Buddhist astrology and astral magic in the Tang Dynasty

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Chapter 4
Buddhist Astrology in the Mid-Tang: the Eighth Century

4.1. The Historical Yixing: Buddhist Monk and Astronomer

In the year 719, the country of Kapiśā 罽賓國 (located in modern Afghanistan)[1] sent an envoy to the Tang court, and offered as tribute an astronomical text, secret medicinal prescriptions, and foreign medicines.[2] This text, the *Tianwen jing* 天文經 (*Scripture of Astronomy*), would become one of several texts related to astrology brought to China and translated throughout the eighth and ninth centuries.[3] Starting from this work, the eighth century saw many developments with respect to astrology in China, especially within the Buddhist community.

One of the best known, albeit perhaps most misunderstood figure, in the history of Tang Buddhist astrology is the monk Yixing 一行 (683–727), who was a court astronomer, in addition to having participated in the translation of the *Mahāvairocana-sūtra*.[4] Discerning his role in the development of Buddhist astrology in China is a complex task, because in addition to the historical Yixing, who developed a new state calendar and reformed the state system of astrology, there existed a legendary image of Yixing (a pseudo-Yixing) that developed in the late-Tang. As will be explored below, a number of works on astral magic from the ninth century were attributed to him, which

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[1] Jibin 罽賓 referred to different places before the Tang. During the Tang, it was identified as Kapiśā 迦畢試. See *Zhenyuan xinding shijiao mulu* 貞元新定釋教目錄: "On the border of northern India are the people of Kapiśā (Jibin is an accented abbreviation) 北天竺境迦畢試國人也(言罽賓者訛略)." T 2157, 55: 891c10. For further details, see Enomoto Fumio, "A Note on Kashmir as Referred to in Chinese Literature: Ji-bin," in *A Study on the Nīlamata: Aspects of Hinduism in Ancient Kashmir*, ed. Ikari Yasuke (Kyōto: Institute for Research in Humanities, 1994), 357–365.

[2] See *Jiu Tang shu*, fasc., 198: 開元七年，遣使來朝，進天文經一夾、秘要方並蕃藥等物. Zhonghua Shuju edn., vol. 16, 5309.

[3] Although this text is not extant, the *Yuhai* 玉海 (*Jade Sea*), a catalog of texts by Wang Yinglin 王應麟 (1223–1296), notes that the text was cited in the *Qianxiang xinshu* 乾象新書, a divination manual. 開元七年罽賓遣使獻天文經 (乾象新書嘗引之). See *Yingyin guji Qinding siku quanshu* 影印古籍欽定四庫全書, Zibu 子部 11, fasc. 3, p. 15. This indicates that the text was translated into Chinese after 719. The *Qianxiang xinshu* by Yang Weide 楊惟德 (active 1034–1038) is preserved as twelve fasicles (of an original thirty) in vol. 1050 of the *Xuxiu siku quanshu* 續修四庫全書, *zi-bu* 子部, *shushulei* 術數類, 1–196. I have not identified any citations therein of the *Tianwen jing*.

[4] For modern studies on Yixing see the following: Osabe Kazuo 長部和雄, *Ichigyō Zenji no kenkyū* 一行禪師の研究 (Kōbe: Kōbe Shōka Daigaku Keizai Kenkyūsho, 1963). Jinhua Chen, "The Birth of a Polymath: The Genealogical Background of the Tang Monk-Scientist Yixing (673-727)," *Tang Studies* 18-19 (2000-2001): 1–39. For analysis of Yixing's mathematical astronomy see Ohashi Yukio, "Astronomy and Mathematics of Yixing," in *Mapping the Oriental Sky: Proceedings of the Seventh International Conference on Oriental Astronomy*, eds. Nakamura Tsukō et al (Tōkyō: National Astronomical Observatory of Japan, 2011), 171–178.

has led to significant misunderstandings in modern scholarship regarding the historical man and his career. Here we will focus on the historical Yixing, reconstructing his life and discussing his achievements in order to separate fact from fiction.

The earliest source material concerning Yixing's life comes from a copy of his memorial stele erected by Emperor Xuanzong, preserved in the *Shingon fuhō den* 真言付法傳 (*Account of the Transmission of Mantra*) by Kūkai 空海 (774–835).[5] Here he is remembered as an erudite Buddhist monk, whereas the *Jiu Tang shu* lists him under the esoteric arts (方伎) section, and celebrates his accomplishments in astronomy. Information on Yixing's career is found in the latter in the section on astronomy (fasc. 35, 36) and his biography (fasc. 191). The *Xin Tang shu* includes additional materials concerning his calendar (fasc. 27–28). The *Naishō buppō sōshō kechimyaku fu* 内證佛法相承血脈譜 (*Transmitted Lineage Account of the Inner-realized Buddhadharma*) of 819, and the *Taizō engi* 胎藏緣起 (*Genesis of the Garbhadhātu*), both by Saichō 最澄 (767–822), also provide accounts of his life, with the latter being more detailed.[6]

It is from these sources that we know that Yixing was born as Zhang Sui 張遂 in Changle 昌樂 in Weizhou 魏州 (modern Nanle 南樂 in Hebei), though some sources indicate that his place of birth was the nearby Julu 鉅鹿 (modern Pingxiang 平鄉 in Hebei). Yixing was great-grandson of Zhang Gongjin 張公謹 (584–632), an influential figure during the early turbulent years of the Tang dynasty.[7] The *Jiu Tang shu* states that he was exceptionally intelligent in his youth, reading the classics with a particular interest in astronomy, calendrical science and traditional Chinese metaphysics.[8] The *Taizō engi* records that at the age of twenty-one, both his parents died, and he thus felt compelled to reject the mundane life. He met the monk Hongjing 弘景 (634–712)[9] in Jingzhou 荊州, who provided instruction and inspired Yixing to ordain as a monk. He also studied under a certain Facheng 法誠 (d.u.) of Huagan-si 化感寺. In 707 (year 1 of Jinglong 景龍), Yixing arrived in the eastern capital of Luoyang where he was fully ordained. He is said to have borrowed a copy of the *prātimokṣa* (precepts manual), and been able to recite it from memory after one reading. He was also said to have been quite diligent in his practice of the vinaya.

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[5] In *Kōbōdaishi zenshū* 弘法大師全集, vol. 1 (Yoshikawa Kōbunkan 吉川弘文館, 1911), 63–65. Alternate title of *Ryaku fuhō den* 略付法傳 (*Brief Account of the Transmission*).

[6] In *Dengyōdaishi zenshū* 傳教大師全集 (Hieizan Senshūin Fuzoku Ezan Gakuin 比叡山專修院附屬叡山學院, 1926). See vol. 1, 238–242, and vol. 4, 387–393.

[7] Chen Jinhua's investigation of his genealogy indicates that Yixing hailed from a prestigious clan with early connections to Dunhuang. Chen suggests that Yixing's family was also a possible factor in his later recruitment by the Emperor Xuanzong who desired to strengthen his position by recruiting descendants of old Tang loyalists after the restoration of the Tang regime following the Zhou interregnum (690–705) of Wu Zetian 武則天. See Chen, "The Birth of a Polymath," 37–38.

[8] *Jiu Tang shu*, Zhonghua Shuju edn., vol. 16, 5112.

[9] His name is also rendered as Hengjing 恆景.

The *Jiu Tang shu* relates that Wu Sansi 武三思 (d. 707), a relative of the empress Wu Zetian 武則天 (624–705), and a powerful minister, admired Yixing's work and requested a meeting, but Yixing fled and hid himself away. This might have been what prompted him to travel to Mt. Song 嵩山. It was here that he studied Chan under the Chan master Puji 普寂 (651–739), later known as Dazhao Chanshi 大照禪師, who was widely recognized as the seventh patriarch of the Northern Chan school.[10] The *Taizō engi* states that Yixing constantly cultivated 'single-practice *samādhi*' (*yixing sanmei* 一行三昧, Skt. **ekavyūha-samādhi*), which is the origin of his monastic name. Chen suggests that Yixing also studied under Puji's teacher Shenxiu 神秀 (d.706), a prominent Chan master, based on the contents of a letter addressed to Zhang Yue 張說 (667–731) that is attributed to Yixing (dated 715–717), in which it is stated that over ten years had passed since their late teacher had died. The letter is an invitation to attend an assembly at Dumen-si 度門寺, an institution which had been established by Wu Zetian for Shenxiu. One of the fellow monks mentioned in the letter, Damo 達摩 (d.u.), was also known as a disciple of Shenxiu.[11]

The *Taizō engi* and *Jiu Tang shu* report that after Emperor Ruizong 睿宗 (662–716) ascended the throne in 710, Yixing was ordered to meet with the statesman Wei Anshi 韋安石 (651–714), but Yixing excused himself on account of illness. Yixing spent the next several years wandering in more southern areas, seeking out eminent monks, and was constantly on the move. He later moved to Mt. Dangyang 當陽山, where he studied the 'Indian Vinaya' 梵律 under Wuzhen 悟真 (673–751), otherwise called Huizhen 惠真. It seems that it was around this time that he intensively studied vinaya works, compiling a work explaining the essentials of the vinaya entitled *Tiaofu zang* 調伏藏 (*Depository of Discipline*) in ten fascicles. It is not extant.[12] Yixing's interest in the vinaya is also demonstrated by a work on the topic he wrote entitled *Shishixi lu* 釋氏系錄 (*Account of the Śākya Lineage*) in one fascicle. Although not extant, a text catalog by Yuanzhao 圓照 (fl. eighth cent.) states that it covers four items, including monastic administration (綱維塔寺), the aims of teaching Dharma (說法旨歸), seated meditation and cultivation (坐禪修證), and the three monastic robes (三法服衣), along with an appended article on procedures for the midday meal (中齋法).[13]

The *Taizō engi* reports that in the year 716 (year 4 of Kaiyuan 開元), Yixing was staying at Mt. Yuquan 玉泉山. Emperor Xuanzong commanded Zhang Qia 張洽 (d.u.) –

[10] The *Jingde chuandeng lu* 景德傳燈錄 (T 2076; *Record of the Transmission of the Lamp Published in the Jingde Era*), an account of the Chan lineage compiled in 1004, lists Yixing as one of forty-six dharma-heirs to Puji. T 2076, 51: 224c12.

[11] Chen, "The Birth of a Polymath," 26–30. See *Quan Tang wen* 全唐文, Zhonghua Shuju edn., vol. 10, 9525–9526.

[12] The *Jiu Tang shu* lists this work as *She tiaofu zang* 攝調伏藏. *Jiu Tang shu*, Zhonghua Shuju edn., vol. 16, 5112.

[13] T 2156, 55: 765a7-10.

the paternal younger male cousin of Yixing's father[14] – to personally invite Yixing to the capital in 717. Yixing arrived in the capital and we are told in the *Jiu Tang shu* that he was often visited, presumably by the emperor, who asked about the ways of securing the country and placating the people. Yixing's arrival in the capital marked the start of two separate careers, one in astronomy, and the other as an eminent monk involved in the early introduction of Mantrayāna into China.

In the last decade of his life, Yixing received instruction from the Indian masters Śubhakarasiṃha and Vajrabodhi 金剛智 (671–741). Yixing collaborated with the former to translate the *Mahāvairocana-sūtra*.[15] The Sanskrit source text that they translated was the one carried from India by a certain Chinese monk named Wuxing who had travelled to India, and while returning to China died in northern India. The texts he carried were forwarded to China.[16] The *Kaiyuan shijiao lu* explains that Yixing and Śubhakarasiṃha found the *Mahāvairocana-sūtra* among other texts at Huayan-si 華嚴寺 in Chang'an. In 724, the two masters moved to Luoyang, where they were housed at Dafuxian-si 大福先寺. It was here that they translated the *Mahāvairocana-sūtra*. The original Sanskrit text is said to have included 100,000 verses. The Chinese translation excerpted the main components of the original work. The monk Baoyue 寶月 (*Ratnacandra; fl. 724) translated the words of Śubhakarasiṃha, while Yixing acted as scribe and editor.[17] In light of this, Yixing was not strictly a translator. Yixing also received instruction from Vajrabodhi. The *Jin'gangding dayuqie bimi xindi famen yijue* 金剛頂經大瑜伽祕密心地法門義訣 (T 1798; *Secrets of the Teaching of the Secret Mind-Ground of the Great Yoga of the Vajraśekhara-sūtra*), a commentary traditionally attributed to Amoghavajra,[18] states that Yixing sought the Vajraśekhara *abhiṣeka* from Vajrabodhi after the latter arrived in Chang'an in 719. Yixing further assisted Vajrabodhi's translation work, but

[14] Chen, "The Birth of a Polymath," 12.

[15] For a survey of this text see Kano Kazuo, "Vairocanābhisaṃbodhi," in *Brill's Encyclopedia of Buddhism*, vol. I, ed. Jonathan A. Silk (Leiden: Brill, 2015), 382–389. For a summary of all primary and secondary sources related to this text see Yamamoto Shōichirō 山本匠一郎, "*Dainichikyō* no shiryō to kenkyūshi gaikan" 『大日經』の資料と研究史概觀, *Gendai mikkyō* 現代密教 23 (2012): 73–102.

[16] Yamamoto, "*Dainichikyō* no shiryō to kenkyūshi gaikan," 88. A contemporary account of Wuxing and his journey to India is provided by Yijing 義淨 (635–713) in his accounts of Chinese monks in India, the *Da Tang xiyu qiufa gaoseng zhuan* 大唐西域求法高僧傳 (T 2066, 51: 9a21-c13). Yijing met Wuxing in India. Fasc. 2 includes some biographical details of Wuxing. In year 1 of Chuigong 垂拱元年 (685), Yijing was returning home and parted from Wuxing (T 2066, 51: 1b22-25.). Wuxing at the time was fifty-six years old. At the time of writing the biographies in 691, Yijing was unaware of Wuxing's whereabouts. Yamamoto, however, gives a death date of 674 (p. 88).

[17] T 2154, 55: 572a15-23. For details on how Buddhist works were translated into Chinese, see Funayama Tōru 船山徹, *Butten ha dō kanyaku sareta no ka* 佛典はどう漢譯されたのか (Tōkyō: Iwanami Shoten, 2013), 53–86.

[18] For a discussion of this text see Endō Yūjun 遠藤祐純, "*Kongōchō daiyuga himitsu shinji hōmon giketsu* ni tsuite" 『金剛頂經大瑜伽祕密心地法門義訣』について, *Mikkyō Bunka* 密教文化 160 (1986): 35–52.

again here he is described as a scribe, and not a translator.[19] There are no credible accounts indicating that Yixing was proficient in Sanskrit.

Yixing also flourished as a court astronomer, being the only example in the history of Chinese Buddhism of a monk fulfilling such a role. His knowledge of the vinaya did not seem to hinder his professional interest in astronomy.

The *Jiu Tang shu* reports that in 721 (year 9 of Kaiyuan), a lack of accurate eclipse predictions led the court to request Yixing to reform the state calendar.[20] Yixing, who clearly had extensively studied astronomy beforehand, identified a need to understand the movement of the ecliptic (the apparent path of the Sun across the sky), and to take measurements in relation to it, but the problem was that the court astronomers until that time had always based their measurements on the celestial equator. They also did not possess any instrument to measure the ecliptic.

Yixing worked together with the military engineer Liang Lingzan 梁令瓚 (d.u.) to build a mechanical water-powered armillary sphere.[21] Its construction was completed in 725. Although it eventually rusted and ceased to operate, the instrument was used by Yixing to gather critical measurements that allowed him to formulate his calendar, the *Dayan li* 大衍曆 (*Calendar of the Great Numerology*). The encyclopedic *Tongdian* 通典 (*Comprehensive Chronicle*), compiled in 801 by Du You 杜佑 (735–812), gives an account of Yixing and Nangong Yue 南宮說 (d.u.) analyzing astronomical observations from various locations around the year 724.[22] Yixing's calendar drew on the results of these investigations while building on the work of earlier calendars that had been actively developed throughout the Sui and early Tang periods. His calendar had a number of innovative features including improved methods for solar eclipse prediction and the calculation of planetary positions, and a device to calculate gnomon length. Yixing also calculated the lengths of daytime and nighttime across differing locations and seasons. His calendar also likely incorporated some Indian elements.[23] The *Xin Tang shu* states that although other calendars were later adopted by the state, they all emulated the *Dayan li.* This calendar was Yixing's most significant work on astronomy.[24] It furthermore states that he was the first to specifically employ number theory derived from the *Yijing*.[25] Text

[19] T 1798, 39: 808b25-27.

[20] *Jiu Tang shu*, Zhonghua Shuju edn., vol. 4, 1293.

[21] An armillary sphere is a mobile model of the celestial sphere comprised of various rings that represent the ecliptic, celestial equator and so on.

[22] Du You 杜佑, *Tongdian* 通典 (Taipei: Taiwan Shangwu Yinshuguan, 1987), 156c.

[23] Ohashi, "Astronomy and Mathematics of Yixing," 172.

[24] *Xin Tang shu*, Zhonghua Shuju edn., vol. 2, 587.

[25] *Xin Tang shu*, Zhonghua Shuju edn., vol. 2, 533. For extensive details see fasc. 27 of the *Xin Tang shu*.

catalogs also indicate that Yixing wrote extensively on the *Yijing*. Osabe identifies seven presently non-extant texts by or attributed to Yixing.[26]

The *Xin Tang shu* reports that Yixing died in 727 while his calendar was in draft form. The court ordered Zhang Yue and Chen Xuanjing 陳玄景 (d.u.) to edit it.[27] The *Dayan li* came into official use from 729 until 762.[28]

Yixing's work was later criticized by the court astronomer Gautama Zhuan 瞿曇譔 (712–776), a figure to be discussed below. In 733, he and Chen Xuanjing reported to the court that the *Dayan li* had plagiarized the **Navagraha-karaṇa* (*Jiuzhi li* 九執曆), a work on Indian mathematical astronomy translated in 718 by his father Gautama Siddhārtha 瞿曇悉達 (fl. 718).[29] An investigation, however, concluded that these allegations were false, though modern scholarship suggests that Yixing, in fact, had probably studied some foreign science.[30]

In addition to his work on the state calendar, Yixing also reformed the native Chinese system of "field allocation" astrology (*fenye* 分野). As the territory of China had expanded since ancient times, it became necessary to account for these new lands, and Yixing had a role in updating the system.[31] As we will recall (2.4 above), this system of astrology is entirely separate from foreign systems of astrology. It can therefore be said that Yixing was proficient in native Chinese astrology, but *not* foreign astrology.

There are several significant points to take away from Yixing's reconstructed life story above. First, Yixing was an eminent Buddhist monk with specialization in the vinaya, Chan and Mantrayāna, in addition to his other skills related to the *Yijing*, calendrical science and astronomy. Although he reformed the state system of native Chinese astrology, this does not necessarily mean he was proficient in Indian astrology, though the *Mahāvairocana-sūtra* commentary discussed above indicates that he might have had passing familiarity with it, which will be discussed further shortly.

These are important points to bear in mind because in the 720s, Buddhist astrology in China was only starting to be seriously studied and observed under the guidance of resident Indian monks. This helps to explain why it was Yixing's junior,

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[26] Osabe, *Ichigyō Zenji no kenkyū*, 124. These include the *Zhouyi lun* 周易論 (*Treatise on the Zhouyi*), *Zixia Yi zhuan* 子夏易傳 (*Yi Transmission of Zi Xia*), *Jingfang Yi zhuan* 京房易傳 (*Yi Transmission of Jing Fang*), *Yi zuan* 易纂 (*Yi Compilation*), *Dayan lun yijue* 大衍論義決 (*Key to the Meaning of the Treatise of the Dayan*), *Dayan xuantu* 大衍玄圖 (*Profound Map of the Dayan*) and *Dayan lun* 大衍論 (*Treatise on the Dayan*). A version of the *Zixia Yi zhuan* exists, but it is unclear how it relates to what Yixing compiled. The other titles appear to be treatises on *Yijing* number theory, and interpretations of the *Yijing* based on inherited traditions or lineages.

[27] *Xin Tang shu*, Zhonghua Shuju edn., vol. 2, 587.

[28] For the the calendrical calculations and arguments, see fasc. 34 of the *Jiu Tang shu* and fasc. 27–28 of the *Xin Tang shu*.

[29] *Xin Tang shu*, Zhonghua Shuju edn., vol. 2, 587. See 4.6 below for further discussion.

[30] Tansen Sen, "Gautama Zhuan: An Indian Astronomer at the Tang Court," *China Report* 31, no. 2 (1995): 278–279.

[31] Pankenier, *Astrology and Cosmology in Early China*, 278–279.

Amoghavajra, who became the primary architect of Buddhist astrology in the mid-Tang. The significance of these points will become apparent as we discuss how Tang Buddhist astrology developed from this point on.

4.2. Tantric Hemerology

Tantric hemerology is different from the system employed in the vinaya as discussed earlier, although it still takes into consideration the *pakṣa* cycle. The practice of Mantrayāna often specifically requires *abhiṣeka* (an initiation or consecration) from a lineage holder, and the drawing of a *maṇḍala*, an iconic representation of the deities of the associated text, or the ritual altar or space within which the relevant rituals are carried out.

The creation of the *maṇḍala* has to be timed so as to take place when it is deemed astrologically auspicious. This is expressly stated in the *Mahāvairocana-sūtra*. In the second chapter of the text the following prescription is given.

> 遇良日晨，定日時分宿直諸執皆悉相應，於食前時值吉祥相者。
> … on the morning of a propitious day, having determined a day on which the time, lunar mansion [*nakṣatra*], and planets are all in harmony, and at a time before the [morning] meal, with an auspicious sign …[32]

The text does not specifically define a propitious day, and the definition of such a day according to the Indian system would not have been readily understood by Chinese readers. There were many such unclear parts of the text, and this was likely one reason that Yixing compiled a commentary on the text with Śubhakarasiṃha – the *Dari jing shu* 大日經疏 (T 1796; *Commentary on the Mahāvairocana-sūtra*) – which was completed sometime before Yixing's death in 727.

Here we should note that Osabe doubted whether Yixing really compiled this commentary, on the basis that it is not mentioned in Tang period catalogs and biographies, among other issues such as its complex history of recensions in China and Japan.[33] There is furthermore a revised version of the commentary, the *Dari jing yishi* 大日經義釋 (X 23; *Exegesis of the Mahāvairocana-sūtra*), which in Japan has traditionally been attributed to Zhiyan 智儼 (d.u.) and Wengu 溫古 (fl. 723), but this attribution has also been called into question by Shimizu Akisumi due to problematic statements in the preface (Wengu in the preface states he could not examine the original Sanskrit, yet the revised commentary actually consults the Sanskrit), and other concerns such as early

[32] See the following English translation of the sūtra: *Vairocanābhisaṃbodhi Sūtra*, trans. Rolf W. Giebel (Berkeley: Numata Center for Buddhist Translation and Research, 2005), 19. T 848, 18: 4c4–5.

[33] Osabe Kazuo 長部和雄, "Dainichikyō no sensha to gishaku no zaijisha ni kansuru gimon" 大日經疏の撰者と義釋の再治者に關する疑問, *Mikkyō bunka* 密教文化 27 (1954): 40–47.

references to the preface constituting a separate text.[34] The traditionally attributed authorship of the original commentary is, despite these critiques and doubts, not universally contested. Kameyama Takahiko has discussed how the text is comprised of Śubhakarasiṃha's oral explanations and Yixing's inserted comments.[35] Mano Shinya's study points out two extant prefaces and one Tang-era work mentioning Yixing writing an exegesis to accompany the sūtra.[36] The biography of Yixing in the *Taizō engi* also states that Yixing wrote a commentary on the sūtra.[37]

So far as the section of the commentary on astrology is concerned, it represents a phase of development that clearly precedes later developments associated with Amoghavajra. For instance, it refers to the zodiac signs as *fang* 房 ('chambers'), rather than the later term *gong* 宮 ('palaces'). The latter became the standard term at a later date. Ketu 計都 is translated as 'banner' 旗, which is understood as meaning 'comet' 彗星.[38] This feature reflects an earlier Indian definition that stands in contrast to its later function as a 'planet' (see 5.3 below). There is nothing anachronistic or problematic that would lead one to conclude that this section of the text is not, as is traditionally believed, the words of Śubhakarasiṃha written down and slightly elaborated by Yixing.[39]

Returning to the content of the commentary, the following remarks concerning the definition of a propitious day are provided in the commentary. These remarks are highly significant as they reflect, with some supplementary remarks by Yixing, Śubhakarasiṃha's understanding of how to ascertain an auspicious day, and therefore likely represent the system employed in the early Nālanda tradition. They moreover constitute the first outline of Tantric hemerology in Chinese Buddhism. They are thus reproduced in full. We furthermore see the first attempt in China to address the technical challenges posed by employing an Indian calendar.

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[34] Shimizu Akisumi 清水明澄, "Tōdo ni okeru Dainichikyō chūshakusho no seiritsu katei: Onkojo wo chūshin toshite" 唐土における『大日經』注釋書の成立過程:『温古序』を中心として, *Mikkyō bunka* 密教文化 221 (2008): 49–72.

[35] Kameyama Takahiko 龜山隆彦, "Dainichikyō sho ni okeru senryakushaku shinpishaku ni tsuite" 『大日經疏』における淺略釋・深秘釋について, *Indogaku Bukkyōgaku Kenkyū* 印度學佛教學研究 56, no. 1 (2007): 169–172.

[36] Mano Shinya 真野新也, "Kan'yaku *Dainichikyō* no chūshakusho seiritsu ni kansuru ichi, noi no mondai" 漢譯『大日經』の註釋書成立に關する一、二の問題, *Indogaku bukkyōgaku kenkyū* 印度學佛教學研究 64, no. 1 (2015): 218–219.

[37] "He himself translated the Sanskrit into Chinese. It was altogether seven fascicles. It was circulated throughout the world. He simultaneously wrote an exegesis of it. 自譯梵文以爲漢典，凡七卷，見傳於世，兼爲疏義." *Dengyōdaishi zenshū* 傳教大師全集, vol. 4 (1926), 391.

[38] T 1796, 39: 618a8 & T 1796, 39: 618a15-16.

[39] Note also that in the *Gishaku mokuroku* 義釋目錄 (*Catalog of Commentaries*) by Enchin 圓珍 (814–891) there is the following item: *Fanwen Piluzhena chengfo jing chaoji* 梵本毗盧遮那成佛經抄記 (X 23, 438: 299b21), which appears to have been notes for the Sanskrit *Mahāvairocana-sūtra*. Zhisheng in 730, only a few years after Yixing's death in 727, reported that Baoyue 寶月 (*Ratnacandra) translated the text and Yixing acted as scribe and editor. See T 2154, 55: 572a22-23. This supports the traditional account that Śubhakarasiṃha's remarks were readily incorporated into the commentary.

因擇地事便明擇時支分也。凡所爲法事皆須與時義契合。今將擇治此地，故於吉日警發地神。餘法事例可知耳。
Selection of the period of time is explained when there is selection of the location. All Dharma rituals must be in accord with the temporal considerations. Now there is to be a selection and preparation of this location. Thus, on an auspicious day the earth deities are alerted. The other Dharma rituals can be understood based on the example.
良日晨者。謂作法當用白分月，就中一日三日五日七日十三日皆爲吉祥，堪作漫荼羅。又月八日十四日十五日最勝，至此日常念誦，亦應加功也。
...*the morning of a propitious day*: The ceremony should occur during the waxing period of the month (*śukla-pakṣa*), of which the first, third, fifth, seventh and thirteenth are all considered auspicious, and one may make the *maṇḍala*. Furthermore, the eighth, fourteenth and fifteenth are supreme. One these days constantly do recitations; furthermore, one should make extra efforts.
定日者。西方曆法通計小月，合當何日。若小月在白分內者，其月十五日即屬黑分，不堪用也。又曆法通計日月，平行度作平朔，皆合一小一大。緣日月於平行中又更有遲疾，或時過於平行或時不及平行，所以定朔或進退一日。定望或在十四日或在十六日。大抵月望正圓滿時，名爲白分十五日。月正半如弦時，亦爲八日。但以此准約之，即得定日也。
… *having determined a day* … : The Western calendar calculates lesser months [i.e., a *pakṣa* with less than fifteen days]. What are the corresponding days? If the lesser month is in the waxing period of the month, the fifteenth of that month will end up belonging to the waning period (*kṛṣṇa-pakṣa*). It cannot be used.[40] Also, the calendar calculates the Sun and the Moon. The date of the averaged new Moon is based on its averaged degrees of movement. It will always incorporate a lesser [29] or greater [30] month. Sometimes [the date for the new Moon] will pass or be late with respect to the averaged movements of the Sun and Moon as their speeds will also differ. This is why a fixed new Moon[41] will sometimes be ahead or behind a day. A fixed full Moon will sometimes be on the fourteenth or on the sixteenth. For most months, the time when the Moon is completely full is designated as the fifteenth day of the waxing period. The time when the Moon is exactly half like a bow string will be the eighth. It may be arranged based on this, and then one can determine the day.

[40] If the waning commences on the fifteenth, then that day is part of an extended-sixteen day *kṛṣṇa-pakṣa*.

[41] A fixed new Moon here refers to the convention of establishing a fixed day of the month as the new Moon regardless of whether the Moon is observed to be waxing or waning. In practice this means that the nominal new Moon will sometimes be out of sync with the true new Moon by up to a day.

時分者。西方曆法晝夜各有三十時。一一時別有名號。如晝日即量影長短計之，某時作事則吉，某時則凶，某時中平。各各皆有像類。

… *the time*: In the Western calendar, day and night are altogether comprised of thirty units of time [*muhūrta*]. Each unit of time has its designation. If it is daytime, one may then measure the length of a shadow. At one time it is auspicious to do something. At one time it is inauspicious. At one time it is neutral. Each have their respective imageries.

言宿直者。謂二十七宿也。分周天作十二房，猶如此間十二次。每次有九足，周天凡一百八足，每宿均得四足，即是月行一日裎。經二十七日，即月行一周天也。依曆算之。月所在之宿，即是此宿直日。宿有上中下，性剛柔躁靜不同。所作法事亦宜相順也。

...*lunar mansion*: The 27 *nakṣatra*–s. The ecliptic[42] is divided into 12 chambers like the 12 Jupiter stations here [in China]. Each station has 9 quarters [*pāda*]. The ecliptic is altogether 108 quarters. Each *nakṣatra* gets 4 quarters, which constitutes the course of movement that the Moon travels in one day. The Moon has gone once around the ecliptic after transiting for 27 days. It is calculated according to the calendar. The *nakṣatra* in which the Moon is present will constitute a convergence with this *nakṣatra*.[43] The *nakṣatra*–s possess a hierarchy, and they differ by nature with respect to their strengths and weaknesses, as well as action and inaction. The ritual to be performed should also be in accord.

諸執者。執有九種，即是日月火水木金土七曜，及與羅睺計都合爲九執。羅睺是交會食神。計都正翻爲旗，旗星謂彗星也。除此二執之外，其餘七曜相次直日，其性類亦有善惡，如梵曆中說。

… *planets*: there are nine *graha*, which are the Sun, the Moon, Mars, Mercury, Jupiter, Venus and Saturn (the seven luminaries).[44] If combined with Rāhu and Ketu, they altogether comprise nine *graha*. Rāhu is the nodal eclipse deity. Ketu is directly translated as banner. The banner star is a comet.[45] Apart from these two planets, the other seven have their sequential convergences [i.e., the days of the week]; their qualities also differ in being either benefic or malefic, as it is explained in the Indian calendar.

食前時者。晝夜各有三時。食前可作息災，暮間可作增益，夜可作降伏事也。入漫荼羅灌頂與息災相應，故云食前。

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[42] The Chinese here could also refer to the celestial equator, but given the Indian context I am inclined to think that this is in reference to the ecliptic.

[43] The *nakṣatra* presiding over a day is determined by the *nakṣatra* in which the Moon is lodged.

[44] Note that this is the Hellenistic ordering.

[45] Note that in later literature Ketu is defined as the descending node of the Moon or lunar apogee (see 5.3 below). Ketu included in the *navagraha* as a comet stands in contrast to the earlier development in which there were eight planets (the seven visible planets plus Rāhu), as seen in the *Sūryagarbha-parivarta* (3.2 above).

… *a time before the* [morning] *meal*: The day and night are altogether comprised of three periods. There should be elimination of obstacles prior to eating. In the evening there should be increase of benefits. At night there should be acts related to subduing [enemies]. Entry into the *maṇḍala* and the consecration [*abhiṣeka*] correspond to the elimination of obstacles, which is why the text states "before eating".[46]

遇善境界意者。謂作法時，或地上或空中有色聲等種種異相。…

...*meeting with a good state*:[47] The time to do the rite, when on the earth or in the air there are various types of unusual signs comprised of form, sound and so on. …

所以須順世諦者，以勝義漫荼羅微妙寂滅。醇信白心人尚難信受、況懷疑慮乎。以所度之人，曾習韋陀祠典，伎藝明處。若見造漫荼羅時分舛謬，慮恐致不吉祥便生疑怪，言：「我聞總持智慧者無所不達，而今觀之，尚不能擇得好星善時，況餘深事乎。」由此疑師疑法，故失堅信力反招重罪，故須順彼情機也。復次如是執曜，即是漫荼羅中一種善知識門，彼諸本尊，即能順世間事業而作加持方便。以阿闍梨善擇吉祥時故，與彼真言本誓法爾相關，爲作加持，得離諸障也。復次種種世諦門，皆是法界摽幟。

As to why one must conform to conventional truths, it is because the *maṇḍala* of the ultimate meaning is subtle and quiescent. Those people with pure faith and clear minds still find it difficult to accept, to say nothing of those harboring doubts. The accomplished individual has studied the Vedic scriptures, and is skilled and discerning in the arts. If they see that the *maṇḍala* was created at an erroneous time, they will worry that it will result in something inauspicious, and subsequently this produces apprehension. They will say, "I have heard that there is nothing that those wise in *dhāraṇī* do not accomplish, but now I see this. They cannot even select an auspicious time with good stars. This is to say nothing of other profound matters!" As a result of this, they doubt the teacher and his teaching. They thus lose the power of firm conviction and instead bring about grave transgressions. This is why [conventions] must be in accord with the dispositions of the beings. Furthermore, such *graha* are a gateway to virtuous friends within the *maṇḍala*. Those worthies [of the *maṇḍala*] can create the means

[46] This definition might initially seem to differ from the conventional reckoning of the day in India, as defined in the **Mahāprajñāpāramitā-upadeśa*, in which a day is defined "from sunrise to sunrise: the first division, middle division and later division, with the night also being three divisions 日名從旦至旦，初分中分後分，夜亦三分 (T 1509, 25: 409b25-26)." Five *muhūrtas* comprise one *kāla*, hence a day and a night comprise six *kāla* (see definition by Xuanzang: T 2087, 51: 875c18-20). In light of this, we might read 晝夜各有三時 in the commentary as "day and night are each comprised of three periods", even though the following sentence mentions only three specific times. These three specific times appear to be specific times within the framework of the six *kālas* (i..e, the general times of morning, sunset and nighttime), rather than being a unique way of dividing the day and night together into three separate periods.

[47] The Chinese here differs from the original quote from the sūtra.

> for empowerment [*adhiṣṭhāna*] in accord with worldly activities. As the *ācārya* skilfully selects an auspicious time, it will naturally align with their [the deities'] mantras and root vows, producing empowerment, and freedom from obstacles. Furthermore, the various methods of conventional truth are all markers of the *dharma-dhātu*.[48]

Here we find Yixing discussing new and full Moons determined according to an average or fixed time. This is a topic upon which he touched in his calendrical discussions. The *Liben yi* 曆本議 ("Discussion on the Calendar") is a summary of Yixing's comments on old and new calendrical systems that was compiled following his death. We see therein the following remarks, which appear to echo the above statements in the commentary:

> 古者平朔，月朝見曰朒，夕見曰朓。今以日之所盈縮，月之所遲疾，損益之，或進退其日，以為定朔。
> With respect to the averaged new Moon of the ancients, the Moon appearing in the morning is called the "Moon rising at sunrise", while it appearing in the evening is called the "Moon rising at sunset". Now these are calculated according to the progression of the Sun and the velocity of the Moon. The day [of the new Moon] can be ahead or behind [the averaged new Moon]. This is considered a fixed new Moon.[49]

Moving on, the commentary provides the esoteric interpretations of these terms. For example, the Sun represents fundamental and pure *bodhicitta*, which is the body of Vairocana, while the Moon represents the actions related to *bodhi*. The commentary suggests that although astrological considerations are worldly, they are still important in order to conform to mundane conventions, and to gain blessings for worldly endeavors. In this respect, astrology is not only employed to determine auspicious times, since there is also the aim of gaining the blessings of the *navagraha* deities through astrological knowledge. This is an important development because the planets (*graha*) are conceived of as deities capable of facilitating worldly endeavors. Thus, a basis for astral magic is directly affirmed in this commentary.[50]

Although this schedule alone would suffice for determining the day of a ritual within the *pakṣa* cycle, the commentary here is alluding to several important elements in an astrological schedule that remain unexplained: the *muhūrta*–s, twenty-seven *nakṣatra*–

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[48] T 1796, 39: 617c18-b14.

[49] *Xin Tang shu*, Zhonghua Shuju edn., vol. 2, 591. These remarks incidentally lend additional evidence in support of the traditional attribution of the commentary to Yixing.

[50] Shingon and Tendai in Japan preserved the *maṇḍala* and associated practices (mantras and *mudrā*-s). The icons and mantras of the planets, while not of primary significance, are still nevertheless a form of astral magic as they are directed to the *navagraha* and *nakṣatra* deities. For details on all these deities see Somekawa Eisuke 染川英輔, *Mandara zuten* 曼荼羅圖典 (Tōkyō: Daihōrinkaku, 2013).

s, twelve zodiac signs, and the seven-day week. Śubhakarasiṃha and other Indians resident in Chang'an would have been able to provide more detailed instructions on the Indian calendar, and take into consideration the above unexplained elements in determining a suitable date and time of day for a ritual, but most Chinese monks would not have possessed such knowledge.

This issue furthermore points to a key difference between the Mantrayāna of Śubhakarasiṃha's time and Amoghavajra's time. In the 720s, the community was under the direct guidance of foreign monks, whereas in the 750s and 760s, Mantrayāna was becoming increasingly integrated within Chinese Buddhism and elite society.[51] The practical requirements to adequately practice Mantrayāna in the Chinese speaking world were only beginning to be addressed in the 720s, as is clear from the commentary.

One noteworthy development in the 720s is the appearance of a system of twenty-seven *nakṣatra*–s of equal dimensions. As will be recalled, earlier translations such as the *Śārdūlakarṇāvadāna* describe twenty-eight *nakṣatra*–s of unequal dimensions. The *nakṣatra* of Abhijit 牛宿 is dropped from this set of twenty-seven. These twenty-seven *nakṣatra*–s are defined in relation to the twelve zodiac signs (and we recall that the zodiac signs have always been of uniformly equal dimensions). The ecliptic is comprised of 108 *pāda*–s, with each zodiac sign comprised of 9 *pāda*–s, and each *nakṣatra* comprised of 4 *pāda*–s. This possibly helps to explain why 27 *nakṣatra*–s were preferred: 108/28 = 3.85, whereas 27 divides into integers (108/27 = 4). This model is the Indian theory of *navāṃsa*–s or ninths of a zodiac sign. This reform occurred after the introduction of Hellenistic astronomy into India, marking a significant departure from the earlier *nakṣatra* system as defined in texts such as the *Śārdūlakarṇāvadāna*. The commentary, however, does not provide any substantial details on the new system, and thus the Chinese reader would have been unable to determine the *nakṣatra* presiding over a specific day without additional information.

4.3. Early Astral Iconography

The commentary to the *Mahāvairocana-sūtra* refers to the *navagraha* deities as "a gateway to virtuous friends within the *maṇḍala*." Although not primary deities within Mantrayāna, they are nevertheless regarded as potentially beneficial. The earlier Buddhist literature surveyed above refers to astral deities, but Mantrayāna introduced into China the means by which one could interact with these deities and gain their blessings.

[51] As Geoffrey Goble points out, "The patronage that Amoghavajra received from members of the Tang imperial family, from high-ranking officials in the central government, and from elite military commanders may be read more broadly as the adoption of Esoteric Buddhism in these various sectors of the Tang government." Geoffrey Goble, "The Politics of Esoteric Buddhism: Amoghavajra and the Tang State," in *Esoteric Buddhism in Mediaeval Maritime Asia*, ed. Andrea Acri (Singapore: ISEAS – Yusof Ishak Institute, 2016), 133.

A component of this magic was the astrological iconography that accompanied the system of the *Mahāvairocana-sūtra*, specifically the visual representations of the twelve zodiac signs, and the *navagraha* and *nakṣatra* deities. These are some of the first known visual representations of the twelve zodiac signs in China. These figures became important elements in the East Asian Buddhist art record. Their introduction also marks the early practice of Buddhist astral magic and star worship by Chinese Buddhists. During the eighth century, these deities were depicted in the Indian fashion, in contrast to later developments in which Iranian representations dominate, a topic to which we will return in the following chapter. It is important to survey these icons in order to understand how they differ from the later icons.

Yixing's commentary on the *Mahāvairocana-sūtra* gives the following details regarding the positions of the astral deities in the *Garbhadhātu-maṇḍala 胎藏界曼荼羅.

> 日天眷屬布諸執曜。盎伽在西。輸伽在東。勃陀在南。勿落薩鉢底在北。沒儞沒遮在東南。羅睺在西南。劒婆在西北。計都在東北。
> Place the planets as the retainers of the solar deity: Aṅgāraka [Mars] in the west, Śukra [Venus] in the east, Budha [Mercury] in the south, Bṛhaspati [Jupiter] in the north, Śanaiścara[52] [Saturn] in the southeast, Rāhu in the southwest, Kampa[53] in the northwest, and Ketu in the northeast.[54]

The inclusion of Kampa, the deity of earthquakes, as one of the *graha*–s (planets) here is unique. It is unclear why it is designated as a *graha*, though we might speculate it was to fill in all eight directions.

> 西門之南，與日天相對應置月天，乘白鵝車。於其左右，置廿七宿，十二宮神等。
> South of the west gate, place the lunar deity opposite the solar deity. He rides in a chariot [pulled by] white geese. To his left and right are the deities of the twenty-seven *nakṣatra*–s and twelve zodiac palaces.[55]

Descriptions of the astral deities are not given in the text, but they are visually depicted in the *Taizō zuzō* 胎藏圖象, which includes drawings of the *maṇḍala* deities (table 4.1).[56]

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[52] Read *mei* 沒 as *she* 設.

[53] Earthquake deity. In Chinese also known as *zhendong shen* 震動神. See depiction below.

[54] T 1796, 39: 634b20-23.

[55] T 1796, 39: 634c12-13.

[56] Compare with the similar icons of the *Taizō kuzuzōyō* 胎藏舊圖像樣 (*Old Icons of the Garbhadhātu*). TZ vol. 2, 477–566. a collection of icons from the Garbhadhātu-maṇḍala brought to Japan by Enchin. The original document is lost, but a copy from 1193 in the Mutō 武藤 collection is reproduced in the TZ. These icons are thought to be those of the tradition of Vajrabodhi 金剛智 (671–741) and Amoghavajra 不空 (705–774).

These icons were reproduced in 1194 based on those brought to Japan from China by Enchin 圓珍 (814–891), who copied them in 855 in Chang'an at Qinglong-si 青龍寺, one of the main temples in the capital for the study of Mantrayāna. It is said that these icons were first drawn by Śubhakarasiṃha.[57] These icons do not display any of the Iranian influences that become prominent in the ninth century. One will note the similarity between these twelve zodiac signs and those of the modern West.

Table 4.1. Astral Deities of the Garbhadhātu-maṇḍala	
	Fig. 4.1. Aries – Meṣa.
	Fig. 4.2. Taurus – Vṛṣabha.

[57] For details see National Institutes for Cultural Heritage, Japan. The document is designated as an "Important Cultural Property". (http://www.emuseum.jp/detail/100034). See TZ, vol. 2, 277–279.

	Fig. 4.3. Gemini – Mithuna.
	Fig. 4.4. Cancer – Karkaṭa.
	Fig. 4.5. Leo - Siṃha.

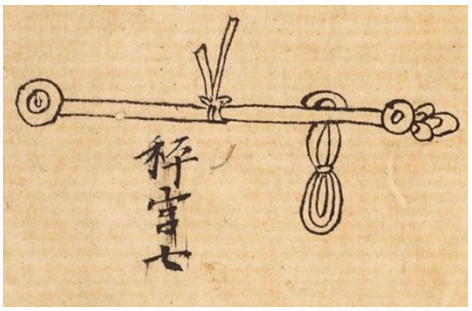
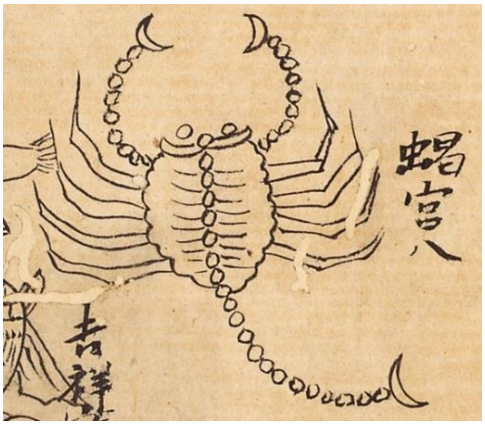
	Fig. 4.6. Virgo – Kanyā.
	Fig. 4.7. Libra – Tulā.
	Fig. 4.8. Scorpio – Vṛścika.

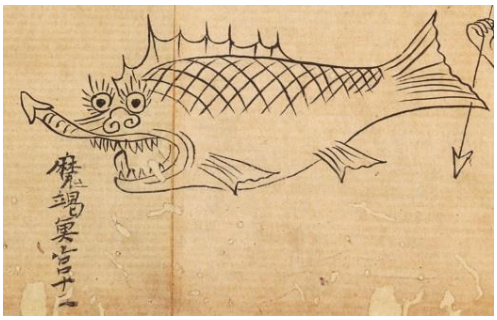
	Fig. 4.9. Sagittarius – Dhanus.
	Fig. 4.10. Capricorn – Makara.
	Fig. 4.11. Aquarius – Kumbha.

	Fig. 4.12. Pisces – Mīna.
	Fig. 4.13. Sun – Āditya.

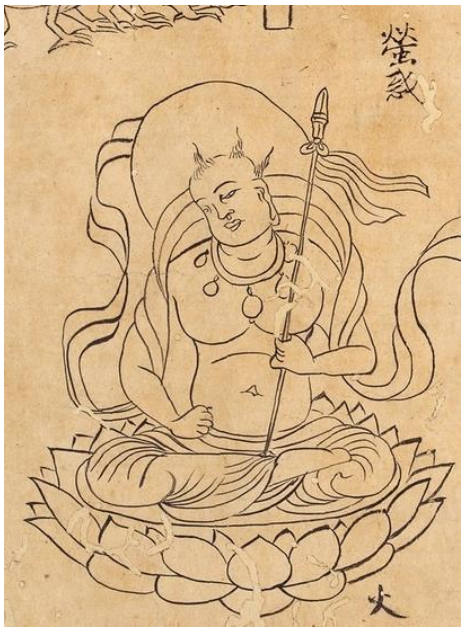
	Fig. 4.14. Moon – Candra.
	Fig. 4.15. Mars - Aṅgāraka.

	Fig. 4.16. Venus – Śukra.
	Fig. 4.17. Mercury – Budha.

	Fig. 4.18. Jupiter - Bṛhaspati.
	Fig. 4.19. Saturn – Śanaiścara.

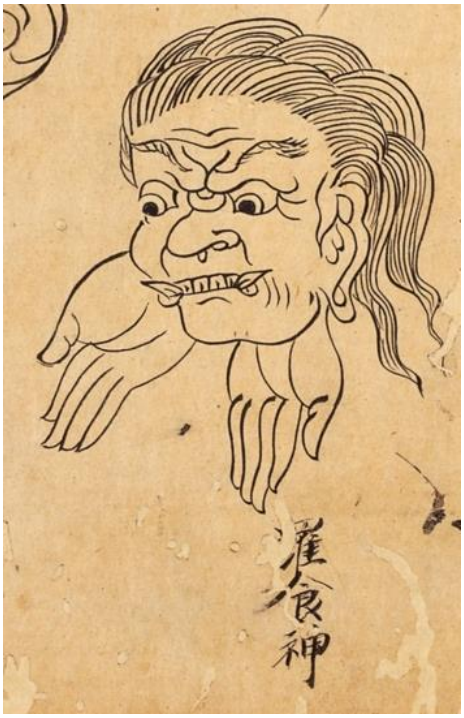


Fig. 4.20. Rāhu.

Fig. 4.21. Ketu (譟星神). Here *zao* 譟 is a scribal error for *jidu* 計都.[58]

[58] In the *Śivadharmaśāstra*, a text of Śaivism which Peter Bisschop dates to the 6th or 7th century, Ketu is said to be "shaped like smoke" (*dhūmākāro*) and "appearing like smoke from straw"

	Fig. 4.22. Kampa.
	Fig. 4.23. *Nakṣatra*. The *nakṣatra* deities are similarly depicted with small variations.

4.4. Amoghavajra and Astrology

Amoghavajra (705–774) led an active and influential life as a Vajra master in China, though his contribution to the development of Buddhist astrology in East Asia is less well known.[59]

One scripture translated by Amoghavajra shows the extent to which astrological determinism was being integrated into early Tantric literature. His translation of the

(*palāladhūmasaṃkāśo*). He is positioned in the northeast. See Peter Bisschop, trans., *Śivadharmaśāstra* (forthcoming). The *Mahāvairocana-sūtra* commentary also positions Ketu in the northeast (計都在東北). See T 1796, 39: 634b22-23. Compare with *Taizō kuzuyō* (TZ, vol. 2, 556).

[59] For biographical details see Martin Lehnert, "Amoghavajra: His Role in and Influence on the Development of Buddhism," in *Esoteric Buddhism and the Tantras in East Asia*, ed. Charles D. Orzech et al (Leiden: Brill, 2011), 352–359.

Parṇaśabarī-avalokiteśvara-bodhisattva-sūtra 葉衣觀自在菩薩經 (T 1100) includes a stated belief in astrological determinism.

> 若國王男女，難長難養，或短壽，疾病纏眠[60]，寢食不安，皆由宿業因緣，生惡宿直。或數被五曜陵逼本宿，令身不安。
> Whether king, man or woman, [some] will be difficult to raise and nourish; some will have short lifespans, bound in illness and at unease with sleep and food. All is due to past karma and causes-conditions, being born under a bad *nakṣatra* convergence. Some often have their natal *nakṣatra* intruded upon by the five planets, making their bodies uneasy.[61]

The Chinese of this passage could be interpreted in two ways: either that one is born under unfavorable stars as a result of past life karma, or that unfortunate life circumstances are a result of past life karma *and* being born under unfavorable stars. In either case, the last remark expresses a belief that planets intruding into one's natal sign causes unease. As one will recall from above, the *Saddharmasmṛtyupasthāna-sūtra* rejects such a concept. It states, "It is not the stars which can impart the fruits of virtue and non-virtue like this."[62] In this later period, however, a belief in astrological determinism becomes essential within Mantrayāna. In light of the popularity of Mantrayāna, and Amoghavajra's elevated status as a court priest,[63] it is reasonable to assume that many people, elites and commoners alike, felt compelled to understand the astrological circumstances of their own birth and life, and subsequently take measures to counteract undesirable influences through the use of rituals and mantras. This was another element that initiated the widespread interest in astrology from the mid-eighth century. In other words, astrology was not only useful for determining auspicious days to maximize the effectiveness of rituals, as there was now a specifically Buddhist interest in understanding one's fate as determined through the practice of astrology. Native Chinese astrology, which focuses on state interests and not those of the individual, could not provide the necessary lore and methods. The need for foreign astrological lore in Chinese translation became all the more pressing as a result.

We might also note that the Emperor Xuanzong (r. 712–756) expressed a particular interest in court astrology during his long reign.[64] This interest, we might imagine, also likely extended to the emerging practice of Buddhist astrology.

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[60] Read *mian* 眠 as *mian* 綿.

[61] T 1100, 20: 448b11-13.

[62] 善不善果非星能與. T 721, 17: 290b7-8.

[63] For discussion concerning Amoghavajra's connections to the imperial, military and bureaucratic elites see Geoffrey Goble, "Chinese Esoteric Buddhism: Amoghavajra and the Ruling Elite," (PhD Dissertation, Indiana University, 2012), 177–200.

[64] As Victor Xiong points out, "Xuanzong helped advance the cause of court astrology by promoting its government agency. In the wake of Wu Zetian's fall from power, this agency suffered a

Until the 750s, there had been a lack of materials in Chinese for understanding the Indian calendar, a necessary component for the effective practice of Mantrayāna. Amoghavajra returned to China from India in 746, which was around twenty years after Yixing had compiled the commentary on the *Mahāvairocana-sūtra*. As discussed above, the inadequecies of the commentary in describing the Indian calendar would have been problematic, and this was likely one motivating factor behind Amoghavajra's compilation of an astrology manual that addressed the challenges of implementing the *nakṣatra* calendar and seven-day week in China. As Mantrayāna became increasingly available to members of the Chinese sangha, they required an authoritative astrology manual. Amoghavajra took on the responsibility of compiling such a work, which despite being intended for Buddhists, still largely drew on non-Buddhist sources. Our attention now turns to Amoghavajra's manual.

4.5. *Xiuyao jing* 宿曜經 (T 1299)

Amoghavajra compiled the *Xiuyao jing* 宿曜經 (T 1299) first in 759, and then subsequently revised it in 764. The full title in the Japanese Taishō canon reads *Sūtra on Mañjuśrī Bodhisattva and the Sages' Teaching on Auspicious and Inauspicious Times, Good and Evil Constellations and Planets* 文殊師利菩薩及諸仙所說吉凶時日善惡宿曜經. Although this text is attributed to Mañjuśrī Bodhisattva and "sages" (*ṛṣi*?), this is merely an attribution designed to legitimize this text for Buddhist use. We might recall here how Zhisheng in 730 excluded a work on Brahmanical astrology from his catalog of sūtras as it was deemed to be heterodox. There was likely still a concern in Amoghavajra's time regarding the non-Buddhist nature of most Indian astrology, which helps to explain why the work at hand is attributed to Mañjuśrī, although this bodhisattva actually plays no major role in the text. As we will explore, the *Xiuyao jing* is, in fact, based on non-Buddhist astrology, with some of its content even being antithetical to Buddhist precepts. There is no known parallel of this work in Sanskrit or Tibetan. According to the preface of the text, it was translated (*yi* 譯) by Amoghavajra, but a reading of the text leads one to conclude it is a compilation of otherwise disconnected materials.

We should first note that the recension in the Taishō (T 1299) is not the original version of the work. According to the extensive research of Yano (1986/2013), the extant textual transmissions of the *Xiuyao jing* are comprised of the mainland (China and Korea) recensions and the Japanese manuscripts traced back to Kūkai, who returned to Japan with a copy in 806, or the Tendai monks Ennin and Enchin, who returned with copies in

setback and was demoted again to the Bureau of the Grand Astrologer. Xuanzong permanently restored the agency's independence, elevating it once more to the position of an inspectorate and disassociating it from the Department of the Palace Library." Victor Cunrui Xiong, "Astrological Divination at the Tang Court," *Early Medieval China* 13-14, no. 1 (2007): 227.

847 and 858 respectively.[65] These two transmissions significantly differ, which was noticed in the Edo period (1603–1868) in Japan by the monk Kakushō 覺勝 (d.u.) at Kōyasan 高野山. He compared the multiple versions available to him, from which he drafted his edition published in 1736, entitled the *Sukuyō yōketsu* 宿曜要訣 (*Essential Key to Sukuyō*).[66] The Taishō version (T 1299) is based on the Korean canon's version with reference to the Ming edition, but gives no mention of Kakushō's edition. The mainland transmission displays evidence of later editorial revisions, which led Yano to believe that the Japanese transmission – specifically Kakushō's edition – is closest to the original text.[67]

As the preface to the original version states, the first version of the *Xiuyao jing* was compiled with the assistance of Shi Yao 史瑤 (d.u.), and completed in 759. We are told that the resulting text was too difficult to grasp, and consequently it was revised with running comments inserted into the text by Yang Jingfeng 楊景風 (d.u.) in 764.[68] It is noteworthy here that neither of these assistants to Amoghavajra appear to have been monks. The latter was a calendar specialist who worked at the court on calendar reforms under Tang emperor Dezong 德宗 (r. 779–805) around the year 783.[69] This also explains why the Chinese of the text does not read like a Buddhist translation. Although Amoghavajra knew Sanskrit, and could have translated the materials himself, he might also have drawn on existing Chinese translations of Indian astrological material from earlier times, such as those listed in the *Sui shu* discussed above. This would explain the presence of expressly non-Buddhist elements in the text, to be discussed shortly.

The mainland and Japanese versions of the *Xiuyao jing* are all comprised of two fascicles. Yuanzhao's catalog of esoteric works that were translated or composed between 730–794 lists the *Xiuyao jing* with the following comment.

> 上卷前譯，下卷後譯，有序，共四十紙。
> The upper fascicle is the earlier translation. The lower fascicle is the later translation. It includes a preface. It totals forty sheets of paper.[70]

[65] One handwritten Japanese manuscript consulted in this study is from 1322, presently owned by Dōshisha University (148.8 | F9632).

[66] This was printed in modern typeset by Wakita Bunshō 脇田文紹 in 1897 as the *Sukuyō-kyō shukusatsu* 宿曜經縮刷 (*Typset Xiuyao jing*). This version was included in the *Shukuyōkyō uranai shinden* 宿曜經占真傳 (*The True Transmission of Xiuyao jing Divination*), a compilation with modern commentary by Wakahara Yukitsune 若原敬經 (1854–1926), published in 1908.

[67] For an analysis of all *Xiuyao jing* manuscripts see Yano, *Mikkyō senseijutsu*, 226–264.

[68] Wakita Bunshō 脇田文紹, ed, *Sukuyō-kyō shukusatsu* 宿曜經縮刷, vol.1 (Nagoya: Wakita Bunshō, 1897), 4.

[69] *Xin Tang shu*, Zhonghua Shuju edn., vol. 3, 716.

[70] T 2156, 55: 753c28-29.

The fascicle ordering of the extant versions is the reverse of this. The 'upper' is the revised version by Yang Jingfeng and the 'lower' is the earlier version by Shi Yao. The content of the 'lower fascicle' is similar to that of the 'upper', which led Zenba (1968), who it seems to have relied exclusively on the Taishō edition, to incorrectly assume that the 'lower' was comprised of supplementary notes. Later Yano (1986) correctly established that the 'upper fascicle' is the later version by Yang Jingfeng, while the 'lower fascicle' is the previous version produced by Shi Yao. This is specifically stated in the preface of the Japanese recension.

> 和上以乾元二年翻出此本。端州司馬史瑤執受纂集，不能品序，使文義煩猥，恐學者難用，於是弟子揚景風親奉指揮，再爲修注，起草以畢敬寫奉行。凡是門人各持一卷。于時歲次甲辰大唐廣德二年春也。今此經文見有兩本，一是史瑤初筆受本，二是楊景風再加修注本。
>
> The Master [Amoghavajra] translated this work in year 2 of reign era Qianyuan [759]. Sima[71] Shi Yao of Duanzhou penned and collated it. He could not manage it well, making the meaning of the content abstruse. There was a concern that scholars would find it difficult to implement. As a result, the disciple Yang Jingfeng personally revised and annotated a new draft according to direct instructions, after which it was respectfully copied. Each disciple carried off one scroll. The time was spring of year 2 in the reign era Guangde [764] of the Great Tang. Now there are two extant versions of this sūtra. The first is the version Shi Yao first recorded. The second the revised edition is by Yang Jingfeng.[72]

The preface in the Taishō version does not mention that the text is comprised of the first draft and the following updated version, which is a curious omission.[73] Exactly when these editorial revisions on the mainland occurred is difficult to determine, but as will be explored in the following chapter, other works on astrology from the mid-ninth century still refer to the earlier recension of the *Xiuyao jing*, which indicates that it was used well into the ninth century, when Japanese monks brought back copies.

It appears that the content of the *Xiuyao jing* was further developed. The Japanese Tendai monk Annen 安然 (841–915?) in his *Sho ajari Shingon mikkyō burui sōroku* 諸阿闍梨真言密教部類總錄 (*A Complete Catalog of the Shingon Mikkyō Collection of the Ācāryas*) includes the following items under the astrology section:

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[71] Sima 司馬, "Master of Horses" is an office title. In the Sui-Tang: "Adjutant, a 2nd- or 3rd-level executive officer found in most military guards stationed at the dynastic capital." Charles O. Hucker, *A Dictionary of Official Titles in Imperial China* (Stanford: Stanford University Press, 1985), 452.

[72] Wakita Bunshō 脇田文紹, ed, *Sukuyō-kyō shukusatsu* 宿曜經縮刷, vol.1 (Nagoya: Wakita Bunshō, 1897), 4.

[73] T 1299, 21: 387a11-16.

新撰宿曜經七卷，加年記一卷，安礙述。
宿曜經那繁補闕鈔七卷，玄靜闍梨集。
New Compilation Xiuyao Jing, 7 fascicles. Appended ephemerides, 1 fasicle. Taught by An'ai [d.u.].
Xiuyao jing Edited Commentary, 7 fascicles. Compiled by Ācārya Xuanjing [d.u.].[74]

These two works are not extant, but they do indicate that the work was further developed between its composition and Annen's time. The latter work appears to have been a commentary. Another point that demonstrates the currency of the *Xiuyao jing* in the ninth century is that Kūkai felt it necessary to transmit it to Japan in 806, and insist on its implementation, which perhaps stemmed from what he had been directly taught in Chang'an. His biography, the *Kōya Daishi go kōden* 高野大師御廣傳 (*Extensive Biography of the Kōya Great Master*), produced by Shōken 聖賢 (1083–1147) in year 1 of the reign era Gen'ei 元永 (1118), reports that calendar specialists in Japan at the time were unaware of such an astrological schedule, in particular the concept of Sunday:

大同以往，曆家無知密日，是故日辰吉凶雜亂，人多犯之。大師歸朝之後，傳此事。
Before the Daidō reign era [806–810], calendar experts did not know of Sunday. This is why there was confusion about astrological auspiciousness and inauspiciousness. People often violated this. After the Great Master [Kūkai] returned to court, he transmitted this practice.[75]

This indicates that between 764 when Amoghavajra's *Xiuyao jing* was completed, and 806 when Kūkai returned to Japan, Amoghavajra's system had become a primary text amongst practitioners of Mantrayāna in China. Kūkai was thus instructed on its importance, which was unknown in Japan until his return.

With these background details in mind, the present discussion turns to the content of the work, and specifically the challenges it addressed. In light of the fact that the Japanese transmission of the text is closest to the original version, reference will be made primarily to Wakita's typeset edition of Kakushō's version.

The second fascicle, which was compiled in 759, commences with an overview of the *pakṣa* cycle. It first cites verses attributed to Mañjuśrī concerning the qualities of days. These verses describe the waning (*kṛṣṇa-pakṣa*) and waxing (*śukla-pakṣa*) periods (each comprised of fifteen days), but the subsequent prose redefines the cycle using the thirty-day lunar month, which appears to have been for ease of reference when using the Chinese calendar. The details are summarized in table 4.2. This is far more detailed than

[74] T 2176, 55: 1127c2-3.
[75] Z 8-2: 661b14-17.

what is given in the *Mahāvairocana-sūtra* commentary, and different from it. The commentary defines lunar days 1, 3, 5, 7 and 13 as auspicious, while days 8, 14 and 15 are regarded as best (see 4.2 above).

The following section expands on the *pakṣa* cycle by specifying the fifteen deities who respectively descend on one of fifteen lunar days (*tithi*–s) within a *pakṣa*. These are Vedic deities. They differ from the deities who are said to descend into the world on three specific days of a *pakṣa* as described in earlier Buddhist texts. As Yano points out, there are additional parallels with Varāhamihira's *Bṛhatsaṃhitā* (chapter 99), a major sixth century compendium detailing *jyotiḥśāstra*, among other subjects.[76] These points reveal that Amoghavajra's source material here was non-Buddhist.[77] The names of the deities in Sanskrit are provided in transliterated Chinese, accompanied by Chinese translations as notes inserted by Yang Jingfeng (table 4.3). The list of associated deities from a separate tradition are also listed.[78]

The heading of the following section reads "Twenty-Seven *Nakṣatra*–s Twelve Zodiac Signs Diagram" 二十七宿十二宮圖. An inserted note points out that China uses twenty-eight lunar stations, while in the western country (i.e., India) they exclude Abhijit 牛宿. Among the *nakṣatra*–s in the earlier system, outlined in the *Śārdūlakarṇāvadāna*, Abhijit has extremely small dimensions, and thus could be easily excluded to form a system of twenty-seven *nakṣatra*–s. One important point to iterate here is that the Indian *nakṣatra*–s are functionally equated to the Chinese lunar stations, but in reality the two systems are still different. This imprecision was perhaps the natural result of translating the Indian terms using Chinese terms, yet inadequately defining them. Similarly, the text explains that the twelve zodiac signs are similar to the twelve Jupiter stations (十二次) of China. This is the same understanding expressed in the *Mahāvairocana-sūtra* commentary.[79] This is different from the sidereal zodiac, which is defined by a different set of stars, but came to serve as a functional equivalent for the zodiac signs in China. This strategy of employing functional equivalents became the norm in Buddhist astrology in China.

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[76] Yano, *Mikkyō senseijutsu*, 128–129.

[77] Amoghavajra's sources were also post-Vedic. Einoo notes that "it is clear that in post-Vedic rituals the use of various *tithis* for determining the day of performance of deities is common phenomenon [sic]." See Einoo Shingo, "Ritual Calendar. Change in the Conceptions of Time and Space," *Journal Asiatique* 293, no. 1 (2005): 101.

[78] Brāhmaṇabala (fl. c. 11th cent. CE) lists deities presiding over the *tithi*–s in his commentary on the *Kāṭhaka Gṛhyasūtra*. Bhaṭṭanārāyaṇa (d.u.) provides a very similar list in his commentary on the Gobhila Gṛhyasūtra. See Einoo, "Ritual Calendar," 103–104.

[79] This is also expressly stated in notes for Yixing's *Dayan li* calendar in which the twelve zodiac signs of India are equated to the twelve Jupiter stations of China. "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." Note here that *yu* 鬱 (equivalent to *yu* 郁) is a scribal error for another character, perhaps *ming* 鄍. *Xin Tang shu*, Zhonghua Shuju edn., vol. 3, 673.

Table 4.2. *Xiuyao jing* (fasc. 2) *Pakṣa* Cycle.				
		Auspicious	**Inauspicious[80]**	**Determined by *nakṣatra* + day of week[81]**
śukla	1	*		
	2			*
	3	*		
	4		Night	
	5	*		
	6			*
	7	*		
	8		Daytime	
	9			*
	10	*		
	11	*	Night	
	12			*
	13	*		
	14			*
	15		Daytime	
kṛṣṇa	1 (16)	*		
	2 (17)			*
	3 (18)	*	Night	
	4 (19)			*
	5 (20)	*		
	6 (21)			*
	7 (22)	*	Daytime	
	8 (23)			*
	9 (24)			*
	10 (25)	*	Night	
	11 (26)	*		
	12 (27)			*
	13 (28)	*		
	14 (29)		Daytime	
	15 (30)			*

[80] The text further notes that a negative daytime period becomes auspicious after noon, and that a negative night period becomes auspicious after midnight.

[81] A day is auspicious if the *nakṣatra* presiding over it and the day of the week are auspicious. It is inauspicious if the *nakṣatra* and day of the week are inauspicious.

Table 4.3. *Xiuyao jing* (fasc. 2) Presiding Deity Cycle				
Days	**Deity**[82]	**Chinese**	**Day Name**[83]	**Brāhmaṇabala & Bhaṭṭanārāyaṇa**
1, 16	Prajāpati 鉢闍鉢底	梵王 Brahmā King	建日 (*pratipad*)	Brahmā
2, 17	Bṛhaspati 苾利訶駅鉢底	造化神 Creation Deva	得財日 (*bhadrā*)	Tvaṣṭṛ
3, 18	Viṣṇu 毘紐神	那羅延天 Nārāyaṇa	威力日 (*balā*)	Viṣṇu
4, 19	Yama 閻謨	閻羅王 King Yama	猛武日 (*riktā*)	Yama
5, 20	Soma 蘇謨	月天子 Moon Deva	圓滿日 (*pūrṇā*)	Soma
6, 21	Kumāra 摩羅	童子天 Boy Deva	求名日 (*māsā*)	Kumāra
7, 22	Saptarṣayaḥ 七仙	北斗 Big Dipper	朋友日 (*mitrā*)	Munis
8, 23	Vasavaḥ 婆娑	婆藪天 Vasudeva	力戰日 (*mahābalā*)	Vasus
9, 24	Rudrāṇī 嚕達囉尼	毘舍闍鬼王 King of Piśācas	凶猛日 (*ugrasenā*)	Piśācas
10, 25	Dharma 達謨[84]	善法神 Saddharma Deva	善法日 (*sudhanvā*)	Dharma
11, 26	Rudra 嚕捺嚧	自在天 Īśvara Deva	慈猛日 (*sunandā*)	Rudras/Rudra
12, 27	Āditya 阿逸都	日天子 Sun Deva	名聞日 (*yamā*)	Ādityas
13, 28	Piśāca (?) 鉢折底	天魔 Deva Māra(?)	最勝日 (*jayā*)	Kāma
14, 29	Yakṣa 藥蓺	藥叉將 Yakṣa General	勇猛日 (*ugrā*)	Bhūtas / Yakṣas
15, 30	Pitaraḥ 多盧[85]	魂靈神 Deity of Spirits	吉相日 (*siddhārthā*)	Pitṛs / Viśve devāḥ

The original diagram is omitted in the Wakita and Wakahara editions. Wakita notes that it is perhaps that in the first fascicle, and thus omits it.[86] The diagram as a circular representation of the ecliptic is found in the aforementioned Dōshisha manuscript from 1322, but the contents are somewhat corrupted and out of alignment. Aries, however, is clearly designated as the first zodiac sign. It further specifies the domiciles of each respective planet, the parallel *nakṣatra*–s and the times of the year when signs rise.

[82] Reconstruction of Sanskrit names from Chinese transliteration adapted from Yano, *Mikkyō senseijutsu*, 130–131.

[83] The Sanskrit terms in parentheses are derived from those specified by a certain "Garga" in Utpala's commentary of the 98th chapter of Varāhamihira's *Bṛhatsaṃhitā.* See Yano, *Mikkyō senseijutsu*, 128–129.

[84] In T 1299 rendered as *Sudharmā 蘇達謨. T 1299, 21: 394b21.

[85] The Dōshisha manuscript gives *Biduolu* 必多盧.

[86] Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 6.

In Hellenistic astrology, the zodiac signs are each considered a "house" (Greek: οἶκος) or domicile in which planets reside. Mars, for example, has two domiciles: Aries and Scorpio. This feature is taken into consideration when interpreting a horoscope chart, as a planet in its domicile is thought to be in a "dignified" position and therefore potent, though here it seems to possess no function. Ths presence of the domiciles does, however, represent the gradual introduction of what were originally Hellenistic elements into Chinese Buddhist astrology. This is the earliest known example of the domiciles in China.

The *Xiuyao jing* introduced the *pūrṇimānta* system, which reckons the start of the month from the full moon. As noted above, there were multiple calendrical systems in India. The Indian calendar of the *Xiuyao jing* is explained as follows (note that the month names in Sanskrit differ from the names of the *nakṣatra*–s themselves; see table 2.1)

> 西國皆以十五日望宿，爲一月之名。故二月爲角月。(西國以二月爲歲首，以其道齊景正，月停夜分，時淑氣和，草木榮茂，一切增長，故梵天折爲曆元也) 。三月名氐月。四月名心月。五月名箕月。六月名女月。七月名室月。八月名婁月。九月爲昴月。(梵語昴星名迦提。西國五月十六日雨安居，至八月十五日，滿已後至九月十五日已來自恣，故號爲迦栗提迦，但取星名而已。今中國迦提月，即是其，而妄者，別爲訓釋，蓋大謬焉)。十月名觜月。十一月名鬼月。十二月名星月。正月名翼月。
>
> The western countries all derive the name of the month from the *nakṣatra* in which the full Moon is lodged on the fifteenth day. Hence the second [Chinese] lunar month is called Caitra.[87] (*The western countries reckon the second [Chinese] lunar month as the year's start; the start of the year as the [solar] path is aligned and the light [of day] is equal, while the Moon [=Sun]*[88] *halts night time [the vernal equinox]; the weather of the time is warm, vegetation and trees flourish and everything increases, hence Brahmā declares it to be the epoch of the calendar.)* The third month is called Vaiśākha, the fourth month is called Jyaiṣṭha, the fifth month is called Āṣāḍha, the sixth month is called Śrāvaṇa, the seventh month is called Bhādraphada, the eighth month is called Āśvina and the ninth month is called Kārttika. (*In Sanskrit the constellation of Mao [the Pleiades] is called Kṛttikā. In the western countries, the sixteenth day of the fifth month is the [start of the] rains retreat until the fifteenth day of the eighth month, after which time are the repentance ceremonies [pravāraṇā] after the fifteenth day of the ninth month. Calling it Kārttika is therefore just a derivation from the nakṣatra's name. Now in China the month of Kārttika …*[89] *they are confused and instead*

[87] The full Moon will 'lodge' in the *nakṣatra* of Citrā, hence the name of the month Caitra.
[88] *Yue* 月 here is a scribal error for *ri* 日.
[89] The text here appears to be corrupted.

etymologically interpret it, greatly erring.)[90] The tenth month is called Mārgaśira, the eleventh month is called Pauṣa, the twelfth month is called Māgha and the first month is called Phālguna.[91]

The Chinese lunar calendar, which numerically counts the days of the month, did not originally track any sort of cycle related to the twenty-eight Chinese lunar stations. The twenty-seven *nakṣatra* calendar was thus an entirely new system to China, and moreover presented the challenge of how to keep track of which day falls under which *nakṣatra*. The explanation for how to do this is given as follows:

> 夫取宿直者，皆月臨宿處，則是彼宿當直。又月行有遲疾。宿月復有南北前後隨合。如何可知，則以後頌言，求之可解，頌：六宿未到名合月，十二宿月左右合，九宿如犢隨母行，從奎宿數應當知。
> To determine the *nakṣatra* convergence: the *nakṣatra* in which the Moon is present constitutes the corresponding *nakṣatra* convergence. Furthermore, lunar movement varies in terms of speed. Moreover, there are convergences between the *nakṣatra*–s and the Moon that occur to the north or south, or ahead or behind one another [along the ecliptic]. How can these be known? It can be understood with reference to the following verses. Six *nakṣatra*–s: they are said to converge with the Moon before [the Moon's] arrival. Twelve *nakṣatra*–s: the Moon meets with them in the same approximate space. Nine *nakṣatra*–s: like a calf following its mother. It should be understood counting from the *nakṣatra* of Revatī.[92]

This explains that the Moon will sometimes be ahead of or behind the *nakṣatra* that is supposed to preside over a given day. In other words, the convergence in many cases is simply in name only.[93]

The *Xiuyao jing*, however, also states, "Always check these verses against the sky and there will be no disparities in applying the [convergences] between the *nakṣatra*–s

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[90] This seems to be referring to the mistaken interpretation of *jiati yue* 迦提月 as the month of *kaṭhina*. The *kaṭhina* is a robe provided to monks after the summer retreat. The vinaya exegete Daoxuan makes the same mistake. His commentary on the *Dharmaguptaka-vinaya* may be the source of this widespread misunderstanding. He states that *jiati* 迦提 (Kārttika) is an abbreviation of *jiachi'na* 迦絺那 (*kaṭhina*). See T 1804, 40: 40b9-11.

[91] Wakita, *Sukuyō-kyō shukusatsu*, vol.2, 6–7. The bracketed text is running commentary presumably inserted by Yang Jingfeng. The Japanese recensions of the *Xiuyao jing* do not expressly mark the beginning and ends of the running commentary, but a comparison with the Taishō edition clarifies this.

[92] Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 7–8.

[93] As Zenba point s out, this simile of a calf and its mother is already found in the *Śārdūlakarṇāvadāna*, and Amoghavajra perhaps took it from there. See Zenba, "*Matōga gyō* no tenmonrekisū ni tsuite," 188–189. These three types of convergences are also mentioned in the *Mātaṅga-sūtra*, though without the simile of a calf and mother. T 1300, 21: 405b12-13.

and Moon."[94] One issue is that the *nakṣatra* dimensions are not adequately defined, so the assumption appears to be that the reader will use the Chinese lunar stations excluding *niu xiu* 牛宿, the equivalent of Abhijit, but this would have been highly impractical due to the fact that the Chinese system strictly uses twenty-eight lunar stations of varying dimensions with only general correspondences to any Indian *nakṣatra* model. To complicate matters further, the *Mahāvairocana-sūtra* commentary expressly states that the twenty-seven *nakṣatra*–s are of equal dimensions, which differs from the *Śārdūlakarṇāvadāna*, in which unequal dimensions are defined. The Indian calendar so impractically introduced like this could not have been feasibly implemented by Chinese practitioners of Buddhism without assistance from an Indian specialist.

The subsequent section details the prescribed and proscribed activities of each of the twenty-seven *nakṣatra* days, starting from Kṛttikā, in contrast to the later ordering, which commences from Aśvinī. Many of these prescribed activities are antithetical to conventional Buddhist values. For example, alcohol production is prescribed for Ārdrā, Pūrvāṣāḍhā, Śatabhiṣaj and Revatī. It is expressly stated that under Punarvasū one "should carry out sacrifices; Brahmanical sacrifices for the gods."[95] This is another element that indicates that Amoghavajra drew upon non-Buddhist sources in compiling the *Xiuyao jing*.

Several other astrological practices are explained, including taboo directions based on the *nakṣatra* in which the Sun is present, as well auspicious directions to travel based on *nakṣatra* days that are associated with specific zodiac signs, and the predicted outcomes following the tailoring of new clothing on specific *nakṣatra* days (such as losing the garment or becoming ill).

One of the more complex practices taught is a method called 'three sets of nine' 三九法, which is a method of electional astrology calibrated to the individual, in which the twenty-seven *nakṣatra*–s are divided into three sets.[96] The individual's natal *nakṣatra* is assigned under 'life' 命, and the following *nakṣatra*–s are respectively assigned under 'prosperity' 榮, 'decay' 衰, 'security' 安, 'danger' 危, 'completion' 成, 'destruction' 壞, 'friend' 友 and 'family' 親 (命榮衰安危成壞友親). The first *nakṣatra* of the second set is assigned under 'activity' 業 (karma?), and the following eight the same sequence of eight as before (業榮衰安危成壞友親). The first *nakṣatra* of the third set is assigned under 'womb' 胎, and the following eight the same sequence of eight as before (胎榮衰安危成壞友親). Prescriptions and proscriptions are given for times when the Moon lodges in each. These would only apply to the individual in question since the three sets are assigned based on one's natal *nakṣatra*. Thus, two persons born on different *nakṣatra* days will have different assignments. The text, however, also explains that the planets

[94] 常以此頌復驗之於天則宿月用之無差. Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 8.
[95] 宜作諸祭法，婆羅門祭天法. Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 9.
[96] Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 19–20.

have influences on these specific sets, but in order to know these influences one must ask the Bureau of Astronomy:

> 如此當須聞知司天者，乃知此年此月熒惑鎮星歲星辰星太白及日等在何宿。以此知之。其法甚妙，宜細審也。
> As such one must inquire about this with the court astronomers, since they will know for a given year and month in which *nakṣatra* Mars, Saturn, Jupiter, Mercury, Venus and the Sun are present. It is through them that one can know this. Their methods are quite excellent, and should be investigated in detail.[97]

This comment alludes to the elite community within which the text was originally produced. The *Xiuyao jing*, although it became popularly practiced in subsequent decades, was originally compiled with elite monks and officials in mind. In light of the politically sensitive nature of astrology throughout earlier Chinese history, outlined earlier, and the fact that Amoghavajra was working directly with non-monastic court officials when compiling the *Xiuyao jing*, it seems likely that the work was originally never meant for popular distribution, but rather was intended for use at court. It furthermore reflects the fact that Mantrayāna in these years was still largely confined to the elites of society in the capital.

A significant component of this fasicle of the text is the introduction of the seven-day week. This custom was not yet widely known in China, though it was observed by non-Han groups resident in China, such as Nestorian Christians, as noted earlier. The reader is therefore advised to ask foreigners the day of the week.

> 忽記不得，但當問胡及波斯并五天竺人摠知。尼乾子末摩尼，常以蜜日持齋。波斯亦事此日爲大日。此等事持不忘。
> If you suddenly forget [the day of the week], just ask the Hu [Sogdians], Persians or peoples of the Five Indias as they all know. The "Nirgranthas"[98] and Manicheans always maintain a fast on Sundays. The Persians also regard this day as an important day. These matters are never forgotten.[99]

To facilitate such inquiries, the text also provides the names of the seven planets in Chinese and transliterated Sogdian, Persian and Sanskrit (table 4.4).

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[97] Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 21–22.
[98] This likely refers to non-Buddhist Indians in China, rather than to Jains.
[99] Wakita, *Sukuyō-kyō shukusatsu*, vol.2, 22.

Table 4.4. Planet Names in *Xiuyao jing* (fasc. 2)[100]				
Planet[101]	**Chinese**	**Sogdian**	**Persian**	**Sanskrit**
Sun	太陽 *taiyang*	蜜 *myr*	曜 *ēw*	阿儞底耶 *āditya*
Moon	太陰 *taiyin*	漠 *m'x*	婁禍 *dō*	蘇摩 *soma*
Mars	熒惑 *yinghuo*	雲漢 *wnx'n*	勢 *sě*	盎誐囉迦 *aṅgāraka*
Mercury	辰星 *chenxing*	咥 *ṭyr*	掣 *čahār*	部陀 *budha*
Jupiter	歲星 *suixing*	鶻鳩勿 *wrmzṭ*	本 *panǰ*	勿哩訶娑跛底 *bṛhaspati*
Venus	太白 *taibai*	那歇 *n'xyδ*	數 *šaš*	戍羯羅 *śukra*
Saturn	鎮星 *zhenxing*	枳浣 *kyw'n*	翕 *haft*	賒乃以室折羅 *śanaiścara*

The text explains the astrological features of each day of the seven-day week, in addition to making natal predictions for individuals born on each respective day of the week, such as their personal qualities.

As the text notes, the seven-day week is observed by both Buddhists and non-Buddhists in the north, west and south; only China remains unaware of it. Although the seven-day week is briefly mentioned in the *Mahāvairocana-sūtra* commentary, the *Xiuyao jing* seems to have been the first major text in Chinese to introduce it in detail. Its importance to Mantrayāna prompted its rapid adoption in China. Numerous manuals on the seven-day week were uncovered at Dunhuang (see chapter 6.1 below).

An additional practice detailed in the text links the *nakṣatra* calendar with the seven-day week. These convergences add another element to consider when determining optimally auspicious days. These convergences represent the mature union of Indian and Hellenistic calendrical elements (table 4.5).

[100] Table adapted from Yano, *Mikkyō senseijutsu*, 110. Wakita, *Sukuyō-kyō shukusatsu*, vol. 2, 22–23. As Yano notes, the Persian names are actually the numerals one to seven used to count the days of the week. Nicholas Sims-Williams informs me that the Sogdian terms are transcriptions of the names from Middle Persian. Private communication. July 25th, 2016. See also table 5.4.

[101] Note that these are listed in the Hellenistic ordering.

Table 4.5: *Nakṣatra*-weekday Convergences					
Day of Amṛta 甘露日 Greatly auspicious for receiving initiations, building temples, receiving precepts, renouncing the home life, etc.		*Day of Vajra Peak* 金剛峯日 Auspicious for subjugation rites, chanting the mantra of the Sun ruler and performing *homa*.		*Day of the Rākṣasa* 羅刹日 Inauspicious for all activities except hunting and harmful acts.	
Hasta 軫	Sunday	Mūla 尾	Sunday	Bharaṇī 胃	Sunday
Rohiṇī 畢	Monday	Śravaṇa 女	Monday	Puṣya 鬼	Monday
Mūla 尾	Tuesday	U.b.padā 壁	Tuesday	U.p.gunī 翼	Tuesday
Aślesā 柳	Wednesday	Kṛttikā 昴	Wednesday	Ārdrā 參	Wednesday
Puṣya 鬼	Thursday	Punarvasū 井	Thursday	Viśākhā 氐	Thursday
Anurādhā 房	Friday	P.phālgunī 張	Friday	Revatī 奎	Friday
Maghā 星	Saturday	Svāti 亢	Saturday	Aślesā 柳	Saturday

Although the second fascicle provides a diverse body of astrological lore, there were still a number of issues. As discussed above, it does not adequately explain how to determine which *nakṣatra* presides over which day. Moreover, the dimensions of the *nakṣatra*–s are not defined, although the Chinese terms for the lunar stations are used as functional equivalents. The zodiac signs are likewise not clearly defined, nor are their functions discussed. This seems to be why the preface of the text states, "Shi Yao of Duanzhou penned and collated it. He could not manage it well, making the meaning of the content abstruse. There was a concern that scholars would find it difficult to implement." The *Xiuyao jing* was subsequently revised in 764 with the assistance of Yang Jingfeng, who was a calendar specialist.

The first fascile of the text (in the revised version) includes much of the same content as the second, but with various reworkings and additional content. It furthermore addresses the issues outlined above, while introducing a structure in the form of chapter titles. It was this updated version of the text that became the authoritative astrological manual for Mantrayāna practitioners in East Asia. The introductory remarks reveal characteristically Chinese elements.[102]

> 天地初建寒暑之精化爲日月。烏兔抗衡生成萬物，分宿設宮管標群品。日理陽位，從星宿順行，取張翼軫角亢氐房心尾箕斗女等一十三宿，迄至于虛宿之半，恰當子地之中。分爲六宮也。月理陰位，從柳宿逆行，取鬼井參觜畢昴胃婁奎壁室危等一十三宿，迄至虛宿之半，恰當子地之中。分爲六宮也。

[102] This is discussed in Shimizu Hiroko 清水浩子, "Sukuyō kyō to nijūhachi suku ni tsuite" 宿曜經と二十八宿について, in *Satō Ryōjun kyōju koki kinen ronbunshū* 佐藤良純教授古稀記念論文集, vol. 2 (Tōkyō: Sankibō, 2003), 96–97.

然日月天子俱以五星爲臣佐，而日光炎猛，物類相感。以陽獸師子爲宮神也。月光清涼，物類相感。以陰蟲巨蟹爲宮神也。又日性剛義。月性柔惠。義以濟下惠以及臣。而日月亦各以神宮均賜五星。… 即辰星太白熒惑歲鎭，排爲次第。行度緩急於斯彰焉。凡十二宮即七曜之躔次。每歷示禍福，經緯災祥。

When heaven and earth were first established, the essence of cold and heat formed into the Sun and Moon. The contest between the Crow and Rabbit produced myriad phenomena, dividing the constellations and establishing the zodiac mansions while demarcating things and beings. The Sun presides over the positions of *yang*, which run counterclockwise from the constellation Maghā, encompassing thirteen constellations including Pūrvaphālgunī, Uttaraphālgunī, Hasta, Citrā, Svāti, Viśākhā, Anurādhā, Jyeṣṭha, Mūla, Pūrvāṣāḍhā, Uttarāṣāḍhā, and Śravaṇa up to half of the constellation of Dhaniṣṭhā, corresponding to the center of north. These are divided into six zodiac houses. The Moon presides over the positions of *yin*, which run clockwise from the constellation Aślesā, encompassing thirteen constellations including Puṣya, Punarvasū, Ārdrā, Mṛgaśīrṣa, Rohiṇī, Kṛttikā, Bharaṇī, Aśvinī, Revatī, Uttarabhādrapadā, Pūrvabhādrapadā and Śatabhiṣaj up to the half of the constellation of Dhaniṣṭhā, corresponding to the center of north. These are divided into six zodiac houses. Thus the Devaputras of the Sun and Moon together have the five planets as their retainers. Things react to the fieriness of sunlight, the zodiac deity of which is Leo, the beast of *yang*. Things react to the coolness of moonlight, the zodiac deity of which is Cancer, the creature of *yin*. Furthermore, the nature of the Sun is firm and virtuous. The nature of the Moon is gentle and benevolent. Virtue aids those below while benevolence extends to subordinates. The Sun and Moon also bestow onto each of the five planets divine palaces. … They are arranged in the sequence of Mercury, Venus, Mars, Jupiter and Saturn. The degrees of their movements and speeds appear here [among the zodiac houses]. The twelve zodiac houses comprise the course within which the seven luminaries move. Every passage reveals disasters and fortune, while their paths [reveal] calamities and fortune.[103]

These introductory remarks perhaps reflect Yang Jingfeng's attempt to address the earlier issue of the text being difficult for Chinese readers to grasp, hence the use of Chinese terminology and a literary style unlike what is found in Buddhist translations. This also marks one of the first major steps in sinicizing foreign astrology, a trend which resulted in the major developments of the subsequent century.

The text goes on to briefly describe the planets and their diameters according to Indian parameters, though there are no definitions given for the *yojana* or *krośa*.

[103] Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 4–5. The omitted text above appears to be an incomplete or corrupted sentence.

日廣五十一由旬，月廣五十由旬。風精太白廣十由旬。空精歲星廣九由旬。月精辰星廣八由旬。火精熒[惑]廣七由旬。日精鎮星廣六由旬。星最小者廣一俱盧舍。日宮下面頗梨之寶，火之質也。溫舒能照萬物。月宮下面琉璃之寶，水之質也。清涼能照萬物。日月諸曜，衆生業力置於空中，乘風而止。當須彌之半逾乾陀羅之上。運行於廿七宿十二宮焉。

The Sun is fifty-one *yojana*–s in diameter. The Moon is fifty *yojana*–s in diameter. Venus of wind essence is ten *yojana*–s in diameter. Jupiter of space essence is nine *yojana*–s in diameter. Mercury of Moon essence is eight *yojana*–s in diameter. Mars of fire essence is seven *yojana*–s in diameter. Saturn of Sun essence is six *yojana*–s in diameter. The smallest stars are one *krośa* in diameter. The bottom surface of the Sun palace is of crystal stone and of fire essence. It warms and can illuminate myriad things. The bottom surface of the Moon palace is of lapis lazuli stone and of water essence. It cools and can illuminate myriad things. The Sun, Moon and planets are placed in the sky through the karmic power of beings, riding the winds. Above Mount Yugaṃdhara, which is half the height of Mount Sumeru, they move through the twenty-seven *nakṣatra*–s and twelve zodiac signs.[104]

This cosmology is similar to that found in the **Lokasthānābhidharma-śāstra* 佛說立世阿毘曇論 (T 1644), which indicates that the similar material was likely drawn from an Abhidharma source, marking one of the few places in the *Xiuyao jing* that draws from identifiable Buddhist material. The **Lokasthānābhidharma-śāstra* defines the Sun and Moon as follows.

是月宮者，厚五十由旬，廣五十由旬，周迴一百五十由旬。是月宮殿，琉璃所成，白銀所覆。水大分多，下際水分，復爲最多。其下際光，亦爲最勝。… 是日宮者，厚五十一由旬，廣五十一由旬，周迴一百五十三由旬。是日宮殿，頗梨所成，赤金所覆。火大分多，下際火分，復爲最多。其下際光，亦爲最勝。

The Moon palace is fifty *yojana*–s in depth, fifty *yojana*–s in diameter, and one-hundred fifty *yojana*–s in circumference. The hall of the Moon palace is made of lapis lazuli and covered in silver. It is in large part water with most of the water [concentrated] at the bottom. It is also most luminous at the bottom. … The Sun palace is fifty-one *yojana*–s in depth, fifty-one *yojana*–s in diameter and one-hundred fifty-three *yojana*–s in circumference. This Moon palace is made of crystal and covered in copper. It is in large part fire with most of the fire [concentrated] at the bottom. It is also most luminous at the bottom.[105]

[104] Ibid., 5.

[105] T 1644, 32: 195a11-b4.

In contrast to the earlier version of the *Xiuyao jing*, the twelve zodiac signs are defined with predictions given concerning individuals born under them. Here the ecliptic is comprised of 108 *pāda*–s 足 (‘quarters’) in which each zodiac house is assigned 9 *pāda*–s (108 ÷ 12 = 9). These are divided among three *nakṣatra*–s. Each of the 27 *nakṣatra*–s is assigned 4 *pāda*–s (108 ÷ 27 = 4). Any remaining *pāda*–s can be assigned to the following zodiac house. This system of dividing the ecliptic was mentioned in the earlier *Mahāvairocana-sūtra* commentary, but here it is explained in greater detail. The system of the *Xiuyao jing* is arithmetically formulated, rather than being observational, which appears to be a significant Indian modification to the *nakṣatra*–s in order to adapt them to the twelve zodiac signs. The ordering of the zodiacs is Leo 師子, Virgo 女, Libra 秤, Scorpio 蝎, Sagittarius 弓, Capricorn 磨竭, Aquarius 瓶, Pisces 魚, Aries 羊, Taurus 牛, Gemini 夫妻, and Cancer 蟹. The second fascicle expressly names Aries as the first zodiac sign,[106] which is standard in astrology, but here it commences with Leo. This appears to merely be a way of dividing the signs into solar and lunar hemispheres. The details of the zodiac signs are displayed in table 4.6.

Table 4.6. Twelve Zodiac Signs *Xiuyao jing* (fasc. 1)

Zodiac	***Pāda* Allocations**	**Domicile**	**Presides Over**	**Natal Prediction**	
Leo	Maghā: 4 Pūrvaphālgunī: 4 Uttaraphālgunī: 1	Sun	Promotion and wealth acquisition.	Spirited, wealthy, honored and filial. Suited to positions in the military.	**Solar**
Virgo	Uttaraphālgunī: 3 Hasta: 4 Citrā: 2	Mercury	Wives, concubines and ladies.	Will have difficulty in obtaining trusted aides. Will have many children and bountiful wealth. Suited to positions in the palace quarters.	
Libra	Citrā: 2 Svāti: 4 Viśākhā: 3	Venus	Treasure stores.	Direct in mind, fair, trustworthy, and having much wealth. Suited to positions in the storehouse.	
Scorpio	Viśākhā: 1 Anurādhā: 4 Jyeṣṭha: 4	Mars	Restraining of illness and the subduing of the body.	Much disease, being frail, a wicked mind and jealousy. Suited to positions related to illness.	
Sagittarius	Mūla: 4 Pūrvāṣāḍhā: 4 Uttarāṣāḍhā: 1	Jupiter	Celebrations and obtaining wealth.	Much planning and deliberation. Suited to positions in civil and military ministries.	

[106] Wakita, *Sukuyō-kyō shukusatsu*, vol.2, 18.

Capricorn	Uttarāṣāḍhā: 3 Śravaṇa: 4 Dhaniṣṭhā: 2	Saturn	Conflict.	Mentally coarse, the five grave transgressions, and not respecting their wives and children. Suited to positions related to executions.	
Aquarius	Dhaniṣṭhā: 2 Śatabhiṣaj: 4 Pūrvabhādrapadā: 3	Saturn	Matters of victory and strength.	Good sincerity, while having much learning, wealth and honors. Suited to positions in the academy.	**Lunar**
Pisces	Pūrvabhādrapadā: 1 Uttarabhādrapadā: 4 Revatī: 4	Jupiter	Promotions and increased duties.	Higher minister of war or civil affairs. Without error or neglect. Learned as well as respected and an authority, being loyal and upright. Suited to positions in the archives of history.	
Aries	Aśvinī: 4 Bharaṇī: 4 Kṛttikā: 1	Mars	Bipedals and people.	Much merit, few ailments and a long lifespan. Further they can tolerate disgrace. Suited to a position in the kitchen.	
Taurus	Kṛttikā: 3 Rohiṇī: 4 Mṛgaśīrṣa: 2	Venus	Affairs related to quadrupeds and the raising of animals.	Fortune of the mouth [bountiful fortune] while having many close friends. A long lifespan. Obtaining status and respect among people. Suited to a position in the stables and pastures.	
Gemini	Mṛgaśīrṣa: 2 Ārdrā: 4 Punarvasū: 3	Mercury	Matters related to posterity.	Many wives and consorts while gaining the love and respect of people. Suited to the gatekeeper position.	
Cancer	Punarvasū: 1 Puṣya: 4 Aślesā: 4	Moon	Government and discourse.	A wicked nature, deception and intelligence, though they will not live long. Suited to a position in justice.	

While not actually stated in the text, it might be assumed that an individual could be subject to multiple zodiacal influences as one's birth *nakṣatra* might be divided equally between two zodiac signs, such as Citrā, which is assigned to Virgo and Libra.

The zodiac signs, however, appear to be of minor importance in the *Xiuyao jing*, in contrast to later developments in which they gain a central importance.

There are two circular tables provided in Yang Jingfeng's revision for the purpose of representing the twelve zodiac signs and their spatial relations to the *nakṣatra*–s. The first lists the months for the rising of each sign from lunar day 15, which is the full Moon, i.e., the start of the month according to the Indian calendar, but these appear to be out of alignment, perhaps due to scribal errors. Yang Jingfeng's commentary states that there was confusion and subsequently it was requested that the table be revised with the months commencing from lunar day 1 or the new Moon (table 4.7). Listing the months in this way would have made it more easily understandable to Chinese readers.

This revised table also lists the twelve Jupiter stations and earthly branches (地支) with the aim, it seems, of providing similar parallels in Chinese astronomy in order to facilitate understanding of the Indian system. Yang Jingfeng's explanatory notes further clarify the differences between the Chinese and Indian calendars. It notes that Chinese scholars finally could understand it clearly.[107]

Following this, Yang Jingfeng's commentary includes a chart of 360 days which gives one-to-one correspondences between the *nakṣatra* days and Chinese lunar days (table 4.8).[108] The earlier version explained that one should observe the *nakṣatra* in which the Moon is lodged to determine the corresponding *nakṣatra* day, with the consideration that the Moon might be ahead or behind the assigned *nakṣatra* for that day.[109]

Such an imprecise system was evidently problematic, thus this simplified system displayed on a chart was devised. Note that the fifteenth of each month (the nominal full Moon) corresponds to the corresponding Indian month. This table enables one to easily determine the *nakṣatra* of any given day of the year. It furthermore has the advantage of not requiring any observation.

This is an important adaptation, as the Indian *nakṣatra*–s defined above with equal dimensions are completely different from the Chinese lunar stations, thereby eliminating the need to define the *nakṣatra*–s and zodiac signs based on specific stars. The astrologer, or Mantrayāna practitioner, has only to know the lunar day of the year.[110]

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[107] Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 10–13.

[108] Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 13–15.

[109] Wakita, *Sukuyō-kyō shukusatsu*, vol.2, 7–8.

[110] The Japanese recension of the text (displayed above) excludes Abhijit 牛, constituting 27 *nakṣatra*-s, though the later Taishō uses 28 *nakṣatra*-s, resulting in the sequence of Indian months being disrupted.

Table 4.7. Revised Table of Twelve Zodiac Signs *Xiuyao jing* (fasc. 1)

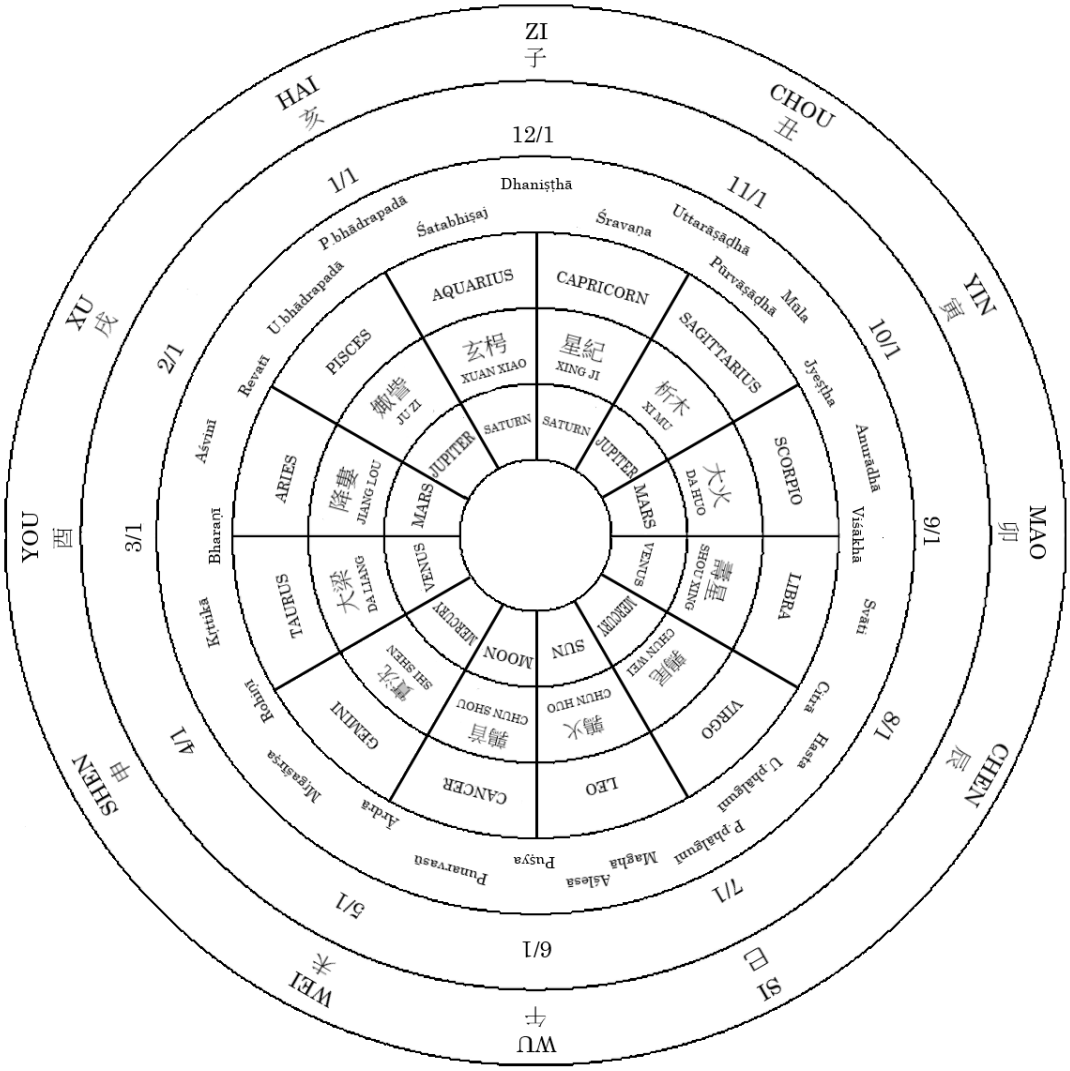

Table 4.8. *Nakṣatra*-Lunar Day Correspondences *Xiuyao jing* (fasc. 1)

	Chinese Lunar Months											
	2	3	4	5	6	7	8	9	10	11	12	1
śukla-pakṣa waxing period	**Revatī**	**Bharaṇī**	**Rohiṇī**	**Ārdrā**	**Puṣya**	**P.phālgunī**	**Citrā**	**Svāti**	**Jyeṣṭha**	**Mūla**	**Dhaniṣṭhā**	**P.bhādrapadā**
1	**Aśvinī**	**Kṛttikā**	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**U.phālgunī**	**Svāti**	**Viśākhā**	**Anurādhā**	**Śravaṇa**	**Śatabhiṣaj**	**U.b.padā**
2	**Bharaṇī**	**Rohiṇī**	**Ārdrā**	**Puṣya**	**Maghā**	**Hasta**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**
3	**Kṛttikā**	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**P.phālgunī**	**Citrā**	**Svāti**	**Viśākhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Śravaṇa**
4	**Rohiṇī**	**Ārdrā**	**Puṣya**	**Maghā**	**U.phālgunī**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Uttarāṣāḍhā**	**Śravaṇa**
5	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**Maghā**	**P.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**
6	**Punarvasū**	**Puṣya**	**Maghā**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**
7	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**
8	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**
9	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**
10	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**
11	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**
12	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**	**Revatī**
1	**Punarvasū**	**Mṛgaśīrṣa**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**
2	**Aśvinī**	**Kṛttikā**	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**U.phālgunī**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**
3	**Bharaṇī**	**Rohiṇī**	**Ārdrā**	**Puṣya**	**Maghā**	**Hasta**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**
4	**Kṛttikā**	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**P.phālgunī**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**
5	**Rohiṇī**	**Ārdrā**	**Puṣya**	**Maghā**	**U.phālgunī**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**
6	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**Maghā**	**P.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**
7	**Punarvasū**	**Puṣya**	**Maghā**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**
8	**Aśvinī**	**Kṛttikā**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**
9	**Bharaṇī**	**Rohiṇī**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Maghā**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**
10	**Kṛttikā**	**Mṛgaśīrṣa**	**Punarvasū**	**Aśleṣā**	**Maghā**	**P.phālgunī**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**

Puṣya	**Aślesā**	**Maghā**	**P.phālgunī**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**
Ārdrā	**Punarvasū**	**Puṣya**	**Aślesā**	**Maghā**	**P.phālgunī**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**
Rohiṇī	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Aślesā**	**Maghā**	**P.phālgunī**	**U.phālgunī**	**Hasta**	**Citrā**
Aśvinī	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Aślesā**	**Maghā**	**P.phālgunī**
U.b.padā	**Revatī**	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Aślesā**
Śatabhiṣaj	**P.b.padā**	**U.b.padā**	**Revatī**	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**
Uttarāṣāḍhā	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**	**Revatī**	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**
Jyeṣṭha	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**	**Revatī**	**Aśvinī**
Viśākhā	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**
Citrā	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**
U.phālgunī	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**
Maghā	**P.phālgunī**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**
11	12	13	14	15	16	17	18	19	20	21
					kṛṣṇa-pakṣa waning period					

Mūla	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**	**Revatī**
Anurādhā	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**
Svāti	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**	**Uttarāṣāḍhā**	**Śravaṇa**	**Dhaniṣṭhā**
U.phālgunī	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**	**Mūla**	**Pūrvāṣāḍhā**
Maghā	**P.phālgunī**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**	**Anurādhā**	**Jyeṣṭha**
Puṣya	**Aślesā**	**Maghā**	**P.phālgunī**	**U.phālgunī**	**Hasta**	**Citrā**	**Svāti**	**Viśākhā**
Mṛgaśīrṣa	**Ārdrā**	**Punarvasū**	**Puṣya**	**Aślesā**	**Maghā**	**P.phālgunī**	**U.phālgunī**	**Hasta**
Bharaṇī	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**	**Aślesā**	**Maghā**
Revatī	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**	**Punarvasū**	**Puṣya**
P.b.padā	**U.b.padā**	**Revatī**	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**	**Mṛgaśīrṣa**	**Ārdrā**
Dhaniṣṭhā	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**	**Revatī**	**Aśvinī**	**Bharaṇī**	**Kṛttikā**	**Rohiṇī**
Uttarāṣāḍhā	**Śravaṇa**	**Dhaniṣṭhā**	**Śatabhiṣaj**	**P.b.padā**	**U.b.padā**	**Revatī**	**Aśvinī**	**Bharaṇī**
22	23	24	25	26	27	28	29	30

One problem that this table does not address, however, is that Chinese calendars use short months of 29 days in coordination with intercalary months[111] to ensure that lunar days 1 and 15 fall on the new and full moons, respectively. This *Xiuyao jing* itself does not explain how to account for these. For example, if there is no lunar day 30 in a given month, what happens to the *nakṣatra* assignment for that day?

Transcripts of Kūkai's oral testimonies address the question of how to deal with short months and intercalary months. It seems that he learnt these solutions in Chang'an, where he studied under the Mantrayāna master Huiguo 惠果 (746–806) from 805 to 806, before returning to Japan in 806. The *Hino'o kuketsu* 檜尾口訣 (T 2465; *The Oral Testimony at Hino'o*) is a record by his disciple Jichie 實慧 (786–847) of Tō-ji 東寺 that preserves these instructions:

> 勘宿曜經取潤月之宿及小月之闕日分宿法。依口訣記。若有閏月時，其正月直宿即亦重直閏月，謂假令十二月有閏月，而其十二月一日直宿是虛宿。十五日直宿是星宿，乃至三十日直宿是星宿。如是閏十二月直宿亦同之，更無異也。先月是正十二月，閏月是傍十二月也。故傍月直宿三十日皆用正十二月直宿，更不異宿也。餘月聞[112]月准之知耳。
>
> Inquiry concerning which *nakṣatra*–s to use during an intercalary month and method for allocating *nakṣatra*–s for missing days in a lesser month. Recorded according to oral instructions. When there is an intercalary month, the *nakṣatra* convergences of the true month[113] repeat themselves in the intercalary month. Supposing month 12 has an intercalary month, the *nakṣatra* convergence of day 1 of month 12 will be Dhaniṣṭhā, the *nakṣatra* convergence of day 15 will be Maghā and the *nakṣatra* convergence of day 30 will be *Maghā [=Pūrvabhādrapadā].[114] Like this the *nakṣatra* convergences of intercalary month 12 will be identical. There are no differences. The preceding month is the true month 12. The intercalary month is the accompanying month 12. Hence the *nakṣatra* convergences and 30 days of the accompanying month all use the *nakṣatra* convergences of the true month 12 without any different *nakṣatra*–s. The other months and intercalary months can be understood according to this.

Here Kūkai states that the thirty-day sequence from Dhaniṣṭhā to Pūrvabhādrapadā will be identically reproduced in an intercalary month. This is not immediately apparent from reading the *Xiuyao jing*. The transcript continues:

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[111] A thirteenth month ensures that the lunar calendar stays in line with the seasons.

[112] Read *wen* 聞 as *run* 閏.

[113] A 'true month' here refers to a normal month that is not an intercalary month.

[114] Looking at the table above, lunar 12/1 is Dhaniṣṭhā, 12/15 is Maghā and 12/30 is Pūrvabhādrapadā. Magha defined as lunar 12/30 is an error.

> 取小月闕第三十日直宿之法。假令正月小闕第三十日，雖無其第三十日，而彼日分直宿猶有故，次二月初一日半已上者正月闕日之分宿直也。半已下者即彼當日宿直，故雖大小異日有增減，而小月闕日直宿無日不得。次月初一日真宿無改代也 。
>
> Method for selecting the *nakṣatra* convergence on the missing thirtieth day in a lesser month. Now suppose month 1 lacks the 30th day. Even without that 30th day, that day still has a *nakṣatra* convergence. The first half of the first day of the following month 2 is assigned the *nakṣatra* convergence of the missing day in month 1, while the second half is that day's *nakṣatra* convergence. Hence even if there are fluctuations with the days, in the case of a lesser month lacking a day, the *nakṣatra* convergence will always apply to a day. The actual *nakṣatra* of day 1 in the following month does not change.[115]

This point is also not apparent in the above table, which likely indicates that such issues were not immediately addressed when the *Xiuyao jing* was finalized. These conventions that Kūkai describes were likely learnt in Chang'an sometime before 806, thus reflecting the ongoing use and development of the *Xiuyao jing* in China. These conventions ensure that the sequence of *nakṣatra*–s remains uninterrupted, thus preserving its alignment with the Chinese lunar calendar. This also presumably means that if someone were born on such a split day, then their natal *nakṣatra* would be determined by the time of their birth (the first or second half of the day), although this is not explicitly stated.

The revised fascicle of the *Xiuyao jing* details the twenty-eight *nakṣatra*–s (including Abhijit, even though it is excluded from the table above), providing their respective star counts, shapes, associated deities (with a few exceptions these deities are the same as those in the *Nakṣatrakalpa* of the *Atharvavedapariśiṣṭā*, demonstrating that Amoghavajra drew from Brahmanical material),[116] *gotra*–s and foods. The *gotra* names cannot be reconstructed from the transliterated Chinese. Predictions concerning individuals born under each *nakṣatra* are also provided, not unlike what is seen in the *Śārdūlakarṇāvadāna*. The *Xiuyao jing* notes how some *nakṣatra*–s differ from, or more rarely correspond to, the Chinese lunar stations. Despite these differences, the table of lunar day–*nakṣatra* convergences (table 4.8) alone is sufficient to determine under which *nakṣatra* a person is born.

Another issue that the revised text addresses is how to determine a person's *nakṣatra* when they do not know their date of birth. It describes the *nakṣatra-puruṣa*, which differs from that described in the *Bṛhatsaṃhitā* of Varāhamihira (chapter 105). The *nakṣatra-puruṣa* is a human figure represented by individual *nakṣatra*–s that are associated with or comprise specific parts of the body. The *Xiuyao jing* explains that if someone does not know their natal *nakṣatra*, this will then be determined by the part of

[115] T 2465, 78: 30c13-c26.

[116] I must thank Peter Bisschop for pointing this out.

the body that the person touches when they first meet the astrologer.[117] Although the system of Varāhamihira differs from that described in the *Xiuyao jing*, this point further highlights that Amoghavajra's source material was largely based on non-Buddhist literature. It is evident that he primarily drew upon common Indian astrological works.

As in the earlier version, the revised text still defers to professional astronomers. A note by Yang Jingfeng mentions use of the Indian calendar, and the Indian or Sino-Indians working for the court as professional astronomers:

> 凡欲知日月五星所在宿分者，據天竺曆術，推之可知也。今有迦葉氏、瞿曇氏、僧俱摩羅等三本梵曆，並掌在司天，然則今之行用瞿曇氏曆本。
> Anyone wanting to know the positions of the Sun, Moon and five planets in the *nakṣatra*–s can know where they are by calculating them according to Indian calendrical science. Presently there are three Indian calendars: those of the Kāśyapa and Gautama families, and the monk Kumāra.[118] They all have appointments in the observatory. However, what is presently employed is the calendar of the Gautama family.[119]

These figures had prominent roles in developments related to state calenders and astronomy in China in the eighth century, in particular the Gautama family, which will be discussed in detail shortly. It is quite certain that Amoghavajra and Yang Jingfeng had direct contact with these astronomers, in light of the fact that they and the astronomers were all employed by the court in related capacities. Moreover, the seventh section[120] of the *Xiuyao jing* is a complex formula for calculating weekdays 算曜直, based on the *Navagraha-karaṇa*, a manual of Indian mathematical astronomy, translated by the Gautamas in 718, a text we shall return to below.[121]

The purpose of the *Xiuyao jing* was to introduce the essential components of Tantric hemerology, which had been earlier only briefly outlined in the *Mahāvairocana-sūtra* commentary in the 720s, in addition to providing basic models of natal and electional astrology based primarily on the *nakṣatra* astrology. The *Xiuyao jing* succeeded in providing this necessary astrological information in Chinese, and it thus

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[117] Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 46.

[118] The character *seng* 僧 here appears also in the Dōshisha manuscript (fasc. 1, p. 33). In the Taishō, the name is rendered as *Jumoluo* 拘摩羅 with *seng* 僧 omitted (T 1299, 21: 391c4), leaving it unclear if it is an individual or family name. The monk Kumāra is mentioned in the *Jiu Tang shu*. He taught a method for predicting solar eclipses (Zhonghua Shuju edn., vol. 4, 1265). Kumāra was therefore a monk's name, and not the name of a family.

[119] Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 29.

[120] An inserted note states that this was not taught by Mañjuśrī, hence it is an appended section. Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 40–41.

[121] Yano notes this. For a study of the complex mathematics of this section see Yano, *Mikkyō senseijutsu*, 132–142.

established a solid foundation for further developments. However, Yang Jingfeng's comments briefly mention advanced astrological techniques that require the means to determine the positions of planets. Such techniques require either mathematical calculations or an ephemeris (a table indicating the location of a planet on given dates in the past). Such knowledge was largely still unavailable to the public due to relevant legal prohibitions still in effect, but this rapidly changed in the subsequent decades following the decline of state authority after the An Lushan rebellion (see 2.4 above). The *Xiuyao jing* therefore offered some solutions, but at the same time, like the *Mahāvairocana-sūtra* commentary, it also referred to practices that were still largely inaccessible to commoners. There was now a need for an accessible calendar designed for the practice of advanced foreign astrology. This is the point where foreign astronomers start to play an important role in the history of astrology in China.

4.6. Indian and Persian Astronomers at the Tang Court

As noted above, Yang Jingfeng mentioned the presence of ethnically Indian men specialized in astronomy working for the Chinese court. As we will now explore, two or three decades later an ethnically Persian astronomer was appointed at court. This transition from Indian astronomers to a Persian astronomer also clearly mirrors a transition from Indian sources of astrology to Iranian. Although Iranian astrology was not connected with Buddhism, it impacted both Chinese Buddhism as well as Daoism. Here we will discuss these court astronomers and the respective roles they had in influencing astronomy and astrology in China.

An important archaeological discovery in modern times providing details about the Gautama family, who were specialists in astronomy, was the tomb of Gautama Zhuan 瞿曇譔 (712–776), which was unearthed in Xi'an (Chang'an) in May, 1977.[122] The inscription of the tomb provides details about his family, who for several generations had served the Chinese court. Gautama Zhuan's great grandfather was Gautama Yi 瞿曇逸 (d.u.). Tansen Sen suggests that Yi might be a rendering of 'Ajita', and that he was possibly "the kin of Indian Brahmans, with the same surname, who had come to China during the Eastern Wei period (AD 534–550): Qutan Poluoliuzhi (Gautama Prajñāruci?) and his 'eldest son' Qutan Damoshena (Gautama Dharmajñāna?)." He also suggests that 'Ajita' was brother to Dharmajñāna (d.u.).[123] This is possible, but not certain. 'Ajita' had a son named Gautama Luo 瞿曇羅 (d.u.). Sen suggests Rāhula for Luo. He was born under Emperor Taizong 太宗 (r. 626–649). He served as *taishi ling* 太史令 (court astronomer) between 665–698. He also drafted calendars: in 665 the *Jingwei li* 經緯曆 (*Calendar of the Warp and Woof*), and then in 698 the *Guangzhai li* 光宅曆 (*Calendar of*

[122] For the first report on the discovery see Chao Huashan 晁華山, "Tangdai tianwenxuejia Judan Zhuan mu de faxian" 唐代天文學家瞿曇譔墓的發現, *Wenwu* 文物 10 (1978): 49–53.

[123] Sen, "Gautama Zhuan: An Indian Astronomer at the Tang Court," 199–200.

the Luminous Abode) under Empress Wu Zetian 武則天 (r. 690–705). The latter was in use until 700. 'Rāhula' had a son named Gautama Siddhārtha 瞿曇悉達 (d.u.), who was born under Emperor Gaozong 高宗 (r. 649–683).

Gautama Siddhārtha served as court astronomer between 712–718. Between 712–713, he worked on the court's armillary sphere (*hun yi* 渾儀). In 718, by imperial decree, he translated the aforementioned *Navagraha-karaṇa*. Yabuuchi Kiyoshi states that this text is based primarily on the Indian *Pañcasiddhāntikā* (c. 550) by Varāhamihira.[124] However, in chapters eleven and thirty-five, the tabulated latitude value of 35 degrees is most likely that for Chang'an (34°16), indicating that the text was adapted for use in China rather than being a strict translation. It notably displays Greek influences, which had been adopted by Indian astronomers in preceding centuries. It is a *karaṇa* text providing calculation methods, rather than being a more comprehensive *siddhānta* text.[125] It further explains concepts such as a dot for zero, a table of sine functions, and advanced methods for eclipse prediction. Despite its objective scientific value, the text was not widely studied after the eighth century. Yabuuchi attributes this to the Sino-centric attitude of astronomers in the Tang, and also the difficulty of understanding the foreign concepts.[126] Although Chinese astronomers might not have studied the *Navagraha-karaṇa* in detail, the Indian astronomers at court, such as the Gautamas, were still consulted. This is demonstrated by the *Navagraha-karaṇa* being cited in the *Xiuyao jing*, as noted above.[127]

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[124] The *Pañcasiddhāntikā* or "Treatise on the Five Astronomical Treatises" is a summary of five astronomical treatises studied by Varāhamihira, including most notably the *Romakasiddhānta* (the 'Roman treatise') and *Pauliśasiddhānta* (the 'treatise of Paul', i.e., a Hellenistic treatise). These two reflect the introduction of Western astronomical knowledge into India. For a translation and study see Otto Neugebauer and David Pingree, *The Pañcasiddhāntikā of Varāhamihira* (København: Munksgaard, 1970-1971).

[125] A *siddhānta* provides a comprehensive astronomical theory. A *karaṇa* is a purely practical guide that provides essential calculations.

[126] For a study and English translation of the *Navagraha-karaṇa* see Yabuuchi Kiyoshi 薮内清, *Zōtei Zuitō rekihō shi no kenkyū*, 1–42. It was otherwise thought lost until rediscovered inside a Buddha statue around 1600 by Cheng Mingshan 程明善 (d.u.) along with the rest of the *Kaiyuan zhan jing* 開元占經 (*Divination Scriptures of the Kaiyuan Period*) collection, within which it is included. The *Navagraha-karaṇa* is fasc. 104.

[127] As discussed earlier, accurate predictive astronomical knowledge was an important element to claims of imperial legitimacy by any reigning Chinese dynasty, thus hosting foreign astronomers at court was politically expedient. The work of Indian astronomers in China was significant enough to attract the attention of Arab leadership. Kevin van Bladel argues that "al-Maṣūr [the second caliph of the Abbasid Caliphate; r. 754–775] was made aware that Indian astronomers were working in the Chinese Tang court and that he was, in his interest in Indian astronomy, effectively emulating the prestigious example that the Tang emperors established." See Kevin van Bladel, "Eighth-Century Indian Astronomy in the Two Cities of Peace," in *Islamic Cultures, Islamic Contexts: Essays in Honor of Professor Patricia Crone*, eds. Behnam Sadeghi et al. (Leiden: Brill, 2014), p. 264.

Gautama Zhuan, the occupant of the unearthed tomb, was the fourth son of Siddhārtha, born in 712. In 733 he was part of a group that criticized Yixing's calendar, saying it was based on the aforementioned *Navagraha*. This was ruled by the emperor to be untrue, and consequently Gautama Zhuan was forced out of capital, only to return in 758. Several years into the An Lushan rebellion in 761, Gautama Zhuan connected the occurrence of a solar eclipse with the rebel commander Shi Siming 史思明 (703–761) in Henan province, predicting his demise. He cites the *Yisi zhan* 乙巳占 (*Divination of Yisi*), a divination manual by Li Chunfeng 李淳風 (602–670), which states, "A country will be destroyed under a solar eclipse 日蝕之下有破國."[128] His use of Chinese divination indicates the extent to which his family had assimilated into Chinese society. However, in 763, one of his divination reports was regarded as erroneous. Emperor Daizong stripped him of his court rank, although this was again restored in 764. In 765 he was appointed *sitian jian* 司天監 (Director of the Bureau of Astronomy), dying in 776. Zhuan had six sons: Sheng 昇, Bian 昇, Yu 昱, Huang 晃, Yan 晏 and Mao 昴 (each having the 'Sun' radical 日 in their names). Gautama Zhuan was active at court when the *Xiuyao jing* was drafted, and thus would have certainly known Amoghavajra. He might also have been a consultant for the team compiling the *Xiuyao jing*.

The Gautamas were among other Sino-Indians working at the Tang court as astronomers in the eighth century. The Kāśyapa 迦葉 family and the monk Kumāra 俱摩羅 were also present.[129] These astronomers facilitated the introduction of foreign astrology and astronomy into China. As discussed above, the commentary on the *Mahāvairocana-sūtra* and the *Xiuyao jing* both refer to the 'Indian calendar'. The reference at this time was most certainly to the calendars produced by these astronomers in the capital, which indicates that the texts in question were initially drafted with elite practitioners in mind, rather than common members of the sangha, given that astronomy was a restricted subject of study. This is an important difference between the astrology of this period and that of the late-Tang, as it was only in the latter period that advanced foreign astrology, in particular horoscopy which requires advanced astronomical knowledge, became popularized and widely available.

It seems that the Gautama family lost its longstanding position at court in the late eighth century. In 1980, a tombstone was unearthed in Xi'an with inscriptions providing accounts of the lives of a Persian Li Su 李素 (743–817) and his wife Bei Shi 卑失 (d.u.).[130] It states he was Persian 波斯人 and nephew to the Persian king. His grandfather Li Yi 李益 in the Tianbao 天寶 era (742–756) had been dispatched from Persia to the

[128] *Jiu Tang shu*, Zhonghua Shuju edn., vol. 4, 1324. This appears to be in reference to chapter six of the *Yisi zhan*, which concerns solar eclipses (日蝕占第六). See fasc. 1, 30–35. China-America Digital Academic Library (CADAL) edition (https://archive.org/details/02094176.cn).

[129] Wakita, *Sukuyō-kyō shukusatsu*, vol.1, 29.

[130] Chen Guoying 陳國英, "Xi'an Dongjiao Sanzuo Tang mu qingli ji" 西安東郊三座唐墓清理記, *Kaogu yu wenwu* 考古與文物 (1981-2): 25–31.

Tang court as an envoy, and held as hostage. As Rong Xinjiang has pointed out, there were envoys from former Persian territoritories at this time, but no record of a Li Yi or any hostages, and moreover at the time Persia was under Arab domination, hence this account of Li Yi is dubious. His son, Li Zhi 李志 (Li Su's father), served the government in Guangzhou, probably around the years 756–779, a region which maintained trade relations with Persia, and hosted a community of East-Syrian or Nestorian (*Jingjiao* 景教) Christians.[131] As a youth Li Su was adept in astronomy and calendrical science, which presumably was either partially or wholly non-Chinese in character. Rong suggests that he possibly learnt these subjects from Christian clergymen in Guangzhou. It seems that he was a clergyman himself. As Rong points out, the 'Nestorian Stele' 大秦景教流行中國碑 (T 2144) erected in Chang'an in 781, which has both Chinese and Syriac inscribed upon it, lists his 'courtesy name' 字 of Wen Zhen 文貞 with the corresponding name Luka in Syriac script.[132]

Sometime during the Dali 大曆 (766–779) era, Li Su was summoned to Chang'an to serve in the court Bureau of Astronomy 司天台. Gautama Zhuan died in 776, so Li Su was perhaps chosen as his replacement. It has been suggested that a Christian clergyman from Byzantium or Syria was involved in astronomy in China earlier in 745, but this is mistaken.[133] The first court astronomer from a Persian or Near Eastern background was, in fact, Li Su. He attained the rank of *sitian jian* 司天監, equivalent to a chief director of the Bureau of Astronomy, not unlike the achievements of the Gautamas in earlier decades. In light of the earlier non-Chinese astronomers at court, Mak suggests that "Li Su and his colleagues must have found themselves in the position where they had to justify the superiority of their scientific knowledge and skills, prompting the translation

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[131] Rong Xinjiang 榮新江, "Yi ge shi Tangchao de Bosi Jingjiao jiazu" 一個仕唐朝的波斯景教家族, in *Zhonggu Zhongguo yu wailai wenming* 中古中國與外來文明 (Beijing: Sanlian shudian, 2001), 244–245. The term "Nestorian" is controversial in present academia, with an increasing preference for the term "East Syriac Church", though "Nestorian" has been the standard term until recently. For details on this issue see S.P. Brock, "The 'Nestorian Church: A Lamentable Misnomer," *Bulletin of the John Rylands Library of Manchester* 78 (1996): 23–36. For a recent survey of research on Nestorianism in Tang China see Zhao Jiadong 趙家棟 and Nie Zhijun 聶志軍, "Qianlun Tangdai Jingjiao wenxian de zhengli yu yanjiu" 淺論唐代景教文獻的整理與研究, *Guji zhengli yanjiu xuekan* 古籍整理研究學刊 6 (2010): 8–13.

[132] Rong, "Yi ge shi Tangchao de Bosi Jingjiao jiazu," 255–257. See T 2144, 54: 1290b12.

[133] Zhang Xushan misreads the Nestorian stele, suggesting that a certain clergyman from 'Byzantium' named Jihe 僧佶和 was involved in astronomy in the year 745. Wylie interpreted this terse passage as honorific language about the Chinese court (三載，大秦國有僧佶和，瞻星向化，望日朝尊). See T 2144, 54: 1289c4-5. He translated this as "looking towards the star (of China), was attracted by its transforming influence, and observing the Sun (i.e., emperor), came to pay court to the most honorable." Pelliot disagreed with Wylie's interpretation, suggesting that the "transformation" indicated China, civilized by its leaders, and that Jihe was guided by the stars and sun. See Alexander Wylie, "On the Nestorian Tablet of Se-gan Foo," *Journal of the American Oriental Society* 5 (1855-1856): 283. Zhang Xushan 張緒山, "Jingjiao dongjian ji chuanru Zhongguo de Xila - Baizhanting wenhua" 景教東漸及傳入中國的希臘-拜占庭文化, *Shijie lishi* 世界歷史 (2005-6): 87. Antonino Forte, ed., *L'Inscription Nestorienne De Si-Ngan-Fou* (Italian School of East Asian Studies & Collège de France, 1996), 262.

of new astral treatises."[134] This is perhaps true to some extent, but I would argue that it was more likely that the increasing widespread interest in astrology, following the success of Buddhist astrology, actually prompted the translation of additional works on astrology and astronomy by foreign specialists like Li Su. In light of the relevant remarks of Yang Jingfeng in the *Xiuyao jing*, there was certainly awareness of the existence of advanced horoscopy at this point, and a figure such as Li Su would have been knowledgeable about it, considering his connection to Near Eastern astronomy.

Until Li Su's appointment sometime after 776, the majority of astrological lore translated into Chinese came from Indian sources, but as we will now explore, toward the end of the eighth century, Iranian and Near Eastern sources were increasingly studied. It appears that Li Su and other Persians initially carried out the necessary translation work, but later, in the ninth century, Sogdians, who were culturally and linguistically related to Persians as fellow Iranians, also came to have an important role in transmitting additional astrological materials into China.[135]

4.7. The *Duli yusi jing* 都利聿斯經: Dorotheus in China

A few decades after the *Xiuyao jing* was produced, a text entitled *Duli yusi jing* 都利聿斯經 [**Dorotheus*][136] was translated into Chinese during the Zhenyuan 貞元 period (785–805). It is no longer extant, though fragments of the original Chinese work are

[134] Bill M. Mak, "Yusi Jing – A treatise of 'Western' Astral Science in Chinese and its versified version Xitian yusi jing," *SCIAMVS* 15 (2014): 122.

[135] Tang sources did not necessarily strongly differentiate between Persians and Sogdians. This is apparent when we consider the shifting meaning of Anxi-guo 安息國, which is a transliteration of the Persian Arśak, the name of the founder of the Parthian empire. During the Han dynasty, it referred to the Parthian dynasty (250 BCE – 226 CE), yet the term was still used in Chinese after its collapse. Saitō (1998) argues that Anxi referred to Bukhara in Central Asia from around the mid-sixth century. Saitō (2007) also points out that from the 1st to 3rd centuries, the surname An 安 was used by peoples originally from the Parthian empire, but later it appears that Sogdians from Bukhara began using this surname. He suggests that the Chinese identification of Bukhara with Anxi was a result of those same Sogdians using the surname An. The first reference to Bukhara in Chinese is as Niumi 忸密國 in the *Wei shu* 魏書 (Zhonghua Shuju edn., vol. 6, 2270), compiled in 559. The MC pronunciation is *ŋjuk mjet* (Schuessler IPA), which corresponds to Nūmijkat, another name for Bukhara in Sogdian. The term that specifically refers to Sassanian Iran is Bosi 波斯 (Fars, i.e., Persia), though this term was still used after the collapse of the Sassanian dynasty during the early seventh century. The homelands of ethnically Iranian figures in China in the eighth and ninth centuries are therefore often uncertain, thus I am inclined to simply refer to general "Iranian" astrology and astronomy, rather than attempting to distinguish the Sogdian from the Persian.

[136] The Chinese title could derive from "Dhurūthiyūs in Arabic." See Isahaya Yoichi and Lin Jyuh Fuh, "Entangled Representation of Heaven: A Chinese Divination Text from a Tenth-Century Dunhuang Fragment (P. 4071)," *Historia Scientiarum* 26, no. 3 (2017): 165.

found as citations in later texts.[137] The *Xin Tang shu* has the following account in its catalog of texts:

> 都利聿斯經，二卷，貞元中，都利術士李彌乾傳自西天竺，有璩公者譯其文。
> *Duli yusi jing*. 2 fascicles. In the Zhenyuan period the *duli*[138] diviner Li Miqian transmitted it from Western India. There was someone [named] Qu Gong who translated the text.[139]

We will recall that this is the same text that Song Lian in the Ming dynasty referred to in his essay on divination cited in the introduction above (1.1). From Song Lian's perspective, astrology as a form of divining individual fortunes was introduced into China through this work, which highlights the influence it had in the subsequent centuries. Song Lian, however, was unaware of the earlier Buddhist interest in astrology.

As with Li Su above, the surname Li here likely indicates a Persian. As to Qu Gong, the *Yiqie jing yinyi* 一切經音義 (T 2128; *The Sounds and Meanings in All Sūtras*) by Huilin 慧琳 (737–820), a Buddhist glossary of terms with pronunciations based on earlier materials completed in 810, does list 'Qu Gong', but simply states that it is a person's name, rather than being a title.[140] Mak tentatively suggests that these two names are transliterations of Micā and [Lū]qā, and that the latter was Li Su who, according to Rong, is the Lūqā on the Nestorian stele.[141] Given the general absence of Buddhist involvement in court astronomy, the monks Yixing and Kumāra being exceptions in the early eighth century, Mak's suggestion is quite plausible.

In modern scholarship there have been several theories concerning the meaning of *Duli yusi*. Jao Tsung-i asserts that *Duli* is a transliteration of 'Talas' 都賴, as in the Talas River 都賴水,[142] which echoes the remarks of Song Lian cited above. Yano, however, proposed that the title phonetically represents *Ptolemaios* (i.e., Ptolemy, the second-century CE Greco-Egyptian astronomer of Alexandria). He suggests that the translation into Chinese might have been from a language not representing vowels, whereby P-T-L-M-Y-V-S was rendered T-L-YV-S, and thereafter *Duli yusi* in Chinese. In addition, there was a text (not extant) listed in the *Xin Tang shu* entitled *Yusi si-men jing* 聿斯四門經

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[137] Ishida Mikinosuke 石田幹之助 collected fragments of the work from a Japanese source. See "*Tori-isshi-kyō* to sono itsubun" 都利聿斯經とその佚文, in *Tōyō ronsō: Haneda Hakushi shōju kinen* 東洋史論叢：羽田博士頌壽記念 (Kyōto: Tōyōshi Kenkyūkai, 1950), 49–62.

[138] *Duli* here appears to be an abbreviation of *Duli yusi jing* 都利聿斯經.

[139] *Xin Tang shu*, Zhonghua shuju edn., vol. 5, 1548.

[140]璩公(巨魚反人名也). T 2128, 54: 921a7.

[141] Mak, "*Yusi Jing*," 121. See T 2144, 54: 1290b12.

[142] Jao Tsung-i 饒宗頤, "Lun Qiyao Yu Shiyiyao" 論七曜與十一曜, in *Xuantang jilin* 選堂集林 (Taipei: Mingwen shuju, 1984), 578.

(*Yusi Four Gates Scripture*) in one fascicle by Chen Fu 陳輔,[143] which possibly indicates that the work could be Ptolemy's *Tetrabiblos*, i.e., '*Four Books*'.[144] Mak's study of the text's extant fragments and a short versified version, the *Xitian yusi jing* 西天聿斯經 *(Yusi jing of Western India*),[145] concludes, however, that the original work was a translation of a version of Dorotheus' work, now titled the *Carmen Astrologicum*,[146] which had likely been brought to China by East-Syrian (Nestorian) Christians. He concludes that the *Xitian yusi jing* "bears a close resemblance to the work of Dorotheus and not of Ptolemy." The title could thus be a phonetic transliteration of Dorotheus.[147] This proposed Christian connection with astrology in China is supported by the fact that some astrologers of the Sasanian court were Christian.[148]

Dorotheus of Sidon (c. 75 CE) was a Hellenistic poet and astrologer. His work, however, is only fully extant in Arabic, although Latin, Greek and Chinese fragments exist. Dorotheus' work was first translated into Pahlavī (Middle Persian) from Greek under the Sassanians between 222–267, and later expanded between 531–578. Around the year 800, this recension was translated into Arabic.[149] It is uncertain from which language the Chinese translation was produced, though it was likely Pahlavī in light of the Iranian specialists present in China when it was produced.

The *Duli yusi jing* is the first known work in Chinese to introduce into East Asia a Hellenistic system of horoscopy, in particular the concept of 'aspect' (i.e., the angles planets make with respect to one another on a horoscopic chart). This requires drafting a horoscopic chart, either circular or rectangular, which represents the ecliptic.[150] A natal chart will indicate the positions of the planets on the ecliptic at the time of birth. From these positions their angular relationships relative to one another are identified and interpreted according to established lore. The positions of the planets in zodiac signs are also essential in interpreting a chart. The zodiac signs, originally defined as twelve segments each comprised of thirty degrees, similarly move and their positions have to be determined. The drafting of a horoscope chart therefore requires a certain level of precise

[143] *Xin Tang shu*, Zhonghua shuju edn., vol. 5, 1548.

[144] Yano, *Mikkyō senseijutsu*, 160–164. *Xin Tang shu*, Zhonghua shuju edn., vol. 5, 1548.

[145] For the *Xitian yusi jing*, see Wan Minying 萬民英, *Xingxue dacheng* 星學大成 (fasc. 7), in SKQS 809: 435–438.

[146] Dorotheus' work is divided into five books. It can be called *Pentateuch*, or *Five Books*. The first four explain natal astrology, while the fifth teaches electional or katarchic astrology. See Holden, *A History of Horoscopic Astrology*, 33–43.

[147] Mak, "*Yusi Jing*," 129.

[148] Shaul Shaked, *Dualism in Transformation: Varieties of Religion in Sasanian Iran* (London: School of Oriental and African Studies, 1994), 89, fn. 44.

[149] David Pingree, "Classical and Byzantine Astrology in Sassanian Persia," *Dumbarton Oaks Papers* 44 (1989): 229.

[150] This was originally drawn up with 360 degrees, but the Chinese system of astronomy uses 365.25 degrees. This is another example of Chinese astrologers avoiding the implementation of foreign astronomy, preferring to use functional equivalents from the native Chinese system.

astronomical knowledge, although this is not necessarily so difficult with various tables in hand.

A complicating factor for Chinese astrologers was that the Hellenistic system of astrology transmitted to China used a tropical zodiac, rather than a sidereal zodiac. As will be recalled (see 2.2 above), a sidereal zodiac defines the twelve zodiac signs (each comprised of 30 degrees) according to fixed stars. The stars that rise on the horizon at a specific time of the year (such as the vernal equinox) gradually move over the course of several decades due to axial precession,[151] and therefore those stars' positions, and the zodiac signs that they define, become disconnected from the seasons over time (they were, however, originally devised to align with the seasons). The classical Greek system of astronomy, however, came to define the twelve zodiac signs based on the position on the ecliptic into which the Sun rises at the vernal equinox. The first degree of Aries (the first zodiac sign) is therefore defined as the position of the Sun at the vernal equinox, and not in relation to the stars that comprise the constellation of Aries. This is an important distinction because the Indian system of zodiac signs, as in the *Xiuyao jing* described above, is defined in relation to the *nakṣatra*–s and/or Chinese lunar stations. Both *nakṣatra*–s and Chinese lunar stations are defined in relation to fixed stars. The Indians used the sidereal zodiac, whereas some late Hellenistic astrologers, and evidently the Persians in China, used a tropical zodiac.[152]

As to evidence that a tropical zodiac was employed in China, there is a terse Japanese scribal note at the end of the *Qiyao rangzai jue* (see 5.3 below) from the year 999 (year 1 of Chōhō 長保) that cites an unspecified text. It states that the Moon 月 (a scribal error for the graphically similar Sun 日) is fixed at the third degree of Revatī / Kui 奎 (here the Chinese lunar station) at the vernal equinox in the second lunar month.[153] It further states that Aries (白羊宮, 'white ram')[154] is defined from this point, although there was now a discrepancy of more than 3 degrees (here this refers to Chinese degrees), and that a new table should be made as the earlier divisions remain.[155] This is explained by the fact that between 724 (when the solar table of the *Qiyao rangzai jue* is stated to have been produced)[156] and 999, a total of 275 years had elapsed. By the year 999, the Sun had retreated about 3.84 degrees (3.89 Chinese degrees). Japanese astrologers, who practiced a system that had been directly imported from China, employed the tropical

[151] Axial precession is the apparent movement of the stars (1 degree every 71.6 years) that results from the change of the rotational axis of the Earth.

[152] It is unclear whether this was Ptolemy's model in China.

[153] This is in reference to the solar table of the *Qiyao rangzai jue*: Taishō 1308, vol. 21: 450c5-451a11. Note that the *Qiyao rangzai jue* itself employs a sidereal zodiac, though Japanese astrologers who used this text alongside the *Duli yusi jing* employed the tropical zodiac.

[154] It can be inferred that the term 'white ram' 白羊宮 for Aries is derived from the *Duli yusi jing* as it appears in the aforementioned *Xitian yusi jing* 西天聿斯經, but not in earlier extant materials. See Wan Minying, *Xingxue dacheng*, 436.

[155] Taishō 1308, vol. 21: 452b1-4.

[156] See T 1308, 21: 450c6.

zodiac, and made necessary corrections to older texts in their possession, in order to ensure that the zodiac signs were properly aligned with the vernal equinox. This was undoubtedly also the case earlier in China.

It seems that this tropical zodiac in China was first defined in relation to the Chinese lunar stations. This would become problematic over time because these stars, as just discussed above, would shift due to axial precession, and thus become unaligned with the seasons. An eleventh century military manual, the *Wujing zongyao* 武經總要 (*Complete Essentials for the Military Classics*),[157] compiled by Zeng Gongliang 曾公亮 (999–1078) and Ding Du 丁度 (990–1053) between 1040–1044, also mentions the changes in degrees over time (a retreat of 1 Chinese degree every 85 years),[158] and defines Aries in relation to the vernal equinox as it is to be observed in year 4 of Qingli 慶曆 (1044):

> 春分二月中，日在奎二度四分，後三日入白羊宮，其神天魁。
> At the vernal equinox, the central solar term of the second month,[159] the Sun is in Kui 2.25 degrees. Three days later it enters Aries. The deity is Tian Kui.[160]

Technically the Sun should enter the first degree of Aries immediately at the vernal equinox. The additional required time of three days reflects an outdated definition of Aries from about two centuries prior. In other words, the zodiac sign of Aries in the ninth century was originally aligned with the vernal equinox, yet it was also defined according to a sidereal parameter. Thus, due to the passage of time and a failure to make adjustments, it became detached from the vernal equinox. This indicates that the tropical zodiac in China was originally defined in relation to the sidereal lunar stations. Japanese astrologers were aware that it had to be aligned with the vernal equinox, and updated their system accordingly, but this key point appears to have been forgotten in China.

In another Japanese source, the *Byakuhō kushō* 白寶口抄 (discussed in 6.4 & 6.5 below), the *Duli yusi jing* is also said to define the first month from Pisces (TZ vol. 7, 315a20), which in the solar table of the *Qiyao rangzai jue* would correspond exactly thirty days prior to the seventeenth degree of Wei 危 (the first day of the solar term of

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[157] As Marcia Butler points out, such manuals as this "are exceptional because they are the earliest extant comprehensive manuals, covering all aspects of pre-modern warfare ... they also contain sections on cosmological ideas, moral mandates, sanctioned deities, prayer texts, sacrifices, oaths, and divination rituals, such as watching the ether, divining Heavenly bodies, methods of 'inferring' future events, and calendrical and spatial divination." Marcia Butler, "Reflections of a Military Medium: Ritual and Magic in Eleventh and Twelfth Century Chinese Military Manuals" (PhD dissertation, Cornell University, 2007), 17.

[158] Compare with the *Qiyao rangzai jue* which states that there will be a difference of 1 Chinese degree after 83 years (滿八十三年即差一度). T 1308, 21: 450c6-7.

[159] *Zhong* here 中 refers to *zhongqi* 中氣. I must thank Yano Michio for pointing this out to me (private communication 2015/10/16).

[160] See Zeng Gongliang 曾公亮, *Wujing zongyao houji* 武經總要後集, fasc. 20, in SKQS 726: 941. Kui 魁 seems to refer to the lunar station Kui 奎宿.

Yushui 雨水). The zodiac here is clearly aligned with the solar terms, which themselves are aligned with the equinoxes and solstices. One problem that East Asian astrologers had to address was that Chinese observational astronomy, which was adopted in Japan, is based on the Chinese system of twenty-eight lunar stations. These lunar stations are of varying lengths and traditionally add up to 365.25 degrees, which stand in contrast to the zodiac signs that are uniformly comprised of 30 degrees each, totaling 360 degrees. It appears that when Li Miqian introduced horoscopy between 795–805, he or perhaps his team also developed a system to reconcile these two systems by dividing the twenty-eight Chinese lunar stations into twelve divisions. Interestingly, these twelve divisions were made exactly equal by assigning thirty solar days (not civil days) to each based, it seems, on the table of solar terms that is preserved in the *Qiyao rangzai jue*. The *Qiyao rangzai jue* states that this table was calculated in year 12 of Kaiyuan (724).

The exact parameters for the zodiac signs devised for use with the *Duli yusi jing*[161] can be inferred based on the above details (see table 4.9). The year 724 is furthermore significant because at this time the court astronomer and monk Yixing was active in the capital. However, his calendar, the *Dayan li*, a work in progress when he died in 727, gives slightly different parameters that include fractions.[162] The table of solar terms of the *Qiyao rangzai jue*, however, equals 360 degrees, which is an occidental parameter, and one that was used in the *Navagraha-karaṇa*.[163] The original creator of the original solar table itself, therefore, might have been a figure such as Gautama Siddhārtha.

The use of a tropical zodiac in China points to the active practice of Hellenistic astrology in China. As to the school of Hellenistic astrology that was practiced, we should return to Mak's thesis that the *Duli yusi jing* was a translation of Dorotheus' work. This is definitely shown to be correct in light of further evidence from a Daoist astrological work.

[161] Curiously, the circular table in the *Qiyao rangzai jue* uses a different model of dividing the zodiac signs amongst the lunar stations. It defines Aries from the thirteenth degree of Lou 婁, which would not have aligned with the vernal equinox. In short, the author of the *Qiyao rangzai jue* does not appear to have utilized the *Duli yusi jing*, but astrologers from the same period made use of the same table of solar terms originally produced in 724. The definitions of the zodiac signs in relation to the twenty-eight lunar stations are given in the *Xingxue dacheng*: it defines Xu 戌 (i.e., the earthly branch corresponding to Aries) as starting from the first degree of Kui 奎 (SKQS 806: 296b3).

[162] Compare columns "T" and "Ch" in Yano, "The *Chi'yao jang-tsai-chueh* and its Ephemerides," *Centaurus* 29, no. 1 (1986): 30. Yano, however, does not seem aware that the table is designed with 360 degrees in mind.

[163] The *Xin Tang shu* (vol. 3, 692) explains that the *Navagraha-karaṇa* uses 360 degrees.

Table 4.9: Lunar Stations – Zodiac Signs – Solar Terms Correspondences

	11月 Capricorn		12月 Aquarius		1月 Pisces		2月 Aries		3月 Taurus		4月 Gemini	
	冬至	小寒	大寒	立春	雨水	驚蟄	春分	清明	穀雨	立夏	小滿	芒種
日	Winter Solstice						Vernal Equinox					
1	斗 9	牛 1	女 8	危 2	危 17	室 15	奎 3	婁 1	胃 3	昴 4	畢 8	參 6
2	斗 10	牛 2	女 9	危 3	室 1	室 16	奎 4	婁 2	胃 4	昴 5	畢 9	參 7
3	斗 11	牛 3	女 10	危 4	室 2	室 17	奎 5	婁 3	胃 5	昴 6	畢 10	參 8
4	斗 12	牛 4	女 11	危 5	室 3	壁 1	奎 6	婁 4	胃 6	昴 7	畢 11	參 9
5	斗 13	牛 5	虛 1	危 6	室 4	壁 2	奎 7	婁 5	胃 7	昴 8	畢 12	參 10
6	斗 14	牛 6	虛 2	危 7	室 5	壁 3	奎 8	婁 6	胃 8	昴 9	畢 13	井 1
7	斗 15	牛 7	虛 3	危 8	室 6	壁 4	奎 9	婁 7	胃 9	昴 10	畢 14	井 2
8	斗 16	牛 8	虛 4	危 9	室 7	壁 5	奎 10	婁 8	胃 10	昴 11	畢 15	井 3
9	斗 17	女 1	虛 5	危 10	室 8	壁 6	奎 11	婁 9	胃 11	畢 1	畢 16	井 4
10	斗 18	女 2	虛 6	危 11	室 9	壁 7	奎 12	婁 10	胃 12	畢 2	觜 1	井 5
11	斗 19	女 3	虛 7	危 12	室 10	壁 8	奎 13	婁 11	胃 13	畢 3	參 1	井 6
12	斗 20	女 4	虛 8	危 13	室 11	壁 9	奎 14	婁 12	胃 14	畢 4	參 2	井 7
13	斗 21	女 5	虛 9	危 14	室 12	壁 10	奎 15	婁 13	昴 1	畢 5	參 3	井 8
14	斗 22	女 6	虛 10	危 15	室 13	奎 1	奎 16	胃 1	昴 2	畢 6	參 4	井 9
15	斗 23	女 7	危 1	危 16	室 14	奎 2	奎 17	胃 2	昴 3	畢 7	參 5	井 10
	5月 Cancer		6月 Leo		7月 Virgo		8月 Libra		9月 Scorpio		10月 Sagittarius	
	夏至	小暑	大暑	立秋	處暑	白露	秋分	寒露	霜降	立冬	小雪	大雪
	Summer Solstice						Autum Equinox					
1	井 12*	井 27	柳 10	張 4	張 19	翼 16*	軫 12	角 8	氐 1	氐 16	尾 6	箕 4
2	井 13	井 28	柳 11	張 5	翼 1	翼 17	軫 13	角 9	氐 2	房 1	尾 7	箕 5
3	井 14	井 29	柳 12	張 6	翼 2	翼 18	軫 14	角 10	氐 3	房 2	尾 8	箕 6
4	井 15	井 30	柳 13	張 7	翼 3	翼 19	軫 15	角 11	氐 4	房 3	尾 9	箕 7
5	井 16	鬼 1	柳 14	張 8	翼 4	軫 1	軫 16	角 12	氐 5	房 4	尾 10	箕 8
6	井 17	鬼 2	星 1	張 9	翼 5	軫 2	軫 17	角 13	氐 6	房 5	尾 11	箕 9
7	井 18	柳 1	星 2	張 10	翼 6	軫 3	軫 18	亢 1	氐 7	心 1	尾 12	箕 10
8	井 19	柳 2	星 3	張 11	翼 7	軫 4	軫 19	亢 2	氐 8	心 2	尾 13	斗 1
9	井 20	柳 3	星 4	張 12	翼 8	軫 5	角 1	亢 3	氐 9	心 3	尾 14	斗 2
10	井 21	柳 4	星 5	張 13	翼 9	軫 6	角 2	亢 4	氐 10	心 4	尾 15	斗 3
11	井 22	柳 5	星 6	張 14	翼 10	軫 7	角 3	亢 5	氐 11	尾 1	尾 16	斗 4
12	井 23	柳 6	星 7	張 15	翼 11	軫 8	角 4	亢 6	氐 12	尾 2	尾 17	斗 5
13	井 24	柳 7	張 1	張 16	翼 12	軫 9	角 5	亢 7	氐 13	尾 3	箕 1	斗 6
14	井 25	柳 8	張 2	張 17	翼 13	軫 10	角 6	亢 8	氐 14	尾 4	箕 2	斗 7
15	井 26	柳 9	張 3	張 18	翼 14	軫 11	角 7	亢 9	氐 15	尾 5	箕 3	斗 8

* Some days see one degree skipped over, apparently in order to fit 365 degrees into 360 days. These might otherwise appear to be scribal errors (although there are obvious such errors in the table). This table does not use fractions, and therefore does not total 365.25 degrees (the traditional Chinese definition of the celestial equator and ecliptic), but instead equals 360 degrees, an occidental parameter. This table is also important in identifying some icons (see chapter 5.4).

The Ming-era Zhengtong Daoist canon 正統道藏 of 1445 includes at least two texts containing discernible Hellenistic elements: the *Lingtai jing* 靈臺經 (DZ 288)[164] and the *Chengxing lingtai miyao jing* 秤星靈臺祕要經 (DZ 289), a fragmentary work written within a few decades after 894–898 (the Qianning 乾寧 era).[165] Their titles may be translated as *Scripture of the Spiritual Terrace* and *Scripture of the Secret Essentials of the Compass Spiritual Terrace*.[166] The former, whose extant version is missing the first eight chapters, is a manual on horoscopic astrology. The latter, which will be explored in detail below (5.4), is a ritual manual that appears to be used in coordination with the *Lingtai jing*. The *Lingtai jing* contains elements of Hellenistic astrology that were clearly derived from the *Duli yusi jing*; thus it was likely compiled sometime between 785–898.

As to the original title of the *Lingtai jing* and its author, the *Song shi* 宋史 lists a *Chengxing jing* 秤星經 (*Compass Scripture*) by Tang Mei 唐昧, who was an ancient Chinese astronomer.[167] The Song-era text catalog *Junzhai dushu zhi* 郡齋讀書誌 (*Chronicle of Books Read in the Commandery Estate*) by Chao Gongwu 晁公武 (1105–1180) lists this text in three fascicles with no author. Its brief description of the text reads as follows:

> 秤星經，三卷。右不著撰人。以日，月，五星，羅睺，計都，紫炁，月孛十一曜，演十二宮宿度，以推人貴賤，壽夭，休咎。不知其術之所起，或云天竺梵學也。
>
> *Chengxing jing*, 3 fascicles. The above does not ascribe a compiler. It prognosticates a person's status, longevity and fortune through the eleven planets through the Sun, Moon, five planets, Rāhu, Ketu, Ziqi, and Yuebei,[168] and an explanation of the parameters for the twelve zodiac signs and [twenty-eight] lunar

[164] Marc Kalinowski dates this to the beginning of the tenth century, but I am in favor of dating it to the mid-ninth century. See below. Marc Kalinowski, "Lingtai 靈臺經," in *The Taoist Canon A Historical Companion to the Daozang*, vol. 1, ed. Kristofer Schipper and Franciscus Verellen (Chicago: The University of Chicago Press, 2004), 337.

[165] Marc Kalinowski, "*Chengxing lingtai biyao jing* 秤星靈臺祕要經," in *The Taoist Canon A Historical Companion to the Daozang*, vol. 1, ed. Kristofer Schipper and Franciscus Verellen (Chicago: The University of Chicago Press, 2004), 337–338. The contents of these two works are outlined by Ren Jiyu and Zhong Zhaopeng, but it seems they were unaware of their various foreign elements. See Ren Jiyu 任繼愈 and Zhong Zhaopeng 鐘肇鵬, eds., *Daozang tiyao* 道藏提要 (Beijing: Zhongguo Shehui Kexue Chubanshe, 1991), 214–215.

[166] *Chengxing* 秤星 ('scale & star') here seems to refers to a *dingpan-xing* 定盤星, which is a flat circular or square plate on which marks of graduation are indicated (*xing* 星), i.e., a compass. *Chengxing* therefore likely refers to a plate representing the ecliptic or equator with the degrees marked. As a metaphor, the term refers to a standard for something. See *Foguang dacidian* 佛光大辭典, 3184.

[167] *Song shi* 宋史, Zhonghua shuju edn., vol. 15, 5233. Tang Mei was an ancient figure from the state of Chu 楚. The *Jin shu* 晉書 (Zhonghua Shuju edn., vol. 2, 277–278) states he was proficient in astronomy.

[168] Ziqi and Yuebei will be discussed in detail below.

stations.[169] The origins of the technique are unknown. Some say it is an Indian science.[170]

The content of the extant *Lingtai jing* corresponds to this description. In light of the above points, the original title of the *Lingtai jing* was likely *Chengxing lingtai jing* 秤星靈臺經 (*Scripture of the Compass Spiritual Terrace*). Whoever compiled it seems to have attributed it to the ancient astronomer Tang Mei as a means of legitimizing its contents, and disguising the foreign origins of much of its content.

The *Lingtai jing* is especially important since it draws upon, albeit without specificially citing, the *Duli yusi jing*. The Japanese monk Shūei 宗叡 (809–884), who returned to Japan from China in 865, noted that the *Duli yusi jing* was important for worldly purposes.[171] In light of the important role that this text came to play in Japan (see 6.4 below), and the popularity of astrology in the late-Tang, together with Shūei's remarks, we can infer that Buddhist astrologers in the mid-ninth century were familiar with, and likely proficient in, the type of astrology that we find in the *Lingtai jing*. The content of this work is therefore instructive with respect to Buddhist astrology in the late-Tang.

The extant *Lingtai jing* includes a number of distinctly Hellenistic concepts that can be traced back to Dorotheus' work. Some of the other content, however, is clearly from Iranian, Indian and Chinese sources, most notably the twenty-eight *nakṣatra*–s,[172] and the mention of the Chinese astral deities Tianyi 天一 and Taiyi 太一. It also draws on a concept first explained in Amoghavajra's *Xiuyao jing*, in which six *nakṣatra*–s are assigned as 'life' 命宿, 'affairs' 事宿, 'intention' 意宿, 'gathering' 聚宿, 'common' 同宿, and 'overcoming' 克宿. The *Lingtai jing* even reproduces Yang Jingfeng's commentary from the *Xiuyao jing*, in which an example of how to determine these assignments is given, though instead of the *Xiuyao jing* being cited, a certain *Zi Tang jing* 紫唐經 (*Purple Tang Scripture*) is quoted.[173] Thus, what was originally a concept from a

[169] This likely refers to a table in which the spatial dimensions of the zodiac signs are aligned with the lunar stations. An authoritative table of this type would have been necessary to practice horoscopy based on the twelve zodiac signs, while using Chinese observational astronomy, which is based on the lunar stations.

[170] Taiwan Shangwu Yinshuguan edn., vol. 4, 842.

[171] See Shūei's catalog: "The assorted works above might not be gates of Dharma [i.e., Buddhist works], but they are held as important in the world" 右雜書等雖非法門世者所要也. T 2174A, 55: 111c1.

[172] We must, however, bear in mind that the *nakṣatra*–s were also incorporated from India into Iranian astrology and cosmology, such as in chapter II of the *Bundahišn*. See E.W. West, trans., *The Bundahis*, Pahlavi Texts Part I, Sacred Books of the East, vol. V, ed. F. Max Muller (Oxford: Clarendon Press, 1880), 11. The *nakṣatra* lore in Chinese therefore may actually be more directly derived from Iranian rather than Indian sources in many cases, especially from the turn of the ninth century.

[173] The difference between the two systems is that in the *Xiuyao jing*, the position of the Moon determines the natal *nakṣatra*, whereas in the *Lingtai jing* it is the Sun. See T 1299, 21: 392b4-9. DZ 288, Wenwu Chubanshe edn., vol. 5, 23c6-18. *Sukuyō-kyō shukusatsu*, vol. 1, 35.

Buddhist scripture was adopted into a new Daoist context. This is a prime example of cross-religious textual reuse. The compiler of the *Lingtai jing* clearly drew on multiple sources. The concepts drawn from Hellenistic astrology are of particular present interest as they were derived from Dorotheus.

The opening lines of chapter nine of the *Lingtai jing* define the triplicity (*sanfangzhu* 三方主).[174] The concept of triplicity divides the twelve zodiac signs into four even sets of three signs. The three signs are positioned relative to one another to form an equilateral triangle. Each set is associated with planetary rulers, which have special significance within a chart when identified as rulers. These differ based on whether the horoscope is nocturnal or diurnal (i.e., whether the time of the chart is night or day). If nocturnal, the zodiac sign in which the Moon is located will determine the planetary rulers. If diurnal, the zodiac sign in which the Sun is located will determine the planetary rulers. The zodiac signs are indicated with the earthly branches (地支) as functional equivalents, a feature that we already saw in the *Xiuyao jing* (see table 4.7).

> 寅午戌。晝生，日木土。夜生，木日土。申子辰。晝生，土水木。夜生，水土木。亥卯未。晝生，金火月。夜生，火金月。巳酉丑。晝生，金月火。夜生，月金火。
> **Sagittarius, Leo, Aries**. Diurnal birth: Sun, Jupiter, Saturn. Nocturnal birth: Jupiter, Sun, Saturn. **Gemini, Aquarius, Libra**. Diurnal birth: Saturn, Mercury, Jupiter. Nocturnal birth: Mercury, Saturn, Jupiter. **Pisces, Scorpio, Cancer**. Diurnal birth: Venus, Mars, Moon. Nocturnal birth: Mars, Venus, Moon. **Virgo, Taurus, Capricorn**. Diurnal birth: Venus, Moon, Mars. Nocturnal birth: Moon, Venus, Mars.[175]

An almost identical definition is given in Book I of Dorotheus' *Carmen Astrologicum* as follows:

> **Aries, Leo, and Sagittarius** are a triplicity; **Taurus, Virgo and Capricorn** are a triplicity, **Gemini, Libra, and Aquarius** are a triplicity; and **Cancer, Scorpio, and Pisces** are a triplicity. Know the lords of the triplicities of the signs: the lords of the triplicity of **Aries** by day are the Sun, then Jupiter, then Saturn, by night Jupiter, then the Sun, then Saturn; the lords of the triplicity of **Taurus** by day are Venus, then the Moon, then Mars, by night the Moon, then Venus, then Mars, and in **Virgo** is also a share for Mercury; the lords of the triplicity of **Gemini** by day are Saturn, then Mercury, then Jupiter, by night Mercury, then Saturn, then

[174] Greek: τρίγωνον. Latin: *trigonum*.
[175] DZ 288, Wenwu Chubanshe edn., vol. 5, 22c6-8. Emphasis on zodiac signs added for clarity.

> Jupiter, the lords of the triplicity of **Cancer** by day are Venus, then Mars, then the Moon, by night Mars, then Venus, then the Moon.[176]

Vettius Valens (b. 120 CE), a major Hellenistic astrologer, also defines the triplicities in this manner (II,1).[177] Note that Al-Bīrūnī (973–c.1052), a noteworthy Iranian-Muslim scholar and astronomer, also defines the triplicities in a similar manner, although he only provides two rather than three lords.[178] The concept of triplicity was therefore fundamental to classical astrology even outside the original Hellenistic context. Dorotheus himself states, "I tell you that everything which is decided or indicated is from the lords of the triplicities."[179] It is therefore unsurprising that the triplicity came to have an important function in Chinese astrology.

This definition of the triplicity in Chinese was most certainly directly cited from the *Duli yusi jing*. This can be established with great certainty since this concept appears in Dunhuang document Pelliot chinois 4071, a horoscope dated to 975, compiled by a certain Kang Zun 康遵 (d.u.), who was likely a Sogdian in light of the surname Kang. Jao Tsung-i identified in this horoscope citations of the *Duli yusi jing*.[180] Triplicity is also employed in extant Japanese horoscopes, one of which also cites the *Duli yusi jing* as *Yusi jing* 聿斯經 (see 6.5 below).

Chapter ten of the *Lingtai jing* deals with the concept of '*lots*'.[181] Much of the content appears to be derived from Dorotheus. The parallels between the Chinese text and Dorotheus cited below will demonstrate this. The Chinese term for '*lots*' is *fei pei* 飛配 ('flying assignments'). This seems to reflect the Greek κλῆροι: lots, as in to assign or appoint by lot (verb: κληρόω). *Lots* are points on the horoscopic chart that are determined by measuring the distance in degrees between two specific planets, and then applying that same measured distance from the ascendant (the eastern horizon) or another third point to determine a specific point on the chart. This specific point on the chart is associated with some matter in life such as fortune or marriage, and thus the astrologer analyzes these sensitive areas of the chart with these *lots* in mind. The *lot* will refer to a specific degree on the chart, but in practice the zodiac sign upon which the *lot* falls becomes associated

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[176] David Pingree, *Dorothei Sidonii Carmen Astrologicum* (Leipzig: Teubner, 1976), 161–162.

[177] Otto Neugebauer and Henry Bartlett Van Hoesen, *Greek Horoscopes*, (Philadelphia: American Philosophical Society, 1959), 13. Vettius Valens, *Anthologies*, trans. Mark T. Riley (unpublished translation), 25.

[178] See Al-Bīrūnī, *The Book of Instruction in the Elements of the Art of Astrology*, 259. This scheme was perhaps derived from Ptolemy's *Tetrabiblos* (I,18).

[179] Pingree, *Dorothei Sidonii Carmen Astrologicum*, 162.

[180] Jao Tsung-i, "Lun qiyao yu shiyi yao," 771–793. For a relevant survey of the document see Weixing Niu, "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 (Leiden: Brill, 2016), 527–558.

[181] In modern astrology these are called 'Arabic parts'.

with the topic of the *lot*.[182] The *lot* of fortune (福德) is defined as follows in the *Lingtai jing*:

> 晝生從日，夜生從月，從東出配之至終。如配在七強，福祿殊常。配在五弱位，即福薄。
> If a diurnal birth, from the Sun. If a nocturnal birth, from the Moon. Assign [the *lot*] from the eastern [ascendant]. If the *lot* [falls] into one of the seven strong [places], fortune will be exceptional. If the *lot* [falls on] one of the seven weak places, the fortune will be meager.[183]

With respect to the *lot* of fortune, Dorotheus states, "[For him] whose birth is in the day count from the Sun to the Moon and add it to the degrees of the ascendent, and in a nocturnal nativity the opposite of this."[184] As to these seven strong and five weak places[185] mentioned in the Chinese, Dorotheus elsewhere defines the latter as the second, third, sixth, eighth and twelfth places, whereas the other seven are 'preferred' (understood in Chinese as 'weak' versus 'strong').[186] This *lot* of fortune is of particular note because "as we know it in our sources [it] is certainly the invention of Hellenistic Egypt, but it may ultimately be derived from an older Babylonian 'place of the Moon', the great god Sin."[187]

The lot of the father (父宮) is defined as follows in the *Lingtai jing*:

> 白日從日至土，夜生反此，東出配之，如有善星，父貴。
> Daytime: from the Sun to Saturn. If a nocturnal birth, it is the reverse of this. Assign [the *lot*] from the eastern [ascendant]. If there is a good star [i.e., planet] present [at the *lot*], the father will be esteemed.[188]

Dorotheus also states that the *lot* of the father is to be calculated from the degree of the Sun to the degree of Saturn. This is reversed if the natal chart is nocturnal. He further states, "If you find its lord in a good place, it indicates the good of his father."[189] Here 'its lord' likely refers to the domicile ruler. Thus, if the lot falls on Aries, the lord is Mars.

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[182] I must thank Chris Brennan, a private scholar of Hellenistic astrology, for instruction on the definition of these *lots*.

[183] DZ 288, Wenwu Chubanshe edn., vol. 5, 24a1-2.

[184] Pingree, *Dorothei Sidonii Carmen Astrologicum*, 191.

[185] This in reference to the system of twelve 'places' (Greek τόποι and Latin *loci*), a topic we will discuss below (5.3). The twelve *places* are twelve static demarcations of the ecliptic through which the zodiac signs and planets move. The stars and planets move, but the twelve places as spatial sections of the ecliptic remain static.

[186] Ibid., 164.

[187] Stanley J. Tester, *A History of Western Astrology* (Woodbridge: Boydell Press, 1987), 28.

[188] DZ 288, Wenwu Chubanshe edn., vol. 5, 26a12-13.

[189] Pingree, *Dorothei Sidonii Carmen Astrologicum*, 174.

Although this latter point is slightly different from the Chinese, it still reflects a common source.

The *lot* of the mother in the *Lingtai jing* (母宮) is defined as "from Venus to the Moon if a diurnal birth and the reverse of this if a nocturnal birth." It also gives the following prediction:

> 日月同在翻復宮，又居東方，此人父母不同類。
> If the Sun and the Moon are in tropical signs, and also [a tropical sign] is resident in the East, then this person's parents will be of different types [races].[190]

Dorotheus states, "If you find the Sun and the Moon in tropical signs, and the ascendent is a tropical sign, then the parents of this native are not from one race."[191] The term *fanfu gong* 翻復宮 ('tropical palace') in the Chinese refers to tropical or solstitial signs, i.e., Cancer and Capricorn. These are the points in which the Sun 'turns' in relation to its celestial latitude or, in other words, reaches its zenith at the solstices before 'turning back'. The zodiac sign of Cancer is defined from the summer solstice, and Capricorn is defined from the winter solstice.[192] Thus the Chinese rendering of *fanfu* 翻復, 'turning' or 'reversing', semantically reflects the original Greek term τροπικός, 'pertaining to turning'. Similarly, in English the term 'tropical' is etymologically derived from this term.[193] This particular line is significant since it indicates how the integrity of the original Greek concept was kept relatively intact in Chinese translation. It strongly indicates an awareness of the tropical zodiac in China. It is furthermore a rare example of what was originally an astronomical Greek term translated into Chinese, long before contact with Christian Europe.[194]

In the *Lingtai jing*, the *lot* of brothers (兄弟宮) is defined as "from Saturn to Jupiter".[195] Dorotheus also defines it as from Saturn to Jupiter. Dorotheus states the follow on the matter of brothers:

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[190] DZ 288, Wenwu Chubanshe edn., vol. 5, 26a15-18.

[191] Pingree, *Dorothei Sidonii Carmen Astrologicum*, 174.

[192] Ptolemy states, "For there are two solstitial signs, the first interval of 30° from the summer solstice, the sign of Cancer, and the first from the winter solstice, Capricorn; and they have received their name from what takes place in them. For the Sun turns when he is at the beginning of these signs and reverses his latitudinal progress, causing summer in Cancer and winter in Capricorn." Claudius Ptolemy, *Tetrabiblos*, trans. Frank Egleston Robbins, Loeb Classical Library (Cambridge, MA: Harvard University Press, 1940), 67. Note that Manilius in his *Astronomica* also defines Aries and Libra as tropical signs, though these are actually equinoctial signs. This indicates that there were some variant definitions in the classical tradition. See Manilius, *Astronomica*, Loeb Classical Library, trans. G.P. Goold (Cambridge, MA: Harvard University Press, 1977), 97.

[193] See "tropical" in Online Etymology Dictionary. http://www.etymonline.com/

[194] It is of course unlikely that the translation was directly from Greek into Chinese.

[195] DZ 288, Wenwu Chubanshe edn., vol. 5, 25b1.

> I am showing you the matter of brothers: know that he for whom the Moon is in Leo or Sagittarius or whose ascendant is one of these two signs will have few brothers. … Whoever has Scorpio or Cancer or Pisces for his ascendant, know that his mother will bear numerous children.[196]

There is a close parallel to this in the *Lingtai jing*:

> 若身命及此宮配，在師子，人馬，磨竭，寶瓶，雙女，皆主少兄弟。如得魚，羊蝎，蟹，即多兄弟。
> If the body or life signs [i.e., the signs in which the Moon and Sun are respectively present] and the *lot* of this sign [the sign signifying the lot of brothers] are in Leo, Sagittarius, Capricorn, Aquarius or Virgo, it will always preside over few brothers. If they take Pisces, Scorpio[197] or Cancer, then they will have many brothers.[198]

The Chinese passage is saying that if the Sun or Moon fall on the sign signifying the *lot* of brothers, then it will indicate few or many brothers, depending on the zodiac sign on which the Sun or Moon fell. This is slightly different from Pingree's translation of Dorotheus, but the latter point about Scorpio, Cancer and Pisces indicating few brothers within the context of the *lot* of brothers clearly indicates a common source. Note that *shen* 身 and *ming* 命 here are abbreviations of *shen gong* 身宮 ('body palace') and *ming gong* 命宮 ('life palace'). Elsewhere in the text, these are defined in relation to the Moon and the Sun respectively.[199] Dorian Gieseler Greenbaum notes that in Hellenistic astrology "the Moon is associated with the body, and the Sun with the mind, the soul and spirit." One major basis for this is Valens, whom she quotes as saying, "For cosmically the Moon is fortune and body and breath, and since she is close to the earth and sends her effluence into us, she brings about something similar as she has authority over our body."[200] In a perhaps related context, there was a concept, attributed to the legendary early astrologers of Hellenistic Egypt, Nechepso and Petosiris, that "the ascendent at birth is the sign of the Moon at the time of conception."[201] This connection between the Moon and body is therefore entirely Hellenistic in origin, and well preserved in the Chinese tradition.

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[196] Pingree, *Dorothei Sidonii Carmen Astrologicum*, 178–179.

[197] *Yang xie* 羊蝎 is a scribal error for *Tian xie* 天蝎.

[198] DZ 288, Wenwu Chubanshe edn., vol. 5, 25b2-4.

[199] "First determine the sign in which the Moon is present as the *body sign* 先定太陰所在之宮便爲身宮." vol. 5, 23b8-9. "The *life sign* is the zodiac sign-*nakṣatra* in which the Sun is present 以太陽所生之宮宿爲命宮." vol. 5, 23c6. Read *sheng* 生 as *zai* 在.

[200] Dorian Gieseler Greenbaum, *The Daimon in Hellenistic Astrology: Origins and Influence* (Leiden: Brill, 2015), 305.

[201] Tester, *A History of Western Astrology*, 79.

The *lot* of wives (妻妾宮) in the *Lingtai jing* is defined as "from Saturn to Venus". The text states that "if Mars appears [in the sign signifying the *lot* of wives], then she will act as a whore."[202] Dorotheus states that the *lot* of marriage is defined from Venus to Saturn. With respect to appearance of Mars in the *lot*, "it indicates women who will marry [several] men in succession and will play the whore with men."[203] As above, there is a slight difference in meaning, but the prediction that the appearance of Mars in the *lot* of marriage as signifying that one's wife will "act as a whore" demonstrates a clear parallel. In addition, Dorotheus states, "Also if Mars aspects[204] Venus and Venus also aspects it [Mars] as I mentioned to you, it indicates a marriage of short duration."[205] Similarly, the *Lingtai jing* states, "If Mars sees Venus, the wife will be no good."[206]

Although this type of horoscopy is strongly Greek in character, and was originally discussed within the framework of Greek physics and cosmology within the Hellenistic world,[207] it does not appear that Chinese astrologers in this period ever attempted to explain the physical or theological underpinnings of astrology. The methods and lore translated into Chinese alone were sufficient to practice horoscopy. As to the cosmology of Chinese astrologers, apart from the aforementioned *Navagraha-karaṇa*, which was ultimately of limited impact in Chinese astronomy, there are no extant foreign texts proving that the world is spherical. Thus, in the case of Chinese Buddhist astrologers, we might imagine that they practiced horoscopy with a traditional flat earth Mt. Meru cosmology in mind. Nevertheless, despite such issues, an astrologer relying on tables would have been able to produce a reasonably accurate horoscope chart without any reference to physical theories.

The foregoing discussion demonstrates that Hellenistic astrology, in particular the concepts of triplicity and *lots*, constitute a significant component in the *Lingtai jing*, a text that draws from the *Duli yusi jing*. This highlights the indirect Hellenistic influence on Chinese religions of the late-Tang. The earlier exposure to foreign astrology through Buddhist scriptures likely provided an already familiar foundation atop which Iranians in

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[202] 晝夜皆從土至金，東出配之 … 若更火，即爲娼婦。DZ 288, *Wenwu Chubanshe* edn., vol. 5, 25b14-17. Reading *geng* 更 as *jian* 見.

[203] Pingree, *Dorothei Sidonii Carmen Astrologicum*, 199.

[204] *Aspect* is the geometrical relationship between two planets on a chart determined by the number of degrees between them. The term 'aspect' in English is derived from the Latin *aspectus* (sight, look). The astrological concept of *aspect* was originally conceived as planets 'seeing' one another. Ptolemy formally recognized four types of *aspect*: *opposition* (180°), *trine* (120°), *quartile* (90°) and *sextile* (60°). See Book 1.13 of Ptolemy's *Tetrabiblos*. Ptolemy, *Tetrabiblos*, 73–75. *Trine* was translated as *san he* 三合 in Chinese. Yano, *Mikkyō senseijutsu*, 202.

[205] Ibid., 205.

[206] "若火見金，妻不良." DZ 288, Wenwu Chubanshe edn., vol. 5, 25c6.

[207] For a relevant discussion see Alexander Jones, "The Stoics and the Astronomical Sciences," in *The Cambridge Companion to the Stoics*, ed. Brad Inwood (Cambridge: Cambridge University Press, 2003), 337–342.

China, be they Persians or Sogdians, could begin practicing advanced forms of horoscopy.

The *Duli yusi jing* was an immensely influential text not only in China, but also in Japan, where it became the core manual for horoscopy as practiced by Buddhist monks. The extant horoscopes from Japan shed light on many technical details, giving us a picture of how horoscopy was utilized in practice. We will return to this topic below, when we discuss Japanese Buddhist astrology (see 6.5 below).

4.8. Cao Shiwei's *Futian li* 符天曆

Although the *Duli yusi jing* provided abundant astrological lore to interpret a horoscope, in order to draw up a horoscope one must be able to calculate the positions of planets at any point of time. In the case of Indian astrology, which also deeply influenced Iranian astrology, it is not only the seven visible planets (the five visible planets plus the Sun and Moon) that must be calculated, but also the 'hidden planets' of Rāhu and Ketu. As mentioned earlier, the *Xiuyao jing* also mentions the need for an Indian calendar, but these at the time were presumably unavailable to the general populace. Consequently, native Chinese calendars were either unavailable or simply incomplete for this task.

This problem was solved by Cao Shiwei 曹士蔿 (d.u.). Before the translation of the *Duli yusi jing*, he compiled the *Futian li* 符天曆 (*Calendar that Tallies with Heaven*) between 780–783. The *Xin Wudai shi* 新五代史 (a history of the five post-Tang regimes) provides the following details:

> 唐建中時，術者曹士蔿始變古法，以顯慶五年爲上元，雨水爲歲首，號符天歷。然世謂之小歷，祇行於民間。
> During the Jianzhong reign era [780–783] of the Tang, the diviner Cao Shiwei first changed the old methods, making Xianqing 5 [660] the start of the calendar[208] and *yushui*[209] the start of the year, calling [this calendar] the *Futian li*. However, it was popularly considered a lesser calendar and only circulated among the masses.[210]

Cao Shiwei originally only drafted the *Futian li* with the seven planets, but he later revised it to accommodate all nine planets. This occurred during the time when the Persian Li Su was active in the capital after 776. The *Xin Tang shu* lists a title, *Qiyao futian li* 七曜符天曆 (*Seven Planets Futian Li*), by Cao Shiwei, indicating a system

[208] Its start date for the seven planets of year 5 of Xianqing (660) is close to the starting point of the aforementioned *Navagraha*: year 2 of Xianqing (657).

[209] One of twenty-four solar terms 二十四節氣.

[210] *Xin Wudai shi*, Zhonghua shuju edn., vol. 3, 670. It appears that the legal prohibition against unauthorized study of calendrical science was not being enforced by this period (see 2.4 above).

specifically comprised of the seven planets,[211] but we know that he subsequently supplemented his work to account for Rāhu and Ketu in light of an account by Song Lian in the fourteenth century.

> 唐貞元初，李弼乾始推十一星行歷，鮑該，曹士蔿，皆業之。士蔿又作羅計二隱曜立成曆，起元和元年 …
> Early in the Zhenyuan reign era [785–805] of the Tang, Li Biqian first calculated the ephemerides for the eleven stars. Bao Gai and Cao Shiwei both studied it. Shiwei also drafted ephemerides for the two hidden planets Rāhu and Ketu. It starts from the first year of reign era Yuanhe [806].[212]

We will recall that the *Duli yusi jing* was translated sometime between 785–805. Cao Shiwei drafted the first version of the *Futian li* a few years prior to this between 780–783. Following the translation of the *Duli yusi jing*, around or shortly after the year 806 it seems that he supplemented the *Futian li* with calculations for Rāhu and Ketu. The latter component was also circulated as a separate text.[213]

Song Lian mentions that Li Biqian introduced the 'eleven stars'. Rāhu and Ketu plus the Sun, the Moon and the five visible planets comprise the standard nine planets (*navagraha*), but there were two other 'hidden' or 'pseudo' planets that were introduced into China from abroad, called Ziqi 紫氣 / 紫炁 ('purple mist') and Yuebei 月孛 ('lunar *bei*'). The exact origin of these is unclear, but they most certainly are not a Chinese creation. A later work by Xing Yunlu 邢雲路 (fl. 1580) also associates these two planets, plus Rāhu and Ketu, with an *Astronomical Scripture of the Western Regions* (西域星經).[214] They are neither found in Hellenistic astrology as it is presently known, nor in Dorotheus' work. As identifiable points on a horoscopic chart they can function in the same way as do Rāhu and Ketu (i.e., as points on the ecliptic tracked as nominal planets).

Ziqi is conceived of as a moving point on the ecliptic that is used to keep track of the time to insert intercalary months. I am unaware of any Tang-era works that define its parameters, but they are provided by the Ming-era author Liu Dingzhi 劉定之 (1409–1469) in his notes on astronomy:

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[211] *Xin Tang shu*, Zhonghua Shuju edn., vol. 5, 1548.

[212] Ren Jiyu, ed, *Zhonghua chuanshi wenxuan Ming wen heng*, 151

[213] The thirteenth century text catalog *Zhizhai shulu jieti* 直齋書錄解題 by Chen Zhensun 陳振孫 also records a specific work entitled *Luoji er yinyao licheng li* 羅計二隱曜立成歷 (an ephemeris for Rāhu and Ketu) by Cao Shiwei, noting the epoch of the calendar. See Fasc. 12, p.30. Listed under the *Yin-yang jia lei* 陰陽家類 heading. Included in the *Qianlong yulan ben siku quanshu huiyao shi bu* 乾隆御覽本四庫全書薈要史部.

[214] This could also be read as "Astronomical Scriptures of the Western Regions", i.e., as a genre of such texts on foreign astronomy. Xing Yunlu 邢雲路, *Gujin lü likao* 古今律歷考, in SKQS 787: 327b7. Elsewhere it is stated that Li Chunfeng 李淳風 (602–670) first calculated Yuebei (vol. 787, 681b13). Xing Yunlu, however, conflates the lunar apogee with comets (vol. 787, 682a10-13).

炁生於閏，二十八年十閏，而炁行一周天。
The *qi* is produced from intercalation. In 28 years there are ten intercalary months, and the *qi* moves around the ecliptic once.[215]

Assuming 360 degrees rather than the Chinese value of 365.25 degrees, a system of whole numbers is produced.[216] Using the Chinese value does not produce whole numbers. This demonstrates that this concept was originally designed with the occidental zodiac in mind, indicating that it was devised by a non-Chinese specialist.

The etymology of the term Ziqi or "purple mist" remains uncertain. The term widely appears throughout earlier Chinese literature, but without any discernible astronomical meaning or function. A possible – and tentative – explanation is that this term in the astrological context is semantically translated from a Near Eastern language. The twelfth month in the Hebrew calendar, for instance, is called Adar, and the intercalary month is called Ve Adar ("And Adar"). Adar is a loan word from Akkadian: *Addaru* or *Adaru*, which in one interpretation means "the dark or clouded month" and derives from the Akkadian *adāru* ("to be dark").[217]

As to Yuebei, its associated icon indicates a foreign origin (see 6.2). In astrology, it is the lunar apogee.[218] Liu Dingzhi defines it as follows.

孛生于月，月之行遲速有常度，最遲之處即孛也，故謂之月孛，孛六十二年而七周天。
The *bei* is produced from the Moon. There are constants for the velocity of the Moon's movement. The slowest point is the *bei*, which is why it is called the lunar *bei*. The *bei* has 7 rotations in a 62 year period.[219]

The system of eleven planets or stars was incorporated into Daoist astrology, as seen in the *Lingtai jing*, as well as general Chinese horoscopy as represented by Pelliot chinois 4071, although it does not seem to have ever been widely adopted by Buddhist astrologers, either in China or Japan, who likely had a preference for the canonical

[215] See the *Za zhi* 雜志 (*Miscellaneous Articles*). Fasc. 56 in *Ming wen heng* 明文衡 collection, 38–39. Ren Jiyu, ed, *Zhonghua chuanshi wenxuan Ming wen heng*, 557.

[216] 28 years x 360 days = 10,080 days. 10,080 days ÷ 360 (degrees) = 28 days. Every 28 days the 'planet' progresses 1 degree as 28 days = 1 degree. 10,080 ÷ 10 (times for intercalary months) = 1008 days. 1008 days ÷ 28 days (= 1 degree each) = 36 degrees. Every 36 degrees (2.8 years) an intercalary month is inserted. 360 degrees ÷ 36 degrees = 10 positions to insert intercalary months.

[217] Ernest Klein, *A Comprehensive Etymological Dictionary of the Hebrew Language for Readers of English* (Jerusalem: The University of Haifa, 1987), 8.

[218] The lunar apogee is the point on the Moon's elliptical orbit which is farthest from the earth. The perigee is the point closest to the earth.

[219] 62 ÷ 7 = 8.85 years, i.e., the lunar apsidal precession. Ren Jiyu, ed, *Zhonghua chuanshi wenxuan Ming wen heng*, 557.

concept of *navagraha*. The eleven planets were incorporated into the systems of astronomy employed by court astronomers in China.[220] They were also incorporated into Chinese horoscopy.[221] The parameters of Yuebei, however, were employed in Buddhist astrology in a unique manner, which will be discussed in the following chapter.

Returning to the *Futian li*, it was likely developed in response to an increasing popular desire for accessible astronomical knowledge for the purposes of practicing astrology. It is important to note that this development occurred only after the An Lushan rebellion. The proliferation of unofficial calendars could only begin after the rebellion, when the reach and authority of the central government had declined.

The Chinese in the first decade of the ninth century thus had access to several systems of foreign astrology and a suitable calendar with which to calculate the positions of planets when drawing up horoscopes. This effectively enabled the subsequent widespread popular practice of occidental astrology in China throughout the following two to three centuries.

4.9. Conclusion

We discussed in this chapter the introduction of Tantric hemerology via the translation of the *Mahāvairocana-sūtra*, and the subsequent commentary on it compiled by Yixing. Unlike earlier astrological materials introduced into Chinese, such as the astrology of the *Śārdūlakarṇāvadāna*, there came to be a pressing need for a practical and accessible astrological schedule in Chinese following the introduction of Mantrayāna from the 720s. Yixing's commentary only briefly outlines the features of the Indian calendar, without providing substantial details. This lack of information was a motivating factor behind Amoghavajra's compilation of the *Xiuyao jing*, first in 759, before being subsequently revised in 764. It is likely that Amoghavajra drew upon existing non-Buddhist astrological materials that had already been translated in the sixth and seventh centuries. Amoghavajra's adaptation of such non-Buddhist sources for use within a specifically Buddhist framework is a prime example of not merely intertextuality, but actually cross-religious and cross-linguistic intertextuality. The *Xiuyao jing* itself testifies to the possibility that various elements from Indian astrology could and, in fact, were integrated into a quite practical Chinese Buddhist manual.

The *Xiuyao jing* provides a large body of astrological lore. This is not only for creating an astrological schedule, but also for making natal predictions based primarily

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[220] In the early Qing the validity of the four planets was called into question by Westerners in China. For a discussion see Huang Yinong 黃一農, "Qing qianqi dui siyu dingyi ji cunfei de zhengzhi" 清前期對「四餘」定義及存廢的爭執, *Ziran kexueshi yanjiu* 自然科學史研究 12, no. 3 (1993): 240–248. Article continued in no. 4 of same journal (344–354).

[221] The astrological lore of Ziqi (SKQS 809: 660b–673a) and Yuebei (SKQS 809: 674a–689b) are explained in the *Xingxue dacheng*.

on the *nakṣatra* calendar. The belief in astrological determinism was increasingly expressed in Tantric literature, such as the *Parṇaśabarī-avalokiteśvara-bodhisattva-sūtra* translated by Amoghavajra. This likely fostered further interest in astrology amongst Buddhists, who now had specifically Buddhist literature clearly linking 'karmic fate' with astrological factors.

The *Mahāvairocana-sūtra* also introduced visual icons of astral deities represented in the associated *maṇḍala*. The related literature describes these as deities. These icons formed the initial foundation for Buddhist astral magic in China, though their representations underwent a number of changes following the introduction of Iranian astrology, which are discussed in the following chapter.

At the beginning of the eighth century, the Chinese court employed ethnically Indian astronomers. One of the major figures was Gautama Siddhārtha, who translated in 718 the *Navagraha-karaṇa*, a manual on mathematical astronomy. Although this work did not greatly impact Chinese astronomy, perhaps because the content was quite alien to Chinese astronomers, it does highlight the extent of contemporary Chinese interest in foreign science. These astronomers were active, and likely consulted, when works such as the *Xiuyao jing* were compiled, given that the revised *Xiuyao jing* from 764 includes a mathematical method for calculating the day of the week based on the work of the Gautama family.

The ethnically Persian astronomer Li Su was summoned to court sometime between 766–779, perhaps to replace the late Gautama Zhuan. As Rong points out, Li Su was likely a Christian clergyman, in light of his name on the Nestorian stele from 781. It was during his time in office that the Hellenistic *Duli yusi jing* was translated, which Mak identified as most likely a version of Dorotheus' *Carmen Astrologicum*. I have provided further evidence in support of Mak's thesis. Even further evidence is found in Japanese sources, which are discussed below (6.5).

Finally, I argue that there was a transition from Indian to Iranian sources of astrology and astronomy in China around the turn of the ninth century. Although Buddhists had little to do with these later developments, they were deeply influenced by these new Iranian elements, and incorporated them into their practices of astrology and astral magic, which become evident in the subsequent century, to which our attention now turns.