

The Horoscope of AD 497 Attributed to Eutocius: Text, Translation, and Commentary

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Introduction.

In *Greek Horoscopes*, Neugebauer and van Hoesen¹ include among the horoscopes from “literary sources” (i.e. transmitted through the medieval manuscript tradition as opposed to ancient papyri and graffiti) about twenty referring to dates in the period from the late fourth through the early sixth centuries.² Within this group, their L497 stands out as an anomaly in several respects.³ Most of these so-called literary horoscopes are illustrations of interpretative astrological technique applied to a given configuration of the heavenly bodies. L497 has no interpretative element, just astronomical and astrological data; but the data are presented very systematically and extend over a wider range than is typical of the literary horoscopes of this period, including latitudes of the Moon and planets as well as names and coordinates of nearby fixed stars. Moreover, this information is presented not only in textual form but also in a horoscopic diagram, of a “square” type common in later medieval astrology but unlike the zodiacal circle diagrams that (rarely) accompany earlier Greek horoscopes. None of the “documentary” horoscopes (mostly papyri) known to Neugebauer and van Hoesen resembled L497 either, but more recently three from the third and fourth centuries have come to light that are comparable to it in their degree of elaboration, including latitudes and fixed stars, so that it now appears that L497 is the most completely preserved representative of a special genre of “high-end” horoscopes that certain astrologers were issuing in late antiquity.⁴

The horoscope is transmitted in two versions. In the eleventh century codex *Laur. Plut.* 28,34 (ff. 141v–143v, henceforth L) and the fourteenth century *Par. gr.* 2425 (ff. 216v–219v, henceforth P) it appears under the title ἐκ τῶν Εὐτοκίου ἀτρολογουμένων (“from the astrological writings of Eutocius”) and consists of (1) a brief introduction; (2) a statement of the date and place to which the horoscope refers; (3) a summary giving the longitudes of the Sun, Moon, planets, Ascendant and Midheaven, the Lots of Fortune and Daimon, the Moon at the preceding Full Moon, and the Moon’s ascending node; (4–10) paragraphs presenting data concerning each

1 For their collaboration see Jones 2023, 254–265. Since van Hoesen was a papyrologist, it is likely that his involvement was chiefly in the part of *Greek Horoscopes* devoted to the “documentary” horoscopes, and one can be sure that the astronomical analyses were more or less entirely Neugebauer’s work.

2 Neugebauer and van Hoesen 1959, 131–158, totally twenty items, but not all are true horoscopes computed for specific dates; see Jones 2010, 44 n. 63 and, for a more up to date checklist of Greek horoscopes (both “literary” and “documentary”) see Heilen 2015, 213–316. The horoscope under discussion in the present article is Heilen’s *Hor. gr.* 497.X.28, on p. 310 with full bibliography.

3 Neugebauer and van Hoesen 1959, 152–157, with further discussion at 188–189.

4 P.Berol. inv. 9825 (AD 319), edited in Greenbaum and Jones 2017; P.Lips. inv. 4144 (paleographically third century), to be edited by Daniela Colomo and Alexander Jones; and P.Giss. inv. 1 (paleographically fourth century), to be edited by Michael Zellmann-Rohrer (personal communication). See also Jones 2026, §4.

of the Sun, Moon, and planets; (11–15) paragraphs presenting data concerning the preceding Full Moon, the Ascendant, Midheaven, and the two lots, but not the ascending node; and (16) a brief closing section. In the fourteenth century *Vind. phil. gr.* 179 (ff. 80v–83r, henceforth V) it is the second of a series of astrological and astronomical chapters headed Ἰουλιανοῦ Λαοδικέως ἐπίσκεψις ἀστρονομική, the chapter title being περὶ ἐποχῶν καὶ κέντρων καὶ κλήρων τῶν ζ' πλανωμένων ἀστέρων (“on positions and centers and lots of the 7 wandering stars”); this version consists of only the summary of longitudes (3), curtailed to include only the longitudes of the seven heavenly bodies, followed by sections (4–10), so that in reality the centers and lots make no appearance in this text notwithstanding the title. I have shown elsewhere that, so far as the materials they gather under Julian’s name are concerned, V and several other manuscripts that share part of this same material with V descend through a lost intermediary from a common ancestor with P, and that the versions in this intermediary were rearranged, abridged, and to some extent garbled.⁵ Hence it is no surprise that sections (12–17), including the diagram, turn up in a different part of V (ff. 38v–39), with no heading.

Olivieri edited—rather sloppily, it must be said—sections (1–2) from L in *CCAG* 1, 170–171,⁶ while Cumont edited the abbreviated version—sections 4–10 only—from V and another member of its family, the fifteenth century *Mutin. gr.* 85 (ff. 80v–82r), not realizing that it was the same horoscope as the one in L. As far as I am aware, these are the only published texts of the horoscope. Neugebauer and van Hoesen recognized that these were two versions of a single original text, and based their discussion chiefly on L, relying on photostats provided by the Biblioteca Laurenziana, but they translated only the part edited by Olivieri. Subsequently Pingree identified the copy in P, where it is one chapter of a loose and chaotic anonymous compilation of astrological texts designated “Book 6,” Books 1–4 being Ptolemy’s *Tetrabiblos*, and Book 5 a more coherent anonymous compilation that Pingree argued was an “epitome” of the astrological work of Rhetorius. Pingree conjectured that the part of this “Book 6” up to and including the horoscope constituted another epitome of Rhetorius, and hence included it in the projected edition of Rhetorius that he was unable to bring to completion before his death in 2005.⁷

It deserves mention that the versions in L and P, though otherwise basically the same, differ in a critical way at the very beginning of the text, where P has the author promising to illustrate not only how a horoscope should be presented but also the method of construction of an ephemeris; and in fact the horoscope in P is followed by a chapter that does just that. L does not have the phrase about the ephemeris, and there is no following chapter on that topic. It is clear that this difference arose through omission, probably deliberate, in L’s version, since in removing the phrase about the ephemeris, the redactor inadvertently retained the linking conjunction τε in the preceding phrase about the horoscope, which is left without a syntactic resolution. This circumstance casts doubt on Pingree’s supposition that the horoscope chapter but not the ephemeris chapter were part of the Rhetorius epitome.⁸

The ascription to Eutocius (presumably meaning Eutocius of Ascalon) strikes me as perfectly credible. However, there is no good reason to believe that the date he chose for the horo-

5 Jones 1987, 20–26.

6 Also published in the same year 1898 as *CCAG* 1 was a short notice of L’s version of the horoscope in Kroll 1898, 128 with erratum on 192.

7 I was able to consult a draft text by Pingree of the horoscope, based on L and P, and I have incorporated a few of his corrections to the transmitted text in my edition below. For Pingree’s efforts to reconstruct the Rhetorian corpus see Pingree 1977 and 2001, and the critique in László 2020, esp. 333.

8 Pingree 2001, 12. I will treat the ephemeris chapter and some related texts in a subsequent article.

scope, AD 497 October 28, was his own nativity (the text in fact does not even say explicitly that this is a nativity though this is probably to be assumed), and this should not be exploited as a datum to support a revision of Eutocius's biography.⁹ As Neugebauer and van Hoesen wrote, "the date of the horoscope sheds no new light on the difficult question of the lifetime of Eutocius...."¹⁰

For the present edition I collated L, P, and V (from photographs), but I do not report V's readings because it does not offer any good ones that are not found in either L or P or both, while its numerous errors would clutter the apparatus. L and the common ancestor of P and V descend from an archetype that was not the author's own manuscript since it had some errors and omissions. On the whole, however, the archetype's text appears to have been fairly clean, as one can verify from internal consistency as well as recomputation of the data. I have not reported the very frequent phonetic misspellings in both manuscripts (in particular $\eta - \epsilon\iota - \iota$, $\omicron - \omega$, $\epsilon - \alpha\iota$, $\rho - \rho\rho$). The manuscripts do not exhibit a consistent differentiation of whole numbers, part-fractions, and sexagesimal fractions by means of superscribed horizontal strokes or apices; in the edition I have used horizontal strokes for cardinal numbers and sexagesimal fractions (except the zero symbol $\bar{\tau}$ which, since it is not an alphabetic letter, does not take such a stroke), and apices for ordinal numbers and part-fractions (except the non-alphabetic 1/2 symbol \angle). In the translation, degrees and minutes are indicated as such by $^\circ$ and $'$ for clarity, but the text lacks comparable indications.

Neugebauer and van Hoesen's commentary on L497 and their observations on it elsewhere in the volume clarified many aspects of the text, but there are some mistakes. Their most important omission is that they did not attempt to compare the astronomical data with recomputation using Ptolemy's *Handy Tables*, on which it turns out that Eutocius relied for more or less everything that is not purely astrological. In the present commentary I restate many of their findings so that the reader will not need to go back and forth between *Greek Horoscopes* and this presentation, but I have attempted to approach this material more from the perspective of how Eutocius could have obtained the information he provides.

9 For the suggestion see Toomer 1976, 18 n. 2; cf. Cameron 1990, 105–106 for speculative reliance on it.

10 Neugebauer and van Hoesen 1959, 189.

(1) ἐκ τῶν Εὐτοκίου ἀστρολογουμένων.

(L140v)

(P217r)

ἀναγκαῖον ὑποδείξει πάς τε δεῖ ἐκτίθεσθαι τὴν τοῦ ἀναδιδομένου θέματος
ψηφοφορίαν καὶ τὴν τῶν ἐφημερίδων καταγραφὴν, καὶ πρῶτον τὸ θέμα
ἐκκείσθω, τοσοῦτον ἀπὸ τῶν γενεθλιαλογουμένων προσλαβὼν ὅσον ἢ χρεία
5 ἀπαιτεῖ πρὸς ὑπόμνησιν τοῦ ἀποτελοῦντος ἀνδρός, τουτέστιν τὰ τε τρίγωνα
καὶ τοὺς οἴκους, ὑψώματά τε καὶ ταπεινώματα, καὶ ὅρια καὶ δεκανοὺς καὶ
πρόσωπα καὶ μονομοιρίας, τοὺς δὲ κλήρους ὡς ἂν ἕκαστος βούληται κατὰ
τὴν παρ' ἑκάστῳ χρείαν ἐκτιθέσθω.

(2) ἔχει δὲ | τὸ ὑπόδειγμα τοῦ θέματος οὕτως. ὑποκείσθω ἔτος ἀπὸ τῆς τοῦ L141r
10 Διοκλητιανοῦ βασιλείας ἀρχῆς σιδ', ὅπερ ἐστὶν ἀπὸ τῆς τοῦ Μακεδόνοιο
Ἀλεξάνδρου τελευτῆς ωκα', μηνὶ κατὰ Ἀλεξανδρέας Ἄθυρ α', ὥρα ἡμέ-
ρας καιρικῆ πρὸς τὴν ἐν Αἰγύπτῳ Ἀλεξανδρείαν ζ' ιβ'. κατὰ τὸν χρόνον
οὖν τούτον καὶ τὸν τόπον τὸν εἰρημένον, τουτέστιν τὴν Ἀλεξανδρείαν, ἐψη-
φήσαμεν τὰς τε ἐποχὰς τῶν ἀστέρων καὶ τὰ κέντρα ἀκριβῶς, καὶ ἐξεθέμεθα
15 αὐτὰ ἄνευ τροπῆς διὰ τὸ οὕτως καλῶς δοκεῖν τῷ θεῷ Πτολεμαίῳ. εἰσὶν οὖν
αἱ τῶν ἑπτὰ πλανωμένων ἐποχαὶ καὶ τὰ κέντρα καὶ οἱ κλήροι οὕτως.

3–4 καὶ τὴν τῶν ἐφημερίδων — ἐκκείσθω om. L | 7 κατὰ: πρὸς P | 11 post τελευτῆς add. ἔτος P |
Ἀλεξανδρέας: Ἀλεξανδρεῖς LP | 12 καιρικῆ P: καὶ ρικ() L

(1) From the astrological writings of Eutocius.

It being necessary to exhibit how one ought to set out both the computation of the given *thema* and the inscribing of ephemerides, and first let the *thema* be set out, taking as much from the literature on nativity astrology as utility demands for informing the man who makes the astrological prognostication, namely the triplicities and the houses, exaltations and depressions, and terms and decans and faces and single-degrees, and let the lots be selected in whatever way each person wants according to the utility associated with each one.

(2) The example of the *thema* stands thus. Let there be established: 214th year (counted) from the beginning of the rule of Diocletian, which is 821st from the death of the Macedonian Alexander, in month, according to the Alexandrians, Hathyr 1st (day), $7 \frac{1}{12}$ seasonal hour of the day for Alexandria in Egypt. Hence according to this time and the stated place, that is, Alexandria, we computed the positions of the stars and the centers accurately, and we set them out without *tropē* since the divine Ptolemy considered this way good. So the positions of the seven wandering (stars) and the centers and the lots are as follows.

(3) ἥλιος Σκορπίου δ̄ κ̄β̄
 κελήνη Ταύρου ιη̄ ῑ
 Κρόνος Κριοῦ κδ̄ κη̄
 20 Ζεὺς Παρθένου δ̄ ιβ̄
 Ἄρης Λέοντος ιζ̄ λ̄ε̄
 Ἀφροδίτη Σκορπίου κᾱ νη̄
 Ἑρμῆς Σκορπίου ιδ̄ λ̄β̄
 ὠροσκόπος Ὑδροχόου β̄ ιβ̄
 25 μεουράνημα Σκορπίου ιθ̄ κ̄β̄
 Τύχη Λέοντος ις̄ |
 | Δαίμων Καρκίνου ιη̄ κδ̄
 πανέληνος Ταύρου γ̄ ζ̄
 ἀναβιβάζων Κριοῦ ις̄ δ̄

P217v

30 (4) ἥλιος Σκορπίου δ̄ κ̄β̄, λοξωθεὶς πρὸς τὸν ἰσημερινὸν ἐπὶ τοῦ διὰ τῶν
 πόλων αὐτοῦ κύκλου πρὸς νότον μοίρας ιγ̄ ς̄. νότον κατέρχεται ἐπὶ βαθμοῦ
 γ', ἐπέχων τοῦ βαθμοῦ τὸ δ' λ'. συνεγγίζει δ' αὐτῷ ἀπλανῆς ἀστὴρ ὁ μεταξὺ
 τῶν χηλῶν τοῦ Σκορπίου, μεγέθους δ', ἐπέχων κατὰ μῆκος Σκορπίου δ̄ μ̄ς̄,
 κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων τῶν ζωδίων κύκλου πρὸς νότον ᾱ λ̄,
 35 ὡς ἀπέχειν τοῦ ἡλίου κατὰ μὲν μῆκος εἰς τὰ ἐπόμενα ρ̄ κδ̄, κατὰ δὲ πλάτος
 ᾱ λ̄[ς̄]. οἰκῶ Ἄρεως, ὀρίοις κατὰ Πτολεμαίων καὶ κατ' Αἰγυπτίους Ἄρεως,
 τριγώνῳ Ἀφροδίτης, μετοχῇ Ἄρεως καὶ τρίτης κελήνης, ὑψώματι οὐδενός,
 ταπεινώματι κελήνης, δεκανῶ α', προσώπῳ Ἄρεως, μονομοιρία κελήνης.

28 πανέληνος NvH: ⅈ π̄LP | γ̄ ζ̄ L: ιζ̄ P | 30 τοῦ P: τὸν L | 31 πρὸς L: ζ̄ P | ιγ̄ P· γ̄ L | 32 τὸ L: τοῦ
 P | 33 ἐπέχων L: ἀπέχων P | 34 ἀπέχων L: ἐπέχων P | μέσων P: μέσου L | 35 ἀπέχειν L: ἐπέχειν P |
 36 ς̄ secl. Pingree | 38 μονομοιρία P: μονομοιρίας L

- (3) Sun Scorpio 4° 22'
 Moon Taurus 18° 10'
 Saturn Aries 24° 28'
 Jupiter Virgo 4° 12'
 Mars Leo 17° 35'
 Venus Scorpio 21° 58'
 Mercury Scorpio 14° 32'
 Ascendant Aquarius 2° 12'
 Midheaven Scorpio 19° 22'
 Fortune Leo 16°
 Daimon Cancer 18° 24'
 Full Moon Taurus 3° 7'
 Ascending node Aries 16° 4'

(4) Sun at Scorpio 4° 22', slanted with respect to the equator on the circle through (the equator's) poles to the south 13° 6'. It descends the south in the 3rd step, occupying $\frac{1}{4} \frac{1}{30}$ of the step. A fixed star is close to it, the (star) between the claws of the Scorpion, of the 4th magnitude, which is in longitude at Scorpio 4° 46', and is distant in latitude from the circle through the middles of the zodiacal signs to the south 1° 30', so that it is distant from the Sun in longitude in the trailing direction 0° 24', and in latitude 1° 30'. In the house of Mars, terms according to Ptolemy and according to the Egyptians of Mars, triplicity of Venus, with Mars as sharer and the Moon in third place, exaltation of none, depression of the Moon, 1st decan, face of Mars, single-degree of the Moon.

(5) $\overline{\text{ιη ι}}$, ἀπέχουσα κατὰ πλάτος ἀπὸ τοῦ διὰ μέσων τῶν ζω-
 40 δίων κύκλου πρὸς ἄρκτον $\overline{\beta \mu\beta}$. βορρᾶν ἀνέρχεται ἐπὶ βαθμοῦ γ' , ἐπέχουσα
 τοῦ βαθμοῦ τὸ ι' κδ'. συνεγγίζει δ' αὐτῇ ἀπλανῆς ἀστὴρ ὁ ἐπὶ τῆς ἐκφύσεως
 τοῦ βορείου κέρατος τοῦ Ταύρου, μεγέθους δ', ἐπέχων κατὰ μῆκος Ταύρου
 $\overline{\text{ιθ ις}}$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων τῶν ζωδίων κύκλου πρὸς νότον
 $\overline{\text{ο ιε}}$, ὡς ἀπέχειν τῆς αὐτῆς κατὰ μὲν μῆκος εἰς τὰ ἐπόμενα $\overline{\alpha \varsigma}$, κατὰ δὲ
 45 πλάτος πρὸς νότον $\overline{\beta \nu\zeta}$. οἰκῶ Ἄφροδίτης, ὀρίοις κατὰ Πτολεμαίων καὶ κατ'
 Αἰγυπτίους Διός, τριγώνῳ Ἄφροδίτης, μετοχῇ ἰδίᾳ, τρίτου Ἄρεως, ὑψώμα-
 τι ἰδίῳ, ταπεινώματι οὐδενός, δεκανῶ β', προσώπῳ ἰδίῳ, μονομοιρίᾳ Διός.

(6) Κρόνος Κριοῦ $\overline{\text{κδ κη}}$, ἀπέχων κατὰ πλάτος τοῦ διὰ μέσων τῶν ζωδίων
 κύκλου πρὸς νότον $\overline{\gamma \epsilon}$. νότον ἀνέρχεται ἐπὶ βαθμοῦ α' , ἐπέχων τοῦ βαθμοῦ
 50 τὸ ν' . συνεγγίζουσι δὲ αὐτῶ ἀπλανεῖς ἀστέρες, εἰς μὲν τὰ προηγούμενα ὁ
 ἐπόμενος τῶν ἐν τῷ ῥομβοειδῇ τετραπλεύρῳ τοῦ Κριοῦ καὶ ἐπ' ἄκρου τοῦ
 μυκτῆρος τοῦ Κήτους, ἐπέχων κατὰ μῆκος Κριοῦ $\overline{\text{κα ις}}$, κατὰ δὲ πλάτος
 ἀπέχων τοῦ διὰ μέσων τῶν ζωδίων κύκλου πρὸς νότον $\overline{\zeta \mu\epsilon}$, ὡς ἀπέχειν τοῦ
 Κρόνου κατὰ μὲν μῆκος εἰς τὰ προηγούμενα $\overline{\gamma \iota\beta}$, κατὰ δὲ πλάτος $\overline{\delta \mu}$, εἰς δὲ
 55 τὰ ἐπόμενα συνεγγίζει αὐτῶ τῶν ἐν τῇ οὐρᾷ τοῦ Κριοῦ | τριῶν | ὁ προηγού- L141v
 μενος, ἐπέχων κατὰ μῆκος Κριοῦ $\overline{\text{κζ κς}}$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ P218r
 μέσων τῶν ζωδίων κύκλου πρὸς ἄρκτον $\overline{\alpha \mu}$, ὡς ἀπέχειν τοῦ Κρόνου κατὰ
 μὲν μῆκος εἰς τὰ ἐπόμενα $\overline{\beta \nu\eta}$, κατὰ δὲ πλάτος $\overline{\delta \mu\epsilon}$. ἀμφοτέροι δὲ εἰσιν
 60 μεγέθους δ'. ἀπὸ πρώτου στηριγμοῦ ἀφαιρετικός, ἐσπέριος, φαινόμενος,
 ποιητάμενος τὴν ἀκρωνυχίαν πρὸ ἡμερῶν πολλῶν. οἰκῶ Ἄρεως, ὀρίοις
 κατὰ Πτολεμαίων καὶ κατὰ Αἰγυπτίους Ἄρεως, τριγώνῳ ἡλίου, μετοχῇ Διός
 καὶ τρίτου Κρόνου, ὑψώματι ἡλίου, ταπεινώματι ἰδίῳ, δεκανῶ γ' , προσώπῳ
 Ἄφροδίτης, μονομοιρίᾳ Ἑρμοῦ.

39 μέσων P: μέσου L | ζωδίων P: ζωδιακός L | 40 post βορρᾶν add. δὲ P | 41 ἐκφύσεως P: ἐκφύως
 L | 43 ἀπέχων L: ἐπέχων P | μέσων P: μέσου L | ζωδίων P: ζωδ() L | 44 ἀπέχειν L: ἐπέχειν P | 45
 πρὸς νότον om. L | 47 ταπεινώματι — ἰδίῳ om. L | 48 ἀπέχων L: ἐπέχων P | μέσων P: μέσου L |
 49 πρὸς L: ζ P | νότον om. P ut videtur | 51 τετραπλεύρῳ P: τετραπλεύρου L | 52 Κριοῦ om. L |
 $\overline{\text{κα ις}}$ NvH: $\overline{\text{ς ς}}$ LP | 53 ἀπέχων L: ἐπέχων P | μέσων P: μέσου L | ζωδίων P: ζωδιακῶν L | ἀπέχειν
 L: ἐπέχειν P | 54 $\overline{\delta \mu'}$ L: δώ P | 55 αὐτῶ P: αὐτὸν L | τοῦ L: τὸ P | 56 $\overline{\text{κς}}$ add. NvH | 57 μέσων:
 μέσου L, om. P | ζωδίων P: ζωδιακῶν L | ἄρκτον L: ἄρκτους P | 59 ἀφαιρετικός: ἀφαιρέτης LP |
 60–61 ὀρίοις — Ἄρεως om. L | 62 καὶ om. L

(5) Moon at Taurus $18^{\circ} 10'$, being distant in latitude from the circle through the middles of the zodiacal signs to the north $2^{\circ} 42'$. It ascends the north in the 3rd step, occupying $\frac{1}{10} \frac{1}{24}$ of the step. A fixed star is close to it, the (star) on the point of juncture of the northern horn of the Bull, of 4th magnitude, which is in longitude at Taurus $19^{\circ} 16'$, and in latitude is distant from the circle through the middles of the zodiacal signs to the south $0^{\circ} 15'$, so that it is distant from the Moon in longitude in the trailing direction $1^{\circ} 6'$, and in latitude to the south $2^{\circ} 57'$. In the house of Venus, terms according to Ptolemy and according to the Egyptians of Jupiter, triplicity of Venus, with itself as sharer and Mars in third place, its own exaltation, depression of none, 2nd decan, its own face, single-degree of Jupiter.

(6) Saturn at Aries $24^{\circ} 28'$, being distant in latitude from the circle through the middles of the zodiacal signs to the south $3^{\circ} 5'$. It ascends the south in the 1st step, occupying $\frac{1}{50}$ of the step. Fixed stars are close to it, in the leading direction the trailing (star) of those on the rhomboidal quadrilateral of the Ram and on the tip of the nostril of the Sea Monster, being in longitude at Aries $21^{\circ} 16'$, and in latitude being distant from the circle through the middles of the zodiacal signs to the south $7^{\circ} 45'$, so that it is distant from Saturn in longitude in the leading direction $3^{\circ} 12'$, and in latitude $4^{\circ} 40'$; and close to it in the trailing direction is the leading one of the three (stars) on the tail of the Ram, which is in longitude at Aries $27^{\circ} <26^{\circ}>$ and in latitude is distant from the circle through the middles of the zodiacal signs to the north $1^{\circ} 40'$, so that it is distant from Saturn in longitude in the trailing direction $2^{\circ} 58'$, and in latitude $4^{\circ} 45'$. Both are of the 4th magnitude. Following the first station, subtractive, in the evening, visible, having made its acronychal rising many days earlier. In the house of Mars, terms according to Ptolemy and according to the Egyptians of Mars, triplicity of the Sun, with Jupiter as sharer and Saturn in third place, exaltation of the Sun, its own depression, 3rd decan, face of Venus, single-degree of Mercury.

(7) Ζεὺς Παρθένου $\bar{\delta} \bar{\iota}\beta$, ἀπέχων κατὰ πλάτος τοῦ διὰ μέσων τῶν ζωδίων
 65 κύκλου πρὸς ἄρκτον $\bar{\omega} \bar{\nu}\epsilon$. βορρᾶν ἀνέρχεται ἐπὶ βαθμοῦ γ', ἐπέχων τοῦ
 βαθμοῦ τὸ $\angle \epsilon'$. συνεχίζει δὲ αὐτῷ ἀπλανῆς ἀστὴρ ὁ ἐπ' ἄκρας τῆς νοτίας
 καὶ ἀριστερᾶς πτέρυγος τῆς Παρθένου, μεγέθους γ', ἐπέχων κατὰ μῆκος
 Παρθένου $\bar{\beta} \bar{\lambda}\zeta$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων τῶν ζωδίων κύκλου
 πρὸς βορρᾶν $\bar{\omega} \bar{\iota}$, ὡς ἀπέχειν τοῦ Διὸς κατὰ μὲν μῆκος εἰς τὰ προηγούμε-
 70 να $\bar{\alpha} \bar{\lambda}\zeta$, κατὰ δὲ πλάτος $\bar{\omega} \bar{\mu}\epsilon$. προσθετικός, μηδέπω ποιησάμενος τὸν α'
 κτηριγμόν, ἔφωτος, φαινόμενος. οἰκῶ Ἑρμοῦ, ὀρίοις κατὰ Πτολεμαίων καὶ
 κατ' Αἰγυπτίους Ἑρμοῦ, τριγώνῳ Ἀφροδίτης, (μετοχῇ σελήνης καὶ τρίτου
 Ἄρεως), ὑψώματι ἰδίῳ, ταπεινώματι Ἀφροδίτης, δεκανῶ α', προσώπῳ ἡλί-
 ου, μονομοιρία Ἄρεως.

(8) Ἄρης Λέοντος $\bar{\iota}\zeta \bar{\lambda}\epsilon$, ἀπέχων κατὰ πλάτος τοῦ διὰ μέσων τῶν ζωδί-
 75 ων κύκλου πρὸς ἄρκτον $\bar{\alpha} \bar{\epsilon}$. βορρᾶν ἀνέρχεται ἐπὶ βαθμοῦ β', ἐπέχων τοῦ
 βαθμοῦ τὸ \angle . συνεχίζει δ' αὐτῷ ἀπλανῆς ἀστὴρ τῶν ἐν τοῖς γλουτοῖς τοῦ
 Λέοντος δύο ὁ νοτιώτερος, μεγέθους γ', ἐπέχων κατὰ μῆκος Λέοντος $\bar{\zeta} \bar{\iota}\bar{\theta}$
 $\bar{\nu}\zeta$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων τῶν ζωδίων κύκλῳ πρὸς βορρᾶν
 80 $\bar{\theta} \bar{\mu}$, ὡς ἀπέχειν τοῦ Ἄρεως κατὰ μὲν μῆκος εἰς τὰ ἐπόμενα $\bar{\beta} \bar{\kappa}\alpha$, κατὰ δὲ
 πλάτος $\bar{\eta} \bar{\lambda}\epsilon$. προσθετικός, μηδέπω ποιησάμενος τὸν α' κτηριγμόν, ἔφωτος,
 φαινόμενος. οἰκῶ ἡλίου, ὀρίοις κατὰ μὲν Πτολεμαίων Ἀφροδίτης, κατὰ δὲ
 Αἰγυπτίους Κρόνου, τριγώνῳ ἡλίου, μετοχῇ Διὸς καὶ τρίτου Κρόνου, ὑψώ-
 ματι οὐδενός, ταπεινώματι οὐδενός, δεκανῶ β', προσώπῳ Διός, μονομοιρία
 85 σελήνης.

64 $\bar{\delta}$ P: $\bar{\beta}$ L | μέσων P: μέσου L | ζωδίων P in corr.: ζωδιακῶν L | 65 $\bar{\nu}\epsilon$: $\bar{\lambda}\epsilon$ LP | 68 ἀπέχων: ἐπέχων
 P, om. L | 68–69 τοῦ διὰ — κύκλου om. L | 69 ἀπέχειν L: ἐπέχειν P | 70 προσθετικός: προθέτης
 LP | τὸν L: τοῦ P | 72–73 μετοχῇ — Ἄρεως add. Pingree | 73 ἰδίῳ: immo Ἑρμοῦ NvH | 75 μέσων
 P: μέσου L | 75–76 ζωδίων P: ζωδιακῶν L | 77 ante ἀπλανῆς add. ὁ P | 78 $\bar{\iota}(\bar{\theta})$ add. NvH | 79
 ἀπέχων: ἐπέχων P, om. L | τοῦ διὰ — κύκλῳ om. L | 80 ἀπέχειν L: ἐπέχειν P | 81 προσθετικός:
 προσθέτης LP | 82 μὲν om. P | 83 καὶ om. L | 83–84 ὑψώματι P: ὑψώματος L | 84 μονομοιρία P:
 μονομοιρίας L

(7) Jupiter at Virgo $4^{\circ} 12'$, being distant in latitude from the circle through the middles of the zodiacal signs to the north $0^{\circ} 55'$. It ascends the north in the 3rd step, occupying $\frac{1}{2} \frac{1}{5}$ of the step. A fixed star is close to it, the (star) on the tip of the southern and left wing of the Maiden, of 3rd magnitude, which is in longitude at Virgo $2^{\circ} 36'$, and in latitude being distant from the circle through the middles of the zodiacal signs to the north $0^{\circ} 10'$, so that it is distant from Jupiter in longitude in the leading direction $1^{\circ} 36'$, and in latitude $0^{\circ} 45'$. Additive, not yet having made its 1st station, in the morning, visible. In the house of Mercury, terms according to Ptolemy and according to the Egyptians of Mercury, triplicity of Venus, <with the Moon as sharer and Mars in third place>, its own exaltation, depression of Venus, 1st decan, face of the Sun, single-degree of Mars.

(8) Mars at Leo $17^{\circ} 35'$, being distant in latitude from the circle through the middles of the zodiacal signs to the north $1^{\circ} 5'$. It ascends the north in the 2nd step, occupying $\frac{1}{2}$ of the step. A fixed star is close to it, the more southerly of the two on the buttocks of the Lion, of 3rd magnitude, being in longitude at Leo $9^{\circ} 56'$, and in latitude being distant from the circle through the middles of the zodiacal signs to the north $9^{\circ} 40'$, so that it is distant from Mars in longitude in the trailing direction $2^{\circ} 21'$, and in latitude $8^{\circ} 35'$. Additive, not yet having made its 1st station, in the morning, visible. In the house of the Sun, terms according to Ptolemy of Venus and according to the Egyptians of Saturn, triplicity of the Sun, with Jupiter as sharer and Saturn in third place, exaltation of none, depression of none, 2nd decan, face of Jupiter, single-degree of the Moon.

(9) | Ἀφροδίτη Σκορπίου $\overline{\kappa\alpha\ \nu\eta}$, ἀπέχουσα κατὰ πλάτος τοῦ διὰ μέσων τῶν P218v
 ζωδίων κύκλου πρὸς νότον $\overline{\tau\ \lambda\theta}$. νότον κατέρχεται ἐπὶ βαθμοῦ α' , ἐπέ-
 χουσα τοῦ βαθμοῦ τὸ γ' $\iota\epsilon'$. συνεγγίζουσι δὲ αὐτῇ ἀπλανεῖς ἀστέρεις, εἰς μὲν
 τὰ προηγούμενα ὁ ἐπόμενος τῶν ἐν τῷ σώματι τοῦ Σκορπίου τριῶν, ἐπέχων
 90 κατὰ μῆκος Σκορπίου $\overline{\iota\eta\ \varsigma}$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων τῶν ζω-
 δίων κύκλου πρὸς νότον $\overline{\epsilon\ \lambda}$, ὡς ἀπέχειν τῆς Ἀφροδίτης κατὰ μὲν μῆκος
 εἰς τὰ προηγούμενα $\overline{\gamma\ \nu\beta}$, κατὰ δὲ πλάτος $\overline{\delta\ \nu\alpha}$, εἰς δὲ τὰ ἐπόμενα συνεγγίζει
 αὐτῇ ὁ ἐπὶ τοῦ δεξιοῦ καὶ ἐπομένου γόνατος τοῦ Ὀφιοῦχου, ἐπέχων κατὰ
 μῆκος Σκορπίου $\overline{\kappa\delta\ \mu\varsigma}$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων τῶν ζωδίων
 95 κύκλου πρὸς βορρᾶν $\overline{\zeta\ \lambda}$, ὡς ἀπέχειν τῆς Ἀφροδίτης κατὰ μὲν μῆκος εἰς τὰ
 ἐπόμενα $\overline{\beta\ \mu\eta}$, κατὰ δὲ πλάτος $\overline{\eta\ \theta}$. ἀμφότεροι δὲ εἰσὶν μεγέθους γ' . προσθε-
 τική, μη|δέπω ποιησαμένη τὸν α' στηριγμόν, ἐσπερία, φαινομένη, ποιησαμέ- L142r
 νη τὴν ἐσπερίαν ἀνατολὴν πρὸ ἡμερῶν πολλῶν. οἰκῶ Ἄρεως, ὁρίοις κατὰ
 μὲν Πτολεμαῖον Ἑρμοῦ, κατὰ δὲ Αἰγυπτίους Διός, τριγώνῳ ἰδίῳ, μετοχῇ
 100 Ἄρεως καὶ τρίτης σελήνης, ὑψώματι οὐδενός, ταπεινώματι σελήνης, δε-
 κανῶ γ' , προσώπῳ ἰδίῳ, μονομοιρίᾳ Ἄρεως.

(10) Ἑρμῆς Σκορπίου $\overline{\iota\delta\ \lambda\beta}$, ἀπέχων κατὰ πλάτος τοῦ διὰ μέσων τῶν ζω-
 δίων κύκλου πρὸς νότον $\overline{\alpha\ \lambda\eta}$. νότον κατέρχεται ἐπὶ βαθμοῦ γ' , ἐπέχων
 τοῦ βαθμοῦ τὸ ϵ' ι' . συνεγγίζει δ' αὐτῷ ἀπλανῆς ἀστὴρ τῶν ἐν τῷ σώματι
 105 τοῦ Σκορπίου ὁ μέσος, ὑπόκιρρος, ὁ καλούμενος Ἀντάρης, μεγέθους β' ,
 ἐπέχων κατὰ μῆκος Σκορπίου $\overline{\iota\varsigma\ \iota\varsigma}$, κατὰ δὲ πλάτος ἀπέχων τοῦ διὰ μέσων
 τῶν ζωδίων κύκλου πρὸς νότον $\overline{\delta\ \tau}$, ὡς ἀπέχειν τοῦ Ἑρμοῦ κατὰ μὲν
 μῆκος εἰς τὰ ἐπόμενα $\overline{\alpha\ \mu\delta}$, κατὰ δὲ πλάτος $\overline{\beta\ \kappa\beta}$. προσθετικός, μηδέπω
 ποιησάμενος τὸν α' στηριγμόν, ἐσπεριος, ὑπαυγος, μέλλων ποιεῖσθαι τὴν
 110 ἐσπερίαν ἀνατολὴν μετὰ ἡμέρας δ . οἰκῶ Ἄρεως, ὁρίοις κατὰ μὲν Πτολε-
 μαῖον Διός, κατὰ δὲ Αἰγυπτίους Ἑρμοῦ, τριγώνῳ Ἀφροδίτης, μετοχῇ Ἄρε-
 ως, καὶ τρίτης σελήνης, ὑψώματι οὐδενός, ταπεινώματι σελήνης, δεκανῶ
 β' , προσώπῳ ἡλίου, μονομοιρίᾳ Ἄρεως.

86 μέσων P: μέσου L | 87 ζωδίων P: ζωδιακῶν L | 88 ἀπλανεῖς: ἀπλανῆς L, ἀπλῶν εἰς P | 89 σώ-
 ματι NvH: στόματι LP | 90 μέσων P: μέσου L | 90–91 ζωδίων P: ζωδιακῶν L | 92 $\overline{\gamma\ \nu\beta}$ L: γνω P | 94
 μέσων P: μέσου L | ζωδίων P: ζωδιακῶν L | 96 δὲ² om. P | 96–97 προσθετική: προσθέτης LP | 97
 ποιησαμένη P: ποιησάμενος L | 99 μὲν om. L | 102 $\overline{\iota\delta\ \lambda\beta}$ L: ἰδλω P | μέσων P: μέσου L | 102–103
 ζωδίων P: ζωδιακῶν L | 103 κατέρχεται P: κατ() L | 104 σώματι NvH: στόματι LP | 105 τοῦ om. P
 | ὁ² L: καὶ P | 107 μέσων P: μέσου L | 107 ζωδίων P: ζωδιακοῦ L | 108 προσθετικός: προσθέτης P,
 προθετ() L | 110 μὲν om. L | 111 κατὰ δὲ P: κατ' L

(9) Venus at Scorpio $21^{\circ} 58'$, being distant in latitude from the circle through the middles of the zodiacal signs to the south $0^{\circ} 39'$. It descends the south in the 1st step, occupying $\frac{1}{3} \frac{1}{15}$ of the step. Fixed stars are close to it, in the leading direction the trailing (star) of the three on the body of the Scorpion, being in longitude at Scorpio $18^{\circ} 6'$, and in latitude being distant from the circle through the middles of the zodiacal signs to the south $5^{\circ} 30'$, so that it is distant from Venus in longitude in the leading direction $3^{\circ} 52'$, and in latitude $4^{\circ} 51'$; and close to it in the trailing direction is the (star) on the right and trailing knee of Ophiuchus, being in longitude at Scorpio $24^{\circ} 46'$, and in latitude distant from the circle through the middles of the zodiacal signs to the north $7^{\circ} 30'$, so that it is distant from Venus in longitude in the trailing direction $2^{\circ} 48'$, and in latitude $8^{\circ} 9'$. Both are of 3rd magnitude. Additive, having not yet made its 1st station, in the evening, visible, having made its evening rising many days before. In the house of Mars, terms according to Ptolemy of Mercury, and according to the Egyptians of Jupiter, its own triplicity, with Mars as sharer and the Moon in third place, exaltation of none, depression of the Moon, 3rd decan, its own face, single-degree of Mars.

(10) Mercury at Scorpio $14^{\circ} 32'$, being distant in latitude from the circle through the middles of the zodiacal signs to the south $1^{\circ} 38'$. It descends the south in the 3rd step, occupying $\frac{1}{5} \frac{1}{10}$ of the step. A fixed star is close to it, the middle (star) of those on the body of the Scorpion, yellowish, called Antares, of 2nd magnitude, being in longitude at Scorpio $16^{\circ} 16'$, and in latitude distant from the circle through the middles of the zodiacal signs to the south $4^{\circ} 0'$, so that it is distant from Mercury in longitude in the trailing direction $1^{\circ} 44'$, and in latitude $2^{\circ} 22'$. Additive, not yet having made its 1st station, in the evening, outshined, going to make its evening rising after 4 days. In the house of Mars, terms according to Ptolemy of Jupiter and according to the Egyptians of Mercury, triplicity of Venus, with Mars as sharer and the moon in third place, exaltation of none, depression of the Moon, 2nd decan, face of the Sun, single-degree of Mars.

115 (11) | ἡ προγενομένη πανσέληνος, κατὰ Ἀλεξανδρέας Φαωφι λ', ὥρα ἡμέ- P219r
 ρας καιρικῆ α' ζ σ' η' Ταύρου γ̄ ζ̄. οἰκῶ Ἀφροδίτης, ὠρίοις κατὰ Πτο-
 λεμαίων καὶ κατ' Αἰγυπτίους Ἀφροδίτης, τριγώνῳ Ἀφροδίτης, μετοχῆι σέ-
 ληνης, τρίτου Ἄρεως, ὑψώματι σελήνης ταπεινώματι οὐδενός, δεκανῶ α',
 προσώπῳ Ἑρμοῦ, μονομοιρία Κρόνου.

120 (12) ὠροσκόπος Ἑδροχόου β̄ ιβ̄. οἰκῶ Κρόνου, ὠρίοις κατὰ μὲν Πτολεμαίων
 Κρόνου, κατὰ δ' Αἰγυπτίους Ἑρμοῦ, τριγώνῳ Κρόνου, μετοχῆι Ἑρμοῦ, τρί-
 του Διός, ὑψώματι (οὐδενός, ταπεινώματι) οὐδενός, δεκανῶ α', προσώπῳ
 Ἀφροδίτης, μονομοιρία Ἄρεως.

125 (13) μεσουράνημα Σκορπίου ιθ̄ κβ̄. οἰκῶ Ἄρεως, ὠρίοις κατὰ μὲν Πτολε-
 μαίων Ἀφροδίτης, κατὰ δὲ Αἰγυπτίους Ἑρμοῦ, τριγώνῳ Ἀφροδίτης, μετοχῆι
 Ἄρεως, τρίτης σελήνης, ὑψώματι οὐδενός, ταπεινώματι σελήνης, δεκανῶ
 β', προσώπῳ ἡλίου, μονομοιρία Κρόνου.

130 (14) κλῆρος τύχης Λέοντος ις̄ τ̄. οἰκῶ ἡλίου, ὠρίοις κατὰ μὲν Πτολεμαίων
 Ἀφροδίτης, κατὰ δ' Αἰγυπτίους Κρόνου, τριγώνῳ ἡλίου, μετοχῆι Διός, ὑψώ-
 ματι οὐδενός, ταπεινώματι οὐδενός, δεκανῶ β', προσώπῳ Διός, (τρίτου
 Κρόνου) μονομοιρία Ἀφροδίτης.

(15) κλῆρος δαίμονος Καρκίνου ιη̄ κδ̄. οἰκῶ σελήνης, ὠρίοις κατὰ Πτο-
 λεμαίων καὶ κατ' Αἰγυπτίους Ἑρμοῦ, τριγώνῳ Ἀφροδίτης, μετοχῆι Ἄρεως,
 τρίτης σελήνης, ὑψώματι Διός, ταπεινώματι Ἄρεως, δεκανῶ β', προσώπῳ
 Ἑρμοῦ, μονομοιρία ἡλίου.

114 προγενομένη P: προγεναμένη L | Ἀλεξανδρέας: Ἀλεξανδρεῖς LP | Φαωφι L: Φασορι ut videtur
 P | 115 καιρικῆ: καιρικ P, καὶ ρι() L | ᾱ ζ σ' η': ᾱ ζ σ' κ' L, σ' η' P | 116 κατ' om. L | 117 τρίτου
 — σελήνης om. L | 118 post Κρόνου scholium add. P: ἐὰν ἡ προγενομένη πανσέληνος (⊕ π̄) οὐσα
 γέγονε, σελήνης οὐσης Ταύρου γ̄ ζ̄, ἡμέρας, τοῦ ἡλίου ὑπὲρ γῆν ὄντος Σκορπίου γ̄ ζ̄, οὐκ ὠφέλι-
 μος τὸν ὑπὸ γῆν ὄντα φωστῆρα λαβεῖν, ἀλλὰ τὸν ὑπὲρ γῆν, τοῦ (sic) ὡς νῦν τὸν τοῦ ἡλίου τόπον,
 Σκορπίου γ̄ ζ̄. τοῦτο γὰρ ὁ μέγας Πτολεμαῖος κεφαλαίου (sic) γ' τοῦ γ' βιβλίου τῶν Ἀποτελεσμα-
 τικῶν κελεύει ποιεῖν | 119 μὲν om. L | 121 οὐδενός, ταπεινώματι add. Pingree | 125 δεκανῶ P: ι' L
 | 126 μονομοιρία P: μον() L | 129–130 τρίτου Κρόνου add. Pingree | 131 μὲν add. P

(11) The preceding Full Moon, according to the Alexandrians, Phaophi 30th (day), seasonal hour of the day $1\frac{1}{2}\frac{1}{6}\frac{1}{8}$, at Taurus $3^{\circ} 7'$. In the house of Venus, terms according to Ptolemy and according to the Egyptians of Venus, triplicity of Venus, with the Moon as sharer and Mars in third place, exaltation of the Moon, depression of none, 1st decan, face of Mercury, single-degree of Saturn.

(12) Ascendant at Aquarius $2^{\circ} 12'$. In the house of Saturn, terms according to Ptolemy of Saturn, and according to the Egyptians of Mercury, triplicity of Saturn, with Mercury as sharer and Jupiter in third place, exaltation of none, 1st decan, face of Venus, single-degree of Mars.

(13) Midheaven at Scorpio $19^{\circ} 22'$. In the house of Mars, terms according to Ptolemy of Venus, and according to the Egyptians of Mercury, triplicity of Venus, with Mars as sharer and the Moon in third place, exaltation of none, depression of the Moon, 2nd decan, face of the Sun, single-degree of Saturn.

(14) Lot of Fortune at Leo $16^{\circ} 0'$. In the house of the Sun, terms according to Ptolemy of Venus, and according to the Egyptians of Saturn, triplicity of the Sun, with Jupiter as sharer <and Saturn in third place>, exaltation of none, depression of none, 2nd decan, face of Jupiter, single-degree of Venus.

(15) Lot of Daimon at Cancer $18^{\circ} 24'$. In the house of the Moon, terms according to Ptolemy and according to the Egyptians of Mercury, triplicity of Venus, with Mars as sharer and the Moon in third place, exaltation of Jupiter, depression of Mars, 2nd decan, face of Mercury, single-degree of the Sun.

- 135 (16) κατὰ τὸ παράδειγμα τοῦτο δεῖ ἐπὶ πάσης πράξεως βιωτικῆς ἐκτίθεσθαι
 τὰς τῶν ζ' ἀστέρων ἐποχὰς καὶ οἰκοδεσποτείας, ἔτι δὲ καὶ τὰ κέντρα καὶ
 τοὺς κλήρους ὡς ἤδη ἔκκεινται ἐνταῦθα, καὶ ταῦτα ἀκριβῶς ἐπισκοπεῖν,
 ἵνα ἀγαθοποιοὶ τὸν τε ὠροσκόπον καὶ τὴν σελήνην καὶ τὸν κλῆρον τῆς τύ-
 χης οἰκοδεσποτῶσιν καὶ ἐπιθεωρῶσιν. ὁ γὰρ ταῦτα ἐνδελεχῶς καὶ ἀκριβῶς
 140 καὶ προηγουμένως πολυπραγμονῶν, τὰ μὲν συμβαίνοντα ἐκ τῆς τύχης κακὰ
 μειώσκει, τὰ δ' ἀγαθὰ ἐπαυξήσκει. ἔσται δὲ καὶ τοῖς χρωμένοις αὐτῷ συμβού-
 λῳ χρησιμώτατος καὶ ὠφελημώτατος. ἀδύνατον γὰρ ἄλλως τὸ μέλλον γνῶ-
 ναι | ἄνθρωπον ὄντα ἢ διὰ μαντικῆς. τοῦτο γὰρ καὶ ὁ θαυμάσιος Ὅμηρος L142v
 αἰνιττόμενος ἔλεγεν·
- 145 ὁ δ' ἔπειτα μετ' ἴχνια βαίνει θεοῖο,
 καὶ ἀλλαχοῦ·
 σὺν γὰρ θεῷ εἰλήλουθμεν.

(17) τὸ δὲ σχῆμα τοῦ θέματος·

137 κλήρους L: κλῆρες P | ἤδη ἔκκεινται Pingree: ἤδει ἔγκειντε L, ἤδει ἔκκαυ^τ ut videtur P | 140
 μὲν L: μὴ P | 141 δ' L: δὲ P | 145 θεοῖο L: θεοῖς P | 148 θέματος: θεάματος LP

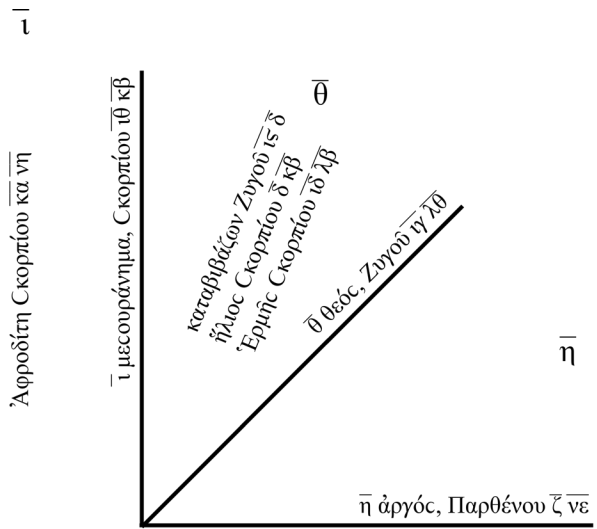
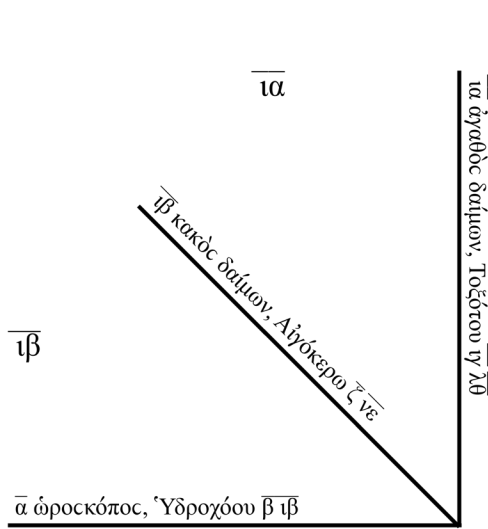
(16) According to this example one ought for every action of life to set out the positions and house-lordships of the seven stars, and also the centers and the lots, as they are set out already (?) here, and examine them accurately, in order that beneficents house-rule and right-aspect the ascendant and the Moon and the Lot of Fortune. For the person who makes careful inquiry into these things with persistence and accuracy and as a priority will diminish the bad things that occur from fortune and will augment the good things. He will be most useful and helpful to those who employ him as an advisor. For it is impossible for anyone who is human to know the future otherwise than through divination. For the wondrous Homer said this enigmatically:

... and he followed in the god's steps... (*Od.* 2.406 *et alibi*)

and elsewhere,

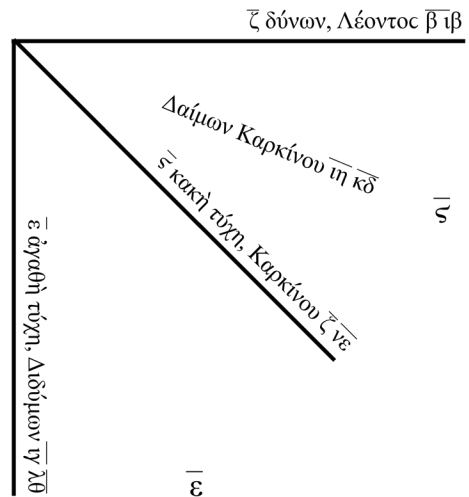
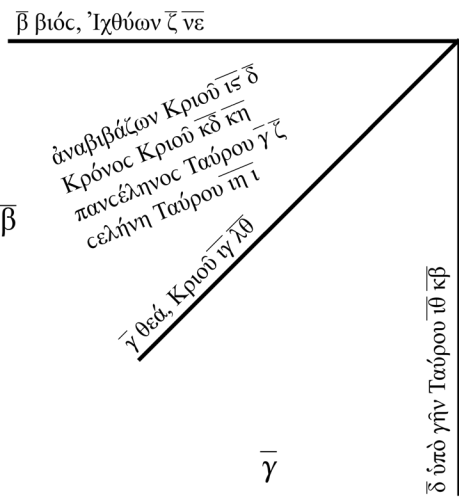
... for we have come with the god's help... (*Il.* 9.49)

(17) The drawing of the chart:

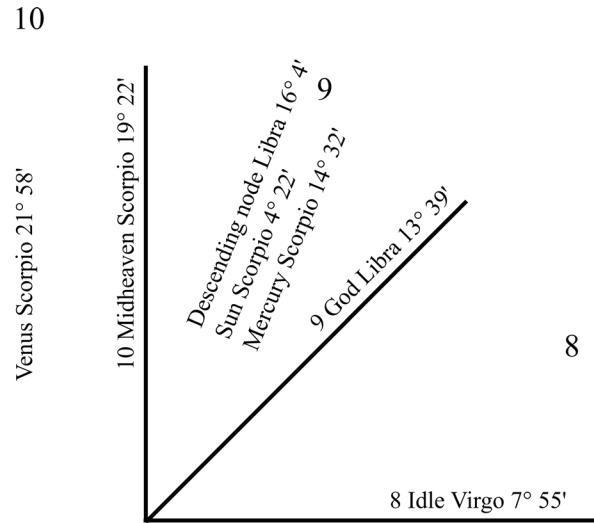
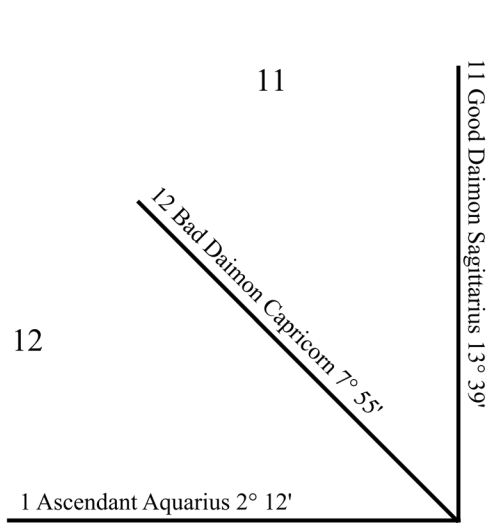


α + + +

Ζεὺς Παρθένου δ ιβ
 Ἄρης Λέοντος ιζ λε
 Τύχη Λέοντος ις Ϟ



οι

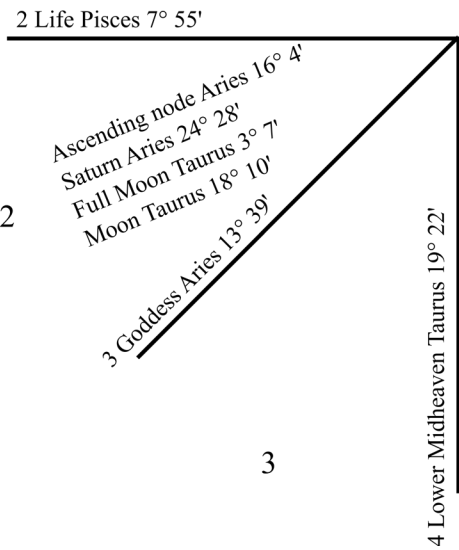


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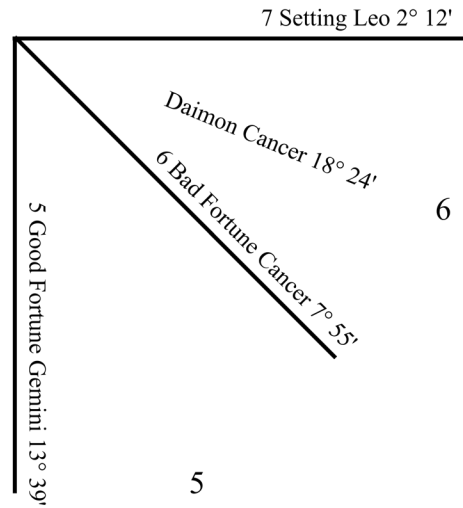
+++

Jupiter Virgo 4° 12'
Mars Leo 17° 35'
Fortune Leo 16° 0'

7



4



5

Texts in the diagram.

In the central space:

+++ (om. P)

Along line 1:

$\bar{\alpha}$ ὄροσκόπος, Ὑδροχόου $\bar{\beta}$ $\bar{\iota}\bar{\beta}$

Between lines 1 and 2:

$\langle \bar{\alpha} \rangle$

Along line 2:

$\bar{\beta}$ βιός, Ἰχθύων $\bar{\zeta}$ $\bar{\nu}\bar{\epsilon}$

Between lines 2 and 3:

$\bar{\beta}$

Along line 3:

$\bar{\gamma}$ θεά, Κριοῦ $\bar{\iota}\bar{\gamma}$ $\bar{\lambda}\bar{\theta}$ (Κριοῦ: symbolum ignotum L, υ P)

Between lines 3 and 4:

$\langle \bar{\gamma} \rangle$

ἀναβιβάζων Κριοῦ $\bar{\iota}\bar{\varsigma}$ $\bar{\delta}$

Κρόνος Κριοῦ $\bar{\kappa}\bar{\delta}$ $\bar{\kappa}\eta$

παντέληνος Ταύρου $\bar{\gamma}$ $\bar{\zeta}$ (παντέληνος: C $\overset{\circ}{\pi}$ P)

σελήνη Ταύρου $\bar{\iota}\eta$ $\bar{\iota}$

Along line 4:

$\bar{\delta}$ ὑπὸ γῆν Ταύρου $\bar{\iota}\bar{\theta}$ $\bar{\kappa}\bar{\beta}$ ($\bar{\delta}$: \ddagger L | ὑπὸ γῆν: B , ὑπόγειον P)

Between lines 4 and 5:

$\bar{\delta}$

Along line 5:

$\bar{\epsilon}$ ἀγαθὴ τύχη, Διδύμων $\bar{\iota}\bar{\gamma}$ $\bar{\lambda}\bar{\theta}$

Between lines 5 and 6:

$\bar{\epsilon}$ (om. L)

Along line 6:

$\bar{\varsigma}$ κακὴ τύχη, Καρκίνου $\bar{\zeta}$ $\bar{\nu}\bar{\epsilon}$ ($\bar{\nu}\bar{\epsilon}$ L: $\bar{\mu}\bar{\epsilon}$ P)

Between lines 6 and 7:

$\bar{\varsigma}$

Δαίμων Καρκίνου $\bar{\iota}\eta$ $\bar{\kappa}\bar{\delta}$

Along line 7:

$\bar{\zeta}$ δύνων, Λέοντος $\bar{\beta}$ $\bar{\iota}\bar{\beta}$ ($\bar{\beta}$ $\bar{\iota}\bar{\beta}$ L: $\bar{\alpha}$ P)

Texts in the diagram.

In the central space:

+ + + (om. P)

Along line 1:

1 Ascendant, Aquarius 2° 12'

Between lines 1 and 2:

⟨1⟩

Along line 2:

2 Life, Pisces 7° 55'

Between lines 2 and 3:

2

Along line 3:

3 Goddess, Aries 13° 39'

Between lines 3 and 4:

⟨3⟩

ascending node Aries 16° 4'

Saturn Aries 24° 28'

Full Moon Taurus 3° 7'

Moon Taurus 18° 10'

Along line 4:

4 Lower Midheaven Taurus 19° 22'

Between lines 4 and 5:

4

Along line 5:

5 Good Fortune, Gemini 13° 39'

Between lines 5 and 6:

5

Along line 6:

6 Good Fortune, Cancer 7° 55'

Between lines 6 and 7:

6

Daimon Cancer 18° 24'

Along line 7:

7 Setting, Leo 2° 12'

Between lines 7 and 8:

$\bar{\zeta}$ (om. L)

Τύχη Λέοντος $\bar{\iota\varsigma}$ $\bar{\tau}$ (Λέοντος om. L)

Ἄρης Λέοντος $\bar{\iota\zeta}$ $\bar{\lambda\epsilon}$

Ζεὺς Παρθένου $\bar{\delta}$ $\bar{\iota\beta}$ (Παρθένου om. L)

Along line 8:

$\bar{\eta}$ ἀργός, Παρθένου $\bar{\zeta}$ $\bar{\nu\epsilon}$

Between lines 8 and 9:

$\langle\bar{\eta}\rangle$

Along line 9:

$\bar{\theta}$ θεός, Ζυγοῦ $\bar{\iota\gamma}$ $\bar{\lambda\theta}$

Between lines 9 and 10:

$\bar{\theta}$

καταβιβάζων Ζυγοῦ $\bar{\iota\varsigma}$ $\bar{\delta}$

ἥλιος Σκορπίου $\bar{\delta}$ $\bar{\kappa\beta}$

Ἑρμῆς Σκορπίου $\bar{\iota\delta}$ $\bar{\lambda\beta}$

Along line 10:

$\bar{\iota}$ μεουράνημα, Σκορπίου $\bar{\iota\theta}$ $\bar{\kappa\beta}$

Between lines 10 and 11:

$\bar{\iota}$

Ἀφροδίτη Σκορπίου $\bar{\kappa\alpha}$ $\bar{\nu\eta}$

Along line 11:

$\bar{\iota\alpha}$ ἀγαθὸς δαίμων, Τοξότου $\bar{\iota\gamma}$ $\bar{\lambda\theta}$

Between lines 11 and 12:

$\langle\bar{\iota\alpha}\rangle$

Along line 12:

$\bar{\iota\beta}$ κακὸς δαίμων, Αἰγόκερω $\bar{\zeta}$ $\bar{\nu\epsilon}$ ($\bar{\nu\epsilon}$ L: $\bar{\nu\theta}$ P)

Between lines 12 and 1:

$\langle\bar{\iota\beta}\rangle$

Between lines 7 and 8:

7

Fortune Leo 16 0

Mars Leo 17° 35'

Jupiter Virgo 4° 12'

Along line 8:

8 Idle, Virgo 7° 55'

Between lines 8 and 9:

<8>

Along line 9:

9 God, Libra 13° 39'

Between lines 9 and 10:

9

descending node, Libra 16° 4'

Sun Scorpio 4° 22'

Mercury Scorpio 14° 32'

Along line 10:

10 Midheaven, Scorpio 19° 22'

Between lines 10 and 11:

10

Venus Scorpio 21° 58'

Along line 11:

11 Good demon, Sagittarius 13° 39'

Between lines 11 and 12:

<11>

Along line 12:

12 Bad demon, Capricorn 7° 55'

Between lines 12 and 1:

<12>

Date, place, and time.

The complete date is given in (2) only in the civil Egyptian calendar (“according to the Alexandrians”), as Era Diocletian 214, Hathyr (III) 1, which is in fact equivalent to AD 497 October 28, and, in the unintercalated Egyptian calendar, Era Diocletian 214 = Era Philip 821, Phamenoth (VII) 11. The Era Philip (“from the death of the Macedonian Alexander”) year 821 given in the text is properly speaking part of the date according to the unintercalated calendar which is the chronological framework of the *Handy Tables*.

The place of the nativity is stated to be Alexandria. For computational purposes (conversion between seasonal and equinoctial hours, and calculation of the ascendant) Eutocius probably used the *Handy Tables* table of oblique ascensions (Tihon A2) for the latitude of Lower Egypt (latitude $30^{\circ} 22'$) since according to the *Handy Tables* Table of Noteworthy Cities (Tihon G1) Alexandria’s latitude is only a little further north at 31° (more precisely, according to *Almagest* 5.12, ed. Heiberg 1.407, $30^{\circ} 58'$).¹¹

The time is given as either $7 \frac{1}{2}$ or $7;12$ seasonal hours, depending on whether the second numeral in the text is to be interpreted as a normal part-fraction or a sexagesimal fraction. Neugebauer and van Hoesen translate it as a sexagesimal fraction. However, since sexagesimal fractions are very seldom employed with times in hours in Greek astronomical texts, one might reasonably presume that this is a part-fraction, and this can in fact be confirmed. According to the *HT* ascension table for Lower Egypt, the Sun’s stated longitude, Scorpio $4^{\circ} 22'$, corresponds to oblique ascension $219^{\circ} 54'$ and a diurnal seasonal hour of $13^{\circ} 41'$ in equatorial time-degrees; the ascendant’s longitude, Aquarius $2^{\circ} 12'$, corresponds to oblique ascension $316^{\circ} 49'$. The ascensional difference, $96^{\circ} 55'$, is, to the nearest minute, $7 \frac{1}{12} \times 13^{\circ} 41'$.¹²

To give the time of birth with the precision of such a small fraction of an hour (five minutes in modern metrology) is highly unusual for a Greek horoscope. The norm, in both papyrus horoscopes and those horoscopes transmitted through the medieval tradition that state times, is simply to state the seasonal hour as an ordinal whole number, usually without saying what stage of the hour is meant though occasionally it is indicated as being at or near either the hour’s beginning or end.¹³ This imprecision is reflected in the Greco-Roman technology for telling time in hours, namely sundials and water-driven devices, which uniformly indicated only the beginnings and ends of seasonal hours.¹⁴ While it would have been theoretically possible to estimate fractional hours, say down to quarter-hours if not beyond, on accurately made and installed sundials of certain types (e.g. spherical and cylindrical), we have no evidence of people doing this. Times in fractional hours do occur occasionally in the technical astronomical literature, but they would have been observed using specialized instrumentation, determined by interpolation, or simply calculated from theory and tables.

A possible explanation of the fractional hour in the present horoscope is that Eutocius in fact assumed a nativity time one *equinoctial* hour after noon, so that the stated time is the result of converting the time in the other direction from what an astrologer normally would have to do. With accurate calculation using the seasonal hour length $13^{\circ} 41'$ quoted above from the *HT* ascension table, 1 equinoctial hour is approximately $1;5,46$ seasonal hours; one would have to

11 The designations of the individual tables of the *Handy Table* are from Tihon 1992, 52–56.

12 For the *Handy Tables* ascension tables I have consulted *Laur. Plut.* 28, 26 and Tihon 2011.

13 Jones 2022, 16.

14 Jones 2020, 125–136.

suppose that Eutocius truncated the result to 1;5 to obtain the fraction $1/12$, since $1/10$ would have been closer.

Eutocius says that he has calculated the longitudes of the heavenly bodies and centers “without *tropē*” (ἄνευ τροπῆς); this is probably alluding to the chapter (12) περὶ τροπῆς in Theon of Alexandria’s *Little Commentary on the Handy Tables* (ed. Tihon 236–237) which sets out a formula used by “the old astrologers” (οἱ παλαιοὶ τῶν ἀποτελεσματικῶν) to calculate a quantity, diminishing by $1/80^\circ$ per year from an initial value of 8° for 158 BC, that should be added to longitudes computed from Ptolemy’s tables. The formula (to which the term *tropē* apparently refers) is in reality a conversion of Ptolemy’s tropical longitudes to a sidereal frame of reference, and it was widely used during the 3rd and 4th centuries, but no instance of its use is known from the 5th century onwards.¹⁵ Eutocius’s remark that “the divine Ptolemy” approved *not* using the formula is a briefer positive version of Theon’s assertion that Ptolemy disapproved of the formula and anti-precessional theory supposedly underlying it “because of the fact that without the addition resulting from this kind of after-the-fact calculation, the aforesaid calculations made by means of the tables agree with determinations made by means of instruments, which is why we too (*scil.* Theon) advise not to adopt this kind of correction....” Since Theon’s formula was specifically devised to be applied to Ptolemy’s tables, it is unlikely that Ptolemy ever knew of its existence, though naturally, if he had, he would have deprecated it.

The epithet “divine” (θεῖος) is applied several times to Ptolemy by Hephaestion of Thebes (early 5th century), and it also occurs occasionally in the astrological literature from later antiquity inflated to the superlative θεϊότατος (e.g. in Olympiodorus’s lectures on astrology, ed. Boer 76.4). Presumably Eutocius picked it up from such an astrological context, though the issue of whether the *tropē* correction was valid is properly an astronomical one.

Astronomical data.

The longitudes of the heavenly bodies, centers, lots, Moon at the preceding Full Moon, and the Moon’s ascending node are all given twice: once as a list immediately after the statement of the place and date of the nativity, and again for each of these bodies and entities in the paragraph devoted to it. In these paragraphs Eutocius gives additional astronomical data: the Sun’s declination, latitudes of the Moon and planets, and the date of the Full Moon.

In Table 1 we compare the longitudes of the Sun, Moon, planets, and ascending node in the text with longitudes computed using the *Handy Tables* (Tihon A3–A4 for Sun and Moon, and A14–A15 for the planets) and the *Almagest*.¹⁶ It is obvious that the longitudes in the text were computed by one version or the other of Ptolemy’s tables. Except for the Moon, the discrepancies are of the order one would expect as resulting from different practices of roundings and precision in the arithmetical operations, and do not allow one to determine which tables were used. For the Moon, however, it is clear that the *Handy Tables* are the source, since lunar longitudes computed by the *Almagest* tables are always larger by about a half-hour’s motion than longitudes

¹⁵ Jones 2010.

¹⁶ For the calculations of longitudes and latitudes I used the spreadsheets for the *Handy Tables* and *Almagest* by Lars Gislén (<http://home.thep.lu.se/~larsg/Site/download.html>), which employ transcriptions of Ptolemy’s tables rather than direct trigonometrical computations from Ptolemy’s models (as is done in Robert Gent’s *Almagest Ephemeris Calculator*, <https://webpace.science.uu.nl/~gent0113/astro/almagestephemeris.htm>); because the tables incorporate interpolations and roundings, differences significant for the present kind of comparison can arise between data obtained by them and by the models on which they are based. In Gislén’s spreadsheets I disabled the correction for equation of time, which would not have been used by ancient astrologers.

	<i>Text</i>	<i>Handy Tables</i>	<i>Almagest</i>
Sun	Scorpio 4° 22'	Scorpio 4° 22'	Scorpio 4° 23'
Moon	Taurus 18° 10'	Taurus 18° 9'	Taurus 18° 26'
Saturn	Aries 24° 28'	Aries 24° 27'	Aries 24° 26'
Jupiter	Virgo 4° 12'	Virgo 4° 12'	Virgo 4° 10'
Mars	Leo 17° 35'	Leo 17° 36'	Leo 17° 33'
Venus	Scorpio 21° 58'	Scorpio 21° 59'	Scorpio 21° 58'
Mercury	Scorpio 14° 32'	Scorpio 14° 27'	Scorpio 14° 34'
Ascending node	Aries 16° 4'	Aries 16° 3'	Aries 16° 2'

Table 1. Longitudes in the horoscope compared with calculation by the *Almagest* and *Handy Tables*.

computed for the same dates and times by the *Handy Tables* because of the difference of equation of time between the Era Nabonassar epoch of the *Almagest* and the Era Philip epoch of the *Handy Tables*.¹⁷

In Table 2 we compare the solar declination and the latitudes of the other heavenly bodies as given in the text¹⁸ with the *Handy Tables* (Tihon A5 for Sun and Moon and A16 for the planets) and *Almagest*. The planets' latitudes clearly were computed by the *Handy Tables*, since the underlying models for planetary latitude in the *Handy Tables* were significantly different from those of *Almagest* Book 13.¹⁹ I am unable to account for the modest but significant discrepancies between text and either set of tables for the Sun's declination and Saturn's latitude.²⁰ In any case, it seems safe to assume that the *Handy Tables* were the source of all the positional information.

Associated with the latitudes are two-part statements that first specify whether the body is ascending or descending the "north" or the "south" (the four possible combinations were sometimes referred to as the body's "wind-direction," ἄνεμος, though not in the present text) and then give a numbered "step" (βαθμός) and a position within the step, expressed as a part-fraction or part-fractions of the entire step. As Neugebauer and van Hoesen (p. 154) showed, the steps and fractions were calculated according to the precepts in Theon of Alexandria's *Little Commentary*, chapters 13 (Sun, ed. Tihon 237–238), 14 (Moon, ed. Tihon 238), and 16 (planets, ed. Tihon 243–244), though their discussion with respect to the planets is hampered by not paying attention to Theon's instructions for determining the wind-direction, which is a prior operation to the determination of the step and its fraction.

¹⁷ Neugebauer 1975, 2.987–988.

¹⁸ Both L and P read 35 for the Jupiter's minutes, but the difference in latitude between the planet and the nearby fixed star implies 55; Neugebauer and van Hoesen did not catch this scribal error.

¹⁹ Swerdlow 2005.

²⁰ One might choose to read the declination as $13 \frac{1}{6}^\circ$ (i.e. $13^\circ 10'$) instead of $13^\circ 6'$, but this would be the only instance in the text of a longitude written with a part-fraction. L's reading, $3^\circ 6'$, is clearly wrong.

	<i>Text</i>	<i>Handy Tables</i>	<i>Almagest</i>
Sun (declination)	13° 6' S	13° 11' S	13° 11' S
Moon	2° 42' N	2° 39' N	2° 40'
Saturn	3° 5' S	2° 56' S	2° 51' S
Jupiter	0° 55' N	0° 55' N	1° 1' N
Mars	1° 5' N	1° 5' N	1° 19' N
Venus	0° 39' S	0° 38' S	0° 22' S
Mercury	1° 38' S	1° 38' S	2° 12' S

Table 2. Latitudes in the horoscope compared with calculation by the *Almagest* and *Handy Tables*.

The rules for Sun and Moon are straightforward. For the Sun, the ecliptic is divided into four quadrants by the solstitial and equinoctial points, so that in the quadrant beginning with the vernal equinoctial point the Sun “ascends the north,” i.e. its declination is northward and increasing, and similarly for the other three quadrants. Each quadrant is divided into six steps numbered from 1 to 6. Hence in the present horoscope, the Sun, being in the quadrant beginning with the autumnal equinoctial point, is “descending the south,” and its elongation from the equinoctial point, 34° 22', places it in the third step of the quadrant. What remains of the elongation after whole steps have been deducted, here 4° 22', is divided by 15° to obtain the fraction. If the division was done sexagesimally, the quotient would have been 0;17,28, while the text’s $\frac{1}{4} \frac{1}{30}$ would be 0;17 as a sexagesimal fraction. Thus the author likely ignored the second sexagesimal place in converting to part-fractions.

The procedure is the same for the Moon except that the quadrants are of the Moon’s inclined circle, and delimited by the two nodes and the northern and southern limit.²¹ Thus here the Moon is 32° 6' east of the ascending node, so it is “ascending the north” in the third step. Dividing 2° 6' by 15° gives 0;8,24, which in exact calculation would convert to $\frac{1}{6} \frac{1}{25}$; the text’s $\frac{1}{6} \frac{1}{24}$ would be 0;8,30.

The situation for the planets is more complicated because their latitudes are not a simple function of elongation from a node but have separate components associated (in Ptolemy’s models) with the motion of the epicycle along the deferent and the motion of the planet along the epicycle. According to Theon, the simple criterion of whether the planet’s latitude is northward or southward determines whether its wind-direction is in “the north” or “the south,” while the trend, “ascending” or “descending,” is established by testing whether the latitude ten days later has increased or decreased. Table 3 applies this procedure to our horoscope, using *Handy Tables*

²¹ A different convention for numbering lunar steps is known from the Standard Lunar Scheme, according to which they are numbered from 1 through 24 starting from the northern limit, and fractions are sexagesimal; see Jones 1997, 3.

	<i>October 28</i>	<i>November 7</i>	<i>Wind-direction</i>
Saturn	2° 56' S	2° 54' S	ascending the south
Jupiter	0° 55' N	0° 58' N	ascending the north
Mars	1° 5' N	1° 18' N	ascending the north
Venus	0° 38' S	1° 6' S	descending the south
Mercury	1° 38' S	1° 58' S	descending the south

Table 3. Planetary latitudes computed by the *Handy Tables* for the horoscope's date and ten days later, and the resulting wind-directions.

calculations²² for the horoscope's date, 497 October 28, and for 497 November 7. The results agree in all cases with the text.

From this point, the determination of the planet's step and fraction is somewhat artificial. The wind-direction that has just been found is considered to constitute a quasi-quadrant of the planet's circle, which is then subdivided into six steps that are equal not in terms of elongation from a node or limit but in terms of what fraction the planet has reached of the maximum attainable latitude in either the northerly or southerly direction (which Theon provides for each planet). For example, if the planet is ascending the north, one divides its latitude by the maximum northerly latitude possible for the planet, and then one multiplies by six; if the result is less than 1, the planet is in the first step, and so on for values less than 2, etc. However, if the planet is descending the south, we make the same calculation but the first step corresponds to values between 5 and 6, and so forth. Fractions are to be determined accordingly, taking into account the backwards reckoning when the planet is in the quadrants following the northern and southern limits. Table 4 applies these rules to the five planets of our horoscope, obtaining results that agree closely enough with the text, making allowances for approximations the author may have made in his computations.²³

For each of the Sun, Moon, and planets, the latitude-related information is followed by the specification of a fixed star is near the body, or in the case of Saturn and Venus, two fixed stars, one to the west, the other to the east. After the name of the star, the text gives its longitude, latitude, and magnitude, its longitudinal elongation from the body in either the westward or eastward direction, and the difference in latitude between star and body (without indication of the direction of this difference except in the Moon's case). Boll, referring to the dateless version in V, identified the nine stars as matching in position and magnitude stars in the star catalogue of *Almagest* Books 7–8, with a precessional adjustment of the longitudes of 3° 36' that would correspond, at Ptolemy's precession rate of 1° in 100 years, to approximately 360 years after the AD 137 epoch.²⁴ This result of course exactly matches the AD 497 date given in the full version of the horoscope in L and P.

²² For Saturn the text has 3° 5', which seems to indicate a miscomputation, but the 10-day trend is not affected by this.

²³ Neugebauer and van Hoesen commit an error in calculating the fraction of Venus's step.

²⁴ CCA 4, 100–102.

	<i>Latitude</i>	<i>Wind-dir.</i>	<i>Maximum</i>	<i>Scaled quotient</i>	<i>Step</i>	<i>Fraction</i>	<i>Text</i>
Saturn	3° 5' S	asc. S	3° 6' S	5;58	1	1/30	1/50
Jupiter	0° 55' N	asc. N	2° 3' N	2;41	3	1/2 1/6 1/60	1/2 1/5
Mars	1° 5' N	asc. N	4° 23' N	1;29	2	1/2 – 1/60	1/2
Venus	0° 39' S	desc. S	8° 56' S	0;26	1	1/3 1/10	1/3 1/15
Mercury	1° 38' S	desc. S	4° 18' S	2;17	3	1/5 1/12	1/5 1/10

Table 4. Recomputation of the steps and fractions for the planets.

Neugebauer and van Hoesen repeated Boll's comparison, with the advantage of being able to cite L's readings, offering several corrections to the numbers and star names that are adopted in the present edition.²⁵ Elsewhere, they remark that the star names “agree closely with the names in the *Almagest*, and not, as one perhaps would have expected, with the *Handy Tables*,”²⁶ referring to the *Handy Tables* list of stars in the zodiacal belt (Tihon A20), but it would appear that they did not check the *Handy Tables* list carefully, as is apparent if we compare the star names in the horoscope with their counterparts in both the *Almagest* and *Handy Tables*.²⁷ In the following, we give for each star, first the name in the text, followed by the name according to the *Almagest* (with relevant wording from precedingly listed stars to fill out the pronouns) and the name according to the *Handy Tables*:

(4, Sun) ὁ μεταξὺ τῶν χηλῶν τοῦ Σκορπίου, “the (star) between the claws of the Scorpion”

(*Alm.* Heiberg 2.108.12) ὁ νότιος αὐτῶν (*scil.* τῶν λοιπῶν β̄ καὶ προηγουμένων τῶν μεταξὺ τῶν χηλῶν, “the southern of the remaining 2, the leading ones, of the (stars) between the claws”

(*HT*, Guidetti 28) ὁ μεταξὺ τῶν χηλῶν τοῦ Σκορπίου, “the (star) between the claws of the Scorpion”

(5, Moon) ὁ ἐπὶ τῆς ἐκφύσεως τοῦ βορείου κέρατος τοῦ Ταύρου, “the (star) on the point of juncture of the northern horn of the Bull”

(*Alm.* Heiberg 2.88.8) ὁ ἐπὶ τῆς ἐκφύσεως τοῦ βορείου κέρατος, “the (star) on the point of juncture of the northern horn”

(*HT*, Guidetti 146) ὁ ἐπὶ τῆς ἐκφύσεως τοῦ βορείου κέρατος τοῦ Ταύρου, “the (star) on the point of juncture of the northern horn of the Bull”

25 Neugebauer and van Hoesen 153–154.

26 Neugebauer and van Hoesen 171.

27 An accurate edition of the *Handy Tables* is at last published in Guidetti 2019, 62–91; Neugebauer and van Hoesen would have had to consult Halma's unreliable 1825 edition, which they cite (171 n. 72) or manuscripts. On the differences between the *Handy Tables* star list and the *Almagest* catalogue see Jones 2026 §4 and Schironi 2026, §5.

(6, Saturn) ὁ ἐπόμενος τῶν ἐν τῷ ῥομβοειδῇ τετραπλεύρῳ τοῦ Κριοῦ καὶ ἐπ' ἄκρου τοῦ μυκτῆρος τοῦ Κήτους, “the trailing (star) of those on the rhomboidal quadrilateral of the Ram and on the tip of the nostril of the Sea Monster”

(*Alm. Heiberg* 2.130.3) ὁ ἐπ' ἄκρου τοῦ μυκτῆρος, “the (star) on the tip of the nostril”

(*HT, Guidetti* 126) ὁ ἐπόμενος τῶν ἐν τῷ ῥομβοειδῇ τετραπλεύρῳ, “the trailing (star) of those on the rhomboidal quadrilateral”

(6, Saturn) τῶν ἐν τῇ οὐρᾷ τοῦ Κριοῦ τριῶν ὁ προηγούμενος, “the leading one of the three (stars) on the tail of the Ram”

(*Alm. Heiberg* 2.84.10) τῶν ἐν τῇ οὐρᾷ $\bar{\gamma}$ ὁ προηγούμενος, “the leading one of the three on the tail”

(*HT, Guidetti* 127) τῶν ἐν τῇ οὐρᾷ τοῦ Κριοῦ τριῶν ὁ προηγούμενος, “the leading one of the three (stars) on the tail of the Ram”

(7, Jupiter) ὁ ἐπ' ἄκρας τῆς νοτίας καὶ ἀριστερᾶς πτέρυγος τῆς Παρθένου, “the (star) on the tip of the southern and left wing of the Maiden”

(*Alm. Heiberg* 2.102.7) ὁ ἐπ' ἄκρας τῆς νοτίου καὶ ἀριστερᾶς πτέρυγος, “the (star) on the southern and left wing”

(*HT, Guidetti* 10) ὁ ἐπ' ἄκρας τῆς νοτίου καὶ ἀριστερᾶς πτέρυγος τῆς Παρθένου, “the (star) on the southern and left wing of the Maiden”

(8, Mars) τῶν ἐν τοῖς γλουτοῖς τοῦ Λέοντος δύο ὁ νοτιώτερος, “the more southerly of the two on the buttocks of the Lion”

(*Alm. Heiberg* 100.2) ὁ νοτιώτερος αὐτῶν (*scil.* τῶν ἐν τοῖς γλουτοῖς $\bar{\beta}$), “the more southerly of the 2 on the buttocks of the Lion”

(*HT, Guidetti* 5) ὁ ἐπὶ τοῦ γλουτοῦ τοῦ Λέοντος λαμπρός, “the bright (star) on the buttock of the Lion”

(9, Venus) ὁ ἐπόμενος τῶν ἐν τῷ σώματι (στόματι LP) τοῦ Σκορπίου τριῶν, “the trailing (star) of the three on the body of the Scorpion”

(*Alm. Heiberg* 2.110.8) ὁ ἐπόμενος τῶν $\bar{\gamma}$ (*scil.* τῶν ἐν τῷ σώματι $\bar{\gamma}$ λαμπρῶν), “the trailing (star) of the 3 bright ones on the body”

(*HT Guidetti* 43) ὁ ἐπόμενος τῶν τριῶν τῶν ἐν τῷ στήθει τοῦ Σκορπίου, “the trailing (star) of the three on the breast of the Scorpion”

(9, Venus) ὁ ἐπὶ τοῦ δεξιοῦ καὶ ἐπομένου γόνατος τοῦ Ὀφιοῦχου, “the (star) on the right and trailing knee of Ophiuchus”

(*Alm. Heiberg* 2.68.12) ὁ ἐπὶ τοῦ δεξιοῦ γόνατος, “the (star) on the right knee”

(*HT Guidetti* 44) ὁ ἐπὶ τοῦ ἐπομένου γόνατος τοῦ Ὀφιοῦχου, “the (star) on the trailing knee of Ophiuchus”

(10, Mercury) τῶν ἐν τῷ σώματι (στόματι LP) τοῦ Σκορπίου ὁ μέσος, ὑπόκιρρος, ὁ καλούμενος Ἀντάρης, “the yellowish middle (star) of those on the body of the Scorpion, called Antares”

(*Alm. Heiberg* H2.110.7 ὁ μέσος αὐτῶν καὶ ὑπόκιρρος καλούμενος Ἀντάρης (*scil.* τῶν ἐν τῷ σώματι $\bar{\gamma}$ λαμπρῶν), “the middle (star) of the 3 bright ones on the body which is also yellowish, called Antares”

(*HT Guidetti* 42) ὁ μέσος αὐτῶν καὶ ὑπόκιρρος καλούμενος Ἀντάρης (*scil.* τῶν ἐν τῷ στήθει τοῦ Σκορπίου τριῶν λαμπρῶν), “the middle (star) of the three bright ones on the breast of the Scorpion”

The outcome of this comparison is unexpected: some of the text’s star names are clearly from the *Almagest* and not the *Handy Tables*, while others are either from the *Handy Tables* or combine elements from both the *Handy Tables* and *Almagest* names. I suppose Eutocius first used the *Handy Tables* list to find the nearest bright stars to each of the heavenly bodies, since that list is organized in a way to facilitate such searches, but then collated the names with their *Almagest* counterparts, making arbitrary decisions about which version to follow—a rather scholarly approach, as one might expect from Eutocius.

Among the numerical data for the fixed stars, only the longitudes would require a calculation on Eutocius’s part, either by adding to the *Almagest* longitude a precessional correction of $1/100$ ° per year since the star catalogue’s epoch (Antoninus Pius year 1), which would have amounted to 3.61° or, in exact calculation, 3° 36' 36", or by adding the longitude of Regulus, found from the mean motion tables as 126° 6', to the *Handy Tables* elongation from Regulus. The transmitted longitudes agree with derivation from the *Handy Tables* or from the *Almagest* using a correction of 1° 36', disregarding corruptions that can be detected by their disagreement with the stated elongation from whichever heavenly body the star is near.

There are two cases where a star’s stated latitude appears to agree with a latitude given in one of the potential sources but not the other. In section (8) “the more southerly of the two on the buttocks of the Lion” the text’s 9° 40' N matches the *Almagest*’s $9\frac{2}{3}$ ° whereas the *Handy Tables*, as transmitted, has 9° 20', but this might be a scribal error in the *Handy Tables* tradition. In section (7), the star “on the tip of the southern and left wing of the Maiden” has latitude 0° 10' N in agreement with the *Handy Tables* whereas the *Almagest* according to Heiberg’s reading has $1/3$ ° N, but several *Almagest* manuscripts have $1/6$ ° N as Neugebauer and van Hoesen noted. The magnitudes given for the stars are consistent with both sources.

Following the fixed star data, the sections for the five planets make statements, first concerning their longitudinal motions considered absolutely, and second concerning their positions relative to the Sun and visibility. Neugebauer and van Hoesen unfortunately misconstrue parts

of these statements so that their criticisms of the author's astronomy are at fault; moreover they did not explore how Eutocius could have derived this information, in particular using the *Handy Tables*.²⁸

(Saturn) "Following the first station, subtractive, in the evening, visible, having made its acronychal rising many days earlier." (NvH: "Retrograding from the first station, visible in the evening, being in opposition for many days.")

The easiest part of all these statements for Eutocius to have obtained is the specification of whether the planet is "in the morning" or "in the evening": if the planet's elongation from the Sun in the eastward direction is less than 180° (as in the present instance where Saturn is $170^\circ 6'$ east of the Sun), the planet is "in the morning," i.e. at sunrise they are both above the horizon; if the elongation is greater than 180° , the planet is "in the evening," i.e. at sunset they are both above the horizon. Also, with such a large elongation, Eutocius would not have needed to check the *Handy Tables* visibility tables to determine that Saturn was visible.

The rest of the data for Saturn can be obtained from the table of Saturn's stations in the *Handy Tables* (Tihon A17), as explained by Theon in chapter 17 of the *Little Commentary* (ed. Tihon, 244-246). One enters the table using as argument the "number of the epicycle's center that has been corrected by means of the third column of the (table) of anomaly," which (using Neugebauer's notation) is the true epicyclic anomaly κ , reading off the corresponding quantities in the second and third columns, which represent the true epicyclic anomaly α at which Saturn would be respectively at first or second station.²⁹ In the present instance, these numbers would be $115^\circ 19'$ and $244^\circ 41'$. Comparing Saturn's actual α , $189^\circ 53'$, with these values, it becomes apparent that the planet is between the two stations, and hence is moving retrograde ("subtractive"), and since it is nearly 20° in anomaly past opposition ($\alpha = 180^\circ$, "acronychal rising"), which would correspond to about 10 days, Eutocius is justified in writing that the acronychal rising took place "many" days earlier.

(Jupiter) "Additive, not yet having made its 1st station, in the morning, visible." (NvH: "Not progressing, being in the first station, visible in the morning.")

Jupiter's elongation from the Sun is $299^\circ 50'$, so it is obviously "in the morning, visible." With $\alpha = 70^\circ 42'$, it is also clearly far short of its first station as a glance at the table of Jupiter's station would show, hence "additive."

(Mars) "Additive, not yet having made its 1st station, in the morning, visible." (NvH: "Not progressing, being in the first station, visible in the morning.")

The situation for Mars is similar to Jupiter's: elongation $283^\circ 13'$, $\alpha = 114^\circ 6'$.

(Venus) "Additive, having not yet made its 1st station, in the evening, visible, having made its evening rising many days before." (NvH: "Not progressing, being in the first station, visible in the evening, having made its evening rising many days before.")

28 Neugebauer and van Hoesen 1959, 154-155 and 157.

29 Neugebauer 1975, 2.1005-1006.

Venus's elongation is $17^{\circ} 36'$ so it is "in the evening." Venus is also clearly "additive," since the true epicyclic anomaly is $41^{\circ} 12'$, far lower than any value for first station in the table of Venus's stations. The table for Venus's evening risings (Tihon A18) gives the elongation required for the planet to be visible at the latitude of Lower Egypt as $6^{\circ} 52'$ when the planet is at Scorpio 0° and $7^{\circ} 33'$ when the planet is at Sagittarius 0° , so the evening rising obviously took place "many days before."

(Mercury) "Additive, not yet having made its 1st station, in the evening, outshined, going to make its evening rising after 4 days." (NvH: "Not progressing, being in the first station, invisible in the evening, tending towards evening rising within 4 days.")

With elongation $10^{\circ} 10'$, Mercury is "additive" and "in the evening," and with $\alpha = 41^{\circ} 3'$, the first station is still to come. From the table for Mercury's evening rising we find by interpolation that for the latitude of Lower Egypt Mercury requires an elongation of $12^{\circ} 48'$ to become visible. To determine the number of days until the evening rising, Theon instructs us to find the daily change in elongation by calculating the Sun's and the planet's longitudes on the preceding day, and divide the difference between the actual elongation and the threshold elongation from the table by this daily change. In the present case, the quotient turns out to be almost exactly 4 days.

The date and longitude of the preceding Full Moon appear to have been calculated with some care. Using the *Handy Tables* to find two consecutive times in whole equinoctial hours from noon such that the Moon was less than 180° ahead of the Sun at the first time and more than 180° at the second, one finds:

<i>Date and time</i>	<i>Sun</i>	<i>Moon</i>
821 VII 9, 20 e.h. past noon	Scorpio $3^{\circ} 8'$	Taurus $3^{\circ} 4'$
821 VII 9, 21 e.h. past noon	Scorpio $3^{\circ} 11'$	Taurus $3^{\circ} 35'$

By interpolation, the luminaries were diametrically opposed at approximately $20 \frac{1}{7}$ e.h. past noon, which for the date in question is, according to the ascension table, approximately $1 \frac{1}{2} \frac{1}{6} \frac{1}{8}$ (sexagesimally, 1;47,30) seasonal hours after sunrise, with a corresponding lunar longitude Taurus $3^{\circ} 8'$. The text has the negligibly different Taurus $3^{\circ} 7'$, but the time is corrupt in diverse ways in L (which has the paleographically easy substitution of $\frac{1}{20}$ for $\frac{1}{8}$) and P (which is missing the whole number and the first fraction).

We saw above that the longitude given for the ascendant, Aquarius $2^{\circ} 12'$, is in agreement with computation using the *Handy Tables* ascension table for the latitude of Lower Egypt. As Neugebauer and van Hoesen remark (157), the Midheaven at Scorpio $19^{\circ} 22'$ is consistent (within $1'$) with having been found using the *HT* table of right ascensions (Tihon A1), entering with the same ascensional degree as was found for the ascendant.

Astrological data.

Neugebauer and van Hoesen checked the astrological data in the horoscope thoroughly against the schemes transmitted in the Greek astrological literature; what follows largely repeats their results.

The Lot of Fortune is the ascendant's longitude plus the elongation (in the eastward direction) of the Moon from the Sun, and the Lot of Daimon is conversely the ascendant's longitude minus the same elongation. These are the normal rules for diurnal natiuities, as stated for example in Paulus Alexandrinus *Isagoge* chapter 23 (ed. Boer 47–48).

As the final part of the section for each heavenly body, cardine, and lot, a list is given of the same selection of “dignities” dependent on the longitude, in the same order; deviations appear to be the results of scribal errors:

House (or domicile, the entire zodiacal sign considered as ruled by one of the heavenly bodies): all the lordships agree with the standard system.³⁰

Terms (multi-degree parts of the zodiacal sign considered as ruled by one of the five planets): Eutocius gives these according to the system “according to Ptolemy” and the system “according to the Egyptians,” in that order. The system “according to the Egyptians” is the normal system found in practically all ancient horoscopes that have terms, and the data in the horoscope agree with the scheme with the single proviso that the midheaven is in the terms of Mercury only if the minutes of its longitude are ignored, otherwise it would be in the terms of Saturn.³¹ In the ancient astrological literature terms according to this scheme are normally just called “terms”; however, Ptolemy, *Tetrabiblos* 1.21 (ed. Hübner 68–69) calls it “Egyptian” (Αἰγυπτιακός) in distinction from a “Chaldean” system. Eutocius's terms “according to Ptolemy” belong to a system that Ptolemy offers as a third and preferable choice in the same chapter of the *Tetrabiblos*, not claiming it as his own invention but as a scheme he discovered in an ancient and damaged manuscript. As Heilen has shown, Eutocius's horoscope is unique among ancient horoscopes in providing terms according to this scheme, which was apparently ignored in the astrological literature following Ptolemy until a variant of it appears in Hephaestio of Thebes's *Apotelesmatica* in the early fifth century.³² Heilen found that all ten terms “according to Ptolemy” in the horoscope agree with the system as it is transmitted in the manuscript tradition of the *Tetrabiblos*, whereas three of the ten conflict with the variant system in Hephaestio.³³

Triplicities (zodiacal signs considered as members of a set of three equally spaced signs ruled by the same heavenly bodies): the text gives a primary, secondary, and tertiary lord according to a system found in the astrological poem of Dorotheus of Sidon (verses preserved in Hephaestio of Thebes, *Apotelesmatica* 1.6, ed. Pingree 1.37) and in Vettius

30 Neugebauer and van Hoesen 1959, 7.

31 Neugebauer and van Hoesen 1959, 12–13.

32 Heilen 2010, 53–67.

33 Heilen 2010, 62 and 67; these are the same discrepancies noted by Neugebauer and van Hoesen 1959, 155 with n. 42. Heilen considers Eutocius's employment of the “Egyptian” system of terms to be methodologically inconsistent because in the earlier tradition they were applied to sidereal longitudes whereas the longitudes in the Eutocius horoscope are tropical.

Valens, *Anthologiae* 2.1.³⁴ The terminology μετοχή, “sharing,” for the secondary lord is paralleled in the phrase κατὰ μέτοχον in an elaborate horoscope *P.Oxy. astr.* 4277 (paleographically late second or early 3rd century) which gives each triplicity only a primary and secondary lord, using a different system.

Exaltations and depressions (zodiacal signs considered as enhancers or suppressors of a heavenly body’s power): these are all as expected according to the standard assignments except that in the section for Jupiter, Virgo is said to be Jupiter’s own exaltation whereas it is correctly Mercury’s.³⁵ Since this may be an authorial slip, I have not emended the text.

Decans (ten-degree parts of the zodiacal sign numbered 1, 2, and 3), faces (or *prosopa*, heavenly bodies as lords of the decans), and single-degrees (or *monomoiriai*, individual degrees considered as ruled by a heavenly body) are all in accordance with the standard systems.³⁶

The horoscopic diagram that follows the text is of a square type though with the twelve sectors open instead of being enclosed in a square frame as was normal in later medieval square diagrams.³⁷ East is to the left, west to the right, so that longitude increases as one “reads” the diagram counterclockwise. Twelve lines radiate out in sets of three, horizontally, vertically, and diagonally, from the corners of a square space in the middle (which is vacant in P, but contains three + signs of unknown significance in L), dividing the exterior of the diagram into twelve spaces representing the “places” (τόποι) that operate in Greek astrology as a frame of reference based on the horizon and meridian in counterpoint with the zodiacal frame of reference. Hence four of the lines represent the cardinal points, two of which, the ascendant as the upper horizontal on the left side and the midheaven as the right vertical at the top, are inscribed with the longitudes given in the text while the remaining two, the setting point and lower midheaven, are trivially 180° from the first two. The two other lines between each pair of cardinal lines are labelled with longitudes that trisect (to the nearest minute) the arcs of the ecliptic between the cardinal points. These intermediate longitudes, and the traditional names of the 12 places, are in fact the only information in the diagram that is not taken from the text, which (like the elaborate horoscopes from antiquity known in papyri) makes no reference to the places. All seven heavenly bodies, the Moon’s ascending node, the preceding Full Moon, and the two lots are inscribed with their longitudes as in section (3) in the appropriate places.

The principle of defining the places by trisecting the unequal quadrants of the ecliptic made by the cardinal points is one of numerous methods known from ancient and medieval astrology. It appears to be first attested in Vettius Valens, *Anthologiae* 3.2, and is commonly associated in modern discussions with Porphyry because it appears in chapter 43 of the *Isagoge* attributed to him.³⁸

34 Neugebauer and van Hoesen 1959, 13.

35 Neugebauer and van Hoesen 1959, 7 and 155.

36 Neugebauer and van Hoesen 1959, 5–6, 11, and 10.

37 For examples of medieval diagram types see North 1986, 2 fig. 1. North asserts that the diagram of the Eutocius horoscope is “unique.”

38 In the edition by Weinstock and Boer in *CCAG* 5.4, 215–216. On the composite and pseudepigraphic nature of this work see László 2021, esp. 400 for this chapter.

Thomann has proposed that square-type diagrams for horoscopes in western astrology were a medieval adaptation of a format that originated in east Asia in different divinatory contexts; the diagram found in L and P would therefore have to be either a later addition to the text or an adaptation to the new format of an original diagram of a different kind.³⁹ Regardless of whether Thomann's interesting hypothesis is correct, it does appear to me quite possible that the diagram was not an original part of the horoscope's presentation. It may be relevant to this question that the text concerning ephemerides that follows the horoscope in P (220r–222r) and that is ostensibly the continuation of the material “from the astrological writings of Eutocius” concludes with a specimen ephemeris that was computed for AD 855 (not 796 as dated by Pingree).⁴⁰

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39 Thomann 2008; see 101 for his brief discussion of the Eutocius horoscope's diagram.

40 Pingree 2003; the text and its ephemeris will be discussed in my forthcoming article mentioned in n. 8 above.

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