

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Selected Geological and Geophysical Remote Sensing  
Publications by U.S. Geological Survey Authors  
1961-1984

by

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

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## INTRODUCTION

The selected bibliography presented here encompasses the major and many minor publications in remote sensing geology and geophysics (and spectroscopy) published by the staff scientists of the Remote Sensing Section, Branch of Geophysics, Geologic Division, mostly between 1961 and 1985. Publications by members of predecessor organizational units in geophysics, the Branches of Theoretical Geophysics, Theoretical and Applied Geophysics, Regional Geophysics, and Petrophysics and Remote Sensing, have also been included. Geological Survey authors are shown in boldface type. Earlier publications in remote sensing by these authors prior to entry on duty with the Geological Survey are also included for the sake of continuity and completeness.

Abstracts, unpublished administrative reports, presentations, and posters presented at national or regional meetings are not included in this list. Some Geological Survey open-file reports and technical letters prepared for sponsoring agencies are included if their content is substantive. No attempt was made to list the many excellent publications of the Astrogeology Branch per se, nor the many excellent publications on remote sensing of the National Mapping and Water Resources Divisions.

References are listed alphabetically by the first author's last name. A chronological order from earliest to most recently published articles is established within the alphabetical order.

## BIBLIOGRAPHY

1. Abrams, M. J., **Ashley, R. P.**, **Rowan, L. C.**, Goetz, A.F.H., and Kahle, A. B., 1977, Mapping of hydrothermal alteration in the Cuprite mining district, Nevada, using aircraft scanner images for the spectral region 0.46 to 2.36  $\mu\text{m}$ : *Geology*, v. 5, no. 12, p. 713-718.
2. Adams, J.A.S., Barretto, P. M., Clark, R. B., and **Duval, J. S.**, 1971: Radon-222 emanation and the high apparent lead isotope ages in lunar dust: *Nature*, v. 231, p. 171.
3. Adler, I., **Podwysocki, M. H.**, Andre, C. G., Trombka, J., and Schmadebeck, R., 1974, The role of horizontal transport as evaluated from the Apollo 15 and 16 orbital experiments, in *Lunar Science Conference, 5th, Proceedings*: New York, Pergamon Press, v. 2, p. 975-979.
4. Adler, J.E.M., and **Salisbury, J. W.**, 1969, Circularity of lunar craters: *Icarus*, v. 10, p. 37-52.
5. Allen, Carlton; Bryan, William; Sigurdsson, Haraldur; Greeley, Ronald; Thorarinsson, Sigurdur; Murray, John; Whitford-Stark, James; **Williams, R. S., Jr.**; and Wood, Charles, 1980, Myvatn volcanism: *Volcano News*, no. 3 (April), p. 1-8.
6. Andre, C. G., Hallum, M. E., Weidner, J. R., and **Podwysocki, M. H.**, 1975, Correlation of Al/Si X-ray fluorescence data with other remote sensing data from the Taurus-Littrow area, in *Lunar Science Conference, 6th, Proceedings*: New York, Pergamon Press, v. 3, p. 2739-2748.
7. Badgley, P. C., **Fischer, W. A.**, and Lyon, R.J.P., 1965, Geologic exploration from orbital altitudes: *Geotimes*, v. 10, no. 2, p. 11-14.
8. Barnett, R. H., and **Moxham, R. M.**, 1961, Infrared phosphorescence detection using pulsed excitation: *Review of Scientific Instruments*, v. 32, no. 6, p. 740-741.
9. Blodget, H. W., Gunther, F. J., and **Podwysocki, M. H.**, 1978, Discrimination of rock classes and alteration products in Saudi Arabia with computer-enhanced Landsat satellite data: *National Aeronautics and Space Administration Technical Paper 1327*, 34 p.; U.S. Geological Survey Saudi Arabian Mission, Project Report 266, 1979, 34 p.
10. **Breed, C. S.**, **McCauley, J. F.**, **Schaber, G. G.**, **Walker, A. S.**, and **Berlin, G. L.**, 1982, Dunes on SIR-A images, in Cimino, J. B., and Elachi, C., eds., *Shuttle Imaging Radar-A (SIR-A) Experiment*: California Institute of Technology, Jet Propulsion Laboratory Publication 82-77, p. 4-52 to 4-86.
11. Briceno, H. O., and **Lee, Keenan**, 1983, Application of Landsat data to geologic mapping in tropical jungle environment - Caroni River Basin, Venezuela, in *International Symposium on Remote Sensing of Environment, 16th, Proceedings*: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 123-133.

12. Briceno, H. O., and **Lee, Keenan**, 1984, Applications of Landsat images to geological mapping in tropical jungle environment: Caroni River basin, Venezuela, in Teleki, P., and Weber, C., eds., Remote Sensing for Geological Mapping, Proceedings of seminar in Orleans, France, Feb. 2-4, 1984: International Union of Geological Sciences/UNESCO, BRGM Document no. 82, IUGS Publication 18, p. 161-175.
13. Brooks, R. L., **Williams, R. S., Jr., Ferrigno, J. G .**, and Krabill, W. B., 1983, Amery Ice Shelf topography from satellite radar altimetry, in Oliver, R. L., James, P. R., and Jago, J. B., eds., Antarctic Earth Science: International Symposium on Antarctic Earth Sciences, 4th, 1982, University of Adelaide, South Australia, Proceedings, p. 441-445.
14. **Brown, R. D., Jr., Eargle, D. H., and Moxham, R. M.**, 1961, Preliminary aeroradioactivity and geologic map of the Falls City NE quadrangle, Karnes and Wilson Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-250, scale 1:31,680.
15. \_\_\_\_\_ 1961, Preliminary aeroradioactivity and geologic map of the Falls City NW quadrangle, Atascosa, Karnes, and Wilson Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-249, scale 1:31,680.
16. Brown, R. H., and **Clark, R. N.**, 1984, Surface of Miranda: Identification of water ice: Icarus, v. 58, p. 288-292.
17. **Cannon, P. J., and Rowan, L. C.**, 1971, Geologic map of the Sabine EB region of the Moon: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-679, scale 1:5,000.
18. **Carter, W. D., and Rowan, L. C.**, 1978, Applying satellite technology to energy and mineral exploration: Episodes, v. 1978, no. 4, p. 19-24.
19. \_\_\_\_\_ 1981, Remote sensing and mineral exploration workshop, Nairobi, Kenya: Episodes, v. 1981, no. 2, p. 43-44.
20. Cecil, T. E., **Salisbury, J. W.**, Logan, L. M., and **Hunt, G. R.**, 1973, Celestial infrared calibration sources in the 8-14 micrometer region: Venus and Jupiter: U.S. Air Force Cambridge Research Laboratories, Technical Report TR-73-0559, 37 p.
21. Chapman, C. P., and **Salisbury, J. W.**, 1973, Comparisons of meteorite and asteroidal spectral reflectivities: Icarus, v. 19, p. 507-522.
22. Clark, R. B., **Duval, J. S.**, and Adams, J.A.S., 1972, Computer simulation of an airborne gamma-ray spectrometer: Journal of Geophysical Research, v. 77, p. 3021-3031.
23. **Clark, R. N.**, 1979, Planetary reflectance measurements in the region of planetary thermal emission: Icarus, v. 40, p. 94-103.
24. \_\_\_\_\_ 1980, Ganymede, Europa, Callisto, and Saturn's rings: Compositional analysis from reflectance spectroscopy: Icarus, v. 44, p. 388-409.

25. \_\_\_\_\_ 1980, A large scale interactive one dimensional array processing system: Astronomical Society of the Pacific Publications, v. 92, p. 221-224.
26. \_\_\_\_\_ 1980, Remote sensing of water frost and ice on planetary surfaces using near-infrared spectrophotometric techniques, in Smith, J., ed., Colloquium on Planetary Water, 3d, Proceedings: University of New York, Buffalo, p. 150-158.
27. \_\_\_\_\_ 1981, The spectral reflectance of water-mineral mixtures at low temperatures: Journal of Geophysical Research, v. 86, p. 3074-3086.
28. \_\_\_\_\_ 1981, Water frost and ice: The near-infrared spectral reflectance 0.65-2.5 $\mu$ m: Journal of Geophysical Research, v. 86, p. 3074-3096.
29. \_\_\_\_\_ 1982, Implications of using broadband photometry for compositional remote sensing of icy objects: Icarus, v. 49, p. 244-257.
30. \_\_\_\_\_ 1983, Ice-soil mixtures: Visual and near-infrared remote sensing techniques, in International Conference on Permafrost, 4th, Proceedings: Washington, D. C., National Academy Press, p. 158-162.
31. \_\_\_\_\_ 1983, Spectral properties of mixtures of montmorillonite and dark carbon grains: Implications for remote sensing minerals containing chemically and physically adsorbed water: Journal of Geophysical Research, v. 88, p. 10635-10644.
32. **Clark, R. N.**, Brown, R. H., Owensby, P. D., Nelson, M. L., and Steele, A., 1984, Saturn's satellites: Near-infrared spectrophotometry (0.65-2.5 $\mu$ m) of the leading and trailing sides and compositional implications: Icarus, v. 58, p. 265-281.
33. **Clark, R. N.**, Fanale, F. P., and Zent, A. P., 1983, Frost grain size metamorphism: Implications for remote sensing of planetary surfaces: Icarus, v. 56, p. 233-245.
34. **Clark, R. N.**, and Lucey, P. G., 1984, Spectral properties of ice-particulate mixtures and implications for remote sensing: I. Intimate mixtures: Journal of Geophysical Research, v. 89, p. 6341-6348.
35. **Clark, R. N.**, and McCord, T. B., 1979, Jupiter and Saturn: Near-infrared spectral albedos: Icarus, v. 40, p. 180-188.
36. \_\_\_\_\_ 1980, The Galilean satellites: New near-infrared reflectance measurements (0.65-2.5  $\mu$ m) and a 0.325  $\mu$ m summary: Icarus, v. 41, p. 323-339.
37. \_\_\_\_\_ 1980, The rings of Saturn: New near-infrared reflectance measurements and a 0.326-4.08  $\mu$ m summary: Icarus, v. 43, p. 161-168.
38. \_\_\_\_\_ 1982, Mars residual north polar cap: Earth-based spectroscopic confirmation of water ice as a major constituent and evidence for hydrated minerals: Journal of Geophysical Research, v. 87, p. 367-370.
- 38a. \_\_\_\_\_ Contributing author, 1984, Laboratory, ch. 10 of Kieffer, H. H., Irman, Planetary Data Workshop, Goddard Space Flight Center, Nov. 29-Dec. 1, 1984, Proceedings: National Aeronautics and Space Administration Conference Publication 2343, Part 1, p. 120-130.

39. **Clark, R. N.**, and Owensby, P. D., 1981, The infrared spectrum of Rhea: *Icarus*, v. 46, p. 354-360.
40. **Clark, R. N.**, and Roush, T. L., 1984, Reflectance spectroscopy: Quantitative analysis techniques for remote sensing applications: *Journal of Geophysical Research*, v. 89, no. B7, p. 6329-6340.
41. Collins, W. E., Chang, Sheng-Huei, **Raines, G. L.**, **Canney, F. P.**, and **Ashley, R. P.**, 1983, Airborne biogeochemical mapping of hidden mineral deposits: *Economic Geology*, v. 78, no. 4, p. 739-749.
42. Cook, Beverly, **Duval, J. S.**, and Adams, J.A.S., 1970, Progress in the calibration of airborne gamma spectrometers for geochemical exploration, in *Geochemical Exploration Symposium*, Toronto, Canada, Proceedings: Canadian Institute of Mining and Metallurgy, p. 480-484.
43. Cronin, J. F., Rooney, T. P., **Williams, R. S., Jr.**, Molineux, C. E., and Bliamptis, E. E., 1968, Ultraviolet radiation and the terrestrial surface: U.S. Air Force Cambridge Research Laboratories, Special Report 83, AFCRL-68-0572, 34 p.
44. **Crowley, J. K.**, 1984, Near-infrared reflectance of zunyite: Implications for field mapping and remote-sensing detection of hydrothermally altered high-alumina rocks: *Economic Geology*, v. 79, p. 553-557.
45. \_\_\_\_\_ 1984, Multispectral remote sensing of carbonate rocks in the Confusion Range, Utah, in *International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology*, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 837-851.
46. Cruikshank, D. P., Brown, R. H., and **Clark, R. N.**, 1984, Nitrogen on Triton: *Icarus*, v. 58, p. 293-305.
- 46a. \_\_\_\_\_ 1984, Methane ice on Triton and Pluto: NATO Conference on Ices in the Solar System, Nice, France, Jan. 1984, Proceedings. [in press].
- 46b. **Cunningham, C. G.**, **Steven, T. A.**, **Campbell, D. L.**, **Naeser, C. W.**, **Pitkin, J. A.**, and **Duval, J. S.**, 1984, Multiple episodes of igneous activity, mineralization, and alteration in the western Tushar Mountains, Utah: U.S. Geological Survey Professional Paper 1299-A, 21 p.
47. **Daniels, D. L.**, 1966, The effect of ultraviolet radiation on the intensity of luminescence: U.S. Geological Survey Technical Letter NASA-36, 7 p.
48. \_\_\_\_\_ 1966, Infrared spectral emittance of rocks from the Pisgah Crater and Mono Crater areas, California: U.S. Geological Survey Technical Letter NASA-13, 20 p.
49. \_\_\_\_\_ 1967, Additional infrared spectral emittance measurements of rocks from the Mono Craters region, California: U.S. Geological Survey Technical Letter NASA-90, 11 p.; Open-file report.
50. **Daniels, D. L.**, and **Stoddard, A. E.**, 1966, Liquid nitrogen blackbody for spectral emittance studies: U.S. Geological Survey Technical Letter NASA-57, 7 p.

51. Del Bono, G. L., **Williams, R. S., Jr.**, and Cronin, J. F., 1971, Photogeologic and thermal infrared imagery geologic surveys in Italy in 1966: *Bollettino del Servizio Geologico D'Italia*, v. 91 (1970), p. 3-44.
52. **Dickinson, K. A.**, and **Duval, J. S.**, 1977, South Texas uranium: geologic controls, potential exploration techniques, and production, in Campbell, M. D., ed., *Geology of alternate energy resources in the south-central United States*: Houston Geological Society, p. 45-66.
53. Dodd, R. T., Jr., **Salisbury, J. W.**, and Smalley, V. G., 1963, Crater frequency and the interpretation of lunar history: *Icarus*, v. 2, p. 466-480.
54. Dodd, R. T., Jr., Smalley, V. G., **Salisbury, J. W.**, and Adler, J.E.M., 1965, Crater frequency evidence for volcanism in the lunar highlands: *New York Academy of Sciences Annals*, v. 123, Article 2, p. 555-562.
55. **Duval, J. S.**, 1976, Statistical interpretation of airborne gamma-ray spectrometric data using factor analysis, in *International Symposium on Exploration for Uranium Ore Deposits, Vienna, Austria, Proceedings*: Nuclear Energy Agency/International Atomic Energy Agency, p. 71-79.
56. \_\_\_\_\_ 1977, High sensitivity gamma-ray spectrometry--state of the art and trial application of factor analysis: *Geophysics*, v. 42, p. 549-559.
57. \_\_\_\_\_ 1980, Radioactivity method: *Geophysics*, v. 45, no. 11, p. 1690-1694.
58. \_\_\_\_\_ 1982, Image production equipment and procedures: U.S. Geological Survey Open-File Report 82-534, 21 p.
59. \_\_\_\_\_ 1982, A method for designing film transfer functions for use in an image processing laboratory: U.S. Geological Survey Open-File Report 82-705, 25 p.
60. \_\_\_\_\_ 1983, Composite color images of aerial gamma-ray spectrometric data: *Geophysics*, v. 48, p. 722-735.
61. \_\_\_\_\_ 1983, Some geophysical applications of nuclear measurements and nuclear data requirements: *American Nuclear Society, Transactions*, v. 44, p. 188-190.
62. \_\_\_\_\_ 1984, Computer program useful for quality control of an image processing laboratory: U.S. Geological Survey Open-File Report 84-218, 17 p.
- 62a. \_\_\_\_\_ 1984, Ohio aerial radiometric color contour maps of regional surface concentrations of potassium (percent K), uranium (ppm eU), thorium (ppm eTh) and composite-color maps of K, U, Th and their ratios: U.S. Geological Survey Geophysical Investigations Map GP-968, scale 1:1,000,000.
- 62b. \_\_\_\_\_ 1984, Ohio aerial radiometric contour maps of surface concentrations of uranium (ppm eU), potassium (percent K), and thorium (ppm eTh): U.S. Geological Survey Geophysical Investigations Map GD-966, scale 1:500,000.



63. \_\_\_\_\_ 1984, Procedures for accurate production of color images from satellite or aircraft multispectral digital data: *Journal of Imaging Technology*, v. 10, no. 1, p. 16-22.
64. **Duval, J. S.**, Cook, Beverly, and Adams, J.A.S., 1971, A study of the circle of investigation of an airborne gamma-ray spectrometer: *Journal of Geophysical Research*, v. 76, p. 8466-8470.
65. **Duval, J. S.**, and **Martin, R. A.**, 1977, Interpretation of an aeromagnetic anomaly in McMullen and Live Oak Counties, Texas: U.S. Geological Survey Open-File Report 77-768, 8 p.
66. **Duval, J. S.**, and **Pitkin, J. A.**, 1980, An aerial radiometric and magnetic survey of the Sierra Ancha Wilderness and Salome Study Area, Gila County, Arizona: U.S. Geological Survey Open-File Report 80-2004, 4 p.
67. \_\_\_\_\_ 1980, Radiometric and magnetic anomalies of the Sierra Ancha Wilderness and Salome Study Area, Gila County, Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1162-F.
68. \_\_\_\_\_ 1981, Aerial radiometric and magnetic surveys, Snowy Range Wilderness study area and vicinity, southeastern Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-1366-A, scale 1:50,000.
69. \_\_\_\_\_ 1981, An experimental test of a large-volume plastic detector for use in aerial gamma-ray spectroscopy: *Geophysics*, v. 46, p. 1432-1438.
70. **Duval, J. S.**, **Pitkin, J. A.**, and **Macke, D. L.**, 1977, Aeromagnetic map of part of the southern part of the Powder River Basin, Wyoming: U.S. Geological Survey Open-File Report 77-621.
71. \_\_\_\_\_ 1977, Composite images of radiometric data from south Texas and Wyoming, *in* Campbell, J. A., ed., Short papers of the U.S. Geological Survey Uranium-Thorium Symposium: U.S. Geological Survey Circular 753, p. 21-22.
72. \_\_\_\_\_ 1978, Aerial gamma-ray survey in the northern part of the Boulder batholith, Jefferson County, Montana: U.S. Geological Survey Open-File Report 78-180, 16 p.
73. **Duval, J. S.**, and **Schulz, K. A.**, 1979, Aerial gamma-ray survey in Duval, McMullen, Live Oak, and Webb Counties, Texas: U.S. Geological Survey Professional Paper 1123-D, p. D1-D11.
74. **Duval, J. S.**, **Schulz, K. A.**, and **Pitkin, J. A.**, 1977, Calibration constants for the Geodata International, Inc. and Texas Instruments, Inc. high sensitivity systems used for the ERDA aerial gamma-ray surveys: U.S. Geological Survey Open-File Report 77-159, 15 p.
75. **Duval, J. S.**, Schwarzer, T. F., and Adams, J.A.S., 1970, Lognormal distribution of trace elements in the environment, *in* Annual Conference on Trace Substances in Environmental Health, 4th, Proceedings: Columbia, Missouri, University of Missouri, p. 120-131.

76. **Duval, J. S.**, Schwarzer, T. F., Cook, B. G., Worden, J. W., and Adams, J.A.S., 1972, Experimental comparison of NaI (Tl) and solid organic scintillation detectors for use in remote sensing of terrestrial gamma rays: *Geophysics*, v. 37, p. 879-888.
77. **Eargle, D. H.**, **Brown, R. D.**, and **Moxham, R. M.**, 1961, Preliminary aeroradioactivity and geologic map of the Falls City SW quadrangle, Atascosa, Karnes, and Live Oak Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-252, scale 1:31,680.
78. **Eargle, D. H.**, and **Moxham, R. M.**, 1961, Preliminary aeroradioactivity and geologic map of the Falls City SE quadrangle, Atascosa, Karnes, and Live Oak Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-253, scale 1:31,680.
79. **Eargle, D. H.**, **Trumbull, J.V.A.**, and **Moxham, R. M.**, 1961, Preliminary aeroradioactivity and geologic map of the Floresville SE quadrangle, Karnes and Wilson Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-246, scale 1:31,680.
80. \_\_\_\_\_ 1961, Preliminary aeroradioactivity and geologic map of the Karnes City NW quadrangle, Karnes County, Texas: U.S. Geological Survey Geophysical Investigations Map GP-251, scale 1:31,680.
81. \_\_\_\_\_ 1961, Preliminary aeroradioactivity and geologic map of the Stockdale SE quadrangle, Karnes, De Witt, and Wilson Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-248, scale 1:31,680.
82. **Elston, D. P.**, 1976, Geological evaluation of north-central Arizona, in Williams, R. S., Jr., and Carter, W. D., eds., ERTS-1, a new window on our planet: U.S. Geological Survey Professional Paper 929, p. 59-66.
83. **Elston, D. P.**, and DiPaolo, W. D., 1976, Verde Valley, in Goetz, A.F.H., and others, Comparison of Skylab and Landsat images for geologic mapping in northern Arizona: National Aeronautics and Space Administration, NASA 7-100, Task Order RD-161, p. IIB1-IIB43.
84. **England, A. W.**, 1973, To sample the Moon, in Sampling, Standards, and Homogeneity Symposium, 75th meeting, 1972, Los Angeles, California: American Society for Testing and Materials, ASTM Special Technical Publication 540, p. 3-15.
85. \_\_\_\_\_ 1974, The effect upon microwave emissivity of volume scattering in snow, in ice, and in frozen soil, in Union Radio Scientifique Internationale meeting on Microwave Scattering and Emission from the Earth, Berne, Switzerland, Proceedings: International Union of Radio Science, p. 273-287.
86. \_\_\_\_\_ 1974, Thermal microwave emission from a halfspace containing scatterers: *Radio Science*, v. 9, p. 447-454.
87. \_\_\_\_\_ 1976, Relative influence upon microwave emissivity of fine-scale stratigraphy, internal scattering, and dielectric properties: *Pure and Applied Geophysics*, v. 114, no. 2, p. 287-299.
88. \_\_\_\_\_ 1976, Thermal microwave emission from a scattering layer: *Journal of Geophysical Research*, v. 80, no. 32, p. 4484-4496.

89. **England, A. W.**, and **Johnson, G. R.**, 1976, The thermal microwave detection of near-surface thermal anomalies: United Nations Symposium on Development of Geothermal Resources, 2d, San Francisco, Proceedings, p. 971-977.
90. \_\_\_\_\_ 1977, Microwave brightness spectra of layered media: *Geophysics*, v. 42, no. 3, p. 514-521.
91. \_\_\_\_\_ 1978, Spectral gradient of lunar radiobrightness: Heat flow or volume scattering?: *U.S. Geological Survey Journal of Research*, v. 6, no. 4, p. 505-509.
92. **Fanale, F. P.**, **Brown, R. H.**, **Cruikshank, D. P.**, and **Clark, R. N.**, 1979, Significance of absorption features in Io's infrared reflectance spectrum: *Nature*, v. 280, p. 761-763.
93. **Fanale, F. P.**, and **Clark, R. N.**, 1983, Solar system ices and Mars permafrost, in *International Conference on Permafrost*, 4th, Proceedings: Washington, D. C., National Academy Press, p. 289-294.
94. **Fellenberg, Eric**, **Duval, J. S.**, and **Pitkin, J. A.**, 1982, An aerial radiometric and magnetic survey of the Deer Flat area, San Juan County, Utah: *U.S. Geological Survey Miscellaneous Field Studies Map MF-1454*, scale 1:15,625.
95. **Ferrigno, J. G.**, and **Williams, R. S., Jr.**, 1978, Satellite image atlas of glaciers, in *Glaciological Data*, World Data Center A for Glaciology (Snow and Ice): Boulder, Colorado, Institute of Arctic and Alpine Research, University of Colorado, Report GD-3, December, p. 59-60.
96. \_\_\_\_\_ 1980, Satellite image atlas of glaciers, in *World Glacier Inventory*, Riederalp (Switzerland) Workshop, Proceedings: International Association of Hydrological Sciences, IAHS-AISH Publication no. 126, p. 333-341.
97. \_\_\_\_\_ 1983, Limitations in the use of Landsat images for mapping and other purposes in snow and ice-covered regions: Antarctica, Iceland, and Cape Cod, Massachusetts, in *International Symposium on Remote Sensing of Environment*, 17th, 1983, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 335-355.
98. **Ferrigno, J. G.**, **Williams, R. S., Jr.**, and **Kent, T. M.**, 1983, Evaluation of Landsat 3 RBV images for earth sciences studies in Antarctica, in *Oliver, R. L., James, P. R., and Jago, J. B., eds., Antarctic Earth Science*, International Symposium on Antarctic Earth Sciences, 4th, 1982, University of Adelaide, Proceedings: Canberra, Australian Academy of Science, p. 446-449.
99. **Fischer, W. A.**, 1963, Depiction of soil-covered structures by infrared aerial photography, in *Geological Survey research 1963*: U.S. Geological Survey Professional Paper 475-B, p. B67-B70.
100. \_\_\_\_\_ 1964, An application of radar to geological interpretation, in *Symposium on Remote Sensing of Environment*, 1st, 1962, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, p. 83-84.

101. \_\_\_\_\_ 1966, Geologic applications of remote sensors, in Symposium on Remote Sensing of Environment, 4th, 1966, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, p. 13-19.
102. \_\_\_\_\_ 1968, EROS--Viewing the Earth from space: GeoScience News, v. 1, no. 3, p. 16-19.
103. \_\_\_\_\_ 1968, Orbital surveys of the Earth, in Use of space systems for planetary geology and geophysics: American Astronautical Society, Science and Technology Series, v. 17, p. 5-11.
104. \_\_\_\_\_ 1968, Remote sensing in the United States, a summary, in International Congress of Photogrammetry, 11th, Lausanne, Switzerland, Proceedings: International Archives of Photogrammetry, v. 17, pt. 10, 5 p.
105. \_\_\_\_\_ 1972, Status of remote sensing: International Archives of Photogrammetry, v. 19, pt. 3, 48 p.
106. \_\_\_\_\_ 1976, Applications to geology and geophysics: Introduction, in Williams R. S., Jr., and Carter, W. D., eds., ERTS-1, a new window on our planet: U.S. Geological Survey Professional Paper 929, p. 48-49.
107. **Fischer, W. A.**, Angsuwathana, Prayong, **Carter, W. D.**, and others, 1976, Surveying Earth and its environment from space: American Association of Petroleum Geologists Memoir 25, p. 63-72.
108. **Fischer, W. A.**, Badgley, Peter, and others, eds., 1975, History of remote sensing, ch. 2 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. I, p. 27-50.
109. **Fischer, W. A.**, **Davis, D. A.**, and **Sousa, T. M.**, 1966, Fresh-water springs of Hawaii from infrared images: U.S. Geological Survey Hydrologic Investigations Atlas HA-218, scale about 1 in. to 8 mi.
110. **Fischer, W. A.**, and **Hemphill, W. R.**, 1973, A report on United States programs in geology and archaeology: USA/USSR Joint Coordination Group on the Natural Environment, Moscow, February 1973, Proceedings: National Aeronautics and Space Administration, p. 1-9.
111. \_\_\_\_\_ 1975, The EROS Program of the Department of the Interior, in International Symposium on Remote Sensing of Environment, 10th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 45-46.
112. **Fischer, W. A.**, **Hemphill, W. R.**, and **Kover, A. N.**, 1976, Progress in remote sensing, 1972-1976: Photogrammetria, v. 32, no. 2, p. 33-72.
113. **Fischer, W. A.**, and Latham, E. H. [**Lathram, E. H.**], 1973, Concealed structures in Arctic Alaska identified on ERTS-1 imagery: Oil and Gas Journal, v. 71, no. 22, p. 97-102.
114. **Fischer, W. A.**, **Moxham, R. M.**, and others, 1964, Infrared surveys of Hawaiian volcanoes: Science, v. 146, no. 3645, p. 733-742.

115. **Flanigan, V. J., and Pitkin, J. A.,** 1979, Airborne gamma-ray spectrometry survey of the Jabal Sayid area, Kingdom of Saudi Arabia: U.S. Geological Survey Open-File Report 79-672, 37 p.
116. **Flint, G. M., Jr., and Pitkin, J. A.,** 1970, Aeroradioactivity map of the Chicago area, Illinois and Indiana: U.S. Geological Survey Geophysical Investigations Map, GP-681.
117. \_\_\_\_\_ 1970, Aeroradioactivity survey and related surface geology of the Chicago area, Illinois and Indiana: U.S. Atomic Energy Commission, CEX-59.4.13, 25 p.
118. **Frank, David, Post, Austin, and Friedman, J. D.,** 1975, Recurrent geothermally-induced debris avalanches from Boulder Glacier, Mt. Baker, Washington: U.S. Geological Survey Journal of Research, v. 3, no. 1, p. 77-87.
119. **Friedman, J. D.,** 1955, Comments on biogeochemical prospecting at the Shawangunk Mine: Economic Geology, v. 50, no. 6, p. 650-651.
120. \_\_\_\_\_ 1966, Composition of basalt flows at Pisgah Crater, California--Preliminary data: U.S. Geological Survey Technical Letter NASA-20, 40 p.
121. \_\_\_\_\_ compiler, 1966, Geologic map of the Mono Craters area, California: U.S. Geological Survey Technical Letter NASA-12, 11 p.
122. \_\_\_\_\_ 1968, Thermal anomalies and geologic features of Mono Lake area, California, as revealed by infrared imagery, in Annual Earth Resources Aircraft Program Status Review, 1st, Houston, Texas, Proceedings: National Aeronautics and Space Administration, v. 1, sec. 2, p. 1-76; U.S. Geological Survey Open-file report; Technical Letter NASA-82, 84 p.
123. \_\_\_\_\_ 1970, The airborne infrared scanner as a geophysical research tool: Optical Spectra, v. 4, issue 6, p. 35-44.
124. \_\_\_\_\_ 1970, Plate 48, in Thorarinsson, Sigurdur, Hekla: A notorious volcano: Reykjavik, Iceland, Almenna Bokofelagid. (translation by Johann Hannesson and Petur Karlsson)
125. \_\_\_\_\_ 1971, Plates and extended captions, in Green, Jack, and Short, Nicholas, Volcanic landforms and surface features, a photographic Atlas and Glossary: New York, Springer-Verlag, pls. 30A, p. 82-83; 59B, p. 146-147; 66B, p. 160-161; 107B, p. 241-242; 124B, p. 275-276; 192B, p. 440-441; captions only for pls. 5B, p. 30-31; 15A-B, p. 50-51; 185A-D, p. 424-427.
126. \_\_\_\_\_ contributing author, 1975, Terrain and minerals: assessment and evaluation, ch. 16 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. 2, p. 1205-1215.
127. \_\_\_\_\_ 1980, Remote sensing studies in Paradox basin, Utah, in Schneider, Robert, Roseboom, E. H., Jr., and others, U.S. Geological Survey research in radioactive waste disposal--Fiscal year 1979: U.S. Geological Survey Circular 847, p. 27-28.

128. \_\_\_\_\_ 1981, Multispectral-scanner band-ratioed composite image of the northern Paradox basin, in Wiegand, D. L., ed., Geology of the Paradox basin: Rocky Mountain Association Petroleum Geologists, frontispiece and caption.
129. \_\_\_\_\_ 1982, in Foxworthy, B. L., and Hill, Mary, Volcanic eruptions of Mount St. Helens: The first 100 days: U.S. Geological Survey Professional Paper 1249, p. 96-97, figure 50B and caption.
130. \_\_\_\_\_ contributing author, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1841-1843. (See Authorship Key for subject, p. 1952).
131. **Friedman, J. D., and Anderson, D. G.**, 1970, Other remote sensing systems, in Polar Research: A survey: National Academy of Sciences, Panel on Geodesy and Cartography, sec. 5, p. 132-134.
132. **Friedman, J. D., Fischer, W. A., and Sousa, T. M.**, 1965, Preliminary results of infrared surveys at Pisgah Crater, California: U.S. Geological Survey Technical Letter NASA-5, 14 p.
133. **Friedman, J. D., and Frank, David**, 1977, Structural and heat-flow implications of infrared anomalies at Mt. Hood, Oregon: U.S. Geological Survey Open-File Report 77-599, 29 p.
134. \_\_\_\_\_ 1978, Thermal surveillance of active volcanoes using the Landsat-1 Data Collection System: Part 3. Heat discharge from Mount St. Helens, Washington: U.S. Department of Commerce National Technical Information Service, E78-10122. U.S. Geological Survey Open-File Report 77-541, 30 p.
135. \_\_\_\_\_ 1978, Thermal surveillance of active volcanoes using the Landsat-1 Data Collection System: Part 4. Lassen volcanic region: U.S. Department of Commerce National Technical Information Service, E78-10123, 68 p.
136. \_\_\_\_\_ 1980, Infrared surveys, radiant flux and total heat discharge at Mount Baker volcano, Washington, between 1970 and 1975: U.S. Geological Survey Professional Paper 1022-D, 33 p.
137. **Friedman, J. D., Frank, David, and Heiken, Grant**, 1974, Volcanoes and volcanic landforms, in Skylab 4 Observation Project Report: National Aeronautics and Space Administration, NASA TM C-58142, JSC-09053, chap. 8, p. 8-1 thru 8-14.
138. **Friedman, J. D., Frank, David, Kieffer, H. H., and Sawatzky, D. L.**, 1982, Thermal infrared surveys: May 18 crater, subsequent lava domes, and associated volcanic deposits, in Lipman, P. W., and Mullineaux, D. R., eds., The 1980 eruptions of Mount St. Helens: U.S. Geological Survey Professional Paper 1250, p. 279-293.
139. **Friedman, J. D., Frank, David, Preble, D. M., and Painter, J. E.**, 1973, Thermal surveillance of Cascade Range volcanoes using ERTS-1 multispectral scanner, aircraft imaging systems, and ground-based Data Communications Platforms, in Symposium of Significant Results Obtained from Earth Resources Technology Satellite-1, March 1973, Proceedings: National Aeronautics and Space Administration, NASA SP-327, v. 1, p. 1549-1560.

140. **Friedman, J. D.**, and Heiken, Grant, 1977, Volcanoes and volcanic landforms, in Wilmarth, V. R., and others, eds., Skylab explores the Earth: National Aeronautics and Space Administration, NASA SP-380, chap. 5, p. 137-171.
141. **Friedman, J. D.**, Heiken, G., Randerson, D., and McKay, D., 1976, Observations of eruption clouds from Sakura-zima volcano, Kyushu, Japan, from Skylab 3 and 4: Journal of Volcanology and Geothermal Research, v. 1, no. 4, p. 305-329.
142. **Friedman, J. D.**; Johansson, C. E.; Oskarsson, Niels; Svensson, Harald; Thorarinsson, Sigurdur; and **Williams, R. S., Jr.**, 1971, Observations on Icelandic polygon surfaces and palsa areas: Photo interpretation and field studies: Geografiska Annaler, v. 53, ser. A, no. 3-4, p. 115-145.
143. **Friedman, J. D.**, Lyon, R.J.P., Beattie, D. A., and Downey, J., Jr., 1965, Lunar ground data required for interpretation of AES orbital experiments: Advances in the Astronautical Sciences, v. 20, p. 381-395.
144. **Friedman, J. D.**, Olhoeft, G. R., Johnson, G. R., and Frank, David, 1982, Heat content and thermal energy of the June dome in relation to total energy yield of Mount St. Helens, May-October, 1980, in Lipman, P. W., and Mullineaux, D. R., eds., The 1980 eruptions of Mount St. Helens: U.S. Geological Survey Professional Paper 1250, p. 557-567.
145. **Friedman, J. D.**, Preble, D. M., Frank, David, and Jakobsson, Sveinn, 1978, Thermal surveillance of active volcanoes using the Landsat-1 Data Collection System: Preface and part 1: U.S. Department of Commerce National Technical Information Service, E78-10121, 89 p.
146. **Friedman, J. D.**, Preble, D. M., and Jakobsson, Sveinn, 1976, Geothermal flux through palagonitized tephra, Surtsey, Iceland, 1. The Surtsey temperature-data-relay experiment via Landsat-1: U.S. Geological Survey Journal of Research, v. 4, no. 6, p. 645-659.
147. **Friedman, J. D.**, and **Simpson, S. L.**, 1978, Landsat investigations of the northern Paradox basin, Utah and Colorado: Implication for radioactive waste emplacement: U.S. Geological Survey Open-File Report 78-900, 49 p.
148. \_\_\_\_\_ 1980, Lineaments and geologic structure of the northern Paradox basin: U.S. Geological Survey Miscellaneous Field Studies Map MF-1221, scale 1:250,000 and 1:500,000.
149. \_\_\_\_\_ contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1822-1823. (See Authorship Key for subject, p. 1952).
150. **Friedman, J. D.**, **Williams, D. L.**, and **Frank, David**, 1982, Structural and heat-flow implications of infrared anomalies at Mt. Hood, Oregon: Journal of Geophysical Research, p. 2793-2803.
151. **Friedman, J. D.**, and **Williams, R. S., Jr.**, 1968, Infrared sensing of active geologic processes, in Symposium on Remote Sensing of Environment, 5th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, p. 787-820.

152. \_\_\_\_\_ 1970, Comparison of 1968 and 1966 infrared imagery of Surtsey, in Surtsey Research Progress Report: Reykjavik, Iceland, The Surtsey Research Society, v. 5, p. 90-94.
153. \_\_\_\_\_ 1970, Changing patterns of thermal emission from Surtsey, Iceland, between 1966 and 1969, in Geological Survey research 1970: U.S. Geological Survey Professional Paper 700-D, p. D116-D124.
154. **Friedman, J. D., Williams, R. S., Jr.,** Miller, C. D., and Palmason, Gudmundur, 1967, Infrared surveys in Iceland in 1966, in Surtsey Research Progress Report: Reykjavik, Iceland, The Surtsey Research Society, v. 3, p. 99-103.
155. **Friedman, J. D., Williams, R. S., Jr.,** Palmason, Gudmundur, and Miller, C. D., 1969, Infrared surveys in Iceland in 1966, in Geological Survey research 1969: U.S. Geological Survey Professional Paper 650-C, p. C89-C105.
156. **Friedman, J. D., Williams, R. S., Jr.,** Thorarinsson, Sigurdur, and Palmason, Gudmundur, 1972, Infrared emission from Kverkfjoll subglacial volcanic and geothermal area, Iceland: Jokull, v. 22, p. 27-43.
157. **Gawarecki, S. J.,** 1969, Infrared survey of the Pisgah Crater area, San Bernardino County, California - a geologic interpretation: U.S. Geological Survey Technical Letter NASA-99, 52 p. Open-file report, 1968.
158. \_\_\_\_\_ 1969, Preliminary geologic evaluation of the Apollo 7 orbital and suborbital photography, in Science screening report of the Apollo 7 Mission, 70 mm. photography: National Aeronautics and Space Administration, Technical Memorandum TM X-58029, June 1969, p. 23-26.
159. \_\_\_\_\_ 1971, Geologic interpretation of Apollo 6 stereophotography from Baja California to West Texas, in Annual Earth Resources Program Review, 3d, Houston Texas, 1970, Proceedings: National Aeronautics and Space Administration, v. 1, p. 15-1 to 15-25.
160. \_\_\_\_\_ contributing author, 1975, Terrain and minerals: Assessment and evaluation, ch. 16 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1107-1351.
161. **Gawarecki, S. J.,** Lyon, R.J.P., and Nordberg, William, 1965, Infrared spectral returns and imagery of the earth from space and their applications to geologic problems: American Astronautical Society, Science and Technology Series, v. 4, p. 13-33.
162. **Gawarecki, S. J., Moxham, R. M.,** Morgan, J. O., and Parker, D. C., 1980, An infrared survey of Irazu' and vicinity, Costa Rica, in International Symposium on Remote Sensing of Environment, 14th, San Jose, Costa Rica, 1980, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1901-1912.
163. **Gawarecki, S. J.,** Neal, J. T., Cronin, J., and **Williams, R. S., Jr.,** contributing authors, 1969, Satellite imagery of the earth: Photogrammetric Engineering, v. 35, no. 7, p. 661-664.



164. Goetz, A.F.H., Billingsley, F. C., **Elston, D. P.**, **Lucchitta, Ivo**, and **Shoemaker, E. M.**, 1974, Geologic applications of ERTS images on the Colorado Plateau, Arizona, in Earth Resources Technology Satellite-1 Symposium, 3d, Washington, D. C., Proceedings: National Aeronautics and Space Administration, NASA SP-351, v. 1, sec. A, p. 719-744.
165. Goetz, A.F.H., Billingsley, F. C., Gillespie, A. R., Abrams, M. J., Squires, R. L., **Shoemaker, E. M.**, **Lucchitta, Ivo**, and **Elston, D. P.**, 1975, Application of ERTS images and image processing to regional geologic problems and geologic mapping in northern Arizona: California Institute of Technology, Jet Propulsion Laboratory Technical Report 32-1597, 188 p.
166. Goetz, A.F.H., Rock, B. N., and **Rowan, L. C.**, 1983, Remote sensing for exploration: An overview: Economic Geology, v. 78, p. 573-590.
167. Goetz, A.F.H., and **Rowan, L. C.**, 1981, Geologic remote sensing: Science, v. 211, no. 4484, p. 781-791.
168. Goetz, A.F.H., **Rowan, L. C.**, and **Kingston, M. J.**, 1982, Mineral identification from orbit: Initial results from the Shuttle Multispectral Infrared Radiometer: Science, v. 218, no. 4576, p. 1020-1024.
169. \_\_\_\_\_ 1982, Shuttle Multispectral Infrared Radiometer: Preliminary results from the second flight of Columbia, in International Geoscience and Remote Sensing Symposium Digest, 1982: Institute of Electrical and Electronics Engineers, v. 2, sec. FA-6, p. 3.1-3.6.
170. \_\_\_\_\_ contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, p. 1707-1710. (See Authorship Key, p. 1952, for subject).
- 170a. Gold, D. P., **Pohn, H. A.**, and Canich, M. R., 1984, The nature of cross-strike and strike-parallel structures in central Pennsylvania: American Association of Petroleum Geologists, eastern section, fieldtrip guidebook, Pittsburgh, Penn., Oct. 12-14, 1984, 70 p.
- 170b. Goodlett, J. C., Zimmermann, R. C., and **Milton, N. M.**, 1984, Distribution of common oaks (Quercus spp.) and regional forest types in New England: U.S. Geological Survey Open-File Report 84-764, 14 p. and map at scale 1:1,000,000.
171. **Greene, G. W.**, **Moxham, R. M.**, and Harvey, A. H., 1970, Aerial infrared surveys and borehole temperature measurements of coal mine fires in Pennsylvania, in International Symposium on Remote Sensing of Environment, 6th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, v. 1, p. 517-520.
172. Gudbergsson, G. M., and **Williams, R. S., Jr.**, 1982, Landsatmyndir af Islandi; MSS og RBV myndir fra Landsat 1, 2, og 3: 1972-1982 [Landsat images of Iceland; MSS and RBV images from Landsat 1, 2, and 3: 1972-1982]: Reykjavik, University of Iceland, Department of Geosciences, looseleaf notebook with index maps and tables.

173. Hartshorn, J. H., **Stoertz, G. E., Kover, A. N.**, and Davis, S. N., 1961, Investigations of ice-free sites for aircraft landings in East Greenland, 1959: Air Force Surveys in Geophysics no. 127, (AFCRL 1026), 146 p.
174. **Hemphill, W. R.**, 1966, Interpretation of ultraviolet imagery of the Meteor Crater, Salton Sea, and Arizona sedimentary test sites: U.S. Geological Survey Technical Letter NASA-39, 28 p.
175. \_\_\_\_\_ 1966, Ultraviolet imaging and spectrometry systems in lunar surface exploration, in Remote Sensing Symposium, Marshall Space Flight Center, Huntsville, Alabama, November 9, 1965, Proceedings: National Aeronautics and Space Administration, p. 54-60.
176. \_\_\_\_\_ 1968, Application of ultraviolet reflectance and stimulated luminescence to the remote detection of natural materials, in Annual Earth Resources Aircraft Program Status Review, 1st, Houston, Texas, 1968, Proceedings: National Aeronautics and Space Administration, v. 1, sec. 19, p. 1-13; U.S. Geological Survey Open-file report, 36 p.
177. \_\_\_\_\_ 1968, Remote detection of solar stimulated luminescence: Congress of the International Astronautical Federation, 19th, New York, 1968, Proceedings, p. 1-6.
178. \_\_\_\_\_ 1968, Ultraviolet absorption and luminescence studies: Progress report for the period from April to December, 1967: U.S. Geological Survey Open-file report; Technical Letter NASA-100, 57 p.
179. \_\_\_\_\_ 1973, EROS Program's ERTS-1 experiment in geology and land resources: Pan American Symposium on Remote Sensing, 1st, 1973, Panama City, Proceedings, p. 133-136.
180. \_\_\_\_\_ 1974, Experiments in the use of ERTS-1 data in geologic and land use analysis: Minnesota University Mining Symposium, Duluth, Minnesota, January 1974, Proceedings, no. 35, p. 147-150.
181. \_\_\_\_\_ contributing author, 1975, History of remote sensing, ch. 2; Interaction mechanisms, ch. 4; and Terrain and minerals: Assessment and evaluation, ch. 16 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. 1, 27-48, p. 75-179; v. 2, p. 1107-1351.
182. \_\_\_\_\_ 1981, Cooperative role of NASA and the Geological Survey in the development of techniques to measure luminescence, in Hemphill, W. R., and Settle, Mark, eds., Workshop on Applications of Luminescence Techniques to Earth Resource Studies: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-03, p. 9-11.
183. **Hemphill, W. R., Boynton, G., Philbin, G.**, and O'Neil, M., 1966, Laboratory tests of the RECONOFAX IV infrared imaging system: U.S. Geological Survey Technical Letter NASA-10, 20 p.
184. **Hemphill, W. R.**, and **Carnahan, S. U.**, 1965, Ultraviolet absorption and luminescence investigations: U.S. Geological Survey Technical Letter NASA-6, 50 p.

185. **Hemphill, W. R., and Danilchik, Walter**, 1968, Geologic interpretation of a Gemini photo: *Photogrammetric Engineering*, v. 34, no. 2, p. 150-154.
186. **Hemphill, W. R., Fischer, W. A., and Dornbach, J. E.**, 1965, Ultraviolet investigations for lunar missions, in *Advances in the astronomical sciences: American Astronautical Society*, v. 20, pt. 1, p. 397-415.
187. **Hemphill, W. R., Gawarecki, S. J., Fischer, W. A., Daniels, D. L., and Gerharz, Reinhold**, 1964, Interim report of ultraviolet absorption and stimulated luminescence investigations: U.S. Geological Survey Technical Letter NASA-3, 28 p.
188. **Hemphill, W. R., and Settle, Mark**, eds., 1981, Workshop on applications of luminescence techniques to earth resource studies: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-03, 104 p.
189. **Hemphill, W. R., and Stoertz, G. E.**, 1971, Fraunhofer line discriminator progress report, in *Advanced Applications Flight Experiments, Principal investigator's review*, NASA Langley Research Center, Langley, Virginia, Proceedings: National Aeronautics and Space Administration, p. 171-185.
190. **Hemphill, W. R., Stoertz, G. E., and Markle, D. A.**, 1969, Remote sensing of luminescent materials, in *International Symposium on Remote Sensing of Environment, 6th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan*, v. 1, p. 565-585.
191. **Hemphill, W. R., and Theisen, A. F.**, 1983, Laboratory spectral luminescence analysis of potential target materials, in *Fluorescence update: Perkin-Elmer Corporation, Oak Brook, Illinois*, p. 3.
- 191a. **Hemphill, W. R., Theisen, A. F., and Tyson, R. M.**, 1984, Laboratory analysis and airborne detection of materials stimulated to luminesce by the Sun: Amsterdam, Elsevier Science Publishers, *Journal of Luminescence*, v. 31-32, p. 724-726.
192. **Hemphill, W. R., Theisen, A. F., Tyson, R. M., and Granata, J. S.**, 1983, Orbital surveys of solar stimulated luminescence, in *William T. Pecora Memorial Remote Sensing Symposium, 8th, 1983, Sioux Falls, South Dakota, Proceedings*, p. 357-364.
193. **Hemphill, W. R., Theisen, A. F., and Watson, R. D.**, 1983, Use of the Fraunhofer line discriminator (FLD) for remote sensing of materials stimulated to luminesce by the Sun, in *Killinger, D. K., and Mooradian, A., eds., Optical and laser remote sensing: Berlin Heidelberg New York, Springer-Verlag*, p. 213-222.
194. **Hemphill, W. R., and Vickers, Roger**, 1966, Geological studies of the Earth and planetary surfaces by ultraviolet absorption and stimulated luminescence: U.S. Geological Survey Technical Letter NASA-33, 33 p.; supplement 33-A, 9 p.

195. **Hemphill, W. R., and Watson, R. D.**, 1981, Bibliography; solar stimulated luminescence and related topics, *in* Hemphill, W. R., and Settle, Mark, eds., Workshop on Applications of Luminescence Techniques to Earth Resource Studies: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-03, p. 83-104.
196. **Hemphill, W. R., Watson, R. D., Bigelow, R. C., and Hessen, T. D.**, 1977, Measurement of luminescence of geochemically stressed trees and other materials: U.S. Geological Survey Professional Paper 1015, 20 p.
197. **Hemphill, W. R., Watson, R. D., and Theisen, A. F.**, contributing authors, 1983, Geological applications, ch. 31 *of* Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. 2, p. 1697-1699, and fig. 31-33. (See Authorship Key, p. 1952, for subject.)
198. **Hite, R. J., Rush, F. E., Balch, A. H., Daniels, J. J., Friedman, J. D., Watts, R. D., and Ackermann, H. D.**, 1979, Geologic exploration at Salt Valley, Utah, *in* National Waste Terminal Storage Program, Proceedings, Office of Nuclear Waste Isolation, Columbus, Ohio, 1979: U.S. Department of Energy, Richland, Washington, p. 73-76.
199. **Hummer-Miller, Susanne**, 1981, Estimation of surface temperature variations due to change in sky and solar flux with elevation: Geophysical Research Letters, v. 8, no. 6, p. 595-598.
- 199a. **Hunt, G. R.**, 1965, Infrared spectral emission and its application to the detection of organic matter on Mars: Journal of Geophysical Research, v. 70, p. 2351-2357.
- 199b. **Hunt, G. R.**, 1966, Rapid remote sensing by a spectrum matching technique-1. Description and discussion of the method: Journal of Geophysical Research, v. 71, p. 2919-2930.
- 199c. **Hunt, G. R.**, 1967, Enhancement of fine detail in the presence of large radiance differences: Applied Optics, v. 6, p. 505-509.
200. **Hunt, G. R.**, contributing author, 1975, Terrain and minerals: Assessment and evaluation, ch. 16 *of* Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1239-1240.
201. \_\_\_\_\_ 1976, Infrared spectral behavior of fine particulate solids: Journal of Physical Chemistry, v. 80, p. 1195-1198.
202. \_\_\_\_\_ 1977, Comments on the origin of features in mineral and rock spectra detectable in the three-micrometer range: U.S. Geological Survey Open-File Report 77-726, 7 p.
203. \_\_\_\_\_ 1977, Spectral signatures of particulate minerals in the visible and near-infrared: Geophysics, v. 42, no. 3, p. 501-513.
204. \_\_\_\_\_ 1979, Near-infrared (1.3 to 2.4  $\mu\text{m}$ ) spectra of alteration minerals--potential for use in remote sensing: Geophysics, v. 44, no. 12, p. 1974-1986.
205. \_\_\_\_\_ 1979, Spectra of rocks and soils from the eastern Shoshone Range, Nevada: U.S. Geological Survey Open-File Report 79-707, 4 p.

- 205a. **Hunt, G. R.**, 1979, Thermal infrared properties of the martian atmosphere-4. Predictions of the presence of dust and ice clouds from Viking IRTM spectral measurements: *Journal of Geophysical Research*, v. 84, p. 2865-2874.
206. \_\_\_\_\_ 1980, Electromagnetic radiation: The communication link in remote sensing, in Siegal, B. S., and Gillespie, A. R., eds., *Remote sensing in geology*: New York, John Wiley and Sons, p. 5-45.
207. \_\_\_\_\_ 1980, Modifications of integrating sphere accessory to allow spectroscopic measurements of horizontal surfaces from above: *Applied Optics*, v. 19, no. 11, p. 1746-1747.
208. \_\_\_\_\_ 1981, Emission spectra in the thermal infrared region, in Settle, Mark, ed., *Workshop on Geological Applications of Thermal Infrared Remote Sensing Techniques*: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-06, p. 63-71; U.S. Geological Survey Open-File Report 81-0787, 10 p.
209. \_\_\_\_\_ 1982, Spectroscopic properties of rocks and minerals, in ch. 3 of *Handbook of physical properties of rocks*: Boca Raton, Florida, CRC Press, v. 1, p. 295-385.
210. **Hunt, G. R.**, and **Ashley, R. P.**, 1979, Spectra of altered rocks in the visible and near infrared: *Economic Geology*, v. 74, no. 7, p. 1613-1629.
211. **Hunt, G. R.**, and **Evarts, R. C.**, 1981, The use of near-infrared spectroscopy to indicate the degree of serpentinization of ultramafic rocks: *Geophysics*, v. 46, no. 3, p. 316-321.
212. **Hunt, G. R.**, and **Hall, R. B.**, 1981, Identification of kaolins and associated minerals in altered volcanic rocks by infrared spectroscopy: *Clays and Clay Minerals*, v. 29, no. 1., p. 76-78.
213. **Hunt, G. R.**, **Johnson, G. R.**, **Olhoeft, G. R.**, **Watson, D. E.**, and **Watson, Kenneth**, 1979, Initial report of the Petrophysics Laboratory: U.S. Geological Survey Circular 789, 74 p.
214. **Hunt, G. R.**, and Lenhoff, C. J., 1971, Visible and near-infrared spectra of minerals and rocks: IV. Sulphides and sulphates: *Modern Geology*, v. 3, p. 1-14.
- 214a. **Hunt, G. R.**, and Logan, L. M., 1970, An image selection device for use with a telescope: *Applied Optics*, v. 9, p. 2786-2787.
- 214b. **Hunt, G. R.**, and Logan, L. M., 1971, Convenient technique for calibration of radiometers used for low energy infrared targets: *Applied Optics*, v. 10, p. 2770.
- 214c. **Hunt, G. R.**, and Logan, L. M., 1972, Variation of single particle mid-infrared emission spectrum with particle size: *Applied Optics*, v. 11, p. 142-147.
215. **Hunt, G. R.**, Logan, L. M., and **Salisbury, J. W.**, 1973, Mars: components of infrared spectra and the composition of the dust cloud: *Icarus*, v. 18, p. 459-469.

216. **Hunt, G. R., and Salisbury, J. W.**, 1964, Determination of compositional differences on the lunar surface using ground-based infrared spectroscopy, in Annual Meeting of the Working Group on Extra-terrestrial Resources, 3d, Proceedings: National Aeronautics and Space Administration/U.S. Air Force, p. 31-40.
217. \_\_\_\_\_ 1964, Lunar surface features: Mid-infrared spectral observations: Science, v. 146, p. 641-642.
218. \_\_\_\_\_ 1969, Mid-infrared spectroscopic observations of the Moon: The Royal Society of London, Philosophical Transactions, Series B, v. 264, no. 1150, p. 109-140.
219. \_\_\_\_\_ 1970, Visible and near-infrared spectra of minerals and rocks: I. Silicate minerals: Modern Geology, v. 1, no. 4, p. 283-300.
220. \_\_\_\_\_ 1971, Visible and near-infrared spectra of minerals and rocks: II. Carbonates: Modern Geology, v. 2, no. 1, p. 23-30.
221. \_\_\_\_\_ 1974, Mid-infrared spectral behavior of igneous rocks: U.S. Air Force Cambridge Research Laboratories, Environmental Research Paper 496, AFCRL-TR-74-0625, 142 p.
222. \_\_\_\_\_ 1975, Mid-infrared spectral behavior of sedimentary rocks: U.S. Air Force Cambridge Research Laboratories, Environmental Research Paper 520, AFCRL-TR-75-0356, 49 p.
223. \_\_\_\_\_ 1976, Infrared spectral behavior of finely particulate solids: Journal of Physical Chemistry, v. 80, p. 1195-1198.
224. \_\_\_\_\_ 1976, Mid-infrared spectral behavior of metamorphic rocks: U.S. Air Force Cambridge Research Laboratories, Environment Research Paper 543, AFCRL-TR-76-0003, 67 p.
225. \_\_\_\_\_ 1976, Visible and near-infrared spectra of minerals and rocks: XI. Sedimentary rocks: Modern Geology, v. 5, no. 4, p. 211-217.
226. \_\_\_\_\_ 1976, Visible and near-infrared spectra of minerals and rocks: XII. Metamorphic rocks: Modern Geology, v. 5, no. 4, p. 219-228.
227. \_\_\_\_\_ 1978, Assessment of Landsat filters for rock type discrimination, based on intrinsic information in laboratory spectra: Geophysics, v. 43, no. 4, p. 738-747.
228. **Hunt, G. R., Salisbury, J. W., and Alexander, W. E.**, 1967, Thermal enhancement techniques: Application of remote sensing of thermal targets, in Research Applications Conference, 2d, Washington, D.C., March 1967, Proceedings: Office of Aerospace Research, p. 113-120.
229. **Hunt, G. R., and Salisbury, J. W., and Lenhoff, C. J.**, 1971, Visible and near-infrared spectra of minerals and rocks: III. Oxides and hydroxides: Modern Geology, v. 2, no. 3, p. 195-205.
230. \_\_\_\_\_ 1971, Visible and near-infrared spectra of minerals and rocks: IV. Sulphides and sulphates: Modern Geology, v. 3, no. 1, p. 1-14.
231. \_\_\_\_\_ 1972, Visible and near-infrared spectra of minerals and rocks: V. Halides, phosphates, arsenates, vanadates and borates: Modern Geology, v. 3, no. 3, p. 121-132.

232. \_\_\_\_\_ 1973, Visible and near-infrared spectra of minerals and rocks:  
VI. Additional silicates: *Modern Geology*, v. 4, no. 2, p. 85-106.
233. \_\_\_\_\_ 1973, Visible and near-infrared spectra of minerals and rocks:  
VII. Acidic igneous rocks: *Modern Geology*, v. 4, no. 3, p. 217-224.
234. \_\_\_\_\_ 1973, Visible and near-infrared spectra of minerals and rocks:  
VIII. Intermediate igneous rocks: *Modern Geology*, v. 4, no. 4, p. 237-244.
235. \_\_\_\_\_ 1974, Visible and near-infrared spectra of minerals and rocks:  
IX. Basic and ultrabasic igneous rocks: *Modern Geology*, v. 5, no. 1, p. 15-22.
236. **Hunt, G. R., Salisbury, J. W., and Reed, J. W.**, 1967, Rapid remote sensing by spectrum matching technique, pt. 2 of Application in the laboratory and in lunar observations: *Journal of Geophysical Research*, v. 72, p. 705-720.
237. **Hunt, G. R., Salisbury, J. W., and Vincent, R. K.**, 1968, Infrared images of the eclipsed Moon: *Sky and Telescope*, v. 36, p. 223-225.
238. \_\_\_\_\_ 1968, Lunar eclipse: Infrared images and an anomaly of possible internal origin: *Science*, v. 162, p. 252-254.
239. \_\_\_\_\_ 1969, Comments on Lunar thermal anomalies and internal heating, by J. M. Saari, 1969 (in *Astrophysics and Space Science*, v. 4, no. 3, p. 275-300): *Astrophysics and Space Science*, v. 4, p. 370-372.
- 239a. **Hunt, G. R., and Vincent, R. K.**, 1968, The behavior of spectral features in the infrared emission from particulate surfaces of various grain sizes: *Journal of Geophysical Research*, v. 73, p. 6039-6046.
- 239b. **Hunt, G. R., and Vincent, R. K.**, 1968, Modification to the Perkin-Elmer Reflectance Attachment for studying powders: *Journal of Scientific Instruments*, v. 1, p. 470-471.
240. **Hunt, G. R., and Wynn, J. C.**, 1979, Visible and near-infrared spectra of rocks from chromium-rich areas: *Geophysics*, v. 44, no. 4, p. 820-825.
241. **Johnson, G. R., and England, A. W.**, 1977, Microwave radiometric survey of the San Joaquin nuclear project site, Kern County, California: *U.S. Geological Survey Journal of Research*, v. 5, no. 4, p. 431-435.
242. Kahle, A. B., and **Rowan, L. C.**, 1980, Evaluation of multispectral middle infrared aircraft images for lithologic mapping in the East Tintic Mountains, Utah: *Geology*, v. 8, no. 5, p. 234-239.
243. **Keiffer, H. H., Frank, David, and Friedman, J. D.**, 1982, Thermal infrared surveys: Observations prior to the eruption of May 18, in Lipman, P. W., and Mullineaux, D. R., eds., *The 1980 eruptions of Mount St. Helens*: U.S. Geological Survey Professional Paper 1250, p. 257-277.
- 243a. **Kingston, M. J., and Rowan, L. C.**, 1984, Application of remote sensing techniques in assessing effects of acid deposition on building stones: *National Acid Precipitation Assessment Program Pre-Review Research Summaries*, Burlington, Vermont, p. 49-56.

244. **Knepper, D. H., Jr.**, 1979, Monitoring and mapping mountain environments, in Webber, P. J., ed., High Altitude Ecology, American Association for the Advancement of Science Selected Symposium 12: Boulder, Colorado, Westview Press, p. 47-55.
245. \_\_\_\_\_ 1982, Lineaments derived from analysis of linear features mapped from Landsat images of the Four Corners region of the southwestern United States: U.S. Geological Survey Open-File Report 82-849, 79 p.
246. \_\_\_\_\_ 1982, Sandstone uranium deposits and Landsat linear features in the southern Colorado Plateau: Some observations: in Symposium on Uranium Exploration Methods, Paris, 1982, Proceedings: Nuclear Energy Agency, Organisation for Economic Co-operation and Development, p. 93-109.
247. \_\_\_\_\_ 1983, Summary of some analysis techniques for linear features with examples from the Cascade Range, in International Geoscience and Remote Sensing Symposium Digest, 1983: Institute of Electrical and Electronics Engineers, v. 2, sec. FP-6, p. 6.1-6.5.
248. **Knepper, D. H., Jr.**, and Marris, R. W., 1971, Geological development of the Bonanza-San Luis Valley-Sangre de Cristo Range area, south-central Colorado, in James, H. L., ed., Guidebook of the San Luis Basin, Colorado: New Mexico Geological Society, p. 249-264.
249. \_\_\_\_\_ 1972, Remote sensing aids in geologic mapping, in International Symposium on Remote Sensing of Environment, 8th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1127-1136.
250. **Knepper, D. H., Jr.**, and **Raines, G. L.**, 1985, Determining stretch parameters for lithologic discrimination on Landsat band-ratio images: Photogrammetric Engineering and Remote Sensing, v. 51, no. 1, p. 63-70.
251. **Koenig, J. B.**, **Gawarecki, S. J.**, and Austin, C. F., 1977, Remote sensing survey of the Cosco Geothermal Area, Inyo County, California: U.S. Naval Weapons Center, Technical Publication TP-5233, 32 p.
252. **Kover, A. N.**, 1968, Sidelooking radar imagery, in Symposium on Remote Sensing of Environment, 5th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, p. 781-785.
253. \_\_\_\_\_ 1969, Status of sidelooking radar imagery for earth resources studies: Tulsa Geological Society Digest, v. 36, p. 43-45.
254. \_\_\_\_\_ 1976, Remote sensing: Geotimes, v. 21, no. 1, p. 35-36.
- 254a. **Kover, A. N.**, Jones, J. E., **Southworth, C. S.**, 1984, Major source of new radar data for exploration research, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 853-862.
255. **Kover, A. N.**, and **Williams, R. S., Jr.**, 1977, Remote sensing: Geotimes, v. 22, no. 1, p. 39-41.



256. **Kowalik, W. S.**, 1982, Exploration for limonitic outcrops in the Circle quadrangle, Alaska, via Landsat digital data: U.S. Geological Survey Open-File Report 82-529, 14 p.
257. **Kowalik, W. S.**, Lyon, R.J.P., and Switzer, P., 1983, The effects of additive radiance terms on ratios of Landsat data: Photogrammetric Engineering and Remote Sensing Journal, v. 49, no. 5, p. 659-669.
258. **Kowalik, W. S.**, Marsh, S. E., and Lyon, R.J.P., 1982, A relationship between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle: Remote Sensing of Environment, v. 12, p. 39-55.
259. **Krohn, M. D.**, 1979, Enhancement of Landsat images for lineament analysis in the area of the Salina Basin, New York and Pennsylvania: U.S. Geological Survey Open-File Report 79-533, 39 p.
- 259a. \_\_\_\_\_ 1984, Interpretation of Thermal Infrared Multispectral Scanner images of the Osgood Mountains, Nevada (Summary), in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 735-737.
260. **Krohn, M. D.**, Abrams, M. J., and **Rowan, L. C.**, 1978, Discrimination of hydrothermally altered rocks along the Battle Mountain-Eureka, Nevada, mineral belt using Landsat images: U.S. Geological Survey Open-File Report 78-585, 63 p.
261. **Krohn, M. D.**, and Gold, D. P., 1975, Relation of lineaments to sulfide deposits: Bald Eagle Mountain, Centre County, Pennsylvania, in Earth Resources Survey Symposium, Houston, Texas, 1975, Proceedings: National Aeronautics and Space Administration, v. 1-B, no. G-21, p. 951-954.
262. **Krohn, M. D.**, and **Milton, N. M.**, 1982, Preliminary evaluation of SIR-A images of eastern North Carolina, in Cimino, J. B., and Elachi, C., eds., Shuttle Imaging Radar-A (SIR-A) Experiment: California Institute of Technology, Jet Propulsion Laboratory Publication 82-77, p. 4-43 to 4-52.
263. \_\_\_\_\_ 1983, Geobotanical potential of Landsat-4 Thematic Mapper spectral bands: American Congress on Surveying and Mapping-American Society of Photogrammetry, Fall Convention, Salt Lake City, Utah, Proceedings, p. 675-684.
264. \_\_\_\_\_ 1983, Image processing of digital Seasat SAR data in eastern Virginia: U.S. Geological Survey Open-File Report 83-228, 32 p.
265. **Krohn, M. D.**, **Milton, N. M.**, and **Segal, D. B.**, 1981, Discrimination of a chestnut-oak forest unit for geologic mapping by means of a principal component enhancement of Landsat multispectral scanner data: Geophysical Research Letters, v. 8, no. 2, p. 151-154.
266. \_\_\_\_\_ 1983, SEASAT Synthetic Aperture Radar (SAR) response to lowland vegetation in eastern Maryland and Virginia: Journal of Geophysical Research, v. 88, no. C3, p. 1937-1952.

267. **Krohn, M. D., Milton, N. M., Segal, D. B., Crowley, J. K., and England, A. W.**, 1981, Seasat L-band radar response to forest vegetation in eastern Virginia, in International Geoscience and Remote Sensing Symposium Digest, 1981: Institute of Electrical and Electronics Engineers, v. 1, p. 617-618.
268. **Kruse, F. A.**, 1984, Munsell color analysis of Landsat color-ratio-composite images of limonitic areas in southwest New Mexico, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 761-773.
269. **Kruse, F. A., and Raines, G. L.**, 1984, A technique for enhancing digital color images by contrast stretching in Munsell color space, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 755-760.
270. **Lathram, E. H., Tailleur, I. L., Patton, W. W., Jr., and Fischer, W. A.**, 1973, Preliminary geologic application of ERTS-1 imagery in Alaska, in Symposium on Significant Results Obtained from Earth Resources Technology Satellite-1, March 1973, Proceedings: National Aeronautics and Space Administration, NASA SP-327, v. 1, p. 257-264.
271. **Lee, Keenan**, 1969, Infrared exploration for shoreline springs at Mono Lake, California, test site, in International Symposium on Remote Sensing of Environment, 6th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, v. 2, p. 1075-1100.
272. \_\_\_\_\_ 1974, Geology from space: Golden, Colorado, Colorado School of Mines, Mines Magazine, v. 64, no. 4, p. 30-32.
273. \_\_\_\_\_ contributing author, 1975, Ground investigations in support of remote sensing, ch. 13 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. 1, p. 826-835.
274. \_\_\_\_\_ ed., 1975, Ground investigations in support of remote sensing, ch. 13 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. 1, p. 804-856.
275. \_\_\_\_\_ 1977, Application of remote sensing to geologic mapping in Taiwan: Mining Research Survey Organization, Industrial Technology Research Institute Report, 51 p., 10 pl.
276. \_\_\_\_\_ 1978, Analysis of thermal infrared imagery of the Black Rock Desert geothermal area, Nevada: Golden, Colorado, Colorado School of Mines Quarterly, v. 73, no. 3, p. 31-43.
277. \_\_\_\_\_ 1983, Landsat analysis for uranium exploration in northeast Turkey: U.S. Geological Survey Open-File Report 83-99, 44 p.

278. **Lee, Keenan, Cole, D. M., and Kruse, F. A.,** 1983, Causes of color differences in limonitic areas on Landsat color-ratio-composite images: Golden, Colorado, Colorado School of Mines Remote Sensing Report 83-1, 43 p.
279. **Lee, Keenan, Knepper, D. H., Jr., and Sawatzky, D. L.,** 1974, Geologic information from satellite imagery, in Shahrokhi, F., ed., Remote sensing of earth resources: Tullahoma, Tennessee, University of Tennessee Space Institute, v. 3, p. 411-448.
280. **Lee, Keenan, and Raines, G. L.,** 1984, Reflectance spectra of some alteration minerals - a chart compiled from published data, 0.4  $\mu\text{m}$  - 2.5 $\mu\text{m}$ : U.S. Geological Survey Open-File Report 84-96, 6 p., 1 chart.
281. **Lee, Keenan, and Weimer, R. J.,** 1975, Geologic interpretation of Skylab photographs: Golden, Colorado, Colorado School of Mines Remote Sensing Report 75-6, 77 p.
282. **Light, T. D., Pike, J. E., Howard, K. A., McDonnell, J. R., Jr., Simpson, R. W., Raines, G. L., Knox, R. D., Wilshire, H. G., and Pernokas, M. A.,** 1983, Mineral resource potential of the Crossman Peak Wilderness study area, Mohave County, Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1602-A, scale 1:48,000.
- 282a. Logan, L. M., Balsamo, S. R., and **Hunt, G. R.,** 1973, Absolute measurements and computed values for martian irradiance between 10.5 and 12.5  $\mu\text{m}$  : Icarus, v. 18, p. 451-458.
- 282b. Logan, L. M., and **Hunt, G. R.,** 1970, Emission spectra of particulate silicates under simulated lunar conditions: Journal of Geophysical Research, v. 75, p. 6539-6547.
- 282c. Logan, L. M., and **Hunt, G. R.,** 1970, Infrared emission spectra, enhancement of diagnostic features by the lunar environment: Science, v. 169, p. 865-866.
283. Logan, L. M., **Hunt, G. R.,** Balsamo, S. R., and **Salisbury, J. W.,** 1972, Mid-infrared emission spectra of Apollo 14 and 15 soils and remote compositional mapping of the Moon: Geochimica et Cosmochimica Acta, v. 3, p. 3069-3076.
284. \_\_\_\_\_ 1972, Mid-infrared emission spectrum of Apollo 14 soil: Significance for compositional remote sensing: Houston, Texas, Lunar Science Institute, Publication no. 88, p. 490-492.
285. Logan, L. M., **Hunt, G. R.,** and **Salisbury, J. W.,** 1972, Infrared emission spectra of Apollo 15 soils: Houston, Texas, Lunar Science Institute, Publication no. 96, p. 475-476.
286. \_\_\_\_\_ 1974, The use of mid-infrared spectroscopy in remote sensing of space targets, in Karr, C., ed., Infrared and Raman spectroscopy of lunar and terrestrial minerals: New York, Academic Press, chap. 9, p. 117-142.
287. Logan, L. M., **Hunt, G. R., Salisbury, J. W.,** and Balsamo, S. R., 1973, Compositional implications of Christiansen frequency maxima for infrared remote sensing applications: Journal of Geophysical Research, v. 78, p. 4983-5003.

- 287a. Logan, L. M., **Hunt, G. R.**, Salisbury, J. W., and Balsamo, S. R., 1972, Mid-infrared emission spectrum of Apollo 14 soil--Significance for compositional remote sensing, in Watkins, C., ed., Lunar Science III: Houston, Texas, Lunar Science Institute, p. 490-492.
- 287b. Lucey, P. G., and **Clark, R. N.**, 1984, Spectral properties of water ice and contaminants: NATO Conference on Ices in the Solar System, Nice, France, Jan. 1984, Proceedings. [in press].
288. Lynch, R. V., **Hemphill, W. R.**, and **Theisen, A. F.**, 1983, Use of the Fraunhofer line discriminator to detect bioluminescence in daylight: Naval Research Laboratory Report 8759, December 30, 1983, 13 p.
289. Lyon, R.J.P., and **Lee, Keenan**, 1970, Remote sensing in exploration for mineral resources: Economic Geology, v. 65, p. 785-800.
290. **MacKallor, J. A.**, **Moxham, R. M.**, Tolozko, L. R., and **Popenoe, Peter**, 1962, Radioactivity and geologic map of the Tordilla Hill-Deweeseville area, Karnes County, Texas: U.S. Geological Survey Geophysical Investigations Map GP-199, scale 1:6,000.
291. **Macke, D. L.**, **Duval, J. S.**, and **Pitkin, J. A.**, 1978, Aerial gamma-ray maps of part of the southern Powder River Basin in Converse County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-956.
292. **Mamula, Ned**, 1978, Remote sensing methods for monitoring surface coal mining in the northern Great Plains: U.S. Geological Survey Journal of Research, v. 6, no. 2, p. 149-160.
293. \_\_\_\_\_ contributing author, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1827-1829. (See Authorship Key for subject, p. 1952).
294. **Mamula, Ned**, **Carter, W. D.**, and **Rowan, L. C.**, 1978, Preliminary bibliography of remote sensing, lineaments, plate tectonics, ore deposits and mineral exploration - through 1977: International Geological Congress Project 143, 180 p.
295. **Mamula, Ned**, and Voight, Barry, 1982, Structural analysis of a divergent plate boundary terrain - A Landsat perspective, in International Symposium on Remote Sensing of the Environment, Thematic Conference on Remote Sensing for Exploration Geology, 2d, Texas, 1982, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 385-416.
296. \_\_\_\_\_ 1984, Tectonic analysis of lineaments near a spreading axis, northeastern Iceland: Tectonophysics. [in press].
297. Marrs, R. W., Martinsen, R. S., and **Raines, G. L.**, 1984, Regional structure and facies changes in the Powder River Basin, Wyoming and Montana, interpreted from satellite imagery, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 25-34.

298. Marrs, R. W., and **Raines, G. L.**, 1984, Tectonic framework of the Powder River Basin, Wyoming and Montana interpreted from Landsat imagery: American Association of Petroleum Geologists Bulletin, v. 68, no. 11, p. 1718-1731.
299. Marsh, S. E., and **Williams, R. S., Jr.**, contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1671-72. (See Authorship Key for subject, p. 1952).
300. McCord, T. B. and **Clark, R. N.**, 1979, Atmospheric extinction 0.65-2.50  $\mu$ m above Mauna Kea: Astronomical Society of the Pacific Publications, v. 91, p. 571-576.
301. \_\_\_\_\_ 1979, The Mercury soil: Presence of  $Fe^{2+}$ : Journal of Geophysical Research, v. 84, p. 7664-7668.
302. McCord, T. B., **Clark, R. N.**, Hawke, B. R., McFadden, L. A., Owensby, P. D., Pieters, C. M., and Adams, J. B., 1981, Moon: Near-infrared spectral reflectance, a first good look: Journal of Geophysical Research, v. 86, p. 10883-10892.
303. McCord, T. B., **Clark, R. N.**, and Huguenin, R. L., 1978, Mars: Near infrared spectral reflectance and compositional implications: Journal of Geophysical Research, v. 83, p. 5433-5441.
304. McCord, T. B., **Clark, R. N.**, Meloy, A., Singer, R. B., Adams, J. B., and El-Baz, Farouk, 1982, An example of the application of a procedure for determining the extent of erosional and depositional features and rock and soil units in the Kharga Oasis Region, Egypt, using remote sensing: International Symposia on Remote Sensing of Environment, Cairo, Egypt, Proceedings, p. 909-919.
305. McCord, T. B., **Clark, R. N.**, and Singer, R. B., 1982, Mars: Near-infrared reflectance spectra of surface regions and compositional implication: Journal of Geophysical Research, v. 87, p. 3021-3032.
306. McFarlane, J. C., **Watson, R. D.**, **Theisen, A. F.**, Jackson, R., Ehrler, W. L., Pinter, P. J., Idso, S. B., and Reginato, R. J., 1980, Plant stress detection by remote sensing measurements of fluorescence: Applied Optics, v. 19, no. 19, p. 3287-3289.
307. **McGee, L. C.**, 1979, Remote sensing enhanced: Geotimes, v. 24, no. 5, p. 23-26.
308. \_\_\_\_\_ 1983, Laramide sedimentation, folding and faulting in the southern Wind River Range, Wyoming: Laramie, Wyo., University of Wyoming, Master of Science thesis, 93 p.
309. Merembeck, B. F., Borden, F. Y., **Podwysoki, M. H.**, and Applegate, D. N., 1977, Application of canonical analysis to multispectral scanner data, in Ramani, R. V., ed., International Symposium on Application of Computer Methods in the Mineral Industry, 14th, 1976, Proceedings: New York, Society Mining Engineers of American Institute of Mining, Metallurgical, and Petroleum Engineers, p. 867-879.

310. Merifield, P. M., Cronin, J. F., Foshee, L. L., **Gawarecki, S. J.**, Neal, J. T., Stevenson, R. W., Stone, R. O., and **Williams, R. S., Jr.**, 1969, Satellite imagery of the Earth: Photogrammetric Engineering, v. 35, no. 7, p. 654-688.
311. Merifield, P. M., Saari, J. M., Shorthill, R. W., **Wildey, R. L.**, **Wilhelms, D. E.**, and **Williams, R. S., Jr.**, 1969, Interpretation of extraterrestrial imagery: Photogrammetric Engineering, v. 35, no. 5, p. 477-492.
312. **Miller, S. H.**, **Nelms, C. A.**, and **Watson, Kenneth**, 1980, Reflectance and thermal infrared aircraft scanner images of Newberry Caldera, Oregon: U.S. Geological Survey Open-File Report 80-234, 43 p.
313. **Miller, S. H.**, and **Watson, Kenneth**, 1977, Evaluation of algorithms for geologic thermal-inertia mapping, in International Symposium on Remote Sensing of Environment, 11th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1147-1160.
314. \_\_\_\_\_ 1980, Ground support data for the aircraft multispectral reflectance and thermal scanner mission Nov./Dec. 1977, on the island of Hawaii: U.S. Geological Survey Open-File Report 80-470, 40 p.
315. \_\_\_\_\_ 1980, Thermal infrared aircraft scanner data of the area of underground coal fires, Sheridan, Wyoming, July 1975, and October 1978: U.S. Geological Survey Open-File Report 80-2021, 4 p.
316. **Miller, S. H.**, **Watson, Kenneth**, and **Kipfinger, R. P.**, 1980, Ground support data from July 10 to July 29, 1978, for the HCMM thermal satellite data of the Powder River Basin, Wyoming: U.S. Geological Survey Open-File Report 80-469, 43 p.
317. **Milton, N. M.**, 1978, Spectral reflectance measurements of plants in the East Tintic Mountains, Utah: U.S. Geological Survey Open-File Report 78-448, 120 p.
318. \_\_\_\_\_ 1983, Use of reflectance spectra of native plant species for interpreting airborne multispectral scanner data in the East Tintic Mountains, Utah: Economic Geology, v. 78, no. 4, p. 761-769.
319. **Milton, N. M.**, Collins, W. E., Chang, S. H., and **Schmidt, R. G.**, 1983, Remote detection of metal anomalies on Pilot Mountain, Randolph County, North Carolina: Economic Geology, v. 78, no. 4, p. 605-617.
- 319a. \_\_\_\_\_ 1984, Remote detection of metal anomalies on Pilot Mountain, Randolph County, North Carolina-A reply: Economic Geology, v. 79, no. 7, p. 336-337.
320. **Milton, N. M.**, and Madura, D. P., 1981, Vegetation distribution in the central part of the East Tintic Mountains, Utah: U. S. Geological Survey Miscellaneous Field Studies Map MF-1195, scale 1:24,000.
321. **Milton, N. M.**, and Mouat, D. A., 1984, The significance of scale in geobotanical applications for lithologic discrimination and mineral exploration, in Teleki, P., and Weber, C., eds., Remote sensing for geological mapping, Proceedings of seminar in Orleans, France, Feb. 2-4, 1984: International Union for Geological Sciences/UNESCO, BRGM Document no. 82, IUGS Publication 18, p. 287-298.

322. \_\_\_\_\_ 1984, Spectral and spatial resolution in geobotany, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 173-182.
323. **Milton, N. M., and Purdy, T. L.**, 1983, Plant and soil relationships in two hydrothermally altered areas of the Great Basin: Great Basin Naturalist, v. 43, no. 3, p. 457-469.
324. **Moore, H. J., Tyler, G. L., Boyce, J. M., Shorthill, R. W., Thompson, T. W., Walker, A. S., Wilhelms, D. E., Wu, S.J.C., and Zisk, S. H.**, 1975, Correlation of photogeology and remote sensing data along the Apollo 14 bistatic-radar ground track, Part I, a working compendium: U.S. Geological Survey Interagency Report, Astrogeology 75, 88 p.
325. **Moxham, R. M.**, 1964, Radioelement dispersion in a sedimentary environment and its effect on uranium exploration: Economic Geology, v. 59, no. 2, p. 309-321.
326. \_\_\_\_\_ 1964, Some aerial observations on the terrestrial component of environmental gamma radiation, in The natural radiation environment: Chicago, Illinois, University Chicago Press (for William Marsh Rice University) p. 737-746.
327. \_\_\_\_\_ 1967, Changes in surface temperature at Taal volcano, Philippines, 1965-1966: Bulletin Volcanologique, v. 31, p. 215-234.
328. \_\_\_\_\_ 1968, Aerial infrared images of the Geysers geothermal steam field and vicinity, Sonoma County, California: U.S. Geological Survey Technical Letter NASA-110, 15 p.; Open-file report.
329. \_\_\_\_\_ 1969, Aerial infrared survey at the Geysers geothermal steam field, California, in Geological Survey research 1969: U.S. Geological Survey Professional Paper 650-C, p. C106-C122.
330. \_\_\_\_\_ 1970, Thermal features at volcanoes in the Cascade Range, as observed by aerial infrared surveys: Bulletin Volcanologique, v. 34, no. 1, p. 77-106.
331. \_\_\_\_\_ 1971, Thermal surveillance of volcanoes: UNESCO Earth Science Series, no. 8, p. 103-124.
332. \_\_\_\_\_ 1976, Gamma-ray spectrometer measurement of  $^{238}\text{U}/^{235}\text{U}$  in uranium ore from a natural reactor at Oklo, Gabon: U.S. Geological Survey Journal of Research, v. 4, no. 5, p. 589-592.
333. **Moxham, R. M., and Alcaraz, Arturo**, 1966, Infrared surveys at Taal Volcano, Philippines, in Symposium on Remote Sensing of Environment, 4th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, p. 827-843.
334. **Moxham, R. M., Boynton, G. R., and Cote, C. E.**, 1973, Satellite telemetry of fumarole temperatures, Mount Rainier, Washington: Bulletin Volcanologique, v. 36 (1972), no. 1, p. 191-199.

335. **Moxham, R. M., Crandell, D. R.,** and Marlatt, W. E., 1965, Thermal features at Mount Rainier, Washington, as revealed by infrared surveys, in Geological Survey research 1965: U.S. Geological Survey Professional Paper 525-D, p. D93-D100.
336. **Moxham, R. M.,** and **Eargle, D. H.,** 1961, Airborne radioactivity and geologic map of the Coastal Plain area, southeast Texas: U.S. Geological Survey Geophysical Investigations Map GP-198, scale 1:250,000.
337. **Moxham, R. M.,** Foote, R. S., and Bunker, C. M., 1965, Gamma-ray spectrometer studies of hydrothermally altered rocks: Economic Geology, v. 60, no. 4, p. 653-671.
338. **Moxham, R. M., Greene, G. W., Friedman, J. D,** and **Gawarecki, S. J.,** 1967, Infrared imagery and radiometry-summary report, December 1967: U.S. Geological Survey Technical Letter NASA-105, 66 p.; Open-file report, 1968.
339. **Moxham, R. M.,** and **Tanner, A. B.,** 1977, High-resolution gamma-ray spectrometry in uranium exploration: U.S. Geological Survey Journal of Research, v. 5, no. 6, p. 783-795.
340. **Nelms, C. A., Miller, S. H.,** and **Watson, Kenneth,** 1980, Multispectral reflectance and thermal infrared aircraft mission for Mt. Hood, Oregon, September 1977: U.S. Geological Survey Open-File Report 80-882, 30 p.
341. **Offield, T. W.,** 1966, Lunar Orbiter Mission--A pre-flight evaluation of site A-1: U.S. Geological Survey Technical Letter, Astrogeology 13, 24 p.
342. \_\_\_\_\_ 1970, Geologic map of part of the Fra Mauro region of the Moon: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-708, sheet 1 of 2, scale 1:25,000.
343. \_\_\_\_\_ 1975, Line-grating diffraction in image analysis: Enhanced detection of linear structure, Colorado Front Range: Modern Geology, v. 5, p. 101-107.
344. \_\_\_\_\_ 1975, Thermal-infrared images as a basis for structure mapping, Front Range and adjacent plains in Colorado: Geological Society of America Bulletin, v. 86, p. 495-502.
345. \_\_\_\_\_ 1976, Remote sensing in uranium exploration, in International Symposium on Exploration for Uranium Ore Deposits, Vienna, Austria, Proceedings: Nuclear Energy Agency/International Atomic Energy Agency, p. 731-744.
346. **Offield, T. W.,** Abbott, E. A., Gillespie, A. R., and Loguercio, Sabino, 1977, Enhanced Landsat images for mapping structural control in southern Brazil copper region: Geophysics, v. 42, p. 256-274.
347. **Offield, T. W., Knepper, D. H., Jr., Sawatzky, D. L.,** and **Raines, G. L.,** 1982, Regional settings of uranium occurrence: Preliminary Landsat studies, Introduction, in Symposium on Uranium Exploration Methods, Paris, 1982, Proceedings: Nuclear Energy Agency, Organisation for Economic Co-operation and Development, p. 21-24.



348. **Offield, T. W.**, Miller, G. B., Pettersson, B. A., 1982, Regional setting and uranium occurrence, Olden-Hotagen District of Sweden and adjacent Norway: Preliminary Landsat interpretation, in Symposium on Uranium Exploration Methods, Paris, 1982, Proceedings: Nuclear Energy Agency, Organisation for Economic Co-operation and Development, p. 67-90.
349. **Offield, T. W.**, Miller, G. B., **Raines, G. L.**, and Ramaekers, Paul, 1982, Unconformity-vein uranium setting in Saskatchewan, Canada: Preliminary Landsat study, in Symposium on Uranium Exploration Methods, Paris, 1982, Proceedings: Nuclear Energy Agency, Organisation for Economic Co-operation and Development, p. 25-49.
350. **Offield, T. W.**, and **Penner, Ellen**, 1982, Setting of the Dartmoor Granite as an environment for potential uranium deposits, in Symposium on Uranium Exploration Methods, Paris, 1982, Proceedings: Nuclear Energy Agency, Organisation for Economic Co-operation and Development, p. 111-119.
351. **Offield, T. W.**, and **Pohn, H. A.**, 1970, Lunar crater morphology and relative-age determination-Part 2. Applications, in Geological Survey research 1970: U.S. Geological Survey Professional Paper 700-C, p. C163-C169.
352. \_\_\_\_\_ 1975, Map showing thermal lineaments in the Evergreen quadrangle, Jefferson County, Colorado: U.S. Geological Survey Miscellaneous Investigations Series Map I-786-G, scale 1:24,000.
353. \_\_\_\_\_ 1979, Geology of the Decaturville impact structure, Missouri: U.S. Geological Survey Professional Paper 1042, 48 p.
354. **Offield, T. W.**, **Raines, G. L.**, and **Sawatzky, D. L.**, 1977, Computer enhanced images and geologic studies, southern Powder River Basin, Wyoming, in Campbell, J. A., ed., Short papers of the U.S. Geological Survey Uranium-Thorium Symposium: U.S. Geological Survey Circular 753, p. 27-29.
355. **Offield, T. W.**, **Rowan, L. C.**, and **Watson, R. D.**, 1970, Linear geologic structure and mafic rock discrimination from infrared data: Annual Earth Resources Program Review, 3d, Houston, Texas, Proceedings: National Aeronautics and Space Administration, v. I, sec. 12, p. 1-12.
356. **Oldale, R. N.**, **Friedman, J. D.**, **Williams, R. S., Jr.**, 1971, Changes in coastal morphology of Monomoy Island, Cape Cod, Massachusetts, in Geological Survey research 1971: U.S. Geological Survey Professional Paper 750-B, p. B101-B107.
357. **O'Leary, D. W.**, and **Aaron, J. M.**, contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1887-1892. (See Authorship Key for subject, p. 1952).
358. **O'Leary, D. W.**, and Earle, J. L., eds., 1981, Proceedings of the third International Conference on Basement Tectonics: Denver, Colorado, Basement Tectonics Committee, Publication 3, 404 p.

359. **O'Leary, D. W., and Friedman, J. D.,** 1981, Toward a workable lineament symbology, in O'Leary, D. W., and Earle, J. L., eds., International Conference on Basement Tectonics, 3d, Proceedings: Denver, Colorado, Basement Tectonics Committee, Publication 3, p. 29-31.
360. **O'Leary, D. W., Friedman, J. D., and Pohn, H. A.,** 1976, Lineament, linear, lineation--some proposed new standards for old terms: Geological Society of America Bulletin, v. 87, p. 1463-1469.
361. \_\_\_\_\_ 1978, Lineament, linear, lineation--some proposed new standards for old terms: Discussion and reply: Geological Society of America Bulletin, v. 88, p. 159-160.
362. **O'Leary, D. W., and Hildenbrand, T. G.,** 1981, Structural significance of lineament and aeromagnetic patterns in the Mississippi embayment, in O'Leary, D. W., and Earle, J. L., eds., International Conference on Basement Tectonics, 3d, Proceedings: Denver, Colorado, Basement Tectonics Committee, Publication 3, p. 305-314.
363. **O'Leary, D. W., Johnson, G. R., and England, A. W.,** 1983, Fracture detection by airborne microwave radiometry in parts of the Mississippi embayment: Remote Sensing of Environment, v. 13, p. 509-523.
364. **O'Leary, D. W., and Pohn, H. A.,** 1978, A photogeologic comparison of Skylab and Landsat images of southwestern Nevada and southeastern California: National Technical Information Service N76 20598/LL.
365. **O'Leary, D. W., and Simpson, S. L.,** 1975, Lineaments and tectonism in the northern part of the Mississippi embayment, in International Symposium on Remote Sensing of Environment, 10th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 965-973.
366. \_\_\_\_\_ 1977, Remote sensor applications to tectonism and seismicity in the northern part of the Mississippi embayment: Geophysics, v. 42, no. 3, p. 542-548.
367. **Olhoeft, G. R.,** 1979, Impulse radar studies of near surface geological structure, in Lunar and Planetary Science X: Houston, Texas, Lunar and Planetary Institute, p. 943-945.
368. **Olhoeft, G. R., Reynolds, R. L., Friedman, J. D., Johnson, G. R., and Hunt, G. R.,** 1982, Physical properties of the June 1980 dacite dome, in Lipman, P. W., and Mullineaux, D. R., eds., The 1980 eruptions of Mount St. Helens: U.S. Geological Survey Professional Paper 1250, p. 549-555.
369. **Overstreet, W. C., Chavez, Pat, Gawarecki, S. J., and Obiabaka, Aaron,** 1977, Provisional map showing land use based on interpretation of vegetation, Federal Capital Territory, Republic of Nigeria: U.S. Geological Survey Special Landsat Digital Image Map, scale 1:100,000.
370. **Overstreet, W. C., Meuschke, J. L., and Moxham, R. M.,** 1962, Airborne-radioactivity survey of the northern part of the Shelby quadrangle, Cleveland and Rutherford Counties, North Carolina: U.S. Geological Survey Geophysical Investigations Map GP-408, scale 1:62,500.

371. Palmason, Gudmundur, **Friedman, J. D., Williams, R. S., Jr.**, Jonsson, Jon, and Saemundsson, Kristjan, 1971, Aerial infrared surveys of Reykjanes and Torfajokull thermal areas, Iceland, with a section on cost of exploration surveys, in United Nations Symposium on Development and Utilization of Geothermal Resources, Pisa, Italy, 1970, Proceedings: Geothermics, special issue, v. 2, pt. 1, p. 399-412.
372. **Peters, D. C.**, 1983, Use of airborne multispectral scanner data to map alteration related to roll-front uranium migration: *Economic Geology*, v. 78, p. 641-653.
373. **Pitkin, J. A.**, 1964, Aeroradioactivity surveys and geologic mapping, in Adams, J. A., and Lowder, W. M., eds., The natural radiation environment, A Volume in the Rice University Semicentennial Series: University Chicago Press, p. 723-736.
374. \_\_\_\_\_ 1968, Airborne measurements of terrestrial radioactivity as an aid to geologic mapping: U.S. Geological Survey Professional Paper 516-F, 29 p.
375. \_\_\_\_\_ 1970, Natural gamma aeroradioactivity map of the Fort Worth-Dallas area, Texas: U.S. Geological Survey Geophysical Investigations Map GP-696.
376. **Pitkin, J. A.**, and **Duval, J. S.**, 1977, How to plan an aerial gamma-ray survey, in Campbell, J. A., ed., Short papers of U.S. Geological Survey Uranium-Thorium Symposium: U.S. Geological Survey Circular 753, p. 19-20.
377. \_\_\_\_\_ 1980, Design parameters for aerial gamma-ray surveys: *Geophysics*, v. 45, no. 9, p. 1427-1439.
378. \_\_\_\_\_ 1980, Interpretation of an aerial radiometric and magnetic survey of the Salmo-Priest study area (RARE E6-981 A1-981), Pend Orielle County, Washington, and Boundary County, Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-1192B, scale 1:48,000.
379. \_\_\_\_\_ 1981, Interpretation of an aerial radiometric survey of the San Gorgonio Wilderness area and vicinity, San Bernardino County, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1161B, scale 1:62,500.
380. \_\_\_\_\_ 1981, Interpretation of Department of Energy aerial radiometric data, in Frishman, David (principle author), National uranium resource evaluation, Iron River quadrangle, Michigan and Wisconsin: U.S. Department of Energy Report PGJ-120 (81), p. 21-28.
381. \_\_\_\_\_ 1981, Reply to Discussion by S. Parker Gay, Jr., of Design parameters for aerial gamma-ray surveys, 1980, (in *Geophysics*, v. 45, no. 9, p. 1427-1439): *Geophysics*, v. 46, no. 10, p. 1474-1475.
382. \_\_\_\_\_ 1982, Reply to Discussion by W. C. Kellogg, of Design parameters for aerial gamma-ray surveys, 1980, (in *Geophysics*, v. 45, no. 9 p. 1427-1439): *Geophysics*, v. 47, no. 9., p. 1342-1343.
383. \_\_\_\_\_ 1982, Interpretation of aerial radiometric data for the Lake City caldera and vicinity, Hinsdale, San Juan, and Ouray Counties, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map MF-1449, scale 1:100,000.

384. **Pitkin, J. A., and Long, C. L.,** 1977, Interpretation of data from an aerial gamma-ray survey in the Cripple Creek district, Colorado: U.S. Geological Survey Open-File Report 77-534, 12 p., 5 pls.
385. **Podwysocki, M. H.,** 1974, An analysis of fracture trace patterns in areas of flat-lying sedimentary rocks for the detection of buried geologic structure: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-923-74-200, 88 p.
386. \_\_\_\_\_ 1976, Analysis of field size distributions, LACIE test sites 5029, 5033, and 5039, Anhwei Province, People's Republic of China: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-923-76-145, 8 p.
387. \_\_\_\_\_ 1976, An estimate of field size distributions for selected sites in the major grain producing countries: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-923-76-93, 34 p.
388. \_\_\_\_\_ 1977, Some computer-based methods for analysis of geologic fracture information, in Ramani, R. V., ed., International Symposium on Application of Computer Methods in the Mineral Industry, 14th, 1976 Proceedings: New York, Society Mining Engineers of American Institute of Mining, Metallurgical, and Petroleum Engineers, p. 880-894.
389. **Podwysocki, M. H., Bender, L. U., Falcone, N. L., and Jones, O. D.,** 1985, A preliminary evaluation of Landsat-4 Thematic Mapper data for their geometric and radiometric accuracy: National Aeronautics and Space Administration Conference Publication 2355, v. 3, pt. 2, p. 497-512.
390. **Podwysocki, M. H., and Earle, J. L., eds.,** 1979, Proceedings of the second International Conference on Basement Tectonics, 1976, Newark, Delaware: Denver, Colorado, Basement Tectonics Committee, Publication 1, 595 p.
391. **Podwysocki, M. H., and Gold, D. P.,** 1974, The surface geometry of inherited fracture patterns resulting from active and passive deformation: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-923-74-222, 38 p.
392. \_\_\_\_\_ 1978, The surface geometry of inherited fracture patterns resulting from active and passive deformation, in International Conference on Basement Tectonics, 2d, Proceedings: Denver, Colorado, Basement Tectonics Committee, Publication 1, p. 542-559.
393. **Podwysocki, M. H., and Lowman, P. D.,** 1974, FORTRAN IV programs for summarization and analysis of fracture trace and lineament patterns: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-644-74-3, 44 p.
394. **Podwysocki, M. H., Moik, J. G., and Shoup, W. C.,** 1975, Quantification of geologic lineaments by manual and machine processing techniques: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-923-75-183, 23 p.; Earth Resources Survey Symposium, Houston, Texas, Proceedings, v. 1B, p. 885-904. Also National Technical Information Service N75-30702/5G1.

395. **Podwysocki, M. H., Pohn, H. A., Phillips, J. D., Krohn, M. D., Purdy, T. L., and Merin, I. S.**, 1982, Evaluation of remote sensing, geological, and geophysical data for south-central New York and northern Pennsylvania: U.S. Geological Survey Open-File Report 82-319, 233 p.
396. **Podwysocki, M. H., Power, M. S., Salisbury, J. W., and Jones, O. D.**, 1984, Evaluation of low-sun illuminated Landsat-4 Thematic Mapper data for mapping hydrothermally altered rocks in southern Nevada, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 541-551.
397. **Podwysocki, M. H., Salisbury, J. W., Bender, L. U., Jones, O. D., and Mimms, D. L.**, 1984, Analysis of Landsat-4 TM data for lithologic and image mapping purposes (summary): National Aeronautics and Space Administration Conference Publication 2326, v. 2, p. 35-39.
398. **Podwysocki, M. H., and Segal, D. B.**, 1980, Preliminary digital classification of limonitic rocks, Frisco 15' quadrangle, Utah: U.S. Geological Survey Open-File Report 80-19, scale 1:48,000.
399. \_\_\_\_\_ contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1744-57. (See Authorship Key for subject, p. 1952).
400. \_\_\_\_\_ 1985, Image map showing the distribution of limonite rocks, Richfield 1° x 2° quadrangle, Utah: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-1574, scale 1:250,000.
401. **Podwysocki, M. H., Segal, D. B., and Abrams, M. J.**, 1983, Mapping of hydrothermally altered rocks using airborne multispectral data, Marysvale, Utah, mining district: Economic Geology, v. 78, no. 4, p. 675-687.
402. **Podwysocki, M. H., Segal, D. B., and Jones, O. D.**, 1983, Mapping of hydrothermally altered rocks using airborne multispectral scanner data, Marysvale, Utah, mining district: London, Pergamon Press, COSPAR Advances in Space Research, v. 3, no. 2, p. 101-112.
403. **Podwysocki, M. H., Weidner, J. R., Andre, C. G., Bickel, A. L., Lum, R. S., Adler, I., and Trombka, J.**, 1974, The application of trend surface analysis to a portion of the Apollo 15 X-ray fluorescence data: National Aeronautics and Space Administration, Goddard Space Flight Center Document X-682-74-129, 11 p.; Lunar Science Conference, 5th, Proceedings: New York, Pergamon Press, v. 3, p. 3007-3014.
404. **Pohn, H. A.**, 1971, Analysis of images and photographs by a Ronchi grating, in Remote sensor application studies progress report, 1968-69, Part 1: Clearinghouse for Federal Science and Technical Information (CFSTI) Document PB-197-101, 14 p.
405. \_\_\_\_\_ 1974, Near-infrared reflectance anomalies of andesite and basalt in southern California and Nevada: Geology, v. 2, no. 11, p. 547-550.

406. \_\_\_\_\_ 1976, A comparison of ERTS images and Nimbus thermal inertia mapping in Oman: U.S. Geological Survey Journal of Research, v. 4, no. 6, p. 661-665.
407. \_\_\_\_\_ 1976, Copper exploration research in Iran, using Landsat data, in CENTO (Central Treaty Organization) Workshop on Applications of Remote Sensing Data and Methods, Istanbul, Turkey, 1976, Proceedings: U.S. Geological Survey/Agency for International Development, no. 4, p. 152-169.
408. \_\_\_\_\_ 1983, The relationship of joints and stream drainage in flat-lying rocks of south-central New York and northern Pennsylvania: Zeitschrift fur Geomorphologie, v. 27, no. 3, p. 375-384.
409. **Pohn, H. A., and Offield, T. W.**, 1970, Lunar crater morphology and relative-age determination of lunar geologic units-Part 1. Classification, in Geological Survey research 1970: U.S. Geological Survey Professional Paper 700-C, p. C153-C162.
410. \_\_\_\_\_ 1971, Crater-age classification and relative age determination of lunar surfaces, in Green, J., ed., Geological problems in lunar and planetary research: American Astronautical Society, Science and Technology Series, v. 25, p. 398-416.
411. **Pohn, H. A., Offield, T. W., and Watson, Kenneth**, 1972, Geologic material discrimination from Nimbus Satellite data, in Annual Earth Resources Program Review, 4th, Houston, Texas: National Aeronautics and Space Administration, v. 3, sec. 59, p. 1-4.
412. \_\_\_\_\_ 1974, Thermal-inertia mapping from satellite: Discrimination of geologic units in Oman: U.S. Geological Survey Journal of Research, v. 2, no. 2, p. 147-158.
- 412a. **Pohn, H. A., and Purdy, T. L.**, 1979, Decollement in the southern Allegheny Plateau of Pennsylvania: U.S. Geological Survey Open-File Report 79-1321, 4 p.
- 412b. \_\_\_\_\_ 1979, Thrust fault zones in the Allegheny Plateau of north-central Pennsylvania: U.S. Geological Survey Open-File Report 79-1604, 4 p.
- 412c. \_\_\_\_\_ 1981, A major (?) thrust fault at Towanda, Pennsylvania: An example of faulting with some speculation on the structure of the Allegheny Plateau: Pennsylvania Geologists Guidebook, 46th Annual Field Conference, p. 45-55, 115-117.
- 412d. \_\_\_\_\_ 1982, Disturbed zones: Indicators of deep-seated subsurface faults in the Valley and Ridge and Appalachian structural front of Pennsylvania: U.S. Geological Survey Open-File Report 82-967, 42 p.
413. **Pohn, H. A., Radin, H. W., and Wildey, R. L.**, 1969, The Moon's photometric function near zero phase angle from Apollo 8 photography: Astrophysical Journal, v. 157, p. L193-L195.
- 413a. **Pohn, H. A., Roberts, A. A., Reimer, G. M., and Forgey, R. L.**, 1984, A possible new source of natural gas in the eastern West Virginia Panhandle: U.S. Geological Survey Open-File Report 84-556, 15 p.

- 413b. **Pohn, H. A., and Southworth, C. S.**, 1984, Geologic applications of side-looking airborne radar data in the central Appalachian Mountains (summary), in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3rd, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 349.
- 413c. **Pohn, H. A., Southworth, C. S., and Scott, C. A.**, 1984, Combined geologic map and radar image of West Virginia: U.S. Geological Survey Experimental Printing, scale 1:250,000.
414. **Pohn, H. A., and Wildey, R. L.**, 1966, A photoelectric-photographic map of the normal albedo of the Moon: U.S. Geological Survey, Astrogeologic studies annual progress report, July 1, 1965 to July 1, 1966, pt. A., p. 211-234.
415. \_\_\_\_\_ 1970, Photoelectric-photographic study of the normal albedo of the Moon, in Contributions to astrogeology: U.S. Geological Survey Professional Paper 599-E, p. E1-E20.
416. **Pohn, H. A., Wildey, R. L., and Offield, T. W.**, 1971, Correlation of the zero-phase brightness surge (heiligschein) with lunar-surface roughness: National Aeronautics and Space Administration, NASA SP-272, p. 296-297.
417. **Pohn, H. A., Wildey, R. L., and Radin, H. W.**, 1970, Theoretical photometry, in Analysis of Apollo 8 photography and visual observations: National Aeronautics and Space Administration, NASA SP-201, p. 40-41.
418. **Preble, D. M., Friedman, J. D., and Frank, David**, 1978, Thermal surveillance of active volcanoes using the Landsat-1 Data Collection System: Part 5. Electronic thermal sensor and Data Collection Platform Technology: U.S. Department of Commerce National Technical Information Service, E78-10124. U.S. Geological Survey Open-File Report 77-87, 64 p.
- 418a. **Purdy, T. L., Brem, G. F., and Collins, W. E.**, 1984, Use of high-spectral resolution airborne spectroradiometer data to map hydrothermally altered rocks in the Gabbs Valley Range, Nevada: U.S. Geological Survey Open-File Report 84-563, 8 p.
419. **Quade, J. G., and Lee, Keenan**, contributing authors, 1975, Ground investigations in support of remote sensing, ch. 13 of Reeves, R. G., editor-in-chief, Manual of remote sensing: Falls Church, Virginia, American Society of Photogrammetry, v. 1, p. 835-843.
420. **Raines, G. L.**, 1977, Digital color analysis of color-ratio composite Landsat scenes, in International Symposium on Remote Sensing of Environment, 11th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1463-1472.
421. \_\_\_\_\_ 1978, A porphyry copper exploration model for northern Sonora, Mexico: U.S. Geological Survey Journal of Research, v. 6, no. 1, p. 51-78.

422. \_\_\_\_\_ 1982, Regional analysis of Landsat data concerning unconformity-vein uranium deposits, Pine Creek Geosyncline, Australia, in Symposium on Uranium Exploration Methods, Paris, 1982, Proceedings: Nuclear Energy Agency, Organisation for Economic Co-operation and Development, p. 51-62.
- 422a. \_\_\_\_\_ 1984, Applied visible and near-infrared spectroscopy, in Teleki, P., and Weber, C., eds., Remote sensing for geological mapping, Proceedings of seminar in Orleans, France, Feb. 2-4, 1984: International Union for Geological Sciences/UNESCO, BRGM Document no. 82, IUGS Publication 18, p. 191-198.
423. \_\_\_\_\_ 1984, Preliminary map showing limonitic areas in the Silver City 1° x 2° quadrangle, Arizona and New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1183-Q, scale 1:250,000.
424. **Raines, G. L., Allen, M. S., and Podwysoki, M. H.**, 1984, Map of hydrothermal alteration, in Richter, D. H., Allen, M. S., and others, Metallic-mineral assessment of the Jabal Habashi sheet, sheet 26-F, Kingdom of Saudi Arabia: Saudi Arabian Deputy Ministry of Mineral Resources Technical Record, USGS-TR-04-08. [in press].
425. **Raines, G. L., and Canney, F. C.**, 1980, Vegetation and geology, in Siegal, B. S., and Gillespie, A. R., eds., Remote sensing in geology: New York, John Wiley and Sons, p. 365-380.
- 425a. **Raines, G. L., and Gabell, A. R.**, 1982, Spectral reflectance properties of pseudo-gossan and massive-sulfide gossan, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 2d, Texas, 1982, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 25-27.
- 425b. **Raines, G. L., Hoover, D. B., and Collins, W. E.**, 1984, Remote sensing mineral discoveries in the Mojave Desert of California (summary), in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 153-154.
426. **Raines, G. L., and Knepper, D. H., Jr.**, 1983, A hue-saturation-intensity transform to improve hydrothermal alteration mapping, in International Geoscience and Remote Sensing Symposium Digest, 1983: Institute of Electrical and Electronics Engineers v. 2, sec. FP-6, p. 1.1-1.3.
427. **Raines, G. L., and Lee, Keenan**, 1974, Evaluation of multiband photography for rock discrimination, in Shahrokhi, F., ed., Remote sensing of earth resources: Tullahoma, Tennessee, University of Tennessee Space Institute, v. 3, p. 361-396.
428. \_\_\_\_\_ 1974, Spectral reflectance measurements: Photogrammetric Engineering, v. 40, no. 5, p. 547-550.
429. \_\_\_\_\_ 1975, in situ rock reflectance: Photogrammetric Engineering, v. 41, p. 189-198.



430. **Raines, G. L.**, and Marrs, R. W., 1983, Lithofacies map, cross section, and favorable areas for uranium deposits, Powder River Basin, Wyoming and Montana: U.S. Geological Survey Miscellaneous Investigations Series Map I-1501, scale 1:500,000.
431. **Raines, G. L.**, **Offield, T. W.**, and **Santos, E. S.**, 1978, Remote-sensing and subsurface definition of facies and structure related to uranium deposits, Powder River Basin, Wyoming: *Economic Geology*, v. 73, no. 8, p. 1706-1723.
432. **Raines, G. L.**, and **Santos, E. S.**, 1978, Maps showing lithofacies and limonitic distribution of the Wasatch Formation in southern Powder River Basin, Wyoming: U.S. Geological Survey Miscellaneous Investigations Series Map I-1246, scale 1:250,000.
433. **Raines, G. L.**, and **Wynn, J. C.**, 1982, Mapping of ultramafic rocks in heavily vegetated terrain with Landsat data: *Economic Geology*, v. 77, p. 1755-1769.
434. **Reeves, R. G.**, **Kover, A. N.**, Lyon, R.J.P., and Smith, H.T.U., eds., 1975, Terrain and minerals: Assessment and evaluation, ch. 16 of Reeves, R. G., editor-in-chief, *Manual of remote sensing*: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1107-1351.
- 434a. **Richter, D. H.**, **Allen, M. S.**, **Raines, G. L.**, **Williams, P. L.**, **duBray, E. A.**, **Smith, C. W.**, **Pallister, J. S.**, and **Kleinkopf, M. D.**, 1985, Metallic-mineral assessment of the Jabal Habashi sheet, sheet 26-F, Kingdom of Saudi Arabia: Saudi Arabian Deputy Ministry for Mineral Resources Technical Record, USGS-TR-04-08.
435. **Richter, D. H.**, **Houser, B. B.**, **Watts, K. C.**, **Klein, D. P.**, **Sharp, W. N.**, **Drewes, H. D.**, **Hedland, D. C.**, **Raines, G. L.**, and **Hassemer, J. R.**, 1984, The Conterminous United States Mineral Resource Assessment Program: Background information to accompany folio of geologic and mineral resource maps of the Silver City 1° x 2° quadrangle, New Mexico and Arizona: U.S. Geological Survey Circular. [in press].
436. **Richter, D. H.**, **Sharp, W. N.**, **Watts, K. C.**, **Raines, G. L.**, **Houser, B. B.**, and **Klein, D. P.**, 1984, Mineral resource assessment of the Silver City 1° by 2° quadrangle, New Mexico-Arizona: U.S. Geological Survey Open-File Report 83-924, 77 p.; Miscellaneous Investigations Series Map I-1310-F. [in press].
437. **Roddy, D. J.**, **Watson, R. D.**, and **Theisen, A. F.**, 1980, Shock-induced luminescence at Meteor Crater, Arizona, measured by laboratory and airborne Fraunhofer line discriminator systems, in Hemphill, W. R., and Settle, Mark, eds., *Workshop on Applications of Luminescence Techniques to Earth Resource Studies*: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-03, p. 47-49.
438. Ronca, L. B., and **Salisbury, J. W.**, 1966, Lunar history as suggested by the circularity index of lunar craters: *Icarus*, v. 5, p. 130-138.
439. Ross, H. P., Adler, J.E.M., and **Hunt, G. R.**, 1969, A statistical analysis of the reflectance of igneous rocks from 0.2 to 2.65 microns: *Icarus*, v. 11, no. 1, p. 46-54.

440. **Rowan, L. C.**, 1969, Structural analysis of the Quad-Wyoming-Line Creeks areas, Montana-Wyoming, in Arie Poldervaart Memorial Volume: Geological Society of America Memoir 115, p. 1-18.
441. \_\_\_\_\_ 1971, Geologic map of the Oppolzer A region of the Moon: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-620, scale 1:100,000.
442. \_\_\_\_\_ 1972, Geologic map of the Rupes Altai quadrangle of the Moon: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-690, scale 1:1,000,000.
443. \_\_\_\_\_ 1972, Near-infrared iron absorption bands: Applications to geologic mapping and mineral exploration, in Annual Earth Resources Program Review, 4th, Houston, Texas, Proceedings: National Aeronautics and Space Administration, v. 3, p. 60-1 to 60-19.
444. \_\_\_\_\_ 1975, Application of satellites to geological remote sensing: American Scientist, v. 63, no. 4, p. 393-403.
445. \_\_\_\_\_ 1982, Preliminary photogeologic map of Chiapas, Mexico, and adjacent northwestern Guatemala prepared from Seasat radar image: U.S. Geological Survey Open-File Report 82-995, scale 1:500,000.
446. \_\_\_\_\_ contributing author, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, p. 1699-1704. (See Authorship Key, p. 1952, for subject).
447. \_\_\_\_\_ 1983, Lithologic units through analysis of visible, near-infrared measurements, in Workshop in the Use of Future Multispectral Imaging Capabilities for Lithologic Mapping, Pasadena, California, April 20-21, Proceedings: California Institute of Technology, Jet Propulsion Laboratory Publication 8293, p. 2-3 to 2-9.
- 447a. \_\_\_\_\_ 1984, Current trends in remote sensing for geologic applications: Lithologic and geobotanical studies: Third Australian Remote Sensing Conference, Gold Coast, Queensland, May, 1984, Proceedings. [in press].
448. **Rowan, L. C.**, and Abrams, M. J., 1978, Evaluation of Landsat multispectral scanner images for mapping altered rocks in the East Tintic Mountains, Utah: U.S. Geological Survey Open-File Report 78-736, 73 p.
449. **Rowan, L. C.**, and **Cannon, P. J.**, 1970, Remote sensing investigations near Mill Creek, Oklahoma: Oklahoma Geological Notes, v. 30, no. 6, p. 127-135.
450. **Rowan, L. C.**, Collins, W. E., **Kingston, M. J.**, and **Crowley, J. K.**, 1984, Spectral reflectance of the carbonatite complexes at Mountain Pass, California and Iron Hill, Colorado (Summary), in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 217-218.
451. **Rowan, L. C.**, Goetz, A.F.H., **Ashley, R. P.**, 1977, Discrimination of hydrothermally altered and unaltered rocks in visible and near-infrared multispectral images: Geophysics, v. 42, no. 3, p. 522-535.

452. **Rowan, L. C.**, Goetz, A.F.H., **Crowley, J. K.**, and **Kingston, M. J.**, 1983, Identification of hydrothermal mineralization in Baja California, Mexico, from orbit using the Shuttle Multispectral Infrared Radiometer, in International Geoscience and Remote Sensing Symposium Digest, 1983: Institute of Electrical and Electronics Engineers, v. 1., sec. TA-4, p. 3.1-3.9.
453. **Rowan, L. C.**, Goetz, A.F.H. and **Kingston, M. J.**, 1983, Preliminary analysis of Shuttle Multispectral Infrared Radiometer data in southern Egypt, in Carter, W. D., Rowan, L. C., and Weill, G., eds., Remote sensing and mineral exploration - 1982: London, Pergamon Press, COSPAR Advances in Space Research, v. 3, no. 2, p. 125-132.
454. **Rowan, L. C.**, Goetz, A.F.H., **Kingston, M. J.**, and **Crowley, J. K.**, 1984, Mineral identification in sedimentary rocks, Egypt, and hydrothermally altered rocks, Mexico, using Shuttle Multispectral Infrared Radiometer measurements: International Geological Congress, 27th, Moscow, Russia, Aug. 1984, Proceedings, v. 18, p. 31-55.
455. **Rowan, L. C.**, and Kahle, A. B., 1982, Evaluation of 0.46 to 2.36  $\mu$ m multispectral scanner images of the East Tintic mining district, Utah, for mapping hydrothermally altered rocks: Economic Geology, v. 77, no. 2, p. 441-452.
456. **Rowan, L. C.**, **Krohn, M. D.**, and **Purdy, T. L.**, 1980, Generalized map of occurrences of limonitic rocks in the Walker Lake 1<sup>o</sup> by 2<sup>o</sup> quadrangle, Nevada-California: U.S. Geological Survey Open-File Report 80-232, scale 1:250,000.
457. **Rowan, L. C.**, and **Lathram, E. H.**, 1980, Mineral exploration, in Siegal, B. S., and Gillespie, A. R., eds., Remote sensing in geology: New York, John Wiley and Sons, chap. 17, p. 552-605.
458. **Rowan, L. C.**, **McCauley, J. F.**, and **Holm, E. A.**, 1971, Lunar terrain mapping and relative-roughness analysis, in Contributions to astrogeology: U.S. Geological Survey Professional Paper 599-G, p. G1-G32.
459. **Rowan, L. C.**, and Mueller, P. A., 1971, Relations of folded dikes and Precambrian polyphase deformation, Gardner Lake area, Beartooth Mountains, Wyoming: Geological Society of America Bulletin, v. 82, no. 8., p. 2177-2186.
460. **Rowan, L. C.**, **Offield, T. W.**, **Watson, Kenneth**, **Cannon, P. J.**, and **Watson, R. D.**, 1970, Thermal Infrared investigations, Arbuckle Mountains, Oklahoma: Geological Society of America Bulletin, v. 81, no. 12, p. 3549-3561.
461. \_\_\_\_\_ 1970, Thermal infrared investigations, Mill Creek area, Oklahoma, in Annual Earth Resources Aircraft Program Status Review, 2d, Houston, Texas, Proceedings: National Aeronautics and Space Administration, v. 1, sec. 5, p. 1-25.
462. **Rowan, L. C.**, **Offield, T. W.**, **Watson, R. D.**, **Cannon, P. J.**, **Grolier, M. J.**, **Pohn, H. A.**, and **Watson, Kenneth**, 1970, Controlled field experiments, in Remote sensor application studies progress report, 1968-69, Part 3: Clearinghouse for Federal Science and Technical Information (CFSTI) Document PB-197-099, 41 p.

463. **Rowan, L. C., and Purdy, T. L.,** 1980, Preliminary map showing distribution of altered rocks and limonitic unaltered rocks in the Walker Lake 1° x 2° quadrangle, Nevada-California: U.S. Geological Survey Open-File Report 80-931, scale 1:250,000.
464. \_\_\_\_\_ 1981, Definition of alteration belts in the Walker Lake, Nevada-California 1° x 2° quadrangle (summary), in International Geoscience and Remote Sensing Symposium Digest, 1981: Institute of Electrical and Electronics Engineers, v. 1, p. 325-330.
465. \_\_\_\_\_ 1984, Map of the Walker Lake 1° x 2° quadrangle, California and Nevada showing the regional distribution of hydrothermally altered rocks: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-Q, 19 p. text, scale 1:250,000.
466. \_\_\_\_\_ 1984, Analysis of linear features in the Wallace, Idaho-Montana 1° x 2° quadrangle: U.S. Geological Survey Miscellaneous Field Studies Map MF-1354-H, 38 p. [in press].
467. \_\_\_\_\_ 1984, Map of the Walker Lake 1° x 2° quadrangle, California and Nevada showing the regional distribution of linear features: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-P, 22 p. text, scale 1:250,000.
468. **Rowan, L. C., and Watson, Kenneth,** 1971, Multispectral analysis of limestone, dolomite, and granite, Mill Creek, Oklahoma, in Annual Earth Resources Program Review, 3d, Houston, Texas, Proceedings: National Aeronautics and Space Administration, v. 1, sec. 12, p. 14.
469. **Rowan, L. C., and Wetlaufer, P. H.,** 1973, Structural geologic analysis for Nevada using ERTS-1 images: A preliminary report, in Symposium on Significant Results Obtained from Earth Resources Technology Satellite-1, Proceedings: National Aeronautics and Space Administration, NASA SP-327, v. 1, sec. A, p. 413-424.
470. \_\_\_\_\_ 1975, Iron-absorption band analysis for the discrimination of iron-rich zones: National Technical Information Service, E75-10386, 203 p.
471. \_\_\_\_\_ 1979, Geologic evaluation of major Landsat lineaments in Nevada and their relationship to ore deposits: U.S. Geological Survey Open-File Report 79-544, 87 p.
472. \_\_\_\_\_ 1981, Relationship between regional lineament system and structural zones in Nevada: American Association of Petroleum Geologists, v. 65, no. 8, p. 1414-1432.
473. **Rowan, L. C., Wetlaufer, P. H., Goetz, A. F. H., Billingsley, F. C., and Stewart, J. H.,** 1974, Discrimination of rock types and detection of hydrothermally altered areas in south-central Nevada by the use of computer-enhanced ERTS images: U.S. Geological Survey Professional Paper 883, 35 p.
474. **Salisbury, J. W.,** 1966, The Moon's surface: Science, v. 2, p. 31-35.
475. \_\_\_\_\_ 1970, Albedo of lunar soil: Icarus, v. 13, p. 509-512.
476. \_\_\_\_\_ 1970, Composition of the Moon from balloon-borne mid-infrared observations: Radio Science, v. 5, p. 241-246.

477. \_\_\_\_\_ 1972, Spectroscopic remote sensing of lunar surface composition: The Moon, v. 5, p. 332-347.
478. **Salisbury, J. W.**, and Adler, J.E.M., 1967, Limits of lunar soil density: Icarus, v. 7, p. 243-250.
479. **Salisbury, J. W.**, Adler, J.E.M., and Smalley, V. G., 1968, Dark haloed craters on the Moon: Royal Astronomical Society Monthly Notices, v. 138, p. 245-250.
480. **Salisbury, J. W.**, Bailey, Brian, Buckingham, William, Collins, William, and Marsh, Stuart, 1983, Near-infrared spectroscopy in geological reconnaissance and exploration, in Frontiers for geological remote sensing from space: Falls Church, Virginia, American Society of Photogrammetry, p. 1-11.
481. **Salisbury, J. W.**, and **Hunt, G. R.**, 1967, Infrared images: Implications for the lunar surface: Icarus, v. 7, p. 47-58.
482. \_\_\_\_\_ 1967, Infrared images of Tycho on the dark Moon: Science, v. 155, p. 1098-1100.
483. \_\_\_\_\_ 1968, Martian surface materials: Effect of particle size on spectral behavior: Science, v. 161, p. 365-366.
484. \_\_\_\_\_ 1969, Compositional implications of the spectral behavior of the Martian surface: Nature, v. 222, p. 132-136.
485. \_\_\_\_\_ 1969, Orbital infrared experiments, in Tiffany and Zaitzell, eds., Advanced Space Experiments, Proceedings: American Astronautical Society, Advances in Astronautical Sciences Series, v. 25, p. 263-278.
486. \_\_\_\_\_ 1971, Spectroscopic remote sensing of water-bearing minerals: American Astronautical Society, Science and Technology Series, v. 25, p. 35-52.
487. \_\_\_\_\_ 1974, Meteorite spectra and weathering: Journal of Geophysical Research, v. 79, p. 4439-4441.
488. \_\_\_\_\_ 1974, Remote sensing of rock type in the visible and near-infrared, in International Symposium on Remote Sensing of Environment, 9th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 3, p. 1953-1968.
489. **Salisbury, J. W.**, **Hunt, G. R.**, and Lenhoff, C. J., 1974, Visible and near-infrared spectra of minerals and rocks: X. Stony meteorites: Modern Geology, v. 5, p. 115-126.
490. **Salisbury, J. W.**, **Hunt, G. R.**, and Logan, L. M., 1973, Infrared spectra of Apollo 16 fines and composition of parent material: Geochimica et Cosmochimica Acta, supplement 4, v. 3, p. 3191-3196.
491. **Salisbury, J. W.**, Logan, L. M., Vincent, R. K., and **Hunt, G. R.**, 1970, Infrared emissivity of lunar surface features, pt. 2 of Interpretation: Journal of Geophysical Research, v. 75, p. 2671-2682.
492. **Salisbury, J. W.**, Smalley, V. G., and Ronca, L. B., 1965, Origin of linear elements on Mare Humorum: Nature, v. 206, p. 1305-1308.

- 492a. **Salisbury, J. W.**, Vincent, R. K., Logan, L. M., and **Hunt, G. R.**, 1970, Infrared emissivity of lunar surface features-2. Interpretation: Journal of Geophysical Research, v. 75, p. 2671-2682.
493. **Sawatzky, D. L.**, and **Crownover, L. M.**, 1980, REMAPP multics programmer's guide: U.S. Geological Survey Open-File Report 80-1259, 29 p.
494. **Sawatzky, D. L.**, and **Lee, Keenan**, 1974, New uses of shadow enhancement, in Shahrokhi, F., ed., Remote sensing of earth resources: Tullahoma, Tennessee, University Tennessee Space Institute, v. III, p. 1-18.
495. **Sawatzky, D. L.**, Prost, Gary, **Lee, Keenan**, and **Knepper, D. H., Jr.**, 1975, Geological significance of features observed in Colorado from orbital altitudes, in Earth Resources Survey Symposium, Houston, Texas, 1975, Proceedings: National Aeronautics and Space Administration, v. I-B, p. 713-760.
496. **Sawatzky, D. L.**, and **Raines, G. L.**, 1981, Geologic uses of linear-feature maps derived from small-scale images, in O'Leary, D. W., and Earle, J. L., eds., International Conference on Basement Tectonics, 3d, Proceedings: Denver, Colorado, Basement Tectonics Committee, Publication 3, p. 91-100.
497. **Sawatzky, D. L.**, and **Townsend, T. E.**, 1976, OPTRIN and OPTAPE: Programs for interchange of data between REMAPP and the OPTRONICS P-1700 system: U.S. Department of Commerce National Technical Information Service, PB-256 692, 43 p.
498. **Schulz, K. A.**, 1975, Airborne gamma-ray spectrometry and aeromagnetic survey of the Freer area in Duval, Live Oak, McMullen, and Webb Counties, Texas: U.S. Geological Survey Open-File Report 75-294, 5 p.
499. \_\_\_\_\_ 1975, Airborne gamma-ray spectrometry and aeromagnetic survey of part of the southern Powder River Basin in Converse County, Wyoming: U.S. Geological Survey Open-File Report 75-661, 4 p.
500. \_\_\_\_\_ 1967, Preliminary contour maps of a gamma-ray spectrometer and aeromagnetic survey of the Freer area in Duval, Live Oak, McMullen, and Webb Counties, Texas: U.S. Geological Survey Open-File Report 76-525, 3 p., 9 plates.
- 500a. **Segal, D. B.**, 1982, Theoretical basis for differentiation of ferric-iron bearing minerals using Landsat MSS data, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 2d, Texas, 1982, Proceedings: Ann Arbor Michigan, Environmental Research Institute of Michigan, v. 2, p. 949-951.
501. **Shoemaker, E. M.**, Squires, R. L., and Abrams, M. J., 1979, Bright Angel and Mesa Butte fault systems of northern Arizona: Geological Society of America Memoir 152, p. 341-367.
502. Sill, G. T., and **Clark, R. N.**, 1982, Composition of the surfaces of the Galilean satellites, in Morrison, D., ed., The satellites of Jupiter: Tucson, Arizona, University of Arizona Press, p. 174-212.

503. **Simpson, S. L.**, 1981, Bibliography of reports of research by personnel of the Branch of Petrophysics and Remote Sensing, U.S. Geological Survey, for 1975-1979: U.S. Geological Survey Open-File Report 81-116, 38 p.
504. \_\_\_\_\_ 1984, Geomorphic domains and linear features on Landsat images, Circle quadrangle, Alaska: U.S. Geological Survey Open-File Report 83-170-E, 31 p., 4 plates.
505. Singer, R. B., McCord, T. B., **Clark, R. N.**, Adams, J. B., and Huguenin, R. L., 1979, Mars surface composition from reflectance spectroscopy: A summary: Journal of Geophysical Research, v. 84, p. 8415-8426.
506. Southworth, C. S., 1982, Multisensor analysis for geologic mapping in the Wind River Range, Wyoming, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 2d, Texas, 1982, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 345-354.
507. \_\_\_\_\_ 1983, General characteristics and availability of Landsat 3 and Heat Capacity Mapping Mission thermal infrared data: U.S. Geological Survey Open-File Report 83-123, 29 p.
508. \_\_\_\_\_ contributing author, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1681-1682, 1683-1696. (See Authorship Key for subject, p. 1952).
509. \_\_\_\_\_ 1984, The Side-Looking Airborne Radar Program of the U.S. Geological Survey: Photogrammetric Engineering and Remote Sensing Journal, v. 50, no. 10, p. 1467-1470.
- 509a. \_\_\_\_\_ 1984, Structural and hydrogeologic applications of remote sensing data, eastern Yucatan Peninsula, Mexico: in Beck, B. F., ed., Sinkholes: Their geology, engineering and environmental impact: Boston, A. A. Balkema, p. 59-64.
510. **Southworth, C. S.**, and **Williams, R. S., Jr.**, contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1682-1683, 1916-1951 (references). (See Authorship Key for subject, p. 1952).
511. Steidtmann, J. R., **McGee, L. C.**, and Middleton, L. T., 1983, Laramide sedimentation, folding and faulting in the southern Wind River Range, Wyoming, in Lowell, J. D., Rocky mountain foreland basins and uplifts: Rocky Mountain Association of Geologists, p. 161-167.
512. Steidtmann, J. R., Middleton, L. T., **McGee, L. C.**, and others, 1984, Geometry, distribution and provenance of syntectonic conglomerates along the southern margin of the Wind River Range, Wyoming: Society of Economic Paleontologists and Mineralogists Special Publication. [in press].

513. **Stoertz, G. E., and Hemphill, W. R.,** 1969, Recent progress in tank, shipboard, and helicopter tests of the Fraunhofer line discriminator, in Annual Earth Resources Aircraft Program Status Review, 2nd, Houston, Texas, 1969, Proceedings: National Aeronautics and Space Administration, v. 2, sec. 33, p. 33-1 to 33-30.
514. \_\_\_\_\_ 1970, Feasibility of surveying pesticide coverage with an airborne fluorometer: U.S. Geological Survey Open-file report, 21 p.
515. \_\_\_\_\_ 1970, Test of an airborne fluorometer over land surfaces and geologic materials: U.S. Geological Survey Open-file report, 39 p.
516. **Stoertz, G. E., Hemphill, W. R., and Markle, D. A.,** 1969, Airborne fluorometer applicable to marine and estuarine studies: Marine Technology Society Journal, v. 3, no. 6, p. 11-26.
517. \_\_\_\_\_ 1970, Remote analysis of fluorescence by a Fraunhofer line discriminator, in Annual Conference and Exposition, 6th, Washington, D.C., 1970, Proceedings: Marine Technology Society, v. 2, p. 1017-1040.
518. **Stringham, J. A., and Williams, R. S., Jr.,** 1970, Applications of reconnaissance concepts to mapping problems, in Geodetic and Research and Development Symposium, Proceedings: Department of Defense Geodetic-Cartographic-Target Materials Conference, 7th, Cameron Station, Virginia, p. 37-105.
519. **Theisen, A. F., and Watson, R. D.,** 1979, Interpretation of luminescence imagery of mineralized areas, Big Indian Valley, Utah: U.S. Geological Survey Open-File Report 79-574, 18 p.
520. **Thorarinsson, Sigurdur; Saemundsson, Kristjan; and Williams, R. S., Jr.,** 1974, ERTS-1 image of Vatnajokull: Analysis of glaciological, structural, and volcanic features: Jokull, v. 23 (1973), p. 7-17.
521. **Townsend, T. E.,** 1979, Discrimination of alteration in the Crooks Gap, Wyoming, uranium district using laboratory and Landsat spectral reflectance data: U.S. Geological Survey Open-File Report 79-765, 73 p., 1 colored photograph.
522. **Townsend, T. E., and Sawatzky, D. L.,** 1976, Programmer's guide for REMAPP remote sensing array processing procedures: U.S. Department of Commerce National Technical Information Service, PB-256 693, 46 p.
523. **Trask, N. J., and Rowan, L. C.,** 1967, Lunar Orbiter photographs: Some fundamental observations: Science, v. 158, no. 3808, p. 1529-1535.
524. **Trask, N. J., Rowan, L. C., and Krohn, M. D.,** 1977, Lineament map of parts of Virginia, North Carolina, and South Carolina: U.S. Geological Survey Open-File Report 77-434, scale 1:1,000,000.
525. **Trumbull, J.V.A., Eargle, D. H., and Moxham, R. M.,** 1961, Preliminary aeroradioactivity and geologic map of the Stockdale SW quadrangle, Karnes and Wilson Counties, Texas: U.S. Geological Survey Geophysical Investigations Map GP-247, scale 1:31,680.



526. **Turner, R. L., Raines, G. L., Kleinkopf, M. D., and Lee-Moreno, J. L.,** 1982, Regional northeast-trending structural control of mineralization, northern Sonora, Mexico: *Economic Geology*, v. 77, p. 25-37.
527. Tyler, L., Howard, T., **England, A. W.,** and Cuzzi, J., 1976, Radar studies of surface properties, in Greeley, R., and Carr, M. H., eds., *A geological basis for exploration of the planets*: National Aeronautics and Space Administration, NASA SP-419, p. 71-74.
528. U.S. Geological Survey, 1976, Vatnajokull, Iceland (Fall Scene): U.S. Geological Survey, Landsat Image Format Series, N6359W01723, Experimental Printing, scale 1:500,000.
529. \_\_\_\_\_ 1977, Vatnajokull, Iceland (Winter Scene): U.S. Geological Survey, Landsat Image Format Series, N6359W01723, Experimental Printing, scale 1:500,000.
530. \_\_\_\_\_ 1983, Satellite image map of New Bedford, Massachusetts: U.S. Geological Survey, Landsat 3 RBV image map, Experimental Edition, scale 1:100,000.
531. Valle Gomez, R., **Friedman, J. D., Gawarecki, S. J.,** and Banwell, C. J., 1970, Photogeologic and thermal infrared reconnaissance surveys of the los Negritos-Ixtlan de los Hervores geothermal area, Michoacan, Mexico, in United Nations Symposium on Development and Utilization of Geothermal Resources, Pisa, Italy, 1970, Proceedings: Geothermics, special issue, v. 2, pt. 1, p. 381-398.
532. Van Tassel, R. A., and **Salisbury, J. W.,** 1963, Remote detection of lunar water deposits, in Annual Meeting of the Working Group for Extraterrestrial Resources, 2d, Proceedings: National Aeronautics and Space Administration/U.S. Air Force, p. 42-49.
533. \_\_\_\_\_ 1964, The composition of the Martian surface: *Icarus*, v. 3, p. 264-269.
534. Vincent, R. K., and **Hunt, G. R.,** 1968, Infrared reflectance from mat surfaces: *Applied Optics*, v. 7, no. 1, p. 53-59.
535. Vincent, R. K., **Rowan, L. C.,** Gillespie, R. E., and Knapp, Charles, 1975, Thermal-infrared spectra and chemical analysis of twenty-six igneous rock samples: *Remote Sensing of Environment*, v. 4, no. 3, p. 199-209.
536. Vincent, R. K., Thomson, Fred, and **Watson, Kenneth,** 1972, Recognition of exposed quartz sand and sandstone by two-channel infrared imagery: *Journal of Geophysical Research*, v. 77, no. 14, p. 2473-2477.
537. Voight, Barry, and **Mamula, Ned,** contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, *Manual of remote sensing*, 2d ed.: Falls Church, Virginia, American Society of Photogrammetry, v. II, p. 1782-1786. (See Authorship Key for subject, p. 1952.)
538. **Walker, A. S.,** 1972, Geologic evaluation of remote sensing imagery of the Mesabi Range, Minnesota, in *International Symposium on Remote Sensing of Environment*, 8th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1137-1146.

539. \_\_\_\_\_ 1981, Drainage in gobi terrain; a Mars analog, in Lunar and Planetary Science XII: Houston, Texas, Lunar and Planetary Institute, p. 1127-1129.
540. \_\_\_\_\_ 1982, Deserts of China: American Scientist, v. 70, p. 366-376.
541. **Walker, A. S.**, and El-Baz, Farouk, 1979, Analysis of craters on the floor of Aitken, in Lunar and Planetary Science X: Houston, Texas, Lunar and Planetary Institute, p. 1271-1273.
542. \_\_\_\_\_ 1982, Analysis of crater distributions in mare units on the lunar farside: The Moon and the planets, v. 27, p. 91-106.
543. **Walker, A. S.**, and Liu Shu, 1982, Monitoring arid land changes in the Turpan Depression, in Remote Sensing of Arid and Semi-Arid Lands Conference, Cairo, Egypt, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 755-762.
544. **Walker, A. S.**, and **Robinove, C. J.**, 1981, Annotated bibliography of remote sensing methods for monitoring desertification: U. S. Geological Survey Circular 851, 25 p.
545. **Wallace, R. E.**, and **Moxham, R. M.**, 1967, Use of infrared imagery in study of the San Andreas fault system, California, in Geological Survey research 1967: U.S. Geological Survey Professional Paper 575-D, p. D147-D156.
546. Watanabe, M. E., **Walker, A. S.**, and Huang, Chuchien, 1982, Habitat determination of the Chinese alligator using Landsat imagery: Ziran Zazhi, v. 5, p. 852-854 (in Chinese).
547. **Watson, Kenneth**, 1967, Proposed lunar heat flow measurement from a polar orbiting satellite: Journal of Geophysical Research v. 72, no. 12, p. 3301-3302.
548. \_\_\_\_\_ 1968, Photoclinometry from spacecraft images, in Contributions to astrogeology: U.S. Geological Survey Professional Paper 599-B, p. B1-B10.
549. \_\_\_\_\_ 1971, A computer program of thermal modeling for interpretation of infrared images: U.S. Department of Commerce National Technical Information Service, PB-203-578, 33 p.
550. \_\_\_\_\_ 1971, Geophysical aspects of remote sensing, in International Workshop on Earth Resources Survey Systems, 7th, May 3-14, 1971, Proceedings: National Aeronautics and Space Administration, v. II, p. 409-428.
551. \_\_\_\_\_ 1970, A. Introduction and summary, B. Data analysis techniques, in Remote sensor application studies progress report, 1968-1969, Part 1: Clearinghouse for Federal Science and Technical Information (CFSTI) Document PB-197-098, 62 p.
552. \_\_\_\_\_ 1971, A thermal model for analysis of infrared images, in Annual Earth Resources Program Review, 3d, Houston, Texas, Proceedings: National Aeronautics and Space Administration, v. 1, sec. 13, p. 1-16.
553. \_\_\_\_\_ 1973, Periodic heating of a layer over a semi-infinite solid: Journal of Geophysical Research, v. 78, no. 26, p. 5904-5910.

554. \_\_\_\_\_ 1974, Geothermal reconnaissance from quantitative thermal infrared images, in International Symposium on Remote Sensing of Environment, 9th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1919-1932.
555. \_\_\_\_\_ 1975, Geologic applications of thermal infrared images: Institute of Electrical and Electronics Engineers Proceedings, v. 63, no. 1, p. 128-137.
556. \_\_\_\_\_ 1978, Thermal phenomena and energy exchange in the environment: Mathematical and Physical Principles of Remote Sensing, Centre National D'Etudes Spatiales, Toulouse, p. 109-174.
557. \_\_\_\_\_ 1980, Direct computation of the sensible heat flux: Geophysical Research Letters, v. 7, no. 8, p. 616-618.
558. \_\_\_\_\_ 1981, Topographic slope for analysis of thermal infrared images: U.S. Department of Commerce National Technical Information Service, PB81-211781, 14 p.
559. \_\_\_\_\_ 1982, Radiative transfer from a homogeneous half-space: A fast algorithm solution: U.S. Geological Survey Open-File Report 82-986, 7 p.
560. \_\_\_\_\_ 1982, Regional thermal-inertia mapping from an experimental satellite: Geophysics, v. 47, no. 12, pp. 1681-1687.
561. \_\_\_\_\_ 1984, Thermal-inertia mapping from space, in International Colloquium on Spectral Signatures of Objects in Remote Sensing, 2d, Bordeaux, France, 1983, Proceedings: International Society for Photogrammetry and Remote Sensing, p. 459-470.
562. **Watson, Kenneth**, and Bauman, C., 1963, Apparatus to measure the thermal conductivity of powders in vacuum from 120 degrees to 350 degrees K: Review Scientific Instruments, v. 34, p. 1235-1238.
563. **Watson, Kenneth**, and **Hummer-Miller, Susanne**, 1981, A simple algorithm to estimate the effective regional atmospheric parameters for thermal-inertia mapping: Journal of Remote Sensing of Environment, v. II, p. 455-462.
564. \_\_\_\_\_ 1984, Thermal-inertia mapping in vegetated terrain from Heat Capacity Mapping Mission satellite data, in International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 3d, Colorado, 1984, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 197-216.
565. **Watson, Kenneth**, **Hummer-Miller, Susanne**, **Knepper, D. H., Jr.**, **Krohn, D. M.**, **Podwysocki, M. H.**, **Pohn, H. H.**, **Raines, G. L.**, and **Rowan, L. C.**, 1984, Application of Heat Capacity Mapping Mission satellite data to regional geologic analysis for mineral and energy resource evaluation: U.S. Department of Commerce National Technical Information Service, N84-16625, 105 p.
566. **Watson, Kenneth**, **Hummer-Miller, Susanne**, and **Offield, T. W.**, 1982, Geologic applications of thermal-inertia mapping from satellite: U.S. Department of Commerce National Technical Information Service, N82-1548 19, 109 p.

567. \_\_\_\_\_ 1982, Geologic thermal-inertia mapping using HCMM, in International Geoscience and Remote Sensing Symposium Digest, 1982: Institute of Electrical and Electronics Engineers, v. 1, sec. WA-3, p. 2.1-2.6.
568. **Watson, Kenneth, Hummer-Miller, Susanne, Sawatzky, D. L.**, 1982, Registration of Heat Capacity Mapping Mission day and night images: Photogrammetric Engineering v. 48, no. 2, pp. 263-268.
569. **Watson, Kenneth, Pohn, H. A.**, and **Offield, T. W.**, 1972, Thermal inertia mapping from Nimbus satellite data (Summary), in International Symposium on Remote Sensing of Environment, 8th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1237.
570. **Watson, Kenneth**, and **Regan, R. D.**, eds., 1983, Remote sensing: Society of Exploration Geophysicists, Geophysics Reprint Series No. 3, 581 p.
571. **Watson, Kenneth, Rowan, L. C.**, and **Offield, T. W.**, 1971, Application of thermal modeling in the geologic interpretation of IR images, in International Symposium on Remote Sensing of Environment, 7th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, v. III, p. 2017-2041.
- 517a. **Watson, R. D.**, 1970, Surface-coating effects in remote sensing measurements: Journal of Geophysical Research, v. 75, p. 480-484.
572. **Watson, R. D.**, and **Hemphill, W. R.**, 1976, Use of airborne Fraunhofer line discriminator for the detection of solar stimulated luminescence: U.S. Geological Survey Open-File Report 76-202, 110 p.
573. **Watson, R. D.**, **Hemphill, W. R.**, and **Bigelow, R. C.**, 1975, Remote sensing of luminescing environmental pollutants using a Fraunhofer Line Discriminator (FLD), in International Symposium on Remote Sensing of Environment, 10th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 203-222.
574. **Watson, R. D.**, **Hemphill, W. R.**, and **Hessin, T. D.**, 1973, Quantification of the luminescence intensity of natural materials, in Symposium for the Management and Utilization of Remote Sensing Data, Sioux Falls, South Dakota, Proceedings: Falls Church, Virginia, American Society of Photogrammetry, p. 364-376.
575. **Watson, R. D.**, **Hemphill, W. R.**, **Hessin, T. D.**, and **Bigelow, R. C.**, 1974, Prediction of the Fraunhofer line detectivity of luminescent materials, in International Symposium on Remote Sensing of Environment, 9th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1959-1980.
576. **Watson, R. D.**, **Hemphill, W. R.**, and **Theisen, A. F.**, 1981, The airborne Fraunhofer line discriminator imaging system and its applications to space experiments: William T. Pecora Symposium on Remote Sensing, 6th, Sioux Falls, South Dakota, Proceedings, p. 357-364.
577. **Watson, R. D.**, **Henry, M. E.**, **Theisen, A. F.**, **Donovan, T. J.**, and **Hemphill, W. R.**, 1978, Marine monitoring of natural oil slicks and manmade wastes utilizing an airborne imaging Fraunhofer line discriminator, in Joint Conference on Sensing of Environmental Pollutants, 4th, New Orleans, Louisiana, 1977, Proceedings: American Chemical Society, p. 667-671.

578. **Watson, R. D., and Rowan, L. C.**, 1971, Automated geologic mapping using rock reflectances, in International Symposium on Remote Sensing of Environment, 7th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, v. 3, p. 2043-2053.
579. **Watson, R. D., and Theisen, A. F.**, 1981, Electronic and optical modification of the engineering model FLD, and the evolution of peripheral equipment, in Hemphill, W. R., and Settle, Mark, eds., Workshop on Applications of Luminescence Techniques to Earth Resource Studies: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-03, p. 15-18.
580. **Watson, R. D., Theisen, A. F., and Prezelin, B. B.**, 1981, Use of laboratory spectrometry to predict the detection of phytoplankton luminescence by an airborne Fraunhofer line discriminator: International Journal of Remote Sensing, v. 2, no. 1, p. 61-70.
581. **Wildey, R. L., and Pohn, H. A.**, 1964, Detailed photoelectric photometry of the Moon: Astronomical Journal, v. 69, no. 8, p. 619-634.
582. \_\_\_\_\_ 1969, The normal albedo of the Apollo 11 landing site and intrinsic dispersion in the lunar heiligenschein: Astrophysical Journal, v. 158, p. L129-L130.
583. **Wildey, R. L., Pohn, H. A., Tompkins, D., and others**, 1970, Remote sensing of the lunar photometric function from the orbiting Apollo Command Service Module, in International Symposium on Remote Sensing of Environment, 6th, Proceedings: Ann Arbor, Michigan, Institute of Science and Technology, University of Michigan, v. 2, p. 1291-1303.
584. **Williams, R. S., Jr.**, 1969, Degradation of infrared caused by condensation: Photogrammetric Engineering, v. 35, no. 1, p. 72-78.
585. \_\_\_\_\_ 1972, Terrestrial remote sensing: Applications of thermal infrared scanners to the geological sciences, pt. 3 of ISA Transducer Compendium: Instrument Society of America, Pittsburgh, Pennsylvania, p. 219-236.
586. \_\_\_\_\_ 1972, Thermography: Photogrammetric Engineering, v. 38, no. 9, p. 881-883.
587. \_\_\_\_\_ 1973, Coastal and submarine features on MSS imagery of southeastern Massachusetts: Comparison with conventional maps, in Symposium on Significant Results Obtained from Earth Resources Satellite-1, Proceedings: National Aeronautics and Space Administration, NASA SP-327, v. 1, sec. B, p. 1413-1422.
588. \_\_\_\_\_ 1975, Scientific rationale for the selection of film-filter combinations in the archaeological remote sensing experiment, Great Britain, in Harp, Elmer, Jr., ed., Photography in archaeological research, School of American Research, Advanced Seminar Series: Albuquerque, University of New Mexico Press, p. 202-210.
589. \_\_\_\_\_ 1976, Cape Cod and Cape Cod National Seashore, Massachusetts, in Williams, R. S., Jr., and Carter, W. D., eds., ERTS-1, A new window on our planet: U.S. Geological Survey Professional Paper 929, p. 307-309.

590. \_\_\_\_\_ 1976, Dynamic environmental phenomena in southwestern Iceland, in Williams, R. S., Jr., and Carter, W. D., eds., ERTS-1, A new window on our planet: U.S. Geological Survey Professional Paper 929, p. 109-112.
591. \_\_\_\_\_ 1976, Vatnajokull icecap, Iceland, in Williams, R. S., Jr., and Carter, W. D., eds., ERTS-1, A new window on our planet: U.S. Geological Survey Professional Paper 929, p. 188-193.
592. \_\_\_\_\_ 1978, Review of Manual of remote sensing: Economic Geology, v. 73, no. 2, p. 290-292.
593. \_\_\_\_\_ 1979, Iceland - satellite monitoring of changes of glaciers of Iceland, in Glaciological Data, World Data Center A for Glaciology (Snow and Ice): Boulder, Colorado, Institute of Arctic and Alpine Research, University of Colorado, Report GD-4, February, p. 72-77.
594. \_\_\_\_\_ 1979, Report of the Remote Sensing Applications Division (of the American Society of Photogrammetry: 1978-1979): Photogrammetric Engineering and Remote Sensing, v. 45, no. 7, p. 1000-1005.
595. \_\_\_\_\_ 1981, The use of broadband thermal infrared images to monitor and to study dynamic geological phenomena, in Settle, Mark, ed., Workshop on Geological Applications of Thermal Infrared Remote Sensing Techniques, 1980: Houston, Texas, Lunar and Planetary Institute, LPI Technical Report 81-06, p. 98-106.
596. \_\_\_\_\_ 1982, Remote sensing: Geotimes, v. 27, no. 2, p. 53-55.
597. \_\_\_\_\_ contributing author, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society Photogrammetry, v. II, p. 1669-70, 1672-78, 1710-14, 1726-28, 1738-39, 1763-69, 1812-20, 1830-32, 1836-41, 1843-46, 1851-68, 1869-75, 1878-80, 1882-87. (See Authorship Key for subject, p. 1952).
598. \_\_\_\_\_ ed., 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed., v. II-- Interpretation and applications (edited by J. E. Estes and G. A. Thorley): Falls Church, Virginia, American Society of Photogrammetry, p. 1667-1953.
599. \_\_\_\_\_ 1983, Glaciers: Clues to future climate?: U.S. Geological Survey Scientific Leaflet, 24 p.
600. \_\_\_\_\_ 1983, Satellite glaciology of Iceland: Jokull, v. 33, p. 3-12.
601. **Williams, R. S., Jr.**; Bodvarsson, Agust; Fridriksson, Sturla; Palmason, Gudmundur; Rist, Sigurjon; Sigtryggsson, Hlynur; Saemundsson, Kristjan; Thorarinsson, Sigurdur; and Thorsteinsson, Ingvi, 1973, Iceland: Preliminary results of geologic, hydrologic, oceanographic, and agricultural studies with ERTS-1 imagery, in Symposium on Management and Utilization of Remote Sensing Data, Sioux Falls, South Dakota, 1973, Proceedings: Falls Church, Virginia, American Society of Photogrammetry, p. 17-35.
602. \_\_\_\_\_ 1974, Environmental studies of Iceland with ERTS-1 imagery, in International Symposium on Remote Sensing of Environment, 9th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 1, p. 31-81.

603. Williams, R. S., Jr.; Bodvarsson, Agust; Fridriksson, Sturla; Palmason, Gudmundur; Rist, Sigurjon; Sigtryggsson, Hlynur; Thorarinsson, Sigurdur; and Thorsteinsson, Ingvi, 1973, Satellite geological and geophysical remote sensing of Iceland - preliminary results from analysis of MSS imagery, in Symposium on Significant Results Obtained from Earth Resources Satellite-1, Proceedings: National Aeronautics and Space Administration, NASA SP-327, v. 1, sec. A, p. 317-327.
604. Williams, R. S., Jr., and Carter, W. D., eds., 1976, ERTS-1, A new window on our planet: U.S. Geological Survey Professional Paper 929, 362 p.
605. Williams, R. S., Jr., Falcone, N. L., Barlow, R. A., and Fitzpatrick-Lins, Katherine, 1983, New Bedford quadrangle, Massachusetts: A prototype 1:100,000-scale Landsat 3 return beam vidicon (RBV) image map, in International Symposium on Remote Sensing of Environment, 17th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, v. 2, p. 715-729.
606. Williams, R. S., Jr., and Fenn, R. W., 1967, Degradation of imagery from optical-mechanical scanners: Moisture condensation on optics: U.S. Air Force Cambridge Research Laboratories, Environmental Research Paper 269, AFCRL-67-0398, 18 p.
607. Williams, R. S., Jr., and Fernandopulle, Denis, 1972, Geological analysis of aerial thermography of the Canary Islands, Spain, in International Symposium on Remote Sensing of Environment, 8th, Proceedings: Ann Arbor, Michigan, Environmental Research Institute of Michigan, p. 1159-1194.
608. Williams, R. S., Jr., and Ferrigno, J. G., 1981, Satellite image atlas of the Earth's glaciers, in Deutsch, Morris, Wiesnet, D.R., and Rango, Albert, eds., Satellite hydrology: William T. Pecora Memorial Symposium on Remote Sensing, 5th, Sioux Falls, South Dakota, 1979, Proceedings, p. 173-182.
- 608a. Williams, R. S., Jr., Ferrigno, J. G., and Kent, T. M., 1984, Index map and table of optimum Landsat 1, 2, and 3 images of Antarctica: U.S. Geological Survey Open-File Report 84-573, scale 1:5,000,000.
609. Williams, R. S., Jr., Ferrigno, J. G., Kent, T. M., and Schoonmaker, J. W., Jr., 1982, Landsat images and mosaics of Antarctica for mapping and glaciological studies: Annals of Glaciology, v. 3, p. 321-326.
- 609a. Williams, R. S., Jr., Ferrigno, J. G. and Meunier, T. K., 1984, Satellite glaciology project: Antarctic Journal of the United States, v. 18, no. 5, p. 119-121.
610. Williams, R. S., Jr., and Friedman, J. D., 1970, Satellite observation of effusive volcanism: British Interplanetary Society Journal, v. 23, no. 6, p. 441-450.
611. Williams, R. S., Jr.; Friedman, J. D.; Thorarinsson, Sigurdur; Sigurgeirsson, Thorbjorn; and Palmason, Gudmundur, 1968, Analysis of 1966 infrared survey of Surtsey, Iceland, in Surtsey Research Progress Report: Reykjavik, Iceland, The Surtsey Research Society, v. 4, p. 177-192.

612. **Williams, R. S., Jr., Hasell, P. G., Jr., Sellman, A. N., and Smedes, H. W.**, 1976, Thermographic mosaic of Yellowstone National Park: Photogrammetric Engineering and Remote Sensing, v. 42, no. 10, p. 1315-1324.
613. **Williams, R. S., Jr., and Kover, A. N.**, 1978, Remote sensing: Geotimes, v. 23, no. 1, p. 43-45.
614. **Williams, R. S., Jr., and Marsh, S. E.,** contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society Photogrammetry, v. II, p. 1667-69. (See Authorship Key for subject, p. 1952).
615. **Williams, R. S., Jr., Meunier, T. K., and Ferrigno, J. G.**, 1983, Blue ice, meteorites, and satellite imagery in Antarctica: The Polar Record, v. 21, no. 134, p. 493-496.
616. **Williams, R. S., Jr., and Moore, J. G.**, 1983, Man against volcano: The eruption on Heimaey, Vestmannaeyjar, Iceland: U.S. Geological Survey Scientific Leaflet, 32 p.
617. **Williams, R. S., Jr., and Morris, E. C.**, 1984, Geomorphic classification of Icelandic and Martian volcanoes, in Lunar and Planetary Science XV: Houston, Texas, Lunar and Planetary Institute, pt. 2, p. 916-917.
618. **Williams, R. S., Jr., Morris, E. C., and Thorarinsson, Sigurdur**, 1981, Illustrated geomorphic classification of Icelandic volcanoes, in Holt, H. E., compiler, Reports of Planetary Geology Program, December 1981: National Aeronautics and Space Administration, Technical Memorandum 84211, p. 183-185.
619. **Williams, R. S., Jr., and Ory, T. R.**, 1967, Infrared imagery mosaics for geological investigations: Photogrammetric Engineering, v. 33, no. 12, p. 1377-1380.
620. **Williams, R. S., Jr., and Schoonmaker, J. W.**, 1979, Surveying Antarctica: From dogsled to satellite: Air and Space, v. 3, no. 1, p. 2-4.
621. **Williams, R. S., Jr., and Southworth, C. S.,** contributing authors, 1983, Geological applications, ch. 31 of Colwell, R. N., editor-in-chief, Manual of remote sensing, 2d ed.: Falls Church, Virginia, American Society Photogrammetry, v. II, p. 1679-81, 1714-25, 1762-63, 1910-16. (See Authorship Key for subject, p. 1952).
622. \_\_\_\_\_ 1983, Remote sensing: Geotimes, v. 28, no. 2, p. 35-37.
623. \_\_\_\_\_ 1984, Remote sensing makes important gains: Geotimes, v. 29, no. 8, p. 13-15.
624. **Williams, R. S., Jr., and Taranik, J. V.**, 1981, Remote sensing: Geotimes, v. 26, no. 2, p. 51-53.
625. **Williams, R. S., Jr., and Thorarinsson, Sigurdur**, 1974, ERTS-1 image of Vatnajokull area: General comments: Jokull, v. 23 (1973), p. 1-6.



626. **Williams, R. S., Jr., Thorarinsson, Sigurdur, and Morris, E. C.,** 1982, Geomorphic classification of Icelandic volcanoes, in Holt, H. E., compiler, Reports of Planetary Geology Program, December 1982: National Aeronautics and Space Administration, Technical Memorandum 85127, p. 155-157.
627. \_\_\_\_\_ 1983, Geomorphic classification of Icelandic volcanoes: Jokull, v. 33, p. 19-24.
628. **Woll, P. W., and Fischer, W. A., eds.,** 1977, Proceedings of the First Annual William T. Pecora Memorial Symposium, 1975, Sioux Falls, South Dakota: U.S. Geological Survey Professional Paper 1015, 370 p.
629. **Wrucke, C. T., Marsh, S. P., Conway, C. M., Ellis, C. E., Kulik, D. M., Moss, C. K., and Raines, G. L.,** 1983, Mineral resource potential map of the Mazatzal Wilderness and contiguous roadless areas, Gila, Maricopa, and Yavapai counties, Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1573-A, scale 1:48,000, and summary report.
630. **Wrucke, C. T., Marsh, S. P., Raines, G. L., Werschky, R. S., Blakely, R. J., Hoover, D. B.,** McHugh, E. L., Rumsey, C. M., Gaps, R. S., and Causey, J. D., 1984, Mineral resources and mineral resource potential of the Saline Valley and Lower Saline Wilderness Study Areas, Injo County, California: U.S. Geological Survey Open-File Report 84-560, 42 p.
631. **Wrucke, C. T., Werschky, R. S., Raines, G. L., Blakely, R. J., Hoover, D. B.,** and Miller, M. S., 1984, Mineral resources and resource potential of the Little Sand Spring Wilderness Study Area, Injo County, California: U.S. Geological Survey Open-File Report 84-557, 20 p.

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