Buddhist astrology and astral magic in the Tang Dynasty

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Chapter 2
Astrology and Eurasian Civilizations

2.1. Definitions: What is Astrology?

Astrology is a practice of divination in which an observer primarily tracks the movements of celestial bodies (the Sun, the Moon and the planets) through the celestial sphere in an attempt to foretell the future, identify auspicious times, or discern the fortune or fate of an individual, community or nation. It is divided into several fields.

The simplest type is the discernment of omens in the sky, such as comets, that are interpreted as either favorable or unfavorable. People in the modern age, however, are most familiar with horoscopes. These are normally circular charts, displaying the positions of the planets, the Sun and the Moon at a specific time, such as when someone was born. The significance of the arrangement is explained and predictions are made. This art is called horoscopy (Skt. *horā*).[1]

The personality and life events of an individual are believed to be either signaled or directly influenced by the arrangement of bodies in the sky at the time of birth. This is natal or genethliacal astrology (Skt. *jātaka*). Additionally, there is electional astrology, also called katarchic astrology (Skt. *muhūrta*), in which the opportune time of activities is decided based upon astrological considerations, such as the day of the week, the positions of the planets, and/or the hour of the day. Related to this is hemerology, in which the success of activities is coordinated with days understood as auspicious on the calendar. Hemerology is effectively a branch of electional astrology. These branches of astrology are not defined in this manner in the Chinese tradition, but nevertheless in Chinese Buddhist astrology we still see these same categories in practice, in particular horoscopy and hemerology.

In modern English, a strong distinction is drawn between astronomy and astrology, though for "many of the ancients astronomy was simply the mathematics needed to practise astrology."[2] In both the West and Asia historically, scientific observation and calculation of celestial bodies were not strictly delineated from the belief that one could discern the fate of an individual or nation through accurate interpretation of celestial bodies and their movements. In accordance with present conventions, however, I will adopt the modern definitions. Astronomy here will refer to scientifically falsifiable observations and calculations. Astrology will refer to largely unfalsifiable truth claims concerning the significance or influences of the stars and planets. In accordance with modern conventions I will also not refer to astrology as a science, but rather as an

[1] The Sanskrit term is a loanword from Greek (ὥρα), originally meaning hour, such as the hour of one's birth.

[2] Tamsyn Barton, *Ancient Astrology* (London: Routledge, 1994), xxi.

art, meaning a field of non-scientific knowledge. As will become clear from this study, astrology is better understood as religion, rather than science. Additionally, when referring to planets, this will include the Sun and the Moon, unless otherwise specified, following the understanding of the term prior to the 1630s in Europe.[3] This moreover accommodates the traditional understanding in Asian languages. In Europe, the planets until recent centuries only referred to bodies visible to the naked eye. The 'outer planets' of Uranus, Neptune and Pluto were unknown to the ancients.

2.2. The Ecliptic in Three Civilizations

Astrology has historically been geocentric, rather than heliocentric. This means that the point of reference for observations and measurements is from the perspective of the observer on the ground of the Earth. Astrologers are chiefly concerned with the movement of planets through the ecliptic, the band of space representing the apparent annual path of the Sun as seen from the Earth. It is within this space that the planets, including the Moon, move. This perspective is produced as a result of the bodies of the solar system orbiting on a relative plane.

The occidental systems of astronomy divide the ecliptic radially into 360 degrees. This is further divided into twelve sectors. These sectors are each comprised of 30 degrees and collectively make up the zodiac. Individually these sectors constitute the zodiac signs: Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorn, Aquarius and Pisces. Their respective names are derived from constellations. It must be understood that the zodiac signs are only nominally connected to these constellations. The zodiac signs were finalized in Mesopotamia around the year 500 BCE, being an amalgamation of an earlier model of eighteen signs.[4] They were formulated relative to stars including the constellations from which they are named. This is called a sidereal zodiac. The zodiac signs were originally calibrated to the seasons, so that certain stars would always rise on the horizon at dawn at specific times of the year (for instance, the stars comprising Aries would rise at the vernal equinox), but over time the positions of the stars move due to axial precession.[5] This became an issue with Hellenistic astronomers, particularly Claudius Ptolemy (fl. 2nd cent.), who redefined the zodiac so that the first degree of Aries (the first zodiac sign) is defined by the position of the Sun on the day of the vernal equinox. This ensures that the zodiac signs are kept in

[3] See 'planet' in Julia Cresswell, *The Oxford Dictionary of Word Origins* (Oxford: Oxford University Press, 2010), 329–330. See also 'planet' on Online Etymology Dictionary (http://www.etymonline.com/).

[4] John Lankford, ed., *A History of Astronomy An Encyclopedia* (New York: Garland Publishing, 1997), 160.

[5] Axial precession is the changing orientation of the earth's rotational axis. The visible result from earth is the apparent movement of otherwise stationary stars over time.

alignment with the seasons (as was their original function), but they are no longer defined in relation to the stars that formerly defined them. This model is called the tropical zodiac and is characteristic of late Hellenistic astrology.[6] Although Indian astronomers absorbed much Hellenistic astronomy, Indians largely continued using the sidereal (Skt. *niryaṇa*) zodiac, rather than adopting the tropical zodiac (Skt. *sāyana*).[7] The difference between the sidereal and tropical zodiacs became a major difference between Indian astrology and those based on the Hellenistic model, a difference we will see in China later on.

Indian sources originally defined the ecliptic in relation to the path of the Moon. The Moon revolves around the earth in a period of 27.32 days, hence it appears to move around the sky and 'lodge' in 27 or 28 positions over the course of its revolution period. These are called lunar stations, or in Sanskrit *nakṣatra*–s.[8] They were originally defined by determinative stars (*yogatārā*), and were of unequal dimensions,[9] but these were never uniformly defined, which is why there are multiple systems of *nakṣatra*–s.[10] They were measured by the amount of *muhūrta*–s required for the Moon to transit through each. The day in India was divided into 30 units (*muhūrta*), each comprised of 48 modern minutes.

Prior to the importation of Hellenistic astronomy into India, beginning perhaps from the late fourth century CE, Indian astrology generally focused on the position of the Moon in the *nakṣtra*–s. The name of each respective month is based on the *nakṣatra* in which the Moon is nominally lodged (see table 2.1), which then marks the first day of the month. This Moon could be either the full (*pūrṇimānta*) or the new (*amānta*) Moon. There were a number of different calendars and dating systems used throughout ancient Indian civilization. The Greeks introduced their own separate models.[11]

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[6] James H. Holden, *A History of Horoscopic Astrology* (American Federation of Astrologers, 2006), 46.

[7] There is a noteworthy example of the tropical zodiac in India. As Henning points out, the Kālacakra Tantra from the early eleventh century adopted the tropical zodiac. See Edward Henning, *Kālacakra and the Tibetan Calendar* (New York: The American Institute of Buddhist Studies at Columbia University, 2007), 220, 258–260.

[8] The complete list of twenty-eight *nakṣatra–s* first appears in the Atharva Veda. Yano Michio, "Planet Worship in Ancient India" in *Studies in the History of the Exact Sciences in Honour of David Pingree* (Leiden: Brill, 2004), 333. The twenty-seven model drops Abhijit, which is of small dimensions. This will be discussed below (4.2).

[9] As they are of unequal dimensions it becomes a complicated process to accurately track the Moon's progress through them. This stands in contrast to the zodiac signs, which are of uniform dimensions. This difference in systems would become an issue later on when the zodiac signs were introduced into Indian astronomy. See below.

[10] David Pingree and Patrick Morrissey, "On the Identification of the Yogatārās of the Indian Nakṣatras," *Journal for the History of Astronomy* 20, no. 2 (1986): 99–119.

[11] See David Pingree, "A Note on the Calendars Used in Early Indian Inscripts," *Journal of the American Oriental Society* 102, no. 2 (1982): 355–359.

Table 2.1. Chinese lunar stations and *nakṣatra*–s.[12]			
Chinese Lunar Station		**Sanskrit *Nakṣatra***	**Sanskrit Month**
Mao	昴	Kṛttikā	Kārttika
Bi	畢	Rohiṇī	
Zi	觜	Mṛgaśīrṣa	Mārgaśīra
Shen	參	Ārdrā	
Jing	井	Punarvasū	
Gui	鬼	Puṣya	Pauṣa
Liu	柳	Aślesā	
Xing	星	Maghā	Māgha
Zhang	張	Pūrvaphālgunī	
Yi	翼	Uttaraphālgunī	Phālguna
Zhen	軫	Hasta	
Jiao	角	Citrā	Caitra
Kang	亢	Svāti	
Di	氐	Viśākhā	Vaiśākha
Fang	房	Anurādhā	
Xin	心	Jyeṣṭha	Jyaiṣṭha
Wei	尾	Mūla	
Qi	箕	Pūrvāṣāḍhā	Āṣāḍha
Dou	斗	Uttarāṣāḍhā	
Niu	牛	Abhijit	
Nü	女	Śravaṇa	Śrāvaṇa
Xu	虛	Dhaniṣṭhā	
Wei	危	Śatabhiṣaj	
Shi	室	Pūrvabhādrapadā	Bhādrapada
Bi	壁	Uttarabhādrapadā	
Kui	奎	Revatī	
Lou	婁	Aśvinī	Āśvina
Wei	胃	Bharaṇī	

Chinese civilization also independently developed a model of astronomy based on twenty-eight lunar stations (*xiu* 宿) of unequal dimensions. These are defined by a set of constellations relative to the celestial equator, which are different from the Indian system. Ancient Chinese astronomy divides the equator into 365.25 degrees, and thus the standard definition of a ‘degree’ (*du* 度) differs from the Hellenistic and Indian models.

[12] Table adapted from Yano Michio 矢野道雄, *Mikkyō senseijutsu* 密教占星術 (Tōkyō: Tōyōshoin, 2013), 69.

The lunar stations first appear in their entire sequence in a tomb dating from 433 BCE.[13] Although Chinese lunar stations are not identical to any *nakṣatra* system, they were used as functional equivalents when translating Indian texts. The lunar stations and *nakṣatra*–s are presented in table 2.1.

It has often been speculated in modern scholarship that these two systems must share a common origin based on their similarities, or that one civilization first developed the model of lunar stations before transmitting it to the other. The evidence, however, now indicates independent origins for both.[14]

It is necessary to bear in mind the differences in these models – specifically the Hellenistic, Indian and Chinese models of the ecliptic – because, despite their incompatibilities, they were eventually all integrated into Buddhist astrology in China. This also resulted in a number of predictable problems, which will be discussed throughout this study.

2.3. Occidental Astrology

'Occidental astrology' in this study refers to traditions from west of China that have connections to Mesopotamia. 'Western astrology', conversely, generally refers to European traditions of astrology, which are unrelated to the present study. For the purposes of this study, we will divide these traditions into five relevant developments: Mesopotamian omenology, Hellenistic astrology, pre-Hellenized Indian astrology, Hellenized Indian astrology and Iranian astrology. During the Tang dynasty, many relevant developments came together with Chinese astrology, leading to new traditions of astrology that were integrated into Buddhism and Daoism.

In Mesopotamia, a practice of accurate and constant astronomical observation developed as a result of a belief that divine omens concerning present and future developments – particularly with respect to the military, ruler and state – could be discerned from natural cycles and apparent anomalies.[15] These omens were not regarded as fatalistic or deterministic, since rituals could be carried out in order to appease the gods and prevent undesirable outcomes that had been prognosticated. The

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[13] David W. Pankenier, *Astrology and Cosmology in Early China: Conforming Earth to Heaven* (Cambridge: Cambridge University Press, 2013), 57.

[14] David Pankenier recently (2014) refuted a longstanding theory proposed by the Assyriologist Carl Bezold. In 1919, Bezold claimed to have discerned Babylonian influences in early Chinese astronomical texts in translation. This was subsequently accepted by influential figures like Joseph Needham and Edward Schafer. See David W. Pankenier, "Did Babylonian Astrology Influence Early Chinese Astral Prognostication Xing Zhan Shu 星占術?" *Early China* 37, no. 1 (2014): 1–13.

[15] These observations were recorded on clay Cuneiform tablets. The *Enuma Anu Enlil*, running to a total of seventy tablets, included 7000 recorded omens and provided advice concerning what were perceived to be divine signals. Clive L. N. Ruggles, *Ancient Astronomy: An Encyclopedia of Cosmologies and Myth* (Santa Barbara, CA: ABC-CLIO, 2005), 39.

Mesopotamians became aware of the periodicity of celestial phenomena, and therefore developed methods for prediction by around 1000 BCE.[16] The zodiac signs, which came to have a prominent function in Hellenistic astronomy, and later in India and East Asia, also originated in Mesopotamia. Around 700 BCE, a series of Babylonian star lists recorded the twelve zodiacal constellations among eighteen star groups along the path of the Moon.[17] Around 500 BCE, the Babylonian zodiac of twelve signs, an amalgamation of an earlier model of eighteen signs, was fully developed into the form which was transmitted to the Greek world.[18]

Mesopotamian omenology coupled with its predictive astronomical knowledge produced the first forms of astrology that were introduced into the Hellenistic world. Hellenistic astrology was the result of vast hybridization of multiple traditions, which Pingree describes as being "a union of aspects of advanced Babylonian celestial divination with Aristotelian physics and Hellenistic astronomy."[19] After Alexander's death in 323 BCE, his generals divided up his short-lived empire, and the Hellenistic world was born, consisting of three primary cultural and political spheres: Greece, Ptolemaic Egypt and the Seleucid Empire. This new political landscape with its common language of Greek facilitated unprecedented interactions between Greece, Mesopotamia and Egypt. It was within such an environment that astrologers could draw on materials from multiple traditions in Babylon and Egypt, while also enjoying a greater freedom of movement than before. Mesopotamian astronomy was, within this political, linguistic and social environment, transmitted by figures such as the Greek astronomer Hipparchus (c.150-125 BCE).[20]

Advanced practices of astrology appeared following the development of observational astronomy. The practice of horoscopy requires such advanced knowledge in order to accurately calculate the positions of planets at any given hour in the past or future. The earliest examples of Babylonian 'proto-horoscopes' that include the date of birth, and planetary positions (in the order of Moon, Sun, Jupiter, Venus, Mercury, Saturn, and Mars) in the zodiac signs, are from the fifth century BCE.[21] Horoscopes as charts displaying the positions of planets at a specific hour for specifically predicting the fate of an individual (the 'native') at birth were developed in Hellenistic Egypt starting in the second century BCE.[22]

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[16] Hermann Hunger and David Pingree, *Astral Sciences in Mesopotamia* (Leiden: Brill, 1999), 50.

[17] Lankford, ed., *A History of Astronomy: An Encyclopedia*, 160.

[18] Ibid., 43.

[19] David Pingree, "Hellenophilia versus the History of Science," *ISIS* 83, no. 4 (1992): 560.

[20] Lankford, ed., *A History of Astronomy: An Encyclopedia*, 12.

[21] Hunger and Pingree, *Astral Sciences in Mesopotamia*, 26–27.

[22] David Pingree, *A History of Indian Literature Vol. 6 Scientific and Technical Literature Part 3, Fasc. 4: Jyotiḥśāstra Astral and Mathematical Literature, Volume 6, Part 4* (Otto Harrassowitz Verlag, 1981), 81.

Horoscopy a less arduous task if one is in possession of planetary ephemerides, i.e., tables providing the calculated positions of planets over the course of time. The astrologer therefore need only refer to such a guide in drawing up a horoscope, either on parchment, or using a board and stone markers for the same purpose.[23] Hellenistic horoscopes differed from those of Babylon in that the former were based on geometry, whereas the latter were arithmetically formulated.[24]

The popularity of astrology in the first few centuries CE in the Mediterranean must be understood in its context within Roman history. As Rome seized Greece and the Mediterranean, it inevitably met with astrologers who provided an alternative practice to traditional forms of Roman divination. Horoscopy was tailored to the individual and, at least initially, was foreign and exotic to the Romans. In the upheaval of the late Roman Republic of the first century BCE, astrology was utilized towards political ends, and with this came an increasing awareness of it among elites.[25] It was an often-contentious art.[26] Attempts at restricting it did not hinder the further development of astrology, as demonstrated by the successful careers of authors on astrology such as Vettius Valens and Ptolemy of Alexandria in the second century CE. Astrology by this time was quite popular across the Roman empire both among Latin and Greek speakers, which facilitated its vibrant evolution. Hellenistic astrology would likely not have developed to the extent it did without elite Roman interest.

Hellenistic astrology was connected to the Greco-Egyptian practices of astral magic,[27] which was heavily concerned with the timing of rituals and calendrical considerations.[28] It regarded planets as deities, and assigned certain gods to specific hours of the day. Specific stones were used to represent them on horoscope boards and also in art. Incense are also prescribed for each planet.[29] As will be explored below, elements of

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[23] Astrologers in Alexandria would use boards representing the ecliptic, atop which they would place colored stones representing the planets. A basic chart could be easily constructed this way if one is in possession of ephemerides. The colors of these stones correspond to the prescribed colors for the planets in later literature. See James Evans, "The Astrologer's Apparatus: A Picture of Professional Practice in Greco-Roman Egypt," *Journal for the History of Astronomy* 35, no 1 (2004): 1–44.

[24] Roger Beck, *A Brief History of Ancient Astrology* (Oxford: Blackwell Publishing, 2007), 20.

[25] Tamsyn S. Barton, *Power and Knowledge Astrology, Physiognomics and Medicine under the Roman Empire* (Michigan: The University of Michigan Press, 1994), 38–47.

[26] In 33 BCE, Augustus banned astrologers and magicians from the city of Rome. In 11 CE, he issued a ruling criminalizing all consultations about death (i.e., genethiological astrology) across the empire. Nevertheless, it seems he simultaneously officially published his own horoscope. In the year 16, Tiberius reasserted the official stance against unsolicited astrological consultation, expelling astrologers from both Rome and Italy. Steven J. Green, *Disclosure and Discretion in Roman Astrology: Manilius and His Augustan Contemporaries* (Oxford: Oxford University Press, 2014), 103–105.

[27] For a relevant study of this magic see Stephen Skinner, *Techniques of Graeco-Egyptian Magic* (Golden Hoard Press, 2014).

[28] Ibid., 55–69.

[29] PGM CX. 1–12 (Betz, 312). PGM XIII.16–22 (Betz, 172). PGM XIII. 353–354 (Betz, 182).

this magic were actually transmitted to China, where Buddhists and Daoists integrated it into their respective magical traditions.

As to astrology in India, Pingree's model suggests that astrology was introduced into India initially through Iranian intermediaries, with a second later dispersement, bringing with it the new developments of the Hellenistic tradition. His outline of the relevant chronology is as follows:

> I. Vedic (c.1000–400 BCE).
> II. Babylonian (400 BCE–200 CE).
> III. Greco-Babylonian (c200–400).
> IV. Greek (c400–1600).
> V. Islamic (c1600–1800).[30]

As will be discussed below, some of Pingree's conclusions are problematic, but this general scheme still generally holds good.

Babylonian astronomy was initially introduced into India through Persian intermediaries, for example the *Jyotiṣavedāṅga* (c.400 BCE), which Pingree explains as "one of the six *aṅgas* or 'limbs' studied by Vedic priests; its purpose was to provide them with a means of computing the times for which the performances of sacrifices are prescribed, primarily new and full moons." This transmission, according to Pingree, occurred during the Achaemenid occupation of the Indus Valley (c.513–326 BCE).[31]

Trade in the subsequent centuries picked up between the eastern Mediterranean world and India, especially at the port of Alexandria that came under Roman control from 30 BCE. Pliny and Tiberius in the first century expressed concerns about Roman wealth flowing eastward, with at least a fifth headed to India. The empire simultaneously imported luxury goods from India.[32] In light of such active trade relations, Pingree's conclusion that horoscopy was introduced into India in the second century CE would be plausible,[33] but recent analysis has cast doubts on such dating. Pingree identified Śāka ruler Rudradāman I, who reigned c.130–160, as a prominent figure in this respect, as he

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[30] Pingree, *A History of Indian Literature*, 8–9.

[31] David Pingree, "The Mesopotamian Origin of Early Indian Mathematical Astronomy," *Journal for the History of Astronomy* 4 (1973): 1–3. See also David Pingree, "The Purāṇas and Jyotiḥśāstra Astronomy," *Journal of the American Oriental Society* 110, no. 2 (1990): 275. An early foreign account of India is provided in *The Geography* by Strabo (born c.64 BCE), in which he cites Megathenes, a diplomat of the early Seleucid empire who purportedly visited the Maurya empire, who stated that their Brachmanes (Brahmins) "are of the same opinion as the Greeks about many things" such as the universe being spherical in shape. Assuming this account has any truth to it, it suggests foreign influences were perhaps discernible in this period. Strabo, *Geography*, Book XV, trans. Horace Leonard Jones, published in Vol. VII of Loeb Classical Library (Cambridge, MA: Harvard University Press, 1932), 103.

[32] Romila Thapar, *The Penguin History of Early India: From the Origins to AD 1300* (London: Penguin Books Ltd, 2002), 242–243.

[33] Pingree, *A History of Indian Literature*, 81.

and his successors, Pingree suggests, encouraged the study of Greek astral sciences. Until recently it was widely thought – on account of Pingree's conclusions – that in 149/150, an Alexandrian text on Hellenistic astrology, originally composed in Egypt sometime shortly after 100 CE, was translated into Sanskrit prose by a certain Yavaneśvara in western India. This was later apparently preserved as the *Yavanajātaka*, composed by Rāja Sphujidhvaja in 269–270 during the Reign of Rudrasena II (r. c. 255-276).[34] Recently, however, Mak has disputed this in light of new manuscript evidence, and suggests it "is dated some time after 22 CE and could be as late as the early seventh century …"[35] If Mak is correct, then Pingree's chronology is disrupted at this point, though Hellenistic influences still become apparent in later works in India. For example, around the year 400, persons having access to Greek astronomical texts, often based on the work of Hipparchus and other Hellenistic astronomers, combined these Greek traditions with the cosmology and chronology of the Purāṇas.[36] Later, the first known text to define the weekday in India was the *Āryabhaṭīya* by Āryabhaṭa (born 476).[37] This model of weekdays goes back to the Mediterranean world, where in 120 Vettius Valens referred to the days of the week beginning with Sunday. The first usage of weekdays using the modern ordering of planets is found in the work of Dio Cassius (born 155 CE).[38] The sixth century also saw a number of prominent works appear. The astrologer Varāhamihira (505–587), who was of Persian ancestry and lived at or near Ujjayinī, wrote the *Pañcasiddhāntikā*, which summarized five astronomical texts including two entitled *Romakasiddhānta* (Roman astronomical treatise) and a *Pauliśasiddānta* (Paulus' astronomical treatise), demonstrating the extent of Hellenistic astral science present by this period.[39]

There were multiple calendars in use throughout ancient Indian history, both indigenous models and those directly influenced by foreign calendars. These differences, which will be discussed below, are apparent in the relevant Buddhist literature that was translated into Chinese throughout the first millennium CE. Pingree notes that the earliest Indian inscriptions (those by Aśoka in the mid-third century BCE) refer to solar years (*vāsa* or *saṃvachara*), three *ṛtu*–s (seasons) each made up of four months (*cātuṃmāsa*), *nakṣatra*–s occupied by the Moon, and nights (*lāti*, Skt. *rātri*). However, the Greek

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[34] See his study and translation: David Pingree, *The Yavanajātaka of Sphujidhvaja* (Cambridge, MA: Harvard University Press, 1978).

[35] Bill M. Mak, "The Transmission of Greek Astral Science Into India Reconsidered – Critical Remarks on the Contents and the Newly Discovered Manuscript of the *Yavanajātaka*," *History of Science in South Asia* 1 (2013): 17.

[36] Pingree, "The Purāṇas and Jyotiḥśāstra Astronomy," 276.

[37] Yano Michio, "Planet Worship in Ancient India," 336.

[38] Ibid., 335.

[39] David Pingree, "The Recovery of Early Greek Astronomy from India," *Journal for the History of Astronomy* 7 (1976): 110. For a translation and study see Otto Neugebauer and David Pingree, *The Pañcasiddhāntikā of Varāhamihira* (København: Munksgaard, 1970-1971).

(*Yavana*) culture in the northwest of India introduced a new calendar based on the Macedonian model during the second century BCE. It used months and days (rather than nights), as was the custom in the Indo-Greek kingdoms. Pingree speculates that this might have been the Seleucid calendar, which was itself an adaptation of the Babylonian calendar as employed by the earlier Achaemenid Persian empire. The Macedonian months were what the Indians call *amānta* (commencing from the new Moon), whereas the Indian month could be either *amānta* or *pūrṇimānta* (commencing from the full-Moon). The Indian month was divided into two parts (*pakṣa*): the waning (*kṛṣṇa-pakṣa*) and waxing (*śukla-pakṣa*) periods, both of which are comprised of fifteen *tithi*–s or lunar days, though alternatively days of the whole month could also be used (first day to thirtieth day). During the Śaka and Kuṣāṇa rule of areas around Mathurā in the first centuries CE, the calendar integrated the northwestern custom of twenty-nine or thirty-day months into the Indian model of three seasons, each comprised of four months. This calendar was in use by Hindu, Jain and Buddhist traditions, hence it was probably implemented also by the civil administration.[40]

It is therefore important to bear in mind that multiple calendars and systems of astrology and astronomy were simultaneously present throughout ancient India. There was, in reality, never a single 'Indian calendar', although, as will be seen throughout this study, this was not always apparent to the Chinese, who were unaware of the complex history of Indian calendrical science, a subject which Buddhist literature seldom mentions. Similarly, there were multiple schools of astronomy active throughout the centuries. These disparate calendrical systems were introduced in an unsystematic fashion into China through Buddhist scriptures, monks proficient in astrology, and several professional Indian or Sino-Indian astronomers resident in China in the eighth century. Various calendrical systems are employed or mentioned in Indian Buddhist literature in Chinese translation. It was only in the mid-eighth century that an 'Indian calendar' was readily implemented in China that was easily convertible into the Chinese lunar calendar.

Another complicating factor within the Chinese context is that an additional source of astrological and astronomical knowledge was the Iranian cultural sphere, the astronomy and astrology of which are far less well documented compared to Indian materials. Tracing the history of Persian or specifically Sāsānian astrology is difficult because "virtually the entire corpus of astrological texts that once existed in Pahlavī has

[40] David Pingree, "A Note on the Calendars Used in Early Indian Inscriptions," *Journal of the American Oriental Society* 102, no. 2 (1982): 355–359. Falk and Bennett note, "On circumstantial grounds we might suppose that the Bactrian Greeks used the Seleucid calendar, though they certainly abandoned the Seleucid era." See Harry Falk and Chris Bennett, "Macedonian Intercalary Months and the Era of Azes," *Acta Orientalia* 70 (2009): 204.

long since disappeared."[41] It is also unfortunate that "virtually nothing is known of the astronomy and astrology of pre-Sāsānian Iran."[42] Translations of some Sāsānian works were made into Arabic, which is how they are now largely known,[43] though the present study will contribute some new knowledge based on what is contained in Chinese translations. Astrology was widely practiced in Sāsānian Iran, and Sāsānian rulers hosted Greek or Greco-Syrian and Indian scholars within their realms. Sāsānian astrology therefore included elements from both traditions. Iranian astrologers can also be credited with some innovations.[44] As will be discussed later in this study, the Sogdians, who were active in Tang China, seem to have primarily practiced astrology sourced from Iran. Persians active at the court in the late eighth century also contributed to the transmission of Iranian knowledge into China.

2.4. Chinese Astrology

China had its own indigenous traditions of astronomy and astrology. They initially developed independent of foreign influences. As Yu Xin notes, "Divination on the basis of the stars dominant at the time of birth was derived from foreign cultures."[45] Long before such foreign astrology was introduced into China, there already existed a concept of astral-terrestrial resonance, i.e., the belief that human events on earth are reflected or forecast above in the skies as omens. Great interest was paid to the movements of celestial bodies, which deeply influenced rulers in their city planning and arrangement of the political hierarchy. Archaeological evidence from the Xia, Shang and Zhou dynasties all demonstrate cities and structures built with conscious consideration of cardinal orientation along the north–south axis.[46] The earliest example of a city in China built according to a plan, rather than following the natural landscape, is Erlitou 二里頭 (2000–1300 BCE). Pankenier argues that it was built according to cosmological theory.[47] Later the capitals of the Qin and Han dynasties were constructed with special consideration given to astral symbolism derived from observation of the heavens, in which the emperor was associated or correlated with the celestial pole. State organization

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[41] David Pingree, *From Astral Omens to Astrology: From Babylon to Bīkāner* (Rome: Ist. Italiano per l'Africa e l'Oriente, 1997), 39.

[42] David Pingree, "Astronomy and Astrology in India and Iran," *ISIS* 54, no. 2 (1963): 240.

[43] For a recent discussion of scholarship on Iranian astrology, see Antonio Panaino, "Sasanian Astronomy and Astrology in the Contribution of David Pingree," in *Kayd: Studies in the History of Mathematics, Astronomy and Astrology in Memory of David Pingree*, eds. Gherardo Gnoli and Antonio Panaino (Rome: Instituto Italiano Per L'Africa E L'Oriente, 2009), 73–103.

[44] Ibid., 245.

[45] Yu Xin, "Personal Fate and the Planets: A Documentary and Iconographical Study of Astrological Divination at Dunhuang, Focusing on the 'Dhāraṇī Talisman for Offerings to Ketu and Mercury, Planetary Deity of the North," *Cahiers d'Extrême-Asie* 20 (2011): 164.

[46] Pankenier, *Astrology and Cosmology in Early China: Conforming Earth to Heaven*, 118.

[47] Ibid., 146.

was in effect partly based on a symbolic model derived from the stars.[48] This model was to be employed throughout the rest of imperial Chinese history and demonstrates a constant interest in coordinating earthly endeavors with Heaven.

In addition to material culture, this deep interest in suitably aligning human activities with Heaven and Earth is also found within spiritual and political contexts. One key example of this is appears in the appended commentary (繫辭) included in the *Yijing* 易經 (*Book of Changes*).[49] It indicates a belief in prognostication through observation of the heavens, as well as the conviction that one should follow cosmic principles that are visible throughout Heaven and Earth. Although the *Yijing* commentaries have been attributed traditionally to Confucius 孔子 (551–479 BCE), modern scholarship assigns them to a time no earlier than the Warring States period (475 BCE to 221 BCE).[50] The commentary contains the following passage:

> 易與天地準，故能彌綸天地之道。仰以觀於天文，俯以察於地理，是故知幽明之故。原始反終，故知死生之說。
> The *Yi* accords with Heaven and Earth, thus it can govern the ways of Heaven and Earth. He looks up to observe celestial patterns, and looks down to examine terrestrial principles; thus, he knows the causes behind darkness and light. He traces the beginning and end of things, and thus knows the explanation of death and life.[51]

This passage is alluding to the concept of astral-terrestrial resonance in which cycles and anomalies above reflect the inclinations of Heaven (*tian* 天) or foretell developments on earth.

The native Chinese model of astral omenology is called *fenye* 分野 or 'field allocation' astrology, which emerged in the mid to late Zhou period (1046–256 BCE). It evolved over time, but the basic concept assigns segments of the twelve Jupiter stations (十二星次)[52] and twenty-eight lunar stations along the equator to either the nine provinces of China or twelve states of the late Zhou. This early model excluded non-Chinese realms. The Yellow River corresponds to the Milky Way, while asterisms are connected to the corresponding territories. It was believed that such astral-terrestrial associations allow for prognostications about future fortunes based on the movements of the planets. It was also specifically employed in military operations. This system is not

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[48] Ibid., 317–336.

[49] Ibid., 149.

[50] David. R. Knechtges and Taiping Chang, eds., *Ancient and Early Medieval Chinese Literature: A Reference Guide, Part Three* (Leiden, Brill: 2014), 1882–1883.

[51] Guo Yu 郭彧, ed., *Nansongchu keben zhouyi zhushu* 南宋初刻本周易注疏 (Shanghai: Shanghai Guji Chubanshe, 2014), 618.

[52] The sidereal orbital period of Jupiter is 11.86 years. Its orbit may therefore be roughly divided into twelve sections through which Jupiter transits over approximately twelve years.

commonly mentioned in contemporary sources, which Pankenier attributes to its hermetic nature.[53]

As mentioned above, this model was never static, as it evolved over time, which happened alongside political and philosophical developments. Harper notes that "the mechanisms that led to the proliferation of masters and to their profuse philosophical discourse during the Warring States transformed the practice of astrology and other specialties as well."[54] Unearthed tombs from the Warring States period also demonstrate the popularity of astrology among elites, as they have yielded astrological texts, as well as lacquer items with astrological features.[55] This interest in astrology continued into the Han period and beyond.

The *Han shu* 漢書, a history of the early Han dynasty that was finished in 111 CE, provides the following associations between the twenty-eight lunar stations and Chinese territories in the chronicle detailing astral matters (*Tianwen zhi* 天文志):[56]

Table 2.2. Astro-Terrestrial Associations	
Lunar Stations	**Associated Territory**
Jiao 角, Kang 亢, Di 氐.	Yanzhou 沇州.
Fang 房, Xin 心.	Yuzhou 豫州.
Wei 尾, Ji 箕.	Youzhou 幽州.
Dou 鬥 (= Dou 斗).	Jiang 江, Hu 湖.
Qian Niu 牽牛, Wu Nü 婺女.	Yangzhou 揚州.
Xu 虛, Wei 危.	Qingzhou 青州.
Ying Shi 營室, Dong Bi 東壁.	Bingzhou 并州.
Kui 奎, Lou 婁, Wei 胃.	Xuzhou 徐州.
Mao 昴, Bi 畢.	Jizhou 冀州.
Zi Xi 觜觿, Shen 參.	Yizhou 益州.
Dong Jing 東井, Yu Gui 輿鬼.	Yongzhou 雍州.
Liu 柳, Qi Xing 七星, Zhang 張.	San He 三河.
Yi 翼, Zhen 軫.	Jingzhou 荊州.

The *Han shu* also provides a model of predictive astrology based on convergences. The following sample is instructive.

[53] Pankenier, *Astrology and Cosmology in Early China: Conforming Earth to Heaven*, 6–7.

[54] Donald Harper, "Warring States Natural Philosophy and Occult Thought," in *The Cambridge History of Ancient China From the Origins of Civilization to 221 B.C.*, ed. Michael Loews et al. (Cambridge: Cambridge University Press, 1999), 813.

[55] Ibid., 819–820.

[56] *Han shu*, Zhonghua Shuju edn., vol. 5, 1288.

> 歲，與填合則爲內亂，與辰合則爲變謀而更事，與熒惑合則爲饑，爲旱，與太白合則爲白衣之會，爲水。太白在南，歲在北，名曰牝牡，年谷大孰。太白在北，歲在南，年或有或亡。
>
> Jupiter: when it converges with Saturn, there will be domestic turmoil; when it converges with Mercury, there will be conspiracies, but it will pass (?); when it converges with Mars, there will be famine and drought; and when it converges with Venus, there will be gatherings of white-clad people [in mourning] and floods. When Venus is in the south and Jupiter is in the north, it is called the union of male and female beasts. The year's harvest of grains will be bountiful. When Venus is in the north and Jupiter is in the south, there will be some gains and some losses in that year.[57]

Unlike occidental astrology, this form of astral divination is chiefly concerned with the whole country, rather than with individuals. Detailed knowledge of astrology in this period was largely only available to elite men in the state with access to the relevant texts. It does appear, however, that the significance of astrologically significant events, such as convergences, was understood by commoners. There was a noteworthy discovery in 1995 from Niya 尼雅 in Xinjiang of a silk brocade armguard from the Eastern Han period (25–220) with embroidered words reading, "When the Five Planets appear in the east it benefits the Middle Kingdom" (五星出東方利中國). If such garments were worn in remote outposts of Chinese civilization, they were presumably also fashionable in the capital.[58] Moreover, Jupiter, as a "Planet of the Year" (having a sidereal revolution of approximately twelve years), was also given special attention, even being deified.[59]

It was in the same period that a state bureau of astronomy was established under the supervision of high ranking officials. The court astronomer or *taishi ling* 太史令 was a fairly prestigious position and well paid.[60] This office required knowledge of astrology. The *Hou Han shu* 後漢書, the history of the later Han dynasty, details his duties as follows:

> 掌天時，星曆。凡歲將終，奏新年曆。凡國祭祀，喪，娶之事，掌奏良日及時節禁忌。凡國有瑞應，災異，掌記之。
>
> He is charge of [monitoring] the sky and the calendar. He reports on the new year's calendar whenever the year is about to conclude. He is in charge of reporting good days and taboo times whenever there are national sacrifices,

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[57] *Han shu*, Zhonghua Shuju edn., vol. 5, 1285–1286.

[58] David W. Pankenier, "Seeing Stars in the Han Sky," *Early China* 25 (2000): 185.

[59] Hou Ching-Lang 侯錦郎, "The Chinese Belief in Balefal Stars," in *Facets of Taoism: Essays in Chinese Religions*, eds. Holmes Welch and Anna Siedel (New Haven: Yale University Press, 1979), 205–209.

[60] For a discussion of court positions and their pay grades see Han Bielenstein, *The Bureaucracy in Han Times* (New York, NY: Cambridge University Press, 1980), 131.

> funerals or weddings. He is in charge of recording auspicious responses [of Heaven], calamities and abnormalities whenever the country has them.[61]

This interest in the movements of stars continued into the Tang dynasty. It seems that there also emerged a belief in the astrological luck justifying the founding of the Tang. The Tang history has the following.

> 隋大業十三年六月，鎮星贏而旅於參。參，唐星也。李淳風曰：「鎮星主福，未當居而居，所宿國吉。」
> In the sixth lunar month of year 13 in reign era Daye [617] in the Sui, Saturn appeared early and stayed in the constellation Shen. Shen comprises the stars of Tang. Li Chunfeng[62] said, "Saturn presides over fortune. The country in which it lodges is lucky when it resides there before it is supposed to."[63]

This refers to the aforementioned 'field-allocation' astrology system, in which the original realm of Tang in the ancient Zhou period was associated with a specific region of the sky. Here Saturn is regarded as auspicious, which stands in contrast to occidental astrology, in which it is regarded as malefic. It apparently moved unexpectedly into the constellation Shen during the last days of the Sui before the rise of the Tang in 618. This was subsequently interpreted as auspicious, and an indication of Heaven's sanction of the recently established Tang dynasty. This was probably not immediately apparent at the time, but later Li Chunfeng, who was a professional astrologer, and spent his life serving the court, retrospectively interpreted the development in a way favorable to the new order, or so the dynastic history tells us.

As in Indian and Greco-Egyptian traditions of astral magic, China also developed its own astral pantheon, which has its origins in the earliest known years of Chinese civilization. During the Warring States period, the numerological calculations of the calendar were arranged alongside the organization of spirits or gods.[64] Much later in the Tang, the native astral deities of Tianhuang Dadi 天皇大帝, Beichen 北辰, Beidou 北斗, Tianyi 天一 and Taiyi 太一 were also part of the court rites for the winter solstice.[65] It is

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[61] *Houhan shu*, Zhonghua Shuju edn., vol. 12, 3572.

[62] Li Chunfeng (602–670) was an astronomer and mathematician of the early Tang. For his biography see the *Jiu Tang shu* (fasc. 79) and *Xin Tang shu* (fasc. 204).

[63] *Xin Tang shu*, Zhonghua Shuju edn., vol. 3, 851.

[64] Harper, "Warring States Natural Philosophy and Occult Thought," 851.

[65] *Xin Tang shu*, Zhonghua Shuju edn., vol. 2, 326. Tianhuang Dadi and his counterpart Ziwei Dadi 紫微大帝 "are the gods of the Sourthern and Northern Dipper; the former is in charge of fixing the date of birth of human beings, and the latter their date of death." Pregadio, ed., *The Encyclopedia of Taoism*, vol. 1, 382. Beichen is Polaris. Beidou is the stars of the Big Dipper. Tianyi and Taiyi are two of the nine palaces 九宮, i.e., spirits of nine constellations of the nine directions. In 744 (year 3 of Tianbao 天寶), their nine altars were built in the capital as follows. Southeast: Zhaoyao 招搖. East: Xuanyuan 軒轅.

important to note here that native Chinese astrological lore regarded the five visible planets as essences of the five elements (五行) rather than as sentient deities, though the Chinese perspective was later influenced by Indian and Iranian conceptions of the planets as gods starting in the eighth century, which we will discuss in chapters four and five.[66]

In the Sui dynasty (581–618), Xiao Ji 蕭吉 (c. 530–610)[67] was able to provide a comprehensive survey of the cosmic hierarchy and its main deities in his *Wuxing da yi* 五行大義 (*Great Meaning of the Five Elements*).[68] In Needham's words, it is the "most important medieval book on the five elements."[69] This work catalogs and explains various natural phenomena (in particular their relationships to *yin-yang* and the five elements), while also detailing classical Chinese metaphysics. Xiao Ji exhaustively details Chinese astrological lore.[70] This material is highly significant because it represents the native Chinese conception of astrology and the cosmic hierarchy as it was generally understood at the beginning of the Tang dynasty. Astral magic and astral deities based on native Chinese models were already ancient, and quite widely known in the Tang period. There were few conceptual issues with introducing new foreign elements.

These long-standing beliefs in astrology and a teleology intimately connected to celestial phenomena from early on in China encouraged the development of observational astronomy, as well as the mathematics necessary for advanced predictions. As will be documented below, advanced Indian astronomy was introduced and translated into Chinese in the eighth century, though it was never widely studied outside of a small community of specialists in the capital (see 4.6 below). It was also unncessary for the practice of astrology. Basic Chinese astronomy was sufficient to calculate the positions of the planets and draw up ephemerides. In short, although there were some foreign influences in Chinese astronomy, the core of it remained unaffected, whereas astrology in China, which employed the Chinese system, was deeply influenced by foreign systems of astrology that were transmitted from India and Iran. The details of these developments will be made clear throughout this study.

Astronomy and astrology were highly regarded throughout Chinese history, but they were also restricted fields of knowledge. The calender in particular was an important component of the state apparatus and its legitimacy. As Pankenier points out, one reason

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Northeast: Taiyin 太陰. South: Tianyi. Center: Tianfu 天符. North: Taiyi. Southwest: Sheti 攝提. West: Xianchi 咸池. Northwest: Qinglong 青龍. See *Jiu Tang shu*, Zhonghua Shuju edn., vol. 3, 929.

[66] The one exception to this is in the obscure native occult tradition in which the planets are identified as the sons of the Five Heavenly Emperors 五天帝. Their qualities are different from the Indian and Iranian traditions. *Wuxing dayi* 五行大義 (see below) in *Xuxiu siku quanshu* 續修四庫全書, vol. 1060 (Shanghai Guji Chubanshe, 2002), 249–250.

[67] His biography is in the *Sui shu* 隋書, fasc. 78. See Zhonghua Shuju edn., vol. 6, 1774–1775.

[68] For relevant studies see works of Nakamura Shōhachi 中村璋八 in the bibliography.

[69] Joseph Needham, *Science and Civilization in China Volume 2 History of Scientific Thought* (Cambridge: Cambridge University Press, 1956), 253.

[70] See *Xuxiu siku quanshu*, vol. 1060, 248–253.

why Chinese rulers after the fall of the Han sought to restrict astrology was the earlier chaos that erupted as a result of planetary portents that had been interpreted as unfavorable to the Han state.[71] This explains why later governments actively sought to control the study of related subjects, including astronomy. One early example is from the Western Jin dynasty (265–316). In 267, a decree recorded in the *Jin shu* 晉書, the history of the Jin compiled in 648, forbids the study of astral and atmospheric divination methods, as well as *Chenwei* 讖緯 works.[72] The Jin law code also included an article prohibiting private possession of books on astronomy and divination.[73] The *Jin shu* describes the historical restrictions on astronomical instruments:

> 此則儀象之設，其來遠矣。綿代相傳，史官禁密，學者不睹 …
> Astronomical instruments have therefore been employed for a long time. They have been transmitted to succeeding dynasties. Court recorders have kept them guarded and secret. Scholars do not examine them. …[74]

Astronomy and divination were permitted fields of study for specific employees of the state, but otherwise unauthorized persons were not permitted access to such knowledge, since it had the potential to be employed against the state. These restrictions carried on into the Tang period. The Tang legal code was first compiled in 624, with subsequent revisions in 627 and 637 before including a commentary in 653, which is the *Tang lü shuyi* 唐律疏議 (*Commentary on Tang Law Codes*). The received text we presently have is from 737.[75] The code provides a penal code based mostly on earlier legal codes and the Chinese classics, altogether comprising 502 articles. It had been preceded by an earlier code published in 564 under the Northern Zhou (557–581), which had been based on codes such as that of the Western Jin (268).[76] Article #110 details the proscription against private possession of books and instruments related to astronomy with the following commentary.

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[71] David Pankenier, "Astrological Origins of Chinese Dynastic Ideology," *Vistas in Astronomy* 39 (1995): 511.

[72] 禁星氣讖緯之學. Cited by Susan Whitfield, "Under the Censor's Eye: Printed Almanacs and Censorship in Ninth-Century China," *The British Library Journal* 24 (1998): 10. *Chen* refers to divination manuals while *wei* refers to esoteric commentaries on the Chinese classics. Often the two are cited together to refer to a specific genre of occult literature.

[73] Ibid., 11.

[74] *Jin shu*, Zhonghua Shuju edn., vol. 2, 284.

[75] Anthony J. Barbieri-Low and Robin D.S. Yates, *Law, State, and Society in Early Imperial China: Volume I* (Leiden: Brill, 2015), 233. It is noted that "a close analysis reveals that the Han and Qin laws were clearly ancestral to the Tang laws, both in their general principles and in dozens of concrete instances, despite the intervening nine centuries."

[76] Jacques Gernet, *A History of Chinese Civilization* (Cambridge: Cambridge University Press, 1996), 244–245.

諸玄象器物，天文，圖書，讖書，兵書，七曜曆，太一，雷公式，私家不得有，違者徒二年。私習天文者亦同。其緯候及論語讖，不在禁限。疏議曰：玄象者，玄，天也，謂象天爲器具，以經星之文及日月所行之道，轉之以觀時變。易曰：「玄象著明，莫大於日月。故天垂象，聖人則之。」尚書云：「在璇璣玉衡，以齊七政。」天文者，史記天官書云天文，日月，五星，二十八宿等，故易曰：「仰則觀於天文。」圖書者，「河出圖，洛出書」是也。讖書者，先代聖賢所記未來徵祥之書。兵書，謂太公六韜、黃石公三略之類。七曜曆，謂日，月，五星之曆。太一，雷公式者，並是式名，以占吉凶者。私家皆不得有，違者，徒二年。若將傳用，言涉不順者，自從「造袄言」之法。「私習天文者」，謂非自有書，轉相習學者，亦得二年徒坐。
Private households may not possess celestial imaging instruments, astronomical charts, divination manuals (*tushu* and *chenshu*), military manuals, ephemerides for the seven planets, and divination plates for Taiyi and Leigong [the god of thunder]. Offenders will be subject to penal servitude for a period of two years, and also likewise for those who secretly study astronomy. *Wei*, *Hou* and *Lunyu chen* are not within the limitations of the prohibition. Commentary: 'Astronomical' (*xuan xiang*): *xuan* is Heaven; that is to say, to image Heaven (*xiang tian*), one makes a device to trace the patterns of stars, and the paths of the Sun and the Moon, rotating it to observe time's passage. The *Yijing* states, "Of astronomical bodies bright and clear, there are none greater than the Sun and Moon; thus, heaven suspends figures, and the sages employs them."[77] The *Shang shu* states, "He examined the Jade Pivot and Beam to calibrate [the movements of] the Seven Directors [planets]."[78] 'Astronomical charts' – the *Tianguan shu* in the *Shiji* speaks of astronomical charts, the Sun, the Moon, five planets and twenty-eight constellations. Hence the *Yijing* states, "He looks up and observes celestial patterns."[79] '*Tushu*' refers to "the diagram that emerged from the Yellow River, and writings coming forth from the Luo River". *Chenshu* are texts concerning future prognostication recorded by sages of past ages. 'Military manuals' are works such as the *Six Secret Quivers of Taigong* and the *Three Strategies of Huangshi Gong*. 'Ephemerides for the seven planets' are ephemerides for the Sun, Moon and five planets. 'Taiyi' and 'Leigong' are names of methods to divine fortune and misfortune. No private household may possess them. Offenders are subject to penal servitude of two years. In the case of them being passed on, it constitutes involvement and non-compliance, which follows the law regarding fabricating bogus stories. 'Secretly studying astronomy' refers

[77] This is abbreviated text based on content found in *Xici shang* 繫辭上 11.
[78] *Yu shu* 虞書, *Shun dian* 舜典 3.
[79] *Xici shang* 繫辭上 4.

to when the texts are not personally owned, and the [knowledge] is conveyed for study; they will also be subject to two years penal servitude.[80]

It does not appear that the authors of the code possessed sophisticated knowledge of astronomy. Despite the existence of laws against the private study of astronomy, as Whitfield points out, there were, in fact, popular calendars produced in the later period of the Tang dynasty, yet this only happened after the An Lushan rebellion (755–763), when the authority and reach of the central government were severely diminished. She further points out "it was also at this time that there was another threat to the state's attempts to monopolize any information it deemed potentially subversive: the development of printing."[81] The Chinese state in the ninth century was, however, still aware of this problem. In 841 the state forbid court astronomers from associating with people outside that bureau.

> 開成五年十二月，敕：「司天臺占候災祥，理宜秘密，如聞近日監司官吏及所由等，多與朝官並雜色人交遊，既乖慎守，須明制約。自今已後，監司官吏不得更與朝官及諸色人等交通往來，委禦史台察訪。」
> In the twelfth lunar month of year 5 in reign era Kaicheng [841],[82] it was ordered by imperial decree: "The Bureau of Astronomy should maintain secrecy with respect to its divination of favorable and unfavorable omens, as it has been heard in recent days that there has been much intercourse between bureau officials and their subordinates with court officials and various commoners. As it constitutes a breach of security, there must be clear understanding of the restrictions. From now on officials [of the Bureau of Astronomy] must not intermingle with court officials and commoners. The imperial censors will be entrusted to investigate [any violations]."[83]

2.5. Astrology in Early Buddhism and Brahmanism

Having outlined the relevant history of astrology, we now turn to the relationship between astrology and Buddhism, first in India and thereafter in China.

Some members of the early sangha, so far as the extant literature indicates, prohibited astrology on the grounds that it was an inappropriate for a *śramaṇa* to practice

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[80] *Tang lü shuyi* 唐律疏議, Taiwan Shangwu Yinshug Guan edn., 1968, vol. 4, 82. I must thank David Pankenier for helping me to translate this passage. Johnson's translation differs from mine. He mistranslates some of the technical terms, for instance, *qiyao li* 七曜曆 as "books on the seven days". China in this period did not observe the seven-day week. See Wallace Johnson, *The T'ang Code: Volume II, Specific Articles* (Princeton: Princeton University Press, 1997), 78–79.

[81] Whitfield, "Under the Censor's Eye," 13.

[82] Kaicheng 5 corresponds to the year 840, but lunar 12/1 fell on January 1st, 841.

[83] *Jiu Tang shu*, Zhonghua Shuju edn., vol. 4, 1336.

divination as a livelihood, though the validity of astrology and its underlying belief that the auspiciousness of a time is determined by favorable arrangements of celestial bodies were not refuted. As explained above, astrology in India must be understood within the context of cultural exchanges between the Indian subcontinent and civilizations to the west. Pingree states that the "influence of Babylonian astronomy on Indian thought is already perceptible in Sanskrit texts of the first half of the last millennium B.C." These influences are further evident in the Pāli canon. As Pingree points out, in the *Brahmajāla-sutta* in the Dīghanikāya, the Buddha is recorded as castigating *śramaṇa*–s and *brāhmaṇa*–s who engage in certain activities for offerings of food, which include sacrifices, apotropaic rites and divination. Pingree states, "Almost every type of omen mentioned by the Buddha is found in both the earlier cuneiform literature and in the later Sanskrit texts; and the terrestrial omens are numerated in an order – houses, ghosts, snakes, poisons, scorpions, mice, vultures, crows, and quadrupeds – that corresponds almost completely with the order of the Tablets of *Šumma ālu*."[84] The Buddha further is made to list omens related to eclipses, stars (*nakṣatra*–s), meteors and so forth.[85] The parallel passage in the Chinese Dīrgha-Āgama 長阿含經 (T 1), translated into Chinese in 413, states that some *śramaṇa*–s and *brāhmaṇa*–s maintain a wicked livelihood through reciting books on astronomy/astrology (天文書).[86] This indicates an awareness of astrological works in circulation by the compilers of this recension. This also suggests that some *śramaṇa*–s actually studied such works in light of the prohibitions against it. Johannes Bronkhorst, on the other hand, believes that Buddhists did not participate in the development of *jyotiḥśāstra* (a field including astronomy, astrology and mathematics). He suggests that the early Buddhist sangha frowned upon such an art so connected with mundane matters through which one could earn a living.[87] This conclusion is problematic in light of other early texts, to be discussed shortly, that teach astrology or presuppose knowledge of astrology or the *nakṣatra* calendar. The evidence actually indicates that some (but clearly not all) Buddhists from early on were at ease with astrology. The condemnation of monks who practice astrology seems to stem from only one side of the discussion on the acceptability of astrology.

Similar sentiments to those found in the *Brahmajāla-sutta* are also seen in *dharmaśāstra* works from Brahmanical traditions. Contemporary Brahmanical culture had a low opinion of astrologers. As Gansten explains, "Before the acculturation of horoscopic astrology proper, introduced from the Greek speaking world in the first centuries of the Common Era, practitioners of astral divination were described in not very

[84] The *Šumma ālu* is a collection of omens. It was standardized around the middle of the seventh century BCE. See Sally M. Moren, "The Omen Series 'Summa Alu': A Preliminary Investigation," PhD diss. University of Pennsylvania (1978), 4.

[85] Pingree, *From Astral Omens to Astrology: From Babylon to Bīkāner*, 32–33.

[86] T 1, 1: 84b18-c9.

[87] Johannes Bronkhorst, *Buddhism in the Shadow of Brahmanism* (Leiden: Brill, 2011), 120.

flattering terms by the authors of religious codes of law."[88] Gansten points out that the *Manusmṛti* (3.162) and *Baudhāyanadharma-sūtra* (2.2.15–16) both unfavorably regard astrologers. The former bans upper-caste astrologers from attending sacrifices. As in some Buddhist literature, divination itself was *not* regarded as invalid, but merely as lowly and base within Brahmanical society.

Following the increasing sophistication of astrology in the first few centuries CE, astrologers enjoyed growing appreciation and prestige, so much so that in the sixth century a figure like Varāhamihira in his *Bṛhatsaṃhitā* (2.8) could state, "Just as the night does not shine without a lamp, and the sky without the Sun, so will a king have pitfalls like a blind person, if he has no astrologer to guide him."[89] The shift in which astrology was increasingly seen in a positive light is reflected in Buddhist literature.

2.6. Astrology in Sūtra and Vinaya Literature

The earliest example of astrology being explained in Buddhist literature is the *Śārdūlakarṇāvadāna*, now included in the Divyāvadāna collection.[90] As to its dating, Pingree suggests that it "was probably written in the first century A.D. and is described in detail in the *Gargasaṃhitā* and in the sixth-century *Bṛhatsaṃhitā* of Varāhamihira."[91] This dating is problematic since Pingree seems to have based his opinion on the traditionally held date of a certain Chinese translation, the *Mātaṅga-sūtra* 摩登伽經 (T 1300), which is a version of the *Śārdūlakarṇāvadāna* attributed to Lüyan 律炎 (fl. 224) and Zhi Qian 支謙 (fl. 223–253). The *Kaiyuan shijiao lu* 開元釋教錄 (T 2154; *Catalog of Buddhist Teachings in the Kaiyuan Era*), a catalog of Chinese Buddhist texts by Zhisheng 智昇 (669–740) finished in 730, states that Lüyan translated four sūtras including the *Mātaṅga-sūtra* in Huanglong 黃龍 2 (230 CE) under Sun Quan 孫權 (r. 222–252) in Yangdu 揚都.[92] Hayashiya, however, points out that the style of translation clearly postdates the time of Kumārajīva (344–413). He suggests a date sometime after the late fifth century.[93] His argument is supported by an entry in the *Da Tang neidian lu* 大唐內典錄 (T 2149; *Catalog of Buddhist Texts of the Great Tang*), a catalog from 664

[88] Martin Gansten, "Astrologers," in *Brill's Encyclopedia of Hinduism*, vol. 3, ed. Knut A. Jacobsen, Helene Basu, Angelika Malinar, Vasudha Narayanan (Leiden: Brill, 2011), 217.

[89] Panditbhushan V. Subrahmanya Shastri and Vidwan M. Ramkrishna Bhat, *Varahamihira's Brihat Samhita with an English Translation and Notes* (Bangalore: V.B. Soobbiah and Sons, 1946), 18.

[90] For printed Sanskrit editions see Cowell and Neil (1886), Mukhopadhyaya (1954) and Vaidya (1959). For Sanskrit manuscripts see Bodleian Library 1091(1-8)-MS. Sansk.e.23(P), and British Library Or.15010/6, 20. For Tibetan translation see D 358, Q 1027.

[91] Pingree, "Astronomy and Astrology in India and Iran," 233.

[92] T 2154, 55: 487c20-24.

[93] Hayashiya Tomojirō 林屋友次郎, *Iyaku kyōrui no kenkyū* 異譯經類の研究 (Tōkyō: Tōyō Bunko, 1945), 541.

by Daoxuan 道宣 (596–667), in which Guṇabhadra 求那跋陀羅 (394–468) of the Liu-Song period (420–479) is cited as the translator.[94]

The oldest extant version of the *Śārdūlakarṇāvadāna* is found in a fragmentary Central Asian manuscript now held at the St. Petersburg Branch of the Institute of Oriental Manuscripts of the Russian Academy of Sciences (SI 1942) dating from around the fourth century.[95] The earliest Chinese translation by Dharmarakṣa 竺法護, the *Shetoujian Taizi ershiba xiu jing* 舍頭諫太子二十八宿經 (T 1301; *Sūtra of Prince Śārdūlakarṇa and the Twenty-eight Nakṣatras*), is closer to the Central Asian manuscript when compared to the *Mātaṅga-sūtra*.[96] Dharmarakṣa's text is said to have been translated between 307–313 (the Yongjia 永嘉 era).[97] In light of these points, a dating to the third or possibly second century for the *Śārdūlakarṇāvadāna* is more probable than Pingree's date of the first century. As to where it was composed, in light of the references to the measurements of Magadha such as the *māgadha-yojana* and *māgadhaka-prastha* (摩伽陀鉢悉他),[98] it was likely composed in Magadha.

The initial story in the sūtra relates how Ānanda was magically summoned against his will into a home by the mother of a *caṇḍāla* girl. The girl found him attractive and sought to marry him. The Buddha freed him with the use of a mantra. The girl later became a bhikṣuṇī and sees the error of her ways. The rest of the text explaining astrology, measurements and other mundane matters is related by a *caṇḍāla* King Triśaṅku, and appears to be a divination manual appended onto the sūtra.

One aim of providing such information on divination seems to have been to demonstrate that a member of the *caṇḍāla* caste could be equally as learned as a *brāhmaṇa*, thereby discrediting the claims to religious authority held by Brahmins. Knowledge of astrology was a form of social capital, and the author of the text, with a clear anti-Vedic agenda, evidently sought to advance Buddhist interests by spreading this knowledge in the form of a sūtra. Neither the Buddha, nor any of his disciples, is responsible for providing such information, which perhaps indicates a sentiment that sangha members are not to teach such mundane things. Nevertheless, the validity and value of astrological knowledge is affirmed in this text.

There were those in the Buddhist community in India, however, who objected to both the practice and validity of astrology. Such arguments are given in the

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[94] T 2149, 55: 298a18-20.

[95] Miyazaki Tensho and others, "The *Śārdūlakarṇāvadāna* from Central Asia," in *Buddhist Manuscripts from Central Asia The St. Petersburg Sanskrit Fragments*, vol. 1, ed. Seishi Karashima and Margarita I. Vorobyova-Desyatovskaya (Tōkyō: The Institute of Oriental Manuscripts of the Russian Academy of Sciences and The International Research Institute for Advanced Buddhology Soka University, 2015), 2.

[96] Ibid., 2.

[97] T 2149, 55: 298a16-17.

[98] T 1301, 21: 416c13. T 1300, 21: 409b1. For the Sanskrit see Sujitkumar Mukhopadhyaya, ed., *The Śārdūlakarṇāvadāna* (Viśvabharati, 1954), 58–59.

Saddharmasmṛtyupasthāna-sūtra 正法念處經 (T 721), which was translated into Chinese by Gautama Prajñāruci 539.[99] Daniel M. Stuart proposes that this sūtra was compiled over many years between 150–400 CE.[100] With respect to the sectarian affiliation of this text, Warder suggests it "was apparently the Mūlasarvāstivādins who composed the *Saddharmasmṛtyupasthāna Sūtra*".[101] Stuart, however, contests this, stating, "As far as the philosophical background of the text is concerned, the authors/compilers/redactors were no doubt learned in some species of Sarvāstivāda."[102]

In quite strong language this sūtra condemns the practice of astrology by bhikṣus. It lists it among thirteen other practices, which include painting, singing, closely associating with kings and residing with evil people, warning that such practices are a hindrance to meditation and recitation. Such hindrances result in rebirth in the hell, *preta* and animal realms. Such individuals are even abandoned by their protective deities.[103]

The refutation of astrology in the *Saddharmasmṛtyupasthāna-sūtra* was likely a reaction to bhikṣus practicing what was an increasingly popular art of astrology and, to some at least, perhaps a lucrative profession. The sūtra attempts to creatively convince the bhikṣu to turn away from mundane star gazing.

> 有三大曜，謂病老死，此爲最大，常住世間。彼惡沙門，不思惟此而更思惟餘世間曜。彼人愚癡，無有聞慧，思惟世間二十八宿。如是思惟，則有罪過。而不思惟彼出世間二十八宿。若能思惟實觀察者，入涅槃城。二十八者，所謂五陰及五取陰十八界等。思惟此者，到於涅槃。以如實觀，離欲持戒，故得涅槃。數星思惟則不能得。
>
> There are three great luminaries [*graha*, i.e., planets], called illness, old age and death. These are the greatest and perpetually present in the world. That wicked *śramaṇa* does not contemplate this, but further contemplates other worldly luminaries. That person is foolish, not having wisdom gained through hearing [**śrutamayī prajñā*?], contemplating the twenty-eight worldly *nakṣatra*–s [constellations]. One is at fault to contemplate like this and not contemplate the twenty-eight transcendental *nakṣatra*–s. One will enter the city of *nirvāṇa* should one be able to contemplate and truly observe them. The twenty-eight are the five *skandha*–s, five *upādāna-skandha*–s and eighteen *dhātu*–s. One who contemplates these will arrive at *nirvāṇa*. When there is observation of things as they truly are, detachment from desire and the upholding of precepts, *nirvāṇa* is consequently

[99] These arguments are in fasc. 49 of the Chinese translation. Astrology is counted as the fifth unacceptable practice.

[100] Daniel M. Stuart, *A Less Traveled Path: Saddharmasmṛtyupasthānasūtra Chapter 2*, vol. I (Austrian Academy of Sciences and China Tibetology Research Center, 2015), 43.

[101] A.K. Warder, *Indian Buddhism* (Delhi: Motilal Banarsidass, 2004), 394–395.

[102] Stuart, *A Less Traveled Path*, vol. I, 199.

[103] T 721, 17: 284c7–17.

attained. It cannot be attained through the contemplation of counting stars [i.e., astrology].[104]

The attack on astrology also includes refutation of its efficacy through various arguments. For instance, the text asks why the lives of people differ, even when they are born under the same stars. It is pointed out that humans, animals and *preta*–s might be born under the same star, yet they also are not identical. It is argued that it is through the force of karma, rather than the force of the stars, that there are differences among living beings.[105]

The sūtra further discusses the untenability of such concepts as astral influence (the belief that stars directly influence life events), a concept we will see conversely affirmed in later literature.

> 又復彼人，數星思惟，而實不善，亦不寂靜。所謂彼星，力不常定，更有妨故，有勝劣故。此星復爲勝星所覆，彼星異時而復更爲異星所覆，是故當知數星思惟，義不相應。若其有人，數星思惟，謂星因緣，有苦有樂，非是自身有苦有樂，彼星更有餘星所覆，云何而能與他苦樂。故知由業而得。如是善不善果，非星能與。… 如日與月，羅睺蝕之，則得苦惱。若此日月，自不能救，何能救他。
>
> Furthermore, that man is truly non-virtuous to contemplate the stars, nor will he attain peace. As to that star, its power is not constantly fixed, as it is also hindered and has superior and inferior capacities. This star is again covered by a superior star. That star at a different time is again covered by a different star. Thus it should be understood that contemplation of the stars [i.e., astrology] is untenable. If there is someone who contemplates the stars, thinking that it is due to the stars that there are sufferings and ease, and that it is not from oneself that there are sufferings and ease, then how is it that when those stars are covered by other stars, that they can impart sufferings and ease to others? Thus, it is understood that [sufferings and ease] come about because of karma. It is not the stars which can impart the fruits of virtue and non-virtue like this. … When the Sun and the Moon are devoured by Rāhu, they experience anguish. If the Sun and the Moon cannot save themselves [from being devoured by eclipses], how could they save others?[106]

The *Saddharmasmṛtyupasthāna-sūtra* indicates that in addition to undesirable artist *śramaṇa*–s, there were also a sufficient number of monks who practiced astrology to merit such extensive criticism and condemnation. This is an interesting example in Indian Buddhist literature of astrology being systematically attacked. It seems, however, that

[104] T 721, 17: 290b12-19.
[105] T 721, 17: 290a6-29.
[106] T 17, 721: 290b1-10.

such views were actually in the minority, because other examples of a passive belief in astrology are to be found in earlier literature, such as vinaya texts.

There is an account in the *Dharmaguptaka-vinaya* 四分律 (T 1428)[107] in which the group of 'six bhikṣuṇīs' tells laypeople that the constellations and stars are favorable, and that they should engage in various activities such as building shelters and shaving a child's head. The Buddha scolds them for this, but states that they should tell laypeople that when the stars are favorable they should visit monasteries, make offerings to the sangha and engage in fasting.[108] This presupposes that the bhikṣuṇīs have knowledge of astrology. The concern in this incident, however, is that they encourage mundane activities upon having determined by the stars that the time is auspicious. The Buddha instructs that they should instead direct laypeople towards religious activities on such days.

As another example, the *Mahīśāsaka-vinaya* 五分律 (T 1421)[109] states that the *āraṇyaka* bhikṣu (a solitary recluse) should fully understand the features of the four directions, *nakṣatra*–s, seasons and dates, though these are for practical purposes. Knowing the four directions helps when escaping from bandits. Knowing the *nakṣatra*–s helps one know when it is time to sleep and move on the road. One will know the way back by observing the stars. Knowing the seasons and dates helps determine the times for *poṣadha* and retreat.[110] Although familiarity with *nakṣatra*–s assumes some traditional astronomical knowledge, there is nothing concerning astrology here. The same text, however, records an account in which bhikṣus were excessively washing, much to the disdain of the laypeople who condemned them for not following proper *śramaṇa* etiquette. At the time, a diviner of King Bimbisāra informed his lord that an inauspicious star (不吉星) had appeared, and that the king ought to go to the waters of a certain spring and wash to expel the evil. If not, the country and his life would be at risk. The king ordered his retainers to prepare the spring, but they reported that the bhikṣus were washing. The king told his retainers to wait for them to finish, but this went on for a day and night. The Brahmins warned the king that the star was hanging above him and that he had to go, otherwise the ritual washing would prove ineffective. The king went to the spring and washed downstream instead. His ministers complained about these bhikṣus' poor practice as *śramaṇa*–s. The elder bhikṣus reported this to the Buddha, who then established a rule against excessive bathing.[111] Here there is no repudiation of the idea itself of a star foretelling catastrophe. The appearance of such an inauspicious star is taken quite seriously. The point of this story is to provide a background story for the rule

[107] Translated by Buddhayaśas (fl. early 5th cent.) between 410–412. See Shayne Clarke, "Vinayas," in *Brill's Encyclopedia of Buddhism*, vol. I, ed. Jonathan A. Silk (Leiden: Brill, 2015), 68–69.

[108] T 1428, 22: 775a15–b26.

[109] Translated between 423–424 by a team led by Buddhajīva 佛陀什 (fl. early 5th cent.). See Clarke, "Vinayas," 69.

[110] T 1421, 22: 180a3–24.

[111] T 1421, 22: 65c29-66a18.

against excessive bathing, but it indirectly indicates a strong belief in astrological determinism.

This passive belief in astrology is also an underlying element in the calendar of the sangha. The Buddhist sangha believed in astrological hemerology based on the *pakṣa* cycle. This is expressly stated in the *Mahāsāṃghika-vinaya* 摩訶僧祇律 (T 1425), which was translated between 416–418.[112]

> 爾時，尊者阿難共行弟子，欲行摩那埵。白佛言：世尊，我共行弟子，欲詣聚落中小住處行摩那埵，時是十四日。佛語阿難：此十四日，星宿隨順，時隨順，眾隨順。應作布薩竟然後去。
> At that time Venerable Ānanda was travelling together with disciples and wanted to perform *mānatva* [i.e., repentance]. He said to the Buddha, "World Honored One, I am travelling with disciples and wish to go to the village to perform *mānatva* in a small dwelling. The time is the 14th day." The Buddha said to Ānanda, "This 14th day agrees with the *nakṣatra*–s, time and assembly[113] – you should leave after performing *poṣadha*.[114]

It is notable that the Buddha is the one stating the 14th day is in agreement with the *nakṣatra*–s. From the emic Buddhist perspective, this is an indirect affirmation of astrological determinism by the figure of the Buddha himself. The underlying belief is that certain days of the lunar cycle are inherently more auspicious and suitable for certain activities than others. The *poṣadha* schedule according to lunar phases is furthermore linked with a belief in deities descending into the world on certain days of the cycle. This belief is expressly stated even in later Abhidharma literature such as the **Abhidharma-mahāvibhāṣā* (T 1545) as follows:

> 問：何故唯說三十三天。答：以彼諸天數數雲集，論善惡事，故偏說之。謂彼諸天於白黑月，每常八日，若十四日，若十五日，集善法堂，稱量世間善

[112] Faxian 法顯 in his travelogue to India in the early fifth century records that "this Mahāsāṃghika Vinaya was practiced by the earliest Great Assembly when the Buddha was in the world. They transmitted that version at Jetavana-vihāra." 是摩訶僧祇眾律，佛在世時最初大眾所行也。於祇洹精舍傳其本. T 2085, 51: 864b19-21. One traditional account suggests that the initial schism between the future Mahāsāṃghikas and Sthaviras was due to the latter wanting to add additional rules to the vinaya. The extant recensions of the *Mahāsāṃghika-vinaya* have the fewest number of precepts compared to those of the Sthaviravāda branch. For details see Janice J. Nattier and Charles S. Prebish, "Mahāsāṃghika Origins: The Beginnings of Buddhist Sectarianism," *History of Religions* 16, no. 3 (1977): 268. See also Clarke, "Vinayas," 62, 64. This stated belief in auspicious days is therefore quite early.

[113] The *nakṣatra* in which the Moon is lodged ought to be auspicious. It is uncertain what 'assembly' (*zhong* 眾) here refers to specifically.

[114] T 1425, 22: 447a15-19.

> 惡多少。復次，三十三天常共伺察造善惡者，見造善者，便擁護之。見造惡者，即共嫌毀。是故偏說。
> Question: Why only speak of thirty-three devas? Answer: The devas frequently gather to debate good deeds and misdeeds, hence the partial discussion of them. The devas during the waxing and waning moons on every eighth, fourteenth and fifteenth always gather in the 'Hall of Sudharmā'[115] to weigh the volume of good deeds and misdeeds in the world. Furthermore, the thirty-three devas constantly together to inspect the makers of good deeds and misdeeds. Seeing one who has done good deeds, they then protect them. Seeing one who has done misdeeds, they then resent them. Hence the partial discussion of them.[116]

In this case, the auspiciousness of these days appears to be determined by these deities. Although this is not astrological determinism, it is a system of hemerology based on lunar phases, and moreover justified by a belief in deities connected to this cycle. This is significant because it establishes a belief structure atop which both Indian and foreign astrologies, as well as astral deities, could be regarded as viable and valid. The *Mahāsāṃghika-vinaya* interestingly already describes the *nakṣatra*–s as protective deities long before the emergence of Tantra, in which such deities play a more prominent role (see discussion below). It is noteworthy that a major Śrāvakayāna text teaches this, as it indicates that such a belief was already existent among some Buddhist communities.

> 東方有七星。常護世間，令得如願。一名吉利帝，二名路呵尼，三名僧陀那，四名分婆唎，五名弗施，六名婆羅那，七名阿舍利。是名七星。在東方常護世間。今當護汝，令得安隱，得利早還。一切星宿皆當護汝。…
> In the eastern direction are seven stars. They constantly protect the world and let [people] gain what they desire. The first is called Kṛttikā. The second is called Rohiṇī. The third is called *Sengtuona. The fourth is called Punarvasū. The fifth is called Puṣya. The sixth is called *Poluona. The seventh is called Aślesā. These are called the seven stars. In the eastern direction they constantly protect the world. Now they will protect you and let you attain ease and benefit, and early return. All *nakṣatra*–s will protect you. … [117]

[115] Located in the city of Indra (善見城). See T 24, 01: 341b7-8.

[116] T 1545, 27: 211c10-15.

[117] T 1425, 22: 500c28-501a3. This appears to be an evocation of stellar and directional deities. The ordering, transliteration and translation of the *nakṣatr*a names are unusual. It commences with Kṛttikā, which is the older starting point for listing the *nakṣatra*-s. In the first half of the first millennium it became customary to list them from Aśvinī, a change which reflects axial precession. Faxian retrieved the manuscript of this text in Pāṭaliputra 巴連弗邑, which likely means it reflects Magadha Buddhism and its conventions and terms. See T 2085, 51: 864b16-19.

Other vinaya texts demonstrate a belief in astrology and call for it to be observed. For example, the Mūlasarvāstivāda *Vinayabhaṅga* permits a monk to dig in the earth under certain conditions, one of which is that the astrological conjunctions are correct.[118] Again, here it assumes that the monk would first of all have studied astrology, and moreover that he is expected to follow its conventions.

2.7. Astrology in Mahāyāna and Tantra

In contrast to Śrāvakayāna traditions, Mahāyāna literature fully endorses the practice of astrology and calendrical science. The later Tantric texts subsequently integrate both into their ideological and practical frameworks.

A prominent example of Mahāyāna literture, the *Daśabhūmika-sūtra* 十住經 (T 286), translated into Chinese by Kumārajīva, states that the bodhisattva engages in not only worldly learning and medicine for the benefit of beings, but also practices divination based on the Sun, Moon, five planets, twenty-eight *nakṣatra*–s and earthquakes,[119] which is not unlike what is described in the *Śārdūlakarṇāvadāna*. Mahāyāna authors seem to have recognized the value of astrological knowledge, which was losing its earlier negative associations in India, as demonstrated by the remarks of Varāhamihira cited above. This potentially placed someone with such knowledge in an advantageous position, especially within an aristrocratic society in which such skills would have been appreciated.

The study of calendrical science was part of a standard layman's education at least by the seventh century. The account of India by Xuanzang 玄奘 (602–664) confirms this. He states that from the age of seven, youths gradually receive training in the great treatises related to the five sciences, the second of which expressly includes calendrical calculations.[120] This would have also meant that educated monks presumably would have almost all had some background training in calendrical science, which was likely closely tied to astrological concerns.

During the seventh century, the emerging tradition of Buddhist Tantra integrated astrological lore into their practice, most notably the twelve zodiac signs from Hellenistic astrology. In addition, they adopted the Hellenistic custom of the seven-day week. This is already clear in the *Vairocanābhisaṃbodhi* (**Mahāvairocana-sūtra* 大日經; T 848) from the mid-seventh century, and its accompanying commentary in Chinese from the 720s by Śubhakarasiṃha and Yixing. This will be discussed below in detail (4.2), but here it is

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[118] See Jonathan A. Silk, *Managing Monks Administrators and Administrative Roles in Indian Buddhist Monasticism* (Oxford: Oxford University Press, 2008), 82.

[119]「是人利益眾生故，世間所有經書，伎藝文章，算數，名性經書，治病醫方 … 日，月，五星，二十八宿，占相吉凶，地動夢書怪相 …」 T 286, 10: 512c1-8. See also the *Avataṃsaka-sūtra* 華嚴經 (T 278) translated by Buddhabhadra 佛馱跋陀羅 (359–429) in 422. T 278, 09: 556c1-10.

[120] 二工巧明，伎術機關，陰陽曆數. T 2087, 51: 876c18-19.

relevant to point out that the explanation of the *maṇḍala* mentions the deities of the twenty-seven *nakṣatra*–s and twelve zodiac signs as the retinue of the Moon deity.[121] The commentary in defining an auspicious day also mentions the twelve zodiac signs along the ecliptic, without providing any details. It also describes the seven-day week based on planets presiding over each day, and each day is regarded as either positive or negative. Again, it fails to provide details, and instead just states "as it is described in the Indian calendar."[122] This is significant because it demonstrates how a highly educated Indian monk, such as Śubhakarasiṃha, born and raised in the seventh century, when the emergence of Tantra was underway,[123] felt it necessary to mention two major features of Hellenistic astrology (the zodiac signs and seven day week) that had become a major part of the Buddhist tradition and Indian thinking in general.[124] Śubhakarasiṃha was from Magadha and once resided at Nālanda.[125] His recorded explanations therefore likely reflect Buddhism in Magadha in the late seventh century, which suggests a wide appreciation for an astrological schedule incorporating what we would identify as Hellenistic elements.[126] That this additional system of foreign hemerology was integrated into early Tantra alongside the ancient *nakṣatra* calendar suggests a firm belief in a kind of calendrical determinism, in which a day's auspicious or inauspicious quality is determined by numerous astrological factors. This demonstrates that by the seventh century, astrology was fully embraced and incorporated into the Buddhist traditions of Magadha. We should, however, note that the emphasis on astrological considerations appears to have been reconsidered later on in Tantric Buddhism. Christian K. Wedemeyer points out that "the frequently-repeated injunctions in Mahāyoga Tantra materials against

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[121] 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，以爲眷屬. T 1736, 39: 634c12-14.

[122] T 1796, 39: 618a8-17.

[123] Wuxing 無行 (b. 630), a Chinese monk who studied in India, witnessed the rising popularity of Mantrayāna there. Xuanzang returned to China in 645. He never mentions Mantrayāna in India. Wuxing around the year 685, however, sent a letter to China, stating, "Recently the new Mantra teachings have become revered in the country" 近者新有眞言教法擧國崇仰. This line is preserved in a Japanese work by Annen 安然 (841–915?), the *Shingon shūkyō jigi* 眞言宗教時義. Wuxing's original letter (南荊州沙門無行在天竺國致於唐國書一卷) is not extant. It was brought to Japan by the Japanese monk Ennin 圓仁 (794–864) in 847. See T 2396, 75: 431a11 & T 2167, 55: 1086c21-22. Wuxing's account indicates that Mantrayāna, as a self-conscious movement, was only arising in India in the latter half of the seventh century. See Yoritomi Motohiro 頼富本宏, "Mikkyō no kakuritsu" 密教の確立, in *Indo mikkyō* インド密教, eds. Tachikawa Musashi 立川武蔵 and Yoritomi Motohiro (Tōkyō: Shunjūsha, 1999), 37.

[124] Śubhakarasiṃha's guru seems to have been the human author of the *Mahāvairocana-sūtra*. A document detailing the history of the *maṇḍala* lineages from 834 quotes Śubhakarasiṃha as saying, "This Dharma is from Vairocana Buddha. It was entrusted to Vajrapāṇi Bodhisattva. After hundreds of years Vajrapāṇi Bodhisattva entrusted it to *ācārya* Dharmagupta from Nālanda monastery in Central India. The *ācārya* Dharmagupta then entrusted it to Tripiṭaka Śubhakarasiṃha of the Śākya clan from Central India." T 2081, 51: 786b5-9.

[125] 中印度摩伽陀國人，住王舍城那爛陀寺. T 2055, 50: 290a9-10.

[126] It is uncertain if they at the time would have regarded it as *Yavana* or foreign.

taking account of astrological phenomena such as lunar mansions (*nakṣatra*), lunar days (*tithi*), and so on, in ritual practice would seem to be a response to earlier esoteric scriptures that enjoin practitioners, on the contrary, to schedule their ritual activities in accordance with such considerations." For example, the *Cittaviśuddhiprakaraṇa* (verses 71-75) mentions technical features of astrology, but also suggests that one should not be attached to these, which are "conceptually posited by the whole world."[127] The urge to dismiss concerns for astrology perhaps points to widespread and deep interest in astrology among contemporary Buddhist practitioners.

It is significant that the *Śārdūlakarṇāvadāna*, *Mahāsāṃghika-vinaya* and *Mahāvairocana-sūtra* all contain elements of astrology and/or astral magic, while, moreover, all having connections to Magadha. This possibly indicates that Buddhism in Magadha had a great appreciation for astrology. This stands in contrast to the *Saddharmasmṛtyupasthāna-sūtra*, which appears to have been written by authors with a Sarvāstivādin background, possibly therefore indicating that the acceptability of astrology among Indian Buddhists might have to some extent differed along sectarian or regional lines.

In light of the Indian Buddhist interest in astrology, it is unsurprising that astrology was transmitted to China via Buddhism. Nevertheless, there were a number of ethical and legal issues that existed in Chinese Buddhism with respect to astrology that should be addressed.

2.8. Astrology in the Chinese Buddhist Context

Chinese Buddhist literature from at least the fifth century reproduced the general injunctions against divination as found in Indian texts. The tradition of vinaya exegetes in China also specifically understood astrology to be an inappropriate practice for a *śramaṇa*. The early model of Chinese bodhisattva precepts also expressly forbid divination.[128] Nevertheless, as will be explored in the following chapters, these prohibitions did not deter the popularization of astrology, nor its practice, by sangha members.

An earlier influential sūtra in China, which specifically forbids a bhikṣu from practicing astrology and calendrical science, is the *Sūtra of the Buddha's Bequeathed Teachings* 佛遺教經 (T 389). This sūtra, which was composed in China, summarizes the

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[127] Christian K. Wedemeyer, *Making Sense of Tantric Buddhism: History, Semiology, and Transgression in the Indian Traditions* (New York: Columbia University Press, 2014), 241n64. *Idem*, "Vajrayāna and its Doubles: A Critical Historiography, Exposition and Translation of the Tantric Works of Āryadeva" (PhD diss., Columbia University, 1999), 371.

[128] These precepts are extracted from the *Brahmā Net Sūtra* 梵網經 (T 1484), a scripture composed in China. It became quite popular, providing the standard set of bodhisattva precepts for East Asian Buddhism. Divination is listed among other wicked acts. Astrology is not specifically mentioned. See T 1484, 24: 1007a23-27.

Buddha's teachings shortly before his death between the twin *śāla* trees in Kushinagar. The translation is attributed to Kumārajīva (344–413). During the early Tang period, emperor Taizong 太宗 (r. 626–649) in 639 decreed that all Buddhist clergy would have to abide by the proscriptions of the sūtra.[129] This is significant because the text expressly forbids bhikṣus from several mundane arts. The relevant part of the sūtra reads as follows:

> 持淨戒者，不得販賣貿易，安置田宅，畜養人民，奴婢，畜生，一切種殖及諸財寶，皆當遠離，如避火坑。不得斬伐草木，墾土掘地，合和湯藥，占相吉凶，仰觀星宿，推步盈虛，曆數算計，皆所不應。… 此則略說持戒之相。
>
> He who maintains the pure precepts may not engage in commerce and trade, the establishment of fields and estate, nor may he keep common people, slaves and livestock. They should all remain far away from all manner of planting and wealth as they would avoid a pit of fire. They may not cut grass and trees, till the soil, dig in the ground, mix medicines, divine fortunes, observe the stars, make astronomical calculations, or make calendrical calculations. All such activities are improper. ... This is a general explanation of the qualities of maintaining the precepts.[130]

It was still understood during the early Tang within the tradition of vinaya exegesis that practicing astrology was inappropriate for a bhikṣu. This tradition is best represented by Daoxuan 道宣 (596–667) who, repeating relevant Indian literature, included divination and astrology among wicked lifestyles, though the wording seems to suggest it is defined as inappropriate only if it is for personal gain or profit, which would not preclude the acceptability of practing divination for some beneficial purpose.

> 破正命者，謂非法乞求邪意活命，則有五種四種。言五邪者：一謂爲求利養改常威儀詐現異相。二謂說己功德。三者高聲現威。四者說己所得利養激動令施。五者爲求利故強占他吉凶。言四邪者：一方邪者。通使四方爲求衣食。二仰邪者。謂上觀星象盈虛之相。三者下邪。即耕田種殖種種下業。四者四維口食。習小小呪術以邀利活命。此智論解也。
>
> Destroying right livelihood is inappropriate solicitation or by wicked intent supporting oneself, of which there are five and four types. The five types of wicked acts: I. For personal gain reforming standard observances and dishonestly displaying strange signs. II. Speaking of one's own merit. III. Loudly displaying one's power. IV. Speaking of one's own obtainment of offerings to prompt

[129] Stanley Weinstein, *Buddhism Under the T'ang* (Cambridge: Cambridge University Press, 1987), 21.

[130] T 389, 12: 1110c22-1111a2.

> giving. V. Divining the fortune of another for gain. The four types: I. Wickedness at a distance: dispatching envoys to the four directions in pursuit of clothing and food. II. Wickedness by looking upwards: surveying above features of star signs and lunar cycles. III. Wickedness below: tilling fields, planting seeds and various acts directed downwards. IV. The four ways to eat by way of the mouth: learning various[131] spells to invite profit to support oneself. This is the understanding of the *Mahāprājñāpāramitā-upadeśa*.[132]

Despite these proscriptions against astrology, it must be understood that monastic precepts were not strictly observed throughout the Tang dynasty, and it appears that many rejected them in favor of a flexible system of bodhisattva precepts. Daoxuan himself laments this development.

> 今時不知教者多自毀傷，云: 此戒律所禁止是聲聞之法，於我大乘棄同糞土。猶如黃葉，木牛，木馬，誑止小兒，此之戒法亦復如是，誑汝聲聞子也。
> In present times many of those who do not know the teachings destroy themselves. They say, "These vinaya proscriptions are a *śrāvaka* teaching. In our Mahāyāna we toss it away just as if it were filth. Like yellow leaves, a wooden ox or a wooden horse deceiving a little child, these precept teachings are also like this. They deceive you *śrāvaka*!"[133]

Flexible interpretation of bodhisattva precepts was facilitated by the translation of the *Yogācārabhūmi* 瑜伽師地論 (T 1579), translated by Xuanzang between 646–648. In this work, a bodhisattva is permitted to commit even homicide if the situation warrants it.[134] These passages were later cited by the Huayan patriarch Fazang 法藏 (643–712) in his *Fanwangjing pusa jieben shu* 梵網經菩薩戒本疏 (T 1813; *Commentary on the Brahmā Net Sūtra Bodhisattva Precepts*).[135] This trend of neglecting, or even rejecting, bhikṣu conventions while allowing, if not encouraging, Mahāyāna practitioners to act according to conscience, rather than the strict letter of scripture, meant that minor conventions against divination and astrology could be ignored. As we will explore below, monks in the Tang dynasty in fact practiced astrology despite their monastic precepts prohibiting it.

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[131] Judging from the text in the *Mahāprājñāpāramitā-upadeśa*, *xiao xiao* 小小 is a scribal error for *zhong zhong* 種種. T 1509, 25: 79c13.

[132] T 1804, 40: 19a8-16. These four are adapted from the *Mahāprājñāpāramitā-upadeśa*. See T 1509, 25: 79c6-14.

[133] T 1804, 40: 49b27-c1.

[134] T 1579, 30: 517b8-17.

[135] T 1813, 40: 611a1-2.

We should also note here that early Daoist proscriptions explicitly forbid the study of astrology, which it seems was in emulation of the Buddhist model. The relevant rule is explicitly stated as precept seventy-eight in *The 180 Precepts Spoken by Lord Lao* 老君說一百八十戒 (included in *Taishang Laojun jinglü* 太上老君經律; DZ 786): "You should not read the stars or prognosticate the seasons 不得干知星文卜相天時."[136] Benjamin Penny notes that the "appearance in China of Buddhist precepts inspired Daoists to write precepts of their own, and, in all probability at an early stage, the Daoist clerisy also developed structures and practices that were based on Buddhist models." It was likely produced sometime during the sixth century.[137] This Daoist prohibition should be kept in mind later in this study as we examine Daoist astrological texts.

2.9. Conclusion

The foregoing discussion covered the general historical background of astrology as it relates to Buddhism in India and China. It is clear that astrology was important in both civilizations from early on. It was therefore natural for Buddhists to take an interest in the art. Having outlined the essential background information for the following chapters, which explain the introduction and development of Buddhist astrology in China, we should note a few things.

First, astrology is an art found throughout Eurasian civilizations, and has been perhaps the only art to transcend so many cultural and linguistic barriers, having been incorporated into several major world religions. It is therefore unsurprising that Buddhists also took an interest. The evidence indicates that many Buddhists, in fact, practiced astrology, with such an interest actually increasing over the centuries, and eventually being incorporated into Tantric practice.

There were views opposed to astrology within Buddhism. Although there are proscriptions that forbid monks from practicing divination, at the same time in Buddhist literature we find many examples of passive knowledge of astrology, in addition to evidence of belief in astral deities. The reality, so far as present evidence suggests, is that those who specifically opposed astrology in Indian Buddhist history constituted a minority. It is clear that Buddhists generally believed in the efficacy of astrology. The Chinese vinaya tradition in the Tang period also specifically forbids monks from practicing astrology as a means of earning a livelihood, but the reality was that such rules were effectively ignored, as we will see.

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[136] DZ 786, Wenwu Chubanshe edn., vol. 18, 220a7. For translation see Barbara Hendrischke and Benjamin Penny, "*The 180 Precepts Spoken by Lord Lao*: A Translation and Textual Study," *Taoist Resources* 6, no. 2: 24.

[137] Benjamin Penny, "Buddhism and Daoism in *The 180 Precepts Spoken by Lord Lao*," *Taoist Resources* 6, no. 2 (1996): 2–3.

Chinese civilization from early on also developed its own systems of astrology and observational astronomy. Throughout the first millennium, legal codes specifically prohibited the private study of astronomy, which is an important point to bear in mind throughout the following chapters as such prohibitions were, at least in theory, in effect throughout the Tang dynasty. The technical astronomical knowledge required to practice astrology is another aspect of astrology that must be kept in mind, especially as we explore how the Chinese approached foreign astrology.