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Author(s):

Andreas Winkler, Michael Zellmann-Rohrer

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Zodiacs and monuments: An early pictorial ‘horoscope’ from Egypt

Andreas Winkler (Free University, Berlin/University of Warsaw)

Michael Zellmann-Rohrer (Free University, Berlin)

Key words: Graeco-Roman Egypt; Afterlife; Coffins; Funerary monuments; Dog Star (Sirius, Sothis); New Year; Horoscope; Soter Family.

Abstract: A pictorial horoscope in a late Ptolemaic papyrus (*P.Kramer 17*) may be assigned more precisely to late 55 or early 56 BC based on the preserved astronomical data, making it the earliest such representation from Egypt. Instead of a copy for presentation to a client, the papyrus is rather a draft for the depiction of a zodiac, probably in a funerary monument, where it would have represented the planetary positions at the time of birth of the person commemorated. The central pictorial element can be identified as a dog, and contextualized in a complex tradition of Egyptian and Greek concepts and iconography related to Sirius-Sothis, and the beginning of the new year.

Introduction

Monumental depictions of the zodiac enjoyed a certain popularity in the Graeco-Roman period. The twelve signs or the associated constellations were represented in art in both two and three dimensions, such as relief sculpture, frescoes, and mosaics, and reproduced in miniature on gems and coins.¹ While individual instances could be invested with culturally specific elements, the motifs were often shared across the cultures of the Mediterranean, and the zodiac contributed to broader illustrations of the heavens. Besides artistic display, configurations of constellations occasionally including the planets could hint at how the skies were envisioned at the moment of the creation of the world, as in the case of the Egyptian temple zodiacs,² or at generic equinoxes or solstices.³ A few monuments are also claimed to illustrate the stellar configurations on a given date of some significance for their commissioners. Examples include the date of birth of the interred person in a tomb⁴ and the ascension or confirmation of the right to the throne, as in the so-called Lion Horoscope from Nimrud Dagh.⁵

Some of these representations were symbolic—and could have been applied as such within a given belief system—while others may have had a more practical purpose. Some monuments served astrology, or could at least have functioned as “instruments” of visualization, such as the *pinax*. The latter is often termed an “astrologer’s board”—which might also have been made from less durable materials, such as papyrus, than the name implies—and would have been used to illustrate the positions of the skies at a given moment.⁶

¹ The standard collection of sources is H.G. Gundel, *Zodiakos: Tierkreisbilder im Altertum* (Mainz am Rhein: Philipp von Zabern, 1992). Abbreviations for papyrological publications follow the *Checklist* maintained at <papyri.info/docs/checklist>.

² E.g. O. Neugebauer and R.A. Parker, *Egyptian Astronomical Texts III: Decans, Planets, Constellations and Zodiacs* (Providence, RI: Brown University Press, 1969), pp. 62–4; 70–104; 203–12.

³ E.g. F. Gury, “L’iconographie zodiacale des tablettes de Grand,” in J.-H. Abry (ed.), *Les tablettes astrologiques de Grand (Vosges) et la astrologie en Gaule romain* (Lyon: De Boccard, 1993), pp. 123–5.

⁴ Neugebauer and Parker, *op. cit.* (note 2), pp. 93–8.

⁵ See, e.g. S. Heilen, “Zur Deutung und Datierung des Löwenhoroskopes auf dem Nemrut Dağı,” *Epigraphica Anatolica*, 38 (2005), pp. 145–58.

⁶ J. Evans, “The Astrologer’s Apparatus: The Picture of Professional Practice in Greco-Roman Egypt,” *Journal for the History of Astronomy*, 35 (2004), pp. 4–14. Further examples of such implements from Egypt are discussed by M.D. Nenna, “De Douch (oasis de Kharga) à Grand (Vosges). Un disque en verre peint à représentations astrologiques,” *Bulletin de l’Institut français d’archéologie orientale*, 102 (2002), pp. 355–76; V. Gay, “Un zodiaque égyptien au Musée des Beaux-Arts de Lyon,” in J.-C. Goyon and Ch. Cardine (eds), *Proceedings of the Ninth International Congress of Egyptologists: Grenoble, 6-12 Septembre 2004* (Leuven: Peeters, 2007), pp. 799–

Among a relatively large number of papyri from Graeco-Roman Egypt that touch on the zodiac—as a means for recording planetary positions in horoscopes, or a topic of more theoretical discussion in astronomical and astrological treatises—only a few illustrate the concept pictorially.⁷ Among the latter, in turn, the subject of the present article stands out: this fragmentary Greek manuscript (P.Berol. 13102: *P.Kramer* 17⁸) preserves part of a drawing of a zodiac with labels and notations of planetary positions, which the first editor described as a pictorial horoscope, an identification which, if correct, would set the composition apart from others in which pictures are ancillary to text, such as the diagram accompanying the horoscope of Tryphon from Oxyrhynchus: *P.Oxy.* II 235.⁹

This study aims first to contextualize the papyrus and provide a precise date for the text and depiction based on the surviving astronomical data—the piece has so far been dated only by paleography. The purpose of the papyrus will then be discussed: if a horoscope has been correctly identified, what sort of horoscope might have been illustrated?

The papyrus

P.Kramer 17 is a papyrus palimpsest measuring 21.1 × 8.7 cm, extracted from mummy cartonnage found at Abusir el-Melek in Middle Egypt during the excavations of O. Rubensohn (1903–1907/8). It is now kept in Berlin (Ägyptisches Museum, Papyrussammlung). Originally both the recto (along the fibers) and verso (against the fibers) were inscribed with agricultural accounts in Greek, which on paleographical grounds can be dated to the late second or the early first century BC.¹⁰ The papyrus fits in chronologically with others from the same find; the papyri from this cartonnage usually date to the first century BC, and no dated text can be

806. An example from outside Egypt is presented by S. Frohenbacher and A. Jones, “The Nakovana Zodiac: Fragments of an Astrologer’s Board from an Illyrian-Hellenistic Cave Sanctuary,” *Journal for the History of Astronomy* 42 (2011), pp. 425–38. See also D. Gieseler Greenbaum and M.T. Ross, “Various Renderings of Pinax in Greek and Demotic at Medinet Madi,” in N. Champion and D. Gieseler Greenbaum (eds), *Astrology in Time and Place: Cross-Cultural Questions in the History of Astrology* (Cambridge: Cambridge Scholars Publishing, 2016), pp. 109–31. The wooden object published by A. Ovadiah and S. Mucznik, “A Fragmentary Roman Zodiac and Horoscope from Caesarea Maritima,” *Liber Annuus*, 46 (1996), 375–80, may also be relevant, but its fragmentary condition complicates any interpretation.

⁷ E.g. *P.Paris* 1 (with F. Blass, *Eudoxi ars astronomica qualis in charta Aegyptiaca superest* (Kiel, 1887; repr. in *Zeitschrift für Papyrologie und Epigraphik*, 115 (1997), pp. 79–101)). Greek horoscopes are collected in O. Neugebauer and H.B. Van Hoesen, *Greek Horoscopes* (Philadelphia, PA: American Philosophical Society, 1959); D. Baccani, *Oroscopi greci: Documentazione papirologica* (Messina: Sicania, 1992); and *P.Oxy.Astr.*; see also recently S. Heilen, *Hadriani genitura: Die astrologischen Fragmente des Antigonos von Nikaia* (Berlin: De Gruyter, 2015), pp. 213–316 (Demotic examples at pp. 316–26), and id., “Hellenistic horoscopes in Greek and Latin: Contexts and Uses,” in A.C. Bowen and F. Rochberg (eds), *Hellenistic Astronomy: The Science in its Contexts* (Leiden: Brill, 2020), pp. 490–508; for Demotic, J.F. Quack, “Egypt as an Astronomical-Astrological Centre between Mesopotamia, Greece, and India,” in D. Brown (ed.), *The Interactions of Ancient Astral Science* (Bremen: Hempen, 2018), pp. 100–3; M.T. Ross, “Demotic Horoscopes,” in Bowen and Rochberg (eds), *op. cit.*, pp. 509–26. For the latter, see also: A. Winkler, “On the Demotic-Hieratic Horoscopes from Athribis,” *Journal for the History of Astronomy*, 53 (2022), p. 336 n. 13.

⁸ F. Reiter, “Der Berliner Tierkreis – ein Horoskop in graphischer Gestalt?,” in R. Eberhard et al. (eds), “*Vor dem Papyrus sind alle gleich!*”: *Papyrologische Beiträge zu Ehren von Bärbel Kramer (P.Kramer)* (Berlin: De Gruyter, 2009), pp. 186–91. The text was first mentioned by W. Brashear, “Review: M.R. Falivene, *The Herakleopolite Nome: A Catalogue of the Toponyms with Introduction and Commentary* (Atlanta, GA: Scholars Press, 1998),” *Enchoria*, 25 (1999), pp. 189–90.

⁹ With Neugebauer and Van Hoesen, *op. cit.* (note 7), pp. 18–19 no 15/22; P.W. Pestman, *The New Papyrological Primer*, 2nd rev. ed. (Leiden: Brill, 1994), pp. 102–4 no 15.

¹⁰ Reiter, *op. cit.* (note 8), p. 187.

securely attributed to the period after the conclusion of the reign of Augustus (AD 14).¹¹ It is probable that the text comes from the Heracleopolite nome.¹²

The recto was at some point erased—albeit poorly—to serve as a substrate for another use: an image of the zodiac circle with captions in Greek indicating the location of the individual signs. The positions of the planets were also indicated in writing. In the middle of the zodiac circle, the front part of an animal, a quadruped, is preserved. It faces right and appears to be lunging forward.

Fig. 1: *P.Kramer 17* (P.Berol. 13102)

The zodiac circle

Only the right part of the depiction is preserved in *P.Kramer 17*. From what is extant one can see that the zodiac is represented as a decorated (near-)circle, which has been divided into twelve segments separated by double borders, between which the scribe added further decorative elements in the form of curved strokes. A double border also delineates the upper and lower parts of each segment containing the name of a zodiac sign. Despite the scribe's attempts at decoration, the result can only be described as careless. Besides the poorly prepared substrate, with traces of earlier writing showing through, and the quality of the handwriting, legible but far from calligraphic, the design was not well planned. The orientation of the writing of the names of the signs follows the circle, with the consequence that signs which are on opposite sides of the circle are upside down with respect to each other, and the circle itself, when complete, will have been unevenly proportioned (see further below).

From the scant traces of writing, it is clear that Aries was placed in the topmost segment, although only part of the final letter of its name is preserved ([Κριό]ς). Aries, as the location of the Sun at the vernal equinox, was the sign with which ancient enumerations of the zodiac often began. In the lost left part of the depiction, the sequence Taurus to Leo would have been inscribed. That is, the zodiac followed the common counterclockwise order.

At the bottom of the zodiac circle found on the papyrus, part of the segment where the name of Leo would have stood is present, though the name of the sign is lost. To its right, opposite Aries, the segment with the name of Virgo is located, thus giving the sequence from Virgo through Pisces to the right of Aries. From what is preserved it is clear that the sequences in the now lost left part must have been larger than those in the preserved right side: the scribe probably was not very careful when measuring out the spaces allocated to each sign. As he progressed, he had to use less space, such that a few of the signs would have been written with abbreviations. Since the compartments containing the names of the signs are unevenly spaced, signs that are supposed to be opposite one another are not. That is, 180° opposite Aries one finds Virgo, not Libra as expected. The latter sign is situated in such a way that one expects Taurus to have been positioned 180° opposite it on the drawing.

In an Egyptian context, this ordering principle can be found in Egyptian or Egyptian-style *pinakes*, such as the Grand tablets¹³ and the Daressy disc.¹⁴ Based on the orientation of the depictions in earlier *pinakes*, the Lyon zodiac tablet has also been interpreted as commencing with Aries.¹⁵ This arrangement is not unique to Egyptian or Egyptianizing boards depicting the

¹¹ E. Salmenkivi, *Cartonnage Papyri in Context: New Ptolemaic Documents from Abū Šīr al-Malaq* (Helsinki: Societas scientiarum Fennica, 2002), pp. 28–51; 156–62.

¹² Reiter, *op. cit.* (note 8), p. 187.

¹³ J.-H. Abry (ed.), *op. cit.* (note 3).

¹⁴ G. Daressy, “Notes et remarques,” *Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes*, 23 (1901), pp. 126–7; F. Boll, *Sphaera: Neue griechische Texte und Untersuchungen zur Geschichte der Sternbilder* (Leipzig: B.G. Teubner), pp. 305–6 and 346, pl. VI; G. Daressy, “L'Égypte céleste,” *Bulletin de l'Institut français d'archéologie orientale*, 16 (1916), pp. 1–34.

¹⁵ Gay, *op. cit.* (note 6), p. 799.

zodiac circle: the *Tabula Bianchini*, for instance, is also structured in such a way.¹⁶ But the circular ordering of the zodiac signs is not limited to astrological boards. One Egyptian coffin from the Kharga Oasis, that of Senpeteuris (Louvre E 31886), which may date from the first half of the first century AD, also represents the zodiac in a similar way on the lid.¹⁷

The coffin of Senpeteuris depicts a zodiac circle with Aries at the top and the signs following in their proper counterclockwise order. The upper part of the zodiac thus contains the signs usually associated with the Moon (Aquarius to Cancer), although the last two signs are not preserved, and the lower half the signs ascribed to the Sun (Leo to Capricorn), although the first two signs are no longer present. The middle of the circle contains an Egyptianized depiction of the Sun and the Moon reminiscent of how Helios and Selene could be placed in the middle of such depictions. The two luminaries are shown traversing the sky on boats, respectively as a human-shaped figure with a staff inside a solar disc, and a baboon inside a lunar disc. The rendering of the zodiac signs is strongly influenced by a ‘Hellenistic style’ and the coffin has even been described as foreshadowing developments in Egyptian art that came about in the Roman period.¹⁸ This is particularly visible in the depiction of Aquarius, and perhaps also that of Libra. Both are represented by anthropomorphic figures, frontal images of young male nudes with clearly defined muscles.

Fig. 2: <https://collections.louvre.fr/en/ark:/53355/c1010035531> (Coffin of Senpeteuris)

A related iconographic trend on slightly later coffin lids divides the zodiac circle around the goddess Nut in such a way that Cancer,¹⁹ which is connected to the summer solstice²⁰ and the heliacal rising of Sothis, and Leo are located around her upper torso. These later zodiacs are rectangular rather than round. Usually the side containing the sequence Leo to Capricorn represents the diurnal hours, while the one containing the sequence Aquarius to Cancer corresponds to the nocturnal hours. The order of the signs in these depictions can run both clockwise and counterclockwise.

Fig. 3: https://www.britishmuseum.org/collection/object/Y_EA6705 (Coffin of Soter)

The difference in arrangement between round and rectangular zodiacs may have to do with whether the Nut figure is present or not. The coffin from the oasis does not depict the sky goddess.²¹ Its date and stylistic features make it an especially relevant parallel to the depiction found in *P.Kramer 17*.

¹⁶ E.g. S. Heilen and D. Gieseler Greenbaum, “Astrology in the Greco-Roman World,” in A. Jones (ed.), *Time and Cosmos in the Greco-Roman World* (New York: Princeton University Press, 2016), pp. 123–41, at 129–30.

¹⁷ Neugebauer and Parker, *op. cit.* (note 2), pp. 104 (no 81); Ch. Riggs, *The Beautiful Burial in Roman Egypt: Art, Identity, and Funerary Religion* (Oxford: Oxford University Press, 2005), pp. 55–7; 259.

¹⁸ Riggs, *op. cit.* (note 17), p. 94.

¹⁹ The fact that the zodiac sign could be understood as a scarab in, for instance, Dendara (Neugebauer and Parker, *op. cit.* (note 2), p. 103), a symbol associated with the birth of the Sun, further underlines the Egyptian background of dividing the zodiac such that it begins with Cancer. See further below.

²⁰ This event is also depicted on the so-called rectangular zodiac from Dendara (e.g. Ch. Leitz, “Die Sternbilder auf dem rechteckigen und runden Tierkreis von Dendara,” *Studien zur altägyptischen Kultur*, 34 (2006), pp. 285–318, at 287).

²¹ There are six such coffins, all of which come from Thebes (Neugebauer and Parker, *op. cit.* (note 2), pp. 91–5 nos 66–71; S. Symons, “Classification of Ancient Egyptian Astronomical ‘Diagrams’,” *Journal for the History of Astronomy*, 46 (2015), pp. 67–8.). Five of these belong to members of the same family, that of Soter (nos 66–70; Riggs, *op. cit.* (note 17), pp. 11 n. 35; 182–205). It is possible that the earliest example, that of Kornelius Pollios (BM EA 6950), stems from the second half of the first century AD, and the other examples date to the first half of the second century (Neugebauer and Parker, *op. cit.* (note 2), nos 66–71).

A few Egyptian tombs also preserve decorations that follow similar principles.²² Others may begin with Aries but arrange the signs in a clockwise order.²³ All these tombs date to the Roman period, but their precise chronology is unknown. Dates in both the first and second century have been proposed for most of them. The oldest examples may be tombs in the Dakhla Oasis decorated with zodiacs, which have been dated broadly to the first century AD.²⁴

The planets

Along the outside of the zodiac circle on *P.Kramer* 17, the names of the planets were added, written above the signs and, in cases of multiple planets in a sign, arranged next to rather than on top of each other. The preserved or partially preserved planets are Jupiter, Mars, and Mercury. Jupiter and Mars are written over Aquarius, indicating their location in that sign. Parts of the name of Mercury are also extant (Ἐρμῆ(ς)), written mostly over Capricorn, indicating its position in that sign, although the name begins over the end of Aquarius, which led the first editor to reconstruct it as being in that sign (see below).

Most of the space above Capricorn and Sagittarius is lost. Thus, further planets could have been located there as well as in the lost left sequence. Given the position of Mercury, one has to assume that Venus and the Sun were in the lost sequence above Capricorn or Sagittarius, as the maximum possible distances between each planet and the Sun are 28° and 48° respectively. However, only part of the space above Sagittarius is lost, and from what remains, no more than one celestial body can be expected to have stood in it.

For the relative placement of planets in a sign, there are three possibilities. The first is that they are inserted in a random order. The second option is that they reflect the longitudinal progression of each planet in the sign, that is, for example, Mars would have progressed further into Aquarius than Jupiter. The third possibility is that the planets were inserted following the common arrangement of the celestial bodies during the Graeco-Roman period, which was based on geocentric distance from the earth, with the one furthest away first and the closest one last: Saturn, Jupiter, Mars, Venus, and Mercury. The two luminaries could either be plotted at the beginning of the sequence or according to their distance: Saturn, Jupiter, Mars, Sun, Venus, Mercury, and Moon. In the latter case, among the planets on the preserved right part of the text, the celestial body with a greater distance from earth would be inserted further to the right than one perceived as being closer.

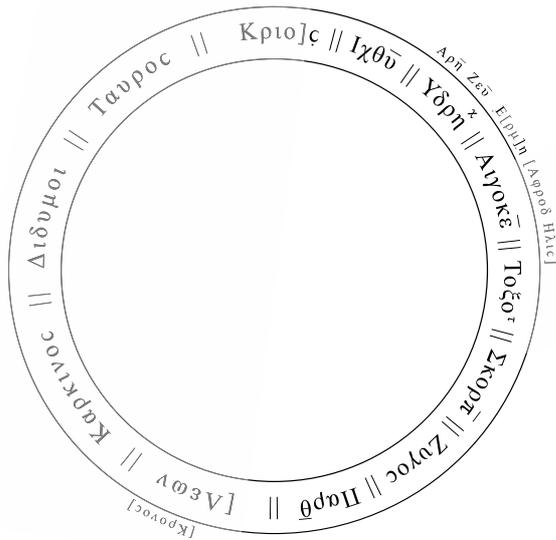
Of the three possibilities for arranging the planets inside each zodiac sign, the last possibility seems to be the most appropriate one given that no longitudes are recorded, at least in the preserved part of the papyrus. Considering the potential nature of the manuscript (see below), the first suggestion—that the planets were inserted randomly—appears less credible.

Fig. 4: Schematic restoration of the zodiac circle

²² Neugebauer and Parker, *op. cit.* (note 2), pp. 101–102.

²³ Neugebauer and Parker, *op. cit.* (note 2), pp. 96–101. See also Gury, *op. cit.* (note 3), pp. 115–23.

²⁴ J. Osing *et al.*, *Denkmäler der Oase Dachla* (Mainz am Rhein: Philipp von Zabern, 1982), pp. 70–102; Riggs, *op. cit.* (note 17), p. 57; M.S. Venit, *Visualizing the Afterlife in the Tombs of Graeco-Roman Egypt* (Cambridge: Cambridge University Press, 2015), pp. 157–95.



Restorations follow the computations presented in the following section. The papyrus has αρῆ for Ἄρη(ς); ζεῦ for Ζεύ(ς); and presumably also ερμῆ for Ἑρμῆς, but the overline no longer survives. An abbreviation αφοροδ̄ for Ἄφοροδ(ίτη) has been assumed for reasons of space, but variants are conceivable (αφοροδ̄, or αφοροδ̄ with suspension of the final letter as in the writings of Aquarius and Sagittarius). The syncopated spelling Ἥλιος has been restored as suiting the space better than Ἥλιος, but an abbreviated form of the latter (e.g. ηλιῶ) is also possible. The spelling of the name of Aquarius in -δρη- rather than -δρο- has a parallel in a horoscope for a nativity of 10 BCE: *BGU III 957* (Neugebauer and Van Hoesen, *op. cit.* (note 7), p. 16 no 9); the other abbreviated forms of the names of zodiac signs are presumably to be resolved as the standard spellings Ἰχθύ(ες), Αἰγόκε(ρως), Τοξότ(ης), Σκορπ(ίος), and Παρθ(ένος). To judge from the preserved part, Λέων and Ταῦρος were probably written out in full; Καρκίνος and Δίδυμοι may have been abbreviated.

The date

The first editor of the papyrus offered a dating based on paleography to the first century BC, allowing the possibility that the first use of the papyrus for a documentary text could have taken place already by the end of the second century BC (see above). A dating on the basis of the astronomical data has not yet been attempted. For this purpose, besides the preserved planetary positions, it can also be observed that there was no planet in Pisces or any sign between Virgo and Scorpio. On the other hand, given the missing areas of the zodiac circle, it is possible that further celestial bodies were located in Sagittarius, Capricorn, or the segment from Aries to Leo. Based on the date of the original text, any date from the late second century BC through the first century BC could be possible for the horoscope. The first few years of the first century AD also have to be considered.

Given the possible date range and the preserved positions of Jupiter and Mars in Aquarius, as well as the probable position of Mercury in Capricorn, with Venus and the Sun in that sign or Sagittarius, it appears that the papyrus was meant to depict a date at the very end of 56 BC or the early days of 55 BC according to the Julian calendar. The dates are calculated with an error tolerance of up to 15°. ²⁵

The earliest possible date then becomes December 28, 56 BC:

²⁵ The basis of this calculation is the online *Almagest Ephemeris Calculator* of R. van Gent (<https://webspacescience.uu.nl/~gent0113/astro/almagestephemeris.htm>), assuming a time of 6 hours after noon on the Alexandrian reckoning (4 p.m. UT). The offset of the “ancient astrologers” to the Ptolemaic tropical longitudes for the given dates (56/55 BC) of 6;43,19° from the sidereal equinox mentioned by R. van Gent is taken into account. The time is based on the hypothesis that the ascendant was marked in the middle of the lost left half of the papyrus (Cancer), which, however, remains uncertain (see p. ** below). The values have been rounded up or down to the nearest integer.

Planet	Sign	Sidereal Longitude
[☉]	♑	12°
[☾]	♈	17°
[♁]	♏	16°
☿	♍	8°
♂	♍	4°
[♀]	♑	3°
[♃]	♈	16°

With the same parameters, January 9, 55 BC is the last possible date:

Planet	Sign	Sidereal Longitude
[☉]	♑	24°
[☾]	♏	3°
[♁]	♏	15°
☿	♍	11°
♂	♍	13°
[♀]	♑	18°
[♃]	♑	5°

Even if much is missing, the space above Capricorn and Sagittarius could have accommodated the names of Venus and the Sun. As the restoration requires three planets to be in Capricorn (Sun, Venus, and Mercury), it appears rather implausible for the Moon to have been in this section too, which could produce another slightly later date within that month. Besides the lack of space for the name of the Moon, the amount of aggregated error in planetary longitude in that position also makes such a suggestion implausible. Part of the space above the sign is still extant, and if the Moon were located there, it should contain traces of writing. Hence, the best date should be between December 28, 56 BC and January 9, 55 BC. If one allows a greater error tolerance for the position of the Moon, the date could potentially be moved one or two days later in January. Because of the fragmentary condition of the papyrus the date has to be treated with caution. But if this reconstruction is accepted, the papyrus contains the earliest known date from Egypt recorded by means of planetary positions.

That date is in turn at best a *terminus*, probably *post quem*: the third reuse would have taken place after the event depicted therein. How long after remains impossible to determine. It is certain, however, that this reuse happened before the end of the reign of Augustus (AD 14) given the overall dates of texts belonging to this group of cartonnage papyri (see above).

The quadruped

The zodiac circle was not the only pictorial element to be executed in a careless way. The same can be said about the depiction of the animal in the center of the circle. Although the scribe used no small amount of ink on the creature, the rendering of its features is rather imprecise. However, the fact that it is not a mere line drawing suggests something more than a scribble.

It is clear that the depiction represents a quadruped, but the species is less certain. It has been suggested that the image shows a lunging horse or a lion. But the resemblance is distant. The unruly crop of hair on the neck would be unusual for the mane of a horse. The snout, furthermore, appears too short for this animal, but too pointed for a lion. What can be understood as the ears also appear more angular than expected for a lion. The front legs

resemble those of a horse, but due to their lack of detail no firm conclusion can be drawn, and it has been remarked that they are placed too high up for an equid.²⁶ One would also expect a horse—out of place in an Egyptian-style zodiac—to be drawing the chariot of the sun god in a composition under Greek influence. There seems, however, to be too little space for such a feature, and in contemporary depictions the vehicle is usually connected to a team rather than one animal.²⁷

Does the image represent an animal with which the scribe was less familiar? One might be tempted to suggest that it depicts a bear.²⁸ The short muzzle could fit well with this identification. The pointy ears do not match typical ancient depictions of bears, but considering that the artist may never have seen a bear in real life, let alone had the chance to observe one closely, such a detail could easily have been missed. A depiction of a bear in the middle of a zodiac circle would find ancient parallels. For instance, the zodiac depicted on the so-called *Tabula Bianchini* has at its center an image of *Draco*, *Ursa Major*, and *Ursa Minor*.²⁹ The bears on that monument are also depicted as lunging forward, which could enhance the parallel. If this were the motif that the scribe tried to imitate, however, one would expect another bear and the serpentine hydra to be depicted, unless the image served as a *pars pro toto* for the whole motif, which remains unparalleled.

The first editor of the text suggested in passing that the animal may be a canine.³⁰ This identification would make sense in view of the fairly short muzzle and the pointy ears. The rather rugged mane or back fur is also in line with contemporary depictions of canines. In an astronomical or astrological setting, the canine—if such it is—could represent the constellation *Canis Major*, which is associated with Sirius. The star is known as Sothis in an Egyptian context and by itself was also often referred to as the Dog (Κύων), understood to be in the jaws of the animal.

In depictions of the constellation as a dog, the luminosity of Sirius—and perhaps its scorching effect on earth (see below)—was often indicated as rays of light emanating from its head, as represented on the Farnese Globe, or as a halo around the head, as appears on the Mainz Globe.³¹ On coinage from Hellenistic Keos, where there was also a cult of Sirius, the constellation or its primary star is also represented as a dog crowned by similar rays.³² The zigzag shape in the drawing in *P.Kramer* 17, running from what can be taken as the animal's snout up over its head, may be an attempt to represent a stellar glow.

Fig. 5: Mainz Globe, detail of *Canis Major* (line drawing)

²⁶ Reiter, *op. cit.* (note 8), p. 188.

²⁷ The standard depiction of horses with the Sun in a zodiacal context is in a four-horse chariot team: see C. Letta, “Helios / Sol,” in *Lexicon iconographicum mythologiae classicae*, vol. 4 (Zurich and Munich: Artemis, 1988), pp. 592–625, at 611–12.

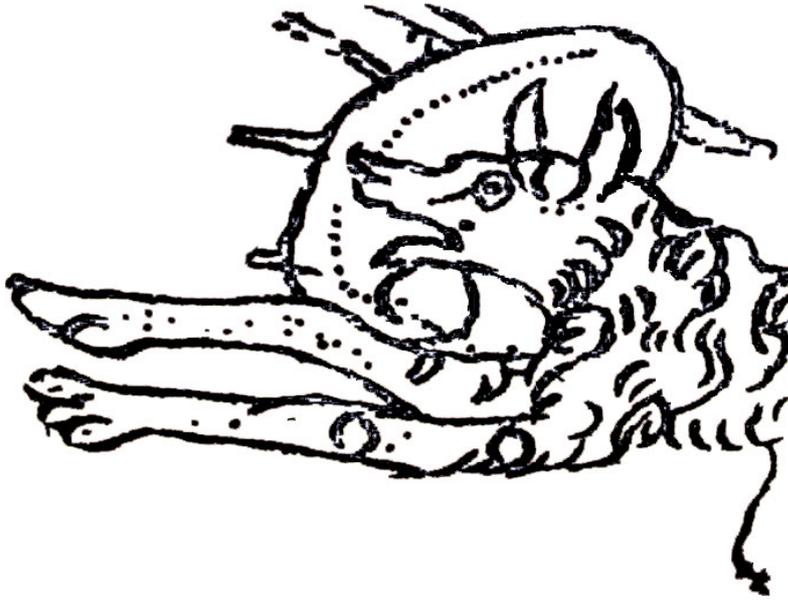
²⁸ For bears in antiquity, see W. Eichinger, *Der Bär und seine Darstellung in der Antike* (Hamburg: Dr. Kovač, 2005).

²⁹ E.g. Heilen and Gieseler Greenbaum, *op. cit.* (note 16), pp. 129–30.

³⁰ Reiter, *op. cit.* (note 8), p. 188.

³¹ For the Mainz globe, see E. Dekker, *Illustrating the Phaenomena: Celestial Cartography in Antiquity and the Middle Ages* (Oxford: University Press, 2013), pp. 106–11. For the Farnese Globe, *ibid.*, pp. 111–15.

³² For the coins, and representations of Sirius as a dog in general, see S. Karusu, “Astra,” in *Lexicon iconographicum mythologiae classicae*, vol. 2 (Zurich and Munich: Artemis, 1984), pp. 904–27, at 922–3.



Although the constellation can be described as a sitting dog in the written sources, it is also associated with hunting and rapid movement. Aratus (*fl.* fourth to third cent. BC) presents the animal—marked in turn by the blazing Sirius, whose etymology is thereby explained—as rearing, if not exactly lunging, and chasing the Hare (*Lepus*) as follows:³³

φαίνεται ἀμφοτέροισι Κύων ὑπὸ ποσσὶ βεβηκῶς,
 (...) ἡ δέ οἱ ἄκρη
 ἀκτέρι βέβληται δεινὴ γένυς, ὅς ῥα μάλιστα
 ὀξεῖα χειριάει· καὶ μιν καλέουσ' ἄνθρωποι
 Σεῖριον (...)
 ποσσὶν δ' Ὀρίωνος ὑπ' ἀμφοτέροισι Λαγῶδς
 ἔμμενές ἤματα πάντα διώκεται. αὐτὰρ ὃ γ' αἰεὶ
 Σεῖριος ἐξόπιθεν φέρεται μετιόντι ἔοικῶς,
 καὶ οἱ ἐπαντέλλει, καὶ μιν κατιόντα δοκεύει.

The Dog appears standing on both (hind) feet, (...) and the tip of its fearsome chin is inset with a star, which scorches (*seiriaei*) especially sharply: people call it Sirius (*Seirios*). (...) At both feet of Orion the Hare is constantly chased each day. Sirius moves from behind, as if pursuing, and rises after it and eyes it as it sets.

Manilius (*fl.* first cent. AD) also refers to the Dog's chase of the Hare as a "hunt,"³⁴ by way of explaining the frenzied behavior in the natural world brought about by the Dog Star. The constellation is in fact already described by Homer (*Iliad* 22.29) as a hound belonging to Orion, the mythical hunter.

³³ *Phaen.* 327–41. For the passage in question, see D. Kidd, *Aratus: Phaenomena* (Cambridge: Cambridge University Press, 1997), pp. 305–11. On Aratus in general, see recently S. Mastorakou, "Aratus and the Popularization of Hellenistic Astronomy," in A.C. Bowen and F. Rochberg (eds), *Hellenistic Astronomy: The Science in its Contexts* (Leiden: Brill, 2020), pp. 383–97; for the particular vocabulary of Aratus pertaining to luminosity and movement across the vaults, ead., "Aratus' Phaenomena beyond its Sources," *Aestimatio*, 1 (2021), pp. 55–70, at 63–4.

³⁴ *Astronomica* 5.232–3, 'You see how even the constellation itself is on the hunt among the stars: it seeks to run and catch the Hare that precedes it' (*cernis ut ipsum etiam sidus uenetur in astris: praegressum quaerit Leporem comprehendere cursu*). Cf. also *ibid.* 1.396, and Hyginus, *De astronomia* 2.33; 3.34; 4.4.

The images of the constellation on ancient celestial globes are also comparable to that on the papyrus. While the Farnese Globe appears to depict a dog standing on its hind legs, the Mainz Globe clearly shows a dog lunging forward. A depiction of Sirius as a lunging dog, with rays emanating from its head (as in the Mainz Globe), recalling also the figure in *P.Kramer* 17, accompanies a copy of the translation of Aratus by Cicero (*fl.* first cent. BC) in a ninth-century manuscript.³⁵ A dog with a shaggy ‘mane’ and a more exaggerated halo is represented in turn in the corresponding place in a ninth-century copy of the translation by Germanicus (the Leiden *Aratea*).³⁶

A difference between the depiction of the lunging dog found on the globes and the papyrus is the direction of the animal. In the two globes it faces left, being situated next to Cancer and Leo. Although not depicted as a dog, but as a reclining cow (see below), Sirius-Sothis is, for instance, also situated under the back paws of Leo in the zodiac depiction in the so-called Zodiac Tomb at Athribis, and a similar situation can be seen in the zodiac depicted in the tomb Salamuni 3, which arranges the zodiac signs in a clockwise order.³⁷ The depiction in Salamuni 8, on the other hand, runs counterclockwise and thus depicts the dog facing towards Scorpio and Sagittarius.³⁸ This resembles the situation in *P.Kramer* 17, where the arrangement of the signs also runs counterclockwise. The snout of the dog is pointing towards Aquarius and Capricorn.

The notion that Sirius-Sothis belonged to a dog-shaped constellation must have been introduced to Egypt with Greek astronomical literature in the Ptolemaic period. One of the earliest references to Sirius-Sothis as a dog is found in a Greek version of an Egyptian cultic calendar from Sais in the Delta (*P.Hib.* I 27), where the rising star is called (ὁ) Κύων (135 (ix 13)). The astronomical poem of Aratus was also read in Ptolemaic Egypt, at least by the second century BC.³⁹ Although the star could have been connected to new imagery, it is probable that older and traditional Egyptian ideas were more prevalent than the Graeco-Roman concept of it

³⁵ London, British Library, Harley MS 647, fol. 8v (facsimile: https://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_647_f008v). On illustrations of Aratus in general: Dekker, *op. cit.* (note 31), passim, and cf. pp. 145–8; 239–42 on the Harley manuscript.

³⁶ Leiden, Universiteitsbibliotheek, VLQ 79, fol. 60v. Facsimiles: R. Katzenstein and E. Savage-Smith, *The Leiden Aratea: Ancient Constellations in a Medieval Manuscript* (Malibu, CA: The J. Paul Getty Museum, 1988); B. Bischoff, B. Eastwood, T. A.-P. Klein, F. Mütterich, and P. J. Obbema, *Aratea: Kommentar zum Aratus des Germanicus MS. Voss. Lat. Q.79* (Luzern: Bibliothek der Rijksuniversiteit Leiden, 1989); see also Dekker, *op. cit.* (note 31), p. 117.

³⁷ Neugebauer and Parker, *op. cit.* (note 2), pls. 51–2. For an overview of the direction of the signs in the zodiac, see M. Shaieb, “Shapes, Orientations and Elements of Egyptian Zodiacs in the Graeco-Roman Period,” in R.A. Díaz Hernández, M.C. Flossmann-Schütze, and F. Hoffmann (eds), *Weltentstehung und Theologie von Hermopolis Magna I: Antike Kosmogonien. Beiträge zum internationalen Workshop vom 28. bis 30. Januar 2016* (Vaterstetten: Patrick Brose, 2019), p. 156.

³⁸ Neugebauer and Parker, *op. cit.* (note 2), pl. 55.

³⁹ The date of *P.Hamb.* II 121, an excerpt from that work. The astronomical miscellany *P.Paris* 1 (cf. note 17), also of the second century BC, mentions the constellation several times as ‘the Dog’ (ὁ Κύων) without further description (e.g. 189 (vii 14)). The latter papyrus probably circulated in a temple environment (e.g. B. Legras, *Les reclus grecs du Sarapieion de Memphis. Une enquête sur l'hellénisme égyptien* (Leuven: Peeters, 2011), pp. 241–51). Moreover, it has been suggested that figurines attested from the Pre-dynastic period until the New Kingdom representing a pregnant bitch could be associated with the star in question (Ch. Desroches Noblecourt, “Isis Sothis - le chien, la vigne -, et la tradition millénaire,” in J. Vercoutter (ed.), *Livre du centenaire: 1880-1980* (Cairo: Institut français d'archéologie orientale), pp. 15–24). The association between the two entities is doubtful at best, but even if the connection between Sirius-Sothis and the pregnant dog were verified in earlier periods, there is probably no direct link between the older image of the dog as the star and the later one (see L. Kákosy, “Sothis,” in W. Helck and E. Otto (eds), *Lexikon der Ägyptologie* V (Wiesbaden: Harrassowitz, 1984), cols. 1111; 1115).

as scorching the earth.⁴⁰ This can be assumed from, for instance, the hymn to Isis quoted by Diodorus (*fl.* first cent. BC) from anonymous reports of a stela inscribed in ‘sacred letters’ (τοῖς ἱεροῖς γράμμασιν), probably hieroglyphs, in which the goddess affirms, ‘I am she who rises in the star that is in the Dog’ (ἐγὼ εἶμι ἢ ἐν τῷ ἄστρῳ τῷ ἐν τῷ Κυνὶ ἐπιτέλλουσα).⁴¹ The Greek Isis aretalogies, of which some date to the same period, contain similar phrasing, ‘I am she who rises in the star of the Dog’ (ἐγὼ εἶμι ἢ ἐν τῷ τοῦ Κυνὸς ἄστρῳ ἐπιτέλλουσα).⁴²

The Egyptian acceptance of Sirius-Sothis as a dog is perhaps indicated by numerous Roman-period figurines representing dogs from different sites across Egypt, which have often been interpreted as representing the star in its canid form.⁴³ How firmly the connection of Sirius-Sothis to dogs had taken root in Egypt by the later Roman period is, however, shown by a curious private letter on papyrus from Oxyrhynchus. The sender apologizes for his absence, which is due to ‘having gotten dog-bitten at the very rising of the Dog, on the 25th (*sc.* of Epeiph, July 19), by a mad dog’ (κυνόβρωτος (...) ἐν αὐτῇ τῇ ἀνατολῇ τοῦ Κυνὸς κἔ ὑπὸ μανικοῦ κυνός).⁴⁴ It may be more than coincidence that the letter also mentions correspondence with ‘the one-eyed astrologer’.

In the Berlin papyrus, it is probable that the dominant association of Sirius-Sothis was that of a new beginning and regeneration, through the connection with the New Year and the inundation of the Nile, a role that can be traced back to the oldest written attestations of Sirius-Sothis.⁴⁵ A similar role for the star is probably reflected in tomb decorations of the second century AD, where Isis seated on a dog can occupy the center of a zodiac.⁴⁶ This dog is typically depicted as lunging right, but often looking back at the goddess seated on its back.⁴⁷ Based on

⁴⁰ This aspect of the star was also known in Egypt, however, and could be visualized by representing the star as a lioness (Kákosy, *op. cit.* (note 39), cols. 1111–15). Moreover, this aspect is discussed in great detail by Geminus, *Phaen.* 17.26–49.

⁴¹ *Bibliotheca historica* 1.27.4. An Egyptian version of the aretalogy without any mention of a canid in connection with Sirius-Sothis, however, is restored by J.F. Quack, “‘Ich bin Isis, die Herrin der beiden Länder’: Versuch zum demotischen Hintergrund der memphitischen Isisaretalogie,” in S. Meyer (ed.), *Egypt – Temple of the Whole World: Studies in Honour of Jan Assmann* (Leiden: Brill, 2003), pp. 319–65, at 336 and 346.

⁴² *I.Kyme* 41.9 (*RICIS* 302/0204.13). Recent studies pertaining to the Isis aretalogies include: L. Bricault, “L’aréologie d’Isis: biographie d’un texte canonique,” in D. Agut-Labordère and M.J. Versluys (eds), *Canonisation as Innovation: Anchoring Cultural Formation in the First Millennium BCE* (Leiden: Brill, 2022), pp. 243–62; I. Moyer, “Form and Intertextuality in the Greek Hymns to Isis,” in L. Bricault and M.A. Stadler (eds), *Hymnen und Aretalogien im antiken Mittelmeerraum: Von Inana bis Isis* (Wiesbaden: Harrassowitz, 2021), pp. 235–54; S. Nagel, “Der ägyptische Hintergrund der memphitischen Aretalogie: Sprechakte und (Selbst-)Inszenierung der Isis/Hathor-Schentait in osirianischen Ritualen,” in *op. cit.*, pp. 117–48; ead., *Isis im Römischen Reich: Die Göttin im griechisch-römischen Ägypten* (Wiesbaden: Harrassowitz, 2019), pp. 831–845. For Isis-Sothis in general in the Graeco-Roman world, see G. Clerc, “Isis-Sothis dans le monde romaine,” in M.B. de Boer and T.A. Edridge (eds), *Hommages à Maarten J. Vermaseren: recueil d’études offert par les auteurs de la série. Études préliminaires aux religions orientales dans l’empire romain à Maarten J. Vermaseren à l’occasion de son soixantième anniversaire le 7 avril 1978*, vol. 1 (Leiden: Brill, 1978), pp. 247–81.

⁴³ E.g. E. Teeter, *Baked Clay Figurines and Votive Beds from Medinet Habu* (Chicago, IL: Oriental Institute Press, 2010), pp. 110, 139 with further references. See also E. Warmenbol, “Un chat, un porc et les dieux: les terres cuites du Fayoum au Musée municipal de Lokeren,” in W. Clarysse, A. Schoors, and H. Willems (eds), *Egyptian Religion: The Last Thousand Years—Studies Dedicated to the Memory of Jan Quaegebeur*, vol. 1 (Leuven: Peeters, 1998), p. 283.

⁴⁴ *P.Oxy.* LXI 4126.

⁴⁵ Kákosy, *op. cit.* (note 39), col. 1113. The rising of Sothis, indicating the ideal starting point of an Egyptian New Year, could also have implications for natal astrology (e.g. Vettius Valens, *Anthologiae* 1.10.13; 3.8.1, 14; 4.29.14).

⁴⁶ For a general overview of Isis-Sothis in Egyptian tombs and related realms, see Venit, *op. cit.* (note 24), pp. 192–5. Similar images were also found on ritual dishes that may have been used during a New Year celebration (Getty Museum, accession 83.AA.327: K Endreffy, “Gods on the Lotus Flower: Two Stone Dishes with Relief Decoration from Graeco-Roman Egypt,” *Bulletin du Musée Hongrois des Beaux-Arts*, 119 (2014), p. 49).

⁴⁷ Neugebauer and Parker (note 2), pls. 52, 55.

the placement of the dog in the upper half of the zodiac circle, one could consider whether Isis was also depicted sitting on the dog in the now lost part. The available space seems insufficient, however, unless the representation of the goddess was disproportionately small.

The earliest image of Isis with a canine as a reference to Sirius-Sothis is more or less contemporary with the zodiac depiction on *P.Kramer* 17. It has been suggested that the earliest attestation of such a motif is in Rome of the first century AD, where it would have been part of the Isis temple erected under Caligula (AD 37–41) which was depicted on some Alexandrian coins of AD 71, part of a series from the reign of Vespasian (AD 69–79),⁴⁸ but the motif may be older, dating back at least to the reign of Augustus. A gem of red carnelian (Berlin, ÄM 6748) dated circa 30–10 BC depicts a woman riding a dog, which can be set in connection with the later images of the goddess riding a canine representing Sirius-Sothis.⁴⁹ In a Graeco-Roman context, the dog alone can also represent the star with which Isis was associated (see above). If the interpretation of the animal in the middle of the zodiac of *P.Kramer* 17 as a dog representing Sirius-Sothis is correct, it would be one of the earliest amalgamations of Greek and Egyptian conceptions of this star expressed in art.

References to Sirius-Sothis connected to the zodiac in a funerary sphere may also be identified in the coffins of the Soter group depicting the twelve signs.⁵⁰ The inner footboards of these coffins represent a cow reclining on a bier, above which there is a winged solar disc with an *uraeus*. The image is modelled on a similar one from the Deir el-Medina temple representing Sirius-Sothis.⁵¹ There the star appears as a lunging cow with a disc between its horns, in the middle of which there is a star, reinforcing the association between the bovid and Sirius-Sothis. On the coffins of the three siblings Kleopatra (BM EA 6706), Sensaos (Leiden, RMO M75), and Petamenophis-Ammonios (Louvre E. 13048), the cow is styled as Hathor,⁵² having a solar disc upon its head and in one case even a so-called *menat*-necklace. In these cases, there is also a representation of a human-headed *ba*-bird standing in a pose of veneration, which has been taken to reinforce the Hathoric imagery.⁵³ The coffin of Soter (BM EA 6705), however, leaves out these latter details, but adds a necklace with an *ankh*-sign. The poorly preserved coffin of the grandfather of the three siblings, Soter's father, Kornelios Pollios (BM EA 6950), also seems to have had such a depiction. Today, however, only the horned sun headdress of the cow is still extant on the inner footboard of the lid.⁵⁴

The remodeling of the cow into Hathor makes sense in the funerary sphere—the goddess was a patron of the deceased and of cemeteries—, but it does not exclude a double identification.⁵⁵ That is, to locals familiar with the temple, the image would still have evoked Sirius-Sothis, and thus also the related astronomical associations. The fact that the image of the bovid Sirius-Sothis is not limited to the Deir el-Medina temple supports the stellar connotation of the depiction. The star is also represented as such in, for instance, the zodiacs of the temples of Dendara and Esna.⁵⁶ The division of the zodiac into two rows (Leo to Capricorn running clockwise and Cancer to Aquarius running counterclockwise) also suggests

⁴⁸ Venit, *op. cit.* (note 24), p. 193, following Clerc, *op. cit.* (note 42), pp. 255–6.

⁴⁹ F. Spadini, “Éros et le lion: Soulager les peines d’amour,” *Mètis* n.s., 19 (2021), p. 93 n. 89. Although the gem is now in Egypt (Cairo, Egyptian Museum), its place of origin is unknown.

⁵⁰ See note 21 above.

⁵¹ Ch. Riggs, “Archaism and Artistic Sources in Roman Egypt: The Coffins of the Soter Family and the Temple of Deir el-Medina,” *Bulletin de l’Institut français d’archéologie orientale*, 106 (2006), p. 327.

⁵² See note 21 above.

⁵³ Riggs, *op. cit.* (note 51), p. 327.

⁵⁴ Neugebauer and Parker, *op. cit.* (note 2), pl. 46.

⁵⁵ Cf. Kákosy, *op. cit.* (note 39), col. 1111.

⁵⁶ Kákosy, *op. cit.* (note 39), cols. 1110–11; Ch. Leitz (ed.), *Lexikon der ägyptischen Götter und Götterbezeichnungen*, vol. 6 (Leuven: Peeters, 2002), pp. 291–4, s.v. *spdt*; Neugebauer and Parker, *op. cit.* (note 2), p. 201.

that the heliacal rising of Sirius-Sothis was considered to divide the zodiac into these two sections, in addition to the association of the summer solstice with the point of division.⁵⁷ The star ideally rose when the Sun was in the final degrees of Cancer, which is also the sign of the summer solstice.⁵⁸ The connection can be seen on the round zodiac from Dendara, for instance, where a reclining cow representing Sirius-Sothis is found next to Cancer. This event was also stressed in the decorative programs on the coffins of Kornelios Pollios and Soter. In contrast to the other coffins of the same type, a scarab is placed next to the feet of the goddess. In the case of Kornelios Pollios it is placed on her right side,⁵⁹ while it is between the feet of the goddess on the coffin of Soter, and thus in both instances close to the depiction of the cow representing the amalgamation of Hathor and Sirius-Sothis. Due to the interchangeability of Cancer and the scarab in monumental art, the image stresses the same aspect by reproducing the “sign” twice, similarly to the rectangular zodiac in Dendara. The connection between Cancer and the scarab is also stressed on a stone ‘New Year dish’ (Getty Museum, accession 83.AA.327) from the Roman period,⁶⁰ which depicts a zodiac on its rim above which a second band of images can be found. Above Cancer, a scarab is depicted.⁶¹

A horoscope?

As correctly observed by the first editor of the papyrus, correspondences with the monumental record can be found.⁶² Both the ornamentation of the zodiac circle and the motif in the middle have parallels in two- and three-dimensional art, though it is unusual for planets, if depicted, not to be placed in their astrological ‘dignities’. The zodiac diagrams in *P.Paris* 1 show some resemblance to the present image,⁶³ but the context of the latter text, a more theoretical treatise on the astral sciences, is different from anything that can be imagined for *P.Kramer* 17.

Elsewhere among the papyri, however, a parallel could perhaps be found in a horoscope from early Roman Oxyrhynchus, *P.Oxy.* II 235, mentioned above (Fig. 6).⁶⁴ Below the text, which includes an epistolary address to the client and augments the positions of the planets and

⁵⁷ See note 19 above.

⁵⁸ Cf. J. Evans and J.L. Berggren, *Geminus’s Introduction to the Phenomena: A Translation and Study of a Hellenistic Survey of Astronomy* (Princeton, NJ: Princeton University Press, 2006), p. 224 n. 19.

⁵⁹ As mentioned, a similar placement of the sign can be seen in the temple zodiacs. In the east section of the rectangular zodiac, Cancer is depicted close to Sirius-Sothis, next to the feet of the goddess Nut on either side of the zodiac (e.g. Neugebauer and Parker, *op. cit.* (note 2), pl. 42; with Leitz, *op. cit.* (note 20), p. 287). The order of the signs on the coffin at first seems to be in disarray. The left side of the figure had the sequence Leo to Capricorn (only the last four are preserved). The other side depicts Aquarius at the bottom, and Gemini and Taurus follow. One can assume that Aries and Pisces would also have been depicted, but the sides surrounding the goddess’ torso are lost. Such a sequence still only produces five signs. It is unclear whether only five signs were depicted on that side, or there was a doubling of either Aquarius or Cancer, given that the scarab next to the feet of the goddess can represent this sign, as in the case of the coffin of Soter. There certainly seems to be enough space to allow for such a feature, had the artist wished to have six signs on each side. Neugebauer and Parker, *op. cit.* (note 2), p. 89, describe the situation as follows: ‘the two end signs, Aquarius and Cancer, are also clockwise but the four interior signs, Pisces to Gemini, run counterclockwise’, without further comment on the unusual placement of the zodiac signs. After finishing the row Leo to Capricorn, the artist began with Aquarius on the foot end of the goddess, but then changed direction. It is tempting to see the insertion of ‘Cancer’ clearly shaped as a scarab at the feet as deliberate, which might also explain the confusion of the direction of the zodiac signs.

⁶⁰ Endreffy, *op. cit.* (note 46).

⁶¹ One could also think of the *Dodekaoros* (Boll, *op. cit.* (note 14), 325–41; A. von Lieven, “From Crocodile to Dragon: The History and Transformations of the *Dodekaoros*,” in Brown (ed.), *op. cit.* (note 7), pp. 124–37), where the scarab represents the fourth hour.

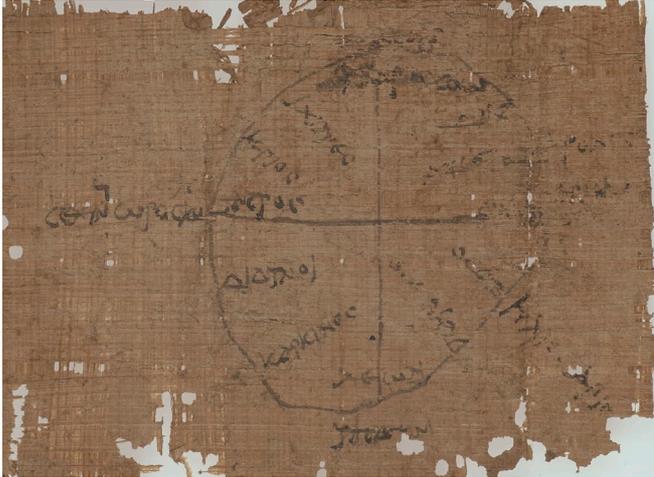
⁶² Reiter, *op. cit.* (note 8), p. 186. The author refers to: A. Pérez-Jiménez, “Cien años de investigación sobre la astrología antigua,” *MHNH*, 1 (2001), pp. 194–6, for a comprehensive bibliography on the topic.

⁶³ Cols 4, 7, 10–11, 19, 24.

⁶⁴ This horoscope can only be roughly dated due to the poor state of preservation and the fact that the positions of the planets seem to be in disarray for the potential dates (Neugebauer and Van Hoesen, *op. cit.* (note 7), pp. 18–19).

luminaries with astrological information, a schematic representation of the zodiac circle with the four cardinal points and the planets is added, partially illustrating the data given in the text. Similarly to *P.Kramer 17*, the Oxyrhynchus horoscope writes out the names of all the zodiac signs inside the circle and places the planets outside the circle. The diagram does not, however, contain any image in its center. The Oxyrhynchus papyrus also indicates the four cardinal points (left: Ascendant; right: Descendant; top: Midheaven; bottom: Lower Midheaven) with a cross-section dividing the circle into four parts. The zodiac signs are plotted accordingly, i.e. running counterclockwise, with Taurus in the Ascendant, Scorpio in the Descendant, Aquarius in Midheaven, and Leo in Lower Midheaven.

Fig. 6: Diagram from *P.Oxy. II 235*



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Parallels to this mode of depicting the constellations are also found in the graffito horoscopes of the third century AD from Dura Europos in Syria (Fig. 7).⁶⁵ These diagrams are organized in the same way as the Oxyrhynchus horoscope, with strokes intersecting the zodiac circle to indicate the four cardinal points. Unlike the papyrus example, however, they are not explicitly labelled.

Fig. 7: Horoscope diagram from Dura Europos (*GH* no 219,I).



⁶⁵ See Neugebauer and Van Hoesen, *op. cit.* (note 7), pp. 49 (no 176); 54–6 (no 219,I); 58 (no 250,1); 162. See also Evans, *op. cit.* (note 6), pp. 10–12.

If *P.Kramer 17* were a proper birth horoscope, the Ascendant would probably also have been indicated. This point or section of the ecliptic is essential for establishing a forecast in any Hellenistic or Egyptian astrological context. It is clear, however, that *P.Kramer 17* does not indicate all the four cardinal points. Had this been the case, two or three of these points should have been visible in the extant part of the zodiac. It cannot be excluded, however, that the Ascendant was plotted in the now lost sections. If so, it is possible that it was indicated in the same relative location as in the Oxyrhynchus papyrus, which would suggest that it was located in Cancer. However, the circle appears to follow the order of the signs, with Aries at the top, which would suggest that a potential Ascendant would not necessarily have been located in the middle of the left side of the circle. Nevertheless, if it were indeed part of the depiction, one can assume that it would have been located somewhere between Taurus and Leo.⁶⁶ As such, it would also be by far the oldest original horoscope. The earliest original horoscope in a Greek text from Egypt published to date is P.Berol. 11831 (*BKT X 29*), of 29 BC,⁶⁷ and the earliest Demotic counterpart dates to 48 BC.⁶⁸

Is it possible that the papyrus is a deluxe horoscope, a text where the astrological forecast was illustrated with the image under discussion here as a kind of diagram? Most so-called deluxe or elaborate horoscopes are refined in terms of astronomical calculations, resulting in a more detailed astrological commentary on relations between the celestial bodies. In *P.Kramer 17* planets are merely localized to a zodiac sign, as a simple horoscope would normally display the astronomical data in textual form. The Greek deluxe horoscopes can apply more elaborate language in recording planetary positions—such as strings of epithets for the planets themselves—than simple horoscopes do.⁶⁹ But this is far from standard. *P.Oxy. II 235* conveys rich astronomical and astrological information, as in a typical deluxe horoscope (though without exact longitudes), but it does not use the elaborate language which can be found in such products.

The so-called Lion Horoscope from Nimrud Dagh also uses the more poetical designation to indicate the planets but is not elaborate in an astrological sense. The Egyptian counterparts, as found in the demotic-hieratic horoscopes from Athribis,⁷⁰ can perhaps also be viewed as using a higher register of writing. They preserve far more hieratic writings for various celestial bodies and astrological concepts than most ordinary horoscopes. Such a suggestion, however, is not without its complications. The writings may in fact merely reflect a local orthographic tradition.

P.Kramer 17, in any case, makes no use of any elaborate language in its limited textual sample, including the names of the planets as far as preserved (e.g., simply Ἄρης ‘Ares’ for Mars, not Πυρόεις ‘Fiery’ or longer descriptors for geocentric distance and character). The decorative elements appear to be carried out without much care and the same can, as already discussed, be said for the drawing of the animal in the middle of the circle. If the practitioner merely wanted to illustrate the positions as part of a diagram, one would also have expected

⁶⁶ If the animal in the center were a lion, it might represent Leo in the Ascendant, but the probability of this identification seems slim, even if such a feature is paralleled in horoscopes on gems (S. Heilen and A. Mastrocinque, “A Third Horoscope-Gem, Twin of the Parisian ‘Seyrig Gem’,” *MHNH*, 17 (2017), pp. 103–38).

⁶⁷ There are no internal indications that the event for which the planetary positions were recorded was a nativity, and a horoscope for another purpose, such as catarchic astrology, is also possible.

⁶⁸ See A. Winkler, “Stellar Scientists: The Egyptian Temple Astrologers,” *Journal of Ancient Near Eastern History*, 8 (2021), p. 131 n. 210.

⁶⁹ For a case of unusually elaborate language: R. Beck, “Imagery and Narrative in an Ancient Horoscope: *P.Lond.* 130 (Greek Horoscopes No. 81),” *Journal for the Study of Religion, Nature, and Culture*, 7 (2013), pp. 397–406; for the phrasing of astral data in deluxe horoscopes in general as ‘pretentious prose text’: A. Jones, in *P.Oxy.Astr.* (1), p. 47.

⁷⁰ E.g. A. Winkler, “The First Zodiac Sign and the Daimon: The Advent of an Astrological Tradition and Seven Elaborate Horoscopes,” *Studien zur Altägyptischen Kultur*, 51 (2022), pp. 267–319.

the presentation to be more schematic, as in the Oxyrhynchus horoscope, and dispense with decoration entirely.

Another purpose of the image?

That the depiction of the zodiac was executed without much care on what can only be described as a substandard writing surface (an incompletely erased palimpsest papyrus) suggests a draft rather than a final result for presentation to a client. It is possible that the papyrus represents an imperfect copy of a now lost original of higher quality. Copies of horoscopes existed: e.g. *P.Paris* 19 and *P.Lond.* I 110, both containing the data for the same nativity (December 4, AD 137).

A rough outline of a more monumental version is conceivable, either painted, engraved, or sculptured in a more durable material. Since the piece can be dated thanks to the given positions of the planets, which are indicated without any relation to astrological dignities such as houses or exaltations, a draft for an astrological board or similar is unlikely. Once the planets were plotted it would be difficult to reuse the piece again, and it is generally accepted that practitioners placed gems on such boards to illustrate the planets and other relevant astrological points,⁷¹ rather than penned notations. A monument depicting planetary positions at a given moment by means of the zodiac is therefore more probable. That identification fits under the concept of the horoscope in the broad sense, but can this be further refined?

Given the suggested date of the zodiac representation in *P.Kramer* 17, the “Lion Horoscope” from Nimrud Dagh, which can be understood to depict a date through the placement of four planets (Mars, Mercury, Jupiter, and the Moon) in Leo, is potentially a parallel. The comparison is of particular relevance not from the coincidence that the same planets are preserved in the papyrus horoscope, but from the potential proximity in time. The date represented by the Anatolian monument, however, is not entirely clear. Two main possibilities exist: either July 14, 109 BC or July 6–7, 62 BC,⁷² with the latter date now considered slightly more plausible.⁷³ Also fairly close in time would have been the publication of the horoscope of Augustus⁷⁴ and his adoption of Capricorn as imperial symbol, with Julius Caesar having already adopted Taurus as a symbol for his legions, and Marc Anthony, reacting against Augustus’ use of Capricorn, apparently making use of Leo as his ‘birth sign’ to promote his claim to power.⁷⁵ Around the same time, the priesthood of Dendara may have participated in this trend when they decided to incorporate the zodiac as part of the decoration of their temple.

While Augustus’ publication and inclusion of Capricorn on public monuments and the so-called Lion Horoscope clearly had a political purpose,⁷⁶ no such connection is apparent in *P.Kramer* 17.⁷⁷ Instead, one might look for potential parallels more specific to the context of the papyrus in Graeco-Roman Egypt. Sovereignty

⁷¹ Evans, *op. cit.* (note 6), pp. 14–21.

⁷² Heilen, *op. cit.* (note 5), pp. 145–58.

⁷³ Heilen, *op. cit.* (note 7: *Hadriani genitura*), pp. 214–15.

⁷⁴ Suetonius, *Augustus* 94.12, and Cassius Dio 56.25.5; see also K. Volk, *Manilius and his Intellectual Background* (Oxford: Oxford University Press, 2009), pp. 146–59.

⁷⁵ Capricorn: A. Schmid, *Augustus und die Macht der Sterne: Antike Astrologie und die Etablierung der Monarchie in Rom* (Cologne: Böhlau, 2005); S. Terio, *Der Steinbock als Herrschaftszeichen des Augustus* (Münster: Aschendorff, 2006). Julius Caesar: e.g. F. Gury, “Caligula alchimiste et théurge,” in V. Dasen and J.M. Spieser (eds), *Les savoirs magiques et leur transmission de l’Antiquité à la Renaissance* (Turnhout: Brepols, 2014), pp. 224–5, n. 17. Marc Anthony: J.H. Abry, “À propos d’un symbole de Marc Antoine: le lion,” in J.-C. Goyon et al. (eds), *Marc Antoine, son idéologie et sa descendance. Actes du colloque organisé à Lyon le jeudi 28 juin 1990, Lyon, Société des amis de Jacob Spon* (Paris: De Boccard, 1993), pp. 55–68.

⁷⁶ Heilen, *op. cit.* (note 5), pp. 156–8; id., *op. cit.* (note 7: *Hadriani genitura*), p. 214.

⁷⁷ Given the date represented by the constellations on the zodiac, one could think of a connection to the political events of that spring in Egypt. In 55 BC, Ptolemy XII Neos Dionysios returned to Egypt after four years in exile.

A zodiac for the afterlife?

Besides the zodiacs of Egyptian temples, comparable monuments are principally known from funerary contexts, exhibiting both traditional Egyptian and more Hellenized elements (as discussed above). Both coffins and tombs could be decorated with zodiacs. These monuments can display the planets in the zodiac signs, thereby representing a birth date of—and hence indirectly reflecting a natal horoscope cast for—the interred person. Tombs or coffins with these features are so far rather rare: the coffin of Heter and the so-called Zodiac tomb at Athribis, both of the second century AD.⁷⁸ While the coffin also reflects the exact hour of birth by plotting the Ascendant, the tomb only indicates the positions of the planets. The tomb was clearly designed to incorporate the date of birth of the interred people; the planets are depicted as birds. The planetary positions found in the coffin of Heter, however, are a later addition. After the coffin was complete, the positions of the planets and the Ascendant were added in demotic and hieratic. The names of these elements appear next to the relevant zodiac signs.

It has furthermore been suggested that another coffin could indicate a date in a similar way, namely the coffin of Petamenophis-Ammonios.⁷⁹ As in the other coffins of this type, the lid has a figure of the sky goddess Nut in the middle. To her left the sequence from Aquarius to Cancer is depicted in clockwise order, while the right side has the sequence Leo to Sagittarius. That is, only five signs. The zodiac sign missing from the sequence, Capricorn, is placed above the left side of the head of the goddess next to a representation of the Sun. Since Petamenophis-Ammonios was born on January 11, AD 93, the zodiac sign singled out could indicate the position of the Sun on this date. This would be a rather rudimentary indication of the date, and consequently it has been remarked that the placement of Capricorn could also be due to poor planning on the part of the artist. The images of the zodiac signs on the right side may have been given too much space, leaving no room for the last sign.⁸⁰ Such a mistake, however, is difficult to attribute to a finished product. It could easily have been discovered during a draft stage when outlines of all the figures were added and subsequently corrected. In this connection, F.R. Herbin has suggested that the placement of Capricorn above the head of the goddess was a deliberate move by the artist. This unexpected rendering of Capricorn set the coffin apart from the three others of the same type that belonged to members of the family.⁸¹ If correctly identified as a distinguishing feature, the detail chosen would indeed have had an astronomical significance for the interred person, and by extension also for his afterlife. As remarked above, it is possible that the coffins of Kornelios Pollios and Soter emphasize a related feature through the placement of Cancer or a scarab representing the same sign. The

Although the chronology of the events that brought the king back to the throne is unclear, the earliest confirmed date of the restoration is mid-April of that year (*SEG XXXIX 1705*). Sometime earlier, in a letter sent from Puteoli to his friend Atticus in Rome (*Epistulae ad Atticum* 4.10), Cicero asks for news regarding the king's return to Egypt (see Ch. Bennet and M. Depauw, "The Reign of Berenike IV (Summer 58 – Spring 55 BC)," *Zeitschrift für Papyrologie und Epigraphik*, 160 (2007), pp. 211–14, at 214 n. 28). The date of the battle close to Pelusium, where the queen regent's spouse Archelaus was killed upon Marc Anthony's entry to Egypt with the soldiers of Gabinius, the governor of Syria, is not known. It could in theory already have taken place in January of that Julian year. For now, any connection to the political events must remain speculative.

⁷⁸ Neugebauer and Parker, *op. cit.* (note 2), pp. 93–8 (nos 71–2); See also O. Neugebauer, "Demotic Horoscopes," *Journal of the American Oriental Society*, 63 (1943), p. 115; S. Töpfer, *Das Balsamierungsritual: Eine (Neu-)Edition der Textkomposition Balsamierungsritual (pBoulaq 3, pLouvre 5158, pDurham 1983.11 + pSt. Petersburg 18128)* (Wiesbaden: Harrassowitz, 2015), pp. 23–32, for the coffin of Heter. The coffin was observed in 1857 but later lost, and knowledge of it depends on a line drawing made by Heinrich Brugsch in Luxor.

⁷⁹ Neugebauer and Parker, *op. cit.* (note 2), pp. 92–3.

⁸⁰ Neugebauer and Parker, *op. cit.* (note 2), p. 93.

⁸¹ F.R. Herbin, *Padiimenipet fils de Sôter: Histoire d'une famille dans l'Égypte romaine* (Paris: Réunion des Musées Nationaux, 2002), p. 33. See also V. Altmann-Wendling, *MondSymbolik - MondWissen: lunare Konzepte in den ägyptischen Tempeln griechisch-römischer Zeit* (Wiesbaden: Harrassowitz, 2018), p. 83 n. 335.

two coffins stress the heliacal rising of Sothis more strongly than those which only present the relation through a division of the twelve signs between Cancer and Leo.

Two of the coffins belonging to members of the Soter Family, namely those of Kleopatra and Petamenophis-Ammonios,⁸² resemble others from the family group, as decorated with motifs copied from the Ptolemaic temple in Deir el-Medina, but add images of the deified Imhotep and Amunhotep son of Hapu. These two were represented in the temple as well as in other sanctuaries around the region.⁸³ Besides their connection to the afterlife in the Theban version of the so-called Embalming Ritual, as the deceased was supposed to join their company, these two deified individuals were regarded as patron saints of several arts, including medicine. At the local level, their appearance in the afterlife can be connected to the latter aspect. It has been suggested that Imhotep and Amunhotep son of Hapu would assist the deceased through their knowledge to attain a sound corporeal life in the hereafter; representing them on the coffin was not merely an act of devotion. Moreover, of the two in particular Imhotep was seen as a leading figure in the astral sciences,⁸⁴ and by extension it appears that Amunhotep could also be associated with such knowledge.⁸⁵ The inclusion of these two characters may therefore additionally have stressed, and augmented, the astral elements of the decorative program of the coffins as a means for rebirth in the hereafter.

In the case of tombs and coffins, the depicted dates did not primarily serve an astrological purpose. The zodiacs simulated the skies and the cyclical evolution of time, the journey of the Sun across the stellar vault. To join the luminary in the afterlife was an explicit goal of the deceased in Egypt, and for this the deceased had to be reborn—just like the Sun—after death. By representing the position of the planets at the moment of birth, the tomb or coffin recreated the skies under which someone was born in the same way that the temple zodiacs represented the envisioned position of the stars at the beginning of the world (*thema mundi*).⁸⁶ Since the tomb by and large functioned on similar principles as a temple—the latter refashioned the world, while the former did so to an interred individual⁸⁷—the recreated heavens must have been seen as a way of assisting the process of rebirth in the hereafter.

The most appealing function so far considered for *P.Kramer 17* is as a draft for such a funerary monument.⁸⁸ A more or less direct parallel can perhaps be seen in a Late Period papyrus from the Theban area, now in New York (Metropolitan Museum, accession 26.3.322), depicting the planet Saturn in its anthropomorphic form with a falcon head. The name of the planet is written out around the frame enclosing the depiction:

 ⁸⁹ The register above Saturn contains other stellar elements.

⁸² See note 21 above.

⁸³ Riggs, *op. cit.* (note 17), p. 199; ead., *op. cit.* (note 51), pp. 322–5.

⁸⁴ E.g. K. Ryholt, “New Light on the Legendary King Nechepsos of Egypt,” *Journal of Egyptian Archaeology*, 97 (2011), pp. 61–72; J.F. Quack and K. Ryholt, “Petese Interpreting Astrology by Imhotep for King Nechepsos,” in J.F. Quack and K. Ryholt (eds), *The Carlsberg Papyri 11: Demotic Literary Texts from Tebtunis and Beyond* (Copenhagen: Museum Tusculanum Press, 2019), pp. 161–83.

⁸⁵ Ryholt, *op. cit.* (note 84), p. 71.

⁸⁶ E.g. J.F. Quack, “The Planets in Ancient Egypt,” in P. Read (ed.), *The Oxford Research Encyclopedia of Planetary Science* (Oxford: Oxford University Press, 2019); id., *op. cit.* (note 8), pp. 92–3. See also Leitz, *op. cit.* (note 20), pp. 285–9.

⁸⁷ E.g. A. von Lieven, “Das Verhältnis zwischen Tempel und Grab im griechisch-römischen Ägypten,” *Revue d'Égyptologie*, 61 (2010), pp. 91–111.

⁸⁸ Sirius-Sothis was associated in the Graeco-Roman period with the dog-headed psychopomp god Anubis, but this seems to have been a later development (see Boll, *op. cit.* (note 14), pp. 178–80; W. Gundel, “Sirius,” in W. Kroll (ed.), *Paulys Realencyclopädie der classischen Altertumswissenschaft* IIIA.1 (Stuttgart: Metzler, 1927), col. 320; Kákosy, *op. cit.* (note 37), col. 1115; M. Malaise, “Harpocrate, la tortue et le chien: contribution à l'iconographie du fils d'Isis,” *Bulletin de la Société Française d'Égyptologie*, 122 (1991), pp. 13–35.

⁸⁹ We are grateful to Yossra Ibrahim (Mainz) for drawing our attention to this piece.

It is possible that the papyrus served as a draft for, or a copy of,⁹⁰ an astral diagram representing the so-called traditional image of the sky to be set up in a tomb (or similar).

Similar texts or at least approximately analogous cases are known from other documents,⁹¹ for instance, P.Vindob. D 10100.⁹² This Roman-period demotic papyrus contains captions of wall scenes for a temple and served as instructions for a draftsman who was supposed to execute the decoration. It is probable, however, that the text was a copy of an earlier master copy, given the fact that the text refers to Ptolemaic kings.⁹³ A similar case is the hieroglyphic P.Vindob. Aeg. 9976,⁹⁴ which contains the plan of a temple wall decoration. Moreover, it is to be assumed that the craftsman in the Roman period would have had difficulties reading the text, considering the paucity of people outside the sacerdotal ranks who were able to read either script, but of course priests would have been involved in the production of temple wall decorations and other related monuments.⁹⁵

P.Zauzich 70 is another potential parallel. The papyrus dates to the Ptolemaic period and contains a sketch of a shrine annotated with measurements in demotic. The plan of the monument is inscribed on the back side (across the fibers) of a section of the Book of the Dead (Spells 163–4 with the adjacent vignettes plus that of Spell 89).⁹⁶ Drafts of monumental inscriptions are attested among the documentary papyri from Roman Egypt, and drafts for programs of pictorial decoration are also known.⁹⁷ Broadly comparable is the use of preliminary sketches for the so-called Fayum portraits, which could also be accompanied by instructions to the artist in the form of text.⁹⁸

The earliest recorded nativity belongs to the end of the first century BC, and most examples of tombs or coffins decorated with zodiacs date to the second century AD.⁹⁹ But there are also examples of the latter which have been dated to the first century AD, though none of these dates are secure. For the interpretation of *P.Kramer* 17, it is relevant that the earliest suggested

⁹⁰ In the Roman period, priests at Tebtunis made copies of inscriptions from tombs in Assiut that date to the First Intermediate Period, which include a list of decans (J. Osing and G. Rosati, *Papiri geroglifici e ieratici da Tebtynis* (Florence: Istituto Papirologico G. Vitelli, 1998), pp. 92–3, pl. 12).

⁹¹ For a survey of such texts, see B.J.J. Haring, “Hieratic Drafts for Hieroglyphic Texts,” in U. Verhoeven (ed.), *Ägyptologische "Binsen"-Weisheiten I-II: Neue Forschungen und Methoden der Hieratistik. Akten zweier Tagungen in Mainz im April 2011 und März 2013* (Stuttgart: Steiner, 2015), pp. 67–84.

⁹² G. Vittmann, “Ein Entwurf zur Dekoration eines Heiligtums in Soknopaiu Nesos (pWien D 10100),” *Enchoria*, 28 (2002/2003), pp. 106–36.

⁹³ Haring, *op. cit.* (note 91), p. 68.

⁹⁴ E. Winter, “Der Entwurf für eine Türinschrift auf einem ägyptischen Papyrus: Papyrus Aeg. 9976,” *Nachrichten von der Akademie der Wissenschaften in Göttingen: Phil.-Hist. Kl.*, 3 (1967), pp. 59–80.

⁹⁵ It should also be assumed with Riggs, *op. cit.* (note 51), p. 316, that the same groups of people were also involved in producing coffins and tomb decorations.

⁹⁶ J. Tait, “A Papyrus Bearing a Shrine Plan and a Book of the Dead,” in F. Hoffmann and H.-J. Thissen (eds), *Res severa verum gaudium: Festschrift für Karl-Theodor Zauzich zum 65. Geburtstag am 8. Juni 2004* (Leuven: Peeters, 2004), pp. 573–82. See also e.g. H.S. Smith and H.M. Steward, “The Gurob Shrine Papyrus,” *Journal of Egyptian Archaeology*, 70 (1984), pp. 54–64. There are also a number of sketches or plans for buildings, such as pyramids or tombs, on papyri or incised on stone.

⁹⁷ See in general the introduction to *P.Oxy.* LXXIX 5202; pictorial decoration: e.g. in weaving, *P.Oxy.* LXXI 4838–9; H. Whitehouse, “Drawing a fine line in Oxyrhynchus,” in A.K. Bowman *et al.* (eds), *Oxyrhynchus, A City and its Texts* (London: Egypt Exploration Society, 2007), pp. 302–3; or for sculpted reliefs in a temple context, an unpublished grid-drawing of a Ptolemaic king, with scale-notations in Demotic, from Tebtunis: P.Tebt.Frag. 14221–6. See also P.Davoli and D. Devauchelle, “A Demotic Papyrus with a Project for a Relief in the Bancroft Library (P.Tebt.Frag. 14291 + 14292),” in S.L. Lippert, M. Schentuleit, and M.A. Stadler (eds), *Sapientia Felicitas: Festschrift für Günter Vittmann zum 29. Februar 2016* (Montpellier: Équipe Égypte Nilotique et Méditerranéenne, 2016), pp. 67–79.

⁹⁸ An example from a Roman-period cemetery near the village of Tebtunis is now in Berkeley, Hearst Museum 6-21378a: *P.Horak* 18; facsimiles: <https://n2t.net/ark:/21549/hm2106021378a>.

⁹⁹ Neugebauer and Parker, *op. cit.* (note 2), pp. 89–101; Riggs, *op. cit.* (note 17), pp. 54–7; 164; 259; 281–3; Venit, *op. cit.* (note 24), pp. 157–95.

date for a coffin containing a zodiac is the first half of the first century AD. This is the coffin of Senpeteuris, discussed above, which contains a round zodiac whose style shows Hellenistic influence. If the papyrus were a draft for such a monument, it would be by far the earliest attestation of this practice.

If this identification is correct, it is also clear that the positions of the planets were planned to be included in the decorative program of the monument sketched in *P.Kramer 17* from the very beginning. As the Athribis tomb mentioned above represents the planets with images, it is possible that the textual labels of the papyrus would have been exchanged for something similar once the sketch was transferred from the papyrus onto an actual monument, either a coffin lid or a tomb ceiling.

Conclusion

P.Kramer 17 depicts a zodiac, complemented with planetary positions in such a way that it represents a specific date. The precise time cannot be determined due to the fragmentary state of the papyrus, but it is at least clear that a date around the beginning of 55 BC is reflected. The papyrus is thus the earliest “horoscope” from Egypt so far published. It is unlikely, however, that the zodiac represents a birth horoscope in the strict sense, as a finished product to be presented by a professional practitioner to a client. The papyrus is better understood as a draft of a more monumentalized version (at least in the wider sense) of the twelve signs. Given the central place of the image, and other attestations of zodiacs outside the horoscopic sphere, the most probable explanation for the papyrus is that it served as a draft for a funerary monument, whether a coffin or a tomb ceiling. Although most examples of coffin zodiacs take another form—the goddess Nut surrounded by a zodiac which is configured in such a way that Cancer and Leo flank the goddess’ upper torso—there is one example of such a monument with the same type of arrangement of the zodiac signs, that is, commencing with Aries and having no direct reference to the sky goddess in connection to the twelve signs: the coffin of Senpeteuris. If the interpretation of the quadruped in the middle as a reference to Sothis stands, further parallels would be gained: Isis-Sothis can be represented in the middle of the zodiac circle as a goddess riding a canine. As such the papyrus would be an early example not only of the practice of substituting a zodiac for the traditional Egyptian conception of the sky in funerary spaces, but also of the amalgamation of Greek and Egyptian cultures in this sphere. Although the papyrus, above all with its Greek text, may pass for a Hellenic cultural product, on closer consideration it could represent ancient Egyptian funerary ideas clad in an astronomical guise that would have been fashionable in its time.

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