BUILDING THE CHINESE UNIVERSE

Before the magnetic compass was invented, people found the cardinal directions by observing the sun during the day or the stars at night (for example, by observing the direction of the pole star at the time of its meridian passage). See Figures 1 and 2 for views of the sky.

To traditional minds the earth is basically flat and it represents space defined by a minimum of four directions, as in the phrase "the four corners of the earth." Four as a sacred number appears in the number of cardinal points and in the seasons. Our ancestors considered solstices and equinoxes as marking the two intersections of the equator with the path of the sun and identified these as four pillars, mountains, hooks, or corners at the ends of the earth. Chinese drew them as the character *shan* (mountain). The four seasonal points were connected to form a square inside the celestial circle, so that flat earth identified the four points of the year (see Figures 3 and 4). Orientations became the yantra that brought form into being, and provided the basic layout of a village or city (which also functioned as a yantra).

Primitive notions in *Huainanzi* and *Zhoubi suanjing* assert the sun's extreme risings and settings describe a square. A squared circle or *fang yuan* represents the sacred marriage of heaven and earth, the primary Chinese mandala *tian-yuan di-fang:* heaven as round (natural world) and earth as square (human experience and concepts of order).

Although the most famous versions of this mandala can be seen in the Altar and Temple of Heaven in Beijing, it was built into sites of Hongshan culture at Dongshanzui (ca. 3500 BCE) and Niuheliang (also ca. 3500 BCE), where buildings were constructed on a north-south axis and grouped around a central altar. Rectangular and circular structures face each other along the axis. The southern end of the complex features a round altar like the Temple of Heaven. A rectangular building at the north reminded site archeologists of the Qinian Temple, one of the first buildings constructed at the Temple of Heaven.

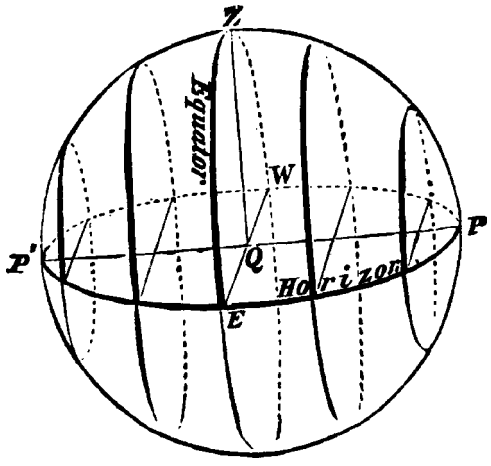


Figure 1. How the stars move if you are standing at the equator.

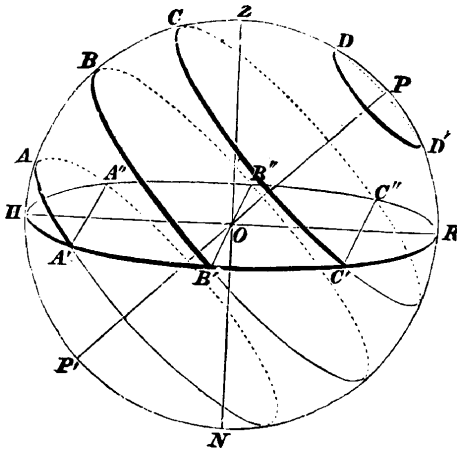
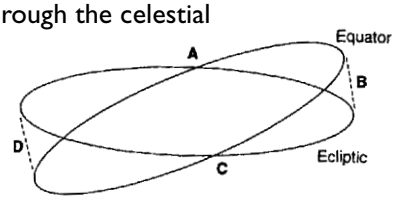


Figure 2. How the stars move if you are standing at a latitude.

Communities and buildings aligned with cardinal directions celebrate a truce of sorts between humans, their planet, and the universe. This kind of construction is so common that it seems even so-called primitive people create very sophisticated and serious ways to encode and cope with the uncertainties of life.

THE FLAT EARTH IS THE REAL EARTH

For the ancients the known world was not our physical planet. It was an ideal plane running through the celestial equator (which divides the zodiac on the path of the sun or ecliptic), inclined at 23.5 degrees (see Figures 5 and 6). "Earth" was the northern band of the zodiac from the spring to fall equinox. The abyss or "waters below," the equinoctial plane or the southern arc of the zodiac, reached from the autumn equinox through the winter solstice to the spring equinox (see Figure 7). Additionally, in China, anything below the equator was yin and anything above the equator was yang.



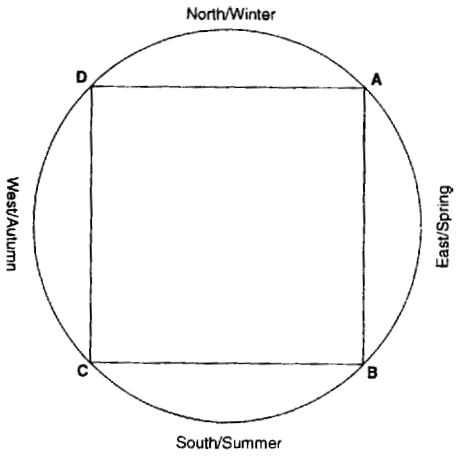


Figure 3. The square earth marks the orbit of the planet. (Major, 33)

At the top of the earth above the waters sat the pole star. The star Canopus (the garden of Nanji Laoren) lay deep in the waters below.[1] The true earth denoted the orbital tracks of the planets (who were believed to be the real people of Earth). This area also

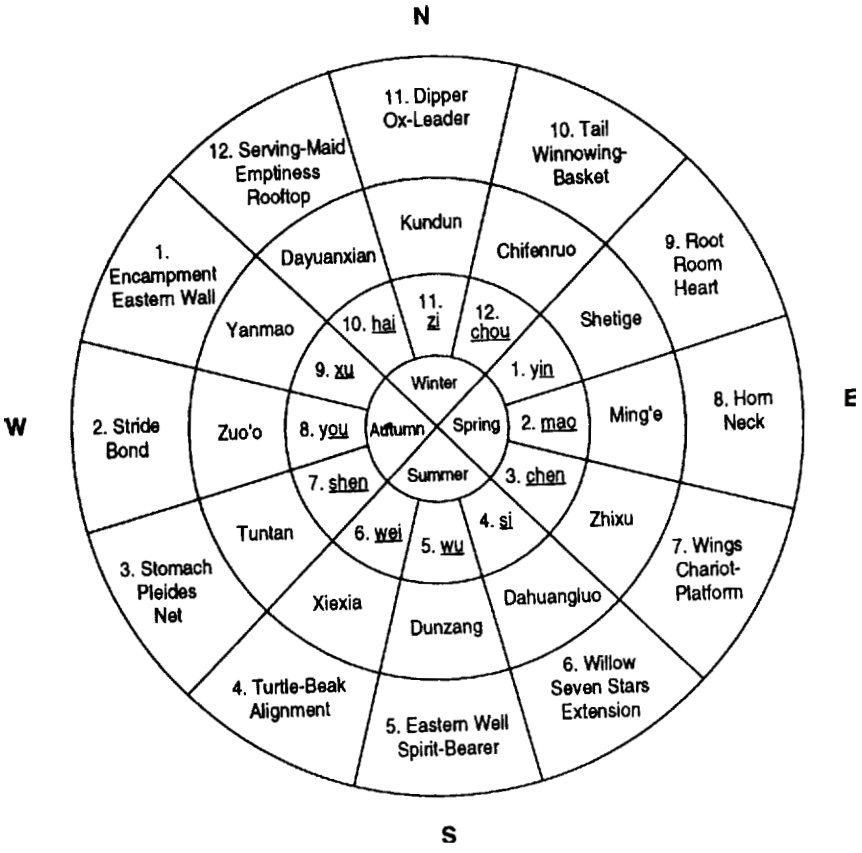


Figure 4. Seasons, branches, years of the Jupiter cycle, and asterisms. (Major, 123)

1 Laoren was visible low above the southern horizon in late October evenings during the Han. During the Kaiyuan reign of the Tang, Yi Xing and his associates journeyed to the site of present-day Hanoi

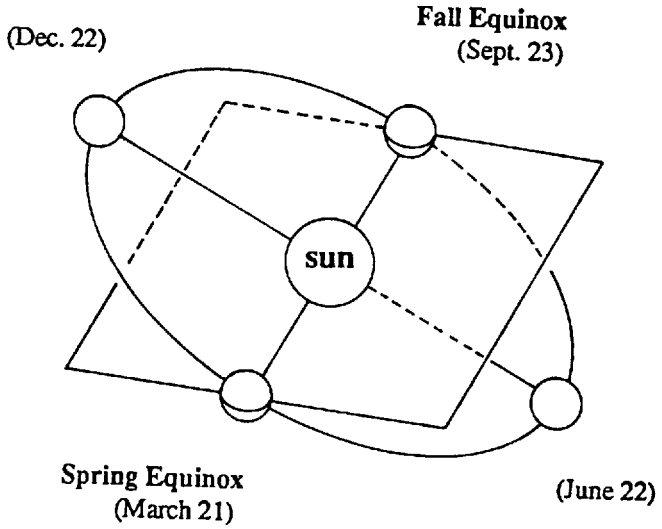


Figure 5. The equinoxes.

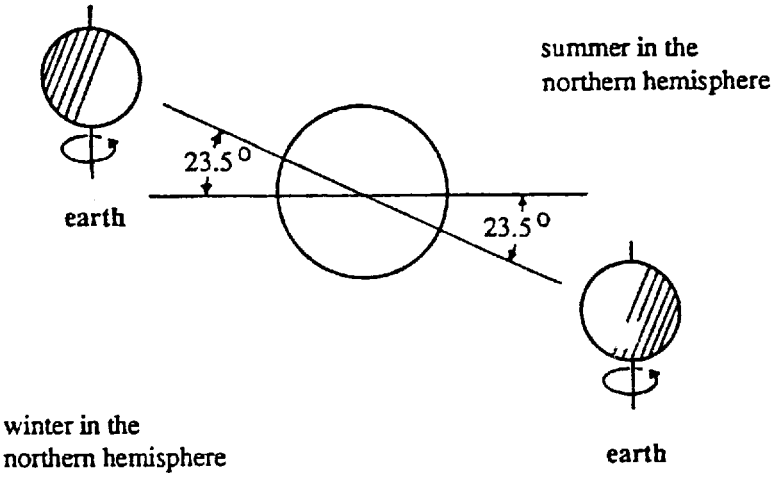


Figure 6. The seasons.

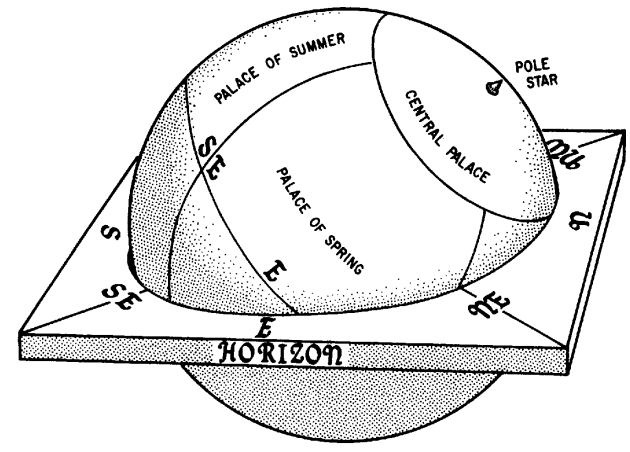


Figure 7. The Chinese celestial sphere. (Major 72)

included the dragon that caused eclipses by swallowing the sun and moon.

The maps of Claudius Ptolemy (ca. 90–168) reveal nothing below 16 degrees latitude, anything west of the Canary Islands or east of China (roughly 180 degrees longitude). Classical Muslim scientific works on al-Qibla show the prime meridian as either the west coast of Africa or the Canary Islands. These were the limits of the known world, and they were established by ancient astronomy (see Figure 8).

The equinox sun occupies each constellation of the zodiac for approximately 2200 years. The constellation that rises in the east just before the sun (that is, the constellation that rises heliacally) marks the "place" and is referred to as the main "pillar" of the sky, for the spring equinox traditionally marks the starting point of the year. The spring equinox constellation climbs from the "sea" onto "dry land" above the equator, and a fall constellation goes below the equator and "drowns."

Because constellations can rule only for so long an Earth can "die" and a new Earth can be "born" from the waters, with four new pillars. Disappearing, hiding under the earth, being hidden or swallowed, drowning, being produced or hidden in the sky, and going to the underworld all indicate the archetype of something sitting on the horizon. Being born from a rock, being vomited up, rising from an ocean bath, and being recalled from the otherworld indicate something rising from invisibility into the sky. (Worthen, 129)

and saw Laoren high above the horizon. They recorded other stars to within 20 degrees of the south celestial pole. Yi Xing believed that early Chinese astronomers considered constellations like Laoren to be hidden and invisible. (Sun and Kistemaker 28-29, 185)

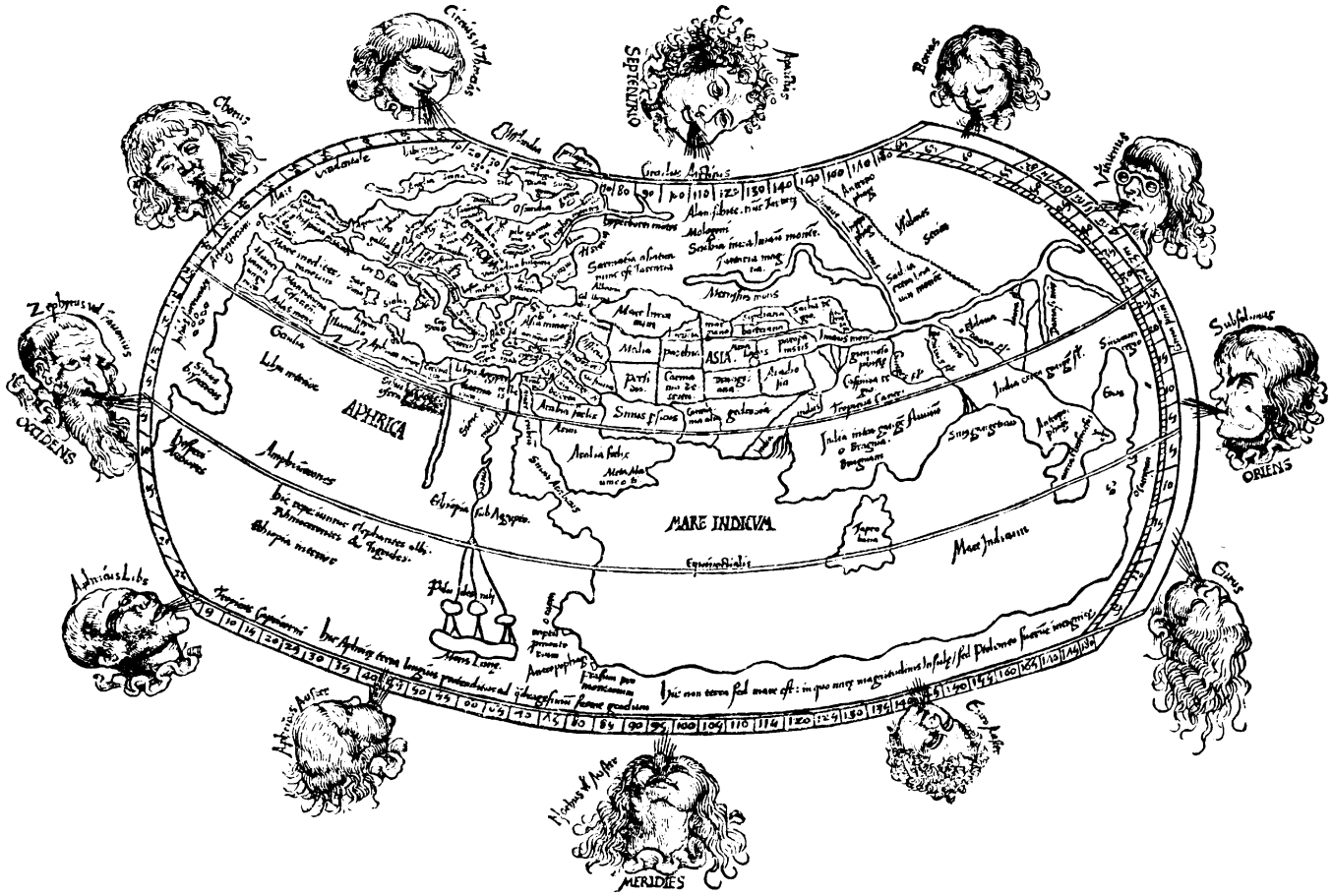


Figure 8. The known world in the time of Claudius Ptolemy.

> *Long ago Gong Gong fought with Xuanxu to be god. In his fury he knocked against Mt. Buzhou. The pillar of heaven broke and the cord of earth snapped. Heaven tilted toward the northwest, and that is why the sun, moon, and stars move in that direction. Earth had a gap missing in the southeast, and that is why the rivers overflowed and silt and soil came to rest there.*
> *—Tianwen*

At least seven thousand years ago, Chinese developed four constellations to divide the sky (see Figures 9 and 10). This was the simplest orientation transferred to markings on a *shi* (also known as the *liuren* astrolabe), the earliest known fengshui device (see Figure 11). In Chinese thought, connecting the four points within the celestial circle created the "four palaces" consisting of four wedges oriented to the cardinal directions—the shape of the character *ya*, which also suggested the maternal ancestor of a Shang nobleman.[2] In Chinese thought, connecting the four points within the celestial circle created the equinox cross or *ya-xing*, which also served Neolithic cultures as an image of the four phases of the moon (see Figure 12).[3] Jung explained this "crossing" as the model for the cross-cousin marriage, which was a feature of Shang dynastic life.

A ya-xing can be found on Karanovo pottery (6300 BCE), and as part of reliefs at Tarxien on Malta (3000 BCE). It

2 In Shang terms, "I" or "we" *(wu)* developed their meaning from a designation for descendants of E (Black Bird Lady), the first female ancestor (Allan 53, 189). Deceased female ancestors are named more frequently in oracle bones than deceased male ancestors. (Rawson, 271)

3 The Shang, like the early Greeks, recognized only the seasons of spring and autumn (the equinox points). For both cultures these were the seasons of the dead, for seeds (and thus new life) belonged to them.

4 The "image of Beidou" is Nandou, the southern dipper. It was known as the Southern Bushel, Celestial Door, and Celestial Sacrificial Hill. Nandou was the first house of Xuanwu, the Mysterious (Black) Warrior-Turtle. (Turtle plastrons symbolize a suit of armor, which gave the turtle its warlike name.) The snake twining around the body of Xuanwu seems to be part of Canglong (the Dragon) because *xiu* (equatorial

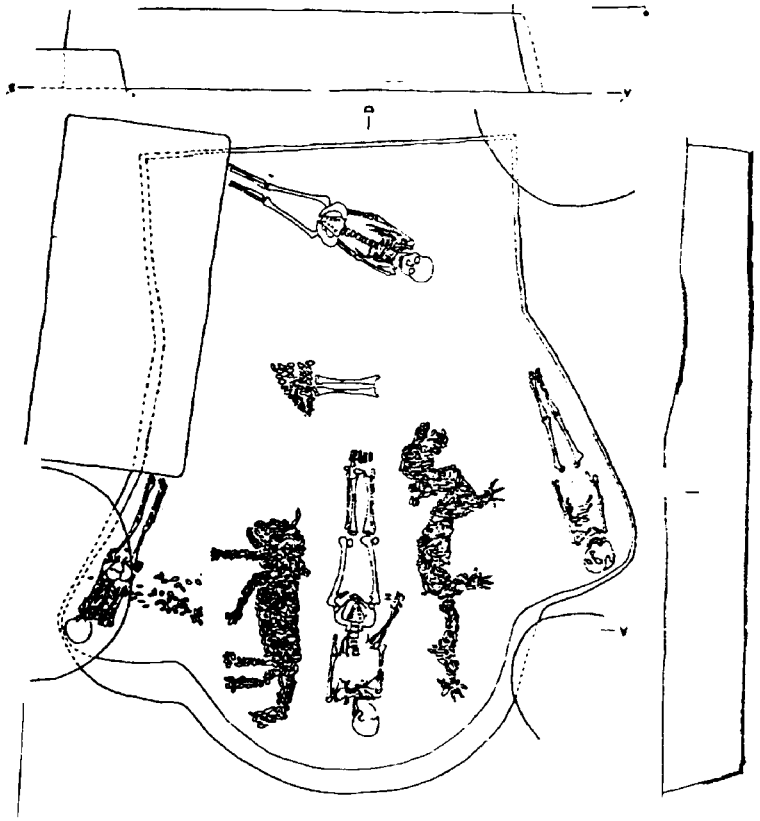


Figure 9. A Yangshao tomb (Banpo phase) at Xishuipo near Puyang, Henan. The river shells are laid in the shape of the Dragon and Tiger. The leg bones and shells in a pile at the north probably indicate Beidou. Dated at 5000 BCE. (Sun and Kistemaker, 116)

Figure 10. The four celestial animals (four images) and their positions in the Chinese sky. (Staal, 1984)

Figure 11. This is a Shipan *or early fengshui compass—the oldest working compass in the world.*

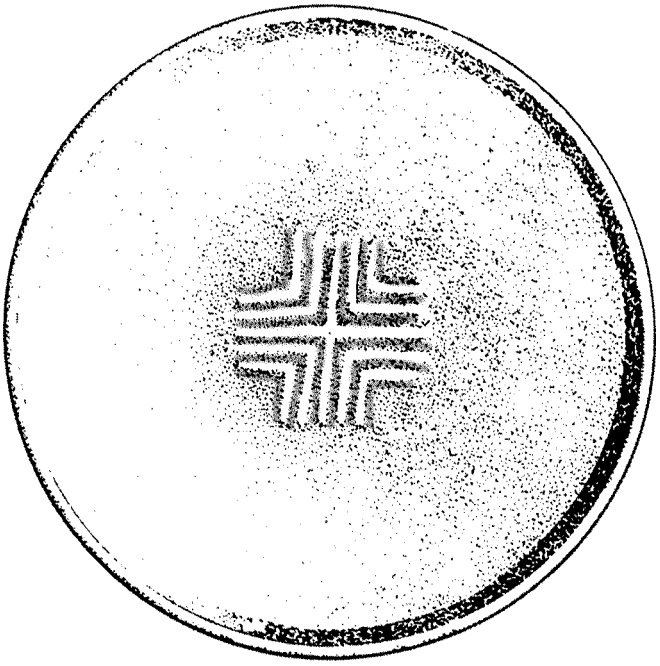


Figure 13. Bowl with ya-xing from Tisza culture in southeast Hungary (4800–4700 BCE) (Gimbutas, 75)

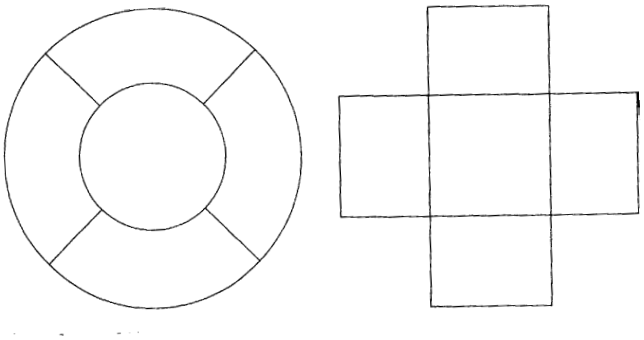


Figure 12. The fourfold earth (left) and the ya-xing (right).

was used as seals and decoration for Tisza culture (see Figure 13), Cucuteni (4500–3500 BCE) and Lengyel (4900–4600 BCE), at Starcevo (6300–5200 BCE) and other Old European sites. Shapes and decorations from Vuçedol culture using this symbol were buried in Maikop kurgans along the Adriatic coast (c. 3500 BCE). At Loughcrew in Ireland the equinox cross was built into cairns to mark the cross-quarter days 4 February, 6 May, 8 August, and 8 November. (Interestingly, many *kanyu shia* used the *sifen li* or quarter-day calendar.)

This cross or *ya-xing* also appears on oracle bones as the graph + (*wu*, meaning mage or magus) to identify officials at Shang courts associated with earth deities of the four directions. Centuries later the same symbol was incorporated into the ceremonial pavilion at Angkor Wat.

Bie, the ancient river turtle *(Corona Australis)* existed in the Void before the universe was created, and knows everything—which explains why turtles were used for divination. Linggui (spiritual turtle) was the sacred animal used by kings to consult heaven and the ancestors. Bie carries on his back an image of Beidou *(Ursa Major)*, the sun, moon, and eight regions of the heavens—a celestial map. [4] On Bie's plastron, it is said, are five peaks and four

reference star) Ji of the dragon contains Bie, the turtle constellation. It is exactly positioned to be entangled in the tail of the dragon. Yao and Gun passed through Xuanwu as part of their transformation into three-legged turtles, bears, or dragons.

5 Bie was one of the xiu in Red Bird at the time of the Han. His neck is dragon-shaped and his head is snake-shaped. Tengshe is the snake of heaven, the awakening serpent (αLacertae), also part of the Mysterious Warrior-Turtle. In Daoist symbolism the lord of the spirits of the polestar (Xuantian Shangdi, also known as Beiji Shengshen Chun) has under the feet of his statues a snake and a turtle. The snake is yang water. The turtle is yin water. When yin and yang aspects of water join under Shangdi's feet there is life, birth, and blessing. When they are separated there is death, wilting, misfortune. (Saso, 30-31)

canals—a terrestrial map.[5] The *ya* was shaped like the sacred turtle plastron and defined the Shang world.

Earth as ya-xing contains five parts. Five is geographically meant as a depiction of two-dimensional space, while the "five palaces" explain the position of the sun in relation to its path (the ecliptic). To depict three dimensions the ancients used six divisions—the cardinal points plus up and down—with the Dao "here" in the middle (just as the *Rig Veda* says everything is relative to "here"). At the center of an axis the dead can rest in peace and the ancestors can easily receive offerings, which explains the ya-xing shape of Shang tombs (see Figure 14), why some ancient festivals were celebrated at crossroads in the heart of a city, and why suicides were traditionally buried at crossroads.

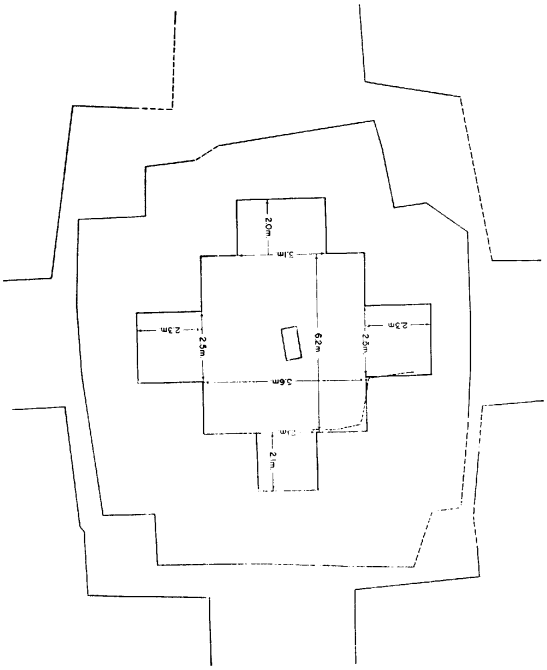


Figure 14. Shang tomb 1550 at Xibeigang near Houjiazhuang showing the outer areas and wooden burial chamber. (Allan, 97)

THE NUMBER OF THINGS

Occult power is believed to live in numbers. Mathematics, numbers, and astronomy developed from each other. Particular numbers possessed special powers because of their relation to astronomy.

The farmer's calendar of 360 days (an approximation of a year) instituted the idea of 30-day months.[6]

Consider the numbers 12 and 480 (as in 4 x 120, or one-third of 360). Some Chinese playing cards provide 120 cards in a set (four suits of 30). Other decks use 108 cards with portraits (36 celestial generals and 72 earthly malignants).

The twelve palaces were divided on the ecliptic from west to east to record astronomical events and cycles, such as the 12 lunations of the tropical year and the 12 two-hour segments of the sidereal day (see Figure 4). But the twelve palaces also encompass a year because the "year" of Jupiter is actually 11.86 earth-years. In Chinese astronomy, the "year" of Jupiter begins in the winter at the solstice *(xuan xiao)* with Xing Ji (the year-marker). There is also a 30-year cycle of Saturn through the zodiac—a cycle that Chinese astronomers set at 28 years.

Lunar lore is suggested by the number 28. Phases of the moon are indicated by 4 and 7. Like 13 (the intercalary month), 28 is a lunar number. Egyptians recognized 28 lunar markers, much like the Chinese. But the Egyptians recognized only 28 constellations, while the Chinese identified far more constellations than any western civilization (see Figure 15).

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6 *Xia xiao zheng* (Small Calendar of the Xia Dynasty) is the Chinese farmer's calendar.

7 *Jie qi* are climatic periods of the solar cycle that show a particular similarity to the annual frequency of magnetic storms. The intensity of the earth's magnetic field has a daily period, a 27-day low- and medium-level period of storms, and a 30-day period of intense magnetic storms.

8 Primeval ocean is often identified as a tail-eating snake (Ouroboros) or imagined as a great flood. "Gulf of the Sea" was originally a term for Hades. Most underworld deities began as gods of water who had rulership of the underworld added to their attributes.

9 Arthur fought twelve battles. Sometimes there are 24 maidens living in the Grail Castle.

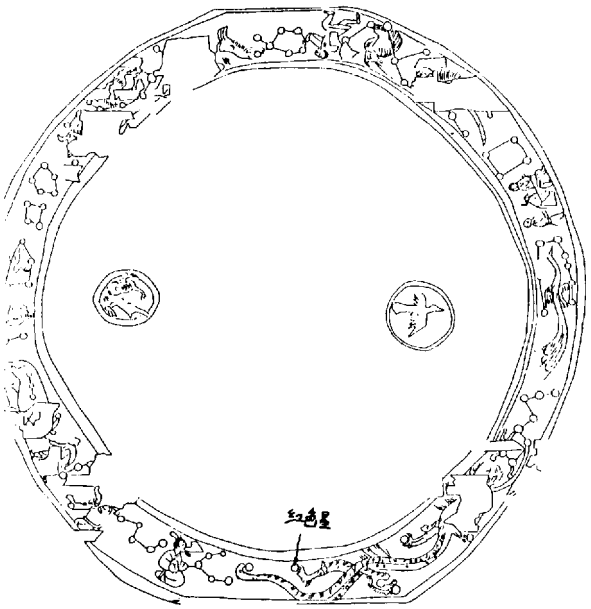


Figure 15. The ceiling of a tomb from the Han dynasty. The xiu appear in the belt. The four celestial animals and other figures were painted to represent their meaning. The star indicated on the body of the dragon is Huo, the Fire Star (Antares). On the ceiling it was painted red. (Sun and Kistemaker, 115)

Seven and 24 are powerful numbers. In the west, the division of a day into 24 hours is a Greek rendering of an Egyptian concept. In the east, 24 denotes the Chinese concept of 24 solar periods or *jie qi*.[7] Seven suggests particular constellations of seven stars (Ursa Minor, Ursa Major).

The 40-day disappearance of the Pleiades, first noticed in Babylon, indicated the significance of 40. Biblical lore teems with number symbolism. The flood lasted 40 days and 40 nights. Moses lived as an Egyptian until after his fortieth year. The Hebrews wandered in the desert for 40 years. Jesus wandered in the desert for 40 days.

Fifty and 150 relate to the Babylonian sun god. Strangely, multiples of 50 are also found as the number of knights to sit at King Arthur's Round Table.

Anu the Babylonian god of the equator and zodiacal band was identified with 60. A 60-year cycle marks the resonance of the orbits of Saturn and Jupiter. (Their Grand Cycle takes 900 years).

Yarrow stalk divination provides the following results among *Yijing* line numbers, again hinting at ancient astronomy:

- Four possible occurrences of a 6
- Twenty possible occurrences of a 7
- Twenty-eight possible occurrences of an 8
- Twelve possible occurrences of a 9

In the *Yijing*, hexagram 35 (Jun) shows Li above Kun (the sun coming from the earth). Hexagram 36 (Mingyi) shows Li below Kun (the sun below the earth). Xu (5) shows Qian below Kan (heavens in the ocean). This is used to support a hypothesis in astronomy found in the *Jin shu*.

THE GODS COME TO EARTH

Cosmic harmony started with the natural world, then worked its way to humans, and eventually influenced individual minds. This resonance *(ganying)* ultimately retraced its harmonic path, but much depended on the actions of each person. Traditional wisdom held that if the heavens could perform their vast work, at the very least humans could honor that work by keeping themselves in good order. Jung said, "If things go wrong in the world this is because something is wrong . . . with me. Therefore, if I am sensible, I shall put myself right first." Those who defied the natural flow of the universe influenced society, and their wickedness amplified in atmospheric and celestial phenomena.

Chinese rulers and their advisors relied on a variety of divining boards and turtle shells to understand the requests of heaven such as where to settle, what and when to sacrifice (and to whom). The boards they used symbolized their lands. The pieces used with the board symbolized rulers and their functionaries. They cast dice or milfoil stalks. Sometimes the pieces were magnetized.

The placement of pieces on a divination board, the numbers on a dice, and the toss of sticks eventually

achieved a different significance. Chinese divination boards and techniques employing arrows, sticks, rods and their arrangement (known as *rhabdomancy)* produced dowsing, dice games, dominoes, and playing cards—including Tarot. Notations on the boards came from the *shi*, which developed into the *shipan*, which became the Luopan. Game boards such as Six Rods (liubo), Pachisi (ludo), Morels (Nine Man Morris or Mills), star chess and celestial war are based on early fengshui devices (see Figure 16).

> *Heaven's mandate is not assured.*
> *Who is punished, who succored?*
> *—Tianwen*

The ancient game of liubo could be played as a metaphor for harmonizing a state according to the cycles in the heavens, with the will of heaven dictated by the throws of the rods or dice. A toss of sticks, a roll of dice, and the mysterious movements of magnetized pieces all corresponded to life and explained the capriciousness of events. It was for this reason that liubo was considered the sport of immortals (see Figure 17).

As disaster was believed to fall on the emperor personally, he embodied the world over which he reigned. Pawns on the liubo board could be lunar positions or peasants. Kings could be people as well as the sun and moon. Knights and castles could be ministers or comets. Early Chinese chessboards show the Milky Way separating the two sides, for the Milky Way is the celestial source of all major Chinese rivers.

On the central disk of a *shi*, Beidou contained the polestar which symbolized the emperor. The circumpolar stars symbolized the officers of his court. A *shi's* central disk also symbolized the capital. Concentric rings or

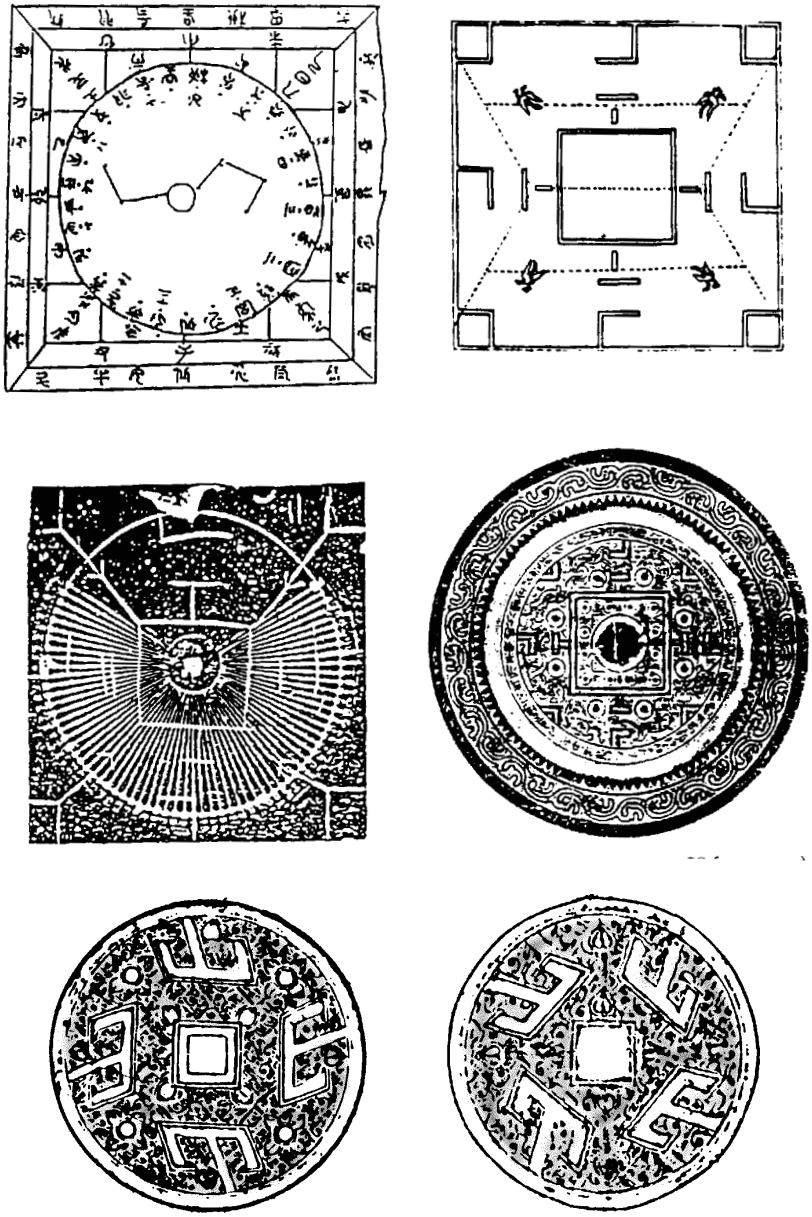


Figure 16. Clockwise from top left: A comparison of markings on a shi (also called a liuren astrolabe), a liubo board, a TLV mirror, two other versions of TLV mirrors, and a sundial. (EC 23-24, 140)

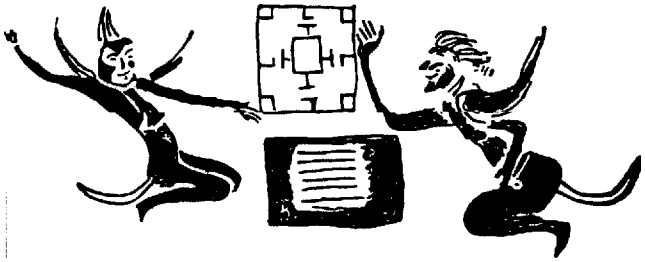


Figure 17. Liubo, the sport of immortals.

squares provided a schematic map of the kingdom at the time of the Zhou:

- *Dian fu*—the royal domain
- *Hou fu*—lands of the princes
- *Sui fu*—demilitarized zone
- *Yao fu*—zone of treaties
- *Huang fu*—the area beyond civilization where barbarians live

This plan asserted the order of the heavens, the kingdom, and society. Cosmic chaos was resigned to the land outside the sacred boundaries.

A similar set of markings is contained in the Celtic brandubh (black raven) game board of 7x7 squares. It shows a schematic of Tara with the provincial capitals surrounding it. The brandubh displays social classes and family structure, a feature common to Chinese and Irish board games.

A PALACE, A MOUNTAIN, AND A SACRIFICE

At the center of a liubo board is "the palace," a square with an X in its middle (see Figure 18). In Daoist cosmology a square with center as unifying principle was implied by a huge boulder (Kunlun) and four sacred hills marking the cardinal directions. In western cosmology the halves of the celestial sphere included a cross identifying the meeting of equinox points and the path of the sun.

Sometimes this cross was depicted as a four-branched torch. In some images it was portrayed by sacred twins such as Cautes (spring) and Cautopates (autumn), Phosphorus (morning star) and Hesperus (evening star), or Castor and Pollux (identified in the sky by the Indian asterism of Punarvasu).

For Chinese, as we have seen, the celestial circle was drawn around the *ya*. Turned as a diagonal the ya could represent a negative cross—a human spread-eagled and headless, like one of the state sacrifices of the Shang. In

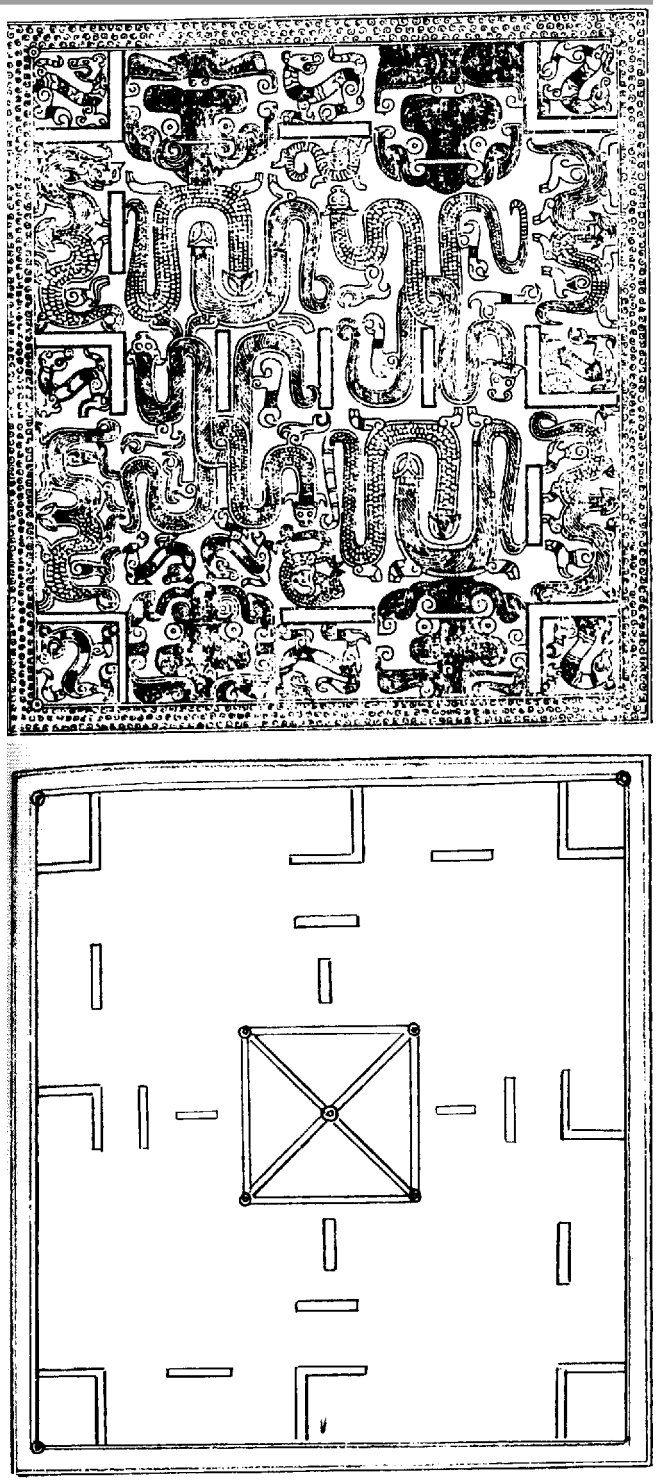


Figure 18. Top: Liubo board.
Bottom: Schematic of the markings on a board.

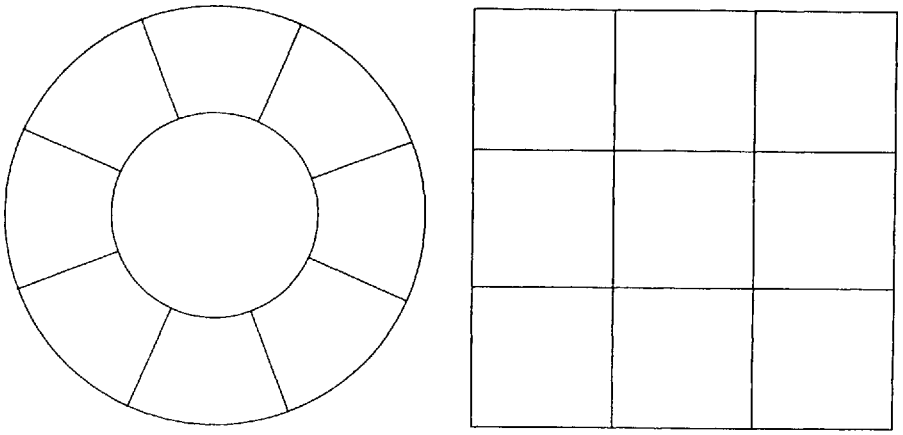


Figure 19. The Well-field system ordained by Yu and mapped onto the earth by the Zhou. It is a divine division of space.

its upright position it could represent a human with feet together and arms outstretched like Pan Gu—or like Tang, the Shang king who offered himself as a sacrifice to heaven—or the right-running *(rita)* axle of the universe, as well as lunar cycles and the seasons.

Resonance appears in the layout of Angkor Wat, for the outside wall represents the square earth. The moat signifies the oceans. The four central towers are the peaks of Mt Meru, the Hindu Kunlun. The same layout later appears in legends of the Holy Grail. The *temenos* or Grail castle sits on an island. Its four towers surround a central mountain, or round or square tower that houses the Fisher King and the four symbols.

The ninefold plan of a Celtic king's hall matches the Mingtang used in China, which was built according to the nine-square *fenye* system ordained by Yu (see Figure 19). However, according to one Chinese classic, this "great plan" with its nine divisions belongs to the time of the Xia, with some parts added by Yu and some pieces as old as Yao.

Beginning at least from the Zhou dynasty, Taiyi diviners used the cord-hook diagrams on the *shi* along with the earliest known mapping of numbers onto the Luoshu. They tracked Taiyin (a time-spirit) through the nine palaces, whose positional changes began around 4 February. The spatial plotting by diviners of calendar cycles onto the nine palaces was called *ersheng sigou* (two cords and four hooks). *Zi, wu, mao,* and *you* are the two cords. *Chou/yin, chen/si, wei/shen,* and *xu/hai* are the four hooks that divide the sky into the four seasons.

Nine-square diagrams used for calculations date not later than the Qin dynasty because boards of that age have been unearthed at several sites. However, the concepts carved into the boards are much older. Cord-hook motifs were popular in the fifth century BCE—they were found on a chest in the astonishing tomb of the Marquis of Yin, along with another chest that shows the *xiu* as

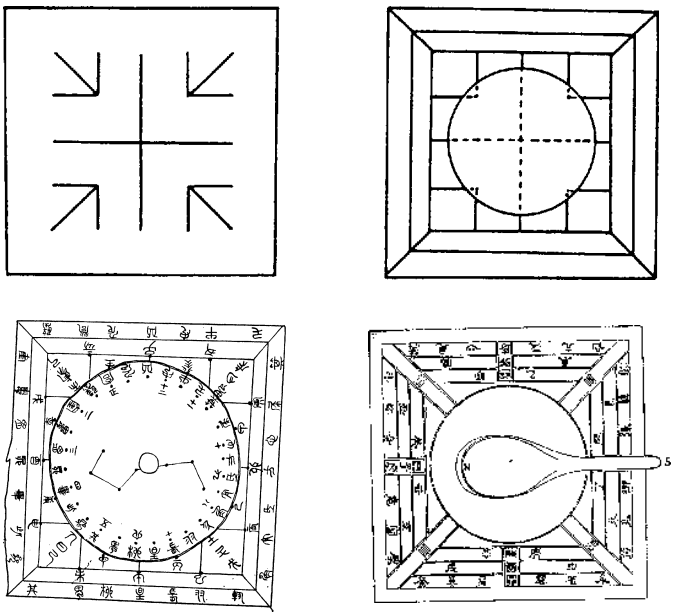
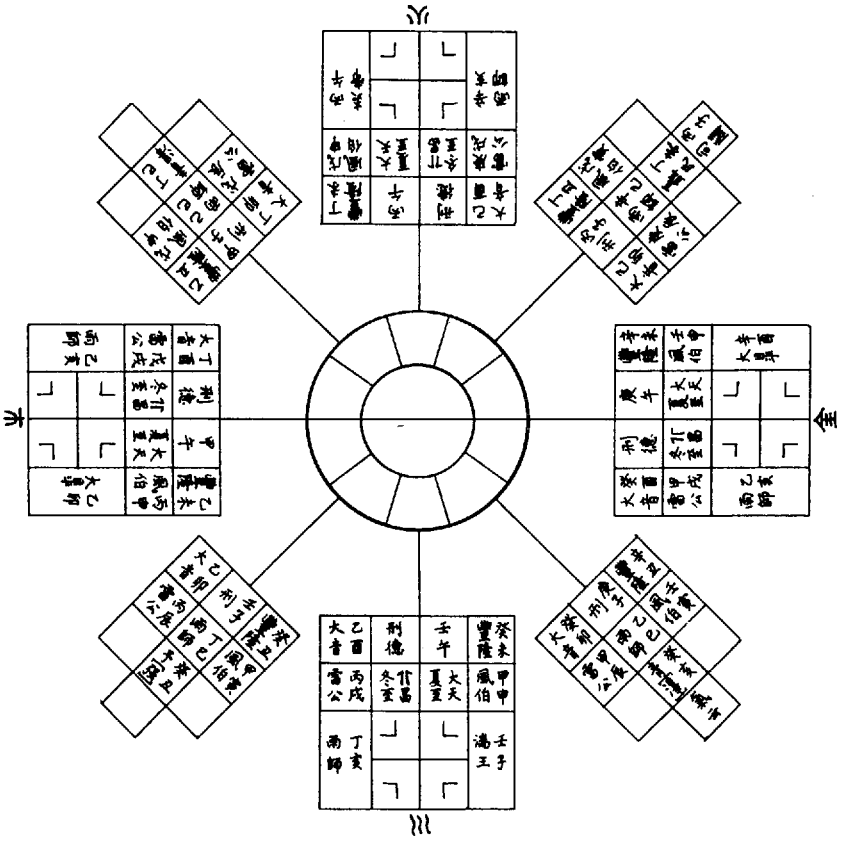


Figure 20. Upper diagrams;—Back (left) and front (right) markings on a shi from the Qin dynasty. (Kalinowski, 199) Lower diagrams—The shi went through a further stage of refinement (left) and developed into the shipan (right).

part of a design that looks like a *shi*. (Kalinowski, 198) Liubo boards from the fourth century BCE were found at Hubei and Zhongshan. A *shi* at least as old as the second half of the third century BCE was excavated at Wangjiatai in 1993. It shows the *xiu* and the earthly branches on one side and a cord-hook diagram on the other. It is possible to trace the development of fengshui compasses from these early examples (see Figure 20).

Recent findings at Shashi in Hubei have pushed these dates farther back into time because archeologists discovered a Qin dynasty manual for a *shi* that explains the four directions, *wuxing*, stems and branches, *xiu*, and the division of the day into 28 hours. (Kalinowski, 139)

As discoveries continue, it is possible that shi may be uncovered from the time of the Zhou or Shang, for it is now certain the basics of fengshui date from at least those times.



OF PLATES AND RINGS

Where is the Dipper tied with the Cord?
How is the Axis raised?
—Tianwen

Part I explained general information about astronomy in China from a very early time and how fengshui instruments are part of that long history. Now we will look at the technical aspects of this information and relate it to our methods.

Most people in ancient China used the ordinary or farmer's calendar of 360 days,[1] while experts employed by the ruling classes—such as the imperial astronomer, imperial astrologer, meteorological officer, and timekeeper[2]—used the astronomical year of 365.25 days. The astronomical year is marked on the *shi*. It counts off roughly a degree *(du)* per day—that is, time appears as an angle. (Cullen, 42) Not until the Jesuits came to China did the compass use 360 degrees.

A Chinese astronomer stood facing south and observed the celestial objects that crossed the north-south meridian in their daily motion from east to west (meridian transits). Any celestial object that fell on the meridian was *zhong*, "centered." (Cullen, 41–42)

All fengshui instruments have in common the following:

- *Central Pool of Heaven, Celestial Lake*. At one time this area indicated the northern celestial polar region, especially the throne of *di* or *di wang* or *da di*, the Pivot Star (*Niuxing* in the constellation Beiji; we call the star *Kochab*), and also the throne of Taiyi. Kochab was considered the polestar by the Han. Taiyi marked the pivot of the heaven plate of the *shi*, around which Beidou turned. The Central Pool is also the needle housing of a Luopan.

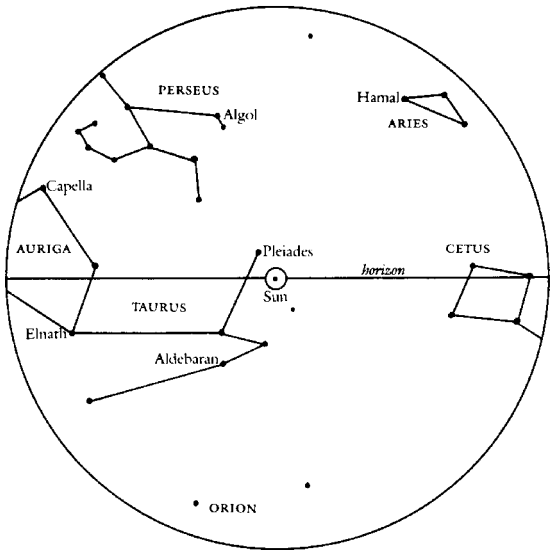


Figure 1. The eastern sky at sunrise at approximately 30°N on the day of the spring equinox in 2300 BCE. (Worthen, 176) The observer assumed by the Zhoubi suanjing *stood at roughly 35°N. (Cullen, 8)*

- *Inside Plate, Heaven Plate*. This is the round plate that contains the markings on a Luopan. On earlier devices it depicts Beidou, or defines where the ladle piece of the compass rests.
- *Outer Plate, Earth Plate*. This is the square plate on a Luopan in which the Heaven Plate rests. On *shi* and *shipan* it contains the markings.
- *Red Cross Grid, Heaven Center Cross Line*. This was anciently considered the axle of the universe *(ya-xing)*. These two red strings or cross markings on a Luopan are used to read the correct direction and meaning, but also indicate the equinoctial colure and solstitial colure. They are part of the Earth Plate of a *shi* and *shipa*n.

1 A common verb of sacrifice, *si,* used during the Shang was also the term for a cult year of 360 days. The term was written as a snake and an altar. It alluded to Shang sacrifices where a human was beaten to death. (Allan, 163)

2 For reasons of national security, astronomy in China was a monopoly of the state. Anyone not authorized to possess such knowledge was likely to be executed. (Qin emperor Shihuang may have burned books, but he did not burn astronomy books or those on celestial prognostications.)

DEFINE "COMPASS"

A tradition as early as the time of Yao was that the sun was the eastern palace (at Ri, near *xiu* Mao) and the moon was the western palace (at Yue, near *xiu* Fang—in earlier times known as *Ho* or *Ta-ho)*. (Sun and Kistemaker, 136)

One of the oldest records of stars used to designate time and the seasons is found in *Yaodian* (the "Canon of Yao"). In this book Yao provides the celestial coordinates for his reign (Legge, I:17):

> *The day is of medium length and the star is in Niao (Bird). You may thus exactly determine mid-spring [spring equinox]. ...The day is at its longest and the star is Huo (Fire). You may thus exactly determine mid-summer [summer solstice]. ...The night is of medium length and the star is in Xu (Void). You may thus exactly determine mid-autumn [autumn equinox]. ...The day is at its shortest and the star is in Mao (Hair). You may thus exactly determine mid-winter [winter solstice].*

Table 1. The xiu and stars in Yaodian
(Sun and Kistemaker, 17)

Xiu	Star name	Right ascension at 2400 BCE	Deviation from cardinal points
Mao	ηTauri	23h45m	–15m
Niao	α Hydra	5h42m	–18m
Huo*	α Scorpii	12h18m	+18m
Xu	α, βAquarii	17h47m	–13m

In 3102 BCE the spring equinox sun was in the center of Taurus. By 2300 BCE the Pleiades (*xiu* Mao) were no longer equinox markers. Hamal (α Arietis) and Algol (part of *Jishi*) may have served—or Capella *(Laoren)*. (Worthen, 171)

*The *Jin shu* says that Huo was also known as *Mingtang* (the middle star of *xiu* Xin); the *Fang* asterism forms *Mingtang*.

Scholars generally assign Niao to the *xiu* Xing (Star), Huo to *xiu* Xin (Heart). Some researchers see a resemblance between the ancient star-landmarks of nomads and farmers and the star-landmarks in the Canon of Yao (see Tables 1 and 2).[3]

Table 2. The xiu and stars in Zhoubi suanjing
(Cullen 18, 97)

Xiu	Name	Star	Positioning
Niu	Ox	α or β Capricornii	Winter solstice, early 11th to mid-5th century BCE
Lou	Sickle	β Arietis	Spring equinox, late 11th to early 2nd century BCE. (The summer solstice was in Lou during the Han.)
Jing	E. Well	γ, μ Geminorium*	Summer solstice, early 6th century BCE to early 16th/ mid-18th century CE. Linked with meteorological phenomena relating to water. (DeWoskin, 187 *n*102)
Jue**	Horn	α Virginis	Autumn equinox, early 6th century BCE to mid-4th century CE.

In the *Yueling* of *Lushi chunqiu* (ca. 239 BCE) the markers are Dipper (winter solstice), Straddler (spring equinox), Eastern Well (summer solstice), and Horn (autumn equinox).

*Castor and Pollux in Gemini (Hindu *Punarvasu*) were heralds of the spring equinox in 5800 BCE. (Worthen, 172)

**This would be *Jiao*, the Horn of Canglong, in the *Shi Shi* list of constellations, and the "gate" to *xin* Xiu. (Sun and Kistemaker, 157)

Guiguzi (ca. 400 BCE) mentions that people on jade-collecting missions to western Asia used a "compass" to find their way home.[4] The Zhou I symposium at Jinan, China in 1978 demonstrated that the Hetu and Luoshu are two-dimensional versions of three-dimensional star maps depicting cardinal directions (see Figure 2). Both figures date from at least 6000 BCE.

3 The notion of a "zodiac" and regular zodiacal "signs" of 30 degrees did not appear in Babylon until approximately 700 BCE. (Pankenier 130–131, *n*6)

4 One of Wu Ding's sixty-four wives, Lady Hao, was an avid collector of jade. Her tomb north of Xiaotun contained 750 jade pieces, some of them extremely ancient and from great distances, along with contemporary Shang works of a foreign or exotic design. (Allan 8, Rawson 91)

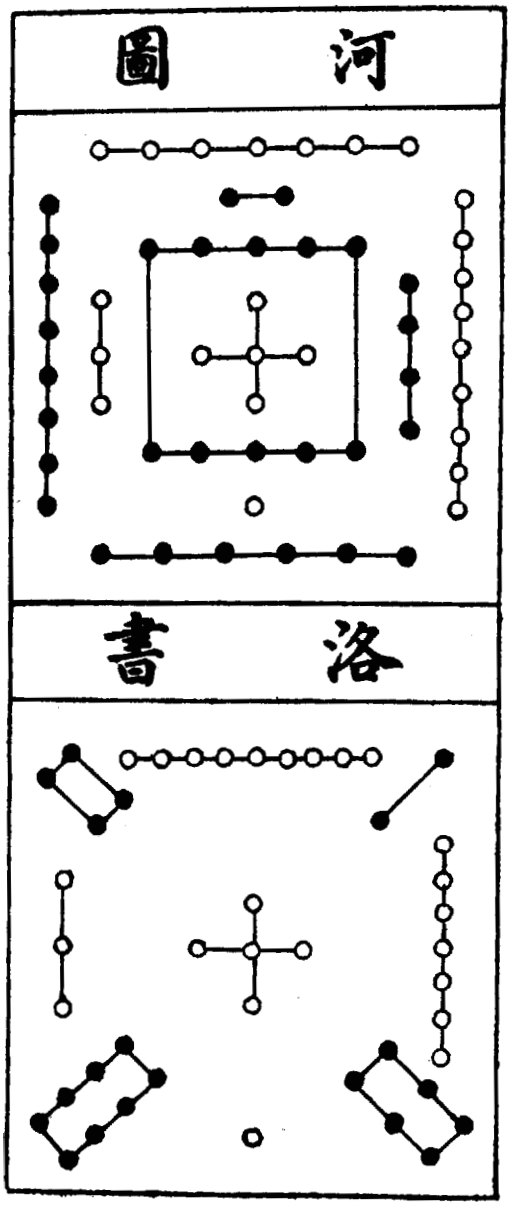


Figure 2a. Hetu (top) and Luoshu (bottom). (DeWoskin, 44)

THE DISH RAN AWAY WITH THE SPOON

Renowned skeptic Wang Chong said that the so-called gods tracked by *kanyu* were actually 'the holy spirits of the stars.' No wonder—the first mentions of *kanyu* were completely related to issues of time (Loewe, 204) — and time for the ancients was about movements in the heavens.

The original Bushel constellation in Chinese astronomy is Nandou, in the first house of the Mysterious Turtle-Warrior, part of our Sagittarius (ϕ Sgr). When precession made it impossible to use the Southern Bushel, another one was found in the constellation of Beidou (see Figure 4).

The Heaven Plate on a *shi* depicts the handle of Beidou moving clockwise through the 24 *jie qi* or periods of 15 days (24 x 15 = 360) around the celestial circle (see sidebar on the *jie qi)*.[5]

Sima Qian said that the seasons were determined by the position of the "handle" of Beidou. The *Heguanzi* (third century BCE) mentions Beidou as the seasonal clock:

> *When the tail of the Bear points to the east (at nightfall) it is spring to all the world. When the tail of the Bear points to the south it is summer to all the world. When the tail of the Bear points to the west, it is autumn to all the world. When the tail of the Bear points to the north, it is winter to all the world.*

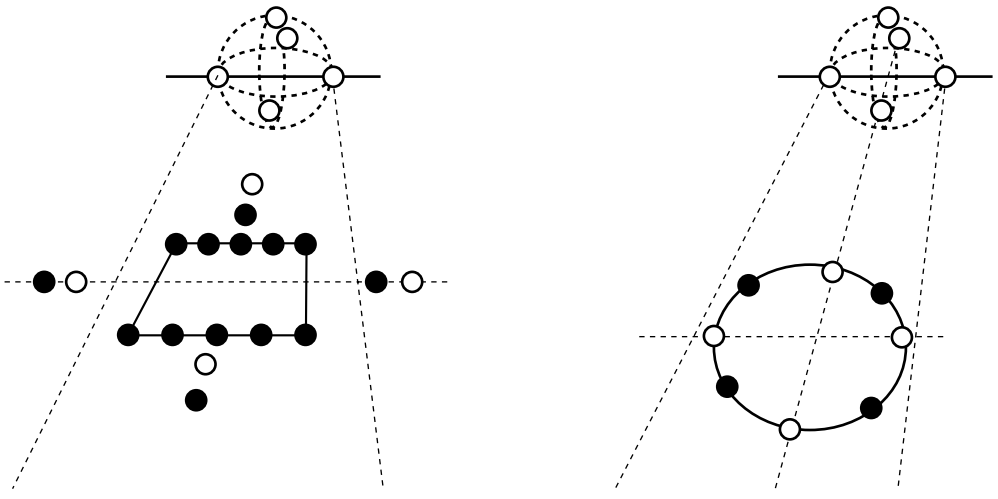


Figure 2b. The restored picture of Hetu (left) and Luoshu (right) showing square Earth and round Heaven. (After Huang, 35)

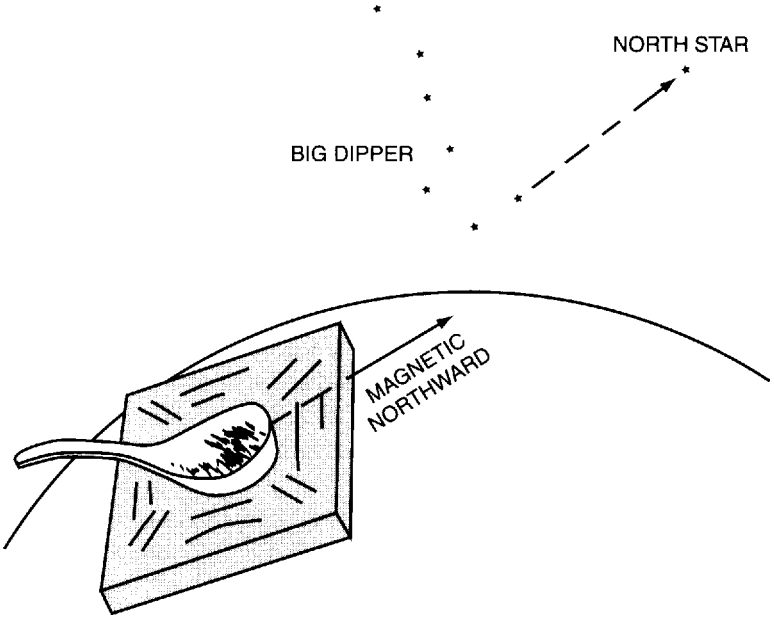


Figure 3. The handle of a shipan is shaped into a ladle that corresponds to Beidou (the Ladle, Plow, or the Great Bear). The last two stars on the bowl of the Dipper, opposite its handle, point toward the polestar. The ladle on the compass was designed so that the outer lip of the bowl points in the horizontal northward direction and the lighter handle points south. (Campbell, 2)

The *Hanshu* records the following:

> *The yin-yang military specialists operate in compliance with the seasons. They calculate Xing-De, follow the striking of Beidou, conform to the Five Conquests, and rely on ghosts and spirits for help.*

Beidou as the Northern Bushel was believed to determine the lifespan of the emperor. It was personified as a being wearing a white cloak. Nandou the Southern Bushel was called the Ruler of Life and personified as wearing a red cloak. Both bushels were the sons of the Bushel Mother, Doumu (Polaris).

Since the fourth century CE, Daoists have recognized the stars of Beidou as gods. However, they claim the constellation consists of nine stars, but only seven stars are visible to ordinary people.

No doubt this is more mythologizing of astronomical details. When the Zhou observed the heavens Beidou was much nearer the north pole, just as four thousand years ago the *xiu* (as equatorial asterisms) were much nearer to the equator than they are now. Ancient astronomers could extend the handle of Beidou through the constellation of Böotes as long as it remained above the horizon (see Figure 5). Apparently one of the so-called invisible stars, *Zhaoyao* (l Böotes), dipped below the horizon around 1500 BCE. (Ho, 133)

In the *Star Manual of Master Shi* (third century BCE), Beidou consisted of eight stars including *Fu*, the operator of *Kaiyang* (our star Mizar), the sixth star of Beidou. Alioth was the fifth star, *Yuheng* (the Jade Sighting Tube).

By the time of the publication of *Hanlong jing* the nine stars indicated earthly counterparts of the stars in Beidou and of mountain shapes. During the Qing dynasty, when *bazhai* was a popular fengshui technique, the nine stars provided only names for eight auspices associated with trigrams.

The *jiugong tu* or nine palaces diagram was used to chart the flow of celestial objects and relationships of space-

5 The *jianchu* system is also based on the cycle of 24 solar periods. (Major, 175)

6 Long before there were astronomers working for emperors it was known that Jupiter's orbit and the calculations of the astronomers did not match. This was known even before there was evidence linking the ganzhi to the recording of years. (Kalinowski, 148)

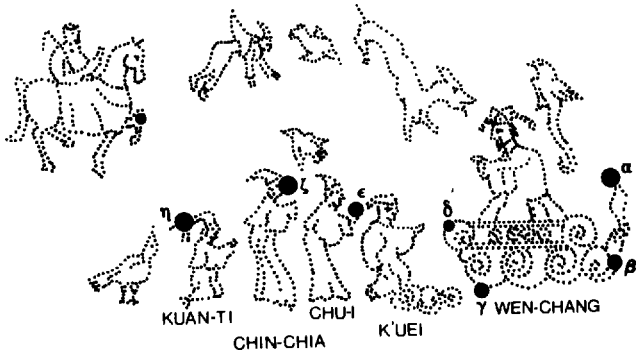


Figure 4. How Beidou looked to ancient Chinese. Notice that this rendition shows Wenchang as γUMa! (Staal,130)

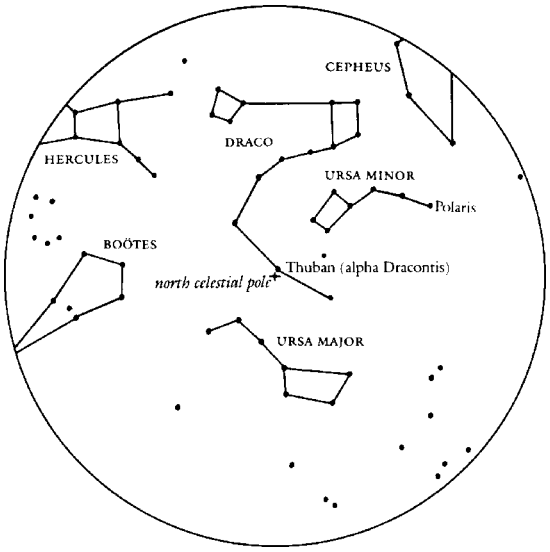


Figure 5. The northern sky viewed from latitude 44°N in 2900 BCE. Alpha Dracontis (Thuban) is the polestar. A line drawn through the handle of Beidou can be matched with part of Böotes. Thuban functioned as the polestar from 3600 to 2200 BCE. (Worthen 166, 168)

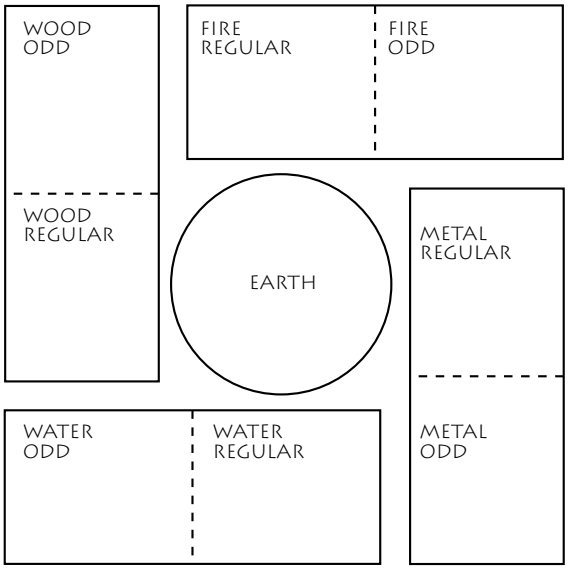


Figure 6. The jiugong tu *in its primary form, according to Mawangdui texts. (Kalinowski, 180)*

THE JIE QI, 24 COMPASS DIRECTIONS/MOUNTAINS, AND CORRESPONDING STEMS, BRANCHES, AND TRIGRAMS

Name	Stem/Branch/Trigram
Zi	branch Zi
Gui	stem Gui
Chou	branch Chou
Gen	trigram Gen
Yin	branch Yin
Jia	stem Jia
Mao	branch Mao
Yi	stem Yi
Chen	branch Chen
Xun	trigram Xun
Si	branch Si
Bing	stem Bing
Wu	branch Wu
Ding	stem Ding
Wei	branch Wei
Kun	trigram Kun
Shen	branch Shen
Geng	stem Geng
You	branch You
Xin	stem Xin
Xu	branch Xu
Qian	trigram Qian
Hai	branch Hai
Ren	stem Ren

Table 3. Correlation of room in Mingtang, month of the year, branch, and asterism (after Major, 222)

Mingtang Room	Month	Branch	Dawn Culminating Asterism	Dusk Culminating Asterism
NE corner	1	yin	Array	Tail
E	2	mao	Bow (Hu)	Establishing Star (Jian Xing)*
SE corner	3	chen	7 Stars	Ox-Leader
SE corner	4	si	Wings	Widow (Wunu)
S	5	wu	Neck	Rooftop
Center	6	wei	Heart	Stride
SW	7	shen	Dipper	Net
W	8	you	Ox-Leader	Turtle-Beak
NW	9	xu	Emptiness	Willow
NW	10	hai	Rooftop	7 Stars
N	11	zi	Eastern Wall	Chariot Platform
NE	12	chou	Bond	Root

*This star was used as a marker for the winter solstice during the early Han. (Cullen 140–145)

Table 4. The six spirits

Xing-De	Virtue and Punishment (from the time of Zhou)
Fenglong	Luxuriant Dragon
Fengbo	Lord of Winds
Dayin	Great Sound
Leigong	Prince of Thunder composed of *Leidian* (α Pegasi, Hydra), *Yunyu* (κ Psc, Hydra), *Pili* (β Psc, Hydra)
Yushi	Master of Rains (*xiu* Bi, ε Taurus, Hydra) This deity began with peoples in central Asia who noticed its heliacal rising matched the coming of the rains; the same deity was worshipped in Greece and Rome. (In antiquity, people in Tarim and Xinjiang came from the Pamirs, Ferghana, Europe, and the Mediterranean.)

In the sky of the Han dynasty Leigong and his "ancestor" Le Cu (α Pegasi), Dian Mu, and Fengbo are all lined up in one hour-circle. On one of the Mawangdui funeral banners Fengbo and Yushi are at the right and left of Taiyi. (Kalinowski 180, 195; Sun and Kistemaker 8-9, 182–184)

time (see Table 3). It is a system of divine division of space. Traditionally this "great plan" of nine divisions belongs to the time of the Xia; some parts are from the time of Yu, and its oldest parts date from the days of Yao.

The Mawangdui texts are the oldest-known works where a diagram with nine divisions is called the "nine palaces." (Kalinowski, 179) The silk documents show the correlative colors for palaces (yellow for center, blue for east and southeast, red for south and southwest, white for west and northwest, black for north and northeast). They also correlate the six spirits found in *fengjiao* and *dunjia* fengshui methods (see Table 4), the spirits of the eight sectors (kings of the cardinal directions described in the *Yueling* part of the *Huainanzi*), and the solstices (see Figures 6 and 7).

FENGJIAO

This divination technique refers to "wind angles," that is wind direction and quality. (DeWoskin, 25) Ching Fang wrote *Essential Traditions of Wind Angles*.[7]

QI MEN DUNJIA

This divination technique was popularized during the Han dynasty and mythologized the six *jia (Liujia)*—that is, the first six of the ten stems—which influenced the divination. Nine halls of the *qi men dunji*a include 72 divisions of 1 through 9 corresponding to hall trigrams *(zhai gua)* of the nine palaces. Twelve of the divisions are empty.

In the *Gan Shi,* the constellation *Liujia* is near *Gang* and *Huagai* (the canopy of the Emperor) and part of the court of *Ziwei Yuan*, the celestial north pole. (Sun and Kistemaker, 165)

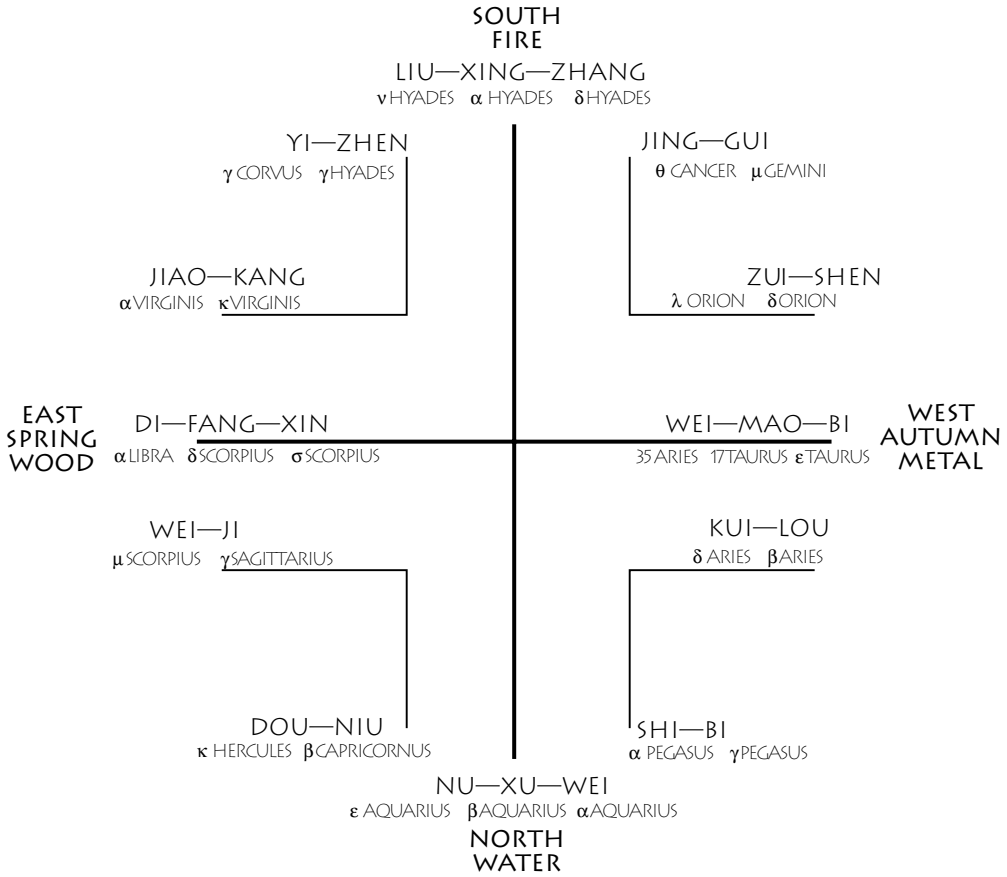


Figure 7. The symbolism found in a cord-hook diagram, according to a Qin dynasty manuscript. (Kalinowski, 139)

DAOIST RITUAL

For Beiji Daoists, Beidou is the Terrace of Seven Treasures. At the four corners of a Daoist altar (matching the equinox cross and the four hooks) are the gate of heaven or dragon pass (northwest), gate of earth (southeast), gate of demons (northeast), and door of humanity (southwest).

Daoists (like ancient magi) invoke the power of the Dipper. The Step of Yu *(yubu)* on the turtle's back (which follows Beidou) combines the ideal altar of eight trigrams, nine palaces, ten directions (four cardinal, four intercardinal, plus up and down). Beidou was the talisman used by Yu to control the floods (which were yin spirits), and divert them to the southeast where the whirlpool-abyss would sweep them away to the Yellow Springs.

Beiji Daoists calculate 4 x 2 = 8 directions (trigrams), plus one above = 9 heavens or palaces plus one below = 1(0). This provides inner and outer heavens/palaces—one of top (northwest) and one of bottom (southeast). Daoist ritual is the product (3) of their union (1) (see Figure 8). (Lagerwey, 143)

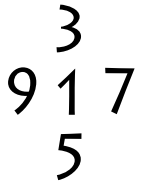


Figure 8. The calculations of Beiji Daoists.

7 *Fengzhi* or "wind seasons" technique implies tracking the orbit of Mercury and using its movements as part of the computations, but beyond portents of cold and famine it was not used for astrology. There were eight winds to a 360-day year, divided into periods according to *ganzhi*. A *shi* was used to track the movements of Beidou and correlate the wind seasons. (Major 77–79, 126)

TRACKING GODS AND SPIRITS

Calendrical calculations were called *lifa* or *lish*u. Spatial plotting of calendar cycles was called *ersheng sigou* (two cords and four hooks) and used a *shi*. The four hooks divided the sky into the four seasons. From earliest times a diviner was literally moving calculations through space-time.

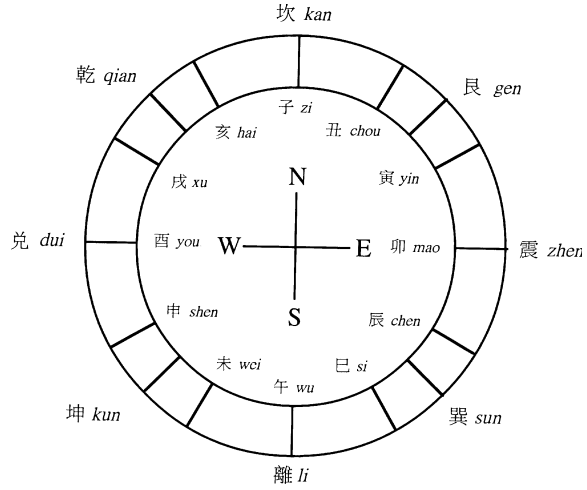
Prognostications were based on the following (Major, 125):

- the movement of particular celestial objects
- the seasons and directions
- [a] the wind-seasons *(fengzhi)* and shifts of the directional gods
- the stems
- the twelve divisions of the Jupiter cycle (in months and years)
- five cycles of the orbit of Jupiter (60 years)
- one *ganzhi* cycle (encompassing the five orbits of Jupiter) divided into three 20-year periods that each move through four of the twelve Jupiter periods

Huainanzi (especially *Tianwe*n, "Celestial Patterns") talks about the annual movement of Daiyin (Taiyin) and the *yuan* cycle of 4560 years. Daiyin is a time-spirit that evolved as it followed the branches (constructed to count off twelve lunations of the tropical year, two-hour segments of the sidereal day, and compass points). Its position changed approximately every 4 February.

The *yuan* cycle is found in the *sifen li* (quarter-day) system which was used in *lifa* before the Taichu (great beginning) calendar reform of 104 BCE. Numbers 1 through 9 were repeated 20 times to match three *ganzhi* cycles of 180 years. The *yuan* cycle contains the following cycles (Cullen, 24–25):

- *The Rule Cycle*. One *zhang* or 19 years (the Metonic Cycle). The first day of the month in the civil calendar is the new moon and a *zhang* cycle denotes when the new moon returns to the same day in the solar year (usually the winter solstice).
- *The Obscuration Cycle*. One *bu* or four *zhang* (76 years — the Calippic Cycle). For this conjunction to occur at the same time of day a 76-year cycle of 4 *zhang* (the *bu*) is required.
- *The Era Cycle*. One *ji* equals 20 *bu* or 80 *zhang* (1520 years). For the day to have the same stem-branch combination in the *ganzhi* means that 20 *bu* must pass (making one *ji* cycle).
- *The Epoch Cycle*. One *yuan* equals 3 *ji*, 650 *bu*, or 240 *zhang* (4560 years). For the year to have the same stem-branch combination means three *ji* must pass for a cycle of 1 *yua*n.



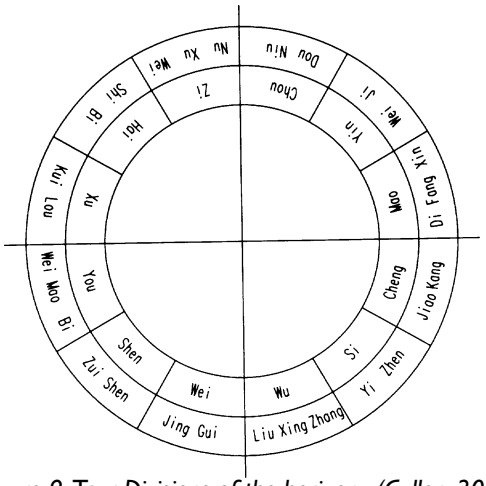


Figure 9. Top: *Divisions of the horizon. (Cullen, 202)*
Bottom: *Correspondence of the branches and the* xiu *(Sun and Kistemaker, 144)*

Table 5. Correlations of Dayin-count with Jupiter cycle.

Dayin	Jupiter Month*	Sidereal Position	Heliacal Rising
you	Shetige**	Dou Niu	11th month
mao	Ming'e	Nu Xu Wei	12th month
chen	Zhixu	Shi Bi	1st month
si	Dahuangluo	Kui Lou	2nd month
wu	Dunzhang	We Mao Bi	3rd month
wei	Xiexia	Zi Shen	4th month
shen	Tuntan	Jing Gui	5th month
you	Zuo'e	Liu Xing Zhang	6th month
xu	Yanmao	Yi Zhen	7th month
hai	Dayuanxian	Jiao Kang	8th month
zi	Kundun	Di Fan Xin	9th month
chou	Chifenruo	Weiji	10th month

* The names of the increments of the Jupiter cycle are from a language that is not Chinese and indicate prolonged contact and technological exchange between the originating country and China. No scholar can assert with any authority in what language these terms originated.

** The prognostication for the months often involve the state's issuance of rations for the population from a central granary. As the terms are Chinese equivalents for non–Chinese terms, it is possible this system originated in a country that provided for the population in this manner. (Major, 139)

Ji and *yuan* are units of *lifa* that associate the *ganzhi* to calculations of astronomical periods. Daiyin worked with a year-count unit based on the combination of its cycle with that of Jupiter, whose year-count was called *suixing jinian* (see Figure 9) The sidereal rotation of Jupiter was fixed at an ideal 12 years. Its tropical rotation was fixed at an ideal 13 months so that the planetary position corresponded with 12 divisions of the sky, the month, and the position of Daiyin in a branch of the *ganzhi* (see Table 5).

Suixing (Jupiter) and Dayin were gods of Beidou. The yang god (Suixing) moved left with the stars, the yin goddess (Daiyin) moved right against the stars, and the deities met twice a year at the borderline between yin and yang, meaning the borders on the cord-hook diagram that separate the yin seasons (autumn and winter) from the yang seasons (spring and autumn). (Kalinowski 148-149, Major 132) See Figure 7.

Canglong (the Green Dragon) is identified with Daiyin. The positions of Beidou and Canglong provide dire military portents. Anything in the path of Beidou is struck down; anything "behind" Beidou, where Daiyin dwells, cannot but advance. A wise military leader in ancient China avoided attacking the position occupied by Daiyin.

From celestial and meteorological observations a military leader could read the outcome of a battle supposedly destined by *tianshu* (heavenly calculations). Although the finest officers were proficient in these methods, staff officers regularly included astrologers, astronomers, researchers, and diviners who helped develop military campaigns. In fact, these technicians ranked as the third-highest staff officers, after the confidential advisers and the strategists. (Kalinowski, 134)

MYTHS MAY BE BASED ON FACTS

Cities as we know them are an exception to the rule. We think of a city as an almost accidental development of political and commercial interests—an idea based on our culture, which has substituted history for myth as a way of understanding life.

This is a very recent phenomenon in terms of human communities. It developed from something the Greeks called the *polis*—which functioned like an extended family—but did not form what we would identify as a city before the Middle Ages in Europe. Before then, and all around the world until quite recently, cities were an institutionalized expression of the sacred. Urban design in premodern China, India, the Near East, and nineteenth-century America, conform to the same vision.[1] Myth was a way to confront reality, not shut it out. It was the ultimate technology.

All the high cultures of Asia and most of the traditional world built their cities as an *axis mundi,* an *omphalos* incorporating the powerful centripedality of that symbol. A city was laid out as a terrestrial image of the cosmos, a schema involving cardinal axiality and orientation and, as a corollary, strong architectural emphasis on the main gates.[2] Careful planning was essential, because a capital assumed the responsibility for the welfare of the state.

What you see in the planning of a traditional city—and especially in the planning of premodern Chinese cities—flows from what Mircea Eliade identified as the sacred practice of city building:

- Reality is a function by which humans imitate the celestial archetype.
- Humans parallel the macrocosm and the microcosm by conducting rituals and ceremonies to maintain harmony between the world of the gods (in the heavens) and their world. The *Liji* says, 'Rites obviate disorder as dikes prevent inundation.'
- Reality is achieved by participating in a symbolic center which is represented by some form of *axis mundi*.
- Orientation techniques for defining sacred territory in profane space emphasize the cardinal compass directions.

You get the sense from these rules that humans built to be humbled by nature. Joseph Campbell pointed out that the heroes and heroines of myth were never conquerors—they were those who submitted.

FENGSHUI AND CITIES

> *The city of Shang was carefully laid out, it is the center of the four quarters; majestic is its fame, bright is its divine power; in longevity and peace it protects us, the descendants.*
> *—From the Book of Odes*

A Chinese city was built only after a considerable list of *fengshui* requirements was satisfied. Local influences or *xingqi*, dynamic powers of what a Roman would call the *genius loci*, would have to be determined; they change according to the shape of local terrain and according to the stars and planets wheeling overhead. (We have seen how Dayin and the other celestial spirits control the seasons and inauspicious and auspicious periods and their positions change over hours, days, and months.)

1 Urban design described in the *Arthasastra* by Kautilya, the city of the Levites prescribed by Ezekiel (48.8–35), the city described in Revelations (21-22), the layout of Salt Lake City (according to Ezekiel), and the ideology expressed in *Kaogong ji* built into premodern Chinese cities all convey the same designs. Wheatley, 454-455.

2 Wheatley, 481

Moreover, the site and date for ground-breaking had to be confirmed by heaven in advance.

> *The plain of Zhou was wide and fertile . . .*
> *And so he set to work, and so he devised a scheme,*
> *He notched our tortoise-shells,*
> *Which indicated that this was the place and time,*
> *And that houses should be built here.*
> *—From the* Book of Odes

Kaogong ji of the *Zhou li* contains the ancient and sacred practices of imperial city-building.[3] It says a royal official used a gnomon to mark sun rising and setting points and drew a circle on the ground to mark midpoints of the two shadows. The *Zhou li* says this was to calculate an axis mundi personified by the king and the polestar—'the place where earth and sky meet, where the four seasons merge, where wind and rain are gathered in, and where yin and yang are in harmony' (see Part 2, Figure 9).

The *Book of Odes* says the *kanyu shia* of the Zhou used a compass to read the landscape. Based on the archeology of fengshui devices and literary references, the ideology of imperial city planning is indeed very ancient. Time and calendar settings can exist only in what we obtain from our ancestors, and we have seen how much space corresponded with time in ancient Chinese thought.

THE GREAT PLAN

Planning a city also required drawing a plan (from at least the first millennium BCE) but literature indicates that two-dimensional plans were employed much earlier. Moats are common around Chinese capitals. The god of the soil, Hou-ji, had an altar erected in the capital to represent the axis point of the state. The altar of the soil and the temple of ancestors together formed a microcosm of the empire.

Capitals sit on a north-south axis. The most important imperial buildings sit on the major north-south avenue; palaces sit on this line and are surrounded by the city on at least three sides. All are wider in the east-west dimension, and the palace complex sits on a T intersection where the avenues and the palace place meet. Gardens and zoos are generally located north of

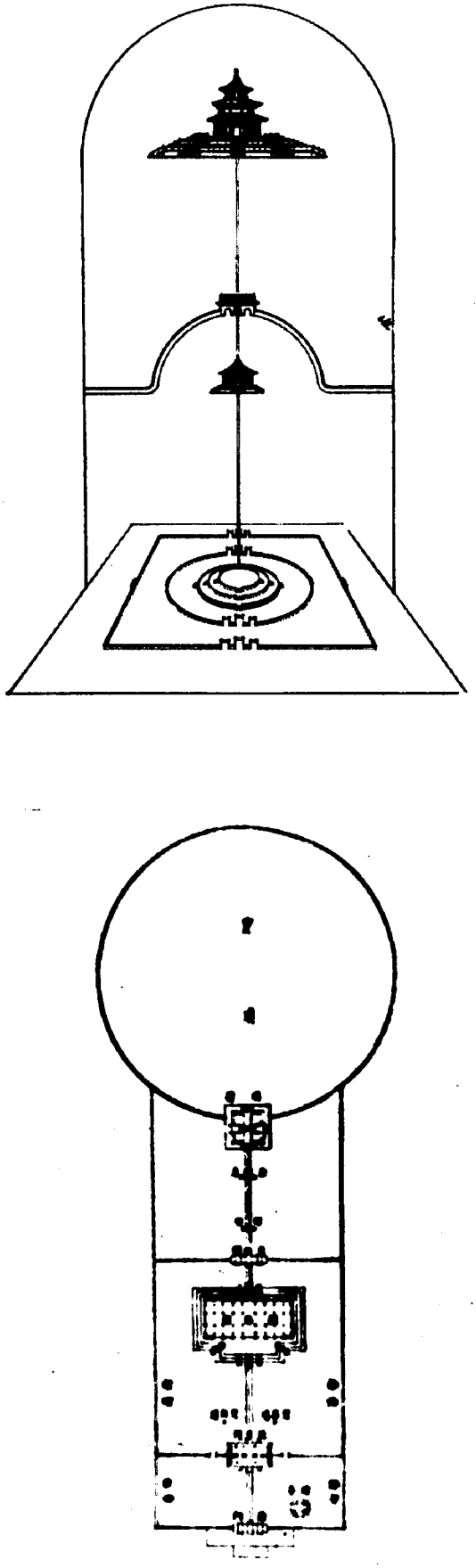


Figure 1. The Temple of Heaven interpreted as volume. (Wu, 106)

MONEY CORNER? RELATIONSHIP CORNER? MONASTERY CORNER?

"Eight corners" refers to the cardinal and intercardinal directions, a concept used in Tantric Buddhist mandalas during the Liao and Jin dynasties and found on pagodas from those times. The "corners" concept was popular in architecture during Mongol rule, for many Mongols were Tibetan Tantric Buddhists.

But for Chinese "eight" always meant the eight basic trigrams of the *Yijing*. This is seen in the monasteries at the corners of Khubilai Khan's city of Kaiping Fu (later known as Shangdu). Yuayan and Qianyuan monasteries were associated with Gen and Qian, respectively, and the symbolic layout of the city under its Mongol ruler can be traced to the *Zhou li.*

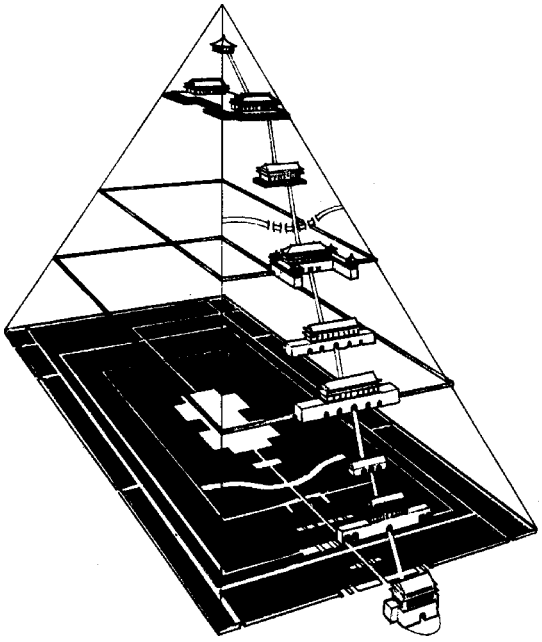


Figure 2. Beijing interpreted as volume. The dark area shows the front and rear courts of the palace superimposed. (Wu, 102)

or next to the palace complex. The imperial highway or *yudao* consists of three lanes: one for incoming traffic, one for outgoing traffic, and a middle lane for imperial use. Tombs are located at north or west of a capital, in the areas of death and decay. Architecture for these complexes was traditionally borrowed from the buildings of the living. Some had their palaces replicated in their tombs.

Banpo (5000–4000 BCE) was built on a north-south axis with its cemetery at the north. An underground capital covering 90 acres was built at Wan Qiu, the reputed birthplace of Fu Xi (r. 2852–2737). Erlitou (c. 1700–1500 BCE) was built with the features common to an imperial city, as was Ao (the second Shang capital, at Erligang). Yinxu, the last Shang capital (at Anyang), consisted of Xiaotun (the administrative and residential area) and Xibeigang (the royal cemetery at the northwest).

A desirable site was at the least benign, and optimally auspicious. But generally this was not possible, so the *kanyu shia (fengshui xiansheng)* had to concentrate on averting the negative and inauspicious or, at the worst, create a way for the *sha qi* to drain out of the area by opening channels and other drainage. Isolated boulders and hillocks on a site would be moved; trees and shrubs would be planted to change inauspicious shapes (either too yin or too yang); artificial ponds and other landscaping effects would be put to use.

When Daxing (the new Chang'an) was completed on 8 February 583 at the foot of Longshou Mountain, the *kanyu shia* had used an artificial pond at the southeast to balance the mountain. The city's horizontal avenues may have alluded to the first hexagram in the upper canon, Qian, because of the *yao* text for the second nine ('Dragon arising in the field/His virtue influences extensively' in Alfred Huang's version).

Qin capital Xianyang (famous in Arabic as *Khumdan*), may have earned its name of "united yang" because of its fengshui. It was situated on the north (yang) side of the

Wei River and to the south (yang) side of nearby hills, thus producing a double yang.

Imperial buildings were often named after auspicious stars or lucky numbers.[4] This was for good luck, because the city was designed around the heavens, because the polestar was the highest spot in the heavens, and because a capital was a sacred mountain (like Meru or Kunlun). One hall was typically named Taiji, referring to the polestar. *Taiji* implies an axis, as *ji* was an ancient technical term for the polestar.[5] (Zhu Xi compared the *taiji* to the longitudinal axis of a candlestick.) Implied in all construction is a three-dimensional volume (see Figures 1 and 2). The Forbidden City in Beijing is known as the Purple (or Polar) Forbidden City, which emphasizes its place at the top of the heavens.

The royal palace corresponded to the polestar, from which Taiyi watched over human fortunes. This concept appears in a speech attributed to the Duke of Zhou. After he constructed the Zhou imperial capital, he exhorted the king to govern from the city 'as the central pivot,' for an emperor integrated space and time. He was *nanmianjun*, the 'south-facing ruler,' whose position was unassailable in heaven and on earth—the position of greatest honor at a peasant's table or in the Great Pivot Hall (the hall of state in medieval Chang'an).

A similar ideology was at work in the Mingtang and other ceremonial buildings. The Mingtang was used by the emperor and his court to resonate activities of the year and as a location to perform imperial sacrifices. It may have been part of, or shared location with, the Biyong (Jade-Ring Moat), a round building surrounded by a moat and used for a variety of purposes. The Mingtang was sometimes built as the ground floor for the Lingtai, another imperial ritual space used for astronomical observations and calendar computations (see Figures 3 and 4; refer to Table 3 in Part 2).

THE CITIES AND THE STARS

When the Ding-star[6] was at zenith
He began to build the Chu palace.
When he had calculated by the sun
He began to build the houses at Chu.
—from the Book of Odes

Yu danced the stars of Beidou to rid China of a flood of *sha qi* ("yin spirits" in Mandarin). But some think Beidou was used as the model for imperial cities (see Figure 5).

We know that the polestar was of primary importance in the siting of cities; however, polestars change over time. Between the time that Thuban (in Draco) was the polestar (around 2900 BCE) and Polaris functioned as

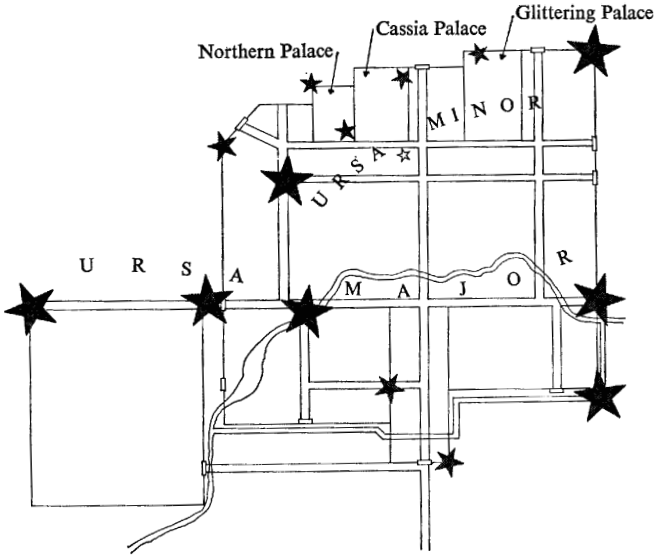


Figure 5. Chang'an with the stars of Beiji and Beidou superimposed on it. Unfortunately the polestar at the time of the building of Chang'an (the white star) does not match the location of the palaces. (Wheatley, 443)

3 There is no direct record of fengshui use for city planning during the Shang but there are plenty of indications that Zhou chroniclers were not anachronistic to think that Shang architects used the same methods as their *kanyu shia*. Wheatley, 420

4 Steinhardt, 5

5 The *taiji* is female, cracked in two like the female genitals, as opposed to the one thing *(dao, ling)* of the male.

6 Two bright stars in *xiu* Yingshi and two stars in *xiu* Dongbi form the Great Square of Pegasus, the 1-iku (one acre square) used to measure the cube-ship of the original Noah, Utnapishtim; it was also the name of the temple of Marduk in Babylon *(Bab-ilani,* "gate of the gods").

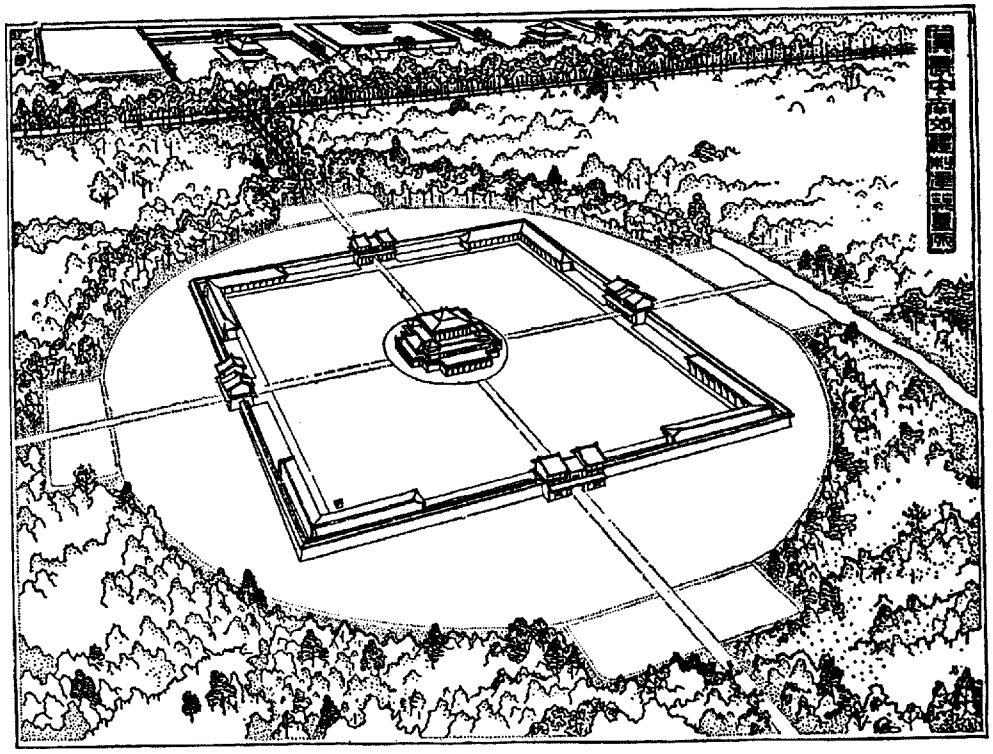


Figure 3. An artist's rendition of a Zhou Mingtang. (Sullivan, 36)

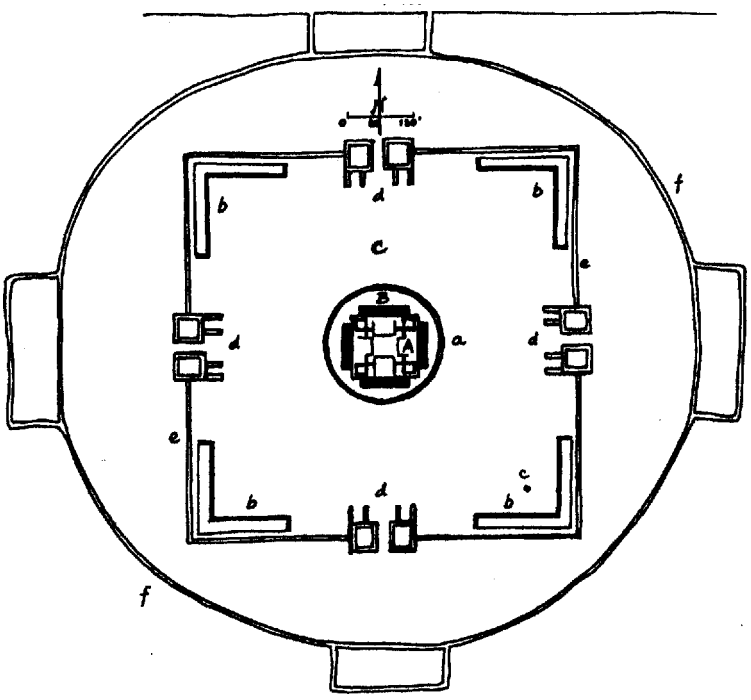


Figure 4. A Mingtang from early first century CE.
A. Square terrace. B. Circular terrace. C. Square terrace. a. central buildings, b. corner buildings, c. well, d. gates, e. wall, and f. moat. (Wu, 100)

polestar (roughly half a millennium in our own time), the pole has been located between Ursa Major and Ursa Minor. At the time of the founding of Han Chang'an the polestar was between Ursa Major and Ursa Minor at 4339 Camelopardus, a very faint star. The ancients often combined these asterisms because they seemed so similar, which may have given rise to the confusion about Chang'an. However, this information also confirms literary sources—and the opinions of *kanyu-shia* who worked on Daxing—that Han Chang'an was not built according to fengshui.

IT REALLY WAS THE MANDATE OF HEAVEN

One of the trademarks of traditional thought is the concept of resonance (*ganying*, in Chinese) between the heavens and earth. The *Shiji* says:

> *formerly the illustrious sovereign Tang the Successful and your ancestors cooperated in the government of the realm and the rule of law prevailed. To dwell [in once place] and make no effort [to conform to the laws of nature, that is, to maintain the harmony between macrocosm and microcosm]—that is no way to ensure the triumph of virtue.*

This was also a common theme in other traditional cultures, as expressed here by Iamblichus:

> *Themis [order] in the realm of Zeus, and Dike in the world below, hold the same place and rank as Nomos in the cities of men; so that he who does not justly perform his appointed duty may appear as a violator of the whole order of the universe.*

The Superior Epoch or beginning of calendar time supposedly started with a signal from the heavens. At Time Zero for Chinese the sun, moon, and five planets rose at Qianniu,[7] with the sun and moon strung like jade disks and the five planets like joined pearls.

During the time of Zhuanxu (that is, Gao Yang, who invented the calendar), seven luminaries appeared in *xiu* Yingshi[8] within five degrees of each other. Gao Yang had reigned for 13 years when the calendar commenced in 2287 BCE. (EC 9-10:175–183)

Shun died in 1917 BCE and rule passed to Yao; the sun and moon were like joined jade-disks and the five planets looked like linked pearls.

When Yu was given the mandate by heaven, a red bird landed on a mountain with a scepter in its beak.[9] The planets stacked like strung pearls. The Xia dynasty was founded by Yu around the time of the five-planet conjunction of 26 February, 1953 BCE. The planets were within 4.3 degrees of each other and rose before dawn on 27 consecutive mornings. (EC 9-10:175–183)

The last year of the Xia dynasty was 1555 BCE. (EC 15:170) The Shang assumed the mandate. King Jie of the Xia had not kept the calendar current so heaven sent a message to Tang (the Successful) in *xiu* Biao—a planetary event in Sagittarius—in 1576 BCE.

King Wen 'examined the Diagram' in the heavens that portended the fall of Shang and the passing of the mandate to Zhou. Five planets joined in the sky in 1059 BCE, bright and luminous like bi-jades. The year of the mandate was 1058 BCE.

For many years this sounded like flowery, stereotyped visions of later historians. But just as researchers found that the heavens were used to model cities in the past, researchers also discovered how much accurate astronomy was coded into ancient documents—including announcements to worthy individuals that they had been given a mandate to rule.

7 *Qianniu-chu* means the beginning of *xiu* Niu (or *Qianniu*). The ancient *sifen li* calendar determined the winter solstice at the beginning of *xiu* Niu. Qianniu became a synonym for the winter solstice *(dong zhi)*. (Sun and Kistemaker, 38)

8 Yingshi has a curious history. It was originally known as the Dark Palace (Xuangong), the winter/northern part of the sky and home of Zhuanxu. It was and also known as Tian miao (heavenly temple) or Qing miao (clear temple). Ding (α Pegasi) marked the location of this asterism.

9 According to the account in *Mo zi*, 'A red bird holding a jade gui scepter in its beak alighted on Mt. Qi." This actually means a planetary cluster appeared a few degrees west of the star marking the "beak" of the constellation Red Bird (the Bird Star is Xing, α Hya). The date was 1059 BCE. The Beak of the Red Bird in Sima Qian's time was Liu (δ Hya), the asterism Willow, a symbol of midwinter on the lunar calendar which fell in early July on the solar calendar during the Han.

VIRTUE AND PUNISHMENT

Veneration of virtue (*jingde*) developed alongside the concept of *tianming*. Virtue was divine charisma granted by heaven to a single man who was given the power to rule the world. It was another piece of the natural order that contributed to good government, based on a model of exemplary personal behavior. The *Book of Documents* mentions *Xing* and *De* as complementary but opposite modalities associated with rulership. Legalists called it "rewards and punishments." (Kalinowski, 155) In the *Guanzi* these were "the conformity of the four seasons." Texts from Yinqueshan called it "vitality and punishment."

In the *Wuxingzhan* texts found at Mawangdui, *Xing* and *De* are associated with the appearances of Venus in the western and eastern parts of the sky. Considering that *Xing* and *De* techniques are part of military divination, and Venus controlled the movement of armies, this seems entirely appropriate. However, most *Xing-De* texts associate the concepts with the sun and moon.

Good days and bad days were associated with personal behavior. On a "virtue" day, if you acted toward the good it was auspicious and good things would result.

VIRTUES

There were essentially four types of virtues (Kalinowski, 158):

- Three virtues related to stems and branches *(ganzhi)*
- One virtue related to monthly breaths *(yueqi)*

Refer to Table 1.

PUNISHMENT

Similar correspondences worked with Punishment. On a "punishment" day, if you acted evilly it was not auspicious. If you acted toward the good you might alleviate some of the negative effects. Punishment related to ganzhi elements of the day as well. There were heavenly, earthly, or human punishments which could occur between branches, between branches and stems, and stems against branches (see Table 2).

Correlations are based on mutual production for De and mutual conquest for Xing. A lag of five positions always exists between each branch and its virtue. The calculations of Virtue and Punishment reveal the virtue or *suide* of the year and the punishment or *suixing* of the year.

Table 1. Stem, branch, and ganzhi virtues. (Kalinowski, 159)

Stem virtues.

Stems	jia	yi	bing	ding	wu	ji	geng	xing	ren	gui
De positions	jia	geng	bing	ren	wu	jia	geng	bing	ren	wu

Branch virtues.

Branches	zi	chou	yin	mao	chen	si	wu	wei	shen	you	xu	hai
De positions	si	wu	wei	shen	you	xu	hai	zi	chou	yin	mao	chen

Ganzhi virtues.

Branches	zi	chou	yin	mao	chen	si	wu	wei	shen	you	xu	hai
De positions	jia	xin	bing	ding	geng	ji	wu	xin	ren	gui	gen	yi

Table 2. Punishments. (Kalinowski, 159)

Branch punishments.

Branches	zi	chou	yin	mao	chen	si	wu	wei	shen	you	xu	hai
Xing positions	mao	xu	si	zi	chen	shen	wu	chou	yin	you	wei	hai

Branch on stem punishments.

Branches	zi	chou	yin	mao	chen	si	wu	wei	shen	you	xu	hai
Xing positions	wu	yi	geng	xin	jia	gui	ren	yi	bing	ding	jia	ji

Stem on branch punishments.

Stems	jia	yi	bing	ding	wu	ji	geng	xin	ren	gui
Xing positions	shen	you	zi	hai	yin	mao	wu	si	xu	wei

BIBLIOGRAPHY

Sarah Allan: *The Shape of the Turtle*. State University of New York Press, 1991

Ian Barnes and Robert Hudson: *Historical Atlas of Asi*a. Arcadia Editions Ltd., New York 1998

Wallace Hall Campbell: *Earth Magnetism*. Harcourt Academic Press, San Diego 2001

Christopher Cullen: *Astronomy and Mathematices in Ancient China*. Cambridge University Press 1996

Giorgio de Santillana and Hertha von Dechend: *Hamlet's Mill*. David R. Godine, Boston 1998

Kenneth J. DeWoskin (Trans.): *Doctors, Diviners, and Magicians of Ancient China*. Columbia University Press, New York 1983

Stephen Field: *Tian Wen, a Chinese Book of Origins*. New Directions, New York 1986

Donald Harper (Ed.): *Early China*. Volume 23-24, Berkeley 1998-1999

Norriss S. Hetherington: *Ancient Astronomy and Civilization*. Pachart Publishing House, Tucson 1987

Michael Saso: *The Gold Pavilion*. Charles E. Tuttle Co. Inc., Boston 1995

J. Norman Lockyer: *The Dawn of Astronomy*. MIT Press, Cambridge 1964

Ho Peng Yoke: *Li, Qi and Shu*. Dover Publications Inc., Mineola 2000

E.C. Krupp: *Skywatchers, Shamans & Kings*. John Wiley & Sons Inc.,New York 1997

Maria Gimbutas: *The Civilization of the Goddess*. Harper SanFrancisco 1991

Catherine Ferry Hargrave: *A History of Playing Cards*. Dover Publications Inc., Mineola 2000

Alfred Huang: *The Numerology of the I Ching*. Inner Traditions, Rochester 2000

Alfred Huang: *The Complete I Ching*. Inner Traditions, Rochester 1998

John Lagerwey: *Taoist Ritual in Chinese Society and History*. Macmillan, New York 1987

Georg Luck: *Arcana Mundi*. Johns Hopkins University Press, Baltimore 1985

John S. Major: *Heaven and Earth in Early Han Thought*. State University of New York Press 1993

Jessica Rawson (Ed.): *Mysteries of Ancient China*. George Braziller, New York 1996

Alwyn Rees and Brinley Rees: *Celtic Heritage*. Thames and Hudson, London 1978

Nancy Shatzman-Steinhardt: *Chinese Imperial City Planning*. University of Hawaii Press, Honolulu 1999

Edward L Shaughnessy: *Early China*. Volume 15, Berkeley 1990

Richard J .Smith and D.W.Y. Kwok (Eds.): *Cosmology, Ontology, and Human Efficiacy*. University of Hawaii Press, Honolulu 1993

Julius D. W. Staal: *The New Patterns in the Sky*. McDonald and Woodward Publishing Co., Blacksburg 1988

Julius D.W. Staal: *Stars of Jade*. Writ Press, Decatur 1984

Michael Sullivan: *The Arts of China, Fourth Edition*. University of California Press, Los Angeles 1999

Sun Xiaochun and Jacob Kistemaker: *The Chinese Sky during the Han*. Brill, Leiden 1997

Thompson Price, Nancy (Ed.): *Early China*. Volume 9-10. Berkeley, 1983–1985