) from glaucophane metagabbros, Samos I., Greece.
- AMPHIBOLE. Muller and Straus, *Neues Jahrb. Mineral., Monatsh.* 543-546 (1984). Analyses of tremolite, S. Norway, for use as microprobe standard. X-ray data, a 9.843, b 18.02, c 5.276 A, beta 105 degrees 03 minutes, Fe₂O₃ 0.89%.
- AMPHIBOLE. Munha, *Comun. Serv. Geol. Port.* 69, 3-35 (1983)(English). Microprobe analyses (11) from Iberian pyrite belt.
- AMPHIBOLE. Na (*Chjil Hakhoe Chi* 20(2), 147-153) (1984). *Chem. Abstr.* 101, no. 12, 94662 (1984). Stability in system Na₂O-CaO-MgO-Al₂O₃-SiO₂H₂O at 670-830 degrees 1000 bars (tremolite, edenite).
- AMPHIBOLE. Na et al., (*Lithos* 19, 153-163) (1986), *Mineral. Abstr.* 38, 87M/2548 (1987) Hydrothermal stability relations of tremolite, edenite and richterite
- AMPHIBOLE. Nadagouda and Hanagodimath (*J. Geol. Soc. India* 25, 796-801) (1984), *Mineral. Abstr.* 36, 200 (1985). Analysis and optics from Huliya, India, of grunerite, a 9.571, b 18.357, c 5.337A, beta 102 degrees 02'.
- AMPHIBOLE. Nakagawa and Aoki (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 80, 136-154) (1985)(Jpn.). Microprobe analyses (2) from Moriyoshi volcano, NE Japan.
- AMPHIBOLE. Nakajima, *Lithos* 15, 267-280 (1982). Microprobe analyses (2) from Shikoku, Japan.
- AMPHIBOLE. Neumann et al. (*Lithos* 18, 35-59) (1985)(Eng.). Microprobe analyses (22) from gabbros, Oslo rift, Norway.
- AMPHIBOLE. Neville et al. (*Am. Mineral.* 70, 668-677) (1985). Microprobe analyses (2) from ultramafic inclusions in basalt, Calif.
- AMPHIBOLE. Nickel and Green (*Kimberlites* 11B, 161-178) (1984). (150.3 D493). Microprobe analyses (31) from ultramafic xenoliths, Victoria, Australia.

- AMPHIBOLE. Nicollet, Bull. Mineral. 105, 691-696 (1982). Microprobe analyses (1) from Aveyron, France.
- AMPHIBOLE. Ntaflos et al. (Fortschr. Mineral. 62, Beih. 1, 174-176) (1984). Microprobe analyses (2) from ultramafites, Zabarged.
- AMPHIBOLE. Nureki et al. (Mem. Geol. Soc. Japan 21, 127-146) (1982) (G(620) G29m). Analyses (15) from xenoliths in andesite, Kagowz Pref)
- AMPHIBOLE. O'Halloran (J. African Earth Sci. 3, 61-75) (1985). Microprobe analyses (21) from alkalie rocks, Sudan.
- AMPHIBOLE. Oba, et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 659-668) (1983)(English), Chem. Abstr. 100, no. 8, 54682 (1983). Stability of kaersutite at 750-1300 degrees and 5-27.5 kbar.
- AMPHIBOLE. Offler, Mineral. Mag. 48, 47-52 (1984). Microprobe analyses (9) of Fe-rich actinolites, Glenrock Sta., N.S. Wales.
- AMPHIBOLE. Olsen et al., Am. Mineral. 68, 315-333 (1983). Microprobe analyses (4) from Concord gabbro-syenite complex, N.C.
- AMPHIBOLE. Olsen, Contrib. Mineral. Petrol. 85, 30-44 (1984)(English). Microprobe analyses (5) from Colo. Front Range migmatites. hornblende
- AMPHIBOLE. Otten, Contrib. Mineral. Petrol. 86, 189-199 (1984). Microprobe analyses (22) from Artfjallet gabbro, Sweden.
- AMPHIBOLE. Page and Zientak, (U.S. Geol. Survey Bull. 1674A, 1-35) (1987) Microprobe analyses (115) from olivine cumulates, Stillwater Complex, Montana
- AMPHIBOLE. Pe-piper, J. Petrol. 25, 453-472 (1984). Microprobe analyses (1) from shoshonite, Lesbos, Greece.
- AMPHIBOLE. Pedersen and Hald, Lithos 15, 137-159 (1982)(English). Microprobe analyses (17) from dacite, Kroksfjordor, Iceland.
- AMPHIBOLE. Pervov and Kononova, (Rock-forming minerals of magmatic rocks, Nauka, 126-138) (1986) (Russian) (170(570)Oss) Analyses (8) from magnesian andesites, Transbaikal
- AMPHIBOLE. Petersen et al. (Am. Mineral. 69, 472-480) (1984). Analysis of tirodite, Balmat, NY.
- AMPHIBOLE. Plyusnina and Likhoidov, (Mineral. Zh. 8(3), 26-32) (1986) (Russian) Synthesis of Na-amphiboles, riebeckite-ferroglaucophane Unit cells
- AMPHIBOLE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (7) from Western Alps, Italy
- AMPHIBOLE. Poporadze, (Nauchn. Tr. - Gruz. Politekh. Inst. im. V. I. Lenina, no. 3, 104-114 (1982)) Chem. Abstr. 98, no. 18, 146734 (1983). Unit cells for hornblende and actinolite.
- AMPHIBOLE. Pouclet et al., (Jour. Africa Earth Sci. 6, 29-43) (1987) (French) Microprobe analyses (12) from Akjoujt Cu deposit, Mauritania
- AMPHIBOLE. Purtscheller and Mogessie, Tschermaks Mineral. Petrogr. Mitt. 32, 223-233 (1984)(Eng.). Analysis from amphibolite, Austria.
- AMPHIBOLE. Ramaswamy (J. Geol. Soc. India 25, 307-310) (1984), Mineral. Abstr. 36, 107 (1985). Analysis of katophorite from carbonatite, Tamil Nadu, India.
- AMPHIBOLE. Raudsepp et al., (Am. Mineral. 72, 580-593) (1987) Infra-red and NMR spectroscopy of synthetic pargasites
- AMPHIBOLE. Reay, (Bull. Roy. Soc. New Zealand 23, 337-343) (1986) Analyses (3) from andesites, Salander Island
- AMPHIBOLE. Reid and Hamilton, (Contrib. Mineral. Petrol. 96, 441-454) (1987) Microprobe analyses (14) of hornblendes, granites, Sierra Nevada
- AMPHIBOLE. Reinecke et al., Neues Jahrb. Mineral., Abh., 145, 157-182 (1982)(English). Microprobe analyses (1), Anafi, Greece (tremolite).
- AMPHIBOLE. Ribeiro, (Geol. Rundschau 76, 147-168) (1987) (Eng) Microprobe analyses (4) from peralkaline rhyolites, NE Portugal (riebeckite-magnesioriebeckite)
- AMPHIBOLE. Ridley and Dixon, J. Metamorph. Geol. 2, 115-128 (1984). Microprobe analyses (14) from Styros Island, Greece.

- AMPHIBOLE. Robinson, *Econ. Geol.* 79, 1796-1817 (1984). Microprobe analyses (7) from iron formation. Timmins, Ont.
- AMPHIBOLE. Rock and Leake, *Mineral. Mag.* 48, 211-227 (1984). Computer program for IMA amphibole nomenclature. Anophorite reinstated. Reclassification of analyses of crossite, glaucophane, richterite, and others.
- AMPHIBOLE. Rock, *Lithos* 15, 111-131 (1982) (English). Microprobe analyses (3) of kaersutites from alkalic rocks; Spain.
- AMPHIBOLE. Rock, *Contrib. Mineral. Petrol.* 81, 64-78 (1982). Microprobe analyses (6) from alkalic rocks, Portugal
- AMPHIBOLE. Roden, et al., *Contrib. Mineral. Petrol.* 85, 376-380 (1984). Microprobe analysis (10), St. Paul's rocks, Atlantic Ocean.
- AMPHIBOLE. Roeske, (*Geol. Soc. Am. Mem.* 164, 169-184) (1986) Microprobe analyses (8) from Raspberry schist, Kodiak, Alaska crossite, hornblende, actinolite, glaucophane
- AMPHIBOLE. Rosi and Santacroce, *J. Volcanol. Geothermal Res.* 17, 247-271 (1983) (English). Microprobe analyses (2) from AD 472 eruption of Vesuvius.
- AMPHIBOLE. Rubin, *Earth Planet. Sci. Lett.* 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite from St. Sauveur meteorite (richterite)
- AMPHIBOLE. Rudashevskii and Zhdanov, *Byull. Mosk. O-va. Ispyt. Priir., Otd. Geol.* 58, no. 5, 49-59 (1983) (G(570)M866). Analyses (2) from Kamchatka Pt deposit.
- AMPHIBOLE. Rudashevskii, *Zap. Vses. Mineral. O-va.* 113, 186-195 (1984) (Russian). Microprobe analyses (8) of minerals enclosing Pt minerals.
- AMPHIBOLE. Sandhu (*Research Bull. Panjab Univ. Sci.* 35, no. 3-4, 147-150) (1984) (Eng.) Analyses of hornblende, Jammu-Kashmir State, India.
- AMPHIBOLE. Sautter, (*Jour. African Earth Sci.* 5, 345-357) (1986) (French) Microprobe analyses (9) from eclogites, Algeria
- AMPHIBOLE. Schenker and Dietrich, (*Schweiz. Min. Petr. Mitt.* 66, 343-384) (1986) (Eng) Microprobe analyses (3) from Lake Nyos, Cameroon pargasite
- AMPHIBOLE. Schiffman et al. (*Mineral. Mag.* 49, 435-449) (1985). Analyses (8) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- AMPHIBOLE. Schultz-Guttler et al., (*Schweiz. Min. Petr. Mitt.* 66, 281-294) (1986) (Eng) Analyses (3) from Buritirama, Brazil - Phase relations in system CaO-MnO-MgO-K₂O-Al₂O₃-SiO₂-CO₂-H₂O infrared from these
- AMPHIBOLE. Scott and Middleton, *Nor. Geol. Tidsskr.* 389, 1-26 (1983) (English) (581)Bu. Microprobe analyses (4) from camptonite sills, Oslo region, kaersutite
- AMPHIBOLE. Scott, *Greenland Geosci.*, no. 4, 1-124 (1981). Microprobe analyses (3) from kimbaitite, Greenland
- AMPHIBOLE. Selverstone and Munoz, (*Contrib. Mineral. Petrol.* 96, 426-440) (1987) Microprobe analyses (8) from Eastern Alps
- AMPHIBOLE. Selverstone et al., *J. Petrol.* 25, 501-531 (1984). Microprobe analyses (15) from Tavern, Austria. hornblende
- AMPHIBOLE. Sharma and Windley, *Mineral. Mag.* 48, 195-209 (1984). Microprobe analyses (2) from Archean gneiss, N.W. India.
- AMPHIBOLE. Shiraishi et al. (*Proc. Symp. Antarctic Geosci.* 4th, 1983, 126-144) (1984) (Eng.) 502(990)J2755. Microprobe analyses (5), Prince Olav coast, E: Antarctica.
- AMPHIBOLE. Sidorov, *Mineralogy of Cibaikalie*, 88-137 (103(690.3)M662p). Analyses from SW Baikal (3).
- AMPHIBOLE. Sills (*Lithos* 16, 112-124) (1983) (Eng.). Microprobe analyses (5) from gneisses, N.W. Scotland.
- AMPHIBOLE. Sills, et al., *J. Metamorph. Geol.* 1, 337-351 (1983). Microprobe analyses (3) from Finero, N. Italy.

- AMPHIBOLE. Skiyarov and Dobretsov, (Geol. Geofiz. 2(326), 3-13) (1987) (Russian) G(690) G292 Microprobe analyses (36) from ophiolites, Sayan
- AMPHIBOLE. Skogby and Annersten, (N. Jb. Miner. Mh., 193-203) (1985), Mineral. Abstr. 38, 87M/2111 (1987) Mossbauer study of Mg-Fe distribution in tremolite-actinolite
- AMPHIBOLE. Slovenec, Geol. Vjesn. 35, 133-152 (1982). Analyses (1) from Mt. Papuk, Yugoslavia.
- AMPHIBOLE. Smellie and Stone (J. Geol. Soc. Scot. 20, 315-327) (1984). Microprobe analysis (1) from garnet-pyroxenite, Ballantree, Scotland.
- AMPHIBOLE. Smith and Wilson, Am. Mineral. 70, 30-39 (1985). Microprobe analyses (1) from kimberlite, Jagersfontein, S. Africa.
- AMPHIBOLE. Smith et al., J. Volcanol. Geothermal Res. 18, 249-278 (1983). Microprobe analyses (14) from gabbroic rocks, S. California.
- AMPHIBOLE. Sorensen, (Geol. Soc. Am. Mem. 164, 59-75) (1986) Microprobe analyses (8) from Catalina schist, Calif.
- AMPHIBOLE. Spadea et al., (Jour. Geol. 95, 377-395) (1987) Microprobe analyses (5) from ophiolite, SW Columbia
- AMPHIBOLE. Spear and Kimball, (Comput. Geosci. 10, 317-325) (1984), Chem. Abstr. 102, no. 2, 9859 (1984). Fortran program to recalculate probe analyses to Fe⁺³
- AMPHIBOLE. Spear, J. Petrol. 23, 383-426 (1982). Microprobe analyses (30), Mt. Cube quadrangle, Vermont.
- AMPHIBOLE. Stepanenko, (Tr. Komi Fil. Akad. Nauk SSSR 45, 36-47) (1984) (G(570)AK144+). Analyses (4) from carbonatites
- AMPHIBOLE. Stephenson and Hensel, Lithos 15, 59-75 (1982) (English). Microprobe analyses (4), NS Wales, Australia.
- AMPHIBOLE. Stoddard (Can. Mineral. 23, 195-204) (1985). Microprobe analyses (4) from granulites, Adirondacks.
- AMPHIBOLE. Stolz, Mineral. Mag. 48, 167-179 (1984). Microprobe analyses (2) from ultramafic inclusions in nepheline mugearite, N.S. Wales
- AMPHIBOLE. Strong and Taylor, (Tschermarks Mineral. Petrogr. Mitt. 32, 211-222) (1984) (Eng.). Electron microprobe analyses (43) from peralkaline rocks and granites of Newfoundland.
- AMPHIBOLE. Stul'chikov, et al., (Geokhim. Rudoobraz. 12, 81-89) (1984), Chem. Abstr. 102, no. 6, 48830 (1985). Analyses (not in abstr.) from Verkhovetso syncline, USSR.
- AMPHIBOLE. Su and Bloss, Am. Mineral. 69, 399-403 (1984). Note of warning on measuring extinction angles on monoclinic.
- AMPHIBOLE. Suzuki, Proc. 3rd Symp. Antarctic Geosci., 132-143 (1983) (English) (502(990)J27SS, no. 28). Microprobe analyses (7), Lutzow-Holm Bay, Antarctica.
- AMPHIBOLE. Takasu, J. Petrol. 25, 619-643 (1984) (English). Microprobe analyses (22) from eclogites, Besshi Dist., Japan.
- AMPHIBOLE. Takeda (J. Sci. Hiroshima Univ., Ser. C, 8(3), 221-280) (1984) (Eng.). Microprobe analyses (8) from greenstones, Shikoku, Japan
- AMPHIBOLE. Tanaka et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 438-454 (1982) (English). Microprobe analyses (11) from cortlandite, N.E. Japan.
- AMPHIBOLE. Thompson and Leclair, (Jour. Metamorph. Geol. 5, 415-436) (1987) Microprobe analyses (4), Grenville Province, Canada.
- AMPHIBOLE. Thomson et al. (Can. Mineral. 23, 173-186) (1985). Microprobe analyses (2) from norite, Sudbury, Ont.
- AMPHIBOLE. Tornroos, Neues Jahrb. Mineral., Abh., 144, 107-123 (1982) (English). Microprobe analyses (1) from Finland.

- AMPHIBOLE. Treiman (Meteoritics 20, 229-243) (1985). Microprobe analyses (3) from Shergotty meteorite (and Zagami).
- AMPHIBOLE. Tripathi and Goel (Proc. Natl. Acad. Sci. India, Sec. A, 53, no. 1, 17-22) (1983) (Eng.). Chem. Abstr. 101, no. 12, 94664 (1984). Mossbauer study of hornblendes.
- AMPHIBOLE. Trzcieski et al. (Contrib. Mineral. Petrol. 85, 311-320) (1984), Chem. Abstr. 100, no. 26, 213131 (1984). Zoned sodic amphiboles, New Brunswick, Canada.
- AMPHIBOLE. Tsai, et al., Acta Geol. Taiwanica 21, 81-91 (1982) (English). Microprobe analyses (2), megacrysts in basalt, N. Taiwan.
- AMPHIBOLE. Ungaretti et al., (Porodoobrazuyushchie Miner. (Rock-forming Minerals), Mater. S'ezda MMA, 11th, 82-110 (1978) (Pub. 1981) (English)) Chem. Abstr. 98, no. 26, 219116 (1983). Fe content vs lattice properties of glaucophane-riebeckite.
- AMPHIBOLE. Upton et al. (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- AMPHIBOLE. Upton, et al., J. Petrol. 25, 151-184 (1984). Microprobe analyses (2) from NE Greenland basalts.
- AMPHIBOLE. Valetov and Lapides (Dokl. Akad. Nauk SSSR 276, 116-119) (1984), Chem. Abstr. 101, no. 10, 76130 (1984). Mossbauer study of riebeckite and arfvedsonite.
- AMPHIBOLE. Vanko and Bishop, Contrib. Mineral. Petrol. 81, 277-289 (1982). Microprobe analyses (6) from Humboldt lopolith, Nev.
- AMPHIBOLE. Vielzeuf, Bull. Mineral. 105, 681-690 (1982). Microprobe analyses (5) of actinolite.
- AMPHIBOLE. Vivallo (eol. Foeren. Stockholm Foerh. 106, 257-267) (1985) (Eng.). Microprobe analyses (4) from metamorphic rocks, Garpenberg, Sweden.
- AMPHIBOLE. Vladykin et al. (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 41-56) (1983) (Russ.). 480(690.3)M662. Analyses (2) from Murunsh massif, arfvedsonite.
- AMPHIBOLE. Volfinger et al. (Geochim. Cosmochim. Acta 49, 37-48) (1985), Chem. Abstr. 102, no. 12, 98519 (1985). Incorporation of Cl in.
- AMPHIBOLE. Wagner and Velde (Bull. Mineral. 108, 173-187) (1985) (Eng.). Microprobe analyses (6) from minette dikes, Jersey and Italy. Arfvedsonite.
- AMPHIBOLE. Wang, (Proc. - Int. Symp. Hydrothermal Research, 1st, 1982, 393-410) (1983) (English), Chem. Abstr. 100, no. 6, 44315 (1984). Hydrothermal synthesis of amphibole asbestos.
- AMPHIBOLE. Ward (Am. Mineral. 69, 531-540) (1984). Microprobe analyses (2) from New Zealand.
- AMPHIBOLE. Waters, (Contrib. Mineral. Petrol. 95, 523-533) (1987) Av. composition from xenoliths in kimberlite, S. Africa (K-richterite)
- AMPHIBOLE. Whitney and McLelland, Contrib. Mineral. Petrol. 82, 34-41 (1983). Microprobe analyses (12) from coronas in metagabbros, Adirondacks.
- AMPHIBOLE. Wierzcholowski, (Arch. Mineral. 38, 67-75) (1983) (Polish), Mineral. Abstr. 36, 183 (1984). Analysis from Sudeten, optics, infra-red data.
- AMPHIBOLE. Williams (Can. Mineral. 22, 417-421) (1984). Microprobe analyses (2) Fiskenaesset, Greenland.
- AMPHIBOLE. Williams, Mineral. Mag. 47, 233-235 (1983). Microprobe analysis from Fornas, Spain (hornblende).
- AMPHIBOLE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)qW895G. Microprobe analyses (50) and trace elements. Laacher See, Germany.
- AMPHIBOLE. Yakovlev, et al., (Mineral. Zh. 6, no. 5, 3-16) (1984), Chem. Abstr. 102, no. 4, 28869 (1985). Analyses (not in abstr.), unit cells from Ukrainian Shield and Russian Platform.

- AMPHIBOLE. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 21, 77-131 (1984) (English). Microprobe analyses (12), Oshime-Oshime volcano, N. Japan.
- AMPHIBOLE. Yardley, Contrib. Mineral. Petrol. 81, 317-327 (1982). Microprobe analyses (18) from schists, New Zealand.
- AMPHIBOLE. Yoshida and Oikava, Proc. 3rd Symp. Antarctic Geosci., 145-165 (1983) (562(990)J27SS no. 28). Microprobe analyses (4) from metabasite, Antarctica.
- AMPHIBOLE. Young (Mineral. Mag. 48, 345-350) (1984). Microprobe analyses (2) of inclusions in chromite, Rhum, Scotland.
- AMPHIBOLE. Zavyalova, (Geol. Geofiz., no. 2, 61-68 (1983)) Chem. Abstr. 98, no. 20, 164131 (1983). Analyses from peridotites, Aldan Shield.
- AMPHIBOLES. Ackermand, et al., Mineral. Mag. 47, 555-561 (1983). Microprobe analyses (2) from Fiskemaess, Greenland.
- AMPHIBOLE. Su et al. (Am. Mineral. 69, 440-448) (1984). Optic axial angle as a measure of Al, Si ordering in. (2)
- ANALCIME. Alberti and Brigatti (Am. Mineral. 70, ;805-813) (1985). Multivariate analysis of ten elements shows strong chemical differentiation between hydrothermal and sedimentary samples.
- ANALCIME. Alt and Honnorez, Contrib. Mineral. Petrol. 87, 145-169 (1984). Microprobe analyses (2) from altered basalt, oceanic cores.
- ANALCIME. Barbieri and Penta, Chem. Erde 43, 197-203 (1984) (English). Relation of Li content to origin. High in volcanic (122 to 960 ppm).
- ANALCIME. Brooks et al., Greenland Geosci. 7, 1-35 (1982) (English). Analyses (1) from Werner Bjerge complex, Greenland.
- ANALCIME. Clarke et al., Contrib. Mineral. Petrol. 83, 117-127 (1983). Microprobe analysis from W.. Greenland.
- ANALCIME. Danilov, (Dokl. Akad. Nauk SSSR 268, 151-154 (1983)) Chem. Abstr. 98, no. 18, 146709 (1983). Occurrence in sedimentary rocks, Timan. X-ray data.
- ANALCIME. Dubanska and Rykl, (Acta Mont. 61, 27-41) (1983), Chem. Abstr. 100, no. 10, 71343 (1984). Hydrothermal synthesis.
- ANALCIME. Dubanska and Rykl, (Cas. Mineral. Geol. 29, 91-98) (1984) (Czech.), Chem.. Abstr. 101, no. 4, 25641 (1984). Hydrothermal preparation from albitite rock.
- ANALCIME. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (3) from teschenite, N.S. Wales.
- ANALCIME. Henderson and Gibb, (Trans. Roy. Soc. Edinburgh 77, 325-347) (1987) Microprobe analyses (2) from Lugar sill, SW Scotland
- ANALCIME. Jakobsson and Moore, (Bull. Geol. Soc. Am. 97, 648-659) (1986) Microprobe analyses (4) from Surtsey volcano, Iceland
- ANALCIME. Keith et al., (Geochim. Cosmochim. Acta 47, 795-804 (1983)) Chem. Abstr. 98, no. 24, 201522 (1983). Concentration of Cs during hydrothermal alteration, Yellowstone.
- ANALCIME. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$.
- ANALCIME. Matsueda et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983) (English) (502(990)J27SS no. 28). Probe analyses (1) from skarn, Antarctica.
- ANALCIME. Nakajima et al. (Kenkyu Shuroku-Kobe Daigaku 72, 105-121) (1984) (Jap.), Chem. Abstr. 101, no. 14, 114129 (1984). Hydrothermal synthesis.
- ANALCIME. Noack, Miner. Mag. 47, 47-50 (1983). Analyses from Mururoa, S. Pacific
- ANALCIME. Senderova and Vorob'eva (Dokl. Akad. Nauk SSSR 294, no. 6, 1491-1494) (1984), Chem. Abstr. 101, no. 10, 76111 (1984). Stability in system analcime + quartz = albite.
- ANALCIME. Ueda et al., (J. Phys. Chem. 88, 2128-2131) (1984), Chem. Abstr. 100, no. 22, 183371 (1984). Synthesis.

- ANALCIME. Ueno and Hanada, J. Mineral. Soc. Jpn. 15, 259-272 (1982) (Japanese). Analysis, X-ray data, Fukuoka Pref., Japan, a 13.7211A.
- ANATASE. Edenharter et al., (Schweiz. Strahler 5, 261-267 (1980)) Mineral. Abstr. 34, 69 (1983). Probe analysis with Nb₂O₅ 1.61-2.45%, a 3.784, c 9.523A.
- ANATASE. Ohtsuka et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 76, 253-261) (1981), Mineral. Abstr. 36, 42-43 (1984). Crystallization under hydrothermal conditions.
- ANATASE. Grunin et al., (Dokl. Akad. Nauk SSSR 268, 686-688 (1983)) Chem. Abstr. 98, no. 18, 146737 (1983). Synthesis. X-ray, DTA, TGA, and EPR study.
- ANATASE. Marziano et al. (Inst. Chem. Eng. Symp. Ser. 87, 709-716) (1984)(Eng.), Chem. Abstr. 102, no. 10, 81036 (1985). Kinetics of anatase-rutile transformation.
- ANATASE. Nishizawa and Aoki, (J. Solid State Chem. 56(2), 158-165) (1985)(Eng.). Chem. Abstr. 102, no. 14, 123329 (1985). Hydrothermal synthesis.
- ANATASE. Suwa et al., (J. Mater. Sci. 19, 1397-1405) (1984)(English), Chem. Abstr. 100, no. 26, 219369 (1984). Transformation to brookite to rutile by grinding.
- ANCYLITE. Viswanathan et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st 1982, 747-757) (1983), Chem. Abstr. 100, no. 8, 59709 (1984). Hydrotherm synth.
- ANDALUSITE. Abs-Wurmbach et al., (J. Petrol. 24, 48-75 (1983) (English)) Chem. Abstr. 98, no. 18, 146713 (1983). Hydrothermal synthesis and stability of andalusite-kaolinite series.
- ANDALUSITE. Brandstatter and Zemann, Tschermaks Mineral. Petrogr. Mitt. 33, 131-4 (1984). Analyses from Rasna, Czechoslovakia reported to contain 0.36% BaO
- ANDALUSITE. Cerny and Hawthorne, Mineral. Assoc. Canada Short Course no. 8, 163-186 (1982). Review of occurrence in granitic pegmatites.
- ANDALUSITE. Gordillo et al. (Contrib. Mineral. Petrol. 90, 93-101) (1985). Microprobe analysis (1) from El Penon, Argentina.
- ANDALUSITE. Halbach and Chattergee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- ANDALUSITE. Jamieson (Contrib. Mineral. Petrol. 86, 309-330) (1984). Probe analysis (1) from gneiss, Nova Scotia.
- ANDALUSITE. Kerrick et al., (Contrib. Mineral. Petrol. 95, 481-498) (1987) Microprobe analyses (3) from corundum-muscovite rocks, Zimbabwe
- ANDALUSITE. Kieffer, (Rev. Geophys. Space Phys. 20, 827-849 (1982)) Chem. Abstr. 98, no. 4, 19591 (1983). Calculations of thermodynamic properties, application to phase equil.
- ANDALUSITE. Lefebvre, (Bull. Mineral. 105, 347-350 (1982)(English)) Chem. Abstr. 98, no. 6, 37821 (1983). Transmission electron microscopy. Plastic deformation
- ANDALUSITE. Ostapenko et al., (Mineral. Zh. 8(3), 59-61) (1986) (Russian) Thermodynamic properties of X-andalusite at 537 deg., 627 deg., 675 deg. C
- ANDALUSITE. Petrusenko (Geochim., Mineral. Petrol. 14, 73-83) (1981), Mineral. Abstr. 35, 77 (1984). Occurrence in pegmatite, Bulgaria, Optics.
- ANDALUSITE. Pokrovskii and Ivanov (Ocherki Fiz-Khim Petrol. 11, 143-160) (1983), Chem. Abstr. 101, no. 20, 174816 (1984). Stability in system Al₂O₃-SiO₂-H₂O. Thermodynamic constants.
- ANDALUSITE. Ralph et al. (Am. Mineral. 69, 513-519) (1984). Compressibility. Crystal structure at pressures up to 37 kb.
- ANDALUSITE. Robie and Hemingway, Am. Mineral. 69, 298-306 (1984). Heat capacity, 10-380 degrees K. Entropy. Triple joint kyanite-andalusite-sillimanite.
- ANDALUSITE. Shvedenkov et al. (Geol i Geofiz. 10, 91-96) (1982), Mineral. Abstr. 35, 45 (1984). Stability in system muscovite + quartz = K-feldspar + andalusite and paragonite = albite + corundum.

- ANDALUSITE. Steefel and Atkinson (Econ. Geol. 79, 573-579) (1984).
Occurrence in hydrothermal deposits, Elkhorn dist., Mont. Abstr. 107, no 10, 81086 (1987) Oriented growth of sillimanite in andalusite, N. Mex.
- ANDALUSITE. Vivallo (Geol. Foeren. Stockholm Foerh. 106, 257-267 (1985)(Eng.). Microprobe analysis (1) from metamorphic rocks, Garpenberg, Sweden.
- ANDERSONITE. Mathovskii et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- ANDORITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- ANDORITE. Kaspar et al. (Neues Jahrb. Mineral., Monatsh., 147(1), 47-57) (1983)(Eng.). Microprobe analysis from Trebsko, Czech.
- ANDORITE. Moelo et al., (Neues Jahrb. Mineral., Monatsh., 175-182) (1984), Abstr. in Am. Mineral. 70, 219-220 (1985). andorite-VI is orth., a 13.02, b 19.18, c 25.48 Å, unit cell contains $Pb_{20}Ag_{24}Cu_2Sb_{74}Si_{44}$. Renewed Senandorite. Andorite IV is renamed Quatranderite. Monoclinic, a 13.04, b 19.18, c 1707 Å, gamma 90 degrees, $Pb_{18}Ag_{15}Sb_{47}S_{96}$.
- ANDORITE. Mozgova et al., (Mineral Zh. 5, no. 1, 17-33 (1983)) Chem. Abstr. 98, no. 26, 219050 (1983). The homologous series andorite - fizelyite - ramdohrite - sundtite. Compositions, unit cells.
- ANDUOITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- ANKERITE. Guwra and Pelczar, (Mineral. Polsk. Karpat., 18-19) 120(578) G934m (Polish) Analyses (1) from Polish Carpathians
- ANHYDRITE. Gritsek and Kropacheva, (Mineral. Sb. (Lvov) 37, no. 1, 85-89) (1983), Chem. Abstr. 102, no. 6, 48845 (1985). Occurrence in basic dike, Siberian Platform. Optics.
- ANHYDRITE. Jakobsson and Moore, (Bull. Geol. Soc. Am. 97, 648-659) (1986) Microprobe analyses (3) from Surtsey volcano, Iceland
- ANHYDRITE. Luhr et al., J. Volcanol. Geotherm. 23, 69-108 (1984). Microprobe analysis (1) from Chichon Volcano, Mexico.
- ANHYDRITE. Marfunin et al., (Mineral. Zh. 5, no. 6, 3-9) (1983), Chem. Abstr. 100, no. 16, 124237 (1984). EPR study of sedimentary and hypogene anhydrites.
- ANHYDRITE. Melnichuk et al., (Mineral. Zh. 6, no. 1, 79-82) (1984), Chem. Abstr. 101, no. 2, 10128 (1984). Analysis from Ukraine.
- ANHYDRITE. Roche, (Report, LBL-14303, 1-88 (1982)) Chem. Abstr. 98, no. 4, 26840 (1983). Thermal decomposition.
- ANHYDRITE. Ryakov et al., (Phys. Chem. Miner. 10, 21-26) (1983), Mineral. Abstr. 35, 138 (1984). E.P.R. study shows the presence of PO_3^{-2} and SO_3^- radicals.
- ANHYDRITE. Saltzmann and Price (Initial Rept. Deep Sea Drill Project 83, 283-288) (1985), Chem. Abstr. 103, no. 4, 25089 (1985). Occurrence in altered basalts, Costa Rica rift, E. Pacific.
- ANILITE. Janjic, (Glas. Prir. Muz. Beogradu Ser. A 37, 127-133) (1982), Chem. Abstr. 102, no. 6, 48835 (1985). Occurrence at Bor, Jugoslava, a 7.92, b 7.34, c 10.98 Å, formula $Cu_{170}S$.
- ANKERITE. Ashworth and Evirgen, Mineral. Mag. 48, 159-165 (1984). Microprobe analyses (1) from S.W. Turkey.
- ANKERITE. Barber and Wenk, Contrib. Mineral. Petrol. 88, 233-245 (1984). T.E.M. study from Alno and Fen carbonatites show 2-phase structures.
- ANKERITE. DeGrave and Vochten (Phys. Chem. Miner. 12, 108-113) (1985), Chem. Abstr. 103, no. 6, 39969 (1985). Analysis, x-ray, DTA, Mossbauer study.

- ANKERITE. Devaraju and Murthy, (J. Geol. Soc. India 23, 381-386) (1982), Mineralog. Abstr. 34, 474 (1983). Analysis from India, FeO 21.35, Fe₂O₃ 0.82, MnO 1.24%, a 4.825, c 16.15A. Minor elements.
- ANKERITE. Gnutenko and Kuzemko, Mineral. Sb. (Lvov) 37, no. 1, 94-97 (1983). Analyses from Au deposit, Central Asia.
- ANKERITE. Hanagodimath and Nadagouda (J. Karnatak Univ., Sci. 28, 67-73) (1983), Chem. Abstr. 103, no. 2, 9136 (1985). Analysis from Karnataka State, India, unit cell.
- ANKERITE. Iwafuchi et al. (Nippon Kagaku Kaishi 98, 1211-1218) (1982), Chem. Abstr. 101, no. 14, 114127 (1984). Analysis, DTA of magnesian.
- ANKERITE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (15) from Davidkovo massif, Ukraine
- ANKERITE. Kucha and Wieczouk (Tschermaks Mineral. Petrogr. Mitt. 32, 247-258) (1984). Electron diffraction data from Austria indicate superstructures with units of CaMg(CO₃)₂, CaFe(CO₃)₂, and CaCO₃.
- ANKERITE. McDowell and Paces (Mineral. Mag. 49, 469-479) (1985). Microprobe analyses (10) from Salton Sea geothermal system, Calif.
- ANKERITE. Miyano and Klein, Am. Mineral. 68, 517-529 (1983). Microprobe analyses (4) of riebeckite, W. Australia.
- ANKERITE. Phillips and Brown, (Can. Mineral. 25, 265-273) (1987) Microprobe and (23) from Kalgoorlie deposit
- ANKERITE. Powell et al., J. Metamorph. Geol. 2, 33-41 (1984). Stability in system CaO-MgO-FeO-CO₂.
- ANKERITE. Selverstone, J. Petrol. 25, 501-531 (1984). Microprobe analyses (2) from Tavern, Austria.
- ANKERITE. Stepanenko (Tr. Komi Fil. Akad. Nauk SSSR 45, 36-47) (1984) (Russ) (G(570)AK144+). Analyses (8) from carbonatites.
- ANKERITE. Thompson and Leclair, (Jour. Metamorph. Geol. 5, 415-436) (1987) Microprobe analyses (1), Grenville Province, Canada
- ANKERITE. Warne et al., (Thermochim. Acta 51, 105-111 (1981)) Mineral. Abstr. 34, 181 (1983). DTA.
- ANNIVITE: Bortnikov et al., (Mineral. Zh. 8(3), 61-64) (1986) (Russian) Microprobe analyses (1) from E. Karamazar, Bi 18.23%
- ANNIVITE. Spiridonov (Dokl. Akad. Nauk SSSR 279, 447-453) (1984), Chem. Abstr. 102, no. 14, 116738 (1985). Nomenclature of group. Annivite for Bi dominant.
- ANORTHOCLASE. Akizuki, (Lithos 16, 249-254) (1983)(English), Chem. Abstr. 100, no. 10, 71395 (1984). Electron microscope study.
- ANORTHOCLASE. Irving and Frey (Geochim. Cosmochim. Acta 48, 1201-1221) (1984). Microprobe analyses (6) of megacrysts in basalts. Trace elements.
- ANORTHOCLASE. Upton et al. (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- ANTHOINITE. Ostwald (Mineral. Mag. 48, 397-400) (1984). Analysis, x-ray data from Tasmania.
- ANTHOPHYLLITE. Ackermend et al., Mineral. Mag. 47, 555-561 (1983). Microprobe analyses (6) from Fiskemaess, Greenland.
- ANTHOPHYLLITE. Chernosky et al. (Am. Mineral 70, 223-236) (1985). Stability in the system MgO-SiO₂-H₂O.
- ANTHOPHYLLITE. Day et al. (Am. Mineral. 70, 237-248) (1985). Thermodynamic analysis of equil. in system MgO-SiO₂-H₂O.
- ANTHOPHYLLITE. Krupka et al. (Am. Mineral. 70, 249-260) (1985). Low-temp. heat capacities and derived thermodynamic properties. Unit cell, analysis.
- ANTHOPHYLLITE. Krupka et al. (Am. Mineral. 70, 261-271) (1985). High-temp. heat capacities and derived thermodynamic properties.

- ANTHOPHYLLITE. Miyake (J. *Metamorph. Geol.* 2, no. 2, 165-177) (1984).
Microprobe analyses (2) from gneisses, Kenya.
- ANTHOPHYLLITE. Rock and Leake, *Mineral. Mag.* 48, 211-227 (1984). Computer reclassification of published anthophyllite and gedrite analyses.
- ANTHOPHYLLITE. Schreyer et al., *Contrib. Geol.* 86, 200-207 (1984).
Microprobe analyses (2) from Limpopo belt, Africa. (gedrites)
- ANTHOPHYLLITE. Spear, J. *Petrol.* 23, 383-426 (1982). Microprobe analyses (25), Mt. Cube quadrangle, Vermont.
- ANTHOPHYLLITE. Stephenson and Hensel, *Lithos* 15, 59-75 (1982)(English).
Microprobe analyses (1), NS Wales, Australia.
- ANTHOPHYLLITE. Su et al. (*Am. Mineral.* 69, 440-448) (1984). Optic axial angle as a measure of Al, Si ordering in. Na-Al rich.
- ANTHOPHYLLITE. Williams, *Mineral. Mag.* 47, 233-235 (1983). Microprobe analysis from Fornas, Spain (gedrite).
- ANTHOPHYLLITE. Windley et al., *Contrib. Mineral. Petrol.* 86, 342-358 (1984). Microprobe analyses (4) from Limpopo belt, S. Africa. gedrite.
- ANTIGORITE. Buseck and Cowley, *Am. Mineral.* 68, 18-40 (1983). Transmission electron microscopy.
- ANTIGORITE. Cressey and Hutchison, (*Conf. Ser. Inst. Antigorite* 68, 409-412) (1984), *Chem. Abstr.* 100, no. 22, 177931 (1984). Microstructure by high resolution electron microscopy.
- ANTIGORITE. Day et al. (*Am. Mineral.* 70, 237-248) (1985). Thermodynamic analysis of equil. in system MgO-SiO₂-H₂O.
- ANTIGORITE. Jiang et al., (*Yankuang Ceshi* 1, no. 1, 36-43 (1982)(Chinese)) *Chem. Abstr.* 98, no. 10, 75504 (1983). Regularly interstratified septechlorite-antigorite, Sichuan Province, China.
- ANTIGORITE. Lange et al. (*Geochim. Cosmochim. Acta* 49, 1715-1726) (1985). Infra-red and TGA study of shocked specimens.
- ANTIGORITE. Weinke and Wieseneder, *Ore Genesis: The State of the Art* (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982).
Microprobe analyses (2) from mafic rocks, East Alps.
- ANTIGORITE. Yariv, (*Clays Clay Miner.* 21, 925-936) (1986), *Chem. Abstr.* 106, no. 26, 217103 (1987) Infra-red study
- ANTIMONPEARCEITE. Sugaki et al. (*Sci. Rep. Tohoku Univ., Ser.* 3, 15(3), 461-469) (1983)(Eng.). *Chem. Abstr.* 101, no. 14, 114109 (1984).
Synthesis Pseudohex. a 7.4299, c 11.8229A. G(620)T5 x-ray data, monoclinic, pseudohexagonal, DTA.
- ANTIMONY. Bernardini et al. (*Rend. Soc. Ital. Mineral. Petrol.* 39, 649-656) (1984)(Ital.). G(550)So15r. Stability relations in system As-Sb.
- ANTIMONY. Halenius and Alinder, *Neues Jahrb. Mineral., Monatsh.*, 201-215 (1982)(English). Microprobe analysis from Langsjon, Sweden.
- ANTIMONY. Nekrasov, (*Mineral. Zh.* 7, 51-72) (1985) (Russian) Stability in system Ag-Au-Sb
- ANTIMONY. Xu and Mei, (*Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- APATITE. Votyakov, et al., (*Dokl. Akad. Nauk SSSR* 275, 167-169) (1984), *Chem. Abstr.* 101, no. 6, 41197 (1984).
- APATITE. Aleksiev; et al., (*Geokhim., Mineral., Petrol.* 10, 12-25) (1979), *Mineralog. Abstr.* 34, 433 (1983). Rare earths in, from S. Bulgaria.
- APATITE. Allan and Carmichael, *Contrib. Mineral. Petrol.* 88, 203-216 (1984). Microprobe analyses (4) from lavas, Colima, Mexico.

- APATITE. Amjad et al. (J. Colloid Interface Sci. 101, 250-256) (1984).
Chem. Abstr. 101, no. 18, 161407 (1984). Crystallization of hydroxyl- and fluor-apatite in the presence of Mg ion.
- APATITE. Azimov et al., (Uzb. Geol. Zh., no. 2, 80-82) (1984), Chem. Abstr. 101, no. 4, 26250 (1984). Synthesis of fluorapatite containing $\text{Fe, Ca}_{10-x}\text{Fe}_x\text{Si}_x\text{P}_{6-x}\text{O}_{24}\text{F}_2$. Optics, G., ns.
- APATITE. Baumer et al. (Bull. Mineral. 108, 145-152) (1985)(Eng.). Infra-red spectroscopy of OH-F apatites.
- APATITE. Borko et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 2, 8-11 (1983)) Chem. Abstr. 98, no. 16, 129452 (1983). Analyses, unit cells, infra-red data, X-ray data from Azov Sea area.
- APATITE. Brastad (Tschermarks Mineral. Petrogr. Mitt. 34, 87-103) (1985)(Eng.). Microprobe analyses (2) from eclogite, W. Norway, SrO up to 1.42%.
- APATITE. Bulakh et al. (Zap. Vses. Mineral. O-va. 113, 398-410) (1984). Analyses (9) from Seligdar deposit, Aldan (fluor-).
- APATITE. Burrigato et al., (Neues Jahrb. Mineral., Monatsh., 407-416 (1982)) Mineral. Abstr. 34, 182 (1983). Analyses from Latium, Italy, a 9.400, c 6.903A; a 9.410, c 6.920A. Optics.
- APATITE. Chaikino, (Dokl. Akad. Nauk SSSR 274, 128-132) (1984), Chem. Abstr. 100, no. 20, 159628 (1984). Disorder in structure caused by grinding.
- APATITE. Cherneva et al., (Geol. Bal. 13, 63-74) (1983)(English). Rare earths in, from granites, S. Bulgaria.
- APATITE. Christoffersen and Christoffersen (Faraday Discussions Chem. Soc. no. 77, 235-242) (1984). Chem. Abstr. 102, no. 14, 120902 (1985). Kinetics of dissolution of hydroxy-apatite.
- APATITE. Ciesla (Pr. Nauk Akad Ekon Wroclaw 267, 385-388) (1984)(Pol.). Chem. Abstr. 102, no. 16, 142257 (1985). Thermal decomposition of carbonate-apatite.
- APATITE. Ciesla and Rudnicki (Pr. Nauk Akad Ekon Wroclaw 267, 389-392) (1984)(Pol.). Chem. Abstr. 102, no. 16, 142258 (1985). Thermal decomposition of hydroxyl-apatite.
- APATITE. Cruriscchio, et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983)(English). Microprobe analyses (2) from Alkalic rocks, Kenya.
- APATITE. DeMichele and Pipino, (Riv. Mineral. Ital., no. 4, 123-124) (1983), Chem. Abstr. 100, no. 20, 159625 (1984). Occurrence in ophiolite, Mt. Sciguello, Italy. Trace elements.
- APATITE. Eberhardt et al. (Appl. Optics 24(3), 388-395) (1985), Chem. Abstr. 102, no. 14, 116741 (1985). Reflectance at CO_2 laser wavelengths.
- APATITE. El-Kammar et al., Chem. Erde 42, 131-143 (1983)(English). Analyses (12) of sedimentary apatite from Svalbard.
- APATITE. Eremenko et al., (Mineral. Zh. 7(6), 9-18) (1985) (Russian) Analyses (2) from Kursk magnetic anomaly
- APATITE. Feoktistova and Panskikh, (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 10, 25-27 (1982)) Chem. Abstr. 98, no. 4, 19586 (1983). Analyses and unit cells from anorthosites.
- APATITE. Fershstater et al. (Dokl. Akad. Nauk SSSR 276(5), 1228-1234) (1984), Chem. Abstr. 101, no. 14, 114148 (1984). F and Cl analyses from magmatic rocks.
- APATITE. Garcia Guinea et al. (Bol. Soc. Espanola Mineral. 7, 139-147) (1983), Mineral. Abstr. 36, no. 2, 206 (1985). Two analyses, optics from Spain, a 9.427, 9.409; c 6.859, 6.920A.

- APATITE. Gucwa and Pelczar, (Mineral. Polsk. Karpat., 19-25) 120(578) G934m (Polish) Analyses (11) from Polish Carpathians
- APATITE. Helvaci, Econ. Geol. 79, 354-371 (1984). Microprobe analyses (10) from magnetite-apatite deposit, Avnik, Turkey.
- APATITE. Ilin, et al., (Litol. Polezn. Iskop. 6, 144-147) (1984)(Russian), Chem. Abstr. 102, no. 6, 48910 (1985). Analyses of carbonate-fluor-apatite from Khubsugal phosphorites.
- APATITE. Irving and Frey (Geochim. Cosmochim. Acta 48, 1201-1221) (1984). Microprobe analyses (2) of megacrysts in basalts. Trace elements.
- APATITE. Ishida (Ganseki Kobutsu Kosho Gakkaishi 79, 424-428) (1984)(Jpn.), Chem. Abstr. 103, no. 2, 25076 (1985). Analysis from Iwate Pref., Japan, (Ca_{7.046}Sr_{2.574}Mn_{0.346})_{9.966}P_{6.014}O_{24.00}[(F,OH)]_{1.927}Cl_{0.073}]2.000, a 9.475, c 6.974a, optics, infrared.
- APATITE. Karpova and Vazirov, (Dokl. Akad. Nauk Tadzh. SSR 26, 584-586) (1983), Chem. Abstr. 100, no. 18, 142373 (1984). Analysis and optics from Tadzhikistan of francolite.
- APATITE. Kibalczyk et al., (Cryst. Res. Technol. 17, K105-K106 (1982)) Chem. Abstr. 98, no. 2, 10044 (1983). Growth of hydroxylapatite crystals in silica gel.
- APATITE. Knutson et al. (Am. Mineral. 70, 829-837) (1985). Microprobe analyses (7) and rare-earths, U, and Th (10) on zoned crystals from Panasqueira Sn. W deposit, Portugal. Cause of color.
- APATITE. Kogarko et al. (Geokhimiia, 472-493) (1984), Chem. Abstr. 100, no. 26, 213138 (1984). Stability in system nepheline-diopside-apatite.
- APATITE. Lang and Walmsley, (Phys. Chem. Miner. 9, 6-8 (1983)) Chem. Abstr. 98, no. 10, 75556 (1983). Occurrence coating a diamond.
- APATITE. Lang, (Bull. Soc. Sci. Bretagne 53, 95-124 (1981)(French)) Chem. Abstr. 98, no. 14, 110750 (1983). A review of the structure and possible substitutions.
- APATITE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (1) from carbonatite, Yenisen region
- APATITE. Luhr and Carmichael (Contrib. Mineral. Petrol. 90, 142-161) (1985). Microprobe analysis (1) from Jorullo volcano, Mexico.
- APATITE. Luhr and Giannetti, (Contrib. Mineral. Petrol. 95, 420-436) (1987) Microprobe analyses (1) from leucitic tuff, Roccamoufina Volcano, Italy
- APATITE. Luhr et al., J. Volcanol. Geotherm. 23, 69-108 (1984). Microprobe analysis (1) from Chichon Volcano, Mexico.
- APATITE. Marchenko et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 2, 22-25) (1984), Chem. Abstr. 100, no. 18, 142401 (1984). Analysis, optics, a 9.37, c 6.88 A, from carbonatite, Azov. Sea.
- APATITE. Nelson and Featherstone, (Calcif. Tissue Int. 34(Suppl. 2), 69-81 (1982)) Chem. Abstr. 98, no. 4, 26732 (1983). Synthesis of carbonite-apatite. Infra-red, Raman spectrum.
- APATITE. Pavlov et al., Mineral. Sb. (Lvov) 37, 92-96) (1983) Chem. Abstr. 102, no. 4, 28644 (1985). Relation of minor element content to type of rock.
- APATITE. Petroukha, (Zap. Vses. Mineral. O-va. 111, 593-597) (1982), Mineralog. Abstr. 34, 474 (1983). Chem. Abstr. 98, no. 4, 19602 (1983). Analysis of fluorapatite from Urals, G 3.19. Optics. n(omega) 1.631, n(epsilon) 1.627.
- APATITE. Plimer, Miner. Deposita 19, 19-25 (1984)(English). Analyses (10) from Broken Hill, Australia (fluor)

- APATITE. Portnov et al., (Dokl. Acad. Sci. USSR, Earth Sci. Sect., 228, 121-122 (1977)) Mineral. Abstr. 34, 182 (1983). Discussion of pleochroism.
- APATITE. Price et al., Can. Mineral. 21, 29-35 (1983). Microprobe analyses from Peach River meteorite, Alberta.
- APATITE. Ritter and Maerk, (Nucl. Instrum. Methods Phys. Res., Sect. B, 229, 394-397) (1984)(English), Chem. Abstr. 101, no. 6, 41170 (1984). Optical study of radiation damage in fluorapatite.
- APATITE. Roden et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (2), St. Paul's rocks, Atlantic Ocean.
- APATITE. Roe and Burnett (Geochim. Cosmochim. Acta 49, 1581-1592) (1985). U in Pacific Island deposits. Age.
- APATITE. Rub et al., (Kovl. Magmet. Porod. Chekh. Nek. Raionov. SSSR, 138-147) (1983), Chem. Abstr. 101, no. 6, 41208 (1984). Analyses, optics from Central Bohemian pluton.
- APATITE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (1) from kimalite, Greenland.
- APATITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (5).
- APATITE. Somorukova et al., (Geokhimiia, no. 11, 1784-1788) (1984), Chem. Abstr. 102, no. 4, 28715 (1985). Infra-red spectroscopy from Khibina.
- APATITE. Stone and George, Proc. Ussher Soc. 5, 428-431 (1983). Analysis, x-ray data, Megilliger Rocks, Cornwall.
- APATITE. Suitch et al. (Acta Cryst. 41B, 173-179) (1985), Chem. Abstr. 103, no. 2, 14843 (1985). Mn^{+2} in fluorapatite is almost entirely in a subset of Ca(1) sites.
- APATITE. Takhonenhova and Udod, (Geokhimiia, no. 1, 113-119) (1984), Chem. Abstr. 100, no. 12, 88934 (1984). Rare earths in.
- APATITE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984). Microprobe analyses (3) from Oka complex, Quebec.
- APATITE. Turesebekov et al., (Uzb. Geol. Zh., no. 5, 65-68) (1983), Chem. Abstr. 100, no. 8, 54695 (1984). Cl and F in rocks, Almalyk ore region. F/Cl increases from 1.6 to 67.7 from basic to acidic rocks.
- APATITE. Vasil'eva (Zap. Vses. Mineral. O-va. 114, 348-360) (1985)(Russ.). Analyses (24) from alkalic plutonic rocks, Mongolia, SiO_2 0-4.19 percent, SO_3 0.25-3.74 percent, rare earths up to 13.5 percent.
- APATITE. Virt and Sagunov (Izv. Akad. Nauk Kaz. SSR, Ser. Geol. 3, 44-51) (1984), Chem. Abstr. 101, no. 10, 76105 (1984). Analyses (not in abstr.), X-ray data, optics, a 9.390, c 6.88 A, from Kazakhstan.
- APATITE. Warren et al., Earth Planet. Sci. Lett. 64, 175-185 (1983). Microprobe analyses (1) from granite clasts, Moon.
- APATITE. Watson et al. (Geochim. Cosmochim. Acta 49, 1813-1823) (1985). Diffusion of Sm, Sr, and Pb in fluorapatite.
- APATITE. Wilson et al. (Mineral. Rec. 15, 361-366) (1984). Indigo-blue fluorapatite from King Lithia Mine, S. Dak. Microprobe analyses (4).
- APATITE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (25) and trace elements. Laacher See, Germany.
- APATITE. Young and Holcomb, (Calcif. Tissue Int. 34(Suppl. 2), 17-32 (1982)) Chem. Abstr. 98, no. 4, 26746 (1983). Synthesis by several methods, X-ray, infra-red data of hydroxyapatite.
- APATITE. Zanin et al. (Vopr. Miner. Petr.-Rudogenezisa, 21-34) (1984) (Russ), Chem. Abstr. 101, no. 18, 155059 (1984). Analyses (not in abstr.), infra-red data from ancient phosphorites.

- APHTHITALITE. Han et al. (Kexue Tongbao (Foreign Ed.) 29, 794-797) (1984)(Eng.), Chem. Abstr. 101, no. 20, 174797 (1984). Stability in the system $K_2SO_4-Na_2SO_4-H_2O$ at 25 degrees, 50 degrees, and 90 degrees C.
- APOPHYLLITE. Arzhamnikov et al., (Mineral. Zh. 8(1), 97-101) (1986) (Russian) Analyses from Krivoi Riz, Optics, X-ray
- APOPHYLLITE. Khomyakov et al., (Nov. Dannye Miner. 30, 207-208 (1982)) Chem. Abstr. 98, no. 26, 219081 (1983). Analysis and optics of hydroxyl-apophyllite, Lovozero massif, a 9.18, c 15.88A, G 2.3.
- APOPHYLLITE. Noack, Mineral. Mag. 47, 47-50 (1983). Analyses from Mururoa, S. Pacific.
- ARAGONITE. England, Mineral. Mag. 48, 519-527 (1984). Contrasting habits of associated aragonite and calcite, Kulmura, N.S. Wales. Microprobe analyses (2).
- ARAGONITE. Gevorkyan and Povarennyhh, Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 11, 8-12 (1983)(Ukrainian). Infra-red spectrum.
- ARAGONITE. Gillet and Madon, Bull. Mineral. 105, 590-597 (1982). A dislocation model for the transition aragonite-calcite.
- ARAGONITE. Juhasz (Acta Geol Acad. Sci. Hung. 25, 247-270) (1982), Effect of grinding on chem. reactivity. DTA, dielectric properties.
- ARAGONITE. Madon and Gillet, (Earth Planet. Sci. Lett. 67, 400-414) (1984), Chem. Abstr. 100, no. 24., 195216 (1984). Theory of calcite-aragonite transformation.
- ARAGONITE. Mel'nik et al., (Mineral. Sb. (Lvov) 37, no. 2, 106-109) (1983), Chem. Abstr. 102, no. 6, 48847 (1985). Morphology from kimberlites, Yakutia.
- ARAGONITE. Nechiporenko and Gul'ko (Mineral. Zh. 6, no. 2, 68-74) (1984), Mineral. Abstr. 36, 45 (1985). Synthesis of Pb-bearing, a 5.002, b 8.035, c 5.823A.
- ARAGONITE. Plummer and Busenberg, (Geochim. Cosmochim. Acta 51, 1393-1441) (1987) Thermodynamics of aragonite-strontianite solid solutions. Solubility in H_2O-CO_2 solution at 25 deg. and 76 degrees C
- ARAGONITE. Ramirez de Agudelo and Stone, (Mater. Sci. Monogr. 10(React. Solids, v. 2), 695-701 (1982)) Chem. Abstr. 98, no. 20, 171832 (1983). Synthesis of strontian.
- ARAGONITE. Sass et al., (Am. J. Sci. 283, 218-229 (1983)) Chem. Abstr. 98, no. 14, 114594 (1983). Solubility products in water and $CaCl_2$ solutions.
- ARAGONITE. Scrivener and Sanderson, (Rep. - Inst. Geol. Sci. (U.K.), no. 82-1, 58-60 (1982)) Chem. Abstr. 98, no. 26, 219049 (1983). Optics from halite deposit, Somerset, England. Analysis.
- ARAGONITE. Senna (Cryst. Res. Technol. 20, 209-217) (1985). Review of polymorphic transformation.
- ARAGONITE. Walter and Morse (Geochim. Cosmochim. Acta 49, 1503-1513) (1985). Kinetics of dissolution in sea water.
- ARAGONITE. Wenk and McTrgue, (Lawrence Berkeley Lab. Rep. LBL-16031, 347-352) (1983), Chem. Abstr. 100, no. 22, 177956 (1984). Transition aragonite-calcite when heated in vacuum at high voltage.
- ARAGONITE. Zaritskii, (Mineral. Zh. 9(1), 91-94) (1987) (Russian) Blue aragonite from Kirghiz SSR Optical spectrum indicates the presence of Cu^{+2} ion
- ARCANITE. Groat and Hawthorne (Can. Mineral. 23, 259-260) (1985).

- ARCANITE. Harvie et al., *Geochim. Cosmochim. Acta* 48, 723-751 (1984).
 Calculated solubilities in system
 $\text{Na-K-Mg-Ca-H-Cl-SO}_4\text{-OH-HCO}_3\text{-CO}_5\text{-CO}_2\text{-H}_2\text{O}$ at 25 degrees C.
- ARDAITE. Abstr. in *Bull. Mineral.* 106, 626 (1983). Abstract of original description.
- ARDAITE. Breskovska et al. (*International Mineralog. Assoc.*, 11th Meeting, Novosibirsk, 1978, 83-89) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (5) showing Cl 3.02-4.06 percent.
- ARDAITE. Breskovska et al., (*Mineral. Mag.* 46, 357-361 (1982)) *Am. Mineral.* 68, 642 (1983). Abstract of original description.
- ARDAITE. Breskovska et al., *International Mineralog. Assoc.*, 11th Meeting, Novosibirsk, 1978, 83-89 (1980)(Russian) (Sulfosalt Vol.). Analyses (4) with up to 4.02% Cl. Formula $\text{Pb}_{19}\text{Sb}_{13}\text{S}_{35}\text{Cl}_7$.
- ARDAITE. Wu and Mei, (*J. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- ARDEALITE. Aslanian and Stoilova, *Bull. Mineral.* 105, 621-624 (1982).
 Synthesis Mon., I2/a, a 5.71, b 15.36, c 6.50 Å, beta 118 degrees. X-ray, DTA data indicate it to be an intermediate member of series gypsum-brushite.
- ARDEALITE. Balenzano et al., (*N. Jb. Miner. Mh.*, 466-467) (1984), *Mineral. Abstr.* 38, 87M/3169 (1987) Analysis from Italy, X-ray data, DTA
- ARDENNITE. Fransolet, (*Bull. Soc. Belge Geol.* 91, 50 (1982)) *Mineral. Abstr.* 34, 217 (1983). Occurrence in Belgium.
- ARDENNITE. Matsubara and Kato, (*Bull. Natl. Sci. Museo Tokyo, Ser. C*, 13, 1-11) (1987) (Eng) Analyses (4) from Sanbagawu, Japan, formula
 $(\text{Mn,Ca})_4(\text{Mg,Al})_2\text{Al}_4(\text{V,As})\text{O}_4(\text{SiO}_4)_2\text{Si}_3\text{O}_{10}(\text{OH})_6$, a 5.832, b 18.573, c 8.707 Å
- ARDENNITE. Mottano, (*Geol. Soc. Am. Mem.* 164, 267-299) (1986) Analyses (2) from manganiferous cherts, Alps
- ARGENTITE. Artemenko, (Deposited Doc. VINITI 92-82, 82-89 (1981)) *Chem. Abstr.* 98, no. 10, 75515 (1983). Solubility in chloride solutions at 300 deg., 500 atm.
- ARGENTITE. Rafal'skii, (*Geokhimiia*, 1780-1797 (1982)) *Chem. Abstr.* 98, no. 6, 37914 (1983). Solubility in chloride solutions at 100-300 deg. calcd.
- ARGENTOJAROSITE. Arana et al., (*Bol. Soc. Espanola Mineral.* 8, 117-123) (1985) (Spanish), *Mineral. Abstr.* 38, 87M/2509 (1985) Synthesis DTA X-ray data
- ARGENTOPENTLANDITE. Borishenskaye and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- ARGENTOPENTLANDITE. Distler and Laputina, *Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol.*, 138-143 (Russian) (201In391g). Microprobe analysis from Norilsk deposit.
- ARGENTOPENTLANDITE. Mioskos, *Chem. Erde* 42, 281-296 (1983)(English). Microprobe analyses (1) from Macedonia.
- ARGENTOPENTLANDITE. Mposkos (*Oelt. Hell. Geol. Hetair.* 16, 97-108) (1982)(Publ. 1983)(Greek), *Chem. Abstr.* 102, no. 26, 223541 (1985) Microprobe analyses from Macedonia.
- ARGENTOPENTLANDITE. Mposkos, (*Neues Jahrb. Mineral., Monatsh.*, no. 5, 193-200 (1983)(English)) *Chem. Abstr.* 98, no. 24, 201495 (1983). Analysis from Macedonia.
- ARGUTITE. Abstract in *Am. Mineral.* 69, 406 (1984). Abstract of original description.
- ARGYRODITE. Wang et al. (*Yanshi Kuangwu Ji Ceshi* 3, no. 2, 124-130) (1984)(Chin.), *Chem. Abstr.* 102, no. 10, 81838 (1985). Analysis from Hubei Prov., China with $(\text{S}_{3.75}\text{Se}_{2.52})$, G 6.70, orth., Pna2 or Pnam, a 15.164, b 7.511, c 10.687 Å, Z=4. DTA.

- ARHBARITE. Schmetzer et al., (Neues Jahrb. Mineral., Monatsh., no. 12, 529-533 (1982)) Chem. Abstr. 98, no. 18, 146700 (1983). Abstract of original description.
- ARMALCOLITE. Rozova, et al., Dokl. Akad. Nauk SSSR 278, 456-461 (1984). Microprobe analysis, x-ray data, reflectance, from kimberlite.
- ARMALCOLITE. Tsybal et al., (Mineral. Zh. 4, no. 5, 28-36 (1982)) Chem. Abstr. 98, no. 8, 57255 (1983). Mineral. Abstr. 34, 471 (1983) Analyses from trachybasalts, Pripyat Arch, USSR.
- ARMANGITE. Lindquist, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 643-648) (1983)(English), Chem. Abstr. 100, no. 8, 54681 (1984). Stability in hydrothermal systems.
- ARMANGITE. Nysten, (Geol. Foren. Forh. 109, 110) (1987) (Eng) Occurrence at Nordmark, Sweden
- ARMENITE. Pouliot et al. (Can. Mineral. 22, 453-464) (1984). Microprobe analyses from Remigny, Quebec. Formula $Ca_2(Ba,Na)Al_3Si_9O_{30} \cdot 2H_2O$. Optics, uniaxial and biaxial $G_{2.74}$. X-ray data, infra-red.
- ARSENDESCLOIZITE. Keller and Dunn, (Mineral. Rec. 13, 155-157 (1982)) Am. Mineral. 68, 280 (1983). Abstract of original description.
- ARSENDESCLOIZITE. Zhao, (Acta Mineral. Sinica 5(4), 282-284) (1985) (Chinese), Mineral. Abstr. 38, 87M/3152 (1987) Analysis from Geijiu Pb-Zn deposit, $G_{5.67}$, $P_{2,2,2,1}$, a 7.587, b 9.302, c 6.00 Å, Reflectance.
- ARSENGOYAZITE. Walenta and Dunn (Schweiz. Mineral. Petrogr. Mitt. 64, 11-19) (1984) (Germ.). New mineral $(Sr,Ca,Ba)Al_3(AsO_4)_2(OH)_5H_2O$ (crandallite group) from Clara mine, Beach Forest. Analysis, x-ray data, $G_{3.35}$, nearly isotopic. Trigonal, a 7.10, c 17.16 Å, z=3.
- ARSENIC. Bernardini et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 649-656) (1984)(Ital.). $G_{(550)So15r}$. Stability relations in system As-Sb.
- ARSENIC. Chekalova and Toibazarov, (Izv. Akad. Nauk Kaz. SSR, Ser. Geol., no. 1, 56-59 (1983)) Chem. Abstr. 98, no. 16, 129401 (1983). Analysis from Kazakhstan, $G_{5.74}$, X-ray data.
- ARSENIC. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- ARSENIOsiderite. Novak, Cas. Nar. Mus. Prirodoved. 67, 7-11 (1982) (Czech.). X-ray data from pegmatite, Hamry.
- ARSENGOYAZITE. Walenta and Dunn (Schweiz. Mineral. Petrol. Mitt., 64(1-2), 11-19) (1984) (Ger), Chem. Abstr. 102, no. 14, 116728 (1985). Abstract of original description.
- ARSENOPALLADINITE. Tarkian and Bernhardt (Tschermaks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- ARSENOPYRITE. Aliev, (Tr. Azerb. Otd., Vses. Mineral. O-va., no. 2, 120-125 (1981)) Chem. Abstr. 98, no. 12, 92772 (1983). Microprobe analysis, Caucasus.
- ARSENOPYRITE. Bril (Bull. Mineral. 108, 161-171) (1985). Microprobe analyses (21) from Brioude-Massif France.
- ARSENOPYRITE. Dadak, (Cas. Mineral. Geol. 28, 89-92 (1983) (Czechoslovakian)) Chem. Abstr. 98, no. 26, 219160 (1983). Analyses from Carpathian Mt. with Sb up to 9.17%.
- ARSENOPYRITE. Dadak, (Cas. Mineral. Geol. 28, 89-92) (1983), Mineral. Abstr. 35, 189 (1984). From Carpathian Mts., Czechoslovakia, with up to 9.01% Sb.
- ARSENOPYRITE. El-Bouseily et al. (Miner. Deposita 20, 194-200) (1985). Minor elements in (7), Eastern Desert gold mine, Egypt.
- ARSENOPYRITE. Fortey et al. (Proc. Yorkshire Geol. Soc. 45, 59-65) (1984). Microprobe analyses from Wales.

- ARSENOPYRITE. Gamyarin et al., Nov. Dannye Mineral. SSSR 30, 64-70 (1982).
Minor elements in samples from gold deposits.
- ARSENOPYRITE. Halenius and Alinder, Neues Jahrb. Mineral., Monatsh., 201-215 (1982)(English). Microprobe analysis from Langban, Sweden.
- ARSENOPYRITE. Hellingwerf (Econ. Geol. 79, 696-715) (1984). Microprobe analyses (10) from sulfide skarn ore, Bergslagen, Sweden.
- ARSENOPYRITE. Kalogeropoulos (N. Jb. Miner., Mh., 294-300) (1984) (English) Mineral. Abstr. 36, 89 (1985). Probe analyses (not in abstr.) from Olympias deposit, Greece. Temp. of formation.
- ARSENOPYRITE. McQueen, Neues Jahrb. Mineral., Monatsh., 323-336 (1984) (English). Microprobe analyses (1) from Broken Hill, N.S. Wales.
- ARSENOPYRITE. Munoz and Moelo, Bull. Mineral. 105, 625-632 (1982). Microprobe analyses (20) from Bournac, France.
- ARSENOPYRITE. Poblenskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (6) from Kuru-Tegeraba deposit.
- ARSENOPYRITE. Pouclet et al., (Jour. Africa Earth Sci. 6, 29-43) (1987) (French) Microprobe analyses (1) from Akjoujt Cu deposit, Mauritania.
- ARSENOPYRITE. Scott, Mineral. Mag. 47, 427-435 (1983). Chemical behavior in hydrothermal and metamorphic environments: systems Fe-As-S and Fe-Zn-As-S.
- ARSENOPYRITE. Stankovic (Miner. Slovaca 16(5), 485-491) (1984) (Slo), Chem. Abstr. 102, no. 12, 98547 (1985). Analyses from Slovakia.
- ARSENOPYRITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes.
- ARSENOPYRITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analyses (4) from Hallefors, Sweden.
- ARSENOSULVANITE. Kovalenkar et al., (Gold and silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M365 Microprobe analyses (6) from Bulgaria.
- ARSENOPOLYBASITE. Nakayama, (Mining Geology (Japan) 36, 511-522) (1986) (Eng) Microprobe analyses (5) from Gunma Pref., Japan.
- ARSENOPOLYBASITE. Sugaki et al., Sci. Rep. Tohoku Univ., Ser. 3, 15, 461-469 (1983)(English). Chem. Abstr. 101, no. 14, 114109 (1984). G(620)T5. Synthesis, x-ray data. Pseudo-hexagonal, a 14.727, c 24.092 Å.
- ARZAKITE. Abstract in Am. Mineral. 70, 873-874 (1985). Abstract of original description.
- ARZAKITE. Vasil'ev et al. (Geol. Geofiz. 7, 54-63) (1984) (Russ), Chem. Abstr. 101, no. 20, 174794 (1984). Abstract of original description of $Hg_3S_2(Br,Cl)_2$.
- ASBOLAN. Chukhrov et al., Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 230-239 (1982). Review of previous papers in Co-Ni asbolan.
- ASBOLAN. Chukhrov, et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 12, 85-95) (1983), Chem. Abstr. 100, no. 10, 71348 (1984). Disordered, microprobe analyses, structure.
- ASCHAMALMITE. Abstract in Am. Mineral. 69, 810 (1984). Abstract of original description.
- ASCHAMALMITE. Abstract in Mineral. Abstr. 35, 192 (1984). Abstract of original description.
- ASSELBORNITE. (Abstr. in Am. Mineral. 69, 565) (1984). Abstract of original description.
- ASSELBORNITE. Sarp et al., Abstract in Mineral. Abstr. 36, 92 (1985). Abstract of original description.

- ATACAMITE. Parise and Hyde, (Acta Cryst. 42C, 1277-1280) (1986), Mineral. Abstr. 38, 87M/2152 (1987) Structure Pnma, a 6.030, b 6.865, c 9.120 A, Z=4
- ATHENEITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- ATHENITE. Malyugin and Vilisov (Ezheg. Inst. Geol. Geokhim. 1981, 87-88) (1982). Chem. Abstr. 101, no. 14, 114098 (1984). Occurrences in placers, Urals.
- ATOKITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe analysis from Norilsk deposit.
- ATOKITE. Evstigneeva (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 184-191) (1980)(Russ.) (Sulfosalt Vol.). Mineral. Abstr. 34, 135 (1983). Synthesis.
- ATOKITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- AUOSTIBITE. Gamyamin et al., Zap. Vses. Mineral. O-va. 113, 196-205 (1984)(Russian). Chem. Abstr. 101, no. 4, 26268 (1984). Review of conditions of formation, optics, hardness. Microprobe analyses (10) from E. Yakutia., x-ray data, Stability in system Au-Fe-Sb-S.
- AUOSTIBITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- AUOSTIBITE. Nekrasov et al., (Problem Kristallografii i Genetiki Mineral., 109-113) (1983), Chem Abstr. 100, no. 6, 37236 (1984). Review of phase relations, stability, and paragenesis.
- AUTUNITE. Schmitt and Thiry, (Bull. Mineral. 110, 197-208) (1987) (Eng) Av. composition from Bertholena, France
- AUTUNITE. Zolensky, (Diss. Pa. State. 222 pp) (1983), Diss. Abstr. 44B, 1392 (1983). Structure of group.
- AWARUITE. Ahmed and Hall, Lithos 15, 39-47 (1982)(English). Microprobe analyses (38) from Pakistan.
- AWARUITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- AWARUITE. Frost (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- AWARUITE. Sakai and Kuroda (Ganseki Kobutsu Kosho Gakkaishi 78, 467-478) (1983)(Eng.), J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983)(English). Chem. Abstr. 101, no. 10, 76097 (1984) Electron microprobe analysis (3) from serpentized dunite Sanbagawa belt, Japan.
- AXINITE. Cassedanne et al., (An. Acad. Bras. Cienc. 55, 93-103 (1983)(French)) Chem. Abstr. 98, no. 26, 219152 (1983). Ferroaxinite from Bahia, Brazil. Analyses, optics, a 9.006, b 9.219, c 7.170A, alpha 102 deg. 41', beta 98 deg. 09', gamma 88 deg. 08', Z=2.
- AXINITE. Davy and Pryce, (Geol. Surv. W. Australia Rept. 14, 104-111) (1985) (860)R Microprobe analyses (9) from dolerite, W. Australia.
- AXINITE. Popov, Mineralogicheskie Isslesovaniia Gidrotermalitor Urala (Mineral. Stud. Hydrotherm. Urals), 61-70 (1980). Analyses (5) from Badzhala, Urals.
- AZOPROITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- BADDELEYITE. Savel'ev et al.; (Nov. Dannye Miner. 30, 194-199 (1982)) Chem. Abstr. 98, no. 26, 219078 (1983). Forms of magnetic impurities in.
- BADDELEYITE. Scatena-Wachel and Jones, Mineral. Mag. 48, 257-261 (1984). Microprobe analysis from kimberlite, Benfontein, S. Africa.

- BADDELEYITE. Filatov, (Zap. Vses. Mineral. O-va. 111, 674-681 (1982)) Chem. Abstr. 98, no. 8, 57285 (1983). Discussion of causes of expansion when heated.
- BAFERTISITE. Wu et al., (Yankuang Ceshi 1, no. 1, 23-29 (1982)(Chinese)) Chem. Abstr. 98, no. 10, 75502 (1983). Mossbauer spectrum.
- BALANGEROITE. Compagnoni et al., (Am. Mineral. 68, 214-219 (1983)) Chem. Abstr. 98, no. 18, 146702 (1983). Abstract of original description. $(\text{Mg}, \text{Fe}^{+2}, \text{Fe}^{+3}, \text{Mn}^{+2})_{42} \text{Si}_{15} (\text{O}, \text{OH})_{90}$, related to gageite. Analysis, X-ray data. Orth., a 13.85, b 13.58, c 9.65A. Infra-red spectrum.
- BALANGEROITE. Mineralog. Abstr. 34, 475 (1983). Abstract of original description.
- BALKANITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BANNERMANITE. Hughes and Finger, Am. Mineral. 68, 634-641 (1983). New mineral, $(\text{Na}, \text{K})_x \text{V}^{+4}_x \text{V}^{+5}_{6-x} \text{O}_{15}$ ($x=0.54-0.90$), mon., black, from Izalco Volcano, El Salvador. Analysis, X-ray data, a 15.413, b 3.615, c 10.066 A, beta 109.29 deg.
- BANNERMANITE. Hughes et al., (Annu. Rep., Geophys. Lab., Carnegie Inst., Washington, D.C., 379-380 (1981)) Am. Mineral. 68, 642 (1983). Abstract of original description.
- BAOTITE. Es'kova, et al., Nov. Dannye Mineral. 30, 106-112 (1982). Analyses (8) and x-ray data, Urals. (Nov. Dannye Miner. 30, 106-112 (1982)), Chem. Abstr. 98, no. 26, 219067 (1983). Microprobe analyses from Urals.
- BARENTSITE. (Abstr. in Am. Mineral. 69, 565) (1984). Abstract of original description.
- BARENTSITE. Abstract in Mineral. Abstr. 35, 192 (1984). Abstract of original description.
- BARENTSITE. Chinh et al., (Dokl. Akad. Nauk SSSR 273, 699-704) (1983), Chem. Abstr. 100, no. 10, 71397 (1984). Structure triclinic, a 6.472, b 6.735, c 8.806 A, Z=1.
- BARENTSITE. Thi et al., (Acta Crystallogr., Sect. A, A40, 257) (1984)(Abstr.). Structure. Triclinic, PT, a 8.806, b 6.735, c 6.472 A, alpha 119.32, beta 97.33, gamma 92.50 degrees, Z=1 $(\text{Na}_7\text{Al}(\text{CO}_3)_2(\text{HCO}_3)_2\text{F}_4)$.
- BARIOPYROCHLORE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (1) from carbonatite, Yenisen region
- BARITE. Cheng et al. (Faraday Discussions Chem. Soc. no. 77, 243-256) (1984).
- BARITE. Eberhardt et al. (Appl. Optics 24(3), 388-395) (1985), Chem. Abstr. 102, no. 14, 116741 (1985). Reflectance at CO_2 laser wavelengths.
- BARITE. Gaft et al. (Zap. Vses. Mineral. O-va. 113, 332-340) (1984), Chem. Abstr. 101, no. 18, 155021 (1984). X-ray and photoluminescence spectra.
- BARITE. Gardner and Nancollaes, (J. Phys. Chem. 84, 4699-4703) (1983), Chem. Abstr. no. 1, 2892 (1984). Growth kinetics at 105-150 degrees.
- BARITE. Gucwa and Pelczar, (Mineral. Polsk. Karpat., 25-27) 120(578) G934m (Polish) Analyses (2) from Polish Carpathians
- BARITE. Huang and Chang, Acta Geol. Taiwanica 21, 1-13 (1982)(English). Analyses (39) from Chinkuashih Au-Cu deposit, Taiwan. Optics. Unit cells.
- BARITE. Leeder et al., (Z. Geol. Wiss. 11, 1137-1140) (1983), Chem. Abstr. 100, no. 16, 124218 (1984). Sr content in.
- BARITE. Maksimova et al., Nov. Dannye Miner. SSSR 31, 160-164 (1983). Occurrence of "radiobarite", USSR.
- BARITE. Matkovskii et al., (Mineral. Zh. 4, no. 6, 62-72 (1982)) Chem. Abstr. 98, no. 16, 129383 (1983). Morphology, optics, trace elements from Beregovovo deposit.

- BARITE. Nikolaeva, et al., (Rentgenogr. Miner. Syr'ya, 93-104) (1982), Chem. Abstr. 101, no. 8, 57822 (1984). Unit cells, G., and photoluminescence of series barite-celestite.
- BARITE. Ryakov, et al., (Phys. Chem. Miner. 10, 21-26) (1983), Mineral. Abstr. 35, 138 (1984). E.P.R. study shows the presence of PO_3^{-2} and SO_3^- radicals.
- BARRERITE. Alberti et al. (Phys. Chem. Miner. 9, 189-191) (1983), Mineral. Abstr. 35, 18 (1984). Spectroscopic study of OH in barrerite and heated phase.
- BARRINGERITE. Abstract in Am. Mineral. 69, 407 (1984). Analysis with Fe 76.22, Ni 2.85, called "iron barringerite." Hex., a 5.857, c 3.452 A.
- BARYTOLAMPROPHYLLITE. Peng et al., (Kexue Tongbao 28, 237-240 (1983)) Chem. Abstr. 98, no. 26, 219048 (1983). Structure. Analysis. Formula. No data in abstr.
- BARYTOLAMPROPHYLLITE. Peng et al., (Kexue Tongbao 29, 237-241) (1984)(English), Chem. Abstr. 101, no. 4, 26260 (1984). Structure. Monoclinic, C2 or C2/m, a 19.833, b 7.089, c 5.393 A, beta 96.66 degrees.
- BASALUMINITE. Gucwa and Pelczar, (Mineral. Polsk. Karpat., 27-28) 120(578) G934m (Polish) Analyses (1) from Polish Carpathians X-ray data
- BASALUMINITE. Toth et al. (Magyar Allumi Foldt Intezet. Evi Jelentese, 423-430) (1982) (publ 1984) ((534) A4). Analysis, DTA from bauxite, Csordakut, Hungary.
- BASALUMINITE. Zazubina and Ankinovich, (Vopr. Metallog. Strukt. Osob Veshchestv. Sostava Mestorozhd. Kaz., 3-8) (1982), Chem. Abstr. 100, no. 16, 124255 (1984). Analysis from Karatau, G 2.12, optics, x-ray data.
- BASSANITE. Akpokodje (Chem. Geol. 47, 361-364) (1984), Chem. Abstr. 102, no. 14, 116972 (1985). Occurrence in arid-zone soils, Australia.
- BASSANITE. Kuzl, (Neues Jahrbuch Miner., Abh. 156, 155-174) (1987) (Germ) Heat of hydration to gypsum
- BASSANITE. Lager et al., Am. Mineral. 69, 910-918 (1984). Formation from gypsum. Structure. Monocline, I2, a 12.062, b 12.660, c 6.930 A, gamma = 90 degrees.
- BASSETITE. Vochten et al. (Am. Mineral. 69, 967-978) (1984). Synthesis. X-ray study. Monoclinic, P2₁/m, a 6.98, b 17.07, c 7.01A, beta 90 degrees 32', Z=2 (Fe⁺²_{1-x}Fe⁺³_x)(UO₂)(PO₄)₂(OH)_x 7-x H₂O, 0<x<1 Oxidized material studied by x-rays and DTA.
- BASSETITE. Vochten and Brizzi, (Mineral. Record 8, 181-184) (1987) Occurrence at Cagliari, Sardinia X-ray data
- BASTNAESITE-(LA). Maksimovic and Panto, (Bull. - Acad. Serbe Sci. Arts, Cl. Sci. Nat. Math., Sci. Nat., 20, 35-42 (1980)) Mineral. Abstr. 34, 182 (1983). Occurrence in bauxite, Marmara, Greece.
- BASTNAESITE-(LA). Styles and Young, Mineral. Mag. 47, 41-46 (1983). Microprobe analysis from Afu, Nigeria.
- BASTNAESITE. Kamineneni and Bonardi, Can. Mineral. 21, 115-119 (1983). Occurrence in NW Ont. X-ray data.
- BASTNAESITE. Maksimovic and Panto (Tscherma's Mineral. Petrogr. Mitt. 34, 159-165) (1985)(Eng.). Rare earths in bastnaesite from bauxite, Vlasenica, Yugoslavia.
- BASTNAESITE. Roeder (Can. Mineral. 23, 263-271) (1985). Microprobe analysis of rare-earth elements.
- BASTNAESITE. Styles and Young, Mineral. Mag. 47, 41-46 (1983). Microprobe analysis from Afu, Nigeria.
- BASTNAESITE. Viswanathan, et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 747-757) (1983), Chem. Abstr. 100, no. 8, 59709 (1984). Hydrothermal synthesis.

- BATISITE. Lazebnik and Makhotko (Mineral. Zhurnal 5(3), 81-84) (1983), Mineral. Abstr. 35, 79 (1984). Analysis (not in Abstr.) of potassium batisite.
- BAUMHAUERITE. Robinson and Harris, (Mineral. Record 18, 199-201) (1987) Analysis, X-ray data on a baumhauerite-like mineral, Quiruvilca, Peru
- BAVENITE. Burt, Mineral. Assoc. Canada Short Course no. 8, 135-148 (1982). Review of occurrence in granite pegmatites. Analyses.
- BAVENITE. Dobrovolskaya et al., Mineral. Zh. 6, no. 5, 64-72 (1984). Magnetic properties.
- BAVENITE. Manning et al., Mineral. Mag. 47, 87-89 (1983). Occurrence in Thailand, partial analysis, X-ray data.
- BAYERITE. Carniglia, J. Am. Ceram. Soc. 66, 495-500 (1983). Standard free energies of formation 298 to 2100 degrees K.
- BAYERITE. Gout and Dandurand (Tran. Com. Internatl. Etude Bauxites 18, 117-125) (1983)(Eng.). (438In83+). Stability in system $Al_2O_3-H_2O$.
- BAYERITE: Hemingway, (Adv. Phys. Geochem. 2, 285-316 (1982)) Mineral. Abstr. 34, 136 (1983). Free energy of formation.
- BAYERITE. Mardilovich et al. (Zh. Prikl. Spektrosk. 42(6), 959-966 (1985), Chem. Abstr. 103, no. 8, 56926 (1985). Infra-red study of dehydration.
- BAYLEYITE. Pinto, (Mem. Nat. Univ. Coimbra Lab. Mineral 96, 21-38) (1983), Chem. Abstr. 102, no. 8, 65058 (1985). Analyses and optics (not in abstr.) of zoned vesuvianites from skarns, Portugal.
- BAYLEYITE. Zhang et al., (Sci. Sinica 28B, 344-350) (1985), Mineral. Abstr. 38, 87M/2144 (1987) Structure Monoc., $P2_1/c$, a 6.499, b 15.235, c 26.51 A, beta 92.92 deg., Z=4
- BAZIRITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif. Stannian.
- BEAVERITE. Jambor and Dutrizac, Can. Mineral. 21, 101-113 (1983). Synthesis, analysis, X-ray data for solid solution series beaverite-plumbojarosite.
- BECQUERELITE. Piret-Meunier and Piret, Bull. Mineral. 105, 606-610 (1982). Structure. Orth., $Pn2_1a$, a 13.86, b 12.30, c 14.92A, Z=4, formula $Ca(UO_2)_6O_4(OH)_6 \cdot 8H_2O$.
- BEIDELLITE. Alt and Honnorez, Contrib. Mineral. Petrol. 87, 145-169 (1984). Microprobe analyses (5) from altered basalt, oceanic cores.
- BEIDELLITE. Beaufort and Meunier, Bull. Mineral. 106, 535-551 (1983) (English). Microprobe analyses (28) from Sibert, France.
- BEIDELLITE. Tsipurskii and Drits, (Mineral. Zh. 6, no. 1, 3-16) (1984), Chem. Abstr. 101, no. 2, 10122 (1984). Electron diffraction study of octahedral cation distribution.
- BENAVIDESITE. Oudin et al., (Bull. Mineral. 105, 166-169 (1982)) Mineral. Abstr. 34, 72-73 (1983). Abstract of original description.
- BENAVIDESITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BENITOITE: Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif. Stannian, up to 4.1% SnO_2 .
- BENJAMINITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (1) from gold-silver deposits of Cu-analogue
- BENLEONARDITE. Mineral. Abstr. 38, 87M/3185 (1987) Abstract of original description
- BERDESINSKIITE. Bernhardt et al., (Neues Jahrb. Mineral., Monatsh., no. 3, 110-118 (1983)) Chem. Abstr. 98, no. 18, 146706 (1983). Abstract of original description.
- BERDESINSKIITE. Mineralog. Abstr. 34, 475-476 (1983). Abstract of original description.

- BERGENITE. Mathovskii et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- BERGSLAGITE. Hansen et al. (N. Jb. Miner., Mh., 257-262) (1984)(Eng.), Chem. Abstr. 101, no. 16, 134270 (1984). New mineral, $\text{CaBe}(\text{AsO}_4)(\text{OH})$ (datolite-kerderite type).
- BERGSLAGITE. Hansen et al. (Z. Krist 166, 73-80) (1984)(Eng.). New mineral from Langban, $\text{CaBeAsO}_4(\text{OH})$. Tetragonal, $P2_1/c$, a 4.882, b 7.809, c 10.127A, Beta 90.16, Z=4.
- BERGSLAGITE. Hansen et al. (Z. Krist. 166(1), 109-125) (1982), Mineral. Abstr. 36, 18 (1985). Structure. Monoclinic, $P2_1/c$, a 4.8818, b 7.809, c 10.127A, beta 90.16 degrees, Z=4; possibly triclinic, PT.
- BERGSLAGITE. Hansen et al. (Z. Krist. 166, 73-80) (1984)(Eng.), Chem. Abstr. 101, no. 16, 134267 (1984). Structure. Mon., $P2_1/c$, a 4.882, b 7.809, c 10.127A, beta 90.16 degrees, Z=4.
- BERGSLAGITE. Hansen et al., Abstract in Mineral. Abstr. 36, 92 (1985). Abstract of original description.
- BERGSLAGITE. Hansen et al., Abstract in Am. Mineral. 70, 436 (1985). Abstract of original description.
- BERGSLAGITE. Hansen et al., Neues Jahrb. Mineral., Monatsh., 257-262 (1984)(English). New mineral, $\text{CaBe}(\text{AsO}_4)(\text{OH})$, from Langban. Analysis, optics, X-ray. Monoclinic or triclinic, pseudo-monoclinic, a 4.8818, b 7.809, c 10.127 A, beta 90.16 degrees, Z=4, G 3.40.
- BERLINITE. Allaf and Rouanet, (Rev. Int. Hautes Temp. Refract. 19, 89-99 (1982) (Pub. 1983)) Chem. Abstr. 98, no. 16, 136606 (1983). Thermal decomposition.
- BERLINITE. Bennett et al., (Zeolites 6, 349-360) (1986), Mineral. Abstr. 38, 87M/2146 (1987) Structural features
- BERLINITE. Bethke et al. (Spez. Ber. Kernforsch. Juelich, 233-239) (1984). Chem. Abstr. 101, no. 12, 101647 (1984). Transition to cristobalite-type at 846 degrees K.
- BERLINITE. Brunner (Phys. Chem. Miner. 10, 273-279) (1984). Calculation of structure based on Coulomb repulsion forces.
- BERLINITE. Kolb et al., (J. Cryst. Growth 51, 178-182 (1981)) Mineral. Abstr. 34, 38 (1983). Solubility and growth in hydrothermal solution.
- BERLINITE. Langer and Fellmann, (U.S. Patents 4, 478, 805, 4 pp) (1984), Chem. Abstr. 102, no. 6, 48212 (1985). Synthesis.
- BERLINITE. Minegishi et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 509-518) (1983) (English), Chem. Abstr. 100, no. 6, 43207 (1984). Hydrothermal synthesis.
- BERLINITE. Popolitov and Yaroslavskii (Kristallografiia 29, 827-829) (1984) (Russ.) Hydrothermal crystallization.
- BERLINITE. Saint-Gregorre et al. (J. Phys. 17C, 1375-1383) (1984)(Eng.). Chem. Abstr. 101, no. 6, 46622 (1984). Birefringence 300-900 degrees K. alpha-beta transformation.
- BERNDTITE. Jackson and Helgeson (Econ. Geol. 80, 1365-1378) (1980). Summary of selected thermodynamic data.
- BERRYITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167 (1986) (Russian) 431 M565 Microprobe analyses (23) from gold-silver deposits
- BERRYITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (10) from gold-silver deposits
- BERRYITE. Kovalenkar, et al., Mineral. Zh. 6, no. 2, 16-30 (1984)(Russian). Microprobe analyses from Kochbulak, USSR.

- BERRYITE. Makovicky and Karup-Moller, *Can. Mineral.* 22, 565-575 (1984).
Microprobe analyses (2) from Ivigtut, Greenland.
- BERTHIERINE. Arima et al. (*Can. Mineral.* 23, 213-220) (1985). Analyses (7) of high TiO_2 (18.5-20 percent). X-ray data.
- BERTHIERINE. Rusinova et al. (*Dokl. Akad. Nauk SSSR* 280(3), 733-738) (1985), *Chem. Abstr.* 102, no. 26, 223557 (1985). Analysis from Central Asia worth up to 21.5 percent Zn.
- BERTHIERINE. Rusinova et al., (*Metosomatizm Mineral Vopr. Au-Ag Deposits*, 5-40) (1986), *Chem. Abstr.* 106, no. 26, 217075 (1987) Analyses (not in abs.); structural state from metasomatites, Au-Ag deposits
- BERTHIERITE. Bortnikov, et al., *International Mineralog. Assoc.*, 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (*Sulfosalt Vol.*).
Stability in system Fe-Pb-Ag-Sb-As-S.
- BERTHIERITE. Chen et al., (*Acta Mineral Sinica* 5(3), 208-215) (1985) (Chinese), *Mineral. Abstr.* 87M/3145 (1987) From Chashan, Guangxi, China, a 11.46, b 14.04, c 3.74 A Reflectance
- BERTHIERITE. Fortey et al. (*Proc. Yorkshire Geol. Soc.* 45, 59-65) (1984).
Microprobe analyses from Wales.
- BERTHIERITE. Wu and Mei, (*J. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- BERTRANDITE. Burt, *Mineral. Assoc. Canada Short Course no. 8*, 135-148 (1982). Review of occurrence in granite pegmatites. Analyses.
- BERTRANDITE. Dobrovolskaya et al., *Mineral. Zh.* 6, no. 5, 64-72 (1984).
Magnetic properties.
- BERTRANDITE. Hsu, *Mem. Geol. Soc. China* 5, 33-46 (1983) (English) (G(611)G292m). Stability in system $BeO-Al_2O_3-SiO_2-H_2O$, 300-700 degrees.
- BERTRANDITE. Ospanov, (*Zh. Neorg. Khim.* 28, 324-328 (1983)) *Chem. Abstr.* 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- BERTRANDITE. Zabolotnaya and Novkvin, *Mineralogy of Ore Deposits*, 13-18 (1983)(Russian) (410M662). Analysis and x-ray data, Siberia, a 8.725, b 15.30, c 4.575 A.
- BERYL. Adewaye, (*J. Mater. Sci.* 3, 855-858) (1984), *Chem. Abstr.* 102, no. 6, 48829 (1985). Study of fracture.
- BERYL. Aines and Rossman, *Am. Mineral.* 69, 319-327 (1984). Infra-red study of behavior of H_2O and CO_2 in channels, up to 900 degrees.
- BERYL. Bukin et al., (*Gem Miner. (Proc. XI Gen. Mtg. IMA, Novosibirsk)*, 36-44 (1980)) *Mineral. Abstr.* 34, 41 (1983). Synthesis in PbV_2O_6 fluxes and hydrothermal solutions. Optics.
- BERYL. Burt, *Mineral. Assoc. Canada Short Course no. 8*, 135-148 (1982).
Review of occurrence in granite pegmatites. Analyses.
- BERYL. Dobrovolskaya et al., *Mineral. Zh.* 6, no. 5, 64-72 (1984).
Magnetic properties.
- BERYL. Fontan and Fransolet, *Bull. Mineral.* 105, 615-620 (1982). Analysis of blue beryl from Lassur, France, Fe_2O_3 3.23, FeO 0.22%, G 2.75-2.78, a 9.254, c 9.195A. Optics, $n(\omega)$ 1.601, $n(\epsilon)$ 1.591.
- BERYL. Franz and Morteani (*J. Petrol.* 25, 27-52) (1984). Analysis from Kolsva, Sweden. a 9.214, c 9.190A. Analyses from Marsikov, Czechoslovakia (2).
- BERYL. Gao and Zhang, (*Sci. Geol. Sin.*, no. 3, 298-303 (1982)) *Mineral. Abstr.* 34, 133 (1983). Calculated free energy of formation, -2018.2 + 21.8 kcal/mole.
- BERYL. Godovikov et al., *Geol. Geofiz.*, no. 12, 42-54 (1982)(Russian).
Review of synthesis and growth of emerald.

- BERYL. Gordillo et al. (Contrib. Mineral. Petrol. 90, 93-101) (1985).
Microprobe analysis (1) from El Penon, Argentina.
- BERYL. Herres and Lang, (J. Appl. Crystallogr. 16, 47-56 (1983)(English))
Chem. Abstr. 98, no. 8, 63502 (1983). X-ray topography of natural.
- BERYL. Kodaira et al. (J. Crystal Growth 60, 172-174) (1982), Mineral.
Abstr. 35, 43-44 (1984). Hydrothermal synthesis.
- BERYL. Kupriyanova, (Dokl. Akad. Nauk SSSR 266, 714-718 (1982)) Chem.
Abstr. 98, no. 4, 19593 (1983). Stability in system $K_2O-Al_2O_3-SiO_2-BeO-H_2O-HF$ calcd.
- BERYL. Kurazhkovskaya and Poyusnina (Vestn. Mosk. Univ., Ser. 4, Geol. 3,
46-52) (1984) (Russ), Chem. Abstr. 101, no. 14, 114144 (1984). Infra-
red study of effect of isomorphous substitution in.
- BERYL. Lebedev and Askhabov, (Zap. Vses. Mineral. O-va. 113, 613-628)
(1984), Chem. Abstr. 102, no. 4, 28611 (1985). Recrystallization and
regeneration.
- BERYL. Matsusima Kogyo Co., (Jpn. Patents 58, 199, 798 (1983), 4 pp), Chem.
Abstr. 100, no. 12, 94944 (1984). Synthesis.
- BERYL. Odikadze, (Geokhimiia, no. 1, 147-152 (1983)(Russian)) Chem. Abstr.
98, no. 14, 110835 (1983). Rare elements from pegmatites, Sahara.
- BERYL. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98,
no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and
experimental.
- BERYL. Petrusenko and Arnaudov, (Gem Miner. (Proc. XI Gen. Mtg. IMA,
Novosibirsk), 74-79 (1980)) Mineral. Abstr. 34, 41 (1983). Analysis of
emerald from Bulgaria; G 2.692, n(omega) 1.576, n(epsilon) 1.5735.
- BERYL. Platonov and Taran, (Nov. Dannye Miner. 30, 131-134 (1982)) Chem.
Abstr. 98, no. 26, 219070 (1983). Optical spectra of blue Fe-rich
beryls.
- BERYL. Polupanova et al. (Geokhimiia 1, 121-123) (1985), Chem. Abstr. 102,
no. 14, 116752 (1985). DTA and infra-red study. Two types of H_2O present.
- BERYL. Povondra et al. (N. Jb. Miner. Mh., 125-136) (1984)(Eng.) Analysis
from Gammelmorskarr, Finland.
- BERYL. Rodionov (Geokhim., Mineral., Petrol. 19, 52-58) (1984)(Russ.). Chem.
Abstr. 102, no. 14, 123345 (1985). habit of crystals grown from gas
phase.
- BERYL. Saito et al. (J. Geophys. Res., 89B, 7891-7901) (1984), Chem. Abstr.
101, no. 20, 174803 (1984). Rare gases in.
- BERYL. Scandale et al. (Phys. Chem. Miner. 11(2), 60-66) (1984), Chem.
Abstr. 101, no. 16, 134290 (1984). Probe analysis, optical anomalies
due to growth history and impurities.
- BERYL. Shatsky et al., (Inhomogeneity Miner. Cryst. Growth (Proc. XI Gen.
Mtg. IMA, Novosibirsk), 255-261 (1980)) Mineral. Abstr. 34, 42 (1983).
Morphology of synthetic hydrothermal emeralds.
- BERYL. Tarnoskii and Shiryalva, Nov. Dannye Miner. SSSR 31, 116-120
(1983). 4 analyses of aquamarine from pegmatite, E. Siberia.
- BERYL. Viticoli et al. (J. Gemmol. 19, 160-163) (1984), Chem. Abstr. 101,
no. 10, 76121 (1984). Electron proton resonance study of emeralds.
- BERYLLONITE. Henderson and Taylor (Mineral. Mag. 48, 431-436) (1984).
Thermal expansion, unit cell dimensions 25 percent to 800 degrees C.
- BERZELIANITE. Dymkov, et al., Nov. Dannye Miner. SSSR 31, 41- (1983).
Microprobe analyses (2).
- BESSMERTNOVITE. Bocek et al., (Dokl. Akad. Nauk SSSR 266, 1255-1259 (1982))
Chem. Abstr. 98, no. 8, 57250 (1983). Probe analyses. General formula
(Au,Cu,Ag,Pb) . $nTeO_2$.

- BESSMERTNOVITE. Spiridonov and Chvileva, (Nov. Dannye Miner. 30, 140-147 (1982)) Chem. Abstr. 98, no. 26, 219071 (1983). Analyses (not in abstr.) and optics.
- BETA-DOMEYKITE. Tarkian et al., Tschermarks Mineral. Petrogr. Mitt. 32, 111-133 (1983) (English). Microprobe analyses (3) from Iran.
- BETA-FERGUSONITE(Nd). Sun et al. (Sci. Geol. Sin. 1, 78-81) (1983), Mineral. Abstr. 35, 83 (1984). Analysis from Bayun-Obo. Monoclinic, a 5.07, b 5.62, c 5.41A; beta 93 degrees.
- BETAFITE. Junge et al., Neues Jahrb. Mineral., Abh. 147, 169-183 (1983). Analyses (12) from Canada and Madagascar, X-ray data, Optics.
- BETEKHTINITE. Nechaev et al., (Mineral. Zh. 8(1), 84-87) (1986) (Russian) Microprobe analysis, Reflectivity, X-ray data, from Ukraine.
- BETEKHTINITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BETPAKDALITE. Schmetzer et al., (N. Jb. Miner. Mh., 393-403) (1984), Mineral Abstracts 38, 87M/2132 (1987) Structure Monoc, C2/m, a 19.44, b 11.10, c 15.25 A, beta 131.28 deg., formula $H_{6-x}[K(H_2O)_6]_x[Ca(H_2O)_6]_4[Mo_{16}As_4Fe_6O_{74} \cdot 4H_2O$ Optics
- BEUDANTITE. Scharte et al., (Karinthin 90, 143-144) (1984), Chem. Abstr. 102, no. 2, 9830 (1984). X-ray data from Carinthia, a 7.376, c 17.113 A.
- BEYERITE. DeVito and Ordway, Mineral. Rec. 15, 273-290 (1984). Occurrences in Jensen quarry, Riverside Co., Calif.
- BICCHULITE. Bunno et al., (Kozan Chishitsu 32, 141-150 (1982)(Japanese)) Chem. Abstr. 98, no. 8, 57365 (1983). Analyses (not in abstr.), X-ray data from Iwate Pref., Japan.
- BICCHULITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- BIKITAITE. Sanders (Zeolites 5, 81-90) (1985). Chem. Abstr. 102, no. 24, 212918 (1985). Electron diffraction study of faults in.
- BILIBINSKITE. Bocek et al., (Dokl. Akad. Nauk SSSR 266, 1255-1259 (1982)) Chem. Abstr. 98, no. 8, 57250 (1983). Probe analyses. General formula (Au,Cu,Ag,Pb) . nTeO₂.
- BILIBINSKITE. Spiridonov and Chvileva, (Nov. Dannye Miner. 30, 140-147 (1982)) Chem. Abstr. 98, no. 26, 219071 (1983). Analyses (not in abstr.) and optics.
- BIOTITE. Abbott, Can. Mineral. 22, 659-667 (1984). Microprobe analysis electron diffraction shows that space group is not C₂/m-, but probably P2₁.
- BIOTITE. Ackermann et al., (Jour. Metamorph. Geol. 5, 323-339) (1987) Microprobe analyses (3), Caraiba complex, Brazil
- BIOTITE. Amonette et al. (Soil Sci. Soc. Am. J. 49(3), 772-777) (1985), Chem. Abstr. 103, no. 8, 56918 (1985). Oxidation of Fe in by different solns. at room temp.
- BIOTITE. Andersen (Lithos 17, 153-170) (1984)(Eng.). Microprobe analyses (6) from larviksite, Norway.
- BIOTITE. Andersen, Lithos 17, 227-245 (1984)(English). Microprobe analyse (3) from Fen carbonatite, Norway.
- BIOTITE. Andreeva and Troneva, (Rock-forming minerals of magmatic rocks, Nauka, 148-164) (1986) (Russian) [170(570)Os5] Analysis (1) from alkalic rocks, Vitim Lepidomelane
- BIOTITE. Andrew, J. Metamorph. Geol. 2, no. 2, 143-163 (1984). Microprobe analyses (5), NS Wales.

- BIOTITE. Arculus et al., J. Volcanol. Geothermal. Res. 18, 215-247 (1983).
Microprobe analyses (7) from Mt. Lamington, Papua, New Guinea.
- BIOTITE. Arkai, Acta Mineral.-Petrogr. 26, no. 2, 129-153 (1984)(English).
G(534)S22am. Microprobe analyses (5) from crystalline basement, Hungary.
- BIOTITE. Armienti et al., J. Volcanol. Geothermal Res. 17, 289-311
(1983)(English). Microprobe analyses (11) from Phlegrean Fields, Italy.
- BIOTITE. Asami and Asami (Mem. Geol. Soc. Japan 21, 151-161) (1982)(Jap.).
(G(620)G29m). Analyses (2) from xenoliths in andesites, Kagawa Pref.).
- BIOTITE. Asami and Shiraishi, Proc. 3rd Symp. Antarctic Geosci., 198-214
(1983)(English) (502(990)J27SS no. 28). Microprobe analyses (13) from
Yamamoto Mts., E. Antarctica.
- BIOTITE. Banos and Amouric, Am. Mineral. 69, 869-871 (1984). Chloritization of
biotite by high resolution transmission electron microscopy.
- BIOTITE. Barley, (Jour. Volcanol. Geothermal Research 32, 247-267) (1987)
Microprobe analyses (2) from volcanic rocks, New Zealand
- BIOTITE. Barton and van Bergen (Mineral. Mag. 48, 449-456) (1984). Microprobe
analysis from dolerite, Rogeland, SW Norway.
- BIOTITE. Berg and Wiebe (Contrib. Mineral. Petrol. 90, 226-235) (1985).
Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- BIOTITE. Bisdorn et al., Pedologie 32, 225-252 (1982)(English). Review of the
micromorphology of weathered biotite.
- BIOTITE. Black, et al., J. Metamorph. Geol. 1, 277-303 (1983). Microprobe
analyses (4) from Field Islands, Antarctica.
- BIOTITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (5)
from Werner Bjerge complex, Greenland.
- BIOTITE. Brown and Earle, J. Metamorph. Petrol. 1, 183-203 (1983). Microprobe
analyses (4) from gneisses, E. Indonesia.
- BIOTITE. Calanchi et al. (Mineral. Petrogr. Acta 27, 15-34) (1983)(Ital.).
Microprobe analyses (3) from volcanic rocks, Java.
- BIOTITE. Chamberlain and Lyons, Am. Mineral. 68, 530-540 (1983). Microprobe
analyses (2), schists, central N.H.
- BIOTITE. Chistofides and Sapountzis, (Neues Jahrb. Mineral., Monatsh., no. 1,
1-12 (1983)(English)) Chem. Abstr. 98, no. 12, 92762 (1983). Analysis from
granites, Xanthi, Greece. Distribution Fe-Mg between biotite and amphibole.
- BIOTITE. Chryssoulis and Wilkinson, Econ. Geol. 78, 302-318 (1983). Analyses
(5) from Guadalcazer granite, San Luis Potosi, Mexico.
- BIOTITE. Clarke et al., (Jour. Metamorph. Geol. 5, 291-306) (1987) Microprobe
analyses (7) from Olary Block, S. Australia
- BIOTITE. Clarke, et al., Contrib. Mineral. Petrol 83, 117-127 (1983).
Microprobe analyses (2) from W. Greenland.
- BIOTITE. Clemeus and Wall, Contrib. Mineral. Petrol. 88, 354-371 (1984).
Microprobe analyses (4) from ignimbrites, S.E. Australia.
- BIOTITE. Cocheme and Silva-Mora (Bull. Volcanol. 46, 55-69) (1983). Analysis
(1) from lavas of Chichonel, Mexico.
- BIOTITE. Coey et al., (J. Appl. Phys. 53(11, Pt. 2), 8320-8325
(1982)(English)) Chem. Abstr. 98, no. 4, 19623 (1983). Magnetic
properties, Mossbauer, and neutron diffraction.
- BIOTITE. Collerson, Contrib. Mineral. Petrol. 81, 126-147 (1982). Microprobe
analyses (5) from granites, Labrador.
- BIOTITE. Crisp and Spera, (Contrib. Mineral. Petrol. 96, 503-518) (1987)
Microprobe analyses (3) from lavas, Canary Islands
- BIOTITE. D'Arco and Cotten (Bull. Mineral. 108, 153-159) (1985). Analyses (2)
from volcanic rocks, Lesser Antilles.

- BIOTITE. De Vecchi and Sedeà (Mem. Sci. Geol. Univ. Padova 36, 149-169) (1984)(Ital.). Analyses (3) from volcanic rocks. N.E. Italy.
- BIOTITE. DePieri et al., Neues Jahrb. Mineral., Abh. 148, 58-82 (1982)(English), Chem. Abstr. 100, no. 6, 37253 (1984). Analyses from Adamello, Italy.
- BIOTITE. DeTini et al., Tschermaks Min. Pet. Mineral. 32, 69-78 (1983)(English). Microprobe analyses (5) from syenites and gabbros, Gargano, Italy.
- BIOTITE. Delor et al., J. Metamorph. Geol. 2, 55-72 (1984). Microprobe analyses (5), French Massif. Centrale.
- BIOTITE. Deschamps et al., Schweiz. Mineral. Petrogr. Mitt. 63, 301-327 (1983) (French). Microprobe analyses (10) from Valle Grove, Elba.
- BIOTITE. Dobretsov et al., Miner. Slovaca 16, no. 1, 87-94 (1984)(English). Microprobe analyses (4) from pyrope peridotites, Bohemia.
- BIOTITE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (4) from granulites, Italian Central Alps.
- BIOTITE. Dymek (Rep. Geol. Surv. Greenland 112, 95-99) (1983)(Eng.). Microprobe analyses (2). W. Greenland.
- BIOTITE. Eggins and Hensen, (Lithos 20, 295-310) (1987) Microprobe analyses (3) from granodiorites, Barrington Top batholith, E. Australia
- BIOTITE. Embey-Isztin et al. (Tschermaks Mineral. Petrogr. Mitt. 34, 49-66) (1985)(Eng.). Microprobe analysis (1) from andesites and granites, Hungary.
- BIOTITE. Enami, J. Metamorph. Geol. 1, 141-166 (1983). Microprobe analyses (5) from Sanbagawa, Japan.
- BIOTITE. Ernst and Harnish, Proc. Geol. Soc. China (Taiwan) 26, 99-112 (1983)(English). Microprobe analyses (6) from green schist rocks, Taiwan.
- BIOTITE. Ernst, J. Metamorph. Geol. 1, 305-329 (1983). Microprobe analyses (17), Tailuko Gorge, Taiwan.
- BIOTITE. Evans and Vance, (Contrib. Mineral. Petrol. 96, 178-185) (1987) Microprobe analysis (1), dacite dike, Boulder Co., Colo.
- BIOTITE. Exley and Jones, Contrib. Mineral. Petrol. 83, 288-292 (1983). Microprobe analyses (3) from kimberlites.
- BIOTITE. Faryad, (Geol. Zbornik Bratislava 37, 729-746) (1986) (Eng) Microprobe analyses (9) from gneiss, Klatov region, Czechoslovakia
- BIOTITE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (12) from metamorphosed bauxites, Naxos, Greece.
- BIOTITE. Fejdi and Fejdiova, (Geol. Zb., Geol. Carpathica, 32, 375-380 (1981)) Mineral. Abstr. 34, 168 (1983). Microprobe analyses (not in abstr.) from granitic rocks.
- BIOTITE. Foley (Lithos 17, 127-137) (1984). Microprobe analyses (6) from lamprophyres, Labrador)
- BIOTITE. Foster, Am. Mineral. 68, 389-397 (1983). Thermodynamic model of biotite pseudomorphs after staurolite, Rangeley, Maine.
- BIOTITE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English). Microprobe analyses (14) from western Lepontine Alps.
- BIOTITE. Franz and Morteani (J. Petrol. 25, 27-52) (1984). Analysis from Kolsva, Sweden. (3)
- BIOTITE. Frey, et al., Contrib. Mineral. Petrol. 88, 133-149 (1984). Microprobe analyses (1) from volcanic rocks, Laguna del Maule, Chile.
- BIOTITE. Frietsch (Geol. Foeren. Stockholm Foerh. 106, 219-230) (1984)(Eng.). Analyses (2) from skarn Fe ores, northern Sweden.
- BIOTITE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (3) from teschenite, N.S. Wales.
- BIOTITE. Gamble, J. Earth Sci. (Dublin) 5, 91-105 (1982). Microprobe analyses (3) from Slieve Gullion, N.E. Ireland.

- BIOTITE. Gauthier-LaFaye, (Sci. Geol. Mem. 78, 1-206) (1986) (French)
Microprobe analyses (12) from V deposits, Gabon (G(540) St52m
- BIOTITE. Gibbons and Horak, J. Metamorph. Geol. 2, 95-113 (1984). Microprobe
analyses (5) from hornblende granodiorite, Corsica.
- BIOTITE. Glikson, (Trans. Geol. Soc. S. Africa 89, 263-283) (1986) Microprobe
analyses (10) from granulite-anorthosite, central Australia
- BIOTITE. Gomez-Pugnaire and Sassi (Mem. Sci. Geol. Univ. Padova 36, 49-72)
(1984)(Eng.). (G(550)qP2). Microprobe analyses (5), Betic cordillera, Spain.
- BIOTITE. Gordillo et al. (Contrib. Mineral. Petrol. 90, 93-101) (1985).
Microprobe analyses (2) from El Penon, Argentina.
- BIOTITE. Grambling, Am. Mineral. 68, 373-388 (1983). Microprobe analyses (4),
Northern N. Mex. Fe-Mg partitioning.
- BIOTITE. Griffin et al. (J. Petrol. 25, 53-87) (1984). Microprobe analyses
(7) from ultramafic xenoliths, Victoria, Australia.
- BIOTITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 69-78) (Polish) Analyses
(25) from Polish Carpathians Optics, X-ray data
- BIOTITE. Halden and Bowes (Bull. - Geol. Soc. Finl. 56, 3-23) (1984)(Eng.).
Microprobe analyses (7) from schists, Savonrante, Finland.
- BIOTITE. Hansen et al., (Contrib. Mineral. Petrol. 96, 225-244) (1987)
Microprobe analyses (25) from charnockites, India and Sri Lanka
- BIOTITE. Harris and Jayaram, Lithos 15, 89-98 (1982)(English). Microprobe
analyses (10) from gneisses, Bangalore, India.
- BIOTITE. Heinrich, Contrib. Mineral. Petrol. 81, 30-38 (1982). Microprobe
analyses (2) from central Alps.
- BIOTITE. Helvacı, Econ. Geol. 79, 354-371 (1984). Microprobe analyses (2) from
magnetite-apatite deposit, Avnik, Turkey.
- BIOTITE. Henderson and Gibb, (Trans. Roy. Soc. Edinburgh 77, 325-347) (1987)
Microprobe analyses (5) from Lugar sill, SW Scotland
- BIOTITE. Herbert, Geotekton. Forsch. no. 65, 1-77 (1983). Microprobe analyses
(10) from crystalline rocks, Ecuador.
- BIOTITE. Herd et al. (Mineral. Mag. 48, 401-406) (1984). Microprobe analyses
(2) from Scotland.
- BIOTITE. Hernandez, (Jour. African Earth Sci. 5, 381-399) (1986) Microprobe
analyses (5) from Guilliz massif, Morocco
- BIOTITE. Hiroi, Contrib. Mineral. Petrol. 82, 334-350 (1983). Microprobe
analyses (7) from Hida, Japan.
- BIOTITE. Hong, (Acta Geol. Sin. 56, 149-164 (1982)) Mineral. Abstr. 34, 168
(1983). Analyses (not in abstr.) from 53 granites, China.
- BIOTITE. Horshek, Contrib. Mineral. Petrol. 87, 129-137 (1984). Microprobe
analyses (7) from metamorphic rocks, Tyrol.
- BIOTITE. Hwang and Meyer, Mem. Geol. Soc. China 5, 67-84
(1983)(English)(G(611)(G292m). Microprobe analyses (6) from dacite-andesite,
N. Taiwan.
- BIOTITE. Hyndman et al., Mem. - Mont., Bur. Mines Geol., 49, 1-37 (1982).
Analyses (16) from Philipsburg batholith.
- BIOTITE. Imeokparia (Lithos 17, 103-115) (1984)(Eng.). Microprobe analyses (11)
from granite, northern Nigeria.
- BIOTITE. Irving and Frey (Geochim. Cosmochim. Acta 48, 1201-1221) (1984).
Microprobe analyses (4) of megacrysts in basalts. Trace elements.
- BIOTITE. Itahara and Honma, (Significance Trace Elements Solomny Petrog. Problems,
431-444) (1984), Chem. Abstr. 100, no. 16, 124236 (1984). Ammonium in
samples from metamorphic and granitic rocks of Japan.
- BIOTITE. Itihara and Suwa (Geochim. Cosmochim. Acta 49, 145-151) (1985).
Ammonium content of Precambrian biotites, Finland.

- BIOTITE. Itihara, (Chikyu Kagaku 37, 306-311) (1983)(Japanese), Chem. Abstr. 101, no. 4, 26256 (1984). Concentration of NH_4^+ in biotites from Precambrian rocks, Finland (up to hundreds ppm).
- BIOTITE. Jamieson (Contrib. Mineral. Petrol. 86, 309-330) (1984). Probe analyses (3) from gneiss, Nova Scotia.
- BIOTITE. Jones, Mineral. Mag. 48, 1-12 (1984). Microprobe analyses (4) from nepheline syenites, S. Greenland.
- BIOTITE. Kabesh and Aly, (Chem. Erde 41, 313-324 (1982)(English)) Mineral. Abstr. 34, 167 (1983). Analyses (12) from Yemen.
- BIOTITE. Kalinichevko et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 5, 9-10) (1984), Chem. Abstr. 101, no. 6, 41211 (1984). Amount of H released when heated in H.
- BIOTITE. Katalenets and Pirogova, (Mineral. Sb. (Lvov) 37, 25-33) (1983), Chem. Abstr. 102, no. 4, 28642 (1985). Analyses (not in abstr.) from quartzites, Ukraine.
- BIOTITE. Kinnaird et al. (J. African Earth Sci. 3, 185-222) (1985). Microprobe analyses (7) from Ririvai alkaline complex, Nigeria.
- BIOTITE. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng) Microprobe analyses (5) from gneisses, Spitsbergen
- BIOTITE. Korikovskii et al. (Geol. Zh. (Bratislava) 36, 51-74) (1985)(Russian). Microprobe analyses from Modra granite, Little Carpathians.
- BIOTITE. Labotha, Northeast. Geol. 4, 85-94 (1982). Microprobe analyses (7) from Iona Island, N.Y.
- BIOTITE. Lalonde and Martin, Can. Mineral. 21, 81-91 (1983). Microprobe analyses (14) from syenite complex, Quebec.
- BIOTITE. Lambert and Mackinnon, (J. Geophys. Res., 89, [Sect.] B, 685-699) (1984), Chem. Abstr. 101, no. 2, 10119 (1984). Effect of high-pressure shock in gneiss.
- BIOTITE. Lan, Proc. Geol. Soc. China 25, 38-52 (1982)(English)(G(611)G292p). Microprobe analyses (3) from gneiss, NE Taiwan.
- BIOTITE. Larsons, Econ. Geol. 79, 1880-1896 (1984). Microprobe analyses (3) from Bruce Cu-Zn ores, Arizona.
- BIOTITE. Latour and Burnett, (Bull. Geol. Soc. Am. 98, 356-363) (1987) Microprobe analyses (8) from Idaho batholith
- BIOTITE. Laz'ko, Mineral. Sb. 37, 40-47 (1983)(Russian). Analyses from western Ukrainian Shield.
- BIOTITE. Le Bel et al. (J. Petrol. 26, 124-148) (1985). Microprobe analyses (3) from Lima, Peru (Andes).
- BIOTITE. Le Roex (J. Petrol. 26, 149-186) (1985). Microprobe analyses (5) from Gough Island, S. Atlantic.
- BIOTITE. Lefebvre, (Ann. Rappt. Museum Roy. Belg. for 1983-1984, 12-151) (1985) (French) G(593) T27r Analyses (1) from Zaire
- BIOTITE. Leroy, Miner. Deposita 19, 26-35 (1984)(French). Analyses (2) from U deposit, Bernardan, France.
- BIOTITE. Luais, (Doc. Trav. Centre Geol. Montpellier 9, 1-229) (1987) (French) G(540) q(334d) Microprobe analyses (10) from the Mediterranean
- BIOTITE. Luhr and Giannetti, (Contrib. Mineral. Petrol. 95, 420-436) (1987) Microprobe analyses (3) from leucitic tuff, Roccamoufina Volcano, Italy
- BIOTITE. Luhr, et al., J. Volcanol. Geotherm. 23, 69-108 (1984). Microprobe analysis (1) from Chichon Volcano, Mexico.
- BIOTITE. Maeda et al. (J. Japan Assoc. Mineral., Petrol. Econ. Geol. 80, 13-20) (1985)(Eng.). Microprobe analyses from norite, Hokkaido, Japan.
- BIOTITE. Mansy, (Soc. Geol. Nord Publ. 13(1), 291-344) (1986) (French) Microprobe analyses (78) from Omineca Mts., Brit. Columbia G(540)qn77p

- BIOTITE. Maresch et al. (Neues Jahrbuch Mineral., Abh. 152, 79-100) (1985)(Eng.), Chem. Abstr. 103, no. 8, 56932 (1985). Ordered and disordered chlorite-biotite interstratified from Venezuela, x-ray data.
- BIOTITE. Maruyeme and Liou, Am. Mineral. 70, 16-29 (1985). Microprobe analyses (6) from Shikoku, Japan.
- BIOTITE. McCaig, J. Metamorph. Geol. 2, 129-141 (1984). Microprobe analysis (1) from Pyrenees.
- BIOTITE. Melchior, (Rep. - Geol. Surv. Greenl., no. 103, 31-37 (1981)(English)) Chem. Abstr. 98, no. 16, 129430 (1983). Analyses (1) from Ilimaussaq.
- BIOTITE. Mezzer et al. (Contrib. Mineral. Petrol. 90, 353-366) (1985). Microprobe analyses (8) from Samos, Greece.
- BIOTITE. Neiva, (Bol. Mus. Lab. Mineral. Geol., Fac. Cienc. Univ. Lisboa, 16, 179-195 (1980)(Pub. 1981)(English)) Chem. Abstr. 98, no. 12, 93003 (1983). Analysis from granite porphyry. Trace elements.
- BIOTITE. Neiva, Mem. Notic. Publ. Museu Lab. Mineral Geol., Univ. Coimbra, no. 91-92, 113-1324 (1981) (English) G(569)C66p. Analyses including trace elements (12) from granites, Portugal. X-ray data.
- BIOTITE. Nell (Econ. Geol. 80, 1129-1152) (1985). Microprobe analyses (3), Potgietersrus, Bushveld Complex.
- BIOTITE. Nureki et al. (Mem. Geol. Soc. Japan 21, 127-146) (1982) (G(620)G29m). Analyses (7) from xenoliths in andesite, Kagowz Pref)
- BIOTITE. Nyambok and Lindquist, Uppsala Univ. Mineral. Petrol. Res. Rept. no. 9 (1978)(English) (G(583)QVP6a). Microprobe analyses (6) from alkalic rocks, Jombo Hill, Kenya.
- BIOTITE. Nysten and Annersten (Geol. Foeren. Stockholm Foerh. 106, 245-256) (1984)(Eng.). Microprobe analyses (5) from Enasen, Sweden.
- BIOTITE. Olsen et al., Am. Mineral. 68, 315-333 (1983). Microprobe analyses (4) from Concord gabbro-syenite complex, N.C.
- BIOTITE. Olsen, Contrib. Mineral. Petrol. 85, 30-44 (1984)(English). Microprobe analyses (9) from Colo. Front Range migmatites.
- BIOTITE. Osakabe and Suzuki, J. Sci. Hiroshumi Univ., S.C., 8, 31-42 (1983)(English)(G(620)H61j). Analyses (2) from gneiss, Hida belt, central Japan.
- BIOTITE. Panova and Vashchenok, (Vestmik Leningrad Univ., Geol. Geogr., no. 1, 29-33) (1984), Chem. Abstr. 101, no. 8, 57854 (1984). Analyses (not in Abstr.), x-ray, DTA, optics from Kazakhstan.
- BIOTITE. Parneix and Meunier, Bull. Mineral. 105, 662-672 (1982). Microprobe analyses (6). Replacement by chlorites.
- BIOTITE. Pe-Piper, Lithos 16, 23-33 (1983). Microprobe analyses (9) from western Greece.
- BIOTITE. Pe-piper, J. Petrol. 25, 453-472 (1984). Microprobe analyses (2) from shoshonite, Lesbos, Greece.
- BIOTITE. Pedersen and Hald, Lithos 15, 137-159 (1982)(English). Microprobe analyses (2) from dacite, Kroksfjordor, Iceland.
- BIOTITE. Phillips, (Jour. Metamorph. Geol. 5, 307-322) (1987) Microprobe analyses (2) from Witwatersrand gold fields
- BIOTITE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (1) from Western Alps, Italy
- BIOTITE. Popov, Mineralogicheskie Isslesovaniia Gidrotermalitor Urala (Mineral. Stud. Hydrotherm. Urals), 61-70 (1980). Analyses (1) from Badzhala, Urals.
- BIOTITE. Pouclet et al., Bull. Mineral. 106, 607-622 (1983). Microprobe analyses (2) from alkalic lavas, Virunga, E. Africa.

- BIOTITE. Propach and Gulessen, *Tschermaks Mineral. Petrogr. Mitt.* 33, 67-75 (1984). Microprobe analyses (2), 33, 67-75 (1984).
- BIOTITE. Puspanen, (*Chem. Erde* 42, 267-280) (1983)(English), *Chem. Abstr.* 100, no. 12, 88891 (1984). Microprobe analysis (not in Abstr.) from granites, S. Finland.
- BIOTITE. Radvanec and Radvancova, (*Mineral. Sl.* 13, 235-248 (1981)) *Mineral. Abstr.* 34, 168 (1983). Analyses (not in abstr.) from granitic rocks.
- BIOTITE. Raskova (*Geochim. Mineral., Petrol.* 16, 29-46) (1982), *Mineral. Abstr.* 35, 78 (1984). Analyses (not in Abstr.), optics, DTA, x-ray data from Bulgaria.
- BIOTITE. Reay, (*Bull. Roy. Soc. New Zealand* 23, 337-343) (1986) Analyses (1) from andesites, Salander Island
- BIOTITE. Reinecke et al., *Neues Jahrb. Mineral., Abh.*, 145, 157-182 (1982)(English). Microprobe analyses (2), Anafi, Greece.
- BIOTITE. Reverdatto (*Zap. Vses. Mineral. O-va.* 114, 229-236) (1985)(Russ.). Microprobe analyses (3) from hornfels.
- BIOTITE. Rey and Kubler, *Schweiz. Mineral. Petrogr. Mitt.* 63, 13-36 (1983)(French). Analyses (9), x-ray intensities of oriented sections as a means of identification.
- BIOTITE. Reymer, et al., *Contrib. Mineral. Petrol.* 85, 336-345 (1984). Microprobe analyses (33) from Wadi Kid, Sinai.
- BIOTITE. Ribeiro, (*Geol. Rundschau* 76, 147-168) (1987) (Eng) Microprobe analyses (4) from peralkaline rhyolites, NE Portugal
- BIOTITE. Ribeiro, *Comun. Serv. Geol. Part.* 69, 37-45 (1983)(Portugese). Rare earths in 15 biotites.
- BIOTITE. Rock, *Contrib. Mineral. Petrol.* 81, 64-78 (1982). Microprobe analyses (1) from alkalic rocks, Portugal.
- BIOTITE. Rosi and Santacroce, *J. Volcanol. Geothermal Res.* 17,, 249-271 (1983)(English). Microprobe analyses (3) from AD 472 eruption of Vesuvius.
- BIOTITE. Rub and Rub, (*Rock-forming minerals of magmatic rocks, Nauka*, 101-126) (1986) (Russian) (170(570)Oss) Analyses (46) from rare-metal, Sn, and W deposits
- BIOTITE. Rudashevskii and Zhdanov, *Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol.* 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (3) from Kamchatka Pt deposit.
- BIOTITE. Rudashevskii, *Zap. Vses. Mineral. O-va.* 113, 186-195 (1984)(Russian). Microprobe analyses (2) of minerals enclosing Pt minerals.
- BIOTITE. Ryabenko et al., *Mineralogy of Ore Deposits*, 25-29 (1983)(Russian) (410M662). Analyses (2) from metasomatic rocks lepidomelane.
- BIOTITE. Santosh, (*Contrib. Mineral. Petrol.* 96, 343-356) (1987) Microprobe analyses (2) from gneisses, Kerala, India
- BIOTITE. Sanz et al., (*Phys. Chem. Miner.* 9, 14-18 (1983)) *Chem. Abstr.* 98, no. 10, 75558 (1983). Infra-red and Mossbauer study of dehydroxylation in vacuo and in oxygen.
- BIOTITE. Sautter, (*Jour. African Earth Sci.* 5, 345-357) (1986) (French) Microprobe analyses (4) from eclogites, Algeria
- BIOTITE. Schiffman et al. (*Mineral. Mag.* 49, 435-449) (1985). Analyses (7) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- BIOTITE. Schultz-Guttler et al., (*Schweiz. Min. Pet. Mitt.* 66, 281-294) (1986) (Eng) Microprobe analyses (7) from Buritirama, Brazil
- BIOTITE. Scott and Middleton, *Nor. Geol. Tidsskr.* 389, 1-26 (1983)(English) (581)Bu. Microprobe analysis (1) from camptonite sills, Oslo region.
- BIOTITE. Selverstone and Munoz, (*Contrib. Mineral. Petrol.* 96, 426-440) (1987) Microprobe analyses (5) from Eastern Alps

- BIOTITE. Selverstone, et al., *J. Petrol.* 25, 501-531 (1984). Microprobe analyses (5) from Tavern, Austria.
- BIOTITE. Shiraishi et al. (*Proc. Symp. Antarctic Geosci.* 4th, 1983, 126-144) (1984)(Eng.), 502(990)J2755. Microprobe analyses (4), Prince Olav coast, E. Antarctica.
- BIOTITE. Sidorov, *Mineralogy of Cibaikalie*, 88-137 (103(690.3)M662p). Analyses from SW Baikal (3).
- BIOTITE. Sills (*Lithos* 16, 112-124) (1983)(Eng.). Microprobe analyses (2) from gneisses, N.W. Scotland.
- BIOTITE. Slovenec (*Geol. Vjesn.* 36, 219-222) (1983), *Chem. Abstr.* 101, no. 14, 114122 (1984). X-ray data on polytypes.
- BIOTITE. Slovenec, *Geol. Vjesn.* 35, 133-152 (1982). Analyses (20) from Mt. Papuk, Yugoslavia.
- BIOTITE. Spadea et al., (*Jour. Geol.* 95, 377-395) (1987) Microprobe analyses (1) from ophiolite, SW Columbia
- BIOTITE. Spear, *J. Petrol.* 23, 383-426 (1982). Microprobe analyses (14), Mt. Cube quadrangle, Vermont.
- BIOTITE. Steltenpohl and Bartley, (*Contrib. Mineral. Petrol.* 96, 93-103) (1987) Microprobe analyses (12) from Caledonian, N. Norway
- BIOTITE. Stolpovskaya et al. (*Tr. Inst. Geol. Geofiz., Akad. Nauk SSSR, Sib. Otd.* 587, 70-81) (1984) (Russ), *Chem. Abstr.* 103, no. 8, 56930 (1985). Infra- red study.
- BIOTITE. Suzuki (*Proc. Symp. Antarctic Geosci.* 4th, 1983, 145-154) (1984)(Eng.), 502(990)J27ss. Microprobe analyses (2), Prince Olav coast, E. Antarctica.
- BIOTITE. Suzuki and Osakabe (*Mem. Geol. Soc. Japan* 21, 37-49) (1982)(Eng.). (G(620)G29m). Analyses (2) from Hida belt, Japan.
- BIOTITE. Suzuki, *Proc. 3rd Symp. Antarctic Geosci.*, 132-143 (1983)(English) (502(990)J27SS, no. 28). Microprobe analyses (2), Lutzow-Holm Bay, Antarctica.
- BIOTITE. Tanaka et al., *J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 77, 438-454 (1982)(English). Microprobe analyses (3) from cortlandtite, N.E. Japan.
- BIOTITE. Thompson and Leclair, (*Jour. Metamorph. Geol.* 5, 415-436) (1987) Microprobe analyses (4), Grenville Province, Canada
- BIOTITE. Townsend and Longworth (*Phys. Chem. Miner.* 12, 141-144) (1985). Mossbauer study.
- BIOTITE. Upton et al. (*Mineral. Mag.* 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- BIOTITE. Van Bergen et al., *J. Volcanol. Geotherm. Res.* 19, 1-35 (1983)(English). Microprobe analyses (11) from rhyodacite, Mt. Amiata, Italy.
- BIOTITE. Vanko and Bishop, *Contrib. Mineral. Petrol.* 81, 277-289 (1982). Microprobe analyses (1) from Humboldt lopolith, Nev.
- BIOTITE. Ventwelli et al.; *Contrib. Mineral. Petrol.* 86, 209-220 (1984). Microprobe analyses (6) from K-rich Lamprophyres, W. Alps, Italy.
- BIOTITE. Vielzeuf, *Bull. Mineral.* 105, 681-690 (1982). Microprobe analyses (5).
- BIOTITE. Viereck, (*Bochumer Geol. Geotechn. Arb.* 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (2) from Eifel, Germany.
- BIOTITE. Vishnoi and Dubey, (*Acta Cien. Indica* 9, 41-44) (1983), *Chem. Abstr.* 101, no. 4, 26263 (1984). X-ray data and determination of F show no correlation of structure with F/OH ratio.

- BIOTITE. Visoni and Zerpola (Moderna, Italy), Neues Jahrb. Mineral., Monatsh. 6, 413-423 (1984). Analyses (2) from granite, Iseltal, Austria.
- BIOTITE. Vivallo (Geol. Foeren. Stockholm Foerh. 106, 257-267 (1985)(Eng.). Microprobe analyses (7) from metamorphic rocks, Garpenberg, Sweden.
- BIOTITE. Volfinger et al. (Geochim. Cosmochim. Acta 49, 37-48) (1985), Chem. Abstr. 102, no. 12, 98519 (1985). Incorporation of Cl in.
- BIOTITE. Waters and Whales, Contrib. Mineral. Petrol. 88, 269-275 (1984). Microprobe analyses (4) from metapelites, Mamequeland, Africa.
- BIOTITE. Whitney and McLellard, Contrib. Mineral. Petrol. 82, 34-41 (1983). Microprobe analyses (8) from coronas in metagabbros, Adirondacks.
- BIOTITE. Wilson and Long, Mineral. Mag. 47, 191-199 (1983). Microprobe analyses (1), Li content.
- BIOTITE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (17) and trace elements. Laacher See, Germany.
- BIOTITE. Yamamoto, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 313-324 (1983)(Japanese). Microprobe analyses (2) from gneisses, Toyana Pref. (zoned)
- BIOTITE. Yoshida and Oikawa, Proc. 3rd Symp. Antarctic Geosci., 145-165 (1983) (562(990)J27SS no. 28). Microprobe analyses (7) from metabasite, Antarctica.
- BIOTITE. Zaritsky, et al., (Mineral. Zh. 5, no. 4, 83-85) (1983), Mineral. Abstr. 35, 184 (1984). Analysis with Cs_2O 4.27, Pb_2O 0.60 from European SSR. Analysis, x-ray data.
- BIOTITE. van Bergen and Barton, Contrib. Mineral. Petrol. 86, 374-385 (1984). Microprobe analyses (6) from Mt. Amiata, Italy.
- BIPHOSPHAMMITE. McMurdie et al., (Powder Diffraction 1(4), 334-345) (1986) X-ray powder data
- BIRINGUCCITE. Menchetti, et al., Neues Jahrb. Mineral., Abh. 148, 163-180 (1983)(English). Stability in $NaOH-B_2O_3-H_2O$ at 250 degrees. X-ray data.
- BIRNESSITE. Chukhrov, et al., Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 143-159 (Russian)(201In391g). Review of data, x-ray powder data, analysis from Pacific. 14A variety.
- BIRNESSITE. Guca and Pelczar, (Mineral. Polsk. Karpat., 28-29) 120(578) G934m (Polish) Analyses (2) from Polish Carpathians
- BIRNESSITE. Takematsu et al. (Geochim. Cosmochim. Acta 48, 1099-1106) (1984). Analysis of material precipitated from aerated well water.
- BIRNESSITE. Wieser, (Mineral. Polonica 16, 23-24) (1985), Mineral. Abstr. 38, 87M/3123 (1987) Microprobe analyses (not in abs.) from Polish Carpathians, infra-red data
- BISCHOFITE. Richter and Klarr (Kali Steinsalz 9, 94-101) (1984). Occurrence at Stassfurt. Br content.
- BISMITE. Kolonin and Laptev, (Geokhimiia, no. 11, 1621-1631 (1982)) Chem. Abstr. 98, no. 12, 92761 (1983). Solubility in $HClO_4$ and in $NaOH$, 25-300°.
- BISMUTH. Gamyagin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (2) from E. Yakutia
- BISMUTH. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (4) from Spissko-Gemer ore deposits, Slovakia.
- BISMUTH. Kovalenker and Geinke, Izv. Akad. Nauk SSSR 5, 91-104 (1984)(Russian). Microprobe analyses (1) from Kuranin Ridge, Tien-shan.
- BISMUTH. Lutoshko et al. (Tr. Komi Fil. Akad. Nauk SSSR 45, 60-66 (1984) (G(570)AK144+). Analyses from Polar Urals.
- BISMUTH. Neradovskii et al., (Zap. Vses. Mineral. O-va. 111, 552-556 (1982)) Chem. Abstr. 98, no. 4, 19664 (1983). Microprobe analysis from Karik'yavr, Kola Peninsula. Optics.

- BISMUTH. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BISMUTHINITE: Boldyreva (Zap. Vses. Mineral. O-va. 114, 43-49) (1985)(Russ.). Optics from Zambaraks deposit, E. Karamazar.
- BISMUTHINITE. Gamyarin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (5) from E. Yakutia
- BISMUTHINITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (7) from Spiissko-Gemer ore deposits, Slovakia.
- BISMUTHINITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (18) from gold-silver deposits
- BISMUTHINITE. Kovalenkar and Geinke, Izv. Akad. Nauk SSSR 5, 91-104 (1984)(Russian). Microprobe analyses (3) from Kuranin Ridge, Tien-shan with up to 12.5% Se.
- BISMUTHINITE. Spiridonov and Badalov, Uzb. Geol. Zh. 6, 82-84 (1983)(Russian). Microprobe analysis from Karragach deposit, Uzbekistan.
- BISMUTHINITE. Stoinova and Begizov, (Izv. Vyssh. Uchebn. Zaved., Geol. Razved., 25, no. 10, 69-74 (1982)) Chem. Abstr. 98, no. 10, 75501 (1983). Analysis, X-ray, optics from northern Rhodopes, Bulgaria.
- BISMUTHINITE. Vendrell-Saz et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 273-286) (1980)(Eng.) (Sulfosalt Vol.). Reflectance at wave lengths 250-1100 nm.
- BISMUTHINITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1978) (1980)) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various wave lengths. Analyses.
- BISMUTHINITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BISMUTOSTIBICONITE. Mineralog. Abstr. 34, 476 (1983). Abstract of original description.
- BISMUTOSTIBICONITE. Walenta, Chem. Erde 42, 77-81 (1983). New mineral from Black Forest, $(\text{Bi,Fe})_2\text{Sb}_2\text{O}_7$. Cubic, $a(o) 10.38\text{\AA}$, $Z=8$, $G 7.38$, $n 2.09$.
- BITYITE. Lin and Guggenheim, Am. Mineral. 68, 130-142 (1983). Structure of a dioctahedral-trioctahedral mica from Zimbabwe intermediate between bityite and margarite. Analysis (Gallagher and Hawkes, 1966).
- BIXBYITE. Abs.-Wurmbach et al. (N. Jahrbuch Miner., Abh. 146(3), 258-279) (1983), Miner. Abs. 35, 45 (1984). Stability in system Mn-Si-O.
- BIXBYITE. Bhattacharyya, et al., Contrib. Mineral. Petrol. 87, 65-77 (1984). Microprobe analyses (14) from India.
- BIXBYITE. Chen and Chen, (Zhongnan Kuangye Xueyuan Xuebao, no. 3, 1-9 (1982)(Chinese)) Chem. Abstr. 98, no. 6, 41522 (1983). Stability in system Mn-O.
- BIXBYITE. Dasgupta et al. (Contrib. Mineral. Petrol. 90, 258-261) (1985). Microprobe analyses (3) from Chikla, India. Oxidation gradient of formation.
- BIXBYITE. Robie and Hemingway (J. Chem. Thermodynamics 17(2), 165-181) (1985). Chem. Abstr. 102, no. 14, 121026 (1985). Heat capacities 5-380 degrees K, entropies.
- BIXBYITE. Sen and Dasgupta, Indian J. Earth Sci. 11, no. 1, 1-8 (1984). Microprobe analyses (2) from India.
- BLOCKITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- BOEHMITE. Carniglia, J. Am. Ceram. Soc. 66, 495-500 (1983). Standard free energies of formation 298 to 2100 degrees K.

- BOEHMITE. Gout and Dandurand (Tran. Com. Internatl. Etude Bauxites 18, 117-125) (1983)(Eng.). (438]n83+). Stability in system $Al_2O_3-H_2O$.
- BOEHMITE. Merdilovich et al., (Zh. Prikl. Khim. 57, 409-413) (1984), Chem. Abstr. 100, no. 20, 162711 (1984). Study of dehydration of infra-red spectroscopy.
- BOEHMITE. Mitsubishi Ind (Jpn. Patent 60 46,923, 4 pp), Chem. Abstr. 103, no. 4, 24426 (1985). Synthesis of fibers.
- BOGDANOVICHITE. Nesterov et al. (Zap. Vses. Mineral. O-va. 114, 212-216) (1985)(Russ.). Microprobe analyses (11) from Transbaikal, a 4.197, c 19.64A, x-ray powder data.
- BOGDANOVITE. Spiridonov and Chvileva, (Nov. Dannye Miner. 30, 140-147 (1982)) Chem. Abstr. 98, no. 26, 219071 (1983). Analyses (not in abstr.) and optics.
- BOLTWOODITE. Bayushkim et al. (Izv. Vyssh. Uchebn. Zaved., Geol. Razved. 27, 50-57) (1984), Chem. Abstr. 101, no. 16, 134308 (1984). Analysis from carbonatite, Afghanistan, K_2O 7.41, Na_2O 2.10 percent. Optics, infra-red data. a 14.35, b 7.05, c 13.06A, beta 108.2 degrees.
- BOLTWOODITE. Strunz and Tennyson, Aufschluss 39, 497-501 (1983). Analysis from Napiontek, S.W. Africa. Monoclinic, $P2_1/m$, a 6.65, b 7.07, c 7.11 A, beta 105 degrees ????, Z=2 (K,Na,H_3O)₂ (UO_2)(SiO_4) . H_2O , cleavage (001) perfect.
- BONACCORDITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- BONSHTEDTITE. Chinh et al. (Mineral. Zh. 6, no. 5, 79-84), Chem. Abstr. 102, no. 12, 98509 (1985). Discussion of structure.
- BONSHTEDTITE. Mineralog. Abstr. 34, 476 (1983). Abstract of original description.
- BONSHTEDTITE. Thi et al., (Acta Crystallogr., Sect. A, A40, 257) (1984)(Abstr.). Structure. Monoclinic, $P2_1/m$, a 8.955, b 6.029, c 5.149 A, beta 89.55 degrees, Z=1, $Na_3Fe(PO_4)(CO_3)$.
- BORAX. Vasil'ev et al., (Zh. Neorg. Khim. 29, 745-747) (1984), Chem. Abstr. 100, no. 20, 162807 (1984). Heat of solution, dilution, and formation.
- BORNITE. Cabri et al. (Can. Mineral. 23, 133-148) (1985). Proton microprobe analyses (2) for trace elements, esp. Se.
- BORNITE. Dymkov et al., Nov. Dannye Miner. SSSR 31, 41- (1983). Microprobe analyses (1).
- BORNITE. Garuti et al., Earth Planet. Sci. Lett. 70, 69-87 (1984)(English). Microprobe analyses (3) from peridotites, Ivrea-Verbani, Italy.
- BORNITE. Kojime et al., (Mineral. J. Tokyo 12, 15-28) (1984)(English), Chem. Abstr. 101, no. 8, 57860 (1984). Stability in system Cu-Fe-Zn-S, 800-500 degrees C.
- BORNITE. Lafitte, (C.R. Seances Acad. Sci., Ser. 2, 295, 1113-1115 (1982)) Chem. Abstr. 98, no. 18, 146754 (1983). Microprobe analyses (not in abstr.) from France and Morocco.
- BORNITE. Nishiyama et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 281-289 (1983)(English) Minor elements in (1), Sulawesi, Indonesia.
- BORNITE. Pasteris, Can. Mineral. 22, 39-53 (1984). Analysis from Duluth complex, Minn.
- BORNITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- BORNITE. Silaev 1982, p. 143 (410(570)Si32m). Analyses (1).
- BORNITE. Tarkian et al., Tschermaks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (6) from Iran.

- BORNITE. Wang, Neues Jahrb. Mineral., Monatsh., 346-352 (1984)(English). Sulfidization of bornite at 110-445 degrees.
- BOROVSKITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- BOSTWICKITE. Abstract in Am. Mineral. 69, 810 (1984). Abstract of original description.
- BOSTWICKITE. Mineralog. Abstr. 34, 476 (1983). Abstract of original description.
- BOULANGERITE. Huiny and Kristin (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (2), Spissky-Gomor Mt., Slovakia.
- BOULANGERITE. Bortnikov and Tsepin, (Izvest. Akad. Nauk SSSR, Ser. Geol. 1, 86-94) (1987) (Russian) G(570)Ac11b Microprobe analyses (10) from E. Transbaikal with Bi up to 5.56%
- BOULANGERITE. Bortnikov et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- BOULANGERITE. Breskovska et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 83-89) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analysis (1) showing Cl 0.03 percent.
- BOULANGERITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (1) from Spissko-Gomor ore deposits, Slovakia. (Bi 13.4%)
- BOULANGERITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- BOULANGERITE. McQueen, Neues Jahrb. Mineral., Monatsh., 323-336 (1984)(English). Microprobe analyses (3) from Broken Hill, N.S. Wales.
- BOULANGERITE. Mozgova et al., (Dokl. Akad. Nauk SSSR 274, 169-172) (1984), Chem. Abstr. 101, no. 6, 41168 (1984). Homologous series with Pb-rich (= falkmanite) and Pb-poor (= plumasite). Analyses and x-ray data of boulangerite and series.
- BOULANGERITE. Mozgova et al., Abstr. in Am. Mineral. 69, 411 (1984). New analyses and optics and proposed changes in nomenclature.
- BOULANGERITE. Podeminskaya et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 49-58 (1981)(Russian) (Sulfosalt Vol.). Structure. Orth., Prma, a 23.51, b 4.036, c 21.24 A, Z=4.
- BOULANGERITE. Vrublevskaya et al., (Izvest. Akad. Nauk SSSR, Ser. Geol. 4, 90-97) (1985), Mineral. Abstr. 38, 87M/2136 (1987) Electron diffraction study indicates boulangerite, falkmanite, and plumosite are structurally similar but have different sub-cells
- BOULANGERITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BOULANGERITE. Yamaoki et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 441-448 (1983) (Japanese). Microprobe analyses (2) from Abata Pref., Japan.
- BOULANGERITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- BOURNONITE. Bortnikov and Tsepin, (Izvest. Akad. Nauk SSSR, Ser. Geol. 1, 86-94) (1987) (Russian) G(570)Ac11b Microprobe analyses (9) from E. Transbaikal with Bi up to 5.55%
- BOURNONITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (3) from Chikuashih ore deposit, Taiwan.

- BOURNONITE. Imai et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 310-321) (1982)(Eng.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe analysis from Janggun, Korea, x-ray data, reflectance.
- BOURNONITE. Innocente et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 657-667) (1984)(Eng.). G(550)So15r. Microprobe analyses (2) from Niccioleta deposit, Tuscany, Italy.
- BOURNONITE. Leonard and Christian, (Mineral. Petrol. 36, 151-168) (1987) (Eng) Analysis from Thunder Mt. complex, Idaho
- BOURNONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BOURNONITE. Yamaoki et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 441-448 (1983) (Japanese). Microprobe analyses (2) from Abata Pref., Japan. X-ray data.
- BOURNONITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- BOWIEITE. Desborough and Criddle, Can. Mineral. 22, 543-552 (1984). New mineral, (Rh, Ir, Pt)₂S₃ from Goodnews Bay, Alaska. Analyses (15). X-ray data, optics. Orth., space group Pnca, a 8.454-8.473, b 5.995-6.002, c 6.143-6.121 Å, Z=4.
- BRADLEYITE. Chinh et al. (Mineral. Zh. 6, no. 5, 79-84), Chem. Abstr. 102, no. 12, 98509 (1985). Discussion of structure.
- BRAGGITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- BRAGGITE. Griddle and Stanley (Can. Mineral. 23, 149-162) (1985). Reflectance data.
- BRAGGITE. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from Kamchatka Pt deposit.
- BRAGGITE. Talkington and Watkinson, Can. Mineral. 22, 125-136 (1984). Microprobe analyses (2), Lac-des. Iles complex, N.W. Ont.
- BRAGGITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- BRAGGITE. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (4) Reflectance
- BRANNERITE. Dimova et al., (Proc. 13th Meeting IMA Varna, 1982, 789-794) (1986) (Russian) Partial analyses (4) from Permian sediments
- BRANNERITE. Ivanova, et al., (Izv. Akad. Nauk SSSR, Ser. Geol, no. 2, 63-71) (1982), Mineralog. Abstr. 34, 472 (1983). Monoclinic, C2/m, C2, or Cm, a 9.8, b 3.8, c 6.7 Å, beta 119 degrees (natural).
- BRANNERITE. Saager and Stupp, Tschermarks Mineral. Petrogr. Mitt. 32, 83-102 (1983)(English). Microprobe analyses (21) from Elliott Lake, Canada.
- BRANNOCKITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- BRAUNITE. Abs.-Wurmbach et al. (N. Jahrbuch Miner., Abh. 146(3), 258- 279) (1983), Miner. Abs. 35, 45 (1984). Stability in system Mn-Si-O.
- BRAUNITE. Ayuso and Brown, Can. Mineral. 22, 327-331 (1984). Analyses (1) from Gouverneur N.Y.
- BRAUNITE. Bhattacharyya et al., Contrib. Mineral. Petrol. 87, 65-77 (1984). Microprobe analyses (19) from India.
- BRAUNITE. Dasgupta et al. (Contrib. Mineral. Petrol. 90, 258-261) (1985). Microprobe analyses (5) from Chikla, India. Oxidation gradient of formation.
- BRAUNITE. Dasgupta et al., (Mining Geology (Japan) 36, 351-360) (1986) (Eng) Stability in system Mn-Fe-Si-O. Analyses of synthetic X-ray data.

- BRAUNITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (3) from manganiferous cherts, Alps
- BRAUNITE. Sen and Dasgupta, Indian J. Earth Sci. 11, no. 1, 1-8 (1984). Microprobe analyses (3) from India.
- BRAVOITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- BRAVOITE. Zahrzewski (Can. Mineral. 22, 499-502) (1984). Microprobe analyses (10) from Karniowrice, Poland.
- BRAZILIANITE. Cortesogno et al., (N. Jb. Miner., Mh., 305-313) (1987) (Eng) Analysis from Italy
- BREITHAAPTITE. Beran and Mohsenzadeh, (Tschermaks Mineral. Petrogr. Mitt. 30, 267-275 (1983)(English)) Chem. Abstr. 98, no. 16, 129396 (1983). Optics.
- BREITHAAPTITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- BREITHAAPTITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe analysis from Norilsk deposit.
- BREITHAAPTITE. Halenius and Alinder, Neues Jahrb. Mineral., Monatsh., 201-215 (1982)(English). Microprobe analysis from Langban, Sweden.
- BREITHAAPTITE. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- BREITHAAPTITE. Zahrzewski (Neues Jahrb. Mineral., Monatsh., 145-154) (1984)(Eng.). Microprobe analyses from Gotberg mine, Sweden.
- BREWSTERITE. Akizuki, (Am. Mineral. 72, 645-648) (1987) Crystals from Strontian, Scotland Growth sectors in
- BRITHOLITE. Feld'man et al., (Mineral. Zh. v. 9, no. 1, 73-86) (1987) (Russian) Analysis from Vietnam, rare earths in, optics, a 9.63, G 7.12 A From carbonatite, Nom. Se
- BRITHOLITE. Krivdik et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 12, 22-26 (1982)) Chem. Abstr. 98, no. 12, 92773 (1983). Analysis from Ukraine, X-ray data.
- BRITHOLITE. Nekrasova and Nekrasov, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 170-177 (Russian)(201In391g). 5 analyses and rare-earth distribution.
- BRITHOLITE. Vrublevskii, et al., Zap. Vses. Mineral. O-va. 113, 59-61 (1984)(Russian). Chem. Abstr. 100, no. 18, 142415 (1984). Rare earths. Occurrence in nepheline syenite, Kuznetsh Alatau, n 1.737, nearly isotopic. Analysis, x-ray data.
- BROCHANTITE. Alcaraz et al., (An. Univ. Murcia Cienc. 39-40, 55-67) (1980-1982)(Spanish), Chem. Abstr. 100, no. 22, 177968 (1984). Kinetics of dehydration, DTA, x-ray data.
- BROCHANTITE. Mrazek, (Miner. Slovaca 14, 471-476 (1982)) Chem. Abstr. 98, no. 8, 57260 (1983). Occurrence at Smolnik, Czechoslovakia. Optics, X-ray, infra-red.
- BROMARGYRITE. Barber et al. (J. Phys. Chem. Solids 46(2), 249-252) (1985). Chem. Abstr. 102, no. 22, 195514 (1985). Elastic constants 77-300 degrees K.
- BROMARGYRITE. Groznetskii et al. (Zh. Neorg. Khim. 30(4), 1033-1035) (1985), Chem. Abstr. 102, no. 24, 210131 (1985). Stability in system AgCl-AgBr solid solutions: X-ray, DTA.
- BROMELLITE. Downs, Diss. Abstr. 44B, 3022 (1984). Electron distribution in.
- BROMELLITE. Soboleva et al. (Geokhimiia (6), 812-822) (1984). Chem. Abstr. 101, no. 8, 57891 (1984). Hydrothermal solubility in HF-NaF etc. Calculation of thermodynamic functions.

- BROOKITE. Grunin et al., (Dokl. Akad. Nauk SSSR 268, 686-688 (1983)) Chem. Abstr. 98, no. 18, 146737 (1983). Synthesis. X-ray, DTA, TGA, and EPR study.
- BRUCITE. Bondi, (Period. Mineral. 52, 47-55) (1983)(Italian), Chem. Abstr. 100, no. 22, 177932 (1984). Stability in hydrothermal system at 600-750 degrees, 0.5-2 kbar.
- BRUCITE. Day et al., (Am. Mineral. 70, 237-248) (1985). Thermodynamic analysis of equil. in system $MgO-SiO_2-H_2O$.
- BRUCITE. Franz, (Am. J. Sci., 282, 1325-1339) (1982), Mineral. Abstr. 35, 39-40 (1984). Stability in system H_2O-MgO 590-670 degrees C.
- BRUCITE. Kiseleva et al., (Geokhimiia, no. 12, 1745-1755) (1983), Chem. Abstr. 100, no. 8, 54703 (1984). Heat of solution. Calcn. of heat of formation and enthalpy of formation.
- BRUCITE. Neal and Stanger, Mineral. Mag. 48, 237-241 (1984). Precipitation from alkaline ground water, Oman. Analysis.
- BRUCITE. Slutskii, et al., (Geokhimiia, 314-323) (1984), Chem. Abstr. 100, no. 20, 159671 (1984). Stability relations in system $MgO-SiO_2-H_2O$.
- BRUCITE. Zhelonkin et al. (Zh. Neorg. Khim. 30, 810-812) (1985)(Russ.). Chem. Abstr. 102, no. 20, 178139 (1985). Thermal decomposition in vacuo.
- BRUCITE. Zinchuk et al., (Dokl. Akad. Nauk SSSR 269, 449-454 (1983)) Chem. Abstr. 98, no. 26, 219104 (1983). Occurrence replacing olivine in kimberlite, Yakutia, a 3.139, c 4.743A. DTA, infra-red spectrum.
- BRUSHITE. Yasue et al., (Nippon Kagaku Kaishi, no. 4, 494-500 (1983)(Japanese)) Chem. Abstr. 98, no. 24, 209113 (1983). DTA study.
- BUKOVSKYITE. Johan, (N. Jb. Miner. Mh., 445-451) (1986), Mineral. Abstr. 38, 87M/2138 (1987) Structure Tricl., P1 or P1, a 10.722, b 14.079, c 10.284 A, alpha 93.50 deg., beta 115.96 deg., gamma 90.27 deg., Z=4
[$Fe^{+3}_2(AsO_4)(SO_4)(OH)7H_2O$], G 2.34
- BULACHITE. Abstr. in Am. Mineral. 70, 214 (1985). Abstract of original description.
- BULACHITE. Walenta, Aufschluss 34, 445-451 (1983). New mineral., $Al_2(AsO_4)(OH)_3 \cdot 3H_2O$, white to pale green. Orth., Pmm, P2, 22, PmQZ, or Pmn 2, a 15.53, b 17.78, c 7.03 A. Analysis, optics, x-ray data.
- BULAIINITE. Nikolaeva (1977), abstr. in Am. Mineral. 70, 871 (1985). Name given to Mg, Fe^{+2} end-member of the glauconite group.
- BUNSENITE. Davies, (Jour. Am. Ceram. Soc. 69, 800-805) (1986), Mineral. Abstr. 38, 87M/2476 (1987) Solid solutions bunsenite-covellite
- BUNSENITE. Szuber (J. Mater. Sci. 19, 1991-1996) (1984)(Eng.). Chem. Abstr. 101, no. 6, 46569 (1984). Defects in single crystals.
- BUNSENITE. Wearing, Mineral. Mag. 48, 243-249 (1984). Microprobe analyses (3) from Cu-converter slags.
- BURBANKITE. Effenberger et al. (N. Jb. Miner., Mh., 4, 161-170) (1985)(Eng.). Structure. Hex., $P6_3mc$, a 10.512, c 6.492A, Z=2.
- BURKEITE. Harvie, et al., Geochim. Cosmochim. Acta 48, 723-751 (1984). Calculated solubilities in system $Na-K-Mg-Ca-H-Cl-SO_4-OH-HCO_3-CO_5-CO_2-H_2O$ at 25 degrees C.
- BURTITE. Abstract in Mineral. Abstr. 35, 87 (1984). Abstract of original description.
- BUSERITE. Chukhrov et al., (Izvest. Akad. Nauk SSSR, Ser. Geol. 10, 65-74) (1984) (Russian), Mineral. Abstr. 38, 87M/3124 (1987) A new variety, buserite-II, which does not change to birnessite when heated

- BUSTAMITE. Angel, (Contrib. Mineral. Petrol. 85, 272-278) (1984), Chem. Abstr. 100, no. 20, 159635 (1984). Inversion boundary johannsenite-bustamite is given by $P(\text{Kbar}) = 0.0411 \times T$ degrees C. X-ray data, a 7.760, b 7.109, c 13.84 Å, alpha 91.5 degrees, beta 94.4 degrees, gamma 103.57 degrees.
- BUSTAMITE. Mikirticheva et al. (Zh. Neorg. Khim. 30(2), 487-491) (1985) (Russ), Chem. Abstr. 102, no. 14, 120835 (1985). Stability in system $\text{CaSiO}_3\text{-MnSiO}_3$. X-ray, infra-red data.
- BUSTAMITE. Stoyanova, (Proc. 13th Meeting IMA, Varna, 1982, 411-419) (1986) (Russian) Analyses (not in abs.) from northern Rhodopes, Bulgaria
- BYSTROMITE. McMurdie et al., (Powder Diffraction 1(4), 334-345) (1986) X-ray powder data
- CABRERITE. Abstract in Mineral. Abstr. 35, 192 (1984). Abstract of original description.
- CABRIITE. Tarkian and Bernhardt (Tscherma's Mineral. Petrogr. Mitt. 33, 121-129) (1984) (Eng.). Diagram for optical determination.
- CACOXENITE. Moore and Shen, (Nature 306, 356-358) (1983), Abstr. in Am. Mineral. 70, 220 (1985). Structure. $P6_3/m$, a 27.559, c 10.550 Å, Z=2 ($\text{AlFe}^{+3}_3\text{O}_6(\text{OH})_{12}(\text{PO}_4)_{17.85}\text{H}_2\text{O}$).
- CADMIUM. Novgorodova et al., (Zap. Vses. Mineral. O-va. 111, 304-315) (1982)) Mineral. Abstr. 34, 174 (1983). Occurrence in southern Verkhoian, analysis.
- CAHNITE. Helvacı, Miner. Deposita 19, 217-226 (1984). Occurrence at Emet deposits, Turkey. Analyses (1).
- CALAUERITE. Harris et al., Can. Mineral. 21, 137-143 (1983). Occurrence at Ashley deposit, Ont. Probe analysis.
- CALAUERITE. Honma et al., (J. Mineral. Soc. Jpn. 15, 63-72) (1981) (Japanese), Mineral. Abstr. 35, 189-190 (1984). Occurrence on Hokkaido.
- CALAUERITE. Kovalenka, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (15) from gold-silver deposits
- CALAUERITE. Lebedeva, (Deposited Doc. VINITI, 6796-83, 114-121) (1983), Chem. Abstr. 102, no. 2, 9846 (1985). Analysis from Au deposit. No data in abstr.
- CALAUERITE. Sjöberg and Rickard, (Geochim. Cosmochim. Acta 47, 2281-2286) (1983); Chem. Abstr. 100, no. 6, 37261 (1984). Rate of solution.
- CALAUERITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- CALCIOANCYLITE. Walter and Postl, (Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum 51, 25-28) (1983), Chem. Abstr. 101, no. 6, 41214 (1984). Analysis from Styria, Austria, x-ray data, infra-red.
- CALCIOANCYLITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 321-324 (1983) (G(533)G78mb). Occurrence at Pack, Styria, DTA, x-ray data, a 5.005, b 8.507, c 7.268 Å.
- CALCIOANCYLITE. White and Nelen, (Mineral. Record 18, 203-205) (1987) Microprobe analysis from Foote mine, N. Carolina
- CALCIOBETAFITE. Mazzi and Munno, Am. Mineral. 68, 262-276 (1983). New mineral from Campania, Italy, $(\text{Ca,Na,RE,Th})_4(\text{Nb,Ti,Fe})_4\text{O}_{14}$, cubic.
- CALCIOBETAFITE. Mineralog. Abstr. 34, 476 (1983). Abstract of original description.
- CALCIOTANTITE. Voloshin et al., (Mineral. Zh. 4, no. 3, 75-79) (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- CALCIOVOLBORTHITE. Hunt, Mineral. Rec. 14, 119 (1983). Occurrence, Yuma Co., Ariz.

- CALCITE. Alt and Honnorez, *Contrib. Mineral. Petrol.* 87, 145-169 (1984).
Microprobe analyses (1) from altered basalt, oceanic cores.
- CALCITE. Andersen, *Lithos* 17, 227-245 (1984)(English). Microprobe analyse (6) from Fen carbonatite, Norway.
- CALCITE. Ashworth and Evirgen, *Mineral. Mag.* 48, 159-165 (1984). Microprobe analyses (1) from S.W. Turkey.
- CALCITE. Bangert et al., (*PACT (Rixensart, Belg.)* 6, 195-199 (1982)(English))
Chem. Abstr. 98, no. 20, 164148 (1983). Thermoluminescence of calcite doped with rare earths.
- CALCITE. Barber and Wenk, *Contrib. Mineral. Petrol.* 88, 233-245 (1984).
T.E.M. study from Alno and Fen carbonatites show 2-phase structures.
- CALCITE. Bhagia and Pandya (*Indian J. Pure Appl. Phys.* 23(1), 27-29) (1985).
Chem. Abstr. 102, no. 22, 195534 (1985). Dissolution of cleavages in formic acid.
- CALCITE. Bischoff et al., (*Geochim. Cosmochim. Acta* 51, 1413-1423) 1987)
Stability of synthetic magnesian calcites in aqueous solution at 25 deg. C
Comparison with biogenic material
- CALCITE. Blasse and Aguilar, (*J. Lumin.* 29, 239-241) (1984)(English), *Chem. Abstr.* 101, no. 6, 41186 (1984). Luminescence red partly due to Ce^{+3} .
- CALCITE. Bucher-Nurminen, *J. Petrol.* 23, 325-343 (1982). Microprobe analyses (11), E. Greenland.
- CALCITE. Burton and Kikuchi, *Am. Mineral.* 69, 165-175 (1984). Thermodynamic treatment of system $CaCO_3$ - $MgCO_3$.
- CALCITE. Chistyakov, (*Rentgenogr. Miner. Syr'ya*, 53-68) (1982)(Russian), *Chem. Abstr.* 101, no. 8, 57820 (1984). X-ray study of structural and textural characteristics of limestones.
- CALCITE. Chistyakova, (*Rentgenogr. Miner. Syr'ya*, 68-77) (1982), *Chem. Abstr.* 101, no. 8, 57821 (1984). X-ray method for determining thermal properties.
- CALCITE. Demenna (*J. Fluorescent Mineral Soc.* 12, 23-26) (1983). Trace elements in fluorescent and non-fluorescent samples.
- CALCITE. Eberhardt et al. (*Appl. Optics* 24(3), 388-395) (1985), *Chem. Abstr.* 102, no. 14, 116741 (1985). Reflectance at CO_2 laser wavelengths.
- CALCITE. England, *Mineral. Mag.* 48, 519-527 (1984). Contrasting habits of associated aragonite and calcite, Kulmura, N.S. Wales. Microprobe analyses (6).
- CALCITE. Eremenko et al., (*Mineral. Zh.* 7(6), 9-18) (1985) (Russian) Analyses (2) from Kursk magnetic anomaly
- CALCITE. Exley and Jones, *Contrib. Mineral. Petrol.* 83, 288-292 (1983).
Microprobe analyses (5) from kimberlites.
- CALCITE. Fedorov (*Zap. Vses. Mineral. O-va.* 112, 716-723) (1983)(Russ.),
Mineral. Abstr. 36, no. 2, 205 (1985). Rose canals in.
- CALCITE. Fedorov, (*Zap. Vses. Mineral. O-va.* 112, 725-728) (1983), *Chem. Abstr.* 100, no. 10, 71373 (1984). Rose canals in.
- CALCITE. Fein and Walther, (*Geochim. Cosmochim. Acta* 51, 1665-1673) (1987)
Solubility in supercritical CO_2 - H_2O mixtures at 1 and 2 kbar, 240 and 620 deg. C
- CALCITE. Frank, *Schweiz. Mineral. Petrogr. Mitt.* 63, 37-93 (1983)(English).
Microprobe analyses (14) from western Lepantine Alps.
- CALCITE. Gevorkyan and Povarennykh, *Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki*, no. 11, 8-12 (1983)(Ukrainian). Infra-red spectrum.
- CALCITE. Gillet and Madon, *Bull. Mineral.* 105, 590-597 (1982). A dislocation model for the transition aragonite-calcite.

- CALCITE. Gotzinger and Weinke (Tschermarks Mineral. Petrogr. Mitt. 33, 101-119) (1984). Rare earths and other minor elements, Austria.
- CALCITE. Grady, (Shock Waves Condens. Matter Conf. 1983, 113-115) (1984), Chem. Abstr. 101, no. 16, 134314 (1984). Phase transformation under stress-wave loading.
- CALCITE. Heijnen, (N. Jb. Miner. Mh., 357-371) (1985), Mineral. Abstr. 38, 87M/2512 (1987) Morphology of gel-grown
- CALCITE. Hoinkes, Schweiz. Mineral. Petrogr. Mitt. 63, 95-114 (1983)(English). Microprobe analyses (6) from Tyrol.
- CALCITE. Hutcheon et al. (Mineral. Mag. 49, 457-467) (1985). Analyses (51) including minor elements of carbonate cements, Grand Banks of Newfoundland.
- CALCITE. Juhasz (Acta Geol Acad. Sci. Hung. 25, 247-270) (1982) Effect of grinding on chem. reactivity. DTA, dielectric properties.
- CALCITE. Kasyanenko et al., (Mineral. Zh. 5, no. 6, 73-77) (1983), Chem. Abstr. 100, no. 16, 124240 (1984). Infra-red, EPR study of pink calcite.
- CALCITE. Kawachi et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (4) from piemontite schist, W. Otago, New Zealand.
- CALCITE. Kein and Wenk, Contrib. Mineral. Petrol. 83, 231-236 (1983). Deformation.
- CALCITE. Kondo and Ahrens, (Phys. Chem. Miner. 9, 173-181 (1983)) Chem. Abstr. 98, no. 22, 182720 (1983). Shock-induced thermal radiation.
- CALCITE. Kronenberg et al., (Phys. Chem. Miner. 11, 101-112 (1984). Diffusion of C and O in calcites of different Mn contents.
- CALCITE. Kucha and Wieczorek, Miner. Deposita 19, 208-216 (1984). Microprobe analyses (13) from Navan Pb-Zn deposit, Ireland with up to 0.65% ZnO, 1.90% PbO, 1.03% FeO, 0.66% MnO.
- CALCITE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (4) from carbonatite, Yenisen region
- CALCITE. Madon and Gillet, (Earth Planet. Sci. Lett. 67, 400-414) (1984), Chem. Abstr. 100, no. 24., 195216 (1984). Theory of calcite-aragonite transformation.
- CALCITE. Matsueda et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (4) from skarn, Antarctica.
- CALCITE. McDowell and Paces (Mineral. Mag. 49, 469-479) (1985). Microprobe analyses (11) from Salton Sea geothermal system, Calif.
- CALCITE. Mehta, (Cryst. Res. Technol. 18, no. 1, 47-52 (1983)(English)) Chem. Abstr. 98, no. 14, 117372 (1983). Etch-pit morphology on cleavages.
- CALCITE. Mel'nik et al., (Mineral. Sb. (Lvov) 37, no. 2, 106-109) (1983), Chem. Abstr. 102, no. 6, 48847 (1985). Morphology from kimberlites, Yakutia.
- CALCITE. Meyer, (Jour. Crystal Growth 66, 639-646) (1984), Mineral. Abstr. 38, 87M/2510 (1987) Effect of impurities on growth of crystals
- CALCITE. Millero et al. (Geochim. Cosmochim. Acta 48, 1141-1143) (1984). Solubility in NaCl solutions at 25 degrees.
- CALCITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (2) from manganiferous cherts, Alps
- CALCITE. Mucci and Morse, (Geochim. Cosmochim. Acta 47, 217-233 (1983)) Chem. Abstr. 98, no. 16, 129410 (1983). Incorporation of Mg and Sr into crystals from sea water.
- CALCITE. Mucci and Morse, Geochim. Cosmochim. Acta 48, 815-822 (1984). Solubility in sea water, 25 degrees C, 1 atm. with varying Mg concentration.
- CALCITE. Nechijorhrko and Bondarev, (Zap. Vses. Mineral. O-va. 112, 731-738) (1983), Chem. Abstr. 100, no. 10, 71375 (1984). Conditions of formation.

- CALCITE. Nikolskaya, (Zap. Vses. Miner. O-va 116, 72-77) (1987) (Russian)
Optical spectra of iceland spar
- CALCITE. Phillips and Brown, (Can. Mineral. 25, 265-273) (1987) Microprobe and
(1) from Kalgoorlie deposit
- CALCITE. Pingitore and Eastman, Geochim. Cosmochim. Acta 50, 2195-2203)
(1986), Mineral. Abstr. 38, 87M/2513 (1987) Coprecipitation of Sr with at 25
deg. C, 1 atm
- CALCITE. Pingitore and Eastman (Chem. Geol. 45, 113-120) (1984). Chem. Abstr.
101, no. 12, 94666 (1984). Partitioning of Ba in calcite from solution at 25
degrees.
- CALCITE. Powell et al. (J. Metamorph. Geol. 2, 33-41) (1984), Chem. Abstr.
101, no. 20, 174812 (1984). Effect of Fe content on calcite-dolomite
geothermometer.
- CALCITE. Ramenskaya (Dokl. Akad. Nauk SSSR 280, 991-994) (1985). Minor
elements in Iceland spar, Siberian Platform.
- CALCITE. Rusunov, (Gold and silver deposits, "Nauka", Moscow, 59-69) (1986)
(Russian) 431 M 565 Microprobe analyses (13) from ore deposits
- CALCITE. Sass et al., (Am. J. Sci. 283, 218-229 (1983)) Chem. Abstr. 98, no.
14, 114594 (1983). Solubility products of calcite and aragonite in H₂O and
CaCl₂ solutions.
- CALCITE. Schaftenaar and Carlson, (J. Geophys. Res. 89B, 503-510) (1984),
Chem. Abstr. 100, no. 24, 195205 (1984). Calcite fabric in deep-sea
carbonates.
- CALCITE. Schiffman et al. (Mineral. Mag. 49, 435-449) (1985). Analyses (5)
from sandstones, Cerro Prieto geothermal system, Baja Calif.
- CALCITE. Schultz-Guttler et al., (Schweiz. Min. Petr. Mitt. 66, 281-294)
(1986) (Eng) Analyses (8) from Buritirama, Brazil - Phase relations in system
CaO-MnO-MgO-K₂O-Al₂O₃-SiO₂-CO₂-H₂O infrared from these
- CALCITE. Senna (Cryst. Res. Technol. 20, 209-217) (1985). Review of
polymorphic transformation.
- CALCITE. Sjöberg and Rickard, (Geochim. Cosmochim. Acta 47, 2281-2286) (1983),
Chem. Abstr. 100, no. 6, 37261 (1984). Rate of solution.
- CALCITE. Sjöberg and Rickard, Geochim. Cosmochim. Acta 48, 485-493 (1984).
Kinetics of dissolution 1-62 degrees C, pH 2.7-8.4.
- CALCITE. Skropyshev, et al., (Geol. Poiski Razved. Nevudn. Polezn. Iskop. 6,
72-77) (1982), Chem. Abstr. 101, no. 6, 41180 (1984). Luminescence
spectra.
- CALCITE. Sobolev et al., (Mineral. Zh. 8(2), 23-31) (1986) (Russian) Microprobe
analyses (2) from kimberlites, Yakutia
- CALCITE. Sverjensky (Geochim. Cosmochim. Acta 48, 1127-1134) (1984).
Calculation of Gibbs free energies at 25 degrees C, 1 bar.
- CALCITE. Thanh and Lacam (Phys. Earth Planet. Inter. 34(3), 195-203)
(1984)(Eng.), Chem. Abstr. 101, no. 16, 134295 (1984). Elasticity under
high pressure at transition at 14 kbar.
- CALCITE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984).
Microprobe analyses (4) from Oka complex, Quebec.
- CALCITE. Trzcieski, et al., Contrib. Mineral. Petrol. 85, 311-320 (1984).
Microprobe analyses (1) from Bathurst, New Brunswick.

- CALCITE. Uspenskaya et al. (Deposited Doc. VINITI, no. 2141-83, 1-8) (1983), Chem. Abstr. 101, no. 14, 114125 (1984). Infra-red spectrum 2-6 microns.
- CALCITE. Votyakov, et al., (Dokl. Akad. Nauk SSSR 275, 167-169) (1984), Chem. Abstr. 101, no. 6, 41197 (1984).
- CALCITE. Walkden and Berry, (Nature (London) 308, 525-527) (1984), Chem. Abstr. 100, no. 26, 213110 (1984). Cathodoluminescence of overgrowths of magnesian calcites.
- CALCITE. Walter and Morse (Geochim. Cosmochim. Acta 48, 1059-1069) (1984). Equil. constants from magnesian calcites ($MgCO_3$, 12 and 18 mole percent) much lower than previously reported.
- CALCITE. Walter and Morse (Geochim. Cosmochim. Acta 49, 1503-1513) (1985). Kinetics of dissolution in sea water, including magnesian.
- CALCITE. Walter and Morse, (Geochim. Cosmochim. Acta 48, 1059-1069) (1984), Chem. Abstr. 101, no. 4, 26271 (1984). Stability relations of magnesian calcite.
- CALCITE. Wenk and McTrigue, (Lawrence Berkeley Lab. Rep. LBL-16031, 347-352) (1983), Chem. Abstr. 100, no. 22, 177956 (1984). Transition aragonite-calcite when heated in vacuum at high voltage and decomposition of calcite to CaO .
- CALZIRTIITE. Ewing et al., (Mater. Res. Soc. Symp. Proc. 6(Sci. Basis Nucl. Waste Manage.), 249-256 (1982)) Chem. Abstr. 98, no. 16, 129379 (1983). Probe analyses, X-ray, transmission electron microscopy.
- CALZIRTIITE. Gardukova and Dubinchuk, Mineralogy of Ore Deposits, 138-142 (1983)(Russian) (410M662). X-ray data.
- CALZIRTIITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- CAMERONITE. Mineral. Abstr. 38, 87M/3186 (1987) Abstract of original description
- CANCRINITE. Bennington and Brown (U.S. Bur. Mines Rept. Invest., 8778, 1-7) (1983), Mineral. Abstr. 35, 46 (1984). Enthalpy of formation of Na-cancrinite.
- CANCRINITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerge complex, Greenland.
- CANCRINITE. Donaldson et al., (Neues Jahrbuch Miner. Abh. 156, 247-279) (1987) (Eng) Microprobe analyses (1) from silicate lavas, Oldoinyo Lengai, Tanzania
- CANCRINITE. Ivanov et al., (Gem Miner. (Proc. XI Gen. Mtg. IMA, Novosibirsk), 97-104 (1980)) Mineral. Abstr. 34, 42 (1983). Analysis of triclinic lazurite from USSR, a 2.56, b 12.85, c 10.69A, optics.
- CANCRINITE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (10) and trace elements. Laacher See, Germany.
- CANFIELDITE. Grozdev, et al., Tikho-oceanisk. Geol., no.5, 113-116 (1982)(Russian) (G(690.2)T448). Analyses (2) from Maritime Prov. USSR.
- CANFIELDITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- CANFIELDITE. Soeda et al. (Neues Jahrb. Mineral., Abh. 150, 11-23) (1984)(Eng.). Microprobe analyses (8) from Tsumo, Japan, Te 8.69-20.46 percent. X-ray data, reflectances.

- CANNIZZARITE. Mozgova et al. (Zap. Vses. Mineral. O-va. 113, 657-672) (1984) (Russ), Chem. Abstr. 102, no. 10, 81860 (1985). Analyses of 3 samples gave $Pb_4Bi_6S_{13}$, $Pb_8Bi_{10}S_{23}$, $Pb_{16}Bi_{18}S_{43}$. X-ray data; ore is Orth, a 20.70, b 4.16A.
- CANNIZZARITE. Mozgova et al., (Rend. Soc. Ital. Mineral. Petrol 40, 277-283) (1985) (Eng) Microprobe analyses (8) from Vulcano, Italy X-ray data Se 5.25%
- CAPPELENITE. Shen and Moore, Am. Mineral. 69, 190-195 (1984). Structure. Trig., P3, a 10.67, c 4.680 A, Z=1 $(Ba(Y,RE))_6Si_3B_6O_{24}F_2$.
- CARATIITE. Clark et al., Abstract in Mineral. Abstr. 36, 92 (1985). Abstract of original description.
- CARATIITE. Clark, et al., Mineral. Mag. 48, 537-539 (1984). New mineral from Vesuvius, $K_4Cu_4O_2(SO_4)_4(Na,Cu)Cl$, Tetrag., I4, a 13.60, c 4.98 A, Z=2. Analysis, optics, G 3.0, x-ray data.
- CARATIITE. Effenberger and Zemann, Mineral. Mag. 48, 541-546 (1984). Structure.
- CARBOIRITE. Abstract in Am. Mineral. 69, 406 (1984). Abstract of original description.
- CARLOSTURANITE. Compagnoni et al. (Am. Mineral. 70, 767-772) (1985). New mineral, $(Mg,Fe^{+2},Ti)_{21}(Si,Al)_{12}O_{28}(OH)_{34}H_2O$. Mon., Cm, a 36.70, b 9.41, c 7.291 A, beta 101.1 degrees, Z=2. Light brown, asbestiform, from Piedmont, Italy. Microprobe analysis (av. of 15). X-ray powder data, infra-red.
- CARLOSTURANITE. Mellini et al. (Am. Mineral. 70, 773-781) (1985). TEM study, showing it belongs to a polysomatic series that includes serpentine.
- CARNOTITE. Zhil'tsova et al., (Litol. Polezn. Iskop, no. 6, 49-60 (1982)) Chem. Abstr. 98, no. 12, 92849 (1983). Synthesis from solution. Calculation of free energy of formation and conditions of stability.
- CARPHOLITE. Loeffler and Schwab, (Z. Geol. Wiss. 9, 519-539 (1981)) Chem. Abstr. 98, no. 12, 92814 (1983). Analyses from Harz Mts., a 13.747, b 20.154, c 5.117A. X-ray and infra-red data.
- CARPHOLITE. Skarpelis (Praket. Akad. Athenon 56, 361-368) (1981). (Published 1982). Chem. Abstr. 101, no. 12, 94691 (1984). Analysis (not in abstr.) from Taygetos, Greece, with Mg-carpholite predominant in one, Fe-carpholite in another.
- CARROLLITE. Annels et al., Miner. Deposita 18, 71-88 (1983)(English). Microprobe analyses (22) from copperbelt, Zambia.
- CARROLLITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- CARROLLITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (4) from Nord mine, Sweden.
- CARROLLITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- CARROLLITE. Sovatzoglou-Skownakis, Chem. Erde 43, 247-254 (1984)(English). Microprobe analyses (6), Othris, Greece.
- CARROLLITE. Strasimirov (Spisanie Balgarskoto Geol. Druzh. [Sofia] 43, 117-127) (1982), Chem. Abstr. 98, no. 16, 129369 (1983). Mineral. Abstr. 35, 83 (1984). Microprobe analyses from Medet Cu-Mo deposit.

- CARROLLITE. Todorov and Laputina, (Geokhim., Mineral., Petrol. B, 27-36) (1980), Mineralog. Abstr. 34, 473 (1983). Analysis from Bulgaria.
- CARROLLITE. Yamaoki, et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 441-448 (1983) (Japanese). Microprobe analyses (5) from Abata Pref., Japan. X-ray data.
- CARROLLITE. Yarenskaya et al., (Izv. Akad. Nauk Kaz. SSR, Ser. Geol., no. 4, 35-39 (1982)) Chem. Abstr. 98, no. 4, 19576 (1983). Analysis, optics from Katpar, Kazakhstan, Ni 4.8%.
- CASCANDITE. Mellini et al., (Am. Mineral. 67, 599-603 (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- CASSITERITE. Amichba, (Mineral. Rudn. Mestorozhd., 127-135) (1983), Chem. Abstr. 100, no. 16, 124301 (1984). Trace elements and unit cells in placers, N.E. Yakutia. (Russian) (410M662). Minor elements (Ta, Nb, Sc, In, Zr, Hf, Ga) from 20 placer deposits. Microhardness, unit cells.
- CASSITERITE. Calas and Cottrant, (Bull. Mineral. 105, 598-605 (1982) (French)) Chem. Abstr. 98, no. 20, 164046 (1982). EPR spectra of Fe in.
- CASSITERITE. Deng et al., (Yankuang Ceshi 1, no. 3, 31-36 (1982)) Chem. Abstr. 98, no. 18, 146740 (1983). Analysis from granite, Guonsi, China, gives (Sn 0.48 Fe 0.28 Al 0.17 Si 0.11 P 0.05 As 0.01) . 3H₂O. X-ray pattern, G 3.21-3.36. When heated, tetragonal, a 4.6671, c 3.0959A of varlamoffite.
- CASSITERITE. Eadington, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 335-345) (1983), Chem. Abstr. 100, no. 12, 88942 (1984). Calculated solubilities in high-temp. hydrothermal solutions.
- CASSITERITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- CASSITERITE. Gulyaeva, Tikhookean. Okeanol. Inst., no. 5, 110-) (1982) (Russian) G(690.2)T448. Analyses (2) from Belogorsh deposit, Maritime Prov.
- CASSITERITE. Hirose and Furuya, (Sci. Bull. Fac. Educ. Nagasaki Univ. 32, 21-36) (1981), Mineralog. Abstr. 34, 421 (1983). Growth of single crystals from vapor.
- CASSITERITE. Izoret et al. (Can. Mineral. 23, 221-231) (1985). Microprobe analyses (51) from Galicia, Spain, including analyses for Ta and Nb.
- CASSITERITE. Jackson and Helgeson (Econ. Geol. 80, 1365-1378) (1980). Summary of selected thermodynamic data.
- CASSITERITE. Kinnaird (J. African Earth Sci. 3, 229-251) (1985). Analysis (1) from ring complexes, Nigeria.
- CASSITERITE. Krasnozhdina and Samchuk, (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 3, 25-27 (1983)) Chem. Abstr. 98, no. 22, 182712 (1983). Analyses from Pamirs.
- CASSITERITE. Makagonov (Miner. Paragenesis Miner. Mestorozhd. Ura, 3-10) (1983), Chem. Abstr. 102, no. 24, 206682 (1985). Rotational twins.
- CASSITERITE. Moller and Dulski (Chem. Geol. 40(1-2)) (1983), Mineral. Abstr. 35, 82 (1984). Zr and Hf in many samples.
- CASSITERITE. Moroz, et al., (Mineral. Rudn. Mestorozhd., 115-121) (1983), Chem. Abstr. 100, no. 16, 124244 (1984). Effect of heating on unit cell parameters.
- CASSITERITE. Nechaev et al., (Mineral. Zh. 7, 47-61) (1985) (Russian) Analyses (7) from Ukraine

- CASSITERITE. Osipova et al., (Dokl. Akad. Nauk SSSR 278, 197-199) (1984)(Russian), Chem. Abstr. 102, no. 2, 9852 (1984). Microprobe analyses (not in abstr.).
- CASSITERITE. Shimada et al. (Yogyo Kyokaishi 92(8), 439-443) (1984)(Jpn.), Chem. Abstr. 101, no. 14, 120696 (1984). Synthesis by flux.
- CASSITERITE. Spiridonov and Badalov, Dokl. Akad. Nauk SSSR 274, 407-409 (1984). Analyses from Kairagech, Uzbekistan with up to 5.35% V.
- CASSITERITE. Suchsevskaya et al. (Geokhimiia, 515-526) (1984), Chem. Abstr. 100, no. 26, 213140 (1984). Composition of fluid inclusions in.
- CASSITERITE. Sugaki et al., Sci. Rep. Tohoku Univ., Ser. 3: Mineral., Petrol. Econ. Geol., 15, 65-77 (1981)(English). Chem. Abstr. 98, no. 20, 164103 (1983). Microprobe analyses (67) from Boliva. X-ray data, a 4.7336, c 3.1837A.
- CASSITERITE. Taylor (Brit. Ceram. Trans. J. 83, 32-37) (1984). Thermal expansion.
- CASSITERITE. Wise and Cerny, Am. Mineral. 69, 807-809 (1984). Microprobe analyses (1) from Powhatan Co., Va.
- CASWELLSILVERITE. Grossman et al. (Geochim. Cosmochim. Acta 49, 1781-1795) (1985). Microprobe analysis (1) from Qingzhen chondrite.
- CASWELLSILVERITE. Okada and Keil, Meteoritics 16, 370-371 (1981). New mineral, NaCr_2S_2 , from Norton County achondrite. Analysis, X-ray data.
- CATAPLEIITE. Bollingberg et al., Tschermarks Mineral. Petrogr. Mitt. 32, 153-169 (1983)(English). Analyses (2) from Langesund, Norway, optics, trace elements.
- CATAPLEIITE. Ilyushin et al., (Dokl. Akad. Nauk SSSR 260, 623-627 (1981)) Mineral. Abstr. 34, 15 (1983). Structure of monoclinic, $\text{Na}_2\text{ZrSi}_3\text{O}_9 \cdot 2\text{H}_2\text{O}$. Space group B2/b, a 23.917, b 20.148, c 7.432A, beta 147.46°, Z=8.
- CATTIERITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- CATTIERITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (1) from Nord mine, Sweden.
- CEBAITE. Li and Fan, (Wuli Xuebao 31, 1206-1214 (1982)(Chinese)) Chem. Abstr. 98, no. 8, 57245 (1983). Electron diffraction study. Monoclinic, C2/m, Cm, or C2, a 21.2, b 5.06, c 13.1A, beta 95°.
- CELSIAN. Viswanathan and Kielhorn, Am. Mineral. 68, 112-121 (1983). Analyses and lattice constants in the series celsian-hyalophane-orthoclase.
- CERIANITE. Tani et al., (J. Mater. Sci. Lett. 1, 461-462 (1982)(English)) Chem. Abstr. 98, no. 2, 10036 (1983). Hydrothermal crystallization.
- CESANITE. Tazzoli, Mineral. Mag. 47, 59-63 (1983). Structure. Hex, P6(3)/m, a 9.446, c 6.895A, formula $\text{Ca}_{1+x}\text{Na}_{4-x}(\text{SO}_4)_3(\text{OH})_x \cdot (1-x)\text{H}_2\text{O}$, related to Apatite group.
- CHABAZITE. Noack, Mineral. Mag. 47, 47-50 (1983). Analyses (3) from Mururoa, S. Pacific.
- CHALCOPYRITE. Barashkov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 86-105 (1981). Analyses (5) of inclusions in olivine of kimberlites.
- CHALCOPYRITE. Bulanova et al., (Zap. Vses. Mineral. O-va. 111, 557-562 (1982)(Russian)) Chem. Abstr. 98, no. 4, 19596 (1983). Microprobe analysis of inclusion in diamond.

- CHALCOPYRITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1980)) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various wave lengths. Analyses.
- CHALCOPYRITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (2) from mafic rocks, East Alps.
- CHALLANTITE. Schmetzer and Medenbach, (Neues Jahrb. Mineral., Monatsh., no. 4, 158-162 (1983)) Chem. Abstr. 98, no. 24, 201482 (1983). Occurrence at Cache Creek, Brit. Columbia. Optics.
- CHEVKINITE. Zhabin, (Mineral. Issled. Il'menskom Zapov., 33-34 (1981)) Chem. Abstr. 98, no. 18, 146717 (1983). Analysis of rare earths from Il'men Mts., ThO_2 24.2%.
- CHIAVENNITE. Bondi et al., Am. Mineral. 68, 623-627 (1983). New mineral, $\text{Ca Mn Be}_2 \text{Si}_5 \text{O}_{13} (\text{OH})_2 \cdot 2\text{H}_2\text{O}$, from Italy. Analysis, optics, X-ray data. Orth., $P2(1)ab$, a 8.729, b 31.326, c 4.903A, Z=4, G 2.64. DTA, infra-red.
- CHIAVENNITE. Raade et al., Am. Mineral. 68, 628-633 (1983). Analysis from Oslo region, Norway. Orth., a 8.866, b 31.34, c 4.787A, Z=4, G 2.56, X-ray, optics.
- CHLORITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (5) from Werner Bjerge complex, Greenland.
- CHLORITE. Brown and Ghent, Am. Mineral. 68, 365-372 (1983). Microprobe analyses (1) from blueschist, N. Calif.
- CHLORITE. Bucher-Nurminen, J. Petrol. 23, 325-343 (1982). Microprobe analyses (3), E. Greenland.
- CHLORITE. Devaraju et al., (J. Geol. Soc. India 24, 262-265 (1983)) Chem. Abstr. 98, no. 26, 219143 (1983). Analysis of sheridanite, Karnataka, India.
- CHLORITE. Herbert, Geotekton. Forsch. no. 65, 1-77 (1983). Microprobe analyses (14) from crystalline rocks, Ecuador.
- CHLORITE. Jiang et al., (Yanguang Ceshi 1, no. 1, 36-43 (1982)(Chinese)) Chem. Abstr. 98, no. 10, 75504 (1983). Regularly interstratified septechlorite-antigorite, Sichuan Province, China.
- CHLORITE. Joswig et al., (Porodoobrazuyushchie Miner. (Rock-forming Minerals), Mater. S'ezda MMA, 11th, 159-168 (1978)(Pub. 1981)(English)) Chem. Abstr. 98, no. 26, 219117 (1983). Neutron diffraction study of penninite. Triclinic, a 5.3266, b 9.232, c 14.399A, beta 97.16°.
- CHLORITE. Mposkos and Perdikatsis, (Neues Jahrb. Mineral., Monatsh., 361-372 (1982)) Mineral. Abstr. 34, 169 (1983). Microprobe analyses (10) of ripidolites and chamosites with K_2O 1.29-3.49%.
- CHLORITE. Nakajima, Lithos 15, 267-280 (1982). Microprobe analyses (5) from Shikoku, Japan.
- CHLORITE. Parneix and Meunier, Bull. Mineral. 105, 662-672 (1982). Microprobe analyses (11). Replacement by vermiculite.
- CHLORITE. Pe-Piper, Lithos 16, 23-33 (1983). Microprobe analyses (2) from western Greece.
- CHLORITE. Petrov, (Mineral. Kriter. Kompleksn. Otsenki Miner. Syr'ya Kol'sk. Poluoostrova, 96-105 (1982)) Chem. Abstr. 98, no. 26, 219090 (1983). Analyses, optics; unit cells from Kola (no data in abstr.).

- CHLORITE. Popov, Mineralogicheskii Issledovaniia Gidrotermal'nykh Urala (Mineral. Stud. Hydrotherm. Urals), 61-70 (1980). Analyses (3) from Badzhala, Urals.
- CHLORITE. Samsonova et al., (Dokl. Akad. Nauk SSSR 266, 1458-1462 (1982)) Chem. Abstr. 98, no. 8, 57264 (1983). Analysis (not in abstr.) of zincian chlorite from Kvaisi Pb-Zn deposit. Optics, X-ray, a 5.37, b 9.27, c 14.41A, beta 97.33°.
- CHLORITE. Shirozu and Ishida, (Mineral. J. 11, 161-171 (1982)(English)) Chem. Abstr. 98, no. 20, 164086 (1983). Infra-red study.
- CHLORITE. Spear, J. Petrol. 23, 383-426 (1982). Microprobe analyses (12), Mt. Cube quadrangle, Vermont.
- CHLORITE. Suwa, Rep. African Stud., Nagoya Univ., 6, 15-32 (1981)(English). Two analyses from W. Kenya.
- CHLORITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (2) from mafic rocks, East Alps.
- CHLORITE. Yakhontova and Rasskazov, (Mineral. Sb. 34, no. 2, 82-85 (1980)) Mineral. Abstr. 34, 169 (1983). Analyses (not in abstract.), X-ray, DTA from K deposits, Starobin area.
- CHLORITOID. Grambling, Am. Mineral. 68, 373-388 (1983). Microprobe analyses (26), Northern N. Mex. Fe-Mg partitioning.
- CHLORMAGALUMINITE. Kashaev et al., (Zap. Vses. Mineral. O-va. 111, 121-127 (1982)) Mineral. Abstr. 34, 183 (1983). Abstract of original description.
- CHROMITE. Bagdasarov et al., (Zap. Vses. Mineral. O-va. 108, 524-535 (1979)) Mineral. Abstr. 34, 177 (1983). Analyses (not in abstr.) from ultramafic rocks.
- CHROMITE. Barashkov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 86-105 (1981). Analyses (4) of inclusions in olivine of kimberlites.
- CHROMITE. Eales et al., (Trans. Geol. Soc. S. Africa 83, 243-253 (1980)) Mineral. Abstr. 34, 176 (1983). Probe analyses from Karoo province show complete series from chromite to titanomagnetite.
- CHROMITE. Ehrenberg, J. Petrol. 23, 507-547 (1982). Microprobe analyses (8) from Navajo volcanic field.
- CHROMITE. Foden, J. Petrol. 24, 98-130 (1983). Microprobe analyses (2) from Rindjani Volcano, Indonesia.
- CHROMITE. Fredriksson, Meteoritics 17, 141-144 (1982). Av. composition in Manegaon meteorite.
- CHROMITE. Friedrich, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 240-250 (1982). Microprobe analyses (28) from Philippines. Average compositions from 6 types of rocks.
- CHROMITE. Genov et al., (God. Sofii. Univ. "Kliment Okhridski," Biol. Fak., 72, 199-204 (1979-1980)(Pub. 1982)) Chem. Abstr. 98, no. 20, 164083 (1983). Mossbauer study.
- CHROMITE. Guner, (Bull. Miner. Res. Explor. Inst. Turk. 92, 75-80 (1981)(English)) Chem. Abstr. 98, no. 22, 182752 (1983). Microprobe analyses, reflectance, hardness, Kure dist., Turkey.
- CHROMITE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 101-110 (1981)(English). Electron probe analyses (3) from peridotite, Kenya.
- CHROMITE. Maaloe and Hansen, Contrib. Mineral. Petrol. 81, 203-211 (1982). Analyses (5) from Hawaiian tholeiites.
- CHROMITE. Murthy and Gopalakrishna, (Proc. - Indian Acad. Sci., [Ser.]: Earth Planet. Sci., 91, 159-166 (1982)) Chem. Abstr. 98, no. 6, 37808 (1983). Remanance hysteresis properties from India.

- CHROMITE. Panagos et al., Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 371-373 (1982). Gold in 15 Greek chromites = 0.40 to 10.80 ppb.
- CHROMITE. Papunen and Idman; Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 374-386 (1982). Microprobe analyses (24) from northern Finland.
- CHROMITE. Pasteris, Can. Mineral. 21, 41-58 (1983). Microprobe analyses (3) from De Beers kimberlite, S. Africa.
- CHROMITE. Petric and Jacob, (J. Am. Ceram. Soc. 65, 117-123 (1982)) Mineral. Abstr. 34, 35 (1983). Free energy of mixing in system magnetite-chromite.
- CHROMITE. Price et al., Can. Mineral. 21, 29-35 (1983). Microprobe analyses from Peace River meteorite, Alberta.
- CHROMITE. Qi et al., (Changchun Dizhi Xueyuan Xuebao, no. 4, 1-12 (1982)(Chinese)) Chem. Abstr. 98, no. 16, 129453 (1983). Alteration of chromites from China.
- CHROMITE. Saager et al., Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 38-56 (1982). Microprobe analyses of 4 chromites (zoned) from Witwatersrand.
- CHROMITE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (2) from kimbaitite, Greenland.
- CHROMITE. Shee et al., Contrib. Mineral. Petrol. 81, 79-87 (1982). Microprobe analyses (2) from peridotite, Finsch, S. Africa.
- CHROMITE. Takla, Neues Jahrb. Mineral., Abh., 144, 56-72 (1982)(English). Microprobe analyses (20) from Bergen Arc, Norway.
- CHROMITE. Urusov and Karabtsov, (Mineral. Zh. 5, no. 1, 3-16 (1983)) Chem. Abstr. 98, no. 22, 182728 (1983). Stability in system Mg-Fe⁺²-Al-Fe-O, synth.
- CHROMITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (4) from mafic rocks, East Alps.
- CHROMITE. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 4, 20, 135-143 (1983)(English). Microprobe analyses (10) from basalts, Oshima-Oshima Volcano, Japan.
- CHROMIUM. Yusupov et al., (Izv. Akad. Nauk Kirg. SSR, no. 5, 24-25 (1982)) Chem. Abstr. 98, no. 14, 110815 (1983). Analysis from Gavasai ore, G 7.17.
- CHRYSOBERYL. Godovikov et al., Geol. Geofiz., no. 12, 42-54 (1982)(Russian). Review of synthesis and growth of alexandrite.
- CHRYSOBERYL. Kupriyanova, (Dokl. Akad. Nauk SSSR 266, 714-718 (1982)) Chem. Abstr. 98, no. 4, 19593 (1983). Stability in system K₂O - Al₂O₃ - SiO₂ - BeO - H₂O - HF calcd.
- CHRYSOBERYL. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- CHRYSOBERYL. Tikhonenkova, (Dokl. Akad. Nauk SSSR 226, 1236-1239 (1982)) Chem. Abstr. 98, no. 6, 37811 (1983). Analysis from Khibina massif, optics, G 3.63.
- CHRYSOTILE. Buettner and Saager, (Tscherma's Mineral. Petrogr. Mitt. 30, 177-187 (1982)(English)) Chem. Abstr. 98, no. 4, 19618 (1983). X-ray determination of chrysotile and lizardite in serpentinites.
- CHRYSOTILE. Shlyapkina, (Deposited Doc. SPSTL 829 Khp-D81, 51-59 (1981)) Chem. Abstr. 98, no. 8, 57252 (1983). DTA and TGA data.
- CHRYSOTILE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (5) from mafic rocks, East Alps.

- CHURCHITE. Podporina et al., (Dokl. Akad. Nauk SSSR 268, 195-198 (1983)) Chem. Abstr. 98, no. 22, 182701 (1983). Analysis of churchite with high Nd, Kazakhstan. Optics, X-ray; DTA.
- CINNABAR. Efremova et al., (Vses. Soveshch. Ehip. Tekh. Mineral. Petrog., [Mater.], 10th, 31-40 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201506 (1983). Hydrothermal synthesis from H₂S solutions.
- CLARITE. Walenta and Dunn, (Chem. Erde 41, no. 2, 97-102 (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- CLINOCHALCOMENITE. Luo et al., (Kexue Tongbao 28, 47-49 (1983)(Chinese)) Chem. Abstr. 98, no. 26, 219044 (1983). Structure. Monoclinic, Ccl.
- CLINOCLASE. Ridkosil, (Acta Univ. Carol., Geol., no. 1, 45-52 (1981)) Chem. Abstr. 98, no. 22, 182706 (1983). Crystals from Novoveska Huta, Slovakia. Analysis, a 7.245, b 6.453, c 12.385A, beta 99.55°, G 4.378, X-ray, infra-red data.
- CLINOPTILOLITE. Pechar and Rykl, (Geol. Zb. (Bratislava) 33, 211-218 (1982)(German)) Chem. Abstr. 98, no. 10, 75565 (1983). X-ray, DTA, infra-red, unit cells at 20-500°, 550°, 730°.
- CLINOPTILOLITE. Val'ter et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 135-145 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201509 (1983). Thermal stability.
- CLINOSAFFLORITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (2) from Nord mine, Sweden. Hardness, X-ray data.
- CLINOZOISITE. Reddy and Sarma, (Acta Phys. Acad. Sci. Hung. 52, 117-122 (1982)(English)) Chem. Abstr. 98, no. 20, 164135 (1983). ESR and optical spectra of Mn²⁺ in dolomite.
- COBALT PENTLANDITE. Scounakis et al., (Neues Jahrb. Mineral., Monatsh., 169-174 (1982)(English)) Mineral. Abstr. 34, 71 (1983). Probe analysis from Pindos, Greece.
- COBALTITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (1) from Nord mine, Sweden. Hardness.
- COBALTITE. Vokes and Strand, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 118-130 (1982). Microprobe analyses (6) of cobaltite-gersdorffite series from Raipas mine, Norway.
- COBALTITE. Volokhonskii, (Mineral. Kriter. Kompleksn. Otsenki Miner. Syr'ya Kol'sk. Poluostrova, 29-40 (1982)) Chem. Abstr. 98, no. 26, 219087 (1983). Analyses (not in abstr.) from Kola Peninsula.
- COESITE. Kieffer, (Rev. Geophys. Space Phys. 20, 827-849 (1982)) Chem. Abstr. 98, no. 4, 19591 (1983). Calculations of thermodynamic properties, application to phase equil.
- COLEMANITE. Semenov et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 96-102 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201507 (1983). Heat capacity and entropy.
- COLUMBITE. Zhabin et al., (Mineral. Issled. Il'menskom Zapov., 32 (1981)) Chem. Abstr. 98, no. 18, 146716 (1983). Analysis from Il'men Mts.
- COMBEITE. Fischer and Tillmanns, (Neues Jahrb. Mineral., Monatsh., no. 2, 49-59 (1983)) Chem. Abstr. 98, no. 14, 110808 (1983). Structure. Trigonal, R3m, a 10.4292, b 13.149A. Also a dimorph from Eifel, Germany.
- COOKEITE. Shirozu and Ishida, (Mineral. J. 11, 161-171 (1982)(English)) Chem. Abstr. 98, no. 20, 164086 (1983). Infra-red study.
- COPPER. Gorshkov et al., (Nov. Dannye Miner. 30, 186-188 (1982)) Chem. Abstr. 98, no. 26, 219076 (1983). Occurrence with haggite and a V silicate.
- CORDIERITE. Armbruster et al., Contrib. Mineral. Petrol. 81, 262-267 (1982). Analysis from Norway with CO₂ 2.2%. Optics, unit cell.

- CORDIERITE. Gilev and Shakhaliyeva, (Dokl. Akad. Nauk Tadzh. SSR 25, 475-479 (1982)) Chem. Abstr. 98, no. 22, 182734 (1983). Analyses (20) (not in abstr.), central Pamirs. Optics.
- CORDIERITE. Haslam, Mineral. Mag. 47, 238-240 (1983). Analyses (3) of an isotropic alteration product of cordierite.
- CORDIERITE. Kitamura and Hiroi, (Contrib. Mineral. Petrol. 80, 110-116 (1982)) Mineral. Abstr. 34, 166 (1983). Analysis (not in abstr.) from Japan.
- CORDIERITE. Lepezin et al., (Dokl. Akad. Nauk SSSR 268, 1218-1222 (1983)) Chem. Abstr. 98, no. 26, 219101 (1983). Analysis. Diffusion coefficients of water in.
- CORDIERITE. Putnis and Bish, Am. Mineral. 68, 60-65 (1983). Al,Si ordering in Mg-cordierite.
- CORDIERITE. Reinecke et al., Neues Jahrb. Mineral., Abh., 145, 157-182 (1982)(English). Microprobe analyses (2), Anafi, Greece.
- CORDIERITE. Sheraton et al., BMR J. Aust. Geol. Geophys. 7, 269-273 (1982). Microprobe analyses (1) from granulites, Antarctica.
- CORDIERITE. Spear, J. Petrol. 23, 383-426 (1982). Microprobe analyses (4), Mt. Cube quadrangle, Vermont.
- CORDIERITE. Stephenson and Hensel, Lithos 15, 59-75 (1982)(English). Microprobe analyses (1), NS Wales, Australia.
- CORUNDUM. Cadoz et al., (Acta Metall. 30, 2205-2218 (1982)(English)) Chem. Abstr. 98, no. 4, 25726 (1983). Work hardening in sapphire undergoing deformation.
- CORUNDUM. Exley et al., Am. Mineral. 68, 512-516 (1983). Microprobe analyses (5) from kimberlite, S. Africa.
- CORUNDUM. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral. Abstr. 34, 216 (1983). Thermal expansion (sapphire).
- CORUNDUM. Kuskov et al., (Geokhimiia, no. 11, 1587-1597 (1982)) Chem. Abstr. 98, no. 6, 37820 (1983). Derivation of equation of state at high T and P.
- CORUNDUM. Reddy and Moorthy (Pramana 19, 449-454 (1982)) Chem. Abstr. 98, no. 22, 182707 (1983). Optical absorption spectrum of Cr³⁺ in ruby.
- CORUNDUM. Topor and Tsoi, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 4, 45-50 (1982)) Chem. Abstr. 98, no. 6, 37780 (1983). Kinetic constants and activation energy for solution in lead borate melt at 700-900°.
- COSALITE. Stoinova and Begizov, (Izv. Vyssh. Uchebn. Zaved., Geol. Razved., 25, no. 10, 69-74 (1982)) Chem. Abstr. 98, no. 10, 75501 (1983). Analysis, X-ray, optics from northern Rhodopes, Bulgaria.
- COULSONITE. Petric and Jacob, (J. Am. Ceram. Soc. 65, 117-123 (1982)) Mineral. Abstr. 34, 35 (1983). Free energy of mixing in system magnetite-coulsonite.
- COVELLITE. Vorob'ev, (Dokl. Akad. Nauk SSSR 268, 185-189 (1983)) Chem. Abstr. 98, no. 18, 146710 (1983). Kinetics of the reaction Cu + S = CuS, a 3.784, c 16.30A.
- COYOTEITE. Erd and Czamanske, Am. Mineral. 68, 245-254 (1983). New mineral, NaFe₃S₅ · 2H₂O, from Coyote Peak, Cal., tric., a 7.409, b 9.881, c 6.441, alpha 100°25', beta 104°37', gamma 81°29', Z=2, G 2.879. Analysis, X-ray data.
- CRANDALLITE. Gilkes and Palmer, Mineral. Mag. 47, 221-227 (1983). Synthesis of series crandallite-goyazite. Variation of unit cell.
- CREEDITE. Giuseppetti and Tadini, (Neues Jahrb. Mineral., Monatsh., no. 2, 69-78 (1983)(English)) Chem. Abstr. 98, no. 10, 75562 (1983). Structure. Monoclinic, C2/c, a 13.936, b 8.606, c 9.985A, beta 94.39°.
- CRICHTONITE. Haggerty et al., Am. Mineral. 68, 494-505 (1983). Analysis from kimberlite, S. Africa.

- CRISTOBALITE. Richet et al., (Geochim. Cosmochim. Acta 46, 2639-2658 (1982)) Chem. Abstr. 98, no. 10, 75560 (1983). Calorimetry 1000-1800 K. Enthalpies.
- CRISTOBALITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum 50, 233-236 (1982). Occurrence of low-cristobalite, Weitendorf, Styria. X-ray data.
- CRONSTEDTITE. Coey et al., (J. Appl. Phys. 53(11, Pt. 2), 8320-8325 (1982)(English)) Chem. Abstr. 98, no. 4, 19623 (1983). Magnetic properties, Mossbauer, and neutron diffraction.
- CRONSTEDTITE. Geiger et al., (Clays Clay Miner. 31, 97-108 (1983)) Chem. Abstr. 98, no. 22, 182708 (1983). Structure of cronstedtite-2H₂ polytype.
- CUBANITE. Levesque, Mineral. Rec. 14, 151-155 (1983). Microprobe analysis from Chibougamau, Quebec. X-ray data.
- CUMENGEITE. Dean et al., Mineral. Mag. 47, 235-236 (1983). Occurrence in Cornwall. Partial analysis.
- CUPROBISMUTITE. Sugaki et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 100-109 (1980)) Mineral. Abstr. 34, 136 (1983). Stability in system Cu-Bi-S. Composition Cu₉ Bi₁₁ S₂₁.
- CUPROSTIBITE. Halenius and Alinder, Neues Jahrb. Mineral., Monatsh., no. 5, 201-215 (1982)(English). Microprobe analyses (av. of 31) from Langsban, Sweden.
- CUSPIDINE. Saduakasov, (Deposited Doc. VINITI 686-82, 1-20 (1982)(Russian)) Chem. Abstr. 98, no. 20, 171808 (1983). Analysis of thermal stability.
- DACHIARDITE. Nishido and Otsuka (Mineral. J. Japan 10(8), 371-384) (1981)(Eng.), Mineral. Abstr. 36, 85 (1985). Analyses, optics, from Japan. No data in abstr.
- DACHIARDITE. Sanders (Zeolites 5, 81-90) (1985). Chem. Abstr. 102, no. 24, 212918 (1985). Electron diffraction study of faults in.
- DACHIARDITE. Vezzalini (Z. Krist. 166, 63-71) (1984), Mineral. Abstr. 36, 17 (1985). (English), Chem. Abstr. 101, no. 4, 26264 (1984). Refinement of structure. Monoclinic, C2/m, a 18.676, b 7.518, c 10.246A, beta 107.87 degrees, Z=1. Acentric domains in.
- DADSONITE. Makovicky and Munime, Abstr. in Acta Crystallogr., Sect. A, A40, C246 (1984). Structure. Triclinic, P1 or PI, a 17.33, b 4.11, c 19.05A, alpha 90 degrees, beta 96.3 degrees, gamma 90.4 degrees, formula Pb_{10+x}Sb_{14-x}S_{31-x}Cl_x.
- DALYITE. Lazebnik and Makhotko, (Zap. Vses. Mineral. O-va. 111, 587-593 (1982)) Chem. Abstr. 98, no. 4, 19601 (1983). Mineral. Abstr. 34, 464 (1983). Occurrence in Aldan Shield, X-ray, optics, analysis. Analyses (4, not in Abstr.)
- DALYITE. Robins et al., Mineral. Mag. 47, 93-94 (1983). Analyses (10) from Sunnfjord, W. Norway. X-ray data.
- DANALITE. Fursenko and Klyakhin, (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 119-126 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201508 (1983). Hydrothermal synthesis.
- DANALITE. Hassen and Grundy, Am. Mineral. 70, 186-192 (1985). Structure of samples from localities same as Dunn's analyses, a 8.2317, 8.2187 A.
- DANALITE. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- DANBAITE. (Abstr. in Am. Mineral. 69, 566) (1984). Abstract of original description.

- DANBAITE. Yu et al. (Kexue Tongbao (Foreign ed.) 29, 646-650) (1984)(Eng.), Chem. Abstr. 101, no. 16, 134268 (1984). CuZn_2 , SW China. Cubic $a=7.7615\text{\AA}$, $Z=32$.
- DANBURITE. Beran, (Phys. Chem. Mineral 14, 441-445) (1987) Infra-red spectroscopy of OH-groups in
- DANBURITE. Cabella et al., (N. Jb. Miner., Mh., 289-294) (1987) (Eng) From Maritime Alps, Italy, a 8.049, b 8.765, c 7.737 \AA , Optics, G 2.995
- DANBURITE. Husna and Cartz, (High Temp.-High Pressures 18, 675-678) (1986), Chem. Abstr. 107, no. 10, 81114 (1987) Elastic constants
- DANBURITE. Misra, et al., (Phys. Status Solidi 80 A, 581-588) (1983), Chem. Abstr. 100, no. 12, 88901 (1984). Electron spin resonance study.
- DAOMANITE. Tarkian and Bernhardt (Tschermsk Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- DAQINGSHANITE. Abstract in Am. Mineral. 69, 811 (1984). Abstract of original description.
- DARAPSKITE. Hill, (Natl. Speleological Soc. Bull. 43, 127-131 (1981)) Mineral. Abstr. 34, 183 (1983). Occurrence in caves, S.W. USA. Optics, a 10.558, b 6.870, c 5.186 \AA , beta 101.46°.
- DAUBREELITE. Rubin (Earth Planet. Sci. Lett. 67, 273-284) (1984). Electron microprobe analyses (3) from Blithfield meteorite.
- DAVANITE. Abstr. in Am. Mineral. 70, 214-215 (1985). Abstract of original description.
- DAVIDITE. Foord and Sharp, Mineral. Mag. 48, 97-106 (1984). Microprobe analyses (1) from Olary, S. Australia. X-ray data.
- DAVIDITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- DAVIDITE. Haggerty et al., Am. Mineral. 68, 494-505 (1983). Analysis from kimberlite, S. Africa.
- DAVIDITE. Segelstad, Am. Mineral. 69, 388-390 (1984). Analysis of mineral resembling crichtonite from Oslo Norway,
($\text{RE}_{0.26}\text{Sr}_{0.21}$)($\text{Ti}_{14.00}\text{Fe}_{3.50}\text{V}_{1.28}\text{Cr}_{1.58}\text{SiB}_{43}$) O_{38} . Metamict.
- DAVREUXITE. Fransolet et al., Am. Mineral. 69, 777-982 (1984). Redescription. Analyses, optics, x-ray data. Formula $\text{MnAl}_6\text{Si}_4\text{O}_{17}(\text{OH})_2$. Mon., $P2_1/m$, a 9.550, b 5.767, c 12.077 \AA , beta 108 degrees 1 minute $Z=2$, G 3.34.
- DAVREUXITE. Sahl et al., Am. Mineral. 69, 783-787 (1984). Structure.
- DAVYNE. Rosi and Santacroce, J. Volcanol. Geothermal Res. 17,, 249-271 (1983)(English). Microprobe analyses (1) from AD 472 eruption of Vesuvius.
- DAWSONITE. Biaha, (Miner. Slovaca 15, 570-572) (1983)(Slovakian), Chem. Abstr. 100, no. 22, 177971 (1984). Occurrence in Slovakia, x-ray data, infra-red.
- DAWSONITE. Bobrov et al., (Nov. Neboksitovye Vidy Glinozemnogo Syr'ya, 110-120 (1982)) Chem. Abstr. 98, no. 26, 219095 (1983). Occurrence in salt domes, Belorussia.
- DAWSONITE. Delitsin et al. (Prir. Soda Dawsonitoprolav,. SSSR, 155-164) (Russ) (1985), Chem. Abstr. 103, no. 8, 56924 (1985). X-ray, DTA, infra-red from 4 Russian localities.
- DAWSONITE. Drong (N. Jb. Miner. Mh., 153-156) (1985)(Ger.), Chem. Abstr. 103, no. 4, 25095 (1985). Occurrence at Solling, Germany.
- DAWSONITE. Du, (Dizhi Kexue, no. 4, 434-437 (1982)(Chinese)) Chem. Abstr. 98, no. 14, 110801 (1983). Occurrence in Shengli oil field, China. Optics.
- DAWSONITE: Paribok et al. (Prir Soda Dawsonit SSSR, 20-23) (1985) (Russ), Chem. Abstr. 103, no. 8, 56964 (1985). Analyses from Pripyat Basin, USSR.
- DAWSONITE. Szczepanik and Rudnicki, (Pol. J. Chem. 55, 1483-1489 (1981)(English)) Chem. Abstr. 98, no. 16, 136607 (1983). Thermal decomposition of synthetic.

- DAWSONITE. Zvezdinskaya et al., (Izvest. Akad. Nauk SSSR, Ser. Geol. 10, 137-141) (1986) (Russian), Chem. Abstr. 106, no. 26, 217078 (1987) DTA study
- DEERITE. Sherman, (Phys. Chem. Minerals 14, 355-363) (1987) $Fe^{+2}-Fe^{+3}$ charge transfer in
- DEERITE. Vernie et al., (Jour. Metamorphic Geol. 4, 385-399) (1986), Mineral. Abstr. 38, 87M/3068 (1987) Analysis from E. Corsica
- DELAFOSSITE. Atanasov et al. (God. Vish. Minno-Geol. Inst. Sofiya 26, 134-141) (1979), Mineral. Abstr. 35, 82 (1984). Occurrence in Kemikovci deposit, Bulgaria.
- DELAFOSSITE. Wearing, Mineral. Mag. 48, 243-249 (1984). Microprobe analyses (7) from Cu-converter slags.
- DELHAYELITE. Ragimov and Chiragov (Abstr. Acta Cryst. 40A, C258) (1984). Structure of K analogue from Kola Peninsula. Orth. $Pn2_1m$, a 6.598, b 24.655, c 7.080A, Z=2. $(K_4Na_2Ca_2Si_6Al_2O_{19}(F,Cl)_2 \cdot H_2O)$.
- DELHAYELITE. Dorfman and Chiragov, (Proc. 13th Meeting IMA, Varna, 1982, 327-334) (1986) (Russian) Classification and crystal chemistry of the group
- DEMESMAEKERITE. Ginderow and Cesbron (Acta Crystallogr., Sect. C, 824-837) (1983), Mineral. Abstr. 35, 18 (1984). Structure. Triclinic, PT, a 11.955, b 10.039, c 5.639A, alpha 89.78, beta 100.36, gamma 91.34 degrees, Z=1 $(Pb_2Cu_5(SeO_3)_6(UO_2)_2(OH)_6 \cdot 2H_2O)$.
- DERBYLITE. (Abstr. in Am. Mineral. 69, 568-569) (1984). New analysis gives $(Fe^{+3}, Fe^{+2}, Ti)_7Sb^{+3}O_{13}(OH)$. Monoclinic, $P2_1/m$, or $P2_1/a$ 7.156, b 14.354, c 4.980A, Beta 104.69 degrees.
- DERRIKSITE. Ginderow and Cesbron, (Acta Crystallogr., Sect. C, C39, 1605-1607) (1983), Chem. Abstr. 100, no. 2, 15665 (1984). Structure Orth., $Pn2m$, a 5.570, b 19.088, c 5.965, Z=2 $(Cu_6)(OO_2)(SeO_3)_2(OH)_6$.
- DERVILLITE. Bari et al., (Bull. Mineral. 106, 519-524) (1983), Chem. Abstr. 100, no. 16, 124220 (1984). Monoclinic, $P2/a$, a 6.833, b 12.932, c 9.638 A, beta 99 degrees 33'. Microprobe analysis gave Ag_2AsS_2 .
- DESAUTELSITE. Inaba et al. (Chigakii Kenhyu 34, 89-96) (1983), Chem. Abstr. 103, no. 6, 39966 (1985). Analysis, x-ray, DTA, infra-red from Shiraki, Japan.
- DEVILLINE. Mrazek, (Miner. Slovaca 14, 471-476 (1982)) Chem. Abstr. 98, no. 8, 57260 (1983). Occurrence at Smolnik, Czechoslovakia. Optics, X-ray, infra-red.
- DEVILLINE. Mrazek, Ridkosil and Ederova, (Neues Jahrb. Mineral., Monatsh., no. 2, 79-88) (1983), Mineralog. Abstr. 34, 474 (1983). Analysis, optics, infra-red and DTA data from central Slovakia. G 3.135; a 20.867, 20.849; b 6.135, 6.126; c 22.187, 22.242 A; beta 102.73 degrees, 102.68 degrees.
- DEVILLINE. Mrazek et al., (Neues Jahrb. Mineral., Monatsh., no. 2, 79-88 (1983)(English)) Chem. Abstr. 98, no. 10, 75563 (1983). Analysis from Slovakia, optics, X-ray data, DTA.
- DIABOLEITE. Lebedev, (Dokl. Akad. Nauk SSSR 268, 414-416 (1983)) Chem. Abstr. 98, no. 18, 146723 (1983). Occurrence in Cheleken Peninsula. Probe analysis (not in abstr.).
- DIAMOND. Aleksandrov et al., (Cryst. Res. Technol. 17, 1389-1392 (1982)(English)) Chem. Abstr. 98, no. 6, 37787 (1983). Activation analysis of distribution of Si, Cu, Mn, Na, Co impurities in.
- DIAMOND. Bakumenko et al., (Dokl. Akad. Nauk SSSR 278, 1461-1465) (1984), Chem. Abstr. 102, no. 6, 48871 (1985). Faceted inclusions in synthetic crystals.
- DIAMOND. Barry et al. (Philos. Mag. 51A(1), 15-49) (1985). Chem. Abstr. 102, no. 14, 123359 (1985). Structure of defects in.

- DIAMOND. Bickford, J. Chem. Education 61, 401 (1984). A review of the physical properties.
- DIAMOND. Bilenko, (Geol. Geofiz., no. 3, 146-147 (1983)) Chem. Abstr. 98, no. 26, 219190 (1983). Nitrogen content.
- DIAMOND. Blinova et al. (Geol. Geofiz 3, 116-119) (1985), Chem. Abstr. 103, no. 6, 39987 (1985). Distribution of N centers, from kimberlites, Yakutia.
- DIAMOND. Deines et al., (Geochim. Cosmochim. Acta 51, 1227-1244) (1987) C isotopes, N content, from kimberlites, S. Africa
- DIAMOND. Elyutin et al., (Dokl. Akad. Nauk SSSR 275, 135-139) (1984), Chem. Abstr. 101, no. 6, 40534 (1984). Study of the formation of polycrystalline diamonds.
- DIAMOND. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral. Abstr. 34, 216 (1983). Thermal expansion.
- DIAMOND. Fan et al. (Yanshi Kuangwu Ji Ceshi 3(4), 339-44, (Chin), Chem. Abstr. 102, no. 24, 206710 (1985). UV Photographs unit.
- DIAMOND. Fedoseev et al., (Dokl. Akad. Nauk SSSR 274, 910-912) (1984), Chem. Abstr. 100, no. 24., 195215 (1984). Kinetics of nucleation in metal-carbon.
- DIAMOND. Frank-Kamenetskii, (Khim.-Fiz. 3, 318-331) (1984), Chem. Abstr. 100, no. 22, 177197 (1984). Theory of the growth of unstable phases, application to temp., pressure, and supersaturation in growth of diamond.
- DIAMOND. Freeman, (Vacuum 34, 305-314) (1984), Chem. Abstr. 100, no. 18, 141522 (1984). Epitaxial synthesis.
- DIAMOND. Gafitullina, (Dokl. Akad. Nauk Uzb. SSR, no. 1, 26-28 (1981)) Chem. Abstr. 98, no. 12, 92776 (1983). Trace elements in.
- DIAMOND. Gao, (Kexue Tongbao 27, 1364-1366 (1982)(Chinese)) Chem. Abstr. 98, no. 22, 181922 (1983). Nucleation rates at 5-7 GPa at different temperatures.
- DIAMOND. Gramenitskii et al. (Dokl. Akad. Nauk SSSR 279, 186-188) (1984), Chem. Abstr. 102, no. 10, 81865 (1985). Reflectance of diamonds containing varying contents of lonsdaleite.
- DIAMOND. Gurney et al. (Kimberlites 11B, 3-9) (1984) (150.3 D 493). Inclusions in diamond, Orapa mine, Botswana.
- DIAMOND. Gurney et al., (Dev. Petrol. 11B, 3-9, 361-393) (1984), Chem. Abstr. 100, no. 24., 195223 (1984). Analyses (not in abstr. 1 of inclusions in) (including coesite).
- DIAMOND. Humble et al., (Conf. Ser. Inst. Phys. 68, 445-448) (1984), Chem. Abstr. 100, no. 20, 159616 (1984). Platelet defects in.
- DIAMOND. Javoy et al (Earth Planet. Sci. Lett. 68, 399-412) (1984), Chem. Abstr. 101, no. 10, 76123 (1984). N and C isotopes in diamonds, Zaire.
- DIAMOND. Kaminskii et al. (Mineral. Zh. 7, 27-36) (1985), Chem. Abstr. 103, no. 2, 9146 (1985). Polycrystalline aggregates of diamond and lonsdaleite, Yakutia.
- DIAMOND. Kanda et al. (Mater. Res. Soc. Symp. Proc. 22, 209-212) (1984) (Eng.). Chem. Abstr. 101, no. 16, 141215 (1984). Effect of impurities on morphology of synthetic diamond.
- DIAMOND. Kondo and Ahrens, (Geophys. Res. Lett. 10, 281-284 (1983)) Chem. Abstr. 98, no. 22, 182741 (1983). Shock compression.
- DIAMOND. Kvasmitsa, et al., (Mineral Zh. 6, no. 5, 23-34) (1984), Chem. Abstr. 102, no. 4, 28646 (1985). Morphology and color from various rock types.
- DIAMOND. Lefebvre et al. (J. Phys. 45(8), 1317-1327) (1984)(Eng.). Chem. Abstr. 101, no. 18, 161546 (1984). Structure near transition point at 276 degrees.
- DIAMOND. Leite et al. (Mineral. Mag. 48, 459-461) (1984). Oriented enstatite inclusions in diamond.

- DIAMOND. Mel'nichenko et al. (Priroda 7, 22-30) (1984) (Russ), Chem. Abstr. 101, no. 12, 101668 (1984). Laminated structure proposed.
- DIAMOND. Meyer (Am. Mineral. 70, 344-355) (1985). A model for the genesis of diamond 135 references.
- DIAMOND. Mitchell, (PCT Int. Appl. WO 83 04, 016, 1-15), Chem. Abstr. 100, no. 8, 53959 (1984). Synthesis from graphite or amorphous C.
- DIAMOND. Mitsubishi (Jpn. Patent 59,182,300, 5 p) (1984). Chem. Abstr. 102, no. 16, 141412 (1985). Synthesis in gas phase.
- DIAMOND. Moriyoshi et al., (J. Mater. Sci. 18, 217-224 (1983)(English)) Chem. Abstr. 98, no. 14, 110805 (1983). Transmission electron microscope study of diamond, carbonado, and ballas.
- DIAMOND. Rybalko et al., (Dokl. Akad. Nauk SSSR 268, 1227-1230 (1983)) Chem. Abstr. 98, no. 26, 219102 (1983). Find of small diamonds, Dniester River region, a 3.55A.
- DIAMOND. Shafranovskii (Zap. Vses. Mineral. O-va. 114, 30-34) (1985). Paramorph of diamond after graphite.
- DIAMOND. Showa Denko Co., (Jpn. Patents 59, 164, 607 and 59, 164, 605, 3 pp. and 4 pp.) (1983), Chem. Abstr. 102, no. 8, 64354, 64355 (1985). Synthesis.
- DIAMOND. Showa Denko K.K. (Jpn. Patents 59, 164, 610, 3 pp (1984), 59, 164, 609, 3 pp (1984), 59, 169, 918, 3 pp (1984)), Chem. Abstr. 102, no. 6, 48184, 48185, 48186 (1985). Synthesis.
- DIAMOND. Simakov (Dokl. Akad. Nauk SSSR 278, 953-957) (1984), Chem. Abstr. 102, no. 12, 98573 (1985). Calculation of possible metastable formation in Earth's crust.
- DIAMOND. Skvortsova, et al., (Mineral. Zh. 5, no. 6, 77-81) (1983), Chem. Abstr. 100, no. 16, 124241 (1984). Kinetics of oxidation.
- DIAMOND. Sunegawa, et al., (Hoseki Gakkaishi 10, 3-35) (1983)(Japanese), Chem. Abstr. 100, no. 10, 71380 (1984). Surface topography.
- DIAMOND. Tsujii, (E. Germ. Patents 99, 486, 31 pp), Chem. Abstr. 100, no. 16, 130357 (1984). Growing single crystals.
- DIAMOND. Wedepohl (Akad. Wiss. Mainz 1, 1-24) (1984). (S(530)M29a). Review of properties and origin.
- DIAMOND. Zaitseva and Gurkina, (Mineral. Zh. 8(3), 48-52) (1986) (Russian) Cause of color of grey and brown, probably due to crystal defects
- DIAPHORITE. Bortnikov, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- DIAPHORITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- DIAPHORITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (8) from S. Korea Reflectivity, X-ray data, a 17.913, b 5.880, c 15.841 A, beta 116.68 deg.
- DIASPORE. Ahmad, et al., (Pak. J. Sci. Res. 26, 297-300) (1983), Chem. Abstr. 100, no. 16, 124247 (1984). DTA quant.
- DIASPORE. Carniglia, J. Am. Ceram. Soc. 66, 495-500 (1983). Standard free energies of formation 298 to 2100 degrees K.
- DIASPORE. Dorogokupets and Karpov (Fiz.-Khim. Modeli Petrog. Rudoobraz, 134-145) (1984) (Russ), Chem. Abstr. 102, no. 24, 206688 (1985). Calcn. of thermodynamic data.
- DIASPORE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985) (Eng.) G(591)qUT3g Microprobe analyses (3) from metamorphosed bauxites, Naxos, Greece.
- DIASPORE. Gout and Dandurand (Tran. Com. Internatl. Etude Bauxites 18, 117-125) (1983)(Eng.). (438]n83+). Stability in system $Al_2O_3-H_2O$.

- DIASPORE. Halbach and Chatterjee, *Contrib. Mineral. Petrol.* 88, 14-23 (1984).
Calculation of thermodynamic data.
- DIASPORE. Kerrick et al., (*Contrib. Mineral. Petrol.* 95, 481-498) (1987)
Microprobe analyses (3) from corundum-muscovite rocks, Zimbabwe
- DICKITE. Bukin and Drits (*Mineral. Zh.* 5, no. 3, 49-54) (1983), *Mineral. Abstr.* 35, 17 (1984). Nature of interlayer bonding in.
- DICKITE. Gucwa and Pelczar, (*Mineral. Polsk Karpat*, 34) 120(578) G934m (Polish)
Analysis (2) from Polish Carpathians
- DICKITE. Rozhdestvenskaya et al., (*Mineral. Zh.* 4, 52-58 (1982)) *Mineral. Abstr.* 34, 15 (1983). Refinement of structure. Location of H.
- DICKITE. Schroll and Spatzek (*Mitteilungen. - Abt. Mineral. Landesmus. Joanneum* 52, 23-25) (1984). G(533)G78mb. Analysis and x-ray data, Kaysersberg, Styria.
- DICKITE. Sen Gupta et al., (*Clays Clay Miner.* 32, 483-485) (1984), *Chem. Abstr.* 102, no. 6, 48857 (1985). Structure. a 5.149, b 8.922, c 14.395 Å, beta 96.76 Å, Z=4. Positions of H in.
- DICKITE. Zabolotnaya and Novkvin, *Mineralogy of Ore Deposits*, 13-18 (1983) (Russian) (410M662). Analysis and x-ray data, Siberia.
- DIGENITE. Buseck and Cowley, *Am. Mineral.* 68, 18-40 (1983). Transmission electron microscopy.
- DIGENITE. Dinsdale et al. (*High Temps. - High Pressures* 14, 633-640) (1982), *Mineral. Abstr.* 35, 41 (1984). Stability in system Cu-S.
- DIGENITE. Garuti et al., *Earth Planet. Sci. Lett.* 70, 69-87 (1984)(English).
Microprobe analyses (3) from peridotites, Ivrea-Verbani, Italy.
- DIGENITE. Sick and Schwerdtfeger (*Metall. Trans. B* 15(4), 736-739) (1984) (Eng.). *Chem. Abstr.* 102, no. 14, 120984 (1985). Free energy and non-stoichiometry at 650-800 degrees.
- DJERFISHERITE. Borishenskaya and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- DJERFISHERITE. Du et al., (*Kexue Tongbao (Foreign Ed.)* 29, 1132) (1984) (English), *Chem. Abstr.* 102, no. 4, 28613 (1985). Analysis of nickelvan (Fe 38.22, Ni 16.36, Cu 1.31, K 9.48, S 33.29, Cl 1.99%).
(Fe₁₇Ni_{6.97}Cu_{0.52})_{24.6}S_{25.95}Cl_{1.40}, a 10.42 Å, G 3.69. X-ray data.
- DJERFISHERITE. Garanin et al., (*Deposited Doc. VINITI* 6796-83, 90-101) (1983), *Chem. Abstr.* 102, no. 2, 9845 (1985). Analyses from kimberlites, a 10.26 Å, Ni 10.09-19.8, Cu 0.8-3.6, Fe 36.37-45.31%.
- DJURLEITE. Walenta (*Aufschluss* 35, 235-236) (1984). Occurrence in Clara mine, Black Forest, Germany.
- DOLOMITE. Andersen, *Lithos* 17, 227-245 (1984)(English). Microprobe analyse (7) from Fen carbonatite, Norway.
- DOLOMITE. Angus et al., (*Chem. Geol.* 43, 331-346) (1984), *Chem. Abstr.* 100, no. 22, 177970 (1984). Distinguishing genetic types of electron spin resonance.
- DOLOMITE. Barber and Wenk, *Contrib. Mineral. Petrol.* 88, 233-245 (1984). T.E.M. study from Alno and Fen carbonatites show 2-phase structures.
- DOLOMITE. Boctor et al., (*Geochim. Cosmochim. Acta* 51, 1705-1715) (1987)
Microprobe analyses (4) from New Idria mine, Calif.
- DOLOMITE. Bucher-Nurminen, *J. Petrol.* 23, 325-343 (1982). Microprobe analyses (2), E. Greenland.
- DOLOMITE. Burton and Kikuchi, *Am. Mineral.* 69, 165-175 (1984). Thermodynamic treatment of system CaCO₃-MgCO₃.
- DOLOMITE. Busenberg and Plummer, (*Am. J. Sci.* 282, 45-78 (1982)) *Mineral. Abstr.* 34, 37 (1983). Kinetics of solution in CO₂-H₂O systems 1.5-65°C, 0-1 atm PCO₂.

- DOLOMITE. Chistyakova, (Rentgenogr. Miner. Syr'ya, 68-77) (1982), Chem. Abstr. 101, no. 8, 57821 (1984). X-ray method for determining thermal properties.
- DOLOMITE. Exley and Jones, Contrib. Mineral. Petrol. 83, 288-292 (1983). Microprobe analyses (1) from kimberlites.
- DOLOMITE. Gregg, (J. Sediment. Petrol. 53, 1025-1026) (1983), Mineral. Abstr. 35, 157-158 (1984). Formation and occurrence of saddle dolomite.
- DOLOMITE. Gućwa and Pelczar, (Mineral. Polsk Karpat, 34-35) 120(578) G934m (Polish) Analysis (4) from Polish Carpathians
- DOLOMITE. Hegyi Pako, et al., Epitoanyag 36, 339-342 (1984)(Hungarian). S.E.M. photographs.
- DOLOMITE. Juhasz (Acta Geol Acad. Sci. Hung. 25, 247-270) (1982), Mineral. Abstr. 35, 43-44 (1984). Effect of grinding on chem. reactivity. DTA, dielectric properties.
- DOLOMITE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (8) from Davidkovo massif, Ukraine
- DOLOMITE. Krupka et al. (Am. Mineral. 70, 261-271) (1985). High-temp. heat capacities and derived thermodynamic properties.
- DOLOMITE. Kucha and Wiczorek, Miner. Deposita 19, 208-216 (1984). Microprobe analyses (6) from Navan Pb-Zn deposit, Ireland with up to 0.17% ZnO, 0.32% FeO.
- DOLOMITE. Kucha et al., (Mineral. Polonica 15, 21-36) (1984) (Eng) Microprobe analysis from Silesia with FeO 7.22% Electron diffraction indicates a superstructure
- DOLOMITE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (5) from carbonatite, Yenisen region
- DOLOMITE. Matsueda et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (2) from skarn, Antarctica.
- DOLOMITE. McDowell and Paces (Mineral. Mag. 49, 469-479) (1985). Microprobe analyses (5) from Salton Sea geothermal system, Calif.
- DOLOMITE. Mitsushio, et al., (Proc. - Int. Symp. Hydrothermal Research, 1st, 1982, 730-737) (1983)(English), Chem. Abstr. 100, no. 6, 44316 (1984). Hydrothermal synthesis at 170 degrees in the presence of ethylenediamine.
- DOLOMITE. Mitsusi et al. (Kochi Daigaku Gakujutsu Kenkyu 32, 327-334) (1983) (Jap), Chem. Abstr. 101, no. 14, 121843 (1984). Hydrothermal synthesis.
- DOLOMITE. Powell et al. (J. Metamorph. Geol. 2, 33-41) (1984), Chem. Abstr. 101, no. 20, 174812 (1984). Effect of Fe content on calcite-dolomite geothermometer: Stability in system CaO-MgO-FeO-CO₂.
- DOLOMITE. Puhén, Contrib. Mineral. Petrol. 87, 98-99 (1984). SEM photographs of dolomite within exsolved magnesian calcite, Namibia.
- DOLOMITE. Reeder and Sheppard (Am. Mineral. 69, 520-527) (1984). Analyses and unit cells of 36 sedimentary dolomites.
- DOLOMITE. Shannon, Mineral. Rec. 14, 91 (1983). Ferroan (FeO 0.92%, G 2.80-2.95) from Vekol mine, Ariz.
- DOLOMITE. Stepanenko (Tr. Komi Fil. Akad. Nauk SSSR 45, 36-47) (1984) (Russ) (G(570)AK144+). Analysis (1) from carbonatites.
- DOLOMITE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984). Microprobe analyses (4) from Oka complex, Quebec.
- DOLOMITE. Warne et al., (Thermochim. Acta 51, 105-111 (1981)) Mineral. Abstr. 34, 181 (1983). DTA.

- DOLOMITE. Zabinski, (Porodoobrazuyushchie Miner. (Rock-forming Minerals), Mater. S'ezda MMA, 11th, 255-258 (1978)(Pub. 1981)(English)) Chem. Abstr. 98, no. 26, 219119 (1983). Zincian dolomite from Silesia. X-ray, DTA, infra-red data.
- DOLORESITE. de Brodtkorb, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 221-229 (1982). Occurrence in Urcal deposit, La Rioja, Argentina.
- DOMEYKITE. Nysten (Geol. Foren. Stockholm Foerh. 106, 293-294) (1984)(Eng.). Occurrence at Harstigen, Sweden.
- DOMEYKITE. Tarkian, et al., Tschermarks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (3) from Iran.
- DONBASSITE. Gorovoi, (Mineral. Sb. 34, no. 2, 86-89 (1980)) Mineral. Abstr. 34, 169 (1983). Analysis (not in abstr.), optics, X-ray, DTA.
- DONPEACORITE. Petersen et al. (Am. Mineral. 69, 472-480) (1984). New mineral, from near Balmat, NY (Mn,Mg)MgSi₂O₆, an orthopyroxene analyses (microprobe) (2), optics, a 18.384, b 8.878, c 5.226A, Pbca, x-ray data, G 3.36.
- DOYLEITE. Chao et al. (Can. Mineral. 23, 21-28) (1985), Chem. Abstr. 103, no. 8, 56906 (1985). Abstract of original description.
- DUFTITE. Sokolova et al., (Vestn. Mosk. Univ., Ser. 4: Geol., no. 4, 50-56 (1982)) Chem. Abstr. 98, no. 4, 19581 (1983). Structure. Orth., Pnan, a 7.52, b 9.14, c 5.91A, Z=4.
- DURANGITE. Foord et al. (Can. Mineral. 23, 241-246) (1985). Analysis from Black Range, N. Mex., optics, x-ray data, a 6.574, 6.579; b 8.505, 8.523; c 7.019, 7.046A; beta 115.34 degrees, 115.47 degrees, C2/c, G 3.92, 3.90. Melts at 775 +/- 25 degrees C. 80, 73-82) (1985)(Jpn.). Microprobe analyses (9) from basalts and andesites, Chokai volcano, Japan.
- DUTTONITE. de Brodtkorb, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 221-229 (1982). Occurrence in Urcal deposit, La Rioja, Argentina.
- DWORNIKITE. Abstr. in Bull. Mineral. 106, 627 (1983). Abstract of original description.
- DWORNIKITE. Milton et al., (Mineral. Mag. 46, 351-355 (1982)) Am. Mineral. 68, 642 (1983). Abstract of original description.
- DYPINGITE. Canterford et al. (Mineral. Mag. 48, 437-442) (1984). X-ray data, DTA, infra-red data on synthetic.
- DYSCRASITE. Kovlenker, (Gold and silver deposits "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 1 analysis from gold-silver deposits
- DYSCRASITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg.
- DYSCRASITE. Nekrasov, (Mineral. Zh. 7, 51-72) (1985) (Russian) Stability in system Ag-Au-Sb
- DYSCRASITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- EAKERITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- EAKERITE. Gaidukova et al., (Dokl. Acad. Sci. USSR, Earth Sci. Sect., 250, 151-153 (1982)) Mineral. Abstr. 34, 164 (1983). Analysis of green andradite; G 3.79, a 12.026A, with SnO₂ 1.45%, exsolved as eakerite.
- EARLSHANNONITE. Abstract in Am. Mineral. 70, 871-872 (1985). Abstract of original description.
- EARLSHANNONITE. Peacor et al. (Can. Mineral. 22, 471-474) (1984). New mineral, MnFe³⁺₂(PO₄)₂(OH)₂.4H₂O, Mn analogue of whitmoreite, from Kings Mt. NC Analysis, x-ray data, optics, G 2.92 Monoclinic, P2₁/c, a 9.910, b 9.669, c 5.455A, Beta 93.95 degrees.

- ECLARITE. Abstr. in Am. Mineral. 70, 215 (1985). Abstract of original description.
- ECLARITE. Kupcik, (Tschermarks Mineral. Petrogr. Mitt. 32, 259-269) (1984), Chem. Abstr. 101, no. 2, 10142 (1984). Structure. Orth., Prma, a 54.76, b 4.030, c 22.75 A, Z=4. [(Cu,Fe)Pb₉Bi₁₂S₂₈]. Analysis.
- ECLARITE. Paar et al, Tschermarks Mineral. Petrogr. Mitt. 32, 103-110 (1983). New mineral, Pb₉(Cu,Fe)Bi₁₂S₂₈, from near Salzburg, Austria. Orth., a 54.76, b 4.03, c 22.75 A, orth. Analysis, optics, x-ray powder data. Chem. Abstr. 100, no. 12, 88879 (1984) New Mineral, Pb₉(Cu,Fe)Bi₁₂S₂₈ from Salzburg Prov., Austria. Analysis, x-ray data, optics.
- EDINGTONITE. Belitskii et al., (Geokhimiia, 276-278) (1984), Chem. Abstr. 100, no. 18, 142394 (1984). Heat capacity 5-316 degrees K. Coeff. of expansion, entropy.
- EDINGTONITE. Grice et al., Can. Mineral. 22, 253-258 (1984). Analyses (2) from Canada, a 9.583, 9.531; b 9.624, 9.656; c 6.527, 6.516 A. Optics, DTA.
- EDINGTONITE. Mazzi et al., Neues Jahrb. Mineral., Monatsh., 373-382 (1984)(English). Structure of 2 tetragonal samples, P 4₂m, a 9.581, c 6.526A; a 9.584, c 6.624 A. X-ray, DTA, infra-red data.
- EDINGTONITE. Nadezhdina et al., (Mineral. Zh. 6, no. 5, 56-63) (1984), Chem. Abstr. 102, no. 6, 48849 91985). Structure of tetragonal edingtonite, Khibina, space group P4₂/m. Optics.
- EGGLETONITE. Abstract in Mineral. Abstr. 35, 192 (1984). Abstract of original description.
- EGGLETONITE. Peacor et al., Abstract in Am. Mineral. 70, 436 (1985). Abstract of original description.
- EGGLETONITE. Peacor et al., Mineral. Mag. 48, 93-96 (1984). New mineral, Na analogue of ganophyllite, formula (Na,K,Ca)₂(Mn,Fe,Al)₈(Si,Al)₁₂(O,OH)₃₂(OH)₄.11H₂O. Monoclinic, I2(a or Ic), a 5.554, b 13.72, c 25.00 A, beta 93.95 degrees, Z=2. Analysis, optics, x-ray data. From Little Rock, Ark., nepheline syenite.
- EIFELITE. (Abstr. in Am. Mineral. 69, 566) (1984). Abstract of original description.
- EIFELITE. Abraham, et al., Contrib. Mineral. Petrol. 82, 252-258 (1983). New mineral, KNa₃Mg₄Si₁₂O₃₀, osumilite group, hex., a 10.14-10.15, c 14.22A. Analyses, optics.
- EIFELITE. Abstract in Mineral. Abstr. 35, 87 (1984). Abstract of original description.
- EITELITE. Deelman, (N. Jb. Miner., Mh., 468-480), Miner. Abstr. 38, 87M/2520 (1987) Synthesis at 25 deg. C
- EKANITE. Demartin et al. (Rend. Soc. Ital. Mineral. Petrol. 38, 1401-1405) (1982), Chem. Abstr. 100, no. 26, 213144 (1984). (1983)(Italian). Analysis from Pitigliano, Italy, a 7.447, c 14.987 A. X-ray powder data.
- EKANITE. Rosaspina (Riv. Min. Ital. 4, 128-129) (1984) (Ital), Chem. Abstr. 102, no. 26, 223532 (1985). From Tuscany, Italy, with high U content.
- EKANITE. Vladykin et al. (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 41-56) (1983)(Russ.). 480 (690.3) M662. Analysis (1) from Murunsh massif.
- EKATERINITE. Mel'nik et al. (Mineral. Sb. (Lvov) 38, no. 1, 12-18) (1984). Occurrence in kimberlites, Yakutia. X-ray, DTA, infra-red, optics.
- EKATERINITE. Zatkhei and Khmelevskii, (Mineral. Zh. 4, no. 5, 70-75 (1982)) Chem. Abstr. 98, no. 8, 57258 (1983). Analysis from Yakutian kimberlite. Optics, G 2.422.

- ELECTRUM. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe analyses (8).
- ELECTRUM. McQueen, Neues Jahrb. Mineral., Monatsh., 323-336 (1984)(English). Microprobe analyses (1) from Broken Hill, N.S. Wales.
- ELECTRUM. Mioskos, Chem. Erde 42. 281-296 (1983)(English). Microprobe analyses (1) from Macedonia.
- ELECTRUM. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- ELECTRUM. Sugaki et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe analysis from Hokkaido.
- ELECTRUM. Takeuchi and Shikazono (Min. Geol. Japan 34(3), 187-195) (1984)(Eng.). (G(620)M66). Microprobe analyses (6) from Kagoshima Pref. Japan.
- ELLENBERGITE. Chopin, (Geol. Soc. Am. Mem. 164, 31-42) (1986) Microprobe analyses (5) from Dora Maira massif, W. Alps
- ELLESTADITE. Vasil'eva (Zap. Vses. Mineral. O-va. 114, 348-360) (1985)(Russ.). Analyses (24) from alkalic plutonic rocks, Mongolia. Analysis from Crestmore, Calif.
- ELYITE. Hatton, Aufschluss 34, 453-455 (1983). Occurrence at Bonkhausen, Germany.
- EMPLECTITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (9) from gold-silver deposits
- EMPLECTITE. Kovalenker and Geinke, Izv. Akad. Nauk SSSR 5, 91-104 (1984)(Russian). Microprobe analyses (10) from Kuranin Ridge, Tien-shan with up to 4.27% Se. X-ray data.
- EMPLECTITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- EMPLECTITE. Spiridonov and Badalov, Uzb. Geol. Zh. 6, 82-84 (1983)(Russian). Microprobe analysis from Karragach deposit, Uzbekistan.
- EMPLECTITE. Sugaki et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 100-109) (1980)(Eng.) (Sulfosalt Vol.) 400 degrees C. Mineral. Abstr. 34, 136 (1983). Stability in system Cu-Bi-S. Composition $CuBiS_2$.
- EMPLECTITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- EMPLECTITE. Yamaoka and Asakura, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 290-294 (1983)(Japanese). Analyses (1) from Fukushima Pref., Japan.
- EMPRESSITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (2) from gold-silver deposits
- ENARGITE. Cabos Y., (Bol. Soc. Geol. Peru, no. 68, 1-12 (1981)) Chem. Abstr. 98, no. 12, 92840 (1983). Microprobe analysis from Hualgayoc, Peru.
- ENARGITE. Huang and Chang, Acta Geol. Taiwanica 21, 1-13 (1982)(English). Analyses (2) from Chinkuashih Au-Cu deposit, Taiwan.
- ENARGITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (1) from Chikuashih ore deposit, Taiwan.
- ENARGITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (2) from Sark, Channel Islands.

- ENARGITE. Kovalenkar et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431M565 Microprobe analyses (10) from Bulgaria
- ENARGITE. Sugaki et al., Sci. Rep. Tohoku Univ., Ser. 3, 15, 257-271 (1982)(English). Synthesis, stability in system $\text{Cu}_3\text{AsS}_4\text{-Cu}_3\text{SbS}_4$. Unit cells.
- ENARGITE. Tarkian, et al., Tschermaks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- ENARGITE. Tufar (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 148-157) (1980)(Eng.) (Sulfosalt Vol.). Reflectance.
- ENARGITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- EOSPHORITE. Zalan and Baptista, (An. Acad. Bras. Cienc. 54, 547-551 (1982)) Chem. Abstr. 98, no. 18, 146704 (1983). Structure. Mon., a 10.423, b 13.477, c 6.975A, beta 90°, Z=8.
- EPHESITE. Gregorkiewitz and Rausell-Colom, (Am. Mineral. 72, 515-527) (1987) Synthesis of a brittle mica.
- EPHESITE. Slade and Radoslovich, (N. Jb. Miner. Mh., 337-352) (1985), Mineral. Abstr. 38, 87M/2114 (1987) Structure Monoc., a 5.114, b 8.865, c 19.29 A, beta 95.19 deg., Z=4
- EPHESITE. Warhus and Chatterjee, Contrib. Mineral. Petrol. 85, 74-79, 80-84 (1984). Chem. Abstr. 100, no. 12, 88923, 88924 (1984). Hydrothermal synthesis of 1M and 2M, types. Thermal stability and thermodynamic properties.
- EPIDIDYMITITE. Novikova, Mineral. Zh. 6, no. 5, 84-90 (1984)(Russian). Analyses (3), unit cells.
- EPIDOTE. Barton and van Bergen (Mineral. Mag. 48, 449-456) (1984). Microprobe analysis from diolerite, Rogeland, SW Norway.
- EPIDOTE. Brastad (Tschermaks Mineral. Petrogr. Mitt. 34, 87-103) (1985)(Eng.). Microprobe analyses (7) from eclogite, W. Norway, SrO up to 8.52%.
- EPIDOTE. Brown and Ghent, Am. Mineral. 68, 365-372 (1983). Microprobe analyses (1) from blueschist, N. Calif.
- EPIDOTE. Dahl and Friberg, (Contrib. Geol. Univ. Wyo. 18, 77-82) (1980), Mineralog. Abstr. 34, 464 (1983). Analyses and optics of zoned epidote-clinozoisite, S.W. Mont.
- EPIDOTE. Davy and Pryce, (Geol. Surv. W. Australia Rept. 14, 104-111) (1985) (860)R Microprobe analyses (9) from dolerite, W. Australia
- EPIDOTE. Dechomets (Miner. Deposita 20, 201-216) (1985)(French). Microprobe analyses (4) from skarn, Niccioleta, Italy.
- EPIDOTE. Ernst and Harnish, Proc. Geol. Soc. China (Taiwan) 26, 99-112 (1983)(English). Microprobe analyses (2) from green schist rocks, Taiwan.
- EPIDOTE. Ernst, J. Metamorph. Geol. 1, 305-329 (1983). Microprobe analyses (10), Tailuko Gorge, Taiwan.
- EPIDOTE. Evans and Vance, (Contrib. Mineral. Petrol. 96, 178-185) (1987) Microprobe analysis (1), dacite dike, Boulder Co., Colo.
- EPIDOTE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (5) from metamorphosed bauxites, Naxos, Greece.
- EPIDOTE. Grapes and Watanabe (Am. Mineral. 69, 490-498) (1984). Analyses (3) with up to percent Fe_2O_3 and up to 8.36 percent SrO from Southern Alps, New Zealand.
- EPIDOTE. Gućwa and Pelczar, (Mineral. Polsk Karpat, 36-37) 120(578) G934m (Polish) Analysis (1) from Polish Carpathians X-ray data

- EPIDOTE. Guiraud and Burg (Neues Jahrbuch Mineral., Abh., 149(1), no. 1, 1-12) (1984)(Eng.). Microprobe analyses (2) from blue schist, Czechoslovakia.
- EPIDOTE. Herbert, Geotekton. Forsch. no. 65, 1-77 (1983). Microprobe analyses (11) from crystalline rocks, Ecuador.
- EPIDOTE. Herd et al., (Spec. Paper Geol. Assoc. Canada 31, 241-253) (1986) Microprobe analyses (6), St. Maurice area, Quebec
- EPIDOTE. Kawachi et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (4) from piemontite schist, W. Otago, New Zealand.
- EPIDOTE. Lan, Proc. Geol. Soc. China 25, 38-52 (1982) (English) (G(611)G292p). Microprobe analyses (2) from gneiss, NE Taiwan.
- EPIDOTE. Liou, Mem. Geol. Soc. China 5, 47-66 (1983)(English)(G(611)G292m) Composition and stability in low-grade metamorphic rocks.
- EPIDOTE. Liou et al. (J. Petrol. 24, 321-342) (1983), Mineral. Abstr. 35, 159 (1984). The equil. prehnite-epidote.
- EPIDOTE. Maruyama et al., (Geol. Soc. Am. Mem. 164, 1-16) (1986) Stability in system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2\text{H}_2\text{O}$ at 300-450 deg. Analyses of glaucophane, tremolite, magnesioriebeckite
- EPIDOTE. Maruyama and Liou, Am. Mineral. 70, 16-29 (1985). Microprobe analyses (8) from Shikoku, Japan.
- EPIDOTE. McCaig, J. Metamorph. Geol. 2, 129-141 (1984). Microprobe analyses (2) from Pyrenees.
- EPIDOTE. Minguzzi et al., (Mineral. Petrogr. Acta 29, 165-189) (1985) (Ital) Analyses (2) from monzonite, Malgola, Italy DTA
- EPIDOTE. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (2) from blue schist, NE Diablo Range, Calif.
- EPIDOTE. Mottano, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganeseiferous cherts, Alps
- EPIDOTE. Mposkos and Perdikatsis (Neues Jahrbuch Mineral., Abh., 149, no. 1, 43-63) (1984)(Eng.). Microprobe analyses (4) from glaucophane metagabbros, Samos I., Greece.
- EPIDOTE. Munha, Comun. Serv. Geol. Port. 69, 3-35 (1983)(English). Microprobe analyses (10) from Iberian pyrite belt.
- EPIDOTE. Nakajima, Lithos 15, 267-280 (1982). Microprobe analyses (5) from Shikoku, Japan.
- EPIDOTE. Nystron, Contrib. Mineral. Petrol. 83, 159-168 (1983). Microprobe analyses (5), central Sweden.
- EPIDOTE. Paesano et al., (Hyperfine Interact 16, 841-844) (1983), Chem. Abstr. 100, no. 12, 88886 (1984). Mossbauer study.
- EPIDOTE. Pe-piper, Neues Jahrb. Mineral., Abh. 149, 163-178 (1984)(English). Microprobe analyses (4) from volcanic rocks, Greece.
- EPIDOTE. Pouclet et al., (Jour. Africa Earth Sci. 6, 29-43) (1987) (French) Microprobe analyses (4) from Akjoujt Cu deposit, Mauritania
- EPIDOTE. Ragnarsdottir et al., Geochim. Cosmochim. Acta 48, 1535-1553 (1984). Microprobe analyses (2) from geothermal system, Svartsengi, Iceland.
- EPIDOTE. Sakai et al., (Geochim. J. 18, 45-53) (1984)(Eng.), Chem. Abstr. 101, no. 16, 134293 (1984). Rare-earth bearing epidote in Sanbagawa schists, Japan.
- EPIDOTE. Schiffman and Liou, (J. Metamorph. Geol. 1, 91-101) (1983), Mineral. Abstr. 35, 159 (1984). Hydrothermal synthesis and stability. Stability relations with Fe-analogue of pumpellyite.
- EPIDOTE. Schiffman et al. (Mineral. Mag. 49, 435-449) (1985). Analyses (8) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- EPIDOTE. Selverstone and Munoz, (Contrib. Mineral. Petrol. 96, 426-440) (1987) Microprobe analyses (4) from Eastern Alps

- EPIDOTE. Selverstone, J. *Petrol.* 25, 501-531 (1984). Microprobe analyses (4) from Tavern, Austria.
- EPIDOTE. Semenov et al., (*Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr.*, [Mater.], 10th, 96-102 (1978)(Pub. 1981)) *Chem. Abstr.* 98, no. 24, 201507 (1983). Heat capacity and entropy.
- EPIDOTE. Sharma and Windley, *Mineral. Mag.* 48, 195-209 (1984). Microprobe analyses (1) from Archean gneiss, N.W. India.
- EPIDOTE. Shikazino, (*Geochem. J.* 18, 181-187) (1984)(English), *Chem. Abstr.* 102, no. 2, 9829 (1985). Compositional variation from geothermal areas.
- EPIDOTE. Sills (*Lithos* 16, 112-124) (1983)(Eng.). Microprobe analysis (1) from gneisses, N.W. Scotland.
- EPIDOTE. Spear, J. *Petrol.* 23, 383-426 (1982). Microprobe analyses (5), Mt. Cube quadrangle, Vermont.
- EPIDOTE. Trzcienski et al., *Contrib. Mineral. Petrol.* 85, 311-320 (1984). Microprobe analyses (4) from Bathurst, New Brunswick.
- EPIDOTE. Vanko and Bishop, *Contrib. Mineral. Petrol.* 81, 277-289 (1982). Microprobe analyses (1) from Humboldt lopolith, Nev.
- EPIDOTE. Vivallo, (*Geol. Foeren. Stockholm Foerh.* 106, 257-267 (1985)(Eng.). Microprobe analysis (1) from metamorphic rocks, Garpenberg, Sweden.
- EPIDOTE. Williams, *Econ. Geol.* 78, 1689-1700 (1983). Analysis from Cu deposits, N.W. Spain.
- EPISTILBITE. Lo, (*Proc. Geol. Soc. China (Taiwan)* 24, 9-20 (1981)(English)) *Mineral. Abstr.* 34, 142 (1983). Hydrothermal synthesis.
- EPISTILBITE. Sanders, (*Zeolites* 5, 81-90) (1985). *Chem. Abstr.* 102, no. 24, 212918 (1985). Electron diffraction study of faults in.
- EPISTOLITE. Karup-Moller, (*Neues Jahrbuch Miner., Abh.* 155, 289-304) (1986), *Mineral. Abstr.* 38, 87M/3044 (1987) Analysis from Ilimaussaq, Greenland, a 5.55, b 7.16, c 12.10 A, alpha 103.47 deg., beta 96.00 deg., gamma 88.60 deg.
- EPSOMITE. Calleri et al., (*Acta Crystallogr., Sect. B*, B40, 218-222) (1984), *Chem. Abstr.* 101, no. 2, 15411 (1984). Structure of synthetic. Orth., P2₁2₁2₁, a 11.876, b 12.002, c 6.859 A, Z=4, G 1.67.
- EPSOMITE. Isa and Nogawa, (*Netsu Sokutei* 10, 2-7 (1983)(Japanese)) *Chem. Abstr.* 98, no. 24, 209108 (1983). Thermal decomposition.
- EPSOMITE. Rubbo et al., (*Jour. Crystal Growth* 71, 470-482) (1985), *Mineral. Abstr.* 38, 87M/2507 (1987) Growth morphology
- ERIONITE. Alberti and Brigatti, (*Am. Mineral.* 70, 805-813) (1985). Multivariate analysis of ten elements shows strong chemical differentiation between hydrothermal and sedimentary samples.
- ERIONITE. Lo, *Acta Geol. Taiwanica* 21, 26-32 (1982)(English). Hydrothermal synthesis.
- ERIONITE. Thomssen, *Mineral. Rec.* 14, 109-113 (1983). Occurrence at Malpais Hill, Ariz.
- ERLICHMANITE. Bowles et al., *Mineral. Mag.* 47, 465-471 (1983).
- ERLICHMANITE. Granovskii et al., (*Dokl. Akad. Nauk SSSR* 267, 1211-1213 (1982)) *Chem. Abstr.* 98, no. 12, 92821 (1983). Analysis from Koryak Range, Os 51.56-53.52, Ru 14.23-16.13, Ir 4.32-6.28%, a 5.60A.
- ERLICHMANITE. Tarkian and Bernhardt, (*Tschermaks Mineral. Petrogr. Mitt.* 33, 121-129) (1984)(Eng.). Diagram for optical determination.

- ESKEBORNITE. Bernardini et al., (N. Jb. Miner., Mh., 326-336) (1983), Mineral. Abstr. 36, 43-44 (1985). Stability in system Cu-Fe-Se.
- ESKEBORNITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- ESKIMOITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (3) from gold-silver deposits
- ESKIMOITE. Kovalenkar et al., Mineral. Zh. 6, no. 2, 16-30 (1984). Microprobe analyses (3) from Kochbulak deposit.
- ESKOLAITE. Rand, (Comm. Eur. Communities, [Rep.] EUR 7820, Pt. 2, 13-1/13-6 (1982)) Chem. Abstr. 98, no. 10, 78877 (1983). Review of thermodynamic properties.
- ESKOLAITE. Rumyantseva, (Zap. Vses. Mineral. O-va. 114, 55-62) (1985). Analysis from Karelia, G 5.18, a 4.964, c 13.60A.
- ETTRINGITE. McMurdie et al., (Powder Diffraction 1(4), 334-345) (1986) X-ray powder data
- ETTRINGITE. Postl and Walter, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 329-332 (1983) (G(533)G78mb). Occurrence at Muttkogel, Styria, infra-red, x-ray data, a 7.315, c 17.541 A.
- ETTRINGITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum 51, 33-36 (1983). Occurrence, Kloeck, Styria, x-ray data, unit cell.
- EUCLASE. Burt; Mineral. Assoc. Canada Short Course no. 8, 135-148 (1982). Review of occurrence in granite pegmatites. Analyses.
- EUCLASE. Dobrovolskaya et al., Mineral. Zh. 6, no. 5, 64-72 (1984). Magnetic properties.
- EUCLASE. Hanson, (Bull. Mineral. 108, 139-143) (1985). Analysis from Ottere, Belgium, a 4.778, b 14.334, c 4.632A, beta 100.31 degrees. Optics.
- EUCLASE. Hsu, Mem. Geol. Soc. China 5, 33-46 (1983) (English) (G(611)G292m). Stability in system $\text{BeO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 300-700 degrees.
- EUCLASE. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- EUCRYPTITE. Lahti et al. (Bull. Geol. Soc. Finland 54, 5-13) (1982) (English) Mineral. Abstr. 36, 202 (1985). a 13.473, c 9.000A, R3, x-ray data, G 2.66, n0 1.585, nE 1.572. Chem. Abstr. 98, no. 16, 129417 (1983). Occurrence in pegmatite, Finland
- EUCRYPTITE. London and Burt, Mineral. Assoc. Canada Short Course no. 8, 99-133 (1982). Review of occurrence and properties in granite pegmatites.
- EUCRYPTITE. Skvortsov et al., (Zap. Vses. Mineral. O-va. 114, 216-219) (1985). Calculation of thermodynamic parameters.
- EUDIALYTE. Bollingberg et al., Tschermarks Mineral. Petrogr. Mitt. 32, 153-169 (1983) (English). Analyses (5) from Langesund, Norway, optics, trace elements, unit cells.
- EUDIALYTE. Feklichev, Nov. Dannye Miner. SSSR 31, 169 - (1983). Analyses and optics of zoned crystals.
- EUDIDYMITE. Dobrovolskaya, et al., Mineral. Zh. 6, no. 5, 64-72 (1984). Magnetic properties.
- EUDIDYMITE. Novikova, Mineral. Zh. 6, no. 5, 84-90 (1984). Analysis, unit cell.
- EUGSTERITE. Abstr. in Bull. Mineral. 106, 627 (1983). Abstract of original description.

- FAMATINITE. Sugaki et al., Sci. Rep. Tohoku Univ., Ser. 3, 15, 257-271 (1982)(English). Synthesis, stability in system $\text{Cu}_3\text{AsS}_4\text{-Cu}_3\text{SbS}_4$. Unit cells.
- FAUSTITE. Kunov et al., (Geokhim., Mineral. Petrol. 16, 55-60 (1982)) Chem. Abstr. 98, no. 20, 164119 (1983). Analysis of cuprian, ZnO 5.30, CuO 0.97%, from Bulgaria.
- FEDORITE. Lazebnik and Lazebnik, Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 32-50 (1981). Analyses from Yakutia, X-ray data, DTA, infra-red.
- FEDORITE. Sokolova et al., (Kristallografiia 28, 170-172 (1983)) Chem. Abstr. 98, no. 20, 170714 (1983). Structure. Triclinic, C1}, a 9.676, b 16.706, c 13.233A, alpha 93.35°, beta 114.96, gamma 90.03, Z=2.
- FERRIHYDRITE. Walenta, (Aufschluss 33, 367-373 (1982)) Mineral. Abstr. 34, 217-218 (1983). Occurrence in Black Forest.
- FERRIHYDRITE. Wilson and Russell, Mineral. Mag. 47, 85-87 (1983). Type "Melanosiderite" from Pa. is ferrihydrite. X-ray data, infra-red spectrum.
- FERRIPHLOGOPITE. Shinno et al., J. Mineral. Soc. Jpn. 15, 273-282 (1982)(Japanese). Analysis from carbonatite, Palabora, S. Africa, composition $\text{K}(\text{Mg}, \text{Fe}^{+2})_3(\text{Fe}^{+3}, \text{Al})\text{Si}_3\text{O}_{10}(\text{OH})_2$, mon., C2/m, a 5.361, b 9.288, c 10.292, beta 100.02°. X-ray, Mossbauer data.
- FERSMITE. Makarochkin, (Geol. Geofiz., no. 2, 128 (1983)) Chem. Abstr. 98, no. 20, 164132 (1983). Analyses from Il'men Mts.
- FIBROFERRITE. Scordari, (Tschermaks Mineral. Petrogr. Mitt. 28, 17-29 (1981)) Mineral. Abstr. 34, 118 (1983). Structure. Trig., a 24.176, c 7.656A, G 1.95, Z=18, $\text{Fe}(\text{OH})\text{SO}_4 \cdot x\text{H}_2\text{O}$.
- FIZELYITE. Mozgova et al., (Mineral. Zh. 5, no. 1, 17-33 (1983)) Chem. Abstr. 98, no. 26, 219050 (1983). The homologous series andorite - fizelyite - ramdohrite - sundtite. Compositions, unit cells.
- FIZELYITE. Munoz and Moelo, Bull. Mineral. 105, 625-632 (1982). Microprobe analyses (1) from Bournac, France.
- FLUOCERITE. (La) (Abstr. in Am. Mineral. 69, 566) (1984). Abstract of original description.
- FLUOCERITE. Styles and Young, Mineral. Mag. 47, 41-46 (1983). Microprobe analysis from Afu, Nigeria. X-ray data.
- FLUORAPOPHYLLITE. Plimer, Miner. Deposita 19, 19-25 (1984)(English). Analyses (1) from Broken Hill, Australia (fluor). F 2.24%
- FLUORITE. Baubron et al., (Compt. Rend. Acad. Sci. France 300, 511-516) (1985)(French). Rare earths in, Provence, France.
- FLUORITE. Bebik and Pleskova, (Nov. Dannye Miner. 30, 26-32 (1982)) Chem. Abstr. 98, no. 26, 219063 (1983). Radiation haloes in.
- FLUORITE. Bodnar and Bethke, Econ. Geol. 79, 141-161 (1984). Study of fluid inclusions in.
- FLUORITE. Faiziev and Iskandarov, (Geokhimiia, no. 2, 263-274 (1983)(Russian)) Chem. Abstr. 98, no. 14, 110852 (1983). Trace elements and rare earths in, Pamirs.
- FLUORITE. Faiziev and Koplus, (Geokhimiia, 649-656) (1985), Chem. Abstr. 103, no. 4, 25119 (1985). Sr content.
- FLUORITE. Faiziev and Koplus, (Geokhimiya, 509-523) (1987) (Russian), Chem. Abstr. 106, no. 26, 217099 (1987) Rb, Cs, and Li contents from various types of deposits
- FLUORITE. Garcia Gil et al., (Trab. Geol. 11, 73-81 (1981)(Spanish)) Chem. Abstr. 98, no. 14, 110829 (1983). Microhardness as indicator of structural distortion in.

- FLUORITE. Glikin, et al., (Zap. Vses. Mineral. O-va. 113, 628-632) (1984), Chem. Abstr. 102, no. 4, 28612 (1985). Hydrothermal synthesis; effect of pH.
- FLUORITE. Gotzinger and Weinke (Tscherma's Mineral. Petrogr. Mitt. 33, 101-119) (1984). Rare earths and other minor elements, Austria.
- FLUORITE. Hein et al., Neues Jahrb. Mineral., Monatsh., 305-316 (1984)(English). Rare-earth fractionation in.
- FLUORITE. Ivanova et al., (Geokhimiia, no. 4, 502-513 (1983)) Chem. Abstr. 98, no. 24, 201524 (1983). Mn and Fe in.
- FLUORITE. Kalinovskii, (Trudy Akad. Nauk SSSR, Komi Filial, Inst. Geol. 45, 67-74) (1984), Chem. Abstr. 101, no. 8, 57832 (1984). X-ray luminescence.
- FLUORITE. Kiselev, (Dokl. Akad. Nauk Tadzh. SSR 27(9), 517-520) (1984), Chem. Abstr. 103, no. 2, 9133 (1985). Analysis and trace elements (not in abstr.) from SW Pamirs.
- FLUORITE. Krasil'shchikova, (Mineral. Zh. 7, no. 1, 75-77) (1985), Chem. Abstr. 103, no. 6, 39961 (1985). Model of anion defects in structure.
- FLUORITE. Loredó Perez and García Iglesia (Rev. Minas 3, 49-54) (1983)(Span.), Chem. Abstr. 101, no. 14, 114128 (1984). Morphology, fluid inclusions of hydrothermal synthetic.
- FLUORITE. Meary et al., (Chem. Geol. 48(1-4), 115-124) (1985), Chem. Abstr. 102, no. 26, 206721 (1985). Rare-earths in 12, Montroie, France.
- FLUORITE. Plimer, Miner. Deposita 19, 19-25 (1984)(English). Analyses (1) from Broken Hill, Australia (fluor).
- FLUORITE. Shepherd et al., (Bull. Bur. Rech. Geol. Min., Sect. 2: Geol. Gites Miner. (Fr.), no. 4, 371-377 (1982)(English)) Chem. Abstr. 98, no. 24, 201556 (1983). Rare earths in fluorite, Pennines, England.
- FLUORITE. Tumenbayar and Smirnova (Geokhimiia 3, 419-423) (1985). Y and Yb in.
- FLUORITE. Vyborov et al., (Mineral. Zh. 6, no. 1, 32-38) (1984), Chem. Abstr. 101, no. 2, 10124 (1984). X-ray luminescence.
- FLUORITE. Vynar et al., (Mineral. Sb. (Lvov) 38, no. 1, 40-48) (1984), Chem. Abstr. 101, no. 10, 76140 (1984). Fluid inclusions in.
- FOSHAGITE. Bunno et al., (Kozan Chishitsu 32, 141-150 (1982)(Japanese)) Chem. Abstr. 98, no. 8, 57365 (1983). Analyses (not in abstr.), X-ray data from Iwate Pref., Japan.
- FRAIPONTITE. Foord et al., Mineral. Rec. 14, 131-132 (1983). Microprobe analysis from Gleeson, Ariz. (CuO 5.2%), a 5.331, b 9.23, c 7.275A, beta 104.15°, G 3.08.
- FRANCISCANITE. Mineral. Abstr. 38, 87M/3187 (1987) Abstract of original description
- FRANCISCANITE. Pertlik, (N. Jb. Miner. Mh., 493-499) (1986), Mineral. Abstr. 38, 87M/2100 (1987) Structure P3, a 8.1518, c 4.8091, Z=2 Analogue of welinite
- FRANCKEITE. Kaplunnik, (Deposited Doc. VINITI 92-82, 98-104 (1981)) Chem. Abstr. 98, no. 14, 110795 (1983). Discussion of structure. Orth., ps tet., a 46.94, b 11.64, c 17.31A.
- FRANCKEITE. Moh, (Mineral. Petrol. 36, 191-204) (1987) (Eng) Discussion of Pb-Sn substitution in
- FRANCKEITE. Moh et al., Neues Jahrb. Mineral., Abh. 150, 25-64 (1984)(English). Microprobe analyses (16) from Summary of previous work. Synthesis and heating experiments.
- FRANCKEITE. Nekrasova et al., (Mineral. Zh. 8(3), 79-84) (1986) (Russian) Microprobe analysis
- FRANCKEITE. Orgenova et al., Int. Geol. Congress, 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 101-108 (Russian with English abstr.). New analysis from Smurinov deposit. True unit cell has pseudo tetragonal layer containing 2MeS, not 1.5 MeS. (201 In 39(g)).

- FRANCOLITE. Young et al., (Rep. - Inst. Geol. Sci. (U.K.), no. 82-1, 10-14 (1982)) Chem. Abstr. 98, no. 20, 164158 (1983). Analysis from Cambridgeshire, F 3.95, CO₂ 3.17%. X-ray powder data, a 9.340, c 6.396A.
- FRANCONITE. Jambor et al. (Can. Mineral. 22, 239-243) (1984), Chem. Abstr. 101, no. 16, 134288 (1984). Abstract of original description. New mineral from Quebec, (Na,Ca)₂Nb₄O₁₁ · 9H₂O. Monoclinic, a 22.22, b 12.857, c 6.359 A beta 92.24 deg., G 2.72. Analyses, optics, x-ray and infra-red data.
- FRANCONITE. Jambor et al., Abstract in Am. Mineral. 70, 436-437 (1985). Abstract of original description.
- FRANKDICKSONITE. Collocott, (J. Phys., Colloq. (Orsay, France), C3, 16, 6179-6184) (1983), Chem. Abstr. 100, no. 16, 127643 (1984). Heat capacity 1:7-40 degrees K.
- FRANKLINITE. Momdzhii (Izv. Vyssh. Uchebn. Zaved., Geol. Razved. 1, 26-33) (1985), Chem. Abstr. 103, no. 2, 9132 (1985). Crystal chemical formula based on Mossbauer, magnetic resonance, and neutron diffraction data.
- FRANKLINITE. O'Neill and Navrotsky, Am. Mineral. 69, 733-753 (1984). Calculation of cation distribution and thermodynamic properties.
- FRANSOLETITE. Abstr. in Am. Mineral. 70, 215 (1985). Abstract of original description.
- FRANSOLETITE. Peacor, et al., Bull. Mineral. 106, 499-503 (1983)(English). New mineral from pegmatite, Custer, SD, K₂Ca₃Bo₂(PO₄)AH₂O. Analysis, optics, x-ray data, G 2.56. Monoclinic, P2₁/a, a 7.354, b 15.07, c 7.00 A, beta 96.41 degrees.
- FREDRIKSSONITE. Dunn, et al., (Geol. Foeren. Stockholm Foerh. 105, 335-340) (1983)(English), Chem. Abstr. 102, no. 2, 9827 (1985). New mineral, Mg₂Mn⁺³(BO₃)O₂, of pinakiolite grey. Orth., Pbam or Pba2, a 9.18, b 12.555, c 2.954 A, Z=4. Microprobe analysis, x-ray data, G 3.845. Optics. from Langban
- FREEDITE. Dunn and Rouse (Am. Mineral. 70, 845-848) (1985). New mineral from Lauriom, Greece, Pb₁₅(Cu,Fe⁺²)₃As⁺³₄O₁₉Cl₁₀, mon., C2, Cm, or C2/n, a 13.569, b 20.085, c 7.463A, beta 105.75 degrees, Z=2. Greenish-yellow, G 7.0. Analysis, x-ray data.
- FREIBERGITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- FREIBERGITE. Aliev, (Tr. Azerb. Otd., Vses. Mineral. 0-va., no. 2, 120-125 (1981)) Chem. Abstr. 98, no. 12, 92772 (1983). Microprobe analysis, Caucasus.
- FREIBERGITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167) (1986) (Russian) 431 M565 Microprobe analyses (5) from gold-silver deposits
- FREIBERGITE. Hackbarth and Petersen (Econ Geol. 79, 448-460) (1984), Chem. Abstr. 100, no. 26, 213150 (1984). Microprobe analyses of argentian. Model for deposition.
- FREIBERGITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- FREIBERGITE. Leonard and Christian, (Mineral. Petrol. 36, 151-168) (1987) (Eng) Analyses (3) from Thunder Mt. complex, Idaho (electrum)
- FREIBERGITE. Mioskos, Chem. Erde 42. 281-296 (1983)(English). Microprobe analyses (1) from Macedonia.
- FREIBERGITE. Nakayama, (Mining Geology (Japan) 36, 511-522) (1986) (Eng) Microprobe analyses (10) from Gunma Pref., Japan

- FREIBERGITE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987)
Microprobe analyses (19) from Western Alps, Italy
- FREIBERGITE. Sakharova and Bryzgalov, Mineralogy of Ore Deposits, 37-48
(1983)(Russian) (410M662).
- FREIBERGITE. Schluter; et al., Tschermaks Mineral. Petrogr. Mitt. 33, 287-296
(1984). Microprobe analyses (2) from Walchen deposit, Styria, Austria.
- FREIBERGITE. Sugaki et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.
77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe
analysis from Hokkaido.
- FREIBERGITE. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol.
79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not
in abs.) from Koryu mine, Hokkaido, Japan
- FREIBERGITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng)
Microprobe analyses (3) from S. Korea
- FREIBERGITE. Takeuchi and Shikazono (Min. Geol. Japan 34(3), 187-195)
(1984)(Eng.). (G(620)M66). Microprobe analyses (7) from Kagoshima Pref.
Japan.
- FREIBERGITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984).
Microprobe analyses (13) from Hallefors, Sweden.
- FREIESLEBENITE. Bortnikov, et al., International Mineralog. Assoc., 11th
Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability
in system Fe-Pb-Ag-Sb-As-S.
- FREIESLEBENITE. Finashin et al. (Dokl. Akad. Nauk SSSR 279, 454-456) (1984)
(Russ), Chem. Abstr. 102, no. 12, 98522 (1985). Occurrence in Maritime
Prov., USSR. Analysis (not in abstr.), x-ray, optics.
- FREIESLEBENITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from
Hallefors, Sweden.
- FRESNOITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with
taramellite in Calif.
- FRIEDELITE. Ozawa et al., Can. Mineral. 21, 7-17 (1983). Structure.
Monoclinic, ps trigonal.
- FRIEDELITE. Plenaar, (Gems and Gemology 18, 221-225) (1982), Mineralog. Abstr.
34, 429 (1983). Analysis of gem material from Karuman, S. Africa Optics.
- FRIEDRICHITE. Kovalenkar, (Gold and silver deposits "Nauka", Moscow, 111- 145)
(1986) (Russian) 431 M565 (5) analyses from gold-silver deposits
- FROBERGITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- FROODITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol.,
Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe
analysis from Norilsk deposit.
- FROODITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109
(Russian)(410M662). Dielectric constant, resistivity.
- FROODITE. Neradovskii et al., (Zap. Vses. Mineral. O-va. 111, 552-556 (1982))
Chem. Abstr. 98, no. 4, 19664 (1983). Microprobe analysis from Karik'yavr,
Kola Peninsula. Optics.
- FROODITE. Tarkian and Bernhardt (Tschermaks Mineral. Petrogr. Mitt. 33,
121-129) (1984)(Eng.). Diagram for optical determination.
- FULOPPITE. Fortey et al. (Proc. Yorkshire Geol. Soc. 45, 59-65) (1984).
X-ray data from Wales. powder data
- GADOLINITE. Dobrovolskaya et al., Mineral. Zh. 6, no. 5, 64-72 (1984).
Magnetic properties.

- GADOLINITE. Miyawaki et al. (Am. Mineral. 69, 948-953) (1984). Structure. Monoclinic, $P2_1/a$, a 10.000, b 7.565, c 4.768A, beta 90.3 degrees, Z=2. Microprobe analysis from Yokkaichi, Japan.
- GAHNITE. Batchelor and Kinnaird (m425-429) (1984). Analysis of gem quality gahnite, Nigeria, G 4.4-4.59, a 8.091 A, n 1.79. Comparison with 22 other analyses shows that they fall into 2 distinct fields, highest Zn in igneous rocks.
- GAHNITE. Cerny and Hawthorne, Mineral. Assoc. Canada Short Course no. 8, 163-186 (1982). Review of occurrence in granitic pegmatites.
- GAHNITE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (3) from metamorphosed bauxites, Naxos, Greece. 6 hercynite - gahnite solid solutions.
- GAHNITE. Jackson, (J. Gemmol. 18, 265-276 (1982)) Mineral. Abstr. 34, 143 (1982). Analysis of gem from Nigeria, n 1.793-1.794, G 4.400-4.589.
- GAHNITE. Suzuki and Osakabe (Mem. Geol. Soc. Japan 21, 37-49) (1982)(Eng.). (G(620)G29m). Analysis (1) from Hida belt, Japan.
- GAHNITE. Vivallo (Geol. Foeren. Stockholm Foerh. 106, 257-267 (1985)(Eng.). Microprobe analysis (1) from metamorphic rocks, Garpenberg, Sweden.
- GAHNITE. Williams, Mineral. Mag. 47, 233-235 (1983). Microprobe analysis from Fornas, Spain.
- GAIDONNAYITE. Roberts and Bonardi, (Papers Geol. Survey Canada 83, no. 1A, 480-482) (1983), Mineralog. Abstr. 34, 465 (1983). Microprobe analysis from Kipawa, Quebec. Optics. x-ray data, a 11.778, b 12.84 Z, c 6.693 A, G 2.701 K₂O 6.1, Na₂O 9.4, CaO 2.1%.
- GALAXITE. Essene and Peacor, Am. Mineral. 68, 449-455 (1983). Microprobe analyses (6) from Bald Knob, N.C., of galaxite-jacobsite intergrowths. Sample with MnAl₂O₄ 92 mole % had a 8.181A.
- GALAXITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganiferous cherts, Alps
- GALENA. Barrett and Anderson, (Econ. Geol. 77, 1923-1933 (1982)) Chem. Abstr. 98, no. 6, 37909 (1983). Solubility in NaCl-rich brines at 95° (satd with H₂S).
- GALENA. Boldyreva (Zap. Vses. Mineral. O-va. 114, 43-49) (1985)(Russ.). Optics from Zambaraks deposit, E. Karamazar. Analysis.
- GALENA. Bortnikov, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- GALENA. Cabri et al. (Can. Mineral. 23, 133-148) (1985). Proton microprobe analyses (53) for trace elements, esp. Se.
- GALENA. El-Bouseily et al. (Miner. Deposita 20, 194-200) (1985). Minor elements in (6), Eastern Desert gold mine, Egypt.
- GALENA. Emslie and Beukes, (Ann. Geol. Opname, S.-Afr., 15, 11-28 (1981)(Pub. 1982)) Chem. Abstr. 98, no. 24, 201527 (1983). Minor elements in 20, S.W. Africa.
- GALENA. Franzini et al. ((Rend. Soc. Ital. Mineral. Petrol. 39, 717-723) (1984)(Ital.). G(550)So13n. Microhardness (14 samples) before and after heating.
- GALENA. Galii and Krochuk, (Mineral. Zh. 7(5), 64-) (1985) (Russian) Microprobe analyses (1) from carbonatites, Ukrainian Shield
- GALENA. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (8) from Chikuashih ore deposit, Taiwan.
- GALENA. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (2) from Sark, Channel Islands.

- GALENA. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- GALENA. Kurilo et al. (Dokl. Akad. Nauk SSSR 276, 455-458) (1984). Chem. Abstr. 101, no. 12, 94657 (1984). Silver content and mechanism of its replacement of Pb.
- GALENA. Makovicky and Karup-Moller, Can. Mineral. 22, 565-575 (1984). Microprobe analysis (1) from Ivigtut, Greenland.
- GALENA. McQueen, Neues Jahrb. Mineral., Monatsh., 323-336 (1984)(English). Microprobe analyses (2) from Broken Hill, N.S. Wales.
- GALENA. Mioskos, Chem. Erde 42. 281-296 (1983)(English). Microprobe analyses (1) from Macedonia.
- GALENA. Mozgova et al., (Rend. Soc. Ital. Mineral. Petrol 40, 277-283) (1985) (Eng) Microprobe analyses (4) from Vulcano, Italy X-ray data Se 0.07%
- GALENA. Muratov, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 224-232 (1980)(Russian) (Sulfosalt Vol.). Reflection spectrum in short-wave region.
- GALENA. Nishiyama, et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 281-289 (1983)(English) Minor elements in (4), Sulawesi, Indonesia.
- GALENA. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe analysis (1) from Alma, Colo.
- GALENA. Rafal'skii, (Geokhimiia, no. 12, 1780-1797 (1982)) Chem. Abstr. 98, no. 6, 37914 (1983). Solubility in chloride solutions at 100-300° calcd.
- GALENA. Silaev 1982, p. 158 (410(570)Si32m). Analyses (10).
- GALENA. Song, (Yankuang Ceshi, 1, no. 3, 37-44 (1982)(Chinese)) Chem. Abstr. 98, no. 18, 146802 (1983). Trace elements in, from Fankou deposit, China.
- GALENA. Song; Miner. Deposita 19, 95-104 (1984)(English). Minor elements in (6), Fankou deposit, China.
- GALENA. Terzinc, (Glas. Prir. Muz. Beogradu Ser. A 37, 51-115) (1982), Chem. Abstr. 102, no. 4, 28627 (1985). Tl and Hg in, from Yugoslavia.
- GALENA. Tufar (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 148-157) (1980)(Eng.) (Sulfosalt Vol.). Reflectance.
- GALENA. Uhler and Helz (Geochim. Cosmochim. Acta 48, 1155-1160) (1984). Solubility of galena. Free energy of formation at 298 degrees K is -79.1 +/- 0.8 KJ/mole.
- GALENA. Vendrell-Saz et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 273-286) (1980)(Eng.) (Sulfosalt Vol.). Reflectance at wave lengths 250-1100 mm.
- GALENA. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1980)) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various wave lengths. Analyses.
- GALENA. Xuexin, Miner. Deposita 19, 95-104 (1984). Minor elements in, from Fankou deposit, China.
- GALENA. Yamamoto, (Chem. Geol. 42, 243-248) (1984), Chem. Abstr. 100, no. 8, 54693 (1984). Experimental distribution of Se between galena and sphalerite.
- GALENA. Yushkin and Pavlov, (Trudy Akad. Nauk SSR, Komi Felid Inst. Geol. 40, 38-44) (1983), Chem. Abstr. 100, no. 8, 54662 (1984). Analysis of selenian variety, Se 9.26%. Optics.
- GALENA. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analyses (11) from Hallefors, Sweden.
- GALENOBISMUTITE. Breskovska et al., (Proc. 13th Meeting IMA, Varna, 1982, 131-146) (1986) (Russian) Microprobe analysis Rhodope Mts., Bulgaria
- GALENOBISMUTITE. Mozgova et al., (Rend. Soc. Ital. Mineral. Petrol 40, 277-283) (1985) (Eng) Microprobe analyses (1) from Vulcano, Italy X-ray data Se 3.3%

- GALENOBISMUTITE. Stoinova and Begizov, (Izv. Vyssh. Uchebn. Zaved., Geol. Razved., 25, no. 10, 69-74 (1982)) Chem. Abstr. 98, no. 10, 75501 (1983). Analysis, X-ray, optics from northern Rhodopes, Bulgaria.
- GALENOBISMUTITE. Vinogradova et al. (Zap. Vses. Mineral. O-va. 112, 677-681) (1983), Mineral. Abstr. 36, no. 2, 205 (1985). Analysis from Tyrny-Auz, Caucasus. X-ray data, reflectance.
- GALENOBISMUTITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- GALKHAITE. Kaplunnik and Pobedimskaya, Deposited Doc. VINITI 6348-82, 18-22 (1982)(Russian). Unit cell data.
- GALKHAITE. Podeminskaya, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 49-58 (1980)(Russian) (Sulfosalt Vol.). Structure. Cubic, I2, a 10.422 Å, Z=12.
- GALLITE. Kovalenker et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M 565 Microprobe analyses (4) from Bulgaria
- GAMAGARITE. Basso et al., (N. Jb. Miner., Mh., 295-304) (1987) (Eng) Analysis from Italy, a 9.121, b 6.142, c 7.838 Å, beta 112.88 deg., Monoc., $P2_1/m$
- GAMAGARITE. Harlow, et al., Am. Mineral. 69, 803-806 (1984). New microprobe analysis, x-ray data, infra-red. Formula $Ba_2(Fe^{+3}, Mn)(VO_4)_2(OH, H_2O)$, mon., $P2_1/m$, a 9.15, b 6.17, c 7.88, beta 112.7 degrees, related to brackebuschite.
- GANANITE. Cheng et al. (Yanshi Kuangwu Ji Ceshi 3, no. 2, 119-123) (1984)(Chin.), Chem. Abstr. 102, no. 14, 116709 (1985). Occurrence at Laikeng, Jiangxi, G 8.93. X-ray data like synthetic. Analysis.
- GANOPHYLLITE. Dunn et al., Mineral. Mag. 47, 563-566 (1983). Microprobe analyses (13) Formula $(K, Na, Ca)_2(Mn, Mg, Al)_8(Si, Al)_{12}(O_{29})(OH)_3(OH)_4 \cdot 8-9 H_2O$
- GANOPHYLLITE. Kato (Mineral. J. Tokyo 10, 1-13) (1980), Mineral. Abstr. 35, 17 (1984). a 16.60, b 27.13, c 50.18Å, beta 93.96 degrees, Z=24.
- GARNET. Ackermant et al., (Jour. Metamorph. Geol. 5, 323-339) (1987) Microprobe analyses (2), Caraiba complex, Brazil
- GARNET. Ackermann et al., (Earth Planet. Sci. Lett. 62, 208-214 (1983)) Chem. Abstr. 98, no. 16, 129413 (1983). System pyrope-H₂O at 25 kb and 1000° shows infra-red spectrum indication H₂O present at 0.05%.
- GARNET. Agaforov et al. (Geol. Geofiz. 3, 112-116) (1985), Chem. Abstr. 103, no. 6, 39986 (1985). Megacryst from Mongolia (Py-Sp) with parting on (422).
- GARNET. Aizuki, Am. Mineral. 69, 328-338 (1984). Study of birefringent Gr and An shows order-disorder growth sectors.
- GARNET. Akizuki, et al., Am. Mineral. 69, 896-901 (1984). Origin of iridescence in Gr-An garnet, Japan, due to growth lamellae.
- GARNET. Allen and Boettcher, Am. Mineral. 68, 307-314 (1983). Formation from andesite and basalt at high pressures. Analyses.
- GARNET. Anan'ev and Sknyrev, Dokl. Akad. Nauk SSSR 274, 402-406 (1984)(Russian). Microprobe analyses (3) from melt inclusions in olivine, Koudach Volcano, Kamchatka.
- GARNET. Andersen, Mineral. Mag. 48, 21-26 (1984). Inclusion patterns in zoned garnets, Mageroy, Norway.
- GARNET. Andreeva and Mityushkin, (Rock-forming minerals of magmatic rocks, Nauka, 138-147 Analyses (16) from Vitim (Gr-An)
- GARNET. Andrew, J. Metamorph. Geol. 2, no. 2, 143-163 (1984). Microprobe analyses (5), NS Wales.
- GARNET. Aoki, (Sci. Rep. Tohoku Univ., Ser. 3, 15, 121-126 (1981)(English)) Chem. Abstr. 98, no. 18, 146910 (1983). Analyses from kimberlites, Colo. Plateau.

- GARNET. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984).
Microprobe analyses (3) from granulite, Sipiwesk Lake, Manitoba.
- GARNET. Arkai, Acta Mineral.-Petrogr. 26, no. 2, 129-153 (1984)(English).
G(534)S22am. Microprobe analyses (11) from crystalline basement, Hungary.
- GARNET. Asami and Asami (Mem. Geol. Soc. Japan 21, 151-161) (1982)(Jap.).
(G(620)G29m). Analyses (4) from xenoliths in andesites, Kagawa Pref.).
- GARNET. Ater et al. (Kimberlites 11B, 309-318) (1984). (150.3 D493).
Microprobe analyses (8) from Colo.-Wyo. kimberlites.
- GARNET. Baker et al., (Jour. Metamorph. Geol. 5, 357-370) (1987) Microprobe
analyses (4) from W. Australia
- GARNET. Baltatzis, Neues Jahrb. Mineral., Monatsh., 317-322 (1984)(English).
Microprobe analysis from rodingite, Greece. (Gr)
- GARNET. Barashkov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh
Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 86-105
(1981). Analyses (10) of inclusions in olivine of kimberlites.
- GARNET. Barberi et al. (Bull. Volcanol. 47, 125-141) (1984)(Eng.). Microprobe
analyses (1) from Latera caldera, Italy.
- GARNET. Barink, Lithos 17, 247-258 (1984) (English). Microprobe analyses (2)
from metagabbro, Quebec.
- GARNET. Barley, (Jour. Volcanol. Geothermal Research 32, 247-267) (1987)
Microprobe analyses (6) from volcanic rocks, New Zealand
- GARNET. Barnicoat, J. Metamorph. Geol. 1, 163-182 (1983). Microprobe analyses
(10) from Scourian complex, N.W. Scotland.
- GARNET. Basso et al. (Neues Jahrb. Mineral., Abh. 148, 246-258) (1984)(Eng.),
Chem. Abstr. 100, no. 24., 195226 91984). Structure and chem. of
hydrogarnets, Liguria, Italy.
- GARNET. Basso, (N. Jb. Miner. Mh., 108-114) (1985), Mineral. Abstr. 38,
87M/2098 (1987) Unit cells and M-O distances for garnets and hydrogarnets
- GARNET. Basu, et al., Contrib. Mineral. Petrol. 86, 35-44 (1984). Microprobe
analyses (5) from kimberlite dikes, N.Y.
- GARNET. Beck, (Soc Geol. Nord Publ. 14, 191-280) (1986) (French) G(540) qN77p
Microprobe analyses (2) from near Caracas, Venezuela
- GARNET. Berg and Wiebe (Contrib. Mineral. Petrol. 90, 226-235) (1985).
Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- GARNET. Birkett and Trzeciński, Can. Mineral. 22, 675-680 ;(1984). Microprobe
analyses (10) with high FeO (up to 20.77%) and MnO (up to 23.33%). X-ray
data. OH ion present.
- GARNET. Black, et al., J. Metamorph. Geol. 1, 277-303 (1983). Microprobe
analyses (13) from Field Islands, Antarctica. (A1)
- GARNET. Boctor and Yodu, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe
analyses (9) from melilite rocks, S. Africa
- GARNET. Botkunov et al., (Geol. Rudn. Mestorozhd. 29(1), 15-20) (1987)
(Russian) Analyses (2) from kimberlite pipes, Yakutia, with sulfide inclusions
- GARNET. Boyd, et al., Contrib. Mineral. Petrol. 86, 119-130 (1984).
Microprobe analyses (2), Mzongwana kimberlite, S. Africa.
- GARNET. Bradley and McCallum (Kimberlites 11B, 205-217) (1984). (150.3 D193).
Microprobe analyses (7) from kimberlites, Col. and Wyo.
- GARNET. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (2)
from Werner Bjerge complex, Greenland.
- GARNET. Brown and Earle, J. Metamorph. Petrol. 1, 183-203 (1983). Microprobe
analyses (4) from gneisses, E. Indonesia.

- GARNET. Cerny and Hawthorne, Mineral. Assoc. Canada Short Course no. 8, 163-186 (1982). Review of occurrence in granitic pegmatites.
- GARNET. Chamberlain and Lyons, Am. Mineral. 68, 530-540 (1983). Microprobe analyses (4), schists, central N.H.
- GARNET. Chatillon-Colinet et al., (Geochim. Cosmochim. Acta 47(3), 439-444) (1983), Mineral. Abstr. 35, 43 (1984). Chem. Abstr. 98, no. 20, 164121 (1983). Enthalpy of formation of almandine by borate calorimetry.
- GARNET. Chatterjee et al., Contrib. Mineral. Petrol. 88, 1-13 (1984). Synthesis, stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, a 11.8505 A, Z=8 (Grossular).
- GARNET. Choi et al., (Ganseki Kobutsu Kosho Gakkaishi 78, 428-440) (1983), Chem. Abstr. 101, no. 2, 10134 (1984). Analyses (not in Abstr.) of grossular-uvarovite series from Korea.
- GARNET. Choi et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 428-440 (1983)(English). Microprobe analyses (14) of chromian grossular and aluminum uvarovite (Cr_2O_3 1.3-15.7%) from Ulsan mine, Korea. X-ray data.
- GARNET. Chopin, (Geol. Soc. Am. Mem. 164, 31-42) (1986) Microprobe analyses (4) from Dora Maira massif, W. Alps (Py)
- GARNET. Chopin, Contrib. Mineral. Petrol. 86, 107-118 (1984). Microprobe analyses (6) from blue schists, W. Alps. Nearly pure pyrope.
- GARNET. Ciglini, (Atti Accad. Sci. Torino, Cl. Sci. Fis., Mat. Nat. 115(5-6), 331-344) (1981)(publ. 1984)(Eng.), Chem. Abstr. 103, no. 8, 56917 (1985). Analyses (not in abstr.) of zoned garnets, mica schists, Italy.
- GARNET. Clarke et al., (Jour. Metamorph. Geol. 5, 291-306) (1987) Microprobe analyses (10) from Olary Block, S. Australia (Al)
- GARNET. Clemens and Wall, Contrib. Mineral. Petrol. 88, 354-371 (1984). Microprobe analyses (6) from ignimbrites, S.E. Australia. (Al)
- GARNET. Cotkin, (Contrib. Mineral. Petrol. 96, 192-200) (1987) Microprobe analysis (2) from blueschist, N. Calif. (Al)
- GARNET. Cuchler et al., (Cas. Moravsk. Muzei 71, 15-22) (1986) (Czech) Microprobe analysis (5) from metapegmatite, Moravia (Sp-Al)
- GARNET. Cygan and Lasaga, (Am. J. Sci. 285, 328-350) (1985), Chem. Abstr. 102, no. 26, 206724 (1985). Self-diffusion of Mg in pyrope at 750 degrees and 900 degrees C.
- GARNET. Cygan and Lasaga, Contrib. Mineral. Petrol. 82, 117 (1983). Correction to previous paper on growth and zoning in.
- GARNET. Dechomets, (Miner. Deposita 20, 201-216) (1985)(French). Microprobe analyses (4) from skarn, Niccioleta, Italy (Al).
- GARNET. Delor et al., J. Metamorph. Geol. 2, 55-72 (1984). Microprobe analyses (6), French Massif. Centrale. (almandine).
- GARNET. Demin and Demina, (Dokl. Akad. Nauk SSSR 279, 193-197) (1984) (Russ), Chem. Abstr. 102, no. 10, 81866 (1985). Microprobe analyses (not in abstr.) from Irtysh zone.
- GARNET. Dietrick and Arndt, (High Pressure Research Geosci., 293-306, 307-319) (1982), Mineralog. Abstr. 34, 411 (1983). Thermal expansion - 100 to 800 degrees C, heat capacity 25-300 degrees, compression to 120 kb. at 25 degrees for $\text{Al}_{45}\text{Py}_{41}\text{Gr}_{13}$.
- GARNET. Dingwell and Brearley, (Contrib. Mineral. Petrol. 90, 29-35) (1985). Microprobe analyses (8) of melanites, Alberta, Canada, TiO_2 2.5-7.7 percent.
- GARNET. Dobretsov et al., Miner. Slovaca 16, no. 1, 87-94 (1984)(English). Microprobe analyses (10) from pyrope peridotites, Bohemia.

- GARNET. Donaldson et al., (N. Jahrb. Miner. Abh. 156, 247-279) (1987) Eng. Microprobe analyses (4) from silicate lavas, Oldoinyo Lengai, Tanzania (An)
- GARNET. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (7) from granulites, Italian Central Alps. (Al-Py)
- GARNET. Dudar et al., (Tr. Komi Fil. Akad. Nauk SSSR 48, 67-75) (1984), Chem. Abstr. 102, no. 4, 28614 (1985). Analyses (not in abstr.). (pyrope)
- GARNET. Economou and Naldrett, Miner. Deposita 19, 289-297 (1984)(English). Microprobe analyses (3) from chromite deposit. Eretria, Greece.
- GARNET. Ehrenberg, J. Petrol. 23, 507-547 (1982). Microprobe analyses (22) from Navajo volcanic field (Py-Al).
- GARNET. Elphick et al. (Contrib. Mineral. Petrol. 90, 36-44) (1985)., Chem. Abstr. 103, no. 8, 56928 (1985). Cation diffusivity in at 1300-1500 degrees, 30-40 kkm.
- GARNET. Embey-Isztin et al., (Tschermarks Mineral. Petrogr. Mitt. 34, 49-66) (1985)(Eng.). Microprobe analyses (15) from andesites and granites, Hungary. (Al-Py).
- GARNET. Embeya-Iszten and Noske-Fazekas, Fragm. Miner. Paleontol. 11, 1-27 (1983)(English). Microprobe analyses (30).
- GARNET. Enami, J. Metamorph. Geol. 1, 141-166 (1983). Microprobe analyses (6) from Sanbagawa, Japan.
- GARNET. Esperanca and Holloway ((Kimberlites 11B, 219-227) (1984). (150.3 D493). Microprobe analyses (13) from potassic latites, Carefree, Ariz.
- GARNET. Evans and Vance, (Contrib. Mineral. Petrol. 96, 178-185) (1987) Microprobe analysis from dacite dike, Colo.
- GARNET. Ewart, J. Petrol. 23, 344-382 (1982). Microprobe analyses (1) from volcanic rocks, Queensland, Australia (Py-Al).
- GARNET. Exley et al., Am. Mineral. 68, 512-516 (1983). Microprobe analyses (12) from kimberlite, S. Africa.
- GARNET. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral. Abstr. 34, 216 (1983). Thermal expansion.
- GARNET. Faryad, (Geol. Zbornik Bratislava 37, 729-746) (1986) (Eng) Microprobe analyses (5) from gneiss, Klatov region, Czechoslovakia
- GARNET. Fortay and Smith, (Scottish Jour. Geol. 22, 377-394) (1986) Microprobe analyses (8) from Tyndrum, Scotland (Al)
- GARNET. Fraga et al., (Estudios Geol. 38(3-4), 173-178) (1982), Mineral. Abs Fr. 35, 76) (1984). Anomalous birefringence in Gr 44 An 51 garnet with a 11.9769, b 11.9754, c 11.9766A, alpha 90.10 degrees, beta 90.10 degrees, gamma 90.05 degrees, -2V 86 degrees.
- GARNET. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English). Microprobe analyses (14) from western Lepontine Alps. (Al)
- GARNET. Franz and Morteani (J. Petrol. 25, 27-52) (1984). Analysis from Kolsva, Sweden. (4) (almadine).
- GARNET. Frechen (Neues Jahrb. Mineral., Abh. 150, 65-93) (1984). Microprobe analysis (1) from the Eifel, Germany. Py-Al-An
- GARNET. Fursenko, (Dokl. Acad. Sci. USSR, Earth Sci. Sec., 250, 176-179 (1982)) Mineral. Abstr. 34, 139 (1982). Synthesis of Mn-Cr and Fe-Cr-garnets, n 1.95, G 4.567; a 11.679.
- GARNET. Gaidukova et al., (Dokl. Acad. Sci. USSR, Earth Sci. Sect., 250, 151-153 (1982)) Mineral. Abstr. 34, 164 (1983). Analysis of green andradite; G 3.79, a 12.026A, with SnO2 1.45%, exsolved as eakerite.
- GARNET. Gali, (Acta Geol. Hispanica 19, 287-293) (1984), Mineral. Abstr. 38, 87M/2095 (1987) Anisotropic garnet from skarn (Gr_{36.4}An_{63.5}) is orth., Fddd, due to ordering of Fe⁺³ and Al

- GARNET. Ganguly and Saxena, *Am. Mineral.* 69, 88-97 (1984). Thermodynamic treatment of distribution of Mg and Fe between garnet and associated phases.
- GARNET. Gao and Zhang, (*Sci. Geol. Sin.*, no. 3, 298-303 (1982)) *Mineral. Abstr.* 34, 133 (1983). Calculated free energy of formation, $-1142.4 + 4$ kcal/mole for pyrope.
- GARNET. Geiger et al., (*Geochim. Cosmochim. Acta* 51, 1755-1763) (1987) Enthalpy of solution of synthetic Al-Gr and Al-Py joins
- GARNET. Gerasimov et al., *Mineral. Zh.* 6, no. 2, 42-50 (1984). Hardness of 9 pyropes contg. Cr.
- GARNET. Ghosh and Srivastev, (*Chem. Erde* 19, 139-141) (1983), *Chem. Abstr.* 100, no. 24., 195213 (1984). Analyses (not in abstr.) from amphibolites, Bihar, India.
- GARNET. Glikson, (*Trans. Geol. Soc. S. Africa* 89, 263-283) (1986) Microprobe analyses (7) from granulite-anorthosite, central Australia (Al)
- GARNET. Gomez-Pugnaic and Fernandez-Soler, (*Contrib. Mineral. Petrol.* 95, 231-244) (1987) Microprobe analyses (120) from metabasites, SE Spain (zoned) (Al)
- GARNET. Gomez-Pugnaire and Sassi (*Mem. Sci. Geol. Univ. Padova* 36, 49-72) (1984)(Eng.). (G(550)qP2). Microprobe analyses (45), Betic cordillera, Spain.
- GARNET. Graham and Powell, *J. Metamorph. Geol.* 2, 13-31 (1984). Microprobe analyses (5) from Pelona schist, S. Calif.
- GARNET. Grambling, *Am. Mineral.* 68, 373-388 (1983). Microprobe analyses (6), Northern N. Mex. Fe-Mg partitioning.
- GARNET. Gregus, (*Geol. Zb. (Bratislava)* 33, 197-210 (1982)(English)) *Chem. Abstr.* 98, no. 10, 75564 (1983). *Mineral. Abstr.* 35, 75 (1984) Microprobe analyses of zoned garnets (Al-Gr-Py) from Czechoslovakia.
- GARNET. Grice and Wight, (*IMA Sofia v.* 2, 433-440), *Mineral. Abstr.* 38, 87M/3034 (1987) Analyses (4) from Quebec (Gr) Coloration and chemistry
- GARNET. Griffin et al., (*J. Petrol.* 25, 53-87) (1984). Microprobe analyses (12) from ultramafic xenoliths, Victoria, Australia.
- GARNET. Gućwa and Pelczar, (*Mineral. Polsk Karpac*, 43-44) 120(578) G934m (Polish) Analysis (1) from Polish Carpathians
- GARNET. Gulyaeva, *Tikhookean. Okeanol. Inst.*, no. 5, 110-) (1982)(Russian) G(690.2)T448. Analyses (15) from Belogorsh deposit, Maritime Prov. (Andradites), A_0 with SnO_2 up to 2.2%.
- GARNET. Gurney et al., (*Kimberlites* 11B, 25-32) (1984) (190.3 D 493). Microprobe analyses (4) of inclusions in diamond, Roberts Victor mine.
- GARNET. Gurney et al., (*Dev. Petrol.* 11B, 3-9, 361-393) (1984), *Chem. Abstr.* 100, no. 24., 195223 (1984). Analyses (not in abstr. 1 of inclusions in).
- GARNET. Hailey, *Contrib. Mineral. Petrol.* 86, 359-373 (1984). Experimental partitioning of Fe and Mg between almandine and enstatite.
- GARNET. Halbach and Chattergee, *Contrib. Mineral. Petrol.* 88, 14-23 (1984). Calculation of thermodynamic data. (Grossular)
- GARNET. Halden and Bowes (*Bull. - Geol. Soc. Finl.* 56, 3-23) (1984)(Eng.). Microprobe analyses, (10) from schists, Savonranta, Finland.
- GARNET. Hall and Ahmed (*Chem. Erde* 43, 45-56) (1984)(Eng.). Microprobe analyses (2) from rodingite, Lizard, England. (Gr).
- GARNET. Hamer and Moyes, (*J. Geol. Soc.* 139, 713-720 (1982)) *Mineral. Abstr.* 34, 164 (1983). Analyses (6) (not in abstr.) of Al from volcanic rocks, Antarctica.

- GARNET. Hansen et al., (Contrib. Mineral. Petrol. 96, 225-244) (1987)
Microprobe analyses (14) from charnockites, India and Sri Lanka
- GARNET. Hare et al., J. Sci. Hiroshima Univ. 8, 51-58 (1983)(English).
Microprobe traces in zoned garnet, Sambagawa schist, Japan.
- GARNET. Harley, (J. Petrol. 25, 697-712) (1984)(Eng.). The garnet-orthopyroxene geobarometer.
- GARNET. Harris and Jayaram, Lithos 15, 89-98 (1982)(English). Microprobe analyses (10) from gneisses, Bangalore, India. (Al)
- GARNET. Hashimoto and Grossman, (Geochim. Cosmchim. Acta 51, 1685-1704) (1987)
Microprobe analyses (2) from Al-rich inclusions, Allende meteorite
- GARNET. Hearn and McGee, (Kimberlites 11B, 57-70) (1984) (150.3 D 493).
Microprobe analyses (18) from Williams kimberlites, Mont.
- GARNET. Heinrich, Contrib. Mineral. Petrol. 81, 30-38 (1982). Microprobe analyses (2) from central Alps.
- GARNET. Helper, (Geol. Soc. Am. Mem. 164, 125-141) (1986) Microprobe analyses (4) from blueschists, Klamath Mts., Cal. and Ore. crossite, actinolite, ferrobarrrosite, riebeckite (Sp-Al)
- GARNET. Hentschke, (Neues Jahrbuch Miner., Abh. 156, 141-153) (1987) (Eng)
Microprobe analyses (35) from Harz Mts., Germany, diorites, etc. (Al)
- GARNET. Herbert, Geotekton. Forsch. no. 65, 1-77 (1983). Microprobe analyses (9) from crystalline rocks, Ecuador.
- GARNET. Herd et al., (Spec. Paper Geol. Assoc. Canada 31, 241-253) (1986)
Microprobe analyses (7), St. Maurice area, Quebec (An-Gr)
- GARNET. Hervig and Smith, Contrib. Mineral. Petrol. 81, 184-189 (1982).
Microprobe analyses (2) from lherzolites. Distribution of Cr in.
- GARNET. Hinterlechner-Ravnik, Razprave Geol. Porocila 25, 270-272 (1982).
Analyses (4), optics, unit cells from eclogite, Pohorje, Yugoslavia (Py-Al-Gr).
- GARNET. Hiroi, Contrib. Mineral. Petrol. 82, 334-350 (1983). Microprobe analyses (17) from Hida, Japan. Al
- GARNET. Hoinkes, Schweiz. Mineral. Petrogr. Mitt. 63, 95-114 (1983)(English).
Microprobe analyses (2) from Tyrol. Al
- GARNET. Hoppe et al., Neues Jahrb. Mineral., Monatsh. 1983, 529-536 (English).
Microprobe analyses (5) of spessartine from E. Brazil.
- GARNET. Huang, (Geochemistry (China) 4, 268-279) (1985) (Eng) Analyses (3) from Songsbugon metamorphosed ultramafic rocks, China
- GARNET. Huckenholz and Fehr, (Neues Jahrb. Mineral., Abh., 145, 1-33 (1982)(English)) Chem. Abstr. 98, no. 10, 75509 (1983). Stability of grossular, hydrogrossular, hydroandradite at various T-P conditions.
- GARNET. Huckenholz, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 356-364) (1983)(English), Chem. Abstr. 100, no. 8, 54679 (1984).
Hydrogrossular formed at 300 degrees at 1-7 kbar pressure.
- GARNET. Hunter and Taylor, Am. Mineral. 69, 16-29 (1984). Microprobe analyses (5) from Kimberlite, Fayette Co., PA. Py
- GARNET. Ito et al., Rep. African Stud., Nagoya Univ., 6, 83-99 (1981)(English).
Microprobe analyses (7) from kimberlite, Kenya (5 Al, 2 Py, 2 high Ti).
- GARNET. Jan et al., Can. Mineral. 22, 341-345 (1984). Microprobe analyses (4) from chromitite, Pakistan. (andradite)
- GARNET. Johnson and Essene, Contrib. Mineral. Petrol. 81, 240-251 (1982).
Microprobe analyses (11) from metagabbros, Adirondacks.
- GARNET. Kaminskaya et al.; (Mineral. Zh. 8(3), 8-17) (1986) (Russian) Features of garnets from impact-shocked rocks
- GARNET. Kano, (Kozengakubu Kenkyu Hokoku 4, 41-47) (1983)(Japanese), Chem. Abstr. 100, no. 12, 88883 (1984). Analyses (not in Abstr.) from andesites, Japan.

- GARNET. Karabinos (Contrib. Mineral. Petrol. 90, 262-275) (1985). Microprobe analyses (4) from schist near Jamaica, Vt.
- GARNET. Karakida and Yamamoto (Mem. Geol. Soc. Japan 21, 173-187) (1982) (G(620)G29m). Analyses (9) from amphibolite, Kyushu).
- GARNET. Karpinskaya et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 9, 128-129 (1982)) Chem. Abstr. 98, no. 6, 37785 (1983). Synthesis of skiagite (Fe+2 Fe+3) garnet, a 8.30A, G 4.733.
- GARNET. Kawachi et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (7) from piemontite schist, W. Otago, New Zealand. spessartine
- GARNET. Keller and Richter, Tschermaks Mineral. Petrogr. Mitt. 33, 49-66 (1984). Microprobe analyses (7) from metarodingite, Hohen Tavern, Austria. (Gr-An)
- GARNET. Kirkley et al. (Kimberlites 11B, 85-96) (1984) (150.3 D 493). Microprobe analyses (4) from kimberlites, Colo and Wyo.
- GARNET. Kiseleva, (Geokhimiia, 760-764) (1984)(Russian), Chem. Abstr. 101, no. 6, 41194 (1984). Calorimetry of solution of grossular. Enthalpy of solution.
- GARNET. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng) Microprobe analyses (6) from gneisses, Spitsbergen (Al)
- GARNET. Klein and Wimmenauer, Neues Jahrb. Mineral., Monatsh., 25-38 (1984)(English). Analyses (3) from eclogite, Black Forest. Al-Py
- GARNET. Kobayashi and Shoji (Mineral. J. Tokyo 11, no. 7, 331-343) (1983)(Eng.). Infra-red study of grossular-hydrogrossular series (synthetic).
- GARNET. Koepke and Seidel, Tschermaks Mineral. Petrogr. Mitt. 33, 263-286 (1984). Microprobe analyses (3) from ophiolite, Crete.
- GARNET. Koons, Contrib. Mineral. Petrol. 80, 340-347 (1984). Microprobe analyses (8) from Sesia zone, W. Alps, Garnet-clinopyroxene geothermometry. (Al)
- GARNET. Korikovskii et al. (Geol. Zh. (Bratislava) 36, 51-74) (1985)(Russian). Microprobe analyses from Modra granite, Little Carpathians (Al).
- GARNET. Kostrovitsku, et al., (Silik Magmat. Postmagmat. Obraz. Yakutu, 54-60) (1983), Chem. Abstr. 100, no. 20, 159622 91984). Analyses (not in abstr.) of inclusions in olivine in kimberlite, Yakutia.
- GARNET. Kovalenko, (Mineral. Sb. 34, 47-53 (1980)) Mineral. Abstr. 34, 164 (1983). Analyses (21) (not in abstr.) from Middle Dneipr and Azov regions.
- GARNET. Krogh, Lithos 15, 305-321 (1982)(English). Probe analyses (18) from Norwegian eclogites.
- GARNET. Kuskov et al., (Geokhimiia, no. 11, 1587-1597 (1982)) Chem. Abstr. 98, no. 6, 37820 (1983). Derivation of equation of state at high T and P (Py, Gr, Al).
- GARNET. Kvasnitsa et al., (Mineral. Zh. 8(1), 30-44) (1986) (Russian) Microprobe analyses (21) of zoned garnets, kimberlites (Py)
- GARNET. Laboitha, Northeast. Geol. 4, 85-94 (1982). Microprobe analyses (13) from Iona Island, N.Y. (Gr-An).
- GARNET. Lan, Proc. Geol. Soc. China 25, 38-52 (1982)(English)(G(611)G292p). Microprobe analyses (2) from gneiss, NE Taiwan. Al
- GARNET. Langer and Lattard (Neues Jahrb. Mineral., Abh., 149, 129-141) (1984)(Eng.). Chem. Abstr. 101, no. 12, 94678 (1984). Absorption spectra of Mn⁺³-bearing synthetic calderite.
- GARNET. Laz'ko et al. (Dokl. Akad. Nauk SSSR 268, 1204-1208 (1983)) Chem. Abstr. 98, no. 26, 219099 (1983). Zoned garnets from kimberlite, Yakutia.
- GARNET. Laz'ko, Mineral. Sb. 37, 40-47 (1983)(Russian). Analyses from western Ukrainian Shield.
- GARNET. Lazur et al. (Dokl. Akad. Nauk SSSR, Earth Sci. Sec. 256, 118-120) (1982), Mineral. Abstr. 36, 88 (1985). Analysis (1) from Kursk magnetic anomaly.

- GARNET. Lepezin et al., (Dokl. Akad. Nauk Tadzh. SSR 27, no. 4, 217-220) (1984), Chem. Abstr. 102, no. 4, 28637 (1985). Analyses (not in abstr.) from N. Pamirs.
- GARNET. Liou et al., (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$.
- GARNET. Lissner and Willner, (J. Phys. Collog., 745-746) (1984), Chem. Abstr. 100, no. 24., 195220 (1984). Microprobe of zoned almandine, Argentina.
- GARNET. Longer and Lattard; Neues, Jahrb. Mineral., Abh. 149, 121-141 (1984)(English). Synthesis of Mn^{+3} -bearing calderites, a 11.8216 Å, $n=1.970$. Optical absorption spectra.
- GARNET: Maeda et al., (J. Japan Assoc. Mineral., Petrol. Econ. Geol. 80, 13-20) (1985)(Eng.). Microprobe analyses from norite, Hokkaido, Japan. (Al)
- GARNET. Malinovskii et al., (Dokl. Akad. Nauk SSSR 268, 189-194 (1983)) Chem. Abstr. 98, no. 16, 129408 (1983). Stability in system pyrope-grossular at 30 kb, 1300-1500 degrees
- GARNET. Manning; Mineral. Mag. 48, 149 (1984). Correction of analyses (14) given in Mineral. Mag. 47, 353-358 (1983).
- GARNET. Mansy, (Soc. Geol. Nord Publ. 13(1), 291-344) (1986) (French) Microprobe analyses (65) from Omineca Mts., Brit. Columbia G(540)qn77p
- GARNET. Mariko and Nagai, (Mineral. J. Tokyo 10(4), 181-191) (1980), Mineral. Abstr. 35, 75 (1984). Analyses (not in Abstr.) from Iwate Pref. Japan Optics for An 50 -Gr 50 = alpha 1.806, beta 1.811, gamma 1.819.
- GARNET. Mason, (J. R. Soc. N. Z. 11, 35-43 (1981)) Mineral. Abstr. 34, 66 (1983). Analyses from Westland; N. Zealand.
- GARNET. Matsyuk et al., (Mineral. Sb. (Lvov) 37, no. 2, 109-116) (1983), Chem. Abstr. 102, no. 4, 28645 (1985). Minor elements in pyropes.
- GARNET. Matsyuk et al., (Mineral. Zh. 7(4), 18-) (1985) (Russian) Analyses (12) from kimberlites, Yakutia (Py-Al)
- GARNET. Mattioli and Bishop, (Geochim. Cosmochim. Acta 48, 1367-1371) (1984). Ideal solid solution between Gr and Uv at 1040-1320 degrees C, 10-17 kbar.
- GARNET. Medaris, Contrib. Mineral. Petrol. 87, 72-86 (1984). Microprobe analyses (14) from garnet peridotites, W. Norway. (zoned)
- GARNET. Meinert, Econ. Geol. 79, 869-882 (1984). Analyses (12) from skarns, W. British Columbia. (An-Gr)
- GARNET. Messiga et al., Contrib. Mineral. Petrol. 83, 1-15 (1983). Microprobe analyses (18) from gabbros, Liguria, Italy (Al-Gr).
- GARNET. Meyer and McCallister (Kimberlites 11B, 133-144) (1984) (150.3 D 493). Microprobe analyses (2) from kimberlites, S. Africa.
- GARNET. Mitchell and Platt (Carbonatite Symp. Brazil 176, 93-104) (1978)(Eng.). (170QIN8PC). Analyses (3), Poohbah Lake, Ont. malignite. Andradite.
- GARNET. Mitchell, Contrib. Mineral. Petrol. 86, 178-188 (1984). Microprobe analyses (39), kimberlites, Namibia. (Py)
- GARNET. Miyake, (J. Metamorph. Geol. 2, no. 2, 165-177) (1984). Microprobe analyses (4) from gneisses, Kenya.
- GARNET. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (2) from blue schist, NE Diablo Range, Calif.
- GARNET. Motoyoshi and Matsueda, (Proc. Symp. Antarctic Geosci. 4th, 1983, 103-125) (1984)(Eng.). Microprobe analyses (4), Enderby Land, Antarctica, 502 (990) J27SS.
- GARNET. Mottano, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (8) from manganeseiferous cherts, Alps
- GARNET. Mulholland, Mineral. Mag. 48, 27-30 (1984). Analysis, optics from Gumble, N.S. Wales. Analyses (2) of andradite from Gumble, N.S. Wales, 1 with SnO_2 1.87%.

- GARNET. Munksgaard, (N. Jb. Miner. Mh., 73-82) (1985), Mineral. Abstr. 38, 87M/3024 (1987) Zoning in garnets (29) from silicic volcanics, SE Spain
- GARNET. Nakagawa and Bamsba, (Mining Geology (Japan) 37, 189-197) (1987) (Eng) (G(620)M66) Analyses (1) from Tominchi mine, Hokkaido, Japan hydrogrossular
- GARNET. Nanda et al., (Neues Jahrb. Mineral., Monatsh., 103-109) (1983), Mineralog. Abstr. 34, 464 (1983). Analysis (not in Abstr.) from Kondapalli, India.
- GARNET. Nell, (Econ. Geol. 80, 1129-1152) (1985). Microprobe analyses (4), Potgietersrus, Bushveld Complex.
- GARNET. Neville et al., (Am. Mineral. 70, 668-677) (1985). Microprobe analysis (1) from ultramafic inclusions in basalt, Calif.
- GARNET. Nickel and Green, (Kimberlites 11B, 161-178) (1984). (150.3 D493). Microprobe analyses (2) from ultramafic xenoliths, Victoria, Australia.
- GARNET. Nicollet, Bull. Mineral. 105, 691-696 (1982). Microprobe analyses (2) from Aveyron, France (Al).
- GARNET. Ntanda, Mem. Inst. Geol. Univ. Louvain 31, 99-105 (1981). Microprobe analyses (10) of pyropes from kimberlite of eastern Kasai, Zaire, showing Al-Cr zoning. Mineral Abstr. 34, 164 (1983).
- GARNET. Nureki et al., (Mem. Geol. Soc. Japan 21, 127-146) (1982) (G(620) G29m). Analyses (4) from xenoliths in andesite, Kagowz Pref.
- GARNET. Nysten and Annersten (Geol. Foeren. Stockholm Foerh. 106, 245-256) (1984)(Eng.). Microprobe analyses (5) from Enasen, Sweden.
- GARNET. Onuki et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 76, 239-247) (1981), Mineral. Abstr. 36, 79 (1985). Ti-rich hydroandradites from Japan. DTA, infra-red data.
- GARNET. Ostrovski et al., (Izv. Akad. Nauk SSSR, Ser. Geol. 6, 100-105) (1984). Chem. Abstr. 101, no. 12, 94649 (1984). Synthesis of skiaigite and its thermodynamic properties.
- GARNET. Passaglia and Turconi, (Riv. Mineral. Ital., no. 4, 97-110 (1982)) Chem. Abstr. 98, no. 20, 164141 (1983). Occurrence at Montalto di Castro, Italy, of hydrogrossular.
- GARNET. Perkins, Am. Mineral. 68, 355-364 (1983). Stability of Mg-rich in system CaO-MgO-Al₂O₃-SiO₂ at 1000-1300°C and high pressure.
- GARNET. Perseil and Grandin, (Miner. Deposita 20, 211-219) (1985)(French). Analyses (11) of spessartine garnets and their alteration products from West Africa.
- GARNET. Piezer et al., Neues Jahrb. Mineral., Abh. 147, 147-159 (1983). Neutron diffraction study of cation distribution in pyrope and grossular.
- GARNET. Poblesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (16) from Kuru-Tegeraba deposit (Gr-An) Optics, Unit cell
- GARNET. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (8) from Western Alps, Italy
- GARNET. Povarennykh and Shabalin, (Geol. Zh. (Russ. Ed.) 43, 45-50 (1983)) Chem. Abstr. 98, no. 18, 146705 (1983). Hydrothermal synthesis of andradites with high Ti and Zr. Unit cells.
- GARNET. Propach and Gulessen, Tschermaks Mineral. Petrogr. Mitt. 33, 67-75 (1984). Microprobe analyses (2), 33, 67-75 (1984).
- GARNET. Purtscheller and Mogessie, (Tschermaks Mineral. Petrogr. Mitt. 32, 223-233) (1984)(Eng.). Electron microprobe analysis from Solden, Austria. Al-Py.
- GARNET. Rager et al., (N. Jb. Miner. Mh., 433-443) (1984), Mineral. Abstr. 38, 87M/2097 (1987) EPR spectra of S. African grossular

- GARNET. Rass, Dokl. Akad. Nauk SSSR 277, 196-199 (1984)(Russian). Analyses (7) of titanian andradites (TiO_2 up to 17.3%). Proposal of a new end-member $Ca_3Ti^{2+}_3Ti^{4+}_3O_{12}$.
- GARNET. Reinecke et al., Neues Jahrb. Mineral., Abh., 145, 157-182 (1982)(English). Microprobe analyses (2), Anafi, Greece (Al).
- GARNET. Reymer et al., Contrib. Mineral. Petrol. 85, 336-345 (1984). Microprobe analyses (22) from Wadi Kid, Sinai.
- GARNET. Ribeiro, (Geol. Rundschau 76, 147-168) (1987) (Eng) Microprobe analyses (3) from peralkaline rhyolites, NE Portugal (An-Gr).
- GARNET. Richet and Bottinga, (Earth Planet. Sci. Lett. 67, 415-432) (1984). Thermodynamics of melting and glass transitions. Pyrope.
- GARNET. Robinson et al., (Kimberlites 11B, 11-24) (1984) (190.3 D 493). Microprobe analyses (23) from eclogite, Botswana.
- GARNET. Robinson, Econ. Geol. 79, 1796-1817 (1984). Microprobe analyses (9) from iron formation. Timmins, Ont. (Py-Al)
- GARNET. Rodionov et al., (Geol. Geofiz. 5, 38-50) (1984), Chem. Abstr. 101, no. 10, 76137 (1984). Analyses (not in abstr.) from kimberlites, Yakatia.
- GARNET. Rosi and Santacroce, J. Volcanol. Geothermal Res. 17,, 249-271 (1983)(English). Microprobe analyses (7) from AD 472 eruption of Vesuvius
- GARNET. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (3) from Kamchatka Pt deposit.
- GARNET. Ruiz de Almodovar et al., (Bol. Soc. Espina Mineral. 8, 157-166) (1985) (Spanish), Mineral. Abstr. 38, 87M/3028 (1987) Spessartine ($Sp_{92}Al_6Py_{10}$), a 11.610 A, n 1.800 from Spain
- GARNET. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983)(English). Microprobe analyses (2) from ultramafic rocks, Sanbagawa belt, Japan. (andradite)
- GARNET. Santosh, (Contrib. Mineral. Petrol. 96, 343-356) (1987) Microprobe analyses (3) from gneisses, Kerala, India.
- GARNET. Sautter, (Jour. African Earth Sci. 5, 345-357) (1986) (French) Microprobe analyses (10) from eclogites, Algeria.
- GARNET. Schiffman et al., (Mineral. Mag. 49, 435-449) (1985). Analysis (1) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- GARNET. Schmetzer, (J. Gemmol. 18, 194-200 (1982)) Mineral. Abstr. 34, 42 (1983). Analysis from Tanzania of Sp-Py-Gr garnet, a 11.627, n 1.762, G 3.68.
- GARNET. Schreyer et al., Contrib. Geol. 86, 200-207 (1984). Microprobe analyses (1) from Limpopo belt, Africa.
- GARNET. Schultz-Guttler et al., (Schweiz. Min. Petr. Mitt. 66, 281-294) (1986) (Eng) Analyses (5) from Buritirama, Brazil - Phase relations in system $CaO-MnO-MgO-K_2O-Al_2O_3-SiO_2-CO_2-H_2O$ infrared from these (Sp)
- GARNET. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (4) from kimbaitite, Greenland.
- GARNET. Selverstone and Munoz, (Contrib. Mineral. Petrol. 96, 426-440) (1987) Microprobe analyses (6) from Eastern Alps (Al)
- GARNET. Selverstone et al., J. Petrol. 25, 501-531 (1984). Microprobe analyses (10) from Tavern, Austria. almandine
- GARNET. Sen and Bhattacharyya, Contrib. Mineral. Petro. 88, 64-71 (1984). Microprobe analyses (7) from charnockite's, Madras, India (ortho-). Pyroxene-garnet thermometer.

- GARNET. Seo and Hare, J. Sci. Hiroshima Univ. 8, 43-50 (1983) (English) (G(620)H61j). Microprobe traces in zoned garnet, Mikawa Plateau, central Japan.
- GARNET. Serenko et al., (Dokl. Akad. Nauk SSSR 267, 438-441 (1982)) Chem. Abstr. 98, no. 12, 92790 (1983). Zoned garnets from kimberlites, Yakutia.
- GARNET. Sharma and Windley, Mineral. Mag. 48, 195-209 (1984). Microprobe analyses (2) from Archean gneiss, N.W. India.
- GARNET. Shee et al., Contrib. Mineral. Petrol. 81, 79-87 (1982). Microprobe analyses (4) from peridotite, Finsch, S. Africa.
- GARNET. Shiraishi et al., (Proc. Symp. Antarctic Geosci. 4th, 1983, 126-144) (1984)(Eng.), 502 (990) J2755. Microprobe analysis (1), Prince Olav coast, E. Antarctica.
- GARNET. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (18).
- GARNET. Sills et al., J. Metamorph. Geol. 1, 337-351 (1983). Microprobe analyses (2) from Finero, N. Italy. Py
- GARNET. Sizykh, (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 68-84) (1983)(Russ.). 480 (690.3) M662. Analyses (84) from Biryusin metamorphic rocks with n, G., a_o (Al-Py).
- GARNET. Slovenec, Geol. Vjesn. 35, 133-152 (1982). Analyses (5) from Mt. Papuk, Yugoslavia.
- GARNET. Smellie and Stone, (J. Geol. Soc. Scot. 20, 315-327) (1984). Microprobe analyses (2) from garnet-pyroxenite, Ballantree, Scotland.
- GARNET. Smith and Ehrenberg, Contrib. Mineral. Petrol. 86, 274-283 (1984). Microprobe analyses (7) from garnet peridotites, Colo. Plateau.
- GARNET. Smith and Langer, Neues Jahrb. Mineral., Monatsh. 983, 541-555 (English). High pressure spectra of synthetic Sp and Al.
- GARNET. Smith and Wilson, Am. Mineral. 70, 30-39 (1985). Microprobe analyses (3) from kimberlite, Jagersfontein, S. Africa. Garnet-olivine equil. during cooling.
- GARNET. Smyth and Caporucio, (Kimberlites 11B, 121-131) (1984) (150.3 D 493). Microprobe analyses (60) from eclogite, Bobbejean mine, S. Africa.
- GARNET. Smyth et al., (Kimberlites 11B, 109-119) (1984) (150.3 D 493). Microprobe analysis from eclogite, Bobbejean mine, S. Africa.
- GARNET. Sobolev et al., (Mineral. Zh. 8(2), 23-31) (1986) (Russian) Microprobe analyses (12) from kimberlites, Yakutia (Py)
- GARNET. Spear, J. Petrol. 23, 383-426 (1982). Microprobe analyses (9), Mt. Cube quadrangle, Vermont (Al-Py-Gr).
- GARNET. Steltenpohl and Bartley, (Contrib. Mineral. Petrol. 96, 93-103) (1987) Microprobe analyses (11) from Caledonian, N. Norway (Al)
- GARNET. Stockton, (Gems Gemol. 18, 100-101 (1982)) Mineral. Abstr. 34, 143 (1983). Analyses (2) from E. Africa of Gr-Sp and Gr-Sp-Py garnets containing Cr and V, ns 1.773, 1.763; G 3.98, 3.89.
- GARNET. Stoddard, (Can. Mineral. 23, 195-204) (1985). Microprobe analyses (2) from granulites, Adirondacks.
- GARNET. Stolz, Mineral. Mag. 48, 167-179 (1984). Microprobe analyses (4) from ultramafic inclusions in nepheline mugearite, N.S. Wales.
- GARNET. Sutherland et al., (Kimberlites 11B, 145-160) (1984). (150.3 D493). Microprobe analyses (2) from basalt flow, Bow Hill, Tasmania.
- GARNET. Suzuki, (Proc. Symp. Antarctic Geosci. 4th, 1983, 145-154) (1984)(Eng.), 502(990)J27ss.. Microprobe analyses (2), Prince Olav coast, E. Antarctica.
- GARNET. Suzuki and Osakabe, (Mem. Geol. Soc. Japan 21, 37-49) (1982)(Eng.). (G(620)G29m). Analyses (4) from Hida belt, Japan. (Al)

- GARNET. Suzuki, Proc. 3rd Symp. Antarctic Geosci., 132-143 (1983)(English) (502(990)J27SS, no. 28). Microprobe analyses (7), Lutzow-Holm Bay, Antarctica.
- GARNET. Takasu, J. Petrol. 25, 619-643 (1984)(English). Microprobe analyses (13) from eclogites, Besshi dist., Japan. (Al)
- GARNET. Tan, (Acta Mineral. Sinica 5, 294-300) (1985) (Chinese), Mineral. Abstr. 38, 87M/3026 (1987) Almandine from Antarctica.
- GARNET. Thompson and Leclair, (Jour. Metamorph. Geol. 5, 415-436) (1987) Microprobe analyses (4), Grenville Province, Canada.
- GARNET. Trunilina, (Silik Magmat. Postmagmat. Obraz. Yakutu, 61-69) (1983), Chem. Abstr. 100, no. 20, 159623 (1984). Analyses (not in abstr.) from granites. (Al-Py)
- GARNET. Tsimbal et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki 8, 25-29) (1984)(Ukr.), Chem. Abstr. 101, no. 18, 155006 (1984). Analyses (not in abstr.), optics, from Ukrainian Shield (pyrope).
- GARNET. Tsimbal et al., (Mineral. Sb. (Lvov) 37, no. 2 51-57) (1983), Chem. Abstr. 102, no. 4, 28898 (1985). Analyses (not in abstr.) of chromian pyrope, Dniester region.
- GARNET. Tsybmal et al., Mineral. Zh. 5, no. 2, 67-78 (1983)(Russian). Mineral. Abstr. 35, 75 (1984). Analyses (20 complete, 10 partial) of pyropes from Pripyat, with Cr₂O₃ up to 14.14%, a(o) and n given.
- GARNET. Valley et al., Am. Mineral. 68, 444-448 (1983). Microprobe analyses (2) of grossular with F 0.76% from the Adirondacks.
- GARNET. Verma and Dubey, (Acta Cien. Indica, Phys. 9, 35-40) (1983), Chem. Abstr. 101, no. 2, 10163 (1984). ao, n, and G of Al-Py from Sikkim, India.
- GARNET. Vielzeuf, Bull. Mineral. 105, 681-690 (1982). Microprobe analyses (1) (Al).
- GARNET. Vielzeuf, Contrib. Mineral. Petrol. 82, 301-311 (1983). Microprobe analyses (6) from Tallante, Spain. An
- GARNET. Viereck, (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (11) from Eifel, Germany.
- GARNET. Vishnevskii, (Mineral. Zh. 9(2), 53-59) (1987) (Russian) Microprobe analyses (14) of garnets and kelyphitic rims around them in kimberlites
- GARNET. Visoni and Zerpolo (Moderna, Italy), Neues Jahrb. Mineral., Monatsh. 6, 413-423 (1984). Analyses (2) from granite, Iseltal, Austria. Al
- GARNET. Vivallo, (Geol. Foeren. Stockholm Foerh. 106, 257-267 (1985)(Eng.). Microprobe analyses (8) from metamorphic rocks, Garpenberg, Sweden.
- GARNET. Vladamirov and Moroiova, (Zap. Vses. Mineral. O-va. 112, 196-208) (1983). Analyses (28) of Al-Py from dacites, USSR.
- GARNET. Vuiko et al., (Mineral. Zh. 5, no. 3, 42-49) (1983), Mineral. Abstr. 35, 75 (1984). Analyses, optics from Middle Bug region (Py + Py-Al). No data in Abstr.
- GARNET. Vuiko et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 3, 3-7 (1983)) Chem. Abstr. 98, no. 22, 182711 (1983). Microprobe analyses from alluvial deposits, Dniester area. Optics, X-ray.
- GARNET. Wan and Yeh, Mineral. Mag. 48, 31-37 (1984). Analyses (2) of grossular and chromian grossular, E. Taiwan, optics, x-ray data.
- GARNET. Wang, (Yanski Kuangwu Ji Ceshi 2(4), 33-39) (1983)(Chin.). Chem. Abstr. 101, no. 12, 94655 (1984). Gem pyrope from placers, Jiangsu Province.
- GARNET. Ward, (Am. Mineral. 69, 531-540) (1984). Microprobe analyses (3) from New Zealand.
- GARNET. Wassermann et al., (Ber. Bunsenges. Phys. Chem. 86, 1057-1060 (1982)) Chem. Abstr. 98, no. 4, 19616 (1983). Free energies, etc., of solid solutions Gr-An and Gr-Uv.

- GARNET. Wassizek and Koller, (Mitt. Oesterri Mineral. Geol. 129, 19-20) (1983).
Microprobe analyses (2) of green grossular, Zillertal, Austria, Cr_2O_3
0.19, 0.22 percent.
- GARNET: Waters and Whales, Contrib. Mineral. Petrol. 88, 269-275 (1984).
Microprobe analyses (2) from metapelites, Mamequeland, Africa. (Al)
- GARNET. Whitney and McLellard, Contrib. Mineral. Petrol. 82, 34-41 (1983).
Microprobe analyses (9) from coronas in metagabbros, Adirondacks (Al-Py).
- GARNET. Williams, Econ. Geol. 78, 1689-1700 (1983). Analysis from Cu deposits,
N.W. Spain (andradite).
- GARNET. Wood and Kleppa, (Geochim. Cosmochim. Acta 48, 1373-1375) (1984).
Calorimetric study of grossular-uvarovite solid solutions.
- GARNET. Word and Holloway, Geochim. Cosmochim. Acta 48, 159-176 (1984).
Stability in system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$.
- GARNET. Worthing, (Norges Geol. Undersokelse Bull. 406, 67-) (1986) (Eng)
Microprobe analyses (8) from mylonites, Seiland, Norway (Al)
- GARNET. Yagi and Yoshikawa, Mem. Geol. Soc. China 5, 117-126
(1983)(English)(G(611)G292m). Microprobe analyses (2) from Xenolith, Nagano,
Japan. andradite
- GARNET. Yakovlev and Vozianova, (Geokhimiia, no. 1, 64-75 (1983)(Russian)) Chem.
Abstr. 98, no. 14, 110834 (1983). Calculation of thermodynamic properties
of almandine from equil. data in system $\text{FeO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$.
- GARNET. Yamada and Takahashi, (Kimberlites 11B, 147-) (1984) (Dev. Petrol. 11B,
247-255, 361-393) (1984)(Eng.), Chem. Abstr. 100, no. 26, 213115 (1984).
(150.3 D 493). Stability in system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$, 50-100 kb., 1200-1500
degrees C.
- GARNET. Yamamoto, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 313-324
(1983)(Japanese). Microprobe analyses (8) from gneisses, Toyana Pref.
- GARNET. Ying et al., (Sci. Sin., Ser. B(Engl. Ed.), 25, 989-999
(1982)(English)) Chem. Abstr. 98, no. 4, 19620 (1983). Mossbauer spectra
from kimberlites, eclogites, skarns, etc.
- GARNET. Zak and Povondra, (Cas. Mineral. Geol. 29, 279-286) (1984)(English),
Chem. Abstr. 102, no. 6, 48846 (1985). Analyses of Sp and Gr from
Chvaletice, a_0 11.650 Å, n. 1.806; a_0 1.729, n. 1.779.
- GARNET. Zhabin et al., (Mineral. Issled. Il'menskoi Zapov., 32 (1981)) Chem.
Abstr. 98, no. 18, 146716 (1983). Analysis from Il'men Mts. (Sp-Al), a
11.593, n 1.815, G 4.15.
- GARNET. Zimmernink (N.Jb. Miner., Mh., 221-223) (1985)(Eng.). Zoned Gr-An from
skarn, Santander, Peru.
- GARNET. Zol'nikov, et al., (Silik Magmat. Postmagmat. Obraz. Yakutu, 43-47)
(1983), Chem. Abstr. 100, no. 20, 159620 (1984). Analyses (not in abstr.)
from kimberlite pipes, Yakutia.
- GARYANSELLITE. Sturman and Dunn, Am. Mineral. 69, 207-209 (1984). New mineral
from Yukon Territory, Canada, $(\text{Mg, Fe}^{+3})_3(\text{PO}_4)_2(\text{OH}) \cdot 1-1/2\text{H}_2\text{O}$, Mg
analogue of phosphoferrite. Analysis, optics, x-ray data. Orth., Pbn, a
9.452, b 9.890, c 8.198 Å, Z=4.
- GASPEITE. Cadoni et al., (Rivista Mineral. Ital. 9(2), 62-67) (1986) (Ital),
Mineral. Abstr. 38(1), 87M/1817 (1987) Occurrence in Sardinia (magnesian)
- GASPEITE. Gamsjaeger et al., (Ber. Bunsenges. Phys. Chem. 86, 1046-1049
(1982)(English)) Chem. Abstr. 98, no. 4, 19613 (1983). Solubility
constants and enthalpies.
- GEBHARDITE. Abstr. in Am. Mineral. 70, 215 (1985). Abstract of original
description.

- GEBHARDITE. Abstract in Mineral. Abstr. 35, 192 (1984). Abstract of original description.
- GEDRITE. Rock and Leake, Mineral. Mag. 48, 211-227 (1984). Computer reclassification of published anthophyllite and gedrite analyses.
- GEDRITE. Williams, (Can. Mineral. 22, 417-421) (1984). Microprobe analyses (2). Fiskenaesset, Greenland.
- GEERITE. Abstr. in Bull. Mineral. 106, 628 (1983). Abstract of original description.
- GEERITE. Economou and Naldrett, Miner. Deposita 19, 289-297 (1984)(English). Microprobe analyses (1) from chromite deposit. Eretria, Greece.
- GEIKIELITE. Ehlers and Hoinkes, (Fortschr. Mineral. 62, Beih. 1, 47-49) (1984). Microprobe analyses (1) from marble, Otztal, Austria.
- GEIKIELITE. Giere, (Contrib. Mineral. Petrol. 96, 496-502) (1987) Microprobe analyses (4) from Bergell, Alps (TiO_2 0.2-2.0%)
- GEIKIELITE. Nedachi et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 79, 200-213) (1984)(Jap.). Microprobe analyses (1), SE Abakuma Mts.
- GEIKIELITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- GEIKIELITE. Wechsler and Navrotsky, (J. Solid State Chem. 55, 165-180) (1984), Chem. Abstr. 102, no. 2, 12943 (1985). Stability in system $MgO-TiO_2$. X-ray data.
- GEIKIELITE. Yakubovskaya et al., (Mineral. Zh. 4, no. 5, 36-43 (1982)) Chem. Abstr. 98, no. 8, 57256 (1983). Magnetic properties from kimberlite, Yakutia.
- GENKINITE. Rudashevskii and Zhdanov, Bull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (1) from Kamchatka Pt deposit.
- GENKINITE. Tarkian and Bernhardt, (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- GENTHELVITE. Fursenko and Klyakhin, (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 119-126 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201508 (1983). Hydrothermal synthesis.
- GENTHELVITE. Hassen and Grundy, Am. Mineral. 70, 186-192 (1985). Structure of samples from localities same as Dunn's analyses, a 8.1493, 8.1091 A.
- GENTHELVITE. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- GEOCRONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- GEORGECHAOITE. Boggs et al., (Can. Mineral. 23, 1-4) (1985), Chem. Abstr. 103, no. 8, 56904 (1985). Abstract of original description.
- GEORGECHAOITE. Chose and Thakur, (Can. Mineral. 23, 5-10) (1985), Chem. Abstr. 103, no. 8, 56905 (1985). Structure. Orth., $P2_1$ nb, a 11.836, b 12.940, c 6.735A, Z=4.
- GEORGIANDESITE. Rouse and Dunn, Mineral. Mag. 47, 219-220 (1983). New microprobe analysis, formula $Pb_{16}(AsO_4)_4Cl_{14}O_2(OH)_2$ or $Pb_{16}(AsO_4)_4Cl_{14}(OH)_6$, G 6.39 and 6.44. Monoclinic, $P2(1)/c$, a 13.803, b 7.910, c 10.812A, beta 102.68°. X-ray powder data.
- GERDTREMELITE. Mineral. Abstr. 38, 87M/3188 (1987) Abstract of original description
- GERDTREMELITE. Schmetzer and Medenbach, (N. Jb. Miner., Mh., 1, 1-6) (1985)(Eng.), Chem. Abstr. 102, no. 14, 116707 (1985). Abstract of original description.

- GERHARDTITE. Bovio and Locchi, (J. Crystallogr. Spectrosc. Res. 12, 507-517 (1982)(English)) Chem. Abstr. 98, no. 6, 44684 (1983). Structure. Orth., $P2(1)2(1)2(1)$, a 6.087, b 13.813, c 5.597A, Z=4.
- GERMANITE. Kovalenker et al., (Gold and silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M365 Microprobe analyses (1) from Bulgaria
- GERMANITE. Tettenhorst and Corbato, (Am. Mineral. 69, 943-947) (1984). Structure. Cubic, a 10.5862A, formula $Cu_{26}Fe_4Ge_4S_{32}$.
- GERSDORFFITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- GERSDORFFITE. Bukovshin and Chernyshov (Zap. Vses. Mineral. O-va. 114, 335-340) (1985)(Russ.). Microprobe analyses (7) from Voronezh massif, Ni up to 7.6, Co 5.8 percent.
- GERSDORFFITE. Choi and Imai (Min. Geol. Jpn. 35, 1-16) (1985)(Eng.). (G(620) M66). Microprobe analyses (10) from Ulsan mine, Korea. Reflectance.
- GERSDORFFITE. Iriscari, (Rend. Soc. Ital. Mineral. Petrol. 40, 289-294) (1985) (Eng) Microprobe analysis from Peloritani Mts., Sicily X-ray data, Optics
- GERSDORFFITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- GERSDORFFITE. Malinov, (Rudoobrez. Protsess. Miner. Nakhad. 19, 44-54) (1983)(Bulgarian), Chem. Abstr. 100, no. 24., 195221 (1984). Microprobe analyses, Medon ore deposit, Bulgaria.
- GERSDORFFITE. Vinogradova et al., (Nov. Dannye Miner. 30, 53-63 (1982)) Chem. Abstr. 98, no. 26, 219064 (1983). Microprobe analyses (33), reflectance, unit cell.
- GERSDORFFITE. Volokhonskii, (Mineral. Kriter. Kompleksn. Otsenki Miner. Syr'ya Kol'sk. Poluostrova, 29-40 (1982)) Chem. Abstr. 98, no. 26, 219087 (1983). Analyses (not in abstr.) from Kola Peninsula.
- GETCHELLITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- GEVERSITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe analysis from Norilsk deposit.
- GEVERSITE. Tarkian and Bernhardt, (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- GIBBSITE: Carniglia, J. Am. Ceram. Soc. 66, 495-500 (1983). Standard free energies of formation 298 to 2100 degrees K.
- GIBBSITE. Gout and Dandurand, (Tran. Com. Internatl. Etude Bauxites 18, 117-125) (1983)(Eng.). (438]n83+). Stability in system $Al_2O_3-H_2O$.
- GIBBSITE: Mardilovich et al., (Zh. Prikl. Spektrosk. 42(6), 959-966 (1985), Chem. Abstr. 103, no. 8, 56926 (1985). Infra-red study of dehydration.
- GIBBSITE. Noguchi et al., (Keikinzoiku 32, 337-345 (1982)(Japanese)) Chem. Abstr. 98, no. 26, 219098 (1983). Synthesis. Thermal decomposition.
- GIESSENITE. Armbruster et al. (Schweiz. Mineral. Petrogr. Mitt. 64, 21-26) (1984)(Germ.). Analysis with 8.18 percent Sb from Vals, Switzerland, a 34.22, b 37.933, c 4.063A, Z=4, Pnm or Pnn2. Formula $Pb_{13}(Bi,Sb)_9(CuAg)S_{28}$.
- GILLESPIE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- GILLESPIE. Hazen and Finger, Am. Mineral. 68, 595-603 (1983). Inversion at 18 kb. Structure of both phases.

- GIORGIOSITE. Canterford et al., (Mineral. Mag. 48, 437-442) (1984). Formula suggested to be $Mg_5(CO_3)_4(OH)_2 \cdot 6H_2O$.
- GLADITE. Breskovska et al., (Proc. 13th Meeting IMA, Varna, 1982, 131-146) (1986) (Russian) Microprobe analysis Rhodope Mts., Bulgaria
- GLADITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (1) from gold-silver deposits
- GLAUCODOT. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- GLAUCONITE. Abed and Mansour, (Nat. Sci. Univ. Jordan 9, 67-80) (1982)(English), Chem. Abstr. 100, no. 10, 71349 (1984). Analyses from Jordan. Trace elements.
- GLAUCONITE. Amirkhanov et al., (Dokl. Akad. Nauk SSSR 275, 967-970) (1984), Chem. Abstr. 101, no. 4, 26281 (1984). Mossbauer spectra.
- GLAUCONITE. Buckley et al., Mineral. Mag. 48, 119-126 (1984). Microprobe analyses (53) from Kent, England, show great variations in composition.
- GLAUCONITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 78-79) (Polish) Analyses (6) from Polish Carpathians X-ray data
- GLAUCONITE. Ivanovskaya et al., (Litol. Polezn. Iskop. 6, 124-130) (1984), Chem. Abstr. 102, no. 8, 65050 (1985). Analysis, optics, x-ray data, infra-red data from SE Yakutia.
- GLAUCONITE. Kucha et al., (Mineral. Pol. 13, 21-25) (1982)(Eng.), Chem. Abstr. 101, no. 10, 76108 (1984). Analysis with < 2.0 percent CuO, a 5.19, b 9.00, c 19.99 Å, beta 95.48 degrees.
- GLAUCONITE. Loveland and Bendflow, Mineral. Mag. 48, 113-117 (1984). Analyses (4) from Lake dist., England of celadonite-like or aluminian glauconite mineral. Infra-red data.
- GMELINITE. Galli et al., (Neues Jahrb. Mineral., Monatsh., 145-155) (1982)(English)) Mineral. Abstr. 34, 16 (1983). Structure of 2 samples. P6(3)/mmc, a 13.756, c 10.048Å; a 13.800, c 9.964Å.
- GMELINITE. Noack; Mineral. Mag. 47, 47-50 (1983). Analyses (4) from Mururoa, S. Pacific.
- GOBBINSITE. Abstr. in Bull. Mineral. 106, 628-629 (1983). Abstract of original description.
- GOBBINSITE. Donahoe et al., (Clays Clay Miner. 32, 433-443) (1983), Chem. Abstr. 102, no. 6, 48855 (1985). Synthesis.
- GOBBINSITE. Nawaz, Mineral. Mag 47, 567-568 (1983). Orth, ps. tetrag., a 9.80, b 10.15, c 10.10Å, Pmmn, Pnm2, or Pn2, m.
- GODLEVSKITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- GOETHITE. Alt and Honnorez, Contrib. Mineral. Petrol. 87, 145-169 (1984). Microprobe analyses (2) from altered basalt, oceanic cores.
- GOETHITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples.
- GOETHITE. Fitzpatrick and Schwertmann, (Geoderma 27, 335-34-) (1982), Mineralog. Abstr. 34, 392 (1983). Aluminian goethite in soils of S. Africa.
- GOETHITE. Fysh and Ostwald, Mineral. Mag. 47, 209-217 (1983). Mossbauer study of Australian samples.
- GOETHITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 41-43) 120(578) G934m (Polish) Analysis (2) from Polish Carpathians
- GOETHITE. Murad and Schwertmann (Clay Miner. 18, 301-312) (1983), Mineral. Abstr. 35, 18 (1984). Effect of Al on Mossbauer spectrum.
- GOETHITE. Schulze, (Clays and Clay Minerals 32, 36-44) (1984), Chem. Abstr. 100, no. 12, 88929 (1984). Synthesis of aluminian up to 33 mole % Al. Unit cells.

- GOETHITE. Schwertmann (Thermochim. Acta 78, 39-46) (1984)(Eng.), Chem. Abstr. 101, no. 18, 155023 (1984). DTA and x-ray study of double dehydroxylation peak.
- GOETHITE. Tkacheva and Umnova, (Nov. Dannye Miner. 30, 200-205 (1982)) Chem. Abstr. 98, no. 26, 219079 (1983). Mossbauer spectra of samples with varying Al content.
- GOETHITE. Yapp and Pedley, Geochim. Cosmochim. Acta 49. 487-495 (1985). D-H isotopic variation in.
- GOLD. Banas et al., (Mineral. Polonica 16, 97-108) (1985) (Eng) Microprobe analyses (10) of detrital gold, Silesia.
- GOLD. Erasmus et al., (Nucl. Geophys. 1(1), 1-23) (1987), Chem. Abstr. 107, no. 10, 81180 (1987) Trace elements in Au from S. Africa.
- GOLD. Gamyanin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (17) from E. Yakutia.
- GOLD. Guindon and Nichol, (Ont. Geol. Surv., Misc. Pap. 103, Geosci. Res. Grant Program, 65-77 (1982)) Chem. Abstr. 98, no. 6, 37915 (1983). Trace elements (Cu, Hg, Pb, Pd, Fe) in gold in glacial overburden.
- GOLD. Karmanov et al., (Petrol. Mineral. Bazitov Sib., 165-170) (1984), Chem. Abstr. 103, no. 6, 40089 (1985). Minor elements in (Cu, Hg, Sb).
- GOLD. Kogachi and Nakahigashi, (Jpn. J. Appl. Phys., Part 1, 24(2), 121-125) (1985)(Eng.). Chem. Abstr. 102, no. 16, 138560 (1985). Stability in system Au-Ag-Cu.
- GOLD. Kovalenkar, (Gold and silver deposits "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Analyses with Hg up to 5.29% in electrum.
- GOLD. Mauorova, (Tr. Komi Fil. Akad Nauk SSSR 45, 23-27) (1984) (G(570)AK144+). Analyses (23) from alluvial deposits, NE Europe.
- GOLD. Nefedov et al., (Phys. Chem. Miner. 8, 193-196 (1982)) Chem. Abstr. 98, no. 4, 19634 (1983). Study of silver content. Surface layers of lode gold are enriched in Ag, surface layers of placer gold are depleted in Ag.
- GOLD. Neradovskii et al., (Zap. Vses. Mineral. O-va. 111, 552-556 (1982)) Chem. Abstr. 98, no. 4, 19664 (1983). Microprobe analysis from Karik'yavr, Kola Peninsula. Optics.
- GOLD. Nysten and Annersten, (Geol. Foeren. Stockholm Foerh. 106, 245-256) (1984)(Eng.). Microprobe analyses (7) from Enasen, Sweden.
- GOLD. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe analyses (2) from Alma, Colo. Electrum.
- GOLD. Sakharova et al., (Eksp. Issled. Endogen. Rudoobiz. 1981, 210-220) (1983), Chem. Abstr. 100, no. 24, 195190 (1984). Effects of conditions on isomorphism in Au-Ag. Unit cell data.
- GOLD. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not in abs.) from Koryu mine, Hokkaido, Japan
- GOLD. von Gehlen, Miner. Deposita 18, 529-534 (1983)(English). Ag and Hg contents from S. Africa (323 samples).
- GOLDAMALGAM, v-. Chen, et al., (Dizhi. Pinglun 27, 107-115) (1981), Am. Mineral. 70, 215-216 (1985). New mineral (Au_{0.69}Ag_{0.31})Hg_{0.98}. Cubic, In₃m, brass-yellow, from Hongshela, China.
- GOLDFIELDITE. Kovalenkar and Troneva, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 75-83 (1980)(Russian) (Sulfosalt Vol.). Analyses (4) with up to 2.26% Au. X-ray data.
- GOLDFIELDITE. Kovalenkar et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M 565 Microprobe analyses (17) from Bulgaria
- GOLDFIELDITE. Kovalenkar and Rusinov, (Mineral. Zh. 8(2), 57-70) (1986) (Russian) Microprobe analyses (34) and conditions of formation

- GOLDFIELDITE. Loginov et al., (Dokl. Akad. Nauk SSSR 273, 437-440) (1983), Chem. Abstr. 100, no. 12, 88925 (1984). Analysis.
- GOLDFIELDITE. Sakharova et al., (Dokl. Akad. Nauk SSSR 278, 1217-1220) (1984), Chem. Abstr. 102, no. 8, 65065 (1985). Analysis from Kamchatka.
- GOLDFIELDITE. Spiridonov, (Dokl. Akad. Nauk SSSR 279, 447-453) (1984), Chem. Abstr. 102, no. 14, 116738 (1985). Nomenclature of group. goldfieldite for Te dominant.
- GONNARDITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerge complex, Greenland.
- GONNARDITE. Ueno et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 78-85) (1982), Mineral. Abstr. 36, 202-203 (1985). Probe analysis (not in abstr.), a 13.45, b 13.42, c 6.67A.
- GONNARDITE. Ulrych and Rychly (Acta Univ. Carol., Geol. 1-2, 33-52) (1983)(Eng.). Analyses from Bohemia, optics.
- GOONGARRITE. Mozgova et al., (Rend. Soc. Ital. Mineral. Petrol 40, 277- 283) (1985) (Eng) Microprobe analyses (3) from Vulcano, Italy X-ray data Se 3.0%
- GOOSECREEKITE. Abstr. in Bull. Mineral. 106, 629 (1983). Abstract of original description.
- GORCEIXITE. Herrmann, et al., Contrib. Mineral. Petrol. 87, 418-419 (1984). Microprobe analysis of strontian gorceixite from Fe ore, Minas Gerais, Brazil.
- GORCEIXITE. Kowalski and Smietanska, (Mineral. Pol. 13, 3-16) (1982)(English), Chem. Abstr. 100, no. 16, 124249 (1984). Analysis from Poland (not in Abstr.).
- GORCEIXITE. Taylor et al., (Am. Mineral. 69, 984-986) (1984). Electron probe analyses (2), Silvermine area, Mo., a 7.02, c 17.29A.
- GORGEIITE. Cavaretta et al., (Neues Jahrb. Mineral., Abh. 147, 304-314) (1983)(English), Mineral. Abstr. 35, 190 (1984). Occurrence in Laticium, Italy, a 17.510 b 6.825, c 18.261 A, beta 113.39 degrees. Optics, G 2.95.
- GORTDRUMITE. Abstract in Am. Mineral. 69, 407 (1984). Abstract of original description.
- GORTDRUMITE. Steed, (Mineral. Mag. 47, 35-36 (1983)) Mineral. Abstr. 34, 183 (1983). Abstract of original description.
- GOTZENITE. Kapustin, (Nov. Dannye Miner. 30, 112-117 (1982)) Chem. Abstr. 98, no. 26, 219068 (1983). Analyses (not in abstr.), optics, from Tuva.
- GOYAZITE. Cortesogno et al., (N. Jb. Miner., Mh., 305-313) (1987) (Eng) Analysis from Italy, Optics, G 3.25, a 6.989, c 16.576 A.
- GOYAZITE. Gilkes and Palmer, Mineral. Mag. 47, 221-227 (1983). Synthesis of series crandallite-goyazite. Variation of unit cell.
- GOYAZITE. Harrison et al., Rep. - Inst. Geol. Sci. (U.K.), 83-1, 16-23 (1983). Analysis from Harston, Eng. (CaO 4.3%), a 6.990, c 16.33 A.
- GOYAZITE. Maksimovic and Panto (Tschermarks Mineral. Petrogr. Mitt. 34, 159-165) (1985) (Eng.). Microprobe analysis of neodymian goyazite, Vlasenica, Yugoslavia. X-ray data. In bauxite.
- GRANDIDIERITE. Herd et al., (Mineral. Mag. 48, 401-406) (1984). Microprobe analyses (3) from Scotland. (B not data)
- GRANDIDIERITE. Rowley, (Rocks and Minerals 62, 243-246) (1987) Occurrence at Johnsburg, N.Y.
- GRAPHITE. Biske, (Zap. Vses. Mineral. O-va. 111, 598-605 (1982)) Chem. Abstr. 98, no. 4, 19603 (1983). X-ray study from Ladoga complex. Det. temp. of formation from X-ray characteristics.
- GRAPHITE. Bonijoly et al., (Proc. - Int. Kohlenwiss. Tag., 51-55 (1981)) Chem. Abstr. 98, no. 6, 37783 (1983). A possible mechanism of formation of natural graphite.
- GRAPHITE. Kulikov and Boyarskaya, (Dokl. Akad. Nauk SSSR 276(5), 1213-1216) (1984), Chem. Abstr. 101, no. 16, 134307 (1984). Inclusions in fluorite, Tyrny-Auz.

- GRAPHITE. Shafranovskii, (Zap. Vses. Mineral. O-va. 114, 30-34) (1985).
Paramorph of diamond after graphite.
- GRAPHITE. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes.
- GRATONITE. Sjoberg and Rickard, (Geochim. Cosmochim. Acta 47, 2281-2286) (1983), Chem. Abstr. 100, no. 6, 37261 (1984). Rate of solution.
- GRATONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes.
- GREENALITE. Coey et al., (J. Appl. Phys. 53(11, Pt. 2), 8320-8325 (1982)(English)) Chem. Abstr. 98, no. 4, 19623 (1983). Magnetic properties, Mossbauer, and neutron diffraction.
- GREENALITE. Gao and Zhang, (Sci. Geol. Sin., no. 3, 298-303 (1982)) Mineral. Abstr. 34, 133 (1983). Calculated free energy of formation, -1184.1 + 16.3 kcal/mole.
- GREENALITE. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe analyses (5).
- GREENOCKITE. Buseck and Cowley, Am. Mineral. 68, 18-40 (1983). Transmission electron microscopy.
- GREENOCKITE. Kaneko et al., (J. Electrochem. Soc. 131, 1445-1446) (1984)(Eng.). Chem. Abstr. 101, no. 4, 31420 (1984). Transition greenockite-hawleyite.
- GREENOCKITE. Kaneko et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 760-769) (1983)(English), Chem. Abstr. 100, no. 6, 43335 (1984). Transition greenockite - hawleyite under hydrothermal conditions.
- GREIGITE. Bracci et al., (Rend. Soc. Ital. Mineral. Petrol. 40, 295-298) (1985) (Ital) From Mentana, Italy, a 9.872 A, G 3.61
- GRIMALDIITE. Livingstone et al., Mineral. Mag. 48, 560-562 (1984). Occurrence at Colquechaca, Bolivia, 7 probe analyses. Infra-red spectrum.
- GRIMSELITE. O'Brien and Williams, Mineral. Mag. 47, 69-73 (1983). Heat of formation.
- GRIPHITE. Fransolet and Abraham, Ann. Soc. Geol. Belg. 106, 299-309 (1983). Microprobe analysis from pegmatite, Buranga, Rwanda. Cubic, a 12.51 A. Chem. Abstr. 100, no. 26, 213127 (1984).
- GRISCHUNITE. Graeser et al., (Schweiz. Mineral. Petrogr. Mitt. 64, 1-10) (1984). New mineral, (Ca,Na)(Mn⁺²,Fe⁺³)₂(AsO₄)₂, from Falotta, Switzerland. Orth., Pcab, a 12.913, b 13.48, c 12.076A. Analysis, x-ray data, optics; infra-red.
- GUANGLINITE. Tarkian and Bernhardt, (Tscherma's Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- GUDMUNDITE. Halenius and Alinder, Neues Jahrb. Mineral., Monatsh., 201-215 (1982)(English). Microprobe analysis from Langsban, Sweden.
- GUDMUNDITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- GUDMUNDITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- GYP SUM. Baumann, (Eclogae Geol. Helv. 77, 301-329) (1984)(Germ.), Chem. Abstr. 103, no. 8, 56923 (1985) Deformation at 20 degrees and up to 2 kbar.
- GYP SUM. Christoffersen et al., (J. Crystal Growth 58, 585-592) (1982), Mineral. Abstr. 35, 42 (1984). Growth of crystals from solution.
- GYP SUM. Gotzinger and Weinke, (Tscherma's Mineral. Petrogr. Mitt. 33, 101-119) (1984). Rare earths and other minor elements, Austria.
- GYP SUM. Gucwa and Pelczar, (Mineral. Polsk Karpat, 38-41) 120(578) G934m (Polish) Analysis (14) from Polish Carpathians X-ray data.
- GYP SUM. Isa and Okuno, (Bull. Chem. Soc. Jpn. 55, 3733-3737 (1982)(English)) Chem. Abstr. 98, no. 8, 60789 (1983). DTA and TGA study of dehydration.

- GYP SUM. Jayakumar and Raju, (Bull. Mater. Sci. 5, 399-404) (1983), Chem. Abstr. 101, no. 14, 120665 (1984). Growth mechanism of herringbone and hourglass crystals.
- GYP SUM. Kirov, (Geokhim., Mineral., Petrol. 12, 18-28) (1980), Mineralog. Abstr. 34, 423 (1983). Growth of crystals from solution.
- GYP SUM. Klima, Diss. Abstr. 44B, 3094 (1984). Kinetics of crystal growth.
- GYP SUM. Kondo and Ahrens, (Phys. Chem. Miner. 9, 173-181 (1983)) Chem. Abstr. 98, no. 22, 182720 (1983). Shock-induced thermal radiation.
- GYP SUM. Kruchenko and Beremzhanov, Zh. Neorg. Khim. 29, 1823-1825 (1984)(Russ.). Solubility at 25 degrees in solutions of sodium salts.
- GYP SUM. Rinaudo et al., (Jour. Crystal Growth 71, 803-806) (1985), Mineral. Abstr. 38, 87M/2508 (1987) Growth of crystals.
- GYP SUM. Russo and Petrov, Kristallografiia 28, 196-199 (1983)(Russian). Regular intergrowths of crystals.
- GYROLITE. Garavelli and Vurro (Rend. Soc. Ital. Mineral. Petrol. 39, 695-704) (1984)(Eng.). G(550)So15r. Analysis from Ortano, Elba. Formula given as $\text{Na}(\text{Ca}, \text{Mg}, \text{Fe})_{16}(\text{Si}, \text{Al})_{24}\text{O}_{60}(\text{OH})_7 \cdot 15\text{H}_2\text{O}$. Triclinic, $a = b = 9.74$, $c = 22.40\text{A}$, Alpha 95.7 degrees, Beta 91.5 degrees, Gamma 120 degrees DTA.
- GYROLITE. Noack, Mineral. Mag. 47, 47-50 (1983). Analyses from Mururoa, S. Pacific.
- HALITE. Eberhardt et al., (Appl. Optics 24(3), 388-395) (1985), Chem. Abstr. 102, no. 14, 116741 (1985). Reflectance at CO_2 laser wavelengths.
- HALITE. Kondo and Ahrens, (Phys. Chem. Miner. 9, 173-181 (1983)) Chem. Abstr. 98, no. 22, 182720 (1983). Shock-induced thermal radiation.
- HALITE. Pitzer and Li, (Proc. Natl. Acad. Sci. 80, 7689-7693) (1983), Chem. Abstr. 100, no. 10, 74931 (1984). Thermodynamics of $\text{NaCl-K}_2\text{O}$ solutions to 823 degrees K and 1 kb.
- HALITE. Roedder, (Am. Mineral. 69, 413-439) (1984). The fluids in.
- HALLOYSITE. Nakagawa and Shirozu, (Nendo Kagaku 23, 92-102) (1983)(Japanese), Chem. Abstr. 101, no. 8, 57824 (1984). Occurrence in Japan, x-ray, DTA, infra-red data.
- HALLOYSITE. Slansky, (Clays Clay Miner. 33, 261-264) (1985), Chem. Abstr. 103, no. 6, 39997 (1985). Interstratification of 7A and 10A layers.
- HALLOYSITE. Xia and Ji, (Dizhi Kexue 4, 435-444) (1984)(Chin.), Chem. Abstr. 102, no. 10, 81832 (1985). DTA.
- HAMMARITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (2) from gold-silver deposits
- HANNEBACHITE. Hentschel, (Marnizer Geowiss. Mitt. 16, 91-96) (1987) (German) Crystals from the Eifel, Germany
- HANNEBACHITE. Mineral. Abstr. 38, 87M/3189 (1987) Abstract of original description
- HARMOTOME. Akizuki and Konno, (Am. Mineral. 70, 822-828) (1985). Origin of sector zoning in.
- HARMOTOME. Passaglia and Bertoldi, (Period. Mineral. 52, 73-82) (English) Chem. Abstr. 100, no. 18, 142388 (1984) Mineral. Abstr. 35, 186 (1984). Analysis from Vicenza, Italy, $a = 9.887$, $b = 14.169$, $c = 8.695$ A, beta 124 degrees 38 minutes.
- HARMOTOME. Roberts and Du Plessis, (Proc. Electron Microsc. Soc. S. Africa 13, 43-44) (1983), Chem. Abstr. 100, no. 20, 159617 (1984). Probe analysis and S.E.M. from the Karrov.
- HARMOTOME. Sheppard and Gude, (Clays Clay Miner. 31, 57-59 (1983)) Chem. Abstr. 98, no. 22, 182702 (1983). Occurrence in sandstone, Ariz., $a = 9.859$, $b = 14.15$, $c = 8.670\text{A}$, beta 124 degrees 51 minutes, mean $n = 1.506$.
- HARMOTOME. Wieser, (Mineral. Polonica 16, 3-10) (1985) (Eng) Optics from Pieniny Mts., Poland, G 2.465 Infra-red spectrum.

- HARMOTOME. Zhabin et al., (Soobshch. Akad. Nauk Gruz. SSR 106, 533-536 (1982)) Chem. Abstr. 98, no. 8, 57259 (1983). Analysis and optics, infra-red, DTA, from S. Ossetia, USSR.
- HASTITE. Brodtkorb, Rev. Inst. Cienc. Geol., Univ. Nac. Jujuy, no. 4, 37 (1981). Occurrence at San Francisco mine, La Rioja, Argentina.
- HAUCHECORNITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- HAUERITE. Beran, (Fortschr. Mineral. 62, Beih. 1, 21) (1984)(abstr.). Reflectance, 400-700 nm.
- HAUERITE. Beran and Zemann, (Mineral. Polonica 15, 3-9) (1984) (Eng) Reflectance at 20 wavelengths in visible spectrum
- HAUERITE. Chattopadhyay and Von Schnering, (J. Phys. Chem. Solids 46, 113-116) (1985). Chem. Abstr. 102, no. 20, 176916 (1985). X-ray study to 340 kb. Transition to marcasite-type structure at 140 Kb.
- HAUSMANNITE. Chen and Chen, (Zhongnan Kuangye Xueyuan Xuebao, no. 3, 1-9 (1982)(Chinese)) Chem. Abstr. 98, no. 6, 41522 (1983). Stability in system Mn-O.
- HAUSMANNITE. Murray et al., Geochim. Cosmochim. Acta 49, 463-470 (1985). Formation in solution during oxidation of dissolved Mn²⁺.
- HAUSMANNITE. Robie and Hemingway, (J. Chem. Thermodynamics 17(2), 165-181) (1985). Chem. Abstr. 102, no. 14, 121026 (1985). Heat capacities 5-380 degrees K, entropies.
- HAUSMANNITE. Shimada et al., (Yogyo Kyokaiishi 92(8), 439-443) (1984)(Jpn.), Chem. Abstr. 101, no. 14, 120696 (1984). Synthesis by flux.
- HAUSMANNITE. Tareen et al., (Proc. - Int. symp. Hydrothermal Reactions, 1st, 1982, 649-657) (1983), Chem. Abstr. 100, no. 8, 60776 (100). Hydrothermal synthesis.
- HAUYNE. Burrigato et al., (Neues Jahrb. Mineral., Monatsh., 433-445 (1982)(English)) Mineral. Abstr. 34, 171 (1983). Analyses from Laticum, Italy, optics, a 9.084-9.127A.
- HAUYNE. Huang and Zhou, (Yankuang Ceshi 1, no. 3, 25-30, 44 (1982)(Chinese)) Chem. Abstr. 98, no. 16, 129454 (1983). Analyses (2) from Nanjing, China, a 9.14, n 1.5058; a 9.073, n 1.5058.
- HAUYNE. Worner, (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (30) and trace elements. Laacher See, Germany.
- HAWLEYITE. Augustithis and Vgenopoulos, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 413-417 (1982). Occurrence at Ragada, Greece. X-ray data.
- HAWLEYITE. Coveney et al., (Mineral. Rec. 15, 351-357) (1984). Occurrence at Bethel Church, Ind.
- HAWLEYITE. Kaneko et al., (J. Electrochem. Soc. 131, 1445-1446) (1984)(Eng.). Chem. Abstr. 101, no. 4, 31420 (1984). Transition greenockite-hawleyite.
- HAWLEYITE. Kaneko et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 760-769) (1983)(English), Chem. Abstr. 100, no. 6, 4335 (1984). Transition greenockite - hawleyite under hydrothermal conditions.
- HAYCOCKITE. Kucha, (Mineral. Pol. 13, 2, 27-31) (1982)(Eng.), Chem. Abstr. 101, no. 10, 76109 (1984). Occurrence at Krzemianka, Poland. Hardness.
- HEAZLEWOODITE. Ahmed and Hall, Lithos 15, 39-47 (1982)(English). Microprobe analyses (19) from Pakistan.
- HEAZLEWOODITE. Ferrante and Gokcen, (Rep. Invest. - U.S., Bur. Mines, RI 8745, 1-10 (1982)) Chem. Abstr. 98, no. 14, 114737 (1983). Heat capacity 298-1197 K of Ni₃S₂. Enthalpies and heat of formation.
- HEAZLEWOODITE. Garuti, et al., Earth Planet. Sci. Lett. 70, 69-87 (1984)(English). Microprobe analyses (1) from peridotites, Ivrea-Verbani, Italy.

- HEAZLEWOODITE. Lorand and Conquere, Bull. Mineral. 106, 585-605 (1983).
Microprobe analyses (1) from basalts, France.
- HEAZLEWOODITE. Lorand and Pinet, Can. Mineral. 22, 553-560 (1984). Occurrence in peridotite, Greece. Microprobe analyses (3).
- HEAZLEWOODITE. Pasquariello, et al., (Prepr. - Am. Chem. Soc. Div. Pet. Chem. 28, 1255-1260) (1983), Chem. Abstr. 100, no. 14, 113849 (1984).
Synthesis, x-ray data.
- HEAZLEWOODITE. Pasteris, Can. Mineral. 22, 39-53 (1984). Analysis from Duluth complex, Minn.
- HEAZLEWOODITE. Ulf-Moller, (J. Petrol. 26, 64-91) (1985). Microprobe analysis (1) from Disko, W. Greenland.
- HEAZLEWOODITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (3) from mafic rocks, East Alps.
- HECTORITE. Earnest, (Thermochim. Acta 63, 277-289 and 291-306 (1983)) Chem. Abstr. 98, no. 26, 219161 and 219162 (1983). DTA and TGA.
- HEDYPHANE. Rouse et al., (Am. Mineral. 69, 920-927) (1984). Microprobe analyses (24) from Franklin and Langban. New formula $Pb_3Ca_2(AsO_4)_3Cl$.
X-ray data.
- HELIOPHYLLITE. Li and Chen, (Acta Mineral. Sinica 5(3), 216-220) (1985) (Chinese), Mineral. Abstr. 38, 87M/3180 (1987) Analysis from Qinghai Prov., China gives formula $Pb_6As_2O_7Cl_6$, a 10.7936, b 10.7663, c 25.5601 A, Z=8, G 7.142.
- HELLANDITE. DeVito and Ordway, Mineral. Rec. 15, 273-290 (1984). Occurrences in Jensen quarry, Riverside Co., Calif.
- HELVITE. Dobrovolskaya et al., Mineral. Zh. 6, no. 5, 64-72 (1984). Magnetic properties.
- HELVITE. Fursenko and Klyakhin, (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 119-126 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201508 (1983). Hydrothermal synthesis.
- HELVITE. Fursenko, (Fiz.-Khim. Issled. Mineraloobraz. Sist., 104-107 (1982)) Chem. Abstr. 98, no. 26, 219084 (1983). Hydrothermal synthesis at 600 degrees. Dependence of composition on pH of solutions.
- HELVITE. Hassen and Grundy, Am. Mineral. 70, 186-192 (1985). Structure of samples from localities same as Dunn's analyses, a 8.291, 8.2365 A.
- HELVITE. Johnsen and Bohse, (Rep. - Geol. Surv. Greenl., no. 103, 25-29 (1981)(English)) Chem. Abstr. 98, no. 16, 129429 (1983). Analysis from Ilimaussaq, G 3.25, n 1.733, a 8.282A.
- HELVITE. Kudoh and Takeuchi, Kobutsugaku Zasshi 16, 177-189 (1983)(Japanese). Structure at high pressure.
- HELVITE. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- HEMATITE. Ashworth and Evirgen, Mineral. Mag. 48, 159-165 (1984). Microprobe analyses (1) from S.W. Turkey.
- HEMATITE. Barron et al., (Clays Clay Miner. 32, 475-479) (1984), Chem. Abstr. 102, no. 8, 65041 (1985). Infra-red study of synthetic aluminian hematite.
- HEMATITE. Bhattacharyya et al., Contrib. Mineral. Petrol. 87, 65-77 (1984). Microprobe analyses (3) from India.
- HEMATITE. Burton and Kikuchi, Phys. Chem. Miner. 11, 125-131 (1984). Paramagnetic transition in.
- HEMATITE. Burton, Phys. Chem. Miner. 11, 132-139 (1984). Thermodynamic analysis of system Fe_2O_3 - $FeTiO_3$.
- HEMATITE. Childs and Baker-Sherman, (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So_3n . Mossbauer study of standard samples.

- HEMATITE. Dasgupta et al., Mineral. Mag. 48, 558-560 (1984). Microprobe analyses (4) from hematite-pyrophanite intergrowths, Chikla, India.
- HEMATITE. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral. Abstr. 34, 216 (1983). Thermal expansion.
- HEMATITE. Feenstra, (Geol. Ultralectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (7) from metamorphosed bauxites, Naxos, Greece.
- HEMATITE. Frietsch, (Sver. Geol. Undersokn. 79C, 1-55) (1985) (Eng) Analyses (1) from Lannavaara ores, N. Sweden.
- HEMATITE. Fysh and Clark, (Phys. Chem. Miner. 8, 257-267 (1982)) Chem. Abstr. 98, no. 10, 75519 (1983). Mossbauer study of aluminous hematites.
- HEMATITE. Gulyaeva, Tikhookean. Okeanol. Inst., no. 5, 110-) (1982)(Russian) G(690.2)T448. Analyses (1) from Belogorsh deposit, Maritime Prov.
- HEMATITE. Helvacı, Econ. Geol. 79, 354-371 (1984). Microprobe analyses (6) from magnetite-apatite deposit, Avnik, Turkey.
- HEMATITE. Hennig-Michaeli and Siemes, (High-Pressure Res. Geosci., Results Priority Program Proc. Its Final Colloq., 133-150 (1980)(Pub. 1982)) Chem. Abstr. 98, no. 26, 219164 (1983). Plastic deformation 25-400°C, 400 MPa.
- HEMATITE. Johnston and Stout, Am. Mineral. 69, 57-68 (1984). Microprobe analyses (1) of ferroandioptside from gabbro, Kauai, Hawaii.
- HEMATITE. Kashkai et al., (Dokl. Acad. Sci., Earth Sci. Sect., 228, 126-128 (1977)) Mineral. Abstr. 34, 174 (1983). Morphology of skeletal crystals, Caucasus, a 5.41Å, alpha 55 degrees 17 minutes.
- HEMATITE. Kawachi et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (6) from piemontite schist, W. Otago, New Zealand.
- HEMATITE. Morris et al. (J. Geophys. Res., 90B4, 3126-3144) (1985). Spectral reflectivity at -110 degrees to + 20 degrees. Mossbauer study.
- HEMATITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (5) from manganiferous cherts, Alps
- HEMATITE. Myers and Eugster, Contrib. Mineral. Petrol. 82, 75-90 (1983). Calculation of thermodynamic properties 298-1600 degrees K.
- HEMATITE. Nakatsuka and Shimocizaka, (Nippon Kagaku Kaishi 98, 575-578) (1982), Chem. Abstr. 100, no. 10, 71345 (1984). Magnetic properties.
- HEMATITE. Taylor, (Trans. Brit. Ceramic Soc. 83, 92-93) (1984). Thermal expansion data.
- HEMATITE. Tkacheva and Umnova, (Nov. Dannye Miner. 30, 200-205 (1982)) Chem. Abstr. 98, no. 26, 219079 (1983). Mossbauer spectra of samples with varying Al content.
- HEMATITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1980)) (English) (Sulfosalt Vol.). Mineral. Abstr. 34, 215-216 (1983). Reflectance at Optical 300-900 mμ, analysis.
- HEMATITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- HEMATITE. Yang et al., Mem. Geol. Soc. China 5, 97-116 (1983)(English)(G(611)G292m). Microprobe analyses (4) from spilite, N. Taiwan.
- HEMIMORPHITE. Taylor and Owen, (Polyhedron 3, 151-155) (1984), Chem. Abstr. 100, no. 26, 220493 (1984). Hydrothermal synthesis.
- HENDRICKSITE. Robert and Gasper, (Tschermarks Mineral. Petrogr. Mitt. 34, 1-14) (1985)(Eng.). Structure. Mon., C2/m, a 5.340, b 9.524, c 10.235Å, beta 100.07 degrees, K(Mg,Zn,Mn)₃Si₃AlO₁₀(OH)₂, (i.e., a zincian biotite. M.F.).
- HENRYITE. Abstr. in Am. Mineral. 70, 216 (1985). Abstract of original description.

- HENRYITE. Abstract in Mineral. Abstr. 35, 192-193 (1984). Abstract of original description.
- HENRYITE. Criddle, et al., Bull. Mineral. 106, 511-517 (1983). New mineral, $Cu_4Ag_3Te_4$, from Bisbee, Arizona. Microprobe analyses (5), x-ray data, optics.
- HERCYNITE. Ackermann et al., (Jour. Metamorph. Geol. 5, 323-339) (1987) Microprobe analyses (1), Caraiba complex, Brazil
- HERCYNITE. Asami and Asami (Mem. Geol. Soc. Japan 21, 151-161) (1982)(Jap.). (G(620) G29m). Analyses (2) from xenoliths in andesites, Kagawa Pref.).
- HERCYNITE. Berg and Wiebe (Contrib. Mineral. Petrol. 90, 226-235) (1985). Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- HERCYNITE. Bloomer and Fisher, (Jour. Geol. 95, 469-495) (1987) Microprobe analyses (4) from Tonga Trench
- HERCYNITE. Brown and Earle, J. Metamorph. Petrol. 1, 183-203 (1983). Microprobe analyses (1) from gneisses, E. Indonesia.
- HERCYNITE. Brown et al. (Aust. J. Earth Sci. 31, 317-340) (1984). Microprobe analysis (1) from Mt. Garnet, Queensland.
- HERCYNITE. Clocchiatti and Metrich, (Bull. Volcnol. 47, 909-928) (1984) (French) Microprobe analyses (2) from Mt. Etna (1892 and 1669)
- HERCYNITE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (3) from granulites, Italian Central Alps.
- HERCYNITE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (3) from metamorphosed bauxites, Naxos, Greece. 6 hercynite - gahnite solid solutions.
- HERCYNITE. Hanus et al. (Neues Jahrbuch Miner., Abh. 148(3), 259-275) (1984). Analysis from amphibolite, Black Forest.
- HERCYNITE. Harley, (Jour. Metamorph. Geol. 5, 341-356) (1987) Microprobe analyses (1) from Antarctica
- HERCYNITE. Herd et al. (Mineral. Mag. 48, 401-406) (1984). Microprobe analyses (2) from Scotland.
- HERCYNITE. Hill (Am. Mineral. 69, 937-942) (1984). Synthesis. Refinement of structure, a 8.15579 Å.
- HERCYNITE. Johnson and Essene, Contrib. Mineral. Petrol. 81, 240-251 (1982). Microprobe analyses (6) from metagabbros, Adirondacks.
- HERCYNITE. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng) Microprobe analyses (1) from gneisses, Spitsbergen
- HERCYNITE. Luais, (Doc. Trav. Centre Geol. Montpellier 9, 1-229) (1987) (French) G(540) q(334d) Microprobe analyses (2) from the Mediterranean
- HERCYNITE. Mazzucchelli, Neues Jahrb. Mineral., Abh., 146, 101-116 (1983)(English). Microprobe analyses (1) from Ivrea-Verbano complex, Italy.
- HERCYNITE. Nell (Econ. Geol. 80, 1129-1152) (1985). Microprobe analyses (4), Potgietersrus, Bushveld Complex.
- HERCYNITE. Nixon, et al., Mineral. Mag. 48, 550-552 (1984). Microprobe analysis (1) from Labwor Hills, Uganda.
- HERCYNITE. Nureki et al. (Mem. Geol. Soc. Japan 21, 127-146) (1982) (G(620) G29m). Analyses (2) from xenoliths in andesite, Kagowz Pref)
- HERCYNITE. O'Neill and Navrotsky, Am. Mineral. 69, 733-753 (1984). Calculation of cation distribution and thermodynamic properties.
- HERCYNITE. Reverdatto (Zap. Vses. Mineral. O-va. 114, 229-236) (1985)(Russ.). Microprobe analyses (4) from hornfels.
- HERCYNITE. Santosh, (Contrib. Mineral. Petrol. 96, 343-356) (1987) Microprobe analyses (3) from gneisses, Kerala, India
- HERCYNITE. Seo, (J. Jap.. Assoc. Mineral., Petrol., Econ. Geol. 79, 498-502) (1984), Mineral. Abstr. 38, 87M/3105 (1987) Analyses (3) (not in abs) from Sato Inland Sea area, Japan

- HERCYNITE. Shuto et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 55-72) (1985)(Jpn.). Microprobe analysis (1) from tholeiite, Fukushima Pref., NE Japan.
- HERCYNITE. Suzuki and Osakabe (Mem. Geol. Soc. Japan 21, 37-49) (1982)(Eng.). (G(620)G29m). Analyses (2) from Hida belt, Japan.
- HERCYNITE. Treiman (Meteoritics 20, 229-243) (1985). Microprobe analyses (3) from Shergotty meteorite.
- HERCYNITE. Vielzeuf, Contrib. Mineral. Petrol. 82, 301-311 (1983). Microprobe analyses (9) from Tallante, Spain.
- HERCYNITE. van Bergen and Barton, Contrib. Mineral. Petrol. 86, 374-385 (1984). Microprobe analyses (1) from Mt. Amiata, Italy.
- HERZENBERGITE. Jackson and Helgeson (Econ. Geol. 80, 1365-1378) (1980). Summary of selected thermodynamic data.
- HESSITE. Gadzeva (C.R. Acad. Bulg. Sci. 2, 245-247) (1983), Mineral. Abstr. 36, 29 (1985). Microprobe analysis from Sadijica deposit, Bulgaria.
- HESSITE. Grozdev, et al., Tikho-oceanisk. Geol., no.5, 113-116 (1982)(Russian) (G(690.2)T448). Analysis from Maritime Prov. USSR.
- HESSITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (14) from gold-silver deposits
- HESSITE. Lebedeva, (Deposited Doc. VINITI, 6796-83, 114-121) (1983), Chem. Abstr. 102, no. 2, 9846 (1985). Analysis from Au deposit. No data in abstr.
- HESSITE. Mioskos, Chem. Erde 42. 281-296 (1983)(English). Microprobe analyses (1) from Macedonia.
- HESSITE. Mposkos (Oelt. Hell. Geol. Hetair. 16, 97-108) (1982)(Publ. 1983)(Greek), Chem. Abstr. 102, no. 26, 223541 (1985) Microprobe analyses from Macedonia.
- HESSITE. Neradovskii et al., (Zap. Vses. Mineral. O-va. 111, 552-556 (1982)) Chem. Abstr. 98, no. 4, 19664 (1983). Microprobe analysis from Karik'yavr, Kola Peninsula. Optics.
- HESSITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- HESSITE. Paar and Chen, (Karinthin 87, 371-381 (1982)) Chem. Abstr. 98, no. 12, 129419 (1983). Microprobe analysis from Schellgaden Au deposit, Austria.
- HESSITE. Piispanen and Tarkian, Miner. Deposita 19, 105-111 (1984). Microprobe analyses (1) from Rometolvas, Finland.
- HESSITE. Sakharova and Bryzgalov, Mineralogy of Ore Deposits, Mineral. Rudn. Mestorozhd 37-48 (1983)(Russian) (410M662).
- HESSITE. Soeda et al. (Neues Jahrb. Mineral., Abh. 150, 11-23) (1984)(Eng.). Microprobe analyses (1) from Tsumo, Japan, Te 8.69-20.32
- HESSITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- HETAEROLITE. Hem et al, (Geochim. Cosmochim. Acta 51, 1539-1547) (1987) Synthesis and stability at 25 deg. C Free energy of formation = -289.4 + or - 0.8 kcal/mole
- HETAEROLITE. Tanida and Kitamura (Tohoku Daigaku Senko Seiren Kenkyusho Iho 39, 105-114) (1983), Chem. Abstr. 101, no. 14, 117622 (1984). Stability in system $ZnMn_2O_4$ - $ZnFe_2O_4$. Transition to cubic at 1120 degrees.
- HETAEROLITE. Tanida, et al., (Tohoku Daigaku Senko Seiren Kenkyushu Iho 39, 51-60) (1983)(Japanese), Chem. Abstr. 100, no. 12, 88960 (1984). Analysis (not in Abstr.) from Hokkaido.
- HETEROGENITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.

- HETEROMORPHITE. Breskovska et al., (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 83-89) (1980)(Russ.) (Sulfosalt Vol.). (Sulphosalts, Platinum Minerals and Ore Microscopy Mineral. Abstr. 34, 180 (1983). Microprobe analysis (1) showing Cl 0.51 percent.
- HETEROMORPHITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes.
- HEULANDITE. Alberti and Brigatti, (Am. Mineral. 70, 805-813) (1985). Multivariate analysis of ten elements shows strong chemical differentiation between hydrothermal and sedimentary samples.
- HEULANDITE. Berenshtein, (Metody. Issled. Obl. Teknol. Redkomet., Syr'ya Okhr. Oknizarjushchei. Sredy., 25-30) (1982), Chem. Abstr. 100, no. 18, 142368 (1984). Thermal stability.
- HEULANDITE. Hambley and Taylor, (J. Solid State Chem. 54, 1-9) (1984)(Eng.). Chem. Abstr. 101, no. 12, 101748 (1984). Neutron diffraction Mon., C2/m, a 17.77, b 17.95, c 7.435A, Beta 116.46 degrees, G 2.15.
- HEULANDITE. Iijama and Matsumoto, (J. Fac. Sci., Hokkaido Univ., Ser. 2, 21, no. 1, 39-49) (1984)(Eng.). Analyses (4) and x-ray data of zoned heulandite - clinoptilolite from Shimoda, Japan.
- HEULANDITE. Joshi and Bhoskar, (Cryst. Res. Technol. 18, 213-218 (1983)) Chem. Abstr. 98, no. 18, 146708 (1983). Photoluminescence.
- HEULANDITE. Lion, Mem. Geol. Soc. China 5, 47-66 (1983)(English)(G(611)G292m) Composition and stability in low-grade metamorphic rocks.
- HEULANDITE. Liou et al., (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$.
- HEULANDITE. Lucchetti et al., (Neues Jahrb. Mineral., Monatsh., no. 12, 541-550 (1982)(English)) Chem. Abstr. 98, no. 4, 19606 (1983). Analysis with up to 8.7% SrO from Campegli, Italy.
- HEULANDITE. Passaglia and Vezzalini, (Contrib. Mineral. Petrol. 90, 190-198) (1985). Analysis from Italy (1). Unit cells.
- HEULANDITE. Ueno and Hanada, J. Mineral. Soc. Jpn. 15, 259-272. (1982)(Japanese). Analysis, X-ray data, Fukuoka Pref., Japan, a 17.74, b 17.85, c 7.44A, beta 116.3°.
- HEXATESTIBIOPANICKELITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- HEYROVSKIITE. Walenta, (Aufschluss 35, 235-236) (1984). Occurrence in Clara mine, Black Forest, Germany.
- HIBONITE. Ekambaram et al., (Geochim. Cosmochim. Acta 48, 2089-2105) (1984). Analyses (2) and trace elements, from Murchison chondrite.
- HIBONITE. El Goresy et al. (Geochim. Cosmochim. Acta 48, 2283-2298) (1984). Microprobe analyses (6) from Ca-Al-rich inclusion, Essebi chondrite.
- HIBONITE. MacPherson et al., Geochim. Cosmochim. Acta 47, 823-839 (1983). Microprobe analyses (9) from Murchison meteorite.
- HILAIRITE. Ilyushin, et al., (Soviet Phys. Doblely 26, 916-917) (1981), Mineralog. Abstr. 34, 397 (1983). Structure. a 10.556, c 15.556 A, Z=6.
- HINGGANITE-(Yb). Abstract in Am. Mineral. 69, 811 (1984). Abstract of original description.
- HINGGANITE-(Yb). Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- HINSDALITE. Stanley, (Can. Mineral. 25, 213-220) (1987) Occurrence in oxidized Cu-Pb-Ag ore, Daisy Creek, NW Montana.
- HISINGERITE. Eggleton et al., (Clay Miner. 18, 21-31 (1983)) Chem. Abstr. 98, no. 24, 201492 (1983). Analyses, X-ray; Mossbauer indicate amorphous or gel structure in series hisingerite - sturtite - neotocite.

- HISINGERITE. Srebrodol'skii et al., (Dokl. Akad. Nauk SSSR, Earth Sci. Sect. 250, 148-150 (1982)) Mineral. Abstr. 34, 167 (1983). X-ray, DTA, infra-red from submarine volcano, Sea of Japan.
- HOCARTITE. Dobrovolskaya et al., (Dokl. Adak. Nauk SSSR 275, 720-725) (1984), Chem. Abstr. 101, no. 8, 57838 (1984). Microprobe analyses from San Jose, Bolivia.
- HOCARTITE. Moh et al., Neues Jahrb. Mineral., Abh. 150, 25-64 (1984)(English). Microprobe analyses (1).
- HOCARTITE. Nekrasova et al., (Mineral. Zh. 8(3), 79-84) (1986) (Russian) Microprobe analyses, X-ray data, Optics
- HODRUSHITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analyses (6) from gold-silver deposits
- HODRUSHITE. Pattrick, Mineral. Mag. 48, 85-91 (1984). Microprobe analyses (6) from Tomnadashan mine, Scotland.
- HOEGBOMITE. Feenstra, (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (2) from metamorphosed bauxites, Naxos, Greece.
- HOEGBOMITE. Ackermend et al., Mineral. Mag. 47, 555-561 (1983). Microprobe analyses (6) from Fiskemaess, Greenland.
- HOLLANDITE. Bhattacharyya et al., Contrib. Mineral. Petrol. 87, 65-77 (1984). Microprobe analyses (8) from India. Series with cryptomelane.
- HOLLINGWORTHITE. Tarkian and Bernhardt, (Tschermaks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- HOLLINGWORTHITE. Tarkian and Prichard, (Mineral. Deposita 22, 178-184) (1987) Microprobe analyses (6) of irarsite-hollingworthite series Optics
- HOLLINGWORTHITE. Urashima et al., (Kagoshima Daigaku Rika Hokoku, no. 31, 129-140 (1982)(Japanese)) Chem. Abstr. 98, no. 18, 146731 (1983). Microprobe analyses (not in abstr.) from Hokkaido, a 5.791A.
- HOLMQUISTITE. Gorelov et al., (Geol. Geofiz. Novosibirsk 2, 129-131) (1983), Mineral. Abstr. 35, 78 (1984). Analysis (not in Abstr.), optics, from Aldan Shield.
- HOLMQUISTITE. London and Burt, Mineral. Assoc. Canada Short Course no. 8, 99-133 (1982). Review of occurrence and properties in granite pegmatites.
- HONGSHIITE. Yu, Abstr. in Am. Mineral. 69, 411-412 (1984). New analysis gives Cu P1 trig., a 10.713, c 13.192 A. Optics.
- HOPEITE. Perezand Nancolles, (J. Cryst. Growth 66, 412-418) (1984), Chem. Abstr. 100, no. 26, 219204 (1984). Kinetics of crystallization.
- HOTSONITE. Abstract in Mineral. Abstr. 36, no. 2, 207 (1985). Abstract of original description.
- HOTSONITE. Beukes et al., (Am. Mineral. 69, 979-983) (1984). New mineral, $Al_{11}(PO_4)_2(SO_4)_3(OH)_{21} \cdot 16H_2O$ from Pofadder S. Africa. Analysis, x-ray, DTA, infra-red data, optics. Triclinic, a 11.23, b 11.66, c 10.55A, alpha 112 degrees 32', beta 107 degrees 32', gamma 64 degrees 27'.
- HUANGHOITE. Li et al., (Phys. Chem.-Japan Electron Microsc. Seminar 1981, 70-73) (1982)(Eng.), Chem. Abstr. 100, no. 26, 213121 (1984). Electron diffraction study. Trigonal, a 5.07, c 38.6 A.
- HUEBNERITE. Zhidikova et al., (Fiz.-Khim. Modeli Petrog. Rudoobraz, 145- 156) (1984) (Russ), Chem. Abstr. 102, no. 24, 206689 (1985). Calcn. of free-energy values.
- HUMITE. Dunn, (Am. Mineral. 70, 379-387) (1985). Microprobe analyses (5) from Franklin and Sterling Hill, NJ.
- HUNTITE. Shayan, (Am. Mineral. 69, 528-530) (1984). Analyses from Geelong, and Deer Park, Victoria, up to 1.86 percent SrO. Infra-red data.

- HUREAULITE. Baptista and Zalan, (An. Acad. Bras. Cienc. 54, 541-545 (1982)) Chem. Abstr. 98, no. 16, 129393 (1983). Structure. Monoclinic, C2/m, a 17.599, b 9.186, c 9.475A, Z=4.
- HUREAULITE. Shigley and Brown, (Am. Mineral. 70, 395-408) (1985). Microprobe analyses (7), Stewart pegmatite, Calif. Unit cell, optics.
- HYALOPHANE. Bhattacharyya et al., Contrib. Mineral. Petrol. 87, 65-77 (1984). Microprobe analyses (1) from India.
- HYALOPHANE. Viswanathan and Kielhorn, Am. Mineral. 68, 112-121 (1983). Analyses and lattice constants in the series celsian-hyalophane-orthoclase.
- HYDROBIOTITE. Brindley et al., Am. Mineral. 68, 420-425 (1983). Redefined as regular 1:1 interstratification of biotite and vermiculite layers.
- HYDROCALUMITE. Passaglia and Turconi, (Riv. Mineral. Ital., no. 4, 97-110 (1982)) Chem. Abstr. 98, no. 20, 164141 (1983). Occurrence at Montalto di Castro, Italy.
- HYDROCERUSSITE. Taylor et al., (Can. J. Chem. 62, 395-402) (1984), Chem. Abstr. 100, no. 16, 127555 (1984). Equil. stability in system PbO-H₂O-CO₂. Free energy of formation.
- HYDROGARNET. Birkett and Trzcienski, Can. Mineral. 22, 675-680 ;(1984). Microprobe analyses (10) with high FeO (up to 20.77%) and MnO (up to 23.33%). X-ray data. OH ion present.
- HYDROGROSSULAR. Basso et al., (Neues Jahrbuch Miner., Abh. 148(3), 246-258) (1984)(Eng.). Microprobe analyses (4) from Liguria, Italy, on with 2.41 TiO₂, others with 3.30, 2.78, 3.43 percent H₂O, a 11.895, 11.877, 11.871A.
- HYDROHETAEROLITE. Tanida et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 284-289) (1982), Mineral. Abstr. 36, no. 2, 203 (1985). Analysis from Hokkaido (not in abstr.), Tet., I₄/amd, a 5.72, c 9.09A.
- HYDROHETAEROLITE. Tanida, et al., (Tohoku Daigaku Senko Seiren Kenkyushu Iho 39, 51-60) (1983)(Japanese), Chem. Abstr. 100, no. 12, 88960 (1984). Analysis (not in Abstr.) from Hokkaido.
- HYDROHONESSITE. Abstr. in Bull. Mineral. 106, 629-630 (1983). Abstract of original description.
- HYDROMAGNESITE. Kirchner and Simonsberger, (Karinthin 87, 395-400 (1982)) Chem. Abstr. 98, no. 12, 129420 (1983). Occurrence at Salzburg, Austria. X-ray data, optics.
- HYDROMAGNESITE. Philipov, (God. Sofii. Univ., Geol.-Geogr. Fak., 72, 205-217 (1979-1980)(Pub. 1982)) Chem. Abstr. 98, no. 26, 219144 (1983). Cryptocrystalline, from Pernik, Bulgaria, a 10.11, b 8.97, c 8.37A, beta 114° 37'.
- HYDROMAGNESITE. Shlyapnikov et al., (Dokl. Akad. Nauk SSSR 252, 123-125) (1980), Mineral. Abstr. 35, 42 (1984). Hydrothermal transformation to magnesite and brucite above 150 degrees C.
- HYDROMUSCOVITE. Dvornikov et al., (Mineral. Sb. 34, 82-84 (1980)) Mineral. Abstr. 34, 169 (1983). Analysis, optics, unit cell of gumbelite.
- HYDROMUSCOVITE. Korikovskii et al., (Geol. Zh. (Bratislava) 36, 51-74) (1985)(Russian). Microprobe analyses from Modra granite, Little Carpathians.
- HYDRONIUM JAROSITE. Aires-Barros et al., (Bol. Mus. Lab. Mineral. Geol., Fac. Cienc. Univ. Lisboa, 16, 197-203 (1980)(Pub. 1981)(Portuguese)) Chem. Abstr. 98, no. 10, 75566 (1983). X-ray and DTA from Meda, Portugal.
- HYDRONIUM JAROSITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 49-51) 120(578) G934m (Polish) Analysis (2) from Polish Carpathians X-ray data
- HYDROTALCITE. LeBail et al., (Phys. Chem. Minerals 14, 377-382) (1987) Synthesis of hydrotalcite-like compounds at 50 deg. C, with variable SO₄ and CO₃ contents X-ray data, Raman spectra

- HYDROTALCITE. Pausch et al., (Clays Clay Miner. 34, 507-510) (1986), Mineral. Abstr. 38, 87M/2501 (1987) Hydrothermal synthesis of Al-rich similar compounds
- HYDROXYL-BASTNASITE-(Nd). Farkas et al., (N. Jb. Miner., Mh., 298-304) (1985), Mineral. Abstr. 38, 887M/3164 (1987) New mineral, (Nd,La,Pr)(OH,F)(CO₃) Hexag., a 7.191, c 9.921 A Analysis.
- IDAITE. Walenta, (Aufschluss 35, 235-236) (1984). Occurrence in Clara mine, Black Forest, Germany.
- IDAITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes.
- IIMORIITE. Foord, et al., Am. Mineral. 69, 196-199 (1984). New analyses give Y₂(SiO₄)(CO₃), Prince of Wales Island, Alaska. Analyses, optics, x-ray data.
- IKAITE. Hesse and Kuppers, (Z. Kristallogr. 163, 227-231) (1983), Mineral. Abstr. 35, 139 (1984). Refinement of structure. Monoclinic, C2/c, a 8.792, b 8.310, c 11.021; beta 110.53 degrees, Z=4 (CaCO₃·6H₂O).
- IKAITE. Jansen et al., (Geology 15(3), 245-248) (1987), Chem. Abstr. 106, no. 26, 217083 (1987) Cores from Zaire deep-sea fm. show ikaite pseudomorphs
- IKAITE. Suess et al., (Science (Washington, D.C., 1883-) 216, 1128-1131 (1982)) Mineral. Abstr. 34, 72 (1983). Analysis from Antarctica. Monoclinic, C2/c or Cc, a 8.828, b 8.322, c 11.051A, beta 110.67°. Optics.
- IKUNOLITE. Finashin et al., (Zap. Vses. Mineral. O-va. 108, 337-339 (1979)) Mineral. Abstr. 34, 179 (1983). Probe analyses from Maritime Province, a 4.16, c 39.44A. Optics.
- ILLITE. Beaufort and Meunier, Bull. Mineral. 106, 535-551 (1983)(English). Microprobe analyses (10) from Sibert, France.
- ILLITE. Beaufort, Clays Clay Miner. 32, 154-156 (1984). Interstratified dioctahedral illite - montmorillonite mineral.
- ILLITE. Cathelineau, Bull. Mineral. 106, 553-569 (1983). Analyses from U deposits (3).
- ILLITE. Gauthier-LaFaye, (Sci. Geol. Mem. 78, 1-206) (1986) (French) Microprobe analyses (6) from V deposits, Gabon (G(540) St52m
- ILLITE. Huggett, (Clay Miner. 17, 433-441 (1982)) Chem. Abstr. 98, no. 12, 92812 (1983). Electron microscope study.
- ILLITE. Juster et al., (Am. Mineral. 72, 555-565) (1987) X-ray data, Infra-red, on NH₄-bearing illite from mudrocks, NE Penna with 0.2-0.55 NH₄⁺ ions per 12 O
- ILLITE. Lee et al., Contrib. Mineral. Petrol. 88, 372-385 (1984). Microprobe analyses (7). T.E.M. study of chlorite-illite-muscovite intergrowths.
- ILLITE. Monier et al., Bull. Mineral. 107, 55-68 (1984). Microprobe analyses (3) from Millevachas, France.
- ILLITE. Nadeau et al., (Mineral. Mag. 49, 393-400) (1985). Conversion of montmorillonite to illite during diagenesis.
- ILLITE. Offler and Prendergast, (Mineral. Mag. 49, 357-364) (1985). Degree of crystallinity in metamorphic rocks, NS Wales.
- ILLITE. Sulaiman et al., (Brit. Ceram. Trans. J. 83, 100-102) (1984), Chem. Abstr. 103, no. 6, 39971 (1985). X-ray data from clays.
- ILMENITE. Agata and Sniwa, Prelip. Rep. African Studies Nagoya Univ. 8, 63-74 (1983)(English). Microprobe analyses (9) from Seychelles Island. High Mn, up to 18.6%.
- ILMENITE. Amshinskii and Pokhilenko, (Geol. Geofiz., no. 11, 116-119) (1983), Chem. Abstr. 100, no. 8, 51692 (1984). Analyses (not in Abstr.) from kimberlites, Yakutia (magnesian).
- ILMENITE. Andersen (Lithos 17, 153-170) (1984)(Eng.). Microprobe analyses (11) from larviksite, Norway.

- ILMENITE. Arculus, et al., Contrib. Mineral. Petrol. 85, 85-94 (1984)(English). Electron microprobe analyses (9) from kimberlite and peridotite.
- ILMENITE. Bacon and Metz, Contrib. Mineral. Petrol. 85, 346-365 (1984). Microprobe analyses (8) from Coso volcanic field, Calif.
- ILMENITE. Barashkov and Marshintsev, (Dokl. Akad. Nauk SSSR 278, 1210-1213) (1984), Chem. Abstr. 102, no. 8, 65063 (1985). Analyses from kimberlite, Yakutia.
- ILMENITE. Beiersdoif et al., (Geol. Jahrb. 36D, 1-85) (1986) (Eng) Placer deposits on the Zambezi shelf, off N. Mozambique
- ILMENITE. Bellieni, et al., Tschermaks Mineral. Petrogr. Mitt. 33, 25-47 (1984)(English). Microprobe analyses (10) from basalt sills, Parana basin, Brazil.
- ILMENITE. Boyd et al. (Contrib. Mineral. Petrol. 86, 119-130) (1984). Microprobe analyses (3), Mzongwana kimberlite, S. Africa.
- ILMENITE. Boyd et al. (Geochim. Cosmochim. Acta 48, 381-384) (1984). Microprobe analysis (1) from kimberlites, S. Africa.
- ILMENITE. Braun and Raith (Contrib. Mineral. Petrol. 90, 199-213) (1985). Microprobe analyses (33) from metamorphosed basites, Alps, Austria.
- ILMENITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (2) from Werner Bjerge complex, Greenland.
- ILMENITE. Bukovanska, et al., Meteoritics 18, 223-240 (1983). Analysis from Usti and Orlici meteorite, Czechoslovakia.
- ILMENITE. Burton, Phys. Chem. Miner. 11, 132-139 (1984). Thermodynamic analysis of system Fe_2O_3 - $FeTiO_3$.
- ILMENITE. Bushveva, et al, (Mineral. Zh. 5, no. 6, 15-22) (1983), Chem. Abstr. 100, no. 16, 124238 (1984). Infra-red spectroscopy.
- ILMENITE. Capaldi et al, (Jour. Volcanol. Geothermal Research 31, 345-351) (1987) Microprobe analyses (1) from Jabal an Nar Volcano, Yemen Republic
- ILMENITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples.
- ILMENITE. Cijolini and Kudo, (Contrib. Mineral. Petrol. 96, 381-390) (1987) Microprobe analyses (1) from basaltic andesites, Arenal Volcano, Costa Rica
- ILMENITE. Collerson, Contrib. Mineral. Petrol. 81, 126-147 (1982). Microprobe analyses (4) from granites, Labrador.
- ILMENITE. Cortesognos and Lucchettie (Neues Jahrbuch Miner., Abh. 148(3), 276-300) (1984)(Eng.). Microprobe analysis (1) from metagabbros, Tuscany, Italy.
- ILMENITE. Crisp and Spera, (Contrib. Mineral. Petrol. 96, 503-518) (1987) Microprobe analyses (12) from lavas, Canary Islands
- ILMENITE. Dia et al., (Jour. African Earth Sci. 6, 257-268) (1987) (French) Analyses (1) from basalts and basanites Senegal
- ILMENITE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (1) from granulites, Italian Central Alps.
- ILMENITE. Dudar, et al., (Tr. Komi Fil. Akad. Nauk SSSR 48, 67-75) (1984), Chem. Abstr. 102, no. 4, 28614 (1985). Analyses (not in abstr.).
- ILMENITE. Duncan and Metson, (N. Zealand J. Sci. 25, 103-109, 111-116) (1982), Mineralog. Abstr. 34, 421 (1983). Acid leaching of.
- ILMENITE. Ehrenberg, J. Petrol. 23, 507-547 (1982). Microprobe analyses (9) from Navajo volcanic field.
- ILMENITE. Embey-Isztin et al. (Tschermaks Mineral. Petrogr. Mitt. 34, 49-66) (1985)(Eng.). Microprobe analyses (2) from andesites and granites, Hungary.

- ILMENITE. Eremenko, et al., (Rentgenogr. Miner. Syr'ya, 44-52) (1982)(Russian), Chem. Abstr. 101, no. 8, 57819 (1984). Synthesis. Effect of heat on x-ray properties.
- ILMENITE. Evdokimov and Bagdasarov (Zap. Vses. Mineral. O-va. 114, 200-212) (1985)(Russ.). Analyses (18) from kimberlites and their placers, Siberia Platform. Up to 13.42 percent MgO.
- ILMENITE. Evdokimov and Bagdasarov, (Zap. Vses. Mineral. O-va. 111, 570-581 (1982)) Chem. Abstr. 98, no. 4, 19599 (1983). Analyses from kimberlites, Yakutia.
- ILMENITE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (4) from metamorphosed bauxites, Naxos, Greece.
- ILMENITE. Fitzgerald and Jaques, Meteoritics 17, 9-26 (1982). Microprobe analyses (1) in Tibooburra carbonaceous chondrite.
- ILMENITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- ILMENITE. Frey, et al., Contrib. Mineral. Petrol. 88, 133-149 (1984). Microprobe analyses (2) from volcanic rocks, Laguna del Maule, Chile.
- ILMENITE. Frost et al., Mineral. Mag. 47, 201-208 (1983). Analyses (21) of weathered samples, Australia.
- ILMENITE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (2) from teschenite, N.S. Wales.
- ILMENITE. Gaspar and Wyllie, Contrib. Mineral. Petrol. 85, 133-140 (1984). Microprobe analyses (13) from carbonatites and kimberlites.
- ILMENITE. Genshaft et al. (Mineral. Zh. 6, no. 2, 55-61) (1984), Mineral. Abstr. 36, 105 (1985). Analysis (MgO 11.34 percent) from ilmenite-silicate intergrowth in kimberlite, Yakutia.
- ILMENITE. Ghent and Stout, Contrib. Mineral. Petrol. 86, 248-255 (1984). Microprobe analyses (6) from British Columbia.
- ILMENITE. Haggerty and Tompkins, (Deve. Petro. 11A, 335-357) (1984), Chem. Abstr. 101, no. 2, 10138 (1984). Study of 13 kimberlite ilmenites.
- ILMENITE. Hammond and Taylor, (Earth Planet. Sci. Lett. 61, 143-150 (1982)) Chem. Abstr. 98, no. 4, 19607 (1983). Reequilibration reactions of ilmenite-magnetite.
- ILMENITE. Hanus et al. (Neues Jahrbuch Miner., Abh. 148(3), 259-275) (1984). Analysis from amphibolite, Black Forest.
- ILMENITE. Hayashi and Aoki (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 73-82) (1985)(Jpn.). Microprobe analyses (4) from basalts and andesites, Chokai volcano, Japan.
- ILMENITE. Helvaci, Econ. Geol. 79, 354-371 (1984). Microprobe analyses (3) from magnetite-apatite deposit, Avnik, Turkey.
- ILMENITE. Henderson and Gibb, (Trans. Roy. Soc. Edinburgh 77, 325-347) (1987) Microprobe analyses (4) from Lugar sill, SW Scotland
- ILMENITE. Herd et al. (Mineral. Mag. 48, 401-406) (1984). Microprobe analyses (2) from Scotland.
- ILMENITE. Hernandez, (Jour. African Earth Sci. 5, 381-399) (1986) Microprobe analyses (2) from Guilliz massif, Morocco
- ILMENITE. Hildreth, J. Volcanol. Geothermal. Res. 18, 1-56 (1983). Microprobe analyses (6) from Valley of 10,000 Smokes, Alaska.
- ILMENITE. Hunter and Taylor, Am. Mineral. 69, 16-29 (1984). Microprobe analyses (3) from Kimberlite, Fayette Co., PA.
- ILMENITE. Hunter, et al., Am. Mineral. 69, 30-40 (1984). Microprobe analyses (3) from kimberlite, Fayette Co., PA.
- ILMENITE. Ilupin and Genshaft, (Mineral. Zh. 8(5), 65-72) (1986) (Russian) Microprobe analyses (15) from kimberlite

- ILMENITE. Jamieson (Contrib. Mineral. Petrol. 86, 309-330) (1984). Probe analysis (1) from gneiss, Nova Scotia.
- ILMENITE. Jones and Wyllie (J. Petrol. 26, 210-222) (1985). Microprobe analyses (2) from Benfontein sill, S. Africa.
- ILMENITE. Jones, et al., J. Geol. 90, 435-454 (1982). Microprobe analyses (3) from peridotites, S. Africa.
- ILMENITE. Kay, et al., Contrib. Mineral. Petrol. 82, 99-116 (1983). Microprobe analyses (6) from Finger Bay pluton, Alaska.
- ILMENITE. Kinnaird (J. African Earth Sci. 3, 229-251) (1985). Analyses (2) from ring complexes, Nigeria.
- ILMENITE. Kinnaird et al. (J. African Earth Sci. 3, 185-222) (1985). Microprobe analyses (4) from Rivival alkaline complex, Nigeria.
- ILMENITE. Knyazev et al., (Geokhim. Rudobraz. 10, 81-92 (1982)) Chem. Abstr. 98, no. 26, 219092 (1983). Thermoelectric properties, unit cells, G of magnesian elements from kimberlites.
- ILMENITE. Krausex and Pedall, Monogr. Ser. Mineral Deposits no. 22, 29-45 (1983)(German). Trace elements in magnetite - ilmenite intergrowths, Norway. Mn is concd. in ilmenite.
- ILMENITE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (1) from Davidkovo massif, Ukraine
- ILMENITE. Lan, Proc. Geol. Soc. China 25, 38-52 (1982)(English)(G(611)G292p). Microprobe analyses (2) from gneiss, NE Taiwan.
- ILMENITE. Le Roex (J. Petrol. 26, 149-186) (1985). Microprobe analyses (4) from Gough Island, S. Atlantic.
- ILMENITE. Lee, Sci. Rep. Tohoku Univ., Ser. 3, 15, 177-256 (1982)(English). Microprobe analyses (7) from Jeju volcanic rocks, Korea.
- ILMENITE. Lubala et al. (Ann. Soc. Geol. Belg. 107, 125-134) (1984)(French). Microprobe analyses (5) from basaltic lavas, Kiver rift, Zaire.
- ILMENITE. Mekhonoshin et al. (Geol. Geofiz. Novosibirsk, 4, 58-62) (1983), Mineral. Abstr. 35, 82 (1984). Microprobe analyses from mafic rocks.
- ILMENITE. Mongkoltip and Ashworth, Am. Mineral. 68, 143-155 (1983). Microprobe analyses (2) from western Scotland inclusions in amphibole.
- ILMENITE. Moore, (Contrib. Mineral. Petrol. 95, 245-253) (1987) Model for the origin of ilmenite in kimberlite and diamond
- ILMENITE. Morris, J. Volcanol. and Geothermal Research 21, 119-148 (1984). Microprobe analyses (3) from Campbell Island, SW Pacific.
- ILMENITE. Motoyoshi and Matsueda (Proc. Symp. Antarctic Geosci. 4th, 1983, 103-125) (1984)(Eng.). Microprobe analysis (1), Enderby Land, Antarctica, 502(990)J27ss.
- ILMENITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (1) from manganiferous cherts, Alps
- ILMENITE. Nakagawa and Aoki (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 136-154) (1985)(Jpn.). Microprobe analyses (4) from Moriyoshi volcano, NE Japan.
- ILMENITE. Naslund, J. Petrol. 25, 185-212 (1984). Av. compositions (7) of Upper Buda Ser., Skeergegd, Eng.
- ILMENITE. Nedachi et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 79, 200-213) (1984)(Jap.). Microprobe analyses (4), SE Abakuma Mts.
- ILMENITE. Nelson and Carmichael, Contrib. Mineral. Petrol. 85, 321-335 (1984). Microprobe analyses (3) from Sanganguey Volcano, Mexico.
- ILMENITE. Nickel and Green (Kimberlites 11B, 161-178) (1984). (150.3 D493). Microprobe analyses (2) from ultramafic xenoliths, Victoria, Australia.
- ILMENITE. Ollila (Bull. - Geol. Soc. Finl. 56, 75-85) (1984)(Eng.). Microprobe analyses (30) for magnetite and coexisting ilmenite. Bushveld granite, S. Africa.

- ILMENITE. Olsen et al., *Am. Mineral.* 68, 315-333 (1983). Microprobe analyses (1) from Concord gabbro-syenite complex, N.C.
- ILMENITE. Ono, (Gansekai Kobutsu Kosho Gakkaishi 78, 221-228) (1983)(English), *Chem. Abstr.* 100, no. 8, 54668 (1984). Partitioning of Mg and Fe between ilmenite and spinel.
- ILMENITE. Pedersen and Hald, *Lithos* 15, 137-159 (1982)(English). Microprobe analyses (6) from dacite, Kroksfjordor, Iceland.
- ILMENITE. Plaksenko et al. (*Dokl. Akad. Nauk SSSR* 276, 213-218) (1984), *Chem. Abstr.* 101, no. 10, 76132 (1984). Analysis from Voronezh massif.
- ILMENITE. Plaksenko, (*Zap. Vses. Mineral. O-va.* 111, 581-587 (1982)) *Chem. Abstr.* 98, no. 4, 19600 (1983). Analyses from Elanskii pluton, Voronezh.
- ILMENITE. Price et al., *Can. Mineral.* 21, 29-35 (1983). Microprobe analyses from Peace River meteorite, Alberta.
- ILMENITE. Reverdatto (*Zap. Vses. Mineral. O-va.* 114, 229-236) (1985)(Russ.). Microprobe analysis (1) from hornfels.
- ILMENITE. Reynolds (*Can. Mineral.* 22, 411-416) (1984). Microprobe analyses (5) from Zululand, S. Africa. Tectonically deformed.
- ILMENITE. Reynolds (*Econ. Geol.* 80, 1027-1048) (1985). Microprobe analyses (5) from Bierkraal area, Bushveld Complex.
- ILMENITE. Reynolds (*Trans. Geol. Soc. S. Afr.* 86, 211-220) (1983). Microprobe analyses (15) from Karrovdolerite. Unit cells.
- ILMENITE. Rodionov et al. (*Geol. Geofiz.* 5, 38-50) (1984), *Chem. Abstr.* 101, no. 10, 76137 (1984). Analyses (not in abstr.) from kimberlites, Yakutia.
- ILMENITE. Rozova, et al., *Dokl. Akad. Nauk SSSR* 278, 456-461 (1984). Microprobe analysis, x-ray data, reflectance, from kimberlite.
- ILMENITE. Santosh, (*Contrib. Mineral. Petrol.* 96, 343-356) (1987) Microprobe analyses (3) from gneisses, Kerala, India
- ILMENITE. Schenker and Dietrich, (*Schweiz. Min. Pet. Mitt.* 66, 343-384) (1986) (Eng) Microprobe analyses (2) from lherzolites, etc., Cameroon
- ILMENITE. Scott, *Greenland Geosci.* no. 4, 1-124 (1981). Microprobe analyses (2) from kimbalite, Greenland.
- ILMENITE. Shee, (*Deve. Petro.* 11A, 59-73, 435-466) (1984), *Chem. Abstr.* 100, no. 26, 213273 (1984). Microprobe analyses (not in Abstr.) from kimberlite, S. Africa.
- ILMENITE. Shiraishi et al. (*Proc. Symp. Antarctic Geosci.* 4th, 1983, 126-144) (1984)(Eng.), 502 (990) J2755. Microprobe analyses (2), Prince Olav coast, E. Antarctica.
- ILMENITE. Simon and Papike, *Meteoritics* 18, 35-50 (1983). Microprobe analyses (2) from eucrite meteorites.
- ILMENITE. Sosedko and Kasatov, (*Dokl. Akad. Sci. USSR, Earth Sci.*, 250, 162-165 (1982)) *Mineral. Abstr.* 34, 135 (1983). Phase transformation to pseudobrookite when heated.
- ILMENITE. Stolz, *Mineral. Mag.* 48, 167-179 (1984). Microprobe analyses (1) from ultramafic inclusions in nepheline mugearite, N.S. Wales.
- ILMENITE. Svisero and Meyer, (*Rev. Bras. Geocienc.* 11, 217-221 (1981)) *Chem. Abstr.* 98, no. 18, 146732 (1983). Analyses from kimberlite, Minas Gerais, MgO 7.03-12.07%, Cr₂O₃ 0.02-3.32%.
- ILMENITE. Thompson and Leclair, (*Jour. Metamorph. Geol.* 5, 415-436) (1987) Microprobe analyses (1), Grenville Province, Canada
- ILMENITE. Thy, *Lithos* 15, 1-16 (1982)(English). Microprobe analyses (24), Fongen-Hyllingen complex, Norway.
- ILMENITE. Timofeev, et al., (*Dokl. Akad. Nauk SSSR* 278, no. 2, 461-464) (1984), *Chem. Abstr.* 102, no. 4, 28622 (1985). Analyses from kimberlites of Yakutia (not in abstr.).

- ILMENITE. Tollo and Haggerty, (Can. Mineral. 25, 251-264) (1987) Microprobe analyses (16) from Orapa kimberlite, Botswana
- ILMENITE. Tyan et al. (Zap. Vses. Mineral. O-va. 114, 34-42) (1985). Microprobe analysis (1) from Kalbin granite, E. Kazakhstan.
- ILMENITE. Upton et al. (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- ILMENITE. Vladimirov and Mayorova, Zap. Vses. Mineral. O-va. 112, 196-208 (1983)(Russian). Four analyses from dacite porphyries.
- ILMENITE. Warren, et al., Earth Planet. Sci. Lett. 64, 175-185 (1983). Microprobe analyses (2) from granite clasts, Moon.
- ILMENITE. Waters, (Contrib. Mineral. Petrol. 95, 523-533) (1987) Av. composition from xenoliths in kimberlite, S. Africa
- ILMENITE. Wechsler and Prewitt, Am. Mineral. 69, 176-185 (1984). Unit cell at 24-1050 degrees C; thermal expansion.
- ILMENITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (1) from mafic rocks, East Alps.
- ILMENITE. Wiebe, (Can. Jour. Earth Sci. 22, 1149-1157) (1985) Microprobe analysis (1) from basalt dikes, Labrador
- ILMENITE. Wyatt and Lawless (Kimberlites 11B, 43-56) (1984) (150.3 D 493). Microprobe analyses (16) from xenoliths, Baltfontein and DeBeus mines.
- ILMENITE. Yakubovskaya et al. (Mineral. Zh. 7, 45-53) (1985), Chem. Abstr. 103, no. 2, 9148 (1985). Study of supergene alteration of ilmenite.
- ILMENITE. Yakubovskaya et al., (Mineral. Zh. 4, no. 5, 36-43 (1982)) Chem. Abstr. 98, no. 8, 57256 (1983). Magnetic properties from kimberlite, Yakutia.
- ILMENITE. Yang, et al., Mem. Geol. Soc. China 5, 97-116 (1983)(English)(G(611)G292m). Microprobe analyses (1) from spilite, N. Taiwan.
- ILMENITE. Yoshida and Oikava, Proc. 3rd Symp. Antarctic Geosi., 145-165 (1983) (562(990)J27SS no. 28). Microprobe analyses (2) from metabasite, Antarctica.
- ILMENITE. van Bergen and Barton, Contrib. Mineral. Petrol. 86, 374-385 (1984). Microprobe analyses (1) from Mt. Amiata, Italy.
- ILMENORUTILE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (1) from carbonatite, Yenisen region
- ILMENORUTILE. Makagonov (Miner. Paragenezis Miner. Mestorozhd. Ura, 3-10) (1983), Chem. Abstr. 102, no. 24, 206682 (1985). Rotational twins.
- ILMENORUTILE. Nechaev et al., (Mineral. Zh. 7, 47-61) (1985) (Russian) Analyses (1) from Ukraine
- ILVAITE. Amthauer and Rossman (Phys. Chem. Miner. 11, 37-51) (1984)(Eng.) Mineral. Abstr. 36, 1 Chem. Abstr. 101, no. 12, 94659 (1984). Optical and Mossbauer spectroscopy. Mixed valence of Fe in.
- ILVAITE. Barton and van Bergen (Mineral. Mag. 48, 449-456) (1984). Microprobe analysis from dolerite, Rogeland, SW Norway.
- ILVAITE. Cecchini et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 711-715) (1984)(Ital.). Microhardness on 5 samples.
- ILVAITE. Finger, et al., (Carnegie Inst. Wash. Yearbook 81, 386-388) (1982), Mineralog. Abstr. 34, 396 (1983). Structure. Mon., a 13.0103, b 8.039, c 5.8517 A, beta 90.209 degrees.
- ILVAITE. Ghose, et al., Phys. Chem. Miner. 11, 67-74 (1984). Neutron diffraction study of crystal structure 5 degrees - 305 degrees K.
- ILVAITE. Litterst and Amthauer (Phys. Chem. Miner. 10, 250-255) (1984), Mineral. Abstr. 36, 16 (1985). Mossbauer spectrum.

- ILVAITE. Meinert, *Econ. Geol.* 79, 869-882 (1984). Analyses (2) from skarns, W. British Columbia.
- ILVAITE. Sakai and Kuroda, *J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 78, 467-478 (1983)(English). Microprobe analyses (1) from ultramafic rocks, Sanbagawa belt, Japan.
- ILVAITE. Sherman, (*Phys. Chem. Minerals* 14, 355-363) (1987) $Fe^{+2}-Fe^{+3}$ charge transfer in
- ILVAITE. Takeuchi, et al., (*Z. Kristallogr.* 163, 267-283) (1983), *Mineral. Abstr.* 35, 136 (1984). Cell dimensions of 2 samples, a 13.009, 13.013; b 8.8008, 8.8197; c 5.8589, 5.8424 Å; beta 90.324 degrees, 90.03 degrees.
- ILVAITE. Wu and Mei, (*J. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- ILVAITE. Zhang, (*Scient. Geol. Sinica* 3, 248-260) (1986) (Chinese), *Mineral. Abstr.* 38, 87M/3057 (1987) Analyses (47) (not in abs.), unit cells from alkali basalts, eastern China
- IMGREITE. Borishenskaya and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- IMOGOLITE. Farmer, et al., *Clay Minerals* 18, 459-472 (1983). Review of synthesis and properties.
- INCAITE. Kaplunnik, (Deposited Doc. VINITI 92-82, 98-104 (1981)) *Chem. Abstr.* 98, no. 14, 110795 (1983). Discussion of structure.
- INDIALITE. Kitamura and Hiroi, (*Contrib. Mineral. Petrol.* 80, 110-116 (1982)) *Mineral. Abstr.* 34, 166 (1983). Analysis (not in abstr.) from Japan.
- INDIUM. Nechaev et al., (*Mineral. Zh.* 9(1), 74-78) (1987) (Russian) Occurrence in tin-bearing greisen, Ukrainian Shield
- INESITE. Abrecht, *Neues Jahrb. Mineral., Monatsh.* 70-82 (1984)(English). Microprobe analyses (2) from Hale Creek, Cal. Dehydration study gives bustamite, pyroxmangite, and quartz. Microprobe analyses from Trinity Co., Cal. DTA study.
- INGODITE. *Abstr. in Am. Mineral.* 70, 220 (1985). New analyses gave formulae ranging from $Bi_2Te_{0.86}(S_{1.12}Se_{0.02})$ to $(Bi_{1.38}Pb_{0.24})Te_{1.42}S_{0.95}$.
- INGODITE. Zav'yalov, et al., (*Zap. Vses. Mineral. O-va.* 113, 31-35) (1984), *Chem. Abstr.* 100, no. 18, 142413 (1984). New analyses (12) show variable composition. a 4.233-4.249, c 69.42-70.08 Å.
- INSIZWAITE. Tarkian and Bernhardt (*Tschermaks Mineral. Petrogr. Mitt.* 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- INOYITE. Semenov et al., (*Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.]*, 10th, 96-102 (1978)(Pub. 1981)) *Chem. Abstr.* 98, no. 24, 201507 (1983). Heat capacity and entropy.
- IRARSITE. Auge (*Can. Mineral.* 23, 163-171) (1985). Microprobe analyses (2) from inclusions in chromitite, Vourinos, Greece.
- IRARSITE. Legendre and Auge, (*Metallogeny of Basic and Ultrabasic Rocks*, 361-372) (1986), *Mineral. Abstr.* 38, 87M/2155 (1987) Analyses (not in abs) from
- IRARSITE. Naidenova, et al., (*Dokl. Bolg. Akad. Nauk* 37, 183-186) (1984)(Russian), *Chem. Abstr.* 101, no. 6, 41185 (1984). Analysis from Bulgaria, optics.
- IRARSITE. Tarkian and Bernhardt (*Tschermaks Mineral. Petrogr. Mitt.* 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- IRARSITE. Tarkian and Prichard, (*Mineral. Deposita* 22, 178-184) (1987) Microprobe analyses (5) of irarsite-hollingworthite series Optics
- IRARSITE. Urashima et al., (*Kagoshima Daigaku Rika Hokoku*, no. 31, 129-140) (1982)(Japanese)) *Chem. Abstr.* 98, no. 18, 146731 (1983). Microprobe analyses (not in abstr.) from Hokkaido.

- IRIDARSENITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- IRIDIUM. Rudashevskii et al., (Mineral. Zh. 7, 88-93) (1985) (Russian) Microprobe analysis (8), Reflectance, X-ray data
- IRIDIUM. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (1) Reflectance
- IRIDOSMINE. Auge (Can. Mineral. 23, 163-171) (1985). Microprobe analyses (3) from inclusions in chromitite, Vourinos, Greece.
- IRIDOSMINE. Bonev and Jordanov, (Geol. Zbornik Bratislava 37, 709-718) (1986) (Eng) Microprobe analyses (2) from placers, Bulgaria
- IRIDOSMINE. Likhachev et al., (Zap. Vses. Mineral. O-va. 116(1), 122-) (1987) (Russian) Many analyses from alkaline-ultrabasic formations
- IRIDOSMINE. Rudashevskii and Zhdanov, Bull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (1) from Kamchatka Pt deposit.
- IRIDOSMINE. Rudashevskii, et al., Mineral. Zh. 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (1) from Konder massif, Aldan.
- IRIDOSMINE. Shilo et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 172-184) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (6), Pacific region, USSR.
- IRIDOSMINE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- IRIDOSMINE. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (2) Reflectance
- IRON BARRINGERITE. Abstract in Am. Mineral. 69, 407 (1984). Unnecessary name for barringerite.
- IRON. Frost (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- IRON. Grossman et al. (Geochim. Cosmochim. Acta 49, 1781-1795) (1985). Microprobe analyses (6) from Quingzhen chondrite.
- IRON. Karpov, et al., (Dokl. Akad. Nauk SSSR 274, 1440-1443) (1984), Chem. Abstr. 101, no. 2, 10164 (1984). Analysis from tuffs, Kamchatka, a 2.860 A.
- IRON. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- IRON. Okamoto, et al., (J. Geol. Soc. Jpn. 87, 595-599) (1981), Mineralog Abstr. 34, 470 (1983). Analysis (6) from peridotite, Ogawara, Japan, Ni 0.54 - 2.93%.
- IRON. Oleinikov and Okrugin, Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 5-19 (1981). Analyses (15) from Yakutia.
- IRON. Rambaldi and Wasson (Geochim. Cosmochim. Acta 48, 1885-1897) (1984). Microprobe analyses (11) from 2 meteorites (kamacite).
- IRON. Rubin, Earth Planet. Sci. Lett. 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite (kamacite).
- IRON. Sakai and Kuroda (Ganseki Kobutsu Kosho Gakkaishi 78, 467-478) (1983)(Eng.), Chem. Abstr. 101, no. 10, 76097 (1984). Analysis from serpentinized dunite, also CoFe_2 .
- IRON. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983)(English). Microprobe analyses (6) from ultramafic rocks, Sanbagawa belt, Japan.
- IRON. Tyan et al. (Zap. Vses. Mineral. O-va. 114, 34-42) (1985). Microprobe analyses (2) from Kalbin granite, E. Kazakhstan.
- IRON. Ulf-Moller (J. Petrol. 26, 64-91) (1985). Microprobe analyses (8) from Disko, W. Greenland.

- IRON. Vendrell-Saz, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 265-272 (1980)(English) (Sulfosalt Vol.). Optical reflectance, 300-900 m μ , analysis.
- IRON. Weidner, Can. Mineral. 22, 347-356 (1984). Equil. in system Fe-C-O and its origin.
- ISO FERROPLATINUM. Likhachev et al., (Zap. Vses. Mineral. O-va. 116(1), 122-) (1987) (Russian) Many analyses from alkaline-ultrabasic formations
- ISO FERROPLATINUM. Okrugin and Rudashevskii (Mineral. Zh. 7, no. 1, 67-71) (1985), Chem. Abstr. 103, no. 8, 56902 (1985). Analyses (not in abstr.) from Vilyui River placers, a 3.866A, Rh 9.90 percent.
- ISO FERROPLATINUM. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from Kamchatka Pt deposit.
- ISO FERROPLATINUM. Rudashevskii et al., (Mineral. Zh. 7, 88-93) (1985) (Russian) Microprobe analysis (1), Reflectance, X-ray data
- ISO FERROPLATINUM. Rudashevskii, et al., Mineral. Zh. 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (2) from Konder massif, Alden.
- ISO FERROPLATINUM. Shilo et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 172-184) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (5), Pacific region, USSR.
- ISO FERROPLATINUM. Tarkian and Bernhardt (Tscherma's Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- ISO FERROPLATINUM. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (3) Reflectance
- ISOMERTIEITE. Cabri, Internatioal Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 157-165 (1980)(English) (Sulfosalt Vol.). New analyses (2) give formula Pd₁₁As₂Sb₂.
- ISOMERTIEITE. Tarkian and Bernhardt (Tscherma's Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- ISOSTANNITE. Corsini and Tavelli (Rend. Soc. Ital. Mineral. Petrol. 39, 669-675) (1984)(Ital.). G(550)So15r. Microprobe analysis, x-ray data from Dachang, China.
- ISO FERROPLATINUM. Rudashevskii, (Zap. Vses. Mineral. O-va. 113, 186-195) (1984). Analyses (2), Far Eastern USSR.
- IWAKIITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- IXIOLITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- IXIOLITE. Korovushkin, et al., (Mineral. Rudn. Mestorozhd., 82-89) (1983), Chem. Abstr. 100, no. 20, 159607 (1984). Mossbauer study.
- IXIOLITE. Plaksenko and Frolov, (Mineral. Zh. 8(4), 32-40) (1986) (Russian) Microprobe analyses (12) from pyroxenites, Voronezh massif, Sc₂O₃ up to 4.4%
- JACOBSITE. Bhattacharyya, et al., Contrib. Mineral. Petrol. 87, 65-77 (1984). Microprobe analyses (2) from India.
- JACOBSITE. Bonev and Jordanov, (Geol. Zbornik Bratislava 37, 709-718) (1986) (Eng) Microprobe analyses (9) from placers, Bulgaria
- JACOBSITE. Dasgupta et al. (Contrib. Mineral. Petrol. 90, 258-261) (1985). Microprobe analyses (2) from Chikla, India. Oxidation gradient of formation.
- JACOBSITE. Essene and Peacor, Am. Mineral. 68, 449-455 (1983). Microprobe analyses (4) from Bald Knob, N.C., of galaxite-jacobsite intergrowths. Sample with MnAl₂O₄ 92 mole % had a 8.181A.
- JACOBSITE. Fukuoka, (Kobutsugaku Zasshi 16, 203-211) (1983)(Japanese), Chem. Abstr. 101, no. 6, 41173 (1984). Stability in system MnMn₂O₄-MnFe₂O₄-MnAl₂O₄. Solid solutions with galaxite at high temps.

- JACOBSITE. Momdzhhi (Izv. Vyssh. Uchebn. Zaved., Geol. Razved. 1, 26-33) (1985), Chem. Abstr. 103, no. 2, 9132 (1985). Crystal chemical formula based on Mossbauer, magnetic resonance, and neutron diffraction data.
- JACOBSITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganiferous cherts, Alps
- JADEITE. Chopin, Contrib. Mineral. Petrol. 86, 107-118 (1984). Microprobe analyses (1) from blue schists, W. Alps. Nearly pure pyrope.
- JADEITE. Hirajima et al. (Nor. Geol. Tidsskr. 64, 267-274) (1984)(Eng.). Microprobe analysis (1) from Spitsbergen.
- JADEITE. Kanat, Mineral. Mag. 48, 301-303 (1984). Analyses (5) from Svalbard.
- JALPAITE. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe analyses (2) from Alma, Colo.
- JALPAITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- JAMESONITE. Bortnikov, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- JAMESONITE. Breskovska et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 83-89) (1980)(Russ.) (Sulfosalt Vol.). (Sulphosalts, Platinum Minerals and Ore Microscopy, Mineral. Abstr. 34, 180 (1983). Microprobe analyses (2) showing Cl 0.29, 0.54 percent.
- JAMESONITE. Fortey et al. (Proc. Yorkshire Geol. Soc. 45, 59-65) (1984). Microprobe analyses from Wales.
- JAMESONITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). (Sulphosalts, Platinum Minerals and Ore Microscopy, Mineral. Abstr. 34, 180 (1983). Microprobe analyses (2) from Spissko-Gemer ore deposits, Slovakia. (Bi 19.4%)
- JAMESONITE. Moh, (Mineral. Petrol. 36, 191-204) (1987) (Eng) Discussion of Pb-Sn substitution in
- JAMESONITE. Motiu, (Mem. Sec. Stunt Acad. Soc. Roman. Y, 313-315) (1981)(pub. 1983), Chem. Abstr. 100, no. 26, 213094 (1984). Symmetry of ring-shaped crystals.
- JAMESONITE. Munoz and Moelo, Bull. Mineral. 105, 625-632 (1982). Microprobe analyses (1) from Bournac, France.
- JAMESONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- JAMSTINITE. Cabos Y., (Bol. Soc. Geol. Peru, no. 68, 1-12 (1981)) Chem. Abstr. 98, no. 12, 92840 (1983). Microprobe analysis from Hualgayoc, Peru.
- JANHAUGITE. Annehed et al., (N. Jb. Mineral. Mh., 7-18) (1985), Mineral. Abstr. 38, 87M/2103 (1987) Structure $P2_1/n$, a 10.668, b 9.787, c 13.931 Å, beta 107.82 deg., Z=4 (Na,Ca)₃(Mn,Fe)₃(Ti,Zn,Nb)₂(Si₂O₇)₂(F,OH)₂ Compare cuspidine
- JANHAUGITE. Raade, et al., (Am. Mineral. 68, 1216-1219) (1983), Chem. Abstr. 100, no. 16, 124217 (1984). Abstract of original description.
- JAROSEWICHITE. Dunn et al., (Am. Mineral. 67, 1043-1047 (1982)) Mineral. Abstr. 34, 183 (1983). Abstract of original description.
- JAROSITE. Arana et al., (Bol. Soc. Espanola Mineral. 8, 117-123) (1985) (Spanish), Mineral. Abstr. 38, 87M/2509 (1985) Synthesis DTA X-ray data
- JAROSITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So₃n. Mossbauer study of standard samples.

- JAROSITE. Dangic and Dangic, Zapisnici Srp. Geol. Drus. 1981, 68-74 (1982). X-ray data and trace elements from Srebrenica, Yugoslavia.
- JAROSITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 51-55) (Polish) Analyses (6) from Polish Carpathians X-ray data
- JAROSITE. Haertig, et al., (Z. Anorg. Allg. Chem. 568, 159-164) (1984), Chem. Abstr. 100, no. 14, 112660 (1984). Analyses, x-ray, thermal data on synthetic alunite and jarosite. Possibility of solid solutions.
- JAROSITE. Jambor and Dutrizac, Can. Mineral. 21, 101-113 (1983). Probe analyses (3), Darwin mine, Calif., and Tintic mine, Utah.
- JAROSITE. Michel and Everdingen, (Can. Mineral. 25, 221-226) (1987) Formation from acidic groundwater seep NW Terr., Canada
- JASKOLSKIITE. Abstract in Am. Mineral. 70, 872 (1985). Abstract of original description.
- JASKOLSKIITE. Harris et al. (Can. Mineral. 22, 487-491) (1984). Microprobe analysis from Izok Lake, NW Territory, Canada, a 11.31, b 19.79, c 4.087A. X-ray data.
- JASKOLSKIITE. Makovicky and Munime, Abstr. in Acta Crystallogr., Sect. A, A40, C246 (1984). New mineral, $Pb_{2+x}(Sb,Bi)_{2-x}Cu_xS_5$ (x=0.2). Orth., a 11.31, b 19.83, c 4.09 A, Pbnm.
- JASKOLSKIITE. Zahrzewski (Can. Mineral. 22, 481-485) (1984). New mineral from Sweden. $Pb_{2+x}Cu_x(Sb,Bi)_{2-x}S_5$. Ortho., Pbnm, a 11.331, b 19.871, c 4.100A, Z=4. G 6.50 calcd. Analysis, x-ray data, reflectance.
- JASMUNDITE. (Abstr. in Am. Mineral. 69, 566-567) (1984). Abstract of original description.
- JASMUNDITE. Hentschel, et al., Abstract in Mineral. Abstr. 36, 93 (1985). Abstract of original description.
- JEFFREYITE. Grice and Robinson, Can. Mineral. 22, 440-446 (1984) New mineral, $(Ca,Na)_2(Be,Al)Si_2(O,OH)_7$ from Quebec. Analysis, optics, x-ray data, G 2.99
- JEFFREYITE. Abstract in Am. Mineral. 70, 872 (1985). Abstract of original description.
- JENNITE. Hara and Inone, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 849-858) (1983), Chem. Abstr. 100, no. 14, 113834 (1984). Hydrothermal synthesis. X-ray, DTA.
- JENNITE. Passaglia and Turconi, (Riv. Mineral. Ital., no. 4, 97-110 (1982)) Chem. Abstr. 98, no. 20, 164141 (1983). Occurrence at Montalto di Castro, Italy.
- JEPPEITE. Abstract in Am. Mineral. 70, 872-873 (1985). Abstract of original description.
- JEPPEITE. Pryce, et al., (Mineral. Mag. 48, 263-266) (1984), Chem. Abstr. 100, no. 24, 195198 (1984). New mineral from Walgidu, W. Australia, $(K,Ba)_2(Ti,Fe)_6O_{13}$. Monoclinic, C2m, a 15.453, b 3.837, c 9.123 A, beta 99.25 degrees, G 3.94. Analysis, optics, X-ray data.
- JEREMEJEVITE. Anan'ev and Konovalenko, (Geol. Geofiz., no. 9, 97-103) (1984), Chem. Abstr. 102, no. 2, 9831 (1985). Optics. Effect of stress on.
- JEREMEJEVITE. Konovalenko et al. (Zap. Vses. Mineral. O-va 112(2), 212-217) (1983), Mineral. Abstr. 35, 83 (1984). Occurrence, SW Pamirs, alpha 1.637, gamma 1.646, a 8.544, c 8.159A.
- JEREMEJEVITE. Rodolias, et al., (Z. Kristallogr. 165, 255-260) (1983)(English), Chem. Abstr. 101, no. 22, 567 (1980). Refinement of structure. a 8.556, c 8.175(3).
- JERRYGIBBSITE. Dunn (Am. Mineral. 70, 379-387) (1985). Microprobe analyses (4) from Franklin and Sterling Hill, NJ.

- JERRYGIBBSITE. Dunn et al. (Am. Mineral. 69, 546-552) (1984). New mineral from Franklin, NJ. $Mn_9(SiO_4)_4(OH)_2$. Orth., Pbnm or Pbn 2_1 , a 4.85, b 10.70, c 28.17A, dimorph with sonolite. Analysis, optics, x-ray data.
- JERRYGIBBSITE. Dunn, et al., Abstract in Mineral. Abstr. 36, 93 (1985). Abstract of original description.
- JERVISITE. Mellini et al., (Am. Mineral. 67, 599-603 (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- JINSHAJIANGITE. (Abstr. in Am. Mineral. 69, 567) (1984). Abstract of original description.
- JOHANNSENITE. Angel, Contrib. Mineral. Petrol. 85, 272-278 (1984). Inversion temp. johannsenite - bustamite at 1-22 kbar. X-ray data, a. 9.944, b 9.146, c 5.275 A, beta 104.84 degrees.
- JOHANNSENITE. Stoyanova, (Proc. 13th Meeting IMA, Varna, 1982, 411-419) (1986) (Russian) Analyses (not in abs.) from northern Rhodopes, Bulgaria
- JOHNINNESITE. Mineral. Abstr. 38, 87M/3190 (1987) Abstract of original description
- JORDANITE. Moh, et al., Neues Jahrb. Mineral., Abh. 150, 25-64 (1984)(English). Microprobe analyses (2) from Balmati, N.Y.
- JORDANITE. Tufar (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 148-157) (1980)(Eng.) (Sulfosalt Vol.). Reflectance.
- JORDANITE. Vakh and Sapin (Dokl. Akad. Nauk SSSR 276(2), 446-450) (1984). Chem. Abstr. 101, no. 12, 94656 (1984). Analysis (not in abstr.) from Au deposit, Far Eastern SSR.
- JORDANITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- JOSEITE-A. Gamyarin et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 121-129) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (4), E. Yakutia.
- JOSEITE-A. Gamyarin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (4) from E. Yakutia
- JOSEITE-A. Gamyarin, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 127-135 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (4) x-ray data.
- JOSEITE-A. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- JOSEITE-B. Gamyarin et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 121-129) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (9), E. Yakutia.
- JOSEITE-B. Gamyarin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (7) from E. Yakutia
- JOSEITE-B. Gamyarin, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 127-135 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (9) x-ray data.
- JOSEITE-B. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analyses (1) from gold-silver deposits
- JOSEITE-B. Soeda et al. (Neues Jahrb. Mineral., Abh. 150, 11-23) (1984)(Eng.). Microprobe analysis (1) from Tsumo, Te 20.67.
- JOSEITE-B. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- JOSEITE. Grozdev, et al., Tikhookean. Okeanol. Inst., no. 5, 113-116 (1982)(Russian) (G(690.2)T448). Analysis from Maritime Prov. USSR.
- JULGOLDITE. Brastad (Nor. Geol. Tidsskr. 64, 251-255) (1984)(Eng.). Analyses from W. Norway with max. Fe content, Fe_2O_3 25.82, FeO 12.06 percent, a 19.426, b 6.047, c 8.949A, beta 97 degrees 38'.

- JUNOITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (6) from gold-silver deposits
- JUNOITE. Kovalenker et al. (Zap. Vses. Mineral. O-va. 113, 35-43) (1984), Mineral. Abstr. 36, 89 (1985). Microprobe analyses (not in abstr.) from Kochbulak deposit, E. Uzbekistan. X-ray data. Monoclinic, C2/m, a 26.66, b 4.06, c 17.03A, beta 127.20 degrees.
- JURBANITE. Sabelli (Bull. Mineral. 108, 133-138) (1985)(Eng.). Occurrence at Cetina mine, Italy, formula $\text{NaMg}(\text{SO}_4)\text{F} \cdot 2\text{H}_2\text{O}$. Monoclinic, P2₁/m, a 7.202, b 7.214, c 5.734A, beta 113.23 degrees, z=2. X-ray data.
- KAATIALAITE. Raade, et al., Am. Mineral. 69, 383-387 (1984), Abstract in Mineral. Abstr. 36, 9 New minerals from Finland $\text{Fe}^{+3}\text{As}^{+5}\text{O}_9 \cdot 6-8\text{H}_2\text{O}$, weathering product of loellingite. Monoclinic, P2, or P2₁/m, a 15.363, b 19.844, c 4.736 A, beta 91.77 degrees, Z=4, G 2.64. Analysis, x-ray data, optics, DTA synthesis.
- KAINOSITE. Mauro, (Riv. Mineral. Ital., no. 4, 124-126) (1983), Chem. Abstr. 100, no. 20, 159626 (1984). Occurrence in granite, Italy. X-ray data.
- KAINOSITE. Nekrasov et al., (Dokl. Akad. Nauk SSSR 294, 948-951) (1987) (Russian), Chem. Abstr. 107, no. 10, 81145 (1987) Anal. from Siberia, Optics, Infra-red, Orth., a 13.13, b 14.25, c 6.71 A
- KALIOPHILITE. Abbott (Am. Mineral. 69, 449-457) (1984). Microprobe analysis from Mt. Somma. Structure, hex., a 26.9, c 8.5A.
- KALSILITE. Abbott (Am. Mineral. 69, 445-457) (1984). Structure. Hex., P 63, a 5.2, C 8.7A.
- KALSILITE. Allan and Carmichael, Contrib. Mineral. Petrol. 88, 203-216 (1984). Microprobe analyses (3) from lavas, Colima, Mexico.
- KALSILITE. Andou and Kawahara (Mineral. J. Jpn. 12(4), 153-161) (1984)(Eng.). Chem. Abstr. 102, no. 22, 195640 (1985). Structure of synthetic. Hex. P6₃, a 5.151, c 8.690A.
- KALSILITE. Gallo et al. (N. Jb. Miner., Mh., 198-210) (1984)(Eng.). Microprobe analyses (2) from alkaline rocks, Italy.
- KALSILITE. Smyslov and Sosedko (Zap. Vses. Mineral. O-va. 114, 86-89) (1985)(Russ.). Microprobe analyses (2) from syenite, Baikal.
- KALSILITE. Stebbins et al., (Phys. Chem. Minerals 13, 371-381) (1986), Mineral. Abstr. 38, 87M/2119 (1987) Nuclear magnetic resonance study of defects in
- KAMACITE. Lazebnik and Lazebnik, Mineralogija i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 32-50 (1981). Analyses from Yakutia, X-ray data, DTA, infra-red.
- KAMACITE. Rubin (Earth Planet. Sci. Lett. 67, 273-284) (1984). Electron microprobe analyses (3) from Blithfield meteorite.
- KAMACITE. Rubin and Keil, Earth Planet. Sci. Lett. 62, 118-131 (1983). Microprobe analyses (7) of Abee chondrite.
- KAMACITE. Semenenko et al., (Mineral. Zh. 8(3), 52-58) (1986) (Russian) Microprobe analyses (7) from 2 chondrites
- KAMACITE. Semenko et al., (Mineral. Zh. 7(5), 78-86) (1985) (Russian) Microprobe analyses (10) from Krymko chondrite
- KAMBALDAITE. Engelhardt et al. (Am. Mineral. 70, 423-427) (1985). Structure.
- KAMBALDAITE. Nickel and Robinson (Am. Mineral. 70, 419-422) (1985). New mineral from Kambalda, W. Australia, $\text{Ni}_4(\text{CO}_3)_3(\text{OH})_3 \cdot 3\text{H}_2\text{O}$. Hex., P6₃, a 10.340A, c 6.097A, Z=1. Analysis, x-ray data, G 3.18, emerald-green.
- KAMITUGAITE. Deliens and Piret, Abstract in Am. Mineral. 70, 437 (1985). Abstract of original description.
- KAMITUGAITE. Deliens and Piret, Bull. Mineral. 107, 15-19 (1984). New mineral from Kobokoba, Zaire, $\text{PbAl}(\text{UO}_2)_5[\text{P,AsO}_4]_{2.9-1/2} \cdot \text{H}_2\text{O}$. Triclinic, a 10.98, b 15.96, c 9.068 A, alpha 95.1 degrees, beta 96.1 degrees, gamma 89.0 degrees, Z=2. Analysis, optics, x-ray data.

- KANASITE. Vladykin et al. (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 41-56) (1983)(Russ.). 480 (690.3) M662. Analyses (4) from Murunsh massif.
- KANEMITE. Perinet et al., Bull. Mineral. 105, 633-639 (1982). Occurrence in recent sediments, Lake Bogoria, Kenya. Analyses (2), DTA, infra-red data.
- KANKITE. Kato, et al., Mineral. J. Tokyo 12, no. 1, 6-14 (1984)(English). Analysis from Yamenashi Pref., Japan, with SO₃ 2.25%. Optics, x-ray data, DTA, infra-red.
- KANOITE. Lindquist, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 643-648) (1983)(English), Chem. Abstr. 100, no. 8, 54681 (1984). Stability in hydrothermal systems.
- KANOITE. Schultz-Guttler et al., (Schweiz. Min. Petr. Mitt. 66, 281-294) (1986) (Eng) Analyses (4) from Buritirama, Brazil - Phase relations in system CaO-MnO-MgO-K₂O-Al₂O₃-SiO₂-CO₂-H₂O infrared from these
- KANONITE. Abs-Wurbach et al., (J. Petrol. 24, 48-75 (1983)(English)) Chem. Abstr. 98, no. 18, 146713 (1983). Hydrothermal synthesis and stability of andalusite-kanonite series.
- KAOLINITE. Buseck and Cowley, Am. Mineral. 68, 18-40 (1983). Transmission electron microscopy.
- KAOLINITE. Costanzo, et al., (Clays Clay Miner. 32, 29-35) (1984), Chem. Abstr. 100, no. 24, 195182 91984). Synthesis of a 10-A hydrated kaolinite.
- KAOLINITE. DeLuca and Slaughter, Am. Mineral. 70, 149-158 (1985). Presence of multiple well-crystallized phases in Keokuk kaolinite.
- KAOLINITE. Dorogokupets and Karpov (Fiz.-Khim. Modeli Petrog. Rudoobraz, 134-145) (1984) (Russ), Chem. Abstr. 102, no. 24, 206688 (1985). Calcn. of thermodynamic data.
- KAOLINITE. Foldvari and Kocsardy (Magyar Allami Foldt Intezet., 417-422) (1983) (1984)(Hung.). (534)A4. Factors influencing the infra-red determination of crystallinity of kaolinite.
- KAOLINITE. Halbach and Chattergee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- KAOLINITE. Lahav et al. (Clays Clay Miner. 33, 207-213) (1985), Chem. Abstr. 103, no. 6, 39992 (1985). Dehydration-induced luminescence.
- KAOLINITE. Lahodny-Sara et al., (Tschermarks Mineral. Petrogr. Mitt. 32, 235-246) (1984)(Eng.), Chem. Abstr. 100, no. 24., 195232 (1984). Hydrothermal synthesis. X-ray data.
- KAOLINITE. Maslennikova and Balicheva, (J. Mol. Struct. 114, 313-316) (1984)(English), Chem. Abstr. 100, no. 20, 159653 (1984). Infra-red study of the state of water in.
- KAOLINITE. Meinhold et al. (J. Mater. Sci. Lett. 4(2), 163-166) (1985). Chem. Abstr. 102, no. 16, 142276 (1985). Thermal decomposition standard by nuclear magnetic resonance.
- KAOLINITE. Mendelovici et al., (Isr. J. Chem. 22, 247-252 (1982)(English)) Chem. Abstr. 98, no. 16, 129426 (1983). DTA in Fe-bearing kaolinite from Venezuela.
- KAOLINITE. Moros (Mineral. Sb. (Lvov) 38, 19-25) (1984), Chem. Abstr. 101, no. 10, 76139 (1984). Study of dehydration.
- KAOLINITE. Panasevich, et al., (Ukr. Fiz. Zh. 50, 936-939) (1984), Chem. Abstr. 102, no. 2, 9843 (1985). Study of swelling in water.
- KAOLINITE. Tomura et al. (Clays Clay Miner. 33, 200-266) (1985)(Eng.), Chem. Abstr. 103, no. 6, 39991 (1985). Growth conditions and genesis of spherical and platy crystals.
- KAOLINITE. Tomura, et al., (Clays and Clay Minerals 31, 413-421) (1983), Chem. Abstr. 100, no. 6, 37263 (1984). Hydrothermal synthesis of spherical kaolinite.

- KAOLINITE. Xia and Ji (Dizhi Kexue 4, 435-444) (1984)(Chin.), Chem. Abstr. 102, no. 10, 81832 (1985). DTA.
- KAOLINITE. Yeshis, et al., Am. Mineral. 70, 159-164 (1985). Study of dehydroxylation.
- KARELIANITE. Taylor (Trans. Brit. Ceramic Soc. 83, 92-93) (1984). Thermal expansion data.
- KARELIANITE. de Brodtkorb, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 221-229 (1982). Occurrence in Urcal deposit, La Rioja, Argentina.
- KARLITE. Abstr. in Bull. Mineral. 106, 630 (1983). Abstract of original description.
- KATAYAMALITE. Abstract in Am. Mineral. 69, 811-812 (1984). Abstract of original description.
- KATAYAMALITE. Kato and Murakami (J. Mineral. Soc. Jpn. 12(5), 206-217) (1985)(Eng.). Chem. Abstr. 103, no. 6, 46288y Structure. Triclinic, PT, a 9.763, b 9.721, c 19.942A, alpha 104.15 degrees, beta 81.76 degrees, gamma 119.52 degrees, Z=2, or CT, a 9.721, b 16.923, c 19.942A, alpha 91.43 degrees, beta 104.15 degrees, gamma 89.94 degrees, Z=4, formula $KCa_7U_3Ti_2Si_{12}O_{36}(OH,F)_2$.
- KATAYAMALITE. Murakami, et al., (J. Mineral. (Tokyo) 11, 261-268) (1983), Chem. Abstr. 100, no. 8, 54666 (1984). Abstract of original description.
- KATOITE. Abstract in Am. Mineral. 70, 873 (1985). Abstract of original description.
- KATOITE. Abstract in Mineral. Abstr. 36, no. 2, 207 (1985). Abstract of original description.
- KATOITE. Passaglia and Rinaldi, (Bull. Mineral. 107, 605-618) (1984)(English), Chem. Abstr. 102, no. 6, 48826 (1985). Abstract of original description.
- KEITHCONNITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- KEIVYITE. Chem. Abstr. 100, no. 10, 71338 (1984). Abstract of original description.
- KELIANITE. Vasil'ev et al., (Zap. Vses. Mineral. O-va. 111, 330-334 (1982)) Chem. Abstr. 98, no. 4, 19573 (1983). Mineral. Abstr. 34, 183 (1983). Abstract of original description.
- KENNEDYITE. Johnston and Stout, Am. Mineral. 69, 57-68 (1984). Microprobe analyses (3) from gabbro, Kauai, Hawaii.
- KENTROLITE. Lindquist, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 643-648) (1983)(English), Chem. Abstr. 100, no. 8, 54681 (1984). Stability in hydrothermal systems.
- KEROLITE. Manceau et al. (Springer Proc. Phys. 2, 358-361) (1984)(Eng.), Chem. Abstr. 103, no. 4, 25071 (1985). Cation ordering (Ni-Mg) by x-ray and optical spectroscopy.
- KESTERITE. Cech and Hah (Acta Univ. Carol., Geol. 1-2, 45-51) (1982)(Eng.), Chem. Abstr. 101, no. 10, 76106 (1984). Analysis from Vernerov, Bohemia (ferroan), a 5.438, c 10.183 A.
- KESTERITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- KESTERITE. Moore and Howie (Mineral. Mag. 48, 389-396) (1984). Microprobe analyses (15) from Cornwall, England, Zn 10.18-13.69 percent. "Stannite" from St. Michael's Mount is kesterite.
- KESTERITE. Munoz and Moelo, Bull. Mineral. 105, 625-632 (1982). Microprobe analyses (1) from Bournac, France.
- KESTERITE. Nekrasova, et al., (Dokl. Akad. Nauk SSSR 278, 723-726) (1984), Chem. Abstr. 102, no. 6, 48662 (1985). Microprobe analyses (not in abstr.) from eastern USSR, a 5.42, c 10.83 A.

- KHANNESHITE. Eremenko and Bel'ko, (Zap. Vses. Mineral. O-va. 111, 321-324 (1982)) Mineral. Abstr. 34, 183-184 (1983). Abstract of original description.
- KHARAEKHITE. Genkin et al. (Mineral. Zh. 7, no. 1, 78-83) (1985), Chem. Abstr. 103, no. 8, 56903 (1985). New mineral (Pt, Cu, Pb, Fe, Ni)₉S₈, orth., Pmmm, Pmm2, or P222, G 7.78 calcd., orth. a 9.713, b 8.333, c 14.50A. Analyses, optics, x-ray data.
- KHATYRKITE. Razin et al. (Zap. Vses. Mineral. O-va. 114, 90-100) (1985), Chem. Abstr. 102, no. 26, 223538 (1985). New mineral (CuAl₂) from mafic rocks Koryek. Kamchatka.
- KIDDCREEKITE. Harris, et al., Abstract in Am. Mineral. 70, 437 (1985). Abstract of original description.
- KIDDCREEKITE. Harris, et al., Can. Mineral. 22, 227-232 (1984). New mineral, Cu₆SnWS₈, cubic, a 10.856 A, G calcd. 4.88. Microprobe analyses (6), x-ray data, optics.
- KILLALAITHE. Sarp et al. (Arch. Sci. (Geneva) 35, 275-278) (1982), Mineral. Abstr. 36, 81 (1985), Chem. Abstr. 98, no. 22, 182738 (1983). Occurrence in Turkey, a 6.80, b 15.47, c 6.82A, beta 93.3 degrees, P2₁/m. G 2.9. Optics.
- KILLINITE. Nawaz, Mineral. Mag 48, 566-567 (1984). Probe analysis shows it to be hydromuscovite.
- KIMURAITHE-(Y). Mineral. Abstr. 38, 87M/3191 (1987) Abstract of original description
- KINICHILITE. Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- KINOSHITALITE. Guggenheim and Kato (Mineral. J. Tokyo 12, 1-5) (1984)(Eng.). Refinement of structure of kinoshitalite and manganoan phlogopite.
- KITKAITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- KLOCKMANNITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- KOBELLITE. Moggova and Bortnikov, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 31-49 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (new and quoted) (28) show variability in composition and x-ray powder data.
- KOBELLITE. Moggova and Bortnikov, (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 31-49 (1980)) Mineral. Abstr. 34, 180 (1983). Probe analyses. Formula (Cu,Fe)_{2-z} Pb_{12-x} (Bi,Sb)_{14+x} S_{35+0.5x}, x = 0-1.7, z = 0-2.
- KOBELLITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- KOENENITE. Aslani-Samim et al., (N. Jb. Miner., Mh., 497-507) (1985), Mineral. Abstr. 38, 87M/2528 (1987) Hydrothermal synthesis at 1 kbar, 150-500 deg. C
- KOENENITE. Liu and Liu (Yanshi Kuangwu Ji Ceshi 3, no. 2, 131-137) (1984)(Chin.), Chem. Abstr. 102, no. 10, 81839 (1985). Analysis from Yunnan, China, 2 trigonal sublattices, analysis.
- KOLBECKITE. Poste (Mitt.-bl. Abt. Miner. Landesmus. Joanneum 49, 23-29) (1981). G(533)G78 mb. Occurrence in trachyandesite. Gleichenberg, Styria. X-ray data, optics, G 2.32, DTA, infra-red spectrum, a 5.418, b 10.193, c 8.893, Beta 90 min. 48 min..
- KOLFANITE. Voloshin et al., (Mineral. Zh. 4, 90-95 (1982)) Am. Mineral. 68, 280 (1983). Abstract of original description.
- KOLUTSKITE. Eggins and Hensen, (Lithos 20, 295-310) (1987) Microprobe analyses (6) from granodiorites, Barrington Top batholith, E. Australia

- KOLUTSKITE. Eiggins and Hensen, (Lithos 20, 295-310) (1987) Microprobe analyses (6) from granodiorites, Barrington Top batholith, E. Australia
- KOMBATITE. Mineral. Abstr. 38, 87M/3192 (1987) Abstract of original description
- KONYAITE. van Doesburg et al., (Am. Mineral. 67, 1035-1038 (1982)) Mineral. Abstr. 34, 184 (1983). Abstract of original description.
- KORNERUPINE. Nanda et al., Neues Jahrb. Mineral., Monatsh., no. 3, 103-109 (1983)(English). Mineral. Abstr. 34, 464 (1983). Microprobe analyses (2), (not in Abstr.) Kondapalli, India, a 15.972, b 13.705, c 6.706A.
- KORNERUPINE. Nixon, et al., Mineral. Mag. 48, 550-552 (1984). Microprobe analyses (2) from Labwor Hills, Uganda.
- KORNERUPINE. Windley, et al., Contrib. Mineral. Petrol. 86, 342-358 (1984). Microprobe analyses (11) from Limpopo belt, S. Africa.
- KORSHUNOVSKITE. Malinko et al., (Zap. Vses. Mineral. O-va. 111, 324-329 (1982)) Am. Mineral. 68, 643 (1983). (1982)) Mineral. Abstr. 34, 184 (1983). Abstract of original description.
- KOSMOCHLOR. Abs-Wumbach et al. (Fortschr. Mineral. 62, Beih. 1, 1-2) (1984). Polarized absorption spectrum.
- KOSMOCHLOR. Khoneiko et al. (Geokhimiia 6, 842-848) (1984), Chem. Abstr. 101, no. 10, 76113 (1984). Optical absorption spectroscopy.
- KOSTOVITE. Kovalenker et al., (Gold and silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M365 Microprobe analyses (1) from Bulgaria
- KOSTOVITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analysis (4) from gold-silver deposits
- KOSTYLEVITE. Abstract in Am. Mineral. 69, 812 (1984). Abstract of original description.
- KOSTYLEVITE. Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- KOTULSKITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- KOTULSKITE. Loucks and McCallum (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 200-218) (1980)(Eng.) (Sulfosalt Vol.). Microprobe analyses (5), Rambler mine, Wyo.
- KOTULSKITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- KOTULSKITE. Talkington and Watkinson, Can. Mineral. 22, 125-136 (1984). Microprobe analyses (3), Lac-des. Iles complex, N.W. Ont.
- KOTULSKITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- KOUTEKITE. Nysten (Geol. Foren. Stockholm Foerh. 106, 293-294) (1984)(Eng.). Occurrence at Harstigen, Sweden.
- KOUTEKITE. Tarkian, et al., Tschermarks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- KRAUSKOPFITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- KRENNERITE. Peitlek, Tschermarks Mineral. Petrogr. Mitt. 33, 253-262 (1984)(English). Structure. Pma2, a 16.58, b 8.849, c 4.464 A, Z=8.
- KRENNERITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes

- KRUPKAITE. Mumme and Zak, (Cas. Mineral. Geol. 28, 61-63) (1983), Mineral. Abstr. 35, 189 (1984). Occurrence at Dobsina, Slovakia, Pb_2Im , a 11.216, b 11.578, c 4.018 A.
- KRUPKAITE. Podeminskaya, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 49-58 (1980)(Russian) (Sulfosalt Vol.). Structure. Orth., PmC_21 , a 4.017, b 11.210, c 11.564 A, Z=2.
- KRUTOVITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- KULARITE. Abstr. in Am. Mineral. 69, 210 (1984). Name for dark monazite.
- KULKEITE. Schreyer et al., (Contrib. Mineral. Petrol. 80, 103-109 (1982)) Mineral. Abstr. 34, 184 (1983). Abstract of original description.
- KUPALITE. Razin et al. (Zap. Vses. Mineral. O-va. 114, 90-100) (1985), Chem. Abstr. 102, no. 26, 223538 (1985). New mineral (CuAl) from mafic rocks Koryak. Kamchatka.
- KUPLETSKITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerge complex, Greenland.
- KURCHATOVITE. Semenov et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 96-102 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201507 (1983). Heat capacity and entropy.
- KURGANTAITE. Abstr. in Am. Mineral. 69, 214 (1984) = strontian Tyretskite.
- KUTINAITE. Tarkian, et al., Tschermaks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- KUTNOHORITE. Iwafuchi and Otsuka (Nippon Kogyo Kaishi 98, 1211-1218) (1982), Chem. Abstr. 101, no. 14, 114127 (1984). Analysis, DTA of magnesian.
- KUTNOHORITE. Iwafuchi et al., (Thermochim. Acta 60, 361-381 (1983)) Chem. Abstr. 98, no. 14, 110842 (1983). DTA on magnesian kutnohorite.
- KUTNOHORITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (3) from manganese cherts, Alps
- KUTNOHORITE. Tanida and Kitamura (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 227-234) (Ganseki Kobutsu Kosho Gakkaishi 77, 227-234 (Mineral. Abstr. 36, no. 2, 206 (1985). Chem. Abstr. 98, no. 6, 37813 (1983). Analysis from Iwate Pref. Japan. DTA.
- KUTNOHORITE. Tornroos, Neues Jahrb. Mineral., Abh., 144, 107-123 (1982)(English). Microprobe analyses (1) from Finland.
- KUTNOHORITE. Zak (Acta Univ. Carol., Geol. 1-2, 27-32) (1983)(Eng.), Chem. Abstr. 102, no. 26, 223551 (1985). Analyses and unit cells from Chvaletice, Czechoslovakia.
- KUTNOHORITE. Zak and Povondra, (Tschermaks Mineral. Petrogr. Mitt. 28, 55-63 (1981)) Mineral. Abstr. 34, 181-182 (1983). Analysis from Bohemia, G 3.066, a 4.852, c 16.219A. Optics.
- KVANEFJELDITE. Abstract in Am. Mineral. 70, 873 (1985). Abstract of original description.
- KVANEFJELDITE. Johnsen, et al., Neues Jahrb. Mineral., Monatsh., 505-512 (1983)(English). Structure of new mineral, $Na(Ca,Mn)[Si_{13}O_{17}(OH)]_{12}$. Orth, Pcab, a 10.213, b 15.878, c 9.058A, Z=4.
- KVANEFJELDITE. Petersen et al. (Can. Mineral. 22, 465-467) (1984). New mineral from Ilimaussaq, Greenland. $Na_4(Ca,Mn)Si_6O_{14}(OH)_2$. Orth., Pcab, a 10.213, b 15.878, c 9.058A, Z=4. Analysis, optics, x-ray data.
- KYANITE. Bosshart et al., (J. Gemmol. 18, 205-212 (1982)) Mineral. Abstr. 34, 66 (1983). Analysis and optics of pleochroic kyanite, E. Africa.
- KYANITE. Cerny and Hawthorne, Mineral. Assoc. Canada Short Course no. 8, 163-186 (1982). Review of occurrence in granitic pegmatites.

- KYANITE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.).
G(591)qUT3g. Microprobe analyses (7) from metamorphosed bauxites, Naxos, Greece.
- KYANITE. Halbach and Chattergee, Contrib. Mineral. Petrol. 88, 14-23 (1984).
Calculation of thermodynamic data.
- KYANITE. Hiroi, Contrib. Mineral. Petrol. 82, 334-350 (1983). Microprobe
analyses (2) from Hida, Japan.
- KYANITE. Kieffer, (Rev. Geophys. Space Phys. 20, 827-849 (1982)) Chem. Abstr.
98, no. 4, 19591 (1983). Calculations of thermodynamic properties,
application to phase equil.
- KYANITE. Matthews and Goldsmith, Am. Mineral. 69, 848-857 (1984). Stability in
system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 400-700 degrees C, 10-20 kbar.
- KYANITE. Neiva, Mineral. Mag 48, 563-564 (1984). Analysis from Mozambique with
 Cr_2O_3 0.40%, a 7.125, b 7.846, c 5.569 A, alpha 89.846 degrees, beta
101.336 degrees, gamma 106.012 degrees, G 2.70.
- KYANITE. Purtscheller and Mogessie (Tscherms Mineral. Petrogr. Mitt. 32,
223-233) (1984)(Eng.). Electron microprobe analysis from Solden, Austria.
- KYANITE. Pyatygina et al., (Vestn. Leningr. Univ., Geol., Geogr. 16, 73- 80)
(1982), Chem. Abstr. 100, no. 26, 213101 (1984). Study of unit cell
dimensions at 80 kbar and 1000, 15000, 2000 degrees. No longer at 1000
degrees, at 1500 degrees corundum was formed.
- KYANITE. Robie and Hemingway, Am. Mineral. 69, 298-306 (1984). Heat capacity,
10-380 degrees K. Entropy. Triple joint kyanite-andalusite-sillimanite
placed at 790 ± 25 degrees K, 4.0 ± 0.5 kb.
- KYANITE. Sharma and Windley, Mineral. Mag. 48, 195-209 (1984). Microprobe
analyses (1) from Archean gneiss, N.W. India.
- KYANITE. Smyth et al. (Kimberlites 11B, 109-119) (1984) (150.3 D 493).
Microprobe analysis from eclogite, Bobbejean mine, S. Africa.
- KYANITE. Word and Holloway, Geochim. Cosmochim. Acta 48, 159-176 (1984).
Stability in system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$.
- L'OURSINITE. Abstract in Mineral. Abstr. 35, 88 (1984). Abstract of original
description.
- LACROIXITE. Lahti et al. (Am. Mineral. 70, 849-855) (1985). Microprobe
analysis from Greifenstein, E. Germany gives composition NaAlFPO_4 . Structure.
Monoclinic, C2/c, a 6.414, b 8.207, c 6.885A, beta 115.47 degrees, Z=4.
Optics, x-ray data, infra-red, G 3.29.
- LAFFITITE. Nakai and Appleman, Am. Mineral. 68, 235-244 (1983). Occurrence at
Getchell mine, Nevada. Microprobe analysis. Synthesis. Structure.
Monoclinic, Aa, a 7.732, b 11.285, c 6.643A, beta 115.16°, Z=4.
- LAIHUNITE. Gao and Zhang, (Sci. Geol. Sin., no. 3, 298-303 (1982)) Mineral.
Abstr. 34, 133 (1983). Calculated free energy of formation, $-311.1 + 4$
kcal/mole.
- LAIHUNITE. Kitamura, et al., Am. Mineral. 69, 154-160 (1984). Analyses (7)
from Hebei, China, P2/b, a 4.82, b 10.2, c 5.87 A.
- LAIHUNITE. Kondoh et al. (Am. Mineral. 70, 737-746) (1985). Synthesis by
heating fayalite. X-ray data.
- LAIHUNITE. Schaeffer (Am. Mineral. 70, 729-736) (1985). "Ferrifayalite" from
China, Ireland, Italy is a mixt. of laihunite and fayalite.
- LAIHUNITE. Shen et al., (Sci. Geol. Sin., no. 3 341-342 (1982)) Mineral.
Abstr. 34, 114 (1983). Supercell has a 4.805, b 10.189, c (2 or 3) x 5.801A,
alpha 91.0°.
- LAIHUNITE. Sherman, (Phys. Chem. Minerals 14, 355-363) (1987) $\text{Fe}^{+2}\text{-Fe}^{+3}$
charge transfer in

- LAIHUNITE. Tamada, et al., Mineral. J. Tokyo 11, 382-391 (1983)(English).
Structure $P2_1/b$, a 4.805, b 10.189, c 5.801 Å, alpha 91.0 degrees. Formula
(0.40 Fe^{+2} , 0.80 Fe^{+3} , 0.80 SiO_4).
- LAITAKARITE. Kovalenker and Geinke, Izv. Akad. Nauk SSSR 5, 91-104
(1984)(Russian). Microprobe analyses (5) from Kuranin Ridge, Tien-shan.
- LAITAKARITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145)
(1986) (Russian) 431 M565 Microprobe analyses (6) from gold-silver deposits
- LAITAKARITE. Spiridonov and Badalov, Uzb. Geol. Zh. 6, 82-84 (1983)(Russian).
Microprobe analysis from Karragach deposit, Uzbekistan.
- LAITAKARITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- LAMMERITE. Filatov et al. (Dokl. Akad. Nauk SSSR 279, 197-200) (1984), Chem.
Abstr. 102, no. 10, 81867 (1985). Analyses (3) from Kamchatka with
variation in As and P contents. Mon., a 5.390, b 11.647, c 5.079 Å, beta
111.73 degrees, Z=2, $P2_1/c$. Optics.
- LAMMERITE. Keller et al., (Tschermarks Mineral. Petrogr. Mitt. 28, 157-164
(1981)) Mineral. Abstr. 34, 184 (1983). Abstract of original description.
- LAMMERITE. Keller, (Aufschluss 32; 437-441 (1981)) Mineral. Abstr. 34, 182
(1983). Occurrence at Tsumeb. Optics.
- LANDAUITTE. Haggerty et al., Am. Mineral. 68, 494-505 (1983). Analysis from
kimberlite, S. Africa.
- LANGISITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41
(1982). Reflectance and hardness.
- LANNONITE. Williams and Cesbron, (Mineral. Mag. 47, 37-40 (1983)) Chem. Abstr.
98, no. 14, 110803 (1983). Abstract of original description.
- LANNONITE. Abstract in Am. Mineral. 69, 407 (1984). Abstract of original
description.
- LANNONITE. Williams and Cesbron, Mineral. Mag. 47, 37-40 (1983). New mineral
from New Mexico, $H Ca_4 Mg_2 Al_4 (SO_4)_8 F_9 \cdot 32 H_2O$. Tet., a 6.84, c 28.01 Å,
Z=1. Analysis, optics, X-ray data, G 2.22.
- LANTHANITE-(Ce). Bevins et al. (Am. Mineral. 70, 411-413) (1985). New
mineral, $(Ce_{0.78}La_{0.55}Nd_{0.55} \text{ etc.})_2(CO_3)_3 \cdot 8H_2O$. Orth., Pbnb, a 9.482,
b 16.938, c 8.965 Å, Z=4, G calcd. 2.79, 2.76. Analysis, optics, x-ray
data.
- LAPIEITE. Harris, et al., Can. Mineral. 22, 561-564 (1984). New mineral,
 $CuNiSbS_3$, from Yukon Territory. Microprobe analyses (4), x-ray data,
reflectance, orth., $P2_12_12_1$, a 7.422, b 12.508, c 4.900 Å, Z=4, G.
calcd. 4.966.
- LARNITE. Catti and Ivaldi, Phys. Chem. Miner. 9, 160-166 (1983). Discussion
of charge distribution in.
- LARNITE. Piriou and McMillan, Am. Mineral. 68, 426-443 (1983). Vibrational
spectrum.
- LAUMONTITE. Frantisek (Acta Mont. 67, 107-116) (1984)(Czech.), Chem. Abstr.
103, no. 8, 56916 (1985). Infrared and Raman spectra.
- LAUMONTITE. Lion, Mem. Geol. Soc. China 5, 47-66 (1983)(English)(G(611)G292m)
Composition and stability in low-grade metamorphic rocks.
- LAUMONTITE. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T
diagram of system $Na_2O-CaO-MgO-Al_2O_3-SiO_2-H_2O$.
- LAUMONTITE. Obradovic et al., (Glas - Srp. Akad. Nauka Umet., Od. Prir.-Mat.
Nauka, 48, 39-51 (1981)) Chem. Abstr. 98, no. 6, 37779 (1983). Occurrence
from Bor, Yugoslavia.
- LAUMONTITE. Rykl and Pechar (Cryst. Res. Technol. 19, 549-555) (1984)(Eng.),
Chem. Abstr. 100, no. 26, 213129 (1984). DTA.

- LAUMONTITE. Ueno and Hanada, J. Mineral. Soc. Jpn. 15, 259-272 (1982)(Japanese). Analysis, X-ray data, Fukuoka Pref., Japan, a 14.76, b 13.085, c 7.560A, beta 112.12' (14 H₂O).
- LAUNAYITE. Breskovska et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 83-89 (1980)) Mineral. Abstr. 34, 180 (1983). Probe analyses showing Cl present.
- LAURITE. Auge (Can. Mineral. 23, 163-171) (1985). Microprobe analyses (7) from inclusions in chromitite, Vourinos, Greece.
- LAURITE. Bowles, et al., Mineral. Mag. 47, 465-473 (1983).
- LAURITE. Naidenova, et al., (Dokl. Bolg. Akad. Nauk 37, 183-186) (1984)(Russian), Chem. Abstr. 101, no. 6, 41185 (1984). Analysis from Bulgaria, optics.
- LAURITE. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (1) from Kamchatka Pt deposit.
- LAURITE. Rudashevskii, et al., Mineral. Zh. 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (2) from Konder massif, Aldan.
- LAURITE. Stockman and Hlava (Econ. Geol. 79, 491-508) (1984). Microprobe analyses (7) from chromatites, Oregon).
- LAURITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- LAURITE. Tarkian and Prichard, (Mineral. Deposita 22, 178-184) (1987) Microprobe analyses (9) of irarsite-hollingworthite series Optics
- LAURRAYITE. Breskovska et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 83-89) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analysis (1) showing Cl 0.53 percent.
- LAVENITE. Mellini, (Tschermarks Mineral. Petrogr. Mitt. 28, 99-112 (1981)) Mineral. Abstr. 34, 114 (1983). Refinement of structure. Monoclinic, P2(1)/a, a 10.83, b 9.98, c 7.174A, beta 108.1'. New analysis gave formula (Na,Ca)₈ (Ca,Mn,Fe⁺²,Ti)₄ (Zr,Nb)₄ Si₈ O₃₂ F₄.
- LAVRENTIEVITE. Abstract in Am. Mineral. 70, 873-874 (1985). Abstract of original description.
- LAWSONITE. Beck, (Soc Geol. Nord Publ. 14, 191-280) (1986) (French) G(540) qN77p Microprobe analyses (3) from near Caracas, Venezuela
- LAWSONITE. Brown and Ghent, Am. Mineral. 68, 365-372 (1983). Microprobe analyses (1) from blueschist, N. Calif.
- LAWSONITE. Chatterjee, et al., Contrib. Mineral. Petrol. 88, 1-13 (1984). Synthesis, stability in system CaO-Al₂O₃-SiO₂-H₂O, Ccmm, a 8.7842, b 5.8358, c 13.1282 A, Z=4.
- LAWSONITE. Cotkin, (Contrib. Mineral. Petrol. 96, 192-200) (1987) Microprobe analysis (2) from blueschist, N. Calif.
- LAWSONITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- LAWSONITE. Hirajima et al. (Nor. Geol. Tidsskr. 64, 267-274) (1984)(Eng.). Microprobe analysis (1) from Spitsbergen.
- LAWSONITE. Lion, Mem. Geol. Soc. China 5, 47-66 (1983)(English)(G(611)G292m) Composition and stability in low-grade metamorphic rocks.
- LAWSONITE. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system Na₂O-CaO-MgO-Al₂O₃-SiO₂-H₂O.
- LAWSONITE. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (1) from blue schist, NE Diablo Range, Calif.
- LAWSONITE. Pe-piper, Neues Jahrb. Mineral., Abh. 149, 163-178 (1984)(English). Microprobe analyses (1) from volcanic rocks, Greece.
- LAWSONITE. Simova and Samajova (Mineral. Slovaca 14, 431-441) (1982). Occurrence in Czechoslovakia, optics, x-ray data.

- LAZARENKOITE. Yakhontova, et al., (Problem Kristallokhim Genezis Miner., 145-148) (1983), Chem. Abstr. 100, no. 6, 37241 (1984). X-ray and optical data suggest possible structure.
- LAZULITE. Amthauer and Rossman (Phys. Chem. Miner. 11(1), 37-51) (1984)(Eng.). Chem. Abstr. 101, no. 12, 94659 (1984). Optical and Mossbauer spectroscopy. Mixed valence of Fe in.
- LAZULITE. Cortesogno et al., (N. Jb. Miner., Mh., 305-313) (1987) (Eng) Analysis from Italy, Optics, DTA, a 7.142, b 7.268, c 7.246, beta 120 deg. 29 min.
- LAZULITE. Giuseppetti and Tadini (N. Jb. Miner., Mh., 410-416) (1983), Mineral. Abstr. 36, 19 (1985). Structure. Monoclinic, $P2_1/c$, a 7.144, b 7.278, c 7.228A, beta 120.51 degrees, Z=2. H bonding in.
- LAZULITE. Litoshko, (Akad. Nauk SSSR, Komi Fil., Inst. Geol. 45, 75-78) (1984), Chem. Abstr. 101, no. 8, 57833 (1984). Occurrence in Polar Urals, optics.
- LAZURITE. Hassan et al. (Acta Cryst. 41C, 827-832) (1985). Structure, cubic $P4_3n$, a 9.054A, Z=1, G 2.39.
- LAZURITE. Ishida et al., (Yogyo Kyokaishi 91, 53-62 (1983)(Japanese)) Chem. Abstr. 98, no. 20, 171807 (1983). Synthesis of ultramarines.
- LAZURITE. Ivanov and Sapozhnikov (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 57-62) (1983)(Russ.). 480 (690.3) M662. Analyses (8) from Baikal.
- LAZURITE. Ivanov et al., (Gem Miner. (Proc. XI Gen. Mtg. IMA, Novosibirsk), 97-104 (1980)) Mineral. Abstr. 34, 42 (1983). Analysis of triclinic lazurite from USSR, G 2.43, a 9.08, b 12.85, c 25.70A, alpha = beta = gamma = 90°. Optics.
- LAZURITE. Litoshko (Tr. Komi Fil. Akad Nauk SSSR 45, 75-78) (1984) (G(570)AK144+). Occurrence in Polar Urals, optics, x-ray data.
- LAZURITE. Vorobiev (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 62-68) (1983)(Russ.). 480 (690.3) M662. Discussion of genesis.
- LEAD. Novgoroda, Int. Geol. Congress, 1980, Dokl. Society Geol., Geokhim., Mineral., Petrol., 108-113 (Russian with English abstr.). Microprobe analyses (1) from S. Urals. Cubic, a 4.95, G 11.63, x-ray powder data (201 In 39(g)).
- LEADAMALGAM. Chen, et al., (Dizhi Lumping Geological Review 27, 107-115) (1981)(Chinese), Abstr. in Am. Mineral., 70, 216 (1985). New Abstr. in Am. Mineral, $HgPb_2$, tet., $I4/mmm$, a 3.545, c 4.525 A, G calcd. 11.96. Silver-white, H 1.6. Compare altmarkite.
- LEADHILLITE. Highcock, et al., (Acta Crystallogr., Sect. A, A40, 249) (1984)(Abstr.). Structure. Mon., $P2_1/c$, a 11.582, b 20.809, c 9.111 A, beta 90.48 degrees, Z=8.
- LEADHILLITE. Milodowski and Morgan (Clay Miner. 19(5) 825-841) (1984), Chem. Abstr. 102, no. 26, 223546 (1985). DTA, x-ray, infra-red study of dehydration.
- LEADHILLITE. Russell, et al., Mineral. Mag. 48, 295-297 (1984). Infra-red spectrum.
- LECHATELIERITE. Trenzel and Stahle (Chem. Erde 43, 17-26) (1984). Microprobe analyses (4) from Switzerland.
- LEITEITE. Ghose et al., (Am. Mineral. 72, 629-632) (1987) Structure Monoc., $P2_1/c$, a 4.542, b 5.022, c 17.597 A, beta 90.81 deg., Z=2
- LENNILENAPEITE. Abstr. in Am. Mineral. 70, 216 (1985). Abstract of original description.
- LENNILENAPEITE. Dunn, et al., Can. Mineral. 22, 259-263 (1984). New mineral from Franklin, $K_{6.7}(Mg,Mn,Fe^{+2})_{48}(Si,Al)_{72}(O,OH)_2 \cdot 16H_2O$, Z=1. Dark brown or light green. Probe analyses (5), x-ray data, optics. The Mg-analogue of stilpnomelane.

- LEPIDOCROCITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So_{3n}. Mossbauer study of standard samples.
- LEPIDOCROCITE. Matsui et al., (Jap. Patent 62, 65,937, 4 pp), Chem. Abstr. 107, no. 10, 80495 (1987) Manufacture
- LEPIDOCROCITE. Morris et al. (J. Geophys. Res., 90B4, 3126-3144) (1985). Spectral reflectivity at -110 degrees to + 20 degrees. Mossbauer study.
- LEPIDOCROCITE. Murad and Schwertmann, Mineral. Mag. 48, 507-511 (1984). Effect of crystallinity on Mossbauer pattern.
- LEPIDOCROCITE. Subrt et al., (J. Thermal. Anal. 20, 61-69 (1981)) Mineral. Abstr. 34, 136 (1983). Synthesis. DTA, infra-red, Mossbauer study of dehydration.
- LEPIDOCROCITE. Taylor (Clays Clay Miner. 32, 175-180) (1984), Chem. Abstr. 101, no. 8, 57863 (1984). Effect of chloride on formation of solution.
- LEPIDOLITE. Evans and Raftery, (Clay Miner. 17, 443-452 (1982)) Chem. Abstr. 98, no. 12, 92813 (1983). X-ray photoelectron diffraction study.
- LEPIDOLITE. Hawthorne and Cerny, Mineral. Assoc. Canada Short Course no. 8, 63-98 (1982). Review of micas in granite pegmatites.
- LERMONTOVITE. Ashikhmin, et al., Mineral. Rudn. Mestorozhd. 1983, 121-127 (Russian)(410M662). Analysis.
- LERMONTOVITE. Belova et al., (Proc. 13th Meeting IMA, Varne, 1982, 763- 772) (1986) (Russian) Data given
- LERMONTOVITE. Melkov et al., (Mineral. Zh. 5, 82-87 (1983)) Chem. Abstr. 98, no. 24, 201484 (1983). Mineral. Abstr. 34, 475 (1983). New analysis gives (U,Tl) PO₄ · H₂O. Orth., Ccca, a 9.74, b 19.0, c 10.1A. Optics.
- LEUCITE. Calanchi et al. (Mineral. Petrogr. Acta 27, 15-34) (1983)(Ital.). Microprobe analyses (2) from volcanic rocks, Java.
- LEUCITE. Gallo et al. (N. Jb. Miner., Mh., 198-210) (1984)(Eng.). Microprobe analysis (1) from alkalic rocks, Italy.
- LEUCITE. Kampunzu et al. (Bull. Volcanol. 47, 79-103) (1984)(French). Microprobe analyses (4) from Nyamulagira volcano.
- LEUCITE. Pouclet, et al., Bull. Mineral. 106, 607-622 (1983). Microprobe analyses (2) from alkalic lavas, Virunga, E. Africa.
- LEUCITE. Rosi and Santacroce, J. Volcanol. Geothermal Res. 17,, 249-271 (1983)(English). Microprobe analyses (2) from AD 472 eruption of Vesuvius.
- LEUCITE. Viereck (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (5) from Eifel, Germany.
- LEUCITE. Volynets and Anan'ev, (Dokl. Akad. Nauk SSSR 275, 955-958) (1984), Chem. Abstr. 101, no. 6, 41198 (1984). Microprobe analysis from basalt, Kamchatka.
- LEUCOPHANITE. Novikova, Mineral. Zh. 6, no. 5, 84-90 (1984). Analysis, unit cell.
- LEUCOPHANITE. Prokof'ev et al., (Mineral. Sb. (Lvov) 36, 76-79 (1982)) Chem. Abstr. 98, no. 24, 201520 (1983). Rare-earth luminescence centers in.
- LEUCOPHANITE. Semenov et al., (Mineral. Zh. 9(2), 84-85) (1987) (Russian) Analyses (5) from Ilimaussaq, Greenland RE₂O₃ up to 5.0%
- LEUCOPHOENICITE. Dunn (Am. Mineral. 70, 379-387) (1985). Microprobe analyses (27) from Franklin and Sterling Hill, NJ.
- LEUCOPHOENICITE. Dunn et al. (Am. Mineral. 69, 546-552) (1984). New analysis from Franklin. a 4.828, b 10.85, c 11.380A, Alpha 103.73 degrees.
- LEUCOPHOSPHITE. Coveney et al. (Mineral. Rec. 15, 351-357) (1984). Occurrence at Bethel Church, Ind.

- LIEBENBERGITE. Bass et al, (Phys. Chem. Miner. 10, 261-272) (1984). Elastic moduli of synthetic crystals and its spinel dimorph.
- LIEBENBERGITE. Boland and Liebermann, (Geophys. Res. Lett. 10, 87-90 (1983)) Chem. Abstr. 98, no. 12, 92810 (1983). Electron microscope study of transition to spinel phase.
- LIEBENBERGITE. Miller and Ribbe, (Am. Mineral. 70, 723-728) (1985). Unit cell parameters in systems $\text{Fe}_2\text{SiO}_4\text{-Mn}_2\text{SiO}_4$ and $\text{Fe}_2\text{SiO}_4\text{-Ni}_2\text{SiO}_4$.
- LIEBENBERGITE. Ribbe and Lumpkin et al., Am. Mineral. 69, 161-164 (1984). Cation ordering; a discussion. Unit cells.
- LIEBENBERGITE. Tamada et al., (Acta Crystallogr., Sect. B, B39, 692-697) (1983), Mineral. Abstr. 35, 135 (1984). Structure and electron distribution, a 4.7277, b 10.1173, c 5.9125 A.
- LIEBENBERGITE. Wearing, Mineral. Mag. 48, 243-249 (1984). Microprobe analyses (2) from Cu-converter slags.
- LIEBIGITE. Deliens, (Ann. Rappt. Museum Roy. Belg. for 1983-1984, 79-80) (1985) (French) G(593) T27r X-ray data from Shinklobure, Zaire, ns alpha 1.500, gamma 1.530, 2V 45 deg. neg.
- LIEBIGITE. Mereiter, (Tschermarks Mineral. Petrogr. Mitt. 30, 277-288 (1983)(English)) Chem. Abstr. 98, no. 16, 129397 (1983). Structure. Orth., Bba2, a 16.699, b 17.557, c 13.697A, Z=8, $\text{Ca}_2(\text{UO}_2)(\text{CO}_3)_3 \cdot 11\text{H}_2\text{O}$.
- LILLIANITE. Aliev, (Tr. Azerb. Otd., Vses. Mineral. O-va., no. 2, 120-125 (1981)) Chem. Abstr. 98, no. 12, 92772 (1983). Microprobe analysis, Caucasus.
- LILLIANITE. Breskovska et al., (Proc. 13th Meeting IMA, Varna, 1982, 131-146) (1986) (Russian) Microprobe analysis Rhodope Mts., Bulgaria
- LILLIANITE. Dangic et al., (Geol. Anal. Balkan Polustr. 481, 231-237) (1984) (Eng summary) Microprobe analyses (4) from Magdan Pb-Zn ores, Yugoslavia give $\text{Bi}_{2.01}\text{Te}_{1.83}\text{S}_{1.17}$
- LILLIANITE. Kovalenkar et al., Mineral. Zh. 6, no. 2, 16-30 (1984)(Russian). Microprobe analyses from Kochbulak, USSR.
- LILLIANITE. Mozgova et al., (Rend. Soc. Ital. Mineral. Petrol 40, 277-283) (1985) (Eng) Microprobe analyses (2) from Vulcano, Italy X-ray data Se up to 3.1%
- LILLIANITE. Patrick, Mineral. Mag. 48, 85-91 (1984). Microprobe analyses (21) from Tomnadashan mine, Scotland.
- LILLIANITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- LIME. Kuskov et al., (Geokhimiia, no. 11, 1587-1597 (1982)) Chem. Abstr. 98, no. 6, 37820 (1983). Derivation of equation of state at high T and P.
- LINARITE. Mrazek, (Miner. Slovaca 14, 471-476 (1982)) Chem. Abstr. 98, no. 8, 57260 (1983). Occurrence at Smolnik, Czechoslovakia. Optics, X-ray, infra-red.
- LINDGRENITE. Hawthorne and Eby, (Neues Jahrb. Mineral., Monatsh., 234-240) (1985)(Eng.). Refinement of structure. monoclinic, $\text{P}2_1/\text{n}$, a 5.394, b 14.023, c 5.608 A, beta 98.50 degrees, Z=2.
- LINDSLEYITE. Haggerty et al., Am. Mineral. 68, 494-505 (1983). New mineral, $(\text{Ba},\text{Sr})(\text{Ti},\text{Cr},\text{Fe},\text{Mg},\text{Zr})_{21}\text{O}_{38}$, trigonal, black, Crichtonite group, a 10.37, c 20.52, G calcd 4.63 end member. Anal., X-ray data, optics.
- LINDSLEYITE. Jones and Ekambaran, (Am. Mineral. 70, 414-418) (1985). analysis by INA from kimberlite, Bultfontein. Rare earths and x-ray data. Heavy lanthanides lower than reported by Haggerty.
- LINDSTROMITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Mineral. Abstr. 34, 180 (1983). Microprobe analyses (3) from Spissko-Gomer ore deposits, Slovakia. Probe analyses from Slovakia.

- LINDSTROMITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (2) from gold-silver deposits
- LINNAEITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (3) from Nord mine, Sweden. Hardness.
- LINNAEITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- LIPSCOMBITE. Vochten et al., (Phys. Chem. Miner. 9, 263-268) (1983), Mineral. Abstr. 35, 139 (1984). Synthesis of manganoan lipscombite, a 5.3020, c 12.8800 Å.
- LITHARGE. Senna, (Cryst. Res. Technol. 20, 209-217) (1985). Review of polymorphic transformation.
- LITHIOPHILITE. Shigley and Brown, (Am. Mineral. 70, 395-408) (1985). Microprobe analyses (2), Stewart pegmatite, Calif. Unit cell, optics.
- LITHIOPHORITE. Chukhrov et al., (Izv. Akad. Nauk SSSR, Ser. Geol. 2, 3-15) (1985) (Russ), Chem. Abstr. 103, no. 2, 9134 (1985) (Russ). Monoclinic, a 5.04-5.07, b 8.71-8.79, c 9.60-9.64Å, beta 100.3-100.7 degrees, formula $(Al_{0.5}Li_{0.5})Mn^{+4}_2O_2(OH)_2$ to $Al_{0.667}MnO_2(OH)_2$.
- LITHIOPHORITE. Matsubara et al., Bull. Natl. Sci. Mus., Ser. C: Geol. (Tokyo), 10, no. 2, 39-48 (1984)(English). G(620)K82K. Analysis from Mazaka, Japan, x-ray data, a 5.018, b 2.904, c 9.585 Å, beta 99.8 degrees.
- LITHIOPHORITE. Ostwald, (Mineral. Mag. 48, 397-400) (1984). Analysis, x-ray data from Tasmania, Fe_2O_3 1.34 percent.
- LITHIOPHORITE. Perseil and Grandin, (Miner. Deposita 20, 211-219) (1985)(French). Analyses (6) formed by alteration of garnet, West Africa (Li not detected).
- LITHIOPHORITE. Shibasaki et al., (Nagoya Kogyo Gijutsu Shikensho Hokoku 33, 241-245) (1984)(Japanese), Chem. Abstr. 102, no. 8, 65059 (1985). Effect of heating; formation of $MnAl_2O_4$ spinel.
- LITHIOTANTITE. Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- LITHIOTANTITE. Nekrasov et al., (Mineral. Zh. 6, no. 4, 42-44) (1984)(Russ.). Analysis, unit cell, optics from pegmatite, Siberia.
- LITHOSITE. Abstr. in Am. Mineral. 69, 210 (1984). Abstract of original description.
- LITHOSITE. Abstract in Mineral. Abstr. 35, 87-88 (1984). Abstract of original description.
- LIVINGSTONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- LIZARDITE. Buettner and Saager, (Tschermarks Mineral. Petrogr. Mitt. 30, 177-187 (1982)(English)) Chem. Abstr. 98, no. 4, 19618 (1983). X-ray determination of chrysotile and lizardite in serpentinites.
- LIZARDITE. Cervelle and Maquet, (Clay Miner. 17, 377-392 (1982)(French)) Chem. Abstr. 98, no. 12, 92811 (1983). Infra-red study of Ni-Fe lizardite.
- LIZARDITE. Cogulu and Laurent, Can. Mineral. 22, 173-182 (1984). Microprobe analyses (13), S. Quebec.
- LIZARDITE. Litsarev et al., (Dokl. Akad. Nauk SSSR 277, 188-192) (1984), Chem. Abstr. 101, no. 20, 174828 (1984). New $2H$ polytype, $2H$, space group $P6_3cm$. Analysis, optics.
- LIZARDITE. Manceau et al., (Springer Proc. Phys. 2, 358-361) (1984)(Eng.), Chem. Abstr. 103, no. 4, 25071 (1985). Cation ordering (Ni-Mg) by x-ray and optical spectroscopy.
- LIZARDITE. Shirozu and Ishida, (Mineral. J. 11, 161-171 (1982)(English)) Chem. Abstr. 98, no. 20, 164086 (1983). Infra-red study.
- LOELLINGITE. Bukovshin and Chernyshov, (Zap. Vses. Mineral. 0-va. 114, 335-340) (1985)(Russ.). Microprobe analyses (2) from Voronezh massif, Ni up to 7.6, Co 5.8 percent.

- LOELLINGITE. Choi and Imai, (Min. Geol. Jpn. 35, 1-16) (1985)(Eng.). (G(620) M66). Microprobe analyses (6) from Ulsan mine, Korea. X-ray data reflectance.
- LOLLINGITE. Tossell, (Phys. Chem. Miner. 11, 75-80) (1984). Electronic structure.
- LOLLINGITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- LOMONOSOVITE. Dorfman, Nov. Dannye Mineral. 30, 91-106 (1982). Analyses of lomonosovite and its alteration products, Kola Peninsula.
- LOMONOSOVITE. Karup-Moeller, Neues Jahrb. Mineral., Abh. 148, 83-96 (1983)(English). Microprobe analyses (24) across 3 zoned crystals, Ilemaussuq, Greenland, trace elements, triclinic, a 5.383, b 7.121, c 14.420A, Alpha 100.02 degrees, Beta 96.44 degrees, Gamma 90.44 degrees. Infra-red, x-ray powder data, DTA.
- LONECREEKITE. Martini, (Ann. Geol. Surv. S. Africa 17, 29-34) (1983)(Publ. 1984). New mineral, $(\text{NH}_4)\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$, cubic, a 12.302, G 1.69, n 1.483.
- LONSDALEITE. Kaminskii et al., (Mineral. Zh. 7, 27-36) (1985), Chem. Abstr. 103, no. 2, 9146 (1985). Polycrystalline aggregates of diamond and lonsdaleite, Yakutia.
- LOPARITE. Kogarko et al., (Dokl. Akad. Nauk SSSR 268, 1213-1215 (1983)) Chem. Abstr. 98, no. 26, 219100 (1983). Stability in system loparite-nepheline.
- LOPARITE. Tikhonenkoyo et al., (Accessory Minerals of Magmatic and Metamorphic Rocks, 150-161) (1982)(Russian) (119AK78). Analyses (15), minor elements, rare earths.
- LOPARITE. Veksler et al., (Geokhimiya 5, 599-607) (1985), Chem. Abstr. 103, no. 6, 40003 (1985). Stability in system loparite-nepheline. Not a binary system.
- LOPARITE. Wolff, (Geochim. Cosmochim. Acta 48, 1345-1348) (1984). Analysis from phonolite, Tenerife I. (2).
- LOPEZITE. Rak and Sangwal, (J. Cryst. Growth 65, 494-497) (1983), Chem. Abstr. 100, no. 22, 183409 (1984). Spiral layers and growth steps on crystals grown from solution.
- LOPEZITE. Szurgot and Sangwal, (Cryst. Res. Technol. 17, 1337-1346 (1982)(English)) Chem. Abstr. 98, no. 4, 25630 (1983). Growth spirals on crystals.
- LOPEZITE. Yatsimirskii et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 8, 54-57 (1982)) Chem. Abstr. 98, no. 2, 10020 (1983). Kinetics of crystallization.
- LORANDITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- LOTHARMEYERITE. Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- LOTHARMEYERITE. Dunn, (Mineral. Rec. 14, 35-36 (1983)) Chem. Abstr. 98, no. 18, 146701 (1983). Abstract of original description.
- LOTHARMEYERITE. Kampf et al., Mineral. Rec. 15, 223-226 (1984). Monoclinic, probably C2/m, a 9.066, b 6.276, c 7.408 A, beta 116.16 degrees. Analysis, optics. Formula $\text{CaZnMn}^{+3}(\text{AsO}_3\text{OH})_2(\text{OH})_3$.
- LOUDONITE. Dunn and Newbury, Can. Mineral. 21, 37-40 (1983). New mineral, $\text{NaCa}_5\text{Zr}_4\text{Si}_{16}\text{O}_{40}(\text{OH}) \cdot 8\text{H}_2\text{O}$, from Goose Creek, Va. Microprobe analysis, optics, G 2.48, H approx. 5. Optically biaxial, sign not detd. X-ray powder data.
- LOVERINGITE. Haggerty et al., Am. Mineral. 68, 494-505 (1983). Analysis from kimberlite, S. Africa.

- LUCHUCCHACUAITE. Abstract in Mineral. Abstr. 36, no. 2, 207 (1985). Abstract of original description.
- LUDDENITE. Abstr. in Bull. Mineral. 106, 630-631 (1983). Abstract of original description.
- LUDDENITE. Williams, (Mineral. Mag. 46, 363-364 (1982)) Am. Mineral. 68, 643 (1983). Abstract of original description.
- LUDLAMITE. Stone and George, Proc. Ussher Soc. 5, 428-431 (1983). Analysis, x-ray data, Megilliger Rocks, Cornwall.
- LUDWIGITE. Kan, et al., (Kexue Tongbao, Foreign Ed. 29, 928-931) (1984)(English), Chem. Abstr. 102, no. 2, 9828 (1985). Mossbauer study, magnetic ordering.
- LUDWIGITE. Lisitskyn et al., (Mineral. Zh. 7(5), 32-40) (1985) (Russian) Analysis from Tazekno deposit, S. Yakutia
- LUDWIGITE. Lisitsyn et al. (Zap. Vses. Mineral. O-va. 114, 62-73) (1985). Analyses (6) from Tazhno skarn, S. Yakutia, optics and hardness and unit cells on 10, magnetic properties, Mossbauer.
- LUDWIGITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- LUNOKITE. Abstr. in Am. Mineral. 69, 210-211 (1984). Abstract of original description.
- LUNOKITE. Abstract in Mineral. Abstr. 35, 88 (1984). Abstract of original description.
- LUZONITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (5) from Chikuashih ore deposit, Taiwan.
- LUZONITE. Kanezawa, Bull. Geol. Surv. Jpn. 35, 13-17 (1984)(English). Hydrothermal synthesis of series luzonite - famatinite and unit cells. End member has a 5.330, c 10.574 A.
- LUZONITE. Kovalenker and Geinke, Izv. Akad. Nauk SSSR, Ser. Geol., no. 5, 91-104 (1984)(Russian). Microprobe analyses (2) from Kuramin region, Tien-Shan.
- LUZONITE. Silaev 1982, p. 155 (410(570)S132m). Analyses (4).
- LUZONITE. Tufar (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 148-157) (1980)(Eng.) (Sulfosalt Vol.). Reflectance.
- LUZONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- MACAULAYITE. Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- MACAULAYITE. Wilson, et al., (Mineral. Mag. 48, 127-129) (1984), Chem. Abstr. 100, no. 12, 88886 (1984). New mineral from Scotland, $Fe^{+3}_2Si_4O_{13}(OH)_2$. Monoclinic, a 5.038, b 8.726, c 36.342 A, beta 92 degrees, Z=2. Infra-red spectrum.
- MACDONALDITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- MACFALLITE. Moore, et al., Am. Mineral. 70, 171-181 (1985). Structure. Monoclinic, $P2_1/m$, a 10.235, b 6.086, c 8.970 A, beta 110.75 degrees, Z=2 $(Ca_2Mn^{+3}_3(SiO_4)(Si_2O_7)(OH)_3)$.
- MACHATSCHKIITE. Effenberger et al., (Tschermarks Mineral. Petrogr. Mitt. 30, 145-155 (1982)(English)) Chem. Abstr. 98, no. 22, 189377 (1983). Structure. Trig., R3c, a 15.127, c 22.471A, formula $Ca_{6-x}Na_x(AsO_4)(AsO_3OH)_3(PO_4)_{1-x}(SO_4)_x \cdot 15H_2O$ (x approx. 0.3), Z=6.
- MACHATSCHKIITE. Walenta, Schweiz. Mineral. Petrogr. Mitt. 62, 177-183 (1982). Two new microprobe analyses with As_2O_5 42.1, 40.0; P_2O_5 1.6, 3.7; SO_3 2.6, 2.5%.

- MACKINAWITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- MACKINAWITE. Casipathi et al. (Indian Mineral. 22, 32-36) (1981)(pub. 1983), Mineral. Abstr. 36, no. 2, 204 (1985). Analysis from India.
- MACKINAWITE. Pasteris, Can. Mineral. 22, 39-53 (1984). Analysis from Duluth complex, Minn. Ni 5.0%.
- MACKINAWITE. Rasmal, (Ann. Geol. Surv. Egypt 12, 177-184) (1982), Chem. Abstr. 101, no. 4, 26249 (1984). Microprobe analyses from S.E. Desert, Egypt.
- MACKINAWITE. Verger, et al., (Geol. Rudn. Mestorozhd. 25, no. 6, 110-113) (1983), Chem. Abstr. 100, no. 12, 88909 (1984). Analysis from E. Yakutia, optics.
- MACKINAWITE. Vyal'sov (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 218-224) (1980)(Russ.) (Sulfosalt Vol.). Reflectance at 18 wavelengths.
- MACKINAWITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- MACPHERSONITE. Abstract in Am. Mineral. 70, 874 (1985). Abstract of original description.
- MACPHERSONITE. Highcock, et al., (Acta Crystallogr., Sect. A, A40, 249) (1984)(Abstr.). Structure. Orth., Pbc_a, a 9.227, b 23.048, c 10.368 Å, Z=8.
- MACPHERSONITE. Livingstone and Sarp, Mineral. Mag. 48, 277-282 (1984). Chem. Abstr. 101, no. 12, 9463 New mineral, Pb₄(SO₄)(CO₃)₂(OH)₂, orth., polymorph. with leadhillite and susannite. Analyses, x-ray data, optics.
- MACPHERSONITE. Russell, et al., Mineral. Mag. 48, 295-297 (1984). Infra-red spectrum.
- MAGHEMITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples.
- MAGHEMITE. Morris et al. (J. Geophys. Res., 90B4, 3126-3144) (1985). Spectral reflectivity at -110 degrees to + 20 degrees. Mossbauer study.
- MAGHEMITE. O'Reilly, (Phys. Earth Planet. Inter. 31, 65-76 (1983)) Chem. Abstr. 98, no. 20, 164082 (1983). Mode of formation of Ti-rich.
- MAGHEMITE. Ozdemir and Banerjee, (Geophys. Res. Lett. 11, 161-164) (1984), Chem. Abstr. 100, no. 24, 195191 (1984). X-ray and magnetic data 20-600 degrees. Inverts to hematite at 510-600 degrees when pure.
- MAGHEMITE. Sherman (Phys. Chem. Miner. 12, 161-175) (1985). Electronic structure of Fe⁺³ coordination sites.
- MAGNESIO-SADANAGAITE. Abstract in Mineral. Abstr. 36, 94 (1985). Abstract of original description.
- MAGNESIO-SADANAGAITE. Shimazaki et al. (Am. Mineral. 69, 465-971) (1984). New mineral (K, Na) Ca₂(Fe⁺², Mg, Al, Fe⁺³, Ti)₅(Si, Al)₈O₂₂(OH)₂, Fe>Mg, Amphibole group, from Japan. Microprobe analyses (3), Mon., C2, Cm, or C2/m, a 9.964, b 18.008, c 3.354 Å, Beta 105.55; Z=2. Optics, x-ray data.
- MAGNESIOCHLORITOID. Abstr. in Am. Mineral. 70, 216-217 (1985). Abstract of original description.
- MAGNESIOCHROMITE. Dabkowska (Polish Journal 1981, 81-88) (1982), Chem. Abstr. 101, no. 20, 181378 (1984). Growth of single crystals from flux.
- MAGNESIOCHROMITE. Dewendra et al. (Trans. J. Brit. Ceramic Soc. 81, 185-189) (1982), Mineral. Abstr. 35, 41 (1984). Stability in systems MgO-R₂O₃ (R=Al, Cr, Fe⁺³).
- MAGNESIOCHROMITE. Kaminskii et al., (Mineral. Zh. 8(2), 39-45) (1986) (Russian) Microprobe analyses (7) from diamond-bearing picrites
- MAGNESIOCHROMITE. Nakagawa and Bamsba, (Mining Geology (Japan) 37, 189-197) (1987) (Eng) (G(620)M66) Analyses (8) from Tominchi mine, Hokkaido, Japan

- MAGNESIOCHROMITE. Oka, et al., *Contrib. Mineral. Petrol.* 87, 196-204 (1984). Synthesis of series spinel-magnesiochromite. Partition of Cr between spinel and corundum.
- MAGNESIOCHROMITE. Pasteris, *Can. Mineral.* 21, 41-58 (1983). Microprobe analyses (3) from De Beers kimberlite, S. Africa.
- MAGNESIOCHROMITE. Poroshin and Bagdasarov, (*Zap. Vses. Miner. O-va.* 115, 705-713) (1986) (Russian) Analyses (23) from basalts, W. Tuva
- MAGNESIOCHROMITE. Rammlmair et al., (*Mineral. Deposita* 22, 190-197) (1987) Microprobe analyses (9) from Central Palawan, Philippines
- MAGNESIOCHROMITE. Sobolev et al., (*Mineral. Zh.* 8(2), 23-31) (1986) (Russian) Microprobe analyses (4) from kimberlites, Yakutia
- MAGNESIOFERRITE. Dewendra et al. (*Trans. J. Brit. Ceramic Soc.* 81, 185-189) (1982), *Mineral. Abstr.* 35, 41 (1984). Stability in systems $MgO-R_2O_3$ (R=Al, Cr, Fe^{+3}).
- MAGNESIOFERRITE. Gaspar and Wyllie, *Contrib. Mineral. Petrol.* 85, 133-140 (1984). Microprobe analyses (3) from carbonatites and kimberlites.
- MAGNESIOFERRITE. Johnston and Stout, *Am. Mineral.* 69, 57-68 (1984). Microprobe analyses (3) of ferroandioptide from gabbro, Kauai, Hawaii.
- MAGNESIOFERRITE. Johnston and Stout, *Contrib. Mineral. Petrol.* 88, 196-202 (1984). Microprobe analyses (4) from symplectites, Hawaii.
- MAGNESIOFERRITE. Khidolozhkin et al., (*Mineral. Zh.* 8(2), 17-23) (1986) (Russian) Infra-red spectra
- MAGNESIOFERRITE. Momdzhii (*Izv. Vyssh. Uchebn. Zaved., Geol. Razved.* 1, 26-33) (1985), *Chem. Abstr.* 103, no. 2, 9132 (1985). Crystal chemical formula based on Mossbauer, magnetic resonance, and neutron diffraction data.
- MAGNESIOFERRITE. Pasteris, *Can. Mineral.* 21, 41-58 (1983). Microprobe analyses (4) from De Beers kimberlite, S. Africa.
- MAGNESIOFERRITE. Schenker and Dietrich, (*Schweiz. Min. Pet. Mitt.* 66, 343-384) (1986) (Eng) Microprobe analyses (2) from lherzolites, etc., Cameroon
- MAGNESIOFERRITE. Sidorov, *Mineralogy of Cibaikalie*, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- MAGNESIOFERRITE. Treiman and Essene, *Contrib. Mineral. Petrol.* 85, 149-157 (1984). Microprobe analyses (3) from Oka complex, Quebec.
- MAGNESIOFERRITE. Trestman-Matts et al. (*J. Am. Ceram. Soc.* 67, 69-74) (1984), *Mineral. Abstr.* 36, 43 (1985). Cation distribution 600-1300 degrees C in magnetite-magnesioferrite series.
- MAGNESITE. Burton and Kikuchi, *Am. Mineral.* 69, 165-175 (1984). Thermodynamic treatment of system $CaCO_3-MgCO_3$.
- MAGNESITE. Gevorkyan and Povarenykh, *Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki*, no. 11, 8-12 (1983) (Ukrainian). Infra-red spectrum.
- MAGNESITE. Juhasz (*Acta Geol Acad. Sci. Hung.* 25, 247-270) (1982), *Mineral. Abstr.* 35, 43-44 (1984). Effect of grinding on chem. reactivity. DTA, dielectric properties.
- MAGNESITE. Knoblach (*Mitt. Oesterri Mineral. Geol.* 129, 5-12) (1983). Dispersion of indices of refraction, 420-680m.
- MAGNESITE. Krivdik et al., (*Geol. Rudn. Mestorozhd.* 28(6), 58-70) (1986) (Russian) Analyses (1) from Davidkovo massif, Ukraine
- MAGNESITE. Peng et al., (*Acta Mineral. Sinica* 5(3), 229-233) (1985) (Chinese), *Mineral. Abstr.* 38, 87M/3162 (1987) Analyses (not in abs.) and infra-red spectra of magnesite-siderite series
- MAGNESITE. Sverjensky (*Geochim. Cosmochim. Acta* 48, 1127-1134) (1984). Calculation of Gibbs free energies at 25 degrees C, 1 bar.
- MAGNETITE. Agata and Sniwa, *Preli. Rep. African Studies Nagoya Univ.* 8, 63-74 (1983) (English). Microprobe analyses (6) from Seychelles Island.

- MAGNETITE. Andersen (Lithos 17, 153-170) (1984)(Eng.). Microprobe analyses (12) from larviksite, Norway.
- MAGNETITE. Aragon et al., Contrib. Mineral. Petrol. 85, 174-183 (1984). Cation diffusion in titanomagnetite.
- MAGNETITE. Arculus et al., Contrib. Mineral. Petrol. 85, 85-94 (1984)(English). Electron microprobe analyses (2) from kimberlite and peridotite.
- MAGNETITE. Arculus et al., J. Volcanol. Geothermal Res. 18, 215-247 (1983). Microprobe analyses (10) from Mt. Lamington, Papua, New Guinea.
- MAGNETITE. Arkhipenkova et al. (Mineral. Zh. 7, no. 1, 62-67) (1985), Chem. Abstr. 103, no. 6, 39960 (1985). Analyses (not in abstr.) of magnesian (MgO 2.4-10.3 percent), E. Siberia.
- MAGNETITE. Arkhipenkova, (Mineral. Rudn. Mestorozhd., 99-103) (1983), Chem. Abstr. 100, no. 16, 124243 (1984). Analyses and trace elements from S. Siberian Platform.
- MAGNETITE. Armienti et al., J. Volcanol. Geothermal Res. 17, 289-311 (1983)(English). Microprobe analyses (5) from Phlegrean Fields, Italy.
- MAGNETITE. Bacon and Metz, Contrib. Mineral. Petrol. 85, 346-365 (1984). Microprobe analyses (8) from Coso volcanic field, Calif.
- MAGNETITE. Bardintzeff, Bull. Mineral. 107, 41-54 (1984). Analyses (12) from soufriere, St. Vincent Island, Caribbean.
- MAGNETITE. Beccaluva et al., Contrib. Mineral. Petrol. 85, 253-271 (1984). Microprobe analyses (2) from Vourinos ophiolite.
- MAGNETITE. Bellieni et al., Tschermaks Mineral. Petrogr. Mitt. 33, 25-47 (1984)(English). Microprobe analyses (10) from basalt sills, Parana basin, Brazil.
- MAGNETITE. Boctor and Yodu, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe analyses (10) from melilite rocks, S. Africa
- MAGNETITE. Boivin, Ann. Sci. Univ. Clermont-Ferrand, no. 72, 32-40 (1982) (G540)C59up). Microprobe analyses (12) from basalts.
- MAGNETITE. Boysen and Schmidtbauer, (Geophys. Res. Lett. 11, 165-168) (1984), Chem. Abstr. 100, no. 24, 195192 (1984). Neutron diffraction study of titanomagnetite.
- MAGNETITE. Braun and Raith, (Contrib. Mineral. Petrol. 90, 199-213) (1985). Microprobe analyses (21) from metamorphosed basites, Alps, Austria.
- MAGNETITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (4) from Werner Bjerge complex, Greenland.
- MAGNETITE. Brown et al., (Aust. J. Earth Sci. 31, 317-340) (1984). Microprobe analysis (1) from Mt. Garnet, Queensland.
- MAGNETITE. Cawthorn et al., Mineral. Mag. 47, 27-34 (1983). Microprobe analyses (6) from Bushveld Complex, showing zoning of Cr₂O₃ composition (1.76-2.04%).
- MAGNETITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples.
- MAGNETITE. Cijolini and Kudo, (Contrib. Mineral. Petrol. 96, 381-390) (1987) Microprobe analyses (4) from basaltic andesites, Arenal Volcano, Costa Rica
- MAGNETITE. Clocchiatti and Metrich, (Bull. Volcnol. 47, 909-928) (1984) (French) Microprobe analyses (8) from Mt. Etna (1892 and 1669)
- MAGNETITE. Collerson, Contrib. Mineral. Petrol. 81, 126-147 (1982). Microprobe analyses (4) from granites, Labrador.
- MAGNETITE. Conrad and Kay, J. Petrol. 25, 88-125 (1984). Microprobe analyses (13) from inclusions in andesites, Adak Island, Alaska.
- MAGNETITE. Crisp and Spera, (Contrib. Mineral. Petrol. 96, 503-518) (1987) Microprobe analyses (12) from lavas, Canary Islands

- MAGNETITE. Cruriscchio et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983)(English). Microprobe analyses (15) from alkalic rocks, Kenya.
- MAGNETITE. Davies and Cawthorn, Mineral. Mag. 48, 469-480 (1984). Microprobe analyses (3) from Bushveld rocks.
- MAGNETITE. Debari et al., (Jour. Geol. 95, 329-341) (1987) Microprobe analysis (1) from Adagdak Volcano, Adak Island
- MAGNETITE. Devine and Sigurdsson, J. Volcanol. Geotherm. Res. 16, 1-31 (1983). Microprobe analyses (1) from Soufriere, St. Vincent.
- MAGNETITE. Dia et al., (Jour. African Earth Sci. 6, 257-268) (1987) (French) Analyses (2) from basalts and basanites Senegal
- MAGNETITE. Dietrich et al., J. Volcanol. Geothermal Res. 18, 405-433 (1983). Microprobe analyses (1) from basalts, Ladakh, Himalayas.
- MAGNETITE. Duda (Bochum Geol. Geotecon Arbert. 16, 24-40) (1984). (G(530) q B628). Microprobe analyses (6) from W. Eifel, Germany, alkalic rocks.
- MAGNETITE. Eales et al., (Trans. Geol. Soc. S. Africa 83, 243-253 (1980)) Mineral. Abstr. 34, 176 (1983). Probe analyses from Karoo province show complete series from chromite to titanomagnetite.
- MAGNETITE. Economou and Naldrett, Miner. Deposita 19, 289-297 (1984)(English). Microprobe analyses (2) from Eretria, Greece.
- MAGNETITE. Eremenko et al., (Mineral. Zh. 7(6), 9-18) (1985) (Russian) Analyses (1) from Kursk magnetic anomaly
- MAGNETITE. Feenstra, (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (2) from metamorphosed bauxites, Naxos, Greece.
- MAGNETITE. Fleet, (Acta Crystalogr. 40C(9), 1491-1493) (1984)(Eng.). Chem. Abstr. 101, no. 18, 161596 (1984). Structure cubic, Fd3m, a 8.3969A, Z=8, G 5.202, for $(\text{Fe}_{2.96}\text{Mg}_{0.04})\text{O}_4$, Cubic, Fd3m, a 8.3975, Z=8. G 5.166.
- MAGNETITE. Foden, J. Petrol. 24, 98-130 (1983). Microprobe analyses (4) from Rindjani Volcano, Indonesia.
- MAGNETITE. Fonarev and Grafchihov, (Geokhimiia, 465-471) (1984), Chem. Abstr. 100, no. 26, 213138 (1984). Calculation of thermodynamic stability in assemblage orthopyroxene, clinopyroxene, magnetite, quartz.
- MAGNETITE. Franz and Morteani, (J. Petrol. 25, 27-52) (1984). Analysis from Kolsva, Sweden. (1)
- MAGNETITE. Frey et al., Contrib. Mineral. Petrol. 88, 133-149 (1984). Microprobe analyses (2) from volcanic rocks, Laguna del Maule, Chile.
- MAGNETITE. Frietsch, (Geol. Foeren. Stockholm Foerh. 106(3), 219-230) (1984) (Eng), Chem. Abstr. 102, no. 26, 223598 (1985). Magnesian magnetite from skarn ores, Sweden.
- MAGNETITE. Frietsch, (Geol. Foeren. Stockholm Foerh. 104, 43-47 (1982)) Chem. Abstr. 98, no. 4, 19687 (1983). Analyses from ores, central Sweden.
- MAGNETITE. Frietsch, (Sver. Geol. Undersokn. 79C, 1-55) (1985) (Eng) Analyses (3) from Lannavaara ores, N. Sweden
- MAGNETITE. Frost, (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- MAGNETITE. Gaidukova et al., (Mineral. Zh. 6, no. 1, 64-70) (1984), Chem. Abstr. 101, no. 2, 10126 (1984). Microprobe analyses and x-ray data from Kovdor, Karelia.
- MAGNETITE. Galii et al., (Mineral. Zh. 4, 85-89 (1982)) Mineral. Abstr. 34, 69 (1983). Averages of 28 analysis from carbonatites, Ukraine.
- MAGNETITE. Gallo et al., (N. Jb. Miner., Mh., 198-210) (1984)(Eng.). Microprobe analysis (1) from alkalic rocks, Italy.
- MAGNETITE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (3) from teschenite, N.S. Wales.

- MAGNETITE. Gaspar and Wyllie, *Am. Mineral.* 68, 195-213 (1983). Microprobe analyses (24) from carbonatites, Jacupiranga, Brazil, close to Fe_3O_4 .
- MAGNETITE. Gaspar and Wyllie, *Contrib. Mineral. Petrol.* 85, 133-140 (1984). Microprobe analyses (16) from carbonatites and kimberlites.
- MAGNETITE. Genov et al., (*God. Sofii. Univ. "Kliment Okhridski," Biol. Fak.*, 72, 199-204 (1979-1980)(*Pub.* 1982)) *Chem. Abstr.* 98, no. 20, 164083 (1983). Mossbauer study.
- MAGNETITE. Genshaft et al., (*Izv. Akad. Nauk SSSR, Ser. Geol.*, no. 4, 90-99) (1984), *Chem. Abstr.* 101, no. 2, 10143 (1984). Analyses (not in Abstr.) from Komandorsk Islands of titanomagnetite.
- MAGNETITE. Graham and Watson, (*N. Zealand J. Geol. Geophys.* 23, 447-454) (1980), *Mineralog. Abstr.* 34, 471 (1983). Analyses, x-ray data, and magnetic properties of titanomagnetite from coastal sands, Waipipi, N. Zealand.
- MAGNETITE. Gruenewaldt et al., (*Econ. Geol.* 80, 1049-1061) (1985). Microprobe analyses (22) and exsolution in titanomagnetites, E. Bushveld Complex.
- MAGNETITE. Gulyaeva and Shcheka, (*Dokl. Akad. Nauk SSSR* 267, 1448-1453 (1982)) *Chem. Abstr.* 98, no. 14, 110954 (1983). Analyses from Maritime Province with MnO up to 22.27%, ZnO up to 3.83, MgO up to 2.81%.
- MAGNETITE. Gulyaeva, Tikhookan. *Okeanol. Inst.*, no. 5, 110-) (1982)(Russian) G(690.2)T448. Analyses (10) from Belogorsh deposit, Maritime Prov.
- MAGNETITE. Hammond and Taylor, (*Earth Planet. Sci. Lett.* 61, 143-150 (1982)) *Chem. Abstr.* 98, no. 4, 19607 (1983). Reequilibration reactions of ilmenite-magnetite.
- MAGNETITE. Hanus et al., (*Neues Jahrbuch Miner., Abh.* 148(3), 259-275) (1984). Analysis from amphibolite, Black Forest.
- MAGNETITE. Hayashi and Aoki, (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 80, 73-82) (1985)(*Jpn.*). Microprobe analyses (14) from basalts and andesites, Chokai volcano, Japan.
- MAGNETITE. Helvacı, *Econ. Geol.* 79, 354-371 (1984). Microprobe analyses (7) from magnetite-apatite deposit, Avnik, Turkey.
- MAGNETITE. Henderson and Gibb, (*Trans. Roy. Soc. Edinburgh* 77, 325-347) (1987) Microprobe analyses (1) from Lugar sill, SW Scotland
- MAGNETITE. Hernandez, (*Jour. African Earth Sci.* 5, 381-399) (1986) Microprobe analyses (6) from Guilliz massif, Morocco
- MAGNETITE. Hildreth, J. *Volcanol. Geothermal. Res.* 18, 1-56 (1983). Microprobe analyses (6) from Valley of 10,000 Smokes, Alaska.
- MAGNETITE. Hoshino and Shiida, *Rep. African Stud., Nagoya Univ.*, 6, 127-138 (1981)(English). Microprobe analysis from phonolite, Tanzania (TiO_2 20.4%).
- MAGNETITE. Hunter et al., *Am. Mineral.* 69, 30-40 (1984). Microprobe analyses (6) from kimberlite, Fayette Co., PA.
- MAGNETITE. Iizumi et al., (*Acta Crystallogr., Sect. B*, B38, 2121-2133 (1982)) *Mineral. Abstr.* 34, 16 (1983). Structure at 10 K. Monoclinic, Cc.
- MAGNETITE. Il'vitsku, (*Mineral. Sb. (Lvov)* 37, 86-92) (1983), *Chem. Abstr.* 102, no. 4, 28643 (1985). Analyses, unit cells from ultramafic rocks, Dnieper region.
- MAGNETITE. Ishchenko, (*Reg. Geol. Nek. Raionov SSSR* 6, 82-87) (1983), *Chem. Abstr.* 100, no. 20, 159609 (1983). Trace elements in magnetites of granites; Mugodzheriy Mts.
- MAGNETITE. Ito et al., *Rep. African Stud., Nagoya Univ.*, 6, 83-99 (1981)(English). Microprobe analyses (2) from kimberlite, Kenya.
- MAGNETITE. Iwasaki and Aoki, (*Lithos* 16, 125-133) (1983)(Eng.). Growth of twinned crystals in talc rock, Torika, Japan. 9 microprobe analyses.

- MAGNETITE. Iwasaki and Aoki, (Lithos 16, 125-133 (1983)(English)) Chem. Abstr. 98, no. 26, 219138 (1983). Twinned crystals, Nagasaki Pref., Japan.
- MAGNETITE. Jones and Wyllie, (J. Petrol. 26, 210-222) (1985). Microprobe analyses (5) from Benfontein sill, S. Africa.
- MAGNETITE. Kampunzu et al., (Bull. Volcanol. 47, 79-103) (1984)(French). Microprobe analyses (3) from Nyamulagira volcano.
- MAGNETITE. Kay et al., Contrib. Mineral. Petrol. 82, 99-116 (1983). Microprobe analyses (4) from Finger Bay pluton, Alaska.
- MAGNETITE. Kinnaird et al., (J. African Earth Sci. 3, 185-222) (1985). Microprobe analyses (4) from Ririvai alkaline complex, Nigeria.
- MAGNETITE. Klemm et al., (Econ. Geol. 80, 1075-1088) (1985). Composition of titanomagnetite (> 430 analyses) from E. Bushveld.
- MAGNETITE. Kono and Nishiteni, Kobutsugaku Zasshi 16, 253-264 (1983)(Japanese). A review of the oxidation and magnetic properties of titanomagnetite.
- MAGNETITE. Krausex and Pedall, Monogr. Ser. Mineral Deposits no. 22, 29-45 (1983)(German). Trace elements in magnetite - ilmenite intergrowths, Norway. V; Cr, Ni, and Zn are concd. in magnetite.
- MAGNETITE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (1) from Davidkovo massif, Ukraine
- MAGNETITE. Krivoshchekova, (Dokl. Akad. Nauk Tadzh. SSR 26, 448-453) (1983), Chem. Abstr. 100, no. 18, 142376 (1984). Analyses of accessory magnetites of granites.
- MAGNETITE. Le Roex, (J. Petrol. 26, 149-186) (1985). Microprobe analyses (4) from Gough Island, S. Atlantic.
- MAGNETITE. Lee, Sci. Rep. Tohoku Univ., Ser. 3, 15, 177-256 (1982)(English). Microprobe analyses (7) from Jeju volcanic rocks, Korea.
- MAGNETITE. Lubala et al., (Ann. Soc. Geol. Belg. 107, 125-134) (1984)(French). Microprobe analyses (5) from basaltic lavas, Kiver rift, Zaire. Microprobe analyses (2) from Jorullo volcano, Mexico.
- MAGNETITE. Luhr and Carmichael, Contrib. Mineral. Petrol. 71, 348-372 (1980). Microprobe analyses (11) and minor elements from Colina Volcano, Mexico.
- MAGNETITE. Luhr and Giannetti, (Contrib. Mineral. Petrol. 95, 420-436) (1987) Microprobe analyses (4) from leucitic tuff, Roccamoufina Volcano, Italy.
- MAGNETITE. Luhr et al., J. Volcanol. Geotherm. 23, 69-108 (1984). Microprobe analysis (1) from Chichon Volcano, Mexico.
- MAGNETITE. Marcelot et al., (Lithos 16, 135-151) (1983) Microprobe analyses (5) from Erromango, New Hebrides.
- MAGNETITE. McCarthy and Cawthon, Miner. Deposita 18, 505-518 (1983). Many analyses for Cr from Bushveld complex, S. Africa.
- MAGNETITE. McCarthy et al., (Econ. Geol. 80, 1062-1074) (1985). Cr content in magnetite, Bushveld Complex up to 0.7 percent Cr.
- MAGNETITE. Morris et al., (J. Geophys. Res., 90B4, 3126-3144) (1985). Spectral reflectivity at -110 degrees to + 20 degrees. Mossbauer study.
- MAGNETITE. Morris, J. Volcanol. and Geothermal Research 21, 119-148 (1984). Microprobe analyses (6) from Campbell Island, SW Pacific. titano-.
- MAGNETITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (1) from manganiferous cherts, Alps.
- MAGNETITE. Myers and Eugster, Contrib. Mineral. Petrol. 82, 75-90 (1983). Calculation of thermodynamic properties 298-1600 degrees K.
- MAGNETITE. Nakagawa and Aoki, (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 136-154) (1985)(Jpn.). Microprobe analyses (5) from Moriyoshi volcano, NE Japan.
- MAGNETITE. Naslund, J. Petrol. 25, 185-212 (1984). Av. compositions (8) of Upper Buda Ser., Skeergegd, Eng.

- MAGNETITE. Nedachi et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 79, 200-213) (1984)(Jap.). Microprobe analyses (17), SE Abakuma Mts.
- MAGNETITE. Nelson and Carmichael, Contrib. Mineral. Petrol. 85, 321-335 (1984). Microprobe analyses (5) from Sanganguey Volcano, Mexico.
- MAGNETITE. Neumann and Schilling, Contrib. Mineral. Petrol. 85, 209-223 (1984). Microprobe analyses (1) from basalt, Greenland Sea.
- MAGNETITE. O'Neill and Navrotsky, Am. Mineral. 69, 733-753 (1984). Calculation of cation distribution and thermodynamic properties.
- MAGNETITE. Ollila, (Bull. - Geol. Soc. Finl. 56, 75-85) (1984)(Eng.). Microprobe analyses (30) for magnetite and coexisting ilmenite. Bushveld granite, S. Africa.
- MAGNETITE. Olsen et al., Am. Mineral. 68, 315-333 (1983). Microprobe analyses (1) from Concord gabbro-syenite complex, N.C.
- MAGNETITE. Osborn, (Can. J. Earth Sci. 22, 642-643) (1985), Chem. Abstr. 103, no. 6, 39973 (1985). Analyses (not in abstr.) from tephra, W. Canada.
- MAGNETITE. Pasteris, Can. Mineral. 21, 41-58 (1983). Microprobe analyses (7) from De Beers kimberlite, S. Africa.
- MAGNETITE. Pedersen and Hald, Lithos 15, 137-159 (1982)(English). Microprobe analyses (7) from dacite, Krokksfjordor, Iceland.
- MAGNETITE. Petric and Jacob, (J. Am. Ceram. Soc. 65, 117-123 (1982)) Mineral. Abstr. 34, 35 (1983). Free energy of mixing in system magnetite-chromite and magnetite-coulsonite.
- MAGNETITE. Plaksenko and Frolov, (Mineral. Zh. 8(4), 32-40) (1986) (Russian) Microprobe analyses (2) from pyroxenites, Voronezh massif
- MAGNETITE. Plaksenko et al., (Dokl. Akad. Nauk SSSR 276, 213-218) (1984), Chem. Abstr. 101, no. 10, 76132 (1984). Analysis from Voronezh massif, Cr₂O₃ 13.19.
- MAGNETITE. Plaksenko, (Mineral. Zh. 7(1), 14-27) (1985) (Russian) Microprobe analyses (9), Voronezh massif
- MAGNETITE. Poblesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (5) from Kuru-Tegeraba deposit
- MAGNETITE. Pottavets, (Eksp. Issled. Endogen. Rudoobraz., 1981, 205-209) (1983) Chem. Abstr. 100, no. 26, 213099 (1984). Ratio Co:Ni in coexisting magnetite and pyrite.
- MAGNETITE. Pouclet et al., Bull. Mineral. 106, 607-622 (1983). Microprobe analyses (2) from alkalic lavas, Virunga, E. Africa.
- MAGNETITE. Przybylowicz and Hubicka-Ptasinski, (Mineral. Polonica 15, 37-45) (1984) (Eng) Microprobe analyses (4) of chromian, from serpentinites, Silesia Unit cell
- MAGNETITE. Ramsay et al., Contrib. Mineral. Petrol. 88, 386-402 (1984). Microprobe analyses (4) from Solomon Island.
- MAGNETITE. Reverdatto, (Zap. Vses. Mineral. O-va. 114, 229-236) (1985)(Russ.). Microprobe analyses (2) from hornfels.
- MAGNETITE. Reynolds, (Can. Mineral. 22, 411-416) (1984). Microprobe analyses (2) from Zululand, S. Africa.
- MAGNETITE. Reynolds, (Econ. Geol. 80, 1027-1048) (1985). Microprobe analyses (5) from Bierkraal area, Bushveld Complex.
- MAGNETITE. Reynolds, (Econ. Geol. 80, 1089-1108) (1985). Review of nature and origin of titanomagnetite layers, Upper Zone, Bushveld Complex.
- MAGNETITE. Reynolds, (Trans. Geol. Soc. S. Afr. 86, 211-220) (1983). Microprobe analyses (10) from Karrovdolerite. Unit cells. TiO₂ 5.99-25.01 percent. Reflectance.
- MAGNETITE. Rozova et al., Dokl. Akad. Nauk SSSR 278, 456-461 (1984). Microprobe analysis, x-ray data, reflectance, from kimberlite.

- MAGNETITE. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983) English). Microprobe analyses (5) from ultramafic rocks, Sanbagawa belt, Japan.
- MAGNETITE. Santosh, (Contrib. Mineral. Petrol. 96, 343-356) (1987) Microprobe analyses (3) from gneisses, Kerala, India
- MAGNETITE. Shee, (Deve. Petro. 11A, 59-73, 435-466) (1984), Chem. Abstr. 100, no. 26, 213273 (1984). Microprobe analyses (not in Abstr.) from kimberlite, S. Africa.
- MAGNETITE. Sherman, (Phys. Chem. Minerals 14, 355-363) (1987) Fe^{+2} - Fe^{+3} charge transfer in
- MAGNETITE. Shevchenko et al., (Geol. Geofiz., Novosibirsk, 107-113 (1982)) Mineral. Abstr. 34, 176 (1983). Microprobe analyses (not in abstr.) from volcanic rocks, Kamchatka.
- MAGNETITE. Shiraishi et al. (Proc. Symp. Antarctic Geosci. 4th, 1983, 126-144) (1984)(Eng.), 502 (990) J2755. Microprobe analyses (2), Prince Olav coast, E. Antarctica.
- MAGNETITE. Shuto et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 55-72) (1985)(Jpn.). Microprobe analyses (2) from tholeiite, Fukushima Pref., NE Japan.
- MAGNETITE. Souther and Hickson, J. Volcanol. and Geothermal Research 21, 79-106 (1984). Microprobe analyses (3) from Mt. Edziza complex, Brit. Columbia.
- MAGNETITE. Stolz, Mineral. Mag. 48, 167-179 (1984). Microprobe analyses (1) from ultramafic inclusions in nepheline mugearite, N.S. Wales.
- MAGNETITE. Takeda, (J. Sci. Hiroshima Univ. Ser. C, 8(3), 221-280) (1984)(Eng.). Microprobe analyses (7) from greenstones, Shikoku, Japan.
- MAGNETITE. Takevo et al., J. Sci. Hiroshima Univ. 8, 59- (1983)(English). Effect of adding Ti, Cr, and Cu on form of magnetite deposited from basaltic melts.
- MAGNETITE. Tanguy and Clocchiatti, (Bull. Volcanol. 47, 879-894) (1984) (Eng) Microprobe analyses (8) from Mt. Etna, 1977-1983
- MAGNETITE. Taylor, (Clays Clay Miner. 32, 167-174) (1984), Chem. Abstr. 101, no. 8, 57862 (1984). Effect of chloride on formation from solution.
- MAGNETITE. Thy, Contrib. Mineral. Petrol. 83, 141-149 (1983). Microprobe analyses (6) from basaltic glasses, Iceland (high Ti).
- MAGNETITE. Thy, Lithos 15, 1-16 (1982)(English). Microprobe analyses (11), Fongen-Hyllingen complex, Norway.
- MAGNETITE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984). Microprobe analyses (1) from Oka complex, Quebec.
- MAGNETITE. Trestman-Matts et al., (J. Am. Ceram. Soc. 67, 69-74) (1984), Mineral. Abstr. 36, 43 (1985). Cation distribution 600-1300 degrees C in magnetite-magnesioferrite series.
- MAGNETITE. Trzcienski et al., Contrib. Mineral. Petrol. 85, 311-320 (1984). Microprobe analyses (1) from Bathurst, New Brunswick.
- MAGNETITE. Upton et al., (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- MAGNETITE. Upton et al., J. Petro. 25, 151-184 (1984). Microprobe analyses (1) from NE Greenland basalts.
- MAGNETITE. Urusov and Karabtsov, (Mineral. Zh. 5, no. 1, 3-16 (1983)) Chem. Abstr. 98, no. 22, 182728 (1983). Stability in system $Mg-Fe^{+2}-Al-Fe-O$, synth.

- MAGNETITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1980)) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various wave lengths. Analyses.
- MAGNETITE. Vendrell-Saz et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 265-272 (1980)(English) (Sulfosalt Vol.). Optical reflectance, 300-900 mu, analysis.
- MAGNETITE. Walker, J. Petrol. 25, 299-342 (1984). Microprobe analyses (4) from Nicaraguan cinder cones. titano-
- MAGNETITE. Warner et al., (Contrib. Mineral. Petrol. 90, 386-400) (1985). Microprobe analyses (2) from dolerite dikes, S. Carolina.
- MAGNETITE. Wechsler et al., Am. Mineral. 69, 754-770 (1984). Structure and cation distribution in titanomagnetites. Synthesis, unit cell constants, magnetic properties.
- MAGNETITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (4) from mafic rocks, East Alps.
- MAGNETITE. Wiebe, (Can. Jour. Earth Sci. 22, 1149-1157) (1985) Microprobe analysis (3) from basalt dikes, Labrador.
- MAGNETITE. Wilkinson and Stolz, Contrib. Mineral. Petrol. 83, 363-374 (1983). Microprobe analyses (3) from Oahu, Hawaii.
- MAGNETITE. Woensdregl et al., Schweiz. Mineral. Petrogr. Mitt. 63, 167-176 (1983) (English). Oriented inclusions of magnetite in star diopside.
- MAGNETITE. Worm and Banerjee, (Geophys. Res. Lett. 11, 169-172) (1984), Chem. Abstr. 100, no. 24, 195193 (1984). Low-temp. oxidation.
- MAGNETITE. Worner, (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (20) and trace elements. Laacher See, Germany.
- MAGNETITE. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 21, 77-131 (1984)(English). Microprobe analyses (9), Oshime-Oshime volcano, N. Japan.
- MAGNETITE. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 4, 20, 135-143 (1983)(English). Microprobe analyses (5) from basalts, Oshima-Oshima Volcano, Japan.
- MAGNETITE. Yang et al., Mem. Geol. Soc. China 5, 97-116 (1983) (English) (G(611)G292m). Microprobe analyses (13) from spilite, N. Taiwan.
- MAGNETITE. Yaroshchuk et al., (Mineral. Zh. 8(1), 56-66) (1986) (Russian) Analyses (10), trace elements from Odessa zone
- MAGNETITE. Yoshida and Oikava, Proc. 3rd Symp. Antarctic Geosi., 145-165 (1983) (562(990)J27SS no. 28). Microprobe analyses (2) from metabasite, Antarctica.
- MAGNETITE. Zednicek (Mitteilungen. - Abt. Mineral. Landesmus. Joanneum 52, 27-38) (1984). G(533)G78mb. Electron probe analyses (22) from basalts and shoshonite, Styria. (Ti-rich).
- MAGNETITE. van Bergen and Barton, Contrib. Mineral. Petrol. 86, 374-385 (1984). Microprobe analyses (1) from Mt. Amiata, Italy.
- MAGNUSSONITE. Dunn and Ramik, Am. Mineral. 69, 800-802 (1984). New analyses give formula $Mn_{10}As^{+3}_6O_{18}(OH,Cl)_2$. Analyses of a similar tetragonal mineral from Brattfous, Sweden.
- MAGNUSSONITE Lindquist, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 643-648) (1983)(English), Chem. Abstr. 100, no. 8, 54681 (1984). Stability in hydrothermal systems.
- MAJAKITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.

- MAJORITE. Price et al., *Can. Mineral.* 21, 29-35 (1983). Microprobe analyses from Peace River meteorite, Alberta.
- MAKATITE. Annehed et al., (*Z. Kristallogr.* 159, 203-210 (1982)(English)) *Chem. Abstr.* 98, no. 4, 25813 (1983). Structure of synthetic $\text{Na}_2\text{Si}_4\text{O}_8(\text{OH})_2 \cdot 4\text{H}_2\text{O}$. Monoclinic, $P2(1)/c$, a 7.3881, b 18.094, c 9.5234A, β 90.64°, $Z=4$.
- MALACHITE. Symes and Kester, (*Geochim. Cosmochim. Acta* 48, 2219-2229) (1984). Solubility at 25 degrees C. Thermodynamic constants.
- MALACHITE. Tokmakchieva and Draganov, (*Dokl. Akad. Nauk SSSR* 38, 207-209) (1985)(Russ.), *Chem. Abstr.* 103, no. 4, 25078 (1985). Analysis, x-ray, DTA of jewel-grade material.
- MALANITE. Rudashevskii et al., (*Mineral. Zh.* 6, no. 1, 93-97) (1984), *Chem. Abstr.* 101, no. 2, 10130 (1984). Microprobe analysis (not in Abstr.) from Kondersk massif, a 9.94 A, optics.
- MALANITE. Rudashevskii et al., *Mineral. Zh.* 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (13) from Konder massif, Aldan. X-ray data.
- MALANITE. Rudashevskii et al., (*Zap. Vses. Mineral. O-va.* 114, 187-195) (1985). Analyses (13) from Far Eastern, USSR. Optics, x-ray data.
- MALAYAITE. Guelfi et al., (*Atti Soc. Toscana Sci. Nat.* 92, 255-258) (1985) (Ital) S(550) qT64 Analysis from Val Vigizzo, Italy, a 7.155, b 8.904, c 6.642 A, β 113 deg. 2 min.
- MALAYAITE. Mulholland, *Mineral. Mag.* 48, 27-30 (1984). Analysis, optics from Gumble, N.S. Wales.
- MALAYAITE. Plimer, (*Aust. J. Earth Sci.* 31, 147-153) (1984), *Chem. Abstr.* 101, no. 14, 114143 (1984). Analysis from skarn, Bourke, NS Wales.
- MALAYAITE. Politov, (*Mineral. Zhurnal* 5, no. 3, 54-65) (1983), *Mineral. Abstr.* 35, 75 (1984). Analysis from Kolyma River, Soviet, a 7.159, b 8.892, c 6.673A, β 113 degrees 28 min. Optics, G 4.46. X-ray data.
- MALAYAITE. Semenov et al., (*Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.]*, 10th, 96-102 (1978)(Pub. 1981)) *Chem. Abstr.* 98, no. 24, 201507 (1983). Heat capacity and entropy.
- MALDONITE. Gamyarin et al., (*Mineral. Zh.* 8(3), 65-71) (1986) (Russian) Microprobe analyses (7) from E. Yakutia, X-ray data
- MANASSEITE. Dias Menezes and Martins, *Mineral. Rec.* 15, 261-270 (1984). Occurrence in Jacupiranga carbonatite, Brazil. Large crystals.
- MANASSEITE. Sokolova et al., (*Zap. Vses. Mineral. O-va.* 113, 47-56) (1984), *Mineral. Abstr.* 36, 91 (1984). Analysis from Caspian depression. One variety contains SO_3 3.16 percent, formula $\text{Mg}_4\text{Al}_2(\text{OH})_{12}[(\text{CO}_3)_{0.8}(\text{SO}_4)_{0.2}]n\text{H}_2\text{O}$. DTA.
- MANASSEITE. Sokolova et al., (*Zap. Vses. Mineral. O-va.* 113, 47-56) (1984), *Chem. Abstr.* 100, no. 24, 195194 (1984). New variety containing Co_2 and SO_4 . Analysis, X-ray data, optics.
- MANDARINOITE. Hawthorne, (*Can. Mineral.* 22, 475-480) (1984). Structure. Monogline, $P2_1/c$, a 16.810, b 7.880, c 10.019A, β 98.26 degrees, $Z=4$ ($\text{Fe}^{+3}_2\text{Se}_3\text{O}_9 \cdot 6\text{H}_2\text{O}$).
- MANGANHUMITE. Dunn, (*Am. Mineral.* 70, 379-387) (1985). Microprobe analysis (1) from Franklin and Sterling Hill, NJ.
- MANGANITE. Baptista, (*An. Acad. Bras. Cienc.* 56, 303-310) (1984), *Chem. Abstr.* 102, no. 2, 9825 (1985). Structure. Orth., C222₁, a 5.762, b 8.975, c 5.302 A.
- MANGANITE. Murray et al., *Geochim. Cosmochim. Acta* 49, 463-470 (1985). Formation in solution during oxidation of dissolved Mn^{+2} .
- MANGANOCOLUMBITE. Wise and Cerny, *Am. Mineral.* 69, 807-809 (1984). Microprobe analyses (1) from Powhatan Co., Va.

- MANGANOCOLUMBITE. von Knowing and Condliffe, (Mineral. Mag. 48, 443-448) (1984).
Microprobe analyses (17) of zoned crystals, Meldon glite, Devonshire.
- MANGANOSITE. Arabiski and Carel, (Bull. Soc. Sci. Bretagne 55, 121-126)
(1983)(French), Chem. Abstr. 100, no. 22, 180919 (1984). Stability in
system Mn-O.
- MANGANOSITE. Gavarri et al., (J. Solid State Chem. 58, 56-70) (1985), Chem.
Abstr. 103, no. 4, 30623 (1985). Structure.
- MANGANOTANTALITE. Dobrovolskaya et al., (Mineral. Rudn. Mestorozhd., 74-78)
(1984), Chem. Abstr. 100, no. 20, 159606 (1984). Forms of Mn present in.
- MANGANOTANTALITE. von Knowing and Condliffe, (Mineral. Mag. 48, 443-448) (1984).
Microprobe analyses (1) of zoned crystals, Meldon glite, Devonshire.
- MANGANOTAPIOLITE. Abstr. in Am. Mineral. 70, 217 (1985). Abstract of original
description.
- MANGANOTAPIOLITE. Lahti et al., Abstract in Mineral. Abstr. 36, 93 (1985).
Abstract of original description.
- MANGANPYROSMALITE. Kato and Takeuchi, Can. Mineral. 21, 1-6 (1983). Refinement
of structure. a 13.422, c 7.165A, and a 13.391, c 7.193A (Fe-rich).
- MARCASITE. Chattopadhyay and Von Schnering (J. Phys. Chem. Solids 46, 113-
116) (1985). Chem. Abstr. 102, no. 20, 176916 (1985). X-ray study to
340 kb.
- MARCASITE. Lutz and Waschenbach, (Phys. Chem. Miner. 12, 155-160) (1985).
Infra-red reflection spectrum.
- MARCASITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore
Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk, 1978), 265-272 and 273-286
(1980)) (English) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various
wavelengths. Analyses
- MARCASITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- MARCASITE. Yakhontova and Nesterovich, (Dokl. Akad. Nauk SSSR 281, 1427- 1429)
(1985), Chem. Abstr. 103, no. 8, 56934 (1985).
- MARCASITE. Zatsikha and Smirnov, (Mineral. Zh. 6, no. 2, 62-68) (1984), Chem.
Abstr. 101, no. 10, 76100 (1984). Trace elements, from Transcarpathia.
- MARGARITE. Dymek, (Rep. Geol. Surv. Greenland 112, 95-99) (1983)(Eng.).
Microprobe analysis, W. Greenland. degrees.
- MARGARITE. Feenstra, (Geol. Ultralectina no. 39, 1-136) (1985)(Eng.).
G(591)qUT3g. Microprobe analyses (12) from metamorphosed bauxites, Naxos,
Greece.
- MARGARITE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English).
Microprobe analyses (8) from western Lepontine Alps.
- MARGARITE. Gregorkiewicz and Rausell-Colom, (Am. Mineral. 72, 515-527) (1987)
Synthesis of a brittle mica, formula, $\text{Na}_4\text{Mg}_6(\text{Al}_{3.4}\text{Si}_{4.5}\text{Fe}_{0.1})\text{O}_{20.7}\text{F}_{3.3}$
- MARGARITE. Guo et al., (Yanshi Kuangwu Ji Ceshi 3, no. 1, 260-271)
(1984)(Chin.), Chem. Abstr. 101, no. 16, 134281 (1984). Occurrence at
Nanling, SE China, partial analysis. BeO 1.33 percent.
- MARGARITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984).
Calculation of thermodynamic data.
- MARGARITE. Jenkins, Contrib. Mineral. Petrol. 88, 332-339 (1984). Stability
in reaction margarite + quartz = kyanite + zoisite + H₂O.
- MARGARITE. Joswig et al., (Z. Kristallogr. 160, 289-303) (1981), Chem. Abstr.
101, no. 22, 183724 (1984). Monoclinic, Cc, a 5.108, b 8.844, c 11.56(3).
- MARGARITE. Kerrick et al., (Contrib. Mineral. Petrol. 95, 481-498) (1987)
Microprobe analyses (2) from corundum-muscovite rocks, Zimbabwe

- MARGARITE. Lin and Guggenheim, *Am. Mineral.* 68, 130-142 (1983). Structure of a dioctahedral-trioctahedral mica from Zimbabwe intermediate between bityite and margarite. Analysis (Gallagher and Hawkes, 1966).
- MARGARITE. Matthews and Goldsmith, *Am. Mineral.* 69, 848-857 (1984). Stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 400-700 degrees C, 10-20 kbar.
- MARGARITE. Selverstone et al., *J. Petrol.* 25, 501-531 (1984). Microprobe analyses (1) from Tavern, Austria.
- MARGARITE. Thompson and Leclair, (*Jour. Metamorph. Geol.* 5, 415-436) (1987) Microprobe analyses (2), Grenville Province, Canada
- MARGARITE. Yau et al., *Contrib. Mineral. Petrol.* 88, 299-306 (1984). Probe analysis, Franklin, N.J.
- MARGAROSANITE. Demenna, (*J. Fluorescent Mineral. Soc.* 12, 19-22) (1983). Trace elements on 4 samples from Franklin, containing Mn and Cr.
- MASLOVITE. Tarkian and Bernhardt, (*Tschermaks Mineral. Petrogr. Mitt.* 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- MASSICOT. Senna, (*Cryst. Res. Technol.* 20, 209-217) (1985). Review of polymorphic transformation.
- MASUTOMILITE. Nemeč, *Neues Jahrb. Mineral., Monatsh.* 1983, 539-540 (English). Occurrence in pegmatites, Morani, Czechoslovakia. Partial analyses.
- MATHIASITE. Gatehouse et al., (*Acta Cryst.* 396, 421-422) (1983), *Mineralog. Abstr.* 34, 398 (1983). Refinement of structure. Analysis - a 9.119, gamma 69.24 degrees, R_3 ; Z = 1.
- MATHIASITE. Haggerty et al., *Am. Mineral.* 68, 494-505 (1983). New mineral, $(\text{K,Ca,Sr})(\text{Ti,Cr,Fe,Mg,Zr})_{21}\text{O}_{38}$, trigonal, black, Crichtonite group, a 10.35, c 20.58A, G calcd 4.60 end member. Analysis, optics, X-ray data.
- MATILDITE. Boldyreva, (*Zap. Vses. Mineral. O-va.* 114, 43-49) (1985)(Russ.). Optics from Zambaraks deposit, E. Karamazar. Analysis.
- MATILDITE. Leonard and Christian, (*Mineral. Petrol.* 36, 151-168) (1987) (Eng) Analysis from Thunder Mt. complex, Idaho
- MATILDITE. Makovicky and Karup-Moller, *Can. Mineral.* 22, 565-575 (1984). Microprobe analysis (1) from Ivigtut, Greenland.
- MATTAGAMITE. Borishenskaya and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- MATTHEDDLITE. Livingstone et al., (*Scottish Jour. Geol.* 23, 1-8) (1987) New mineral, $\text{Pb}_{20}(\text{SiO}_4)_7(\text{SO}_4)_4\text{Cl}_4$ from Leadhills, Scotland Hex., $P6_3/m$, a 9.863, c 7.464, G calcd. 6.96 Creamy white, uniaxial neg., nO 2.017, nE 1.999 Fluor. dull yellow in shortwave UV Analysis, Infra-red data
- MAUCHERITE. Borishenskaya and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- MAUCHERITE. Kulichikhina, *Mineral. Rudn. Mestorozhd.* 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- MAUCHERITE. Lorand and Pinet, *Can. Mineral.* 22, 553-560 (1984)(French). Microprobe analysis (1).
- MAUCHERITE. Neradovskii et al., (*Zap. Vses. Mineral. O-va.* 111, 552-556 (1982)) *Chem. Abstr.* 98, no. 4, 19664 (1983). Microprobe analysis from Karik'yavr, Kola Peninsula. Optics.
- MAURITZITE. Kakay, (*Foldt Kozlony* 113, 333-356) (1983), *Chem. Abstr.* 101, no. 10, 76103 (1984). X-ray, optics; DTA, infra-red. A trioctahedral smectite.
- MAWSONITE. Cabos Y., (*Bol. Soc. Geol. Peru*, no. 68, 1-12 (1981)) *Chem. Abstr.* 98, no. 12, 92840 (1983). Microprobe analysis from Hualgayoc, Peru.
- MAWSONITE. Jambor and Owens, (*Can. Mineral.* 25, 227-228) (1987) Microprobe analyses (2) from Maggie Cu deposit, Brit. Columbia
- MAWSONITE. Kovalenkar and Geinke, *Izv. Akad. Nauk SSSR* 5, 91-104 (1984)(Russian). Microprobe analyses (1) from Kuranin Ridge, Tien-shan.

- MAWSONITE. Spiridonov and Badalow, Dokl. Akad. Nauk SSSR 274, 407-409 (1984)(Russian). Microprobe analyses (3) from Kairaggch, Uzbekistan (Sb 1:0-2.4%).
- MAWSONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- MCGILLITE. Ozawa et al., Can. Mineral. 21, 7-17 (1983). Structure. Monoclinic, ps trigonal.
- MCGUINNESSITE. Postl and Golob, (Mitt.-bl. - Abt. Miner. Landesmus. Joanneum 49, 15-21) (1981). G(533)G78 mb. Occurrences in Styria. Microprobe analyses (3), x-ray data; DTA.
- MCKINSTRYITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- MEDAITE. Abstr. in Bull. Mineral. 106, 631 (1983). Abstract of original description.
- MEDAITE. Gramaccioli et al., (Acta Crystallogr. 37B, 1972-1978 (1981)) Mineral. Abstr. 34, 115 (1983). Structure. Mon., P2(1)/n, a 6.712, b 28.948, c 7.578A, beta 95.40°, Z=4, G 3.70.
- MEDAITE. Gramaccioli et al., (Am. Mineral. 67, 85-89 (1982)) Mineral. Abstr. 34, 184 (1983). Abstract of original description.
- MELANOPHLOGITE. Fortschr. Mineral. 62, Beih. 1, 72 (1984)(Eng.). Structure. Pm3n, a 13.426 A. Position of methane, H₂, CO₂.
- MELANOPHLOGITE. Smith and Steele, (N. Jb. Miner. Mh., 137-144) (1984)(Eng.). Minor elements (Li, Na, K, Al, Ti) in (1).
- MELANOTHALLITE. Filatov and Vergasova, (Mineral. Zh. 5, no. 3, 84-89) (1983), Mineral. Abstr. 35, 41 (1984). Inverts to tenorite when heated to 400+/- 10 degrees. Thermal expansion. Tetrag. at -250 degrees C with a 9.68, c 7.37 A.
- MELANOTHALLITE. Vergasova and Filatov, (Zap. Vses. Mineral. O-va. 111, 562-565 (1982)) Chem. Abstr. 98, no. 4, 19597 (1983). From Tolbachik Volcano, Cu₂ O Cl₂, orth., a 9.595, b 9.693, c 7.461A. X-ray data.
- MELANOVANADITE. Konnert and Evans, (Am. Mineral. 72, 637-644) (1987) Structure Tricl., a 6.360, b 18.090, c 6.276 A, alpha 110.18 deg., beta 101.62 deg., gamma 82.86 deg., G calcd. 2.53, measured 2.55, formula CaV₄O₁₀·5H₂O = CaV₂⁺⁴V₂⁺⁵O₁₀·5H₂O Dehydration
- MELANTERITE. Chesnokov, (Miner. Paragenesis Miner. Mestorozhd. Ura, 29-31) (1983) (Russ), Chem. Abstr. 102, no. 24, 206683 (1985). Analysis, x-ray, DTA, optics from Urs. No data in abstract.
- MELILITE. Boctor and Yodu, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe analyses (1) from melilite rocks, S. Africa
- MELILITE. Brousse et al., (Geochim. Cosmochim. Acta 48, 1081-1088) (1984), Chem. Abstr. 101, no. 2, 10166 (1984). Enthalpy of formation (akermanite).
- MELILITE. El Goresy et al., (Geochim. Cosmochim. Acta 48, 2283-2298) (1984). Microprobe analyses (3) from Ca-Al-rich inclusion, Essebi chondrite.
- MELILITE. Federico et al., (Rend. Soc. Ital. Mineral. Petrol. 38, 1387-1400) (1982), Chem. Abstr. 101, no. 4, 26254 (1984). Analyses (not in abstr.), optics, unit cells from Alban Hills, Italy.
- MELILITE. Finch et al., (J. Cryst. Growth 54, 482-484 (1981)) Mineral. Abstr. 34, 39 (1983). Growth of single crystals of gehlenite from melt, a 7.7010, c 5.0532, G 3.01.
- MELILITE. Gallo et al., (N. Jb. Miner., Mh., 198-210) (1984)(Eng.). Microprobe analyses (2) from alkalic rocks, Italy.
- MELILITE. Halbach and Chattergee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data. (Gehlenite)
- MELILITE. Hashimoto and Grossman, (Geochim. Cosmochim. Acta 51, 1685-1704) (1987) Microprobe analyses (4) from Al-rich inclusions, Allende meteorite

- MELILITE. Hemingway and Robie, *Am. Mineral.* 69, 307-318 (1984). Heat capacity of synthetic gehlenite 12-370 degrees K. Entropy, enthalpy, Gibbs energy.
- MELILITE. Kimata and Ii, (*Neues Jahrb. Mineral., Abh.*, 144, 254-267 (1982)) *Mineral. Abstr.* 34, 114 (1983). Structure of synthetic gehlenite.
- MELILITE. MacPherson et al., *Geochim. Cosmochim. Acta* 47, 823-839 (1983). Microprobe analyses (5) from Murchison meteorite.
- MELILITE. Meeker et al., *Geochim. Cosmochim. Acta* 47, 707-721 (1983). Microprobe analyses (4) from Allende meteorite.
- MELILITE. Pouclet et al., *Bull. Mineral.* 106, 607-622 (1983). Microprobe analyses (4) from alkalic lavas, Virunga, E. Africa.
- MELILITE. Sabine et al., (*Rep. - Inst. Geol. Sci. (U.K.)*, no. 82-1, 61-63 (1982)) *Chem. Abstr.* 98, no. 22, 182722 (1983). Analysis of gehlenite, Co. Antrim, Ireland, Fe₂O₃ 3.03, MgO 0.85, CaO 41.25%, n(omega) 1.676, n(epsilon) 1.666, a 7.702, c 5.069A.
- MELILITE. Schaefer et al., (*Phys. Chem. Miner.* 10, 121-124) (1984), *Chem. Abstr.* 100, no. 18, 142381 (1984). Shock effects in.
- MELILITE. Sidorov, *Mineralogy of Cibaikalie*, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- MELILITE. Wilkinson and Stolz, *Contrib. Mineral. Petrol.* 83, 363-374 (1983). Microprobe analyses (3) from Oahu, Hawaii.
- MELIPHANITE. Dobrovolskaya et al., *Mineral. Zh.* 6, no. 5, 64-72 (1984). Magnetic properties.
- MELIPHANITE. Novikova, *Mineral. Zh.* 6, no. 5, 84-90 (1984). Analysis, unit cell.
- MELONITE. Borishenskaya and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- MELONITE. Kovalenkar, (*Gold and silver deposits, "Nauka", Moscow*, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (2) from gold-silver deposits
- MELONITE. Oen and Kieft, *Neues Jahrb. Mineral., Abh.* 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden. Co up to 6.0%.
- MELONITE. Paar and Chen, (*Karintin 87*, 371-381 (1982)) *Chem. Abstr.* 98, no. 12, 129419 (1983). Microprobe analysis from Schellgaden Au deposit, Austria.
- MELONITE. Piispanen and Tarkian, *Miner. Deposita* 19, 105-111 (1984). Microprobe analyses (1) from Rometolvass, Finland with Bi 4.7, Pd 4.4%. Optics.
- MELONITE. Shimada et al., (*Mineral. J. Japan* 10, 269-278) (1981)(English), *Mineral. Abstr.* 35, 190 (1984). Analysis from Kyushu, reflectance.
- MELONITE. Wu and Mei, (*J. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- MENEGHINITE. Bonev and Iordenov, (*Geokhim., Mineral., Petrol.* 17, 51-54) (1983)(Bulgarian), *Chem. Abstr.* 100, no. 22, 177962 (1984). Analysis, x-ray data from Malko Tarmova, Bulgaria.
- MENEGHINITE. McQueen, *Neues Jahrb. Mineral., Monatsh.*, 323-336 (1984)(English). Microprobe analyses (4) from Broken Hill, N.S. Wales.
- MENEGHINITE. Wu and Mei, (*J. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- MENEGHINITE. Yamaaki et al., *J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 78, 441-448 (1983) (Japanese). Microprobe analyses (2) from Abata Pref., Japan. X-ray data.
- MENEGHINITE. Zakrzewski and Nugteren, *Can. Mineral.* 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- MERENSKYITE. Eggins and Hensen, (*Lithos* 20, 295-310) (1987) Microprobe analyses (3) from granodiorites, Barrington Top batholith, E. Australia
- MERENSKYITE. Filimonova, (*Dokl. Akad. Nauk SSSR* 279, 200-202) (1984) (Russ), *Chem. Abstr.* 102, no. 10, 81868 (1985). Microprobe analysis from Kazakhstan. Reflectances.

- MERENSKYITE. Loucks and McCallum, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 200-218 (1980)(English) (Sulfosalt Vol.). Microprobe analyses (10) from New Rambler Mine, Wym.
- MERENSKYITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- MERENSKYITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- MERLINOITE. Donahoe, et al., (Clays Clay Miner. 32, 433-443) (1983), Chem. Abstr. 102, no. 6, 48855 (1985). Synthesis. Occurrence at Searles Lake, Calif.
- MERRILLITE. Muira and Matsumoto, (Mem. Natl. Inst. Polar Research 25, 124-130) (1982), Mineral. Abstr. 38, 87M/2984) (1987) Microprobe analysis (not in abs.) from Yamato-75 chondrite
- MERRILLITE. Graham, et al., Meteoritics 19, 85-88 (1984). Microprobe analysis (1) from Machinga meteorite.
- MERRILLITE. Price et al., Can. Mineral. 21, 29-35 (1983). Microprobe analyses from Peace River meteorite, Alberta.
- MERTIEITE-II. Malyugin and Vilisov (Ezheg. Inst. Geol. Geokhim. 1981, 87-88) (1982). Chem. Abstr. 101, no. 14, 114098 (1984). Occurrences in placers, Urals. a 7.57, c 43.41A. Optics.
- MERTIEITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- MERWINITE. Brousse, et al., (Geochim. Cosmochim. Acta 48, 1081-1088) (1984), Chem. Abstr. 101, no. 2, 10166 (1984). Enthalpy of formation.
- MERWINITE. Catti and Ivaldi, Phys. Chem. Miner. 9, 160-166 (1983). Discussion of charge distribution in.
- MERWINITE. Piriou and McMillan, Am. Mineral. 68, 426-443 (1983). Vibrational spectrum.
- MESOLITE. Artioli et al., (Acta Cryst. 42C, 937-942) (1986), Mineral. Abstr. 38, 87M/2125 (1987) Structure Fdd2, a 18.4049, b 56.655, c 6.5443 A, Z=8
- MESOLITE. Pechar, (Acta Mont. 65, 101-127) (1984)(Czech), Chem. Abstr. 102, no. 2, 9833 (1984). X-ray, DTA, infra-red study of thermal behavior.
- MESOLITE. Ulrych and Rychly (Acta Univ. Carol., Geol. 1-2, 33-52) (1983)(Eng.), Chem. Abstr. 102, no. 26, 223552 (1985) Analyses from Bohemia, optics.
- META-ALUMINITE. Ankinovich and Zazubina, (Vopr. Metallog. Strukt. Osob Veshchestv. Sostava Mestorozhd. Kaz., 9-15) (1982), Chem. Abstr. 100, no. 16, 124256 (1984). Analysis from Karatau, G 1.83, optics.
- META-ANKOLEITE. Matkovskii et al., (Mineral. Sb. (Lvov) 35, 27-32 (1981)) Chem. Abstr. 98, no. 10, 75521 (1983). Excitation-luminescence spectrum.
- META-AUTUNITE. Cejka et al. (Phys. Chem. Miner. 11, 172-178) (1984). Infra-red spectroscopy.
- META-AUTUNITE. Cejka et al. (Thermochim. Acta 86, 387-390) (1985)(Eng.), Chem. Abstr. 103, no. 4, 25087 (1985). DTA, infra-red data.
- META-AUTUNITE. Cejka et al., (N. Jb. Miner. Mh., 115-126) (1985), Mineral. Abstr. 38, 87M/2553 (1987) Synthesis DTA, infra-red spectrum
- META-AUTUNITE. Cejka, et al., Phys. Chem. Miner. 11, 172-177 (1984). Infra-red spectroscopy.
- META-AUTUNITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- META-AUTUNITE. Vochten and Remant, (Geol. Congress Middle East, 1979, 1-15) (1982), Chem. Abstr. 100, no. 26, 213114 (1982). Synthesis and discussion of conditions of formation.
- META-AUTUNITE. Vochten and Van Doorselaer, Mineral. Rec. 15, 293-297 (1984). Occurrence at Cunha Baixa mine, Portugal. Color photographs.

- META-AUTUNITE. Zolensky, (Diss. Pa. State. 222 pp) (1983), Diss. Abstr. 44B, 1392 (1983).
- META-TOBERNITE. Cejka et al., (N. Jb. Miner. Mh., 115-126) (1985), Mineral. Abstr. 38, 87M/2553 (1987) Synthesis DTA, infra-red spectrum
- META-URANOCIRCITE. Cejka et al. (Phys. Chem. Miner. 11, 172-178) (1984), Chem. Abstr. 102, no. 10, 81825 (1985) Infra-red spectroscopy.
- META-URANOCIRCITE. Cejka et al. (Thermochim. Acta 86, 387-390) (1985)(Eng.), Chem. Abstr. 103, no. 4, 25087 (1985). DTA, infra-red data.
- META-URANOCIRCITE. Cejka et al., (N. Jb. Miner. Mh., 115-126) (1985), Mineral. Abstr. 38, 87M/2553 (1987) Synthesis DTA, infra-red spectrum
- METACINNABAR. Boctor et al., (Geochim. Cosmochim. Acta 51, 1705-1715) (1987) Microprobe analyses (9) from New Idria mine, Calif.
- METACINNABAR. Sorokin, et al., (Geokhimiia, no. 1, 132-136) (1984), Chem. Abstr. 100, no. 12, 88935 (1984). Effect of pressure on transition cinnabar-metacinnabar. Triple point C-M-liquid is at 866 15 degrees, 1520 MPa.
- METACINNABAR. Tauson, et al., (Geokhimiia, no. 12, 1706-1719) (1983), Chem. Abstr. 100, no. 8, 54700 (1984). Hydrothermal synthesis. Unit Cells.
- METACINNABAR. Zatsikha, Zap. Vses. Mineral. O-va. 113, 317-324 (1984)(Russian). Chem. Abstr. 101, no. 18, 15501 Analyses (11) from Transcarpathians (Zn up to 1.75%).
- METAKIRCHHEIMERITE. Vochten and Goemine (Phys. Chem. Miner. 11, 95-100) (1984). Synthesis. $a=b=20.25$, $c=17.20A$, $Z=16$, $G=3.821$.
- METAKOETTIGITE. Schmetzer et al., (Neues Jahrb. Mineral., Monatsh., no. 11, 506-518 (1982)) Chem. Abstr. 98, no. 4, 19579 (1983). Mineral. Abstr. 34, 184 (1983). Abstract of original description.
- METASTUDTITE. Deliens and Piret, Am. Mineral. 68, 457-458 (1983). New mineral, $UO_4 \cdot 2H_2O$, from Shinkolobwe, Zaire. Orth., Immm, $a=6.51$, $b=8.78$, $c=4.21A$, $Z=2$, G calcd 4.67. Microprobe analysis, X-ray data, optics.
- METASTUDTITE. Abstr. in Mineralog. Abstr. 34, 476-477 (1983). Abstract of original description.
- METATORBERNITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- METATORBERNITE. Cejka et al. (Phys. Chem. Miner. 11, 172-178) (1984). Infra-red spectroscopy.
- METATORBERNITE. Cejka et al. (Thermochim. Acta 86, 387-390) (1985)(Eng.), Chem. Abstr. 103, no. 4, 25087 (1985). DTA, infra-red data.
- METATORBERNITE. Cejka et al., (Cas. Narod Muzea Praze 154, 36-44) (1985) (Czech with Eng summary) Raman and infra-red spectroscopy
- METATORBERNITE. Cejka, et al., Phys. Chem. Miner. 11, 172-177 (1984). Infra-red spectroscopy.
- METATORBERNITE. Vochten and Remant, (Geol. Congress Middle East, 1979, 1- 15) (1982), Chem. Abstr. 100, no. 26, 213114 (1982). Synthesis and discussion of conditions of formation.
- METATORBERNITE. Vochten and Van Doorselaer, Mineral. Rec. 15, 293-297 (1984). Occurrence at Cunha Baixa mine, Portugal. Color photographs.
- METATYUYAMUNITE. de Brodtkorb, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 221-229 (1982). Occurrence in Urcal deposit, La Rioja, Argentina.
- METAURANOCIRCITE. Cejka, et al., Phys. Chem. Miner. 11, 172-177 (1984). Infra-red spectroscopy.
- METAURANOCIRCITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- METAURANOSPINITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.

- METAVARISCITE. Bennett et al., (Zeolites 6, 349-360) (1986), Mineral. Abstr. 38, 87M/2146 (1987) Structural features.
- METAVIVIANITE: Rodgers and Johnston, (N. Jb. Miner. Mh., 539-542) (1985), Mineral. Abstr. 38, 87M/3172 (1987) Mossbauer data suggest the formula $Fe^{+2}_{1.14}Fe^{+3}_{1.86}(PO_4)_2(OH)_{1.86} \cdot 6.1 H_2O$.
- METAZEUNERITE. Vöchten and Goeminne, (Phys. Chem. Miner. 11, 95-100) (1984). Synthesis. Unit cell, $a=b=7.10$, $c=17.42A$, $Z=2$, $G=3.70$.
- MEYERHOFFERITE. Semenov et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 96-102 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201507 (1983). Heat capacity and entropy.
- MGRITE. Dykov et al., (Zap. Vses. Mineral. O-va. 111, 215-219 (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- MGRITE. Dymkov et al., (Zap. Vses. Mineral. O-va. 111, 215-219 (1982)) Am. Mineral. 68, 280-281 (1983). Abstract of original description.
- MIARGYRITE. Bortnikov et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- MIARGYRITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- MIARGYRITE. Kaspar et al., (N. Jb. Miner., Mh. 19-28) (1985)(Eng.). Microprobe analyses (4) from Trebsko, Czechoslovakia, $a=12.880$, 12.878 ; $b=4.415$, 4.414 ; $c=13.234$, $13.230A$; $\beta=98.56$, 98.56 degrees.
- MIARGYRITE. Kaspar et al., (Neues Jahrbuch Miner., Abh., 147(1), 47-57) (1983)(Eng.). Microprobe analysis from Trebsko, Czech.
- MIARGYRITE. Nakayama, (Mining Geology (Japan) 36, 511-522) (1986) (Eng) Microprobe analyses (4) from Gunma Pref., Japan
- MIARGYRITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg. Microprobe analyses (11)
- MIARGYRITE. Nekrasov, (Mineral. Zh. 7, 51-72) (1985) (Russian) Stability in system Ag-Au-Sb
- MIARGYRITE. Sugaki et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe analysis from Hokkaido.
- MIARGYRITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (5) from S. Korea Reflectivity, X-ray data $a=13.224$, $b=4.352$, $c=12.861 A$, $\beta=98.28$ deg.
- MIARGYRITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- MICA. Pandey et al., (Phys. Chem. Miner. 8, 268-278 (1982)) Chem. Abstr. 98, no. 8, 57268 (1983). Influence of stacking faults on the spiral growth of polytype structure.
- MICAS. Weiss et al., (Am. Mineral. 70, 747-757) (1985). Geometry of octahedral coordination in micas.
- MICHENERITE. Cornelius et al., (Mineral. Petrol. 36, 247-265) (1987) Microprobe analyses (4) from New Mexico, W. Australia
- MICHENERITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- MICHENERITE. Loucks and McCallum, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 200-218 (1980)(English) (Sulfosalt Vol.). Microprobe analyses (9) from New Rambler Mine, Wym.
- MICHENERITE. Tarkian and Bernhardt, (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.

- MICROCLINE. Andreeva and Troneva, (Rock-forming minerals of magmatic rocks, Nauka, 148-164) (1986) (Russian) [170(570)Os5] Analysis (9) from alkalic rocks, Vitim
- MICROCLINE. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984). Microprobe analyses (2) from granulite, Sipiwesk Lake, Manitoba.
- MICROCLINE. Armienti et al., J. Volcanol. Geothermal Res. 17, 289-311 (1983)(English). Microprobe analyses (12) from Phlegrean Fields, Italy.
- MICROCLINE. Badejoko, (Lithos 17, 259-271) (1984)(Eng.). Relation between triclinicity and content of Rb, Sn, Li, F in biotite granites, Nigeria.
- MICROCLINE. Barberi et al., (Bull. Volcanol. 47, 76:96) (1984)(Eng.). Microprobe analyses (7) from Latera caldera, Italy.
- MICROCLINE. Borutskii et al., (Izv. Akad. Nauk SSSR, Ser. Geol. 12, 96-103) (1984), Chem. Abstr. 102, no. 10, 81834 (1985). Structure and Si-Al ordering, alkalic pegmatites.
- MICROCLINE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (5) from Werner Bjerge complex, Greenland.
- MICROCLINE. Buseck and Cowley, Am. Mineral. 68, 18-40 (1983). Transmission electron microscopy.
- MICROCLINE. Cawthorn et al., (Econ. Geol. 80, 988-1006) (1985). Microprobe analysis (1) from Potgreetersrus, N. Transvaal.
- MICROCLINE. Crurisicchio, et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983)(English). Microprobe analyses (13) from Alkalic rocks, Kenya.
- MICROCLINE. Davidova, (Acta Geol. Geogr. Univ. Comenianae, Geol. 38, 65-82 (1982)(English)) Chem. Abstr. 98, no. 24, 201529 (1983). Infra-red determination of degree of triclinicity.
- MICROCLINE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (3) from granulites, Italian Central Alps.
- MICROCLINE. Dymek and Schiffries, (Can. Mineral. 25, 291-319) (1987) Microprobe analyses (17) from anorthosite, St. Urbain, Quebec.
- MICROCLINE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English). Microprobe analyses (10) from western Lepontine Alps.
- MICROCLINE. Fujiyoshi, Mineral. Mag. 48, 53-63 (1984). Obliquity from schists, gneisses, granites, central Japan.
- MICROCLINE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (2) from teschenite, N.S. Wales.
- MICROCLINE. Gamble, J. Earth Sci. (Dublin) 5, 91-105 (1982). Microprobe analyses (3) from Slieve Gullion, N.E. Ireland.
- MICROCLINE. Gordienko et al., (Zap. Vses. Mineral. O-va. 111, 734-740 (1982)) Chem. Abstr. 98, no. 8, 57287 (1983). Mineral. Abstr. 34, 397 (1983). Estimate of structural state based on infra-red spectra.
- MICROCLINE. Hofmeister and Rossman (Am. Mineral. 70, 794-804) (1985). Spectroscopic study of blue-green amazonite shows that the color is radiation-induced and requires the presence of Pb and bound H₂O.
- MICROCLINE. Hyndman et al., Mem. Mont. Bur. Mines Geol., 49, 1-37 (1982). Analyses (5) from Philipsburg batholith. Cell parameters.
- MICROCLINE. Jamieson, (Contrib. Mineral. Petrol. 86, 309-330) (1984). Probe analyses (3) from gneiss, Nova Scotia.
- MICROCLINE. Kirkpatrick et al., Am. Mineral. 70, 106-123 (1983). Nuclear magnetic resonance study.
- MICROCLINE. Kirsh et al., (Phys. Status Solidi 101(1), 253-262) (1987), Chem. Abstr. 107, no. 10, 81148 (1987), Kinetics and emission spectra of thermoluminescence.
- MICROCLINE. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng) Microprobe analyses (2) from gneisses, Spitsbergen.

- MICROCLINE. Klemd and Hallbauer, (Mineral. Deposita 22, 227-235) (1987)
Microprobe analyses (2) from altered Archean granites, S. Africa
- MICROCLINE. Kroll and Ribbe, (Am. Mineral. 72, 491-506) (1987) Review of Al-Si
distribution, lattice parameters, diffraction peaks
- MICROCLINE. LaTour et al., Can. Mineral. 22, 621-630 (1984). Microprobe
analyses (8) from Archean iron formation, Kirkland Lake, Ont.
- MICROCLINE. Le Roex, (J. Petrol. 26, 149-186) (1985). Microprobe analyses (4)
from Gough Island, S. Atlantic.
- MICROCLINE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1)
from manganiferous cherts, Alps
- MICROCLINE. Munshi and Gupta, Mineral. Mag. 47, 95-97 (1983). Analyses (7)
from granites, Kashmir, India.
- MICROCLINE. Neiva, (Bol. Mus. Lab. Mineral. Geol., Fac. Cienc. Univ.
Lisboa, 16, 179-195 (1980)(Pub. 1981)(English)) Chem. Abstr. 98, no. 12,
93003 (1983). Analysis from granite porphyry. Trace elements.
- MICROCLINE. Ostertag, (J. Geophys. Res. 88B, 364-376) (1983), Chem. Abstr.
100, no. 26, 213105 (1984). Effect of shock up to 456 Pa on single crystals.
- MICROCLINE. Ostroumov et al., (Zap. Vses. Miner. O-va. 116, 77-84) (1987)
(Russian) Quant. study of the color of amazonite
- MICROCLINE. Ostroumov et al., (Zap. Vses. Mineral. O-va. 111, 719-734 (1982))
Chem. Abstr. 98, no. 8, 57286 (1983). Structural state of amazonites.
- MICROCLINE. Popov and Popova, (Dokl. Akad. Nauk SSSR 268, 417-419 (1983)) Chem.
Abstr. 98, no. 16, 129425 (1983). Zoning of color in amazonite.
- MICROCLINE. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd.
Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from Kamchatka Pt
deposit.
- MICROCLINE. Rudashevskii, Zap. Vses. Mineral. O-va. 113, 186-195
(1984)(Russian). Microprobe analyses (1) of minerals enclosing Pt minerals.
- MICROCLINE. Santosh, (Contrib. Mineral. Petrol. 96, 343-356) (1987) Microprobe
analyses (2) from gneisses, Kerala, India
- MICROCLINE. Schiffman et al., (Mineral. Mag. 49, 435-449) (1985). Analyses (4)
from sandstones, Cerro Prieto geothermal system, Baja Calif.
- MICROCLINE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses
(1) from kimbabite, Greenland.
- MICROCLINE. Sherriff and Hartman, (Can. Mineral. 23, 205-212) (1985). Nuclear
magnetic resonance study.
- MICROCLINE. Shvedenkov et al., (Geol. Geofiz., no. 1, 80-86 (1983)) Chem.
Abstr. 98, no. 16, 139422 (1983). Stability in system muscovite -
paragonite - K-feldspar - H₂O - CO₂.
- MICROCLINE. Siegel and Pfannhuch, (Geochim. Cosmochim. Acta 48, 197-201)
(1984), Chem. Abstr. 100, no. 12, 88912 (1984). Soln. at pH4.
- MICROCLINE. Smith et al., (Nature 309, 140-142) (1984), Chem. Abstr. 100, no.
26, 213149 (1984). Nuclear magnetic resonance of series microcline-low
albite.
- MICROCLINE. Su et al., (Am. Mineral. 69, 440-448) (1984). Optic axial angle as
a measure of Al, Si ordering in.
- MICROCLINE. Suzuki and Osakabe, (Mem. Geol. Soc. Japan 21, 37-49) (1982)(Eng.).
(G(620)G29m). Analyses (2) from Hida belt, Japan.
- MICROCLINE. Velde and Boyer, (J. Geophys. Res., 90B, 3675-3682) (1985), Chem.
Abstr. 102, no. 26, 223565 (1985). Raman spectra of shocked samples.
- MICROCLINE. Ventwelli et al., Contrib. Mineral. Petrol. 86, 209-220 (1984).
Microprobe analyses (2) from K-rich Lamprophyres, W. Alps, Italy.
- MICROCLINE. Votyakov et al., (Dokl. Akad. Nauk SSSR 275, 167-169) (1984),
Chem. Abstr. 101, no. 6, 41197 (1984).

- MICROCLINE. Wagner and Velde, (Bull. Mineral. 108, 173-187) (1985)(Eng.).
Microprobe analyses (3) from minette dikes, Jersey and Italy.
- MICROCLINE. Warren, et al., Earth Planet. Sci. Lett. 64, 175-185 (1983).
Microprobe analyses (2) from granite clasts, Moon.
- MICROCLINE. Yang et al., Mem. Geol. Soc. China 5, 97-116 (1983)(English)
(G(611)G292m). Microprobe analyses (2) from spillite, N. Taiwan.
- MICROCLINE. Ziryanov, (Ocherki Fiz-Khim Petrol 11, 5-11) (1984)(Russ.), Chem.
Abstr. 101, no. 20, 174814 (1984). Structural state in perthites.
- MICROLITE. von Knowing and Condliffe, (Mineral. Mag. 48, 443-448) (1984).
Microprobe analyses (7) of zoned crystals, Meldon glite, Devonshire.
- MIHARAITE. Choi and Imai, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78,
350-360 (1983)(English). Microprobe analyses (13) from Ulson mine, Koua,
optics, x-ray.
- MIHARAITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145)
(1986) (Russian) 431 M565 Microprobe analysis (2) from gold-silver deposits
- MILARITE. Burt, Mineral. Assoc. Canada Short Course no. 8, 135-148 (1982).
Review of occurrence in granite pegmatites. Analyses.
- MILARITE. Dobrovolskaya et al., Mineral. Zh. 6, no. 5, 64-72 (1984).
Magnetic properties.
- MILLERITE. Beran and Mohsenzadeh, (Tschermarks Mineral. Petrogr. Mitt. 30,
267-275 (1983)(English)) Chem. Abstr. 98, no. 16, 129396 (1983). Optics.
- MILLERITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41
(1982). Reflectance and hardness.
- MILLERITE. Frost, (J. Petrol. 26, 31-63) (1985). Calculation of stability in
system Fe-Mg-Si-O-H.
- MILLERITE. Garuti et al., Earth Planet. Sci. Lett. 70, 69-87 (1984)(English).
Microprobe analyses (1) from peridotites, Ivrea-Verbani, Italy.
- MILLERITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average
composition from various types of ore, Thierry mine, Ont.
- MILLERITE. Velikanov et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol.,
Khim. Biol. Nauki 3, 7-10) (1985) (Ukr), Chem. Abstr. 102, no. 26, 223582
(1985). Microprobe analyses (2) from ultramafic rocks, Ternivsko region.
- MILLERITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes.
- MIMETITE. Rouse et al., (Am. Mineral. 69, 920-927) (1984). Microprobe analyses
(3) from Franklin and Langban.
- MINAMIITE. Ossaka et al., (N. Jb. Miner. Mh., 49-63) (1987) (Eng), Chem.
Abstr. 106, no. 26, 217079 (1987) Synthesis Trigonal a 6.9751, c 33.415 A
- MINNESOTAITE. Frost, (J. Petrol. 26, 31-63) (1985). Calculation of stability in
system Fe-Mg-Si-O-H.
- MINNESOTAITE. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe
analyses (1).
- MINNESOTAITE. Kager and Oen, Mineral. Mag. 17, 229 and 230-231 (1983).
Microprobe analyses (1) from Sierra de Cartagena, Spain. X-ray data.
- MINRECORDITE. Garavelli et al., (Mineral. Rec. 13, 131-136 (1982)) Mineral.
Abstr. 34, 73 (1983). Am. Mineral. 68, 281 (1983). Abstract of original
description.
- MIRABILITE. Harvie et al., Geochim. Cosmochim. Acta 48, 723-751 (1984).
Calculated solubilities in system Na-K-Mg-Ca-H-Cl-SO₄-OH-HCO₃-CO₅-CO₂-H₂O at
25 degrees C.
- MISERITE. Lazebnik and Lazebnik, Mineralogia i Geokhimiia Ultraosnovnykh i
Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia),
32-50 (1981). Analyses from Yakutia, RE₂O₃ 0.62%, X-ray data, DTA, infra-red.
- MISERITE. Milton (Ark. Geol. Comm. Misc. Publ. 18B, 97-114) (1984). Review
of previous data. New analysis, x-ray data, unit cell, analysis, optics from
Ark.

- MITRIDATITE. Van Tassel, (Bull. Soc. Belge Geol. 91, 50 (1982)) Mineral. Abstr. 34, 217 (1983). Occurrence in Belgium.
- MODDERITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- MOGANITE. Abstract in Am. Mineral. 70, 874 (1985). Abstract of original description.
- MOGANITE. Floerke et al., (Neues Jahrb. Mineral., Abh. 149, 325-336) (1984)(Eng.), Chem. Abstr. 101, no. 18, 154999 (1984). New mineral, SiO_2 G; from ignimbrite, Canary Islands. Mon., a 4.934, b 10.761, c 8.533A, beta 92.29 degrees, n 1.52, G 2.55.
- MOGANITE. Florke et al., Neues Jahrb. Mineral., Abh. 149, 325-336 (1984)(English). New mineral, SiO_2 , from Mogan, Canary Islands. Monoclinic, a 4.934, b 10.761, c 8.533 A, beta 92.29 degrees, G 2.55. n 1.52. Analysis, x-ray.
- MOHITE. Kovalenkar et al., (Zap. Vses. Mineral. O-va. 111, 110-114 (1982)) Am. Mineral. 68, 281 (1983). Abstract of original description.
- MOISANNITE. Skripnichenko et al., (Dokl. Akad. Nauk SSSR 267, 1453-1455 (1982)) Chem. Abstr. 98, no. 14, 110838 (1983). Occurrence in serpentinite, Baltic Shield. X-ray data.
- MOISSANITE. Gnoevaja and Grozdanov, (Review Bulgar. Geol. Soc. 42(3) 342- 346) (1981) (Bulg.), Mineral. Abstr. 35, 81 (1984). Occurrence in bituminous rocks, SW Bulgaria.
- MOLYBDENITE-3R. Bralía et al., (Period. Mineral. 52, 235-251) (1983)(Eng.), Chem. Abstr. 101, no. 14, 114172 (1984). Polytypes from Sardinia. Minor elements in.
- MOLYBDENITE-3R. Filimonova et al., (Geokhimiia 7, 1040-1046) (1984) (Russ) (Russ), Chem. Abstr. 101, no. 14, 114118 (1984) (Russ). Rhenium content.
- MOLYBDENITE-3R. Graeser and Imhof, (Aufschluss 33, 375-382 (1982)) Mineral. Abstr. 34, 179 (1983). Occurrence in Binntal Valley, Switzerland.
- MOLYBDENITE. Bralía et al., (Period. Mineral. 52, 235-251) (1983), Mineral. Abstr. 36, no. 2, 204 (1985). Chem. Abstr. 101, no. 14, 11417 Polytypes - 2H and 3R from Sardinia. Minor elements in.
- MOLYBDENITE. Filimonova et al., (Geokhimiia 7, 1040-1046) (1984) (Russ), Chem. Abstr. 101, no. 14, 114118 (1984). Rhenium content.
- MOLYBDENITE. Kornilova, (Izv. Akad. Nauk Kaz. SSR, Ser. Geol., no. 1, 59-63 (1983)) Chem. Abstr. 98, no. 16, 129402 (1983). Occurrence from Katpar deposit, a 3.1355-3.1541, c 12.2380-12.2988A, trace elements.
- MOLYBDENITE. Kruglovo et al., Mineralogy of Ore Deposits, 79-82 (1983)(Russian) (410M662). Reflectance at 15 wave lengths. Analysis.
- MOLYBDENITE. Odegard, (Nor. Geol. Tidsskr. 64, 287-294) (1984)(Eng.). Analysis (9) from northern Norway showed 0.43-0.71 percent Se.
- MOLYBDENITE. Vyal'sov, (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 218-224) (1980)(Russ.) (Sulfosalt Vol.). Reflectance at 18 wavelengths.
- MOLYBDENITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- MOLYBDENITE. Yamaoka and Asakura, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 290-294 (1983)(Japanese). Analyses (3) from Fukushima Pref., Japan. x-ray data
- MOLYBDOFORNACITE. (Abstr. in Am. Mineral. 69, 567) (1984). Abstract of original description.
- MOLYBDOFORNACITE. Medenbach et al., Abstract in Mineral. Abstr. 36, 93 (1985). Abstract of original description.

- MONAZITE-(ND). Maksimovic and Panto, (Bull. - Acad. Serbe Sci. Arts, Cl. Sci. Nat. Math., Sci. Nat., 20, 35-42 (1980)) Mineral. Abstr. 34, 182 (1983). Occurrence in bauxite, Marmara, Greece.
- MONAZITE. Black et al., Contrib. Mineral. Petrol. 85, 141-148 (1984). Pb isotopes and partial analyses, from Antarctica.
- MONAZITE. Gauthier-LaFaye, (Sci. Geol. Mem. 78, 1-206) (1986) (French) Microprobe analyses (3) from V deposits, Gabon (G(540) St52m).
- MONAZITE. Kinnaird, (J. African Earth Sci. 3, 229-251) (1985). Analyses (3) from ring complexes, Nigeria.
- MONAZITE. Kornetova and Kazakova, (Nov. Dannye Miner. 30, 191-194 (1982)) Chem. Abstr. 98, no. 26, 219077 (1983). Analysis from granite pegmatite, Siberia.
- MONAZITE. Mohr, Am. Mineral. 69, 98-103 (1984). Zoned monazite from Schist, N.C. Analyses for rare earths.
- MONAZITE. Nekrasova and Nekrasov, (Proc. 13th Meeting I.M.A., Varna, 1982, 795-801) (1986) (Russian) Two analyses
- MONAZITE. Postl and Walter, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 317-319 (1983) (G(533)G78mb). Occurrence at Eisenberg, Styria.
- MONAZITE. Roeder, (Can. Mineral. 23, 263-271) (1985). Microprobe analysis of rare-earth elements.
- MONAZITE. Styles and Young, Mineral. Mag. 47, 41-46 (1983). Microprobe analysis from Afu, Nigeria.
- MONAZITE. Tikhonenkova, (Dokl. Akad. Nauk SSSR 226, 1236-1239 (1982)) Chem. Abstr. 98, no. 6, 37811 (1983). Analysis from Khibina massif, G 5.07.
- MONAZITE. White and Nelen, (Mineral. Record 18, 203-205) (1987) Microprobe analysis from Foote mine, N. Carolina.
- MONCHEITE. Eggins and Hensen, (Lithos 20, 295-310) (1987) Microprobe analyses (8) from granodiorites, Barrington Top batholith, E. Australia.
- MONCHEITE. Loucks and McCallum, International Mineral. Assoc., 11th Meeting, Novosibirsk, 1978, 200-218 (1980)(English) (Sulfosalt Vol.). Microprobe analyses (2) from New Rambler Mine, Wym.
- MONCHEITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- MONCHEITE. Tarkian and Bernhardt, (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- MONGOLITE. Vladykin et al., (Zap. Vses. Mineral. O-va. 114, 374-377) (1985)(Russ.). New mineral, $\text{Ca}_4\text{Nb}_6\text{Si}_5\text{O}_{20}\text{O}_4(\text{OH})_{10} \cdot 5.6 \text{H}_2\text{O}$. Tet., $a=b=7.05$, $c=29.0\text{A}$. Analysis, x-ray data, DTA, optics, G 3.147.
- MONOHYDROCALCITE. Nechiporenko et al., (Zap. Vses. Mineral. O-va. 112, 94-103) (1983)(Russian)) Chem. Abstr. 98, no. 20, 164116 (1983). Synthesis.
- MONOHYDROCALCITE. Shterenberg et al., (Litol. Polezn. Iskop., no. 1, 89-100) (1983)) Chem. Abstr. 98, no. 20, 164091 (1983). Analyses from lakes, N. Kazakhstan. X-ray, DTA, infra-red data.
- MONTBRAYITE. Nysten and Annersten, (Geol. Foeren. Stockholm Foerh. 106, 245-256) (1984)(Eng.). Microprobe analyses (6) from Enasen, Sweden.
- MONTBRAYITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes.
- MONTEBRASITE. Fransolet and Abraham, Ann. Soc. Geol. Belg. 106, 299-309 (1983). Microprobe analyses (3) from pegmatite, Buranga, Rwanda. $a=5.177$, $b=7.7$, $c=5.045 \text{A}$, $\alpha=112$ degrees 42 minutes, $\beta=98$ degrees 2 minutes, $\gamma=67$ degrees 42 minutes.
- MONTEREGIANITE. Ragimov and Chiragov, (Acta Crystallogr., Sect. A, A40, 258) (1984)(Abstr.). Structure. Orth., $a=14.04$, $b=23.91$, $c=13.196 \text{A}$, $\text{K}_2\text{Na}_4\text{Y}_2\text{Si}_{16}\text{O}_{38} \cdot 10\text{H}_2\text{O}$. Related to Delhayelites.

- MONTGOMERYITE. Ankinovich et al., (Zap. Vses. Mineral. O-va. 112, 84-88) (1983), Mineral. Abstr. 35, 191 (1984). Analysis with Fe_2O_3 10.75%, a 10.34, b 24.20, c 6.31 Å, beta 91 degrees 30 minutes. X-ray, DTA, optics.
- MONTGOMERYITE. Dunn et al., Mineral. Rec. 14, 195-197 (1983). Microprobe analysis from Tip Top pegmatite, S. Dakota. Optics.
- MONTICELLITE. Adams and Bishop (Am. Mineral. 70, 714-722) (1985). Stability in system Mg_2SiO_4 - $CaMgSiO_4$, unit cells.
- MONTICELLITE. Brousse et al., (Geochim. Cosmochim. Acta 48, 1081-1088) (1984), Chem. Abstr. 101, no. 2, 10166 (1984). Enthalpy of formation.
- MONTICELLITE. Catti and Ivaldi, Phys. Chem. Miner. 9, 160-166 (1983). Discussion of charge distribution in.
- MONTICELLITE. Gallo et al., (N. Jb. Miner., Mh., 198-210) (1984)(Eng.). Microprobe analysis (1) from alkalic rocks, Italy.
- MONTICELLITE. Piriou and McMillan, Am. Mineral. 68, 426-443 (1983). Vibrational spectrum.
- MONTICELLITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- MONTICELLITE. Vishnevskii et al., Mineral. Sb. 37, 3-7 (1983)(Russian). Reflectance spectra in ultra-violet.
- MONTMORILLONITE. Alietta and Brigatti, (Mineral. Petrogr. Acta 26, 39-47) (1982) (Eng), Chem. Abstr. 101, no. 12, 94660 (1984) Analyses, DTA, TGA, x-ray data, infra-red, from Greece.
- MONTMORILLONITE. Beaufort, Clays Clay Miner. 32, 154-156 (1984). Interstratified dioctahedral illite - montmorillonite mineral.
- MONTMORILLONITE. Bird, (Tectonophysics 107, 235-260) (1984), Chem. Abstr. 103, no. 4, 25068 (1985). Hydration phase diagrams.
- MONTMORILLONITE. Cathelineau, Bull. Mineral. 106, 553-569 (1983). Analyses from U deposits (5).
- MONTMORILLONITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 90-91) (Polish) Analyses (8) from Polish Carpathians
- MONTMORILLONITE. Luptakova and Masar, (Acta Fac. Rerum Nat. Univ. Comeniana, Chim., 30, 81-88 (1982)(English)) Chem. Abstr. 98, no. 14, 118419 (1983). Hydrothermal synthesis.
- MONTMORILLONITE. Monier et al., Bull. Mineral. 107, 55-68 (1984). Microprobe analyses (3) from Millevachas, France.
- MONTMORILLONITE. Nadeau et al., (Mineral. Mag. 49, 393-400) (1985). Conversion of montmorillonite to illite during diagenesis.
- MONTMORILLONITE. Pe-Piper, Lithos 16, 23-33 (1983). Microprobe analyses (3) from western Greece.
- MONTMORILLONITE. Sakamoto, (Kobutsugaku Zasshi 17, 147-153) (1986) (Jap), Chem. Abstr. 107, no. 10, 81108 (1987) DTA study; esp. of endothermic peaks around 100 deg. C
- MONTMORILLONITE. Schomburg, (Z. Geol. Wiss. 12, 457-468) (1984), Chem. Abstr. 101, no. 18, 155038 (1984). DTA of muscovite-montmorillonite interlayered minerals.
- MONTMORILLONITE. Shlykov and Luksha, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 1, 58-68) (1984), Chem. Abstr. 100, no. 26, 213107 (1984). Effect of organic acids on hydrothermal behavior.
- MONTMORILLONITE. Talibudeen and Goulding, (Clays Clay Miner. 31, 37-42 (1983)) Chem. Abstr. 98, no. 12, 129409 (1983). Study of charge heterogeneity.
- MONTMORILLONITE. Tazaki, (Can. Mineral. 25, 347-352) (1987) Transformations of Al-interlayered montmorillonite on aging

- MONTMORILLONITE. Tsipurskii and Drits, (Mineral. Zh. 6, no. 1, 3-16) (1984), Chem. Abstr. 101, no. 2, 10122 (1984). Electron diffraction study of octahedral cation distribution.
- MONTMORILLONITE. Uno et al., (Kobutsugaki Zasshi 17, 155-161) (1986) (Jap), Chem. Abstr. 107, no. 10, 81109 (1987) X-ray, DTA study of inversion at 850-1000 deg. C
- MONTMORILLONITE. van Groos and Guggenheim, Am. Mineral. 69, 872-879 (1984). Effect of pressure on dehydration of montmorillonite (Na). Analyses, DTA.
- MONTMORILLORITE. Mposkos and Perdikatsis, (Neues Jahrbuch Mineral., Abh., 149, no. 1, 43-63) (1984)(Eng.). Microprobe analyses (2) from glaucophane metagabbros, Samos I., Greece.
- MONTROSEITE. de Brodtkorb, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 221-229 (1982). Occurrence in Urcal deposit, La Rioja, Argentina.
- MONTROYDITE. McMurdie et al., (Powder Diffraction 1(4), 334-345) (1986) X-ray powder data
- MOOIHOEKITE. Kucha, (Mineral. Pol. 13, 2, 27-31) (1982)(Eng.), Chem. Abstr. 101, no. 10, 76109 (1984). Occurrence at Krzemianka, Poland. Hardness.
- MORDENITE. Bodart et al.; (Studies Surface Sci. Catal. 18, 125-132) (1984), Chem. Abstr. 101, no. 14, 120695 (1984). Hydrothermal synthesis.
- MORDENITE. Bodart et al., (Appl. Catal. 12, 359-371) (1984)(English), Chem. Abstr. 102, no. 2, 15316 (1984). Hydrothermal synthesis.
- MORDENITE. Bremer et al.; (Z. Chem. 23, 381-382) (1983), Chem. Abstr. 100, no. 8, 60785 (1984). Hydrothermal synthesis.
- MORDENITE. Kurihara and Takatsu, (Jap. Patent. 62 52,121, 1-7) (1987), Chem. Abstr. 106, no. 26, 216432 (1987) Synthesis of large crystals
- MORDENITE. Pechar and Rykl; (Zeolites 3, 329-332) (1983), Mineral. Abstr. 35, 137 (1984). Infra-red and Raman spectra.
- MORDENITE. Phillips, Brigham Young Univ. Geol. Study 30, 95-111 (1983). Analyses (4) from Marysvale, Utah.
- MORDENITE. Sanders, (Zeolites 5(2), 81-90) (1985). Chem. Abstr. 102, no. 24, 212918 (1985). Electron diffraction study of faults in.
- MORDENITE. Ueda et al., (J. Phys. Chem. 88, 2128-2131) (1984), Chem. Abstr. 100, no. 22, 183371 (1984). Synthesis.
- MOSANDRITE. Kapustin, (Nov. Dannye Miner. 30, 112-117 (1982)) Chem. Abstr. 98, no. 26, 219068 (1983). Analyses (not in abstr.), optics, from Tuva.
- MOTTRAMITE. Gross and Bartura, Isr. J. Earth-Sci. 33, 43-47 (1984). Analysis, x-ray data, DTA, G 5.71, from Timna, Israel. a 7.654, b 9.246, c 6.071 A.
- MOTUKOREAITE. Alker et al.; (Mitt.-bl. - Abt. Miner. Landesmus. Joanneum 49, 1-13) (1982). G(533)G78 mb. Occurrence in Styria. Microprobe analysis.
- MOUNTKEITHITE. Abstr. in Bull. Mineral. 106, 631-632 (1983). Abstract of original description.
- MUIRITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- MULLITE. Desmond et al., (Phys. Rev. 31B(9), 6140-6142) (1985), Chem. Abstr. 103, no. 8, 62878 (1985). Incommensurate structure and stability.
- MULLITE. Pokrovskii and Ivanov, (Ocherki Fiz-Khim Petrol. 11, 143-160) (1983), Chem. Abstr. 101, no. 20, 174816 (1984). Stability in system $Al_2O_3-SiO_2-H_2O$. Thermodynamic constants.
- MULLITE. Wenk, (Neues Jahrb. Mineral., Abh., 146, 1-14 (1983)(English)) Chem. Abstr. 98, no. 20, 164102 (1983). Sillimanite-mullite intergrowths from Bergell, Italy, a 14.9, b 7.6; c 5.7A.
- MUNDRABILLAITE. Abstract in Am. Mineral. 69, 407 (1984). Abstract of original description.

- MUNDRABILLAITE. Bridge and Clarke, Mineral. Mag. 47, 80-81 (1983). Chem. Abstr. 98, no. 14, 110804 (1983). Abstract of original description. New mineral from W. Australia, $(\text{NH}_4)_2 \text{Ca}(\text{HPO}_4)_2 \cdot \text{H}_2\text{O}$. Analysis, X-ray data. Monoclinic, a 8.643, b 8.184, c 6.411A, beta 98.0°, Z=2. Optics, G 2.05.
- MUNIRITE. Abstr. in Mineral. Abstr. 34, 477 (1983). Abstract of original description.
- MUNIRITE. Abstract in Am. Mineral. 69, 812 (1984). Abstract of original description.
- MURDOCHITE. Dubler et al., (Acta Crystallogr., Sect. C, C39, 1143-1146) (1983), Mineral. Abstr. 35, 138 (1984). Structure. Cubic, Fm3m, a 9.224 A, Z=4 (Cu_6PbO_6).
- MURMANITE. Karup-Moller, (Neues Jahrbuch Miner., Abh. 155, 67-88) (1986), Mineral. Abstr 38, 87M/3045 (1987) Analysis from Ilimaussaq, Greenland Tricl., a 5.44, b 7.06, c 11.7 A, alpha 93.44 deg., beta 98.52 deg., gamma 89.49 deg.
- MURUNSKITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- MUSCOVITE. Aldridge et al., (Am. Mineral. 72, 528-536) (1987) Electric-field gradient in 3 chem. analysis, Australia
- MUSCOVITE. Altherr et al., Lithos 15, 191-192 (1982)(English). Microprobe analyses (1) from anatexites, Tanzania.
- MUSCOVITE. Amouric and Baronnet, (Phys. Chem. Miner. 9, 146-159 (1983)) Chem. Abstr. 98, no. 22, 182719 (1983). Mineral. Abstr. 34, 397 (1983). TEM study of polytypes of synthetic muscovite.
- MUSCOVITE. Arkai, Acta Mineral.-Petrogr. 26, no. 2, 129-153 (1984)(English). G(534)S22am. Microprobe analyses (5) from crystalline basement, Hungary.
- MUSCOVITE. Baker and de Groot, Contrib. Mineral. Petrol. 82, 119-130 (1983). Recalcd. microprobe analyses, W. Bergslagen, Sweden.
- MUSCOVITE. Baronnet and Amouric, (Bull. Mineral 109, 489-508) (1986), Mineral. Abstr. 38, 87M/2112 (1987) Growth spirals and complex polytypism in muscovite and phengite
- MUSCOVITE. Beck, (Soc Geol. Nord Publ. 14, 191-280) (1986) (French) G(540) qN77p Microprobe analyses (5) from near Caracas, Venezuela (phengite)
- MUSCOVITE. Bishop and Bird, (Geochim. Cosmochim. Acta 51, 1245-1256 (1987) Analyses of sericite from Coso Hot Springs, Cal.
- MUSCOVITE. Boscardin and Orlandi, (Riv. Miner. Ital. 3, 103-106) (1984), Chem. Abstr. 102, no. 14, 116711 (1985). Analysis (not in abstr.), x-ray, infra-red data from Oropa, Italy (phengite).
- MUSCOVITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerge complex, Greenland.
- MUSCOVITE. Chamberlain and Lyons, Am. Mineral. 68, 530-540 (1983). Microprobe analyses (4), schists, central N.H.
- MUSCOVITE. Childs and Baker-Sherman, (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples.
- MUSCOVITE. Chopin, Contrib. Mineral. Petrol. 86, 107-118 (1984). Microprobe analyses (1) from blue schists, W. Alps.
- MUSCOVITE. Clarke et al., (Jour. Metamorph. Geol. 5, 291-306) (1987) Microprobe analyses (4) from Olary Block, S. Australia
- MUSCOVITE. Cotkin, (Contrib. Mineral. Petrol. 96, 192-200) (1987) Microprobe analysis (3) from blueschist, N. Calif. (phengite)
- MUSCOVITE. Cuchler et al., (Cas. Moravsk. Muzei 71, 15-22) (1986) (Czech) Microprobe analysis (1) from metapegmatite, Moravia

- MUSCOVITE. Delor et al., *J. Metamorph. Geol.* 2, 55-72 (1984). Microprobe analyses (5), French Massif. Centrale.
- MUSCOVITE. Dunn, *Mineral. Mag.* 48, 562-563 (1984). Analysis from Franklin, NJ with K₂O 9.7, BaO 6.3%.
- MUSCOVITE. Dymek (Rep. Geol. Surv. Greenland 112, 95-99) (1983)(Eng.). Microprobe analysis (2). W. Greenland.
- MUSCOVITE. Dymek et al. (Rep. Geol. Surv. Greenland 113, 71-82) (1983)(Eng.). Electron microprobe analyses (15) with up to 16.8 percent Cr₂O₃, up to 7.6 percent BaO.
- MUSCOVITE. Enami, *J. Metamorph. Geol.* 1, 141-166 (1983). Microprobe analyses (1) from Sanbagawa, Japan.
- MUSCOVITE. Ernst and Harnish, *Proc. Geol. Soc. China (Taiwan)* 26, 99-112 (1983)(English). Microprobe analyses (6) from green schist rocks, Taiwan.
- MUSCOVITE. Ernst, *J. Metamorph. Geol.* 1, 305-329 (1983). Microprobe analyses (16), Tailuko Gorge, Taiwan.
- MUSCOVITE. Evans and Vance, (*Contrib. Mineral. Petrol.* 96, 178-185) (1987) Microprobe analysis (1), dacite dike, Boulder Co., Colo.
- MUSCOVITE. Feenstra (*Geol. Ultralectina* no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (10) from metamorphosed bauxites, Naxos, Greece.
- MUSCOVITE. Flux, et al., *Contrib. Mineral. Petrol.* 86, 294-297 (1984). Pressure-induced (Al, Si) ordering in synthetic. Unit cell data.
- MUSCOVITE. Frank, *Schweiz. Mineral. Petrogr. Mitt.* 63, 37-93 (1983)(English). Microprobe analyses (14) from western Lepontine Alps.
- MUSCOVITE. Franz and Morteani (*J. Petrol.* 25, 27-52) (1984). Analysis from Kolsva, Sweden. (4)
- MUSCOVITE. Frey, et al., *Contrib. Mineral. Petrol.* 83, 185-197 (1983). Microprobe analyses (9) and polytypes present in Central Alps (phengites and muscovite 3T).
- MUSCOVITE. Gordillo et al. (*Contrib. Mineral. Petrol.* 90, 93-101) (1985). Microprobe analyses (2) from El Penon, Argentina.
- MUSCOVITE. Grambling, *Am. Mineral.* 68, 373-388 (1983). Microprobe analyses (6), Northern N. Mex. Fe-Mg partitioning.
- MUSCOVITE. Grambling, *Am. Mineral.* 69, 79-87 (1984). Microprobe analyses (2) from New Mexico.
- MUSCOVITE. Gućwa and Pelczar, (*Mineral. Polsk Karpat*, 62-68) (Polish) Analyses (19) from Polish Carpathians
- MUSCOVITE. Guggenheim et al., (*Am. Mineral.* 72, 537-550) (1987) Dehydroxylation to 1000 deg. C Structure at 20 deg., 525 deg., 650 deg. C and 300 deg. C Microprobe analyses, Keystone, S. Dakota, and Panasqueira, Portugal
- MUSCOVITE. Hawthorne and Cerny, *Mineral. Assoc. Canada Short Course* no. 8, 63-98 (1982). Review of micas in granite pegmatites.
- MUSCOVITE. Heinrich, *Contrib. Mineral. Petrol.* 81, 30-38 (1982). Microprobe analyses (2) from central Alps.
- MUSCOVITE. Helper, (*Geol. Soc. Am. Mem.* 164, 125-141) (1986) Microprobe analyses (4) from blueschists, Klamath Mts., Cal. and Ore. crossite, actinolite, ferrobarrrosite, riebeckite (phengite)
- MUSCOVITE. Herbert, *Geotekton. Forsch.* no. 65, 1-77 (1983). Microprobe analyses (11) from crystalline rocks, Ecuador.
- MUSCOVITE. Horshek, *Contrib. Mineral. Petrol.* 87, 129-137 (1984). Microprobe analyses (7) from metamorphic rocks, Tyrol.
- MUSCOVITE. Ito, (*Prelim. Rep. Afr. Stud. (Nagoya Univ.)* 6, 139-143 (1981)(English)) *Chem. Abstr.* 98, no. 26, 219051 (1983). Microprobe analyses of chromian muscovite, Kenya.

- MUSCOVITE. Karabinos, (Contrib. Mineral. Petrol. 90, 262-275) (1985).
Microprobe analysis (1) from schist near Jamaica, Vt.
- MUSCOVITE. Katalenets and Pirogova, (Mineral. Sb. (Lvov) 37, 25-33) (1983),
Chem. Abstr. 102, no. 4, 28642 (1985). Analyses (not in abstr.) from
quartzites, Ukraine.
- MUSCOVITE. Kawachi et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe
analyses (7) from piemontite schist, W. Otago, New Zealand.
- MUSCOVITE. Kerrick et al., (Contrib. Mineral. Petrol. 95, 481-498) (1987)
Microprobe analyses (7) from corundum-muscovite rocks, Zimbabwe
- MUSCOVITE. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng)
Microprobe analyses (2) from gneisses, Spitsbergen
- MUSCOVITE. Kozyreva and Babaeva, (Geol. Geofiz., no. 3, 140-145) (1984), Chem.
Abstr. 101, no. 6, 41209 (1984). Analyses, unit cells, infra-red from
Udsk-Maisk region, USSR.
- MUSCOVITE. Kozyreva et al., (Zap. Vses. Mineral. O-va. 113, 113-120) (1984),
Chem. Abstr. 100, no. 20, 159642 (1984). Relation of composition to
infra-red spectrum with composition of phengite (30 analyses)
- MUSCOVITE. Lambert and Mackinnon, (J. Geophys. Res., 89, [Sect.] B, 685-699)
(1984), Chem. Abstr. 101, no. 2, 10119 (1984). Effect of high-pressure
shock in gneiss.
- MUSCOVITE. Lan, Proc. Geol. Soc. China 25, 38-52 (1982)(English)(G(611)G292p).
Microprobe analyses (3) from gneiss, NE Taiwan.
- MUSCOVITE. Lardeaux et al., (Bull. Mineral. 106, 673-689) (1983), Chem.
Abstr. 100, no. 16, 124274 (1984). Analyses (not in Abstr.) of phengites,
western Alps, Italy.
- MUSCOVITE. Larsons, Econ. Geol. 79, 1880-1896 (1984). Microprobe analyses (1)
from Bruce Cu-Zn ores, Arizona.
- MUSCOVITE. Latour and Burnett, (Bull. Geol. Soc. Am. 98, 356-363) (1987)
Microprobe analyses (7) from Idaho batholith
- MUSCOVITE. Lefebvre, (Ann. Rappt. Museum Roy. Belg. for 1983-1984, 12-151)
(1985) (French) G(593) T27r Analyses (1) from Zaire
- MUSCOVITE. Leroy, Miner. Deposita 19, 26-35 (1984)(French). Analyses (2) from U
deposit, Bernardan, France.
- MUSCOVITE. Mansy, (Soc. Geol. Nord Publ. 13(1), 291-344) (1986) (French)
Microprobe analyses (45) from Omineca Mts., Brit. Columbia G(540)qn77p
- MUSCOVITE. Mets, (Mineral. Kriter. Kompleksn. Otsenki Miner. Syr'ya Kol'sk.
Poluostrova, 79-87 (1982)) Chem. Abstr. 98, no. 26, 219088 (1983).
Analyses (not in abstr.) from granite pegmatites, Kola Peninsula.
- MUSCOVITE. Monier et al., Bull. Mineral. 107, 55-68 (1984). Microprobe
analyses (7) from Millevachas, France.
- MUSCOVITE. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (3) from
blue schist, NE Diablo Range, Calif.
- MUSCOVITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (5)
from manganiferous cherts, Alps phengites
- MUSCOVITE. Mukhamet, Goleev, et al., (Dokl. Akad. Nauk SSSR 278, no. 2,
449-452) (1984), Chem. Abstr. 102, no. 4, 28621 (1985). Stability at 300
degrees of 1M and 2M polytypes.
- MUSCOVITE. Munha, Comun. Serv. Geol. Port. 69, 3-35 (1983)(English).
Microprobe analyses (3) from Iberian pyrite belt.
- MUSCOVITE. Naef and Stern, (Contrib. Mineral. Petrol. 79, 355-360 (1982))
Mineral. Abstr. 34, 168 (1983). Relations between b and c parameters and
Chem. composition are complex and correlations are unsatisfactory.

- MUSCOVITE. Neiva, (Bol. Mus. Lab. Mineral. Geol., Fac. Cienc. Univ. Lisboa, 16, 179-195 (1980)(Pub. 1981)(English)) Chem. Abstr. 98, no. 12, 93003 (1983). Analysis from granite porphyry. Trace elements.
- MUSCOVITE. Odikadze, (Geokhimiia, no. 1, 147-152 (1983)(Russian)) Chem. Abstr. 98, no. 14, 110835 (1983). Rare elements from pegmatites, Sahara.
- MUSCOVITE. Offler and Prendergast, (Mineral. Mag. 49, 357-364) (1985). b_0 for white mica of metamorphic rocks, NW Wales.
- MUSCOVITE. Osakabe and Suzuki, J. Sci. Hiroshumi Univ., S.C., 8, 31-42 (1983)(English)(G(620)H61j). Analyses (5) from gneiss, Hida belt, central Japan.
- MUSCOVITE. Panova and Vashchenok, (Vestn. Leningr. Univ., Geol., Geogr., no. 1, 29-33) (1984), Chem. Abstr. 101, no. 8, 57854 (1984). Analyses (not in Abstr.), x-ray, DTA, optics from Kazakhstan.
- MUSCOVITE. Parry et al., Econ. Geol. 79, 72-86 (1984). Microprobe analyses (98) from porphyry copper deposits.
- MUSCOVITE. Pe-piper, Neues Jahrb. Mineral., Abh. 149, 163-178 (1984)(English). Microprobe analyses (4) from volcanic rocks, Greece.
- MUSCOVITE. Phillips, (Jour. Metamorph. Geol. 5, 307-322) (1987) Microprobe analyses (1) from Witwatersrand gold fields
- MUSCOVITE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (3) from Western Alps, Italy
- MUSCOVITE. Popov, Mineralogicheskie Isslesovaniia Gidrotermalitor Urala (Mineral. Stud. Hydrotherm. Urals), 61-70 (1980). Analyses (6) from Badzhala, Urals.
- MUSCOVITE. Povondra et al., (N. Jb. Miner. Mh., 125-136) (1984)(Eng.). Analysis from Gammelmorskarr, Finland.
- MUSCOVITE. Rey and Kubler, Schweiz. Mineral. Petrogr. Mitt. 63, 13-36 (1983)(French). Analyses (10), x-ray intensities of oriented sections as a means of identification. (6 phengites)
- MUSCOVITE. Reymer et al., Contrib. Mineral. Petrol. 85, 336-345 (1984). Microprobe analyses (4) from Wadi Kid, Sinai.
- MUSCOVITE. Rosenberg et al., Clays Clay Miner. 32, 480-482 (1984), two analyses. Immersion in solution at 25 degrees for 2 years produced no significant changes.
- MUSCOVITE. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Priir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from Kamchatka Pt deposit.
- MUSCOVITE. Rumyantseva et al., (Zap. Vses. Mineral. O-va. 113, 68-75) (1984), Mineral. Abstr. 36, 83 (1985). Analysis, optics from Karelia of phengite with Cr_2O_3 17.93 percent.
- MUSCOVITE. Sato et al., (Mineral. J. Japan 10, 222-232) (1981)(English), Mineral. Abstr. 35, 136 (1984). Structure refinement by pattern fitting.
- MUSCOVITE. Schomburg, (Z. Geol. Wiss. 12, 457-468) (1984) (Ger), Chem. Abstr. 101, no. 18, 155038 (1984). DTA of muscovite-montmorillonite interlayered minerals.
- MUSCOVITE. Scott and Middleton, Nor. Geol. Tidsskr. 389, 1-26 (1983)(English) (581)Bu. Microprobe analysis (1) from camptonite sills, Oslo region.
- MUSCOVITE. Selverstone and Munoz, (Contrib. Mineral. Petrol. 96, 426-440) (1987) Microprobe analyses (3) from Eastern Alps
- MUSCOVITE. Sharma and Windley, Mineral. Mag. 48, 195-209 (1984). Microprobe analyses (2) from Archean gneiss, N.W. India (2 fuchsites).
- MUSCOVITE. Shvedenkov et al., (Geol i Geofiz. 10, 91-96) (1982), Mineral. Abstr. 35, 45 (1984). Stability in system muscovite + quartz = K-feldspar + andalusite and paragonite = albite + corundum.

- MUSCOVITE. Shvedenkov et al., (Geol. Geofiz., no. 1, 80-86 (1983)) Chem. Abstr. 98, no. 16, 139422 (1983). Stability in system muscovite - paragonite - K-feldspar - H₂O - CO₂.
- MUSCOVITE. Sills, (Lithos 16, 112-124) (1983)(Eng.). Microprobe analysis (1) from gneisses, N.W. Scotland.
- MUSCOVITE. Sorensen, (Geol. Soc. Am. Mem. 164, 59-75) (1986) Microprobe analyses (14) from Catalina schist, Calif.
- MUSCOVITE. Steltenpohl and Bartley, (Contrib. Mineral. Petrol. 96, 93-103) (1987) Microprobe analyses (12) from Caledonian, N. Norway
- MUSCOVITE. Suzuki and Osakabe (Mem. Geol. Soc. Japan 21, 37-49) (1982)(Eng.). (G(620)G29m). Analysis (1) from Hida belt, Japan.
- MUSCOVITE. Thompson and Leclair, (Jour. Metamorph. Geol. 5, 415-436) (1987) Microprobe analyses (4), Grenville Province, Canada
- MUSCOVITE. Trzcienski et al., Contrib. Mineral. Petrol. 85, 311-320 (1984). Microprobe analyses (2) from Bathurst, New Brunswick.
- MUSCOVITE. Tyler and Ashworth, Contrib. Mineral. Petrol. 81, 18-29 (1982). Microprobe analyses (16) from Strontian area, Scotland.
- MUSCOVITE. Voncken et al., (Am. Mineral. 72, 551-554) (1987) Hydrothermal synthesis of Rb analogue, 2M₁, a 5.215, b 9.059, c 20.59 Å, beta 96.540 deg., spacegroup probably C2/c, G calcd. 3.06
- MUSCOVITE. Wang and Li, (Kexue Tongbao 27, 1445-1448 (1982)(Chinese)) Chem. Abstr. 98, no. 16, 129371 (1983). Analysis of 3T polytype, DTA, infra-red spectra.
- MUSCOVITE. Wirth, (J. Mater. Sci. Lett. 4(3), 327-330) (1985), Chem. Abstr. 102, no. 26, 223556 (1985). T.E.M. study of dehydration of phengite during electron bombardment.
- MUSCOVITE. Wirth, (Neues Jahrbuch Mineral., Abh. 152, 101-112) (1985)(Eng.), Chem. Abstr. 103, no. 8, 56933 (1985). Dehydration of phengite, Traversella, Italy.
- MUSCOVITE. Wybrecht et al., (Mineral. Mag. 49, 401-411) (1985). Chemical evolution from diagenesis to low-grade metamorphism, Morocco.
- MUSCOVITE. Yau et al., Contrib. Mineral. Petrol. 88, 299-306 (1984). Probe analysis, Franklin, N.J.
- MUSCOVITES. Klemd and Hallbauer, (Mineral. Deposita 22, 227-235) (1987) Microprobe analyses (6) from altered Archean granites, S. Africa
- MUSCOVITES. Rusunova and Rusunov, (Gold and silver deposits, "Nauka", Moscow, 41-59) (1986) (Russian) 431 M565 Microprobe analyses (49) of sericites from Au- and Ag-deposits
- MUSHISTONITE. Marshukova et al., (Zap. Vses. Mineral. O-va. 113, 612-617) (1984), Chem. Abstr. 102, no. 8, 65029 (1985). New mineral of schonfliesite group, (Cu,Zn,Fe) Sn(OH)₆. Cubic, a 7.735 Å. Analysis, reflectance, x-ray data.
- MCGUINNESSITE. Reed, (Mineral. Mag. 48, 457-459) (1984). Microprobe analyses, Nelson, New Zealand, a 9.384, b 12.047, c 3.374 Å, beta 93.27 degrees.
- NABAPHITE. Baturin et al., (Dokl. Akad. Nauk SSSR 266, 624-627 (1982)) Chem. Abstr. 98, no. 2, 10148 (1983). Structure. Cubic, P2₃, a 10.7116 Å, Z=4, G calcd 2.24.
- NABAPHITE. Khomyakov et al., (Dokl. Akad. Nauk SSSR 266, 707-710 (1982)) Am. Mineral. 68, 643-644 (1983). Chem. Abstr. 98, no. 4, 19592 (1983). Abstract of original description.
- NAGASHIMALITE. Abstract in Mineral. Abstr. 35, 88 (1984). Abstract of original description.

- NAGASHIMALITE. Matsubara, (Mineral. J. Tokyo 10, 131-142) (1980), Mineral. Abstr. 35, 16 (1984). Structure. Orth., Pmmm, a 13.937, b 12.122, c 7.116A, Z=2.
- NAGYAGITE. Paar and Chen, (Karinthin 87, 371-381 (1982)) Chem. Abstr. 98, no. 12, 129419 (1983). Microprobe analysis from Schellgaden Au deposit, Austria.
- NAGYAGITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- NAHCOLITE. Harvie et al., Geochim. Cosmochim. Acta 48, 723-751 (1984). Calculated solubilities in system Na-K-Mg-Ca-H-Cl-SO₄-OH-HCO₃-CO₂-H₂O at 25 degrees C.
- NAHCOLITE. Monnin and Schott, Geochim. Cosmochim. Acta 48, 571-581 (1984). Calculation of solubility product.
- NAHPOITE. Khomyakov et al., (Dokl. Akad. Nauk SSSR 264, 191-194 (1982)) Mineral. Abstr. 34, 72 (1983). Abstract of original description.
- NAKAURIITE. Braithwaite and Pritchard, Mineral. Mag. 47, 84-85 (1983). Occurrence, Shetland Islands, infra-red data.
- NAMUWITE. Abstr. in Bull. Mineral. 106, 632 (1983). Abstract of original description.
- NAMUWITE. Bevins et al., (Mineral. Mag. 45, 51-54 (1981)) Am. Mineral. 68, 281 (1983). Abstract of original description.
- NARSARSUKITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (2) from Werner Bjerge complex, Greenland.
- NATANITE. Chistyakova and Nechelyustov, (Mineral. Zh. 7(4), 39-48) (1985) (Russian) Microprobe analyses (14) Effect of leaching with HCl
- NATRITE. Khomyakov, (Zap. Vses. Mineral. O-va. 111, 220-225 (1982)) Am. Mineral. 68, 281-282 (1983). Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- NATROALUNITE. Aoki, (Sci. Rep. Hirosaki Univ. - 30, 132-141) (1983)(Japanese), Chem. Abstr. 100, no. 24., 195209 (1984). Analyses (not in abstr.) from Osorezan geothermal area, Japan.
- NATROALUNITE. Graham and Robinson, (Geochem. Journal (Japan) 20, 249-253) (1986) (Eng) Analyses (2), X-ray data from Ruapahu volcano, New Zealand
- NATROBISTANTITE. Abstract in Am. Mineral. 69, 407-408 (1984). Abstract of original description.
- NATROBISTANTITE. Abstract in Mineral. Abstr. 35, 193 (1984). Abstract of original description.
- NATRODUFRENITE. Fontan et al., (Bull. Mineral. 105, 321-326 (1982)) Mineral. Abstr. 34, 184-185 (1983). Chem. Abstr. 98, no. 10, 75507 (1983). Abstract of original description.
- NATROJAROSITE. Arana et al., (Bol. Soc. Espanola Mineral. 8, 117-123) (1985) (Spanish), Mineral. Abstr. 38, 87M/2509 (1985) Synthesis DTA X-ray data
- NATROJAROSITE. Jambor and Dutrizac, Can. Mineral. 21, 101-113 (1983). Probe analysis, Tintic mine, Utah.
- NATROJAROSITE. Lopez Galindo et al., (Bol. Soc. Espanola Mineral. 7, 69-79) (1983), Mineral. Abstr. 36, no. 2, 205 (1985). Analysis from Andalusia, Spain, DTA, infra-red data. Modification of structure when heated.
- NATROLITE. Alberti and Vezzalini, (Neues Jahrb. Mineral., Monatsh., no. 3, 135-144 (1983)(English)) Chem. Abstr. 98, no. 16, 129407 (1983). Mineral. Abstr. 34, 398 (1983). Study of dehydration to "metanatroilite," monoclinic, a 16.01, b 16.73; c 6.40A, gamma 90 deg.

- NATROLITE. Hesse, (Z. Kristallogr. 163, 69-74) (1983), Mineral. Abstr. 35, 137 (1984). Structure of partially disordered. Fdd2, a 18.319, b 16.595, c 6.597 A.
- NATROLITE. Jie and Jiang, (Kexue Tongbao 28, 162-165 (1983)) Chem. Abstr. 98, no. 20, 164088 (1983). DTA.
- NATROLITE. Joshi and Bhoskar, (Cryst. Res. Technol. 18, 213-218 (1983)) Chem. Abstr. 98, no. 18, 146708 (1983). Photoluminescence.
- NATROLITE. Kirfel et al., (Zeolites 4, 140-146) (1984), Chem. Abstr. 100, no. 24., 195212 (1984). Refinement of structure. Orth., Fddz, a 18.285, 18296, b 18.630, 18.647, c 6.585, 6.585 A.
- NATROLITE. Pechar et al., (Zeolites 2, no. 4, 257-259 (1982)) Chem. Abstr. 98, no. 6, 37781 (1983). Photoelectron spectra.
- NATROLITE. Pechar, (Acta Mont. 65, 101-127) (1984)(Czech), Chem. Abstr. 102, no. 2, 9833 (1984). X-ray, DTA, infra-red study of thermal behavior.
- NATROLITE. Pechar; et al., (Z. Kristallogr. 164, 19-24) (1983)(English), Chem. Abstr. 100, no. 12, 94867 (1984). Structure by neutron diffraction. Orth., Fdd2, a 18.326, b 18.652, c 6.601 A, Z=8.
- NATROLITE. Qi and Jiang, (Guisuanyan Xuebao 10, 478-485 (1982)(Chinese)) Chem. Abstr. 98, no. 14, 110797 (1983). Analyses and optics from China, a 18.254, b 18.594, c 6.571A.
- NATROLITE. Qi and Jiang, (Kexue Tongbao 29, 356-360) (1984)(English), Chem. Abstr. 101, no. 8, 57829 (1984). Analyses, hydrothermal stability.
- NATROLITE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (1), St. Paul's rocks, Atlantic Ocean.
- NATROLITE. Rykl and Pecher, (Acta. Mont. 63, 87-100) (1983)(English), Chem. Abstr. 100, no. 8, 53936 (1984). Thermal decomposition. Inverts to paranatrolite at > 360 degrees.
- NATROLITE. Ulrych and Rychly (Acta Univ. Carol., Geol. 1-2, 33-52) (1983)(Eng.). Chem. Abstr. 102, no. 26, 223552 (1985), Analyses from Bohemia, optics.
- NATROMONTEBRASITE. Stone and George, Proc. Ussher Soc. 5, 428-431 (1983). Analysis, x-ray data, Megilliger Rocks, Cornwall.
- NATRON. Harvie, et al., Geochim. Cosmochim. Acta 48, 723-751 (1984). Calculated solubilities in system Na-K-Mg-Ca-H-Cl-SO₄-OH-HCO₃-CO₂-H₂O at 25 degrees C.
- NATRON. Monnin and Schott, Geochim. Cosmochim. Acta 48, 571-581 (1984). Calculation of solubility product.
- NATROPHITE. Baturin, et al., (Sov. Phys. 26, 1023-1026) (1983), Mineral. Abstr. 34, 399 (1983). Structure P2, 3, a 10.559 A., Z=4, G 2.05.
- NATROSIDERITE. Gao and Zhang, (Sci. Geol. Sin., no. 3, 298-303 (1982)) Mineral. Abstr. 34, 133 (1983). Calculated free energy of formation, -556.5 + 4 kcal/mole, = Aegirine (a pyroxene).
- NATROSILITE. Khomyakov, (Nov. Dannye Miner. 30, 168-173 (1982)) Chem. Abstr. 98, no. 26, 219073 (1983). Occurrence in Khibiny massif.
- NATROSILITE. Khomyakov, Nov. Dannye Mineral. 30, 168-173 (1982). Occurrence in Kola Peninsula. X-ray data.
- NAUMANNITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analyses (7) from gold-silver deposits
- NAUMANNITE. Leonard and Christian, (Mineral. Petrol. 36, 151-168) (1987) (Eng) Analysis from Thunder Mt. complex, Idaho
- NAUMANNITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg.
- NAUMANNITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.

- NAUMANNITE. Sugaki et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe analysis from Hokkaido.
- NAUMANNITE. Takeuchi and Shikazono (Min. Geol. Japan 34(3), 187-195) (1984)(Eng.). (G(620)M66). Microprobe analyses (2) from Kagoshima Pref. Japan.
- NEFEDOVITE. Abstract in Am. Mineral. 69, 812-813 (1984). Abstract of original description.
- NEFEDOVITE. Abstract in Mineral. Abstr. 35, 193-194 (1984). Abstract of original description.
- NEFEDOVITE. Pobedimskaya, et al., (Acta Crystallogr., Sect. A, A40, 250) (1984)(Abstr.). Structure. Tetrag., I4, a 11.644, c 5.396 A, Z=2. $\text{Na}_5\text{Ca}_4(\text{PO}_4)_4\text{F}$.
- NEKOITE. Kovalenker, et al., Zap. Vses. Mineral. O-va. 113, 35-43 (1984)(Russian). Occurrence in Kochbulah deposit, E. Uzbekistan, analyses (16). X-ray data.
- NEKRASOVITE. Kovalenker and Geinke, Izv. Akad. Nauk SSSR, Ser. Geol., no. 5, 91-104 (1984)(Russian). Microprobe analyses (7) from Kuramin region, Tien-Shan. Reflectance
- NEKRASOVITE. Kovalenker et al. (Mineral. Zh. 6, no. 2, 88-97) (1984)(Russ.). New mineral $(\text{Cu}, \text{Fe})_{26}(\text{V}, \text{Fe}_2(\text{Sn}, \text{Sb}, \text{As})_6\text{S}_{32})$, cubic, P43n, a 10.73A. Analyses, optics, x-ray data. Also analyses of Sb-analogue.
- NEKRASOVITE. Kovalenker et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M 565 Microprobe analyses (5) from Bulgaria
- NEKRASOVITE. Kovalenker et al., Abstract in Am. Mineral. 70, 437 (1985). Abstract of original description.
- NEKRASOVITE. Kovalenker, et al., Abstract in Mineral. Abstr. 36, 93 (1985). Abstract of original description.
- NELENITE. Abstract in Am. Mineral. 70, 874-875 (1985). Abstract of original description.
- NELENITE. Dunn and Peacor (Mineral. Mag. 48, 271-275) (1984), Chem. Abstr. 100, no. 24, 195199 (1984). New mineral from Franklin, $(\text{Mn}, \text{Fe}^{+2})_{16}\text{Si}_{12}\text{O}_{30}(\text{OH})_{17}$. Analysis, optics, X-ray data, G 346, C2/m, a 23.240, b 13.418, c ;7.382 A, beta 105.21 degrees.
- NELTNERITE. Baudracco-Gritti et al., (Bull. Mineral. 105, 161-165 (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- NEOTOCITE. Eggleton et al., (Clay Miner. 18, 21-31 (1983)) Chem. Abstr. 98, no. 24, 201492 (1983). Analyses, X-ray, Mossbauer indicate amorphous or gel structure in series hisingerite - sturtite - neotocite.
- NEOTOCITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (1) from manganiferous cherts, Alps
- NEPHELINE. Allan and Carmichael, Contrib. Mineral. Petrol. 88, 203-216 (1984). Microprobe analyses (3) from lavas, Colima, Mexico.
- NEPHELINE. Andreeva and Troneva, (Rock-forming minerals of magmatic rocks, Nauka, 148-164) (1986) (Russian) [170(570)Os5] Analysis (17) from alkalic rocks, Vitim
- NEPHELINE. Boctor and Yodu, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe analyses (1) from melilite rocks, S. Africa
- NEPHELINE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (3) from Werner Bjerger complex, Greenland.
- NEPHELINE. Clarke, et al., Contrib. Mineral. Petrol 83, 117-127 (1983). Microprobe analysis from W. Greenland.
- NEPHELINE. Cruriscchio, et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983)(English). Microprobe analyses (10) from alkalic rocks, Kenya.

- NEPHELINE. Dia et al., (Jour. African Earth Sci. 6, 257-268) (1987) (French) Analyses (1) from basalts and basanites Senegal
- NEPHELINE. Donaldson et al., (Neues Jahrbuch Miner. Abh. 156, 247-279) (1987) (Eng) Microprobe analyses (5) from silicate lavas, Oldoinyo Lengai, Tanzania
- NEPHELINE. Foley, (Lithos 17, 127-137) (1984). Microprobe analyses (3) from lamprophyres, Labrador)
- NEPHELINE. Hashimoto and Grossman, (Geochim. Cosmchim. Acta 51, 1685-1704) (1987) Microprobe analyses (2) from Al-rich inclusions, Allende meteorite
- NEPHELINE. Henderson and Gibb, (Trans. Roy. Soc. Edinburgh 77, 325-347) (1987) Microprobe analyses (3) from Lugar sill, SW Scotland
- NEPHELINE. Hirai and Arai, (Chishitsugaku Zasshi 89, 531-534) (1983)(English), Chem. Abstr. 100, no. 18, 142386 (1984). Analyses (3) (not in abstr.) from S.W. Japan.
- NEPHELINE. Kampunzu et al., (Bull. Volcanol. 47, 79-103) (1984)(French). Microprobe analyses (2) from Nyamulagira volcano.
- NEPHELINE. Kogarko et al., (Geokhimiia, 472-493) (1984), Chem. Abstr. 100, no. 26, 213138 (1984). Stability in system nepheline-diopside-apatite.
- NEPHELINE. Kornacki and Word, Geochim. Cosmochim. Acta 48, 1663-1676 (1984). Microprobe analyses (3) from Allende meteorite.
- NEPHELINE. Melchior, (Rep. - Geol. Surv. Greenl., no. 103, 31-37 (1981)(English)) Chem. Abstr. 98, no. 16, 129430 (1983). Analyses (1) from Ilimaussaq.
- NEPHELINE. Mitchell and Platt, (Carbonatite Symp. Brazil 176, 93-104) (1978)(Eng.). (170QIN8PC). Analyses (4), Poohbah Lake, Ont. malignite.
- NEPHELINE. Nyambok and Lindquist, Uppsala Univ. Mineral. Petrol. Res. Rept. no. 9 (1978)(English) (G(583)QVP6a). Microprobe analyses (20) from alkalic rocks, Jombo Hill, Kenya.
- NEPHELINE. Pouclet et al., Bull. Mineral. 106, 607-622 (1983). Microprobe analyses (4) from alkalic lavas, Virunga, E. Africa.
- NEPHELINE. Rosi and Santacroce, J. Volcanol. Geothermal Res. 17,, 249-271 (1983)(English). Microprobe analyses (2) from AD 472 eruption of Vesuvius.
- NEPHELINE. Schafer, Aufschluss 34, 503-504 (1983). Twins from Eifel, Germany.
- NEPHELINE. Smyslov and Sosedko, (Zap. Vses. Mineral. O-va. 114, 86-89) (1985)(Russ.). Microprobe analyses (2) from syenite, Baikal.
- NEPHELINE. Stebbins et al., (Phys. Chem. Minerals 13, 371-381) (1986), Mineral. Abstr. 38, 87M/2119 (1987) Nuclear magnetic resonance study of defects in
- NEPHELINE. Veksler et al., (Geokhimmia 5, 599-607) (1985) (Russ), Chem. Abstr. 103, no. 6, 40003 (1985). Stability in system loparite-nepheline. Not a binary system.
- NEPHELINE. Viereck, (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (3) from Eifel, Germany.
- NEPHELINE. Volynets and Anan'ev, (Dokl. Akad. Nauk SSSR 275, 955-958) (1984), Chem. Abstr. 101, no. 6, 41198 (1984). Microprobe analysis from basalt, Kamchatka.
- NEPHELINE. Vrubleoskaya, (Deposited Doc VINITI 6538-82, 1-12) (1982), Chem. Abstr. 100, no. 12, 88937 (1984). Temp. of formation in the Mukhal'sk deposit.
- NEPHELINE. Wilkinson and Stolz, Contrib. Mineral. Petrol. 83, 363-374 (1983). Microprobe analyses (2) from Oahu, Hawaii.
- NEPHELINE. Worner, (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (4) and trace elements. Laacher See, Germany.
- NEPHELINE. Yamada et al., Mineral. Mag. 47, 177-181 (1983). High-pressure modification is orth., Pbrm, a 10.1546, b 8.6642, c 2.7385A.
- NEPOUITE. Manceau et al., (Springer Proc. Phys. 2, 358-361) (1984)(Eng.), Chem. Abstr. 103, no. 4, 25071 (1985). Cation ordering (Ni-Mg) by x-ray and optical spectroscopy.

- NEPTUNITE. Slansky and Glen, (Tschermarks Mineral. Petrogr. Mitt. 30, 237-247 (1983)(English)) Chem. Abstr. 98, no. 16, 139395 (1983). Analysis from NS Wales, a 16.43, b 12.51, c 10.00A, beta 115.32°. Optics.
- NESQUEHONITE. Kirchner and Simonsberger, (Karinthin 87, 395-400 (1982)) Chem. Abstr. 98, no. 12, 129420 (1983). Occurrence at Salzburg, Austria. X-ray data, optics.
- NEVSKITE. Abstract in Am. Mineral. 70, 875 (1985). Abstract of original description.
- NEVSKITE. Nechelyustov et al., Zap. Vses. Mineral. O-va. 113, 351-355 (1984)(Russian). New mineral, Bi(Se,S) from Nevskii deposit, N.E. USSR. Analyses (4), optics, x-ray data. Hex., a 4.197, c 22.80 A, Z=6, G. calcd. 7.85.
- NEWBERYITE. Abbona and Rinaud, (Jour. Crystal Growth 71, 673-681) (1985), Mineral. Abstr. 38, 87M/2526 (1987) Growth and twinning of crystals
- NEWBERYITE. Abbona et al., (J. Cryst. Growth 57, 6-14) (1982), Mineral. Abstr. 35, 19 (1984). Crystallization from solution at 25 degrees C.
- NEWBERYITE. Bartl et al, Tschermarks Mineral. Petrogr. Mitt. 32, 187-194 (1983)(English). Neutron diffraction study of structure.
- NEWBERYITE. Biostelle, (Phys. Chem. Miner. 9, 216-222) (1983), Mineral. Abstr. 35, 43 (1984). Conversion of struvite to newberyite in solution.
- NEWBERYITE. Rinaudo et al., (J. Cryst. Growth 66, 607-615) (1984). Chem. Abstr. 101, no. 12, 101396 (1984). Growth of crystals.
- NIAHITE. Abstract in Am. Mineral. 69, 408 (1984). Abstract of original description.
- NIAHITE. Bridge and Robinson, (Mineral. Mag. 47, 79-80 (1983)) Chem. Abstr. 98, no. 12, 92781 (1983). Mineral. Abstr. 34, 185 (1983). New mineral, (NH₄) (Mn⁺², Mg, Ca) PO₄ · H₂O. Orth., a 5.68, b 8.78, c 4.88A, Z=2. Analysis, optics, X-ray data from Niah cave, Sarawak, Malaysia.
- NICKEL-SKUTTERUDITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- NICKEL. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- NICKELINE. Beran and Mohsenzadeh, (Tschermarks Mineral. Petrogr. Mitt. 30, 267-275 (1983)(English)) Chem. Abstr. 98, no. 16, 129396 (1983). Optics.
- NICKELINE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- NICKELINE. Bukovshin and Chernyshov, (Zap. Vses. Mineral. O-va. 114, 335-340) (1985)(Russ.). Microprobe analyses (2) from Voronezh massif, Ni up to 7.6, Co 5:8 percent.
- NICKELINE. Choi and Imai, (Min. Geol. Jpn. 35, 1-16) (1985)(Eng.). (G(620) M66). Microprobe analyses (9) from Ulsan mine, Korea.
- NICKELINE. Harrison et al., (Rep. - Inst. Geol. Sci. (U.K.), no. 83-10, 12-16) (1983), Chem. Abstr. 100, no. 8, 54685 (1984). Microprobe analysis (not in Abstr.).
- NICKELINE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- NICKELINE. Tarkian et al., Tschermarks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (2) from Iran.
- NICKELINE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- NIGERITE. Ding et al., (Yankuang Ceshi 1, no. 1, 30-35 (1982)(Chinese)) Chem. Abstr. 98, no. 10, 75503 (1983). Occurrence of 6H-nigerite, a 5.71, c 27.72A, formula (Zn, Fe, Mg)₆ Sn₃ (Al, Fe⁺³)₂₄ O₄₈.

- NIGERITE. Ding et al., *Acta Petrol. Mineral. Anal.* 1, no. 1, 30-35 (1982).
Microprobe analyses from China. X-ray powder data for 6H-nigerite, a 5.71, c 27.72A.
- NIGERITE. Foord, *Mineral. Assoc. Canada Short Course no. 8*, 187-238 (1982).
Review of occurrence in granite pegmatites.
- NIGERITE. Tan et al., (*Acta Mineral. Sinica* 5(4), 321-326) (1985) (Chinese),
Mineral. Abstr. 38, 87M/3115 (1987) Microprobe analysis with TiO₂ 6.205%,
a 5.7004, c 13.866 A, X-ray data
- NIGGLITE. Tarkian and Bernhardt, (*Tschermaks Mineral. Petrogr. Mitt.* 33,
121-129) (1984)(Eng.). Diagram for optical determination.
- NINGYOITE. Ashikhmin et al., *Mineral. Rudn. Mestorozhd.* 1983, 121-127
(Russian)(410M662). Analysis. a 6.72, b 12.08, c 6.36 A.
- NINGYOITE. Belova et al., (*Izv. Akad. Nauk SSSR, Ser. Geol.* 3, 101-109)
(1985)(Russ), *Chem. Abstr.* 103, no. 4, 25069 (1985). X-ray data show it is
hexagonal, isostructural with rhabdophane.
- NINGYOITE. Belova et al., (*Proc. 13th Meeting IMA, Varna, 1982*, 773-779) (1986)
(Russian), *Mineral. Abstr.* 38; 87M/3175 (1987) Analysis from Bulgaria gives
formula $U_x(Ca,Fe)_{2x}[P(O,OH)_4]_2 nH_2O$, $x < 1$, a 6.76, b 12.12, c 6.38 A
- NININGERITE. Fleet and MacRae, (*Geochim. Cosmochim. Acta* 51, 1511-1521) (1987)
Formation by reaction of S or sulfide with olivine
- NININGERITE. Grossman et al., (*Geochim. Cosmochim. Acta* 49, 1781-1795) (1985).
Microprobe analyses (7) from Qingzhen chondrite.
- NININGERITE. McCannon et al., *Phys. Chem. Miner.* 11, 182-193 (1984).
Stability in system FeS-MnS.
- NININGERITE. Osborne and Fleet, (*Phys. Chem. Miner.* 10, 245-249) (1984), *Chem.*
Abstr. 101, no. 6, 41217 (1984). Mossbauer study.
- NININGERITE. Rubin and Keil, *Earth Planet. Sci. Lett.* 62, 118-131 (1983).
Microprobe analyses (8) of Abee chondrite.
- NININGERITE. Rubin, *Earth Planet. Sci. Lett.* 64, 201-212 (1983). Microprobe
analysis (av.) from Adhi Krot meteorite.
- NISBITE. Borishenskaya and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982).
Reflectance and hardness.
- NISBITE. Zakrzewski, (*Neues Jahrb. Mineral., Monatsh.*, 145-154) (1984)(Eng.).
Microprobe analyses (3) of Co analogue of nisbite (unnamed) from Gotberg mine,
Sweden.
- NISSONITE. Bayliss, (*Powder Diffraction* 1(4), 331-333) (1986) X-ray powder data
- NITER. Carling, (*Thermochim. Acta* 60, 265-275 (1983)) *Chem. Abstr.* 98, no.
14, 114740 (1983). Heat capacity 350-800 K. Transition at 406 K, m.p. 612
K. Entropies.
- NITER. Hill, (*Natl. Speleological Soc. Bull.* 43, 127-131 (1981)) *Mineral.*
Abstr. 34, 183 (1983). Occurrence in caves, S.W. USA.
- NITRATITE. Carling, (*Thermochim. Acta* 60, 265-275 (1983)) *Chem. Abstr.* 98, no.
14, 114740 (1983). Heat capacity 350-800 K. Transition at 550 K, m.p. 583
K. Entropies.
- NITRATITE. Hill, (*Natl. Speleological Soc. Bull.* 43, 127-131 (1981)) *Mineral.*
Abstr. 34, 183 (1983). Occurrence in caves, S.W. USA.
- NITRATITE. Tungatt and Humphreys, (*Strength Met. Alloys, Proc. Int. Conf.*,
6th, 2, 747-752 (1982)(Pub. 1983)) *Chem. Abstr.* 98, no. 12, 92818 (1983).
Deformation at 20-300°.
- NITROBARITE. Nowotny and Heger, (*Acta Crystallogr., Sect. C*, 952-956) (1983),
Mineral. Abstr. 35, 20 (1984). Synthetic crystals are cubic, Pa3, a
8.1184A, Z=4.
- NONTRONITE. Jakobsson and Moore, (*Bull. Geol. Soc. Am.* 97, 648-659) (1986)
Microprobe analyses (2) from Surtsey volcano, Iceland

- NONTRONITE. Johnson and Cardile, (Clays Clay Miner. 33, 21-30) (1985), Chem. Abstr. 102, no. 14, 116758 (1985). Mossbauer study. Effect of interlayer cations.
- NONTRONITE. Murnane and Clague, Earth Planet. Sci. Lett. 65, 343-352 (1983). Analyses (5) and trace elements from Juan de Fuca Ridge.
- NONTRONITE. Tsipurskii and Drits, (Mineral. Zh. 6, no. 1, 3-16) (1984), Chem. Abstr. 101, no. 2, 10122 (1984). Electron diffraction study of octahedral cation distribution.
- NONTRONITE. Van Wonerghem et al., (J. Mater. Sci. Lett. 3, 1080-1082) (1984), Chem. Abstr. 102, no. 10, 81835 (1985). Mossbauer spectra of heated nontronite, Monito, Wash.
- NORDSTRANDITE. Alker et al., (Mitt.-bl. - Abt. Miner. Landesmus. Joanneum 49, 1-13) (1982). G(533)G78 mb. Occurrence in Styria. X-ray data.
- NORDSTRANDITE. Hemingway, (Adv. Phys. Geochem. 2, 285-316 (1982)) Mineral. Abstr. 34, 136 (1983). Free energy of formation.
- NORDSTRANDITE. Pardo et al., (Bol. Soc. Espanola Mineral. 8, 83-89) (1985), Mineral. Abstr. 87M/3127 (1987) Analysis (not in abs.), X-ray, DTA from bauxite, Haro, Spain
- NOSEAN. Viereck, (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (10) from Eifel, Germany.
- NOWACKIITE. Kaplunnik and Pobedimskaya, Deposited Doc. VINITI 6348-82, 18-22 (1982)(Russian). Unit cell data.
- NSUTITE. Ostwald, Neues Jahrb. Mineral, Monatsh. 9, 385-392 (1984)(English). Microprobe analyses (10) from Australia. Remarks on genesis.
- NUKUNDAMITE. Wang, Neues Jahrb. Mineral., Monatsh., 346-352 (1984)(English). Stability in system Cu-Fe S, 110-445 degrees.
- NULLAGINITE. Abstr. in Bull. Mineral. 106, 633 (1983). Abstract of original description.
- Nd-CHURCHITE=CHURCHITE. Abstr. in Am. Mineral. 69, 211 (1984). Abstract of original description.
- OKENITE. Merlino, Am. Mineral. 68, 614-622 (1983). Structure. Triclinic, P1}, a 9.69, b 7.28, c 22.02A, alpha 92°7', beta 100.1°, gamma 110.9°.
- OLDHAMITE. Grossman et al., (Geochim. Cosmochim. Acta 49, 1781-1795) (1985). Microprobe analyses (8) from Quingzhen chondrite.
- OLDHAMITE. Okada et al., Meteoritics 16, 141-152 (1981). Analyses from Norton County achondrite. Weathering to portlandite, bassanite, vaterite.
- OLDHAMITE. Rubin, Earth Planet. Sci. Lett. 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite.
- OLDHAMITE. Woolum et al., Meteoritics 17, 299 (1982)(abstr.). Trace elements from Pena Blanca meteorite, U 1920 + 100 ppm.
- OLGITE. Sokolova et al., (Kristallografiia 29, 1079-1083) (1984), Chem. Abstr. 102, no. 2, 15543 (1985). Structure. Trigonal, P3, a 5.565, c 7.050 A, Z=1, G 3.52 calc'd.
- OLIGOCLASE. Liou et al., (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system Na₂O-CaO-MgO-Al₂O₃-SiO₂-H₂O.
- OLIVENITE. Braithwaite, Mineral. Mag. 47, 51-57 (1983). Infra-red spectroscopy.
- OLIVENITE. Chisholm, (Phys. Chem. Miner. 12, 185-190) (1985). Infra-red study. Cation segregation and O-H stretching vibration.
- OLIVINE. Adams and Bishop, (Am. Mineral. 70, 714-722) (1985). Stability in system Mg₂SiO₄-CaMgSiO₄, unit cells.

- OLIVINE. Aithen et al., *Contrib. Mineral. Petrol.* 86, 94-105 (1984).
Microprobe analyses (7) of zoned, Gorgona, Colombia.
- OLIVINE. Akaogi et al., (*Am. Mineral.* 69, 499-512) (1984). Calorimetry of Mg_2SiO_4 , thermodynamic properties.
- OLIVINE. Al-Kadier et al., (*J. Chem. Soc., Faraday Trans.* 80(6), 669-679) (1984), *Chem. Abstr.* 101, no. 16, 134277 (1984). X-ray spectroscopy of forsterite.
- OLIVINE. Amthauer, et al., (*Acta Crystallogr., Sect. A*, A40, 259) (1984) (Abstr.). Mossbauer study of fayalite.
- OLIVINE. Anderson and Suzuki, (*J. Geophys. Res., [Sect.] B*, 88(B4), 3549-3556 (1983)) *Chem. Abstr.* 98, no. 22, 182751 (1983). Anharmonicity (Grueneisen ratio, sp. heat) at high temps of fayalite and forsterite.
- OLIVINE. Andrew, J. *Metamorph. Geol.* 2, no. 2, 143-163 (1984). Microprobe analyses (5), NS Wales.
- OLIVINE. Arai and Hirai, *Annu. Rep. Inst. Geosci. Univ. Tsukuba* 9, 65-67 (1983)(English). Microprobe analyses from peridotite, S.W. Japan.
- OLIVINE. Arai and Kobayashi, (*Ann. Rep. Inst. Geosci. Univ. Tsukuba* 10, 119-122) (1984)(Eng.). Microprobe analyses from Fe-rich lherzolite, SW Japan.
- OLIVINE. Arculus et al., *Contrib. Mineral. Petrol.* 85, 85-94 (1984)(English). Electron microprobe analyses (4) from kimberlite and peridotite.
- OLIVINE. Armienti et al., *J. Volcanol. Geothermal Res.* 17, 289-311 (1983)(English). Microprobe analyses (1) from Phlegrean Fields, Italy.
- OLIVINE. Ashcroft, (*Bull. Roy. Soc. New Zealand* 23, 48-63) (1986) Analyses (3) from volcanic rocks, Northland
- OLIVINE. Barashkov et al., *Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii* (*Mineral. Ultramafic and Mafic Rocks of Yakutia*), 86-105 (1981). Analyses (2) of inclusions in olivine of kimberlites.
- OLIVINE. Barashkov et al., (*Silik Magmat. Postmagmat. Obraz. Yakutu*, 48-54) (1983), *Chem. Abstr.* 100, no. 20, 159621 (1984). Analyses (not in abstr.) from ultramafic rocks, Yakuta.
- OLIVINE. Bardintzeff, *Bull. Mineral.* 107, 41-54 (1984). Analyses (10) from soufriere, St. Vincent Island, Caribbean.
- OLIVINE. Barnes et al., *Contrib. Mineral. Petrol.* 83, 293-308 (1983). Microprobe analyses (8) from Alexo, Ont.
- OLIVINE. Basu et al., *Contrib. Mineral. Petrol.* 86, 35-44 (1984). Microprobe analyses (7) from kimberlite dikes, N.Y.
- OLIVINE. Beccaluva et al., *Contrib. Mineral. Petrol.* 85, 253-271 (1984). Microprobe analyses (1) from Vourinos ophiolite.
- OLIVINE. Beccaluva et al., *Lithos* 17, 299-316 (1984)(English). Microprobe analyses (14) from lherzolites, Italy.
- OLIVINE. Bellieni et al., *Tschermaks Mineral. Petrogr. Mitt.* 33, 25-47 (1984)(English). Microprobe analyses (1) from basalt sills, Parana basin, Brazil.
- OLIVINE. Beran and Putnis, (*Phys. Chem. Miner.* 9, 57-60 (1983)) *Chem. Abstr.* 98, no. 16, 129427 (1983). Infra-red study of position of hydroxyls in olivine.
- OLIVINE. Berg and Wiebe, (*Contrib. Mineral. Petrol.* 90, 226-235) (1985). Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- OLIVINE. Besson et al., (*J. Geophys. Res., [Sect.] B*, 87(B13), 10773-10775 (1982)) *Chem. Abstr.* 98, no. 12, 92809 (1983). Raman spectra up to 65 kb.
- OLIVINE. Biggar, *Mineral. Mag.* 47, 161-176 (1983). Crystallization in synthetic systems and in tholeiites.
- OLIVINE. Black et al., *J. Metamorph. Geol.* 1, 277-303 (1983). Microprobe analyses (1) from Field Islands, Antarctica.

- OLIVINE. Bloomer and Fisher, (Jour. Geol. 95, 469-495) (1987) Microprobe analyses (6) from Tonga Trench
- OLIVINE. Boctor and Yodu, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe analyses (10) from melilite rocks, S. Africa
- OLIVINE. Boivin, Ann. Sci. Univ. Clermont-Ferrand, no. 72, 32-40 (1982) (G540)C59up). Microprobe analyses (20) from basalts.
- OLIVINE. Boyd et al., Geochim. Cosmochim. Acta 48, 381-384 (1984). Microprobe analyses (1) from kimberlites, S. Africa.
- OLIVINE. Brearly et al., Contrib. Mineral. Petrol. 88, 53-63 (1984). Microprobe analyses (8) from ultramafic xenoliths, Summit Lake, British Columbia.
- OLIVINE. Briggs and Goles, Contrib. Mineral. Petrol. 86, 77-88 (1984). Microprobe analyses (10) of zoned crystals, New Zealand.
- OLIVINE. Brousse et al., (Geochim. Cosmochim. Acta 48, 1081-1088) (1984), Chem. Abstr. 101, no. 2, 10166 (1984). Enthalpy of formation (forsterite).
- OLIVINE. Bucher-Nurminen, J. Petrol. 23, 325-343 (1982). Microprobe analyses (3), E. Greenland.
- OLIVINE. Bukovanska et al., Meteoritics 18, 223-240 (1983). Analysis from Usti and Orlici meteorite, Czechoslovakia.
- OLIVINE. Buseck and Clark, Mineral. Mag. 48, 229-235 (1984). Microprobe analyses (17) from meteorites with up to 4.91% P_2O_5 .
- OLIVINE. Calanchi et al., (Mineral. Petrogr. Acta 27, 15-34) (1983)(Ital.). Microprobe analysis (1) from volcanic rocks, Java.
- OLIVINE. Capaldi et al., (Jour. Volcanol. Geothermal Research 31, 345-351) (1987) Microprobe analyses (2) from Jabal an Nar Volcano, Yemen Republic
- OLIVINE. Catti, (J. Phys. Chem. Solids 43, 1111-1118 (1982)) Chem. Abstr. 98, no. 20, 170709 (1983). Atomic charges fitting thermodynamics to structural properties.
- OLIVINE. Chatillon-Colinet et al., (Geochim. Cosmochim. Acta 47, 439-444 (1983)) Chem. Abstr. 98, no. 20, 164121 (1983). Calorimetric determination of enthalpy of formation (fayalite).
- OLIVINE. Chem. Acta Geol. Taiwanica 21, 33-62 (1982)(English). Microprobe analyses (6), Kuanyinshan volcano, Taiwan.
- OLIVINE. Chernosky et al., (Am. Mineral 70, 223-236) (1985). Stability in the system $MgO-SiO_2-H_2O$. (forsterite)
- OLIVINE. Cijolini and Kudo, (Contrib. Mineral. Petrol. 96, 381-390) (1987) Microprobe analyses (6) from basaltic andesites, Arenal Volcano, Costa Rica
- OLIVINE. Clayton, et al., Geochim, Cosmochim. Acta 48, 535-548 (1984). Microprobe analyses (3) from inclusions, Allende meteorite (forsterite).
- OLIVINE. Clocchiatti and Metrich, (Bull. Volcanol. 47, 909-928) (1984) (French) Microprobe analyses (4) from Mt. Etna (1892 and 1669)
- OLIVINE. Collerson, Contrib. Mineral. Petrol. 81, 126-147 (1982). Microprobe analyses (1) from granites, Labrador.
- OLIVINE. Conrad and Kay, J. Petrol. 25, 88-125 (1984). Microprobe analyses (16) from inclusions in andesites, Adak Island, Alaska.
- OLIVINE. Cruricchio et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983)(English). Microprobe analyses (18) from Alkalic rocks, Kenya.
- OLIVINE. Davidson, (Diss. Stony Brook, NY, 149 pp.) (1983). Diss. Abstr. 44B, 3689 (1984). Thermodynamic analysis.
- OLIVINE. Day et al., (Am. Mineral. 70, 237-248) (1985). Thermodynamic analysis of equil. in system $MgO-SiO_2-H_2O$.

- OLIVINE. DeFin et al., *Tschermaks Min. Pet. Mineral.* 32, 69-78 (1983)(English). Microprobe analyses (9) from syenites and gabbros, Gargano, Italy.
- OLIVINE. Debari et al., (*Jour. Geol.* 95, 329-341) (1987) Microprobe analysis (9) from Adagdak Volcano, Adak Island
- OLIVINE. Devine and Sigurdsson, *J. Volcanol. Geotherm. Res.* 16, 1-31 (1983). Microprobe analyses (2) from Soufriere, St. Vincent.
- OLIVINE. Dia et al., (*Jour. African Earth Sci.* 6, 257-268) (1987) (French) Analyses (9) from basalts and basanites Senegal
- OLIVINE. Dietrick and Arndt, (*High Pressure Research Geosci.*, 293-306, 307-319) (1982), *Mineralog. Abstr.* 34, 411 (1983). Thermal expansion - 100 to 800 degrees C, heat capacity 25-300 degrees, compression to 120 kb. at 25 degrees for Fo 84.
- OLIVINE. Du and Weidner, (*Phys. Chemistry Minerals* 13, 360-370) (1986), *Mineral. Abstr.* 38, 87M/2092 (1987) Modelling of the elastic properties of forsterite
- OLIVINE. Duda, (*Bochum Geol. Geotecon Arbert.* 16, 24-40) (1984). (G(530) q B628). Microprobe analyses (20) from W. Eifel, Germany, alkalic rocks.
- OLIVINE. Ehrenberg, *J. Petrol.* 23, 507-547 (1982). Microprobe analyses (20) from Navajo volcanic field.
- OLIVINE. Eto and Anderson, *Contrib. Mineral. Petrol.* 82, 371-388 (1983). Microprobe analyses (2) from Mid-Cagnan Rise.
- OLIVINE. Falzone and Stacey, (*Phys. Chem. Miner.* 8, 212-217 (1982)) *Mineral. Abstr.* 34, 216 (1983). Thermal expansion.
- OLIVINE. Fitzgerald and Jaques, *Meteoritics* 17, 9-26 (1982). Microprobe analyses (1) in Tibooburra carbonaceous chondrite.
- OLIVINE. Frey et al., *Contrib. Mineral. Petrol.* 88, 133-149 (1984). Microprobe analyses (3) from volcanic rocks, Laguna del Maule, Chile.
- OLIVINE. Friend and Janardhan, *Mineral. Mag.* 48, 181-193 (1984). Microprobe analyses (27) from shonkinites, Salem, India.
- OLIVINE. Frietsch, (*Geol. Foeren. Stockholm Foerh.* 106, 219-230) (1984)(Eng.). Analyses (2) from skarn Fe ores, northern Sweden.
- OLIVINE. Frost, (*J. Petrol.* 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- OLIVINE. Fujinawa, *J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 77, 419-437 (1982)(Japanese). Microprobe analyses (7) from basaltic rocks, N.E. Japan.
- OLIVINE. Furnish and Bassett, (*J. Geophys. Res.* 88B, no. 12, 1033-10341) (1983), *Chem. Abstr.* 100, no. 8, 54690 (1984). Mechanism of olivine-spinel transition in fayalite.
- OLIVINE. Gaboriand, (*Bull. Mineral.* 107, 35-39) (1984), *Chem. Abstr.* 100, no. 24., 195210 (1984). Dislocations in a natural single crystal.
- OLIVINE. Gallo et al., (*N. Jb. Miner., Mh.*, 198-210) (1984)(Eng.). Microprobe analyses (21) from alkalic rocks, Italy.
- OLIVINE. Gamble et al., (*Bull. Roy. Soc. New Zealand* 23, 344-365) (1986) Microprobe analyses (14) from volcanic rocks, Campbell Plateau
- OLIVINE. Girardeau et al., (*Contrib. Mineral. Petrol.* 90, 309-321) (1985). Microprobe analyses (2) from Xigaze ophiolite, Tibet.
- OLIVINE. Gole et al., (*Contrib. Mineral. Petrol.* 96, 151-162) (1987) Av compositions in metamorphosed komatiites, Australia
- OLIVINE. Goncharenko and Simonov, (*Dokl. Akad. Nauk SSSR* 276, 228-231) (1984), *Chem. Abstr.* 101, no. 10, 76134 (1984). Fluid inclusions in, from dunites.
- OLIVINE. Gooding et al., *Earth Planet. Sci. Lett.* 65, 209-224 (1983). Microprobe analyses (6) from meteorite chondrules.
- OLIVINE. Goodrich, (*Geochim. Cosmochim. Acta* 48, 1115-1126) (1984), *Chem. Abstr.* 101, no. 2, 10168 (1984). From native iron, Disko Island, with up to 2.7% P₂O₅.

- OLIVINE. Graham, *Meteoritics* 18, 51-61 (1983). Microprobe analyses (5) from Romero chondrite.
- OLIVINE. Graham et al., *Meteoritics* 19, 85-88 (1984). Microprobe analysis (1) from Machinga meteorite.
- OLIVINE. Grossman et al., (*Geochim. Cosmochim. Acta* 49, 1781-1795) (1985). Microprobe analyses (10) from Quingzhen chondrite.
- OLIVINE. Gurney et al., (*Kimberlites* 11B, 25-32) (1984) (190.3 D 493). Microprobe analyses (4) of inclusions in diamond, Roberts Vector mine.
- OLIVINE. Gurney et al., (*Kimberlites* 11B, 3-9) (1984) (150.3 D 493). *Chem. Abstr.* 100, no. 24., 195223 Microprobe analysis (1) of inclusions in diamonds; Botswana.
- OLIVINE. Gurney et al., (*Dev. Petrol.* 11B, 3-9, 361-393) (1984), (1984). Analyses (not in abstr. 1 of inclusions in).
- OLIVINE. Hashimoto and Grossman, (*Geochim. Cosmochim. Acta* 51, 1685-1704) (1987) Microprobe analyses (2) from Al-rich inclusions, Allende meteorite
- OLIVINE. Hatton, (*Contrib. Mineral. Petrol.* 86, 45-53) (1984), *Chem. Abstr.* 100, no. 26, 213137 (1984). Effect of T and P on the distribution of Fe and Mg between olivine, pyroxene and liquid in the Bushveld Complex.
- OLIVINE. Hatton and Von Gruenewaldt, (*Econ. Geol.* 80, 911-924) (1985). Analysis (1) from Swarthop mine, Bushveld Complex.
- OLIVINE. Hawkins and Melchior, *Earth Planet. Sci. Lett.* 66, 356-368 (1983). Microprobe analyses (12) from Foihi seamount, Hawaii.
- OLIVINE. Hayashi and Aoki, (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 80, 73-82) (1985)(Jpn.). Microprobe analyses (19) from basalts and andesites, Chokai volcano, Japan.
- OLIVINE. Hayashi et al., (*Phys. Chem. Minerals* 14, 341-344) (1987) The Neel temp. of transition of fayalite at pressures 10-16 GPa
- OLIVINE. Hearn and McGee, (*Kimberlites* 11B, 57-70) (1984) (150.3 D 493). Microprobe analyses (17) from Wilboms kimberlites, Mont.
- OLIVINE. Hekinian and Walker, (*Contrib. Mineral. Geol.* 96, 265-280) (1987) Microprobe analyses (11) from basalts, East Pacific Rise
- OLIVINE. Henderson and Gibb, (*Trans. Roy. Soc. Edinburgh* 77, 325-347) (1987) Microprobe analyses (2) from Lugar sill, SW Scotland
- OLIVINE. Hentschel, *Aufschluss* 34, 391-396 (1983). Morphology of Eifel olivine.
- OLIVINE. Hermeling and Schmalzried, *Phys. Chem. Miner.* 11, 161-166 (1984). Tracer diffusion of Fe in.
- OLIVINE. Hernandez, (*Jour. African Earth Sci.* 5, 381-399) (1986) Microprobe analyses (6) from Guilliz massif, Morocco
- OLIVINE. Hervig and Smith, *Contrib. Mineral. Petrol.* 81, 184-189 (1982). Microprobe analyses (19) from lherzolites. Distribution of Cr in.
- OLIVINE. Hildreth, *J. Volcanol. Geothermal. Res.* 18, 1-56 (1983). Microprobe analyses (1) from Valley of 10,000 Smokes, Alaska.
- OLIVINE. Hoshino and Shiida, *Rep. African Stud., Nagoya Univ.*, 6, 127-138 (1981)(English). Microprobe analysis from phonolite, Tanzania.
- OLIVINE. Hunter and Taylor, *Am. Mineral.* 69, 16-29 (1984). Microprobe analyses (5) from Kimberlite, Fayette Co., PA.
- OLIVINE. Ike et al., (*Can. Mineral.* 22, 401-409) (1984). Microprobe analyses (4) from Tibchi ring complex, Nigeria. (Fa92 to 99).
- OLIVINE. Ionov, (*Geol. Zbornik Bratislava* 37, 681-692) (1986) (Eng) Microprobe analyses (9) from peridotite xenoliths, Mongolia
- OLIVINE. Ishibashi, (*Sci. Rep. - Dep. Geol., Kyushu Univ.*, 13, 209-216 (1980)) *Mineral. Abstr.* 34, 167 (1983). Analysis (1) (not in abstr.) from Kyushu.
- OLIVINE. Ismail-Zada, (*Izv. Akad. Nauk SSSR, Ser. Geol.*, 51-56) (1984)(Russian). Microprobe analyses (10) from gabbro-troctolite, Little Caucas.

- OLIVINE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 101-110 (1981)(English). Electron probe analyses (1) from peridotite, Kenya.
- OLIVINE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 83-99 (1981)(English). Microprobe analyses (2) from kimberlite, Kenya.
- OLIVINE. Jamieson and Roeder, Am. Mineral. 69, 283-291 (1984). Distribution of Mg and Fe⁺² between olivine and spinel at 1300 degrees C.
- OLIVINE. Johnson and Essene, Contrib. Mineral. Petrol. 81, 240-251 (1982). Microprobe analyses (10) from metagabbros, Adirondacks.
- OLIVINE. Johnston and Stout, Am. Mineral. 69, 57-68 (1984). Microprobe analyses (4) of ferroandioptide from gabbro, Kauai, Hawaii.
- OLIVINE. Johnston and Stout, Contrib. Mineral. Petrol. 88, 196-202 (1984). Microprobe analyses (5) from symplectites, Hawaii.
- OLIVINE. Jones, Mineral. Mag. 48, 1-12 (1984). Microprobe analyses (6) from nepheline syenites, S. Greenland.
- OLIVINE. Jones et al., J. Geol. 90, 435-454 (1982). Microprobe analyses (6) from peridotites, S. Africa.
- OLIVINE. Kampunzu et al., (Bull. Volcanol. 47, 79-103) (1984)(French). Microprobe analyses (12) from Nyamulagira volcano.
- OLIVINE. Kashima et al., (Sci. Rep. tohoku Univ., Ser. 3, 15, 281-407) (1983)(English), Chem. Abstr. 102, no. 8, 65022 (1985). Plastic deformation of single crystals.
- OLIVINE. Kay and Kay, (Contrib. Mineral. Petrol. 90, 276-290) (1985). Microprobe analyses (17) from Aleutian volcanic rocks.
- OLIVINE. Keaneko et al., (Ganseki Kobutsu Kosho Gakko 81, 341-347) (1986) (Eng), Chem. Abstr. 107, no. 10, 81096 (1987) Analyses (not in abs.), DTA, from Iwate Pref. manganoan fayalite
- OLIVINE. Khisina et al., (Dokl. Akad. Nauk SSSR 276, 873-876) (1984), Chem. Abstr. 101, no. 14, 114137 (1984). Distribution of Mg and Fe in 3 olivines.
- OLIVINE. Kiji; (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 75-80) (1987) (Jap) Microprobe analyses (10) from ultramafic rocks, SW Japan
- OLIVINE. King et al., Meteoritics 16, 229-237 (1981). Microprobe analyses (1) from Tierra Blanca achondrite.
- OLIVINE. Kirkley et al., (Kimberlites 11B, 85-96) (1984) (150.3 D 493). Microprobe analyses (2) from kimberlites, Colo and Wyo.
- OLIVINE. Kitamura et al., (Nature 328, 143-145) (1987), Chem. Abstr. 107, no. 10, 81150 (1987) Planar OH-bearing defects in mantle olivine
- OLIVINE. Kitamura et al., Am. Mineral. 69, 154-160 (1984). Analyses (3) from Hebei, China, P2₁/b, a 4.82, b 10.2, c 5.87 A. of fayalite.
- OLIVINE. Kontak et al., Mineral. Mag. 48, 547-558 (1984). Recognition of zoning in by laser interference microscopy.
- OLIVINE. Kornacki and Word, Geochim. Cosmochim. Acta 48, 1663-1676 (1984). Microprobe analyses (many) from Allende meteorite.
- OLIVINE. Kostrovitskii and Fiveiskaya, (Deposited Doc. VINITI 5902-82, 1-39) (1982), Chem. Abstr. 100, no. 16, 124250 (1984). Analyses and trace elements from kimberlites.
- OLIVINE. Kostrovitskii et al., (Dokl. Akad. Nauk SSSR 276, 451-454) (1984), Chem. Abstr. 101, no. 10, 76154 (1984). Inclusions of pyrope, spinel, enstatite, clinopyroxene, sulfides and phlogopite from kimberlite, Yakutia.
- OLIVINE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (1) from Davidkovo massif, Ukraine
- OLIVINE. Kudoh and Takeuchi, Kobutsugaku Zasshi 16, 177-189 (1983)(Japanese). Structure at high pressure of synthetic forsterite.
- OLIVINE. Kuskov, (Geokhimiia 8, 1119-1124) (1984), Chem. Abstr. 101, no. 16, 134321 (1984). Thermodynamic constants and equations of state at 300-1800 degrees to 220 kbar of fayalite.

- OLIVINE. Kutty et al., (Proc. Indian Acad. Sci., Earth Planet Sci. 92(3), 283-295) (1983)(Eng.), Chem. Abstr. 101, no. 14, 114126 (1984). Electron microscope study of olivine with perfect cleavage. Tamil Nadu, India.
- OLIVINE. Larson et al., (Geol. Foren. Stockholm Foerh. 106, 119-125) (1984)(Eng.). Average of 25 analyses from gabbro, Sweden.
- OLIVINE. Laz'ko et al., Izv. Akad. Nauk SSSR, Ser. Geol., no. 3, 42-53 (1984)(Russian). Microprobe analyses (3) from peridotites, Khizen fault, S.E. Pacific.
- OLIVINE. Le Roex, (J. Petrol. 26, 149-186) (1985). Microprobe analyses (10) from Gough Island, S. Atlantic.
- OLIVINE. Lee, Sci. Rep. Tohoku Univ., Ser. 3, 15, 177-256 (1982)(English). Microprobe analyses (57) from Jeju volcanic rocks, Korea.
- OLIVINE. Lefevre and Cocusse, (Bull. Mineral. 108, 189-208) (1985). Microprobe analyses (7) from andesite lavas, Guadeloupe.
- OLIVINE. Lightfoot and Naldrett, (Trans. Geol. Soc. S. Afr. 86, 169-187) (1983). Microprobe analyses (24) from Insiziva complex, S. Africa.
- OLIVINE. Lightfoot et al., Econ. Geol. 79, 1857-1879 (1984). Microprobe analyses (23) from Insizwa complex, S. Africa (including Ni determination).
- OLIVINE. Lippard, Mineral. Mag. 48, 13-20 (1984). Microprobe analyses (2) from Oman Mts., Arabia.
- OLIVINE. Lisitskyn et al., (Mineral. Zh. 7(5), 32-40) (1985) (Russian) Analysis from Tazekno deposit, S. Yakutia
- OLIVINE. Luais, (Doc. Trav. Centre Geol. Montpellior 9, 1-229) (1987) (French) G(540) q(334d) Microprobe analyses (13) from the Mediterranean
- OLIVINE. Lubala et al., (Ann. Soc. Geol. Belg. 107, 125-134) (1984)(French). Microprobe analyses (13) from basaltic lavas, Kiver rift, Zaire.
- OLIVINE. Luhr and Carmichael, Contrib. Mineral. Petrol. 71, 348-372 (1980). Microprobe analyses (8) and minor elements from Colina Volcano, Mexico.
- OLIVINE. Luhr and Giannetti, (Contrib. Mineral. Petrol. 95, 420-436) (1987) Microprobe analyses (4) from leucitic tuff, Roccamoufina Volcano, Italy
- OLIVINE. Lumpkin and Ribbe, Am. Mineral. 68, 164-176 (1983). Structural properties of silicates, germanates, phosphates of many elements.
- OLIVINE. Maaloe and Hansen, Contrib. Mineral. Petrol. 81, 203-211 (1982). Analyses (11) from Hawaiian tholeiites.
- OLIVINE. MacPherson et al., Geochim. Cosmochim. Acta 47, 823-839 (1983). Microprobe analyses (2) from Murchison meteorite.
- OLIVINE. Maeda et al., (J. Japan Assoc. Min, Petrol. Econ. Geol. 80, 13-20) (1985)(Eng.). Microprobe analyses from norite, Hokkaido, Japan.
- OLIVINE. Malvin et al., (Meteoritics 20, 259-273) (1985). Microprobe analysis (1) from Bocaiuva meteorite.
- OLIVINE. Marcelot et al., (Lithos 16, 135-151) (1983) Microprobe analyses (9) from Erromango, New Hebrides
- OLIVINE. Matsueda et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (2) from skarn, Antarctica.
- OLIVINE. Matsui and Busing, (Phys. Chem. Miner. 11(2), 55-59) (1984). Chem. Abstr. 101, no. 14, 114111 (1984). Model of crystal, computing elastic constants of forsterite.
- OLIVINE. Mazzucchelli, Neues Jahrb. Mineral., Abh., 146, 101-116 (1983)(English). Microprobe analyses (2) from Ivrea-Verbano complex, Italy.
- OLIVINE. McCormick et al., (Phys. Chem. Mineral. 14,, 368-372) (1987) Site occupancies of Ni and Mn in synthetic crystals
- OLIVINE. Medaris, Contrib. Mineral. Petrol. 87, 72-86 (1984). Microprobe analyses (7) from garnet peridotites, W. Norway.

- OLIVINE. *Meteoritics* 19, 121-133 (1984). Microprobe analysis and alteration products, from Antarctic.
- OLIVINE. Mezger and Okrusch, (*Tschermaks Mineral. Petrogr. Mitt.* 34, 67-82) (1985). Microprobe analyses (2) from metamorphosed dolomites, Samos, Greece.
- OLIVINE. Miller and Ribbe, (*Am. Mineral.* 70, 723-728) (1985). Unit cell parameters in systems Fe_2SiO_4 - Mn_2SiO_4 and Fe_2SiO_4 - Ni_2SiO_4 .
- OLIVINE. Miller et al., (*Phys. Chem. Minerals* 14, 461-472) (1987) Infra-red study from 17 localities shows variable content of hydroxyl.
- OLIVINE. Mitchell, *Contrib. Mineral. Petrol.* 86, 178-188 (1984). Microprobe analyses (24), kimberlites, Namibia.
- OLIVINE. Miyake et al., (*Am. Mineral.* 72, 594-598) (1987) Synthesis of 5 compositions Mg_2SiO_4 - Co_2SiO_4 Unit cells, Cation distribution
- OLIVINE. Morris, J. *Volcanol. and Geothermal Research* 21, 119-148 (1984). Microprobe analyses (14) from Campbell Island, SW Pacific.
- OLIVINE. Morten and Puga, (*Neues Jahrbuch Miner., Abh.*, 211-218) (1984)(Eng.). Analysis from harzburgite, Spain.
- OLIVINE. Moseley, *Am. Mineral.* 69, 139-153 (1984). Microprobe analyses (16) of symplectite inclusions.
- OLIVINE. Myers and Eugster, *Contrib. Mineral. Petrol.* 82, 75-90 (1983). Calculation of thermodynamic properties 298-1600 degrees K (fayalite).
- OLIVINE. Nagahara and Kushiro, *Meteoritics* 17, 55-63 (1982). Microprobe analyses (4) from Ca-Al rich chondrules, meteorites.
- OLIVINE. Nakamura and Schmalzried, (*Phys. Chem. Miner.* 10, 27-37) (1983), *Chem. Abstr.* 100, no. 10, 7134 (1984). Non-stoichiometry and point defects.
- OLIVINE. Naslund, J. *Petrol.* 25, 185-212 (1984). Av. compositions (5) of Upper Buda Ser., Skaergaard, Eng.
- OLIVINE. Nedachi et al., (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 79, 200-213) (1984)(Jap.). Microprobe analyses (14), SE Abakuma Mts.
- OLIVINE. Nell, (*Econ. Geol.* 80, 1129-1152) (1985). Microprobe analyses (4), Potgietersrus, Bushveld Complex.
- OLIVINE. Nelson and Carmichael, *Contrib. Mineral. Petrol.* 85, 321-335 (1984). Microprobe analyses (14) from Sanganguey Volcano, Mexico.
- OLIVINE. Neville et al., (*Am. Mineral.* 70, 668-677) (1985). Microprobe analyses (5) from ultramafic inclusions in basalt, Calif.
- OLIVINE. Olsen et al., *Am. Mineral.* 68, 315-333 (1983). Microprobe analyses (2) from Concord gabbro-syenite complex, N.C.
- OLIVINE. Osterteg et al., *Earth Planet. Sci. Lett.* 67, 162-166 (1984). Olivine crystals from Alka 77005 meteorite (shocked a chondrule contains 4.5% Fe_2O_3 (totaling 24% as FeO). Unit cell a 4.778, b 10.300, c 6.021 A.
- OLIVINE. Page and Zientak, (*U.S. Geol. Survey Bull.* 1674A, 1-35) (1987) Microprobe analyses (3) from olivine cumulates, Stillwater Complex, Montana
- OLIVINE. Paktung, *Can. Mineral.* 22, 77-91 (1984). Microprobe analyses (4) from Thompson mine, Manitoba.
- OLIVINE. Paneyckh, *Mineral. Zh.* 6, no. 1, 38-52 (1984)(Russian). Microprobe analyses (14) from hyperbasites.
- OLIVINE. Pasteris, *Can. Mineral.* 22, 39-53 (1984). Analyses (7) from Duluth complex, Minn.
- OLIVINE. Pe-piper, J. *Petrol.* 25, 453-472 (1984). Microprobe analyses (7) from shoshonite, Lesbos, Greece.
- OLIVINE. Peck and Wood, (*Geochim. Cosmochim. Acta* 51, 1503-1510) (1987) Microprobe analyses (6) from Allende meteorite, including rims with Fa 15-44
- OLIVINE. Pedersen and Hald, *Lithos* 15, 137-159 (1982)(English). Microprobe analyses (1) from dacite, Kroksfjordor, Iceland.

- OLIVINE. Piriou and McMillan, *Am. Mineral.* 68, 426-443 (1983). Vibrational spectrum of forsterite.
- OLIVINE. Pouclet et al., *Bull. Mineral.* 106, 607-622 (1983). Microprobe analyses (5) from alkalic lavas, Virunga, E. Africa.
- OLIVINE. Povenmire, *Meteoritics* 19, 89-90 (1984). Analysis from Grayton Beach, Fla., meteorite.
- OLIVINE. Price and Parker, (*Phys. Chem. Mineral.* 10, 209-216) (1984), *Chem. Abstr.* 101, no. 4, 26262 (1984). Computer simulation of structural and physical properties. (forsterite)
- OLIVINE. Price et al., *Can. Mineral.* 21, 29-35 (1983). Microprobe analyses from Peace River meteorite, Alberta.
- OLIVINE. Princivalle and Secco, (*Tschermaks Mineral. Petrogr. Mitt.* 34, 105-115) (1985)(Eng.). Crystal structure refinement of 13 olivines from volcanic rocks and ultramafic modules. *Chem. analyses.*
- OLIVINE. Rambaldi et al, *Earth Planet. Sci. Lett.* 66, 15-24 (1983). Microprobe analyses (7) from Quigzhen meteorite.
- OLIVINE. Ramsay et al., *Contrib. Mineral. Petrol.* 88, 386-402 (1984). Microprobe analyses (10) from Solomon Island.
- OLIVINE. Reynolds, (*Econ. Geol.* 80, 1027-1048) (1985). Microprobe analyses (8) from Bierkraal area, Bushveld Complex.
- OLIVINE. Ricoult and Kohlstedt, (*Philos. Mag.* 51A(1), 79-93) (1985). *Chem. Abstr.* 102, no. 14, 123393 (1985). Creep of single crystals of fayalite.
- OLIVINE. Robins, *Contrib. Mineral. Petrol.* 81, 290-295 (1982). Microprobe analyses (6) from Finnmark, Norway.
- OLIVINE. Robins, *Norges Geol. Undersokilso* no. 371, 1-55 (1982)(English). Electron microprobe analyses (6), Rognsund, Norway.
- OLIVINE. Roden et al., *Contrib. Mineral. Petrol.* 85, 376-380 (1984). Microprobe analysis (2), St. Paul's rocks, Atlantic Ocean.
- OLIVINE. Rosi and Santacroce, *J. Volcanol. Geothermal Res.* 17,, 249-271 (1983)(English). Microprobe analyses (4) from AD 472 eruption of Vesuvius.
- OLIVINE. Rubin et al., (*Meteoritics* 20, 175-195) (1985). av. analysis from Colony meteorite.
- OLIVINE. Rubin, *Am. Mineral.* 69, 880-888 (1984). Microprobe analyses (13) from Allende meteorite MnO 1.2, 0.61%.
- OLIVINE. Rudashevskii, *Zap. Vses. Mineral. O-va.* 113, 186-195 (1984)(Russian). Microprobe analyses (6) of minerals enclosing Pt minerals.
- OLIVINE. Ryder, *Meteoritics* 19, 79-83 (1984). Minor elements in olivine, Marjalahti meteorite.
- OLIVINE. Sakai and Kuroda, *J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 78, 467-478 (1983)(English). Microprobe analyses (10) from ultramafic rocks, Sanbagawa belt, Japan.
- OLIVINE. Sato and Banno, (*Kazan* 28(2), 141-156) (1983)(Eng.). *Chem. Abstr.* 101, no. 8, 57894 (1984). Ni content in olivines for andesite and basalt, Shikoku, Japan.
- OLIVINE. Scharmeli, (*High Pressure Research Geosci.*, 349-373) (1982), *Mineralog. Abstr.* 34, 411 (1983). Anisotropy of thermal conductivity at 2.5 G.P. and up to 1500 degrees K.
- OLIVINE. Schenker and Dietrich, (*Schweiz. Min. Petr. Mitt.* 66, 343-384) (1986) (Eng) Microprobe analyses (8) from Lake Nyos, Cameroon
- OLIVINE. Scott, *Greenland Geosci.* no. 4, 1-24 (1981). Microprobe analyses (11) from kimbalite, Greenland.
- OLIVINE. Scribbins et al., *Can. Mineral.* 22, 67-75 (1984). Microprobe analyses (5) from Sudbury, Ont.

- OLIVINE. Sen and Presnall, (Contrib. Mineral. Petrol. 85, 404-408) (1984), Chem. Abstr. 100, no. 26, 213132 (1984). Stability in system anorthite-forsterite-SiO₂ at 10 kbar.
- OLIVINE. Shabanin and Fomin, (Mineral. Zh. 8(4), 65-) (1986) (Russian) Infra-red spectra from ultramafic rocks, Ukrainian Shield, 9 analyses
- OLIVINE. Sharpe and Hulbert (Econ. Geol. 80, 849-871) (1985). Microprobe analyses (6) from E. Bushveld Complex.
- OLIVINE. Shee et al., Contrib. Mineral. Petrol. 81, 79-87 (1982). Microprobe analyses (3) from peridotite, Finsch, S. Africa.
- OLIVINE. Shimazu et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 119-127) (1985)(Eng.). Microprobe analyses (3) from andesites and dacites, Niigata Pref.
- OLIVINE. Shinno, (Sci. Rep. - Dep. Geol., Kyushu Univ., 13, 217-224 (1980)(English)) Mineral. Abstr. 34, 163-164 (1983). Mossbauer spectra, distribution of Mg and Fe in M1 and M2 sites.
- OLIVINE. Shuto et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 55-72) (1985)(Jpn.). Microprobe analyses (8) from tholeiite, Fukushima Pref., NE Japan.
- OLIVINE. Siegel and Pfannhuch, (Geochim. Cosmochim. Acta 48, 197-201) (1984), Chem. Abstr. 100, no. 12, 88912 (1984). Soln. at pH4 (forsterite).
- OLIVINE. Sinigoi, et al., Contrib. Mineral. Petrol. 82, 351-359 (1983). Microprobe analyses (2) from peridotite, Balmuccia, Italy.
- OLIVINE. Sipiera et al., Meteoritics 18, 63-75 (1983). Microprobe analyses (15) from Texas chondrites.
- OLIVINE. Smith and Ehrenberg, Contrib. Mineral. Petrol. 86, 274-283 (1984). Microprobe analyses (5) from garnet peridotites, Colo. Plateau.
- OLIVINE. Smith and Wilson, Am. Mineral. 70, 30-39 (1985). Microprobe analyses (3) from kimberlite, Jagersfontein, S. Africa. Garnet-olivine equil. during cooling.
- OLIVINE. Smith, et al., J. Volcanol. Geothermal. Res. 18, 249-278 (1983). Microprobe analyses (5) from gabbroic rocks, S. California.
- OLIVINE. Smol'kin and Pakhomovskii (Izv. Akad. Nauk SSSR, Ser. Geol. 4, 57-) (1985)(Russ.). Microprobe analyses (5) of olivine and chromite from serpentized peridotites.
- OLIVINE. Souther and Hickson, J. Volcanol. and Geothermal Research 21, 79-106 (1984). Microprobe analyses (3) from Mt. Edziza complex, Brit. Columbia.
- OLIVINE. Spadea et al., (Jour. Geol. 95, 377-395) (1987) Microprobe analyses (3) from ophiolite, SW Columbia
- OLIVINE. Srikantappa (J. Geol. Soc. India 26, 281-286) (1985), Microprobe analyses (3) from Karnataka, India.
- OLIVINE. Stebbins and Carmichael, Am. Mineral. 69, 293-297 (1984). Heat of fusion of fayalite, Enthalpy of equil-incongruent melting.
- OLIVINE. Stephenson and Hensel, Lithos 15, 59-75 (1982)(English). Microprobe analyses (1), NS Wales, Australia.
- OLIVINE. Stindl and Vieten, (Neues Jahrb. Mineral., Abh., 145, 183-199 (1982)(English)) Chem. Abstr. 98, no. 8, 57282 (1983). Phenocrysts and xenocrysts from volcanic rocks, Siebengebirge.
- OLIVINE. Stockton and Manson (Gems and Gemology 19(2), 103-107) (1983), Mineral. Abstr. 35, 47 (1984). Analysis of gem variety from Tanzania.
- OLIVINE. Sutcliffe, (Contrib. Mineral. Petrol. 96, 201-211) (1987) Microprobe analyses (4) from diabase and picrite, Lake Napigon, Canada
- OLIVINE. Sutherland et al. (Kimberlites 11B, 145-160) (1984). (150.3 D493). Microprobe analysis (1) from basalt flow, Bow Hill, Tasmania.
- OLIVINE. Suzuki, Anderson and Sumino, (Phys. Chem. Miner. 10, 38-46) (1983), Chem. Abstr. 100, No. 6, 37229 (1984). Elastic properties of forsterite to 1200 degrees K.

- OLIVINE. Svisero, An. Acad. Bras. Cienc. 55, 395-407 (1983)(Portugese) (Fo 91.8 - 94.5) Analyses (microprobe) of inclusions in Brazilian diamonds.
- OLIVINE. Tanaka et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 438-454 (1982)(English). Microprobe analyses (2) from cortlandtite, N.E. Japan.
- OLIVINE. Tanguy and Clocchiatti, (Bull. Volcanol. 47, 879-894) (1984) (Eng) Microprobe analyses (9) from Mt. Etna, 1977-1983
- OLIVINE. Thompson, et al., Can. Mineral. 22, 55-66 (1984). Microprobe analyses (33) from 4 plutons.
- OLIVINE. Thy, Contrib. Mineral. Petrol. 82, 232-251 (1983). Microprobe analyses (25) of alkali basaltic glasses, Iceland (Fo 59.6 - 89.0).
- OLIVINE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984). Microprobe analyses (3) from Oka complex, Quebec.
- OLIVINE. Upton et al. (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- OLIVINE. Upton, et al., J. Petrol. 25, 151-184 (1984). Microprobe analyses (3) from NE Greenland basalts.
- OLIVINE. Urusov and Khisina (Mineral. Zh. 7, no. 1, 3-13) (1985), Chem. Abstr. 103, no. 6, 39959 (1985). Distribution of cations in.
- OLIVINE. Urusov et al. (Geokhimiia 7, 1047-1055) (1984) (Russ), Chem. Abstr. 101, no. 14, 114119 (1984) (Russ). Synthesis of forsterite-tephroite solid solutions, unit cells.
- OLIVINE. Van Bergen, et al., J. Volcanol. Geotherm. Res. 19, 1-35 (1983)(English). Microprobe analyses (6) from rhyodacite, Mt. Amiata, Italy.
- OLIVINE. Viereck (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (9) from Eifel, Germany.
- OLIVINE. Viljoen and Scoon (Econ. Geol. 80, 1109-1128) (1985). Microprobe analyses (8) from Fe-rich ultramafic pegmatite, Bushveld.
- OLIVINE. Vinx, Neues Jahrb. Mineral., Abh., 144, 1-28 (1982). Microprobe analyses (7) from the Harzburg gabbro, Germany.
- OLIVINE. Vurkov, et al., (Symp. Meteorites, 135-139) (1984), Chem. Abstr. 102, no. 8, 65067 (1985). Association of major elements in meteorites and lunar rocks.
- OLIVINE. Wacker et al. (Fortschr. Mineral. 62, Beih. 1, 253-254) (1984). Magnetic properties of synthetic.
- OLIVINE. Walker and Cameron, Contrib. Mineral. Petrol. 83, 150-158 (1983). Microprobe analyses (4) from Cape Vozel, Papua, New Guinea.
- OLIVINE. Walker, J. Petrol. 25, 299-342 (1984). Microprobe analyses (6) from Nicaraguan cinder cones.
- OLIVINE. Warner et al. (Contrib. Mineral. Petrol. 90, 386-400) (1985). Microprobe analyses (5) from dolerite dikes, S. Carolina.
- OLIVINE. Warren, et al., Earth Planet. Sci. Lett. 64, 175-185 (1983). Microprobe analyses (1) from granite clasts, Moon.
- OLIVINE. Webb, et al., Phys. Chem. Miner. 11, 167-171 (1984). Absence of sheer mode softening in single-crystal fayalite at high pressure, room temp.
- OLIVINE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (6) from mafic rocks, East Alps.
- OLIVINE. Wilkinson and Stolz, Contrib. Mineral. Petrol. 83, 363-374 (1983). Microprobe analyses (2) from Oahu, Hawaii.
- OLIVINE. Williams (Can. Mineral. 22, 417-421) (1984). Microprobe analysis (1). Fiskenaasset, Greenland.
- OLIVINE. Word and Holloway, Geochim. Cosmochim. Acta 48, 159-176 (1984). Stability in system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$.
- OLIVINE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G. Microprobe analyses (20) and trace elements. Laacher See, Germany.

- OLIVINE. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 21, 77-131 (1984)(English). Microprobe analyses (24), Oshima-Oshima volcano, N. Japan.
- OLIVINE. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 4, 20, 135-143 (1983)(English). Microprobe analyses (10) from basalts, Oshima-Oshima Volcano, Japan.
- OLIVINE. Yang, et al., Acta Geol. Taiwanica 21, 63-80 (1982)(English). Microprobe analyses (10) from basalts, Penghu Islands.
- OLIVINE. Zeck, et al., Lithos 15, 173-182 (1982)(English). Microprobe analyses (5) from gabbro-norite, Sweden.
- OLIVINE. Zeuch, (Tectonophysics 83, 293-308 (1982)) Mineral. Abstr. 34, 214 (1983). Recrystallization and faulting in.
- OLIVINE. Zol'nikov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 64-74 (1981). Analyses (3) from kimberlite.
- OLIVINE. van Bergen and Barton, Contrib. Mineral. Petrol. 86, 374-385 (1984). Microprobe analyses (1) from Mt. Amiata, Italy.
- OOSTERBOSCHITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- OPAL. Dubrorinskaya and Dubrovinskii, (Reg. Geol. Nek. Raionov SSSR 6, 102-105) (1983), Chem. Abstr. 100, no. 20, 159610 (1984). Diffractometer and infra-red study. Mostly consists of beta- and gamma- quartz.
- OPAL. Epova, et al., (Geol. Geofiz., no. 11, 76-83) (1983), Chem. Abstr. 100, no. 8, 54691 (1984). Conditions and mechanism of formation.
- OPAL. Godovikov et al., Geol. Geofiz., no. 12, 42-54 (1982)(Russian). Review of synthesis and growth.
- OPAL. Hukuo and Hikichi, (Ganseki Kobutsu Kosho Gakkaishi 78, 459-466) (1983)(English), Chem. Abstr. 101, no. 6, 41174 (1984). Analyses and x-ray data from Aomori Pref., Japan, of opal-CT.
- OPAL. Hukuo and Hikichi, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 459-466 (1983)(English). Opal-CT in shales, Ciomon Pref., Japan. X-ray, DTA.
- OPAL. Jakobsson and Moore, (Bull. Geol. Soc. Am. 97, 648-659) (1986) Microprobe analyses (4) from Surtsey volcano, Iceland
- OPAL. Kano and Taguchi, (Chishitsugaku Zasshi 88, 683-690 (1982)(English)) Chem. Abstr. 98, no. 24, 201503 (1983). Opal-A, opal-CT, and opal-C from Akita Pref., Japan.
- OPAL. Kastner and Gieskes, (Dev. Sedimentol. 36(Siliceous Deposits Pac. Reg.), 211-227 (1983)) Chem. Abstr. 98, no. 14, 110844 (1983). Kinetics of transformation of opal-A to opal-CT. Effect of Mg important.
- OPAL. Kose, (J. Gemmol. Soc. Jpn. 5, 66-74) (1983), Mineralog. Abstr. 34, 428 (1983). Synthesis of opal-like material.
- OPAL. Meitens, (J. Gemmol. 19, 43-53) (1984), Chem. Abstr. 100, no. 18, 141544 (1984). Study of synthetic.
- OPAL. Sanders (J. Phys., Colloq. (Orsay, France), C3, 1-8) (1985)(Eng.), Chem. Abstr. 103, no. 4, 25096 (1985). 21 photomicrographs SEM.
- OPAL. Schmetzer, (J. Gemmol. 19, 27-42) (1984), Chem. Abstr. 100, no. 18, 141543 (1984). Study of synthetic.
- OPAL. Sysoeva, (Fiz.-Khim. Issled. Mineraloobraz. Sist., 75-84 (1982)) Chem. Abstr. 98, no. 26, 219082 (1983). DTA and TGA analyses, infra-red study of dehydration.
- OPAL. Tada and Iijima, (Dev. Sedimentol. 36(Siliceous Deposits Pac. Reg.), 229-245 (1983)) Chem. Abstr. 98, no. 14, 110845 (1983). X-ray data on mixts of opal types.
- ORCELITE. Lorand and Pinet, Can. Mineral. 22, 553-560 (1984). Occurrence in peridotite, Greece. Microprobe analyses (15), ratios are M:S - (M mostly Ni) from 4.2:2 to 5.5:2, from 5 localities. Optics.

- ORCELITE. Weinke and Wieseneder, *Ore Genesis: The State of the Art* (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (1) from mafic rocks, East Alps.
- OREBROITE. Mineral. Abstr. 38, 87M/3187 (1987) Abstract of original description
- ORICKITE. Erd and Czamanske, *Am. Mineral.* 68, 245-254 (1983). New mineral, near $\text{CuFeS}_2 \cdot 5\text{H}_2\text{O}$, hex., from Coyote Peak, Cal. Microprobe analysis, X-ray data, G 4.221.
- ORICKITE. Mineralog. Abstr. 34, 476 (1983). Abstract of original description.
- ORIENTITE. Moore, et al., *Am. Mineral.* 70, 171-181 (1985). Structure. Orth., space group, Bbmm, a 9.074, b 19.130, c 6.121 Å, Z=4 ($\text{Ca}_2\text{Mn}^{+2}\text{Mn}^{+3}_2\text{Si}_3\text{O}_{10}(\text{OH})_4$).
- ORPIMENT. Mironova, et al., (*Geokhimiia*, no. 12, 1762-1768) (1983), *Chem. Abstr.* 100, no. 10, 71353 (1984). Solubility in acid solns. 25-150 degrees C.
- ORPIMENT. Stojanovic, (*Zapisnici Srp. Geol. Drus.* 1981, 51-53) (1982), *Chem. Abstr.* 100, no. 6, 43406 (1984). Structure Monoclinic, $P2_1/n$, a 11.4220-11.4227, b 9.5829-9.5862, c 4.2560-4.2601 Å, beta 90.302-90.393 degrees.
- ORPIMENT. Wu and Mei, (*Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- ORTHOCLASE. Bambauer and Bernotat, and Bernotat and Baumbauer, (*Schweiz. Mineral. Petrogr. Mitt.* 62, 185-230 and 231-244 (1982)(English)) *Chem. Abstr.* 98, no. 22, 182716 and 182717 (1983). Orthoclase-sanidine transformation isograd.
- ORTHOCLASE. Borutskii et al. (*Izv. Akad. Nauk SSSR, Ser. Geol.* 12, 96-103) (1984), *Chem. Abstr.* 102, no. 10, 81834 (1985). Structure and Si-Al ordering, alkalic pegmatites (adularia).
- ORTHOCLASE. Cerny, et al., *Can. Mineral.* 22, 631-651 (1984). Microprobe analyses (33) from pegmatite, Vezna, Czechoslovakia.
- ORTHOCLASE. Davidova, (*Acta Geol. Geogr. Univ. Comeniana*, *Geol.* 38, 65-82 (1982)(English)) *Chem. Abstr.* 98, no. 24, 201529 (1983). Infra-red determination of degree of triclinicity.
- ORTHOCLASE. Ferguson and Cundari, *Contrib. Mineral. Petrol.* 81, 212-218 (1982). Microprobe analyses (16) from leucite-bearing rocks. Crystn trends.
- ORTHOCLASE. Gordienko et al., (*Zap. Vses. Mineral. O-va.* 111, 734-740 (1982)) *Chem. Abstr.* 98, no. 8, 57287 (1983). Estimate of structural state based on infra-red spectra.
- ORTHOCLASE. Haselton et al., *Am. Mineral.* 68, 398-413 (1983). Calorimetric study of excess entropy of mixing in analbite-sanidine solid solutions.
- ORTHOCLASE. Hofmeister and Rossman (*Am. Mineral.* 70, 794-804) (1985). Spectroscopic study of blue-green amazonite shows that the color is radiation-induced and requires the presence of Pb and bound H_2O .
- ORTHOCLASE. Kampunzu et al. (*Bull. Volcanol.* 47, 79-103) (1984)(French). Microprobe analyses (2) from Nyamulagira volcano.
- ORTHOCLASE. Kapustin (*Dokl. Akad. Nauk SSSR* 276, 209-213) (1984), *Chem. Abstr.* 101, no. 10, 26131 (1984). Analysis and optics from carbonatite.
- ORTHOCLASE. Kroll and Ribbe, (*Am. Mineral.* 72, 491-506) (1987) Review of Al-Si distribution, lattice parameters, diffraction peaks
- ORTHOCLASE. Latour and Burnett, (*Bull. Geol. Soc. Am.* 98, 356-363) (1987) Microprobe analyses (2) from Idaho batholith
- ORTHOCLASE. Leroy, *Miner. Deposita* 19, 26-35 (1984)(French). Analyses (2) from U deposit, Bernardan, France.
- ORTHOCLASE. Mitchell and Platt (*Carbonitite Symp. Brazil* 176, 93-104) (1978)(Eng.). (170QIN8PC). Analyses (5), Poohbah Lake, Ont. malignite.

- ORTHOCLASE. Ostertag, (J. Geophys. Res. 88B, 364-376) (1983), Chem. Abstr. 100, no. 26, 213105 (1984). Effect of shock up to 456 Pa on single crystals.
- ORTHOCLASE. Reverdatto (Zap. Vses. Mineral. O-va. 114, 229-236) (1985)(Russ.). Microprobe analysis (1) from hornfels.
- ORTHOCLASE. Scandale et al., (Phys. Chem. Miner. 9, 182-187 (1983)) Chem. Abstr. 98, no. 22, 182721 (1983). TEM study of deformed sanidine crystals.
- ORTHOCLASE. Schenker and Dietrich, (Schweiz. Min. Pet. Mitt. 66, 343-384) (1986) (Eng) Microprobe analyses (2) from lherzolites, etc., Cameroon
- ORTHOCLASE. Sherriff and Hartman (Can. Mineral. 23, 205-212) (1985). Nuclear magnetic resonance study.
- ORTHOCLASE. Shvedenkov et al., (Geol. Geofiz., no. 1, 80-86 (1983)) Chem. Abstr. 98, no. 16, 139422 (1983). Stability in system muscovite - paragonite - K-feldspar - H₂O - CO₂.
- ORTHOCLASE. Smyslov and Sosedko (Zap. Vses. Mineral. O-va. 114, 86-89) (1985)(Russ.). Microprobe analysis (1) from syenite, Baikal.
- ORTHOCLASE. Su et al. (Am. Mineral. 69, 440-448) (1984). Optic axial angle as a measure of Al, Si ordering in.
- ORTHOCLASE. Woensdregt, (Z. Kristallogr. 161, 15-33 (1982)(English)) Chem. Abstr. 98, no. 18, 152930 (1983). Effect of crystal structure on morphology.
- ORTHOERICSSONITE. Matsubara (Mineral. J. Tokyo 10, 107-121) (1980), Mineral. Abstr.s 35, 15-16 (1984). Structure. Orth., Pmmm, a 20.230, b 6.979, c 5.392A, z=4.
- OSARSITE. Auge (Can. Mineral. 23, 163-171) (1985). Microprobe analyses (2) from inclusions in chromitite, Vourinos, Greece.
- OSARSITE. Legendre and Auge, (Metallogeny of Basic and Ultrabasic Rocks, 361-372) (1986), Mineral. Abstr. 38, 87M/2155 (1987) Analyses (not in abs) from
- OSMIRIDIUM. Auge (Can. Mineral. 23, 163-171) (1985). Microprobe analysis (1) from inclusions in chromitite, Vourinos, Greece.
- OSMIRIDIUM. Rudashevskii et al., (Mineral. Zh. 7, 88-93) (1985) (Russian) Microprobe analysis (3), Reflectance, X-ray data
- OSMIRIDIUM. Rudashevskii, Zap. Vses. Mineral. O-va. 113, 186-195 (1984)(Russian). Microprobe analyses (9) of inclusions in olivine.
- OSMIRIDIUM. Shilo et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 172-184) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analysis (1), Pacific region, USSR.
- OSMIRIDIUM. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- OSMIRIDIUM. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (3) Reflectance
- OSMIUM. Bonev and Jordanov, (Geol. Zbornik Bratislava 37, 709-718) (1986) (Eng) Microprobe analyses (5) from placers, Bulgaria
- OSMIUM. Likhaev et al., (Zap. Vses. Mineral. O-va 116, 122-125) (1987) (Russian) Microprobe analyses (27)
- OSMIUM. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (1) from Kamchatka Pt deposit.
- OSMIUM. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- OSUMILITE. Hemingway, et al., Am. Mineral. 69, 701-710 (1984). Heat capacity 298-1000 degrees K. Analysis from Antarctica.

- OSUMILITE. Hesse and Seifert, (Z. Kristallogr. 160, 179-186 (1982)(English)) Chem. Abstr. 98, no. 14, 110841 (1983). Mineral. Abstr. 34, 396 (1983). Refinement of structure. Hex., P6/mcc, a 10.126, c 14.319A, Z=2.
- OSUMILITE. Motoyoshi and Matsueda (Proc. Symp. Antarctic Geosci. 4th, 1983, 103-125) (1984)(Eng.). Microprobe analyses (3), Enderby Land, Antarctica, 502(990)J27ss..
- OTTEMANNITE. Kniep et al., (Acta Crystallogr., Sect. B, B38, 2022-2023 (1982)) Mineral. Abstr. 34, 17 (1983). Structure of synthetic. Orth., Pnma, a 8.878, b 3.751, c 14.020A, Z=4.
- OURAYITE. Makovicky and Karup-Moller, Can. Mineral. 22, 565-575 (1984). Microprobe analyses (11) from Ivigtut, Greenland, near $Pb_4Ag_3Bi_5S_{13}$ (I) or $Pb_{16}Ag_{12}Bi_{20}S_{52}$ (II), ranging to $Pb_{15}Ag_{12.5}Bi_{20.5}S_{52}$. X-ray data. Orth., Bbnn or Bb2₁m, a 13.49, b 44.17, c 4.05 A, for (I), orth., a 13.15, b 44.17, c 4.05 A, Pbnm or Pbn2₁ (II)
- OURSINITE. (Abstr. in Am. Mineral. 69, 567) (1984). Abstract of original description.
- OWYHEEITE. Moelo et al. (Tschermarks Mineral. Petrogr. Mitt. 31, 271-284) (1984)(French), Chem. Abstr. 100, no. 26, 213125 (1984). Microprobe analyses. Formula $Ag_{3+x}Pb_{10-2x}Sb_{11+x}S_{28}$, x = -0.13 to +0.20.
- OWYHEEITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- OYELITE. Mineral. Abstr. 38, 87M/3193 (1987) Abstract of original description
- PAKKONENITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PABSTITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- PACHNOLITE. Pauly and Petersen, (Neues Jahrb. Mineral., Monatsh., no. 6, 241-250 (1983)(English)) Chem. Abstr. 98, no. 26, 219135 (1983). Optics.
- PADERAITE. Mineral. Abstr. 38, 87M/3194 (1987) Abstract of original description
- PALARSTANIDE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PALARSTANNIDE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PALERMOITE. Cortesogno et al., (N. Jb. Miner., Mh., 305-313) (1987) (Eng) Analysis from Italy
- PALLADOARSENIDE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PALLADOBISMUTHARSENIDE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PALLADSEITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PALYGORSKITE. Barron and Frost (Am. Mineral. 70, 758-766) (1985). Nuclear magnetic resonance study.
- PALYGORSKITE. Lindquist and Laitakari (Bull. Geol. Soc. Finland 53, 91-95) (1981), Mineral. Abstr. 36, 201 (1985). Occurrence at Padasjoki, Finland, a 12.689, b 17.845, c 5.119A, beta 91.22 degrees.
- PALYGORSKITE. Lokanatha and Bhattacharjee (Clay Miner. 19, 253-255) (1984), Chem. Abstr. 101, no. 18, 155017 (1984). Structural defects in.
- PALYGORSKITE. Lokanatha and Bhattacharjee (Indian J. Pure Appl. Phys. 23, 30-34) (1985), Chem. Abstr. 102, no. 24, 206719 (1985). Dehydration.
- PALYGORSKITE. Lokanatha et al. (J. Mater. Sci. Lett. 3(12), 1105-1108) (1984), Chem. Abstr. 102, no. 10, 81836 (1985). Dehydration.
- PALYGORSKITE. Yariv, (Clays Clay Miner. 21, 925-936) (1986), Chem. Abstr. 106, no. 26, 217103 (1987) Infra-red study

- PANUNZITE. Merlino et al., (N. Jb. Miner. Mh., 322-328) (1985), Mineral. Abstr. 38, 87M/2120 (1987) Structure Hexag., P6, a 20.496, c 8.549 A
- PAOLOVITE. Evstigneeva, (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 184-191 (1980)) Mineral. Abstr. 34, 135 (1983). Synthesis.
- PAOLOVITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PARACOSTIBITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- PARAGONITE. Ashworth and Evirgen, Mineral. Mag. 48, 159-165 (1984). Microprobe analyses (1) from S.W. Turkey.
- PARAGONITE. Baronnet and Amouric, (Bull. Mineral 109, 489-508) (1986), Mineral. Abstr. 38, 87M/2112 (1987) Growth spirals and complex polytypism in
- PARAGONITE. Beck, (Soc Geol. Nord Publ. 14, 191-280) (1986) (French) G(540) qN77p Microprobe analyses (2) from near Caracas, Venezuela
- PARAGONITE. Enami, J. Metamorph. Geol. 1, 141-166 (1983). Microprobe analyses (1) from Sanbagawa, Japan.
- PARAGONITE. Feenstra (Geol. Ultraiectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (2) from metamorphosed bauxites, Naxos, Greece.
- PARAGONITE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English). Microprobe analyses (4) from western Lepontine Alps.
- PARAGONITE. Grambling, Am. Mineral. 69, 79-87 (1984). Microprobe analyses (5) from New Mexico.
- PARAGONITE. Heinrich, Contrib. Mineral. Petrol. 81, 30-38 (1982). Microprobe analyses (1) from central Alps.
- PARAGONITE. Karabinos (Contrib. Mineral. Petrol. 90, 262-275) (1985). Microprobe analysis (1) from schist near Jamaica, Vt.
- PARAGONITE. Lin and Bailey, Am. Mineral. 69, 122-127 (1984). Structure of -2M. Microprobe analyses (4). C2/c, b = 8.898 A.
- PARAGONITE. Povondra et al. (N. Jb. Miner. Mh., 125-136) (1984)(Eng.). Analysis from Gammelmorskarr, Finland.
- PARAGONITE. Robie and Hemingway, Am. Mineral. 69, 858-868 (1984). Heat capacity, entropy, 5-900 degrees K, estimates of free energy, 3 analyses.
- PARAGONITE. Selverstone and Munoz, (Contrib. Mineral. Petrol. 96, 426-440) (1987) Microprobe analyses (2) from Eastern Alps
- PARAGONITE. Selverstone, et al., J. Petrol. 25, 501-531 (1984). Microprobe analyses (4) from Tavern, Austria.
- PARAGONITE. Shvedenkov et al. (Geol i Geofiz. 10, 91-96) (1982), Mineral. Abstr. 35, 45 (1984). Stability in system muscovite + quartz = K-feldspar + andalusite and paragonite = albite + corundum.
- PARAGONITE. Shvedenkov et al., (Geol. Geofiz., no. 1, 80-86 (1983)) Chem. Abstr. 98, no. 16, 139422 (1983). Stability in system muscovite - paragonite - K-feldspar - H₂O - CO₂.
- PARAGUANAJUATITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PARAHILGARDITE. Wan and Ghose, Am. Mineral. 68, 604-613 (1983). Refinement of structure. Triclinic, P1, a 17.495, b 6.487, c 6.313A, alpha 60.77, beta 79.56, gamma 83.96°, Z=1.
- PARAHOPEITE. Lai and Shi (Yanshi Kuangwu Ji Ceshi 2, no. 4, 40-45) (1983), Chem. Abstr. 101, no. 20, 174792 (1984). Occurrence at Guangdong Prov., China, X-ray, DTA, infra-red data.
- PARAHOPEITE. Shi et al., (Kexue Tongbao 28, 44-46 (1983)) Chem. Abstr. 98, no. 20, 164081 (1983). Structure.

- PARANATROLITE. Rykl and Pecher, (Acta. Mont. 63, 87-100) (1983)(English), Chem. Abstr. 100, no. 8, 53936 (1984). Thermal decomposition. Inverts to paranatrolite at > 360 degrees.
- PARARAMMELSBERGITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- PARARAMMELSBERGITE. Tarkian, et al., Tschermaks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- PARAREALGAR. Abstr. in Bull. Mineral. 106, 633 (1983). Abstract of original description.
- PARASCHACHNERITE. Atanasov (Godishnik Visshiya Minno-Geolozhki Institut Sofiya 26, 119-129) (1979), Mineral. Abstr. 35, 81 (1984). Analyses from Kremihovic deposit, Bulgaria.
- PARASCHOLZITE. Abstr. in Bull. Mineral. 106, 634 (1983). Abstract of original description.
- PARATELLURITE. Godovikov et al., Geol. Geofiz., no. 12, 42-54 (1982)(Russian). Review of synthesis and growth.
- PARATELLURITE. Kalashnikov and Shkuratova, (Izv. Akad. Nauk SSSR, Neorg. Mater., 19, 250-252 (1983)) Chem. Abstr. 98, no. 16, 135471 (1983). Etching of crystals.
- PARATELLURITE. Taylor (Brit. Ceram. Trans. J. 83, 32-37) (1984). Thermal expansion.
- PARAUMBITE. Abstract in Am. Mineral. 69, 813-814 (1984). Abstract of original description.
- PARAUMBITE. Abstract in Mineral. Abstr. 35, 194 (1984). Abstract of original description.
- PARAWOLLASTONITE. Hesse (Z. Kristallogr. 168(1-4), 93-98) (1984)(Eng.). Chem. Abstr. 102, no. 18, 158505 (1985). Structure of wollastonite -2M. Monoclinic, $P2_1/a$, a 15.409, b 7.322, c 7.063A, Beta 95.30 degrees, Z=4.
- PARAWOLLASTONITE. Oheshi, Phys. Chem. Miner. 10, 217-229 (1984). Structures of polysynthetically twinned.
- PARISITE. Roeder (Can. Mineral. 23, 263-271) (1985). Microprobe analysis of rare-earth elements.
- PARKERITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- PARKERITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe analysis from Norilsk deposit.
- PARKERITE. Neradovskii et al., (Zap. Vses. Mineral. O-va. 111, 552-556 (1982)) Chem. Abstr. 98, no. 4, 19664 (1983). Microprobe analysis from Karik'yavr, Kola Peninsula. Optics.
- PARSETTENSITE. Munha, Comun. Serv. Geol. Port. 69, 3-35 (1983)(English). Microprobe analyses (1) from Iberian pyrite belt.
- PARSONSITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- PARSONSITE. Vochten and Brizzi, (Mineral. Record 8, 181-184) (1987) Occurrence at Cagliari, Sardinia
- PARTHEITE. Engel and Yuon, (Acta Crystallogr., Sect. A, A40, 247) (1984)(Abstr.). Structure. Space group C2/c, a 21.555, b 8.761, c 9.304 A, beta 91.55 degrees, Z=4 ($Ca_2Al_4Si_4O_{15}(OH_2 \cdot 4H_2O)$).
- PARTHEITE. Ivanov and Mozzherin, (Zap. Vses. Mineral. O-va. 111, 209-214 (1982)) Mineral. Abstr. 34, 167 (1983). Analyses (not in abstr.) from gabbro pegmatite, Urals, G 2.44-2.45, a 21.59, b 8.78, c 9.30A, beta 91'47', optics, DTA, infra-red, X-ray data.

- PASCOITE. de Brodtkorb, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 221-229 (1982). Occurrence in Urcal deposit, La Rioja, Argentina.
- PAULINGITE. Andersson and Faeltz, (J. Solid State Chem. 46, 265-268 (1983)) Chem. Abstr. 98, no. 16, 135615 (1983). Structure described as a transformation of the gismondine structure.
- PAULINGITE. Strohmaier and Vaughan, (Eur. Patent. 213,739, 1-9) (1987), Chem. Abstr. 106, no. 26, 216433 (1987) Synthesis of a paulingite-like zeolite
- PAULKERRITE. Abstract in Am. Mineral. 70, 875 (1985). Abstract of original description.
- PAULKERRITE. Peacor, et al., Mineral. Rec. 15, 303-306 (1984). New mineral, $K(Mg,Mn)_2(Fe^{+3},Mg,Al,Ti)_2(PO_4)_4(OH)_3 \cdot 15H_2O$. Orth, Pbca, a 10.49, b 20.75, c 12.44 Å, Z=4, G 2.36. Analysis, optics, x-ray data.
- PEARCEITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (1) from Sark, Channel Islands.
- PEARCEITE. Minceva-Stefanova, et al., (Geokhim., Mineral., Petrol. 11, 13-34) (1979), Mineralog. Abstr. 34, 473 (1983). Occurrence in Bulgaria and Germany, 4 analyses (not in Abstr.), optics, x-ray data.
- PEARCEITE. Sugaki et al. (Sci. Rep. Tohoku Univ., Ser. 3, 15(3), 461-469) (1983)(Eng.). Chem. Abstr. 101, no. 14, 114109 (1984). Synthesis Pseudohex. a 7.3445, c 11.9255Å.
- PEARCEITE. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not in abs.) from Koryu mine, Hokkaido, Japan
- PEARCEITE. Sugaki, et al., Sci. Rep. Tohoku Univ., Ser. 3, 15, 461-469 (1983)(English). G(620)T5. Synthesis, x-ray data. Monoclinic, pseudo-hexagonal, a 12.721, b 7.3445, c 11.9255 Å, beta 90 degrees.
- PEARCEITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PECORAITE. Milton, et al., Neues Jahrb. Mineral., Monatsh., 513-523 (1983)(English). Occurrence near St. Louis, MO., x-ray data, a 5.30, b 9.16, c 14.68Å, Beta 92 deg. 15', Z=2.
- PECTOLITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerge complex, Greenland.
- PECTOLITE. Fengl et al., (Cas. Nar. Muz. Praze, Rada Prirodoved., 151, no. 2, 61-63 (1982)(Czech)) Chem. Abstr. 98, no. 14, 110799 (1983). Occurrence at Techlovic, Czechoslovakia, X-ray, infra-red, DTA data.
- PECTOLITE. Nakagawa and Bamsba, (Mining Geology (Japan) 37, 189-197) (1987) (Eng) (G(620)M66) Analyses (3) from Tominchi mine, Hokkaido, Japan
- PECTOLITE. Smith et al., Mineral. Mag. 47, 75-78 (1983). Analyses (6) from kimberlite, S. Africa. X-ray data.
- PEHRMANITE. Abstr. in Bull. Mineral. 106, 634 (1983). Abstract of original description.
- PEISLEYITE. Pilkington et al., (Mineral. Mag. 46, 449-452 (1982)) Chem. Abstr. 98, no. 20, 164079 (1983). New mineral, $Na_3Al_{16}(SO_4)_2(PO_4)_{10}(OH)_{17} \cdot 2H_2O$, from Kapunda, Australia. Mon., a 13.31, b 12.62, c 23.15Å, beta 110.0°, Z=2. Mineral. Abstr. 34, 185 (1983). Abstract of original description.
- PEKOITE. Breskovska et al., (Proc. 13th Meeting IMA, Varna, 1982, 131-146) (1986) (Russian) Microprobe analysis Rhodope Mts., Bulgaria
- PEKOITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (4) from gold-silver deposits
- PEKOITE. Kovalenker et al. (Zap. Vses. Mineral. O-va. 113, 35-43) (1984), Mineral. Abstr. 36, 89 (1985). Microprobe analyses (not in abstr.) from Kochbulak deposit, E. Uzbekistan. X-ray data.

- PELLYITE. Alfors and Pabst, *Am. Mineral.* 69, 358-373 (1984). Occurrences with taramellite in Calif.
- PELLYITE. Pabst and Harris, *Can. Mineral.* 22, 653-658 (1984). New analyses (4) from Lower Calif., Mexico and 2 Calif. localities. a 14.201-14.238, b 15.611-15.690, c 7.142-7.156. Optics; behavior when heated.
- PENGINITE (PENZHINITE). Abstract in *Am. Mineral.* 70, 875-876 (1985). Abstract of original description.
- PENROSEITE. Livingstone, et al., *Mineral. Mag.* 48, 560-562 (1984). Occurrence at Colquechaca, Bolivia, probe analysis (1).
- PENTAHYDROBORITE. Fujiwara et al., (*Chigaku Kenkyu* 33, 11-20 (1982)) *Geosci. Mag.* 33, 11-20) *Chem. Abstr.* 98, no. 4, 19605 (1983). Analysis from Fuka, Okayama Pref., Japan. Triclinic, P1}, a 7.878, b 6.540, c 8.066A, alpha 111.12°, beta 111.25°, gamma 73.88°, G 2.03, optics.
- PENTLANDITE. Ahmed and Hall, *Lithos* 15, 39-47 (1982)(English). Microprobe analyses (8) from Pakistan.
- PENTLANDITE. Barashkov et al., *Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii* (*Mineral. Ultramafic and Mafic Rocks of Yakutia*), 86-105 (1981). Analyses (9) of inclusions in olivine of kimberlites.
- PENTLANDITE. Borishenskaye and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- PENTLANDITE. Botkunov et al., (*Geol. Rudn. Mestorozhd.* 29(1), 15-20) (1987) (Russian) Analyses (2) from kimberlite pipes, Yakutia, inclusions in garnet
- PENTLANDITE. Bukovanska, et al., *Meteoritics* 18, 223-240 (1983). Analysis from Usti nad Orlici meteorite, Czechoslovakia.
- PENTLANDITE. Bulanova et al., (*Zap. Vses. Mineral.* 0-va. 111, 557-562 (1982)(Russian)) *Chem. Abstr.* 98, no. 4, 19596 (1983). Microprobe analysis of inclusion in diamond.
- PENTLANDITE. Cabri, et al., *Can. Mineral.* 22, 521-542 (1984). Microprobe analyses (11) from Sudbury and Stillwater.
- PENTLANDITE. Cagatay, (*Mineral. Deposita* 22, 163-171) (1987) Microprobe analyses (2) from Pancarli deposit, E. Turkey
- PENTLANDITE. Durazzo and Taylor, *Miner. Deposita* 17, 313-332 (1982). Exsolution in the system Fe-Ni-S.
- PENTLANDITE. Dymek, (*Can. Mineral.* 25, 245-249) (1987) Microprobe analyses (3) from metadunite, W. Greenland
- PENTLANDITE. Galii and Krochuk, (*Mineral. Zh.* 7(5), 64-) (1985) (Russian) Microprobe analyses (2) from carbonatites, Ukrainian Shield
- PENTLANDITE. Garuti, et al., *Earth Planet. Sci. Lett.* 70, 69-87 (1984)(English). Microprobe analyses (11) from peridotites, Ivrea-Verbaní, Italy.
- PENTLANDITE. Kacharovskaya et al. (*Petrol. Mineral. Bazitov Sib.*, 111-116) (1984) (Russ), *Chem. Abstr.* 103, no. 6, 40088 (1985). Trace elements in Cu-Ni ores, Ioko-Dovyren massif.
- PENTLANDITE. Kelly and Vaughan, *Mineral. Mag.* 47, 453-463 (1983). Pyrrhotite - pentlandite ore textures. Probe analyses (4).
- PENTLANDITE. Lorand and Conquere, *Bull. Mineral.* 106, 585-605 (1983). Microprobe analyses (11) from basalts, France.
- PENTLANDITE. Lorand and Pinet, *Can. Mineral.* 22, 553-560 (1984). Occurrence in peridotite, Greece. Microprobe analyses (3).
- PENTLANDITE. Pasteris, *Can. Mineral.* 22, 39-53 (1984). Analyses (7) from Duluth complex, Minn.
- PENTLANDITE. Patterson and Watkinson, *Can. Mineral.* 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.

- PENTLANDITE. Piispanen and Tarkian, *Miner. Deposita* 19, 105-111 (1984). Microprobe analyses (3) from Rometolvas, Finland.
- PENTLANDITE. Pouclet et al., (*Jour. Africa Earth Sci.* 6, 29-43) (1987) (French) Microprobe analyses (4) from Akjoujt Cu deposit, Mauritania
- PENTLANDITE. Ripley, *Miner. Deposita* 18, 3-15 (1983)(English). Microprobe analysis from Deer Lake complex, Minn. (Co 7.0%).
- PENTLANDITE. Sakai and Kuroda, *J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 78, 467-478 (1983)(English). Microprobe analyses (2) from ultramafic rocks, Sanbagawa belt, Japan.
- PENTLANDITE. Shiraishi et al. (*Proc. Symp. Antarctic Geosci.* 4th, 1983, 126-144) (1984)(Eng.), 502 (990) J2755. Microprobe analysis (1), Prince Olav coast, E. Antarctica.
- PENTLANDITE. Tsukimura and Nakazawa (*Acta Cryst.* 40B(4), 364-367) (1984) (Eng), *Chem. Abstr.* 101, no. 12, 101719 (1984). Fe-Ni distribution in
- PENTLANDITE. Ulf-Moller (*J. Petrol.* 26, 64-91) (1985). Microprobe analyses (3) from Disko, W. Greenland.
- PENTLANDITE. Weinke and Wieseneder, *Ore Genesis: The State of the Art* (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (4) from mafic rocks, East Alps.
- PENZHINITE. Bochek, et al., *Zap. Vses. Mineral. O-va.* 113, 356-360 (1984)(Russian). New mineral, $(Ag,Cu)_4Au(S,Se)_4$. Analyses (4), x-ray data, optics. Hex., a 13.779, a 13.779, c 16.980 A, Z=18, G calcd. 8.35.
- PERETAITE. Sarp, et al., (*Arch. Sci.* 36, 345-347) (1983), *Chem. Abstr.* 100, no. 8, 54675 (1984). Analysis from Tuscany, Italy, G 4.0, a 24.638, b 5.607, c 10.180 A, beta 96 degrees. X-ray powder data.
- PERICLASE. Anderson and Suzuki, (*J. Geophys. Res.*, [Sect.] B, 88(B4), 3549-3556 (1983)) *Chem. Abstr.* 98, no. 22, 182751 (1983). Anharmonicity (Grueneisen ratio, sp. heat) at high temps of fayalite and forsterite.
- PERICLASE. Appel et al. (*Phys. Status Solidi A* 83(1), 179-184) (1984). *Chem. Abstr.* 101, no. 4, 31366 (1984). Dislocation and plasticity of single crystals.
- PERICLASE. Day et al. (*Am. Mineral.* 70, 237-248) (1985). Thermodynamic analysis of equil. in system $MgO-SiO_2-H_2O$.
- PERICLASE. Dewendra et al. (*Trans. J. Brit. Ceramic Soc.* 81, 185-189) (1982), *Mineral. Abstr.* 35, 41 (1984). Stability in systems $MgO-R_2O_3$ (R=Al, Cr, Fe^{+3}).
- PERICLASE. Eberhardt et al. (*Appl. Optics* 24(3), 388-395) (1985), *Chem. Abstr.* 102, no. 14, 116741 (1985). Reflectance at CO_2 laser wavelengths.
- PERICLASE. Falzone and Stacey, (*Phys. Chem. Miner.* 8, 212-217 (1982)) *Mineral. Abstr.* 34, 216 (1983). Thermal expansion.
- PERICLASE. Franz (*Am. J. Sci.*, 282, 1325-1339) (1982), *Mineral. Abstr.* 35, 39-40 (1984). Stability in system H_2O-MgO 590-670 degrees C.
- PERICLASE. Narayan (*J. Appl. Phys.* 57, 2703-2708) (1985), *Chem. Abstr.* Dislocations in.
- PERICLASE. Topor and Mel'chakova, (*Vestn. Mosk. Univ.*, Ser. 4: Geol., no. 6, 50-58 (1982)(Russian)) *Chem. Abstr.* 98, no. 16, 129387 (1983). Heat capacity.
- PERICLASE. Treiman and Essene, *Contrib. Mineral. Petrol.* 85, 149-157 (1984). Microprobe analyses (1) from Oka complex, Quebec. (FeO 8.93%)
- PERLIALITE. Men'shikov, (*Zap. Vses. Mineral. O-va.* 113, 607-612) (1984), *Chem. Abstr.* 102, no. 8, 65028 (1985). New mineral, $K_9Ca(Ca,Sr)Al_{12}Si_{24}O_{72} \cdot 15H_2O$, hex., P6/mmm, a 18.49, c 7.51 A, G 2.14. Analysis, optics, x-ray data.
- PEROVSKITE. Basu, et al., *Contrib. Mineral. Petrol.* 86, 35-44 (1984). Microprobe analyses (1) from kimberlite dikes, N.Y.

- PEROVSKITE. Boctor and Yoder, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe analyses (4) from melilite rocks, S. Africa
- PEROVSKITE. Hashimoto and Grossman, (Geochim. Cosmochim. Acta 51, 1685-1704) (1987) Microprobe analyses (1) from Al-rich inclusions, Allende meteorite
- PEROVSKITE. Ilupin and Genshaft, (Mineral. Zh. 8(5), 65-72) (1986) (Russian) Microprobe analyses (2) from kimberlite
- PEROVSKITE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 83-99 (1981)(English). Microprobe analyses (1) from kimberlite, Kenya.
- PEROVSKITE. Jones and Wyllie (J. Petrol. 26, 210-222) (1985). Microprobe analyses (2) from Benfontein sill, S. Africa.
- PEROVSKITE. Jones and Wyllie, Earth Planet. Sci. Lett. 69, 128-140 (1984). Analyses and rare earth in 10 from kimberlites.
- PEROVSKITE. Koopmans, et al., (Acta Crystallogr., Sect. C, C39, 1323-1325) (1983), Mineral. Abstr. 35, 138 (1984). Synthetic CaTiO_3 has space group Pcmn, a 5.3829, b 7.6453, c 5.4458 Å, Z=4.
- PEROVSKITE. Kozlov, et al., (Geokhimiia, 1684-1688) (1984), Chem. Abstr. 102, no. 4, 28623 (1985). U, Th, and lanthanides from kimberlites, W. Yakutia.
- PEROVSKITE. Muir, et al., Can. Mineral. 22, 689-694 (1984). Mossbauer spectrum. Most of the iron is present as Fe^{+3} .
- PEROVSKITE. Orlova et al., (Zap. Vses. Mineral. O-va. 108, 590-595 (1979)) Mineral. Abstr. 34, 177 (1983). Analyses (3) from Khabarovsk, Aldan, a 5.452, b 7.643, c 5.387Å.
- PEROVSKITE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (1) from kimberlite, Greenland.
- PEROVSKITE. Shee, (Deve. Petro. 11A, 59-73, 435-466) (1984), Chem. Abstr. 100, no. 26, 213273 (1984). Microprobe analyses (not in Abstr.) from kimberlite, S. Africa.
- PEROVSKITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- PERRIERITE. van Bergen, Mineral. Mag. 48, 553-556 (1984). Analyses (2) from Mt. Amiata, Italy.
- PERRYITE. Grossman et al. (Geochim. Cosmochim. Acta 49, 1781-1795) (1985). Microprobe analysis (1) from Qingzhen chondrite.
- PETALITE. Hemingway, et al., Am. Mineral. 69, 701-710 (1984). Heat capacity 200-1800 degrees K. Thermodynamic properties.
- PETALITE. London and Burt, Mineral. Assoc. Canada Short Course no. 8, 99-133 (1982). Review of occurrence and properties in granite pegmatites.
- PETALITE. Skvortsov et al. (Zap. Vses. Mineral. O-va. 114, 216-219) (1985). Calculation of thermodynamic parameters.
- PETALITE. Tagai et al., (Z. Kristallogr. 160, 159-170 (1982)(German)) Chem. Abstr. 98, no. 14, 110840 (1983). Mineral. Abstr. 34, 397 (1983) Structure by neutron scattering gives a 11.737, b 5.171, c 7.630 Å, beta 112.54 degrees.
- PETASITE. Abstr. in Bull. Mineral. 106, 635 (1983). Abstract of original description.
- PETROVSKAITE. Nesterenko, et al., (Zap. Vses. Mineral. O-va. 113, 602-607) (1984), Chem. Abstr. 102, no. 8, 65027 (1985). New mineral, AuAg(S,Se), Kazakhstan. Analysis, G calc 9.5, a 4.943, b 6.670, c 7.221 Å, beta 95.68 degrees, mon., Z=4.
- PETZITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (2) from gold-silver deposits

- PETZITE. Lebedeva, (Deposited Doc. VINITI, 6796-83, 114-121) (1983), Chem. Abstr. 102, no. 2, 9846 (1985). Analysis from Au deposit. No data in abstr.
- PETZITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- PHARMACOSIDERITE. Mutter et al. (N. Jb. Miner. Mh., 183-192) (1984)(Eng.). Analyses, unit cells for K, Ba, Na varieties and synthetic with Ca, NH₄, Rb, etc. Chem. Abstr. 100, no. 20, 159655 (1984). Analyses, x-ray data.
- PHAUNOXITE. Bari et al., (Bull. Mineral. 105, 327-332 (1982)) Chem. Abstr. 98, no. 10, 75508 (1983). Mineral. Abstr. 34, 185 (1983). Abstract of original description.
- PHAUNOXITE. Catti and Ivaldi, (Acta Crystallogr., Sect. B: Struct. Sci., B39, 4-10 (1983)(English)) Chem. Abstr. 98, no. 14, 110831 (1983). Mineral. Abstr. 34, 400 (1983) Structure, dehydration. Tric., a 12.563, b 12.181, c 6.205A, alpha 88.94, beta 91.67, gamma 113.44°, G 2.27.
- PHENAKITE. Burt, Mineral. Assoc. Canada Short Course no. 8, 135-148 (1982). Review of occurrence in granite pegmatites. Analyses.
- PHENAKITE. Dobrovolskaya, et al., Mineral. Zh. 6, no. 5, 64-72 (1984). Magnetic properties.
- PHENAKITE. Downs, Diss. Abstr. 44B, 3022 (1984). Electron distribution in.
- PHENAKITE. Hazen and Finger, (Phys. Chem. Minerals 14, 426-434) (1987) Unit cells at 25-690 deg. C Thermal expansion
- PHENAKITE. Kiseleva and Shuriga, (Geokhimiia, no. 2, 310-313 (1983)) Chem. Abstr. 98, no. 18, 146721 (1983). Calorimetric data. Heat capacity, heat of formation, enthalpy.
- PHENAKITE. Ospanov, (Zh. Neorg. Khim. 28, 324-328 (1983)) Chem. Abstr. 98, no. 16, 129404 (1983). Soly in acids, calcd from thermodynamics, and experimental.
- PHENAKITE. Rodionov (Geokhim., Mineral., Petrol. 19, 52-58) (1984)(Russ.). Chem. Abstr. 102, no. 14, 123345 (1985). Habit of crystals grown from gas phase.
- PHENAKITE. Soboleva et al. (Geokhimiia (6), 812-822) (1984). Chem. Abstr. 101, no. 8, 57891 (1984). Hydrothermal solubility in HF-NaF etc. Calculation of thermodynamic functions.
- PHENAKITE. Topor and Mel'chakova, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 6, 50-58 (1982)(Russian)) Chem. Abstr. 98, no. 16, 129387 (1983). Heat capacity.
- PHENAKITE. Vishnevskii, et al., Mineral. Sb. 37, 3-7 (1983)(Russian). Reflectance spectra in ultra-violet.
- PHILLIPSITE. Alberti and Brigatti (Am. Mineral. 70, 805-813) (1985). Multivariate analysis of ten elements shows strong chemical differentiation between hydrothermal and sedimentary samples.
- PHILLIPSITE. DeGennaro, et al., (Period. Mineral. 51, 287-310) (1982), Chem. Abstr. 100, no. 8, 54672 (1984). Analysis, optics, x-ray data from tuffs, Italy. DTA.
- PHILLIPSITE. Donahoe, et al., (Clays Clay Miner. 32, 433-443) (1983), Chem. Abstr. 102, no. 6, 48855 (1985). Synthesis.
- PHILLIPSITE. Hemingway and Robie, Am. Mineral. 69, 692-700 (1984). Low-temp. heat capacities and thermodynamic functions.
- PHILLIPSITE. Jakobsson and Moore, (Bull. Geol. Soc. Am. 97, 648-659) (1986) Microprobe analyses (4) from Surtsey volcano, Iceland
- PHILLIPSITE. Noack, Mineral. Mag. 47, 47-50 (1983). Analyses (3) from Mururoa, S. Pacific.
- PHILLIPSITE. Passaglia and Vezzalini (Contrib. Mineral. Petrol. 90, 190-198) (1985). Analyses from Italy (7). Unit cells.

- PHLOGOPITE. Ackermand et al., (Jour. Metamorph. Geol. 5, 323-339) (1987)
Microprobe analyses (2), Caraiba complex, Brazil
- PHLOGOPITE. Allan and Carmichael, Contrib. Mineral. Petrol. 88, 203-216
(1984). Microprobe analyses (12) from lavas, Colima, Mexico.
- PHLOGOPITE. Altherr, et al., Lithos 15, 191-192 (1982)(English). Microprobe
analyses (2) from anatexites, Tanzania.
- PHLOGOPITE. Amundsen, (Neues Jahrbuch Miner., Abh. 156, 121-140) (1987) (Eng)
Microprobe analyses (2) from peridotite xenoliths, Canary Islands
- PHLOGOPITE. Arai, Contrib. Mineral. Petrol. 87, 260-264 (1984). Review of
compositional variation in peridotites as dependent on P-T.
- PHLOGOPITE. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984).
Microprobe analyses (6) from granulite, Sipiwesk Lake, Manitoba.
- PHLOGOPITE. Boyd, et al., Geochim. Cosmochim. Acta 48, 381-384 (1984).
Microprobe analyses (1) from kimberlites, S. Africa.
- PHLOGOPITE. Bachinski and Simpson, Am. Mineral. 69, 41-56 (1984). Analyses (9)
from Shaw's Cove, New Brunswick, Canada, with high TiO₂ (max 6.4%).
- PHLOGOPITE. Basu, et al., Contrib. Mineral. Petrol. 86, 35-44 (1984).
Microprobe analyses (6) from kimberlite dikes, N.Y.
- PHLOGOPITE. Boctor and Yoder, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe
analyses (9) from melilite rocks, S. Africa
- PHLOGOPITE. Boyd et al. (Geochim. Cosmochim. Acta 48, 381-384) (1984).
Microprobe analysis (1) from kimberlites, S. Africa.
- PHLOGOPITE. Boyd, et al., Contrib. Mineral. Petrol. 86, 119-130 (1984).
Microprobe analyses (1), Mzongwana kimberlite, S. Africa.
- PHLOGOPITE. Bradvorova, et al., (Geokhim., Mineral., Petrol. 10, 41-55) (1979),
Mineralog. Abstr. 34, 426 (1983). Synthesis of Fluorophlogopite.
- PHLOGOPITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses
(2) from Werner Bjerger complex, Greenland.
- PHLOGOPITE. Bucher-Nurminen, J. Petrol. 23, 325-343 (1982). Microprobe
analyses (2), E. Greenland.
- PHLOGOPITE. Duda (Bochum Geol. Geotechn. Arb. 16, 24-40) (1984). (G(530) q
B628). Microprobe analyses (10) from W. Eifel, Germany, alkalic rocks.
- PHLOGOPITE. Ehrenberg, J. Petrol. 23, 507-547 (1982). Microprobe analyses (14)
from Navajo volcanic field.
- PHLOGOPITE. Eremenko et al., (Mineral. Zh. 7(6), 9-18) (1985) (Russian)
Analyses (2) from Kursk magnetic anomaly
- PHLOGOPITE. Esperanca and Holloway ((Kimberlites 11B, 219-227) (1984). (150.3
D493). Microprobe analysis (1) from potassic latites, Carefree, Ariz.
- PHLOGOPITE. Exley et al., (Contrib. Mineral. Petrol. 81, 59-63 (1982)) Chem.
Abstr. 98, no. 4, 19608 (1983). Analyses from lherzolite, Italian Alps.
- PHLOGOPITE. Exley et al., Am. Mineral. 68, 512-516 (1983). Microprobe analyses
(5) from kimberlite, S. Africa.
- PHLOGOPITE. Frechen (Neues Jahrb. Mineral., Abh. 150, 65-93) (1984).
Microprobe analyses (3) from the Eifel, Germany.
- PHLOGOPITE. Frietsch (Geol. Foeren. Stockholm Foerh. 106, 219-230)
(1984)(Eng.). Analysis (1) from skarn Fe ores, northern Sweden.
- PHLOGOPITE. Gallo et al. (N. Jb. Miner., Mh., 198-210) (1984)(Eng.).
Microprobe analysis (1) from alkalic rocks, Italy.
- PHLOGOPITE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe
analyses (1) from teschenite, N.S. Wales.
- PHLOGOPITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 68-69) (Polish) Analyses
(1) from Polish Carpathians
- PHLOGOPITE. Guggenheim and Kato (Mineral. J. Tokyo 12, 1-5) (1984)(Eng.).
Refinement of structure of kinoshitalite and manganoan phlogopite.

- PHLOGOPITE. Herd et al., (Spec. Paper Geol. Assoc. Canada 31,241-253) (1986)
Microprobe analyses (6), St. Maurice area, Quebec
- PHLOGOPITE. Hoinkes, Schweiz. Mineral. Petrogr. Mitt. 63, 95-114
(1983)(English). Microprobe analysis from Tyrol.
- PHLOGOPITE. Hunter, et al., Am. Mineral. 69, 30-40 (1984). Microprobe analyses
(7) from kimberlite, Fayette Co., PA.
- PHLOGOPITE. Ionov, (Geol. Zbornik Bratislava 37, 681-692) (1986) (Eng)
Microprobe analyses (4) from peridotite xenoliths, Mongolia
- PHLOGOPITE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 101-110
(1981)(English). Electron probe analyses (4) from peridotite, Kenya.
- PHLOGOPITE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 83-99
(1981)(English). Microprobe analyses (9) from kimberlite, Kenya. Zoned.
- PHLOGOPITE. Ivanitskii et al., (Mineral. Zh. 8(3), 41-48) (1986) (Russian)
Analyses (3) from kimberlite pipes nuclear magnetic resonance study
- PHLOGOPITE. Jones and Smith (N. Jb. Miner., Mh., 228-240) (1984)(Eng.). Ion
probe analyses (5) from kimberlites.
- PHLOGOPITE. Jones, et al., J. Geol. 90, 435-454 (1982). Microprobe analyses
(20) from peridotites, S. Africa.
- PHLOGOPITE. Kampunzu et al. (Bull. Volcanol. 47, 79-103) (1984)(French).
Microprobe analyses (4) from Nyamulagira volcano.
- PHLOGOPITE. Kiji, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 75- 80)
(1987) (Jap) Microprobe analyses (1) from ultramafic rocks, SW Japan
- PHLOGOPITE. Kozlova et al. (Vestn. Mosk. Univ., Ser. 4: Geol. 3, 52-57)
(1984), Chem. Abstr. 101, no. 16, 134297 (1984). Synthesis twinning.
- PHLOGOPITE. Kupriyanova and Meisner, Zap. Vses. Mineral. O-va. 113, 109-113
(1984) (Russian). Chem. analysis (20). Study of acentricity.
- PHLOGOPITE. Larsons, Econ. Geol. 79, 1880-1896 (1984). Microprobe analyses (1)
from Bruce Cu-Zn ores, Arizona.
- PHLOGOPITE. Lefebvre, (Ann. Rappt. Museum Roy. Belg. for 1983-1984, 12- 151)
(1985) (French) G(593) T27r Analyses (2) from Zaire
- PHLOGOPITE. Lippard, Mineral. Mag. 48, 13-20 (1984). Microprobe analyses (2)
from Oman Mts., Arabia.
- PHLOGOPITE. Luais, (Doc. Trav. Centre Geol. Montpellior 9, 1-229) (1987)
(French) G(540) q(334d) Microprobe analyses (15) from the Mediterranean
- PHLOGOPITE. Maksimovic and Panto, (Bull. - Acad. Serbe Sci. Arts, Cl. Sci.
Nat. Math., Sci. Nat., 22, 1-6 (1982)(English)) Chem. Abstr. 98, no. 26,
219114 (1983). Analysis with NiO up to 4.33%, Macedonia.
- PHLOGOPITE. Matsueda, et al., Proc. 3rd Symp. Antarctic Geosci., 166-176
(1983)(English) (502(990)J27SS no. 28). Microprobe analyses (3) from skarn,
Antarctica.
- PHLOGOPITE. Mezger and Okrusch (Tschermarks Mineral. Petrogr. Mitt. 34, 67- 82)
(1985). Microprobe analyses (2) from metamorphosed dolomites, Samos, Greece.
- PHLOGOPITE. Mitchell and Lewis, Can. Mineral. 21, 59-64 (1983). Microprobe
analyses (9) from peridotite, Arkansas.
- PHLOGOPITE. Mitchell, Contrib. Mineral. Petrol. 86, 178-188 (1984).
Microprobe analyses (8), kimberlites, Namibia.
- PHLOGOPITE. Morandi et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 677-693)
(1985). G(550)So15r. Microprobe analyses (5), Predazzo, Italy. X-ray data,
a 5.318, b 9.223, c 10.294A, beta 99 degrees 36'. DTA, infra-red.
- PHLOGOPITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (3)
from manganeseiferous cherts, Alps
- PHLOGOPITE. Muszynski and Preczka, (Mineral. Polonica 16, 69-76) (1985) (Eng)
Analysis from lamprophyre, Silesia, X-ray, Infra-red data
- PHLOGOPITE. Nickel and Green (Kimberlites 11B, 161-178) (1984). (150.3 D493).
Microprobe analyses (9) from ultramafic xenoliths, Victoria, Australia.

- PHLOGOPITE. Nikol'skii, (Dokl. Akad. Nauk SSSR 275, 955-958) (1984), Chem. Abstr. 101, no. 6, 41199 (1984). Stability in system with H-C-O. Thermodynamic functions.
- PHLOGOPITE. Page and Zientak, (U.S. Geol. Survey Bull. 1674A, 1-35) (1987) Microprobe analyses (12) from olivine cumulates, Stillwater Complex, Montana
- PHLOGOPITE. Pasteris, Can. Mineral. 21, 41-58 (1983). Microprobe analyses (5) from De Beers kimberlite, S. Africa.
- PHLOGOPITE. Pe-Piper, Lithos 16, 23-33 (1983). Microprobe analyses (1) from western Greece.
- PHLOGOPITE. Pedersen and Hald, Lithos 15, 137-159 (1982)(English). Microprobe analyses (2) from dacite, Kroksfjordor, Iceland.
- PHLOGOPITE. Pertser and Zinov'eva, Izv. Akad. Nauk SSSR, Ser. Geol., no. 3, 66-78 (1984)(Russian). Microprobe analyses (6) from Uzbekistan.
- PHLOGOPITE. Raskova (Geochim. Mineral., Petrol. 16, 29-46) (1982), Mineral. Abstr. 35, 78 (1984). Analyses (not in Abstr.), optics, DTA, x-ray data from Bulgaria.
- PHLOGOPITE. Rey and Kubler, Schweiz. Mineral. Petrogr. Mitt. 63, 13-36 (1983)(French). Analyses (5), x-ray intensities of oriented sections as a means of identification.
- PHLOGOPITE. Robie and Hemingway, Am. Mineral. 69, 858-868 (1984). Heat capacity, entropy, 5-900 degrees K, estimates of free energy, 1 analysis.
- PHLOGOPITE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (2), St. Paul's rocks, Atlantic Ocean.
- PHLOGOPITE. Rudashevskii, Zap. Vses. Mineral. O-va. 113, 186-195 (1984)(Russian). Microprobe analyses (1) of minerals enclosing Pt minerals.
- PHLOGOPITE. Rumyantseva (Zap. Vses. Mineral. O-va. 114, 55-62) (1985). Analysis from Karelia (3) of vanadian phlogopite (V_2O_3 7.26 13.20 percent), a 5.265, 5.31; b 9.128, 9.08; c 20.044, 10.17A; beta 95.02, 100.65 degrees; G 2.86. DTA.
- PHLOGOPITE. Schreyer, et al., Contrib. Geol. 86, 200-207 (1984). Microprobe analyses (1) from Limpopo belt, Africa.
- PHLOGOPITE. Schultz-Guttler et al., (Schweiz. Min. Petr. Mitt. 66, 281-294) (1986) (Eng) Analyses (7) from Buritirama, Brazil - Phase relations in system $CaO-MnO-MgO-K_2O-Al_2O_3-SiO_2-CO_2-H_2O$ infrared from these
- PHLOGOPITE. Semenova et al., (Mineral. Zh. 5, no. 1, 41-49 (1983)) Chem. Abstr. 98, no. 22, 182730 (1983). Refinement of structure of tetraferriphlogopite.
- PHLOGOPITE. Sheraton et al., BMR J. Aust. Geol. Geophys. 7, 269-273 (1982). Microprobe analyses (5) from granulites, Antarctica.
- PHLOGOPITE. Shinno and Suwa (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 76, 122-129) (1981)(Jpn.), Mineral. Abstr. 36, 16 (1985). Mossbauer spectra of phlogopites showing reverse pleochroism.
- PHLOGOPITE. Shinno, (Prelim. Rep. Afr. Stud. (Nagoya Univ.) 6, 151-157 (1981)(English)) Chem. Abstr. 98, no. 22, 182756 (1983). Mossbauer spectrum of phlogopite with reverse pleochroism.
- PHLOGOPITE. Stern and Klein (Schweiz. Mineral. Petrogr. Mitt. 63, 187-202) (1983)(Eng.), Chem. Abstr. 101, no. 14, 114145 (1984). Analyses from Madagascar.
- PHLOGOPITE. Stolz, Mineral. Mag. 48, 167-179 (1984). Microprobe analyses (2) from ultramafic inclusions in nepheline mugearite, N.S. Wales.
- PHLOGOPITE. Takeda (J. Sci. Hiroshima Univ. Ser. C, 8, 221-280) (1984)(Eng.). Microprobe analyses (2) from greenstones, Shikoku, Japan.
- PHLOGOPITE. Tanaka et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 438-454 (1982)(English). Microprobe analyses (2) from cortlandtite, N.E. Japan.

- PHLOGOPITE. Tsai, et al., Acta Geol. Taiwanica 21, 81-91 (1982)(English).
Microprobe analyses (1), megacrysts in basalt, N. Taiwan.
- PHLOGOPITE. Viereck (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984).
(G(530)qB628). Microprobe analyses (9) from Eifel, Germany.
- PHLOGOPITE. Volfinger et al. (Geochim. Cosmochim. Acta 49, 37-48) (1985),
Chem. Abstr. 102, no. 12, 98519 (1985). Incorporation of Cl in.
- PHLOGOPITE. Wagner and Velde (Bull. Mineral. 108, 173-187) (1985)(Eng.).
Microprobe analyses (13) from minette dikes, Jersey and Italy.
- PHLOGOPITE. Wagner et al., (Contrib. Mineral. Petrol. 96, 186-191) (1987)
Microprobe analyses (28) from sector-zoned crystals from shonkinite,
theralite, melilitite, Germany, Utah, Morocco
- PHLOGOPITE. Waters, (Contrib. Mineral. Petrol. 95, 523-533) (1987) Av.
composition from xenoliths in kimberlite, S. Africa
- PHLOGOPITE. Wearing, Mineral. Mag. 48, 81-84 (1984). Microprobe analyses (7)
from blast furnace slags + from kimberlite (De Beers).
- PHLOGOPITE. Williams (Can. Mineral. 22, 417-421) (1984). Microprobe analysis
(1). Fiskenaesset, Greenland.
- PHLOGOPITE. Williams, Mineral. Mag. 47, 233-235 (1983). Microprobe analysis
from Fornas, Spain.
- PHLOGOPITE. Windley, et al., Contrib. Mineral. Petrol. 86, 342-358 (1984).
Microprobe analyses (6) from Limpopo belt, S. Africa.
- PHLOGOPITE. Wyatt and Lawless (Kimberlites 11B, 43-56) (1984) (150.3 D 493).
Microprobe analyses (4) from xenoliths, Baltfontein and DeBeus mines.
- PHLOGOPITE. Yau, et al., Contrib. Mineral. Petrol. 88, 299-306 (1984). Probe
analysis, Franklin, N.J.
- PHLOGOPITE. Young (Mineral. Mag. 48, 345-350) (1984). Microprobe analyses (2)
of inclusions in chromite, Rhum, Scotland.
- PHLOGOPITE. Zosin et al., (Silikaty Mater. Miner. Suy'ya, 119-124) (1983),
Chem. Abstr. 100, no. 10, 71344 (1984). Initial stage of hydration.
- PHLOGOPITES. Stepanenko (Tr. Komi Fil. Akad. Nauk SSSR 45, 36-47) (1984)
(Russ) (G(570)AK144+). Analyses (4) from carbonatites.
- PHOSPHOFIBRITE. Walenta and Dunn (Chem. Erde 43, 11-16) (1984)(Eng.) Chem.
Abstr. 101, no. 16, 134265 New mineral from Clara Mine, Black Forest. $K Cu$
 $Fe^{+3}_{15}(PO_4)_{12}(OH)_{12} \cdot 12H_2O$, yellow to yellow-green. Orth., a 14.40,
b 18.76, c 10.40A, Z=2, G 2.90 Analysis, x-ray data, optics.
- PHOSPHOPHYLLITE. Ericsson and Nord (Neues Jahrb. Mineral., Monatsh., 193- 197)
(1984)(Eng.), Chem. Abstr. 100, no. 26, 213130 (1984). Mossbauer study.
Mossbauer and 2 samples shows all Fe in octahedral positions.
- PHOSPHOSIDERITE. Ruzsala, (U.S. Patent 4,374,109, 1-2 (1983)) Chem. Abstr. 98,
no. 18, 145982 (1983). Synthesis.
- PHOSPHOSIDERITE. Shigley and Brown (Am. Mineral. 70, 395-408) (1985).
Microprobe analysis (1), Stewart pegmatite, Calif. Unit cell, optics.
- PHOSPHURANYLITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation
and optical absorption spectra.
- PHOSPHURANYLITE. Matkovskii et al., (Mineral. Sb. (Lvov) 35, 27-32 (1981))
Chem. Abstr. 98, no. 10, 75521 (1983). Excitation-luminescence spectrum.
- PHOSPHURANYLITE. Vochten and Brizzi, (Mineral. Record 8, 181-184) (1987)
Occurrence at Cagliari, Sardinia
- PHOSPHURANYLITE. Vochten and Van Doorselaer, Mineral. Rec. 15, 293-297 (1984).
Occurrence at Cunha Baixa mine, Portugal. Color photographs.
- PHURCALITE. Chew (Calif. Geol. 35, 246-247) (1982), Mineral. Abstr. 36, 131
(1985). Occurrence in Riverside County, Calif.
- PHYLLOTUNGSTITE. Mineral. Abstr. 38, 87M/3195 (1987) Abstract of original
description

- PHYLLOTUNGSTITE. Walenta, Neues Jahrb. Mineral., Monatsh., 529-535 (1984). New mineral, $\text{CaFe}_3^{+3}\text{H}(\text{WO}_4)_6 \cdot 10\text{H}_2\text{O}$, from Black Forest. Orth., a 7.29, b 12.59, c 19.55 Å, Z=3. Analysis, optics, x-ray data, G 5.26 calcd. Yellow.
- PICKERINGITE. Neradovskii et al., (Zap. Vses. Mineral. O-va. 108, 343-345 (1979)) Mineral. Abstr. 34, 180 (1983). Analysis, optics from Pechenga.
- PIEMONTE. Kawachi, et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (4) from piemontite schist, W. Otago, New Zealand.
- PIEMONTE. Matsubara and Kato, (Bull. Natl. Sci. Museo Tokyo, Ser. C, 13, 1-11) (1987) (Eng) Analyses (2) from Sanbagawu, Japan
- PIEMONTE. Mottano, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (4) from manganiferous cherts, Alps
- PIEMONTE. Pouliot et al. (Can. Mineral. 22, 453-464) (1984). Microprobe analyses from Remigny, Quebec.
- PIEMONTE. Tillmans et al. (Abstr. Acta Cryst. 40A, C258) (1984). Refinement of structure, a 8.8739, b 5.6156, c 10.1484 Å, Beta 115.488 degrees, $\text{P2}_1/\text{m}$.
- PIERROTITE. Engel, et al., (Z. Kristallogr. 165, 209-215) (1983), Abstr. in Am. Mineral. 70, 220 (1970). Structure. Orth., Pna_21 , a 38.746, b 8.816, c 7.989 Å, Z=4, formula $\text{Tl}_2(\text{Sb,As})_{10}\text{S}_{16}$.
- PILSENITE. Mioskos, Chem. Erde 42. 281-296 (1983)(English). Microprobe analyses (1) from Macedonia.
- PILSENITE. Mposkos (Oelt. Hell. Geol. Hetair. 16, 97-108) (1982)(Publ. 1983)(Greek), Chem. Abstr. 102, no. 26, 223541 (1985) Microprobe analyses from Macedonia.
- PIMELITE. Gerard and Herbillon, (Clays Clay Miner. 31, 143-151 (1983)(English)) Chem. Abstr. 98, no. 20, 164128 (1983). Infra-red study.
- PIMELITE. Manceau et al. (Springer Proc. Phys. 2, 358-361) (1984)(Eng.), Chem. Abstr. 103, no. 4, 25071 (1985). Cation ordering (Ni-Mg) by x-ray and optical spectroscopy.
- PIRQUITASITE. Johan and Picot, (Bull. Mineral. 105, 229-235 (1982)) Mineral. Abstr. 34, 73 (1983). Abstract of original description.
- PIYPITE. Vergasova et al. (Dokl. Akad. Nauk SSSR 275(2), 714-717) (1984) (Russ), Chem. Abstr. 101, no. 16, 134273 (1984). New mineral, $\text{K}_2\text{Cu}_2(\text{SO}_4)_2$. Tet., a 13.67, c 4.94 Å, Z=4. Analysis, optics from Tolbachinsk, Kamchatka.
- PIYPITE. Vergasova, et al., Abstract in Am. Mineral. 70, 437-438 (1985). Abstract of original description.
- PLAGIOCLASE. Al Dahon et al., (N. Jb. Miner., Mh., 327-335) (1987) (Eng) Untwinned albite from granite, central Sweden
- PLAGIOCLASE. Allan and Carmichael, Contrib. Mineral. Petrol. 88, 203-216 (1984). Microprobe analyses (4) from lavas, Colima, Mexico.
- PLAGIOCLASE. Altherr, et al., Lithos 15, 191-192 (1982)(English). Microprobe analyses (2) from anatexites, Tanzania. (albite)
- PLAGIOCLASE. Anderson, Am. Mineral. 69, 660-676 (1984). Detailed study of zoned crystals from Fulgo volcano, Guatemala.
- PLAGIOCLASE. Andreeva and Troneva, (Rock-forming minerals of magmatic rocks, Nauka, 148-164) (1986) (Russian) [170(570)Os5] Analysis (11) from alkalic rocks, Vitim
- PLAGIOCLASE. Apps and Neil, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 290-316) (1983)(English), Chem. Abstr. 100, no. 8, 54678 (1984). Solubility of albite 125-350 degrees.
- PLAGIOCLASE. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984). Microprobe analyses (2) from granulite, Sipiwesk Lake, Manitoba.
- PLAGIOCLASE. Arkai, Acta Mineral.-Petrogr. 26, no. 2, 129-153 (1984)(English). G(534)S22am. Microprobe analyses (6) from crystalline basement, Hungary.

- PLAGIOCLASE. Armienti, et al., J. Volcanol. Geothermal Res. 17, 289-311 (1983)(English). Microprobe analyses (12) from Phlegrean Fields, Italy.
- PLAGIOCLASE. Asami and Asami (Mem. Geol. Soc. Japan 21, 151-161) (1982)(Jap.). (G(620) G29m). Analyses (7) from xenoliths in andesites, Kagawa Pref.).
- PLAGIOCLASE. Ashcroft, (Bull. Roy. Soc. New Zealand 23, 48-63) (1986) Analyses (2) from volcanic rocks, Northland
- PLAGIOCLASE. Barberi et al. (Bull. Volcanol. 47, 125-141) (1984)(Eng.). Microprobe analyses (9) from Latera caldera, Italy.
- PLAGIOCLASE. Bardintzeff, Bull. Mineral. 107, 41-54 (1984). Analyses (16) from Soufriere, St. Vincent Island, Caribbean.
- PLAGIOCLASE. Barink, Lithos 17, 247-258 (1984)(English). Microprobe analyses (2) from metagabbro, Quebec.
- PLAGIOCLASE. Barley, (Jour. Volcanol. Geothermal Research 32, 247-267) (1987) Microprobe analyses (6) from volcanic rocks, New Zealand
- PLAGIOCLASE. Barnicoat, J. Metamorph. Geol. 1, 163-182 (1983). Microprobe analyses (3) from Scourian complex, N.W. Scotland.
- PLAGIOCLASE. Beccaluva, et al., Contrib. Mineral. Petrol. 85, 253-271 (1984). Microprobe analyses (6) from Vourinos ophiolite.
- PLAGIOCLASE. Beccaluva, et al., Lithos 17, 299-316 (1984)(English). Microprobe analyses (3) from lherzolites, Italy.
- PLAGIOCLASE. Bellieni, et al., Tschermaks Mineral. Petrogr. Mitt. 33, 25-47 (1984)(English). Microprobe analyses (9) from basalt sills, Parana basin, Brazil.
- PLAGIOCLASE. Benne et al. (Contrib. Mineral. Gex. 90, 381-385) (1985). Unit cell parameters of anorthite heated at temps up to 1547 degrees.
- PLAGIOCLASE. Beran, (Phys. Chem. Mineral 14, 441-445) (1987) Infra-red spectroscopy of OH-groups in labradorite
- PLAGIOCLASE. Berg and Wiebe (Contrib. Mineral. Petrol. 90, 226-235) (1985). Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- PLAGIOCLASE. Biggar, Mineral. Mag. 47, 161-176 (1983). Crystallization in synthetic systems and tholeiites.
- PLAGIOCLASE. Boivin, Ann. Sci. Univ. Clermont-Ferrand, no. 72, 32-40 (1982) (G540)C59up). Microprobe analyses (8) from basalts.
- PLAGIOCLASE. Bradley and McCallum (Kimberlites 11B, 205-217) (1984). (150.3 D193). Microprobe analyses (9) from kimberlites, Col. and Wyo.
- PLAGIOCLASE. Brastad (Tschermaks Mineral. Petrogr. Mitt. 34, 87-103) (1985)(Eng.). Microprobe analyses (7) from eclogite, W. Norway, SrO up to 9.64%.
- PLAGIOCLASE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (6) from Werner Bjerge complex, Greenland.
- PLAGIOCLASE. Brown and Earle, J. Metamorph. Petrol. 1, 183-203 (1983). Microprobe analyses (8) from gneisses, E. Indonesia.
- PLAGIOCLASE. Calanchi et al. (Mineral. Petrogr. Acta 27, 15-34) (1983)(Ital.). Microprobe analyses (25) from volcanic rocks, Java.
- PLAGIOCLASE. Capaldi et al, (Jour. Volcanol. Geothermal Research 31, 345- 351) (1987) Microprobe analyses (2) from Jabal an Nar Volcano, Yemen Republic
- PLAGIOCLASE. Carpenter and Ferry, Contrib. Mineral. Petrol. 87, 138-148 (1984). Constraints on the thermodynamic mixing properties.
- PLAGIOCLASE. Carpenter and McConnell, Am. Mineral. 69, 112-121 (1984). Cl-I1 transformation in intermediate plagioclases.
- PLAGIOCLASE. Carpenter et al. (Geochim. Cosmochim. Acta 49, 947-966) (1985), Chem. Abstr. 102, no. 26, 223567 (1985). Enthalpy of ordering for 36 samples.
- PLAGIOCLASE. Cawthorn et al. (Econ. Geol. 80, 988-1006) (1985). Microprobe analyses (8) from Potgretersrus, N. Transvaal.

- PLAGIOCLASE. Cerny, et al., *Can. Mineral.* 22, 631-651 (1984). Microprobe analyses (34) from pegmatite, Vezna, Czechoslovakia.
- PLAGIOCLASE. Chamberlain and Lyons, *Am. Mineral.* 68, 530-540 (1983). Microprobe analyses (4), schists, central N.H.
- PLAGIOCLASE. *Chem. Acta Geol. Taiwanica* 21, 33-62 (1982)(English). Microprobe analyses (15), Kuanyinshan volcano, Taiwan.
- PLAGIOCLASE. Chou and Wollast, *Geochim. Cosmochim. Acta* 48, 2205-2217 (1984). Weathering of albite at room temp. and pressure.
- PLAGIOCLASE. Christofferson and Yund (*N. Jahrbuch Miner., Abh.*, 149, no. 1, 91-104) (1984)(Eng.). Experimental ordering of Al and Si in andesine. Unit cell data.
- PLAGIOCLASE. Cijolini and Kudo, (*Contrib. Mineral. Petrol.* 96, 381-390) (1987) Microprobe analyses (24) from basaltic andesites, Arenal Volcano, Costa Rica
- PLAGIOCLASE. Clarke, et al., *Contrib. Mineral. Petrol* 83, 117-127 (1983). Microprobe analyses (2) from W. Greenland.
- PLAGIOCLASE. Clocchiatti and Metrich, (*Bull. Volcanol.* 47, 909-928) (1984) (French) Microprobe analyses (19) from Mt. Etna (1892 and 1669)
- PLAGIOCLASE. Cocheme and Silva-Mora (*Bull. Volcanol.* 46, 55-69) (1983). Analyses (3) from lavas of Chichonel, Mexico.
- PLAGIOCLASE. Crisp and Spera, (*Contrib. Mineral. Petrol.* 96, 503-518) (1987) Microprobe analyses (11) from lavas, Canary Islands
- PLAGIOCLASE. Crurisicchio, et al., *Neues Jahrb. Mineral., Abh.* 148, 113-140 (1983)(English). Microprobe analyses (15) from alkalic rocks, Kenya.
- PLAGIOCLASE. Cuchler et al., (*Cas. Moravsk. Muzei* 71, 15-22) (1986) (Czech) Microprobe analysis (1) from metapegmatite, Moravia
- PLAGIOCLASE. Davies and Cawthorn, *Mineral. Mag.* 48, 469-480 (1984). Microprobe analyses (3) from Bushveld rocks.
- PLAGIOCLASE. Debari et al., (*Jour. Geol.* 95, 329-341) (1987) Microprobe analysis (3) from Adagdak Volcano, Adak Island
- PLAGIOCLASE. Delor, et al., *J. Metamorph. Geol.* 2, 55-72 (1984). Microprobe analyses (6), French Massif. Centrale.
- PLAGIOCLASE. Devine and Sigurdsson, *J. Volcanol. Geotherm. Res.* 16, 1-31 (1983). Microprobe analyses (2) from Soufriere, St. Vincent.
- PLAGIOCLASE. Dia et al., (*Jour. African Earth Sci.* 6, 257-268) (1987) (French) Analyses (4) from basalts and basanites Senegal
- PLAGIOCLASE. Droop and Bucher-Nurminen, *J. Petrol.* 25, 766-803 (1984). Microprobe analyses (3) from granulites, Italian Central Alps.
- PLAGIOCLASE. Dymek and Gromet, *Can. Mineral.* 22, 297-326 (1984). Analyses (12) from anorthosite, Quebec.
- PLAGIOCLASE. Dymek and Schiffries, (*Can. Mineral.* 25, 291-319) (1987) Microprobe analyses (17) from anorthosite, St. Urbain, Quebec
- PLAGIOCLASE. Eberhardt et al. (*Appl. Optics* 24(3), 388-395) (1985), *Chem. Abstr.* 102, no. 14, 116741 (1985). Reflectance at CO₂ laser wavelengths. albite.
- PLAGIOCLASE. Embey-Isztin et al. (*Tschermaks Mineral. Petrogr. Mitt.* 34, 49-66) (1985)(Eng.). Microprobe analyses (3) from andesites and granites, Hungary.
- PLAGIOCLASE. Ernst and Harnish, *Proc. Geol. Soc. China (Taiwan)* 26, 99-112 (1983)(English). Microprobe analyses (6) from green schist rocks, Taiwan.
- PLAGIOCLASE. Ernst, J. *Metamorph. Geol.* 1, 305-329 (1983). Microprobe analyses (35), Tailuko Gorge, Taiwan.
- PLAGIOCLASE. Esperanca and Holloway ((*Kimberlites* 11B, 219-227) (1984). (150.3 D493). Microprobe analysis (1) from potassic latites, Carefree, Ariz.

- PLAGIOCLASE. Feenstra (Geol. Ultralectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (6) from metamorphosed bauxites, Naxos, Greece.
- PLAGIOCLASE. Ferguson and Cundari, Contrib. Mineral. Petrol. 81, 212-218 (1982). Microprobe analyses (8) from leucite-bearing rocks. Crystn trends.
- PLAGIOCLASE. Fitzgerald and Jaques, Meteoritics 17, 9-26 (1982). Microprobe analyses (1) in Tibooburra carbonaceous chondrite.
- PLAGIOCLASE. Fitzgerald et al., (Textures Microstruct. 5, 219-237 (1983)) Chem. Abstr. 98, no. 22, 182737 (1983). Dynamic recrystallization in a naturally deformed albite from blueschist, Cazadero region, Calif.
- PLAGIOCLASE. Frank-Kamenetskaya et al., (Mineral. Zh. 3, no. 6, 77-89 (1981)) Mineral. Abstr. 34, 15-16 (1983). Effect of thermal history on structure of low-albite.
- PLAGIOCLASE. Franz and Morteani (J. Petrol. 25, 27-52) (1984). Analysis from Marishov, Czechoslovakia. (albite).
- PLAGIOCLASE. Fredriksson, Meteoritics 17, 141-144 (1982). Av. composition in manganoan meteorite.
- PLAGIOCLASE. Frey, et al., Contrib. Mineral. Petrol. 88, 133-149 (1984). Microprobe analyses (16) from volcanic rocks, Laguna del Maule, Chile.
- PLAGIOCLASE. Friend and Janardhan, Mineral. Mag. 48, 181-193 (1984). Microprobe analyses (5) from shonkinites, Salem, India.
- PLAGIOCLASE. Fujinawa, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 419-437 (1982)(Japanese). Microprobe analyses (9) from basaltic rocks, N.E. Japan.
- PLAGIOCLASE. Gamble et al., (Bull. Roy. Soc. New Zealand 23, 344-365) (1986) Microprobe analyses (10) from volcanic rocks, Campbell Plateau
- PLAGIOCLASE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (6) from teschenite, N.S. Wales.
- PLAGIOCLASE. Gamble, J. Earth Sci. (Dublin) 5, 91-105 (1982). Microprobe analyses (6) from Slieve Gullion, N.E. Ireland.
- PLAGIOCLASE. Girardeau et al. (Contrib. Mineral. Petrol. 90, 309-321) (1985). Microprobe analyses (19) from Xigaze ophiolite, Tibet.
- PLAGIOCLASE. Graham, et al., Meteoritics 19, 85-88 (1984). Microprobe analysis (1) from Machinga meteorite.
- PLAGIOCLASE. Grapes and Otsuki (J. Metamorph. Geol. 1, 47-61) (1983), Chem. Abstr. 101, no. 20, 174813 (1984). Peristerite compositions in schists, New Zealand.
- PLAGIOCLASE. Greenough and Papezik, (Can. Jour. Earth Sci. 24, 1255-1260) (1987) Analyses (4) from basalt, Bay of Fundy
- PLAGIOCLASE. Grieve et al., (Contrib. Mineral. Petrol. 96, 56-62) (1987) Microprobe analyses (5) from Boltys impact crater, Ukraine
- PLAGIOCLASE. Grove et al. (Geochim. Cosmochim. Acta 48, 2113-2121) (1984). Rate of diffusion of CaAl-NaSi in (An 80).
- PLAGIOCLASE. Grove et al., Am. Mineral. 68, 41-59 (1983). Phase transitions and decomposition relations in calcic.
- PLAGIOCLASE. Gurney et al. (Kimberlites 11B, 25-32) (1984) (190.3 D 493). Microprobe analysis (1) of inclusions in diamond, Roberts Vector mine.
- PLAGIOCLASE. Halbach and Chattergee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data. (anorthite)
- PLAGIOCLASE. Halden and Bowes (Bull. - Geol. Soc. Finl. 56, 3-23) (1984)(Eng.). Microprobe analyses (6) from schists, Savonranta, Finland.
- PLAGIOCLASE. Hall and Ahmed (Chem. Erde 43, 45-56) (1984)(Eng.). Microprobe analysis (1) from rodingite, Lizard, England. Albite.
- PLAGIOCLASE. Harris and Jayaram, Lithos 15, 89-98 (1982)(English). Microprobe analyses (5) from gneisses, Bangalore, India.

- PLAGIOCLASE. Haselton et al., *Am. Mineral.* 68, 398-413 (1983). Calorimetric study of excess entropy of mixing in analbite-sanidine solid solutions.
- PLAGIOCLASE. Hashimoto and Grossman, (*Geochim. Cosmochim. Acta* 51, 1685-1704) (1987) Microprobe analyses (2) from Al-rich inclusions, Allende meteorite
- PLAGIOCLASE. Hayashi and Aoki (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 80, 73-82) (1985)(Jpn.). Microprobe analyses (20) from basalts and andesites, Chokai volcano, Japan.
- PLAGIOCLASE. Heinrich, *Contrib. Mineral. Petrol.* 81, 30-38 (1982). Microprobe analyses (2) from central Alps.
- PLAGIOCLASE. Hekinian and Walker, (*Contrib. Mineral. Geol.* 96, 265-280) (1987) Microprobe analyses (10) from basalts, East Pacific Rise
- PLAGIOCLASE. Henderson and Gibb, (*Trans. Roy. Soc. Edinburgh* 77, 325-347) (1987) Microprobe analyses (6) from Lugar sill, SW Scotland
- PLAGIOCLASE. Herd et al. (*Mineral. Mag.* 48, 401-406) (1984). Microprobe analyses (3) from Scotland.
- PLAGIOCLASE. Hermes, et al., *Contrib. Mineral. Petrol.* 86, 386-397 (1984). Microprobe analyses (11) from dolerites, S.E. New England.
- PLAGIOCLASE. Hernandez, (*Jour. African Earth Sci.* 5, 381-399) (1986) Microprobe analyses (11) from Guilliz massif, Morocco
- PLAGIOCLASE. Hiroi, *Contrib. Mineral. Petrol.* 82, 334-350 (1983). Microprobe analyses (13) from Hida, Japan.
- PLAGIOCLASE. Hwang and Meyer, *Mem. Geol. Soc. China* 5, 67-84 (1983)(English)(G(611)(G292m). Microprobe analyses (8) from dacite-andesite, N. Taiwan.
- PLAGIOCLASE. Hyndman et al., *Mem. - Mont., Bur. Mines Geol.*, 49, 1-37 (1982). Analyses (5) from Philipsburg batholith. Cell parameters.
- PLAGIOCLASE. Ismail-Zada, (*Izv. Akad. Nauk SSSR, Ser. Geol.*, 51-56) (1984)(Russian). Microprobe analyses (2) from gabbro-troctolite, Little Caucasus.
- PLAGIOCLASE. Jamieson (*Contrib. Mineral. Petrol.* 86, 309-330) (1984). Probe analyses (4) from gneiss, Nova Scotia.
- PLAGIOCLASE. Johnson and Essene, *Contrib. Mineral. Petrol.* 81, 240-251 (1982). Microprobe analyses (10) from metagabbros, Adirondacks.
- PLAGIOCLASE. Johnston and Stout, *Am. Mineral.* 69, 57-68 (1984). Microprobe analyses (1) of ferroandioside from gabbro, Kauai, Hawaii.
- PLAGIOCLASE. Kampunzu et al. (*Bull. Volcanol.* 47, 79-103) (1984)(French). Microprobe analyses (12) from Nyamulagira volcano.
- PLAGIOCLASE. King et al., *Meteoritics* 16, 229-237 (1981). Microprobe analyses (1) from Tierra Blanca achondrite.
- PLAGIOCLASE. Kirkpatrick, et al., *Am. Mineral.* 70, 106-123 (1983). Nuclear magnetic resonance study of entire series.
- PLAGIOCLASE. Kirsh et al., (*Phys. Status Solidi* 101(1), 253-262) (1987), *Chem. Abstr.* 107, no. 10, 81148 (1987) Kinetics and emission spectra of thermoluminescence of albite
- PLAGIOCLASE. Klaper, (*Schweiz. Min. Petr. Mitt.* 66, 295-313) (1986) (Eng) Microprobe analyses (3) from gneisses, Spitsbergen
- PLAGIOCLASE. Klein and Wimmenauer, *Neues Jahrb. Mineral., Monatsh.*, 25-38 (1984)(English). Analyses (3) from eclogite, Black Forest.
- PLAGIOCLASE. Klemd and Hallbauer, (*Mineral. Deposita* 22, 227-235) (1987) Microprobe analyses (2) from altered Archean granites, S. Africa
- PLAGIOCLASE. Korolyuk and Lepezin, (*Geol. Geofiz.* 11, 72-82) (1984)(Russian), *Chem. Abstr.* 102, no. 8, 65054 (1985). Kinetics of crystallization from melts.

- PLAGIOCLASE. Kovalev et al. (Tr. Inst. Geol. Geofiz., Akad. Nauk SSSR, Sib. Otd. 587, 21-37) (1984), Chem. Abstr. 103, no. 8, 56929 (1985). Reverse zoning in plagioclase.
- PLAGIOCLASE. Kroll and Ribbe, (Am. Mineral. 72, 491-506) (1987) Review of Al-Si distribution, lattice parameters, diffraction peaks (albite)
- PLAGIOCLASE. LaTour, et al., Can. Mineral. 22, 621-630 (1984). Microprobe analyses (10) from Archean iron formation, Kirkland Lake, Ont.
- PLAGIOCLASE. Lan, Proc. Geol. Soc. China 25, 38-52 (1982)(English)(G(611)G292p). Microprobe analyses (2) from gneiss, NE Taiwan.
- PLAGIOCLASE. Latour and Burnett, (Bull. Geol. Soc. Am. 98, 356-363) (1987) Microprobe analyses (6) from Idaho batholith
- PLAGIOCLASE. Le Roex (J. Petrol. 26, 149-186) (1985). Microprobe analyses (12) from Gough Island, S. Atlantic.
- PLAGIOCLASE. Lee, Sci. Rep. Tohoku Univ., Ser. 3, 15, 177-256 (1982)(English). Microprobe analyses (70) from Jeju volcanic rocks, Korea.
- PLAGIOCLASE. Lefevre and Cocusse (Bull. Mineral. 108, 189-208) (1985). Microprobe analyses (12) from andesite lavas, Guadeloupe.
- PLAGIOCLASE. Leroy, Miner. Deposita 19, 26-35 (1984)(French). Analyses (2) from U deposit, Bernardan, France.
- PLAGIOCLASE. Lightfoot and Naldrett (Trans. Geol. Soc. S. Afr. 86, 169- 187) (1983). Microprobe analyses (17) from Insiziva complex, S. Africa.
- PLAGIOCLASE. Lisoivan and Kamentsev (Zap. Vses. Mineral. O-va. 113, 740- 744) (1984) (Russ), Chem. Abstr. 102, no. 10, 81864 (1985). Av. lattice of albite a 8.1455, b 12.7906, c 7.1627A, alpha 94.217, beta 116.583, gamma 87.691 degrees.
- PLAGIOCLASE. Loomis, Contrib. Mineral. Petrol. 81, 219-229 (1982). Oscillatory zoning in.
- PLAGIOCLASE. Luis, (Doc. Trav. Centre Geol. Montpellior 9, 1-229) (1987) (French) G(540) q(334d) Microprobe analyses (15) from the Mediterranean
- PLAGIOCLASE. Lubala et al. (Ann. Soc. Geol. Belg. 107, 125-134) (1984)(French). Microprobe analyses (17) from basaltic lavas, Kiver rift, Zaire.
- PLAGIOCLASE. Luhr and Carmichael (Contrib. Mineral. Petrol. 90, 142-161) (1985). Microprobe analyses (12) from Jorullo volcano, Mexico.
- PLAGIOCLASE. Luhr and Carmichael, Contrib. Mineral. Petrol. 71, 348-372 (1980). Microprobe analyses (27) and minor elements from Colina Volcano, Mexico.
- PLAGIOCLASE. Luhr and Giannetti, (Contrib. Mineral. Petrol. 95, 420-436) (1987) Microprobe analyses (2) from leucitic tuff, Roccamoufina Volcano, Italy
- PLAGIOCLASE. Luhr, et al., J. Volcanol. Geotherm. 23, 69-108 (1984). Microprobe analyses (3) from Chichon Volcano, Mexico.
- PLAGIOCLASE. MacPherson et al., Geochim. Cosmochim. Acta 47, 823-839 (1983). Microprobe analyses (1) from Murchison meteorite (anorthite).
- PLAGIOCLASE. Maeda et al. (J. Japan Assoc. Minerla., Petrol. Econ. Geol. 80, 13-20) (1985)(Eng.). Microprobe analyses from norite, Hokkaido, Japan.
- PLAGIOCLASE. Malvin et al. (Meteoritics 20, 259-273) (1985). Microprobe analysis (1) from Bocaiva meteorite.
- PLAGIOCLASE. Mansy, (Soc. Geol. Nord Publ. 13(1), 291-344) (1986) (French) Microprobe analyses (39) from Omineca Mts., Brit. Columbia G(540)qn77p
- PLAGIOCLASE. Marcelot et al., (Lithos 16, 135-151) (1983) Microprobe analyses (15) from Erromango, New Hebrides
- PLAGIOCLASE. Maruyama et al., (Geol. Soc. Am. Mem. 164, 1-16) (1986) Stability in system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ at 300-450 deg. Analyses of glaucophane, tremolite, magnesioriebeckite

- PLAGIOCLASE. Matthews (Contrib. Mineral. Petrol. 89, 110-121) (1985), Chem. Abstr. 103, no. 6, 39968 (1985). Kinetics and mechanism of dehydration of zoisite to anorthite under hydrothermal conditions.
- PLAGIOCLASE. Matthews and Goldsmith, Am. Mineral. 69, 848-857 (1984). Stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 400-700 degrees C, 10-20 kbar. (anorthites)
- PLAGIOCLASE. Mazzucchelli, Neues Jahrb. Mineral., Abh., 146, 101-116 (1983)(English). Microprobe analyses (2) from Ivrea-Verbano complex, Italy.
- PLAGIOCLASE. McCaig, J. Metamorph. Geol. 2, 129-141 (1984). Microprobe analyses (3) from Pyrenees.
- PLAGIOCLASE. Meeker et al., Geochim. Cosmochim. Acta 47, 707-721 (1983). Microprobe analyses (1) from Allende meteorite Microprobe analyses (anorthite).
- PLAGIOCLASE. Melchior, (Rep. - Geol. Surv. Greenl., no. 103, 31-37 (1981)(English)) Chem. Abstr. 98, no. 16, 129430 (1983). Analyses (6) from Ilimaussaq.
- PLAGIOCLASE. Mezger and Okrusch (Tschermarks Mineral. Petrogr. Mitt. 34, 67-82) (1985). Microprobe analyses (4) from metamorphosed dolomites, Samos, Greece.
- PLAGIOCLASE. Miura et al. (Springer Ser. Chem. Physics 36, 460-462) (1984)(Eng.), Chem. Abstr. 102, no. 14, 116747 (1985). Microprobe and mass spectrometer study of exsolution in labradorite.
- PLAGIOCLASE. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (1) from blue schist, NE Diablo Range, Calif. albite
- PLAGIOCLASE. Morimoto and Kitamura (Kobutsugaku Zasshi 16, 315-324) (1983)(Jpn.), Chem. Abstr. 102, no. 10, 81815 (1985). X-ray and electron microscopy of modulated structures.
- PLAGIOCLASE. Morris, J. Volcanol. and Geothermal Research 21, 119-148 (1984). Microprobe analyses (14) from Campbell Island, SW Pacific.
- PLAGIOCLASE. Morse (Science 225, 504-505) (1984). Compositional gradients in igneous plagioclase.
- PLAGIOCLASE. Morse and Nolan (Earth Planet. Sci. Lett. 68, 485-498) (1984), Chem. Abstr. 101, no. 10, 76124 (1984). Reversed rims from gabbroic rocks, Kiglapait, Labrador Microprobe analyses (5) with higher An or rims from Kiglapait intrusion, Labrador and explanation Microprobe analyses (2) from glaucophane metagabbros, Samos I., Greece. (albite).
- PLAGIOCLASE. Nakagawa and Aoki (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 136-154) (1985)(Jpn.). Microprobe analyses (16) from Moriyoshi volcano, NE Japan.
- PLAGIOCLASE. Naslund, J. Petrol. 25, 185-212 (1984). Av. compositions (7) of Upper Buda Ser., Skeergegd, Eng.
- PLAGIOCLASE. Navrotsky et al., (J. Geol. 90, 679-698 (1982)) Chem. Abstr. 98, no. 4, 19609 (1983). Thermodynamic constraints on the melting of albite at atm. and high pressure.
- PLAGIOCLASE. Neiva, (Bol. Mus. Lab. Mineral. Geol., Fac. Cienc. Univ. Lisboa, 16, 179-195 (1980)(Pub. 1981)(English)) Chem. Abstr. 98, no. 12, 93003 (1983). Analysis from granite porphyry of albite. Trace elements.
- PLAGIOCLASE. Nell (Econ. Geol. 80, 1129-1152) (1985). Microprobe analyses (2), Potgietersrus, Bushveld Complex.
- PLAGIOCLASE. Nelson and Carmichael, Contrib. Mineral. Petrol. 85, 321-335 (1984). Microprobe analyses (22) from Sanganguey Volcano, Mexico.
- PLAGIOCLASE. Nicollet, Bull. Mineral. 105, 691-696 (1982). Microprobe analyses (1) from Aveyron, France.
- PLAGIOCLASE. Nowakowski et al. (Arch. Mineral. 39, 5-15) (1983), Chem. Abstr. 101, no. 10, 76094 (1984). Givens and conditions of formation of albite in pegmatites.

- PLAGIOCLASE. Ntaflos et al. (Fortschr. Mineral. 62, Beih. 1, 174-176) (1984).
Microprobe analyses (2) from ultramafites, Zabarged.
- PLAGIOCLASE. Nureki et al. (Mem. Geol. Soc. Japan 21, 127-146) (1982) (G(620)
G29m). Analyses (6) from xenoliths in andesite, Kagowz Pref)
- PLAGIOCLASE. Okuno and Marumo, (Mineral. J. 11, 180-196 (1982)(English)) Chem.
Abstr. 98, no. 18, 146733 (1983). X-ray study of structure of anorthite and
albite melts.
- PLAGIOCLASE. Olsen and Kohlstedt, Phys. Chem. Miner. 11, 153-160 (1984).
Dislocations in naturally deformed plagioclase.
- PLAGIOCLASE. Olsen et al., Am. Mineral. 68, 315-333 (1983). Microprobe
analyses (3) from Concord gabbro-syenite complex, N.C.
- PLAGIOCLASE. Orlov and Uspenskaya, (Deposited Doc. VINITI 92-82, 134-138 (1981))
Chem. Abstr. 98, no. 8, 57267 (1983). Raman spectra, An 0-20%.
- PLAGIOCLASE. Ostertag, (J. Geophys. Res. 88B, 364-376) (1983), Chem. Abstr.
100, no. 26, 213105 (1984). Effect of shock up to 456 Pa on single crystals.
oligoclase, labradorite
- PLAGIOCLASE. Pasteris, Can. Mineral. 22, 39-53 (1984). Analyses (5) from
Duluth complex, Minn.
- PLAGIOCLASE. Pearce (Can. Mineral. 22, 383-390) (1984). Optical dispersion and
zoning in.
- PLAGIOCLASE. Pervov and Kononova, (Rock-forming minerals of magmatic rocks,
Nauka, 126-138) (1986) (Russian) (170(570)Oss) Analyses (5) from magnesian
andesites, Transbaikal
- PLAGIOCLASE. Petersen (J. Petrol. 26, 223-252) (1985). Microprobe analyses
(36) from lardalite, Oslo region, Norway.
- PLAGIOCLASE. Post and Burnham, (Am. Mineral. 72, 507-514) (1987)
Structure-energy calculations on high- and low- albite
- PLAGIOCLASE. Pouclet, et al., Bull. Mineral. 106, 607-622 (1983). Microprobe
analyses (5) from alkalic lavas, Virunga, E. Africa.
- PLAGIOCLASE. Price et al., Can. Mineral. 21, 29-35 (1983). Microprobe analyses
from Peace River meteorite, Alberta.
- PLAGIOCLASE. Ragnarsdotter, et al., Geochim. Cosmochim. Acta 48, 1535-1553
(1984). Microprobe analyses (6) from geothermal system, Svartsengi, Iceland.
- PLAGIOCLASE. Reverdatto (Zap. Vses. Mineral. O-va. 114, 229-236)
(1985)(Russ.). Microprobe analysis (1) from hornfels.
- PLAGIOCLASE. Reymer, et al., Contrib. Mineral. Petrol. 85, 336-345 (1984).
Microprobe analyses (6) from Wadi Kid, Sinai.
- PLAGIOCLASE. Richet and Bottinga (Earth Planet. Sci. Lett. 67, 415-432)
(1984). Thermodynamics of melting and glass transitions. (anorthite,
andesine).
- PLAGIOCLASE. Robins, Contrib. Mineral. Petrol. 81, 290-295 (1982). Microprobe
analyses (4) from Finnmark, Norway.
- PLAGIOCLASE. Robins, Norges Geol. Undersokilso no. 371, 1-55 (1982)(English).
Electron microprobe analyses (7), Rognsund, Norway.
- PLAGIOCLASE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984).
Microprobe analysis (3), St. Paul's rocks, Atlantic Ocean.
- PLAGIOCLASE. Rubin (Earth Planet. Sci. Lett. 67, 273-284) (1984). Electron
microprobe analyses (4) from Blithfield meteorite.
- PLAGIOCLASE. Rubin and Keil, Earth Planet. Sci. Lett. 62, 118-131 (1983).
Microprobe analyses (8) of Abee chondrite.
- PLAGIOCLASE. Rubin and Jerdi, (Earth Planet. Sci. Lett. 84, 1-14) (1987)
Microprobe analyses (7) from Vaca Muerta mesosiderite meteorite
- PLAGIOCLASE. Rubin, Am. Mineral. 69, 880-888 (1984). Microprobe analyses (13)
from Allende meteorite.

- PLAGIOCLASE. Rubin, Earth Planet. Sci. Lett. 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite.
- PLAGIOCLASE. Rudashevskii and Zhadnov, Byull. Mosk. O-va. Ispyt. Priir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from Kamchatka Pt deposit. albite
- PLAGIOCLASE. Rudashevskii, Zap. Vses. Mineral. O-va. 113, 186-195 (1984)(Russian). Microprobe analyses (2) of minerals. Albite enclosing Pt minerals. Albite.
- PLAGIOCLASE. Salje et al. (Phys. Chem. Miner. 12, 93-98, 99-107) (1985). Thermodynamics of Na-rich.
- PLAGIOCLASE. Santosh, (Contrib. Mineral. Petrol. 96, 343-356) (1987) Microprobe analyses (3) from gneisses, Kerala, India
- PLAGIOCLASE. Sautter, (Jour. African Earth Sci. 5, 345-357) (1986) (French) Microprobe analyses (13) from eclogites, Algeria
- PLAGIOCLASE. Schenker and Dietrich, (Schweiz. Min. Pet. Mitt. 66, 343-384) (1986) (Eng) Microprobe analyses (10) from lherzolites, etc., Cameroon
- PLAGIOCLASE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (2) from kimbabite, Greenland.
- PLAGIOCLASE. Scott and Middleton, Nor. Geol. Tidsskr. 389, 1-26 (1983)(English) (581)Bu. Microprobe analysis (1) from camptonite sills, Oslo region.
- PLAGIOCLASE. Selverstone and Munoz, (Contrib. Mineral. Petrol. 96, 426-440) (1987) Microprobe analyses (6) from Eastern Alps
- PLAGIOCLASE. Selverstone, J. Petrol. 25, 501-531 (1984). Microprobe analyses (11) from Tavern, Austria.
- PLAGIOCLASE. Sen and Bhattacharyya, Contrib. Mineral. Petro. 88, 64-71 (1984). Microprobe analyses (7) from charnockites, Medras, Inda (ortho-). Pyroxene-garnet thermometer.
- PLAGIOCLASE. Sen and Presnall (Contrib. Mineral. Petrol. 85, 404-408) (1984), Chem. Abstr. 100, no. 26, 213132 (1984). Stability in system anorthite-forsterite-SiO₂ at 10 kbar.
- PLAGIOCLASE. Senderova and Vorob'eva (Dokl. Akad. Nauk SSSR 294, no. 6, 1491-1494) (1984), Chem. Abstr. 101, no. 10, 76111 (1984). Stability in system analcime + quartz = albite.
- PLAGIOCLASE. Sharma and Windley, Mineral. Mag. 48, 195-209 (1984). Microprobe analyses (1) from Archean gneiss, N.W. India.
- PLAGIOCLASE. Sharpe and Hulbert (Econ. Geol. 80, 849-871) (1985). Microprobe analyses (6) from E. Bushveld Complex.
- PLAGIOCLASE. Sherriff and Hartman (Can. Mineral. 23, 205-212) (1985). Nuclear magnetic resonance study.
- PLAGIOCLASE. Shiraishi et al. (Proc. Symp. Antarctic Geosci. 4th, 1983, 126-144) (1984)(Eng.), 502 (990) J2755. Microprobe analyses (6), Prince Olav coast, E. Antarctica.
- PLAGIOCLASE. Shvedenkov et al. (Geol i Geofiz. 10, 91-96) (1982), Mineral. Abstr. 35, 45 (1984). Stability in system muscovite + quartz = K-feldspar + andalusite and paragonite = albite + corundum.
- PLAGIOCLASE. Siegel and Pfannhuch, (Geochim. Cosmochim. Acta 48, 197-201) (1984), Chem. Abstr. 100, no. 12, 88912 (1984). Soln. at pH4 (labradorite).
- PLAGIOCLASE. Sills, et al., J. Metamorph. Geol. 1, 337-351 (1983). Microprobe analyses (3) from Finero, N. Italy.
- PLAGIOCLASE. Simon and Papike, Meteoritics 18, 35-50 (1983). Microprobe analyses (7) from eucrite meteorites.
- PLAGIOCLASE. Simon et al., Meteoritics 17, 149-162 (1982). Microprobe analyses (20) from lithic clasts, eucrite meteorite.

- PLAGIOCLASE. Sipiara et al., *Meteoritics* 18, 63-75 (1983). Microprobe analyses (9) from Texas chondrites.
- PLAGIOCLASE. Smith and Lofgren, (*Lithos* 16, 153-168 (1983)) *Chem. Abstr.* 98, no. 26, 219139 (1983). Microprobe analyses of synthetic and natural zoned crystals.
- PLAGIOCLASE. Smith et al. (*Nature* 309, 140-142) (1984), *Chem. Abstr.* 100, no. 26, 213149 (1984). Nuclear magnetic resonance of series microcline-low albite.
- PLAGIOCLASE. Smith, et al., *J. Volcanol. Geothermal. Res.* 18, 249-278 (1983). Microprobe analyses (14) from gabbroic rocks, S. California.
- PLAGIOCLASE. Souther and Hickson, *J. Volcanol. and Geothermal Research* 21, 79-106 (1984). Microprobe analyses (4) from Mt. Edziza complex, Brit. Columbia.
- PLAGIOCLASE. Spadea et al., (*Jour. Geol.* 95, 377-395) (1987) Microprobe analyses (1) from ophiolite, SW Columbia
- PLAGIOCLASE. Srgvaldason (*Erupt. of Hekla 5, no.1*) (1984)(Eng.). Analyses (5) from Icelandic tephras. Trace elements.
- PLAGIOCLASE. Steltenpohl and Bartley, (*Contrib. Mineral. Petrol.* 96, 93- 103) (1987) Microprobe analyses (12) from Caledonian, N. Norway
- PLAGIOCLASE. Stenina and Balyakin, (*Div. Fiz. Khim. Model. Magmatog. Protsessor*, 129-138 (1983), *Chem. Abstr.* 100, no. 24, 195186 91984). Transmission electron microscopy.
- PLAGIOCLASE. Stoddard (*Can. Mineral.* 23, 195-204) (1985). Microprobe analyses (8) from granulites, Adirondacks (zoned).
- PLAGIOCLASE. Stolz, *Mineral. Mag.* 48, 167-179 (1984). Microprobe analyses (4) from ultramafic inclusions in nepheline mugearite, N.S. Wales.
- PLAGIOCLASE. Sutcliffe, (*Contrib. Mineral. Petrol.* 96, 201-211) (1987) Microprobe analyses (2) from diabase and picrite, Lake Napigon, Canada
- PLAGIOCLASE. Suzuki and Osakabe (*Mem. Geol. Soc. Japan* 21, 37-49) (1982)(Eng.). (G(620)G29m). Analysis (1) from Hida belt, Japan.
- PLAGIOCLASE. Suzuki, *Proc. 3rd Symp. Antarctic Geosci.*, 132-143 (1983)(English) (502(990)J27SS, no. 28). Microprobe analyses (7), Lutzow-Holm Bay, Antarctica.
- PLAGIOCLASE. Tanguy and Clocchiatti, (*Bull. Volcanol.* 47, 879-894) (1984) (Eng) Microprobe analyses (12) from Mt. Etna, 1977-1983
- PLAGIOCLASE. Thompson and Leclair, (*Jour. Metamorph. Geol.* 5, 415-436) (1987) Microprobe analyses (2), Grenville Province, Canada
- PLAGIOCLASE. Thy, *Contrib. Mineral. Petrol.* 82, 232-251 (1983). Microprobe analyses (28) of alkali basaltic glasses, Iceland.
- PLAGIOCLASE. Trzcienski, et al., *Contrib. Mineral. Petrol.* 85, 311-320 (1984). Microprobe analyses (2) from Bathurst, New Brunswick. (albite)
- PLAGIOCLASE. Tsuchiyama and Takahashi, (*Contrib. Mineral. Petrol.* 84, 345-354) (1983), *Chem. Abstr.* 100, no. 12, 88900 (1984). Kinetics of fusion of labradorite.
- PLAGIOCLASE. Upton, et al., *J. Petrol.* 25, 151-184 (1984). Microprobe analyses (2) from NE Greenland basalts.
- PLAGIOCLASE. Vielzeuf, *Contrib. Mineral. Petrol.* 82, 301-311 (1983). Microprobe analyses (2) from Tallante, Spain.
- PLAGIOCLASE. Visoni and Zerpolo (*Moderna, Italy*), *Neues Jahrb. Mineral., Monatsh.* 6, 413-423 (1984). Analyses (3) from granite, Iseltal, Austria.
- PLAGIOCLASE. Vivallo (*Geol. Foeren. Stockholm Foerh.* 106, 257-267 (1985)(Eng.). Microprobe analyses (2) from metamorphic rocks, Garpenberg, Sweden.
- PLAGIOCLASE. Walker, *J. Petrol.* 25, 299-342 (1984). Microprobe analyses (12) from Nicaraguan cinder cones.

- PLAGIOCLASE. Warner et al. (Contrib. Mineral. Petrol. 90, 386-400) (1985).
Microprobe analyses (4) from dolerite dikes, S. Carolina.
- PLAGIOCLASE. Warren, et al., Earth Planet. Sci. Lett. 64, 175-185 (1983).
Microprobe analyses (2) from granite clasts, Moon.
- PLAGIOCLASE. Wenk, Schweiz. Mineral. Petrogr. Mitt. 63, 177-179 (1983).
Microscopic intergrowths of oligoclase (An 20-23) with andesine (An 30-32)
from Lepontine Alps.
- PLAGIOCLASE. Werk, Schweiz. Mineral. Petrogr. Mitt. 63, 181-186 (1984).
Optics of bytownite (An 86). Intergrowths of bytownite with andesine.
- PLAGIOCLASE. Word and Holloway, Geochim. Cosmochim. Acta 48, 159-176 (1984).
Stability in system CaO-MgO-Al₂O₃-SiO₂.
- PLAGIOCLASE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)q W895G.
Microprobe analyses (50) and trace elements. Laacher See, Germany.
- PLAGIOCLASE. Worthing, (Norges Geol. Undersokelse Bull. 406, 67-) (1986) (Eng)
Microprobe analyses (16) from mylonites, Seiland, Norway
- PLAGIOCLASE. Yamamoto, et al., (Acta Crystallogr., Sect. B, B40, 228-237)
(1984), Chem. Abstr. 101, no. 2, 15413 (1984). Mineral. Abstr. 36, 16
(1985). Structure of labradorite (An 52). Refinement of structure of
labradorite.
- PLAGIOCLASE. Yang, et al., Mem. Geol. Soc. China 5, 97-116
(1983)(English)(G(611)G292m). Microprobe analyses (11) from spilite, N.
Taiwan.
- PLAGIOCLASE. Yoshida and Oikava, Proc. 3rd Symp. Antarctic Geosci., 145-165
(1983) (562(990)J27SS no. 28). Microprobe analyses (6) from metabasite,
Antarctica.
- PLAGIOCLASE. Zabolotnikova (Vopr. Miner. Petr.-Rudogenezisa, 11-15) (1984)
(Russ), Chem. Abstr. 101, no. 18, 155058 (1984). Analyses (not in abstr.)
from nepheline-containing metasomalites, Kuznetsk Alatau.
- PLAGIONITE. Moelo, et al., Bull. Mineral. 106, 505-510 (1983). Microprobe
analyses (9) from Rujevac, Yugoslavia.
- PLAGIONITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- PLANCHEITE. Sarma et al., (Phys. Lett. A, 92A, 305-308 (1982)) Chem. Abstr.
98, no. 6, 37786 (1983). EPR spectrum.
- PLATARSITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33,
121-129) (1984)(Eng.). Diagram for optical determination.
- PLATARSITE. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe
analyses (4) Reflectance
- PLATINIRIDIUM. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir.,
Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from
Kamchatka Pt deposit.
- PLATINUM. Bonev and Jordanov, (Geol. Zbornik Bratislava 37, 709-718) (1986)
(Eng) Microprobe analyses (9) from placers, Bulgaria Cu up to 29.6%
- PLATINUM. Doughty et al., (Ir. Nat. J. 20, 490-491 (1982)) Mineral. Abstr.
34, 68 (1983). Analyses from Ireland and USSR.
- PLATINUM. Likhaev et al., (Zap. Vses. Mineral. O-va 116, 122-125) (1987)
(Russian) Microprobe analyses (1)
- PLATINUM. Okrugin and Rudashevskii (Mineral. Zh. 7, no. 1, 67-71) (1985),
Chem. Abstr. 103, no. 8, 56902 (1985). Analyses (not in abstr.) from
Vilyui River placers, Rh 8.74 percent. Analyses (7) (Fe 7.37-10.3 percent)
- PLATINUM. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd.
Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (1) from Kamchatka Pt
deposit.

- PLATINUM. Rudashevskii, (Zap. Vses. Mineral. O-va. 113, 186-195) (1984). Analyses (7), Far Eastern USSR. (Pt-Ir-Ru). Microprobe analyses (9) of inclusions in olivine.
- PLATINUM. Rudashevskii, et al., Mineral. Zh. 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (2) from Konder massif, Alden.
- PLATINUM. Shilo, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 172-184 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (11) from NE USSR.
- PLATINUM. Stockman and Hlava (Econ. Geol. 79, 491-508) (1984). Microprobe analyses (4) from chromatites, Oregon).
- PLATINUM. Tarkian and Bernhardt (Tschemm's Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PLATINUM. Urashima et al., (Kagoshima Daigaku Rika Hokoku, no. 31, 129-140 (1982)(Japanese)) Chem. Abstr. 98, no. 18, 146731 (1983). Microprobe analyses (not in abstr.) from Hokkaido.
- PLATINUM. Yusk-Zakharova, et al., Mineral. Rudn. Mestorozhd. 1983, 71-73 (Russian)(410M662). Analyses (PT and Fe) of 27 samples, reflectance, microhardness for samples contg. 6.6 to 24.0% Fe.
- PLATTNERITE. Shirobokova et al (Ezhez. Inst. Geol. Geokhim 1981) (publ. 1982, 93-95), Chem. Abstr. 101, no. 10, 76101 (1984). Occurrence as inclusions in galena, Polar Urals.
- PLATTNERITE. Taylor (Brit. Ceram. Trans. J. 83, 32-37) (1984). Thermal expansion.
- PLAZOLITE. Basso et al. (N. Jb. Miner., Mh., 251-258) (1983), Mineral. Abstr. 36, 15 (1985). Refinement of structure.
- PLUMASITE. Mozgova, et al., (Dokl. Akad. Nauk SSSR 274, 169-172) (1984), Chem. Abstr. 101, no. 6, 41168 (1984). Homologous series with Pb-rich (= falkmanite) and Pb-poor (= plumasite). Analyses and x-ray data of boulangierite and series.
- PLUMBOFERRITE. Shaaban et al. (Brit. Ceram. Trans. J. 83, 102-105) (1984), Chem. Abstr. 103, no. 2, 12135 (1985). Stability in system Pb-Fe-O.
- PLUMBOJAROSITE. Jambor and Dutrizac, Can. Mineral. 21, 101-113 (1983). Synthesis, analysis, X-ray data for solid solution series beaverite-plumbojarosite. Probe analysis, Tintic mine, Utah.
- PLUMBOPALLADINITE. Tarkian and Bernhardt (Tschemm's Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PLUMOSITE. Mozgova, et al., Abstr. in Am. Mineral. 69, 411 (1984). New analyses and optics and proposed changes in nomenclature.
- PLUMOSITE. Vrublevskaya et al., (Izvest. Akad. Nauk SSSR, Ser. Geol. 4, 90-97) (1985), Mineral. Abstr. 38, 87M/2136 (1987) Electron diffraction study indicates boulangierite, falkmanite, and plumosite are structurally similar but have different sub-cells
- POKROVSKITE. Abstr. in Am. Mineral. 70, 217 (1985). Abstract of original description.
- POKROVSKITE. Ivanov, et al., (Zap. Vses. Mineral. O-va. 113, 90-95) (1984). Abstract of original description.
- POLARITE. Tarkian and Bernhardt (Tschemm's Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- POLARSTANIDE. Evstigneeva and Genkin, (Proc. 13th Meeting IMA, Varna, 1982, 165-174) (1986) (Russian) Microprobe analyses
- POLLUCITE. Agomov et al., (Mineral. Zh. 8(5), 85-91) (1986) (Russian) Analysis from S. Ghana, G 2.85
- POLLUCITE. Bennington et al. (U.S. Bur. Mines Rept. Invest. 8779, 1-18) (1983), Mineral. Abstr. 35, 46 (1984). Enthalpy of formation, heat capacity, free energy of formation.

- POLLUCITE. Cerny, Mineral. Assoc. Canada Short Course no. 8, 149-161 (1984).
Review of occurrences in granite pegmatites. Analyses.
- POLLUCITE. Prokof'ev et al., (Mineral. Sb. (Lvov) 36, 116-119 (1982)) Chem.
Abstr. 98, no. 24, 201517 (1983). X-ray luminescence spectra.
- POLYBASITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167)
(1986) (Russian) 431 M565 Microprobe analyses (3) from gold-silver deposits
- POLYBASITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe
analyses (1) from Sark, Channel Islands.
- POLYBASITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from
Hallefors, Sweden.
- POLYBASITE. Motomura and Yamamoto, (Sci. Rep. - Dep. Geol., Kyushu Univ., 13,
251-257 (1980)(English)) Mineral. Abstr. 34, 179 (1983). Analyses (not in
abstr.) from Kagoshima Pref. with Se 4.7-6.7%.
- POLYBASITE. Nakayama, (Mining Geology (Japan) 36, 511-522) (1986) (Eng)
Microprobe analyses (5) from Gunma Pref., Japan
- POLYBASITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian)
Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg., Se up to 7.9%
- POLYBASITE. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe
analyses (2) from Alma, Colo.
- POLYBASITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48
(Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- POLYBASITE. Sugaki et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.
77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe
analysis from Hokkaido.
- POLYBASITE. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol.
79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not
in abs.) from Koryu mine, Hokkaido, Japan
- POLYBASITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng)
Microprobe analyses (6) from S. Korea Reflectivity, X-ray data, a 15.076, c
23.886 A
- POLYBASITE. Sugaki, et al., Sci. Rep. Tohoku Univ., Ser. 3, 15, 461-469
(1983)(English). G(620)T5. Chem. Abstr. 101, no. 14, 114109 (1984)
Synthesis, x-ray data. Monoclinic, pseudohexagonal, a 26.105, b 15.072, c
23.834 A, beta 90 degrees. DTA.
- POLYBASITE. Takeuchi and Shikazono (Min. Geol. Japan 34(3), 187-195)
(1984)(Eng.). (G(620)M66). Microprobe analyses (14) from Kagoshima Pref.
Japan.
- POLYBASITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- POLYDYMITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41
(1982). Reflectance and hardness.
- POLYDYMITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average
composition from various types of ore, Thierry mine, Ont.
- POLYMIGNYTE. Mazzi and Munno, Am. Mineral. 68, 262-276 (1983). New analyses
from Campania, Italy. Appears to be dimorphous with zirkelite and
calclobetafite. Orth., (Ca,RE,Th,Zr)₄ (Ti,Nb,Fe)₄ O₇.
- PORTLANDITE. Neal and Stanger, Mineral. Mag. 48, 237-241 (1984). Precipitation
from alkaline ground water, Oman. Analysis.
- POSNJAKITE. Yakhontova et al. (Vestnik. Mosk. Univ., Ser. 4: Geol. 3, 41-
46) (1984) (Russ), Chem. Abstr. 101, no. 16, 134296 (1984). Occurrence in
Komsomol ore field, E. Siberia. DTA.
- POTASSIUM ALUM. Groenvold and Meisingset, (J. Chem. Thermodyn. 14, 1083-1098
(1982)) Chem. Abstr. 98, no. 10, 79051 (1983). Heat capacity 270-400 K.
Enthalpies and entropies.

- POWELLITE. Hazen et al. (J. Phys. Chem. Solids 46(2), 253-263) (1985). Chem. Abstr. 102, no. 22, 195561 (1985). Structures and unit cells at pressures up to 5.8 GPa.
- POWELLITE. Hentschel, (Marnizer Geowiss. Mitt. 16, 91-96) (1987) (German) Crystals from the Eifel, Germany
- POWELLITE. Orlov and Uspenskaya, (Deposited Doc. VINITI 92-82, 134-138 (1981)) Chem. Abstr. 98, no. 8, 57267 (1983). Raman spectra of scheelite-powellite series.
- POWELLITE. Topor and Mel'chakova, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 6, 50-58 (1982)(Russian)) Chem. Abstr. 98, no. 16, 129387 (1983). Heat capacity.
- POWELLITE. Zhidikova et al. (Fiz.-Khim. Modeli Petrog. Rudoobraz, 145-156) (1984) (Russ), Chem. Abstr. 102, no. 24, 206689 (1985). Calcn. of free-energy values.
- POYARKOVITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PRASSOITE. Tarkian and Bernhardt (Tscherms Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- PREHNITE. Barton and van Bergen (Mineral. Mag. 48, 449-456) (1984). Microprobe analysis from dolerite, Rogeland, SW Norway.
- PREHNITE. Brastad (Tscherms Mineral. Petrogr. Mitt. 34, 87-103) (1985)(Eng.). Microprobe analyses (1) from eclogite, W. Norway, SrO up to 0.48%.
- PREHNITE. Chatterjee, et al., Contrib. Mineral. Petrol. 88, 1-13 (1984). Synthesis, stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, Pma2, a 18.4796, b 5.4829, c 4.6241 Å, Z=2.
- PREHNITE. Cortesognos and Lucchietti (Neues Jahrbuch Miner., Abh. 148(3), 276-300) (1984)(Eng.). Microprobe analysis (1) from metagabbros, Tuscany, Italy.
- PREHNITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- PREHNITE. Hall and Ahmed (Chem. Erde 43, 45-56) (1984)(Eng.). Microprobe analyses (2) from rodingite, Lizard, England.
- PREHNITE. Lago et al. (Estud. Geol. (Madrid) 39, 245-251) (1983), Chem. Abstr. 101, no. 20, 174795 (1984). Analysis (not in abstr.) from Huesca, Spain.
- PREHNITE. Lion, Mem. Geol. Soc. China 5, 47-66 (1983)(English) (G(611)G292m) Composition and stability in low-grade metamorphic rocks.
- PREHNITE. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system $\text{Na}_2\text{O-CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$.
- PREHNITE. Liou, et al. (J. Petrol. 24, 321-342) (1983), Mineral. Abstr. 35, 159 (1984). The equil. prehnite-epidote.
- PREHNITE. Munha, Comun. Serv. Geol. Port. 69, 3-35 (1983)(English). Microprobe analyses (4) from Iberian pyrite belt.
- PREHNITE. Schiffman and Lion (N. Jahrbuch Miner., Abh. 146(3), 242-257) (1983), Miner. Abstr. 35, 45 (1984). Hydrothermal stability. X-ray data.
- PREHNITE. Schiffman et al. (Mineral. Mag. 49, 435-449) (1985). Analyses (7) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- PREISINGERITE. Bedlivy and Mereiter, (Am. Mineral. 67, 833-840 (1982)) Mineral. Abstr. 34, 74 (1983). Abstract of original description.
- PRIDERITE. Lazebnik et al., (Mineral. Zh. 7(4), 81-) (1985) (Russian) Analyses (6) from E. Siberia; X-ray data
- PRIDERITE. Mitchell and Lewis, Can. Mineral. 21, 59-64 (1983). Microprobe analyses (11) from peridotite, Arkansas.

- PRIDERITE. Pring and Jefferson, Mineral. Mag. 47, 65-68 (1983). Microprobe analysis from W. Australia. Tet, a 10.12, c 2.97A. Superlattice periodicity.
- PRIDERITE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (2) from kimbalite, Greenland.
- PROSOPITE. Marchenko, et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 12, 19-21) (1983), Chem. Abstr. 100, no. 16, 124260 (1984). Occurrence in Korosten Pluton n-1.338, optics.
- PROTOLITHIONITE. (Rock-forming minerals of magmatic rocks, Nauka, 5-101) (1986) (Russian) (170(570)Oss) Analyses (5) from rare-metal, Sn, and W deposits
- PROUSTITE. Belyaev, et al., (Ukr. Fiz. Zh. 29, 618-619) (1984), Chem. Abstr. 100, no. 26, 219362 (1984). X-ray data at 77-300 degrees K. Trigonal, a 6.838 Å, alpha 103 degrees 31.
- PROUSTITE. Fedorova et al. (Izv. Akad. Nauk SSSR, Neorg. Mater. 21, no. 1, 17-19) (1985), Chem. Abstr. 102, no. 14, 116749 (1985). Stability in system $Ag_2S-As_2S_3$ by heating in As_2S_3 vapor.
- PROUSTITE. Fedorova et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 268-275 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201513 (1983). Effect of gas phase on rate of growth of crystals.
- PROUSTITE. Godovikov et al., Geol. Geofiz., no. 12, 42-54 (1982)(Russian). Review of synthesis and growth.
- PROUSTITE. Nakayama, (Mining Geology (Japan) 36, 511-522) (1986) (Eng) Microprobe analyses (2) from Gunma Pref., Japan
- PROUSTITE. Nelmes, et al., (J. Phys. 17C, L861-L865) (1984), Chem. Abstr. 102, no. 2, 15443 (1985). Neutron diffraction study of phase transitions in, at 35-298 degrees K.
- PROUSTITE. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not in abs.) from Koryu mine, Hokkaido, Japan
- PROUSTITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PSEUDOBROOKITE. Le Roex (J. Petrol. 26, 149-186) (1985). Microprobe analyses (2) from Gough Island, S. Atlantic.
- PSEUDOBROOKITE. Wagner and Velde (Bull. Mineral. 108, 173-187) (1985)(Eng.). Microprobe analysis (1) from minette dikes, Jersey and Italy.
- PSEUDORUTILE. Rybha, et al., (Cas. Mineral. Geol. 28, 415-421) (1983)(Czech), Chem. Abstr. 100, no. 20, 159633 (1984). Analysis (not in abstr.) from Czechoslovakia.
- PSEUDORUTILE. Vrana, et al., Cas. Mineral. Geol. 28, 415-421 (1983). Occurrence in ultramafic rocks, Bohemia, 4 microprobe analyses, x-ray data.
- PSEUDORUTILE. Yakubovskaya et al. (Mineral. Zh. 7, 45-53) (1985), Chem. Abstr. 103, no. 2, 9148 (1985). Study of supergene alteration of ilmenite.
- PUMPELLYITE. Bevins (Mineral. Mag. 49, 451-456) (1985). Microprobe analyses (11) from Bullith Wells, Wales.
- PUMPELLYITE. Brown and Ghent, Am. Mineral. 68, 365-372 (1983). Microprobe analyses (2) from blueschist, N. Calif.
- PUMPELLYITE. Cortesogno, et al., Contrib. Mineral. Petrol. 85, 14-24 (1984)(English). Microprobe analyses (37) from Italy. Relation of composition to metamorphic conditions and rock chemistry.
- PUMPELLYITE. Hirajima et al. (Nor. Geol. Tidsskr. 64, 267-274) (1984)(Eng.). Microprobe analyses (2) from Spitsbergen.
- PUMPELLYITE. Lion, Mem. Geol. Soc. China 5, 47-66 (1983)(English)(G(611)G292m) Composition and stability in low-grade metamorphic rocks.
- PUMPELLYITE. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system $Na_2O-CaO-MgO-Al_2O_3-SiO_2-H_2O$.

- PUMPELLYITE. Lucchetti, Neues Jahrb. Mineral., Monatsh. 1983, 563-568 (English). Analyses 3) from E. Liguria, Italy with MnO 9.22-10.167. X-ray data, optics.
- PUMPELLYITE. Maruyeme and Liou, Am. Mineral. 70, 16-29 (1985). Microprobe analyses (5) from Shikoku, Japan.
- PUMPELLYITE. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (1) from blue schist, NE Diablo Range, Calif.
- PUMPELLYITE. Munha, Comun. Serv. Geol. Port. 69, 3-35 (1983)(English). Microprobe analyses (10) from Iberian pyrite belt.
- PUMPELLYITE. Nakajima, Lithos 15, 267-280 (1982). Microprobe analyses (8) from Shikoku, Japan.
- PUMPELLYITE. Nystron, Contrib. Mineral. Petrol. 83, 159-168 (1983). Microprobe analyses (6), central Sweden.
- PUMPELLYITE. Pe-piper, Neues Jahrb. Mineral., Abh. 149, 163-178 (1984)(English). Microprobe analyses (3) from volcanic rocks, Greece.
- PUMPELLYITE. Schiffman and Liou (N. Jahrbuch Miner., Abh. 146(3), 242-257) (1983), Mineral. Abstr. 35, 45 (1984). Hydrothermal stability. X-ray data.
- PUMPELLYITE. Schiffman and Liou, (J. Metamorph. Geol. 1, 91-101) (1983), Mineral. Abstr. 35, 159 (1984). Hydrothermal synthesis and stability of iron-bearing pumpellyite at 275-325 degrees, 5-9.1 kb. a 19.13, b 5.940, c 8.847 A, beta 97.37 degrees.
- PURPURITE. Shigley and Brown (Am. Mineral. 70, 395-408) (1985). Microprobe analysis (1), Stewart pegmatite, Calif. Unit cell, optics.
- PYRARGYRITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167) (1986) (Russian) 431 M565 Microprobe analyses (2) from gold-silver deposits
- PYRARGYRITE. Bortnikov, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- PYRARGYRITE. Ivanov and Taskaev (Dokl. Akad. Nauk SSSR 275, 725-728) (1984). Chem. Abstr. 101, no. 12, 94638 (1984). Analysis with Fe 3.2, Zn 2.3 percent from Lower Amur region.
- PYRARGYRITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (2) from Sark, Channel Islands.
- PYRARGYRITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- PYRARGYRITE. Kaspar et al. (N. Jb. Miner., Mh. 19-28) (1985)(Eng.). Microprobe analyses (3) from Trebsko, Czechoslovakia, a 11.042, c 8.717-8.724A.
- PYRARGYRITE. Nakayama, (Mining Geology (Japan) 36, 511-522) (1986) (Eng) Microprobe analyses (8) from Gunma Pref., Japan
- PYRARGYRITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg. Microprobe analyses (6), Se up to 40%
- PYRARGYRITE. Nekrasov, (Mineral. Zh. 7, 51-72) (1985) (Russian) Stability in system Ag-Au-Sb
- PYRARGYRITE. Pinet et al., (Bull. Mineral. 105, 193-196 (1982)) Mineral. Abstr. 34, 35 (1983). Optical spectra of synthetic crystals.
- PYRARGYRITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- PYRARGYRITE. Sugaki et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 65-77) (1982)(Jpn.), Mineral. Abstr. 36, no. 2, 205 (1985). Microprobe analysis from Hokkaido.

- PYRARGYRITE. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not in abs.) from Koryu mine, Hokkaido, Japan
- PYRARGYRITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (6) from S. Korea X-ray data, reflectivity a 16.040, c 8.720 A
- PYRARGYRITE. Takeuchi and Shikazono (Min. Geol. Japan 34(3), 187-195) (1984)(Eng.). (G(620)M66). Microprobe analyses (3) from Kagoshima Pref. Japan.
- PYRARGYRITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PYRARGYRITE. Xia et al., (Kexue Tongbao 27, 1408 (1982)(Chinese)) Chem. Abstr. 98, no. 16, 129368 (1983). Analysis from China.
- PYRARGYRITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analyses (3) from Hallefors, Sweden.
- PYRITE. Annels, et al., Miner. Deposita 18, 71-88 (1983)(English). Microprobe analyses (12) from copperbelt, Zambia (with up to 20% Co).
- PYRITE. Barker and Parks, (Geochim. Cosmochim. Acta 50, 2185-2194) (1986) Review of thermodynamic data
- PYRITE. Berner (Geochim. Cosmochim. Acta 48, 605-615) (1984), Chem. Abstr. 100, no. 26, 213133 (1984). Review on sedimentary pyrite.
- PYRITE. Borisoya and Prokof'eva, (Deposited Doc. VINITI, 6348-82, 185-192) (1982), Chem. Abstr. 100, no. 18, 142373 (1984). Minor elements in gold deposit.
- PYRITE. Bulanova et al., (Zap. Vses. Mineral. O-va. 111, 557-562 (1982)(Russian)) Chem. Abstr. 98, no. 4, 19596 (1983). Microprobe analysis of inclusion in diamond.
- PYRITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (2) from Nord mine, Sweden. Hardness.
- PYRITE. Campbell and Ethier (Can. Mineral. 22, 503-506) (1984). Co and Ni in 26 samples. British Columbia.
- PYRITE. Chattopadhyay and Von Schnering (J. Phys. Chem. Solids 46(1), 113-116) (1985). Chem. Abstr. 102, no. 20, 176916 (1985). X-ray study to 340 kb.
- PYRITE. Dillen, et al., Schweiz. Mineral. Petrogr. Mitt. 64, 27-48 (1984)(German). Trace elements (Co, Ni, Pb, Cu, As, Tl, V, Cr, Mn) in 19 alpine pyrites.
- PYRITE. Dubut et al., (C. R. Seances Acad. Sci., Ser. 2, 295, 587-590 (1982)) Chem. Abstr. 98, no. 16, 129370 (1983). Stoichiometry of terrestrial and oceanic pyrites.
- PYRITE. Durza and Chovan, (Mineral. Sl. 13, 185-190 (1981)) Mineral. Abstr. 34, 215 (1983). Thermoelectric voltage of.
- PYRITE. Durza and Duda, (Mineral. Sl. 13, 443-449 (1981)) Mineral. Abstr. 34, 215 (1983). Thermoelectric voltage of.
- PYRITE. Durza, (Miner. Slovaca 15, 449-453) (1983), Chem. Abstr. 100, no. 16, 124250 (1984). Electrical properties from Rudnany, Slovakia. Co and Ni in.
- PYRITE. Economou and Naldrett, Miner. Deposita 19, 289-297 (1984)(English). Microprobe analyses (2) from chromite deposit. Eretria, Greece.
- PYRITE. El-Bouseily et al. (Miner. Deposita 20, 194-200) (1985). Minor elements in (5), Eastern Desert gold mine, Egypt.
- PYRITE. Frost (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- PYRITE. Galuskin and Golovanova, (Zap. Vses. Miner. O-va. 116, 64-72) (1987) (Russian) Microprobe analyses (15) of zoned diopside crystals from skarn, Polar Yakutia

- PYRITE. Gamyarin et al., Nov. Dannye Mineral. SSSR 30, 64-70 (1982). Minor elements in samples from gold deposits.
- PYRITE. Gribanov and Belozarov, (Metallog. Priamur'ya, 34-39 (1981)) Chem. Abstr. 98, no. 20, 164109 (1983). Minor elements from Amur River region. Conductivity, emf, etc.
- PYRITE. Gupta et al., (Thermochim. Acta 48, 175-186 (1981)) Mineral. Abstr. 34, 136 (1983). Infra-red and Mossbauer study of products of heating.
- PYRITE. Hakova et al., (Acta Mont. 67, 23-39) (1984)(Czech.), Chem. Abstr. 103, no. 8, 56953 (1985). Co and Ni in, from Hruby and Nizky Jezenik Mts., Moravia.
- PYRITE. Hallbauer and von Gehlen, Mineral. Mag. 47, 473-479 (1983). Detrital, synsedimentary, and authigenic pyrite from Witwatersrand, S. Africa.
- PYRITE. Huang and Chang, Acta Geol. Taiwanica 21, 1-13 (1982)(English). Analyses (2) from Chinkuashih Au-Cu deposit, Taiwan.
- PYRITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (8) from Chikuashih ore deposit, Taiwan.
- PYRITE. Jarkovsky et al., (Geol. Zbornik 33, 331-342) (1982), Mineral. Abstr. 35, 50) (1984). Gold content, from Slovakia.
- PYRITE. Jarkovsky et al., (Geol. Zh. (Bratislava) 35, 741-761) (1984)(Ger.). Minor elements and electrophysical properties.
- PYRITE. Jorgensen and Moyle, (J. Therm. Anal. 25, 473-485) (1982), Chem. Abstr. 100, no. 12, 88908 (1984). Phases formed during thermal analysis in air.
- PYRITE. Kase and Yamamoto, (Min. Geol. Jpn. 35, 17-29) (1985)(Eng.). (G(620)M66. Co and Ni content from Hitachi mine, Japan.
- PYRITE. Koroleva et al., (Aktual Vopr. Geol. Mineral. Zolota, 111-115) (1984) (Russ), Chem. Abstr. 101, no. 18, 155037 (1984). Structure, hardness, trace elements from Au deposits, W. Uzbekistan.
- PYRITE. Kravtsova, (Geol. Geofiz. 3, 71-76) (1985), Chem. Abstr. 103, no. 4, 25163 (1985). Trace elements from Au-Ag deposits.
- PYRITE. Kulesevich, (Deposited Doc. VINITI 48-84, 1-15), Chem. Abstr. 102, no. 2, 9841 (1985). Minor elements from ores of S.W. Karelia.
- PYRITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- PYRITE. Kvasnitsa and Galii, (Geol. Zh. (Bratislava) 35, 683-692) (1984)(Russ.). Minor elements in 50 from Ukrainian Carpathians.
- PYRITE. Lin and Chen, (Sci. Sin. (Engl. Ed.) Ser. B, 26, 971-982) (1983)(English), Chem. Abstr. 100, no. 10, 71351 (1984). Authigenic microspheroid variety by S.E.M.
- PYRITE. Matkovskii et al., (Mineral. Sb. (Lvov) 36, 98-102 (1982)) Chem. Abstr. 98, no. 26, 219054 (1983). Minor elements in, Ukrainian Shield.
- PYRITE. McClay and Ellis, Mineral. Mag. 47, 527-538 (1983). Deformation and recrystallization.
- PYRITE. Moses et al, (Geochim. Cosmochim. Acta 51, 1561-1571) (1987) Aqueous oxidation by dissolved oxygen and by ferric iron
- PYRITE. Muratov, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 224-232 (1980)(Russian) (Sulfosalt Vol.). Reflection spectrum in short-wave region.
- PYRITE. Nedachi et al., (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 79, 200-213) (1984)(Jap.). Microprobe analyses (1), SE Abakuma Mts.
- PYRITE. Nishiyama, (Kozan Chishitsu 33, 1-7) (1983)(Eng.), Chem. Abstr. 103, no. 4, 25131 (1985). Minor elements, from Mamut mine, Malaysia.
- PYRITE. Nishiyama et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 281-289 (1983)(English) Minor elements in (5), Sulawesi, Indonesia.

- PYRITE. Odegard (Nor. Geol. Tidsskr. 64, 287-294) (1984)(Eng.). Analysis (14) from northern Norway showed 0.08-0.17 percent Se.
- PYRITE. Onishchenko et al., (Mineral. Zh. 4, no. 3, 70-72 (1982)) Mineral. Abstr. 34, 215 (1983). Hardness and fragility of.
- PYRITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- PYRITE. Pavlun, (Mineral. Sb. (Lvov) 36, 31-36 (1982)) Chem. Abstr. 98, no. 26, 219056 (1983). Morphology, minor elements, from Akchatau deposit.
- PYRITE. Poblesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (8) from Kuru-Tegeraba deposit
- PYRITE. Popova (Miner. Paragenesis Miner. Mestorozhd. Ura, 50-55) (1983), Chem. Abstr. 102, no. 24, 206684 (1985). Neutron-activation study, a 5.4174-5.4177A.
- PYRITE. Pottavets, (Eksp. Issled. Endogen. Rudoobraz., 1981, 205-209) (1983) Chem. Abstr. 100, no. 26, 213099 (1984). Ratio Co (Ni in coexisting magnetite and pyrite).
- PYRITE. Rafal'skii (Geokhimiia 1, 78-92) (1985), Chem. Abstr. 102, no. 14, 116750 (1985). Solubility in hydrothermal solutions and calculations of free energy of Fe^{+2} , $FeOH^{+}$, $FeCl^{+}$, etc.
- PYRITE. Sato (Oyo Butsuri 53, 394-401) (1984) (Jpn.). Discussion of electronic structure, infra-red spectrum, and reflectance.
- PYRITE. Seifullin and Ponomorenko, (Zap. Vses. Mineral. O-va. 111, 254-256 (1982)) Mineral. Abstr. 34, 215 (1983). Thermoelectrical properties.
- PYRITE. Shieh and Chen, (Ch'ang-ch'un Ti Chih Hsueh Yuan Hsueh Pao 5, 167-176) (1983)(English), Chem. Abstr. 100, no. 12, 88898 (1984). Co and Ni in pyrite, E. Taiwan.
- PYRITE. Silaev 1982, p. 131 (410(570)Si32m). Analyses (12).
- PYRITE. Song, Miner. Deposita 19, 95-104 (1984)(English). Minor elements in (22), Fankou deposit, China.
- PYRITE. Sovatzoglow-Skownekis, Chem. Erde 43, 247-254 (1984)(English). Cobalt content from Othris, Greece. (0.05-0.30%)
- PYRITE. Speer and Smith, (Keystone Newsletter 30, 5-8 (1981)) Mineral. Abstr. 34, 70 (1983). Microprobe analyses (4), core 0% Ni, rim 4.47% Ni.
- PYRITE. Strashimirov, (Spis. Bulg. Geol. Druzh. 43, 117-127 (1982)(Bulgarian)) Chem. Abstr. 98, no. 16, 129369 (1983). Microprobe analyses from Medet Cu-Mo deposit, Co up to 17.85%.
- PYRITE. Strasimirov (Spisanie Balgarskoto Geol. Druzh. [Sofia] 43(2), 117-127) (1982), Mineral. Abstr. 35, 83 (1984). Microprobe analyses with Co up to 17.85, Ni up to 5.3 percent.
- PYRITE. To'rnrroos, Neues Jahrb. Mineral., Abh., 144, 107-123 (1982)(English). Microprobe analyses (1) from Finland.
- PYRITE. Tvalchredidze and Pataridge, (Zap. Vses. Miner. O-va. 115, 727- 735) (1986) (Russian) Thermal decomposition in vacuo
- PYRITE. Vakhrushev et al., (Dokl. Akad. Nauk BSSR 27, no. 2, 158-161 (1983)) Chem. Abstr. 98, no. 16, 129403 (1983). Minor elements in.
- PYRITE. Vendrell-Saz et al., (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 265-272 and 273-286 (1980)) Mineral. Abstr. 34, 215-216 (1983). Reflectance at various wave lengths. Analyses.
- PYRITE. Vendrell-Saz, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 265-272 (1980)(English) (Sulfosalt Vol.). Optical reflectance, 300-900 mu, analysis.
- PYRITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (1) from mafic rocks, East Alps.

- PYRITE. Xuexin, *Miner. Deposita* 19, 95-104 (1984). Minor elements in, from Fankou deposit, China.
- PYROAURITE. Hashi et al., (*Clays Clay Miner.* 31, 152-154 (1983)) *Chem. Abstr.* 98, no. 20, 171809 (1983). Synthesis of similar compounds.
- PYROAURITE. Zinchuk et al., (*Dokl. Akad. Nauk SSSR* 267, 722-728 (1982)) *Chem. Abstr.* 98, no. 14, 110812 (1983). X-ray, optics, a 3.103, c 23.400A, DTA, from kimberlites, Yakutia.
- PYROBELONITE. Dunn, *Mineral. Rec.* 14, 203-204 (1983). Microprobe analysis from Franklin, N.J.
- PYROCHLORE. Kinnaird (*J. African Earth Sci.* 3, 229-251) (1985). Analyses (1) from ring complexes, Nigeria.
- PYROCHLORE. Lapin et al., (*Geol. Rudn. Mestorozhd.* 29(1), 30-) (1987) (Russian) Analyses (2) from carbonatite, Yenisen region
- PYROCHLORE. Nechelyustov and Christyakova, (*Mineral. Zh.* 8(4), 57-64) (1986) (Russian) Microprobe analyses (18) from Siberian metasomatites Possible replacement of Na and Ca by hydronium
- PYROCHLORE. Nechelyustov and Pozharitskaya, (*Mineral. Zh.* 8(5), 38-48) (1986) (Russian) Microprobe analyses (33) from carbonatites, E. Europe
- PYROCHLORE. Rimsaite, *Ore Genesis: The State of the Art* (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 269-280 (1982). Microprobe analyses (2) from Bancroft, Ont.
- PYROLUSITE. Chen and Chen, (*Zhongnan Kuangye Xueyuan Xuebao*, no. 3, 1-9 (1982)(Chinese)) *Chem. Abstr.* 98, no. 6, 41522 (1983). Stability in system Mn-O.
- PYROLUSITE. Hrabal and Mohyla, (*Chem. Prum.* 33, 21-24 (1983)(Czechoslovakian)) *Chem. Abstr.* 98, no. 16, 128562 (1983). Thermal behavior.
- PYROLUSITE. Robie and Hemingway, (*J. Chem. Thermodynamics* 17(2), 165-181) (1985). *Chem. Abstr.* 102, no. 14, 121026 (1985). Heat capacities 5-380 degrees K, entropies.
- PYROMORPHITE. Small, *Proc. York. Geol. Soc.* 44, 153-158 (1982). Microprobe analysis from Yorkshire.
- PYROMORPHITE. White, (*Mineral. Rec.* 15, 347-350) (1984). Analysis of "pyromorphite" from Touissit, Morocco, shows it to be vanadinite.
- PYROPHANITE. Agata and Sniwa, *Preli. Rep. African Studies Nagoya Univ.* 8, 63-74 (1983)(English). Microprobe analyses (2) from Seychelles Island. Ferroan.
- PYROPHANITE. Brooks et al., *Greenland Geosci.* 7, 1-35 (1982)(English). Analyses (2) from Werner Bjerge complex, Greenland.
- PYROPHANITE. Dasgupta et al., *Mineral. Mag.* 48, 558-560 (1984). Microprobe analyses (3) from hematite-pyrophanite intergrowths, Chikla, India.
- PYROPHANITE. Lindh and Malmstrom, (*Neues Jahrbuch Miner., Abh.*, 149, no. 1, 13-21) (1984)(Eng.). *Chem. Abstr.* 101, no. 2, 10154 Occurrence within magnetite. Microprobe analyses (12), ferroan.
- PYROPHANITE. Mottana, (*Geol. Soc. Am. Mem.* 164, 267-299) (1986) Analysis (1) from manganiferous cherts, Alps
- PYROPHYLLITE. Ashworth and Evirgen, *Mineral. Mag.* 48, 159-165 (1984). Microprobe analyses (1) from S.W. Turkey.
- PYROPHYLLITE. Chatterjee et al., *Contrib. Mineral. Petrol.* 88, 1-13 (1984). Synthesis, stability in system CaO-Al₂O₃-SiO₂-H₂O. Triclinic CT, a 5.160, b 8.940, c 9.380 A, alpha 90.27 degrees, beta 100.51 degrees, gamma 89.98 degrees, Z=2.
- PYROPHYLLITE. Dorogokupets and Karpov, (*Fiz.-Khim. Modeli Petrog. Rudoobraz*, 134-145) (1984), *Chem. Abstr.* 102, no. 24, 206688 (1985). Calcn. of thermodynamic data.

- PYROPHYLLITE. Durovic and Weiss, (Silikety 27, 1-18) (1983), Mineralog. Abstr. 34, 397 (1983). Polytypes of.
- PYROPHYLLITE. Feenstra (Geol. Ultralectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (7) from metamorphosed bauxites, Naxos, Greece.
- PYROPHYLLITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- PYROPHYLLITE. Phillips, (Jour. Metamorph. Geol. 5, 307-322) (1987) Microprobe analyses (2) from Witwatersrand gold fields
- PYROPHYLLITE. Pokrovskii and Ivanov (Ocherki Fiz-Khim Petrol. 11, 143-160) (1983), Chem. Abstr. 101, no. 20, 174816 (1984). Stability in system $Al_2O_3-SiO_2-H_2O$. Thermodynamic constants.
- PYROPHYLLITE. Spetzler et al., (J. Geophys. Res., [Sect.] B, 86, 1070-1080 (1981)) Mineral. Abstr. 34, 141 (1983). Surface deformation under stress.
- PYROSMALITE. Takeuchi et al., Can. Mineral. 21, 19-27 (1983). Derivation of polytypes for the group.
- PYROSTILPNITE. Kaspar et al. (N. Jb. Miner., Mh. 19-28) (1985)(Eng.). Microprobe analyses (4) from Trebsko, Czechoslovakia, a 6.840, b 15.825, c 6.239A, beta 117.16 degrees.
- PYROXENE. Ackermann et al., (Jour. Metamorph. Geol. 5, 323-339) (1987) Microprobe analyses (10), Caraiba complex, Brazil ortho
- PYROXENE. Aithen, et al., Contrib. Mineral. Petrol. 86, 94-105 (1984). Microprobe analyses (8) of zoned, Gorgona, Colombia. clino-
- PYROXENE. Akasaka (Phys. Chem. Miner. 9, 205-211) (1983), Mineral. Abstr. 35, 16 (1984). Mossbauer study of synthetic clinopyroxenes.
- PYROXENE. Allan and Carmichael, Contrib. Mineral. Petrol. 88, 203-216 (1984). Microprobe analyses (14) from lavas, Colima, Mexico.
- PYROXENE. Allen and Boettcher, Am. Mineral. 68, 307-314 (1983). Formation from andesite and basalt at high pressures. Analyses.
- PYROXENE. Amigo et al., (Acta Geol. Hisp. 16, 119-120 (1981)) Chem. Abstr. 98, no. 24, 201491 (1983). Analyses and X-ray data of diopside-augite for basalts.
- PYROXENE. Amthauer and Rossman (Phys. Chem. Miner. 11, 37-51) (1984)(Eng.). Chem. Abstr. 101, no. 12, 94659 (1984). Optical and Mossbauer spectroscopy. Mixed valence of Fe in acmite, hedenbergite. Probe analyses (3). Hedenbergite, acmite, aegirine-augite.
- PYROXENE. Amundsen, (Neues Jahrbuch Miner., Abh. 156, 121-140) (1987) (Eng) Microprobe analyses (13) from peridotite xenoliths, Canary Islands (ortho + clino)
- PYROXENE. Andersen (Lithos 17, 153-170) (1984)(Eng.). Microprobe analyses (32) from larviksite, Norway. (clino-, ortho-).
- PYROXENE. Andersen et al., (Lithos 20, 279-294) (1987) (Eng) Microprobe analyses (10) from mantle-derived megacrysts (clino)
- PYROXENE. Andreeva and Troneva, (Rock-forming minerals of magmatic rocks, Nauka, 148-164) (1986) (Russian) [170(570)Os5] Analysis (12) from alkalic rocks, Vitim
- PYROXENE. Andrew, J. Metamorph. Geol. 2, no. 2, 143-163 (1984). Microprobe analyses (6), NS Wales.
- PYROXENE. Andrianova et al. (Mineral. Zh. 6, no. 1, 71-75) (1984), Mineral. Abstr. 36, 127 (1985). Calculated thermal deformation tensors in clinopyroxenes.

- PYROXENE. Aohi and Fapineki (Chem. Geol. 45, 165-171) (1984), Chem. Abstr. 101, no. 10, 76161 (1984). Rare-earths in clinopyroxene from kimberlite, S. Africa.
- PYROXENE. Arai and Hirai, Ann. Rep. Inst. Geosci. Univ. Tsukuba 9, 65-67 (1983)(English). Microprobe analyses from peridotite, S.W. Japan.
- PYROXENE. Arai and Kobayashi (Ann. Rep. Inst. Geosci. Univ. Tsukuba 10, 119-122) (1984)(Eng.). Microprobe analyses (2) from Fe-rich lherzolite, SW Japan.
- PYROXENE. Arculus, et al., Contrib. Mineral. Petrol. 85, 85-94 (1984)(English). Electron microprobe analyses (7) from kimberlite and peridotite.
- PYROXENE. Arculus, et al., J. Volcanol. Geothermal Res. 18, 215-247 (1983). Microprobe analyses (16) from Mt. Lamington, Papua, New Guinea (6 clino-, 10 ortho-).
- PYROXENE. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984). Microprobe analyses (12) from granulite, Sipiwesk Lake, Manitoba.
- PYROXENE. Armienti, et al., J. Volcanol. Geothermal Res. 17, 289-311 (1983)(English). Microprobe analyses (19) from Phlegrean Fields, Italy (clino-).
- PYROXENE. Asami and Asami (Mem. Geol. Soc. Japan 21, 151-161) (1982)(Jap.). (G(620) G29m). Analyses (8) from xenoliths in andesites, Kagawa Pref.).
- PYROXENE. Asami and Shiraishi, Proc. 3rd Symp. Antarctic Geosci., 198-214 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (11) from Yamamoto Mts., E. Antarctica.
- PYROXENE. Ashcroft, (Bull. Roy. Soc. New Zealand 23, 48-63) (1986) Analyses (3) from volcanic rocks, Northland
- PYROXENE. Ater et al. (Kimberlites 11B, 309-318) (1984). (150.3 D493). Microprobe analyses (8) from Colo. - Wyo. kimberlites.
- PYROXENE. Bacon and Metz, Contrib. Mineral. Petrol. 85, 346-365 (1984). Microprobe analyses (10) from Coso volcanic field, Calif.
- PYROXENE. Baker and Grove (Am. Mineral. 70, 279-287) (1985). Kinetic control of pyroxene nucleation in basaltic andesite (pigeonite-augite).
- PYROXENE. Barashkov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 86-105 (1981). Analyses (8) of inclusions in olivine of kimberlites.
- PYROXENE. Barberi et al. (Bull. Volcanol. 47, 125-141) (1984)(Eng.). Microprobe analyses (1) from Latera caldera, Italy.
- PYROXENE. Bardintzeff, Bull. Mineral. 107, 41-54 (1984). Analyses (22) from soufriere, St. Vincent Island, Caribbean.
- PYROXENE. Barink, Lithos 17, 247-258 (1984)(English). Microprobe analyses (1) from metagabbro, Quebec.
- PYROXENE. Barley, (Jour. Volcanol. Geothermal Research 32, 247-267) (1987) Microprobe analyses (7) from volcanic rocks, New Zealand
- PYROXENE. Barnes, et al., Contrib. Mineral. Petrol. 83, 293-308 (1983). Microprobe analyses (8) from Alexo, Ont.
- PYROXENE. Barnicoat, J. Metamorph. Geol. 1, 163-182 (1983). Microprobe analyses (13) from Scourian complex, N.W. Scotland. (clino-, ortho-)
- PYROXENE. Baryshnikova et al. (Geokhimiia 1, 20-34) (1985), Chem. Abstr. 102, no. 14, 117001 (1985). Analyses (not in abstr.), optics from H- and L- group chondrites.
- PYROXENE. Basu, et al., Contrib. Mineral. Petrol. 86, 35-44 (1984). Microprobe analyses (2) from kimberlite dikes, N.Y.
- PYROXENE. Beccaluva, et al., Contrib. Mineral. Petrol. 85, 253-271 (1984). Microprobe analyses (32) from Vourinos ophiolite. (clino- and ortho-)

- PYROXENE. Beccaluva, et al., *Lithos* 17, 299-316 (1984)(English). Microprobe analyses (52) from lherzolites, Italy. (clino- and ortho-)
- PYROXENE. Bellieni, et al., *J. Petrol.* 25, 579-618 (1984)(English). Microprobe analyses (4) from Parana Plateau, Brazil. (clino)
- PYROXENE. Bellieni, et al., *Tschermaks Mineral. Petrogr. Mitt.* 33, 25-47 (1984)(English). Microprobe analyses (16) from basalt sills, Parana basin, Brazil.
- PYROXENE. Bennington, et al., (Rep. Invest. - U.S., Bur. Mines RI 8873, 1-23) (1984), *Chem. Abstr.* 101, no. 4, 26257 (1984). Thermodynamic properties of hedenbergite. Heat capacity, etc.
- PYROXENE. Berg and Wiebe (*Contrib. Mineral. Petrol.* 90, 226-235) (1985). Microprobe analyses (4) from gneiss, Nain complex, Labrador.
- PYROXENE. Biggar, *Mineral. Mag.* 47, 161-176 (1983). Crystallization in synthetic systems and tholeiites (augite).
- PYROXENE. Biggar, *Mineral. Mag.* 48, 481-494 (1984). Composition of diopside solid solutions in equil. with forsterite, plagioclase, and liquid in system $\text{Na}_2\text{O}-\text{CaO}-\text{MgO}-\text{Al}_2\text{O}_3-\text{SiO}_2$.
- PYROXENE. Black, et al., *J. Metamorph. Geol.* 1, 277-303 (1983). Microprobe analyses (6) from Field Islands, Antarctica.
- PYROXENE. Bloomer and Fisher, (*Jour. Geol.* 95, 469-495) (1987) Microprobe analyses (13) from Tonga Trench (ortho + clino)
- PYROXENE. Boctor and Yodu, (*Am. Jour. Sci.* 286, 513-539) (1986) Microprobe analyses (5) from melilite rocks, S. Africa clino
- PYROXENE. Boivin, *Ann. Sci. Univ. Clermont-Ferrand*, no. 72, 32-40 (1982) (G540)C59up). Microprobe analyses (38) from basalts.
- PYROXENE. Boland and Van Roermund, (*Phys. Chem. Miner.* 9, 30-37 (1983)) *Chem. Abstr.* 98, no. 10, 75559 (1983). Mechanisms of exsolution of omphacites from eclogites.
- PYROXENE. Bonin and Giret (*J. Afr. Earth Sci.* 3, 175-183) (1985)(Eng.), *Chem. Abstr.* 103, no. 6, 39985 (1985). Analyses (not in abstr.), optics of clinopyroxenes from alkalic ring complexes.
- PYROXENE. Boyd et al. (*Geochim. Cosmochim. Acta* 48, 381-384) (1984). Microprobe analyses (2) from kimberlites, S. Africa.
- PYROXENE. Boyd et al., *Geochim. Cosmochim. Acta* 48, 381-384 (1984). Microprobe analyses (2) from kimberlites, S. Africa. (diopside)
- PYROXENE. Boyd, et al., *Contrib. Mineral. Petrol.* 86, 119-130 (1984). Microprobe analyses (10), Mzongwana kimberlite, S. Africa.
- PYROXENE. Bradley and McCallum (*Kimberlites* 11B, 205-217) (1984). (150.3 D193). Microprobe analyses (16) from kimberlites, Col. and Wyo.
- PYROXENE. Brady and McCallister, *Am. Mineral.* 68, 95-105 (1983). Homogenization of diopside-pigeonite lamellae.
- PYROXENE. Brandstatter and Kurat (*Fortschr. Mineral.* 62, Beih. 1, 30-32) (1984). Microprobe analyses (3 ortho, 3 clino) from chondrites.
- PYROXENE. Bray and Huth, (*Dev. Petrol.* 11B, 257-264, 361-393) (1984), *Chem. Abstr.* 100, no. 26, 213116 (1984). The enstatite-diopside solns to 60 kb. (40-60 kbar, 1100-1500 degrees).
- PYROXENE. Brearly, et al., *Contrib. Mineral. Petrol.* 88, 53-63 (1984). Microprobe analyses (28) from ultramafic xenoliths, Summit Lake, British Columbia. (14 ortho-, 14 clino-)
- PYROXENE. Brey and Huth (*Kimberlites* 11B, 257-) (1984). (150.3 D193). The enstatite-diopside solvus to 40-60 kb, 1100-1500 degrees C.
- PYROXENE. Briggs and Goles, *Contrib. Mineral. Petrol.* 86, 77-88 (1984). Microprobe analyses (10) of zoned crystals, New Zealand.
- PYROXENE. Brooks et al., *Greenland Geosci.* 7, 1-35 (1982)(English). Analyses (10) from Werner Bjerge complex, Greenland.

- PYROXENE. Brousse and Rancon, Mineral. Mag. 48, 39-45 (1984). Microprobe analyses (38) of clinopyroxenes (high Ca, high Na) from phonolites, Cantal, France.
- PYROXENE. Brousse, et al., (Geochim. Cosmochim. Acta 48, 1081-1088) (1984), Chem. Abstr. 101, no. 2, 10166 (1984). Enthalpy of formation (enstatite).
- PYROXENE. Brown and Ghent, Am. Mineral. 68, 365-372 (1983). Microprobe analyses (2) from blueschist, N. Calif.
- PYROXENE. Brown et al. (U.S. Bur. Mines Rept. Invest. 8912, 1-20) (1984), Chem. Abstr. 101, no. 20, 174793 Thermodynamic properties of aegerine. HF soln. calorimetry.
- PYROXENE. Bucher-Nurminen, J. Petrol. 23, 325-343 (1982). Microprobe analyses (1), E. Greenland (diopside).
- PYROXENE. Bukovanska, et al., Meteoritics 18, 223-240 (1983). Analyses (2) from Usti nad Orlici meteorite, Czechoslovakia.
- PYROXENE. Calanchi et al. (Mineral. Petrogr. Acta 27, 15-34) (1983)(Ital.). Microprobe analyses (14) from volcanic rocks, Java. (ortho and clino).
- PYROXENE. Cannillo and Oberti (Rend. Soc. Ital. Mineral. Petrol. 39, 103-108) (1984)(Eng.), Chem. Abstr. 102, no. 14, 116734 (1985). Rapid determination of composition from x-ray data.
- PYROXENE. Capaldi et al, (Jour. Volcanol. Geothermal Research 31, 345-351) (1987) Microprobe analyses (2) from Jabal an Nar Volcano, Yemen Republic clino
- PYROXENE. Capedri et al., (Neues Jahrbuch Miner., Abh. 156, 231-246) (1987) (Eng) Microprobe analyses (19) from basalts, Crete
- PYROXENE. Carbonin, et al., Lithos 17, 191-202 (1984)(English). Microprobe analyses (23) clinopyroxenes from trachytic rocks, Italy and Ethiopia. Unit cells.
- PYROXENE. Carlson, (Geophys. Research Letters 12, 409-411) (1985), Mineral. Abstr. 38, 87M/2540 (1987) Orthoenstatite cannot exist stably above 1005 deg. C at 1 atm
- PYROXENE. Castagna, (Geophys. Res. Lett. 10, 137-139 (1983)) Chem. Abstr. 98, no. 16, 129416 (1983). Prediction of Mg-Fe²⁺ site occupancy in pigeonite.
- PYROXENE. Cawthorn et al. (Econ. Geol. 80, 988-1006) (1985). Microprobe analyses (9) from Potgretersrus, N. Transvaal.
- PYROXENE. Chem. Acta Geol. Taiwanica 21, 33-62 (1982)(English). Microprobe analyses (25), Kuanyinshan volcano, Taiwan. Ortho and clino.
- PYROXENE. Chernosky et al. (Am. Mineral 70, 223-236) (1985). Stability in the system MgO-SiO₂-H₂O. (enstatite)
- PYROXENE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So3n. Mossbauer study of standard samples. (augite)
- PYROXENE. Cijolini and Kudo, (Contrib. Mineral. Petrol. 96, 381-390) (1987) Microprobe analyses (19) from basaltic andesites, Arenal Volcano, Costa Rica
- PYROXENE. Clarke, et al., Contrib. Mineral. Petrol 83, 117-127 (1983). Microprobe analyses (8) from W. Greenland. augite
- PYROXENE. Clayton, et al., Geochim. Cosmochim. Acta 48, 535-548 (1984). Microprobe analyses (3) from inclusions, Allende meteorite (clinoenstatite).
- PYROXENE. Clemeus and Wall, Contrib. Mineral. Petrol. 88, 354-371 (1984). Microprobe analyses (4) from ignimbrites, S.E. Australia.
- PYROXENE. Clocchiatti and Metrich, (Bull. Volcanol. 47, 909-928) (1984) (French) Microprobe analyses (31) from Mt. Etna (1892 and 1669)
- PYROXENE. Cocheme and Silva-Mora (Bull. Volcanol. 46, 55-69) (1983). Analyses (2) from lavas of Chichonel, Mexico. (Clino).
- PYROXENE. Collerson, Contrib. Mineral. Petrol. 81, 126-147 (1982). Microprobe analyses (16) from granites, Labrador.

- PYROXENE. Conrad and Kay, J. *Petrol.* 25, 88-125 (1984). Microprobe analyses (22) from inclusions in andesites, Adak Island, Alaska. clino + ortho.
- PYROXENE. Coombs et al., (*Bull. Roy. Soc. New Zealand* 23, 270-312) (1986) Analyses (5) from tuffs, Otago
- PYROXENE. Cortesognos and Lucchettie (*Neues Jahrbuch Miner., Abh.* 148(3), 276-300) (1984)(Eng.). Microprobe analyses (4) from metagabbros, Tuscany, Italy.
- PYROXENE. Crisp and Spera, (*Contrib. Mineral. Petrol.* 96, 503-518) (1987) Microprobe analyses (9) from lavas, Canary Islands clino
- PYROXENE. Cruriscichio, et al., *Neues Jahrb. Mineral., Abh.* 148, 113-140 (1983)(English). Microprobe analyses (36) from Alkalic rocks, Kenya.
- PYROXENE. Cundari and Ferguson, (*Tschermaks Mineral. Petrogr. Mitt.* 30, 189-204 (1982)(English)) *Chem. Abstr.* 98, no. 4, 19619 (1983). Chemistry of pyroxenes in leucite-bearing assemblages.
- PYROXENE. Dal Negro, et al., *Contrib. Mineral. Petrol.* 86, 221-229 (1984). Microprobe analyses (22) and unit cells of clinopyroxenes from ultramafic nodules, Victoria, Australia.
- PYROXENE. Danni, (*Carbonatite Symp. Brazil* 176, 149-167) (1978)(Eng.). (170QIN8PC). Analyses (6) Ipora region, Goras, Brazil. (Clino).
- PYROXENE. Davidson (*Diss. Stony Brook, NY*, 149 pp.) (1983). *Diss. Abstr.* 44B, 3689 (1984). Thermodynamic analysis.
- PYROXENE. Davies and Cawthorn, *Mineral. Mag.* 48, 469-480 (1984). Microprobe analyses (6) from Bushveld rocks. (3 ortho, 3 clino)
- PYROXENE. Day et al. (*Am. Mineral.* 70, 237-248) (1985). Thermodynamic analysis of equil. in system $MgO-SiO_2-H_2O$ (enst.)
- PYROXENE. De Vecchi and Sedea (*Mem. Sci. Geol. Univ. Padova* 36, 149-169) (1984)(Ital.). Analyses (30) from volcanic rocks. N.E. Italy. (Ortho, clino) clino).
- PYROXENE. Debari et al., (*Jour. Geol.* 95, 329-341) (1987) Microprobe analysis (9) from Adagdak Volcano, Adak Island clino
- PYROXENE. Dechomets (*Miner. Deposita* 20, 201-216) (1985)(French). Microprobe analyses (4) from skarn, Niccioleta, Italy.
- PYROXENE. Devine and Sigurdsson, *J. Volcanol. Geotherm. Res.* 16, 1-31 (1983). Microprobe analyses (4) from Soufriere, St. Vincent.
- PYROXENE. Dia et al., (*Jour. African Earth Sci.* 6, 257-268) (1987) (French) Analyses (7) from basalts and basanites Senegal
- PYROXENE. Dick and Bullen, *Contrib. Mineral. Petrol.* 86, 54-76 (1984). Microprobe analyses (5) from peridotites.
- PYROXENE. Dietrich and Arndt, (*High Pressure Research Geosci.*, 293-306, 307-319) (1982), *Mineralog. Abstr.* 34, 411 (1983). Thermal expansion - 100 to 800 degrees C, heat capacity 25-300 degrees, compression to 120 kb. at 25 degrees for En 85.
- PYROXENE. Dietrich, et al., *J. Volcanol. Geothermal Res.* 18, 405-433 (1983). Microprobe analyses (24) from basalts, Ladakh, Himalayas (clino).
- PYROXENE. Dobretsov (*Geol. Geofiz.* 12, 80-88) (1984)(Russ.), *Chem. Abstr.* 102, no. 14, 116705 (1985). A review of jadeite and problems of ophiolites.
- PYROXENE. Dobretsov, et al., *Miner. Slovaca* 16, no. 1, 87-94 (1984)(English). Microprobe analyses (7) from pyrope peridotites, Bohemia.
- PYROXENE. Donaldson et al., (*Neues Jahrbuch Miner. Abh.* 156, 247-279) (1987) (Eng) Microprobe analyses (8) from silicate lavas, Oldoinyo Lengai, Tanzania
- PYROXENE. Droop and Bucher-Nurminen, *J. Petrol.* 25, 766-803 (1984). Microprobe analyses (10) from granulites, Italian Central Alps. ortho
- PYROXENE. Duda (*Bochum Geol. Geotecon Arbert.* 16, 24-40) (1984). (G(530) q B628). Microprobe analyses (30) from W. Eifel, Germany, alkalic rocks.

- PYROXENE. Dudar, et al., (Tr. Komi Fil. Akad. Nauk SSSR 48, 67-75) (1984), Chem. Abstr. 102, no. 4, 28614 (1985). Analyses (not in abstr.).
- PYROXENE. Duggan and Reay, (Bull. Roy. Soc. New Zealand 23, 264-276) (1986) Analyses (7) from basalt, Timaru, New Zealand
- PYROXENE. Dymek and Gromet, Can. Mineral. 22, 297-326 (1984). Analyses (32) from anorthosite, Quebec. (Al-rich ortho-)
- PYROXENE. Eales and Marsh, (Chem. Geol. 38, 57-74 (1983)) Chem. Abstr. 98, no. 14, 110846 (1983). Al/Cr ratios in coexisting ortho- and clino-pyroxenes and spinels in ultramafic rocks.
- PYROXENE. Economou and Naldrett, Miner. Deposita 19, 289-297 (1984)(English). Microprobe analyses (6) from chromite deposit. Eretria, Greece.
- PYROXENE. Eggins and Hensen, (Lithos 20, 295-310) (1987) Microprobe analyses (9) from granodiorites, Barrington Top batholith, E. Australia (hypersthene + augite)
- PYROXENE. Egglar and Burnham, Contrib. Mineral. Petrol. 85, 58-66 (1984). Solubility of H₂O in diopside melts: a thermodynamic model.
- PYROXENE. Ehrenberg, J. Petrol. 23, 507-547 (1982). Microprobe analyses (52) from Navajo volcanic field.
- PYROXENE. El Goresy et al. (Geochim. Cosmochim. Acta 48, 2283-2298) (1984). Microprobe analyses (5) from Ca-Al-rich inclusion, Essebi chondrite including vanadian fassaite and diopside.
- PYROXENE. Enami and Tokonami, Contrib. Mineral. Petrol. 86, 241-247 (1984). Microprobe analyses (7) of coexisting sodic augite and omphacite, Japan.
- PYROXENE. Eremenko et al., (Mineral. Zh. 7(6), 9-18) (1985) (Russian) Analyses (2) from Kursk magnetic anomaly
- PYROXENE. Eriksson, Am. Mineral. 70, 74-79 (1985). Microprobe analyses (3) of clinopyroxenes, Phalaborwa, S. Africa, with oscillatory zoning.
- PYROXENE. Esperanca and Holloway ((Kimberlites 11B, 219-227) (1984). (150.3 D493). Microprobe analyses (13) from potassic latites, Carefree, Ariz.
- PYROXENE. Eto and Anderson, Contrib. Mineral. Petrol. 82, 371-388 (1983). Microprobe analyses (12) from Mid-Cagnan Rise.
- PYROXENE. Ewart, J. Petrol. 23, 344-382 (1982). Microprobe analyses (5) from volcanic rocks, Queensland, Australia.
- PYROXENE. Exley et al., Am. Mineral. 68, 512-516 (1983). Microprobe analyses (1) from kimberlite, S. Africa.
- PYROXENE. Feklichev, Nov. Dannye Miner. SSSR 31, 121-131 (1983). Morphology and mechanism of growth of diopside (variety "baikalite").
- PYROXENE. Fitzgerald and Jaques, Meteoritics 17, 9-26 (1982). Microprobe analyses (4) in Tibooburra carbonaceous chondrite.
- PYROXENE. Foden, J. Petrol. 24, 98-130 (1983). Microprobe analyses (13) from Rindjani Volcano, Indonesia.
- PYROXENE. Foley (Lithos 17, 127-137) (1984). Microprobe analyses (11) from lamprophyres, Labrador). (clino-)
- PYROXENE. Fonarev and Grafchikov (Geokhimiia, 465-471) (1984), Chem. Abstr. 100, no. 26, 213138 (1984). Calculation of thermodynamic stability in assemblage orthopyroxene, clinopyroxene, magnetite, quartz.
- PYROXENE. Fonarev and Grafchikov, (Mineral. Zh. 4, no. 5, 3-12 (1982)) Chem. Abstr. 98, no. 8, 57253 (1983). Bipyroxene geothermometer.
- PYROXENE. Frechen (Neues Jahrb. Mineral., Abh. 150, 65-93) (1984). Microprobe analyses (3) from the Eifel, Germany.
- PYROXENE. Fredriksson, Meteoritics 17, 141-144 (1982). Av. composition in Manegaon meteorite.
- PYROXENE. Frey, et al., Contrib. Mineral. Petrol. 88, 133-149 (1984). Microprobe analyses (9) from volcanic rocks, Laguna del Maule, Chile.

- PYROXENE. Friend and Janardhan, Mineral. Mag. 48, 181-193 (1984). Microprobe analyses (51) from shonkinites, Salem, India.
- PYROXENE. Frietsch (Geol. Foeren. Stockholm Foerh. 106, 219-230) (1984)(Eng.). Analyses (5) from skarn Fe ores, northern Sweden.
- PYROXENE. Frost (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- PYROXENE. Fujinawa, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 419-437 (1982)(Japanese). Microprobe analyses (35) from basaltic rocks, N.E. Japan (ortho-, clino-, pigeonite).
- PYROXENE. Gallo et al. (N. Jb. Miner., Mh., 198-210) (1984)(Eng.). Microprobe analyses (3) from alkalic rocks, Italy.
- PYROXENE. Galuskin and Golovanova, (Zap. Vses. Miner. O-va. 116(1), 64-72) (1987) (Russian) Microprobe analyses (15) from skarn, Polar Yakutia
- PYROXENE. Gamble et al., (Bull. Roy. Soc. New Zealand 23, 344-365) (1986) Microprobe analyses (17) from volcanic rocks, Campbell Plateau
- PYROXENE. Gamble, Contrib. Mineral. Petrol. 88, 173-187 (1984). Microprobe analyses (9) from teschenite, N.S. Wales. (clino)
- PYROXENE. Gamble, J. Earth Sci. (Dublin) 5, 91-105 (1982). Microprobe analyses (3) from Slieve Gullion, N.E. Ireland.
- PYROXENE. Gamin and Zoysa, J. Gemmol. 19, 419-425 (1985), Chem. Abstr. 102, no. 24, 206691 (1985). Gem enstatite from Sri Lanka. Microprobe analysis, a 18.50, b 8.75, c 5.19A.
- PYROXENE. Gasparik and Newton, Contrib. Mineral. Petrol. 85, 186-196 (1984). Equil. content of Al in orthopyroxenes in equil. with spinel and forsterite 1030-1060 degrees C, 10-28 kbar.
- PYROXENE. Gasparik, (Contrib. Mineral. Petrol. 96, 357-370) (1987) Thermobarometry in various systems
- PYROXENE. Gasparik, Contrib. Mineral. Petrol. 87, 87-97 (1984). Stability in system CaO-Mg-Al₂O₃-SiO₂ 1300-1400 degrees C, 10.2-20.8 kb.
- PYROXENE. Girardeau et al. (Contrib. Mineral. Petrol. 90, 309-321) (1985). Microprobe analyses (19) from Xigaze ophiolite, Tibet (clino).
- PYROXENE. Gladkikh and Romanchev, (Dokl. Akad. Nauk SSSR 268, 964-966 (1983)) Chem. Abstr. 98, no. 22, 182709 (1983). Microprobe analyses (not in abstr.) from Maimecha-Kotui Province, USSR, show zoning from Cr-diopside in center to titanaugite on rim.
- PYROXENE. Glikson, (Trans. Geol. Soc. S. Africa 89, 263-283) (1986) Microprobe analyses (18) from granulite-anorthosite, central Australia (ortho + clino)
- PYROXENE. Gole et al., (Contrib. Mineral. Petrol. 96, 151-162) (1987) Av. composition in komatiite, W. Australia (enstatite)
- PYROXENE. Gomez-Pugnaic and Fernandez-Soler, (Contrib. Mineral. Petrol. 95, 231-244) (1987) Microprobe analyses (9) from metabasites, SE Spain (zoned)
- PYROXENE. Gooding, et al., Earth Planet. Sci. Lett. 65, 209-224 (1983). Microprobe analyses (9) from meteorite chondrules.
- PYROXENE. Goodrich, (Geochim. Cosmochim. Acta 48, 1115-1126) (1984), Chem. Abstr. 101, no. 2, 10168 (1984). From native iron, Disko Island, with up to 2.7% P₂O₅.
- PYROXENE. Grafchikov and Fonarev, (Geokhimiya 4, 563-573) (1987) (Russian), Chem. Abstr. 106, no. 26, 217100 (1987) Thermodynamic functions of clinopyroxenes
- PYROXENE. Graham and Powell, J. Metamorph. Geol. 2, 13-31 (1984). Microprobe analyses (1) from Pelone schist, S. Calif. (clino)
- PYROXENE. Graham, Meteoritics 18, 51-61 (1983). Microprobe analyses (2) from Romero chondrite.
- PYROXENE. Graham, et al., Meteoritics 19, 85-88 (1984). Microprobe analysis (2) from Machinga meteorite. ortho-, clino

- PYROXENE. Grandin de L'Épervier and Ito, (J. Cryst. Growth 64, 411-412) (1983), Chem. Abstr. 100, no. 12, 94655 (1984). Growth of large enstatite crystals from flux.
- PYROXENE. Greenough and Papezik, (Can. Jour. Earth Sci. 24, 1255-1260) (1987) Analyses (4) from basalt, Bay of Fundy
- PYROXENE. Gregorkiewicz and Rausell-Colom, (Am. Mineral. 72, 515-527) (1987) Analysis of augite, Mt. Vesuvius
- PYROXENE. Grieve et al., (Contrib. Mineral. Petrol. 96, 56-62) (1987) Microprobe analyses (3) from Boltys impact crater, Ukraine
- PYROXENE. Griffin et al. (J. Petrol. 25, 53-87) (1984). Microprobe analyses (60) from ultramafic xenoliths, Victoria, Australia. (clino- and ortho-).
- PYROXENE. Grossman et al. (Geochim. Cosmochim. Acta 49, 1781-1795) (1985). Microprobe analyses (14) from Quingzhen chondrite.
- PYROXENE. Gucua and Pelizer, (Mineral. Polsk Karpat., 94-101) 120(578) G934m (Polish) Analyses (7) from Polish Carpathians X-ray data
- PYROXENE. Guiraud and Burg (Neues Jahrbuch Mineral., Abh., 149(1), no. 1, 1-12) (1984)(Eng.). Microprobe analysis (1) from blue schist, Czechoslovakia.
- PYROXENE. Gurney et al. (Kimberlites 11B, 25-32) (1984) (190.3 D 493). Microprobe analyses (7) of inclusions in diamond, Roberts Vector mine.
- PYROXENE. Gurney et al. (Kimberlites 11B, 3-9) (1984) (150.3 D 493). Microprobe analyses (4) of inclusions in diamonds, Botswana.
- PYROXENE. Gurney et al., (Dev. Petrol. 11B, 3-9, 361-393) (1984), Chem. Abstr. 100, no. 24., 195223 (1984). Analyses (not in abstr. 1 of inclusions in).
- PYROXENE. Gurulev (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 84-89) (1983)(Russ.). 480 (690.3) M662. Analyses (6) of blue diopside, Siberia, optics, unit cell.
- PYROXENE. Hailey, Contrib. Mineral. Petrol. 86, 359-373 (1984). Experimental partitioning of Fe and Mg between almandine and enstatite.
- PYROXENE. Hansen et al., (Contrib. Mineral. Petrol. 96, 225-244) (1987) Microprobe analyses (14) from charnockites, India and Sri Lanka
- PYROXENE. Harding et al.; (J. Gemmol. 18, 213-216 (1982)) Mineral. Abstr. 34, 42 (1983). Analysis and optics of gem enstatite, Sri Lanka, a 18.232, b 8.808, c 5.180A.
- PYROXENE. Harding, (Scottish J. Geol. 19, 219-227) (1983), Mineralog. Abstr. 34, 465 (1983). Microprobe analyses (7) (not in Abstr.) from alkali granite, Ceilson Craig, Scotland, with up to 3.15% ZnO₂.
- PYROXENE. Harley (J. Petrol. 25, 665-696) (1984)(Eng.). Solubility of Al₂O₃ in orthopyroxene coexisting with garnet in the systems FeO-MgO-Al₂O₃-SiO₂ and CaO-FeO-MgO-Al₂O₃-SiO₂ at 800-1200 degrees C, 5-30 kbar.
- PYROXENE. Harley (J. Petrol. 25, 697-712) (1984)(Eng.). The garnet-orthopyroxene geobarometer.
- PYROXENE. Harley, (Jour. Metamorph. Geol. 5, 341-356) (1987) Microprobe analyses (25) from Antarctica
- PYROXENE. Harris and Jayaram, Lithos 15, 89-98 (1982)(English). Microprobe analyses (2) from gneisses, Bangalore, India.
- PYROXENE. Haselton et al. (Am. Mineral. 69, 481-489) (1984). Heat capacity and thermal expansion of Ca Al₂SiO₆.
- PYROXENE. Hashimoto and Grossman, (Geochim. Cosmochim. Acta 51, 1685-1704) (1987) Microprobe analyses (9) from Al-rich inclusions, Allende meteorite
- PYROXENE. Hatton (Contrib. Mineral. Petrol. 86, 45-53) (1984), Chem. Abstr. 100, no. 26, 213137 (1984). Effect of T and P on the distribution of Fe and Mg between olivine, pyroxene and liquid in the Bushveld Complex.
- PYROXENE. Hatton and Von Gruenewaldt (Econ. Geol. 80, 911-924) (1985). Analyses (3) from Swarthop mine, Bushveld Complex.

- PYROXENE. Hatton, *Contrib. Mineral. Petrol.* 86, 45-53 (1984). Effect of P and T on distribution of Mg and Fe olivine-orthopyroxene.
- PYROXENE. Hayashi and Aoki, (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 80, 73-82) (1985)(Jpn.). Microprobe analyses (40) from basalts and andesites, Chokai volcano, Japan.
- PYROXENE. Hearn and McGee, (*Kimberlites* 11B, 57-70) (1984) (150.3 D 493). Microprobe analyses (29) from Williams kimberlites, Mont. (ortho and clino).
- PYROXENE. Hellingwerf (*Econ. Geol.* 79, 696-715) (1984). Microprobe analyses (12) from sulfide skarn ore, Bergslagen, Sweden. Hedenbergite, diopside.
- PYROXENE. Helper, (*Geol. Soc. Am. Mem.* 164, 125-141) (1986) Microprobe analyses (4) from blueschists, Klamath Mts., Cal. and Ore. crossite, actinolite, ferrobarrosite, riebeckite (acmite)
- PYROXENE. Helvacı, *Econ. Geol.* 79, 354-371 (1984). Microprobe analyses (2) from magnetite-apatite deposit, Avnik, Turkey.
- PYROXENE. Henderson and Gibb, (*Trans. Roy. Soc. Edinburgh* 77, 325-347) (1987) Microprobe analyses (9) from Lugar sill, SW Scotland (clino)
- PYROXENE. Herd et al., (*Spec. Paper Geol. Assoc. Canada* 31, 241-253) (1986) Microprobe analyses (6), St. Maurice area, Quebec ortho-
- PYROXENE. Hermes et al., *Contrib. Mineral. Petrol.* 86, 386-397 (1984). Microprobe analyses (20) from dolerites, S.E. New England.
- PYROXENE. Hernandez, (*Jour. African Earth Sci.* 5, 381-399) (1986) Microprobe analyses (12) from Guilliz massif, Morocco
- PYROXENE. Hervig and Smith, *Contrib. Mineral. Petrol.* 81, 184-189 (1982). Microprobe analyses (38) from lherzolites. Distribution of Cr in.
- PYROXENE. Hildreth, J. *Volcanol. Geothermal. Res.* 18, 1-56 (1983). Microprobe analyses (13 ortho, 9 clino.-) from Valley of 10,000 Smokes, Alaska.
- PYROXENE. Hinterlechner-Ravnik, *Razprave Geol. Porocila* 25, 270-272 (1982). Analyses (4), optics, unit cells from eclogite, Pohorje, Yugoslavia (omphacites).
- PYROXENE. Hogarth and Lapointe, *Can. Mineral.* 22, 281-295 (1984). Analyses (22) of sodic from fenite, Cantley, Que.
- PYROXENE. Hoinkes, *Schweiz. Mineral. Petrogr. Mitt.* 63, 95-114 (1983)(English). Microprobe analyses (2) from Tyrol. diopside
- PYROXENE. Holland, *Contrib. Mineral. Petrol.* 82, 214-220 (1983). Activity in disordered jadetic pyroxenes.
- PYROXENE. Hoshino and Shiida, *Rep. African Stud., Nagoya Univ.*, 6, 127-138 (1981)(English). Microprobe analysis from phonolite, Tanzania (diopside).
- PYROXENE: Huang, (*Geochemistry (China)* 4, 268-279) (1985) (Eng) Analyses (3) from Songsbugon metamorphosed ultramafic rocks, China
- PYROXENE. Hunter and Taylor, *Am. Mineral.* 69, 16-29 (1984). Microprobe analyses (6) from Kimberlite, Fayette Co., PA.
- PYROXENE. Hwang and Meyer, *Mem. Geol. Soc. China* 5, 67-84 (1983)(English)(G(611)(G292m). Microprobe analyses (8) from dacite-andesite, N. Taiwan.
- PYROXENE. Ike et al., (*Can. Mineral.* 22, 401-409) (1984). Microprobe analyses (28) from Tibschi ring complex, Nigeria. Ferroaugite and ferro hedenbergite.
- PYROXENE. Ike, (*J. African Earth Sci.* 3, 101-105) (1985). Microprobe analysis (1) from Burra ring dike, Nigeria. (Ferrohedenbergite).
- PYROXENE. Ionov, (*Geol. Zbornik Bratislava* 37, 681-692) (1986) (Eng) Microprobe analyses (18) from peridotite xenoliths, Mongolia (Cl+Or)
- PYROXENE. Irving and Frey, (*Geochim. Cosmochim. Acta* 48, 1201-1221) (1984). Microprobe analyses (18) of megacrysts in basalts. Trace elements.

- PYROXENE. Ishibashi, (Sci. Rep. - Dep. Geol., Kyushu Univ., 13, 209-216 (1980)) Mineral. Abstr. 34, 167 (1983). Analysis (1) (not in abstr.) from Kyushu. (aegirine-augite).
- PYROXENE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 101-110 (1981)(English). Electron probe analyses (2) from peridotite, Kenya (ortho-).
- PYROXENE. James and Hawke, Can. Mineral. 22, 93-109 (1984). Microprobe analyses (4) from Kanichee complex, Ont. (Clino)
- PYROXENE. Jan (Geol. Bull. Punjab Univ., 55-64) (1983)(Eng.). Microprobe analyses (ortho- and clino-) from granulite, n. Pakistan.
- PYROXENE. Janardhen and Wiebe (J. Geol. Soc. India 26, 163-176) (1985). Analyses (9) from anorthosites, Tamil Nadu, India.
- PYROXENE. Jantzen, Am. Mineral. 69, 277-282 (1984). Spinodal decomposition in Fe-free pyroxenes, in system enstatite-diopside.
- PYROXENE. Jenner and Green, Mineral. Mag. 47, 153-160 (1983). Equilibrium in the Mg-rich part of the pyroxene quadrilateral.
- PYROXENE. Johnson and Essene, Contrib. Mineral. Petrol. 81, 240-251 (1982). Microprobe analyses (20) from metagabbros, Adirondacks.
- PYROXENE. Johnston and Stout, Am. Mineral. 69, 57-68 (1984). Microprobe analyses (9) of ferroandiolite from gabbro, Kauai, Hawaii.
- PYROXENE. Johnston and Stout, Contrib. Mineral. Petrol. 88, 196-202 (1984). Microprobe analyses (4) from symplectites, Hawaii.
- PYROXENE. Jones, Mineral. Mag. 48, 1-12 (1984). Microprobe analyses (12) from nepheline syenites, S. Greenland.
- PYROXENE. Jones, et al., J. Geol. 90, 435-454 (1982). Microprobe analyses (19) from peridotites, S. Africa.
- PYROXENE. Kalinin and Serdobintseva, (Din. Fiz-Khim. Model Magmet. Protzess., 126-128) (1983), Chem. Abstr. 100, no. 26, 213095 (1984). 1 Reaction of hedenbergite with H_2S-H_2O at 300 degrees.
- PYROXENE. Kaminskii et al., (Mineral. Zh. 8(2), 39-45) (1986) (Russian) Microprobe analyses (24) from diamond-bearing picrites
- PYROXENE. Kampunzu et al. (Bull. Volcanol. 47, 79-103) (1984)(French). Microprobe analyses (25) from Nyamulagira volcano.
- PYROXENE. Kanat, Mineral. Mag. 48, 301-303 (1984). Analyses (5) from Svalbard of jadeite.
- PYROXENE. Kay and Kay (Contrib. Mineral. Petrol. 90, 276-290) (1985). Microprobe analyses (41) from Aleutian volcanic rocks.
- PYROXENE. Kay, et al., Contrib. Mineral. Petrol. 82, 99-116 (1983). Microprobe analyses (22) from Finger Bay pluton, Alaska.
- PYROXENE. Keller and Richter, Tschermaks Mineral. Petrogr. Mitt. 33, 49-66 (1984). Microprobe analyses (7) from metarodingite, Hohen Tavern, Austria.
- PYROXENE. Khomenko and Platonov, (Mineral. Zh. 4, no. 4, 38-45 (1982)) Mineral. Abstr. 34, 214 (1983). Pleochroism of Fe-bearing.
- PYROXENE. Khomenko et al. (Mineral. Zh. 5, no. 2, 47-60) (1983), Mineral. Abstr. 35, 78 (1984). Analyses (15) of aegerine and aegirine-salite (not in Abstr.), Optics.
- PYROXENE. Khomenko et al., (Mineral. Zh. 6, no. 1, 24-32) (1984), Chem. Abstr. 100, no. 26, 213112 (1984). Pleochroism in aluminian orthopyroxenes.
- PYROXENE. Khomenko, et al., (Problem. Kristallokhim Genezis Miner., 60-70) (1983), Chem. Abstr. 100, no. 6, 37232 (1984). Analyses, color, pleochroism, Mossbauer spectroscopy of series enstatite - orthoferrosilite.
- PYROXENE. Khoneiko et al. (Geokhimiia 6, 842-848) (1984), Chem. Abstr. 101, no. 10, 76113 (1984). Optical absorption spectroscopy (enstatite).
- PYROXENE. Kienast and Martin, Ophiolite 8, 245-260 (1983)(Italian). Microprobe analyses (8) of jadeite-acmite, W. Alps.

- PYROXENE. Kiji, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 75-80) (1987) (Jap) Microprobe analyses (3) from ultramafic rocks, SW Japan clino
- PYROXENE. Kikhoidov (Zap. Vses. Mineral. O-va. 112, 89-94) (1983), Mineral. Abstr. 35, 44 (1984). Synthesis of acmite-jadeite series. Unit cells.
- PYROXENE. King et al., Meteoritics 16, 229-237 (1981). Microprobe analyses (2) from Tierra Blanca achondrite.
- PYROXENE. Kirkley et al. (Kimberlites 11B, 85-96) (1984) (150.3 D 493). Microprobe analyses (8) from kimberlites, Colo and Wyo. (ortho and clino)
- PYROXENE. Kitamura and Aoki (Mineral. J. Tokyo 10, 35-42) (1980), Mineral. Abstr. 35, 16 (1984). Intergrowths of diopside and pigeonite from kimberlite, S. Africa.
- PYROXENE. Klein and Wimmenauer, Neues Jahrb. Mineral., Monatsh., 25-38 (1984)(English). Analyses (4) from eclogite, Black Forest. (omphacites and Orth.) diopside
- PYROXENE. Koepke and Seidel, Tschermaks Mineral. Petrogr. Mitt. 33, 263-286 (1984). Microprobe analyses (6) from ophiolite, Crete. clino-
- PYROXENE. Kogarko et al. (Geokhimiia, 472-493) (1984), Chem. Abstr. 100, no. 26, 213138 (1984). Stability in system nepheline-diopside-apatite.
- PYROXENE. Kompanertsev, (Izv. Akad. Nauk Kaz. SSR, Ser. Geol., no. 6, 38-46) (1984), Chem. Abstr. 102, no. 6, 48853 (1985). Analyses from Kazhakstan (not in abstr.), optics.
- PYROXENE. Kontak, et al., Mineral. Mag. 48, 547-558 (1984). Recognition of zoning in by laser interference microscopy.
- PYROXENE. Koons, Contrib. Mineral. Petrol. 80, 340-347 (1984). Microprobe analyses (8) from Sesia zone, W. Alps, Garnet-clinopyroxene geothermometry.
- PYROXENE. Kornacki and Word, Geochim. Cosmochim. Acta 48, 1663-1676 (1984). Microprobe analyses (2) from Allende meteorite.
- PYROXENE. Kostakis (Prakt. Akad Athenon 56, 139-147) (1982)(Ger.), Chem. Abstr. 101, no. 16, 134284 (1984). Electrical conductivity of 2 diopsides.
- PYROXENE. Kostrovitsku, et al., (Silik Magmat. Postmagmat. Obraz. Yakutu, 54-60) (1983), Chem. Abstr. 100, no. 20, 159622 91984). Analyses (not in abstr.) of inclusions in olivine in kimberlite, Yakutia.
- PYROXENE. Kosyakova, (Dokl. Akad. Nauk SSSR 274, 399-401) (1984), Chem. Abstr. 100, no. 20, 159630 (1984). Stability in hydrothermal system cordierite + quartz + orthopyroxene.
- PYROXENE. Kouchi, et al., (Contrib. Mineral. Petrol. 83, 177-184) (1983), Mineral. Abstr. 35, 159 (1984). Sector zoning in synthetic crystals in system $\text{CaMgSi}_2\text{O}_6$ - $\text{CaTiAl}_2\text{O}_6$.
- PYROXENE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (7) from Davidkovo massif, Ukraine
- PYROXENE. Krogh, Lithos 15, 305-321 (1982)(English). Probe analyses (27) from Norwegian eclogites.
- PYROXENE. Kruger and Marsh (Econ. Geol. 80, 958-974) (1985). Microprobe analyses (36) from Merensky unit, Bushveld Complex.
- PYROXENE. Krupka et al. (Am. Mineral. 70, 249-260) (1985). Low-temp. heat capacities and derived thermodynamic properties.
- PYROXENE. Krupka et al. (Am. Mineral. 70, 261-271) (1985). High-temp. heat capacities and derived thermodynamic properties. (diopside, enstatite, bronzite)
- PYROXENE. Krupka, (Diss. Pa. State Univ., 1-396) (1984); Diss. Abstr. 1984B, 45, no. 6, p. 1704. Thermodynamic analysis of equil. in system $\text{MgO-SiO}_2\text{-H}_2\text{O}$.
- PYROXENE. Kuskov (Geokhimiia 8, 1119-1124) (1984), Chem. Abstr. 101, no. 16, 134321 (1984). Thermodynamic constants and equations of state at 300-1800 degrees to 220 kbar of ferrosilite.

- PYROXENE. Kuskov et al., (Geokhimiia, no. 11, 1587-1597 (1982)) Chem. Abstr. 98, no. 6, 37820 (1983). Derivation of equation of state at high T and P (diopside).
- PYROXENE. Labotha, Northeast. Geol. 4, 85-94 (1982). Microprobe analyses (13) from Iona Island, N.Y.
- PYROXENE. Lalonde and Martin, Can. Mineral. 21, 81-91 (1983). Microprobe analyses (14) from syenite complex, Quebec.
- PYROXENE. Larson et al., (Geol. Foren. Stockholm Foerh. 106, 119-125) (1984)(Eng.). Average of 35 analyses from gabbro, Sweden.
- PYROXENE. Latouche, (Bull. Mineral. 106, 329-339) (1983), Mineral. Abstr. 35, 77 (1984). Analysis, optics of orthoferrosilite, Ahaggar, Algeria, a 18.411, b 9.027A.
- PYROXENE. Laz'ko, et al., Izv. Akad. Nauk SSSR, Ser. Geol., no. 3, 42-53 (1984)(Russian). Microprobe analyses (10) from peridotites, Khizen fault, S.E. Pacific.
- PYROXENE. Le Bel et al., (J. Petrol. 26, 124-148) (1985). Microprobe analyses (7) from Lima, Peru (Andes).
- PYROXENE. Le Roex, (J. Petrol. 26, 149-186) (1985). Microprobe analyses (10) from Gough Island, S. Atlantic.
- PYROXENE. Lee, Sci. Rep. Tohoku Univ., Ser. 3, 15, 177-256 (1982)(English). Microprobe analyses (59) from Jeju volcanic rocks, Korea.
- PYROXENE. Lefevre and Cocusse, (Bull. Mineral. 108, 189-208) (1985). Microprobe analyses (21) from andesite lavas, Guadeloupe. (Ortho- and clino-).
- PYROXENE. Leite et al., (Mineral. Mag. 48, 459-461) (1984). Oriented enstatite inclusions in diamond, a 18.17, b 8.81, c 5.17 A.
- PYROXENE. Lennikov et al., (Dokl. Akad. Nauk SSSR 278, no. 2, 444-448) (1984), Chem. Abstr. 102, no. 4, 28620 (1985). Analyses of hypersthene of high Al content.
- PYROXENE. Likhoidov, (Mineral. Zh. 6(2), 35-42) (1984)(Russian). Chem. Abstr. 101, no. 6, 44315 (1984). Thermodynamic functions calculated from data on aegirine = hematite + quartz.
- PYROXENE. Likhoidov, (Zap. Vses. Mineral. O-va. 112, 89-94 (1983)) Chem. Abstr. 98, no. 20, 164115 (1983). Synthesis of acmite-jadeite series.
- PYROXENE. Lindsley, Am. Mineral. 68, 477-493 (1983). Review of pyroxene geothermometry.
- PYROXENE. Lippard, Mineral. Mag. 48, 13-20 (1984). Microprobe analyses (4) from Oman Mts., Arabia.
- PYROXENE. Litvinovich and Matkovskii, (Mineral. Sb. (Lvov) 36, 68-75 (1982)) Chem. Abstr. 98, no. 24, 201519 (1983). Analyses, optics, X-ray data, Bug River region.
- PYROXENE. Litvinovich and Matkovskii, Mineral. Sb. 37, 27-34 (1983)(Russian). Analysis, optics, unit cells of ortho- and clino-, Bug River region, Ukraine.
- PYROXENE. Litvinovich, (Deposited Doc. VINITI 5994-82, 100-105) (1982), Chem. Abstr. 100, no. 12, 88918 (1984). Analyses (not in Abstr.), unit cells, optics of clino- and ortho- pyroxenes. Upper Bug River, Ukraine.
- PYROXENE. Livi, (Contrib. Mineral. Petrol. 96, 371-380) (1987) Geothermometry of exsolved augites, Wyo. Microprobe analyses (21)
- PYROXENE. Luais, (Doc. Trav. Centre Geol. Montpellier 9, 1-229) (1987) (French) G(540) q(334d) Microprobe analyses (106) from the Mediterranean (clino + ortho)
- PYROXENE. Lubala et al., (Ann. Soc. Geol. Belg. 107, 125-134) (1984)(French). Microprobe analyses (12) from basaltic lavas, Kiver rift, Zaire.
- PYROXENE. Luhr and Carmichael, (Contrib. Mineral. Petrol. 90, 142-161) (1985). Microprobe analyses (8) from Jorullo volcano, Mexico.

- PYROXENE. Luhr and Carmichael, *Contrib. Mineral. Petrol.* 71, 348-372 (1980).
Microprobe analyses (32) and minor elements from Colina Volcano, Mexico.
- PYROXENE. Luhr and Giannetti, (*Contrib. Mineral. Petrol.* 95, 420-436) (1987)
Microprobe analyses (7) from leucitic tuff, Roccamoufina Volcano, Italy clino
- PYROXENE. Luhr, et al., *J. Volcanol. Geotherm.* 23, 69-108 (1984). Microprobe
analysis (1) from Chichon Volcano, Mexico. augite
- PYROXENE. MacPherson et al., *Geochim. Cosmochim. Acta* 47, 823-839 (1983).
Microprobe analyses (8) from Murchison meteorite.
- PYROXENE. Maeda et al. (*J. Japan Assoc. Mineral., Petrol. Econ. Geol.* 80,
13-20) (1985)(Eng.). Microprobe analyses from norite, Hokkaido, Japan.
(Ortho)
- PYROXENE. Malvin et al. (*Meteoritics* 20, 259-273) (1985). Microprobe analyses
(2) from Bocaluva meteorite (ortho and clino).
- PYROXENE. Maquil and Duchesni (*Ann. Soc. Geol. Belg.* 107, 27-49) (1984).
Microprobe analyses of 62 ortho- clino-pairs from Egersund-Ogna anorthosite,
Norway.
- PYROXENE. Marcelot et al., (*Lithos* 16, 135-151) (1983) Microprobe analyses (40)
from Erromango, New Hebrides
- PYROXENE. Martin, *Mineral. Mag.* 48, 529-531 (1984). Microprobe analyses (5) of
titanian aegirine and ferroselite from teschemite, N.S. Wales.
- PYROXENE. Maruyeme and Liou, *Am. Mineral.* 70, 16-29 (1985). Microprobe
analyses (12) from Shikoku, Japan.
- PYROXENE. Matsueda, et al., *Proc. 3rd Symp. Antarctic Geosci.*, 166-176
(1983)(English) (502(990)J27SS no. 28). Microprobe analyses (4) from skarn,
Antarctica.
- PYROXENE. Maury and Coulon, *Bull. Mineral.* 107, 69-80 (1984). Microprobe
analyses (29) from basalts and andesites, Sardinia.
- PYROXENE. Mazzucchelli, *Neues Jahrb. Mineral., Abh.*, 146, 101-116
(1983)(English). Microprobe analyses (2) from Ivrea-Verbano complex, Italy.
- PYROXENE. Medaris, *Contrib. Mineral. Petrol.* 87, 72-86 (1984). Microprobe
analyses (24) from garnet peridotites, W. Norway. (zoned)
- PYROXENE. Meeker et al., *Geochim. Cosmochim. Acta* 47, 707-721 (1983).
Microprobe analyses (6) from Allende meteorite.
- PYROXENE. Meinert, *Econ. Geol.* 79, 869-882 (1984). Analyses (12) from skarns,
W. British Columbia.
- PYROXENE. Messiga, et al., *Contrib. Mineral. Petrol.* 83, 1-15 (1983).
Microprobe analyses (21) from gabbros, Liguria, Italy (sodic clinopyroxenes
 $\text{Na}_2\text{Na}_2\text{O}$) 4.6-7.67%.
- PYROXENE. Meyer and McCallister (*Kimberlites* 11B, 133-144) (1984) (150.3 D 493).
Microprobe analyses (16) from kimberlites, S. Africa. (ortho and clino).
- PYROXENE. Mezger and Okrusch (*Tschermaks Mineral. Petrogr. Mitt.* 34, 67- 82)
(1985). Microprobe analyses (3) from metamorphosed dolomites, Samos, Greece.
- PYROXENE. Mezger et al. (*Contrib. Mineral. Petrol.* 90, 353-366) (1985).
Microprobe analyses (2) from Samos, Greece (clino).
- PYROXENE. Mitchell and Lewis, *Can. Mineral.* 21, 59-64 (1983). Microprobe
analyses (12) from peridotite, Arkansas.
- PYROXENE. Mitchell and Platt (*Carbonitite Symp. Brazil* 176, 93-104)
(1978)(Eng.). (170QIN8PC). Analyses (6), Poolbah Lake, Ont. malignite.
(Clino).
- PYROXENE. Mitchell, *Contrib. Mineral. Petrol.* 86, 178-188 (1984). Microprobe
analyses (78), kimberlites, Namibia. Ortho, clino
- PYROXENE. Miyahisa et al. (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.*
75, 25-29) (1980), *Mineral. Abstr.* 35, 77 (1984). Probe analyses (not in
Abstr.) of fassaite, Japan.

- PYROXENE. Miyake (J. Metamorph. Geol. 2, no. 2, 165-177) (1984). Microprobe analyses (2) from gneisses, Kenya.
- PYROXENE. Moore, J. Petrol. 25, 126-150 (1984). Microprobe analyses (2) from blue schist, NE Diablo Range, Calif.
- PYROXENE. Morimoto and Kitamura, (Proc. China-Japan Electron Microsc. Seminar 1st 1981, 100-104) (1982)(Eng.), Chem. Abstr. 100, no. 26, 213120 (1984). Study of exsolution.
- PYROXENE. Morris, J. Volcanol. and Geothermal Research 21, 119-148 (1984). Microprobe analyses (16) from Campbell Island, SW Pacific. clino- and ortho.
- PYROXENE. Morten and Puga (Neues Jahrbuch Miner., Abh., 211-218) (1984)(Eng.). Analysis from harzburgite, Spain.
- PYROXENE. Moseley, Am. Mineral. 69, 139-153 (1984). Microprobe analyses (18) of symplectite inclusions.
- PYROXENE. Motoyoshi and Matsueda (Proc. Symp. Antarctic Geosci. 4th, 1983, 103-125) (1984)(Eng.). Microprobe analyses (8), Enderby Land, Antarctica, 502 (990) J27SS.
- PYROXENE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (11) from manganiferous cherts, Alps
- PYROXENE. Mposkos and Perdikatsis (Neues Jahrbuch Mineral., Abh., 149, no. 1, 43-63) (1984)(Eng.). Microprobe analyses (5) from glaucophane metagabbros, Samos I., Greece. (omphacites).
- PYROXENE. Murakami et al. (Z. Kristallogr. 166(3-4), 263-275) (1966)(Eng.). Chem. Abstr. 101, no. 6, 46768 (1984). X-ray data on protoenstatite.
- PYROXENE. Murakami; et al., (Z. Krist. 160, 299-312) (1982), Mineralog. Abstr. 34, 396 (1983). Transition of enstatite to proto-enstatite. Structure at 1080 degrees C.
- PYROXENE. Nagahara and Kushiro, Meteoritics 17, 55-63 (1982). Microprobe analyses (4) from Ca-Al rich chondrules, meteorites.
- PYROXENE. Nakagawa and Aoki (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 136-154) (1985)(Jpn.). Microprobe analyses (8) from Moriyoshi volcano, NE Japan.
- PYROXENE. Nakagawa and Bamsba, (Mining Geology (Japan) 37, 189-197) (1987) (Eng) (G(620)M66) Analyses (2) from Tominchu mine, Hokkaido, Japan Cr_2O_3 0.97%
- PYROXENE. Naslund, J. Petrol. 25, 185-212 (1984). Av. compositions (7) of Upper Buda Ser., Skeergegd, Eng.
- PYROXENE. Nell (Econ. Geol. 80, 1129-1152) (1985). Microprobe analyses (15), Potgietersrus, Bushveld Complex.
- PYROXENE. Nelson and Carmichael, Contrib. Mineral. Petrol. 85, 321-335 (1984). Microprobe analyses (5) from Sanganguey Volcano, Mexico.
- PYROXENE. Neumann et al. (Lithos 18, 35-59) (1985)(Eng.). Microprobe analyses (21) from gabbros, Oslo rift, Norway.
- PYROXENE. Neville et al. (Am. Mineral. 70, 668-677) (1985). Microprobe analyses (14) from ultramafic inclusions in basalt, Calif.
- PYROXENE. Nickel and Brey, Contrib. Mineral. Petrol. 87, 35-42 (1984). Chem. Abstr. 101, no. 18, 155035 Stability of ortho- and clino- pyroxenes in system $CaO-MgO-SiO_2$ to 60 kb.
- PYROXENE. Nickel and Green (Kimberlites 11B, 161-178) (1984). (150.3 D493). Microprobe analyses (95) from ultramafic xenoliths, Victoria, Australia.
- PYROXENE. Nicollet, Bull. Mineral. 105, 691-696 (1982). Microprobe analyses (1) from Aveyron, France.
- PYROXENE. Ntaflos et al. (Fortschr. Mineral. 62, Beih. 1, 174-176) (1984). Microprobe analyses (4) from ultramafites, Zabarged, Red Sea.
- PYROXENE. Nureki et al. (Mem. Geol. Soc. Japan 21, 127-146) (1982) (G(620) G29m). Analyses (25) from xenoliths in andesite, Kagowz Pref). (19 ortho, 6 clino).

- PYROXENE. Nyambok and Lindquist, Uppsala Univ. Mineral. Petrol. Res. Rept. no. 9 (1978)(English) (G(583)QVP6a). Microprobe analyses (18) from alkalic rocks, Jombo Hill, Kenya.
- PYROXENE. O'Halloran (J. African Earth Sci. 3, 61-75) (1985). Microprobe analyses (20) from alkalic rocks, Sudan. (Clinopyroxene).
- PYROXENE. Ohashi and Osawa, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 100-105) (1987) (Eng) Unit cell dimensions in system kosmochlor ($\text{NaCrSi}_2\text{O}_6$)- $\text{NaSeSi}_2\text{O}_6$ Optics
- PYROXENE. Ohashi and Sekita, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 455-459 (1982)(English). Raman spectra clinopyroxenes.
- PYROXENE. Ohashi, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 449-453 (1983)(English). Crystal field spectra of 3 clinopyroxenes containig Cr. Unit cell data.
- PYROXENE. Oheshi, Phys. Chem. Miner. 10, 217-229 (1984). Structures of polysynthetically twinned enstatite and clinoenstatite.
- PYROXENE. Olsen et al., Am. Mineral. 68, 315-333 (1983). Microprobe analyses (6) from Concord gabbro-syenite complex, N.C.
- PYROXENE. Onuma, J. Fac. Sci., Hokkaido Univ., Ser. 4, v. 20, 185-194 (1983)(English). Effect of O fugacity on stability relations of fassaite.
- PYROXENE. Otten and Buseck, (Contrib. Mineral. Petrol. 96, 529-538) (1987) TEM study of transformation augite to sodic pyroxene 11 analyses
- PYROXENE. Ottonello, et al., J. Petrol. 25, 343-372 (1984). Rare earths in 5 pairs of coexisting ortho-pyroxenes from W. Alpine peridotites.
- PYROXENE. Owen et al., (Spec. Publ. Geol. Assoc. Canada 31, 95-106) (1986) Analyses (2) from Grenville, Labrador coast (clino-)
- PYROXENE. Paktung, Can. Mineral. 22, 77-91 (1984). Microprobe analyses (4) from Thompson mine, Manitoba. Clino.
- PYROXENE. Pankratov, (Vestnik Leningrad Univ., Geol. Geogr., no. 1, 93-96) (1984), Chem. Abstr. 101, no. 8, 57856 (1984). Analyses (not in Abstr.) from Khibiny alkalic massif.
- PYROXENE. Pannhorst, (Neues Jahrb. Mineral., Abh., 145, 270-279 (1982)(English)) Chem. Abstr. 98, no. 8, 57281 (1983). Interpretation of the diffuse X-ray reflections observed in enstatite inverted from low-clinoenstatite.
- PYROXENE. Pe-piper (J. Petrol. 25(2), 453-472) (1984). Chem. Abstr. 101, no. 12, 94814 (1984). Analyses (not in abstr.), optics from shoshonite, Lesbos, Greece.
- PYROXENE. Pe-piper, Schweiz. Mineral. Petrogr. Mitt. 63, 249-266 (1983)(English). Microprobe analyses (7) of clinopyroxenes, Peloponnese, Greece.
- PYROXENE. Pedersen and Hald, Lithos 15, 137-159 (1982)(English). Microprobe analyses (13) from dacite, Kroksfjordor, Iceland.
- PYROXENE. Pervov and Kononova, (Rock-forming minerals of magmatic rocks, Nauka, 126-138) (1986) (Russian) (170(570)Oss) Analyses (7) from magnesian andesites, Transbaikal (mono + ortho)
- PYROXENE. Platonov et al. (Zap. Vses. Mineral. O-va. 113(6), 724-727) (1984) (Russ), Chem. Abstr. 102, no. 10, 81861 (1985). Optical absorption spectrum of vanadian diopside.
- PYROXENE. Pobllesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (22) from Kuru-Tegeraba deposit
- PYROXENE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (9) from Western Alps, Italy
- PYROXENE. Poroshin and Kuznetsova, (Mineral. Zh. 8(2), 3-17) (1986) (Russian) Review of the physical parameters and composition of the clinopyroxenes of magmatic rocks

- PYROXENE. Pouclet, et al., Bull. Mineral. 106, 607-622 (1983). Microprobe analyses (5) from alkaline lavas, Virunga, E. Africa.
- PYROXENE. Povenmire, Meteoritics 19, 89-90 (1984). Analysis from Grayton Beach, Fla., meteorite.
- PYROXENE. Price et al., Can. Mineral. 21, 29-35 (1983). Microprobe analyses from Peace River meteorite, Alberta.
- PYROXENE. Qin (Yanski Kuangwu Ji Ceshi 3(1), 272-281) (1984)(Chin.). Chem. Abstr. 101, no. 12, 94654 (1984). Analyses, x-ray, infra-red of clinopyroxenes, Cihai iron deposit.
- PYROXENE. Rambaldi, et al, Earth Planet. Sci. Lett. 66, 15-24 (1983). Microprobe analyses (5) from Quigzhen meteorite. (enstatite and clino-)
- PYROXENE. Ramsay, et al., Contrib. Mineral. Petrol. 88, 386-402 (1984). Microprobe analyses (7) from Solomon Island.
- PYROXENE. Reinecke et al., Neues Jahrb. Mineral., Abh., 145, 157-182 (1982)(English). Microprobe analyses (2), Anafi, Greece.
- PYROXENE. Reverdatto (Zap. Vses. Mineral. O-va. 114, 229-236) (1985)(Russ.). Microprobe analysis (1) from hornfels (hypersthene).
- PYROXENE. Reznitskii et al., (Dokl. Akad. Nauk SSSR 267, 203-206 (1982)) Chem. Abstr. 98, no. 8, 57266 (1983). Analysis (not in abstr.) of vanadian diopside (lavrovite), a 9.71-9.76, b 8.80-8.92, c 5.23-5.24A. Optics, X-ray data.
- PYROXENE. Richet and Bottinga, Earth Planet. Sci. Lett. 67, 415-432 (1984)(Eng.). Thermodynamics of melting. (diopside)
- PYROXENE. Rietmeijer, Contrib. Mineral. Petrol. 83, 169-176 (1983). Diffusion coefficients in clinopyroxenes.
- PYROXENE. Rietmeyer, Mineral. Mag. 47, 143-151 (1983). Chemical distinction of igneous and metamorphic orthopyroxenes.
- PYROXENE. Robins, Contrib. Mineral. Petrol. 81, 290-295 (1982). Microprobe analyses (6) from Finnmark, Norway (clino-).
- PYROXENE. Robins, Norges Geol. Undersokilso no. 371, 1-55 (1982)(English). Electron microprobe analyses (10), Rognsund, Norway.
- PYROXENE. Robinson et al. (Kimberlites 11B, 11-24) (1984) (190.3 D 493). Microprobe analyses (26) from eclogite, Botswana.
- PYROXENE. Rock, Contrib. Mineral. Petrol. 81, 64-78 (1982). Microprobe analyses (5) from alkaline rocks, Portugal.
- PYROXENE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (5), St. Paul's rocks, Atlantic Ocean.
- PYROXENE. Rosi and Santacroce, J. Volcanol. Geothermal Res. 17,, 249-271 (1983)(English). Microprobe analyses (16) from AD 472 eruption of Vesuvius (clino-).
- PYROXENE. Rossi et al., (Porodoobrazuyushchie Miner. (Rock-forming Minerals), Mater. S'ezda MMA, 11th, 20-45 (1978)(Pub. 1981)(English)) Chem. Abstr. 98, no. 26, 219115 (1983). Structure of metamorphic pyroxenes.
- PYROXENE. Rossi, et al., Contrib. Mineral. Petrol. 83, 247-258 (1983). Microprobe analyses (6) and crystal structure in system diopside - jadeite; cation ordering in.
- PYROXENE. Rubie and Gunter, Contrib. Mineral. Petrol. 82, 165-175 (1983). Microprobe analyses (9) from Kisingiri fenites, Kenya (diopside - hedenbergite).
- PYROXENE. Rubin (Earth Planet. Sci. Lett. 67, 273-284) (1984). Electron microprobe analyses (3) from Blithfield meteorite (enstatite).
- PYROXENE. Rubin and Jerdi, (Earth Planet. Sci. Lett. 84, 1-14) (1987) Microprobe analyses (7) from Vaca Muerta mesosiderite meteorite
- PYROXENE. Rubin and Keil, Earth Planet. Sci. Lett. 62, 118-131 (1983). Microprobe analyses (8) of Abee chondrite (enstatite).

- PYROXENE. Rubín et al. (Meteoritics 20, 175-195) (1985). av. analysis from Colony meteorite.
- PYROXENE. Rubín, Am. Mineral. 69, 880-888 (1984). Microprobe analyses (13) from Allende meteorite (13, 11 ortho-, 2 clino), MnO up to 4.5%.
- PYROXENE. Rubín, Earth Planet. Sci. Lett. 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite.
- PYROXENE. Rudashevskii and Zhdanov, Bull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (3) from Kamchatka Pt deposit.
- PYROXENE. Rudashevskii, Zap. Vses. Mineral. O-va. 113, 186-195 (1984)(Russian). Microprobe analyses (3) of minerals enclosing Pt minerals.
- PYROXENE. Rumyantseva (Zap. Vses. Mineral. O-va. 114, 55-62) (1985). Analysis from Karelia of chromian aegirine (Cr_2O_3 9.2 percent), a 9.621, b 8.762, c 5.289A, beta 107.47 degrees, optics.
- PYROXENE. Ryabov (Geol. Geofiz. Novosibirsk, 6, 63-72) (1982), Mineral. Abstr. 35, 77 (1984). Microprobe analyses (20) of clinopyroxene, Moril'sk region (analyses not in Abstr.).
- PYROXENE. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983)(English). Microprobe analyses (9) from ultramafic rocks, Sanbagawa belt, Japan.
- PYROXENE. Sasaki et al., (Chigaku Kenkyu 33, 63-77 (1982)(Japanese)) Chem. Abstr. 98, no. 8, 57248 (1983). Analyses (not in abstr.) of fassaite and schefferite, Ehime Pref.
- PYROXENE. Sasaki et al., (Z. Kristallogr. 158, 279-297 (1982)) Mineral. Abstr. 34, 114 (1983). Electron distribution in orthoenstatite and orthoferrosilite.
- PYROXENE. Sautter, (Jour. African Earth Sci. 5, 345-357) (1986) (French) Microprobe analyses (4) from eclogites, Algeria
- PYROXENE. Schenker and Dietrich, (Schweiz. Min. Pet. Mitt. 66, 343-384) (1986) (Eng) Microprobe analyses (16) from lherzolites, etc., Cameroon (ortho + clino)
- PYROXENE. Schiffman et al. (Mineral. Mag. 49, 435-449) (1985). Analyses (7) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- PYROXENE. Schultz-Guttler et al., (Schweiz. Min. Pet. Mitt. 66, 281-294) (1986) (Eng) Analyses (3) from Buritirama, Brazil - Phase relations in system $\text{CaO-MnO-MgO-K}_2\text{O-Al}_2\text{O}_3\text{-SiO}_2\text{-CO}_2\text{-H}_2\text{O}$ (diopside)
- PYROXENE. Scott and Middleton, Nor. Geol. Tidsskr. 389, 1-26 (1983)(English) (581)Bu. Microprobe analyses (3) from camptonite sills, Oslo region.
- PYROXENE. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (11) from kimbalite, Greenland.
- PYROXENE. Scribbins, et al., Can. Mineral. 22, 67-75 (1984). Microprobe analyses (16) from Sudbury, Ont. Ortho and clino.
- PYROXENE. Seifert, Neues Jahrb. Mineral., Abh. 148, 141-162 (1983)(English), Chem. Abstr. 100, no. 6, 37264 (1984). Mossbauer study of aluminian orthopyroxenes.
- PYROXENE. Seifert, et al., (High Pressure Research Geosci., 419-432) (1982), Mineralog. Abstr. 34, 412 (1983). Electrical conductivity at 10-20 kb., 500-1000 degrees C.
- PYROXENE. Sen (Am. Mineral. 70, 678-695) (1985). Composition of clino- and ortho-pyroxenes in the system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$ at 900-1200 degrees C, 10-15 kbar. Nearly 100 analyses.
- PYROXENE. Sen and Bhattacharyya, Contrib. Mineral. Petro. 88, 64-71 (1984). Microprobe analyses (7) from charnockite's, Madras, India (ortho-). Pyroxene-garnet thermometer.

- PYROXENE. Sen and Presnall (Contrib. Mineral. Petrol. 85, 404-408) (1984), Chem. Abstr. 100, no. 26, 213132 (1984). Stability in system anorthite-forsterite-SiO₂ at 10 kbar.
- PYROXENE. Sharpe and Hulbert (Econ. Geol. 80, 849-871) (1985). Microprobe analyses (20) from E. Bushveld Complex (11 orth., 9 clino).
- PYROXENE. Shee et al., Contrib. Mineral. Petrol. 81, 79-87 (1982). Microprobe analyses (5) from peridotite, Finsch, S. Africa.
- PYROXENE. Sheraton et al., BMR J. Aust. Geol. Geophys. 7, 269-273 (1982). Microprobe analyses (6) from granulites, Antarctica.
- PYROXENE. Sherman, (Phys. Chem. Minerals 14, 355-363) (1987) Fe⁺²- Fe⁺³ charge transfer in augite
- PYROXENE. Shimazu et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 119-127) (1985)(Eng.). Microprobe analyses (13) from andesites and dacites, Niigata Pref.
- PYROXENE. Shiraishi et al. (Proc. Symp. Antarctic Geosci. 4th, 1983, 126-144) (1984)(Eng.), 502(9990) J2755. Microprobe analyses (4), Prince Olav coast, E. Antarctica.
- PYROXENE. Shuto et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 55-72) (1985)(Jpn.). Microprobe analyses (10) from tholeiite, Fukushima Pref., NE Japan.
- PYROXENE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (22).
- PYROXENE. Siegel and Pfannhuch, (Geochim. Cosmochim. Acta 48, 197-201) (1984), Chem. Abstr. 100, no. 12, 88912 (1984). Soln. at pH4 (augite and enstatite).
- PYROXENE. Sills, et al., J. Metamorph. Geol. 1, 337-351 (1983). Microprobe analyses (11) from Finero, N. Italy.
- PYROXENE. Simon and Papike, Meteoritics 18, 35-50 (1983). Microprobe analyses (8) from eucrite meteorites.
- PYROXENE. Simon et al., Meteoritics 17, 149-162 (1982). Microprobe analyses (20) from lithic clasts, eucrite meteorite.
- PYROXENE. Sinigoi, et al., Contrib. Mineral. Petrol. 82, 351-359 (1983). Microprobe analyses (11) from peridotite, Balmuccia, Italy.
- PYROXENE. Sipiera et al., Meteoritics 18, 63-75 (1983). Microprobe analyses (15) from Texas chondrites.
- PYROXENE. Smellie and Stone (J. Geol. Soc. Scot. 20, 315-327) (1984). Microprobe analyses (2) from garnet-pyroxenite, Ballantree, Scotland.
- PYROXENE. Smith and Ehrenberg, Contrib. Mineral. Petrol. 86, 274-283 (1984). Microprobe analyses (9) from garnet peridotites, Colo. Plateau. ortho, clino
- PYROXENE. Smith and Wilson, Am. Mineral. 70, 30-39 (1985). Microprobe analyses (6) from kimberlite, Jagersfontein, S. Africa.
- PYROXENE. Smith, et al., J. Volcanol. Geothermal. Res. 18, 249-278 (1983). Microprobe analyses (16) from gabbroic rocks, S. California (8 ortho, 8 clino)
- PYROXENE. Smyth and Caporucio (Kimberlites 11B, 121-131) (1984) (150.3 D 493). Microprobe analyses (59) from eclogite, Bobbejean mine, S. Africa.
- PYROXENE. Smyth et al. (Kimberlites 11B, 109-119) (1984) (150.3 D 493). Microprobe analysis from eclogite, Bobbejean mine, S. Africa.
- PYROXENE. Solov'ev and Struchkov, (Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 51-63 (1981). Analyses (14) from kimberlite.
- PYROXENE. Souther and Hickson, J. Volcanol. and Geothermal Research 21, 79-106 (1984). Microprobe analyses (4) from Mt. Edziza complex, Brit. Columbia.
- PYROXENE. Spadea et al., (Jour. Geol. 95, 377-395) (1987) Microprobe analyses (17) from ophiolite, SW Columbia

- PYROXENE. Srgvaldason (Erupt. of Hekla 5, no.1) (1984)(Eng.). Analyses (2) from Icelandic tephra. Trace elements.
- PYROXENE. Srikantappa (J. Geol. Soc. India 26, 281-286) (1985), Microprobe analyses (5) from Karnataka, India.
- PYROXENE. Stepanenko (Tr. Komi Fil. Akad. Nauk SSSR 45, 36-47) (1984) (Russ) (G(570)AK144+). Analyses (3) from carbonatites. aegerine.
- PYROXENE. Stephenson and Hensel, Lithos 15, 59-75 (1982)(English). Microprobe analyses (2), NS Wales, Australia.
- PYROXENE. Stoddard (Can. Mineral. 23, 195-204) (1985). Microprobe analyses (8) from granulites, Adirondacks.
- PYROXENE. Stolz, Mineral. Mag. 48, 167-179 (1984). Microprobe analyses (17) from ultramafic inclusions in nepheline mugearite, N.S. Wales (chromian diopside).
- PYROXENE. Su and Bloss, Am. Mineral. 69, 399-403 (1984). Note of warning on measuring extinction angles on monoclinic.
- PYROXENE. Su et al. (Am. Mineral. 69, 440-448) (1984). Optic axial angle as a measure of Al, Si ordering in. (Ortho-)
- PYROXENE. Sueno, et al., Am. Mineral. 69, 264-269 (1984). Structure of high clinoferrosilite. Mon., C2/c, a 9.928, b 9.129, c 5.338 Å, beta 110.20 degrees at 1050 degrees C.
- PYROXENE. Sueno, et al., Am. Mineral. 70, 141-148 (1985). Phase transitions in Fe-Mg-Ca pyroxenes.
- PYROXENE. Suerro and Prewitt, (Fortschr. Mineral. 66, Beih., 223-241) (1983)(English), Chem. Abstr. 100, no. 8, 59852 (1984). Models for the phase transition of orthoferrosilite-cliniferrosilite.
- PYROXENE. Sutcliffe, (Contrib. Mineral. Petrol. 96, 201-211) (1987) Microprobe analyses (6) from diabase and picrite, Lake Napigon, Canada
- PYROXENE. Sutherland et al. (Kimberlites 11B(4), 145-160) (1984). (150.3 D493). Microprobe analyses (4) from basalt flow, Bow Hill, Tasmania.
- PYROXENE. Suzuki (Proc. Symp. Antarctic Geosci. 4th, 1983, 145-154) (1984)(Eng.), 502(990)J27ss. Microprobe analysis (1), Prince Olav coast, E. Antarctica.
- PYROXENE. Suzuki and Kirino, Mineral. J. (Tokyo) 12, 47-63 (1984)(English). Hydrothermal reaction of serpentinite + quartz give diopside.
- PYROXENE. Suzuki, Proc. 3rd Symp. Antarctic Geosci., 132-143 (1983)(English) (502(990)J27SS, no. 28). Microprobe analyses (7), Lutzow-Holm Bay, Antarctica.
- PYROXENE. Svisero, An. Acad. Bras. Cienc. 55, 395-407 (1983)(Portugese). Analyses (microprobe) of inclusions in Brazilian diamonds, enstatite, diopside, omphacite.
- PYROXENE. Takasu, J. Petrol. 25, 619-643 (1984)(English). Microprobe analyses (11) from eclogites, Besshi dist., Japan.
- PYROXENE. Takeda (J. Sci. Hiroshima Univ. Ser. C, 8, 221-280) (1984)(Eng.). Microprobe analyses (47) from greenstones, Shikoku, Japan.
- PYROXENE. Takei et al. (J. Crystal Growth 60, 453-456) (1982), Mineral. Abstr. 35, 44 (1984). Growth of single crystals of diopside (Wo46, En54), a 9.732, b 8.921, c 5.254 Å, Beta 105.77 degrees, G 3.263.
- PYROXENE. Takeuchi et al. (Acta Cryst. 40B, 257-262) (1984), Mineral. Abstr. 36, 16 (1985). Superstructures in synthetic Sc clinopyroxenes.
- PYROXENE. Tanaka et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 77, 438-454 (1982)(English). Microprobe analyses (9) from cortlandtite, N.E. Japan (clino and ortho).
- PYROXENE. Tanguy and Clocchiatti, (Bull. Volcanol. 47, 879-894) (1984) (Eng) Microprobe analyses (9) from Mt. Etna, 1977-1983

- PYROXENE. Tatarinov et al. (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 90-96) (1983)(Russ.). 480(690.3)m662. Analyses of jadeite (4) from W. Sayan.
- PYROXENE. Thy, Contrib. Mineral. Petrol. 82, 232-251 (1983). Microprobe analyses (13) of alkali basaltic glasses, Iceland (clino).
- PYROXENE. Topor and Mel'chakova, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 6, 50-58 (1982)(Russian)) Chem. Abstr. 98, no. 16, 129387 (1983). Heat capacity for enstatite.
- PYROXENE. Topor and Tsoi, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 4, 45-50 (1982)) Chem. Abstr. 98, no. 6, 37780 (1983). Kinetic constants and activation energy for solution in lead borate melt at 700-900° (diopside).
- PYROXENE. Tsai, et al., Acta Geol. Taiwanica 21, 81-91 (1982)(English). Microprobe analyses (3), megacrysts in basalt, N. Taiwan.
- PYROXENE. Tsimbal et al. (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki 8, 25-29) (1984)(Ukr.), Chem. Abstr. 101, no. 18, 155006 (1984). Analyses (not in abstr.), optics, from Ukrainian Shield. Chrome diopside.
- PYROXENE. Uchida, (Mining Geology (Japan) 36, 195-208) (1986) (Eng) Microprobe analyses (13) from skarn, Kamaishi mine, NE Japan (clino-)
- PYROXENE. Ulrych (Acta Univ. Carol., Geol. 1-2, 117-119) (1983)(Czech.), Chem. Abstr. 102, no. 24, 206709 (1985). Sector zoning in clinopyroxene from Ceske Stredohori Mt.
- PYROXENE. Upton et al. (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (8) from E. Greenland. (clino-)
- PYROXENE. Upton, et al., J. Petrol. 25, 151-184 (1984). Microprobe analyses (10) from NE Greenland basalts.
- PYROXENE. Urusov and Khisina (Mineral. Zh. 7, no. 1, 3-13) (1985), Chem. Abstr. 103, no. 6, 39959 (1985). Distribution of cations in orthopyroxenes.
- PYROXENE. Van Bergen, et al., J. Volcanol. Geotherm. Res. 19, 1-35 (1983)(English). Microprobe analyses (21) from rhyodacite, Mt. Amiata, Italy (16 clino-, 5 ortho-).
- PYROXENE. Van Roermund (Textures Microstruct. 6, no. 2, 105-116) (1984)(Eng.), Chem. Abstr. 102, no. 14, 116729 (1985). Omphacite microstructures of deformed clinopyroxenes, Spain.
- PYROXENE. Vanko and Bishop, Contrib. Mineral. Petrol. 81, 277-289 (1982). Microprobe analyses (4) from Humboldt lopolith, Nev.
- PYROXENE. Ventwelli, et al., Contrib. Mineral. Petrol. 86, 209-220 (1984). Microprobe analyses (5) from K-rich Lamprophyres, W. Alps, Italy.
- PYROXENE. Vielzeuf, Bull. Mineral. 105, 681-690 (1982). Microprobe analyses (5). Breakdown to actinolite, biotite, and garnet.
- PYROXENE. Vielzeuf, Contrib. Mineral. Petrol. 82, 301-311 (1983). Microprobe analyses (3) from Tallante, Spain. Ortho-
- PYROXENE. Viereck (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (37) from Eifel, Germany.
- PYROXENE. Vinx, Neues Jahrb. Mineral., Abh., 144, 1-28 (1982). Microprobe analyses (16) from the Harzburg gabbro, Germany.
- PYROXENE. Vivallo (Geol. Foeren. Stockholm Foerh. 106, 257-267 (1985)(Eng.). Microprobe analysis (1) from metamorphic rocks, Garpenberg, Sweden.
- PYROXENE. Vladykin et al. (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 41-56) (1983)(Russ.). 480 (690.3) M662. Analysis (1) from Murunsh massif.
- PYROXENE. Wagner and Velde (Bull. Mineral. 108, 173-187) (1985)(Eng.). Microprobe analyses (5) from minette dikes, Jersey and Italy. (Clino).
- PYROXENE. Walker and Cameron, Contrib. Mineral. Petrol. 83, 150-158 (1983). Microprobe analyses (7) from Cape Vozel, Papua, New Guinea.

- PYROXENE. Walker, J. *Petrol.* 25, 299-342 (1984). Microprobe analyses (12) from Nicaraguan cinder cones.
- PYROXENE. Ward (*Am. Mineral.* 69, 531-540) (1984). Microprobe analysis (1) from New Zealand.
- PYROXENE. Warner et al. (*Contrib. Mineral. Petrol.* 90, 386-400) (1985). Microprobe analyses (6) from dolerite dikes, S. Carolina (augite, pigeonite).
- PYROXENE. Warren, et al., *Earth Planet. Sci. Lett.* 64, 175-185 (1983). Microprobe analyses (3) from granite clasts, Moon. 2 orths, 1 hedenbergite.
- PYROXENE. Waters, (*Contrib. Mineral. Petrol.* 95, 523-533) (1987) Av. composition from xenoliths in kimberlite, S. Africa (diopside)
- PYROXENE. Weber, (*Acta Cryst.* 390C, 1-3) (1983), *Mineralog. Abstr.* 34, 396 (1983). Structure of FeSiO_3 -III, high temp. form, triclinic, P1, a 6.628, b 7.467, c 22.607 Å, alpha 115.32, beta 80.56, gamma 95.49 degrees, Z=18.
- PYROXENE. Weidner and Vaughan, (*J. Geophys. Res.*, [Sect.] B, 87(B11), 9349-9353 (1982)) *Chem. Abstr.* 98, no. 8, 57242 (1983). Variation of elastic moduli as a function of structure and composition.
- PYROXENE. Weinke and Wieseneder, *Ore Genesis: The State of the Art* (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (2) from mafic rocks, East Alps.
- PYROXENE. Wiebe (*Lithos* 17, 171-188) (1984)(Eng.). Microprobe analyses (20) from Bjerkrem-Sogndal lopolith, Norway.
- PYROXENE. Wiebe, (*Can. Jour. Earth Sci.* 22, 1149-1157) (1985) Microprobe analysis (9) from basalt dikes, Labrador (clino)
- PYROXENE. Wilkinson and Stolz, *Contrib. Mineral. Petrol.* 83, 363-374 (1983). Microprobe analyses (3) from Oahu, Hawaii.
- PYROXENE. Williams (*Can. Mineral.* 22, 417-421) (1984). Microprobe analyses (3). Fiskenaasset, Greenland. Ortho
- PYROXENE. Williams, *Econ. Geol.* 78, 1689-1700 (1983). Analysis from Cu deposits, N.W. Spain.
- PYROXENE. Windley, et al., *Contrib. Mineral. Petrol.* 86, 342-358 (1984). Microprobe analyses (4) from Limpopo belt, S. Africa. enstatite.
- PYROXENE. Woensdregl, et al., *Schweiz. Mineral. Petrogr. Mitt.* 63, 167-176 (1983) (English). Oriented inclusions of magnetite in star diopside.
- PYROXENE. Word and Holloway, *Geochim. Cosmochim. Acta* 48, 159-176 (1984). Stability in system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$.
- PYROXENE. Worner (*Diss. Ruhr Univ.*, 248-301) (1982). (298(530)q W895G. Microprobe analyses (115) and trace elements. Laacher See, Germany.
- PYROXENE. Yagi and Yoshikawa, *Mem. Geol. Soc. China* 5, 117-126 (1983)(English)(G(611)G292m). Microprobe analyses (3) from Xenolith, Nagano, Japan. hedenbergite
- PYROXENE. Yamada and Takahashi (Kimberlites 11B, 147-) (1984) (150.3 D 493). Stability in system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$, 50-100 kb., 1200-1500 degrees C.
- PYROXENE. Yamada and Takahashi, (*Dev. Petrol.* 11B, 247-255, 361-393) (1984)(Eng.), *Chem. Abstr.* 100, no. 26, 213115 (1984). Subsolidus phase relations of garnet and 2 pyroxene in the system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$ 50-100 kbar, 1200-1500 degrees.
- PYROXENE. Yamamoto, J. *Fac. Sci., Hokkaido Univ.*, Ser. 21, 77-131 (1984)(English). Microprobe analyses (12), Oshime-Oshime volcano, N. Japan. (Clino)
- PYROXENE. Yang, et al., *Acta Geol. Taiwanica* 21, 63-80 (1982)(English). Microprobe analyses (18) from basalts, Penghu Islands. (Clino and ortho).
- PYROXENE. Yang, et al., *Mem. Geol. Soc. China* 5, 97-116 (1983) (English) (G(611)G292m). Microprobe analyses (5) from spilite, N. Taiwan.

- PYROXENE. Yoshida and Oikawa, Proc. 3rd Symp. Antarctic Geosci., 145-165 (1983) (562(990)J27SS no. 28). Microprobe analyses (14) from metabasite, Antarctica.
- PYROXENE. Young (Mineral. Mag. 48, 345-350) (1984). Microprobe analyses (2) of inclusions in chromite, Rhum, Scotland (ortho.).
- PYROXENE. Yu and Smith, (Acta Geol. Taiwan 21, 14-25) (1982)(English), Chem. Abstr. 100, no. 6, 37248 (1984). Crystal structure imperfections in Hedenbergite and diopside.
- PYROXENE. Yu and Smith, (Ch'ang-ch'un Ti Chih Hsueh Yuan Hsueh Pao 5, 147-166) (1983)(English), Chem. Abstr. 100, no. 12, 88897 (1984). Structure of a sodian augite, C2/c, a 9.672, b 8.812, c 5.243 A, beta 106.33 degrees.
- PYROXENE. Yu and Smith,, Mem. Geol. Soc. China 5, 147-166 (1983)(English)(G(611)G292m). Structure of a sodian augite, San Carlos, Ariz. (Na₂O 2.7%), C2/C, a 9.672, b 8.812, c 5.243 A, beta 106.33 degrees.
- PYROXENE. Zardiashvili, Nov. Dannye Miner. SSSR 31, 154-159 (1980). Analyses (6) and optics, unit cells, augites, Kazakhstan.
- PYROXENE. Zeck, et al., Lithos 15, 173-182 (1982)(English). Microprobe analyses (5) from gabbro-norite, Sweden. (ortho-)
- PYROXENE. Zhang et al., (Sci. Geol. Sin., no. 2, 134-143 (1982)) Mineral. Abstr. 34, 166 (1983). Analyses (not in abstr.) of 15 ortho- and 10 clino-pyroxenes from eastern Hebei, China.
- PYROXENE. Zhang, (Scient. Geol. Sinica 3, 248-260) (1986) (Chinese), Mineral. Abstr. 38, 87M/3057 (1987) Analyses (47) (not in abs.), unit cells from alkali basalts, eastern China ferrosalite
- PYROXENE. Zol'nikov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 64-74 (1981). Analyses (3) from kimberlite.
- PYROXENE. van Bergen and Barton, Contrib. Mineral. Petrol. 86, 374-385 (1984). Microprobe analyses (8) from Mt. Amiata, Italy.
- PYROXENES. Ribeiro, (Geol. Rundschau 76, 147-168) (1987) (Eng) Microprobe analyses (4) from peralkaline rhyolites, NE Portugal (aegirine-augite)
- PYROXMANGITE. Aikawa, Am. Mineral. 69, 270-276 (1984). Analyses from Sankei Mine, Hokkaido, Japan, of rhodonite-pyroxmangite intergrowths. unit cells.
- PYROXMANGITE. Bonev and Jordanov, (Geol. Zbornik Bratislava 37, 709-718) (1986) (Eng) Microprobe analyses (9) from placers, Bulgaria
- PYROXMANGITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (3) from manganiferous cherts, Alps
- PYROXMANGITE. Schultz-Guttler et al., (Schweiz. Min. Pet. Mitt. 66, 281-294) (1986) (Eng) Microprobe analyses (4) from Buritirama, Brazil
- PYROXMANGITE. Schultz-Guttler et al., (Schweiz. Min. Petr. Mitt. 66, 281-294) (1986) (Eng) Analyses (6) from Buritirama, Brazil - Phase relations in system CaO-MnO-MgO-K₂O-Al₂O₃-SiO₂-CO₂-H₂O infrared from these
- PYRRHOTITE. Andersen et al., (Lithos 20, 279-294) (1987) (Eng) Microprobe analyses (8) from mantle-derived megacrysts
- PYRRHOTITE. Arutyunyan et al. (Dokl. Akad. Nauk SSSR 276, 235-237) (1984), Chem. Abstr. 101, no. 10, 76135 (1984). Solubility in NH₄Cl and MgCl₂ solutions at 400 degrees, 300-1000 bars.
- PYRRHOTITE. Arutyunyan et al. (Geokhimiia 7, 1029-1039) (1984). Chem. Abstr. 101, no. 14, 114117 (1984). Solubility in chloride solutions 200-500 degrees, 300-1200 atm pressure.
- PYRRHOTITE. Barashkov et al., Mineralogiia i Geokhimiia Ultraosnovnykh i Bazitovykh Porod Yakutii (Mineral. Ultramafic and Mafic Rocks of Yakutia), 86-105 (1981). Analyses (19) of inclusions in olivine of kimberlites.
- PYRRHOTITE. Barker and Parks, (Geochim. Cosmochim. Acta 50, 2185-2194) (1986) Review of thermodynamic data

- PYRRHOTITE. Borredon, et al., *Miner. Deposita* 18, 437-442 (1983)(French). Analysis (1) from Hualgayoc mine, Peru.
- PYRRHOTITE. Bradburg (Diss. Pa. State Univ., 149 pp.) (1983). Dissertation Abstr. B 45, no. 1, 195-196 (1984).
- PYRRHOTITE. Bukovanska, et al., *Meteoritics* 18, 223-240 (1983). Analysis from Usti nad Orlici meteorite, Czechoslovakia.
- PYRRHOTITE. Bulanova et al., (*Zap. Vses. Mineral. O-va.* 111, 557-562 (1982)(Russian)) *Chem. Abstr.* 98, no. 4, 19596 (1983). Microprobe analysis of inclusion in diamond.
- PYRRHOTITE. Buseck and Cowley, *Am. Mineral.* 68, 18-40 (1983). Transmission electron microscopy.
- PYRRHOTITE. Cabri et al. (*Can. Mineral.* 23, 133-148) (1985). Proton microprobe analyses (2) for trace elements, esp. Se.
- PYRRHOTITE. Cagatay, (*Mineral. Deposita* 22, 163-171) (1987) Microprobe analyses (1) from Pancarli deposit, E. Turkey
- PYRRHOTITE. Campbell and Ethier (*Can. Mineral.* 22, 503-506) (1984). Co and Ni in 26 samples. British Columbia.
- PYRRHOTITE. Chichinadze and Tvalchrelidze (*Soobshch. Akad. Nauk Gruz. SSR* 117, no. 1, 77-80) (1985), *Chem. Abstr.* 103, no. 4, 25097 (1985). Co and Ni contents, from Caucasus.
- PYRRHOTITE. Clark, (*Geophys. Res. Lett.* 11, 173-176) (1984), *Chem. Abstr.* 100, no. 22, 177941 (1984). Magnetic properties of monoclinic.
- PYRRHOTITE. Economou and Naldrett, *Miner. Deposita* 19, 289-297 (1984)(English). Microprobe analyses (2) from chromite deposit. Eretria, Greece.
- PYRRHOTITE. Galii and Krochuk, (*Mineral. Zh.* 7(5), 64-) (1985) (Russian) Microprobe analyses (7) from carbonatites, Ukrainian Shield
- PYRRHOTITE. Gamsjaeger et al., (*Ber. Bunsenges. Phys. Chem.* 86, 1046-1049 (1982)(English)) *Chem. Abstr.* 98, no. 4, 19613 (1983). Solubility constants and enthalpies.
- PYRRHOTITE. Garuti, et al., *Earth Planet. Sci. Lett.* 70, 69-87 (1984)(English). Microprobe analyses (4) from peridotites, Ivrea-Verbani, Italy.
- PYRRHOTITE. Graham et al., (*Am. Mineral.* 72, 599-604, 605-611) (1987) Oxygen in natural pyrrhotite Behavior when heated
- PYRRHOTITE. Gupta, et al., (*Phys. Status Solidi* 81A, 281-291) (1984), *Chem. Abstr.* 100, no. 18, 142398+ (1984). Mossbauer study.
- PYRRHOTITE. Hakova et al. (*Acta Mont.* 67, 23-39) (1984)(Czech.), *Chem. Abstr.* 103, no. 8, 56953 (1985). Co and Ni in, from Hruby and Nizky Jezenik Mts., Moravia.
- PYRRHOTITE. Kase and Yamamoto (*Min. Geol. Jpn.* 35, 17-29) (1985)(Eng.). (G(620) M66. Co and Ni content from Hitachi mine, Japan.
- PYRRHOTITE. Kelly and Vaughan, *Mineral. Mag.* 47, 453-463 (1983). Pyrrhotite - pentlandite ore textures. Probe analyses (8).
- PYRRHOTITE. Kojime, et al., (*Mineral. J. Tokyo* 12, 15-28) (1984)(English), *Chem. Abstr.* 101, no. 8, 57860 (1984). Stability in system Cu-Fe-Zn-S, 800-500 degrees C.
- PYRRHOTITE. Kropacheva et al., (*Mineral. Sb. (Lvov)* 36, 36-41 (1982)) *Chem. Abstr.* 98, no. 26, 219057 (1983). Analysis, X-ray data from Carpathian S deposits.
- PYRRHOTITE. Lorand and Conquere, *Bull. Mineral.* 106, 585-605 (1983). Microprobe analyses (25) from basalts, France. solid solns Ni up to 27.0%.
- PYRRHOTITE. Luhr, et al., *J. Volcanol. Geotherm.* 23, 69-108 (1984). Microprobe analysis (3) from Chichon Volcano, Mexico.

- PYRRHOTITE. Nakazawa and Morimoto, (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol., Spec. Issue, 2, 45-54 (1980)) Mineral. Abstr. 34, 17 (1983). Phase relations and superstructures.
- PYRRHOTITE. Pasquariello, et al., (Prepr. - Am. Chem. Soc. Div. Pet. Chem. 28, 1255-1260) (1983), Chem. Abstr. 100, no. 14, 113849 (1984). Synthesis, x-ray data.
- PYRRHOTITE. Pasteris, Can. Mineral. 22, 39-53 (1984). Analysis from Duluth complex, Minn.
- PYRRHOTITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- PYRRHOTITE. Piispanen and Tarkian, Miner. Deposita 19, 105-111 (1984). Microprobe analyses (2) from Rometolvas, Finland.
- PYRRHOTITE. Poblesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (11) from Kuru-Tegebera deposit
- PYRRHOTITE. Powell, Mineral. Mag. 47, 437-440 (1983). Thermodynamic mixing properties.
- PYRRHOTITE. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983)(English). Microprobe analyses (2) from ultramafic rocks, Sanbagawa belt, Japan.
- PYRRHOTITE. Treiman and Essene, Contrib. Mineral. Petrol. 85, 149-157 (1984). Microprobe analyses (2) from Oka complex, Quebec.
- PYRRHOTITE. Tvalchrelidze and Chichinadze (Zap. Vses. Mineral. O-va. 113(6), 649-656) (1984) (Russ), Chem. Abstr. 102, no. 10, 81859 (1985). Co and Ni in monoclinic and hexagonal, from Georgian SSR.
- PYRRHOTITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (1) from mafic rocks, East Alps.
- PYRRHOTITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- PYRRHOTITE. Zvinchuk et al. (Mineral. Zh. 5, no. 3, 77-81) (1983), Mineral. Abstr. 35, 19 (1984). Structure of monoclinic, pseudo-hex. $Fe_{11}Si_2$. analyses (3) from camptonite sills, Oslo region.
- QINGHEIITE. (Abstr. in Am. Mineral. 69, 567-568) (1984). Abstract of original description.
- QINGHEIITE. Mineral. Abstr. 38, 87M/3196 (1987) Abstract of original description
- QITIANLINGITE. Mineral. Abstr. 38, 87M/3197 (1987) Abstract of original description
- QUARTZ. Abdukadyrova, (Izv. Akad. Nauk Uzb. SSR, Ser. Fiz.-Mat. Nauk, no. 1, 55-58 (1983)) Chem. Abstr. 98, no. 24, 201489 (1983). Changes in phys properties near the alpha-beta transition.
- QUARTZ. Agafanova et al. (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki 8, 3-7) (1984)(Ukr.), Chem. Abstr. 101, no. 18, 155004 (1984). Analysis and trace elements of blue opalescent quartz, Ukraine, a 4.91129, c 5.40411A. Luminescence spectrum.
- QUARTZ. Akaogi and Navrotsky (Phys. Earth Planet. Inter. 36, 124-134) (1984), Chem. Abstr. 102, no. 14, 116713 (1985). Heat of solution and enthalpies of transition coesite-quartz, coesite-stishovite.
- QUARTZ. Akashi, et al., (Nippon Eiseigaku Zasshi 38, 923-927) (1984)(Japanese), Chem. Abstr. 101, no. 8, 57823 (1984). Relation of grain size to alpha-beta transformation.

- QUARTZ. Asahera, et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 430-441) (1983)(English), Chem. Abstr. 100, no. 6, 43204 (1984). Hydrothermal synthesis in large autoclaves.
- QUARTZ. Baeta (Phys. Status Solidi 82A, 101-109) (1984)(Eng.), Chem. Abstr. 100, no. 26, 213148 (1984). Steady-state creep of quartz.
- QUARTZ. Baran et al., (Phys. Status Solidi 101(1), 9-24) (1987), Chem. Abstr. 107, no. 10, 81147 (1987) X-ray study of Brazil twins in amethyst
- QUARTZ. Barsanov and Yakoleva, Nov. Dannye Miner. SSSR 30, 3-26 (1982). Detailed study of agates.
- QUARTZ. Bazarov and Shcherbakova, (Dokl. Akad. Nauk SSSR, Earth Sci. Sect. 265, 141-143) (1984), Mineral. Abstr. 38, 87M/3097 (1987) Trace elements in quartz from rare-metal granite pegmatites
- QUARTZ. Belichenko, et al., (Mineral. Zh. 5, no. 6, 9-15) (1983), Chem. Abstr. 100, no. 18, 142367 (1984). Spectroscopic study of chrysoprase.
- QUARTZ. Bennett and Siegel, (Nature 326(6114), 684-686) (1987), Chem. Abstr. 106, no. 26, 217098 (1987) Solubility of quartz in water is increased by organic acids
- QUARTZ. Blacie and Christie, J. Geophys. Res., [Sect.] 89B, 4223-4239 (1984). Review on plasticity and hydrolytic weakening of single crystals.
- QUARTZ. Boettcher, Am. Mineral. 69, 823-833 (1984). Solubility in system $\text{SiO}_2\text{-H}_2\text{O-CO}_2$ to 1700 degrees and 25 kbar.
- QUARTZ. Brunner (Phys. Chem. Miner. 10(6), 273-279) (1984), Mineral. Abstr. 36, 17 (1985). Interpretation of structures of alpha- and beta-quartz based on Coulomb repulsive forces.
- QUARTZ. Brunner (Phys. Chem. Miner. 10, 273-279) (1984). Calculation of structure based on Coulomb repulsion forces. alpha and beta.
- QUARTZ. Delmas, et al., (Sci. Geol. Bull. 35, 81-89) (1982), Chem. Abstr. 100, no. 22, 177965 (1984). Discussion of formation of quartz from cristobalite at 25 degrees C.
- QUARTZ. Dolino and Bachheimer (Mater. Res. Soc. Symp. Proc. 21, 803-809) (1984). Chem. Abstr. 101, no. 4, 31424 (1984). Heat capacity measurements and thermodynamic near transition.
- QUARTZ. Dubrovinskii, (Reg. Geol. Nek. Raionov SSSR 6, 105-107) (1983), Chem. Abstr. 100, no. 18, 142374 (1984). Calcd. thermodynamic data (no data in abstr.).
- QUARTZ. Dunning et al. (J. Geophys. Res. 89B, 4115-4123) (1984). Chem. Abstr. 101, no. 12, 94641 (1984). Effect of aqueous chemical environments on propagation of cracks in quartz.
- QUARTZ. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral. Abstr. 34, 216 (1983). Thermal expansion.
- QUARTZ. Floerke et al., (Contrib. Mineral. Petrol. 80, 324-333 (1982)) Chem. Abstr. 98, no. 10, 75506 (1983). Infra-red study of H_2O in agates.
- QUARTZ. Fuju, (Jpn. Patent JP 58, 190, 900, 2pp) (1983), Chem. Abstr. 100, no. 14, 112721 (1984). Growing crystals cheaply.
- QUARTZ. Gamarnik and Fedorenko, (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 1, 3-6 (1983)) Chem. Abstr. 98, no. 14, 117388 (1983). Alpha-beta transition is at lower temp and wider range for finely divided quartz.
- QUARTZ. Giletti, (J. Geophys. Res., Sect. 89B, 4039-4046) (1984), Chem. Abstr. 101, no. 8, 57871 (1984). Review of oxygen diffusion in.
- QUARTZ. Gouhara et al. (J. Phys. Soc. Japan 54, 1868-1889) (1985) (Eng), Chem. Abstr. 103, no. 6, 46179 (1985). Intermediate phase - between alpha and beta- quartz.
- QUARTZ. Gouhara, et al., (J. Phys. Soc. Japan 52, 3821-3828) (1983), Chem. Abstr. 100, no. 2, 15622 (1984). X-ray study of alpha-beta transition.

- QUARTZ. Halbach and Chatterjee, *Contrib. Mineral. Petrol.* 88, 14-23 (1984). Calculation of thermodynamic data.
- QUARTZ. Hosaka and Taki, (*J. Cryst. Growth* 64, 572-576) (1983), *Chem. Abstr.* 100, no. 14, 112444 (1984). Hydrothermal growth of amethyst and citrine.
- QUARTZ. Hosaki and Taki, (*Proc. Int. Symp. Hydrothermal Reactions*, 1st, 1982, 411-420) (1983)(English), *Chem. Abstr.* 100, no. 6, 43203 (1984). Hydrothermal synthesis.
- QUARTZ. Hosieni et al., (*Am. Mineral.* 70, 782-793) (1985). Thermodynamics of the alpha-beta transition and the equation of state for quartz.
- QUARTZ. Kato, (*Proc. Indian Acad. Sci., Chem. Sci.* 92, 429-435) (1983)(English), *Chem. Abstr.* 100, no. 6, 43352 (1984). Theory of gamma-beta transition.
- QUARTZ. Kazenas et al., (*Izv. Akad. Nauk SSSR, Met.* no. 1, 46-48) (1985) (Russ), *Chem. Abstr.* 102, no. 14, 121014 (1985). Thermodynamics of sublimation and dissociation 1887-1984 degrees K.
- QUARTZ. Kieffer, (*Rev. Geophys. Space Phys.* 20, 827-849 (1982)) *Chem. Abstr.* 98, no. 4, 19591 (1983). Calculations of thermodynamic properties, application to phase equil.
- QUARTZ. King et al., (*Neues Jahrbuch Miner., Abh.* 156, 325-341) (1987) (Eng) Inferences as to lack of Al, irradiation history, etc., if clear quartz is present in granite rocks rather than smoky
- QUARTZ. Kitahara et al., (*Proc. - Int. Symp. Hydrothermal Reactions*, 1st, 1982, 480-495) (1983)(English), *Chem. Abstr.* 100, no. 6, 43206 (1984). Hydrothermal synthesis from silica gel at 150-300 degrees C.
- QUARTZ. Klipov, (*Dokl. Akad. Nauk SSSR* 266, 1455-1458 (1982)) *Chem. Abstr.* 98, no. 8, 57263 (1983). Morphology of crystals synthesized at different conditions.
- QUARTZ. Kolb et al., (*Proc. An. Frequency Control Symp.* 37, 153-156) (1983), *Chem. Abstr.* 101, no. 14, 117578 (1984). P-V-T conditions for hydrothermal growth.
- QUARTZ. Kortov et al., (*Phys. Chem. Miner.* 12, 114-121) (1985), *Chem. Abstr.* 103, no. 4, 25085 (1985). Spectroscopy of defects in.
- QUARTZ. Kostov, (*Dokl. Bolgar Akad. Nauk* 37, 59-60) (1984)(Russian), *Chem. Abstr.* 101, no. 2, 10121 (1984). E.P.R. and thermoluminescence, from Bulgaria.
- QUARTZ. Kostov, (*Spis. Bulg. Geol. Druzh.* 44, 294-303) (1983)(Bulgian), *Chem. Abstr.* 101, no. 2, 10146 (1984). Thermoluminescence and infra-red data on amethyst, S. Bulgaria.
- QUARTZ. Kotru et al., (*Cryst. Res. Technol.* 20, 27-37) (1985). Twinning in synthetic hydrothermal quartz.
- QUARTZ. Lind and Schmetzer, (*Jour. Gemmol.* 20, 274-277) (1987) Description of synthetic amethyst
- QUARTZ. Martin, *Mineral. Assoc. Canada Short Course* 8, 41-62 (1982). Review of quartz in granitic pegmatites.
- QUARTZ. Maschmeyer and Lehmann (*Solid State Commun.* 50, 1015-1018) (1984)(Eng.), *Chem. Abstr.* 101, no. 10, 76122 (1984). Electron centers in neutron-irradiated quartz.
- QUARTZ. Matsuura et al. (*J. Phys. Soc. Jap.* 54(2), 625-629) (1985)(Eng.). *Chem. Abstr.* 102, no. 14, 121038 (1984). Heat capacity near alpha-beta transition.
- QUARTZ. McKenzie and Helgeson, *Geochim. Cosmochim. Acta* 48, 2167-2177 (1984). Calculation of dielectric constant of H₂O and thermodynamic properties of aqueous species to 900 degrees C at 2 kb. from solubilities of quartz.

- QUARTZ. Miche, et al., (Phys. Chem. Miner. 10, 197-199) (1984), Chem. Abstr. 101, no. 2, 10160 (1984). Crystal structure and growth fabric of chalcedony, T.E.M., x-ray data.
- QUARTZ. Neumann and Schmetzer, Neues Jahrb. Mineral., Monatsh., 272-282 (1984)(English). Mechanism of thermal effects of color of amethyst.
- QUARTZ. Novgorodova and Vlasova, Nov. Dannye Miner. SSSR 31, 90-108 (1983). CO₂ and H₂O in quartz of gold deposits by infra-red study.
- QUARTZ. Ontomo and Takahashi, (Kobutsugaku Zasshi 15, 169-175 (1981)(Japanese)) Chem. Abstr. 98, no. 18, 146758 (1983). Hydrothermal synthesis of citrine, amethyst, and blue quartz.
- QUARTZ. Ontoms and Takahashi, (J. Mineral. Soc. Jpn. 16, 169-175) (1981), Mineral. Abstr. 35, 162 (1984). Coloration of synthetic quartz under hydrothermal conditions, Fe for yellow, Co + Al for blue, K + Ag for amethyst.
- QUARTZ. Orlenev, (Mineral. Zh. 6, no. 1, 17-24) (1984), Chem. Abstr. 101, no. 2, 10123 (1984). E.P.R. study.
- QUARTZ. Parks, (J. Geophys. Res., Sect. 89B, 3997-4008) (1984), Chem. Abstr. 101, no. 8, 57869 (1984). Review of surface and interfacial free energies.
- QUARTZ. Plath and Lehmann, (Phys. Chem. Minerals 14, 383-386) (1987) Thermoluminescence of shock-loaded amethyst
- QUARTZ. Plyusnina, et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim, Biol. Nauki, no. 12, 22-25) (1983), Chem. Abstr. 100, no. 16, 124261 (1984). Infra-red spectrum.
- QUARTZ. Pogorelev and Rumjantsev, (Zap. Vses. Mineral. O-va. 112, 725-728) (1983), Chem. Abstr. 100, no. 10, 71374 (1984). Effect of hydrothermal synthesis on E.P.R. and luminescence.
- QUARTZ. Ragnarsdottir and Walther (Geochim. Cosmochim. Acta 47, 941-946) (1983), Mineral. Abstr. 35, 46 (1984). Solubility in H₂O at 250 degrees C and 250, 500, 1000 bar.
- QUARTZ. Richet et al., (Geochim. Cosmochim. Acta 46, 2639-2658 (1982)) Chem. Abstr. 98, no. 10, 75560 (1983). Calorimetry 1000-1800 K. Enthalpies.
- QUARTZ. Rozek and Chuoe, (Silikaty 27, 151-187) (1983), Mineral. Abstr. 35, 160 (1984). Loss of free energy of quartz on grinding.
- QUARTZ. Smith and Steele (N. Jb. Miner. Mh., 137-144) (1984)(Eng.). Minor elements (Li, Na, K, Al, Ti) in (5).
- QUARTZ. Stenina et al., (Phys. Chem. Miner., 180-186) (1984), Chem. Abstr. 100, no. 24., 195237 (1984). Inhomogeneities by TEM, probe, and EPR.
- QUARTZ. Stoch et al., (Mineral. Polonica 16, 43-54) (1985), Mineral. Abstr. 38, 87M/2566 (1987) Effect of impurities on the transformation quartz-cristobalite Trace elements in 11 quartz samples
- QUARTZ. Suchsevskaya et al. (Geokhimiia, 515-526) (1984), Chem. Abstr. 100, no. 26, 213140 (1984). Composition of fluid inclusions in.
- QUARTZ. Sunagawa and Sugibuchi, (Ganseki Kobutsu Kosho 81, 348-358) (1986) (Eng), Chem. Abstr. 107, no. 10, 81097 (1987) Etch study to det. growth history
- QUARTZ. Taner and Dora, (Doga, Ser. B, 8, 65-77) (1984)(Turkish), Chem. Abstr. 101, no. 6, 41172 (1984). Fluid inclusions in quartz, W. Anatolia, Turkey.
- QUARTZ. Thomas et al., (Geophys. Res. Lett. 10, 91-92 (1983)) Chem. Abstr. 98, no. 14, 110818 (1983). Nuclear magnetic resonance study.
- QUARTZ. Topor and Tsoi, (Vestn. Mosk. Univ., Ser. 4: Geol., no. 4, 45-50 (1982)) Chem. Abstr. 98, no. 6, 37780 (1983). Kinetic constants and activation energy for solution in lead borate melt at 700-900`.
- QUARTZ. Tsarev, et al., (Geol. Rudn. Mestorozhd. 26, no. 4, 110-114) (1984), Chem. Abstr. 101, no. 20, 174819 (1984). Piezo-electrical characteristics, minor elements in:

- QUARTZ. Voznyak et al. (Geokhimiia, 334-540) (1984), Chem. Abstr. 100, no. 26, 213142 (1984). ESR study of honey comb quartz.
- QUARTZ. Weil (Phys. Chem. Miner. 10, 149-165) (1984). Paramagnetic defects in review.
- QUARTZ. White, (Mineral. Record 18, 207-209) (1987) Unusual crystal from Zaire with phantoms and deep etching
- QUARTZ. Yang and Zhong, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 453-459) (1983)(English), Chem. Abstr. 100, no. 6, 43285 (1984). Brazil twins in synthetic crystals.
- QUARTZ. Zheng, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 460-479) (1983)(English), Chem. Abstr. 100, no. 6, 43205 (1984). Interface molecular group waviness of synthetic.
- QUATRADORITE. Moelo, et al., (Neues Jahrb. Mineral., Monatsh., 175-182) (1984), Abstr. in Am. Mineral. 70, 219-220 (1985). New name for Andorite-IV. Monoclinic, $c=4.c'$ ($c'=4.25-s4.35A$). Probe analyses.
- RAGUNITA. Kamwa and Wandji, (Rev. Sci. Tech. 3, 79-85) (1983), Chem. Abstr. 100, no. 20, 165892 (1984). Structure. Fe^{+3} is in tetrahedral site.
- RAITE. Khomyakov et al., (Nov. Dannye Miner. 30, 205-207 (1982)) Chem. Abstr. 98, no. 26, 219080 (1983). New analyses (not in abstr.) and X-ray data. Formula $Na_4 Mn_4 Si_8 (O,OH)_{24} \cdot 8-10 H_2O$.
- RALSTONITE. Effenberger and Kluger (N. Jb. Miner. Mh., 97-108) (1984). Analyses from Ivigtut show variation, formula is $Na_x [Mg_x Al_{2x} F_{6-y} (OH)_y] \cdot zH_2O$, $X=0.3-0.5$, $Y=1.1-2.3$, $Z=0.8-0.9$ Cubic, $Fd3m$, $a 9.91A$. Refinement of structure.
- RAMDOHRITE. Mackovicky and Mumme (Neues Jahrb. Mineral., Abh. 147, 58-79) (1983), Mineral. Abstr. 35, 19 (1984). Structure. Monoclinic, $P2_1/n$, $a 19.24$, $b 13.08$, $c 8.73A$, $\beta 90.28$ degrees. Microprobe analysis gives $Pb_6 Ag_3 Sb_{11} S_{24}$.
- RAMDOHRITE. Mackovicky, Abstr. in Am. Mineral. 69, 412 (1984). Structure. Monoclinic, $P2_1/n$, $a 19.24$, $b 13.08$, $c 8.73 A$, $\beta 90.28$ degrees. Microprobe analysis gives $Pb_6 Ag_3 Sb_{11} S_{24}$.
- RAMDOHRITE. Moelo, et al., (Neues Jahrb. Mineral., Monatsh., 175-182) (1984), Abstr. in Am. Mineral. 70, 219-220 (1985). Monoclinic, $a 13.09$, $b 19.24$, $c 8.73 A$, $\alpha 90.3$ degrees, formula $Pb_{12} Ag_6 Sb_{22} S_{48}$.
- RAMDOHRITE. Mozgova et al., (Mineral. Zh. 5, no. 1, 17-33 (1983)) Chem. Abstr. 98, no. 26, 219050 (1983). The homologous series andorite - fizelyite - ramdohrite - sundtite. Compositions, unit cells.
- RAMMELSBERGITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- RAMMELSBERGITE. Choi and Imai (Min. Geol. Jpn. 35, 1-16) (1985)(Eng.). (G(620) M66). Microprobe analyses (3) from Ulsan mine, Korea.
- RAMMELSBERGITE. Tarkian, et al., Tschermaks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- RAMSBECKITE. Mineral. Abstr. 38, 87M/3198 (1987) Abstract of original description
- RAMSDELLITE. Thomssen, Mineral. Rec. 14, 109-113 (1983). Occurrence at Malpais Hill, Ariz.
- RANCIEITE. Chukhrov, et al., Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 143-159 (Russian)(201In391g). Review of data. X-ray powder data.
- RANKACHITE. Abstract in Am. Mineral. 70, 876 (1985). Abstract of original description.
- RANKACHITE. Walenta and Dunn (N. Jb. Miner., Mh., 289-295) (1984), Chem. Abstr. 101, no. 16, 134278 (1984). New mineral from Black Forest. Orth., $Pmmn$, $a 8.17$, $b 42.02$, $c 5.45A$, $Z=4$. $CaFe^{+2}V_4^{+5}W_8+6O_{36} \cdot 12H_2O$. Analysis, optics, x-ray.

- RANKACHITE. Walenta and Dunn, Abstract in Mineral. Abstr. 36, 93 (1985).
Abstract of original description.
- RANKAMAITE. Nekrasov et al. (Mineral. Zh. 6, no. 4, 42-44) (1984)(Russ.).
Mineral. Abstr. 36, no. 2, 203 (1985) Analysis, unit cell, optics from
pegmatite, Siberia.
- RASVUMITE. Khomyakov, (Nov. Dannye Miner. 30, 168-173 (1982)) Chem. Abstr.
98, no. 26, 219073 (1983). Occurrence in Lovozero massif. Analyses, X-ray
data.
- RAUENTHALITE. Catti and Ivaldi, (Acta Crystallogr., Sect. B: Struct. Sci.,
B39, 4-10 (1983)(English)) Chem. Abstr. 98, no. 14, 110831 (1983).
Structure, dehydration. Triclinic, a 12.564, b 12.169, c 6.195, alpha 89.09,
beta 79.69, gamma 118.58°, G 2.362.
- RAYITE. Abstr. in Am. Mineral. 69, 211 (1984). Abstract of original
description.
- RAYITE. Basu, et al., Abstract in Mineral. Abstr. 36, 94 (1985). Abstract of
original description.
- REALGAR. Biala, (Miner. Slovaca 15, 570-572) (1983)(Slovakian), Chem. Abstr.
100, no. 22, 177971 (1984). Occurrence in Slovakia, x-ray data.
- REALGAR. Stojanovic, (Zapiski Srp. Geol. Drus. 1981, 51-53) (1982), Chem.
Abstr. 100, no. 6, 43406 (1984). Structure Monoclinic, $P2_1/n$, a
9.3089-9.3355, b 13.5581-13.5762, c 6.5841-6.5897 Å, beta 106.432 degrees.
- REALGAR. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- REBULITE. Balic-Zunic and Scavnicar (Z. Krist. 160, 109-125) (1982), Mineral.
Abstr. 36, 18 (1985). Chem. Abstr. 98, no. 22, 189375 (1983). Structure of
 $Tl_5 Sb_5 As_8 S_{22}$. Monoclinic, $P2_1/c$, a 17.441, b 7.363, c 32.052 Å, beta 105.03
degrees, Z=4., G 4.81
- RECTORITE. Beaufort and Meunier, Bull. Mineral. 106, 535-551 (1983)(English).
Microprobe analyses (12) from Sibert, France. K-rectorite
- REINHARDBRAUNSITE. Abstr. in Mineral. Abstr. 34, 477 (1983). Abstract of
original description.
- REINHARDBRAUNSITE. Hamm and Hentschel, (Neues Jahrb. Mineral., Monatsh., no. 3,
119-129 (1983)) Chem. Abstr. 98, no. 18, 146707 (1983). Abstract of
original description.
- RENIERITE. Kovalenka et al., (Gold and silver deposits, "Nauka", Moscow, 91-110)
(1986) (Russian) 431 M365 Microprobe analyses (2) from Bulgaria
- RENIERITE. Silaev 1982, p. 165 (410(570)Si32m). Analyses (4).
- RENIERITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82,
91-99) (1987) (Eng) Polarization color indexes
- RETGERSITE. Bargouth and Will, (Report IC-81/103, 1-12 (1981)) Chem. Abstr. 98,
no. 14, 117516 (1983). Structure. Tetragonal, $P4(1)2(1)2$, a 6.787, c
18.299 Å.
- RETZIAN-(La). Dunn, et al, Mineral. Mag. 48, 533-535 (1984). New mineral from
Sterling Hill, NJ, $(Mn,Mg)_2(La,Ce,Nd)(AsO_4)(OH)_4$. Orth., a 5.670, b
12.01, c 4.869 Å, G 4.49 calcd. Analysis, optics, x-ray pattern.
- RETZIAN-(La). Dunn, et al., Abstract in Mineral. Abstr. 36, 94 (1985).
Abstract of original description.
- RETZIAN-(Nd). Dunn and Sturman, (Am. Mineral. 67, 841-845 (1982)) Mineral.
Abstr. 34, 74 (1983). Abstract of original description.
- REZBANYITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting,
Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Mineral. Abstr.
34, 180 (1983). Microprobe analyses (1) from Spissko-Gemer ore deposits,
Slovakia.
- RHABDOPHANE-(Nd). Bowles and Morgan, (Mineral. Mag. 48, 146-148) (1984),
Mineral. Abstr. 35, 188 (1984). Analysis from Cornwall, a 6.960, c 6.732 Å.

- RHODIUM. Tarkian and Bernhardt (Tscherma Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- RHODIZITE. Cerny, Mineral. Assoc. Canada Short Course no. 8, 149-161 (1984). Review of occurrences in granite pegmatites. Analyses.
- RHODOCHROSITE. Egorov (Kristallografiia 30, 161-165) (1985)(Russ.). Chem. Abstr. 102, no. 14, 123294 (1985). Solubility 250-400 degrees, 700-900 Kg/Sq cm. Crystal growth.
- RHODOCHROSITE. Gevorkyan and Povarennykh, Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 11, 8-12 (1983)(Ukrainian). Infra-red spectrum.
- RHODOCHROSITE. Gucwa and Pelczar, (Mineral. Polsk Karpat, 92-93) (Polish) Analyses (3) from Polish Carpathians
- RHODOCHROSITE. Kojima and Sugaki, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 491-496 (1983)(English). (Ganseki Kobutsu Kosho Gakkaishi 78, 491-496) Microprobe analyses (15) of stalagmites, Oe mine, Hokkaido, Japan. X-ray data.
- RHODOCHROSITE. Krivdik et al., (Geol. Rudn. Mestorozhd. 28(6), 58-70) (1986) (Russian) Analyses (5) from Davidkovo massif, Ukraine
- RHODOCHROSITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (1) from manganiferous cherts, Alps
- RHODOCHROSITE. Robie, et al., Am. Mineral. 69, 349-357 (1984). Heat capacity 5-550 degrees K. Entropy Analysis from Alma, Colo.
- RHODOCHROSITE. Sverjensky (Geochim. Cosmochim. Acta 48, 1127-1134) (1984). Calculation of Gibbs free energies at 25 degrees C, 1 bar.
- RHODOCHROSITE. Zak (Acta Univ. Carol., Geol. 1-2, 27-32) (1983)(Eng.), Chem. Abstr. 102, no. 26, 223551 (1985). Analyses and unit cells from Chvaletice, Czechoslovakia.
- RHODONITE. Abs.-Wurmbach et al. (N. Jahrbuch Miner., Abh. 146(3), 258-279) (1983), Miner. Abs. 35, 45 (1984). Stability in system Mn-Si-O.
- RHODONITE. Aikawa, Am. Mineral. 69, 270-276 (1984). Analyses from Sankei Mine, Hokkaido, Japan, of rhodonite-pyroxmangite intergrowths. unit cells.
- RHODONITE. Boctor, Geochim. Cosmochim. Acta 49, 565-575 (1985). Solubility in HCl at 400-700 degrees C at 1 and 2 kbar.
- RHODONITE. Hayashi and Sugaki (Min. Geol. Japan 34(3), 151-162) (1984)(Jap.). Microprobe analyses (81) from Iwaite Pref., Japan.
- RHODONITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (4) from manganiferous cherts, Alps
- RHODONITE. Schultz-Guttler et al., (Schweiz. Min. Petr. Mitt. 66, 281-294) (1986) (Eng) Analyses (13) from Buritirama, Brazil - Phase relations in system CaO-MnO-MgO-K₂O-Al₂O₃-SiO₂-CO₂-H₂O infrared from these
- RHODONITE. Takei and Hosoya (J. Cryst. Growth 71, 17-22) (1985), Chem. Abstr. 103, no. 2, 14710 (1985). Growth of single crystals. Mineral. Abstr. 38, 87M/2547 (1987), a 7.633, b 11.868, c 6.716 A, alpha 92 deg. 41 min., beta 94 deg. 38 min., gamma 105 deg. 40 min. Optical absorption curve
- RHODONITE. Zhang, (Scient. Geol. Sinica 3, 248-260) (1986) (Chinese), Mineral. Abstr. 38, 87M/3057 (1987) Analyses (47) (not in abs.), unit cells from alkali basalts, eastern China
- RHODOSTANNITE. Moh, et al., Neues Jahrb. Mineral., Abh. 150, 38-40 (1984)(English). Synthesis. X-ray power data. Analyses (2) of Argentinian variety from Argentina with Cu:Ag = 1.04:0.86, 1.10:0.92.
- RHODPLUMSITE. Abstract in Mineral. Abstr. 35, 88 (1984). Abstract of original description.

- RHONITE. Johnston and Stout, *Am. Mineral.* 69, 57-68 (1984). Microprobe analyses (1) of ferroandioptside from gabbro, Kauai, Hawaii.
- RHONITE. Olsson (Geol. Foeren. Stockholm Foerh. 105, 281-286) (1983)(Eng.). Microprobe analyses (4) from Skane, Sweden. Correlation of unit cell with variation of Al and Si.
- RICHELSDORFITE. Abstr. in *Am. Mineral.* 69, 211 (1984). Abstract of original description.
- RICHELSDORFITE. Suesse and Schnorrer-Koehler, (*Neues Jahrb. Mineral., Monatsh.*, no. 4, 145-150 (1983)) *Chem. Abstr.* 98, no. 24, 201480 (1983). New mineral, $\text{Ca}_2\text{Cu}_5\text{Sb}(\text{AsO}_4)_4(\text{Cl},\text{OH})_6 \cdot 6\text{H}_2\text{O}$. Monoclinic, C2/m, a 14.17, b 14.42, c 13.57A, beta 102°, Z=4. Analysis, optics, X-ray data.
- RICHETITE. Piret and Deliens (*Bull. Mineral.* 107, 581-585) (1984), *Mineral. Abstr.* 36, no. 2, 204 (1985). Analysis, formula $\text{Pb}_0.4\text{UO}_3 \cdot 4\text{H}_2\text{O}$, Triclinic, a 20.81, b 12.06, c 16.30A, alpha 103.8, beta 115.1 degrees, gamma 90.4 degrees, Z=9, G calcd. 6 O. Optics.
- RICKAIDITE. Vyal'sov (*International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 218-224*) (1980)(Russ.) (*Sulfosalt Vol.*). Reflectance at 18 wavelengths. Color effects of anisotropy.
- RICKARDITE. Spiridonov and Chvileva, (*Nov. Dannye Miner.* 30, 140-147 (1982)) *Chem. Abstr.* 98, no. 26, 219071 (1983). Optics.
- RICKARDITE. Wu and Mei, (*J. Jap. Assoc. Mineral., Petrol., Econ. Geol.* 82, 91-99) (1987) (Eng) Polarization color indexes
- RINGWOODITE. Akaogi et al. (*Am. Mineral.* 69, 499-512) (1984). Calorimetry of Mg_2SiO_4 , thermodynamic properties.
- RINGWOODITE. Matsui and Busing (*Phys. Chem. Miner.* 11(2), 55-59) (1984). *Chem. Abstr.* 101, no. 14, 114111 (1984). Model of crystal, computing elastic constants
- RINGWOODITE. Price and Parker, (*Phys. Chem. Mineral.* 10, 209-216) (1984), *Chem. Abstr.* 101, no. 4, 26262 (1984). Computer simulation of structural and physical properties.
- RINGWOODITE. Sawamoto, et al., (*Science (Washington, D.C.)* 224, 749-751) (1984), *Chem. Abstr.* 101, no. 2, 10159 (1984). Elastic moduli of synthetic crystals.
- RINGWOODITE. Weidner et al., (*J. Geophys. Res.* 89B, 7852-7860) (1984), *Chem. Abstr.* 101, no. 18, 155033 (1984). Elastic properties of the spinel phase of Mg_2SiO_4 .
- ROBINSONITE. Bortnikov, et al., *International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75* (1981)(Russian) (*Sulfosalt Vol.*). Stability in system Fe-Pb-Ag-Sb-As-S.
- ROBINSONITE. Breskovska, et al., *International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 83-89* (1980)(Russian) (*Sulfosalt Vol.*). Analyses (2) with up to 0.20% Cl. Formula $\text{Pb}_4\text{Sb}_6\text{S}_{13-14}$.
- ROBINSONITE. Moelo, et al., *Bull. Mineral.* 106, 505-510 (1983). Microprobe analyses (3) from Rujevac, Yugoslavia.
- ROCKBRIDGEITE. Amthauer and Rossman (*Phys. Chem. Miner.* 11, 37-51) (1984)(Eng.). *Chem. Abstr.* 101, no. 12, 94659 (1984). Optical and Mossbauer spectroscopy. Mixed valence of Fe in.
- ROCKBRIDGEITE. Van Tassel, (*Bull. Soc. Belge Geol.* 90, 105-106 (1981)) *Mineral. Abstr.* 34, 217 (1983). Occurrence in Belgium.
- ROEDDERITE. Abraham, et al., *Contrib. Mineral. Petrol.* 82, 252-258 (1983). Two analyses from Eifel. osumilite group, hex., a 10.14-10.15, c 14.22A. Analyses, optics.

- ROMANECHITE. Chukhrov et al., (Izvest. Akad. Nauk SSSR, Ser. Geol., 68-75) (1983) (Russian), Mineral. Abstr. 87M/3126 (1987) Monoc., a 9.661, b 2.850, c 13.948 Å, beta 92.8 deg., A2/m Electron diffraction shows super-periods Hydrothermal synthesis.
- ROMANECHITE. Giovanoli and Balmer, (Chimia 37 (11), 424-427) (1983)(German), Chem. Abstr. 100, no. 8, 60786 (1984). Mineral. Abstr. 36, 43 (1985). Hydrothermal synthesis. X-ray data.
- ROMANECHITE. Giovanoli and Burns, et al., Am. Mineral., 70, 202-208 (1985). Discussion of problem of valence of Mn (Mn^{+2} or Mn^{+3} ?)
- ROMANECHITE. Vasileva (Gedishnik Vissh. Minno-Geol. Inst. Sofia 30, 191- 204) (1983-1984) (G(595)So15g). Analyses (5) from Kremihovtsi, Bulgaria, DTA, x-ray, infra-red.
- ROMANECHITE. Yanchuk et al., (Mineral. Zh. 7(6), 27-32) (1985) (Russian) DTA, X-ray data
- ROMARCHITE. Jackson and Helgeson (Econ. Geol. 80, 1365-1378) (1980). Summary of selected thermodynamic data.
- ROUESITE. Cantinolle et al. (Bull. Mineral. 108, 245-248) (1985). Two new occurrences in France.
- ROUESITE. Imai and Choi (J. Mineral. Soc. Jpn. 12, 162-172) (1984)(Eng.). Microprobe analyses (10) from Korea, x-ray data, optics.
- ROUESITE. Kovalenker et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M 565 Microprobe analyses (7) from Bulgaria
- ROUESITE. Seetharan, (J. Geol. Soc. India 28, 21-28) (1986), Mineral. Abstr. 38, 87M/3132 (1987) Occurrence with minor Ag, Bhiwani dist., India
- ROUESITE. Tsonev et al. (Dokl. Bolg. Akad. Nauk 38(4) 477-479) (1985)(Russian), Chem. Abstr. 103, no. 8, 56925 (1985). Analysis from Srednegora, Bulgaria. Tetrag., I42d, a 5.51, c 11.0Å, Optics.
- ROSCHERITE. Clark et al., Mineral. Mag. 47, 81-83 (1983). Analysis from Gunnislake, Cornwall, FeO 27.0-30.40%. Optics, X-ray data.
- ROSENHAHNITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- ROSENHAHNITE. Kato and Matsubara (Bull. Natl. Sci. Mus., Ser. C: Geol. (Tokyo) 10, no. 1, 1-8) (1984)(Eng.). Analysis from Engyoji, Japan, gives 1.605 CO₂ and formula $(Ca_{2.96}Fe_{0.02})Si_{3.02}O_8(OH)_{1.46}O_{0.16}(CO_3)_{0.13}$. X-ray powder data optics, G 2.90 calcd.
- ROSTITE. Sabelli (Bull. Mineral. 108, 133-138) (1985) (Eng.). Occurrence at Cetina mine, Italy, formula $NaMg(SO_4)F \cdot 2H_2O$. Monoclinic, PZ₁/m, a 7.202, b 7.214, c 5.734Å, beta 113.23 degrees, z=2. X-ray data.
- ROUBAULTITE. Ginderow and Cesbron (Acta Crystallogr. 41C(5), 654-657) (1985). Chem. Abstr. 102, no. 26, 229779 (1985). Structure. Triclinic, PT, a 7.767, b 6.924, c 7.850Å, Alpha 92.16 degrees, Beta 90.89 degrees, Gamma 93.48 degrees, Z=1, G calcd 4.71, formula $Cu_2(UO_2)_3(CO_3)_2O_2(OH)_2 \cdot 4H_2O$.
- ROUBAULTITE. Yakhontova et al. (Vestnik. Mosk. Univ., Ser. 4: Geol. 3, 41-46) (1984) (Russ), Chem. Abstr. 101, no. 16, 134296 (1984). Occurrence in Komsomol ore field, E. Siberia. DTA.
- ROUSEITE. Mineral. Abstr. 38, 87M/3199 (1987) Abstract of original description
- ROZENITE. Weise, (Chem. Erde 43, 171-178) (1984), Chem. Abstr. 101, no. 6, 41193 (1984). Occurrence in xylites. Occurrence in gravels, East Germany. Analyses, x-ray data.
- RUARSITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- RUCKLEDGEITE. Harris et al., Can. Mineral. 21, 137-143 (1983). Occurrence at Ashley deposit, Ont. Probe analysis.

- RUCKLEDGEITE. Sakharova, et al., (Dokl. Akad. Nauk SSSR 278, 1217-1220) (1984), Chem. Abstr. 102, no. 8, 65065 (1985). Analysis from Kamchatka.
- RUIZITE. Hawthorne (Tschermarks Mineral. Petrogr. Mitt. 33, 135-146) (1984), Am. Mineral. 70, 441 (1985). Structure. Monoclinic, A2, a 11.984, b 6.175, c 9.052A, beta 91.34 degrees, formula $\text{Ca}_2\text{Mn}^{+3}_2[\text{Si}_4\text{O}_{11}(\text{OH})_2](\text{OH})_2 \cdot 2\text{H}_2\text{O}$.
- RUIZITE. Hawthorne, Tschermarks Mineral. Petrogr. Mitt. 33, 135-146 (1984). Structure. Mon., A2, a 11.984, b 6.175, c 9.052 A, beta 91.34 degrees, Z=2 ($\text{Ca}_2\text{Mn}^{+3}_2\text{Si}_4\text{O}_{11}(\text{OH})_4 \cdot 2\text{H}_2\text{O}$).
- RUIZITE. Moore, et al., Am. Mineral. 70, 171-181 (1985). Structure. Monoclinic, C2/m, a 9.064, b 6.171, c 11.976 A, beta 91.38 degrees, Z=2 ($\text{Ca}_2\text{Mn}^{+3}_2\text{Si}_4\text{O}_{11}(\text{OH})_4 \cdot 2\text{H}_2\text{O}$).
- RUSSELLITE. Forster et al, (Chem Erde 45, 203-211) (1986) Microprobe analysis from Altenberg tin deposit, East Germany
- RUSSELLITE. Mrazek, et al., (Sb. Nar. Muz. Praze, Rada 39B, 61-67) (1983), Chem. Abstr. 100, no. 16, 124221 (1984). Analysis from Krusne Hory Mts., Czechoslovakia.
- RUSTENBURGITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- RUTHENARSENITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- RUTHENIRIDOSMINE. Auge (Can. Mineral. 23, 163-171) (1985). Microprobe analysis (1) from inclusions in chromitite, Vourinos, Greece.
- RUTHENIRIDOSMINE. Okrugin and Rudashevskii (Mineral. Zh. 7, no. 1, 67-71) (1985), (Russ) Chem. Abstr. 103, no. 8, 56902 (1985). Analyses (1) (Ru 25.5 percent)] Analyses (not in abstr.) from Vilyui River placers. Fe 7.37- 8.74%
- RUTHENIRIDOSMINE. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (2) from Kamchatka Pt deposit.
- RUTHENIRIDOSMINE. Rudashevskii, et al., Mineral. Zh. 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (2) from Konder massif, Alden.
- RUTHENIRIDOSMINE. Shilo et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 172-184) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (2), Pacific region, USSR.
- RUTHENIRIDOSMINE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- RUTHENIRIDOSMINE. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (8) Reflectance
- RUTHENIUM. Rudashevskii et al., (Mineral. Zh. 7, 88-93) (1985) (Russian) Microprobe analysis (1), Reflectance, X-ray data
- RUTHENIUM. Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (1) Reflectance
- RUTHENOSMIRIDIUM. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- RUTILE. Boyd et al. (Geochim. Cosmochim. Acta 48, 381-384) (1984). Microprobe analysis (1) from kimberlites, S. Africa.
- RUTILE. Boyd, et al., Contrib. Mineral. Petrol. 86, 119-130 (1984). Microprobe analyses (1), Mzongwana kimberlite, S. Africa.
- RUTILE. Braun and Raith (Contrib. Mineral. Petrol. 90, 199-213) (1985). Microprobe analyses (4) from metamorphosed basites, Alps, Austria.
- RUTILE. Bursill and Blanchin, (J. Solid State Chem. 51, 321-335) (1984), Chem. Abstr. 100, no. 20, 165670 (1984). Structure of non-stoichiometric rutile.
- RUTILE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- RUTILE. Ghent and Stout, Contrib. Mineral. Petrol. 86, 248-255 (1984). Microprobe analyses (1) from British Columbia.

- RUTILE. Grunin et al., (Dokl. Akad. Nauk SSSR 268, 686-688 (1983)) Chem. Abstr. 98, no. 18, 146737 (1983). Synthesis. X-ray, DTA, TGA, and EPR study.
- RUTILE. Kawachi, et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (4) from piemontite schist, W. Otago, New Zealand.
- RUTILE. Marziano et al. (Inst. Chem. Eng. Symp. Ser. 87, 709-716) (1984)(Eng.), Chem. Abstr. 102, no. 10, 81036 (1985). Kinetics of anatase-rutile transformation.
- RUTILE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analysis (1) from manganiferous cherts, Alps
- RUTILE. Nekrasov et al., (Mineral. Zh. 8(4), 47-57) (1986) (Russian) Analyses (20) from pegmatite, E. Kazakhstan, Nb₂O₅ up to 29.6%, Ta₂O₅ up to 6.1%, Sc₂O₃ up to 0.8% Unit cells
- RUTILE. Pederson and Ronsbo, (Contrib. Mineral. Petrol. 96, 35-46) (1987) Microprobe analyses (10) of blue Ti oxide, Disko Island, Greenland Analyses add to >102%, hence Ti₂O₃ present in considerable amount, as in synthetic "Magnali phases"
- RUTILE. Shafranovskii and Alyavdin, (Zap. Vses. Mineral. O-va. 112, 77-79 (1983)) Chem. Abstr. 98, no. 20, 164113 (1983). Study of twins.
- RUTILE. Sharma and Windley, Mineral. Mag. 48, 195-209 (1984). Microprobe analyses (1) from Archean gneiss, N.W. India.
- RUTILE. Shee, (Deve. Petro. 11A, 59-73, 435-466) (1984), Chem. Abstr. 100, no. 26, 213273 (1984). Microprobe analyses (not in Abstr.) from kimberlite, S. Africa.
- RUTILE. Spetius and Safronov, (Zap. Vses. Miner. O-va. 115, 699-705) (1986) (Russian) Analyses (22) and trace elements from eclogites and from associations with diamond
- RUTILE. Taylor (Brit. Ceram. Trans. J. 83, 32-37) (1984). Thermal expansion.
- RUTILE. Tollo and Haggerty, (Can. Mineral. 25, 251-264) (1987) Microprobe analyses (20) from Orapa kimberlite, Botswana, Cr₂O₃ up to 8.2%, Nb₂O₅ up to 20.9%
- RUTILE. Waters, (Contrib. Mineral. Petrol. 95, 523-533) (1987) Av. composition from xenoliths in kimberlite, S. Africa
- RUTILE. Wyatt and Lawless (Kimberlites 11B, 43-56) (1984) (150.3 D 493). Microprobe analyses (5) from xenoliths, Baltfontein and DeBeus mines.
- RUTILE. Yoshikoshi et al., (Jap. Patent 62,56,323, 5 pp (1987), Chem. Abstr. 106, no. 24, 198684 (1987) Synthesis
- RYNHOTITE. Nedachi et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 79, 200-213) (1984)(Jap.). Microprobe analyses (2), SE Abakuma Mts.
- SABIEITE. Martini (Ann. Geol. Surv. S. Africa 17, 29-34) (1983)(Publ. 1984). New mineral, (NH₄)Fe(SO₄)₂, hex., a 4.822, c 8.170A, Z=1.
- SABUGALITE. Cejka et al. (Phys. Chem. Miner. 11, 172-178) (1984), Chem. Abstr. 102, no. 10, 81825 (1985), Infra-red spectroscopy.
- SABUGALITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- SABUGALITE. Vochten and Brizzi, (Mineral. Record 8, 181-184) (1987) Occurrence at Cagliari, Sardinia
- SABUGALITE. Vochten and Pelsmaekers, (Phys. Chem. Miner. 9, 23-29 (1983)) Chem. Abstr. 98, no. 10, 82679 (1983). Synthesis, solubility, refined crystal structure.
- SADANAGAITE. Shimazaki et al. (Am. Mineral. 69, 465-971) (1984). New mineral (K,Na)Ca₂(Fe⁺²,Mg,Al,Fe⁺³,Ti)₅(Si,Al)₈O₂₂(OH)₂, Fe>,Al Amphibole group, from Japan. Microprobe analyses (3), Mon., C2, Cm, or C2/m, a 9.922, b 18.03, c 5.352A, Beta 105.30; Z=2. Optics, x-ray data.

- SAFFLORITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- SAFFLORITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SAHLINITE. Rouse and Dunn, (N. Jb. Miner. Mh., 127-131) (1985), Mineral. Abstr. 38, 87M/3181 (1987) Analysis from Langban Monoc., Cc or C2/c, a 12.710, b 22.498, c 11.360 A, beta 118.99 deg., Z=4 G 8.07
- SAKHAROVAITE. Huiny and Kristin, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 109-121 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (6) from Spissko-Gemer ore deposits, Slovakia.
- SAL AMMONIAC. Coradossi and Mazzi, (Rend. Soc. Ital. Mineral. Petrol. 40, 267-275) (1985) (Ital) Variation of unit cell content with Br content
- SALAMMONIAE. Aquilano et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 705-710) (1984)(Eng.). G(550)So15r. Crystals from Vulcano, Italy containing Br. Unit cells.
- SALEEITE. Cassedanne et al., (Anais Acad. Brasil Cienc 58, 149-266) (1986) (French) X-ray data from Urucun Brazil, a 7.22, c 17.73 A
- SALEEITE. Cejka et al. (Phys. Chem. Miner. 11, 172-178) (1984), Chem. Abstr. 102, no. 10, 81825 (1985) Infra-red spectroscopy.
- SALEEITE. Cejka, et al., Phys. Chem. Miner. 11, 172-177 (1984). Infra-red spectroscopy.
- SALEEITE. Mathovskii, et al., Mineral. Sb. 37, 7-19 (1983). Excitation and optical absorption spectra.
- SALEEITE. Muck et al., (Cas. Narod Muzea Praze 154, 45-50) (1985) (Czech with Eng summary) X-ray and Infra-red data
- SALEEITE. Vochten and Brizzi, (Mineral. Record 8, 181-184) (1987) Occurrence at Cagliari, Sardinia
- SALEEITE. Vochten and Van Doorselaer, Mineral. Rec. 15, 293-297 (1984). Occurrence at Cunha Baixa mine, Portugal. Color photographs. Analysis, giving 10 H₂O.
- SAMARSKITE. Keller (Am. Mineral. 69, 954-960) (1984). X-ray data of heated metamict mineral gives 3 phases.
- SAMARSKITE. Keller and Wagner, Am. Mineral. 68, 459-465 (1983). Diffraction analysis of metamict.
- SAMARSKITE. Sugitani, et al., Am. Mineral. 69, 377-379 (1984). Heating in H₂ gives x-ray pattern of single phase. Four samples gave a 5.687, 5.664, 5.64, 5.71; b 4.925, 4.940, 4.98, 9.80; c 5.210, 5.173, 5.18, 5.20 A; beta 90.02, 90.0, 90.0, 90.5 degrees.
- SANBORNITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- SANIDINE. Barley, (Jour. Volcanol. Geothermal Research 32, 247-267) (1987) Microprobe analyses (1) from volcanic rocks, New Zealand
- SANIDINE. Calanchi et al. (Mineral. Petrogr. Acta 27, 15-34) (1983)(Ital.). Microprobe analysis (1) from volcanic rocks, Java.
- SANIDINE. Clarke, et al., Contrib. Mineral. Petrol 83, 117-127 (1983). Microprobe analyses (1) from W. Greenland.
- SANIDINE. Friend and Janardhan, Mineral. Mag. 48, 181-193 (1984). Microprobe analyses (12) from shonkinites, Salem, India.
- SANIDINE. Gandais and Strunk, (Lawrence Berkeley Lab. Rep. LBL-16031, 353-358) (1983), Chem. Abstr. 100, no. 22, 177952 (1984). Microstructure of plastically deformed sanidine.
- SANIDINE. Kirkpatrick, et al., Am. Mineral. 70, 106-123 (1983). Nuclear magnetic resonance study.
- SANIDINE. Kroll and Ribbe, (Am. Mineral. 72, 491-506) (1987) Review of Al-Si distribution, lattice parameters, diffraction peaks

- SANIDINE. Luhr and Giannetti, (Contrib. Mineral. Petrol. 95, 420-436) (1987)
Microprobe analyses (2) from leucitic tuff, Roccamoufina Volcano, Italy
- SANIDINE. Viereck (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984).
(G(530)qB628). Microprobe analyses (12) from Eifel, Germany.
- SANIDINE. Worner (Diss. Ruhr Univ., 248-301) (1982). (298(530)q^ W895G.
Microprobe analyses (79) and trace elements. Laacher See, Germany.
- SANTAFLARITE. Erd and Ohashi, Am. Mineral. 69, 200-206 (1984). New mineral
from California, $\text{CaMn}_4\text{Si}_5\text{O}_{14}(\text{OH})_2$. Analysis, optics, x-ray data.
Triclinic, a 15.633, b 7.603, c 12.003 Å, alpha 109.7 degrees, beta 88.61,
gamma 99.95 degrees, Z=4.
- SAPONITE. Alt and Honnorez, Contrib. Mineral. Petrol. 87, 145-169 (1984).
Microprobe analyses (3) from altered basalt, oceanic cores.
- SAPONITE. Cheng and Tang (Kexue Tongbao 29, 807-811) (1984)(Eng.), Chem. Abstr.
101, no. 18, 155008 (1984). Regular intergrowth chlorite-saponite. X-ray,
DTA, infra-red data.
- SAPONITE. Post, (Clays Clay Miner. 32, 147-153) (1984), Chem. Abstr. 100, no.
22, 177976 (1984). Analysis, x-ray and infra-red data from Ballarat, Calif.
- SAPONITE. Whitney, (Clays Clay Miner. 31, 1-8) (1983), Mineral. Abstr. 35, 130
(1984). Hydrothermal synthesis and reactions.
- SAPPHIRINE. Ackermann et al., (Jour. Metamorph. Geol. 5, 323-339) (1987)
Microprobe analyses (9), Caraiba complex, Brazil
- SAPPHIRINE. Ackermann, et al., Mineral. Mag. 47, 555-561 (1983). Microprobe
analyses (6) from Fiskemaess, Greenland.
- SAPPHIRINE. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984).
Microprobe analyses (12) from granulite, Sipiwesk Lake, Manitoba.
- SAPPHIRINE. Baker et al., (Jour. Metamorph. Geol. 5, 357-370) (1987)
Microprobe analyses (1) from W. Australia
- SAPPHIRINE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984).
Microprobe analyses (8) from granulites, Italian Central Alps.
- SAPPHIRINE. Herd et al., (Spec. Paper Geol. Assoc. Canada 31, 241-253) (1986)
Microprobe analyses (10), St. Maurice area, Quebec
- SAPPHIRINE. Janardhen and Swamy, (Current Sci. (India) 51, 43-44) (1982),
Mineralog. Abstr. 34, 464 (1983). Microprobe analysis from Terakanambi,
India.
- SAPPHIRINE. Motoyoshi and Matsueda (Proc. Symp. Antarctic Geosci. 4th, 1983,
103-125) (1984)(Eng.). Microprobe analyses (4), Enderby Land, Antarctica,
502(990)J27ss.
- SAPPHIRINE. Nixon, et al., Mineral. Mag. 48, 550-552 (1984). Microprobe
analysis (1) from Labwor Hills, Uganda.
- SAPPHIRINE. Rowley, (Rocks and Minerals 62, 243-246) (1987) Occurrence at
Johnsburg, N.Y.
- SAPPHIRINE. Schreyer, et al., Contrib. Geol. 86, 200-207 (1984). Microprobe
analyses (1) from Limpopo belt, Africa.
- SAPPHIRINE. Sheraton et al., BMR J. Aust. Geol. Geophys. 7, 269-273 (1982).
Microprobe analyses (5) from granulites, Antarctica.
- SAPPHIRINE. Sills, et al., J. Metamorph. Geol. 1, 337-351 (1983). Microprobe
analyses (4) from Finero, N. Italy.
- SAPPHIRINE. Steffen, et al., Am. Mineral. 69, 339-348 (1984). Syntheses with
 Fe^{+3} up to approx. $\text{Mg}_{3.5}\text{Fe}^{+3}_{0.7}\text{Al}_{8.3}\text{Si}_{1.5}\text{O}_{20}$. Mossbauer study
indicates Fe^{+3} to be in tetrahedral coordination.
- SAPPHIRINE. Williams (Can. Mineral. 22, 417-421) (1984). Microprobe analyses
(3). Fiskemaesset, Greenland.
- SAPPHIRINE. Windley, et al., Contrib. Mineral. Petrol. 86, 342-358 (1984).
Microprobe analyses (11) from Limpopo belt, S. Africa.

- SARCOLITE. Livingstone, (Mineral. Mag. 48, 107-112) (1984), abstr. in Am. Mineral. 70, 441 (1985). New analysis gives $\text{Na}_2\text{Ca}_{12}(\text{Ca},\text{K},\text{Fe},\text{Sr},\text{Mg})_2\text{Al}_8\text{Si}_{12}(\text{P},\text{Si})\text{O}_{52}\text{F}_2$ G 2.95. Tetrag. a 12.32, c 15.480A. Optics. CO_3 present.
- SARCOPSIDE. Ericsson and Nörd, Am. Mineral. 69, 889-895 (1984). Cation ordering in (Ni-Fe) analogue.
- SARKINITE. Lindquist, (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 643-648) (1983)(English), Chem. Abstr. 100, no. 8, 54681 (1984). Stability in hydrothermal systems.
- SASSOLITE. Menchetti et al., (Neues Jahrb. Mineral., Abh. 148, 163-180) (1983), Chem. Abstr. 100, no. 10, 74784 (1984). Hydrothermal synthesis.
- SAUCONITE. Foord et al., Mineral. Rec. 14, 131-132 (1983). Microprobe analysis from Gleeson, Ariz.
- SAUCONITE. Taylor and Owen, (Polyhedron 3, 151-155) (1984), Chem. Abstr. 100, no. 26, 220493 (1984). Hydrothermal synthesis.
- SAYRITE. (Abstr. in Am. Mineral. 69, 568) (1984). Abstract of original description.
- SAYRITE. Abstract in Mineral. Abstr. 35, 88 (1984). Abstract of original description.
- SCAPOLITE. Aitken, (Geochim. Cosmochim. Acta 47, 351-362 (1983)) Chem. Abstr. 98, no. 20, 164120 (1983). Stability and synthesis of CaCO_3 -scapolite at temp 625° and CO_2 pressure.
- SCAPOLITE. Aitken et al., Neues Jahrb. Mineral., Abh. 149, 309-324 (1984). Structure of synthetic meronite, I4/m, a 12.179, c 7.571 A.
- SCAPOLITE. Chamberlain et al., Am. Mineral. 70, 134-140 (1985). Alkali atom configurations, antiphase domains, and compositional variations.
- SCAPOLITE. Esperanca and Holloway, ((Kimberlites 11B, 219-227) (1984). (150.3 D493). Microprobe analysis (1) from potassic latites, Carefree, Ariz.
- SCAPOLITE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English). Microprobe analyses (9) from western Lepontine Alps.
- SCAPOLITE. Goff et al., (Earth Planet. Sci. Lett. 60, 86-92 (1982)) Chem. Abstr. 98, no. 8, 57368 (1983). Microprobe analyses (not in abstr.) from latite dome, Ariz., show 1.74% S.
- SCAPOLITE. Jaffe et al., (Univ. Mass. Contrib. Geol. 46) (1983). Analysis from Adirondacks, NY. G (214)qM382c.
- SCAPOLITE. Levitskii et al., (Mineral. Zh. 7(6), 46-56) (1985) (Russian) Analyses (33) from Baikal region
- SCAPOLITE. Liang, (Acta Geol. Sin. 56, 136-148 (1982)(Chinese)) Mineral. Abstr. 34, 141 (1983). Hydrothermal synthesis.
- SCAPOLITE. Manby, Mineral. Mag. 47, 89-93 (1983). Analyses (20) of zoned scapolite, Svalbard, primary.
- SCAPOLITE. Matsueda et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (3) from skarn, Antarctica.
- SCAPOLITE. Mezger and Okrusch, (Tscherms Mineral. Petrogr. Mitt. 34, 67- 82) (1985). Microprobe analyses (2) from metamorphosed dolomites, Samos, Greece.
- SCAPOLITE. Mezhlumyan, (Izv. Akad. Nauk Arm. SSR, Nauki Zemle, 35, no. 5, 27-36 (1982)) Chem. Abstr. 98, no. 10, 75525 (1983). Analyses (not in abstr.); optics of marialite from Fe deposits.

- SCAPOLITE. Oterdoom and Wenk, *Contrib. Mineral. Petrol.* 83, 330-346 (1983).
Microprobe analyses (4). Al-Si order-disorder in by electron microscopy.
- SCAPOLITE. Pe-piper, *Neues Jahrb. Mineral., Abh.* 149, 163-178 (1984)(English).
Microprobe analyses (1) from volcanic rocks, Greece.
- SCAPOLITE. Prokof'ev et al., (*Mineral. Sb. (Lvov)* 36, 76-79 (1982)) *Chem. Abstr.* 98, no. 24, 201520 (1983). Rare-earth luminescence centers in.
- SCAPOLITE. Roden, et al., *Contrib. Mineral. Petrol.* 85, 376-380 (1984).
Microprobe analysis (2), St. Paul's rocks, Atlantic Ocean.
- SCAPOLITE. Schmetzer and Bank (*Z. Dtsch. Gemmol. Ges.* 32, 86-89) (1983),
Mineral. Abstr. 35, 162 (1984). Gem scapolite, a 12.169, c 7.569 A from Sri Lanka, n0 1.583, nE 1.553.
- SCAPOLITE. Vanko and Bishop, *Contrib. Mineral. Petrol.* 81, 277-289 (1982).
Chem. Abstr. 98, no. 18, 146753 (1983). Microprobe analyses (11) from Humboldt lopolith, Nev. (marialite).
- SCHEELITE. Votyakov, et al., (*Dokl. Akad. Nauk SSSR* 275, 167-169) (1984), *Chem. Abstr.* 101, no. 6, 41197 (1984).
- SCHEELITE. Caruba et al. (*Phys. Chem. Miner.* 9, 223-228) (1983), *Mineral. Abstr.* 35, 41 (1984). Hydrothermal synthesis. Thermoluminescence, fluorescence, EPR study.
- SCHEELITE. Gavelin, (*Sver. Geol. Undersokn.* 79C, 1-17) (1985) (Eng) Analysis from the Baggetorp W deposit, S. Sweden
- SCHEELITE. Hazen et al. (*J. Phys. Chem. Solids* 46(2), 253-263) (1985). *Chem. Abstr.* 102, no. 22, 195561 (1985). Structures and unit cells at pressures up to 5.8 GPa.
- SCHEELITE. Orlov and Uspenskaya, (Deposited Doc. VINITI 92-82, 134-138 (1981)) *Chem. Abstr.* 98, no. 8, 57267 (1983). Raman spectra of scheelite-powellite series.
- SCHEELITE. Rafal'skii, et al., (*Geokhimiia*, 611-624) (1984)(Russian), *Chem. Abstr.* 101, no. 6, 41276 (1984). Solubility in NaCl solutions at 100-300 degrees.
- SCHIRMERITE. Boldyreva (*Zap. Vses. Mineral. O-va.* 114, 43-49) (1985)(Russ.). Optics from Zambaraks deposit, E. Karamazar. Analysis.
- SCHIRMERITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (10) from gold-silver deposits
- SCHIRMERITE. Kovalenker, et al., *Mineral. Zh.* 6, no. 2, 16-30 (1984)(Russian). Microprobe analyses from Kochbulak, USSR.
- SCHOLLHORNITE. Okada, et al., *Meteoritics* 19, 284-285 (1984)(Abstr.). New mineral, $\text{Na}_{0.3}\text{CrS}_2\cdot\text{H}_2\text{O}$, from Norton County, achondrite. Trig., R3m, R3m, or R32, a 3.32, c 26.6, G 2.74.
- SCHOLZITE. Lai and Shi (*Yanshi Kuangwu Ji Ceshi* 2, no. 4, 40-45) (1983), *Chem. Abstr.* 101, no. 20, 174792 (1984). Occurrence at Guangdong Prov., China, X-ray, DTA; infra-red data.
- SCHREIBERSITE. Borodaev et al., (*Zap. Vses. Mineral. O-va.* 111, 682-687 (1982)) *Chem. Abstr.* 98, no. 12, 92777 (1983). Ni-free variety from Red Sea.
- SCHREIBERSITE. Grossman et al. (*Geochim. Cosmochim. Acta* 49, 1781-1795) (1985). Microprobe analyses (3) from Quingzhen chondrite.
- SCHREIBERSITE. Ramboldi and Wasson (*Geochim. Cosmochim. Acta* 48, 1885-1897) (1984). Microprobe analyses (3) from 2 meteorites
- SCHREIBERSITE. Rubin (*Earth Planet. Sci. Lett.* 67, 273-284) (1984). Electron microprobe analyses (3) from Blithfield meteorite.
- SCHREIBERSITE. Rubin, *Earth Planet. Sci. Lett.* 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite.
- SCHREIBERSITE. Ulf-Moller (*J. Petrol.* 26, 64-91) (1985). Microprobe analysis (1) from Disko, W. Greenland.

- SCHREIBERSITE. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SCHROECKINGERITE. O'Brien and Williams, Mineral. Mag. 47, 69-73 (1983). Heat of formation.
- SCHROECKINGERITE. Pinto, (Mem. Nat. Univ. Coimbra Lab. Mineral 96, 21-38) (1983), Chem. Abstr. 102, no. 8, 65058 (1985). Analyses and optics (not in abstr.) of zoned vesuvianites from skarns, Portugal.
- SCHUCHARDTITE. Dubinska et al., (Arch. Mineral. 40, 5-22) (1986) (Eng), Chem. Abstr. 107, no. 10, 81093 (1987) From Szklary, Poland, is a mixture of phases, chlorite-vermiculite, chlorite-montmorillonite, talc, and serpentine
- SCHUILINGITE. Sarp, et al., (Schweiz. Mineral. Petrogr. Mitt. 63, 1-6) (1983), Chem. Abstr. 100, no. 18, 142377 (1984). (French). New analysis gives $PbCu(Nd,Gd,Dy)(CO_3)_3(OH) \cdot 1-1/2 H_2O$. Orth., Pmcn, a 7.43, b 18.89, c 6.40 Å, Z=2, G calcd. 4.59. Optics, X-ray data.
- SCHULENBERGITE. Hodenberg, et al., Abstract in Am. Mineral. 70, 438 (1985). Abstract of original description.
- SCHULENBERGITE. Von Hodenberg, et al., (Neues Jahrb. Mineral., Monatsh., no. 1, 17-24) (1984), Chem. Abstr. 100, no. 12, 88877 (1984). New mineral, $(Cu,Zn)_7(SO_4,CO_3)_2(OH)_{10}3H_2O$, from Harz Mts., Germany, trigonal, P3 or P3, a 8.249, c 7.183 Å, Z=1, G 3.28., trig., a 8.249, c 7.183 Å.
- SCHUMACHERITE. Walenta, et al., Abstract in Am. Mineral. 70, 438 (1985). Abstract of original description.
- SCOLECITE. Joshi and Bhoskar, (Cryst. Res. Technol. 18, 213-218 (1983)) Chem. Abstr. 98, no. 18, 146708 (1983). Photoluminescence.
- SCOLECITE. Joshi and Bhoskar, (Indian J. Pure Appl. Phys. 20, 601-605 (1982)) Chem. Abstr. 98, no. 12, 92779 (1983). Study of etching.
- SCOLECITE. Joswig et al. (Z. Kristallogr. 166(3-4), 219-223) (1984). Chem. Abstr. 101, no. 6, 46766 (1984). Structure by neutron diffraction, Cc, a 18.508, b 18.891, c 6.527 Å. Beta 90.64.
- SCOLECITE. Lago et al. (Estud. Geol. (Madrid) 39, 245-251) (1983), Chem. Abstr. 101, no. 20, 174795 (1984). Analysis (not in abstr.) from Huesca, Spain. DTA.
- SCOLECITE. Pechar (Cryst. Res. Technol. 19, 541-548) (1984)(Eng.), Chem. Abstr. 100, no. 26, 213128 (1984). Infra-red spectrum.
- SCOLECITE. Pechar, (Acta Mont. 60, 121-130 (1982)(Czechoslovakian)) Chem. Abstr. 98, no. 16, 129435 (1983). Structure. Mon., Cc, a 6.514, b 18.954, c 9.768 Å, beta 108.85°, Z=4.
- SCOLECITE. Pechar, (Acta Mont. 65, 101-127) (1984)(Czech), Chem. Abstr. 102, no. 2, 9833 (1984). X-ray, DTA, infra-red study of thermal behavior.
- SCOLECITE. Ulrych and Rychly (Acta Univ. Carol., Geol. 1-2, 33-52) (1983)(Eng.), Chem. Abstr. 102, no. 26, 223552 (1985) Analyses from Bohemia, optics.
- SCORODITE. Dove and Rimstidt (Am. Mineral. 70, 838-844) (1985). Calculation of solubility and stability conditions.
- SCORODITE. Sabelli and Santucci, (Atti Soc. Toscana Sci. Nat. 92, 259-267) (1985) (Ital) S(550) qT64 Occurrence at Sassa, Italy, a 10.323, 10.317; b 8.946, 8.942; c 10.037, 10.038 Å X-ray data
- SCOTLANDITE. Abstract in Am. Mineral. 70, 876 (1985). Abstract of original description.
- SCOTLANDITE. Paar, et al., Mineral. Mag. 48, 283-288 (1984). Chem. Abstr. 101, no. 2, 10117 (1984). Abstract of original description. New mineral, lead sulfite, $PbSO_3$, from Leadhills, Monoclinic, $P2_1$ or $P2_1/m$, a 4.542, b 5.333, c 6.413 Å, beta 106.22 degrees, Z=2. X-ray data, optics.
- SELENIUM. Beran, Neues, Jahrb. Mineral., Monatsh, 83-91 (1984). Reflectance.

- SELENIUM. Kruglova and Ryabeva, (Zap. Vses. Mineral. O-va. 111, 552-556) (1982), Mineralog. Abstr. 34, 470 (1983). Crystals from burning coal, G 4:82. Trigonal P3/2, a 4.31, c 4.95 A, optics, x-ray data.
- SELENIUM. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SELENOSTEPHANITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg. Microprobe analyses (5)
- SELIGMANNITE. Moh, et al., Neues Jahrb. Mineral., Abh. 150, 25-64 (1984)(English). Microprobe analyses (2).
- SELIGMANNITE. Tufar (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 148-157) (1980)(Eng.) (Sulfosalt Vol.). Reflectance.
- SELIGMANNITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SELLAITE. Cassedanne and Resende, Mineral. Rec. 14, 179-181 (1983). Large crystals from Brumado, Brazil, G 3.15, n(omega) 1.390, n(epsilon) 1.378.
- SELLAITE. Yoshikawa and Nancollas, (J. Cryst. Growth 64, 222-228) (1983), Chem. Abstr. 100, no. 12, 94650 (1984). Kinetics of crystal growth.
- SEMENOVITE. Semenov et al., (Mineral. Zh. 9(2), 84-85) (1987) (Russian) Analyses (5) from Ilimaussaq, Greenland
- SEMSEYITE. Breskovska, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 83-89 (1980)(Russian) (Sulfosalt Vol.). Analyses (1) with up to 0.02% Cl. Formula $Pb_9Sb_8S_{22}$.
- SEMSEYITE. Fortey et al. (Proc. Yorkshire Geol. Soc. 45, 59-65) (1984). Microprobe analyses from Wales.
- SEMSEYITE. Kukulyan, (Izv. Akad. Nauk Arm. SSR, Nauki Zemle, 35, no. 5, 59-63 (1982)) Chem. Abstr. 98, no. 10, 75526 (1983). Analysis from Mardzhan deposit, Armenia.
- SENAITE. Foord and Sharp, Mineral. Mag. 48, 97-106 (1984). Microprobe analyses (13) from St. Peter's Dome, Col. and Dattas, Brazil, with up to 7.4% ZnO and up to 5% rare earth. X-ray data.
- SENAITE. Haggerty et al., Am. Mineral. 68, 494-505 (1983). Analysis from kimberlite, S. Africa.
New name for Andorite-VI.
- SENAIDORITE. Moelo et al. (N. Jb. Miner., Mh., 175-182) (1984)(Eng.), Chem. Abstr. 101, no. 16, 134262 (1984). Abstr. in Am. Mineral. 70, 219-220 (1985). Andorite VI (named Senandorite) is orth., c=c; c varies 4.25-4.35A. Andorite IV (named Quatranderite) is mon.
- SENARMONTITE. Sumitomo Mining Co. (Jpn. Patent 60 16,820, 1-4) (1985), Chem. Abstr. 103, no. 2, 8478 (1985). Synthesis.
- SEPIOLITE. Barron and Frost (Am. Mineral. 70, 758-766) (1985). Nuclear magnetic resonance study.
- SEPIOLITE. Bonatti et al., (Earth Planet. Sci. Lett. 62, 229-238 (1983)) Chem. Abstr. 98, no. 16, 129414 (1983). Formation on sea floor from ultramafic rocks.
- SEPIOLITE. Pedan, (Mineral. Sb. 34, no. 2, 89-91 (1980)) Mineral. Abstr. 34, 169-170 (1983). Analysis from Krivoi Rog, DTA, X-ray, infra-red.
- SEPIOLITE. Yariv, (Clays Clay Miner. 21, 925-936) (1986), Chem. Abstr. 106, no. 26, 217103 (1987) Infra-red study
- SERANDITE. Kalinin and Zvezdinskaya, (Dokl. Akad. Nauk SSSR 273, 1467-1471) (1983), Chem. Abstr. 100, no. 16, 12427 (1984). Analyses and optics from Mn deposits, a 7.69, b 6.89, c 6.76 A, alpha 90.33 degrees, beta 94.14 degrees, gamma 103.10 degrees.

- SERANDITE. Morikiya, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 503-508) (1984), (Gansekai Kobutsu Kosho Gakkaishi 79, 503-508) (1984)(Eng.), Mineral. Abstr. 38, 87M/3062 (1987), Chem. Abstr. 103, no. 8, 56922 (1985). Analysis (not in abstr.) Optics, X-ray data from Hokkaido, Optics, x-ray, Ca-rich.
- SERENDIBITE. Rowley, (Rocks and Minerals 62, 243-246) (1987) Occurrence at Johnsbury, N.Y.
- SERPENTINE. Abou Sekkina et al. (J. Therm. Anal. 29(6), 1309-1317) (1984)(Eng.), Chem. Abstr. 103, no. 4, 25100 (1985). Analyses, x-ray, DTA from Hungary and Egypt.
- SERPENTINE. Bannikov and Kovaleva (Geol. Geofiz. 1, 109-115) (1984)(Russ.), Mineral. Abstr. 36, 83 (1985) Infra-red study.
- SERPENTINE. Boyd, et al., Contrib. Mineral. Petrol. 86, 119-130 (1984). Microprobe analyses (1), Mzongwana kimberlite, S. Africa.
- SERPENTINE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerre complex, Greenland.
- SERPENTINE. Economou and Naldrett, Miner. Deposita 19, 289-297 (1984)(English). Microprobe analyses (2) from chromite deposit. Eretria, Greece.
- SERPENTINE. Exley and Jones, Contrib. Mineral. Petrol. 83, 288-292 (1983). Microprobe analyses (1) from kimberlites.
- SERPENTINE. Exley et al., Am. Mineral. 68, 512-516 (1983). Microprobe analyses (1) from kimberlite, S. Africa.
- SERPENTINE. Frietsch (Geol. Foeren. Stockholm Foerh. 106, 219-230) (1984)(Eng.). Analysis (1) from skarn Fe ores, northern Sweden.
- SERPENTINE. Frost (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- SERPENTINE. Hall and Ahmed (Chem. Erde 43, 45-56) (1984)(Eng.). Microprobe analysis (1) from rodingite, Lizard, England.
- SERPENTINE. Ito et al., Rep. African Stud., Nagoya Univ., 6, 83-99 (1981)(English). Microprobe analyses (1) from kimberlite, Kenya.
- SERPENTINE. Nakagawa and Bamsba, (Mining Geology (Japan) 37, 189-197) (1987) (Eng) (G(620)M66) Analyses (1) from Tominchi mine, Hokkaido, Japan Cr_2O_3 1.23%
- SERPENTINE. Podvysotskii (Zap. Vses. Mineral. O-va. 114, 234-247) (1985)(Russ.). Analyses (18) from kimberlites.
- SERPENTINE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (2), St. Paul's rocks, Atlantic Ocean.
- SERPENTINE. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 467-478 (1983)(English). Microprobe analyses (8) from ultramafic rocks, Sanbagawa belt, Japan.
- SERPENTINE. Slutskii, et al., (Geokhimiia, 314-323) (1984), Chem. Abstr. 100, no. 20, 159671 (1984). Stability relations in system $MgO-SiO_2-H_2O$.
- SERPENTINE. Smith et al., Mineral. Mag. 47, 75-78 (1983). Analyses (2) from kimberlite. S. Africa.
- SERPENTINE. Suzuki and Kirino, Mineral. J. (Tokyo) 12, 47-63 (1984)(English). Hydrothermal reaction of serpentinite + quartz give diopside.
- SERPENTINE. Tokmekov, et al., (Geol. Genezio Vaslmash Endoz. Nemet. Iskoz., 87-98) (1983), Chem. Abstr. 100, no. 10, 71381 (1984). Keg-line chrysotile.
- SERPENTINE. Tompkins, et al., Am. Mineral. 69, 237-249 (1984). Microprobe analyses (2) from kimberlite, Sierra Leone.
- SERPENTINE. Varlekov, (Dokl. Akad. Nauk SSSR 278, 189-193) (1984), Chem. Abstr. 102, no. 2, 9850 (1985). Analyses, optics, x-ray, DTA from Urals., intermediate between lizardite and clinochrysotile.

- SERPENTINE. Zinchuk et al., Nov. Dannye Miner. SSSR 31, 15-81 (1983).
Analyses (7), x-ray data, infra-red from kimberlites.
- SERPIERITE. Yakhontova et al., (Vestnik. Mosk. Univ., Ser. 4: Geol. 3, 41-46) (1984) (Russ), Chem. Abstr. 101, no. 16, 134296 (1984). Occurrence in Komsomol ore field, E. Siberia. DTA.
- SHAFRANOVSKITE. Khomyakov et al., (Zap. Vses. Mineral. O-va. 111, 475-480 (1982)) Chem. Abstr. 98, no. 4, 19574 (1983), Mineral. Abstr. 34, 185 (1983).
Abstract of original description.
- SHAKHOVITE. Tillmanns et al., (Tschermaks Mineral. Petrogr. Mitt. 30, 227-235 (1983)(English)) Chem. Abstr. 98, no. 16, 129394 (1983). Structure. Monoclinic, Im, a 4.871, b 15.098, c 5.433A, beta 98.86°, formula $Hg_4 Sb O_3 (OH)_3$, Z=2. Infra-red data.
- SHANDITE. Dymek, (Can. Mineral. 25, 245-249) (1987) Microprobe analyses (3) from metadunite, W. Greenland
- SHARPITE. Cejka et al., (N. Jb. Miner. Mh., 109-117) (1984)(Eng.). Abstr. in Am. Mineral. 70, 220 (1985). Chem. Abstr. 100, no. 16, 124269 (1984). New analysis gives formula $Ca(UO_2)_6(CO_3)_5(OH)_4 \cdot 6H_2O$, DTA, Orth., a 21.992, b 15.63, c 4.487A., G 4.51 calcd. Optics, x-ray data, infra-red
- SHARPITE. Mrazek and Urbanec, (N. Jb. Miner., Mh., 109-117) (1984), Mineral. Abstr. 36, 91 (1985). Analysis (not in abstr.) gave $Ca(UO_2)_6(CO_3)_5(OH)_4 \cdot 6H_2O$, G 4.61, a 21.99, b 15.63, c 4.487A.
- SHATTUCKITE. Sarma et al., (Phys. Lett. A, 92A, 305-308 (1982)) Chem. Abstr. 98, no. 6, 37786 (1983). EPR spectrum.
- SHIGAITE. Mineral. Abstr. 38, 87M/3200 (1987) Abstract of original description
- SHORTITE. Prokof'ev et al., (Mineral. Sb. (Lvov) 36, 76-79 (1982)) Chem. Abstr. 98, no. 24, 201520 (1983). Rare-earth luminescence centers in.
- SHUISKITE. Ivanov et al., (Zap. Vses. Mineral. O-va. 114, 49-55) (1985)(Russ.). Analysis from Saranov chromite deposit, Urals, with low H_2O (3.77 percent instead of 7.03 percent). X-ray, DTA, a 8.780, b 5.963, c 19.01A, beta 98.07 degrees. Optics.
- SICKLERITE. Shigley and Brown, (Am. Mineral. 70, 395-408) (1985). Microprobe analysis (1), Stewart pegmatite, Calif. Unit cell, optics.
- SIDERITE. Bak and Zabinski, (Mineral. Pol. 12, 75-80 (1981)) Mineral. Abstr. 34, 181 (1983). Probe analyses (not in abstr.) indicate complete series smithsonite-siderite.
- SIDERITE. Childs and Baker-Sherman, (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So_3n . Mossbauer study of standard samples.
- SIDERITE. Gevorkyan and Povarennyh, Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 11, 8-12 (1983)(Ukrainian). Infra-red spectrum.
- SIDERITE. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe analyses (5).
- SIDERITE. Kaurkovskii, Zap. Vses. Mineral. O-va. 113, 325-331 (1984)(Russian). 5 analyses and study of oxidation.
- SIDERITE. Knoblach, (Mitt. Oesteri Mineral. Geol. 129, 5-12) (1983). Dispersion of indices of refraction, 420-680m.
- SIDERITE. Kobayashi, (Geosci. Mag. 32, 139-144) (1982), Mineral. Abstr. 36, no. 2, 206 (1985). Analysis of manganoan siderite, Ishikawa Pref., Japan.
- SIDERITE. Lyon, (U.S. Patent 4,657,752, 1-8) (1987), Chem. Abstr. 106, no. 26, 216459 (1987) Hydrothermal synthesis

- SIDERITE. Peng et al., (Acta Mineral. Sinica 5(3), 229-233) (1985) (Chinese), Mineral. Abstr. 38, 87M/3162 (1987) Analyses (not in abs.) and infra-red spectra of magnesite-siderite series
- SIDERITE. Phillips and Brown, (Can. Mineral. 25, 265-273) (1987) Microprobe and (12) from Kalgoorlie deposit
- SIDERITE. Prachar et al., (Acta Univ. Carol., Geol. 1-2, 13-25) (1983) (Czech), Chem. Abstr. 102, no. 24, 206707 (1985). Analysis of manganoan, from near Pribyslavice.
- SIDERITE. Robie et al., Am. Mineral. 69, 349-357 (1984). Heat capacity 5-550 degrees K. Entropy Analysis.
- SIDERITE. Stepanenko, (Tr. Komi Fil. Akad. Nauk SSSR 45, 36-47) (1984) (Russ) (G(570)AK144+). Analyses (2) from carbonatites.
- SIDERITE. Sverjensky, (Geochim. Cosmochim. Acta 48, 1127-1134) (1984). Calculation of Gibbs free energies at 25 degrees C, 1 bar.
- SIDERITE. Xu et al., (Dizhi Kexue, no. 4, 421-423 (1982) (Chinese)) Chem. Abstr. 98, no. 14, 110800 (1983). Trace elements in.
- SIDEROPHYLLITE. Guo et al., (Yanshi Kuangwu Ji Ceshi 3, no. 1, 260-271) (1984) (Chin.), Chem. Abstr. 101, no. 16, 134281 (1984). Occurrence at Nanling, SE China, partial analysis. Zn 0.46 percent.
- SIDEROPHYLLITE. Popov, Mineralogicheskie Isslesovaniia Gidrotermalitor Urala (Mineral. Stud. Hydrotherm. Urals), 61-70 (1980). Analyses (3) from Badzhala, Urals.
- SIDORENKITE. Chinh et al., (Mineral. Zh. 6, no. 5, 79-84), Chem. Abstr. 102, no. 12, 98509 (1985). Discussion of structure.
- SIEGENITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- SIEGENITE. Burke and Zakrzewski, Can. Mineral. 21, 129-136 (1983). Microprobe analyses (3) from Nord mine, Sweden.
- SIEGENITE. Zakrzewski, (Can. Mineral. 22, 499-502) (1984). Microprobe analyses (3) from Karniowrice, Poland. Cu up to 6.4.
- SILIMANITE. Asami and Asami, (Mem. Geol. Soc. Japan 21, 151-161) (1982) (Jap.). (G(620)G29m). Analyses (2) from xenoliths in andesites, Kagawa Pref.).
- SILLIMANITE. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984). Microprobe analyses (1) from granulite, Sipiwesk Lake, Manitoba.
- SILLIMANITE. Beran et al., (Neues Jahrb. Mineral., Monatsh., no. 5, 219-226 (1983)) Chem. Abstr. 98, no. 24, 201497 (1983). Microprobe analysis, Mossbauer and infra-red show presence of hydroxyl (O 4.93 (OH) 0.07).
- SILLIMANITE. Doukhan and Christie, (Bull. Mineral. 105, 583-589 (1982) (English)) Chem. Abstr. 98, no. 20, 164085 (1983). Plastic deformation.
- SILLIMANITE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (1) from granulites, Italian Central Alps.
- SILLIMANITE. Evers and Wevers, Neues Jahrb. Mineral., Monatsh, 49-60 (1984) (English). Mineral. Abstr. 87M/3035 (1987) Microprobe analyses (12) from Norway with Fe₂O₃ up to 1.8%. Variation of unit cell and optics with Fe.
- SILLIMANITE. Franz and Morteani, (J. Petrol. 25, 27-52) (1984). Analysis from Kolsva, Sweden. (1)
- SILLIMANITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984). Calculation of thermodynamic data.
- SILLIMANITE. Herd et al., (Spec. Paper Geol. Assoc. Canada 31, 241-253) (1986) Microprobe analyses (2), St. Maurice area, Quebec
- SILLIMANITE. Jamieson, (Contrib. Mineral. Petrol. 86, 309-330) (1984). Probe analysis (1) from gneiss, Nova Scotia.

- SILLIMANITE. Kieffer, (Rev. Geophys. Space Phys. 20, 827-849 (1982)) Chem. Abstr. 98, no. 4, 19591 (1983). Calculations of thermodynamic properties, application to phase equil.
- SILLIMANITE. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng) Microprobe analyses (2) from gneisses, Spitsbergen
- SILLIMANITE. Motoyoshi and Matsueda, (Proc. Symp. Antarctic Geosci. 4th, 1983, 103-125) (1984)(Eng.). Microprobe analyses (3), Enderby Land, Antarctica, 502(990)J27ss..
- SILLIMANITE. Nanda et al., Neues Jahrb. Mineral., Monatsh., no. 3, 103-109 (1983)(English). Microprobe analyses (1), Kondapalli, India.
- SILLIMANITE. Nixon et al., Mineral. Mag. 48, 550-552 (1984). Microprobe analysis (1) from Labwor Hills, Uganda.
- SILLIMANITE. Pokrovskii and Ivanov, (Ocherki Fiz-Khim Petrol. 11, 143-160) (1983), Chem. Abstr. 101, no. 20, 174816 (1984). Stability in system $Al_2O_3-SiO_2-H_2O$. Thermodynamic constants.
- SILLIMANITE. Robie and Hemingway, Am. Mineral. 69, 298-306 (1984). Heat capacity, 10-380 degrees K. Entropy. Triple point kyanite-andalusite-sillimanite placed at 790 ± 25 degrees K, 4.0 ± 0.5 kb.
- SILLIMANITE. Vernon, (Can. Jour. Earth Sci. 24, 580-590) (1987), Chem. Abstr. 107, no 10, 81086 (1987) Oriented growth of sillimanite in andalusite, N. Mex.
- SILLIMANITE. Wenk, (Neues Jahrb. Mineral., Abh., 146, 1-14 (1983)(English)) Chem. Abstr., 98, no. 20, 164102 (1983). Sillimanite-mullite intergrowths from Bergell, Italy.
- SILLIMANITE. Word and Holloway, Geochim. Cosmochim. Acta 48, 159-176 (1984). Stability in system $CaO-MgO-Al_2O_3-SiO_2$.
- SILVER-RHODOSTANNITE. Abstract in Am. Mineral. 70, 876 (1985). Abstract of original description.
- SILVER. Ermolaev et al., (Zap. Vses. Mineral. O-va 116(1), 85-93) (1987) (Russian) Microprobe analyses (5) of Au-Ag alloys from black shales
- SILVER. Kogachi and Nakahigashi, (Jpn. J. Appl. Phys. 24, 121-125) (1985)(Eng.). Chem. Abstr. 102, no. 16, 138560 (1985). Stability in system Au-Ag-Cu.
- SILVER. Kovlenkar, (Gold and silver deposits "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 10 analyses from gold-silver deposits
- SILVER. Leonard and Christian, (Mineral. Petrol. 36, 151-168) (1987) (Eng) Analyses from Thunder Mt. complex, Idaho (electrum)
- SILVER. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- SILVER. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe analyses (3) from Alma, Colo.
- SILVER. Sakharova et al., (Eksp. Issled. Endogen. Rudoobiz. 1981, 210-220) (1983), Chem. Abstr. 100, no. 24, 195190 (1984). Effects of conditions on isomorphisin Au-Ag. Unit cell data.
- SILVER. Sugaki et al., (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 79, 405-423) (1984) (Jap), Mineral. Abstr. 38, 87M/2325 (1987) Analyses (not in abs.) from Koryu mine, Hokkaido, Japan
- SILVER. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (15) from S. Korea (electrum)
- SIMONITE. Abstr. in Am. Mineral. 69, 211 (1984). Abstract of original description.
- SIMONITE. Engel et al., (Z. Krist. 161, 159-166) (1982), Mineral. Abstr. 35, 19 (1984). Structure. Monoclinic; $P2/n$, a 5.948, b 11.404, c 15.979A, β 90 degrees 15', $Z=4$ (Tl Hg As₃ So).

- SIMONKOLLEITE. Mineral. Abstr. 38, 87M/3203 (1987) Abstract of original description
- SIMPSONITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- SIMPSONITE. Sarp and Deferne, (Arch. Sci. 36, 341-343) (1982), Chem. Abstr. 100, no. 8, 54674 (1984). Analysis, x-ray data, G 6.8, from Zaire, a 7.30, c 4.50 A.
- SINCOSITE. Prozorovskaya et al., (Zap. Vses. Mineral. O-va. 113, 56-59) (1984), Chem. Abstr. 100, no. 24, 195195 (1984). Analyses from Kazakhstan. Tetrag. $P4_2n-4/m$, a 9.08, c 12.66 A.
- SINCOSITE. Shifov, et al., Zap. Vses. Mineral. O-va. 113, 56-59 (1984). Mineral. Abstr. 36, 91-92 (1985). Analysis (not in abstr.) from Kazakhstan, Analysis from Kazakhstan gives $CaV^{+4}_2(PO_4)_2O_2 \cdot 4H_2O$. X-ray data give $P4_2n-4/m$, a 9.08, c 12.66 A, tet. Optics, $Z=4$, G 2.84.
- SINCOSITE. Zolensky (Am. Mineral 70, 409-410) (1985). Analysis from Beach Hills, $Ca(VO)_2(PO_4)_2 \cdot 5H_2O$. Tetrag. a 8.895, c 12.727A, Z=2, G 2.98, 2.97 calcd. X-ray data.
- SINHALITE. Lisitskyn et al., (Mineral. Zh. 7(5), 32-40) (1985) (Russian) Analysis from Tazkno deposit, S. Yakutia
- SINHALITE. Rowley, (Rocks and Minerals 62, 243-246) (1987) Occurrence at Johnsburg, N.Y.
- SINKANKASITE. Peacor, et al., Abstract in Mineral. Abstr. 36, 94 (1985). Abstract of original description.
- SINKANKASITE. Peacor, et al., Am. Mineral. 69, 380-382 (1984). New mineral from Barker pegmatite, S. Dakota. $H_2MnAl(PO_4)_2(OH) \cdot 6H_2O$. Triclinic, PI or PT, a 9.58, b 9.79, c 6.88 A, alpha 108.1 degrees, beta 99.6 degrees, gamma 98.7 degrees, Z=2. Analysis, optics. x-ray data.
- SKUTTERUDITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- SKUTTERUDITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- SMIRNITE. Abstract in Am. Mineral. 70, 876-877 (1985). Abstract of original description.
- SMIRNITE. Spiridonov, et al., (Dokl. Akad. Nauk SSSR 278, 199-202) (1984), Chem. Abstr. 102, no. 4, 28605 (1985). Abstract of original description. Analysis, optics, orth., CmZa, a 16.447, b 5.513, c 11.579 A, G 7.72, Bi_2TeO_5 .
- SMITHITE. Fedorova et al. (Izv. Akad. Nauk SSSR, Neorg. Mater. 21, no. 1, 17-19) (1985), Chem. Abstr. 102, no. 14, 116749 (1985). Stability in system $Ag_2S-As_2S_3$ by heating in As_2S_3 vapor.
- SMITHITE. Fedorova et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 268-275 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201513 (1983). Effect of gas phase on rate of growth of crystals.
- SMITHSONITE. Bak and Zabinski, (Mineral. Pol. 12, 75-80 (1981)) Mineral. Abstr. 34, 181 (1983). Probe analyses (not in abstr.) indicate complete series smithsonite-siderite.
- SMITHSONITE. Gevorkyan and Povarenyyh, Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 11, 8-12 (1983)(Ukrainian). Infra-red spectrum.
- SMITHSONITE. Ringrose, (Geol. W. Australia Rept. 19, 62-69) (1986) (860)R Occurrence at Narlarla, W. Australia
- SMITHSONITE. Sverjensky (Geochim. Cosmochim. Acta 48, 1127-1134) (1984). Calculation of Gibbs free energies at 25 degrees C, 1 bar.
- SMYTHITE. Fleet, (Phys. Chem. Miner. 8, 241-246 (1982)) Mineral. Abstr. 34, 136 (1983). Synthesis. Formula $Fe_{13}S_{16}$.

- SMYTHITE. Kropacheva et al., (Mineral. Sb. (Lvov) 36, 36-41 (1982)) Chem. Abstr. 98, no. 26, 219057 (1983). Analysis, X-ray data from Carpathian S deposits.
- SMYTHITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- SMYTHITE. Walenta (Aufschluss 35, 235-236) (1984). Occurrence in Clara mine, Black Forest, Germany.
- SOBOLEVITE. Abstract in Am. Mineral. 69, 813 (1984). Abstract of original description.
- SOBOLEVITE. Abstract in Mineral. Abstr. 35, 194 (1984). Abstract of original description.
- SOBOLEVSKITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe analysis from Norilsk deposit.
- SOBOLEVSKITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- SOBOLEVSKITE. Tarkian and Bernhardt (Tschermaks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- SODALITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerge complex, Greenland.
- SODALITE. Burrigato et al., (Neues Jahrb. Mineral., Monatsh., 433-445 (1982)(English)) Mineral. Abstr. 34, 171 (1983). Analyses from Latium, Italy, optics, a 8.880-8.906A.
- SODALITE. Cruriscchio, et al., Neues Jahrb. Mineral., Abh. 148, 113-140 (1983)(English). Microprobe analyses (2) from Alkalic rocks, Kenya.
- SODALITE. Hassan and Grundy, (Acta Crystallogr., Sect. B, B40, 6-13) (1984)(English), Chem. Abstr. 100, no. 12, 94874 (1984). Structure. Cubic, $P4_3n$, a 8.882, Z=1.
- SODALITE. Kornacki and Word, Geochim. Cosmochim. Acta 48, 1663-1676 (1984). Microprobe analyses (2) from Allende meteorite.
- SODALITE. Roden, et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (2), St. Paul's rocks, Atlantic Ocean.
- SODALITE. Semenov et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 96-102 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201507 (1983). Heat capacity and entropy.
- SODALITE. Triodina, et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 681-694) (1983)(English), Chem. Abstr. 100, no. 6, 43212 (1984). Hydrothermal synthesis of hydrosodalite with 0-6 H₂O.
- SODALITE. Wilkinson and Stolz, Contrib. Mineral. Petrol. 83, 363-374 (1983). Microprobe analyses (3) from Oahu, Hawaii.
- SODALITE. Zilio and Bagnato, (J. Phys. Chem. 88, 1373-1376) (1984), Chem. Abstr. 100, no. 16, 124229 (1984). Infra-red spectrum.
- SONOLITE. Dunn (Am. Mineral. 70, 379-387) (1985). Microprobe analyses (24) from Franklin and Sterling Hill, NJ. Discontinuous solid solution with clinohumite.
- SONOLITE. Mottano, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganiferous cherts, Alps
- SOPCHEITE. Dunning et al. (Can. Mineral. 22, 233-237) (1984), Chem. Abstr. 101, no. 16, 134287 (1984). Abstract of original description. Microprobe analyses (5) from Ontario, optics.
- SOSEDKOITE. Voloshin et al., (Dokl. Akad. Nauk SSSR 264, 442-445 (1982)) Am. Mineral. 68, 644 (1983). Abstract of original description.
- SOUCEKITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes

- SPERRYLITE. Cornelius et al., (Mineral. Petrol. 36, 247-265) (1987) Microprobe analyses (3) from New Mexico, W. Australia
- SPERRYLITE. Loucks and McCallum, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 200-218 (1980)(English) (Sulfosalt Vol.). Microprobe analyses (6) from New Rambler Mine, Wym.
- SPERRYLITE. Piispanen and Tarkian, Miner. Deposita 19, 105-111 (1984). Microprobe analyses (1) from Rometolvas, Finland.
- SPERRYLITE. Rudashevskii and Zhdanov, Byull. Mosk. O-va. Ispyt. Prir., Otd. Geol. 58, no. 5, 49-59 (1983)(G(570)M866). Analyses (1) from Kamchatka Pt deposit.
- SPERRYLITE. Rudeshevskii, et al., Mineral. Zh. 6, no. 1, 93-97 (1984)(Russian). Microprobe analyses (2) from Konder massif, Alden.
- SPERRYLITE. Tarkian and Bernhardt (Tschermaks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- SPERTINITE. Abstr. in Bull. Mineral. 106, 635 (1983). Abstract of original description.
- SPHALERITE. Barrett and Anderson, (Econ. Geol. 77, 1923-1933 (1982)) Chem. Abstr. 98, no. 6, 37909 (1983). Solubility in NaCl-rich brines at 95° (saturated with H₂S).
- SPHALERITE. Barton and Bethke, (Am. Mineral. 72, 451-467) (1987) Study of chalcopyrite "disease" in sphalerite Types of deposits, causes including replacement, dislocation, etc. Well illustrated
- SPHALERITE. Bodnar and Bethke, Econ. Geol. 79, 141-161 (1984). Study of fluid inclusions in.
- SPHALERITE. Borredon, et al., Miner. Deposita 18, 437-442 (1983)(French). Analyses (18) from Hualgayoc mine, Peru.
- SPHALERITE. Brill (Bull. Mineral. 108, 161-171) (1985). Microprobe analyses (22) from Brioude-Massif France.
- SPHALERITE. Britun and Pilyankevich, (Mineral. Zh. 4, no. 5, 65-69 (1982)) Chem. Abstr. 98, no. 4, 25792 (1983). Role of defects in the transition sphalerite-wurtzite.
- SPHALERITE. Cabri et al. (Can. Mineral. 23, 133-148) (1985). Proton microprobe analyses (18) for trace elements, esp. Se.
- SPHALERITE. Dobrovolskii and Zaozerina, (Geol. Rudn. Mestorozhd. 29(1), 46-58) (Russian) Microprobe analyses (4) from Maritime Province
- SPHALERITE. El-Bouseily et al. (Miner. Deposita 20, 194-200) (1985). Minor elements in (5), Eastern Desert gold mine, Egypt.
- SPHALERITE. Emslie and Beukes, (Ann. Geol. Opname, S.-Afr., 15, 11-28 (1981)(Pub. 1982)) Chem. Abstr. 98, no. 24, 201527 (1983). Minor elements in 21, S.W. Africa.
- SPHALERITE. Fedotova et al., (Mineral. Kriter. Kompleksn. Otsenki Miner. Syr'ya Kol'sk. Poluostrova, 87-96 (1982)) Chem. Abstr. 98, no. 26, 219089 (1983). Analyses (not in abstr.), unit cells, trace elements from Kola Peninsula.
- SPHALERITE. Frietsch, (Geol. Foeren. Stockholm Foerh. 104, 43-47 (1982)) Chem. Abstr. 98, no. 4, 19687 (1983). Analyses from ores, central Sweden.
- SPHALERITE. Galii and Krochuk, (Mineral. Zh. 7(5), 64-) (1985) (Russian) Microprobe analyses (1) from carbonatites, Ukrainian Shield
- SPHALERITE. Grodskaya et al., (Mineral. Zh. 4, no. 5, 43-49 (1982)) Chem. Abstr. 98, no. 8, 57257 (1983). Laser-beam study.
- SPHALERITE. Gulyaeva, Tikhookean. Okeanol. Inst., no. 5, 110-) (1982)(Russian) G(690.2)T448. Analyses (2) from Belogorsh deposit, Maritime Prov.

- SPHALERITE. Hak et al., (Cas. Mineral. Geol. 28, 15-69) (1983), Mineral. Abstr. 35, 189 (1984). Probe analyses (7) from Kutna Hora with up to 0.167% In.
- SPHALERITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G611)G292p). Microprobe analyses (3) from Chikuashih ore deposit, Taiwan.
- SPHALERITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (2) from Sark, Channel Islands.
- SPHALERITE. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe analyses (42).
- SPHALERITE. Kaneko et al., (J. Electrochem. Soc. 131, 1445-1446) (1984)(Eng.). Chem. Abstr. 101, no. 4, 31420 (1984). Transition sphalerite-wurtzite in hydrothermal conditions.
- SPHALERITE. Kaneko et al., (J. Electrochem. Soc. 130, 2487-2489) (1983), Chem. Abstr. 100, no. 6, 40517 (1984). Stability in system ZnS-MnS under hydrothermal conditions.
- SPHALERITE. Kojime et al., (Mineral. J. Tokyo 12, 15-28) (1984)(English), Chem. Abstr. 101, no. 8, 57860 (1984). Stability in system Cu-Fe-Zn-S, 800-500 degrees C.
- SPHALERITE. Koryukin et al., (Izv. Vyssh. Uchebn. Zaved., Geol. Razved. 4, 3-7) (1985), Chem. Abstr. 103, no. 4, 25098 (1985). Trace elements, a_0 , magnetic properties, microhardness from Pyanko-Lomovsk deposit.
- SPHALERITE. Kovalenkar et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M 565 Microprobe analyses (4) from Bulgaria
- SPHALERITE. Kucha and Wieczorek, Miner. Deposita 19, 208-216 (1984). Microprobe analyses (13) from Navan Pb-Zn deposit, Ireland.
- SPHALERITE. McQueen, Neues Jahrb. Mineral., Monatsh., 323-336 (1984)(English). Microprobe analyses (1) from Broken Hill, N.S. Wales.
- SPHALERITE. Mioskos, Chem. Erde 42. 281-296 (1983)(English). Microprobe analyses (2) from Macedonia.
- SPHALERITE. Moles, Mineral. Mag. 47, 487-500 (1983). Microprobe analyses from Aberfeldy, Scotland.
- SPHALERITE. Munoz and Moelo, Bull. Mineral. 105, 625-632 (1982). Microprobe analyses (8) from Bournac, France.
- SPHALERITE. Nakayama, (Mining Geology (Japan) 36, 523-533) (1986) Microprobe analyses (20), Gunma Pref., Japan Mn up to 7.1%
- SPHALERITE. Nishiyama et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 281-289 (1983)(English) Minor elements in (4), Sulawesi, Indonesia.
- SPHALERITE. Novak, (Acta Univ. Carol., Geol. 4, 323-338) (1983)(Czech.), Chem. Abstr. 103, no. 6, 39958 (1985). Dependence of hardness and a_0 on Fe content.
- SPHALERITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- SPHALERITE. Piispanen and Tarkian, Miner. Deposita 19, 105-111 (1984). Microprobe analyses (1) from Rometolvass, Finland.
- SPHALERITE. Pimminger et al., (Tscherms Mineral. Petrogr. Mitt. 34, 131-141) (1985). Trace elements by ion mass spectrometry from E. Alps, Austria.
- SPHALERITE. Poblesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (11) from Kuru-Tegeraba deposit
- SPHALERITE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (26) from Western Alps, Italy
- SPHALERITE. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe analysis (1) from Alma, Colo.

- SPHALERITE. Rafal'skii, (Geokhimiia, 1780-1797 (1982)) Chem. Abstr. 98, no. 6, 37909 (1983)) Chem. Abstr. 98, no. 6, 37914 (1983). Solubility in chloride solutions at 100-300 degrees calcd.
- SPHALERITE. Ryabeva, (Mineral. Rudn. Mestorozhd., 90-93) (1983), Chem. Abstr. 100, no. 16, 124242 (1984). Reflectances differ for material of 2 generations.
- SPHALERITE. Schluter et al., Tschermaks Mineral. Petrogr. Mitt. 33, 287-296 (1984). Microprobe analyses (7) from Walchen deposal, Styria, Austria.
- SPHALERITE. Scott, Mineral. Mag. 47, 427-435 (1983). Chemical behavior in hydrothermal and metamorphic environments in systems Fe-Zn-S and Cu-Fe-Zn-S.
- SPHALERITE. Semidalov et al., (Izv. Vyssh. Uchebn. Zaved., Geol. Razved., no. 1, 101-105) (1984), Chem. Abstr. 100, no. 26, 213100 (1984). Separation of magnetic fractions from Oktyabr deposit. Variation of minor elements, G., reflectance.
- SPHALERITE. Senna, (Cryst. Res. Technol. 20, 209-217) (1985). Review of polymorphic transformation.
- SPHALERITE. Shimazaki and Shimizu, (J. Fac. Sci., Hokkaido Univ., Ser. 2, 21, no. 1, 51-66) (1984)(Eng.). Microprobe analyses (59) for Fe, Mn, Cd from Japanese skarns.
- SPHALERITE. Shimizu and Shikazono, (Can. Mineral. 25, 229-236) (1987) Microprobe analyses (5) from Japanese ores
- SPHALERITE. So and Jang, (Chijil Hakhoe Chi 20, 28-40) (1984)(English), Chem. Abstr. 101, no. 2, 10131 (1984). Reflectance.
- SPHALERITE. Song, (Yankuang Ceshi, 1, no. 3, 37-44 (1982)(Chinese)) Chem. Abstr. 98, no. 18, 146802 (1983). Trace elements in, from Fankou deposit, China.
- SPHALERITE. Song, Miner. Deposita 19, 95-104 (1984)(English). Minor elements in (12), Fankou deposit, China.
- SPHALERITE. Sorokin and Osadchii, (Eksp. Issled. Endogen. Rudoobraz., 1981, 167-180) (1983) Chem. Abstr. 100, no. 26, 213093 (1984). Thermodynamics of sphalerite-stannite solid solutions calcd.
- SPHALERITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (7) from S. Korea
- SPHALERITE. Takeuchi and Shikazono, (Min. Geol. Japan 34(3), 187-195) (1984)(Eng.). (G(620)M66). Microprobe analyses (7) from Kagoshima Pref. Japan.
- SPHALERITE. Terzinc, (Glas. Priir. Muz. Beogradu Ser. A 37, 51-115) (1982), Chem. Abstr. 102, no. 4, 28627 (1985). Tl and Hg in, from Yugoslavia.
- SPHALERITE. Tornroos, Neues Jahrb. Mineral., Abh., 144, 107-123 (1982)(English). Microprobe analyses (2) from Finland.
- SPHALERITE. Velizade, (Izv. Akad. Nauk Az. SSR, Ser. Nauk Zemle 4, 24-30) (1983) (Russ), Chem. Abstr. 101, no. 12, 94681 (1984). Trace elements in 4 generations. Katsdag deposit. Optics.
- SPHALERITE. Xuexin, Miner. Deposita 19, 95-104 (1984). Minor elements in, from Fankou deposit, China.
- SPHALERITE. Yamamoto, (Chem. Geol. 42, 243-248) (1984), Chem. Abstr. 100, no. 8, 54693 (1984). Experimental distribution of Se between galena and sphalerite.
- SPHALERITE. Yamaoka and Asakura, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 290-294 (1983)(Japanese). Analyses (7) from Fukushima Pref., Japan.
- SPHALERITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analyses (13) from Hallefors, Sweden.
- SPINEL. Ackermant et al., (Jour. Metamorph. Geol. 5, 323-339) (1987) Microprobe analyses (1), Caraiba complex, Brazil

- SPINEL. Ackermend, et al., Mineral. Mag. 47, 555-561 (1983). Microprobe analyses (7) from Fiskemaess, Greenland.
- SPINEL. Andrew, J. Metamorph. Geol. 2, no. 2, 143-163 (1984). Microprobe analyses (2), NS Wales.
- SPINEL. Arai and Hirai, Ann. Rep. Inst. Geosci. Univ. Tsukuba 9, 65-67 (1983)(English). Microprobe analyses from peridotite, S.W. Japan.
- SPINEL. Arai and Kobayashi (Ann. Rep. Inst. Geosci. Univ. Tsukuba 10, 119-122) (1984)(Eng.). Microprobe analysis (1) from Fe-rich lherzolite, SW Japan. Chromian.
- SPINEL. Arculus, et al., Contrib. Mineral. Petrol. 85, 85-94 (1984)(English). Electron microprobe analyses (5) from kimberlite and peridotite.
- SPINEL. Arima and Barnett, Contrib. Mineral. Petrol. 88, 102-112 (1984). Microprobe analyses (2) from granulite, Sipiwesk Lake, Manitoba.
- SPINEL. Asami and Asami (Mem. Geol. Soc. Japan 21, 151-161) (1982)(Jap.). (G(620) G29m). Analysis (1) from xenoliths in andesites, Kagawa Pref.).
- SPINEL. Barnicoat, J. Metamorph. Geol. 1, 163-182 (1983). Microprobe analyses (1) from Scourian complex, N.W. Scotland.
- SPINEL. Basso, et al., Neues Jahrb. Mineral., Abh. 150, 1-10 (1984)(English). Structure of 4 samples from peridotites, W. Italian Alps.
- SPINEL. Beccaluva, et al., Lithos 17, 299-316 (1984)(English). Microprobe analyses (14) from lherzolites, Italy. (chromian)
- SPINEL. Black, et al., J. Metamorph. Geol. 1, 277-303 (1983). Microprobe analyses (1) from Field Islands, Antarctica.
- SPINEL. Bloomer and Fisher, (Jour. Geol. 95, 469-495) (1987) Microprobe analyses (2) from Tonga Trench
- SPINEL. Brearly, et al., Contrib. Mineral. Petrol. 88, 53-63 (1984). Microprobe analyses (7) from ultramafic xenoliths, Summit Lake, British Columbia.
- SPINEL. Bucher-Nurminen, J. Petrol. 23, 325-343 (1982). Microprobe analyses (3), E. Greenland.
- SPINEL. Capedri et al., (Neues Jahrbuch Miner., Abh. 156, 231-246) (1987) (Eng) Microprobe analyses (3) from basalts, Crete
- SPINEL. Debari et al., (Jour. Geol. 95, 329-341) (1987) Microprobe analysis (7) from Adagdak Volcano, Adak Island
- SPINEL. Della Giusta et al., (Neues Jahrbuch Miner., Abh. 155, 319-330) (1986), Mineral. Abstr. 38, 87M/3108 (1987) Analyses (8) (not in abs) of chromian spinels, Mt. Leura, Australia
- SPINEL. Dewendra et al. (Trans. J. Brit. Ceramic Soc. 81, 185-189) (1982), Mineral. Abstr. 35, 41 (1984). Stability in systems $MgO-R_2O_3$ ($R=Al, Cr, Fe^{+3}$).
- SPINEL. Dick and Bullen, Contrib. Mineral. Petrol. 86, 54-76 (1984). Microprobe analyses (19) from peridotites.
- SPINEL. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (3) from granulites, Italian Central Alps.
- SPINEL. Drzymala et al. (Mineral. Pol. 13, 2, 33-40) (1982)(Eng.), Chem. Abstr. 101, no. 10, 76110 (1984). Analysis from Krzemianka, Poland (ferroan) $Mg_{0.56}Fe_{0.44}$.
- SPINEL. Dudar, et al., (Tr. Komi Fil. Akad. Nauk SSSR 48, 67-75) (1984), Chem. Abstr. 102, no. 4, 28614 (1985). Analyses (not in abstr.). (chromian)
- SPINEL. Eales and Marsh, (Chem. Geol. 38, 57-74 (1983)) Chem. Abstr. 98, no. 14, 110846 (1983). Al/Cr ratios in coexisting ortho- and clino-pyroxenes and spinels in ultramafic rocks.
- SPINEL. Ekambaram et al. (Geochim. Cosmochim. Acta 48, 2089-2105) (1984). Analysis (1) and trace elements, from Murchison chondrite.

- SPINEL. El Goresy et al. (Geochim. Cosmochim. Acta 48, 2283-2298) (1984).
Microprobe analyses (6) from Ca-Al-rich inclusion, Essebi chondrite.
- SPINEL. Esperanca and Holloway ((Kimberlites 11B, 219-227) (1984). (150.3 D493).
Microprobe analysis (1) from potassic latites, Carefree, Ariz.
- SPINEL. Ewart, J. Petrol. 23, 344-382 (1982). Microprobe analyses (3) from
volcanic rocks, Queensland, Australia.
- SPINEL. Exley et al., Am. Mineral. 68, 512-516 (1983). Microprobe analyses (9)
from kimberlite, S. Africa.
- SPINEL. Fitzgerald and Jaques, Meteoritics 17, 9-26 (1982). Microprobe analyses
(1) in Tibooburra carbonaceous chondrite.
- SPINEL. Franz and Morteani (J. Petrol. 25, 27-52) (1984). Analysis from
Kolsva, Sweden. (2)
- SPINEL. Frenzel et al., (Z. Deut. Gemmol. Ges. 35, 39-46) (1986), Mineral.
Abstr. 38, 87M/3106 (1987) Analysis of zincian spinel from Sri Lanka
- SPINEL. Griffin et al. (J. Petrol. 25, 53-87) (1984). Microprobe analyses
(22) from ultramafic xenoliths, Victoria, Australia.
- SPINEL. Grimes et al., (Proc. R. Soc. London, [Ser.] A, 386, 333-345 (1983))
Chem. Abstr. 98, no. 24, 207955 (1983). Discussion of structure. Proposed
F₄3m symmetry.
- SPINEL. Guner, (Bull. Miner. Res. Explor. Inst. Turk. 92, 75-80
(1981)(English)) Chem. Abstr. 98, no. 22, 182752 (1983). Microprobe
analyses, reflectance, hardness, Kure dist., Turkey.
- SPINEL. Hashimoto and Grossman, (Geochim. Cosmochim. Acta 51, 1685-1704) (1987)
Microprobe analyses (3) from Al-rich inclusions, Allende meteorite
- SPINEL. Herd et al., (Spec. Paper Geol. Assoc. Canada 31, 241-253) (1986)
Microprobe analyses (1), St. Maurice area, Quebec
- SPINEL. Hervig and Smith, Contrib. Mineral. Petrol. 81, 184-189 (1982).
Microprobe analyses (17) from lherzolites. Distribution of Cr in.
- SPINEL. Ionov, (Geol. Zbornik Bratislava 37, 681-692) (1986) (Eng) Microprobe
analyses (8) from peridotite xenoliths, Mongolia
- SPINEL. Jamieson and Roeder, Am. Mineral. 69, 283-291 (1984). Distribution of
Mg and Fe⁺² between olivine and spinel at 1300 degrees C.
- SPINEL. Johnson and Essene, Contrib. Mineral. Petrol. 81, 240-251 (1982).
Microprobe analyses (6) from metagabbros, Adirondacks.
- SPINEL. Johnston and Stout, Am. Mineral. 69, 57-68 (1984). Microprobe analyses
(1) of ferroandioptside from gabbro, Kauai, Hawaii.
- SPINEL. Kaminskii et al., (Mineral. Zh. 8(2), 39-45) (1986) (Russian)
Microprobe analyses (4) from diamond-bearing picrites
- SPINEL. Khidolozhkin et al., (Mineral. Zh. 8(2), 17-23) (1986) (Russian)
Infra-red spectra
- SPINEL. Kirkley et al. (Kimberlites 11B, 85-96) (1984) (150.3 D 493).
Microprobe analyses (3) from kimberlites, Colo and Wyo.
- SPINEL. Kuskov et al., (Geokhimiia, no. 11, 1587-1597 (1982)) Chem. Abstr. 98,
no. 6, 37820 (1983). Derivation of equation of state at high T and P.
- SPINEL. Laz'ko, et al., Izv. Akad. Nauk SSSR, Ser. Geol., no. 3, 42-53
(1984)(Russian). Microprobe analyses (3) from peridotites, Khizen fault, S.E.
Pacific.
- SPINEL. Levitskii and Petrova (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim.
Nauk, 5-12) (1983)(Russ.). 480 (690.3) M662. Analyses (10) of gem spinels,
mostly from Baikal.
- SPINEL. Luais, (Doc. Trav. Centre Geol. Montpellior 9, 1-229) (1987) (French)
G(540) q(334d) Microprobe analyses (2) from the Mediterranean
- SPINEL. MacPherson et al., Geochim. Cosmochim. Acta 47, 823-839 (1983).
Microprobe analyses (6) from Murchison meteorite.

- SPINEL. Malezieux, et al., *Tschermaks Mineral. Petrogr. Mitt.* 32, 171-185 (1983)(French). Raman spectrum.
- SPINEL. Matsueda, et al., *Proc. 3rd Symp. Antarctic Geosci.*, 166-176 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (6) from skarn, Antarctica.
- SPINEL. Mattioli et al., (*Am. Mineral.* 72, 468-480) (1987) Unit cells in system spinel-magnetite-magnesioferrite
- SPINEL. Meeker et al., *Geochim. Cosmochim. Acta* 47, 707-721 (1983). Microprobe analyses (5) from Allende meteorite.
- SPINEL. Mitchell, *Contrib. Mineral. Petrol.* 86, 178-188 (1984). Microprobe analyses (3), kimberlites, Namibia.
- SPINEL. Moseley, *Am. Mineral.* 69, 139-153 (1984). Microprobe analyses (14) of symplectite inclusions.
- SPINEL. Motoyoshi and Matsueda (*Proc. Symp. Antarctic Geosci.* 4th, 1983, 103-125) (1984)(Eng.). Microprobe analyses (2), Enderby Land, Antarctica, 502(990)J27ss.
- SPINEL. Nagahara and Kushiro, *Meteoritics* 17, 55-63 (1982). Microprobe analyses (4) from Ca-Al rich chondrules, meteorites.
- SPINEL. Nedachi et al. (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 79, 200-213) (1984)(Jap.). Microprobe analyses (4), SE Abakuma Mts.
- SPINEL. Nelson and Carmichael, *Contrib. Mineral. Petrol.* 85, 321-335 (1984). Microprobe analyses (7) from Sanganguey Volcano, Mexico.
- SPINEL. Neville et al. (*Am. Mineral.* 70, 668-677) (1985). Microprobe analyses (5) from ultramafic inclusions in basalt, Calif.
- SPINEL. Ntaflos et al. (*Fortschr. Mineral.* 62, Beih. 1, 174-176) (1984). Microprobe analyses (2) from ultramafites, Zabarged.
- SPINEL. O'Neill and Navrotsky, *Am. Mineral.* 68, 181-194 (1983). Study of group. Crystallographic parameters, cation radii, lattice energies, cation distribution.
- SPINEL. O'Neill and Navrotsky, *Am. Mineral.* 69, 733-753 (1984). Calculation of cation distribution and thermodynamic properties.
- SPINEL. Oka, et al., *Contrib. Mineral. Petrol.* 87, 196-204 (1984). Synthesis of series spinel-magnesiochromite. Partition of Cr between spinel and corundum.
- SPINEL. Olsen et al., *Am. Mineral.* 68, 315-333 (1983). Microprobe analyses (1) from Concord gabbro-syenite complex, N.C.
- SPINEL. Ono, (*Ganseki Kobutsu Kosho Gakkaishi* 78, 221-228) (1983)(English), *Chem. Abstr.* 100, no. 8, 54668 (1984). Partitioning of Mg and Fe between ilmenite and spinel.
- SPINEL. Orlova et al., (*Zap. Vses. Mineral. O-va.* 108, 590-595 (1979)) *Mineral. Abstr.* 34, 177 (1983). Analyses (2) from Khabarovsk, Aldan, n 1.720, a 8.112A, G 3.60.
- SPINEL. Paktung, *Can. Mineral.* 22, 77-91 (1984). Microprobe analyses (3) from Thompson mine, Manitoba.
- SPINEL. Paneyckh, *Mineral. Zh.* 6, no. 1, 38-52 (1984)(Russian). Microprobe analyses (3) from hyperbasites. (chromian)
- SPINEL. Pasteris, *Can. Mineral.* 21, 41-58 (1983). Microprobe analyses (5) from De Beers kimberlite, S. Africa.
- SPINEL. Pertser and Zinov'eva, *Izv. Akad. Nauk SSSR, Ser. Geol.*, no. 3, 66-78 (1984)(Russian). Microprobe analyses (5) from Uzbekistan.
- SPINEL. Plaksenko, (*Mineral. Zh.* 7(1), 14-27) (1985) (Russian) Microprobe analyses (1), Voronezh massif
- SPINEL. Propach and Gulessen, *Tschermaks Mineral. Petrogr. Mitt.* 33, 67-75 (1984). Microprobe analyses (7), 33, 67-75 (1984).

- SPINEL. Przybylowicz and Hubicka-Ptasinski, (Mineral. Polonica 15, 37-45) (1984)
(Eng) Microprobe analyses (1) of chromian, from serpentinites, Silesia Unit
cell
- SPINEL. Rundkvist and Rezhnova, (Zap. Vses. Mineral. O-va. 111, 566-570
(1982)) Chem. Abstr. 98, no. 2, 19598 (1983). Analyses from Kola
Peninsula.
- SPINEL. Sakai and Kuroda, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78,
467-478 (1983)(English). Microprobe analyses (2) from ultramafic rocks,
Sanbagawa belt, Japan.
- SPINEL. Schafer, et al., (Phys. Chem. Mineral. 9, 248-252) (1983), Mineral.
Abstr. 35, 156 (1984). Effects of shock at 25.5 - 50.5 GPa.
- SPINEL. Schenker and Dietrich, (Schweiz. Min. Pet. Mitt. 66, 343-384) (1986)
(Eng) Microprobe analyses (7) from lherzolites, etc., Cameroon
- SPINEL. Schenker and Dietrich, (Schweiz. Min. Petr. Mitt. 66, 343-384) (1986)
(Eng) Microprobe analyses (7) from Lake Nyos, Cameroon
- SPINEL. Schmetzer and Bank, (N. Jb. Miner. Mh., 353-356) (1985), Mineral.
Abstr. 38, 87M/3107 (1987) Analyses (not in abs) of zincian spinels, Sri
Lanka
- SPINEL. Schreyer, et al., Contrib. Geol. 86, 200-207 (1984). Microprobe
analyses (1) from Limpopo belt, Africa.
- SPINEL. Scott, Greenland Geosci. no. 4, 1-124 (1981). Microprobe analyses (5)
from kimalite, Greenland.
- SPINEL. Sen and Presnell (Contrib. Mineral. Petrol. 85, 404-408) (1984), Chem.
Abstr. 100, no. 26, 213132 (1984). Stability in system anorthite-
forsterite-SiO₂ at 10 kbar.
- SPINEL. Shee, (Deve. Petro. 11A, 59-73, 435-466) (1984), Chem. Abstr. 100,
no. 26, 213273 (1984). Microprobe analyses (not in Abstr.) from kimberlite,
S. Africa.
- SPINEL. Sheraton et al., BMR J. Aust. Geol. Geophys. 7, 269-273 (1982).
Microprobe analyses (3) from granulites, Antarctica.
- SPINEL. Shuto et al. (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 80, 55-
72) (1985)(Jpn.). Microprobe analysis (1) from tholeiite, Fukushima Pref., NE
Japan.
- SPINEL. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses
from SW Baikal (5).
- SPINEL. Sills, et al., J. Metamorph. Geol. 1, 337-351 (1983). Microprobe
analyses (1) from Finero, N. Italy.
- SPINEL. Sinigoi, et al., Contrib. Mineral. Petrol. 82, 351-359 (1983).
Microprobe analyses (2) from peridotite, Balmuccia, Italy.
- SPINEL. Srikantappa (J. Geol. Soc. India 26, 281-286) (1985), Microprobe
analyses (2) from Karnataka, India.
- SPINEL. Stephenson and Hensel, Lithos 15, 59-75 (1982)(English). Microprobe
analyses (2), NS Wales, Australia.
- SPINEL. Stolz, Mineral. Mag. 48, 167-179 (1984). Microprobe analyses (7) from
ultramafic inclusions in nepheline mugearite, N.S. Wales.
- SPINEL. Takeda (J. Sci. Hiroshima Univ. Ser. C, 8(3), 221-280) (1984)(Eng.).
Microprobe analyses (6) from greenstones, Shikoku, Japan.
- SPINEL. Thy, Contrib. Mineral. Petrol. 83, 141-149 (1983). Microprobe
analyses (11) from basaltic glasses, Iceland (high Cr).
- SPINEL. Tsai, et al., Acta Geol. Taiwanica 21, 81-91 (1982)(English).
Microprobe analyses (1), megacrysts in basalt, N. Taiwan.

- SPINEL. Upton et al., (Mineral. Mag. 48, 323-343) (1984). Microprobe analyses (1) from E. Greenland.
- SPINEL. Viereck, (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (5) from Eifel, Germany.
- SPINEL. Walker, J. Petrol. 25, 299-342 (1984). Microprobe analyses (12) from Nicaraguan cinder cones.
- SPINEL. Ward, (Am. Mineral. 69, 531-540) (1984). Microprobe analysis (1) from New Zealand.
- SPINEL. Warner et al., (Contrib. Mineral. Petrol. 90, 386-400) (1985). Microprobe analyses (4) from dolerite dikes, S. Carolina.
- SPINEL. Williams, (Can. Mineral. 22, 417-421) (1984). Microprobe analyses (3). Fiskenaeset, Greenland.
- SPINEL. Windley et al., Contrib. Mineral. Petrol. 86, 342-358 (1984). Microprobe analyses (3) from Limpopo belt, S. Africa.
- SPINEL. Word and Holloway, Geochim. Cosmochim. Acta 48, 159-176 (1984). Stability in system CaO-MgO-Al₂O₃-SiO₂.
- SPINEL. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 21, 77-131 (1984)(English). Microprobe analyses (12), Oshime-Oshime volcano, N. Japan.
- SPINEL. Yamamoto, J. Fac. Sci., Hokkaido Univ., Ser. 4, 20, 135-143 (1983)(English). Analyses from basalts and ultramafic rocks, Oshima-Oshima volcano.
- SPINEL. Yamanaka and Takeuchi, (Z. Kristallogr. 165, 65-78) (1983)(English), Chem. Abstr. 100, no. 22, 183605 (1984). Order-disorder 600-1000 degrees.
- SPINEL. Yamanaka et al., (Acta. Crystallogr., Sect. B, B40, 96-102) (1984)(English), Chem. Abstr. 100, no. 18, 148935 (1984). Anharmonic thermal vibrations of atoms into 1933 degrees K.
- SPINEL. Yang et al., Acta Geol. Taiwanica 21, 63-80 (1982)(English). Microprobe analyses (13) from basalts, Penghu Islands. (Chromian).
- SPIONKOPITE. Abstr. in Bull. Mineral. 106, 635-636 (1983). Abstract of original description.
- SPIONKOPITE. Walenta, (Aufschluss 35, 235-236) (1984). Occurrence in Clara mine, Black Forest, Germany.
- SPODUMENE. Fujii and Isotani, (Report IFUSP-P-437, 1-33) (Eng.), Chem. Abstr. 103, no. 4, 25070 (1985). Optical absorption study of 5 samples.
- SPODUMENE. Gaite et al., (Phys. Chem. Miner. 12, 145-148) (1985). E.P.R. study of distortion of Fe⁺³ in structure.
- SPODUMENE. Garcia and Laguey, (IMA v. 2, 421-431) (1986), Mineral. Abstr. 38, 87M/2589 (1987) Analyses from Minas Gerais, Brazil, a 9.508, b 8.312, c 5.339 A, beta 110 deg. 56 min., harzite, a 9.520, b 8.290, c 5.267 A, beta 110 deg. 59 min. Optical absorption spectra
- SPODUMENE. Kalinichenko et al., (Mineral. Zh. 4, no. 6, 73-83 (1982)) Chem. Abstr. 98, no. 16, 129384 (1983). DTA, infra-red, TGA data on material with 0.03-0.40 (OH) per formula unit. Optics.
- SPODUMENE. Kalinichenko et al., (Mineral. Zh. 4(6), no. 6, 73-83) (1982), Mineral. Abstr. 35, 78 (1984). Analyses (21, not in Abstr.), unit cells.
- SPODUMENE. London and Burt, Mineral. Assoc. Canada Short Course no. 8, 99-133 (1982). Review of occurrence and properties in granite pegmatites.
- SPODUMENE. Marsch, (Mitt. Oesteri Mineral. Geol. 129, 13-18) (1983). Occurrence near Wollatratten, Austria.
- SPODUMENE. Skvortsov et al., (Zap. Vses. Mineral. O-va. 114, 216-219) (1985). Calculation of thermodynamic parameters.
- SPODUMENE. Van Duysen et al., (Phys. Chem. Miner. 10, 125-132) (1984), Chem. Abstr. 100, no. 18, 142382 (1984). Deformation at room temp.

- SREBRODOL'SKITE. Chesnokov and Baxhenova, (Zap. Vses. Mineral. O-va. 114, 195-199) (1985)(Russ.). New mineral from Urals, $\text{Ca}_2\text{Fe}^{+3}_2\text{O}_5$. Orth., G 4.04; Prma; a 5.420, b 14.752, c 5.59A. Analysis, optics, x-ray data.
- SRILANKITE. Abstr. in Am. Mineral. 69, 212 (1984). Abstract of original description.
- SRILANKITE. Willgallis and Hartl, (Z. Kristallogr. 164, 59-66) (1983), Chem. Abstr. 100, no. 10, 77724 (1984). Structure. Orth., Pbcn, a 4.706, b 5.553, c 5.024 A, Z=4.
- SRILANKITE. Willgallis et al., (Neues Jahrb. Mineral., Monatsh., no. 4, 151-157 (1983)(English)) Chem. Abstr. 98, no. 24, 201481 (1983). New mineral, (Zr,Ti) O_2 . Orth., Pbcn, a 4.708, 5.553, c 5.019A, G 4.77. Analysis, optics, X-ray.
- STANLEYITE. Abstr. in Bull. Mineral. 106, 636 (1983). Abstract of original description.
- STANLEYITE. Livingstone, (Mineral. Mag. 45, 163-166 (1982)) Am. Mineral. 68, 644-645 (1983). Abstract of original description.
- STANNITE. Corsini and Tavelli, (Rend. Soc. Ital. Mineral. Petrol. 39, 669-675) (1984)(Ital.). G(550)So15r. Microprobe analysis, x-ray data from Dachang, China.
- STANNITE. Distler and Laputina, Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 138-143 (Russian)(201In391g). Microprobe analysis from Norilsk deposit.
- STANNITE. Dobrovolskii and Zaozerina, (Geol. Rudn. Mestorozhd. 29(1), 46-58) (Russian) Microprobe analyses (4) from Maritime Province
- STANNITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- STANNITE. Hassan, (Sains Malays 13, 63-73) (1984), Chem. Abstr. 101, no. 18, 155074 (1984). Analyses (not in abstr.) from Malaysia.
- STANNITE. Moh et al., Neues Jahrb. Mineral., Abh. 150, 25-64 (1984)(English). Microprobe analyses (2) from Oruro, Bolivia.
- STANNITE. Moore and Howie, (Mineral. Mag. 48, 389-396) (1984). Microprobe analyses (6) from Cornwall, England.
- STANNITE. Nekrasova et al., (Mineral. Zh. 8(3), 79-84) (1986) (Russian) Microprobe analyses (2), Ag up to 2.78%
- STANNITE. Pietzsch and Fritzs, Chem. Erde 43, 117-127 (1984)(German). Chem. Abstr. 101, no. 6, 41192. Synthesis. High-temp. phase is tetragonal, I4, a 5.4194, c 10.851 A, Z=2.
- STANNITE. Ryabera, (Mineral. Rudn. Mestorozhd., 90-93) (1983), Chem. Abstr. 100, no. 16, 124242 (1984). Reflectances differ for material of 2 generations.
- STANNITE. Ryabeva et al., (Zap. Vses. Mineral. O-va. 113, 443-445) (1984)(Russ.). Analysis of stannite-like mineral from Golubo deposit, Maritime Province, composition $\text{Cu}_2\text{Fe}_2\text{Sn}_3\text{S}_7$.
- STANNITE. Soeda et al., (Neues Jahrb. Mineral., Abh. 150, 11-23) (1984)(Eng.). Microprobe analysis (1) from Tsumo, Japan percent.
- STANNITE. Sorokin and Osadchii, (Eksp. Issled. Endogen. Rudoobraz., 1981, 167-180) (1983) Chem. Abstr. 100, no. 26, 213093 (1984). Thermodynamics of sphalerite-stannite solid solutions calcd.
- STANNITE. Sugaki et al., (Sci. Rep. Tohoku Univ., Ser. 3, 15, 65-77 (1981)(English)) Chem. Abstr. 98, no. 20, 164103 (1983). Analyses from Oruro, Bolivia.

- STANNITE. Sugaki et al., Sci. Rep. Tohoku Univ., Ser. 3: Mineral., Petrol. Econ. Geol., 15, 65-77 (1981)(English). Microprobe analyses (29) from Boliva. X-ray data, a 5.453, c 10.7470A.
- STANNITE. Tornroos, Neues Jahrb. Mineral., Abh., 144, 107-123 (1982)(English). Microprobe analyses (1) from Finland.
- STANNITE. Wang, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 726-734 (1982). Review of synthetic work.
- STANNITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- STANNOIDITE. Chistyakova et al., (Mineral. Zh. 44, no. 4, 58-66 (1982)) Mineral. Abstr. 34, 178 (1983). Occurrence in Yana-Kolyma area, Siberia, a 10.68, b 5.30, c 16.34A.
- STANNOIDITE. Hassen (Sains Malays 13, 63-73) (1984), Chem. Abstr. 101, no. 18, 155074 (1984). Analyses (not in abstr.) from Malaysia.
- STANNOIDITE. Jambor and Owens, (Can. Mineral. 25, 227-228) (1987) Microprobe analyses (3) from Maggie Cu deposit, Brit. Columbia
- STANNOIDITE. Kovalenker and Geinke, Izv. Akad. Nauk SSSR 5, 91-104 (1984)(Russian). Microprobe analyses (11) from Kuranin Ridge, Tien-shan. Minerals of stannoidite group.
- STANNOIDITE. Moore and Howie (Mineral. Mag. 48, 389-396) (1984). Microprobe analyses (8) from Cornwall, England, Zn 2.53-3.43 percent. "Yellow stannite" from Cornwall is stannordite.
- STANNOIDITE. Shimizu and Shikazono, (Can. Mineral. 25, 229-236) (1987) Microprobe analyses (15) from Japanese ores
- STANNOIDITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- STANNOPALLADINITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- STARINGITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- STARINGITE. Khvostova et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 9, 89-100 (1982)) Chem. Abstr. 98, no. 6, 37784 (1983). Analyses and unit cell from Kazakhstan, G 7.17.
- STAUROLITE. Baker et al., (Jour. Metamorph. Geol. 5, 357-370) (1987) Microprobe analyses (1) from W. Australia
- STAUROLITE. Clarke et al., (Jour. Metamorph. Geol. 5, 291-306) (1987) Microprobe analyses (2) from Olary Block, S. Australia
- STAUROLITE. Delor, et al., J. Metamorph. Geol. 2, 55-72 (1984). Microprobe analyses (2), French Massif. Centrale.
- STAUROLITE. Droop and Bucher-Nurminen, J. Petrol. 25, 766-803 (1984). Microprobe analyses (1) from granulites, Italian Central Alps.
- STAUROLITE. Dutrow and Holdaway, Geol. Sci. Am. Abstracts of 97th Ann. Meeting, 497 (1984). Analyses of 27 staurolites showed 0.01-1.39% Li, 0.01-0.18% F.
- STAUROLITE. Feenstra (Geol. Ultralectina no. 39, 1-136) (1985)(Eng.). G(591)qUT3g. Microprobe analyses (13) from metamorphosed bauxites, Naxos, Greece.
- STAUROLITE. Foster, Am. Mineral. 68, 389-397 (1983). Thermodynamic model of biotite pseudomorphs after staurolite, Rangeley, Maine.
- STAUROLITE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983)(English). Microprobe analyses (6) from western Lepontine Alps.
- STAUROLITE. Gomez-Pugnaire and Sassi (Mem. Sci. Geol. Univ. Padova 36, 49-72) (1984)(Eng.). (G(550)qP2). Microprobe analyses (22), Betic cordillera, Spain.

- STAUROLITE. Grambling, Am. Mineral. 68, 373-388 (1983). Microprobe analyses (20), Northern N. Mex. Fe-Mg partitioning.
- STAUROLITE. Hemingway and Robie, Am. Mineral. 69, 307-318 (1984). Heat capacity of natural staurolite 5-370 degrees K. Entropy, enthalpy, Gibbs energy.
- STAUROLITE. Hiroi, Contrib. Mineral. Petrol. 82, 334-350 (1983). Microprobe analyses (14) from Hida, Japan.
- STAUROLITE. Karabinos (Contrib. Mineral. Petrol. 90, 262-275) (1985). Microprobe analyses (2) from schist near Jamaica, Vt.
- STAUROLITE. Lefebvre, Phys. Chem. Miner. 8, 251-256 (1982). Lattice defects in.
- STAUROLITE. Lonker, (Contrib. Mineral. Petrol. 84, 36-42) (1983), Mineral. Abstr. 35, 182 (1984). Hydroxyl per unit cell ($O + OH = 48$) on 46 samples gave 1.96 - 3.75.
- STAUROLITE. Mansy, (Soc. Geol. Nord Publ. 13(1), 291-344) (1986) (French) Microprobe analyses (17) from Omineca Mts., Brit. Columbia G(540)qn77p
- STAUROLITE. Mets et al., Zap. Vses. Mineral. O-va. 112, 208-212 (1983). Analyses (6) from pegmatites, Kola Peninsula (ZnO 1.08-7.44%). X-ray data, a 7.91, b 16.68, c 5.68A.
- STAUROLITE. Purtscheller and Mogessie (Tschermarks Mineral. Petrogr. Mitt. 32, 223-233) (1984)(Eng.). Electron microprobe analysis from Solden, Austria.
- STAUROLITE. Purtscheller and Mogessie, Tschermarks Mineral. Petrogr. Mitt. 32, 223-233 (1984)(Eng.). Analysis from amphibolite, Austria.
- STAUROLITE. Schreyer, et al., Contrib. Geol. 86, 200-207 (1984). Microprobe analyses (1) from Limpopo belt, Africa. (MgO 5.31%)
- STAUROLITE. Selverstone and Munoz, (Contrib. Mineral. Petrol. 96, 426-440) (1987) Microprobe analyses (3) from Eastern Alps
- STAUROLITE. Selverstone, et al., J. Petrol. 25, 501-531 (1984). Microprobe analyses (5) from Tavern, Austria.
- STAUROLITE. Sharma et al, (Hyperfine Interact. 35, 871-874) (1987), Chem. Abstr. 107, no. 6, 48785 (1987) Mossbauer study
- STAUROLITE. Sizykh (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 68-84) (1983)(Russ.). 480 (690.3) M662. Analyses (5) from Biryusin metamorphic rocks. Optics.
- STAUROLITE. Spear, J. Petrol. 23, 383-426 (1982). Microprobe analyses (4), Mt. Cube quadrangle, Vermont.
- STAUROLITE. Tagai and Joswig, (N. Jb. Miner. Mh., 97-107) (1985), Mineral. Abstr. 38, 87M/2101 (1987) Neutron diffraction study of structure at 100 deg. K Microprobe analysis from St. Gotthard, Switzerland
- STAUROLITE. Tuisku et al., (Geochim. Cosmochim. Acta 51, 1639-1650) (1987) Microprobe analyses (36) from Finland with ZnO up to 0.526%
- STAUROLITE. Ward (Am. Mineral. 69, 531-540) (1984). Microprobe analyses (10) from New Zealand with MgO up to 6.5 percent. ("magnesium staurolite") a 7.891, b 16.617, c 5.658A. Also with Cr_2O_3 up to 2.01 percent.
- STAUROLITE. Ward (Am. Mineral. 69, 541-545) (1984). Color probably due to Ti in tetrahedral Fe^{+2} site.
- STAUROLITE. Williams, Mineral. Mag. 47, 233-235 (1983). Microprobe analysis from Fornas, Spain.
- STEACYITE. Parodi and Della Ventura, (N. Jb. Miner., Mh., 233-239) (1987) (Eng) Analysis from Los Islands, Guinea, Tetrag., P4/mcc, a 7.583, c 14.763 A
- STEENSTRUPINE. Konnerup-Madsen et al., (Rep. - Geol. Surv. Greenl., no. 103, 113-118 (1981)(English)) Chem. Abstr. 98, no. 16, 129432 (1983). Hydrothermal decomposition at 200-600`.

- STEIGERITE. Ankinovich et al., (Zap. Vses. Miner. O-va 116, 100-113) (1987) (Russian) Analyses (2) from Kara-Tan, Kazakhstan, Optics Monoc., $P2_1$ or $P2/m$, a 11.840, b 25.00, c 11.040 Å, beta 111 deg. 10 min., X-ray data, DTA, $P2_1/n$ or $P2_1$, DTA, Infra-red formula near $Al(V,P)O_{11} \cdot 3H_2O$
- STENONITE. Hawthorne, Can. Mineral. 22, 245-251 (1984). Structure. Mon., $P2_1/n$, a 5.450, b 8.704, c 13.150 Å, beta 98.72 degrees, Z=4.
- STEPHANITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167) (1986) (Russian) 431 M565 Microprobe analyses (2) from gold-silver deposits
- STEPHANITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- STEPHANITE. Kaspar et al. (N. Jb. Miner., Mh. 19-28) (1985)(Eng.). Microprobe analyses (4) from Trebsko, Czechoslovakia, a 7.838, b 12.460, c 8.535 Å.
- STEPHANITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg. Microprobe analyses (4)
- STEPHANITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- STEPHANITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (5) from S. Korea Reflectivity
- STEPHANITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- STEPHANITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- STERNBERGITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- STERNBERGITE. Sveshnikova and Bocheh, Nov. Dannye Mineral. 30, 135-139 (1982). Analyses (5), optics, x-ray.
- STERNBERGITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- STEVENSITE. Leoni and Sartori, Neues Jahrb. Mineral., Monatsh. 1983, 556-562 (English). Pseudomorph after periclase from Procidi Island, S. Italy. Microprobe analysis (5).
- STEVENSITE. Otsuka, et al., (J. Mineral. Soc. Jpn. 14 (Spec. Issue 1), 170-186) (1979), Mineral. Abstr. 35, 160 (1984). Hydrothermal formation from pectolite.
- STIBARSEN. Bernardini et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 649-656) (1984)(Ital.). G(550)So15r. Stability relations in system As-Sb.
- STIBIOLUZONITE. Walenta (Aufschluss 35, 235-236) (1984). Occurrence in Clara mine, Black Forest, Germany.
- STIBIOMICROLITE. Groat et al., (Geol. Foren. Forh. 104, 105-109) (1987) (Eng) New microprobe analyses (3) from Varutrask pegmatite with Sb_2O_3 12.03 to 19.24% X-ray data, a 10.455 Å Revalidation
- STIBIOPALLADINITE. Malyugin and Vilisov (Ezheg. Inst. Geol. Geokhim. 1981, 87-88) (1982). Chem. Abstr. 101, no. 14, 114098 (1984). Occurrences in placers, Urals.
- STIBIOPALLADINITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- STIBIOTANTALITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- STIBIOTANTALITE. Popolitov et al., (Inhomogeneity Miner. Cryst. Growth (Proc. XI Gen. Mtg. IMA, Novosibirsk), 262-267 (1980)) Mineral. Abstr. 34, 35 (1983). Kinetics of growth of crystals.
- STIBIVANITE. Abstr. in Bull. Mineral. 106, 636-637 (1983). Abstract of original description.

- STIBNITE. Bortnikov, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 66-75 (1981)(Russian) (Sulfosalt Vol.). Stability in system Fe-Pb-Ag-Sb-As-S.
- STIBNITE. Fortey et al. (Proc. Yorkshire Geol. Soc. 45, 59-65) (1984). Microprobe analyses from Wales.
- STIBNITE. Gerthofferova, (Mineral. Sl. 13, 363-371 (1981)) Mineral. Abstr. 34, 179 (1983). Transmission electron microscopy.
- STIBNITE. Kozlov and Masalovich, (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 59-66 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 26, 219052 (1983). Solubility in H₂O and NaCl solutions at 140-350°.
- STIBNITE. Nekrasov and Lunin, (Mineral. Zh. 9(1), 25-39) (1987) (Russian) Stability in system Ag-Sb-S-Se, 300 deg. and 400 deg.
- STIBNITE. Nekrasov, (Mineral. Zh. 7, 51-72) (1985) (Russian) Stability in system Ag-Au-Sb
- STIBNITE. Terzinc, (Glas. Prir. Muz. Beogradu Ser. A 37, 51-115) (1982), Chem. Abstr. 102, no. 4, 28627 (1985). Tl and Hg in, from Yugoslavia.
- STIBNITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- STILBITE. Akizuki (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 75, 38-40) (1985), Mineral. Abstr. 35, 18 (1984). Ordering of Al and Si in and effect on sector growth and optics.
- STILBITE. Akizuki and Konno (Am. Mineral 70, 814-821) (1985). Analyses (3) from Japan, N. Korea, and India, optics. X-ray study shows (001) sector is orth., (11) sector monoclinic, but optical study shows stilbite to be triclinic. Order-disorder relations.
- STILBITE. Joshi and Bhoskar, (Cryst. Res. Technol. 18, 213-218 (1983)) Chem. Abstr. 98, no. 18, 146708 (1983). Photoluminescence.
- STILBITE. Lion, Mem. Geol. Soc. China 5, 47-66 (1983)(English)(G(611)G292m) Composition and stability in low-grade metamorphic rocks.
- STILBITE. Liou et al. (Mineral. Mag. 49, 321-333) (1985). Stability in P-T diagram of system Na₂O-CaO-MgO-Al₂O₃-SiO₂-H₂O.
- STILBITE. Mortier, Am. Mineral. 68, 414-419 (1983). Structure of dehydrated NaNH₄ from thermal stability of the stilbite-type framework.
- STILBITE. Taniguchi and Abe (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 76, 324-330) (1981), Mineral. Abstr. 36, 86 (1985). Analysis, optics from Bomeki, Japan, G 2.22, a 13.43, b 18.21, c 11.21A, beta 128.9 degrees.
- STILBITE. Ueno and Hanada, J. Mineral. Soc. Jpn. 15, 259-272 (1982)(Japanese). Analysis, X-ray data, Fukuoka Pref., Japan, a 13.61, b 18.15, c 11.29A, beta 129.3°, Na₂O 6.63, CaO 3.72%.
- STILLWATERITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- STILPNOMELANE. Beck, (Soc Geol. Nord Publ. 14, 191-280) (1986) (French) G(540) qN77p Microprobe analyses (5) from near Caracas, Venezuela
- STILPNOMELANE. Cotkin, (Contrib. Mineral. Petrol. 96, 192-200) (1987) Microprobe analysis (1) from blueschist, N. Calif.
- STILPNOMELANE. Dunn, et al., Can. Mineral. 22, 259-263 (1984). Analyses of ferristilpnomelane, Franklin, and 4 stilpnomelanes with Mn dominant.
- STILPNOMELANE. Feininger (Can. Mineral. 22, 423-435) (1984). Microprobe analyses (11), Quebec Appalachians.
- STILPNOMELANE. Franceschelli et al. (Rend. Soc. Ital. Mineral. Petrol. 39, 491-496) (1984)(Eng.). G(550)So15r. Microprobe analyses (4), Mt. Contrario, Italy.
- STILPNOMELANE. Maruyeme and Liou, Am. Mineral. 70, 16-29 (1985). Microprobe analyses (2) from Shikoku, Japan.

- STILPNOMELANE. Munha, *Comun. Serv. Geol. Port.* 69, 3-35 (1983)(English).
Microprobe analyses (11) from Iberian pyrite belt.
- STILPNOMELANE. Robinson, *Econ. Geol.* 79, 1796-1817 (1984). Microprobe analyses
(3) from iron formation. Timmins, Ont.
- STISHOVITE. Akaogi and Navrotsky (*Phys. Earth Planet. Inter.* 36, 124-134)
(1984), *Chem. Abstr.* 102, no. 14, 116713 (1985). Heat of solution and
enthalpies of transition coesite-quartz, coesite-stishovite.
- STISHOVITE. Dolgov et al., (*Geol. Geofiz.* 1, 77-81) (Russian) (1987), *Chem.*
Abstr. 107, no. 10, 81407 (1987) Occurrence at Lunar meteoritic impact
crater, India
- STISHOVITE. Hill et al., (*J. Solid State Chem.* 47, 185-200 (1983)) *Chem.*
Abstr. 98, no. 24, 207960 (1983). Structure. Tetrag., $P4(2)/mmm$, a 4.1773,
 c 2.6655A, $Z=2$.
- STISHOVITE. Kieffer, (*Rev. Geophys. Space Phys.* 20, 827-849 (1982)) *Chem.*
Abstr. 98, no. 4, 19591 (1983). Calculations of thermodynamic properties,
application to phase equil.
- STISHOVITE. Slawomir, *Phys. Chem. Miner.* 10, 133-136 (1984). Relation of n to
 G .
- STISHOVITE. Thomas et al., (*Geophys. Res. Lett.* 10, 91-92 (1983)) *Chem.*
Abstr. 98, no. 14, 110818 (1983). Nuclear magnetic resonance study.
- STISTAITE. Novgoroda; *Int. Geol. Congress, 1980, Dokl. Society Geol.,*
Geokhim., Mineral., Petrol., 108-113 (Russian with English abstr.).
Microprobe analyses (3) from S. Urals. Cubic, a 4.16 A, x-ray powder data
(201 In 39(g)) contains Pb 13.04-13.46%.
- STOKESITE. Foord, *Mineral. Assoc. Canada Short Course no. 8,* 187-238 (1982).
Review of occurrence in granite pegmatites.
- STOLZITE. Getmanskaya et al., (*Nov. Dannye Miner.* 30, 183-186 (1982)) *Chem.*
Abstr. 98, no. 26, 219075 (1983). Analysis, optics from North Buryat.
- STOLZITE. Hazen et al. (*J. Phys. Chem. Solids* 46, 253-263) (1985). *Chem.*
Abstr. 102, no. 22, 195561 (1985). Structures and unit cells at pressures
up to 6.0 GPa.
- STRACZEKITE. Abstract in *Am. Mineral.* 70, 877 (1985). Abstract of original
description.
- STRACZEKITE. Evans, et al., *Mineral. Mag.* 48, 289-293 (1984). New mineral,
(Ca,Ba,K,Na)(V⁺⁴,V⁺⁵,Fe⁺³)₂O₂₀3H₂O, monoclinic, a 11.679, b 3.660, c 10.636 A,
beta 100.53 degrees, G calcd. 3.21. Analysis, x-ray data.
- STRAETLINGITE. Passaglia and Turconi, (*Riv. Mineral. Ital.,* no. 4, 97-110
(1982)) *Chem. Abstr.* 98, no. 20, 164141 (1983). Occurrence at Montalto di
Castro, Italy.
- STRINGHAMITE. Hawthorne (*Tschermaks Mineral. Petrogr. Mitt.* 34, 15-24) (1985).
Structure. Mon., $P2_1/c$, a 5.030, b 16.135, c 5.343A, beta 102.96 degrees,
 $Z=4$ (CaCuSiO₄ 1 H₂O), not 2 H₂O.
- STROMEYERITE. Raabe and Sack, *Can. Mineral.* 22, 577-582 (1984). Microprobe
analysis (1) from Alma, Colo.
- STROMEYERITE. Sakharova and Bryzgalov, *Mineral. Rudn. Mestorozhd.* 1983, 37-48
(Russian)(410M662). Microprobe analysis, N.E. U.S.S.R.
- STROMEYERITE. Sakharova and Bryzgalov, *Mineralogy of Ore Deposits,* 37-48
(1983)(Russian) (410M662).
- STRONTIANITE. Busenberg et al. (*Geochim. Cosmochim. Acta* 48, 2021-2035)
(1984). Solubility in CO₂-H₂O solutions 2-91 degrees C. Thermodynamic
properties.
- STRONTIANITE. Busenberg, et al., (*Geochim. Cosmochim. Acta.* 48, 2021-2035)
(1984), *Chem. Abstr.* 102, no. 2, 9826 (1985). Solubility, 2-91 degrees.
Thermodynamic constants.

- STRONTIANITE. Gaft et al. (Zap. Vses. Mineral. O-va. 113, 332-340) (1984), Chem. Abstr. 101, no. 18, 155021 (1984). X-ray and photoluminescence spectra.
- STRONTIANITE. Gevorkyan and Povarennykh, Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim. Biol. Nauki, no. 11, 8-12 (1983)(Ukrainian). Infra-red spectrum.
- STRONTIANITE. Millero et al. (Geochim. Cosmochim. Acta 48, 1141-1143) (1984). Solubility in NaCl solutions at 25 degrees.
- STRONTIANITE. Plummer and Busenberg, (Geochim. Cosmochim. Acta 51, 1393-1441) (1987) Thermodynamics of aragonite-strontianite solid solutions Solubility in H₂O-CO₂ solution at 25 deg. and 76 deg. C
- STRONTIANITE. Ramirez de Agudelo and Stone, (Mater. Sci. Monogr. 10(React. Solids, v. 2), 695-701 (1982)) Chem. Abstr. 98, no. 20, 171832 (1983). Synthesis of calcian.
- STRONTIOPYROCHLORE. Lapin et al., (Geol. Rudn. Mestorozhd. 29(1), 30-) (1987) (Russian) Analyses (1) from carbonatite, Yenisen region
- STRUVITE. Abbona et al. (Acta Cryst. 40B, 223-227) (1984), Mineral. Abstr. 36, 19 (1985). Structure. Pm2.
- STRUVITE. Abbona, et al., (Acta Crystallogr., Sect. B, B40, 223-227) (1984), Chem. Abstr. 101, no. 2, 15412 (1984). Synthetic is orth., space group, Pnm2₁, a 6.955, b 6.142, c 11.218 Å, Z=2, G 1.70.
- STRUVITE. Abbona and Boistelle (Cryst. Res. Technol. 20, 133-140) (1985). Growth of crystals from solution.
- STRUVITE. Boistelle (Phys. Chem. Miner. 9, 216-222) (1983), Mineral. Abstr. 35, 43 (1984). Conversion of struvite to newberyite in solution.
- STUETZITE. Grozdev, et al., Tikhoo-okeanisk. Geol., no.5, 113-116 (1982)(Russian) (G(690.2)T448). Analysis from Maritime Prov. USSR.
- STUETZITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- STUMPFLITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- STURMANITE. Abstract in Mineral. Abstr. 36, no. 2, 207 (1985). Abstract of original description.
- STURMANITE. Peacor, et al., (Can. Mineral. 21, 705-709) (1983), Chem. Abstr. 100, no. 12, 88882 (1984). Abstract of original description.
- STURTITE. Abbona et al. (J. Cryst. Growth 57, 6-14) (1982), Mineral. Abstr. 35, 19 (1984). Crystallization from solution at 25 degrees C.
- STURTITE. Eggleton et al., (Clay Miner. 18, 21-31 (1983)) Chem. Abstr. 98, no. 24, 201492 (1983). Analyses, X-ray, Mossbauer indicate amorphous or gel structure in series hisingerite - sturtite - neotocite.
- STUTZITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (2) from gold-silver deposits
- STUTZITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- STYLOTYPITE. Sjöberg and Rickard, (Geochim. Cosmochim. Acta 47, 2281-2286) (1983), Chem. Abstr. 100, no. 6, 37261 (1984). Rate of solution.
- SUANITE. Lisitskyn et al., (Mineral. Zh. 7(5), 32-40) (1985) (Russian) Analysis from Tazkno deposit, S. Yakutia X-ray, DTA
- SUDBURYITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- SUDOITE. Fransolet and Schreyer, Contrib. Mineral. Petrol. 86, 409-417 (1984). Mineral. Abstr. 36, 48 (1985). Synthesis, Stability in system MgO-Al₂O₃-SiO₂-H₂O at low temps.
- SULFOBORITE. Giese and Penna, Am. Mineral. 68, 255-261 (1983). Structure. Orth., Pm3a, a 10.132, b 12.537, c 7.775 Å, Z=4.

- SULFUR. Hartman, Phys. Chem. Miner. 11, 149-152 (1984). Structural morphology of orthorhombic S.
- SULFUR. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SULPHOTSUMOITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SULPHOTSUMOITE. Zaviyalov and Begizov, (Zap. Vses. Mineral. O-va. 111, 316-320 (1982)) Mineral. Abstr. 34, 185 (1983). Abstract of original description.
- SULVANITE. Menshchikova et al., (Izv. Akad. Nauk SSSR, Neorg. Mater., 18, 1954-1964 (1982)) Chem. Abstr. 98, no. 8, 60663 (1983). Stability in system $Cu_2S-V_2S_5$.
- SUOLUNITE. Stanger and Neal, Mineral. Mag. 48, 143-146 (1984). Analysis from Oman, x-ray data, a 11.14, b 19.78, c 6.01 Å.
- SURINAMITE. de Roever and Vrana, (Am. Mineral. 70, 710-713) (1985). Pseudomorph after cordierite in granulite from Zambia (previously identified as sapphirine). Partial analysis.
- SURSASSITE. Allmann, (Fortschr. Mineral. 62, Beih. 1, 3-4) (1984). Structure. Pz_1/m , a 8.719, b 5.808, c 9.813 Å, beta 109 degrees, Z=2, G calcd. 3.57,
- SURSASSITE. Mellini et al., (Phys. Chem. Miner. 10, 99-105) (1984), Chem. Abstr. 100, no. 18, 142380 (1984). Structure. Mon., $P2_1/m$, a 8.70, b 5.79, c 9.78, beta 108.9 degrees, formula $Mn_2Al_3(SiO_4)(Si_2O_7)(OH)_3$. Closely related to macfallite.
- SUSANNITE. Baptista, (An. Acad. Bras. Cienc. 55, 263-270 (1983), Chem. Abstr. 100, no. 8, 54664 (1984). Samples from Italy and Brazil, labeled leadhillite, are susannite with a 9.076, c 11.558 Å, and a 8.999, c 11.481 Å, resp.
- SUSANNITE. Russell et al., Mineral. Mag. 48, 295-297 (1984). Infra-red spectrum.
- SUZUKIITE. Matsubara et al., (Mineral. J. 11, 15-20 (1982)) Am. Mineral. 68, 282 (1983). Abstract of original description.
- SVANBERGITE. Stoffregen and Alpers, (Can. Mineral. 25, 201-211) (1987) Microprobe analyses (2) from hydrothermal ore deposits, Summitville, Colo., La Escondida, Chile Summary of all occurrences
- SVEITE. Martini, (Trans. Geol. Soc. S. Afr. 83, 239-241 (1980)) Mineral. Abstr. 34, 185 (1983). Abstract of original description.
- SVERIGEITE. Dunn et al., (Geol. Foeren. Stockholm Foerh. 106, 175-177) (1984)(Eng.), Chem. Abstr. 103, no. 8, 56901 (1985). New mineral, $NaMgMnBe_2SnSi_3O_{12}(OH)$, from Langban. Orth., $Ibmm$ or $Ibm2$, a 6.818, b 13.273, c 10.815 Å. Analysis, optics, x-ray data.
- SVYAZHINITE. Abstract in Am. Mineral. 70, 877 (1985). Abstract of original description.
- SVYAZHINITE. Chesnokov et al., (Zap. Vses. Mineral. O-va. 113(3), 347-351) (1984), Chem. Abstr. 101, no. 20, 174800 (1984). New mineral, $(Mg, Mn, Ca)(Al, Fe^{3+})(SO_4)_2 \cdot F \cdot 14H_2O$. Triclinic, a 6.217, b 13.306, c 6.255 Å, alpha 90 degrees 09', beta 93 degrees 50', gamma 82 degrees 05', Z=1, G 1.69. Optics, DTA. Compare aubertite.
- SWARTZITE. Mereiter, (N. Jb. Miner. Mh., 481-482) (1986), Mineral. Abstr. 38, 87M/2145 (1987) Structure of synthetic Monoc., $P2_1/m$, a 11.080, b 4.634, c 6.439 Å; beta 99.43 deg., Z=2 Structure of Sr analogue
- SWEETITE. Clark et al., (Mineral. Mag. 48, 267-269) (1984), Chem. Abstr. 101, no. 2, 10116 (1984). Abstract of original description.

- SWEETITE. Clark, et al., Abstract in Am. Mineral. 70, 438 (1985). Abstract of original description.
- SWEETITE. Clark, et al., Mineral. Mag. 48, 267-269 (1984). New mineral, $Zn(OH)_2$, tet., a 8.322, c 14.34 A, Z=20. From Milltown, Eng., Analysis, x-ray data, optics. G 3.33.
- SYLVANITE. Ermolaev et al., (Zap. Vses. Miner. O-va 116, 85-93) (1987) (Russian) Analyses (16) of electrum from black schists
- SYLVANITE. Kovalenkar, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analysis (5) from gold-silver deposits
- SYLVANITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- SYLVANITE. Van Tendeloo, et al., (J. Solid State Chem. 50, 335-361) (1983), Chem. Abstr. 100, no. 14, 112585 (1984). Electron microscope study of modulated structures in.
- SYLVANITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- SYLVITE. Apollonov and Koshchug, (Nov. Dannye Miner. 30, 174-175 (1982)) Chem. Abstr. 98, no. 26, 219074 (1983). Radiation-induced color centers in.
- SYLVITE. Yamamoto and Anderson, (Phys. Chem. Minerals 14, 332-340) (1987) Elasticity and anharmonicity at temperatures up to 870 deg. K
- SYNCHISITE-(Nd). Scharm and Kuhn, Abstract in Mineral. Abstr. 36, 94 (1985). Abstract of original description.
- SYNCHYSITE. DeVito and Ordway, Mineral. Rec. 15, 273-290 (1984). Occurrences in Jensen quarry, Riverside Co., Calif.
- SYNCHYSITE. Stepanov, et al, Nov. Dannye Mineral. 30, 147-154 (1982). Analysis, x-ray data from Kazakhstan.
- SYNGENITE. Cavaretta, et al., (Neues Jahrb. Mineral., Abh. 147, 304-314) (1983)(English), Mineral. Abstr. 35, 190 (1984). Occurrence in Latium, Italy, a 9.768, b 7.139, c 6.255 A, beta 104.02 degrees, G 2.58. Optics.
- SZAIBELYITE. Lisitsyn et al. (Zap. Vses. Mineral. O-va. 114, 62-73) (1985), Chem. Abstr. 103, no. 2, 9130 (1985). Analyses from Yakutia, unit cell a 12.562, b 10.418, c 3.128A, beta 95.10 degrees, infra-red. DTA.
- SZAIBELYITE. Mel'nik et al. (Mineral. Sb. (Lvov) 38, no. 1, 12-18) (1984). Occurrence in kimberlites, Yakutia. X-ray, DTA, infra-red, optics.
- SZAIBELYITE. Zinchuk et al. (Dokl. Akad. Nauk SSSR 275(2), 459-464) (1984) (Russ), Chem. Abstr. 101, no. 16, 134272 (1984). Analyses of ferroan szabelyite from kimberlite, Yakutsk, FeO 28.74 percent, x-ray, DTA data.
- TADZHIKITE. Chernitsova, et al., (Dokl. Akad. Nauk SSSR, Soviet Physics 27, 367-368) (1982), Mineralog. Abstr. 34, 396 (1983). Structure. Mon., P2/a, a 18.946, b 4.714, c 10.302 A, Z=2. $Ca_3(RE)_2(Ti,Fe) B_4(Si,Al)_4 O_{22}$. Related to hellandite.
- TAENIOLITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerre complex, Greenland.
- TAENIOLITE. Rumyantseva et al. (Zap. Vses. Mineral. O-va. 113, 68-75) (1984), Mineral. Abstr. 36, 83 (1985). Analysis, optics from Karelia.
- TAENITE. Semenenko et al., (Mineral. Zh. 7(5), 78-86) (1985) (Russian) Microprobe analyses (12) from Krymko chondrite
- TAENITE. Semenenko et al., (Mineral. Zh. 8(3), 52-58) (1986) (Russian) Microprobe analyses (7) from 2 chondrites
- TAGILITE. Wappler (Z. Geol. Wiss. 12(6), 705-709) (1984), Chem. Abstr. 102, no. 14, 116744 (1985). Material from type localities is pseudomalachite.
- TAIMYRITE. Kulichikhina, Mineral. Rudn. Mestorozhd. 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- TAIMYRITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes

- TALC. Chernosky et al. (Am. Mineral 70, 223-236) (1985). Stability in the system $MgO-SiO_2-H_2O$.
- TALC. Chopin, (Geol. Soc. Am. Mem. 164, 31-42) (1986) Microprobe analyses (2) from Dora Maira massif, W. Alps
- TALC. Chopin, Contrib. Mineral. Petrol. 86, 107-118 (1984). Microprobe analyses (1) from blue schists, W. Alps. Nearly pure pyrope.
- TALC. Durovic and Weiss, (Silikety 27, 1-18) (1983), Mineralog. Abstr. 34, 397 (1983). Polytypes of.
- TALC. Frietsch (Geol. Foeren. Stockholm Foerh. 106, 219-230) (1984)(Eng.). Analysis (1) from skarn Fe ores, northern Sweden.
- TALC. Frost (J. Petrol. 26, 31-63) (1985). Calculation of stability in system Fe-Mg-Si-O-H.
- TALC. Hoinkes, Schweiz. Mineral. Petrogr. Mitt. 63, 95-114 (1983)(English). Microprobe analyses (3) from Tyrol.
- TALC. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe analyses (6).
- TALC. Kager and Oen, Mineral. Mag. 47, 229 and 230-231 (1983). Microprobe analyses (2) from Sierra de Cartagena, Spain (FeO 19.56, 18.68%). Optics, X-ray data.
- TALC. Kiseleva, et al., (Geokhimiia, no. 12, 1745-1755) (1983), Chem. Abstr. 100, no. 8, 54703 (1984). Heat of solution. Calcn. of heat of formation and enthalpy of formation.
- TALC. Krupka et al. (Am. Mineral. 70, 261-271) (1985). High-temp. heat capacities and derived thermodynamic properties.
- TALC. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganiferous cherts, Alps
- TALC. Scrivener and Sanderson, (Rep. - Inst. Geol. Sci. (U.K.), no. 82-1, 58-60 (1982)) Chem. Abstr. 98, no. 26, 219049 (1983). Optics from halite deposit, Somerset, England. Analysis.
- TALC. Slutskii, et al., (Geokhimiia, 314-323) (1984), Chem. Abstr. 100, no. 20, 159671 (1984). Stability relations in system $MgO-SiO_2-H_2O$.
- TALC. Spear, J. Petrol. 23, 383-426 (1982). Microprobe analyses (2), Mt. Cube quadrangle, Vermont.
- TALC. Vivallo (Geol. Foeren. Stockholm Foerh. 106, 257-267) (1985)(Eng.). Microprobe analysis from metamorphic rocks, Garpenberg, Sweden.
- TANEYAMALITE. Aoki, et al., (Mineral. J. Japan 10, 385-395) (1981)(English), Mineral. Abstr. 35, 184 (1984). New mineral, $(Na,Ca)(Mn^{+2}, Mg, Fe^{+2}, Fe^{+3}, Al)_{12}(Si, Al)_{12}(O, OH)_{44}$, Mn analogue of howeite. Analysis, optics, x-ray data. Triclinic, a 10.1882, b 9.7544, c 9.5674 Å, alpha 90.429, beta 71.025, gamma 109.168 Å, G 3.30.
- TANTALITE. Korovushkin, et al., Mineral. Rudn. Mestorozhd. 1983, 82-89 (Russian)(410M662). Analyses (1). Mossbauer study.
- TANTITE. Abstract in Mineral. Abstr. 35, 194 (1984). Abstract of original description.
- TAPIOLITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- TAPIOLITE. Ito (Tohoku Kogyo Gijutsu Shikensho Hokoku 17, 14-18) (1984)(Jpn.), Chem. Abstr. 101, no. 18, 154997 (1984). Synthesis of $FeTaO_4$, a 4.695, c 3.046 Å.
- TAPIOLITE. Khvostova et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 9, 89-100 (1982)) Chem. Abstr. 98, no. 6, 37784 (1983). Analyses and unit cell from Kazakhstan, G 7.24.
- TARAMELLITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Defined as $Ba_4(Fe^{+3}, Ti^{+4}, Fe^{+2}, Mg)_4(B_2Si_8O_{27})O_2Cl_x$ with $Fe > Ti$. Review of unit cell data, optics. Forms a series with titantaramellite.

- TARBUTTITE. Lai and Shi (Yanshi Kuangwu Ji Ceshi 2, no. 4, 40-45) (1983), Chem. Abstr. 101, no. 20, 174792 (1984). Occurrence at Guangdong Prov., China, X-ray, DTA; infra-red data.
- TAUSONITE. Abstr. in Am. Mineral. 70, 218 (1985). Abstract of original description.
- TAUSONITE. Vorob'ev et al., (Zap. Vses. Mineral. O-va. 113, 86-89) (1984), Chem. Abstr. 100, no. 24, 195196 (1984). New minerals, SrTiO₃, cubic, Pm3m, a 3.913 Å; Z=1. Analysis, optics, n. 240.
- TAUSONITE. Vorob'ev, et al., Abstract in Mineral. Abstr. 36, 94 (1985). Abstract of original description.
- TAVORITE. Genkina et al. (Soviet Physics Dokl. 29, 27-30) (1984), Mineral. Abstr. 36, 19 (1985). Structure. Triclinic, PT, a 5.138, b 5.307, c 7.442 Å, alpha 67.48 degrees, beta 67.72 degrees, gamma 81.98 degrees, Z=2, G 3.33.
- TAVORITE. Genkina, et al., (Kristallografiia 29, 50-55) (1984), Chem. Abstr. 100, no. 18, 148859 (1984). Structure of synthetic. Triclinic, PT, a 5.138, b 5.307, c 7.442 Å, alpha 67.48 degrees, beta 67.72 degrees, gamma 81.98 degrees, Z=1, G calcd. 3.328.
- TAYLORITE. Groat and Hawthorne (Can. Mineral. 23, 259-260) (1985).
- TAZHERANITE. Dias Menezes and Martins, Mineral. Rec. 15, 261-270 (1984). Occurrence in Jacupiranga carbonatite, Brazil.
- TAZHERANITE. Sidorov, Mineralogy of Cibaikalie, 88-137 (103(690.3)M662p). Analyses from SW Baikal (1).
- TEALLITE. Nekrasova et al., (Mineral. Zh. 8(3), 79-84) (1986) (Russian) Microprobe analysis
- TEALLITE. Sugibuchi et al., (Ganseki Kobutsu Kosho Gakkaishi 81, 393-398) (1981), Chem. Abstr. 107, no. 10, 81098 (1987) Analysis (not in abs.), a 4.258, b 11.447, c 4.103 Å, from Toyoka mine, Hokkaido Reflectance
- TELARGPALITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- TELLURANTIMONY. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (5) from gold-silver deposits
- TELLURANTIMONY. Nakata et al., (Jour. Mineral. Soc. Japan 17, 79-83) (1985) (Jap) Analysis from Sapporo, Japan
- TELLURIUM. Beran, Neues, Jahrb. Mineral., Monatsh, 83-91 (1984). Reflectance.
- TELLURIUM. Berbeleac and David, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 283-295 (1982). Analyses from Musariu, Romania, G 6.02-6.16. Optics, X-ray data.
- TELLURIUM. Xu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- TELLUROBISMUTHITE. Gamyamin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (4) from E. Yakutia
- TELLUROBISMUTHITE. Harris et al., Can. Mineral. 21, 137-143 (1983). Occurrence at Ashley deposit, Ont. Probe analysis.
- TELLUROBISMUTHITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (5) from gold-silver deposits
- TELLUROBISMUTHITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- TELLUROBISMUTHITE. Pouclet et al., (Jour. Africa Earth Sci. 6, 29-43) (1987) (French) Microprobe analyses (1) from Akjoujt Cu deposit, Mauritania
- TELLUROBISMUTHITE. Smorodina, et al., (Cryst. Res. Technol. 19, 601-605) (1984)(English), Chem. Abstr. 100, no. 26, 219237 (1984). Effect of impurities on shape of crystals.
- TELLUROBISMUTHITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes

- TEMAGAMITE. Loucks and McCallum (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 200-218) (1980)(Eng.) (Sulfosalt Vol.). Microprobe analysis (1), Rambler mine, Wyo.
- TEMAGAMITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- TENNANTITE. Tufar (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 148-157) (1980)(Eng.) (Sulfosalt Vol.). Reflectance.
- TENNANTITE. Basu, et al., Neues Jahrb. Mineral., Abh. 149, 143-161 (1984)(English). Microtextures due to metasomatic replacements. Microprobe analyses (6) from Rajasthan, India.
- TENNANTITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167) (1986) (Russian) 431 M565 Microprobe analyses (35) from gold-silver deposits
- TENNANTITE. Bortnikov et al., (Mineral. Zh. 8(3), 61-64) (1986) (Russian) Microprobe analyses (1) from E. Karamazar
- TENNANTITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (6) from Chikuashih ore deposit, Taiwan.
- TENNANTITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (14) from Sark, Channel Islands.
- TENNANTITE. Janjic and Svetkovic (Copper, bor, 36, 15-18) (1983)(Eng.), Chem. Abstr. 101, no. 10, 76095 (1984). Analysis from Bor, a 10.189 A. Reflectance.
- TENNANTITE. Kovalenker et al., (Gold and Silver deposits, "Nauka", Moscow, 91-110) (1986) (Russian) 431 M 565 Microprobe analyses (14) from Bulgaria
- TENNANTITE. Kovalenker and Rusinov, (Mineral. Zh. 8(2), 57-70) (1986) (Russian) Microprobe analyses (9) and conditions of formation
- TENNANTITE. Malinov, (Geokhim., Mineral., Petrol. 23, 45-53) (1987) (Bulgarian) G(595)G272 Analyses (2) of zincian, Madan ore field, Zn 5.7, 5.2%
- TENNANTITE. Moh, et al., Neues Jahrb. Mineral., Abh. 150, 25-64 (1984)(English). Microprobe analyses (6) from Qurivilca, Peru with Mn 1.96 - 5.15% and 1 from Balmati, N.Y.
- TENNANTITE. Mozgova, (Proc. 13th Meeting, IMA, Varna, 1982, 199-213) (1986) (Russian) Isomorphism in the series tetrahedrite-tennantite
- TENNANTITE. Nishiyama, et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 281-289 (1983)(English) Minor elements in (3), Sulawesi, Indonesia.
- TENNANTITE. Pattrick, Mineral. Mag. 48, 85-91 (1984). Microprobe analyses (8) from Tomnadashan mine, Scotland.
- TENNANTITE. Pognante et al., (Jour. Metamorph. Geol. 5, 397-414) (1987) Microprobe analyses (5) from Western Alps, Italy
- TENNANTITE. Raabe and Sack, Can. Mineral. 22, 577-582 (1984). Microprobe analyses (12) from Alma, Colo. Growth zoning in.
- TENNANTITE. Silaev 1982, p. 150-151 (410(570)Si32m). Analyses (16).
- TENNANTITE. Small, Proc. York. Geol. Soc. 44, 153-158 (1982). Microprobe analysis from Yorkshire.
- TENNANTITE. Spiridonov (Dokl. Akad. Nauk SSSR 279, 447-453) (1984) (Russ), Chem. Abstr. 102, no. 14, 116738 (1985). Nomenclature of group. Tennantite for As dominant.
- TENNANTITE. Tarkian, et al., Tschermarks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- TENNANTITE. Vinogradova et al. (Zap. Vses. Mineral. O-va. 114, 340-344) (1985)(Russ.). Microprobe analysis (1) from Tyrong Auz, Caucasus, Bi 13.9 percent. Optics.
- TENNANTITE. Yamaoki, et al., J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 441-448 (1983) (Japanese). Microprobe analyses (2) from Abata Pref., Japan.

- TENORITE. Neumann et al. (Bull. Alloy Phase Diagrams 5, 136-140, 207-210) (1984). Review of stability in the system Cu-O.
- TEPHROITE. Abs.-Wurmbach et al. (N. Jahrbuch Miner., Abh. 146(3), 258- 279) (1983), Miner. Abs. 35, 45 (1984). Stability in system Mn-Si-O.
- TEPHROITE. Beyer, Aufschluss 34, 397-400 (1983). Analysis from Laacher See, Germany, of "mangan-roepperite" MnO 34.6, FeO 17.5, Mg 0 9.7, ZnO 6.67.
- TEPHROITE. Birch, Mineral. Mag. 48, 137-139 (1984). Microprobe analyses (10) from Broken Hill, N.S. Wales, show that so-called roepperite is ferroan tephroite.
- TEPHROITE. Bonev and Jordanov, (Geol. Zbornik Bratislava 37, 709-718) (1986) (Eng) Microprobe analyses (9) from placers, Bulgaria Cu up to 29.6%
- TEPHROITE. Hayashi and Sugaki (Min. Geol. Japan 34(3), 151-162) (1984)(Jap.). Microprobe analyses (76) from Iwaite Pref., Japan.
- TEPHROITE. Keaneko et al., (Ganseki Kobutsu Kosho Gakko 81, 341-347) (1986) (Eng), Chem. Abstr. 107, no. 10, 81096 (1987) Analyses (not in abs.), DTA, from Iwate Pref.
- TEPHROITE. Miller and Ribbe (Am. Mineral. 70, 723-728) (1985). Unit cell parameters in systems Fe_2SiO_4 - Mn_2SiO_4 and Fe_2SiO_4 - Ni_2SiO_4 .
- TEPHROITE. Morioka, (Geochim. Cosmochim. Acta 47, 2275-2279) (1983), Chem. Abstr. 100, no. 6, 37260 (1984). Cation diffusion (Ca, Sr, Ba, Co, Mn, Ni) in.
- TEPHROITE. Mottano, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (3) from manganiferous cherts, Alps
- TEPHROITE. Urusov et al. (Geokhimiia 7, 1047-1055) (1984) (Russ), Chem. Abstr. 101, no. 14, 114119 (1984). Synthesis of forsterite-tephroite solid solutions, unit cells.
- TERSKITE. Abstr. in Am. Mineral. 69, 212 (1984). Abstract of original description.
- TERSKITE. Abstract in Mineral. Abstr. 35, 88 (1984). Abstract of original description.
- TERUGGITE. Aydin and Gulensoy, (Chim. Acta Tur. 11, 385-396) (1983)(English), Chem. Abstr. 101, no. 6, 41205 (1984). Occurrence in Turkey. Dehydration.
- TERUGGITE. Helvacı, Miner. Deposita 19, 217-226 (1984). Occurrence at Emet deposits, Turkey. Analyses (3).
- TESTIBIOPALLADITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- TETRADYMITE. Breskovska et al., (Proc. 13th Meeting IMA, Varna, 1982, 131- 146) (1986) (Russian) Microprobe analysis Rhodope Mts., Bulgaria
- TETRADYMITE. Dangle et al., (Geol. Anal. Balkan Polustr. 481, 231-237) (1984) (Eng summary) Microprobe analyses (4) from Magdan Pb-Zn ores, Yugoslavia give $Bi_{2.01}Te_{1.83}S_{1.17}$
- TETRADYMITE. Gamyanin et al. (International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 121-129) (1980)(Russ.) (Sulfosalt Vol.). Microprobe analyses (15); E. Yakutia.
- TETRADYMITE. Gamyanin et al., (Mineral. Zh. 8(3), 65-71) (1986) (Russian) Microprobe analyses (2) from E. Yakutia
- TETRADYMITE. Gamyanin, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 127-135 (1980)(Russian) (Sulfosalt Vol.). Microprobe analyses (15) x-ray data.
- TETRADYMITE. Kaspar and Pasava, (Acta Univ. Carol., Geol., no. 3, 217-222 (1981)) Chem. Abstr. 98, no. 26, 219046 (1983). Microprobe analyses from Vltavou, Bohemia. X-ray data.
- TETRADYMITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analyses (14) from gold-silver deposits some are selenian

- TETRADYMITE. Stoinova and Begizov, (Izv. Vyssh. Uchebn. Zaved., Geol. Razved., 25, no. 10, 69-74 (1982)) Chem. Abstr. 98, no. 10, 75501 (1983). Analysis, X-ray, optics from northern Rhodopes, Bulgaria.
- TETRADYMITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- TETRAFERRIPHLOGOPITE. Semenova et al. (Mineral. Zh. 5, no. 1, 41-49) (1983), Mineral. Abstr. 35, 17 (1984). Structure refinement.
- TETRAFERROPLATINUM. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- TETRAFERROPLATINUM: Tarkian, (Mineral. Petrol. 36, 169-190) (1987) (Eng) Microprobe analyses (1) Reflectance
- TETRAHEDRITE. Aliev, (Tr. Azerb. Otd., Vses. Mineral. O-va., no. 2, 120-125 (1981)) Chem. Abstr. 98, no. 12, 92772 (1983). Microprobe analysis, Caucasus.
- TETRAHEDRITE. Basu et al. (Neues Jahrbuch Mineral., Abh., 149(1), no. 1, 105-112) (1984)(Eng.). Microprobe analyses (6) from Rajpura-Dariba, India (Mn 4.86-5.74 percent).
- TETRAHEDRITE. Basu, et al., Neues Jahrb. Mineral., Abh. 149, 143-161 (1984)(English). Microtextures due to metasomatic replacements. Microprobe analyses (6) from Rajasthan, India.
- TETRAHEDRITE. Bortnikov et al., (Gold and silver deposits, "Nauka" Moscow, 146-167) (1986) (Russian) 431 M565 Microprobe analyses (95) from gold-silver deposits
- TETRAHEDRITE. Bortnikov et al., (Mineral. Zh. 8(3), 61-64) (1986) (Russian) Microprobe analyses (18) from E. Karamazar with Bi up to 13.6%
- TETRAHEDRITE. Durza, (Mineral. Sl. 13, 569-570 (1981)) Mineral. Abstr. 34, 215 (1983). Thermoelectrical properties, analyses.
- TETRAHEDRITE. Gucua and Pelizer, (Mineral. Polsk Karpat., 128-129) 120(578) G934m (Polish) Analyses (2) from Polish Carpathians X-ray data
- TETRAHEDRITE. Hackbarth and Petersen (Econ Geol. 79, 448-460) (1984), Chem. Abstr. 100, no. 26, 213150 (1984). Microprobe analyses of argentian. Model for deposition.
- TETRAHEDRITE. Halenius and Alinder, Neues Jahrb. Mineral., Monatsh., 201-215 (1982)(English). Microprobe analysis from Langsjon, Sweden.
- TETRAHEDRITE. Hwang and Meyer, Proc. Geol. Soc. China 25, 88-101 (1982)(English)(G(611)G292p). Microprobe analyses (2) from Chikuashih ore deposit, Taiwan.
- TETRAHEDRITE. Iriscari, (Rend. Soc. Ital. Mineral. Petrol. 40, 289-294) (1985) (Eng) Microprobe analysis from Peloritani Mts., Sicily X-ray data, Optics
- TETRAHEDRITE. Ixer and Stanley, Mineral. Mag. 47, 539-545 (1983). Microprobe analyses (12) from Sark, Channel Islands.
- TETRAHEDRITE. Jambor, CANMET Rep. 81-8E, 1-65 (1981) [P(100)Tn27cr]. Microprobe analyses (16), Bi up to 14.7%.
- TETRAHEDRITE. Jasinski, Mineral. Mag. 47, 507-514 (1983). Analysis from Hallefors, Sweden.
- TETRAHEDRITE. Jeanloz and Johnson (Phys. Chem. Minerl. 11, 52-54) (1984). Discussion of bonding and optical spectrum.
- TETRAHEDRITE. Johnson and Burnhan, Am. Mineral. 70, 165-170 (1985). Synthesis of $(\text{Cu}_{8.49}\text{Ag}_{2.12}\text{Fe}_{1.44})(\text{Sb}_{2.70}\text{As}_{1.30})\text{S}_{13}$. Refinement of structure.
- TETRAHEDRITE. Johnson and Jeanloz, Am. Mineral. 68, 220-226 (1983). Brillouin-zone model should occur with 204-208 valence electrons per unit cell.

- TETRAHEDRITE. Johnson et al., (Can. Mineral. 25, 237-244) (1987) Effect of substituents on cell dimension In terms of atoms per formula unit: $a = 10.379 + (0.082)Ag - 0.009 (Cu^*) + 0.66 (Hg) - 0.038(As) + 0.144 (Bi)$, where $Cu^* = 2.0 - (Fe+Zn+Hg+Cd)$
- TETRAHEDRITE. Johnson, (Diss. Abstr. Int. B 43(9), 2839 (1983)) Chem. Abstr. 98, no. 20, 164155 (1983). Effect of substitutions on physical properties.
- TETRAHEDRITE. Kaplunnik and Pobedimskaya, Deposited Doc. VINITI 6348-82, 18-22 (1982)(Russian). Unit cell data.
- TETRAHEDRITE. Kovalenkar and Geinke, Izv. Akad. Nauk SSSR, Ser. Geol., no. 5, 91-104 (1984)(Russian). Microprobe analyses (3) from Kuramin region, Tien-Shan. bismuthian
- TETRAHEDRITE. Kovalenkar and Rusinov, (Mineral. Zh. 8(2), 57-70) (1986) (Russian) Microprobe analyses (26) and conditions of formation
- TETRAHEDRITE. Kovalenkar and Troneva, (Sulphosalts, Platinum Minerals and Ore Microscopy (Proc. XI Gen. Mtg. IMA, Novosibirsk), 75-83 (1980)) Mineral. Abstr. 34, 179 (1983). Analyses with Au up to 10.68%.
- TETRAHEDRITE. Leonard and Christian, (Mineral. Petrol. 36, 151-168) (1987) (Eng) Analysis from Thunder Mt. complex, Idaho
- TETRAHEDRITE. Lind and Makovicky, (Neues Jahrb. Mineral., Abh., 145, 134-156 (1982)(English)) Chem. Abstr. 98, no. 8, 57354 (1983). Stability under hydrothermal conditions at 200°. Change of composition under the microprobe.
- TETRAHEDRITE. Malinov, (Geokhim., Mineral., Petrol. 23, 45-53) (1987) (Bulgarian) G(595)G272 Analyses (2) of zincian, Madan ore field, Zn 4.5, 6.0%
- TETRAHEDRITE. McQueen, Neues Jahrb. Mineral., Monatsh., 323-336 (1984)(English). Microprobe analyses (4) from Broken Hill, N.S. Wales.
- TETRAHEDRITE. Miller and Craig, Am. Mineral. 68, 227-234 (1983). Microprobe analyses (32) of entire series tetrahedrite-tennantite from Cofer Deposit, Virginia.
- TETRAHEDRITE. Mozgova, (Proc. 13th Meeting, IMA, Varna, 1982, 199-213) (1986) (Russian) Isomorphism in the series tetrahedrite-tennantite
- TETRAHEDRITE. Munoz and Moelo, Bull. Mineral. 105, 625-632 (1982). Microprobe analyses (11) from Bournac, France.
- TETRAHEDRITE. Muratov, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 224-232 (1980)(Russian) (Sulfosalt Vol.). Reflection spectrum in short-wave region.
- TETRAHEDRITE. O'Leary and Sack, (Contrib. Mineral. Petrol. 96, 415-425) (1987) Microprobe analyses (8), Thermodynamics of exchange reactions sphalerite-tetrahedrite
- TETRAHEDRITE. Pattrick and Hall, Mineral. Mag. 47, 441-451 (1983). Silver substitution into synthetic Zn, Cd, and Fe tetrahedrites. unit cells.
- TETRAHEDRITE. Pattrick, Mineral. Mag. 48, 85-91 (1984). Microprobe analyses (13) from Tomnadashan mine, Scotland.
- TETRAHEDRITE. Raabe and Sack, Can. Mineral., 22, 577-582 (1984). Microprobe analyses (14) from Alma, Colo. Growth zoning in.
- TETRAHEDRITE. Shikazono and Kouda, (Min. Geol. 29, no. 1, 33-41) (1979), Mineral. Abstr. 36, 89 (1985). Analyses (not in abstr.) from Japanese ore deposits.
- TETRAHEDRITE. Small, Proc. York. Geol. Soc. 44, 153-158 (1982). Microprobe analysis from York.
- TETRAHEDRITE. Spiridonov, (Dokl. Akad. Nauk SSSR 279, 447-453) (1984) (Russ), Chem. Abstr. 102, no. 14, 116738 (1985). Nomenclature of group. Tetrahedrite for Sb dominant.
- TETRAHEDRITE. Spiridonov and Badalov, Dokl. Akad. Nauk SSSR 274, 407-409 (1984)(Russian). Microprobe analysis (1) from Kairagach, Uzbekistan (Te 5.0%).

- TETRAHEDRITE. Sugaki et al., (Mining Geology (Japan) 36, 555-572) (1986) (Eng) Microprobe analyses (4) from S. Korea
- TETRAHEDRITE. Tarkian, et al., Tschermarks Mineral. Petrogr. Mitt 32, 111-133 (1983)(English). Microprobe analyses (1) from Iran.
- TETRAHEDRITE. Vinogradova et al. (Zap. Vses. Mineral. O-va. 114, 340-344) (1985)(Russ.). Microprobe analysis (1) from Tyrong Auz, Caucasus, Bi 15.8 percent. Optics.
- TETRAHEDRITE. Zakrzewski and Nugteren, Can. Mineral. 22, 583-593 (1984). Microprobe analysis (1) from Hallefors, Sweden.
- TETRATAENITE. Benusa and Goldstein, Meteoritics 18, 265-266 (1983)(Abstr.). Formation by electron irradiation of Fe-Ni alloys.
- TETRATAENITE. Novotny et al., Meteoritics 16, 370 (1981). Occurrence in Estherville meteorite.
- TETRATAENITE. Rambaldi and Wasson (Geochim. Cosmochim. Acta 48, 1885-1897) (1984). Microprobe analyses (15) from 2 meteorites
- TETRAWICKMANITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- TETRAWICKMANITE. Konovalenko et al. (Mineral. Zh. 6, no. 1, 89-92) (1984), Chem. Abstr. 101, no. 2, 10129 (1984). Mineral. Abstr. 36, 88 (1985). Occurrence and analysis, S.W. Pamir, nO 1.705, nE 1.704., a 7.866, c 7.804A
- THALCUSITE. Dobrovol'skaya et al., (Dokl. Akad. Nauk SSSR 267, 1214-1217 (1982)) Chem. Abstr. 98, no. 16, 129389 (1983). Microprobe analysis from Murun massif with K 2.30%. Reflectance.
- THALCUSITE. Mookherjee et al., (N. Jb. Miner. Mh., 444-454) (1984), Mineral. Abstr. 38, 87M/3149 (1987) Microprobe analysis from India, X-ray data, Reflectance
- THAUMASITE. Effenberger, et al., (Neues Jahrb. Mineral., Monatsh., no. 2, 60-68) (1983), Mineralog. Abstr. 34, 398 (1984). Chem. Abstr. 98, no. 10, 75561 (1983). Refinement of structure. P6, a 11.030, c 10.3966 A; Z=2.
- THAUMASITE. Grubessi et al., (Tschermarks Min. Pet. Mitt. 35, 149-156) (1986), Mineral. Abstr. 38,, 87M/3070 (1987) Analysis from S. Africa, a 11.013, c 10.379, nO 1.498, nE 1.458, X-ray, DTA, Infra-red data
- THAUMASITE. Janjic et al., (Glas. Prir. Muz. Beogradu, Ser. A, 36, 17-22 (1981)(Serbian)) Chem. Abstr. 98, no. 14, 110832 (1983). Analysis, X-ray, DTA from Vlaola, Yugoslavia.
- THAUMASITE. Kresten, (Geol. Foeren. Stockholm Foerh. 104, 10 (1982)(English)) Chem. Abstr. 98, no. 4, 19621 (1983). DTA study.
- THAUMASITE. Noack, Mineral. Mag. 47, 47-50 (1983). Analyses from Mururoa, S. Pacific.
- THAUMASITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum 51, 33-36 (1983). Occurrence, Kloeck, Styria, x-ray data, unit cell.
- THEISITE. Abstr. in Bull. Mineral. 106, 637-638 (1983). Abstract of original description.
- THEISITE. Williams, (Mineral. Mag. 45, 49-50 (1981)) Am. Mineral. 68, 282 (1983). Abstract of original description.
- THENARDITE. Godovikov, et al., (Dokl. Akad. Nauk SSSR, v. 274, 167-169) (1984), Chem. Abstr. 100, no. 18, 142399 (1984). Hpojene thenardite in nepheline syenite. Analysis, DTA; x-ray data.
- THENARDITE. Harvie, et al., Geochim. Cosmochim. Acta 48, 723-751 (1984). Calculated solubilities in system Na-K-Mg-Ca-H-Cl-SO₄-OH-HCO₃-CO₅-CO₂-H₂O at 25 degrees C.
- THENARDITE. McMurdie et al., (Powder Diffraction 1(4), 334-345) (1986) X- ray powder data

- THENARDITE. Wiedemann and Smykatz-Kloss, (Thermochim. Acta 50, 17-29 (1981)) Mineral. Abstr. 34, 137 (1983). DTA. Phase transitions at 210, 240°C (natural), 230, 250°C synthetic.
- THEOPHRASITE. Abstr. in Bull. Mineral. 106, 638 (1983). Abstract of original description.
- THERMONATRITE. Harvie, et al., Geochim. Cosmochim. Acta 48, 723-751 (1984). Calculated solubilities in system Na-K-Mg-Ca-H-Cl-SO₄-OH-HCO₃-CO₂-H₂O at 25 degrees C.
- THERMONATRITE. Monnin and Schott, Geochim. Cosmochim. Acta 48, 571-581 (1984). Calculation of solubility product.
- THOMETZEKITE. Mineral. Abstr. 38, 87M/3201 (1987) Abstract of original description
- THOMSONITE. Doctor and Yodu, (Am. Jour. Sci. 286, 513-539) (1986) Microprobe analyses (1) from melilite rocks, S. Africa
- THOMSONITE. Brastad (Tschermarks Mineral. Petrogr. Mitt. 34, 87-103) (1985)(Eng.). Microprobe analyses (2) from eclogite, W. Norway, SrO up to 6.65%.
- THOMSONITE. Brooks et al., Greenland Geosci. 7, 1-35 (1982)(English). Analyses (1) from Werner Bjerger complex, Greenland.
- THOMSONITE. Joshi and Bhoskar, (Cryst. Res. Technol. 18, 213-218 (1983)) Chem. Abstr. 98, no. 18, 146708 (1983). Photoluminescence.
- THOMSONITE. Pechar and Rykl, (Acta Mont. 64, 69-77) (1983)(Czech.), Chem. Abstr. 101, no. 8, 57851 (1984). Behavior when heated. Infra-red data.
- THOMSONITE. Pechar, (Acta Mont. 65, 101-127) (1984)(Czech), Chem. Abstr. 102, no. 2, 9833 (1984). X-ray, DTA, infra-red study of thermal behavior.
- THOMSONITE. Pechar, (Acta Univ. Carol., Geol., no. 2, 89-93 (1981)(English)) Chem. Abstr. 98, no. 18, 146766 (1983). X-ray emission spectra.
- THOMSONITE. Pluth et al. (Zeolites 5, 74-80) (1985), Chem. Abstr. 102, no. 24, 213033 (1985). Neutron diffraction study of structure. Orth., Pncn, a 13.088, b 13.052, c 13.229A.
- THOMSONITE. Ulrych and Rychly (Acta Univ. Carol., Geol. 1-2, 33-52) (1983)(Eng.), Chem. Abstr. 102, no. 26, 223552 (1985) Analyses from Bohemia, optics.
- THOREAULITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- THOREAULITE. Khvostova et al., (Izv. Akad. Nauk SSSR, Ser. Geol., no. 9, 89-100 (1982)) Chem. Abstr. 98, no. 6, 37784 (1983). Analyses and unit cell from Kazakhstan, G 7.6.
- THOREAULITE. Nekrasov et al. (Mineral. Zh. 6, no. 4, 42-44) (1984)(Russ.). Mineral. Abstr. 36, no. 2, 203 (1985) Analysis, unit cell, from pegmatite, Siberia optics
- THORIKOSITE. Dunn and Rouse (Am. Mineral. 70, 845-848) (1985). New mineral from Laurion, Greece, Pb₃(Sb,As)O₃(OH)Cl₂, tet., I4/mmm, a 3.919, c 12.854A, Z=1. Light yellow, G 7.24 calcd. Analysis, x-ray data.
- THORIANITE. Herrick and Behrens, (Proc. Electrochem. Soc. 83-7, 42-47) (1983). Chem. Abstr. 100, no. 2, 15439 (1984). Single crystals by skull melting.
- THORIANITE. Hoch (J. Nucl. Material. 130, 94-101) (1985). Chem. Abstr. 102, no. 22, 192288 (1985). High-temp. sp. heat.
- THORIANITE. Taylor (Brit. Ceram. Trans. J. 83, 32-37) (1984). Thermal expansion.
- THORIANITE. Wanklyn and Garrard, (J. Cryst. Growth 66, 346-350) (1984), Chem. Abstr. 100, no. 26, 219201 (1984). Growth of large crystals.
- THORITE. Cathelineau, (Bull. Mineral. 110, 249-259) (1987) Analysis of phosphatian thorite (P₂O₅ 13.6%) and rare-earth distribution, French Massif Central

- THORITE. Gauthier-LaFaye, (Sci. Geol. Mem. 78, 1-206) (1986) (French)
Microprobe analyses (11) from V deposits, Gabon (G(540) St52m
- THORITE. Kinnaird (J. African Earth Sci. 3, 229-251) (1985). Analyses (2) from ring complexes, Nigeria.
- THORITE. Makarochkin, (Mineral. Issled. Il'menskom Zapov., 30-31 (1981)) Chem. Abstr. 98, no. 18, 146715 (1983). Analysis from Il'men Mts., Urals, G 4.86.
- THORITE. Nechelyustov and Shuriga, (Mineral. Zh. 8(1), 88-94) (1986) (Russian) Analyses (12) from E. Siberia, Fe_2O_3 up to 23.2% X-ray data Fe present as impurity
- THORITE. Rimsaite, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 269-280 (1982). Microprobe analyses (3) from Bancroft, Ont. (urano).
- THREAGOLDITE. Khosrawan-Sazedj, (Tschermarks Mineral. Petrogr. Mitt. 30, 111-115 (1982)) Mineral. Abstr. 34, 119 (1983). Space group is C2/c, not Cc.
- TILASITE. Bousovskii et al. (Dokl. Akad. Nauk SSSR 276, 223-227) (1984), Chem. Abstr. 101, no. 10, 76133 (1984). Analysis and optics from N. Caucasus.
- TILLEYITE. Bunno et al., (Kozan Chishitsu 32, 141-150 (1982)(Japanese)) Chem. Abstr. 98, no. 8, 57365 (1983). Analyses (not in abstr.), X-ray data from Iwate Pref., Japan.
- TIN. Jackson and Helgeson (Econ. Geol. 80, 1365-1378) (1980). Summary of selected thermodynamic data.
- TIN. Tyan et al. (Zap. Vses. Mineral. O-va. 114, 34-42) (1985). Microprobe analysis (1) from Kalbin granite, E. Kazakhstan.
- TINAKSITE. Vladykin et al. (Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk, 41-56) (1983)(Russ.). 480 (690.3) M662. Analyses (3) from Murunsh massif.
- TINSLEYITE. Dunn, et al., Abstract in Mineral. Abstr. 36, 94 (1985). Abstract of original description.
- TINSLEYITE. Dunn, et al., Am. Mineral. 69, 374-376 (1984). New mineral from Tip Top pegmatite, S. Dakota. $KAl_2(PO_4)_2(OH) \cdot 2H_2O$. Analysis, optics. x-ray data. Monoclinic, Pn or P2/n, a 9.602, b 9.532, c 9.543, beta 103.16 degrees, Z=4.
- TINTINAITE. Bortnikov and Tsepin, (Izvest. Akad. Nauk SSSR, Ser. Geol. 1, 86-94) (1987) (Russian) G(570)Ac11b Microprobe analyses (3) from E. Transbaikal with Bi up to 6.86%
- TINTINAITE. Moelo et al. (Can. Mineral. 22, 219-226) (1984), abstr. in Am. Mineral. 70, 441 (1985). Microprobe analyses from Tintina, Yukon give $Pb_{11}Cu_2Sb_{15}S_{4.5}$.
- TIPTOPITE. Grice et al. (Can. Mineral. 23, 43-46) (1985), Chem. Abstr. 103, no. 8, 56908 (1985). Abstract of original description.
- TITANITE. Armienti, et al., J. Volcanol. Geothermal Res. 17, 289-311 (1983)(English). Microprobe analyses (1) from Phlegrean Fields, Italy.
- TITANITE. Brastad (Tschermarks Mineral. Petrogr. Mitt. 34, 87-103) (1985)(Eng.). Microprobe analyses (1) from eclogite, W. Norway, SrO up to 0.3%.
- TITANITE. Cherneva, et al., (Geol. Bal. 13, 63-74) (1983)(English). Rare earths in, from granites, S. Bulgaria.
- TITANITE. Cotkin, (Contrib. Mineral. Petrol. 96, 192-200) (1987) Microprobe analysis (2) from blueschist, N. Calif.
- TITANITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- TITANITE. Ghent and Stout, Contrib. Mineral. Petrol. 86, 248-255 (1984). Microprobe analyses (11) from British Columbia.

- TITANITE. Hollabangh and Foit, *Am. Mineral.* 69, 725-732 (1984). Structure of aluminian titanite from Grisons, Switzerland, Monoclinic, a 7.050, b 8.681, c 6.539 A, beta 113.90 degrees.
- TITANITE. Hollabaugh and Rosenberg, *Am. Mineral.* 68, 177-180 (1983). Substitution of Ti for Si hydrothermally. Unit cell for ideal Ca Ti Si O₅, a 7.054, b 8.703, c 6.551A, beta 113.77°.
- TITANITE. Honda and Hiroharu, (Chika Shigen Kenhyu Shisetsu Hokoku 49, 1-9) (1984)(Japanese), *Chem. Abstr.* 102, no. 4, 28603 (1985). Probe analysis from Onuma geothermal field shows Al₂O₃ 4.67, FeO 0.30%.
- TITANITE. Kalinin, et al., *Mineral. Zh.* 6, no. 5, 34-44 (1984)(Russian). Analyses (14) from Baikal region. Rare earths in.
- TITANITE. Kawachi, et al., *J. Metamorph. Geol.* 1, 353-372 (1983). Microprobe analyses (5) from piemontite schist, W. Otago, New Zealand.
- TITANITE. Lan, *Proc. Geol. Soc. China* 25, 38-52 (1982)(English)(G(611)G292p). Microprobe analyses (2) from gneiss, NE Taiwan.
- TITANITE. Luhr, et al., *J. Volcanol. Geotherm.* 23, 69-108 (1984). Microprobe analysis (1) from Chichon Volcano, Mexico.
- TITANITE. Mezger and Okrusch (*Tschermaks Mineral. Petrogr. Mitt.* 34, 67- 82) (1985). Microprobe analyses (3) from metamorphosed dolomites, Samos, Greece.
- TITANITE. Mottano, (*Geol. Soc. Am. Mem.* 164, 267-299) (1986) Analyses (3) from manganiferous cherts, Alps Analysis, high in Al, from Czechoslovakia, a 7.050, b 8.664, c 6.526, beta 114.01A.
- TITANITE. Mrazek and Vrana (*N. Jb. Miner., Mh.*, 251-256) (1984), *Mineral. Abstr.* 36, 79 (1985). *Chem. Abstr.* 101, no. 16, 134269 (1984). Analysis with Al₂O₃ 7.8-9.3 percent, Vlastejovice, Czechoslovakia, a 7.050, b 8.664, c 6.526A, beta 114.01 deg., a 7.050, b 8.664, c 6.526 A, beta 114.0 deg., 8.39% (Ca_{3.83}) (Ti_{2.63}Al_{1.24}Fe_{0.18})_{0.18.75}Fe_{0.62}OH_{0.63}. X-ray powder data.
- TITANITE. Muir, et al., *Can. Mineral.* 22, 689-694 (1984). Mossbauer spectrum. Most of the iron is present as Fe⁺³.
- TITANITE. Munha, *Comun. Serv. Geol. Port.* 69, 3-35 (1983)(English). Microprobe analyses (3) from Iberian pyrite belt.
- TITANITE. Myhra, et al., (Rep. AERE-R-10799, 1-35) (1983), *Chem. Abstr.* 100, no. 18, 142379 (1984). Surface modification by hydrothermal reaction.
- TITANITE. Schiffman et al. (*Mineral. Mag.* 49, 435-449) (1985). Analyses (3) from sandstones, Cerro Prieto geothermal system, Baja Calif.
- TITANITE. Trzcienski, et al., *Contrib. Mineral. Petrol.* 85, 311-320 (1984). Microprobe analyses (1) from Bathurst, New Brunswick.
- TITANITE. Viereck (Bochumer Geol. Geotechn. Arb. 17, 1-337) (1984). (G(530)qB628). Microprobe analyses (2) from Eifel, Germany.
- TITANITE. Vivallo (*Geol. Foeren. Stockholm Foerh.* 106, 257-267 (1985)(Eng.)). Microprobe analysis (1) from metamorphic rocks, Garpenberg, Sweden.
- TITANITE. Wolff (*Geochim. Cosmochim. Acta* 48, 1345-1348) (1984). Analysis from phonolite, Tenerife I. Nb₂O₅ 1.20, Ta₂O₅ 0.13, rare earth 1.31 percent.
- TITANITE. Worner (*Diss. Ruhr Univ.*, 248-301) (1982). (298(530)q W895G. Microprobe analyses (30) and trace elements. Laacher See, Germany.
- TITANITE. Yau, et al., *Contrib. Mineral. Petrol.* 88, 299-306 (1984). Probe analysis, Franklin, N.J.
- TITANTAMELLITE. Alfors and Pabst, *Am. Mineral.* 69, 358-373 (1984). Defined as Ba₄(Ti⁺⁴, Fe⁺³, Fe⁺², Mg)₄(B₂Si₈O₂₇)O₂Cl_x with Ti > Fe. Eight analyses (TiO₂ 9.10-12.53%), optics, unit cells. Orth., a 12.053-12.220, b 13.904-14.005, c 7.12-7.141 A.
- TIVANITE. *Abstr. in Bull. Mineral.* 106, 637 (1983). Abstract of original description.

- TOBELITE. Higashi, (Mineral. J. 11, 138-146 (1982)(English)) Chem. Abstr. 98, no. 12, 92759 (1983). New mineral, $(\text{NH}_4, \text{K}) \text{Al}_2 (\text{Si}_3\text{Al}) \text{O}_{10} (\text{OH})_2$, from Tobe, Japan. Monoclinic, 1M, a 5.219, b 8.986, c 10.447A, beta 101.31°. Optics, X-ray data, infra-red.
- TOBERMORITE. Esteoule and Jauberthie (Compt. Rend. Ser. 2, 298, no. 6, 207-210) (1984). Chem. Abstr. 101, no. 12, 94647 (1984). Hydrothermal synthesis of 10A tobermorite.
- TOBERMORITE. Jakobsson and Moore, (Bull. Geol. Soc. Am. 97, 648-659) (1986) Microprobe analyses (4) from Surtsey volcano, Iceland
- TOBERMORITE. Jauberthie (Compt. Rend., Ser. 2, 300(8), 341-344) (1985)(French), Chem. Abstr. 103, no. 4, 25080 (1985). Synthesis of 10A and 11A types. DTA and infra-red data.
- TOBERMORITE. Urabe et al., (Semento Gijutsu Nenpo, no. 35, 45-48 (1981) (Japanese)) Chem. Abstr. 98, no. 18, 153044 (1983). Electron diffraction study.
- TOBERMORITE. Urabe, et al., (Semento Gijutsu Nenpo, no. 36, 34-37) (1984)(Japanese), Chem. Abstr. 101, no. 2, 10140 (1984). Hydrothermal synthesis. X-ray, DTA.
- TOCHILINITE. Muramatsu and Nambu, (J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 75, 377-384) (1980), Mineral. Abstr. 35, 189 (1984). Occurrence of T. and cuprian T. from Iwate Pref., Japan. Optics.
- TOCHILINITE. Van de Vusse and Powell, Mineral. Mag. 47, 501-505 (1983). Occurrence at Mt. Keith, W. Australia.
- TODOROKITE. Chukhrov, et al., Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 143-159 (Russian)(201In391g). Review of data.
- TODOROKITE. Giovanoli and Burns, et al., Am. Mineral. 70, 202-208 (1985). Discussion of todorokite problem. Agreement that it is a valid phase but disagreement on structure.
- TODOROKITE. Osipov, (Mineral. Zh. 8(1), 94-97) (1986) (Russian) Analyses (2) from granite pegmatite, Kazakhstan DTA, X-ray
- TODOROKITE. Piper et al. (Geochim. Cosmochim. Acta 48, 2347-2355) (1984). Marine todorokite contains only Mn^{+4} , gives formula $(\text{Na}, \text{K}, \text{Ca}, \text{Ba})_{0.33} (\text{Mg}, \text{Ni}, \text{Cu})_{0.76} \text{Mn}^{+5}_5 \text{O}_{22} \cdot 3.2\text{H}_2\text{O}$.
- TODOROKITE. Siegel and Turner, (Science (Washington, D.C., 1883-) 219, 172-174 (1983)) Chem. Abstr. 98, no. 12, 92778 (1983). Analysis (not in abstr.), X-ray data from Pacific nodules.
- TODOROKITE. Takematsu et al. (Geochim. Cosmochim. Acta 48, 1099-1106) (1984). Analysis of material precipitated from aerated well water.
- TOKKOITE. Mineral. Abstr. 38, 87M/3202 (1987) Abstract of original description
- TOLBACHITE. Abstract in Am. Mineral. 69, 408 (1984). Abstract of original description.
- TOLBACHITE. Abstract in Mineral. Abstr. 35, 194 (1984). Abstract of original description.
- TONGBAITE. Abstr. in Am. Mineral. 70, 218 (1985). Abstract of original description.
- TOPAZ. Cerny and Hawthorne, Mineral. Assoc. Canada Short Course no. 8, 163-186 (1982). Review of occurrence in granitic pegmatites.
- TOPAZ. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral. Abstr. 34, 216 (1983). Thermal expansion.
- TOPAZ. Giannini and Penick, (Va. Div. Miner. Resour. Publ. 29, 1-3) (1983), Mineral. Abstr. 35, 161 (1984). Large crystal, 8.9 lbs., from Powhatan Co., Va.
- TOPAZ. Hampar and Zussman (Tschermarks Mineral. Petrogr. Mitt. 33, 235-252) (1984)(Eng.), Chem. Abstr. 102, no. 12, 98512 (1985). Thermal decomposition. X-ray, DTA.

- TOPAZ. Konno and Akizuki, (Neues Jahrb. Mineral., Monatsh., 465-470 (1982)) Mineral. Abstr. 34, 165 (1983). Wt. % F = $0.264 \times (2V) + 1.66$.
- TOPAZ. Lee and Kirby, (J. Geophys. Res. 89B, 4161-4166) (1984). Chem. Abstr. 101, no. 12, 94642 (1984). Experimental deformation of.
- TOPAZ. Semenov et al., (Vses. Soveshch. Eksp. Tekh. Mineral. Petrogr., [Mater.], 10th, 96-102 (1978)(Pub. 1981)) Chem. Abstr. 98, no. 24, 201507 (1983). Heat capacity and entropy.
- TOPAZ. Vishnevskii et al., Mineral. Sb. 37, 3-7 (1983)(Russian). Reflectance spectra in ultra-violet.
- TORBERNITE. Charlet et al., (Ann. Soc. Geol. Belg. 107, 1-13) (1984). Microprobe analyses of torbernite-zeunerite series.
- TORBERNITE. Vochten and Van Doorselaer, Mineral. Rec. 15, 293-297 (1984). Occurrence at Cunha Baixa mine, Portugal. Color photographs.
- TOSUDITE. Starke et al., (Z. Geol. Wiss. 12(4), 509-516) (1984) (Ger), Chem. Abstr. 101, no. 20, 174807 (1984). Analysis from Ehrenfriedersdorf, E. Germany, unit cell, DTA.
- TOURMALINE. Afonina et al., (Proc. 13th Meeting IMA, Varna 1982, 307-316) (1986) (Russian) Unit cells from various parageneses
- TOURMALINE. Ayuso and Brown, Can. Mineral. 22, 327-331 (1984). Analyses (5) from Gouvernem, N.Y. Mn-rich uvite, MnO 4.34%.
- TOURMALINE. Cabella et al., (N. Jb. Miner., Mh., 289-294) (1987) (Eng) From Maritime Alps, Italy, 3 analyses, a 15.938, c 7.229 A, Optics
- TOURMALINE. Cotkin, (Contrib. Mineral. Petrol. 96, 192-200) (1987) Microprobe analysis (2) from blueschist, N. Calif.
- TOURMALINE. Cuchler et al., (Cas. Moravsk. Muzei 71, 15-22) (1986) (Czech) Microprobe analysis (2) from metapegmatite, Moravia
- TOURMALINE. Enikeeva et al., (Uzbek Geol. Zhurn., no. 5, 69-73) (1983), Che. Abstr. 100, no. 8, 54696 (1984). Analyses (not in Abstr.), optics.
- TOURMALINE. Feklichev et al., (Nov. Dannye Miner. 30, 154-168 (1982)) Chem. Abstr. 98, no. 24, 201523 (1983). Review of correlation of group for Chem., phys. properties, unit cells; G, optics.
- TOURMALINE. Gorsakaya and Frank-Kamenetskaya, (Sovrem Problem Kristalloghim. Mater. 1981, 4, 47-51) (1983) (Russ), Chem. Abstr. 103, no. 6, 39962 (1985). Crystal chemistry of dravite, elbaite, buvgerite, uvite, and schorl.
- TOURMALINE. Gorskaya et al., (Sov. Phys.: Crystallogr. 27, 63-66 (1982)) Mineral. Abstr. 34, 114 (1983). Structure of elbaite with high Al, R_{3m}, a 15.802, c 7.0861A.
- TOURMALINE. Gucua and Pelizer, (Mineral. Polsk Karpat., 131-132) 120(578) G934m (Polish) Analyses (4) from Polish Carpathians
- TOURMALINE. Henry and Guidotti, Am. Mineral. 70, 1-15 (1985). Microprobe analyses (10) of zoned samples, NW Maine. Review of tourmaline as a petrogenetic indicator.
- TOURMALINE. Kassaidrov et al., (Vopr. Miner. Petr.-Rudogenezisa, 3-10) (1984) (Russ), Chem. Abstr. 101, no. 18, 155057 (1984). Optics, DTA, infra-red of schorl- dravite, Aldon Shield.
- TOURMALINE. Kawachi et al., J. Metamorph. Geol. 1, 353-372 (1983). Microprobe analyses (4) from piemontite schist, W. Otago, New Zealand.
- TOURMALINE. Kitaev and Bogatyrev, (Dokl. Akad. Nauk SSSR 274, 1182-1184) (1984), Chem. Abstr. 100, no. 26, 213146 (1984). Properties from gold deposits.
- TOURMALINE. Kitaev et al., (Geol. Geofiz. 1, 68-74) (1985) (Russ), Chem. Abstr. 102, no. 24, 206711 (1985). Analyses (not in abstr.), unit cells from Au deposits.
- TOURMALINE. Li et al., (Sci. Geol. Sinica 1, 71-77) (1983), Mineral. Abstr. 35, 77 (1984). Analyses (15, not in Abstr.), Optics, unit cells from granite, Tibet.

- TOURMALINE. Liu and Gus, (Acta Mineral. Sinica 5(3),199-207) (1985) (Chinese), Mineral. Abstr. 38, 87M/3047 (1987) Origin of color banding in
- TOURMALINE. London and Burt, Mineral. Assoc. Canada Short Course no. 8, 99-133 (1982). Review of occurrence and properties in granite pegmatites.
- TOURMALINE. Lottermoser and Plimer, (N. Jb. Miner., Mh., 314-326) (1987) (Eng) Microprobe analyses (10) from granite, Umberatana, S. Australia
- TOURMALINE. Matsueda, et al., Proc. 3rd Symp. Antarctic Geosci., 166-176 (1983)(English) (502(990)J27SS no. 28). Microprobe analyses (1) from skarn, Antarctica.
- TOURMALINE. Mottana, Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (2) from manganiferous cherts, Alps
- TOURMALINE. Nanda et al., Neues Jahrb. Mineral., Monatsh., no. 3, 103-109 (1983)(English). Mineral. Abstr. 34, 464 (1983) Microprobe analyses (1), (not in Abstr.) from Kondapalli, India.
- TOURMALINE. Nuber and Schmetzer, Neues Jahrb. Mineral., Monatsh., 301-304 (1984)(English). Structure of Tsilausite, $(\text{Na}_{0.85}\text{Ca}_{0.01}(\text{Li}_{0.42}\text{Mn}_{6.93}\text{Al}_{1.53})\text{Al}_6(\text{BO}_3)_3\text{Si}_6\text{O}_{18}\text{O}_{0.90}(\text{OH},\text{F})_{3.10}, a 15.916, c 7.130 \text{ \AA}$.
- TOURMALINE. Plimer, Miner. Deposita 19, 19-25 (1984)(English). Analyses (2) from Broken Hill, Australia (fluor). F 0.82, 1.84%
- TOURMALINE. Popov, Mineralogicheskie Isslesovaniia Gidrotermalitor Urala (Mineral. Stud. Hydrotherm. Urals), 61-90 (1980). Analyses (5) from Badzhala, Urals.
- TOURMALINE. Povondra, (Acta Univ. Carol., Geol., no. 3, 223-264 (1981)) Chem. Abstr. 98, no. 18, 146767 (1983). Analyses and trace elements in 85 samples of schorl-dravite series.
- TOURMALINE. Razmenova, et al., Nov. Dannye Miner. SSSR 31, 108-116 (1983). Refinement of structure of uvite.
- TOURMALINE. Schmetzer and Bank, Neues Jahrb. Mineral., Monatsh, 61-69 (1984)(English). Analysis of manganoan (MnO 6.72%) from Zambia (tsilaisite) with substitution $\text{Li}+\text{OH} = \text{Mn}+\text{O}$. Optics, x-ray data, $a 15.915, c 7.123 \text{ \AA}, G 3.13$.
- TOURMALINE. Serdyuchenko, et al., (Zap. Vses. Mineral. O-va. 113, 478-485) (1984), Chem. Abstr. 101, no. 20, 174832 (1984). Analyses (not in Abstr.), G., n from Urals.
- TOURMALINE. Shibue, Miner. Deposita 19, 298-303 (1984)(English). Microprobe analyses (11) from W. deposit, Japan, Na-Fe dominant.
- TOURMALINE. Werding and Schreyer (Geochim. Cosmochim. Acta 48, 1331-1344) (1984). Hydrothermal synthesis of $(\text{Mg}_2\text{Al})\text{Al}_6(\text{BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH})_4$. Unit cell, x-ray data, infra-red data.
- TOURMALINE. Wilson and Long, Mineral. Mag. 47, 191-199 (1983). Microprobe analyses (7), Li content.
- TOURMALINE. Weiding and Schreyer, (Geochim. Cosmochim. Acta 48, 1331-1344) (1984), Chem. Abstr. 101, no. 6, 4a1234 (1984). Stability in system $\text{MgO}-\text{Al}_2\text{O}_3-\text{B}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ (alkali-free), R3m, $a 15.90, c 7.115 \text{ \AA}$.
- TRABZONITE. Sarp and Burri, (Schweiz. Min. Petr. Mitt. 66, 453) (1986) (Eng) New mineral, $\text{Ca}_4\text{Si}_3\text{O}_{10} \cdot 2\text{H}_2\text{O}$, Ikizdere, Turkey, in skarn Microprobe analysis Colorless, monoclinic, $\text{P}2_1$ or $\text{P}2_1/\text{m}$, $a 6.895, b 20.640, c 6.920 \text{ \AA}$, $\beta 98^\circ$, $Z=4, G 2.9$ Biax., pos., $2V 55^\circ$ (60°), $\alpha 1.632$, $\beta 1.634$, $\gamma 1.640$, \hat{v} weak to moderate $Y=b, Z=a, X^c=8^\circ$.
- TRASKITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- TREASURITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analyses (4) from gold-silver deposits

- TREASURITE. Kovalenker, et al., Mineral. Zh. 6, no. 2, 16-30 (1984)(Russian). Microprobe analyses from Kochbulak, USSR.
- TREVORITE. Fujimura (J. Phys. Earth 32(3), 273-297) (1984)(Eng.), Chem. Abstr. 102, no. 24, 206693 (1985). Preferred orientation during unaxial deformation at 800-1265 degrees.
- TREVORITE. Momdzhii (Izv. Vyssh. Uchebn. Zaved., Geol. Razved. 1, 26-33) (1985), Chem. Abstr. 103, no. 2, 9132 (1985). Crystal chemical formula based on Mossbauer, magnetic resonance, and neutron diffraction data.
- TREVORITE. O'Neill and Navrotsky, Am. Mineral. 69, 733-753 (1984). Calculation of cation distribution and thermodynamic properties.
- TRIANGULITE. Abstr. in Am. Mineral. 69, 212 (1984). Abstract of original description.
- TRIANGULITE. Delyens and Piret, Bull. Mineral. 105, 611-614 (1982). New mineral, $Al_3(UO_2)_4(PO_4)_4(OH)_5 \cdot 5H_2O$, from Kobokobo, Zaire. Triclinic, a 10.39, b 10.56, c 10.60A, alpha 116.4, beta 107.8, gamma 113.4, Z=1, G 3.7. Analysis, optics, X-ray data.
- TRIDYMITE. Dubrovinskii, (Reg. Geol. Nek. Raionov SSSR 6, 105-107) (1983), Chem. Abstr. 100, no. 18, 142374 (1984). Calcd. thermodynamic data (no data in abstr.):
- TRIDYMITE. Kazenas et al. (Izv. Akad. Nauk SSSR, Met. no. 1, 46-48) (1985). Chem. Abstr. 102, no. 14, 121014 (1985). Thermodynamics of sublimation and dissociation 1887-1984 degrees K.
- TRIDYMITE. Nawaz, Mineral. Mag. 47, 567 (1983). Low tridymite from Tardree Mt., N. Ireland, has a 9.92, b 17.19, c 40.81A, Cmmm, CmmZ, or Czzz.
- TRIDYMITE. Plyusnina, et al., (Dopov. Akad. Nauk Ukr. RSR, Ser. B: Geol., Khim, Biol. Nauki, no. 12, 22-25) (1983), Chem. Abstr. 100, no. 16, 124261 (1984). Infra-red spectrum.
- TRIDYMITE. Schneider and Majdic, Neues Jahrb. Mineral., Monatsh., 559-568 (1984). Microprobe analyses from furnace bricks show small amounts of Fe in tetrahedral position.
- TRIDYMITE. Schneider, (N. Jb. Miner. Mh., 433-444) (1986), Mineral. Abstr. 38, 87M/3098 (1987) Microprobe analyses from 10 volcanic rocks and 2 meteorites
- TRIDYMITE. Smith and Steele (N. Jb. Miner. Mh., 137-144) (1984)(Eng.). Minor elements (Li, Na, K, Al, Ti) in (4).
- TRIMERITE. Henderson and Taylor (Mineral. Mag. 48, 431-436) (1984). Thermal expansion, unit cell dimensions 25 percent to 800 degrees C.
- TRIPHYLITE. Fransolet et al. (Mineral. Mag. 48, 373-381) (1984). Synthesis of 5 triphylite-lithiophilite series and equations for determination of Fe (Mn + Fe) ratio in the series by x-ray method.
- TRIPHYLITE. Raju, et al., (Proc. Indian Natl. Sci. Acad. 49A, 662-668) (1983), Chem. Abstr. 100, no. 24., 195234 (1984). Optical and electron proton resonance study.
- TRIPHYLITE. Stone and George, Proc. Ussher Soc. 5, 428-431 (1983). Analysis, x-ray data, Megilliger Rocks, Cornwall.
- TRIPLITE. Fransolet and Abraham (Ann. Soc. Geol. Belg. 106, 299-309) (1983), Chem. Abstr. 100, no. 26, 213127 (1984). Microprobe analysis from Buranga pegmatite, Ruanda. (not in abstr.)
- TRIPLITE. Mandarino, et al., Mineral. Mag. 48, 142-143 (1984). Microprobe analysis from Nova Scotia, a 12.134, b 6.546, c 9.939 A, beta 106.08 degrees. DTA.
- TRISTRAMITE. Abstr. in Mineralog. Abstr. 34, 477 (1983). Abstract of original description.

- TRISTRAMITE. Abstract in Am. Mineral. 69, 813 (1984). Abstract of original description.
- TROILITE. Bukovanska, et al., Meteoritics 18, 223-240 (1983). Analysis from Usti nad Orlici meteorite, Czechoslovakia.
- TROILITE. Gamsjaeger et al., (Ber. Bunsenges. Phys. Chem. 86, 1046-1049 (1982)(English)) Chem. Abstr. 98, no. 4, 19613 (1983). Solubility constants and enthalpies.
- TROILITE. Grossman et al. (Geochim. Cosmochim. Acta 49, 1781-1795) (1985). Microprobe analyses (13) from Quingzhen chondrite.
- TROILITE. Pasteris, Can. Mineral. 22, 39-53 (1984). Analysis from Duluth complex, Minn.
- TROILITE. Rubin (Earth Planet. Sci. Lett. 67, 273-284) (1984). Electron microprobe analyses (3) from Blithfield meteorite.
- TROILITE. Rubin and Keil, Earth Planet. Sci. Lett. 62, 118-131 (1983). Microprobe analyses (8) of Abee chondrite.
- TROILITE. Rubin, Earth Planet. Sci. Lett. 64, 201-212 (1983). Microprobe analysis (av.) from Adhi Krot meteorite.
- TROILITE. Ulf-Moller (J. Petrol. 26, 64-91) (1985). Microprobe analyses (3) from Disko, W. Greenland.
- TRONA. Choi and Mighell, (Acta Crystallogr. 38B, 2874-2876 (1982)) Mineral. Abstr. 34, 119 (1983). Neutron diffraction gives space group C2/c, Z=4, a 20.36, b 3.48, c 10.29A, beta 106°48'.
- TRONA. Harvie, et al., Geochim. Cosmochim. Acta 48, 723-751 (1984). Calculated solubilities in system Na-K-Mg-Ca-H-Cl-SO₄-OH-HCO₃-CO₅-CO₂-H₂O at 25 degrees C.
- TRONA. Monnin and Schott, Geochim. Cosmochim. Acta 48, 571-581 (1984). Calculation of solubility product.
- TSCHERMIGITE. Groenvold and Meisingset, (J. Chem. Thermodyn. 14, 1083-1098 (1982)) Chem. Abstr. 98, no. 10, 79051 (1983). Heat capacity 270-400 K. Enthalpies and entropies.
- TSILAISITE. Abstract in Am. Mineral. 70, 877-878 (1985). Abstract of original description.
- TSUMOITE. Vinogradova et al. (Zap. Vses. Mineral. O-va. 114, 340-344) (1985)(Russ.). Microprobe analysis (1) from Tyrong Auz, Caucasus.
- TUGARINOVITE. Kudrin, (Geochem. Internatl. 22, 126-138) (1985) (Eng) Solubility in H₂O, HCl, NaO, KOH 250-450 deg. C
- TUGTUPITE. Dobrovolskaya, et al., Mineral. Zh. 6, no. 5, 64-72 (1984). Magnetic properties.
- TULAMEENITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- TUNDRITE. Karup-Moeller, (Neues Jahrb. Mineral., Monatsh., 481-494 (1982)) Mineral. Abstr. 34, 165 (1983). Analysis from Ilimaussaqa, a 7.533, b 13.924, c 5.010A, alpha 99°52', beta 70°50', gamma 100°59'. Infra-red spectra.
- TUNELLITE. Helvacı, Miner. Deposita 19, 217-226 (1984). Occurrence at Emet deposits, Turkey. Analyses (1).
- TUNGSTENITE. Nekrasov and Konyushok, (Mineral. Zh. 4, 33-40 (1982)) Mineral. Abstr. 34, 35-36 (1983). Occurrence in Tamvatnei deposit, Kamchatka. Calculation of stability field.
- TUNGSTENITE. O'Hare, et al., (J. Chem. Thermodynamics 16, 45-59) (1984), Chem. Abstr. 100, no. 22, 181062 (1984). Heat capacity, heat of formation, thermodynamic properties to 1500 degrees K.
- TUNGSTENITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes

- TUNGSTITE. Szymanski and Roberts, *Can. Mineral.* 22, 681-688 (1984). Structure. Orth., Pmb, a 5.249, b 10.711, c 5.133 A, Z=4. X-ray powder data.
- TUPERSSUATSIAITE. Karup-Moeller and Petersen, (*Neues Jahrb. Mineral., Monatsh.*, 507-512) (1984) (English), *Chem. Abstr.* 102, no. 4, 28602 (1985). New mineral from Ilimaussaq, Greenland, $\text{NaFe}_3\text{Si}_8\text{O}_{20}(\text{OH}_2 \cdot 5\text{H}_2\text{O})$, mon., C2/m, a 13.729, b 18.000, c 4.828 A, beta 104.28 degrees, compare Palygorskaite.
- TURNEAWREITE. Dunn et al. (*Can. Mineral.* 23, 251-254) (1985). New mineral from Franklin, N.J., Balmat, N.Y. and Langban, C.A., $[(\text{As},\text{P})\text{O}_4]_3\text{Cl}$, hex., $\text{P6}_3/\text{m}$, a 9.810, c 8.68A, apatite gray. Analysis, optics, G 3.60, x-ray data.
- TURQUOISE. Belyaev (*Tr. Komi Fil. Akad. Nauk SSSR* 45, 87-91) (1984) (G(570)AK144+). Analysis from Pai-Khoe, DTA infra-red spectrum.
- TURQUOISE. Belyaev, (*Akad. Nauk SSSR, Komi Fil. Inst. Geol.* 45, 87-91) (1984), *Chem. Abstr.* 101, no. 6, 41203 (1984). Occurrence in Pai-Khoi, x-ray, DTA, infra-red data.
- TURQUOISE. Sneva Seikoshe Co., (*Jpn. Patents* 59, 141, 486, 3 pp) (1983), *Chem. Abstr.* 102, no. 6, 27516 (1985). Synthesis of single crystals.
- TURQUOISE. Zhang et al. (*Geochemistry (China)* 3, no. 4, 322-332) (1984)(Eng.) G(610)G292g. Analyses (14), electron proton resonance, magnetic properties, Mossbauer spectrum. Cause of color.
- TUSIONITE. Konovalenko, et al., (*Dokl. Akad. Nauk SSSR* 272, 1449-1453) (1983), *Chem. Abstr.* 100, no. 10, 71340 (1984). New mineral, $\text{MnSn}(\text{BO}_3)_2$, trig., R3, a 4.78, c 15.26 A, Z=3, G 4.73, from SW Pamir. Analysis, optics, x-ray data.
- TVALCHRELIDZEITE. Podeminskaya, et al., *International Mineralog. Assoc.*, 11th Meeting, Novosibirsk, 1978, 49-58 (1980)(Russian) (Sulfosalt Vol.). Structure. Triclinic, PT, a 4.391, b 11.573, c 15.667A, alpha 88.17, beta 90.01, gamma 89.8 degrees, Z=2.
- TWINNITE. Moelo, et al., *Bull. Mineral.* 106, 505-510 (1983). Microprobe analyses (6) from Rujevac, Yugoslavia.
- TYRETSKITE. *Abstr. in Am. Mineral.* 69, 214 (1984). Kurgentaite = strontian Tyretskite.
- TYRRELLITE. Borishenskaye and Vinogradova, *Nov. Dannye Mineral.* 30, 32-41 (1982). Reflectance and hardness.
- TYRRELLITE. Dymkov, et al., *Nov. Dannye Miner. SSSR* 31, 41- (1983). Microprobe analyses (2).
- TYUYAMUNITE. Schmitt and Thiry, (*Bull. Mineral.* 110, 197-208) (1987) (Eng) Av. composition from Bertholena, France
- UCHUCCHACUAITE. Moelo, et al., (*Bull. Mineral.* 107, 597-604) (1984), *Chem. Abstr.* 102, no. 4, 28597 (1985). Abstract of original description.
- UKLONSKOVITE. Sabelli (*Bull. Mineral.* 108, 133-138) (1985)(Eng.). Occurrence at Cetina mine, Italy, formula $\text{NaMg}(\text{SO}_4)\text{F} \cdot 2\text{H}_2\text{O}$. Monoclinic, $\text{P2}_1/\text{m}$, a 7.202, b 7.214, c 5.734A, beta 113.23 degrees, Z=2. X-ray data.
- ULLMANITE. Kulichikhina, *Mineral. Rudn. Mestorozhd.* 1983, 104-109 (Russian)(410M662). Dielectric constant, resistivity.
- ULVOSPINEL. Allan and Carmichael, *Contrib. Mineral. Petrol.* 88, 203-216 (1984). Microprobe analyses (3) from lavas, Colima, Mexico.
- ULVOSPINEL. Bellieni, et al., *J. Petrol.* 25, 579-618 (1984)(English). Microprobe analyses (38) from Parana Plateau, Brazil.
- ULVOSPINEL. Momdzhii (*Izv. Vyssh. Uchebn. Zaved., Geol. Razved.* 1, 26-33) (1985); *Chem. Abstr.* 103, no. 2, 9132 (1985). Crystal chemical formula based on Mossbauer, magnetic resonance, and neutron diffraction data.
- ULVOSPINEL. Nakagawa and Aoki (*J. Jpn. Assoc. Mineral., Petrol. Econ. Geol.* 80, 136-154) (1985)(Jpn.). Microprobe analysis (1) from Moriyoshi volcano, NE Japan.

- ULVOSPINEL. Plaksenko et al. (Dokl. Akad. Nauk SSSR 276, 213-218) (1984), Chem. Abstr. 101, no. 10, 76132 (1984). Analysis from Voronezh massif.
- ULVOSPINEL. Rozova; et al., Dokl. Akad. Nauk SSSR 278, 456-461 (1984). Microprobe analysis, x-ray data, reflectance, from kimberlite.
- ULVOSPINEL. Schenker and Dietrich, (Schweiz. Min. Petr. Mitt. 66, 343-384) (1986) (Eng) Microprobe analyses (4) from Lake Nyos, Cameroon
- ULVOSPINEL. Trestman-Matts et al. (J. Am. Ceram. Soc. 66, 829-834 (1984), Mineral. Abstr. 36, 43 (1985). Cation distribution in magnetite-ulvospinel.
- UMANGITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- UMBITE. Abstract in Am. Mineral. 69, 813-814 (1984). Abstract of original description.
- UMBITE. Abstract in Mineral. Abstr. 35, 194 (1984). Abstract of original description.
- UPALITE. Piret and Declercq, (Bull. Mineral. 106, 383-389) (1983), Mineral. Abstr. 35, 139 (1984). Structure. Monoclinic, a 13.704, b 16.32, c 9.332 Å, β 111.5 degrees, $P2_1/a$, $Z=4$ $(Al(UO_2)_3O(OH)(PO_4)_2 \cdot 7H_2O)$.
- URANCALCARITE. Delians and Piret, (Bull. Mineral. 107, 21-24) (1984), Chem. Abstr. 100, no. 26, 213109 (1984). Abstract of original description. New mineral, $Ca(UO_2)_3(CO_3)(OH)_6 \cdot 3H_2O$, from Shinkolobwe, Zaire. Orth., Pbnm or Pbn2₁, a 15.42, b 16.08, c 6.970 Å, $Z=4$, G 4.03. Analysis, optics, x-ray data.
- URANINITE. Dymkova, et al., Nov. Dannye Miner. SSSR 31, 51-65 (1983). Many analyses of pitchblende and alteration products. X-ray and unit cells.
- URANINITE. Gevorkyan, et al., (Problem Kustellokhim Genesis Mineral., 57-60 (1983), Chem. Abstr. 100, no. 6, 37231 (1983). Infra-red spectroscopic data on uraninite and synthetic UO_2 .
- URANINITE. Herrick and Behrens, (Proc. Electrochem. Soc. 83-7, 42-47) (1983). Chem. Abstr. 100, no. 2, 15439 (1984). Single crystals by skull melting.
- URANINITE. Hoch (J. Nucl. Mater. 130, 94-101) (1985). Chem. Abstr. 102, no. 22, 192288 (1985). High-temp. sp. heat.
- URANINITE. Leroy, Miner. Deposita 19, 26-35 (1984) (French). Analyses (6) from U deposit, Bernardan, France, a 5.406 Å.
- URANINITE. Rimsaite, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 269-280 (1982). Microprobe analyses (3) from Bancroft, Ont.
- URANINITE. Stuckless and Troeng (Econ. Geol. 79, 509-528) (1984). Microprobe analyses (8) of pitchblende, Littjuthatten, Sweden.
- URANOPHANE-BETA. Naumova et al., (Mineral. Zh. 4, no. 3, 57-61 (1982)) Mineral. Abstr. 34, 165-166 (1983). Structure, a 6.52-6.99, b 15.11-15.69, c 13.65-14.15 Å, β 89°31'-94°34'. Optics.
- URANOPHANE. Matkovskii et al., (Mineral. Sb. (Lvov) 35, 27-32 (1981)) Chem. Abstr. 98, no. 10, 75521 (1983). Excitation-luminescence spectrum.
- URANOSILITE. Abstract in Am. Mineral. 69, 408-409 (1984). Abstract of original description.
- URANOSILITE. Walenta, Abstract in Mineral. Abstr. 36, 94-95 (1985). Abstract of original description.
- URANOTUNGSTITE. Walenta (Tscherma Mineral. Petrogr. Mitt. 34, 25-34) (1985) (Eng.). (Germ.), Chem. Abstr. 103, no. 8, 56913 (1985). New mineral from Black Forest $(Ba, Pb, Fe^{+2})(UO_2)_2(WO_4)(OH)_4 \cdot 12H_2O$. Orth., a 9.22, b 13.81, c 7.17 Å, $Z=2$. Analysis, optics, x-ray data. G 4.27 calcd. Abstract of original description.
- URANPYROCHLORE. Povarenykh (Nov. Dannye Miner. SSSR 32, 82-90) (1985) (Russ) Chem. Abstr. 103, no. 8, 56931 (1985) (Russ). Analysis from carbonatite, Chernigov, 90 10.44-10.45 Å.

- UREA. McMurdie et al., (Powder Diffraction 1(4), 334-345) (1986) X-ray powder data
- UREA. Swaminathan, et al., (Acta Crystallogr. Sect. B, B40, 300-306) (1984), Chem. Abstr. 101, no. 2, 15416 (1984). Neutron diffraction study at 12 degrees, 60 degrees, and 123 degrees K. Unit cells. tet.
- URVANTSEVITE. Tarkian and Bernhardt (Tschermarks Mineral. Petrogr. Mitt. 33, 121-129) (1984)(Eng.). Diagram for optical determination.
- USHKOVITE. Abstr. in Am. Mineral. 69, 212-213 (1984). Abstract of original description.
- USHKOVITE. Abstract in Mineral. Abstr. 35, 89 (1984). Abstract of original description.
- UZONITE. Popova and Polyakov (Zap. Vses. Mineral. O-va. 114, 369-373) (1984)(Russ.). New mineral from Kamchatka, A_4S_5 . Analysis, optics. X-ray data. Monoclinic, $P2_1/m$, a 7.94, b 8.08, c 7.10A, beta 100.10.
- VAESITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- VAESITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- VALLERIITE. Oen et al., (N. Jb. Miner. Mh., 209-220) (1985), Mineral. Abstr. 38, 87M/3143 (1987) Microprobe analyses, Nordmark, Sweden, some rich in Fe, Mg, Mn
- VALLERIITE. Vyalsov, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 218-224 (1980)(Russian) (Sulfosalt Vol.). Reflectance at 16 wave lengths. Color effects of anisotropy.
- VALLERIITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- VANADINITE. Jones, Mineral. Rec. 14, 95-107 (1983). Crystals from Old Yuma mine, Ariz. Color photos.
- VANADINITE. White (Mineral. Rec. 15, 347-350) (1984). Analysis of "pyromorphite" from Touissit, Morocco, shows it to be vanadinite.
- VANALITE. Ankinovich et al., (Zap. Vses. Mineral. O-va 116(1), 100-113) (187) (Russian) Analyses (1) from schists, Kara-Tan X-ray data, Optics, DTA, Infra-red data, Monoc., a 12.470, b 19.00, c 10.825 A, beta 98 deg. 40 min., formula $NaAl_9V^{+5}_{12}O_{42}(OH)_4 \cdot 15H_2O$
- VANTHOFFITE. Kuhn, Kaliu Steinsalz 8, no. 12, 411-415 (1983). X-ray data. Possible conditions of formation.
- VANURALITE. Matkovskii et al., (Mineral. Sb. (Lvov) 35, 27-32 (1981)) Chem. Abstr. 98, no. 10, 75521 (1983). Excitation-luminescence spectrum.
- VARISCITE. Bennett et al., (Zeolites 6, 349-360) (1986), Mineral. Abstr. 38, 87M/2146 (1987) Structural features
- VARLAMOFFITE. Chistyakova and Nechelyustov, (Mineral. Zh. 7(4), 39-48) (1985) (Russian) Microprobe analyses (20)
- VARLAMOFFITE. Deng et al., (Yankuang Ceshi 1, no. 3, 31-36 (1982)) Chem. Abstr. 98, no. 18, 146740 (1983). Analysis from granite, Guonsi, China, gives (Sn 0.48 Fe 0.28 Al 0.17 Si 0.11 P 0.05 As 0.01) . $3H_2O$. X-ray pattern, G 3.21-3.36. When heated, tetragonal, a 4.6671, c 3.0959A.
- VATERITE. Senna (Cryst. Res. Technol. 20, 209-217) (1985). Review of polymorphic transformation.
- VEATCHITE-A. Helvacı, Miner. Deposita 19, 217-226 (1984). Occurrence at Emet deposits, Turkey. Analyses (2).
- VERMICULITE. Gucua and Pelizer, (Mineral. Polsk Karpat., 134-135) 120(578) G934m (Polish) Analyses (3) from Polish Carpathians
- VERMICULITE. Parneix and Meunier, Bull. Mineral. 105, 662-672 (1982). Microprobe analyses (10). Replacement by vermiculite.

- VERMICULITE. Pe-Piper, Lithos 16, 23-33 (1983). Microprobe analyses (3) from western Greece.
- VERMICULITE. Pe-piper, Neues Jahrb. Mineral., Abh. 149, 163-178 (1984)(English). Microprobe analyses (1) from volcanic rocks, Greece.
- VERMICULITE. Ziborova, et al., (Geol. Genezio Vaslmash Endoz. Nemet. Iskoz., 141-151) (1983), Chem. Abstr. 100, no. 12, 88890 (1984). Infra-red spectra.
- VERNADITE. Chukhrov, et al., Int. Geol. Congress 1980, Dokl. Soviet Geol., Geokhim., Mineral., Petrol., 143-159 (Russian)(201In391g). Analyses (2), Pacific Ocean, and Kola Peninsula.
- VERPLANCKITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- VESUVIANITE. Baltatzis, Neues Jahrb. Mineral., Monatsh., 317-322 (1984)(English). Microprobe analysis from rodingite, Greece.
- VESUVIANITE. Fitzgerald et al., (Am. Mineral. 72, 625-628) (1987) New microprobe analysis from San Benito, Cal., gives RE_2O_3 17.19% (Murdoch and Ingram, 1966, found 16.7%) Structure Tetrag., $P4/n a 15.799$, $c 11.917$ A, $Z=2$
- VESUVIANITE. Grice and Wight, (IMA Sofia v. 2, 433-440), Mineral. Abstr. 38, 87M/3034 (1987) Analyses (5) from Quebec (Gr) Coloration and chemistry
- VESUVIANITE. Meinert, Econ. Geol. 79, 869-882 (1984). Analyses (2) from skarns, W. British Columbia.
- VESUVIANITE. Mottana, (Geol. Soc. Am. Mem. 164, 267-299) (1986) Analyses (1) from manganiferous cherts, Alps
- VESUVIANITE. Mulholland, Mineral. Mag. 48, 27-30 (1984). Analysis, optics from Gumble, N.S. Wales. Analysis from Gumble, N.S. Wales.
- VESUVIANITE. Pinto, (Mem. Nat. Univ. Coimbra Lab. Mineral 96, 21-38) (1983), Chem. Abstr. 102, no. 8, 65068 (1985). Analyses and optics (not in abstr.) of zoned vesuvianites from skarns, Portugal.
- VESUVIANITE. Plimer, Miner. Deposita 19, 19-25 (1984)(English). Analyses (1) from Broken Hill, Australia (fluor). F 1.87%
- VESUVIANITE. Poblesskii et al., (Gold and silver deposits, "Nauka", Moscow, 167-212) (Russian) 431 M565 Microprobe analyses (2) from Kuru- Tegeraba deposit
- VESUVIANITE. Sherman, (Phys. Chem. Minerals 14, 355-363) (1987) $Fe^{+2}-Fe^{+3}$ charge transfer in
- VESUVIANITE. Vishnevskii, et al., Mineral. Sb. 37, 3-7 (1983)(Russian). Reflectance spectra in ultra-violet.
- VIITANIEMIITE. Lahti and Pajunen, (Geologi 34, 149-152 (1982)) Chem. Abstr. 98, no. 24, 201475 (1983). Structure. Monoclinic, $P2(1)/m$, $a 5.46$, $b 7.15$, $c 6.84A$, $\beta 109.36^\circ$, $Z=2$.
- VIKINGITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111- 145) (1986) (Russian) 431 M565 Microprobe analyses (4) from gold-silver deposits
- VIKINGITE. Kovalenker, et al., Mineral. Zh. 6, no. 2, 16-30 (1984). Microprobe analyses (4) from Kochbulak deposit.
- VILLAMANINITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- VINCIENNITE. Jambor and Owens, (Can. Mineral. 25, 227-228) (1987) Microprobe analyses (4) from Maggie Cu deposit, Brit. Columbia
- VIOLARITE. Borishenskaye and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- VIOLARITE. Cagatay, (Mineral. Deposita 22, 163-171) (1987) Microprobe analyses (8) from Pancarli deposit, E. Turkey
- VIOLARITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.

- VIOLARITE. Weinke and Wieseneder, Ore Genesis: The State of the Art (Spec. Publ. No. 2, Soc. Geol. Appl. Miner. Dep.), 396-404 (1982). Microprobe analyses (2) from mafic rocks, East Alps.
- VISHNEVITE. Hassan and Grundy, Can. Mineral. 22, 333-340 (1984). Structure $P6_3$, a 12.685, c 5.179 Å, (analysis from Vishnevye Mts., USSR, SO_3 6.97%.
- VISHNEVITE. Donaldson et al., (Neues Jahrbuch Miner. Abh. 156, 247-279) (1987) (Eng) Microprobe analyses (1) from silicate lavas, Oldoinyo Lengai, Tanzania
- VISMIRNOVITE. Chistyakova and Nechelyustov, (Mineral. Zh. 7(4), 39-48) (1985) (Russian) Microprobe analyses (5)
- VIVIANITE. Childs and Baker-Sherman (N. Z. Soil Bur. Sci. Rpt. 66, 1-50) (1984). P(890)q So_3n . Mossbauer study of standard samples.
- VIVIANITE. Hearn et al., (J. Sediment. Petrol. 53, 165-177 (1983)) Chem. Abstr. 98, no. 22, 182718 (1983). Authigenic vivianite in Potomac River sediments near sewage treatment plant.
- VIVIANITE. Riezeks and Rappol, (Geol. Mijnbouw 66, 21-34) (1987) (Eng), Chem. Abstr. 107, no. 10, 81112 (1987) Occurrence in till, Netherlands
- VOLKONSKOITE. Khoury et al. (Clay Minerals 19, 43-57) (1984), Chem. Abstr. 101, no. 10, 76096 (1984). Analysis from Jordan, Fe-free, with 16 percent Cr_2O_3 . Infra-red shows it to be mostly di-octahedral.
- VOLKOVŠKITE. Mackenzie, Mineral. Mag. 48, 297-298 (1984). Discussion of original description.
- VOLTAITE. Postl and Walter, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 329-332 (1983) (G(533)G78mb). Occurrence at Muttlkogel, Styria, infra-red, x-ray data, a 27.35 Å.
- VOLTAITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum 51, 29-32 (1983). Occurrence at Voitsberg, Styria, x-ray and infra-red data.
- VOLTAITE. Walter and Postl, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 325-328 (1983) (G(533)G78mb). Occurrence at Muttlkogel, Styria, x-ray, infra-red data.
- VOLYNSKITE. Harris et al., Can. Mineral. 21, 137-143 (1983). Occurrence at Ashley deposit, Ont. Probe analysis.
- VOLYNSKITE. Kovalenker, (Gold and silver deposits, "Nauka", Moscow, 111-145) (1986) (Russian) 431 M565 Microprobe analyses (2) from gold-silver deposits
- VOLYNSKITE. Oen and Kieft, Neues Jahrb. Mineral., Abh. 149, 245-266 (1984)(English). Microprobe analyses, Glava, Sweden.
- VOLYNSKITE. Shimada, et al., (Mineral. J. Japan 10, 269-278) (1981)(English), Mineral. Abstr. 35, 190 (1984). Analysis from Kyushu, reflectance.
- VONSENITE. Bavese et al., (N. Jb. Miner. Mh., 483-489) (1984), Mineral. Abstr. 38, 87M/2498 (1987) Synthesis
- VONSENITE. Kan, et al., (Kexue Tongbao, Foreign Ed. 29, 928-931) (1984)(English), Chem. Abstr. 102, no. 2, 9828 (1985). Mossbauer study, magnetic ordering.
- VOZHMINITE. Rudashevskii et al., (Zap. Vses. Mineral. O-va. 111, 480-485 (1982)) Am. Mineral. 68, 645 (1983). Mineral. Abstr. 34, 186 (1983). Abstract of original description.
- VOZHMINITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- VULCANITE. Vyalsov, International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 218-224 (1980)(Russian) (Sulfosalt Vol.). Reflectance at 16 wave lengths. Color effects of anisotropy.
- VULCANITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes

- VUONNEMITE. Ronsbo, et al., (Neues Jahrb. Mineral., Monatsh., 451-460) (1983)(English), Mineral. Abstr. 35, 182 (1984). From Ilimaussaq, Greenland, a 5.501, b 7.162, c 14.440 A, alpha 92.63, beta 95.33, gamma 90.57 degrees. X-ray data, optics.
- VYACHESLAVITE. Belova et al., (Proc. 13th Meeting IMA, Varne, 1982, 763-772) (1986) (Russian) Data given
- VYACHESLAVITE. Belova, et al., Zap. Vses. Mineral. O-va. 113, 360-365 (1984)(Russian). New mineral, $U^{+4}(PO_4)(OH) \cdot 2-1/2H_2O$, green. Orth., Cmc, Cmc₂₁, or C2cm, a 6.96, b 9.10, c 12.38 A, Z=6.
- VYSOTSKITE. Borishenskaya and Vinogradova, Nov. Dannye Mineral. 30, 32-41 (1982). Reflectance and hardness.
- VYSOTSKITE. Talkington and Watkinson, Can. Mineral. 22, 125-136 (1984). Microprobe analyses (2), Lac-des. Iles complex, N.W. Ont.
- VYUNTSPAKHKITE. Yakubovich, et al., (Kristallografiia 29, 238-242) (1984), Chem. Abstr. 100, no. 26, 219464 (1984). Structure. Monoclinic, P2₁/a, a 5.830, b 14.763, c 6.221 A, beta 123.05 degrees, 64.02, Z=4.
- WADEITE. Rudenko, et al., (Mineral. Zh. 5, no. 6, 70-72) (1983), Chem. Abstr. 100, no. 16, 124239 (1984). Synthesis of Sn-analogue. Hex., a 6.864, c 10.022 A, Z=2.
- WADSLEYITE. Price, (Phys. Earth Planet. Inter. 33, 137-147) (1983), Chem. Abstr. 100, no. 8, 54684 (1984). Stacking faults in.
- WAGNERITE. Irouschek and Armbruster (Fortschr. Mineral. 62, Beih. 1, 109-110) (1984). Hydroxyl-bearing (F_{0.7}OH_{0.3}) from Val Ambria, Switzerland. Optics. a 9.650, b 11.974, c 12.714 A, beta 108.34 degrees.
- WAGNERITE. Novak and Povondra, (N. Jb. Miner. Mh., 536-542) (1984), Mineral. Abstr. 38, 87M/3170 (1987) Analysis from Shrinarov, Optics, G 3.09, a 11.925, b 12.647, c 9.635 A, beta 108.21 deg.
- WAGNERITE. Novak and Povondra, Neues Jahrb. Mineral., Monatsh., 536-542 (1984)(English). Analysis from Shrinarov, Czechoslovakia, with about 25% of F replaced by OH. a 11.925, b 12.647, c 9.635 A, beta 108.21 degrees.
- WAKABAYASHILITE. Wu and Mei, (Jour. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- WAKABAYASHILITE. Zhang, (Acta Mineral. Sinica 5(3), 270-274) (1985) (Chinese), Mineral. Abstr. 38, 87M/3147 (1987) Microprobe analysis, Guangxi, China, G 4.0, gave (As,Sb)_{11.1}S₁₈, DTA, Reflectance
- WALENTAITE. Dunn et al., (Neues Jahrb. Mineral., Monatsh., no. 4, 169-174) (1984)(English). Chem. Abstr. 100, no. 24, 195197 (1984). New mineral from S. Dakota; H₄(Ca,Mn,Fe)₄Fe₁₂⁺³(AsO₄)₁₀(PO₄)₆ 28 H₂O. Orth., a 26.24, b 10.31, c 7.38 A, Z=1. Analysis, optics, X-ray data.
- WALSTROMITE. Alfors and Pabst, Am. Mineral. 69, 358-373 (1984). Occurrences with taramellite in Calif.
- WARWICKITE. Malinko et al., (Zap. Vses. Miner. O-va. 115, 713-719) (1986) (Russian) Analyses (5) from S. Yakutia, Fe₂O₃ 28.4-39.3%, a 9.253, b 9.395, c 3.105 A
- WAVELLITE. Falster, Rocks Miner. 59, 125-126 (1984). Occurrence, Jackson County, Wis.
- WAYLANDITE. Bayliss, (Powder Diffraction 1(4), 331-333) (1986) X-ray powder data
- WEDDELLITE. Heijnen and van Diujnevaldt, (Jour. Crystal Growth 67, 324-336) (1984), Mineral. Abstr. 38, 87M/2530 (1987) Growth morphology
- WERMLANDITE. Ruis and Allmann (Z. Kristallogr. 168, 133-144) (1984)(Eng.). Chem. Abstr. 102, no. 18, 158507 (1985). Structure. Trigonal, space group P3c1; a 9.303, c 22.57A, Z=2, G calcd 1.96.
- WHEWELLITE. Franchini-Angela and Ciquilano, (Phys. Chem. Minerals 10, 114-120) (1984), Chem. Abstr. 100, no. 14, 112462 (1984). Growth morphology of.

- WHEWELLITE. Peldyakov and Karpenko, (Zap. Vses. Mineral. O-va. 113, 83-85) (1984), Chem. Abstr. 100, no. 20, 159640 (1984). Occurrence in Kuznetsh Basin. X-ray data.
- WHEWELLITE. Will, et al., (J. Cryst. Growth 64, 297-305, 306-315, 316-325) (1983), Chem. Abstr. 100, no. 10, 77541, 77542, 77543 (1984). Kinetics of growth of crystals.
- WHITLOCKITE. Bukovanska, et al., Meteoritics 18, 223-240 (1983). Analysis from Usti nad Orlici meteorite, Czechoslovakia.
- WHITLOCKITE. Nord, Neues Jahrb. Mineral., Monatsh., 489-497 (1983)(English). Synthesis and unit cells for beta-(Ca_{1-x}M_x)₃(PO₄)₂, X=Ni, Mg, Cu, Co, Zn, Fe, Mn, Cd, Sn, Pb, Ba.
- WHITLOCKITE. Terpstra, et al., (Z. Anorg. Allg. Chem. 507, 206-212) (1983)(English), Chem. Abstr. 100, no. 10, 71352 (1984). Stability in system CaO-MgO-P₂O₅ at 1000 degrees C.
- WILCOXITE. Abstract in Am. Mineral. 69, 408 (1984). Abstract of original description.
- WILLEMITE. Marchenko, (Mineral. Zh. 9(1), 86-) (1987) (Russian) Analyses (5) from alkaline metasomatites, Ukraine, Optics, a 13.90, c 9.15 A
- WILLENDERSONITE. Peacor, et al., Am. Mineral. 69, 186-189 (1984). New zeolite from Italy, KCaAl₃Si₃O₁₂.5 H₂O, from Umbria, Italy. Triclinic, P1, a 9.23, b 9.21, c 9.52 A, alpha 92.7, beta 92.4, gamma 90 degrees, G 2.18. Analyses, optics, x-ray data.
- WILLENDERSONITE. Tillmanns, et al., Neues Jahrb. Mineral., Monatsh., 547-558 (1984). Structure. PT, triclinic, a 9.206, b 9.216, c 9.500 A, alpha 92.34 degrees, beta 92.70 degrees, gamma 90.12 degrees, Z=2. Structure similar to that of chabazite.
- WILLENDERSONITE. Walter and Postl (Mitteilungen. - Abt. Mineral. Landesmus. Joanneum 52, 39-43) (1984). G(533)G78mb. X-ray data and infra-red spectrum. Wilhelmsdorf, Styria.
- WITHERITE. Busenberg and Plummer, (Geochim. Cosmochim. Acta 50, 2225-2233) (1986), Mineral. Abstr. 38, 87M/2519 (1987) Solubility in CO₂-H₂O solutions 0-90 deg. C
- WITHERITE. Eberhardt et al. (Appl. Optics 24(3), 388-395) (1985), Chem. Abstr. 102, no. 14, 116741 (1985). Reflectance at CO₂ laser wavelengths.
- WITTICHENITE. Patterson and Watkinson, Can. Mineral. 22, 13-21 (1984). Average composition from various types of ore, Thierry mine, Ont.
- WITTICHENITE. Ptitsyn and Naumov, (Eksp. Issled. Endogen. Rudoobraz., 1981, 22-34) (1983), Chem. Abstr. 100, no. 26, 213097 (1984). Hydrothermal synthesis.
- WITTICHENITE. Sakharova and Bryzgalov, Mineral. Rudn. Mestorozhd. 1983, 37-48 (Russian)(410M662). Microprobe analysis, N.E. U.S.S.R. Ag 4.9%.
- WITTICHENITE. Sugaki, et al., International Mineralog. Assoc., 11th Meeting, Novosibirsk, 1978, 100-109 (1980)(English) (Sulfosalt Vol.). Stability in system Cu-Bi-S below 400 degrees.
- WITTICHENITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- WITTICHENITE. Yamaoka and Asakura, J. Jpn. Assoc. Mineral., Petrol. Econ. Geol. 78, 290-294 (1983)(Japanese). Analyses (3) from Fukushima Pref., Japan.
- WODGINITE. Dobrovol'skaya, et al., (Mineral. Rudn. Mestorozhd., 74-78) (1983), Chem. Abstr. 100, no. 20, 159606 (1984). Forms of Mn present in.
- WODGINITE. Foord, Mineral. Assoc. Canada Short Course no. 8, 187-238 (1982). Review of occurrence in granite pegmatites.
- WODGINITE. Kimkov and Dybik, (Problem Kristalloghim Genezis Miner., 129-134) (1983), Chem. Abstr. 100, no. 6, 37238 (1984). Analyses (not in Abstr.)

- WODGINITE. Wise and Cerny, *Am. Mineral.* 69, 807-809 (1984). Microprobe analyses (4) from Powhatan Co., Va., a 9.471, b 11.431, c 5.108 A, beta 90 degrees 47 minutes.
- WOLFRAMITE. Gavelin, (*Sver. Geol. Undersokn.* 79C, 1-17) (1985) (Eng) Analysis from the Baggetorp W deposit, S. Sweden
- WOLFRAMITE. Maksimyuk, et al., (*Mineral Zh.* 6, no. 5, 45-55) (1984), *Chem. Abstr.* 102, no. 4, 28648 (1985). Electron microscope (TEM) study of morphology.
- WOLFRAMITE. Nechaev et al., (*Mineral. Zh.* 7, 47-61) (1985) (Russian) Analyses (1) from Ukraine ferberite
- WOLFRAMITE. Rafal'son and Filatov, (*Vestn. Leningr. Univ., Geol., Geogr.* 16, 80-91) (1982), *Chem. Abstr.* 100, no. 20, 167090 (1984). Behavior when heated.
- WOLFRAMITE. Tan, (*Geochemistry (China)* 4, 236-244) (1985) (Eng) Analyses (14) from W deposits, Nanling region, China
- WOLFRAMITE. Zhang (*Kuangchuang Dizhi* 3, no. 2, 59-67) (1984) (Chinese), *Chem. Abstr.* 101, no. 20, 174808 (1984). Nb and Ta in; significance of Nb/Ta rates as an indicator.
- WOLFRAMOIXIOLITE. Kornetova, et al., *Nov. Dannye Mineral.* 30, 117-130 (1982). Comprehensive study, analysis, x-ray data. It is a mixture.
- WOLLASTONITE-IT. Oheshi, *Phys. Chem. Miner.* 10, 217-229 (1984). Structures of polysynthetically twinned.
- WOLLASTONITE. Chatterjee, et al., *Contrib. Mineral. Petrol.* 88, 1-13 (1984). Synthesis, stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$. Triclinic, PT, a 7.9333, b 7.3248, c 7.0674 A, alpha 89.98 degrees, beta 95.24 degrees, gamma 103.36 degrees.
- WOLLASTONITE. Clocchiatti and Metrich, (*Bull. Volcnol.* 47, 909-928) (1984) (French) Microprobe analyses (4) from Mt. Etna (1892 and 1669)
- WOLLASTONITE. Halbach and Chatterjee, *Contrib. Mineral. Petrol.* 88, 14-23 (1984). Calculation of thermodynamic data.
- WOLLASTONITE. Koepke and Seidel, *Tschermaks Mineral. Petrogr. Mitt.* 33, 263-286 (1984). Microprobe analyses (1) from ophiolite, Crete.
- WOLLASTONITE. Mikirticheva et al. (*Zh. Neorg. Khim.* 30(2), 487-491) (1985) (Russ), *Chem. Abstr.* 102, no. 14, 120835 (1985). Stability in system $\text{CaSiO}_3\text{-MnSiO}_3$. X-ray, infra-red data.
- WOLLASTONITE. Nakagawa and Bamsba, (*Mining Geology (Japan)* 37, 189-197) (1987) (Eng) (G(620)M66) Analyses (1) from Tominchi mine, Hokkaido, Japan
- WOLLASTONITE. Oheshi, *Phys. Chem. Miner.* 10, 217-229 (1984). Structures of polysynthetically twinned.
- WOLLASTONITE. Richet and Bottinga, *Earth Planet. Sci. Lett.* 67, 415-432 (1984) (Eng.). Thermodynamics of melting.
- WOLLASTONITE. Sharma and Windley, *Mineral. Mag.* 48, 195-209 (1984). Microprobe analyses (2) from Archean gneiss, N.W. India.
- WOLLASTONITE. Sidorov, *Mineralogy of Cibaikalie*, 88-137 (103(690.3)M662p). Analyses from SW Baikal (4).
- WOLSENDORFITE. Cassedanne et al., (*Anais Acad. Brasil Cienc* 58, 149-266) (1986) (French) X-ray data from Urucun Brazil
- WOODHOUSEITE. Stoffregen and Alpers, (*Can. Mineral.* 25, 201-211) (1987) Microprobe analyses (3) from hydrothermal ore deposits, Summitville, Colo., La Escondida, Chile Summary of all occurrences
- WULFENITE. Hazen et al. (*J. Phys. Chem. Solids* 46(2), 253-263) (1985). *Chem. Abstr.* 102, no. 22, 195561 (1985). Structures and unit cells at pressures up to 6.0 GPa.
- WULFINGITE. *Mineral. Abstr.* 38, 87M/3203 (1987) Abstract of original description

- WURTZITE. Kaneko, et al., (J. Electrochem. Soc. 130, 2487-2489) (1983), Chem. Abstr. 100, no. 6, 40517 (1984). Stability in system ZnS-MnS under hydrothermal conditions.
- WURTZITE. Kareko et al. (J. Electrochem. Soc. 131, 1445-1446) (1984)(Eng.). Chem. Abstr. 101, no. 4, 31420 (1984). Transition sphalerite-wurtzite in hydrothermal conditions.
- WURTZITE. Senna (Cryst. Res. Technol. 20, 209-217) (1985). Review of polymorphic transformation.
- WUSTITE. Hazen and Jeanloz, Rev. Geophys. Space Phys. 22, 37-46 (1984). Review of defect structures and phys. properties.
- WUSTITE. McCammon and Liu, (Phys. Chem. Miner. 10, 106-113) (1984), Chem. Abstr. 100, no. 16, 124272 (1984). Effects of P and T on the composition.
- WUSTITE. Myers and Eugster, Contrib. Mineral. Petrol. 82, 75-90 (1983). Calculation of thermodynamic properties 298-1600 degrees K.
- WUSTITE. Vasyutinskii, (Izv. Akad. Nauk SSSR, Neorg. Mater. 20, 1540-1543) (1984), Chem. Abstr. 102, no. 2, 12929 (1985). Stoichiometry in system FeO-O at 750-1370 degrees.
- XENOTIME. Votyakov, et al., (Dokl. Akad. Nauk SSSR 275, 167-169) (1984), Chem. Abstr. 101, no. 6, 41197 (1984).
- XENOTIME. Postl and Walter, Mitteilungsbl. - Abt. Mineral. Landesmus. Joanneum, no. 51, 317-319 (1983) (G(533)G78mb). Occurrence at Eisenberg, Styria.
- XENOTIME. Kinnaird (J. African Earth Sci. 3, 229-251) (1985). Analyses (4) from ring complexes, Nigeria.
- XILINGOLITE. Abstract in Am. Mineral. 69, 409 (1984). Abstract of original description.
- XINGZHONGITE. Abstract in Am. Mineral. 69, 412 (1984). New analysis gives $(\text{Cu,Pb,Fe})(\text{Ir,Rh,Pl})_2\text{S}_4$. Cubic, a 9.970 Å, Fd $\bar{3}m$. X-ray data.
- XINGZHONGITE. Legendre and Auge, (Metallogeny of Basic and Ultrabasic Rocks, 361-372) (1986), Mineral. Abstr. 38, 87M/2155 (1987) Analyses (not in abs) from
- XONOTLITE. Filipishin, et al., (Izv. Vyssh. Uchebn. Zaved., Geol. Razved. 26, 38-42) (1983), Chem. Abstr. 100, no. 10, 71350 (1984). Analysis from Yakutia, a 16.958, b 7.34, c 6.98 Å, beta 90 degrees. DTA, infra-red, optics.
- YAFSOANITE. Kim et al., (Zap. Vses. Mineral. 0-va. 111, 118-121) (1982) Am. Mineral. 68, 282-283 (1983). Abstr. of original description
- YARROWITE. Abstr. in Bull. Mineral. 106, 638-639 (1983). Abstract of original description.
- YIMENGITE. Abstr. in Am. Mineral. 70, 218 (1985). Abstract of original description.
- YIMENGITE. Dong, et al., (Kexue Tongbao, Foreign Ed. 29, 920-923) (1984)(English), Chem. Abstr. 102, no. 4, 28598 (1985). New mineral, $\text{K}(\text{Cr,Ti,Fe,Mg})_{12}\text{O}_{19}$, hex., P63/mnc, a 5.857, c 22.940 Å, G 4.34, Z=2.
- YODERITE. Lefebvre, Phys. Chem. Miner. 8, 251-256 (1982). Lattice defects in.
- ZAHERITE. Beukes, et al., Mineral. Mag. 48, 131-135 (1984). Analysis from Pofadder, S. Africa Triclinic, a 5.55, b 9.74, c 18.43Å, alpha 99.71 degrees, beta 89.13 degrees, gamma 94.97 degrees. X-ray, DTA, infra-red data.
- ZAKHAROVITE. Abstr. in Mineralog. Abstr. 34, 477 (1983). Abstr. of original description
- ZEUNERITE. Charlet et al. (Ann. Soc. Geol. Belg. 107, 1-13) Microprobe analyses of torbernite-zeunerite series
- ZINC. Novgoroda, Int. Geol. Congress, 1980, Dokl. Soviet Geol, Geokhim., Mineral., Petrol., 108-113 (Russian with English abstr.). Microprobe analyses (3) from S. Urals, hex.; C6/mmc, a 2.68, c 4.95 Å, G 7.5, x-ray powder data (201 In 39(g)).

- ZINCITE. Lobachev et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 561-575) (1983) (English), Chem. Abstr. 100, no. 6, 43209 (1984). Hydrothermal synthesis 150 - 450 degrees in KOH soln.
- ZINCITE. Sakagami et al., (Proc. - Int. Symp. Hydrothermal Reactions, 1st, 1982, 576-586) (1983) (English), Chem. Abstr. 100, no. 6, 43210 (1984). Hydrothermal synthesis
- ZINCROSELITE. Mineral. Abstr. 38, 87M/3204 (1987) Abstract of original description
- ZINKENITE. Fortey et al., (Proc. Yorkshire Geol. Soc. 45, 59-65) (1984) Microprobe analyses from Wales.
- ZINKENITE. Kukulyan, (Izv. Akad. Nauk Arm. SSR, Nauki Zemle, 35, no. 5, 59-63 (1982)) Chem. Abstr. 98, no. 10, 75526 (1983). Analysis from Mardzhan deposit, Armenia
- ZINKENITE. Sugaki and Kitakaze, (Ganseki Kobutsu Kosho Gakkaishi 81, 454-457) (1986) (Jap), Chem. Abstr. 107, no. 190, 81095 (1987) Microprobe analyses (5) (not in abs) give formula $Pb_{9.00}(Sb_{21.60}As_{0.31})_{22}S_{42.02}$
- ZINKENITE. Wu and Mei, (J. Jap. Assoc. Mineral., Petrol., Econ. Geol. 82, 91-99) (1987) (Eng) Polarization color indexes
- ZINNWALDITE. Hawthorne and Cerny, Mineral. Assoc. Canada Short Course no. 8, 63-98 (1982). Review of micas in granite pegmatites.
- ZINNWALDITE. Klaper, (Schweiz. Min. Petr. Mitt. 66, 295-313) (1986) (Eng) Microprobe analyses (2) from gneisses, Spitsbergen
- ZIPPEITE. Matkovskii et al., (Mineral. Sb. (Lvov) 35, 27-32) (1981)) Chem. Abstr. 98, no. 10, 75521 (1983) Excitation-luminescence spectrum
- ZIRCON. Aoki, (Cas. Mineral. Geol. 29, 75-85) (1984) (English), Chem. Abstr. 101, no. 6, 41187 (1984) Fluorescence, from sandstone and diorite, Czechoslovakia
- ZIRCON. Bartoshinskii et al., (Dokl. Akad. Nauk SSSR 267, 1444-1448 (1982)) Chem. Abstr. 98, no. 14, 110837 (1983). Goniometric study of etched crystals from kimberlite.
- ZIRCON. Beiersdoif et al., (Geol. Jahrb. 36D, 1-85) (1986) (Eng) Placer deposits on the Zambezi shelf, off N. Mozambique
- ZIRCON. Broska, (Geol. Zbornik Bratislava 37, 693-707) (1986) (Russian) Analyses (21) from granitic rocks, Mala Fatra Mts.
- ZIRCON. Caruba and Iacconi, (Chem. Geol. 38, 75-92) (1983) (French)) Chem. Abstr. 98, no. 14, 110847 (1983) Analyses (not in abstr.) from Narsarsuk, Greenland. X-ray, infra-red data, minor elements
- ZIRCON. Chervinskaya and Tarkhov, (Accessory Minerals of magmatic and Metamorphic Rocks, 161-176), (119AK78).
- ZIRCON. Dupdall and Douch, (Jour. African Earth Sci. 4, 275-288) (1986) Analyses (5) from Jabal Tawlah, Saudi Arabia
- ZIRCON. Falzone and Stacey, (Phys. Chem. Miner. 8, 212-217 (1982)) Mineral Abstr. 34, 216 (1983) Thermal expansion
- ZIRCON. Gauthier-LaFaye, (Sci. Geol. Mem. 78, 1-206) (1986) (French) Microprobe analyses (3) from V deposits, Gabon (G(540) St52m
- ZIRCON. Hoffman and Long, Mineral. Mag. 48, 513-517 (1984). Sector zoning in Lewisian zircons from Hf, Zr, Si.
- ZIRCON. Kinnaird, (J. African Earth Sci 3, 229-251) (1985). Analyses (2) from ring complexes, Nigeria.
- ZIRCON. Nechaev et al., (Mineral. Zh. 8(2), 45-56) (1986) (Russian) Analyses (10) from syenites, Ukraine
- ZIRCON. Roden et al., Contrib. Mineral. Petrol. 85, 376-380 (1984). Microprobe analysis (1), St. Paul's rocks, Atlantic Ocean.
- ZIRCON. Tole, Geochim. Cosmochim. Acta 49, 453-458 (1985). Kinetics of solution of metamict zircon.

- ZIRCON. Tornroos, (Bull. Geol. Soc. Finl. 54, 77-83) (1982) (English)) Chem. Abstr. 98, no. 16, 129418 (1983). Analyses of metamict zircon from Mozambique
- ZIRCON. Vishnevskii, et al., Mineral. Sb. 37, 3-7 (1983) (Russian). Reflectance spectra in ultra-violet
- ZIRCON. Votyakov, et al., (Dokl. Akad. Nauk SSSR 27;5, 167-169) (1984), Chem. Abstr. 101, no. 6, 41187 (1984) Tunnel luminescence
- ZIRCON. Warren, et al., Earth Planet. Sci. Lett. 64, 175-185 (1983). Microprobe analyses (1) from granite clasts, moon.
- ZIRCON. Watson and Harrison, Earth Planet. Sci. Lett. 64, 295-304 (1983). Hydrothermal experiments on saturation by zircon of magma types.
- ZIRCONOLITE. Ewing et al., (Mater. Res. Soc. Symp. Proc. 6 (Sci. Basis Nucl. Waste Manage., 249-256) (1982) Chem. Abstr. 98, probe analyses, X-ray, transmission electron microscopy.
- ZIRCONOLITE. White, et al., (Proc. R. Soc. London 392, 343-350) (plates), Chem. Abstr. 100, no. 24, 201229p (1984). Polytypic behavior.
- ZIRKELITE. Mazzi and Munno, Am. Mineral. 68, 262-276 (1983) Redefined as a trigonal polymorph of zirconolite (mon.), polymignite (orth.), and calciobetafite (cub.) (?).
- ZIRSINALITE. Khomyakov, (Nov. Dannye Miner., 30, 168-173) (1982) Chem. Abstr. 98, no. 26, 219073 (1983). Occurrence in Lovozero massif. Optics, a 10.593A, alpha 58.14'.
- ZOISITE. Chatterjee, et al., Contrib. Mineral. Petrol. 88, 1-13 (1984). Synthesis stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, a 16.1903, b 5.5487 A, c 10.0337 A, Z=4
- ZOISITE. Frank, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983) (English) Microprobe analyses (11) from western Lepontine Alps
- ZOISITE. Halbach and Chatterjee, Contrib. Mineral. Petrol. 88, 14-23 (1984) Calculation of thermodynamic data.
- ZOISITE. Hoinkes, Schweiz. Mineral. Petrogr. Mitt. 63, 37-93 (1983) (English) Microprobe analyses from Tyrol
- ZOISITE. Horshek, Contrib. Mineral. Petrol. 87, 129-137 (1984). Microprobe analyses from metamorphic rocks, Tyrol
- ZOISITE. Jenkins et al., (Jour. Geol. 93, 663-672) (1985), Mineral. Abstr. 38, 87M/2536 (1987) Stability conditions
- ZOISITE. Matthews and Goldsmith, Am. Mineral. 69, 848-857 (1984). Stability in system $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 400-700 degrees C, 10-20 kbar.
- ZOISITE. Sautter, (Jour. African Earth Sci. 5, 345-357) (1986) (French) Microprobe analyses (1) from eclogites, Algeria
- ZOISITE. Tillmans et al. (Abstr. Acta Cryst. 40A, C258) (1984). Refinement of structure of thulite. Pnma, a 16.2051, b 5.5488, c 10.0329A Beta 90.0 degrees
- ZUNYITE. Hsu, (Mining Geology (Japan) 36, 219-230) (1986) (Eng) Stability in system $\text{Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O-F}$ at 300-600 deg. C, P 1 kbar, X-ray data
- ZUSINALITE. Khomyakov, Nov. Dannye Mineral. 30, 168-173 (1982). Occurrence in Kola Peninsula. X-ray data.