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## Remarks on the source, selection, reliability, and function of the non-terrestrial events recorded in the *Hou Han shu* ‘Benji’ imperial annals

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This paper is a very, very rough draft. All comments, critiques, and corrections are very welcome.

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The sole entry in Fàn Yè’s 范曄 (398–446 CE) *Hòu Hàn shū* 後漢書 ‘Basic Annals’ 本紀 for 201 CE is this:

【建安】六年春三月丁卯朔，日有食之。  
[Jiàn’ān], year 6, spring, month III, [day] *dīngmǎo*.<sup>04</sup>, new moon: the sun was eclipsed.<sup>1</sup>

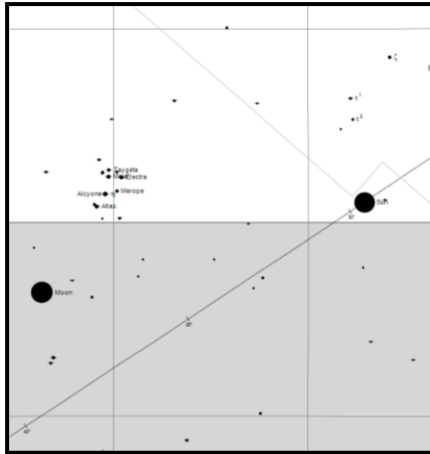
The *Hòu Hàn shū* ‘Basic Annals’ records *nothing else* as having happened in 201 CE, and I want you to think about that. I want you to think about *this example*, specifically, because Fàn Yè is the subject of today’s workshop, because this is odd. How could *this* be the most important (let alone only) thing that happened in that year, and why is it *here*, in the imperial annals? What does it tell us about the emperor (or empire) that ‘the sun was eclipsed’, and nothing more, on such-and-such a date? In *tiānwén* 天文 ‘heavenly patterns’ omenology, the sun is the *xiàng* 象 – the ‘symbol’ – of the emperor, and the eclipse of the one can signal the eclipse of the other.<sup>2</sup> That said, it can just as well mean something else – or nothing at all – which is why omenological records often give us a *zhàn* 占 ‘omen-reading’ and/or an *yìng* 應 ‘corresponding event’, so as to spell out what a given eclipse spells out. Fàn Yè gives us none of that, just a date and an observation. So, does that mean that the single event of 201 CE means *nothing, or...* is what’s meaningful here perhaps the annals’ *silence* about what it means? More importantly, if this *is* some sort of message, what’s it tell us when we turn to modern calculations and find that the eclipse on new moon, month III, never really happened (fig. 1)?

There’s a whole literature that arose around these sorts of questions over the twentieth century – a literature concerned primarily with the *Hàn shū*, but whose implications extend equally to other histories. The literature’s a little hard to follow,

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<sup>1</sup> *Hou Han shu*, 9.382.

<sup>2</sup> On *xiang* in *tianwen* omenology, see Schafer (1977, esp. 54-56). On *tianwen* omenology more broadly, see Nakayama (1966), Jiang Xiaoyuan (1992; 2009), Lu Yang (2007), and Chen Meidong (2007, 669–756). For a sampling of all that a solar eclipse can potentially mean, see *Kaiyuan zhan-jing*, j. 9.



**Fig. 1**  
**Sunrise, new moon day, Jiàn'ān**  
**6-III-*dīngyǒu*.<sup>34</sup> (201 Apr 21)**  
 Location: Luòyáng (112° 27'  
 E / 34° 41' N / altitude 130 m)  
 No eclipse; sun and moon 8° 30'–  
 14° 22' apart (ang. sep.) over the  
 course of the day.  
 (Image and data from *Alcyone*  
*Ephemeris* v.3.2.0.53)

as a major strand of it develops in a back and forth, so allow me to summarise its major points.<sup>3</sup>

Wolfram Eberhard, Hans Bielenstein, and Huang Yi-long have made forceful arguments to the effect that the observational record preserved in the various parts of the Standard Histories has been manipulated. They argue that records have been *omitted* for political reasons, and they argue that records have been *fabricated* for the same. As to the *level* of manipulation, Huang Yi-long (1991) presents the most horrifying numbers: as concerns the phenomenon of ‘Mars guarding Antares’ 熒惑守心, for example, he tells us, seventeen of twenty-three incidents recorded in the Standard Histories never happened, while most of the forty times this *did* happen in history go unrecorded.

As concerns who’s behind this manipulation, scholars began with rather simplistic questions about ‘the officials’ and whether a historian like Bān Gù 班固 (32–92 CE) would dare ‘falsify history’,<sup>4</sup> and we have moved from there to a messier, more nuanced picture of the parties and the interests involved. As to ‘the officials’, Bielenstein (1984) and Kern (2000) remind us that we must distinguish between those who offer one-off memorials from whatever office and those whose job it is to observe, report, and ritually handle celestial phenomena. And as to the dynastic historian, Huang Yi-long reminds us that one of the very real imperatives behind the fabrication of celestial phenomena is the creation of literary and historical resonances between the sort of landmark moments that repeat in human history.

Perhaps most importantly, Martin Kern has shown how we can find *radically different interpretations* of the *exact same phenomenon* in the omenological and ritual monographs of Bān Gù’s work, leading him to the conclusion, (which we can easily extend to other histories), that ‘we are dealing with several identifiable voices from different times – voices that cannot be

<sup>3</sup> For the full debate, see Eberhard (1933), Dubs (1938–1955, *passim*), Bielenstein (1950), Franke (1950), Eberhard (1957), Newton (1977), Bielenstein and Sivin (1977), Bielenstein (1984), Chang Chia-Feng and Huang Yi-long (1990), Huang Yi-long (1990; 1991), Chiang Chih-Han and Huang Yi-long (1999), and Kern (2000). Note that Huang Yi-long’s articles on the subject are collected in Huang Yi-long (2004).

<sup>4</sup> Bielenstein (1950, 135, 137).

integrated into one synchronic layer of political debate’ (Kern 2000, 28).

Whatever one’s interest in astronomy or omenology, *per se*, the implications of this debate should be of obvious concern to the historian. All of us, in one way or another, are speaking today about matters of the selection, reliability, and framing of Fàn Yè’s sources for the *Hòu Hàn shū*, and what the subject of eclipses adds to that conversation is double. On the one hand, it gives us something that we can independently verify with total certainty – a baseline to say *how* and *if* the historical record has been manipulated. On the other hand, it brings us into historiographically frightening territory, where, as Eberhard, Bielenstein, and Huang Yi-long have suggested, we can expect even *basic facts of nature* to be routinely fabricated and covered up, let alone the facts of *political history* that they are made to accompany. This *false* and *judgement-less* eclipse record in 201 CE is something that should stand out about Fàn Yè’s annals, and what I want to do today is to offer you a satisfying explanation as to why it’s there.

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As to Fàn Yè’s sources, we know his *Hòu Hàn shū* to have had a dozen or so predecessors, of which only three survive more or less intact: the *Dōngguān Hàn jì* 東觀漢記, written in five instalments between 72 and 225 CE;<sup>5</sup> the monographs of Sīmǎ Biāo’s 司馬彪 (c.240–c.306 CE) *Xù Hàn shū*, compiled in the third century on the basis of earlier monographs;<sup>6</sup> and Yuán Hóng’s 袁宏 (328–376 CE) *Hòu Hàn jì* 後漢紀, compiled in the fourth century on the basis of his own predecessors’ histories.<sup>7</sup> These seem like the best place to begin looking for the potential source of Fàn Yè’s solar eclipse records, so I combed through them both manually and via database search to compile an exhaustive list for the purposes of collation, a simplified version of which you will find at the end of this PDF.<sup>8</sup>

The *Xù Hàn shū* ‘Wǔxíng zhì’ collects a master list of seventy-two solar eclipses running from the beginning to the end of the Eastern Hàn (25–220 CE), and it is this that I shall be using as a baseline for discussing the other sources. The earlier

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<sup>5</sup> On the *Dongguan Han ji*, see Loewe (1993, 471–72).

<sup>6</sup> On the *Xu Han shu* monographs, see Mansvelt Beck (1990).

<sup>7</sup> Yuan Hong identifies his sources as the (1) [*Dongguan*] *Han ji* 漢 (紀) (記), (2) Xie Cheng’s 謝承 (E. Han) [*Hou Han*] *shu* 後漢書, (3) Sima Biao’s [*Xu Han*] *shu* 續漢書, (4) Hua Qiao’s 華嶠 (d. 293 CE) [*Hou Han*] *shu*, (5) Xie Chen’s 謝忱 [*Hou Han*] *shu*, the (6) *Han Shanyang Gong ji* 漢山陽公記, (7) *Han Ling Xian qiju zhu* 漢靈獻起居注, (8) *Han mingchen zou* 漢名臣奏, and (9) ‘the biographies of the venerable former worthies of the various commanderies’ 諸郡耆舊先賢傳 (*Hou Han ji*, preface, 1a). Other of *Fan Ye*’s predecessors and potential sources include (10) Xue Ying’s 薛瑩 (d. 282 CE) *Hou Han ji* 後漢記, (11) Zhang Fan’s 張璠 (Wei-Jin) *Hou Han ji* 後漢紀, (12) Zhang Ying’s 張瑩 (??) *Hou Han nanji* 後漢南記, (13) Yuan Shansong’s 遠山松 (d. 401 CE) *Hou Han shu*, and (14) Liu Yiqing’s 劉義慶 *Hou Han shu* (cited primarily from *Sui shu*, 33.954). On *Fan Ye*’s *Hou Han shu*, see van Ess (2015).

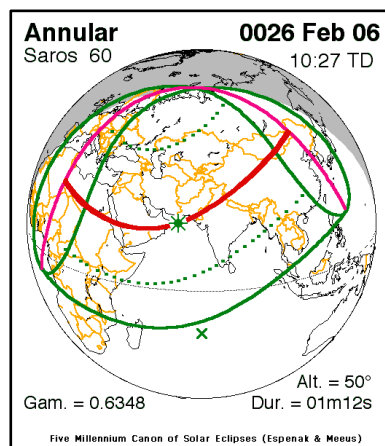
<sup>8</sup> For my database work, I availed myself variously to Scripta Sinica (<http://hanchi.ihp.sinica.edu.tw>), the Chinese Text Project (<http://ctext.org/>), and the Kanseki Repository (<http://www.kanripo.org/>).

*Dōngguān jì*, sadly, gives us but three dated observations, so I shall be setting it largely aside.

I say ‘observations’, but the ‘*Wǔxíng zhì*’ records gives us more than a simple log of what was seen when it was seen. Let us consider the very first entry (#1 in Table 1):

光武帝建武二年正月甲子朔，日有蝕之。在危八度。日蝕說曰：「日者，太陽之精，人君之象。君道有虧，為陰所乘，故蝕。蝕者，陽不克也。」其候雜說，『漢書·五行志』著之必矣。儒說諸侯專權，則其應多在日所宿之國。諸象附從，則多為王者事。人君改修其德，則咎害除。是時世祖初興，天下賊亂未除。虛、危，齊也。賊張步擁兵據齊，上遣伏隆諭步，許降，旋復叛稱王，至五年中乃破。

**[Observation]** Emperor Guāngwǔ, Jiànwǔ, year 2, month 1, *jiǎzǐ*.<sub>01</sub>, new moon (0026 Feb 6): the sun was eclipsed. **[Position]** It was in the eighth *dù* of Rooftop.<sub>L12</sub> ( $\alpha$  Aqr + 8 *dù*). **[Theory]** The theory of solar eclipses states: ‘The sun is the essence of great *yáng* and the symbol of the lord of men. It is eclipsed because the *dao* of lordship is deficient and is mounted by [the forces of] *yīn*. An eclipse is *yáng* failing to overcome.’ The *Han shu* ‘*Wǔxíng zhì*’ is necessary reading as concerns miscellaneous theories about this omen. Scholars explain that when the marquises monopolise power, the corresponding event (*yíng*) is usually in the state in which the sun is lodged, if various [other] signs follow suit, then they are usually matters for the king, and if the lord of men corrects and works on his virtue, then calamity may be eschewed. **[Interpretation]** At this time, Shìzǔ 世祖 (i.e., Emperor Guāngwǔ) had only begun his ascent, and the world had yet to be rid of bandits and rebellion. Tumulus.<sub>L11</sub> and Rooftop.<sub>L12</sub> (Aquarius) [correspond to the territory of] Qí 齊, and the bandit Zhāng Bù 張步 (d. 32 CE) had assembled soldiers to occupy Qí. The emperor dispatched Fú Lóng 伏隆 (d. 27 CE) to instruct [Zhāng] Bù, who promised to surrender, but then turned around once again to rebel and proclaim himself king, only to be broken in [Jiànwǔ] year 5 (29 CE).<sup>9</sup>



**Fig. 2**  
Eclipse on Jiànwǔ 2-1-1, *jiǎzǐ*.<sub>01</sub>  
(0026 Feb 06)  
Max. eclipse 16:37:50, obs. 0.617, at Luòyáng

We can divide this entry into four elements – ‘observation’, ‘position’, ‘theory’, and ‘interpretation’ – and we note that at least two of the latter postdate the observation: the interpretation, (working backwards), calmly references events three years in the future while referring to the emperor by his (posthumous)

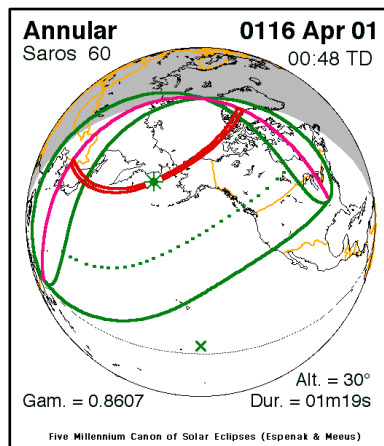
<sup>9</sup> *Hou Han shu*, *zhi* 18, 3357.

temple name, and the theory portion cites the *Hàn shū*, whose author had yet to be born by 26 CE. The statement of the sun's position among the twenty-eight lodges (L01–L28) is equally suspect, one notes, because the lodges cannot be seen in daylight, meaning that this particular element is *calculated* rather than *observed*. The *observation*, however, does correspond with a partial eclipse that should have been visible from Luòyáng on this very date (fig. 2), so we have no reason to suspect the *observation* to which these other elements have been added.

Looking just at the dates, the *Xù Hàn shū*'s master list is, overall, pretty reliable. Sixty-four of its seventy-two dated observations correspond perfectly with historical eclipses visible in China as per Espenak and Meeus' *Five Millennium Canon* (2007). Five of these would not have been visible in Luòyáng, mind you, but the *Xù Hàn shū* tells us just as much. As concerns the eclipse of Yuanchu 6-III-2, *xinhai*.<sup>48</sup> (116 Apr 01), for example, we are told that...

史官不見，遼東以聞。

... the Clerk's Office did not see it. It was reported from Liáodōng.<sup>10</sup>



**Fig. 3**  
Eclipse on Yuanchu 6-III-2, *xinhai*.<sup>48</sup> (116 Apr 01)  
Eclipse visible only in the North-East, hence reported from Liaodong.

As a side note, this tells us that it is normally the 'Clerk's Office' that makes these observations. That makes sense, because it is the Prefect Grand Clerk (*tàishǐ lìng* 太史令) and his *shǐguān* 史官 that run the state observatory.<sup>11</sup>

Sixty-four of the *Xù Hàn shū*'s seventy-two eclipse records check out, what is perhaps more interesting is the eight that don't. Four of these are *also* reported from outside commanderies, so if this is *false reporting*, it would seem that it is *not* the observatory or capital officials that are behind it. More importantly, three of the *Xù Hàn shū*'s records don't match up because of simple textual corruption: you have *tiāngān dìzhì* 天干地支 of the sexagenary date that get confused for another,<sup>12</sup>

<sup>10</sup> *Hou Han shu*, *zhi* 18, 3364.

<sup>11</sup> On the history and function of the Prefect Grand Clerk, 'Clerk's Office', and the state observatory, see Deane (1989) and Chen Xiaozhong and Zhang Shuli (2008).

<sup>12</sup> For the eclipse on 0117 Mar 21 (#37 on Table 1), the *Xu Han shu* gives *yihai*.<sup>12</sup> 乙亥 in place of *yisi*.<sup>42</sup> 乙巳. For the eclipse on 0124 Oct 25 (#41), it gives *gengyin*.<sup>27</sup> 庚寅 in place of *gengshen*.<sup>57</sup> 庚申.

and, in one case, you have the same month and sexagenary date that appear in two consecutive entries, when they only work for the one.<sup>13</sup> There is one last anomaly in 178 (#65 on Table 1) that is difficult to explain, but it is not one that any of our sources choose to *interpret*, so if it's a *fabrication*, its purpose is anything but clear.

That's what the *Xù Hàn shū*'s master list *does* record, but what about what it *misses*? Eberhard and Bielenstein have argued that eclipses were *purposefully omitted* from such lists, and that may well be true, but it's hard to say that something's not missing because it wasn't seen. The NASA Javascript Solar Eclipse Explorer identifies seventy-one eclipses as potentially visible in Luòyáng over the period covered by the *Xù Hàn shū*,<sup>14</sup> nine of which the *Xù Hàn shū* misses. Of those nine, five happen to be among the seven smallest eclipses in the entire list, where no more than three per cent of the solar disk was obscured in the capital (obscuration 0.001–0.032).<sup>15</sup> That's hard to see, and it shouldn't surprise us if no one saw these at the observatory. (Instead, we should expect them to have been reported from the provinces). Indeed, Yuán Hóng's *Hòu Hàn jì* gives us a concrete example of how the Clerk's Office nearly missed a much larger eclipse in 193 CE (obscuration 0.449) simply because they gave up looking some one hour and forty minutes too early:

春正月甲寅朔，日有蝕之。未（晡）〔蝕〕八刻，太史令王立奏曰：「日晷過度，無有變（色）〔也〕。」於是朝臣皆賀。帝密令尚書候焉，未晡一刻而蝕。尚書賈詡奏（曰）：「立司候不明，疑誤上下；太尉周忠，職所典掌。請皆治罪。」詔曰：「天道幽遠，事驗難明。且災異應政而至，雖探道知微，焉能不失？而欲歸咎史官，益重朕之不德。」不從。於是避正殿，寢兵，不聽事五（月）〔日〕。丁卯，大赦天下。

[Chūpíng, year 4], spring, month I, *jiǎyín*.<sup>51</sup>, new moon (0193 Feb 19): the sun was eclipsed. Eight notches prior to *bū* 晡 (16:00 – 115.2 minutes = 14:05), Prefect Grand Clerk Wáng Lì 王立 memorialised, saying 'The sundial has passed [the appointed] measure, there has been no incident', and, at that, the court officials all offered their congratulations. The emperor secretly ordered the Master of Writing to omen-watch for it [nonetheless], and at one notch prior to *bū* (16:00 – 14.4 minutes = 15:45) there was an eclipse. Master of Writing Jiǎ Xǔ 賈詡 (147–223 CE) petitioned: '[Wáng] Lì's management of omen-watching was less than brilliant, and [I] suspect him to have mislead superior and inferior [alike], and Defender-in-Chief Zhōu Zhōng 周忠, his function is to be in charge of this. [I] request that both be punished for their crime.' The [emperor's] edict said: 'The *dao* of heaven is dark and distant, and [celestial] phenomenon and [their terrestrial] verifications are difficult to understand. What is more, disasters and anoma-

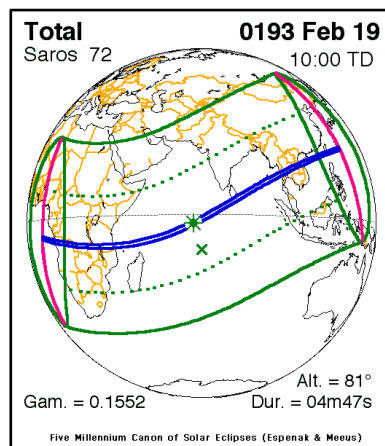
<sup>13</sup> The *Xu Han shu* lists an eclipse on 'month X, *guiwei*.<sup>20</sup>' 十月癸未 in both Jiànwǔ year 6 (201 CE; #77) and, immediately after, in year 13 (208 CE; #79). One suspects that the former refers instead to the one eclipse visible in Luoyang in 201 CE, namely that on Jiànwǔ 6-II-1 *dingmao*.<sup>04</sup> (0201 Mar 22).

<sup>14</sup> <https://eclipse.gsfc.nasa.gov/JSEX/JSEX-index.html>. Note that I am not counting the final eclipse in 220 (#85), before which the *Xu Han shu* 'Wuxing zhi' stops.

<sup>15</sup> Namely, #11, #15, #74, #75, and #78 on Table 1.

lies (yì) arrive in response (yìng) to government affairs, and even if [We] explore the *dào* to apprehend its subtleties, how could [We] not make [the occasional] mistake? [You], on the other hand, desire to cast the blame on the Clerk's Office, [but that only] adds to the weight of Our lack of virtue.' [The emperor] did not follow [Jiǎ Xǔ's petition]. [Instead], at that time, [he] avoided the main hall (of the palace), laid [the empire's] weapons to rest, and did not listen to [court] affairs for five days. Day *dīngmǎo*.<sup>04</sup> (Mar 04): a general amnesty was issued for the subcelestial realm.<sup>16</sup>

Another thing is clouds. The *Xù Hàn shū* lists seven eclipses that should have been easily visible from Luòyáng but that are reported instead from the provinces. Clearly, it's not as if somebody was trying to cover these up and write them out of history; the reason that it's not *the observatory* that's doing the reporting is probably just because it was cloudy over the capital that day. It is hardly a stretch therefore to imagine that the four bigger eclipses (obscuration 0.132–0.981) that escaped the *Xù Hàn shū* might simple have escaped *observation* under similar circumstances, be it clouds or someone deciding that it's not the time to look. Again, this is not to say that these nine eclipses were not purposefully omitted from the *Xù Hàn shū* (or some earlier source), it's just to say that it's hard to say without further evidence.<sup>17</sup>



**Fig. 4**  
Eclipse on Chūpíng 4-I-1, *jiǎyín*.<sup>51</sup>  
(0193 Feb 19)  
Eclipse begins 15:42 LT, reaches a maximum obscuration of 0.449 at 16:41, Luòyáng

That was a lot of numbers, so allow me to summarise. The *Xù Hàn shū* ‘Wǔxíng zhì’ master list of seventy-two dated solar eclipse observations draws from a combination of observatory records and commandery-level reports. The list is *rather complete*, given the circumstances. It's missing nine historical eclipses we might otherwise expect to see there, *but* it's hard to say that this isn't due to weather, visibility, or some failure to observe or pass on a report of the phenomenon from the prov-

<sup>16</sup> *Hou Han ji*, 27.8b–9a.

<sup>17</sup> Further evidence for the omission of three in particular (#15–#17) does come in Fu Hou's *Gujin zhu*, below. Note that Bielenstein (1950; 1984) attempts to offer further evidence of intentional eclipse observation omission in the form of statistical correspondences in the number of ominous phenomena (across categories) reported in any given reign, criticism of which can be found in Eberhard (1957) and Newton (1977), and a defence of which can be found in Bielenstein and Sivin (1977).

inces. On the whole, the list is also *fairly reliable*. There *are* handful of ‘false reports’, but these are mainly due to textual corruption and misreporting from the provinces.

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Now, I’ve gone on at length about the *Xù Hàn shū*, because the eclipses recorded there, in the ‘Wǔxíng zhì’, appear to be the basis of those included in both Yuán Hóng and Fàn Yè’s work. Allow me to explain.

Yuán Hóng’s *Hòu Hàn jì* contains sixty dated solar eclipse observations. Controlling for simple matters of date corruption, fifty-seven of them correspond exactly with the *Xù Hàn shū*; one falls outside the period covered in its ‘Wǔxíng zhì’ (#85), one is a duplicate from the previous year (#80), and one is strange (#68), which I’ll come back to in a moment. What is more, in two places the *Hòu Hàn jì* in fact *cites* the ‘original monograph’ 本志 of the *Xù Hàn shū* as concerns the meaning of a particular eclipse. When he gets to the eclipse of 26 CE (#1), for example, Yuán Hóng cites the earlier entry from the *Xù Hàn shū* to explain how this particular eclipse relates to the emperor’s inability to pacify the territory of Qí:

二年春正月甲子朔，日有蝕之。本志曰：「日者陽精，人君之象也。君道虧，故日為之蝕。諸侯順從，則為王者。諸侯專權，則疑在日。於是在危十度，齊之分野，張步未賓之應也。」

[Emperor Guāngwǔ, Jiànwǔ], year 2, spring, month I, *jiǎzǐ*.<sup>01</sup>, new moon (0026 Feb 6): the sun was eclipsed. The original monograph says: ‘The sun is the essence of great *yáng* and the symbol of the lord of men. The reason that the sun is eclipsed is that the *dào* of lordship is deficient. When the marquises/various [other] signs (sic.?) follow suit, then they are matters for the king, and when the marquises monopolise power, then the doubt (sic.?) is with the sun. At this [time], [the sun] was in the tenth *dù* of Rooftop.<sup>L12</sup> ( $\alpha$  Aqr + 10 *du*), which is the field (of the sky) allotted to [the territory of] Qí, [making] the corresponding event (*ying*) Zhang Bu’s failure to [submit himself as a] guest [of the Hàn throne]’.<sup>18</sup>

Turning to the *Hòu Hàn shū*, one notes that Fàn Yè’s ‘Basic Annals’ cover *every single eclipse* contained in the *Xù Hàn shū* ‘Wǔxíng zhì’, to which Fàn Yè adds only two: a duplicate that accidentally transposes an eclipse from the Yǒngchū 永初 to the Yuánchū 元初 reign,<sup>19</sup> and one beyond the period covered in the ‘Wǔxíng zhì’ (#85). Save for *these* and a couple of corrupt sexagenary dates, Fàn Yè’s and Sīmǎ Biāo’s lists are identical.

Fàn Yè does not out-and-out cite the *Xù Hàn shū* in his ‘Basic Annals’ as does Yuán Hóng, but there is something to be said about his dates. Eight of Yuán Hóng’s dates are corrupt in

<sup>18</sup> *Hou Han ji*, 4.1a. The other place where the *Hou Han ji* cites ‘the original monograph’ as concerns a solar eclipse is for that on Yongchu 5-1-*gengchen*.<sup>17</sup> 永初五年正月庚辰 (0111 Jan 27; #31).

<sup>19</sup> More specifically, the entry for Yongchu 1-III-2 *guiyou*.<sup>10</sup> 永初元年三月二日癸酉 (0107 Apr 11; #30) gets repeated as Yuanchu 1-III-[12] *guiyou*.<sup>10</sup> 永初元年二月癸酉 (0114 May 04; #33).

that one *tiāngān dìzhī* has been swapped for another (#40, #43, #45, #67, #73, #76) or that the *right date* appears in the *wrong month* (#9, #19). Whichever it is, none of these faulty dates find their way into Fàn Yè's list. Where the *Xù Hàn shū* is corrupt, however, the problem makes it into *both* Yuán Hóng and Fàn Yè's Annals. We know the eclipse of 70 CE (obs. 0.842 in Luòyáng) to have occurred on *jiachen*.<sup>41</sup>, the last day of month VII (0070 Sep 23; #19), in the place of which the *Xù Hàn shū* gives us *jiachen*.<sup>41</sup>, **month X**, someone having mistaken 'seven' 七 for 'ten' 十 along the way. At that, the date is doubly wrong: the eclipse did not occur in month X, nor does *jiachen*.<sup>41</sup> occur as the last day of that particular month. This date ends up in the *Hòu Hàn jì*, and it ends up also in the *Hòu Hàn shū*, except that Fàn Yè 'fixes' the (correct) sexagenary date to *renchen*.<sup>29</sup> to fit it to the (faulty) month.<sup>20</sup>

The overlap between the *Xù Hàn shū*, *Hòu Hàn jì*, and *Hòu Hàn shū* lists is all the more striking when we compare them to what we know of other sources for Eastern Hàn eclipse records: Fú Hòu's 伏侯 (*zì Wújì* 無忌; fl. 151 CE) *Gǔjīn zhù* 古今注, as cited in Liú Zhāo's 劉昭 commentary to *Xù Hàn shū*, and the tallies of contemporaries in *lì* mathematical astronomy, as cited in *Xù Hàn shū* 'Lù-lì zhì' 律曆志.

Liú Zhāo's commentary references fourteen solar eclipse records from Fú Hòu's *Gǔjīn zhù*, and he does so mainly where they differ from those listed in the 'Wǔxíng zhì'. It is hard to know what to do with these records, because the majority of the dates appear corrupt, nonsensical, and/or to point to years where no eclipse was possibly foreseeable or visible in East Asia. That said, the *Gǔjīn zhù* does fill in three of the nine eclipses missing from the *Xù Hàn shū*'s master list, two of which, as it happens, issue from commandery-level reports:

四年八月丙寅，時加未，日有蝕之。

[Yǒngpíng], year 4, month VIII, [day] *bǐngyín*.<sup>03</sup>, added hour *wèi*.<sup>B08</sup> (0061 Oct 02, 14:00 LAT; #15): the sun was eclipsed.

五年二月乙未朔，日有蝕之，京師候者不覺，河南尹、郡國三十一上。

Year 5, month II, [day] *yǐwèi*.<sup>32</sup>, new moon (0062 Feb 28; #16): the sun was eclipsed. The capital omen watchers did not detect it. It was reported [instead] by Henan Directorate and thirty-one commanderies and kingdoms

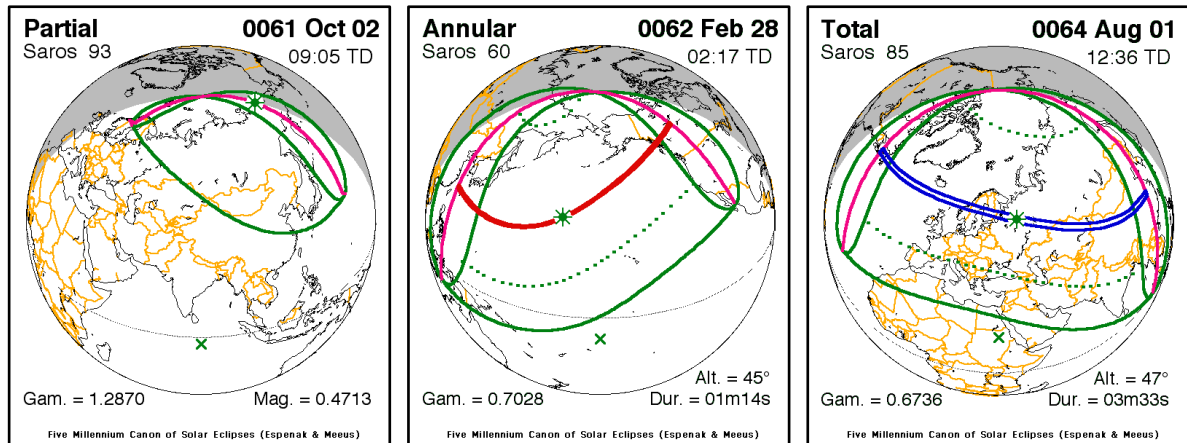
六年六月庚辰晦，日有蝕之，時雒陽候者不見。

Year 6, month XI, [day] *gēngchén*.<sup>17</sup>, new moon eve (0064 Aug 01; #17): the sun was eclipsed. At the time, the omen watchers of Luòyáng did not see it.<sup>21</sup>

We don't have the rest of whatever eclipses Fú Hòu may have collected in his work, but judging from those preserved in Liú Zhāo's commentary, it's clear that this is a different set than that shared by the *Xù Hàn shū*, *Hòu Hàn jì*, and *Hòu Hàn shū*.

<sup>20</sup> Note that #37 and #41 in Table 1 present potential counterexamples to that of #19: there, a problem in the *Xu Han shu* entry's eclipse date is corrected in both the *Hou Han ji* and *Hou Han shu* annals.

<sup>21</sup> *Gujin zhu*, cited in *Hou Han shu*, *zhi* 18, 3360 (comm.).



**Fig. 5**  
Yǒngpíng 4-VIII-bǐngyīn.03 (#15)

**Fig. 6**  
Yǒngpíng 5-II-yǐwèi.32 (#16)

**Fig. 7**  
Yǒngpíng 6-XI-gēngchén.17 (#17)

That brings us to the *Xù Hàn shū* ‘Lǜ-lì zhì’, which is taken from a monograph compiled by Cài Yōng 蔡邕 (133–192 CE) and Liú Hóng 劉洪 (fl. 167–206 CE) in the late second-century *Dōngguān* 東觀.<sup>22</sup> One of the groups that worked the closest with eclipse records in any historical period is that devoted to *lì* mathematical astronomy, both within and without the Clerk’s Office.<sup>23</sup> In the context of *lì*, an eclipse was a *cháng* ‘regular’ phenomenon amenable to mathematical modelling and prediction, and historical eclipse observations were not divine messages about ethical, political, or metaphysical aberrations (*yì*) in this context, they were invaluable and *inviolable* data points from which to extrapolate numbers.<sup>24</sup> As Liú Hóng’s disciple Xú Yuè 徐岳 tells us in 226 CE:

效曆之要，要在日蝕。

<sup>22</sup> On the *Xu Han shu* ‘Lü-li zhi’, see Mansvelt Beck (1990, 56–63). On the greater genre up to the seventh century CE, see Morgan and Goodman (forthcoming).

<sup>23</sup> Note that the practice of *li* mathematical astronomy was by no means illegal or restricted to the Clerk’s Office in this period. See Cullen (1996, *passim*), Chen Meidong (2007, 17–32), and Morgan (2015; 2017, 36–48).

<sup>24</sup> On *tianwen*, *li*, and their distinction in early imperial times, see Morgan (2017, 10–25). That solar eclipses have an ambiguous status of being at once astronomically ‘regular’ and omenologically meaningful is perhaps best reflected in Sima Qian’s 司馬遷 (c.145–c.85 BCE) *Shiji* 史記 ‘Tianguan shu’ 天官書. In one place, he dismisses the old idea that eclipses are somehow unnatural phenomena: ‘The old Gan [De] 甘德 and Shi [Shen] 石申 methods... took the veiling and eclipse of sun and moon as [the subject of] omen-reading (*zhan*). I have observed the clerk’s records (*shiji*) and examined past events, and over a hundred years... the veilings, eclipses, and northern and southern displacements of the sun and moon [always] have their time – this is their great measure (*du*). ... With celestial incidents, one only performs omen reading when they have exceeded their measure’ 故甘、石曆五星法.....日月薄蝕，皆以為占。余觀史記，考行事，百年之中.....日月薄蝕，行南北有時：此其大度也.....凡天變，過度乃占 (*Shiji*, 27.1349–1351). Elsewhere, however, he affirms the message of the *Odes*: that ‘lunar eclipses are *chang*, and solar eclipses are no good’ 月蝕，常也；日蝕，為不臧也 (ibid., 27.1332; cf. ‘Shiyue zhi jiao’ 十月之交: ‘For the moon there to be eclipsed is but in keeping with what is *chang*; for the sun here to be eclipsed, there must be something wrong’ 彼月而食、則維其常。此日而食、于何不臧).

Of the essentials of *li* testing, the [most] essential is the solar eclipse.

As it happens, Cài Yōng and Liú Hóng's 'Lù-lì zhì' cites two tallies of the number of solar eclipses over a given period covered by the 'Wǔxíng zhì' – tallies offered in the context of 'examining' (*kǎo* 考) a predictive model against historical data. Neither of those tallies agrees with the master list in the 'Wǔxíng zhì', nor do they agree with what little we know of the *Gǔjīn zhù*.

The first comes from a memorial by General of the Gentlemen-of-the-Household Jiǎ Kuí 賈逵 (30–101 CE) in 92 CE:

以太初曆考漢元盡太初元年日（朔）〔食〕二十三事，日（朔）〔食〕二十三事，其十七得朔，四得晦，二得二日；新曆七得朔，十四得晦，二得（三）〔二〕日。

Checking the *Tàichū lì* 太初曆 (104 BCE) against [the] twenty-three instances of solar eclipse from the Hàn Epoch to the first year of the *Tàichū* 太初 period (206–104 BCE), [one finds that] seventeen [of the *Tàichū lì*'s calculated results] land on new moon, four land on new moon's eve, and two get day 2. The new [*Sifēn*] *lì* [四分曆 of 85 CE] has seven land on new moon, fourteen land on new moon's eve, and two land on day [2].

以太初曆考太初元年盡更始二年二十四事，十得晦；以新曆十六得朔，七得二日，一得晦。

Checking the *Tàichū lì* against [the] twenty-four instances from *Tàichū* year 1 to *Gēngshǐ* 更始 year 2 (104 BCE–24 CE), ten land on new moon's eve. The new *lì* has sixteen land on new moon, seven land on day 2, and one land on new moon's eve.

以太初曆考建武元年盡永元元年二十三事，五得朔，十八得晦；以新曆十七得朔，三得晦，三得二日。

Checking the *Tàichū lì* against [the] twenty-three instances from *Jiànwǔ* year 1 to *Yǒngyuán* year 1 (25–89 CE), five land on new moon, and eighteen land on new moon's eve. The new *lì* has seventeen land on new moon, three land on new moon's eve, and three land on day 2.<sup>25</sup>

The second tally is cited from Prefect Grand Clerk Yú Gōng 虞恭 and *Li*-worker Zōng Xīn 宗訢 et al.'s memorial of 143 CE:

今以去六十三分之法為曆，驗章和元年以來日變二十事，月食二十八事，與四分曆更失。

Now if we make a *li* system on the basis of the method of subtracting the sixty-three parts, and if we verify it against [the] twenty instances of solar incidents and twenty-eight instances of lunar eclipses from the first year of the *Zhānghé* 章和 period onwards (87–143 CE), then [one finds that] it is further off the mark than the *Sifēn lì*.<sup>26</sup>

As concerns the second tally, Liú Zhāo points out that the number of solar eclipses on the Prefect Grand Clerk's list from 87

<sup>25</sup> Jia Kui 'Li yi' 曆議 (92 CE), cited in *Hou Han shu*, *zhi* 2, 3028; cf. the translation in Cullen (2017, 383).

<sup>26</sup> Cited in *Hou Han shu*, *zhi* 2, 3036–3037; cf. the translation in Cullen (2017, 402).

to 143 CE is different than that included in both the ‘Wǔxíng zhì’ and Fú Hòu’s *Gǔjīn zhù*:

案『五行志』，章和元年訖漢安二年日變二十三事，『古今注』又長一。

Note that the ‘Wǔxíng zhì’ has twenty-three instances of solar incidents (i.e., eclipses) from Zhānghé year 1 to Hàn’ān 漢安 year 2 (87–143 CE), and that the *Gǔjīn zhù* further exceeds [that number] by one.<sup>27</sup>

His number for the ‘Wǔxíng zhì’ checks out, and we can assume that he knows what he’s talking about as concerns the *Gǔjīn zhù*. Likewise, if we submit Jiǎ Kuí’s tally to the same test, we notice that where his list has twenty-three solar eclipses from 25 to 89 CE, the ‘Wǔxíng zhì’ has twenty-four, and the *Gǔjīn zhù*, as cited in Liú Zhāo’s commentary, offers twelve records in variance with – and, *thus*, in excess of – that list over the same period.<sup>28</sup>

So, the ‘Wǔxíng zhì’ master list – from which the *Hòu Hàn jì* and *Hòu Hàn shū* are drawing – constitutes a set of eclipse records distinct from that in the *Gǔjīn zhù* and those used by mathematical astronomers in the Eastern Hàn. *But*, all three of them either come from the Grand Clerk’s mouth or speak to what ‘the Clerk’s Office’ and ‘the capital omen watchers’ ‘did not see’, so one assumes that all of them nonetheless originate from the Clerk’s Office and the capital observatory.

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Citing the Prefect Grand Clerk’s job description in the ‘Bǎiguān zhì’ 百官志, Bielenstein (1984) hypothesises that his office maintained ‘a central list’ of observations made in the capital and reported from the provinces:

掌天時、星曆。凡歲將終，奏新年曆。凡國祭祀、喪、娶之事，掌奏良日及時節禁忌。凡國有瑞應、災異，掌記之。  
[The Prefect Grand Clerk] handles the seasons/time of heaven and sequence of the stars (*xīnglì*). Near the end of each year, [he] memorialises the new year’s *lì* (in this instance, the civil calendar). For all state matters of sacrifices, funerals and weddings, he handles the memorialising of auspicious dates and seasonal prohibitions. For every time that the state experiences

<sup>27</sup> *Hou Han shu*, *zhi* 2, 3037 (comm.).

<sup>28</sup> Namely, (1) ‘Jianwu 1-I-gengwu.<sub>07</sub>, new moon’ 建武元年正月庚午朔 (0025 Feb 17), (2) ‘[Jianwu] 4-V-yimao.<sub>52</sub>, new moon’s eve’ 【建武】四年五月乙卯晦 (0028 ?? ??), (3) ‘[Jianwu] 9-VII-[-??] dingyou.<sub>34</sub>’ 【建武】九年七月丁酉 (0033 ?? ??), (4) ‘[Jianwu] 11-VI-[15] guichou.<sub>50</sub>’ 【建武】十一年六月癸丑 (0035 Aug 07), (5) ‘[Jianwu 11]-VII-[15] xinhai.<sub>48</sub>’ 【建武十一年】十二月辛亥 (0036 Feb 01), (6) ‘[Jianwu] 26-II-[-??] wuzi.<sub>25</sub>’ 【建武】二十六年二月戊子 (0050 ?? ??), (7) ‘[Yongping] 4-VIII-[29] bīngyín.<sub>03</sub>, added hour wèi.<sub>B08</sub>’ 【永平】四年八月丙寅，時加未 (0061 Oct 02, 14:00), (8) ‘[Yongping] 5-II-yǐwèi.<sub>32</sub>, new moon’ 【永平】五年二月乙未朔 (0062 Feb 28; #16), (9) ‘[Yongping] 6-XI-gēngchén.<sub>17</sub>, new moon eve’ 六年六月庚辰晦 (0064 Aug 01; #17), (10) ‘[Yongping 8]-VII-[renyin].<sub>39</sub>, new moon’s eve’ 【永平八年】十二月【壬寅晦】 (0066 Feb 14), (11) ‘[Yongping 13]-VIII-[-jiachen].<sub>41</sub>, new moon’s eve’ 【永平十三年】閏八月【甲辰晦】 (0070 ?? ??), (12) ‘Yuanhe 1-ix-[13] yiwei.<sub>32</sub>’ 元和元年九月乙未 (0084 Oct 30).

an auspicious [omen-]response (*yìng*) or calamitous anomaly, [he] handles the recording of it.<sup>29</sup>

This is sensible, the *Suí shū* 隋書 bibliographic monograph records just such a resource – a *Tàishǐ zhùjì* 太史注記 (The Grand Clerk’s Note Records), in six *juan*, filed under ‘Heavenly patterns’ – and one notes that there are numerous records of astronomers both inside and outside the Clerk’s Office working from similarly-titled materials in lieu of personal observation in Chinese history.<sup>30</sup>

Bielenstein (1984) further hypothesises that it is from this ‘central list’ that Bān Gù and Sīmǎ Biāo are working in their respective monographs. This certainly seems to be the case in the *Nán Qí shū* 南齊書, where Xiāo Zǐxiǎn 蕭子顯 (489–537 CE) opens his ‘Tiānwén zhì’ with a caveat about how he stops where the Clerk’s Office’s public records stop in 494 CE:

建武世太史奏事，明帝不欲使天變外傳，竝祕而不出，自此闕焉。

As to the affairs memorialised by the Grand Clerk in the Jiànwǔ era (494–498 CE), Emperor Míng (r. 494–498 CE) did not want for celestial incidents to get out, [so] all of them were kept secret and never came out, and that is why they are missing here.<sup>31</sup>

The problem is that Bān Gù and Sīmǎ Biāo also name their sources, and they do not name Bielenstein’s ‘central list’. In their respective ‘Wúxíng zhì’, Bān Gù claims to be working from ‘[records] of past affairs’ 行事 as ‘laid out’ 陳 by such famous Western Han (206 BCE–9 CE) exegetes and omenologists as Dǒng Zhòngshū 董仲舒 and Jīng Fáng 京房 (77–37 BCE),<sup>32</sup> while Sīmǎ Biāo describes himself as ‘combining’ 合 the omenological writings of Yīng Shào 應劭 (140–206 CE), Dǒng Bā 董巴 (fl. 220–226 CE), and Qiáo Zhōu 譙周 (199–270 CE), not copying from some anonymous database.<sup>33</sup> This doesn’t mean that their eclipse records do not ultimately issue from some central list maintained by the Clerk’s Office, of course, it just means that what we’re reading has been filtered through several layers of selection, interpretation, corruption, and, *potentially*, manipulation and fabrication.

What would the original ‘central list’ have looked like? We don’t know, but I’m going to hazard a guess: it would probably be empirically reliable and interpretatively conservative as concerns observations made at the capital observatory, and it would probably be ambivalent as concerns those made in the provinces. I say this because the observatory’s data collection was partly in service of mathematical astronomy, and mathe-

<sup>29</sup> *Hou Han shu*, *zhi* 25, 3572; tr. Morgan (2017, 37).

<sup>30</sup> Namely, *shiji* 史記 ‘Clerk’s records’, *shiguan houzhù* 史官候注 ‘shiguan observation notes’, *xingshi houzhù* 行事候注 ‘observation notes of past events’, *zhuji* 注記 ‘note records’, *jishu* 記注 ‘annotated records’, and, simply, *zhu* 注 ‘notes’; see *Hou Han shu*, *zhi* 2, 3027, 3029, 3030, 3034, 3039, 3041, 3042; *Song shu*, 12.290, 13.309, 311, 312, 315; *Jin shu*, 17.498, 18.564; *Sui shu*, 18.460.

<sup>31</sup> *Nan Qi shu*, 12.205.

<sup>32</sup> *Han shu*, 27A.1317.

<sup>33</sup> *Hou Han shu*, *zhi* 13, 3265.

mathematical astronomy, as a rule, needs empirically reliable data. I say also because the omenological claims of ministers, rebels, and religious movements tend to be both empirically and interpretatively wild, and everything I know about the omenological wing of the Clerk's Office suggests to me that it was intended as a reasoned, professional, and loyalist *check* on these sorts of voices. You get a sense of this by comparing the sort of omen readings one finds in various 'Tiānwén zhì' with those found in the biographies of politically ambitious officials.<sup>34</sup> Even better is this fantastical story told from the latter's perspective that Liú Zhāo cites from the lost *Liáng Jì biézhuàn* 梁冀別傳 as concerns the eclipse of 158 CE (#54):

常侍徐璜白言：「臣切見道術家常言，漢死在戌亥。今太歲在丙戌，五月甲戌，日蝕柳宿。朱雀，漢家之貴國，宿分周地，今京師是也。史官上占，去重見輕。」璜召太史陳援詰問，乃以實對。冀怨援不為隱諱，使人陰求其短，發擿上聞。上以亡失候儀不肅，有司奏收殺獄中。

Attendant-in-Ordinary Xú Huáng 徐璜 (fl. 158–167 CE) plainly stated, 'Your servant humbly reports (?) having seen experts in Daoist techniques frequently saying that the Han will die at [some date involving the earthly branches] *xū*.<sub>B11</sub> 戌 [and/or] *hái*.<sub>B12</sub> 亥, and now with Taisui 太歲 in *bīngxū*.<sub>23</sub>, on month V, [day] *jiàxū*.<sub>11</sub>, the sun was eclipsed in the lodge Willow.<sub>L24</sub> (158 Jul 13, #54). The Vermillion Sparrow (of which Willow.<sub>L24</sub> is a part) is the noble country of the Han lineage, and the lodge (Willow.<sub>L24</sub>) is allotted to the land of the Zhōu 周, which is none other than the modern capital. [Still] the Clerk's Office memorialised an omen-reading that dismissed the weightiness [of its implications] to make it seem light.' [Xú] Huáng summoned Grand Clerk Chén Yuán 陳援 to interrogate him, and [Chén Yuán] responded with the truth. [Liáng] Jì 梁冀 (d. 159 CE) resented [Chén] Yuán for not having covered it up, [so] he sent someone to root out some shortcoming for which he might denounce him for the emperor to hear. He reported him for irreverence for having let observational instruments go missing, and [other] officers petitioned that he may end his days in prison.<sup>35</sup>

In the story, the Attendant-in-ordinary is right, and it turns out that the 'lightness' of the Grand Clerk's interpretation is a conspiracy, which is probably how some people felt when his office failed to announce the end of the world every other year. Still, it's good to keep in mind that the other half of Chén Yuán's job was to treat eclipses as the object of data collection, mathematical modelling, and predictive competition. He can probably be forgiven, then, if another in a long, 'regular' (*cháng*) line of eclipses did not convince him that 'the Hàn will die', in Xú Huáng's words, in 158 CE.

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This brings us back to omens and the omenological significance of the other eclipses on our list, and it is here where the

<sup>34</sup> Compare, for example, the memorials studied in De Crespigny (1976) with Ho Peng Yoke's (1966) translation of the *Jin shu* 'Tianwen zhi'.

<sup>35</sup> *Hou Han shu*, *zhi* 18, 3368.

*Hòu Hàn jì* and *Hòu Hàn shū* annals make a significant departure from the *Xu Han shu* ‘Wǔxíng zhì’.

Of the seventy-two solar eclipse observations recorded in the *Xù Hàn shū* monograph, twenty-nine (about forty per cent) of them are left ‘naked’, so to speak, while forty-three (about sixty per cent) are given some sort of interpretation. Like the example of the very first eclipse entry, for 26 CE, the majority of the interpretations are based on the sun’s calculated position, and most betray a foreknowledge of later historical events. There is but a single voice, and that voice is one of *a posteriori* expert analysis delivering authoritative fact.

The *Hòu Hàn jì* cites the *Xù Hàn shū*’s analysis of two eclipses (#1, #14), one of which we’ve already seen, but it only ventures its own authoritative decree of ‘the incident was because of this’ 因是變 as concerns two others (#4, #14), and there Yuán Hóng is taking cues from memorials that he cites from then District Prefect Féng Yǎn 馮衍 (fl. 23–58 CE) and Vice Director of the Masters of Writing Zhōnglí Yì 鐘離意 (fl. 38–70 CE), respectively. Yuán Hóng’s history is unique in the way that it brings divergent voices and personal stories into an imperial annals, and where there is an eclipse, it is often the apocalyptic voice of some contemporary official that Yuán Hóng lets do the talking. This is true of eclipses for which the *Xù Hàn shū* offers a calmer interpretation, it’s true of those for which it offers *no interpretation*, and it’s true of the one eclipse of the bunch that most looks like a fabrication:

【光和三年】九月辛酉，日有蝕之。詔群臣上封事，靡有所諱。郎中審忠上書曰：「臣聞治國之要，得賢則安，失賢則危。故舜有五臣天下治，湯舉伊尹，不仁者遠。故太傅蕃、尚書令尹勲知中官姦亂，考其黨與。華容侯朱瑀知事覺露，禍及其身，乃（與）（興）造逆謀，迫脅陛下，聚會群臣。因共割裂城社以相賞，父子兄弟被蒙尊榮。素所親厚，布在州郡，皮剝小民，甚於狼虎。多言財貨，繕治殿舍，車馬服飾，擬於大家。群公卿士，杜口吞聲，州郡承風順指。故蟲蝗為之生，夷狄為之起，天意憤盈，積十餘年矣。故頻年日有蝕之於上，地震於下，所以譴戒人主，欲令覺悟。今瑀等並在左右，陛下春秋富盛，懼惑佞諂，以作不軌。願陛下留漏刻之聽，以省臣表，埽滅醜類，以答天怒。」章寢。有星孛於狼、（狐）（狐）。

[Guānghé, year 3], month IX, [day] *xīnyǒu*.<sup>58</sup> (0180 Nov 01; #68): the sun was eclipsed. There was an edict calling upon the host of officials to submit envelope-sealed matters in which no topic was forbidden. Gentleman-of-the-Palace Shěn Zhōng 審忠 submitted a letter saying: ‘Your servant has heard that the key to managing the state is that if you secure [the allegiance of] worthy men, then you are safe, and if you lose [the allegiance of] worthy men, then you are in danger. Thus was the subcelestial realm put in order when Shùn 舜 had his five officials,<sup>36</sup> and [thus] did the inhumane keep themselves at a distance when Tāng 湯 [the Accomplished] selected Yī Yīn 伊尹. Thus [likewise] did Grand Mentor Chén Fán 陳蕃 (d. 168 CE) and Prefect of the Masters of Writing Yīn Xūn 尹勲 investigate the factional allegiances of the palace eunuchs, having knowledge of their treachery. [The eunuch] Zhū Yǔ 朱瑀, Marquis of Huáróng 華容 knew that the affair had been

<sup>36</sup> Namely, Yu 禹, Ji 稷, Qi 契, Gaoyao 皋陶, and Boyi 伯益.

exposed and that the consequences would touch him personally, so he rose up and fomented a rebellious plot to coerce Your Majesty [in his favour] and rally the officials [behind him]. [Everyone] followed along, and together they carved up the cities and altars to offer one another as reward, and father and son, brother and brother, were hoodwinked by [promises] of honour and glory. All those kin and kindred, they spread out over the provinces and commanderies, peeling the skin from the common folk, worse than any wolf or tiger. They spoke mostly of money and goods, and they built themselves palaces and country homes, their carts, horses, clothing, and jewellery rivalling those of the greatest of families. All the Excellencies, Ministers, and officers shut their mouths and swallowed their voices, and the provinces and commanderies caught wind and turned where it was pointed. It is because of this the locusts are upon us, and it is because of this that the barbarians are arisen: heaven's will is brimming with rage, and it has been building for ten odd years. Thus, in consecutive years, is the sun eclipsed up above and does the earth quake down below – they are [signs] excoriating the ruler of man and intended to wake him from his slumber. Now, with [Zhū] Yǔ and co. left and right at Your sides, Your Majesty's springs and autumns are wealthy and prosperous, [You are] scared, confused, flattered, and truckled, and it is for that that [You] are doing things off-track. It is [my] hope that Your Majesty leaves [a moment in His] clepsydra[-timed] audience [schedule] (?) to consider Your servant's petition, and that [He] sweeps this gang of scoundrels into oblivion to answer for the wrath of heaven.' The article was tabled. **There was a comet in Wolf (CMA) and Bow (Pup).**<sup>37</sup>

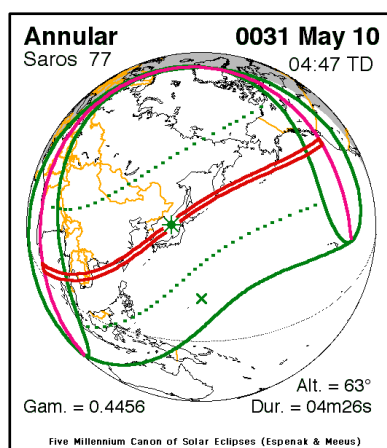
There are a couple of problems here with the date. Both the *Xù Hàn shū* 'Tiānwén zhì' and *Hòu Hàn shū* 'Basic Annals' place the 'comet in Wolf and Bow' in the winter (i.e., month X–XII) of 180 CE.<sup>38</sup> Also, the *Hòu Hàn shū* includes a much fuller (and more vituperative) version of this memorial in a biography, and it dates the memorial to one year prior, in 179 CE, where it would make sense as a reaction to the eclipse in that year (#67) and those reported 'in consecutive years' prior in 177 (#64) and 178 (#65, #66).<sup>39</sup> There was no eclipse anywhere except Antarctica near Guānghé 3-IX-*xīnyǒu*.<sup>58</sup>, however, and *xīnyǒu*.<sup>58</sup> falls *five days prior to new moon*, at which time any astronomer would have known a solar eclipse was impossible. I can't currently explain this record, and Yuán Hóng's use of it to anchor Shěn Zhōng's memorial is the closest thing that I've encountered in these sources to the sort of 'fabrication' discussed by previous scholars.

This brings us back to Fàn Yè's 'Basic Annals', and what he does *omenologically* with the eclipse records that he's inherited is perhaps the most interesting: he does nothing. He does not speak in the first person about what they mean, he does not identify their cause, effect, or 'correspondence', and he certainly doesn't cite outside literature or contemporary memorials. These are imperial annals, and all he adds to a dated eclipse re-

<sup>37</sup> *Hou Han ji*, 24.9b–10a.

<sup>38</sup> *Hou Han shu*, 8.344, and *zhi* 12, 3259.

<sup>39</sup> *Ibid.*, 78.2526–2527.



**Fig. 8**  
Eclipse on Jiànwǔ 7-III-*guǐhài*.<sub>60</sub>  
(0031 May 10; #4)

cord is the imperial response and the next thing after on the docket. The response is generally pretty formulaic – a retreat from court, a general amnesty, a call to criticism – and the closest we get to an *omen-reading* is an equally formulaic edict in which the emperor takes personal responsibility for what has happened in heaven. For example,

【建武七年三月】癸亥晦，日有食之。避正殿，寢兵，不聽事五日。詔曰：「吾德薄致災，謫見日月，戰慄恐懼，夫何言哉！今方念愆，庶消厥咎。其令有司各修職任，奉遵法度，惠茲元元。百僚各上封事，無有所諱。其上書者，不得言聖。」

[Jiànwǔ, year 7, month III, day] *guǐhài*.<sub>60</sub>, new moon's eve (0031 May 10; #4): the sun was eclipsed. [The emperor] avoided the main hall (of the palace), laid [the empire's] weapons to rest, and did not listen to [court] affairs for five days. There was an edict that said: 'My virtue is so weak as to have caused a disaster, my onus being manifest in the [eclipse of the] sun and moon, [We are] trembling with fear, what more is there to say? [We] have just now started thinking about [Our] transgressions, and perhaps that will dissipate this catastrophe. It is hereby ordered that all office holders are to attend to their individual functions, to respect and uphold legal norms and to show kindness to the common people; that the hundred officials each submit envelope-sealed matters in which no topic is forbidden; and that those submitting letters are not to speak of [Us] as "the Sage".'

夏四月壬午，詔曰：「比陰陽錯謬，日月薄食。百姓有過，在予一人，大赦天下。公、卿、司隸、州牧舉賢良、方正各一人，遣詣公車，朕將覽試焉。」

Summer, month IV, [day] *rénwǔ*.<sub>19</sub> (May 29), there was an[other] edict that said: 'Lately, *yīn* and *yáng* have been egregiously out of order, and the sun and moon have been weakened and eclipsed. If the hundred surnames have somehow transgressed, [the fault] lies with [I], the solitary one, and [I hereby issue] a general amnesty throughout the subcelestial realm. The excellencies, ministers, metropolitan commandant, and regional governors are each to recommend a single man good and upright [of character] and order them to render themselves to Gōngjū [Gate], where We shall inspect and test them [for government service].'

五月戊戌，前將軍李通為大司空。

Month v, [day] wùxū.<sup>35</sup> (Jun 14): former general Lǐ Tōng 李通 was made the grand minister of works. ...<sup>40</sup>

In other words, where Fàn Yè says *anything* about a solar eclipse he foregrounds the imperial voice over any other, and he treats it less like an omen than an occasion for ritual action. In that way, Fàn Yè's 'Basic Annals' read like any other in the twenty-four Standard Histories, so you might be wondering why this is important. It is important, I think, because of what it means for the somewhat alarmist discourse that has formed around these records over the twentieth century.

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Namely, the eclipses recorded in Fàn Yè's 'Basic Annals' are mostly complete and reliable except for textual corruption and misreporting from the provinces. This is thanks in part to their having originated in some earlier form from the state astronomical office, which had an interest in providing complete and reliable records, both for the sake of mathematical astronomy and for that of omenology itself. If we are right about Fàn Yè having taken his records from the *Xù Hàn shū* 'Wǔxíng zhì', this is thanks also to Sīmǎ Biāo and *his* sources, through which the official records were filtered. Yes, these authors were free to omit and fabricate eclipses in their writing, and, yes, evidence from Fú Hòu's *Gùjīn zhù* suggests that three eclipses may well have gone missing from the observational record along the way, but what has come down to us is otherwise still a fairly complete, reliable, and coherent list. What is more, Sīmǎ Biāo and his sources may have layered the observational record with *a posteriori* omenological significance speaking to 'political manipulation', but one notes that a historian like Fàn Yè is equally guilty of 'manipulation' in that he purges the records of the significance attributed them by his predecessors. If Fàn Yè's purpose in doing this is 'praise and blame' 褒貶, then his words are truly every bit as subtle as Confucius' in the *Chūnqiū* 春秋.<sup>41</sup>

Earlier, I offered the case of the false and judgement-less solar eclipse that constitutes Fàn Yè's sole entry for or 201 CE as an enigma emblematic of the sort of questions raised by previous scholarship on this topic, and here I offer an explanation that I believe emblematic of the factors at work: this eclipse is here because it was on the list from which Fàn Yè was copying; it bears no omenological judgement because Fàn Yè has eliminated such judgements from his sources; and it fails to correspond to a veritable historical eclipse because, somewhere along the way, 'month III' 三月 was accidentally copied in the place of 'month II' 二月.<sup>42</sup> This might not be as exciting as the

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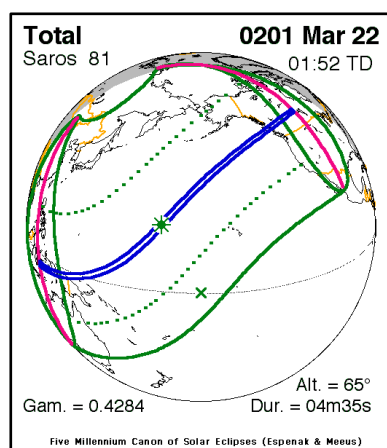
<sup>40</sup> *Hou Han shu*, 1B.52.

<sup>41</sup> On Confucius' supposed use of 'subtle words' and 'praise and blame' in editing the *Chunqiu* annals, see Van Auken (2007).

<sup>42</sup> Note that I am simply using the eclipse of 201 CE as what I believe to be a noteworthy and paradigmatic example of the factors behind phenomena discussed in this talk, that I am not the first to notice that (or explain how) its , and not the first to see this and that the editors of the *Zhonghua shuju* edition of the *Hou Han shu* add a note to this point in *Hou Han shu*,

idea that the Grand Clerk is somehow ‘hiding’ 隱 ‘the truth’ 實 (*Liáng Jì biézhuàn*, above), or that the historian has seeded his annals with secret messages, but it should at least give us some peace of mind about a historian like Fàn Yè’s process.

Thank you.



**Fig. 9**  
Eclipse on Jiàn'ān 6-(III)[II]-  
*dīngmǎo*.<sub>04</sub> (0201 Mar 22)  
Max. eclipse 06:13, obs. 0.055, at  
Luòyáng

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No.	Chinese Date	Julian Date	Hist. eclipse at Luoyang		Record of				Source	Interpretation of			
			Cat. No.	Obscuration	DGHJ	XHS	HHJ	HHS		DGHJ	WXZ	HHJ	HHS
1	建武二年正月甲子 朔	0026 Feb 06	<a href="#">04838</a>	0.617	–	x	x	x	–	–	x	x	–
2	建武三年五月乙卯 晦	0027 Jul 22	<a href="#">04841</a>	0.417	–	x	x	x	–	–	x	–	–
3	建武六年九月丙寅 晦	0030 Nov 14	<a href="#">04849</a>	0.565(r)	–	x	–	x	郡以聞	–	–	–	–
4	建武七年三月癸亥 晦	0031 May 10	<a href="#">04850</a>	0.637	–	x	x	x	–	–	x	–	–
5	建武九年七月己卯 晦	0033 Sep 12	<a href="#">04857</a>	0.75(s)									
6	建武十六年三月辛丑 晦	0040 Apr 30	<a href="#">04874</a>	0.08(r)	–	x	x	x	–	–	x	–	–
7	建武十七年二月乙未 晦	0041 Apr 19	<a href="#">04876</a>	0.735	x	x	x	[x]	–	x	x	–	–
8	建武廿二年五月乙未 晦	0046 Jul 22	<a href="#">04889</a>	0.082	–	x	x	x	–	–	x	–	–
9	建武廿五年三月戊申 晦	0049 May 20	<a href="#">04897</a>	0.666	–	x	[x]	x	–	–	x	–	–
10	建武廿九年二月丁巳 朔	0053 Mar 09	<a href="#">04905</a>	0.639	–	x	x	x	–	–	x	–	–
11	建武卅年五月戊寅 晦	0054 Jul 23	<a href="#">04909</a>	0.001									
12	建武卅一年五月癸酉 晦	0055 Jul 13	<a href="#">04912</a>	0.161	–	x	x	x	–	–	x	–	–
13	中元元年十一月甲子 晦	0056 Dec 25	<a href="#">04915</a>	0.552	–	x	–	x	–	–	x	–	–
14	永平三年八月壬申 晦	0060 Oct 13	<a href="#">04924</a>	0.605	–	x	x	x	–	–	x	x	–
15	永平四年八月丙寅 晦	0061 Oct 02	<a href="#">04927</a>	0.002									
16	永平五年二月乙未 朔	0062 Feb 28	<a href="#">04928</a>	0.132(r)									
17	永平七年六月庚辰 晦	0064 Aug 01	<a href="#">04933</a>	0.981									
18	永平八年十月壬寅 晦	0065 Dec 16	<a href="#">04938</a>	0.931	–	x	x	x	–	–	x	–	–
19	永平十三年十月甲辰 晦	0070 Sep 23	<a href="#">04948</a>	0.842	–	[x]	[x]	[x]	–	–	–	–	–
20	永平十六年五月戊午 晦	0073 Jul 23	<a href="#">04956</a>	0.789	–	x	–	x	–	–	x	–	–

**Table 1** Solar eclipses as reported and potentially visible in the Eastern Han (25–220 CE), covering the *Dongguan Han ji* (DGHJ), *Xu Han shu* ‘Wuxing zhi’ (XHS), *Hou Han ji* (HHJ) and *Hou Han shu* (HHS). The Cat[alogue] No. and Obscuration are from the NASA JavaScript Solar Eclipse Explorer (<https://eclipse.gsfc.nasa.gov/eclipse.html>), the latter being calculated for Luòyáng (127° 27' E / 34° 41' N / altitude 130 m), where ‘(r)’ and ‘(s)’ indicate that the event is in progress at sunrise and sunset, respectively. Note that ‘[x]’ in the ‘Record of’ columns indicates that there is a record of what is obviously said eclipse but that the date suffers from some simple textual corruption.

No.	Chinese Date	Julian Date	Hist. eclipse at Luoyang		Record of				Source	Interpretation of			
			Cat. No.	Obscuration	DGHJ	XHS	HHJ	HHS		DGHJ	WXZ	HHJ	HHS
21	永平十八年十一月甲辰 晦	0075 Dec 26	<a href="#">04962</a>	0.107	—	x	x	x	—	—	x	—	—
22	建初五年二月庚辰 朔	0080 Mar 10	<a href="#">04972</a>	0.161	—	x	x	x	—	—	x	—	—
23	建初六年六月辛未 晦	0081 Aug 23	<a href="#">04975</a>	0.17	—	x	x	x	—	—	x	—	—
24	章和元年八月乙未 晦	0087 Oct 15	<a href="#">04990</a>	0.789	—	x	—	x	佗官以聞	—	—	—	—
25	永元二年二月壬午 二日	0090 Mar 20	<a href="#">04996</a>	0.037(r)	x	x	—	x	涿郡以聞	—	—	—	—
26	永元四年六月戊戌 朔	0092 Jul 23	<a href="#">05002</a>	0.572	—	x	—	x	—	—	x	—	—
27	永元七年四月辛亥 朔	0095 May 22	<a href="#">05010</a>	0.916	—	x	x	x	—	—	x	—	—
28	永元十二年七月辛亥 朔	0100 Aug 23	<a href="#">05022</a>	0.352	—	x	x	x	—	—	x	—	—
29	永元十五年四月甲子 晦	0103 Jun 22	<a href="#">05030</a>	0.728	—	x	x	x	—	—	x	—	—
30	永初元年三月癸酉 二日	0107 Apr 11	<a href="#">05038</a>	0.319	—	x	x	x	—	—	x	—	—
31	永初五年正月庚辰 朔	0111 Jan 27	<a href="#">05048</a>	0.716	—	x	x	x	—	—	x	x	—
32	永初七年四月丙申 晦	0113 Jun 01	<a href="#">05055</a>	0.905	—	x	x	x	—	—	—	—	—
33	元初元年三月癸酉 十二	0114 May 04	n/a	n/a	—	—	—	x	—	—	—	—	—
34	元初元年十月戊子 朔	0114 Nov 15	<a href="#">05058</a>	0.44	—	x	x	x	—	—	x	—	—
35	元初二年九月壬午 晦	0115 Nov 04	<a href="#">05060</a>	0.139	—	x	x	x	—	—	x	—	—
36	元初三年三月辛亥 二日	0116 Apr 01	<a href="#">05061</a>	only NE	—	x	x	x	遼東以聞	—	—	—	—
37	元初四年春二月乙巳 二日	0117 Mar 21	<a href="#">05063</a>	only SE	—	[x]	x	x	七郡以聞	—	x	—	—
38	元初五年八月丙申 朔	0118 Sep 03	<a href="#">05066</a>	0.457	—	x	—	x	張掖以聞	—	—	—	—
39	元初六年十二月戊午 朔	0120 Jan 18	<a href="#">05071</a>	0.989	—	x	x	x	—	—	x	—	—
40	永寧元年七月乙酉 朔	0120 Jul 13	<a href="#">05072</a>	not China	—	x	[x]	x	酒泉以聞	—	—	—	—
41	延光三年九月庚申 晦	0124 Oct 25	<a href="#">05082</a>	0.884	—	[x]	x	x	—	—	x	—	—
42	延光四年三月戊午 朔	0125 Apr 21	<a href="#">05083</a>	0.203	—	x	x	x	隴西、酒泉、朔方	—	—	—	—

Table 1 (continued)

No.	Chinese Date	Julian Date	Hist. eclipse at Luoyang		Record of				Source	Interpretation of			
			Cat. No.	Obscuration	DGHJ	XHS	HHJ	HHS		DGHJ	WXZ	HHJ	HHS
43	永建二年七月甲戌 朔	0127 Aug 25	<a href="#">05089</a>	0.956	–	x	[x]	x	–	–	–	–	
44	陽嘉四年閏月丁亥 朔	0135 Apr 01	<a href="#">05107</a>	0.394(s)	x	x	x	x	零陵以聞	x	–	–	–
45	永和三年十二月戊戌 朔	0139 Jan 18	<a href="#">05117</a>	only SE	–	x	[x]	x	會稽以聞	–	x	–	–
46	永和五年五月己丑 晦	0140 Jul 02	<a href="#">05120</a>	0.437	–	x	x	x	–	–	x	–	–
47	永和六年九月辛亥 晦	0141 Nov 16	<a href="#">05122</a>	0.578(s)	–	x	x	x	–	–	x	–	–
48	本初元年七月甲寅 朔	0146 Aug 25	<a href="#">05135</a>	0.852									
49	建和元年正月辛亥 朔	0147 Feb 18	<a href="#">05136</a>	only E	–	x	–	x	郡國以聞	–	x	–	–
50	建和三年四月丁卯 晦	0149 Jun 23	<a href="#">05143</a>	0.503	–	x	–	x	–	–	x	–	–
51	元嘉二年七月庚辰 二日	0152 Aug 19	n/a	n/a	–	x	–	x	廣陵以聞	–	x	–	–
52	永興二年九月丁卯 朔	0154 Sep 25	<a href="#">05154</a>	0.654	–	x	x	x	–	–	x	–	–
53	永壽三年閏月庚辰 晦	0157 Jul 24	<a href="#">05161</a>	only SE	–	x	–	x	郡國以聞	–	x	–	–
54	延熹元年五月甲戌 晦	0158 Jul 13	<a href="#">05163</a>	0.711	–	x	x	x	–	–	x	–	–
55	延熹八年正月丙申 晦	0165 Feb 28	<a href="#">05178</a>	0.29	–	x	x	x	–	–	x	–	–
56	延熹九年正月辛卯 朔	0166 Feb 18	<a href="#">05181</a>	0.116(r)	–	x	–	[x]	–	–	x	–	–
57	永康元年五月壬子 晦	0167 Jul 04	<a href="#">05185</a>	0.49	–	x	x	x	–	–	x	–	–
58	建寧元年五月丁未 朔	0168 Jun 23	<a href="#">05187</a>	0	–	x	x	x	–	–	–	–	–
59	建寧元年十月甲辰 晦	0168 Dec 17	<a href="#">05188</a>	0.613	–	x	x	x	–	–	–	–	–
60	建寧二年十月戊戌 晦	0169 Dec 06	<a href="#">05190</a>	0.021	–	x	–	[x]	右扶風以聞	–	–	–	–
61	建寧三年三月丙寅 晦	0170 May 03	<a href="#">05191</a>	not China	–	x	–	x	梁相以聞	–	–	–	–
62	建寧四年三月辛酉 朔	0171 Apr 23	<a href="#">05193</a>	0.097(r)	–	x	x	x	–	–	–	–	–
63	熹平二年十二月癸酉 晦	0174 Feb 19	<a href="#">05199</a>	0.227	–	x	x	x	–	–	x	–	–
64	熹平六年十月癸丑 朔	0177 Nov 9	n/a	n/a	–	x	x	x	趙相以聞	–	–	–	–

Table 1 (continued)

No.	Chinese Date	Julian Date	Hist. eclipse at Luoyang		Record of				Source	Interpretation of			
			Cat. No.	Obscuration	DGHJ	XHS	HHJ	HHS		DGHJ	WXZ	HHJ	HHS
65	光和元年二月辛亥 朔	0178 Mar 7	n/a	n/a	–	x	x	x	–	–	–	–	–
66	光和元年十月丙子 晦	0178 Nov 27	<a href="#">05210</a>	0.258	–	x	x	x	–	–	x	–	–
67	光和二年四月甲戌 朔	0179 May 24	<a href="#">05211</a>	0.869	–	x	[x]	x	–	–	–	–	–
68	光和三年九月辛酉 廿六	0180 Nov 1	n/a	n/a	–	–	x	–	–	–	–	–	–
69	光和四年九月庚寅 朔	0181 Sep 26	<a href="#">05216</a>	0.855	–	x	x	x	–	–	–	–	–
70	中平三年五月壬辰 晦	0186 Jul 04	<a href="#">05227</a>	0.175	–	x	x	x	–	–	–	–	–
71	中平六年四月丙午 朔	0189 May 03	<a href="#">05234</a>	0.614	–	x	x	x	–	–	–	–	–
72	初平四年正月甲寅 朔	0193 Feb 19	<a href="#">05242</a>	0.449	–	x	x	x	–	–	–	–	–
73	興平元年六月乙巳 晦	0194 Aug 04	<a href="#">05245</a>	0.869(r)	–	x	[x]	x	–	–	–	–	–
74	興平二年十月丁卯 晦	0195 Dec 19	<a href="#">05249</a>	0.032(s)									
75	建安五年二月壬申 晦	0200 Apr 01	<a href="#">05258</a>	0.003(s)									
76	建安五年九月庚午 朔	0200 Sep 26	<a href="#">05259</a>	0.437(r)	–	x	[x]	x	–	–	–	–	–
77	建安六年二月丁卯 朔	0201 Mar 22	<a href="#">05260</a>	0.055	–	[x]	–	[x]	–	–	–	–	–
78	建安六年七月甲子 晦	0201 Sep 15	<a href="#">05261</a>	0.018									
79	建安十三年十月癸未 朔	0208 Oct 27	<a href="#">05278</a>	0.684	–	x	x	x	–	–	–	–	–
80	建安十四年十月晦 晦	0209 Dec 14	n/a	n/a	–	–	x	–	–	–	–	–	–
81	建安十五年二月乙巳 朔	0210 Mar 13	<a href="#">05281</a>	0.264(r)	–	x	x	x	–	–	–	–	–
82	建安十七年六月庚寅 晦	0212 Aug 14	<a href="#">05286</a>	0.792	–	x	x	x	–	–	–	–	–
83	建安廿一年五月己亥 朔	0216 Jun 03	<a href="#">05295</a>	0.725(r)	–	x	x	x	–	–	–	–	–
84	建安廿四年二月壬子 晦	0219 Apr 02	<a href="#">05301</a>	0.412	–	x	x	x	–	–	–	–	–
85	建安廿五年二月丁未 朔	0220 Mar 22	<a href="#">05304</a>	0.561	–	–	x	x	–	–	–	–	–

Table 1 (continued)