

On Iconographic and Diagrammatic Irregularities in the Representation of Constellations in Han (206 BCE–220 CE) Tomb Art

Daniel Patrick Morgan

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ON ICONOGRAPHIC AND DIAGRAMMATIC IRREGULARITIES IN THE REPRESENTATION OF CONSTELLATIONS IN HAN (206 BCE–220 CE) TOMB ART

a paper delivered at the workshop

'Visualization of the Heavens and Their Material Cultures',
Max-Planck-Institut für Wissenschaftsgeschichte,
Berlin
18–19 April 2018

by

Daniel Patrick Morgan[*]

I will be speaking to the second of the three themes Dagmar and Sonja outlined in their invitation to today's workshop, namely 'pictorial choices, their spread, and their changes across space and/or time'.

I am not a historian of art, so my ideas about it change rather radically depending on the last thing I've read, and that, in this case, is the recent dissertation of one Micki McCoy on the transmission and adaptation of celestial imagery in the context of Chinese and Tangut Buddhism. In the introduction, McCoy offers a caveat that I had never thought of before and that, in retrospect, seems hard to imagine how anyone could have missed. That caveat, in four points, is this. First, we must not take the similarity between the East Asian 'dot-and-line' constellation notation and its modern, scientific counterpart as an invitation to project modern, scientific expectations upon the former. Neither, for that matter, must we take it for granted

[*] I offer you this unsolicited paper-version of my talk for two reasons. First, it is my experience that doing so improves overall audience engagement and feedback. Second, as a French civil servant, the research that goes into such a talk is graciously funded by the French tax-payer, and in so much as I am within my legal rights to do so, I believe that it my professional and societal duty to provide immediate, barrier-free open access to what he/she has paid for on HAL, the Archive ouverte en Sciences de l'Homme et de la Société here. I thank Dagmar Schäfer and Sonja Brentjes for their kind and unexpected invitation to take part in this workshop and Micki McCoy for bouncing ideas around with me by telephone.

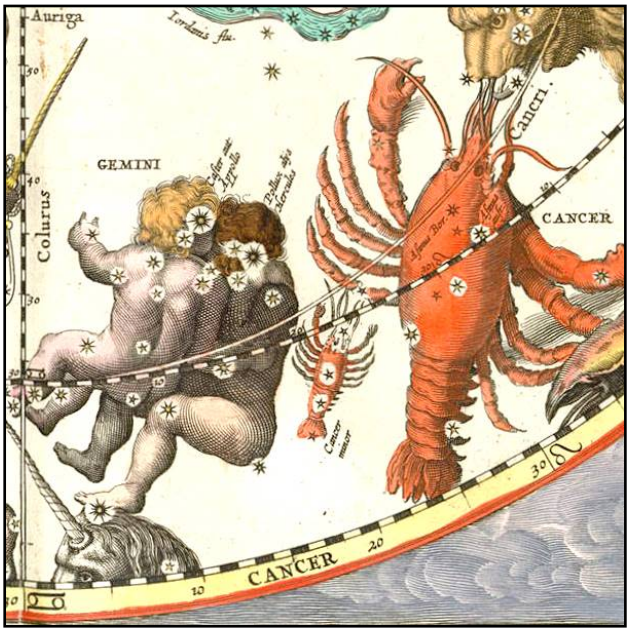


Figure 1 The constellation as iconographic armature. *Harmonia Macrocosmica*, by Andreas Cellarius, illustrations by Frederik Hendrik van den Hove, Johannes van Loon et al. (Amsterdam: Johannes Janssonius, 1660), plate 24. Source: http://www.staff.science.uu.nl/~gent0113/cellarius/cellarius_plates.htm.

that the association of imagery to constellations worked the same all throughout Eurasia. Constellations did not function as iconographic armatures in the Sinosphere as they did in the Mediterranean, Near East, and their cultural heritors (see Figure 1), so in thinking about *transmission*, we must also think about *translation* from one representational system to another. To do that, lastly, we must first try to understand the visual 'target language', so to speak, independently and on its own terms.[1]

In his early work on the subject, F.R. Stephenson expresses a sort of shock about the scientific minimalism of a 'typical Oriental star map' like the *circa* 1453 caisson ceiling piece preserved in Longfu Temple, Beijing (Figure 2).

> This and similar works exhibit several features not usually found on early Western star maps. Perhaps the most obvious of these is the

[1] Michelle Malina McCoy, 'Astral Visuality in the Chinese and Inner Asian Cult of Tejaprabhā Buddha, Ca. 900–1300 AD' (Ph.D. diss., University of California, Berkeley, 2017), 8, 15–16.

> complete lack of idealised figures such as animals, ancient deities, etc (sic.); instead, there is an evident concern for mapping the *visible* sky. The motive for celestial observation was very much astrological; the night sky was regarded as the counterpart of the Chinese Empire. Hence asterisms were named after the emperor and his family, courtiers, government officials, etc. as well as buildings and other everyday objects (Ho Peng Yoke, 1966). However, it seems clear that the various star groups were regarded as only nominally representing their terrestrial equivalents: their actual shape was of relatively minor importance.[2]

Stephenson compares this to a tombstone carving of the twenty-eight zodiacal lodges like that found in the tomb of King Qian Yuanguang of Wuyue (887–941 CE), in Figure 3, and to the Suzhou *Tianwen tu* stele of 1247 CE, in Figure 4.[3] Be it in a temple, a tomb, or on an academic/educational monument, respectively, each of these star maps presents the same *highly accurate* dot-and-line figures you might find in a modern star atlas, all free of the lobsters and unicorns of such European artistic excess one sees in 'a typical Occidental star map' like Cellarius' *Harmonia Macrocosmica*, in Figure 1.

This was true when Stephenson was writing in 1987, and one familiar with the topic might hazard several guesses as to why.[4] It is not as if the ancient Chinese didn't have a tradition of star lore every bit as rich as did their counterparts in western Eurasia – because they did.[5] It was not as if they did not decorate their tombs (and, presumably, the architecture of the living) with images of the things that filled *their sky* articulated with the dot-and-line notation of the con-

[2] 'Oriental Star Maps', in *Mapping the Sky: Past Heritage and Future Directions : Proceedings of the 133rd Symposium of the International Astronomical Union, Held in Paris, France, June 1-5, 1987*, ed. Suzanne Débarbat (Dordrecht; Boston: Kluwer Academic Publishers, 1988), 13. Stephenson is citing Ho, *The Astronomical Chapters of the* Chin Shu (Paris: Mouton, 1966).

[3] Note that Stephenson, op. cit., actually uses the tombstone carving from the tomb of Wu Hanyue (912–952 CE), which, with that found also in the tomb of Qian Yuanguan and his wife, Queen Ma's (890–939 CE) tomb, are all clustered in a single necropolis dating to the same thirteen-year period.

[4] Note that I am citing Stephenson's 1987 conference paper here as a sort of narrative bridge; for an infinitely more developed study of his on this topic, see F. Richard Stephenson, 'Chinese and Korean Star Maps and Catalogs', in *The History of Cartography, Volume 2, Book 2*, ed. J. B. Harley and D. Woodward (Chicago: the University of Chicago Press, 1994), 511–78.

[5] For an excellent introduction to Chinese star lore, see Edward H. Schafer, *Pacing the Void: T'ang Approaches to the Stars* (Berkeley: U. California Press, 1977).



Figure 2 Caisson ceiling piece of *circa* 1453, Longfu Temple, Beijing (map). Artist's reconstruction based on the original. Source: Chen Meidong, ed. *Zhongguo gu xingtu* (Shenyang: Liaoning jiaoyu chubanshe, 1996), plate 7–2.



Figure 3 Stone carving of 941 excavated in 1965 from the tomb of King Qian Yuanguan of Wuyue (887–941), Hangzhou, Zhejiang (map). Ink rubbing. Source: Zhongguo shehui kexue yuan kaogu yanjiusuo, ed. *Zhongguo gudai tianwen wenwu tuji* (Beijing: Wenwu chubanshe, 1980), fig. 69.

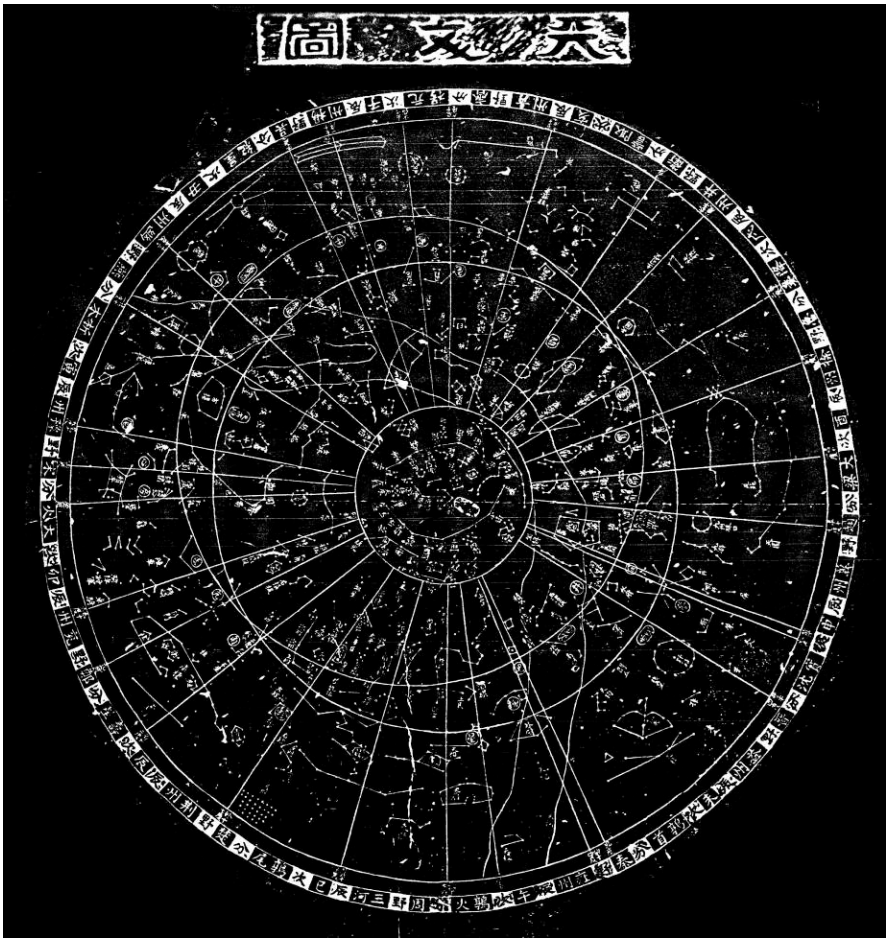


Figure 4 The Suzhou *Tianwen tu* stele of 1247, Suzhou, Jiangsu. Ink rubbing. Source: Will Carl Rufus, and Tien Hsing-chih, *The Soochow Astronomical Chart* (Ann Arbor: University of Michigan Press, 1945), plate IA.

stellations that they embodied – that they did too.[6] For some reason, however, none of that seemed to enter into what we might rightly call a 'star map'.

One reason, one imagines, is because the Chinese sky was divided up *differently* and, importantly, *much more finely*. Where Ptolemy's (*c*.90–*c*.168 CE) star catalogue lists 1,022 stars in 48 constellations, for example, Chen Zhuo's (fl. 280–309 CE) lists 1,464 in 283 *guan* (lit. 'offices'), many *guan* consisting of but a single star or but two or three on a single line.[7] It is for this reason that we tend to speak of 'asterisms' rather than 'constellations' in sinology, because many *guan* are not technically con-stellations. As such, the Chinese sky is considerably more crowded than any other, and the forms with which it is crowded are at once less distinct from one another or visually evocative of what they represent, which makes it difficult to imagine how one would have gone about – let alone *think to go about* – a Chinese equivalent of the *Harmonia Macrocosmica*.

That said, the most important *guan* – notably the twenty-eight lodges (*xiu*) of what we might call the 'Chinese zodiac' – they *were* constellations that *do* (mostly tend to) look like the things they represent. As enumerated diagrammatically in Figure 5, and as illustrated in Figure 3, the twenty-eight lodges were constellations with evocative names roughly straddling the celestial equator that, by the twenty-eight meridians running through each of their 'guide stars' (*juxing*), served as reference points for the system of celestial coordinates.[8] And not only did they (mostly) look like *basic things* such as ladles, baskets, and nets, as the *words* – or *wen* – for those basic things often evolved from pictograms, several look also like the word for the thing they are (see the example of Net_{L19} in Figure 8, below).[9] It is for this that the word that now means 'astronomy' in

[6] See for example, in Stephenson's rough timeline, Xia Nai, 'Luoyang Xihan bihua mu zhong de xingxiang tu', in *Zhongguo gudai tianwen wenwu lunji*, ed. Zhongguo shehui kexue yuan kaogu yanjiusuo (Beijing: Wenwu chubanshe, 1989), 162–75.

[7] On the (reconstructed) Chen Zhuo catalogue, see Sun Xiaochun and Jacob Kistemaker, *The Chinese Sky during the Han: Constellating Stars and Society* (Leiden: Brill, 1997).

[8] For more on the twenty-eight lodges, see Christopher Cullen, 'Translating 宿 **sukh/Xiu* and 舍 **lhah/She*—"lunar Lodges", or Just Plain "lodges"?', *East Asian Science, Technology, and Medicine*, no. 33 (2011): 76.

[9] The example of Net_{L19} is taken from Lillian Lan-ying Tseng, *Picturing Heaven in Early China* (Cambridge, MA: Harvard University Asia Center, 2011), 323. See

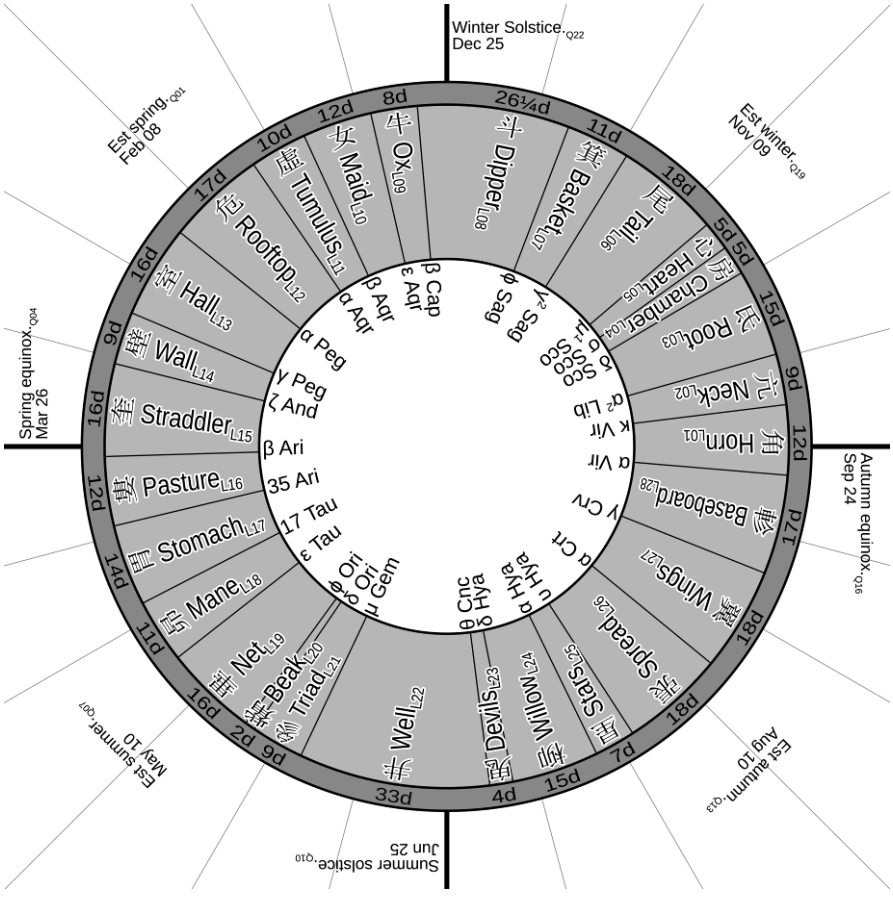


Figure 5 The twenty-eight lodges (*xiu*) of the Han (206 BCE–220 CE) zodiac. Lodge widths (outer circle) are given in *du* and/as days that the mean sun spends travelling from the 'distance star' (*juxing*; inner circle) at the head of said lodge to the next, where a *sui* solar year of 365 ¼ days makes for a 'circumference of heaven' (*zhoutian*) of 365 ¼ *du*. Diagram drawn by the author, used under licence CC BY.

also the arguments about the constellation Long 龍 'Dragon' in Feng Shi, 'Zhongguo zaoqi xingxiang tu yanjiu', *Ziran kexue shi yanjiu* 9, no. 2 (1990): 108–18 (esp. 112), and Ding 定/丁 'Fixer' in David W. Pankenier, *Astrology and Cosmology in Early China: Conforming Earth to Heaven* (Cambridge: Cambridge University Press, 2013), chap. 4. It is my opinion that similar arguments could be made about the Northern and Southern Dou 斗 'Dippers' and, perhaps, the lodge Well$_{L22}$ (Jing 井).

Sinitic languages – *tianwen* (usually 'heavenly patterns') – can also, as in Mesopotamia, be read as 'heavenly writing'.[10]

The *real reason*, however, that one could speak in 1987 of 'the complete lack of idealised figures such as animals, ancient deities, etc (sic.) [in Oriental star maps]' is that we had yet to find an exception. Now, as of 2018, we have four. Illustrated in Figure 6, the first – a ceiling painting – was excavated that very year, in 1987, in a first-century BCE tomb discovered on the campus of the Xi'an Jiaotong University Primary School (map).[11] The second, which has yet to be published, was discovered in 2003 in a Han (206 BCE–220 CE) tomb excavated in the village of Haotan (map), Dingbian County, on the other side of Shaanxi.[12] The third, also yet to be published, was discovered in 2008 in another Han tomb excavated in the town of Yangqiaopan, in neighbouring Jingbian County (map).[13] The fourth, illustrated in Figure 7, was discovered in 2015 in a second-century CE tomb excavated at Qushuhao, *also* in Yangqiaopan.[14]

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Beyond issues of identification and restoration, the main question that has been posed thus far of these tomb paintings has been *accuracy* in the modern, scientific sense of the term. As regards the lodge Net_{L19} as appears in the Xi'an fresco in Figure 8, Luo Qikun, after reminding us that 'the lodge Net has eight stars' tells us that 'in the fresco… "Net" is comprised of six stars, the five stars on the right combined into the form of a net'.[15] The full site report tells us that

[10] See Francesca Rochberg, *The Heavenly Writing: Divination, Horoscopy, and Astronomy in Mesopotamian Culture* (Cambridge: Cambridge University Press, 2004).

[11] Shaanxi sheng kaogu yanjiu suo and Xi'an jiaotong daxue, *Xi'an jiaotong daxue Xihan bihua mu* (Xi'an: Xi'an jiaotong daxue chubanshe, 1991).

[12] For the initial site report (hereafter 'site report') of the Haotan tomb, see Lü Zhirong and Zhang Pengcheng, 'Shaanxi Dingbian xian Haotan faxian Donghan bihua mu', *Kaogu yu wenwu* 2004.5: 20–21.

[13] I have yet to see the site report for the 2008 Yangqiaopan tomb, but it is mentioned in the initial site report for the 2015 Yangqiaopan tomb at Qushuhao: Shaanxi sheng kaogu yanjiuyuan and Jingbian xian wenwu guanli ban, 'Shaanxi Jingbian xian Yangqiaopan Qushuhao Donghan Bihua mu fajue jianbao', *Kaogu yu wenwu* 2017.1: 3–26 (pp. 25–26).

[14] For the site report (hereafter 'site report'), see Note 13.

[15] 'Xi'an Jiaotong daxue Xihan muzang bihua ershiba xiu xingtu kaoshi', *Ziran kexue shi yanjiu* 10, no. 3 (1991): 236–45 (p. 243).

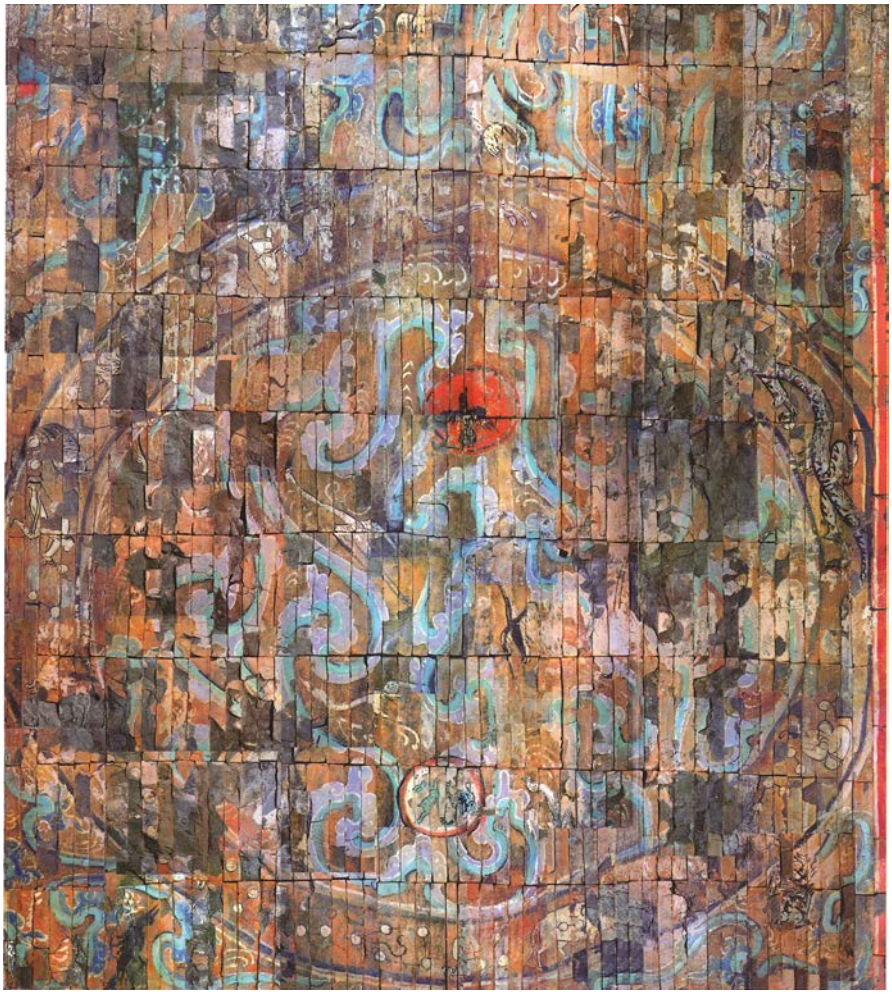


Figure 6 Xi'an Jiaotong University star-chart tomb fresco, 73 BCE/5 CE, Xi'an. Restored by Tseng, op. cit., p. 318 fig. 5.15.



Figure 7 Qushuhao star-chart tomb fresco, 2nd cent. CE, site report, fig. 23.

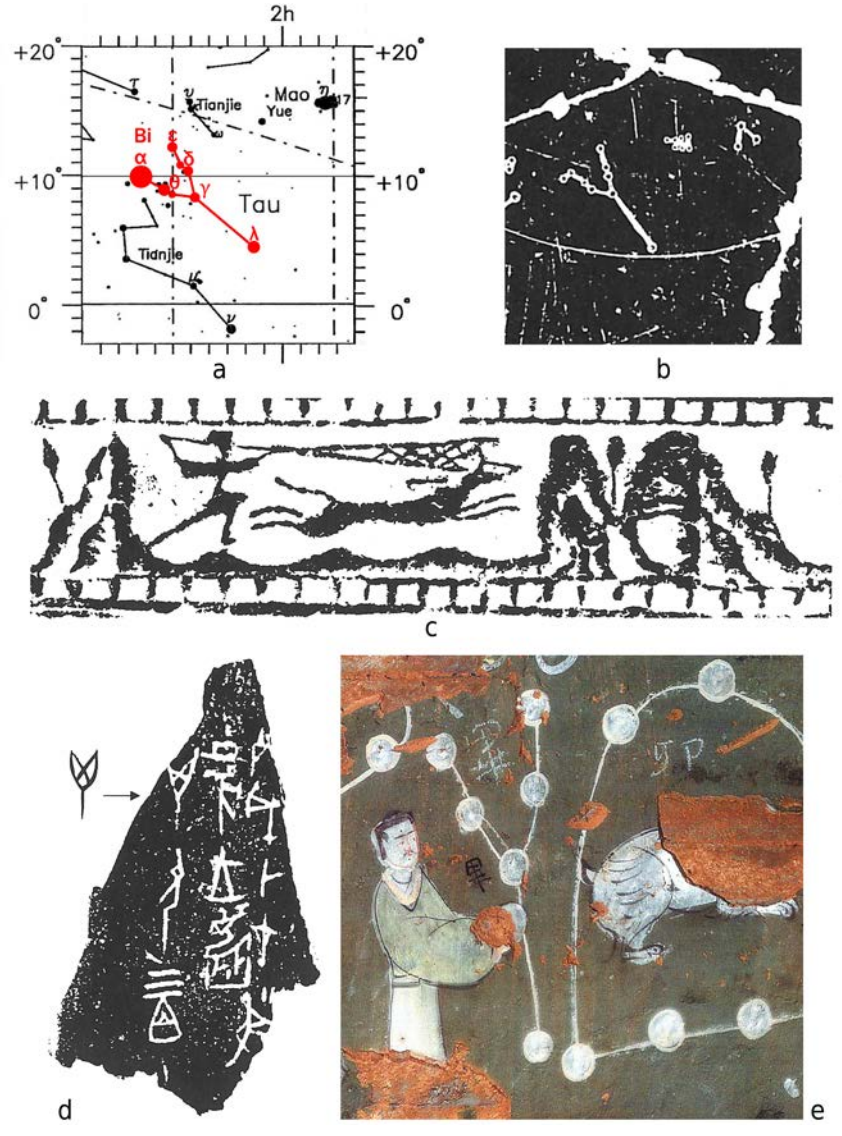


Figure 8 The lodge Net_{L19} (and $Mane_{L18}$): (a) modern astronomical reconstruction, epoch 100 BCE; (b) tomb carving 941 CE, from Figure 3; (c) hunting scene, late first century BCE, decorated brick; (d) 'net' 畢 as written in Shang (?–1046 BCE) oracle bone script; (e) Qushuhao tomb fresco, second century CE. Source: (a) modified from Sun Xiaochun and Jacob Kistemaker, *The Chinese Sky during the Han: Constellating Stars and Society* (Leiden: Brill, 1997); (c–d) Tseng, *Picturing Heaven*, p. 326 figs. 5.23, 5.25; (e) Qushuhao tomb fresco, 2nd cent. CE, site report, fig. 35.



Figure 9 The lodge Net_{L19} and $Mane_{L18}$ from the Xi'an fresco. Restored by Tseng, op. cit., p. 326 fig. 5.24.

'the painting features a man running and holding in one hand the "net," comprised of seven stars, trying to ensnare a fleeing rabbit, while the other hand, posed behind the body, is another star – the eighth star of Net_{L19} – which, combined, makes a total of exactly eight stars'.[16] Lillian Tseng, however, sees yet a different number: 'There, the lodge Net, with only seven stars, is the net that contains a hare about to be caught'.[17] No one can quite agree on how many stars there are in this illustration, but where they *do* agree is that it's not the right number, and, as such, that we have a problem. Perhaps nowhere are scholars' general expectations on clearer display than in in Tseng's choice of segue into a conclusion:

> Despite the artisans' typical disregard for astronomical accuracy, scholars have a high regard for the representation of the Chinese sky in the Xi'an tomb (335).

Oddly, no one thus far has noted that the *shape* of the constellation in Figure 9 is also off – off, that is, compared to the word, object, and real-world constellation that it is meant to represent, and off also compared to the form it takes at Qushuhao (Figure 8).

That we will come back to; what I want to say first is that Luo, Tseng, and the original archaeological and editorial teams' expecta-

[16] Shaanxi sheng kaogu yanjiu suo and Xi'an jiaotong daxue, *Xi'an jiaotong daxue Xihan bihua mu*, 38.
[17] *Picturing Heaven in Early China*, 326.

tions vis-à-vis the Xi'an fresco's 'scientific' accuracy makes a certain amount of sense in its historical context. They have solid textual support: early primary sources are *all* in agreement about Net_{L19} having eight stars.[18] Moreover, we are somewhat used to finding such scientific (or scientific-looking) star charts in religious and funerary contexts as those in Figures 2 and 3, above, so the Xi'an fresco, prior to 2017, could certainly be said to have stood out as an exception. Lastly, the notation is still *so very modern*, whatever the presence of iconography, that it is hard not to read certain expectations thereupon.

Imagine we found a tomb decorated with the following pattern:

$$\begin{cases} \dfrac{\delta \mathrm{u}}{\delta t} + \mathrm{u} \cdot \Delta \mathrm{u} = -\Delta w + \mathrm{g} \\ \Delta \cdot \mathrm{u} = 0 \end{cases}$$

No modern scholar could look at this and not think it is some sort of equation. No mathematician or physicist, moreover, could look at this and see anything other than the Euler momentum equation for uniform density, nor, for that matter, could they help seeing that it is *wrong*: '*Delta*? It's clear that δ is a mistake for ∂, Δ a mistake for ∇, and that is that – I mean, what else could it be?'

It could be something else; and it is my suspicion that questions of 'scientific accuracy' are misplaced as concerns such star charts as found in Han tombs unless that, explicitly, is what the artisans formally state as their purpose.

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First, I ask you to consider two other pieces of funerary star-art: Mr Wang's tomb inscription cover of 946, in Figure 10, and the Astana tomb ceiling painting in Figure 11. These obviously reflect another, very different style of depicting the twenty-eight lodges than those we have seen above: they are every bit as *schematic* as the frescos, in terms of constellation choice and placement, and rendering, while being, at once, every bit as *devoid of iconography* as

[18] 'Mr Shi [Shen]', cited in *Kaiyuan zhanjing* (Siku quanshu edn.), 62.6a, *Lingtai miyuan* (Siku quanshu edn.), 1.9a, *Shiji* (Zhonghua shuju edn.), 11.302 (comm.), *Jin shu* (Zhonghua shuju edn.), 20.547, *Sui shu* (Zhonghua shuju edn.), 27.1305, Dunhuang manuscript P. 2512, etc.

their 'scientific' counterparts in Stephenson's 1987 study. Zooming in to the individual lodge, more importantly, we see that the forms are highly distorted – the distances between dots compressed and expanded, their connections highly linearised – and that that the number of stars in any given lodge is, often, incorrect. Tseng argues for a distinction between 'elite' and 'popular', 'literate' and 'illiterate', astronomy as concerns Chinese *xingtu* 'star charts/maps/diagrams/drawings',[19] so where in this binary are these two examples go?

I'm no historian of art, but I suspect a better way to think about these two examples is in terms of Harry Beck's (1902–1974) Tube map of 1933 (Figure 12). Up into the 1910s, official maps of the ever-expanding London Underground were drawn on the basis of survey maps, the lines superimposed over a geographically accurate map of the city. These were difficult to read, and, in the 1920s, the Underground began experimenting with colour lines and equalising the distance between stations in a compromise between *geographical accuracy* and *information accuracy*, for lack of a better word. Taking a radical step forward in this direction, Beck, an engineering draughtsman working for the Underground's Signal Office, drew a minimalist, full-colour diagram with stations marked at *regular distances* on *straight lines* on *90°* and *45° angles*, his model being that of an electrical schematic. It took two years for his 1931 design to see acceptance by the London Underground, but it would go on to revolutionise the way that subway maps the world over would be drawn and become, in Eric Hobsbawm's opinion, 'the most original work of avant-garde art produced in Britain between the wars'.[20]

Beck's Tube map would not pass the test of 'accuracy' one might impose upon it were it found in a Han-era tomb, but that, David Pike would insist, is because it is not so much an embodiment of *geographical space* as it is of …

> ... what French sociologist Henri Lefebvre has termed "abstract space," the conception of space as a coherent, homogeneous whole that can consequently be bought and exchanged in the same manner as any other commodity. Abstract space is a planned and organized

[19] *Picturing Heaven in Early China*, chap. 5.

[20] *Behind the Times: The Decline and Fall of the Twentieth-Century Avant-Gardes* (New York: Thames and Hudson, 1999), 38–39.

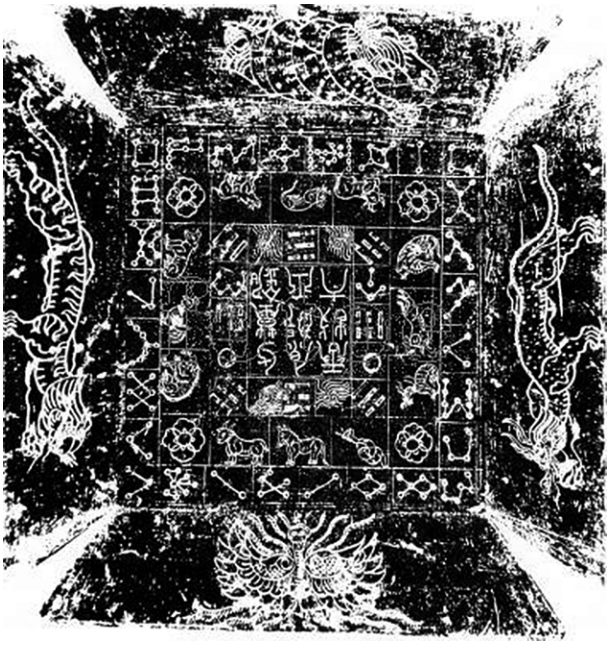


Figure 10 Mr Wang's tomb inscription cover of 946, excavated 1964 in Hanjiang, Yangzhou, Jiangsu (map), with the twenty-eight lodges are represented in the outermost band. Ink Rubbing. Source: for now, the interwebs.

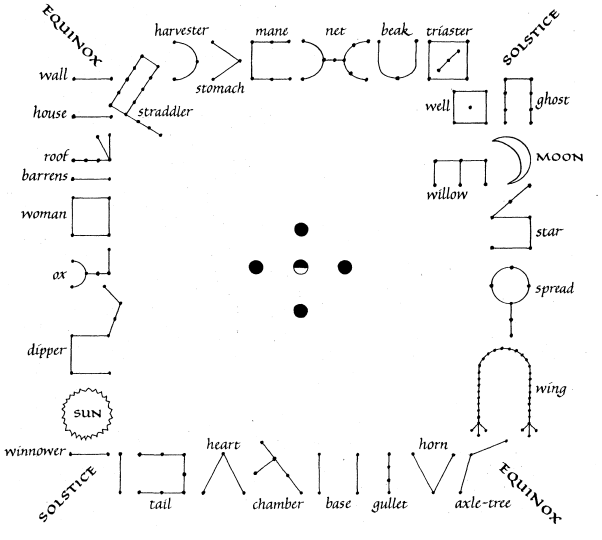
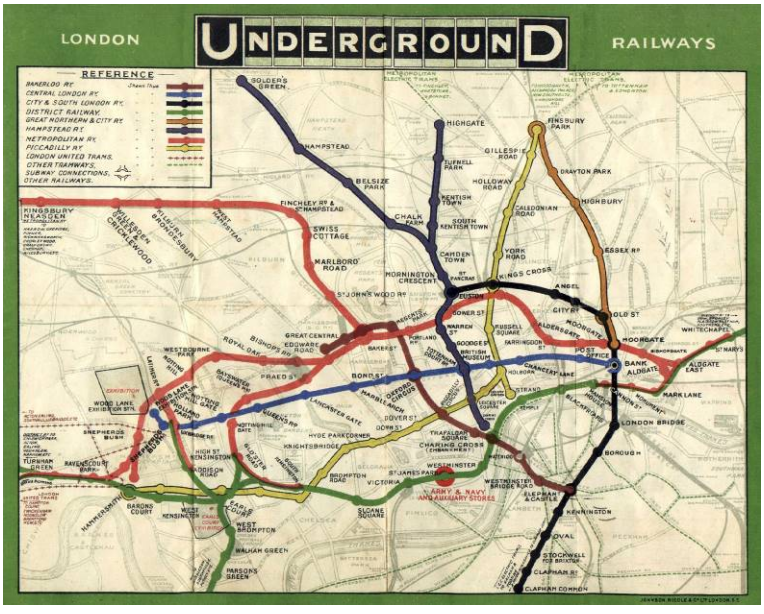
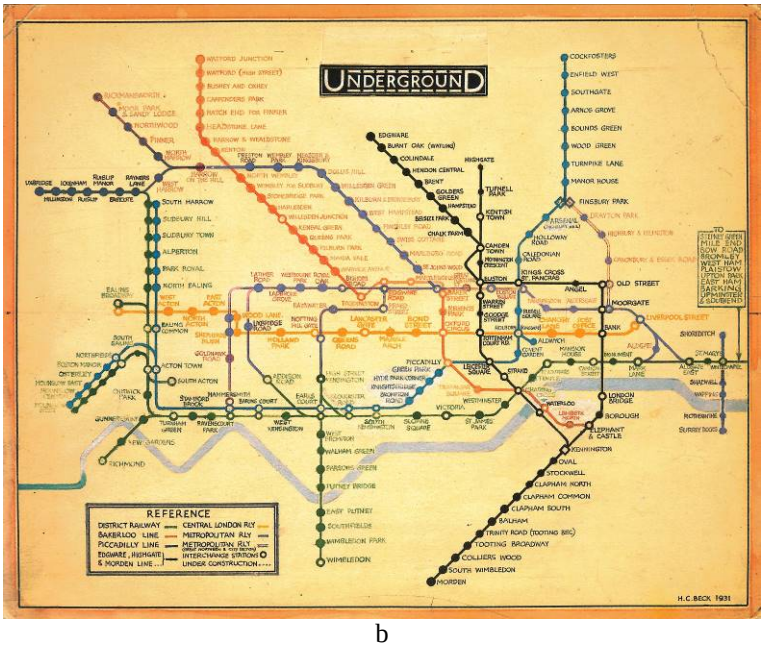


Figure 11 Ceiling painting, tomb excavated in 1973 in Astana, Turpan, Xinjiang (map). Redrawing in Edward H. Schafer, *Pacing the Void: T'ang Approaches to the Stars* (Berkeley: University of California Press, 1977), p. 81 fig. 2.



a



b

Figure 12 The map of the London Underground, (a) in 1908 and (b) Harry Beck's 'circuit diagram' of 1931. Source: for now, the interwebs.

> space, thought rather than lived, and known conceptually rather than directly experienced.[21]

As such, what we see on Beck's famous 1933 Tube map is not so much London, the city, *as it is*, but *as it is experienced* by a particular class of Londoner:

> In addition to plotting the cityscape onto a grid of horizontals, verticals, and diagonals, the map's abstraction codified several abiding distortions. The space of central London is significantly enlarged, dominating the highly compressed outlying areas; of those areas, west and northwest London occupy some two-thirds of the map's volume, while the East End is represented beyond Liverpool Street Station only by the truncated extensions of the District and Metropolitan lines. The equally vast expanse of South London is represented only by the Northern line and quite a bit of empty, white space, conveniently occupied by the London Underground insignia and, later on, by explanatory text and keys to the symbols. A complete transport map, including bus and surface railway routes in the south and east, would show a different picture of the city entirely. As it stands, the reverie of the map-gazing passenger is limited by a set of social boundaries that define his or her tastes and desires as middle to upper-middle class; the remainder are rendered invisible both on and off of the Underground.[22]

Returning to the electrical-diagram-like representation of the twenty-eight lodges found on Mr Wang's tomb inscription cover and the Astana tomb ceiling, in Figures 10 and 11, we might consider that they too reflect a form of abstract space – the twenty-eight lodges *as experienced* by a particular class of royal subject rather than *as seen*. The presence of the twelve Chinese birth animals and *Book of Changes* trigrams, in the former, and of the careful placement of the sun and moon, in the latter, betrays an interest in *horoscopy*, and, as it happens, the sky depicted in these pieces is also *incomplete*, showing only those constellations that speak to *personal fate* and leaving

[21] David L. Pike, 'Modernist Space and the Transformation of Underground London', in *Imagined Londons*, ed. Pamela K Gilbert (Albany: State University of New York Press, 2002), 101–19 (p. 107).
[22] Ibid., 104.

empty an equally vast expanse of the Northern and Southern sky that belongs, in contemporary omenology, to the state.[23]

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The second reason why I think questions of 'accuracy' as has been heretofore applied to *xingtu* found in Han tombs is somewhat misplaced is because I think we might be missing what is their actual point of emphasis. Whatever the differences in Eastern and Western constellations and the frequency and form by which artistic traditions connect stars to their lore, I think we should consider the possibility that it is the *iconography* in the Xi'an tomb fresco that was more important to its creator(s) and commissioner(s) than the *constellations* that it went with.

Let us consider the lodges Straddler$_{L15}$ and Pasture$_{L16}$ as represented in both the Qushuhao and Xi'an frescos (Figures 13 and 14). What we know from relative position, shape, and, in the case of Qushuhao, *the label*, to be Straddler$_{L15}$ is drawn with eight stars at Qushuhao versus only five at Xi'an. At Qushuhao, one finds a snake drawn within the dot-and-line constellation, and at Xi'an, nothing.

This is odd, because early sources are all consistent with Li Chunfeng's (602–670 CE) gold-standard description of the constellation in the *Book of Jin* (648 CE):

> The sixteen stars of K'uei ('Stride') [in this article, 'Staddler$_{L15}$'] in the Western (Palace) form the arsenal of the heavens. Also known as T'ien Shi ('Celestial Wild Boar') or Fêng Shih ('Wild Boar'): (the group) governs both the employment of military strength to ward off attack, and also the canals and waterways. The large star at the south-west is called T'ien Shih Mu ('Chief Celestial Wild Boar'), or the the 'Commanding General'. It is desirable to find these stars bright (for this would indicate peace throughout the whole country).[24]

[23] On Buddhist-inspired twenty-eight-lodge horoscopy, see Jeffrey Kotyk, 'Buddhist Astrology and Astral Magic in the Tang Dynasty' (Ph.D. diss., Leiden University, 2017). For a brief comparison between this and traditional Chinese state-centred *tianwen* omenology, see Nakayama Shigeru, 'Characteristics of Chinese Astrology', *Isis* 57, no. 4 (1966): 442–54.

[24] *Jin shu*, 11.301; tr. Ho Peng Yoke, *Astronomical Chapters of the* Chin Shu, 100. Cf. *Lingtai miyuan*, 1.7a, *Sui shu*, 20.546, P. 2512, and *Kaiyuan zhanjing*, 62.1a–2b.

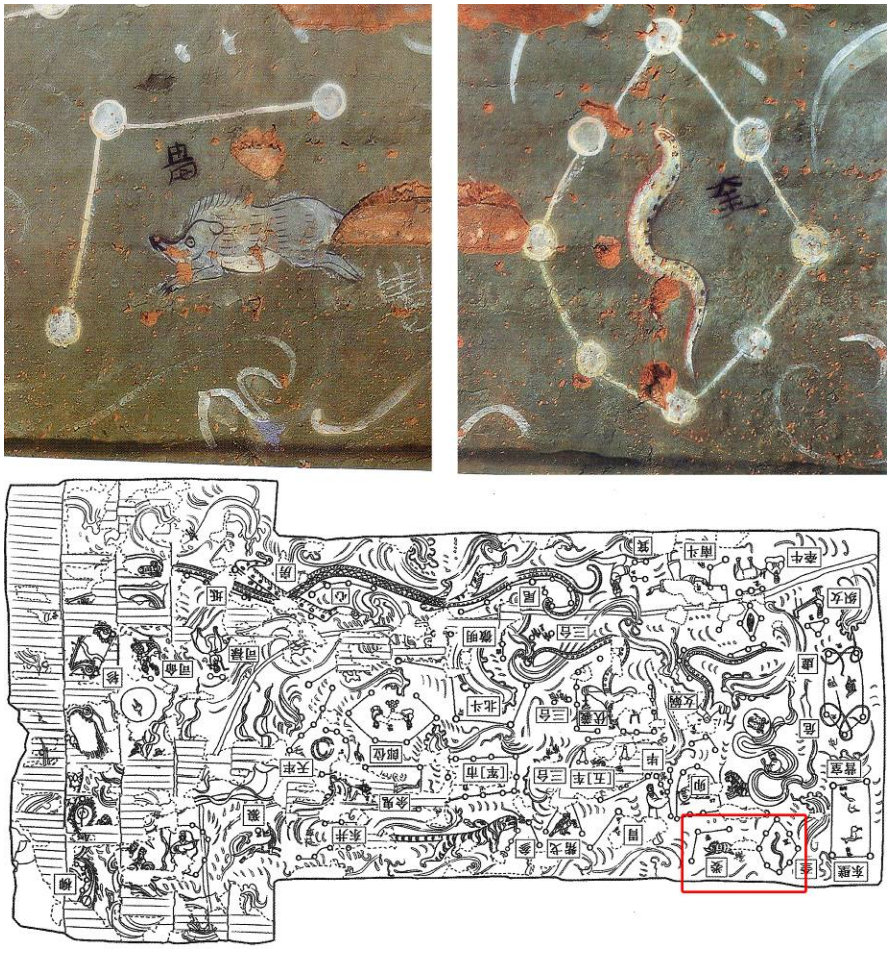


Figure 13 The lodges Straddler$_{L15}$ (right) and Pasture$_{L16}$ (left), Qushuhao tomb fresco. Source: site report, figs. 1, 31, 32.

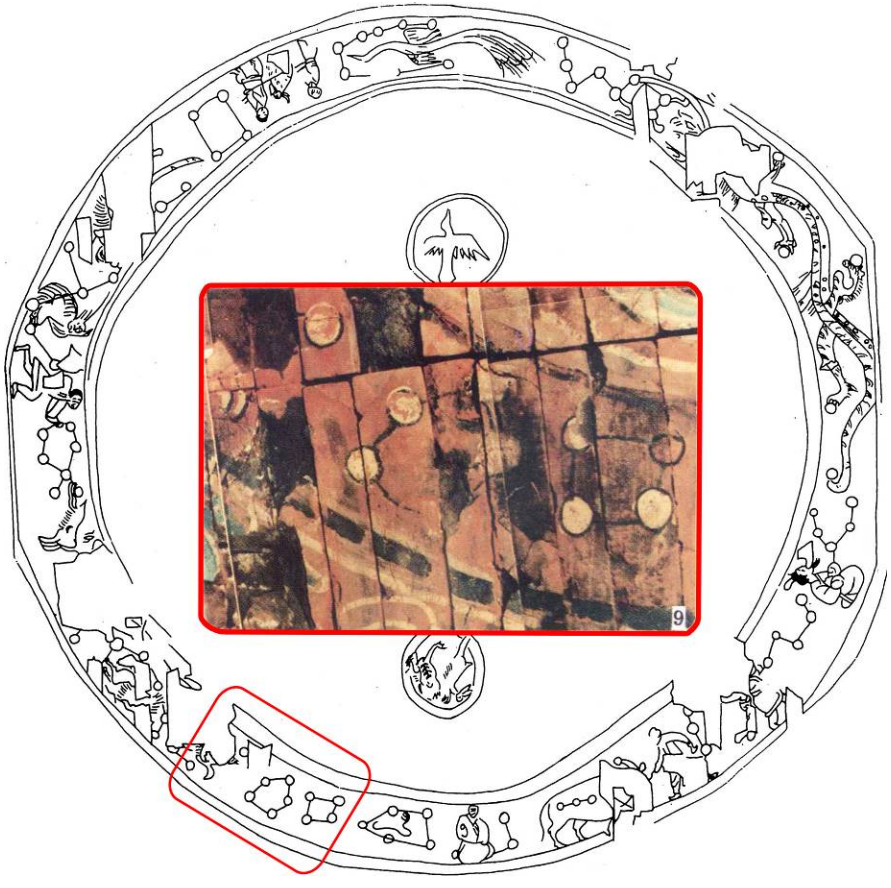


Figure 14 The lodges Fixer ($Hall_{L13}$ + $Wall_{L14}$, right), $Straddler_{L15}$ (middle), and $Pasture_{L16}$ (left), Xi'an tomb fresco. Source: image from Luo, op. cit., plate 9; line drawing from Tseng, op. cit., fig. 5.16.

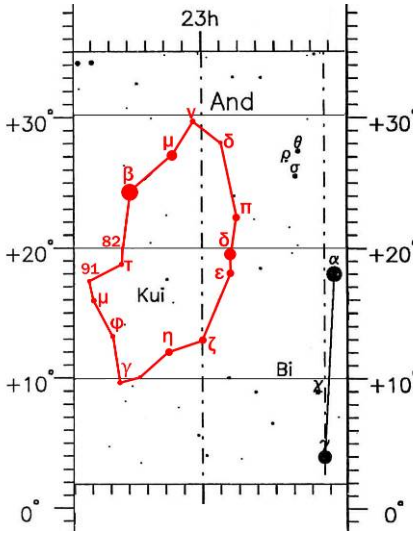


Figure 15 The lodge Straddler$_{L15}$, after Sun and Kistemaker, *The Chinese Sky during the Han.*

As to the number of stars, Luo Qikun offers that 'Straddler$_{L15}$ is the stellar lodge with the second highest number of stars of all twenty-eight, and it would be impossible to draw all of them, but, linked together, the form of this five-star grouping in the fresco does look exactly like the stupa-like form of each of the stars at its northern and southern heads' (Figure 15).[25] As to the *boar*, that has clearly 'straddled' out of its constellation and into Pasture$_{L16}$, in Figure 13, and, less clearly, in Figure 14.

We could once pass of the Xi'an fresco's iconographic and dot-and-line depiction of these two lodges as simply 'inaccurate', but the fact that, at some one century and 450 kilometres' remove, the Qushuhao fresco almost perfectly reproduces these features should make us wonder how much any of this is the idiosyncrasy—let alone *illiteracy*—of the individual artisan.[26] There is *one* apparent idiosyncrasy, of course, and that is the snake.

As we see in Figure 16, there *is* a snake in the Xi'an fresco, in the joint Tumulus$_{L11}$–Rooftop$_{L12}$ constellation, in the corresponding place of which the Qushuhao fresco has *two snakes* of the same col-

[25] 'Xi'an Jiaotong daxue Xihan muzang bihua ershiba xiu xingtu kaoshi', 243.

[26] Tseng offers that 'The artisans who represented the structure of the entire sky in the Xi'an tomb were probably illiterate but shared in the popular knowledge of astronomy' (Tseng, *Picturing Heaven in Early China*, 336). She does not explain *why* we should assume this, except, by inference, for the global 'inaccuracy' of their work, but this is a common theme in 2000s and 2010s early Chinese studies, for an influential statement of which, see Anthony J. Barbieri-Low, *Artisans in Early Imperial China* (Seattle: University of Washington Press, 2007), esp. 63–66. To an outsider, this would seem harder to argue about the Qushuhao artisans, who added accurate written labels to all of their drawings, but the topic of (il)literacy has reached such (un)critical mass in our field that this fact is destined to be ignored or explained away.



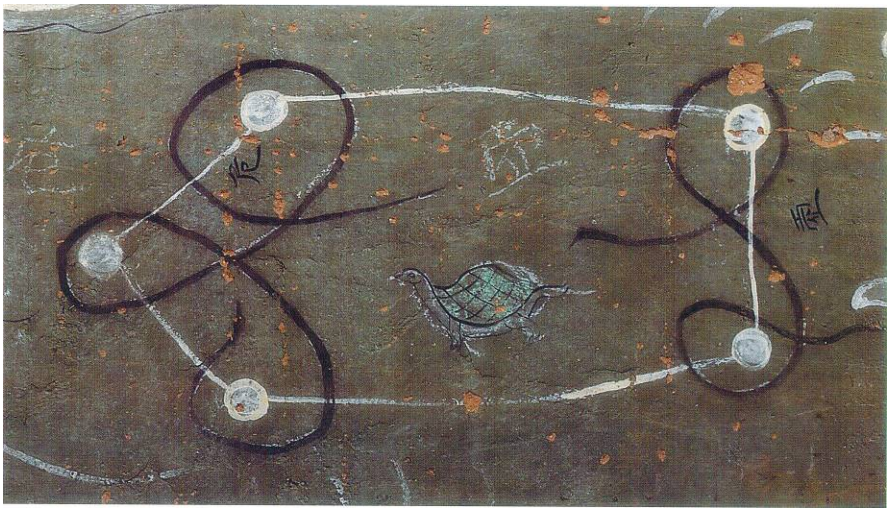


Figure 16 Combined lodges Tumulus_{L11} and Rooftop_{L12}. Above: Xi'an tomb fresco, restored by Tseng, op. cit., fig. 5.19. Below: Qushuhao, site report, fig. 30.

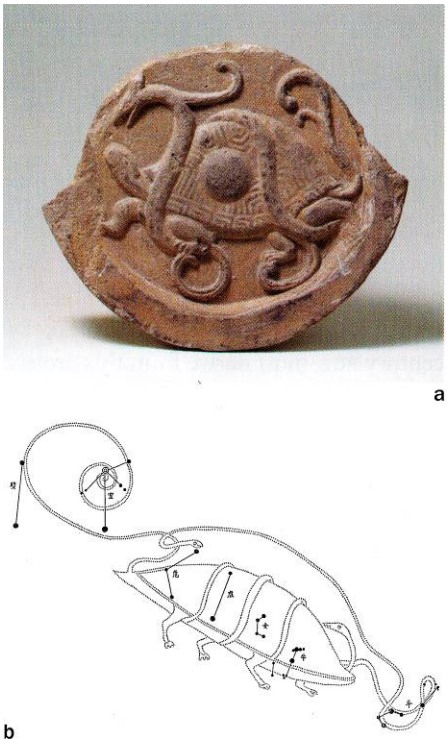


Figure 17 The Dark Warrior[s]. Above, roof tile excavated from the Nine Temples, 22 CE, source: (a) Liu Qingzhu and Kanasaki Hiroshi, *Yomigaeru Kan Ōcho: tokubetsu tenrankai* (Ōsaka: Yomiuri shinbun Ōsaka honsha, 1999), plate 1.14. Below, reconstruction of how this *xiang* 'cardinal emblem' is supposed to fit onto the seven lodges in this quadrant, as per Gao Lu, *Xingxiang tongjian* (Beiping: Guoli zhangyang yanjiuyuan tianwen yanjiusuo, 1933), 7.

our and style snaking around the five stars of the (joint) constellation, trapping, if I may, a battle-ready tortoise. Early *tianwen* star lore such as we find in the *Book of Jin* does not assign the lodge Tumulus_{L12} a specific animal as it does in the case of Staddler_{L15}. That said, one notes that Tumulus_{L11} is located in the Northern of the Four Cardinal Palaces, which is associated with the cold, the dark, the chthonic, and, more importantly, the *xiang* 'cardinal emblem' Dark Warrior(s), which, as typically represented in Figure 17, is a snake wrapped around a tortoise in combat. [27] The two-snake Qushu-hao illustration is clearly a variation on this theme, as is the lone snake one finds at Xi'an. [28]

Two things are curious here. First, one notes, in the Qushuhao fresco, that the snakes are snaking *around* the five stars, but that *the lines between stars* are painted *over the snakes*. And this is not the only instance of 'connecting the dots' after the iconography was already there. [29] This points to something *more like* the Western-

[27] Note *tianwen* star lore such as that cited above is silent about the association of Tumulus_{L11} itself with a specific animal.

[28] Without the reference of the Qushuhao tomb, one notes, the identification of the Xi'an snake with the Dark Warrior(s) was arrived at independently in Luo Qikun, 'Xi'an Jiaotong daxue Xihan muzang bihua ershiba xiu xingtu kaoshi', 242; Shaanxi sheng kaogu yanjiu suo and Xi'an jiaotong daxue, *Xi'an jiaotong daxue Xihan bihua mu*, 35; Tseng, *Picturing Heaven in Early China*, 317.

style armature use of disconnected stars, as we saw in Figure 1, and it points to the primacy of the iconography over the dot-and-line constellations – it does, at least, in *this painting* and *as concerns composition*. Second, assuming that a single, centrepiece snake *is* for some reason supposed to go in $\text{Straddler}_{\text{L15}}$, as per the Qushuhao fresco, it seems an interesting coincidence that, in the Xi'an fresco, it would seem to have reappeared two over, in a lodge that is (depicted to be) the exact same shape and number of stars (see Figure 15, above). This and the boar that has apparently shifted from $\text{Straddler}_{\text{L15}}$ to $\text{Pasture}_{\text{L16}}$ should make us wonder whether we might expect there to be some confusion in the matching of iconography and the dot-and-line constellations.

***

That brings us back to Net_{L19} by way of $\text{Basket}_{\text{L07}}$. The *iconography* of Net_{L19}, if we recall, is the same between the Xi'an and Qushuhao frescos: both feature a man holding said dot-and-line constellation chasing (more or less vigorously) after the rabbit in the adjoining lodge, Mane_{L18}. As to the *constellation*, however, the Qushuhao version is abbreviated from eight to six stars, while the Xi'an version looks nothing like it (Figures 8 and 9, above). Turning to Figure 18, we see that what *does* look a lot like the Qushuhao version of Net_{L19} does appear some twelve lodges earlier in the Xi'an fresco, turned ninety degrees clockwise, with a shorter handle, representing $\text{Basket}_{\text{L07}}$. The iconography here is once again the same between the two frescos, albeit that the direction is reversed: $\text{Basket}_{\text{L07}}$ is being held in the hands of a kneeling figure. In the Xi'an version, the constellation has *one star too many*, which scholars have found it difficult to explain. The official tomb publication, for example, offers that:

> The four stars of the lodge $\text{Basket}_{\text{L07}}$ all belong to Sagittarius (Sgr), [stars number] one to four corresponding, respectively, to the four stars Sagittarii γ, δ, ε, and η […] This drawing is of the lodge $\text{Basket}_{\text{L07}}$, that appears to be without a doubt. The only thing is that $\text{Basket}_{\text{L07}}$, as depicted in the fresco, has one more star than as recorded in our textual sources, the reason for which is probably that emphasis of the composition is on pictorial symmetry and that the

[29] Cf. Tail_{L06}, Mane_{L18}, $\text{Devils}_{\text{L23}}$, and $\text{Baseboard}_{\text{L28}}$ in site report, figs. 25, 35, 37, and 38.

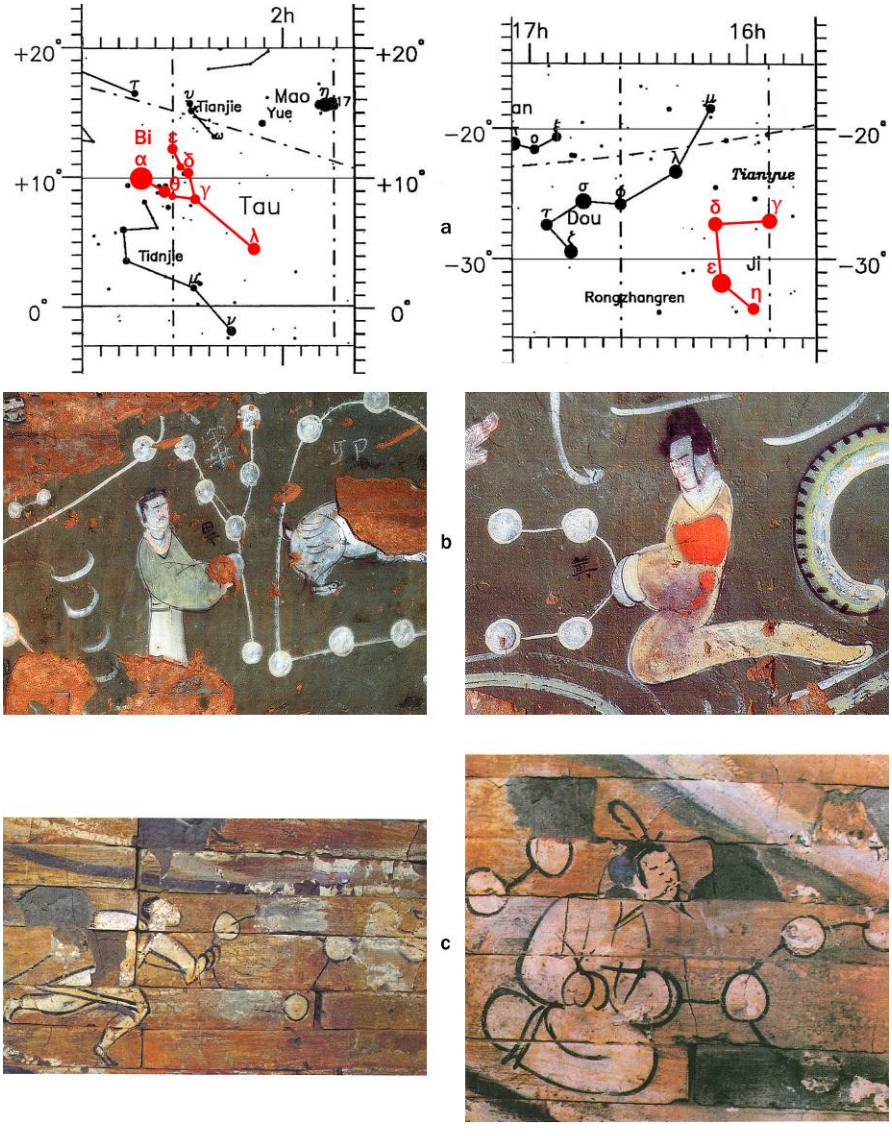


Figure 18 Comparison of the lodges $\text{Basket}_{\text{L07}}$ (right) and Net_{L19} (left) as per (a) Sun and Kistemaker, *The Chinese Sky during the Han*, (b) Qushuhao site report, plates 28 and 35, and (c) the Xi'an fresco as restored in Tseng, op. cit., figs. 5.24 and 5.27. Note that Tseng's framing of the bottom right image cuts off half way through *two stars*, one below and one above.

> shape of a/this $\text{Basket}_{\text{L07}}$ comprising *five stars* looked more presentable than with four. What is more, as the black line connecting the hand to its middle-star resembles a 'crank rod/connecting bar', drawing this extra star makes $\text{Basket}_{\text{L07}}$ look like it feels a little more at equilibrium, which goes with the posture of the person holding it in the fresco, adding a bit of a feeling of 'movement'.[30]

And that may well be so, but I ask you to consider another possibility: maybe the reason that, in the Xi'an fresco, the dot-and-line constellation $\text{Basket}_{\text{L07}}$ looks like Net_{L19}, and Net_{L19} looks like $\text{Basket}_{\text{L07}}$, is because the artisans confused them. With Sinitic constellations, anyways, the patterns formed by the stars themselves are usually less visually striking or memorable than the iconography with which they are associated.

***

Again, I'm not an expert, but it is my guess that such confusion could not have occurred in a Western Eurasian context. I say this because while we are dealing with all the same elements – constellations, their iconographic and notational representation, 'scientific' and abstract space – they are individually approached and articulated in different ways such that the whole is incommensurable and slippages occur along different lines. As to how to understand how foreign constellations and constellation imagery gets historically transmitted into China, to return to McCoy and Theme 2 of today's workshop, I offer this paper as a meditation on how need first to better understand the workings Sinitic astral visual culture, as its own coherent whole, before we can start talking about how elements of another are essentially *translated* therein. And to do that, I suspect, it is probably best to look at cases of contrast and transmission *internal* to this representational culture and to nuance our expectations of 'accuracy'.

There was no *one way* to draw a *xingtu* in pre-modern China, there were, at the very least, three: those depicting *astronomical reality* by careful measure, for whom questions of 'scientific accura-

[30] Shaanxi sheng kaogu yanjiu suo and Xi'an jiaotong daxue, *Xi'an jiaotong daxue Xihan bihua mu*, 32. Luo Qikun, by contrast, sees no problem, as he sees only four stars ('Xi'an Jiaotong daxue Xihan muzang bihua ershiba xiu xingtu kaoshi', 241; cf. his fig. 1). Lillian Tseng sees five stars, but does not offer an explanation for this (*Picturing Heaven in Early China*, 326–30, see esp. fig. 5.27).

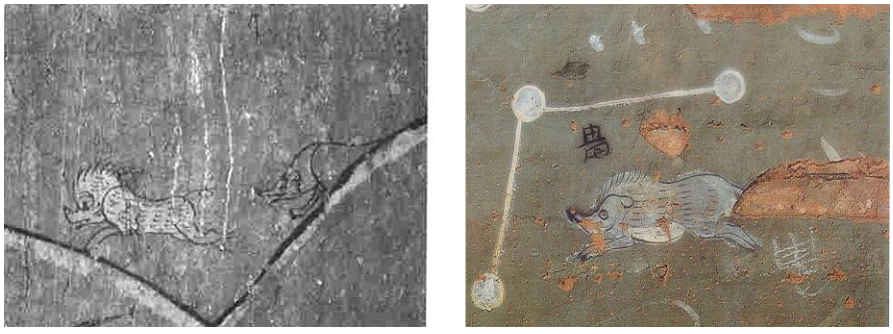


Figure 19 Wild boar as depicted, on the right, in Qushuhao site report, fig. 32, and, on the left, in the hunting scene published in the preliminary site report of the Han tomb at Haotan.

cy' are perfectly fitting, those depicting *abstract space* by *equally careful measure*, for whom 'inaccuracy' is a conscious choice, and there are those depicting first and foremost the *iconography* of star lore, in which star notation plays the role of support, or mise-en-scène, and for whom we might better speak of *iconographic accuracy*. What I mean to say by this is that we might want to shift our gaze in the Xi'an, Qushuhao, and forthcoming Han star chart frescos from the dot-and-line notation to the constellations' iconography and ask how faithfully *that* is reproduced from one instance to the next.

As concerns the Xi'an and Qushuhao frescos, one notes that they are, in fact, very ichnographically consistent in the face of multiple choices – the posture in Basket_{L07}, the boar in Pasture_{L16}, the combo lodge Tumulus_{L11}–Rooftop_{L12}, the varying extent of each 'cardinal emblem' – and that, where they vary, they vary within a limited set of parameters – the black, single-line snake(s) in both versions of Tumulus_{L11}–Rooftop_{L12}. Moreover, looking *beyond* the Xi'an and Qushuhao frescos at what little we have glimpsed from that uncovered at Haotan, we can get an idea of what probably lies in store. It may not be running from a fully fleshed-out *snake*, as in Qushuhao, but the features of the boar published in the initial site report bear a striking resemblance to that we find in Pasture_{L16}: the gate, the direction, the spikey crest, the up-turned nose, and even the bristles on its sides are all as if the two artists were copying (accurately) from a common exemplar (Figure 19).