

Astronomie



ANTIQUARIAT
Michael Kühn

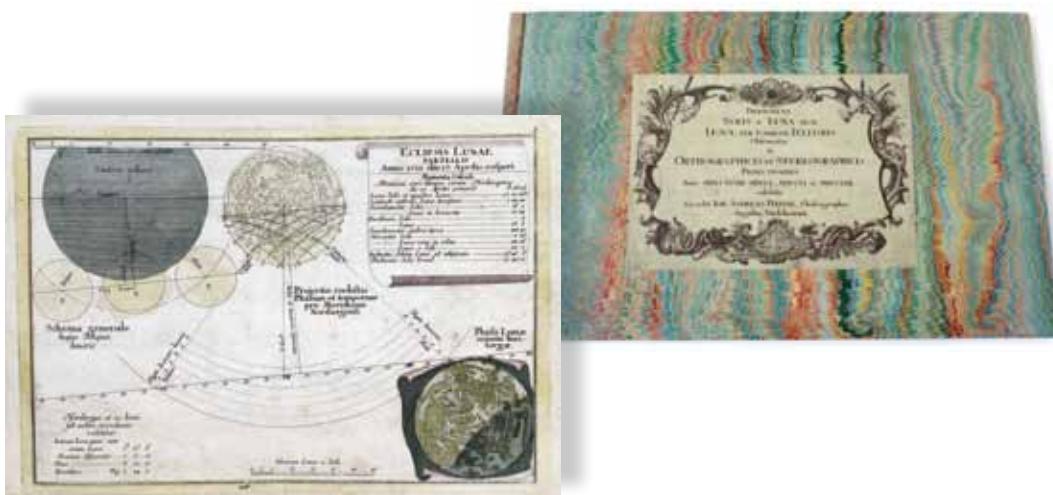
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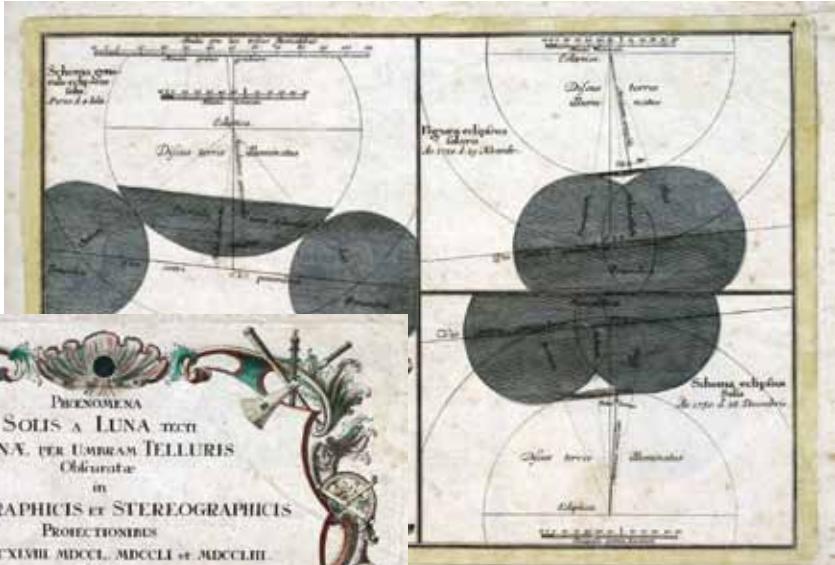
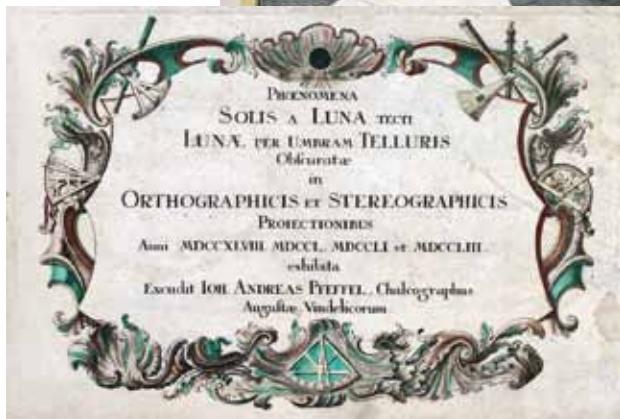
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Unknown work by Tobias Mayer?

I Pfeffel, Joh[ann] Andreas [ed.]

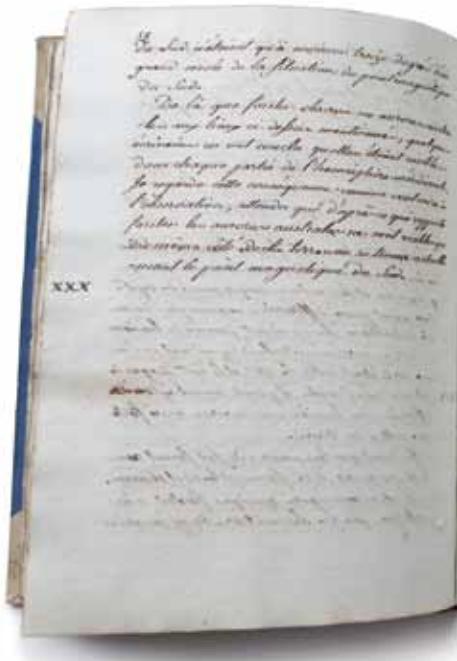
Phaenomena Solis a Luna tecti lunae per umbram telluris obscuratae in orthographicis et stereographicis projectionibus anni MDCCXLVIII. [1748] MDCCL. [1750] MDCCLI [1751] et MDCCCLIII. [1753]. Excudit Joh. Andreas Pfeffel. Augsburg, Pfeffel, no date [1748 – 1753]. Oblong-4°. Engraved and handcoloured title within ornate border adorned with astronomical instruments, 9 engr. plates (of which 8 numb. & handcoloured). Later Marbled boards.



First and only edition, a rarity. With only two copies traceable in libraries on KVK and OCLC [Berlin and Basle] both with only 8 plates. Produced and edited [excudit] by the Augsburg based engraver and publisher J. A. Pfeffel (1674-1748), this series comprises 8 numbered plates (1-8), with various sun eclipses from 1748 to 1753, mathematical calculations, maps and delineations of the moon mostly with delicate hand-colouring. The last unnumbered plate with an instrument for viewing sun eclipses. Very rare work on solar eclipses probably published in rivalry to the Homann maps made by Doppelmayr, Lowitz, Mayer and Euler. The question of authorship is dubious, because J. A. Pfeffel was merely an etcher and publisher, not a mathematician or astronomer.

I think there are two possibilities for authorship:

1. Johann Tobias Mayer (1723-1762) published in 1745 his second publication "Mathematischer Atlas" at the firm of Pfeffel. On leaving Augsburg he joined the Homann Cartographic Bureau in Nuremberg, Bavaria where he devoted 5 years to improving the state of mapmaking. Mayer collated geographical and astronomical data, and made observations of occultations and eclipses. In 1747 and 1748 Mayer obtained a large number of meridian transits of the moon, and made numerous measures of its angular diameter, to facilitate the lunar-eclipse method of fixing longitude. This work is not included into the bibliography of the author.
2. Andreas Mayer (1716 Augsburg – 1782 Greifswald) a german mathematician, architect, astronomer and cartographer. He was first educated in Augsburg by his father in architecture and the mathematical sciences before he left to study at Wittenberg Univ. mathematics & physics with Johann Matth. Hase [Hasius], Johann Friedrich Weidler, Martin Gotthelf Löscher and Samuel Christian Hollmann; he then studied in Berlin with the astronomer Christfried Kirch. His dissertation under supervision of Hasius recalls the title of the work here: Diss. de Phaenomenis Solis per Lunam recti & Lunae per umbram telluris obscurantae (1737). On recommendation of Christian Wolff he became in 1741 Prof. of astronomy and mathematics at Greifswald University in Northern Germany.– KVK: Berlin [war loss ?], Univ. Basel. Not in Kenney, Barchas Coll., or similar collections.



Unknown manuscript translation – American cartographer

2 Churchman, John [Jean].

Atlas Magnétique ou cartes de variation partout le globe terrestre. ... Londre: Darton & Harvey, 1794. French Manuscript on paper. France, around 1795. Small quarto. 132,(4 blank) numbered pp. with 4 fold. manuscript maps in pen and ink of which two very large and with wash-colour showing the northern and southern hemispheres with their magnetic orbits. Contemporary half leather, sprinkled edges, partly rubbed, else fine.

Unknown & unpublished French manuscript translation of american surveyor John Churchman (1753-1805): "The Magnetic Atlas, or Variation Charts of the whole Terraqueous Globe; comprising a system of variation and dip of the needle, by which, the observations being truly made, the longitude may be ascertained" which was published 4 times from 1790 to 1804 in English to promote his solution of the problem of longitude. This French translation according to preliminary notes was made for the French astronomer Vidal by a French lawyer Borelli initiated by a French engineer Mercadier after the 1794 ed. Churchman's theory aroused much interest in France.

When his theory for the longitude problem faced mixed reactions in the USA, Churchman went to Europe. In 1796 he visited first Copenhagen, and then proceeding on to St. Petersburg, where he was well received by the authorities. There his theory proved to be of such sufficient interest to the Imperial Russian Academy that it was proposed for an award. Although he did not receive the award, Churchman was elected to membership in the Academy on the director's personal recommendation.

Chapitre 1^{er}

Définition et Description

Définitions 1^{re}

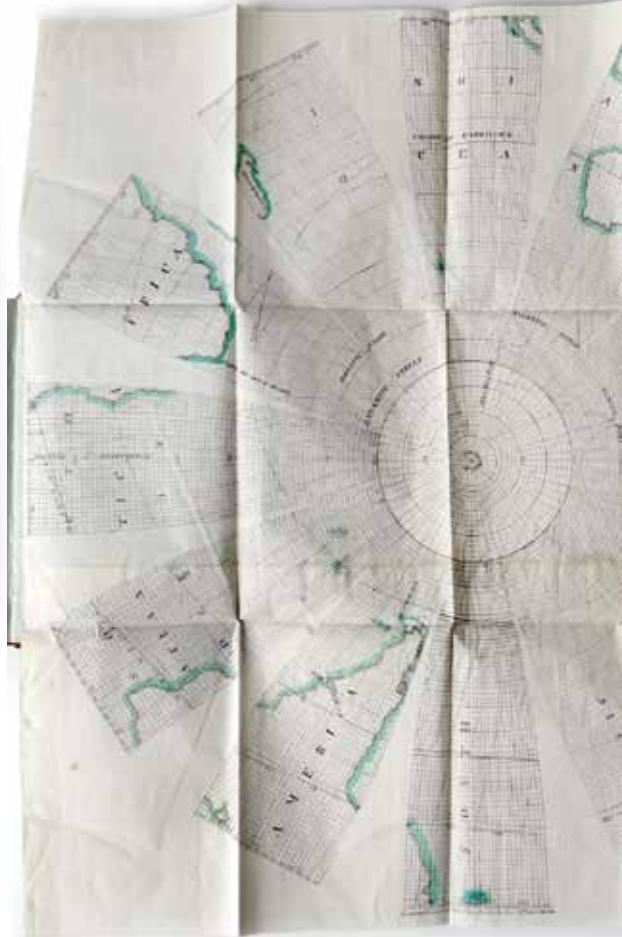
Le degré grande. Celuy qui contient une Demie circonference ou l'anguste moindre d'un quadrant de sphère terrestre ou marine. De moins à 360° il y a pour le degré grande un quart de cercle.

Def 11. Le grand magnetique. D'après les idées de Planchon le degré ou une partie d'un cercle qui contient la partie de la terre joignant les deux pôles magnétiques de l'Univers.

Def 12. Le petit magnetique. Celuy qui est inférieur au précédent. On le voit en une certaine partie d'un cercle ou pôle ou tout de la terre grande ou petite joignant les deux pôles magnétiques de la Terre.

Def 13. Un cercle de grande arche. Qui contient plus de la moitié à l'ouest ou au sud d'entre les deux pôles magnétiques de la Terre.

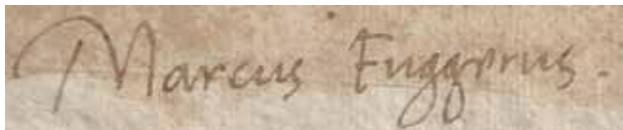
Def 14. Un cercle de petite arche. Qui contient moins de la moitié à l'ouest ou au sud d'entre les deux pôles magnétiques de la Terre.



"An interesting footnote from a self-taught American scientist to the eighteenth century history of navigation in general and the search for a method of measuring longitude in particular. The first edition of the present work was published in 1790 under the title An Explanation of the Magnetic

Atlas, or Variation Chart. In 1794, Churchman published a much expanded edition of his work under a new title, The Magnetic Atlas, or Variation Charts of the whole Terraqueous Globe; comprising a system of variation and dip of the needle, by which, the observations being truly made, the longitude may be ascertained, which was followed by an 1800 and a 1804 edition. The text presents a rich history of navigational accounts and scientific speculation on the subject of magnetic variation and offers methods for determining longitude based on the revolution of magnetic points around the Earth's north and south poles. A final chapter poses an interesting hypothesis on major shifts in coastal boundaries based on „magnetic tides,” and the appendix prints numerous excerpts of responses to Churchman's work. The folding charts, all dated July 1, 1794, include „A Stereographic Projection of the Sphere on the Plane of the First Magnetic Meridian” and two large handcolored charts (of the northern and southern hemispheres with their magnetic orbits).

Bibliography: Sabin 13026 (another ed); Murphy D. Smith „Realms of Gold“ A Catalogue of Maps in the Library of the American Philosophical Society (Philadelphia, 1991); Silvio A. Bedini. John Churchman and His Magnetic Atlas, Part I & II. In: Professional Surveyor Magazine, November & December 2000.



Rojas univeral astrolabe – the Fugger copy

3 Rojas Sarmiento, Juan de.

Commentariorum in Astrolabium quod Planisphaerium vocant, libri sex nunc primum in lucem editi. Paris, Michel de Vascosan, 1550. Quarto, pp. [xxiv], 282, [2, blank], [12], with 63 woodcuts, some full-page; a fine copy in contemporary French calf for Marcus Fugger, blind-panelled sides, with Marcus Fugger's device of a hand-held floral sprig surmounted with a bird gold-tooled in the center of both covers, open floral tool at the outermost angles and another at the inner angles in gilt, rebacked preserving the manuscript longitudinal title on vellum strips mounted in compartments of the spine; title with the Fugger family stamp; front paste-down inscribed 'Marcus Fuggerus' in ink

Marcus Fugger's copy of the rare first edition of Rojas Sarmiento's description of two new types of astrolabe that he developed using an orthographic projection of the celestial sphere. Rojas Sarmiento's new instruments were a great improvement on previously used 'universal astrolabes', which were not very convenient or versatile. 'Indeed, while a small number have survived, the variety of their designs bears witness to their makers' continuous efforts to emulate the advantages of the planispheric astrolabe.

'In the Europe of the second half of the fifteenth century, the new projection was used instead of the equinoctial stereographic projection to build the mater of several types of universal astrolabe. The projection transforms the celestial parallels and meridians respectively into segments parallel to the celestial equator and ellipse arcs intersecting the celestial poles. The ecliptic is shown as an oblique segment intersecting the celestial equator in the equinox, located exactly at the center of the mater.'

'In the sixth book of his *Commentarium de astrolabium* (1550), Juan de Rojas Sarmiento gave the first accurate description of the new instrument, henceforth known as Rojas universal astrolabe. Like al-Zarqālī's universal astrolabe, the Rojas astrolabe replaces the rete by a graduated alidade carrying a graduated perpendicular cursor' (Museogalileo, Italy, online).

'This work represents an important turning point in the development of European astrolabes. In the usual form of the astrolabe, the projections used are familiar to most. The earth is projected, from the South Pole looking north, onto the plane of the equator – basically a view of the earth from below. The heavens are similarly projected from above. This simple system was readily understood by most people attempting to learn how to use the device. The disadvantage of this system is that the markings on an astrolabe are only useful for a narrow band of latitudes – astrolabes were often

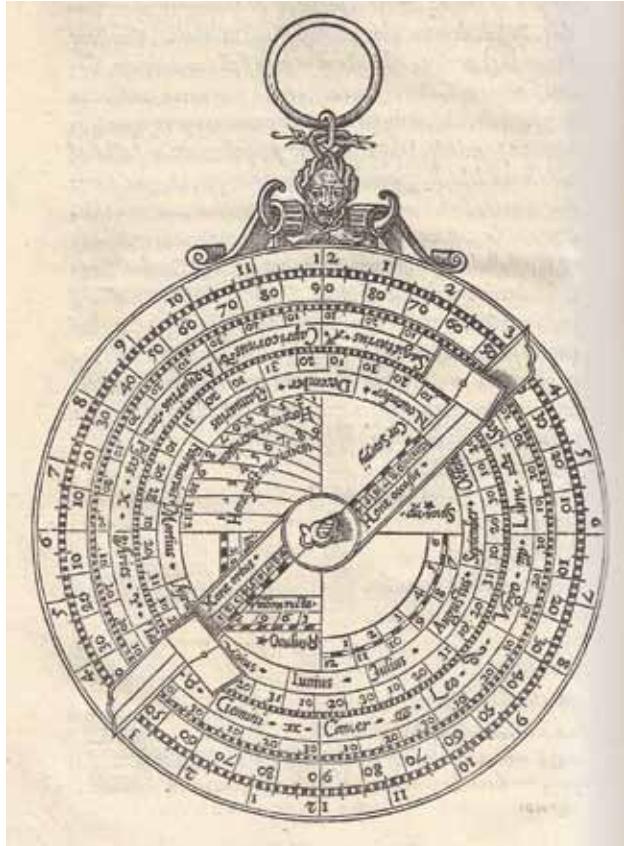
provided with additional engraved plates to be used if the owner was travelling any distance north or south. To overcome the disadvantage of having to create a number of different plates, various universal astrolabic projections were devised. One of the most popular was that of Juan de Rojas Sarmiento, of whom nothing is known other than the fact that he was a Castilian and may well have been a pupil of Gemma Frisius ... Rojas wrote this work in six parts: the first five deal with the planispheric astrolabe and its use in constructing sundials, surveying (both civil and military) and astrology. The final part is devoted to his new projection and its use ... The illustrations in this volume are particularly well done' (Thomash).

The work is very rare on the market and no copy appears to have come up for sale since 1984.

Rojas Sarmiento's work is here bound with Oronce Finé's *De rectis in circuli quadrante subtensis (quos vocant sinus)* Libri Duo, published in Paris by Regnalt and Claude Chaudière in the same year. This is the first separate edition of Finé's study of the squaring of the circle, originally published in *De mundi sphaera*, in 1542. - Adams F472.

Provenance: Marcus Fugger (1529-1597), the cousin of two other great book collectors, Ulrich and Johann Jakob Fugger, and the eldest son of the head of the great Augsburg banking family, Anton Fugger, with his inscription to front paste-down, his gilt device on covers and with the Fugger family stamp on title; Marcus Fugger, member and, for a time, chief executive, of the celebrated Augsburg international banking and trading house, was one of the outstanding German Renaissance book collectors, often called 'The German Grolier,' as he had about fifteen large inlaid bindings '*à la Grecque*' and fifty smaller bindings bound in Paris by Grolier's ateliers. Through the marriage of his grandson Marquard with a daughter of a Count of Öttingen his library became part of the already considerable library of that family

Adams R671; Houzeau and Lancaster 3275; Mortimer French 462; Stillwell 225 and. 885; Palau 276066; Thomash Collection R108; Zinner, Instrumente 614; OCLC: Harvard, Grolier Club, New York Public Library, and Columbia University.



DE INAEQUALITATIBUS
 MOTUUM LUNARIUM
 AUCTORE
 D. CAROLO WALMESLEYO
 REGiae ACADEMIÆ BEROLINENSIS
 REGIAE SOCIETATIS LONDINENSIS SOCIO,
 FLORENTIAE MDCCCLVIII.
 E TYPGRAPHIO IMPERIALI,
 PRAESTDIDUM PERMISSU.



FLORENTIAE MDCCCLVIII.
 E TYPGRAPHIO IMPERIALI,
 PRAESTDIDUM PERMISSU.

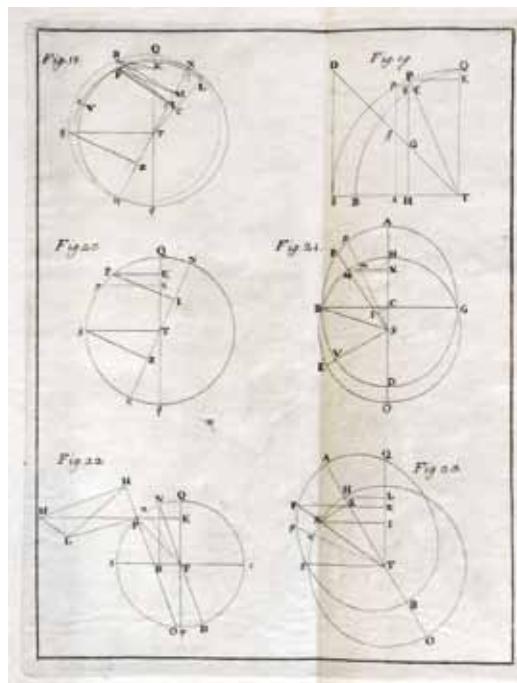
First edition, an important “Newtonianum” on the irregularities in the movement of the moon by Charles Walmsley (1722-1797), Bishop of Rama, Vicar Apostolic of the Western District, England. His last scientific book, elegantly printed in Florence (maybe under patronage of Paolo Frisi), “written as an illustration of Newton’s theory of the moon”. Like another English scientist, Thomas Simpson, Walmsley attempts to derive the precession of the equinoxes and the nutation through the use of Newtonian-style, geometrical procedures. Both Walmsley and Simpson failed, as had Newton himself, because they lacked a worked-out dynamics of rotational motion, such as d’Alembert successfully put forward. While studying at the Sorbonne,

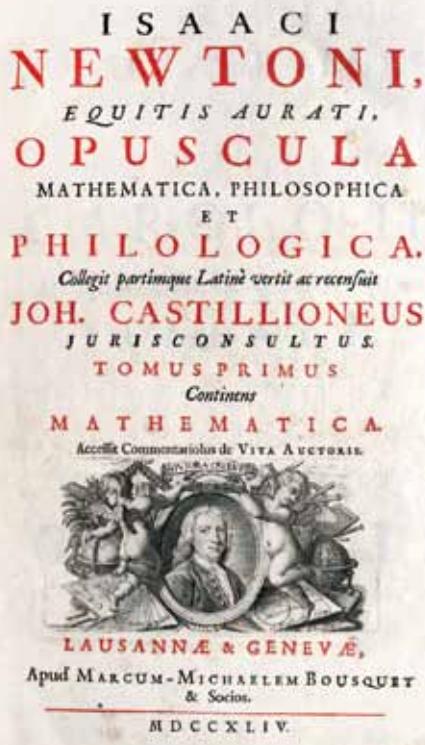
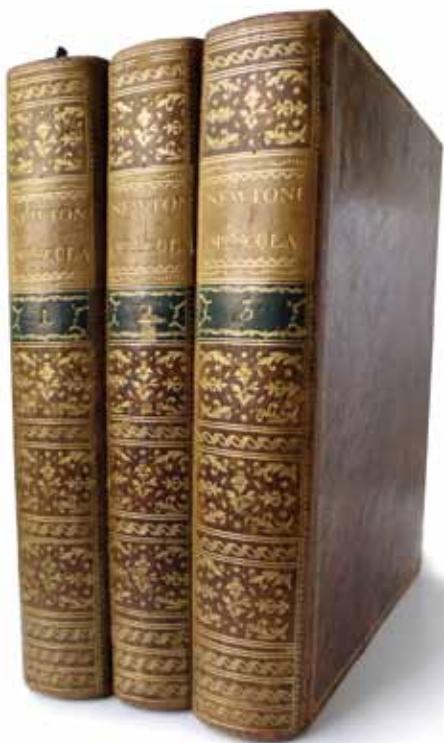
Charles Walmsley (1722-1797), later Roman Catholic Titular Bishop of Rama and Vicar Apostolic of the Western District of England had been attracted to questions relating to mathematics, astronomy and Newtonian science. When in November 1747 Clairaut announced to the Paris Academy that Newton’s inverse-square law implied only about half the observed motion of the moon’s apse, Walmsley attempted to persuade Clairaut that the source of the discrepancy was Clairaut’s use of a uniformly rotating ellipse as a first-order approximation. Failing to persuade Clairaut, he produced a book: *Theorie du movement des apses en general...* (1749) giving three different derivations of the motion of the moon’s apse. The first was based on Newton’s proposition 39 of Book I of the Principia, the second on proposition 40, and the third on a theorem enunciated by John Machin. In all three derivations Walmsley arrives at values for the apsidal motion in good agreement with the observed value. Walmsley had achieved some distinction among European scientists, esp. in Italy (Boscovich), and the Academies in Paris, London and Berlin made him member. After this he decided his dereliction of mathematics. Politics and the Church had overtaken science. [Scott]. Pogg. II, 1256; Lalande 465; Niccolò Guicciardini. The Development of Newtonian Calculus in Britain, 1700-1800. pp. 176; Dom Geoffrey Scott. The early career of Bishop Walmsley (1997).

Newton’s loyalist on the Continent

4 Walmsley, Charles.

De inaequalitatibus motuum lunarium auctore D. Carolo Walmsleyo, Regiae Academiae Berolinensis et Regiae Societatis Londinensis socio. Florentiae: Typographio Imperiali, 1758. 8°. VI, 91 pp, [1; blank], [2, Errata] with 3 fold. plates with nice head and tail-pieces. Nice printing. Carta rustica, inside clean and fresh, uncut.

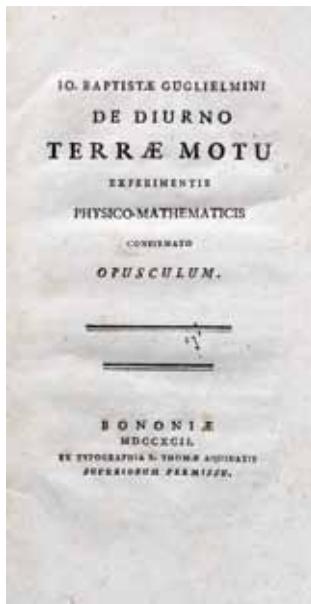




5 Newton, Isaac.

Opuscula mathematica, philosophica et philologica. Collegit partimque Latine vertit ac recensuit J. Castillioneus (d. i. G. F. Salvemini). 3 Vols.- Lausanne, Geneve: Bousquet, 1744. Quarto. 4 Bl., XXVIII (recte 38), 420 pp.; VI S., 2 Bl. (erstes Bl. weiß), 423 pp.; VI, 566 (recte 562) pp., 1 Bl. Mit 3 gleichen gestoch. Titelvign., 64 ausfaltbaren Kupfer-tafeln und 2 gefalt. Tabellen. Leder d. Zt. Contemporary calf, gilt spine in compartments. An exceptional fine copy.

First edition, a first collection of his papers beside the Principia and Opticks. Wallis 2. DSB X, 93. Poggendorff II, 279. Roller-G. II, 235. Babson 9 (Gray 2). Erste Sammelausgabe der naturwissenschaftlichen Schriften, besorgt von Salvemini, „who supplied a Preface and Life of Newton. They are a fine piece of bookmaking“ (Babson). Included are: „Lectiones opticae“, 31 papers from „Philosophical Transactions“ of the Royal Society and the 2. printing of his only chemical paper: „De natura acidorum“, published before in Harris’ Lexicon of 1692.

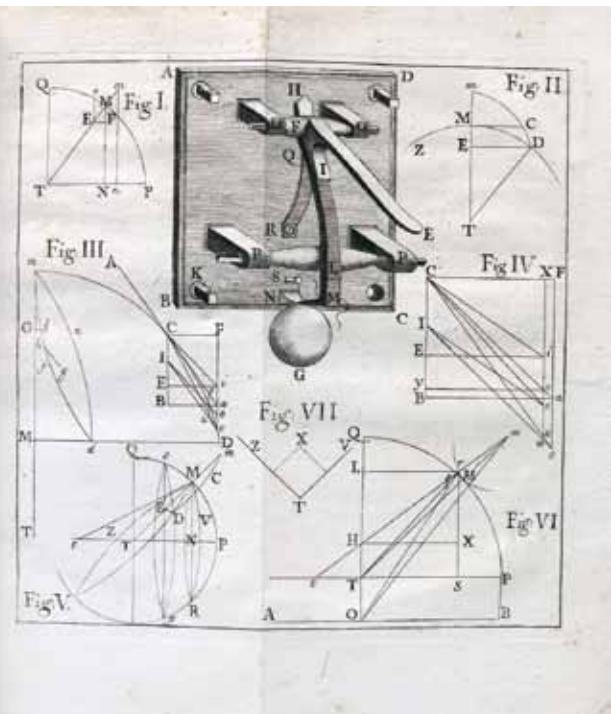


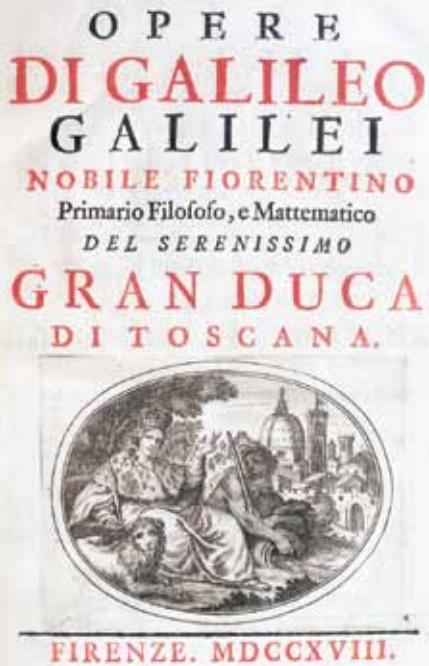
... and finally the Earth moves

6 Guglielmini, Giovanni Battista.

De diurno terrae motu experimentis physico-mathematicis confirmato opusculum. Bononiae [Bologna]: ex Typ. S. Thomae Aquinatis, 1792. gr.8°. 90 pp., [2, last blank], 1 folding plate with 7 fig.. Uncut, Original blue wrappers, worn & little spotted.

First edition of the first experimental demonstration that the Copernican theory is right. Giovanni Battista Guglielmini (1763 -1817), Italian physicist, known as the first scientific experimenter on the mechanical demonstration of the rotation of the earth. He published his first treatise in Rome, „Riflessioni sopra un nuovo esperimento in prova del diurno moto della terra“ (Rome, 1789). The experiments which followed were made in the city tower of Bologna, called „Asinelli“, and famous from former experiments of Riccioli on the laws of falling bodies. A small octavo volume, published in Bologna in 1792, „De diurno terræ motu experimentis physico-mathematicis confirmato opusculum“ gives (in the preface) the history and description of Guglielmini's experiments, then resumes in the first article the contents of the „Riflessioni“, defends the same in the second article against opponents, and in the third presents the results. The book bears the imprimatur of the Holy Office at Bologna. Sixteen balls were dropped from a height of 241 feet, between June and September, 1791, and the plumb-line fixed in February, 1792, all during the night and mostly after midnight. The mean deviations towards east and south proved to be 8.4 and 5.3 respectively, while the computation gave 7.6 and 6.2 (1 = 1-12 inch). In spite of their agreement both observation and calculation were defective, the plumb-line having been determined half a year later, and the theory of motion relative to the moving earth being as yet undeveloped. The experimental skill and laborious precautions of Guglielmini, however, served his followers, Benzenberg (1802 and 1804) and Reich (1831), as models, and the inner agreement of his results was never surpassed. Guglielmini's theory was right, in considering the absolute path of the falling body (apart from the resistance of the air) as elliptical, or approximately parabolical, and the orbital plane as passing a little north of the vertical, through the centre of attraction, while the errors in his formulæ, afterwards repeated by Olbers, served to incite C. F. Gauss and Laplace to develop the correct theory of relative motion. [wikipedia].- Pogg. I, 975; not in Barchas Collection; not Kenney, not Honeyman. KVK: Stuttgart, Berlin [KV möglich], Göttingen, Düsseldorf; COPAC: BL London, Cambridge, Oxford; OCLC: [only in Microfiches ?]

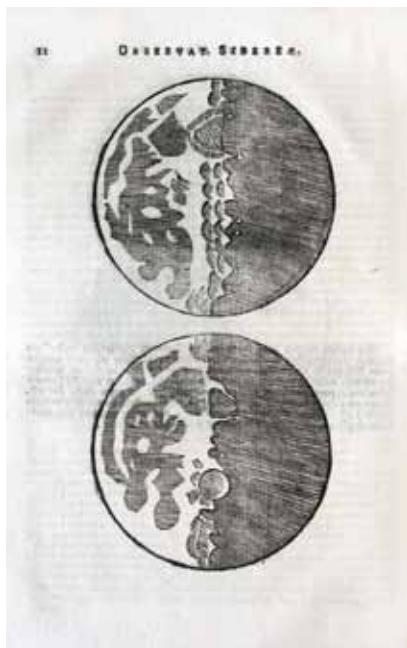




7 Galilei, Galileo.

Opere di Galileo Galilei ... Nuova edizione coll'aggiunto di vari trattati dell'istesso autore non più dati alle stampe. 3 volumes. Florenz, Tartini & Franchi 1718. Quarto (255 x 185 mm) Engraved portrait of Galilei, title-vignette and folding plate, CXII, 628 (recte 644 – pages 369-384 numbered twice), (2) pages (8), 722, (2) pages; (6), 484, (50) pages. Numerous woodcuts in the text. Cont. vellum, calligraphic title to spines. Sprinkled edges. A broadmargined and nice copy

Second collected edition of the works of Galileo containing nearly 500 pages of writings, not included in the first collected edition in two volumes from 1656-55, and previously unpublished. In the third volume of the present edition appears here for the first time Galileo's remarkable treatise on probability, his notes on the Sidereus Nuncius (the treatise on sun-spots) and a large amount of important letters to and from supporters and antagonists alike. The present edition reprints such epoch-making titles as Sidereus Nuncius, the treatise on the proportional compass, generally considered the forerunner of the modern calculator and Galileo's greatest achievement in physics: Discorsi e Demonstrazioni Mathematiche; but does not contain the Dialogo. Carli & Favaro 431; Honeyman 1419; Cinti 170; Riccardi I, 520.



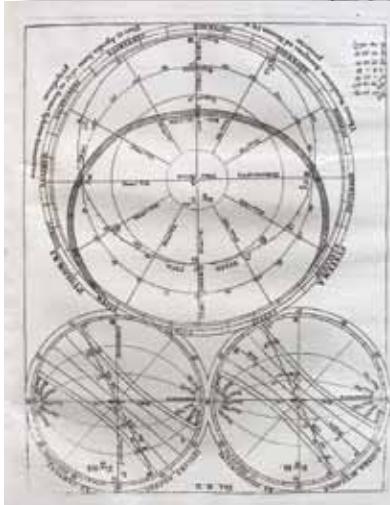


First European record of Chinese sun eclipses

8 Bayer, Theophilus Siegfried.

De Eclipsi Sinica Liber singularis De Eclipsi Solis, quae Christo in crucem acto facta esse cre-ditur Indicum examinans et momento suo ponderans. [and] Praeceptiones De Lingua Sinica. 2 parts in 1.- Königsberg: Hallervorde, 1718. Quarto. [6], 42 pp., [14] pp., one engraved plate. Cont. plain wrappers.

First edition of one of the first works to deal with Chinese astronomy in the West. Theophilus S. Bayer (1694-1738), a Prussian scholar, established sinology as a new discipline in science, wrote this treatise on Chinese astronomy when he was librarian at the university library in Königsberg. He later was professor of Greek and Roman Antiquities at St Petersburg Academy of Sciences. His Museum Sinicum of 1730 was the first book about Chinese language to be published in Europe. He had his own huge collection of 200 manuscripts, Chinese, and other Oriental books which was purchased by William Hunter. These collections finally reached University of Glasgow in 1807. Glasgow University [Bayer Coll.] holds a manuscript by Bayer on a Chinese globe: Globus Coelestis Sinicus Explicatus: "This manuscript contains a Chinese copper plate engraving of a star map, bound in with a manuscript in Latin and Chinese. The engraved map is by Ignatius Kögler, a member of the Portuguese Jesuit house at Beijing. He was appointed President of the Bureau of Astronomy and Mathematics at the Ch'ing court under the emperor K'ang-hsi. The map represents the northern (right) and southern (left) stellar hemispheres." The engraved plate with Chinese text and a Latin title reads "Excerpta ex annalibus Sinicis Confucio lexico Tsching tsu tung etc. ad commentarium de eclipsi Sinica pertinentia".- Cordier, Bibl. Sinica 1444. Ruud Lundbaek, T. S. Bayer (1694-1738): pioneer sinologist.- London: 1986.

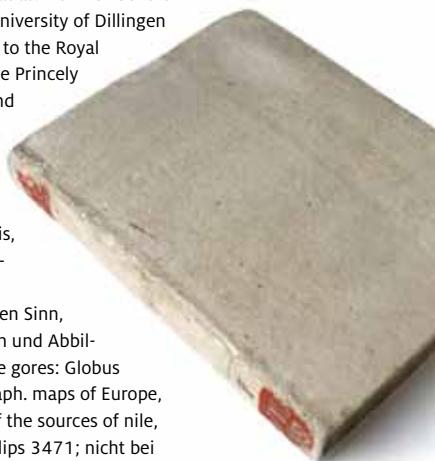


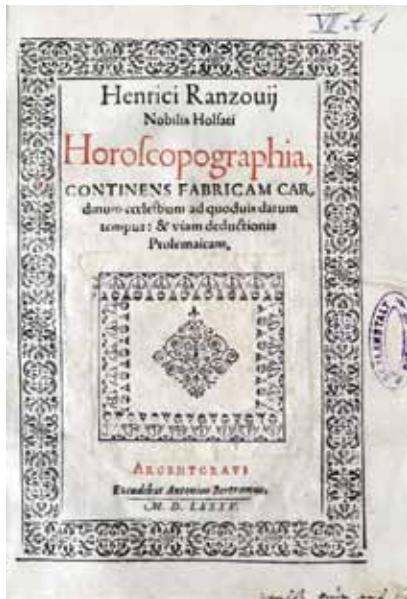
9 Scherer, Heinrich

Critica quadripartita, in qua plura recens inventa, et emendata circa geographiae artificium, historiam, techniam, et astrologiam scitu dignissima explicantur. Opus posthumum.-München, Riedl für Bencard in Dillingen, 1710. Folio. Etched Frontisp., 8 Blatt, 228 pp., 4 Blatt and 20 (8 fold.) copperplates (incl. maps). Contemporary Carta rustica.

First edition of this separately published part, the last part of his multi-volume atlas. Heinrich Scherer (1628-1704) taught as Professor of Hebrew, Mathematics and Ethics at the University of Dillingen until about 1680. Thereafter he obtained important positions as Official Tutor to the Royal Princes of Mantua and Bavaria. It was during his time in Munich as Tutor to the Princely house of Bavaria that his lifetime's work as a cartographer received acclaim and recognition. Scherer's World Atlas, the *Atlas Novus*, first published in Munich between 1702 and 1710 and reissued in a second edition between 1730 and 1737, forms a singularly unusual, almost revolutionary work in terms of the development of European mapmaking at the beginning of the 18th Century. The *Atlas* comprised 7 separate volumes entitled *Geographia Naturalis*, *Geographia Hierarchica*, *Geographia Politica*, *Tabellae Geographicae*, *Atlas Marianus*, *Critica Quadrapartita*, and *Geographia Artificialis*.

„Jeder Teil des *Atlas* mit eigenem Titel. Das Werk ist nicht ein *Atlas* im modernen Sinn, sondern ein geographisches Handbuch, dem zur Erläuterung des Textes Karten und Abbildungen beigegeben sind. (ADB LIII, 757 ff.). Included are a world map in globe gores: *Globus geographicus novus anno 1700 construct(us) Monachii (München)*’, chorograph. maps of Europe, Africa, an arctic-centrical world map, a map of the Northern Atlantic, a map of the sources of nile, and astronomical maps and diagrams.- De Backer/ Sommervogel VII, 766; Philips 3471; nicht bei Houzeau/L. u. Pogg.





Astrology in Kepler's time

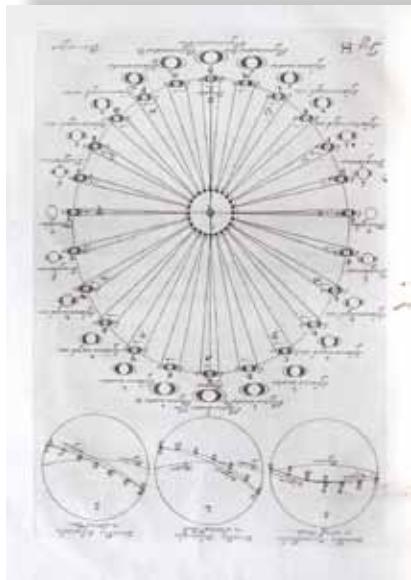
10 Rantzau, Henrik.

Henrici Ranzouij Nobilis Holsati Horoscopographia, continens fabricam cardinum coelestium ad quodvis datum tempus: & viam deductionis Ptolemaicam. [Edited by Th. Finck].- Argentorati [Straßburg]: excudebat Antonius Bertramus, 1585. Quarto. [198 x 145 mm] 26 Bll./ leaves. Title within border of rules & type- ornaments; printer's mark on t.p. replaced [cut out], verso Ex-Libris: Anne Marie Herfurth [around 1900]. Contemporary gilt wrappers.



First edition, rare; actually by Thomas Finck [Finkius], based on Henrik Rantzau's materials; foreword and dedication to Rantzau signed by Finck [Basel, 1583]. Later editions, much enlarged, were printed under Finck's name. Heinrich [Henrik] Rantzau [Ranzovius], a prolific astrologer and an associate of Tycho Brahe. He was Governor of Holstein, a rich man and celebrated book collector. Rantzau is perhaps best remembered as a patron of scholars. His own *Tractatus astrologicus de genethliacorum thematum* appeared in 1597, and went through five editions by 1615.

Thomas Finck[e] (1561 – 1656), a Danish mathematician and physicist, and professor at the University of Copenhagen for more than 60 years, is best known for his book *Geometria rotundi* (1583), in which he introduced the modern names of the trigonometric functions tangent and secant. Fincke was born in Flensburg, Schleswig and died in Copenhagen. He studied in Straßburg with Joh. Sturm and Konrad Dasypodus and in Wittenberg and there became a friend to Rantzau. In Basel he edited his *Geometria rotundi* (1583) and prepared the following book with material given by Rantzau. A later edition of 1591 was published under his name. He then studied again medicine in Padua, Pisa, Florence and became personal doctor of count Philipp of Schleswig-Holstein at Gottorp. His son in law was the Danish physician and natural historian, Ole Worm, who married Fincke's daughter Dorothea. - Lit.: G. Oestmann. Heinrich Rantzau und die Astrologie. (2001); Brosseder. Im Banne der Sterne (2004), 163-64. - VD16 R 244; KVK: Bayerische Staatsbibliothek München; Köln, Univ. u. Stadtbibliothek; Leipzig, Wien, Univ.bibl.; Wien, ÖNB, Wolfenbüttel; COPAC: Leeds [27 leaves ?]; OCLC: Univ. Alabama; Harvard Houghton



**JOANNIS HEVELII
DISSERTATIO,
De
Nativa Saturni Facie,
VARIIS PHASIBUS.
CERTA PERIODO REDEUNTIBVS.**
 Addita est, tam Eclipseos Solaris anni 1656
Observatio, quam Diametri Solis apparentis
accurata dimension.
 SERENISSIMUM.
 LUDOVICI A DEODATI,
REGIS CHRISTIANISSIMI
PATRUM.
 GASTONEM BORBONIUM,
AURELIANENSIMUM DUCEM, &c.



GEDANI

anno a. Christi 1656.
Sumptibus Autoris, Typis Reiniger.

II Hevelius, Johannes.

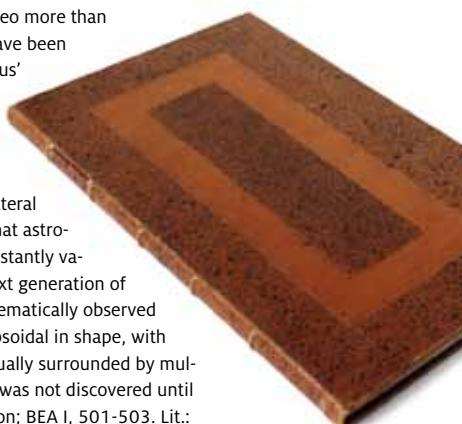
Dissertatio de native saturni facie: ejusq[ue] variis phasibus, certa periodo redeuntibus: cui addita est, tam eclipseos solaris anni 1656 observatio, quam diametric solis apparentis accurate dimension.

Gedani [Danzig]: 1656. Folio [348 x 224 mm] [4] Bll., 40 pp., with engraved title vignette, and 4 full page engravings [F, G, H, I] Later calf period style, a tall and bright copy, with little worming inside inner hinges, touching text, but overall fine.

First edition of Hevelius' hypothesis about the configuration of Saturn, the reknowned Danzig astronomer's answer to the perplexing observations bequeathed by Galilei Galileo more than 40 years earlier. Although the correct solution to the puzzle turns out to have been suggested by Huygens a year before this Dissertatio was published, Hevelius' proposal remains important.

In 1610, Galileo with great excitement observed through his telescope that Saturn was flanked by two small orbs; he included an anagram in the Sidereus Nuncius that documented his discovery of this triform planet.

Much to his surprise, when he looked at Saturn again in 1612, the small lateral bodies had vanished – only to return in 1616 in a very different shape. What astronomical phenomenon or geometrical structure could give rise to these constantly varying appearances? Galileo died before the mystery was solved, but the next generation of astronomers devoted substantial efforts to answering it. Hevelius had systematically observed Saturn's appearances since at least 1642; he believed that Saturn was ellipsoidal in shape, with two ansae or "cup handles" physically attached to the planet. Saturn is actually surrounded by multiple concentric thin rings composed of separate particles, something that was not discovered until the 19th century.- DSB VI, 360-64; Brunet III, 150; not in Barchas Collection; BEA I, 501-503. Lit.: Albert van Helden. Huygens's Ring, Cassini's Division and Saturn's Children. Dibner Lecture (2004).

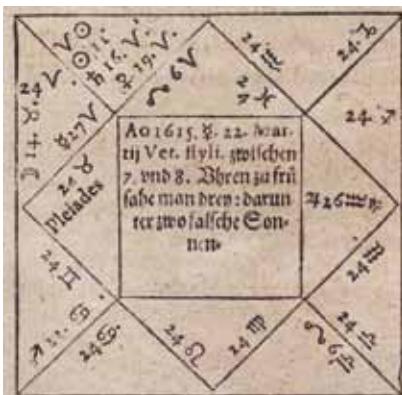




A Halo described

12 Halbmayer, Georg.

Astrologisch Judicium. Was zwe oder drey Son(n)en bedeuten, unnd sonderlich was die drey Sonnen so Mittwochs den 22. Martii, und die zwe Sonnen, so am Grünen Donnerstag den 6. Aprilis... am Himmel gesehen worden, anzeigen und bedeuten... auffs kürzest mit fleiß beschrieben.- Nürnberg, A. Wagenmann, 1615. 4°. 12 unnumb. ll. with 2 woodcut-illustrations in the text. Marbled boards with lable to spine. Quire B and C bound out of order. Evenly lightly browned.



First and only edition. Very rare description of a halo (also known as a nimbus, icebow or gloriole); it is an optical phenomenon produced by ice crystals creating colored or white arcs and spots in the sky. Many are near the sun or moon but others are elsewhere and even in the opposite part of the sky. There are many types of ice halos. They are produced by the ice crystals in cirrostratus clouds high (3–6 miles) in the upper troposphere. The particular shape and orientation of the crystals is responsible for the type of halo observed. Light is reflected and refracted by the ice crystals and may split up into colors because of dispersion. The crystals behave like prisms and mirrors, refracting and reflecting sunlight between their faces, sending shafts of light in particular directions. Of course not known by the author. The author Georg Halbmaier, who died in 1637, was the brother of the printer Simon Halbmaier, and a student of Georg Caesius (1543-1604), both working as 'lovers of astronomy' in Burgbernhain near Rothenburg and Ansbach. He prepared astronomical calendars sometimes using incorrectly Caesius and Simon Marius' name. He might have been in contact with Simon Marius in Ansbach. [Grieb. Nürnberger Künstler II, 559]. VD17 1:640322C. KVK: Berlin, Hannover; OCLC: BN Paris; Not in Kenney, Barchas Coll.



13 Hage, Armin von.

Aulae Planetarum jocoseriae Daß ist: Schimpff und Ernst: Von der Planeten Hoffhaltung, ... Kassel, W. Wessell, 1614. Kl.-4°. 10 nn. Bl. / leaves. Rückenbroschüre d. Zeit Durchgehend gleichmäßig gebräunt.

Very rare ironical poetical work on the planets and the corresponding features, signs or characteristics within men. Probably against astrology.- VD 17, 23:238247W, not in Rosenthal. KVK: Wolfenbüttel, Augsburg, Basel, not in COPAC or OCLC.

Solar eclipse of 1748 with Euler's map

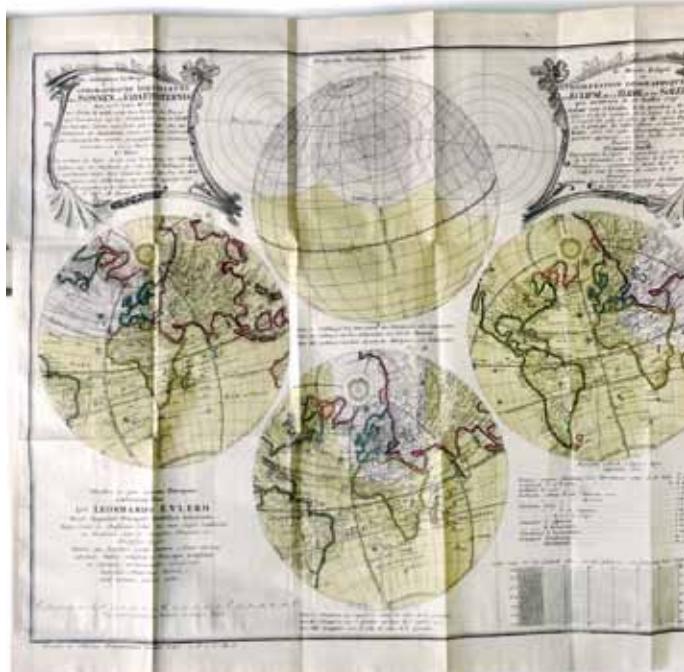
14 Lowiz [Lowitz], Georg Moriz.

Kurze Erklärung über zwey Astronomische Karten von der Sonnen- oder Erd-Finsternis den 25. Julius 1748. Zu derselben deutlicher Einsicht und bequemen Gebrauch bey künftiger Wahrnehmung dieser Himmels-Begebenheit denjenigen zu Liebe, die der Astronomie nicht kundig sind... Nürnberg, Homann, 1748. 4°. 24 pp., one folding engraved and handcoloured plate, 2 large folding engraved and handcoloured maps. Marbled boards, gilt label to spine. Title-leaf restored in front margin.



First edition, copy of the astronomer Zach. Scarce work on the solar eclipses of 1748 with the often missing map / chart based on calculations by Leonhard Euler: *Projectio orthographica tellurus. Illustrata ac per omnem Europam celeberrimo viro Dno. Leonardo Eulero.* Four figures of hemispheric world maps are presented showing the predicted eclipse of 1748, based upon the calculations of the important 18th Century Swiss mathematician and astronomer Leonhard Euler. The map was conceived by Georg Moritz Lowitz, also mathematician and astronomer, who worked for Homann in the 1740s.

The top hemisphere is blank and has the eclipse superimposed. The other three hemispheres appear in various projections and show the effects of the eclipse at different times in relation to the continents. Various scales and measurements are included near the lower margin. Two ornate rococo cartouches provide the titles and descriptions of the print in German and French. According to scholar Robert H. van Gent, this chart was engraved in 1747, and also issued later in 1748 as Plate 31 of *Atlas Novus Coelestis*, the extra plate of the revised edition of the original Doppelmayr compilation, *Atlas Coelestis in quo Mundus Spectabilis.* Ausstellungskatalog Nürnberg, Der Verlag Homann, S. 137, 17.; BMC 15, 522.; Pogg. I, 150; Meusel VIII, 364ff. Not in Kenney, not in Barchas Coll. KVK: Berlin, Halle, Hannover, Erfurt, Göttingen, Jena, Oldenburg, [Weimar Brandverlust]. Regensburg, Augsburg, München [without maps], et al.; ETHZ [ohne die Karten]; COPAC: BL London, Glasgow; OCLC: Brigham Young.



SPATIO REALI,

ENTE INFINITO
CONAMEN

Mathematico-Metaphysicum.

Authore JOSEPHO RAPHSON, A. M.
& Reg. Soc. Scien.

LONDINI,

Typis T. B. prostant venales apud A. & I. Churchill,
in vicinum vocatae Peter-mister-Rox, S. Smith &
Ben Walford, E. Taylor & T. Bennet in Cam-
tere D. Pauli, Bibliopoli, 1702.

What is Space?

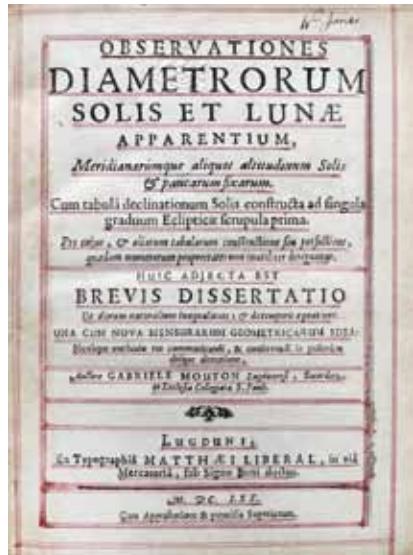
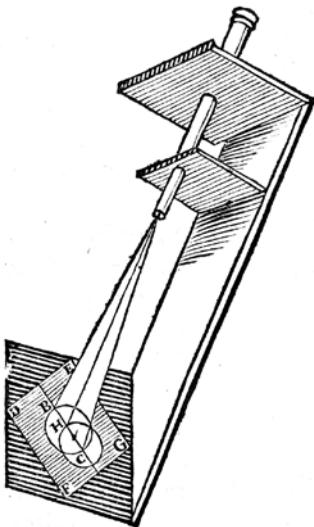
15 Raphson, Joseph.

De spatio reali, seu ente infinito conamen mathematico-metaphysicum. London: T.B. prostant venales apud A. & I. Churchill, S. Smith & B. Walford, I. Taylor & T. Bennet, 1702. 4° [245 x 185 mm]. [8], 95 pp., [1] Contemporary vellum-backed grey paper boards, clean large paper copy. Bookplate inside front cover: Earl of Macclesfield and blindstamped at title.

Rare separate edition. First published in 1697 as an appendix to his „Analysis aequationum”, than as the Analysis was republished in 1702 this work was published again as appendix and it was also sold separately [Copies at Leeds, Zurich & Berlin indicate this]. From the Macclesfield Library, Shirburn Castle, who hold once the Newton Papers.

Raphson's attempt to demonstrate the existence of absolute space. Raphson distinguishes between real and rational entities, considering the former as perceptible not to mathematical reasoning but to intuition, and space is one such “real entity”. He followed the Spinozist position in taking God to be extended. Henry More had presented similar ideas against Descartes. Koyré presents an excellent description of Raphson's ideas in: From the closed world, ch. 8 [190-205]; Grant. Much ado about nothing: theories of space and vacuum, pp. 230-33.

Joseph Raphson was an English mathematician known best for the Newton-Raphson method. Little is known about his life, and even his exact years of birth and death are unknown, although the mathematical historian Florian Cajori provided the approximate dates 1648-1715. He was made a Fellow of the Royal Society on 30 November 1689, after being proposed for membership by Edmund Halley. Raphson's most notable work is *Analysis Aequationum Universalis*, which was published in 1690. It contains a method, now known as the Newton-Raphson method, for approximating the roots of an equation. Isaac Newton had developed a very similar formula in his *Method of Fluxions*, written in 1671, but this work would not be published until 1736, nearly 50 years after Raphson's *Analysis*. However, Raphson's version of the method is simpler than Newton's, and is therefore generally considered superior. The two were not close friends, however, as is evidenced by Newton's inability to spell Raphson's name either correctly or consistently. Raphson seems to be the one, who coined the word pantheism, in his work *De spatio reali*, which was published in 1697, where it may have been found by John Toland.. Lit: Dict. 18th. cent. British Philosophers, II, 214; Copenhagen. Jewish Theologies of Space in the Scientific revolution: Henry More, Joseph Raphson; in: Annals of Science 37 (1980), 489-548.



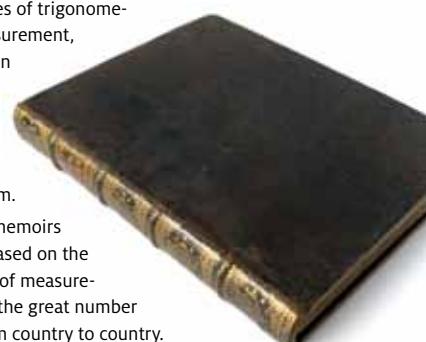
Early solar science

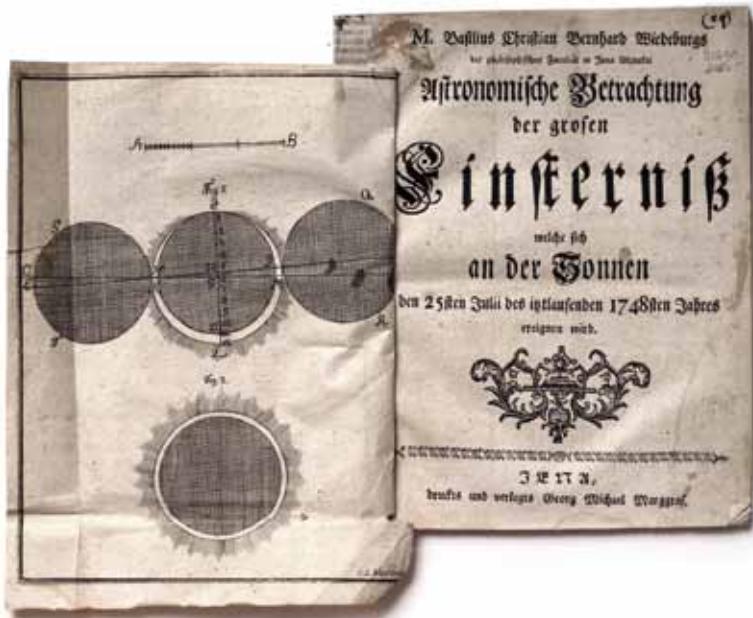
16 Mouton, Gabriel.

Observationes diametrorum solis et lunae apparentium, meridianarumque aliquot altitudinem solis & paucarum fixarum. Cum tabula declinationum solis constructa ad singula graduum eclipticae scrupula prima. Lyon: M. Liberal, 1670. Quarto [230 x 175 mm] [10], 448 pp. mit gest. Porträt u. einigen schemat. Textholzschn. Some browning; some waterstaining at end; title ruled in red; repaired long tear to 1 leaf; portrait bound in tight; blind stamp of Macclesfield library to half-title, title & portrait. Cont. calf bound to style.

First edition, with owner's inscription of the mathematician William Jones (1675-1749): „well known to historians of mathematics through his association with the correspondance and works of many seventeenth-century mathematicians, particularly Newton“ (DSB VII, 162). Mouton's astronomical accomplishments included determining the apparent diameter of the sun at apogee. As an experimentalist, he constructed an astronomical pendulum. And, as a calculator, he was able to present a practical way to compute ordered tables of numbers such as logarithmic tables of trigonometric functions. [Hillger] „Mouton, a pioneer in research on natural units of measurement, called for the adaption of a standard decimal system of measurement base upon the length of the terrestrial meridian, a fraction of which - one minute of one degree - would serve as the universal unit of length“ (Norman). „Contains in the appendix the first suggestion of the idea of the metric system: decimal progression and universal standard“ (Honeyman).- DSB IX, 554 [Spezial]; BEA II, 811 [Hillger]; Cantor III, 76; Honeyman 2259; Norman 1560; PMM 260 Anm.

DSB IX, p. 554 - 555: „Lalande later stated: „This volume contains interesting memoirs on interpolations and on the project of a universal standard of measurement based on the pendulum“. Mouton was a pioneer in research on natural and practicable units of measurement. He had been struck by the difficulties and disagreements resulting from the great number of units of length, for example which varied from province to province and from country to country. First he studied how the length of a pendulum with a frequency of one beat per second varies with latitude. He then proposed to deduce from these variations the length of the terrestrial meridian, a fraction of which was to be taken as the universal unit of length. . .“

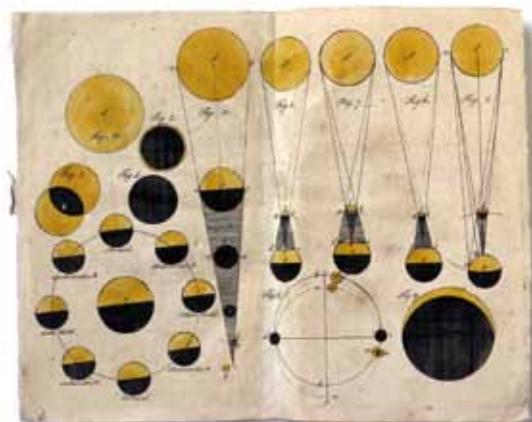




17 Wiedeburg, Basilius Christian Bernhard.

Astronomische Betrachtung der großen Finsterniß welche sich an der Sonnen den 25sten Julii des itztlaufenden 1748sten Jahres ereignen wird.- Jena: Druckts und verlegs Georg Michael Marggraf, [1748]. 4°. [2], 38 pp., [2] with 1 engraved plate. Cont. Backstrip. Plate and title soiled.

Very rare first edition, an examination of the solar eclipse of 1748. The author was prof. of mathematics and physics in Jena, but died early. He wrote papers on the star parallax, citing Bradley and Clairaut, on light [propagatione luminis] and on similar astronomical themes.- Poggendorff II, 1317; ADB XLII, 375; Meusel XV, 98 ff. COPAC: Univ. Edinburgh; OCLC: Madison/Wisconsin; NY Public.
-Not in Kenney, not in Barchas Coll.



18 (Vogel, Johann).

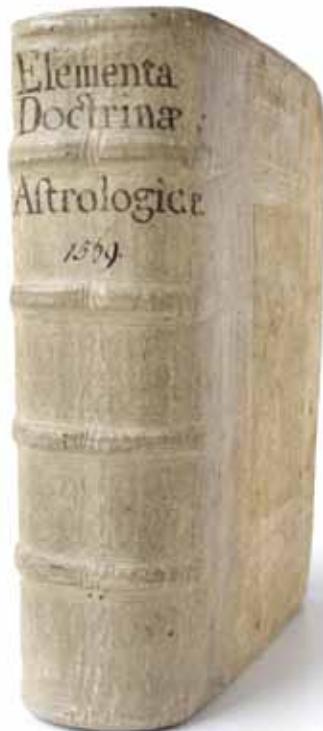
Einzig wahre und richtige Erklärung der großen merkwürdigen Sonnenfinsterniß, welche sich im jetzigen Jahre am 7ten September ereignen wird. Leipzig, Vogel, 1820. 8°. 31 pages, one engraved and handcoloured double-page plate. Spine covered with cont. paper-strip.

Rare anonymously published treatise on the solar eclipse of 1820. Title with mounted library ticket.

Early astronomical education

19 Peucer, Caspar.

Elementa doctrinae de circulis coelestibus, et primo motu, recognita et correcta.- Wittenberg: Johannes Crato [Krafft], 1569. Octavo [162 x 100 mm] [16], 204 [recte 288] pp. with title-woodcut, and 8 fold. tables , numerous text-woodcuts with 3 Volvelles Contemporary blind-pressed pigskin, bordered by thin ornamental roll-stamp with small heads, probably by the master D. V. (L.) working at Magdeburg around 1570 [Haebler I, 453]. [bound with:] Theodoricus Winshemius [Dietrich], Sebastianus. Novae quaestiones sphaerae, hoc est, de circulis coelestibus, et primo mobili.- Wittenberg: Johannes Crato [Krafft] 1578. [16, last blank], 320 pp. [bound with:] Regiomontanus, Johannes. Tabulae ascensionum rectarum et obliquarum, Wittenberg: Johannes Crato [Krafft], 1564. 8 Bl.



I.) "Er hatte als Astronom einen so bedeutenden Namen, dass ihn Tycho Brahe 1566 auf seinem Weg von Leipzig nach Kopenhagen in Wittenberg besuchte und 5 Monate bei ihm studierte. ... Peucers Werk erlebte noch sechs Auflagen, zuerst 1551, dann 1553, 1558, 1563, 1576 und 1587. Later edition, first published in 1551.- VD 16 P 1989. Zinner 2495.

Roller-G. II, 297. Houzeau-L. I, 2556: „C'est le premier livre d'une certaine valeur écrit dans les idées de Copernic. Les ouvrages de Peucker sont inscrits à l' Index librorum prohibitorum.“ II.) VD 16 D 1544. Zinner 2862

Houzeau-L. I, 2620. Vgl. Libri rari
275. Lalande 89. Kenney 185.

Diese Ausgabe nicht im STC
und bei Adams. III.). VD 16 ZV
16981. Zinner 2355; Hamel

3220; nicht bei Houzeau-
Lancaster.

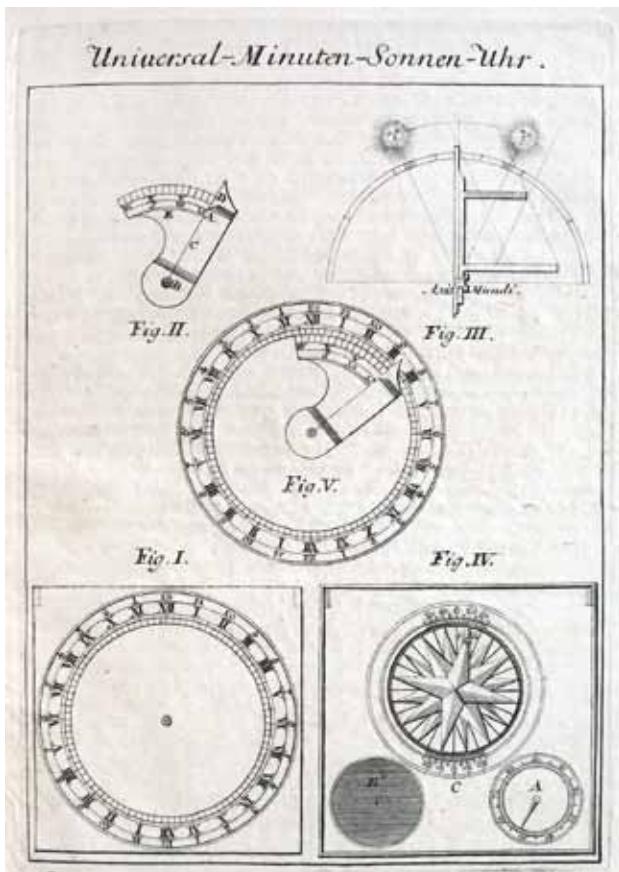




Mechanical Sundial

20 Huebsch, Johann George Gotthelff.

Besonderer Einfall, von einer Universal-Sonnen-Uhr, so, nebst denen gewöhnlichen Stunden, auch die eingelen Minuten, ohne mühsame Theilung, deutlich und genau zeigen, und doch die Grösse einer Sack- oder Taschen-Uhr nicht viel übertrifft soll, welchen dem Hoch-Edelgebohrnen Herrn, Herrn Jacob Leupolden, Königl. Preussischen Commercien-Rathe, der Königl. Preuß- und Sächsischen Societät der Wissenschaften, ingleichen della Accademia dell'onere Letterario in Forlì Mit-Gliede guetigster Beurtheilung übergiebt ... Dresden, nebst zugehörigem Kupffer, zu finden bey Moritz Bodenehrn 1725. Quarto 4 unn. Leaves, one plate. Blue Wrappers.



First and only edition. Exceedingly rare book on an universal sun-dial with mechanical parts by the mathematician Johann Georg Gotthelf Hübsch (1690-1773), teacher in Schulpforta higher school.- Not in COPAC & OCLC. Only two copies in Germany.



Instrument for designing Sundials

21 L[eeemann], B[urkhard].

Instrumentum Instrumentorum: Horologiorum Sciotoricorum. Erstlich werden gelehrt auffreissen die vier hauptsonnen uhren ohne einich verenderung deß Circkels, aufgenommen was das Fundament anlangt. Darnach wie man... New und zuvor nie ersehen Instrument... sonderley Sonnenuhren.... newlich beschrieben und an tag geben. Basel, L. König, 1606. Small-4°. Engraved title-vignette, 7 engravings (of which 2 whole-page) 18, (2) pages. Cont. backstrip.

Second edition, a book on dialling, sun-dials and an invented instrument described, first published in Basel in 1604. The author (1531-1613) was preacher in Zürich and worked against the introduction of the Gregorian calendar reform in Switzerland.

Holzmann/Boh. VI, 6009; Zinner 4102; Zinner, Instrumente 426; VD 17, 23: 257680T; Poggendorf I, 1403. Wolf, Biographien II, 27-34. Die erste Ausgabe dieser Anweisung zur Konstruktion von Sonnenuhren erschien 1604 in Basel.- Not in Tomash Coll., Kenney, Barchas Coll. KVK: Kiel, Göttingen, Wolfenbüttel, Dresden, Weimar [Brandverlust], COPAC: BL London [1604]; Oxford, BL London, Cambridge [1606]; OCLC: Houghton/ Harvard; Michigan/ Ann Arbor; Wisc.-Madison, Oklahoma Bizzell.



Broadsheet – Comet

22 „Deß Neuen Wunder-großen
Comet-Sterns, Von West west-Sud gegen

Nord-Ost eigner Lauff, samt der Gegend und Beschaffenheit deß Observatorii in der Pastey auf der Vösten in Nürnberg observirt und vor Augen gestellet ...“ Einblattdruck mit großer Radierung von J. J. von Sandrart (*Observatorium auf der Nürnberger Burg*, 19 x 26,3 cm) und zweispaltigem typographischen Text. O. O., Dr. und J. (Nürnberg, Sandrart, 1681). Sheet size/ Blattgr.: 36,3 x 28 cm.

Drugulin II, 2022. Halle, Neue Zeitungen, 1415. VD 17 12:667836D. – Nicht bei Brüning. – Sehr seltene Druckvariante (Titel von Drugulin, im VD 17 leicht abweichend und typographisch gesetzt, nicht gestochen) ohne Signatur des Stechers und Verlegers Johann Jakob von Sandart. – Beobachtung des großen Kometen von 1680 von der Eimmartschen Sternwarte auf der Nürnberger Burg aus; im Vordergrund ist der große hölzerne Doppelquadrant zu sehen, den Eimmaart konstruiert hatte (Wolfschmidt, Astronomie in Nürnberg, Hamburg 2010, pp. 97; der vorliegende Einblattdruck in übereinstimmender Befitelung hier als bedeutende Bildquelle zur Kenntnis des Observatoriums in Anm. 173 zitiert). Im Gegensatz zu der naturwissenschaftlichen Beobachtung, wie sie die Radierung darstellt, der in der Druckvariante hinzugefügte Begleittext mit den üblichen Unheilsdeutungen und der Aufforderung zur moralischen Besserung (Textbeginn: „Erstaune Menschen-Hertz ob diesem Himmels-Wunder!“). Um 1680 wendete sich die Kometenbeobachtung allmählich vom Aberglauben zum empirischen Erkennen von Naturphänomenen. Unten knapp beschnitten (Verlust des Impressums?), ebenso linke Seite (geringer Bildverlust in der Darstellung), und mit kleinen Randläsuren auf größeres Trägerpapier mont., wenig gebräunt, kaum fleckig. Sammlerstempel Hans Hopf.

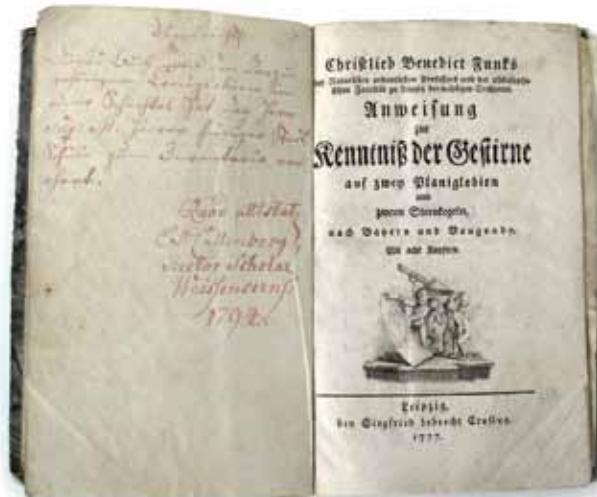


23 Trigler von Iglerau, Johann Georg.

Sphaera das ist: Ein kurtzer astronomischer Tractat, darinnen über zweyhundert curiose Fragen sambt deroselben Erörterung von der Sphaera und des Himmels Lauft, dem weigen Schoepffer des Himmels und der Erde, und alles was darinnen ist, zu Lob, Her, Preiß, un Danck: der lieben deutschen Nation zu Ruhm und Ehren, und dann allen Liehabern der Mathematischen Kuensten zu Lieb, Nutz und Frommen in die deutsche Sprache gebracht und mit 23. Figuren verfertiget.- Franckfurt am Mayn, Verlegts von F. v. R. in Henning Grossens Buchladen, 1678. Quarto. Mit gest. Titelvignette in rotem Holzschnittrahmen, [10], 139 pp., [1], 22 num. copp. plates, 1 fold. tab. Contemporary vellum over boards, with one of two binders.

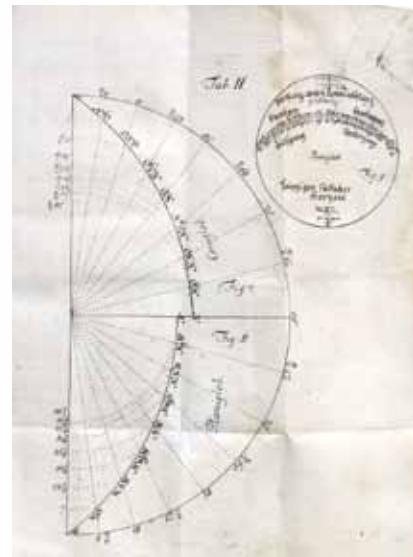
Third edition, completely revised and much enlarged by an unknown editor of the smaller 1614 edition, - a popular introduction into astronomy and astrology based on Sacrobosco's Sphaera.

About Johann Georg Triegler von Iglerau (fl. 17cent.) is not much known. The title states that he was "Hauptmann der Burg und Herrschaft Goldenstein" [Captain of the castle of Goldenstein], maybe a sort of military engineer in Banna / Bohemia near Olomouc. Hieronymus Megiserus has dedicated him one of the volume of his Theatri Machinarum and he was the author/translator of a book on fencing by Jacques de Villamont. This introduction into astronomy based on Sacrobosco was quite famous and went through at least six editions [1614, 1622, 1664, 1678, 1705], and it is not mentioned who has edited the different editions, only the last edition was done by Abdias Trew of Altdorf University. One of the earliest popular introduction into astronomy in the german language.- VD17 23:6419052; Houzeau-Lancaster 2952; vgl. Zinner 4487; Kenney 187; Lalande 162 (jeweils die EA von 1614).

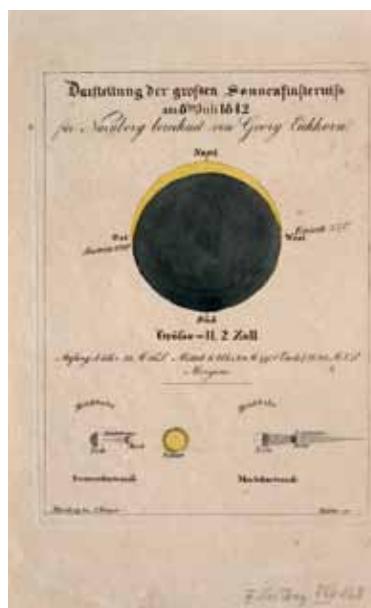


24 Funk, Christlieb Benedict.

Christlieb Benedict Funks... Anweisung zur Kenntniß der Gestirne auf zwey Planiglobien und zween Sternkegeln, nach Bayern und Vaugondy.... Leipzig: Siegfried Leberecht Crusius, 1777. Octavo [180 mm x 120 mm]. [5], 212 pp., with two plates. Contemporary papercard boards with long contemporary inscription on front-fly.



First edition, rare; as always [see library holdings] without the separate sold & distributed celestial charts after Bayer and Vaugondy mentioned by Nick Kanas and Warner. Christlieb Benedict Funk[e] (1736-1786) was Professor of Physics at the University of Leipzig. In 1770 he published a small book entitled: *Anweisung zur Kenntniß der Gestirne auf zwei Planigloben und zween Sternkegeln, nach Doppelmayrs Himmelscharten* which contained four celestial maps derived from the work of Doppelmayr. In 1777 he published an advanced or similar book which accompanied four celestial maps derived from the work of [Johann] Bayer and [Didier Robert de] Vaugondy (1723-1786). Two of these maps, labelled Planiglobum boreale or australe, consisted of 49cm-diameter celestial hemispheres centered on the equatorial poles using a polar stereographic projection with geocentric orientation. The other two, labelled Coniglobum boreale or australe, consisted of 49-cm diameter celestial hemispheres centered on the equatorial poles using a conical projection with geocentric orientation. Both sets of maps included constellations from Hevelius and southern stars with greek and roman letters as assigned by La Caille [Kanas 336/37]; Lalande, 560; Warner, Sky; Pogg. I, 818; Meusel III, 579. KVK: Jena, Hannover, Halle, Göttingen, Bremen, Berlin, Augsburg, St. Gallen [all without plate ?]; Dresden, Freiburg, Heidelberg, Leipzig [all one plate ?]; ÖNB Wien [Globenmuseum]; Bonn [two pla-tes]; COPAC: BL London [imperfect; wanting the plates]; OCLC: Illinois/Urb. [2 plates]



Kepler's Supernova of 1604

25 Moller[us] von Straupitz, Albin.

Gründlicher und warer Bericht. Von dem neuen Cometstern, so in der Lufft unter dem Himmel gesehen, nach dem Niedergang der Sonnen, in October und Novemb. Des 1604. Jahrs. Jederman zu getrewer Warnung mit vleis beschrieben und an den Tag gegeben [...]- Eisleben. Gedruckt durch Jacobum Gaubisch, Inn Verlegung Nicol Nerlich des eltern in Leipzig Jar [1605]. Quarto [184 x 151 mm] 12 leaves / Bll. [the last blank]. Later Wrappers. Browning throughout.



Rare description of Kepler's supernova of 1604. Albin Moller (1541-1618) was a German author, astrologer, and translator who lived in eastern Germany during the late 16th and early 17th centuries. Moller was born in Straupitz, and worked there as a pastor. Moller published *Die grosse: Practica Astrologica*, a guide to astrology. In 1602, he published *Fleissig und Getrewlich Gestellet*, an astrological calendar, in Leipzig. The title page features a woodcut of Moller at age sixty, which was also used here. He published another calendar, *Alt und New Schreibcalender Auff das Jar nach unsers Herrn Jhesu Christi Geburt MDCL*, around 1600. Moller translated the Lutheran hymn book *Hymnal* and catechism into the Sorbian language in 1574, the first book to be printed in the language. He published *Die Pflanzen der Arzneikräuter-Liste* (List of Medicinal Plants and Herbs) in 1582.- Brüning 672; Zinner 4059, Tennen 132, 291; Lalande 145. VD17 3:002502H; Druckvariante mit einigen Verbesserungen in der Orthographie, daher wohl die zweite Ausgabe im Jahr des Erstdrucks [?]. Der Erstdruck hat als Titelholzschnitt eine Windrose. KVK: Halle, Dresden, Wolfenbüttel; COPAC: BL London [one of the variants]; OCLC: only San Diego Zinner Collection 122 [variant; 8 leaves]; only Brigham Young [variant; 8 leaves]

26 Eichhorn, Georg.

Darstellung der grossen Sonnenfinsterniss am 8ten Juli 1842.
Nürnberg, Bauer, um 1842. 20,5 x 13,7. Altkolorierter Kupferstich von Hassler. (Leicht gebräunt).

Very rare print / Broadsheet on the sun eclipse of 1842. Vermutlich als Flugblatt oder Beilage erschienenes Blatt mit den Berechnungen des Nürnberger Astronomen Georg Wolfgang Eichhorn (1794-1866), der eine eigene kleine Sternwarte auf dem Dach seines Hauses. - „Eichhorn soll auch die Sonnenfinsternis vom 8. Juli 1842 für Nürnberg berechnet haben, wovon sich allerdings nichts erhalten hat.“ (Nürnberger Astronomische Gesellschaft). Im Nürnberger Friedens- und Kriegs-Kurier Nr. 192 vom 11. Juli 1842 erschien auf Seite 3 ein kleiner Textbeitrag mit den Beobachtungen Eichhorns. Sammlungsstempel Hans Hopf.



Broadsheet – Comet

27 „Vernünfftige Erkantnuß und eigentliche Bewandniß, daß den 16(-.)26. Decembri erstesmal zu Abends um 1. Uhr der Grössern allhier zu Nürnberg erschienenen entsetzlichen Cometens.“ Einblattdruck mit großer Radierung (Ansicht von Nürnberg, 17,3 x 31 cm) und zweispaltigem typographischen Text. O. O. und Dr., 1680. Blattgr.: 40,3 x 32,8 cm.

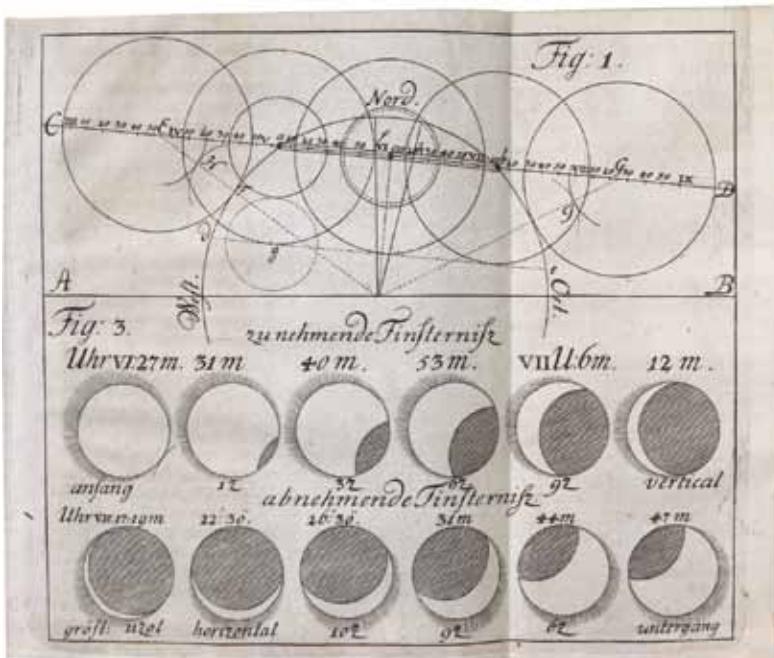
Drugulin II, 3025. Halle, Neue Zeitungen, 1413. Brüning 1311 (betitelt: „Erkanntnuss und Bewandniß ...“). – Für die Geschichte der Kometendeutung im Spiegel der Flugschriften besonders interessanter Einblattdruck, der sich gegen eine prophetisch-moralische Deutung derartiger Himmelserscheinungen ausspricht, durch „Vernüftlinge ..., welche ihre ungegrundete Meinungen mehr aus dem Gestirn einer hirnlosen Vernunftt, als daß weiten und breiten Horizonts lesen und einsammeln ... Dann unerachtet alle Cometen ... als ein natürliches Werck, ihren gewiesen Grund und Ursprung der Erscheinungen, nach aller der Gelehrtesten und Sternkündigen Astronomorum einhellenigen Beystimmung, an dem Himmel haben.“ Die Kometenerscheinungen der Jahre 1680 und 1682 (Halley) waren Auslöser einer kontrovers geführten Diskussion um ihre Deutung. Unser Flugblatt dürfte als Reaktion auf unheilsverkündende Bußaufrufe wie der von Schollenberger publizierte Druck (Brüning 1300) entstanden sein. Die schöne Nürnberger Stadtansicht mit weitem Umfeld, davor eine Beobachtergruppe. Mit einigen Einrissen und Randläsuren (darunter zwei Ausrisse am Rand der Radierung, geringer Darstellungsverlust) auf größeres Trägerpapier mont., wenig gebräunt, vereinzelt fleckig. Sammlerstempel Hans Hopf.- Selten.

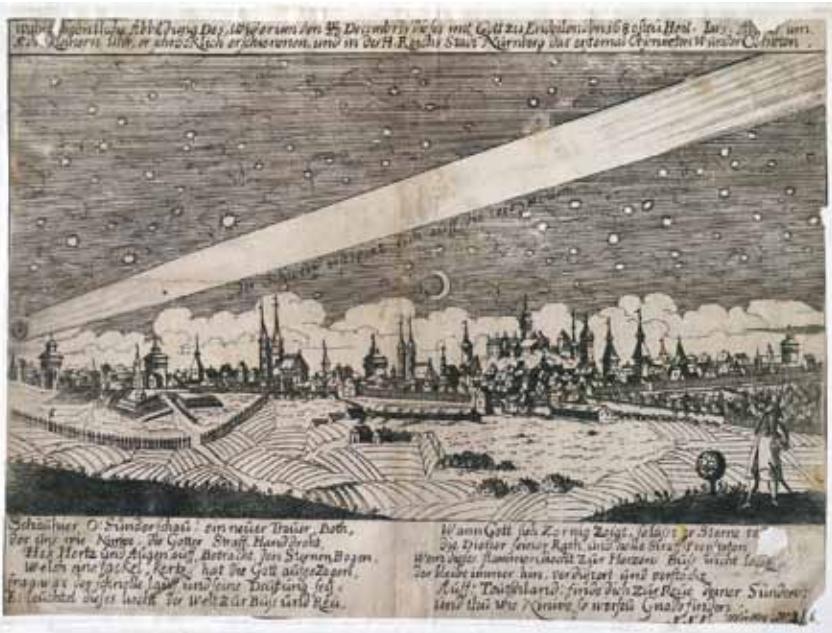
Solar & moon eclipse in 1733

28 Wahn, Hermann.

Kurtze Vorstellung und Beschreibung der grossen sichtbaren Sonnen- oder vielmehr Erd-Finsterniß, Welche sich in diesem 1733 Jahr den 13. Maj. Abends zwischen 6 und 8 Uhr begiebt; ... Nebst einem Anhange von der bald darauf folgenden Mond-Finsterniß den 28. Maji.- Hamburg: König und Richter, 1733. 4°.
24 pp., 2 folding engraved plates. Marbled boards.

First edition. Very rare work on a solar and moon eclipse of 1733 by an amateur astronomer and practical mathematician of Hamburg, only two copies traceable [Stockholm, Munich]. Hermann Wahn (1678 – 1747) was a teacher of “commercial & practical” mathematics [Schreib- und Rechenmeister], and a member of Hamburg “Kunstrechnungsübende Societät”; he was the first astronomer in Hamburg / Northern Germany, who observed astronomical objects for scientific use, not as related to astrology, nautical subjects, commerce, et al. He used the private observatory of Johann Beyer (1673–1751), a cabinet-maker, who also made globes and sundials. Lit.: J. Schramm. Sterne über Hamburg - Die Geschichte der Astronomie in Hamburg. (2010); Not in Kenney, not in Barchas Coll. (Schramm's web: Sterne ueber Hamburg at www.friedensblitz.de).





Broadsheet – Comet

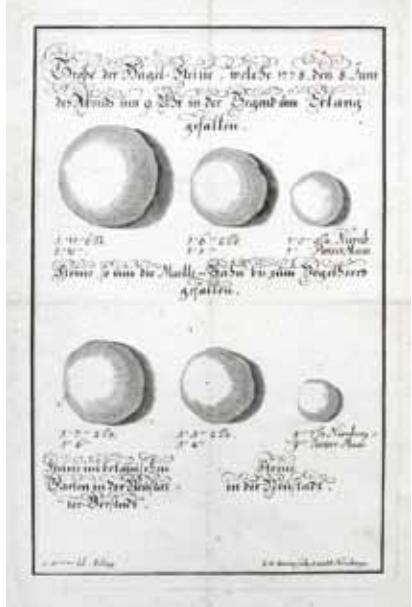
„Wahre eigentliche Abbildung des widerum den 10/20 Decembris dieses mit Gott zu Endeilenden 1680sten Heil-Jars ... erschröcklich erschienenen, und in des H. Reichs Stadt Nürnberg das erstemal observirten WunderCometen.“ Radierter Einblattdruck mit großer Stadtansicht von Nürnberg (16,7 x 29,5 cm), radierter Betitelung und radiertem zweispaltigen Text. O. O., Dr. und J. (Nürnberg, Hoffmann, 1680). Blattgr.: 21,6 x 29,5 cm.

Drugulin II, 3027. Halle, Neue Zeitungen, 1414. Brüning 1334. VD 17 1:620907D (alle mit dreispartigem Erklärungstext). Seltener Einblattdruck der Kometenbeobachtung vom Dezember 1680, wohl eines der frühesten Flugblätter zu diesem Ereignis. Daß einige ältere Verzeichnisse (Heß, Robinson) ebenfalls Exemplare ohne den typographischen Text anführen, läßt auf die Verbreitung einer Teilausgabe schließen, die allein aus der Radierung bestand. Vergleicht man die Texte, so ist dies sogar sehr wahrscheinlich. In der radierten Bilderläuterung heißt es noch ganz in der unheilsverkündenden Auslegungstradition: „Wann Gott sich zornig zeigt, so läßt er Sterne reden/ die Diener seiner Rath, und helle Straff-Propheten.“ Im typographischen Text werden dagegen andere Töne angeschlagen: „Hat nun dieser Comet eine Bedeutung, so überlaß man desselbigen Auslegung GOTT ...“ Dies dürfte Indiz genug sein, unseren Druck als die ursprüngliche Form (im quer-oblängen „Handzettelformat“) zu identifizieren, die unter dem Eindruck derjenigen Flugblätter, die sich in der Folgezeit dezidiert gegen eine moralische Kometendeutung wandten, modifiziert und inhaltlich abgemildert worden ist. Die Darstellung mit panoramaartiger Stadtansicht von Nürnberg, rechts im Vordergrund ein Astronom mit Fernrohr und Globus bei der Beobachtung des Kometenschweifs. Mit fünf kleinen Ausrissen (Verlust einiger Buchstaben und minimaler Ausbruch am Rand der Darstellung) auf überstehendes Trägerpapier aufgezogen, bis an die Einfassungslinie beschnitten, in der unteren rechten Ecke alte bibliographische Notiz, gebräunt (Falz stärker) und fleckig.

Broadsheet – Meteorite or Hail

30 „Größe der Hagel-Steine, welche 1778. den 8. Juni des Abends um 9 Uhr in der Gegend um Erlang gefallen.“ Einblattdruck (Kupferstich) nach C. S.*****. Nürnberg, Henning, o. J. (1778). Plättengr.: 27,7 x 18,3 cm.

Drugulin II, 2006. Abbildung von je drei verschiedenen großen Hagelkörnern oder Meteoriten, die in der Nähe der „Maille-Bahn“ und des Vogelherds sowie im Botanischen Garten und der Neustadt von Erlangen gefallen sind. Nur ein Exemplar in der HAB in Wolfenbüttel nachweisbar. Faltspuren, etw. fleckig, rückseitig Stempel der Sammlung Hans Hopf, Nürnberg.



Broadsheet – Halo

31 „Parelia [graece], oder ungewöhnliche Zeichen umb die Sonnen, wie sie unter dem Nürnbergischen Horizonte den 19 Aprilis Anno 1630 etliche stund vor mittag ... gesehen worden.“ Radierter Einblattdruck mit Stadtansicht von Nürnberg, radierter Betitelung und radiertem zweispaltigen Text. O. O. (Nürnberg), Pfann, o. J. (1630). Radierung: 22,5 x 19,3 cm, Blattgr: 37,4 x 25,4 cm.

Drugulin II, 1830. Halle, Neue Zeitungen, 1064. F.
Roßmann, Eine frühe bemerkenswerte Halo-Darstellung, in: Zeitschrift für angewandte Meteorologie, Bd. 48, H. 2 (1931), S. 44f. – Nicht bei Brüning und im VD 17. Sehr seltenes Flugblatt mit der Beschreibung eines Halos, eines atmosphärischen optischen Effekts infolge von Licht Himmelserscheinung mit zwei Nebensonnen die Stadtan Vordergrund. Der gereimte Text mit einer Unheilswarnung. Erstes Wort des Titels in griechischen Buchstaben, rechts kann Pfann (scupsit et excludit). Auf sehr feinem, dünner nachweisbar, verzeichnet auch in der Halo-Bibliographie – Sauberer Abzug mit etwas Plattenton. Ränder mit klein

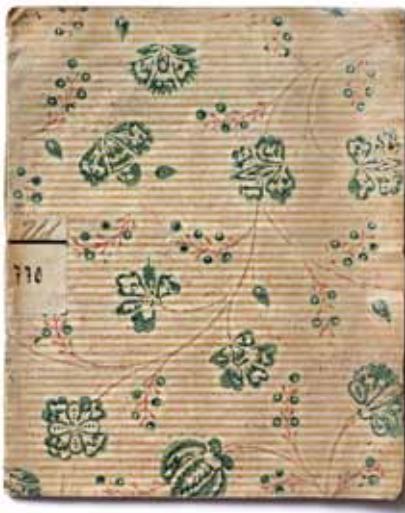




Broadsheet - Laibach

³² Warhaffter und glaubwürdiger Bericht, eines erschrecklichen Wunderzeichen, so sich den 28. Januari dieses 1664. Jahrs, frue um 8. Uhr, an der Sonnen erzeiget, und in dem Fürstentum Crain bey Ober-Laybach zum H. Creutz, von sechs PP. Capucin. neben ihrem Provincial ist gesehen worden ...“ Einblattdruck mit Radierung [155 x 180 mm]. Nürnberg, Fürst, [1664]. Sheet-size: 373 x 293 mm.

Fine journalistic description of a strange appearance at sky in 1664 [sun eclipse or comet] observed by Capoucin monks. Schöne Darstellung von Kapuzinern in weiter Landschaft, die die Sonnenfinsternis beobachten. Rechts daneben die 5 Phasen der Sonne und was sie darin sahen. Der zweispaltige Text mit den am 29. Januar 1664 von den Kapuzinern gemachten Aussagen in Laibach. Eine Sonnenfinsternis, dargestellt in Form einer die Sonne von links oben überlagernden Mondsichel. Die linke Seite der Radierung zeigt die Kapuzinermönche bei der Beobachtung in weiter Landschaft, die rechte fünf verschiedene Visionen, die in der verbleibenden Sonnenscheibe gesehen worden seien (Kriegsvorahnungen).- Hampe 116; Drugulin II, 2600; Halle, Neue Zeitungen, 1292; vgl. Harms I, 197; VD 17 23:676345Z.



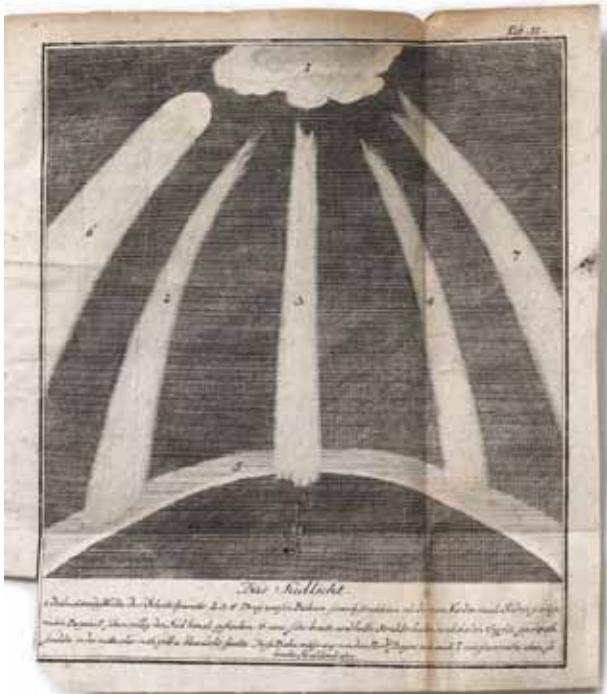
Aurora

33 Silberschlag, Johann Esaias.

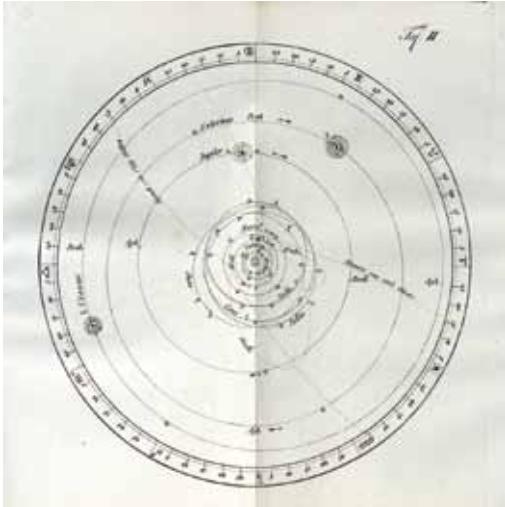
Sendschreiben über das am 18ten des Jänners im Jahre 1770 zu Berlin beobachtete Nordlicht an seinen Bruder Georg Chr. Silberschlag. - Berlin, Real-Schule 1770. Kl. 4°. Mit 2 gefalt. Kupfertaf. 23 pp. Buntpapier-Umschl. d. Zt., etwas gebräunt, tls. randrisig, Ecken geknickt..

The development of the great aurora of January 18, 1770 has been discussed in a fundamental paper by Silberschlag (1770) and other authors. The aurora was observed in middle and low latitudes and in Northern latitude. In Central Europe it displayed all typical auroral forms, including the Corona. Johann Esaias Silberschlag (1721 – 1791) was a German Lutheran theologian and natural scientist from Aschersleben, Principality of Halberstadt. In 1760, he became an external member of the Prussian Academy of Sciences in Berlin, Privy Councillor in the newly founded Office for Public Works, Section of Mechanical Engineering and Hydraulic Engineering. In 1780 Silberschlag observed and described the Brocken bow (also called Brocken spectre).

Kurioser Bericht des Naturwissenschaftlers und Theologen aus seiner frühen Berliner Zeit. - ADB XXXI, 314 ff.



On globes



34 Jüttner, Joseph.

Anweisung zum Gebrauch der Himmelskugel. Zweite vermehrte Auflage. Mit 2 Kupfer- und 3 lithogr. Tafeln. Olmütz, Alois Skarnitzl 1842. (8), 100 pp., 3 folding lithographed plates, and two folding engraved plates. **bound with:** Jüttner, Joseph. Anweisung zum Gebrauch der Ringkugel (Sphaera armillaris). Mit verbesserter Darstellung der Planeten. ... Als Anhang zu der im Jahre 1842 in Olmütz herausgegebenen Anweisung zum Gebrauche der Himmelskugel. Zweite Auflage. Wien, Pichler's sel. Witwe 1848. 19, (1) pp., one lithographed plate with the armillasphere. Cont. cloth, gilt title to spine.

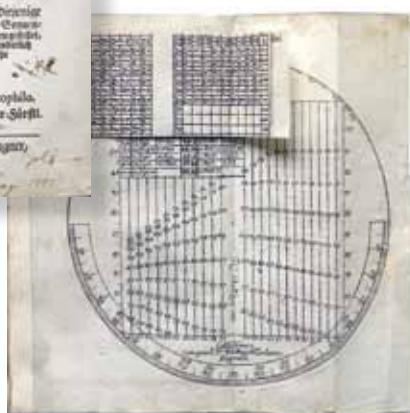
Ad I. Cf. Poggendorff I, 1208 and Houzeau-Lancaster 9808 (first edition of 1824 with only two plates). Second edition. Ad II. Cf. Poggendorff I, 1208. Not in Houzeau-Lancaster. Probably first edition. I couldn't trace an earlier one. Jüttner (1775-1848) produced in 1822 together with Franz Lettany a terrestrial globe which was followed in 1824 by a celestial globe and in 1828 by an armillasphere. (Allmayer-Beck, Modelle der Welt p. 277). These two manuals show how to use both instruments.



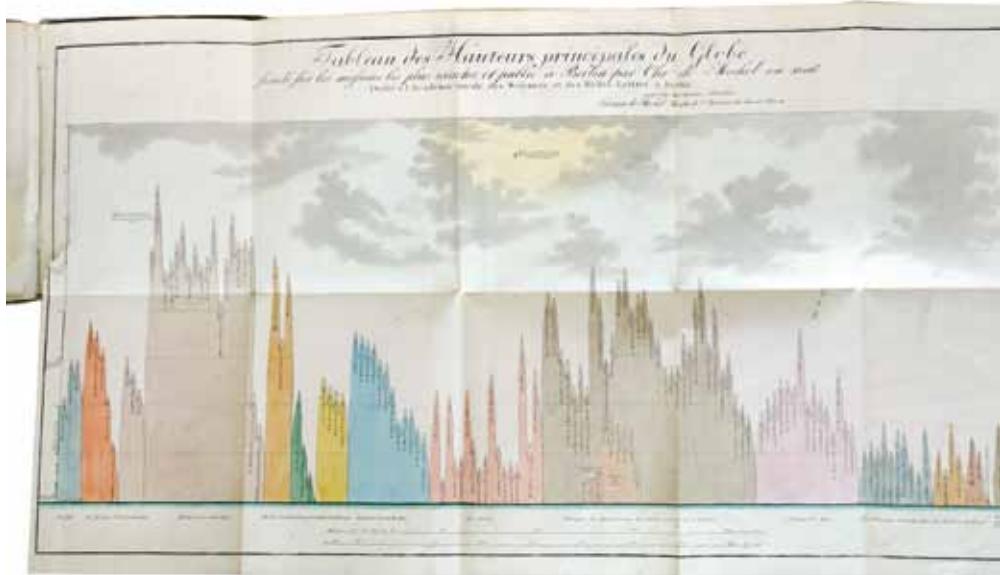
Sundials

35 Holtzhey, Johann Conrad.

Heliotropium gnomonicum, oder: Neu-efundene und unbetrügliche Universal-Sonnen-Uhr, auf welcher man vermittelst eines Plani penduli, so man aller Orten bequem mit sich führen kan, durch alle Tage deß ganzen Jahrs eigentlich wissen kan, um welche Stunde deß Tages es seye; ... Folglich durch den groessten Theil Europae, gantz Asiam und Africam, auch fast das gantze Americam sicherlich zu gebrauchen: ... Ulm, Wagner 1722. (2), 53 (11) pp., 2 folding plates with two mounted tables, 3 folding tables. Cont. plain cardboards. Soiled, extremities worn.



Cf. Zinner, Instrumente 387. Second edition. A few contemporary annotations.

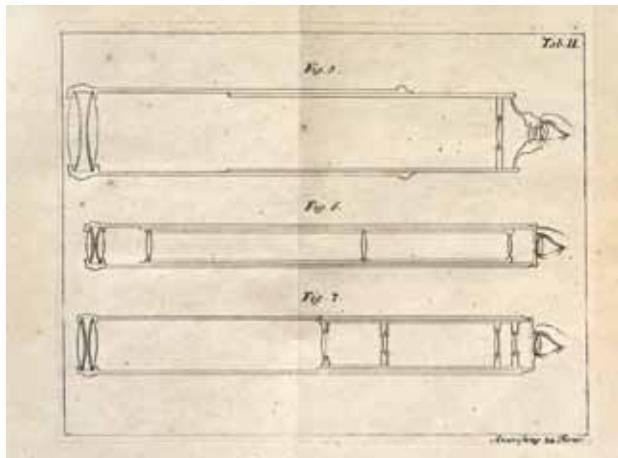


Magnificent plates: on moon mountains & venus crater

36 Gelpke, August Heinrich Christian.

Allgemeine Darstellung der Oberflächen der Weltkörper unseres Sonnengebietes, besonders der Erde, des Mondes, der Venus und des Merkur's, zur Vergleichung ihrer wundervollen Naturbaua und merkwürdige Naturkräfte. Mit zwei grossen illuminirten Kupfern.- Leipzig: bei Gerhard Fleischer dem Jüngern, 1811. 4° [260 x 210 mm] VIII, 79 pp., [1] with two large, folded handcoloured plates [480 x 800 mm]. Errata on final page. Papercover boards of time, rubbed & soiled, outside unfresh, spine little damaged, but firm. Inside fresh & partly uncut.

First edition; a popular account on the comparision of the heights of mountains on earth and on different planets (moon, venus) after studies made by Alexander von Humboldt and Johann Heinrich Schroeter at Lilienthal Observatory. The text is grouped around two large coloured images made by Christian von Mechel and first published separately in 1806 by Simon Schropp in Berlin [Wüthrich 388 & 389]. The author of the text was Prof. of Astronomy at Brunswick, where Gauss had have his education. The work was very controversial regarding Gelpke's mostly speculative ideas. The images received a genuine good critic. Die Karten in diesem Band sind gestochen nach Christian von Mechel (1806): Eine der mehrfach gefalteten u. sauber kolorierten Kupferplatten zeigt ein Profil der Erde, das die Berge der Erdteile vergleicht. Die zweite Tafel zeigt die Berge von Mond, Venus u. Merkur im Profil. Mechel hatte 1806 bei Simon Schropp in Berlin zwei Tafeln gestochen: Tableau des hauteurs principales du Globe, fondé sur les mesures exactes [900 x 470 mm] und Tableau comparatif des Montagnes de la lune, de Venus, de Mercure et de quelques unes des plus hautes Montagnes de la Terre" [880 x 460 mm].- Lit.: Wüthrich, Oeuvre 388 & 389; outside of Germany quite rare; COPAC: only Edinburgh; OCLC: Columbia, Linda Hall, Moravian College; not in JbAP.



Telescopes and Euler

37 Fuss, Nicolaus (or Nikolai Ivanovich Fus).

Umfänsliche Anweisung wie alle Arten von Fernroehren in der groeßten moeglichen Vollkommenheit zu verfertigen sind. Aus des ältern Herrn Eulers Theorie der Dioptrik gezogen und für alle Künstler in diesem Fache begreiflich gemacht. Beygefügt ist die Beschreibung eines Mikroskops, das als das vollkommenste in seiner Art anzusehen ist, und zu jeder beliebigen Vergrößerung eingerichtet werden kann. Aus dem Französischen übersetzt und mit einigen Zusätzen vermehrt von Georg Simon Klügel, Professor der Mathematik zu Helmstädt. Leipzig, Johann Friedrich Junius 1778. Small Quarto. 56 pp. with two fold. engraved plates. Later fancy paper wrappers.

Poggendorff I, 821-823. DSB V, 209-210. First German edition. "Fuss (1755-1826), was born into a Swiss family of modest means. His mathematical abilities, which manifested themselves quite early, attracted the attention of a number of prominent scholars, including Bernoulli, who in 1772 recommended him to Euler, then living in Russia as a secretary. ... In January 1776 (Fuss) was selected as a junior scientific assistant of the St. Petersburg Academy of Sciences. ... from September 1800 until his death he was the academy's permanent secretary. The majority of Fuss's writings contain solutions to problems raised in Euler's works. They deal with several branches of mathematics (spherical geometry, trigonometry, the theory of series, the geometry of curves, the integration of differential equations) and with mechanics, astronomy and geodesy" (A. I. Volodarsky in DSB, V, 209). A broadmargined copy.



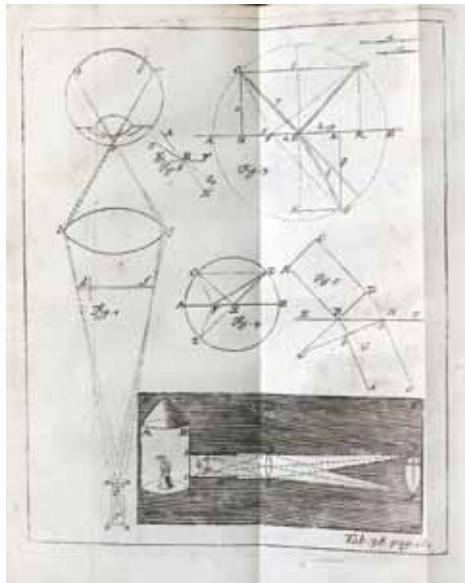
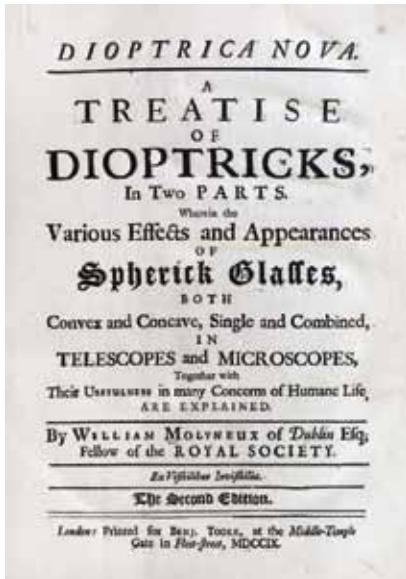
Everything on optics

38 D[enicke oder Denecke], C. L.

Vollständiges Lehrgebäude der ganzen Optik, oder der Sehe= Spiegel= und Strahlbrech= Kunst: darinn die Gründe derselben Theoretisch und Practisch vorgetragen, die Verfertigung der Maschinen und Instrumente, die Zubereitung aller Arten von Spiegeln und Optischen Gläsern deutlich gelehret, auch der Gebrauch derselben bey den Experimenten gezeigt wird. Mit 90. Kupfertafeln. von C. L. D. F. B. L. C. Altona, Iversen, 1757. 4°. Mit gestoch. Frontisp., 89 (86 gefalt.) Kupfertafeln und 4 gefalt. Tabellen. 9 Bl., 772 pp., 2 Bl. Pergamentbd. d. Zt., bestoßen, kaum fleckig. Titel gestempelt, die Kupfer tls. bis zum Bildrand beschnitten, einzelne kleine Einrisse, wenig fleckig. Eine Tafel mit Fleck. Die Kupfertafeln 1-90 nummeriert, die Tafel XXIV ist „als überflüssig weggelassen worden“ (content).

First edition, a rare compendium on all parts of optics. Erste Ausgabe des seltenen umfangreichen Kompendium's zur Optik mit reichem Abbildungsmaterial. „Ein besonders umfangreiches Lehrbuch über die Optik verfasste Denecke (oder Denicke), das 1757 unter dem Titel ... in Altona erschien. ... Von den Mikroskopen werden so ziemlich alle bis dahin allgemein bekannten Modelle besprochen, ebenso die wichtigsten Präparationsmethoden. Im 15., mit Microscopische Observations und Experimente überschriebenen Kapitel sind die beliebtesten Untersuchungsobjecte aufgeführt, angefangen von dem strömenden Blut in Kapillaren über verschiedene Teile von Insekten, Spermatozoen, Infusorien und sonstige Kleinlebewesen, tierischen Parasiten, Kristallen bis hin zu Teilen von Pflanzen.“ [Gerlach. Geschichte Mikroskopie, 2009. 168]





First optics book in English

39 Molyneux, William.

Dioptrica nova, A treatise of dioptrics in two parts: wherein the various effects and appearances of spherick glasses, both convex and concave, single and combined, in telescopes and microscopes, together with their usefulness in many concerns of humane life, are explained by William Molyneux of Dublin, Esq ... London: Printed for Benj. Tooke, 1709. 4° [245 x 189 mm] [17], 301 pp., [2], 42 folded leaves of plates Later half calf period style. Some browning and little unfresh inside, else a good copy.

First edition, second issue [with cancelled title-page]. The first part of that book examines the geometrical optics of lenses, the eye, telescopes, and microscopes. The second part consists of commentaries on various topics, including spectacles, telescopes, and physiological diplopia. The book was originally published in 1692. It includes at the end Halley's famous theorem for finding the foci of lenses. William Molyneux (1656-1698), an influential figure in the scientific affairs of Dublin in the late 17th cent., gained the respect of Edmond Halley and John Flamsteed as an astronomer and wrote the first major book in English on optics, Dioptrica nova. The book was received favourably and became a standard text. Printed in London in 1692 it was intended as a complete and clear treatise of current optical knowledge independent of any hypothesis concerning the nature of light. It provided a scientific basis for Berkeley's Essay towards a new theory of vision. The book was widely distributed, and Molyneux personally sent copies to Newton, Locke, Hooke, Boyle, Flamsteed, and Huygens.- Wing M2405; Taylor, Tudor & Stuart 489; British Optical Ass. I, 145. DSB IX, 464-466. Lit.: Peter Abrahams. Molyneux ; in: Hamel [ed.] Der Meister und die Fernrohre 229-246.



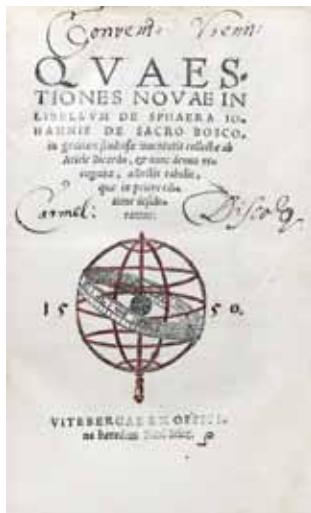
Early astronomy, ballistics & mathematics

40 Santbech, Daniel.

Problematum astronomicorum et geometricorum sectiones septem.- Basel: Heinrich Petri und Peter Perna, 1561. Folio. Mit zahlr. Textholzschnitten. 10 Bl., 294 pp., 1 Bl. Halb-Pergamentbd. späterer Zeit, leicht fleckig, wenig beschabt, kaum bestoßen. Stellenweise leicht ge-bräunt und fleckig. Here and there slightly browned and soiled. Half vellum of the 19th century, slightly soiled, minimally scratched, hardly scuffed.

First edition, published as second part of Santbech's Regiomontan edition („De triangulis planis“) as well as separately. Particularly nice are the woodcuts to artillery calculation with towns, fortresses, towers and cannons. Daniel Santbech (florished 1561) was a Dutch mathematician and astronomer. In 1561, Santbech compiled a collected edition of the works of Regiomontanus (1436–1476), De triangulis planis et sphaericis libri quinque (first published in 1533) and Compositio tabularum sinum recto. Santbech's work consisted of studies on astronomy, sundials, surveying, and levelling for water courses. It also includes descriptions of astronomical instruments, information for navigators and geographers, and general information about astronomy in the first years after Nicolaus Copernicus. Santbech also studied the subject of gunnery and ballistics as a theoretic discourse as well as for the practical application of war, and utilized the foundations of geometry, with ample references to Euclid and Ptolemy, in order to do so. Santbech seem not to have been aware of similar studies by Niccolò Tartaglia. Santbech's text included theoretical illustrations of trajectories. These were depicted with abruptly acute angles and straight lines, allowing him to create a right-angled triangle from which ranges were computed with the help of a table of sines. Santbech was of course fully aware that a cannonball's true trajectory would not consist of a straight line and a sudden drop, but these depictions were meant to assist with mathematical calculations.- Lit.: Andreas Kleinert. Zur Ballistik des Daniel Santbech; Janus 63 (1976), 47-59; Hooykaas. Selected studies 639 on Santbech as Copernican; Schemmel. The English Galileo 30 f.; Arend. Die Mechanik des N. Tartaglia ... 1998. 81 ff.; Peterson. Galileo's Muse 2011. 244 ff.; 450 Jahre Copernicus De Revolutionibus. 238; Adams R 281. Houzeau-L. I, 2500. Zinner 2273. Bierens de Haan 4126. VD 16 S 1646. Nicht bei Kearney.





TABVLA CONTINENS INGRESSVM SOLIS IN H. SIGNA ZODIACI, VERVM ITEM LOCVM SOLIS AD SINGULOS 24 ANNI, VETERVM POTARVM TEMPORIBVS ACCORDATA.											
Signo	Utriusque										
1	10	10	10	10	10	10	10	10	10	10	10
2	11	11	11	11	11	11	11	11	11	11	11
3	12	12	12	12	12	12	12	12	12	12	12
4	1	1	1	1	1	1	1	1	1	1	1
5	2	2	2	2	2	2	2	2	2	2	2
6	3	3	3	3	3	3	3	3	3	3	3
7	4	4	4	4	4	4	4	4	4	4	4
8	5	5	5	5	5	5	5	5	5	5	5
9	6	6	6	6	6	6	6	6	6	6	6
10	7	7	7	7	7	7	7	7	7	7	7
11	8	8	8	8	8	8	8	8	8	8	8
12	9	9	9	9	9	9	9	9	9	9	9
13	10	10	10	10	10	10	10	10	10	10	10
14	11	11	11	11	11	11	11	11	11	11	11
15	12	12	12	12	12	12	12	12	12	12	12
16	1	1	1	1	1	1	1	1	1	1	1
17	2	2	2	2	2	2	2	2	2	2	2
18	3	3	3	3	3	3	3	3	3	3	3
19	4	4	4	4	4	4	4	4	4	4	4
20	5	5	5	5	5	5	5	5	5	5	5
21	6	6	6	6	6	6	6	6	6	6	6
22	7	7	7	7	7	7	7	7	7	7	7
23	8	8	8	8	8	8	8	8	8	8	8
24	9	9	9	9	9	9	9	9	9	9	9

Commentary on Sacrobosco for the German University

41 Beyer, Hartmann.

Quaestiones novae in libellum de sphaera Iohannis de Sacro Bosco, adiectis tabulis quae in priore editione desiderantur. Wittenberg: Seitzens Erben, 1550. 8°. Mit Druckermarke a. d. Titel u. 2 gefalt. Tabellen. 4 nn., 84 num. Bl. Blindgepr. Schweinsldr. d. Zt., monogr. und dat. „AVG 1558“, etwas fleckig und bestoßen. Titel ankoloriert, gering gebräunt und stellenweise etwas fleckig.

Beliebtes, vielfach aufgelegtes astronomisches Lehrwerk auf der Basis von Sacroboscos „Sphaera“. Hartmann Beyer (1516 – 1577 Frankfurt a. Main) , deutscher Mathematiker, Theologe und Reformator. Beyer wurde als Sohn eines Tuchscherers in Frankfurt am Main geboren und besuchte die 1520 gegründete Lateinschule, wo er bei Jakob Micyllus eine gute klassische Bildung genoss. 1534 immatrikulierte er sich an der Universität Wittenberg und erwarb sich unter dem starken Einfluss Martin Luthers und Philipp Melanchthons 1539 den akademischen Grad eines Magisters. Nachdem er noch einige Jahre als Privatlehrer für Mathematik in Wittenberg verbracht hatte, wurde er am 11. April 1546 zum Nachfolger von Sebastian Ligarius als Praedikant in seine Vaterstadt berufen. Zunächst predigte er hauptsächlich an der Peterskirche, später an der Barfüßerkirche, die nach 1548 zur evangelischen Hauptkirche wurde. IA 118.456. Houzeau-L. I, 2527. Zinner 1978. Nicht im VD 16, im STC und bei Adams.



Amateur Astronomer

42 Wurzelbau, Johann Philipp von.

Uranies Noricae Basis Astronomico-Geographica sive Inclytiae S. Rom. Imp. liberae Civitatis Norimbergae situs Geographicus secundum Latitudinem istique aequalem Poli, super horizonta, ... Longitudinem ex Lunae eclipsium ... promotione collectus vigiliis ... [Norimberga: Sumptibus authoris], 1697. Folio [345 x 210 mm]. 8 Blatt, 86 pp., 2 Blatt. incl. gestochenen Titel u. 4 (2 gefalteten) Kupfertafeln. Contemporary half vellum, handwritten title to spine, some rubbing, small losses to covering material. Faint Dampstaining to upper inner margin.

Erste Ausgabe, sehr selten. Der bekannteste Nürnberger Astronom um 1700, Johann Philipp von Wurzelbau[r], (1651-1725) interessierte sich bereits in frühesten Jugend für Mathematik und Astronomie, musste aber als Kaufmann in der Messinghandlung seines Stiefvaters arbeiten. „Im Herbst 1678 errichtete Georg Christoph Eimmart (1638-1705) auf der Vestnertorbastei nördlich der Nürnberger Burg die erste Nürnberger Sternwarte. Dadurch angeregt begann Wurzelbau sich ab 1682 in seinem Haus eine eigene Sternwarte einzurichten. Ein markantes Wahrzeichen wurde ein achteckiges Beobachtungstürmchen, das er 1692 auf dem Dach seines Hauses am Spitzenberg 4 anbringen ließ. Im Folgenden zog er sich aus dem Geschäftsleben zurück und widmete sich ganz der Astronomie.“ (Astronomie in Nürnberg).- Houzeau/l. 11858 Anm.; Poggendorff II, 1377; Pilz, Astronomie in Nürnberg 298 ff.; Kenney 211; not in Barchas; Zinner, Instrumente 594; not in BEA. First edition, rare. Johann Philipp von Wurzelbauer [also spelled Wurzelbaur, Wurzelbau] (1651-1725) was a German observational astronomer. A native of Nuremberg, Wurzelbauer was a merchant who became an astronomer with the help of Georg Christoph Eimmart [1638-1705], who was codirector alongside with Sandart of the Nuremberg School of Painting and another private astronomer and instrument-maker. VD17 39:125144Z [incl. a star chart: "Schema Mercurii Ad Limbum Solis ope telescopii intra tabellam oppositam excepti et observati Norinbergae A.O.R. MDCXC d. 31. Octobris st. v. mane a Joh. Phil. Wurzelbaur"] KV: Wolfenbüttel [incptl.], Nürnberg [two copies incptl.], Gotha, München; COPAC: no copy [only the later edition of 1719 at BL London]; OCLC: Adler Planetarium, Houghton, San Diego, Bizzell Mem.



QUADRIGA DELIQUORUM
SOLIS ET LUNÆ

Seu

CALCULUS ASTRONOMICUS

Quo apparentia Eclipsium, trium Lunae, & unius

Solis, Anni Salutis Christianæ

M DC LXXV.

Intra seculum proxime elapsum, unus anni spacio non visorum;

exponens, si Revolutio annua excedatur, ut in ultimam

extensem, A. Tabularium correlative.

Balistic veloxem,

Eximia Tabula aferentia, quibus sive Princi-

piaciam trahant, diligenter traditæ;

Out.

Vierfache Verfinsterungen an Sonn und Monde
So sich dieses Jahres begeben und in Europa
sich sehen werden, beständen fast in Hundert
Jahren nicht geschehen ... nebst einen
kurtzen und unvergleichlichen Judicio und gutachten darüber, etc.

Adam Thilo V.D.M.

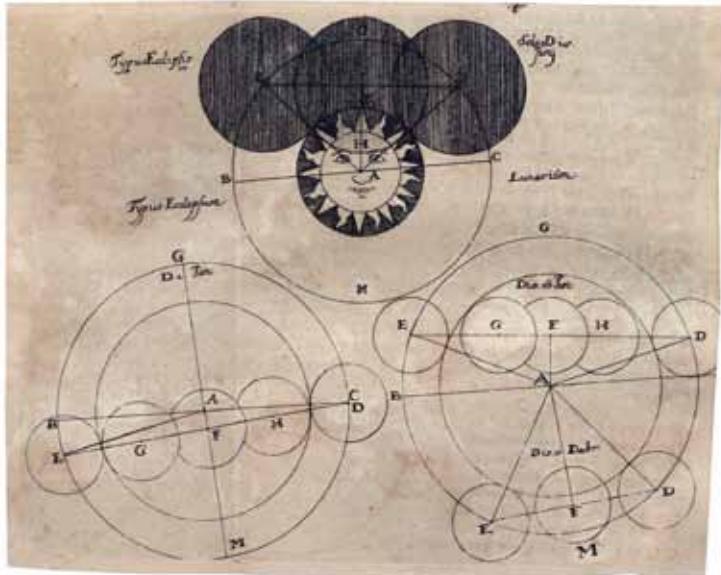
& divinae mathes. Studioso apud Berolinenses.

Beroliniens.

Benedictus ac his Quic-

Eduardus de Beham Empf. der Universität

A. C. C. 1675.



Eclipses in 1675

43 Thilo, Adam.

Quadriga Deliquorum Solis Et Lunae Seu Calculus Astronomicus: Quo apparentiae Eclipsium, trium Lunae, & unius Solis, Anni Salutis Christianae M DC LXXV [1675]. Intra seculum proxime elapsum, unus anni spacio non visorum, ... Das ist: Vierfache Verfinsterungen an Sonn und Monde So sich dieses Jahres begeben und in Europa gesehen werden: dergleichen fast in Hundert Jahren nicht geschehen ... nebst einen kurtzen und unvergleichlichen Judicio und gutachten darüber, etc.- Gestellet von Adamo Thilone V.D.M. & divinae mathes. Studioso apud Berolinenses.- Frankfurt an der Oder: Ernst, 1675 Quarto. [2], 22 pp., [2], one fold. engraved plate. Cont. backstrip.

First and only edition. Very rare description of solar and moon eclipses in 1675 by the preacher and diakonus of St. Nikolai Church in Berlin, Adam[us] Thilo[nius] from Silesia (working 1675-1681), who wrote calendars. Only one copy traceable at Munich.- VD17 12:642388W. OCLC: only Munich; not in Kenney, Barchas Coll.

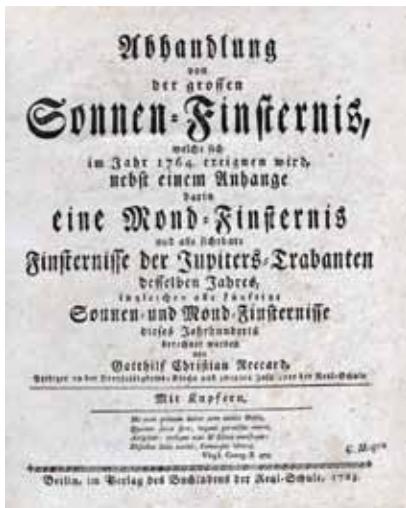


Early Solar Eclipse Photography

44 Coffin, J[ohn] H[untington] C[rane] [ed.]

Reports of observations of the total eclipse of the sun, August 7, 1869, made by parties under the general direction of Professor J. H. C. Coffin.- [Washington]: published by authority of the secretary of the Navy, [1871-1885]. Quarto [300 x 240 mm] [2], II, 158 pages, numerous tables, 10 numb. plates in various techniques (3 chromolith.; 1 original photograph; 5 photograv.; 1 lith.). Publisher's cloth, gilt title to spine. Spine-ends damaged, else fine.

First edition. The photograph, an albumen (230 x 175 mm) in fine tonal ranges, captioned: Solar Eclipse August 7th 1869 Burlington Iowa. Printed by James Cremer. The photographs were made by Alfred Marshall Mayer (1836 – 1897), who in 1863/4 studied physics, mathematics, and physiology in the University of Paris, and on his return filled successively chairs in Pennsylvania College, Gettysburg, and Lehigh University, Bethlehem, from 1865 to 1870. At Lehigh, he had charge of the department of astronomy, and superintended the erection of an observatory, from which he made a series of observations of Jupiter. He had charge of the expedition that was sent to Burlington, Iowa, under the auspices of the U.S. Nautical Almanac office to photograph the solar eclipse of 7 August 1869, and he made 41 perfect photographs. He used a Merz & Mähler telescope with 6.42 inch aperture and 9 feet focus, equatorially mounted driven by one of Fraunhofer's friction-governor clocks. The Sun's solar corona was first successfully imaged during the Solar eclipse of July 28, 1851 and later in 1860 by Warren de la Rue.– not in Barchas Collection; not in Hockey. Steven J. Dick. Sky and Ocean Joined: The U. S. Naval Observatory 1830-2000. (2007) pp. 75-76; 199-205; T. W. Webb. American Photographs of Total Solar Eclipse of August 7, 1869 in: Monthly Notices of the Royal Astronomical Society, Vol. 30, pp. 4-5.

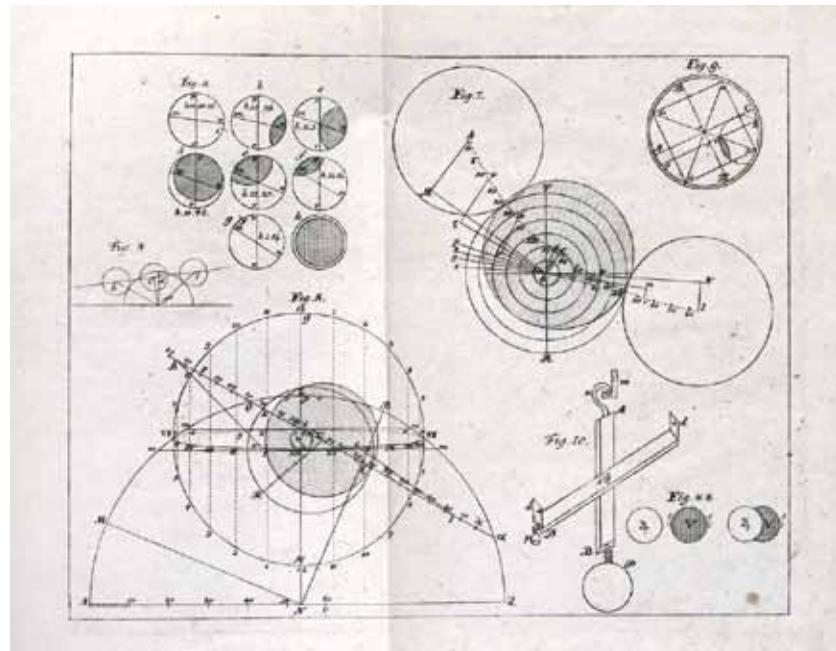


Announcement for the Eclipses in 1764

45 Reccard, Gotthilf Christian.

Abhandlung von der grossen Sonnen-Finsternis, welche sich im Jahr 1764 ereignen wird, nebst einem Anhange darin eine Mond-Finsternis und alle sichtbare Finsternisse der Jupiters-Trabanten.... berechnet worden.- Berlin, Buchladen der Real-Schule, 1763. 4°. [16], 104 pp., 2 fold. engraved plates. Cont. plain boards. Extremities worn.

First edition. Mathematical calculations for the sun eclipse of 1764 by the theologian Gotthilf Christian Reccard (1735-1798). He was headmaster at the Collegium Fredericianum in Königsberg and a keen astronomer, who had built a private observatory for his researches. Not in Kenney, Barchas Coll. Not in Copac; OCLC: only Oklahoma [1763]; Columbia, Caltech [both second edition, 1764]; Rice, Emory, Virginia Tech, Duke [all only Microfiches]. - Cf. Poggendorff II, 381/382; Houzeau/L. 12173; ADB 27, 491.



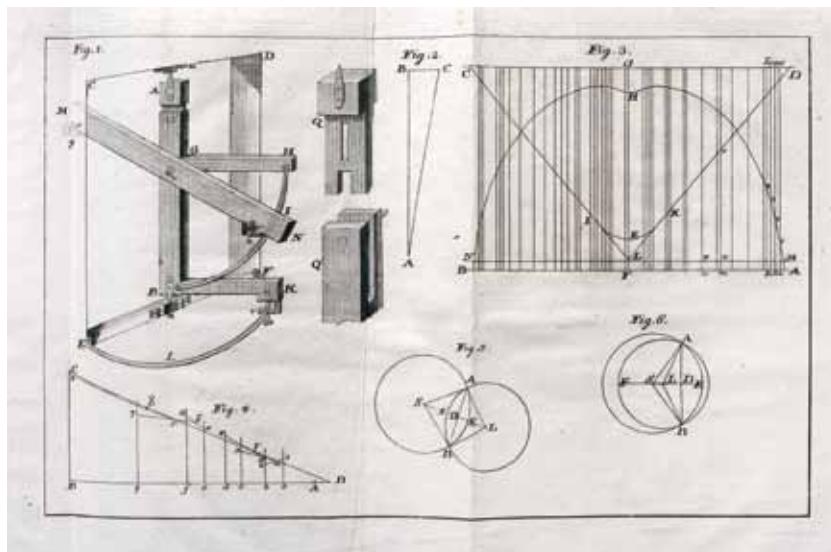
Report of the Eclipses in 1764

46 Recard G[otthilf]. C[hristian].

Die Beobachtungen der Sonnen-Finsternis welche sich den 1 April 1764 ingleichen der Mond-Finster-
nis welche sich den 17 März dieses Jahres ereignet hat nebst den daraus hergeleiteten Schlüssen. Ber-
lin, Realschule 1764. 4°. [12], 70 pp., 2 fold. engraved
plates. Cont. boards. Title and last leaf with stamp.
Lightly browned.



First and only edition. Gotthilf Christian Recard (1735-1798), was headmaster at the Collegium Fredericianum in Königsberg and a keen astronomer, who had built a private observatory for his researches.- Poggendorff II, 581; Houzeau-L. I, 12173; Lalande 488; Hamberger-M. VI, 240. Not in COPAC or OCLC.



Darstellung
des
Weltsystems

durch

Peter Simon La Place

Mitglied des Französischen Nationalkonservat. und der
Kommission wegen der Monarchie.

Aus dem Französischen übersetzt

von

Johann Karl Friedrich Hauff.

Erster Theil.

Frankfurt am Main,

bey Varrentrapp und Wenner.

1797.

47 Laplace, Pierre Simon de.

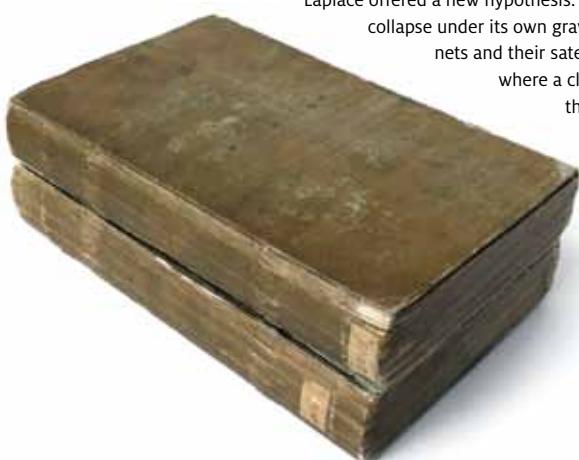
Darstellung des Weltsystems durch Peter Simon La Place, [= Exposition du Système du Monde, 1796; dt.]. Aus dem Französischen übersetzt von Johann Karl Friedrich Hauff. 2 Bde. in 1. Frankfurt am Main: Varrentrapp und Wenner, 1797. 8° [202 x 116 mm]. XVIII, 354 pp.; [4], 342 pp. Goldene Pappbd. d. Zt., handschrftl. R.schild, überklebt, berieben u. bestoßen, tls. etwas beschabt, gering stockfl., ein Stempel im Text. Ordentl. Exemplar.

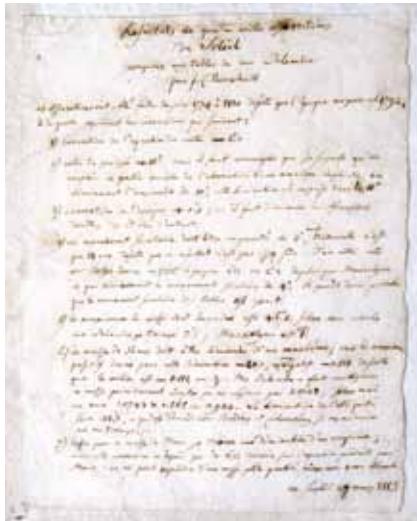
Rare first german edition of „Exposition du systeme du monde“

from 1796: a popular account of celestial mechanics, in which Laplace presented his nebular hypothesis of the origin of the solar system. Laplace noted five key observations about the solar system: 1. planets orbit the sun in the same direction and in roughly the same plane; 2. planetary satellites likewise revolve around their primaries in the same direction and in the same plane; 3. planets, satellites, and the sun all rotate about their own axes in the same direction and in roughly the same plane; 4. orbital eccentricities of planets and satellites are very small; and 5. comets disobey all of the above, and appear to have their orbits randomly distributed. Laplace noted that the only person put forward an origin of the solar system since the discoveries of Newton was Buffon, who had suggested that a cometary collision with the sun yielded parts that later coalesced to form the planets.

Laplace offered a new hypothesis: The solar system began as a vast cloud, which began to collapse under its own gravitation, with portions of the cloud condensing into planets and their satellites. Laplace pointed o the Pleiades as examples of a case where a cloud might condense into a multiple star system. Although

the nebular hypothesis as Laplace presented it is no longer considered valid, the current theory of the formation of the Solar System incorporates many of Laplace's ideas. [Jeff Suzuki]- BEA I, 678; Mordano, „Laplace,“ in: Taton & Wilson [eds]. Planetary Astronomy from the Renaissance to the Rise of Astrophysics. Part B: The Eighteenth and Nineteenth Centuries, 131-150; PMM 252 (fr. ed.), DSB XV, 388.





Mechanik des Himmels

P. S. Laplace,

Wirkungs der Sonnenwirken, Mercuri-Saturnus und der
Kometen für die Monde-Umlage

aus dem Französischen übersetzt

mit erläuternden Anmerkungen versehen

J. C. Burckhardt.

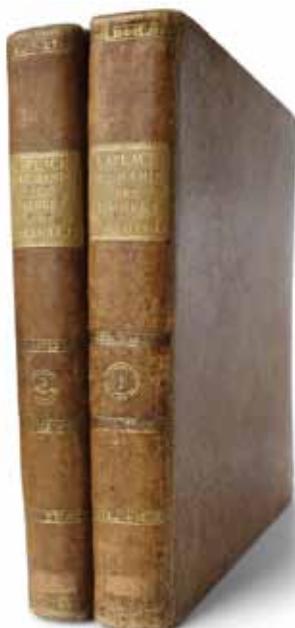
Erster Theil.

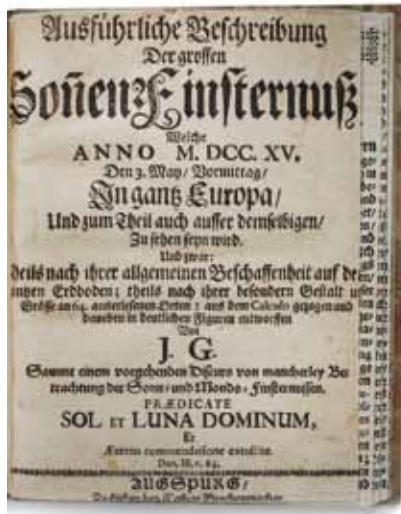
Berlin
vor F. T. LaGarde,
1800.

48 Laplace, P[ierre] S[imon] Marquis de.

Mechanik des Himmels. Aus dem Französischen übersetzt und mit erläuternden Anmerkungen versehen von J. C. Burkhardt. 2 Bde. [= alles erschien]. Berlin: bey F. T. LaGarde, 1800-1802. 4°. 2 Bll., III - VIII, 482 pp.; Titelbl., 458 pp., [4; Vlgsanz.] Lederbd. d. Zt, aufwendige R. vergoldung, R. titelprägung, mamoriertes Deckpapier. Innen vereinzelt etwas braunfleckig. Gutes Exemplar.

First german edition of the first two volumes of Pierre Simon de Laplace's *Traité de Mécanique céleste* [PMM 252], no more published in german. On the inner front fly is a manuscript page out of the hand of the translator J. C. Burckhardt. In the 'Mecanique' Laplace summarized everything known about celestial mechanics in five dense volumes. The work provided the first fully analytical solution to calculations of the orbital elements for a celestial body from three observations. The technique assumed that the second observation was exact, and that the first and third observations were to be approximated to a high degree of accuracy. [Jeff Suzuki] The translator was Johann Karl [Jean-Charles] Burckhardt (1773-1825), who had studied mathematics in Germany. When Baron von Zach was in search of an astronomer for his Gotha Observatory (Seeberg), Burckhardt was recommended to him, and he was hired to work on practical astronomy and to observe star transits. In France, Lalande had undertaken a similar search, therefore Zach requested Lalande to have Burckhardt placed at the Collège de France, his pension being paid by the Duchesse de Gotha. Burckhardt arrived in Paris at the end of 1797, and began the translation of the first two volumes of Laplace's *Mécanique céleste* while reading the proofs for the printing; he also added some notes and double-checked the calculations, made by Alexis Bouvard. On various occasions Lalande praised Burckhardt for being a tireless observer, rapid calculator, and a translator making french science known in Germany. [Solange Grillot]-Hockey [ed.] BEA I, 183/184 [Burckhardt]; I, 678/79 [Laplace]; Pogg. I, 1375; DSB XV, Suppl. 273-403.



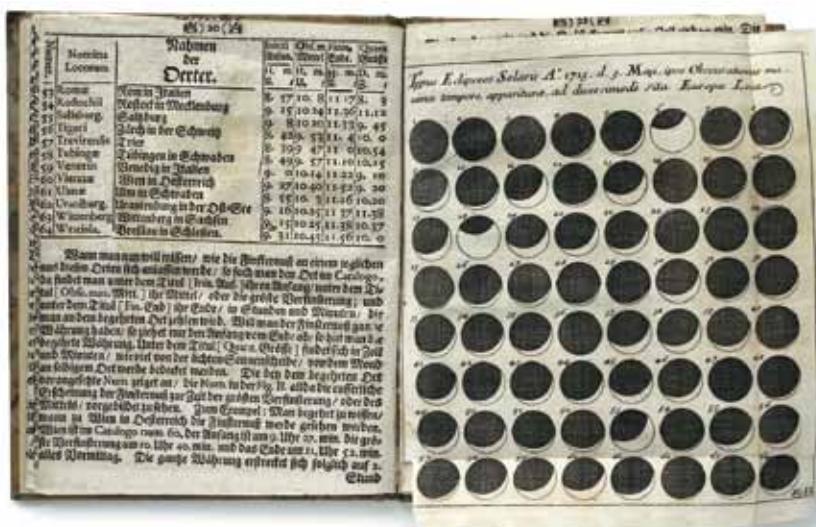


Solar eclipse in 1715

49 [Gaupp], [Johannes].

Ausführliche Beschreibung der grossen Sonnenfinsternuß
Welche anno M.DCC.XV. Den 3. May Vormittag In ganz Europa
Und zum Theil auch außer demselben Zu sehen seyn wird.
Sammt einem vorgehenden Discurs von mancherley Betrach-
tung der Sonn- u. Monds- Finsternissen.- Augsburg, Brechen-
macher, no date, [1715]. 4°. 24 pp., two engraved plates (incl. a
map of Europe, partly with Africa & America), Marbled boards.

First and very scarce edition. Johannes Gaupp (1667-1738), protestant theologian, but mainly known as a keen mathematician and astronomer. He published various books on astronomical subjects. His most important publication was the „Gnomonica mechanica universalis“ on the manufacture of sun-dials. This treatise on the sun eclipse of 3 of May 1715, which could be viewed in most parts of Europe is adorned with a map showing Europe and part of North America with the course of the sun eclipse and a plate with various coronas which could be viewed in 64 European places. Evenly lightly browned throughout due to paper-quality. Very closely trimmed, binder's knife touching text in front margin. - Zinner, Instrumente 319; Poggendorff I, 853; Jöcher II, 888. not in Kenney, Barchas Coll.- KVK: Berlin (war loss), Göttingen, Jena; COPAC: UCL [8 pp., 1 map]; Observatoire Paris; not in OCLC.



Eigentliche Beschreibung
der grossen
SonnenEinsteruß/

Welche
ANNO M.DC.XXIV.

Den 22. May/

Des Abends vor und bey dem Untergang der Sonnen/
auf dem Westlichen Horizont zu sehen seyn wird.
Aus dem Calende geogen von

J. G.

Sammt beygefügten 2. Kupffer-Ziguren / in welchen die Gestalt
und Größe derselben an 64. Orten in Europa vor Augen
gestellt wird.

Wie auch einer General Charta von EUROPA

und 4. Speciall Charten, nämlich
ITALIEN FRANCREICH ENGELLAND und TEUTSCHLAND
welchen Curieux abgezeichnet zuhaben,
so eigentlich das Total Fiassternus
über und durch dage Lander gehe,
an genauer Reichtum aber
von derselben auffangt, grösse nach Zoll und minuten
ist in einer besondern großen Charta zuhaben
bey den beiden vorher verlegten
Gabriel Bodenehr, Kupferstecher in Augspurg.

Solar eclipse in 1724

50 G[auupp], J[ohannes].

Eigentliche Beschreibung der grossen Son[n]e
enfinsternuß Welche anno M.DC.XXIV. [eig. 1724]
den 22. May ... zu sehen seyn wird. Augsburg,
Brechenmacher, [1724]. 4°. 4 unumb. ll., one fold.
engraved plate, 5 fold. engraved and handcoloured
maps by Bodenehr. Cont. wrappers. Rubbed,
covers partially restored.

Very rare work on the solar eclipse of 1724 including 5
maps showing the ongoing direction/ way of the eclipse
over Europe [Europe, Italy, France, England, Germany].

One map projection showing parts of North America (not in Sabin). All maps by Gabriel Bodenehr
(1673-1765), German engraver and map-maker, son of Johann Georg Bodenehr (1631-1704) &
from a family dynasty of engravers and publishers. His works include *Atlas Curieux* [1704] and
Curioser Staats und Kriegs Theatrum [1715]. In 1717 the family took over the Augsburg publishing
house of Stridbeck. The dates ascribed to both Gabriel Bodenehrs in Tooley's Dictionary of Mapma-
kers appear erroneous.- Poggendorff I, 854; Jöcher II, 888. not in Kenney, Barchas Coll.- KV: Berlin
(war loss); ZB Zürich [dated 1624]; Observatoire Paris, Bern, no copy traced in American libraries.





51 Campigneulles, V. de.

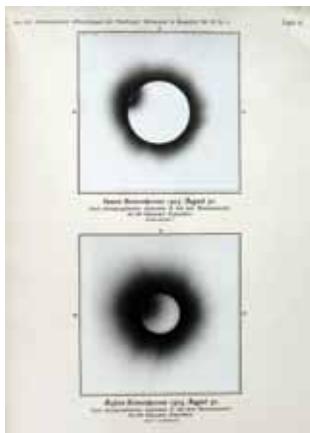
Observations taken at Dumraon, Behar, India during the eclipse of the 22nd January 1898, by a party of Jesuit fathers of the western Bengal mission. By Rev. V. De Campigneulles. London; New York; Bombay: Longmans, Green, and co, 1899. 4° [260 x 190 mm] X, 104 pp. with 14 pl. (1 fold.), mainly after photographs. Original pebbled cloth. Front-fly with a handdrawing of the eclipse [by the author ?], and with printed dedication. Ownership inscription: C. W. Hodson, 1899.

First edition, uncommon. Report of the expedition of the total sun eclipse in 1898 under the leadership of the Jesuit scientist Campigneulles. He reported that the eclipse lasted 99 seconds, recorded solar prominences, and inner and outer corona. The Jesuits of Bengal, who directed two important educational establishments and possessed a Solar Observatory, organized the study and research of the eclipse to solve some problems of solar

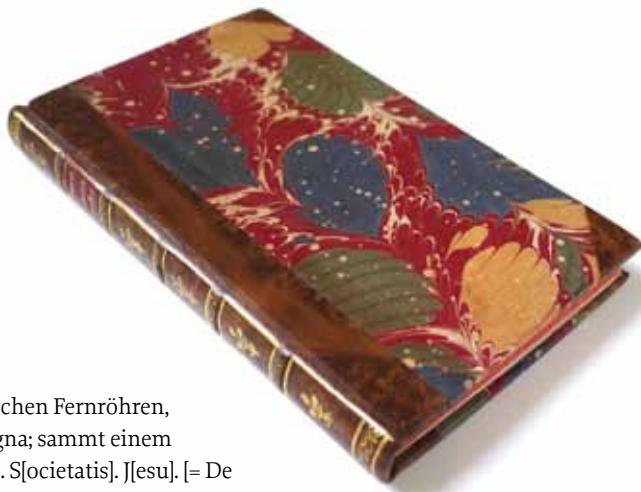
physics under the leadership of Rev. C. De Clippeleir, S.J., Director of the St. Xavier's Solar Observatory. The observatory was established when Tacchini observed the transit of the Venus in 1874. The party had with them two telescopes, for direct ocular observations and five photographic apparatus; three for photographs of the corona, and two for spectroscopic photography.- Lit.: Biswas in: Indian J. History Science 29 (1994), 77-88.

52 Schorr, R[ichard].

Die Hamburgische Sonnenfinsternis-Expedition nach Souk-Ahras (Algerien) im August 1905. Die Ergebnisse der Beobachtungen.- Hamburg: [Gräfe & Sillem], 1913. (= Astronomische Abhandl. d. Hamburger Sternwarte in Bergedorf, Band III, Nr. 1) Front. with mounted original photograph, 93, (3) pages, 17 plates (of which 3 with 5 mounted original photographs; 8 collotype plates after photogr.; 3 tables (one double-page) & 3 lithogr. plates).



First and only edition of the scientific part of this solar eclipse expedition done by the Hamburg Observatory, incl. impressive original photographs. Richard Reinhard Emil Schorr (1867 -1951) worked from 1889 to 1891 as an assistant editor of Astronomische Nachrichten, at the observatory at Kiel. In 1892 Schorr became observer (observator) and later after Rümker's death director at the Hamburg Observatory. The building of Germany's second largest observatory in Hamburg-Bergedorf at that time became his task. The new observatory opened in 1912. Schorr's main interests had been star positions (astrometry), proper motion of stars and solar eclipse observations.- Not in Kenney, Barchas Coll.

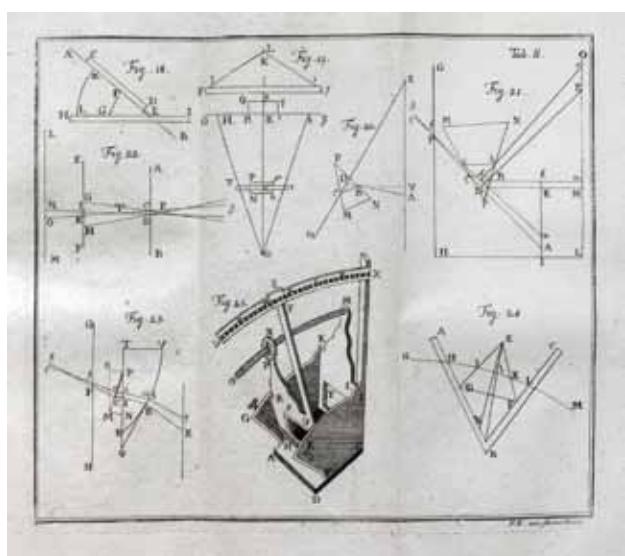


On telescopes

53 Boscovich, Roger Joseph.

Abhandlung von den verbesserten Dioptrischen Fernröhren,
aus den Sammlungen des Instituts zu Bologna; sammt einem
Anhange des Uebersetzers C[arl]. S[cherffer]. S[ocietatis]. J[esu]. [= De
lentibus et telescopiis dioptricis dissertatio; dt.] Wien, Trattner, 1765 8°. 183
pp. Mit 2 mehrf. gefalt. Kupfertafeln. Halblederbd. neuerer Zt m. Rückenschild.
Sauber u. frisch.

Honeyman 426: „A translation with considerable additions by the translator“. Very rare first german edition with long commentary from Carl Scherffer, citing from letters from Boscovich, which is not present in the original edition. It is a tract on the construction of lenses for telescopes, with instructions how to manufacture dioptric instruments with the use of two different lenses. Boscovich was a skilled experimentalist beyond being an accomplished mathematician. His aim in this work was providing guidelines for establishing the optimal refraction of lenses when viewing celestial bodies. He discusses the use of a new model of micrometer recently invented by Dollond in different sorts of telescopes, demonstrates the impossibility to reach a significant improvement of the magnification by use of a catoptric telescope with one lens. Ruggero Boscovich (1711 - 1787) is renowned as the author of the „Philosophiae naturalis theoria“. The translator Carl Scherffer (1716-1783), a Jesuit, supervisor of the Observatory at Graz, later Prof. of Mathematics in Vienna, introduced Newton's Principia at the University of Vienna.- Holzmann-B. I, 7345. Pogg. II, 791 [unter Scherffer]; de Backer-S. I, 1838, 55; Giese 673; Whyte 218; DSB II, 326-332; Roberts/Trent 45; Riccardi I/I, 1784, 45 [ital. ed.]. Zarko Dadic. The role of the Karl Scherffer in the acceptance and promotion of Boskovic's scientific ideas; in: Proceedings of the International Symposium on Ruder Boskovic, Dubrovnik, 5th-7th Oct., 1987.- Zagreb, 1991. pp. 153-160.





54 Abbé Paris.

The elements of astronomy and geography. Explained on 40 cards, beautifully engraved and coloured. London, John Wallis published July 1795. 40 engraved and handcoloured playing cards with printed text on versos. Loosely contained in publisher's box with mounted engraved title-label. Box heavily rubbed and soiled. Extremities worn. Hargrave, History of playing cards pp. 210/220.

First edition. "They are engraved with precision and scientifically, with a diagram, and on the other side of the card is the explanation thereof" (Hargrave p. 211). Cards only slightly finger-soiled.

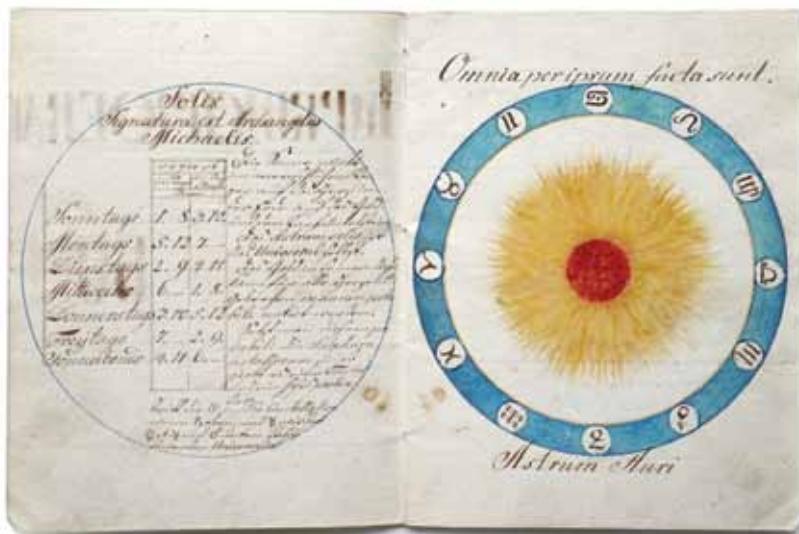


55 Court Game of Astronomy.

[London ?]: William and Henry Rock bei J. Unwin, ca 1830. 52 handcol. playing cards showing different star constellations. Satz von 52 altkol. gest. Karten (6,5 x 9,7 cm) im Lederschuber der Zeit, mit orig. Broschüre. Im Lederschuber der Zeit mit goldgeprägtem Titel und Broschüre. Leicht angestaubt. Schuber berieben und bestossen, oben und unten geöffnet. Insgesamt gut erhalten.



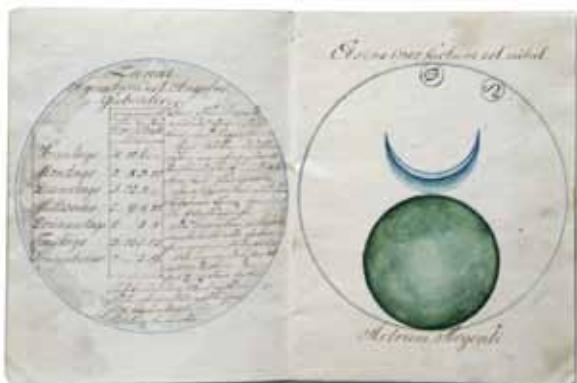
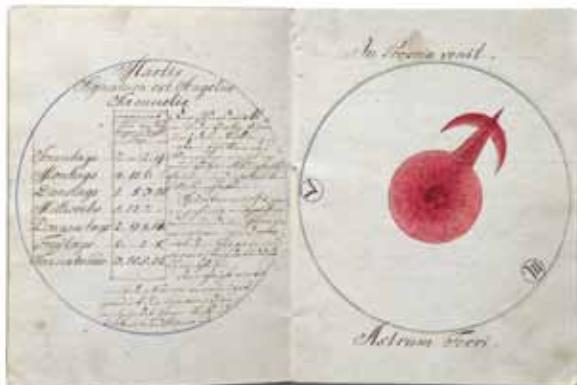
Seltenes Kartenspiel der Biedermeierzeit mit gestochenen Sternenkonstellationen und ankolorierten Farben. Vier Farben mit je 13 Karten (Französisches Blatt).



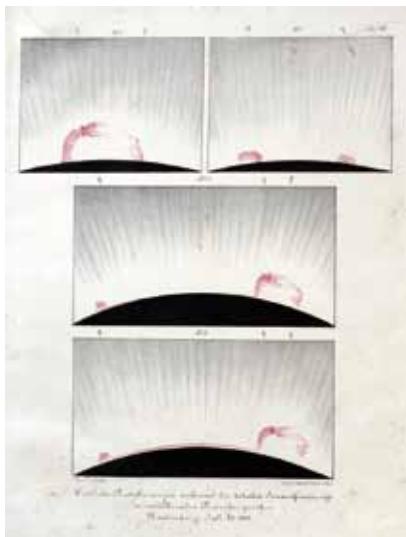
Alchemy - Astrology - Mystical

56 [Anonymous]

In Principio erat verbum [title on front flyleaf] Alchemistic, astrologic, medical, mystical manuscript in German and Latin.- No place, no date. [probably around 1760-1780]. [145 x 110 mm] 8 unnumbered leaves with 7 watercolour paintings of planet symbols. Contemporary grey boards with gilt frame in contemporary slip case.



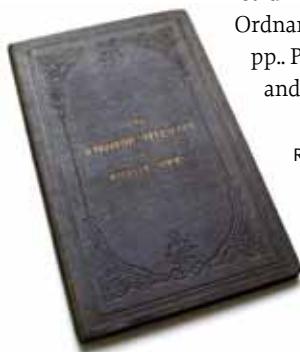
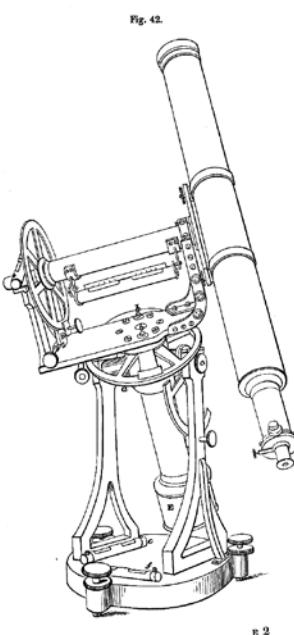
A nicely illustrated manuscript showing the seven planets sun, moon, mars, mercury, Jupiter, venus and Saturn as mystical symbols each connected with quotation from the bible: In principio erat verbum (St. John's Gospel) plus an angel and a noble metal. A rare and charming manuscript showing the influence of alchemical and astrological-mystical ideas within the 18th century in Germany.
 „Die Sonne wirkt im menschlichen auf das Herz, in der erde auf das Gold und den Karfunkelstein ... Das Gold in seiner Masse kann für alle Herzensgebrechen in aurum potabile mutiert werden. Setzt man diesem potabile die Sulphura metallorum zu so giebt es eine Tinctur und ein hohes particulare.“
 [Text within manuscript]



57 Schmidt, J[ohann] F[riedrich] Julius.

Beobachtung der totalen Sonnenfinsterniss vom 28.Juli 1851 zu Rastenburg in Ostpreussen. Bonn, Marcus 1852. Quarto. [2], 25 pp., 4 lithogr. plates, two extra plates with mounted original photographs (albumen 135 x 115 mm). Publisher's printed wrappers. Extremeties slightly worn. Spine gone. Text slightly water-stained in upper margin and foxed.

First edition. For the two extra plates cf. Kempe, Daguerreotypie in Deutschland, illustration on page 134, showing a reproduction of a daguerreotype from 1856 by Breuning, with the author & the philologist J. N. Bartels, with the author holding an illustration of this book in his hand.- Hockey [ed.] BEA II, 1026. DSB XII, 192. (Without this publication). Poggendorf II, 819.



58 Simms, William.

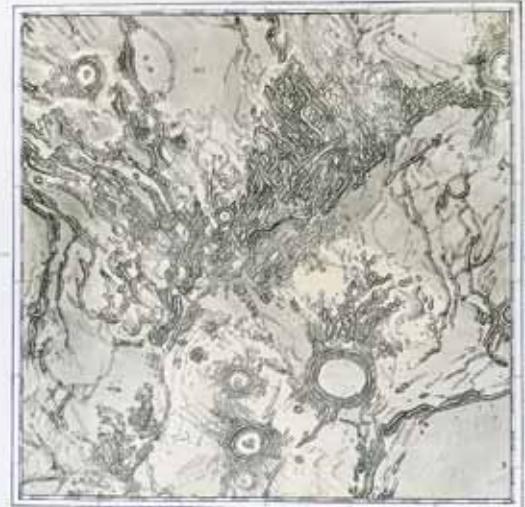
The achromatic telescope, and its various mountings, especially the equatorial. To which are added some hints on private observatories. London, Throughton and Simms 1852. (4), 74 pages with numerous partly whole-page text-illustrations. – bound with: Troughton and Simms. Catalogue of instruments made by Troughton and Simms, opticians and mathematical instrument makers to the Honourable Board of Ordnance. London, privately published 1852. 16 pp.. Publisher's green cloth, gilt title to spine and front cover.

Rare manual on telescopes with a trade catalogue from Troughton and Simms. Not in Houzeau-Lancaster. Cf. Clifton, Directory of British Scientific Instrument Makers p. 252. First edition.

"Teutonic intellect and perseverance"

59 Schmidt, Johann Friedrich Julius.

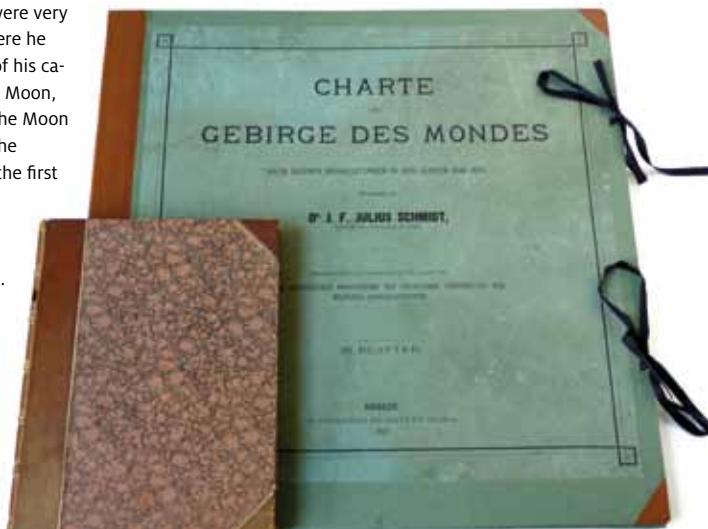
Charte [Karte] der Gebirge des Mondes; nach eigenen Beobachtungen in den Jahren 1840-1874 entworfen von Julius Schmidt. Hrsg. auf Veranlassung u. Kosten des Königlich Preussischen Ministeriums der Geistl., Unterrichts- und Medicinal-Angelegenheiten. Berlin: Reimer, 1878. 4°. XII, 303 pp. [Erläuterungsband]; 25 Bl. / leaves [map]. Halfcalf [text] and modern halfcalf with original wrappers. The folder of the map heavily rubbed, inside quite fine.

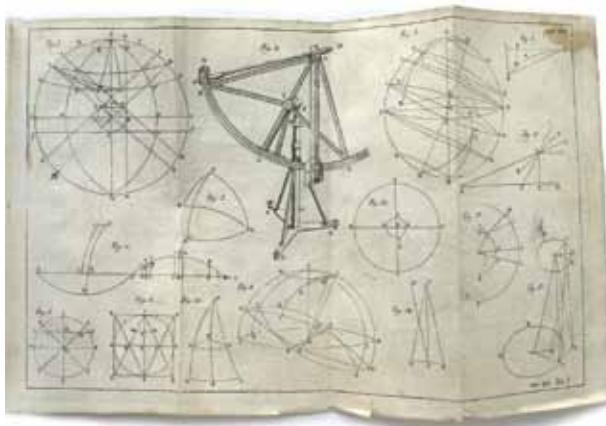


"The Schmidt map was the pinnacle of nineteenth-century selenography. Published in twenty-five sheets, if assembled it would make a map 6 ½ feet across. There are over 33,000 craters depicted (compared to about 7100 for Lohrmann (1878; edited by Schmidt) and 7800 for Beer and Mädler (1834). For most of the position measurements Schmidt relied on the work of his predecessors, but he did determine himself the height of over 3,000 mountains, using the techniques invented by his countryman, Schröter, whose book had inspired him to take up astronomy in the first place. The map was published in photolithograph made by the Office of the Prussian General staff." [W. B. Ashworth, jr].- Linda Hall. Face of the moon, no. 22.

"To give some idea of Schmidt's amazing industry in lunar researches, it may be mentioned that in six years he made nearly 57,000 individual settings of his micrometer in the measurement of lunar altitudes. His great chart of the mountains in the moon is based on no less than 2,731 drawings." [Robert Ball. The story of the Heavens, 1886]

Johann Friedrich Julius Schmidt (1825 Eutin – 1884 Athens, Greece) was a German astronomer & geophysicist. In 1858, he became director of the new Athens Observatory, where the clear skies were very suited to astronomical observation, and where he spent the rest of his career. He spent most of his career since his youth making drawings of the Moon, preparing a map of it. By 1868 his map of the Moon was almost ready, although he did not put the finishing touches to it until 1874. This was the first map of the Moon to surpass the celebrated map of Beer and Mädler. In 1878, Schmidt also edited and published all 25 sections of a moon map by Wilhelm Gotthelf Lohrmann. [wikipedia].- Hockey [ed.] BEA 1026-27 [Dobbins, Sheehan] Whitaker. Mapping and naming the Moon 1999; DSB XII, 192.





60 Melander [Melanderhjelm], Daniel.
Conspectus Praelectionum Academica-
rum Continens Fundamenta Astrono-
miae: Cum Figuris aere incisis. Auctore
Daniele Melanderhjelm, Astron. Prof.
2 Bde. in 1. Holmiae; Upsalae; Aboae:
Sweder; Upsaliae: Edman, 1779. 8°. [4] Bll.,
320 pp.; [1] Bl. [Titel], pp. [321] - 664, [1] Bl.,
[7] folding plates. Contemporary Halfcalf,
rubbed and soiled.

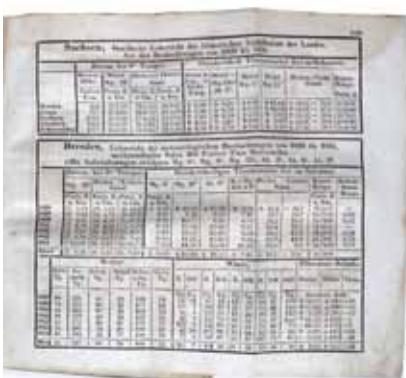
First edition. Daniel Melanderhjelm's (1726-1810) astronomical work was mainly in celestial mechanics, especially the theory for the motions in the Solar system and the Lunar orbit: *De theoria lunae commentarii* (1769); *Om den synliga verldens större eller mindre varaktighet* (1772), where he shows that among the possible laws of attraction of bodies the present is the most preferable for the stability of the celestial bodies. Other areas were studies of the atmospheres of the planets, the theory and calculation of the Equation of Time and studies of the Venus transitions of 1761 and 1769. He published a text-book for the fundamental academical lectures in astronomy: *Conspectus praelectionum academicarum continens fundamenta astronomiae* (1779), used also in many foreign countries. Melanderhjelm also took the initiative to the 1802 expedition to Lapland to measure a degree of a meridian to compare with Maupertuis' values from 1736.

Mathematisch-physikalischer Salon

61 Lohrmann, Wilhelm Gotthelf.

Die Sammlungen der mathematisch-physicalischen Instrumente und der Modell-
kammer in Dresden. Nebst einer Ansicht des mathematischen Salons zu Dresden.

Dresden und Leipzig, Arnoldische Buchhandlung 1835. XIV
(XIII and XIV are folding tables), 77, (1) pp. Publisher's printed
wrappers. Spine covered with paperstrip. A few faint waters-
tains in margins.



First and only edition. First printed list of the contents of this important collection of mathematical, physical and optical instruments in Dresden. Foreword with the history of the collection. Listed are globes, sextants, clocks, microscopes, weatherclasses, thermometers, magnetical and electrical apparatuses, telescopes, dioptrical and catoptrical devices, tools and architectural models. Lohrmann who was in charge of the collection was a renowned astronomer. His most important work was the atlas showing the topographical features of the moon published in 1824 *Topographie der sichtbaren Mondoberfläche*. Lithogr. front. with a view of the building, Engelmann, Bibl. 465. Cf. Pogg. I, 1491.

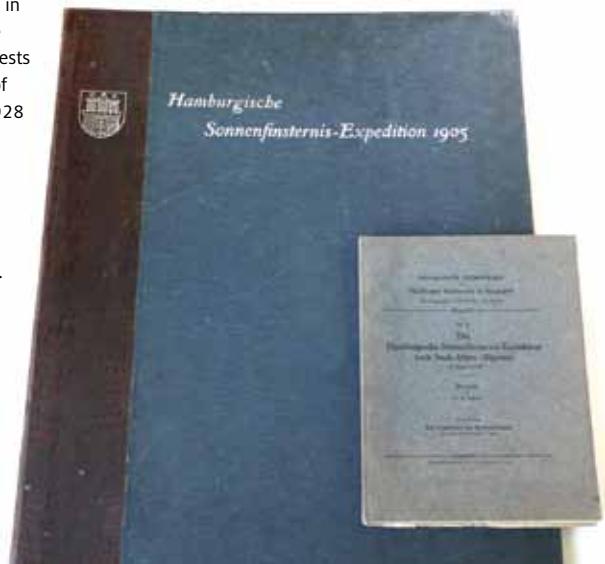


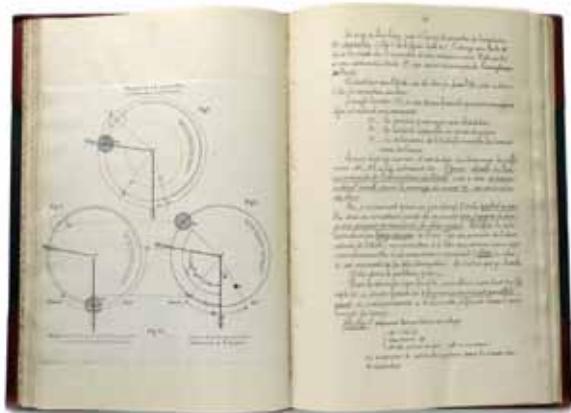
62 Schorr, R[ichard].

Die Hamburgische Sonnenfinsternis-Expedition nach Souk-Ahras (Algerien) im August 1905. 2 volumes text and atlas bound in 3 volumes. Hamburg: Gräfe & Silem, 1905-1912-1913. Quarto & folio. Publisher's printed wrappers (text) and publisher's cloth (atlas). Covers lightly dust-soiled, spine of atlas carefully restored. Volume I. Die Ausrüstung und der Verlauf der Expedition. (2), 36 pages, one fold. chromolith. map, 8 plates, 4 orig. photogr., many text-ill. (= Mitteilungen d. Hamburger Sternwarte, Nr. 10; Hamburg 1905); Volume II. Die Ergebnisse der Beobachtungen. Front. with mounted orig. photogr. 93, (3) pages, 17 plates (of which 3 with 5 mounted orig. photogr.; 8 collotype plates after photographs; 3 tables (one double-page) and 3 lithogr. plates). (= Astron. Abhandl. d. Hamburger Sternwarte in Bergedorf, Band III, Nr. 1; Hamburg 1913). III. Atlas: Photographische Aufnahmen der Sonnenkorona ausgeführt in Souk-Ahras (Algerien). Hamburg, 1912. 2 unn. ll., 9 plates (of which 8 mounted photogr. under printed transparent foils, 1 lithogr. plate).

First and only edition. Rare complete set of a solar eclipse expedition to Algeria including impressive original photographs. Richard Reinhard Emil Schorr (1867 - 1951) worked from 1889 to 1891 as an assistant editor of Astronomische Nachrichten, at the observatory at Kiel. In 1892 Schorr became observer (observator) and later after Rümker's death director at the Hamburg Observatory.

The building of Germany's second largest observatory in Hamburg-Bergedorf at that time became his task. The new observatory opened in 1912. Schorr's main interests had been star positions (astrometry), proper motion of stars and solar eclipse observations. From 1905 to 1928 Schorr organized 8 big expeditions to observe solar eclipses at different parts in the world. At 7 he took part himself. Under Schorr's directorship the optician Bernhard Schmidt got rooms and time to experiment with new optical assemblies. Schmidt constructed several new telescope constructions for the observatory. In the Nazi time Schorr had to resign the directorship due to his age. His first choice candidate as his follower was Walter Baade who refused because of better astronomical working conditions at Mt. Wilson and Palomar observatory which was under construction. - Heidtmann, Photographie 6861 (atlas volume only). Not in Kenney, Barchas Coll.; OCLC: only UCSC (atlas volume).





63

Lubanski, Lieutenant-Colonel.

Instruction pratique d'astronomie de campagne redigée pour servir de guide aux séances de l'école d'astronomie de campagne du Service géographique de l'Indo-Chine. (and) Appendix I and II. 3 parts in one volume. Hanoi, le 30 Juillet 1901.

Lithogr. manuscript, text on rectos only, verso with mounted illustrations. 2 leaves, 79 numb. leaves (1 folding), 1 leaf; 8 numb. ll.; 5 numb. leaves. One folding lithogr. handcoloured celestial chart, 12 folding tables (partly with handwritten entries) and numerous partly handcoloured mounted illustrations. –bound with: Lubanski. Instruction pratique sur le nivellement direct. Hanoi, Service Géographique Septembre 1899. Folding plate, 8 unnumb. leaves and illustrations. Lithographed throughout. Cont. red half leather, gilt title to spine. 4to (345 x 230 mm). Very scarce astronomical and surveying manual for the field service of the colonial French army in Vietnam. With a two-page handwritten letter, and a handwritten dedication on front fly-leaf by the author who was 'Chef du Service Géographique de l'Indo-Chine'.



64 ASTRONOMIE -

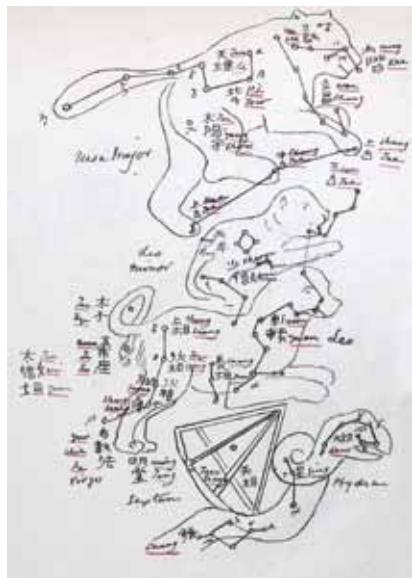
Osservazioni sopra la prossima Ecclisse del Sole. Da celebrarsi doppo mezzo giorno dellì 12. Luglio del corrente Anno 1684.... Discorso Astrologico dell'Accad. Incognito. Venedig, Galassi, 1684. 4°. 4 nn. Bl., mit Titelholzschnitt. Pappband aus der ersten Hälfte des 20. Jahrhunderts, (leicht berieben und bestossen).

Erste und einzige Ausgabe, sehr selten. - Von uns bibliographisch in keiner Bibliothek oder Bibliographie nachweisbar. Lediglich in einer Festschrift Blake Lee Spahr unter dem Titel: „für Barocker Lust-Spiegel. Studien zur Literatur des Barock“, haben wir folgende Notiz über die Schrift gefunden: „... ein italienisches Schriftchen das den Titel führt: Osservazioni.... Alle Versuche, den Verfasser zu identifizieren, das Werk einzusehen oder auf dem antiquarischen Markt zu beschaffen, schlügen leider fehl.“ (Vorwort). - Es wird dort eine Kupfertafel angegeben, diese bei uns jedoch auch nicht vorhanden. - Wasserfleckig.



65 Williams, John

Observations of Comets, From B.C. 611 to a.D. 1640. Extracted From the Chinese Annals. Translated, With Introductory Remarks, and an Appendix, Comprising the Tables Necessary for Reducing Chinese Time to European Reckoning; and a Chinese Celestial Atlas. London: Printed for the author by Strangways and Walden, 1871. sm.Folio. XXXII, 124 pp., plates, errata slip bound in. Original publ. cloth., binding tight, but completely work throughout the text with handwritten annotations by unknown hand, incl. corrections.



Rare work on Chinese comets by John Williams (1797-1874), british antiquary and astronomer.- not in BEA, not in Barchas Coll.

Earliest textbooks on stellar statistics

66 Struve, F[riedrich] G[eorg] W[ilhelm].

Etudes d' Astronomie stellaire sur la voie lactee et sur la distance des étoiles fixes.- St. Petersburg, 1847. Quarto. iv, 108 pp. Blue Boards.



First edition of an important contribution to the knowledge of stellar distribution, in particular the brightness of stars and their distances; Struve demonstrated that the sun is above the main plane of the Milky Way rather than at its centre. Struve (1793-1864), organised and became the first director (1834) of Pulkovo, the new observatory near St Petersburg; he had discussed its formation with distinguished contemporary astronomers, and purchased instruments for it from the best European makers. He won international recognition for „his significant research in observation of double stars; determination of stellar parallaxes and distribution of stars in space“. [DSB].- Crawford Library, 434; DSB XIII, 108-113. Poggendorff II.1037. Sothen/Zeilinger, vol 1, no. 4648. BEA II, 1101-1102 [Batten]: „In 1847, Struve published Etudes d'astronomie stellaire, which might be described as one of the earliest textbooks on stellar statistics. It was necessarily tentative because only a few stellar parallaxes had yet been successfully measured. This book tried to extend Herschel's work on the 'construction of the heavens'.”



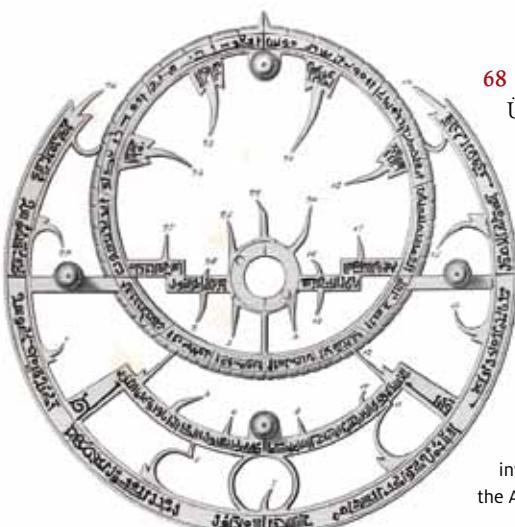
With manuscript notes by Schwabe?

67 Woeckel, Lorenz.

Die Sonne und ihre Flecken.- [s. l.]: [s. n.] [Druck: Nürnberg : Campe], 1846. [= Beilage zu: Jahresbericht der Königlich Bayerischen Studienanstalt zu Nürnberg; 1845/46] Quarto. 31 pp. Original-Wrappers, dustsoiled.

Rare work on sunspots, included are the observations of Johann Caspar Staudacher (1731-1799) and given with are 10 pages of handwritten notes on sunspot observations from 1837 upwards by unknown hand, but similar to the ones by Samuel Heinrich Schwabe preserved in the Royal Astronomical Society London. Johann Simon Lorenz Woeckel (1807-1849), amateur astronom and teacher of mathe-

matics at Nürnberg Gymnasium [College]. "Johann Simon Lorenz Woeckel brachte einige beliebte Lehrbücher zur Mathematik heraus. Seine Geometrie der Alten erschien erstmalig 1839 und erlebte 1901 die 14. Auflage. Bezüglich der Astronomie brachte er 1834 eine große Sternkarte heraus, im folgenden Jahr veröffentlichte er zum Halley'schen Kometen. Er scheint auch Vorlesungen zur Astronomie gehalten zu haben, wie seine Populäre Sternkunde von 1844 bezeugt. 1846 brachte er auch ein Buch zu Sonnenflecken heraus, in dem er u.a. die Beobachtungen des Nürnberger Amateurastronomen Johann Caspar Staudacher (1731-1799?) von 1749 bis 1792 veröffentlichte." [H. Gaab]



68 Woepcke, Franz.

Über ein in der Königlichen Bibliothek zu Berlin befindliches arabisches Astrolabium.- Berlin: Dümmler, 1858. Quarto. 31 pp., 3 plates showing the instrument (= aus den Abh. der Königl. Akad. d. Wiss. zu Berlin) Original-Wrappers, little stocked, else fine

Franz Woepcke (1826 - 1864) was a German Orientalist and mathematician. Woepcke is remembered for edition of numerous Arabic mathematical manuscripts. Among his better known works were an edition of Persian polymath Omar Khayyám Algebra and he was also author of several essays involving Italian mathematician Leonardo Pisano's relations with the Arabs.



Manuscript lecture notes of Gauss' assistant

69 [Goldschmidt, Carl Wolfgang Benjamin].

Grundlagen der Astronomie des Herrn Dr. Goldschmidt. [Manuscript. Handwritten lecture notes by E. Klinkhardt on the principles of astronomy held by Goldschmidt in 1837 at Göttingen Observatory; Deutsche Handschrift auf Papier. Flüssige Kursive in brauner Tinte. Sommer-Semester 1837]. [Göttingen, 1837] Quarto. [270 x 195 mm]. 137 handnumbered pages, 1 blank leaf, with 1 double-page diagram and some ink drawings within text. Contemporary black papercard, used. [with] 60 leaves fragmentary astronomical notes by the same hand.

Handwritten lecture notes by E. Klinkhardt of lectures held by the **assistant and pupil of Carl Friedrich Gauß**, Carl Wolfgang Benjamin Goldschmidt (1807-1851) at Göttingen University resp. Observatory. Goldschmidt was a converted jew, probably to make a career at German University (which was otherwise not possible) and held in high esteem by Gauß. Gauß was responsible that Goldschmidt took over the position of Harding at the Observatory. With Gauß and Weber he worked on magnetical observations and published with them the *Atlas des Erdmagnetismus*. He died early of a heart attack. The lectures notes include many mathematics and he used probably methods derived by Gauss and lectured to his pupils. Sorgfältige Vorlesungsnachschrift eines Studenten der Mathematik eines Astronomie-Kurses des Gauss Schülers und Assistenten C. W. B. Goldschmidt an der Universität Göttingen. Möglicherweise handelt es sich beim Schreiber um den aus Hildesheim stammenden und bereits 1847 verstorbenen Professor für Mathematik an der Kantonalschule in Chur (Pogg. I, 1274). Carl Wolfgang Benjamin Goldschmidt (1807 - 1851) war Schüler von Gauß. 1831 erhielt er die philosophische Doctorwürde und ging für zwei Jahre als Lehrer der Mathematik nach Hofwyl. 1833 wurde ihm die *venia docendi* verliehen und nach dem Tod von Harding wurde er als Observator bei der Sternwarte angestellt. Er arbeitete mit Gauß und Weber am magnetischen Observatorium, galt als Assistent von Gauß und wurde 1845 zum außerordentlichen Professor ernannt. Er verstarb früh im Alter von 44 Jahren an Herzversagen. „den Abend vorher war er noch ein paar Stunden sehr vergnügt bei mir gewesen, und nachher hat er noch einer Gesellschaft den Mond durch ein Fernrohr gezeigt.“ [Gauß]

Whiston obiit Londini 5 Sept.
1752. anno aet. 85.

First major extract of Newton's Principia - Kästner's copy

70 William Whiston

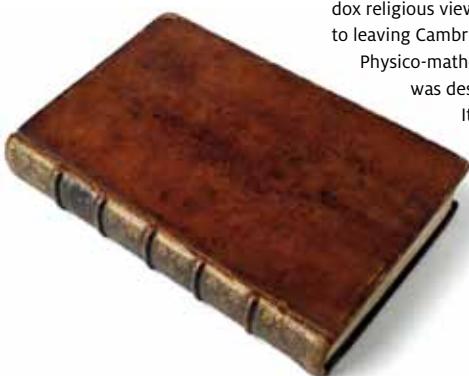
Praelectiones Physico-Mathematicae Cantabrigiae In Scholis Publicis habitae.... - Cambridge: Benj. Motte, 1726. Octavo, (2), 435 pp., (1) Contemporary calf, gilt spine in compartments, black morocco label.

Abraham Gottlieb Kästner
1780.

Second enlarged latin edition, copy of the Göttingen mathematician Abraham G. Kästner. here Whiston collected the lectures he gave as successor of Newton in the Lucasian chair, being one of the first works to include longer citations out of Newton's Principia. William Whiston (1667-1752) was educated at Cambridge and served for some years as Fellow of Clare College, Chaplain to the Bishop of Norwich, and rector of Lowestoth. In 1703 he was selected by Newton to succeed him as Lucasian Professor of Mathematics. However, Whiston soon got into trouble over his unorthodox religious views and was forced to leave the university in 1710. Prior to leaving Cambridge, Whiston published his lectures as Praelectiones

Physico-mathematicae.... It was translated into English in 1716, and was designed to present Newtonian physics in a popular form.

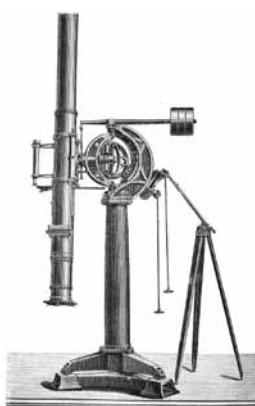
It is considered the first major collection of extracts from the Principia in English. Guicciardini. Development of newtonian calculus in Britain, 1700-1800. 22-23. Wallis 167.

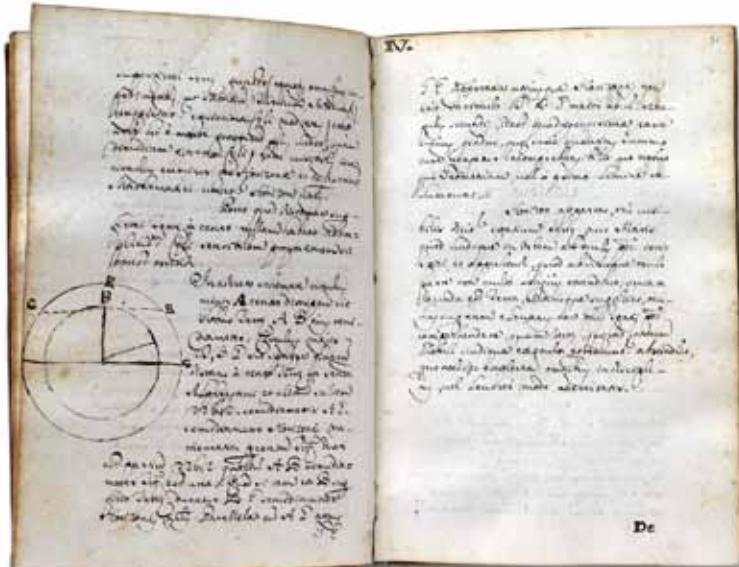


Manual for Sky-Photography

71 Konkoly [- Thege], [Miklós].

Practische Anleitung zur Himmelsphotographie nebst einer kurzgefassten Anleitung zur modernen photographischen Operation und der Spectralphotographie im Cabinet. Mit 218 Text-abb. Halle a. S.: W. Knapp, 1887. 8°. XVI, 372 pp. Contemporary halfcalf, rubbed and soiled.

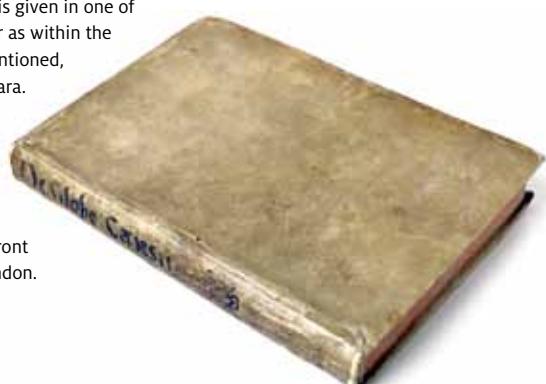




Manuscript on the use of Globes

72 *De Globo Caelesti* [back-title] Manuscript in Latin on period paper [late 17th–early 18th century]. smallQuarto [194 x 135 mm]. 185 pages (some later blanks), gatherings of 8 numbered in upper margin, written in brown ink in a neat italic hand, in two parts, including tables and 3 diagrams, but diagrams in the second part are not supplied. Paperstock mid 17th century, with anchor watermark, similar to Piccard 119048 (occasional light spotting, mainly marginal). 16th-century vellum, titled on spine in manuscript, slight wear to extremities, wormed at joint.

A treatise on the celestial globe, opening 'Quid, et quotuplex sit Globus', arranged in 14 chapters and by 'Problema' numbered I-LV. An accompanying note suggests that the work was dated by Edmonds' MS. Notes (Vol. VI, p. 52) to 1571. This date is given in one of the horoscope diagrams within the text. The text is later as within the text 1634 is mentioned. Within the text Teneriffe is mentioned, also Tycho Brahe, and often Amsterdam, also Almucantara. The manuscript might be Spanish origin or used by the Spanish community in the Lower Countries. It is also possible that it might have some-thing to do with the Amsterdam editions of Robert Hues' *Tractatus de Globis*, edited by Bertius or Hondius.- Provenance: Howel Wills, Balliol College (inscribed on front pastedown); Ex Library: Royal Astronomical Society, London.





73 Röhl, Lampert Heinrich.

Kleine mathematische Abhandlungen von Lamb. Henr. Röhl.- Greifswald: gedruckt A. F. Röse, 1790. gr.8°. 126 pp. with nice vignettes and geometrical woodcut-illustrations. New halfleather period style. Uncut sheets. Neuer Halblederbd im Stil der Zeit, unbeschnitten, schönes Exemplar.

Very rare collected papers by the Prof. of Astronomy at the Greifswald University. Lampert Hinrich Röhl (1724 - 1790), deutscher Mathematiker und Astronom. Im Jahr 1753 erwarb er die Erlaubnis, akademische Vorlesungen zu halten. Später begleitete Röhl seinen akademischen Lehrer Andreas Mayer bei dessen Reisen zur kartographischen Aufnahme von Schwedisch-Pommern. 1762 wurde Röhl astronomischer Observator

und außerordentlicher Professor an der Universität Greifswald. 1775 wurde er der erste ordentliche Professor der Astronomie in Greifswald. 1788 war Röhl Rektor der Universität. Ein besonderes Verdienst erwarb Röhl sich 1773-75 durch die Einrichtung der Greifswalder Sternwarte in einem noch heute vorhandenen Befestigungsturm. Die Gründung der Sternwarte ging auf einen Vorschlag seines Lehrers Andreas Mayer zurück. Röhl war ab 1775 auch der erste Direktor der Sternwarte. Aufgrund seiner astronomischen Beobachtungen ernannte ihn die Stockholmer Akademie der Wissenschaften zu ihrem Mitglied.- Meusel XI, 376-79; DBE VIII, 475; ADB XXIX, 56.- KVK: Göttingen, Berlin, Greifswald, Jena, Leipzig; COPAC: Cambridge; OCLC: no copy in USA.

74 Bredikhin, Fyodor Aleksandrovich.

Prof. Dr. Th. Bredichin's, ... Mechanische Untersuchungen über Cometenformen. In systematischer Darstellung von R. Jaegermann. Mit fünfzehn Tafeln.- St. Petersburg: Voss Sortiment (G. Haessel), 1903. Quarto [2], 500 pp., 11 plates. Halb-Lwd. d. Zt.,

Classic work, first published in 1862 [russ.] and republished in 1934 [russ.], this is the first translation into a western language. Beginning with Bredikhin's first paper in 1861, he carried out extensive observational and theoretical studies on comets. His work on the subject continued after his retirement and culminated in the so called mechanical theory aimed at explaining the peculiar shape of cometary tails. They are typically directed toward the sun near the nucleus but then curve away from it, forming multiple jets, as if they were repelled by the sun. Bredikhin classified cometary tails into three types depending on the magnitude of this effective repulsive force. Although his theory was later abandoned, some aspects of his classification are still valid. Fyodor Aleksandrovich Bredikhin (1831-1904), Russian astronomer; Comets, and especially the nature of

their tails, were Fyodor Bredikhin's major preoccupation throughout his entire scientific career. After graduation in 1855 from Moscow University, Bredikhin conducted his postgraduate study there, also working at the Moscow Observatory. In 1862 he defended his master's thesis, *On the Tails of Comets*, and in 1864 his doctoral dissertation, *Perturbations of Comets that do not Depend on the Gravitational Attraction of Planets*. The same year Bredikhin was appointed professor at Moscow University and in 1873 became director of the university's observatory. He then succeeded Otto Wilhelm Struve, the first director of the Pulkovo Observatory, in 1890. - Hockey [ed.] BEA I, 167-168 [Balashov]

Early advocate of the "Big Bang"

75 Wirtz, Carl W.

Triangulation der Hyadengruppe ausgeführt am sechszähligen Fraunhoferschen Heliometer der Bonner Sternwarte von ...

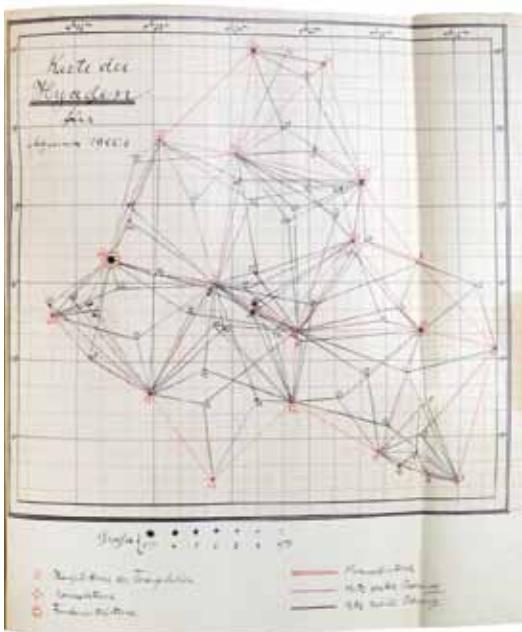
[Manuscript] Quarto. [2], IV, 194 Leaves, one hand-drawn map of the hyades. [with: Off-Print]: Carl W. Wirtz. Triangulation der Hyaden- Gruppe ausgeführt in den Jahren 1898-99 am sechs- zölligen Fraunhoferschen Heliometer der Bonner Sternwarte.

Abdruck aus: Astr. Nachr. Nr. 3818-19 (Bd. 160), Oktober 1902.



The Original-Manuscript by Carl Wirtz of his work on the triangulation of the star cluster Hyades. This was an early work in the field of cosmology. In 1869, the astronomer R. A. Proctor observed that numerous stars at large distances from the Hyades share a similar motion through space. From that time some astronomer try determine the positions of the stars and see how the positions evolve. In 1908, Lewis Boss reported after almost 25 years of observations to support this premise, arguing for the existence of a co-moving group of stars that he called the Taurus Stream (now generally known as the Hyades Stream or Hyades Supercluster). Boss published a chart that traced the scattered stars' movements back to a common point of convergence. By the 1920s, the notion that the Hyades shared a common origin with the Praesepe Cluster was widespread, with Rudolf Klein- Wassink noting in 1927 that the two clusters are „probably cosmically related.“ For much of the twentieth century, scientific study of the Hyades focused on determining its distance; modeling its evolution; confirming or rejecting candidate members; and characterizing individual stars.

Carl Wilhelm Wirtz (1876-1939), astronomer, measured magnitudes and positions of nebulae, and made many observations of solar system objects. He was among the first to study the redshift-magnitude and redshift-diameter diagrams of galaxies, which is why Allan Sandage, the successor of Edwin Hubble, called Wirtz “the European Hubble without telescope.” As already Vesto Slipher in 1912, Wirtz in 1918 observed a systematic redshift of nebulae, which was difficult to interpret in terms of a cosmological model in which the Universe is filled more or less uniformly with stars and nebulae. Wirtz additionally used the equivalent in German of K correction. The term continues to be used in presentday observational cosmology, but Wirtz’s observational evidence that the Universe is expanding is not often mentioned.- Lit.: Kragh, H.; Smith, R. W. (2003). „Who discovered the expanding universe“. History of Science 41 pp. 141–62.



Astronomy in India

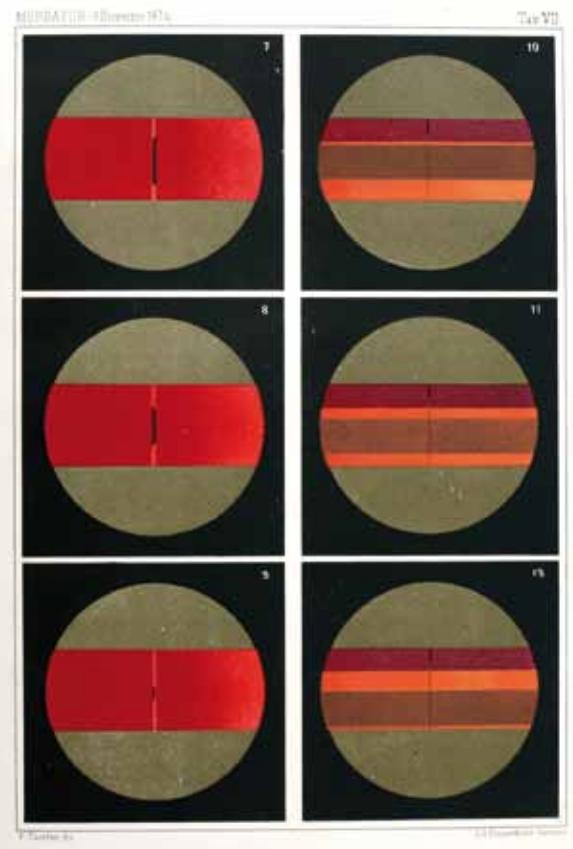
76 Tacchini, Pietro.

Il Passaggio die Venere sul Sole dell' 8-9 Dicembre 1874 osservato a Muddapur nel Bengala. Palermo: Stabilimento Tipografico Lao, 1875. 4°. [8], 119 pp. with 13 lithographic plates and charts, three folding, eight printed in colour. Original gilt-stamped brown cloth, a little faded, inner hinge split, a few plates lightly browned, but a very good copy indeed.



First edition of Tacchini's important work on the transit of Venus at Muddapur, Bengal in December 1874 being the first use of a spectroscope for this purpose. In 1874, Tacchini was asked to organize the Italian astronomical expedition to Muddapur, India, to observe the passage of Venus across the solar disk on 8/9 December. The expedition, organized by Tacchini, Alessandro Dorna, and Antonio Abetti, observed for the first time, the details of Venus's spectrum (Fraunhofer lines C and B), thus confirming the existence

of an atmosphere. The expedition also validated the use of spectroscopic observations to determine the exact instant of limb contact. During the trip to India, needing a low latitude observatory for the winter solar observations, Tacchini founded the spectroscopic Calcutta Astronomical Observatory at Saint Xavier College, directed then by Eugene Lafont, S.J. Pietro Tacchini (1838-1905), Italian astrophysicist, meteorologist, and seismologist. Tacchini distinguished himself as one of the fathers of solar astrophysics, inventor of one of the first sunspot classifications, editor of the oldest astrophysics review, first observer of the details of Venus' atmosphere spectrum, deviser of the first experiments of synchronization of astronomical observations, and organizer of scientific projects and institutions, both national and international. [Leonardo Gariboldi]. The plates show the new spectroscopic observatory at Calcutta, the encampment at Muddapur, the portable observatory and its instrument, among them a Fraunhofer equatorial, and spectroscopic mappings. - [Hockey; ed.] BEA, II, 1119-21 [Gariboldi]; DSB XIII, 232-233 [Abetti]; Quaritch 1392, no. 93



Veranschaulichung der vier Mondphasen
rund um einer künstlich beleuchteten Corona



Lemon in space

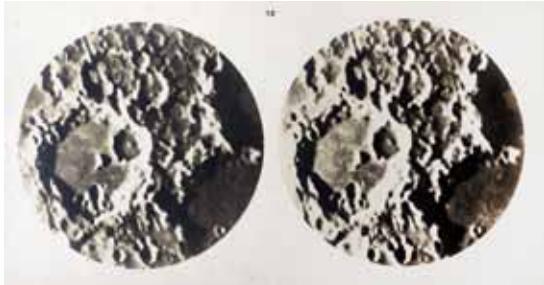
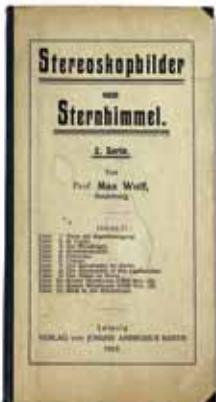
77 Valentiner, [Karl] W[ilhelm] [Friedrich Johannes].

Atlas des Sonnensystems. 25 Abbildungen in Lichtdruck. Lahr: Moritz Schauenberg 1884. (= Grimm's Atlas des Sonnensystems) Folio [440 x 336 mm] [2], 19 pp., [1] Seiten, with 25 Photogravures / Lichtdrucktafeln (only coloured) partly after photographs by Julius Grimm. Later Halfcloth contemporary style with label. Fine copy.

Rare photographic astronomical atlas by the astronomer K. Valentiner (1845-1931), who lead in 1874 a successful German expedition to Tschifu (China) to observe a solar eclipse, and the scientific photographer and 'Hofphotograph' Julius Grimm (1842-1906) in response to the Moon atlas of Nasmyth/ Carpenter of 1874. Some bibliographer thought he just used the images of the English work but he re-invented the images of the original edition. The photographs are independent, similar to his famous moon oil-painting: www.carltonhobbs.net/news/moonshadows/2009/07/21/

Der Offenburger Fotograf Julius Grimm (1842-1906) stand mit mehreren Hochschulen in Verbindung und lieferte Mikro- und Makrofotografien für wissenschaftliche Werke und Atlanten aus vielen Gebieten der Naturwissenschaften (u. a. für den Chemietechniker Karl Birnbaum, den Meteoritenforscher Gustav Tschermak, den Mediziner Sigmund Theodor Stein, den Anatomen Julius Kollmann und den Astronomen Wilhelm Valentiner), die dann auch teilweise als Lichtdrucke publiziert wurden. Im Grimm'schen Atelier und „Kunstinstitut“ befand sich zudem auch ein eigenes astronomisch- fotografisches Observatorium. Vielleicht mit Hilfe einer Projektion eigener Mondfotografien auf eine Leinwand schuf Grimm im Jahre 1895 ein großes Ölgemälde der Mondoberfläche, wie sich diese durch ein Teleskop zeigt (also um 180 Grad gedreht), allerdings mit etwas unnatürlichem (künstlerischem) Lichteinfall von links.- Poggendorff III, 1382. Nicht bei Heidtmann.





78 Wolf, Max.

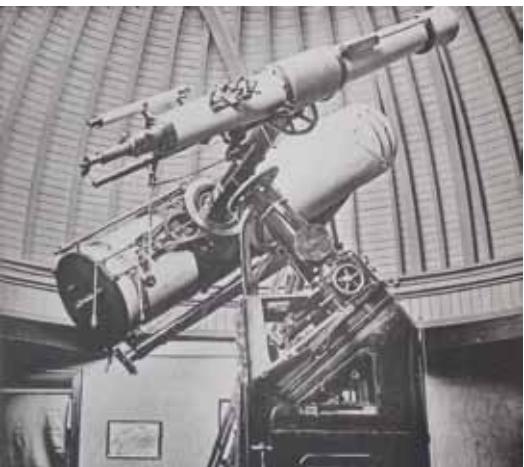
Stereoskopbilder vom Sternhimmel. 1. Serie und 2. Serie. [cptl.]- Leipzig: Verlag von Johann Ambrosius Barth, 1915-1918. quer-8° [98 x 175 mm] 16 pp., 12 plates, [4; adv.]; 4 pp., 12 plates with each 4 pp. text; [2, adv.] Original halfcloth portfolios. Fine condition.

First & Fifth edition of impressive astro- stereophotographs. Maximilian Franz J. Wolf (1863-1932) is considered a pioneer in astrophotography. He observed many new nebulae both within the Milky Way and outside our Galaxy and he discovered more than 200 asteroids along with three comets that now bear his name. Wolf was a co-developer of the stereo comparator together with Carl Pulfrich from the Zeiss Company. The stereo comparator consists of a pair of microscopes arranged so that one can see simultaneously two photographic plates of the same region taken at different times.- Hockey [ed.] BEA II, 1237-38.

79 Festschrift

Max Wolf 1863-1932 zum Gedächtnis 21.6. 1953.
[edited by H. Kienle ?].- Heidelberg-Königstuhl
[Sternwarte], [1953] quer4°. [275 x 194 mm] Papercard
Album with 9 mounted photographs [ca. 160 x 125
mm] in black/ white from before 1940, showing instru-
ments and buildings at which Max Wolf worked.
[1] page of explanation for the photographs.



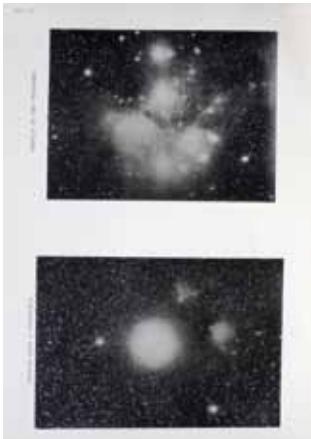


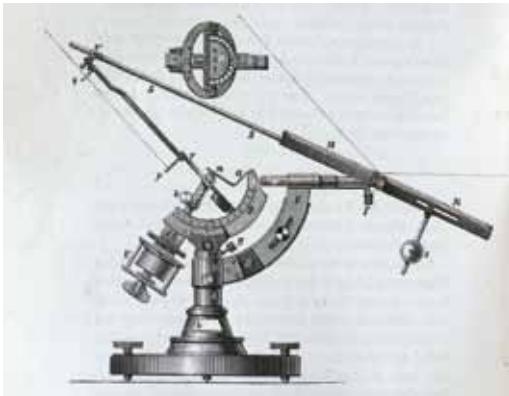
Astrophotography

80 Roberts, Isaac.

Selection of photographs of stars, star-clusters and nebulae, together with information concerning the instruments and the methods employed in the pursuit of celestial photography. 2 volumes. London, Universal Press (1893-1899). Original cloth. Dedication copy. Fine.

First edition of this famous work in astrophotography and celestial photography of the deep sky. He saw that the future of observational astronomy lay with big reflectors, ... the giant instruments erected by Ritchey and Hale [Mount Wilson], James Keeler [Lick] and Ritchey [Yerkes] bore witness to the value of Roberts assessment." With 53 photographic plates in the first vol. and 28 collotype plates by Direct Photo Engraving Co., Barnsbury in the second vol. Original cloth. "Isaac Roberts, a pioneer astrophotographer, demonstrated that long exposures in large, well-mounted reflecting telescopes could record details of nebulae not visible to the naked eye. His photographs of Andromeda, Orion, and many other nebulae surpassed all prior efforts" (L. B. Abbey in Hockey BEAll, 976-978.





81 Konkoly [- Thege], Nicolaus von [= Miklós].
Praktische Anleitung zur Anstellung astronomischer Beobachtungen mit besonderer Rücksicht auf die Astrophysik. Nebst einer modernen Instrumentenkunde. Mit 345 Textabbild. Braunschweig: Friedrich Vieweg, 1883. 8°. XXII, 912 (+ 2) pp.
Original-HLdbd. d. Zt. berieben u. bestoßen, innen durchgängig etwas braunfleckig, ordentl. Exemplar.

General exposition of astronomical and astrophysical observational techniques and appropriate instrumentation in use during the late 19th cent., with over 300 woodcuts illustrating instruments, providing details of their construction and use.- DeVorkin 401. Seltenes Instrumentenbuch des ungarischen Astronomen Konkoly - Thege (1842-1916) mit Kapiteln über die Uhren (1-82), die Libelle (82-106), Instrumente die der Zeitbestimmung dienen, bzw. Meridiankreise (107 - 289), Aequatoreale (289 - 535), Mikrometer (536 - 611), Sonnenbeobachtungsinstrumente (612 - 767), Himmelsphotographen (768 - 845), Polariscope, Astrophotometer, Pyrheliometer, etc.

Miklós [Nikolaus] Konkoly - Thege (1842-1916) errichtete 1871 auf seinem Gut in Ogyalla [heute: Hurbanovo, Slovakia] ein astronomisches Observatorium, in welchem er zahlreiche Spektralanalysen der Himmelskörper vornahm. Besonders wertvoll waren seine Beobachtungen der Kometen, der Meteore und der Sonnenflecken. Er bereicherte die Astronomie mit mehreren neuen Instrumenten eigener Konstruktion unter denen besonders sein Spektralkolorimeter, seine Spektroskope und Spektrographen in weiten Kreisen bekannt wurde. Später war er Ministerialrat und Reichstagsabgeordneter. Er stattete sein Observatorium unter grossen materiellen Opfern mit modernsten Instrumenten aus und baute es zum Zentralobservatorium für Ungarn aus.- Hockey 650-651; Krücken / Parlagi II, 54; DSB VII, 461.

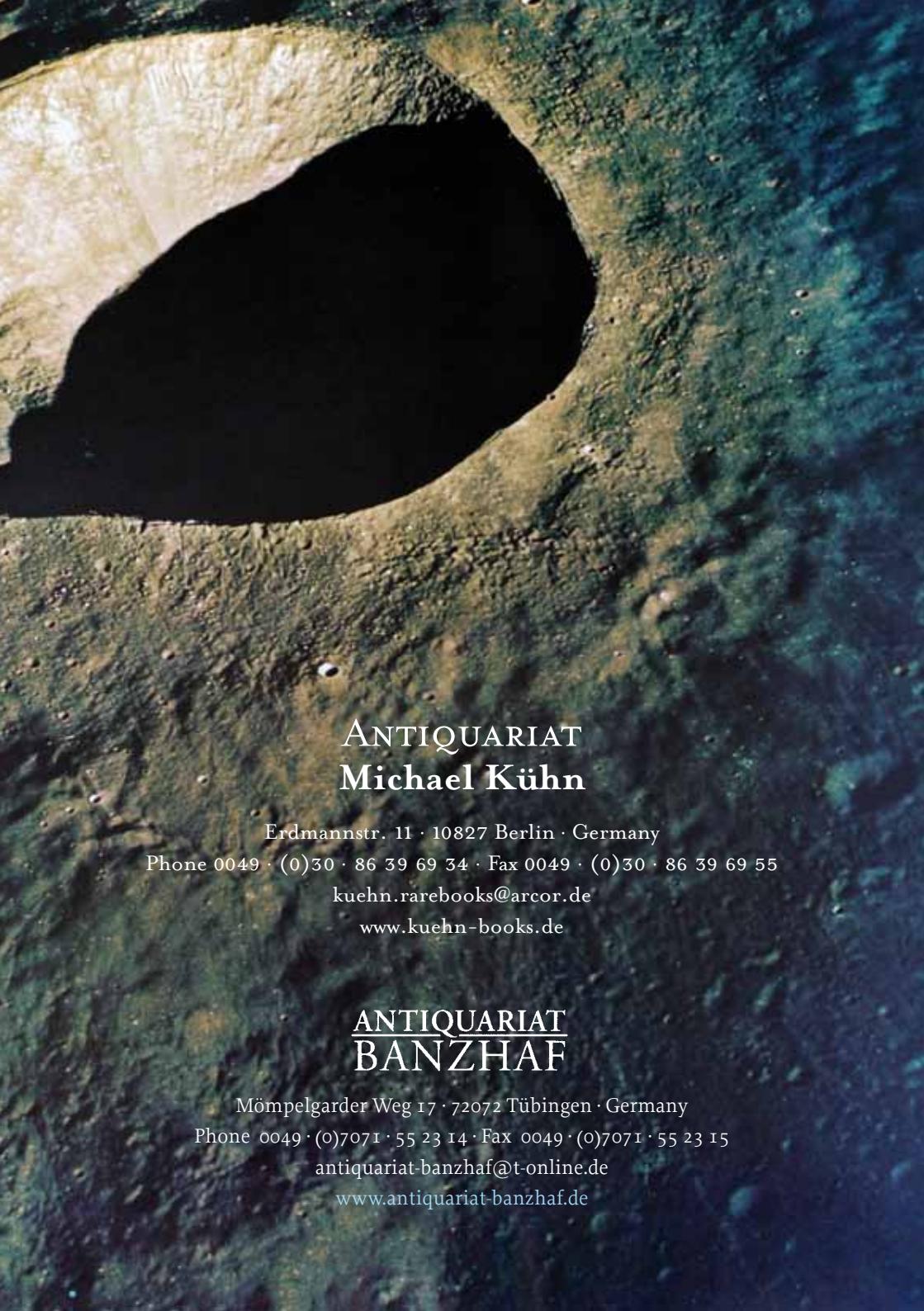
Men on moon

82 La conquête de la lune. Photographies prises par des cosmonautes de la National Aeronautics and Space Administration NASA. [Pour commémorer le plus sensationnel exploit de tous les temps, qui a fait d'Omega la première montre portée sur la lune]. Avec une introduction de Eric Schärlig.- Bienné: Omega, [noel 1969] Folio [500 x 400] Printed Papercard Box with 4 pages of text by Schärlig and 20 printed photographs of the Apollo mission. With signatures in print by the astronauts.

Rare privately printed and distributed folder on the United States' Apollo 11 mission, which was the first manned mission to land on the Moon, on 20 July 1969. The folder was given by the watch-maker Omega to clients as Christmas present. „The OMEGA Speedmaster Professional chronograph Buzz Aldrin was wearing when he stepped onto the lunar surface in July of 1969 is arguably the most famous wristwatch in the world, making it particularly ironic that its whereabouts are unknown.



The Apollo 11 astronauts, Aldrin, Neil Armstrong and Michael Collins, wore Speedmasters as had their colleagues on each one of NASA's manned flights since October 3rd 1962 when Walter "Wally" Schirra wore his personal Speedmaster on his Sigma 7 mission, almost three years before the Speedmaster became flight certified by NASA, a status it has enjoyed ever since. Buzz Aldrin has explained that just after landing on the Moon, the Lunar Module's on-board electronic timer had a breakdown. Neil Armstrong left his Speedmaster aboard as a reliable backup. As a result, the first watch worn on the Moon was on Aldrin's wrist. It would be natural to expect that this timepiece, a true historic artefact, would have a place of honour in a museum dedicated to watches or to spaceflight. Sadly, that's not the case. In early 1970, Aldrin sent his Speedmaster, along with other personal items, to the Smithsonian Institution's National Air and Space Museum in Washington, D.C. The famous chronograph disappeared en route, probably stolen.



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