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# Don't Listen to the Sceptics: Li Chunfeng (602–670) on Why Solar Eclipses Are Still Omens

Daniel Patrick Morgan (墨子涵)

Talk given at

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**Abstract** From at least the time of Sima Qian 司馬遷 (c.145–c.86 BCE), Chinese sources consistently divided the astral sciences into *tianwen* 天文 ‘heavenly patterns’ and *li* 曆 ‘calculation’. In short, the former is devoted to interpreting ‘anomalies’ (*yi* 異), the latter to modelling ‘regularities’ (*chang* 常), and though no one in his day could predict them with any accuracy, Astronomer Royal Sima Qian makes a forceful argument that solar eclipses are nevertheless perfectly ‘regular’ and, thus, not to be read as omens (*zhan* 占). Seven centuries later, when experts were able to calculate their exact time, place, ‘starting corner’ and magnitude with relative ease, we then hear Astronomer Royal Li Chunfeng 李淳風 (602–670) argue the opposite: that, regardless the protestations of sceptics, eclipses are nevertheless ‘catastrophes’ (*zai* 災) linked to political dysfunction. In this talk I will discuss Li Chunfeng’s curious position, presented in the omen compendium *Yisi zhan* 乙巳占, then turn to his other works and activities in *tianwen* omenology to explore how he may have put theory into practice. With an idea of what he personally did about solar eclipses, I will then take a broader look at the practice of their interpretation to his day to hypothesise about what was at stake in declassifying them as ‘anomalies’.

**Key words** Solar eclipses 日食, Omenology 星占學, Li Chunfeng 李淳風 (602–670), *Yisi zhan* 乙巳占

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## Introduction

First, I'd like to thank Guan Yuzhen and John Steele for inviting me to participate in this comparative workshop. I'm very excited to be here, and I'm excited in part because there's something that I always wished that we historians of astronomy in China and Mesopotamia might sit down together to discuss, which is: what on earth do we do with omen literature (星占學文獻)? The ancient Chinese have left us with a whole lot more in omenology than in mathematical astronomy or mathematics, and while there's been a number of excellent studies on these materials, from a variety of perspectives,<sup>1</sup> the attention they receive in the history of science is nowhere proportionate to their number or size. I think that there's more that we could be doing with these materials; I suspect that my colleagues in Assyriology might know what that is;<sup>2</sup> and I've written this talk to try to draw it out of you.

OK, so, in sinology, solar eclipses occupy a very interesting grey area between omenology and mathematical astronomy – between the sister sciences of *tianwen* 天文 'heavenly patterns' and *li* 曆 'calculation'. As our sources themselves describe them, 'heavenly patterns' is devoted to interpreting 'anomalies' (*yi* 異), and 'calculation' to modelling and predicting 'regularities' (*chang* 常).<sup>3</sup> And what makes solar eclipses special is that, as one of the most spectacular phenomena the sky has to offer, they began as momentous 'anomalies', and, over the course of the early imperial period (221 BCE–750 CE), experts learned that they were in fact 'regular' and developed models to successfully predict them. This led to something of a crisis of meaning. Shi Yunli and Xing Gang (2006) have written an excellent article about how this crisis came about and how it was dealt with in the first two centuries before and after the Common Era, and, in Part 1 of this talk, I'm going to follow this up with a look at the seventh-century astronomer royal Li Chunfeng 李淳風 (602–670), who defends the position that solar eclipses are nevertheless meaningful signs from heaven. In Part 2, I will ask to what degree Li Chunfeng may have put this

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<sup>1</sup> For major, general studies on *tianwen* omenology, see, in Chinese, Jiang Xiaoyuan (1992), Chen Jiujiu (2005), Lu Yang (2007) and Jiang Xiaoyuan (2009); in Western languages, see Nakayama (1966), Schafer (1977), Pankenier (2013: esp. 261–314, 404–441) and Morgan (2016a). For Western-language translations and studies of *tianwen* omen literature, see Chavannes (1895–1969: vol. 3, 339–412), Ho (1966), Pankenier (2013: 444–511) and Cullen (2011a; 2011b). On the *practice* of *tianwen* omenology in politics and political historiography, see Bielenstein (1950), Franke (1950), Eberhard (1957), De Crespigny (1976), Bielenstein and Sivin (1977), Bielenstein (1984), Kern (2000), Huang Yi-long (2004: 1–71), Pankenier (2012) and Morgan (2019). For more on the observational record left by the practice of *tianwen* omenology as well as its modern applications, see Saitō and Ozawa (1992), Stephenson (1997a; 1997b), Steele (2000) and Zhuang Weifeng (2009). On the 'Tianwen zhi' 天文志 genre up to the seventh century CE, see Morgan (forthcoming).

<sup>2</sup> I have been particularly inspired thus far in this regard by Rochberg (1999; 2004; 2010), my discussions with John Steele and Zackary Wainer about the 'schematisation' of phenomena, and an edited volume on the language and logic of omenology in the ancient/Mesopotamian world that I can no longer find.

<sup>3</sup> As Yixing 一行 (683–727) rather elegantly states in *Xin Tang shu*, 27B.633: 'Mathematicians (*suan zhe*) are ignorant of signs (*xian*), and omen-readers (*zhan zhe*) are confused by numbers' 近代算者昧於象, 占者迷於數. For a more nuanced discussion of the categories of *tianwen* and *li*, see Morgan (2017: 10–25).

theory into practice in his life, career and other writings, and, in Part 3, I will offer some thoughts about what might have been at stake for him.

## 1 Omen theory

To summarise from Shi Yunli and Xing Gang's article of 2006, the first evidence for the prediction of solar eclipses in China appears only in the late second century CE. Using a period of  $5^{20/23}$  months (23 eclipses:135 months), two astronomical procedure texts from the first century CE *do* include a model for predicting the 'coincidence' (*hui* 會) of necessary conditions for there to be an eclipse; however, they are specific that this applies to *lunar eclipses*, and there is no evidence that this model *was* or *could have been* effectively applied to the sun.

It's safe to say, therefore, that no one in **Sima Qian's** 司馬遷 (c.145–c.86 BCE) day in the early-first-century BCE knew how to predict a solar eclipse. Nevertheless, as the astronomer royal (*taishiling* 太史令), Sima Qian makes a forceful argument in his 'Book of Heavenly Offices' (Tianguan shu 天官書) that solar eclipses, in and of themselves, are not to be read as omens. I've provided a translation of this passage in the Appendix to the PDF, so allow me to summarise:

- his ancient predecessors treated eclipses and the retrogradation of the planets as the object of omen-reading (*zhan* 占);
- Sima Qian, however, points to the 'regularity' (*chang*) of these phenomena in the observational record over the last hundred years, positing that they obey some 'measure' or 'norms' (*du* 度);
- he reaffirms that the correct response to a solar eclipse is for the ruler to 'cultivate virtue' 脩德, and for his underlings to work on statecraft 政, relief efforts 救 and ritual expiation 禳;
- however, Sima Qian insists that 'one only resorts to omen-reading if the [relevant] measures/norms are exceeded' 過度乃占.

Some two centuries later, **Ban Zhao** 班昭 (44/49–118/121) comes back to this in her 'Heavenly Patterns Monograph' (Tianwen zhi 天文志) in the *History of the Han* (*Han shu* 漢書).<sup>4</sup> Summarising from the full passage provided in the Appendix, Ban Zhao's position is as follows:

- the ancients were right: eclipses and the retrogradation of the planets *are* to be read as omens (*zhan*);
- yes, they do 'regularly' (*chang*) occur, and we can calculate lunar eclipses and planetary retrogradation in advance, but that does not mean they are *zhengxing* 正行 (correct behaviour/prograde motion);

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<sup>4</sup> According to Ban Zhao's biography, 'Her elder brother [Ban] Gu 班固 (32–92) wrote the *History of Han*, but he died before he could finish its eight tables and "Heavenly Patterns Monograph," so Emperor He (r. 89–105) ordered her to render herself to the stacks of the Eastern Observatory so as to follow in his footsteps and bring it to completion' 兄固著『漢書』，其八表及天文志未及竟而卒，和帝詔昭就東觀臧書閣踵而成之 (*Hou Han shu*, 84.2784–2785). On Ban Zhao, see Swann (1968).

- in effect, these ‘anomalies’ (*yi*) only ‘regularly’ (*chang*) occur because we live in fallen times.

Now, Sima Qian and Ban Zhao may fundamentally disagree about the status of solar eclipses, but they’re both writing within the same traditional paradigm of Chinese omenology. Namely, heaven and earth are mirrors of one another, the sky being populated with ‘signs’ or ‘simulacra’ (*xiang* 象) of the ‘myriad things’ (*wanwu* 萬物) on earth. By the law of ‘stimulus and response’ (*ganying* 感應), any disturbance of the moral order on earth is immediately reflected *in kind* (*lei* 類) by a commensurate disturbance of the cosmic order in heaven. And given that the sun is the heavenly simulacra (*xiang*) of the earthly ruler, any true ‘solar disturbance’ (*ribian* 日變) is thus necessarily a response (*ying*) provoked by the stimulus (*gan*) of his earthly misdeeds.<sup>5</sup>

Importantly, both Sima Qian and Ban Zhao also agree *in principle* that omen-reading (*zhan*) is reserved for the truly anomalous (*yi*), which excludes all that is observed and/or mathematically proven to ‘regularly’ (*chang*) reoccur. The difference is that Ban Zhao places ancient authority over contemporary experience, dreaming of a past and a potential future where our predictive models fail – a time when there *are no eclipses, and no planetary retrogradation*, because people act as they should.<sup>6</sup>

Several decades later, starting in the 170s, Liu Hong 劉洪 (fl. 167–206) would revolutionise lunar theory, introducing models for calculating the moon’s speed, latitude and nodal ‘crossing’ (*jiao* 交) – models that his predecessors would immediately apply to eclipse prediction and gradually improve.<sup>7</sup> At the same time, and despite the near constant state of civil war over the next four centuries (189–618), lunar eclipses and planetary retrogradation would all but disappear from records of professional and amateur omen-reading at court, and the proportion of *solar eclipses* reported as ominous would fall dramatically.<sup>8</sup> Unfortunately, very little of the omen literature written over these centuries survives fully intact, and for the next *theoretical development* we must turn to Li Chunfeng’s omen compendium of *circa* 656, the *Yisi zhan* 乙巳占.

**Li Chunfeng’s *Yisi zhan*** is not a particularly well-studied text,<sup>9</sup> and I was frankly rather surprised by what I stumbled upon there in the chapter on solar eclipses, so while I have provided a full translation in the Appendix for your reference, I would nonetheless like to read a couple of passages with you.

<sup>5</sup> Nowhere are the ideas or vocabulary here more clearly or beautifully treated than in Schafer (1977).

<sup>6</sup> One gets an idea of the sort of ‘correct behaviour’ this would require of her half of the population in Ban Zhao’s *Lessons for Women* (*Nüjie* 女誡), translated in Baldwin (1988) and Indraccolo (2011).

<sup>7</sup> On the application of these models to eclipse prediction in Yang Wei’s 楊偉 *Jingchu li* 景初曆 of 237, see Guan Yuzhen (2015). On third- to seventh-century eclipse prediction more generally, see Qu Anjing (2008: 390–531), Tang Quan (2011).

<sup>8</sup> This is admittedly hard to measure, but I base this remark on the percentage of solar eclipses submitted to omen-reading in the observational annals in the *tianwen* monographs of the dynastic histories.

<sup>9</sup> The only scholarship on the *Yisi zhan* of which I am aware are the articles of Liu Jinyi (1987), Guan Zengjian (2002), Zeng and Cui (2009) and Harper (2010).

‘[Chapter] VI. Solar Eclipse Omens’ 日蝕占第六 begins with a brief and simplified description of the sun’s behaviour and symbolic associations:

夫日依常度，蝕者，月來掩之也，臣下蔽君之象。

The sun abides by **measures/norms of regularity** (*chang du*), and its eclipse is due to the moon coming in and concealing it, which is a sign (*xiang*) of the servant blocking the lord.

The text provides said ‘norms’ – the sun’s mean speed – and it goes on to describe how the moon effectively runs circles around the sun, warning about how a lord’s servants, if left unchecked, can block and run circles around his authority. From there, however, Chapter VI then takes a strange turn:

其蝕雖依常度，而災害在於國君大臣。或人疑之，以為日月之虧蝕，可以算理推窮，皆先朔知之。蝕分多少、時節、早晚所起，皆如符契左右，此豈天災之意耶？夫月毀於天，魚腦滅於泉，月豈為螺蚌之災而毀其體乎？

Though eclipses abide by **measures/norms of regularity** (*chang du*), disaster nevertheless lies with the great ministers of the lord of state. Some people are dubious of this, considering that every aspect of the eclipse of the sun and moon can be calculated via mathematical principles and known in advance of the new moon. [Between prediction and observation], the magnitude, time, and direction are all like the left and right halves of matching tallies, so how can this imply some celestial catastrophe? [As everyone knows, when] in heaven the moon is destroyed, in the springs the brains of fish [mysteriously] shrink – are we to believe that the moon destroys its form because of some disaster among the molluscs?

This last piece of stimulus-response folk-knowledge comes from the *Huainanzi* 淮南子 of 139 BCE,<sup>10</sup> and whether or not it makes sense to us, we can see the point that Li Chunfeng’s hypothetical sceptic is trying to make: If some celestial phenomenon occurs so regularly (*chang*) as to be perfectly predictable in advance, then how could it possibly be a *response* (*ying*) to the stimulus (*gan*) of some specific moral failing among men, let alone among the fish and molluscs? Li goes on to explain, reminding us of the physics of stimulus and response:

但陰陽之氣迭相感應自然耳。東風至而酒湛溢，東風非故為溢酒而來至也，風逼至而酒適溢耳，此豈不相感應者歟？

These are simply due to the natural, spontaneous back-and-forth of stimulus and response between the *qi* of *yin* and *yang*. [Imagine you’re eating dinner outside], the east wind comes, and a full [cup of] wine spills over. The east wind did not come with the *express purpose* of spilling wine, it is just that the wind brusquely arrived, and the wine spilled right over. Is this not an example of the stimulus and response between them?

Now, here comes the twist:

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<sup>10</sup> *Huainan Honglie jijie*, 3.81: ‘Creatures with scales and shells make up the class of creeping and hiding things and are subject to yin. ... The moon is the fundament of yin. Therefore when the moon wanes, the brains of fish shrink; when the moon dies, wasps and crabs shrivel up’ 介鱗者，蟄伏之類也，故屬於陰.....月者，陰之宗也，是以月虛而魚腦滅，月死而蠃虻臄 (tr. Major 2010: 116).

若然，油水之類也。東風至，油水不溢而酒獨溢，猶天災見，有德之君修德而無咎，暴亂之王行酷而招災，豈不然也？陽燧之取火，方諸之取水，皆以象占之也。陽燧、方諸，銅蛤之類，將凡鏡往求而不得者，為無其象而不占也。

Granting this, [now consider a different] category of thing, that of the grease [on your plate]: the east wind comes, and the grease *does not* spill over, only the wine. This is like how, when a heavenly disaster appears, the virtuous lord cultivates his virtue and emerges unscathed, while the tyrannical king practices cruelty and invites disaster. Is this not the case? The *yangsui* (fire-starting mirror) absorbs [the] fire [of the sun], the *fangzhu* (dew-collecting mirror?) absorbs [the] water [of the moon], and both can be **omen-read (zhan)** according to the *xiang* (signs). [But] the *yangsui* and *fangshu* belong to the category of bronze clam-[shaped devices(?)], and the fact that you find nothing if you go looking in a normal mirror is because [normal mirrors] do not possess these *xiang* (signs) and [thus they] cannot be **omen-read (zhan)**.

In case you didn't catch it, Li Chunfeng has done something very interesting here: he has reversed the relationship of stimulus and response. In other words, it's not the ruinous behaviour of the king that stimulates (*gan*) an eclipse, it is rather the eclipse that stimulates ruinous behaviour in the king – in the category of king, that is, who, like wine, is easily moved to spill right out of his constraints. A good king, like your average mirror, will not start fires when you point him at the sun.

'[Chapter] VI. Solar Eclipse Omens' of the *Yisi zhan* goes on from there to list what I would group into twenty different omen formulae, to which we will come in a minute. Some of these are physically impossible, some clearly reflect the schematic thinking of hemerology, to which large portions of this compendium are rather exceptionally dedicated,<sup>11</sup> but the most interesting thing to me about this chapter is the implications of the previous lines. I would like to develop on two of these implications in the next two parts of this talk.

## 2 Omen practice

First, in arguing that it is the solar eclipse that is the stimulus (*gan*), and the failure of leadership the response (*ying*), Li Chunfeng effectively solves the dilemma posed by Sima Qian and Ban Zhao: in this configuration, regularity (*chang*) does not exclude omen-reading (*zhan*); in fact, *it allows you to read omens that have yet to happen*. Consider Omen 5c, in the Appendix:

日蝕從下起，女主自恣，臣下興師動衆失律，將軍當之。

The eclipse of the sun starts from the bottom: the female ruler acts capriciously; one's servants below lose discipline in raising armies and mobilising the masses; the general will suffer it.

An eclipse's 'starting corner' 起角 could be predicted in advance in Li Chunfeng's day, and if you could predict *the eclipse* and *the starting corner* some months or years in advance, logically, you could also predict the empress' behaviour and the military defeat to follow.

This is the proposition that's at the centre of Jiang Xiaoyuan's famous argument that 'mathematical astronomy was in service of astral omens'.<sup>12</sup> I quote:

<sup>11</sup> See Harper (2010). On the relationship between hemerology and 'heavenly patterns' omenology, see Lu Yang (2007: 446) and Morgan (2016a; 2016b).

<sup>12</sup> 曆法為星占服務, Jiang Xiaoyuan (1991: 152–153).

At first glance, it seems that [omen literature] is all without exception in the form ‘x celestial phenomenon is a portent of y event’ and, as such, that all that omenologists need do was be diligent at observation, waiting until after they had seen a certain celestial phenomenon before interpreting it according to omenological theory. ... But the ideal to which ancient omenologists aspired involved something far more profound, the key to which lay in the foreknowledge of the laws and positions of celestial bodies (Jiang Xiaoyuan 1992: 173–174).<sup>13</sup>

Jiang Xiaoyuan gives two examples of this ideal in action, and one of them happens to involve Li Chunfeng. According to the tenth-century encyclopaedia *Taiping guangji* 太平廣記:

唐太史李淳風授新（歷）〔曆〕，太陽合朔當蝕既，於占不吉。太宗不悅曰：「日或不蝕，卿將何以自處？」曰：「如有不蝕，臣請死之。」

Under the Tang (619–907), Astronomer Royal Li Chunfeng was working on a new system of mathematical astronomy, [when he realised that] the sun was due to be completely eclipsed at syzygy, and that it [would result in] an inauspicious omen-reading (*zhan*). Displeased, Emperor Taizong (b. 598; r. 626–649) said, ‘And if the sun is *not eclipsed*, how does my good minister plan to atone?’ ‘If it happens that it is not eclipsed,’ [answered Li Chunfeng], ‘Your servant requests to die for it.’

及期，帝候於庭，謂淳風曰：「吾放汝與妻子別之。」對曰：「尚早。」刻日指影于壁，至此則蝕。如言而蝕，不差毫髮。出〔國史異纂〕及〔紀聞〕。

At the appointed time, the emperor watched from the courtyard, and said to Chunfeng, ‘I will release you to your wife and children to bid farewell.’ [Li Chunfeng] responded, ‘It’s still early,’ then drew a sun and pointed to [where] the shadow [would be] on its disk, and, at that, there was then an eclipse. The eclipse happened as he said, without a hair’s breadth of a difference. ([Passage] cited from *Guoshi yizuan* and *Jiwen*).<sup>14</sup>

This is a great story, but it’s completely apocryphal: Li Chunfeng was made the astronomer royal in 648;<sup>15</sup> Taizong died in July of 649;<sup>16</sup> the only eclipse that occurred between these dates over Chang’an 長安, in 648 (obs. 0.838), occurred while the emperor was away from the court at Yuhua 玉華, some 100 km north;<sup>17</sup> suspi-

<sup>13</sup> 初看起來，似乎都不外「某某天象是某某事件的征兆」這一模式，因此，星占學家只要勤於觀測，待見到了某種天象後再依據星占學理論解釋即可……古代星占學家追求的理想境界，其間另有奧妙，而關鍵則是預知天體運行規律與位置。

<sup>14</sup> *Taiping guangji*, 76.6a–b; cited in Jiang Xiaoyuan (1991: 158).

<sup>15</sup> 【貞觀】二十二年，遷太史令，*Jiu Tang shu*, 79.2718.

<sup>16</sup> 【貞觀】二十三年……五月……己巳，上崩於含風殿，年五十二，*Jiu Tang shu*, 3.62.

<sup>17</sup> Namely, the eclipse of 24 August 648 (FMC no [06312](#)). According to the imperial annals in *Jiu Tang shu*, 3.60–61, the emperor left to Yuhua on 23 March (二月……乙亥，幸玉華宮), the eclipse was seen on 24 August (八月己酉朔，日有蝕之)，and the emperor only returned to Chang’an on 6 November (十月癸亥，至自玉華宮). Said eclipse is reported in the observational annals of the ‘Heavenly Patterns Monograph’ in *Jiu Tang shu*, 36.1317, where it bears no interpretation (二十二年八月己酉朔)，in the annals in *Xin Tang shu*, 32.828, where the omen-reading is ‘drought’ (二十二年八月己酉朔，日有食之，在翼五度。占曰：「旱。」).



ciously, this anecdote only first appears in Liu Shu's 劉劔 (fl. 742/756) *Guoshi yizuan* some one century later.<sup>18</sup> Now, Jiang Xiaoyuan provides one other example of omen forecasting, which is also apocryphal,<sup>19</sup> and while there may well be a handful more of which I am not aware, there is no evidence that this was even a *trope*, let alone a common practice in early imperial times.

So what *did* Astronomer Royal Li Chunfeng do with his eclipse theory? Well, most of what we can say involves his work on interpreting historical eclipses. Li Chunfeng has left us with no less than two 'Heavenly Patterns Monographs' in the *History of the Jin* and *History of the Sui*, which include the observational annals of nine dynasties covering the 314 years from 220 to 419 and from 502 to 617 CE.<sup>20</sup> Importantly, his eclipse records for 220 to 419 are taken nearly word for word from Shen Yue's 沈約 (441–513) *History of the Song*,<sup>21</sup> so by comparing the differences between the two we can get a clear sense of Li Chunfeng's editorial voice.

Reduced to bullet points, this is what I think we can take away from this comparison:

- Shen Yue lists 67 eclipses, and Li Chunfeng 81, subtracting 2 and adding 16 to Shen Yue's list; 14 of those added are false reports.
- Both Shen Yue and Li Chunfeng leave the vast majority of eclipses uncommented upon (SY 45/67 vs LCF 49/81).
- Several comments simply report the reaction and/or countermeasures taken at the time (SY 4/22 vs LCF 3/32).
- And of those eclipses that bear some analysis (SY 18 vs LCF 29),
  - 11 are reworded or/but identical in contents between Shen Yue (11/18) and Li Chunfeng (11/29),
  - and where Li Chunfeng deviates from Shen Yue,

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<sup>18</sup> According to *Xin Tang shu*, 59.1541, the *Guoshi yizuan* was written by Liu Shu 劉劔 (fl. 742/756), and the *Jiwen* by Niu Su 牛肅 (fl. c.804) (劉劔『傳記』三卷。一作『國史異纂』。牛肅『紀聞』十卷)。Also, add to all of the above that the *Taiping guangji* follows this anecdote about Li Chunfeng with one that is even more fantastical, involving the transformation of the seven stars of the Northern Dipper (UMA) into alcoholic Buddhist monks.

<sup>19</sup> Cited in Jiang Xiaoyuan (1992: 174), Jiang's second example, from the *History of the [Northern] Wei* (*Wei shu* 魏書), has Cui Hao 崔浩 (d. 450 CE) interpret his prediction of the lodge in which Mars would reappear 'in the year prior to [Latter Qin emperor] Yao Xing's (r. 394–416 CE) death' 姚興死之前歲 as a sign of the latter's impending death. In this anecdote, the situation of Mars' sudden 'disappearance' (*shi* 失) is fantastical; Cui Hao's method does not comport with those of mathematical astronomy (*li*), and Mars could not have appeared that year where it is reported to have.

<sup>20</sup> *Jin shu*, 12.337–345, tr. Ho (1966: 150–160), and *Sui shu*, 21.593–615. On Li Chunfeng's authorship of these treatises, see *Jiu Tang shu*, 79.2718 (預撰晉書及五代史, 其天文、律曆、五行志皆淳風所作也), and *Shitong*, 12.20a (唯有十志, 斷為三十卷, 尋擬續奏, 未有其人。又詔左僕射于志寧、太史令李淳風、著作郎韋安仁、符璽郎李延壽同撰。其先撰史人, 唯令狐德棻重預其事。太宗崩後, 刊勒始成。其篇第雖編入『隋書』, 其實別行, 俗呼為『五代史志』); cf. Morgan and Chaussende (forthcoming).

<sup>21</sup> *Song shu*, 25.739, 34.1011–1017.

- it is usually to delete the prognostic (*zhan*) and/or correspondent event (*ying*) (SY 6/7, LCF 6/18),<sup>22</sup>
- and, in one case, to attribute the same event to a different, false report (SY 1/7, LCF 2/18).<sup>23</sup>
- Lastly, of the 13 reported eclipses to which Li Chunfeng *adds*,
  - 2 of his omen-readings reinforce a previous analysis,<sup>24</sup>
  - and while the other 11 focus on similar, traditional themes such as the ruler's lack of virtue (2),<sup>25</sup> illness (2),<sup>26</sup> and ouster (1),<sup>27</sup> as well as the death of the empress (2),<sup>28</sup> barbarian invasion (2),<sup>29</sup> armed rebellion (1)<sup>30</sup> and ouster of the regent (1),<sup>31</sup> none match the exact rules or language of Li Chunfeng's *Yisi zhan*.

In short, Li Chunfeng sticks fairly close to his sources, but he *removes* received prognostics (6/18), leaves the majority of historical eclipses blank (49/81), and what

<sup>22</sup> 224 Dec 27 (黃初五年十一月戊申晦), 306 Jan 31 (光熙元年正月戊子朔), 306 Jul 27 (光熙元年七月乙酉朔), 312 Mar 24 (永嘉六年二月壬子朔), 316 Jul 06 (建興四年六月丁巳朔) and 395 Apr 06 (太元二十年三月庚辰朔).

<sup>23</sup> Shen Yue correlates the death of Emperor Min (r. 313–317) in 318 with the reported eclipse of Jianxing year 4 month XII day 1, *yimao* (316 Dec 31, 建興四年十二月乙卯朔), while Li Chunfeng correlates it with two eclipses on the nonsensical dates of Jianxing year 5 month V day *bingzi*<sub>13/60</sub> and month XI day *bingzi*<sub>13/60</sub> (五年五月丙子, 十一月丙子, 並日有蝕之。時帝蒙塵于平陽).

<sup>24</sup> E.g., 'both eclipses were responses to...' Compare *Song shu*, 34.1013, (太康九年六月庚子朔, 日有蝕之。後二年, 宮車晏駕。) to *Jin shu*, 12.339 (九年正月壬申朔, 六月庚子朔, 並日有蝕之。永熙元年四月庚申, 帝崩。). Compare also *Song shu*, 24.1015, (晉海西公太和三年三月丁巳朔, 日有蝕之。太和五年七月癸酉朔, 日有蝕之。明年, 廢為海西公。) to *Jin shu*, 12.341 (海西公太和三年三月丁巳朔, 五年七月癸酉朔, 並日有蝕之。皆海西被廢之應也。).

<sup>25</sup> 331 Mar 25 (六年三月壬戌朔, 日有蝕之。是時帝已年長, 每幸司徒第, 猶出入見王導夫人曹氏如子弟之禮。以人君而敬人臣之妻, 有虧君德之象也) and 334 ?? (九年十月乙未朔, 日有蝕之。是時帝既冠, 當親萬機, 而委政大臣, 著君道有虧也).

<sup>26</sup> 362 May 03 and 363 Jan 02 (哀帝隆和元年三月甲寅朔, 十二月戊午朔, 並日有蝕之。明年而帝有疾, 不識萬機).

<sup>27</sup> 403 May 07 (元興二年四月癸巳朔, 日有蝕之。其冬桓玄篡位).

<sup>28</sup> 327 Jun 06 (成帝咸和二年五月甲申朔, 日有蝕之, 在井。井, 主酒食, 女主象也。明年, 皇太后以憂崩) and 341 Mar 04 (七年二月甲子朔, 日有蝕之。三月, 杜皇后崩).

<sup>29</sup> 356 Nov 09 (十二年十月癸巳朔, 日有蝕之, 在尾。尾, 燕分, 北狄之象也。是時邊表姚襄、苻生互相吞噬, 朝廷憂勞, 征伐不止) and 380 Jan 24 (太元四年閏月己酉朔, 日有蝕之。是時苻堅攻沒襄陽, 執朱序).

<sup>30</sup> 325 Dec 22 (明帝太寧三年十一月癸巳朔, 日有蝕之, 在卯至斗。斗, 吳分也。其後蘇峻作亂).

<sup>31</sup> 400 Jul 08 (安帝隆安四年六月庚辰朔, 日有蝕之。是時元顯執政).

little he adds by way of omen-reading has no apparent relation to his own theoretical work in this field. His annals for 502 to 617 tell a similar story.<sup>32</sup>

So, Li Chunfeng does not seem to have applied his theory to eclipses in his future, *though he could have*, nor does he seem to have applied his theory to eclipses in the historical past. All that leaves, therefore, is the question of his historical present. There is not much we can say about *that*, but I invite you consider the following: Li Chunfeng served as astronomer royal from 648 to 662, and once again in 670, and in this position he would have been responsible for the submission and archival of such observational and omenological reports as would eventually make their way into the ‘Heavenly Patterns Monograph’ for the Tang (618–907).<sup>33</sup> In other words, though they may have passed through other, later editorial hands, we might expect the eclipse records for these years in the *Old* and *New History of the Tang* to potentially reflect the application of Li Chunfeng’s ideas.<sup>34</sup>

There is not much there. The two monographs record four eclipses over these years,<sup>35</sup> and none of the *Old History of the Tang* (945 CE) records bear prognostics. Two of the *New History of the Tang* (1060 CE) records do, which raises other questions,<sup>36</sup> and one of those does finally correspond with an exact formula in the *Yisi zhan*:

二十二年八月己酉朔，日有食之，在翼五度。占曰：「旱。」  
[Zhenguan] year 22 month VIII day *jiyou*<sub>46/60</sub>, new moon (648 Aug 24): the sun was eclipsed; it was 5 *du* [into the lodge] Wings<sub>L27</sub>. Omen-reading states: ‘Drought’.<sup>37</sup>

Compare this to Li Chunfeng’s Omen 20aa in the Appendix:

日在翼蝕，王者退太常，以法官代之，有德令則蝕不為害，其歲旱，亦為王者失祀，宗廟不親，戒在主車駕之官；

**The sun is eclipsed in Wings<sub>L27</sub>**: the king recalls the Minister of Rites and replaces him with an officer of the law; if there are virtuous ordinances, then the eclipse will do no harm; **there is a drought this year**, and it is due for its part to the king’s negligence of the sacrifices and failure to show up in person to the ancestral temple; admonition should be directed at the officers responsible for carriages and driving.

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<sup>32</sup> These annals record 16 eclipses, only 4 of which bear some sort of analysis, and none of these relate in any unambiguous way to the theory or omen formulae elaborated in Chapter VI of the *Yisi zhan*.

<sup>33</sup> On the function and history of the state Astronomical Office, see Deane (1989) and Chen and Zhang (2008). On the existence, use and redaction of observational and interpretive records, see Morgan (2019; forthcoming).

<sup>34</sup> Namely, *Jiu Tang shu*, 36.1317–1319, and *Xin Tang shu*, 32.827–632.

<sup>35</sup> They both share 648 Aug 24 (貞觀二十二年八月己酉朔; no [06312](#)), 660 Jul 13 (高宗顯慶五年六月庚午朔; no [06342](#)) and 670 Jun 23 (咸亨元年六月壬寅朔; no [06369](#)). In addition, the *New History of the Tang* alone records a fourth eclipse on 661 Jul 02 (龍朔元年五月甲子晦; no [06344](#)).

<sup>36</sup> E.g., might the omen-reading have been *added* in the eleventh-century *New History of the Tang* rather than *omitted* from its tenth-century predecessor?

<sup>37</sup> *Xin Tang shu*, 32.828.

This is the closest evidence we have that Li Chunfeng ever put his own eclipse theory into practice, and we can hardly assume that he is even the author of this one-word omen-reading.

### 3 Virtue signalling

However astronomer royal Li Chunfeng may have actually interpreted solar eclipses in practice, Chapter VI of his *Yisi zhan* does at least provide the theoretical justification to continue treating them as omens – something that real-life sceptics like Sima Qian had opposed on principal for more than seven centuries. There is obviously something at stake here for Li Chunfeng, and I would like to offer my thoughts on what that might be.

Long ago, in his study of the astronomical monographs for the Former Han (206 BCE–9 CE), Wolfram Eberhard argued that we are mistaken to study these materials through the optic of ‘science’, because the literature and practice of omenology are in fact ‘purely political’. More specifically, he argues that omens provided a well-needed institutional check on the power of the monarch:

In most of the cases where an explanation of a phenomenon is given..., it is given in a subsequent proclamation of the ruler. This proclamation normally starts with the ruler’s self-accusation: ‘Recently Yin and Yang were disturbed, wind and rain did not come in time. This is [the result of] my lack of *de* [spiritual power (DPM: “virtue”)].’ The form of these ‘self-accusations’ suggests that they are a conventional formula and do not have to be taken at face value. They serve as an introduction for political actions, such as cancellation of debts of citizens (85 and 79 B.C.), reduction of luxury (71 B.C.), reduction of expenses in the central administration (83 B.C.), or any other actions which naturally infringed the vested rights of some persons (Eberhard 1957: 51).

And seeing that they could be used to check and force such concessions from the monarch, so too did high officials use them against one another...

... the fact that we know both that portents were fabricated and that portents were used in the power struggle between factions opens another perspective: at least some of the persons who reported portents in memoranda, or who wrote them into the historical records, may not have believed in portents at all but may have used them merely as political weapons (Eberhard 1957: 56).

Minus the question of belief and calculated cynicism, this functionalist explanation is not that different from that offered by Li Chunfeng or his predecessors: the ‘virtue’ and/as ‘spiritual power’ (*de*) of the ruler is effectively the lynchpin of the social order, and more than a sign of moral failing, a solar eclipse is a call to moral action. Of course, moral action is necessarily *ritual action* (*li* 禮), and that is probably why Li Chunfeng ends Chapter VI of the *Yisi zhan* with a reminder of the ritual countermeasures to be taken:

凡日蝕者，皆着赤幘以助陽也。天子素服，避正殿，內外嚴警，太史靈台伺日，有變，便伐鼓，聞鼓音作，侍臣皆著赤幘，帶劍以助陽……  
Whenever there [might be] a solar eclipse, [the emperor] is to don a red turban to aid [the forces of] *yang*. The Son of Heaven wears the simple [white mourning] clothes, avoids the throne room, and remains stern and alert inside [the palace] and out [in the

world]. The Observatory of the Astronomer Royal watches the sun, and [if] there is a disturbance, [they?] beat the drums, and once they first hear the sound of the drums, the officers in attendance all don red turbans and wear swords so as to aid [the forces of] *yang*...<sup>38</sup>

Going back to a discussion in the Confucian Classics of the ritually appropriate response to the solar eclipse of 21 August 525 BCE,<sup>39</sup> this was a long-standing tradition that had been on the books for centuries by Li Chunfeng's day.<sup>40</sup> Of course, the same can be said about the 'conventional formula' of the emperors' 'self-accusations' and the *political actions* taken immediately after an eclipse.

This, at least, is what I have noticed in my work on the use of solar eclipses the various histories, annals, biographies and technical monographs covering the Later Han (25–220 CE).<sup>41</sup> By my rough count, our sources record 88 distinct political actions taken by the throne in response to solar eclipses over this period, the majority of which (76×, or 86%) are indeed completely formulaic:

- Normally, the emperor issues a decree declaring his lack of virtue to be the cause and promising to take corrective measures (11×).
- As he is the problem,
  - he avoids the throne room 避正殿 (6×),
  - refuses audience for five days 不聽事五日 (4×),
  - and/or invites open, and often anonymous written criticism with the promise that 'nothing is off limits' 無有所諱 (12×).
- And, as general measures, he invariably orders
  - the replacement of the head of the military 太尉/大司馬 (16×),

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<sup>38</sup> *Yisi zhan*, chap. VI (see Appendix).

<sup>39</sup> *Chunqiu Zuo zhuan zhushu*, Zhao 17 (525 BCE): 夏，六月，甲戌，朔，日有食之，祝史請所用幣，昭子曰，日有食之，天子不舉，伐鼓於社，諸侯用幣於社，伐鼓於朝，禮也，平子禦之，曰，止也，唯正月朔，慝未作，日有食之，於是乎有伐鼓用幣，禮也，其餘則否，大史曰，在此月也，日過分而未至，三辰有災，於是乎百官降物，君不舉辟，移時樂奏鼓，祝用幣，史用辭，故夏書曰，辰不集于房，瞽奏鼓，鼂夫馳，庶人走，此月朔之謂也，當夏四月，是謂孟夏，平子弗從，昭子退曰，夫子將有異志，不君君矣。

<sup>40</sup> See *Hou Han shu*, zhi 4, 3101: 禮威儀，每月朔旦，太史上其月曆，有司、侍郎、尚書見讀其令，奉行其政。朔前後各二日，皆牽羊酒至社下以祭日。日有變，割羊以祠社，用救日（日）變。執事者冠長冠，衣阜單衣，絳領袖（緣）（緣）中衣，絳袴，以行禮，如故事；cf. *Jin shu*, 19.594: 漢儀，每月旦，太史上其月曆，有司侍郎尚書見讀其令，奉行其正。朔前後二日，牽牛酒至社下以祭日。日有變，割羊以祠社，用救日變。執事者長冠，衣絳領袖緣中衣、絳袴，以行禮，如故事。自晉受命，日月將交會，太史乃上合朔，尚書先事三日，宣攝內外戒嚴。摯虞決疑曰：「凡救日蝕者，著赤幘，以助陽也。日將蝕，天子素服避正殿，內外嚴警。太史登靈臺，伺候日變，便伐鼓於門。聞鼓音，侍臣皆著赤幘，帶劍入侍。三臺令史以上皆各持劍，立其戶前。衛尉卿驅馳繞宮，伺察守備，周而復始。亦伐鼓於社，用周禮也。又以赤絲為繩以繫社，祝史陳辭以責之。社，勾龍之神，天子之上公，故陳辭以責之。日復常，乃罷。」

<sup>41</sup> See Morgan (2019).

- a general amnesty 大赦天下 (8×),
- the recommendation for office of ‘the worthy and good’ 舉賢良 (7×),
- economic aid to widows and orphans 鰥孤獨貧不能自存 (4×),
- the investigation of cases of wrongful imprisonment 舉冤獄 (3×),
- the cessation of military operations 寢兵 (3×),
- and/or the blanket granting of noble titles to those of a given rank (2×).

Other than transferring the head of the military to another post, none of these standard actions seem like particularly effective ‘political weapons’ to wield against one’s foes. Indeed, it is only the rare exception in the Later Han (6×, or 7%) where an eclipse results in anyone else actually losing something.<sup>42</sup> Otherwise, when treated as meaningful anomalies, solar eclipses mostly provided ritual occasions requiring the emperor to show humility, hear criticism, and if not to *cultivate* then at least to *make a show of virtuous conduct* – one so grand as to eclipse the eclipse.

I suspect that someone like Li Chunfeng might have seen some intrinsic value in this tradition, and in so much as the predictable ‘regularity’ of the phenomenon essentially threatened the ritual on scientific grounds, he may well have adapted the science to fit the ritual. After all, virtue is the one thing at the centre of all these conflicting theories.

## Conclusion

To wrap up, solar eclipses constitute a troubling grey area in early imperial omen theory, and the development of predictive models in *li* mathematical astronomy over these centuries only further complicated things for *tianwen* omen-reading. On principle, that which is predictably ‘regular’ (*chang*) cannot be a meaningful sign (*xiang*) in response (*ying*) to political events on earth. Sima Qian accepted this, declaring the ancients wrong and rejecting that solar eclipses are omens. Ban Zhao doubled down, insisting that what is ‘regular’ is not necessarily ‘right’. And, centuries later, Li Chunfeng would argue that solar eclipses are in fact the *cause* – the ‘stimulus’ (*gan*) – of political upheaval to preserve the meaning the ancients instilled on what was no longer an ‘anomaly’ (*yi*). Oddly, this theoretical move seems to have had no impact on how the astronomer royal *practised* omenology beyond justifying the continued reading of solar eclipses as omens by older methods. As to what was at stake, Li Chunfeng’s writings emphasise virtue and the ritual expression thereof, and a statistical look at the throne’s political actions in response to solar eclipses over the Later Han reveals that very thing: a tradition of meeting solar eclipses with the ritualised performance of virtuous acts. Beyond ‘science’ and the ‘purely political’ (Eberhard 1957: 70), therefore, I would like to suggest that it was this *ritual aspect* of Chinese omenology that experts like Li Chunfeng may have been keen to preserve and develop.

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<sup>42</sup> Namely, a solar eclipse is cited as the reason for removing the minister of works 司空 in 171 and 174, the minister of education 司徒 in 135, and three governors in 75, as well as for deposing the empress in 165 and the abdication of the throne in 220.

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## Appendix: Key statements of *tianwen* omen theory

Sima Qian 司馬遷 (c.145–c.86 BCE),

*Records of the Grand Clerk (Shiji 史記, c.91 BCE)*, ‘Book of Heavenly Offices’ (Tianguan shu 天官書), 27.1349–1351; translation modified from Pankenier (2013: 509–510):

故甘、石曆五星法，唯獨熒惑有反逆行；逆行所守，及他星逆行，日月薄蝕，皆以為占。

In the old Gan [De] and Shi [Shen] methods for *li*-computing the five [planets] only [Mars]<sup>43</sup> experiences retrogradation. They took the [asterisms] it guards in retrograde, the retrogradation of the other [planets], and the dimming and eclipse of sun and moon all as [objects of] *zhan* (omen interpretation).

余觀史記，考行事，百年之中，五星無出而不反逆行，反逆行，嘗盛大而變色；日月薄蝕，行南北有時：此其大度也。

I have contemplated/observed the clerk’s records (*shiji*) and examined past events, and [I can say that] in a hundred years the five [planets] have never once emerged without turning around and going into retrograde – [that] as they turn around and go into retrograde, they [also] regularly flourish in size and change in colour – [and that] the dimming and eclipse of the sun and moon and their travels north and south (of the celestial equator) have their times. These are their general *du* (measures/norms).

故紫宮、房心、權衡、咸池、虛危列宿部星，此天之五官坐位也，為經，不移徙，大小有差，闊狹有常。水、火、金、木、填星，此五星者，天之五佐，為（經）緯，見伏有時，所過行贏縮有度。

Thus, Purple Palace (Cep), Chamber<sub>L04</sub>-and-Heart<sub>L05</sub> (Sco), Weight-and-Balance (CMi), the Mineral Spring (Aur) and Ruins<sub>L11</sub>-and-Roof<sub>L12</sub> (Aqr), these [five] sectional asterisms within the array of lodges (L01–L28), are the seats of heaven’s five offices. They are the warp – immobile, they differ in size but their separation is *chang* (constant). [By contrast,] [Mercury], [Mars], [Venus], [Jupiter] and the [Saturn], these five stars (planets) are heaven’s five assistants. They are the weft – their appearance and hiding have their times, and the excess and deficit in their transits and travels have their *du* (measures/norms).

日變脩德，月變省刑，星變結和。凡天變，過度乃占。

Faced with a solar disturbance, one practices virtue; faced with a lunar disturbance, one reduces punishments; and faced with a [planetary] disturbance, one joins together in harmony. For any celestial disturbance, [however], one only resorts to omen interpretation (*zhan*) if the [relevant] *du* (measures/norms) are exceeded.

國君彊大，有德者昌；弱小、飾詐者亡。太上脩德，其次脩政，其次脩教，其次脩禳，正下無之。

<sup>43</sup> Whereas our primary sources refer to the five naked-eye planets as ‘stars’ (*xing* 星) and by one of several sets of indigenous names – Water (Shui 水) or Time-marker Star (Chenxing 辰星) for Mercury, Fire (Huo 火) or Sparkling Deluder (Yinghuo 熒惑) for Mars, Metal (Jin 金) or Great White (Taibai 太白) for Venus, Wood (Mu 木) or Year Star (Suixing 歲星) for Jupiter, and Earth (Tu 土) or Filler/Suppressor Star (Tian/Zhenxing 填/鎮星) for Saturn – I have chosen to distinguish ‘planets’ from ‘stars’ and use their English names in brackets for the sake of comprehension.

[If] the lord of the state is strong and great, the virtuous will prosper, and the weak and small, fawning and false will perish. The ultimate superior practices virtue, the next [person down] practices statecraft, the next practices relief [efforts], the next cultivates expiation, and [those at] the very bottom have no [responsibility] in the matter.

夫常星之變希見，而三光之占亟用。日月暈適，雲風，此天之客氣，其發見亦有大運。然其與政事俯仰，最近（大）（天）人之符。此五者，天之感動。為天數者，必通三五。

Now, disturbances in the *chang stars* (fixed stars) are rarely seen, and [so] *zhan* (omen-reading) is [most] frequently applied to the Three Luminaries (sun, moon and planets). The sun and moon, with their halos and blemishes, clouds and winds, these are [the effects] of the transient *qi* of heaven, and their production and appearance also have their major cycles. As such, with regard to the vicissitudes of governmental affairs, [these phenomena] are the closest thing to tallies of [the interaction] between heaven and man. These five (?) are the responsive movements of heaven, and those who deal with heavenly numbers must comprehend the three and the five.

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**Ban Zhao 班昭 (44/49–118/121),**

*Book of Han (Hanshu 漢書), 'Heavenly Patterns Monograph' (Tianwen zhi 天文志), 26.1290–1291:*

古曆五星之推，亡逆行者，至甘氏、石氏經，以熒惑、太白為有逆行。

The calculation of the five [planets] in ancient *li* (mathematical astronomy) lacked retrogradation until Mr Gan [De] and Mr Shi [Shen]'s [respective] classics, which [first] held that [Mars] and [Venus] experience retrogradation.

夫曆者，正行也。古人有言曰：「天下太平，五星循度，亡有逆行。日不食朔，月不食望。」夏氏日月傳曰：「日月食盡，主位也；不盡，臣位也。」星傳曰：「日者德也，月者刑也，故曰日食修德，月食修刑。」然而曆紀推月食，與二星之逆亡異。

Now, *li* (mathematical astronomy) is concerned with correct behaviour/proper motion. The ancients had a saying that:

When Great Peace reigns all under heaven, the five [planets] obey their *du* (measures/norms) and do not experience retrogradation; neither is the sun eclipsed at new moon, nor the moon eclipsed at full moon.

Mr Xia's *Solar and Lunar Tradition* states that:

When a solar or lunar eclipse is complete, it [relates to] the position of ruler; when incomplete, it [relates to] the position of subject.

[Lastly], the *Star Tradition* states that:

The sun is virtue, and the moon is punishment, thus it is said that faced with a solar eclipse, one practices virtue, and faced with a lunar eclipse, one practices punishment.

Even so, the tenants of *li* (mathematical astronomy) [allow us to] predict lunar eclipses along with the retrogradation of the [aforementioned] two [planets], [so] there is nothing *yi* (**anomalous**) [about these phenomena].

熒惑主內亂，太白主兵，月主刑。自周室衰，亂臣賊子師旅數起，刑罰失中，雖其亡亂臣賊子師旅之變，內臣猶不治，四夷猶不服，兵革猶不寢，刑罰猶不錯，故二星與月為之失度，三變常見；及有亂臣賊子伏尸流血之兵，大變乃出。[Mars] governs internal strife, [Venus] governs soldiers, and the moon governs punishment. [Now], ever since the decline of the house of Zhou 周 (after 771 BCE), rebellious servants and the sons of traitors have led armies in numerous uprisings, and the punishments and penalties (i.e., the law) have missed the mark. And even when there were *no [such political] disturbances*, the internal servants were still unruly, the four barbarians were still insubordinate, and the punishments and penalties were still unmistakable (sic.). Therefore, it is because of *this* that the two [planets] and the moon violated their *du* (**measures/norms**), and that the three disturbances were **chang** (**regularly**) seen; and it was only when there *were* armies of rebellious servants and the sons of traitors, sprawling corpses and flowing blood, that the *big disturbances* would occur.

甘、石氏見其常然，因以為紀，皆非正行也。詩云：「彼月而食，則惟其常；此日而食，于何不臧？」詩傳曰：「月食非常也，比之日食猶常也，日食則不臧矣。」謂之小變，可也；謂之正行，非也。

Gan [De] and Shi [Shen] saw that this was **chang** (**regularly**) the case and, therefore, took these phenomena as cyclic, *but none of this is proper behaviour*. The *Odes* say,

The moon eclipsed was what full **chang** (**oft**) takes place; the sun's eclipse portends a sadder case.<sup>44</sup>

[However], the *Odes Tradition* (commentary) states that,

Lunar eclipses are by no means **chang** '**normal**' [as such], but they are relatively **chang** '**normal**' by comparison to solar eclipses, [and that is precisely why] 'the sun's eclipse portends a sadder case'.

To call this a 'small disturbance' is fine, but to call it 'proper behaviour' is wrong.

故熒惑必行十六舍，去日遠而顛恣。太白出西方，進在日前，氣盛乃逆行。及月必食於望，亦誅盛也。

Thus it is that [Mars] necessarily goes off and does as it pleases [only] after travelling sixteen lodges and placing itself at a distance from the sun (i.e., around opposition). [Thus it is that] Venus only retrogrades after having emerged from the west, advanced right up to the sun, and flourished its *qi*. [And thus it is too], coming to the moon, [that] it is necessarily eclipsed at full moon as executions also flourish.

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<sup>44</sup> Citing "Shiyue zhi jiao" 十月之交, *Mao shi zhushu* 毛詩注疏 (Siku quanshu ed.), 19.33a; translation modified from Legge (1876: 229).

## 日蝕占第六

### VI. Solar Eclipse Omens

夫日依常度，蝕者，月來掩之也，臣下蔽君之象。日行遲，一日行一度，一月行二十九度餘；月行疾，二十七日半一周天，二十九日餘而迫及日。及日之時，與日同道，而在于內映日，故蝕其象。大臣與君同道，逼迫其主，而掩其明。又為臣下蔽上之象，人君當防慎權臣內戚在左右擅威者。

The sun abides by *chang du* (constant measure/norms), and its eclipse is due to the moon coming in and concealing it, which is a *xiang* (sign) of the servant blocking the lord. The sun travels slowly, at 1 *du* per day,<sup>45</sup> 29 plus *du* per month, while the moon travels quickly, making a circuit of heaven in 27 and a half days and catching back up to the sun in 29 plus days. [Sometimes], when it catches up to the sun and is on the same path (i.e., the same latitude), being interior to it (i.e., closer to us), it covers the sun, and thus does it eclipse the *xiang* (sign/appearance) [of the sun]. [Likewise], when a great minister is on the same path as his lord, and he chases and charges after him, then he conceals his ruler's brilliance. Furthermore, because this is the *xiang* (sign) of the servant blocking his superior, [when it occurs] the lord of men ought to take caution and protect himself against the arrogation of authority left and right amongst his most powerful ministers and closest relatives.

其蝕雖依常度，而災害在於國君大臣。或人疑之，以為日月之虧蝕，可以算理推窮，皆先朔知之。蝕分多少、時節、早晚所起，皆如符契左右，此豈天災之意耶？夫月毀於天，魚腦滅於泉，月豈為螺蚌之災而毀其體乎？

Though eclipses abide by *chang du* (constant measure/norms), disaster nevertheless lies with the great ministers of the lord of state. Some people are dubious of this, considering that every aspect of the eclipse of the sun and moon can be calculated via mathematical principles and known in advance of the new moon. [Between prediction and observation], the magnitude, time, and direction are all like the left and right halves of matching tallies, so how can this imply some celestial catastrophe? [As everyone knows, when] in heaven the moon is destroyed, in the springs the brains of fish [mysteriously] shrink<sup>46</sup> – are we to believe that the moon destroys its form because of some disaster among the molluscs?

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<sup>45</sup> *Du* 度 ('measure/crossing'): a linear measure, convertible with terrestrial distances, used in the context of the astral sciences (and that context only) as a measure of the circumference of a great circle whereby one *du* equals the distance travelled by the mean sun in one day, and the 'circuit of heaven' thus equals the length in days of the tropical year (*sui*). In other words,  $365\frac{1}{4} du \approx 360^\circ$ .

<sup>46</sup> This is a reference to *Huainan Honglie jijie* 淮南鴻烈集解, 3.81: 'Creatures with scales and shells make up the class of creeping and hiding things and are subject to yin. ... The moon is the fundament of yin. Therefore when the moon wanes, the brains of fish shrink; when the moon dies, wasps and crabs shrivel up' 介鱗者，蟄伏之類也，故屬於陰.....月者，陰之宗也，是以月虛而魚腦滅，月死而羸虵黉。 (tr. Major 2010: 116).

但陰陽之氣迭相感應自然耳。東風至而酒湛溢，東風非故為溢酒而來至也，風逼至而酒適溢耳，此豈不相感應者歟？若然，油水不溢而酒獨溢，猶天災見，有德之君修德而無咎，暴亂之王行酷而招災，豈不然也？陽燧之取火，方諸之取水，皆以象占之也。陽燧、方諸，銅蛤之類，將凡鏡往求而不得者，為無其象而不占也。

These are simply due to the natural, spontaneous back-and-forth of stimulus and response between the *qi* of *yin* and *yang*. [Imagine you're eating dinner outside], the east wind comes, and a full [cup of] wine spills over. The east wind did not come with the *express purpose* of spilling wine, it is just that the wind brusquely arrived, and the wine spilled right over. Is this not an example of stimulus and response between them? Granting this, [consider a different] category of thing, that of the grease [on your plate]: the east wind comes, the grease *does not* spill over, only the wine. This is like how, when a heavenly disaster appears, the virtuous lord cultivates his virtue and emerges unscathed, while the tyrannical king practices cruelty and invites disaster. Is this not the case? The *yangsui* (fire-starting mirror) absorbs [the] fire [of the sun], the *fangzhu* (dew-collecting mirror?) absorbs [the] water [of the moon], and both can be **zhan (omen-read)** according to the *xiang* (signs). [But] the *yangsui* and *fangshu* belong to the category of bronze clam-[shaped devices(?)], and the fact that you find nothing if you go looking in a normal mirror is because they do not possess these *xiang* (signs) and cannot be **zhan (omen-read)**.<sup>47</sup>

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災之所起，起於昏亂之所無災。非朔而蝕者，名為薄蝕。

#### [Omen 1]

As to whence disasters arise, they arise from places of chaos without disaster (sic.?). When it is not new moon and there is an eclipse, this is called a 'dimming eclipse' (*boshi*).

凡薄蝕者，人君誅之不以理，賊臣漸舉兵而起，北陰氣盛，掩薄日光也。陰盛侵陽，臣凌其君，其分君凶，不出三年。無道之國，日月過之而薄蝕，兵之所攻；國家壞亡，必有喪禍。

In all cases of 'dimming eclipse', the lord of men is irrational in his executions, rebellious servants gradually raise armies to rise up, the *yin qi* of the north flourishes, and it blocks and dims the light of the sun. *Yin* flourishes and encroaches upon *yang*, the servant insults his lord, and bane falls upon the lord of the parcel [corresponding to the parcel of the sky in which the event occurred], [lingering upon him] for three years before leaving. When the sun and moon experience dimming eclipse while passing by [the parcel] of a state without the Way, that is [the state] that armies attack; state and family is destroyed and lost, and there is necessarily mourning and tragedy.

裴子曰：夫日者君也，月者臣也，一歲十二會，君臣相見之象。君有失德，臣下專之，故有日蝕之咎，故伐鼓，用幣，責上卿，是其禮退臣道也，以知君臣忠。

#### [Omen 2]

Master Pei says that the sun is the lord and the moon is the servant; they meet twelve times a year, a *xiang* (sign/symbol) of the meeting of lord and servant. [When] the lord loses virtue, the servant monopolises [power] below him. Thus it is that there is the blame/punishment of a solar eclipse, and thus it is that one strikes the drums, offers silks, and blames the high ministers – this is because the appropriate ritual [response involves] the retreat of the way of the servant, that it be known that the lord's servants are loyal.

<sup>47</sup> This paragraph is difficult to understand, and I have probably made several mistakes in translating it.

天下太平，雖交而不能蝕，蝕即有凶。臣下縱權篡逆、兵革水旱之應兆耳。日者陽精之明，曜魄之寶，其氣布德而生。生在地曰德，德者生之類也，德傷則亡，故日蝕，必有亡國死君之災。

When all under heaven enjoys great peace, even if there is a crossing (i.e. transit of the lunar nodes), there cannot be an eclipse, but once there is, there is bane: it is an omen (*zhao*) in response to one's servants below vying for power, usurping and rebelling, of weapons and armour, flood and drought, and that is that. The sun is the brilliance of the essence of *yang* and the treasure of [the god] Yaopo, and its *qi* spreads virtue and brings about life. On/in the earth, [that] life is called virtue, and virtue belongs to the category of life, [so] if virtue is harmed then there is death. Thus it is that [when] the sun is eclipsed, there is inevitably a disaster of the loss of the state and death of the lord.

日蝕，則失德之國亡。

If the sun is eclipsed, then the state that has lost its virtue will perish.

日蝕，則王者修德。修德之禮重于責躬。是故禹、湯罪己，其興也勃焉。

If the sun is eclipsed, then the king will cultivate virtue. The ritual of the cultivation of virtue lays emphasis on self-criticism. This is the reason that [the legendary kings] Yu [the Grand] and Tang [the Accomplished] condemned themselves and were able to rise back ever stronger.

日薄蝕，色赤黃，不出三年，日時所當之國有喪。一曰日始出而蝕，是謂無明。齊、越之國受兵亡地。

**[Omen 3]** **[3a]** Dimming eclipse (*boshi*, above) of the sun, its colour red and yellow: [the effects] linger for three years before leaving, and there is mourning in the state to which the [position of] the sun at the time corresponds. **[3b]** One [source] says that [if] the sun is eclipsed when it starts to rise [in the east], this is called 'no light', and the [eastern states of] Qi and Yue encounter armies and lose territory.

凡日蝕者，則有兵有喪。失地國亡，皆以日蝕時早晚、分宿、日辰占之。

Whenever the sun is eclipsed, then there are armies and there is mourning. The loss of territory and ruin of the state can all be *zhan* (omen-read) from the time, position and hour (?) at which the sun is eclipsed:

日午時已後蝕者，有兵，兵罷不起。

**[Omen 4]** The sun is eclipsed after the hour *wu* (11:00–13:00): there are armies, but the armies cease down and do not rise up.

日蝕從上起，君失道而亡。從旁起，內亂兵大起，更立天子。日蝕從下起，女主自恣，臣下興師動衆失律，將軍當之。

**[Omen 5]** **[5a]** The eclipse of the sun starts from the top: the lord loses the Way and is lost. **[5b]** It starts from the side: a great uprising of armies in civil war, a new Son of Heaven is installed. **[5c]** The eclipse of the sun starts from the bottom: the female ruler acts capriciously; one's servants below lose discipline in raising armies and mobilising the masses; the general will suffer it.

日蝕少半，諸侯、大臣亡國失地相逐。蝕半，有大喪亡國。蝕大半，災重，天下之主當之。蝕盡，亡天下，奪國，臣弑君，子弑父，不出三年。

**[Omen 6]** **[6a]** The sun is eclipsed by a short-half (1/3): the marquises and great ministers will lose the state, surrender territory, and chase one another out. **[6b]** It is eclipsed by a half: there is great mourning and one loses the state. **[6c]** It is eclipsed by a big-half (2/3): the disaster is serious, and the leader of all under heaven suffers it. **[6d]** It is

eclipsed completely: one loses all under heaven, fighting for states; the servant kills his lord, and the son kills his father; [the effects] linger for three years before leaving.

日蝕見星，臣弑其君，天下分裂。

**[Omen 7]** The sun is eclipsed and one sees a/the star/s: the servant kills his lord, and all under heaven is ripped apart.

日蝕而暈傍珥，白雲來去掩映，天下大亂，大兵起。臣弑君，君失位。

**[Omen 8]** The sun is eclipsed and there is a halo [with?] side earrings (i.e., parhelia), and white clouds come and go to cover and absorb [its light]: there is great chaos all under heaven, and a large army rises up; the servant kills his lord, [and/or] the lord loses his position.

日蝕陰侵陽，君位凶，群兵動，宜施恩賞。

**[Omen 9]** The sun is eclipsed [and] *yin* encroaches on *yang*: the position of the lord is in jeopardy, groups of armies are mobilised, and it is best to implement grace and rewards.

日蝕而旁有似白兔、白鹿守之者，民為亂，臣逆君，不出其年。其分兵起。

**[Omen 10]** The sun is eclipsed and next to it there is something that looks like a white rabbit or white deer that is guarding it: the population makes chaos, the servant turns against his lord, and it lingers for three years before leaving. Armies arise in the parcel [of land corresponding to the position of the sun at eclipse].

凡日蝕之時，或有雲、氣、風、冥、暈、珥，似有群鳥守日，名曰天雞，后妃謀易主位，奪其君，數視動靜，欲行其志。

**[Omen 11]** Whenever the sun is eclipsed and there are clouds, vapours, winds, darkneses (?), halos or earrings that looks as though there is a flock of birds guarding the sun, these are called the Heavenly Chickens. The empress and concubines plot a change in the ruler's position, contending for the lord [of their choice]; [they(?)] watch several times for [signs of] action and inaction desiring to act upon their will(?).

日蝕大風地鳴，四方雲者，宰相專權謀反之象。

**[Omen 12]** The sun is eclipsed, a great wind [makes] the earth cry, and [there are] clouds in every direction: this is the *xiang* (sign) that the grand counsellor is monopolising authority and planning to revolt.

地震裂，日色味而寒乃蝕者，四方正伯專誅，恣行殺逆。

**[Omen 13]** The earth shakes and cracks, the sun darkens in colour, goes cold, and is then eclipsed: the rectors and earls (?) of every direction monopolise power over executions, indulgently engaging in murder and disobedience.

日蝕而大寒，又在於平旦，中國大饑餓，賊盜起，夷狄動，諸侯亂。

**[Omen 14]** The sun is eclipsed, followed by a great cold; also, this happens at dawn: the Central States/Middle Kingdom suffers a great famine, bandits rise up, the barbarians mobilise, and the marquises create chaos.

日蝕星墜而復上，君將被殺，下將窮竭，賦斂重數之應。

**[Omen 15]** The sun is eclipsed, a star falls and then goes back up: the lord is about to be killed, and his inferiors are about to be cleaned out; this is a response to heavy taxation.

日月俱蝕，國亡。

**[Omen 16]** The sun and moon are eclipsed together: the state is lost.



日者，人主之象，故王者道德不施，則日為之變。

The sun is the *xiang* (symbol) of the ruler of men, thus if the king does not implement the Way and its virtue, then there will be a solar disturbance because of it.

薄蝕無光。日以春蝕，大凶，有大喪，女主亡；夏蝕無光，諸侯死；秋蝕，兵戰，主人死；冬蝕，有喪，多病而疫。

**[Omen 17]** Dimming eclipse with no light. **[21a]** The sun is eclipsed in spring: great bane, there is great mourning, and the female ruler is lost. **[21b]** Summer eclipse with no light: the marquises die. **[21c]** Autumn eclipse: armies war, the ruler dies. **[21d]** Winter eclipse: there is mourning, many fall ill and it turns to pestilence.

凡四時以王日蝕者，主死；以相日蝕者，國相死；以囚死日蝕者，臣殺君；休廢日蝕者，多病疫。

**[Omen 18]** **[18a]** Whenever the sun is eclipsed on the day of reign [of water, fire, metal, wood or earth] in [the one of] the four seasons [to which it corresponds]: the ruler dies. **[18b]** Eclipse on a counsellor day: the state counsellor dies. **[18c]** Eclipse on a bound and dead day: the servant kills his lord. **[18d]** Eclipse on a rest and discard day: much illness and pestilence.<sup>48</sup>

日以正月蝕，人多病；二月蝕，多喪；三月蝕，大水；四月、五月蝕，大旱，民大饑；六月蝕，六畜死；七月蝕者，歲惡，秦國惡之；八月蝕者，兵起；九月蝕者，女工貴；十月蝕者，六畜貴；十一月、十二月蝕者，糴貴，牛死于燕國。

**[Omen 19]** **[19a]** The sun is eclipsed in month I: people suffer many illnesses. **[19b]** Eclipse in month II: much mourning. **[19c]** Eclipse in month III: great flood. **[19d]** Eclipse in month IV or V: great drought, the populace suffers a great famine. **[19e]** Eclipse in month VI: the six domestic animals die. **[19f]** Eclipse in month VII: the harvest is bad; the State of Qin takes it bad. **[19g]** Eclipse in month VIII: armies arise. **[19h]** Eclipse in month IX: female artisans are expensive. **[19i]** Eclipse in month X: the six domestic animals are expensive. **[19j]** Eclipse in month XI or XII: grain purchases are expensive; cows die in the State of Yan.

其日之甲乙，一如『略例』中。

The sexagenary dates are all as [explained] in the ‘Summary Examples’ [section].

蝕列宿占：

**[Omen 20]** *Zhan* (omen-readings) for Eclipses in the Array of Lodges (L01–L28, see Fig. 1)

日在角蝕，將吏耕田。臣有憂為司農之官者。國四門閉，其國凶；（月同。）

**[20a]** The sun is eclipsed in Horn<sub>L01</sub>: the generals and petty officers till fields; the servants that [should] be worried are those in the office of the minister of agriculture; the four gates of the state are closed; bane is upon the state. (Same for the moon.)

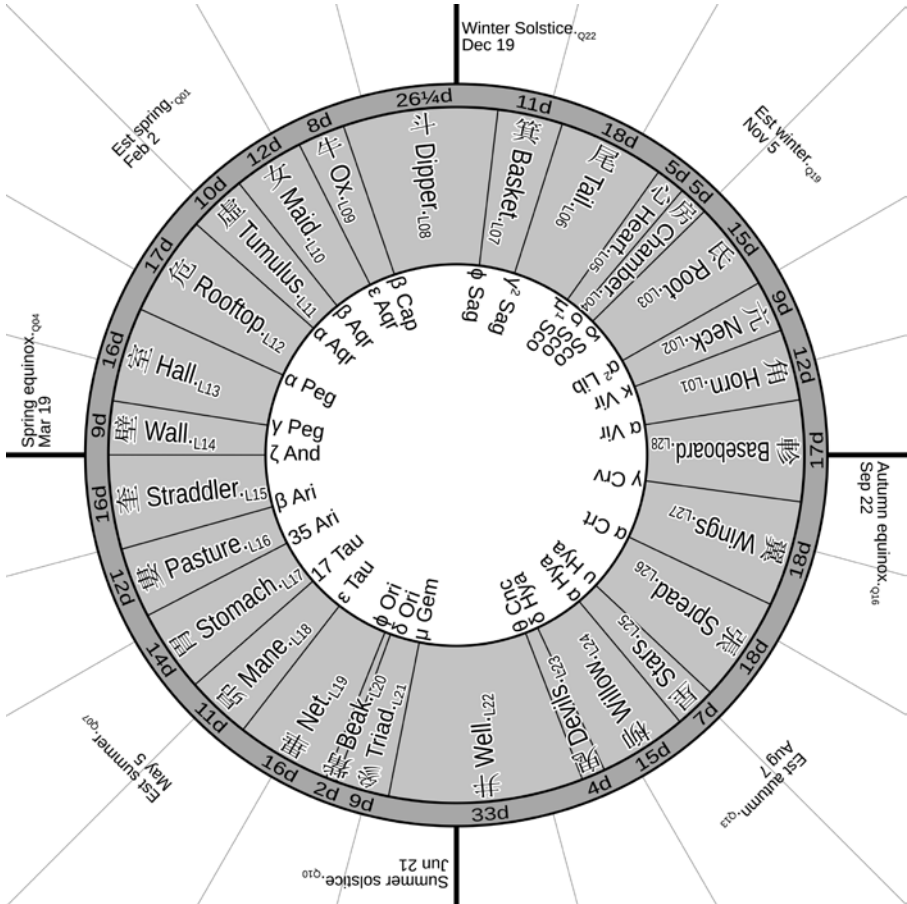
日在亢蝕，朝廷之臣有謀叛；

**[20b]** The sun is eclipsed in Neck<sub>L02</sub>: servants of the court are plotting and rebelling.

日在氏蝕，天子病崩，卿相讒諛，君殺無辜，王后惡之；

**[20c]** The sun is eclipsed in Root<sub>L03</sub>: the Son of Heaven falls ill and dies; the ministers and counsellors slander and flatter; the lord kills the innocent; the queen takes it bad.

<sup>48</sup> These are all appear to be the name of hemerologies, relating to ‘day selection’ (*zeri* 擇日).



**Fig. 1** The twenty-eight lodges (*xiu* 宿). Named and numbered in the central circle, the twenty-eight lodges represent uneven orange-segment-like divisions of the celestial sphere running from pole to pole through the ‘guide stars’ (*juxing* 距星) at/near the western extremity of the constellations after which they are named. In the inner circle are the modern identifications of those guide stars. In the outer circle are the equatorial lodge widths in contemporary use in *du* 度 / days, where the number of *du* to a ‘circuit of heaven’ (*zhoutian* 周天) equals the number of days in a solar year ( $\approx 365 \frac{1}{4}$ ). Around the lodge-circle are arrayed lines marking the twenty-four *qi* 氣 of the tropical year. The precession-adjusted position of the winter solstice – Dipper.L08 11 *du* – is that proposed by Zu Chongzhi’s 祖冲之 (429–500) *Daming li* 大明曆, which was adopted by the Liang 梁 court in 510 and represents an adequate median value for the ‘Five Dynasties’ period (502–618).

日在房而蝕，王者憂疾病，有亂。又大臣專權；（月同。）

[20d] The sun is eclipsed while in Chamber<sub>L04</sub>: the king worries about illness; there is chaos; the great minister also monopolises power. (Same for the moon.)

日在心而蝕，君臣不相信。政令失儀度，准繩變其宜；

[20e] The sun is eclipsed while in Heart<sub>L05</sub>: lord and servant do not trust one another; government orders disrupt ceremony and norms, the level and plumb (standards) transform what is suitable.

日在尾蝕，將有疫，後宮中小凶；

[20f] The sun is eclipsed in Tail<sub>L06</sub>: there is about to be pestilence; there is a small misfortune in the rear, [women's] palace.

日在箕蝕，將有疾風飛砂，發屋折木，戒之於出入；

[20g] The sun is eclipsed in Basket<sub>L07</sub>: there is about to be miasma and sandstorms; roofs are lifted and wood split; admonish (?) it upon exit and entry/rise and setting.

日在斗蝕，將相憂，國饑兵起；（月同。）

[20h] The sun is eclipsed in Dipper<sub>L08</sub>: the general and counsellor should be worried; the state is hungry and armies arise. (Same for the moon.)

日在井（牛）蝕，其國反叛兵起，戒在后、夫人祠禱之咎；

[20i] The sun is eclipsed in [OX]<sub>L09</sub>: the state revolts and armies arise; the admonition lies in the fault of the empress and concubines' prayers and sacrifices.

日在女蝕，戒在巫祝后妃禱祠；

[20j] The sun is eclipsed at Maid<sub>L10</sub>: the admonition lies in the prayers and sacrifices of the shamans, invocators, empress and consorts.

日在虛蝕，其邦有崩亡，天下改服；（月同。）

[20k] The sun is eclipsed at Tumulus<sub>L11</sub>: the state suffers the death of its head and loss; all under heaven change their clothing. (Same for the moon.)

日在危蝕，有大喪，君臣改服；

[20l] The sun is eclipsed at Rooftop<sub>L12</sub>: there is a great mourning; lord and servant change their clothing.

日在室蝕，人君出入無禁，好女色，外戚專權；

[20m] The sun is eclipsed at Hall<sub>L13</sub>: the lord of men goes in and out without restraint, [unduly] fond of the feminine delights; the in-laws monopolise power.

日在壁蝕，則陽消陰壞，男女多傷敗其人道，王者失孝敬，下從師友，虧文章，損德教，學禮廢矣；

[20n] If the sun is eclipsed at Wall<sub>L14</sub>, then *yang* is eliminated and *yin* broken; many men and women hurt and defeat the Way of humanity; the king loses his piety and respect; his inferiors follow their teachers and friends; there is a deficiency of cultural examples, a forfeiture of ethical training, and the study of the Rites is abandoned.

日在奎蝕，魯國凶，邦不安，慎在人主、邊境廩庫；

[20o] The sun is eclipsed in Straddler<sub>L15</sub>: misfortune upon the State of Lu; the state is insecure; caution should be directed at the ruler of men, the borders, and the staples and armouries.

日在婁蝕，戒在聚斂之臣；

[20p] The sun is eclipsed in Pasture<sub>L16</sub>: admonition should be directed at servants who amass [wealth] through [heavy] taxation.

日在胃蝕，委輸國有乏食之憂；

[20q] The sun is eclipsed in Stomach<sub>L17</sub>: supplier countries (?) face a worry of a lack of food.

日在昴蝕，大臣厄在獄，王者有疾，戒在主獄有犯誤天子者；

[20r] The sun is eclipsed in Mane<sub>L18</sub>: the great minister rots in prison; the king is ill; admonition should be directed at the head of prisons [and?] those who have mistakenly transgressed the Son of Heaven.

日在畢蝕，將有邊將亡，人主有弋獵之咎；

[20s] The sun is eclipsed in Net<sub>L19</sub>: one is about to lose a border general; the fault lies in the ruler of man's hunting parties.

日在觜蝕，大將謀議，戒在將兵之臣；

[20t] The sun is eclipsed in Beak<sub>L20</sub>: the great general is plotting; admonition should be directed at one's servants amongst the generals and the soldiery.

日在參蝕，戒在將帥；

[20u] The sun is eclipsed at Triad<sub>L21</sub>: admonition should be directed at the generals.

日在井蝕，秦邦不臣，畫謀不成，大旱，人流亡；

[20v] The sun is eclipsed in Well<sub>L22</sub>: the State of Qin refuses its allegiance; planning and plotting do not come to fruition; there is a great drought, and people flee.

日在鬼蝕，其國君不安；

[20w] The sun is eclipsed in Devils<sub>L23</sub>: the lord of state is insecure.

日在柳蝕，廚官門戶橋道之臣有憂；

[20x] The sun is eclipsed in Willow<sub>L24</sub>: there are worries for the kitchen officers and those responsible for the gates and windows, bridges and roads.

日在七星蝕，橋門臣憂黜；

[20y] The sun is eclipsed in the Seven Stars<sub>L25</sub>: those responsible for the bridges and gates worry about demotion.

日在張蝕，山澤汙池之官有憂；

[20z] The sun is eclipsed in Spread<sub>L26</sub>: there are worries for the officers of the mountains and marshes, wastewater and ponds.

日在翼蝕，王者退太常，以法官代之，有德令則蝕不為害，其歲旱，亦為王者失祀，宗廟不親，戒在主車駕之官；

[20aa] The sun is eclipsed in Wings<sub>L27</sub>: the king recalls the Minister of Rites and replaces him with an officer of the law; if there are virtuous ordinances, then the eclipse will do no harm; there is a drought this year, and it is due for its part to the king's negligence of the sacrifices and failure to show up in person to the ancestral temple; admonition should be directed at the officers responsible for carriages and driving.

日在軫蝕，貴臣亡，后不安。（月同。）

[20ab] The sun is eclipsed in Baseboard<sub>L28</sub>: the esteemed servant is lost; the queen is unsecure. (Same for the moon).

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凡日蝕者，皆着赤幘以助陽也。天子素服，避正殿，內外嚴警，太史靈台伺日，有變，便伐鼓，聞鼓音作，侍臣皆著赤幘，帶劍以助陽，順之也。

Whenever there [might be] a solar eclipse, [the emperor] is to don a red turban to aid [the forces of] *yang*. The Son of Heaven wears the simple [white mourning] clothes, avoids the throne room, and remains stern and alert inside [the palace] and out [in the world]. The Observatory of the Astronomer Royal watches the sun, and [if] there is a disturbance, [they?] beat the drums, and once they first hear the sound of the drums, the officers in attendance all don red turbans and wear swords so as to aid [the forces of] *yang* [and] follow it (?).