A Timeline of the Decans:

From Egyptian Astronomical Timekeeping to Greco-Roman Melothesia

By

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Abstract

The decans were a set of thirty-six stars or constellations selected by the Egyptians in the First Intermediate Period as a means of marking the progression of the hours during the night. The rising of each decan on the horizon would mark the beginning of a new hour. The decans were depicted most often by the Egyptians in a funerary context, which led scholars to believe their initial function was not just astronomical but deeply religious as well. Once Egypt became colonized by Hellenistic rulers, the decans were adapted into the imported Babylonian zodiac. Once incorporated into the Hellenistic astrological system, which synthesized elements of both Egypt and Mesopotamia, the decans were believed to influence human health through the bonds of cosmic sympathy – the idea that all celestial bodies impacted human life in one way or another. The decans were each assigned to various sub-sections of the human body in a practice called melothesia. Once this assignment was established, a tradition of creating medical amulets emerged, allowing individuals to create folk remedies to alleviate disease and injury. The purpose of this paper is to review, synthesize, and contextualize the existent research on the decans.

Keywords: Decans, Egyptian astronomy, medical astrology, melothesia, pseudoepigrapha.

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Chapter 1: Introduction

A fascinating element of ancient Egyptian astronomy that was gradually adopted into Greco-Roman astrological practice is the decan. The decans were thirty-six individual stars or small constellations that rose and set at different times of the year, acting as a means of telling time throughout the night for the ancient Egyptians. They were eventually incorporated into the Babylonian zodiac by Hellenistic scholars, astrologers, and priests in Alexandria and beyond. Three decans were assigned to each of the twelve zodiacal signs. Because of their incorporation into an astrological system, they were seen as relevant astrological elements alongside the planets, the constellations, and the zodiac. As hour-markers, the star or constellation that made up each decan was seen as a lesser protective god, akin to a *daimon*. Eventually, their protector-god role became medical in nature. In the Hermetic tradition that flourished in Alexandria, the decans were each assigned to the different parts of the body and were believed to have a say in the healing or decline of each of their given parts. In an attempt to influence health and as an alternative to the often-frightening medical practices of the day, there is evidence of a technical tradition that involved amulets constructed to act in cosmic sympathy with the each of the individual decans. The purpose of this paper is to review, synthesize, and contextualize the existent research on the decans, from their use as an astronomical hour-marker in pre-Hellenistic Egypt, up until the late Roman era. While it is impossible to provide an in-depth analysis of each distinct period or iteration of the decans (and is not the goal of the work to begin with), the purpose is to unify the often-disjointed research of the topic into one centralized location. In addition to this, context will be provided to allow for the framework of a timeline to be laid. Where information exceeds the scope of this paper, suggestions for further reading will be provided.

Chapter 2: Astronomy in Pre-Hellenistic Egypt: Decans as Hour Markers

2.1 The Decans as Early Hour-Markers

It is necessary to begin our exploration of the decans with an exploration of their role in Egyptian astronomy. It is the first step in understanding how they transitioned from an Egyptian astronomical element into an astrological factor that influenced Hellenistic and Roman melothesia.[1] As previously stated, the decans originated as thirty-six stars or small constellations established in early Egypt as a system of marking the hours during the night. The earliest surviving evidence appears in the First Intermediate Period but was possibly based in an even earlier tradition.[2] The Egyptian night was divided into twelve hours of varying length (depending on the time of the year), and the decans that rose at the beginning of each hour acted as a time marker for that hour.[3] When the next decan rose, a new hour began. Twelve decans were visible throughout the night to represent the twelve hours. The Egyptian term for "decan" has been translated to mean "the living," as the decans rose (i.e. were born), lived, and then set (i.e. died).[4] At the beginning of the Egyptian year (which occurred at the rising of Sirius, usually in our July), one decan would be visible on the eastern horizon just before the sun rose. The appearance of that star would signal the beginning of a new "decade," a ten-day period where it was the brightest and last star or constellation to rise before the sun. This was called the decan's heliacal rising. After the ten-day period, that decan would no longer be the last one to rise in the morning. Another decan would take its place, and from that point (i.e. that next decade) the first decan

[1] The distinction between these two fields is that the former deals with the motions and measurements of astral bodies, while the latter is concerned with how those astral bodies impact life on earth. The best source for the early phase of these decans is the watershed work by Neugebauer and Parker on Egyptian Astronomical Texts. It will be a frequent friend of this work.

[2] Richard A. Parker, "Ancient Egyptian Astronomy," *Philosophical Transactions of the Royal Society of London. Series A, Mathematical and Physical Sciences* 276, no 1257 (1974): 54.

[3] William Dodd, "Exploring the Astronomy of Ancient Egypt with Simulations II: Sirius and the Decans," *The Journal of the Royal Astronomical Society of Canada* 99, no. 2 (2005): 67.

[4] Rosalind Park, "The First Decan," in *Current Research in Egyptology 2007: Proceedings of the Eighth Annual Conference*, ed. Ken Griffin. (Oxford: Oxbow Books, 2008), 104. This is in contrast to the "fixed" circumpolar stars, which remained in the sky year-round.

would represent the second-to-last hour of the night. This would continue until the third decan rose, supplanting the second decan to the second last hour of the night and the first decan to the third last hour of the night**.** Following this cycle, the hour that each decan represented would shift back by one when the next decan in the cycle had its heliacal rising. This continued on throughout the year thirty-six times, through the thirty-six decans, creating thirty-six decades or 360 days. Five days were added, called epagomenal days, to synchronize the system to the next rising of Sirius, where the cycle began again. This left the Egyptian year at 365 days, influencing the Gregorian and Julian calendars.[5]

This system was not always in use and was preceded by one based on the lunar cycles instead of stellar motion.[6] In the previous system, each new month began at the point in which the "old moon" – the moon that had just completed its cycle from waxing to full to waning – became invisible. This created twelve months in the early Egyptian year, divided into three equal seasons – Ahktet (inundation), Peret (growth), and Shemu (harvest). A thirteenth month was intercalated if Sirius' heliacal rising occurred within the last eleven days of the month, keeping the calendar linked to the seasons. This occurred once every two or three years.[7] For the purpose of timekeeping, this system only lasted until 3000 B.C., but it carried on as a means of scheduling seasonal festivals until the end of pagan Egypt.[8] The decanal timekeeping system was introduced in the 3rd millennium, probably for administrative reasons. This new civil calendar kept the number of months to 12 like its predecessor, but instead of inserting an entire extra month depending on the rising of Sirius, the Egyptians added the five epagomenal days to each year.[9]

There were, of course, issues with this system that caused it to fall out of line with the

[5]Parker, "Ancient Egyptian Astronomy," 53.
[6]Hugh Thurston, *Early Astronomy* (New York: Springer, 1994), 82.
[7]Parker, "Ancient Egyptian Astronomy," 52.
[8]Ibid., 52.
[9]Thurston, *Early Astronomy*, 20. The late names for the civil months based on their Greek spellings are Thoth, Phaophi, Athyr, Choiak, Tybi, Mechir, Phamenoth, Parmuthi, Pachons, Payni, Epiphi, Mesore.

natural length of the year. While 365 days is a very close estimate of the true length of the year (i.e. the amount of time it takes for the earth to complete a full rotation around the sun), it is not exact. In reality, the year is just under 365 and 1/4 days long. Scholars believed that the Egyptians were aware of this information from the beginning, but did not change the decan system to accompany it until the reign of Ptolemy III in 238 B.C.E , where a sixth epagomenal day was added every four years.[10] For the thousands of years before this official correction (which wasn't necessarily honoured by the locals), the Egyptian calendar was a wandering one, falling out of synchronization with the natural year length at a rate of approximately one day per four years. The use of decans as nightly hour markers was probably introduced around the same time as the implementation of the 365-day civil calendar.[11] They allowed for the year to be easily broken into thirty-six ten-day "weeks." However, because of the wandering calendar, eventually the decans used to represent each hour of the night would shift and the whole system would have to be adjusted. There is only evidence of one attempt at correcting for the wandering, occurring in the Twelfth Dynasty.[12] By 1786 B.C.E., a system based on the decans transiting the meridian (passing through the highest point of the sky) instead of their heliacal rising was introduced.[13] The Egyptians also began to make use of water clocks for improved accuracy.[14] Despite the introduction of new systems for practical purposes, the decans as symbolic hour markers remained widespread in Egypt, and their civil calendric system was used for religious and administrative purposes late into Egyptian history.

[10]Parker, "Ancient Egyptian Astronomy," 52.
[11]Ibid., 53.
[12]Ibid., 55.
[13]Ibid., 55.
[14] James Evans, *The History and Practice of Ancient Astronomy* (New York: Oxford University, 1998), 176. However, this attempt to correct the wandering system did not hold and the Egyptians continued to use the old calendar.

2.2 Decanal Star-Clock Systems: Archaeological and Epigraphical Evidence

Neugebauer and Parker divide the evidence of the use of decans in Egypt into four groups of different representations:[15]

1. The diagonal star clocks on coffin lids from the 9th-12th dynasty
2. The cenotaph of Seti I, the tomb of Ramses IV, and the P. Carlsberg 1 papyrus
3. The tomb of Senmut and later similar monuments
4. Hellenistic- and Roman-era astrological documents and monuments.

Groups 1-3 will be discussed in the following subsections. This will by no means be a complete assessment of the texts, monuments, and artifacts, but rather a general review of scholarship pertaining to them. Group 4 will be of importance for the rest of this work, far beyond the realm of early Egyptian astronomy.

The earliest example of the decanal timekeeping systems survives in several damaged coffin lids from the 9th-12th dynasties, riddled with corrupted tables and copying errors.[16]

[Epagomenal days]				III Shemu 1st decade				II Shemu 1st decade				I Shemu 1st decade				IV Peret 1st decade				III Peret 1st decade				II Peret 1st decade				I Peret 1st decade				IV Akhet 1st decade				III Akhet 1st decade				II Akhet 1st decade				I Akhet 1st decade			
				Final decade				Middle decade				Final decade				Middle decade				Final decade				Middle decade				Final decade				Middle decade				Final decade				Middle decade				Final decade			
A	25	13	1	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
B	26	14	2	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
C	27	15	3	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3
D	28	16	4	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
E	29	17	5	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
F	30	18	6	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
G	31	19	7	F	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7
H	32	20	8	G	F	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
J	33	21	9	H	G	F	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
K	34	22	10	J	H	G	F	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
L	35	23	11	K	J	H	G	F	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
M	36	24	12	L	K	J	H	G	F	E	D	C	B	A	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12

Table 1. An idealized diagonal star chart. Symons, "Ancient Egyptian Astronomy," 17.

The common names for these are diagonal star charts. Coffin lids from this period show the charts used to track the risings and settings of decans, with different lids consisting of different

[15]Otto Neugebauer and Richard Parker, *Egyptian Astronomical Texts I* (London: Brown University Press, 1960), 96.
[16] For a complete list of existent diagonal star charts, see: Sarah Symons, "Ancient Egyptian Astronomy: Timekeeping and Cosmography in the New Kingdom," (PhD Dissertation, University of Leicester, 1999), 18-27.

numbers of surviving rows and columns. Each column of a star chart represented a decade (or a ten-day week), and each row represented the hour of the night (from first to twelfth) with a decan name contained in each "cell" of the chart. Dividing the table both horizontally and vertically were "strips" in which, instead of decan names, there were representations of important constellations or deities (namely Orion, the goddess Nut, the Foreleg [which we know as the Big Dipper], and Sirius). These also contained textual offerings to deities and the dead. Following the chart from left to right, the hieroglyph representing each decan fell in a diagonal line with itself. Each decan shifted position in the subsequent columns to represent their place in the timekeeping system moving forward. Beginning from the 26th decade onwards (the middle decade of I Shemu above), twelve decans (listed A-L) form a triangle along the left side of the chart. The reason for the inclusion of these "triangle" decans is that the system did not cycle perfectly through 360 days and then begin again immediately at the first decan. Because the five epagomenal days were added at the end of the thirty-six decades and had to pass before the cycle started again (hence the 365-day system), the triangle decans acted as additional hour markers while the cycle waited to reset itself after the five epagomenal days. To read the chart, the following would be done: looking at the east at any given time of night, the observer would find the decan closest to the horizon. Assuming the observer knew the date, they would look for the column headed with either that exact date, or the date that has occurred over the last nine days. Finding the decan in that column, the observer would have known what hour it was.[17] As noted above, the accuracy of these diagonal star charts dwindled after a period of time due to the wandering of the calendar and thus are not believed to have been useful long-term.[18] Their place on coffin lids speaks to their priority as a guide for the dead, instead of a fully accurate system for

[17]Symons, "Ancient Egyptian Astronomy," 17; Of the seventeen remaining diagonal star charts, some 70 different decan names have been identified, believed to belong to one of two decanal traditions pre-dating the coffin lids. Neugebauer and Parker, *Egyptian Astronomical Texts I*, 26-29; Symons, "Ancient Egyptian Astronomy," 32.

[18] That is, unless the chart was deliberately reorganized to keep up with the wandering. This isn't likely. For more theories on this, see Symons, "Ancient Egyptian Astronomy," 47ff.

the living. Despite this, the decans persisted in some form or another late into Egyptian religion.

The diagonal star charts are traded in for a different system during the New Kingdom. This new system was based on the transiting of the meridian by the decans, fittingly called transit decan clocks.[19] The transit clocks are found in the Cenotaph of Seti I in Abydos (1303-1290 B.C.E.), the tomb of Rameses IV in Luxor (1158-1152 B.C.E.), and the Carlsberg I and Ia papyri (probably from the 2nd century C.E.).[20] The Carlsberg Papyri consist of a line-by-line copy of the texts found at the cenotaph of Seti I and the tomb of Ramses, as well as commentary by the scribe. It is one of the most important pieces of text concerning Egyptian astronomical and mythological stellar motions. The transit decan system found in the papyri is more complicated than the previous rising decan system. It was based on the idea that each decan disappeared for seventy days into the *Duat* (i.e. the underworld), before it rose again and spent eighty days in the eastern sky, eventually transiting the meridian. At this point the decan "worked" for 120 days, marking hours during the night. Like the decans in the earlier system, the decan marked the last hour of the night until it was replaced ten days later by another decan, at which point it marked the second-last hour, and continued on until it represented the first hour in the twelfth decade. At this point, it had completed "working "and remained in the sky for ninety days, until "dying" (i.e. was no longer able to seen) for seventy days once more. This left this system at 360 days long. This new system meant an almost complete shift in decans from the old system.[21] Parker states that the closer the old system was to the new system chronologically, the more the decans overlapped: "Of the thirty-six decans of the star clocks nearest in time to the transit scheme, only twenty-three remain exactly in the transit list. The other thirteen have each a different place or drop out and

[19]Marshall Clagett, *Ancient Egyptian Science II: Calendars, Clocks, and Astronomy* (Philadelphia: American Philosophical Society, 1989), 56.
[20]Neugebauer and Parker, *Egyptian Astronomical Texts I*, 36-42.
[21]Ibid., 57.

are replaced by new decans."[22] Because the transit clocks fell short of the natural year-length by a full five and 1/4 days, there is little likelihood that these clocks were of real-time keeping utility to the Egyptians. Their highly schematic and qualitative design suggests, once again, a symbolic and religious association with the night hours rather than an accurately measured, mathematical system of timekeeping.[23] Decans continue to be listed on monuments and tomb ceilings, but after the reign of Merneptah (1223-1211 B.C.E.) we no longer find anything approaching an actual star clock.[24]

Aside from the diagonal and transit star charts, celestial diagrams from various tombs include valuable information about the decans in the form of lists. Many list decan names, the deities associated with the decan (sometimes with pictorial representations), one (or more, if the decan consists of more than one) star as a determinative (an unpronounced picture sign that gives the hieroglyphic word depicted a category or meaning), the twelve triangle decans, as well as clusters of stars below the decan name to give some indication of the constellation they represent.[25] When listed, more than one decan sometimes appears in a column, suggesting that those decans belonged to the same, larger constellation. The information in these celestial diagrams changes from depiction to depiction. This is also true for the deity associated with the decans – they are not consistent across depictions. The planets are also included in these diagrams alongside the decans, often located on the southern panel. The northern panel usually consists of the "Northern Constellations," or the circumpolar constellations that remain in the sky year-round (many of which are difficult, if not impossible, to identify due to monument inconsistencies).[26] Neugebauer and Parker tell us that, "with more than fifty lists of decans, complete or fragmentary, to compare and contrast with one another, individual study would soon

[22]Ibid., 58.
[23]Ibid., 68.
[24]Parker, "Ancient Egyptian Astronomy," 56.
[25]Clagett, *Ancient Egyptian Science* 109.
[26]Ibid., 109-110.

bog down in morass of detail. Fortunately, the lists readily group themselves into families."[27] The Senmut diagram is considered to be one of the earliest near-complete lists of decans, and the first of the Senmut family.

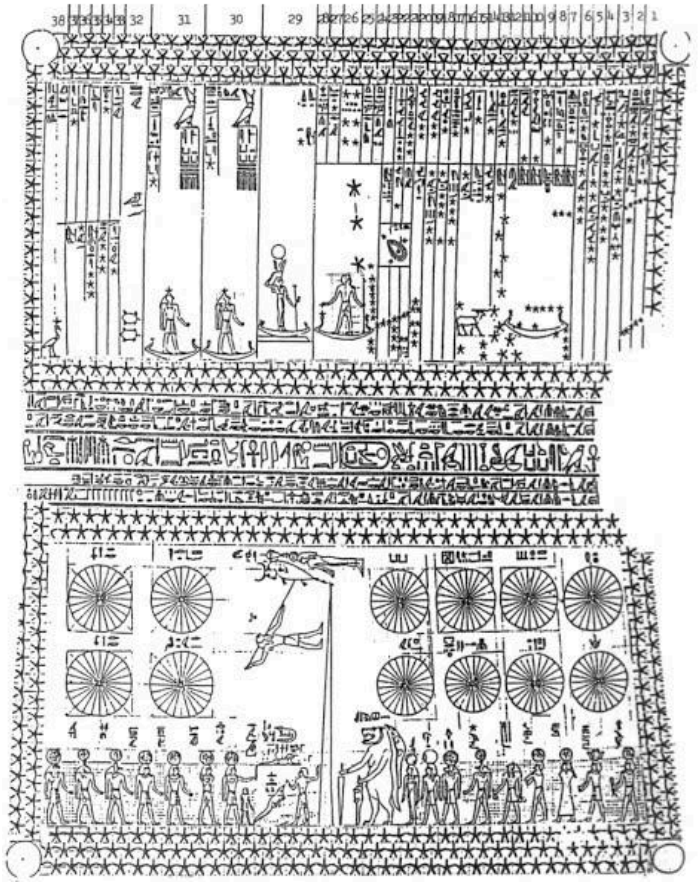

Figure 1. The Ceiling of Senmut. The decan list is found on the southern ceiling (top), while the northern contellations are located on the northern ceiling (bottom). Neugebauer and Parker, EAT III), plate 25.

Clagett states that it "seems to suggest that the [Senmut] decorations represent the prototype for a decanal family."[28] It is believed that this list was drawn from a diagonal star clock, and all original thirty-six decan names are known. Within this family of decans are eighteen lists, the latest of which is probably from 246-221 B.C.E.[29] This is the earliest and most complete family of decan lists on astronomical ceiling diagrams. Another celestial family, Seti I A, is made up of eight

[27] Otto Neugebauer and Richard Parker, *Egyptian Astronomical Texts III* (London: Brown University Press, 1960), 105.
[28]Clagett, *Ancient Egyptian Science,* 112.
[29]Neugebauer and Parker, *Egyptian Astronomical Texts III,* 105.

lists, the first from the cenotaph of Seti I (1303-1290 B.C.E.) and the last from the tomb of Petosiris (150 B.C.E.).[30] This family is made up of one main group and two subgroups. Finally, the last family is that of Tanis, which consists of ten lists, the first of which comes from Tanis from 664-525 B.C.E., and the last of which occurs in 69-96 C.E. at Esna.[31] The Tanis family includes the Zodiac of Dendera, an incredibly important ceiling diagram which will be discussed further in the section on astrology in Hellenistic Egypt.

2.3 The Modern Decan: Identification Attempts and Theories

Archaeologists have found over fifty variations of the decan lists over time, with differing decan names or identities depending on the different family that each list falls into. The most recognizable and consistent decan is Soth, or Sirius. Sirius marked the beginning of the decanal cycle and thus a new Egyptian year. Egyptian sources always name Sirius as the first decan to rise at the beginning of a new Sothic year, which began in July and predicted the flooding of the Nile. From here on, attempts to determine the other stars or constellations become muddy. Other than Sirius, Orion, and the Ox's Foreleg (the Big Dipper) the true identity of these stars or small constellations has not been established and the decanal lists have not been helpful in this regard to modern scholars. Early attempts at understanding where these decans were in our modern sky were established, perhaps predictably, by Neugebauer and Parker.[32] They hypothesized that the decans all fell along a line south of the ecliptic called the decanal belt. They established this hypothesis by combining information from the diagonal star clocks and the Carlsberg 1 papyrus. This belt was to house stars or constellations that were “invisible” (i.e. below the horizon) for seventy days between their setting and heliacal rising, just like their “leader” Sirius/Sothis.

[30]Ibid., 122.
[31]Ibid., 140.
[32]Otto Neugebauer, *The Egyptian "Decans"* (London: Pergamon Press, 1955), 49-50.

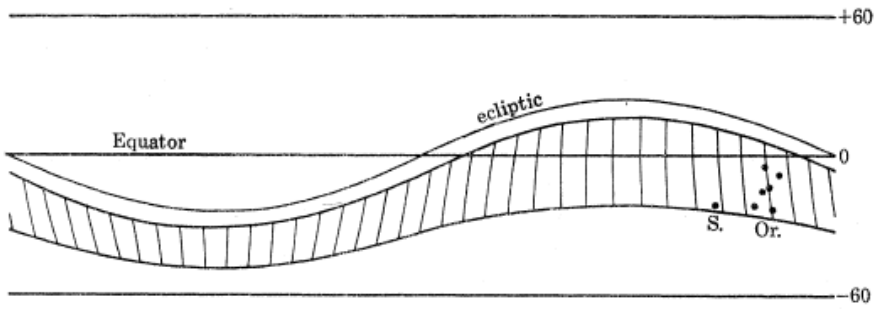

Figure 2. The decanal belt, as proposed by Neugebauer and Parker. Parker, "Ancient Egyptian Astronomy,"55.

Other than Sirius, Orion, and the Foreleg, Neugebauer believed that it wasn't worth trying to figure out the modern equivalents – that there would be "no point," and the attempt would assume that the periods of invisibility, the relationships between each decan in the system, and the length of the hours that each decan were to represent was precise and approached a level of accuracy that the Egyptians would have been unable to achieve: "The extreme inaccuracy of all aspects of Egyptian astronomy makes it impossible to identify any of its constellations, except for Sirius by means of its calendric significance, for Orion from its characteristic arrangement of stars in the propinquity of Sirius, and for the seven stars of the Great Dipper depicted by the Egyptians as outlining an ox-leg."[33]

Joanne Conman refutes the decanal belt hypothesis, stating that there is no real evidence to believe that the Egyptians would have tracked a belt in the sky that no other culture would have, and especially one to which no surviving text refers.[34] Compounded by this it is her belief that Neugebauer and Parker deeply misunderstood Egyptian cosmology and understandings of the celestial sphere. First, she argues that Neugebauer misunderstood the Carlsberg papyrus and extrapolated that the *Duat* was underground, meaning that the decanal stars must be invisible for seventy days after their acronychal setting. This led him to hypothesize that the decanal belt was

[33]Otto Neugebauer, *A History of Ancient Mathematical Astronomy II* (Berlin: Springer, 1975), 561.
[34]Joanne Conman, "It's About Time: Ancient Egyptian Cosmology," *Studien zur Altägyptischen Kultur* 31 (2003): 44.

not the ecliptic itself, but some line south of the ecliptic (to allow the stars the seventy-day invisibility period). She states that,

> The ancient unknown writer of the Carlsberg Papyrus, in attempting to clarify the tomb texts, was careful to specify the important fact that the sun and the decans were on the same path, and that path (or road) is singular... Nevertheless, in reference to mentions of the sun being "on the road of the decans" and of the decans setting where the sun sets, [Neugebauer] wrote, "This is obviously impossible in the strict sense because the point of sunset at the horizon varies greatly." Here a modern accuracy is presumed that is not reasonable to expect from the Egyptians. Neugebauer's own decanal belt, ranging between 10 degrees and 50 degrees from the ecliptic would vary even more, and has the added complication of being quite difficult to locate.[35]

Beyond this, Conman states that no later texts based on Egyptian astronomical or decanal theory (Ptolemy, Maternus, Hephaestion) indicate the observation of a different set of stars than was common outside of the ecliptic.[36] Instead, she argues that proximity to the ecliptic would provide the easiest way to track the thirty-six asterisms, and that the ecliptic provided the most consistent place along the horizon "at any given latitude" for the rising and setting of the decans.[37] Conman places most, if not all, of the onus on the religiosity of the decanal system, as opposed to its value as an astronomical science, and believes that in following the ecliptic, the decans follow the "invisible" path of the sun throughout the night.[38] The tracking of stars is not

[35]Ibid., 43-44.
[36]Conman, "It's About Time," 44-45.
[37] Conman's interpretation of the decanal texts speaks to the importance of the positions of the stars on either side of the sun, following its path. For a complete explanation, see: Conman, "It's About Time," 36-41.
[38] It should be noted that this was a belief held by Neugebauer and Parker as well: "It must also be kept in mind that these celestial phenomena remained closely associated with a variety of religious concepts. Such associations caused the Egyptians to retain for centuries descriptions of astronomical phenomena which in fact may have changed in the meantime." Neugebauer and Parker, *Egyptian Astronomical Texts I*, 95.

evidence of early astronomy in her eyes – the universe was not understood in mechanical terms or through mathematics. What patterns could be discerned were to be understood in a sacred light, and the sun was a highly sacred object to not only the Egyptians but a vast majority of ancient societies. The star clocks, decan charts, and any texts concerning them were first and foremost religious. For astronomers to assume some greater scientific basis for the decanal system removes the Egyptian sources from their context and denies them their original purpose as sacred. Conman's rejection of the Neugebauer and Parker decanal belt is one of the few alternative theories to their claims. She does not only reject the decanal belt *theoretically*, but also uses the program SkyMap Pro 6 to test their theory of seventy-day invisibility (which she claims to disprove), as well as provides potential candidates for the decans.[39] While Conman's attempt is refreshing to see, scholars still remain loyal to the decanal belt theory and reject Conman's revision to the tradition. Very few pro-decanal belt scholars attempt to explain or account for the issues that arise from her valid criticisms of Neugebauer's theory.[40]

While it is assumed that the decans were probably the brightest asterisms in the sky, we cannot say for sure on what criteria the Egyptians chose them. The most recent attempt to identify a possible list of decans has been in a pair of articles by William Dodd, where he performed computer simulations to establish a list of "pseudo-decans."[41] The list begins with the heliacal rising of Sirius and continues to name various stars of bright apparent magnitude as potential candidates for the decans.

[39]See Conman's full article for the complete attempt.

[40]Scholars tend to weigh in on this debate in the footnotes. See: Jose Lull and Juan Antonio Belmonte, "A Firmament Above Thebes: Uncovering the Constellations of Ancient Egyptians," *Journal for the History of Astronomy* 37 (2006): 18, note 4; Anthony J. Spalinger, "Nut and the Egyptologists," *Studien zur Altägyptischen Kultur* 41 (2012): 353, note 4. Personally, I appreciate Conman's resistance and moxie, but I cannot speak to the validity of her decan identifications.

[41]Dodd, "Astronomy of Ancient Egypt," 65-69; William Dodd, "Decans, Djed Pillars, and Seasonal-Hours in Ancient Egypt," *The Journal of the Royal Astronomical Society of Canada* 105, no. 5 (2011): 187-194.

1. Sirius (-1.47)	7. Regulus (1.34)	13. Spica (0.96)	19. Nunki (2.03)	25. Deneb (1.25)	31. Almach (2.09)
2. Alhena (1.90)	8. Algieba (2.00)	14. Arcturus (-0.07)	20. Cebalrai (2.75)	26. Gienah Cygnus (2.46)	32. Algol (2.06)
3. Procyon (0.37)	9. Zosma (2.50)	15. Dschubba (2.28)	21. Rasalhague (2.06)	27. Markab (2.46)	33. Pleiades (1.37)
4. Pollux (1.15)	10. Denebola (2.12)	16. Shaula (1.59)	22. Altair (0.75)	28. Scheat (2.43)	34. Aldebaran (0.84)
5. Castor (1.56)	11. Gienah Corvus (2.56)	17. Antares (1.03)	23. Vega (0.00)	29. Alpheratz (2.06)	35. Rigel (0.15)
6. Alphard (1.96)	12. Menkent (2.03)	18. Sabik (2.40)	24. Enif (*2.37)	30. Mirach (2.06)	36. Betelgeuse (0.43)

Table 2. Dodd's pseudo-decans. Dodd, "Decans, Djed Pillars, and Seasonal-Hours in Ancient Egypt," 190.

The magnitudes of the asterisms (in brackets) have an inverse relationship, meaning that the brighter the star, the lower the number. Dodd obtained these by using the astronomical program Starry Night, with location set to model the night sky over Giza and Saqqara in 2500 B.C.E. Dodd limited candidates to those stars with visual magnitudes brighter than three, and they had to pass through an eastern and western "viewing window" roughly along the ecliptic at the appropriate points of the year. He created simulations for all 365 days of the decanal year, and recorded the potential pseudo-decans. Unfortunately, there is no way to match these pseudo-decans to the Egyptian stellar names. An additional limitation to Dodd's attempt is that he does not include full constellations, which scholars understand to have featured amongst the single-star decans. But Dodd's attempt deserves recognition as an application of modern technology to further understand and appreciate the efforts of ancient astronomical observation, even if it is unlikely scholars will ever know the modern identities of the ancient decans.

2.4 Decans and Egyptian Religion: An Integral Connection

That astronomical observation was intertwined with Egyptian religious culture is well established within scholarship, and can be seen in both the primary material and the archaeological evidence. Many temples were astronomically oriented, built in such a way to

mimic the alignment of the heavens.[42] Egyptian religion is fraught with associations between the sun and the Pharaohs, the moon and the religious calendar, and the wanderings of the stars and the deities that were worshipped. There was little, if any, distinction between the observation of objects in the sky (what we would consider "scientific") and religious symbolism and tradition. The Book of Nut, one of the most important astronomical texts that survives from pre-Hellenistic Egypt, does not make any sort of differentiation between celestial observation for the sake of scientific or mathematic inquiry, and celestial observation as a valid and practiced way to worship their sky deities. The decans, as facets of Egyptian astronomy, were no exception to this idea. Their associations in celestial diagrams with individual deities exhibits this. They all interacted within a system governed and protected by the goddess Nut, whose outstretched body formed the backdrop of the night sky for the stars (including the decans) to pass through as she birthed them.[43] As far as the symbolic importance of the stars, Dodd states that, "For the ancient Egyptians, the stars were "the shining ones"— the eternal spirits of lesser gods (after the Sun and Moon). Thus, it is not an unreasonable assumption that following the motion of the stars was a religious devotion rather than a scientific procedure." Neugebauer and Parker tell us that the deities that the decans embodied were seen as living phenomena in the sky, "children of Horus."[44] Their motion throughout the sky during the year was symbolic of the process of birth, life, and death in a way that was visible to all – this, Von Bomhard states, is the meaning behind the Egyptian word for the decans, which they translated as "the living."[45] Where more scientific approaches would have processed the decanal system as an indication of some cycle of rotation, the Egyptian priests and astronomers grounded the motions within the context most understandable to them – the gods and the *Duat*. The star clocks, decan lists, and any texts

[42]Juan Antonio Belmonte, "In Search of Cosmic Order: Astronomy and Culture in Ancient Egypt," *The Role of Astronomy in Society and Culture* 5 (2009): 84.
[43]Conman, "It's About Time," 63.
[44]Neugebauer and Parker, *Egyptian Astronomical Texts I*, 150.
[45]A. S. Von Bomhard, *The Egyptian Calendar: A Work for Eternity* (London: Periplus, 1999), 51.

concerning the decans were first and foremost religious. For modern astronomers to assume some greater scientific basis for the decanal system is to remove the Egyptian sources from their context and deny them their original purpose as sacred.[46] The associations of decans with their deities becomes more important in later Egyptian religion, especially as they become associated with the Babylonian zodiac and are taken up by Hellenistic culture in various ways, as we will see.

The location of the diagonal star charts on coffin lids and the celestial diagrams in tombs attests to the importance of these systems as funerary symbols. The decan systems were not calculated, rigorous time markers akin to the modern clock.[47] The diagonal and transit star charts fell out of synchronization relatively quickly, and this was not missed by the Egyptians. If the decan systems were to be used for their day-to-day utility, the issue of their wandering would have been remedied for accuracy. Instead, the star charts we find are calibrated for specific moments in time. This is because the clock was predominately used by the dead contained within the tomb or coffin. The decan that rose each hour was a symbolic guide to allow the journey to the *Duat* to be made by the dead. This is what much of the scholarship regarding the decans in Egyptian astronomy has concluded: they were based in the actual risings and settings of specific stars and constellations, but their primary context was religious. They were not necessarily important for the sake of scientific or mathematic inquiry. However, while we would see these two as distinct, mutually exclusive reasons to observe the stars, the Egyptians melded these concepts together, and religion and astronomy were wed in a way that would not be as obvious to us today.

[46]Conman, "It's About Time," 41.
[47]Dodd, "Astronomy of Ancient Egypt," 66.

Chapter 3: The Adoption of Astrology into Hellenistic and Roman Egypt
Egypt as a Centre of Cultural Transmission

3.1 The Influence of Babylon and Egypt on Greco-Roman Astrology

The stellar observation recorded in Egyptian star clocks was qualitative and used in a religious context to assist in funerary setting, decorating coffins as a way of assisting the dead through their journey to the *Duat*. Neugebauer states that, "Egypt has no place in a work on the history of mathematical astronomy."[48] The discussion above has come to a similar conclusion, although with somewhat less stern language. Egyptian astronomical measurement and sacred conceptions of the decans were two parts of an inseparable whole. While fascinating in its own right, the study of Egyptian astronomy doesn't necessarily contribute all that much to the whole base of mathematical knowledge within the Mediterranean. With that said, Egypt certainly had a place in the history of ancient astrological practice, and the transition of the decans from astronomical to astrological exhibits this. That Hellenistic Egypt was a nexus for the intelligentsia of the Greco-Roman world is well established. As the educated swarmed Alexandria under the Ptolemaic dynasty, vast amounts of information were readily accessible. Out of this, advancements in astronomy, engineering, mathematics, and medicine, among several topics, occurred in Hellenistic Egypt. Theories about the willingness of the native peoples to absorb or reject these advancements have altered since scholars began closer analysis of the cultural exchange between the colonizers and the colonized. Initially, the conversion-repulsion dichotomy was easily digestible – local peoples In Egypt either fully accepted the Hellenistic settlers' enlightened ways, or they rebelled in force, reaching the maximum amount of "superior" culture they could ingest.[49] As analyses into cross-cultural relations in the ancient Mediterranean

[48]Neugebauer, *A History of Ancient Mathematical Astronomy II*, 560.
[49]David Frankfurter, "The Consequences of Hellenism in Late Antique Egypt: Religious Worlds and Actors," *Archiv für*

increase in number, it becomes clear that cultural exchange was not as polarized as was once believed. With established and respected cultures interacting, the intellectual exchange between the Egyptians and Greco-Romans resulted in nuanced and complex melding that has eluded attempts at untangling. Hellenistic Egypt is an especially delightful region to turn these efforts towards, as the resulting literature, art, science, and religion is complex in its synthesis of the wisdom of the "ancient" Egyptians and the innovation of the Hellenistic settlers.[50] The Greco-Romans did not merely arrive on the scene and "enlighten" the native Egyptians. David Frankfurter shows that the relationship between the two cultures was more than just a one-way street, with the Hellenistic population absorbing a huge amount of tradition from the Egyptians. He effectively outlines the interplay between the Hellenistic and Roman population, and the Egyptian population's religious cults, temples, and priesthoods.[51] Robert Ritner shows a similar relationship of exchange in the field of medicine, with Egyptian traditions influencing Greco-Roman thought about the circulatory and waste management systems within the body.[52] The adoption of Egyptian practices and wisdom became "fashionable" to the receptive Greco-Roman audience, and gave their resulting synthesized fields an air of credibility.[53] If a practice could claim to eastern origins (be it from Mesopotamia, Egypt, or Persia), then it was taken more seriously.

Astrology was included in this cultural and intellectual exchange. Exported out of the east from Mesopotamia, the astrological sciences found an easy place amongst the people in Hellenistic and Roman Egypt. Attempts to pin down the exact transmission have led to vague results at best, but it is generally accepted that astrology was transported to Egypt during the

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Religionsgeschichte 2, no. 1 (2000): 162-194.

[50]To the Greco-Roman settlers, Egypt was already extremely ancient.

[51]Frankfurter, "The Consequences of Hellenism in Late Antique Egypt," 162-194.

[52]Robert K. Ritner, "Innovations and Adaptations in Ancient Egyptian Medicine," *Journal of Near Eastern Studies 59*, no 2 (2000): 114-117.

[53]Moonika Oll, "Hellenistic Astrology as a Case Study of 'Cultural Translation,'" Master's Thesis, University of Birmingham, 2010, 43.

early Ptolemaic dynasty thanks to porous borders between the Hellenistic kingdoms.[54] Babylonia had a long-standing astrological tradition at the state level (concerned with king and country) as well as a tradition of personal astrology which developed during the 5th century B.C.E. Early in Mesopotamia, astrology was viewed as the language through which heavenly beings communicated with those on earth.[55] Several sources state the importance of the Babylonians, and more specifically the "Chaldeans," in discovering the practices that eventually became common-place in the Greco-Roman world. Diodorus Siculus describes Belesys, an astrologer, as:

> ...the most distinguished of the priests whom the Babylonians call Chaldeans. And so since he had great experience of both astrology and divination he was accustomed to predicting the future to the masses with unerring accuracy.[56]

The idea of the "Chaldeans" as the masters of astrology was imbedded in the Greco-Roman mind. They introduced astrological practices which dealt either with why things *were* and what things might come to *be*.[57] Babylonian omen astrology survives in the *Enuma Anu Enlil* tablets, dealing with systematic interpretations of lunar, solar, stellar, planetary, and meteorological events.[58] An example of one of these predictive tablets follows: "If Venus rises in month IV and the Twins stand toward the front: the king of Akkad will perish."[59] While this type of omen astrology had a long-standing tradition in Babylon, diversification occurs around the 5th century when more personal horoscope astrology became common. The following is the earliest existent tablet, from 409 B.C.E. "Son of Shuma-usur, son of Shuma-iddina, descendant of Deke, was born. / At that time the moon was below the "Horn" of the Scorpion, Jupiter in Pisces, Venus in Taurus, Saturn in Cancer, Mars in

[54]Garth Fowden, *The Egyptian Hermes: A Historical Approach to the Late Pagan Mind* (Princeton: Princeton University Press, 1993): 91.
[55]Francesca Rochberg, *The Heavenly Writing: Divination, Horoscopy, and Astronomy in Mesopotamian Culture* (Cambridge: Cambridge University Press, 2004): 47.
[56]Diodorus Siculus, *Library of History*, ed. and trans. C. H. Oldfather, Loeb Classical Library 340 (Cambridge, MA: Harvard University Press, 1939), 24.2.
[57]Nicholas Campion, *A History of Western Astrology I* (London: Continuum, 2011), 48; 173.
[58]Moonika Oll, "Greek 'Cultural Translation' of Chaldean Learning," PhD Dissertation, University of Birmingham, 2014, 167.
[59]Erica Reiner and David E. Pingree, *Babylonian Planetary Omens* (Malibu: Undena Publications, 1981), EAE 59 IV 2.

Gemini. Mercury, which had set (for the last time), was (still) in[visible]... (Things?) will(?) be good."[60] Additional elements found in Greek horoscopy that are believed to have been imported from Mesopotamia are planetary exhalations (i.e. positions in the zodiac where each planet is believed to be at its most powerful), theories of natal chart aspects (relationships between planets and individuals of varying signs: "Signs in opposition are considered by the Chaldeans in connection with sympathies in nativities. For those born diametrically opposite seem to be in sympathy with each other, and, as someone would say, to lie opposite each other."),[61] and the assignment of each planet as malevolent or beneficent.[62] These are only a few of the many contributions the Babylonians provided to the Greco-Roman iteration of astrology. The term Chaldean eventually becomes synonymous with "astrologer."[63] The Hellenistic Greeks combined the Babylonian methods with their spherical world-view and philosophical and religious concepts to form an entirely unique way of processing the world around them.[64]

Alongside many of the ancient attributions of astrology to the Babylonians, there are simultaneous attributions to the Egyptians. Diodorus Siculus states that, "The Thebans [of Egypt] say that they are the earliest of all men and the first people among whom philosophy and the exact science of the stars [*astrologia*] were discovered, since their country enables them to observe more distinctly than others the risings and settings of the stars."[65] Diodorus even claims that the Egyptians were the original teachers of the Babylonians: "According to them the Chaldeans of Babylon, being colonists from Egypt, enjoy the fame which they have for their astrology because they learned the science from the priests of Egypt."[66] The Hellenistic writers

[60]A Sachs, "Babylonian Horoscopes," *Journal of Cuneiform Studies* 6, no 2 (1952): 54.
[61]James Evans and J. L. Berggren, *Geminos's Introduction to the Phenomena: A Translation and Study of a Hellenistic Survey of Astronomy* (Princeton: Princeton University Press, 2006), 2.5ff.
[62]Oll, "Chaldean Learning,"181.
[63]Christopher Brennan, *Hellenistic Astrology: The Study of Fate and Fortune* (Denver: Amor Fati Publications, 2017), 24.
[64]Moonika, "Chaldean Learning,"164.
[65]Diodorus Siculus, *Library of History*, 1. 50.
[66]Diodorus Siculus*, Library of History,* 1. 81.

believed the tradition of astrological practice to be derived from a mixing of these two eastern powers. Dorotheus of Sidon begins his *Carmen Astrologicum* by stating that the "wondrous" knowledge contained within was gathered from authorities in both "Egypt and Babylon."[67] Whereas the Babylonian influence is relatively obvious through analysis of surviving texts, tablets, and other tangible evidence, less is firm for modern scholarship about the Egyptian contribution. There seems to be a permeating sentiment that the Egyptians turned the statecraft of astrology into an art form, adding their esoteric wisdom to the Babylonian's formulaic predictions.[68] Unfortunately, the verifiable evidence of the cultural connection is obscured when discussing the role of Egypt in the development of Hellenistic astrological practice due to a tradition of attributing important astrological treatises to Egyptian authors in the form of pseudo-epigraphical works. An analysis of these works can enlighten us to the Hellenistic mindset regarding the influence of Egyptian wisdom on astrology.

3.2 The Role of Pseudoepigrapha in Hellenistic Astrology: Nechepso, Petosiris, and the Hermetic Tradition.

Beginning around 150 B.C.E., a thirteen-book astrological guide entitled *Astrologumena* was released under the pseudonym Nechepso-Petosiris.[69] These are the names of a Pharaoh and his scribe, respectively. The sheer volume of texts that claim to be influenced by these authors, or the "ancient Egyptians" in general is very large – writers like Pliny, Hephaestio of Thebes, Vettius Valens, Firmicus Maternus, and Celsus all claim that these quasi-mythological figures passed down the wisdom concerning astral omens, horoscopic astrology, astrological medicine, and

[67]Dorotheus of Sidon, *Carmen Astrologicum,* trans. by David Pingree, (Bel Air, MD: Astrology Classics, 2005), 1.1-5.
[68]Briant Bohleke, "In Terms of Fate: A Survey of the Indigenous Egyptian Contribution to Ancient Astrology in Light of Papyrus CttYBR inv. 1132(B)," *Studien für Altägyptischen Kultur* 23 (1996): 11.
[69]There are some 40-odd fragments of the *Astrologumena* itself that survive in a 1891 work compiled by Ernst Riess (Riess, Ernst, "Nechepsonis et Petosiridis Fragmenta Magica," *Philologus* 6, (1891): 325-394.)

astrological botany.[70] Vettius Valens claims inspiration him most frequently, stating that,

> It is obvious that the King [Nechepso] made his explanations with mystic intelligence and that he has also been the guide—even for us—in our approach to this art. His willingness to confess, and then to correct, his early errors is a sign of a nobility and wisdom on his part which gave him the intelligence to know when to change his mind. The fact that he despised his kingship and power and devoted himself to these matters [astrology] is a sign of his experience and persuasiveness, qualities which reveal this art's alluring and attractive face to his successors. No necessity for making a living and no trickery caused by greed affected him ... As a result, this man must be taken as a model.[71]

In his *Natural History*, Pliny credits them with the creation of a technique for determining the length of an individual's life.[72] Firmicus Maternus speaks specifically to the importance in the decans and their role in astrological medicine, a topic that will be discussed in further detail below: "Nechepso, the most just Emperor of Egypt and a truly good astrologer, by means of the decans predicted all illnesses and afflictions; he knew which decan produced which illness and which decans were stronger than others."[73]

With the importance of their influence on Greco-Roman astrology in mind, it is difficult to say whether or not these texts are depicting accurate representations of the actual historical figures and, if so, whether the historical Nechepso or Petosiris were responsible for much, if any, early development of astrology. According to Ryholt, the legendary Nechepso that Hellenistic and

[70]Examples of these passages include Firmicus Maternus, *Mathesis*, ed. and trans. Jean Rhys Bram, (Park Ridge, IL: Noyes Press, 1975), 8.4.14; Vettius Valens, *Anthology*, trans. by Robert Schmidt and Robert Hand, (Berkley Springs: Golden Hind Press, 2001), 58.14-17; Hephaistio of Thebes, *Apotelesmatics* I, trans. Robert Schmidt, ed. Robert Hand, (Berkeley Springs: The Golden Hind Press, 1994), 1.23.
[71]Valens, *Anthology,* 58.14-17.
[72]Pliny, *Natural History* ed. and trans. H. Rackham, Loeb Classical Library 330 (Cambridge, MA: Harvard University Press, 1938), 7.50.1ff.
[73]Firmicus Maternus, *Mathesis*, 4.22.2.

Roman texts referred was likely Necho II of the Twenty-sixth dynasty, also known as Necho the Wise.[74] The meshing over time of the King's name and his epithet for "the wise" (i.e. "Psos") created the name that he became known for in later history – Nechepsos. The scribe that is most often associated with King Necho II in the preserved Papyri is named Petesis, who was a well-known sage. Is it possible that the name was changed during its transmission over time because Petesis and Petosiris look very similar in the demotic script. This could have caused a change in the name due to transposing error.[75] While Petesis was known as a sage with a well-attested tradition of knowledge transmission and magic, the association between Nechepsos and the field of astrology is made by Ryholt, who claims that he received the status due to an eclipse that occurred close to his ascension on June 22, 610 B.C.E.[76] Ryholt argues that it is likely that this was an exploited element during Nechepso's reign.[77] However, Brennen believes that this is a relatively flimsy reason for the notoriety. Mythological tales say that Petosiris was responsible for translating an astrological treatise from Imhotep and sharing this god-given knowledge with Nechepso, forming an alliance together based on a foundation of powerful information about the motions of the stars and their impact on daily life.[78]

With this historical information in mind, we have no texts that were actually written by the Pharaoh and his scribe, only pseudo-epigraphical works appearing much later that are attributed to them. This was probably in an attempt to lend clout and credence to the astrological work, similar to how those following in the Hippocratic tradition attributed their medical texts to

[74]Kim Ryholt, "New Light on the Legendary King Nechepsos of Egypt," *The Journal of Egyptian Archaeology* 97, (2011): 61-72. This historical identification is quite recent because, outside of his presence in several medical and astrological Greco-Roman texts, he was unmentioned in any Egyptian sources until these discoveries. Now, there are six mentions of the name Nechepsos in Egyptian text, three of which concern astrological information.

[75]Ibid., 70. The addition of the divine determinative (which was likely, due to the high status of the sage) would have made the two names nearly indistinguishable from one another.

[76]Ibid., 69.

[77]Ibid., 69. "If we are dealing with a historical event, it is even possible that the eclipse was exploited in the contemporary portrayal of Necho's kingship; eclipses were regarded as *omina* and it would have been an obvious strategy to proclaim it as a beneficent omen in favour of the new king and as divine endorsement."

[78]Christopher Brennan, *Hellenistic Astrology: The Study of Fate and Fortune.* Denver: Amor Fati Publications (2017): 74.

Hippocrates himself. As discussed above, harkening back to "ancient" wisdom strengthened claims of understanding a skill. This was especially useful when dealing with two important realms that had consequences for the daily lives of individuals – namely, astrology and medicine. To have access to ancient wisdom concerning these fields meant that you had an edge over other authors and that your skill set was based in old (and thus, tested and true) knowledge. According to Bohleke, within a century of the original *Astrologumena*'s release, "Their work... had become canon, synthesizing all the principles and techniques of astrology and enshrining the system as the basis for all later doctrine through manipulation and dissemination."[79] They are credited with a huge swath of astrological techniques, including the length-of-life system mentioned above by Pliny, doctrines dealing with the three main branches of Hellenistic astrology (natal, universal, and inceptional), medical astrology (called iatromathematics) dealing with the best ways to heal illnesses and afflictions through certain rituals, the techniques for determine "advantageous places" and lots of fortune, among others.[80]

Nechepsos and Petosiris are believed to have been handed down their knowledge of astrology, medicine, and various other arts through heavenly means. As such, there is a clear connection between the writings of Nechepso-Petosiris and those of Asclepius and Hermes Trismegistus, who is considered to be the founder of the school of Hermeticism and early Hellenistic astrology. Iamblichus states that, "Hermes [is] the god who presides over rational discourse... It is to him that our ancestors in particular dedicated the fruits of their wisdom, attributing all of their own writings to Hermes."[81] Hermes Trismegistus is believed to be the amalgamation between the Greek god Hermes and the Egyptian god Thoth, the patron of science and learning in general, showing a complex fusion between Egyptian and Greek culture in

[79]Bohleke, "In Terms of Fate," 11.
[80] Brennan, *Hellenistic Astrology,* 75-76.
[81]Iamblichus, *On the Mysteries*, ed. and trans. Emma C. Clarke and John M. Dillion, (Atlanta: Society of Biblical Literature, 2003): 1.2-2.3.

Hellenistic Egypt.[82] Further investigation into the connection shows that Hellenistic astrologers believed that there was a passing of information from the sage Hermes, down to Asclepius, who then revealed it to Nechepso and Petosiris:

> By examining in many books how it was handed down to us by the wise ancients, that is, by the Chaldeans, and Petosiris and especially the King Nechepso, just as they also based themselves on our lord Hermes together with Asclepius, who is of Imouthos, son of Hephaestus – in accordance with the time given me for the first year of the lord Antonius Caesar.[83]

Similar statements of this lineage are mentioned in Manetho, Manilius, and Firmicus Maternus.[84] There is a clear connection between these four quasi-mythological astrological authorities. Thus, a mythological stage for the astrological manuals written under their pseudonyms is set.

Hermeticism developed out of an intellectual environment similar to the works of Nechepso-Petosiris. A vast collection of philosophical and technical writings that fall under one core set of esoteric beliefs, Hermeticism has its roots in Hellenistic Egypt and has been an influential force for occult studies up until at least the Scientific Revolution, if not beyond into modern occultism.[85] Fowden's work on the Egyptian Hermes gives a comprehensive look into the foundations of this quasi-religious group, whose complex philosophy incorporated Platonism, Stoicism, Gnosticism, Jewish, and Egyptian elements.[86] There were approximately seventeen primary books in the Hermetic Corpus, divided into the early technical manuals and later

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[82] Luck, Georg. *Arcana Mundi: Magic and the Occult in the Greek and Roman Worlds* (Baltimore: Johns Hopkins University Press, 2008), 26.
[83]Brennan, *Hellenistic Astrology*, 39.
[84]Manetho, *Apotelesmatika*, ed. and trans. William G Waddell, Loeb Classical Library 350 (Cambridge, MA: Harvard University Press, 1940), 5, 1-10; Manilius, *Astronomica*, ed. and trans. G. P. Goold, Loeb Classical Library 469 (Cambridge, MA: Harvard University Press, 1977), 1.30. Firmicus Maternus, *Mathesis,* 4.5.
[85]Garth Fowden, *The Egyptian Hermes: A Historical Approach to the Late Pagan Mind*, Princeton: Princeton University Press (1993): 22ff.; See also: Robert S. Westman and J. E. McGuire, Hermeticism and the Scientific Revolution, (Los Angeles: University of California, 1977); Christian H. Bull, Ancient Hermeticism and Esotericism, *Aries: Journal for the Study of Western Esotericism* 15 (2015): 109-135.
[86]Brennen, *Hellenistic Astrology*, 68.

philosophical writings (dated to between is 1st and 3rd centuries CE).[87] Like the pseudo-epigraphical tradition of Nechepso-Petosiris, the teachings of Hermes Trismegistus deal with a wide variety of magical, astrological, and medical topics (to name a few) and even references Nechepso and Petosiris frequently throughout, winding the two traditions together further. Chronologically, the early works of the two are also quite similar – just like the *Astrologumena* written under the Nechepso-Petosiris pseudonym, the technical *Hermetica* is believed to have been released around the mid-2nd century B.C.E.[88] The astrological concept of the houses is stated to have come from the writings of Hermes Trismegistus.[89] Additionally, his status as a revered figure in astrology hints at the potential existence of early, highly influential astrological works written by him.[90]

These two traditions are vast and complex far beyond the scale of this work.[91] However, they are important to note to contextualize the study of decans as astrological medical elements, as well as to ground the Hellenistic astrological tradition in Egyptian history, even if it is a pseudo-epigraphical history. It is important to understand that, while the traditions discussed above are not indicators of a *historical* basis for the influence of Egyptian astrological practice, it is clear that the Hellenistic *psyche* had reserved a very important space for the *perceived* impact of Egypt. The attribution of texts to certain influential individuals (be they historical, mythological, or otherwise) was a common practice in this time period. As such these texts should not be disqualified from analysis just because it cannot be said for sure who wrote them. If the decans are mentioned by later Hellenistic or Roman astrologers, they are often mentioned with Nechepso-Petosiris or the Hermetic tradition in tow. The works by these two pseudonymous

[87]Ibid., 68.
[88]Ibid., 69.
[89]Robert Hand and Robert Schmidt, *The Astrological Record of the Early Sages in Greek* (Berkeley Springs: Golden Hind Press, 1995), x.
[90]Brennan, *Hellenistic Astrology,* 89.
[91]For an in-depth discussion of this, see Brennan, *Hellenistic Astrology*, 39ff.

authors form the basis for the use of the decans in a medical and protective context. Because of this, they have been included to contextualize the later role of the decan in the astrological tradition.

3.3 Decans in the Zodiac: A Melding of Traditions:

It is difficult to pin down precisely when the decans ceased to have an hour-marking function and began to be used in an astrological setting. Scholars know that sometime in the 3rd century B.C.E the zodiacal system was imported to Egypt from Babylon.[92] The decans become adapted into the zodiac as sub-divisions of each of the twelve signs, at three decans per sign. Firmicus Maternus explains the mechanics of this union in the following passage:

> There are thirty decans in the whole circle of the zodiac and they are divided among the twelve gods, that is, the twelve signs. There are three decans to each sign, but their power does not extend to all 30 degrees of each sign. In every sign decans possess certain degrees and not others.[93]

In the Hellenistic era, the use of the decans as nightly hour-markers is dropped, and they are assigned to the twelve signs of the Babylonian zodiac, at ten degrees per decan. The Babylonian zodiac also begins to appear in Egyptian monuments with notably Egyptian elements incorporated at this time. These elements include the Egyptian northern and southern constellations, the Egyptian representations of the sun, moon, and planets, and the thirty-six decans. The representations of the zodiacal signs maintain their Babylonian representations.[94] Neugebauer and Parker catalogued these ceilings in *Egyptian Astronomical Texts III.* While the earliest of these zodiacal depictions come from the Ptolemaic reign, most are from the Roman

[92]Campion, *A History of Western Astrology*, 182.
[93]Firmicus Maternus, *Mathesis*, 4.22.2.
[94]Neugebauer and Parker, *Egyptian Astronomical Texts III*, 203: "The basic pictorial elements for the zodiac signs are, however, undoubtedly of Babylonian origin as is evident, e.g. From the figure of the goat-fish (Capricorn), the double-headed archer on a winged, scorpion-tailed horse (Sagittarius), and the ear of corn (in Virgo), etc.

period with the latest dating to the middle of the second century C.E.[95] Six temple ceilings, eight private tomb ceilings, seven coffin lids, and two plaques show depictions of the Egyptianized zodiac. The depictions of the zodiac on the ceilings/lids in a funerary setting are believed to depict the idealized version of the night sky, in which all decans and all zodiacal signs can be seen at once. Different zodiacal ceilings included different decanal families depending on their location, strengthening the evidence that decan lists were different from place to place.[96]

Two of the more famous astrological ceilings are the now-destroyed Esna ceiling, and the Dendera zodiac. The astrological ceiling at Khnum near Esna was destroyed in the 19th century, along with the entirety of the temple.[97] A description of the ceiling and information about the temple itself survives through the archaeological records taken by Napoleon's Egyptologists prior to the destruction.[98] Dating from the reign of Ptolemy III (246-180 B.C.E.), this ceiling is believed to be the earliest iteration of the Egyptianized zodiac, strengthening the evidence that the introduction of the zodiac was possible due to the cultural interaction between the Hellenistic colonizers and the locals they colonized.[99] The Esna zodiac included two families of decans in its depiction of the zodiac – the Tanis family and the Seti I B family.[100] This exhibits a meshing of not only Babylonian and Egyptian traditions, but traditions within Egypt itself. The most eye-catching and best-known example of Egyptian zodiacal monuments is the zodiac of Dendera, from the first century B.C.E. Now housed in the Louvre, the Dendera zodiac displays a rounded ceiling vault with the twelve Babylonian signs, as well as the Egyptian northern and southern constellations, the planets, the sun and moon, and the decans, arranged as such: the thirty-six decans are located around the edge of the circle. Within the circle are the representations of the Babylonian zodiac.

[95]Ibid., 203.
[96]Parker, "Ancient Egyptian Astronomy," 61.
[97]Campion, "A History of Western Astrology," 182-183.
[98]Evans," The Astrologer's Apparatus," 24-26.
[99]Ibid., 24-26.
[100] Parker, "Ancient Egyptian Astronomy,", 61.

At the very centre are the two main northern Egyptian constellations – the Hippopotamus and the Bull's leg. Campion states that, to the creators of the temple, "this zodiac is supposed to represent the living cosmos at its most perfect, a moral lesson in right-living to all those who gaze upon it."[101] Built between 50-30 B.C.E., it is an exquisite surviving example of the Egyptianized zodiac.[102] Instead of replacing core concepts of either the Babylonian or the Egyptian traditions, the zodiac elegantly includes both – the flavor of Babylon is alive with the same pictorial representations of the zodiacal signs, but expressed in an Egyptian artistic style, in an Egyptian temple, with all of the features of Egyptian astro-religious lore. The use of these zodiacs exhibits that, while the zodiac was only recently brought to the Egyptian temple, it was well received and the priests made room for it within their most sacred spaces.[103] This, along with the introduction of the zodiac into demotic texts in the 3rd century, shows that Hellenistic Egypt was more than happy to forge new traditions from the pieces of the old ones, regardless of where they hailed from.[104]

[101] Campion, "A History of Western Astrology," 183.
[102] Campion, "A History of Western Astrology," 183.
[103] Evans, "The Astrologer's Apparatus," 26.
[104] Neugebauer, "The Egyptian Decans," 31.

Chapter 4: Decans as Protectors: Melothesia, Sympathy, and Amulet Magic

4.1 Decan Cults & Daimons

In addition to these zodiacal monuments, we also find the role of the decan transformed beyond a funerary context. As discussed above, they are combined with the Babylonian zodiac to become thirty-six sub-divisions of the twelve signs, three decans per. By this point, native Egyptians had begun depicting the decans as physical deities on amulets and votive offerings. Kakosy states that, "Gradually decans became manifestations of divine and demonic powers and, therefore, their favour could be obtained or their unfavourable influence mitigated by means of amulets."[105] They were imagined as snakes, lion-headed deities, and variations of these animals, such as upright snakes or those with wings, arms, or legs.[106] A particularly well-preserved votive statuette consists of a cat-headed goddess seated on a throne. Along the sides of the throne are engravings of four decan symbols, with two on each side of the throne.[107] Inscriptions often accompanied the physical depictions of the decans on these objects. One of the bracelets from the tomb of Osorkon II bore the following inscription alongside the engravings of the decans: “Said by the gods and goddesses of the heaven, the earth, and the netherworld: what we are making is protection over you. Their arrows are defending your body in life and (safe) rule.”[108] In creating physical representations of the decans in the form of votives, worshippers hoped to incite the decan's protection, or at least ward off its wrath.[109] Imbuing physical objects with their form could prevent illness, bad luck, and generally attract favour or avoid harm from the deity. In engraving the image or symbol of the decan, worshippers hoped to fulfill some desire or receive

[105] L. Kákosy, “Decans in Late-Egyptian Religion,” *Oikumene* 3 (1982): 191.
[106] Ibid., 164. Snakes were connected to ideas of protection and fertility, as well as destruction and carnage – a perfect choice for a protective amulet to, say, ward off evil.
[107] Ibid., 165.
[108] Ibid., 164.
[109] Ittai Weinryb, "Votives and Material religion," *Material Religion* 13, no. 1 (2017): 102-103.

some benefit from the decan. This shows a further strengthening of the belief in the decans as not just stars or constellations, but as powerful god-like beings that influenced the events on earth. In this cult setting, the decans are seen for their utility not only for the dead, but also for the living. Wearing an amulet or bracelet allowed for the patronage of the decan beyond the creation of vast, elaborate funerary ceilings and coffins. This, in turn, allowed for the dissemination of their cult from the higher classes of Pharaohs, princes, and priests, into to the lower classes.[110] It allowed individuals to have a pocket decan with them whenever they went. While most of the preserved votives, amulets, and other objects are from native religious practice before the Hellenistic era, the tradition of decanal worship in Egypt had influence over later Greco-Roman cultic adaptations.

Greenbaum argues that the Hellenistic colonizers took the protective iterations of the decans and further developed cultic worship around them. In this way, they became equivalent to the *daimon:* a sort of lesser god or guiding spirit, generally benevolent or ambivalent in nature but with the potential of causing harm if transgressed.[111] She states the decans, like *daimons*, were under the charge of the primary gods:

> The animal heads with which these decanic divinities are often depicted from the gods (e.g. Sakhmet and Bastet) with which they are associated. In the Ptolemaic and Greco-Roman periods decan cults expand to include connections with Isis-Sothis, Osiris, Hathor, Ptah, Amun, and other prominent Egyptian gods.[112]

They possessed an intermediate position between gods and humans, and had the potential to be both productive and destructive. As equivalents to *daimons* in the Hellenistic era, they were not necessarily always positive forces. They had to ability to cause illness and destruction as well.

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[110] L. Kakosy, "Decans in Late Egyptian Religion," 165.
[111] Dorian Gieseler Greenbaum, *The Daimon in Hellenistic Astrology: Origins and Influence* (Boston: Brill, 2016): 213ff.
[112] Ibid., 217.

Because of their associations with snakes, their occupation of this role as intermediaries between the primary gods and humans, and their role as servants of the gods to "protect or avenge," they were eventually linked to concepts of illness, injury, and ailments in various parts of the human body.[113] This association between the decans and health becomes integrated into their role in astrological practice. Eventually, the position of the decans in the zodiac has consequences for the health of those on earth. Firmicus Maternus states that:

> ...each sign has three decans. These decans have great divine power and by themselves determine all good and bad fortune. Nechepso, the most just Emperor of Egypt and a truly good astrologer, by means of the decans predicted all illnesses and afflictions; he knew which decan produced which illness and which decans were stronger than others. From their different nature and power, he discovered the cure for all illnesses, because one nature is often overcome by another, and one god by another.[114]

Firmicus, referencing the wisdom of Nechepso, explicitly states that the decans are involved with "*all* illnesses and afflictions." Similarly, a fragment of Celsus from Origen states the origin of this practice in Egypt:

> ... the Egyptians say that the body of man has been put under the charge of thirty-six *daimons*, or ethereal gods of some sort, who divide it between them, that being the number of parts into which it is divided (although some say far more). Each *daimon* is in charge of a different part.[115]

That the decans were not only used to medically assess different parts of the body, but that Nechepso could figure out the root cause of *all* illnesses through consulting with the decans

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[113] Greenbaum, *The Daimon in Hellenistic Astrology*, 219.
[114] Firmicus Maternus, *Mathesis*, 4.22.2.
[115] Origen, *Contra Celsum*, 8.58.3-6.

speaks volumes. Thus, the decans had become an important player in the realm of astrological medicine, also known as iatromathematics.

Iatromathematics is a sub-field of astrology formulated around the premise that the health of humans can be influenced in one or several ways by the relationships between celestial objects, be they planets, zodiacal signs, stars, or the decans. Crinias of Marseilles, who used the positions of the stars and planets to determine what to prescribe and when to prescribe it, was "among the first medical millionaires".[116] There was clearly a market. A common way of parsing these astrological relationships for human health was through the division of the body parts between the different influencing celestial forces, known as melothesia. In zodiacal melothesia, for example, the sign of Aries is responsible for afflictions to the head, Gemini for the shoulders, Scorpio for the genitals, etc. Melothesia has been an extremely popular medical technique throughout time and in various geographical locations. It was used extensively by physicians in the Medieval period.[117] It held sway over medical practices in some capacity up until the early modern period, as well as across cultures as far as China.[118] The planets or signs that the specific body parts were mapped to remains consistent throughout the centuries and iterations.[119] There is evidence of practices of treatments based on melothesia as far back as in Mesopotamia. An example comes from BM 47755: "Ditto (= if) the Great Twins (Gemini) has affected him and his head hurts him, place murr¨nu-wood in snakeskin and secondly, rub him with oil and he will improve."[120] In Greco-Roman astrology, melothesia was also practiced. Manilius gives us a complete description of zodiacal melothesia:

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[116] Nutton, Vivian, "Greek medical astrology and the boundaries of medicine," in A. Akasoy, Burnett C, Yoeli-Tlalim R., eds. *Astro-Medicine: Astrology and Medicine, East and West* (Florence: Sismel - Edizioni del Galluzzo, 2008), 19.

[117] John Z. Wee, "Discovery of the Zodiac Man in Cuneiform," *Journal of Cuneiform Studies* 67, (2015): 217.

[118] For further information, see: *Astro-Medicine. Astrology and Medicine, East and West*, eds. Anna Akasoy, Charles Burnett and Ronit Yoeli-Tlalin.

[119] Wee, "Discovery of the Zodiac Man," 219.

[120] Margaret J. Geller, *Look to the Stars: Babylonian Medicine, Magic, Astrology, and Melothesia* (Berlin: Max Planck Institut für Wissenschaftsgeschichte, 2010), 74, BM 56605 ii.

> The Ram is allotted the head as Princeps of all, and the handsome neck is given by census to the Bull. To the Twins are inscribed the arms joined to shoulders. The breast is allocated to the Crab. The reign over sides and shoulder blades belongs to the Lion. As her individual lot, the lower abdomen falls to the Maiden. The Scales rule over the buttocks, and the Scorpion delights in the groin. The thighs assent to the Centaur. Capricorn commands both knees. The pouring Waterman arbitrates the lower legs, and the Fishes adjudicate the feet.[121]

In his *Tetrabiblos*, Ptolemy wrote extensively about which parts of the bodies the individual planets had control over:

> For the most important parts of the body, Saturn is lord of the right ear, the spleen, the bladder, the phlegm, and the bones; Jupiter is lord of touch, the lungs, arteries, and semen; Mars of the left ear, kidneys, veins, and genitals...[122]

In this manner, he continues through the sun, the moon, and the remaining planets, listing off which influences each organ, limb, or feature of the body. Depending on the relationships between each of the planets and which sign of the zodiac they are in, they interact in various ways to produce health issues of all sorts. For example:

> Mercury assists [Saturn and Mars] chiefly to prolong the evil effects, when he is allied with Saturn including toward the cold and continually stirring into activity rheumatisms and gatherings of fluid, particularly about the chest, throat, and stomach. When he is allied with Mars he adds his force to produce greater dryness, as in cases of ulcerous sore eyes, eschars, abscesses, erysipelas, savage lichens or

[121] Manilius. *Astronomica*, 2.453-465.
[122] Ptolemy, *Tetrabiblos* ed. and trans. F. E. Robbins, Loeb Classical Library 435 (Cambridge, MA: Harvard University Press, 1940), 3.12.

skin eruptions, black bile, insanity, the sacred disease, or the like.[123]

The various relationships between the planets (trine, opposition, conjunction, etc.) within the zodiac could produce all manner of physical illnesses. Iatromathematics and melothesia offered an alternative approach to medical practices that could be understood through the stars, not just by trained medical professionals. The means by which individuals were healed of their injuries or diseases were frightening, painful, and often unsuccessful. Nutton states that, in competition with the doctors of the day, astrologers were able to provide a quick and acceptable answer to their patients' two most pressing questions: will I recover, and how long will it take?[124] He states that, "The famous injunction in *Epidemics* I.2 [a Hippocratic text], to 'help or at any rate do no harm', is a telling indication of the limitations of Hippocratic therapy; the most that might be hoped for is that the doctor's intervention will not make the situation worse."[125] The prospect of medical intervention was frightening, and many of the treatments were gruesome at best. By appealing to the heavenly bodies which were connected to the gods and could be accessed through many inexpensive avenues, an alternative approach to human health was offered.

4.2 Magical Amulets for Medicinal Use

Individuals could appeal to the heavenly bodies for their health through the creation of amulets made with specific materials associated with the celestial object or deity they were wishing to attract the favour of.[126] The use of amulets for various means is well attested in the *Greek Magical Papyri*, and they were an extremely common way to deal with issues that arose in daily life. These papyri included instructions for creating amulets for personal gain, to induce

[123] Ptolemy, *Tetrabiblos,* 3.12.
[124] Vivian Nutton, "From medical certainty to medical amulets: Three aspects of ancient therapeutics," in WF Bynum, V. Nutton, eds, *Essays in the History of Therapeutics* (Amsterdam: Rodopi, 1991): 24.
[125] Ibid., 15.
[126] James Evans, "The Astrologer's Apparatus: A Picture of Professional Practice in Greco-Roman Egypt," *Journal for the History of Astronomy* 35, no 118 (2004): 14.

insomnia in others, and even for contraception.[127] The following example is a set of instructions for appealing to the god Sarapis:

> On a jasper-like agate engrave Sarapis seated, facing forwards, holding an Egyptian royal scepter and on the scepter an ibis, and on the back of the stone the [magical] name [of Sarapis?], and keep it shut up. When need [arises] hold the ring in your left hand, and in your right a spray of olive and laurel [twigs], waving them toward the lamp saying the spell 7 times. And when you have put / [the ring] on the index finger of your left hand with the stone inside, [keep it] thus and, going off [to bed] without speaking to anybody, go to sleep holding the stone to your left ear.[128]

Several elements of this instruction set are common to other amulet creation guides. The stone one should use is specified ("jasper-like agate"). The instruction to engrave the figure of the deity is given. The amulet should be made into a specific form in order to be effective (a ring). There are instructions for the ritual surrounding the amulet and how to most effectively entice the deity (waving olive and laurel, wearing the ring on the left hand, sleeping with it next to the left ear). Like a medical regime or treatment, this instruction guide gave the interested party a step-by-step guide to winning the favour of any of the given decans.

While amulets could be worn to protect from evil curses, they could also be combined with astrological elements to protect the wearer from illnesses. Scholars are extremely fortunate to have a surviving technical manual from the *Corpus Hermeticum* concerning similar instructions for creating amulets that appeal to decans for health. Originally translated from Greek into French in 1908, *The Sacred Book of Hermes to Asclepius* is a document that survives through a Byzantine

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[127] Hans Dieter Betz. *The Greek Magical Papyri in Translation Including the Demotic Spells.* Chicago: University of Chicago Press (1996)*:* 295.
[128] Betz, *Greek Magical Papyri*, 447-58.

manuscript but is believed to have its origins in early Roman Egypt.[129] It divides the body into thirty-six sections and assigns each division to a decan, in true melothesic fashion.[130] In creating an amulet for a specific decan, the interested individual hoped to heal the body part that it was associated with. Similar to the amulet instructions found in the *Greek Magical Papyri*, the decan amulets follow a specific formula:

> First decan of Aries. Its name is KHENLAKHïRI, and its image is thus. It has the face of a young child with hands raised upward. He bears a sceptre, holding it above his head. He bears wrappings from his feet to his knees. He governs illnesses that afflict the head. Engrave his image on a porous Babylonian stone, place above it the plant called *isophrus* (?), place the whole in an iron ring and wear it. Avoid eating boar's head, for thus you will gain the favour of each decan by engraving it on its stone with its name.[131]

The instructions give the reader the specific details of the image they should engrave, includes what type of stone, metal, and plant material should be used in the construction, and states what type of jewelry the amulet should be made into.[132] It also includes details about regimen, which was a common element of many medical treatments. In following this guide, the wearer could expect to treat any "illnesses that afflict the head." The manual continues in this manner through the thirty-six decans. Certain body parts may be under the charge of several decans, perhaps speaking to the number of different illnesses that occurred in those locations or the complexity of the body part. For example, while the first decan of Aries deals with the head as a whole, several of the following decans are in charge of specific parts of the head – the temples, the nose, the ears,

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[129] Spyros Piperakis. "Decanal Iconography and Natural Materials in the *Sacred Book of Hermes to Asclepius*." *Greek, Roman, and Byzantine Studies* 57 (2017): 137.

[130] See Appendix I for a complete table of amulet instructions.

[131] C.E. Rulle. "Hermès Trismégiste, Le livre sacré sur les décans." *Revue de philologie, de littérature et d'histoire anciennes* 32, (1908): 247-227. English translation by K. Pedro Feliciano.

[132] For an in-depth discussion of the choices of stones and how they relate to the decan at hand, see: Piperakis, "Decanal Iconography," 136ff.

the teeth. The same can be said for the legs – there are at least five separate decans that deal with various afflictions that may occur in the legs. This manual offers an interesting insight into the variety of illnesses that may have occurred. It also offers a look into the physical manifestations of the decans, and why certain material goods may have been used to call upon their help.

The use of earthly materials to influence the gods and deities is believed to have worked through the bonds of cosmic sympathy. A Stoic concept accepted across a variety of ancient intellectual schools, sympathy was the idea that all matter in the universe (including what occurs in the heavens) was connected and unified through a physical, material bond. Everything was tied together through sympthaty, and in acting on one object or force, you could influence another. Sextus Empiricus explains sympathy in the following way:

> For in accordance with the waxings and the wanings of the moon many sea and land animals wane and wax, and ebb-tides and flood-tides occur in some parts of the sea. And in the same way, too, in accordance with certain rising and setting of the stars, alterations in the surrounding atmosphere and all varieties of change in the air take place, sometimes for the better, but sometimes fraught with pestilence.[133]

This explanation for the reason why events in nature occur (such as the motion of the tides, the changes in weather, etc.) was the basis behind why astrology functions as a whole: the motions of the celestial bodies influence the goings-on on earth because everything in the universe is connected through the bond of sympathy. In understanding that everything is connected, the astrologer, the magician, the creator of the amulet hopes to be able to manipulate the bonds of sympathy to their own end – "The secret," Georg Luck states, "is 'power through sympathy' and

[133] Sextus Empiricus, *Against the Physicists*, ed. and trans. R. G. Bury, Loeb Classical Library 311 (Cambridge, MA: Harvard University Press, 1939), 1.79.

'sympathy through power.'"[134] Manilius directed the Stoic concept towards astrology when he stated that, "Thus everything is organized throughout the whole world and follows a master. This god, and the reason that controls everything... though the stars are very distant and remote, he makes us feel their influence, as they give to the peoples their ways of life and destinies and to every person a character of his own."[135] In this vein, using specific materials for the creation of amulets to appeal to certain decans worked because those materials acted in sympathy with the decan. In building an amulet out of Egyptian sardonyx and liquorice, you were invoking the third decan of Scorpio to help you with the inflammation of your testicles, because that decan was most sympathetic to those materials. Engraving the decan's image onto the amulet further solidified this bond and, calling on the magic of the universe's intrinsic connections of sympathy, health would be on its way. The regimen suggestions operated in a similar but opposite way, known as antipathy. While sympathy connected certain things to each other more than others (e.g. the moon and tidal motion), antipathy repelled certain things more so than others.[136] In abstaining from orchids, for example, one ensured that they did not drive away the help of the decan by creating antipathy. *The Sacred Book of Hermes to Asclepius* personalizes the decans and gives amulet creators insight into the specific earthly materials that could create sympathetic bonds with the astral deities. It worked on the assumption that each decan had protective or malevolent influence over the specific areas of the health of humans. They were to be appealed to or placated using specific stones, plants, and metals that acted in particular sympathy with them. In creating these amulets, the wearer intended to take cosmic control of their health in a way that the healthcare practices of the day did not necessarily allow.

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[134] Luck, *Arcana Mundi*, 4.
[135] Manilius, *Astronomica*, 2.80f.
[136] Tamsyn Barton. *Ancient Astrology*. London: Routledge (1994), 103.

Conclusion

The legacy of the decans extends throughout history, and the decans enjoy popularity in the astrological traditions of several cultures after the Greco-Roman tradition had been disseminated. This brief overview of the research must be confined to this epoch, as the decans enjoy a rich history throughout the course of western astrological practices well beyond the scale of this work. They see use in Indian astrology and emerge in the astrological text *Yavanajataka*.[137] They also appear in Arabic astrology, which had an extremely important astrological tradition that has influenced modern practices as much as Greco-Roman astrology.[138] They are discussed in Arabic texts such as the *Tistar Yast* and the *Bundahisn*. There are references to them throughout the medieval periods, the Renaissance, and into the early modern era. They appear in frescos of the Salone dei Mesi of the Palazzo Schifanoia from 1476-1484 C.E., influenced by a variant of the Persian Abu Ma'shar (787-886 C.E.).[139] Some modern tarot decks and practicing astrologers still take the influence of the decans into account. It is clear that these astral elements provided enough substance, influence, and inspiration to hold tight to the astrological traditions where other elements had fallen to the way-side. Beginning as hour-markers in early Egyptian astronomical-funerary depictions, the decans went through several transformations and reiterations throughout the Hellenistic period alone. Once their protective role in native Egyptian religion was realized by Hellenistic colonizers, they became seen as equivalents to *daimons*, with the ability to both harm and heal. This led to their value in iatromathematics being gradually fleshed out until they were mapped on to the body parts through the practice of melothesia. The amulet tradition that they had enjoyed under the native

[137] David Pingree, The Indian Iconography of the Decans and Horas, *Journal of the Warburg and Courtauld Institutes* 26, no. 3 (1963): 223-254

[138] Antonio Panaino, The Decans in Iranian Astrology, *East and West* 37, no. 1 (1987): 131-137.

[139] Micah T. Ross, "Decans" in *Astrology through History: Interpreting the Stars from Ancient Mesopotamia to the Present.* ed. William E. Burns. (Santa Barbara: ABC-CLIO, 2018): 101.

Egyptians re-emerged within the technical *Hermetica*, as an instruction manual for crafting finger rings to assist in the health of whichever body part was in trouble. The purpose of this work has been to trace the development of this tradition from Egypt into Greco-Roman, contextualizing various aspects of their development along the way. This is to provide a more cohesive idea of their development than the scholarship, often articles focusing on one element of the decans, has previously allowed for, as well as to act as a research "catalogue" for those looking to further understand any individual element.

Bibliography

Barton, Tamsyn. *Ancient Astrology*. London: Routledge, 1994.

Belmonte, Juan Antonio. "In Search of Cosmic Order: Astronomy and Culture in Ancient Egypt," *The Role of Astronomy in Society and Culture* 5 (2009): 74-86.

Betz, Hans Dieter. *The Greek Magical Papyri in Translation Including the Demotic Spells*. Chicago: University of Chicago Press, 1996.

Bohleke, Briant "In Terms of Fate: A Survey of the Indigenous Egyptian Contribution to Ancient Astrology in Light of Papyrus CttYBR inv. 1132(B)," *Studien zur Altägyptischen Kultur* 23 (1996): 11-46.

Brennan, Christopher. *Hellenistic Astrology: The Study of Fate and Fortune.* Denver: Amor Fati Publications, 2017.

Bull, Christian H. "Ancient Hermeticism and Esotericism." *Aries: Journal for the Study of Western Esotericism* 15 (2015): 109-135.

Campion, Nicholas. *A History of Western Astrology* (London: Continuum, 2011).

Clagett, Marshall *Ancient Egyptian Science II: Calendars, Clocks, and Astronomy*. Philadelphia: The American Philosophical Society Held at Philadephia for Promoting Useful Knowledge, 1989.

Conman, Joanne “It's About Time: Ancient Egyptian Cosmology,” *Studien zur Altägyptischen Kultur* 31 (2003): 42-57.

Diodorus Siculus. *Library of History.* ed. and trans. C. H. Oldfather, Loeb Classical Library 340. Cambridge, MA: Harvard University Press, 1939.

Dodd, William. “Exploring the Astronomy of Ancient Egypt with Simulations II: Sirius and the Decans.” *The Journal of the Royal Astronimcal Society of Canada* 99, no. 2 (2005): 65-69.

Dodd, William. “Decans, Djed Pillars, and Seasonal-Hours in Ancient Egypt.” *The Journal of the Royal Astronomical Society of Canada* 105, no. 5 (2011): 187-194.

Dorotheus of Sidon. *Carmen Astrologicum.* trans. by David Pingree. Bel Air, MD: Astrology Classics, 2005.

Evans, James. *The History and Practice of Ancient Astronomy.* New York: Oxford University, 1998.

Evans, James. The Astrologer's Apparatus: A Picture of Professional Practice in Greco-Roman Egypt. *Journal for the History of Astronomy* 35, no 118 (2004): 1-44.

Evans, James and Berggren, J. L. *Geminos's Introduction to the Phenomena: A Translation and Study of a Hellenistic Survey of Astronomy*. Princeton: Princeton University Press, 2006.

Firmicus Maternus. *Mathesis.* ed. and trans. Jean Rhys Bram. Park Ridge, IL: Noyes Press, 1975.

Fowden, Garth. The Egyptian Hermes: A Historical Approach to the Late Pagan Mind. Princeton: Princeton University Press, 1993.

Frankfurter, David. "The Consequences of Hellenism in Late Antique Egypt: Religious Worlds and Actors," *Archiv für Religionsgeschichte* 2, no. 1 (2000): 162-194.

Geller, Margaret J. *Look to the Stars: Babylonian Medicine, Magic, Astrology, and Melothesia.* Berlin: Max Planck Institut für Wissenschaftsgeschichte, 2010.

Gieseler-Greenbaum, Dorian, *The Daimon in Hellenistic Astrology: Origins and Influence*. Boston: Brill, 2016.

Hand, Robert and Schmidt, Robert, *The Astrological Record of the Early Sages in Greek.* Berkeley Springs: Golden Hind Press, 1995.

Hephaistio of Thebes. *Apotelesmatics.* trans. Robert Schmidt, ed. Robert Hand. Berkeley Springs: The Golden Hind Press, 1994.

Iamblichus. *On the Mysteries* ed. and trans. Emma C. Clarke and John M. Dillion. Atlanta: Society of Biblical Literature, 2003.

Kákosy, L. "Decans in Late-Egyptian Religion," *Oikumene* 3 (1982): 163–191.

Luck, Georg. *Arcana Mundi: Magic and the Occult in the Greek and Roman Worlds*. Baltimore: Johns Hopkins University Press, 1985.

Lull, Jose and Belmonte, Juan Antonio. "A Firmament Above Thebes: Uncovering the Constellations of Ancient Egyptians." *Journal for the History of Astronomy* 37 (2006): 373-392.

Manetho. *Apotelesmatika.* ed. and trans. William G. Waddell, Loeb Classical Library 350. Cambridge, MA: Harvard University Press, 1940.

Manilius, *Astronomica*, ed. and trans. G. P. Goold, Loeb Classical Library 469. Cambridge, MA: Harvard University Press, 1977.

Micah T. Ross, "Decans" in *Astrology through History: Interpreting the Stars from Ancient Mesopotamia to the Present*. ed. William E. Burns. Santa Barbara: ABC-CLIO, 2018.

Neugebauer, Otto. *The Egyptian "Decans."* London: Pergamon Press, 1955.

Neugebauer, Otto. *A History of Ancient Mathematical Astronomy II.* Berlin: Springer, 1975.

Neugebauer, Otto and Parker, Richard. *Egyptian Astronomical Texts.* London: Brown University Press, 1960.

Nutton, Vivian. "From Medical Certainty to Medical Amulets: Three Aspects of Ancient

Therapeutics," in WF Bynum, V. Nutton, eds, *Essays in the History of Therapeutics.* Amsterdam: Rodopi, 1991, 13-22.

Nutton, Vivian, "Greek medical astrology and the boundaries of medicine," in A. Akasoy, Burnett C, Yoeli-Tlalim R., eds. *Astro-Medicine.Astrology and Medicine, East and West*, Florence: Sismel - Edizioni del Galluzzo, 2008, 17-31.

Oll, Moonika. "Hellenistic Astrology as a Case Study of 'Cultural Translation.'" Master's Thesis, University of Birmingham, 2010.

Oll, Moonika. "Greek 'Cultural Translation' of Chaldean Learning." PhD Dissertation, University of Birmingham, 2014.

Origen, *Contra Celsum*, trans. by Henry Chadwick. Cambridge: Cambridge University Press, 1980.

Panaino, Antonio. "The Decans in Iranian Astrology," *East and West* 37, no. 1 (1987): 131-137

Park, Rosalind "The First Decan." In *Current Research in Egyptology 2007: Proceedings of the Eighth Annual Conference*, edited by Ken Griffin. (Oxford: Oxbow Books, 2008), 103-111.

Parker, Richard A. "Ancient Egyptian Astronomy." *Philosophical Transactions of the Royal Society of London. Series A, Mathematical and Physical Sciences* 276, no 1257 (1974): 51-65.

Pliny. *Natural History.* ed. and trans. H. Rackham, Loeb Classical Library 330. Cambridge, MA:

Harvard University Press, 1938.

Pingree, David. “The Indian Iconography of the Decans and Horas.” *Journal of the Warburg and Courtauld Institutes* 26, no. 3 (1963): 223-254

Piperakis, Spyros. “Decanal Iconography and Natural Materials in the Sacred Book of Hermes to Asclepius.” *Greek, Roman, and Byzantine Studies* 57 (2017): 136-161.

Ptolemy. *Tetrabiblos* ed. and trans. F. E. Robbins, Loeb Classical Library 435. Cambridge, MA: Harvard University Press, 1940.

Reiner, Erica and Pingree, David E. *Babylonian Planetary Omens.* Malibu: Undena Publications, 1981.

Riess, Ernst. “Nechepsonis et Petosiridis Fragmenta Magica.” *Philologus* 6, (1891): 325-394.

Ritner, Robert K. “Innovations and Adaptations in Ancient Egyptian Medicine,” *Journal of Near Eastern Studies* 59, no 2 (2000): 114-117.

Rochberg, Francesca, *The Heavenly Writing: Divination, Horoscopy, and Astronomy in Mesopotamian Culture.* Cambridge: Cambridge University Press, 2004.

Ruelle, C.E. “Hermès Trismégiste, Le livre sacré sur les décans.” *Revue de philologie, de littérature et d'histoire anciennes* 32, (1908): 247-227.

Ryholt, Kim. “New Light on the Legendary King Nechepsos of Egypt.” *The Journal of Egyptian Archaeology* 97, (2011), 61-72.

Sachs, A. “Babylonian Horoscopes,” *Journal of Cuneiform Studies* 6, no 2 (1952): 49-75.

Sextus Empiricus, *Against the Physicists*, ed. and trans. R. G. Bury. Loeb Classical Library 311. Cambridge, MA: Harvard University Press, 1939.

Spalinger, Anthony J. "Nut and the Egyptologists," *Studien zur Altägyptischen Kultur* 41 (2012), 353-377.

Symons, Sarah. "Ancient Egyptian Astronomy: Timekeeping and Cosmography in the New Kingdom." PhD Dissertation, University of Leicester, 1999.

Thurston, Hugh. *Early Astronomy*. New York: Springer, 1994.

Vettius Valens, *Anthology*, trans. by Robert Schmidt and Robert Hand, Berkley Springs: Golden Hind Press, 2001.

Von Bomhard, A. S. *The Egyptian Calendar: A Work for Eternity.* London: Periplus, 1999, 51

Wee, John Z. “Discovery of the Zodiac Man in Cuneiform,” *Journal of Cuneiform Studies* 67 (2015): 217-233

Weinryb, Ittai "Votives and Material Religion," *Material Religion* 13, no. 1 (2017): 98.

Westman, Robert S. and McGuire, J.E. *Hermeticism and the Scientific Revolution.* Los Angeles: University of California, 1977.

Appendix I: Tabulated Amulet Construction Manual from

The Sacred Book of Hermes to Asclepius

ZODIACAL SIGN / DECAN # (NAME)	IMAGE	BODY PART	STONE	PLANT	OTHER
Aries I (Khenlakhori)	Young child, arms held up; sceptre above head; wrapped up	Head	"A porous Babylonian Stone"	Isophrus (?)	Enclose in iron (ring); avoid eating boar's head
Aries II (Kontaret and Kau)	Dog's face; sceptre in right hand, disk in left; covered in wrappings	Temples and nose	Siderite stone	Wild Rue	Enclose in gold (ring); avoid eating stork
Aries III (Siket)	Woman with a drum on her head; sceptre in right hand; flask in left; covered in wrappings	Ear, uvula, teeth	Bostrychite	Plantain	Do not eat ram entrails
Taurus I (Soou)	Ram head with curls; Syrian robe; sceptres resting on shoulders	Neck	Selenite	Spherical cypress (i.e. having spherical fruits)	Do not eat dolphin or porpoise; leave stone in sun to "gain weight"
Taurus II (Aron)	Woman; Sceptre with both hands; wrapped up "like Osiris"	Tonsils and neck	Aphrodite's	Dittany	Enclose in gold/silver (ring); do not eat eel
Taurus III (Hromenos)	Dog head with curls; Sceptre in right hand; left hand touches buttocks; falling belt	Mouth and throat	Hyacinth	Bugloss	Enclose in gold/silver (ring); avoid eating eel
Gemini I (Xokha)	Man with donkey head; key in right hand; wrapped up	Shoulder	Diamond	Orchid	Abstain from eating electric rays
Gemini II (Ouari)	Man with a goat head; staff in right hand; left hangs over thigh; wrapped to knees	Arms	Pankhrous	Pentadactyl (five fingered grass or cinquefoil)	Abstain from parrotfish
Gemini III (Pepisoth)	Woman holding thunderbolts in right hand, flask in left; wings; crown	Hands	Heliotrope	Libanotis (Apiaceae family)	Abstain from boar meat
Cancer I (Sotheir)	Man with a dog head; serpentine body; seated on a pedestal	Torso sides	Dryite	Artemisia	Abstain from white sow stomach
Cancer II (Ouphisit)	Woman with avian body; tress on her head	Lungs	Greek Jasper	Selenogone	Avoid any food that dogs may touch
Cancer III (Khnouphos)	Two female faces turned away fro each other; one wears a small hat, one a diadem; neck	Spleen	Eukhaite	Spherite plant	N/A

	surrounded by dragons; torso on pedestal				
Leo I (Khnoumos)	Lion head; serpent body	Heart	Agate	Edelweiss	Avoid eating songbird eggs
Leo II (Ipi)	Naked man with a sceptre in one man, whip in the other, a lunar crescent on his head	Upper Back	Selenite	Chrysogone	Abstain from beans; enclose in gold ring
Leo III (Phatiti)	Wild-faced man; hand up in greeting position; flask in the other hand	Liver	Helite	(MISSING)	Abstain from tuna
Virgo I (Athoum)	Man with a dog face; hot red body; standing on a pedestal	Belly	Corallite (coral?)	Weasel eye	Abstain from white sow liver
Virgo II (Brusous)	Man with horned goat's head; sceptre in right hand; flask in left	Bowels	Dendrite	Liquorice	Abstain from stork meat
Virgo III (Amphatham)	Covered chest to feet in wrappings; bearing a sceptre in both hands; small hat on head	Navel	*Eu thlizou ti*	*katanake*	N/A
Libra I (Sphoukou)	Old man; wearing a belt; left hand raised; right hand hanging down; holding a flask	Buttocks and Rectum	Jasper-agate	Polium	Abstain from duck and bitter almonds
Libra II (Nephthimes)	Man standing on a fountain with four streams; covered in wrappings from ankles to chest; curl in beard; holding a flask	Urethra, bladder, urinary tract	Red onyx	Vervain	Abstain from blackberries
Libra III (Phou)	Serpent face; man's body; wears a crown; wrapped in trouser	Anus	Emerald	Vervain	Abstain from wild celery
Scorpio I (Bos)	Bull head; four wings; man body; has a belt; flask in right hand; sceptre in left	Penis, oedemas	Hematite	Mercurial	N/A
Scorpio II (Oustikhos)	Man standing on top of a scorpion; wearing a robe	Genital (infections)	Pyrite	Sunflower	N/A
Scorpio III (Aphebis)	Head of a goat; body of a man; holds reins; covered in wrappings from	Testicles	Egyptian Sardonyx	Liquorice	Abstain from orchids
Sagittarius I (Sebos)	Clothed man; left hand is open and lowered; needle in right; next to him are several spears;	Thighs (sores)	Phrygian	Sage	N/A

	covered in a net from chest to heels; wrapped head				
Sagittarius II (Teukhmos)	Head of a bird; man's body; flask in right hand; sceptre in left	Bones	Amethyst	*Adraktitalos*	Abstain from turtledoves
Sagittarius III (Khthisar)	Old man; crown on head; covered with wrappings. from chest to heels; flask in right hand; sceptre in left	Thighs (pain)	*Aerigon*	Centaury	Abstain from chicken brains
Capricorn I (Tair)	Headless; man's body; scarab-shell girdle; flask in right hand; sceptre in left	Knees	Ophite	*Delphinion*	Abstain from eel
Capricorn II (Epitek)	Head of a pig; similar body to the first decan; wears a belt; flask in right hand; a sword in his left	Knees (back)	*Karkhedonios* (probably chalcedony)	Anemone	Abstain from moray eel
Capricorn III (Epikhnaus)	Wears a mask; flask in right hand; needle in his left; wears a belt	Knees (back)	Anankite	Thistle	Abstain from crayfish
Aquarius I (Isu)	Dog-headed man; covered in wrappings from chest to heels	Tibia	*Knekite*	*Asar*	N/A
Aquarius II (Sosomno)	Man covered in wrappings from chest to heels; holds an *agkhia* (Ankh?); wears a crown	Knees & leg fat	Lodestone	Gladiolus	N/A
Aquarius III (Khonoumous)	Man covered in wrappings from chest to heels; crown on head; flask in right hand; sceptre in left	Body parts (“above said”)	Median	Thyrsion (catanache)	N/A
Pisces I (Tetimo)	Old man in a blue robe; covered in wrappings from chest to heels; flask in right hand	Feet	Beryl	Vervain	N/A
Pisces II (Sopphi)	Naked man; coat on his shoulders; flask in right hand; left index finger to his mouth; flask in hand	N/A	*Perileukois*	Libanotis	N/A
Pisces III (Suro)	Invisible; coiling dragon; beard; crown on his head	N/A	Hyacinth	Chamomile	N/A