



## Special Catalogue

### Milestones of Lunar Mapping and Photography Four Centuries of Selenography

On the occasion of the 50th anniversary of Apollo 11 moon landing

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## Authors in Chronological Order

Author	Year	No.	Author	Year	No.
SCHEINER, Christoph	1614	72	BIRT, William	1869	7
WILKINS, John	1640	87	PROCTOR, Richard	1873	66
SCHYRLEUS DE RHEITA, Anton	1645	77	NASMYTH, James	1874	58, 59, 60, 61
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MÄDLER, Johann Heinrich	1837	49	HACKMAN, Robert	1960	27
GRUITHUISEN, Franz von Paula	1839	26	KUIPER Gerard P.	1960	35, 36
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DRAPER, Henry	1863	12	FAUTH, Philipp	1964	20
RUTHERFURD, Lewis	1865	68, 69	ARMSTRONG, Neil et al.	1970	2
SCHMIDT, Johann Friedrich Julius	1866	74	KOSOFSKY, L.J.	1970	32
			DZHAPIASHVILI, V. P.	1982	13

### Suggested Readings and frequently cited works:

WHITAKER, Ewen A. *Mapping and Naming the Moon. A History of Lunar Cartography and Nomenclature*. Cambridge University Press, 1999, 242 pp.

ASHWORTH, William B., editor. *The Face of the Moon - Galileo to Apollo*. An Exhibition of Rare Books and Maps October 13, 1989 - February 28, 1990. Linda Hall Library, Kansas City, 1989, 45 pp.

MONTGOMERY, Scott L. *The Moon and the Western Imagination*. Univ. Arizona Press, 1999, 265 pp.

SHEEHAN, William P. & DOBBINS, Thomas A. *Epic Moon. A history of lunar exploration in the age of the telescope*. William Bell, 2001, 363 pp.

KOPAL, Z. & CARDER, R. W. *Mapping the Moon: Past and Present*, 2013.

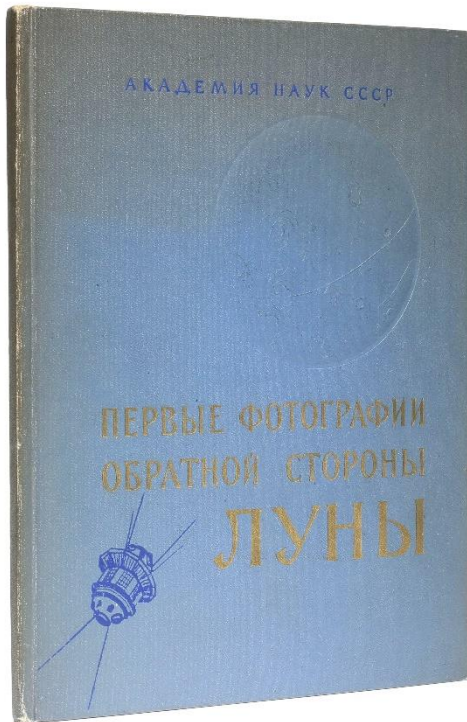
KOPAL, Z. *The earliest maps of the moon*, The Moon, Vol. 1 (1969), pp. 59-66.

PIGATTO, Luisa, and ZANINI, Valeria. *Lunar Maps Of The 17th And 18th Centuries. Tobias Mayer's Map And Its 19th-Century Edition*. Earth, Moon, and Planets, 1999, vol. 85/86, pp. 365-377.

The Moon-Wiki. Online resource at <https://the-moon.us/wiki>

**First Photographs of the Far Side of the Moon, with original photograph attached**

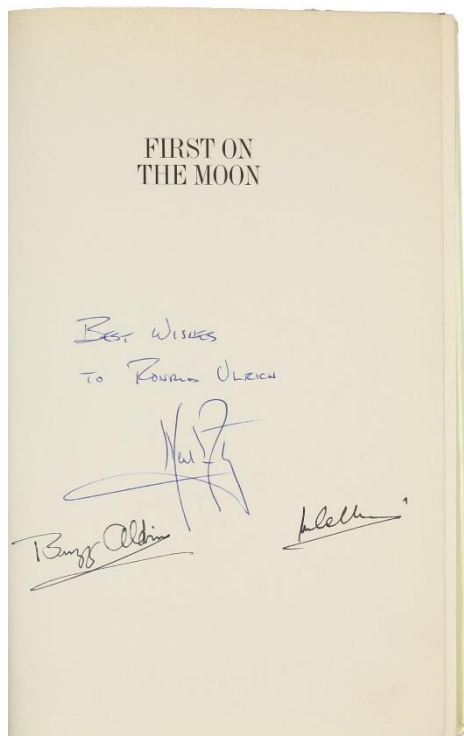
1 **[ACADEMY OF SCIENCES OF THE U.S.S.R.] ПЕРВЫЕ ФОТОГРАФИИ ОБРАТНОЙ СТОРОНЫ ЛУНЫ** (*First Picture of the Far Side of the Moon*). Moscow: Publishing House of the Academy of Sciences of the U.S.S.R., 1959. 4to (261 x 205 mm). 33 [5] pp., 5 diagrams and 4 full-page photographic reproductions in text. Original blue cloth covers with the spacecraft and the moon stamped in blind and blue, lettering in blue and gilt (uneven fading to cover, extremities little rubbed). Provenance: From a private Danish collection. Loosely attached is an original glossy B&W photo (241 x 184 mm) of the press released photograph of the lunar far side ("Photo: 235-236. Moscow, Oct. 27. Fotokhronika TASS", with copyright stamp on verso "Nordisk Pressefoto A/S, Copenhagen, Denmark") accompanied by a second photo with explanatory text. Fine copy. (#002592) € 1,500



FIRST EDITION, approved for publication on November 10, 1959. For centuries, one of mankind's greatest quests was to view the other side of the moon. Luna 3 was launched on October 4, 1959, and three days later it took a total of 29 photos over a 40 minute period, covering about 70% of the hitherto-unseen lunar surface on the other side. It then headed back toward home and managed to broadcast about seventeen of these images to earth by October 18; all contact with the probe was lost on October 22. This amazing scientific achievement far overshadowed the fact that the images were of poor quality; they were later computer-enhanced. This book was published just 23 days after the pictures were received.

**Signed and inscribed by Neil Armstrong and signed by Aldrin and Collins**

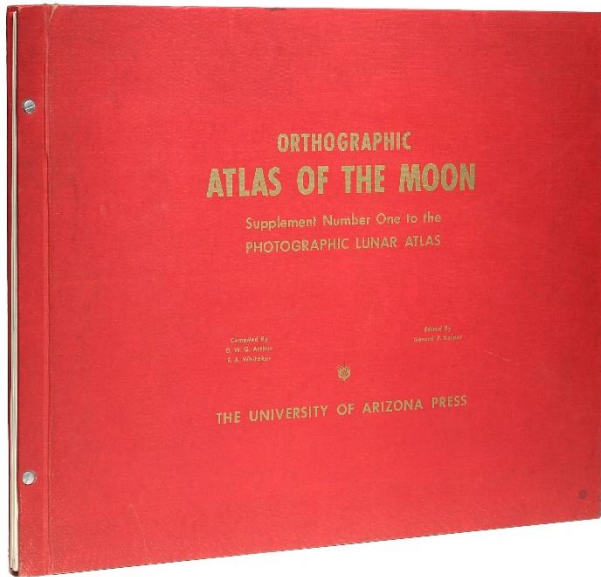
2 **ARMSTRONG, Neil; COLLINS, Michael; ALDRIN, Edwin E. Jr.** *First on the Moon. A Voyage with Neil Armstrong, Michael Collins, Edwin E. Aldrin Jr.* Written with Gene Farmer and Dora Jane Hamblin. Epilogue by Arthur C. Clarke. Boston: Little, Brown and Company, [1970]. 8vo (235 x 154 mm). xiii, 434 pp. With 29 pages of black and white photographs. Publisher's black cloth over boards (lightly rubbed on the spine ends and corners with mild soiling to the rear board), blindstamped title on front board, gilt title on spine. In unclipped original dust jacket (minimal edge wear, primarily at the spine ends and corners). Inscribed and signed on the half-title page: "Best Wishes/ to Ronald Ulrich/ Neil Armstrong", and signed "Buzz Aldrin" and "M Collins". Provenance: Apollo 11 collection of Ronald Ulrich. A fine copy. Books signed AND inscribed by Neil Armstrong are quite rare. (#002851) € 12,000



First edition of the Apollo 11 astronauts' own account of the first manned lunar landing. Inscribed and signed on the title page by all three crew members. Collectors of space memorabilia consider the autographs of the Apollo 11 astronauts an important and necessary acquisition, with all three signatures on one item the ultimate goal. This original signed first edition, telling the inside story of this world-changing event in the words of the very participants, would make a handsome and worthy addition to any collection.

**Author's dedication copy to the British Astronomical Association**

- 3 **ARTHUR, David W. G. and WHITAKER, Ewen A. (compilers), edited by KUIPER Gerard P.** *Orthographic Atlas of the Moon - Supplement Number One to the Photographic Lunar Atlas. Edition A*



*showing the Standard Orthographic Coordinate grid, Part 1: Central Area; Part 2: Limb area.* Contributions, Lunar and Planetary Laboratory, No. 1, The University of Arizona Press, Tucson, 1960. Oblong folio (470 x 583 mm). Title, divisional part title, 2 pages of text, 3 maps and 60 photographs. Original red cloth. Title with two tears. Dedication inscription by Ewen Whitaker to the British Astronomical Association. (#002175) € 1,500

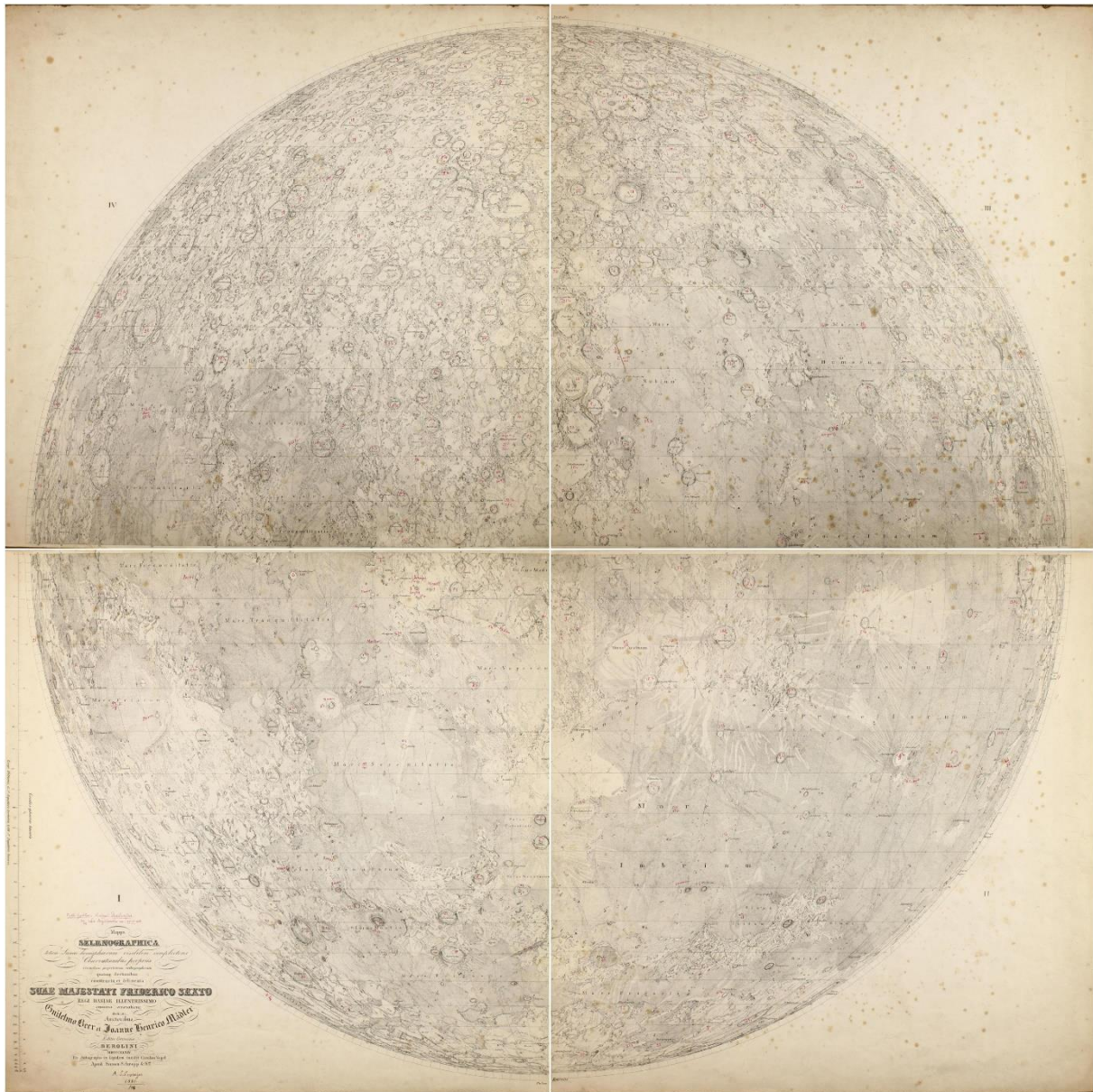
This lunar atlas was intended as a supplement to Gerard Kuiper's et al. *Photographic Lunar Atlas*, published at University of Chicago Press earlier the same year.

**The most detailed lunar map of its time**

- 4 **BEER, Wilhelm & MÄDLER, Johann Heinrich.** *Mappa selenographica totam Lunae hemisphaeram visibilem complectens Observationibus propriis (...)* Lithographed lunar map by C. VOGEL after W. BEER and J.H. MÄDLER. 4 sections, mounted on a single sheet of brown linen and folding, 95 x 99 cm (total size). Berlin: Simon Schropp & Soc., 1834. Slightly foxed, with owner's entry of A. SCHWEIZER dated 1881, and with num. small annotations in pen and red ink probably by Schweizer, mainly concerning crater sizes. (#002177) € 9,500

Ashworth, *The face of the moon*, Linda Hall 16; Honeyman 267; Baldwin, *The Face of the Moon*, 1949, p.8-9; Pannekoek, *History of Astronomy*, 1961, 372--3. EXCEPTIONALLY RARE. "This map... constitutes a milestone in the development of selenographical literature" (DSB). "In 1837 (sic) Beer and Mädler gave to the world the results of seven years' study. Their book, *Der Mond* and its chart *Mappa Selenographica* contained an almost unbelievable amount of information . . . they named nearly 150 new formations, using principally the names of prominent scientists" (Baldwin).

"Because Lohrmann's map did not appear in full until 1878, the Beer and Mädler map has the honor of being the first large-scale moon map to be based on precise micrometric measurements. Beer was a banker and amateur lunar observer, possessing a fine Fraunhofer refractor. Mädler, the major figure in the enterprise, was an astronomer who teamed with Beer to measure the position of every lunar feature from a large number of fundamental control points. The resulting map, the result of four years of effort, is in four sections and is on a scale of just over 38 inches to the moon's diameter, the same as Lohrmann's. It was followed by an accompanying text volume in 1837. The map was without question the most influential lunar publication of the century, and formed the basis for later maps by T.W. Webb and Edmund Neison ... It is also the earliest, and still the finest, lithographed lunar map" (Ashworth, 16)



5 [BEER, Wilhelm & MÄDLER, Johann Heinrich](#). *Der Mond nach seinen kosmischen und individuellen Verhältnissen oder allgemeine vergleichende Selenographie. Mit besonderer Beziehung auf die von den Verfassern herausgegebene Mappa Selenographica*. Berlin: Simon Schropp, 1837. 4to (295 x 235 mm), xviii, 412 pp, 5 wood-engraved plates. Later morocco-backed cloth (lightly sun-faded, new endpapers). Text little browned (plates a bit stronger) and with light scattered foxing, plates with waterstaining towards lower corner. Provenance: William Porthouse (inscribed on title. William Porthouse, an amateur astronomer, produced some fine drawings of the Moon and Planets, and a crater was named after him on the Wilkin's Map of the Moon.); E. ?G. Whitelaw (crossed out signature on title); British Astronomical Association (stamp on title and endpaper). Sold Christie's South Kensington sale 5808, Aug. 4, 2009, lot 34. (#002178) € 1,200

Houzeau & Lancaster 1251; Ashworth, *The face of the moon*, Linda Hall 16 (rem) - The text volume to Beer & Mädler's *Mappa selenographica totam Lunae hemisphaeram* which was separately published 3 years before. It describes in much detail the lunar features which Beer observed through his Fraunhofer telescope.

**With detailed illustrations of lunar topographic features**

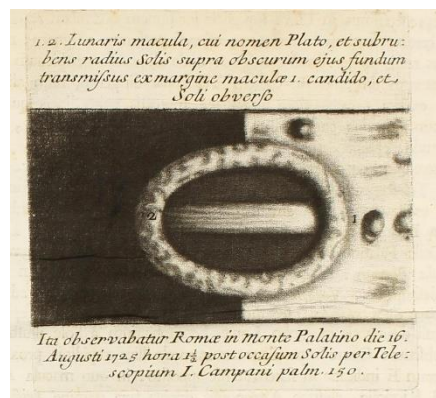
**6** [BIANCHINI, Francesco](#). *Hesperii et Phosphori nova phaenomena sive observationes circa planetam Veneris unde colligitur. I. Descriptio illius macularum... II. Vertigo circa axem proprium... III. Parallelismus axis in oriba octimestri circa solem. IV. Et quantitas parallaxeos methodo Cassiniana explorata...* Rome: apud Joannem Mariam Salvione, 1728. Folio (390 x 270 mm). viii, 92 pp., including engraved frontispiece, title printed in red and black and with engraved vignette, two engraved initials, engraved headpiece, 3 mezzotint engraved illustrations in text, and 10 (4 folding) engraved plates (the first in mezzotint). Contemporary calf, spine with 5 raised bands gilt-tooled in compartments and with gilt-lettered red morocco label (rubbing and scratching to extremities and boards, spine ends chipped, corners scuffed). First endpaper browned in outer margins and with cut out at upper corner. Very little browning of text and plates, minor occasional mostly marginal spotting, light dust-soiling to outer margins. A very good, wide-margined copy. (#002179) € 6,000

Ashworth, *The face of the moon*, Linda Hall 11; Brown, *Astronomical Atlases*, p.139; Graesse, I, 437; Riccardi I 132.15; Honeyman 323. - FIRST EDITION OF THE FIRST ATLAS OF THE PLANET VENUS - A fine copy of the first book of telescopic observations of the planet Venus, and containing important illustrations of lunar topography.

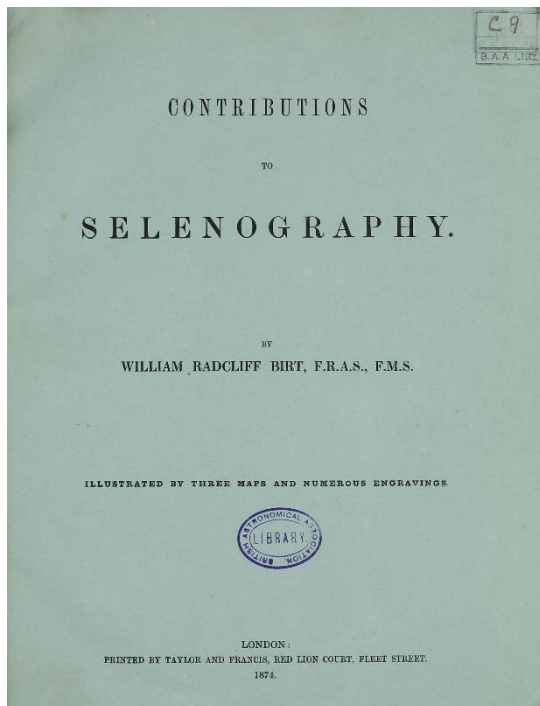


The work also documents Bianchini's observations of the dark spots on the surface of Venus, and the Campani telescopes he used in his discoveries. Bianchini (1662-1729) sought to determine the rotational period of the planet Venus from the dark patches on the disc, and to draw a map of its surface. Cassini had earlier determined a period of revolution or libration of about 23 hours; Bianchini concluded, on the basis of several successive observations, that the rotational period was in fact 24 and a half days; that the north pole of this rotation faced the 20th degree of Aquarius, and was elevated 15 degrees above the plane of the ecliptic, and that the axis kept parallel to itself during the planet's revolution around the sun. Although his results on the rotational period were incorrect, due to Venus's thick cloud cover, his observations were

pioneering efforts in investigating the planet. He utilised an enormously long, single-lens long-focus refracting telescope, designed by the brilliant Roman lens-maker Giuseppe Campani. Of great interest are the two mezzotint views of lunar features in the text. They depict the crater Plato and the Alpine Valley and were the result of the problems of determining topography from shadow patterns. 'This small engraving, which appears in the text as part of the introductory chapter, shows the crater Plato at the right, with Aristotle and Eudoxus at left, and the mountain range of the Alps cut by the dramatic slash of the Alpine Valley. Bianchini noted with surprise that the valley did not appear on the great Cassini map, and he was right; Bianchini was the first to see and to portray this most impressive of lunar valleys' (William Ashworth jr, *The face of the moon* p 11). The fine frontispiece was engraved by Rocco Pozzi (d. 1780) after a design by Stefano Pozzi (1707-1768). It depicts Minerva on a throne, supporting a portrait the King of Portugal. A putto presents a globe of Venus to the King's portrait; other astronomical instruments are also depicted. The figure of Atlas supports the celestial globe on which the constellations are visible. The Bologna Astronomical Museum has a globe of Venus made by Bianchini (Riccardi I 132.15).

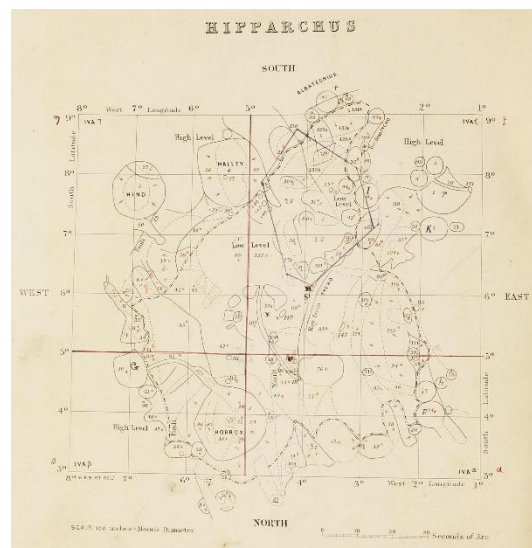


7 [BIRT, William Radcliff](#). *Contributions to Selenography. Illustrated by Three Maps and numerous engravings*. London: Printed by Taylor and Francis, 1869-1874. 4to (285 x 230 mm). 6 parts in one volume: I. *Outline lunar map, zone IV. area IVA with letterpress*, 1870, pp- 1-12, 1 folding engraved plate. II. *The Mare Serenitatis, its craterology and principal features*, 1869, pp. 1-14, 1 engraved plate. III. *Hipparchus, its characteristic features and craterology*, 1870, pp. 15-20, 1 engraved plate. IV. *A Catalogue of lunar objects with notes and illustrations*, 1872, pp. 1-4, 1-4. V. *Selections from the Portfolios of the Editors of the Lunar Map and Catalogue, first issue*, 1873, pp. 1-8. VI. *Selections from the Portfolios of the Editors of the Lunar Map and Catalogue, second issue*, 1874, pp. 9-20, [2 of addenda]. Original card boards with publisher's printed title laid down, further general title on blue paper dated 1874 bound at beginning, 4 pp. of text, original blue printed wrappers to each part bound in. 6 leaves of BIRT's *Lunar Committee Circulars* no. II, III, IV, VI to the British Association for the Advancement of Science bound in after general title (smaller paper size), further bound in is BIRT's one-page abstract from *The Exeter and Plymouth Gazette Daily Telegram*, August 17th, 1869. Several illustrations and diagrams in text. Contemporary paper card boards, thin cloth spine (binding heavily worn with chipping to spine ends



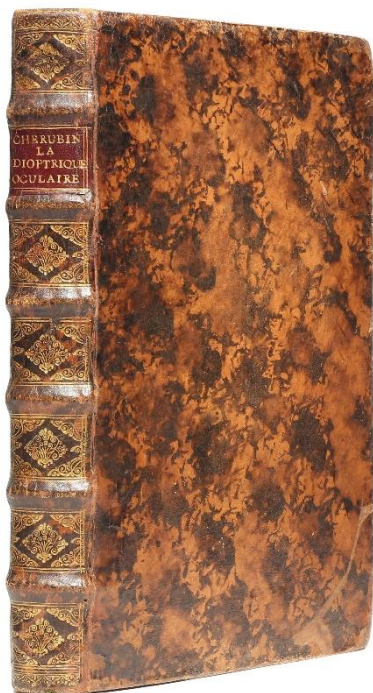
and board edges, front cover soiled and stained, detached with inner joint and a further leaf crudely fixed by tape). Text and plates lightly age-toned, a few occasional pencil and pen annotations. Provenance: British Astronomical Association (ink stamps to section titles). (#002180) € 3,500

FIRST AND ONLY EDITION, AND EXCEPTIONALLY RARE, of Birt's collected papers, being the result of his selenographic studies. William Radcliffe Birt (1804–1881) was an English amateur astronomer in the 19th century. His name is used for the Birt crater, a minor crater on the Moon. Birt worked extensively with John Herschel, carrying out a great deal of meteorological research on atmospheric waves. Between 1864 and 1870, under the auspices of the British Association for the Advancement of Science, Birt undertook to produce a large map of the Moon 5 m in diameter, also in an attempt to surpass the large Schmidt's map in size. Only four sheets of it however were completed before Birt's death, and in 1882 the whole project was abandoned (see Z. Kopal & R. W. Carder, *Mapping the Moon: Past and Present*, 2013, p.33). One of the 5° square sections (Zone IV, Area IVA) that Birt could finish is included here. Whitaker has reproduced another of the 4 sections (Zone II, Area IV) and remarks that the lines on the map are seen to be completely meaningless when compared with a photo of the same area (Whitaker, p.136).

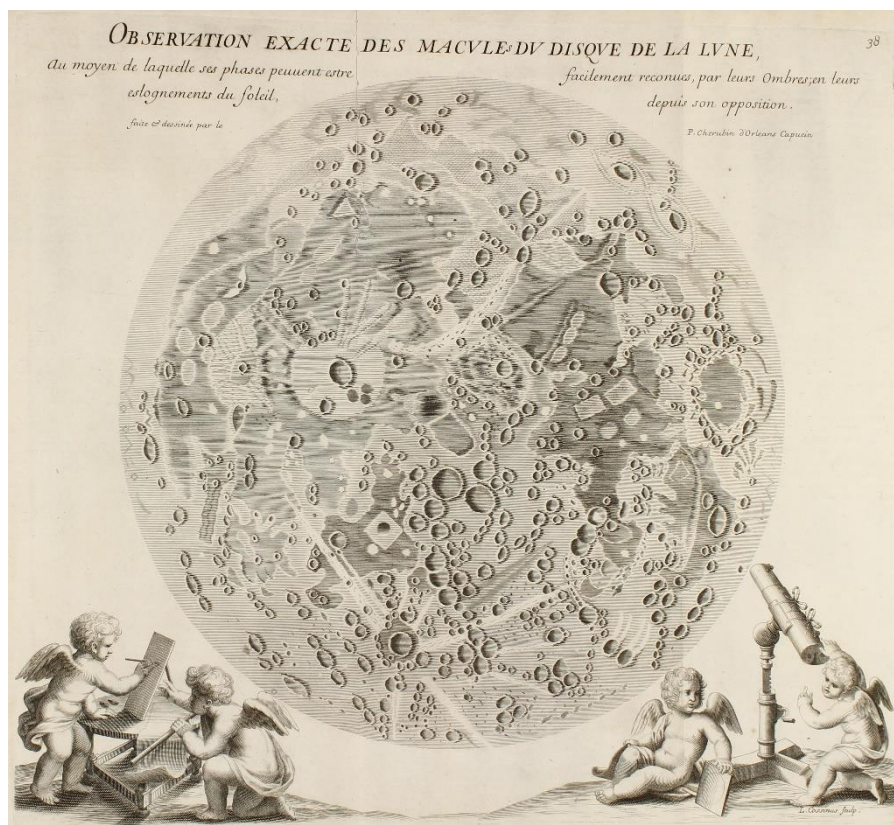




8 [CHERUBIN D'ORLEANS, Capuchin](#). *La dioptrique oculaire, ou la théorique, la positive, et la mécanique, de l'oculaire dioptrique et toutes ses espèces*. Paris: Chez Thomas Jolly & Simon Bernard, 1671. Folio (367 x 240 mm). [46], 419 [1], [30] pp., including additional engraved title by G. Eddelinck after le Pautre, 57 engraved plates (including 6 folding), 2 engraved illustrations in text, dedication with engraved headpiece incorporating the arms of Colbert, woodcut head- and tailpieces, general index at end. Signatures: [pi]<sup>4</sup> e<sup>4</sup> i<sup>4</sup> o<sup>4</sup> u<sup>4</sup> aa<sup>4</sup> A-3F<sup>4</sup> 3G<sup>2</sup> 3H-3L<sup>4</sup> (-pi1, -3L4 blanks). Lacking the initial and final blank leaves only. Colophon on p. 419 reads 'de l'Imprimerie de Jean Cusson, 1670'. Plate numbering corrected in ink or pencil, contemporary pen drawing on blank verso of plate 20. Contemporary marbled calf, spine with 6 raised bands richly gilt in compartments and with gilt-lettered red morocco label in first compartment (split hinges expertly repaired, extremities rubbed, corners bumped), gilt-tooled board-edges, red-dyed edges, marbled endpapers. Internally little browned throughout (several pages and a few plates stronger), occasional very minor spotting, engraved- and printed title-leaf tipped in and with some neat repairs in margins, two plates lightly soiled, a few light ink smudges, a few neat marginal repairs elsewhere. Provenance: Biblioteca Caproni Vizzola (bookplate to front pastedown); Giancarlo Beltrame Library. A very good, wide-margined copy in beautiful binding. A very good copy, text and plates collate complete. (#002978) € 12,500



Krivatsy 2427; Wellcome II, 335; Roller-Goodman I, 226. FIRST EDITION of this standard 17th-century work on optics. Of special interest here is the engraved lunar map, supposedly made by one of his inventions (shown in the lower corners of the maps), but in fact plagiarized and directly copied from Hevelius' images 'P' and 'R' (see Whitaker, p.76). Chérubin d'Orléans is the inventor of the opera glasses. In this work he describes glasses, microscopes and telescopes, including detailed descriptions of the tools and techniques involved in the manufacture of lenses and the effects that different lenses have on the eye.



***The first approximate resolution of the three-body problem.***

9 **CLAIRAUT, Alexis-Claude.** *Théorie de la lune, déduite du seul principe de l'attraction réciproquement proportionnelle aux carrés des distances.* Paris: Dessaint & Saillant, 1765. 4to (252 x 200 mm), [1-3] 4 [5] 6-7 [8], [1] 2-161 [1] pp. and folding plate with diagrams. Contemporary French calf with 5 raised bands, gilt in compartments and with red morocco label (hinges cracked, extremities worn, boards rubbed), red-dyed edges, marbled endpapers, text only very minor spotted and age-toned. (#001995) € 2,500

DSB III, p.283; Honeyman 701; Poggendorff I 447. - SECOND EDITION (the first in France of both papers unified). First published in 1752, this discourse won the annual prize at the Russian Imperial Academy. "In 1743 Clairaut read before the French Academy a Paper entitled 'L'orbite de la lune dans le systeme de M. Newton,' Newton was not fully aware of the movement of the moon's apogee, and therefore the problem had to be reexamined in greater detail. However, Clairaut - and d'Alembert, and Euler, who were also working on this question - found only half of the observed movement in their calculations. It was then that Clairaut suggested completing Newton's law of attraction by adding a term inversely proportional to the fourth power of the distance... The minimal value of the term added soon made Clairaut think that the correction - all things considered - could apply to the calculations but not to the law... Clairaut found toward the end of 1748... that in Newton's theory the apogee of that moon moved over a time period very close to that called for by observations. This is what he declared to the French Academy on 17 May 1749. This first approximate resolution of the three-body problem in celestial mechanics culminated in the publication of the *Théorie de la lune* in 1752 and the *Tables de la lune* in 1754." (DSB III, p. 283).

10 **CRAMPTON, Josiah.** *The Lunar World: its scenery, motions, etc. [Considered with a view to design.]* Third Thousand. Dublin: George Herbert, 1854. 8vo (152 x 113 mm). viii, 104 pp., including half-title and 7 plates. [Bound with:] **GALL, James.** *An Easy Guide to the Constellations; with a miniature atlas of the stars.* Edinburgh / London: Gall and Inglis / Houlston and Wright, [1855?]. 52 pp., 12 plates, including 25 maps and key plates of the constellations some printed double-sided and in blue, some within the pagination. Pages uncut. Two works in one volume. Contemporary half calf over marbled boards, gilt-lettered spine label (extremities rubbed, spine ends chipped with loss, joints cracked and upper board almost detached, corners scuffed and bumped). Internally generally clean and fresh, with just a bit of marginal dust-soiling and occasional spotting. (#003108) € 650

Two popular-science books on the moon and the stars (for second work). The book by the Irish theologian and astronomer Josiah Crampton is of particular interest as it contains a few plates showing rather fictive lunar scenery among them one of a "crater" having a brick-walled plain with a central brick-peak (plate V). At the time when Crampton was finishing his book, another astronomer, James Nasmyth, was working on the fundamental problem to transform the telescopic 'bird-eye' views to reasonable moonscapes, "a fact that is brought into relief in a letter to Josiah Crampton... Upon receiving a gift-copy of Crampton's book, and seeing therein the ways in which he depicted hypothetical views of someone standing upon the moon's surface ... Nasmyth wrote: I am glad to observe you have made an attempt to realize lunar landscape and scenery, as it would appear were we 'there to see.' I also have done something in this way. I cannot imagine any subject more glorious to feast the mind's eye upon, than to wander, in thought, amid the fearfully grand scenery in the moon; and anyone who is artist enough can do so, from what is revealed to us by

the telescope; in fact, this is to me the chief charm of the pursuit---not an indulgence of 'mere wild fancy', but a most legitimate exercise of the reason, and most legitimate powers of the imagination... Although Nasmyth is referring to his own moonscapes in praise of Crampton's, Nasmyth's insistence on their legitimacy extends to his photographs published in 1874, as well. In that work, he also contends that his photographic depictions of lunar

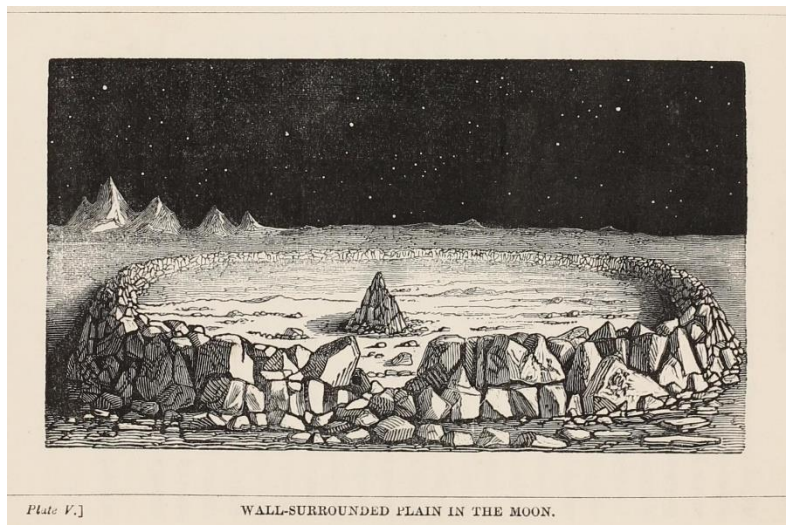


Plate V.]

WALL-SURROUNDED PLAIN IN THE MOON.

the telescope; in fact, this is to me the chief charm of the pursuit---not an indulgence of 'mere wild fancy', but a most legitimate exercise of the reason, and most legitimate powers of the imagination... Although Nasmyth is referring to his own moonscapes in praise of Crampton's, Nasmyth's insistence on their legitimacy extends to his photographs published in 1874, as well. In that work, he also contends that his photographic depictions of lunar

landscapes are not mere fantasy, or what we might today call, science fiction." (Carmen P. Gonzalez, *Selene's Two Faces: From the Daguerreotype to Spacecraft Imaging: A History of the Visualization of the Moon*, Brill, Leiden, 2018, p. 168-69).

The second work in this volume has seen several editions, apparently none with a print date.

**11** [DOPPELMAYR, Johann Gabriel](#). *Tabula Selenographica in qua Lunarium Macularum exacta Descriptio secundum Nomenclaturam Praestantissimorum Astronomorum tam Hevelii quam Riccioli*. Nürnberg: J. B. Homann, [ca. 1730]. Engraved double-hemisphere of the lunar surface, hand-colored, image 494 x 588 mm (single sheet 520 x 593). Map is framed under glass. (#002218) € 1,500

Important double-hemisphere map of the surface of the moon, depicting the lunar maps of Johannes Hevelius (1611-1687) and Giovanni Riccioli (1598-1671). Hevelius published "the first atlas of the moon, *Selenographia*, 1647... It displayed for the first time the complexity of the moon's topography, although it perpetuated certain myths such as the existence of lunar seas. Few of the place-names proposed by Hevelius became permanent, indeed one of the most striking aspects of his maps is the elaborate analogy he built up between the topography of the moon and that of the earth, with the Mediterranean, North Africa and Asia Minor dominating the moon's visible face. It is to the Jesuit astronomer, Giambattista Riccioli, an ardent opponent of Copernicanism, that we owe most of the familiar lunar names" (Whitfield, *Mapping of the Heavens*, p. 93 and p. 97). The double hemisphere is surrounded by representations of four phases of the moon, the upper corners decorated with cherubs using a telescope and Diana, the lady of the moon, text panels at bottom.



**Draper's dedication copy and the earliest surviving large-format photograph of the moon**

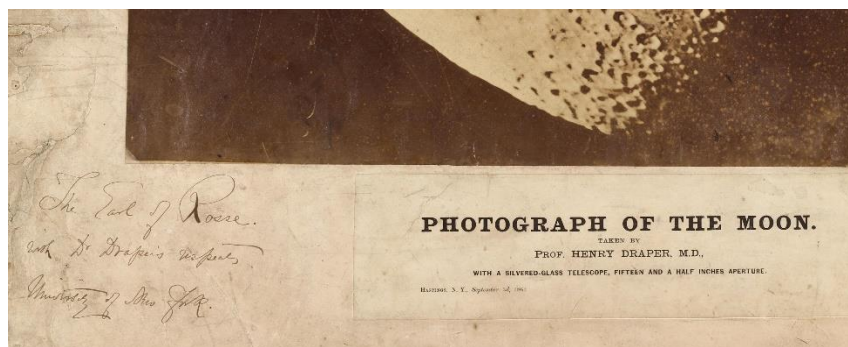
**12** **DRAPER, Henry.** *A very large and extremely rare early albumen silver print photograph of the Moon.* Size 536 x 435 mm (21 x 17 inches) laid down on original mount (702 x 547 mm) which bears a printed label 'Photograph of the Moon, taken by Prof. Henry Draper, M.D., with a silvered glass Telescope, Fifteen and a Half Inches Aperture, Hastings N.Y., September 3rd 1863'. The mount also bears a manuscript dedication 'The Earl of Rosse, with Dr. Draper's Respects, University of New York.' The image has repaired tears at the top center and in the upper left background sky area, with a 2 inches small torn-off patch restored with albumen paper. The mount is soiled on both sides, scratched and teared on the back-side. The entire photograph with the mount was folded once resulting in a horizontal crease. Provenance: Otto Boedicker. Except for the mentioned defects and several smaller scratches, the photograph is in fairly good state of preservation for its age. (#003150) € 50,000

HIGHLY IMPORTANT ASSOCIATION COPY OF THE EARLIEST SURVIVING LARGE-FORMAT PHOTOGRAPH OF THE MOON with Henry Draper's dedication inscription to the 3rd Earl of Rosse. Original photographs by Draper are of exceptional rarity.



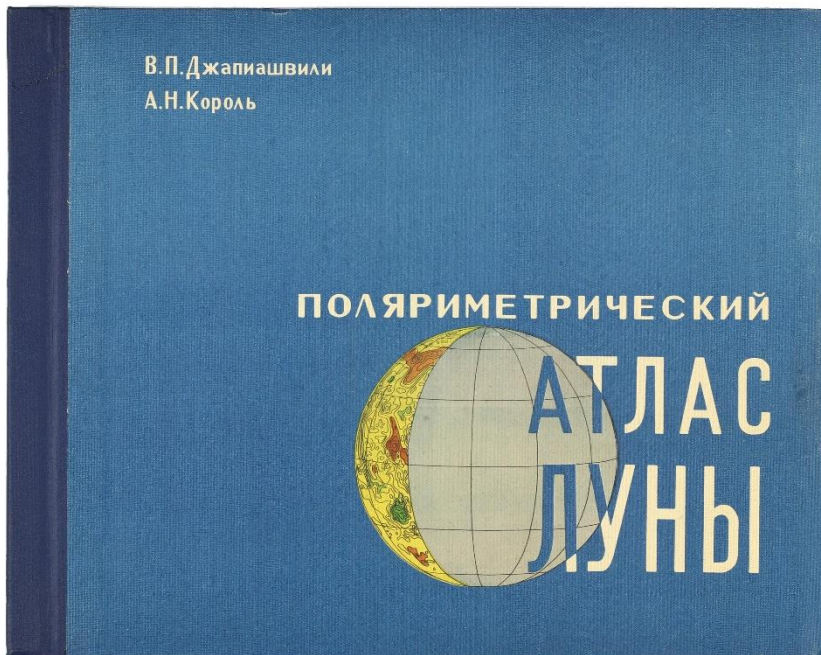
Henry Draper (1837-1882), Professor of Medicine at New York University, was a prominent physician, amateur scientist, and pioneer of astronomical photography. He inherited his interests, skills and energy from his father, Lancashire-born John William Draper (1811-1882), professor of chemistry at NYU, who improved on Daguerre's process to produce some of the earliest photographs of the human face, and in March 1840 made the first photograph of the face of the Moon. As a boy, Henry assisted his father in his chemical and astronomical work. Having completed his medical thesis in 1857, he was still too young to be awarded a degree, so he spent a year abroad. "Together with his brother, John, the pair headed to Europe, deciding on a stopover in Dublin to investigate and meet scientists at the exhibit – partly fuelled by their father's astronomy hobby. Their father had photographed the moon in 1840, but it was the meeting of Henry Draper and William Parsons, the third Earl of Rosse, that would change the course of Draper's life forever, when Parsons invited the pair to Birr. Parsons had

constructed the Leviathan of Parsonstown, which remained the largest telescope in the world for over 70 years, and this Irish scientific wonder still stands at centre of the demesne at Birr Castle in Co Offaly. Draper, in awe of Parsons's achievement and determined to create his own telescope of a similar magnitude, returned to New York where he established his observatory at Hastings on the Hudson. By the age of 23 he had constructed the telescope (not as large as the one in Birr) and was elected Professor of Natural Science, with the position of dean following within two years. In 1863, he took a photograph of the moon through his telescope which was considered to be the finest lunar photograph until the early 20th century. Not only was this photograph significant



as a pioneering picture of astronomic photography and taken through a telescope, but it began the significant contribution Draper made to the photographic process. He captured the first ever photograph of a nebula – considered the holy grail of astrophotography, and further contributions led to a plethora of awards, both from academia and US Congress. He died aged just 45 from pleurisy after a fall in the Rockies. (E. Birdthistle, *The Irish Times*, July 15, 2019). His telescope is now in the Nicolas Copernicus University in Poland. This photograph is authenticated by the inscription from Draper to the Earl of Rosse and comes from the personal collection of Otto Boedicker, who was the last astronomer in charge of Rosse's observatory at Birr Castle from 1887-1916.

**13** [DZHAPIASHVILI, V. P. & KOROL, A. N.](#) *Polarimetric Atlas of the Moon*. Abastumani Astrophysical Observatory, Geogia. Tbilisi: Metsniereba, 1982. In Russian, with additional English explanation and English and Georgian title page. Oblong folio (282 x 355 mm). 22, [4] pp., 21 color-printed maps. Publisher's original printed cloth (light rubbing of extremities, corners bumped). (#003196) € 500

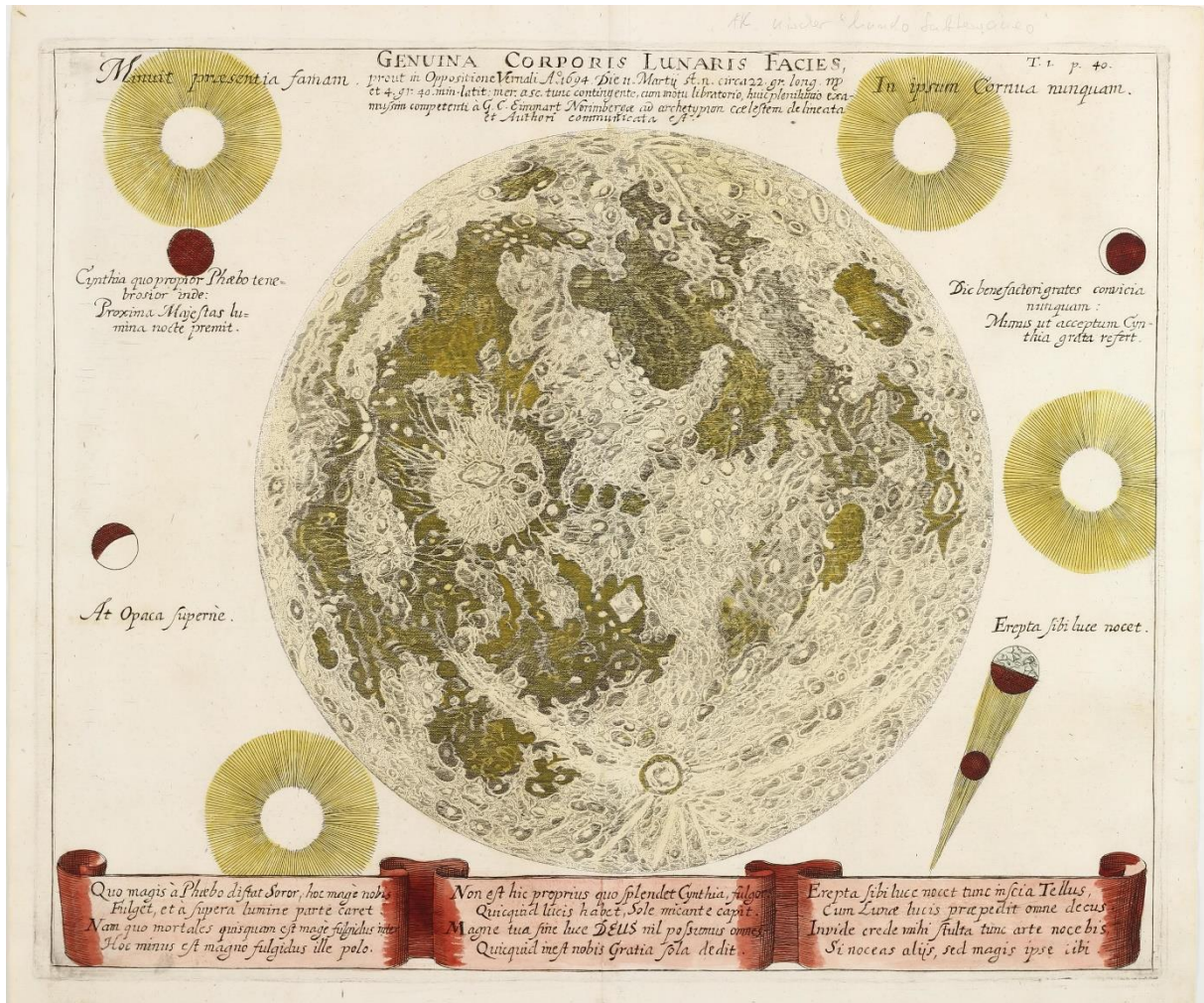


A rare lunar atlas, being a result of a polarimetric imaging project by the Academy of Sciences of Georgian SSR, with the aim to characterize the physical nature of the lunar surface by the median grain size and surface roughness.

A rare lunar atlas, being a result of a polarimetric imaging project by the Academy of Sciences of Georgian SSR, with the aim to characterize the physical nature of the lunar surface by the median grain size and surface roughness.

**14** [EIMMART, Georg Christoph](#). *Genuina Corporis Lunaris Facies*. Plate, extracted from: Zahn, Johann. *Specula physico-mathematico-historica*, vol. 1. - Nuremberg: sumptibus Joannis Christophori Lochner, 1696. Large folio, 448 x 389 mm. 1 double-page map of the moon, colored in red and yellow, original fold at center. Paper only very slightly browned, very little soiling to margins. Near fine copy (#002118) € 2,500

Ashworth, *The face of the moon*, Linda Hall 10. – First Edition. "The Eimmart lunar map was the least successful of all the large-scale moon maps of the seventeenth century, if success is measured by the number of copies and imitations that are spawned. It seems never to have been reproduced. Eimmart was a gifted artist and cartographer, and a reputable astronomer, but his rendition of the moon as it appeared to him on March 11, 1694 suffers from many deficiencies. Most notable is that it fails as a map, since many features are misplaced, the outlines of most of the maria are in error, and many prominent craters do not appear at all. However, if the engraving is viewed, not as a map, but as an impression, it is quite striking and evocative. For all the clarity of the Hevelius map, the full moon does not really look the way Hevelius depicted it, or the way Cassini did, for that matter; it does look very much as Eimmart drew it, surreal and shimmering and alive with light." (Linda Hall 10).



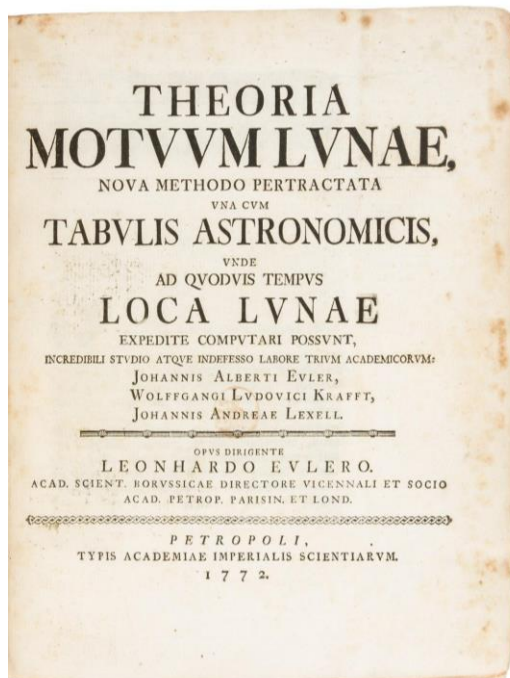
15 [ELGER, Thomas Gwyn](#). *The Moon - A Full Description and Map of Its Principal Physical Features*. London: George Philip & Son, 1895. 8vo (246 x 155 mm). viii, 173, [3] pp., 4 double-page maps of the moon, half-title and advert leaf at end. Original publishers blue cloth, lettering to upper board and spine, cloth heavily waterstained, rubbed and worn at extremities, binding a bit weak (inner hinges split). Content quite clean and unaffected from the damp. Still a good copy (near fine internally). (#003067) € 1,500

Ashworth, *The face of the moon*, Linda Hall 34. - FIRST EDITION. Elger was the first director of the Lunar Section



of the British Astronomical Association, which kept up interest in the moon after the demise of the Selenographic Society. Using an 8.5" reflector, Elger made many drawings of the moon between 1884 and 1896; his sketchbooks survive, and are now in the possession of the British Astronomical Association. The Moon contains Elger's own lunar map, in four sections, with a diameter of 18 inches. It is much less complex than the maps of Neison, Schmidt, Mädler, and Lohrmann, and for that reason, one of the most usable lunar maps ever produced. Printed with the maria in green, and with easily legible type, it is still an ideal reference map (Ashworth).

**16** [EULER, Leonhard](#). *Theoria Motuum Lunae, nova methodo pertractata una cum tabulis astronomicis, unde ad quodvis tempus Loca Lunae expedite computari possunt...* St. Petersburg, Typis Academiae imperialis scientiarum, 1772. 4to (255 x 200 mm). [16], 775 [1] pp., including one folding engraved plate. Bound in contemporary calf, rebaked with modern calf, spine ruled in gilt, with 5 raised bands and two gilt-lettered morocco labels (boards scratched, extremities worn, corners bumped and scuffed), red-dyed edges, lower edge partially uncut. Very little age-toning to text, foxing to margins of endpapers and title-page, occasional light marginal foxing elsewhere, otherwise quite crisp and clean. Provenance: small collector's circular ink-stamp featuring an owl on title page verso. Near fine, extremely wide-margined copy. (#002873) € 5,500



Enestrom 418; Lalande 526; Roller-Goodman I, 375; DSB IV, p.472. FIRST EDITION of Euler's second theory of the lunar motion. Euler was assisted by his son Johann, Wolfgang Kraft and Johann Lexell. "From 1770 to 1772 Euler elaborated his second theory of lunar motion... but the scientists assisting Euler were not mere secretaries; he discussed the general scheme of the work with them, and they developed his ideas, calculated tables, and sometimes compiled examples. The enormous *Theoria motuum lunae...* was thus completed with the help of Johann Albert Euler, Krafft, and Lexell - all of whom are credited on the title-page." (DSB).

**17** [FAUTH, Philipp](#). *Astronomische Beobachtungen und Resultate aus den Jahren 1893 und 1894. Neue Beiträge zur Begründung einer modernen Selenographie und Selenologie. Gesammelt aus seiner Privatsternwarte zu Kaiserslautern... Mit einem Atlas von 25 Topographischen Spezialkarten des Mondes.* Leipzig: Johann Ambrosius Barth (Arthur Meiner), 1895. 20 b&w collotype sheets with 25 topographical charts in original publisher's folder with printed boards (330 x 250 mm), one explanatory sheet pasted onto inner front board. Additional text volume, stapled as issued and with publisher's printed wrappers (287 x 226 mm). x, 66 pp. Publisher's advert sheet announcing this work loosely inserted. Printed paper-slip of (new) publisher pasted over original imprint on both, upper board of folder and front cover of text volume. Boards of folder rubbed and browned in margins, cloth of spine cracked at upper hinge and somewhat chipped, some wear to extremities, one folder flap detached; little marginal browning to wrappers of text volume, text and charts clean and little age-toned only. Still a fine and unsophisticated copy. (#002608) € 3,000

Ashworth, *The face of the moon*, Linda Hall 33. - RARE FIRST EDITION of Fauth's first published lunar atlas. Originally published in Kaiserslautern by Gotthold, the print run was taken over by Ambrosius Barth in Leipzig in the same year. Without plate XII which has never been issued. The advert sheet included states a sales price of 15.00 Mark for this work.

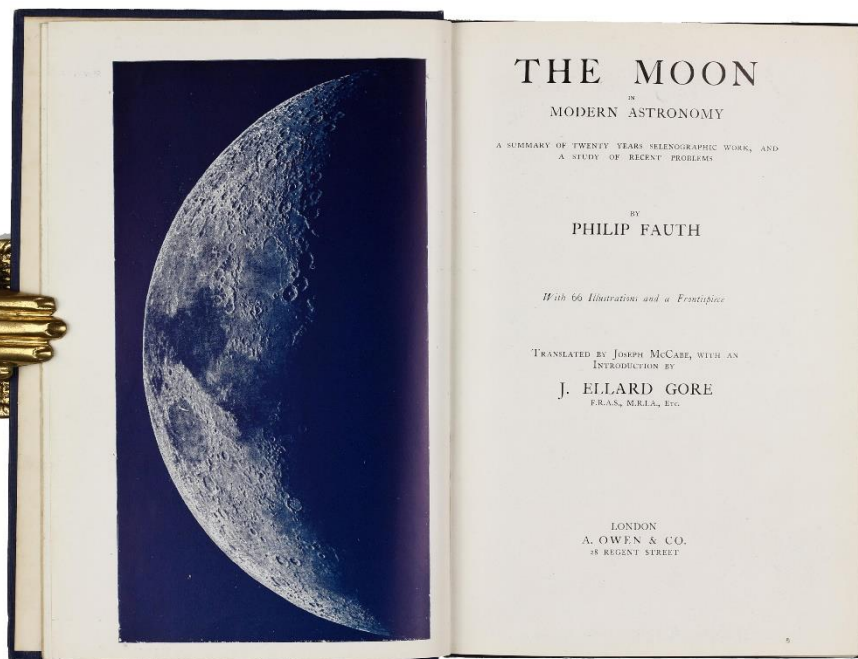
"Fauth managed to alienate most of the selenographic community during his lifetime, with his intemperate criticism of other observers and his espousal of the theory that the moon was solidly covered with ice. But there is no denying that Fauth was a gifted observer, perhaps the last of the great



selenographers to map the moon by hand and eye. Fauth was a schoolteacher for most of his life and maintained an observatory near Kaiserslautern. This is his first publication, containing 25 drawings of selected lunar features on 20 sheets, at a scale of 1:1 million. Fauth was one of the most skilled of all selenographers at using the hachure shading technique, which indicates relief by short lines in the direction of maximum slope. Curiously, he abandoned this technique later in his career in favor of contour lines." (Ashworth 33). "The depth of understanding of the nature of lunar topography demonstrated by Fauth was superior to that possessed by the majority of his contemporaries. The morphology revealed by his methodical measurements of the depth-to-diameter ratios of hundreds of lunar craters and the slopes of their exterior and interior walls led him to reject the prevailing volcanic theories of the origin of lunar craters." (Thomas A. Dobbins, In: *Bibliographical Encyclopedia of Astronomers*, Springer, 2007, p.360).

**18** [FAUTH, Philipp](#). *The Moon in modern Astronomy. A Summary of twenty Years Selenographic Work, and a Study of Recent Problems*. Translated by Joseph McCabe, with an Introduction by J. Ellard Gore. London: A. Owen & Co., 1907. 8vo (208 x 143 mm). 160 pp. [2], 12 pp. Half-title, colored frontispiece, advertisements, 66 b&w illustrations in text. Original publishers blue cloth, gilt-lettered spine and upper board (a trifle rubbing to extremities and spine ends). Provenance: British Astronomical Association (library stamp and shelf mark on front endpaper, rear endpaper with library card in pocket); cancelled inscription on half-title. (#002183) € 350

FIRST ENGLISH EDITION, originally published in German the year before. Philipp Johann Heinrich Fauth (March 19, 1867 - January 4, 1941) was a German selenographer. Born in Bad Dürkheim, he worked as a schoolteacher. As an amateur astronomer, he studied the formations on the Moon with great intensity and meticulousness. He

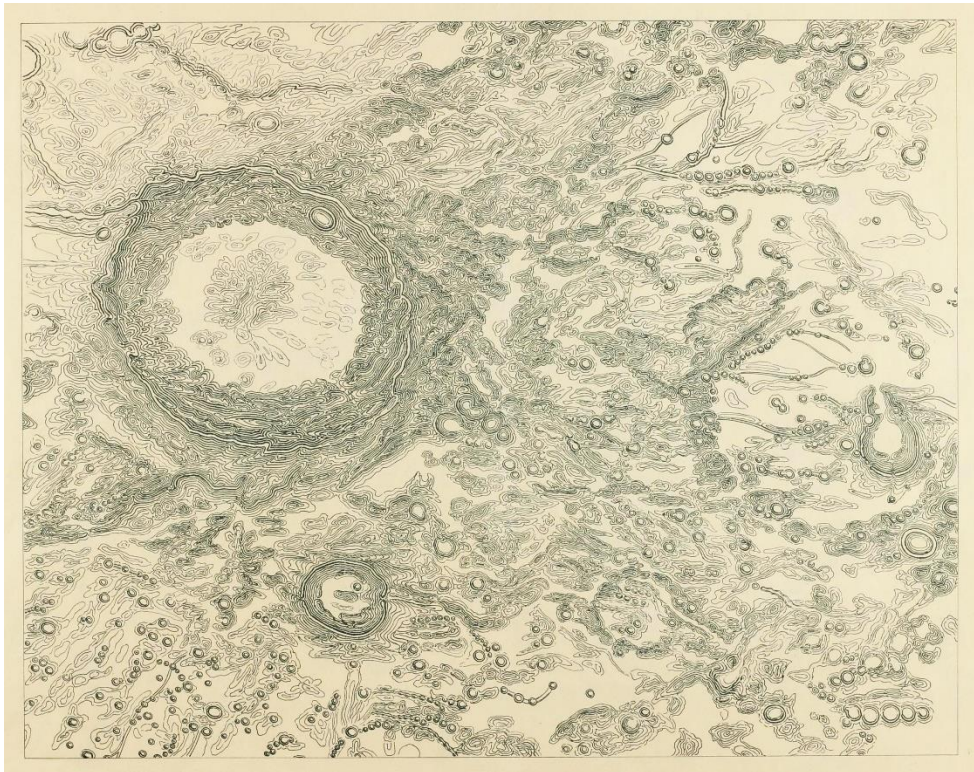


compiled an extensive atlas of the moon between 1884 and 1940 (which was not completely published until 1964, and prized today as a rare book). Unfortunately, Fauth carried out this immense work at the same time that advances were being made in photography that allowed for a more reliable depiction of the lunar surface. In 1913 with co-author Hans Hoerbiger, he published his now-defunct Cosmic Ice (Glacial Kosmogonie) Theory which was subsequently investigated by Austrian writer, Hans Schindler Bellamy.

**19** [FAUTH, Philipp](#). *Neue Mondkarten und neue Grundlagen einer Mondkunde auf 16 Tafeln*. Publikation VI seiner Sternwarte. [Grünwald bei München]: by the author, 1932. Folio (402 x 425 mm). 16 Maps and 1 leaf of explanatory text in original printed grey wrappers, additional hand-lettered paper dust wrapper. Little age-toned, the explanatory sheet soiled at lower margin, light dust-soiling to margins throughout. Ink stamp of the British Astronomical Association to wrappers. (#002184) € 3,800

Ashworth, *The face of the moon*, Linda Hall, 36 - EXCEEDINGLY RARE. "Fauth published a number of works on the moon between his initial maps of 1895 and his death in 1941: a general book on the moon in 1907, a work espousing the glacial theory of the moon in 1925, a map in six sections adopting the new nomenclature system of the International Astronomical Union of 1935, and a comprehensive guide to the moon in 1936; all are in the Library's collections. In addition, he published these 16 studies for a large-scale moon map that he never completed. The lithograph maps vary in quality and technique; most of them use the same hachure shading



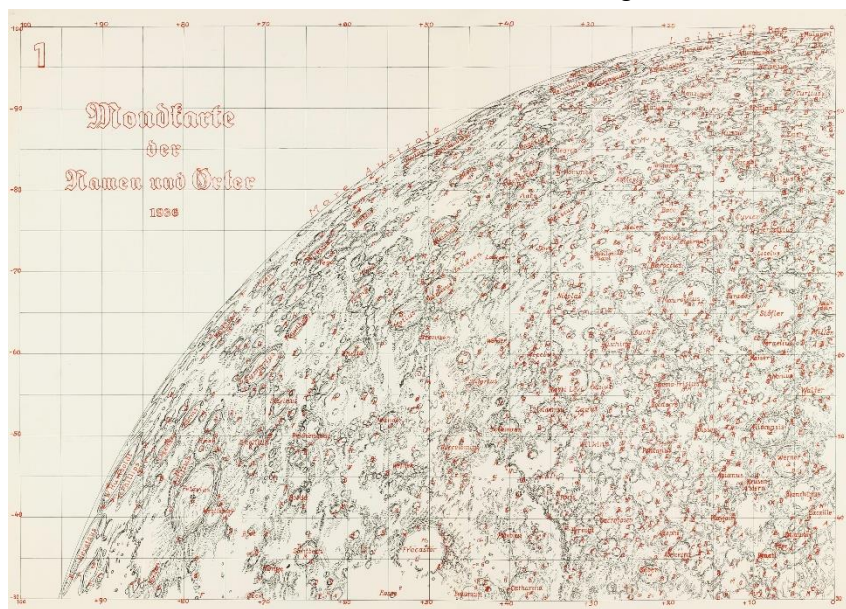


technique of his early maps, while several use false contour lines instead, and indeed Fauth would shortly adopt the contour convention for his large map project, left unfinished at his death" (Ashworth, 36).

**20** [FAUTH, Philipp](#). *Großer Mond-Atlas*. Bremen: Olbers-Gesellschaft, 1964. 28 folding sheets of lunar maps (22 of large size 695 x 695 mm, and 6 smaller sheets, double-page and printed in red and black), separate volume of 38 pages explanatory text ("Erläuterungen zum Fauth'schen Mondatlas"). Original papercard folding box with publisher's pictorial label on front cover, an inserted pocket for the text volume, and the original ties present. Generally very clean and bright with only very minor soiling and wear. (#002119) € 2,300

FIRST EDITION OF FAUTH'S MAGNUM OPUS, PUBLISHED POSTUMOUSLY BY HIS SON, HERMANN. One of the most renowned and meticulous lunar observers of the time, Fauth was the last great lunar cartographer to rely principally on visual observations. "The depth of understanding of the nature of lunar topography demonstrated by Fauth was superior to that possessed by the majority of his contemporaries. The morphology revealed by his methodical measurements of the depth-to-diameter ratios of hundreds of lunar craters and the slopes of their exterior and interior walls led him to reject the prevailing volcanic theories of the origin of lunar craters." (*Biographical Encyclopedia of Astronomers* I, p. 360). Based on observations from 1911 until his death in 1941 using his 15 1/2 inch refractor first at Landstuhl in the Rhineland and later in Bavaria, his great lunar atlas was finally completed and published in 1964 by his son Hermann.

"Fauth was a master of careful observation, his drawings of lunar formations were superb, both in their representation and accuracy, and he quickly became well respected in astronomical circles ... Fauth continued to rise in the esteem of the astronomical community, particularly in Germany, his 600 page treatise (*Our Moon*) was published in 1936, and remains his best known work outside Germany. His Lunar Atlases of 1895 and 1936 [sic] are testimony to his skill and perseverance as an observer"



(Nigel Langshaw, *The Small Collection of Important Selenographical Works Held by the Manchester Astronomical Society*). Drawn on a scale of 1:1,000,000, the map would assemble to a diameter of 3:50 meters. The final sheet contains four segments, numbered 25a to 25d, with numbers 13, 17, and 21 omitted due to overlaps between the areas depicted. Completed in 1936, the smaller map, in six segments, is on a scale of 1:1,400,000.

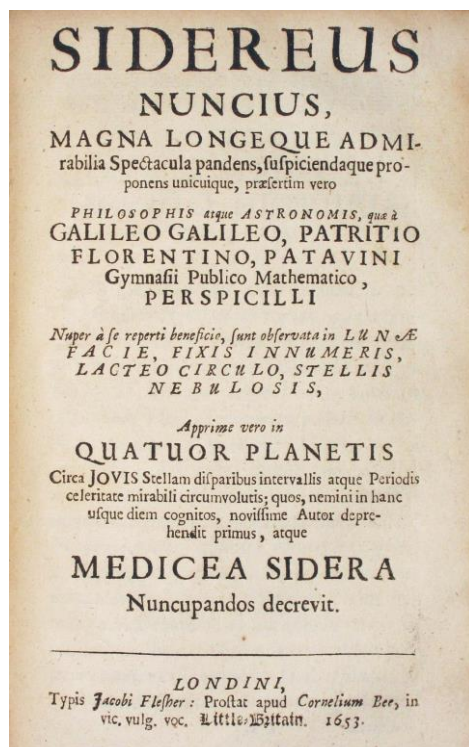
**21** [FRANZ, Julius Heinrich Georg, editor](#). *Mitteilungen der Universitäts-Sternwarte zu Breslau, erster Band / -zweiter Band*. Breslau: Maruschke & Berendt, 1901-1903. Two volumes. 4to (315 x 235 mm). vi, [2], 116 pp., 6 collotype plates of moon phases (one bound as frontispiece); iv, 120 pp., 6 plates of moon phases and diagrams (incl. 1 collotype). Uniformly bound in half cloth, gilt-lettered spines, printed upper boards (light rubbing of extremities). Text and plates very little age-toned, generally clean and bright. Provenance: Carl Wilhelm Wirtz\* (ownership inscriptions to covers, front pastedowns and titles, dated 1901 and 1903). (#002185) € 1,600



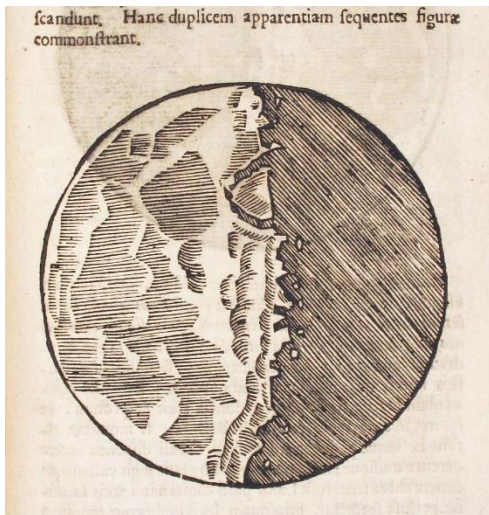
Julius Heinrich Franz (1847–1913) was a German astronomer and director of the observatory at the University of Breslau. He is most noted for his measurements of features near the lunar limbs. He published a popular book about the Moon in 1906 called "Der Mond". In this work he named some lunar mares along the limb the Mare Orientale, Mare Autumni and Mare Veris. The latter two were later renamed to the Lacus Autumni and Lacus Veris. The *Mitteilungen* contain a number of papers by Franz himself and other astronomers, such as Paul Neugebauer, Harry Meyer, Walter Zimmermann, Mainka, mostly dealing with lunar observations.

\*Carl Wilhelm Wirtz (1876-1939) was a German astronomer who worked at the observatories in Kiel and Strasbourg. He is best known for his statistical studies of redshift-distance correlation of spiral galaxies.

**22** [GALILEI, Galileo](#). *Sidereus Nuncius*. In: [GASSENDI, Pierre](#). *Institutio Astronomica, juxta hypotheses tam Veterum quam Recentiorum, cui accesserunt Galileo Galilei Nuntius Siderius et Johannis Kepleri Dioptrice. Secunda editi priori correctior*. London: Jacob Flesher for William Morden, 1653. 3 parts in one volume. 8vo (177 x 112 mm). General title printed in black and red (some paper repairs) with separate title-pages for each part, numerous text woodcuts and 4 plates of constellations in *Sidereus Nuncius*. Full calf binding skillfully rebaked retaining the early 18th century blind-ruled boards. Text browned, very minor spotting, few underlinings in text, otherwise clean. Good copy. (#001785) € 7,400

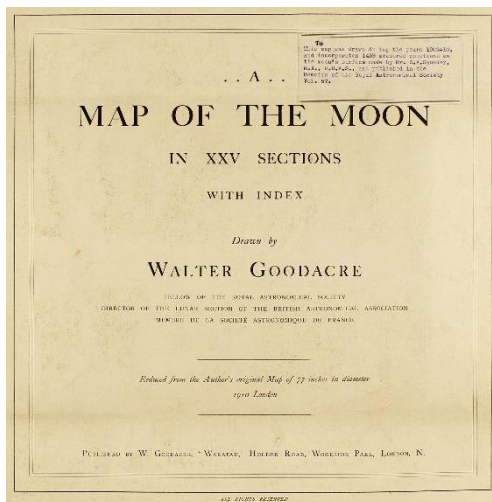


Cinti 128. - Riccardi I, 508. - Houzeau/Lanc. 9225. - Horblit 444. - Honeyman 1399: "Rare". - Caspar, Kepler 92. - "Third edition of the *Sidereus nuncius* and the first printing in England of any of the works of Galileo." (Horblit). Gassendi's *Institutio astronomica*, first published in 1647, outlines the various competing models of the cosmos, notably the Ptolemaic, the Copernican, and the intermediate system invented by Tycho Brahe. This is followed by Galileo's *Sidereus nuncius*, in which he outlined his observations made by telescope; first published in 1610, this constitutes the third edition of this seminal work. The volume is completed by Kepler's *Dioptrice*, first published in 1611, which is an effective companion piece to the *Sidereus nuncius*: Kepler had been researching optics since 1600 but it was the publication of Galileo's



work which spurred him to complete his treatise on lenses. It contains the first explanation of myopia and the first design for an inverted astronomical telescope.

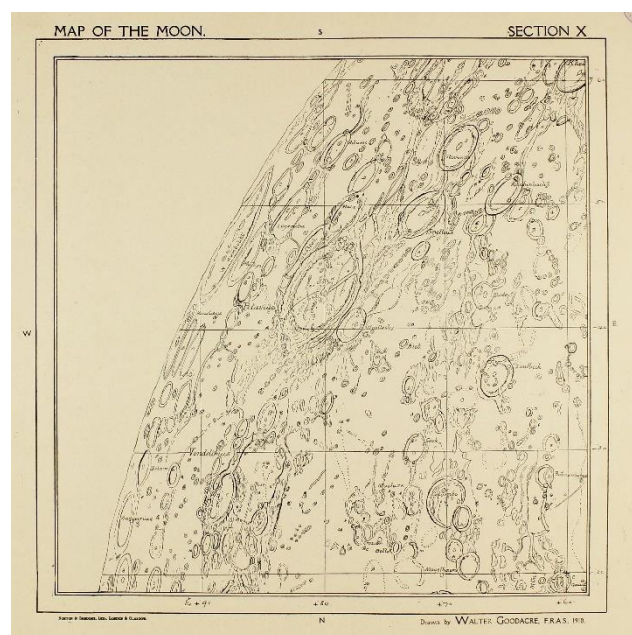
**23** [GOODACRE, Walter](#). *A Map of the Moon in XXV Sections with Index*. London: Published and printed by the Author, 1910. Large folio (455 x 455 mm). Separate printed sheets in folder: title, index, and 25 maps. The contemporary folder is made of percaline over boards with gilt-lettered front cover (spine and corners damaged and chipped, leather strap partially gone). The plates evenly age-toned, plate IV soiled. Provenance: The British Astronomical Association (ink stamp to each sheet, machine typed label on title giving information about the making of the maps\*). Very good copy internally.. (#002186) € 8,500



Ashworth, *The face of the moon*, Linda Hall, 35 - EXCEEDINGLY RARE. In 1910, the famous selenographer Walter Goodacre published a hand drawn 77-inch diameter map of the Moon. The map covers the entire nearside of the Moon in 25 detailed sections, and was based upon hundreds of lunar observations and extensively used Saunders' measurements for positional accuracy. A reduced version of this map was privately published

in his book *The Moon: with a Description of its Surface Formations* (1931). Walter Goodacre (1856-1938) was born in Loughborough, England, but went to live in London when aged 7. Following his education he entered the family business and worked there until retiring in 1929. Goodacre was an enthusiastic amateur lunar observer. For a while he was Director of the Lunar Section of the Liverpool Astronomical Society and in 1897 he succeeded Thomas Gwyn Elger as the second Director of the Lunar Section of the British Astronomical Association (BAA). Goodacre was President of the BAA in 1922-24.

\*The label on the title-sheet reads "This map was drawn during the years 1902-10, and incorporates 1433 measured positions on the moon's surface made by Mr. S.A. Saunder, M.A., F.R.A.S., and published in the Memoirs of the Royal Astronomical Society Vol. 57"



**24** [GOODACRE, Walter](#). *The Moon with a description of its Surface Formations. Fully Illustrated by the Author's revised Map of the Moon in Twenty-five Sections together with numerous Drawings, Charts and Photographs*. Bournemouth: Printed for the Author by Pardy & Son, 1931. 4to (245 x 175 mm), [4] 364 pp. Several illustrations and diagrams in text (many full-page), a few on separate sheets outside pagination. Contemporary half red morocco over cloth, rebacked with gilt-lettered portion of original spine preserved. Text very bright and clean. Provenance: The British Astronomical Association



PHOTOGRAPH OF SURFACE—MT. WILSON.

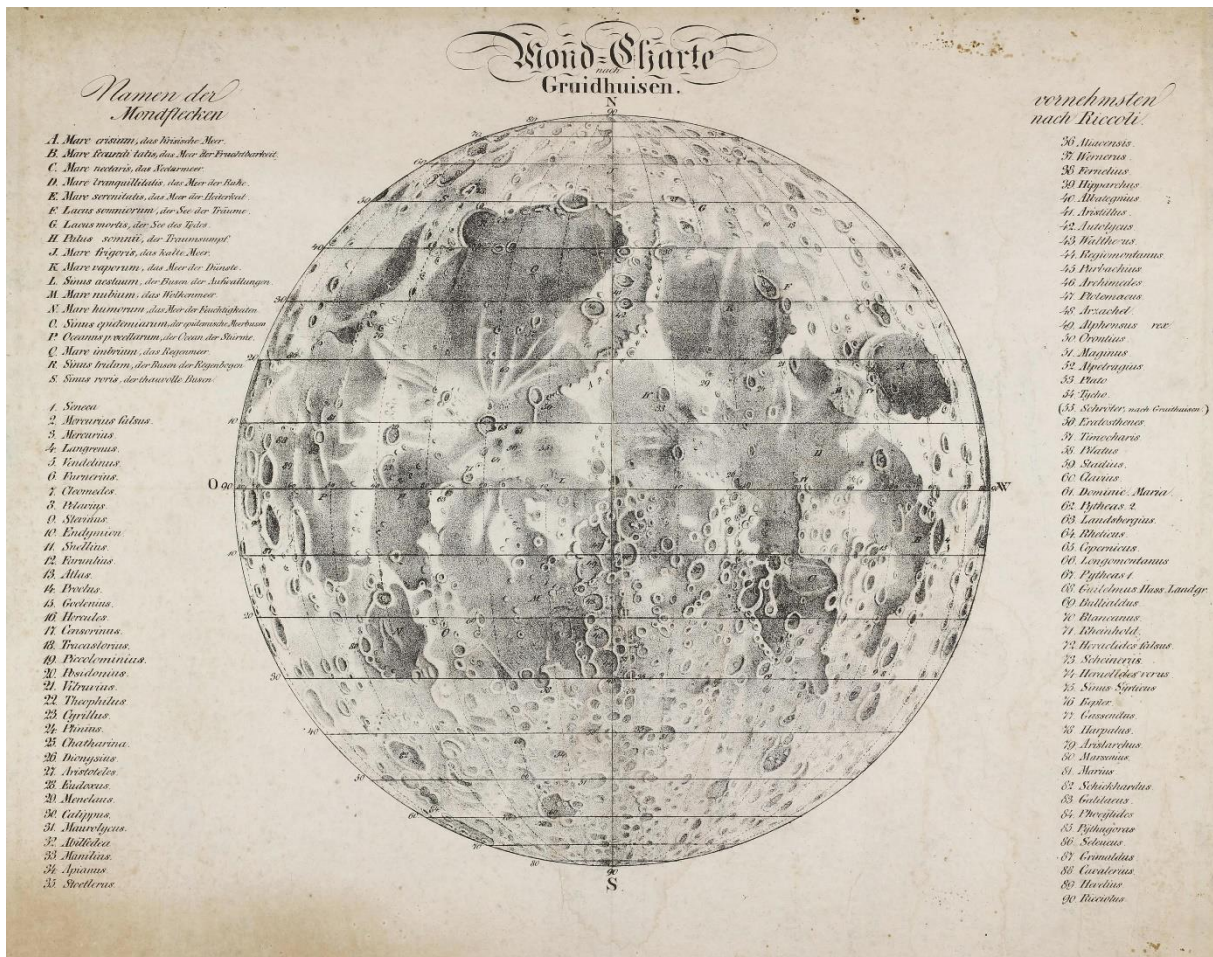
(ink stamps on title and free endpaper, library card in pocket on rear pastedown), cancelled ownership inscription on free endpaper (T.B.G? dated 1934, R.W.Payne, dated 1966). (#002187) € 2,500

Ashworth, *The face of the moon*, Linda Hall, 37 - In his youth, Goodacre was a member of the Liverpool Astronomical Society, becoming a founding member of the British Astronomical Association in 1890. In 1897 he became the second Director of its Lunar Section, serving in that post until 1937. In 1910, he published a 77" diameter hand drawn map of the moon. In 1931, he published the present larger book of maps of the moon's surface with descriptions of features. "Until 1919, it was generally agreed that for all their accuracy and reliability, lunar photographs were still inferior to the human eye in capturing fine detail. Then in September 1919, the 100-inch Hooker telescope opened for business at Mt. Wilson Observatory. In a remarkable series of photographs taken by Francis Pease on September 12-15, the moon appeared as never before. The results were not placed before the general public until Goodacre published his lunar handbook and included several enlarged prints from these negatives [Photographs of Surface, facing p. 315]." (Ashworth)

**25** [GRUITHUISEN, Franz von Paula](#). *Mond-Charte nach Gruithuisen*. No place, no date (but ca. 1825). Lithographed map of the full moon on a single unfolded sheet, pasted onto cardboard, total size 410 x 495 mm. Very minor, mostly marginal, browning and soiling. (#002188) € 3,500

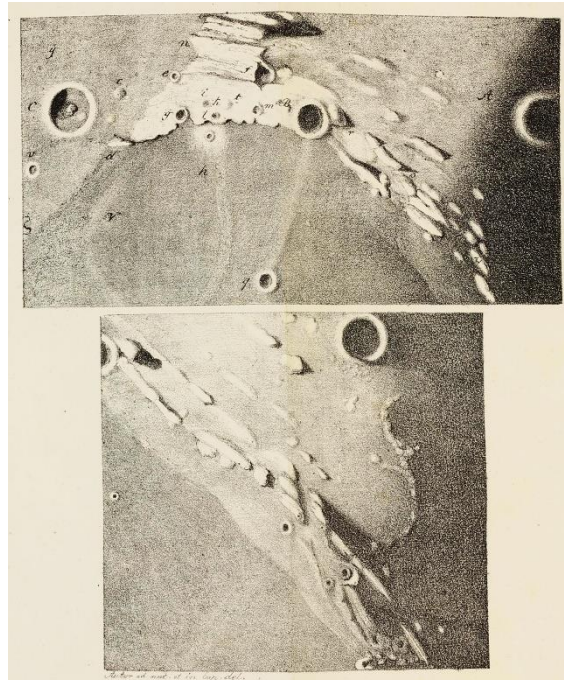
EXCEPTIONALLY RARE separate map of the moon by or after Gruithausen in orthographic projection, like Johann Tobias Mayer's map with lunar coordinates. In addition there are the mare and prominent features named after Riccioli. This map is probably the first in which mare names are translated to any other language (here German). Gruithuisen published his map first in *Selenognostische Fragmente*, 1821, then in *Gedenkschriften der Bonner Akademie der Naturforscher*, 1822 and in *Berliner Astronomisches Jahrbuch*, 1822. The present map appears to have been redrawn from Gruithuisen's original at some later date, with the nomenclature possibly copied (with some spelling errors) from, Johann Schröter's version of Mayer's map, except that at #55 the name Schröter ("after Gruithuisen" -- a reference to his "city") is inserted and the remaining numbers are increased by one (see *the-Moon Wiki Map Collection*, showing this map).

Baron Franz von Paula Gruithuisen (March 19, 1774 - 1852) was a Bavarian physician and astronomer. He taught medical students before becoming a professor of astronomy at the University of Munich in 1826. Like others before and since his time, Gruithuisen believed that the Earth's moon was inhabitable. He made multiple observations of the lunar surface that supported his beliefs, including his announcement of the discovery of a city in the rough terrain to the north of Schröter crater he named the Wallwerk. This region contains a series of somewhat linear ridges that have a fishbone-like pattern, and, with the small refracting telescope he was using, could be perceived as resembling buildings complete with streets. He published his observations in 1824, but they were greeted with much scepticism by other astronomers of the time. His claims were readily refuted using more powerful instruments. He is also noted for the discovery of bright caps on the cusps of the crescent Venus, and for being the first to suggest that craters on the Moon were caused by meteorite impacts. He proposed that jungles on Venus grew more rapidly than in Brazil due to the proximity of the planet to the Sun, and that as a consequence the inhabitants celebrated fire festivals - the cause of the bright caps on Venus. The Gruithuisen crater on the Moon is named for him.



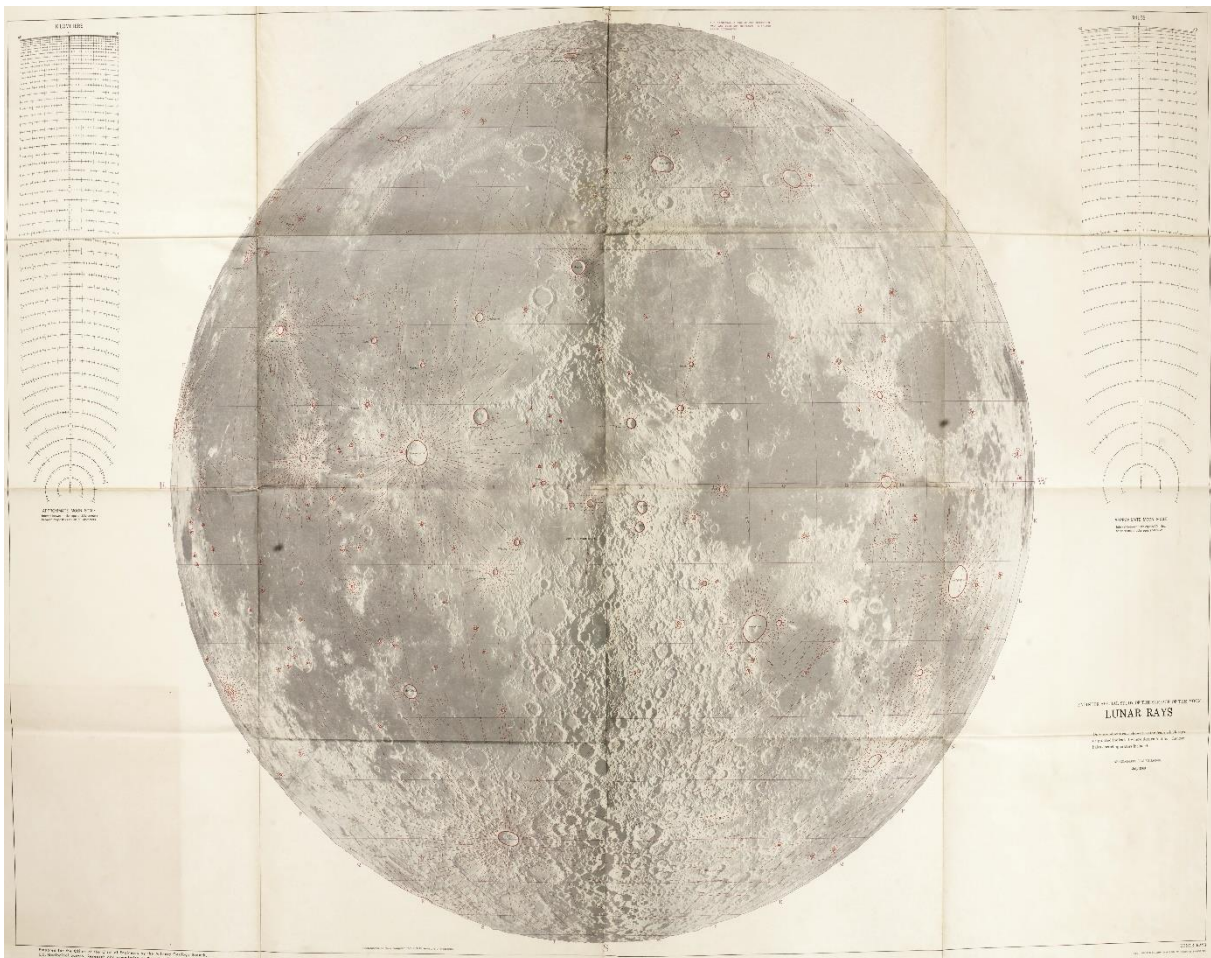
**26** [GRUITHUISEN, Franz von Paula](#). *Astronomisches Jahrbuch für physische und naturhistorische Himmelsforscher, mit den für das Jahr 1839 (/ 1840) vorausbestimmten Erscheinungen am Himmel*. München: Jos. A. Finsterlin, 1838 / 1839. 8vo (197 x 120 mm). 2 volumes. xxx, 126 pp.; xxxvi, 172 pp. [With:] *Astronomisches Jahrbuch für physische und naturhistorische Himmelsforscher und Geologen, mit den für das Jahr 1841 (/ -1848) vorausbestimmten Erscheinungen am Himmel*. München: Jos. A. Finsterlin, 1840 / -1846. 8vo (210 x 129 mm). 6 (of 8) volumes. Vol. 3: xxxix, 188 pp., 4 folding plates including 2 lunar maps; vol. 4: xxxvii, 218 pp., 3 plates; vol. 5: lxxvii, 156 pp., 3 plates; vol. 6: xlii, 227 pp., 2 colored plates; vol. 8: xlv, 232, 1 plate; vol. 9: xlii, (2), 208 pp., 2 plates. Except for first two volumes bound in uniform half calf over marbled boards, blue or yellow dyed edges, spines with gilt-lettered labels (minor rubbing of extremities). Text generally somewhat foxed, otherwise clean and only little browned. (#002189) € 2,700

EXCEPTIONALLY RARE run of Gruithuisen's astronomical yearbooks, complete except for vol. 7 and 10. Beside astronomy, ephemerides, geology, and letters to the editor, this publication deals, to a large part, with Gruithuisen's own telescopic observations of the lunar surface. The set contains a number of lithographed plates showing details of lunar features as well as general maps of the full moon.



**27**     [HACKMAN, Robert & MASON, Arnold](#). *Engineer Special Study of the Surface of the Moon - Lunar Rays*. Washington, D.C: Army Map Service of the USGS, July 1960. 1 folding map, 1440 x 975 mm, image size 1275 x 940 mm. Light yellowing of paper, some paper thinness on old folds, but generally in a very good condition. (#003189)     € 2,000

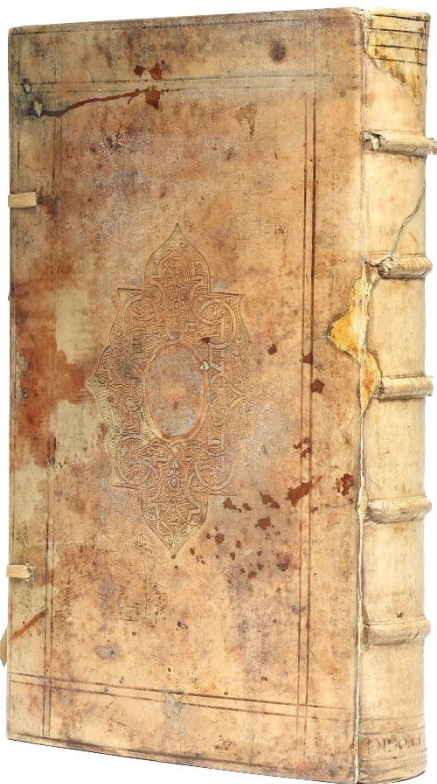
VERY RARE FIRST EDITION. The Army Corps of Engineers published the first edition of Arnold Mason and Robert Hackman's four-sheet *Engineer Special Study of the Surface of the Moon* map set in July 1960. The USGS published a second edition with "minor revisions" in 1961. "Even after the creation of NASA, the Army and USAF studied lunar surface bases ... The USAF also began lunar mapping using Earth-based telescopes. The first attempt to map lunar features for scientific and engineering purposes did not, however, originate within the Defense Department. It was begun instead by Arnold Mason of the U.S. Geological Survey (USGS) Military Geology Branch in Washington, DC. ... Early in 1959 - soon after Luna 1 - Mason proposed to carry out an analysis of the moon's terrains to determine their suitability for spacecraft landings, travel on foot and by rover, and base construction ... he enlisted Robert Hackman and Annabel Brown Olson of the USGS Photogeology Branch in his project ... At first, they had available only meager USGS funds. Soon after Luna 2 and Luna 3, however, the Army Corps of Engineers funded their study ... They based their analysis on photographic plates from large telescopes on Earth, which under the best viewing conditions could (they estimated) reveal features on the moon no smaller than about a mile across. In fact, features 10 miles wide were barely discernible in most of the photographic images they used. Their work soon drew in as consultants lunar experts Gerard Kuiper (McDonald Observatory), Eugene Shoemaker (USGS Menlo Park), and Robert Dietz (Naval Electronics Laboratory). All three supported the impact hypothesis, which stated that most of the moon's craters are asteroid impact scars; not, as some believed, volcanic calderas. At the time, planetary astronomer Kuiper was hard at work on a USAF-funded lunar photographic atlas; Mason and Hackman would use it near the end of their study. Shoemaker, meanwhile, was busy refining a prototype lunar geologic map of the region containing the large, relatively young crater Copernicus; Hackman would later assist him with identification of lineaments in the Copernicus region. In this sheet 2 of the "Engineer Special Study," titled "Lunar Rays," Mason and Hackman plotted the source craters and extent of the moon's most prominent ray systems ... They correctly identified the light-hued rays as ejecta blasted out from young asteroid impact craters." (Online Source: USGS Astrogeologic Science Center, 1961: *USGS Astrogeology's First Published Map*).



**28** [HANSEN, Peter Andreas](#). *Tables de la lune, construites d'apres la principe Newtonien de la gravitation universelle*. London: George Edward Eyre & William Spottiswoode, 1857. 4to (305 x 250 mm). [20], 511 [1] pp. Contemporary cloth, printed paper label on spine (head and lower portion of spine chipped, upper joint split, corners bumped, wear to extremities). Text little age-toned, title-page a bit soiled, light dust-soiling elsewhere. Provenance: British Astronomical Association (stamps on title and front endpaper, inscription that this copy was presented by Charles Cooper in Sept. 1947); A. Sidney Field (ink stamps on title and front pastedown). (#002190) € 300

Hansen (1795-1874). Danish-born German astronomer whose most important work was the improvement of the theories and tables of the orbits of the principal bodies in the solar system. Hansen became director of the Seeberg Observatory, near Gotha, in 1825, and in 1857 a new observatory was built for him. He worked on theoretical geodesy, optics, and probability theory. His most important books on the theory of the motion of the Moon are the *Fundamenta nova investigationis orbitae verae quam Luna perlustrat* (1838; 'New Foundations of the Investigation of the True Orbit That the Moon Traverses') and the *Darlegung der theoretischen Berechnung der in den Mondtafeln angewandten Störungen* (1862-64; 'Explanation of the Theoretical Calculation of Perturbations Used in Lunar Tables'). The systematic character of Hansen's methods carried celestial mechanics to a new level of power and precision. The tables based on his theory were printed in Great Britain in 1857 and were used until 1923. From his theory of the Moon, Hansen deduced a value close to that now accepted for the distance between Earth and the Sun. Assisted by the astronomer Christian Olufsen, Hansen in 1853 compiled new tables of the Sun's positions at various times.

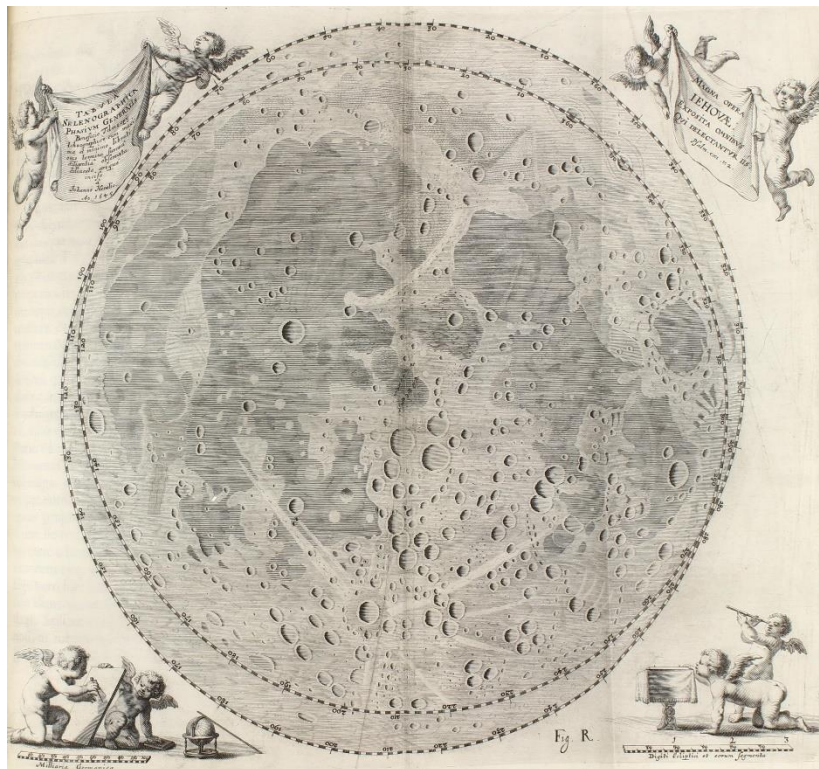
**29** [HEVELIUS, Johannes](#). *Selenographia: sive, lunae descriptio; atque accurata, tam macularum ejus, quam motuum diversorum, aliarumque omnium vicissitudinum, phasiumque, telescopii ope deprehensarum, delineatio. Addita est, lentis exoliendi nova ratio; ut et telescopia diversa construendi, et experiendi modus*. Danzig: A. Hünefeldt for the author, 1647.



Folio (346 x 215 mm). [4], [26], 563 [1] pp., including title (printed in red and black), additional engraved title-page with historiated border incorporating figures of Alhazen and Galileo, 108 (of 111) engraved illustrations on 88 (of 91) plates (3 full-sheet; one with volvelle in facsimile and red silk string-pointer; 20 printed recto and verso for total of 40 engravings), 27 engraved illustrations and diagrams in text, one five-line historiated woodcut initial, numerous ornamental wood-cut two-line initials and head- and tailpieces. Lacking the half title, the author's portrait, plate N (to p.180), plate Q (to p.226) and plate RRR (to p.547, which is not included in the list of plates and which was added to later issues). Also lacking is the volvelle to plate 21 (to p. 364). All missing plates and the volvelle are replaced in good facsimile. Neatly restored contemporary vellum, ruled in blind and with large central arabesques on both boards, spine with faint hand-lettering. Endpapers renewed, engraved title reinforced at guard, occasionally a little soiled, paper carefully cleaned (leaves still crisp). Additionally bound in are two letters in facsimile not belonging to the work, by Hevelius to Petrus Gassendus and Ismael Bullialdus (1652) and to Laurentius Eichstadius (1650). (#002191) € 27,000

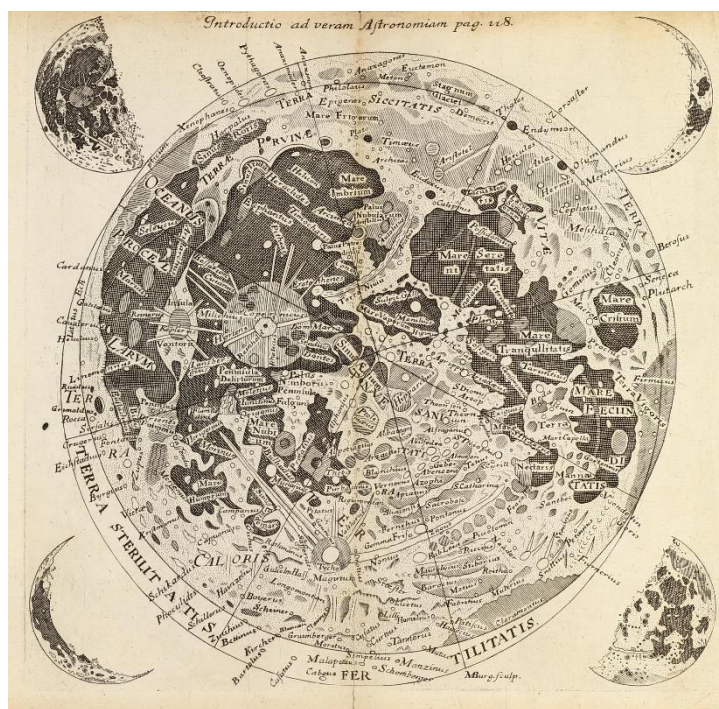
Ashworth, *The face of the moon*, Linda Hall 5; DSB VI, 360. Zinner, *Instrumente*, 381. Volkoff, *Hevelius*, 1-3. *Libri rari* 135. Roller-G. I, 538. Honeyman 1672: "The first complete lunar atlas." The *Selenographia*, printed in 1647, is perhaps Hevelius' most important work. "No finer book on the moon has ever been published. In scores of illustrations, drawn and engraved by the author himself, Hevelius tracked the moon through every phase of an entire lunar cycle, and then incorporated the information gained into three large moon maps. The best-known of these three introduced a complete lunar nomenclature--unsuccessfully, as it turned out (see item 7 for the successful nomenclature). But the two other maps, though less often reproduced, are much more splendid examples of lunar cartography. One shows the full moon as it actually appears through the telescope--that is, with no shadows. The other is uniformly (and artificially) shadowed to show the craters as they appear at mid-morning on the moon." (Ashworth).

Following the invention of the telescope earlier in the seventeenth century the moon, being the closest planet to earth and the one which could therefore be seen most clearly, had become a favourite object of study for many astronomers wishing to take full advantage of the potential for detailed observation offered by the new invention. In *Selenographia* Hevelius set about creating an authoritative atlas and study of the moon, derived from his own observations. The book contains 133 engraved plates, many of them depicting the moon and its phases. Hevelius assigns names to the geographical features observable on the moon's surface (seas, mountains, etc.) frequently borrowing the nomenclature of terrestrial geography; thus, there



is an island of Sicily (complete with a Mount Etna) and an island of Corsica, both in the Mediterranean Sea. A few of these names - the Alps, the Apennines and the Caucasus - are still used today in lunar topography, but on the whole Hevelius' nomenclature was supplanted later in the seventeenth century by that of Giovanni Battista Riccioli. Hevelius engraved all the plates himself, with great skill. The level of detail attained testifies both to the power of his telescopes and to his accuracy as an observer. Hevelius was renowned for his sharp eyesight; he could see stars of the seventh magnitude with his naked eye. *Selenographia* contains a number of depictions of the instruments constructed by Hevelius, of considerable interest to anyone studying the development of the telescope.

**30** [KEILL, John](#). *Introductio Ad Veram Astronomiam seu Lectiones Astronomicae Habitae in Schola Astronomica Academiae*. Oxford: Hen. Clements, 1718. 8vo (195 x 120 mm). [8], xv, [1], 495 [1] pp., engraved title vignette, 2 folding engraved plates of the moon, several woodcut diagrams in text. Contemporary panelled calf, rebacked (light wear to extremities), red-dyed edges, lacking the first free



endpaper. Text little browned throughout, occasional minor spotting, title trifle dust-soiled, a few leaves with neat annotations in ink, probably in Richard Watson's hand. Provenance: Richard Watson, Bishop of Llandaff (1739-1816) and Professor of Chemistry at Cambridge University (his "Calgarth Park" bookplate on front pastedown). (#003201) € 750

DSB VII, 275-76; Houzeau & Lancaster 9244; Wallis 103.17; Whitaker, p.89. FIRST EDITION of Keill's lectures as Savillian Professor of Astronomy at Oxford. "His work was later translated into English at the request of the Duchess of Chandos. Partly because of its skillful popularization and spirited defense of Newton in his priority dispute with Leibnitz, the English version was reprinted several times during the eighteenth century, well after Keill's own



death in 1721. It appears to have been a standard reference for students and educated lay people as late as 1750 and was translated into several European languages, including French, German, and Dutch ... Keill's book contained a simplified version of Hevelius' map P (with the Riccioli/Grimaldi nomenclature imposed upon it). Keill added to it a new name, Flamsteedus, located in the southwest quadrant. This was apparently done while John Flamsteed ... was still alive." (Scott L. Montgomery, *The Moon & the Western Imagination*, p.206)

**31** **KIRCHER, Athanasius (Gaspar Schott, editor).** *Iter extaticum coeleste, Quo Mundi opificium, id est, Coelestis Expansi, siderumque tam errantium, quam fixorum natura, vires, proprietates, singulorumque compositio & structura, ab infimo Telluris globo, usque ad ultima Mundi confinia,*

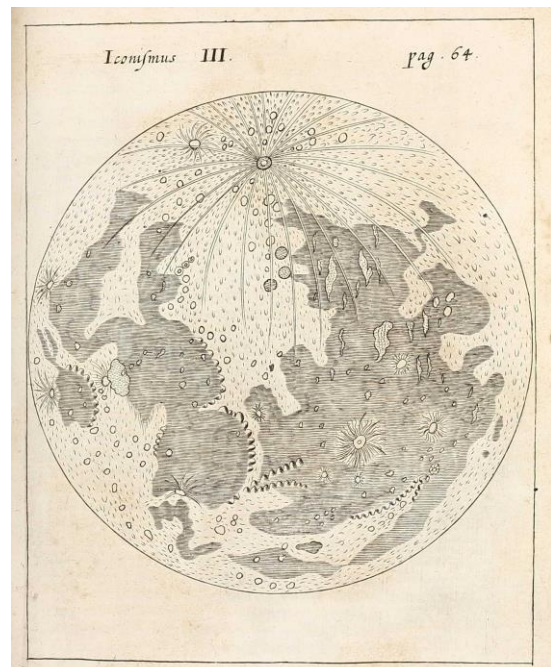


*per ficti raptus integumentum explorata, novâ hypothesi exponitur ad veritatem, interlocutoribus Cosmiele et Theodidacto.* Würzburg: heirs of J.A. & Wolfgang Endter, 1660. 4to (201 x 157mm). [24], 689, [18] pp., engraved title, full page engraved coat of arms and 12 engraved plates. Contemporary vellum (stained, with worming). Blue color cut. First pages with slight worming affecting some letters, virtually no browning or foxing. Internally a crisp copy printed on strong paper. (#002115) € 3,500

Merrill 12 & 14; Caillet 5775; De Backer-Sommervogel IV, 1056-57.14 - Second edition, enlarged and edited by the author's friend and disciple, Gaspar Schott. The first edition of 1656 did not contain any illustrations. This is one of Kircher's most curious works in which a certain Theodidactus, a personification of Kircher himself, has a dream of a journey through the heavens guided by the angel Cosmiel. In the first dialogue Kircher tells of a journey to the moon, which he finds full of mountains and craters. He continues on to Venus, and then on to each of the other planets and to the region of the fixed stars. The sun has blemishes,

he announces. He himself had seen sunspots through his telescope some years earlier. Kircher rejected the Aristotelian and Ptolemaic cosmologies for that of Tycho Brahe, who had argued that the sun orbits the earth and is in turn orbited by the planets and the fixed stars. This system was adopted "by most of Kircher's fellow Jesuits, since it allowed them to maintain geocentric orthodoxy while espousing, at least in part, the new, more scientific heliocentricity advocated by the Copernicans" (Merrill).

The engraved lunar map facing p. 64 is a reproduction in reduced scale of Schyrleus da Rheita's map of 1645.

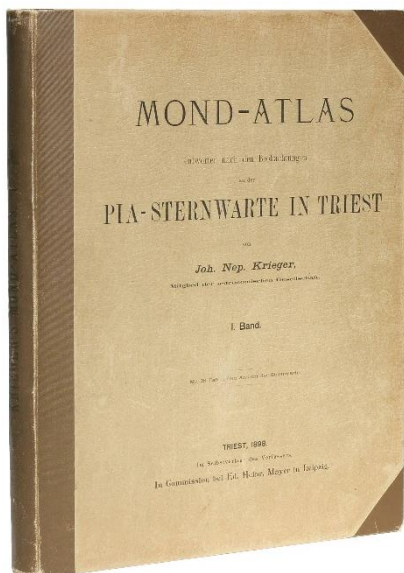


*Author's presentation copy*

**32** [KOSOFKY, L.J. & EL-BAZ, Farouk](#). *The Moon as viewed by Lunar Orbiter*. NASA SP-200, Washington, D.C.: NASA, 1970. Folio format. 152 pp. Several b&w and one colored photographic illustrations throughout. Original gilt-lettered green cloth (light rubbing of spine and boards). Presentation copy, inscribed and signed by El-Baz on title-page ("To Bill Muehlberger / With compliments / Farouk ElBaz"). Fine copy. (#002192) € 600

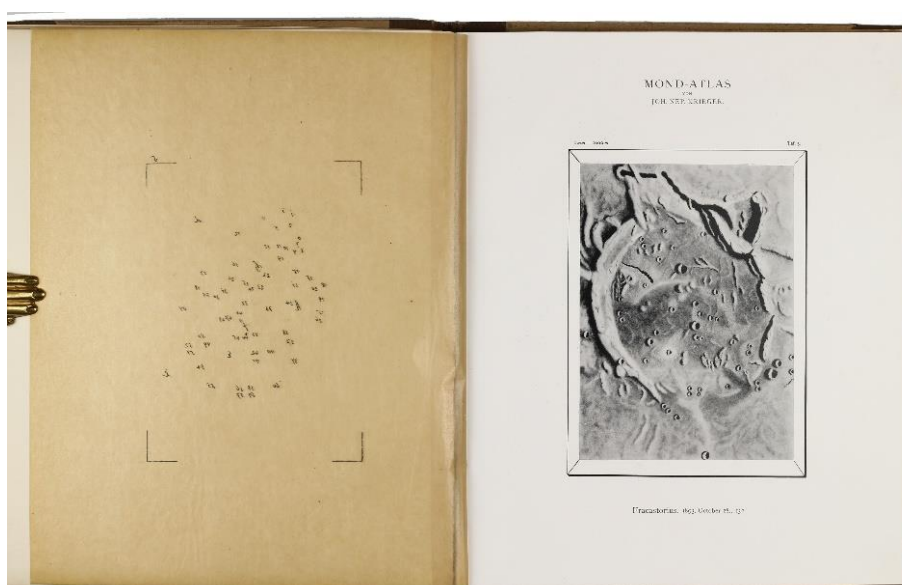
Ashworth, *The face of the moon*, Linda Hall 43. "The five Lunar Orbiter missions flown in 1966-67 were in their own way as amazing and successful as the later Apollo missions. Each spacecraft took actual photographs on a continuous reel of film; the film was then developed on board, and scanned with a special photoelectric system. These signals were transmitted to earth, where the photographs were reconstructed. The Orbiter missions were designed to photograph all possible Apollo landing sites, but this goal was accomplished by the third mission, so Orbiter IV was devoted to photographing the entire lunar near side, thus making possible a photographic lunar atlas of unprecedented quality, while Orbiter V photographed selected features of special interest." (Ashworth).

**33** [KRIEGER, Johann Nepomuk](#). *Mond-Atlas, entworfen nach den Beobachtungen an der Pia-Sternwarte in Triest*. Privately Printed. Triest, 1898. 4to (315 x 257 mm), with photogravure of Krieger's observatory and 28 photolithographed plates, each with a transparent key overlay. Original three-quarter cloth with publishers printed boards. Only very little soiling and age-toning, overlay tissue guards browned as usual, inner hinges starting. A fine copy. (#002173) € 1,500

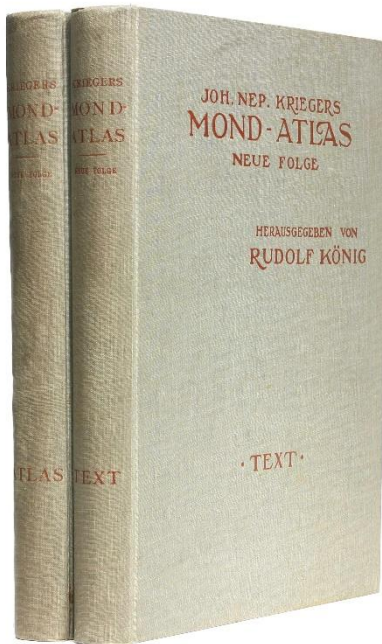


Ashworth, *The face of the moon*, Linda Hall 27 (ref.) - FIRST EDITION. Krieger (1856-1902) 'was a gifted draftsman, but he realized that it make little sense to spend time drawing features that the camera could record. So he had the brilliant idea of adding the finer details by hand at the telescope. The resulting maps of selected craters were not equaled until the U.S. Air Force began issuing its own series of photobase lunar charts in the 1960s. 'Krieger published the first volume of his drawings in 1898; it contained twenty-eight plates. Due to overwork, his health broke shortly thereafter, and he died before the contemplated second volume could be issued. His manuscripts were taken over by Rudolf König, and the remaining drawings were finally published in 1912. 'The posthumous publication contains one of the most impressive drawings of the crater Gassendi ever made. Gassendi has always been a

favorite object for observers, because of the intricate rill system on the crater floor' (Ashworth).

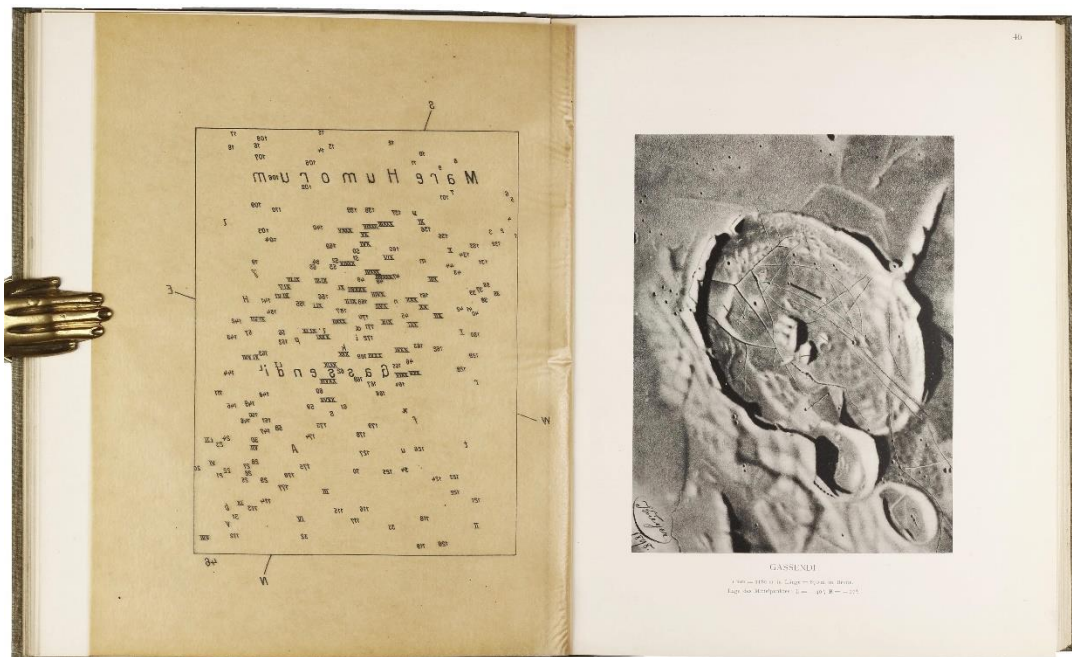


**34** [\[KRIEGER, Johann Nepomuk\] KÖNIG, R.](#) *Joh. Nep. Krieger's Mond-Atlas, nach seinen an der Pia-Sternwarte in Triest angestellten Beobachtungen unter Zugrundelegung der hinterlassenen Zeichnungen und Skizzen.* Wien und Leipzig: E.H. Mayer. 1912. Two parts in two volumes (text and atlas). 4to (310 x 254 mm). Text volume: xviii, 376 pp., frontispiece portrait of Krieger in heliogravure, 5 full-page photographic illustrations of which 2 with associated tissue-paper key overlay, 26 smaller photographic illustrations in text. Plate volume: [8] pp., 58 photographic plates, numbered 29 to 86, each with associated key overlay, and one folding map. Original publisher's cloth, spine and upper board lettered in red (very light spotting to boards), original green endpapers. Text and plates clean and bright, tissue-paper overlays browned as usual. An exceptionally well preserved set of this rare lunar atlas. (#003123) € 2,600



Ashworth, *The face of the moon*, Linda Hall 27; NDB 13, 44 - THE RARE FIRST ENLARGED EDITION. "Krieger was a gifted draftsman, but he realized that it made little sense to spend time drawing features that the camera could record. So he had the brilliant idea of starting with a low-contrast photograph as a base and adding the finer details by hand at the telescope. The resulting maps of selected craters were not equaled until the U.S. Air Force began issuing its own series of photobase lunar charts

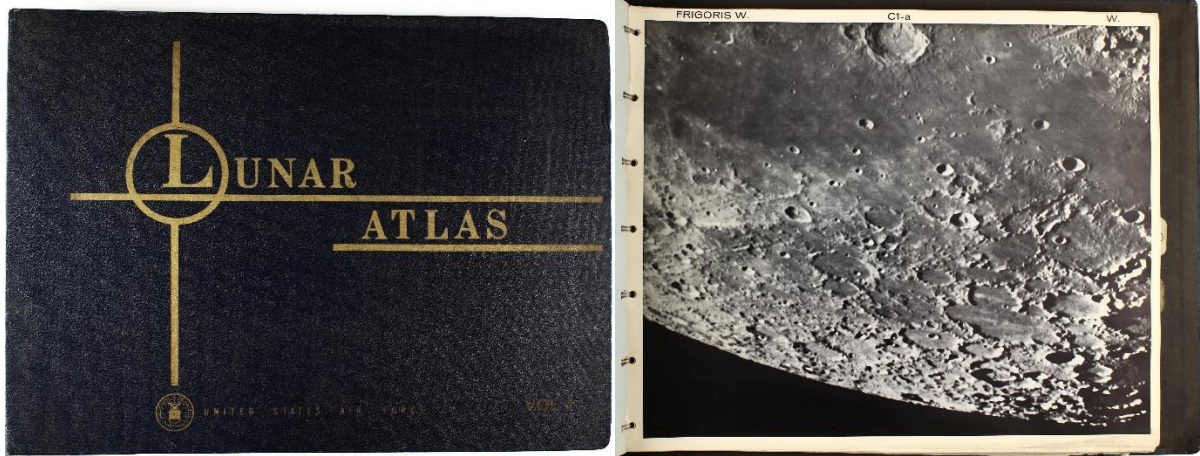
in the 1960's. Krieger published the first volume of his drawings in 1898; it contained 28 plates. Due to overwork, his health broke shortly thereafter, and he died before the contemplated second volume could be issued. His manuscripts were taken over by Rudolf König, and the remaining drawings were finally published in 1912." (Ashworth 27). This new atlas is much rarer than the original 1898 publication.



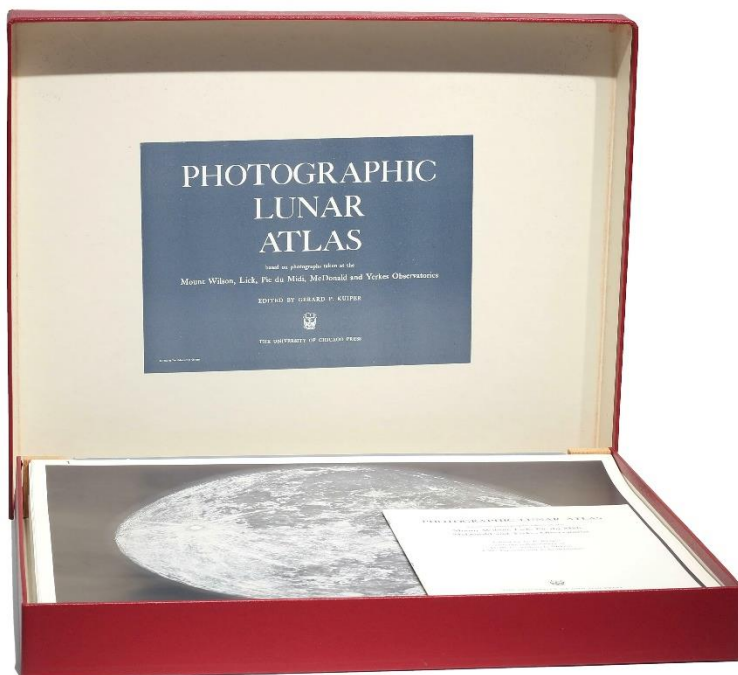
**35** [KUIPER, Gerard P.; WHITAKER, Ewan A.; STROM, Robert G.; FOUNTAIN, John W.; and LARSON, Stephen M.](#) *Photographic Lunar Atlas Based on Photographs Taken at the Mount Wilson, Lick, Pic du Midi, McDonald and Yerkes Observatories.* Nat. Sci. Foundation (Contract AF-19(604)-3873). Vol. 1 [on ring-binder]. St. Louis: Aeronautical Chart and Information Center, February 1960. Oblong folio (430 x 532 mm). Pictorial title, 228 monochrome photographed plates of the moon's surface (title creased, one plate detached, some fraying to last few plates). Original ring-binder (a bit soiled). (#002273) € 3,000

Ashworth, *The face of the moon*, Linda Hall 38 (civil edition only). - VERY RARE TRUE FIRST EDITION (the military edition was published prior to the civil edition of the University of Chicago Press). "The last great photographic

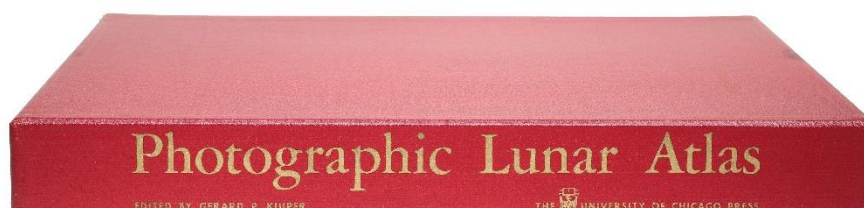
lunar atlas based on images recorded from earth was undertaken by Gerard Kuiper and a number of colleagues, most notably Ewen Whitaker, in 1955. The atlas utilized photographs from five observatory collections--Mount Wilson, Lick, Pic du Midi, McDonald, and Yerkes--supplemented as necessary by new ones. The complete atlas has 281 photographs, covering 44 fields under different angles of illumination. The photographs in the main body of the atlas are printed four to a sheet, and folded, so that they might be used at the telescope" (Ashworth).



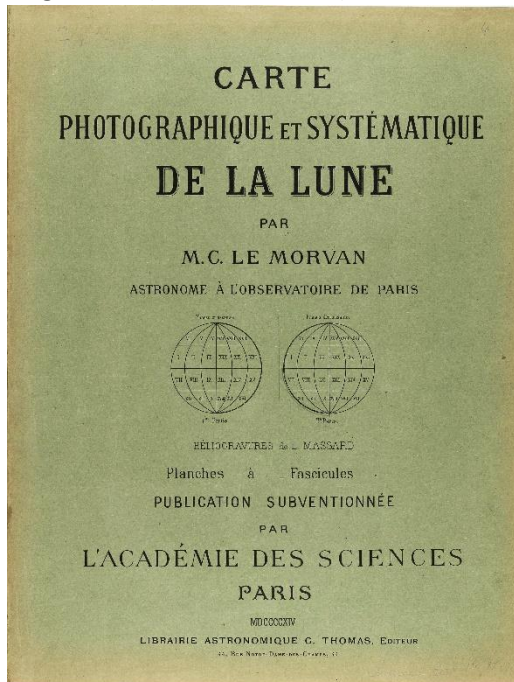
**36** [KUIPER Gerard P.; Arthur, D. W. G.; Moore, E.; Tapscott, J. W.; and Whitaker, E. A.](#) *Photographic Lunar Atlas Based on Photographs Taken at the Mount Wilson, Lick, Pic du Midi, McDonald and Yerkes Observatories*. Chicago: University of Chicago Press, [1960]. Text booklet (23pp.), numerous photographs and maps on a total of 232 sheets, together loose in original red rexine box (55 x 45 x 6 cm). Complete and very clean copy. (#002194) € 1,200



Ashworth, *The face of the moon*, Linda Hall 38. - FIRST EDITION. "The last great photographic lunar atlas based on images recorded from earth was undertaken by Gerard Kuiper and a number of colleagues, most notably Ewen Whitaker, in 1955. The atlas utilized photographs from five observatory collections - Mount Wilson, Lick, Pic du Midi, McDonald, and Yerkes - supplemented as necessary by new ones. The complete atlas has 281 photographs, covering 44 fields under different angles of illumination. The photographs in the main body of the atlas are printed four to a sheet, and folded, so that they might be used at the telescope" (Ashworth).



37 [LE MORVAN, Charles](#). *Carte photographique et systématique de la Lune*. Paris: Librairie astronomique G. Thomas [Publication subventionnée par l'Académie des sciences de Paris], 1914. Large folio (505 x 385 mm). 6 fascicles comprising 48 photographic plates in heliogravures by L.

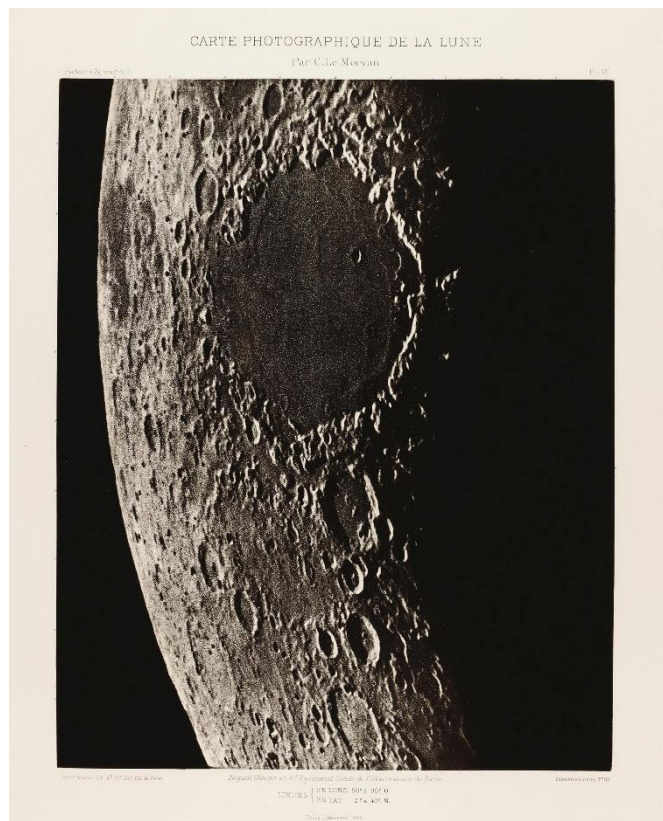


Massard after the photographs by the author, taken at the Observatoire de Paris between 1902 and 1907. The plates are numbered I to XXIV and I-A to XXIV-A. The size of the heliogravure area is 320 x 255 mm. Each of plates I to XXIV with original transparent tissue key overlay with outlines and captions of lunar features, the remaining plates with tissue guards only, partly with outlines drawn by hand in pencil. The plates loose as issued in the printed fascicle wrappers. The wrappers partly split at folds and repaired. A few plates chipped, a few plates little soiled or tanned at margins. Accompanied by a text volume: *Description sommaire et coordonnées rectilignes des principales formations représentées sur les planches*, 4to (312 x 240 mm), iv, 66, 14 pp. Text volume in original printed wrappers, little browned throughout. Plates and text volume housed in a custom-made clamshell box. Altogether an outstanding, unsophisticated copy, complete with the text volume. (#002257) € 22,500

In his *photographic and systematic Map of the Moon*, the astronomer Charles Le Morvan (1865-1933) reused the original clichés of the *l'Atlas photographique de la Lune* by Maurice Loewy (1833-1907) and Pierre Puiseux (1855-1928), first published between 1896 and 1910 by the Paris Observatory. Le Morvan already participated in the production of the Loewy/Puiseux Atlas with own lunar observations and the preparation of glass clichés, especially after the death of Loewy in October 1907. "Le Morvan joined the staff of the Paris Observatory in 1890, where he spent his entire working life. In 1914 Morvan edited the *Carte Photographique de la Lune* which contained copies of photographs taken from the *Atlas Photographique de la Lune*. The finance for this work had come from a grant of 4000 francs from the Bonaparte Fund of the Paris Academy of Sciences." (S. Hughes, *Cathers of the Light*, 2012, p.188).

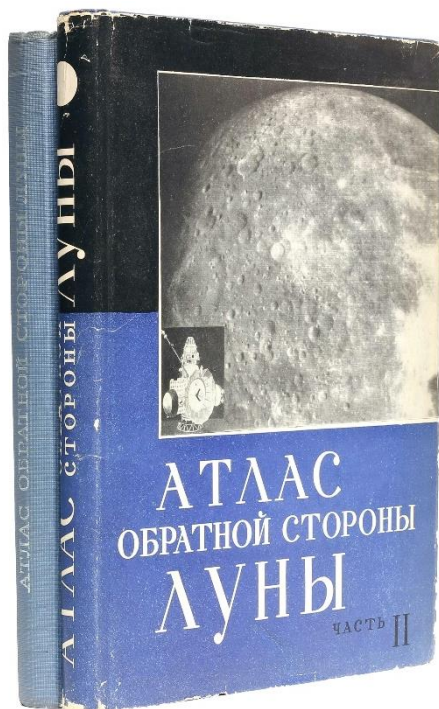
Complete sets of this work are rare. Linda Hall Library in Kansas City has the full copy of the 48 sheets, the University of Arizona in Tucson only has the first 24 sheets, the Paris Observatory has the entire book, the Universidade de Sao Paulo, and the Universiteit Utrecht, unspecified for the last two.

A supplement, published in 1926 and which contained 6 plates of the lunar disk at different times (first quarter, full moon, etc.) at a smaller scale, is not included here.



**The first atlas with images showing the far side of the moon**

**38** [LIPSKY, Yuri N., BARABASHOV, N.P., MIKHAILOV, A.A., editors](#). *Atlas obratnoy storony luny*. (Atlas of the rear side of the moon). Moscow: Nauka, 1960-1967. 2 volumes. 4to (298 x 225 mm). 149; 235, [1] pp. 1 loosely inserted folding map, 30 photographic illustrations of the moon on folding plates, 3 other folding plates, numerous illustrations and tables. Original publisher's blindstamped cloth, the second volume with the original dust-wrappers (light chipping and fraying to edges), the first with simple paper wrappers. (#002196) € 1,500



The first vol. contains photographic material taken by the "Luna-3" space-station in 1959. In 1967, the second vol. was published containing material provided by the "Zond-3" space-station in 1965. Rare. First publishing of photographs of the "dark" side of the moon from Luna 3 and Zond 3 probes. Volume 1, dated 1960 on the title page and 1961 on the colophon, was published in an edition of 5000+ copies, with 30 photoreproductions and many tables. Volume 2 is in an edition of 3000 copies, dated 1967 on title page and colophon. Lipskiy, chief Lunar and Planetary Laboratory, Sternberg Astronomical Institute, Moscow B-234, U.S.S.R./C.C.P." The volumes had printings sufficient for scientific and government institutions in the USSR but apparently few have been available in the West; it was translated and printed in English by Pergamon Press in 1961.

**39** [LOEWY, Maurice & PUISEUX, Henri](#). *Photographie Lunaire, Guttemberg - Mer de la Tranquillité - Pline, 1899 Février 16*. Plate XXXII from *Atlas Photographique de la Lune, 1896-1910*. Photogravure printed for Loewy et Puiseux, Observatoire de Paris, by J. Heuse, Paris. 1 sheet, image size 560 x 464 mm (total size 813 x 610 mm). A clean and bright copy with just a very little marginal dust-soiling. (#002259) € 2,500



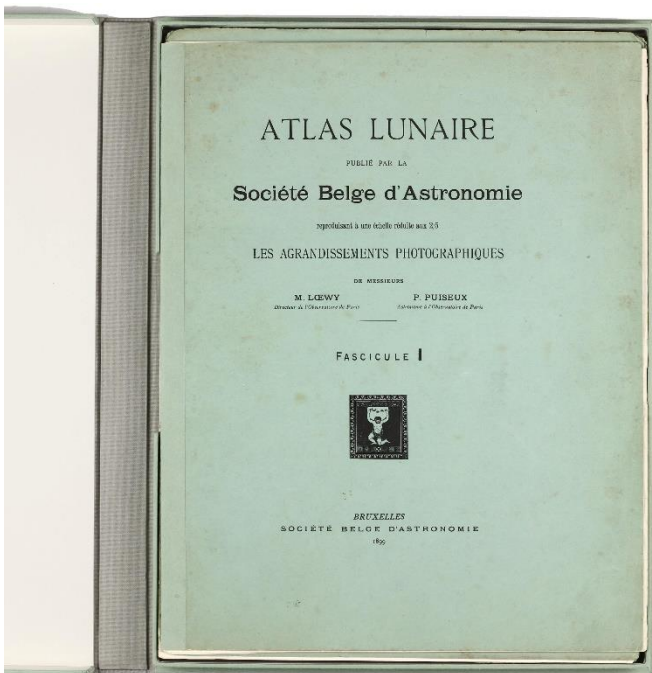
Original sheet from the famous Loewy-Puiseux Atlas of the Moon. It depicts the Mare Tranquillitatis (See of Tranquility), the landing site of Apollo 11, the first manned landing on the Moon on July 20, 1969. This Mare was named in 1651 by astronomers Francesco Grimaldi and Giovanni Battista Riccioli in their lunar map published in Riccioli's *Almagestum novum*.

The Loewy-Puiseux Atlas of the Moon is 'the ultimate achievement of nineteenth-century astronomical photography' which can be regarded, along with Muybridge's *Animal Locomotion* (1887) and Edward S. Curtis's *The North American Indian* (1907-30) as 'one of the great photographic publishing ventures ... the individual photogravure plates, amongst the largest and finest ever made, are prized by collectors for their sheer aesthetic beauty' (The Photobook). It was only in the 1970s that images substantially better than those of Loewy and Puiseux were obtained. Because perfect weather conditions were needed, the project took 14 years to complete. During this period only 50 or 60 nights per year exhibited the ideal weather conditions, and from those nights suitable for photography only 4 or 5 usable negatives would be produced.

**A fine and unsophisticated set of the exceptionally rare reduced-format atlas**

**40** **LOEWY, Maurice & PUISEUX, Henri.** *Atlas lunaire; reproduisant à une échelle réduite aux 2/5 les agrandissements photographiques; Atlas photographique de la lune.* Bruxelles: Société Royale Belge d'Astronomie, de Météorologie et de Physique du Globe, 1899. Fascicule 1-12 (all published). Folio (330 x 250 mm). Folding title sheet and 71 half-tone prints after photographs by Loewy and Puisseux. Each photographic plate accompanied by a printed overlay, with principal features named and highlighted. 12 fascicles in original green printed wrappers, preserved in clamshell box. Little age-toning to overlays, occasional very minor spotting of plates, most wrappers split at fold ends but holding (split fold of wrapper to fasc. 1 repaired with tape), short closed tear to plate XXXI overlay, wrapper to fasc. 12 creased, with closed tear (residue of former tape) and torn lower corner at fold. An outstanding copy in unusual fine condition. (#002122) € 45,000

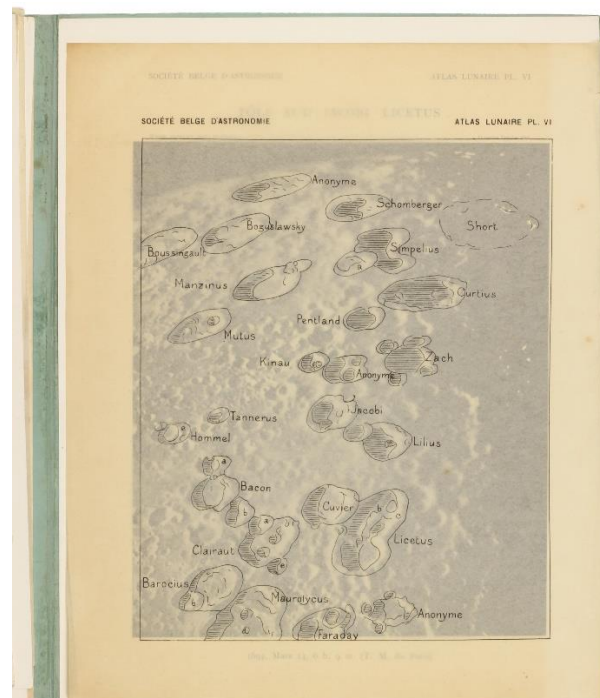
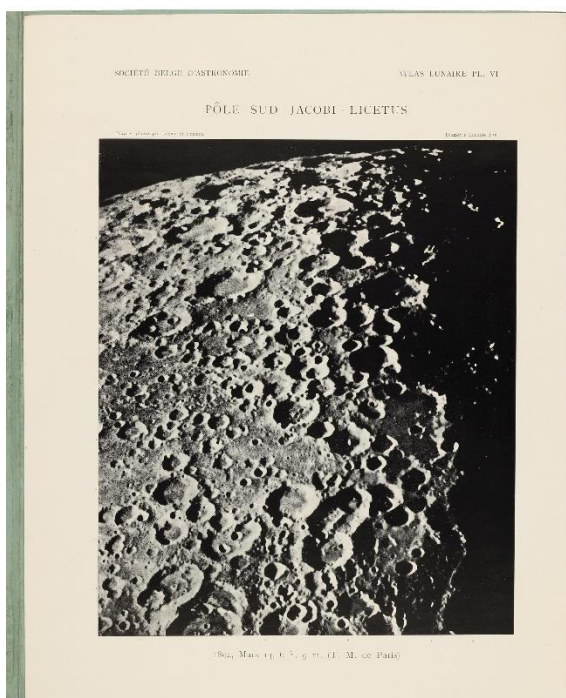
THE RARE REDUCED-FORMAT EDITION, REPRODUCING ALL OF LOEWY AND PUISEUX'S FAMOUS PHOTOGRAPHS at a more portable 2/5 scale, and issued in parts at roughly the same time as the first edition of 1896-1910. Loewy



and Puisseux's was the first large-scale photographic atlas of the moon, and "the ultimate achievement of nineteenth-century astronomical photography" (The Photobook). It was only in the 1960s that images substantially better than those of Loewy and Puisseux were obtained (NASA's Lunar Ranger missions). Because perfect weather conditions were needed, the project took 14 years to complete. During this period only 50 or 60 nights per year exhibited the ideal weather conditions, and from those nights only 4 or 5 usable negatives could be produced. Like the large-format edition, this edition comprises 71 plates (The Photobook I, pp. 54-55).

Exceedingly rare (much rarer than the large-format edition) especially as with the original printed wrappers. Copies catalogued on OCLC/WorldCat appear to be mostly incomplete, with between 35 and 65 plates only. Only 3 libraries could be identified holding complete copies (Paris Observatory, Linda Hall Library, and Univ. Ramon Lull, Spain). One copy only of this edition appear to have come on the market in the past 50 years (bound

up, heavily trimmed and lacking most original wrappers as well as the two text leaves; Bonhams sale 2013).



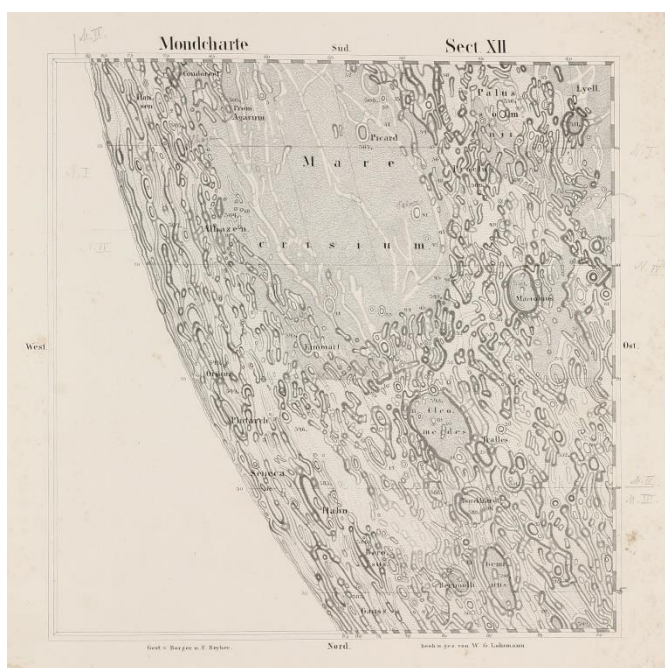
**41** [LOHRMANN, Wilhelm Gotthelf](#). *Topographie der sichtbaren Mondoberflaeche. Erste Abteilung. Mit VI Kupfertafeln. Auf Kosten des Verfassers* [All published]. Dresden bei demselben; Leipzig bei Joh. Friedr. Hartknoch, 1824. 4to (285 x 244 mm). [12], 110, [2], xviii, [2] pp., including half title, 2 engraved plates and 4 lunar charts. Contemporary half cloth over marbled boards with the original printed wrappers laid down (extremities worn, corners scuffed, spine with traces of former shelf labels, binding soiled). Minor foxing to title-page and text, little marginal browning. A very good and wide-margined copy. (#002610) € 1,500

Ashworth, *The face of the moon*, Linda Hall, 15 - Lohrmann was a professional cartographer and surveyor who undertook a lunar map based on his own micrometric measurements. Using a small Fraunhofer refractor, he determined the exact position of a number of control points on the moon, from which the positions of all other lunar features could be determined. He divided his map into 25 sections, and in 1824 he published the first four of these sections, along with an explanation of his methods. Although he worked for sixteen more years, and finished drawing all the sections, Lohrmann never did publish the remainder of the atlas. Fortunately, his great successor Julius Schmidt undertook to have the drawings engraved, and the complete Lohrmann atlas finally saw the light in 1878.



**42** [LOHRMANN, Wilhelm Gotthelf](#). *Mondcharte in 25 Sectionen und 2 Erläuterungstafeln*, edited by J.F. Julius Schmidt. Leipzig: Johann Ambrosius Barth, 1878. Folio (315 x 263 mm). Dedication, half title, engraved portrait frontispiece, 25 engraved section maps of the moon after W.G. Lohrmann and 2 explanatory plates. Contemporary half leather (rebacked and recorned preserving part of original gilt-lettered spine, front free endpaper starting). Some light mostly marginal foxing throughout, light waterstain in lower margin of most maps, title page and portrait a bit spotted. Provenance: Dr. R. Engelmann (astronomer, inscription dated August 1878 on endpaper) - some annotations in pencil (possibly by R. Engelmann) - British Astronomical Association (stamps on endpaper and title). (#002198) € 5,500

Ashworth, *The face of the moon*, Linda Hall, 23 (1892 reissue) - VERY RARE FIRST EDITION. Lohrmann completed the drawings for all 25 sections of his moon map by 1836, but he died before he could secure their publication. In 1851 Lohrmann's publisher, J.A. Barth, asked Julius Schmidt if he would edit the remaining sections. Schmidt agreed, but it took him almost 30 years to complete the task. The first four sections, which had been published in 1824, were re-engraved, and, as they are virtually identical to the originals, we may conclude that the remaining sections are faithful to Lohrmann's intentions. Schmidt's edition of Lohrmann's map was finally published in 1878" (Ashworth). "One of the most attractive features of Lohrmann's maps is the use of multiple levels of shading to indicate light and dark areas of the moon ... Schmidt did depart from Lohrmann in the nomenclature used on the map. Many additional



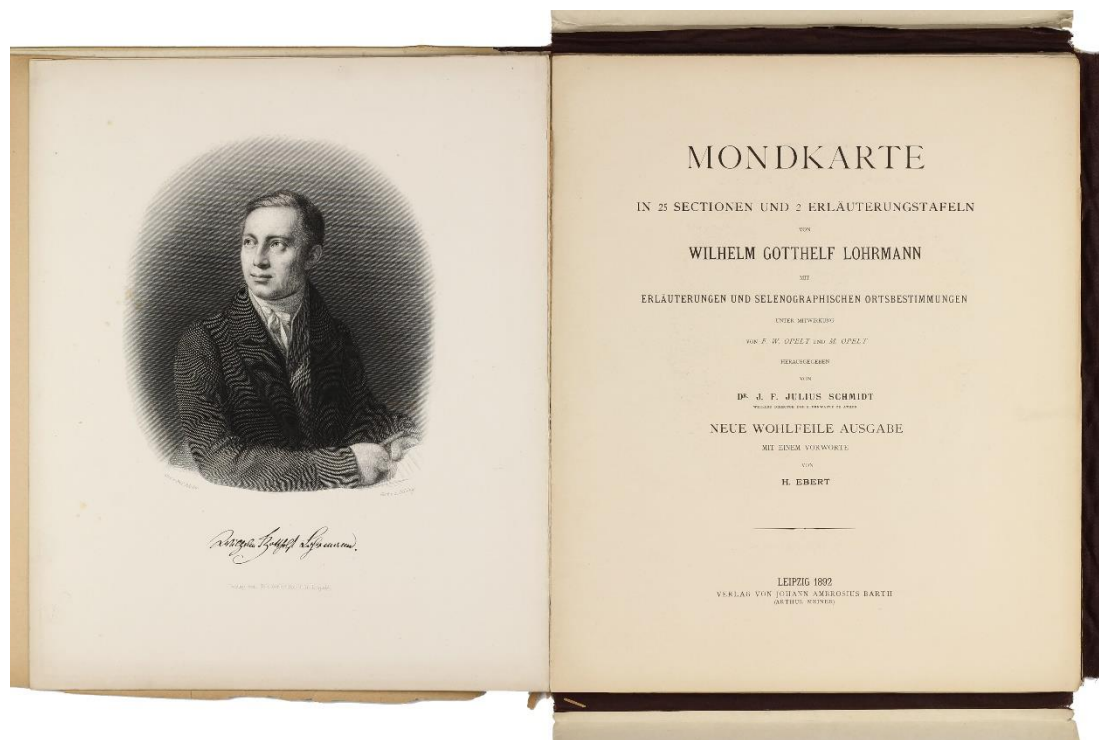


features had been named in the fifty years since Lohrmann worked, by Mädler, Schmidt, and Birt, and Schmidt thought it proper to incorporate these changes" (Ashworth). "Here we find, for the first time in lunar maps, the use of hachures to indicate the length and steepness of the slopes of the various features. This technique had ... the drawbacks of being extremely labour intensive and, ideally, requiring an artistic engraver who was sensitive to the telescopic appearance of the lunar surface. Variations in surface reflectivity are indicated by carefully applied stippling. South is up, thus following Schröter's convention" (Whitaker, *Mapping and Naming the Moon* p. 116).

***Includes Lehnert's Erklärungsblatt***

**43** **LOHRMANN, Wilhelm Gotthelf**. *Mondkarte in 25 Sectionen und 2 Erläuterungstafeln. Herausgegeben von Dr. J.F.Julius Schmidt. Neue wohlfeile Ausgabe. Mit einem Vorwort von H. Ebert.* Leipzig: Verlag von Johann Ambrosius Barth (Arthur Meiner), 1892. 4to (331 x 275 mm). viii, 49 [1], 4 pp. including original publisher's printed wrapper to text volume (front wrapper chipped at outer edges due to some brittleness of paper and separated at fold, first leaves detached), 2 explanatory plates (A and B) and 25 engraved plates of lunar map sections, all in loose sheets in original publisher's folder with printed front board over cloth, original ties (dust soiling of boards, shipping and dog-earing of flaps, wear to corners, cloth at spine frayed and partially split). Plates little browned at margins only, otherwise clean and bright. [Attached:] **LEHNERT, Rudolf**. *Erklärungsblatt zu W. G. Lohrmanns Übersichtskarte des Mondes*. Leipzig: Johann Ambrosius Barth, 1910. pp. IX-XII (All published). Original publisher's printed wrappers. A very good, unsophisticated copy. The sheets have the engravings vertically aligned. (#002693) € 2,200

Ashworth, *The face of the moon*, Linda Hall 23; Whitaker, p.116. - Reissue of the 1878 edition. Lohrmann completed the drawings for all 25 sections of his moon map by 1836, but he died before he could secure their publication. In 1851 Lohrmann's publisher, J.A. Barth, asked Julius Schmidt if he would edit the remaining sections. Schmidt agreed, but it took him almost 30 years to complete the task. The first four sections, which had been published in 1824, were re-engraved, and, as they are virtually identical to the originals, we may conclude that the remaining sections are faithful to Lohrmann's intentions. Schmidt's edition of Lohrmann's map was finally published in 1878 and reissued in 1892. (Ashworth, 23).



"One of the most attractive features of Lohrmann's maps is the use of multiple levels of shading to indicate light and dark areas of the moon ... Schmidt did depart from Lohrmann in the nomenclature used on the map. Many additional features had been named in the fifty years since Lohrmann worked, by Mädler, Schmidt, and Birt, and Schmidt thought it proper to incorporate these changes" (Ashworth). "Here we find, for the first time in lunar

maps, the use of hachures to indicate the length and steepness of the slopes of the various features. This technique had... the drawbacks of being extremely labour intensive and, ideally, requiring an artistic engraver who was sensitive to the telescopic appearance of the lunar surface. Variations in surface reflectivity are indicated by carefully applied stippling. South is up, thus following Schröter's convention" (Whitaker, *Mapping and Naming the Moon*, p. 116).

**44** [LOHRMANN, Wilhelm Gotthelf](#). *Mondkarte in 25 Sektionen von Wilhelm Gotthelf Lohrmann mit einer Beschreibung der einzelnen Karten von Dr. J. F. Julius Schmidt. Zweite Auflage bearbeitet von Dr. Paul Ahnert, Sternwarte Sonneberg*. Leipzig: Johann Ambrosius Barth Verlag, 1963. 4to (336 x 278 mm). Text volume: 30, [2] pp. including portrait frontispiece and final leaf of publishers ads. Original publisher's printed wrappers. 25 collotype plates after engravings of lunar map sections, all in loose sheets in original publisher's folder with printed front board over cloth (very light soiling of boards and spine). First plate creased at left upper corner, text and plates otherwise clean and bright. Fine copy. (#002656) € 700

Ashworth, *The face of the moon*, Linda Hall 23; Whitaker, p.116. - Second reissue of the 1878 edition.

**The following 4 items are from the collection of British Astronomer Patrick MOORE**

**45** [LUNAR IMAGE](#). *The World's largest ground-based lunar image mosaic, 4th April 2009*. Sheet size 608 x 507 mm, under photo mount. Signed in the image by the members of the team. This Photographic print was presented to Sir Patrick Moore by the team members on the occasion of the Guinness World Records presentation event, which was hosted at his home on July 11, 2009. (#003191) € 3,800

An ambitious plan by a group of British based amateur astronomers was devised to create the largest lunar mosaic image ever taken by ground-based telescopes. Using amateur equipment, a team of world's foremost astro imagers gathered at the home of Sir Patrick Moore in April 2009. It was agreed to use a range of 9.25" to



14" Schmidt-Cassegrain telescopes for this task, working at 5.5 - 7.8 m focal length, in combination with HFR planetary imaging cameras. The 9-day old Moon was ideally placed for the attempt during the first week in April. Each of the eight team members was assigned one unique segment to capture with an approximate overlap of 25% for each sector to ensure full coverage of the entire area. Two further team members imaged the entire Moon at 2.3 - 3.0 m focal length to ensure that if any small gaps were missed, these areas could be filled in using the lower resolution data.

Sir Patrick Moore had been instrumental in mapping the Moon for both the Russian and American space efforts, during the Apollo era in the early to mid 1960s. The team requested that the attempt be made from his grounds in Selsey, further adding to the excitement being generated for this audacious plan. Sir Patrick generously accepted, and was hugely supportive of the project from the outset. In February, once the plan was agreed, Guinness World Records were contacted, and a claim for the attempt lodged on their website. Guinness took several weeks to

research our proposal, before replying that the record attempt was valid, and our criteria would satisfy the record book entry. They also indicated that not only would it be the largest mosaic image of its type taken by amateurs, but would also eclipse any taken by a ground-based professional observatory... The 4th April was a Saturday evening, thus not clashing with team work commitments, and the 9.2-day old Moon was nice and high at over

50 degrees altitude. Many of the participants had previously done large lunar mosaics, but none at this high a magnification or to this size and scale. (Online resource: [lunarworldrecord-org](http://lunarworldrecord-org))

- 46** [LUNAR PHOTOGRAPH](#). *Full moon*. Image size 420 x 450 mm (with stripes of background sky attached at left and right side), all mounted on card board. Silk photopaper. Creator unknown and unsigned. Provenance: British astronomer Patrick Moore. (#003192) € 900



- 47** [LUNAR PHOTOGRAPH](#). *Lunar landscape near the terminator*. Mosaic of four sections, approx. size 340 x 820 mm, framed under glass and photo mount. Silk photopaper. Creator: B. A. Käfig(?), signed in pencil on photo mount. Near pristine condition of photograph with no visible scratches. Provenance: British astronomer Patrick Moore. (#003193) € 4,500

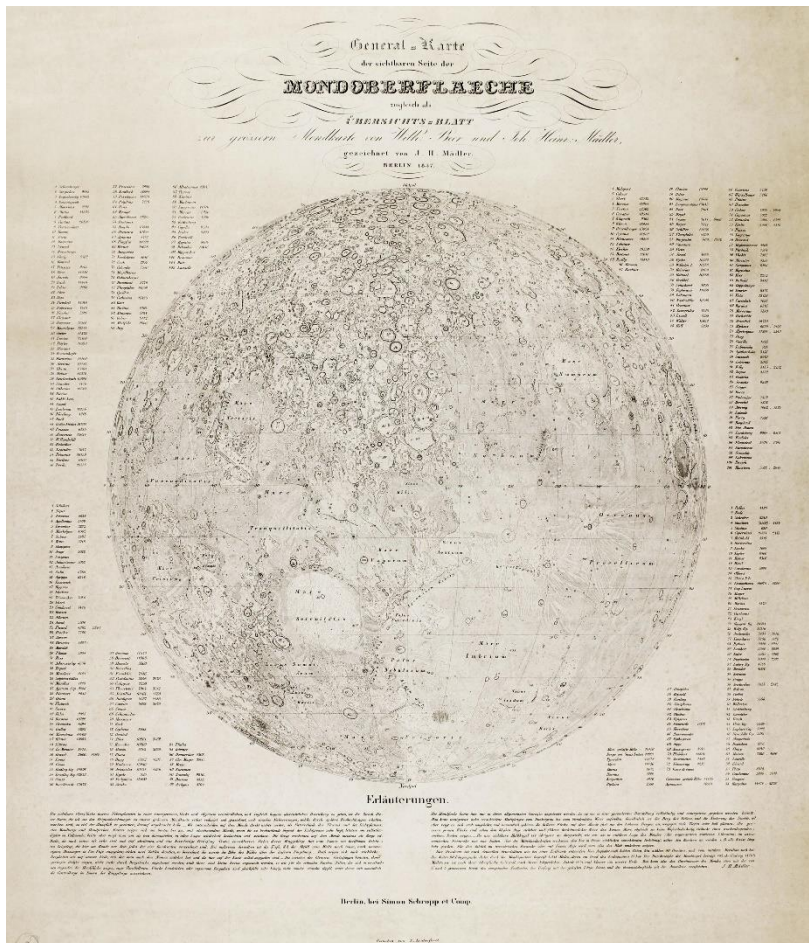
Shown on this Earth-based telescopic image are the prominent craters Ptolemaeus, Alphonsus, Arzachel and Purbach near the evening terminator and close to the center of the Moon. Stunning, high-resolution image.



**48** **LUNAR PHOTOGRAPH.** *Mare Orientale, view from the far-side of the moon in W direction.* Image 11-401/3.15 N00992, taken with Soviet Zond 8 spacecraft on October 24, 1970. Sheet size 300 x 400 mm. Glossy photopaper under grey photo mount. A few light creases. Provenance: British astronomer Patrick Moore. (#003194) € 1,200



**49** **MÄDLER, Johann Heinrich.** *General-Karte der sichtbaren Seite der Mondoberflaeche, zugleich als Übersichts-Blatt zur grösseren Mondkarte / von Wilh. Beer und Joh. Heinr. Mädler; gezeichnet von J. H. Mädler.* Berlin: Simon Schropp u. Comp., 1837. 1 engraved map, 540 x 450 mm, faint spotting and pale browning, a few minor handling creases at sheet edges, a small loss to upper right sheet corner, not affecting map or text. (#002124) € 3,500

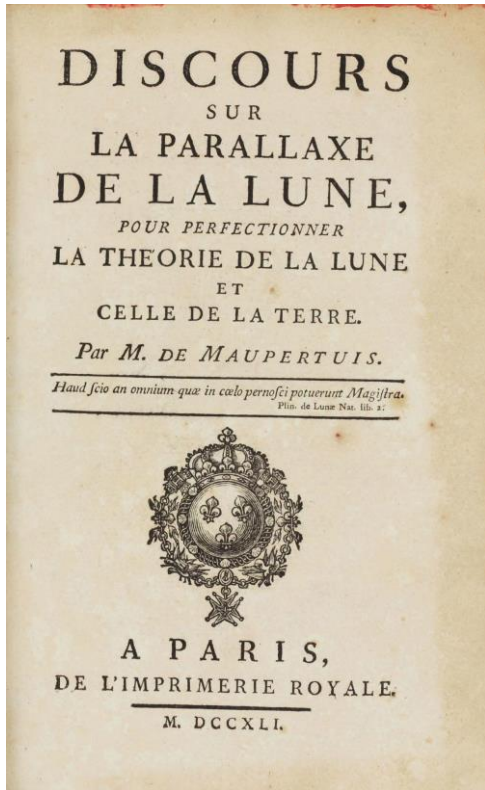


*J. H. Mädler.* Berlin: Simon Schropp u. Comp., 1837. 1 engraved map, 540 x 450 mm, faint spotting and pale browning, a few minor handling creases at sheet edges, a small loss to upper right sheet corner, not affecting map or text. (#002124) € 3,500

Whitaker, *Mapping and Naming the Moon*, p.142-43. VERY RARE FIRST EDITION. Separately published map of the moon, with extensive key to either side and text panel below. "Mädler's excellent smaller map (1837) with 368 numbered features, and many measured heights and depths ... with a scale of one-third that of the large map, about 12.5 inches diameter. This was used as a basis for several grossly inferior outline maps, such as that by Birt" (Whitaker, p.142). A full-page reproduction of this map is found on p.143 of Whitaker's book

*Gabriel Cramer's copy*

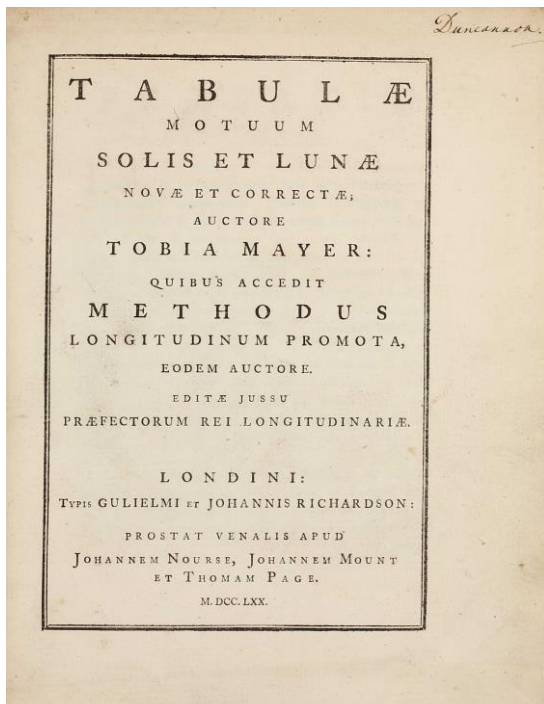
**50** [MAUPERTUIS, Pierre Louis Moreau de](#). *Discours sur la parallaxe de la lune, pour perfectionner la theorie de la lune et celle de la terre*. Paris: Imprimerie Royale, 1741. 8vo (193 x 120 mm). xxxii, 133 [1] pp. Woodcut title-vignette, head-piece and ornament; several woodcut diagrams in text (many full-page), letterpress tables. Bound in fine contemporary calf, spine with 5 raised bands gilt in compartments and with gilt-lettered morocco label (little rubbing and spotting to boards), marbled endpapers, red-dyed edges. Internally only very little browned, occasional minor spotting. Provenance: Prof. Gabriel Cramer, Geneva based mathematician\* (armorial bookplate pasted on second flyleaf recto). A fine copy, printed on very strong paper. (#002692) € 3,500



Poggendorff II, 85; Houzeau-L. II, 1205; Honeyman 2177; Roller-Goodman II, 173. FIRST EDITION. RARE. A discourse on methods of determining the using of the lunar parallax as an aid to navigation, dedicated to Count de Maurepas, Minister of the French Navy.

\*Gabriel Cramer (1704-1752) was a Swiss mathematician, born in Geneva. At 18 he received his doctorate and at 20 he was co-chair of mathematics at the University of Geneva. In 1728 he proposed a solution to the St. Petersburg Paradox that came very close to the concept of expected utility theory given ten years later by Daniel Bernoulli. He edited the works of the two elder Bernoullis, and wrote on the physical cause of the spheroidal shape of the planets and the motion of their apsides (1730), and on Newton's treatment of cubic curves (1746). In 1750 he published Cramer's rule, giving a general formula for the solution for any unknown in a linear equation system having a unique solution, in terms of determinants implied by the system. This rule is still standard. (source: Wikipedia)

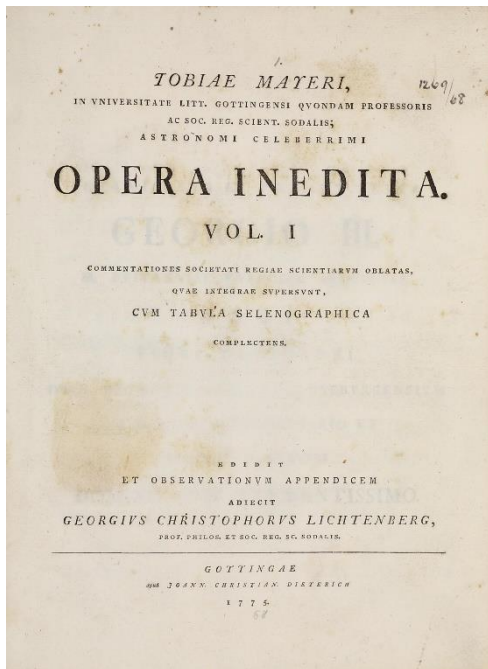
**51** [MAYER, Johann Tobias](#). *Tabulae motuum solis et lunae novae et correctae... quibus accedit methodus longitudinum promotae* [edited by Nevil Maskelyne]. London: William and John Richardson for John Nourse, John Mount and Thomas Page, 1770. 4to (268 x 212 mm). Two parts in one volume; part I (*Methodus longitudinum promotae*) in Latin and English, part II (the letterpress tables and 'Papers relative to the...tables') separately paginated. vii [1], 89; [6], 92-136; cxxx, [2] pp., including errata leaf and two folding engraved plates. Some light age toning and occasional very minor spotting, dust soiling at top margin of few leaves, otherwise generally quite crisp and clean. Contemporary tree calf, rebaked with later calf, spine with gilt-lettered morocco label (extremities rubbed, corners bumped and scuffed). Very good copy. (#002876) € 2,800



Sotheran I, 2934-5; Norman 1468. - FIRST EDITION. In 1752 Mayer, a cartographer and astronomer "drew up new lunar and solar tables, in which he attained an accuracy of  $\pm 1'$ , an achievement attributable to his skilful use of observational data, rather than to the originality of his theory or the superiority of his instruments" (DSB). He sent a copy of the tables in 1755 to the Lords Commissioner of the British Admiralty, hoping to receive the prize promised by the Act of Parliament of 12 November 1713 to anyone who could solve the age-old problem of devising a method for determining longitude at sea. Although he failed to win the prize, Mayer continued to improve the tables until his death in 1762, and in 1763 his widow submitted a copy of the revised tables to the Board of Longitude, who deemed the

improved tables sufficiently useful to grant her a prize of £3000. The astronomer Nevil Maskelyne had used Mayer's tables successfully in 1761 on a mission to St. Helena, in order to determine the reliability of the lunar distance method for determining longitude at sea, and Maskelyne assumed the responsibility of editing the tables and supervising their publication. "They were used to compute the lunar and solar ephemerides for the early editions of the Nautical Almanac. (They were superseded a decade later by tables employing essentially the same principles, but based upon the newer and more accurate observational data that were gradually being assembled at the Royal Observatory at Greenwich)" (DSB).

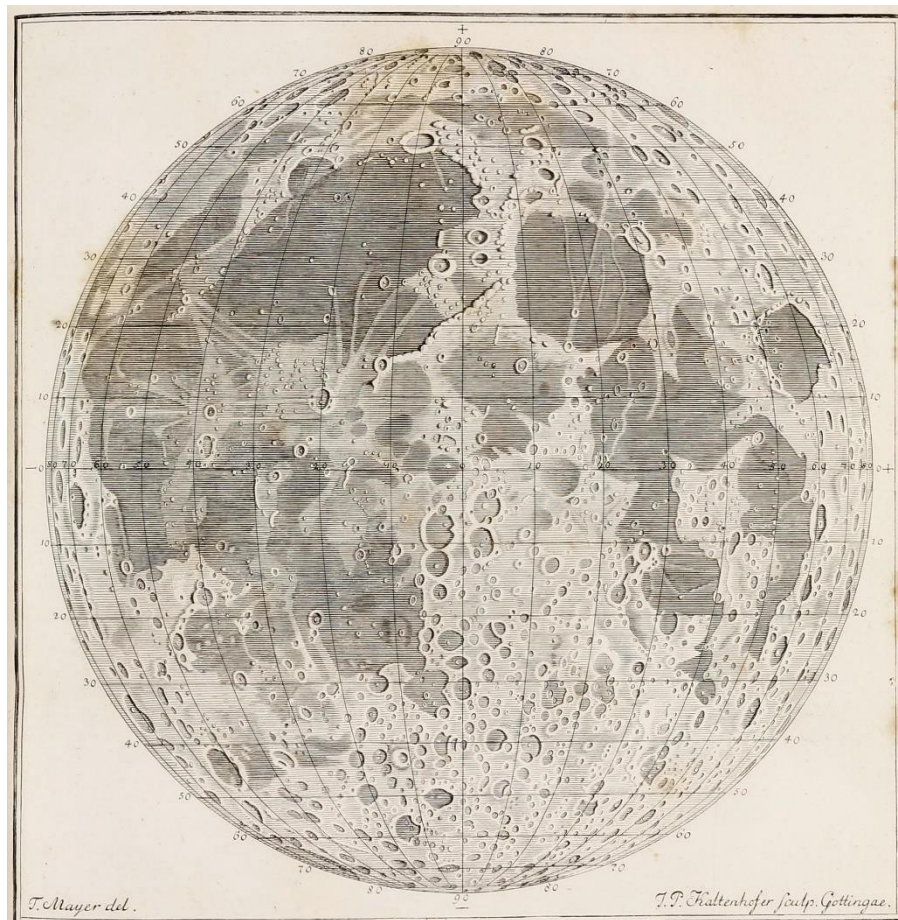
**52** [MAYER, Johann Tobias](#). *Opera inedita / edidit et observationum appendicem adiecit Georgius Christophorus Lichtenberg. V. 1, Commentationes Societati Regiae Scientiarum oblatas, quae integrae supersunt, cum tabula selenographica complectens.* [all published]. Göttingen: Johann Christian Dieterich, 1775.



4to (290 x 224 mm). [8], 110 pp., 4 engraved plates (one hand-coloured). Modern half calf over marbled boards, spine with gilt-lettered label, contemporary front endpaper bound in. Internally very little browned, some light spotting to margins, light brown spotting of title-page, very slight dampstaining to upper blank margin of p.105/106. Fine copy. (#002677) € 7,500

Ashworth, *The face of the moon*, Linda Hall 39 - "After Mayer's untimely death, George Christoph Lichtenberg undertook to edit some of Mayer's papers for publication, among them the smaller moon map of 1750. To engrave it, he selected Joel Paul Kaltenhofer, who was not only one of the best engravers in Germany, but a friend of Mayer, and himself a skilled lunar artist. Kaltenhofer's first attempt was rejected, but the second proved satisfactory... One unusual feature of the map is that it has north at the top, contrary to the tradition inaugurated by Cassini and continued by every other lunar map until 1960. When Schröter incorporated Mayer's map in his own moon book (Ashworth 14),

he took exception to this disregard of convention, and had the map re-engraved with south up." (Ashworth). In his *Opera inedita*, Mayer was the first to introduce a system of lunar coordinates.



**One of 20th century's most iconic images, signed by astronaut Jim Lovell**

**53** [NASA photograph](#). *Earthrise from Apollo 8*. NASA negative no. AS08-14-2383. William Anders, December 24, 1968. Size 11 x 14 inches (272 x 350 mm). Chromogenic print laid down on matt 16 x 20 inches, signed in felt-tip pen on the matt 'To: Myra and Roy - With best wishes, James Lovell, Apollo 8, 13' and 'Earthrise from Apollo Eight 12/24/68' The photograph in perfect condition, mounted on cardboard. (#003197) € 8,800

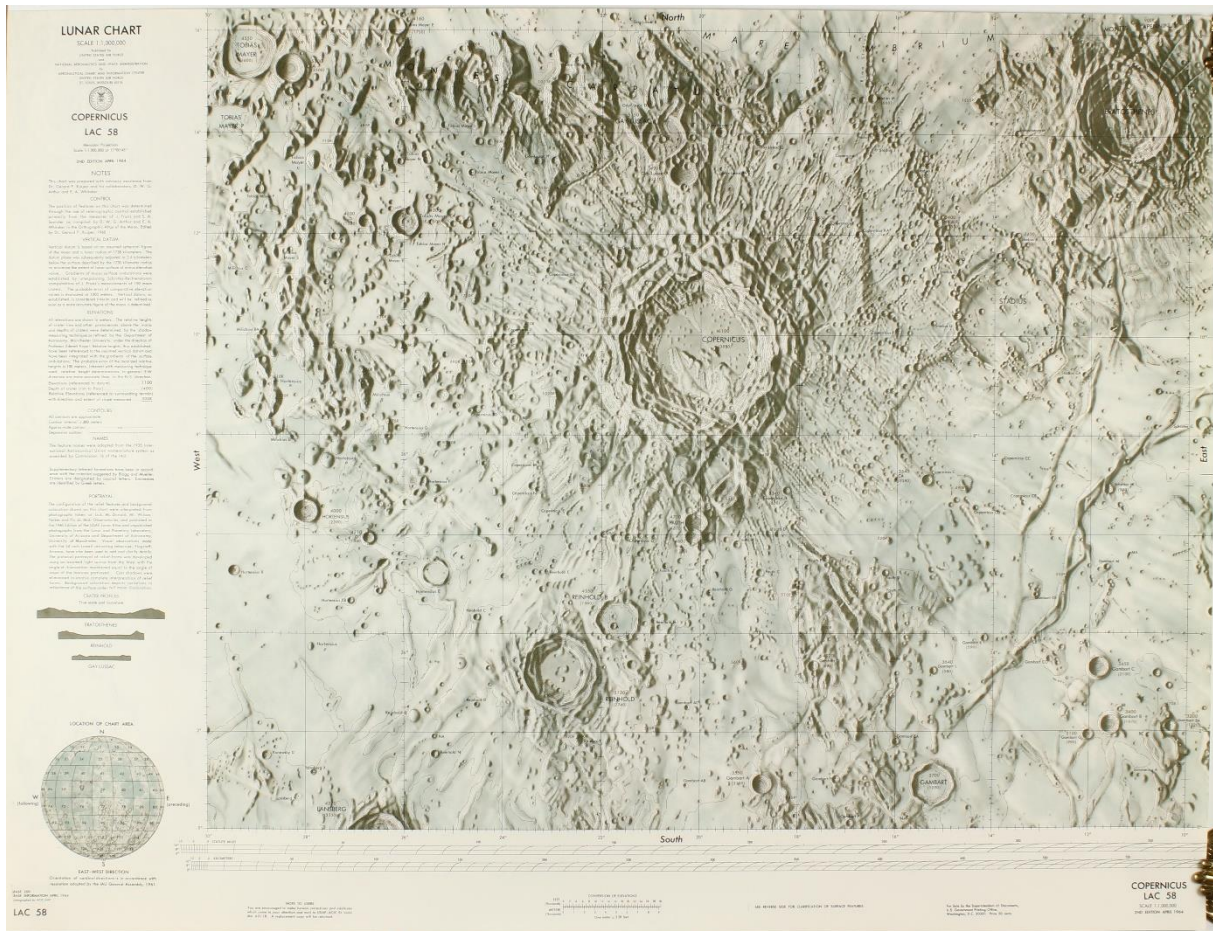
*Earthrise* is the name popularly given to NASA image AS08-14-2383, taken by astronaut William Anders during the Apollo 8 mission. The astronaut crew, Commander Frank Borman, Command Module Pilot James Lovell, and Lunar Module Pilot William Anders, experienced several firsts in flight: they were the first humans to travel beyond the Earth's orbit, the first to see Earth as a whole planet, the first to directly see the far side of the Moon, and the first to witness Earthrise. On this image, the rising Earth is about five degrees above the lunar horizon in this telephoto view taken from the Apollo 8 spacecraft near 110 degrees east longitude. The horizon, about 570 kilometers (350 statute miles) from the spacecraft, is near the eastern limb of the moon as viewed from Earth. Width of the view at the horizon is about 150 km (95 statute miles). On Earth 240,000 statute miles away the sunset terminator crosses Africa. The crew took the photo around 10:40 a.m. Houston time on the morning of Dec. 24, and that would make it 15:40 GMT on the same day. The South Pole is in the white area near the left end of the terminator. North and South America are under the clouds. (NASA online resource)



**54** [NASA](#). *Lunar Astronautical Chart (LAC) series*. St. Louis: ACIC, published for United States Air Force and NASA, 1962-1966. 21 (of 44) sheets, size 22 x 29 inches (735 x 560 mm). Present are LAC numbers 39-42, 56-62, 74-80, 93-95. A few marginal creases in places. (#002199) € 1,200

Ashworth, *The face of the moon*, Linda Hall 39 (for Chart 'Mare Humorum') - "The success of the *Lunar Photographic Atlas* inspired the U.S. Air Force to embark on the project of producing detailed charts of the moon based on the same photographs used by Kuiper. With the exception of Lohrmann and perhaps Mayer, this was the first time that professional cartographers had been called on to deal with the problem of mapping the lunar surface. The moon was divided into 68 quadrants (although the numbers run from 1-144, since the far side was included in the numbering system), and the first two maps appeared in 1961. Eventually, 44 charts were

published, until the project was superseded by later efforts. The maps are on a scale of 1:1 million, equivalent to a moon over eleven feet in diameter." (Ashworth)



**55** [NASA](#). *Ranger VII Photographs of the Moon*. I. Camera "A" Series; II. Camera "B" Series; III. Camera "P" Series. NASA SP-61, SP-62, and SP-63. NASA: Washington D.C., 1964-1965. 3 volumes. Folio (356 x 277 mm). IX, [1], 17; VII, [1], 17; VII, [1], 27 pp., 199; 200; 200 plates. Original printed wrappers, spine of SP-61 cracked and chipped with small loss at foot, covers of SP-62 little browned, light edge wear. The set clean and bright internally. (#002200) € 500

Ashworth, *The face of the moon*, Linda Hall 40 - "The Ranger missions, designed to photograph selected sites at a continually increasing scale before crashing onto the moon, got off to a shaky start; the first six missions, launched between 1961 and 1964, were all failures. Ranger VII, however, was successful, taking over 4000 pictures before plunging into the Ocean of Storms west of Fra Mauro. Ranger VIII had similar good fortune, photographing the Sabine/Ritter region of the Sea of Tranquility, the future landing site of Apollo 11." (Ashworth)

**56** [NASA](#). *Ranger IX Photographs of the Moon*. Cameras "A", "B" and "P". NASA SP-112. NASA: Washington D.C., 1966. Folio (356 x 277 mm). VII, [1], 17 pp., 170 plates. Original printed wrappers (age-toned, front cover rubbed at fore-margin). Clean and bright internally. (#002201) € 250

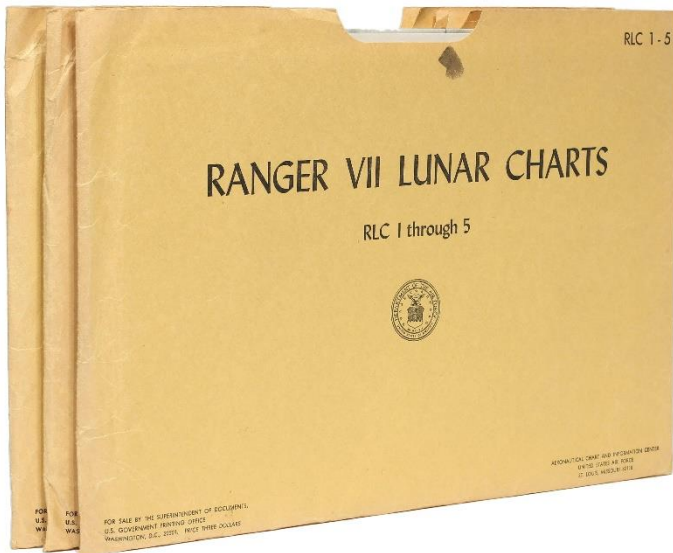
Ashworth, *The face of the moon*, Linda Hall 40 - "The site chosen for Ranger IX was the crater Alphonsus--at the time high on the list for an Apollo landing. The spacecraft was launched on March 21, 1965, and transmitted over 5800 pictures before impact. The last images, interrupted by the crash, show objects as small as a foot in diameter." (Ashworth)

**57** [NASA](#). *Ranger VII-IX Lunar Charts*. St. Louis: Aeronautical Chart and Information Center / Washington D.C.: NASA, 1964-1966, 17 folded maps (57 x 74 cm sheet size), loose as issued in 3 uniform printed envelopes: Ranger VII Lunar Charts, RLC I through 5; Ranger VIII Lunar Charts, RLC 6 through



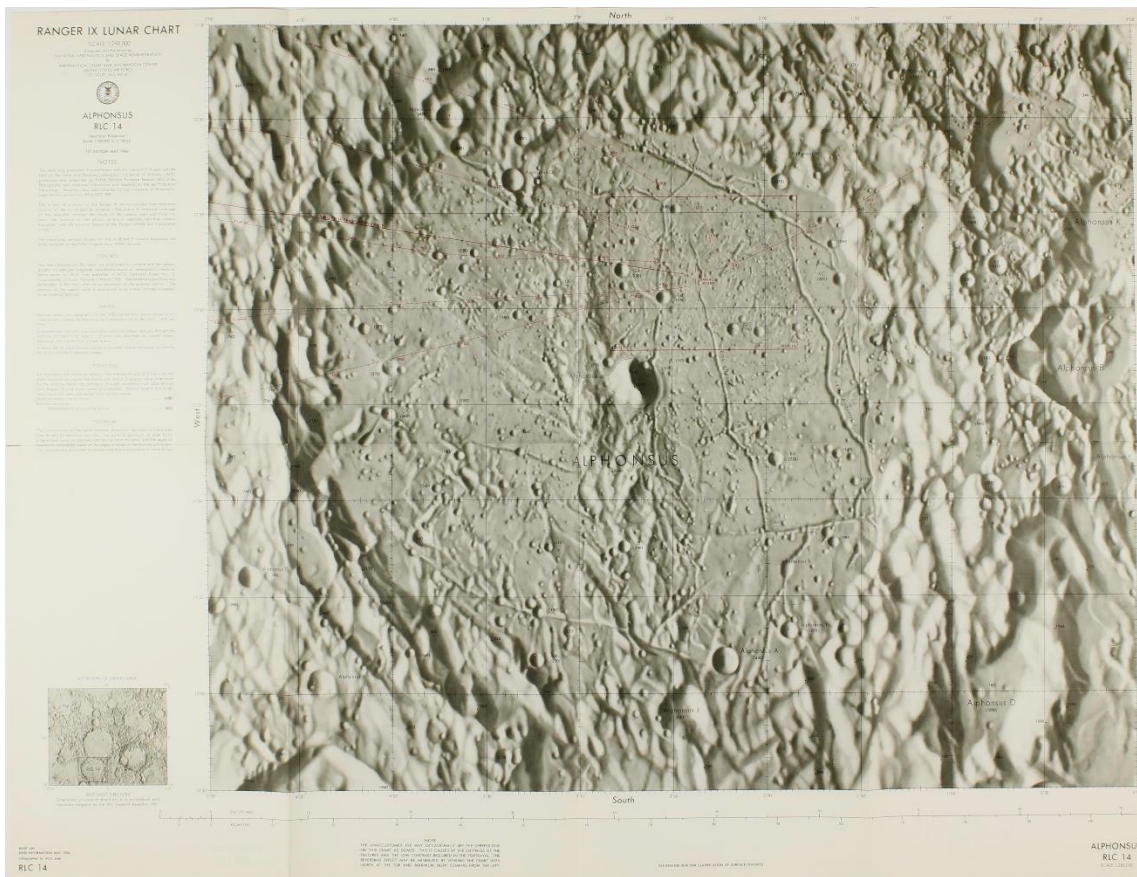
12; Ranger IX Lunar Charts, RLC 13 through 17. Envelops slightly creased, the maps clean and bright. (#002202) € 2,000

Ashworth, *The face of the moon*, Linda Hall 41 (showing RLC-14 chart) - Rare complete set of 17 folded air brushed Ranger Lunar Charts based on close-up spacecraft television images. All are 29 by 22 inches except RLC 2 being 31 by 22 inches. First editions from October 1964, March 1966, and May 1966 with 14 charts having non-annotated images on verso. Scales vary from 1:1,000,000 down to 1:350. The first five sheets show "increasingly detailed maps of the Fra Mauro/Riphaeus region; maps 6-12 do the same with the Sabine/Ritter region, and maps 13-17 chart the crater Alphonsus" (Ashworth, 41).



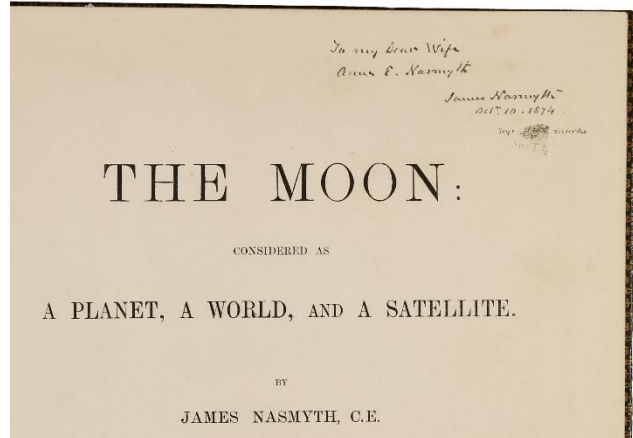
After six straight failures, the final three Ranger spacecraft all achieved their objective of obtaining close-up images of the lunar surface prior to hard impacts. The Ranger VII set has five charts of the Mare Cognitum area with impact just south the future Apollo 14 landing area. Ranger VIII has 7 charts of the western Mare Tranquillitatis area with impact just north of the future Apollo 11 landing area. Both Apollo landing areas are within view of the larger scale charts. Ranger IX has 5 charts focused on the crater Alphonsus. "Alphonsus was at one time slated for the Apollo 17 mission. It was of interest to selenologists because it was "pre-Imbrium," that is, formed of material that predated the impact that created the Imbrium Basin and showered much of the moon with debris. It was also thought at the time that many of the small

craters on the Alphonsine floor were volcanic in origin, and sampling might give clues as to when tectonic activity ceased in the moon's interior. Apollo 16 raised doubts about lunar volcanism, however, and Alphonsus was finally replaced by Taurus/Littrow as the site for Apollo 17." (Ashworth, 41).

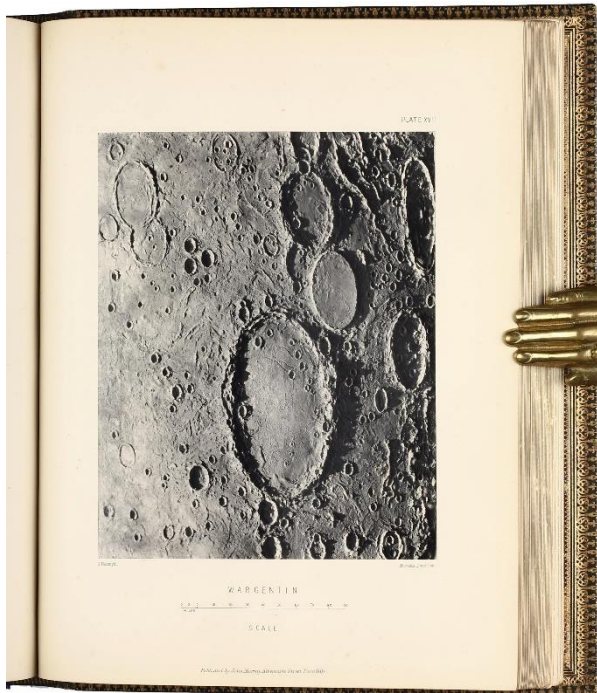


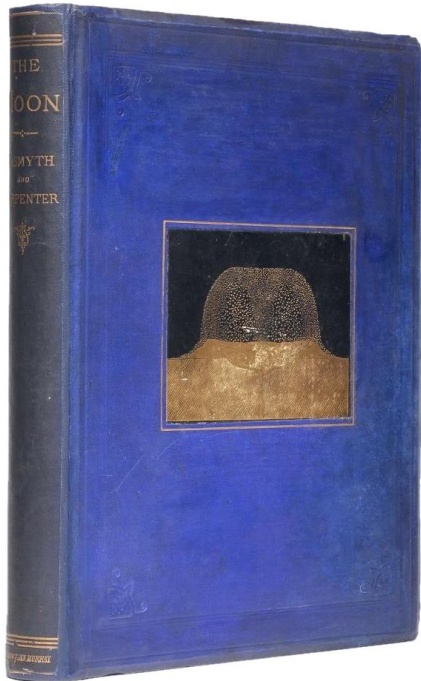
**Signed dedication copy to author's wife**

**58** **NASMYTH, James Hall & CARPENTER, James.** *The Moon: Considered as a Planet, a World, and a Satellite.* London: John Murray, 1874. 4to (272 x 210 mm). xvi, 189 [1] pp., including half-title, 46 text illustrations, and 25 plates on 24 leaves (comprising 12 mounted Woodburytypes of lunar models, 6 photogravures, 4 autotypes, 2 lithographs, and one chromolithograph). Photograph of the author, ink signed and dated 1877 pasted on 2nd free endpaper. Extra thick paper. Bound in grained dark-green calf over wooden boards, spine with 5 raised bands ruled, paneled and lettered in gilt, boards blind-stamped and ruled in gilt, turn-ins gilt decorated, all edges gilt, marbled endpapers (little rubbing to extremities, light spotting of upper board). Plates xii + xx with faint waterstain to lower corner. Provenance: author's copy given to his wife. With personal dedication on title 'To my Dear Wife / Anne E. Nasmyth / James Nasmyth / October 10th 1874 / [with personal finger print] my mark', affixed photographic portrait of the author, signed 'James Nasmyth' and with personal finger print 'my mark' and dated '1877.' An exceptional, bright and clean copy, much less foxed than usual. (#003065) € 8,500



FIRST EDITION. In a special, richly gilt-decorated binding of heavy wooden boards intended for presentation. *The Photobook*, p.51; Ashworth, *The face of the moon*, Linda Hall, 20. - First edition. "Photographers sometimes adopted realism over naturalism in order to render motifs more literally. On occasion, however, the reverse was true: photographers attempted to deceive through extremely literal treatment. The artist Les Levine once claimed iconoclastically that the folk saying 'the camera never lies' is a lie. Nasmyth and Carpenter's *The Moon* presents an elaborately devised model photographed with the clarity of a subject at an arm's distance. The deception was necessary because successful astronomical photographs of sharp definition and good contrast were not possible until the twentieth century with the advent of sensitive films and efficient lenses. The Woodburytypes proved to be exceptionally effective illustrations and, doubtless, many readers were misled to think that they were seeing the face of the moon itself." -- *Truthful Lens*, p. 38. This work is also notable for its original publisher's decorated cloth binding; it is reproduced in *The Truthful Lens* as fig. 6. This book is also discussed in Carol Armstrong, *Scenes in a library*, reading the photograph in the book 1843-1875, in passim.



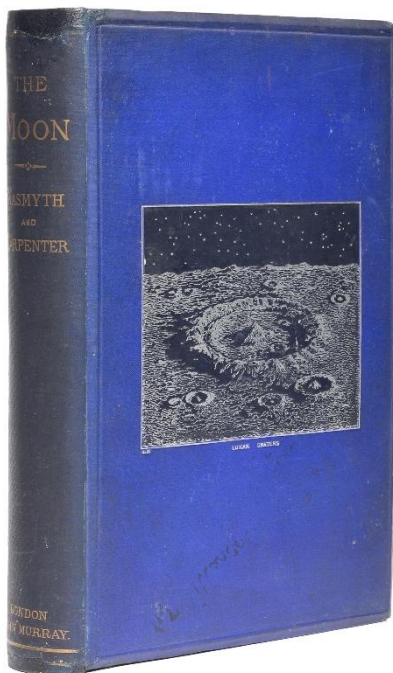


**59** [NASMYTH, James Hall & CARPENTER, James.](#) *The Moon: Considered as a Planet, a World, and a Satellite.* London: John Murray, 1874. 4to (280 x 215 mm). xvi, 189 [1] pp., including half-title, ad leaf dated December 1873 at end, 46 text illustrations, and 25 plates on 24 leaves, comprising 12 mounted Woodburytypes of lunar models, 6 photogravures, 4 autotypes, 2 lithographs, and one chromolithograph. Original publisher's gilt-pictorial cloth with depiction of lunar eruption on front cover, original brown endpapers (binding restored and rebaced retaining original back-strip, minor soiling and staining of boards). Text little age-toned, some spotting and foxing to plates, occasional finger soiling. Still very good copy. (#002125) € 3,000

The Photobook, p.51; Ashworth, *The face of the moon*, Linda Hall, 20 - FIRST EDITION, in its original binding.

**J. Norman Lockyer's copy, presented by the publisher John Murray**

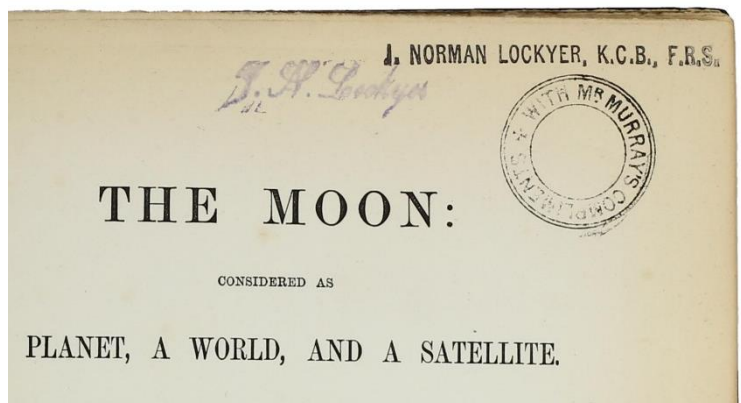
**60** [NASMYTH, James Hall & CARPENTER, James.](#) *The Moon: Considered as a Planet, a World, and a Satellite.* London: John Murray, 1885. 4to (224 x 162 mm). xvi, 213 [1] pp., including half-title, Woodburytype frontispiece, 46 text illustrations, and 24 mounted Woodburytypes and one chromolithograph. Pages uncut and largely unopened. Original Publishers silver-pictorial cloth with depiction of lunar craters on front cover (soiling of boards, spine ends repaired). Text with light browning and occasional minor spotting and dust-soiling, the plates with some foxing in margins. Provenance: J. Norman Lockyer\*, ink stamps to frontispice verso and title-page, presented by the publisher John Murray (ink stamp "with Mr. Murray's compliments" to title-page; Nature publishing house (ink stamp to title-page "Nature / Bedford Street / 8 Nov 1885"). Interesting association copy. (#002773) € 3,500



The Photobook, p.51; Ashworth, *The face of the moon*, Linda Hall, 20 (for 1st ed). - THIRD EDITION. Compared to the previous editions considerably smaller in size.

\*Joseph Norman Lockyer was born in Rugby in Warwickshire on 17 May 1836. "A clerk in the UK government's War Office by day, Lockyer was a keen and talented young amateur astronomer by night - he was later to discover the element helium in the corona of the Sun by using a spectroscope. He shared a train carriage to London each day with John Ludlow

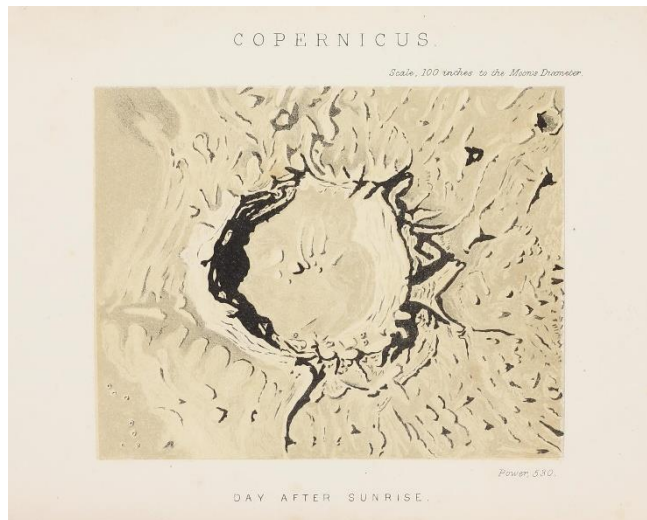
and David Masson, both friends of Alexander Macmillan, and they asked him to be the science editor of their proposed new weekly, *The Reader*, which was to cover the arts, literature and science. *The Reader* was in many ways an early forerunner to *Nature* - thirty-eight people who supplied reviews to *The Reader* all later contributed to *Nature*... It's not clear who proposed the title "*Nature*", but a letter in July 1869 from Huxley to Lockyer reveals that Macmillan made the final decision. (source: Springer Nature website).



- 61 [NASMYTH, James Hall & CARPENTER, James](#). *Der Mond betrachtet als Planet, Welt und Trabant*. Translation by H. J. Klein. Leipzig: Leopold Voss, 1876. 4to (255 x 195 mm). vii [1], 165, [3] pp. With 21 mount photo-mechanical plates ("Lichtdruck") on 19 leaves; 2 lithographed plates (1 in color); wood engravings in text. Original publishers printed boards and cloth spine (boards rubbed and age-toned, cloth at joints partly split and frayed, corners slightly scuffed). Text and plates little age-toned, occasional foxing (some plates stronger). (#002203) € 600

Ashworth, *The face of the moon*, Linda Hall, 20 (for 1st ed.) FIRST GERMAN EDITION. "Nasmyth was brought up in an artistic family, made a fortune as a manufacturer and inventor, and retired to take up astronomy. He built his own 20" reflector in 1842 (inventing the Nasmyth focus in the process), and began to concentrate on lunar studies. Nasmyth brought photography to the aid of selenography in an unusual manner. Since photography was not yet advanced enough to take photographs of lunar details, Nasmyth constructed plaster models based on visual observations, and then photographed the models. For this book, the photographs were then printed by the arduous Woodburytype process, perhaps the most faithful method ever devised for the reproduction of photographs. The Woodburytype has no grain whatsoever, because it does not use cracks or dots to reproduce tone. Instead, a relief mould is made of the image in lead, so that the areas of dark tone are deep and light tone shallow. Ink suspended in gelatin is cast in the mould, and the resulting print produces contrast by the thickness or thinness of the ink" (Ashworth).

- 62 [NEISON, Edmund](#). *The Moon and the Condition and Configurations of its Surface*. London: Longmans, Green, and Co., 1876. 8vo (225 x 160 mm). [2], xviii, 576 pp. Half title, 5 tinted lithographed plates and 26 maps of the moon, including one folding, publisher's advert leaf bound at beginning. Publisher's original cloth (spine and extremities rubbed, spine faded and ends frayed, stitching weak, only lower cords holding in first third). Light browning of text (plates less), mainly marginal light soiling.



*Provenance:* J.M. Baron (bookplate); W. Buckeridge (signature on bookplate); ?S. Dores (signature on bookplate, dated 1949); British Astronomical Association (stamp on title and endpaper). (#002205) € 600

Ashworth, *The face of the moon*, Linda Hall 21 - FIRST EDITION. "Neville, who wrote under the name Neison, published the first observer's guide to the moon written in English, and it is still one of the best. It contains a wealth of detail on more than 500 named features, as well as a map in 22 sections, to the scale of 24" to the moon's diameter. The map is not entirely original, being based on that of Beer and Mädler, but it is much easier to use than the original. In addition to the map, there are several enlarged drawings of

craters of special interest, such as Gassendi and Maginus, and five chromolithographs to show the effect of changing illumination on the lunar landscape" (Ashworth).

### **Mary Ashley's working copy**

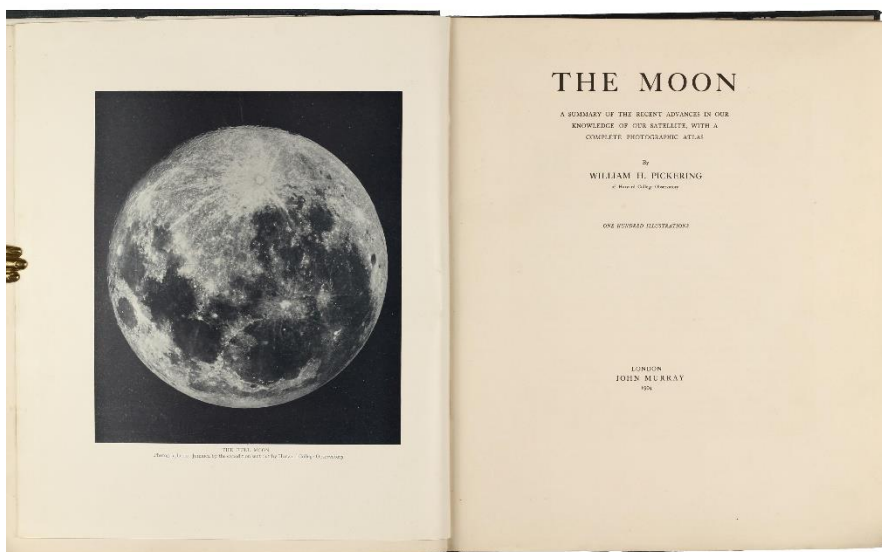
- 63 [NEISON, Edmund](#). *The Moon and the Condition and Configurations of its Surface*. [No place, 19th century]. 8vo (220 x 150 mm). 5 tinted lithographed plates and 26 lithographed maps, INTERLEAVED THROUGHOUT, WITH ANNOTATIONS AND PENCIL AND CRAYON MARKINGS BY MARY ASHLEY up to and including map 22 (lacks all text, lightly waterstained, light mainly marginal soiling, adhesive tape along inner gutter at beginning). Contemporary half calf (worn, crudely rebaced with adhesive tape). *Provenance:* MARY ASHLEY\* (signature on endpaper, numerous annotations and a few drawings in her hand); Mary Adela Blagg (1858-1944), first female member of the RAS, inscription on endpaper: "M.A. Blagg. Formerly the property of Mr Hardcastle"; Joseph Alfred Hardcastle (great grandson of Sir William Herschel (1738-1822), British astronomer who discovered Uranus in 1781); British Astronomical Association (stamps). (#002206) € 1,500

\*Mary Ashley (1843-1903), born Shirehampton, Gloucestershire. Lived at 19, New King Street, Bath, just along the road from Herschel's house. She was an active observer of the Moon and Jupiter in particular during the 1870s and 1880s, using 3 1/4-inch and 4-inch Wray refractors. It is not known if she had an observatory. She was a member of the Selenographical Society (with contributions by her on lunar observations published in the *Selenographical Journal*) and of the Liverpool Astronomical Society in 1884 (see: Anthony Kinder, *Another Victorian lady astronomer*, *JBA*, 108[6], 1998, p. 338). Her observing notebooks on the Moon and Jupiter with other items came to the library of BAA.



**64** [PICKERING, William H.](#) *The Moon. A Summary of the Recent Advances in our Knowledge of our Satellite, With a Complete Photographic Atlas.* London: John Murray, 1904. 4to (328 x 275 mm). viii, [4], 103 pp., 100 plates including the frontispiece, half-tone plates and illustrations. Original blue cloth, gilt lettering to spine and upper board, top edge gilt, pages uncut (cloth a little rubbed and with stains at front board, corners bumped and scuffed). Text and plates clean and little age toned only, insect damage to rear endpaper not affecting text. (#002207) € 700

Ashworth, *The face of the moon*, Linda Hall 32 (US American edition) – FIRST EDITION, Published in New York and London at the same time. "When Pickering began his work, three photographic atlases had been attempted, and all had encountered difficulties or criticism: the Lick atlas had been discontinued; the Paris atlas had no orderly arrangement or consistent scale; the Weineck [sic] atlas was too expensive. Pickering decided to produce a systematic, affordable atlas, with every feature covered five times, under different angles of illumination. All the

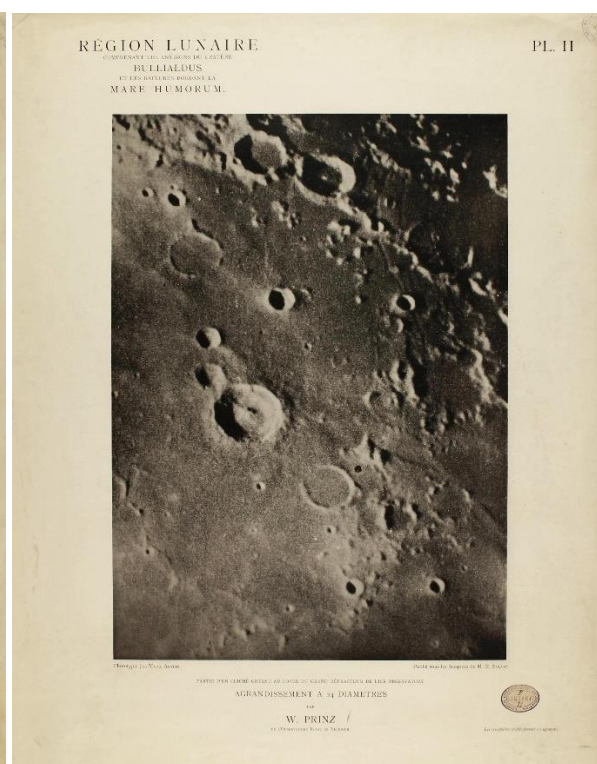
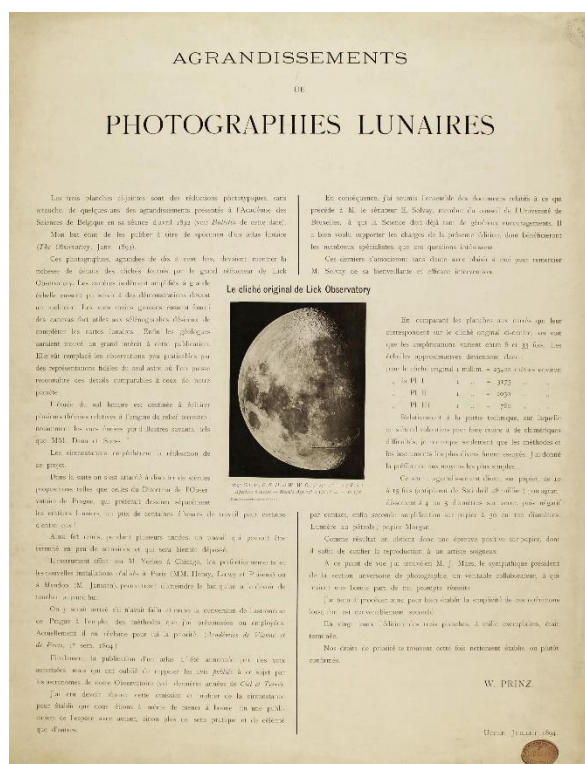


plates were to be at the same scale, and the same size as the original negatives. The photographs were taken in 1901 in Jamaica especially for this atlas. Pickering's atlas (which was also issued as part of the *Annals* of the Harvard Observatory) may not be as physically impressive as its competitors, but it was much more useful for the lunar observer, and it established the standards which most later atlases would follow" (Ashworth).

## Large format photographs of the moon

**65** **PRINZ, Wilhelm.** *Agrandissements de Photographies Lunaires.* Uccle, Juillet 1894. 1 leaf of text and 3 phototypies by Jos Maes, Anvers. Imperial Folio (650 x 500 mm). Loose sheets in custom folder (folder soiled, spine torn). The sheets slightly browned and with some dust-soiling and creasing at outer margins, corners a bit rounded in places. Provenance: Sticker and small ink stamp of British Astronomical Association at corners of each leaf. Signature of W. Prinz on phototype leaves. (#002208) € 4,900

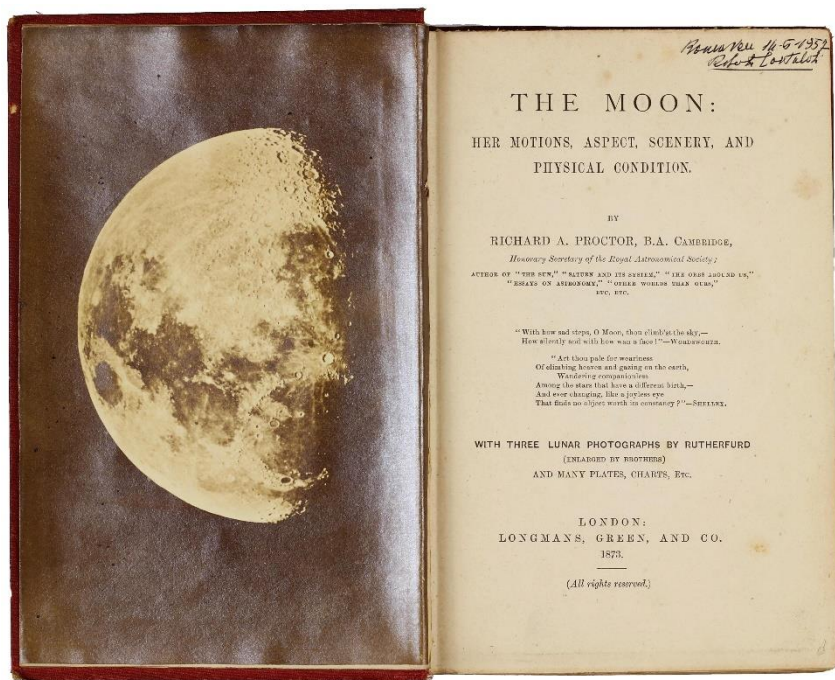
EXCEPTIONALLY RARE FIRST AND ONLY EDITION. Wilhelm Prinz (1857-1910) was a German-Belgian astronomer and noted for his selenography. Three plates of Enlargements of Lunar Photographs (*Agrandissements de Photographies lunaires*) published by W. Prinz, of the Belgian Royal Observatory at Uccle, are collotype reductions, without retouching, of some of the enlargements which were presented by the author to the Belgian Academy of Sciences in April, 1892. They represent photographs taken with the great refractor of Lick Observatory, enlarged from ten to a hundred times, and among other things they illustrate the richness in details of the views taken with that instrument. They are of special value as permitting a closer study of the details of lunar relief. A question of priority is connected with this publication, which was made partly to enforce Prinz's claims and partly as a specimen of a proposed atlas. The photographs represent the circle Copernicus, the crater Bullialdus, Mare Humorum, and Mare Imbrium. Sent gratis to astronomers and observatories.



## With 3 photographs by Lewis Rutherford

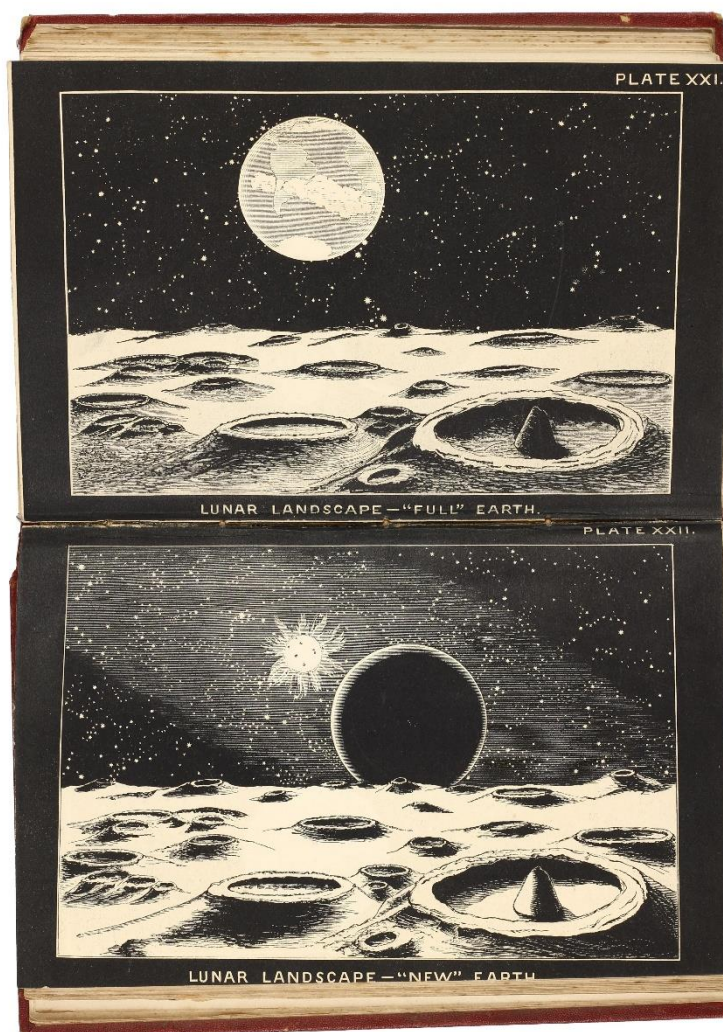
**66** **PROCTOR, Richard Anthony.** *The Moon: Her Motions, Aspect, Scenery, and Physical Condition.* London: Longmans, Green, and Co., 1873. 8vo (190 x 125 mm). xv [1], 394, [6] pp. Tipped-in albumen-print frontispiece and 2 further albumen-prints of the moon, all by Rutherford ("enlarged by Brothers"), 22 plates of which 21 numbered I-XVIII and XX-XXII (including 2 large folding lunar maps and 3 Woodburytypes) and 1 unnumbered folding lunar map after Schmidt, 1 illustration in text, publisher's advert leaves at the end. Publisher's original blind-stamped red cloth with gilt lettering and decoration to spine (binding weak, spine soiled, cloth on upper hinge split towards foot and little frayed, also at foot of spine, inner hinge split between frontispiece and title, corners bumped and worn). Text little browned and slightly foxed throughout. Provenance: illegible signature on title dated 14.06.1957. (#002209) € 1,200

Ashworth, The face of the moon, Linda Hall 19 (cit. NY edition) - FIRST EDITION, and rarely found complete with all the maps and photographs present as here. Of special interest are the 3 photographic albumen prints of the Moon by Lewis Morris Rutherford (1816-1892). "One



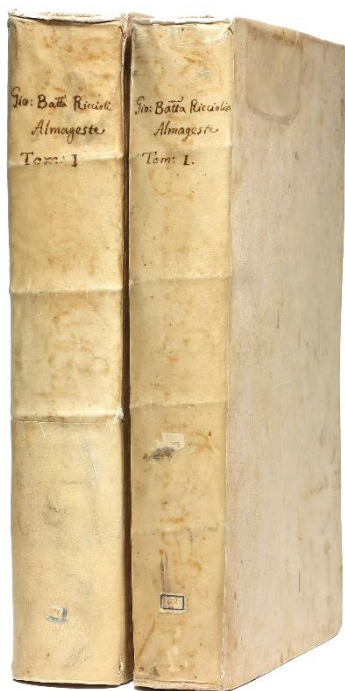
solution to the problem of reproducing photographs for publication was simply to make positive paper prints and paste them into books. This was expensive, time-consuming, and not always aesthetically pleasing, but it solved the difficulty of capturing tone in a black-and-white medium. Richard Proctor, the greatest popularizer of astronomy in the nineteenth century, used this expedient in his treatise on the moon. In addition to numerous lithographs and wood engravings, and a large folding lunar map by T.W. Webb, there are three photographic prints of the moon by the American

Lewis Rutherford, whom Proctor called the greatest lunar photographer of the age." (Ashworth, 19). The photograph facing p.230 was taken at Rutherford's observatory in New York on September 16, 1870 (ref. cit.)



**A milestone in lunar nomenclature**

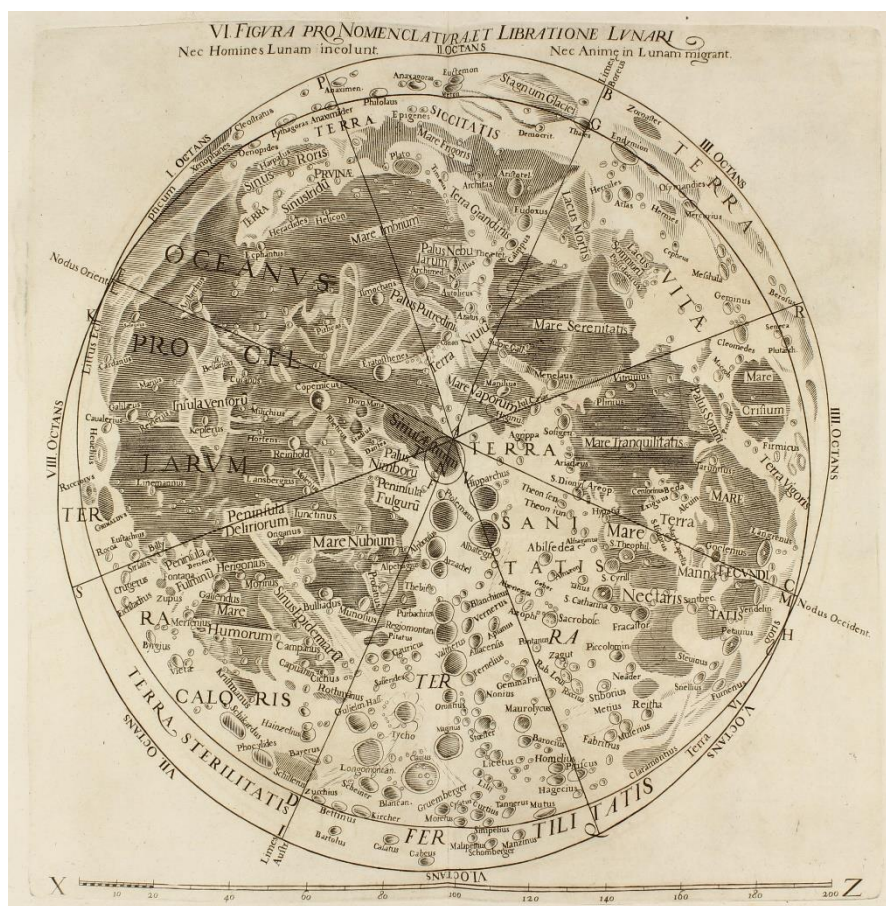
**67** **RICCIOLI, Giambattista.** *Almagestum novum astronomiam veterem novamque complectens observationibus aliorum et propriis.* Bologna: Heirs of V. Benatius, 1651. Volume one (all published) in 2 volumes, Folio (360 x 243 mm). [12], xlvii [1], 763 [1]; [6], xviii, 675 [1] pp. Engraved frontispiece by F. Curtus in each volume, engraved arms on dedication leaves, 2 fine engraved double-page lunar maps



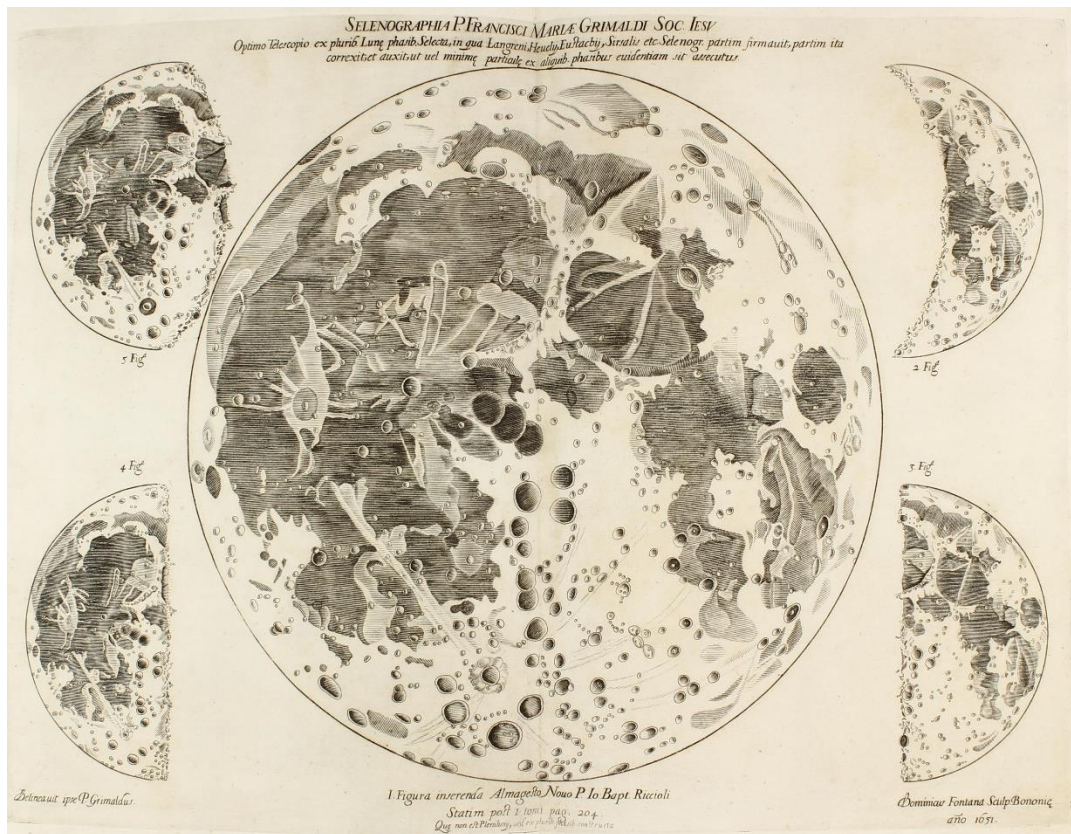
by Domenico Fontana after Francesco Maria Grimaldi, each mounted on a guard, numerous woodcut diagrams in text, some browning (few leaves stronger), marginal worming partly silked, mild marginal staining, few leaves with corrections in old hand. Contemporary full vellum (some old repairs, minor spotting and soiling), spine lettered in manuscript. Bookplate of Giorgio Tabarroni to inner front covers. An excellent, wide-margined copy, with the lunar maps very clean and bright. (#001858) € 16,000

Ashworth, *The face of the moon*, Linda Hall 7; Cinti 124; Riccardi I (2), 371; De Backer & Sommervogel VI:1798; Houzeau-L. 9223; Norman 1826. - FIRST EDITION. One of the most important anti-Copernican works: "Riccioli's scientific career epitomized the conflict between the old astronomy and the new: as a Jesuit committed to church doctrine, Riccioli was among the most vehement opponents of Copernican and Galilean theory, but as astronomer, Riccioli recognized that Copernican theory provided the simplest and best mathematical model of the solar system" (Norman). "Riccioli designed a series of experiments by which he hoped to disprove Galileo's conclusions, but instead he ratified them" (DSB). This work was the first to state that no water existed on the moon. "The Riccioli moon map is historically of great importance, since it provided the basis for the system of lunar nomenclature still in use. It is more properly referred to as the Riccioli/Grimaldi map, since

the Jesuit optician Francesco Grimaldi was apparently responsible for the map itself, while fellow-Jesuit Riccioli invented the names (and wrote the book in which the map appeared). Thus the Sea of Tranquility (Mare Tranquillitatis) traversed by the Apollo astronauts acquired its name here, as Mare Tranquillitatis, as did such prominent lunar craters as Plato, Ptolemaeus, and Tycho" (Ashworth).







**One of the earliest large-format photographs of the moon**

**68** [RUTHERFURD, Lewis Morris](#). *A view of the Moon*. New York, March 6, 1865. Large-format albumen print photograph mounted on the black card stock as issued. Image size 555 x 425 mm (22 x 16 3/4 inches), signed 'Lewis M. Rutherford' and dated 'N.Y. March 6, 1865' in the plate. Minor wear, overall a fine example with rich, beautiful tones. Together with a large-format photographic portrait of Rutherford (with clean tear in mount extending into image). (#002965) € 18,000

A remarkable, civil-war-era, large-format photograph by Rutherford showing the first quarter moon in little more than half-illumination. Lewis Morris Rutherford, lawyer, American astronomer and pioneering astrophotographer, was regarded by his English colleague and admirer Richard Proctor as 'the greatest lunar



photographer of the age'. Rutherford was among the first American astronomers to use photography in astrophysical research. For these large photographs which surpassed any photographs of the moon up to that time and for twenty years or so afterwards, Rutherford used a new 11.5-inch objective lens. In 1858, he built his garden observatory at his home at 11th Street and 2nd Avenue in New York, and spent the rest of his life working on astronomical photography and spectroscopy. Beside lunar photography, Rutherford produced outstanding photographs of the sun and planets, as well as star clusters and stars down to the fifth magnitude. He invented instruments for his studies, including the micrometer for measuring photographs, a machine for producing improved ruled diffraction gratings, and the first telescope designed specifically for astrophotography.

Large-format albumen prints by Rutherford are very rare on the market. Bonhams sold one, also dated March 6, 1865, in 2012 for US\$ 22,500.



***The larger-format issue of Rutherford's famous set of lunar photographs***

**69** **RUTHERFURD, Lewis Morris**. *Three views of the Moon, from New York, c. 1865-1870*. Albumen print photographs mounted, (343 x 268 mm, 13 1/2 x 10 1/2 inches, on sheet 382 x 293 mm) unbound as issued. Enlarged, printed and published by Alfred Brothers of Manchester, [c. 1865-1870]. The photographs showing the full moon, about half (illuminated on its left), and about half (illuminated on its right). Provenance: blind stamp in blank margin on recto of each sheet "Photo by L. M. Rutherford, Enl. by A. Brothers." (#002617) € 12,500

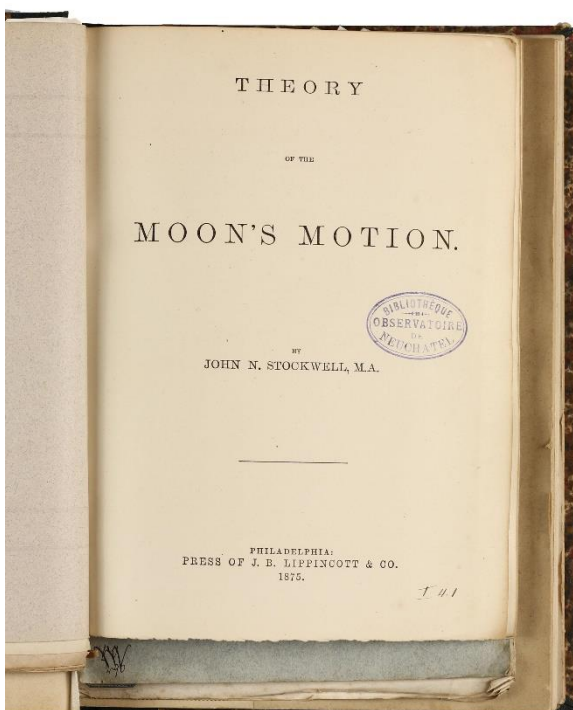
Ashworth, *The face of the moon*, Linda Hall 19; DSB XII, pp 36-7; Whitaker, *Mapping and naming the moon* 88d; Gernsheim, *Incunabula* 572 (for the reduced-size version) - Lewis Morris Rutherford, lawyer, American astronomer and pioneering astrophotographer, was regarded by his English colleague and admirer Richard Proctor as 'the greatest lunar photographer of the age'. Rutherford was among the first American astronomers to use photography in astrophysical research. For these large photographs which surpassed any photographs of the moon up to that time and for twenty years or so afterwards, Rutherford used a new 11.5-inch objective lens. In 1858, he built his garden observatory at his home at 11th Street and 2nd Avenue in New York, and spent the

rest of his life working on astronomical photography and spectroscopy. Beside lunar photography, Rutherford produced outstanding photographs of the sun and planets, as well as star clusters and stars down to the fifth magnitude. He invented instruments for his studies, including the micrometer for measuring photographs, a machine for producing improved ruled diffraction gratings, and the first telescope designed specifically for astrophotography. These three photographs appeared in much reduced size in Proctor's popular work *The Moon: her motions, aspect, scenery and physical condition* (1873). The present series, however, was meant for astronomers and is quite rare. NUC lists a single copy with this imprint (Yale).



**70** [SAMMELBAND](#): 17 special prints and monographs on lunar science. Bound in early 20th century half cloth over marbled boards with two paper labels to spine. Content list in neat contemporary hand bound at beginning. (#003195) € 2,500

Papers: 1. **GUSSEW, H.** *Ueber die Gestalt des Mondes*. 36 pp. With the author's presentation inscription. Waterstain throughout. 2. **CELORIA, G.** *Sull'eclissi totale di Luna avvenuto il 4 ottobre del 1884*. 4 pp. 3. **STOCKWELL, John N.** *Theory of the Moon's Motion*. XVI, 44 pp. 1875. 4. **HILDESHEIMER, L.** *Alphabetisches Verzeichnis der sich in J. Schmid's Mond-chartre befindlichen Objecte*. 2, 10 pp. Odessa. 1885. 5. **PORRO, Francesco**: *Intorno all'eccisse total di Luna del 28 gennaio 1888*. 6 pp. Torino, 1888. 6. **SEARLE, A.** *The Phases of the Moon*. 16 pp. USA. 1884. 7. **RAJNA, M.** *Osservazioni fatte nella R. Specola di Brera durante l'eclisse di Luna del 15 novembre 1891*. 8 pp. Milano, 1891. 8. **STONE, E.J.** *An Explanation of the principal cause of the large errors at present existing between the position of the Moon and the cause of an apparent increase in the secular acceleration in the Moon's mean motion, etc.* 12 pp. (London, 1883). 9. **EBERT, H.** *Über die Ringgebirge des Mondes*. 22 pp. München, 1890. 10. **WEINEK, L.** *Über das feinere stenographische Detail der focalen Mond-Photographien der Mt. Hamiltoner und Pariser Sternwarte*. 14 pp. 1897. 11. **MARTH, A.** *Ephemeris for physical observation of the Moon, 1897 Sept. to 1898 April*. 8 pp. 1897. 12. **KEMPF, P.** *Untersuchungen über die Ptolemäische Theorie der Mond-bewegung*. 2, 38, 2 pp. Berlin. 1878. 13. **NEWCOMB, Simon.** *Notes on Mr. Stone's Explanation of the Errors of Hansen's Lunar Tables* - **STONE, E.J.** *Answers to Prof. Newcomb's Questions on the Changes in the adopted unit of Mean Time*. 2, 14 pp. ca. 1885. 14. **BRENNER, J.** *Abhandlung über die Frage Warum kehrt der Mond unserer Erde stets dieselbe Seite zu?* 24 pp. Stuttgart, Hofbuchdruckerei, 1880. 15. **CHARCORNAC.** *Note sur les apparences de la surface Lunaire*. 12 pp. Lyon. 1864. 16. **STRUVE, Otto.** *Sammlung der Beobachtungen von Sternbedeckungen während der totalen Mondfinsterniss 1888 Januar 28*. XII, 2, 58 pp. S. Petersburg,



**71** [SAVOY, Gaspare](#). *Dissertatio philosophica de planeticis quam una cum thesibus ex universa philosophia ... in Lyceo Tridentino praeside p. Gaspare Savoy ... publicae disputationi subjecit ... Jos. Alphonsus Widmann de Corredensis Annaniensis : mense Julio anno MDCCCLXX*. Trento: ex typographia episcopali Monauniana, [1770?]. 4to (234 x 175 mm). viii, 120 [i.e. 112], 8 pp., 2 engraved folding plates, 1 woodcut within text. Later plain wrappers, internally fresh and unspotted, a few occasional annotations in contemporary hand. (#002126) € 600

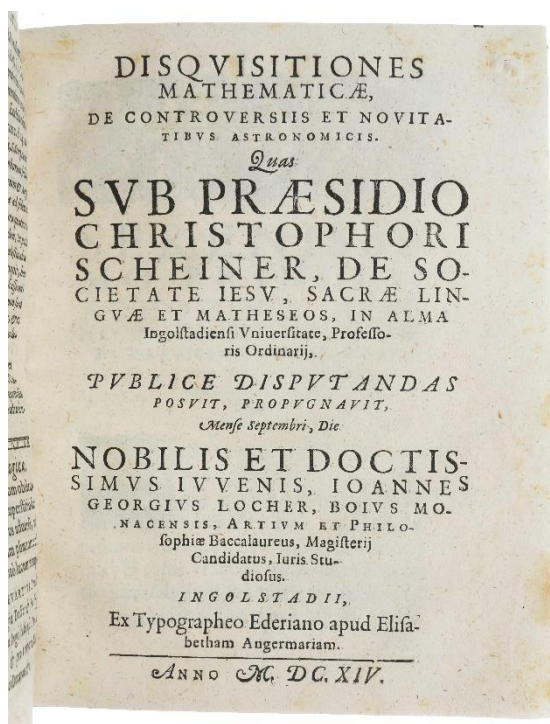


FIRST EDITION, very rare work on the habitability of the moon and other planets by Gaspare Savoy. The first copper engraving shows the solar system after Fontenelle's *Entretiens sur la Pluralité des Mondes*. The other engraving represents a map of the moon after Riccioli. Worldcat knows of 4 copies only, all in Italian libraries.

Gaspare Savoy was a missionary who taught poetry and between 1768 and 1773 Philosophy at the College of Trento. He published three works: in 1770 the *Dissertatio de philosophica planeticis ...*, in 1772 the *Dissertatio de usu et philosophica effectiveness campanarum adversum tempestates ...* and in 1784 the *Dissertatio physico-historico-canonical æquitatem juxta necessitatem demonstrans mortuos extra urbes et oppida sepeliendi*.

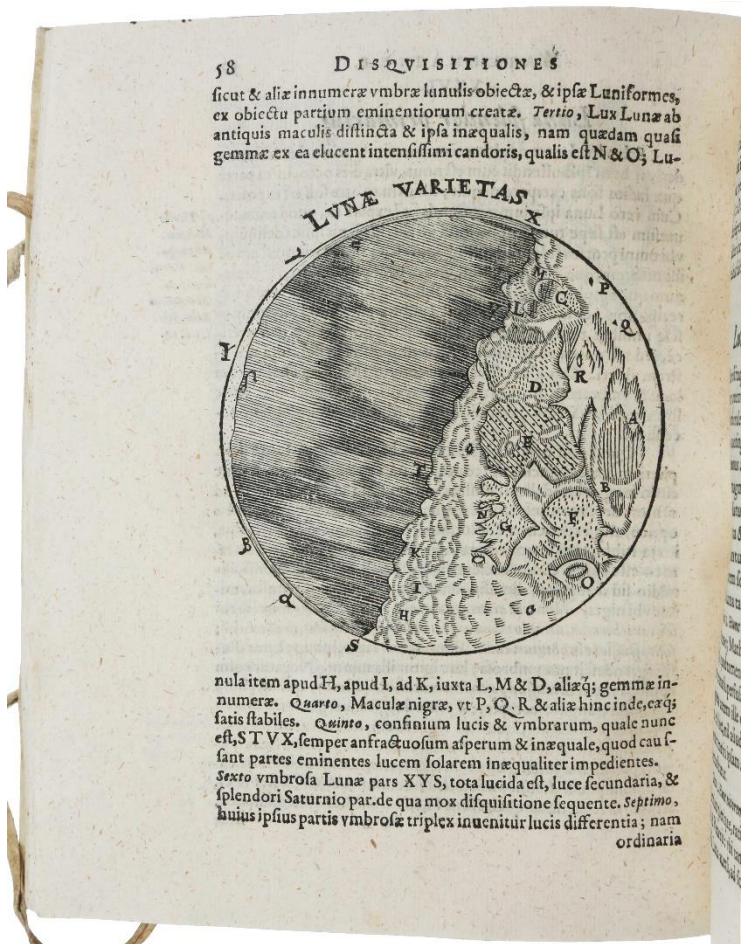
**The earliest printed lunar map to give topologic details**

**72** [SCHEINER, Christoph](#). *Disquisitiones mathematicae, de controversiis et novitatibus astronomicis quas sub praesidio Christophori Scheiner, De Societate Iesv . . . publice disputandas posvit, propvgnavit . . . Ioannes Georgius Locher ...* Ingolstadt: Eder for Elisabeth Angermaria, 1614. [Bound before:] II. **TANNER, Adam**, praes. *Astrologia Sacra: hoc est, Orationes et Quaestiones quinque, quibus explicatur, an et qua ratione fas sit homini christiano, de rebus occultis, praesertim futuris, ex astris iudicium ferre / Dictae & discussae . . . D. Otho Henricus Bachmair Monacensis, . . . & D. Fridericus Pirchinger, Promotore Adamo Tannero, E Societate Jesu . . .* Ingolstadt: Eder for Elisabeth Angermaria, 1615. Two works in one volume, 4to (192 x 155 mm). [2], 90, [4, last blank] pp; [8], 64 pp.; with numerous text woodcuts in Scheiner's work, including images of the moon, some full-page; pages 75/76 and 81/82 folded in at outer margins, due to oversize images; a partly erased early inscription to the title of Tanner's work, and a few early annotations to the same. Excellent copy in contemporary vellum using an earlier manuscript sheet (musical notations); two ties; manuscript paper label. (#003202) € 34,000



Two works in one volume, 4to (192 x 155 mm). [2], 90, [4, last blank] pp; [8], 64 pp.; with numerous text woodcuts in Scheiner's work, including images of the moon, some full-page; pages 75/76 and 81/82 folded in at outer margins, due to oversize images; a partly erased early inscription to the title of Tanner's work, and a few early annotations to the same. Excellent copy in contemporary vellum using an earlier manuscript sheet (musical notations); two ties; manuscript paper label. (#003202) € 34,000

FIRST EDITION, in a beautiful contemporary binding, of Scheiner's very rare work containing the second earliest printed map of the moon (the first to give topographical details) as well as the first illustrations of a telescope. It builds upon Scheiner's 1612 discovery of sunspots, made using a telescope he built himself, which led to his famous controversy with Galileo. This work discusses almost all the astronomical issues then current, especially those brought about by the newly invented telescope. There is an extensive argument against the notion of an infinite universe, illustrated by a striking full-page woodcut on p. 17 of 'Chaos infinitum ex atomis' surrounding the sphere of fixed stars. This is followed by a detailed examination of the Copernican heliocentric theory, as well as the Tyconic system, which he supported, and that of Fracastoro; the systems are illustrated by three large diagrams. Then follow discussions of the moon (including its 'secondary light'), the sun (with a full examination of sunspots), and the planets.



On p. 58 is an extraordinary map of the first quarter moon, with craters and other features labelled and listed, including Mare Crisium, Mare Tranquillitatis, Mare Foecunditatis, Mare Nectaris and the crater Aristoteles. The only earlier known maps of the moon are those published in Galileo's *Sidereus Nuncius* (1610) and Thomas Harriot's unpublished maps which only exist as drawings. The Galilei maps are "apparently but schematic views of what Galileo saw with his telescope, for none of the features recorded on them can be identified with certainty with any known formation" (Kopal, p. 62). "In Scheiner's map, the dark areas are reasonably well portrayed, and a few bright spots and recognizable craters are shown. The original has a diameter of 9 cm" (Whitaker, p.25)

Bound before Scheiner's work is a dissertation on astronomy and against astrology written by Scheiner's Jesuit Superior at Ingolstadt University, Adam Tanner. Tanner discusses the usefulness of telescopic observations and the relation of theology to astrology and to astronomy. The second part includes a discussion of Galileo's discoveries announced in the *Sidereus Nuncius*. Scheiner worked with

Tanner trying to make or obtain improved telescopes and, independently of Scheiner, Tanner observed sunspots in the autumn of 1611, having heard a rumor about Galileo's observations. But Scheiner always maintained that his own first observations of sunspots had been made in the spring and without knowledge of Galileo's. Tanner makes no mention of Scheiner's activities in the present work, and on p. 49 credits Galileo with the first observation of sunspots: "Assuredly the great astronomer Galileo, the first discoverer of these wonders of the skies, maintains that these spots which overshadow the sun"

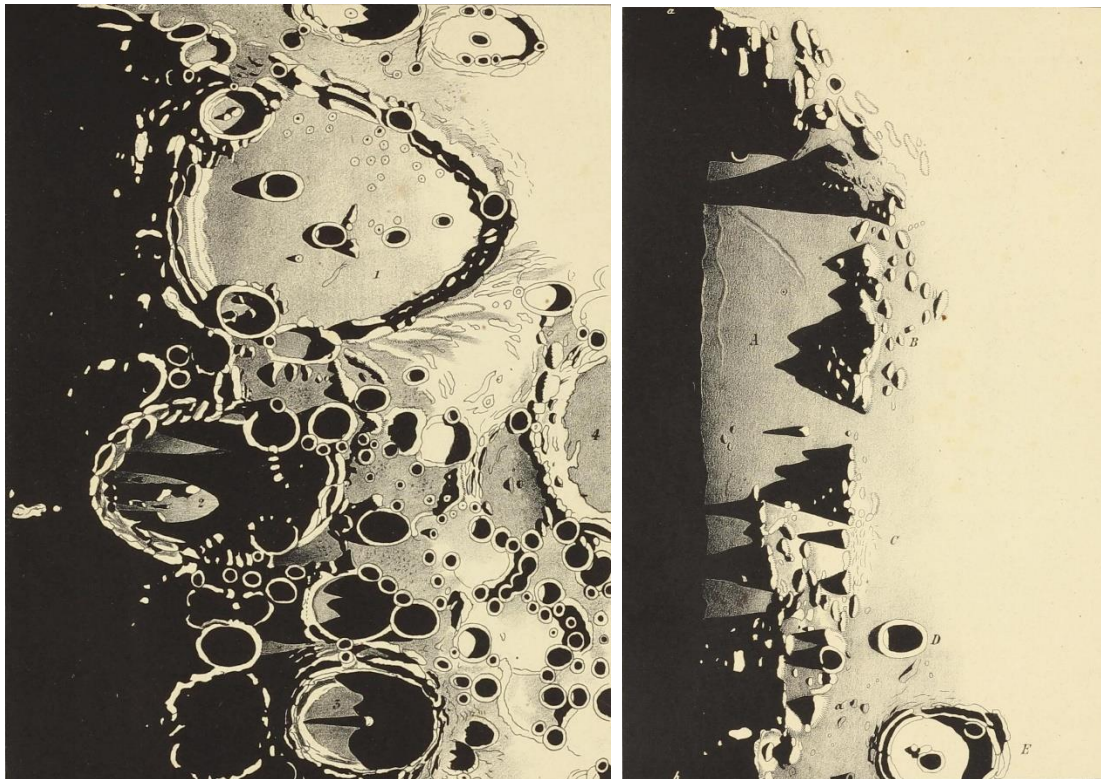
Literature: I. BEA II, 1018; BM/STC 17th-century German S-594; Houzeau-Lancaster 2948; VD17 12:161843A; Sommervogel VII 737 3; Zinner 4484; Danielson, *Paradise Lost and the Cosmological Revolution*, 2014. Dear, *Discipline and Experience: The Mathematical Way in the Scientific Revolution*, 1995. Kopal, *The earliest maps of the moon*, *The Moon*, Vol. 1 (1969), pp. 59-66. Reeves, *Painting the Heavens: Art and Science in the Age of Galileo*, 1999. Reeves & Van Helden (tr.), *Galileo Galilei & Christoph Scheiner, On Sunspots*, 2010.

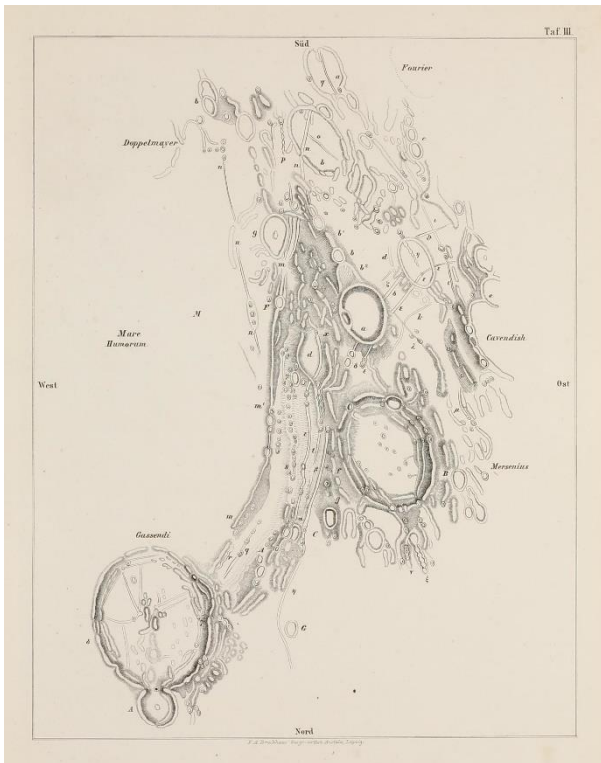
II. (Tanner): VD17 23:238787Z; Sommervogel VII, cols. 1843-1855. OCLC records no locations for North America.

**73**     [SCHMIDT, Johann Friedrich Julius](#). *Der Mond: Ein Überblick über den gegenwärtigen Umfang und Standpunkt unserer Kenntnisse von der Oberflächengestaltung und Physik dieses Weltkörpers*. Joh. Ambr. Barth, Leipzig, 1856, 8vo (227 x 146 mm). x, [2], 163 [1] pp., 2 chromolithographic plates (the first bound as frontispiece), errata leaf after preliminaries. Contemporary half cloth over blue marbled boards, gilt-ruled and -lettered spine (old remnants of paper label, light rubbing). Text little age-toned, occasional foxing. Provenance: Convent. P. P. Capuciner Confluentiae I. V. (stamp on title). (#002210)     € 600

Ashworth, *The face of the moon*, Linda Hall 17; Poggendorf II, 820; DSB XII, p.192. - FIRST EDITION of this fundamental selenographic work by the German astronomer and geophysicist Schmidt (1825-1884). Of special interest are the two plates showing topological details at the lunar terminator. The first plate depicts the crater field around Tycho and the second the Caucasus mountain range, both with long shadow casts of sunset. These two chromolithographs are "among the most vivid of nineteenth-century lunar illustrations" (Ashworth, 17).

"Schmidt (1825-1884) reportedly became interested in the moon when, at the age of 14, he came across a copy of Schröter's *Selenotopographical Fragments*. Schmidt devoted the rest of his life to observing, measuring, and drawing the moon, amassing in the process an incredible amount of selenographic information. He began his career in Germany, spent some time in Moravia, and in 1858 became Director of the Athens Observatory in Greece. His observing was done with a variety of telescopes, most notably a 6-foot refractor by Plossl. Schmidt is best known for his moon map, but this earlier treatise, written just before the move to Athens, is an important contribution in its own right, since it contains the first results of his measurements of the altitudes of the moon's mountains" (Ashworth, 17).





**The first monograph on lunar rilles**

**74** [SCHMIDT, Johann Friedrich Julius](#). *Über Rillen auf dem Monde. Nebst drei Steindrucktafeln*. Leipzig: Johann Ambrosius Barth, 1866. 4to (322 x 245 mm). 24 pp., 3 lithographic plates. Original publisher's printed boards (spine heavily chipped, endpapers browned and stained). Text and plates little aged-toned, title-page somewhat spotted. (#002611) € 600

VERY RARE FIRST AND ONLY EDITION of Schmidt's monograph on the lunar rilles. A full-page reproduction of plate III is reproduced in Whitaker, p.132.

**One of the greatest achievements in lunar cartography of the 19th century**

**75** [SCHMIDT, Johann Friedrich Julius](#). *Charte der Gebirge des Mondes nach eigenen Beobachtungen in den Jahren 1840-1874 entworfen / ... Erläuterungsband / Kurze Erläuterung zu J. Schmidt's Mondcharte in 25 Sectionen*. Berlin: Dietrich Reimer, 1878. Complete set of all three parts (1. atlas, 2. text volume and 3. short explanatory text). 1. Atlas: large oblong folio (493 x 487 mm). Single-side printed title sheets and 25 tinted lithographed maps of lunar sections, all loosely inserted



in later folder with original printed label laid down on front cover (label somewhat soiled and waterstained). The maps generally clean and bright with only a trifle dust-soiling to outer margins, title brown-stained by folder flaps and with some edge-chipping). 2. Text volume: *Charte der Gebirge des Mondes nach eigenen Beobachtungen in den Jahren 1840-1874 ... Erläuterungsband*. Berlin: Dietrich Reimer. 4to (303 x 229 mm). xii, 303 [1] pp., 1 text illustration. Original half cloth, publisher's printed label laid down on front board, spine with original printed paper label (light dust-soiling, spine label slightly chipped, corners and edges bumped (one corner stronger with fold), cloth split at

lower hinge towards foot of spine). Text with light, mostly marginal, age-toning (title and final page a bit stronger), occasional minor spotting. 3. *Kurze Erläuterung zu J. Schmidt's Mondcharte in 25 Sectionen*. Berlin: Dietrich Reimer. 4to (313 x 239 mm). 19 [1] pp. Original publisher's printed wrappers (little tanned and dust-soiled, light edge chipping), the text loosely inserted as issued, pages mostly unopened. The text age-toned, dust-soiling to front-page, one page with brown-staining from formerly inserted paper slip. A very good and complete set, exceptionally rare with all three parts. (#102812) € 8,500

Ashworth, *The face of the moon*, Linda Hall 14; Whitaker, *Mapping and Naming the Moon*, p.131-135 - EXCEPTIONALLY RARE FIRST EDITION. "The Schmidt map was the pinnacle of nineteenth-century selenography. Published in 25 sheets, if assembled it would make a map 6 1/2 feet across. There are over 33,000 craters depicted (compared to about 7,100 for Lohrmann and 7,800 for Beer and Mädler). For most of the position measurements Schmidt relied on the work of his predecessors, but he did determine himself the height of over 3,000 mountains, using the techniques invented by his countryman Schröter, whose book had inspired him to take up astronomy in the first place. The map was published in photolithograph by the Office of the Prussian General Staff." (Ashworth, 14).

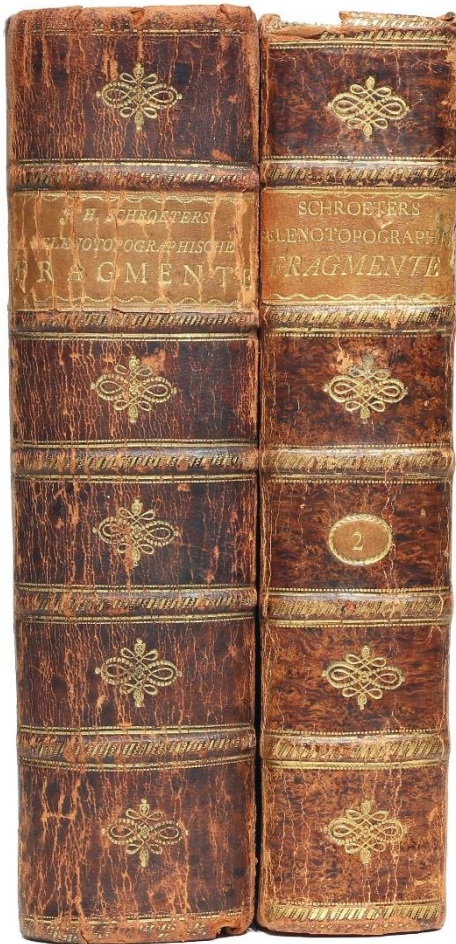
"Beginning in about 1840, [Schmidt] observed the Moon assiduously for some 34 years, making numerous drawings and height and depth measurements. All this extensive work culminated in 1878 with the publication of a map and book, *Charte der Gebirge des Mondes*. The format of the map follows that initiated by Lohrmann, i.e. 25 square sections with no overlap, south-up, with topography indicated by hachuring. The map areas are coloured with a pleasant sepia tone, with the darker patches emphasized either by stippling or by deeper sepia ink." (Whitaker, p.131).





**The masterpiece by the first really great lunar observer; Edmund Weiss' copy**

**76** [SCHRÖTER, Johann Hieronymus](#). *Selenotopographische Fragmente zur genauern Kenntniss der Mondfläche, ihrer erlittenen Veränderungen und Atmosphäre, sammt den dazu gehörigen Specialcharten und Zeichnungen*. Lilienthal and Göttingen: Auf Kosten des Verfassers, 1791-1802. Two volumes, 4to (256 x 206 mm). pp. [12], xx, 676, [1, "Verbesserungen"], [1, blank]; [8], xxii, 565, [1, colophon], [2, "Druckverbesserungen"]. Vol. I with 43 engraved plates and vol. II with 32 engraved plates, engraved devices on title-pages. Bound with the list of subscribers in vol. I. Contemporary full calf, spines gilt, red-dyed edges (boards slightly soiled and leather slightly abraded and cracky). Very



minor browning of text and plates only, occasional minor spotting, first title and following leaves with light waterstain marks. Provenance: Austrian astronomer Edmund Weiss, director of the Vienna observatory, with his ownership inscription on first free endpaper of vol. I, shelf mark and (erased) ink stamps elsewhere, old paper over paste on signature of first title. A fine copy of an important and rare astronomical work, with notably clean and bright plates. (#002212) € 26,000

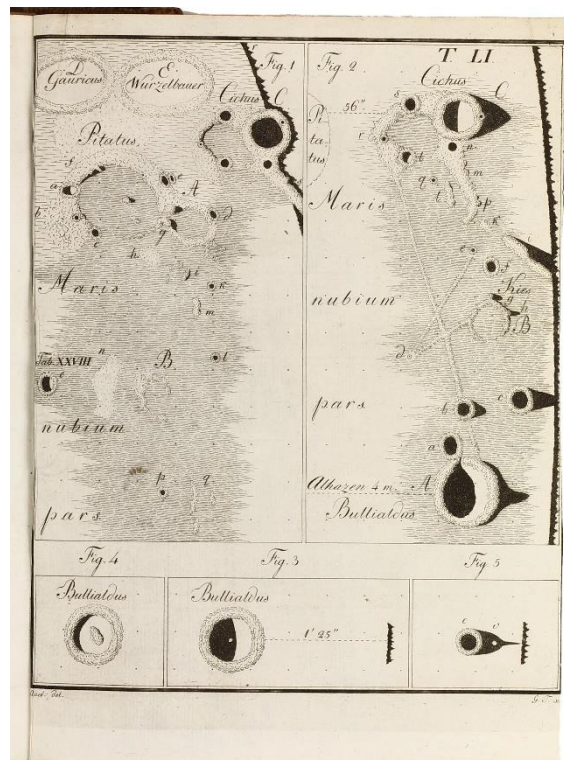
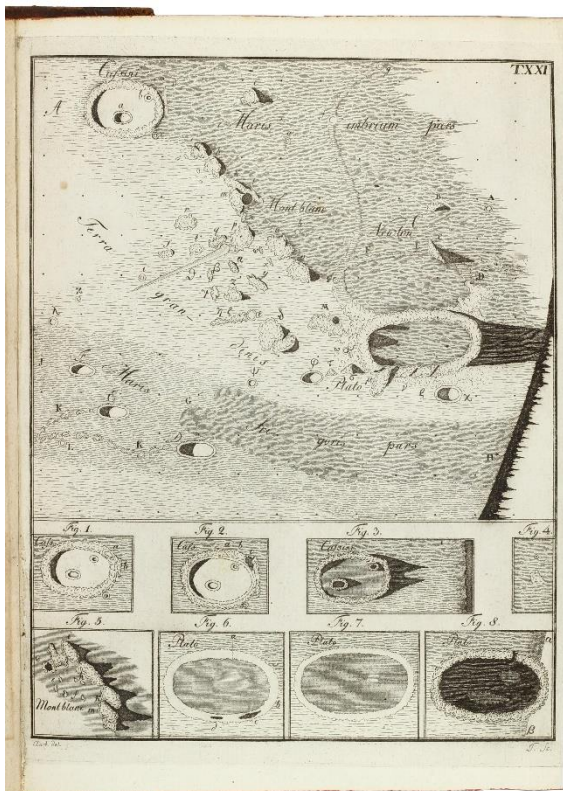
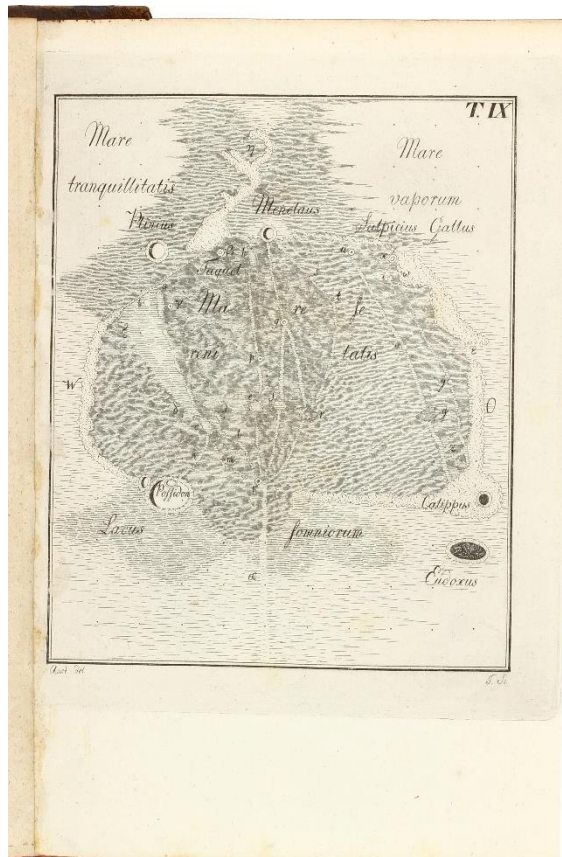
Ashworth, *The face of the moon*, Linda Hall 14; Whitaker, *Mapping and Naming the Moon*, p. 98-109. - FIRST AND ONLY EDITION. Although somewhat limited by the technology available at the time, Schröter is recognized by astronomers for his perseverance, scrupulous observations, and fastidious measurements. The excellent plates in *Selenotopographische Fragmente*, in addition to being remarkably faithful renderings of lunar topography, also represent the first systematic maps of the surface of the Moon.

German astronomer Johann Hieronymus Schröter (1745-1816) was trained as a lawyer but became interested in astronomy after meeting the brothers of British astronomer William Herschel at the Royal Chamber of George III in Hanover, where Schröter had been appointed secretary in 1777. From 1779 to 1786, he purchased increasingly powerful telescopes to observe the Sun, Moon, Venus, Mars, Jupiter, and Saturn, and soon became known in astronomical circles for his contributions to scientific journals. In 1791, he published the seminal *Selenotopographische Fragmente*, the work for which he is most well-known, and which represents the first accurate mapping of the Moon's surface. For his contributions to astronomy, and in

particular to the science of selenography, the Moon's Schröter Crater and Vallis Schröteri are named in his honor.

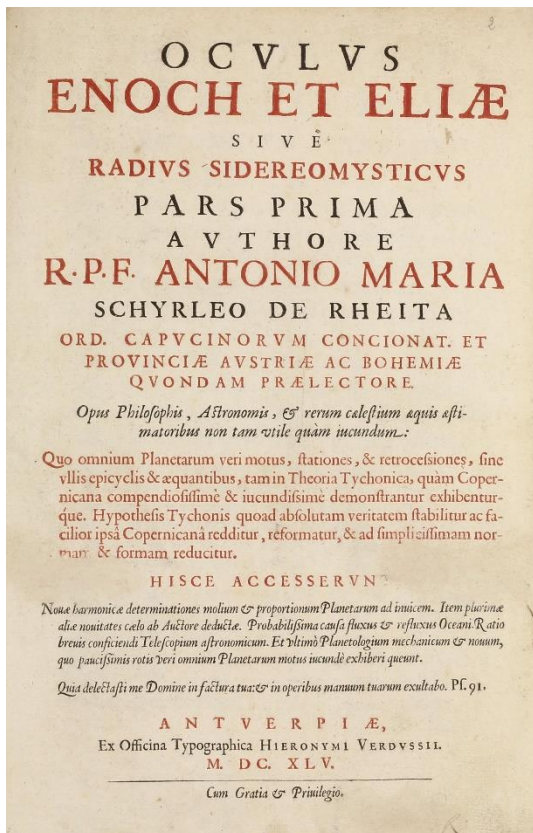
"The 75 engraved plates published in the two volumes include anything from whole-page drawings of larger areas to groups of twelve or more sketches of specific small details. Examination shows that while a few drawings appear quite amateurish ... others are reasonably accurate in their portrayal. Schröter consistently gives the rims of craters the appearance of an overhead view of a ring of closely spaced trees ... even though many of those craters display sharp rims as viewed in the telescope. Nevertheless, comparing the many drawings with modern photos shows that they include virtually all of the more important details of each region except in only one or two rare cases where he apparently became confused by what he observed. Whatever criticisms may be leveled against Schröter's work, it can fairly be said that he pioneered the science of detailed and comprehensive selenography which, with Mayer's pioneering attention to positional accuracy, laid the ground for an unprecedented burst of lunar observation and cartography in Germany." (Whitaker, p.107-9)

*Selenotopographische Fragmente*, especially the volume 2 (most of this edition was lost in a fire), is a very rare book; indeed, just fifty years after the publication of the second volume, John Russell Hind observed that "This work has become somewhat rare" (*The Solar System* (New York: Putnam); p. 79). Worldcat reports just four copies in institutional libraries.



*Includes the first map of the moon on a reasonably large scale*

**77** [SCHYRLEUS DE RHEITA, Anton Maria \(SCHYRLAEUS\)](#). *Oculus Enoch et Eliae, sive radius sidereomysticus pars prima ... Opus philosophis, astronomis, & rerum caelestium aequis aestimatoribus ... quo omnium planetarum veri motus, stationes & retrocessions ... tam in Theoria Tychonica, quam Copernicana ... demonstrantur exhibenturque (Pars altera sive theo-astronomia)*. Antwerp:



Hieronymus Verdussen, 1645. Two parts in one volume. Folio (303 x 205 mm). [52], 356, [4, blank] pp., 10 engraved plates by Arnold Loemans including a lunar map; [16], 279 [1], [28, index] pp. Each part with separate title-page, first title-page printed in red and black, engraved frontispiece, woodcut device on recto of final leaf. Signatures: \*-6\*<sup>4</sup>, 7\*<sup>2</sup>, A-Z<sup>4</sup>, Aa-Vv<sup>4</sup>, Xx<sup>8</sup>; \*-2\*<sup>4</sup>, A-Z<sup>4</sup>, Aa-Mm<sup>4</sup>, Nn<sup>6</sup> Oo-Pp<sup>4</sup>. Contemporary full vellum, blue coloured edges (upper part of spine with unobtrusive repair, some soiling and staining, corners bumped). Text and plates generally crisp and clean, some gatherings and pages with light even browning, occasional very minor spotting, a few contemporary annotations in red and black ink, ink smudge to pp. p.154 and 147, a few smaller marginal waterstains and tears in places. Very good copy. (#002940) € 38,000

Ashworth, *The face of the moon*, Linda Hall 3; Whitaker, *Mapping and Naming the Moon*, p.47. First edition of this very rare and influential work in the history of the telescope. "This treatise on optics includes a map of the full moon - the first on a reasonably large scale. Rheita is noted in the history of optics for his invention of the erecting eyepiece. It is ironic that his lunar map is one of the first to have the south pole at the top, showing the moon inverted, as it appears through

an astronomical telescope *without* his eyepiece ... Rheita's map has not been much appreciated, probably because it was so soon eclipsed by the more splendid efforts of Hevelius, Divini, and Grimaldi, but it captures the brilliant ray system of Tycho much better than any other illustration to that time, as well as the mountainous nature of the Apennines. The floors of the craters Plato and Grimaldi are properly depicted as black." (Ashworth, 3).

"Rheita actually introduced a number of crucial improvements in his work, leading to a real break-through in telescope design. First, Rheita suggested a new and much better method of polishing lenses, leading to a strong reduction of deviations; secondly (and even more importantly), he found that a compound ocular, composed of three or four lenses, resulted in a much better quality than using only a single (compound) ocular" (Van Helden, *The Origin of the Telescope*, p. 334).

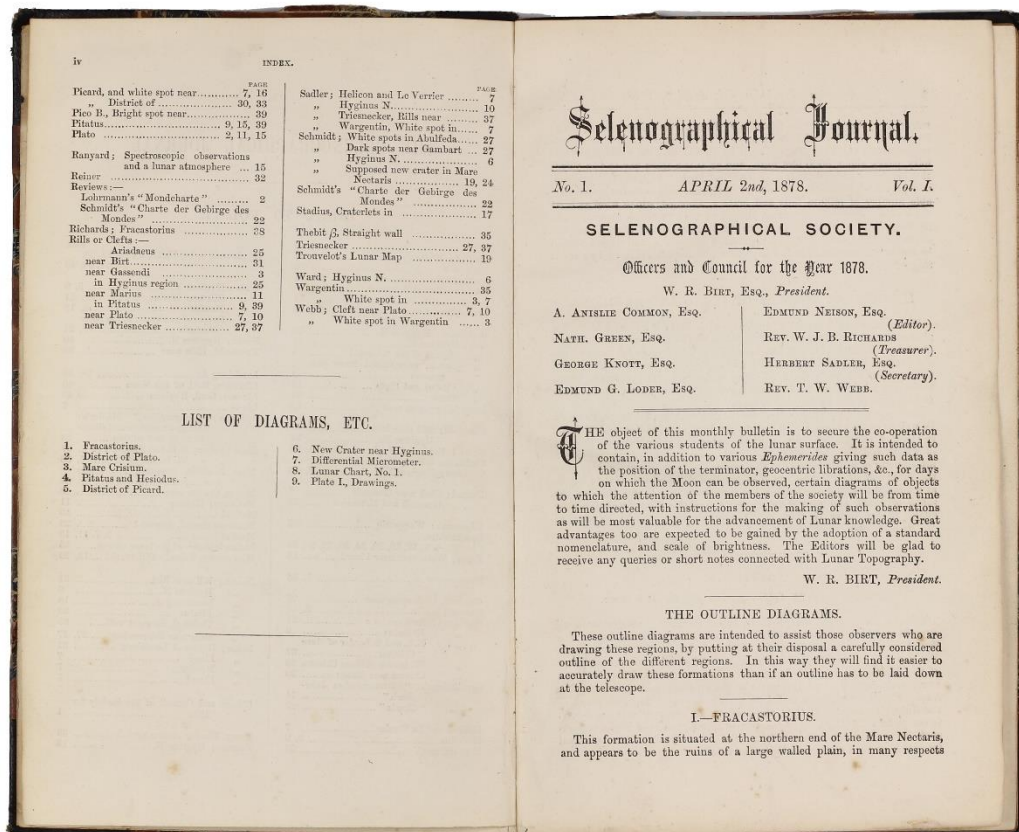
"The map is a copperplate edition, diameter about 18.5 cm, of an original drawing made by Rheita. It is essentially a full-Moon image with a very few craters included from observations made at other phases. The ray systems emanating from Tycho and other craters are very stylistically drawn, and bear little resemblance to reality. Indeed, those lettered H and V are non-existent. The small bright spots are almost entirely randomly placed." (Whitaker, p.47)



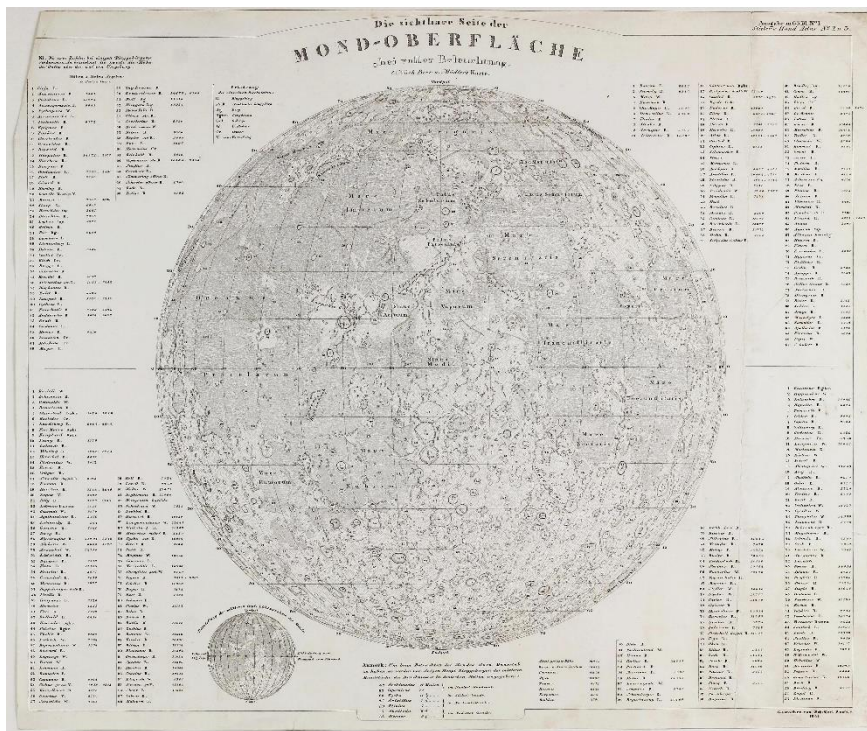
**78** **[SELENOGRAPHICAL SOCIETY].** *Selenographical Journal*. A monthly bulletin of the *Selenographical Society*, London. Vol. 1, no. 1 (Apr. 2nd, 1878) – vol. 5, no. 59 (Dec. 10th, 1882), all published. Clapham [England]: Selenographical Society / London: Printers, W. Hall & J.J. Lovitt. Two numbers issued for May 1878 and for Dec. 1880. 58 numbers in total (no. 43 never published), caption title to each number, continuous pagination for each vol., general index bound at beginning of each vol. This set has the text only (bound without any plate), 1 illustration in text. Vol. I: nos. 1-10, [2], 40 pp, 12 pp. Memoranda, [6] pp. Soc. rules. Vol. II: nos. 11-22, [2], 96 pp. Vol. III: nos. 23-35, [2], 104 pp. Vol. IV: nos. 36-42, 44 to 47, [2], 96 pp., [4] pp. Soc. rules. Vol V: nos. 48 to 59, [2], 96 pp. Bound in uniform contemporary half leather over marbled boards, gilt-lettered spines (spine ends and extremities rubbed, vol. V with foot of spine chipped, upper board of vol. III detached). Text little browned only. Provenance: Mary Ashley, British astronomer (her ownership inscription on free endpapers and pencil annotation within text), British Astronomical Association (stamps on front pastedowns). (#002213) € 7,500

Ashworth, *The face of the moon*, Linda Hall 24 - EXCEEDINGLY RARE FIRST AND ONLY EDITION. "The moon acquired its own journal in 1878, when the British amateur William Radcliff Birt organized the Selenographical Society in London and launched this publication, under the editorship of Edmund Nevell (Neison). The Society and the *Journal*, alas, did not survive the death of their founder in 1881, and the *Journal* ceased publication after only five volumes. During its short lifetime, the most prominent subject of discussion was whether a new crater had just appeared below (north of) the Hyginus rill, just south of Mare Vaporum, near the center of the moon. Hermann Klein, a German astronomer and popularizer, made the claim for the new crater in 1876, and called it Hyginus Nova, or N for short. He used a series of drawings made by Julius Schmidt over the years to argue that the crater had suddenly and recently appeared. Many such drawings, by Schmidt and others, appeared in the various issues of the *Journal*" (Ashworth).

Amazingly, COPAC and British Library do not list any copy present in UK public libraries. Within the EU, there are copies in Vienna, Hamburg (Sternwarte) and Paris. Three locations in the US are listed in OCLC/Worldcat: Linda Hall Library, University of Cincinnati, and T.C. Andersen Library. No information about completeness of these holdings is provided.



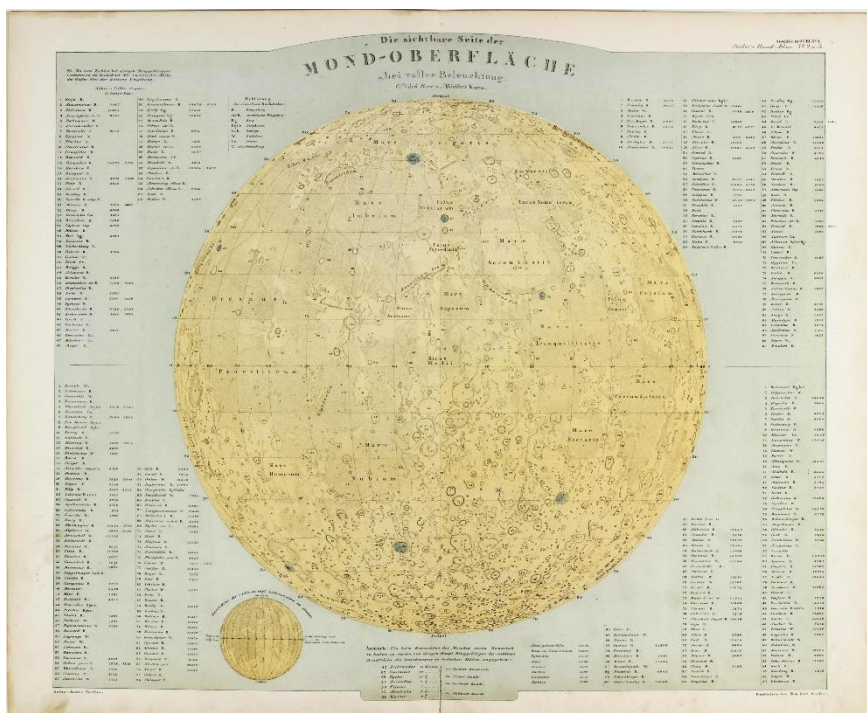
**79** [STIELER, Adolph et al.](#) *Die sichtbare Seite der Mond-Oberfläche bei voller Beleuchtung nach Beer u. Mädler's Karte.* Sheet no. 1 of Stieler's Handatlas. Gotha: Justus Perthes, [1841]. Lithographed lunar map on single sheet, 353 x 422 mm, engraved by Joh. Carl Ausfeld, 1841.



Lithographed lunar map on single sheet, 353 x 422 mm, engraved by Joh. Carl Ausfeld, 1841. Dog-ear at upper left corner not affecting image, vertical crease, little age-toning. A well-preserved copy from the popular geographical atlas by Stieler. (#002742) € 500

A map after Beer and Mädler of the full moon, here projected north-up and thus opposite to the original Beer and Mädler projections. Height and depth values of 155 topographical features are given in Paris foot. The map itself deviates slightly from the original Beer & Mädler maps.

**80** [STIELER, Adolph et al.](#) *Die sichtbare Seite der Mond-Oberfläche bei voller Beleuchtung nach Beer u. Mädler's Karte.* Sheet no. 1 of Stieler's Handatlas. Gotha: Justus Perthes, [ca. 1875]. Chromolithographed lunar map on folding single sheet, 374 x 460 mm, engraved by Joh. Carl Ausfeld.



Short tear at fold, little age-toning and marginal dust-soiling. From a later edition of the popular geographical atlas by Stieler. (#002743) € 500

A map after Beer and Mädler of the full moon, here projected north-up and thus opposite to the original Beer and Mädler projections. Scale approx. 1:13,000,000. Height and depth values of 198 topographical features are given in Paris foot. The map itself deviates slightly from the original Beer & Mädler maps. In addition to the large map, there is a small illustration demonstrating the daily changes of lunar phase.

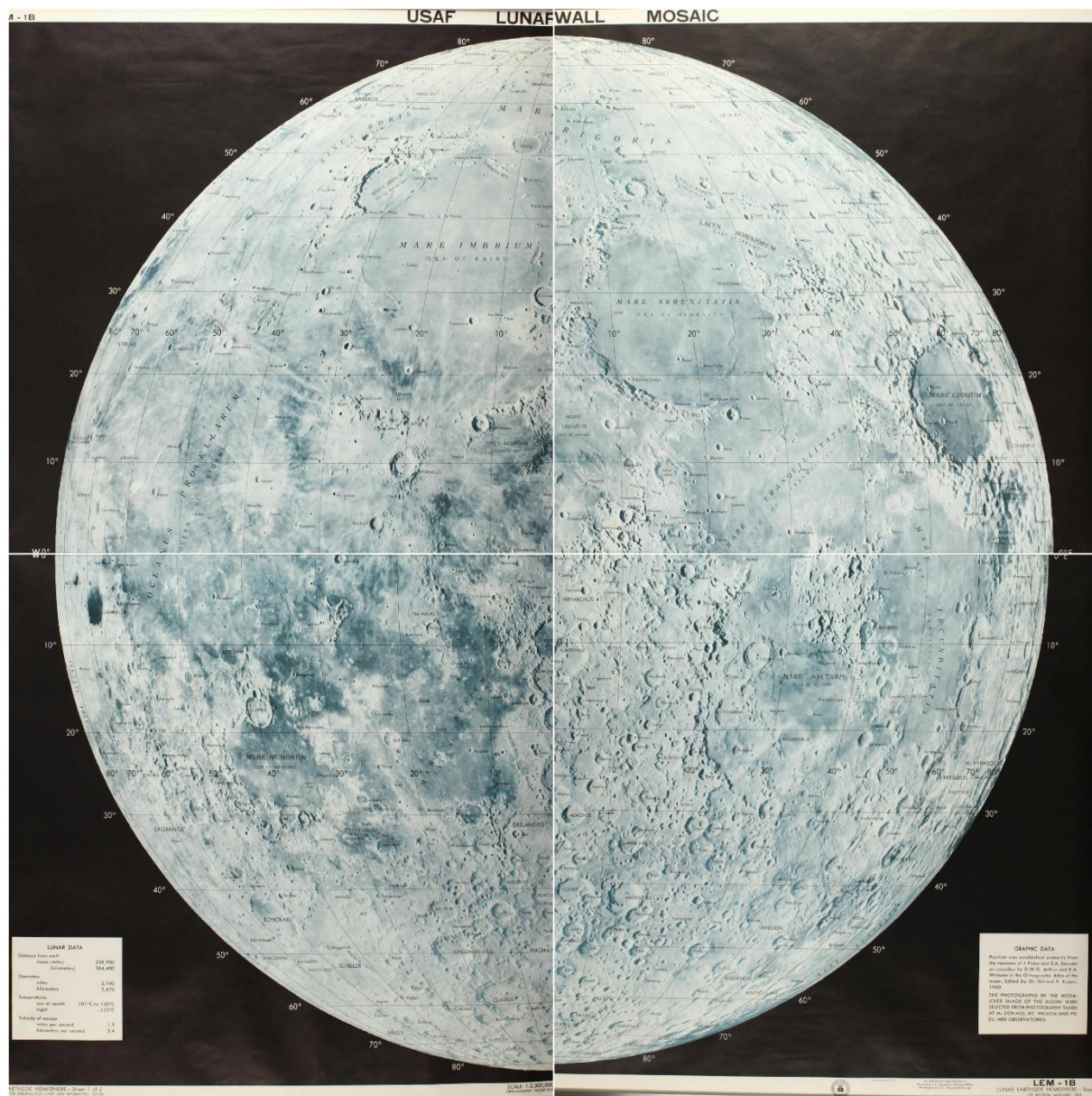
**81** [ACIC](#). *USAF Lunar Reference Mosaic LEM-1. Lunar earthside hemisphere in orthographic projection*. St. Louis: Aeronautical Chart and Information Center (ACIC), 2nd edition, November 1962. Scale 1:5,000,000. Single lithographed sheet, size 34 x 35 in. (864 x 889 mm, lunar diameter 27 in). The map with a few marginal kinks, but generally well preserved. #003203 € 1,200

"The USAF Lunar Reference Mosaic (LEM) is a composite photo mosaic of the moon produced from selected photographs taken at Mt. Wilson, McDonald and Pic du Midi Observatories. Sections of twenty-four photographs were chosen which would provide a constant sun angle in order to maintain a uniform portrayal of lunar craters and prominences. This mosaic was compiled to an orthographic projection which shows the moon as a sphere as viewed from an infinite distance. Position was determined through the use of selenographic control established primarily from the measures of Franz and Saunder as compiled in the Orthographic Atlas Of the Moon, edited by G. P. Kuiper in 1960. Each photograph was copied to a common scale and rectified to mean libration in order for it to match or fit adjacent sections. The USAF Lunar Reference Mosaic was originally compiled In February 1960 and published at the 1:5,000,000 scale. In 1962 it was recompiled with improved photo imagery and issued in the three existing sizes. Subsequent revisions have been limited to updating names. This series of lunar mosaics have been one of the most popular items in the lunar map inventory. They have been very much in demand for use as a wall display and as a base for various indices. All three sizes of LEM are lithographed in duotone blue and gray against a solid black background." (NASA LPI online resource).



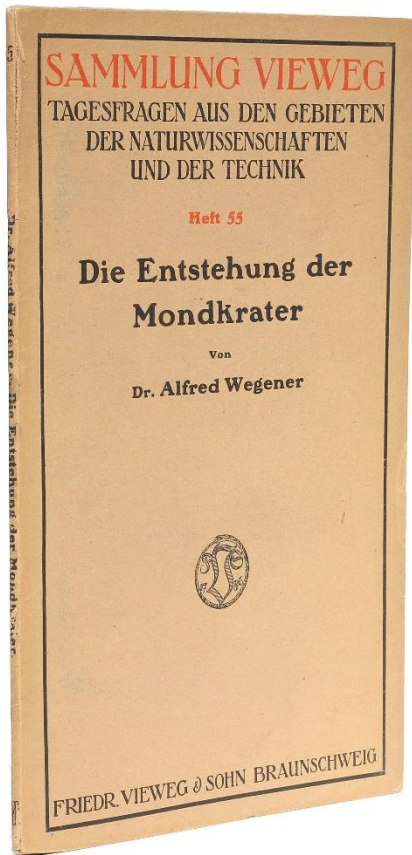
**82 ACIC.** *USAF lunar wall mosaic LEM-1B. Lunar earthside hemisphere in orthographic projection.* St. Louis: Aeronautical Chart and Information Center (ACIC), 1st edition, January 1963. Scale 1:2,500,000. Single map on two lithographed sheets, sheet size 1470 x 890 mm, lunar diameter 1390 mm. The sheets with a few short kinks, but generally very well preserved. #003204 € 1,200

"In 1962, LEM-I was recompiled from improved photo imagery and issued at scales of 1: 10,000,000; 1:5,000,000 and 1:2,500,000, the latter in two sheets and titled *USAF Lunar Wall Mosaic (LEM-1B)*. This series of lunar mosaics has been one of the most popular items in the ACIC lunar map inventory. The mosaics have been very much in demand as a wall display and as a base for various indices. All three sizes of LEM are lithographed in duotone blue and gray against a solid black background." (Z. Kopal & R.W. Carder, *Mapping of the Moon: Past and Present*, p.115).



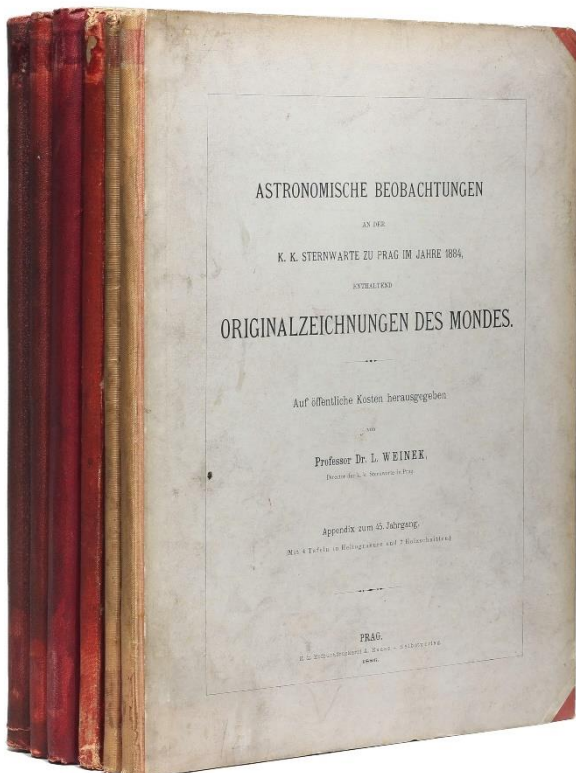
**Wegener's experimental studies to proof the impact origin of lunar craters**

- 83** [WEGENER, Alfred](#). *Die Entstehung der Mondkrater*. Sammlung Vieweg, Heft 55. Braunschweig: Vieweg & Sohn, 1921. 8vo (224 x 143 mm). 48 pp., 3 plates. Original publisher's wrappers, printed in red and black, spined lettered in black (short split at fold towards head of spine, minor soiling). Text little age toned only, a few pencil markings at fore-margin. Provenance: Hirschwald'sche Buchhandlung Berlin (small sticker to inner front wrapper). A fine, unsophisticated copy. (#002214) € 750



FIRST EDITION, very rare. As a scientist, Wegener was extremely versatile. 106 of his 170 publications treat meteorological topics. The doctoral thesis however treated astronomy. In some way, his later work on lunar craters and meteorites can be regarded as a continuation of his early astronomical studies. Wegener was concerned with the shape of impact craters. He made experiments using cement powder and in 1921 wrote the monograph *Die Entstehung der Mondkrater* (The origin of lunar craters). In this work, he expressed the view that the great majority of lunar craters were formed by the impact of meteorites. An opinion at that time advocated by few outsiders only, but which is generally accepted today. Mott T. Greene, *Alfred Wegener and the Origin of Lunar Craters*. Earth Sciences History, Vol. 17, No. 2, 1998, pp. 111-138.

- 84** [WEINEK, Ladislaus](#). *Astronomische Beobachtungen an der K.K. Sternwarte zu Prag im Jahre 1884, in den Jahren 1885 [- 1909]*. Prag, im Selbstverlage der Sternwarte, A. Haase, 1886-1912. Six



Volums (all published), 4to (308 x 240 mm). With a total of 56 plates in heliogravure, collotype, photolithography, lithography, and colour printing. Original publisher's printed boards over cloth (little rubbing and soiling, bumping to corners). Internally little age-toned with very minor spotting in places, otherwise clean. Provenance: K. u. k. militärisch-geographisches Institut (shelf label to front inner pastedown of each volume and ink stamp to title-page and to margin of a few plates). (#002127) € 2,500

A COMPLETE SET OF LADISLAUS WEINEK'S ASTRONOMICAL RESEARCH PERFORMED BETWEEN 1885 AND 1909 AT THE IMPERIAL OBSERVATORY, PRAGUE, CONTAINING MUCH OF HIS WORK ON LUNAR TOPOGRAPHY. The set comprises:

I. *Astronomische Beobachtungen an der k.k. Sternwarte zu Prag im Jahre 1884, enthaltend Originalzeichnungen des Mondes*. K.k. Hofbuchdruckerei A. Haas - Selbstverlag, Prague, 1886, 4to (310x240 mm). [2], iv, 74 pp., 4 plates in heliogravure after drawings by



Weinek and 7 woodcut illustrations in text. Some foxing to plates.

II. Astronomische Beobachtungen an der k.k. Sternwarte zu Prag in den Jahren 1885, 1886 und 1887, enthaltend Originalzeichnungen des Mondes. K.k. Hofbuchdruckerei A. Haas - Selbstverlag, Prague, 1890, 4to (311x240 mm). [6], 61 [1] pp., 7 plates (of which 3 lithographed and 4 in heliogravure) after drawings by Weinek and 9 woodcut illustrations in text. Some foxing to plates.

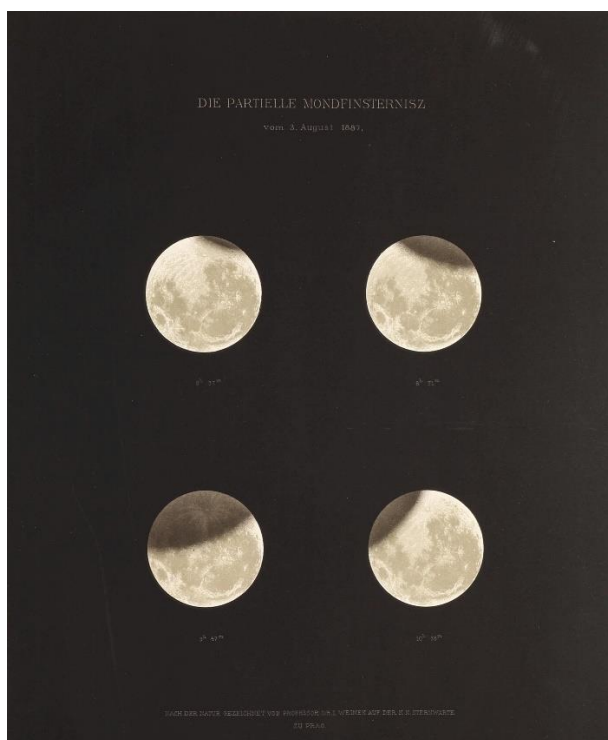
III. Astronomische Beobachtungen an der k.k. Sternwarte zu Prag in den Jahren 1888, 1889, 1890 und 1891, nebst Zeichnungen und Studien des Mondes. K.k. Hofbuchdruckerei A. Haas - Selbstverlag, Prague, 1893, 4to (309x237 mm). [8], 90 pp., 9 plates (in heliogravure, photolithography and color printing) and 4 illustrations in text.

IV. Astronomische Beobachtungen an der k.k. Sternwarte zu Prag in den Jahren 1892 - 1899, nebst Zeichnungen und Studien der Mondoberfläche nach photographischen Aufnahmen. K.k. Hofbuchdruckerei A. Haas - Selbstverlag, Prague, 1901, 4to (307x237 mm). [6], 131 [1] pp., 18 plates (of which 3 in heliogravure, 2 lithographed and 13 in colotype) and 12 illustrations in text.

V. Astronomische Beobachtungen an der k.k. Sternwarte zu Prag in den Jahren 1900 - 1904. K.k. Hofbuchdruckerei A. Haas - Im Selbstverlage der Sternwarte, Prague, 1907, 4to (312x240 mm). vi, 106 pp., 10 plates (in mono- and 3-colour colotype) and 25 illustrations in text.

VI. Astronomische Beobachtungen an der k.k. Sternwarte zu Prag in den Jahren 1905 - 1909. K.k. Hofbuchdrucker A. Haas - Im Selbstverlage der Sternwarte, Prague, 1912, 4to (309x240 mm). vi, 151 [1] pp., 8 plates (in mono- and 3-colour colotype and lithography) and 54 illustrations in text.

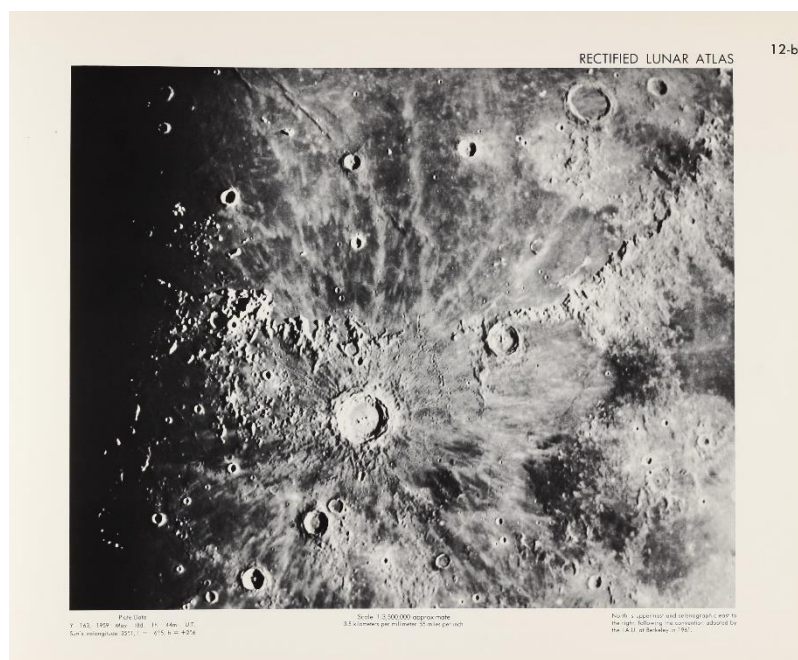
Born in Buda in 1848, Weinek was educated in Vienna, and worked for a period at the photography laboratories in Schwerin. In 1874 he joined a German expedition to the Kerguelen Islands to observe a transit of Venus across the face of the Sun. His results from the expedition were published in *Nova Acta Leopoldina*. In 1883 he became a professor in Prague and the ninth director of the Klementinum observatory. By then hardly used in observational research, the observatory suffered from outdated equipment, combined with an awkward architectural layout. Weinek's first efforts concentrated on rectifying this by installing superior instruments and by making important architectural changes. As soon as 1884 he began to prepare highly detailed drawings of lunar topographic features, with a preparation time of up to 225 hours per drawing, partly based on his analysis of photographs of the Moon taken at the Lick Observatory, the Columbia College Observatory, and the Paris Observatory. Weinek's combined treatment of the drawings and analysis of photographs brought to light many unrecorded features on the lunar surface, and he became the leading investigator in this field. His atlas of the Moon of 1897-1900 was the first such atlas based on photographs. His works attracted international attention and recognition. He received the 'Diplôme D'Honneur' at the Exposition Universelle de Paris in 1890, was honored with a doctorate by Berkeley University in 1893, and was invited as a member to several European and American scientific societies.



**85** [WHITAKER, Ewen A., KUIPER, Gerard P., HARTMANN William K. and SPRADLEY L. H.:](#) *Rectified Lunar Atlas - Supplement Number Two to the Photographic Lunar Atlas*. Contributions, Lunar and Planetary Laboratory, No. 3, The University of Arizona Press, Tucson, 1963. Oblong folio (380 x 465 mm). Title, 2 pages of text and 141 photographs. Original blue cloth. Dedication inscription on inner front cover by R.G. Baxter to the British Astronomical Association. (#002215) € 600

Ewen Whitaker (1922-2016) was astronomer at the Royal Greenwich Observatory, becoming the director of the Lunar Section of the British Astronomical Association. He then emigrated to the United States and joined the staff of the Yerkes Observatory. In 1960 he left Yerkes, along with Gerard P. Kuiper, helping found the Lunar and Planetary Laboratory at the University of Arizona, eventually becoming research scientist emeritus. He worked on several NASA missions, and was successful in locating the landing site of the Surveyor 3. (This was used to determine the landing site for the Apollo 12 mission.) He has been considered by some to be the world's leading expert on mapping the Moon and lunar nomenclature. He was a member of the IAU's Task Group for Lunar Nomenclature (source: Wikispace).

As part of G.P. Kuiper's Moon-mapping program of the late 50s and 60s a unique atlas of the limb regions was made, the *Rectified Lunar Atlas* by Whitaker, Kuiper, Hartmann and Spradley. This large format, bound atlas

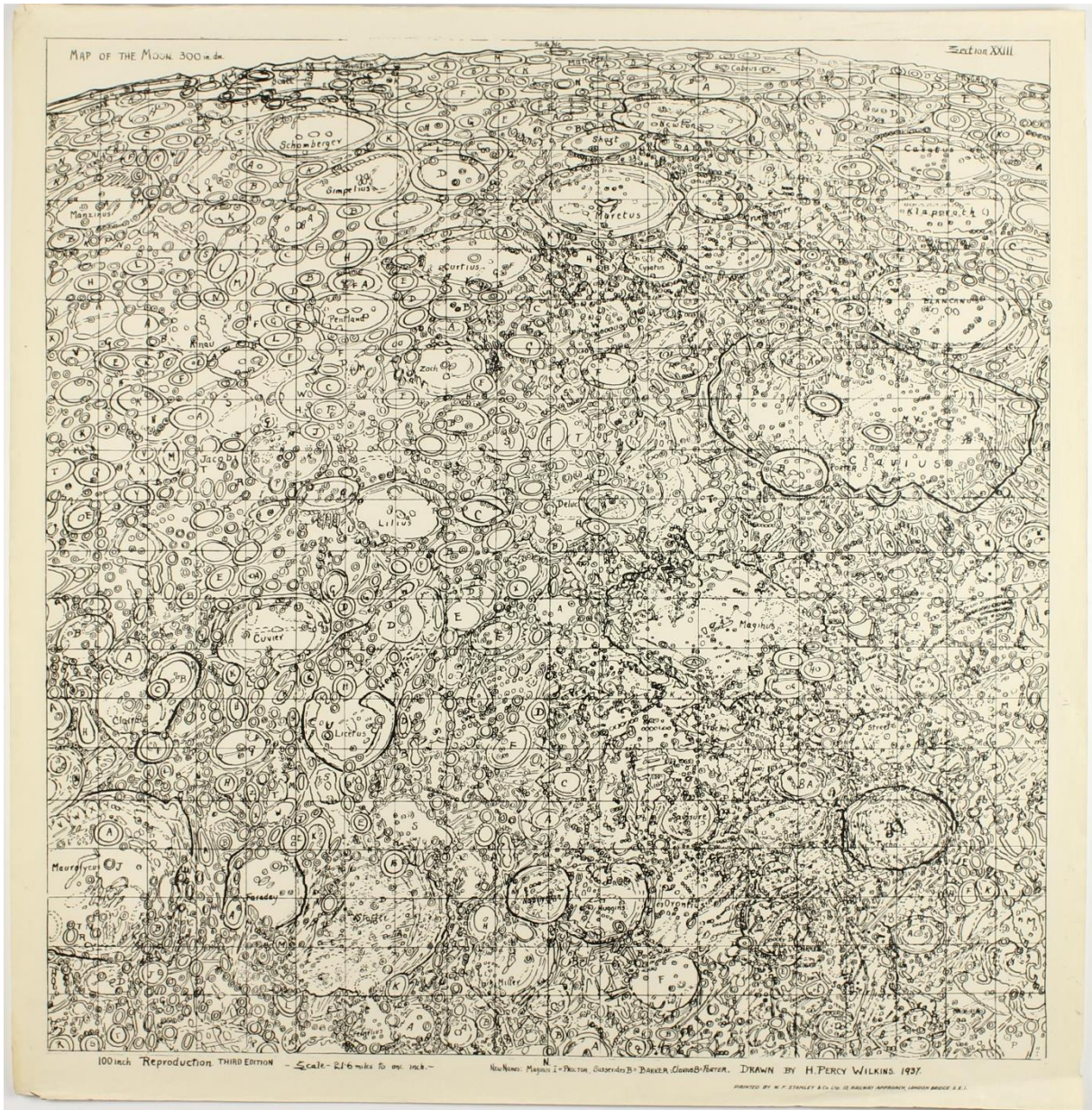


showed each limb area as seen from directly overhead. Since this was made before lunar orbiters flew it was necessary to create it by projecting telescopic images of the Moon onto a large white sphere and then re-photographing the sphere from directly over the area of interest. In doing this Bill Hartmann discovered the multi-ring structure of Orientale and other basins. This vertical view also allowed us crater cataloguers (compiling the System of Lunar Craters) to clean up many inconsistencies of limb nomenclature and recognize craters deserving names. D.W.G. Arthur and E.A. Whitaker gave 68 new names or shifted earlier names to real formations in the Atlas. (see Whitaker, p. 234-35).

**86** [WILKINS, Hugh Percy.](#) *300-inch Map of the Moon*. Oblong folio (535 x 550 mm). 23 leaves of square lunar section maps, mixed editions (1937, 1946, 1951). London: Printed by W. F. Stanley & Co. Hand-lettered title-leaf, dated 1946. Sections present, for 1st edition 1937: 9, 23; for 2nd edition, 1946: 4, 11, 12, 18, 19, 20, 24 (+duplicate with added hand drawing); for 3rd edition, 1951: 3, 9, 10, 11, 12, 15, 18, 19, 20, 25. The maps little age-toned, occasional dog-eared. Provenance: Ink stamp of the British Astronomical Association. (#002216) € 4,500

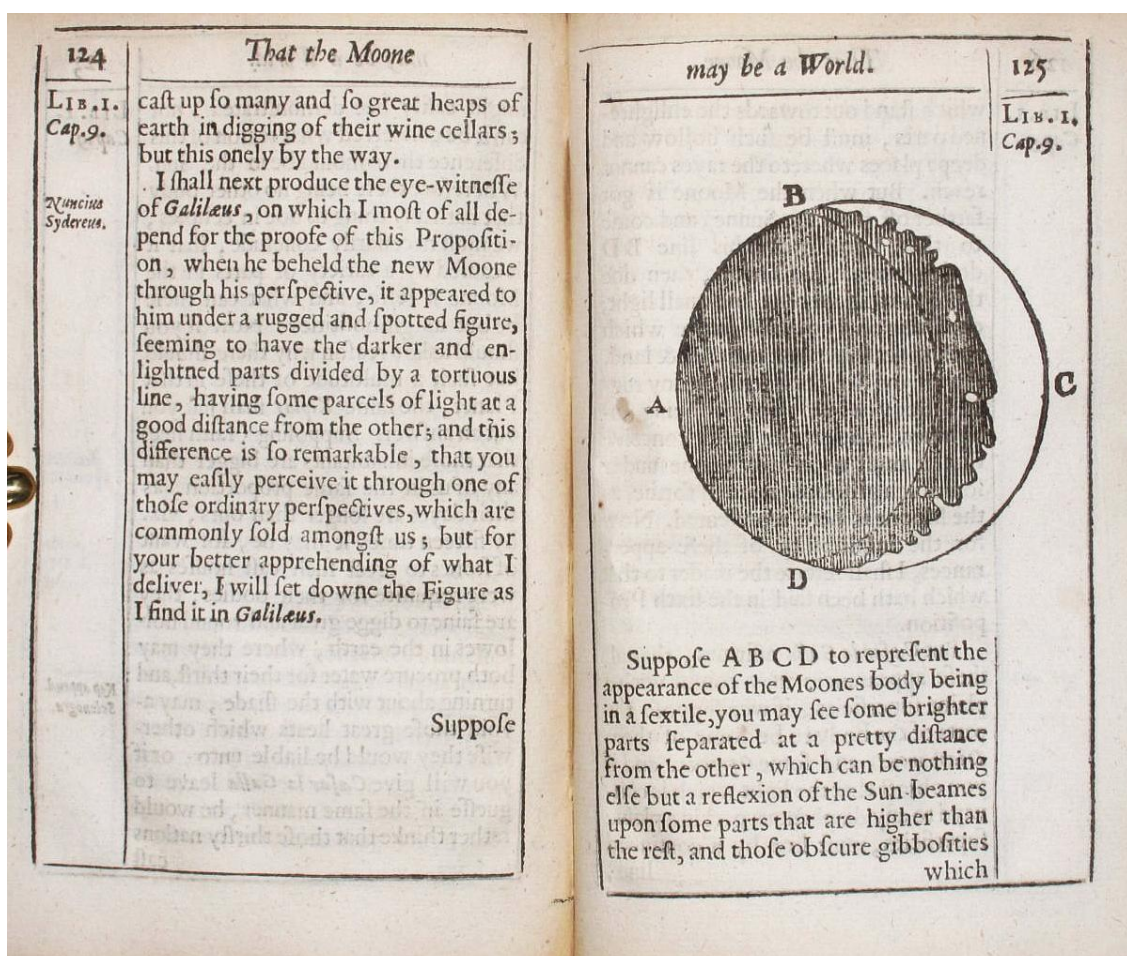
All editions are very rare. Hugh Percy Wilkins is most noted for his efforts as an amateur astronomer, particularly as a selenographer. He was elected to the British Astronomical Association in 1918 and served as Director of the Lunar Section from 1946-1956. He is probably best known for the classic observing guide he wrote with Patrick Moore. Wilkins produced a number of lunar maps, beginning with a 60-inch map published in 1924. This was followed in 1930 by a 200-inch map, in quadrants, that was also printed in reduced size as a single image 30 inches in diameter. He then commenced work on his 300-inch map, which first appeared in 1946, with revised versions issued in 1951 and 1954. Wilkins and Moore reproduces the 300-inch map in reduced-size sections. This map was considered by some as the culmination of the art of selenography prior to the space age. However Wilkins' maps were dense with detail, some of which was fictitious, making them less useful than most. The Goodacre and Mee crater names from Wilkins' 1924 map he were part of the original IAU nomenclature, as was the name of Wilkins himself (reportedly proposed by Karl Müller). According to Whitaker (p. 230), at the 1948, 1952 and 1955 General Assembly meetings of the IAU, Wilkins proposed 96 new names from his 300-inch map. None of these proposals were accepted, but 16 of the names have subsequently been used, almost always for a feature other than the one proposed by Wilkins. Most of Wilkins' suggested names are printed in an Appendix

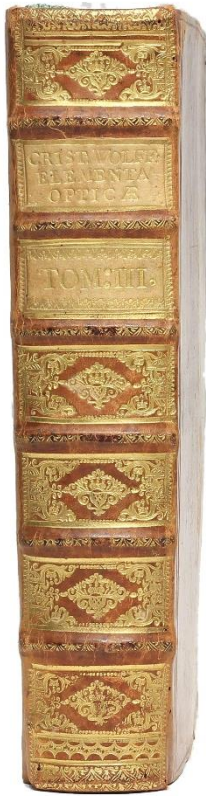
to Wilkins and Moore (Wikispace). A full-page reproduction of Section XXIII is shown in Whitaker, p.172 with his remark that "the addition of fictious fine detail has so cluttered the map that it is virtually uninterpretable." (Whikaker, *Mapping and Naming the Moon*, p.171-72).



87 [WILKINS, John](#). *A Discourse Concerning A New World & Another Planet, In two Bookes. The First Book. The Discovery of a New World. Or, A Discourse Tending to Prove, That 'tis Probable There May Be Another Habitable World in the Moone. With a Discourse Concerning the Possibility of a Passage Thither.* London: Printed by John Norton for John Maynard, 1640. *The Second Book, A Discourse Concerning a New Planet. Tending to prove, That 'tis Probable Our Earth is one of the Planets.* London: Printed by R. H. for John Maynard, 1640. Two volumes bound in one. 8vo (170 x 110 mm). [16], 242, [2:blank] pp.; [14], 246, [2:errata] pp., extra engraved title by W. Marshall to vol. 1 (re-inserted on stub), several woodcut diagrams in text, with leaf P7 present in vol. 2 as a cancel leaf (with engraved illustration, bound before p.1) and as a cancellandum, errata leaf to vol. 1 bound before p.1, errata leaf to vol. 2 bound at the end (supplied and re-margined), leaf R1 (pages 241/2, vol. 2) supplied and re-margined, light circular stain on opening gathering, blindstamp on title and last leaf, bookplate of Wigan public library to inner front cover, contemporary calf (hinges repaired, upper joint cracked). An internally sound and complete copy, with all the cancel and errata leaves present. (#001812) € 3,900

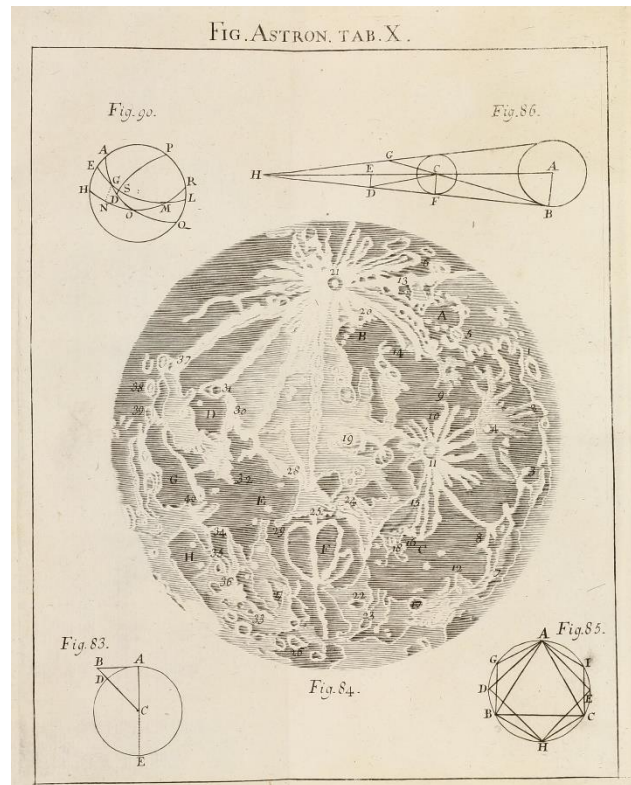
Norman 2240. - Book I: Third Impression, Corrected and Enlarged. Book II: First edition. FIRST COMPLETE EDITION. 'ONE OF THE EARLIEST SIGNIFICANT WORKS OF POPULAR SCIENCE' (Norman), which comprises the third edition of Wilkins' *The Discovery of a New World* as part i and the first edition of *A Discourse Concerning a New Planet* as part ii. 'Wilkins's primary aim was to promote general knowledge and acceptance of the "new" science of Copernicus, Galileo and Kepler and to wean his readers from an unquestioning dependence upon Aristotelian doctrine and literal biblical interpretation. In the first edition of the *Discovery* Wilkins had used Galileo's statement that the moon is a world similar to the earth as a foundation for more speculative hypotheses, wondering if the moon might not support life, what its inhabitants might be like, and whether the moon's resemblance to the earth could be extended into a uniformitarian theory of the universe. In [this] edition Wilkins added a section, inspired by Francis Godwin's *Man in the Moone* (1638), on the then-sensational idea of voyaging to the moon, discussing the problems connected with this endeavour -- such as gravity and the nature and height of the atmosphere -- in terms of contemporary physical knowledge' (Norman).





**88** [WOLFF, Christian von](#). *Elementa Matheseos universae. Tomus Tertius, qui opticam, perspectivam, catoptricam, dioptricam, sphaerica & trigonometriam sphaericam, atque astronomiam, tam sphaericam quam theoreticam complectitur. Editio novissima*. Geneva: Henricum-Albertum Gosse, 1747. 4to (260 x 205 mm). viii, 581 [1] pp. Including 51 folding engraved plates. Contemporary calf, spine with two gilt lettered labels and rich floral gilt decoration, red-dyed edges, and marbled endpapers. (#002797) € 450

Graesse VII 469. Final edition. Volume III of the five-volume encyclopedic standard work of mathematics and exact sciences by Christian Wolff (1679-1754). With plates on optics, perspective, catoptrics, spherical trigonometry, and astronomy, including a lunar chart. The south-up map of the full moon is a rather typical example of the "grossly degraded moon map as found in encyclopedias of the late 1700s. The 'Greek phi' shape in Mare Serenitatis shows that it was based very loosely on the Cassini maps" (Whitaker, *Mapping and Naming the Moon*, p. 86).



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