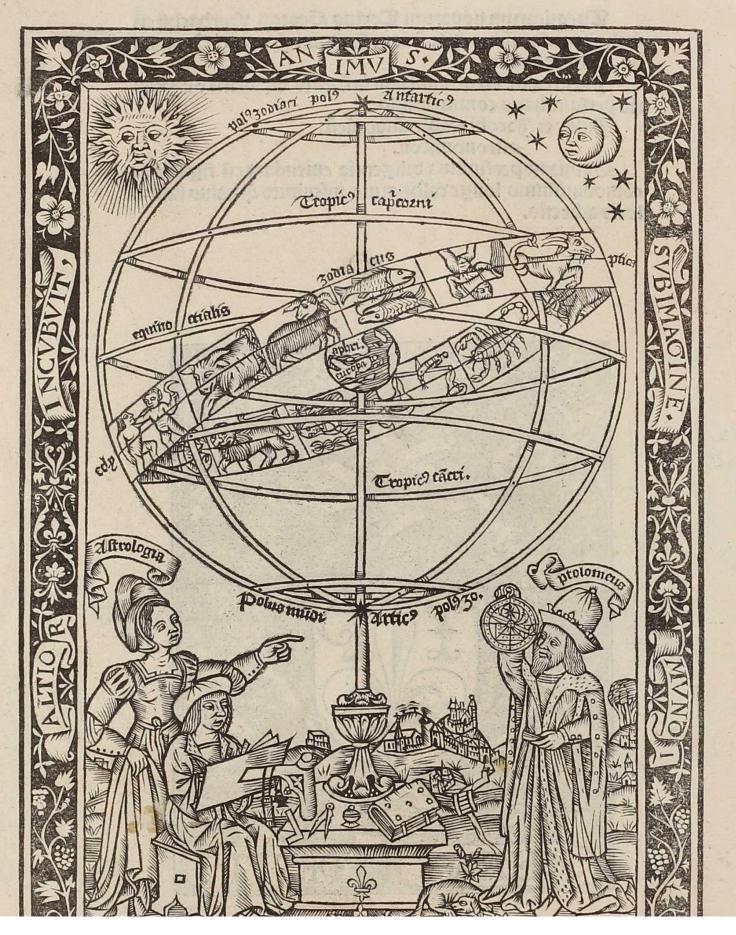
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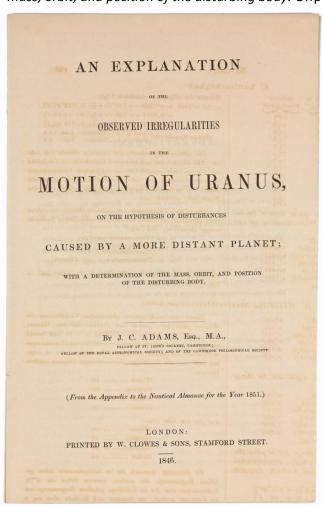
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Announcing the discovery of Neptune

ADAMS, John Couch. An Explanation of the Observed Irregularities in the Motion of Uranus 1 on the Hypothesis of Disturbances Caused by a More Distant Planet; with a determination of the mass, orbit, and position of the disturbing body. Offprint from the Appendix of the Nautical Almanac



for the Year 1851. London: W. Clowes & Sons, 1846. 8vo (232 x 146 mm). [3] 4-31 [1] pp. Original printed self-wrappers as issued, stitched, pages partially unopened and uncut. Very little age-toned, faint offsetting on title-page. A clean, crisp and completely unsophisticated copy. € 7,500

(#002884)

Dibner 16; Sparrow 1; Norman 7; Evans 24; DSB I, pp. 53-4; Ley, Watchers, pp. 407-14. **EXCEPTIONALLY RARE FIRST SEPARATE EDITION** of the work that announced the discovery of Neptune and finally confirmed Newton's theory of gravitation.

Adams began his investigation of Uranus in mid-1843, and in 1845 sent his calculations and observations to the Astronomer Royal, George Biddell Airey, who failed to recognise the importance of the paper. In 1846, Urbain Jean Joseph Le Verrier published his own research and reached the same conclusion, leading to the immediate identification of Neptune by J.G. Galle. Only then was Adams' work published, leading to a bitter dispute over priority (Norman 7).

"In retrospect Adams' many mathematical and astronomical achievements pale in comparison to his analysis of the orbit Uranus and his prediction of the existence and position of Neptune at the

age of twenty-four. Much of his later work has been superseded, but as the co-discoverer of Neptune he occupies a special, undiminished place in the history of science." (DSB I, p.54).

...among the most excellent in Islamic astronomy

AL BATTANI, Abu Abdallah Muhammad ibn Jabir [Albategnius]. [Kitab al-Zij]. Mahometis Albatenii de Scientia Stellarum Liber cum aliquot additionibus Joannis Regiomontani ex Bibliotheca Vaticana transcriptus. Bologna: Typis Haeredis Victorii Benatii, 1645. 4to (223 x 160 mm). [16], 228, [4] pp., including half-title, fine engraved frontispiece with Medici arms by Coriolano, errata and imprimatur/colophon leaves at end, the latter with large printer's device. Numerous woodcut astronomical diagrams in text. Text within ruled borders throughout. Contemporary full vellum, spine titled in manuscript (covers faintly bowed). Internally very clean and crisp with no signs of spotting or markings. Provenance: Lieutenant Rafe? (illegible inscription to front pastedown, dated 1817). An outstanding copy of a rare and important work. (#002254) € 18,000

DSB I, pp.507-16; Riccardi II, 288. First separate edition of al-Battani's "great work on astronomy, ... among the most excellent in Islamic astronomy" (DSB). Al-Battani (858-929 A.D.) holds a place of honour among Islamic astronomers and historians. This is his principal work, the Kitab al-Zij, translated into Latin as De Scientia Stellarum by Plato of Tivoli in the first half of the twelfth century, on which his fame in both the East and West rests. He tested many of Ptolemy's results by fresh observations, and obtained more accurate values of the obliquity of the ecliptic and of precession. He improved the moon's mean motion in longitude, used signs and cosines, and introduced new and elegant solutions into spherical trigonometry. He measured the apparent



diameters of the sun and moon and their variation, and concluded that annular solar eclipses must be possible. The indebtedness of Copernicus to al-Battani is well known, he is frequently quoted by Tycho Brahe and Riccioli, and his observations were of interest to Kepler and Galileo. The *De Scientia Stellarum* was first published in 1537 with Alfragani's *Rudimenta astronomica*. The present edition was the only other edition until Nallino's superb scholarly edition of 1899.

Editio princeps of the Alfonsine Tables

ALFONSO X, King of Castile and Leon (ALFONSIUS). *Tabulae astronomicae* - Johannes DANCK (fl. first half 14th century). *Canones in tabulas Alphonsi*. [Venice:] Erhard Ratdolt, 4 July 1483. 4to (214 x 157 mm). 93 unfoliated leaves (of 94, without initial blank). Collation: a-l⁸ m⁶ (-a1, a2r incipit,

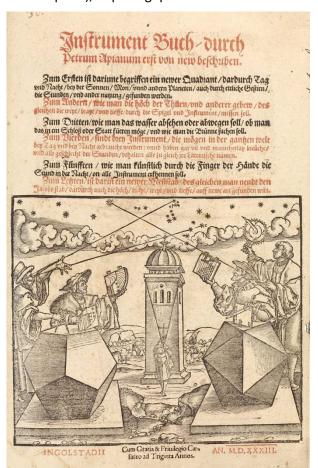


text of the Canons of John of Saxony, b3v supplement to the Canons of John of Saxony, c1r astronomical tables, m3r explanation of figure of solar eclipse, m3v woodcut diagram of solar eclipse, m4r explanation of figure of lunar eclipse, m4v diagram of lunar eclipse, m5r table of the latitude and longitude of principal European and North African cities, m6r colophon, m6v blank). Text in 40 to 43 lines, gothic type 4:76G, white-on-black woodcut floriated initials with fine hand-coloring, incipit printed in red, smaller lombard initials, woodcut diagrams in text, red paraphs and initial-strokes. Modern polished and speckled calf, spine with 4 raised bands and gilt lettering, customized folding cloth box. Old hand lettering to upper edge. Text pages with light brown staining at upper and lower edges (stronger at bottom margin of leaf d7 only), but generally clean and crisp. Provenance: Cesare Malfatti, armorial bookplate (pasted into new binding); Erwin Tomash (bought from Martayan Lan, 1989). A fine, wide-margined copy. (#003073) € 25,000

Tomash & Williams A59 (this copy); Norman 36; ISTC ia00534000; Crone Library 1; Redgrave, *Ratdolt* 34; Stillwell *Science* 14; DSB I, p.122. - RARE FIRST EDITION of the Toledan Tables of the Cordoban astronomer al-Zarqali (c.1029-c.1087), commonly known as the *Alphonsine tables* after the patron who commissioned their translation. This Latin version, which circulated widely in the Middle Ages, was translated from an earlier Spanish version that is now lost. It is the most famous of numerous translations commissioned by Alfonso X, 'el Sabio,' of Arabic scientific, legal, and magical treatises. Although the translation contains new observations, made from 1262 and 1272, it follows the overall format of al-Zarqali's compilation and adheres to the Ptolemaic system for explaining celestial motion. The present text follows a revised version of the tables completed in the early 14th century; Ratdolt prefaced it with the first appearance of John (Danck) of Saxony's almost equally popular canons, written in 1327, which completed the *Alphonsine tables* in several areas, including supplementary tables of the eclipses and several chapters on the latitudes of the planets.

"Alfonso had a keen interest in astronomy and had many Arabic manuscripts on the subject translated. He also ordered that a new calculation of the Toledan astronomical tables be made to replace those compiled by the Cordoban astronomer al-Zarquli some two hundred years earlier. These new Tablas Alfonsinas, also done in Toledo, were completed by Judah ben Moses (a Spanish/Jewish physician and astronomer) and Isaac ibn Sid (a Spanish/Jewish astronomer and collector of instruments) about 1272. No original copies of these Alphonsine tables are extant; however, they were translated from Spanish into Latin in the first part of the fourteenth century and in this form remained a major influence on European astronomy for the next three hundred years. During the translation from Spanish to Latin, a number of changes were introduced into the tables (differences in the date of the epoch upon which they are based and also differences in the latitude of Toledo). The resulting tables remained in general use until superseded by Kepler's *Tabulae Rudolphinae* in 1627." (Tomash & Williams).

APIAN, Peter. Instrument Buch. Ingolstadt: Cum gratia & privilegio caefareo ad triginta annos [P. Apianus], 1533. Folio (285 x 192 mm). 5, 54 unnumbered leaves, including 5 (of 9) supplementary woodcut leaves bound after title. Gothic types. Signatures: pi¹ A⁴ chi¹ B-N⁴. Title-printed in red and black with the imprint added in red and with large woodcut vignette, full-page woodcut arms of the dedicatee on title verso, 84 woodcut illustrations and diagrams in text (including unassembled volvelle parts), depicting quadrants and other observational instruments, their use, and



constellations. Leaf chi1 bound before A1.

Bound in later card-boards, spine titled in manuscript and with shelf-mark paper label (extremities rubbed and slightly chipped, boards soiled and stained, corners bumped), redsprinkled edges. Text very little browned, occasional minor spotting, fore-margin trimmed close touching four woodcut illustrations and saving two a few millimeters, mostly light waterstaining to lower margin of about 20 leaves, small holes near lower corner of final two leaves. (#002975) € 6,500

BMC German 37; Honeyman 1:113; Houzeau & Lancaster 2398; LC/Rosenwald 460; Stillwell Science 812; Van Ortroy 104. FIRST EDITION, WITH 5 VERY RARE SUPPLEMENTARY WOODCUT LEAVES. "Apian wrote on a wide range of scholarly and scientific topics. He designed a number of ingenious astronomical instruments for measuring celestial angles -, mostly combinations of graduated scales and travelling sights on the usual lines of the times" (Wolf, History of Science). The book is richly illustrated with a striking title woodcut, the arms of the Duke of Loubenberg to whom the volume is dedicated, and a great number of illustrations in the text, the work of H. Brosamer and M. Ostendorfer. They show instruments, charts, astronomical

designs, methods of measuring, etc. Apian, who was professor of mathematics at the University of Ingolstadt, was also active as a printer. His productions, mainly his own works, are done with great care.

Very few copies have survived with all the 5 original woodcut bifolios, making up one blank and 9 printed leaves (in our copy we have 2 bifolio and 1 half bifolio making up 5 leaves only). The explanation for the rarity is disclosed in the headline text of the first bifolium (not present here): that these 5 sheets, which are printed single side only, shall not be bound-in. They are intended for dissection to become part of the instruments that shall be build by the reader. The book was issued in two different editions, one with the 5 extra plates, and one without them.

The lengthy title reads in full: Instrument Buch ... Zum ersten ist darinne begriffen ein newer Quadrant, dardurch Tag und Nacht, bey der Sonnen, Mon, unnd andern Planeten, auch durch ettliche Gestirn, die Stunden und ander nutzung gefunden werden. Zum andern , wie man die höch der Thürn, und anderer gebew, des gleichen die weyt, brayt, und tieffe durch die Spigel und Instrument, messen soll. Zum Dritten, wie man das wasser absehen oder abwegen soll, ob man das in ein Schloss oder Statt füeren möge, und wie man die Brünne suchen soll. Zum Vierden, sindt diey Instrument, die mögen in der gantzen welt bey Tag und bey Nacht gebraucht werden: vnnd haben gar vil und manicherlay breüche, und all geschiecht der Stunden, behalten alle zu gleich jre Latinische nämen. Zum Fünfften, wie man künstlich durch die Finger der Hände die Stund in der Nacht, on alle Instrument erkhennen soll. Zum Letzten, ist darin[n] ein newer Messstab, des gleichen man nendt den Jacobs stab, dardurch auch die höch, brayt, weyt, und tieffe, auff newe art gefunden wirt.

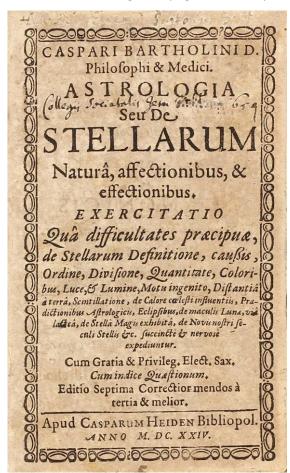
ARGOLI, Andrea. Ptolemaeus Parvus in Genethliacis junctus Arabibus. Lyon: Joseph and Pierre Vilort, 1652. 8vo (238 x 175 mm). [8], 247 [1] pp. Signatures:)(⁴, A-P⁸, Q⁴. Woodcut device to title-page, several astrological woodcut diagrams and astronomical tables in text. Bound in 20th-century vellum over boards, new endpapers. All pages untrimmed. Little browning of text, minor spotting and staining in places, some faint dampstaining towards upper gutter, title-page with erased



old ink signature leaving small ink corrosion hole (affecting two letters and repaired), short tear to blank margin of leaf O7. Provenance: Biblioteca Degli Israeliti (old ink stamp and shelf-mark to title); Giancarlo Beltrame Library. Good copy, collated complete. (#003001) € 600

Caillet 383; Gardner, Astrologica 71; Casanatense 126; Riccardi I, p.51:112 ("Anche quest'opera appartiene pia all'astrologia che all'astronomia"); Houzeau-Lancaster I, 5204; Pianatanda 1507 (1654 edition); Graesse I, 194. SECOND EDITION of Argoli's astrological treatise, first published the same year in Padua. Argoli (1570-1657) studied in Naples and became a professor of mathematics at the Sapienza of Rome in 1622. He was replaced by B. Castelli in 1627, perhaps because of his passion for astrology. According to Thorndike, he teached Wallenstein in astrology (see Thorndike VII, 122). In 1632 he arrived in Padua as a teacher of mathematics at the University. Although follower of the Ptolemaic school, Argoli could not resist the charm of Galileo, inspiring him to write a treatise on the system of the world which he however never publish for fear of condemnation. The manuscript was never found.

BARTHOLIN, Caspar. Astrologia Seu De Stellarum Natura, affectionibus, & effectionibus. Exercitatio: Qua difficultates praecipuae, de Stellarum Definitione, caußis, Ordine, . . . succincte & nervose ecpediuntur; Cum Indice Quaestionum. Editio Septima Correctior mendos a tertia & melior . . . [Wittenberg]: Casparus Heiden, 1624. [24], 260, [26] pp. Signatures: A-N¹². Woodcut ornaments, substantial browning, title-page with inscription of Jesuit College member (partially erased with small



holes not affecting text) dated 1659, final blank. [Bound with] Enchiridion Metaphysicum. Editio octava. [Wittenberg]: Casparus Heiden, 1621. [6], 40, [2] pp. Signatures: A-B¹². Woodcut headpieces (one shaved), substantial browning, margins trimmed close. [Bound with] Enchiridion Ethicum Seu Epitome Philosophiae Moralis: Praecepta breviter ... & facili explicata exhibens. [Rostock]: Joan Hallervord, 1622. [2], 117 [1] pp. Signatures: A-E¹². Decorated woodcut initial and tailpiece, substantial browning, inscription of Jesuit College member (partially erased) dated 1654 to p.117. Three works in one volume. 12mo (119 x 70 mm). Bound in contemporary vellum, yapp edges, shelfmark label to spine, upper hinge partially split, minor chipping of spine head. Provenance: Giancarlo Beltrame Library. (#002999) € 2,500

I. VD17 23:296423Z. 7th edition of Bartholin's treatise on astrology in which he widely follows Melanchton's and Niels Hemmingsen's triple divisions of astrology (infallible, probable and false predictions). Example for the first (necessaria) is the prediction of a solar eclipse, the second (probalia) concerns the weather forecasts of rain and drought, etc., and for the last (false) the forbidden predictions, or the 'chaldean superstition', as Bartholin calls it. Bartholin himself does believe that his astrological art falls into the third category, and

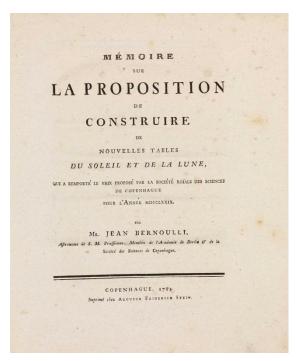
emphasizes that the art of astrological prediction is subject to certain but crucial constraints. It is the same discussion Tycho Brahe and Hemmingsen had conducted. The stars influence the whole nature, the body and the organs, and thus also the soul, for 'when the body is fast, it goes well', as Bartholin says. (see M. Fink-Jensen, Fornuften under troens lydighed: naturfilosofi, medicin og teologi i Danmark 1536-1636. Museum Tusculanum Press, 2004, pp. 320-21).

II. VD17 1:066033V. 8th edition of Bartholin's metaphysical tratise.

III. VD17 1:066015X. Early, probably 6th, edition of Bartholin's treatise on moral philosophy and ethics.

Caspar Bartholin the elder (1585-1629) was a Danish polymath. His precocity was extraordinary; at three years of age he was able to read, and in his 13th year he composed Greek and Latin orations and delivered them in public. When he was about 18 he went to the University of Copenhagen and afterwards studied at Rostock and Wittenberg. In 1613 he became professor of medicine at the University of Copenhagen and later taught theology at the same university.

BERNOULLI, Jean. Mémoire sur la proposition de construire de nouvelles tables du soleil et de la lune, qui a remporté le prix proposé par la Société Roïale des Sciences de Copenhague pour l'année MDCCLXXIX. Copenhagen: Imprimé chez Auguste Friderich Stein, 1784. 4to (257 x 213 mm). 54, [2] pp. including final blank. Modern plain wrappers. Untrimmed with pages unopened. Some minor foxing and light marginal browning. (#002872) € 750



DSB II, p.56. Very rare first edition of a prize essay by the French mathematician Jean Bernoulli in which he proposes for builiding new tables of the solar an lunar motion. Jean (or Johann III) Bernoulli (1744-1807) was grandson of Johann Bernoulli, and son of Johann II Bernoulli. He was known around the world as a child prodigy. He studied at Basel and at Neuchâtel, and when 13 years of age took the degree of doctor in philosophy. When he was 14, he got the degree of master of jurisprudence. At 19 he was appointed astronomer royal of Berlin. A year later, he reorganized the astronomical observatory at the Berlin Academy. Some years after, he visited Germany, France and England, and subsequently Italy, Courland, Russia and Poland. His travel accounts were of great cultural and historical. On his return to Berlin he was appointed director of the mathematical department of the academy. His writings consist of travels and astronomical, geographical and mathematical works. In 1774 he published a French translation of Leonhard Euler's Elements of Algebra. He contributed several papers to the Academy of Berlin, and in 1774 he was elected a foreign member of the Royal Swedish

Academy of Sciences. He was entrusted with the administration of Bernoulli family's mathematical estate (DSB, Wikisource).

Complete Lambert-Bode run of the important Berlin Astronomical Yearbooks

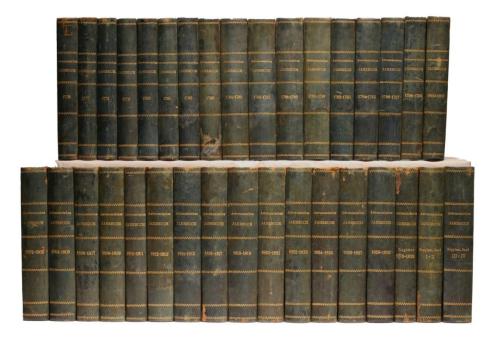
BODE, Johann Englert & LAMBERT, Johann Heinrich, editors. Astronomisches Jahrbuch für die Jahre 1776 bis 1829. Complete set of 53 volumes, 4 supplements, 1 index volume and 1 volume of Erläuterungen bound in 34 volumes. Berlin: Haude u. Spenerschen Buchhandlung, Ferd. Dümmler and others, 1774 to 1829. 8vo (204 x 124 mm). In total 18380 pages and 116 engraved folding plates (2 hand coloured). The supplements are dated 1793 (I), 1795 (II), 1797 (III), and 1808 (IV), the Erläuterungen über die Einrichtung und dem Gebrauch seiner astronomischen Jahrbücher... is dated 1811, and the Namen- und Sachregister... 1776 bis 1829 is dated 1829. Mid-19th century uniform green half calf, spines lettered in gilt (little rubbing to spines and extremities, spine ends occasionally slightly chipped). Internally little browned (first volumes a bit stronger), occasional foxing and brownspotting, some volumes with dampstaining in places. Provenance: Teyler Museum, Haarlem* (ink stamps "Bibliotheque Musée Teyler Haarlem to title pages and upper and lower edges); Dieter Schierenberg b.v. (acquired from them in 1986). A very good set, rarely found complete as here with all the supplements and index volumes. (#002720) € 7,500

Kirchner 9517; Houzeau/L. 15593; Poggendorf I, 217; DSB II, 220 - FIRST EDITION. A complete Run of the earliest series of the Berlin Astronomical Yearbooks, published and edited by the German astronomers Johann Heinrich Lambert (1776-80) and Johann Englert Bode (1781-1829). The volumes with a large number of astronomical contributions, "and a collection of the latest treatises, observations, and news, which are included in the astronomical sciences, with contributions from Bessel, Encke, Gruithuisen, Herschel, Littrow, Olbers, Pfaff, and many others . The engraved plates depict comet orbits, the moon, sunspots, solar eclipse trajectories and astronomical devices.

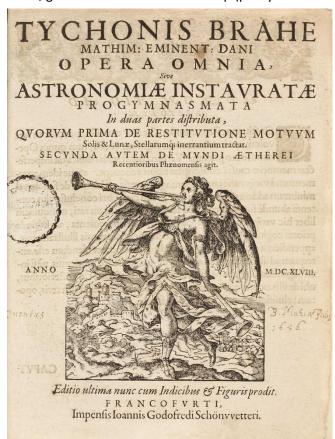
Die Jahrgänge mit den vielseitigen astronomischen Beiträgen, "nebst einer Sammlung der neuesten in die astronomischen Wissenschaften einschlagenden Abhandlungen, Beobachtungen und Nachrichten. Mit Beiträgen von Bessel, Encke, Gruithuisen, Herschel, Littrow, Olbers, Pfaff und anderen. Die Tafeln zeigen Kometen und Sonnenflecken, Pons'schem Kometen und Sonnenfinsternis, astronomischen Geräten sowie Sternwarte und Navigationsschule in Hamburg.

*This is an ex library copy from the famous Teylers Museum in Haarlem, the only museum in the Netherlands that has been open to the public continuously since 1784. Its authentic interior, containing the original objects, has remained the same since then. So Teylers can justly lay claim to the title of being the first and oldest museum in the Netherlands. The library is interesting for itself. There is no other library in the Netherlands with such a beautiful and complete collection of literature from the 18th and 19th centuries about botany, zoology, and the earth sciences. In total, the book and journal collection consists of more than 125,000 volumes. Major acquisitions continued to be made until approximately 1940. Since then,

the library has no longer been a place for finding out about the latest scientific developments, but primarily as a museum room of historic interest. (source: Tylers Museum website).



BRAHE, Tycho. Opera omnia, sive astronomiae instauratae progymnasmata in duas partes distributa. Two parts in one volume. Frankfurt: Johann Gottfried Schönwetter, 1648. 4to (221 x 178 mm). 470, [10] pp. (last leaf blank); 217, [5] pp., including 2 leaves of dedication by Schönwetter bound at the end. Separate title-page to second part, printer's woodcut devices to each title-page and page [218] of second part, numerous (9 full page) woodcut illustrations and diagrams in text. 19th-century half vellum over marbled boards (slightly soiled, extremities little rubbed), fore-edge of book block lettered in black ink. Light even browning of text, occasional spotting and light foxing as usual, general title with old ink stamp (partly erased and paper slightly thinned). Provenance: first



flyleaf with illegible ownership entry dated 1655; title page with ownership signature dated 1656. A very good copy, collated complete. (#001663) € 6,500

Norman 321; Lalande 225; Houzeau-L. 2704; Waller 12004; Sotheran 6440. Starp, Schönwetter 195 (in AGB I); Brüning 987; Warner, Sky Explored, 41, 2 b.SECOND EDITION (first Prague 1611). "Despite its title, this work contains only Brahe's 'Protogymnasmata' (1602) and 'De mundi aetheri' (1588), the first two volumes of a never-completed trilogy. The first is a scholarly work on the 1572 supernova in Cassiopeia, containing Tycho's observations of the supernova, revisions of the theories of solar and lunar motion, and a catalogue of the positions of 777 fixed stars. The second work records Tycho's observations of the great comet of 1577, and includes a description of his geoheliocentric theory of the universe. Tycho's observations of the supernova and comet led him to abandon the Ptolemaic concept of heavenly spheres and to deny the Aristotelian hypothesis that nothing new could be born in the heavens." (Norman).

10 <u>CATANEO, Giovanni Battista (CATTANEO, Giambattista)</u>. Tavole nuove a modo di almanaco : per trovare con il giuoco di tre dadi perpetuamente il far della luna, le feste mobili, la lettera



dominicale, l'aureo numero, il ciclo solare, l'indittione, & l'epatta, con molt' altre cose utili, e nocessarie alla gionata, comme nella tavola si uede. Brescia: Tomaso Bozzola, 1566. Folio (293 x 208 mm). [4], 42 leaves. Signatures: *4 A-G⁶. Printer's woodcut device on title, historiated initials, large woodcut illustrating the arms of the dedicatee Camilla Torella, letterpress tables. Later half vellum over xylographed paper boards, old ink lettering and shelf label to spine (little soiling of boards). Little age toning and dust soiling of text, filled larger wormtrack to final gatherings just affecting upper outer corner of tables, final leaf with old paper repair obscuring text of colophon on verso and some loss to table on recto, restored edge chipping of first 3 leaves, occasional spotting and light waterstaining. Provenance: small stamp "ex biblioteca Franncardini Rom.(?)" on title; Giancarlo Beltrame Library. (#003019)€ 1,500

Riccardi I, 511; not in BM-STC Italian. VERY RARE FIRST EDITION of Cataneo's curious mathematical-astrological treatise (a similar tract was published in 1562 under the title *Rote perpetue*). In this

work, a board game based on calendar computations is described which consists of numerical charts related to the 12 months of the year. The game involves the casual extraction of two numbers by the use of three dices, to calculate Moon phases, specific dates such as Easter, the beginning of the Advent or the Golden number.

Calculating the return date of Halley's comet

CLAIRAUT, Alexis Claude. Théorie du mouvement des comètes, dans laquelle on a égard aux altérations que leurs orbites éprouvent par l'action des planètes. Avec l'application de cette théorie à la comète qui a été observée dans les années 1531, 1607, 1682 & 1759. Paris: Chez Michel Lambert,



[1760]. 8vo (196 x 125 mm). [2] i-xiv, [1] 2-247 [1] pp. Woodcut device on title, letterpress tables, 2 folding engraved plates bound at the end. Contemporary French mottled calf, spine with 5 raised bands, gilt decoration and gilt-lettered red morocco label, red-dyed edges, marbled endpapers (joints partially split, some worming to spine, foot of spine scuffed, extremities rubbed, marinal browning of flyleaves from binders glue). Text little browned, occasional minor spotting, small ink spot and light brown stain to title-page). Provenance: Giancarlo Beltrame Library. All in all a very good copy. (#002922) €8,000

Norman 487; Freitag 483; DSB III, p.283. - FIRST EDITION, EXCEPTIONAL RARE, especially with the folding plates. In the work 'Théorie du mouvement des comètes' ('Theory on the Movement of Comets') Clairaut predicted the date that Halley's comet would be nearest the sun, was April 13, 1759. The actual date was March 13, just within the allowed-for margins of error. There was a suggestion that Halley's Comet be renamed for Clairaut and he was hailed as the "new Thales."

"In the 1740s Clairaut became the first to find an approximate resolution of the three-body problem when he calculated the movement of the moon's apogee using an augmented version

of Newton's law of attraction. In the 1750s he turned his attention to the movement of comets, inspired by Halley's prediction of 1705 that the comet last observed in 1682 would appear in 1758 or 1759. Halley had attributed the variations in the comet's period of appearance to pertubations caused by Jupiter and Saturn, and Clairaut, armed with his solution to the three-body problem, set out to calculate these pertubations in order to predict the exact time of the comet's passage to perihelion. In November 1758, he announced that the passage would occur around 15 Aril 1759; the actual passage took place on 13 March. Clairaut afterward refined his calculations to arrive at the date 4 April, and later, by use of different method, the last day of March - a calculation which no one at the time could have bettered." (Norman 487).

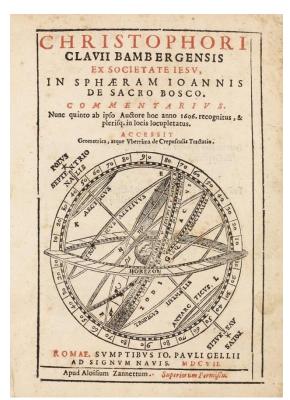
CLAVIUS, Christopher. Gnomonices libri octo. Rome: Francesco Zanetti, 1581. Folio (321 x 228 mm). [16], 654, [2] pp. Signatures: †8 A-E⁶ F⁸ G-GGg⁶ HHh⁸. Engraved title, several woodcut diagrams and tables in text, decorated and historiated woodcut initials. Colophon and printer's woodcut device on final leaf 3H8r. Contemporary limp vellum, manuscript title on spine (vellum soiled and browned, closed tear across spine, label removed from lower part of spine). Occasional minor spotting of text, dent at upper right margin through the first 130 pages well outside text area, top corner of leaf Kk6 torn not affecting text, few pages with light browning and foxing, but generally quite clean and bright. Provenance: Turin, Minorites of St. Thomas (library stamps on first page of dedication and inscription on free front endpaper). A very good, unstained and unmarked copy in untouched original binding. (#002880)



Adams C-2098; BL/STC Italian p. 126; Houzeau-Lancaster 11383; Lalande p 112; Zinner, Astronom. Instrumente, 281. Honeyman 706; De Backer-S. II, 1220, 3; DSB III, 311. - FIRST EDITION of this masterwork on the theory and construction of sundials. Clavius considers the astronomical background, the geometrical theory and the various construction methods of the sundial, a topic which occupied many mathematicians in this period. The problems of sundial construction were related to those of the studies of perspective and shadows, which were also of interest to painters such as Albrecht Dürer. The Latin name Christopher Clavius is the only name known of this Jesuit mathematician and astronomer, whose given name in German has been lost to time. He was born in Bamberg, and joined the Jesuit order in 1555. He studied at the Collegio Romano, and in 1579 was assigned the task of determining a way to adjust the calendar to keep it in line with the actual seasons of the year. The result, built on the work of Erasmus Reinhold and Aloysius Lillius, was a reformed calendar that was endorsed by Pope Gregory XIII. Adopted in 1582, the Gregorian Calendar is still in use as the common calendar of the Western world today. "Sums up all that was known on gnomonics" (Honeyman), "le plus grand ouvrage existant sur la gnomonique" (Houzeau and Lancaster).

CLAVIUS, Christopher. In Sphaeram loannis de Sacro Bosco commentarius nunc quinto ab ipso auctore recognitus ... accessit Geometrica ... de crepusculis tractatio. Rome: Luigi Zanetti for Paulo Gellio, 1607. 4to (220 x 162 mm). [8], 669 (i.e. 639) [1], [48] pp., title printed in red and black and with large woodcut vignette of the celestial spheres (repeated on p. 24), woodcut initials and tailpieces, colophon and printer's device on leaf f3 recto, several astronomical and mathematical diagrams in text, index bound at end, final blank f4 present. Signatures: †4 A-4L4, a-f4. Contemporary limp vellum, spine lettered in manuscript, inscription on covers in contemporary hand (inner joints split, rear cover restored). Some uneven browning and foxing to text, small wormtracks in blank margins, slight marginal dampstaining to few leaves, first leaves little frayed at fore-edge, two others

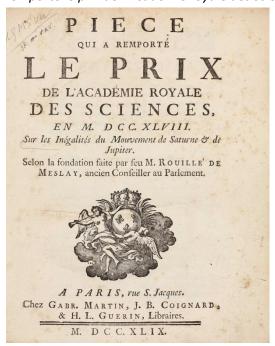
loose, rear free endpaper repaired. Provenance: Giancarlo Beltrame Library. Still very good copy in original binding, collated complete. (#003021) € 1,500



Houzeau-Lancaster 2678 - LATER EDITION of Clavius' commentaries on Sacrobosco's Sphaera (first 1570). The basic text of this book, Joannes de Sacrobosco's (fl. ca. 1230) Sphaera was the most widely used astronomical resource of the late Middle Ages and the Early Modern Period and went through literally hundreds of editions inspiring many commentaries. "Although the end of the Ptolemaic era was marked by Copernicus's revolutionary work, De revolutionibus (1543), it was not until the publication of Kepler's Astronomis nova (1609) and Galileo's Sidereus nuncius (1610) that the heliocentric theory began to achieve broader acknowledgement. The period between 1543 and 1610, as a result, is a particularly fascinating one. Tycho Brahe (1546-1601) still represented a geo-heliocentric system and Johannes Kepler (1571-1630) and Galileo began his observations and researches continuing the work of Copernicus. Christoph Clavius (1538-1612), meanwhile, was the most compelling astronomical voice in support of geocentricism. He was perhaps the most distinguished mathematics professor of his generation at the Collegio Romano, the principal Jesuit seminary and college. He produced two extremely popular textbooks and he also served on the papal commission on calendar reform that

would produce the Georgian calendar. After Galileo visited Clavius in Rome in 1587 they corresponded and Clavius, cautiously though, but mentioned in the later editions of his commentaries on the *Sphaera*, the new invention, the telescope. He also described there some of the observations Galileo made with the telescope, such as about the 'roughness' of the surface of the Moon, and the moons ('stars') of the Jupiter. Clavius's edition of the *Sphaera* was an extremely important book, and according to modern historians is the 'greatest of all Sphere commentaries' (Lattis, *Between Copernicus and Galileo*, p. 37)" (L. Robinson, *In sphaeram Ioannis de Sacro Bosco commentarius*, Smithsonian Libraries, 2012). "C'est le meilleur commentaire de l'astronomie de Sacrobosco; mais l'auteur a evite de parler du systeme de Copernic" (Houzeau).

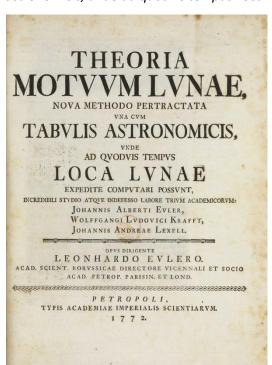
14 <u>EULER, Leonhard</u>. Sur les inégalités du mouvement de Saturne & de Jupiter: Piece qui a remporté le prix de l'Académie royale des sciences en M. DCC. XLVIII. Selon la fondation faite par feu



M. Rouillé de Meslay, ancien Conseiller au Parlement.
Paris: chez Gabr. Martin, J. B. Coignard & H. L. Guerin,
1749. 4to (216 x 179 mm). iv, 123 [1] pp., folding
engraved plate; 2 folding tables. Later simple paper
wrapper, disbound, red-sprinkled edges. A few pages
folded-in to protect extending mathematical
equations. Paper little browned, faint foxing and
occasional spotting, Leaves A1 and folding plate little
soiled. Very good copy. (#002929) € 1,500

FIRST EDITION. A significant work in the determination of planetary motion. The DSB notes: "The observed motions of the planets, particularly of Jupiter and Saturn, as well as the moon, were evidently different from the calculated motions based on Newton's theory of gravitation."

15 <u>EULER, Leonhard</u>. Theoria Motuum Lunae, nova methodo pertractata una cum tabulis astronomicis, unde ad quodvis tempus Loca Lunae expedite computari possunt... St. Petersburg,

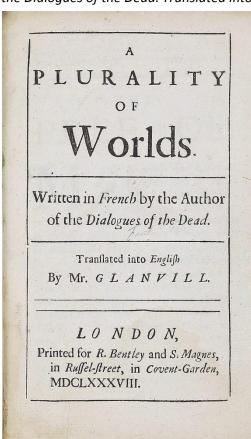


Typis Academiae imperialis scientiarum, 1772. 4to (255 x 200 mm). [16], 775 [1] pp., including one folding engraved plate. Bound in contemporary calf, rebacked with modern calf, spine ruled in gilt, with 5 raised bands and two gilt-lettered morocco labels (boards scratched, extremities worn, corners 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 muotuum lunae*... was thus completed with the help of Johann Albert Euler, Krafft, and Lexell - all of whom are credited on the title-page." (DSB).

FONTENELLE, Bernard le Bovier de. A Plurality of Worlds. Written in French by the Author of the Dialogues of the Dead. Translated into English by Mr. Glanvill. London: for R. Bentley and S.



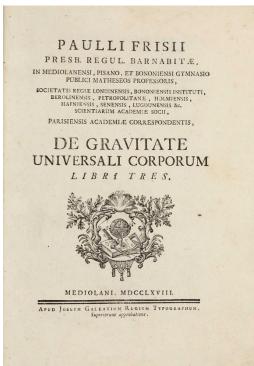
Magnes, 1688. 8vo (162 x 102 mm). [12], 152 pp.
Signatures: A⁶ B-K⁸ L⁴. E4 is a cancel leaf. Contemporary mottled calf, elaborate gilt spine (upper joint neatly repaired, head of spine slightly chipped), preserved in cloth slipcase. Internally only slightly browned, a little faint dampstaining, marginal paper flaw in H3.
Provenance: J. Borole(?), Oriel College, Oxford (inscription "J Borole(?) / Orielensis Oxon. / Apr. 24, 1949" to first free endpaper). Fine copy.

(#002282) € 3,200

Wing F1416; Hodgson, p.399. - THE RARE FIRST ENGLISH EDITION. One of the first major works of the Age of Enlightenment. "Fontenelle's treatise ... marks a true watershed in the history of the idea of the plurality of worlds ... written in a language that the normal educated person could understand, and ... see the basic concepts of the new Copernican astronomy as supplemented by Descartes" (Steven J. Dick, *Plurality of Worlds*, p. 126).

FRISI, Paolo. De gravitate universali corporum libri tres. Milan: Giuseppe Galeazzi, 1768. 4to (272 x 201 mm). [12], 420 pp. Printer's woodcut device on title, 6 folding engraved plates. Early 19th century half calf over marbled boards, spine decorated in gilt and with two gilt lettering pieces (wear to hinges, spine and extremities rubbed), red-dyed edges. Text generally crisp and clean, occasional minor soiling or spotting. Provenance: Giancarlo Beltrame Library. A near fine, wide-margined copy. (#003033) € 1,500

DSB V, p.195; Riccardi I, 487:22 ("Questa voluminosa e dotta opera... che puo considerassi come uno dei primi e più completi tratti di meccanica celeste, meritava anche per la sua rarita di non essere dimenticata dal Brunet"). - RARE FIRST EDITION of Frisi's work on celestial mechanics. Paolo Frisi (1728-1784), mathematician, astronomer, presbyter and publicist, was a prominent figure in science and mathematics in Italy of his time. In



1764 he was appointed professor of mathematics in the Palatine Schools and obtained from Pope Pius VI the dissolution from the ecclesiastical jurisdiction and the authorization to become a secular priest. In 1766 he visited France and England and in 1768 Vienna. Later he became director of an architecture school in Milan. Frisi wrote several texts on Galilei, Bonaventura Cavalieri, Isaac Newton and Jean d'Alembert, contributing significantly to the dissemination of their ideas in Italy. He gave numerous contributions to mathematics, physics and astronomy. In physics he works on light and electricity, on themes advanced for his time, but explaining these phenomena with the vibrations of the ether. His works in astronomy, like this one, have the merit of relying on Newton's theory of gravitation. De gravitate covered almost all developments in mathematical physics from Newton to the mid-eighteenth century, including general mechanics, motion of a planets around the sun and the three-body problem, fluid mechanics, optics, meteorology, physics of the atmosphere, and structure of the earth. The content wasn't new, Frisi ordered results dispersed in numerous publications, not using advanced analysis, but a combination of elemental analysis and synthetic geometry. Mostly, therefore, the innovations it brought consisted of

simplifications obtained by replacing the mathematical role of the original demonstrations with a more traditional or accessible point of view. In general, therefore, he was not an innovative scientist; some of its results were relatively marginal; others did not stand up to the checks. His work however was of high application and pedagogical level. (ref. U. Baldini, *Dizionario Biografico degli Italiani*, Vol. 50, 1998).

The rare first Latin edition of the Dialogo printed in England

GALILEI, Galileo. Systema cosmicum ... in quo quatuor dialogis, de duobus maximis mundi systematibus, Ptolemaico & Copernicano. London: Thomas Dicas for D. Pauli, 1663. 8vo (169 x 107 mm). [24], 704 (i.e. 702), [24] pp., including engraved additional title, woodcut diagrams in text, blank leaves [A]1 (signed "A" on recto) and [A]8, 12 leaves of index at end. Signatures: [A]⁸, B-3A⁸. Contemporary calf, spine with 5 raised bands, compartments lettered and decorated in gilt (rebacked preserving original spine, covers stained, corners scuffed, original endpapers). Light browning of text, occasional minor spotting, a few short clean tears to blank margins, some rust spots, two with small hole affecting a few letters (leaves I6 and S6). Provenance: Library stamp partially removed from verso of title. Still very good copy. (#003117) € 12,000

Carli and Favaro 287; Cinti 140; Riccardi I, 513.10; Wing G-168 & 165. **FIRST EDITION PRINTED IN ENGLAND**, and the third Latin edition of the *Dialogo*. Wing notes two printings of this year, but was probably confused by varying reports of engraved and printed titles. Wing G165 gives the engraved title as above, omitting the imprint; G168 gives the printed title as above, with matching form of imprint. The text includes, after the end of the Dialogus, an excerpt from Kepler, and Foscarini's reconciliation of the Copernican system with Scripture. This edition is very rare in the trade and at auction with only 4 copies recorded at auction in the past 50 years. Our copy sold 2011 at Christie's London for GBP 10,000 (lot 42). The *Dialogo* is the summation of Galileo's



astronomical work, and his celebrated advancement of the Copernican system in the form of an irrefutable hypothesis. The inconclusive debate on the subject between three participants which Pope Urban VIII had expected was hardly evident in the sure reasoning of Salviati, the pointed questioning of Sagredo, and the feeble responses of Simplicio (a figure sometimes equated with the Pope himself). While the hypothetical nature of the argument should not be forgotten, Galileo's book 'revels in the simplicity of Copernican thought and, above all, it teaches that the movement of the earth makes sense in philosophy, that is, in physics ... The Dialogo, more than any other work, made the heliocentric system a commonplace' (PMM). The Italian first edition (Florence: 1632) was banned by the Pope and withdrawn from circulation shortly after publication, leading to the author's trial and imprisonment a year later; it was followed by the first Latin edition, published in Strasbourg in 1635, which was translated by the history professor and mathematics enthusiast Matthias Bernegger at Galileo's request.

HOLWARDA, J. Phocylides (FOKKENS). Panselenos ekleiptike diaugazou (graece), id est, Dissertatio astronomica quae occasione ultimi lunaris anni 1638 deliquii manuductio sit ad cognoscendum. I. Statum astronomiae, praaesertim Lansbergianae, II. Novorum phenomenôn exortu[m] & interitum. Franeker: Idzard Alberts, 1640. [24], 288 pp., woodcut title-vignette and several woodcut illustrations in text [Bound with:] Epitome astronomiae reformatae, generalis. Franeker: Idzard Alberts, 1642. [6], 66 (of 77) pp., lacking the 6-leaves addendum "Additiuncula in momum", woodcut title vignette. Signatures: A-C¹² D⁶ (-D6). Two works in one volume. 12mo (117 x 67 mm). Bound in 18th century mottled calf, spine with 4 raised bands, gilt decoration and gilt-lettered red morocco label, front board with gilt medaillon of Bibliothèque du Dépôt, red-dyed

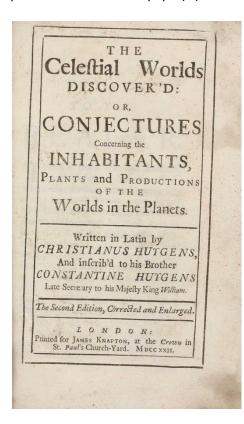


edges. Little browning to text, occasional spotting, second title dust-soiled and browned, dust-soiling of a few further pages of second work, upper margin trimmed close just touching headline of a few pages. Provenance: Bibliothèque du Dépôt général des Cartes et Journaux de la Marine (stamp to second preliminary leaf, spine with the anchor and characteristic fleur-de-lis signets); Imperial Observatory (stamp to first flyleaf). (#002935) € 3,800

EXCEPTIONALLY RARE FIRST EDITION. "In 1638 Holwarda of Franeker had found that the magnitude of a star in Cetus fluctuated with a periodicity of 11 month; it was

named Mira Ceti ('the miraculous one in the Whale')." (DSB VII, p.373). This is a rare and often cited work present in the most important collections of astronomical books. It deals mainly with lunar eclipses and discusses the findings of Lansberge. Dutch astronomer, physicist and philosopher Joannes P. Holwarda (1618-1651) taught philosophy at Franeker University from 1639 until his early death. See Houzeau-Lancaster, 8707 and 7976, A.F.B. Dijkstra, "A Wonderful Little Book: *The Dissertatio Astronomica* by Johannes Phocylides Holwarda (1618-1651)", in: Centers and Cycles of Accumulation in the Netherlands During the Early Modern Period, Münster, 2011, pp. 73-99).

HUYGENS, Christiaan. The Celestial Worlds Discover'd: or Conjectures Concerning the Inhabitants, Plants and Productions of the Worlds in the Planets. London: Printed for James Knapton, at the Crown in St. Paul's Church-Yard, 1722. 8vo (166 x 108 mm). vi, 162 pp., title with double-rule border, 5 folding engraved plates. Contemporary sheep, some gilt ruling of boards and spine (leather over boards heavily wormed and rubbed resulting in substantial loss, front pastedown mostly gone, but binding and hinges still tight). Text only little browned, title slightly dust-soiled, outer margins of one plate somewhat frayed and soiled, some minor marginal dust-soiling elsewhere, but generally a crisp and clean copy internally. Provenance: W. Parkinson, Gent. / Norwich (large armorial bookplate pasted to first free endpaper). (#003140) € 1,200



DSB VI, p.611; Wing H3859 (for 1st English edition). SECOND EDITION IN ENGLISH, corrected and enlarged (first published in Latin in 1698 under the title *Cosmotheoros*). In this work, Huygens argued that "in the Copernican world system . . . the Earth holds no privileged position among the other planets. It would therefore be unreasonable to suppose that life should be restricted to the earth alone . . . Huygens came to the conclusion that, in all probablilty, the plant and animal worlds of other planets are very like those of the earth" (DSB). The fascination with what lies beyond the boundaries of our world have driven philosophy, religion and science across the centuries. Huygens was no exception. He further speculated that the moons of other planets were like ours and stated that the Moon could have no atmosphere of its own. The work has been placed in the company of Wilkins, Godwin, and Cyrano de Bergerac in its fantastical enquiries, but also within the company of Utopian writing. Despite this the book has a grounding in scientific principles (at least of the time), arguing that water was essential for life, and water on other planets must vary according to their temperatures. Being a part of the religious climate of his time Huygens still positioned arguments in theological terms, pointing out that extraterrestrial life is not denied by the Bible and wondering why God would create all other planets just to be admired from Earth. The work is a fascinating piece of speculative natural philosophy which combines near-whimsical thinking with a strict underlying desire

for scientific rationalism, yet from an era when theological concerns were seen as near-inextricable from scientific ones.

Kant's nebular hypothesis of solar system formation

XANT, Immanuel. Allgemeine Naturgeschichte und Theorie des Himmels, oder Versuch von der Verfassung und dem mechanischen Ursprunge des ganzen Weltgebäudes nach Newtonischen Grundsätzen abgehandelt. Frankfurt, Leipzig: [publisher unknown], 1797. 8vo (229 x 140 mm). [20],



130 pp. Contemporary cardboard, plain spine with gilt-lettered paper-label (boards rubbed and little soiled, extremities slightly worn, corners bumped and scuffed). Pages uncut. Text little browned, but otherwise clean and virtually unfoxed. Provenance: Illegible ownership inscription on title, bibliographic remarks in ink manuscript to first flyleaf. Exceptional copy in untouched binding. (#002973) € 3,500

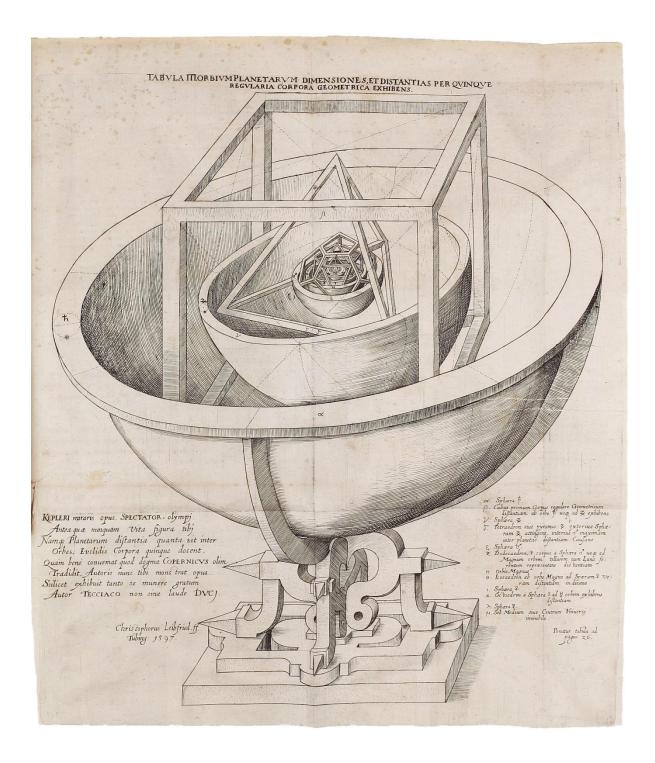
D.S.B VII, p.231; Warda 6. - Scarce second edition of Kant's third work, first printed in 1755. An "Auszug", i.e only part of the Naturgeschichte, was printed in 1791, but no other editions or part of the work appeared between 1755 and 1797, though a third and fourth edition appeared in 1798 and 1808. All editions of this work are of great rarity.

In his youth Kant was a great admirerer of Newton, and in this work he bases his theories on him, but at the same time goes far beyond him. Kant describes how the solar system originated, and does this on the basis of his own mechanical principles. "In his "Theory of the heavens", Kant, by a series of bold strokes, anticipated astronomical facts that were later confirmed by very powerful observational techniques and with the help of relativistic cosmological theory. He conjectured that our solar system is a part of a vast system of stars making up a single galaxy, that the so-called nebolous-stars are galactic

systems external to but similar to our own galaxy (a fact that was not confirmed until the twentieth century), and that there are many such galaxies making up the universe as a whole." (D.S.B.)

KEPLER, Johannes. Prodromus Dissertationum Cosmographicarum continens Mysterium Cosmographicum de Admirabili Proportione Orbium coelestium . . . item, eiusdem . . . Pro suo Opere Harmonices Mundi Apologia adversus . . . Roberti de Fluctibus, Medici Oxoniensis. Two works in one volume. Frankfurt am Main: Erasmus Kempfer for Godefrid Tampach, 1621-1622. Folio (290 x 193 mm). 1-114, 119-163 [1]; 1-50 pp. 5 folding plates. Signatures:):(⁴ A−V⁴; a−e⁴ f⁶ (−f₆, blank), 109 of 110 leaves, without the final blank only. Second work with separate title-page, p.89 with section title to the *Narratio Prima*. Near contemporary paper wrappers, bound without endpapers, blue-colored edges, housed in a custom clamshell box. Text and plates little browned, occasional minor spotting, title-page somewhat soiled, two tiny holes in title-leaf (one affecting one letter of text), short tear at fold of plate 3 outside image, a few dog ears to upper blank corner. A fine, unsophisticated copy. € 36,000

Caspar 67 & 68; Houzeau-Lancaster 2841; DSB VII, p.291-3. - ENLARGED SECOND EDITION of the Prodromus; together as issued with the FIRST EDITION of the Apologia. When Kepler originally published *Prodromus Dissertationum Cosmographicarum, continens Mysterium Cosmographicum* as a defence against Fludd in 1596, it "was the first unabashedly Copernican treatise since De Revolutionibus itself . . . Kepler argued that the sun's centrality was essential, for the sun itself must provide the driving force to keep the planets in motion . . . although the principal idea of the *Mysterium Cosmographicum* was erroneous, Kepler established himself as the first, and until Descartes the only, scientist to demand physical explanations for celestial phenomena. Seldom in history has so wrong a book been so seminal in directing the future course of science" (DSB).



The *Prodromus* was originally printed in 1596 in quarto format in a small edition of about 300 copies. Using the numerical relationship between the five regular solid figures or 'Platonic bodies' and the five intervals between the six planets then known, Kepler advanced the first unitary system in explanation of the structure of the solar system. By 1621 the *Prodromus* was out of print and it was decided to bring out a new edition; rather than rewrite the text, Kepler added numerous detailed footnotes which enabled him to elaborate upon and amend in the light of his subsequent studies the intuitive discoveries of his youthful genius regarding the number, size, and the course of the planets. This 1621 edition is thus of great importance. The *Apologia* (1622) is Kepler's defense against the reproaches of Robert Fludd, English physician and mystical philosopher. Kepler had criticized Fludd in an appendix to *Harmonices Mundi* (1619); the latter continued the argument in published replies to Kepler in 1621 and 1622.

23 [KRIEGER, Johann Nepomuk] KÖNIG, Rudolf. 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

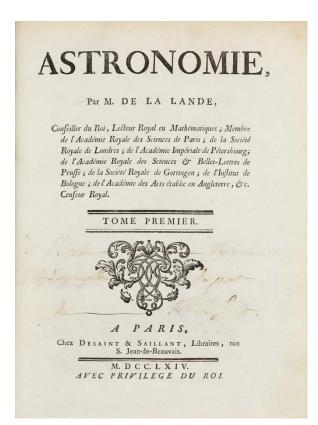


photographic illustrations in text. Plate volume: [8] pp., 58 photographic plates, numbered 29 to 86, each with associated key overlay, and one folding map. Original publisher's cloth, spine and upper board lettered in red (rubbing of extremities, wear to spine ends of atlas, rather crude rebacking of text volume preserving original spine), original green endpapers. Text and plates with slight agetoning, but generally clean and bright, tissue-paper overlays browned as usual. A very good set of this rare lunar atlas. (#002193) € 2,500

Ashworth, The face of the moon, Linda Hall 27; NDB 13, 44 - THE RARE 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 equalled 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)

LALANDE, Joseph-Jérôme de. Astronomie. 2 Vols. Paris: Desaint & Saillant, 1764. Two parts bound in two volumes. 4to (252 x 188 mm). xlviii, 752, 44; [4], (753)-1544, xxxiv, [2] pp., including half-titles, titles with woodcut device, woodcut head- and tailpieces, index and privilege leaf at end of vol. II, 36 folding engraved plates. Contemporary mottled French calf, spines with 5 raised bands, compartments tooled and lettered in gilt, marbled endpapers and edges (extremities rubbed, corners worn, slight cracking to spine leather and joints, spine ends somewhat scuffed). Text generally crisp and clean with only minor age-toning and very minor occasional spotting, both title pages with old inscriptions erased resulting in thining of paper and a repaired hole in vol. I (not affecting text), leaf N3 in vol. I and 5a2 in vol. II torn in blank margins. Provenance: Rochefort (signature to second titlepage); Chappuis ainé & fils, Bordeaux (paper sticker to front pastedown of vol. I). A fine set in untouched bindings, collated complete. (#002987)

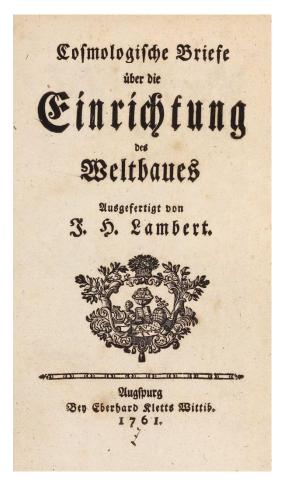


Poggendorff I, 1349; Houzeau-L. I, 9258; Sotheran 2390; DSB 7:580; Honeyman 1889; DSB VII, p.580. - Next to his efforts to improve astronomical tables, Lalande's greatest achievement was his Astronomie, which "became a standard textbook and had the advantage over other texts of containing much practical information on instruments and methods of calculation" (DSB).

LAMBERT, Johann Heinrich. Cosmologische Briefe über die Einrichtung des Weltbaues.

Augsburg: Eberhard Kletts Wittiv, 1761. 8vo (19.4x12.0cm). xxviii, 318 pp., 1 folding printed table.

Text with minor browning, first free endpaper with old ownership entries. Contemporary paste paper boards, gilt, somewhat rubbed. (#001707) € 1,400



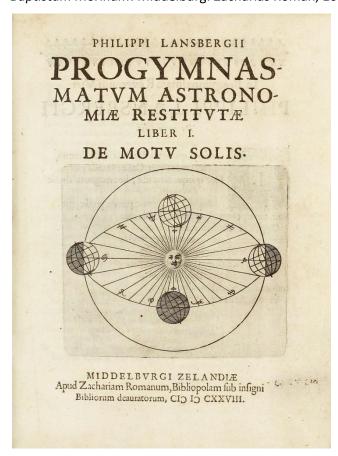
Houzeau-L. 8886. Poggendorff I, 1355; Goed. IV 1, 479, 1. Ziegenfuss II, 11. - The scarce first edition of Lambert's sensational "Cosmological Letters", his most important astronomical work, in which he to a large extent foreshadowed the documentation of the basic features of the universe that Herschel later carried out. The work became very popular and was translated into French, Russian, and English, and it was later re-written and published as "Systeme du Monde" in Berlin, 1770. "Of special interest among Lambert's astronomical writings - apart from applications of his physical doctrines - are his famous Cosmologische Briefe über die Einrichtung des Weltbaues" (Augsburg, 1761). Not familiar with the similar ideas of Thomas Wright (1750) and with Kant's "Allgemeine Naturgeschichte und Theorie des Himmels" (1755), Lambert had the idea that what appears as the Milky Way might be the visual effect of a lens-shaped universe. On this basis he elaborated a theory according to which the thousand of stars surrounding the sun constituted a system. Moreover he considered the Milky Way as a large number of such systems, that is, a system of higher order... Only when William Hershel systematically examined the heavens telescopically and discovered numerous nebulae and "telescopic milky-ways" did it become obvious that Lambert's description was not mere science fiction but to a large extent a bold vision of the basic features of the universe" (Scriba in D.S.B. VII:598).

Kant's mentor (Martin Knutzen) died in 1755, three years

before the pre-critical project unfolded. But Kant still had the chance of meeting kindred spirits. One of these was the great philosopher and mathematician Johann Heinrich Lambert, whom he admired a great deal. Finally he had encountered a thinker who appreciated both the scientific and metaphysical perspective, who worried about their tensions, and who was searching for a truce. In his "Cosmologische Briefe..." (Cosmological Letters on the establishment of the universe), Lambert worked on the same topic as Kant had worked on in his earlier Universal Natural History. The tasks and results of both works resemble each other, in so far as they were both proposals of integrating Newtonian physics into a larger framework, and they both contained a theory of the dynamic constitution of the universe. Furthermore, as Kant's scientific works should be viewed under the perspective of his general philosophical outlook, so must Lambert's work in physics and astronomy be seen in relation to his general philosophical outlook and his perpetual quest for introducing mathematical exactness into the sciences. "Lambert's efforts to improve communication and collaboration in astronomy were noteworthy. He promoted the publication of astronomical journals and founded "Berliner astronomisches Jahrbuch oder Ephemeriden". Many of the articles that he contributed to it were not published until after his death... He also favored the founding of the Berlin observatory. These suggestions, in line with Leibniz' farreaching plans for international cooperation of scientific societies, inaugurated a new period of scientific teamwork." (D.S.B., VII:598).

Important Sammelband of four astronomical works by Lansberge

LANSBERGE, Johan Philip van. I. Progymnasmatum astronomiae restitutae liber I. De motu solis. Middelburg: Zacharias Roman, 1628. [12], 1-64, [35], 100-116 pp. Signatures: *4 2*2 A-O4 P². Preliminary gathering 2* misbound after title-leaf. Large engraved vignette on title, woodcut diagrams, initials and headpieces. A few spots. [Bound with:] II. Uranometriae libri tres. [24], 134, [2] pp. Signatures: *-3*4 A-R4. Middelburg: Zacharias Roman, 1631. Large woodcut on title and in text, woodcut device on final leaf. Some browning, heavy in gathering 3*, light marginal waterstaining. [Bound with:] III. Commentationes in motum terrae diurnum & annuum. Middelburg: Zacharias Roman, 1630. [40], 65, [3] pp. Signatures: A4 2*-3*4 A-F4 G² H-L4. Large woodcut on title, one double-page engraved plate, woodcut diagrams, historiated initials, headpieces, with final blank. Occasional light spotting. [Bound with:] IV. Apologia pro commentationibus Philippi Lansbergii in motum terrae diurnum & annuum: adversus libertum fromondum theologum Lovaniensem & Joan. Baptistam Morinum. Middelburg: Zacharias Roman, 1633. [16], 131 [1] pp. Signatures: [dagger]-



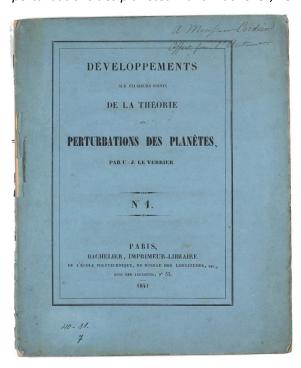
2[dagger]⁴ A-Q⁴ R². Large woodcut on title, woodcut diagrams, with final 2 blanks. Some spotting and browning. 4to (217 x 162 mm). Four works bound in one volume. Contemporary vellum with yapp edges, manuscript title on spine (sides a little warped). Provenance: erased inscription on first title − 'G.S.' (initials on rear cover); Giancarlo Beltrame Library. A fine copy in original untouched binding. (#002704) € 8,000

DSB VIII, p. 28. I. Second edition. Houzeau-Lancaster 2979. II. FIRST EDITION. Houzeau-Lancaster 2981. III. First edition in Latin of Bedenckingen op den dagelyckschen, ende jaerlyckschen loop van den aerdt-kloot (Middelburg, 1629). IV. FIRST EDITION. - Van Lansberge can be credited with bringing the ideas of Copernicus to a wide range of people who did not possess the mathematical background to read advanced texts. "In his Progymnasmatum astronomiae. . . Van Lansberge taught the probability of the earth's motion according to Copernican doctrine; the same is true of . . . Commentationes. . . Both works were attacked for their Copernican ideas by Morin in his Famosi et

antiqui problematis de telluris motu vel. . . (Paris, 1631), and by Libert Froidmond in his Anti-Aristarchus. . . (Antwerp, 1631). Although a follower of Copernicus, Van Lansberge did not accept the planetary theories of Kepler altogether." (DSB).

Presentation copy inscribed by the author.

27 <u>LE VERRIER, Urbain Jean Joseph</u>. *Développements sur plusieurs points de la théorie des perturbations des planètes*. Paris: Bachelier, 1841. 4to (270 x 220 mm). 29 [1] pp., including half-title.

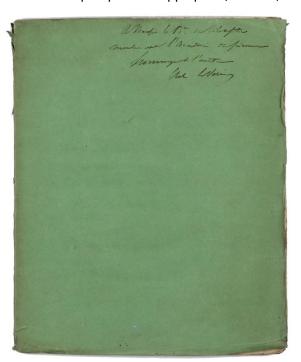


Original blue printed wrappers, spine chipped, minor dust-soiling. Scattered foxing throughout. Provenance: M. Cordier, presented by the author. (#002874) € 800

DSB VIII, p.277. First Edition. Presentation copy inscribed by the author on the front wrappers. The Perturbation theory was first devised to solve otherwise intractable problems in the calculation of the motions of planets in the solar system. Le Verrier's analytic theory of perturbations was a significant contribution to the most general problem of celestial mechanics, the stability of the solar system. The discovery of the planet Neptune in 1848 by Le Verrier, based on the deviations in motion of the planet Uranus (he sent the coordinates to Johann Gottfried Galle who successfully observed Neptune through his telescope), represented a triumph of perturbation theory.

Presentation copy inscribed and signed by the author.

LE VERRIER, Urbain Jean Joseph. Recherches sur l'orbite de Mercure et sur ses perturbations. Détermination de la masse de Venus et du diamètre du soleil (caption title). Offprint from: Journal de Mathematiques pures et appliquées, vol. VIII, 1843. Paris: Bachelier, 1843. 4to (280 x 223 mm). 87 [1]

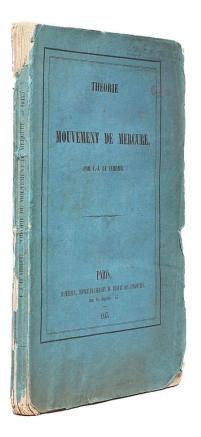


pp. Contemporary plain green wrappers (little edge and spine wear), pages uncut and partially unopened. Text with some faint dampstaining at top margin and occasional minor foxing and soiling, first leaf torn in blank inner margin not affecting text. Provenance: Presentation copy inscribed and signed by the author in ink on the front wrapper. (#002875) \in 1,900

DSB VIII, p.278. RARE OFFPRINT. In 1843 Le Verrier turned to the theoretical pertubation study of Mercury since the existing tables did not agree well with observations. He later "showed that Mercury moves as if an unknown agent produced an advance of its perihelion of about 38 seconds per century. He then put forth the hypothesis of the perturbing action of an intramercurial planet - or, rather, of a group of such planets; the dimensions of a single perturbing body - on the order of those of Mercury - ruled out the possibility of this body having remained unobserved. The hypothesis was not confirmed by the observations

conducted for this purpose. No satisfactory explanation was found until 1916, when Karl Schwarzschild, applying the theory of general relativity to celestial mechanics, demonstrated that the only notable correction in the orbits in relation to the Newtonian theory was an advance in the perihelia. This advance is very slight, except in the case of Mercury where it attains 43 seconds per century. Hence the disagreement pointed out by Le Verrier ultimately became the most celebrated proof of the validity of Einstein's theory." (DSB).

OCLC/WorldCat locates only three copies, one at the U.S. Naval Observatory, and two at the Bibliotheque Nationale de France (perhaps duplicate listings).



29 LE VERRIER, Urbain Jean Joseph. Théorie du mouvement de Mercure. Paris: Bachelier, 1845. 4to (248x163 mm). [2], 165, [5] pp. Original wrappers (chipped, soiled, spine damaged), pages untrimmed, foxing throughout, first blank attached to front cover. (#001843) € 500

Sparrow, Milestones of Science 133; DSB VIII, 277; Houzeau-L. II, 1103 - Original edition of Le Verrier's profound examination of the theory of Mercury. "He calculated all the terms of perturbation which could sensibly affect the motion of the planet. Later observations proved the accuracy of Le Verrier's researches.

LE VERRIER, Urbain Jean Joseph. Recherches sur le mouvements d'Uranus. In: Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, Vol. XXII, no. 22, June 1846, pp. 907-918. Paris: Bachelier, 1846. 4to (283 x 226 mm). Entire volume 22 (Jan. - June 1846), [4], 1208 pp., including half- and general title-page. Contemporary plain paper wrapper with printed paper label to spine, pages untrimmed and unopened. Very little marginal browning and occasional minor spotting to text, faint dampstaining to blank margin of few leaves. A fine, unsophisticated copy.

(#001708)

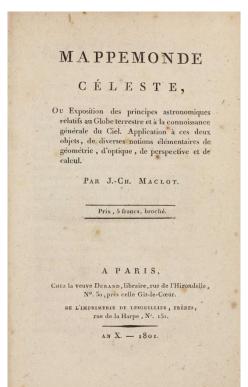


Sparrow, Milestones of Science 132; Evans 25; Norman 1343 (book form). - In 1845 the astronomer and physicist Francois Arago encouraged Le Verrier to examine observed anomalies in the movements of the known planet Uranus. Le Verrier began by establishing a precise theory of Uranus which he demonstrated in his memoir "Recherches sur les Mouvements d'Uranus" published in Volume 22, number 22. He showed that the discrepancies in the orbit of Uranus could not be explained by the gravitational effects of the Sun, Jupiter or Saturn, but were in fact caused by the presence of an as yet unknown planet within its orbit.

"In 1846, John Couch Adams, an English astronomer, and Urban J. J. Leverrier, a French astronomer, simultaneously and independently determined the location of a possible new planet. Adams put Newton's theory of attraction to a test by studying the causes of the irregularities in the motion of the planet Uranus. In 1845, he wrote of his findings of the mathematical location of the new planet to Sir George Biddell Airy, Astronomer

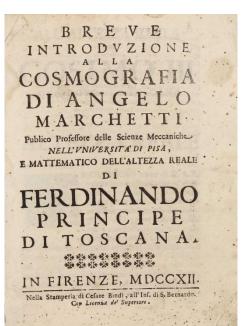
Royal. Because Adams was unknown, his letter was put aside. Meanwhile these same perturbations of Uranus had become of interest to Leverrier. On July 1, 1846, he presented a paper *Recherches sur les movement d'Uranus* (1846) to the Académie des Sciences in Paris... When Airy realized that Leverrier and Adams had reached the same conclusions, he hastened to suggest that a search be made for the new planet. Shortly thereafter it was seen but not recognized. About a week before it was found in England, it was discovered by Galle in Berlin on information supplied by Leverrier. Thus, the honor of priority of discovery, or even codiscovery of the new Planet, Neptune, was lost to Adams and credited to Leverrier. Adam's paper *On the perturbations of Uranus* was read before the Royal Astronomical Society, November 13, 1846, and was published in 1847" (Sparrow, p.40).

From the library of the great Italian bibliographer Pietro Riccardi



MACLOT, Jean-Charles. Mappemonde cèleste, ou Exposition des principes astronomiques relatifs au Globe terrestre et à la connoissance gènèrale du Ciel. Application à ces deux objets, de diverses notions èlèmentaires de gèomètrie, d'optique, de perspective et de calcul. Paris: chez la veuve Durand, 1801. 8vo (203 x 122 mm). viii, 370, [2] pp., half-title, two folding engraved plates, errata leaf at end. Bound in half marbled morocco over marbled boards, spine with gilt lettering piece, edges sprinkled red (worming to hinges, boards rubbed, corners bumped, extremities worn). Text little browned, occasional minor spotting. Provenance. 1. From the library of the great bibliophile Pietro Riccardi (1828-98), author of 'Biblioteca Matematica Italiana'; 2. Giancarlo Beltrame Library. Very good copy. (#003008)€ 500

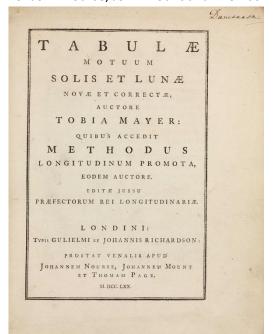
Houzeau-L. 9794. FIRST EDITION of this textbook on astronomy and geodesy by Maclot (1728-1805), French geographer and professor of cosmography and member of the Rouen Academic Association.



MARCHETTI, Angelo. Breve introduzione alla cosmografia. Florence: Cesare Bindi, 1712. 4to (208 x 160 mm). 120 pp., including title-page, woodcut initials and ornaments, woodcut astronomical diagrams in text. Contemporary vellum over boards, small loss to upper cover and spine, hinges starting. tiny marginal ink spots to title, first few leaves a bit browned, light waterstaining to gutter, slight marginal spotting and finger soiling, lower blank corner of first two leaves torn, a few tears and paper flaws to blank outer margins elsewhere, H2-3 working loose and with small clean tear to fore margin. Provenance: inked exlibris of a friar from the Monastery of Peccioli; Giancarlo Beltrame Library. (#003007) € 1,800

Riccardi I, 109:4.1 ("raro"); Houzeau & Lancaster 8011. FIRST EDITION of a rare astronomical work. The Pistoiese scientist Angelo Marchetti (1674-1753) was a teacher of mathematics in Pisa.

MAYER, Johann Tobias. Tabulae motuum solis et lunae novae et correctae... quibus accedit methodus longitudinum promota [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;

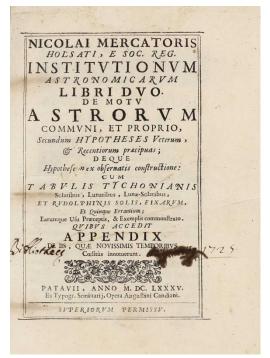


part I ('Methodus longitudinum promota') in Latin and English, part II (the letterpress tables and 'Papers relative to the...tables') separately paginated. vii [1], 89; [6], 92-136; cxxx, [2] pp., including errata leaf and two folding engraved plates. Some light age toning and occasional very minor spotting, dust soiling at top margin of few leaves, otherwise generally quite crisp and clean. Contemporary tree calf, rebacked with later calf, spine with gilt-lettered morocco label (extremities rubbed, corners bumped and scuffed). Very good copy. (#002876) € 4,000

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 ± 1 ', an achievement attributable to his skillful 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 Obseivatory at Greenwich)" (DSB).

MERCATOR, Nicolaus. Institutionum astronomicarum libri duo, de motu astrorum communi et proprio, secundum hypotheses veterum & recentiorum praecipuas... cum tabulis Tychonianis solaribus, lunaribus, lunae-solaribus... Padua: Agostino Candiano, 1685. 4to (245 x 180 mm). 16, 223,



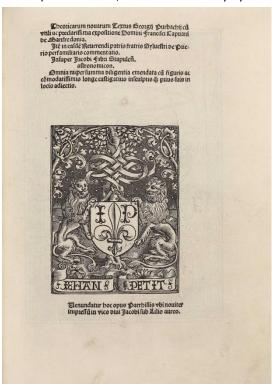
[1], 64, [4] pp., including woodcut head- and tailpieces, 7 folding engraved plates bound at end, without blank leaf b4 of preface. Signatures: A4, b4, (B-Ff)4, (A-H)4, k2. Contemporary carta rustica, spine lettered in ink (some spotting and soiling). All pages untrimmed, leaves A3-4 loose. Very little browning, very minor occasional spotting, small worm tracks (a bit stronger to lower blank margin of gatherings F-H and upper margin of gatherings F-H of *tabulae* affecting headlines text on a few pages, minor repair to b2 and lower outer corner of last two gatherings. Provenance: Giancarlo Beltrame Library; cancelled library inscription to title-page dated 1725. (#003006) € 2,500

VERY RARE SECOND EDITION. This work includes Mercator's *Hypothesis astronomica nova* which presents his modified Keplerian system of elliptical orbits, originally published in 1664. Nicholas Mercator (1620-1687), also known by his German name Kauffmann, was a mathematician and astronomer who lectured at the University of Copenhagen during 1648–1654 and lived in Paris from 1655 to 1657. He

was mathematics tutor to Joscelyne Percy, son of the 10th Earl of Northumberland, at Petworth, Sussex in 1657 and also taught mathematics in London from 1658 to 1682. In 1666, he was elected a Fellow of the Royal Society. Mercator is most well known for his treatise *Logarithmo-technia* on logarithms, published in 1668. In this treatise he described the Mercator series, also independently discovered by Gregory Saint-Vincent.

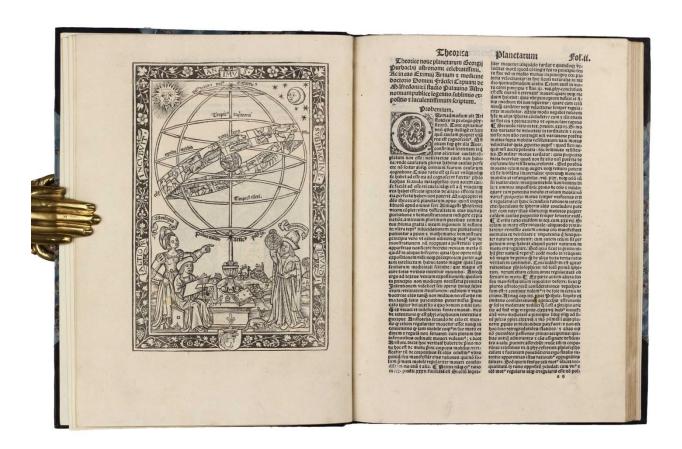
35 **PEURBACH, Georg von**. Theoricarum novarum textus Georgii Purbachij . . . expositione Dom. Francisci Capuani de Manfredonia: it in easd Reu. p. p. Syluestri de Prierio perfamiliaris commentatio; insuper Jacobi Fabri Stapulen astronomicon; omnia nuper emendata cu fiquris. Paris: Michel Lesclencher for J. Petit and R. Chaudière, 1515. Folio (256 x 188 mm). [1] 2-91 [1] leaves, roman foliation. Signatures: a⁸ b-p⁶. Black letter type, text in double column, large woodcut of Petit's device on title, full-page illustration of an armillary sphere by Oronce Finé on verso, woodcut decorative initials, several woodcut astronomical diagrams in text, colophon on final leaf recto. Rebound in modern half calf over marbled boards, spine lettered and ruled in gilt, all edges gilt, new endpapers. Only very minor brown spotting internally, several small closed wormholes throughout, mostly marginal but one in middle of leaves sometimes touching text, including the full-page illustration on verso of title (the tiny loss skilfully supplied in pen manuscript), worming stronger in upper margin of gatherings e-i, larger repair in corner of e5 (not affecting text), a few clean closed tears including a longer one across leaf d6 (without loss). Provenance: Sotheby's Sale Nov. 2, 1981, lot 130. An exceptional, clean and bright copy, collated complete. (#002972) € 12,000

Houzeau-Lancaster 2252; Mortimer/Harvard French, 432; DSB XV, Suppl. 1, p.475-6. - FIRST PARIS PRINTING as an independent work, with a commentary by Francesco Capuano and Silvestro Mazzolini da Priero. Of

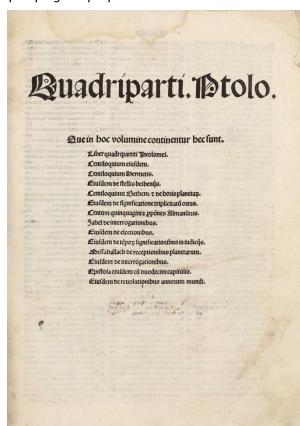


exceptional rarity, only two copies have appeared at auction in the past 40 years (our copy and an incomplete copy lacking the title-page). The work contains the earliest known woodcut by Oronce Finé, an illustration of the armillary sphere with his monogram and crowned dolphin in the lower border. "Theoricae novae Planetarum is an elementary but thorough textbook of planetary theory written by Peurbach to replace the old, and exceedingly careless, so-called Theorica planetarum Gerardi, a standard text written probably in the second half of the thirteenth century. The original version of the Theoricae novae, completed in 1454 ... contained sections on the sun, moon, superior planets, Venus, Mercury, characteristic phenomena and eclipses, theory of latitude, and the motion of the eighth sphere according to the Alphonsine Tables. Peurbach later enlarged the work ... by adding a section on Thabit ibn Qurra's theory of trepidation. Regiomontanus brought out the first printed edition (Nuremberg, ca, 1474). Zinner reports no fewer than fiftysix editions through the middle of the seventeenth century ... The diagrams are of considerable importance. Since parts of Peurbach's text would be unintelligible without them ... The Theoricae novae contains very careful and detailed descriptions of solid sphere representations of

Ptolemaic planetary models that Peurbach based either upon Ibn al-Haytham's description of identical models in his *On the Configuration of the world* (translated into Latin in the late thirteenth century) or upon some later intermediary work. Peurbach's book was of great importance because his models remained the canonical physical description of the structure of the heavens until Tycho disproved the existence of solid spheres. Even Copernicus was to a large extent still under their influence, and the original motivation for his planetary theory was apparently to correct a number of physical impossibilities in Peurbach's models relating to nonuniform rotation of solid spheres." (DSB XV, p.475).



PTOLEMAEUS, Claudius et al. Quadriparti[tum]. Ptolo. Que in hoc volumine continentur hec sunt. Liber quadri partiti Ptolomei. Centiloquium eiusdem. Centiloquium Hermetis. Eiusdem de stellis beibenijs. Centiloquium Bethem & de horis planetarum ... de significatione triplicitatum ortus. Centum quinquaginta propositiones Almansoris. Zahel de interrogationibus ... de electionibus ... de temporum

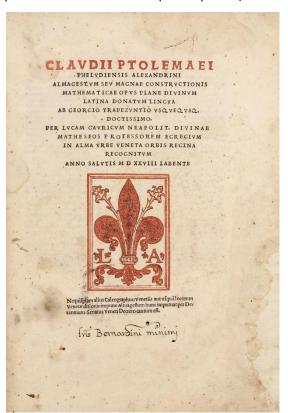


significationibus in iudicijs. Messahallach de receptionibus planetarum. Eiusdem de interrogationibus. ... Epistola ... cum duodecim capitulis ... de reuolutionibus annorum mundi. Venice: Heirs of Ottaviano Scoto, 6 February 1519. Folio (302 x 220 mm). [4], 140 leaves. Signatures: 2a⁴ A-Q⁸ R-S⁶. Place, printer and date from colophon on leaf S6r. Text in two columns, astronomical and astrological woodcut diagrams in text. Contemporary limp vellum (soiled and browned, repair to upper cover, first free endpaper torn with loss). Text only very little agetoned, first few leaves including title slightly dustsoiled and stained, title-page with small hole and erased inscription, faint dampstaining to few pages elsewhere, but generally quite clean and bright internally. Provenance: Eramersce Bedermi; ex-libris Sunerzini (inscriptions on second free endpaper). (#002964) € 7,500

Stillwell 96; Thorndike V, 364 - SECOND EDITION of this compilation of classical astrological and astronomical tracts edited by H. Salius (first published 1493 in Venice). The first Latin edition of Ptolemaeus' *Quadripartitum* alone was first printed by Radoldt in

1484. This Salius edition was considerably enlarged by 11 treatises of Hermes Trismegistus, Al Battani, Almansor, Zahel and Messahala. Ptolemaeus' *Quadripartitum* (Greek: *Tetrabiblos*) is divided into four books: the first is a defence of astrology and technical concepts, the second deals with the influences on earth (including astrological geography and weather prediction), and the third and fourth discuss the influences on individuals. "Ptolemy's *Quadripartitum* ranks as the Bible of Astrology, but the attribution of the *Centiloquium* is considered spurious. The volume contains also a half dozen other works of astrological interest." (Stillwell). The original Greek text was published for the first time in 1535 by Camerarius, and in 1553 by Melanchthon. Thorndike discusses the *Quadripartitum* at great length (I, 110-16) and stresses its influence on later writers.

PTOLEMAEUS, Claudius. Almagestum seu magnae constructionis mathematicae opus plane divinum. Latina donatum lingua ab G. Trapezuntio. Per L. Gauricum recognitum. Venice: Luc'antonio Giunta, 1528. Folio (303 x 208 mm). [6], 143 leaves. Signatures: A⁶ a-s⁸ (-s8), several foliation and signature errors. Title printed in red and black with printer's woodcut device, ornamental woodcut initials, several woodcut mathematical diagrams at page margins throughout. Lacking final blank leaf s8. Bound in contemporary limp vellum, spine titled in manuscript (vellum soiled and spotted, small patch of vellum at lower spine repaired). Text little browned throughout, scattered spotting, foxing,



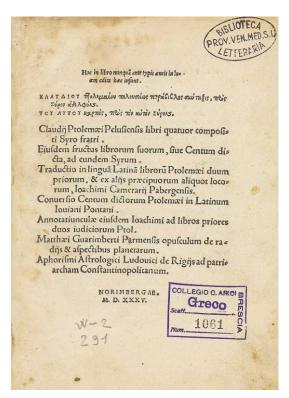
and occasional minor damp staining, a few smaller patches of mold at outer margin of few leaves, first 9 and final 2 leaves with paper repairs, worming to first 3 leaves affecting a few letters, woodcut at bottom margin of fol.19v slightly shaved (loss of one letter). Provenance: Fratis Bernadini minimi (inscription on title-page). Still good copy. (#002959) € 6,000

Adams P-2214; Norman 1760; PMM 40; Sparrow 167; Honeyman 1760; DSB XI, 187ff; Stillwell 97n; Wellcome 5281. - THE FIRST PUBLISHED LATIN TRANSLATION made from the original Greek text of Ptolemy's most important astronomical and mathematical work. "Until the innovative work of Tycho Brahe and Kepler in the late sixteenth and early seventeenth centuries, that is, for nearly fifteen hundred, years, the Almagest was the basis of all sophisticated astronomy, a longevity exceeded only by Euclid's Elements" (Swerdlow). Instruments mentioned or described include the equatorial armillary, the plinth, the meridional armillary, the triguestrum and the armillary astrolabon. The Almagest had been translated into Arabic and was known to the later Middle Ages in a Latin translation from the Arabic by Gerard of Cremona; that version was first published in Venice in 1515.

PTOLEMAEUS, Claudius. Hoc in libro nunquam ante typis aeneis in lucem edita haec insunt [Tetrabiblos] Libri Quatuor Composti Syro Fratri. Nuremberg: Ioannem Petreium, 1535. 3 parts in one volume 4to (210 x 151 mm). [6], 59, [5], 84, [24] leaves. Greek and Latin text, a woodcut diagram and woodcut initials (little soiling, browning and spotting, occasional mainly marginal staining, heavier at the end and quires q and s, tear without loss at gutter of title page). Contemporary vellum with yapp borders and manuscript title on spine, blue sprinkled edges (light staining). Provenance: Biblioteca Prov. Ven. Med. S.I. Letteraria (stamp on title and I.33); Collegio C. Arioi, Brescia (stamp on title); Compagnia del Gesú, Rome (book label). A fine copy, complete with all blanks present.

€ 11,000

DSB XI, p.198; Zinner 1605; Burmeister, Rhetikus III, 31; Thorndike V, 364; Schweiger I, 279; Houzeau & Lancaster 3636; VD16 P5248. - FIRST EDITIONS of the original greek texts and the translations. Ptolemy's Tetrabiblos is one of the great astrological textbooks of antiquity. Book 1 describes the technical aspects of the

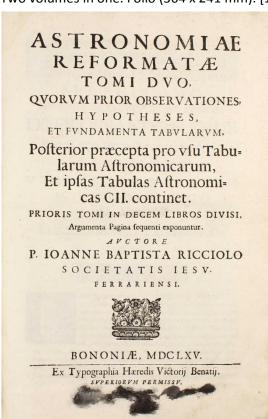


subject, book 2 the influences on the earth in general, and books 3 and 4 with influences on human life. The Greek text contains symbols representing signs of the zodiac and planets and stars. A chart explaining the symbols is included at the beginning of the text. The Karpos, a collection of astrological aphorisms, is erroneously ascribed to Ptolemy. In addition to the two Greek texts by Ptolemy, this edition contains the Latin translation by Joachim Camerarius of the Tetrabiblos, the Latin translation by Giovanni Pontano of the Karpos and two short works by Matthaeus Guarimbertus (Opusculum de radiis et aspectibus planetarum) and Ludovicus de Rigius (Aphorismi astrologici). A different Latin translation of the Tetrabiblios, by Plato Tiburtinus, was published in Venice by Ratdolt in 1484 (Goff P1088).

Editio princeps des griechischen Textes der "Tetrabiblos", ein systematisches Handbuch der Astronomie, das von Joachim Camerarius herausgegeben und ins Lateinische ubertragen wurde. Die Ubersetzung der ersten beiden Bucher ist vollstandig, wahrend Buch 3 und 4 nur in Auszugen wiedergegeben werden. Der mit Camerarius eng befreundete Rhetikus vertritt ebenfalls die hier dargelegte wissenschaftliche Auffassung der Astrologie und wird

bisweilen auch als Ubersetzer des Werkes genannt (vgl. Burmeister).

RICCIOLI, Giambattista. Astronomiae reformatae. Tomo duo, quorum prior observations, hypotheses, et fundamenta tabularum. Posterior praecepta pro usu Tabularum Astronomicarum, et ipsas Tabulas Astronomicas CII continent. Bologna: Ex Typographia Haeredis Victorij Benatij, 1665. Two volumes in one. Folio (364 x 241 mm). [12] (of [14]), xii, 374 [2]; [8], 35 [1], 128 pp., text printed

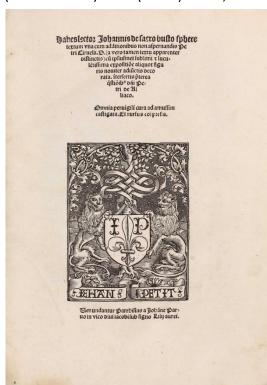


in two columns, woodcut device on each of both titlepages, woodcut initials, head- and tailpieces, several woodcut diagrams (some full-page), with blank leaf 3A4, but lacking the additional general title to part I and two double-page engraved plates. Signatures: †6 ¶⁶ A-3A⁴, a⁴ A-T⁴ V⁶. Contemporary carta rustica, spine titled in manuscript (spine cracked without loss, some rubbing and light soiling). Text with occasional very minor spotting, a few corrections in contemporary hand. Provenance: old inscription at foot of title obscured with black ink resulting in a few tiny holes; unidentified library label on front pastedown; Giancarlo Beltrame Library. Except for the two lacking plates and additional title a near fine copy. (#002904)€ 2,000

Norman 1827; Riccardi I (2); Houzeau-Lancaster 9230; Sommervogel VI, 1801 no. 9; DSB XI, p.411. RARE FIRST EDITION of this anti-Copernican work by a Jesuit astronomer which seeks to prove the immobility of the earth. "This work, which the author thought of as a third part of his *Almagestum Novum*, contains a valuable collection of observations. It is composed of a series of specialized treatises of the different bodies of the solar system and the fixed stars" (Houzeau-Lancaster). Riccioli

noted the colored bands parallel to the equator of Jupiter and published his observations of the phases of Saturn. He knew of Huygen's *Systema Saturnium*, but disagreed with Huygen's ring theory. Most of the Tabular material in the second volume was the work of his student Francesco Maria Grimaldi" (Norman).

SACROBOSCO, Johannes de. Habes lector Johannis de Sacro Busto sphere textum una cum additionibus non aspernandis Petri Cirvelli ... cum ipsiusmet sublimi et luculentissima expositione aliquot figuris noviter adiunctis decorata. Intersertis praeterea quaestionibus domini Petri de Alliaco; Omnia peruigili cura ad amussim castigata. Et rursus coipressa. Paris: Jean Petit, August 1515. Folio (271 x 195 mm) LXXXI (i.e. 79) leaves, woodcut printer's device on title-page, woodcut initials,

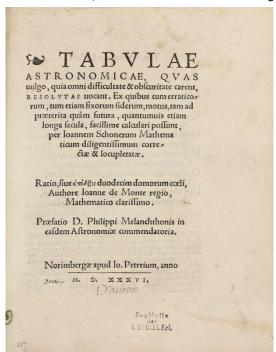


woodcut illustrations and diagrams in text, without the final blank. Printed in Gothic letter, two columns. Signatures: a-m⁶ n-o⁴ (-o4), print date from colophon on n4 verso. 17th-century limp vellum (restored, cover soiled, extremities rubbed, lacking free endpapers but stubs of vellum manuscript preserved). Text only very little browned, occasional mainly marginal brown spotting, tear in leaf d3 slightly affecting woodcut diagram on verso, a few text corrections and markings in ink. A very good copy. (#003071) €7,500

Honeyman 2726; Shaaber H325; Moreau II, 1515/1216. - RARE EDITION by Petit with the commentary of the astrologer and mathematician Pedro Cirvelo (1470-1548) who includes the recent discoveries of the New World. Sacrobosco's *Sphaera* is one of the great Renaissance books. It was the most important work on astronomy, next to Ptolemy's, in the Age of Discovery. Printed in Paris in gothic type, this edition closely follows the 1498 edition also reprinted and published in 1508 by the same Petit under the title *Uberrimum Sphere mundi commentum, intersertis etiam questionibus Petri de Aliaco*. In Cirvelo's

commentary, he mentions how in 1491 (sic) King Ferdinand sent out sailors to the westward to seek new islands and how they returned with examples of many strange birds, exotic unguents and spices, and gold, and bringing strange blue men with square heads. For a long time this work was not recognised as an early Americanum, and it does not appear in Harrisse, JCB or Sabin.

SCHÖNER, Johannes. Tabulae astronomicae, quas vulgo, quia omni difficultate & obscuritate carent, resolutas vocant ... per Ioannem Schonerum ... correctae & locupletatae. Ratio, siue duodecim domorum coeli, authore Ioanne de Monte regio, ... praefatio D. Philippi Melanchthonis. Nürnberg:



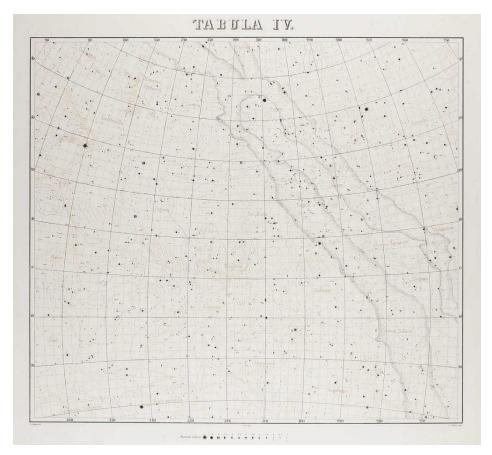
Johann Petreius, 1536. 4to (207 x 159 mm). 94 unnumbered leaves. Signatures: [*]⁶ A-V⁴ X⁶ [Y]². Contemporary limp vellum with 2 (of 4) ties still present, spine titled in manuscript (covers soiled and spotted, book block rehinged). Pages partially uncut. Text quite crisp and clean with only very minor occasional spotting, annotations in old hand to leaves T4r and V2r, old foliation numbers in manuscript, the single bifolio of errata at end supplied (little frayed at outer margins and somewhat smaller in size). Provenance: D'Auron (faint ink inscription on title page); Erlangen Universitätsbibliothek (small duplicate stamp to title-page). Exceptionally well preserved and wide-margined copy in its original binding. (#003089) € 6,500

Zinner 1647; VD16 S 3505; Adams p.684. - EXCEPTIONALLY RARE FIRST EDITION, FIRST ISSUE, of Schöner's *Astronomical Tables* intended for use by astronomers and students; a work well committed to the tradition of the

Alphonsine Tables. A commendatory preface, addressed to Schöner, is a famous contribution by the leading Lutheran theologian and scholar Philipp Melanchthon in which he underlines once more the adherence to and importance of astrology and in which he praises the care of mathematics in Nuremberg, ranking it higher than Athens, Miletus and Alexandria and names Johannes Regiomontanus, Johannes Werner, Melchior Pfinzing, Willibald Pirckheimer and Christoph Coler. He also honors Schöner's educational and publishing work for the vital mathematics and thus his services to Nuremberg and the students. The book was published in Nuremberg by the celebrated printer Johannes Petreius, who had collaborated with Schöner as his editor on a number of mathematical works, including Regiomontanus' *De triangulis*. There are two issues of this work known: the first with large title vignette but without printer and year mentioned on the title-page, 86 numbered leaves and no errata, the second (our copy) with 94 unnumbered leaves including a final leaf of errata. The former issue appears to be of later date since the errors listed in the errata of our issue are corrected in the text and the entire text being completely reset. Our issue has on the title-page the mention of Regiomontanus "*Ratio, siue Apodeixis duodecim domorum coeli, authore Ioanne de Monte regio, mathematico clarissimo*" which is completely absent from the other issue's title-page.

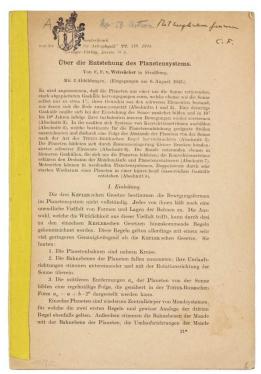
SCHWINCK, Gustav. Mappa Coelestis sive Tabulae Quinque inerrantium septimum ordinem non excedentium et usque ad XXX gradum decl. Austr. Pertinentium quas pro medio Seculo XIX stereographice construxit. Leipzig: K. F. Köhler, 1843. Large oblong folio (597 x 664 mm). 3 unnumbered leaves including typographic title and dedication page, 5 engraved star charts printed in black and red after Schwinck by C. E. Weber. Marginal soiling and repaired central vertical crease to title-page, text and plates, plates 3-5 with small tear repaired in lower margin, plate 5 also with repair to upper left corner of margin, verso of plate soiled. Modern quarter black morocco gilt, marbled boards, original printed label laid down on upper cover; label torn with some marginal loss, some soiling, and with later nineteenth-century inscription, green endpapers. Provenance: Gerald F. Fitzgerald; Bibliothek der königl. Haupt-Cadetten-Anstalt Lichtenfelde, Berlin (red ink stamp to title). A fine copy. (#001839) € 2,800

First edition of Schwinck's rare star atlas, dedicated to the German astronomer F. W. Bessel, who advised Schwinck on this work. Schwinck's atlas was designed for professional use rather than as a popular atlas. It comprises stars down to seventh order. The finely drawn star constellations are printed in brown color.



Rare offprint, inscribed and monogramed by the author

WEIZÄCKER, Carl Friedrich. Über die Entstehung des Planetensystems. pp. 319-355. Offprint from: Zeitschrift für Astrophysik, vol. 22, 1944. Berlin: Julius Springer, 1944. 8vo (230 x 155 mm). Stapled as issued (spine enforced with yellow tape). Internally somewhat browned throughout.

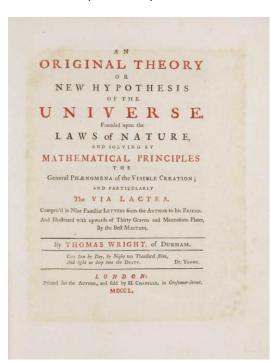


Provenance: small coat of arms stamp. Inscribed and monogrammed 'Mit freundlichen Grüssen C. F.' by the author in pencil to top margin of first page. (#002796) € 600

RARE FIRST EDITION. In this groundbreaking paper on the origin of the solar system and planet formation, Weizäcker introduced a new idea that within the protoplanetary disc a pattern of turbulence-induced eddies was set up. "A suitable combination of clockwise rotation of each vortex with anticlockwise rotation of the whole system can lead to individual elements of the disc movin around the central mass in Keplerian orbits. Thus there would be very little dissipation of energy due to the overall motion of the system but material would be colliding at high relative velocity at the boundary between vortices, as shown at the point P. According to the von Weizsacker model, in such regions small roller-bearing eddies would form and in these regions, where matter was heavily interacting, material would coalesce to give condensations. The condensations would form in rings and once all condensations in a ring had come together there would be a family of planets. If there were five vortices to a ring then von Weizsacker showed that the orbital radii would

give something similar to Bode's law. (Woolfson, M. M. *The Origin and Evolution of the Solar System*, CRC Press, 2000, pp. 136-7).

WRIGHT, Thomas. An original theory or new hypothesis of the universe, founded upon the laws of nature, and solving by mathematical principles the general phaenomena of the visible creation; and particularly the Via Lactea. London: Printed for the Author, and sold by H. Chapelle,



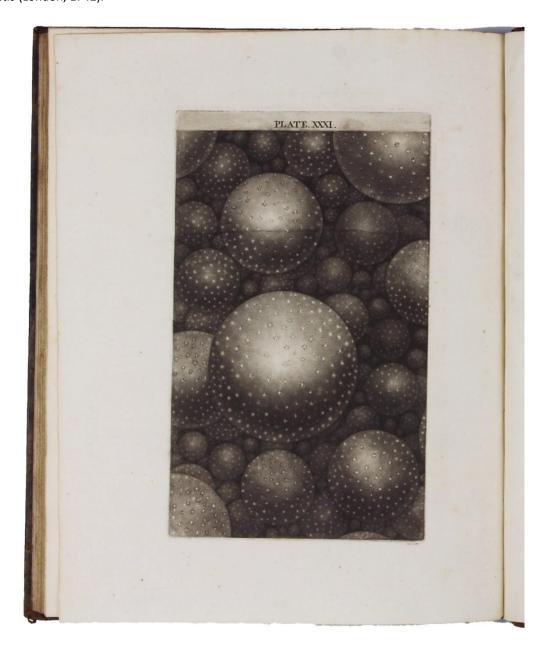
1750. 4to (286 x 226 mm). viii, [4], 84 pp. Engraved portrait frontispiece* of the author by Fourdrinier after G. Allen, title printed in red and black, 32 engraved plates (2 folding, 8 in mezzotint), wood-engraved initials, head- and tailpieces, with the errata- and list of subscribers leaves, without the final blank. Contemporary mottled calf, spine with 5 raised bands richly gilt in compartments and with gilt-lettered morocco label in first compartment (boards and extremities rubbed, corners bumped and scuffed). Internally very little age-toned, minor spotting to a few leaves only, light offsetting from frontispiece on titlepage, tiny hole in plate 28 from paper flaw not affecting image. Provenance: inscribed monogram L.C.B. to front pastedown. An outstanding, bright and crisp copy with very broad margins. (#002600) € 28,000

Norman 2265; DSB XIV, p.518-9; Honeyman 3143; Gingerich, *Rara Astronomica* 53; Hoskin, *J. for the History of Astronomy*, 1, pp.44-52. RARE FIRST EDITION of this attempt

at reconciling religion and science and establishing an understanding of the Milky Way. A book of considerable importance in the history of science. Wright first explained the Milky Way and the nebulae as external galaxies and provided the basis for the theories on the universe by Kant, Herschel and Laplace.

Wright, a teacher of navigation and a land surveyor by profession, "hypothesized a 'divine center' of the universe, corresponding to a gravitational center around which the sun and other stars orbited. He also proposed, as a possible explanation for the visual phenomenon of the Milky Way, a model of the universe in which the orbiting stars formed a flattened ring, this hypothesis caused Immanuel Kant, who did not realize that Wright's 'center' was supernatural, to credit Wright with originating a disk-shaped model of the galaxy" (Norman).

*The engraved portrait frontispiece is not called for in this work, but is part of Wright's earlier work *Clavis coelestis* (London, 1742).



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