

EASTERN PERSPECTIVE OF THE CONFERENCE

I. EAST AND WEST?

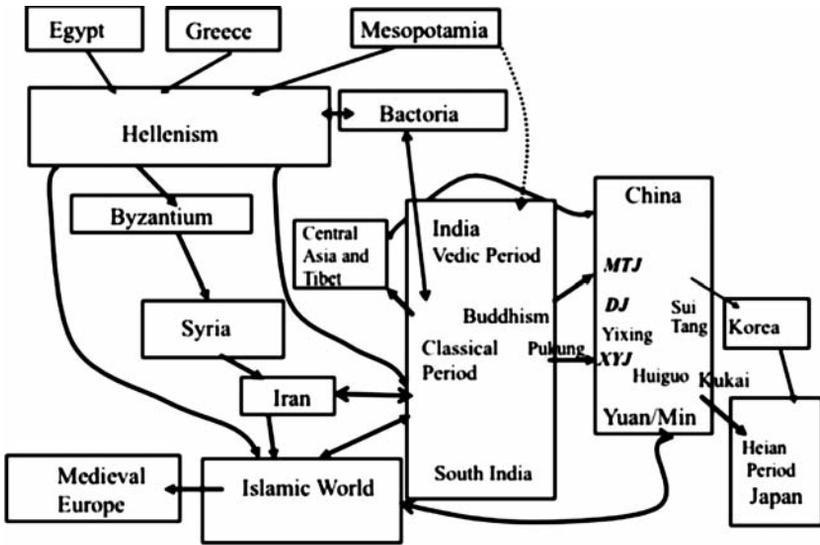


Fig. 1. Cultural Exchanges between East and West.

1. The main body of this paper is based on my oral communication at the Erlangen conference on 23 January, 2014. I intended to send a summary of my talk, but since I could not prepare it by the deadline date, I almost declined the invitation. But the organizers were very kind and asked me to give a summary of the Eastern Perspective of the Conference. I understood that I was expected to give a talk concerning the communications presented by Mohammed Bagheri, Kristina Buhrman, Benno van Dalen, and Shi Yunli. Still the lack of time made my talk poor. In the present version I have put many corrections and added some new information.

First of all I have a question concerning the title of this conference. The question is: «Where is the boundary between East and West?» The reason of raising this question is that the main area of my study is the history of Indian astronomy and astrology. To put the question in another words, «Is India East or West?». In a sense India is neither East nor West, or both East and West. In my class of the cultural exchanges of East and West I show an overview map (Fig. 1) of the areas on which I talk. I locate India at the center of the map. The cultural exchanges between India and surrounding countries go back to quite old time. In the context of the history of science, particularly in this conference, the role played by Central Asia and Iran is very important. The position of Central Asia and Iran is again neither West nor East.

Dragon myth

As an example of the position of Iran, I would like to take up the myth of a dragon who is the cause of eclipses.



Fig. 2. From Hartner [1968, 134].

Here is a well known figure (Fig. 2) from the Latin translation (Venice, 1515) of Abū Ma'shar's *Great Conjunction*. This figure depicts a Dragon coiling around the ecliptic and the lunar orbit. Dragon's head is at the ascending node and the tail is at the descending node. This Dragon devours the Sun or Moon at the time of eclipse. This

dragon myth makes the etymon of the «draconic month». Abū Maʿshar mentions the head and tail of the Dragon several times in *The Abbreviation of the Introduction to Astrology*².

Bundahišn

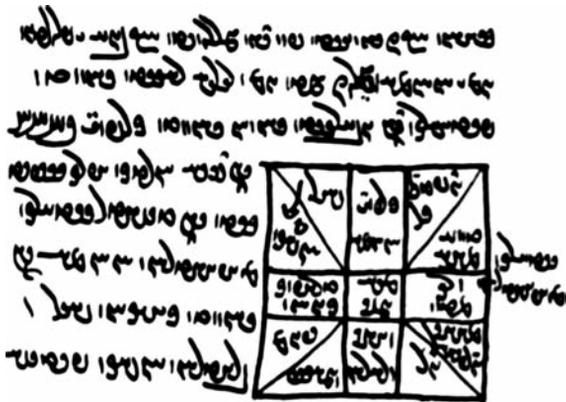


Fig. 3. From TD₂ of the *Bundahišn*.

It is still a matter of discussion where this dragon myth originated, but the Pahlavi text *Bundahišn* seems to contain an old version of the myth. It is found in the context of the horoscope at the time of the creation of the world (so-called *Thema Mundi*). I have copied here (Fig. 3) a part of page 51 of the text TD₂ published by Anklesaria in 1908. Similar diagrams are found in another two manuscripts: TD₁ and DH. Raffaelli [1999] compared the three diagrams. The diagrams are full of mistakes and no diagram shows the proper position of Dragon's head and tail. But the text clearly describes that the head and tail were at Gemini and Sagittarius, respectively. The text was translated by Mackenzie (1964) and Ito (1980). Mackenzie located the head and tail in his Figure 1 (page 514).

At the center top of this diagram is the ascending sign Cancer. The names of the 12 zodiacal signs are written anti-clockwise. The positions of the seven luminaries are indicated in this diagram, but

2. See References.

gočihr

neither the head nor the tail is found. The Pahlavi word for the Dragon is *go ihr*, which would later become *jawzahar* in Arabic texts. The position of the seven luminaries together with Dragon's head and tail are shown in the following table.

I	Cancer	Jupiter
II	Virgo	Mercury
III	Libra	Saturn
VI	Sagittarius	Dragon's tail
VII	Capricorn	Mars
IX	Pisces	Venus
X	Aries	Sun
XI	Taurus	Moon
XII	Gemini	Dragon's head

Table 1.

It is evident that all the planets, including the head and tail of Dragon, are at their sign of exaltation, the place where they are most powerful. Among the many problems in this horoscope, the most serious one is that Mercury is in Virgo, its sign of exaltation. It is clear that such a position is impossible because Mercury cannot be separated from the Sun, which is in Aries, more than its maximum elongation of about 28 degrees.

Rāma's horoscope

It would be interesting to know that a very similar kind of impossible horoscope is found in the *Rāmāyaṇa*, one of the most popular Indian epics along with the *Mahābhārata*. The part describing the position of the planets is not found in the critical edition, but I found it in Yutaka Iwamoto's Japanese translation (Tokyo 1980) which was based on the Bombay edition of the *Rāmāyaṇa*, *Bālakāṇḍa*, 18.8-10:

Then after the end of the sacrifice, six seasons have past. Then in the twelfth month, on the ninth tithi of Caitra month, when *nakṣatra* was

Punarvasu and when the five planets (excluding Jupiter and moon) were in their exaltation, and Jupiter together with the moon was in the ascendant which was Cancer and rising, Kausalyā gave birth to Rāma, the lord of the world, worshiped by all the people, and endowed with the divine characteristics.

I wonder which edition of the *Rāmāyaṇa* is closer to the original. In other words, I wonder whether the concept of the horoscope was in the original text or it was later addition.

Here Rāma is said to have been born on the ninth day of Caitra month when five planets were in their exaltation and Jupiter and the moon were in Cancer. On the beginning of a ninth lunar day (or at the completion of the 8th *tithi*) of the month the moon is 96 (8×12) degrees or three signs and six degrees ahead of the sun which is at Aries 0° , because the day is supposed to be the vernal equinox. Thus it is reasonable that the moon is not in Taurus (its exaltation sign) but in conjunction with Jupiter which is at its exaltation (Cancer 5°)³. With this minor difference, the concept is the same as the *Thema Mundi*.

I have long wondered how these two imaginary horoscopes were related: which of the Iranian or Indian horoscope is original, and which is its copy. Since there is no mention of Dragon's head or tail in Rāma's horoscope, I am now inclined to think that Rāma's horoscope is original, made at the time when the Dragon myth was not transmitted to India. The drawing of the horoscope in the *Bundahišn* might have been borrowed from India, because the ascendant is drawn at the upper center, which is usually the case in India where the eastern direction is thought to be «front» and the west «back»⁴. On the other hand, European horoscopes usually put the ascendant on the left (i.e. nine o'clock position). Probably some Sassanid astrologers added the position of Dragon's head and tail to the *Thema Mundi*.

3. In the day of vernal equinox, the sun is at the sign of exaltation, but precisely the exaltation of the sun is at Aries 10° according to Ptolemaic system and Sanskrit texts. The position of the moon is also a little off the place, since the *nakṣatra* Punarvasu covers $80 - 93;20^\circ$.

4. Raffaelli [1999, 286] says: «[...] these diagrams most likely reflect the cartographic practice of the Sasanian age in which, as partly in Islamic tradition, the East was probably marked on the top». But I would like to say that it is an Indian tradition.

The Indian mythology of Rāhu as an eclipse demon has an old origin. In the Vedic period the demon was called Svarbhānu. It was called Rāhu in *Chandogya-Upaniṣad* 8.13.1. In the *Maitrāyaṇī-Upaniṣad*, Rāhu and Ketu are mentioned along with Śani (Saturn), but there is no ground to interpret them as Dragon's head and tail⁵. In the earlier period Ketu was regarded as comets. This interpretation was still maintained by Varāhamhira (6th century) in his *Bṛhatsaṃhitā*. When Brahmagupta discussed eclipses in the *Brāhmasphuṭasiddhānta* (AD 628) he used the word Rāhu as the eclipse demon but nothing was said about Ketu⁶. In the history of Hindu iconography, too, the appearance of Ketu is rather late as Stephen Markel observed, «Ketu is a relative newcomer to the group of planetary deities, and is absent in collective representations until after c. A.D. 600». (Markel [1991, 174]).

In the more recent time most Hindu temples have a shrine of *navagrahas*, or nine planetary gods. In some temples they adorn the lintel of the gate. Here is one of the examples from Orissa.



Fig. 4. Rāhu and Ketu at the gate of Rameshvar Temple in Bhuvaneshvar, Orissa (by Michio Yano, September 2000).

In Japanese Buddhist iconographies Rāhu and Ketu are also found as eclipse demon.

5. Yano [2003, 333].

6. *Brāhmasphuṭasiddhānta* 21, 36-48.

2. ASTROLOGY OF THE WESTERN ORIGIN IN CHINA AND JAPAN

Tantric Buddhist Texts

Buddhism was the main vehicle that conveyed Indian science to the neighboring cultural areas. In the earliest period of transmission, the Buddhist text *Sārdūlakarṇāvadāna*, where Indian lunar astrology was taught, was translated into Chinese two times.

Modengqie jin (摩登伽經, MDJ) by Zhu Luyan (竺律炎) and Zhi Qian (支謙)⁷. The date of this text is toward the end of the third century A.D.

Shetoujian Taizi Ershiba-xiu Jing (舍頭諫太子二十八宿經) by Zhu Fahu (竺法護)⁸, belonging to the beginning of the fourth century.

In these texts no element of the Western astrology is found⁹.

Daji jing

The earliest Chinese Buddhist text that contains translation of the names of the zodiacal signs is the *Dafang deng daji jing* (大方等大集經) or *Daji jing* (大集經, abbr. DJ) in short, which is an encyclopedic collection full of rich information on Indian Buddhist culture. The title of the original text is *Mahāsaṃnipātasūtra*. The text is No. 397 of Taisho Tripitaka which is a compilation by Sengjiu (僧就) and it consists of two main parts: the first part was composed by Dharmakṣema and the other was by Narendraya as between 566 and 585. In this text the Sanskrit names of zodiacal signs are translated into Chinese both literally (Taisho, Vol. 13, No. 397 page 280b) and phonetically (*ibid.* page 373a).

The literal translations reflect rather well the iconographies of the Western astrology, for example, «the god holding a ram» for Aries and «the god holding an ox» for Taurus. The only strange translation is that of Gemini. The Chinese phonetic translation is from *mithuna*,

7. Taisho Vol. 21 (No. 1300).

8. Taisho Vol. 21 (No. 1301).

9. The only exception is that toward the end of the *Modengqie jin* the weekday order of seven planets along with the 19 year cycle of intercalation are mentioned. But this part seems to be a later interpolation.

	Sanskrit	literal	phonetic		Sanskrit	literal	phonetic
♈	meṣa	持羊之神	彌沙	♎	tula	秤量之神	兜邏
♉	vṛṣa	持牛之神	毘利沙	♏	vṛścika	蝎神	毘梨支迦
♊	mithuna	雙鳥之神	彌偷那	♐	dhanvin	射神	檀尼毘
♋	karkaṭa	蟹神	羯迦吒迦	♑	makara	磨竭之神	摩伽羅
♌	siṃha	師子之神	線呵	♒	kumbha	水器之神	鳩槃
♍	kanyā	天女之神	迦若	♓	mīna	天魚之神	彌那

Table 2. Oldest Chinese translation of 12 zodiacal signs.

which means a male–female couple, while the literal translation is «a god of two birds». I wonder whether this is a kind of euphemism in order to avoid sexual connotation of the Sanskrit word.

Xiuyao jing

It was in the Tang Dynasty that frequent cultural exchanges were made between China, Central Asia and India through Buddhism. The city of Chang'an (modern Xi'an) flourished as the international capital that was flooded with foreign envoys, missionaries, refugees, and travelers.

The *Xiuyao jing* (宿曜經, abbr. XYJ) is a text on Indian astrology composed in the middle of the eighth century by the Buddhist monk Amoghavajra (705–74, Chinese name Bukong 不空) of Indian origin¹⁰. The full title of this text can be rendered as «Sūtras on auspicious and inauspicious times and good and bad *nakṣatras* and luminaries preached by the Bodhisattva Mañjuśī and several sages». The Chinese translation was made by Amoghavajra's Buddhist disciple Shiyao (史瑤) in 759 but Amoghavajra was not satisfied with it and he ordered its revision to his secular disciple Yang Jingfeng (楊景風). The second version was complete in 764. Both versions were printed as no.1299 of the Taisho Tripitaka, but there remain several old manuscripts in Japan that offer far better readings¹¹.

10. Yano, *Mikkyo Senseijutsu*, and Yano [1987].

11. As the appendix to the revised version of the *Mikkyo Senseijutsu*, I have added two reports on the recent survey of these manuscripts, with the collaboration of Prof. Takao Hayashi.

In this translation Sagittarius is only «bow», without the upper human body and the lower horse-body. In Sanskrit texts mere bow (*dhanus*) is also found. The phonetic translation, on the other hand, is that of *dhanvin*, «a man holding a bow». These interpretations were transmitted to Japan and a bow without a person holding it is depicted in star maṇḍalas.

Fantien huoluo jiu yao

A text entitled *Fantien huoluo jiu yao* (梵天火羅九曜)¹³ is ascribed to Yixing (一行, 683-727) who was not only a distinguished figure as a Tantric Buddhist priest but also one of the best known astronomers in China.

The title of the book is rendered in English as «Indian Horās and Nine Grahas». It is interesting to note that the Sanskrit word *horā*, which is a phonetic translation of the Greek word, was also phonetically translated into Chinese as *huolou* (火羅). The Greek word is nothing other than the etymon of the English word «hour» and also stands for «half a zodiacal sign» (15°) as a unit of space. In Sanskrit the word assumed a wider meaning standing for a genre called *horāśāstra*, i.e., «science of horoscope». There is a beautiful painting called Karazu (火羅圖) in the Toji Temple (東寺) in Kyoto which provides a summary of the *Fantien huoluo jiu yao*. In this painting we find the phonetic translation of Sogdian names of planets which were shown in Table 3 above.

Yusi jing

In the middle of the ninth century a Buddhist monk Soei (宗叡) of Toji Temple brought back from China some texts on astrology. Among them was the *Yusi jing* (聿斯經). I have suggested¹⁴ that the full title of this text was *Duli yusi jing* (都利聿斯經) as attested in Chinese documents, and that *Duli yusi* stands for the name of the Greek astronomer Ptolemaios, who was an author of a book on

13. Taisho Tripitaka, Vol. 21 (No. 1311).

14. Yano [1990].

astrology *Tetrabiblos*¹⁵. There were many Arabic texts ascribed to «pseudo-Ptolemy» and the *Duli yusi jing* might have been a translation from one of such kind of texts¹⁶.

Although the text of *Duli Yusi Jing* is lost in China, we have its fragments as quoted by Japanese Buddhist astrologers during the Heian period (794-1192). It is highly possible that a kind of epitome of Greek astrology was transmitted to China and ultimately to Japan with Ptolemy's name attached to it.

Qiyao rangzai jue

Another Chinese text brought to Japan by Soei is the *Qiyao rangzai jue* (七曜攘災訣, abbr. QRJ)¹⁷, which was written by a «Western Indian Brāhmin named Jin Juto» (金俱陀) around 800 CE. Although the title of this text can be expressed in Sanskrit as *Sapta-graha-śānti-mantra* («Formulas to appease the disasters caused by the seven luminaries»), the number of planets (*grahas*) are not seven but nine, including Rāhu and Ketu, the former being phonetically translated as *luohou* (羅睺) and the latter as *ji du* (計都). They are also called «the head of the eclipse god» (蝕神頭) and «the tail of the eclipse god» (蝕神尾) respectively, but strangely the latter was actually not the descending node but the lunar apogee¹⁸. This strange interpretation is found in Japanese horoscopes. This text is a mixture of elements of Indian, Central Asian, and Chinese origin. As I have shown in Yano [1986], the main body of this text is planetary ephemeris including that of Rāhu and Ketu. The twelve houses (*bhāva*) were first defined in this text. As Ito [1980, 187-90] found, the Chinese names are closer to those found in the *Bundahišn*. The coordinates system is the Chinese 28 lunar mansion system and the

15. See Yano [1990].

16. Recently Bill Mak has drawn my attention to a text entitled *Xitian yusi jing* (西天聿斯經), which is a part of the *Xingxue dacheng* (星學大成, A compendium of the Science of Stars) compiled in the Ming Dynasty. The text is a mixture of Western astrology and traditional Chinese divination. See Mak [2014]. Here Mak proposed the possibility of *Duli yusi* as a phonetic translation of «Dorotheus».

17. Yano [1986] and Yano [1995].

18. Yano [1986].

planetary positions were computed by the Chinese method. This is a typical example of the role played by central Asian texts.

Fu tian li

Another text which was related with QRJ and which followed the similar course was the *Fu tian li* (符天曆) of the central Asian origin. This text, which was once important and used in the Yuan Dynasty China, was lost in China but it was used by Japanese Buddhist astrologers in order to compute the planetary positions. As Nakayama has proved¹⁹, the text contained the solar equation table which was based on the parabolic function. This text gave some influence in the astronomical tables (*Zīj*) of the Central Asian origin²⁰. Unfortunately, however, what was discovered in Japan was only a fragment which does not permit any further study.

Japanese horoscopes

During the Heian period in Japan the school of Buddhist astrology was in fashion. The school was called Sukuyodo (宿曜道) because the system was based on the *Xiuyao jing* (XYJ).

The text of the XYJ was brought to Japan in 806 CE by Kukai (空海), the founder of the Shingon sect of tantric Buddhism. The Sukuyodo school flourished in the middle of the Heian period and competed with the traditional Onmyodo (陰陽道) school of Chinese origin. Two complete horoscopes and several fragments are preserved in Japan. One of them is so-called Ten'ei (天永) horoscope (Fig. 5), of which the date is a.m. 1-3, January 15, 1113 CE²¹. In this horoscope Rāhu (羅睺) and Ketu (計都) are placed in diametrically opposite places and few people doubted that the latter is the descending node of the moon. But I have shown that Ketu is not the tail of Rāhu but the apogee of the moon. The names of the twelve houses that are found in the outermost circle are the same as those found in the *Qiyao rangzai jue* mentioned above.

19. Nakayama [1964].

20. van Dalen *et. al.* [1997].

21. Yano [1986b, 32].

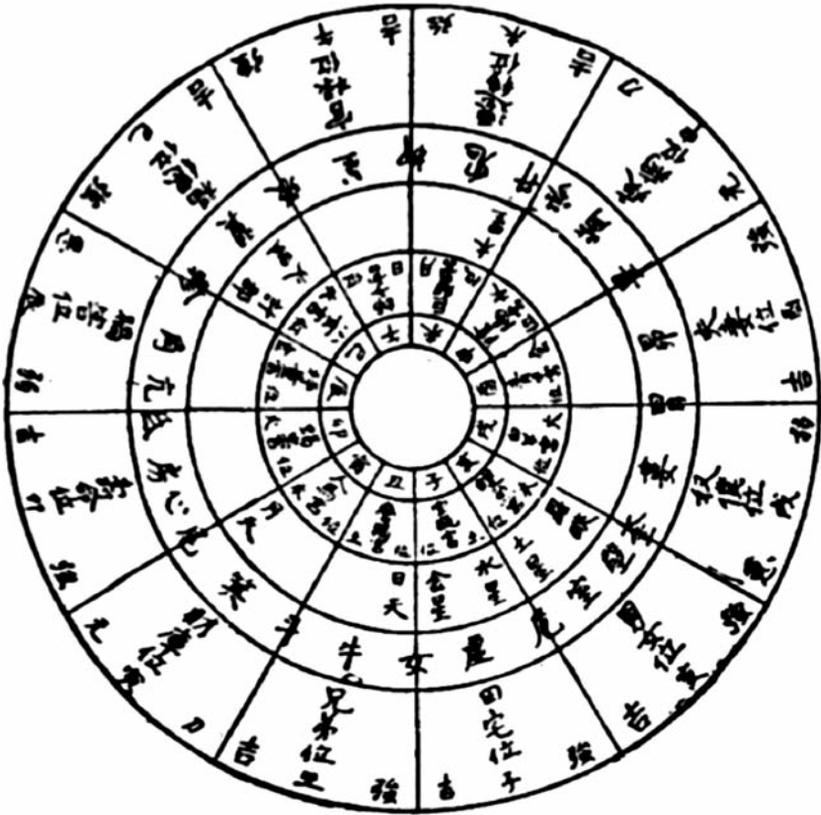


Fig. 5. Ten'ei horoscope.

3. LATER TEXTS

A small but interesting text belonging to the later period is contained in the Taisho Tripitaka²². The short title of this text is *Zhi lun jing* (支輪經) which was translated into Chinese by Faxian (法賢) during the Song Dynasty (985-1001). The text is ascribed to a god (*tian* 天, *deva*) called Nan ni ji shi fu ra (難儺計濕嚩囉), which, in my view, is a phonetic translation of Nandikeśvara. Nandikeśvara is known as one of Śiva's attendants and, according to the Sanskrit Dictionary of Monier-Williams, there are several works bearing his name.

22. Taisho Tripitaka, Vol. 21 (No. 1312).

The main topic of this text is to give the correspondence between the 12 zodiacal signs and the 27 *nakṣatras* and to explain the auspicious and inauspicious days. The sign-*nakṣatra* correspondence was very important since the introduction of Greek astrology to India and many Sanskrit texts, including Varāhamihira's *Bṛhatsaṃhitā* (Chapter 101) contain it. Since the 27 *nakṣatras* are allotted to the 12 zodiacal signs, each sign covers $27/12 = 9/4$ *nakṣatras*. Thus $1/4$ was used as a unit called *pāda*, each sign consisting of nine *pādas*. The correspondence is tabulated as Table 5. In the list I added the planets governing the signs. The names of the 12 zodiacal signs in the *Zhi lun jing* are in column 4 and column 9 (ZLJ) of Table 4.

Meṣa	Mars	Aśvinī	4	Bharaṇī	4	Ḳṛttikā	1
Vṛṣa	Venus	Ḳṛttikā	3	Rohiṇī	4	Mrgasīrṣa	2
Mithuna	Mercury	Mrgasīrṣa	2	Ārdrā	4	Punarvasū	3
Karkaṭa	Moon	Punarvasū	1	Puṣya	4	Āśleṣā	4
Siṃha	Sun	Maghā	4	Pūrvaphālgunī	4	Uttaraphālgunī	1
Kanyā	Mercury	Uttaraphālgunī	3	Hasta	4	Citrā	2
Tulā	Venus	Citrā	2	Svāti	4	Viśākhā	3
Vṛścika	Mars	Viśākhā	1	Anurādhā	4	Jyeṣṭhā	4
Dhanus	Jupiter	Mūla	4	Pūrvāṣāḍhā	4	Uttarāṣāḍhā	1
Makara	Saturn	Uttarāṣāḍhā	3	Śravaṇa	4	Dhaniṣṭhā	2
Kumbha	Saturn	Dhaniṣṭhā	2	Śatabhiṣaj	4	Pūrvabhādrapadā	3
Mīna	Jupiter	Pūrvabhādrapad	1	Uttarabhādrapadā	4	Revatī	4

Table 5. Twelve signs and 27 *nakṣatras*.

There are some remarkable differences of ZLJ from the older Chinese translations. Here Sagittarius is «man and horse». A picture demonstrating this interpretation is found in the Mogao Cave No. 61 in Dun Huang. This is a remarkable variant of the image of Sagittarius, especially to be compared with what we have seen above in Amoghavajra's interpretation. In Indian texts both form *dhanvin* «archer» and *dhanus* «bow» are attested as I have said above. But in this case man and horse were separated. This is because only the name of «man and horse», without the image of Sagittarius, was transmitted.



Fig. 6. Sagittarius in Mogao Cave No.61, from *The Tonkou Sekikutsu* (敦煌石窟), Bunka Publishing Bureau, 2002.

Gemini is here just «yin and yang», being less euphemistic and probably standing for man and woman. Another conspicuous transformation is Virgo as «two girls». I have not been able to find where such a change occurred, but it is very interesting that the images of two girls are found in the Mogao Cave No. 61 as well as in Japanese Buddhist iconographies.

In the *Xiuyao jing* a quarter of a *nakṣatra* was correctly translated as 足 (foot), while in the *Zhi lun jing* it was translated as 分 (分). Probably the translator did not understand the astrological meaning of this allotment scheme and thus there are many mistakes in the text. Moreover, although this allotment is only applicable to the 27 *nakṣatra* system, the text includes *niu* (牛, Indian Abhijit), in Capricorn, between *dou* (斗, Uttarabhādrpadā) and *nu* (女, Śravaṇa). It is interesting to know that the names of the zodiacal signs in this text are exactly the same as those of the *Qiyao rangzai jue*. The text of ZLJ is very corrupt and we find many mistakes in the correspondence shown in Table 5.

The *Huihui li* and the *Ming-yi tian-wen shu*

In the beginning of Min Dynasty, two texts of Arabic/Islamic origin were translated into Chinese. One is the *Huihui li* (回回曆) a handbook of mathematical astronomy based on Ptolemy's system. The other is the *Ming-yi tian-wen shu* (明訊天文書, abbr. MYTWS). This is a Chinese translation of Kūšyār ibn Labbān's *Introduction to Astrology*. The two translations were made in the same year, i.e. 1383 CE, by the same group of translators from the Central Asia. It is very interesting that Chinese translations of some of the technical terms are borrowed from Buddhist texts. The names of the zodiacal signs are very good examples. They are shown in column 4 and 8 (MYTWS) of Table 4. The difference from the list of the *Zhi lun jin* is only Aries as «white sheep» instead of «divine sheep». The peculiar names «two girls» and «man and horse» were retained.

In the *Ming-yi tian-wen shu* four kinds of astrological aspects are translated as:

Trine: *san he* (三合), quartile: *er xian* (二弦),
Sextile: *lu he* (六合), opposition: *chon* (衝).

Out of these *san he* and *lu he* are sometimes found in Chinese translations of Buddhist texts, but neither of them is attested in any Chinese classical text as astrological technical terms. The very interesting thing is that the word *san he* for trine is found in a fragmentary quotation in a Buddhist horoscope that is found in Japan. The quotation is from so-called *Duli yusi jing*, which was, as I have mentioned above, referred to by Yixing in his *Fantien huoluo jiu yao*.

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