

## Vatican

## Biblioteca Apostolica

Pal. lat. 1377

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 Multi-disciplinary compendium with *Tabulae stellarum*

German

first half 14th century

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 This compendium was compiled in the 17th century from individual fascicules, most of which date from the early 15th century.
 

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**contents**

The compendium consists of 7 fascicules on varying topics, including cosmology, meteorology, optics, music, etc. The Stellar Tables appear in the final section (VII). The contents have been fully described by SCHUBA 1922, pp. 103-07 and summarised by METZGER 2016.

Section I - This section is written on paper. It dates from the first half of the 15th century and was probably produced in Germany.

fol. Cv	Table of contents of the first part, in which al-Haytam and the Witelo excerpts are not listed separately.
ff.1ra-5ra	Petrus de Abano, <i>De motu octave spere</i> (THORNDIKE/KIBRE 1963, col. 1283, no. 8; THORNDIKE 1923, II, p. 921). In the colophon, the text is referred to as the work of Petrus von Abano from 1310, which is also preserved in Oxford, Bodl. Lib., Ms. Canon. misc. 190, ff. 78r-83r. There is a postscript on the year count of the Jewish and 'Indian' calendars.
ff.5rb-9rb	Philo Alexandrinus, <i>De spiritualibus ingeniis</i> (Fragmentum; THORNDIKE/KIBRE 1963, col. 1233, no. 1; ed. ROSE 1870), containing several very fine drawings.
ff. 9v-9a rv	blank
ff.10ra-11rb	Plinius Secundus, <i>De presagiis tempestatum</i> (THORNDIKE/KIBRE 1963, col. 392, no. 14). An excerpt from <i>NH</i> , XVIII, 342-365.

ff.11va-14r	Tideus, <i>De speculis comburentibus</i> (Thorndike/Kibre 1963, Col. 1388, No. 11; Björnbo/Vogl ed. 1912, pp. 73-82). Text also appears in Basel, UB, fol. II. 33, ff. 109v-110v
ff.14ra-18vb	Ibn al Haytam, <i>De speculis comburentibus</i> (THORNDIKE/KIBRE 1963, col. 392, no. 9; ed. Heiberg/Wiedemann 1909-10).
ff.18vb-19ra	Witelo, <i>Optica</i> (excerpta). Eight questions and answers about Book II.
ff.19rb-20va	Jordanus de Nemore, <i>De ponderibus</i> (THOMPSON 1976, pp. 101f.; ed. CLAGETT/MOODY 1952, pp. 154-164). 13 'propositiones' of Jordan, each of which is followed by a commentary.
ff.20vb-20bv	blank

Section II - A collection of works by and on Abraham ibn Ezra. It is written on paper, dates from the mid-15th century and was written in the Netherlands by Johannes de Blisia (Bilzen near Tongeren, Belgium, cf. SCHUBA 1992, p. 103 in a *bastarda* script.

ff.21ra-37va:	Abraham ibn Ezra, <i>Liber introductorius in Iudicia astrorum</i> (THORNDIKE/KIBRE 1963, col. 745, no. 6; THORNDIKE 1923, vol. 2, p. 928). The Latin translation by Henricus Bates from the Hebrew (cf. BJÖRNBO/VOGL 1912, p. 135).
ff. 7vb-42va	Abraham ibn Ezra, <i>De fortitudine planetarum</i> (THORNDIKE/KIBRE 1963, col. 1050, no. 7).
ff. 42va-43vb	Notes on the works of Abraham ibn Ezra, with two tables at the end (cf. SCHUBA 1992, p. 105).
fol. 43arv	blank

Section IIa - notes, drawings and prints of sundials produced in Italy, during the 2nd half of the 15th century.

ff. 44r-46v	<i>Notae et delineationes</i> .
fol. 44rv	Two drawings of a sundials (see description below).
fol. 45rv	calculation examples, multiplication tables, rules for calculating fractions
fol. 46rv	Woodcut illustrations of sundials from a printed book (see description below).

Section III - texts by Johannes de Sacrobosco, written on paper in Italy and dated 1436, Italy at the Dominican monastery of S. Anastasia in Verona by *Jacobus de Cademustis de*

*Laude* (Lodi) (ff. 50vb, fol. 58rb). Added later in the second colophon: ...*arcium doctorem*.... The fascicle was evidently still in the possession of the scribe.

- ff. 47ra-50vb Johannes de Sacrobosco, *Algorismus* (THORNDIKE/KIBRE 1963, col. 991, no. 1; ed. CURTZE 1897).
- ff. 51ra-58rb Johannes de Sacrobosco, DE SPHAERA (THORNDIKE/KIBRE 1963, col. 1525, no. 4, col. 1524, no. 5; ed. THORNDIKE 1949, pp. 76-117)
- ff. 58v-59v *Notae*. See SCHUBA 1992, pp. 105f.

Section IV - a set of musical texts, written during the first half of the 15th century in Italy on paper. The entry 1274 refers to Johannes Baptista Egnatius (= J. B. Cipelli, † 1553) from whose estate between 1553 and 1555 Greek and Latin manuscripts, mainly of Italian origin, came to Ulrich Fugger's library (See LEHMANN I, p. 96f., 98, 131). The fascicle came with this library to the Heidelberg Palatina and later was transferred to the Vatican.

- ff. 60r-81v Johannes de Muris, *Musica speculativa* (THORNDIKE/KIBRE 1963, col. 1287, no. 3). With drawings of the proportions of various intervals throughout.
- ff. 82r-89v Johannes de Muris, *Libellus cantus mesurabilis* (THORNDIKE/KIBRE 1963, col. 1188, no. 11), with musical examples.
- ff. 89v-93v Philippus de Casserta, *De diversis figuris cantus* (THORNDIKE/KIBRE 1963, col. 1302, no. 8).
- ff. 93v-94v *Ars contrapuncti secundum Johannem de Muris* (THORNDIKE/KIBRE 1963, col. 1247, no. 3)

Section V - Texts on the astrolabe. Written on parchment, during the 12th century in either Germany or France. See BJÖRNBO/VOGL 1912, p. 136, who say: 12th-13th century.

- ff. 95r-98r ps.-Ptholemaeus, *Liber horologii* (THORNDIKE/KIBRE 1963, col. 1258, no. 5). On measuring time and calculating equal and unequal hour lengths using the astrolabe. The table of astrolabe stars fol. 98r losts the Arabic star names in transliteration.
- ff. 98v-100r ps.-Bede, *Libellus de astrolabio* (THORNDIKE/KIBRE 1963, col. 667, no. 10; PL 90, cols. 955-960).
- ff. 100r-105r ps.-Gerbert, *De utilitate astrolabii* (THORNDIKE/KIBRE 1963, col. 1236, no. 1; ed. Bubnov 1899, pp. 109-147). On fol. 103v, there is the *De stellis horarum*. On determining time by aiming at certain stars, for this purpose not

only is it described which stars are needed, but star groups are also shown schematically in the text, which should help to find the correct astrolabe star. The names are all Arabic in transliteration. The transcription here contains numerous corrections.

- ff. 105r-106r *De mensura astrolabii* (THORNDIKE/KIBRE 1963, col. 1041, no. 9; cf. ed. BUBNOV 1899, pp. XXXIV, CVII).
- ff. 106r-110r *Excerpta*. Shorter pieces on the quadrivium, including on time measurement, geometry, music and astronomy (see SCHUBA 1992, p. 107).

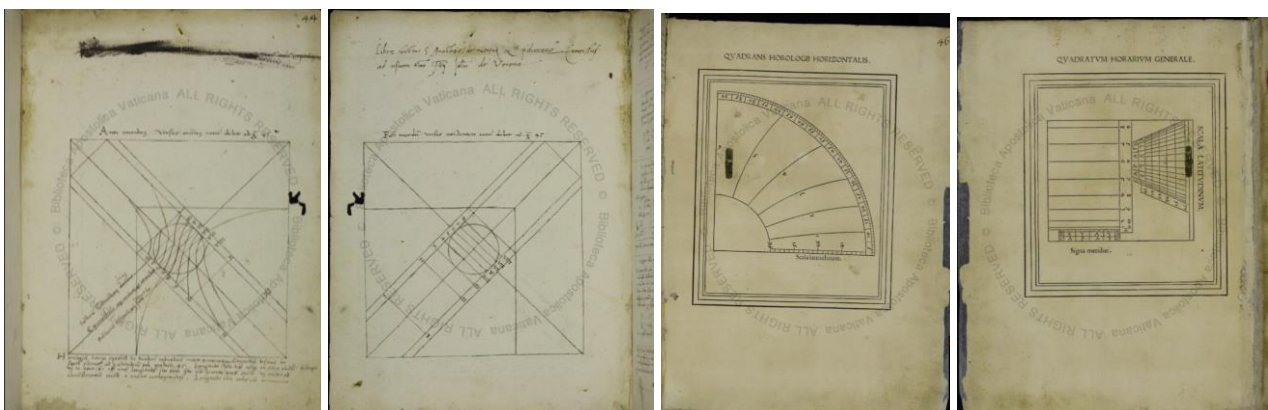
Section VI - a text by Albertus Magnus. Written on paper in Germany in the 15th century.

- ff. 111ra-182rb Albertus Magnus, *Liber de causis* (THORNDIKE/KIBRE 1963, col. 430, no. 5; ed. Borgnet 1891, X, pp. 362-619). On the scribe's verse, see SCHUBA 1992, p. 107.
- fol. 182v blank

Section VII - *Tabulae stellarum fixarum*, written during the first half of the 14th century (around 1350?) in Germany on parchment.

- ff. 183r-194v Claudius Ptolemy, *Tabulae stellarum fixarum* (ed. KUNITZSCH 1990). The rubric identifies the tables as part of the *Almagest*.
- fol. 194v Addendum: Note on the precession up to the year 1350, as well as excerpts on Ptolemy and the year the tables were created

## illustrations

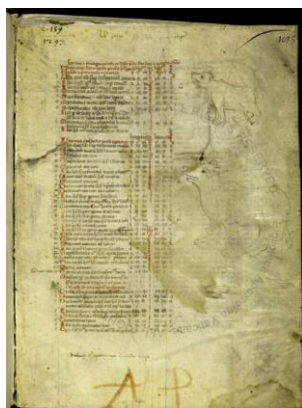


fol. 44r

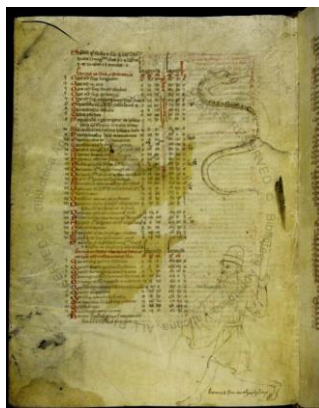
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fol. 46r

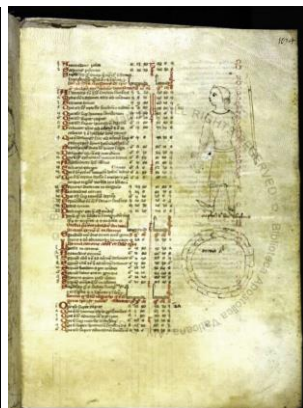
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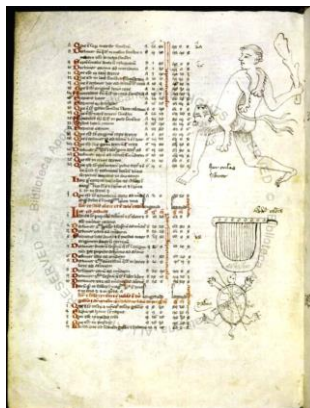
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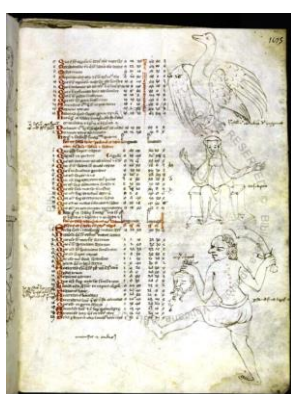
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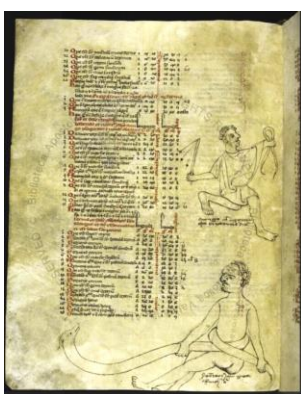
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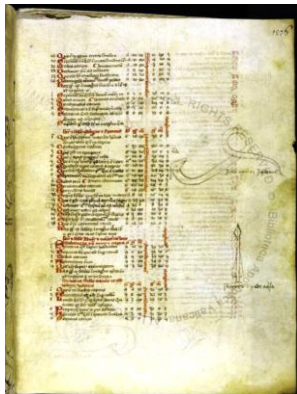
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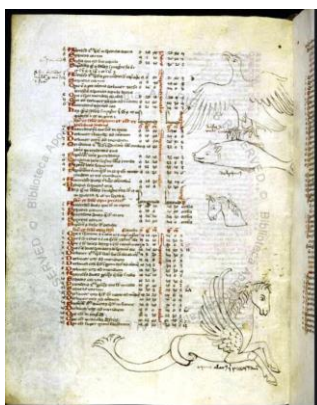
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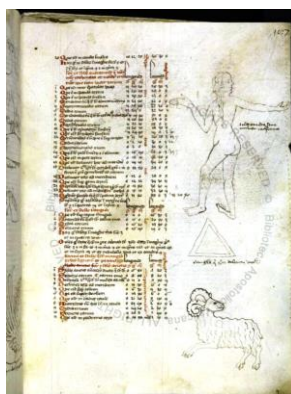
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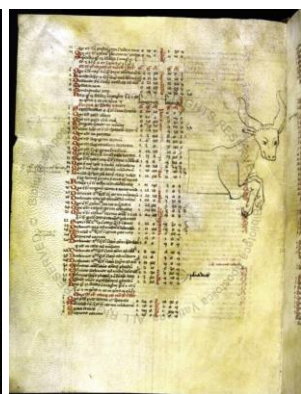
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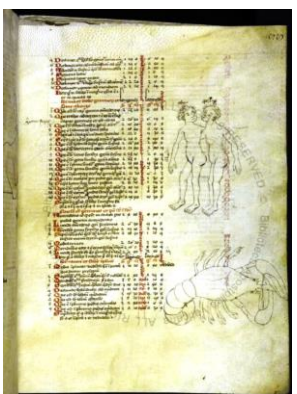
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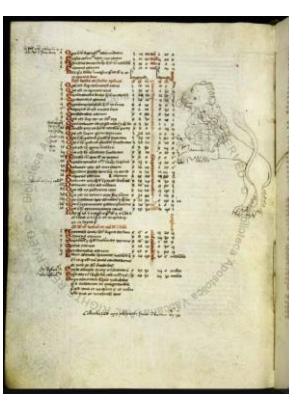
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fol. 187v



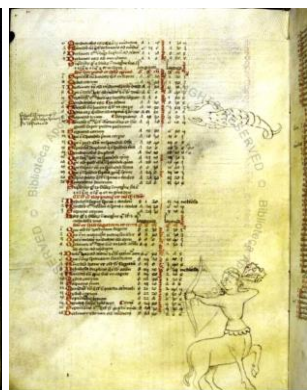
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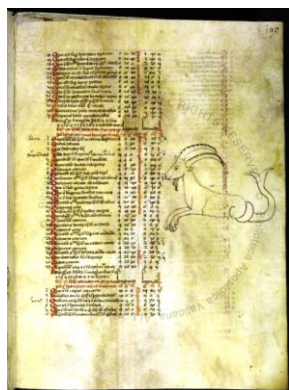
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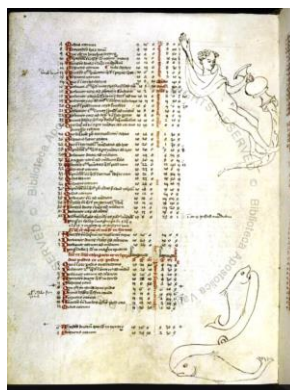
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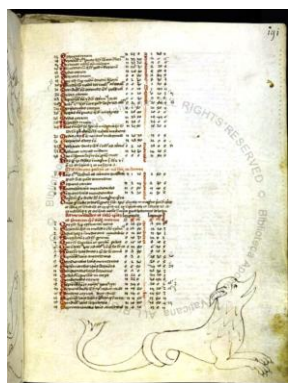
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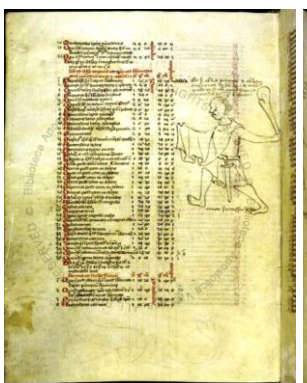
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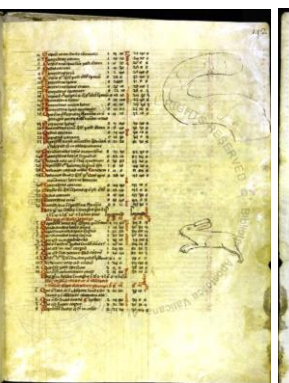
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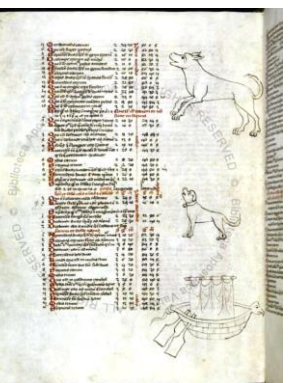
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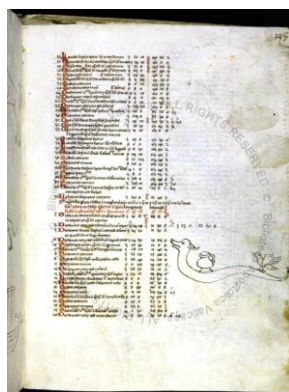
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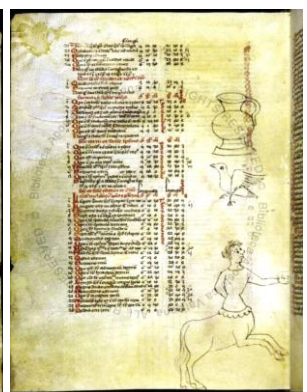
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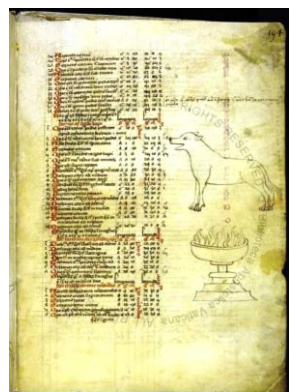
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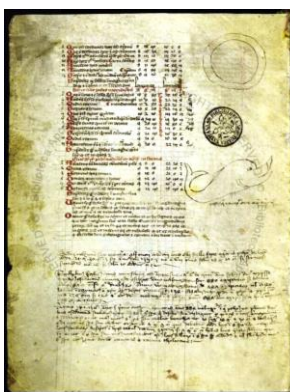
fol. 193r



fol. 193v



fol. 194r



fol. 194v

fol. 44r            A design for a sundial (*ante meridiem versus orientem ... debet ad gradum 45*).

fol. 44v            A design for a sundial (*post meridiem versus occidentem ... debet ad gradum 45*).

- fol. 46r A page from a printed volume, pasted in, depicting a *quadrans horologii horizontalis*.
- fol. 46v A page from a printed volume, pasted in, depicting a *quadratum horarium generale*.
- ff. 183r- 194v Depictions of the 48 Ptolemaic constellations. LYRA is depicted twice. There is a certain amount of confusion between some of the figures and their labels (see CEPHEUS and BOOTES). Similar depictions occur in Rome, BAV, Pal. lat. 1368 and Brussels, BRA, 10117-26, both from the first half of the 15th century. The pen drawings are very simple and there are no stars marked.
- fol. 183r URSA MINOR is a small bear, walking to the left, with his head slightly lifted and it has a short tail.
- URSA MAIOR is the larger bear and walks to the left.
- fol. 183v DRACO is set vertically on the page. It is a snake with 3 bends in its body and a dragon's head, with a thin tongue sticking out.
- CEPHEUS faces the viewer, walking to the left. He is dressed in a short, belted tunic with a cloak covering the whole of his shoulder and right arm, which he holds out in front of himself. In his left hand, he raises a sword/stick vertically. There is some confusion here with depictions of Bootes. Although the table describes: *forma et stelle chechius latine et ipse est inflamatus seu*; he is labelled: *boetes seu archophylax*.
- fol. 184r BOOTES stands to the left, apparently facing away from the viewer (see his foreshortened feet), though his hands suggest otherwise. He looks to the left and holds a spear vertically in the hand that is towards the right side of the page. There is confusion with Cepheus here. Although the table describes: *forma et stelle thegnius et ipse est ululans cuius intentio vociferans*, he is labelled: *cepheus dicitur hic ululans*.
- CORONA BOREALIS is a two-layered wreath seen from above.
- fol. 184v HERCULES strides to the left and is nude, facing away from the viewer. He wears the lion's skin draped over his shoulder and down the length of this left arm, with the beast's legs wrapped around his neck (cf Pal. lat. 1368, fol. 51va). He raises a knobby club in his right hand. He is beardless and has a small round cap on his head. The text reads: *forma et stelle algiethi que est dicitur super genu*

*ipsius et nominator saltator*, and the label reads: *hercules* and *saltator* (in a later hand).

LYRA is depicted twice. The first version is as a harp with a strange hook on the right side. The text reads: *forma et stelle alrore et est vulture cadens et est testudo*; and it is labelled: *vulture volans* (in a later hand).

LYRA (second version) is as a tortoise, seen from above. It has been crossed out by a later hand. It is labelled: *gallina non verum (?) lyra* (in a later hand).

fol. 185r CYGNUS flies to the left with wings raised, but the right wing slightly curved in front of its chest. The table reads: *forma et stelle erysin et est volans etiam vocatur gallina et dicitur eyrisin quasi redolens ut lilium ab y[ ]*, but the label reads: *hec constellatio ab aliis dicitur cignus*.

CASSIOPEIA sits on a wooden bench with no back. Both her arms are outstretched and raised. She wears a wimple over her hair.

PERSEUS walks to the left, with his back towards the viewer. He raises his left leg almost horizontally (as if goose-stepping) and is wearing undershorts. In his left hand, he holds a decapitated, bearded male head (labelled: *capud algol*); and in his right, a curved sword. He is labelled: *perseus sive* [cut off].

fol.185v AURIGA runs to the right, seemingly with his back to the viewer, but the anatomy is confusing. He holds a three-flailed whip raised in his left hand, and a piece of rope (the resin) in his leading right hand. The text reads: *forma et stelle habentis habenas et nominatur latine auriga vel agitator et nominatur alaanat id est collarium*; and the label reads: *auriga vel agitator qui erictonius dicitur*.

OPHIUCHUS is a nude male figure, seated on the ground with his back to the viewer. He has a hooked nose and beard stubble. He has a long, thin SERPENS wrapped around his waist, with its head at the left and looking back at him. The text reads: *Forma et stelle offiachos seu alanguie et dicitur effeminatus et est lator serpentis*; while the label reads: *serpentarius qui grece offiucus dicitur*.

fol.186r SERPENS is posed exactly as he was in the preceding image, but without the Serpent-holder. The label reads: *serpens qua oportet (?) serpentarius*.

SAGITTA is an arrow placed vertically on the page, with its tip towards the top. The label reads: *sagitta in pede aquile*.

- fol. 186v      AQUILA stands with its back to the viewer, its head raised towards the left and its wings extended. The label reads: *aquila vulture volans*.
- DELPHINUS is a fish that swims to the left. It has a flattened snout and small pig's ears. The label reads: *delphinus*.
- EQUULEUS is the *protome* of a horse, faced to the left. There is no label.
- PEGASUS is a sea-horse, with a horse's front half and the sinuous tail with a corkscrew twist in the middle and a flaring end. It faces to the right, with its wings raised and its front legs extended in front (cf Digby 83). It is labelled: *equus alatus que Pegasus dicitur*.
- fol. 187r      Andromeda is a female nude seen from the back. She walks to the left, but twists her upper body back towards the right. Her left arm is bent in front of her and her right arm extended behind her. She has long uncovered hair. She is labelled: *andromeda sive mulier catenata*.
- TRIANGULUM is an equilateral triangle and is labelled: *triangulus que grece deltoton dicitur*.
- ARIES is a fleecy ram that leaps to the left, but turns its head to the right. It has lumpy, curled horns.
- fol. 187v      TAURUS is half a bull that gallops to the right. With its forelegs tucked under. It has long, fat horns that rise vertically from his head.
- fol. 188r      GEMINI are depicted as two nude boys, facing the viewer, turned slightly to the left. Their arms are interlocked. They are labelled: *Castor, Pollux*.
- CANCER is a realistic crayfish facing to the right. Its front claws are crossed in front of its beak and its tail is curled under its body.
- fol. 188v      LEO jumps to the left. He has a very curly mane and his tail crosses between his hind legs before rising vertically.
- fol. 189r      VIRGO is a maiden wearing a long dress. She walks to the left, her hair exposed, and she carries a long, thin plant (palm frond) in her upraised left hand.
- LIBRA is a simple beam balance with rounded pans.
- fol. 189v      SCORPIO is an earwig-like creature with two large front claws, a scaly front half (without legs) and a corkscrew tail.

SAGITTARIUS is a centaur. His horse's body turns to the right, with its left foreleg raised. The human half turns back to the left and draws a bow. He has a turban-like headdress, which has ends fluttering from it.

fol. 190r CAPRICORN is a goat-fish that lies to the left. Its front feet are extended in front of it and it had long, lumpy ibex's horns and a beard. The tail has a corkscrew twist and a bifurcated end.

fol. 190v AQUARIUS is a nude, male youth standing leaning diagonally to the left. His shoulders are covered with a mantle. He raises his right arm vertically above his head and holds a vase by its foot in his left hand, from which water pours, flowing down and then backwards beneath his feet.

PISCES are two fish set at almost perpendicular to each other with their heads pointing in different directions, but both backs upwards. Their mouths are tied by a string with a doughnut shape in the middle.

fol. 191r CETUS faces to the right. His front part is doglike, with a very pointed snout and scales. The back part is tapered with a corkscrew and bifurcated end to the tail. It looks slightly upwards.

fol.191v ORION strides to the left and is facing the viewer. He extends his right arm in front of him, which is completely covered by his cloak. He extends the left arm behind him and holds a club vertically in his left hand. He has a long, straight sword at his waist. He is labelled: *Orion fortissimus*.

fol. 192r ERIDANUS is a short, curved segment of a stream.

LEPUS is a hare that leaps to the left, with his ears lying back.

fol. 192v CANIS MAIOR is a large dog that leaps to the left. It looks upwards.

CANIS MINOR is smaller, has a snub nose and stands to the left, looking upwards. It has a collar with a ring.

NAVIS is a full round-hulled wooden ship. It has a bird's head as its bow and a twisting tail at its stern. There are two steering oars at the stern and a curtain-like sail hung from the main mast.

fol. 193r HYDRA, CRATER and CORVUS are pictured together. HYDRA is a dog-faced snake that slides to the left. CRATER is a single-handled, fat-bellied pitcher and CORVUS stands to the right with its wings raised.

fol.193v CRATER is a single-handled, fat-bellied, footed pitcher.


CORVUS stands to the right with its wings raised.

CENTAURUS is a centaur that trots to the right. His human half is wearing a tight-fitting shirt, with a frilly hem. He holds his right arm behind his back and holds his left arm extended in front of him. It seems to hold a small animal, but it is cut off by the edge of the page.

fol. 194r LUPUS is a wolf that stands to the left with its mouth open.

ARA is a cup-shaped vessel set on a series of steps with flames coming from the top.

fol. 194v CORONA MERIDIONALIS is two concentric rings.

PISCIS AUSTRINUS is a dolphin-like fish that swims to the right. It is labelled: *pisces que  overo aquam aquarii.*

## notes

The current structure of the ms reflects the ordering and rebinding of the manuscripts of the Bibliotheca Palatina, which were moved from Heidelberg to Rome in 1623 in the 17th century.

METZGER 2016 notes: The longitude values of the tables were not corrected according to precession, but the information added a little later at the end about Ptolemy, the time of creation and the correction values to be applied up to 1350 nevertheless allowed the user to calculate the current values without great effort. In contrast to the constellation drawings in manuscript 207 of the St. Nicholas Hospital, which also belonged to Nicholas of Cusa in the 15th century, the depictions here differ very clearly from the picture cycle of the Sufi latinus. Rather, it is one of the two variants of new picture sequences for the star tables, which are based on the depictions according to al-Sufi, but in a variety of motifs, figure variants and depictions draw on the picture sequences of the 11th to 13th centuries transmitted by Europe, which ultimately emerged from the Aratea illustrations. While the first variant (Oxford, Bodl., Rawl. C. 117; Rome, BAV, Urb. lat. 1399 etc.) is connected with the editing of the Ptolemaic star tables, which are usually handed down with the Alfonsine tables and were therefore converted to the year of the accession of Alfonso X of Castile, the second variant presented here is found in connection with the non-converted Ptolemaic tables, to which at most information on updates was added.

Iconographically, this ms (and BAV, Pal. lat 1368 and Brussels, BRA, 10117-26) appear to be a German equivalent to the French-Italian group that is associated with the Alfonsine tablets. Although the approach was fundamentally very similar, both the ideas presented and the selection of the elements adopted were different.

According to the ownership entry on fol. 183r, the constellation fascicle (part VII.) comes from the St. Nicholas Hospital in Kues (Liber hospitalis sancti Nicolai prope Cusam). This means that it may have once been owned by Nicolaus Cusanus (cf. Bernkastl-Kues 207), though the iconography of the illustrations is very different in each ms.

### **bibliography**

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