

“A Brief History of *Beiji* 北极 (Northern Culmen), with an Excursus on the Origin of the Character *di* 帝”

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Abstract:

In ancient Chinese astral lore, the imperial nomenclature associated with the circumpolar stars in the Palace of Purple Tenuity 紫微垣 points to the crucial importance of the north-pole in astrological, calendrical, and spiritual contexts. But preoccupation with this numinous region has a history dating back far earlier than the Qin and Han empires. This paper briefly surveys what is known about the pre-imperial history of the region of the ‘Northern Culmen,’ with particular reference to spiritual and metaphysical conceptions concerning the Northern Dipper, and to the void at the pivot of the heavens, where there was no prominent pole star throughout much of the formative period of classical Chinese civilization. The discussion concludes with a hypothesis about possible astral origins of the ancient form of the character used to denote the High God *di* 帝.

Chinese preoccupation with astronomical orientation has a very long history.

Archaeological evidence from the 5<sup>th</sup> millennium BCE Neolithic cultures of North China shows that burials and dwellings were already being oriented with particular attention to the diurnal and seasonal variations in the Sun’s position.<sup>1</sup> With the beginning of the Bronze Age in the early 2<sup>nd</sup> millennium BCE and the inception of early state formation, such concepts had progressed to the point where ritually and politically important structures were uniformly quadrilateral in shape and cardinally oriented, with the longitudinal axis aligned with varying precision in a north-south direction.<sup>2</sup> Palatial structures and royal tombs from the earliest dynastic states in the 2<sup>nd</sup> millennium BCE, that is, Xia,<sup>3</sup> Shang, and Zhou, consistently display such orientation. [Figs. 1, 2, 3] From the layout of the best preserved of these city walls and palatial foundations, it is clear that the principal access was normally via a main gate in the south facade, with the inner sanctum located far from the entrance towards the rear or north wall. This ritually and cosmologically significant architectural arrangement remained consistent throughout the

entire history of China, most especially in edifices connected with the imperial prestige and power, as exemplified by the Forbidden City in Beijing. This much is already well-known and has been thoroughly documented by Paul Wheatley.<sup>4</sup>

What has been less well explored is the possible astral-terrestrial correspondence between the archaic kingship in the Bronze Age and the north-pole (*beiji* 北極) or ‘Northern Culmen’, whose unique characteristics and powerful associations as the pivot of the heavens ultimately led to its becoming the celestial archetype of the cosmically empowered Chinese monarch. Already by the late Warring States period, well before the founding of the empire, Confucius famously drew on the metaphorical potency of the pole to exemplify the charismatic virtue (*de* 德) of the sagely ruler:

The Master said: To conduct government by virtue may be compared to the Northern Asterism: it occupies its place, while the myriad stars revolve around it.<sup>5</sup>  
*Lunyu* 2:1

子曰：為政以德，譬如北辰<sup>6</sup>，居其所而眾星共之。

### **Taiyi and Northern Culmen**

Recent studies of the cultic practices, ceremonial, and conceptual background of the supreme numinous power Taiyi, “Great Unique,” during the Warring States through Han periods draw on abundant textual and archaeological materials and underscore the identification of Taiyi with the celestial pole. Let me just cite here a few examples:

〈史記・天官書〉：中央太極星，其一明者，太一常居也。

〈淮南子・天文〉：太微者，太一之庭也。紫宮者，太一之居也。<sup>7</sup>

〈鶡冠子・泰錄〉：中央者，太一之位，百神仰制焉。

〈禮記・禮運〉：禮本於大一，分而為天地，轉而為陰陽，變而為四時。

〈呂氏春秋·大樂〉：太一出兩儀，兩儀出陰陽。陰陽變化，一上一下，合而成章。渾渾沌沌，離則復合，合則復離，是為天常。天地車輪，終則復始，極則復反，莫不咸當。日月星辰，或疾或徐，日月不同，以盡其行。四時代興，或暑或寒，或短或長。或柔或剛。萬物所出，造於太一，化於陰陽。〔高秀〈注〉：太一，道也。〕

According to those in charge of restoring the Guodian Chu manuscripts, and the text 〈太一生水〉 in particular:” 太一，在此為道的代稱 . . . 文中的「太一」就是先秦時期所稱的「道」.”<sup>8</sup>

〈莊子·天下〉：古之道術有在於是者，關尹、老聃聞其風而說之。建之以常無有，主之以太一，以濡弱謙下為表，以空虛不毀萬物為實。

曰：「神何由降，明何由出？」聖有所生，王有所成，皆原于一。

〈鶡冠子·泰錄〉：神明所以類合者也。故神明錮結其紘，類類生成，用一不窮。

〈莊子·列禦寇〉：「太一形虛」。

According to Li Ling 李零：“〈楚辭·九歌〉所祝者為「東皇太一」、〈史記·封山書〉和〈漢書·郊祀志〉記漢代禱祀也以「太一」為尊。「太一」居斗極，為眾星所拱，〈史記·天官書〉開篇就是講它，式法的太乙術也是以「太一」為核心。這些都可說明它的重要性。”<sup>9</sup>

According to Li Jianmin 李建民：“太一，居中央，亦天子之位也。帝王在人間的地位與太一在天體的地位，是有類似性的。 . . . 〈鶡冠子〉講「用一」、〈老子〉講「抱一」（二十二章）、馬王堆帛書〈要〉講「繇一」、「得一」等，看似形上抽象的哲思，亦可與數術之學相通。<sup>10</sup>

According to Jiang Xiangnan 蔣湘南：“太一之神河神也？曰：上帝也。上帝何以為北斗之神？曰：恆星。天之正中，曰「紫微垣」。紫微垣之正中，曰「北極」。北極之第五星，曰「天樞」，其相近無星處，曰「赤極」。赤極上值「宗動天」之正中，而宗動天向下一面者有形，向上一面者無形。無形，即上帝本然之天也。上帝不可見，故取「宗動天」之中心以識之。「宗動天」之中心不可定，而北極第二星赤大而明，主日、主帝王，占天者因取之以為大帝之坐。〈史記·天官書〉曰：中央太極星，其一明者，太一常居也。即謂北極之第二星也。<sup>11</sup>

From these and other sources we conclude:

- (i) Taiyi is the supreme spiritual power residing at the center of the Palace of Purple Tenuity at the pole and is identifiable with the Tao.

- (ii) All other numinous influences are subordinate to Taiyi; it is the ultimate source of all phenomena, imperceptibly animating and regulating the universe.
- (iii) An important attribute of Taiyi is its “formlessness”; there is a recognition that its nominal association at this time with the bright star Kochab  $\beta$  UMi (天帝星) is an expedient; similar to the rationale for placing the heavenly pivot of Han diviners’ boards *shi* in the handle of the Dipper.
- (iv) As a focus of spiritual concern and inspiration, Taiyi/Beiji has a history that reaches into the far past.

### **The Virtue of Nothing**

The mysterious efficacy of charismatic virtue to which Confucius referred in the passage above, in the alternative, Taoist vision becomes the efficacy of non-action, or *wu-wei* 無為, the ultimate achievement of one who is in harmony with the invisible force of Tao (Taiyi) animating the universe. ‘*Wu-wei* does not imply absence of action. Rather, it indicates spontaneity and non-interference; that is, letting things follow their own natural course. For the ruler, this implies reliance on capable officials and the avoidance of an authoritarian posture. For the individual, it means accomplishing what is necessary without ulterior motive. Some commentators have explained *wu-wei* as “non-purposive” or “nonassertive” action.’<sup>12</sup> The aphoristic maxims of the *Laozi* repeatedly invoke the themes of non-action, artlessness, and embracing “the one” through which non-intentional purposefulness achieves its objective. So, for example, we find metaphorical allusion to the protean nature of *de* as impassive, infantile, feminine, watery, non-possessive, non-controlling, and so on.<sup>13</sup> More to the point, however, may be this musing on the paradoxical virtue of “nothing”:

Thirty spokes converge on a single hub,  
     But it is in the space where there is nothing  
         That the usefulness of the wheel [cart? 車] lies.  
 Clay is molded to make a pot,  
     But it is in the space where there is nothing,  
         That the usefulness of the clay pot lies.  
 Cut out doors and windows to make a room,  
     But it is in the spaces where there is nothing  
         That the usefulness of the room lies.  
 Therefore,  
     Benefit may be derived from something,  
         But it is in nothing that we find usefulness.<sup>14</sup> (55/11)

We have twice seen the metaphor of a wheel appear, with reference to rotational movement, first in the quotation from *Lüshi chunqiu* above, and now with reference to the utility of the void at its hub. In contrast to Confucius, who was quite explicit about the astronomical source of his evocative simile of the mysterious efficacy of charismatic virtue, the *Laozi*, true to form, is indirect, allusive, yet down-to-earth in its choice of images. Nevertheless, it does not require a great imaginative leap to recognize the likelihood of a common inspirational source for their respective visions of ultimate attainment in the mysterious operations of the invisible pivot of the heavens. It can hardly be purely coincidental that during the preceding two millennia while this mystical vision was taking shape, there was no distinctive pole star, no physical presence at the pivot of the heavens, so that the marvel of an efficacious nothing at the center of the rotating dome of the heavens was nightly on display, nightly inviting contemplation.

### **The Northern Dipper and the Imperial Power**

Needless to say, as the most conspicuous stellar formation near the pole, some of the mysterious aura of that location quite naturally attached to the Dipper. The rotation of the Northern Dipper around the mysterious pivot at the center of the heavens [Fig. 4] for centuries enabled it to serve as a proxy for the pole, a celestial clock whose changing

orientation made manifest the passing of the hours of the night as well as the seasons of the year. As the *Pheasant Cap Master* (*Heguan zi*), famously put it:

When the handle of the Dipper points to the east [at dawn], it is spring to all the world. When the handle of the Dipper points to the south (i.e., up) it is summer to all the world. When the handle of the Dipper points to the west, it is autumn to all the world. When the handle of the Dipper points to the north (i.e., down), it is winter to all the world. As the handle of the Dipper rotates above, so affairs are set below . . . . (5:21/1-4)<sup>15</sup>

Explicit literary and graphic elaboration of the association of the north-pole and its attributes with the person of the Emperor, the ‘Son of Heaven,’ came with the establishment of the universal empire, as in the famous Han dynasty stone carving from a Wu Liang tomb shrine dating from the Later Han. [Fig. 5] Here we see the Celestial Thearch *di* 帝 dressed in the imperial garb and riding in the Dipper as if driving an imperial carriage. Like the mysterious Northern Culmen (*beiji*) at the center of the celestial dome, the formal, ritual pose of the terrestrial Emperor was to sit facing south, so that all his ministers, minions, generals, and subjects approached his exalted presence and prostrated themselves while facing north. Indeed, tradition had it in the early Empire that the Han dynasty capital Chang’an had been laid out in such a way as to mimic the stars of Ursa Major and Ursa Minor, although this has not been confirmed archaeologically.<sup>16</sup> Historical accounts from the early Han dynasty lend credence to the claim that the preceding Qin dynasty capital of Xianyang did indeed contain elements of astral symbolism implying that the Emperor’s palace was in the position of the pole star relative to the constellations and the Milky Way.<sup>17</sup>

The *locus classicus* for the identification of the person of the Emperor, who with the inception of the imperial system is now also called *di* 帝, with the cosmic functions of the Northern Dipper, is in the “Treatise on Astrology” in the *Grand Scribe’s Records*

(*Shiji* 史記) compiled in the late 2<sup>nd</sup> century BCE. There, in the description of the astral correlates of the imperial court in the circumpolar region of the sky, we read:

The Dipper is the Celestial Thearch *di*'s carriage. It revolves about the center, visiting and regulating each of the four regions. It divides *yin* from *yang*, establishes the four seasons, equalizes the Five Elemental Forces, deploys the seasonal junctures and angular measures, and determines the various periodicities: all these are tied to the Dipper. (27:1291)<sup>18</sup>

Beginning with the Han dynasty the historical record clearly reflects the crucial symbolic significance of the Dipper in the cosmo-magical imagery associated with the imperial office. Let me just cite two examples. In the Grand Scribe's account of ritual procedures during the Former Han dynasty there is the following passage:

That autumn (112 BCE), in preparation for a punitive expedition against Nan Yue, the attack was announced in prayers to the Great Unique. A banner decorated with images of the sun, moon, Northern Dipper, and rampant dragons was mounted on a shaft made from the wood of the thorn tree, to symbolize Tianyi the Heavenly Unity and its three stars, vanguard of Taiyi the Great Unique. [The banner] was called 'Numinous Flag'. When one prayed for military success, the Grand Scribe would hold it aloft and point in the direction of the country to be attacked.<sup>19</sup>

And then there is the slightly later account from the reign of the usurper Wang Mang, first and only emperor of the Xin dynasty, which intervened between the Former and Later Han dynasties. This occurred in CE 17:

(In the 4<sup>th</sup> year of the Tianfeng reign period) in the 8<sup>th</sup> month, (Wang) Mang went in person to the place for the suburban sacrifice south of the capital to superintend the casting and making of the Ladle of Majesty (威斗). It was prepared from minerals of five colors and from copper. In shape it was like the Northern Dipper, measuring two feet five inches in length. (Wang) Mang intended (to use it) to conquer all rebel forces by means of conjurations and incantations. After the Ladle of Majesty was finished, he ordered the Directors of Mandates (from the Five Elements) to carry it solemnly on their shoulders in front of him whenever he went out, and when he entered the palace, they waited upon him at his sides.<sup>20</sup>

Six years later, during the rebellion of CE 23, when the burning palace was invaded and Wang Mang and his retinue were about to be killed by Han dynasty loyalists, the following scene ensued:

Meanwhile, (Wang) Mang, dressed all in deep purple and wearing a silk belt with the imperial seals attached to it, held in his hand the spoon-headed dagger of the Emperor Shun. An astrological official placed a diviner's board (*shi* 式) in front of him, adjusting it to correspond with the day and hour. The Emperor turned his seat, following the handle of the ladle, and so sat. Then he said, 'Heaven has given the (imperial) virtue to me; how can the Han armies take it away?'<sup>21</sup>

Imperturbable in his faith in the protection of Heaven and the Dipper, in this pose Wang Mang and his Xin dynasty met their end.

### **Seasonal Time-keeping and the Northern Dipper**

As in Homeric Greece, where the orientation of the Dipper's handle was used to time the sentries' watches at the siege of Troy, we saw above how the Dipper served as a celestial clock-hand, indicating the passage of the seasons and the hours of the night. This enormously useful function of the Dipper is certainly very ancient. There is evidence that at a much earlier epoch the bright star Arcturus ( $\alpha$  Boo) or Dajiao participated in this function of the Dipper's handle until precession caused the ecliptic to move away from the vicinity, so that Arcturus's Left and Right Assistant Conductors "could no longer serve as indicators," as Sima Qian put it.<sup>22</sup> Arcturus's obsolescence (by the early 1<sup>st</sup> millennium BCE) is also noted in Hesiod, so we are here talking about a very ancient observational practice indeed.

In a more uniquely Chinese application of the usefulness of the circumpolar stars, it was evidently also common practice to key their meridian transits by means of sight lines to the positions of other stars, and in this way by indirect means determine the location of the Sun, Moon and other heavenly bodies among the lunar mansions not



currently visible in the night sky. Given the resolutely polar-equatorial orientation of Chinese astronomy from the outset, this technique too is likely to have arisen quite early. It is clearly reflected in the astronomical decor painted on the lid of the famous lacquer hamper from the tomb of Zeng Hou Yi, dating from the late 5<sup>th</sup> century BCE, which also for the first time deploys in one image the entire array of 28 lunar mansions. In the diagram of the heavens painted on the lid the central character *dou* 斗 representing the Dipper is exaggerated in specific ways to point to the lunar mansions keyed to the Dipper's stars.

### **Bronze Age Antecedents**

We have seen how the microcosmic-macrocosmic analogy between the Emperor and *di*, the Celestial Thearch at the apex of the heavens, is abundantly documented for the early imperial period. In addition, as Paul Wheatley and others have shown for the Shang and Zhou dynasties, each of the basic modes of symbolism displayed by the ideal type-city throughout much of the ancient world is evident in the planning of ancient Chinese capitals. These aspects of traditional symbolism have been succinctly formulated by Mircea Eliade as follows:

1. Reality is a function of the Imitation of a Celestial Archetype.
2. The Parallelism between the Macrocosmos and the Microcosmos necessitates the practice of ritual ceremonies to maintain harmony between the world of the gods and the world of men.
3. Reality is achieved through participation in the Symbolism of the Center, as expressed by some form of *axis mundi*.
4. The techniques of orientation necessary to define sacred territory within the continuum of profane space involve an emphasis on cardinal compass directions.<sup>23</sup>

In addition to the cosmo-magical physical layout of the Shang and Zhou capitals and ritual centers mentioned above, abundant inscriptional evidence attests to the ancient

Chinese preoccupation with each of these basic modes of symbolism. For example, the late-Shang oracle bone inscriptions integral to the Shang kings' cultic and ritual practices contain numerous examples of divinations motivated by propitiatory impulses. In addition to those concerning *di*'s manipulation of powerful natural forces such as wind, rain, and the like, numerous other divinations relate to the bestowal of good harvests, relief from natural disasters, belligerent neighbors, etc., by the spirits of the Four Quarters, the Dipper,<sup>24</sup> and so on. These and other divinations also embody the conceptualization of Shang as the symbolic center from which the royal charisma radiates in all directions. From the inscriptions it is also clear that the supernatural realm, with *di* at its apex, mirrored the hierarchy of the temporal Shang state.<sup>25</sup> Though we have no explicit contemporary statement to that effect, it seems clear that in the Shang conception the Lord-on-High *di*'s abode, as in Warring States and Han times, was at the center of the heavens from which cosmic control appeared to emanate, a location made all the more mysterious even then by the lack of a pole star.<sup>26</sup> This absence of a distinctive pole star at this epoch as well is an issue which deserves further exploration, both because of the orientation of monumental architecture in the landscape, and to better understand the role of the Lord-on-High and the significance of the character used to denote him *di*. First, however, a brief account of the career of the north-pole from the Neolithic through the Bronze Age is perhaps in order.

### **Migration of the Pole**

Precession of the equinoxes may seem a rather sophisticated concept to be of concern to the Chinese in the mid-2<sup>nd</sup> millennium BCE, but for a civilization with an emphatically polar-equatorial astronomy and cosmo-political culture, the inconstancy of

the pole's location ought to have been problematical. Although precession as a phenomenon was not adequately understood until the 3<sup>rd</sup> century, well after the founding of the Empire, its effects were certainly noticed and accommodated considerably earlier, most notably in the well-documented Taichu calendar reform of 104 BCE.<sup>27</sup> Given the early focus on the celestial pole in early Chinese astronomy, it would be surprising if the inconstancy of such a highly symbolic location did not register in the consciousness of observers in the Chinese Bronze Age. This is all the more true since not long before, in the late Neolithic period, there was a comparatively bright star  $\alpha$  Draconis (magnitude +3.65) ideally located close to celestial north. Indeed, in about 2,775 BCE, Thuban ( $\alpha$  Dra) with a declination of  $89^{\circ}53'$  was closer to the pole than our own Polaris will ever be [Fig. 6]. Subsequently, however, and for much of the Chinese Bronze Age, the track of the north pole did not bring it anywhere near as close to a comparably bright star which might serve as a pole star. [Fig. 7] By the Han dynasty the celestial pole had migrated many degrees from its location in the late Neolithic, so that there can be little doubt that the circumpolar constellations and imperial nomenclature now familiar to us are creations of late Warring States and Han times.<sup>28</sup>

### **A Handoff of Pole Stars**

As we saw above, however, the lack of a precisely located pole star did not deter the Shang royal architects, throughout the latter half of the 2<sup>nd</sup> millennium BCE, from attempting to align their built environment with celestial north. This is especially true in the Shang ritual center of Yinxu, where palatial foundations, city walls, royal tombs, and other structures were laid out with their longitudinal axis aligned on the pole. [Fig. 8] To cite just one well-known example, the consistent displacement from the present true north

by some  $5^{\circ}$  -  $12^{\circ}$  E displayed by late Shang tombs is, as Joseph Needham observed, ‘not far from what we should expect if the Shang people had taken care to site their tombs in accordance with the astronomical north of their time.’<sup>29</sup> Needham was apparently of the opinion that Kochab, with a declination of  $83^{\circ} 26' 54''$  in 1200 BCE, roughly  $6.5^{\circ}$  from the true pole, may have served as pole star for alignment purposes. This is a reasonable enough conjecture, but perhaps there other possibilities that might account equally well for the archaeological facts observed on the ground.

Below is a table showing the changing declinations of Thuban, the Neolithic pole star, and Kochab at intervals from -2000 to -600:

| <u>Epoch</u> | <u>Star</u> | <u>Declination</u>     | <u>Polar Distance</u> |
|--------------|-------------|------------------------|-----------------------|
| -2000        | Kochab      | $82^{\circ} 01'' 54''$ | ca $8^{\circ}$        |
|              | Thuban      | $85^{\circ} 32'' 36''$ | ca $4.5^{\circ}$      |
| -1600        | Kochab      | $82^{\circ} 58'' 11''$ | ca $7^{\circ}$        |
|              | Thuban      | $83^{\circ} 18'' 00''$ | ca $6.6^{\circ}$      |
| -1200        | Kochab      | $83^{\circ} 26'' 54''$ | ca $6.5^{\circ}$      |
|              | Thuban      | $81^{\circ} 04'' 20''$ | ca $9^{\circ}$        |
| -1000        | Kochab      | $83^{\circ} 28'' 46''$ | ca $6.5^{\circ}$      |
|              | Thuban      | $79^{\circ} 57'' 56''$ | ca $10^{\circ}$       |
| -600         | Kochab      | $83^{\circ} 07'' 05''$ | ca $7^{\circ}$        |
|              | Thuban      | $77^{\circ} 46'' 13''$ | ca $12.25^{\circ}$    |

Notice the changing polar distances of the two stars. Thuban, located precisely at the pole in 2,775 BCE, grew ever more distant from  $90^{\circ}$ N over the course of the next two millennia, all the while Kochab, the brightest star (mag. +2.0, same as Polaris) anywhere near the pole at that epoch, grew progressively closer. Unlike Thuban, however, Kochab never approached closer than  $6.5^{\circ}$  to the pole, and by mid-1<sup>st</sup> millennium, by Confucius’

time, its polar distance was already increasing again. What is particularly striking, however, is that the crossover point during the 16<sup>th</sup> century BCE, when both stars would have been more or less equidistant from the pole, also marks the period of Shang ascendancy. I have long wondered about the curious fact that the earliest palatial foundations at Erlitou, which are attributed to a distinctly different cultural complex identified as Xia by a substantial number of archaeologists, depart radically from subsequent Shang period structures in being oriented roughly the same average number of degrees west of north, rather than east of north.<sup>30</sup> [Figs. 9 & 9a] Perhaps a transition from the obsolete pole star Thuban to the upstart Kochab, located on the other side of the celestial pole, might provide an explanation for this phenomenon.<sup>31</sup> What I am suggesting, therefore, is that along with the political hegemony and the new cult of the royal ancestors, the Shang would have introduced certain other ritual and cultural innovations, including using a different pole star for alignment purposes. But there is still another possibility, just slightly more speculative, to which I now turn.

### **No “there” there**

In what follows I would like to discuss how this northerly alignment might otherwise have been accomplished in practical terms, given the absence of a true pole star, which will also lead me to propose a new interpretation of the notoriously obscure shape of the oracle-bone character used to write the name of the Shang high god *di*. [Fig. 10] In view of the inconspicuousness of the stars near 90° N when the late-Shang dynasty royal tombs were being constructed, some technique must certainly have been devised to orient such structures in the landscape. In speaking of a technique, what I have in mind is something akin to the device commonly employed today to quickly locate a naked-eye

object among the vast array of stars. First one identifies an unmistakable constellation nearby, for example, in the case of Polaris one can use Ursa Major, and then by sighting along the line formed by the two bright stars Mirak and Dubhe ( $\alpha$  and  $\beta$  Ursa Major) forming the outer edge of the bowl of the Dipper, the eye is easily guided toward Polaris. This is about the simplest and most effective device one could imagine, both serviceable and, in my experience, still necessary, even in an age when we have a second magnitude star less than  $1^\circ$  from the pole. How much more indispensable would such a device have been in an age when there was no obvious star located precisely at the pole? Indeed, we know for certain that such techniques were later used by the ancient Chinese, as Joseph Needham has illustrated with regard to the sightlines established for the circumpolar stars.<sup>32</sup>

Of course, one could argue that the objective of locating astronomical north could have been accomplished more conveniently had structures been oriented in conformity with a north-south axis determined by the bisection of the angle between the directions of the rising and setting sun. Indeed, such a procedure may be alluded to in an ancient ode from the early Zhou dynasty,<sup>33</sup> and it is explicitly recommended much later in the *Rites of Zhou*, as Paul Wheatley has pointed out.<sup>34</sup> However, alignments established by bisecting the angle between the directions of the rising and setting sun should still be accurate today, and should not have produced the significant easterly offset exhibited by Shang dynasty architectural remains.<sup>35</sup> I am inclined to the opinion that at a time when the Lord-on-High's intentions vis à vis the Shang state were very much a national security concern, taking direction – literally – from the ultimate source of supernatural power, may well have called for a more direct, 'polar' method.

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### FIGURES

Fig. 1: Yanshi Shang city site plan, Henan province, early Shang dynasty. The arrow at the upper left shows true north. (after Zhang Zhiheng 張之恆 & Zhou Yuxing 周裕興, *Xia Shang Zhou kaogu* 夏商周考古, [Nanjing, 1995], [hereafter Zhang, *Xia Shang Zhou*], p. 49)

Fig. 2: Yanshi Shang City palace foundation #4 (after Zhang, *Xia Shang Zhou*, p. 51).

Fig. 3: Early Shang city walls at Zhengzhou, Henan (after Zhang, *Xia Shang Zhou*, p. 54).

Fig. 4: Position of the Big Dipper in relation to the North Pole in early Shang (*Dance of the Planets* © ARC Software).

Fig. 5: Stone carving from the Wuliang Shrine, Eastern Han, showing the Celestial Thearch driving his heavenly chariot, the Dipper (after Major, *Early Han Thought*, p. 108).

Fig. 6: Thuban, the late-Neolithic pole-star, at 90° N in 2,775 BCE (*Dance of the Planets* © ARC Software).

Fig. 7: The trajectory of the north celestial pole among the Chinese circumpolar asterisms from -3000 through -100 (after Maeyama, “Two Supreme Stars,” p. 7).

Fig. 8: Site plan of the late-Shang royal tombs at Xibeigang, Anyang, Henan (after Zhang, *Xia Shang Zhou*, p. 106).

Fig. 9: Erlitou palace foundation #1 showing orientation 8° west of north (*Yanshi Erlitou*, Fig. 93, p. 152).

Fig. 9: Erlitou palace foundation #1 showing orientation 6° west of north (*Yanshi Erlitou*, Fig. 84, p. ?).

Fig. 10: Common oracle-bone script variants of the character *di* “Lord-on-High” (large characters on the right) with commentary (after Liu Xinglong 劉興隆, *Jiaguwen jiju jianshi* 甲骨文集句簡釋, [Zhengzhou, 1986], p. 178).

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<sup>1</sup> David W. Pankenier, ‘The Cosmo-political Background of Heaven’s Mandate,’ *Early China*, (Berkeley, 1995), [hereafter Pankenier, ‘Background’], Vol. 20, p. 121, n. 2.

<sup>2</sup> Paul Wheatley, *The Pivot of the Four Quarters: A Preliminary Enquiry into the Origin and Character of the Ancient Chinese City* (Edinburgh, 1971) [hereafter Wheatley, *Pivot*], p. 423.

<sup>3</sup> If, indeed, Erlitou levels I and II may be identified with a culture complex distinctly different from Shang and identifiable with Xia.

<sup>4</sup> Wheatley, *Pivot*; especially Chapter 5, ‘The Ancient Chinese City as Cosmo-magical Symbol.’

<sup>5</sup> See E. Bruce Brooks and A. Taeko Brooks, *The Original Analects: Sayings of Confucius and his Successors* (New York: Columbia, 1998), 109.

<sup>6</sup> The earliest references to a polar asterism generally use the term *dou* 斗 “ladle/dipper” or *chen* 辰 as here, rather than *beiji* 北极 “northern culmen.” In contrast to *ji*, which clearly refers to the apex of the heavens, specifically the north celestial pole, *beichen* usually refers to *bei dou* 北斗, the northern dipper, the asterism of primary importance closest to the pole (see n. 15 below). But as Brooks & Brooks remark (*The Original Analects*, p. 109): “Whether we imagine a polar void or (as the text seems to require) a polar star, the thrust of the saying is the magical power of inactivity. “ If Confucius really did have in mind a true pole star, then he is recalling a very ancient state of affairs indeed (more on which below). I suspect his use of the term *beichen* here is not intended to be astronomically accurate, but refers in a more conventional way to the centrality of the most prominent circumpolar asterism, the northern dipper, in the same way that the round plate representing heaven in early *shi* 式 or diviners’ boards pivots on the handle of the Dipper. In actual fact, the celestial pole in Warring States and Han times was well over 20° away from the Dipper.

<sup>7</sup> *Taiwei* here is a reference to the Celestial Court *Taiweiyuan* between Leo and Virgo; *Zigong* refers to *Ziweiyuan*, the Palace of Purple Tenuity at the pole already referred to above.

<sup>8</sup> Quoted in 李建民, “太一新證: 以郭店楚簡為線索,” 中國出土史料研究會 (Tokyo: 1999), p. 51.

<sup>9</sup> 李零, 中國方術考 (北京: 中國人民出版社, 1993), 269; quoted in 李建民, “太一新證,” p. 50.

<sup>10</sup> 李建民, “太一新證,” 51.

<sup>11</sup> 蔣湘南, <七經樓文鈔·太一釋義> (鄭州: 中州古籍出版社, 1991), 108; quoted in 李建民, “太一新證,” p. 48.

<sup>12</sup> Victor H. Mair, tr. *Tao Te Ching: The Classic Book of Integrity and the Way, Lao Tzu* (New York, 1990) [hereafter Mair, *Tao Te Ching*], p. 138.”

<sup>13</sup> See, for example, (54/10) Mair, *Tao Te Ching*, p. 69.

<sup>14</sup> Mair, *Tao Te Ching*, p. 70 (modified).

<sup>15</sup> Carine Defoort, *The Pheasant Cap Master (He guan zi): A Rhetorical Reading* (Albany, 1997), pp. 189, 320. The earliest metaphorical use of stars or asterisms occurs in ode #203 in the *Shijing*. There, however, the brilliance of several asterisms, including the Northern Dipper, is likened to the aristocratic elite who occupy positions of importance but do not exploit their brilliance in practical ways that benefit the populace. See Bernhard Karlgren, tr. *The Book of Odes* (Stockholm, 1950), p. 153-154. For an account of the Dipper in Han times, see John S. Major, *Heaven and Earth in Early Han Thought: Chapters Three, Four, and Five of the Huainanzi*, (Albany, 1993), [hereafter Major, *Early Han Thought*], p. 106ff.

<sup>16</sup> Wheatley, *Pivot*, p. 443.

<sup>17</sup> *Ibid*, p. 442.

<sup>18</sup> As John Major points out, the Celestial Thearch or God of the Pivot was in Han times understood to refer to the star Kochab (β UMi), which although several degrees from the celestial pole at the time,



conventionally served as the pole star in astrological contexts. This star thus became the pivot of the heaven plate of Han cosmographs (diviner's boards), around which the image of the Dipper inscribed on the plate rotated while serving as a pointer; see John S. Major, *Heaven and Earth in Early Han Thought*, p. 107.

<sup>19</sup> William H. Nienhauser, ed. *The Grand Scribe's Records*, Vol. II, *Basic Annals of Han China* (Bloomington, 2002), p. 239.

<sup>20</sup> Joseph Needham, et al. *Science and Civilisation in China*, vol. IV.1, *Physics and Physical Technology*, (Cambridge, 1962) [hereafter Needham, *Science and Civilisation*, vol. IV], p. 272.

<sup>21</sup> Ibid.

<sup>22</sup> Joseph Needham, et al., *Science and Civilisation in China*, vol. III, *Mathematics and the Sciences of the Heavens and the Earth*, (Cambridge, 1959), 252; Shiji, 26.1257.

<sup>23</sup> Wheatley, *Pivot*, p. 418.

<sup>24</sup> A reflection of the protean role of the Dipper asterism whose most archaic attested identity (ca. 1300 BCE) was already as a ladle *dou* 斗, or peck-measure.

<sup>25</sup> Cf. Cho-yun Hsu and Kathryn M. Linduff, *Western Chou Civilization* (New Haven, 1988), p. 98.

<sup>26</sup> The 1987 discovery of the Neolithic clamshell mosaics depicting eastern dragon, western tiger and Northern Dipper in tomb no. 45 at Xishuipo, dating from ca. 2,500 BCE, is another possible indication of the long history of ancient Chinese cosmological focus on the North Pole; see Chen Cheng-yih and Xi Zezong, 'The Yao Dian 堯典 and the Origins of Astronomy in China,' *Astronomies and Cultures*, ed. C. L. N. Ruggles and N. J. Saunders, (Niwtot: Colorado, 1993), p. 53; but see also David W. Pankenier, 'The Mandate of Heaven,' *Archaeology* (New York, March-April 1998), Vol. 51, p. 30.

<sup>27</sup> See Christopher Cullen, 'Motivations for Scientific Change in Ancient China,' *Journal for the History of Astronomy*, (Chalfont St. Giles, 1993), Vol. 24, pp. 185-203.

<sup>28</sup> This is, of course, the reason why Sun and Kistemaker sub-titled their reconstruction of the sky in the early imperial period "Constellating Stars & Society"; see Sun Xiaochun and Jakob Kistemaker, *The Chinese sky during the Han: Constellating Stars & Society* (Leiden: E.J. Brill, 1990).

<sup>29</sup> Needham, *Science and Civilisation*, vol. IV, p. 313. On Kochab  $\beta$  UMi as the pole star of about 1000 BCE, see *Science and Civilisation*, vol III, 261.

<sup>30</sup> Erlitou Level I palace #1, for example, is oriented  $8^\circ$  west of north. It is a curious fact, however, that all Erlitou graves from levels I-IV, in which the head is oriented to the north, are aligned within the range of  $0^\circ$  to  $10^\circ$  west of north. See Zhongguo shehui kexue yanjiusuo ed., *Zhongguo tianye kaogu baogao ji: Yanshi Erlitou* (Beijing: Zhongguo da baike quanshu chubanshe, 1999), 141, 397-398.

<sup>31</sup> Whatever its source, this same alignment west of present true north is also found in, for example, predynastic Zhou palatial foundations in Fufeng, suggesting that the Zhou claim to be the successors to the Xia may be more than merely rhetorical.

<sup>32</sup> See Needham, *Science and Civilisation in China*, vol. III, pp. 232-233.

<sup>33</sup> Pankenier, 'Background,' p. 121, n. 2; Wheatley, *Pivot*, p. 426; see also Kwang-chih Chang, *Shang Civilization*, (New Haven, 1980), [hereafter Chang, *Shang*], p. 160.

<sup>34</sup> Wheatley, *Pivot*, p. 426.

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<sup>35</sup> Interestingly, the foundation of a small shrine that originally stood atop the underground tomb of Fuhao 婦好, consort of the 13<sup>th</sup> century BCE Shang King Wu Ding 武丁, is precisely aligned to the cardinal directions, though the tomb beneath is not, suggesting that builders may well have used different techniques to orient the two structures.