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Astronomical Miscellany, including a Treatise on the confection and use of a quadrant;  
Astronomical Tables, Canons and Diagrams for the computing of the position of the sun and the  
moon etc.

In Latin, illustrated manuscript on paper  
Southern Germany (Bavaria?), 1459?

8 ff., preceded by a single modern paper flyleaf and followed by 5 modern paper flyleaves, complete in itself but perhaps once part of larger miscellany, collation (is [single quire of 10-2, with last two leaves of quire excised, perhaps blank]), on paper (watermark close to Briquet, "Monts et croix", no. 11798, Würzburg, 1457; also close to Briquet, no. 11802, Würzburg, 1465-1469; Brunswick, 1464; see also Briquet, no. 11803, Imsbruck?), written in a highly abridged cursive bookhand in brown ink, on up to 47 long lines, text pages ruled in light plummet and grids ruled in blind (justification of text pages 125 x 70 mm.), some passages in red (e.g. f. 6), initials and Arabic numerals touched in red throughout, 3-4 line high initials in red, four three-dimensional drawings of rolling dice, traced in ink with some facets colored in brown and red ink (ff. 3v and 6v), four circular diagrams (ff. 3v, 5, 7). Bound in a modern binding, cardboard covered with blue paper, smooth vellum spine. Dimensions 168 x 118 mm.

Perhaps from a larger miscellany, this small compendium contains an interesting treatise on the construction of a quadrant, unpublished though part of a small yet coherent manuscript tradition. Numerous tables, circular diagrams, and canons complete this compendium, related to a "Quadrivium Miscellany" including texts mandatory for university students following the course on the Quadrivium (arithmetic, geometry, astronomy, and music). Images of tumbling dice recall how fate, destiny, and chance were all related to astronomy and astrology in the Middle Ages

## PROVENANCE

1. Script and watermark in paper suggest a southern German origin for this manuscript, likely Bavaria (possibly Würzburg?). The dating of the watermarks perfectly corroborate the date 1459 found in the manuscript and cited as an example of calculation and determination of the dominical letter, and the solar and lunar cycles for that specific year: "Anno domini 1459. Litera dominicalis 9. Ciclus solaris, 12. Ciclus lunaris 16...." (f. 8). The present manuscript was thus copied in or little after 1459.
2. Europe. Private Collection.

## TEXT

ff. 1- 2, [Anonymous]. Treatise on the confection and use of a quadrant [*Confectio quadrantis et utilitas*], incipit, "Quadrantis noticiam habere affectans ex premissis tribus...";

Thorndike and Kibre, col. 1156, list the following manuscripts with the same incipit: Basel, F VIII. 16, ff. 204-205; Paris BnF MS lat. 7197, ff. 37v-38; Paris, BnF, MS lat. 10266, ff. 1-3; Munich, Bayerische Staatsbibliothek, Cod. 11067, ff. 194v-196v; London, BL, Add. MS 15107, ff. 203-204; Saxl, *Verzeichnis astrologischer und mythologischer illustrierter Handschriften...* (1953), 22; Zinner, *Verzeichnis der astronomischen Handschriften des deutschen Kulturgebietes* (1925), 8886. This first census should be completed by the manuscripts recorded under this incipit in the Jordanus database (some 9 manuscripts). This particular text is found in two *Quadrivium Sammelhandschriften*, as described in L. Schuba, *Die Quadriviums-Handschriften der Codices Palatini Latini in der Vatikanischen Bibliothek*: these are Vatican, BAV, Pal. Lat. 1381 (1350-1366), fol. 173; Vatican, BAV, Pal. Lat. 1452, f. 56v (see Schuba, 1992, pp. 122 and 277).

A variant of the astrolabe, the quadrant is an astronomical tool used to measure altitudes of celestial objects and was especially useful for mapping the sky. It consisted of a sighting device mounted on a quarter circle, or quadrant, which was engraved with degree markings. A quadrant simulates the movement of the celestial sphere in relation to the referential terrestrial sphere, in order to solve problems of spherical astronomy by combining geometry and trigonometry. It enables the measurement of altitude, latitudes and longitudes, and the time of day and night. Although easy and rather inexpensive to make, the astrolabe quadrant was, however, complicated to use. Quadrants ranged in size from small hand-held or table-mounted versions to large mural quadrants mounted on walls.

f. 2v-4, *Astronomical Tables, Canons and Diagrams*, with heading, *Aureus numerus* and underlined, *Tabula per invencione aurei numeri...* [Table to find the golden number] (f. 3v);

The golden number was used in computus to calculate the date of Easter.

f. 4v, Canon for determining the position of the moon (?), incipit, "Volentes sciendum signum [...] die locum lune...";

f. 5, Syllables (with elements of Cysioianus) and verses related to the previous treatise on the calculation of the position of the moon, including, "Arbiter electus fac iuris mollia..." These verses are found in another manuscript in Stuttgart, Württemberg LB, HB I 234, f. 80v.

ff. 5v-6v, Tables and Canons concerning the *Tabule ascensionum signorum*, incipit, "Ad inveniendum verum locum solis...";

"Tables" according to Thorndike and Kibre, 1963, col. 50, who record the following manuscripts: Vienna, Österreichische Nationalbibliothek, Cod. 2332 (dated 1428), ff. 205-218v; Munich, Bayerische Staatsbibliothek, Cod. 10662, ff. 232v-233; Melk, MS. 51, ff. 279v-282.

f. 7-8v, Astronomical Tables and Canons related to the cycle of the sun, incipit, "Si per presente tabulam cupis invenire intervallum..."; underlined: *Ad inveniendum ciclum solaris cum litera dominicali*; explicit, "[...] diversi diocesi consuetudine."

This mid-fifteenth century manuscript contains a small miscellany of astronomical texts, tables and grids, primarily texts and tools for the prediction and determination of planetary and stellar positions. The astronomical tables and accompanying explicatory canons permitted the computing of the places of the Sun, Moon, planets, and comets. Most likely originally part of a larger miscellany, the texts found in this small compendium of practical astronomy are amongst those that are commonly found in what are called *Quadrivium-Handschriften* or *Sammelhandschriften* ("Quadrivium Miscellanies") which were miscellanies that contained texts relating to arithmetic, geometry, astronomy, and music, all mandatory subjects for students in arts following the *quadrivium* cursus. The manuscript contains a number of apparently unfamiliar tables and their explicatory canons, some not recorded in Thorndike and Kibre, which merit further study.

The representation of tumbling dice (with twice two pairs of dice, ff. 3v and 6v), is undoubtedly a reference to the passing of time, to chance with the pondering of good and bad luck (*Alea jacta est!* ["The die has been cast," famous quote attributed to Caesar by Suetonius...]) and destiny in general. Images of game pieces are not common in pre-1500 manuscripts and contribute here to livening up a rather specialized text and calculations. During the Middle Ages, dicing became the favorite pastime of knights, with the development of both "dicing schools" and guilds. Dicing was practiced throughout Europe even if the legislation by the church and governments often ruled against it (for instance in France, the interdictions of St. Louis if 1254 and 1256).

## LITERATURE

Pouille, Emmanuel. *Les sources astronomiques: textes, tables, instruments*, Turnhout, Brepols, 1981.

Saxl, F. *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters, II: Die Handschriften der National-Bibliothek in Wien*, Heidelberg, 1927.

Schuba, L. *Die Quadriviums-Handschriften der Codices Palatini Latini in der Vatikanischen Bibliothek*, Wiesbaden, 1992.

Thorndike, L. and P. Kibre, *A Catalogue of Incipits of Medieval Scientific Writings in Latin*, Cambridge, Mass., The Medieval Academy of America, 1963.

Zinner, E. *Verzeichnis der astronomischen Handschriften des deutschen Kulturgebietes*, Munich, C. H. Beck, 1925.

## ONLINE RESOURCES

Jordanus, An International Catalogue of Medieval Scientific Manuscripts:

<http://jordanus.org/cgi-bin/iccmsm?seite=home&sprache=en>

Treatise on the construction and use of a quadrant, in "Jordanus":

<http://jordanus.org/cgi-bin/iccmsm-search.pl?>

[sprache=en&datenbank=iccmsm&listpos=35&listlen=35&listen=inc&listlet=Q](http://jordanus.org/cgi-bin/iccmsm-search.pl?sprache=en&datenbank=iccmsm&listpos=35&listlen=35&listen=inc&listlet=Q)

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