

THE ASTRONOMICAL ORIGIN OF CHINA'S "WEAVING MAID AND OXHERD" FABLE

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Abstract: One of the most celebrated festivals in traditional China was called 'Seventh Night', observed on the seventh day of the seventh lunar month (8 August 2024). The celebration was especially popular among young girls whose responsibility it was to weave cloth for the family. On that date, girls would implore the Weaving Maid, the celestial princess who weaves the varicolored tapestries of the dawn and twilight skies, to grant them exceptional skill at the loom. But there is more to the story. The legend tells how the heavenly Weaving Maid, out of curiosity takes an impermissible break from her task to explore what earthly existence is like. One day, along with her palace attendants, she visits the Earth, and a problematic romance soon ensues. Poetic allusion to the alter-egos of the lovers, the stars Vega and Altair, occurs as early as the first millennium BCE. The astral connections of the tale are particularly intriguing because there is good reason to believe that the usefulness of Vega and Altair in ancient star lore in fact dates from Neolithic times when the two stars aligned exactly on celestial North, at a time when Thuban (α Draconis) was the bright Pole Star. As the abode of the Supernal Lord in Heaven and the pivot of the cosmos, the celestial Pole played a crucial role in cosmological and metaphysical contexts throughout Chinese history.

This paper traces the origin and evolution of the astronomical role of Vega and Altair, and the Weaving Maid and Oxherd in Chinese history, from the earliest times to the imperial period.

Keywords: China, folktales, astronomy, Weaving Maid and Oxherd, Seventh Night qi xi 七夕

1 INTRODUCTION

For centuries one of the most popular observances for girls in traditional China was called *Qī xī* 'Seventh Night', celebrated on the seventh night of the seventh lunar month. The folklore concerning the observance, especially popular among girls and young women, goes as follows:

After his parents died a young oxherd became mistreated by his brother's wife, who schemed to be rid of him. Eventually, he was forced to leave, taking with him only an old draught ox. Unbeknownst to the young man this ox had once been a celestial official, but having displeased the King of Heaven he was demoted to a mortal existence. One day, the ox broke his imposed silence and told the boy that there would be seven maidens bathing in the nearby lake at dusk. One was the daughter of Heaven who, bored with her daily task of weaving the colors of sunrise and sunset, was curious to see what terrestrial life was like. The ox counseled the boy to hide her clothes so that she would not be able to return to Heaven. The oxherd did so, the pair ultimately fell in love, and soon the Oxherd and the Weaving Maid started a family. Years passed—when the Queen of Heaven found out that the Weaving Maid had secretly eloped with a mortal, she was furious and ordered troops to bring her back. When the Weaving

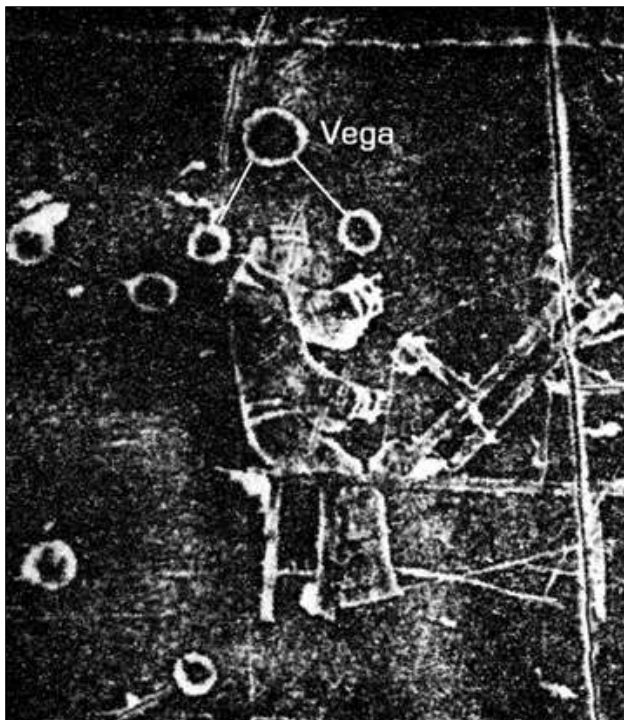
Maid was returned to Heaven without her children barely a day had passed up there.

When the Oxherd discovered that his wife had been abducted, he followed the old ox's dying instructions to wrap himself in his mentor's charmed hide, put his children in a basket, and fly to Heaven in pursuit of the Weaving Maid. To prevent their reunion, the Queen Mother had scratched a golden hairpin across the sky to create the Sky River. Ever after, the Oxherd and the Weaving Maid, like the stars Vega and Altair, were eternally separated by the Milky Way, forever longingly gazing at one another but unable to reunite. Eventually, the King of Heaven was moved by their plight and allowed them to cross the Sky River on one night each year, the seventh of the seventh month. A swarm of magpies would flock together to form a bridge allowing the lovers to meet. Traditionally, on this night girls and young women would hang fruit in the courtyard for the pair or trap a spider in a box to see whether by morning a web would appear. If one did, it meant that their entreaty to the Weaving Maid for exceptional skill on the loom had been successful. And so, the occasion also came to be known as *Qī qiao jié* 乞巧節 "Imploring Proficiency Day".

Qī qiao or *Qī xī* Festival has been



Figure 1: The cover of a richly illustrated, diminutive, children's paperback *The Oxherd and the Weaving Maid*, showing the happy family of the folktale framed by the ox and magpies (after Zhang, 1980).



celebrated since early imperial times and is very popular elsewhere in East and Southeast Asia as well. In Japan it is popularly known as *Tanabata* and in Korea *Chilseok*. The name of a relay satellite in the Chinese lunar space program recalls the bridge of magpies, and lunar craters are named for the Weaving Maid and Oxherd. For the geographically widespread parallels to this folktale see Eberhard (1937: 55–57).

This fable is illustrated in Figure 1, and the Weaving Maid's association with Vega is indicated in Figure 2.

Apart from the passing references to Heaven and the two stars, what has this fable got to do with astronomy? In fact, the characters in this

Figure 2: The celestial Weaving Maid at her loom. The large star above her head is Vega. Detail from an Eastern Han stone relief (after Zhongguo ..., 1980: 51, Figure 49).

folktale have a remarkably long history of association with the sky. The Weaving Maid and the Draught Ox have been identified with the stars for over three thousand years, and probably longer. The Weaving Maid is Vega, and the Draught Ox (or Oxherd) is Altair, two corners of the Summer Triangle, a familiar evening sight all summer long. The pair first make their appearance in one of the five canonical classics of ancient China, the *Shi jing* 詩經 or *Book of Odes*, from the early first millennium BCE, in a poem called 'Great East'. There they figure in a satirical poem, together with our own two 'stars' (i.e., Venus), classically denoted Lucifer and Hesperus, in what is taken to be a piece of social criticism, using "... similes of various constellations which are very bright and fine-looking but serve no useful purpose ..." to mock the ruling classes (Karlgrén: 155, trans. modified):

In Heaven there is the [celestial] *Han River* [Milky Way]; it looks down brightly.

Triangular is the Weaving Maid (Vega); in one day she is seven times displaced.

Though she is seven times displaced, she does not complete any woven pattern.

Brilliant is the Draught Ox (Altair), but one does not yoke it to any carriage.

In the east there is the Opener of Light (Lucifer).

In the west there is the Long Continuer (Hesperus).

Long and curved is the Heavenly Net (ϵ Tau), but it is just placed there in a row.

In the south there is the Winnowing Basket (γ Sgr), but one cannot winnow with it.

In the north there is the Ladle (UMa), but one cannot ladle wine or porridge with it. (Karlgrén, 1950, trans., modified).

The *Odes*, *Shijing* 詩經, is a collection of three hundred songs, hymns, and celebratory odes from the earliest times, which fortunately survived to be written down by the mid-first millennium BCE. They run the gamut from love poems to celebratory odes extolling the ancestors, to temple hymns, all in ancient Chinese. The *Odes* have been revered for many centuries as a canonical work that preserves much of the cultural and intellectual life of the earliest times. The poem 'Great East' clearly illustrates how conventional and familiar the identities of asterisms were by this time. Others, such as the 'Fire Star' α Sco and 'Triaster' ζ Ori (Belt of Orion), already appeared in the Shang Dynasty

(1562–1046) oracle bone inscriptions half-a-millennium earlier. The first hexagram *Qian* 乾 of the Early Zhou Dynasty (1046–256) oracular text *Yijing* 易經 (*Book of Changes*) focuses on the seasonal posture of the celestial Cerulean Dragon of the East (Vir–Sgr).

2 THE EARLY ROLE OF VEGA AND ALTAIR IN CHINESE ASTRONOMY

Although allusion to the Weaving Maid and the Oxherd is only textually attested after the turn of the second millennium BCE in the early W. Zhou dynasty (1046–722), the link between Vega and Altair is much older. After 2775 BCE, Thuban (α Dra) gradually relinquished its prominent role as Pole Star due to precession (amounting to about one degree of displacement every 72 years), and there was no longer a bright star at celestial north. As Léopold de Saussure showed, the cosmological controversies alluded to in the ancient text of the *Yao dian* 堯典 'Canon of Yao' and *Guo yu* 國語 'Discourses of the States' involving astro-calendrical reform and the prominent role of the renowned Zhuan Xu 顓頊, was a direct result of the challenge confronting the ancient astronomer-priests' due to the momentous consequences of the untoward displacement of the Supreme One. Throughout the formative period of Chinese civilization, the North Pole was the abode of the omnipotent Supernal Lord, *Shang di* 上帝, who ordered the cosmos, and whose terrestrial surrogate was The Emperor, the 'Son of Heaven', *Tian zi* 天子. The pivot of the heavens was the Supernal Lord's abode at the very center of the cosmos, and the Center's cosmological and metaphysical significance played a crucial role in politico-religious governing all successive dynasties. Consequently, the identity of the star The Celestial One, *Tian yi* 天一, had to be adjusted over time due to precession.¹

But in the first half of the third millennium BCE, when bright Thuban (α Draconis, mag. 3.65) was the Pole Star, during the long summer evenings when the Summer Triangle (https://en.wikipedia.org/wiki/Summer_Triangle_-_media/File:Map-summer-triangle.png) dominated the evening sky, the two bright stars Vega and Altair aligned exactly on Thuban (see Figures 3 and 4), as shown by their R.A. Such an alignment would hardly have gone unnoticed and could easily have been observed by using a straight stick. Once it became culturally established and religiously sanctioned, the conventional understanding of the astronomical configuration of the 'changeless' heavens would have persisted for centuries as a 'teaching story',

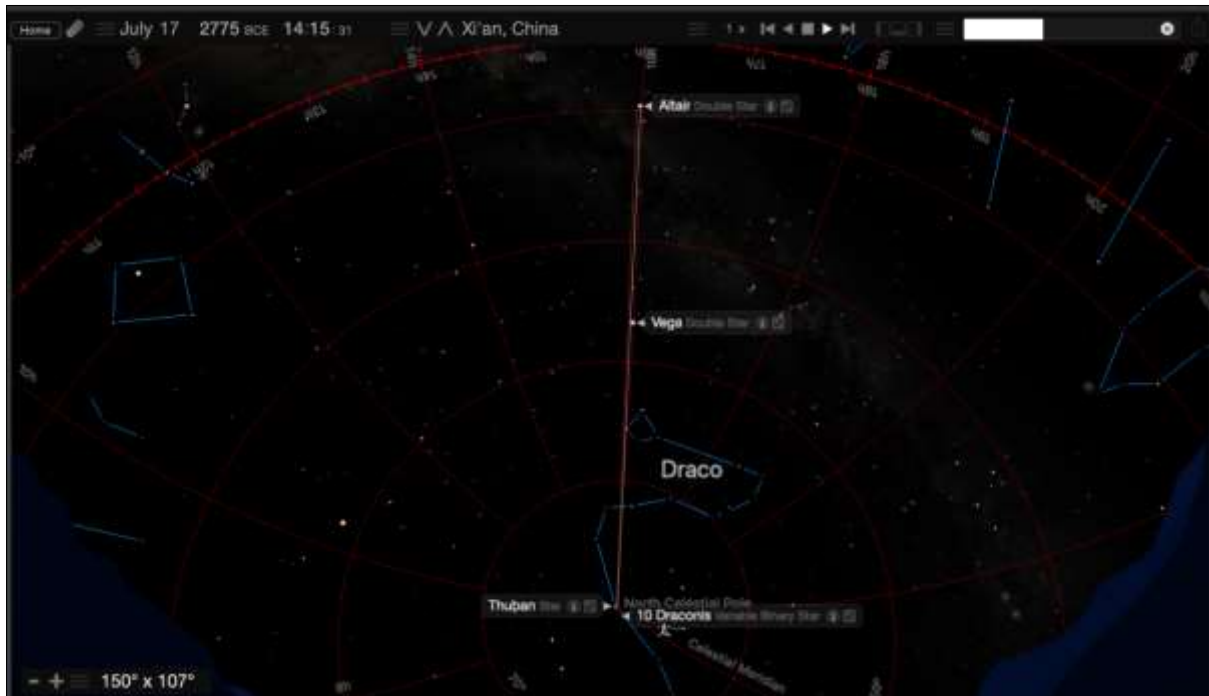


Figure 3: The alignment of Vega and Altair on the North Celestial Pole in the early third millennium BCE. Thuban's successor 10 Dra later became *Tai yi*, the 'Unique One' ([Starry Night Pro 8](#)).

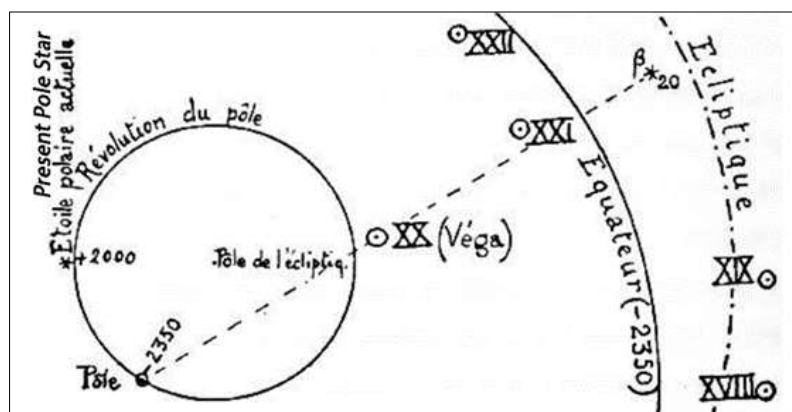
given the barely perceptible progressive obsolescence of Thuban as the Pole Star.

However, by the Shang Dynasty (1562–1046 BCE) in the mid-second millennium BCE the discrepancy would have become glaringly obvious ([Figure 5](#)). By then, urbanization and the cardinal orientation of high value structures—palaces, tombs, temples, city walls—had become *de rigueur* so that establishing true North without a Pole Star posed significant problems. Deviations of the longitudinal axes of structures by several degrees West and East of true North was common. Even later, when establishing the cardinal directions using a shadow gnomon had become conventional, the ritual need for celestial sanction still demanded that the responsible officials bring down a true N–S line by aligning on the Supernal Lord's abode at the Pole ([Pankenier, 2013: 127](#)).

3 WHEN DING 定~顓 JUST CULMINATED

Due to the obsolescence of the polar alignment of Vega–Altair, around the founding of the Zhou

Figure 4: The alignment of Vega (XX) on both the Pole and the location of the winter solstice in Capricorn ca. –2350. The circle describes the trajectory of the Pole resulting from precession. The full circuit takes about 26,000 years to complete (after [de Saussure, 1930](#)).



Dynasty in the mid-11th century BCE a new polar alignment was adopted, and its significance also merited a mention in a poem in the *Book of Odes*:

When [the asterism] Ding just culminated, he started work on the Chu Palace.

When he had measured it by the Sun, he started work on the Chu Hall ...

He ascended the tell to look out over Chu.

He looked out over Chu and Tang.

He measured hills and mounds by their shadow.

He descended and inspected the mulberry orchards.

The turtle-shell oracle was auspicious, all through it was truly good. ([Karlgrén, 1950: 33](#), my English translation).

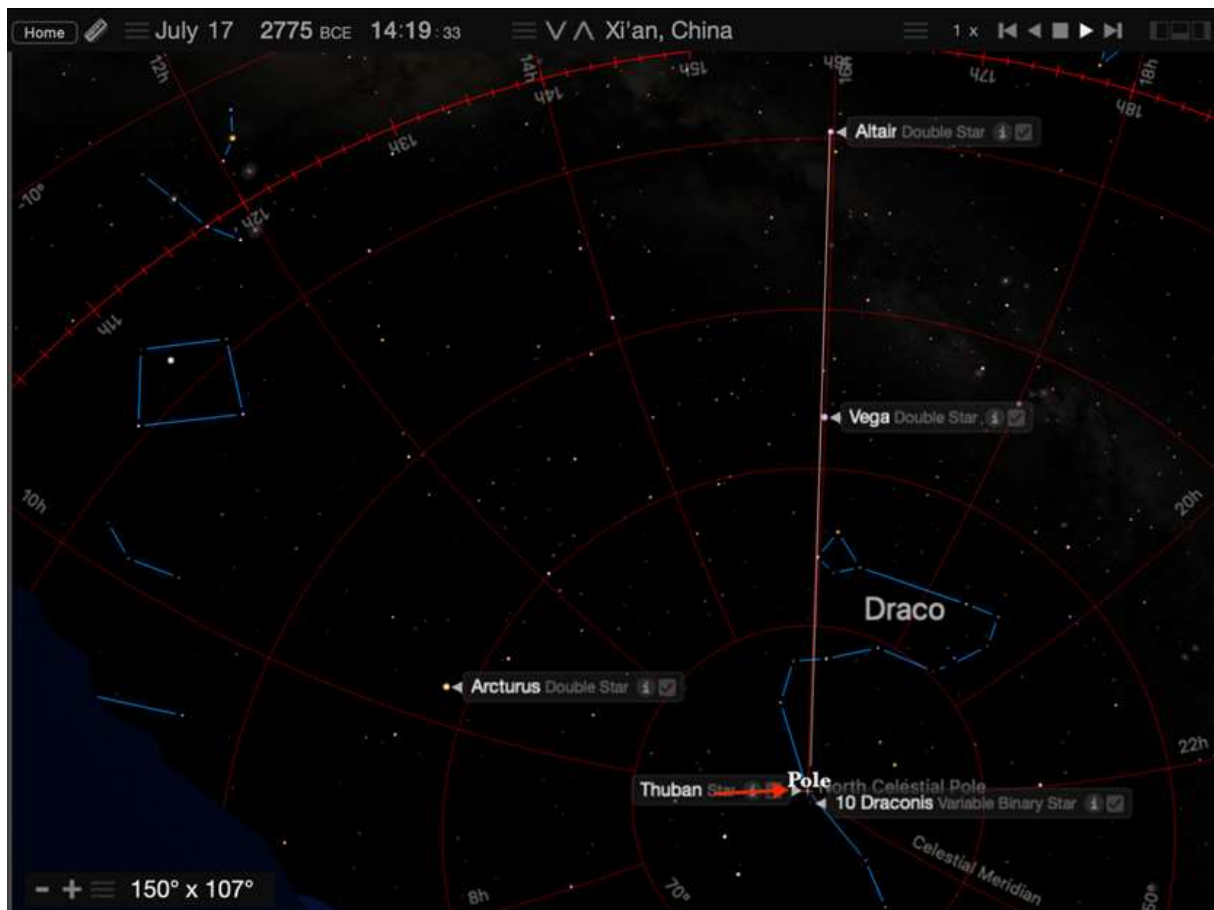


Figure 5: The non-alignment of Vega and Altair on Tuban in the middle of the second millennium BCE (Starry Night Pro 8)

In this poem, pride of place among the activities described in the rebuilding of the ruined city was the ritually correct orientation of the main temple dedicated to the Supernal Lord and the ancestors. Commentators agree that the time to commence work on the new Royal Palace was when Ding just culminated due South in the evening. The next line alludes to the collateral astronomical technique: "When he had measured it by the Sun ..." he started work on the Chu Hall. The Hall was surveyed from atop a hill, from which the location was gauged by means of a shadow gnomon. An early commentary on the first of these lines says:

Ding 定~頤 is Yingshi 營室 [Aligned Hall, α Peg, lunar lodge thirteen]. "Just culminated" means at dusk to rectify the four directions ... "to gauge" is to measure—to measure sunrise and sunset to ascertain east and west. Looking to the south, observe Ding and to the north align on the Pole, to rectify south and north. (Pankenier, 2013: 131).

Ding is none other than the Great Square of Pegasus whose two vertical sides during this epoch aligned on the Pole (see Figure 6).

But what of the Weaving Maid and Oxherd, whose alignment had long become astronomically obsolete yet had survived in story and song? In the first millennium BCE the pair were memorialized and their astronomical demotion remedied by their being reidentified as the two adjoining lunar lodges in the northern palace of the heavens that had come to host the Sun at the winter solstice—Weaving Maid (Maid in Waiting) Xu nǚ 須女 (ϵ Aqr, lodge 12) and Draught Ox, Qian niu 牽牛 (β Cap, lodge 11) (Figure 7). The former name is a variation on the original Weaving Maid, while the latter is essentially the same as that appearing in the Book of Odes. Rising before dawn in the East, the pair marked the Winter Solstice, in contrast to their ancient nightly appearance on Summer evenings around the summer solstice many centuries earlier. The process is unmistakable and, as one might expect, a confusion of terminology and stellar referents became inevitable.

4 CONCLUDING REMARKS

The ode 'When Ding just culminated', like the other ode 'Great East', dates from very early in the first millennium BCE. The polar alignment of Vega–Altair having long become obsolete; Peg-

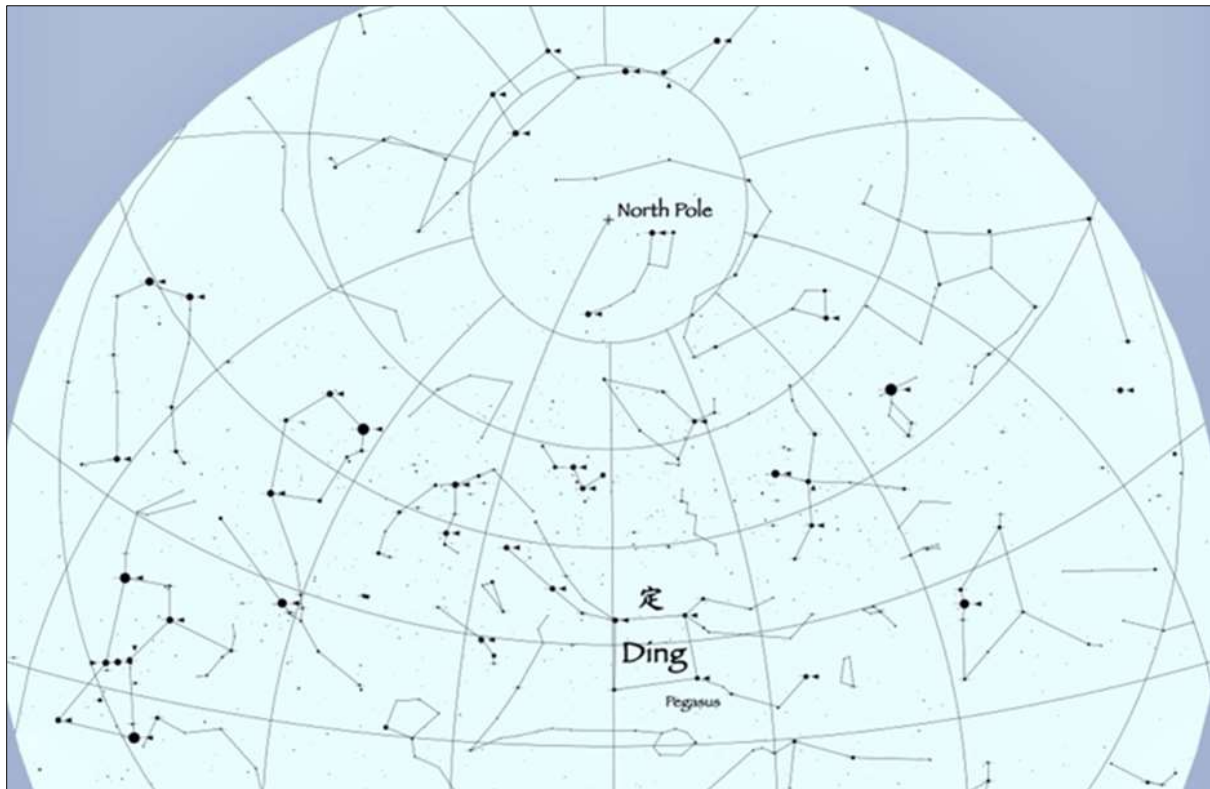


Figure 6: Alignment of the Great Square of Pegasus (Ding) on the North Celestial Pole in pre-Imperial China (Starry Night Pro 8).

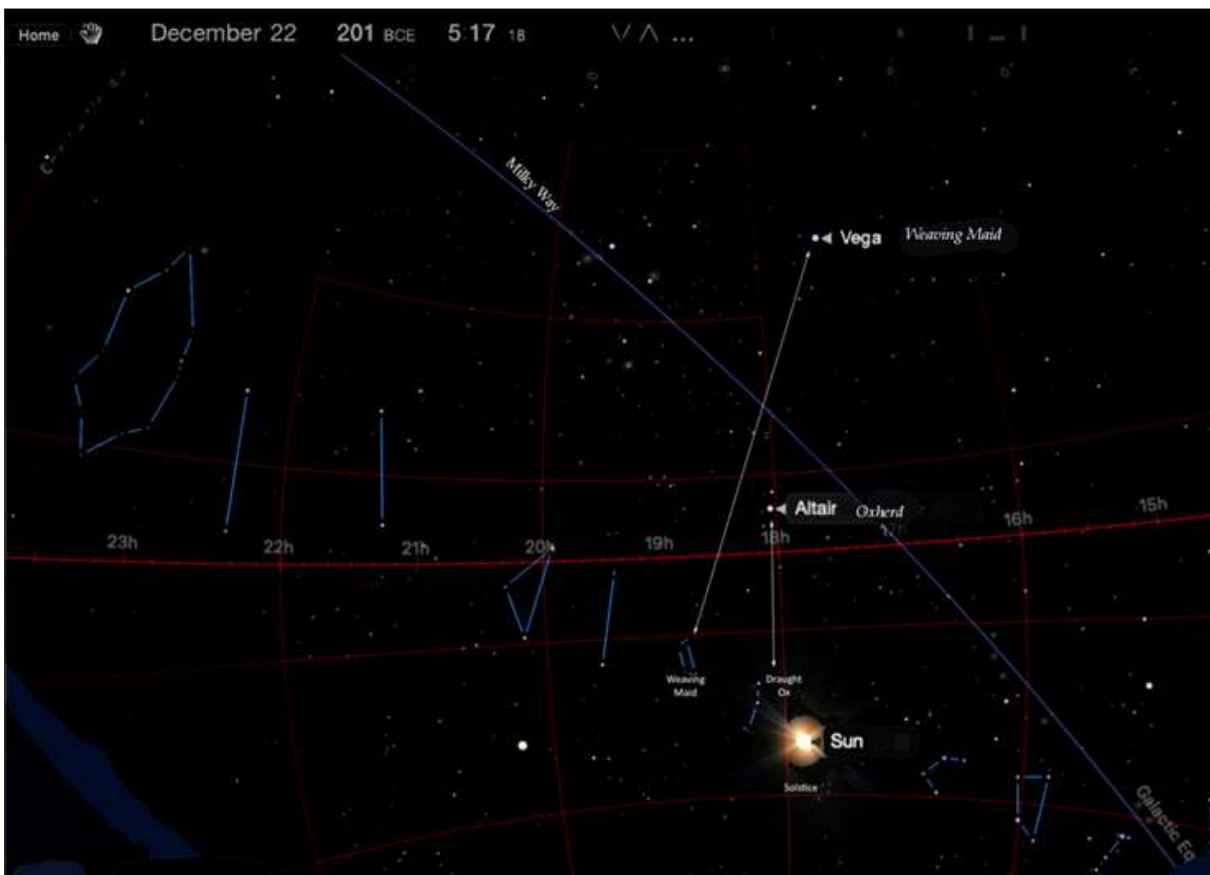


Figure 7: The duplicate identities of the Weaving Maid and Draught Ox already in place in the fifth century BCE (Starry Night Pro 8).

asus was substituted to serve the polar alignment function. The season of observation shifted from high summer to winter and from facing north to facing south, in order to observe when the Great Square of Pegasus culminated on the meridian, perpendicular to the southern horizon at dusk. Under the first Imperial Dynasty, the *Qin* 秦 (221–206 BCE) this month became identified as *zhengyue* 正月, the first lunation of the New Year. The centuries-long intimate association between the Weaving Maid and Oxherd, Vega and Altair, survived, albeit in a new guise as side-by-side lunar lodges. Based on current evidence, it was sometime during the Late Han Dynasty (206 BCE–220 CE), after the beginning of the present era, that the pair's 'Romeo and Juliet-like' saga began to be allud-

ed to in ancient texts. But some version of the fable is at least a millennium older, and the original role of Vega and Altair in pointing to the celestial Pole is much older still.

5 NOTES

1. Initially, Thuban was succeeded by the much dimmer star 10 Dra (mag. 4.56) a few degrees away which came to be called *Tai yi* 太一 *Unique One*. Later, in mid-first millennium BCE the Supernal Lord's mystical power (in Daoism known as Dao 道 or 'The Way'), was even thought to emanate from the mysterious 'void' at the center of the heavens due to the absence of a Pole Star.

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Poughkeepsie, New York, USA, in 1946. After graduating with a BA in History from the University of Rochester in upstate New York, including a year of study at the Sorbonne in Paris, in 1970, David began intensive study of Chinese language and literature at the University of Stockholm in Sweden with Professor Göran Malmqvist. On completing a fil. kand. in Chinese in Stockholm, in 1974 he moved to Taiwan for further study in classical Chinese and spent three years reading the ancient Chinese classics with the renowned scholar Aixin Gioro Yuyun. In 1978, Pankenier entered the doctoral program in Chinese at Stanford University, receiving the PhD in 1983.

After two years as Visiting Assistant Professor at the University of British Columbia in Vancouver and Stockholm University, David became the first Professor of Chinese at Lehigh University in Bethlehem, PA, where he spent the next thirty years building the program and chairing the Department of Foreign Languages. During that time he was appointed a Fellow of the Swedish Institute for Advanced Study in Uppsala (2010–2011) and a member of the Institute for Advanced Study in Princeton, NJ (2012–2013), and has been a member of the Association for Asian Studies and of the Commission on Cultural Astronomy of the IAU. At various times he has served as an executive committee member of the European Society for Astronomy in Culture (SEAC) and the Conferences on the Inspiration of Astronomical Phenomena (INSAP).

David Pankenier has made pioneering contributions to the understanding of ancient Chinese astronomy, judicial astrology, and political history. In addition to his *Astronomy and Cosmology in Early China: Conforming Earth to Heaven* (Cambridge, 2013), together with his Chinese collaborators Xu Zhentao and Jiang Yaotiao he produced two extensive collections of translations of several thousand Chinese, Japanese, and Korean historical records of solar and lunar eclipses, comets, meteor showers, novae, and planetary alignments. The Chinese translation of his 2013 Cambridge book 中國早期的星象學和天文學 has recently been published in both Taiwan and the PRC.

A listing of David's principal publications, many available for download, is available here: <https://lehigh.academia.edu/DavidPankenier>