SINO-PLATONIC PAPERS

Number 282 September, 2018

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SINO-PLATONIC PAPERS

FOUNDED 1986

ISSN
2157-9679 (print) 2157-9687 (online)

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The Sinicization of Indo-Iranian Astrology in Medieval China

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Abstract: This study explores the introduction and development of foreign systems of astrology in medieval China (Tang to Ming periods), in particular the practice of horoscopy, and how such models were implemented within a Chinese astronomical framework. It is argued that the basic character of such horoscopy was in large part Dorothean, rather than Ptolemaic. It is furthermore demonstrated that Chinese horoscopy was as much an heir to Persian systems of horoscopy as was the Islamicate, a point that has yet to be recognized. The paper also demonstrates the enduring impact of horoscopy within the culture of Chinese divination.

INTRODUCTION

Recent scholarship is increasingly revealing the breadth and depth of the practice of foreign systems of astrology in medieval China. The incorporation of astrological motifs in the East Asian art record and the application of foreign astrology by Chinese Buddhist and Daoist clerics during the Tang dynasty (618–907) demonstrate that this art — especially in the form of horoscopy — was widely

accepted and practiced by diverse communities in China, although this did not necessarily mean that foreign astrology became canonized among state systems of divination.[1]

Pankenier (2016: 22) suggests that during the Tang period "foreign influence on state-sponsored astral prognostication remained negligible." He furthermore notes (fn. 35) that "this was much less so at the popular level when it came to hemerology, divination, and popular almanacs, which proliferated from the Tang Dynasty on and introduced numerous Western concepts and practices which the official astral prognostication ignores." This distinction between state and popular practices of astrology is critical. As we will explore in this paper, horoscopy — an originally Hellenistic art — was indeed practiced by elite men, but it was never formally incorporated into the state apparatus of prognostication during the medieval period (eighth to mid-seventeenth century).

This study specifically explores the adaptation, implementation and development of Indo-Iranian forms of astrology during the medieval period.[2] It is argued that foreign astrology acted as a substantial medium for the transmission of hitherto unrecognized knowledges from predominately Indo-Iranian sources, and furthermore that horoscopy in particular underwent a process of gentrification following its earlier implementation by Buddhists and Daoists.

It is also argued that a significant portion of Chinese horoscopy is derived from material traced back to the work of Hellenistic astrologer Dorotheus of Sidon that was transmitted into China via Indo-Iranian intermediaries, one prominent figure of which was part of the Persian diaspora of Western India. This study argues that the foundation of medieval Chinese horoscopy was generally Dorothean in character. In addition, I point out the unique Buddhist contribution to Chinese horoscopy in the way of *nakṣatra* astrology, the introduction and implementation of which predates Chinese practice of what I call true horoscopy.

I will stress that China was as much heir to the Persian traditions of horoscopy as were the

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1 The Chinese adaptation and development of astrological art from abroad has been explored (Kotyk 2017a; McCoy 2017).

2 Ho Peng Yoke (2003: 82) notes, "As a general rule, the further back we go towards the eighth century the more easily we can identify imported elements of Hellenistic astrology in Chinese writings." Although it is not mistaken to identify Hellenistic elements in the horoscopy of Tang period, this paper argues that the horoscopy of this period ought to be classified as Indo-Iranian, rather than Hellenistic, given the Iranian intermediary through which horoscopy was transmitted into China.

Arab cultures, and therefore we ought to recognize Chinese horoscopic literature as a potential source for understanding the spread and development of astrology in a wider global context. This study stands to further highlight the depth of trans-Eurasian cultural exchanges during the medieval period, a point that will be of interest in the present academy, which increasingly seeks to identify hitherto unrecognized cultural connections during premodern times.

HISTORICAL BACKGROUND: ASTROLOGY IN EURASIA

In order to understand foreign astrology in China, we must first briefly survey the complex history underlying its disparate sources. Medieval astrology in the present context is best understood as incorporating five major historical components: Mesopotamian, Greco-Egyptian (Hellenistic), Indian, Iranian, and Islamicate.[3] These components, as we will see, are all represented in medieval China to varying degrees.

The story of Eurasian astrology begins around the year 1000 BCE, when Mesopotamian observers of the skies came to understand the periodicity of celestial phenomena and subsequently started to develop predictive methods (Hunger and Pingree 1999: 50). Mesopotamian celestial omenology was established upon the premise that divine omens related to the ruler and state could be grasped from the stars above. The idea of twelve zodiac signs understood as twelve uniform divisions of a 360° celestial equator (Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius and Pisces) is of Mesopotamian origin. The constellations after which they are named appear sometime after 900 BCE, while the 30° signs were employed in Babylonia before the end of the sixth century BCE (Evans 1998: 39).

The Greco-Egyptian tradition of astrology, centered in the Ptolemaic-Egyptian capital of Alexandria, was established atop an inherited body of knowledge from Mesopotamia, in addition to bringing together Greek and Egyptian concepts, which Pingree (1992: 560) describes as constituting "a union of aspects of advanced Babylonian celestial divination with Aristotelian physics and Hellenistic

3 The adjective "Islamicate" was coined by Marshall Hodgson (1974: 57–60). This refers to parts of Islamdom that were not specifically Islamic, i.e., a formally recognized element of the Islamic religion. "Islamicate" is arguably a better descriptive than "Arabic" or "Islamic" in light of the fact that astrologers within Islamdom were sometimes neither Arab nor Muslim.

astronomy." Greco-Egyptian astrologers developed the art of horoscopy, which includes the science of calculating planetary positions relative to the twelve zodiac signs, which are normally displayed on a chart, in addition to the technique of interpreting the significance of each planetary configuration based upon an established body of lore. Horoscopy was also studied during the Roman empire, and manuals in Latin were produced. Classical horoscopy — in contrast to later developments — includes two primary wings, namely natal or genethliacal astrology, which offers predictions concerning an individual's life based on the arrangement of celestial bodies and stars at the time of birth. The second wing is electional or katarchic astrology, which attempts to determine opportune times for various activities, such as marriage or commencing a trip.

During these same centuries in India there also existed a system of predictive astrology that initially developed independent of foreign influences. Indigenous Indian astrology is primarily based upon the motion and phases of the Moon. One integral element is the system of the twenty-eight or twenty-seven lunar stations called *nakṣatras*. These were originally constellations through which the Moon transits over the course of 27.3 days. The complete list of twenty-eight *nakṣatras* first appears in the *Atharva Veda*, but they are also part of some early Buddhist texts (see below). In light of the absence of the *nakṣatras* in Avestan and Mesopotamian literatures, it stands to reason that they were an autochthonous conception from the Indian subcontinent. With respect to the original function of the *nakṣatras*, Falk (2018: 532) convincingly argues that "the circle of 27 or 28 *nakṣatras* was used by an early group of savants to define the day of delivery. On the day of the marriage, precisely three days before the planned conception, the Moon's position needed to be made out and remembered. When the Moon came close to that *nakṣatra* for the tenth time, delivery was close at hand."

The Indian month was divided into two parts (*pakṣa*). These are the periods of waxing (*śukla-pakṣa*) and waning (*kṛṣṇa-pakṣa*), both of which are constituted by fifteen *tithis* (lunar days). Each *tithi* includes astrological associations, with some being more auspicious than others. It is on the basis of the *nakṣatras and tithis* that early Indian astrologers practiced genethliacal and katarchic models of astrology. Indian astrology was increasingly merged with Hellenistic horoscopy starting around the fourth century CE at the earliest. Indian authors, relying upon foreign sources, introduced into the subcontinent knowledge of the planets and the zodiac signs in addition to the calculation methods necessary to understand both of these. One of the key texts from this period, demonstrating an early

Indian adaptation of horoscopy, is the *Yavanajātaka* of Sphujidhvaja, a work to which we shall refer below.[4]

Iranian kings under the Sasanian dynasty (224–650) also took a deep interest in astrology. Iranian astrology drew together Hellenistic and Indian materials into a syncretic form while developing some of their own unique doctrines (Pingree 1963: 245). Unfortunately, as Pingree (1997: 39) notes, there are great challenges to reconstructing Sasanian astrology, since "virtually the entire corpus of astrological texts that once existed in Pahlavī has long since disappeared." Modern scholarship has therefore had to rely heavily upon Arabic translations of Persian materials, although there has been little awareness of Persian materials preserved in Chinese translation. There are, however, a few extant Pahlavī sources that explain some horoscopic doctrines (Panaino 2015: 250–251), but nothing from an earlier period in Iran. Raffaelli (2017: 172) explains that "we have no indisputable source of information on the interaction between astral sciences and religion in Iran before the Sasanian period." The present study stands to offer some new insights into Iranian astrology on the basis of textual materials in Chinese translation.

Following the conquest of the Sasanian empire by the Muslims during the seventh century, Islamdom was increasingly exposed to foreign sciences. There was a concentrated interest particularly in Greek sciences, which included both astronomy and astrology, as well as translation of such works during the eighth and ninth centuries, especially in Baghdad. Astronomy and astrology were together known as *'ilm al-nujūm* (science of the stars), but were also separately discussed as *'ilm al-hay'a* (astronomy proper) and *al-'aḥkām* (judicial astrology). Early *'ilm al-nujum* also included significant components from Indian, Syriac, and Iranian sources. Although astrology was subject to religious criticisms and attacks from the tenth century onward, astrology was never abandoned in the Arab-speaking world (Saliba 1994: 52–57). As we will discuss in this study, Islamicate astrology was later conveyed to China during the fourteenth century.

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4 Pingree (1978: vol.1, 3) suggested that an Alexandrian text on horoscopy was translated into Sanskrit prose in 149/150, and later in 269–270 was revised to incorporate Indian elements as the *Yavanajātaka*, but Mak (2013: 13–17) contests this dating on the basis of manuscript evidence, arguing that the *Yavanajātaka* "is dated some time after 22 CE and could be as late as the early seventh century," while also suggesting that "the *Yavanajātaka* is an orginal amalgamation of Greek and Indian astral sciences" rather than being a translation from Greek.

With respect to specific astrologers of Antiquity that are relevant to the present study, there are two figures: Dorotheus of Sidon (c. 75 CE) and Claudius Ptolemy (second cent. CE). Dorotheus' original manual of astrology was titled *Pentateuch*, but it is no longer extant in Greek apart from fragments. This work was translated into Pahlavī from Greek between 222 and 267. This Persian version was subsequently expanded sometime between 531 and 578. The new recension was then translated into Arabic in the latter half of the eighth century by the Arabic astrologer 'Umar al-Tabarī (Pingree 1989: 229; van Bladel 2009: 28; Dykes 2017: 5–8). One key source for the history of translations of Dorotheus is the *Kitāb al-Fihrist* (chapter 7.1 & 7.2), a catalog of texts by Ibn al-Nadim (c. 987–988), which mentions that the Sasanian king Šāpur I (r. 239–270) translated into Persian the books of Dorotheus among others. He also confirms al-Tabarī's connection to Dorotheus (in Dodge 1980: vol. II, 575, 641).[5]

Ptolemy produced a manual of astrology known now as the *Tetrábiblos* (in Greek, *Apotelesmatiká*). This work significantly differs from Dorotheus in terms of ontology. Ptolemy attempted to explain the efficacy of astrology on the basis of a natural cosmological framework, i.e., as a natural science, instead of the arguably more traditional model of regarding the heavens as signaling predetermined fate. The planets in the traditional Hellenistic model were equated to gods (a custom we preserve today: Jupiter, Saturn, etc.), and thus the planets were regarded as sentient deities. Ptolemaic cosmology, however, simply conceives of the planets as insentient material forces, which was an atypical position among astrologers of Antiquity.

This point about planetary deities is additionally pertinent when we consider the parallel practice of what is normally called "astral magic" in English that accompanied the transmission of horoscopy westward and eastward.[6] The largest and most sophisticated extant manual of astral magic from the medieval period is the *Ghāyat al-Ḥakīm* (The Aim of the Sage), a work by the occultist Maslama l-Qurṭubī (d. 964) that Saif (2017: 299) characterizes as "among the most influential of

5 Pingree translated Dorotheus from Arabic into English in 1976, but Dykes in 2017 produced a new and arguably superior translation with reference to citations of Dorotheus in the works of medieval Arab authors.

6 Medieval traditions, Western or Eastern, did not refer to any "astral magic" specifically. This is a modern designation for ritual practices directed at planets and asterisms that takes into consideration astrological factors when timing the execution of spells.

premodern grimoires" that "epitomizes the earliest tradition of natural magic in Islam." The Arabic text was translated into Latin as the *Picatrix* by 1258 at the Spanish court of Alfonso the Wise (1221–1284). European and Arabic magicians both utilized this work. The original Near Eastern tradition on which this work was established also made its way via Iranian intermediaries eastward to China during the ninth century, where Buddhists and Daoists took a deep interest (Kotyk 2017a: 47–48). The practice of horoscopy, I would argue, must be considered alongside the practice of astral magic.

Finally, what of the historical practice of astrology in China before the introduction of foreign systems? Ancient China before full unification under the Qin dynasty (221–206 BCE) developed a system of celestial omenology that chiefly concerned state interests, called "field allocation" astrology (*fenye* 分野), in which the realms of China were assigned segments of the sky with the Yellow River representing the Milky Way (Pankenier 2013: 265–268). Native Chinese astrology as it existed around the beginning of the Tang period is sketched in a text titled *Wuxing dayi* 五行大義 (Great Meaning of the Five Elements), which was produced by Xiao Ji 蕭吉 (c. 530–610), likely toward his later years. This work, which will be cited below, is particularly valuable given its encyclopedic scope, in addition to predating the implementation of foreign astrology in China.[7] In short, native systems of astrology in China existed and were developed alongside foreign systems.

EARLY INDIAN ASTROLOGY IN CHINA

Foreign astrology was first introduced into China between 307 and 313, when Dharmarakṣa 竺法護 translated a Buddhist text titled *Śārdūlakarṇāvadāna*.[8] This text, most likely from Magadha in India, explains basic *nakṣatra* astrology and its calendrical conventions. Approximately two centuries later,

7 This text was extant in China until around the thirteenth century. It was preserved in Japan until modern times, when it was re-introduced into China. It does not appear to have been consulted by Chinese authors on horoscopy, although its relevant content is reflective of native Chinese astrology from the early medieval period. See studies by Nakamura (1970; 1972).

8 The Chinese title is *Shetoujian Taizi ershiba xiu jing* 舍頭諫太子二十八宿經 (T 1301), i.e., the "Sūtra of Prince Śārdūlakarṇa and the Twenty-eight *Nakṣatras*." Pingree (1963: 240–241) claims the *Śārdūlakarṇāvadāna* was summarized by An Shigao 安世高 (2nd cent.) in the second century CE, but there is no evidence for this claim.

a different recension of this text, most likely from Central Asia, and titled **Mātaṅga-sūtra* 摩登伽經 (T 1300), was translated by Guṇabhadra 求那跋陀羅 (394–468) of the Liu-Song period (420–479).[9] The biography of Guṇabhadra in the *Gaoseng zhuan* 高僧傳 (T 2059; Biographies of Eminent Monks), compiled by Huijiao 慧皎 (497–554) in 519, notes that Guṇabhadra was "highly learned in astronomical books, medicine, and incantations."[10] Such an interest in astronomy or astrology likely explains his motivation to translate the *Mātaṅga-sūtra*.

The *Mahāsaṃnipāta* 大方等大集經 (T 397), a voluminous collection of Buddhist scriptures, includes three parts that discuss *nakṣatra* astrology. These include the **Samādhi-ṛddhi-pāda* 三昧神足品 chapter of the *Ratnaketu-parivarta* 寶幢分 (fasc. 20). The translation of this work is attributed to Dharmakṣema 曇無讖 (385–433). The second part is the *Candragarbha-parivarta* 月藏分, translated by Narendrayaśas 那連提耶舍 (490–589) in 566. The third part is the *Sūryagarbha-parivarta* 日藏分, translated by Narendrayaśas in 585 (Mak 2015b: 8–14; Kotyk 2017c: 58–64). Although the latter two parts are the first texts in Chinese to describe the zodiac signs, there is scarce zodiacal lore within them, and the *nakṣatra* astrology they explain is relatively basic. Furthermore, what appears to have been the *Gārgīya-jyotiṣa* (**Garga-saṃhitā*), an enormous manual of Indian astrology, was translated around the Sui dynasty (581–618), although it is not extant.[11]

The aforementioned Buddhist texts serve as important specimens for our understanding of Indian astronomy and astrology that are moreover datable, but their systems of astrology were never implemented among Chinese people, first because there was no pressing need to do so on the part of the Chinese *saṃgha* (the Buddhist monastic community), and second because the astronomical parameters of Indian astrology at this point were insufficiently defined for use within a Chinese astronomical context (Kotyk 2017b: 28–29).

With respect to the technical features of *nakṣatras*, in both ancient China and India the

9 Scholars have frequently accepted the traditional attribution of this translation to Lüyan 律炎 (fl. 224) and Zhi Qian 支謙 (fl. 223–253) in 230 CE. See Mak (2015a: 62) and Chang (2018: 417) for instance. The Chinese grammar, vocabulary and details in other catalogs, however, all indicate a fifth-century translation by Guṇabhadra (see Kotyk 2017b: 28).

10 天文書算醫方呪術, 靡不該博. T 2059, 50: 344a7.

11 Kotyk 2016: 104–105; 2017c: 66–67. For recent research on Garga, see Geslani et al. 2017.

orbital path of the Moon was divided into twenty-eight lunar stations of unequal lengths. As we will discuss below, these became an important part of Chinese horoscopy in later centuries. In Chinese these are called *xiu* 宿 or "lodges." The Moon transits through the stations over the course of approximately twenty-eight days (its actual orbital period is 27.3 days). Despite the similarities between the Chinese and Indian systems, Dharmarakṣa's translation of the *Śārdūlakarṇāvadāna* did not use the Chinese names of the stations as functional equivalents for the *nakṣatras*, although he did call them the twenty-eight *xiu*. For instance, the *nakṣatra* Mṛgaśīrṣa ("deer's head") was semantically translated as *lu shou* 鹿首 ("deer's head").[12] This stands in contrast to Guṇabhadra's translation, in which he used the Chinese lunar station Zi 觜 as a functional equivalent for Mṛgaśīrṣa. It was from this early period of Sino-Indian contact that Chinese Buddhists and later other East Asian peoples generally conceived of the *nakṣatras* as identical to their native lunar stations despite their actual differences.

These differences were cause for confusion when Amoghavajra 不空 (705–774) and his team compiled the *Xiuyao jing* 宿曜經 ("Sūtra of *Nakṣatras* and Planets"), a manual of nominally Buddhist astrology, in 759 with a subsequent revision in 764. There are two primary recensions of this text: the "Japanese" and the "mainland" versions, the former being closest to the original text (Yano 2013: 253–264).[13] The Japanese recension notes that the *nakṣatra* Kṛttikā is comprised of six stars and offers the following comment:

12 T 1301, vol. 21: 415a25–b4; T 1300, vol. 21: 404b29.

13 For extensive details on the *Xiuyao jing*, see Yano 2013: 11–146 and Kotyk 2017c: 95–120. Chang (2018: 421) claims that "Amoghavajra collected Tantrist sūtras from Sri Lanka and translated them," one of which was, according to Chang, the *Xiuyao jing*. There is zero evidence for the *Xiuyao jing* originating in Sri Lanka. Instead, it was pieced together from multiple disparate sources, several of which were likely already translated into Chinese before Amoghavajra (d. 774) compiled the *Xiuyao jing*.

> Mao in Tang Astronomy is seven stars. Now, according to the explanation of this text, the stars are not identical to those of the Great Tang, which is why in astronomical charts of the Great Tang, [Kṛttikā] is below said lunar station.[14]

Although in practice "Kṛttikā" and "Mao" both refer to the Pleiades, it appears that the Chinese team working under Amoghavajra was confused as a result of the variant star count. They attempted to identify similarities between the Indian and Chinese systems on the basis of star charts. They noted that most of the *nakṣatras* did not correspond to the Chinese lunar stations. To complicate matters, the *nakṣatra* system of the original *Xiuyao jing* uses twenty-seven *nakṣatras*, in which Abhijit (corresponding to the Chinese Niu 牛) is dropped. This system of twenty-seven *nakṣatras* was at the time a relatively recent change in the Indian Buddhist community. This revision attempted to reconcile the twelve zodiac signs — a non-Indian system — with the native *nakṣatras* by turning the *nakṣatras* into twenty-seven uniformly equal zones.[15] Although nobody in China was, it seems, aware of the novelty of this new system, it did pose a problem, since in practice it would have been infeasible for the Chinese to revise their ancient system of strictly twenty-eight lunar stations. This is why there was no attempt ever to implement the system of twenty-seven for the purposes of observational astronomy.[16] The Chinese simply continued using their native system of observational astronomy while utilizing *nakṣatra* lore in astrological consultations.

Unlike ancient Chinese celestial omenology, *nakṣatra* astrology provides predictions about

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14 唐國天文昴七星. 今案此經說, 星不與大唐同, 故依大唐天文各各圖於當宿之下. *Sukuyō-kyō shukusatsu*, vol. 1, 16–17.

15 In this system, the ecliptic is comprised of 108 *pādas* or "quarters" with each zodiac sign comprised of 9 *pādas*. Each *nakṣatra* consists of 4 *pādas*. 27 *nakṣatras* would have been preferred since 108/28 = 3.85, whereas 27 divides into integers (108/27 = 4). This system is that of the *navāṃsas* or ninths of a zodiac sign. This system is first mentioned in China in the commentary on the *Mahāvairocana-sūtra*, titled *Dari jing shu* 大日經疏, by Yixing 一行 (673–727) and Śubhakarasiṃha 善無畏 (637–735). See Kotyk 2018a: 15. The *Yavanajātaka* mentions the 108 *navāṃsas* (51.1; 130).

16 Note that the table of correspondences between the 360 lunar days of the Chinese calendar and twenty-seven *nakṣatras* in the *Xiuyao jing* (*Sukuyō-kyō shukusatsu*, vol. 1, 13–15) is not based on observational astronomy. Each day of the Chinese lunar month is merely assigned a *nakṣatra* regardless of whether the Moon actually lodges in it.

individuals, so long as their natal *nakṣatra* can be determined. For instance, those born under Kṛttikā are predicted to be "mindful of virtue, with many children, diligent in learning, possessing decorum, parsimonious in nature, and loquacious."[17] This appears to constitute the beginning of "personalized astrology" in China, a significant development from the sort of omenology explained in works such as the *Han shu* 漢書, the dynastic history of the Former Han (206 BCE–23 CE), in which the movements of celestial bodies are interpreted as they relate strictly to the realm as a whole.[18]

With respect to personalized astrology, the *Xiuyao jing* also explains a system of what I call pseudo-horoscopy. Although the text briefly describes the twelve zodiac signs and provides predictions concerning those born under each sign, the zodiac is largely irrelevant when considering the text as a whole. The following method cannot be called proper horoscopy, since classical horoscopy requires the zodiac signs, although as we will see it does indeed display parallels to horoscopy.

The method in question is called *tārā-bala* ("Star Force"), *tārā-cakra* ("Star Wheel"), or *nava-tārā* ("Nine Stars"), or *nava-nakṣatra-guṇa* ("Qualities of Nine *Nakṣatras*") in Sanskrit. Chapter three of the *Xiuyao jing* calls this the "Three Sets of Nine Method" (*san jiu zhi fa* 三九之法). The twenty-seven *nakṣatras* are each assigned a theme or category from which predictions are made. This method is calibrated to the individual, since the natal *nakṣatra* (i.e., the *nakṣatra* in which the Moon was positioned at birth) determines the arrangement of these categories. The Chinese names of the first set display strong similarities to a certain group of nine stars that are mentioned in the *Agnipurāṇa* (121.21–23 and 132.14–18). These names are presented in Table 1. It is evident that the *Xiuyao jing* was drawing upon material common to Indian astrology.

17 念善, 多男女, 勤學問, 有儀容, 性慳澁, 足詞辯. *Sukuyō-kyō shukusatsu*, vol. 1, 16.

18 Note that Chinese dynastic histories include sections documenting the arts and sciences that were developed during the dynasty in question. Native Chinese celestial omenology is explained in the *Han shu* in the chronicle detailing astral matters (*Tianwen zhi* 天文志. *Han shu*, vol. 5, 1273–1291).

Table 1. "Nine Stars" in *Xiuyao jing* and *Agnipurāṇa*

Chinese *Xiuyao jing*	English Translation	Sanskrit *Agnipurāṇa*	English Translation
ming 命	life	*janma*	birth
rong 榮	prosperity	*sampat*	prosperity
shuai 衰	decay	*vipat*	misfortune
an 安	security	*kṣema*	welfare
wei 危	danger	*pratyari*	enmity
cheng 成	completion	*sādhaka* / *dhanadā*[19]	achiever
huai 壞	destruction	*nidhana* / *ṣaṣṭhī*	death / sixth
you 友	friend	*mitra*	friend
qin 親	family	*paramamitra*	highest friend

19 Here *dhanadā* should probably be read as *sādhanā* (accomplishment, completion).

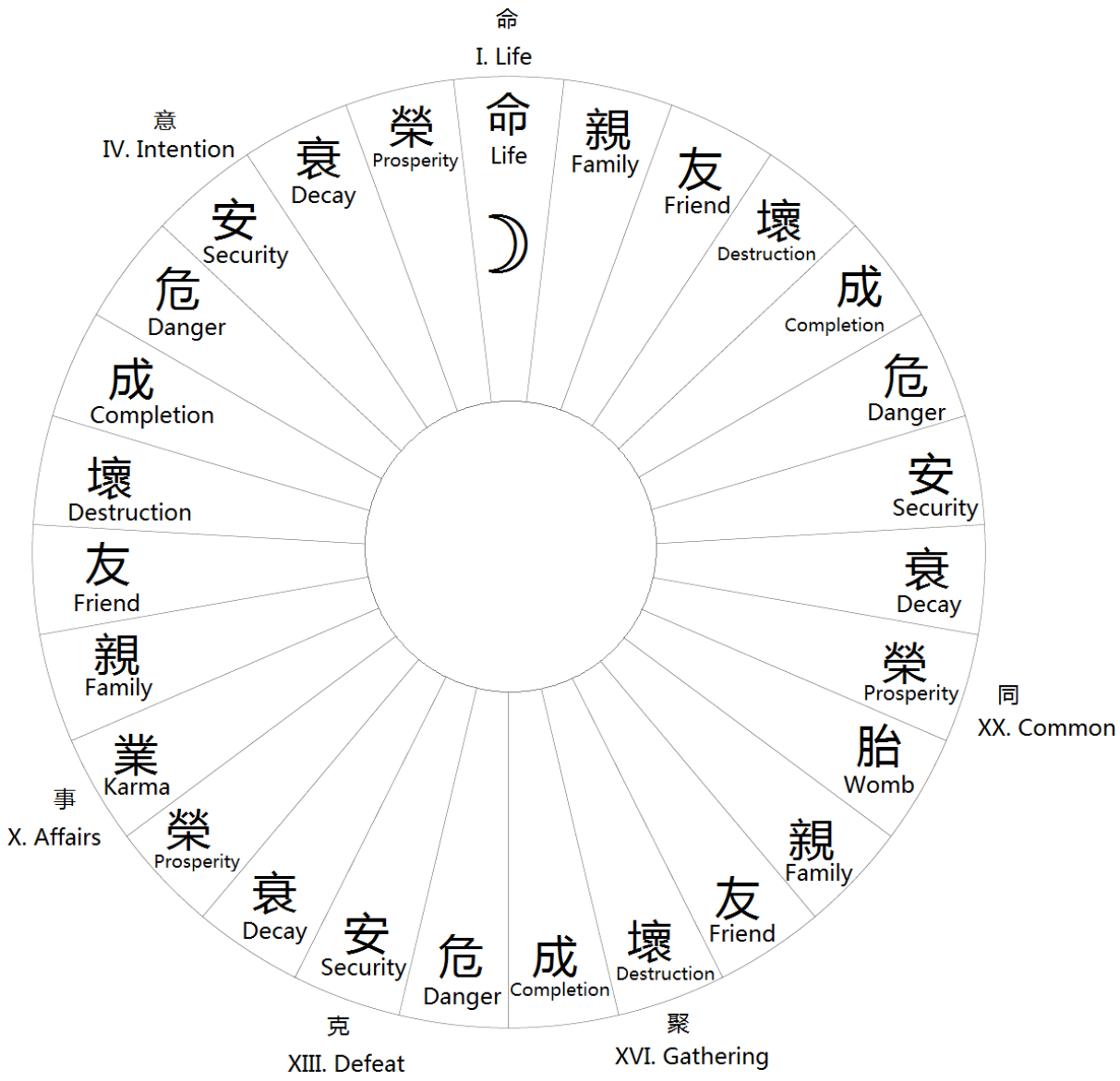

Figure 1. System of "Nine Stars" in *Xiuyao jing*.

In the *Xiuyao jing*, the first *nakṣatra* of the second set is assigned as "karma" (*ye* 業) and the following the same eight as before. Finally, the *first nakṣatra* of the third set is assigned under "womb" (*tai* 胎) and the following the same eight as before (see fig. 1).

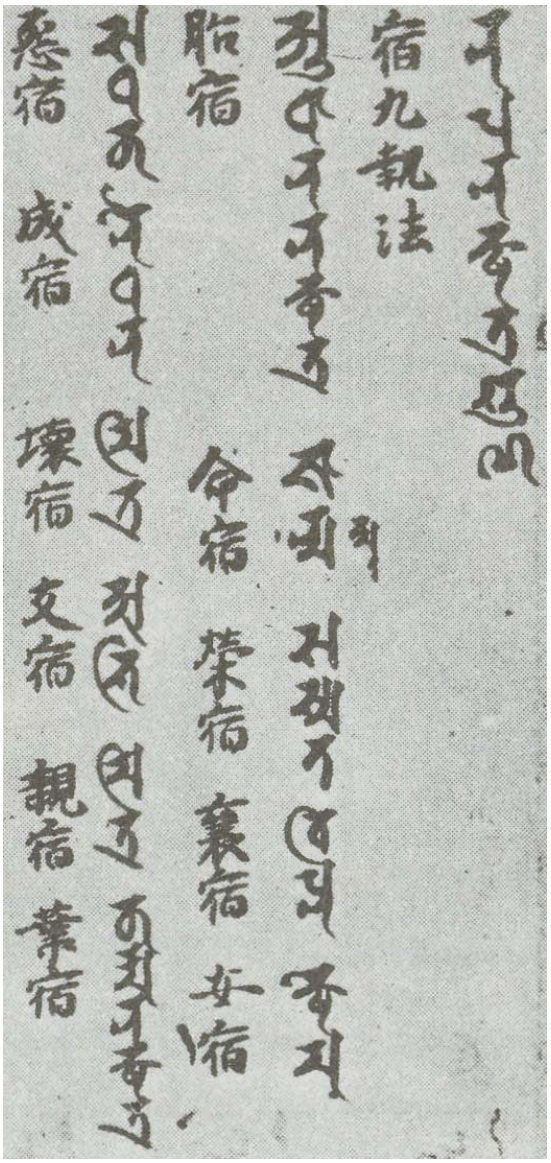

Figure 2. Sanskrit and Chinese terms for "Nine Stars" in *Goma rodan yō*. TZ vol. 7: 840.
SAT Taishōzō Image DB. Creative Commons BY-SA 4.0.

Sanskrit terms in Siddhaṃ script for these assignments are provided in a Japanese manuscript titled *Goma rodan yō* 護摩爐壇樣 (Model for the Homa Altar), which appears actually to have been a text brought over from China by the Japanese monk Jōgyō 常曉 (d. 867) in 839. The Chinese terms and the accompanying Sanskrit appear to have become corrupted (fig.2).[20] They read as follows:

20 The version reproduced in the *Taishō zuzō* is from Kanchi-in of Tōji in Kyōto (京都東寺觀智院). This text is listed in

napa-nakṣatra-guṇa (*xiu jiuzhi fa* 宿九執法)

ādhāna-nakṣatra (*tai xiu* 胎宿)

janma (*ming xiu* 命宿)

sasmata (*rong xiu* 榮宿)

vipna (*xiang xiu* 衰宿)

kṣema (*an xiu* 安宿)

sadhaka (*yuan xiu* 怨宿)

nidhana (*cheng xiu* 成宿)

mitra (*huai xiu* 壞宿)

abhi (*zhi xiu* 支宿)

mitra (*qin xiu* 親宿)

karma-nakṣatra (*ye xiu* 業宿)

Despite the corrupted Sanskrit and other mistakes (*mitra* or "friend" is given for *huai xiu* 壞宿, the "*nakṣatra* of destruction"), the parallels with the *Agnipurāṇa* are evident. We might assume that the Sanskrit and Chinese terms given in the manuscript stem from rough notes.

The *Xiuyao jing* lists various prescriptions and proscriptions related to this system. For instance, when the Moon is lodged in one's "life" or "womb" *nakṣatras*, one should not engage in many matters, whereas when it is lodged in one's "karma" *nakṣatra*, one will gain success in whatever one does. The text also describes the forecast risks when the Sun, Moon, and five planets encroach upon key *nakṣatras*, but at the same time refers the readers to the Indian calendar with which one can determine the positions of these celestial bodies. The sub-commentary to the text even mentions by name the Kāśyapa and Gautama families, as well as the monk Kumāra, who were resident court astronomers in the Chinese capital at the time.[21] This advanced system of astrology therefore would initially have been out of the reach of common Buddhist monks, to say nothing of the general

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the catalog of texts brought back by Jōgyō (T 2163, 55: 1071a5). I must thank Thomas Eijō Dreitlein of Kōyasan University who transcribed the Siddhaṃ into Roman at my request.

21 *Sukuyō-kyō shukusatsu*, vol. 1, 28–29.

populace. It is clear that foreign astrology realistically was available only to elites when it was first seriously implemented in China, although, as we will see, in subsequent decades it was popularized.

An additional system to be used in conjunction with the above method is called the "Six Detriments" (*liu hai* 六害) in the *Xiuyao jing*. These are six assignments relative to one's natal *nakṣatra* (indicated in fig. 1): "life" (*ming* 命), "affairs" (*shi* 事), "intention" (*yi* 意), "gathering" (*ju* 聚), "common" (*tong* 同), and "defeat" (*ke* 克). The seven planets transiting through these impart various positive and negative effects.[22] As evidence for the later popularization of this Indian model of *nakṣatra* divination, the "Six Detriments" are mentioned in the *Lingtai jing* 靈臺經 (DZ 288; Scripture of the Spiritual Terrace), a ninth-century manual of astrology included in the Daoist canon,[23] and defined in an almost identical fashion to that of the *Xiuyao jing*, which likely indicates that the compiler of the former drew material from the latter, albeit without citation.[24] The primary difference here, however, is that the *Lingtai jing* defines the "life" *nakṣatra* by the position of the Sun, rather than the Moon.

Another significant astrological concept included in Amoghavajra's work that was new for the Chinese during the mid-eighth century was the seven-day week, which itself originally was a religious Greco-Egyptian reckoning of time, although this fact, of course, would have been unknown to the Chinese at the time. In addition to listing auspicious and inauspicious activities for each of the days of the week, the *Xiuyao jing* also provides predictions about a person's personality based on the day of the week they were born. For example, those born on a Sunday will "have abundant wisdom, be upright, beautiful in appearance, filial, and short-lived."[25]

How is the ordering of the seven-day week determined? The standard ordering is a union of Greek cosmological concept of concentric spheres and the Egyptian concept of deities presiding over each of the twenty-four seasonal hours.[26] The spheres run in the Chaldean order of planets, which is

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22 *Sukuyō-kyō shukusatsu*, vol. 1, 35–36.

23 The extant version in the Daoist canon is missing parts 1–8, and only includes parts 10–12.

24 T 1299, 21: 392b4–9. DZ 288, 5: 23c6–18. *Sukuyō-kyō shukusatsu*, vol. 1, 35.

25 足智, 端正, 美貌, 孝順, 短命. *Sukuyō-kyō shukusatsu*, vol. 1, 30.

26 Seasonal hours differ from modern equinoctial hours. See below for discussion.

based on the speed of the planets from a geocentric perspective: Saturn, Jupiter, Mars, Sun, Venus, Mercury, Moon. The first hour of Saturday, commencing at sunrise, is assigned to Saturn, the next hour to Jupiter, and so forth. The forty-ninth hour, being the first hour of Monday at sunrise, will be the Moon (Yano 2003: 383). Although the *Yavanajātaka* mentions the lords of the hours (77.9, 79.55; vol. 2, 184, 190), it does not appear that they ever became core to Indian astrology or calendrical science.[27] These planetary hours were, it seems, unknown in China, but nevertheless the seven-day week became widely known from the mid-eighth century onward.[28] It was first popularized by Buddhists in China following Amoghavajra, and then later it was adopted by Daoists starting in the ninth century (Kotyk 2017a: 50).

Returning to the social context of astrology during the eighth century, the *Xiuyao jing* was the first authoritative astrological manual for the Buddhist community in China actually to be implemented, despite monastic regulations technically prohibiting Buddhist monks from practicing astrology (Kotyk 2017d). Although the *Xiuyao jing* was originally intended for an elite audience at court, within a few decades it became available to the wider world — no doubt in part due to its attributed authorship to Mañjuśrī Bodhisattva — which then spurred popular interest in foreign astrology. Interestingly, it was ethnically Iranian men — not Indian Buddhists or astronomers — who introduced true horoscopy into China. It was from this point on, around the year 800, that Chinese astrologers had at their disposal the lore of the *nakṣatras* and zodiac signs.

HISTORY OF CHINESE HOROSCOPY

The earliest known transmission of true horoscopy into China was the translation of the *Duli yusi jing* 都利聿斯經 (**Dorotheus*).[29] This manual of horoscopy, a translation of the work of Dorotheus of

27 For a comprehensive survey of units of time in Ancient and Medieval India, see Hayashi 2017.

28 Astrological elements of the seven-day week, including the Sogdian names of each day, are explained in Dunhuang almanac Or.8210 / P6.

29 Mak (2014) demonstrated on the basis of the versified version and other details that this work was most likely a translation of Dorotheus. Kotyk (2017c: 134–139) identified further fragments of the *Duli yusi jing* by comparing various sources with Pingree's translation of the Arabic translation of Dorotheus (1976). Chang (2018: 414), however, seems to

Sidon (fl. 75 CE) most likely from the Pahlavī recension, became the foundation for East Asian horoscopy. The Chinese text is not extant, but there remain identifiable fragments scattered across numerous sources, as well as a versified text, titled *Xitian yusi jing* 西天聿斯經 (*Yusi jing* of Western India).[30] The *Duli yusi jing* was brought to China between 785 and 805 by Li Miqian 李彌乾 (d.u.), said to hail from Western India 西天竺. The source text was subsequently translated into Chinese by Qu Gong 璩公.[31] Qu Gong was possibly the Sino-Persian Li Su 李素 (743–817), who served as court astronomer from around 781 until his death, and was moreover likely a Christian cleric (Mak 2014: 120–122). The proposed connection between horoscopy and "Nestorian" or East-Syriac Christianity in China is made all the more probable in light of extant Syriac medical texts from Antiquity and the medieval period, called *Spar-Sammāné* , or Book of Medicines, that explain astrology in detail.[32]

Yin Kui 殷奎 (1331–1376) in a short work of prose mentions that horoscopy in China started from Li Miqian and the *Duli yusi jing* during the Tang period. He also explains that it was Li Changrong 李常容 in the Ministry of Personnel (*li bu* 吏部) who promoted and extensively studied this art.[33] Li Changrong was the courtesy name of Li Xuchong 李虛中 (762–813), who historically was known for his work in divination.[34]

In light of the custom for Persians in Tang China to take the surname Li 李 (Chen 2007: 247–

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suggest that *Yusi*-related texts originate from the *Tetrábiblos*. This is incorrect because the *Duli yusi jing* and late-Tang horoscopy are largely based upon Dorothean material.

30 Included in a larger sixteenth-century Chinese text on horoscopy, the *Xingxue dacheng* 星學大成 (Great Compendium of Star Studies). See below. SKQS 809: 435–438. See translation by Mak (2014: 140–153).

31 *Xin Tang shu*, vol. 5, 1548.

32 An example of such a Syriac text is reproduced and translated by Budge (1913: esp. vol. II, 520–655). For a recent discussion of this material, see Al-Jeloo 2012.

33 In *Qiang zhai ji* 強齋集. SKQS 1232: 397a14–16.

34 The *Li Xuzhong ming shu* 李虛中命書 (Book of Fate by Li Xuzhong) claims Li Xuzhong as a commentator on the text, which is partially reconstructed in the *Siku quanshu* (vol. 809). Its content deals primarily with divination via the sexagenary cycle. The text includes an "original preface" (*yuan xu* 原序), apparently by Li Xuzhong, that includes a date of year 1 of Yuanhe 元和 (806), but an appended note confusingly states that this preface was recorded in the Tianbao 天寶 (742–756) and Zhide 至德 (756–758) reign eras. See SKQS 809: 3a9–12.

248), Li Miqian was indeed likely of Persian descent.[35] By the year 785, however, the Abbasid Caliphate had long since assimilated and conquered the territories that had comprised the Sasanian empire (224–650).[36] What are we to make of Li Miqian and his homeland of Western India? Agostini and Stark (2016) argue that there existed in the vicinity of the southern Hindu Kush region a Sasanian court in exile until at least the mid-eighth century. It is therefore plausible that Li Miqian was a member of the post-Sasanian Persian diaspora that had migrated eastward. If this is true, then we have evidence of Dorothean horoscopy having been practiced in India, which has otherwise gone unnoticed in modern scholarship. So far as evidence suggests, however, Li Miqian's tradition of astrology does not appear to have impacted the wider practice of *jyotiḥśāstra* (astrology and astronomy) in India. We might speculate that his community was relatively small and possibly died out following the Muslim conquests of Western India.

Li Miqian's horoscopy also included numerous Indian and otherwise non-Hellenistic elements, which is why it ought to be considered Indo-Iranian in character.[37] He produced ephemerides for the

35 There were Sasanian Persians in exile in China from the mid-seventh century. These people fled the conquest of their realm by Muslim armies. See Compareti 2003 for an overview of the relevant history.

36 The Silla monk Hyecho 慧超, who traveled through India between 723 and 727, wrote a travelogue titled *Wang Ocheonchukguk jeon* 往五天竺國傳 (Memoir of a Pilgrimage to the Five Indian Kingdoms), in which he states that the country of Persia had once governed the Arabs (*Dashi* 大食, a transliteration of Pahlavī *tāzīk* or *tāzīg*, "Arab"), who were camel herders for the Persian monarch, but who later rebelled, killing the king and establishing themselves as independent. Hyecho reports that at that time, Persia had been "swallowed" by the Arabs (T 2089, 51: 978a27–b1). A travelogue of Arab countries by Du Huan 杜環, titled *Jingxing ji* 經行記 (Account of Travels), which is cited in *j.* 193, the encyclopedic *Tong dian* 通典 (Comprehensive Chronicle), compiled in 801 by Du You 杜佑 (735–812), states that "by the end of the Tianbao reign era [742–756], it had already been over a century since [Persia] had been destroyed by the Arabs 自被大食滅至天寶末, 已百餘年矣." SKQS 605: 662b15–16. It is therefore evident that by the mid-eighth century the Chinese court was aware that Sasanian Persia no longer existed as a polity.

37 *J.* 68 of the *Tong zhi* 通志, an encyclopedia compiled in 1161 by Zheng Qiao 鄭樵 (1104–1162), includes a text titled *Shi'er gong rushi ge* 十二宮入室歌 in one fascicle by Li Qian 李乾 (SKQS 374: 424a11), which appears to be "Verses for the Specifications of the Twelve Zodiac Signs" (reading *shi* 室 as *shi* 式). The title and the name here likely suggest it was produced by Li Miqian. Curiously, the catalog of texts in the Song dynastic history includes an identical title (*Shi'er gong rushi ge* 十二宮入式歌), but this is attributed to Li Chunfeng 李淳風 (602–670), a divination master of the early Tang

eleven planets, which refer to the five visible planets, the Sun, the Moon, Rāhu, Ketu, Ziqi 紫氣, and Yuebei 月孛. Rāhu and Ketu were originally an Indian concept, being the ascending and descending nodes of the Moon, although Ketu in earlier Sanskrit literature referred exclusively to comets. Ziqi is a moving point along the ecliptic, treated as a planet, that tracks intercalary months. Yuebei is the lunar apogee (see below for further discussion). On the basis of the mathematical parameters and associated iconography of Ziqi and Yuebei, it is indisputable that these two pseudo-planets originated from foreign sources, rather than having been devised by Chinese astronomers (Kotyk 2017b: 47). Mak (2014: 124), however, suggests "the four pseudo-planets were likely a later development on the basis of the *Yusi jing*." On this point we should understand that the historical record cited above indicates that these four pseudo-planets were transmitted as an integral part of Li Miqian's horoscopy, and were *not* a Chinese development.

We furthermore should also note here that Mak (2014: 118) suggests it is possible that the *Duli yusi jing* or its related cluster of texts might date to "635 CE, when the Persian or East-Syrian Christian monk Aluoben 阿羅本 (Middle Persian: *Ardabān) first brought five hundred thirty texts to China," but in my estimation there is no evidence in the corpus of datable Chinese horoscopic texts or relevant records to support this speculation. Even if the Christian envoy in 635 had among their party some astrologers or astrological texts — and there is nothing to suggest this was so — there is still nothing to indicate that horoscopy was ever revealed to the wider Chinese world, let alone translated, at this point. So far as present evidence suggests, Indo-Iranian horoscopy was translated into Chinese only during the late-eighth century, *after* the compilation of the *Xiuyao jing* in the mid-eighth century and *not* before.

Following the successful introduction of horoscopy into China, there was an active religious interest in horoscopy within a few decades on the part of both Buddhists and Daoists. Both these religions adapted Iranian astral magic, which itself was based upon earlier Near Eastern models, into their respective practices. Buddhists and Daoists even adapted materials from identical sources while modifying details to make the magic suitable to their respective religious frameworks. The interest in such magic highlights the booming popular interest in horoscopy during the ninth century, but it also

court (*Song shi*, vol. 15, 5249). There are other questionable attributions to this man (see below). My proposed chronology is unaffected, since attributions to figures such as Li Chunfeng and others are spurious.

reveals a simultaneous belief that fate could be negotiated through the use of rituals directed at the planetary deities (Kotyk 2017a). The concept of the planets as deities, which originally evolved out of Mesopotamia, was initially alien to the Chinese, who associated the five planets with the five elements, but by the late-Tang it appears that many conceived of the planets as deities in what was originally a foreign manner.

Foreign astronomical knowledge as well as horoscopy survived the collapse of the Tang dynasty in 907, and continued to thrive in the new polities of East Asia. Although the Chinese Buddhist practice of astrology declined, if not largely vanished, after the Tang, two officials of the early Song state are noted in the dynastic history for their expertise in the *Duli yusi jing*: Liu Xigu 劉熙古 (903–976) and Chu Yan 楚衍 (d.u.).[38] We furthermore possess a horoscope from Dunhuang (P. 4071), produced by a certain Kang Zun 康遵 (d.u.) in 975 (see below). An almanac containing much astrological lore, dating from 877, is also extant (Or.8210 / P6), in addition to a fragment of a separate text from 882 (Or.8210 / P.10).

Late-Tang astrology was also transmitted to the Korean kingdom of Koryŏ 高麗 (918–1392). Sørensen (2006: 71) notes that "when looking at the defining practices and beliefs of Esoteric Buddhism under the Koryŏ, one is immediately struck by the consistent and frequent references to astrology including the worship of the heavenly bodies."[39] According to an account in the *Quan Liao wen* 全遼文 (92–93), a compilation of chronicles from the Liao 遼 (907–1125) dynasty, a Khitan diplomat named Yelü Chun 耶律純 (d.u.) was sent in the year 984 to Koryŏ. It was there that he apparently met a "national teacher" (*guoshi* 國師) who was a master of astronomy. Yelü Chun attempted to arrange a meeting, but despite his sending gifts, this mysterious teacher avoided meeting him. It was only when the king of Koryŏ commanded that a meeting should occur that Yelü Chun could learn from this teacher an unconventional method of assigning the Sun, Moon, and traditional five Chinese elements to the twenty-eight lunar stations. The teacher claimed to have been taught this method by a "strange man at sea" (*haishang yiren* 海上異人). Sørensen (2006: 72–73)

38 *Song shi*, vol. 26, 9101, and vol. 39, 13518.

39 Korea was later also heir to Islamicate and European systems of horoscopy via Ming and Qing China. See Jun 2018 for a discussion of Western horoscopy in Korea during the Early Modern period.

suggests that this account "reveals that the Koreans were considered as being in possession of a superior form of astrology." It is difficult to accept any of this narrative, given the lack of details about the teacher in question and moreover the obviously fantastical story about a strange man at sea teaching astrology. Similar fantastical tales about Yixing were also created, and several texts on astrology and astral magic were attributed to him (Kotyk 2018b). This story about a strange man at sea was likely crafted in order to validate a revised system, much in the same way works were attributed to Yixing to validate them, which itself points to ongoing innovation among astrologers in East Asia (Kotyk 2017c: 216–217). A work attributed to Yelü Chun, too, titled *Xingming zongkuo* 星命總括 (Summary of Stellar Fates) in three fascicles is extant.

There was no decline of divination and astrology in China in subsequent centuries. McCoy (2017: 129) points out that Marco Polo (1254–1324) observed (chapter XXV) that the Mongol-Chinese capital hosted five thousand astrologers of various backgrounds (Christians, Saracens and Cathayans), who published pamphlets that functioned as annual astrological almanacs. It was during this period, the Yuan dynasty (1271–1368), that astrological texts in Arabic were brought to China, although it appears that government translations of Arabic works occurred only during the following Ming dynasty (1368–1644). During the early years of the Ming, the court had these texts transported to Nanjing. The court under Hongwu 洪武 (r. 1368–1398) translated some of them into Chinese (Chen 2009: 15), one of which was an introduction to astrology titled *al-Madkhal* by Kūšyār ibn Labbān 闊識牙耳 (971–1029). The title in Chinese is now simply *Mingyi tianwen shu* 明譯天文書 (Book of Astronomy Translated in the Ming). According to its preface, the emperor was impressed with the accuracy of astronomy from the Western Regions, and thus ordered translations of relevant texts, such as the *al-Madkhal*, which was completed in 1383 (Cheung 2017: 12–14). Another work, the *Huihui lifa* 回回曆法 (*Chinese-Islamic System of Calendrical Science*), which includes astronomical tables along with instructions, was also produced around this time on the basis of translated material (Shi and Zhu 2016: 311–312). This translation project was carried out by Muslim officials working for the Chinese court. The *al-Madkhal* is heavily reliant upon Ptolemy's *Tetrábiblos*, and therefore it represents the first appearance of identifiable Ptolemaic astrology in China. Yano (1997: vi), however, notes that "Kūšyār added several topics which were of later origin (Yano 1997, vi)." For example, there is reference to Saturn–Jupiter conjunctions in relation to the Great Flood (in Yano 1997: 280). Saturn–

Jupiter conjunctions are a Sasanian Persian innovation, and the myth of the Great Flood stems from the Old Testament of the Bible.[40]

Horoscopy was quite popular among literati throughout the Ming period. Song Lian 宋濂 (1310–1381), a historian known for compiling the history of the Mongol Yuan dynasty, the *Yuan shi* 元史 in 1370, in a short treatise titled *Luming bian* 祿命辯 (Discussion on Fate Calculation), argued that horoscopy did not have an ancient origin in China, and he traced its introduction back to the translation of the *Duli yusi jing* between 785 and 805. Song Lian himself was displeased with such popular interest and remarked, "In recent times great scholars all relish speaking to diviners and are glad to speak about them, but the master [Confucius] completely rejected this. Is there also a basis for this? There is. The master seldom spoke of fate."[41] That he had to argue that horoscopy was originally foreign indicates that it had become sufficiently naturalized so that many — if not the majority — had become unaware of its true origins.

The volume of astrological manuals from the Ming period demonstrates the extent of elite interest in astrology during the late medieval period. The Daoist canon includes the *Rumen chong lizhe zhong kanyu wanxiao lu* 儒門崇理折衷堪輿完孝錄 (DZ 1471; Scholars' Record Perfecting Filial Piety Which Esteems Persuasion and Accords with Geomancy), a manual of geomancy that includes some horoscopic lore and dates to the mid-Ming (Hu 1995: 398). Wan Minying 萬民英 (1521–1603) compiled the *Xingxue dacheng* 星學大成 (Great Compendium of Stellar Studies). This voluminous work of thirty fascicles covers many astrological concepts and horoscopic methods. Another valuable work from this period titled *Shendao dabian xiangzong huatian wuxing* 神道大編象宗華天五星 (Great Compilation of the Divine Way: Purports of Celestial Phenomena, Flowering Heavens and the

40 Saturn–Jupiter conjunctions are said to influence the development of world history. Pingree explains that a "Saturn–Jupiter conjunction takes place about every 20 years; a series will occur in the signs of one triplicity for about 240 years, that is, twelve conjunctions; and they will have passed through the four triplicities and begin the cycle again after about 960 years. When they shift from one triplicity to another, they indicate events on the order of dynastic changes." See below for discussion of triplicities. This concept of Saturn–Jupiter conjunctions linked to world cycles was especially studied in the seventeenth century in China (see Shi and Zhu 2016: 329–333).

41 近世大儒, 於祿命家無不嗜談而樂道之者而子一切摒絶之. 其亦有所本乎? 曰: 有. 子罕言命. See *Ming wen heng* 明文衡, 152. The last remark is in reference to *Analects* 論語, "Zi Han" 子罕 1.

Five Stars) in nine fascicles by Zhou Yun (also known as Yuanzi) 周雲淵子 (d.u.) was produced in 1582, according to its preface.

Chinese interest in horoscopy continued after the collapse of the Ming dynasty in 1644. Chinese understanding was considerably developed and refined via interaction with Europeans, especially Jesuit missionaries such as Nikolaus Smogulecki (1611–1656).[42]

THE PRACTICE OF HOROSCOPY IN MEDIEVAL CHINA

Having outlined the history of horoscopy in China, we may now turn to discussing its practice in detail. One element that was necessary for the Chinese practice of horoscopy within a local context was a system of accurate calculations for planetary movements as well as ephemerides designed with Chinese observational astronomy. Classical Chinese astronomy divided the celestial equator into 365.25 "degrees" (a *du* 度 is strictly speaking not a Western degree, but for ease of understanding here I shall refer to it as such), in contrast to the Mesopotamian parameter of 360 degrees, which became standard across much of Eurasia and Africa. The zodiac signs, each comprised of 30 degrees, are also integral to the Mesopotamian model. The Chinese system, however, uses an entirely different allocation, and therefore foreign ephemerides could not be directly translated into Chinese.

Cao Shiwei (d.u.), a court official who had earlier produced between 780 and 783 the *Futian li* 符天曆, a popular calendar, also studied under Li Miqian sometime before 806, and he subsequently produced supplementary material for his calendar in which he incorporated Babylonian goal-years (see below). In addition, it was also around the year 806 that the twenty-four solar terms were divided into twelve even units, in which the first degree of Aries was defined by the vernal equinox, resulting in a tropical zodiac superimposed upon an otherwise sidereal model of lunar stations (see fig. 3). At this point in time, Chinese astrologers had access to the astronomical tools and lore necessary to cast and interpret horoscopes.

Regardless of the later influence of Dorotheus in Chinese horoscopy, there also existed a separate Iranian tradition that is attested in the Buddhist *Qiyao rangzai jue* 七曜攘災決 (T 1308;

42 Chinese horoscopy during the Qing dynasty (1644–1912) falls under the Early Modern period and therefore is outside the scope of the present study. For relevant studies, see Standaert 2001, Shi and Zhu 2016, and Chang 2018.

Secrets of Seven-Planet Apotropaism) and nowhere else among extant materials.[43] This system shares no strong parallels — particularly in terms of vocabulary usage — with other Chinese horoscopic materials connected to the Dorothean transmission. The *Qiyao rangzai jue* was compiled from disparate materials between 806 and 865, but the compiler appears never to draw upon the *Duli yusi jing*, which had been translated earlier, between 785 and 805. In light of this point, it is difficult to determine whether the horoscopic lore incorporated into the *Qiyao rangzai jue* was translated into Chinese before or after the *Duli yusi jing*. Nevertheless, the basic technical features of horoscopy of both transmissions are very similar.

How did the Chinese approach the vocabulary and techniques of horoscopy when it was first made available in Chinese? The basic platform from which an astrologer operates is the horoscope, which is a table representing the ecliptic divided into twelve zodiac signs. Such tables in circular format from the Tang period are found in the Buddhist *Xiuyao jing* and *Qiyao rangzai jue*. Circular tables were also used in two Japanese horoscopes for the years 1113 and 1268 respectively.[44] In later Chinese sources to be discussed below, it appears that preference was given to rectangular charts. In light of the datable Tang sources and the fact that the Japanese astrologers generally remained faithful to their inherited system of horoscopy, we can infer that the circular type of chart was in use during the Tang period. The table in the *Qiyao rangzai jue* — datable to 806–865 — is especially informative since it includes the essential features of horoscopy. The content of the table is translated and presented in fig. 4.

The outermost characters in fig. 4 are the twelve earthly-branches (*di zhi* 地支), which in this context represent twelve directions as well as the traditional Chinese reckoning of twelve units of time or "double hours" (each are comprised of 120 modern minutes). For example, *mao* 卯 indicates east as well as the period of time between 05:00 and 07:00 when the Sun is present there. The fact that Hellenistic horoscopy and Chinese astronomy both divide the celestial equator into twelve directions was a helpful coincidence for the early translators of horoscopy in China, but one major difference

43 Chang (2018: 423–424) claims without citing any evidence that the *Qiyao rangzai jue* incorporates "Ptolemaic astrological factors," but in actuality this text displays nothing stemming from Ptolemy.

44 See reproduction in Momo 1990 (133, 144) and Yano 2013 (193, 195). See further study in Kotyk 2018c (59–70).

was that, while the Chinese divided the day and night together into twelve equal units of time, the Greeks divided the day into twenty-four *hṓra* or hours, which differ from the modern convention of each hour consisting of sixty minutes (equinoctial hours).

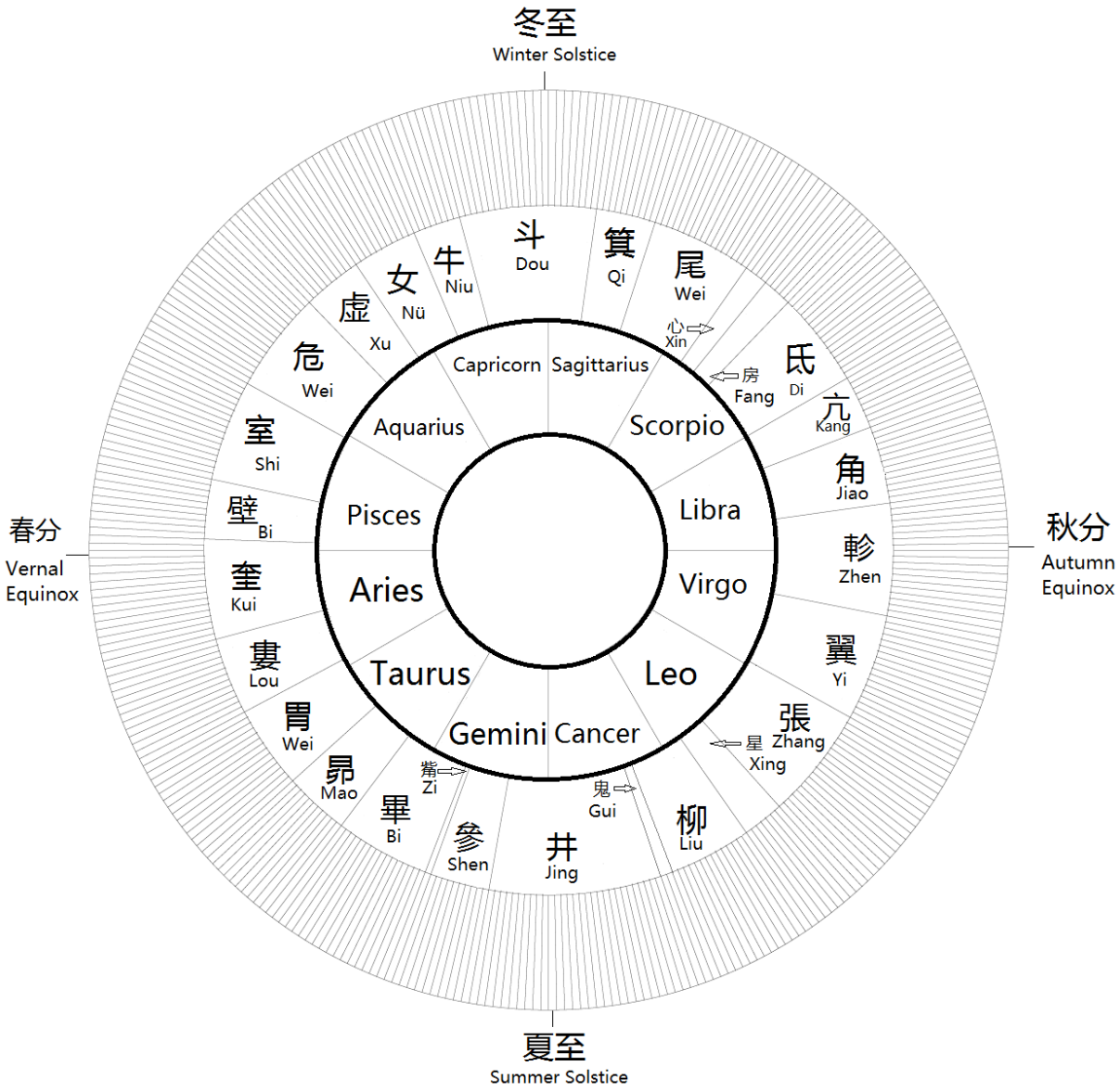

Figure 3. Lunar stations, zodiac signs, and solar terms.[45]

45 This table uses 360 degrees. It is based on the data of correspondences between the lunar stations, zodiac signs, and

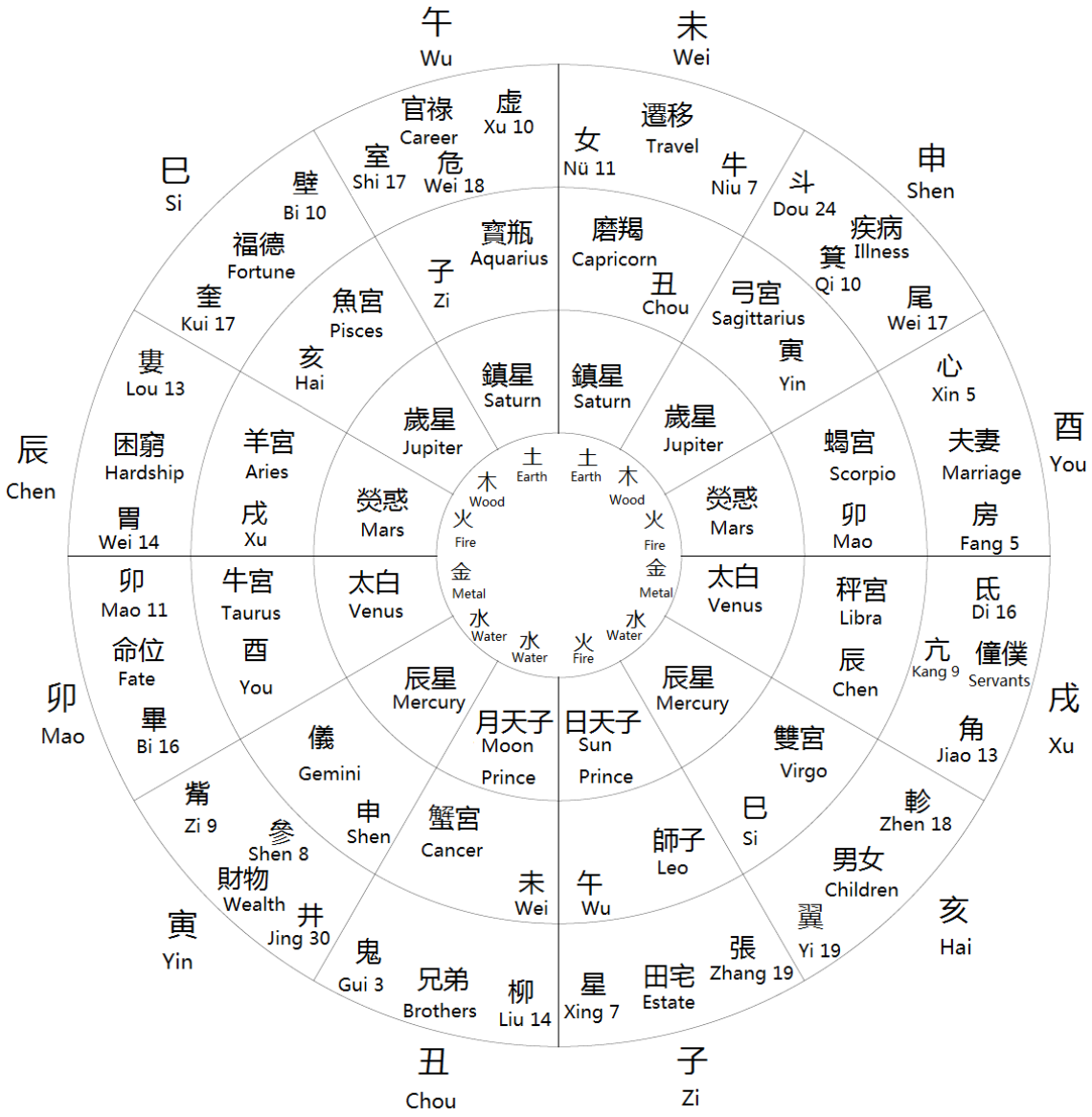

Figure 4. Horoscopic table from *Qiyao rangzai jue*.

The Greek model of seasonal hours divided daytime (sunrise to sunset) and nighttime (sunset to sunrise) respectively into twelve hours of equal duration each, hence the length of daytime or

twenty-four solar terms in Kotyk 2018c: 60. Chinese observational astronomy uses 365.25 degrees, but the solar terms (*jieqi* 節氣), each comprised of 15 days, total 360 days. The Sun progresses one degree each day. This system was easily converted into twelve tropical zodiac signs of uniform dimensions without having to sacrifice the sidereal lunar stations. The position of a planet will be noted using a degree of a lunar station, and from there one can easily determine the zodiac sign under which a degree is subsumed.

nighttime hours will vary according to latitude and the time of the year (Berggren and Jones 2000: 17–18). These seasonal hours were apparently unknown to Chinese astrologers.

Hellenistic astrology calculated the degree of the zodiac rising for the point in time under consideration (i.e., the *horoskopos* or ascendant), such as the minute of one's birth, which further requires consideration of long and short ascension, yet the Chinese model does not allow for such considerations.[46] Instead, Chinese horoscopy determined the rising sign by first identifying the "double hour" in which the Sun was to be placed, and from there they could establish the arrangement of the zodiac signs and lunar stations. This results in all the zodiac signs having uniformly equal rising times, which was not so in classical horoscopy: the signs of long ascension are Cancer, Leo, Virgo, Libra, Scorpio, and Sagittarius, while the signs of short ascension are Capricorn, Aquarius, Pisces, Aries, Taurus, and Gemini. The former rise slowly (longer than the two-hour average of all the signs) as a result of the obliquity of the ecliptic (Bobrick 2006: 312). Chinese astrologers do not appear to have been aware of this fact, or even if they were, this was never a documented concern for them.

This point about ascension times is perhaps best explained by the fact that Chinese astronomy was primarily operating with flat Earth cosmology throughout the medieval period. Calculation of ascension requires reference to latitude as it relates to a spherical earth. Although the *Navagraha-karaṇa* (*Jiuzhi li* 九執曆), translated in 718 by Gautama Siddhārtha 瞿曇悉達 (d.u.), assumes a spherical Earth, and moreover provides a tabulated latitude value of 35° (likely for the proximity of Chang'an at 34°16), as well as a means for calculating lengths of daytime and night, these mathematical models were never incorporated into Chinese horoscopy.[47] Chinese astrologers thus produced a functional albeit comparatively crude system for producing horoscopes.

The next concentric circle in the chart above indicates the twelve places (*shi'er gong* 十二宮; Greek: τόποι, Latin: *loci*). These are static demarcations of the celestial equator through which the fixed stars and planets move. These run in the zodiacal direction (counter-clockwise), although

46 The word for the ascendant in the *Lingtai jing* is *dong chu* 東出, literally "eastern emergence" (DZ 288, 5: 24a1). It does not appear, however, to have been incorporated into the technical framework of producing horoscopes in East Asia.

47 See the English translation of the *Navagraha-karaṇa* and commentary by Yabuuchi (1989: 17–19, 40–41). For the original Chinese, see *Jiuzhi li* (SKQS 807: 933–943). For remarks on Gautama, see Sen 1999.

Chinese horoscopic literature generally does not enumerate them in this Hellenistic fashion, but instead lists them off by their respective names in a clockwise fashion. Each place represents a specific theme, although predictions that are made based upon planets positioned in them are not necessarily limited to the labels given. The original names attested in the Hellenistic tradition differ somewhat from what are provided, since the Chinese names here are translations of Iranian terms.[48] This point highlights the fact that Chinese horoscopy is strictly speaking Iranian, rather than Hellenistic, in direct origin. This circle also lists the twenty-eight Chinese lunar stations with accompanying numbers that appear to constitute rough sidereal parameters for the twelve zodiac signs or possibly their associated constellations. This point likely indicates that this material predates the system of horoscopy developed by Li Miqian and his team, in which the zodiac signs were defined relative to the twenty-four solar terms.

The next concentric circle provides the names of the twelve zodiac signs and for a second time the twelve earthly-branches. In this context, confusing as it may seem, the earthly-branches do not indicate directions, but rather they are used as functional equivalents for the twelve Jupiter stations. Yixing in the 720s is the first known author to equate the zodiac signs to the Jupiter stations. He knew the zodiac signs by their names in Sanskrit.[49] In general, the zodiac signs are translated semantically into Chinese, but the name for Capricorn in Chinese sources is generally a transliteration of the Sanskrit *makara* (e.g., *mo jie* 磨羯). The reason for this is unclear, but perhaps it was simply because no equivalent creature could be found in the Chinese lexicon.[50]

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48 For the Hellenistic system, see Greenbaum 2016: 400–403. For the Iranian names in Chinese translation, see Itō 1980: 224, Kotyk 2017b: 44–45.

49 Remarks in Yixing's *Dayan li* 大衍曆 calendar make this specific association: "The twelve palaces [zodiac signs] as they are called in India are the twelve Jupiter stations of China. The palace of *Meṣa [Aries] is the Jupiter station of Jianglou. 天竺所雲十二宮, 即中國之十二次. 鬱車宮者, 降婁之次也." The character *yu* 鬱 (= *yu* 郁) is perhaps a scribal error for *ming* 鄍. See *Xin Tang shu*, vol. 3, 673; Kotyk 2017c: 99, fn. 79, and 2018a: 15–17).

50 The earliest extant Chinese illustration of a *makara* is found in the *Taizō zuzō* 胎藏圖象 (painted icons of the *Garbhadhātu-maṇḍala 胎藏界曼荼羅) from Japan, in which a *makara* is a bottlenose dolphin or fish-like creature. These icons were recopied in 1194 based on those brought back to Japan by the monk Enchin 圓珍 (814–891), who copied them in 855 at Qinglong-si 青龍寺 in Chang'an. See Kotyk 2017c: 87, fig. 4.10.

The next concentric circle indicates the planetary rulers who rule over the twelve zodiac signs (the Chinese names here are ancient, antedating those names that are derived from the five elements). For example, the ruler of Aries is Mars. This is one of the most common and important elements of a horoscope. When a planet is within a sign it rules (i.e., its domicile or *domus*), it is thought to be strengthened. Similarly, there are variable interpretations for the circumstance that a planet is positioned within a sign ruled by another planet.

The center area of the above table provides the Chinese elements associated with each of the planets. Chinese authors could refer to the planets using their ancient names or as stars associated with specific elements (Saturn, for instance, is the "Earth Star" or *tu xing* 土星). The associations here with the elements shaped a lot of uniquely Chinese doctrines of horoscopy after the Tang period, which will be discussed below.[51]

DOCTRINES OF HOROSCOPY

There are several doctrines of classical horoscopy that are not found in the *Qiyao rangzai jue*, but that are attested in fragments of Dorotheus in Chinese or materials based upon the *Duli yusi jing*. These doctrines were fundamental to classical horoscopy. The manner in which these ideas were translated into Chinese is instructive with respect to the implementation of foreign astrology in China.

TRIPLICITY

The first example is triplicity rulers (in Chinese *sanfang zhu* 三方主, "rulers of the trifold directions"). A triplicity is one of four groups of three zodiac signs that each forms a triangle relative to one another. Each zodiac sign in this system is ruled by three planets, the order of which differs based upon whether the chart is diurnal or nocturnal. In classical astrology, each of the four triplicities is associated with one of the four elements (fire, earth, air, and water), as a result of each zodiac sign's possessing an elemental association, but this elemental categorization does not appear in Chinese sources. This is illustrated in fig. 5. Dorothean astrology places great emphasis upon the doctrine of

51 In the late Tang we also see Buddhist and Daoist texts referring to the planets using their Sogdian names transliterated into Chinese. See Yano 2013: 110.

triplicity. Dorotheus states that "every thing which is decided and indicated comes to be from the lords of the triplicities" (I.1.8; 62).

How are the planetary rulers of the triplicity determined? As the *Lingtai jing* explains, in a manner almost identical to that of Dorotheus (I.1.4–7; 61–62), if the native is born during the day, the primary rulers are established by looking at the zodiac sign in which the Sun is positioned, whereas if born during the night, the rulers are established by looking at the zodiac sign in which the Moon is positioned (see Table 2).

Table 2. Triplicity Rulers in *Lingtai jing* (DZ 288, 5: 22c5–9)[52]

Zodiac Signs	Diurnal Birth	Nocturnal Birth
Yin 寅, *Wu* 午, *Xu* 戌 [Sagittarius, Leo, Aries]	Sun 日, Wood 木, Earth 土 [Sun, Jupiter, Saturn]	Wood 木, Sun 日, Earth 土 [Jupiter, Sun, Saturn]
Shen 申, *Zi* 子, *Chen* 辰 [Gemini, Aquarius, Libra]	Earth 土, Water 水, Jupiter 木 [Saturn, Mercury, Jupiter]	Water 水, Earth 土, Wood 木 [Mercury, Saturn, Jupiter]
Hai 亥, *Mao* 卯, *Wei* 未 [Pisces, Scorpio, Cancer]	Metal 金, Mars 火, Moon 月 [Venus, Mars, Moon]	Fire 火, Metal 金, Moon 月 [Mars, Venus, Moon]
Si 巳, *You* 酉, *Chou* 丑 [Virgo, Taurus, Capricorn]	Metal 金, Moon 月, Mars 火 [Venus, Moon, Mars]	Moon 月, Metal 金, Fire 火 [Moon, Venus, Mars]

Moreover, whether the Sun or Moon is positioned in a *yang* or *yin* (i.e., male or female) sign respectively further determines fortunes in life (the Sun prefers a *yang* sign, the Moon prefers a *yin* sign).

52 Isahaya and Lin (2017: 158–159, fn. 39) refer to the triplicities as "dominant luminaries of the three directions," but did not identify this concept as stemming from classical horoscopy. Triplicity is found in Dunhuang document P. 4071.

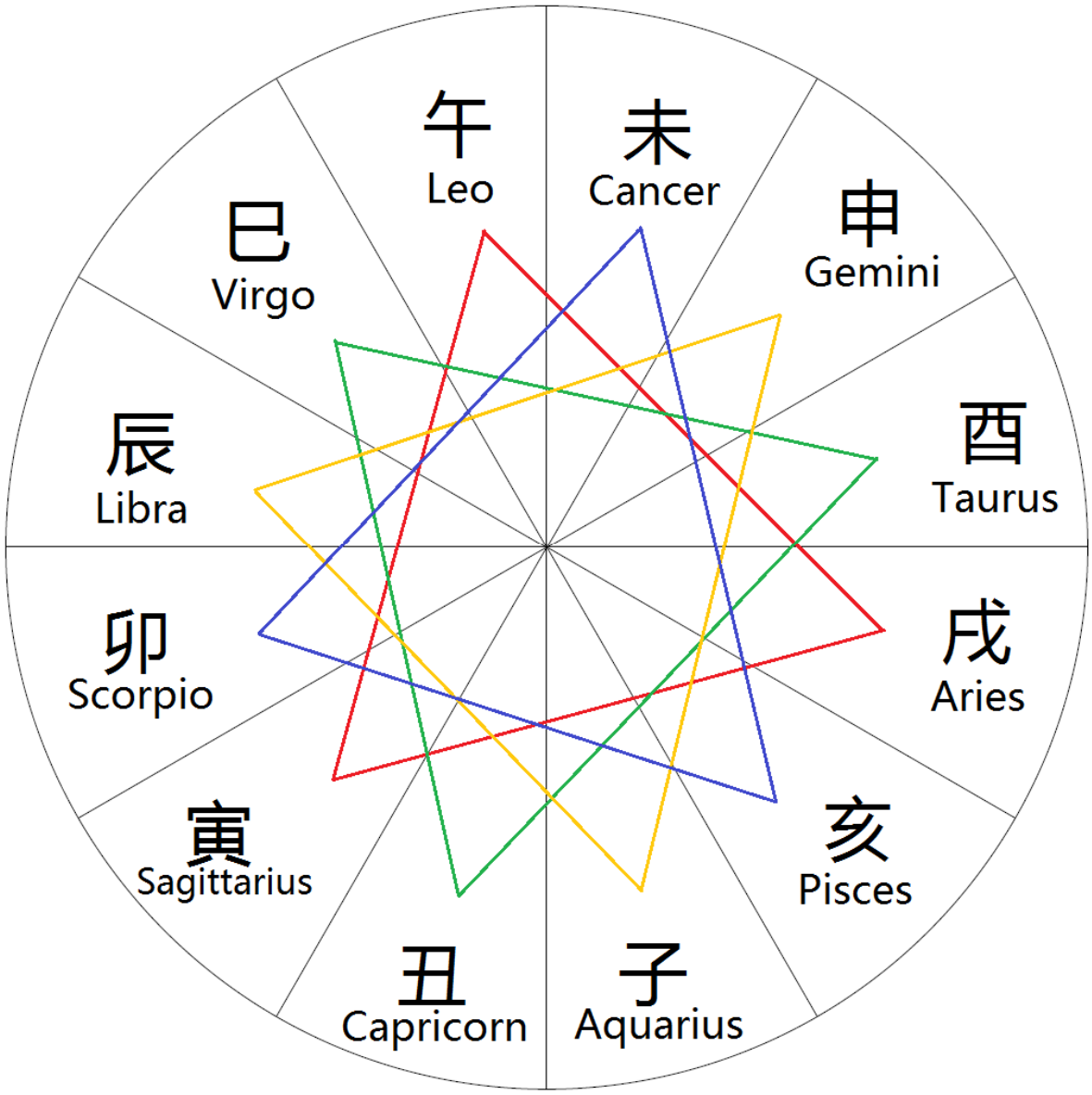

Figure 5. Triplicities.

The planets that function as triplicity rulers are also important, since they will indicate a lack of fortune if stationary or in retrogradation, or "hidden" (*fu* 伏), meaning invisible as a result of being positioned in close proximity to the Sun. An additional element that must be taken into consideration is whether a planet is positioned in its exaltation (*kuang* 旺). The Chinese system uses the standard

Hellenistic definition of exaltations in addition to assigning exaltations to the remaining four pseudo-planets (Rāhu, etc.).[53]

The ability to accurately calculate planetary positions and moreover identify their motion decades in the past was absolutely essential in order to produce a horoscope. Chinese astronomy by the late Tang was sufficiently sophisticated to accomplish such calculations. Determining these positions was made easier by using ephemerides, since one could quickly determine the position of a planet on the first day of a given lunar month in past decades, and from there calculate its position later in the month with relative ease using basic addition and/or subtraction depending upon direct or retrograde motions.

One way of employing the triplicity rulers in a predictive fashion, as explained in the *Lingtai jing*, is to look at the triplicity rulers connected to the "life" and "body" signs. These are not necessarily the primary triplicity rulers of the chart as a whole, but rather are those rulers of the sign in which the Sun and Moon are positioned respectively. The text reads, "In determining the disasters and fortunes of a person, first take the zodiac signs of the body and life and then establish their triplicity rulers. There will still be middle to low wealth and status if the triplicity rulers are positioned in good places, even if the rulers of the body and life signs lack power."[54]

DECANS

The "decans" or "faces" are "simply the thirds of the zodiacal signs, i.e., sections of the ecliptic of 10° lengths. Historically the decans go back to Egyptian lists of 36 constellations which were drawn up many centuries before the introduction of the zodiac" (Neugebauer and Hoesen 1959: 5). The main system of decans assigns planets to rule over each decan. The ordering of this sequence is Chaldean, i.e., Babylonian (Greenbaum 2015: 228): Saturn, Jupiter, Mars, the Sun, Venus, Mercury, and finally the Moon.

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53 Sun = Aries 日戌, Moon = Taurus 月酉, Venus = Pisces 金亥, Jupiter = Cancer 木未, Mercury = Virgo 水巳, Mars = Capricorn 火丑, Saturn = Libra 土辰, Ziqi = Pisces 紫亥, Yuebei = Cancer 孛未, Rāhu = Sagittarius 羅寅, Ketu = Virgo 計巳. SKQS 809: 766a5. Compare with Dorotheus (I.2; 64).

54 夫定人災福, 先以身命宮, 次以三方主定之. 若身命宮主不得力, 但得三方主居好處, 亦得中下富貴. DZ 288, 5: 27a15–17.

The *Lingtai jing* appears to mention them in passing, stating, "Each zodiac sign is divided into three parts. Each part is comprised of ten degrees."[55] The use of the decans is also attested in the Japanese 1113 horoscope (Kotyk 2018c: 70). In the *Mingyi tianwen shu* (in Yano 1997: 269), a decan is called "a face" (*yi mian* 一面). As to the significance of a decan, the text explains that "if a planet is positioned in a degree of a decan [over which it rules], it is like a man being on his own property."[56] The idea here is that a planet is empowered by virtue of being in a strategic position, and therefore its effects will be favorably modified in general.

Annual Profections

Annual profections or the revolution of years (*xing nian* 行年) is a concept explained in Dorotheus (IV.1; 197–198) as well as the *Lingtai jing*. The latter explains as follows:

> For each year of life [the profection] advances one sign, with the sign at the ascendant reckoned as the beginning. [The profection] only moves signs after one's birthday has passed. Auspicious and inauspicious fortunes are always indicated by the ruler of the annual profection.[57]

In short, the planetary ruler of the zodiac sign occupying the first of the twelve places (indicated I–XII

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55 每宮分為三分, 即每分十度也. DZ 288, 5: 27a11. The text additionally refers the reader to a certain *Wuxing dingfen jing* 五行定分經 (Scripture of Establishing the Divisions of the Five Elements). The catalog of texts from the dynastic history of the Song lists this text, with the author given as a certain Luo Binlao 羅賓老 (*Song shi*, vol. 15, 5251). Judging from its title, this text may have dealt with native Chinese metaphysics, rather than horoscopy, yet in the *Tong zhi* (*j*. 68) we see another title, *Duli yusi dayan shu* 都利聿斯大衍書, (Book of the *Dorotheus and the Dayan) by an author called Luo Bin 羅濱 (SKQS 374: 413b10). *Dayan* 大衍 here is a mathematical principle of the *Yijing* 易經. The characters given for the cited authors differ, but they likely refer to the same writer. Although neither of these works is extant, in light of the reference to the former in the *Lingtai jing* and the seemingly hybridized theme of the latter, we might infer that Dorothean material was combined with native Chinese concepts by Luo Bin.

56 若星在每宮分三分之一度數上, 如人在自己田產內. Yano 1997: 270.

57 但以東出宮為首, 一歲一移宮, 直須過生日後, 方可移宮, 常以行年宮主, 言其吉凶. DZ 288, 5: 28b16–17.

in fig. 6) governs the first year of life, which in traditional Chinese reckoning counts as age one (0–12 months in Western reckoning). The planetary ruler of the second year of life will be determined by the zodiac sign occupying the second place in the natal chart. This transition from one annual ruler to the next occurs after one's birthday has passed.[58] The same definition is provided in the *Xingxue dacheng* from sixteenth century China: "From age one, start from the ascendant sign and go backward [counterclockwise] one sign every one year. The cross over [to a new sign] happens at the birthday."[59] Therein this specific convention is called "Lesser Limit of Annual Profections" (*xingnian xiaoxian* 行年小限).

As an example of how this is used in practice, the *Lingtai jing* states, "If Venus is the [annual] ruler, look to when she will arrive in her regal shrine [exaltation], for it will always be a time in which there is joy."[60]

58 In the Hellenistic model defined by Dorotheus (IV.1.4; 197), this transition specifically occurs when the Sun returns to the exact minute one was born (a solar revolution or return). This will normally fall on one's birthday.

59 自一歲從命宮起, 逆行一年移一宮, 遇生日即交也. SKQS 809: 426b7.

60 若得金為主, 看何時到本王廟之, 皆為有喜之時也. DZ 288, 5: 28c7–8.

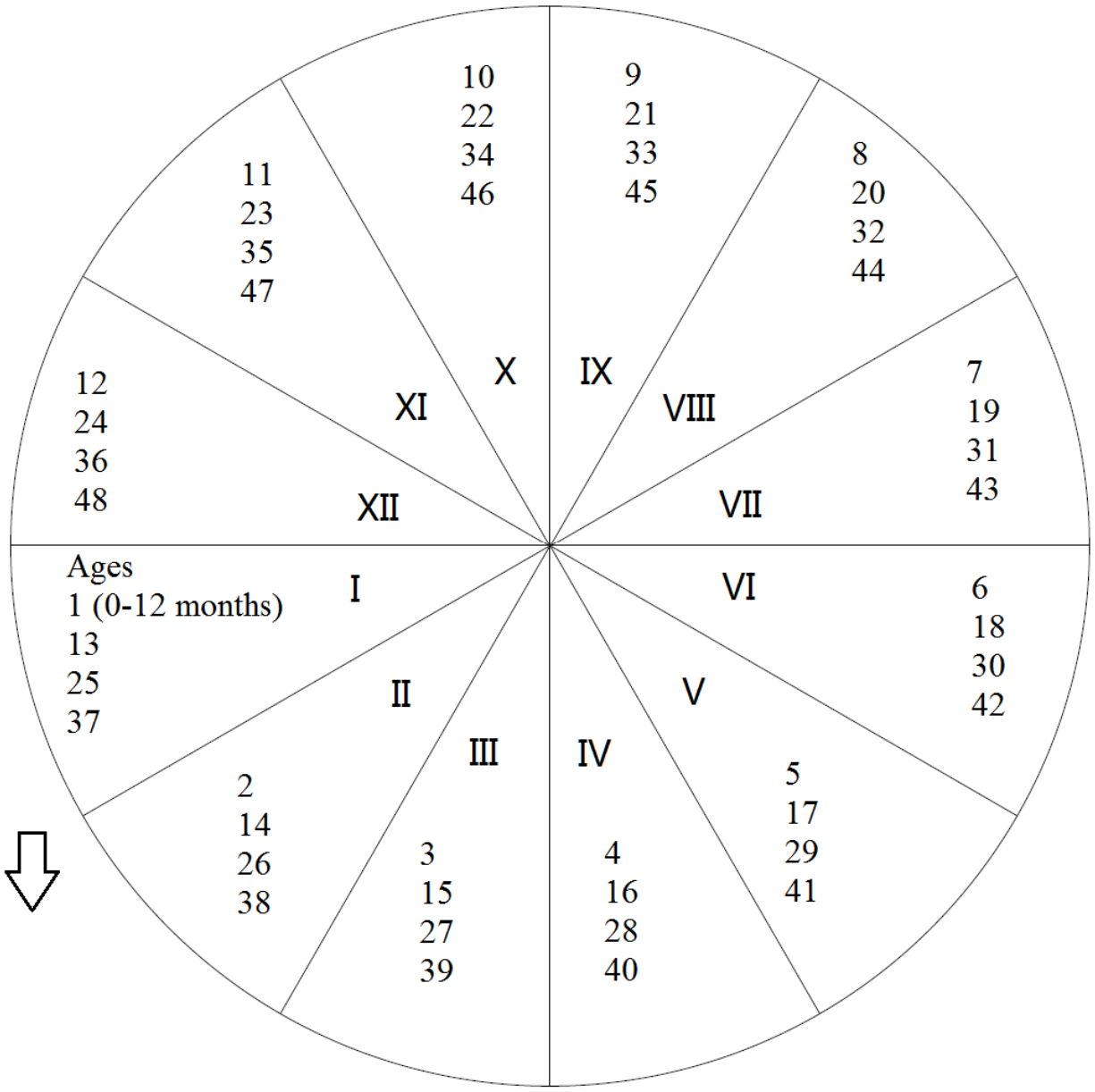

Figure 6. Annual Profections.

A different system of annual profections is also employed in the late Tang *Fantian huoluo jiuyao* 梵天火羅九曜 (T 1311; **Brahmadeva-horā-navagraha*), which is an illustrated manual complete with apotropaic mantras for use against the nine planets, spuriously attributed to Yixing.[61]

61 This text is traditionally attributed to the astronomer-monk Yixing (d. 727). Internal evidence within the text itself indicates a composition date of around the year 874. See Kotyk 2018b: 16–20.

The system of annual profections therein uses what appears to be an originally Indic model, albeit naming the planets in Sogdian, in which each year of life is assigned to one of the *navagraha*. One line reads that one is to count off from one's birth month counter-clockwise until one's birthday (T 1311, 21: 460a27–28), which means that the annual ruler, as in the Hellenistic system, governs a year of a person's life from birthday to birthday. The traditional assignments of malefic and benefic to the planets are evident in this system, although it is uncertain from which Indic source they derive. This system is outlined in Table 3.

Table 3. *Navagraha* Profections

Planet	Ages of Life Ruled[62]
Rāhu	1, 10, 19, 28, 37, 46, 55, 64, 73, 82, 91 (Greatly inauspicious 大凶)
Saturn	2, 11, 20, 29, 38, 47, 56, 65, 74, 83, 92 (Greatly inauspicious 大凶)
Mercury	3, 12, 21, 30, 39, 48, 57, 66, 75, 84, 93 (Somewhat auspicious 少吉)
Venus	4, 13, 22, 31, 40, 49, 58, 67, 76, 85, 94 (Somewhat auspicious 少吉)
Sun	5, 14, 23, 32, 41, 50, 59, 68, 77, 86, 95 (Greatly auspicious 大吉)
Mars	6, 15, 24, 33, 42, 51, 60, 69, 78, 87, 96 (Inauspicious 凶)
Ketu	7, 16, 25, 34, 43, 52, 61, 70, 79, 88, 97 (Greatly inauspicious 大凶)
Moon	8, 17, 26, 35, 44, 53, 62, 71, 80, 89, 98 (Greatly auspicious 大吉)
Jupiter	9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99 (Greatly auspicious 大吉)

Niu (2016: 530) points out that a fragment of a separate text from 882 (Or.8210 / P.10) includes a heading "Chart for Determining the Nine Planets of Men and Women" (*Tui nannü jiuyao xing tu* 推男女九曜星圖), under which is the subheading *xingnian* 行年 (annual profections). The text reads, "When the year falls on Rāhu, your expectations will not be met. Evil will arise." At the bottom of the fragment is also mention of Ketu.[63] This appears to be the system of annual profections based upon

62 Note that age one would be ages 0 to 12 months in the Western reckoning.

63 年至羅侯星, 求覓不稱情, 此年惡起. Translation mine.

the *navagraha*, rather than the twelve zodiac signs, thus demonstrating the continued use of the former alongside the latter. This was also so in Japan.[64]

DIRECTIONS

Another important component of classical horoscopy that is found in various forms within Chinese horoscopy is what is called in English "directions," which is derived from Latin *directio*. This Latin term is derived from the Arabic *tasyīr*, which is based upon the Greek *áphesis*, which can mean a releasing or a sending away.

This doctrine basically requires that one follow the progress of the ascendant or another point/significator through the degrees or houses of the zodiac following birth. In the system of classical horoscopy, each degree of ascension (four modern minutes) is equated to one year of life. Six hours therefore would total ninety years of life. The primary factors to take into consideration are the individual rulers of the terms (Greek *horia* or Arabic *ḥudūd*) that a significator passes through, in addition to any planet whose body or aspect falls in those terms.[65]

The period of time corresponding to the direction of the significator through a specific set of terms is called *qisma* in Arabic, which means share or division. Kūšyār ibn Labbān devotes a section to discussing *tasyīr* (III.20). The *Mingyi tianwen shu* translates Arabic *tasyīr* as "shifting limits" (*xing xian* 行限) and "fatal limits" (*ming xian* 命限). The same term *xian* 限 appears in Tang-era literature, although the systems in which it is found differ. The semantic similarity between this Chinese term and the Arabic *qisma* likely points to an earlier common Pahlavī lexicon.

The *Lingtai jing* defines a different model from Kūšyār ibn Labbān, in which periods of life are

64 The system of *navagraha* profections was employed in the Japanese 1268 horoscope. It is also outlined in the Japanese *Byakuhō kushō* 白寶口抄 (TZ 7: 314b25–315a1; Oral Instructions on the White Treasure) by Ryōson 亮尊 (taught by Ryōzen 亮禪; 1258–1341).

65 "Terms" (from Latin *termini*) are another way of dividing the degrees of zodiac signs into sections that are individually ruled by specific planets. During Antiquity the most commonly used set was called Egyptian, but Ptolemy had his own version. The terms are first defined in Chinese (called *fendu shu* 分度數 or "numbers of divided degrees") in the *Mingyi tianwen shu* (in Yano 1997: 268–269). These are the Egyptian set. See *Tetrábiblos* (I.20; 97). The terms are not attested in any Tang-era sources of which I am presently aware.

divided across the houses from the ascendant to the descendant (DZ 288, 5: 25a3–6). This system is illustrated as follows in fig.7. Yet another system called "Hundred and Six" (*bai liu* 百六) seems to have been popular during the late Ming. Wan Minying (SKQS 809: 416b6–11) defines this concept as follows. "Hundred" refers to one-hundred years and "six" refers to six months. This is a length of lifespan that is divided across the twelve places into specific periods (again, limits, or, in Chinese, *xian* 限). The system works as follows: I. 15 years. XII. 10 years. XI. 11 years. X. 15 years. IX. 8 years. VIII. 7 years. VII. 11 years. VI. 4.5 years. V. 4.5 years. IV. 4.5 years. III. 5 years. II. 5 years. This totals 100.5 years of life.[66] This system is illustrated in fig.8.

66 This system is also defined in the *Rumen chong lizhe zhong kanyu wanxiao lu* (DZ 1471, vol. 35: 658a5-9).

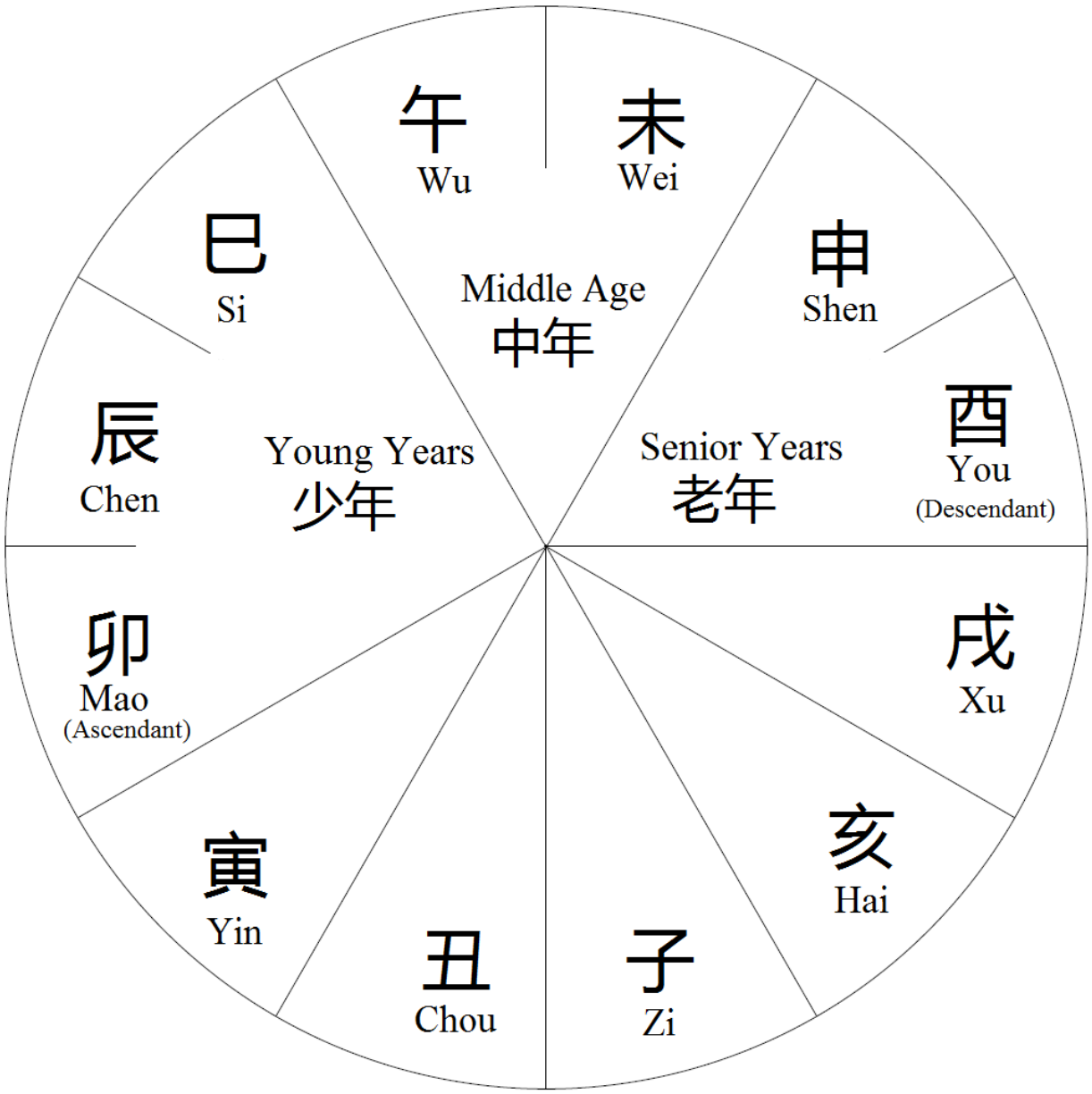

Figure 7. *Lingtai jing* limits.

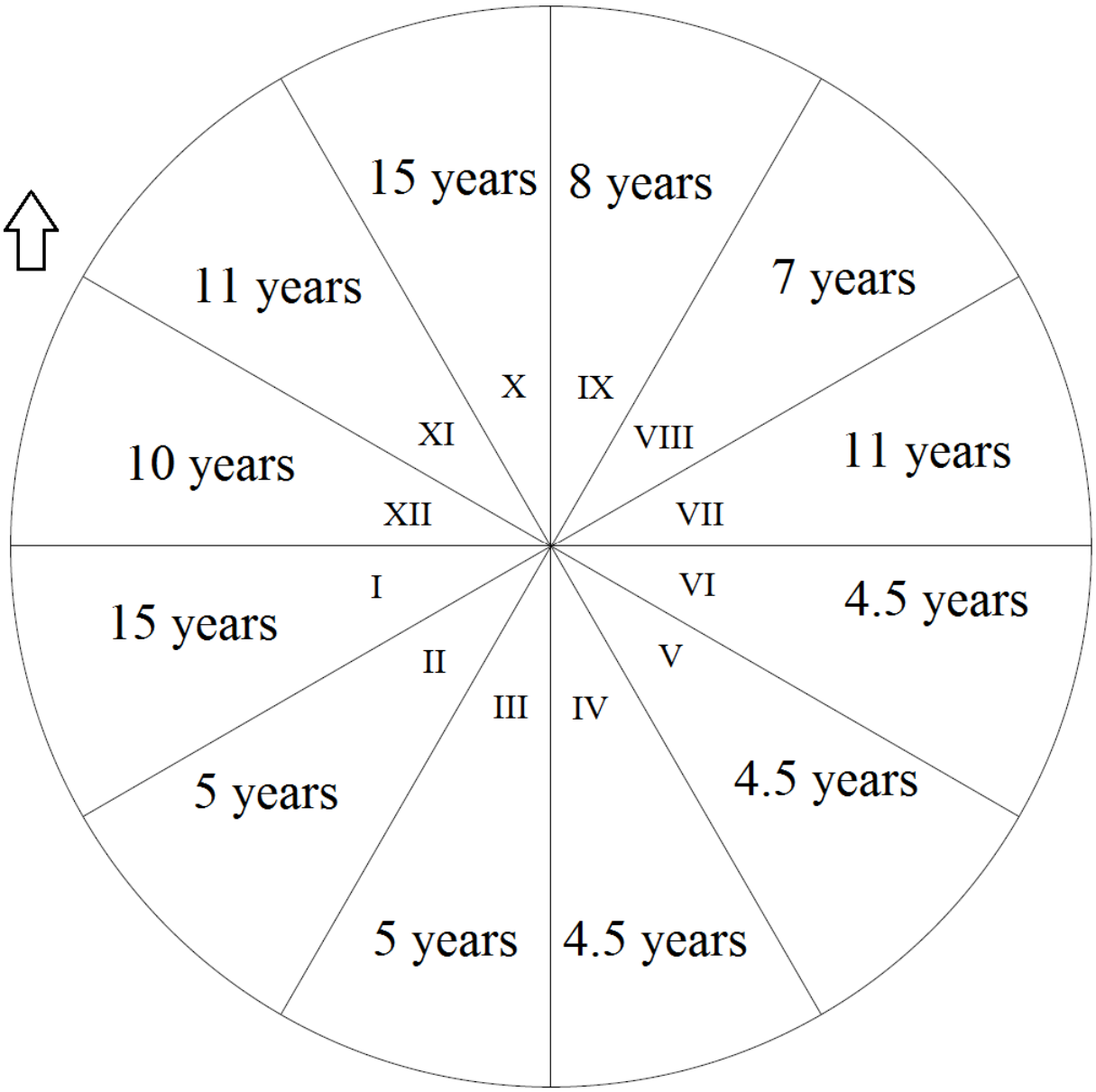

Figure 8. "100 Years & 6 Months" limits.

As an example of how this is used, Wan Minying explains that if one were to find a diurnal Mars or a nocturnal Saturn (i.e., a malefic out of its favored sect) in the eleventh place in a natal chart, the client in question would be predicted to die at the age of twenty-eight (SKQS 809: 417b9).

LOTS

Lots were a major part of Hellenistic and later Arab systems of astrology. As Greenbaum (2016: 7) explains, "Lots are specific points in the chart found by taking the arc between two planets (or a planet and another point) and projecting it from a third point." The earliest Chinese translation of this concept is found in the *Lingtai jing* (DZ 288, 5: 23b5), in which it is called "flying assignments" (*fei pei* 飛配). The Chinese here can loosely be traced back to the Greek term κλῆροι, i.e., "lots," in such usage as "appointing by lot" (κληρόω). The *Mingyi tianwen shu* (1.21.1) curiously calls lots "arrowheads" (*jian* 箭). Wan Minying (SKQS 809: 405a11) in the sixteenth century calls this concept "changing forms" (*bian ge* 變格). As with the system of aspect (see below), it appears that Chinese astrologers used whole-signs, rather than degree measurements, when measuring the distance between two points on a chart for the purposes of calculating lots.[67]

To illustrate how this system works, we can look to fig. 9. The Lot of Spirit is calculated from the Moon to the Sun. In the example given we see the Moon separated from the Sun by one whole-sign in a diurnal chart (the Sun is above the horizon). The distance between the Moon and the Sun following the zodiacal order (counter-clockwise) is measured and then that same distance is applied also in the zodiacal order from the ascendant. The sign in which the end of that measurement falls constitutes the Lot of Spirit. If this were a nocturnal chart, then the starting and end points would be reversed and one would measure from the Sun to the Moon.

The Chinese system of lots during the Tang was derived from Dorotheus. This can be demonstrated by comparing the names of lots and the formulas for determining them in the *Lingtai jing* and Dorotheus (Table 4).

67 Hand (2007: 161) notes with respect to Greek horoscopes, "There was only one way in which the chart was divided into twelve divisions, the signs of the zodiac. The places were simply the signs counted from the rising sign." This is in reference to "whole-sign" configurations, which differ from later models that treat the twelve places (otherwise called "houses") in a different manner.

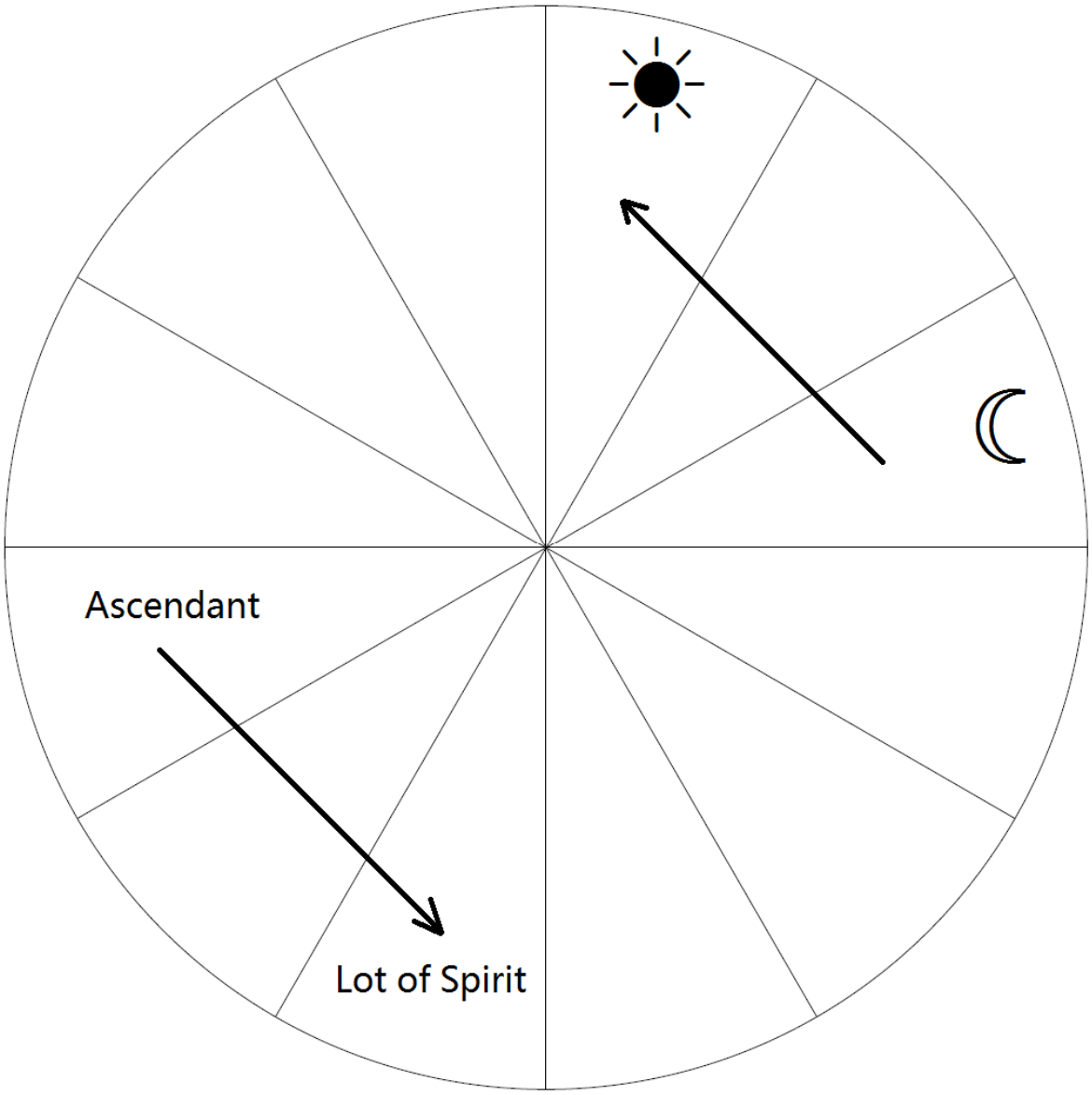

Figure 9. Lot of Spirit.

Table 4. Lots in *Lingtai jing* and Dorotheus[68]

Lingtai jing Lots	Formula (Diurnal)	Dorotheus Lots	Formula (Diurnal)
Fortune 福德	Sun to Moon	Fortune	Sun to Moon
Wealth 財帛位	Ruler of 2nd place to 2nd place	Assets	Ruler of 2nd place to 2nd place
Longevity 壽命宮	Jupiter to Moon		
Death and Captivity 死囚宮	Saturn to Mars	Chronic illness	Saturn to Mars
Disaster 灾厄宮	Moon to 8th place	Death	Moon to 8th place
Illness 疾患宮	Sun to 6th place		
Brothers 兄弟宮	Saturn to Jupiter	Siblings	Jupiter to Saturn
Wives and Concubines 妻妾宮	Saturn to Venus	Wedding (men)	Saturn to Venus
Husband 夫宮	Venus to Saturn	Wedding (women)	Venus to Saturn
Children 男女宮	Jupiter to Saturn	Children	Jupiter to Saturn
Upbringing 生育宮	Mars to Jupiter	Transit-children	Mars to Jupiter

68 For a definition and description of lots in *Lingtai jing*, see DZ 288, 5: 23b5–27a13. The list of lots of Dorotheus is adapted from the table in Dykes 2017: 14.

Lingtai jing Lots	Formula (Diurnal)	Dorotheus Lots	Formula (Diurnal)
Sons 男宮	Sun to Jupiter	Male children	Jupiter to Sun
Daughter 女宮	Moon to Venus	Female children	Moon to Venus
Father 父宮	Sun to Saturn	Father	Sun to Saturn or Mars to Jupiter
Mother 母宮	Venus to Moon	Mother	Venus to Moon
Office 官祿宮	Ruler of 10th place to the 10th place.		
Military Office 武官	Saturn to Moon	Expedition	Saturn to Moon
Civil Office 文官	Jupiter to Mercury		
Companions 交遊宮	Moon to Mercury	Friendship	Moon to Mercury
Spirit and Cultivation 精魂增修宮	Moon to Sun	Spirit (*daimon*)	Moon to Sun
Love 情慾宮	12th place to Lot of Spirit and Cultivation	Eros	Fortune to Spirit
Slaves 奴婢宮	Mercury to Moon	Slaves	Mercury to Moon
Distress 艱迫宮	Lot of Love to Mercury		

Chinese astrologers generally remained faithful to the Dorothean definitions of lots, but they also reshaped the material to make it work within a Chinese cultural framework. The "Lot of Spirit and Cultivation" is particularly informative with respect to the sinicization of horoscopy. The following explanation is given in the *Lingtai jing*:

> If diurnal, then from the Moon to the Sun. Reverse this if it is a nocturnal birth. Apply it to the ascendant, and [this lot] is ruled by this sign. If a good star appears [in the lot], [the native] will favor adornment. If you see the Sun, they will favor Daoism. If you see Jupiter, they will favor alchemy. If you see the Moon, they will favor the Śākyas [Buddhism]. If you see Mars, they will be overcourteous. If you see Saturn, they will favor life-enhancing arts. If you see Venus, they will favor women. If you see Mercury, they will favor literature. If you see Mars, they will favor martial valor. If you see Tianyi [Ziqi], they will favor reception of powerful people. If you see Taiyi [Yuebei], they will favor debauchery and theft.[69]

The idea here is that a certain proclivity in the native's personality will be predicted if one of the eleven planets is positioned in the zodiac sign in which the Lot of Spirit fell. The mention here of Daoism, alchemy, and Buddhism indicates Chinese modification of the source material. Is this a case of innovation or adaptation? I am inclined to suggest the latter. Buddhists and Daoists adapted texts of Near Eastern astral magic for their own respective purposes during the ninth century (Kotyk 2017b: 55). Naturalizing horoscopic lore would also therefore have occurred. The idea of individual planets being connected to specific religions is also explained in the *Picatrix*. Interestingly, the *Picatrix* (III.1; 93–95) states that the Sun rules over those who pray to the spirits of the planets (*spirituum planetarum oratores*), while the Moon rules over those religions that pray to idols and images (*idola orantes et ymagines*).[70] Assuming that the *Picatrix* and the Chinese sources here drew upon ultimately

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69 白日從月至日, 夜生反此, 東出配之, 此宮所主. 善星見好修飾, 見日好道, 見木好丹, 見月好釋, 見火多禮, 見土好長生之術, 見金好女人, 見水好文章, 見火好武勇, 見天一好接貴人, 見太一好姦虛作盜. DZ 288, 5: 26b20–c4.

70 For an English translation, see Greer and Warnock 2010–2011: 135–137. In the case of the Sun, Greer and Warnock

similar sources (as was demonstrably the case with the astrological iconography), assigning the Sun to Daoism and the Moon to Buddhism within the Chinese context would have made sense, given that during the ninth century Daoists were heavily involved in astral magic, while Buddhists were heavily invested in the production of icons.

The inclusion of Tianyi 天一 and Taiyi 太一 here is another naturalized element. These are ancient Chinese astral deities that became merged with the foreign planetary deities Ziqi and Yuebei respectively sometime during the late Tang. Tianyi and Taiyi together with native astral deities, including Tianhuang Dadi 天皇大帝, Beichen 北辰 and Beidou 北斗, were also part of the court rites for the winter solstice during the Tang.[71]

It is clear from the above discussion that the original system of lots was carried from Dorotheus into Chinese, and this material was subsequently adapted to the Chinese cultural context. The lots also appear in the translation of the *al-Madkhal* (1.21.1–10; 271–272). We know that these were incorporated into the local practice of horoscopy because Zhou Yun in 1582 (X 1031: 223b1–5) uses the same term, *jian* 箭 (arrowhead), and moreover defines the lots in a manner identical to that of the *al-Madkhal*. Zhou Yun, however, curiously writes that this method is derived from "Ptolemy (Ptolemaios) of India" (Tianzhu Batiliemusi 天竺八替列木思). It is clear that the *al-Madkhal* was used by Chinese astrologers, a point that stands in contrast to the view of Chen Ying (1989), who suggests that interest in this work and Arabic astrology "were stimulated by European astrology and chiefly restricted in history-tracing and knowledge-comparison, with very little intention of practical applications."[72] Arabic astrology, in reality, was in fact studied by Chinese astrologers *before* the translation of European materials by Jesuits (Shi and Zhu 2016: 312–314).

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interpret "legem gentilium" as referring to the Sabaeans, who were a religious minority during the Abbasid Caliphate that purportedly worshipped the planets.

71 Tianyi and Taiyi are two of the nine palaces 九宮, i.e., spirits of nine constellations of the nine directions. See *Xin Tang shu*, vol. 2, 326, and *Jiu Tang shu*, vol. 3, 929.

72 For a summary of Chen Ying's views and some objections, see Shi and Zhu 2016: 312–314.

ASPECT

Aspect (from Latin *aspectus*: "look" or "sight") in the *Lingtai jing* is translated with the verb *jian* 見 "to see" (DZ 288, 5: 25c6). The basic concept of aspect is that planets are conceived of as "seeing" one another in differing capacities based upon their positions relative to one another, and these configurations signify various things. The *Mingyi tianwen shu* (1.21.1) gives the following explanation:

> With respect to the separating distances between the signs, it is called opposition when there is a separation of six signs and 180 degrees. It is called trine when there is a separation of four signs and 120 degrees. It is called "two bowstrings" [square][73] when there is a separation of three signs and 90 degrees. It is called sextile when there is a separation of two signs and 60 degrees. Opposition is inauspicious in being separating and hostile. The square aspect is half as inauspicious as opposition. The aspect of trine is auspicious in indicating harmony and familiarity. Sextile is half as auspicious.[74]

This definition is derived from Ptolemy's *Tetrábiblos*, in which he defined four types of aspect in an identical manner (1.13; 73–75). An alternative system of defining these four types of aspect by "sign-based" configurations, something to which this section also alludes, was also employed in the Hellenistic tradition. Aspect in this system is determined by the distance between whole zodiac signs, rather than by exact degree measurements (see fig. 10).

Looking back at earlier horoscopic literature in Chinese, we can see that the terminology differs somewhat from what we see here. In the *Lingtai jing*, the opposition aspect is rendered as

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73 The corresponding Arabic term is *tarbi'*, which means a square or quadrangular form. The Chinese translation of "two bowstrings" seems to derive from the two right angles, akin to two drawn bowstrings, forming a square. This term in Chinese translation appears to stem from a Chinese conception, rather than being Arabic in origin.

74 凡宮分相者, 隔六宮一百八十度, 呼為相衝. 隔四宮一百二十度, 呼為三合. 隔三宮九十度,呼為二弦. 隔兩宮六十度, 呼為六合. 相衝照, 係相離讎恨凶. 二弦照比相衝減半凶. 三合照, 主和睦親厚吉. 六合減半吉. See Chinese reproduced in Yano 1997: 267.

duiwang 對望, and similarly in the Japanese 1113 horoscope we see the identical term. The square aspect in the *Xingxue dacheng* is called *si zheng zhao* 四正照 ("illumination at the four cardinals").[75]

As an example of how aspect is utilized, predictions are made in the *Xingxue dacheng* concerning what will become of an individual when Yuebei aspects some planets as follows:

> This planet is greater than the other stars in its power over calamity and fortune. If it aspects Jupiter, the native will become a Censor or Remonstrator.[76] If it aspects Mars, the native will become a hero upsetting the world. If it aspects Mercury, he will become a thief.[77]

75 DZ 288, 5: 23b18, 26b16, 26c4. Momo (1990: 137). SKQS 809: 777b15.

76 *Tai-xian* 臺憲 perhaps is a scribal error for *tai-jian* 臺諫. Hucker (1985: 476) identifies the latter as a Song-Ming abbreviation functioning as a "quasi-official reference to members of the Censorate and the Sung dynasty Remonstrance Bureau or the Ming dynasty Offices of Scrutiny."

77 此曜為災福力大於諸星. 若見木即為臺憲之任; 見火為亂世英雄; 見水為盜. SKQS 809: 682b10– 11.

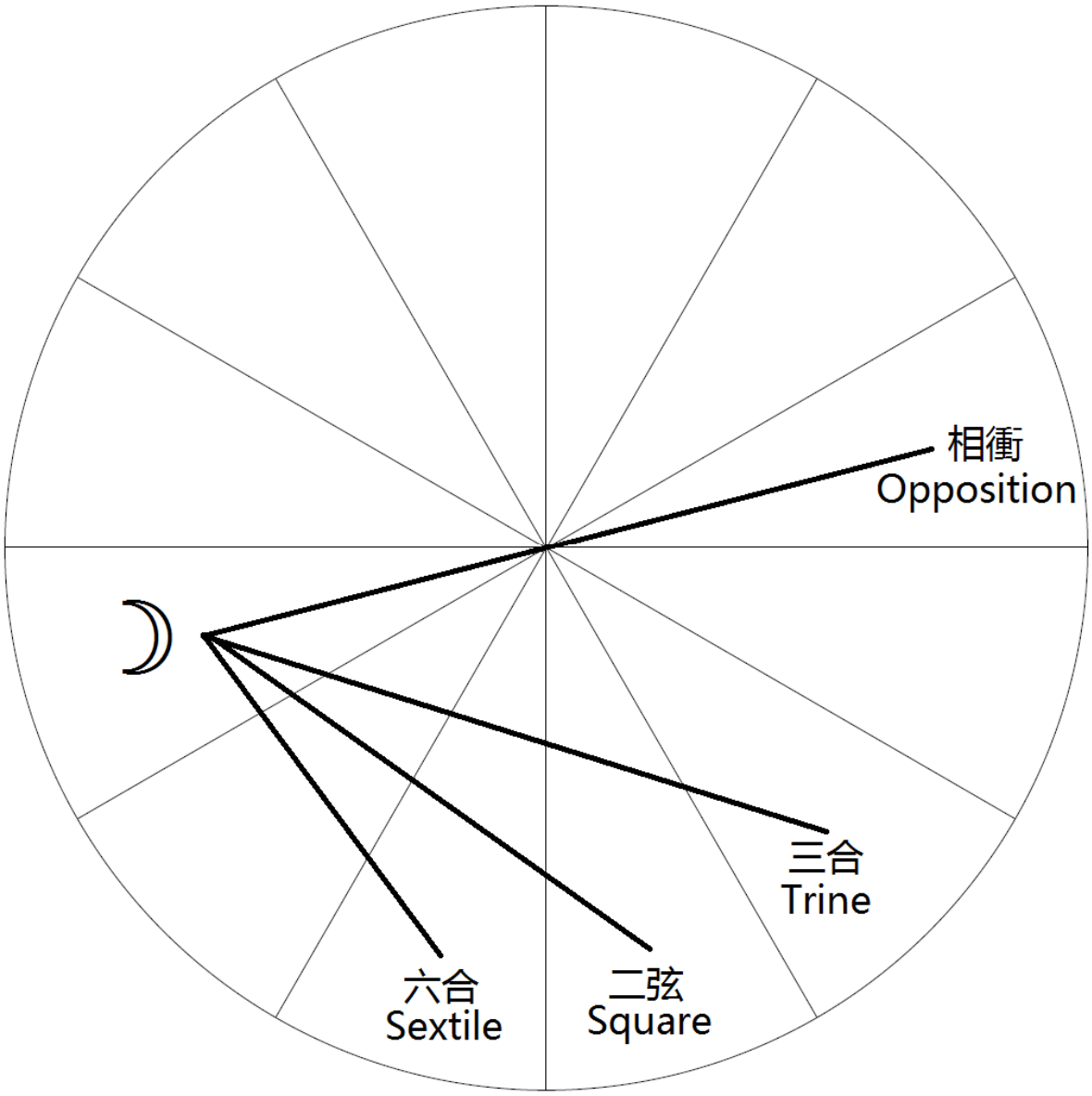

Figure 10. Aspects.

Aspect can also be an important factor in deciding what lots signify. For example, the Lot of the Father in the *Lingtai jing* is defined as follows:

> If there is a benefic planet [in the Lot of the Father], the father will be prominent. It will indicate problems for the father if in a diurnal birth the Sun aspects Mars, or in a

> nocturnal birth Saturn aspects the Sun, or if the Sun and Eclipse Deity [Rāhu or Ketu] are together.[78]

LUNAR STATIONS IN CHINESE HOROSCOPY

Chinese horoscopy includes abundant lore concerning the *nakṣatras* or lunar stations. Their use in horoscopy ought to be understood as separate from the Indian *nakṣatra* astrology discussed above, since in the present context they were utilized within a purely horoscopic framework distinct from the earlier Indian systems.

The lunar stations were also an important feature of Persian and later Islamicate traditions of astrology. Chapter II.3 of the *Bundahis* [*Bundahišn*] (1880: 11), a Pahlavī work detailing the cosmogony and cosmography on the basis of Zoroastrian scriptures (MacKenzie 1964, 1989), lists the names of twenty-eight lunar stations, the concept of which no doubt originated from Indian sources.[79] Given the Indo-Iranian sources, it is unsurprising to see that the lunar stations played a prominent role within Chinese horoscopy.

The lunar stations are each ruled by a planet in Chinese horoscopy. This concept is called "degree rulers" (*du zhu* 度主), which is similar to sign rulership (*gong zhu* 宮主). This system of degree rulers is defined in fascicle four of the aforementioned *Scholars' Record Perfecting Filial Piety* (DZ 1471, 35: 625b1–626c4). These are presented in Table 5.

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78 如有善星, 父貴. 如晝生, 日見火; 夜生, 土見日; 日與蝕神同並, 主妨父也. DZ 288, 5: 26a12–14.

79 Kunitzsch (1987: 374) suggests that the Arab system of lunar stations or mansions, called *al-Manāzil*, appear to be of Indian origin, but notes that this theory is not firmly established. The term *manāzil* is mentioned in the Qur'an (10: 5 and 36: 39). The *al-Manāzil* are tropical, rather than sidereal, and comprise 28 stations of uniform dimensions (12°50 each), which differs from the aforementioned Indian system of *navāṃsas*, which divides the ecliptic into 27 sidereal *nakṣatras* of uniform dimensions (13°20 each). It is conceivable that the *navāṃsas* were the prototype of the *al-Manāzil*, but this requires further investigation.

Table 5. Planetary Rulerships of the Lunar Stations[80]

1. 婁宿	8. 鬼宿	15. 亢宿	22. 牛宿
Aśvinī	Puṣya	Svāti	Abhijit
Venus	Venus	Venus	Venus
2. 胃宿	9. 柳宿	16. 氐宿	23. 女宿
Bharaṇī	Āśleṣā	Viśākhā	Śravaṇa
Saturn	Saturn	Saturn	Saturn
3. 昴宿	10. 星宿	17. 房宿	24. 虛宿
Kṛttikā	Maghā	Anurādhā	Dhaniṣṭhā
Sun	Sun	Sun	Sun
4. 畢宿	11. 張宿	18. 心宿	25. 危宿
Rohiṇī	Pūrvaphālgunī	Jyeṣṭha	Śatabhiṣaj
Moon	Moon	Moon	Moon
5. 觜宿	12. 翼宿	19. 尾宿	26. 室宿
Mṛgaśīrṣa	Uttaraphālgunī	Mūla	Pūrvabhādrapadā
Mars	Mars	Mars	Mars
6. 參宿	13. 軫宿	20. 箕宿	27. 壁宿
Ārdrā	Hasta	Pūrvāṣāḍhā	Uttarabhādrapadā
Mercury	Mercury	Mercury	Mercury
7. 井宿	14. 角宿	21. 斗宿	28. 奎宿
Punarvasū	Citrā	Uttarāṣāḍhā	Revatī
Jupiter	Jupiter	Jupiter	Jupiter

80 Note that the ordering commencing from Aśvinī (Lou 婁) here is an arbitrary decision on my part. The *nakṣatras* originally commenced from Kṛttikā, but later around the fifth or sixth centuries they were revised to commence from Aśvinī. Alternatively, the sequence commencing from Kṛttikā (here ruled by the Sun) would also be logical.

It is apparent from the assignment of planetary rulers that the ordering is based on the ordering of the seven-day week. The seven-day week is not a native Chinese custom, which means that in all likelihood this system of degree rulers is foreign in origin.

The lunar stations are arguably just as important in making predictions as the zodiac signs. The particular locations along the ecliptic in which planets have their exaltations and falls are normally defined by the degrees of lunar stations, rather than the zodiac signs, in Chinese horoscopy. The activity or signification of a planet will change considerably according to the station in which it is positioned. The ruler of the station is also an important factor. Wan Minying provides many such details. For example, Saturn in the degrees ruled by the Sun "indicates that the father will be prominent. [The native] will constantly suffer cold illnesses. It will be especially severe if it is a nocturnal birth." In contrast, Saturn in the degrees ruled by the Moon "harm the mother and destroy wealth. [The native] will suffer many cold illnesses. They will enjoy writing and have abundant literary intelligence."[81]

PLANETS IN CHINESE HOROSCOPY

As Xiao Ji's aforementioned work demonstrates, the planets were originally in the Chinese conception since ancient times regarded as insentient natural forces, a convention that continued until the Tang period. Although the five visible planets were associated with the five elements (metal = Venus, wood = Jupiter, water = Mercury, fire = Mars, and earth = Saturn), stellar bodies were considered by Xiao Ji to be metal in their composition (X 1060: 249a15–19). Following the introduction of horoscopy, however, from the mid-eighth century onward, a different conception of the planets as sentient deities began to take shape in the Chinese imagination. In this new model from abroad, each planet seemingly possesses its own personality, preferences, and inclinations. The planets as deities became part of the Chinese pantheon.

Chinese horoscopic lore concerning the planets draws from multiple sources. The qualities and natures of the five visible planets plus the Sun and the Moon in Chinese horoscopy largely reflect the Hellenistic model. The lore and qualities of the planets generally did not change between the late

81 日度主父貴, 常患冷疾, 夜生尤甚. ... 月度妨母, 損財, 多患冷疾, 好文章, 足詞智. SKQS 809: 593.

Tang and late Ming periods. It is therefore possible to discuss the planets in Chinese horoscopy based primarily upon Wan Minying's work from the sixteenth century. This is also necessary, given that comprehensive details of planetary lore are simply fewer in earlier extant works.

To begin, one of the arguably most important doctrines of classical horoscopy is sect (*hairesis* in Greek, meaning "faction"), which refers to the preferred time of day (night or day) of a planet. Wan Minying quotes the *Duli yusi jing* as follows: "Nocturnal births shun Saturn, while the diurnal shun Mars. There will certainly be a calamity when each meets its opposite."[82] The two malefics of Hellenistic astrology are considered to be especially wrathful when out of their favored sects. Saturn is a cold planet and therefore prefers the warmth of daytime. Mars is a fiery planet and therefore prefers the coolness of nighttime. The other planets similarly have their preferred sects: the Sun and Jupiter are diurnal, while the Moon and Venus are nocturnal. Mercury is neutral. The benefic planets operate better while in their preferred sects (Greenbaum 2016: 403–404).

Scientific astronomical knowledge concerning the planets in China was also influenced by foreign sources. This is demonstrated by the presence of Babylonian goal-years from at least the ninth century onward. Goal-years refer to perpetually reoccurring planetary periodicities or cycles of movement. Evans (1999: 315) states, "All the known goal-year texts are from the Seleucid period. Among the oldest is a text for 81 S.E. (231/230 B.C.)." Goal-years are first found in China in the Buddhist *Qiyao rangzai jue*, and thereafter variant parameters are given by Liu Dingzhi 劉定之 (1409–1469). The goal-years, or at least a specific set, were known to Ptolemy, as well as to countless other astronomers across Eurasia.[83] Some examples of these goal-years are presented in Table 6.

82 都例經云: 夜生忌土, 晝忌火, 各自相逢必為禍. SKQS 809: 569a6–7.

83 Pingree (1998: 135–137) notes that the goal-years are found in Greek, Arabic and Indian sources.

Table 6. Babylonian Goal-Years and Periodicities[84]

Planet	*Qiyao rangzai jue*	Liu Dingzhi	Claudius Ptolemy
Jupiter	83 (Y), 76 (A), 7 (R)	83 (Y), 76 (A), 7 (R)	71 (Y), 65 (A), 6 (R)
Mars	79 (Y), 37 (A), 42 (R)	79 (Y), 37 (A), 42 (R)	79 (Y), 37 (A), 42 (R)
Saturn	59 (Y), 57 (A), 2 (R)	59 (Y), 57 (A), 2 (R)	59 (Y), 57 (A), 2 (R)
Venus	8 (Y), 5 (A)	8 (Y), 5 (A)	8 (Y), 5 (A)
Mercury	33 (Y), 104 (A)	46 (Y), 145 (A)	46 (Y), 145 (A)
Rāhu	18 (Y), 1 (R)		
Ketu	62 (Y), 7 (R)		
Yuebei		62 (Y), 7 (R)	
Ziqi		10 intercalary months in 28 years, 1 (R)	

*Number of sidereal rotations (R) and number of synodic periods (A) in a number of years (Y).

The identical parameters of Ketu in the *Qiyao rangzai jue* and Yuebei (the apsidal precession of 8.85 years) are a result of Cao Shiwei reassigning Ketu as the lunar apogee sometime around the year 806 for use within a Buddhist context that favors the *navagraha* (i.e., nine planets, in contrast to the set of eleven taught by Li Miqian).[85] Although the *Navagraha-karaṇa* provides a formula for calculating the lunar apogee (called *gaoyue* 高月, "high moon," which is derived from *candra-ucca* in Sanskrit), it does not appear that Li Miqian or Cao Shiwei ever consulted this text, nor does this text treat the lunar apogee as a planet.[86]

Moving on, we will survey each of the eleven planets in Chinese horoscopy, the aim of which

84 See Kotyk 2017b: 45–46, esp. fn. 103 and 105; *Za zhi* 雜志 by Liu Dingzhi (557); Neugebauer 2012: 604–605.

85 Note: 62/7 = 8.85. As Grego (2006: 44) explains, "The imaginary line that joins the points of apogee and perigee — effectively the major axis of the Moon's elliptical orbit — is called the 'line of apsides.' The line of apsides rotates (with respect to the stars) in a prograde fashion every 8.85 years." Yano (1986: 31) was the first scholar to identify the parameters of Ketu in the *Qiyao rangzai jue* as those of the lunar apogee. For further discussion of Cao Shiwei, see Kotyk 2017b: 42–43, 46–48.

86 See translation and commentary of relevant passage in Yabuuchi 1989: (12).

is to demonstrate sufficient parallels with early authors on astrology from Islamdom to prove that Chinese sources also ultimately depended upon many of the same foundations as the Islamicate tradition, while also pointing out some significant differences.

SATURN

Saturn in classical horoscopy is the foremost malefic planet, although in East Asia he is arguably second to Yuebei (see below). In East Asian iconography he is generally depicted as a bearded Brahmin (i.e., an "Indian man") holding a staff, which stems from an originally Greco-Egyptian motif of Kronos reaping wheat with a sickle. He is associated with the bull, and either wears a "bull cap" or is seen riding a bull. Chinese artists normally portrayed Saturn as a bearded Indian man with a dark complexion and slightly crooked back, which indicates age.[87] Saturn rules over longevity, which connects to the wider Saturnine associations with agriculture and activities that require time and restraint to come to fruition. Such lore can be gleaned from the inscription accompanying the illustration of Saturn, an Indian Brahmin riding a bull, in the "Painting of the Divine Forms of the Five Planets and Twenty-Eight Lunar Stations" (*Wuxing er shi ba xiu shenxing tu* 五星二十八宿神形圖), presently in the Osaka City Museum of Fine Arts (fig. 11).[88] The inscription reads as follows:[89]

> The god Saturn has a palace of black smoke. Sacrifice to him black sesame oil, vegetables and drinking water. For the coins, use old black ones, and for the vessels use those made of iron. Restrain yourself from excessive intercourse. Saturn is an

87 Two separate Tangut paintings in the St. Petersburg Hermitage Museum (items #XX-2424 and #XX-2430) show Saturn as a man with a red or brown beard and Caucasian features, which perhaps indicates a local conception of Brahmins from a region such as Kashmir.

88 McCoy (2017: 54, 192, esp. fig. 36) points out that this scroll shares many commonalities with a scroll uncovered in the Tarim Basin, dating to the eighth or ninth century, that includes Tocharian inscriptions.

89 The inscriptions of the painting, which are in seal-script, are also preserved in the Qing-era *Midian zhulin* 秘殿珠林 (SKQS 823: 677–678) as standard characters.

> Imperial Censor. One should do activities related to water and earth. Build up ancestral temples, farmlands and levees.[90]

Themes seen here play out in the horoscopic lore of Saturn in Chinese sources. They are also present in sources from the Arab world. The eminent astrologer Abū Ma'shar (787–886) explains that this planet is of "activities involving moist things and waters and riverbanks and ploughing and plants and works of the hands (in Dykes 2010: 235)." Wealth gained from agriculture or from external sources is characteristically Saturnine. As the *Xingxue dacheng* explains, Saturn in the second place (concerning wealth) indicates "surplus income from the four directions. They will often attract illicit wealth, developing fortune from wealth."[91] The text also states that Saturn in the fourth place (concerning estate) indicates "development of fortune from agriculture. If one is born during the daytime, it further indicates a portion of an estate from somewhere beyond one's home. If born during the night, the native will greatly destroy the enterprises of their parents."[92]

90 鎮星神以黑煙霧為宮. 祭用烏麻油, 蔬食, 飲水. 幣用故黑, 器用鐵. 戒在奢淫. 鎮星是御史. 宜水土事. 立祠農疇水渚旁. SKQS 823: 678a6–8.

91 土照合有四方外財, 多招不義之財, 因財發福. SKQS 809: 596a1–2.

92 土照合因田土上發福. 如在日生, 更主外鄉田宅之分. 夜生, 大破父母之業. SKQS 809: 596a16–b1.

Figure 11. Saturn in "Painting of the Divine Forms."

Themes of time and solitude are also qualities of Saturn. For example, Wan Minying explains that Saturn in the seventh place (the place of marriage) indicates that the native will "often attract a wife of an ugly appearance. Also indications of separation. It will be difficult to live together until old age. There is no harm if one's fate conflicts with that of the wife."[93]

Although Saturn is a malefic planet, he can indeed indicate favorable developments, especially if positioned in a favorable position, particularly with respect to whether the chart is diurnal or nocturnal. Saturn favors the day, a conclusion also stated by Wan Minying, who quotes an unnamed text: "If you see Saturn in a diurnal birth, their affairs will be harmonious. If the person is

93 多招醜貌之妻. 亦主相離, 難為偕老. 妻命相抵, 則無害. SKQS 809: 597a3–4.

born at night, then conversely it will be disastrous."[94]

JUPITER

Figure 12. Jupiter in "Painting of the Divine Forms."

Jupiter in classical horoscopy is the foremost benefic planet, although he is arguably second to Ziqi in auspiciousness (see below). He is normally depicted in East Asian iconography as a stately man in bluish-colored robes, holding a plate of flowers. In East Asia, he is associated with boars or pigs. The

94 經云: 晝生見土事和諧, 夜裏生人, 反為災. SKQS 809: 585a15–16.

zodiac sign Pisces (ruled by Jupiter) corresponds to the earthly branch *hai* 亥, which is associated with swine (*zhu* 猪).

This association between Jupiter and pigs or boars might seem to stem from Chinese lore, but a certain **Navagraha-sūtra* (*Jiuzhi jing* 九執經) cited in a Daoist text from the late-ninth or tenth century, titled *Chengxing lingtai miyao jing* 秤星靈臺祕要經 (DZ 289; Scripture of the Secret Essentials of the Compass Spiritual Terrace), calls for hair from a boar in an apotropaic ritual, in addition to abstaining from the consumption of pork.

A fragment from another text, titled the **Brahmadeva-saptagraha-sūtra* (*Fantian qiyao jing* 梵天七曜經), which is cited in a medieval Japanese manual, describes Jupiter as a chief lord riding a black pig (Kotyk 2017a: 52–53). These two texts appear to stem from an Indo-Iranian tradition based on the iconographical motifs described therein. The association between Mars and donkeys (see below) is also suggestive of a foreign origin for these animal associations, given that the donkey is not one of the twelve animals associated with the earthly branches. It is still nevertheless a remarkable coincidence that some of the Chinese animals associated with the earthly branches correspond to those animals of some planetary domicile rulers.[95]

The inscription alongside the illustration of Jupiter in the aforementioned "Painting of the Divine Forms" (fig. 12) reads as follows:

> The god Jupiter is gallant and influential. His shrine is to be built at the Palace Gate. Make offerings of white coins, and for vessels use silver. For foods, offer up dittany and things of the official colors of the Emperor. It is taboo to weep. Jupiter is ruler.[96]

The designation of Jupiter as king (*junwang* 君王) reflects the Persian transmission of

95 The branch *chou* 丑 (Capricorn, ruled by Saturn) is associated with the bull. *You* 酉 (Taurus, ruled by Venus) is associated with the hen. *Shen* 申 (Gemini, ruled by Mercury) is associated with the monkey. We indeed see these planets also depicted with these animals in China, but a stronger case can be made that these animal associations are foreign in origin, especially in light of textual evidence, and given the fact that the other animals of the earthly branches are not represented.

96 歲星神, 豪俠勢利, 立廟可於君門. 祭用白幣, 器用銀, 食上白鮮諱彩色. 忌哭泣. 歲星為君王. SKQS 823: 677b9–11.

astrological lore, in which Jupiter is associated with Ohrmazd, a convention stemming from the earlier Mesopotamian designation of Jupiter as Marduk, the ruler of the gods.

This association with rulership stands in contrast with the medieval Islamicate and European understanding of Jupiter, in which, as the *Picatrix* explains, he "rules over laws and the legal profession, jurisprudence, and skill in obtaining petitions, repayments and retentions." Abū Ma'shar, however, does explain that Jupiter also signifies kingdom and the king (in Dykes 2010: 241), which reflects an earlier stratum of lore. The *Picatrix,* and more broadly Islamicate and European traditions of astral magic, instead regarded the Sun as ruler or "governor of the cosmos" (*mundus gubernatur*).[97]

Native Chinese astrology also regards the Sun as lordly. For example, one Yuan dynasty source, titled *Tianwen jingyi fu* 天文精義賦 (Odes on the Essential Meaning of Astronomy) by Yue Xizai 岳熙載 (d.u.), cites different sources in describing the Sun as a ruler (X 1031: 87b). His descriptions of the planets are rooted in native Chinese lore. The Indian and Iranian streams of horoscopy in China, however, generally do not emphasize a lordly quality for the Sun.

In Chinese horoscopy, Jupiter is benefic, benevolent, and diurnal, and it signifies prosperity, civil rather than military office, and happiness. These qualities are also similarly mentioned in sources from Islamdom.

Wan Minying explains that Jupiter, even in the eighth place (of death and distress), indicates that the native "will have no disasters related to illness throughout life. They will enjoy pure fortune and never have unforeseen disasters."[98]

Jupiter interacting with the malefic planets, however, can cause diminished fortunes, although the planetary placements can greatly affect the outcome of such interactions. For example, Wan Minying states that "if Jupiter and Rāhu are conjunct in a *yang* [male] sign, [the native] will have rich blessings and position, whereas if they are in a *yin* [female] sign, they will have a terrible death."[99]

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97 For Latin, see *Picatrix* (III.I; 92–93). Translation by Greer and Warnock (2010–2011: 134–135). We ought to note that Panaino (2015: 246) explains that "in the Middle Iranian context, we observe a progressive identification of Mithra (Pahl. *Mihr*) with the Sun." Mithra is a divine judge in Zoroastrianism (Jong 2015: 92).

98 一生無疾厄, 常享清福, 永無不測之災. SKQS 809: 565b5.

99 木羅同宮, 在陽宮福厚有位, 在陰宮惡死. SKQS 809: 562b8.

MARS

Figure 13. Mars in "Painting of the Divine Forms."

Mars is a malefic planet, considered second in severity only to Saturn. East Asian iconography normally depicts him as a red figure with multiple arms holding assorted weapons, either wearing a "donkey cap" or riding a donkey. The association with the donkey likely stems from the Egyptian Seth (Kotyk 2017a: 50). Mars is universally associated with war gods: the Greek Ares, Mesopotamian Nergal, and Iranian Wahrām. Mars is fiery, violent, and competitive, representing gains and losses from conflict. The inscription alongside the illustration of Mars in the "Painting of the Divine Forms" reads as follows:

> The god Mars: fire is his food. For the sacrifice, use bloody meat and alcohol. For the vessel, use red copper. For the coins, use those that are red. Kill the victim and spill its blood. For the sacrifice, provide weapons of war. Sacrifice these after having made a clamor with drums. It is taboo to weep or carry out virtuous deeds. Mars is an arrogant and violent son of a nobleman. The shrine to Mars is to be at the Gate of the Army.[100]

Mars in Chinese horoscopy is nocturnal, malefic, and destructive, although as in warfare there are also gains to be had when outcomes prove favorable. Mars favors the night, given that his fiery quality is then cooled. Diurnal births are therefore especially unfavorable. Wan Minying explains that Mars "is a taboo planet when encountered by people with a diurnal nativity, and it is most terrifying should [Mars] be in a *yang* [male] sign."[101] Elsewhere it is explained that if a diurnal Mars is "met within the four cardinal signs, throughout life [the native's] wealth will be scarce like ashes."[102] Conversely, a nocturnal birth can prove quite favorable: "Nocturnal Mars in the [place of] fate [i.e., the first place] indicates possessing authority, grasping wealth and salary, and being prosperous and honored."[103]

SUN

The "Painting of the Divine Forms" does not depict the Sun. Buddhist sources of the Tang period depict the Sun as the Indian solar deity, Āditya or Sūrya, who rides in a chariot drawn by horses. One rare zoomorphic depiction of the Sun attested in the Tang period is that of "a form like a man, but a head like a lion and a human body." I have argued that this icon could stem from the Egyptian solar deity Ra (Kotyk 2017a: 43–44).

The solar lore that Wan Minying presents is an evident mix of Chinese and foreign elements.

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100 熒惑星神, 食火, 祭用血肉酒, 器用赤銅, 幣用赤, 殺牲啜血. 祭具戰器. 鼓舞然後祭之. 忌哭泣善事. 熒惑嬌暴公子. 熒惑廟可致軍門. SKQS 823: 678a1–3. Read *jiao* 嬌 as *jiao* 驕.

101 晝生人逢之為忌星, 最怕陽宮也. SKQS 809: 569a2–3.

102 四正宮中如遇着一生財物似灰微. SKQS 809: 570b2 –3.

103 夜火在命主有權, 掌有財禄, 富貴. SKQS 809: 570a2.

He states, "Great Yang, the solar asterism. The essence of fire. One name is the *Myr* star. Its color is red and its nature is broad. Its image is that of a lord. It is the place of the father."[104] The Sun in China is considered an embodiment of *yang* (the Moon embodies *yin*). The character *mi* 宓 here is a transliteration of Sogdian *Myr*, a name for the Sun derived from the Pahlavī *Mihr*. The Sun in horoscopy traditionally represents the father, whereas the Moon signifies the mother.

The Sun in Chinese horoscopy signifies themes of intelligence, study, sincerity, honesty, and prosperity in mid-life and beyond. Similarly, Abū Ma'shar describes the Sun as signifying "the life-giving soul, and light and splendor, reason and intellect and knowledge and middle age (in Dykes 2010: 241)." The first thing mentioned here has a parallel in the *Lingtai jing* (DZ 288, 5: 23c6): the sign in which the Sun is positioned is defined as the "fate sign" (*ming gong* 命宮).

The Sun is neither entirely benefic nor malefic, which reflects its perceived influences on Earth (the Sun both nourishes and destroys life). Its influences can be unfavorable, especially when conjunct with other planets. For instance, the Sun in the second place (concerning wealth) indicates that "in their early years there will be much destruction [of wealth], while in the middle and late years it will become auspicious. It indicates holding an eminent position. If conjunct with Jupiter, then there will be the most wealth, whereas in this sign conjunct with Mercury there will be its loss."[105] Similarly, the Sun in the fourth place (concerning estate) "indicates that they will obtain wealth from their parents; first they will destroy their ancestral [estate] and later establish themselves. They will acquire fields and manors external [to their family]. They will only be able to flourish in their later years."[106]

VENUS

Venus is the lesser benefic, second to Jupiter. East Asian iconography generally depicts her as an elegant lady holding or playing a *pipa* 琵琶 (a stringed guitar-like instrument). She is associated with

104 太陽日宿, 火之精, 一名宓星, 其色紅赤, 其性寬厚, 人君之象, 父之所. SKQS 809: 632a1–2.

105 初年多破, 中末方吉. 主居貴位. 同木財最多. 此宮同水主失脫. SKQS 809: 642a1–2.

106 主得父母財物, 先破祖後自成. 招外田庄, 末年方可旺盛. SKQS 809: 642ba1–2.

ji 雞, which means hens or more broadly fowl. The inscription alongside the illustration of Venus in the aforementioned "Painting of the Divine Forms" reads as follows:

> The goddess Venus: at the sacrifice employ female singers. For the vessels, use gold, and for the coins use those yellow in color, and for food use bloody meat. Do not kill any victims. It is also taboo to weep. The shrine of Venus is to be in a yellow room within the quarters of indentured female servants, in which the decorations are all yellow and draped in the five colors. Venus represents the Empress and imperial concubines.[107]

Venus in Chinese horoscopy signifies beauty, women, music, desire, friendship, and martial authority. Zhou Yun (X 1031: 269b) associates Venus with "beautiful appearance, much desire, and indulgence in music and socializing."[108]

107 太白星神, 祭用女樂, 器用金, 幣用黃, 食用血肉, 不殺牲, 亦忌哭泣. 太白廟, 女宮中黃屋, 飾皆黃仍被五采. 太白后妃也. SKQS 823: 678a11–13.

108 姿容美, 情多慾, 耽音樂交友 … X 1031: 269b13.

Figure 14. Venus in "Painting of the Divine Forms."

Abū Ma'shar (in Dykes 2010: 253) similarly associates Venus with women, clothing, ornaments, gold, amiability toward friends, singing, dancing, and the lute. The *Qiyao rangzai jue* explains an apotropaic approach against Venus, in which one should wear yellow garments as well as gold and jade treasures, and moreover one is to avoid conversing with women for it can lead to disasters connected to jealousy and speech (T 1308, 21: 449a3–8).

Wan Minying explains that "Venus is the star of the soldier. If it illuminates a person's body [sign], it indicates possessing the rank of general. If it is in the fate [sign], it indicates possessing soldiers. If Venus is of the wife [i.e., positioned in the seventh place], it indicates achievement through the possession of the wealth of one's wife."[109] In light of the *Brahmadeva-saptagraha-sūtra* describing what appears to be Ištar (Kotyk 2017a: 54), the Mesopotamian goddess associated with the planet

109 金者，兵星也. 照人身主有將軍之位. 在命主有兵. 金為妻主有妻財而達. SKQS 809: 601a8–9. See below for details on the definitions of the body-sign.

Venus, who was also associated with war, it is tempting to suspect that the stated martial quality of Venus here might stem from a Near Eastern direction, but this would be perhaps premature, given that Xiao Ji states that Venus is "the image of a great general 大將之象" and that this planet manages troops (X 1060: 249b14). Nevertheless, Venus in Sasanian Iran was connected to the goddess Anāhīd (Old Persian Anāhitā), and in the Sogdian context the goddess Nāxid (Panaino 2015: 253). Qaderi (2018: 185) argues that "Antu/Annunit(um), the Mesopotamian goddess of warfare and the planet Venus, was introduced to the Iranian pantheon as Anāhitā." It is therefore difficult to determine whether the Chinese horoscopic material that connects Venus with war stems more from Iranian or Chinese sources. It is curious that Islamicate sources surveyed by Dykes do not seem to highlight any martial quality of Venus, which only complicates the problem at hand, leaving it unresolved.[110]

MERCURY

The inscription alongside the illustration of Mercury in the "Painting of the Divine Forms" reads as follows:

> The goddess Mercury is of the Staff Agency. He knows the entire realm, governing writing and texts on calendrical science, while administering communication and overseeing law and order in the realm. Mercury is the court astronomer. He never departs from the Sun. For the sacrifice, use greenish-blue jade, for the vessels use greenish-blue jade, and for the coins use those greenish-blue in color. For the sacrifice, use vegetables and seafood. The shrine is to be built at the Chancellery (Central Secretariat).[111]

110 See Dykes 2010: 253–256. *Picatrix* (III.I; 93–94) also does not mention martial qualities for Venus.

111 辰星神, 功曹也. 知天下, 理文墨歷術典, 吏傳送, 執天下綱紀. 辰星日御也, 常不離日. 祭用碧, 器用碧玉, 幣用碧色. 祭用蔬, 水類〈魚屬〉. 廟可致於相府也〈中書省是〉. Sub-commentary indicated in brackets. SKQS 823: 678a16–b3.

Figure 15. Mercury in "Painting of the Divine Forms."

The motifs and features of Mercury here clearly represent a sinicized form of Hermes. In East Asian iconography, Mercury is generally depicted as a woman with a brush and paper, wearing a monkey cap. Near Eastern and European sources depict Mercury as a male figure. The Chinese representation of a female Mercury is unique. The monkey likely stems from the association between Hermes and the Egyptian Thoth, the latter being the god of writing, often represented as a baboon. Hermes in a Greco-Egyptian papyrus is associated with turquoise (Betz 1986: 312). The *Picatrix* gives "blue and mixed colors" for Mercury.[112] The Chinese tradition naturally associated the blue-green color of Mercury with jade, a stone long cherished in China.

112 "et ex coloribus blavium et misculum." For Latin, see *Picatrix* (III.I; 94). Translation by Greer and Warnock (2010–2011:

The astrologer *al-Qabīṣī* (mid-tenth cent.) states that Mercury is associated with works such as "business deals and assessing and geometry and the managing and organization of a matter" as well as "writing and the knowledge of versifying, and especially the work of counting (in Dykes 2010: 259)." Mercury is universally associated with topics such as intelligence, calculation, management, organization, and writing. These themes are evident in Chinese sources.

Zhou Yun explains that "Mercury in the [sign of] fate indicates that the nature [of the native] will be warm with good form. They will be sophisticated and possess much resourcefulness. They will wander about. They will be naturally endowed with bright wits and they shall produce many writings."[113] Similarly, Wan Minying quotes an unspecified text that reads "Mercury of the northern direction especially indicates intelligence, alertness of mind, and many skilled arts."[114]

Mercury is neither diurnal nor nocturnal in nature, and neither benefic nor malefic. Her qualities are determined by the circumstances in which she is positioned. This is clearly stated in the versified version of the *Duli yusi jing* reproduced by Wan Minying: "Mercury alone is not fixed, as its character is determined by those in its proximity. When associated with a male [luminary], then it becomes a benefic male. When associated with a female [luminary], then it becomes a malefic female."[115] This multivalent quality of Mercury is evident when she interacts with other planets, particularly malefics. For example, Wan Minying explains that when Mercury is positioned "in the domicile of Saturn, it indicates a ferocious nature. They will carry out virtue when witnessing virtue, and carry out evil when witnessing evil."[116]

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136).

113 水在命主, 性溫, 良形容. 清秀, 多智謀, 随方逐圜, 天資明敏, 更多文章. X 1031: 270a4–5.

114 經云: 北方水星, 專主智性, 地惺惺, 多巧藝. SKQS 809: 616b1–2. The character *di* 地 ("earth") is anomalous here and is likely a scribal error for *xin* 心 ("mind").

115 獨有水星本無定, 見附近處即為性, 附陽即陽之相輔, 附陰即陰為害病. English translation here by Mak (2014: 142). SKQS 809: 436a12–13.

116 土宮主性凶猛, 見善行善, 見惡行惡. SKQS 809: 624b12.

MOON

The "Painting of the Divine Forms" does not depict the Moon. The Moon is depicted as a lady holding a white sphere in the Khara-Khoto collection from Tangut Xixia.[117] The Moon is also depicted as a woman in the Japanese *Kuyō hiryaku* 九曜秘歷 (Secret Calendar of the Nine Planets) by Sōkan 宗觀 (produced in 1125).[118] These two icons are based upon earlier Chinese motifs, in which the Moon is universally female. This female quality is highlighted by one of the Moon's names in Chinese: Taiyin 太陰 ("Great *Yin*"), in contrast to the Sun, which is Taiyang 太陽 ("Great *Yang*"). The Indian lunar deity Candra, in contrast, is male. All planetary deities (the *navagraha*) in India, in fact, are traditionally male.

Given the Moon's feminine nature, in Chinese metaphysics as well as Hellenistic horoscopy, the Moon naturally represents the mother. Wan Minying states, "Great *Yin*, the lunar asterism. The essence of water. One name is the *M'x* star. Its color is bluish-white and its nature is compassion. Its image is that of the retainer. It is the place of the mother."[119] Abū Ma'shar (in Dykes 2010: 263) also associates the Moon with mothers and female relatives. According to the *Lingtai jing* (DZ 288, 5: 23b8–9), the sign in which the Moon is present in a nativity becomes the "body sign" (*shen gong* 身宮). Zhou Yun similarly assigns the Moon to the mother and calls the Moon the "body-star" (*shen xing* 身星). He states that the Moon "indicates a disposition that is gentle and full-bodied."[120] The lunar association with the body stems from Hellenistic astrology originally. Greenbaum (2015: 305) explains that in Hellenistic astrology "the Moon is associated with the body, and the Sun with the mind, the soul and spirit."

In Chinese horoscopy the Moon does not seem to mitigate the ill effects of malefics, especially when the latter are positioned in unfavorable configurations. Wan Minying states the following:

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117 See Hermitage Museum (St. Petersburg) item# XX-2453.

118 See appended plate 2 in Kotyk 2018c.

119 太陰, 月宿水之精, 一名莫星, 其色青白, 其性仁慈, 人臣之象, 母之所. SKQS 809: 646b16–647a1. *M'x* is Sogdian, which derived from Pahlavī *Māh*.

120 太陰, 配母, 為身星, 主儀容溫軟, 豐美. X 1031: 268b10.

> If the Moon and Saturn are conjunct in the same Sign, and Saturn is the ruling star [i.e., the domicile ruler], [the native] will possess learning and eminent status; if a diurnal birth, their fortune will be rich and their status elevated, whereas if a nocturnal birth they will have lesser fortune. If [Saturn] is not the domicile ruler, they will have many disasters. Their speech will be handicapped, and they will be dull by nature. In a nocturnal nativity, they will be debauched in their actions, and it indicates a deformity of the lips of the mouth. Their mother will have illness.[121]

Dorotheus (II.18; 157) similarly explains that Saturn with the Moon corrupts the mother's well-being.

Rāhu and Ketu

Rāhu is an ancient Vedic deity, who appears in a portion of the *Ṛgveda* (5.40.5) in which a demon named Svarbhānu afflicts the Sun with darkness. Later, Rāhu in the *Atharvaveda* (19.9.10) is synonymous with the earlier demon. Ketu originally was not associated with Rāhu. The word *ketu* meant "banner" among other things and represented comets (Gansten 2009: 652–653). Initially, Rāhu was assigned the function of the ascending node of the Moon. It was only later, around the seventh or eighth century, that Ketu was assigned the function of the descending node.

Indian iconography from the early eighth century, as preserved in East Asia, originally depicted Rāhu as a decapitated head with hands, and Ketu as a demonic figure springing forth from smoke, the latter being described in the same manner in the Śaivaite *Śivadharmaśāstra* of the sixth or seventh century (Kotyk 2017a: 59–60). These icons, however, were exclusively preserved in Buddhist materials. In China, the originally Near Eastern motif of the nodes as the head and tail of an eclipse deity (*chi shen* 蝕神), which was normally associated with serpents and became more mainstream than the aforementioned Indian icons, first appears during the ninth century, such as in the Buddhist *Qiyao rangzai jue* (T 1308, 21: 442b3 and 446b1). The motif of a serpent representing the nodes, which

121 月土同宮, 土是主星, 有學問身貴, 晝生福厚貴達, 夜生微福, 不是主星, 多災害, 言詞蹇澁, 性純, 夜生作事淫濫, 主缺唇, 母有疾. Read *chun* 純 ("pure") as *dun* 鈍 ("dull"). SKQS 809: 654b4–6.

the Chinese received via Iranian intermediaries, can be traced back to late Hellenistic antiquity, with examples even existing from the cult of Mithras (Sluijs 2009). The Islamicate tradition of astrology also received this concept from the Iranian tradition (Kuehn 2016: 216–217).[122]

Evidence indicates that scientific knowledge of the ascending and descending nodes of the Moon was introduced into China from abroad. The *Navagraha-karaṇa* of 718 provides calculations for the lunar node (in Yabuuchi 1989: 26–27; SKQS 807a15–b6), but it is uncertain whether Chinese astronomers adopted this formula, in which the period of retrogression of the lunar node is given as specifically 6794 days (equal to 18.6 years). The *Qiyao rangzai jue*, produced between 806–865, gives the following explanation of Rāhu:

> It always moves hidden and unseen. There could occur an eclipse if it encounters the Sun or the Moon. There will certainly be an eclipse if it encounters the New or Full Moon. There could also occur an eclipse if in opposition to the Sun or Moon.[123]

The text then cites a certain Indian author (Popi Mobu 婆毘磨步), whose name appears to have been garbled in transliteration, explaining that his explanation is the same as above, but that the Chinese in a different manner explain that the Sun and Moon follow parallel orbital paths (instead of their orbits intersecting, which is the Indian theory). The text argues that the Indian calendar is correct.

Who is this Indian author? The *Tong zhi* (SKQS 374: 414a6–7) lists a work in one fascicle titled *Jiu yaoxing luo licheng li* 九曜星羅立成歷 (Ephemerides for the Nine Planets and Rāhu) by Popiyan 婆毗衍, which is perhaps a transliteration of *Bhāvya. We might speculate that this work was the basis for the *Luoji er yinyao licheng li* 羅計二隱曜立成歷 (Ephemerides for Rāhu and Ketu) by Cao Shiwei, which was produced around the year 806 (Kotyk 2017b: 42), and became a core component within Chinese horoscopy. Cao Shiwei, it must be noted, reassigned Ketu as the lunar apogee in his system (see below). The nodes cannot be visibly tracked because they are not physical bodies in the

122 The word for the nodes in Pahlavī is *gōzihr*, which was transliterated into Arabic as *ǰawzahr* (MacKenzie 1986: 37).

123 常隱行不見, 逢日月則蝕. 朔望逢之必蝕. 與日月相對亦蝕. 謹按天竺婆毘磨步之云爾. T 1308, 21: 442b4–c2.

sky, hence it was expedient to produce ephemerides in order to quickly determine their positions, especially in a horoscope. This point explains why the complex calculations of the *Navagraha-karaṇa* for Rāhu were not implemented within Chinese astrology.

Rāhu and Ketu functioning as the ascending and descending nodes of the Moon, as well as their continued designation in Chinese using their Sanskrit names in transliterated forms, was carried on after the Tang. The *Mingxi bidan* 夢溪筆談 (Dream Pool Essays), by the famous writer and polymath Shen Kuo 沈括 (1031–1095) notes the nodes' utility in the prediction of eclipses (7.1; 60–61). Shen Kuo also mentions that this concept is to be traced to "Western India" (*Xitian* 西天), which likely points to the aforementioned visit of Li Miqian in China around the year 800.

The *Qiyao rangzai jue* regards both Rāhu and Ketu as malefic and disastrous. Similarly, the *Brahmadeva-horā-navagraha* explains that having Rāhu in one's natal sign brings illness and loss of office and wealth, while Ketu brings hindrances to office and many illnesses (T 1311, 21: 459b26–28 and 461a15–18). Wan Minying provides a more nuanced explanation of Rāhu:

> One name is Eclipse Deity. Hidden, it travels through the sky. The zodiacal degrees through which it travels include those of delight and anger. It orbits around the sky in eighteen years, moving retrograde along its celestial path. When delighted, it is the Star of Celestial Unity. When angry, it is the Star of Celestial Harm and Disastrous Net.[124]

Wan Minying also states, "Its shrine is in Leo, its joy is in Scorpio, its flourishing is in Libra, its preference is in Taurus, its delight is in Aries, and its anger in Gemini."[125] He also explains the prognosticated outcome if Rāhu is positioned in the sign in which it is angered:

> [If Rāhu is positioned] in its sign of anger, it becomes the Star of Celestial Harm and

124 一名蝕神, 隱行於天. 其行宮度有喜怒. 一宮一年半. 十八年行一周天, 逆行天道. 喜則為天統星, 怒則為天傷災網星. SKQS 809: 690b12–15.

125 廟在午, 樂在卯, 旺在辰, 好在酉, 喜在戌, 怒在申. SKQS 809: 691a13.

> Disastrous Net. When people encounter this, it indicates that throughout life they will be dull-witted by inherent nature. If [Rāhu] illuminates the person's body or life signs, they can only be a monk. They should be in state service. [This configuration] makes people isolated and often brings about unforeseen disasters.[126]

Rāhu signifies both favorable and unfavorable developments throughout each of the twelve places. Rāhu's configuration with other planets also significantly affects the prognosticated outcome. For instance, Rāhu in the tenth place (concerning office) "indicates possession of authority. It makes for official ministerial office if the Sun or Mercury are conjunct in the same sign, whereas if Mars or Saturn are conjunct it indicates that they will be a bandit.[127]

Ketu, also called the "Celestial Tail" (*Tian wei* 天尾) is equally as variable in signaling fortune and misfortune as Rāhu. For example, "If Ketu is conjunct with Saturn, then it indicates increase of wealth and benefits if diurnal, whereas in a nocturnal nativity it reveals obstacles in one's affairs."[128]

This Chinese understanding of Rāhu and Ketu notably differs from that of the Islamicate and Latin traditions of astrology. The *Picatrix* explains that the Head of the Dragon augments (*augmentandi*) by nature (that is to say, it increases fortune and misfortune already indicated wherever it is positioned), while the Tail conversely diminishes (*diminucionis*) by nature.[129] Māshā'allāh (died c.815), a Jew of Persian descent, similarly describes the effect of Rāhu or the Head as signifying "increase and loftiness and strength according to its conjunction with the planets" and Ketu or the Tail as signifying "separation and detriment" and "the decreasing of matters" (in Dykes 2008: 510–511). We might infer that the lore related to Rāhu and Ketu in Chinese horoscopy perhaps stems more directly from Indian sources.

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126 怒宮為天傷災網星. 凡人遇之, 主一生稟性愚昧. 若照人身命, 只可為僧. 宜在公門. 為人孤獨. 多招不測災. SKQS 809: 693a7–9.

127 當官主有威權. 日水同宮, 為台座, 火土同主作盜. SKQS 809: 702b4.

128 計都同土, 晝益財利, 夜生對照經營迍滯. SKQS 809: 713a1.

129 For Latin, see *Picatrix* (III.I; 95). Translation by Greer and Warnock (2010–2011: 137).

YUEBEI

Yuebei 月孛 is another pseudo-planet and one that is uniquely found only in East Asian astrology. Xing Yunlu 邢雲路 (fl. 1580), in his voluminous work on astronomy, the *Gujin lüli kao* 古今律歷考 (Study of Ancient and Present Tone and Calendars), defines Yuebei as a comet that spells disaster when appearing in the spring or autumn, or in the Big Dipper in the north, but at the same time acknowledges that Yuebei shares the same position as the slowest position of the Moon's orbit (i.e., the lunar apogee). One original meaning of *bei* 孛 is comet, which perhaps explains why Cao Shiwei assigned the function of Yuebei to Ketu (also originally meaning comet in Sanskrit) in his calendar, the *Futian li*. Xing Yunlu's text, however, claims that Li Chunfeng, the aforementioned seventh-century court divination master, calculated the parameters Yuebei, in which it moves 7 degrees every 62 days, while making 7 revolutions over a 62-year period.[130] Confusingly, elsewhere Xing Yunlu identifies the four pseudo-planets as originally stemming from "Astronomical Scripture of the Western Regions" (*Xiyu xing jing* 西域星經).[131]

Did Li Chunfeng actually calculate the parameters of Yuebei? A plausible explanation in this regard is that Xing Yunlu was relying upon sources that reattributed foreign astronomical and astrological knowledge to prominent Chinese figures of the past. The *Lingtai jing*, for example, was attributed to Tang Mei 唐昧, an ancient Chinese astronomer (Kotyk 2017c: 131). Wan Minying also describes a system of directions, based upon triplicity rulers, that is attributed to Li Chunfeng and Yuan Tiangang 袁天罡, both of whom were divination masters of the early Tang. These two men, we are told, received this method from the stars and constellations that gather atop a certain mountain named Zhuluo 竹羅 in the northwest heaven at night (SKQS: 428a–13b4). Such a fantastical account indicates an attempt to cover up the originally foreign source for the concept. Based on the extant evidence, the concept of triplicity rulers dates to Li Miqian's arrival in China around the year 800. The

130 淳風步月孛, 六十二日行, 七度, 六十二年而七周. The *Xingxue dacheng* gives for Yuebei an average daily motion of 11.29 parts of 1 Chinese degree per day (平行一日行十一分二十九秒), thus it moves 1 degree every 8.85 days. Approximately every 62 days it would move 7 degrees.

131 SKQS 787: 327b7 and 681b13.

attribution of Yuebei's calculated parameters to Li Chunfeng also likely stems from the same trend of reattributing astrological knowledge to native figures from the past.

In short, the parameters for Yuebei were introduced by Li Miqian and not produced by Li Chunfeng. Nevertheless, a method for calculating the lunar apogee was provided in the *Navagraha-karaṇa* of 718 (in Yabuuchi 1989: 12; SKQS 807: 935a8–13), but, as with Rāhu above, it does not appear that Chinese astrologers directly utilized the *Navagraha-karaṇa*. We should note here that the precession of the lunar apogee (3,232 days or 8.85 years) and the regression of the nodes (6,796 days or 18.6 years) were known to the second century BCE Greek astronomer Hipparchus and later Ptolemy (Leverington 2003: 51). It is possible that these lunar parameters taught by Li Miqian were derived ultimately from Hipparchean astronomy.

On the basis of her associated iconography, the figure and lore of Yuebei is derived from Iranian Āl, a demoness of an especially malefic nature related but *not* identical to Semitic Lilith (Kotyk 2017a: 60–64). Yuebei was introduced into China by Li Miqian. She was a part of early Chinese horoscopy from the ninth century, since the *Lingtai jing* mentions her. Although in the *Qiyao rangzai jue* the lunar apogee is treated as Ketu, there is nothing in said text to suggest that the lore of Yuebei was adapted into Buddhist horoscopy, especially given that medieval Japanese horoscopy does not use Yuebei.

Wan Minying explains, "This planet seldom bestows unto people fortune. It often bestows unto people misfortune." In line with the mythology of Āl and Lilith, Yuebei also signals a lack of sons, for "if the house is without sons, it is always due to [Yue]bei being positioned in a high and strong position."[132] One of the recurring themes in Wan Minying's treatise on Yuebei is harm coming to one's wife: "When [Yue]bei transits through the lunar station Xing [Maghā], she is called the Celestial Armament, and she will definitely kill one's wife and children."[133]

Yuebei in conjunction with other planets often heralds disaster, even with benefics. For instance, "If Yuebei and Jupiter are conjunct in the same sign, the native should pursue official office,

132 此星空與人為福, 多與人為祸. SKQS 809: 675a12. 妻無子息都緣孛在髙強. SKQS 809: 675b1.

133 孛躔星宿號天戎 定殺妻兒 … . SKQS 809: 681b13.

and not the arts. They will be short-lived. They will become a rebel against the state."[134] Zhou Yun, who was citing or paraphrasing the same source as Wan Minying, explains, "If [Yue]bei meets with Rāhu, one's inscribed merits will reach far beyond the frontier wall. Often people will have numerous calamities."[135] The conjunction of Yuebei and Ketu, both of which indicate promiscuous natures, is an instance in which the poem Wan Minying frequently cites is expressly directed at women:

彗星計都不可逢
人生薄賤主貧窮
須招風疾并癆厄
百六當之不善終
陰人計孛若入命
定是淫邪色慾娘
若得善星來同照
遏雲歌舞近侯王

The comet-star and Ketu cannot meet.
For life will be lowly with indications of destitution.
It will certainly bring wind disorders and hardships of physical exhaustion.
When it falls within a "Hundred and Six" bound, there will be no favorable death.
If Ketu and Yuebei enter into the life sign in a female nativity,
They will definitely be a debauched woman with sexual desire.
If a favorable star comes to jointly illuminate the conjunction.
They will become close to royalty with their cloud-stopping song and dance.[136]

134 孛木同宮, 宜官不宜才藝, 夭壽, 為悖逆之徒. SKQS 809: 683a14.

135 孛星會羅睺, 勒石遠塞, 常人多殃. X 1031: 277a13.

136 SKQS 683b8–11. See above for details on the "Hundred and Six" bound.

It is noteworthy that this extract and many of the others cited by Wan Minying are composed in a seven-syllable quatrain (*qiyan jueju* 七言絶句), a form of poetry developed during the Tang dynasty. It is perhaps unsurprising that such a form was used, considering that the aforementioned historical record indicates that the court officials Liu Xigu and Chu Yan during the early Song produced versified versions of Dorotheus. It would appear that horoscopy in China was gentrified starting from around the tenth century onward.[137]

Ziqi

Ziqi or "Purple Mist" (also called Tianyi 天乙) is the foremost benefic planet in Chinese horoscopy. Like Rāhu, Ketu, and Yuebei, Ziqi is a pseudo-planet, but unlike these three, Ziqi is unconnected with the Moon. Ziqi is "a point on the ecliptic for determining when to insert intercalary months." Ziqi progresses 1 degree every 28 days. There are 10 intercalary months in 28 years, hence an intercalary month is observed after Ziqi has progressed 36 degrees. The etymology of Ziqi's name is uncertain, but it is possibly connected to the Mesopotamian calendar. The twelfth Hebrew month is Adar and the intercalary month is Ve Adar ("And Adar"). The term Adar itself is an Akkadian loanword (*Addaru* or *Adaru*), which has been interpreted to mean "the dark or clouded month" derived from the Akkadian *adāru*, meaning to be dark.[138] Tianyi, on the other hand, is the name of a Chinese stellar deity that was merged with Ziqi, who is generally depicted in the art record simply as a man in courtly Chinese attire. Ziqi and Yuebei are not attested outside East Asia, but on the basis of the historical record, their astronomical parameters, and the iconography of Yuebei, it can be inferred that both were originally imported from abroad, most certainly through the efforts of Li Miqian.

The superb benefic quality of Ziqi is highlighted by Wan Minying, who states, "The star of Tianyi Ziqi carries on with the surplus of wood [Jupiter]. It is a planet of auspiciousness. One name is the Brilliant Star, for it is the energy of the Celestial Canopy and the source of mist and dew of the

137 The two extant Japanese horoscopes do not include any versified elements, which indicates that the process of versifying translated astrological texts in China started after the Tang dynasty.

138 See Kotyk 2017b: 47, fn. 107; Kotyk 2017c: 141; Klein 1987: 8.

myriad rivers."[139] The elemental association of wood with Ziqi reflects its being a benefic with many of the same qualities as Jupiter, which in China is associated with wood.

Ziqi generally mitigates the worst qualities of the malefics when interacting with them. For instance, Ziqi "in the domicile of Mars indicates a kind personality and being exceptional in literary and martial matters. They will learn literature just by seeing it, and learn martial arts just by seeing them."[140] Ziqi, however, can still be unfavorably affected by malefics: "If Ziqi is conjunct with Ketu and Yuebei in the fate-sign, it indicates criminal violation and punishments occurring as a result of alcohol and sex."[141]

DUNHUANG P. 4071: EXAMPLE OF A CHINESE HOROSCOPE

We might now finally briefly turn to discussion of an extant horoscope from Dunhuang (P. 4071).[142] This document consists of handwritten notes for a natal horoscope of 3 October 930 CE. The document itself was produced on 25 January 975 by Kang Zun 康遵 (d.u.), Niu (2016: 533) and Isahaya and Lin (2017: 158, no. 38) suggest that the time of the horoscope is between 15:00 and 17:00 on the basis of the characters at the beginning of document that give the date and time of the native's birth. I disagree with this point based upon details given in the document that indicate that the birth time actually ought to be 07:00 to 09:00. The text reads: "*Shen* Birth Time 申時生." *Shen* is a Chinese double-hour corresponding to 15:00 to 17:00, but I argue that this is a scribal error for *Chen* 辰, which corresponds to 07:00 to 9:00. Furthermore, the text expressly states that the "fate sign" (*ming gong* 命宮) is comprised of the lunar stations Di 氐 and Fang 房, which it states correspond to Scorpio (*Tianjie* 天蝎, in which the latter character is an error for *xie* 蝎). The "body sign" (*shen gong* 身宮) is stated to be Taurus (*Tianniu* 天牛). The time would have to be around 08:00 in order for Scorpio to be

139 天乙紫炁星, 續木之餘, 吉祥之曜也. 一名景星, 乃天華盖之氣, 百川霧露之源. SKQS 809: 660b14–15.

140 火宮, 主性格慈惠, 文武異常, 見文習文, 見武習武. SKQS 667a10.

141 計孛同入命宮, 主因酒色犯刑. SKQS 809: 669a13.

142 Relevant studies include Jao 1984, Jiang 1990, Kalinowski 2003: 271–272, Niu 2016, Isahaya and Lin 2017. Jiang (1990: 9) already pointed out some of the Persian influences in this document, especially the names of the twelve places.

at the ascendant and Taurus to be at the descendant. Moreover, in order for the annual profections to work out properly as stated in the notes (age 42 is ruled by Aries for instance), the ascendant would have to be Scorpio.

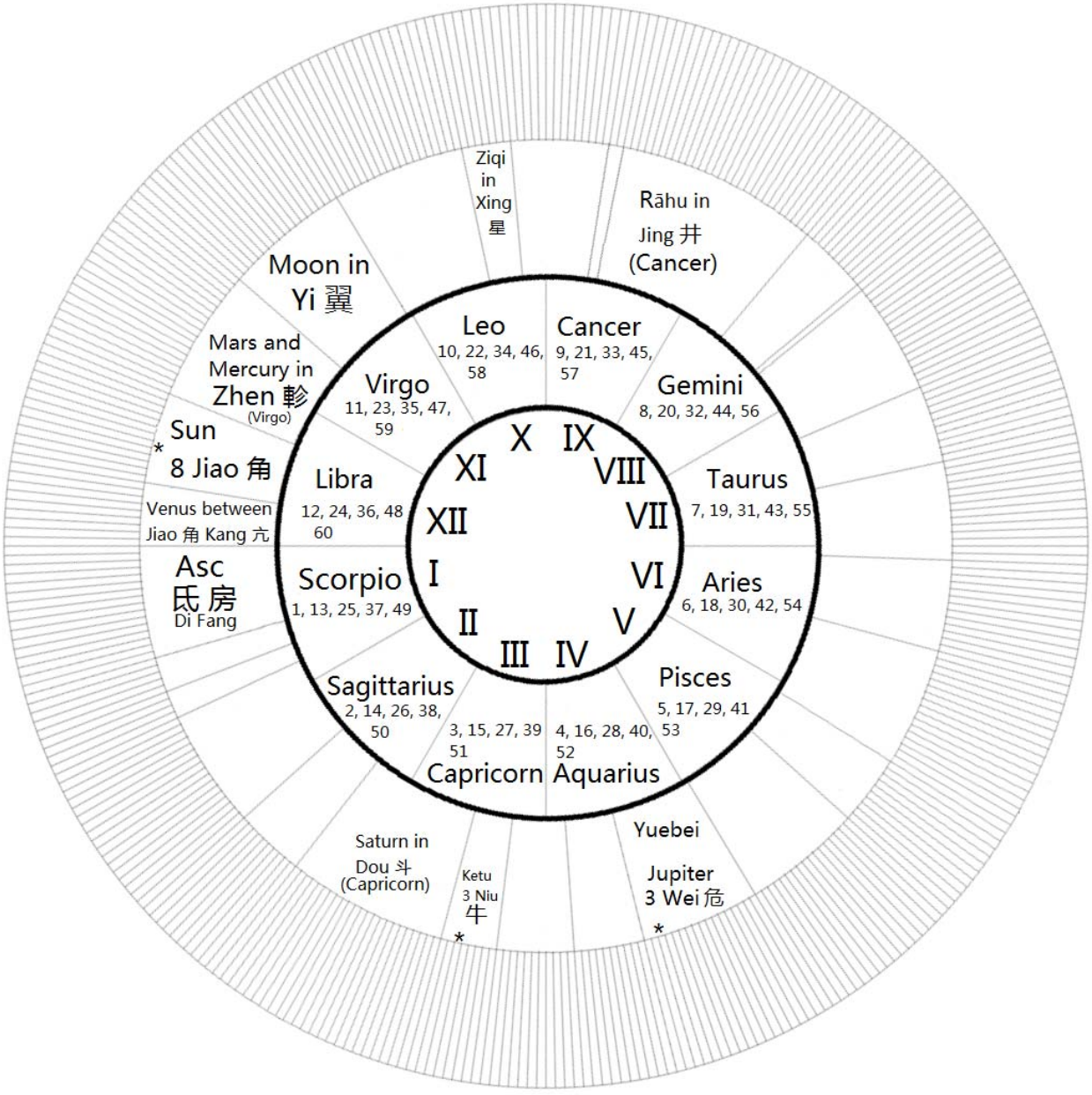

Figure 16. Reconstructed horoscopic chart of Dunhuang P. 4071.

Niu (2016: 547) expresses confusion about this issue and attempts to explain the discrepancies as scribal errors, but the horoscope as a whole makes sense if we place Scorpio at the ascendant.[143] The document itself does not include an illustrated chart, but, on the basis of the details provided therein, Figure 16 is produced, which differs from that of Niu, who places Pisces at the ascendant (2016: 545).

Wan Minying was aware of the differing conventions for determining the signs of fate and body, which clearly were also present during the tenth century. His work notes differing definitions in use during his time: assigning the signs in which the Sun and Moon are respectively positioned as "fate" and "body" signs, or alternatively assigning the signs positioned at the ascendant and descendant as these signs (SKQS 809: 398b4–11). In the present horoscope, the latter convention is adopted, which is why Taurus is identified as the body-sign, rather than the sign in which the Moon is positioned, i.e., Virgo.

As Niu (2016: 535) points out, the horoscope at hand mentions the *Futian li* whose epoch is 660, but gives a sum of accumulated days as 22,073 and a sum of actual elapsed days as 15,873, resulting in an epoch of 930, which was the native's year of birth. The accumulated days results in a date of 991, when the native would have been around sixty years old.

My interpretation of this is that the native probably already had his natal chart in hand, which meant that calculations did not have to be performed again. The horoscope in question focuses primarily on annual profections running to the age of sixty, which is why the astrologer calculated planetary positions until the year 991.

One last curious feature of the planetary positions given in the horoscope is that Rāhu is the descending lunar node while Ketu is the ascending node.[144] This reversal of names for the nodes is anomalous and might simply be explained as an error on the part of the astrologer.

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143 In addition, Niu (2016: 555) is confused with respect to Yuebei's position, which he places in the twelfth place, whereas the text indicates it is to be placed in the fourth. My reconstructed chart results in Yuebei in the fourth.

144 Niu (2016: 536 and 537) points this out and remarks, "Except for the Moon, the accuracy of the planetary positions in P. 4071 is quite good." I was able to confirm this using a horoscope generator on astro.com (tropical whole-signs).

CONCLUSION

This study has demonstrated that a significant body of horoscopic practice and lore — much of it ultimately Hellenistic in origin and basically Dorothean in character — was incorporated into Chinese astrology from the late Tang and thereafter was developed and expanded throughout subsequent centuries. The Chinese court in the early Ming translated Islamicate astrology into Chinese for the first time, the foundation of which was to a large extent Ptolemaic in character. At present there is no evidence to indicate that Ptolemaic material was translated into Chinese before the late-fourteenth century. If there ever was such material, it is not apparent within the extant sources.[145]

Chinese astrologers seldom, if ever, it seems, felt compelled to explain the efficacy of their art or its moral legitimacy. In contrast, Ptolemy, and later figures in Islamdom, such as Abū Ma'shar and al-Qabīṣī, argued for the certainty of astrology (Burnett 2002). Such concerns about the validity of astrology are scarcely seen in medieval Chinese intellectual history. Horoscopy became one limb among many in the practice of Chinese divination, which is why it was continually studied throughout the medieval period.

By the time horoscopy was introduced during the late Tang, Chinese civilization already had had centuries of experience with celestial omenology and other forms of divination, in addition to ancient beliefs concerning fate. There are no treatises in China that attempt to explain the metaphysical framework of astrology in terms approximating what elsewhere in Eurasia and Africa was known as natural science. There were furthermore in China no concerns about free will in relation to the deterministic premise of astrology, which stands in contrast to the reception of astrology in Abrahamic religions, in which determinism is rejected on theological grounds.[146]

The data and conclusions from this study confirm a statement by Burnett (2013: 288), who

145 Burnett (2002: 201) explains that 'Umar ibn al-Farrukhān (late eighth century), the aforementioned 'Umar al-Tabarī, one of the earliest writers on astrology in Arabic, "was responsible for translating a paraphrase of the *Tetrábiblos* from Middle Persian." Persians were active in Tang China and therefore it is conceivable that a figure such as Li Miqian may have had access to a translation or excerpts of the *Tetrábiblos*, but again there is no evidence at present to suggest this.

146 For discussion of the justification of astrology in the Islamic context, see Saif 2017: 304–306.

states, "In astrological practice, to the extent that the West and East are heirs to the same traditions, one can identify common elements; e.g., in the drawing up of birth horoscopes." Indeed, China was as much an heir to horoscopy as was Europe, India and Islamdom. More specifically, Chinese horoscopy was as much an heir to Persian astrology as was Islamicate astrology, a point that is not yet recognized in modern scholarship.

Furthermore, it is clear that the astronomical calculations of Gautama Siddhārtha's *Navagraha-karaṇa* of 718 did not exert much if any influence on Chinese horoscopy. Instead, it was figures such as Li Miqian and Cao Shiwei around the year 800 who produced the basic astronomical framework with which astrologers could produce horoscopes without reference to complex mathematical formulas.

One final aspect apparent from Chinese sources of horoscopy is that the manuals were written with aristocratic men in mind, in light of the references to official and often high-ranking offices, although our horoscope from Dunhuang indicates that commoners could also hire professional astrologers. Although there are predictions concerning women, the majority of the literature overwhelmingly assumes male clients. The lore specifically directed at women within Chinese horoscopy is a topic for a future study.

The present study hopefully has augmented the present foundation of research on horoscopy in China. There are still vast amounts of literature to survey and discussions to be had before the development of this tradition throughout the centuries can be fully understood. The social elements of the practice of horoscopy amongst the literati must also be further explored. It is hoped that scholars will pursue such potentially gainful avenues of research in the future.

ACKNOWLEDGMENTS

This article was made possible by the author's research stay at the International Consortium for Research in the Humanities' program "Fate, Freedom and Prognostication: Strategies for Coping with the Future in East Asia and Europe" at Friedrich-Alexander-University Erlangen-Nürnberg, which was funded by the Federal Ministry of Education and Research (BMBF). I must also thank the following people, who kindly provided feedback or answered my various questions, or simply assisted in some

generous way: Martin Gansten, Christopher Warnock, Daniel Canaris, David Pankenier, Micah Ross, Thomas Eijō Dreitlein, Enrico Raffaelli, Clifford Hartleigh Low, Christof Niederwieser, Tom Mazanec, Chris Brennan, and Arina Mikhalevskaya.

BIBLIOGRAPHY

ABBREVIATIONS

DZ Daozang 道藏 (Daoist Canon). Wenwu Chuban edition (1986).

j. *juan* 卷 (fascicle).

SKQS *Siku quanshu* 四庫全書 (Complete Works of the Four Depositories). *Ying yin Wen yuan ge Si ku quan shu* 景印文淵閣四庫全書 (Complete Works of the Four Depositories Ying yin Wen yuan Edition). 1500 vols. Taipei: Taiwan Shangwu Yinshuguan, 1983.

T *Taishō shinshū daizōkyō* 大正新脩大藏經 (Updated Buddhist Canon of the Taishō Era). 100 vols. Takakusu Junjirō 高楠順次郎 and Watanabe Kaigyoku 渡邊海旭 et al., eds. Tōkyō: Taishō Issaikyō Kankōkai, 1924–1934. Digitized in CBETA (v. 5.2) and SAT Daizōkyō Text Database (http://21dzk.l.u-Tōkyō.ac.jp/SAT/satdb2015.php).

TZ *Taishō zuzō* 大正圖像 (Images of the Taishō Canon). 12 vols. Takakusu Junjirō 高楠順次郎 and Ono Genmyō 小野玄妙, eds. Tōkyō: Daizō Shuppan Kabushiki Kaisha, 1932–1934. Digitized in SAT Taishōzō Image DB (http://dzkimgs.l.u-Tōkyō.ac.jp/SATi/images.php).

X *Xuxiu Siku quanshu* 續修四庫全書 (Supplement to the Complete Works of the Four Depositories). Shanghai Guji Chubanshe 上海古籍出版社, 1995.

PRIMARY SOURCES

Agnipurāṇa. See *The Agni Purana*, trans. Natās Gangadharan, 4 vols. Delhi: Motilal Banarsidass, 1985.

Bundahis. E. W. West, trans. In *Pahlavi Texts*, Part I, Sacred Books of the East, vol. V, ed. F. Max Muller, 1–151. Oxford: Clarendon Press, 1880.

Byakuhō kushō 白寶口抄 (Oral Instructions on the White Treasure). TZ vol. 6: 343–516 and vol. 7: 1–384.

Chengxing lingtai miyao jing 秤星靈臺祕要經 (Scripture of the Secret Essentials of the Compass Spiritual Terrace). DZ 289.

Dorotheus. See translation by Dykes 2017.

Gaoseng zhuan 高僧傳 (Biographies of Eminent Monks). T 2059.

Goma rodan yō 護摩爐壇樣 (Model for the Homa Altar). TZ vol. 7: 816–841.

Gujin lü likao 古今律歷考 (Study of Ancient and Present Tone and Calendars). By Xing Yunlu 邢雲路. SKQS 787: 1–754.

Han Shu 漢書 (Book of the Han Dynasty). 12 vols. Beijing: Zhonghua Shuju, 1962.

Jiu Tang shu 舊唐書 (Former Book of the Tang Dynasty). 16 vols. Beijing: Zhonghua Shuju, 1975.

Jiuzhi li 九執曆 (**Navagraha-karaṇa*; Calendar of the Nine Planets). SKQS 807: 933–943.

Jōgyō Wajō shōrai mokuroku 常曉和尚請來目錄 (Catalog of Texts Brought by Monk Jōgyō). T 2163.

Kuyō hiryaku 九曜秘歷 (Secret Calendar of the Nine Planets). By Sōkan 宗觀 (1125). The Metropolian Museum of Art, New York (item no. 1975.268.4). Public Domain. https:// www.metmuseum .org/art/collection/search/45616.*Li Xuzhong ming shu* 李虛中命書. SKQS 809: 1–27.

Lingtai jing 靈臺經 (Scripture of the Spiritual Terrace). DZ 288.

Luming bian 祿命辯 (Discussion on Fate Calculation). By Song Lian 宋濂. In *Zhonghua chuanshi wenxuan Ming wen heng* 中華傳世文選明文衡 (Collection of Ming-era Works of the Chinese Tradition), 150–152. Edited by Ren Jiyu 任繼愈. Changchun: Jilin Remin Chubanshe, 1998.

Mahāsaṃnipāta 大方等大集經 (Greatly Exended Collection). T 397.

Mengxi bidan 夢溪筆談 (Dream Pool Essays). Shanghai Shudian Chubanshe, 2003.

Midian zhulin 秘殿珠林 (Forest of Pearls of the Private Palace). SKQS 823: 443–752.

Mingyi tianwen shu 明譯天文書 (Book of Astronomy Translated in the Ming). Reproduced in Yano 1997: 264–295.

Or.8210 / P. 6. Chinese almanac from 877.

Or.8210 / P. 10. Fragment of Chinese almanac from 882.

P. 4071. Horoscope Kang Zun 康遵 (d.u.) in 975.

Picatrix: The Latin Version of the Ghāyat al-Ḥakīm. David Pingree, ed. London: University of London, 1986. See translation by Greer and Warnock 2010–2011.

Qiang zhai ji 強齋集 (Qiangzhai Collection). SKQS 1232: 383–522.

Qiyao rangzai jue 七曜攘災決 (Secrets of Seven-Planet Apotropaism). T 1308.

Quan Liao wen 全遼文 (Complete Works of the Liao). Beijing: Zhonghua Shuju, 1982.

Qur'an, trans. by M. A. S. Abdel Haleem. Oxford: Oxford University Press, 2010.

Rumen chong lizhe zhong kanyu wanxiao lu 儒門崇理折衷堪輿完孝錄 (Scholars' Record Perfecting Filial Piety Which Esteems Persuasion and Accords with Geomancy). DZ 1471.

Śārdūlakarṇāvadāna. See **Mātaṅga-sūtra* (*Modengjia jing* 摩登伽經; T 1300) and *Shetoujian Taizi ershiba xiu jing* 舍頭諫太子二十八宿經 (T 1301; Sūtra of Prince Śārdūlakarṇa and the Twenty-eight Nakṣatras).

Shendao dabian xiangzong huatian wuxing 神道大編象宗華天五星 (Great Compilation of the Divine Way: Purports of Celestial Phenomena, Flowering Heavens and the Five Stars). By Zhou Yun Yuanzi 周雲淵子 (1582). X 1031: 215–322.

Song shi 宋史 (History of the Song Dynasty). 40 vols. Beijing: Zhonghua Shuju, 1977.

Sukuyō-kyō shukusatsu 宿曜經縮刷 (Typeset Edition of Sūtra of *Nakṣatras* and Planets). 2 vols. Ed. Wakita Bunshō 脇田文紹. Nagoya: Wakita Bunshō, 1897.

Tetrábiblos (Four Books). By Claudius Ptolemy. Trans. Frank Egleston Robbins. Loeb Classical Library. Cambridge, MA: Harvard University Press, 1940.

Tianwen jingyi fu 天文精義賦 (Odes on the Essential Meaning of Astronomy). By Yue Xizai 岳熙載. X 1031: 87–127.

Tong dian 通典 (Comprehensive Chronicle). SKQS 603–605.

Tong zhi 通志 (Comprehensive Accounts). SKQS 372–381.

Wang Ocheonchukguk jeon 徃五天竺國傳 (Memoir of a Pilgrimage to the Five Indian Kingdoms). T 2089.

Wuxing dayi 五行大義 (Great Meaning of the Five Elements). X 1060: 195–281.

Wuxing er shi ba xiu shenxing tu 五星二十八宿神形圖 (Painting of the Divine Forms of the Five Planets and Twenty-Eight Lunar Stations). Wikimedia Commons. https://commons.wikimedia.org/wiki/File:五星二十八宿神形图.jpg

Xin Tang shu 新唐書 (New Book of the Tang Dynasty). 20 vols. By Ouyang Xiu 歐陽修 and Song Qi 宋祁. Beijing: Zhonghua Shuju, 1975.

Xingming zongkuo 星命總括 (Summary of Stellar Fates). By Yelü Chun 耶律純. SKQS 809: 191–236.

Xingxue dacheng 星學大成 (Great Compendium of Stellar Studies). By Wan Minying 萬民英. SKQS 809: 285–870.

Xiuyao jing 宿曜經 (Sūtra of *Nakṣatras* and Planets). See *Sukuyō-kyō shukusatsu,* above. I have also consulted a handwritten manuscript from Japan dating to 1322, presently owned by Dōshisha University (148.8 | F9632).

Yavanajātaka (Greek Nativities). See translation in Pingree 1978.

Za zhi 雜志 (Assorted Accounts). By Liu Dingzhi 劉定之. In *Zhonghua chuanshi wenxuan Ming wen heng* 中華傳世文選明文衡 (Collection of Ming-era Works of the Chinese Tradition), 556–557. Edited by Ren Jiyu 任繼愈. Changchun: Jilin Remin Chubanshe, 1998.

SECONDARY SOURCES

Agostini, Domenico, and Sören Stark. 2016. "Zāwulistān, Kāwulistan and the Land Bosi 波斯 — On the Question of a Sasanian Court-in-Exile in the Southern Hindukush," *Studia Iranica* 45, no. 1: 17–38.

Al-Jeloo, Nicholas. 2012. "Kaldāyūthā: The *Spar-Sammāné* and Late Antique Syriac Astrology." *ARAM* 24: 457–492.

Bagheri, Mohammed. 2016. "Kūšhyār ibn Labbān's Mathematical Approach in His Astronomical Handbook," *Micrologus: Nature, Sciences and Medieval Societies* XXIV: 303–310.

Berggren, J. Lennart, and Alexander Jones. 2000. *Ptolemy's Geography: An Annotated Translation of the Theoretical Chapters*. Princeton University Press.

Betz, Hans Dieter, ed. 1986. *The Greek Magical Papyri in Translation: Including the Demotic Spells*. Chicago: The University of Chicago Press.

Bobrick, Benson. 2006. *The Fated Sky: Astrology in History*. New York: Simon & Schuster.

Budge, E. A. Wallis. 1913. *Syrian Anatomy, Pathology and Therapeutics, or "The Book of Medicines."* 2 vols. London: Oxford University Press.

Burnett, Charles. 2002. "The Certitude of Astrology: The Scientific Methodology of Al-Qabīsī and Abū Ma'shar," *Early Science and Medicine* 7, no. 3: 198–213.

————. 2013. "East (and South) Asian Traditions in Astrology and Divination as Viewed from the West," *Extrême-Orient Extrême-Occident* 35: 285–293.

Chang Che-Chia. 2018. "Translation and Adaption: The Continuous Interplay between Chinese Astrology and Foreign Culture." In *Coping with the Future: Theories and Practices of Divination in East Asia*, ed, Michael Lackner, 409–432. Leiden: Brill.

Chen Ming 陳明. 2007. "The Transmission of Foreign Medicine via the Silk Roads in Medieval China: A Case Study of the *Haiyao Bencao* 海藥本草," *Asian Medicine* 3: 241–264.

Chen Ying 陈鹰. 1989. "*Tianwen shu* ji huihui zhanxingshu 《天文书》及回回占星术." (The Book on Astronomy and Islamic Astrology) *Ziran kexueshi yanjiu* 自然科学史研究 (Studies in the History of Natural Sciences) 8, no. 1: 37–46.

Chen Zhanshan 陈占山. 2009. "A Comparison between Islamic Astrology and Traditional Chinese Astrology — A Case Study of Comparison between Mingyi Astronomy Book and Kaiyuanzhanjing 伊斯兰星占学与中国传统星占学的比较——以《明译天文书》与《开元占经》的比较为例," *Journal of The Second Northwest Institute For Ethnic Minorities* (*Philosophy and Social Science*) 北方民族大学学报：哲学社会科学版 2: 14–23.

Cheung, Martha. 2017. *An Anthology of Chinese Discourse on Translation* (*Volume 2*)*: From the Late Twelfth Century to 1800*. New York: Routledge.

Compareti, Matteo. 2003. "The Last Sasanians in China," *Eurasian Studies* 2, no. 2: 197–213.

Dodge, Bayard. 1970. *The Fihrist of al-Nadīm: A Tenth-Century Survey of Muslim Culture*. 2 vols. New York: Columbia University Press.

Dykes, Benjamin N. 2008. *Works of Sahl and Māshā'allāh*. Minneapolis: The Cazimi Press.

———. 2010. *Introduction to Traditional Astrology: Abū Ma'shar and al-Qabīsī*. Minneapolis: The Cazimi Press.

———. 2017. *Dorotheus of Sidon: Carmen Astrologicum, The 'Umar al-Tabarī Translation*. Minneapolis: The Cazimi Press.

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

Falk, Harry. 2018. "The Early Use of Nakṣatras." In *The Interactions of Ancient Astral Science*, ed. David Brown, 527–532. Bremen: Hempen Verlag.

Gansten, Martin. 2009. "Navagrahas." In *Brill's Encyclopedia of Hinduism*, vol. 1, ed. Knut A. Jacobsen, Helene Basu, Angelika Malinar, and Vasudha Na-rayanan, 647–653. Leiden: Brill.

Geslani, Marko, Bill Mak, Michio Yano, and Kenneth Zysk. 2017. "Garga and Early Astral Science in India," *History of Science in South Asia* 5, no. 1: 151–191.

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

Greer, John Michael, and Christopher Warnock. 2010–2011. *The Picatrix: Liber Rubeus Edition*. Adocentyn Press.

Grego, Peter. 2005. *The Moon and How to Observe It*. London: Springer-Verlag.

Hand, Robert. 2007. "Signs as Houses (Places) in Ancient Astrology," *Culture and Cosmos* 11, no. 1 and 2: 135–162.

Hayashi Takao. 2017. "The Units of Time in Ancient and Medieval India," *History of Science in South Asia* 5, no. 1: 1–116.

Hodgson, Marshall. 1974. *The Venture of Islam: Conscience and History in a World Civilization, Volume One: The Classical Age of Islam*. Chicago: The University of Chicago Press.

Ho Peng Yoke. 2003. *Chinese Mathematical Astrology: Reaching Out for the Stars*. London: RoutledgeCurzon.

Hucker, Charles O. 1985. *A Dictionary of Official Titles in Imperial China*. Stanford, CA: Stanford University Press.

Hu Fuchen 胡孚琛, ed. 1995. *Zhonghua Daojiao dacidian* 中華道教大辭典 (Dictionary of Chinese Daoism). Beijing: Zhongguo Shehuixue Chubanshe.

Hunger, Hermann, and David Edwin Pingree. 1999. *Astral Sciences in Mesopotamia*. Leiden: Brill.

Isahaya Yoichi and Lin Jyuh Fuh. 2017. "Entangled Representation of Heaven: A Chinese Divination Text from a Tenth-Century Dunhuang Fragment (P. 4071)," *Historia Scientiarum* 26, no. 3: 153–171.

Itō Gikyō 伊藤義教. 1980. *Perushia bunka toraikō* ペルシア文化渡来考 (Study of the Coming of Persian Culture). Tōkyō: Iwanami shoten.

Jao Tsung-i 饒宗頤. 1984. "Lun Qiyao Yu Shiyiyao" 論七曜與十一曜 (Discussion of the Seven and Eleven Planets). In *Xuantang jilin* 選 堂集林 (Xuantang Collection), 771–793. Taipei: Mingwen shuju.

Jiang Boqin 姜伯勤. 1990. "Dunhuang yu bosi" 敦煌与波斯 (Dunhuang and Persia), *Dunhuang yanjiu* 敦煌研究 (Dunhuang Research) 3: 7–21.

Jong, Albert de. 2015. "Religion and Politics in Pre-Islamic Iran." In *The Wiley Blackwell Companion to Zoroastrianism*, ed. Michael Strausberg and Yuhan Sohrab-Dinshaw Vevaina, 85–101. Chichester: John Wiley & Sons.

Jun Yong Hoon. 2018. "Western Horoscopic Astrology in Korea." In *Coping with the Future: Theories and Practices of Divination in East Asia*, ed. Michael Lackner, 486–496. Leiden: Brill.

Kalinowski, Marc. 2003. *Divination et société dans la Chine médiévale: étude des maniscrits de Dunhuang de la Bibliothèque nationale de France et de la British Library* (Medieval Chinese Divination and Society: a Study of the Dunhuang Manuscripts at the French National Library). Paris: Bibliothèque Nationale de France.

Klein, Ernest. 1987. *A Comprehensive Etymological Dictionary of the Hebrew Language for Readers of English*. Jerusalem: The University of Haifa.

Kotyk, Jeffrey. 2016. "Kanjiken no bungaku ni okeru saihō-senseijutsu no yōso: tōzai bunka kōryū ni okeru Bukkyō no yakuwari" 漢字圏の文学における西方占星術の要素：東西文化交流における仏教の役割 (Elements of Occidental Astrology in Literature of the Sinosphere: A Role of Buddhism in Eurasian Cultural Exchange), *Bukkyō bungaku kenkyū* 佛教文學研究 19: 85–110.

————. 2017a. "Astrological Iconography of Planetary Deities in Tang China: Near Eastern and Indian Icons in Chinese Buddhism," *Journal of Chinese Buddhist Studies* 30: 33–88.

————. 2017b. "Iranian Elements in Late-Tang Buddhist Astrology," *Asia Major* 30, no. 1: 25–58.

————. 2017c. "Buddhist Astrology and Astral Magic in the Tang Dynasty." PhD dissertation, Leiden University. https://openaccess.leidenuniv.nl/handle/1887/54858

————. 2017d. "Can Monks Practice Astrology? Astrology and the Vinaya in China." In *Rules of Engagement: Medieval Traditions of Buddhist Monastic Regulation*, ed. Susan Andrews, Jinhua Chen and Cuilan Liu, 503–517. Hamburg: Hamburg University Press.

————. 2018a. "Early Tantric Hemerology in Chinese Buddhism: Timing of Rituals According to Śubhakarasiṃha and Yixing," *Canadian Journal of Buddhist Studies* 13: 1–29.

————. 2018b. "Yixing and Pseudo-Yixing: A Misunderstood Astronomer-Monk," *Journal of Chinese Buddhist Studies* 31: 1–37.

————. 2018c. "Japanese Buddhist Astrology and Astral Magic: Mikkyō and Sukuyōdō," *Japanese Journal of Religious Studies* 45, no. 1: 37–86.

Kuehn, Sara. 2016. "The Eclipse Demons Rāhu and Ketu in Islamic Astral Sciences." In *In Umbra: демонология как семиотическая система* (Demonology as a Semiotic System), no. 5, ed. D. Antonov and O. Khristoforova, 203–235. Moscow: Indrik.

Leverington, David. 2003. *Babylon to Voyager and Beyond: A History of Planetary Astronomy*. Cambridge: Cambridge University Press.

MacKenzie, D. N. 1964. "Zoroastrian Astrology in the *Bundahišn*," *Bulletin of the School of Oriental and African Studies* 27, no. 3: 511–529.

————. 1986. *A Concise Pahlavi Dictionary*. London: Oxford University Press. Reprint with corrections of 1971 edition.

————. 1989. "BUNDAHIŠN." Encyclopædia Iranica, Vol. IV, Fasc. 5, 547–551. See Iranica Online: http://www.iranicaonline.org/articles/bundahisn-primal-creation.

Mak, Bill M. 2013. "The Transmission of Greek Astral Science into India Reconsidered: Critical Remarks on the Contents and the Newly Discovered Manuscript of the *Yavanajātaka*," *History of Science in South Asia* 1: 1–20.

————. 2014. "*Yusi Jing*: A Treatise of 'Western' Astral Science in Chinese and Its Versified Version *Xitian yusi jing*," SCIAMVS 15: 105–169.

————. 2015a. "The Transmission of Astral Science from India to East Asia: The Central Asian Connection," *Historia Scientiarum* 24, no. 2: 59–75.

————. 2015b. "Indian Jyotiṣa through the Lens of Chinese Buddhist Canon," *Journal of Oriental Studies* 48, no. 1: 1–19.

McCoy, Michelle M. 2017. "Astral Visuality in the Chinese and Inner Asian Cult of Tejaprabhā Buddha, ca. 900–1300 AD." PhD dissertation, University of California, Berkeley.

Momo Hiroyuki 桃裕行. 1990. "Sukuyō kanmon shū" 宿曜勘文集 (Collection of Japanese Horoscopes). In *Momo Hiroyuki chosakushū* 桃裕行著作集 (Collected Works of Momo Hiroyuki), vol. 8, no. 2, *Rekihō no kenkyū* 暦法の研究 (Research on Calendrical Science), ed. Tsuchida Naoshige 土田直鎮, 131–162. Kyōto: Shibunkaku.

Nakamura Shōhachi 中村璋八. 1970. "Wa ga kuni ni okeru *Gogyōtaigi* no juyō ni tsuite" 我が國に於ける五行大義の受容について (The Reception of the Great Meaning of the Five Elements in Japan), *Komazawa Daigaku bungaku bu kenkyū kiyō* 駒澤大學文學部研究紀要 (Research Bulletin of Komazawa University Department of Letters) 28: 10–23.

———. 1972. "Shūkitsu to *Gogyōtaigi*" 蕭吉と五行大義 (Xiaoji and the Great Meaning of the Five Elements), *Komazawa Daigaku gaikokugo bu kiyō*. 駒澤大學外國語部紀要 (Bulletin of the Foreign Languages Department of Komazawa University) 1 (1972): 26–42.

Neugebauer, Otto. 2012. *A History of Ancient Mathematical Astronomy*. Springer Science & Business Media.

Neugebauer, Otto, and Henry Bartlett Van Hoesen. *Greek Horoscopes*. Philadelphia: American Philosophical Society, 1959.

Niu Weixing. 2016. "On the Dunhuang Manuscript P. 4071: A Case Study on the Sinicization of Western Horoscope in Late 10th Century China." In *The Circulation of Astronomical Knowledge in the Ancient World*, ed. John M. Steele, 527–558. Leiden: Brill.

Panaino, Antonio. 2015. "Cosmologies and Astrology." In *The Wiley Blackwell Companion to Zoroastrianism*, ed. Michael Strausberg and Yuhan Sohrab-Dinshaw Vevaina, 235–257. Chichester: John Wiley & Sons.

Pankenier, David. 2013. *Astrology and Cosmology in Early China: Conforming Earth to Heaven*. Cambridge: Cambridge University Press.

———. 2016. "On Chinese Astrology's Imperviousness to External Influences." In *Astrology in Time and Place: Cross-Cultural Questions in the History of Astrology*, ed. Nicholas Campion and Dorian Gieseler Greenbaum, 3–26. Newcastle, Eng.: Cambridge Scholars Publishing.

Pingree, David. 1963. "Astronomy and Astrology in India and Iran," *Isis* 54, no. 2: 229–246.

———. 1976. *Dorothei Sidonii Carmen astrologicum: interpretationem arabicam in linguam anglicam versam una cum Dorothei fragmentis et graecis et latinis*. Leipzig: Teubner.

———. 1978. The *Yavanajātaka of Sphujidhvaja*. 2 vols. Cambridge, MA: Harvard University Press.

———. 1989. "Classical and Byzantine Astrology in Sassanian Persia," *Dumbarton Oaks Papers* 44: 227–239.

———. 1992. "Hellenophilia versus the History of Science," *Isis* 83, no. 4: 554–563.

———. 1997 *From Astral Omens to Astrology: From Babylon to Bīkāner*. Rome: Ist. Italiano per l'Africa e l'Oriente.

———. 1998. "Legacies in Astronomy and Celestial Omens." In *The Legacy of Mesopotamia*, ed. Stephanie Dalley, 125–137. Oxford: Oxford University Press.

Qaderi, Alireza. 2018. "Mesopotamian or Iranian? A New Investigation on the Origin of the Goddess Anāhitā," *Iranian Studies* 51, no. 2: 171–194.

Raffaelli, Enrico G. 2017. "Astrology and Religion in the Zoroastrian Pahlavi Texts," *Journal Asiatique* 305, no. 2: 171–190.

Saif, Liana. 2017. "From *Ġāyat al-ḥakīm* to *Šams al-maʿārif*: Ways of Knowing and Paths of Power," *Arabica* 64: 298–345.

Saliba, George. 1994. *A History of Planetary Astronomy: Planetary Theories during the Golden Age of Islam*. New York: New York University Press.

Sen, Tansen. 1995. "Gautama Zhuan: An Indian Astronomer at the Tang Court," *China Report* 31, no. 2: 197–208.

Shi Yunli and Haohao Zhu. 2016. "Calculating the Fate of Chinese Dynasties with the Islamic Method: The Chinese Study and Application of Arabic Astrology in the 17th Century," *Micrologus: Nature, Sciences and Medieval Societies* XXIV: 311–335.

Sluijs, Marinus Anthony van der. 2009. "The Dragon of the Eclipses — A Note," *Culture and Cosmos* 13, no. 1: 62–74.

Sørensen, Henrik H. 2006. "Esoteric Buddhism under the Koryŏ in Light of the Greater East Asian Tradition," *International Journal of Buddhist Thought & Culture* 7: 55–94.

Standaert, Nicolas. 2001. "European Astrology in Early Qing China: Xue Fangzuo's and Smogulecki's Translation of Cardano's Commentaries on Ptolemy's *Tetrábiblos*," *Sino-Western Cultural Relations Journal* XXIII: 50–79.

van Bladel, Kevin. 2009. *The Arabic Hermes: From Pagan Sage to Prophet of Science*. New York: Oxford University Press.

Yabuuchi Kiyoshi 藪内清. 1989. *Zōtei Zuitō rekihō shi no kenkyū* 増訂隋唐暦法史の研究 (Revised Research on the history of Calendrical Science in the Sui and Tang Dynasties). Kyōto: Rinsen Shoten 臨川書店.

Yano, Michio. 1986. "The *Chi'yao jang-tsai-chueh* and Its Ephemerides," *Centaurus* 29, no. 1: 28–35.

————. 1997. *Kūšyār ibn Labbā's Introduction to Astrology*. Tōkyō: Institute for the Study of Languages and Cultures of Asia and Africa.

———. 2003. "Calendar, Astrology, and Astronomy." In *The Blackwell Guide to Hinduism*, ed. Gavin Flood, 376–392. Oxford: Blackwell Publishing.

———. 2004. "Planet Worship in Ancient India." In *Studies in the History of the Exact Sciences in Honour of David Pingree*, ed. Charles Burnett, Jan P. Hogendijk, Kim Plofker and Yano Michio, 331–348. Leiden: Brill.

———. 2013. *Mikkyō senseijutsu* 密教占星術 (Esoteric Buddhist Astrology). Tōkyō: Tōyōshoin.

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