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CHAPTER III

“IN THE FOOT OF *TAURUS*”: ASTROLOGICAL NOTIONS IN *4QZODIACAL PHYSIOGNOMY* (4Q186)

INTRODUCTION

4QZodiacal Physiognomy is a physiognomic-astrological catalogue listing information on astrological matters that concern individual types of people recognizable by their physical descriptions. Although scholars have been trying to understand the text since it was first published, as yet there is no consensus. Consideration of the astrological framework may help to clarify these matters.

4Q186 1 ii 8-9 states that the horoscope (מילד) under which a person was born is “in the foot of *Taurus*” (ברגל השור). But what do these words actually mean? Are they a reference to the position of the sun or the moon at birth; to the first decan of the sign *Taurus* at the moment of conception; or to the ascendant part of the sign at birth?

An important element in the different entries of *4QZodiacal Physiognomy* is the mention of the “house of light” and the “house of darkness,” listed together with certain numbers (4Q186 1 ii 7-8; 1 iii 8-9). What is the meaning of this light and darkness terminology? How are the specific combinations of numbers established and how are they assigned to the “house of light” and the “house of darkness?” Furthermore, are the horoscope, the light and darkness terminology, and the realization of the numbers related to each other, and, if so, how? Some scholars have taken the light and darkness terminology as an indication of the text’s sectarian worldview, while others have sought to understand it more specifically in terms of different astrological concepts: planetary houses signifying either the duration of day and night, or zodiacal signs of light and darkness; diurnal and nocturnal decans; cosmological rooms above and below the horizon. Also, the realization of the numbers divided between the “house of light” and the “house of darkness” has been related in different ways to the horoscope being “in the foot of *Taurus*”: the position of the moon divides the zodiacal sign between the “house of light” and the “house of darkness,” signifying the times of day and night; the decan at the moment of conception determines the allocation of diurnal and nocturnal decans; the ascendant position

establishes the division of the zodiacal sign into parts above and below the horizon.

Various interpretations have been suggested for the meaning of enigmatic terms and elements in *4QZodiacal Physiognomy* against an astrological background. It will be clear that the significant elusiveness inherent in the terminology and the fragmentary nature of the manuscript preclude any final interpretation. I do not, therefore, intend to attempt any such thing in the following discussion. The different interpretations represent possibilities. Within the realm of possibility, however, some interpretations are better than others because they can account for more features in a coherent way.

In this chapter astrological hypotheses will be discussed, both in terms of their ability to explain certain elements in *4QZodiacal Physiognomy* as well as being considered against the background of ancient astrological notions from Babylonian and Greek astrology. For this reason the chapter begins by addressing some aspects of ancient Babylonian and Greek astrology. These will reoccur throughout the subsequent discussion of the astrological framework of *4QZodiacal Physiognomy*.

SOME ASPECTS OF ANCIENT ASTROLOGY IN BABYLONIA AND GREECE

Evidence for celestial divination is attested in Mesopotamia from the Old Babylonian period in the first half of the second millennium BCE onwards.¹ Like physiognomics, celestial divination was expressed in the form of omens. These were collected, for example, in the first millennium BCE celestial omen series *Enūma Anu Enlil* (“When Anu, Enlil”).² The importance of celestial divination in the Neo-Assyrian period is demonstrated by the many reports sent to the king by his celestial diviners across the country.³

In addition to these divinatory sources, there are also many astronomical texts that show a primarily calendric and mathematical interest, such as the astronomical compendium *MUL.APIN* (“Plough Star”), from ca. 1000 BCE.⁴ Other examples of astronomical writings are non-mathematical texts

¹ See Koch-Westenholz, *Mesopotamian Astrology*; H. Hunger and D. Pingree, *Astral Sciences in Mesopotamia* (HdO 1/44; Leiden: Brill, 1999); Maul, “Omina und Orakel,” 51-58; Rochberg, *The Heavenly Writing*.

² Cf. Hunger and Pingree, *Astral Sciences*, 12-20; E. Reiner, “Babylonian Celestial Divination,” in *Ancient Astronomy and Celestial Divination* (ed. N.M. Swerdlow; Cambridge, Massachusetts: MIT Press, 1999), 21-37; Rochberg, *The Heavenly Writing*, 66-78.

³ See Chapter Two n. 38.

⁴ Hunger and Pingree, *MUL.APIN*. It lists, for example, the names and relative positions of fixed stars, the dates of their first rising just before sunrise (heliacal), the simultaneous rising and setting of certain stars and constellations, the constellations through which the moon courses monthly, the periods of visibility and invisibility of the five planets (Mercury,

such as astronomical diaries, goal-year texts, almanacs, and the mathematical ephemerides.⁵ Astronomical records reach back to the reign of the Babylonian king Nabonassar (747-734 BCE), beginning with an eclipse on December 6, 747. Suggestive of the transmission of Babylonian astronomical learning is the reference by Ptolemy of Alexandria (second century CE) to records of ancient observations from the beginning of the reign of Nabonassar that had been preserved down to his own time.⁶

Mathematical Astronomy and Zodiacal Astrology

Two fundamental features characterize the development of astrology from the middle of the first millennium BCE onwards: first, the recognition of the periodicity of certain astronomical phenomena and the ability to formulate mathematical models enabling the prediction of the recurrence of those phenomena;⁷ second, the introduction of the zodiac. It is because of the second factor particularly that some scholars reserve the term “astrology” for that form of celestial divination that is based on the signs of the zodiac.

The exact relationship between the mathematical astronomical texts and the horoscope texts is not entirely clear due to the lack of evidence. It seems unlikely that advances in mathematical astronomy were made because of astrological concerns regarding horoscopes. Much of the data from the mathematical texts is not used in the horoscope texts. This is not only the case for Babylonian, but also for Hellenistic astronomy and astrology.⁸ But what seems clear is that the mathematical character gave astrology its credibility, regardless of its actual use in all aspects. Although “astronomy” and “astrology” were not clearly distinguished before the sixth century CE, ancient scholars were familiar with the distinction between the two concepts implied by these words in modern parlance, as is clear from Ptolemy’s opening words in his *Tetrabiblos*:

Of the means of foreknowledge through astronomy, O Syrus, two are the most important and authoritative. One, which is first both in order and in effectiveness, is that whereby we understand the aspects of the movements of sun, moon, and the stars in relation to each other and to the earth, as they occur from time to time; the second is that in which, through the

Venus, Mars, Jupiter, and Saturn), the length of the daylight scheme, the intercalation schemes, and the lunar visibility scheme. Cf. Hunger and Pingree, *Astral Sciences*, 57-83; Rochberg, *The Heavenly Writing*, 6-7.

⁵ See Hunger and Pingree, *Astral Sciences*, 116-270; Rochberg, *The Heavenly Writing*, 147-60.

⁶ Ptolemy, *Almagest* 3.7. Cf. Rochberg, *The Heavenly Writing*, 146.

⁷ Cf. D. Pingree, *From Astral Omens to Astrology: From Babylon to Bīkāner* (SOR 78; Rome: Istituto Italiano per l’Africa e l’Oriente, 1997), 18-19.

⁸ See Rochberg, *The Heavenly Writing*, 160-63. On the interest in applied mathematical science for its own sake on the part of the Babylonian scribes, see e.g. N.M. Swerdlow, *The Babylonian Theory of the Planets* (Princeton: Princeton University Press, 1998).

natural character distinctive of their aspects, we consider the changes they influence with regard to what they surround.⁹

The development cannot be exactly determined, but, roughly speaking, the zodiacal circle was introduced sometime in the fifth century BCE.¹⁰ It is a schematic, symbolic division of the ecliptic, the apparent path followed by the sun around the earth. The ecliptic lies at an angle of approximately 24° to the equator, and the angle that the ecliptic makes with the horizon is dependent on the geographical latitude of the observer or computer's position. The ecliptic or zodiacal circle of 360° was divided into twelve equal sections or signs of 30°. Before the introduction of the zodiac the Babylonians used certain fixed stars for locating bodies in the sky approximately. The astronomical compendium MUL.APIN locates seventeen constellations through which the moon passes every month.¹¹ By the fifth century BCE these seventeen constellations had been reduced to twelve, and sometime in the fifth century BCE the twelve equal divisions of the ecliptic into zodiacal signs replaced these twelve constellations of unequal size. The signs of the zodiac served as a means of reference for computing and recording the planetary positions more exactly.

There is a difference between zodiacal *constellations* in the zodiacal belt, which comprise actual stars, and zodiacal *signs* on the ecliptic, which are derived from the constellations but are nonetheless symbolic entities of 30° longitude. The constellations are of varying size and some extend well beyond the zodiacal belt, which is given a width of ±12°, i.e. 6° latitude on either side of the ecliptic.¹² Understanding the difference between the zodiac as denoting *signs* and *constellations* is important for the interpretation of the words ברגל השור (“in the foot of *Taurus*”) in *4QZodiacal Physiognomy* with regard to identification and localization.

⁹ Ptolemy, *Tetrabiblos* 1.1.1 (books, chapters, and sections cited according to Hübner, *ΑΠΟΤΕΛΕΣΜΑΤΙΚΑ*). Translation, slightly adapted, from Robbins, *Ptolemy*, 3 (all translations of the *Tetrabiblos* are taken, sometimes adapted, from Robbins). See W. Hübner, *Die Begriffe 'Astrologie' und 'Astronomie' in der Antike: Wortgeschichte und Wissenschaftsthematik, mit einer Hypothese zum Terminus 'Quadrivium'* (AWLMAGSK 7; Wiesbaden: Franz Steiner, 1989).

¹⁰ See e.g. B.L. van der Waerden, “History of the Zodiac,” *AfO* 16 (1952-1953): 216-30; Koch-Westenholz, *Mesopotamian Astrology*, 163-70; Rochberg, *The Heavenly Writing*, 117-18, 129-33, 239. Cf. also the recent contribution by L. Brack-Bernsen and H. Hunger, “The Babylonian Zodiac: Speculations on its Invention and Significance,” *Centaurus* 41 (1999): 280-92; Rochberg, *The Heavenly Writing*, 123-33.

¹¹ See MUL.APIN Tablet I iv 31-39 (cf. Hunger and Pingree, *MUL.APIN*, 67-69, 144).

¹² See e.g. Geminus, *Introduction to Phenomena* 1.3-5. Neugebauer, *HAMA*, 583: “This concept of a latitudinal expanse of 12° of the zodiac is usually motivated as corresponding to the space traversed by the moon and the planets in their latitudinal motion, although it is admitted that Venus might go 2° beyond the limits of ±6°.”

Horoscopic Astrology

More or less simultaneously with these two developments the first Babylonian horoscopes are attested. The two earliest horoscopes extant are dated to 410 BCE and the latest is dated to 69 BCE.¹³ These texts represent a change from general to personal celestial divination. Traditional Babylonian celestial divination was solely concerned with king, state, and country. Celestial diviners observed the sky for the political and economic benefit of the ruler.¹⁴ With the rise of horoscopic astrology in Mesopotamia somewhere in the fifth century BCE the focus shifted to include individuals and personal predictions.¹⁵ From then on astrology knows two areas of interest:

the first and more universal is that which relates to entire peoples, countries, and cities, which is called general, and the second and more specific is that which relates to individual men, which is called genethliological.¹⁶

It is in this form that astrology, together with mathematical astronomy, was transmitted from Babylonia to Greece during the Hellenistic period, probably by scribes from the temples of Babylon and Uruk carrying their knowledge with them through the Hellenistic world.¹⁷ Although “the main structure of the astrological theory is undoubtedly Hellenistic,”¹⁸ several elements of Babylonian origin are basic to Hellenistic astrology.¹⁹ In addition, Greek papyri demonstrate the continuing use of Babylonian mathematical methods. These finds minimize a presumed dichotomy between Babylonian and Greek astronomy.²⁰ However, one main difference is that at the same time Hellenistic astronomy was based on a spherical-geometrical model and

¹³ See Rochberg, *Babylonian Horoscopes*, 51-57, 137-40. The earliest Greek horoscope extant, the one for Antiochus I of Commagene, is dated to 62 BCE, practically contemporary with the latest cuneiform horoscope. Cf. Neugebauer and van Hoesen, *Greek Horoscopes*, 14-16, 161-62. Recently it has been re-dated to 109 BCE by M. Crijns in E.M. Moormann and M.J. Versluys, “The Nemrud Dağ Project: First Interim Report,” *BABesch* 77 (2002): 73-111, at 97-99. See, however, S. Heilen, “Zur Datierung des Löwenhoroskops auf dem Nemrud Dağ,” *forthcoming*. Cf. W. Hübner, “Sulla’s Horoscope? (Firm. math. 6,31,1),” in *Horoscopes and Public Spheres: Essays on the History of Astrology* (eds. G. Oestmann, H.D. Rutkin and K. von Stuckrad; *RelSoc* 42; Berlin: Walter de Gruyter, 2005), 13-35, at 13 n. 2.

¹⁴ See e.g. Pongratz-Leisten, *Herrschaftswissen in Mesopotamien*, 17-46.

¹⁵ Cf. Rochberg, *The Heavenly Writing*, 98-120.

¹⁶ Ptolemy, *Tetrabiblos* 2.1.2. The second book of the *Tetrabiblos* is devoted to general or mundane astrology, while the third book is concerned with individual or genethliological astrology. For an overview of both forms, see Bouché-Leclercq, *L’astrologie grecque*, 327-457 (still a standard work on Hellenistic astrology).

¹⁷ Neugebauer, *HAMA*, 613; A. Jones, “Evidence for Babylonian Arithmetical Schemes in Greek Astronomy,” in *Rolle der Astronomie*, 77-94.

¹⁸ Neugebauer, *Exact Sciences*, 170.

¹⁹ See Neugebauer, *HAMA*, 589-614; Rochberg-Halton, “Elements of the Babylonian Contribution”; Koch-Westenholz, *Mesopotamian Astrology*, 177-79.

²⁰ Rochberg, *The Heavenly Writing*, 34-35.

a theory of kinematics of which Babylonian astronomy was apparently completely devoid.²¹

Although the term “horoscope” is used in modern scholarly writings for both Babylonian and Greek texts, it is important to realize that they do not exhibit the same characteristics and actually reflect two different genethliological systems.²² The main difference is that Babylonian horoscopes do not regard as at all important which zodiacal sign is rising above the eastern horizon at a particular time (the ascendant or ὠροσκόπος), which is precisely the most important feature of Greek horoscopes.²³ As Francesca Rochberg explains:

Babylonian ‘horoscopes’ are documents that assemble and record a particular series of astronomical data which have been determined to occur either on or near the date of the birth of an individual. A number of examples ‘look at the hour,’ noting the time of birth occasionally with respect to a seasonal hour (one-twelfth of the length of daylight), and provide planetary positions in the zodiac for the specified time. Only the moon’s position is affected by a change in hour, since it moves so much more rapidly than the sun or the five planets. That planetary data are not greatly affected, may perhaps explain why the hour of birth is not noted with regularity in the Babylonian horoscopes. Even when noted, the Babylonian horoscopes’ ‘inspection of the hour’ is not paralleled by the synonymous Greek counterparts, where ὠροσκόπος refers not to the consideration of the time of day, but of the point of the ecliptic (the ascendant) rising at the moment of birth.²⁴

Contrary to Babylonian astrology, in Greek astrology the determination of the degree of the zodiac that is rising in the east at the moment of birth is considered the primary important fact.²⁵ It takes approximately two hours for a 30° section of the ecliptic to rise above the eastern horizon, but the exact duration of ascension varies. The unequal rising times of the different sections of the ecliptic have to do with the position of the ecliptic in relation to the eastern horizon. As this position is also connected with the length of daylight during the year, the determination of the zodiacal rising times is connected with the measurement of the length of daylight at a certain moment of the year. Both zodiacal rising times and length of daylight vary according to geographical latitude.

²¹ Cf. Neugebauer, *HAMA*, 675, 771-72; Rochberg, *The Heavenly Writing*, 127.

²² See Rochberg, *Babylonian Horoscopes*, 1-2; Rochberg, *The Heavenly Writing*, 207-8.

²³ For the meaning of the term ὠροσκόπος, see Gundel and Kehl, “Horoskop,” 599-600; Hübner, “Verwendung und Umschreibung des Terminus ὠροσκόπος,” 221. Pingree, *From Astral Omens to Astrology*, 20, therefore, argues that the term horoscopy or genethliology should be used solely to refer to the particular genre of Greek horoscope texts.

²⁴ Rochberg, *Babylonian Horoscopes*, 1-2.

²⁵ See Ptolemy, *Tetrabiblos* 3.3. Cf. Bouché-Leclercq, *L’astrologie grecque*, 86; Gundel and Gundel, *Astrologumena*, 344.

Although the Babylonians were concerned with determining the length of daylight and their methods formed the basis for the Greek ones, the rising times of the zodiacal signs are of less importance in Babylonian than in Greek astronomy.²⁶ In Greek astronomy, however, the importance of computing the zodiacal rising times, such as in Hypsicles' *On the Ascendant* (second century BCE), seems to go hand in hand with the significance attributed to the ascendant for the nativity in Greek astrology. The actual computation of zodiacal rising times was not a simple matter. From a comment by Hipparchus (second century BCE) it is clear that some of his contemporary astronomers had difficulties understanding the astronomical concept of zodiacal rising times.²⁷ But to most astrologers this sort of information would probably be at hand in almanacs and ephemerides.²⁸

²⁶ Bouché-Leclercq, *L'astrologie grecque*, 259-69; O. Neugebauer, "The Rising Times in Babylonian Astronomy," *JCS* 7 (1953): 100-2; V. De Falco, M. Krause and O. Neugebauer, *Hypsikles: Die Aufgangszeiten der Gestirne* (AAWGPHK 3/62; Göttingen: Vandenhoeck & Ruprecht, 1966), 5-17; Neugebauer, *HAMA*, 34-45, 301-3, 366-71, 706-33, 763-67, 864-65; B.L. van der Waerden, *Die Astronomie der Griechen: Eine Einführung* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1988), 125-30; J.-H. Abry, "Les *anaphorai* des signes du zodiaque dans les écrits astrologiques," in *Sciences exactes et sciences appliquées à Alexandrie (IIIe siècle av. J.-C. – Ier siècle ap. J.-C.): Actes du Colloque International de Saint-Étienne (6-8 juin 1996)* (eds. G. Argoud and J.-Y. Guillaumin; Mémoires 16; Saint-Étienne: Université de Saint-Étienne, 1998), 305-24; J. Evans, *The History and Practice of Ancient Astronomy* (New York: Oxford University Press, 1998), 95-125; F. Rochberg, "A Babylonian Rising-Times Scheme in Non-Tabular Astronomical Texts," in *Studies in the History of the Exact Sciences in Honour of David Pingree* (eds. C. Burnett et al.; IPTS 54; Leiden: Brill, 2004), 56-94.

²⁷ Hipparchus, *Commentary on Aratus and Eudoxus* 2.1.2-14. Cf. Neugebauer, *HAMA*, 715.

²⁸ Neugebauer and van Hoesen, *Greek Horoscopes*, 170, observe that reference to the zodiacal rising times occurs only once in an actual horoscope from 95 CE, whereas in handbooks, such as the astrological treatise of the second-century CE astrologer Vettius Valens, the rising times are mentioned frequently. Jones, *Astronomical Papyri*, 1:282-83; 2:418-19, has published another horoscope (late second or early third century CE) that says explicitly that the computations were carried out on the basis of the table of ascensions from Hipparchus' compilation. Both horoscopes differ from standard horoscopes in that they are elaborate, "deluxe" horoscopes, cast for a socially high class of clients. Jones, *Astronomical Papyri*, 2:249: "They show the astrologer using more resources and making more precise computations than in the other horoscopes. A basic horoscope like 4242 could have been cast in a few minutes by an astrologer equipped with a sign-entry almanac and a set of tables for the sun and moon; but 4277 was the work of several hours of reckoning and careful writing." In so-called standard horoscopes, the sign in which the ascendant is situated is only mentioned in passing, without any further indication of the exact degrees. See Neugebauer and van Hoesen, *Greek Horoscopes*, 18-20, 47-48, 51-53, 61; Baccani, *Oroscopti Greci*, 97, 112, 124, 140; Jones, *Astronomical Papyri*, 2:374-81, 384-87, 394-99.

Astral Influence and the Classification of the Characteristics of Planets and Zodiacal Signs

There is much debate about whether Babylonian astrology conceived of astral influence in the realm of genethliology,²⁹ but in Hellenistic astrology this is clearly one of the basic premises. The planets and zodiacal signs were not seen as mere signs, by their character, qualities and power they were believed to exert influence on heavenly and earthly matters, especially on people from the moment of their birth. The planets were classified, for example, according to their beneficent or maleficent nature, or their gender. The zodiacal signs were also ordered according to their gender, as well as to numerous other characteristics.³⁰ The ascendant zodiacal sign in the east – literally the “horoscope” (ὥροσκόπος) – established the specific nature of the nativity, determining the configuration of the planets vis-à-vis the zodiacal signs and each other at the moment of a person’s birth. The geometrical relationships between planets and zodiacal signs amongst and between each other were expressed in terms of “aspects.” In antiquity five aspects were distinguished: conjunction (0°), opposition (180°), trine (120°), quartile (90°), and sextile (60°). These aspects together with the character and qualities of the planets and the zodiacal signs were believed to determine people’s nativity.³¹

Planetary Rulership and Zodiacal Houses

The determination of the influence of planets and zodiacal signs was further refined by ascribing planetary rulership over the zodiacal signs in different ways and by making various subdivisions of the zodiacal signs. Including the sun and the moon, seven planets were known in antiquity: moon, Mercury, Venus, sun, Mars, Jupiter, and Saturn.³² One of the forms of plane-

²⁹ Cf. Koch-Westenholz, *Mesopotamian Astrology*, 51-52; Rochberg, *The Heavenly Writing*, 293-94. Reiner, *Astral Magic*, 13, argues that there are other areas in which the Babylonians acknowledged the influence of the stars, such as in catarchic astrology and different forms of magic. Cf. also Chapter Two n. 48.

³⁰ See Hübner, *Eigenschaften der Tierkreiszeichen*.

³¹ Cf. Bouché-Leclercq, *L'astrologie grecque*, 72-179; Gundel and Böker, “Zodiakos,” 555-59; D. Pingree, “Astrology,” in *Dictionary of the History of Ideas: Studies of Selected Pivotal Ideas* (vol. 1; ed. P.P. Wiener; New York: Charles Scribner’s Sons, 1973), 118-26; Tester, *A History of Western Astrology*, 4-10; Barton, *Ancient Astrology*, 86-113. The trine aspect is attested in cuneiform sources, but, according to Rochberg-Halton, “Elements of the Babylonian Contribution,” 60, “the Babylonian grouping of three signs seems to be the result simply of the schematic arrangement of twelve elements (here zodiacal signs) into four groups of three elements each, rather than the result of some geometrical or spatial relation.”

³² This order was based on the presumed distance of each planet from earth, beginning with the highest one, Saturn. In Hellenistic astrology the position of the planets was imagined as occupying a sphere with its own height and distance from the earth. For different ancient traditions on the order of the planets, see Bouché-Leclercq, *L'astrologie grecque*, 107-8; Nilsson, *Geschichte der griechischen Religion*, 272-73; Neugebauer, *Exact Sciences*, 168-70;

tary rulership was the notion of a planetary or zodiacal house. The twelve signs of the zodiac were divided between the planets. Each of the five planets rules two zodiacal signs, while sun and moon each rule only one sign:

Planets	Zodiacal signs	Zodiacal signs	Planets
Saturn	<i>Aquarius</i>	<i>Capricorn</i>	Saturn
Jupiter	<i>Pisces</i>	<i>Sagittarius</i>	Jupiter
Mars	<i>Aries</i>	<i>Scorpio</i>	Mars
Venus	<i>Taurus</i>	<i>Libra</i>	Venus
Mercury	<i>Gemini</i>	<i>Virgo</i>	Mercury
Moon	<i>Cancer</i>	<i>Leo</i>	Sun

The zodiacal sign ruled by a planet was called its “house” (οἶκος, *domus*) in Hellenistic astrology. This means that, for example, the signs of *Capricorn* and *Aquarius* are both “houses” of the planet Saturn,³³ while the other ten signs are not, or the sign of *Leo* is the “house” of the sun, while the other eleven zodiacal signs are not. The planetary or zodiacal houses affect the influence exerted by the planets when they are in their “house,” i.e. in conjunction, making them more powerful.³⁴

Subdivisions of the Zodiacal Signs

The 360° of the ecliptic were not only divided into twelve equal parts of 30° distributed among the signs of the zodiac, further subdivisions were made within the signs. Through various systems the 30° of the twelve zodiacal signs could be divided into different parts of smaller sections.³⁵ Attested subdivisions are, for example, three parts of 10° (decans),³⁶ twelve parts of 2;30° (*dodecatemoria*),³⁷ thirty parts of 1°,³⁸ and, probably merely

Neugebauer, *HAMA*, 604, 690-93; Tester, *A History of Western Astrology*, 4, 18-19, 166-67; W. Hübner, “Der *descensus* als ordnendes Prinzip in der ‘Naturalis historia’ des Plinius,” in *Die Enzyklopädie im Wandel vom Hochmittelalter bis zur frühen Neuzeit* (ed. C. Meier; MMS 78; Munich: Wilhelm Fink, 2002), 25-41, at 28.

³³ These are, respectively, the diurnal and the nocturnal “house,” according to the solar semicircle from *Leo* to *Capricorn* and the lunar semicircle from *Aquarius* to *Cancer*. See Ptolemy, *Tetrabiblos* 1.18. Cf. Bouché-Leclercq, *L’astrologie grecque*, 155-57; Hübner, *Eigenschaften der Tierkreiszeichen*, 287-88.

³⁴ Cf. Bouché-Leclercq, *L’astrologie grecque*, 182-92.

³⁵ See Gundel and Böker, “Zodiakos,” 559-67.

³⁶ The system of thirty-six decans was developed in Ptolemaic Egypt. Cf. Bouché-Leclercq, *L’astrologie grecque*, 215-40; Gundel, *Dekane und Dekansternebilder*, 1-36; W. Gundel, “Dekane,” *RE*, Supp. 7 (1940), 116-24; Neugebauer and van Hoesen, *Greek Horoscopes*, 5-6.

³⁷ The *dodecatemoria* is an astrological concept of Mesopotamian origin. Cf. Bouché-Leclercq, *L’astrologie grecque*, 299-304; A. Ungnad, “Besprechungskunst und Astrologie in Babylonien,” *AfO* 14 (1941-44): 251-84, at 275-76; Sachs, “Babylonian Horoscopes,” 71-73; O. Neugebauer and A. Sachs, “The ‘Dodekatemoria’ in Babylonian Astrology,” *AfO* 16 (1952-53): 65-66; B.L. van der Waerden, “Die Zahlen der Texte VAT 7815 und 7816,” in *Gestirn-Darstellungen auf babylonische Tontafeln* (E. Weidner; ÖAWPH.SB 254/2; Vienna:

in theory, even smaller sections of 1800 parts of 0;01° (*myriogenesis*).³⁹ The terms (ὄρτια) are a further subdivision of the zodiacal signs into five unequal parts, each of which is allotted to one of the five planets.⁴⁰

These subdivisions show that astrology was believed capable of infinitely precise calculations and, hence, predictions. The connection of these subdivisions with the planets enabled astrologers to extract various interpretations from the computed position of each planet. On the one hand, the possibility of multiple interpretations provided the astrologer with numerous suggestions to interpret people's horoscopes as the clients would wish.⁴¹ On the other hand, the minute distinctions and elaborations were the tools of the trade and the technical complexity had the rhetorical impact of demonstrating the level of knowledge and skillfulness needed to apprehend the art (τέχνη) of astrology.⁴²

GENERAL AND PERSONAL ASTROLOGY IN THE DEAD SEA SCROLLS:
4QZODIOLOGY AND BRONTOLOGY AR (4Q318) AND *4QZODIACAL
 PHYSIOGNOMY* (4Q186)

Ancient astrology's two areas of interest, viz. general and individual astrology,⁴³ are both represented in the Dead Sea Scrolls. The Aramaic text 4Q318 (*4QZodiology and Brontology ar*) covers mundane astrology, while genethliological astrology is hinted at in *4QZodiacal Physiognomy*. In both cases there is nothing particularly sectarian, or even Jewish, about these texts. If they had been Greek papyri found in Egypt, nothing would suggest a Jewish context. This is actually what makes them so valuable. They testify to a Jewish interest in astrological matters on a scientific level that matches similar texts from the Hellenistic world.

Hermann Böhlhaus, 1967), 50-52; Rochberg-Halton, "Elements of the Babylonian Contribution," 57-60; Brown, *Mesopotamian Planetary Astronomy-Astrology*, 259, 264; W. Hübner, "Δωδεκατημόριον," in *Corona Coronaria: Festschrift für Hans-Otto Kröner zum 75. Geburtstag* (eds. S. Harwardt and J. Schwind; Spudasmata 102; Hildesheim: Georg Olms, 2005), 189-217 (I am most grateful to Professor Hübner for sending me a copy of the article prior to its publication).

³⁸ Cf. Firmicus Maternus, *Mathesis* 8.18-30.

³⁹ Firmicus Maternus, *Mathesis* 5.1.36; 8.18.1, refers to a Hermetic work on *myriogenesis* by Asclepius that, according to the latter, was revealed to him by Mercury. Cf. Barton, *Power and Knowledge*, 82-83.

⁴⁰ E.g. Ptolemy, *Tetrabiblos*, 1.21. Cf. Bouché-Leclercq, *L'astrologie grecque*, 206-15; Tester, *A History of Western Astrology*, 73-77.

⁴¹ Cf. J.D. North, *Horoscopes and History* (WIST 13; London: The Warburg Institute University of London, 1986), xi.

⁴² Cf. Barton, *Power and Knowledge*, 71-94.

⁴³ See n. 16 above.

4QZodiology and Brontology ar consists of two parts: a *selenodromion* and a *brontologion*.⁴⁴ Copied somewhere between the late first century BCE and the early first century CE, this text shows that people in Palestine at that time had knowledge of the zodiacal signs and the synodic movement of the moon through the zodiac. In the first part of *4QZodiology and Brontology ar*, the monthly course of the moon through the signs of the zodiac is noted schematically (*selenodromion*).⁴⁵ This part gives the Aramaic names of all twelve signs of the zodiac. In the second part predictions are given for when it thunders at the moment when the moon is positioned in one of the zodiacal signs (*brontologion*). In line with the interests of mundane astrology, these predictions concern general matters occurring in the provinces and at the palace. The genres of both parts are fully understandable against the background of Hellenistic astrology, and have their precursors in Babylonian celestial divination.⁴⁶

As has been argued in Chapters One and Two, *4QZodiacal Physiognomy* is not a horoscope or a collection of horoscopes, but a physiognomic catalogue that points readers to certain astrological matters. Since these astrological matters concern individual types of people, the interest of the text is similar to that of personal astrology. *4QZodiacal Physiognomy* specifically mentions the nativity of people's birth (בּוֹרֵד), referring to a part of the zodiacal sign, and perhaps also to people's zodiacal sign (בְּהַמָּדָה). Several elements in the text thus suggest an astrological background rooted in genethliology.

HYPOTHESES ON THE ASTROLOGICAL FRAMEWORK OF *4QZODIACAL PHYSIOGNOMY* (4Q186)

Undoubtedly, ancient astrological concepts are significant for understanding the background of *4QZodiacal Physiognomy*. The question is which particular notions are of importance. Any hypothesis about the astrological framework of *4QZodiacal Physiognomy* has to start, of course, with what the text itself makes explicit. But here one is confronted with a key problem. The text gives little astrological information in a clear, straightforward

⁴⁴ Cf. the literature cited in Chapter One nn. 19, 88. Add Albani, "Horoscopes in the Qumran Scrolls," 296-301.

⁴⁵ 4Q317 (*4Qcrypt Phases of the Moon*) concerns the phases of the moon, but the text shows no evidence that it attempts to relate this to the signs of the zodiac. See recently J. Ben-Dov, "The Initial Stages of Lunar Theory at Qumran," *JJS* 54 (2003): 125-38; J.-C. Dubs, "4Q317 et le rôle de l'observation de la Pleine Lune pour la détermination du temps à Qoumran," in *Le Temps et les Temps dans les littératures juives et chrétiennes au tournant de notre ère* (eds. C. Grappe and J.-C. Ingelaere; JSJSup 112; Leiden: Brill, 2006), 37-54.

⁴⁶ Cf. Bouché-Leclercq, *L'astrologie grecque*, 363-64; Gundel and Gundel, *Astrologu-mena*, 260-69.

manner. Apart from knowledge of the zodiacal signs, *4QZodiacal Physiognomy* shows no evident awareness of other astronomical and astrological principles.

Astrology was not a fixed and unified system of concepts and terminology during the Hellenistic and Early Roman period. There was much terminological inconsistency and conceptual confusion, reflecting the still unsettled state of astrology.⁴⁷ One has to bear in mind the possibility of multiple developments and trajectories, not all of which are recognizable anymore.

Against this background, and taking into account the late first century BCE date for the manuscript, *4QZodiacal Physiognomy* can perhaps be seen as a text representative of the incipient stages of horoscopic astrology in Second Temple Period Judaism, attempting to render concepts foreign to Jewish culture into Hebrew. The text may represent a translation effort of astrological terminology and concepts into Hebrew. If this is correct, *4QZodiacal Physiognomy* is of importance for the history of astrology in general since it demonstrates, like *4QZodiology and Brontology ar*, the transmission of certain astrological concepts to first century BCE Palestine.⁴⁸

As concluded in Chapter Two, *4QZodiacal Physiognomy* adheres to the line of reasoning that later found articulated explication through the late antique astrologer Hephaestion. He advised his readers to pay attention to the shape of people's bodies, to see which zodiacal sign they resembled, and to discern their horoscope accordingly. *4QZodiacal Physiognomy*, however, is not only concerned with the entire zodiacal sign, but also with a specific part of it, viz. in 4Q186 1 ii 9 "the foot of *Taurus*" (רגל השרור). Most scholars understand this as a reference to a specific part of the constellation or zodiacal sign *Taurus*.⁴⁹ For reasons explained below, it should be taken as a reference to a part of the zodiacal sign, not the constellation, *Taurus*.⁵⁰

⁴⁷ Cf. Neugebauer, *HAMA*, 278-79, 332-33, 340, 772; Tester, *A History of Western Astrology*, 72.

⁴⁸ One cannot, of course, exclude the possibility that astrology was known and practiced in Palestine before the first century BCE, but concrete evidence is lacking for this. Furthermore, taking into account the astrological background of the text (a combination of *melothesia* and *dodecatemoria*, see below) a date before the first century BCE for *4QZodiacal Physiognomy* is difficult to prove.

⁴⁹ The translation by Allegro DJD 5.89, "on the Festival of *Taurus*," has met with little approval. Only García Martínez and Tigchelaar, *DSSSE*, 381, seem to accept Allegro's interpretation: "the period of *Taurus*." But García Martínez, *Dead Sea Scrolls Translated*, 456, has "in the foot of *Taurus*."

⁵⁰ On the cloven hoof of the constellation *Taurus*, see Hübner, *Eigenschaften der Tierkreiszeichen*, 126. And on the crooked knee, see W. Hübner, *Grade und Gradbezirke der Tierkreiszeichen: Der Anonyme Traktat De Stellis Fixis, In Quibus Gradibus Oriuntur Signorum: I Quellenkritische Edition, II Kommentar* (SWC; Stuttgart: B.G. Teubner, 1995), 1:140; 2:111.

The terminology ברנל השור (“in the foot of *Taurus*”) raises the following questions: what is the significance of this specific reference to a part of the zodiacal sign *Taurus*; is it related to the numbers allotted to the “house of light” and the “house of darkness,” and, if so, in what way is it connected? Alongside the physiognomic descriptions, the most significant element in *4QZodiacal Physiognomy* are the numbers linked to the “house of light” (בית האור) and the “house of darkness” (בית החושך). Although references to light and darkness are key concepts in Qumran sectarian texts, the combination with בית in the phrases “house of light” and “house of darkness” does not occur elsewhere and is unique to *4QZodiacal Physiognomy*.⁵¹

In the extant text of *4QZodiacal Physiognomy*, the element of numbers connected to the “house of light” and “house of darkness” terminology occurs twice, while a third occurrence can be assumed.⁵² Despite the uniqueness of these phrases, many scholars relate this to the light/darkness dualism of sectarian texts from the Dead Sea Scrolls, especially the *Two Spirits Treatise of the Rule of the Community*.⁵³ It is possible that the “house of light” and “house of darkness” terminology of *4QZodiacal Physiognomy* was read and understood by members of the Qumran community in light of other texts from Qumran, but it is not necessary, nor desirable, to explain this terminology only from that perspective.

The issue is how the numbers allotted to the “house of light” and “house of darkness” came about. Was there some sort of system that regulated the pattern and division of certain numbers between the “house of light” and the “house of darkness?” The proponents of the dualistic interpretation of *4QZodiacal Physiognomy* have not yet provided an answer to this question. Since an astrological framework for this element is denied, such an interpretation has not been able to explain the specific numbers in relation to the “house of light” and the “house of darkness,” or to the reference to a specific part of the zodiacal sign, i.e. “the foot of *Taurus*.” It is with these considerations in mind that the following discussion on different hypotheses about the astrological notions that are operative in *4QZodiacal Physiognomy* must be approached.

⁵¹ In *T. Jos.* 8:5 the prison is referred to as a “house of darkness” (οἶκος σκότους), but this does not throw much light on the meaning of these words in *4QZodiacal Physiognomy*.

⁵² 4Q186 1 ii 7-8; 1 iii 8-9. In both cases the words (ו)ריח לו begin the sentence. Whatever the exact sense of (ו)ריח לו, from its basic connection with the “house of light” and the “house of darkness,” one can assume that a third occurrence of these words originally stood in 4Q186 2 i 7, following the words וריח לנ in 1.6. But the exact division of numbers in the “house of light” and the “house of darkness” is, unfortunately, lost.

⁵³ See Chapter Four.

THE WORD “HOUSE” AS A *TERMINUS TECHNICUS* FOR PLANETARY HOUSE

Matthias Delcor and Hermann Lichtenberger have understood the term בית (“house”) to be an astrological *terminus technicus* equivalent to Greek οἶκος, Latin *domus*, and Syriac *bēt*. Regarding the realization of the numbers in the “house of light” and the “house of darkness,” however, their interpretations differ. Delcor understands the division between light and darkness as a reference to the duration of day and night at the moment of birth. Lichtenberger suggests it is dependent on the position of one of the luminaries between two zodiacal signs, the signs being classified either as light or darkness.⁵⁴

Matthias Delcor: Houses of the Sun and the Duration of Day and Night

Delcor is not entirely clear in his understanding of the concept of planetary houses. He seems to equate this concept with the notion of the movement of the sun through the various signs of the zodiac during the year. On the one hand, Delcor describes a planetary house as “la région assignée à chaque planète et plus précisément des ‘maisons du cercle du zodiaque.’”⁵⁵ But he also states that each zodiacal sign could be called a house of the sun, because the sun seems to travel through each sign of the zodiac circle during a year. Delcor connects this latter idea with a zodiacal interpretation of the six “gates” of the eastern and western horizon where, according to *1 En.* 72, the sun rises and sets. This chapter describes the course of the sun through these gates in relation to the duration of night and day during the year.

Delcor uses the Enochic data on the variable length of day and night to explain the light and darkness terminology in *4QZodiacal Horoscope*, assuming that it provides more or less the same information as *1 En.* 72. According to Delcor, the spirit of each person is conditioned by the duration of day and night at the moment of birth. He suggests that the zodiacal sign *Taurus* corresponds with the fifth gate (*1 En.* 72:11). The duration of day and night during the sun’s position in the fifth gate is 11:7. Delcor concludes that this “correspond approximativement aux proportions de notre horoscope, six pour le jour et trois pour la nuit.”⁵⁶

There are too many conceptual problems for Delcor’s interpretation to be convincing.⁵⁷ First, it is correct to say that the sun seems to travel successively through each zodiacal sign during the course of a year, but it is incorrect to apply the notion of planetary houses to this. The “houses” have

⁵⁴ Delcor, “Recherches sur un horoscope,” 301-4; Lichtenberger, *Studien zum Menschenbild*, 144-46.

⁵⁵ Delcor, “Recherches sur un horoscope,” 301-2.

⁵⁶ Delcor, “Recherches sur un horoscope,” 304.

⁵⁷ Cf. also Albani, “Horoscopes in the Qumran Scrolls,” 304 n. 81.

nothing to do with the movement of the sun as such. This concept simply assigns rulership to the various planets over certain zodiacal signs.

Second, the Enochic gates are not identical with the zodiacal signs. Otto Neugebauer has argued against the interpretation of the “gates” in the *Astronomical Book* as zodiacal signs, suggesting that these gates represent fixed points (“arcs”) of the horizon that are related with the rising and setting amplitude of the sun during the course of a year.⁵⁸

Third, Delcor fails to explain the sense of the numbers in *4QZodiacal Physiognomy* and how these come about. Apart from the approximate nature of the numbers, his interpretation can hardly be upheld for the numbers eight and one in 4Q186 1 iii 9.⁵⁹ Such a ratio does not occur in *1 En. 72*, nor is it a possible one for the length of day and night. *4QZodiacal Physiognomy*, therefore, does not give data similar to *1 En. 72*.⁶⁰

Hermann Lichtenberger: Zodiacal Signs of Light and Darkness

Lichtenberger asserts that the word בית (“house”) represents a technical astrological term expressing the theory of planetary houses, but he does not clarify in what way this concept functions in *4QZodiacal Physiognomy*.

Lichtenberger argues that the relationship between light and darkness is dependent on the position of one of the luminaries or planets between two zodiacal signs, which are classified as either light or darkness. He explains this by referring to symbolism used in the late rabbinic treatise *Pesiqta Rabbati* 20 §5. This text answers the question why God created the world in Nisan, not in Iyyar. The zodiacal sign *Aries* of the month Nisan is associated with light, while the zodiacal sign *Taurus* is linked to darkness. According to the rabbinic tradition in *Pesiq. Rab.* 20 §5, God wished to create the world in light and he therefore told the Prince of Darkness, who looked like a bull, to get out of his way. Lichtenberger concludes that:

das Tierkreiszeichen des Widders wurde schöpfungstheologisch grundsätzlich mit ‘Licht,’ das Zeichen des Stiers grundsätzlich mit ‘Finsternis’ identifiziert. Der jeweilige Stand der Sonne oder des Mondes oder eines

⁵⁸ O. Neugebauer, “Notes on Ethiopic Astronomy,” *Or* 33 (1964): 50-61. Cf. also Albani, “Horoscopes in the Qumran Scrolls,” 295 n. 57. The zodiacal interpretation of the Enochic “gates” is in itself problematic, but Delcor also tries to harmonize the number of twelve zodiacal signs with the description of the sun rising and setting in the same gates opposite each other. If the six gates of the eastern and the six gates of the western horizon are another way of referring to the twelve zodiacal signs, it seems impossible to suggest that the sun rises and sets in the same gate while both represent at the same time one zodiacal sign. Delcor does not clarify how one is to imagine this harmonization.

⁵⁹ See also Lichtenberger, *Studien zum Menschenbild*, 145.

⁶⁰ Gordis, “Document in Code,” 38, simply asserts, without explanation, that the light-darkness terminology refers “to day and night, light and darkness, which were represented in some form as the shrine or dwelling” of the described individuals.

Planeten zwischen Widder und Stier bei der Geburt ergäbe dann das Verhältnis von Licht- und Finsternisanteilen beim einzelnen Menschen.⁶¹

Lichtenberger's interpretation is not convincing and the comparative value of the rabbinic text is weak. First, the zodiacal signs *Aries* and *Taurus* are not just "houses" for any luminary, but only for the planets Mars and Venus. The concept of planetary houses stands in the way of Lichtenberger's explanation for the relationship between light and darkness in *4QZodiacal Physiognomy*. A planet is not "in its house" if it is positioned between the zodiacal signs.⁶² It seems, however, that the concept of planetary houses is redundant, since Lichtenberger does not refer to it in his explanation.

Second, Lichtenberger cannot explain the specific numbers ascribed to light and darkness in 4Q186 1 ii 7-8. According to *Pesiq. Rab.* 20 §5 *Aries* is completely light and *Taurus* is completely dark. There is no mention of any space between the two signs, or of any gradation between light and darkness. It remains vague how this text helps to understand the concrete division of light and darkness in *4QZodiacal Physiognomy*. The rabbinic text provides no background or system that helps to determine a partition of light and darkness between two zodiacal signs.⁶³

Third, *Pesiq. Rab.* 20 §5 qualifies only the first two zodiacal signs *Aries* and *Taurus* as light and darkness, but not the other ten signs.⁶⁴ The symbolism behind the zodiacal signs in *Pesiq. Rab.* 20 §5 is determined by a specific theology of creation.⁶⁵ The relevance of this text regarding the

⁶¹ Lichtenberger, *Studien zum Menschenbild*, 146.

⁶² This does not mean that a planet cannot be positioned between two zodiacal signs. There is the concept of a planet in transit (μετάβασις, *transitus*) between two signs. Serapion, a third century CE astrologer from Egypt, discusses the power a planet holds when positioned in the last three and the first three degrees of a sign, see CCAG 8/4.230.1-6). Cf. Gundel and Böker, "Zodiakos," 563: "Auf dem Schnitt (σημεία, *ultima linea*) zwischen zwei Zeichen ist die Wirkung besonders stark und unermeßlich."

⁶³ Cf. also Albani, "Horoscopes in the Qumran Scrolls," 304-5 n. 82.

⁶⁴ See K.-E. Grözinger, *Ich bin der Herr, dein Gott: Eine rabbinische Homilie zum Ersten Gebot (PesR 20)* (FJS 2; Frankfurt: Peter Lang, 1976), 30-31, 75-104. For the text, see M. Friedman (ed.), *Pesikta Rabbati: Midrash für den Fest-Cyclus und die ausgezeichneten Sabbathe* (Vienna, 1880), 95a-96a. For an English translation, see W.G. Braude, *Pesikta Rabbati: Discourses for Feasts, Fasts, and Special Sabbaths* (2 vols; YJS 18; New Haven: Yale University Press, 1968), 1:400-1. The text does not name the zodiacal sign *Aries* as such, but in one of the manuscripts it does allude to the sign *Taurus* when it mentions "the Prince of Darkness being black as a bull" (וְשָׂרֵן שֶׁל חוֹשֶׁךְ דּוֹמֵה לְשׂוֹר) (דומה לשור). Cf. Friedman, *Pesikta Rabbati*, 95a; Grözinger, *Ich bin der Herr*, 30 n. 1.

⁶⁵ After light and darkness comes the creation of humanity, symbolized by the sign *Gemini*. Man is to see both light and darkness. *Gemini* represents man. The opposing forces of light and darkness determine the life and fate of every human being. It is up to every individual to choose the light and walk in the path of the Torah. The other nine zodiacal signs can be said to represent phases in the life of man. The next three signs (*Cancer*, *Leo*, and *Virgo*) symbolize the stages in a man's life from infancy to the age suitable for marriage. The signs *Libra* and *Scorpio* stand for the weighing of a man's deeds and the punishment of sins discovered in him with banishment to *gehenna*. After these signs God created *Sagittarius*, because

partition of light and darkness in *4QZodiacal Physiognomy* is therefore limited. It cannot be applied to other signs of the zodiac. Lichtenberger's interpretation, therefore, fails to account satisfactorily for the terminology "house of light" and "house of darkness," or for the concrete numbers connected with it in *4QZodiacal Physiognomy*.

The Evidence for Planetary Houses in Jewish Astrology and 4QZodiacal Physiognomy (4Q186)

Later Jewish astrological tradition indeed makes use of the term בית ("house") to express the concept of planetary houses, but this is not the case in *4QZodiacal Physiognomy*. In the medieval astrological text *Baraita de-Mazzalot*, for example, one finds the theory of planetary houses in the ninth section:

The house of Saturn: *Capricorn* and *Aquarius*; the house of Jupiter: *Sagittarius* and *Pisces*; the house of Mars: *Aries* and *Scorpio*; the house of Venus: *Taurus* and *Libra*; the house of Mercury: *Gemini* and *Virgo*; the house of (the) sun: *Leo*; the house of (the) moon: *Cancer*.⁶⁶

It is evident that this enumeration lists the houses of the seven planets according to Ptolemaic astrology. In *4QZodiacal Physiognomy*, however, this is not the case. In the extant text no mention is made of any planet. Moreover, a planet can only be in one of its houses, not in both at the same time. Even if one were to take recourse to the notion of diurnal and nocturnal houses to somehow explain how a certain planet is in limbo between two of its houses, the fact is that no planet, except Saturn, can be in or near two of its houses at the same time. It is, therefore, extremely unlikely that *4QZodiacal Physiognomy* uses the word בית ("house") as a *terminus technicus* for planetary houses.⁶⁷

when a prayer is made on behalf of the one cast into *gehenna*, he is shot up from there as an arrow from a bow. The sign of *Capricorn* represents the one purified from *gehenna*, while *Aquarius* symbolizes the bucket of water used to purify a man of his sins. The sign of *Pisces*, finally, represents Israel, that is, like the unseen fish in the sea, unaffected by the evil eye or the zodiacal sign, and is destined to inherit the world.

⁶⁶ ביתו של שבת, גדי ודלי, וביתו של צדק, קשת ודגים, ביתו של מאדים, טלה ועקרב, ביתו של נונה, שור ומאזנים, ביתו של כוכב חמה, האומים ובתולה, ביתו של חמה, ארי, ביתה של לבנה, סרטן Wertheimer and Wertheimer (eds.), *Batei Midrashot*, 22. The manuscript used ("New York - Jewish Theological Seminary Rab. 1948 [from the Geniza]") was dated to the tenth century (see Wertheimer and Wertheimer, *Batei Midrashot*, 11), but the text as such is probably older. I owe the reference to the manuscript number to Ronit Nikolsky.

⁶⁷ Cf. Bergmeier, *Glaube als Gabe*, 113 n. 447; Alexander, "Physiognomy," 387 n. 5; Albani, "Horoscopes in the Qumran Scrolls," 308.

“THE FOOT OF *TAURUS*” AND THE CONSTELLATION *TAURUS*

Several scholars have understood the words “in the foot of *Taurus*” (ברגל (השור) as a reference to a part of the constellation in which the sun or the moon was positioned at the moment of birth. Martin Hengel suggested identifying “the foot of *Taurus*” with a certain star on the ecliptic, possibly identical with the “knee” (γόνυατος) or “hoof” (ποδὸς ἄκρου) of the constellation *Taurus* as mentioned by Eratosthenes in his third century BCE star catalogue.⁶⁸

Eratosthenes presents information regarding the *constellation*, not the *sign Taurus*. The “knees” and “hoofs” of the constellation *Taurus* are situated far below the ecliptic. In his star catalogue in the *Almagest*, Ptolemy gives a latitudinal position beneath the ecliptic of $-14;50^\circ$ for the “right hock” (δεξιὸν σφυροῦ=ν Tau) and -13° for the “left lower leg” (ἀριστεροῦ πῆχεως=88[d] Tau).⁶⁹

It is impossible for the sun, the moon, or any of the other five planets to reach this section of the constellation *Taurus* so far below the ecliptic. It lies well beyond the latitudinal width of $\pm 12^\circ$ of the zodiacal belt, i.e. $\pm 6^\circ$ above and beneath the ecliptic. The sun’s course is identical with the ecliptic (0°). It cannot, therefore, be positioned in different parts of zodiacal constellations above or below the ecliptic.⁷⁰ The moon and planets can be positioned within different constellational parts, but only within the width of the zodiacal belt.⁷¹ The orbit of the moon, for example, is inclined to the ecliptic. This causes the moon to cross within an area of 5° latitude to either side of the ecliptic during its periodic movement. The moon, therefore, can only be observed being positioned in those parts of the constellations that are within the latitudinal expanse of 10° of the zodiacal circle.⁷²

These considerations argue against understanding the words “in the foot of *Taurus*” as a reference to a part of the *constellation* in which the sun or

⁶⁸ Eratosthenes, *Catasterismi* 14. Hengel, *Judentum und Hellenismus*, 435. Cf. Carmignac, “Les Horoscopes,” 203; Delcor, “Recherches sur un horoscope,” 306-7; Lichtenberger, *Studien zum Menschenbild*; Alexander, “Physiognomy,” 389.

⁶⁹ Ptolemy, *Almagest* 7.5[.23]. The constellation *Taurus* is imagined as half of an animal (ἀπότομος). Only the front half is represented, cf. Eratosthenes, *Catasterismi* 14, 23; Hipparchus, *Commentary on Aratus and Eudoxus* 2.6.6; Ptolemy, *Tetrabiblos* 1.9.3. The zodiacal sign *Taurus* is connected with lethal injuries through amputations (ἀποτομαίς), cf. Ptolemy, *Tetrabiblos*. 4.9.12. See Bouché-Leclercq, *L’astrologie grecque*, 133; Hübner, *Eigenschaften der Tierkreiszeichen*, 113. Ptolemy’s catalogue was one of the sources for Albrecht Dürer’s famous wood-cut astral map from 1515. See H.G. Gundel, *Zodiakos, Tierkreisbilder im Altertum: Kosmische Bezüge und Jenseitsvorstellungen im antike Alltagsleben* (KAW 54; Mainz: Philipp von Zabern, 1992), 311, 314.

⁷⁰ Cf. Albani, “Horoscopes in the Qumran Scrolls,” 294.

⁷¹ Cf. n. 12 above.

⁷² See e.g. Neugebauer, *Exact Sciences*, 108; Neugebauer, *HAMA*, 68, 80-84, 1107-8, 1111, cf. also 626.

the moon was positioned at the moment of birth. They should rather be taken as a reference to a specific part of the zodiacal sign *Taurus* and indicating the division of that sign.⁷³

ROLAND BERGMEIER: DAY AND NIGHT AND THE MOON “IN THE FOOT OF
TAURUS”

In a short but important excursus, Roland Bergmeier suggested that the realization of the numbers in the “house of light” and the “house of darkness” is the result of the division of the zodiacal sign with the moon positioned in one of its parts. The phrases “house of light” and “house of darkness” represent day and night as times of light and darkness.⁷⁴

The Divided Zodiacal Sign Taurus in the Rhetorius-Teucer Text

Bergmeier emphasizes that the astrological background of *4QZodiacal Physiognomy* is determined by understanding the words ברגל השור in 4Q186 1 ii 9 as presupposing a division of the zodiacal sign *Taurus*.⁷⁵ As a key text for understanding this division, he uses an excerpt from a text by Teucer “the Babylonian” that has been transmitted by the late antique astrologer Rhetorius. Rhetorius collected and compiled astrological literature. Perhaps originally from Egypt, he was mainly active in Constantinople during the reign of Anastasius I (491-518).⁷⁶ Teucer was probably active somewhere during the first century BCE, and most likely of Greek descent from Egypt, rather than from Persian Babylon.⁷⁷

The extant part of the Rhetorius-Teucer text is a fascinating example of a short astrological catalogue that deals with the twelve zodiacal signs.⁷⁸ It illustrates very neatly the practice of subdivisions, elaborations, classifications, characterizations, and complexity that is typical of astrology as an ancient art (τέχνη).

⁷³ In addition to the hypotheses discussed below, cf. Wise, “Horoscope Written in Code,” 276-77, who correctly inferred that the concept of *dodecatemoria* is involved.

⁷⁴ Cf. Bergmeier, *Glaube als Gabe*, 78-81, for the following.

⁷⁵ Bergmeier, *Glaube als Gabe*, 79, quotes Boll, Bezold, and Gundel, *Sternglaube und Sterndeutung*, 147: “Weitere praktische Ratschläge für astrologische Konsultationen und für Nativitäten enthalten diejenigen Text, welche besondere Gutachten abgeben über die Wirkungen der verschiedenen Glieder der Tierkreisbilder.”

⁷⁶ Gundel and Gundel, *Astrologumena*, 249-51.

⁷⁷ Cf. F. Boll, *Sphaera: Neue griechische Texte und Untersuchungen zur Geschichte der Sternbilder* (Leipzig: B.G. Teubner, 1903; repr., Hildesheim: Georg Olms, 1967), 6-11; Gundel and Gundel, *Astrologumena*, 112-13; Hübner, *Grade und Gradbezirke*, 92; W. Hübner, “Teukros [4],” *DNP* 12/1 (2002), 205.

⁷⁸ For the text, see CCAG 7.192-213.

The text is arranged into twelve sections according to the number of zodiacal signs, beginning with *Aries*, and each section consists again of twelve subdivisions.⁷⁹ Each section opens with a description of some general characteristics regarding the zodiacal sign, such as, for example, whether they are masculine or feminine, diurnal or nocturnal, their seasonal character, and their influence on human matters. Second, the text lists the various connections between the zodiacal sign and the planets, such as planetary houses, exaltations, depressions, and planetary triplicity rulers during day and night. Third, for every three decans of the zodiacal sign the accompanying extra-zodiacal constellations rising simultaneously (the so-called *paranatellonta*) are listed. Fourth, for each decan the so-called planetary “faces” (πρόσωπα) are enumerated.⁸⁰ Fifth, bright stars rising simultaneously with a zodiacal sign to the north and south of the ecliptic are listed according to their length, size, and temperament (κρῶσις). Sixth, the text provides a list of terms (ὄρια).⁸¹ Seventh, an enumeration is given of the different regions of the world (κλίματα) that are under the influence of a particular zodiacal sign.⁸² Eighth, the text assigns parts of the body *a capite ad calcem* to the various zodiacal signs, each sign governing a section of the human body and influencing various diseases in that part (*melothesia*). Ninth, the zodiacal sign is allotted two letters from the alphabet.⁸³ Tenth, the text describes the division of the zodiacal sign into different parts along the 30° longitude, such as, for example, the head, neck, breast, loins, hip joint, hind legs, tail, and feet of *Aries*. Eleventh, the text lists the influences that the zodiacal sign exerts when it is the horoscope (ὠροσκόπος) or ascendant sign. Finally, each section concludes with an account of the various influences attributed to the three decans of the zodiacal sign.

Bergmeier directs attention to the tenth element that the Rhetorius-Teucer text lists in each section. This subsection concerns the divisions of

⁷⁹ See Boll, *Sphaera*, 5-6.

⁸⁰ Cf. Bouché-Leclercq, *L'astrologie grecque*, 216, 224-25; Gundel, *Dekane und Dekansternebilder*, 30-35.

⁸¹ The division into terms corresponds to the Egyptian system presented in Ptolemy, *Tetrabiblos* 1.21. Cf. Bouché-Leclercq, *L'astrologie grecque*, 206-15; Tester, *A History of Western Astrology*, 73-77.

⁸² The Rhetorius-Teucer text claims the climates to be according to Ptolemy, which is, apart from minor variations, the case, see Ptolemy, *Tetrabiblos* 2.4. Cf. Bouché-Leclercq, *L'astrologie grecque*, 328-47; E. Honigmann, *Die sieben Klimata und die ΠΟΛΕΙΣ ΕΠΙΣΗΜΟΙ: Eine Untersuchung zur Geschichte der Geographie und Astrologie im Altertum und Mittelalter* (Heidelberg: Carl Winter, 1929), 43 n. 1, 47-49; Barton, *Ancient Astrology*, 180-85. See also Chapter Two n. 124.

⁸³ Cf. Boll, *Sphaera*, 469-72; Gundel and Böker, “Zodiakos,” 578; W. Hübner, “Der Tierkreis in der Psalmenmagie,” in *Ritual und Poesie: Formen und Orte religiöser Dichtung im Alten Orient, im Judentum und im Christentum* (ed. E. Zenger; HBS 36; Freiburg: Herder, 2003), 293-319, at 303-5.

the zodiacal signs into different parts covering 30° longitude on the ecliptic. The sign of *Taurus* is divided into nine parts:

From 1° to 3° the head rises, from 4° to 7° the horns, from 8° to 10° the neck, from 11° to 13° the breast, from 14° to 18° the loins, from 19° to 21° the hip joints, from 22° to 24° the feet, from 25° to 27° the tail, from 28° to 30° the hoofs.⁸⁴

In the case of *Taurus* the sign is divided into nine parts, but this is not the case for all zodiacal signs, suggesting that nine is not a set number.⁸⁵

According to Bergmeier the specific division of *Taurus* in *4QZodiacal Physiognomy* is determined by observing the position of the moon.

The Moon in the Feet of Taurus in Firmicus Maternus, Mathesis 6.31.88?

Referring to a passage in the *Mathesis*, an astrological handbook written by Firmicus Maternus around 335 CE, Bergmeier argues that “the foot of *Taurus*” (רגל השור) in 4Q186 1 ii 9 concerns the position of the moon in that part of *Taurus*, though the moon is not mentioned in *4QZodiacal Physiognomy*.

In this particular passage (6.31.88) Firmicus Maternus discusses the position of the moon in certain parts of several zodiacal signs:

If the moon is found in the feet of *Taurus*, or in the nebula of *Cancer*, or in the mane of *Leo*, or in the front of *Scorpio*, obviously from 8° to 10°, or in *Sagittarius*, or in the spine of *Capricorn*, or in the fishing-line of *Pisces*, or in the head of *Aries*, and if she is without light, that is if all the glare of light disappeared, and if Saturn or Mars cast their light in some way, it will bring forth blind men.”⁸⁶

Unfortunately, this passage from Firmicus Maternus cannot be used to support Bergmeier’s interpretation that *4QZodiacal Physiognomy* deals with the position of the moon in the partitioned zodiacal signs. There is a textual problem that eliminates it as supportive evidence.

The text does not say “in the feet of *Taurus*” (*in Tauri pedibus*). This reading is a conjecture made by Franz Skutsch without any basis in the manuscript evidence. Instead of *pedibus* the extant manuscripts all have

⁸⁴ CCAG 7.197.24-27: Ἀνατέλλει δὲ ἀπὸ μοίρας α΄ ἕως γ΄ κεφαλή, ἀπὸ δ΄ ἕως ζ΄ κέρατα, ἀπὸ η΄ ἕως ι΄ τράχηλος, ἀπὸ ια΄ ἕως ιγ΄ στῆθος, ἀπὸ ιδ΄ ἕως ιη΄ ὄσφυς, ἀπὸ ιθ΄ ἕως κα΄ ἰσχία, ἀπὸ δε καβ΄ ἕως κδ΄ πόδες, ἀπὸ δε κε΄ ἕως κζ΄ οὐρά, ἀπὸ δε κη΄ ἕως λ΄ ὄνυχες.

⁸⁵ One zodiacal sign (*Pisces*) has seven parts; one (*Cancer*) has eight parts; eight (*Aries*, *Taurus*, *Gemini*, *Leo*, *Virgo*, *Scorpio*, *Sagittarius*, and *Capricorn*) have nine parts; and two (*Libra* and *Aquarius*) have ten parts.

⁸⁶ Firmicus Maternus, *Mathesis* 6.31.88. For the text, see W. Kroll, F. Skutsch and K. Ziegler (eds.), *Firmicus Maternus: Matheseos Libri VIII* (vol. 2; Teubner; Leipzig: B.G. Teubner, 1913), 172-73. For a modern translation, see P. Monat (ed.), *Firmicus Maternus: Mathesis* (vol. 3; Budé; Paris: Les Belles Lettres, 1997), 110.

pl(e)iadibus.⁸⁷ This refers to the *Pleiades*, a small group of weak and nebulous stars situated in the front of the constellation *Taurus*.⁸⁸ The *Pleiades* were known to cause diseases of the eyes and blindness, a connection probably made because one had to strain the eyes to spot them.⁸⁹ As the reading in *Tauri pl(e)iadibus* (“in the *Pleiades* of *Taurus*”) makes perfect sense, Skutsch’s conjecture has to be rejected.⁹⁰ There is, therefore, no mention in Firmicus Maternus, *Mathesis* 6.31.88 of the moon “in the feet of *Taurus*,” and thus far there is no other textual evidence for the moon being positioned in this part of the sign.

The Moon “in the Foot of Taurus” in 4Q186 1 ii 9

On the basis of these two texts, the Rhetorius-Teucer text for the division of the zodiacal sign *Taurus* and the passage from Firmicus Maternus for the position of the moon in the feet of *Taurus*, Bergmeier concludes:

Steht der Mond ‘im Fuß des Stiers’ [...], sind die Parzellen ‘Füße,’ ‘Schwanz,’ und ‘Klauen’ die im Qumrantext angesprochenen drei Teile ‘im Haus der Finsternis,’ während ‘Kopf,’ ‘Hörner,’ ‘Hals,’ ‘Brust,’ ‘Hüfte’ und ‘Lenden’ die sechs Teile ‘im Haus des Lichts’ darstellen. Die Ausdrücke ‘Haus des Lichts/der Finsternis’ hängen danach wohl kaum mit dem Licht-Finsternis-Dualismus zusammen, sondern bezeichnen Tag und Nacht als Zeiten des Lichts und der Finsternis.⁹¹

Thus, the astrological framework in *4QZodiacal Physiognomy* presupposes the division of the zodiacal sign into separate parts. This division is realized by the position of the moon in one of the sign’s parts. Bergmeier reads רוח in 4Q186 1 ii 7 as רוח, a suggestion by Robert Gordis, meaning “space, interval” (רוח לו בבית), “it has a space in the house...”).⁹² He takes it as a reference to the different areas or parts of the zodiacal sign, and, therefore, draws the conclusion that *4QZodiacal Physiognomy* understands “Aussehen und Schicksal eines Menschen davon abhängig, wie sich der Bereich eines Sternbilds durch den Mondstand in einem seiner ‘Glieder’ aufteilt.”⁹³

⁸⁷ See the critical apparatus in Kroll, Skutsch and Ziegler, *Firmicus Maternus*, 2:172; Monat, *Mathesis*, 3:88.

⁸⁸ See Ptolemy, *Almagest* 7.5[.23].

⁸⁹ For further references to *Taurus*, but also to other zodiacal signs, causing deficiencies to the eyes, see Hübner, *Eigenschaften der Tierkreiszeichen*, 193-96; W. Hübner, “Pleiaden,” *DNP* 9 (2002), 1127-28.

⁹⁰ I am grateful to Professor Hübner for bringing this matter to my attention in a personal communication (e-mail on February 28, 2005).

⁹¹ Bergmeier, *Glaube als Gabe*, 79.

⁹² Gordis, “Document in Code,” 38.

⁹³ Bergmeier, *Glaube als Gabe*, 80, refers to Firmicus Maternus, *Mathesis* 8.5.2, saying that the “Tierkreisbilder besitzen ‘ihnen anvertraute spatia.’” However, in that passage, introducing the section on the *Sphaera Barbarica*, Firmicus Maternus distinguishes between signs and constellations. He describes the constellations as not erring in their course, but

Furthermore, supporting the interpretation of העמוד השני (“the second column”) as a reference to the zodiacal sign *Taurus*,⁹⁴ Bergmeier suggests reconstructing 4Q186 2 i 9 as [בפרסות השור וזה הוואה בהמתו] [שוןר] (“in the hoofs of *Taurus*. And this is his zodiacal sign: *Taurus*”). His reconstruction and interpretation assume the correctness of Allegro’s fragments’ joins and Strugnell’s reconstruction for 4Q186 2 i 6-9.⁹⁵ Consistent with the division of the sign *Taurus* in the Rhetorius-Teucer text, one would get eight parts in the “house of light” and one part in the “house of darkness” if, according to Bergmeier’s interpretation, the moon is positioned in the hoofs of *Taurus*.⁹⁶ This reconstruction, however, has lost its textual basis and is therefore no longer feasible.

Bergmeier has made a significant contribution to the elucidation of the astrological framework of *4QZodiacal Physiognomy* by adducing the Rhetorius-Teucer text. This text is important evidence for understanding the words ברגל השור (“in the foot of *Taurus*”) in 4Q186 1 ii 9 as an indication of the division of the zodiacal sign *Taurus* in *4QZodiacal Physiognomy*, and, presumably, also of the other signs. The passage from Firmicus Maternus, however, fails to support the suggestion that the division of the zodiacal sign depends on the position of the moon in one of its parts.

Even if the reading in *Mathesis* 6.31.88 had been *in Tauri pedibus* (“in the feet of *Taurus*”), this element of Bergmeier’s interpretation is not convincing. First, Bergmeier does not explain why those parts from the part in which the moon is positioned onwards until the final part of the zodiacal sign are assigned to the “house of darkness,” while the other parts are in the “house of light.” This might perhaps be so because the moon is the nocturnal luminary, but this is not clear from the text of *4QZodiacal Physiognomy*. Second, Bergmeier’s suggestion that “house of light” stands for day, being the time of light, and “house of darkness” stands for night, being the time of darkness, is problematic. This interpretation fails to explain how day and night are conceptually related to the position of the moon “in the foot of *Taurus*” in a proportion of six to three.⁹⁷

possessing the space attributed to them they turn around the world never altering their itinerary. This cannot be taken as a reference to support the notion that the different ecliptical parts of a zodiacal sign are understood to occupy space. But Bergmeier refers to a second passage, Firmicus Maternus, *Mathesis* 8.4.16, stating that one can speak of *unius signi spatium*, “a sign’s space.” Although this passage is somewhat obscure, it is clear that Firmicus Maternus imagines a zodiacal sign occupying a certain amount of space. Cf. Boll, *Sphaera*, 395 n. 2; Neugebauer, *HAMA*, 953-54.

⁹⁴ See Chapter One n. 87.

⁹⁵ See Chapter One and Appendix I.

⁹⁶ See CCAg 7.197.27.

⁹⁷ Cf. Albani, “Horoscopes in the Qumran Scrolls,” 304.

FRANCIS SCHMIDT: "THE FOOT OF *TAURUS*" AS A DIURNAL DECAN AND THE HOROSCOPE OF CONCEPTION

According to the interpretation of Francis Schmidt, *4QZodiacal Physiognomy* is a text that predicts people's physiognomy, as well as the parts of light and darkness that characterize them, on the basis of their date of conception, not of birth.⁹⁸ Schmidt has suggested that the light and darkness terminology of *4QZodiacal Physiognomy* has an astrological background in the concept of diurnal and nocturnal decans. He argues that the realization of the numbers in the "house of light" and the "house of darkness" is based on a calculation of the moment of conception. Accordingly, the text presupposes a set number of nine months for the duration of pregnancy.⁹⁹

Thus, Schmidt proposes, first, that the use of the number nine in *4QZodiacal Physiognomy* can be explained if the two notions of decans and conception are taken into consideration, and, second, that the words "house of light" and "house of darkness" make sense if the astrological classification of the zodiacal signs into diurnal and nocturnal is taken into account.¹⁰⁰

Diurnal and Nocturnal Zodiacal Signs, Decans, and Quadrants

The subdivision of the entire zodiac into thirty-six decans each of 10° was "one of the means by which Greek astrology could extract multiple interpretations from the computed position of a single heavenly body."¹⁰¹ According to Manilius' zodiacal decan system:

no sign has exclusive control over itself: all share their powers with certain signs in equal portions, and in a spirit of hospitality, as it were, they form a heavenly fellowship and surrender the parts of which they are composed to the keeping of other signs. This part the Greeks have termed the system of decans. The name is derived from the numeral, since the signs, which consist of thirty degrees, have a tripartite arrangement and allot ten degrees to each of the signs associating with themselves, the constellations one after the other providing a home for three signs each.¹⁰²

Developed in Ptolemaic Egypt, the system of thirty-six decans originally goes back to the Egyptian calendar of three hundred and sixty days with

⁹⁸ Schmidt assumes that this is expressed in 4Q186 1 ii 8 by מולד as a reference to conception and by ליד as an indication of birth. See Chapter One.

⁹⁹ Cf. Wise, "Horoscope Written in Code," 276.

¹⁰⁰ Schmidt, "Astrologie juive ancienne"; F. Schmidt, "Astrology and Predestination in Qumran," *Qadmoniot* 30 (1997): 115-18 (in Hebrew); Schmidt, "Ancient Jewish Astrology."

¹⁰¹ Jones, *Astronomical Papyri*, 1:10. Cf. Schmidt, "Astrologie juive ancienne," 130: "Cette division [...] leur permettait notamment de diversifier les pronostics."

¹⁰² Manilius, *Astronomica* 4.294-302. Cf. also Firmicus Maternus, *Mathesis* 2.4.1-2.

ten-day weeks (not counting the five epagomenal days).¹⁰³ As the sun travels more or less 1° per day through the zodiacal circle, decans were originally stars connected with these ten-day week periods. They came to represent divinities ruling these periods and were later called δεκανοί or *decani*, thought to rule ten days or 10° of the ecliptic.

During the Hellenistic period this latter aspect came to the fore in Greek astrology. The decans initially represented individually acting divinities known by names, images and specific effects due to their character. But gradually they lost any such personality traits and were simply seen as a specific 10° part of the ecliptic emanating celestial energy. The thirty-six decans were related to the zodiacal signs or to the planets in various zodiacal and planetary decan systems.¹⁰⁴ The importance of the decans in ancient astrological theory and practice is not clear. Ptolemy, for example, does not discuss them in his *Tetrabiblos*, and they only turn up in a few of the more elaborate Greek horoscopes.¹⁰⁵

In addition to the concept of thirty-six decans, Schmidt's explanation introduces an astrological classification of the zodiacal signs as diurnal or nocturnal. As with many aspects of ancient astrology, there was no uniform system. Various divisions of the zodiacal signs into diurnal and nocturnal are attested.¹⁰⁶ Manilius, for example, describes three possible divisions. First, he presents a system in which the zodiacal signs are ascribed a diurnal or a nocturnal nature in sections of 60°:

The zodiacal signs of *Sagittarius* and fierce *Leo*, he who looks round on the golden fleece of his back (sc. *Aries*), then *Pisces* and *Cancer* and *Scorpio* of stinging lash, signs either adjacent or spaced at equal intervals, are all under like estate termed diurnal. The others, identical in number and in the pattern of their spacing, for they are inserted into as many places, are called nocturnal.¹⁰⁷

Second, Manilius refers to a division in which half of the zodiacal circle is diurnal, while the other half is nocturnal:

¹⁰³ For the following, see the literature cited in n. 36 above.

¹⁰⁴ See Manilius, *Astronomica* 4.310-62; Firmicus Maternus, *Mathesis* 2.4.3; Abū Ma'shar, 1.9-77. Cf. Gundel, *Dekane und Dekansterbilder*, 81.246-56; C. Burnett, K. Yamamoto and M. Yano (eds.), *Abū Ma'shar: The Abbreviation of the Introduction to Astrology, Together with the Medieval Latin Translation by Adelard of Bath* (IPTs 15; Leiden: E.J. Brill, 1994), 14-23.

¹⁰⁵ See Neugebauer and van Hoesen, *Greek Horoscopes*, 21-38; Jones, *Astronomical Papyri*, 2:382-83, 420-29, 432-35.

¹⁰⁶ See Bouché-Leclercq, *L'astrologie grecque*, 155-57; Hübner, *Eigenschaften der Tierkreiszeichen*, 286-92.

¹⁰⁷ Manilius, *Astronomica* 2.211-17.

Some have also asserted that the diurnal belong to the six consecutive stars which begin with *Aries* and that the six from *Libra* count as nocturnal.¹⁰⁸

Finally, “there are those who fancy that the masculine signs are diurnal and that the feminine class rejoices in the safe cover of darkness.”¹⁰⁹ This results in the zodiacal signs being alternately diurnal and nocturnal, beginning with *Aries*. Ptolemy explains that:

an alternating order was assigned to them because day is always yoked to night and close to it, and female to male. Now as *Aries* is taken as the starting point [...] and as the male likewise rules and holds first place, since also the active is always superior to the passive in power, the signs of *Aries* and *Libra* were thought to be masculine and diurnal [...]. The signs in succession after them correspond, as we have said, in alternating order.¹¹⁰

The same binary opposition between male and female, in which the latter is ascribed negative and inferior qualities, plays a significant role in ancient physiognomic theory and, more generally, in ancient “anthropology.”¹¹¹

From the various ancient classifications, Schmidt makes use of the second system described by Manilius:¹¹²

Diurnal	Nocturnal
<i>Aries</i>	<i>Libra</i>
<i>Taurus</i>	<i>Scorpio</i>
<i>Gemini</i>	<i>Sagittarius</i>
<i>Cancer</i>	<i>Capricorn</i>
<i>Leo</i>	<i>Aquarius</i>
<i>Virgo</i>	<i>Pisces</i>

Furthermore, against this background he proposes to divide the zodiacal circle into four quadrants.¹¹³ The first quadrant begins with *Capricorn* (marking the winter solstice), the second with *Aries* (marking the vernal equinox), the third with *Cancer* (marking the summer solstice), and the fourth quadrant begins with *Libra* (marking the autumn equinox). Quadrants two and three correspond with the diurnal half of the zodiac, while quadrants four and one correspond with the nocturnal half. The thirty-six

¹⁰⁸ Manilius, *Astronomica* 2.218-20.

¹⁰⁹ Manilius, *Astronomica* 2.221-22.

¹¹⁰ Ptolemy, *Tetrabiblos* 1.13.1-2. Ptolemy, *Tetrabiblos* 1.13.3-4, explains another arrangement in which the nature of the zodiacal signs as either diurnal or nocturnal depends on which one is the ascendant.

¹¹¹ See Chapter Two n. 139.

¹¹² Schmidt, “Astrologie juive ancienne,” 129, 133, equates the concept of diurnal and nocturnal zodiacal signs with the notion of solar and lunar “parties” (ἀίρέσεις). But the latter concept is based on the planetary houses and the arrangement is different. Cf. Hübner, *Eigenschaften der Tierkreiszeichen*, 287-88. See also n. 33 above.

¹¹³ See Chapter One.

decans follow this arrangement. The decans are divided into eighteen diurnal and eighteen nocturnal ones.

The subdivision of the zodiacal signs into thirty-six decans functions as a temporal unit in Schmidt's hypothesis. Each season, between equinox and solstice, corresponds to three zodiacal signs or nine decans. This makes it possible to connect the decans with the determination of the moment of conception. Schmidt argues that people's horoscopes are determined by the decan in which their moment of conception took place. From the moment of conception to that of birth twenty-seven decans are counted for a set period of nine months of embryonic growth.

According to Schmidt the astrological place of conception is established by moving backwards nine signs, starting from the date of birth. On the basis of a text passage by the third century CE grammarian Censorinus, discussing a theory ascribed to the Chaldeans on the duration of pregnancy, he argues that the influence of the sun on the development of the fetus is exerted with differing force due the varying position that the sun has in each decan during the period of pregnancy in relation to its position at the moment of conception. In order to assess this element of Schmidt's hypothesis, it is necessary to pay some attention to the meaning and calculation of the moment of conception in ancient astrology.

The Moment of Conception in Ancient Astrology

Both Babylonian and Greek astrology recognized the importance of the moment of conception for people's horoscopes.¹¹⁴ Even before the rise of Babylonian horoscopy, the omen series *Šumma ālu* shows the astrological significance ascribed to the moment of conception: "If a man 'approaches' his wife at the rising of the Yoke star (= Bootes), he will get a son with a pleasant spirit."¹¹⁵ A Babylonian horoscope from 258 BCE provides both the date of conception and of birth showing that the duration of pregnancy amounted to 273 days.¹¹⁶ In Greek and Roman literary sources it is attested

¹¹⁴ The following discussion is largely based on the comprehensive study by Frommhold, *Empfängnis in der Astrologie*. Cf. also Bouché-Leclercq, *L'astrologie grecque*, 373-83; Boll, Bezold, and Gundel, *Sternglaube und Sterndeutung*, 153-54; M. Stol, *Birth in Babylonia and the Bible: Its Mediterranean Setting* (CM 14; STYX: Groningen, 2000), 97-98.

¹¹⁵ Cited from Stol, *Birth in Babylonia*, 97.

¹¹⁶ See Sachs, "Babylonian Horoscopes," 58-60; Rochberg, *Babylonian Horoscopes*, 73-75. A.J. Sachs, *Late Babylonian Astronomical and Related Texts* (BUS 18; Providence, Rhode Island: Brown University Press, 1955), xxxvii, 256, lists *LBAT* 1588 and 1589 as mentioning "conception of child"; F. Rochberg-Halton, "Babylonian Horoscopes and Their Sources," *Or* 58 (1989): 102-23, at 107 n. 21, mentions an unpublished horoscope in which the moment of conception is accounted for. As an example, she gives lines 8-9: "a child is conceived (when) the sun stands in 5° Aries, Jupiter and Mars stand in 5° Sagittarius. That child (will be) king." Cf. also Reiner, *Astral Magic*, 115, for another possible reference to a gestation period of 277 days.

that astrologers practiced genethliology on the basis of the moment of conception.¹¹⁷ Although in ancient astrological theory the determination of the moment of conception is valued, there are no actual Greek and Roman conception horoscopes extant, only literary examples.¹¹⁸

Ptolemy is the only astrologer who has reflected on the importance of the moment of conception for horoscopic astrology. He grants its importance, but in the end favors the time of birth because the moment of conception is usually not known. He circumvents the difficult problem of casting a conception horoscope by assuming that the celestial configuration at birth is similar to that at the moment of conception.¹¹⁹

The precise moment of conception was impossible to establish exactly.¹²⁰ Some astrologers may have sought the desired information by asking women when according to them conception had taken place,¹²¹ while others may have determined the moment of conception from the given facts of people's lives, as Tarutius is said to have done for Romulus.¹²² Most astrologers, however, would probably have assumed a set time for the duration of pregnancy and then counted backwards from the moment of birth.

Knowledge of the exact duration of pregnancy is indispensable for all astrological methods that seek to determine the horoscope for the moment of conception.¹²³ The gestation period can be expressed either in terms of

¹¹⁷ Cf. Vitruvius, *On Architecture* 9.6.2; Philo, *On Providence* 1.87; Aulus Gellius, *Attic Nights* 14.1.19; Sextus Empiricus, *Against the Professors* 5.58. Cf. Frommhold, *Empfängnis in der Astrologie*, 3-4, 18-20, 22, 230.

¹¹⁸ Frommhold, *Empfängnis in der Astrologie*, 226, 241. In a Greek horoscope from 81 CE the time of pregnancy is said to number 276 days, but this not a conception horoscope. Only a set amount of days is given for the duration of pregnancy. The date of conception is not explicitly provided, nor are further astronomical details given for this date. See Neugebauer and van Hoesen, *Greek Horoscopes*, 23-24, 28.

¹¹⁹ Ptolemy, *Tetrabiblos* 3.2.3-4. Cf. Frommhold, *Empfängnis in der Astrologie*, 10-31.

¹²⁰ For criticism of some of the church fathers against astrology because of this, see E. Lesky and J.H. Waszink, "Empfängnis," *RAC* 4 (1959), 1245-55, at 1254-55.

¹²¹ Cf. Bouché-Leclercq, *L'astrologie grecque*, 375. Some claimed that ancient gynecology gave clues for recognizing conception. Cf. Soranus, *Gynecology* 1.44. Cf. Lesky and Waszink, "Empfängnis," 1248-50.

¹²² See Chapter Two nn. 233, 234.

¹²³ On different opinions on conception, duration of pregnancy, and stages of growth of the fetus in Babylonian and Greek cultures, see e.g. E. Lesky and J.H. Waszink, "Embryologie," *RAC* 4 (1959), 1236-40; H. King, "Making a Man: Becoming Human in Early Greek Medicine," in *The Human Embryo: Aristotle and the Arabic and European Traditions* (ed. G.R. Dunstan; Exeter: University of Exeter Press, 1990), 10-19; D.M. Balme, "Ἄνθρωπος ἄνθρωπον γεννᾷ: Human is Generated by Human," in *The Human Embryo*, 20-31; D. Gourevitch, "La gynécologie et l'obstétrique," *ANRW* II 37.3 (1996), 2098-2103; H. King, "Geburt: Medizinisch," *DNP* 4 (1998), 835; Stol, *Birth in Babylonia*, 1-26; Frommhold, *Empfängnis in der Astrologie*, 32-39.

That ancient Jewish authors were probably familiar with certain, widely current, ideas about conception, pregnancy, and gestation is convincingly argued by P.W. van der Horst, "Seven Months' Children in Jewish and Christian Literature from Antiquity," in *Essays on the Jewish World of Early Christianity* (P.W. van der Horst; NTOA 14; Freiburg, Switzerland:

months or days. The ten-month period for pregnancy seems to have been the traditional number of months.¹²⁴ This is related to the fact that the period of pregnancy is commonly counted according to the menstruation period, which in turn was seen as related to the period of the moon, since both cover a period of about 28 days. Ten moon months result in an average number of 280 days for pregnancy. This same number of days, however, can also be numbered as nine months and 10 days when one takes schematic months of 30 days as a measuring unit.¹²⁵ In some of the ancient astrological treatises the mean values of 273 and 273 1/3 days for pregnancy were taken as the basis for arithmetical and geometrical methods to compute the moment of conception exactly.

Katrin Frommhold distinguishes between four methods for computing the astrological configuration at the moment of conception.¹²⁶ Characteristic for all methods is that they count back from the moment of birth. The calculations involve the determination of the position of the sun, the moon, and the ascendant at the moments of conception and birth.¹²⁷

A rule attributed to the Egyptian priest Petosiris, but probably originating in the second century BCE,¹²⁸ is concerned with the position of the moon and the ascendant at the moment of conception and birth. The rule is that the ascendant zodiacal sign at birth is the same sign in which the moon

Universitätsverlag and Göttingen: Vandenhoeck & Ruprecht, 1990), 233-47; P.W. van der Horst, "Sarah's Seminal Emission: Hebrews 11:11 in the Light of Ancient Embryology," in *Hellenism-Judaism-Christianity: Essays on Their Interaction* (P.W. van der Horst; CBET 8; Kampen: Kok Pharos, 1994), 203-23.

¹²⁴ Aulus Gellius, *Attic Nights* 3.16.1.

¹²⁵ Frommhold, *Empfängnis in der Astrologie*, 33-34, 38 (for the confusion between nine schematic and ten sidereal months, see also 56, 195 n. 486). Expressed in weeks, the total is 40 in both cases. Neugebauer distinguishes between three types of "months." First, there is the schematic month of 30 days. Second, one can reckon with sidereal months of about 27 1/3 days. A sidereal month represents the average interval between the moon's consecutive returns to the same fixed star. Third, there is the synodic month of about 29 1/2 days. A synodic month takes the course of the sun and the moon in relation to each other into consideration. It denotes the interval between consecutive conjunctions of sun and moon, i.e. between two new moons. The synodic month provides the basis for calendrical months of 29 ("hollow") or 30 ("full") days. In antiquity the sidereal month was also defined more exactly as a period of 27 1/3 days. This results in a period of 273 1/3 days as the mean value for pregnancy, which is almost identical to the 273 days of the Babylonian horoscope from 258 BCE. See O. Neugebauer, "Decem Tulerunt Fastidia Menses," *AJP* 84 (1963): 64-65; Neugebauer, *HAMA*, 1083-84. Cf. Frommhold, *Empfängnis in der Astrologie*, 93-94, 133, 177.

¹²⁶ Two of these methods were not influential in astrological tradition and they will therefore be further ignored here. See Frommhold, *Empfängnis in der Astrologie*, 173-90.

¹²⁷ Frommhold, *Empfängnis in der Astrologie*, 240.

¹²⁸ To the Egyptian pharaoh Nechepso (seventh century BCE) and the priest Petosiris (either contemporary with Nechepso or fourth century BCE) is ascribed an astrological compendium that shows Babylonian, Greek, and Egyptian influences. It is a pseudepigraphon that probably originated in second-century BCE Alexandria. Cf. Gundel and Gundel, *Astrologumena*, 27-36; D. Pingree, *The Yavanajātaka of Sphujidhvaja* (vol. 2; HOS 48; Cambridge, Massachusetts: Harvard University Press, 1978), 436-37.

is positioned at conception, and, vice versa, that the zodiacal sign in which the moon stands at birth is the same sign that ascends at conception.¹²⁹

Censorinus has transmitted a method in which the course of the sun through the zodiac is combined with the astrological theory of aspects to discern both the moment of conception and of birth.¹³⁰ Since Censorinus' text is important for Schmidt's interpretation, it is necessary to examine what Censorinus has to say on the "Chaldean" method and how ancient astrologers have appropriated it.¹³¹

In his work *On the Day of Birth* Censorinus is, among other things, concerned with theories regarding the duration of pregnancy. In this context he discusses a theory, ascribed to the Chaldeans,¹³² according to which births are possible in the seventh, the ninth, and the tenth months. The reason why births are possible in these months is because of the aspect of the sun with regard to its position at the moment of conception.¹³³ The sun causes the moment of birth by means of three aspects (opposition, trine, and quartile) that are regarded as powerful and beneficial. On its course through the zodiac, the sun enters each month in a different relationship or aspect with regard to its starting position from the moment of conception.¹³⁴ The aspects influence the gestation of the embryo and the birth of

¹²⁹ Frommhold, *Empfängnis in der Astrologie*, 70-172. Cf. J.-F. Bara (ed.), *Vettius Valens d'Antioche: Anthologies, Livre I* (EPRO 111; Leiden: E.J. Brill, 1989), 214-28. Frommhold points out that there are two assumptions for the computability of the conception moon sign on the basis of the ascendant birth sign. First, the duration of pregnancy is expressed as a ten-month period counted on the basis of the sidereal moon period. Second, the pregnancy period is exactly ten months if the moon is positioned in the ascendant at the moment of birth. If the moon stands elsewhere, its elongation from the ascendant is used to add or subtract from the mean number of days for pregnancy, thereby determining the exact number of days for a particular pregnancy. Together with an estimation of the moon's velocity through the zodiacal circle, these two assumptions provide the basis for calculating the moment of conception in terms of a calendar date at which the moon always occupies the same zodiacal sign that is ascending at the moment of birth.

¹³⁰ See n. 31 above.

¹³¹ For the following, see Frommhold, *Empfängnis in der Astrologie*, 40-69.

¹³² Censorinus, *On the Day of Birth* 8.1: *Chaldaeorum ratio* (K. Sallmann [ed.], *Censorinus: De die natalie liber* [Teubner; Leipzig: B.G. Teubner, 1983], 12.18). Cf. also 10.48.

¹³³ Censorinus, *On the Day of Birth* 8.13: "according to this theory seven months' children are born in opposition, whereas nine months' children in trine, ten months' children indeed in quartile." Cf. G. Rocca-Serra, *Censorinus: Le jour natal* (HDAC 5; Paris: Librairie Philosophique J. Vrin, 1980), 12.

¹³⁴ C.S.F. Burnett, "The Planets and the Development of the Embryo," in *The Human Embryo*, 95-112, points out that the exact correlation between consecutive months of gestation and specific planets, familiar from medieval literature, does not seem to appear in sources from antiquity, although several elements in ancient astrology might be regarded as having been conducive to the development of such a concept. One of these elements is the connection between the sun's course through the zodiac and the different months of embryonic growth in relation to the theory of aspects in Censorinus' account. According to Burnett, "Planets and the Development of the Embryo," 96 n. 8, no clear ancient examples are brought forward by Bouché-Leclercq, *L'astrologie grecque*, 508-11.

the child in different ways. When the sun enters the fourth and fifth zodiacal signs, it enters respectively the aspects of quartile and trine with regard to place of conception. These are regarded as the first effective aspects that the sun enters during the gestation period of the fetus. In the seventh zodiacal sign the sun stands in opposition to the place of conception. This is the fullest and strongest aspect, which already brings forth mature infants called *septemestres*.¹³⁵ A birth in the eighth month is not possible because the sun does not stand in any aspect with regard to the place of conception.¹³⁶ The eighth zodiacal sign, like the sixth, is a powerless aspect. Birth was deemed possible again in the ninth and tenth months because the sun regards the place of conception again in respectively trine and quartile, two very powerful aspects.

Astrologers used Censorinus' "Chaldean" theory in reversed manner. The zodiacal position of the sun at the moment of birth was the basis to determine the sun's position at conception. The similarity, however, between number of pregnancy months and number of zodiacal signs remained the same. Astrologers distinguished between seven and ten months' children. Regarding ten months' children the assumption was that at the time of conception the sun was situated in the left quartile with regard to its position at the moment of birth. Frommhold explains that "left" refers to the direction of the annual course of the sun through the zodiac, which runs anti-clockwise. The "left quartile," therefore, refers to the fourth zodiacal sign to the left of the birth sign, again, counting the latter as one of the four signs. If one assumes, for example, a ten months' child to have been born when the sun was positioned in *Aries*, the fourth zodiacal sign to the left is *Cancer*. The sun was, therefore, positioned in the zodiacal sign *Cancer* ("left quartile") at the moment of conception according to this rule.¹³⁷

¹³⁵ Frommhold, *Empfängnis in der Astrologie*, 43, points out that in Censorinus' account a zodiacal sign equals one month, and that the sun's zodiacal position at conception is already counted as one month. That way after the sun has traveled through six more signs after the moment of conception seven months are counted. Furthermore, the aspects do not represent schematic months of 30 days that have passed. Rather, the seventh month begins at 180°, the ninth month at 240°, and the tenth month at 270°. However, if one counts sidereal moon months of about 28 days, one is in the middle of the seventh month at 180°, in the middle of the ninth month at 240°, and at the middle of the tenth month at 270°. See Frommhold, *Empfängnis in der Astrologie*, 44 n. 149.

¹³⁶ It was the general opinion in antiquity that an eighth months' birth was not viable. Cf. the references cited in n. 123 above.

¹³⁷ Schmidt's interpretation assumes a mean period of nine months of pregnancy. As this is equal to twenty-seven decans or 270° the result is almost the same. However, to be exactly the same, and for the sun to be positioned at the place of birth in the left quartile, someone conceived in the zodiacal sign of *Taurus* has to be born in *Aquarius*, not in the third decan of *Capricorn* (see n. 157 below).

Notwithstanding the literary testimonies, conception horoscopy seems not to have had as large a following among astrologers as birth horoscopy. Frommhold concludes:

Bis auf das fiktive, bei Plutarch überlieferte Empfängnishoroskop des Romulus und die beiden Beispielhoroskope, welche die Astrologen Vetius Valens und Hephaestion zur Veranschaulichung der Petosiris-Regel auf ihre eigen Konzeption gestellt haben, ist in der griechischen und römischen Astrologie kein einziges originales Empfängnishoroskop überliefert. Diese Form der Horoskopie als konkurrierende Methode zur Geburtshoroskopie hat sich praktisch offensichtlich nicht durchsetzen können.¹³⁸

The Division of Light and Darkness in 4QZodiacal Physiognomy (4Q186)

The point of departure for understanding the astrological framework is to take the number of nine zodiacal signs or twenty-seven decans as representative for the mean period of pregnancy. Accordingly, one zodiacal sign or three decans equal one month.

Adding the notion of diurnal and nocturnal zodiacal signs according to Manilius' second arrangement, according to which half from *Aries* to *Virgo* is diurnal, while the other half from *Libra* to *Pisces* is nocturnal, Schmidt reasons that any fetus can have a maximum of six diurnal zodiacal signs and a minimum of three nocturnal signs during the gestation period. Any person having a lesser share of diurnal signs has at least three nocturnal zodiacal signs, or nine nocturnal decans. This number of three nocturnal signs or nine nocturnal decans Schmidt calls the "common fund," which cannot be altered.¹³⁹ Regardless of the date of conception, therefore, every individual has a common fund of nine diurnal and nine nocturnal decans. This number of eighteen invariable decans is common to every mean period of pregnancy of nine months, no matter during what period of the year the fetus develops. This means that nine variable decans remain to be designated as diurnal or nocturnal.¹⁴⁰

According to Schmidt, *4QZodiacal Physiognomy* addresses the question of how to divide the nine variable decans into diurnal and nocturnal decans. He suggests that the text locates the conception of those with a maximum of nine diurnal decans in the first quadrant, between the first decan of *Cap-*

¹³⁸ Frommhold, *Empfängnis in der Astrologie*, 241.

¹³⁹ Equally, an embryo having the maximum of six nocturnal zodiacal signs has a minimum of three diurnal signs. Any individual with fewer nocturnal signs has at least three diurnal zodiacal signs, or nine diurnal decans. Again, this represents what Schmidt calls the "common fund."

¹⁴⁰ Schmidt, "Astrologie juive ancienne," 133-34.

ricorn and the third decan of *Pisces*.¹⁴¹ Those people with a maximum of nine nocturnal decans were conceived in the opposite, third quadrant, between the first decan of *Cancer* and the third decan of *Virgo*.¹⁴² The second quadrant contains the intermediate positions from the most diurnal to the most nocturnal categories, while the third quadrant includes the transitional positions between the most nocturnal and the most diurnal categories.¹⁴³

Interpreting “the second column” (העמוד השני) as a reference to the second quadrant, Schmidt argues that the remaining fragments of *4QZodiacal Physiognomy* successively listed the physiognomic and spiritual descriptions of those types of people conceived in the three decans of *Aries*, *Taurus*, and *Gemini*, respectively.¹⁴⁴ He suggests that the words “in the foot of *Taurus*” (ברגל השור) are a reference to “la première partie de la constellation du Taureau apparaissant à l’Orient du ciel, ou le premier décan du Taureau.”¹⁴⁵ He understands it together with מולד as a reference to the place of conception. Schmidt suggests that the moment of birth of this individual is to be found in the third decan of *Capricorn*. This means that 4Q186 1 ii 7-8 provides the numbers of diurnal and nocturnal decans at the moment of conception in terms of six in the “house of light” and three in the “house of darkness.” Thus, the “house of light” corresponds with the diurnal decans, while the “house of darkness” refers to the nocturnal decans.¹⁴⁶

¹⁴¹ All those conceived in the first quadrant share the same division of eighteen diurnal and nine nocturnal decans during their periods of gestation (covering twenty-seven decans). The nine-month gestation period of every person conceived during the zodiacal signs from *Capricorn* to *Pisces* necessarily passes through the diurnal half of the zodiacal circle from *Aries* to *Virgo*, thereby benefiting maximally from the diurnal decans.

¹⁴² All those conceived in the third quadrant, therefore, possess the same number of eighteen nocturnal and nine diurnal decans, because their gestation period necessarily covers the nocturnal half of the zodiac from *Libra* to *Pisces*.

¹⁴³ Schmidt, “Astrologie juive ancienne,” 134-36.

¹⁴⁴ Schmidt, “Astrologie juive ancienne,” 136-38. The second quadrant contains the intermediate positions from the most diurnal to the most nocturnal category of individuals. The nine variable decans are divided accordingly, beginning with a division into nine diurnal and zero nocturnal decans in the first decan of *Aries* and ending with a partition of one diurnal and eight nocturnal decans in the third decan of *Gemini*. That the first decan of *Aries* has the maximum number of diurnal decans, like those in the first quadrant, is necessarily so. The gestation period of someone conceived at this time benefits from the maximum amount of eighteen diurnal decans until the third decan of *Virgo*.

¹⁴⁵ Schmidt, “Astrologie juive ancienne,” 136.

¹⁴⁶ Schmidt, “Astrologie juive ancienne,” 136-37. The total division of diurnal and nocturnal decans is respectively fifteen and twelve. For those conceived in the first decan of *Taurus*, the influence of the sun on the development of the fetus is exerted for the period of fifteen diurnal decans until the third decan of *Virgo*. Then the sun exerts its influence for another period of twelve nocturnal decans until the time of birth in the third decan of *Capricorn*. Subtracting the minimum amounts of nine diurnal and nine nocturnal decans leaves the variable decans to be numbered as six diurnal and three nocturnal decans. Although no zodiacal information or reference to “the second column” are provided for the type listed in 4Q186 1 iii, Schmidt situates this entry in the second quadrant because it is listed next to 4Q186 1 ii. Having more parts of darkness, eight in the “house of darkness” and one in the

On the basis of the date of conception predictions could be made regarding the physiognomic and spiritual state of categories of people. It is important to notice that Schmidt connects the division of diurnal and nocturnal decans to a certain spiritual state of each type. The ratio of diurnal and nocturnal decans at the time of conception apparently reflects people's spiritual share in light and darkness. But Schmidt rejects the idea that this is related to the dualism envisaged in the *Two Spirits Treatise* in 1QS 3:13-4:26, which represents an absolute dualism. Because of the common fund of nine diurnal and nine nocturnal decans, it is impossible for people's spiritual share to be completely within the "house of light" or the "house of darkness." *4QZodiacal Physiognomy* represents only a relative dualism.¹⁴⁷

Conception, "the Foot of Taurus," and Schmidt's Decanal Interpretation

The ingenuity of Schmidt's interpretation lies in its combination of different elements from ancient astrology in a comprehensive manner. But under closer scrutiny several issues appear problematic.

First, according to Schmidt's model, most moments of conception result in a similar physiognomic and spiritual state. There are only ten different divisions of diurnal and nocturnal decans.¹⁴⁸ One would, however, anticipate the use of the concept of thirty-six decans to result in more diversification of the prognostications regarding the shape and appearance of the human body and the character of people's spirit. The expectation would be that every decan governs its own type of people in terms of their physique and spirit; the effect of Schmidt's hypothesis is merely ten types, implying that this is not the case.¹⁴⁹ Related to this issue is the function of the decans. They have no actual influence on the development of the embryo; the

"house of light," this type is further towards the third quadrant of the most nocturnal entries. Thus, the place of conception is positioned in the third decan of *Gemini* and the moment of birth is expected to occur in the second decan of *Pisces*. Finally, Schmidt situates the conception of the type listed in 4Q186 2 i in the second decan of *Aries* and its place of birth in the first decan of *Capricorn*.

¹⁴⁷ Schmidt, "Astrologie juive ancienne," 126-27, 138-39.

¹⁴⁸ Those conceived in the zodiacal signs of *Capricorn*, *Aquarius*, *Pisces* and the first decan of *Aries* apparently share the same spiritual make-up of eighteen diurnal and nine nocturnal decans. Schmidt does not comment on whether their physiognomies might differ, but this does not seem to be the case. The second type concerns those conceived in the zodiacal signs of *Cancer*, *Leo*, *Virgo*, and the first decan of *Libra*, who are credited with an identical physiognomic and spiritual portrait of nine diurnal and eighteen nocturnal decans. Finally, those conceived in one of the eight remaining decans from the second of *Aries* until the third of *Gemini* have identical physiognomic and spiritual characters to those conceived in one of those from the second decan of *Libra* until the third of *Sagittarius*. Thus, one arrives at a total of ten physiognomic and spiritual character types. Cf. Schmidt, "Astrologie juive ancienne," figure 3.

¹⁴⁹ Schmidt, "Astrologie juive ancienne," 125: "A chaque division du zodiaque correspondent un portrait-type, physique et spirituel." Cf. Albani, "Horoscopes in the Qumran Scrolls," 328. See also n. 101 above.

decans are redundant in this sense. They merely signal a moment in time and serve as a simple arithmetical device. The key element is the division of the zodiacal circle in a diurnal and a nocturnal half. According to their diurnal and nocturnal nature the decans are equally indicative of people's spiritual character and have no further importance.

Second, Schmidt suggests that the place of conception "in the foot of *Taurus*" (ברגל השור) refers to the first decan of *Taurus* or the first part of the constellation *Taurus* to appear in the eastern sky, but this is incorrect for several reasons. First, the decans are a subdivision of the zodiacal signs schematically dividing each sign into three parts of 10°. As such they have nothing to do with the actual constellations. Secondly, there is no evidence from ancient astrology that the first decan of *Taurus* is referred to as the "foot of *Taurus*."¹⁵⁰ Finally, even if the words ברגל השור are taken as a reference to the forefeet¹⁵¹ of the zodiacal constellation *Taurus* rising above the eastern horizon, it is impossible to understand it as the first part of the constellation to appear, because the constellation *Taurus* rises backwards and not head first.¹⁵²

Third, like all astrological theories concerning the establishment of the date of conception, Schmidt assumes that such a determination takes its starting point from the date of birth. However, Albani rightly remarks that "one should also expect, therefore, a statement concerning the place of birth within the decans of zodiacal signs" in *4QZodiacal Physiognomy*.¹⁵³ The text, however, does not provide this. The date of birth is pivotal for calculating the moment of conception. It not being mentioned seriously hampers Schmidt's interpretation. This means that an ancient astrologer had to make the calculations before use could be made of the text. Taking the date of birth he would count back twenty-seven decans and only then probably turn to *4QZodiacal Physiognomy* to find the information needed. But how would an ancient astrologer know where to look in the text?

Fourth, Schmidt argues that *4QZodiacal Physiognomy* provides the predictions regarding the physiognomic and spiritual characters of categories of individuals on the basis of the date of conception, but he does not explain how the text is structured to facilitate access to this kind of information. Taking Schmidt's hypothesis as our point of reference, only two elements seem to present themselves as possible markers for retrieving the data

¹⁵⁰ Cf. Gundel, *Dekane und Dekansterbilder*, 119-21, 160-61. See Albani, "Horoscopes in the Qumran Scrolls," 326-28.

¹⁵¹ Schmidt, "Astrologie juive ancienne," 136 n. 22: "les pattes antérieures," wrongly translated in Schmidt, "Ancient Jewish Astrology," 199 n. 28, as "rear hooves." This is impossible because the constellation *Taurus* is imagined as a halved animal, cut from the middle, cf. n. 69 above.

¹⁵² Cf. Hübner, *Eigenschaften der Tierkreiszeichen*, 102.

¹⁵³ Albani, "Horoscopes in the Qumran Scrolls," 326.

needed: (1) the signs of the zodiac and their decans; (2) the numbers allotted to the “house of light” and the “house of darkness.” Regarding the former element, moving backwards nine zodiacal signs or twenty-seven decans from the moment of birth, an ancient astrologer would arrive at a certain zodiacal sign and its decan. These would function as his indicators in the auxiliary text before him. But the zodiacal information is provided at the end of the account in 4Q186 1 ii. A similar problem arises regarding the latter element of the numbers in the “house of light” and the “house of darkness”. Having knowledge of the system according to which the zodiacal signs from *Aries* to *Virgo* are diurnal and those from *Libra* to *Pisces* nocturnal, an ancient astrologer could do the math and arrive at a certain division of variable diurnal and nocturnal decans, which he would then look up. But, again, the data concerning the “house of light” and the “house of darkness” seems to stand somewhere in the middle of an account, which does not help to find it easily. A more important objection is that one would have to assume knowledge on the part of an ancient user of half of the information he wants to retrieve, which does not make much sense.¹⁵⁴

Fifth, the argument that the astrological framework of *4QZodiacal Physiognomy* is based on the idea that a person’s horoscope is determined by the moment of his conception is not convincing. A more likely interpretation for מולד is that it refers to the horoscope, not in the sense of the ascendant (ὠροσκόπος), but, equivalent to the Greek γένεσις, in the sense of the nativity, i.e. the configuration of heavenly bodies in relation to the zodiacal circle at the moment of birth.¹⁵⁵ If, therefore, no distinction is made in 4Q186 1 ii 8 between the moment of conception and the moment of birth by means of the words מולד and ילד, there is no need to assume that *4QZodiacal Physiognomy* is based on the astrological notion to determine a person’s horoscope from the moment of conception.¹⁵⁶ This means that *4QZodiacal Physiognomy* does not provide evidence for an adapted applica-

¹⁵⁴ Schmidt does not explain this sufficiently, but he seems to make two assumptions. First, he suggests that a system dividing the zodiacal circle in a diurnal half from *Aries* to *Virgo* and a nocturnal half from *Libra* to *Pisces* is the astrological background for the numbers in the “house of light” and the “house of darkness.” Second, although such a system forms the background, one must assume that it was not known to the users of *4QZodiacal Physiognomy* who interpreted the references to the “house of light” and the “house of darkness” as a division of the spiritual character of a type of person. After all, if the ancient users had been familiar with this system, there would not have been much need to look for the diurnal and nocturnal division after they had counted backward from the moment of birth. The only new type of information would be the physiognomic description of the newborn on the basis of his moment of conception. Another option is that the ancient reader was not familiar with Manilius’ second system. But then the division of light and darkness could not have functioned as a marker in the text. One thus returns to the question of how the information in the text was to be found if the date of birth is not mentioned.

¹⁵⁵ See Chapter One. For “nativity,” see Gundel and Kehl, “Horoskop,” 600.

¹⁵⁶ See n. 98 above and the section on מולד (“horoscope”) in Chapter One.

tion of the method used by astrologers to establish the moment of conception on the basis of the sun's movement during pregnancy through the zodiacal circle, as described by Censorinus.¹⁵⁷

If, however, the key to understanding the astrological framework in *4QZodiacal Physiognomy* is not conception horoscopy, the interpretation of the words "house of light" and "house of darkness" as a reference to the variable diurnal and nocturnal decans becomes difficult to maintain. Schmidt's explanation for the number nine is entirely based on the combined assumptions that the horoscope is determined by the moment of conception and that twenty-seven decans equal a mean period of pregnancy. If these assumptions do not hold water, the reference to a typology of diurnal and nocturnal zodiacal signs as a third assumption loses its explanatory function.¹⁵⁸

MATTHIAS ALBANI: "THE FOOT OF *TAURUS*" ASCENDING ABOVE THE
HORIZON INTO LIGHT

Following Bergmeier, Albani has argued that the key to understanding the astrological character of *4QZodiacal Physiognomy* is the phrase "in the foot of *Taurus*" (ברגל השור). These words presuppose a partition of the zodiacal sign *Taurus*, and they indicate an exact localization in that sign. Instead of the moon, however, it is the horizon that functions as the dividing line between the different parts of the sign. The "house of light" and the "house of darkness" are related to cosmological rooms above and below the horizon, not to day and night. The "house of light" contains the parts of the zodiacal sign that have risen above the horizon, while the "house of darkness" refers to those parts that are still below the horizon.¹⁵⁹

Albani characterizes *4QZodiacal Physiognomy* as "a list or compilation of options for astrological interpretations systematically arranged according to certain astrological criteria." It is "an auxiliary astrological resource for creating horoscopic prognostications." More specifically, *4QZodiacal*

¹⁵⁷ The difference being that in *4QZodiacal Physiognomy* the number of twenty-seven decans guides the computations, whereas in the astrological method based on Censorinus' account the idea is to find the sun's place at the moment of conception in the left quartile with regard to its position on the date of birth (see also n. 137 above).

¹⁵⁸ In addition, Schmidt's choice for the second system described by Manilius is not arbitrary but necessary if one assumes that twenty-seven decans equal the mean period of pregnancy for explaining the actual numbers used in 4Q186 1 ii 7 and 4Q186 1 iii 9. If, for example, one assumes another arrangement according to which the zodiacal signs are alternately diurnal and nocturnal beginning from *Aries*, the result for someone conceived in the first decan of *Taurus* is three diurnal and six nocturnal decans and not the numbers given.

¹⁵⁹ Albani, "Horoscopes in the Qumran Scrolls." Cf. also Albani, "Horoscopes."

Physiognomy provides “the astrological possibilities of interpretation for the observed ascendant.”¹⁶⁰

The Ascendant Part of the Divided Zodiacal Sign

Albani calls his hypothesis for the astrological framework of *4QZodiacal Physiognomy* an ascendant interpretation. This one is preferable to solar and lunar interpretations, since neither of them “can offer a satisfactory explanation for the statements about the light-darkness ratio in connection with the astronomical position ‘in the foot of Taurus.’”¹⁶¹

A solar interpretation of *4QZodiacal Physiognomy* has difficulty accounting for “the foot of *Taurus*” (רגל השור) as a part of the constellation *Taurus*, because the sun cannot reach this area.¹⁶² One could propose instead that it refers to an ecliptical part of the zodiacal sign *Taurus*, but Albani makes two further objections against such a solar interpretation. First, he objects that in solar *zodiologia* the position of the sun is not further specified as being in a specific part of the zodiacal sign, and that only complete zodiacal signs are relevant. Second, a solar interpretation does not explain the relationship between the different light-darkness ratios and the positions of the sun in the zodiacal sign. This also counts for the lunar interpretation.¹⁶³ A solar interpretation seems unable to account for the realization of the numbers in the “house of light” and the “house of darkness,” but it is not true, as Albani states, that solar *zodiologia* disregard distinctions within a sign. There is clear evidence that a precise localization of the sun in a zodiacal sign was of significance.¹⁶⁴ In some Babylonian as well as Greek horoscopes the solar longitude in degrees of a zodiacal sign is provided.¹⁶⁵ As these data obviously cannot be derived from direct observation, one has to assume that calculations were made, or, more probably, that ephemeris tables or almanacs were available from which to retrieve the required data. There is abundant evidence for the existence of these kinds of texts for the Babylonian and Greco-Roman astronomical traditions,¹⁶⁶ but none are known from ancient Palestine.

¹⁶⁰ Albani, “Horoscopes in the Qumran Scrolls,” 309-10.

¹⁶¹ Albani, “Horoscopes in the Qumran Scrolls,” 305.

¹⁶² See n. 70 above.

¹⁶³ See n. 97 above. But Albani, “Horoscopes in the Qumran Scrolls,” 303 n. 79, 307 n. 87, admits the possibility that sun or moon are in conjunction with the ascendant.

¹⁶⁴ See Hübner, *Grade und Gradbezirke*.

¹⁶⁵ See Rochberg, “Babylonian Horoscopes,” 65-67, 97-81, 83-85; Jones, *Astronomical Papyri*, 1:47; 2:374-77, 382-83, 416-17.

¹⁶⁶ See A. Jones, “Studies in the Astronomy of the Roman Period II: Tables for Solar Longitude,” *Centaurus* 39 (1997): 211-29; Rochberg, *Babylonian Horoscopes*, 8-9; Jones, *Astronomical Papyri*, 1:281; 2:191, 199; Rochberg, *The Heavenly Writing*, 145-63.

Like Bergmeier, Albani uses the Rhetorius-Teucer text as an important key text for his interpretation. In this text the enumeration of the nine parts of the zodiacal sign *Taurus* indicates the successive rising of the ecliptical parts of that sign,¹⁶⁷ imagined as the limbs of the sign. The aspect of rising is an important clue for understanding the astrological framework of *4QZodiacal Physiognomy*. Albani proposes that the words ברגל השור (“in the foot of *Taurus*”) are a reference to the ascendant, i.e. that ecliptical part of the zodiacal sign *Taurus* rising above the eastern horizon at the time of birth. It takes approximately two hours before the entire 30° section has entirely risen above the horizon. This means that during the time of ascension an ever-greater part appears above the horizon, leaving an ever-smaller part below the horizon.

Using a text such as that of Rhetorius-Teucer, which divides the sign *Taurus* into nine parts, an ancient astrologer could, in theory, count which parts of the sign had risen above the horizon and which parts still remained below the horizon. According to Albani, if the ascendant is “in the foot of *Taurus*” that means that this part is rising from below the eastern horizon. In the ascendant interpretation it is the ascendant, not the sun or the moon, which divides the rising zodiacal sign into parts of light and darkness. This explains the numbers assigned to the “house of light” and the “house of darkness” in 4Q186 1 ii 7-8. Six ecliptical parts of the sign *Taurus* have risen above the horizon, while three parts are still below the horizon. At the moment of birth six parts of *Taurus* were “in the house of light,” while three parts were still “in the house of darkness.” Consequently, Albani takes the zodiacal sign as the object of reference of רְוַח לוֹ: “it has a space (in the house of light of six [parts], and three in the house of darkness).” He prefers this reading because, contrary to the reading רִיחַ (“spirit”), it allows an astrological interpretation of the division of light and darkness in *4QZodiacal Physiognomy* without necessarily invoking the theological anthropological background of the *Two Spirits Treatise* in 1QS 3:13-4:26.¹⁶⁸

*“House of Light” and “House of Darkness” as Cosmological Rooms
above and below the Horizon*

According to the ascendant interpretation, the “house of light” denotes the part above the horizon while the “house of darkness” refers to the area below

¹⁶⁷ This is expressed by the use of the verb ἀνατέλλω (“to rise”). For *Taurus*, see CCAG 7.197.24 (cf. n. 84 above). For the importance of establishing the rising degree of the zodiacal sign at the moment of birth, see n. 25 above.

¹⁶⁸ Albani, “Horoscopes in the Qumran Scrolls,” 285, 308-9, 312. Cf. n. 92 above. For Albani’s previous position on this matter and on *4QZodiacal Physiognomy* in general, see Albani, “Der Zodiakos in 4Q318,” 7-8, 40; Albani, *Astronomie und Schöpfungsglaube*, 343 n. 262.

the horizon. Such an understanding is supported by Greco-Roman astrological texts that show that the area above the horizon was associated with light and the area below the horizon with darkness.

Albani seeks confirmation for his interpretation of the “house of light” and the “house of darkness” in a commentary by the Greek astronomer Hipparchus on the third-century BCE poem *Phenomena* by Aratus. Hipparchus comments on a section in which Aratus describes how some zodiacal constellations rise in the east while others set in the west. The relevant comment is in a passage in the section describing the rising of *Cancer* where Aratus says:

No more will *Bootes* bulk large above and below the horizon, the lesser part being ‘day,’ and the greater already in darkness.¹⁶⁹

Hipparchus explains:

‘day’ signifies the part of the cosmos above the earth, and ‘night’ the part below the earth.¹⁷⁰

Albani concludes, therefore, that “the phrases ‘house of light/darkness’ [...] are related to the cosmological rooms above and below the horizon.”¹⁷¹

In addition to these texts adduced by Albani, one can also point to the section in the *Tetrabiblos* on determining the length of a person’s life. Here Ptolemy discusses which places are vital for a planet to be positioned in with regard to obtaining lordship. In this context he states that:

the whole region below the earth must, as is reasonable, be disregarded when a domination of such importance is concerned, except only those parts which in the ascendant sign itself are coming into the light.¹⁷²

I suggest that this passage supports the ascendant hypothesis in two important ways. First, it corroborates the idea that the separate ecliptical parts of a zodiacal sign are important to take account of in an astrological procedure. Second, as the area “below the earth” (ὑπὸ γῆν) is disregarded except for those parts of the zodiacal sign that are rising above the horizon into the area of light, Ptolemy, by extension, evidently designates the part “above the earth” (ὑπὲρ γῆν) as an area of “light” (φῶς). In another passage

¹⁶⁹ Aratus, *Phenomena* 579-580. Translation, slightly adapted, from D. Kidd (ed.), *Aratus: Phaenomena* (CCTC 34; Cambridge: Cambridge University Press, 1997), 114-15, 382. Cf. also 575-76 where the upper parts of a setting constellation are described as moving into the night, and 581-82 where Aratus says of the setting *Bootes* that it is “satiated with light” (φάεος κορέσεται).

¹⁷⁰ Hipparchus, *Commentary on Aratus and Eudoxus* 2.2.15.

¹⁷¹ Albani, “Horoscopes in the Qumran Scrolls,” 308.

¹⁷² Ptolemy, *Tetrabiblos* 3.11.4. Cf. Hephaestion, *Apotelesmatica* 2.11.19.

Ptolemy states that a zodiacal sign is diurnal if it is above the earth, and nocturnal if it is below the earth.¹⁷³

In addition, Albani puts forward that the interpretation of cosmological areas is supported by the spatial notion suggested by the use of “house” (בֵּית) in *4QZodiacal Physiognomy*. Here it is interesting, I suggest, to refer to the use of *bītu* (“house”) in cuneiform texts in the phrase *bītu niširti* (“house of the secret”), which is also found in a number of Babylonian horoscopes. This concept is identified as a forerunner of the Greek astrological theory of exaltations (ὑψώματα), according to which the planets hold a special influence in certain parts of the zodiacal signs. The difference is that in cuneiform texts the place of influence is referred to as the entire zodiacal constellation or sign, not a specific part of it. Also, the *bītu niširti* refers to the place or region in which a planet’s position causes auspicious omens, but this is not exactly the same as the exaltation referring to a planet’s greater planetary influence. The word *bītu* (“house”) was originally used in the term *bītu niširti* as a reference to the general region of a constellation in the sky, but in horoscope texts it seems to be a reference to a zodiacal sign. Its spatial notion is, nonetheless, clearly attested.¹⁷⁴

With regard to 4Q186 1 ii, the ascendant interpretation succeeds in explaining the realization of the specific numbers in the “house of light” and the “house of darkness” in connection with an astrological explanation for the words “in the foot of *Taurus*.” Taking the words “the second column” (הַעֲמֹד הַשֵּׁנִי) to refer to *Taurus* as the second zodiacal sign, the idea of a division of the sign makes it possible that different physiognomic types were classified under the zodiacal sign *Taurus*, and other signs. These types of people corresponded to the various divisions of the signs.

The implication of the ascendant interpretation for *4QZodiacal Physiognomy* is that it presupposes that different parts of the zodiacal sign influence the shape and appearance of the human body. Albani, therefore, suggests that “the idea seems to be that one obtains a more differentiated physiognomic classification by dividing the zodiacal sign – in other words, not only twelve but 9 x 12 physiognomic types.”¹⁷⁵

This notion finds support, I suggest, in a remark by the Skeptic philosopher Sextus Empiricus (second century CE). An important argument brought forward against astrology in antiquity was that people born under the same sign had different fates (the case of twins is a classic example).¹⁷⁶

¹⁷³ Ptolemy, *Tetrabiblos* 3.11.20. This variable system is not to be confused with Ptolemy’s account of diurnal and nocturnal zodiacal signs in *Tetrabiblos* 1.13.

¹⁷⁴ See Rochberg-Halton, “Elements of the Babylonian Contribution,” 53-57; Koch-Westenholz, *Mesopotamian Astrology*, 134-35; Rochberg, *Babylonian Horoscopes*, 46-50.

¹⁷⁵ Albani, “Horoscopes in the Qumran Scrolls,” 312.

¹⁷⁶ For this and other arguments against astrology in antiquity, see Chapter Five n. 55.

Similarly, Sextus argued that those born in the same sign of the zodiac are not similar in shape or character, unless, he added, the proponents of astrology say that the degrees and minutes into which each sign is divided are capable of causing these differences.¹⁷⁷ Despite Sextus' criticism, his remark shows that the different parts and subdivisions of the zodiacal signs could be taken into account to explain physical and psychological differences between people born under the same zodiacal sign. That the separate degrees of the signs were indeed thought to be decisive for people's fates is demonstrated by different astrological systems.¹⁷⁸ With regard to *4QZodiacal Physiognomy* this means that different physiognomic types of people could belong to one zodiacal sign, viz. each corresponding to one of its different divisions.¹⁷⁹

4QZodiacal Physiognomy (4Q186) and Casting Horoscopes at Qumran

Albani classifies *4QZodiacal Physiognomy* as a text that is structured according to astrological criteria. As such it was an auxiliary text for creating horoscopic predictions concerning people's fates and physical appearance. He provides some suggestions regarding practical requirements for the use of a text like *4QZodiacal Physiognomy*, and he addresses the question of whether the text was actually used for casting horoscopes.

Practical usage of *4QZodiacal Physiognomy* would have required knowledge of the rising times of the zodiacal signs, either by computation or observation. If the text lists data for each ascending part of the zodiacal signs, one needs to know which parts are ascending at what time. According to Albani, this required computational competence by someone at Qumran to determine the rising times.

The rising times are an indication of the number of degrees, or arcs, of the equator that cross the horizon of a given geographical latitude simultaneously with the consecutive signs of the zodiac. The rising times of the zodiacal signs are connected with the length of daylight and vary accordingly during the year due to the angle of the ecliptic in relation to the eastern horizon. The computations must take the vernal equinox, the point on the ecliptic at which the length of both day and night is equal, as their start-

¹⁷⁷ Sextus Empiricus, *Against the Professors* 5.99. As a critic of astrology, Sextus Empiricus concluded that astrologers could never determine exactly the ascendant or degree of the zodiacal sign rising at the moment of people's birth. He ridiculed the impossibility of exact observations, ignoring the largely non-observational character of astrology. See *Against the Professors* 5.27-28, 68-72, 74, 80-85. Cf. E. Spinelli, "Sesto Empirico e l'astrologia," in *Traditions of Theology: Studies in Hellenistic Theology, Its Background and Aftermath* (eds. D. Frede and A. Laks; PhA 89; Leiden: Brill, 2002), 239-73.

¹⁷⁸ Cf. Gundel and Böker, "Zodiakos," 563-66.

¹⁷⁹ Cf. Chapter One n. 94.

ing point.¹⁸⁰ From sunrise to sunset the sun travels half a circle, i.e. 180°. If at a certain moment of the year the sun is known to be at the beginning of a zodiacal sign, this means that between sunrise and sunset six signs, or 180°, have crossed the eastern horizon. Depending on the length of daylight, which depends on the sun's position in the ecliptic in relation to the equator, the signs of the zodiac rise quickly or slowly. Importantly, computations apply only to particular geographical latitudes.¹⁸¹

But Albani notes that “records of such relatively sophisticated computations are not attested in the Qumran texts.”¹⁸² He suggests that a possible clue to the practice of actual observation of the heavens might be found in a stone disc excavated from the settlement of Khirbet Qumran.¹⁸³ Albani has interpreted this object as a sundial, but this identification, as well as how it works, is, at the moment, far from clear.¹⁸⁴

Albani draws the conclusion that, thus far, “there is no clear proof [...] for observing or computing the rising times of the zodiacal signs at Qumran,” although “if the ascendant-interpretation is correct, this would be the

¹⁸⁰ In antiquity opinions differed as to the exact point of the ecliptic at which the vernal equinox was thought to occur. In Babylonian astronomy the vernal equinox was placed either at 10° *Aries* (System A) or 8° *Aries* (System B). In Greek astronomy the vernal equinox was placed either at 0° *Aries*, 8° *Aries*, or 15° *Aries* (10° *Aries* and 12° *Aries* being isolated occurrences). The position of the vernal equinox at 0° *Aries* is related to the discovery of precession, while the placement of the vernal point at 15° *Aries* has to do with calendrical considerations to have the equinox on the fifteenth day of a given month (this is also attested in Babylonian tradition). See Neugebauer, *HAMA*, 368-69, 593-600.

¹⁸¹ See Geminus, *Introduction to Phenomena* 7.9-11. Cf. n. 26 above.

¹⁸² Albani, “Horoscopes in the Qumran Scrolls,” 310.

¹⁸³ Locus 45, object 1229: “disque de pierre,” see J.B. Humbert and A. Chambon (eds.), *Fouilles de Khirbet Qumrân et de Ain Feshkha I: Album de photographies, Répertoire du fonds photographique, Synthèse des notes de chantier du Père Roland de Vaux OP* (NTOA.SA 1, Fribourg, Switzerland: Éditions Universitaires and Göttingen: Vandenhoeck & Ruprecht, 1994), 308.

¹⁸⁴ Albani, “Horoscopes in the Qumran Scrolls,” 310 n. 97; U. Gleßmer and M. Albani, “An Astronomical Measuring Instrument from Qumran,” in *The Provo International Conference on the Dead Sea Scrolls: Technological Innovations, New Texts, and Reformulated Issues* (eds. D.W. Parry and E. Ulrich; STDJ 30; Leiden: Brill, 1999), 407-42; M. Albani and U. Gleßmer, “Un instrument de mesures astronomiques à Qumrân,” *RB* 104 (1997): 88-115. See furthermore Pfann, “Writings in Esoteric Script,” 186, 188-90; G.M. Hollenback, “The Qumran Roundel: An Equatorial Sundial?,” *DSD* 7 (2000): 123-29; B. Thiering, “The Qumran Sundial as an Odometer Using Fixed Lengths of Hours,” *DSD* 9 (2002): 347-63; Ben-Dov, “Initial Stages of Lunar Theory,” 134 n. 28; G.M. Hollenback, “More on the Qumran Roundel as an Equatorial Sundial,” *DSD* 11 (2004): 289-92.

For more general discussions of sundials, see S.L. Gibbs, *Greek and Roman Sundials* (YSHSM 11; New Haven: Yale University Press, 1976); R.R.J. Rohr, *Sundials: History, Theory, and Practice* (trans. G. Godin; New York: Dover Publications, 1996). For Vitruvius' first century BCE book on sundials and clocks, see J. Soubiran (ed.), *Vitruve: De l'architecture, Livre 9* (Budé; Paris: Les Belles Lettres, 1969), 2-36. Cf. I.D. Rowland and T.N. Howe (eds.), *Vitruvius: Ten Books on Architecture* (Cambridge: Cambridge University Press, 1999), 107-18, 281-91; I.K. McEwen, *Vitruvius: Writing the Body of Architecture* (Cambridge, Massachusetts: MIT Press, 2003), 229-50.

prerequisite for the practical use of a zodiacal text like 4Q186.¹⁸⁵ From this lack of evidence it seems that *4QZodiacal Physiognomy* did not have a practical function in a horoscopic practice in the Qumran community.

In Albani's argumentation the issues of actual observation and computational competence figure prominently. However, I think it is important to point out that lack of evidence for either of them does not necessarily mean that a horoscopic practice could not have taken place. Rather than actually observing, most astrologers would have depended on computations. Neugebauer pointed out that ancient astronomy is overwhelmingly mathematical:

Both Babylonian and Greek astronomy are based on a set of relatively few data, like period relations, orbital inclinations, nodes and apogees, etc. The selection of these data undoubtedly required a great number of observations and much experience to know what to look for. Nevertheless, a mathematical system constructed at the earliest possible stage of the game was generally no longer systematically tested under modified conditions.¹⁸⁶

The results of these computations were at hand in almanacs and ephemerides.¹⁸⁷ No individual astrologer had to calculate for himself the positions of the luminaries, the planets, and the ascendant; quite the contrary. Unfortunately, no evidence of such records has been found at Qumran. But in this case Albani rightly remarks that this silence on the part of the sources does not mean that Jewish users of texts like *4QZodiacal Physiognomy* had no access to such resources from their Hellenistic environment.¹⁸⁸ So the possibility that the rising times of zodiacal signs were used in a horoscopic practice at Qumran cannot be ruled out.

Besides the possibility of almanacs and ephemerides with the zodiacal rising times, one need not even assume a real understanding of the matter. Reference has already been made to Hipparchus' comment that some of his contemporary astronomers did not fully grasp this complicated concept.¹⁸⁹ Moreover, many astrological texts from antiquity have been transmitted that are worthless and useless from an astronomical perspective.¹⁹⁰ Astrological

¹⁸⁵ Albani, "Horoscopes in the Qumran Scrolls," 311. Although there is no evidence for the observation or computation of the zodiacal rising times, it is perhaps possible that observation of the phases of the moon is indicated by 4Q317 (*4Qcrypt Phases of the Moon*), see Dubs, "4Q317 et le rôle de l'observation de la Pleine Lune."

¹⁸⁶ Neugebauer, *HAMA*, 14.

¹⁸⁷ Rochberg, *Babylonian Horoscopes*, 7-11; Rochberg, *The Heavenly Writing*, 105.

¹⁸⁸ Albani, "Horoscopes in the Qumran Scrolls," 295.

¹⁸⁹ Cf. n. 27 above.

¹⁹⁰ Regarding, for example, the issue of planetary visibility, Neugebauer, *HAMA*, 830-31, states that "most of the data found in the popular literature or in the astrological treatises have no theoretical background whatsoever and probably often enough not even an observational basis." In a more condescending tone, *HAMA*, 943: "Astrology is a dogmatic discipline, following a strict ritual in combining certain data without worrying how reliable these data were. This attitude is reflected in the fact that astrologers for centuries used arithmetical

handbooks such as the *Anthology* of Vettius Valens (second century CE) or the *Mathesis* of Firmicus Maternus have been transmitted for centuries. Although Vettius Valens refers explicitly to Hypsicles' *On the Ascendant*,¹⁹¹ it is doubtful whether he really used the mathematical principles. He seems unaware of inconsistencies in the different doctrines that he had inherited from his predecessors and confuses data regarding the rising times for different *climata*. Firmicus Maternus exhibits the same unawareness and confusion when he lists the rising times of the zodiacal signs for the different *climata* in *Mathesis* 2.11 and assigns the same values to Babylon and Alexandria.¹⁹² Despite these apparent astronomical shortcomings, these texts were, nonetheless, transmitted, so astronomical validity is perhaps not a good criterion for deciding on their usefulness.

With regard to *4QZodiacal Physiognomy*, this means that the text's astronomical background of zodiacal rising times need not have been understood or even be astronomically correct for people to have somehow made use of it. An illustrative example may be found in astrological practices in present-day India. According to traditional schools of astrologers, which have a limited membership, the ascendant is decided by divination.¹⁹³ A girl throws stones on a diagram to determine the ascendant. For the traditional schools it seems to be entirely beside the point whether in actuality this was people's birth ascendant. Of course, they believe that this is so. But they are rivaled by new schools of astrologers, open to everybody, that make use of modern resources like computers to determine the ascendant exactly in terms of modern astronomy and to point out the mistakes of the traditional way. Regardless of these modern developments, which have much to do with the democratization of astrology as a profession in the villages, this example vividly demonstrates how horoscopy could be practiced without a "real" anchor in astronomy.¹⁹⁴

models, e.g. for planetary positions or for determining the length of daylight, which were long superseded by more accurate procedures. No astrologer cared about the reliability of the basic parameters of his planetary tables."

¹⁹¹ Vettius Valens, *Anthology* 3.13.8. For the text, see D. Pingree (ed.), *Vettius Valens: Anthologiae* (Teubner; Leipzig: B.G. Teubner, 1986), 149.8.

¹⁹² Cf. Neugebauer, *HAMA*, 719, 729, see also 823-24, 953-54. As to the practical astrological value, Tester, *A History of Western Astrology*, 142, emphasizes that "although Firmicus' work is long and very detailed, if confusing, nobody could actually have practiced astrology with only the *Mathesis* to hand. To use the book at all one would have needed to be expert, to sort out his muddles; or unprincipled or stupid enough to ignore them."

¹⁹³ A fragmentary Greek magical papyrus gives a hint of astrological divination from antiquity, see *PGM* CX.1-12. Cf. H.D. Betz, *The Greek Magical Papyri in Translation, Including the Demotic Spells* (Chicago: University of Chicago Press, 1996), 312.

¹⁹⁴ See G. Tarabout, "Pratiques astrologiques, double autorité textuelle (monde indien)," paper read at the CNRS Symposium *Divination et écriture, écriture de la divination*, Paris, December 10, 2005. The proceedings are to be published by J.-J. Glassner.

MODIFICATIONS OF AND FURTHER ADDITIONS TO ALBANI'S ASCENDANT
INTERPRETATION

From the foregoing discussion it has become apparent that Albani's ascendant interpretation comes closest to coherently explaining the different elements in *4QZodiacal Physiognomy* against an astrological background and in accordance with notions from Greek astrology.

The words "in the foot of *Taurus*" (ברגל השר) refer to a certain part of the sign *Taurus*, and reflect the notion of a division of the zodiacal signs into different parts. The terminology "house of light" (בית האור) and "house of darkness" (בית החושך) has a spatial sense, referring to the hemispheres above and below the horizon. The realization of the numbers assigned to them is a result of the ascendant being in a part of the zodiacal sign, dividing it into parts above and below the earth.

Despite the fact that the ascendant interpretation is the most convincing possibility, it is evident, from the understanding of the textual structure of *4QZodiacal Physiognomy* and the relationship between physiognomics and astrology in Chapters One and Two, that I cannot agree with Albani's characterization of the text as an astrological one structured according to astrological criteria. *4QZodiacal Physiognomy* does not provide physiognomic descriptions on the basis of astrological possibilities. It is the other way around. The text gives astrological information on the basis of the physiognomic descriptions. The fact that astrological data have not governed the way in which the information in *4QZodiacal Physiognomy* has been processed and catalogued makes it unlikely that the text functioned in a horoscopic practice at Qumran. That is, it could not be used to look up the physiognomic possibilities for an individual after the astrologer knew the exact section of a rising zodiacal sign, as with the Greek *zodiologia*.

This different assessment of the character of *4QZodiacal Physiognomy*, however, does not weigh against the plausibility of the ascendant interpretation with regard to the sense of certain terminology in the text and the astrological concepts it reflects. On the contrary, the ascendant interpretation helps to understand the nature of the astrological matters that are signified by the human body according to *4QZodiacal Physiognomy*. But a few modifications and additions must be made.

"The Foot of Taurus" in the "House of Light"

The ascending part of the zodiacal sign is counted as still belonging to the "house of darkness," below the earth. As Albani says: "the 'feet of Taurus' are in the act of leaving the 'house/pit of darkness.'"¹⁹⁵ This interpretation

¹⁹⁵ Albani, "Horoscopes in the Qumran Scrolls," 307.

results in an exact match between the numbers in *4QZodiacal Physiognomy* and the division of *Taurus* in the Rhetorius-Teucer text. There the “feet” (πόδες) of *Taurus* are listed as the seventh element of a list that enumerates nine sections for *Taurus*.¹⁹⁶ If one assumes that the “foot” (רגל) in *4QZodiacal Physiognomy* is equivalent to the “feet” (πόδες) in Rhetorius-Teucer, the 6:3 division in *4QZodiacal Physiognomy* implies that the “foot” (רגל), being the seventh element, belongs in the “house of darkness.”

However, from an astrological perspective such a classification does not make sense. Ptolemy, in the statement regarding the importance of those parts of the ascendant sign that are coming into the light, makes clear that the parts of the sign below the earth are to be ignored.¹⁹⁷ It makes more sense to regard the “foot of *Taurus*” (רגל השור) part as belonging to the area above the earth (ὑπὲρ γῆς) in Ptolemy’s terminology and in the “house of light” (בית האור) in the terminology of *4QZodiacal Physiognomy*. It is almost a tautology to state that the ascendant, as that point of the ecliptic or part of the sign that is rising above the eastern horizon, belongs to the area above the earth, in the “house of light.” This means that there is not an exact match between the data in *4QZodiacal Physiognomy* and Rhetorius-Teucer. Assuming the division in the latter text and counting the position “in the foot of *Taurus*” as belonging to the “house of light” results in a different division of light and darkness; seven in the “house of light” and two in the “house of darkness,” numbers not given in 4Q186 1 ii 7-8. This suggests a different division of *Taurus* in *4QZodiacal Physiognomy*.

Albani suggests that the entire text of *4QZodiacal Physiognomy* could have contained one hundred and eight physiognomic types. According to his interpretation this means that it is perfectly possible that the complete text of *4QZodiacal Physiognomy* contained entries with a division of nine parts in the “house of darkness” and zero parts in the “house of light,” but not vice versa.¹⁹⁸ This is problematic. If one part of a zodiacal sign must at least be visible on the eastern horizon for it to radiate its influence, this excludes the possibility of all zodiacal parts being assigned to the “house of darkness.” The other way around, however, viz. the last part being the ascendant and therefore all parts of the sign being in the “house of light,” makes sense from an astrological perspective. But this would then concern

¹⁹⁶ CCAG 7.197.26. See also n. 84 above.

¹⁹⁷ See n. 172 above.

¹⁹⁸ On the one hand, the first part of the ascending zodiacal sign, for example the head of *Taurus*, is regarded as belonging to the “house of darkness” because it is in the act of leaving the area below the horizon. On the other hand, it is not possible for all the parts of the sign to be above the earth in the “house of light”, because the last ascending part must be regarded as being below the earth and leaving the “house of darkness.” If all signs have nine parts this means that there are nine possible divisions between the “house of light” and the “house of darkness”, resulting in Albani’s hundred and eight physiognomic types.

types of people connected with entire zodiacal signs, which seems unlikely in a text dealing with divisions of the signs. So if the last parts were ignored – this is pure speculation – then there would be ninety-six physiognomic types in the text at an average of nine parts per sign; if not, then there would be one hundred and eight.

Melothesia and Dodecatemoria in 4QZodiacal Physiognomy (4Q186)

It is worthwhile to have a closer look at the sort of text the tenth section of the Rhetorius-Teucer text represents. This section concerns the partition of the zodiacal sign into several ecliptical parts of longitudinal degrees referred to as the sign's body parts. In the case of *Taurus*, however, Albani correctly states that the schematic distribution of the limbs of *Taurus* contradicts the representation of the zodiacal constellation, which is imagined as a halved animal.¹⁹⁹ In addition, the constellation *Taurus* rises backwards and not head first.²⁰⁰

This raises the question as to the exact sense of the division of the zodiacal signs in the tenth section of the Rhetorius-Teucer text where *Taurus* is a whole animal, rising head first. One possible explanation is this text, or its *Vorlage*, followed an older iconographic example, perhaps Egyptian, in which *Taurus* was represented as a whole animal.²⁰¹ But Neugebauer suggests another explanation.

In a short article Neugebauer discusses an astrological tradition he found in two Vatican codices in which the concept of *dodecatemoria* has been mixed with another astrological concept, namely that of *melothesia*.²⁰² He illustrates the general scheme of this particular astrological tradition with the sign of *Cancer*. Twelve places in this sign are associated with different parts of the body, and the numbers in degrees for each part show alternating differences of 2 and 3:

2°	head	17°	left claw
5	face	20	back

¹⁹⁹ Albani, "Horoscopes in the Qumran Scrolls," 303 n. 78. See nn. 69 and 151 above.

²⁰⁰ Cf. n. 152 above. This is also acknowledged in the Rhetorius-Teucer text: "it rises from its hinder parts, setting straight, belonging for the most part in the invisible cosmos and looking south" (ἀνατέλλων ἐκ τῶν ὀπισθίων μερῶν, δύνων ὀρθῶς, οὗ τὸ πλεῖον μέρος ἐν τῷ ἀφανεῖ κόσμῳ κείται, ἀποβλέπον εἰς τὸν νότον, CCAG 7.196.21-23).

²⁰¹ See Boll, *Sphaera*, 395 n. 3; Gundel and Böker, "Zodiakos," 560. In ancient iconography *Taurus* is primarily represented as a whole animal. For images, see Gundel, *Zodiakos*, 69-70, 161-63, 174, 205, 211, 231. Cf. also the fourth- to sixth-century CE synagogue zodiac mosaics from Beth ʿAlpha, Hammath Tiberias, and Naʿaran in R. Hachlili, *Ancient Jewish Art and Archaeology in the Land of Israel* (HdO: Siebente Abteilung: Kunst und Archäologie 1/2B4; Leiden: E.J. Brill, 1988), 304.

²⁰² O. Neugebauer, "Melothesia and Dodecatemoria," *AnBib* 12 (SBO 3, *OrAnt*; Rome: Pontificio Istituto Biblico, 1959), 270-75. I owe this reference to Professor Hübner. For *dodecatemoria* see n. 37 above, and for *melothesia* see Chapter Two n. 218.

7	mouth	22	abdomen
10	shoulder blades	25	hands
12	throat	27	feet
15	right claw	30	haunches ²⁰³

Neugebauer suggests that this is the result of leaving out in every second case the fraction 1/2 in an original sequence of 2 1/2, 5, 7 1/2, 10, 12 1/2, and so on up to 30. This original sequence represents the concept of *dodecatemoria* dividing each sign of the zodiac into twelve equal parts of 2;30°.

As for the parts of the body that are associated with each twelfth section, Neugebauer argues that this connection forms “a curious mixture of the well-known zodiacal ‘melothesia’ and specific features of the constellation in question,” representing however “purely astrological speculation without any contact with astronomical reality.”²⁰⁴ In the twelfth divisions of the zodiacal signs, an attempt is made to integrate certain features of the zodiacal constellations, thereby modifying the partition somewhat. For example, the two so-called bi-corporeal signs, *Gemini* and *Pisces*, are divided into two sequences each. Also, constellational parts like *Heart of Leo*, *Ear of Corn* of *Virgo*, and *Bow* of *Sagittarius* are given longitudinal degrees that do not correspond astronomically with the constellation. The *Heart of Leo* is at 10° longitude, whereas according to Ptolemy’s star it (α Leo) has a longitude of 2;30°. ²⁰⁵ The list also assigns *Virgo’s Ear of Corn* to 10° longitude, while Ptolemy gives a longitude of 26;40° for *Spica* (α Vir).²⁰⁶ In the case of *Sagittarius* the list assigns the *Bow* to 15° longitude, but in the *Almagest* this part of the constellation has a longitude between 6;40° and 9° (δ , ϵ , λ , and μ Sgr).²⁰⁷

Neugebauer suggests that this peculiar astrological tradition that combines *dodecatemoria* and *melothesia* forms the ultimate source of the tenth section in the Rhetorius-Teucer text on the division of the zodiacal signs. He takes the division of *Taurus* as an example and concludes:

Obviously the compiler of this list (Rhetorius? or Teucros?) no longer understood that he was dealing with rounded dodecatemoria. Thus he changed the numbers, adopting the scheme ‘from *a* to *b*, from *b* + 1 to *c*, from *c* + 1 to *d*’ etc., thus reducing their number to nine. Furthermore, he

²⁰³ Neugebauer, “Melothesia and Dodecatemoria,” 270. This scheme is only correctly preserved for the signs *Cancer*, *Capricorn*, and *Aquarius*. In other instances scribal errors have altered this underlying format. Cf. the tables on 271, 273.

²⁰⁴ Neugebauer, “Melothesia and Dodecatemoria,” 272. Cf. Boll, *Sphaera*, 395: “eine von aller astronomischen Richtigkeit gänzlich entfernte Phantasieschöpfung, in der die Sternbilder des Tierkreises in höchst willkürlicher Weise nach dem Prokrustesbett der je 30 Grade umfassenden Zeichen verzerrt werden.”

²⁰⁵ Cf. Neugebauer, “Melothesia and Dodecatemoria,” 271; Ptolemy, *Almagest* 7.5[.26].

²⁰⁶ Cf. Neugebauer, “Melothesia and Dodecatemoria,” 271; Ptolemy, *Almagest* 7.5[.27].

²⁰⁷ Cf. Neugebauer, “Melothesia and Dodecatemoria,” 273; Ptolemy, *Almagest* 8.1[.29].

did not understand the purpose of this list and simply took it as a list of consecutively rising parts.²⁰⁸

The original purpose of the text would presumably have been to inform which (rounded) dodecatemorial sections were deemed to hold authority over each part of the human body. In the Rhetorius-Teucer text this was apparently no longer understood. The described body parts were transferred from referring to the human body to the members of the zodiacal signs. The list was understood to give an account of the consecutively rising limbs of these signs. This also explains why *Taurus* is imagined as a whole animal, rising head first.

The astrological tradition that combines *melothesia* and *dodecatemoria* suggests that the difference noted above between the division of *Taurus* in Rhetorius-Teucer and in *4QZodiacal Physiognomy* may be due to different trajectories of transmission. Although it is evident that there are differences between textual traditions with regard to the exact division, the basis is the same.

There is another example of this astrological tradition. In *Mathesis* 8.4.1-13, Firmicus Maternus provides a division of the twelve zodiacal signs. He also regards the different (longitudinal) sections as the body parts of the signs:

Now, I will endeavor to teach you which degrees you must seek in which parts of the zodiacal signs. For all 30° are divided across all the bodies of the zodiacal signs.²⁰⁹

Neugebauer apparently did not know of this passage, but it fits the same pattern as that in the Vatican codices and in the Rhetorius-Teucer text.²¹⁰ It is evident that the system of rounded *dodecatemoria* originally must have been the basis for the partition. The exact scheme has not been preserved in any of the divisions, probably because of scribal errors due to the many numbers used. In the case of *Sagittarius*, for example, the alternating differences of 2 and 3 are maintained until the eleventh part of 26°-27°, resulting in a total of thirteen parts.²¹¹ In the cases of *Aries*, *Gemini*, *Libra*, *Capricorn*, and probably *Aquarius* the original number of twelve parts has been preserved, but the alternating scheme of 2 and 3 has been disturbed.²¹² Furthermore, as in the Vatican codices presented by Neugebauer, Firmicus Maternus divides the bi-corporeal signs *Gemini* and *Pisces* into two se-

²⁰⁸ Neugebauer, "Melothesia and Dodecatemoria," 274.

²⁰⁹ Firmicus Maternus, *Mathesis* 8.4.1.

²¹⁰ Although Albani, "Horoscopes in the Qumran Scrolls," 327, mentions this passage in Firmicus Maternus, he does not elaborate the relationship with Rhetorius-Teucer in the way set out here. Cf. also Hübner, "Δωδεκατημόριον," 198 n. 54.

²¹¹ Firmicus Maternus, *Mathesis* 8.4.9.

²¹² Firmicus Maternus, *Mathesis* 8.4.1, 3, 7, 10, 11.

quences.²¹³ But this is not the case in Rhetorius-Teucer,²¹⁴ which demonstrates that there were different traditions in which the concepts of *dodecatemoria* and *melothesia* were mixed. The following example for *Taurus* from Firmicus Maternus is illustrative:

[Division of *Taurus*.] 1° and 2° are in the horns of *Taurus*, 3°, 4°, and 5° in the whole face, 6° and 7° in the back part of the neck, 8°, 9°, and 10° in the forehead, 11° and 12° in the heart, 13°, 14°, and 15° in the shoulders, 16° and 17° are assigned to the forefeet of *Taurus*, 18°, 19°, and 20° in the belly, 21° in the knees, 22°, 23°, 24°, and 25° in the hinder feet, 26° and 27° are in the genital parts of *Taurus*. In the haunch are 28° and 29°, in the tail is found 30°. Such is the number of parts divided across the whole body of *Taurus*.²¹⁵

It is evident that the division of *Taurus* in Firmicus Maternus is not the same as in the Rhetorius-Teucer text.²¹⁶ Common to both, however, is the image of *Taurus* as a whole animal. In both texts it was no longer understood that the dodecatemorial sections held influence over various parts of the human body (*melothesia*). The enumerated body parts were transferred from referring to the human body to referring to the imagined body of the zodiacal signs. It is evident that in Firmicus Maternus the two concepts of *dodecatemoria* and *melothesia* have been merged, just as in Rhetorius-Teucer and the two Vatican codices.

I suggest that *4QZodiacal Physiognomy* belongs to a similar astrological tradition in which the concepts of *dodecatemoria* and *melothesia* were merged together. According to the division of *Taurus* in this text, “the foot of *Taurus*” (רגל השור) in 4Q186 1 ii was the sixth section of nine that ascended above the horizon, into the “house of light.” The words “foot of *Taurus*” (רגל השור) seemingly indicate one of the limbs of the zodiacal sign. Whereas the dodecatemorial part behind it originally controlled both or one of the feet of the human body, it is now understood as that body part of the zodiacal sign and influencing the shape and appearance of the entire human body. If this interpretation is correct, *4QZodiacal Physiognomy* provides important, although very implicit, evidence for the antiquity of this astrological tradition.²¹⁷ This background makes clear that not all signs were divided into nine sections and also that there were different divisions for the same sign so that there was no fixed set of divisions for the zodiacal signs in ancient astrology.

²¹³ Firmicus Maternus, *Mathesis* 8.4.3, 12-13.

²¹⁴ See CCAG 7.199.8-12; 212.3-5.

²¹⁵ Firmicus Maternus, *Mathesis* 8.4.2.

²¹⁶ But note that Rhetorius-Teucer locates the feet in 22°-24°, while Firmicus Maternus gives 22°-25° as the position.

²¹⁷ The manuscript is dated to the end of the first century BCE and the beginning of the first century CE. For Teucer’s date, see n. 77 above.

The different texts discussed are rooted in the same astrological tradition that merged *melothesia* and *dodecatemoria*. It is clear that there were variants according to the way in which the zodiacal sign could be divided into its imagined body parts, but because the notion is so specific it seems probable that they all go back to one source. It is difficult to trace the origin of this tradition. Although the concept of *dodecatemoria* is Babylonian, the specific idea of *melothesia* lacks any decisive evidence for a Babylonian origin.²¹⁸ One should allow for the possibility that it originated in Egypt with Teucer as an element of Greek astrology.²¹⁹

The Human Body Signifying Greek Astrology in 4QZodiacal Physiognomy (4Q186)

An important corollary of the ascendant interpretation is that it points decidedly to a Greek background as against a Babylonian one for the astrological tradition in *4QZodiacal Physiognomy*.

The genre of *4QZodiacal Physiognomy* is clearly not that of a horoscope or a collection of horoscopes, but its interest is horoscopic. The physiognomic descriptions of the human body invite the reader to learn about someone's zodiacal sign, its ascendant position, and its division. If the words "in the foot of *Taurus*" (ברגל השור) refer to that part of the sign ascending above the eastern horizon at the moment of birth, then the interest of the text is clearly horoscopic. The main difference between Babylonian and Greek horoscopy is that the former was not at all concerned with determining the ascendant at the time of birth, whereas this is the latter's primary concern. If the ascendant interpretation is correct, this means that *4QZodiacal Physiognomy* shows evidence of the Hellenistic concern with determining the ascendant.

THE ASTROLOGICAL BACKGROUND OF *4QZODIACAL PHYSIOGNOMY* (4Q186)

The astrological background of *4QZodiacal Physiognomy* consists of two elements. First, that the position of the ascendant determines the number of parts of the zodiacal signs above and below the horizon, understood in the text in terms of "house of light" and "house of darkness." Second, the divi-

²¹⁸ The passage in Manilius seems the oldest attestation (see Chapter Two n. 219). There is some Babylonian evidence that certain parts of the human body were correlated with the planets (the spleen with Jupiter, and the kidney with Mars), but it is not clear if this is directly related to the Hellenistic concept of *melothesia*. E. Reiner, "Two Babylonian Precursors of Astrology," *NABU* (1993): 21-22; Koch-Westenholz, *Mesopotamian Astrology*, 178; Reiner, *Astral Magic*, 59-60.

²¹⁹ On Teucer's Egyptian background, see n. 77 above.

sion of the zodiacal signs is according to their imagined bodies (“in the foot of *Taurus*”), which combines the notions of *melothesia* and *dodecatemoria*.

Ancient readers of *4QZodiacal Physiognomy* need not have been aware, of course, that the astrological background consisted of these elements. It has been shown that those transmitting this tradition did not understand the merging of *melothesia* and *dodecatemoria* anymore, because the rising ecliptical parts were taken to be the sign’s body parts. It has also been shown that ancient astrologers did not always properly understand certain astronomical and astrological notions, such as some specific calculations and concepts.

The original, complete text of *4QZodiacal Physiognomy* was an elaborate physiognomic catalogue (see Chapter One on columns and measurements) that listed separate entries for every division of the twelve zodiacal signs in order to determine someone’s ascendant sign and its division between the “house of light” and the “house of darkness.” The ancient users need not have been aware that this division was a result of the zodiacal position. Or even if they did know, they need not have known anything about the complicated methods for calculating zodiacal rising times. They were content to know the division of the zodiacal sign between light and darkness. That was enough. How this came about was probably of no interest to them because the text listed what they wanted to know. This astrological information could be attained through physiognomic observation, so it is irrelevant with regard to the use and understanding of the text of *4QZodiacal Physiognomy* how one could also arrive at this astrological information from an astronomical perspective, either observational or mathematical.