

Prof. Pantheonist

1.1. The Two Supreme Stars, Thien-i and Thai-i, and the Foundation of the Purple Palace

Y. Maeyama
University of Frankfurt

Y. Maeyama
26.5.03

Introduction

The two stars of Chinese astronomy which were the most worshipped and most frequently mentioned in Chinese literature were the small stars Thien-i^a and Thai-i^b. This phenomenon was evident for more than two millennia, apparently linked with mysticism rather than a direct result of the original significance of these two stars.

Their Chinese names, generally written in several different characters,¹ were rendered in Western languages by a wide variety of imposing expressions:

Thien-i: Coelum unum / Celestial Unique, Heavenly Unity / Unique du Ciel, Unité Céleste / Himmlische Monade.

Thai-i: Magnum unum / Great Unique, Grand Monad, August Unity, Supreme One / Archi-Première, Souverain des Cieux, Unité Suprême, Suprême Un, Unique Suprême, Grande Unité / das Erhabene Eine, Höchste Monade.

All these variations are intended to denote one and the same attribute, *supremacy and sovereignty in the heavens*. They also betray the fact that they are not purely linguistic translations of the original names, but also derive from the mystic backgrounds of what Ssuma Chhien (fl. 90 B.C.) and others tell us:

“Of all Celestial Deities the Thai-i is the most venerable”,

“The Thien-i ... is the God of the Celestial Emperor. ... the Thai-i ... is also the God of the Celestial Emperor.”²

Yet these lofty concepts relate to two tiny celestial objects, well known in the available star-maps from the 8th and later centuries (Figs. 1–3). In one of the star-maps (Fig. 1) two different sets apparently with the same names are depicted.

All this seems to have led us, since more than a thousand years ago, to the prevailing, tacitly accepted, mystic perplexity that the two stars, Thien-i and Thai-i, are of paramount importance in Chinese astronomy. However, the degree of that importance and the origin of the extraordinary significance of the two stars are not at all known.

Despite uncertainties, ambiguities and even apparent contradictions in the historical records we shall demonstrate below the following three theses, presenting what I believe to be an astronomically plausible solution to this enigma:

- (1) Originally, the Thien-i was the Pole-Star.³
- (2) Originally, the Thai-i was the unified celestial symbol of the Pole-Star and the terrestrial Emperor, designated to a star adjacent to the Thien-i.

Intern. Congress of Astr. Union, Kyoto 1997. Proceedings.
History of Oriental Astronomy.S.M.R. Ansari (ed.).
Dordrecht-Boston-London 2002, 3-18.



Figure 1 Tunhuang Star-Map A
(ca. A.D. 710; Brit. Mus. Stein no. 3326; copied from Xia Nai): Table 1, lines 2, 3

Note: The set of the two supreme stars is depicted twice, at the wide open gate of the Purple Palace (Thien-i, Thai-i) and outside the Western (Right) Boundary (Thien, Thai).

- (3) The Purple-Palace^c originated in connection with the “precession of the North-Pole”. Its foundation is therefore inseparably connected with the two stars, Thien-i and Thai-i.

1. The Thien-i,^a the Celestial Unique

In the bone-inscriptions (14th – 11th cent. B.C.) of the Yin^d-dynasty we meet again and again the symbol of the Yin-people’s highest Deity, *Ti*^e, which had been supposed to govern men’s destinies.

In my paper (1992) I, inspired by Prof. H. von Dechend, claimed that the *Ti*, the later Emperor, must have been the Pole-Star.⁴ As it turned out, the probable Pole-Star of that time, κ Dra, was exactly the star whose position had been measured in equatorial coordinates by one of the astronomical schools, the so-called Shih Shen or Shih Shih^f, under the name of Thien-i, the Celestial Unique, and according to my analysis, this was around 70 B.C.⁵

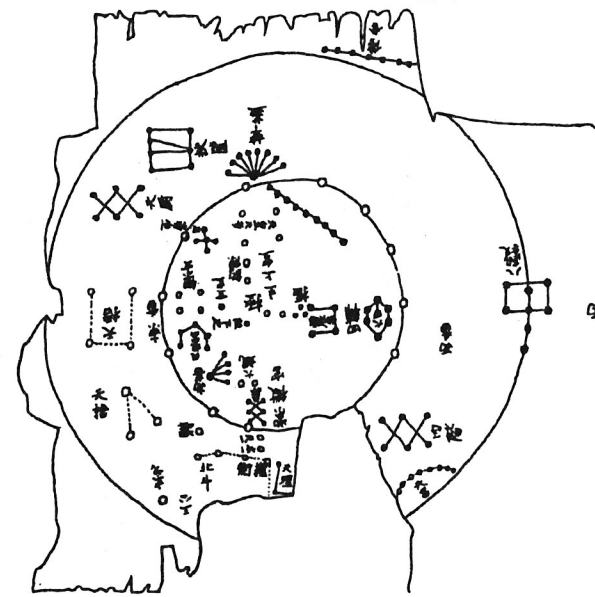


Figure 2 Tunhuang Star-Map B
(A.D. 10th cent.; Tunhuang Culture Center no. 076; copied from Deng Wenkuan p. 94 (modified)): Table, line 4

Note: The two boundaries, Eastern and Western, are connected together forming an enclosed Purple Palace, from which the two supreme stars, Thien-i and Thai-i, are excluded.

I have subsequently shown that, based on the Thien-i as the pivot of the celestial sphere and the Northern Dipper, the Chinese must have drastically improved their equatorial orientation by inventing the 28 lunar mansions (hsiu).⁶

In the same documents Shih Shen describes two other important stars as well as the Thien-i:

No. 59 The Purple Tenuity Boundaries^g

Shih Shih says, the Purple Tenuity Boundaries consist of 15 stars, ..., the Right Star^h is north of the Pei Touⁱ

No. 61 Thien-i, the Celestial Unique

Shih Shih says, the star Thien-i is south of the Right Star, outside the gate of the Purple Palace, at the same degree (position in the same hsiu as the Right Star),

No. 62 Thai-i, the Great Unique

Shih Shih says, the star Thai-i is south of the Thien-i, they are near to one another (Khai-Yuan Chan Ching, ch. 67).

The records from some time later, though we scarcely know the epoch, tell us:

In the *old* times the Thien-i and Thai-i were near to one another in Chen (hsiu no. 28) but are *now* in I (hsiu no. 27). The star Thai-i is south of the Right Star at (outside of)

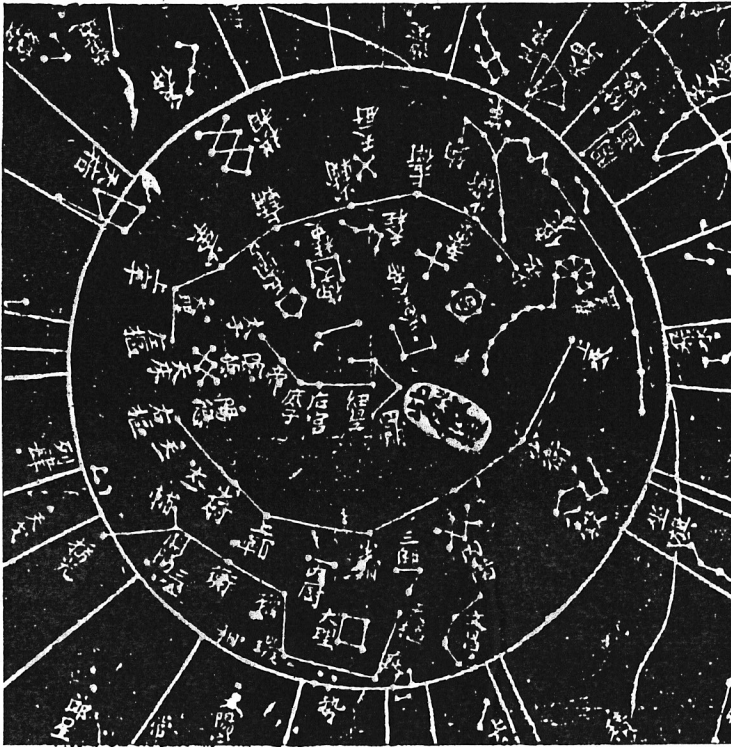


Figure 3 The Purple Palace of the Suchow planisphere, (A.D. 1193; copied from Saussure, p. 510): Table 1, line 5

Note: In relation to the Northern Dipper, the Western (Right) Boundary of the Purple Palace, in particular the range of its last three stars α (Right Pivot), δ and λ Dra, is distorted. The two supreme stars, Thien-i and Thai-i, are depicted right between the Right Pivot (α Dra) and the early Right Star (δ Dra), now called Shao-wen, outside the Western (Right) Boundary.

the gate of the Purple Tenuity Palace. The star Thien-i is equally in the same mansion near the Thai-i (ibid., ch. 107). Based on the above descriptions and the numerically given star-positions, we saw only one possibility, and so came to our conclusive identification of the three stars of great importance as follows (Fig. 4):⁷

the Right Star (as opposed to the Left Star) at the gate of the Purple Palace = δ Dra

the Thien-i (Celestial Unique), south of the Right Star = κ Dra

the Thai-i (Great Unique), south of the Thien-i = δ Dra

Now the remarkable 1987 excavation of the “tomb no.45” from the Yangshao cultural stratum has shown us that even in those remote times of ca. 3000 B.C. the constellation

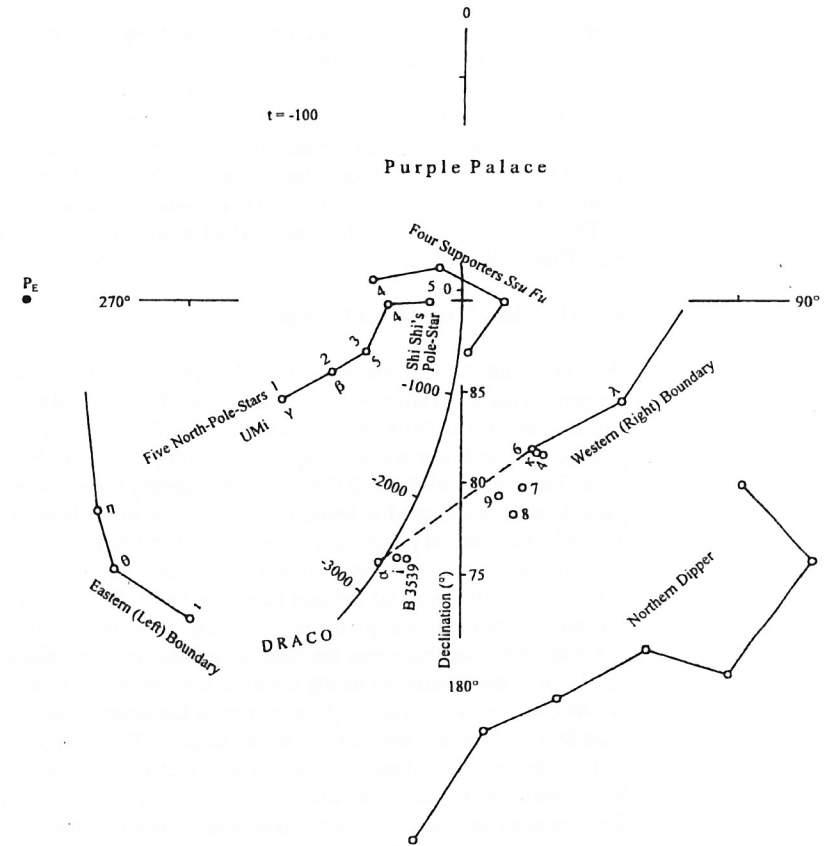


Figure 4 The three stars at the gate of the Purple Palace: the Right Star and the two supreme stars, Thien-i and Thai-i, according to Shih Shen (ca. 70 B.C.): Table, line 1

Note the relative positions of the three stars, Right Star (δ Dra), Thien-i (κ Dra) and Thai-i (δ Dra), along the north-south line. Later the Western (Right) Boundary was extended as indicated by the dotted line from δ Dra to α Dra (Right Pivot), retaining those relative positions of the three stars, now α Dra, ι Dra and Boss 3539 (Tab., Figs. 1-3).

The new constellation of the four Supporters *Ssu Fu* was established by Kan Shih (Khai-Yuan Chan Ching, ch. 69) in order to stop the farther “precession of the North-Pole” from the present Pole-Star [HD 117566 (Shih Shen, ca. 70 B.C.)] to another star (Maeyama, On the Pole-Star).

consisting of the Northern Dipper, (Pei) Tou, and the then Pole-Star α Dra must have served for the Chinese as a mean for the fundamental orientation [measure (Tou)] of time and space, all according to the daily regular rotation of the celestial sphere about the Pole-Star.⁸

From the above statements it is certain that my early claim of identifying the *Ti*, the highest Deity of the Yin-people, with the Pole-Star can be considered correct.⁹ It now

seems justified to assume that the Pole-Star, seemingly the only unmovable point in the whole Universe, was consistently worshipped for millennia as the highest Deity; during the Yin-time (16th – 11th cent. B.C.) as *Ti* (κ Dra) and later – as this was replaced by *Thien*, Heaven, through the Chouⁱ-dynasty (11th – 3rd cent. B.C.)¹⁰ – by the name of Thien-i, Celestial Unique. It is indeed a remarkable historical reality that we find the Chou-people's probable original name, Thien-i, long after finishing its role as the Pole-Star, still in Shih Shen's Hsing Ching^k (ca. 70 B.C.) and numerous other documents.¹¹

The question arises as to what function had originally been assigned to the neighbouring star, Thai-i, Great Unique.

2. The Thai-i^b, the Great Unique

We know that the Chinese worshipped many deceased Yin-kings by the name of *Ti*, Emperor. This in fact already occurred during the Yin-time and we find in bone-inscriptions expressions such as *Ti-ting* and *Ti-chia*, Emperor Ting and Emperor Chia for *Wu-ting*^l and *Tsu-chia*^m¹², and later we read them as *Ti Wu-ting*, Emperor Wu-ting, etc. in the History of the Yin-dynasty of the Shih Chi (ch. 3). Apparently some distinguished kings were after their death thus regarded as being almost identical to the highest Deity of the Universe, *Ti*^c, who had been in possession of men's good and evil.

Thus, for instance, the founder of the Yin-dynasty was called other names, mostly *Thai-i*ⁿ during the Yin-time and perhaps later also *Thien-i*^p as Ssuma Chhien tells us (ch. 3), obviously because he was particularly worshipped by the Yin-people.¹³

Under these circumstances we came to assume that the Chinese established a special star (4 Dra), not strictly but nearly identical with the *Ti*, the Celestial Deity and Pole-Star (κ Dra), as a celestial symbol of the terrestrial Emperors, in the immediate vicinity of the Pole-Star, the Thien-i, and called it by the name of *Thai-i* (Fig. 4).¹⁴

The Chinese original intention seems obvious enough. A perfect identification of their Kings with the *Ti*, their ultimate Divinity for millennia, would make the authority of not legendary but real kings with their great concrete achievements even obscure. We further assume that the Chinese may have invented two similar names, Celestial Unique and Great Unique, simultaneously for the Pole-Star *Ti* and the celestial symbol of the terrestrial Emperor.¹⁵

In this connection Shih Shen's above-mentioned emphasis on the correlative positions of the two stars, "the Thai-i (the symbol of the Emperor) is situated south of (below, beneath, under) the Thien-i (the Pole-Star)" – which would imply that the Thai-i is subordinate to the Thien-i – is inescapable, and his description has in fact been tenaciously retained unaltered in the Chin Shu, Sui Shu and others.¹⁶

The question arises as to why in the Shih Chi we find the Thai-i at an entirely different position. With the Astronomical Chapter of the Shih Chi we now proceed to the problem of the Purple Palace.

3. The Purple Palace^e

The Purple Palace is mentioned in writings such as Shih Chi (ch. 27), Huai Nan Tzu (ch. 3) and Hsing Ching of both Shih Shih and Kan Shih (Khai-Yuan Chan Ching, chs. 67, 69).

According to the frequently cited statement of Ssuma Chhien, the North-Pole is supposed to be at the second star of the so-called Five North-Pole-Stars^{p17}, β UMi, which is furthermore the permanent residence of the Thai-i. However, the Chou Pei Suang Ching tells us about the movement of the great star, certainly β UMi, in four directions near the North-Pole.¹⁸ Undoubtedly also Ssuma Chhien knew this fact, that the star β UMi was not strictly at the North-Pole.

Long before the time of the Huai Nan Tzu and Shih Chi the Chinese must already have been increasingly uneasy about the shift of the North-Pole in connection with that of the point of the winter-solstice. Probably around 70 B.C. we find Shih Shen saying that at the winter-solstice the Sun is at the 21st degree Tou (hsiu no.8; determinative star φ Sgr), a statement that distinguishes his school's strictly scientific attitude from all others.¹⁹ From Shih Shen's measurements of 120 star-positions in equatorial coordinates we know that his instrument was fixed to the North-Pole with an unprecedentedly high accuracy of ca. 1°. ²⁰ Thus Shih Shen was in possession of a Pole-Star far nearer to the actual North-Pole than Ssuma Chhien and all others of his time.²¹ Astronomically, Shih Shen's documents contain details of numerical measurements and can be considered the most reliable at that time.²²

Contrary to all comments hitherto made, I claim that the Purple Palace was deliberately set up in the heavens for the eternal authority of the Emperor so as to be free of any kind of changes in that Imperial territory.

At the centre of the Palace is the residence of the Emperor and the Thai-i, the Great Unique; it is the greatest and brightest star, β UMi, which commands all in space and time. Here we finally see the Unity of the macro- and microcosm, the ultimate unification of the three most fundamental principles of the Chinese:

1. the early highest Deity of the Universe of the Yin-time, *Ti*^c (the Pole-Star, later Thien-i, Celestial Unique),
2. the celestial symbol of the terrestrial Emperor (Thai-i, Great Unique, adjacent to the Thien-i),
3. the terrestrial Emperor himself.

The star will in fact be called *Ti-wang* (Imperial King) or *Thien-ti* (Celestial Emperor) as found in the Chin Shu (ch. 11, 13b) and others. In this regard the great bright star β UMi is no doubt more proper than any other possible Pole-Stars such as 5, 4 UMi and Shih Shen's proud one;²³ all these were at that time much nearer to the North-Pole but inevitably much smaller than β UMi (Fig. 4). As Maspero correctly says, Ssuma Chhien does not even pay much attention to the apparent tiny Pole-Star.²⁴

Like Shih Shih, Kan Shih also knew that the North-Pole had changed its place and therefore he wrestled with stopping its *historical precession* by means of the Four Supporters *Ssu Fu*^q, so that the North-Pole would no longer be able to proceed to another Pole-Star, unless it broke the chained hedge of the Four Supporters, as these cannot become the Pole-Star because of the duty already imposed on them (Fig. 4).²⁵

The Celestial Emperor at the centre of the Palace is surrounded by his Imperial Family-members. Within the Palace no change is allowed to occur. The whole Palace should never come into contact with the seven ever-moving luminaries – Sun, Moon and planets – nor should it sink under the horizon. It is determined to be a secluded holy territory.

How exactly the Chinese may have come to demarcate the Purple Palace from the rest of the celestial sphere, which is subject to perpetual mutations, betrayed their innermost secret and prompted our argument above.

Knowing that the present North-Pole is at, or just near, the star β UMi and far from the early Pole-Star, Thien-i (κ Dra), they drew the Western (Right) Boundary⁷ immediately close to those two supreme stars, Thien-i and Thai-i, so that they, starting with the Right-Star^h, would come on the north-south line (6, κ and 4 Dra), as described by Shih Shen (ch. 67). Here the early Pole-Star of the Yin-people and the symbolized Emperor, Thien-i (κ Dra) and Thai-i (4 Dra), are excluded from the Purple Palace because they have already “changed” and are no longer those supreme stars as such. However, because of their early supremacy in the Universe they are allowed to retain their original names and to stay nearby, just outside its gate at the Right-Star (6 Dra) of the Right (Western) Boundary (Fig. 4).

The constellation of these three neighbouring stars, 6, κ and 4 Dra – its collective descriptions with their individual positions in equatorial coordinates by Shih Shih (ch. 67) – seems to me extremely significant. If we consider that sharp demarcation of the Western Boundary at the Right Star (6 Dra), critically excluding its two immediately adjacent stars, the early supreme stars of κ and 4 Dra, suspicions will be strong that Shih Shen himself (fl. ca. 350 B.C.) of the Warring States period may have been the creator of the Purple Palace.

Yet Ssuma Chhien mentions an asterism of three stars at the mouth of the Northern Dipper. We claim that the star in the north is the Right-Star of the Right (Western) Boundary, 6 Dra, and the other two stars, κ and 4 Dra, are what Ssuma Chhien calls *Yin-te*^s, adding “also called Thien-i” (ch. 27, 2a).

We further claim that these two stars had originally been called *Thien-i* and *Thai-i* as found in Shih Shen’s Hsing Ching (ch. 67) and that the latter, the celestial symbol of the Emperor, was now displaced to the centre of the Purple Palace, β UMi, its permanent residence. Being thus devoid of the symbol of the Emperor, the early asterism of the two stars is now called *Yin-te*, or simply *Thien-i* as Ssuma Chhien tells us.

As we shall see below, Kan Shih also describes the asterism *Yin-te*, consisting of two stars. This name seems to have some historical significance.

The expression *Yin-te*^s consists of shadow *yin* as opposed to *yang*^t and virtue. Its original element seems best represented by Chavannes’ expression “Vertu cachée”, the Hidden Virtue.²⁶

Based on it we assume that the early set of the two supreme stars – after the Thien-i was deprived of its ultimate supremacy of the Pole-Star, while the Thai-i took over its role and thus became the ultimate Divinity of the whole Universe, the highest symbol, at the centre of both macro- and microcosm – was now named *Yin-te*. These two stars are, however, allowed to retain the once-heralded Virtue, albeit “hidden” as a token of homage to the late Pole-Star, and to stay immediately outside the gate of the Purple Palace. Thus, the name *Yin-te* bears mute testimony to the dispossessed of the highest Divinity of the Pole-Star.

The origin of the thus newly established Purple Palace is, to my knowledge, best expressed not by Ssuma Chhien, who is eager to point to the Celestial North-Pole-Stars

(Thien-chi-hsingⁿ, β UMi, etc.²⁷), but in the Huai Nan Tzu, extending the original concept to the whole Palace:

“The Purple Palace is the residence of the Thai-i.” (ch. 3),

and later likewise in the Chin Shu and Sui Shu:

“...also called the Purple Tenuity (Palace), is the place of the Thai-ti (Great Emperor), it is the permanent residence of the Son of Heaven (ch. 11, 14b; ch. 19, 30b).”

Here, unlike in the Shih Chi, we find the original *Thai-i* back again in its old place south of the Thien-i in a description similar to, but more clear than, Shih Shen’s:

“The Thai-i is south of and near the Thien-i, it is also the God of the Celestial Emperor.” (ch. 11, 14a; ch. 19, 30b)

That the star 6 Dra was, as we have seen above, originally assigned to the Right-Star at the gate of the Western Boundary is certain, but this star was later named *Shao-wei*^v, while that function was taken over by α Dra, now called the Right Pivot (Yu-shu^w) (Figs. 3, 4).

If the original Boundaries had been similar to those of the Tunhuang Star-Map A (Fig. 1), the gate would actually have been very widely open and free to foreign elements. On this question the comment “Old and Now”^x on the Shih Shen’s Hsing Ching (ch. 107) is most likely to supply some valuable data. We read:

“In the Old (records) *Thien-i* and *Thai-i* stood side by side in Chen (hsiu no. 28) but now are both in I (no. 27).”

No doubt this statement already cited above is additional support for our identification of the two stars with κ and 4 Dra. Although we subsequently read “the star Thai-i outside the gate of the Purple Tenuity Palace, south of its Right-Star”, exactly the same as the *Old*, we further read:

“In the Old, the Boundaries of the Palace were between Lou (hsiu no. 16) and Chen (no. 28), according to the new measurements they are now between Wei (no. 17) and Chen (no. 28).”

From this it follows that the last star of the Western Boundary is now in Chen (no. 28), while the two stars Thien-i and Thai-i are in I (no. 27), and therefore that the Western Boundary was already extended from the Right-Star (6 Dra) to α Dra, now the Right Pivot, at this time (Fig. 4). We are not clear when this epoch is, however, though it is very likely to be soon after the *Old* Shih Shen, and certainly some time during the Later Han.²⁸

There are two star-maps, the so-called Tunhuang Star-Map A and B, probably dating from the 8th and 10th centuries (Figs. 1, 2).²⁹ Besides several serious inconsistencies such as the number of stars in the Boundaries and the colours of the stars, we also find some crucial ambiguities.

In A we assume the two stars above the Dipper, *Thien* and *Thai*, to be *Thien-i* and *Thai-i* (κ , 4 Dra), coloured in black, hence supposedly of Kan Shih, although we find them only in Shih Shen’s Hsing Ching.

In both maps we find another set of the two stars designated as Thien-i and Thai-i above the fourth star of the Northern Dipper, δ UMa, and these are respectively in black (Kan Shih) and in red (Shih Shen or Wu Hsien). Most remarkable is that the position of these

two stars relative to the Northern Dipper is nearly the same on both star-maps, on the prolongation of $\gamma - \delta$ UMa, on which also α Dra is situated.

In A the two stars are between the Right- and the Left-Star of the Boundaries, while in B they are excluded from, and right south of, the enclosed Boundaries, consisting of presumably 12 stars like Ssuma Chhien's constellations, but contrary to Shih Shen's with 15 stars.

The Star-Map B seems likely to deal with the predecessor of the later arrangement of the three stars, α Dra (the Right Pivot of the Western Boundary) and the two adjacent tiny stars ι Dra (Thien-i) and B 3539 (Thai-i), such as we find in the constellations of the Sung-time (Figs. 2–4).³⁰

If this assumption is correct, the Western Boundary in B is extended from the original Right-Star 6 Dra to α Dra and together with this, the two stars Thien-i and Thai-i are displaced from their original asterism of κ and 4 Dra to their new positions mentioned above, retaining the relative positions of all these three stars “along the north-south line, near to one another”, following exactly Shih Shen's original description (Fig. 4).

Despite their great similarity at a glance, the two Star-Maps differ from one another particularly at the gate of the Palace. In A the two stars Thien-i and Thai-i are isolated, as in B but, in contrast to this, are right at the wide opened gate. They are marked in black, though Kan Shih gives no stars under these names. Both Xia Nai and Deng Wenkuan considered these names to be copying errors and tried to correct them to Yin-te and Yang-te, and respectively to Yin-te alone, presumably, in the case of the former in particular, in connection with the famous 12th-century star-map (Fig. 3).³¹

Like Ssuma Chhien, Kan Shih also (ch. 69) tells us of the asterism *Yin-te* of two stars, but obviously at a different position: “The two stars *Yin-te* are west of the asterism *Shang-shu*.”³² Perhaps in this connection Deng Wenkuan was led to correct the original star-names in A to *Yin-te*.

Unfortunately, Chhen Cho's² (fl. A.D. 310) completion of his star-map according to the three ancient schools (Chin Shu, ch. 11, 13a), where for example no constellation is given as common to these schools, makes the early history before him completely obscure.

Our assumption about the Star-Map A (Fig. 1) goes back a long time. The Thien-i entirely isolated, only accompanied by the Thai-i, is highly likely to be identified with α Dra, the early Pole-Star around 3000 B.C.

As we have already shown, we are in possession of some increasingly compelling evidence that from those remote times of ca. 3000 B.C. onwards the Pole-Star, the only unmovable concrete point in the whole Universe, was worshipped continuously for millennia, and that by the time of Shih Shih's observations (ca. 70 B.C.) the Chinese had changed their Pole-Star at least three times: from α Dra to κ Dra to β UMi (Ssuma Chhien, etc.) to HD 117566 (Shih Shih)³² – possibly the Kan Shih's school had its own Pole-Star near 4 UMi as seen from its constellation of the Four Supporters *Ssu-fu* (Fig. 4). Most probably, the tip of the original (Pei) Tou, as given by the 1987 excavation, is represented by the then Pole-Star α Dra, and the Yin-people's highest Deity *Ti* had been the Pole-Star κ Dra (Fig. 5).³³

The question arises as to whether one might have named the two stars, α Dra and south of (below) it its adjacent star, by Thien-i and Thai-i, as in the later case of Shih Shen around 70 B.C. and given them the by-name *Yin-te* as found in Kan Shih, similar to what

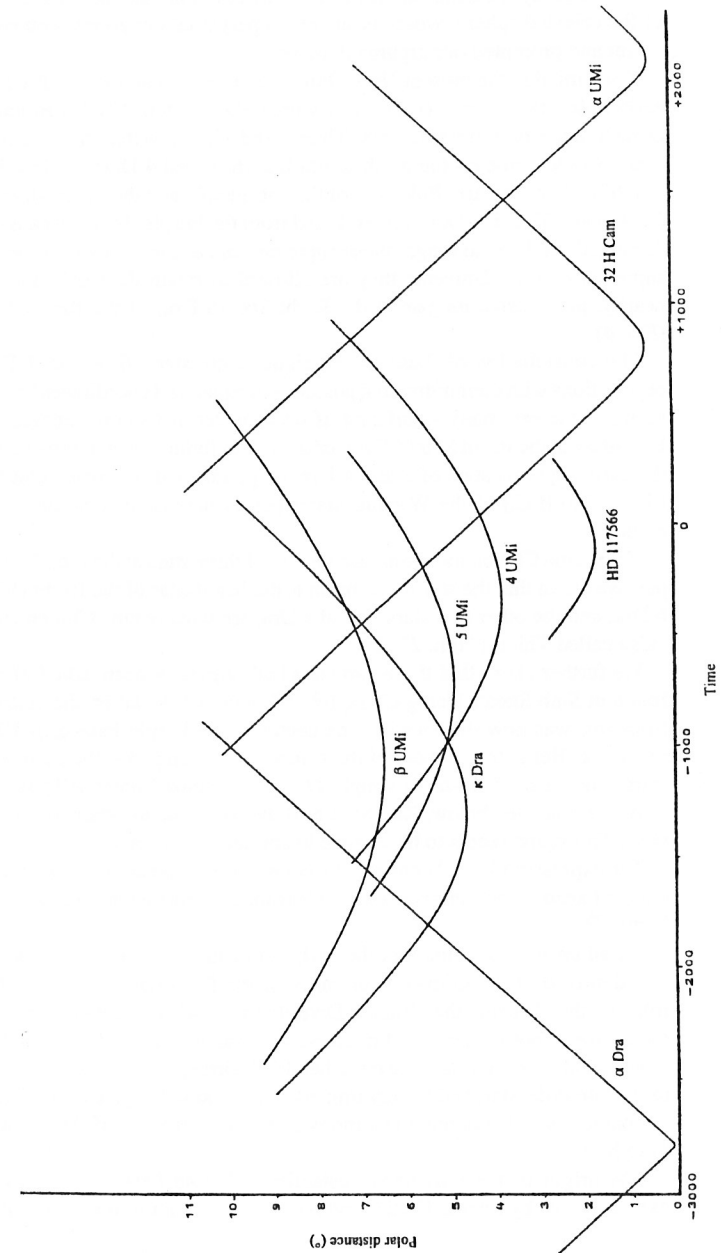


Figure 5 The polar distance of some apparent Pole-Stars in Chinese astronomy

Note: Due to the “precession of the North-Pole” the Chinese had at least four Pole-Stars by the Han-time:

1. α Dra [the tip of the original (Pei) Tou around 3000 B.C.; Feng Shi; Maeyama (1998)]

2. κ Dra [*Ti* (Yin), *Thien* (-) (Chou and later); Maeyama (1992), (1995)]

3. β UMi [*Ti* Wang (Imperial King), *Ta Ti* (Great Emperor) (Ssuma Chhien, etc.)]

4. HD 117566 [Shih Shen (ca. 70 B.C.), perhaps also Kan Shih; Maeyama, On the Pole-Star.]

How exactly the Chinese may have come to demarcate the Purple Palace from the rest of the celestial sphere, which is subject to perpetual mutations, betrayed their innermost secret and prompted our argument above.

Knowing that the present North-Pole is at, or just near, the star β UMi and far from the early Pole-Star, Thien-i (κ Dra), they drew the Western (Right) Boundary^f immediately close to those two supreme stars, Thien-i and Thai-i, so that they, starting with the Right-Star^h, would come on the north-south line (6, κ and 4 Dra), as described by Shih Shen (ch. 67). Here the early Pole-Star of the Yin-people and the symbolized Emperor, Thien-i (κ Dra) and Thai-i (4 Dra), are excluded from the Purple Palace because they have already “changed” and are no longer those supreme stars as such. However, because of their early supremacy in the Universe they are allowed to retain their original names and to stay nearby, just outside its gate at the Right-Star (6 Dra) of the Right (Western) Boundary (Fig. 4).

The constellation of these three neighbouring stars, 6, κ and 4 Dra – its collective descriptions with their individual positions in equatorial coordinates by Shih Shih (ch. 67) – seems to me extremely significant. If we consider that sharp demarcation of the Western Boundary at the Right Star (6 Dra), critically excluding its two immediately adjacent stars, the early supreme stars of κ and 4 Dra, suspicions will be strong that Shih Shen himself (fl. ca. 350 B.C.) of the Warring States period may have been the creator of the Purple Palace.

Yet Ssuma Chhien mentions an asterism of three stars at the mouth of the Northern Dipper. We claim that the star in the north is the Right-Star of the Right (Western) Boundary, 6 Dra, and the other two stars, κ and 4 Dra, are what Ssuma Chhien calls *Yin-te*^s, adding “also called Thien-i” (ch. 27, 2a).

We further claim that these two stars had originally been called *Thien-i* and *Thai-i* as found in Shih Shen’s Hsing Ching (ch. 67) and that the latter, the celestial symbol of the Emperor, was now displaced to the centre of the Purple Palace, β UMi, its permanent residence. Being thus devoid of the symbol of the Emperor, the early asterism of the two stars is now called *Yin-te*, or simply *Thien-i* as Ssuma Chhien tells us.

As we shall see below, Kan Shih also describes the asterism *Yin-te*, consisting of two stars. This name seems to have some historical significance.

The expression *Yin-te*^s consists of shadow *yin* as opposed to *yang*^l and virtue. Its original element seems best represented by Chavannes’ expression “Vertu cachée”, the Hidden Virtue.²⁶

Based on it we assume that the early set of the two supreme stars – after the Thien-i was deprived of its ultimate supremacy of the Pole-Star, while the Thai-i took over its role and thus became the ultimate Divinity of the whole Universe, the highest symbol, at the centre of both macro- and microcosm – was now named *Yin-te*. These two stars are, however, allowed to retain the once-heralded Virtue, albeit “hidden” as a token of homage to the late Pole-Star, and to stay immediately outside the gate of the Purple Palace. Thus, the name *Yin-te* bears mute testimony to the dispossessed of the highest Divinity of the Pole-Star.

The origin of the thus newly established Purple Palace is, to my knowledge, best expressed not by Ssuma Chhien, who is eager to point to the Celestial North-Pole-Stars

(Thien-chi-hsingⁿ, β UMi, etc.²⁷), but in the Huai Nan Tzu, extending the original concept to the whole Palace:

“The Purple Palace is the residence of the Thai-i.” (ch. 3),

and later likewise in the Chin Shu and Sui Shu:

“...also called the Purple Tenuity (Palace), is the place of the Thai-ti (Great Emperor), it is the permanent residence of the Son of Heaven (ch. 11, 14b; ch. 19, 30b).”

Here, unlike in the Shih Chi, we find the original *Thai-i* back again in its old place south of the Thien-i in a description similar to, but more clear than, Shih Shen’s:

“The Thai-i is south of and near the Thien-i, it is also the God of the Celestial Emperor.” (ch. 11, 14a; ch. 19, 30b)

That the star 6 Dra was, as we have seen above, originally assigned to the Right-Star at the gate of the Western Boundary is certain, but this star was later named *Shao-wei*^v, while that function was taken over by α Dra, now called the Right Pivot (Yu-shu^w) (Figs. 3, 4).

If the original Boundaries had been similar to those of the Tunhuang Star-Map A (Fig. 1), the gate would actually have been very widely open and free to foreign elements. On this question the comment “Old and Now”^x on the Shih Shen’s Hsing Ching (ch. 107) is most likely to supply some valuable data. We read:

“In the Old (records) *Thien-i* and *Thai-i* stood side by side in Chen (hsiu no. 28) but now are both in I (no. 27).”

No doubt this statement already cited above is additional support for our identification of the two stars with κ and 4 Dra. Although we subsequently read “the star Thai-i outside the gate of the Purple Tenuity Palace, south of its Right-Star”, exactly the same as the *Old*, we further read:

“In the Old, the Boundaries of the Palace were between Lou (hsiu no. 16) and Chen (no. 28), according to the new measurements they are now between Wei (no. 17) and Chen (no. 28).”

From this it follows that the last star of the Western Boundary is now in Chen (no. 28), while the two stars Thien-i and Thai-i are in I (no. 27), and therefore that the Western Boundary was already extended from the Right-Star (6 Dra) to α Dra, now the Right Pivot, at this time (Fig. 4). We are not clear when this epoch is, however, though it is very likely to be soon after the *Old* Shih Shen, and certainly some time during the Later Han.²⁸

There are two star-maps, the so-called Tunhuang Star-Map A and B, probably dating from the 8th and 10th centuries (Figs. 1, 2).²⁹ Besides several serious inconsistencies such as the number of stars in the Boundaries and the colours of the stars, we also find some crucial ambiguities.

In A we assume the two stars above the Dipper, *Thien* and *Thai*, to be *Thien-i* and *Thai-i* (κ , 4 Dra), coloured in black, hence supposedly of Kan Shih, although we find them only in Shih Shen’s Hsing Ching.

In both maps we find another set of the two stars designated as Thien-i and Thai-i above the fourth star of the Northern Dipper, δ UMA, and these are respectively in black (Kan Shih) and in red (Shih Shen or Wu Hsien). Most remarkable is that the position of these

we have seen above in the Shih Chi, because the early Pole-Star should keep its past virtue “hidden”, and whether, in order to distinguish the *older* from the *old* set of the two stars, one might have come to name the latter (κ , 4 Dra) simply *Thien* and *Thai* omitting “yi (one, unique)” (Fig. 1). Some traces of myths – as abundantly found in the Shan Hai Ching, Chhu Tzhu (ch. Astronomical questions) and others – about the earliest Pole-Star might have induced the Chinese to the circumstance mentioned above.

Table 1 shows our explanations of the three stars concerned.

Later on the Suchow Star-Map (Fig. 3) we find two stars, *Yin-te* and *Yang-te*, near the two chief stars, γ and β UMi, of Shih Shen’s Five North-Pole-Stars, certainly connecting with the Yin-Yang doctrine of dualism to which these two stars, γ and β UMi, seem to be further related through their control of the Moon and the Sun respectively.³⁴

Admittedly, these kinds of arguments are highly speculative. However, it is certain that for the Chinese the Pole-Star has served as the fundamental point of reference constantly since ca. 3000 B.C., and that this principle, though never explicitly attested in the bone-inscriptions, has not changed throughout the Yin-time. All this, I submit, is at least certain, thanks to the recent excavation of the “tomb no. 45”.³⁵

An outstanding example of the most tenacious transmission in time and space of historical elements is the fact that “*Amaterasu Oomikami*” (the Great God Illuminating the Heaven) – the fundamental principle and the mythical founder of Japan and the imperial family, the Sun-Goddess, deified in the *Ise Jingu* (Shrine) – has been worshipped – since the 7th century A.D. also under the by-name of *Thai-i* (*Tai-itsu* in Japanese), but in a highly mystical *hidden* way certainly because it originally dealt with the foreign concept – in a close connection with the Northern Dipper as the Imperial Chariot.³⁶ This has been shown by H. Yoshino.

The original Chinese concept of the Thai-i, the unified Divinity of the Pole-Stars and the Emperors, has thus been transmitted afar but preserved until today as a single Deity for Japanese souls. In Korea, which was at that time the transmitter of Chinese culture to Japan, such a phenomenon of the transmission of cosmological concepts founding the legacy of the imperial house seems not to have ever existed.³⁷

Summary

This paper deals with the way in which the Purple Palace, the celestial symbol of the Emperor and his imperial belongings, may have originated.

I claim that this occurred strictly in connection with the old and new Pole-Stars. The Purple Palace was defined such that the centre of the Palace was occupied by the newly unified Deity of the two fundamental concepts, the Pole-Star (Thien-i), the highest traditional Divinity, and the celestial symbol of the terrestrial Emperor (Thai-i) – now called the residence of the celestial Emperor and the Thai-i – while the Boundaries critically excluded those two supreme stars from the Palace, the old Pole-Star *Thien-i* (κ Dra) and the old star for the symbol of the Emperor *Thai-i* (4 Dra).

For this elevation of the terrestrial Emperor to the highest authority of the Universe at the centre of the Palace, the Chinese chose β UMi, the greatest and brightest star in the North-Pole region.

Table 1 The right star at the gate of the Purple Palace and the two supreme stars, Thien-i and Thai-i

	a	b	c	d	e
		Right star at the gate of the Purple Palace	Thien-i Celestial Unique	Thai-i Great Unique	Remarks
1	Shih Shih (ca. 70 B.C.)	Right Star 6 Dra	Thien-i κ Dra	Thai-i 4 Dra	Khai-Yuan Chan Ching, ch. 67, Maeyama (1977), 240–243 1-c, d: Yin-te (Ssuma Chhien)
2	Tunhuang Star-Map A (ca. A.D. 710), Fig. 1	Right Star 6 Dra (or 7, 8, 9 Dra)	Thien κ Dra	Thai 4 Dra	The West Boundary of 8 stars, contrary to Shih Shih (7 stars)
3			Thien-i prob. α Dra, prob. also called <i>Yin-te</i>	Thai-i prob. i Dra, prob. also called <i>Yin-te</i>	3-c, d: asterism of 2 stars <i>Yin-te</i> (Kan Shih, ch. 69)
4	B (A.D. 10th cent.), Fig. 2	Right Pivot (?) α Dra, the Right Star now called Shao-wei (?)	Thien-i i Dra = 4-c	Thai-i Boss 3539	prob. predecessor of the Suchow Star-Map, the West Boundary extended together with Thien-i and Thai-i, the Boundaries of prob. 12 stars (Ssuma Chhien)
5	Suchow Star-Map (A.D. 1193), Fig. 3	Right Pivot α Dra, the Right Star now called Shao-wei		= 4-d	the Boundaries of 15 stars (Shih Shih), the West Boundary extended together with Thien-i and Thai-i

The origin of the Purple Palace is therefore ultimately attributable to the apparent “precession of the North-Pole”.

This would indicate that the same fundamental concept of the Chinese might be traced back on that vast historical line of the “precession of the North-Pole”, through *Thien* (Heaven of Chou’s origin) and *Ti* (the Highest Deity of the Yin-people, the predecessor of *Thien* and the later Emperor, *Ti*), and finally to the original constellation of the Northern Dipper, (Pei) *Tou*, with its tip which had once been occupied by the still earlier Pole-Star, α Dra, as shown by the recent excavation of the “tomb no. 45” dating from ca. 3000 B.C.

Notes

1. For Thai-i cf. Chhien Pao-Tsung.
2. Shih Chi, ch. 28, 22a; Chin Shu, ch. 11, 14a.
3. Gaubil and many other scholars were of this opinion; cf. e.g. Saussure 495ff., Teboul. Anybody would come to this idea.
4. Maeyama (1992), 28; (1995).
5. Khai-Yuan Chan Ching, ch. 67; Maeyama (1977), 211, 242; see also Sun and Kistemaker (1997), 68 (-78).
6. Maeyama (1992), 83–87, 89, Figs. 6.1–6.5, 6.7; (1995), 390–393, Figs. 2–5.
7. Maeyama (1977), 240–243 (nos. 59, 61, 62). For my identification in detail cf. 216–218. For the three stars concerned Sun and Kistemaker chose κ , 7 and 8 Dra, which is certainly contrary to Shih Shen’s descriptions.
8. See Maeyama (1998); for the (Pei) Tou in the bone-inscriptions cf. Xu, Yau and Stephenson.
9. See note 4 above.
10. For the transition from *Ti* to *Thien* see e.g. Chang 236, 239.
11. Huai Nan Tzu, ch. 3; Shih Chi, ch. 27, 2a; Han Shu, ch. 26, 2a; Chin Shu, ch. 11, 14a; Sui Shu, ch. 19, 30b.
12. E.g. Chang, 237.
13. E.g. Shirakawa, 84, 88.
14. Cf. an interesting quotation by Ho Peng Yoke, 68: “One legend says that when Huang Ti died ..., his spirit ascended up the heavens and became the deity T’ai I ... (Huang Ti Pên Hsing Chi, p. 8a).”
15. Unlike Chhien Pao-Tsung, Li Ling maintains that the history of Thai-i worship can be traced back to the Warring States period (p. 25f.). In his private communications Prof. Pankenier suspects it may be still earlier.
16. Chin Shu, ch. 11, 14a; Sui Shu, ch. 19, 30b.
17. Originally Shih Shen’s designation.
18. See e.g. Cullen, 127.
19. Hou Han Shu, ch. 12, 3b.
20. Maeyama (1977), 216, 219; see also Sun and Kistemaker, 56.
21. Maeyama, On the Pole Star.
22. See also Yabuuti (1969), 52 and Maspero’s erroneous statement, 281.
23. HD 117566, cf. Fig. 4 below; Maeyama, On the Pole Star.
24. Maspero, 328.
25. Maeyama, On the Pole Star.
26. Chavannes, T.3, 340.
27. This is the asterism of the Five North-Pole-Stars of Shih Shi (Fig. 4). For the erroneous interpretation of Chavannes (T.3, 339) see Herbster, 48–50.
28. For the detailed comment see Maeyama (1977), 217f.
29. See Ma Shichang; Xia Nai.
30. See Yabuuti (1936), 72, 76; (1969), 128; Maeyama (1977), 243.
31. Xia Nan, 144, 148. The lines (13) and (14) of the Star-Map B in the table should be exchanged with the line (19); Deng Wenkuan, 92.
32. Maeyama, On the Pole Star.

33. Maeyama (1998).
34. Chin Shu, ch. 11, 13b.
35. For the precession of the equinoxes as the fundamental historical problem in terms of archaic astronomy, see Dechend. For the unification of the macro- and microcosm through the terrestrial emperor, see Pankenier.
36. According to Prof. von Dechend’s private communications the concept of the Northern Dipper as a chariot must have originally stemmed from Mesopotamia. See UMi /UMa as Himmelswagen/Lastwagen in Gössmann, 95–97.
37. Prof. Nha Il-Seong’s private communications.

Bibliography

Chinese primary sources

- Chhu Tzhu^{aa}. *Elegies of Chhu*. Chhu Yuan et al. Chou, ca. 300 B.C.
 Chin Shu^{ab}. *History of the Chin Dynasty (265–419)*. A.D. 635. Twenty-five Histories.
 Chou Pei Suan Ching^{ac}. *The arithmetical classic of the gnomon and the circular path of heaven*. Chou, Chhin, Han. Writers unknown.
 Han Shu^{ad}. *History of the Former Han Dynasty (206 B.C./A.D. 24)*. ca. A.D. 100. Twenty-five Histories.
 Hou Han Shu^{ae}. *History of the Later Han Dynasty (A.D. 25/220)*. A.D. 450. Twenty-five Histories.
 Huai Nan Tzu^{af}. *The book of (the Prince of) Huai Nan*. ca. 120 B.C. Repr. Taipei 1969.
 Khai-Yuan Chan Ching^{ag}. *Chhüthan Hsi-Ta*, 729.
 Shan Hai Ching^{ah}. *Classic of the mountains and rivers*. Writers unknown. Chou, Chhin, Han. Taipei 1959.
 Shih Chi^{ai}. *Ssuma Chhien*^{aj}, ca. 90 B.C. Twenty-five Histories.
 Sui Shu^{ak}. *History of the Sui Dynasty (581–617)*. A.D. 636, 656. Twenty-five Histories.

Secondary sources

- Chang, Tsung-tung: *Der Kult der Shang-Dynastie im Spiegel der Orakelinschriften. Eine paläographische Studie zur Religion im archaischen China*. Wiesbaden 1970.
 Chavannes, Édouard: *Les mémoires historiques de Se-Ma Ts’ien*. 5 tomes, Paris 1895–1905, repr. Paris 1967.
 Chhien Pao-Tsung: “Thai I” Khao. Investigation of the meaning of the term “Great Unique” (Chinese). *Yenching Hsiieh Pao (Yenching Univ. Journal of Chinese Studies)*, no.12 (1932), 2449.
 Cullen, Christopher: *Astronomy and mathematics in ancient China: the Zhou bi suan jing*. Cambridge 1996.
 Dechend, Hertha von and Santillana, Giorgio de: *Hamlet’s Mill. An essay on myth and the frame of time*. Boston 1969; German translation: *Die Mühle des Hamlet*. Berlin 1993.
 Deng Wenkuan: *Collected Collations of the Astronomical Texts and Calendars from Dunhuang* (Chinese). 1996.
 Feng Shi: Astronomical investigation of the tomb no. 45 at the water bank west of P’u-yang, Ho Nan. *Wenwu* (1990), III, 52–60, 69.
 Gössmann, P. Felix: *Planetarium Babylonicum oder die sumerisch-babylonischen Stern-Namen*. Rome 1950.
 Herbster, Rainer: *Die Grundlagen der frühen chinesischen Astronomie, Bestimmung der Periode und Bahn der Sonne*. Frankfurt am Main 1986.
 Ho Peng Yoke: *The astronomical chapters of the Chin Shu*. Paris 1966.
 Li Ling: An Archaeological Study of Taiyi (Grand One) Worship (English transl. by D. Harper). *Early Medieval China*, 1995–96, 1–37.
 Maeyama, Y. (1977): *The oldest star catalogue of China, Shih Shen’s Hsing Ching*. Prismata. Festschrift für Willy HARTNER, Wiesbaden, 211–245.
 — (1992): *The Four Cardinal Points of the Compass and the Chinese Lunar Mansions. The evolution of positional astronomy in ancient China*. J.W. Goethe-Univ. IGN Preprint Series No. 29.
 — (1995): The stellar reference-points in ancient China and the evolution of positional astronomy. *Proc. of the 7th Intern. Conf. History of Science in East Asia, Kyoto 1994, East Asian Science: Tradition and Beyond*. K. Hashimoto et al. (eds.). Osaka 1995, 385–394.

- (1998): On the Earliest Stage of Chinese Astronomy. A new hypothesis. *Proc. of the Intern. Symp. on Ancient Astronomy and Traditional Culture of China (Nanjing, Oct. 1997)*. The Purple Mountain Observatory, Academia Sinica et al., Nanjing 1998, 6–9.
- : On the Pole Star and its Four Supporters, *Ssu fu*, in ancient Chinese astronomy. To appear in the *Proc. of The Third Intern. Conf. on Oriental Astronomy (Fukuoka, Japan, Oct. 1998)*.
- Ma Shichang: Tunhuang xingtu de niandai (Chinese). On the date of the Tunhuang Star-Maps. Zhongguo gudai tianwen wenwu lunji. *Collected Papers on Astronomical Relics in China*. Beijing 1989.
- Maspero, Henri: L'astronomie chinoise avant les Han. *T'oung Pao* 26 (1929), 267–356.
- Needham, Joseph: *Science and civilisation in China*. vol.3. Cambridge 1959.
- Nha Il-Seong: Private communications.
- Pankenier, David William: *Early Chinese Astronomy and Cosmology: The "Mandate of Heaven" as Epiphany*. Stanford Univ. 1983.
- Saussure, L. de: *Les Origines de l'Astronomie Chinoise*. Paris 1930.
- Schlegel, Gustave: *Uranographie Chinoise*. Leyden 1875.
- Shirakawa, Shizuka: *Kokotsu-bun no sekai – Kodai Yin-ochō no kozo (Japanese)*. The world of the bone inscriptions – The structure of the ancient Yin Dynasty. Tokyo 1972.
- Sun, Xiaochun and Kistemaker, Jacob: *The Chinese Sky during the Han. Constellating Stars & Society*. Leiden-New York-Köln 1997.
- Teboul, Michel: Sur quelques particularités de l'uranographie polaire chinoise. *T'oung Pao* 71 (1985), 1–39.
- Xia Nai: Another Manuscript Star-map from Dunhuang – The Dunhuang Star-map B (Chinese). *Explorations in the History of Science and Technology in China*. Li Guohao et al. (eds.). Shanghai 1982, 143–154.
- Xu Zhentao, Yau Kevin K. C. and Stephenson, F. Richard: Astronomical records on the Shang Dynasty oracle bones. *Archaeoastronomy* 14 (1989), S61–S72.
- Yabuuti, Kiyosi (1936): Sodai no seishuku. Descriptions of the constellations in the Sung Dynasty (Japanese). *Toho Gakuho*, Kyoto, VII, 42–89.
- (1969): *Chugoku no tenmon rekiho. Chinese astronomy and calendrical science (Japanese)*. Tokyo.
- Yoshino, Hiroko: Ise-Jingu ko (Japanese). A study on Ise Shrine. *Minzoku-gaku Kenkyu*, 39 (1974), 209–232.

- (a) 天一 (乙) (b) 太 (大) 一 (乙) (c) 紫宮 (d) 殷 (e) 采
 (f) 石申 石氏 (g) 紫微垣 (h) 右星 (i) 北斗 (j) 周 (k) 星經
 (l) 武丁 (m) 祖甲 (n) 大乙 (o) 天乙 (p) 北極五星 (q) 四輔
 (r) 西 (右) 蕃 (垣) (s) 陰德 (t) 陽 (u) 天極星 (v) 少尉 (w) 右樞
 (x) 古今 (y) 尚書 (z) 陳卓 (aa) 楚辭 (ab) 晉書 (ac) 周髀算經 (ad) 漢書
 (ae) 後漢書 (af) 淮南子 (ag) 開元占經 (ah) 山海經 (ai) 史記 (aj) 司馬遷
 (ak) 隋書

Frankfurt, March 22, 1999

Prof. D.W. Pankenier

Lehigh Univ. Dep.MFL,
9 West Packer Ave.

Bethlehem, PA 18015, USA

Y. Maeyama

Univ. Frankfurt

60054 Frankfurt, Germany

FAX: 0049-69-798 23275 (Univ)

Dear Prof. Pankenier:

I have been enjoying in reading your dissertation, "Early Chinese astronomy and cosmology (1983)", which H.v.Dechend gave me to read. I had been ignorant of this important work.

In this connection I would like to pose you some questions.

I have been working on the two peculiar stars 天一, 太一 appearing in 星经 (南齐占经), Tunhuang star-maps, etc. and I somehow came into a situation to submit in three weeks a short paper on that subject. However I am largely perplexed. For instance in Nangjing I also asked 鄧文寬, the author of 敦煌天文曆法, "What stars are they?", he simply answered, "Nobody knows."

I suppose, 天一 was the Pole-star (α , K Dra) and 太一 was later sent to its vicinity as a symbolic Epiphany of the authority of the earthly Emperors.

I would be very much pleased if you write me any opinion about those two stars.

It is urgent. Could you write me a couple of sentences soon?
Thank you for your kindness in advance.

Sincerely yours

