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THEMATIC DOSSIER

EMPIRE UNDER THE NIGHT SKY: RECORDING ASTRAL-COSMOGRAPHY IN QING DYNASTY
CHINA, 17TH – 19TH CENTURIES

From *Fenye* to *Fengshui*: Applying Correlative Cosmography in Late Imperial China

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Abstract: This paper documents the resilience of *fenye* (分野, lit., “field allocation”) and its applications through the nineteenth century in China. Despite literati (and eventually imperial) criticisms that the *fenye* system of correlative cosmography was outdated and unworthy of belief, *fenye* retained a sizeable audience through the close of the Qing period. At the top, the Qing imperial state continued to reference *fenye* correlations in its official communications late into the dynasty. In local society, literati looked to newly issued dynastic sources of astrological knowledge to update local gazetteers; in the nineteenth century, these trends were pronounced along frontier areas lacking longstanding gazetteer records. Finally, people engaged in the practice of *fengshui* looked to *fenye* knowledge to update the values and layout of the compass, the historical origins of which related to geomantic practices. In the Qing period, the compass was both theoretically and physically altered under the influence of Jesuit-introduced “Western Learning” (*Xixue* 西學). The paper contends that the status of *fenye* in pre-twentieth century China was seldom an all-or-nothing proposition between a celebrated component of imperial orthodoxy and an outdated relic in inexorable decline: people critiqued *fenye*, used *fenye*, and updated *fenye*.

Keywords: Astronomy, Astrology, China, fengshui, Compass

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Introduction

This paper aims to show that a form of correlative cosmography associated with ancient China known as *fenye* did not fall into inevitable decline with the dissemination of Western Learning and foreign astronomical knowledge in China over the seventeenth, eighteenth, and nineteenth centuries.¹ Instead, Western astronomical knowledge was incorporated into *fenye* cosmology, which remained socially and politically relevant well into the nineteenth century. *Fenye*'s resilience through that time is witnessed in at least three venues: dynastic histories and memorials to the throne, local gazetteers, and *fengshui* (that is, geomantic) manuals. The first highlights the interests of the imperial court, the second denotes the attention of local administrators and society, and the final represents the broader applications of *fenye* knowledge to related fields, like *fengshui*, or the longstanding practice in China of timing, positioning, and orienting construction projects and analyzing land for human benefit in accordance with cosmological principles.²

With some important exceptions, academic literature on Chinese historical astronomy and *fenye*—a cosmological system dating from Chinese antiquity that associated significant regional events with the twelve Jupiter stations (*ci* 次) and twenty-eight constellations (“lodges” or “mansions;” *xiu* 宿)—has tended to fall into two categories.³ A formidable body of work by scholars such as David Pankenier, Christopher Cullen, and David Patrick Morgan traces the rise of astronomy in Zhou Dynasty (1046-256 BCE) China and its subsequent development into the early imperial era.⁴ A second collection of works by scholars such as Catherine Jami and

¹ The term “correlative cosmology” has a long historiography. This paper is heavily indebted to the works of Joseph Needham, Richard Smith, and John Henderson, among others. Joseph Needham, *Science and Civilisation in China. Volume II: History of Scientific Thought* (Cambridge: Cambridge University Press, 1956); John B. Henderson, *The Development and Decline of Chinese Cosmology* (New York: Columbia University Press, 1984); Richard J. Smith, *Mapping China and Managing the World: Culture, Cartography, and Cosmology in Late Imperial Times* (New York: Routledge, 2013). This paper's title slightly adjusts the phrase to “correlative cosmography” since it explicitly centers the correlative linkages between geography and astronomy.

² *Fengshui* (lit. “wind and water”) is sometimes rendered into English as “Chinese Geomancy.” While geomancy is an imprecise translation for *fengshui*, I follow Ole Bruun in retaining the term. Ole Bruun, *Fengshui in China: Geomantic Divination between State Orthodoxy and Popular Religion* (Honolulu: University of Hawai'i Press, 2003); Michael Paton, *Five Classics of Fengshui: Chinese Spiritual Geography in Historical and Environmental Perspective* (Leiden: Brill, 2013). See also Tristan G. Brown, *Laws of the Land: Fengshui and the State in Qing Dynasty China* (Princeton and Oxford: Princeton University Press, 2023) and Tristan G. Brown, “The Veins of the Earth: Property, Environment, and Cosmology in Nanbu County, 1865-1942” (Ph.D. diss., Columbia University, 2017).

³ Qiu Jingjia's work is one such exception, as he treats the entire imperial period. Jingjia Qiu 邱靖嘉, *Tiandi zhi jian: Tianwen fenye de lishixue yanjiu* 天地之間：天文分野的歷史學研究 [Between Heaven and Earth: A Historical Study of *Fenye* Astrology] (Beijing: Zhonghua Shuju, 2020).

⁴ See for instance the following titles: David W. Pankenier, *Astrology and Cosmology in Early China: Conforming Earth to Heaven* (Cambridge: Cambridge University Press, 2013). Christopher Cullen, *Heavenly Numbers: Astronomy and Authority in Early Imperial China* (Oxford and New York:

Ping-Ying Chang focuses on the seventeenth and eighteenth centuries, when Jesuit missionaries made significant contributions to Chinese astronomical knowledge.⁵ At that time, some literati of the Ming and Qing eras—building on a longer tradition criticizing the cosmological assumptions underpinning *fenye*—attacked the system as outdated, inconsistent, and illogical.⁶ Because astrology's influence in elite European centers of learning was also waning in that century, a historical narrative postulating a linear decline of *fenye* held understandable appeal for bringing China into a trans-Eurasian early modern history of scientific exchange.⁷

Before addressing why and how *fenye* retained appeal after the 1600s, we may begin with a basic observation: literati would not have criticized the correlative cosmographic system if it was unimportant. For people to have felt compelled to criticize or even condemn *fenye*, there had to be (many) other people who were making use of the knowledge. As the other papers of this issue make clear, by late imperial publication metrics *fenye* was hardly in decline, as the period saw a greater number of regional and local texts such as gazetteers applying and adapting the correlative knowledge than ever before. In this paper, I build on those observations by demonstrating the ways people used and applied *fenye*-related knowledge to several fields, including *fengshui* (風水). Those practical applications are key to understanding why *fenye* mattered enough to criticize in the first place.

Following in the footsteps of Buddhist and later Islamic influences, the introduction of “Western Learning” via the Jesuits in the seventeenth century brought substantial changes to Chinese astronomical knowledge.⁸ Part of those changes involved the selective adoption of Western-introduced knowledge, while others involved strategic adaptation of it. Changes included the identification of hundreds of new stars, particularly from the south circumpolar region, the increasing acceptance of the earth as a terraqueous globe, the use of 360 degrees

Oxford University Press, 2017). Daniel Patrick Morgan. *Astral Sciences in Early Imperial China: Observation, Sagehood, and the Individual* (Cambridge: Cambridge University Press, 2017).

⁵ Catherine Jami, *The Emperor's New Mathematics: Western Learning and Imperial Authority During the Kangxi Reign (1662-1722)* (Oxford: Oxford University Press, 2012). Ping-Ying Chang, *The Chinese Astronomical Bureau, 1620-1850: Lineages, Bureaucracy, and Technical Expertise* (Milton Park: Routledge, 2023).

⁶ See for instance, “the field allocation was not attacked as an outdated notion until the seventeenth century.” Benjamin Elman, *On Their Own Terms: Science in China, 1550-1900* (Cambridge, Mass.: Harvard University Press, 2005), 196.

⁷ For the decline of astrology in Europe during the seventeenth century, see: Laurence Brockliss, “Aristotle, Descartes and the New Science: Natural Philosophy at the University of Paris, 1600–1740,” *Annals of Science* 38, no. 1 (1981): 33-69. Tayra MC Lanuza Navarro, “From Intense Teaching to Neglect: The Decline of Astrology at the University of Valencia and the Role of the Spanish Novatores,” *Early Science and Medicine* 22, no. 5-6 (2017): 410-437. Mark S. Dawson, “‘No God but Onely Nature’: Explaining Astrology's Decline in Stuart England,” *Parergon* 39, no. 1 (2022): 27-54. For the resonance of astrology's decline in China's history, see Henderson, *The Development and Decline of Chinese Cosmology*.

⁸ For an overview on Buddhist influences on *fenye* in medieval China, see Jeffrey Kotyk, *Buddhist Astrology and Astral Magic in the Tang Dynasty* (Ph.D. diss., Leiden University, 2017).

for conceptualizing circular motion in place of the longstanding 365.25 degrees based on the tropical year, and a subsequent rise in the importance of ecliptic (*huangdao* 黃道; lit. “Yellow Way,” meaning the annual circuit traced out by the sun as it moves against the background of stars) coordinates of astral bodies over the more traditionally emphasized equatorial (*chidao* 赤道; “Red Way,” or the celestial equator) ones.⁹

The Qing came to place significant weight on the new knowledge produced through these Eurasian scientific exchanges. Numerous imperially commissioned titles, including the annually issued imperial calendar and derivative almanacs, adopted and adapted Jesuit-introduced “Western Learning.” Such works, in addition to elite astronomical texts produced privately and subsequently circulated, provided local gazetteer compilers with ample sources to draw on when updating astrological chapters. Elsewhere in this issue, Huiyi Wu shows that some 103 Qing-era gazetteers explicitly identify “Western Learning” in their discussions of astronomy.¹⁰ As will be shown later in this paper, hundreds of additional gazetteers directly cited dynastic works that explicitly or implicitly incorporated this new knowledge. The picture that emerges is not one of a sterile regurgitation of ancient texts through the nineteenth century but one involving the adaptation, reworking, and renewal of the knowledge they contained.

Drawing on Qing dynastic records, astronomical texts, local gazetteers, and *fengshui* manuals, this article demonstrates that changing astronomical knowledge provided motives and means for local elites to continue employing *fenye* into the nineteenth century. At the top, Qing emperors and high officials looked to *fenye* to explain or contextualize rising political and environmental crises in the nineteenth century. In local society, literati responsible for composing gazetteers likewise looked to updated, dynastic sources for updating their *fenye* sections. These actions were all possible in part because knowledge about *fenye* had disseminated so widely by that time—through imperial encyclopedia, calendars, and local gazetteers. Even if one did not believe in the system wholesale, its presence was difficult to ignore.

By extension, changes in astronomical knowledge by way of “Western Learning” necessitated alterations to the *fengshui* compass, which includes the values and ordering of the twenty-eight lodges on its outer layer. Note that the use of the term “fengshui compass” is heuristic: traditional Chinese writing generally lacked linguistic distinction between navigational and geomantic compasses, either of which could be alternatively termed *luopan* (羅盤), *luojing* (羅經), or

⁹ For the Chinese reception of the terraqueous globe, see Qiong Zhang, *Making the New World Their Own: Chinese Encounters with Jesuit Science in the Age of Discovery* (Leiden: Brill, 2015), 160-163. For a discussion of ecliptic and equatorial coordinates, see F. Richard Stephenson, “Chinese and Korean Star Maps and Catalogs,” in *The History of Cartography*. Vol. 2, Book 2. *Cartography in the Traditional East and Southeast Asian Societies*, eds. J.B. Harley and David Woodward, 511-578 (Chicago: University of Chicago Press, 1994).

¹⁰ See Huiyi Wu’s paper in this thematic dossier.

zhinanzhen (指南針) (see more below).¹¹ Elite geomancers engaged in robust discussions over the eighteenth and nineteenth centuries about whether the Jesuit-introduced astral coordinates should replace the previously used degree values on the compass, of which a set of numbers from the Song dynasty (960-1279 CE) had been especially popular. Some geomancers embraced these amendments, while others rejected them in favor of the older values. The debate never was resolved: today, many geomantic compasses contain two concentric layers containing the twenty-eight lodges—one dating from the Song, and the other from the Qing.

Due to its variegated applications from the imperial center to local society, *fenye* persisted in Qing China as a knowledge easy to criticize but difficult to replace. Other papers in this issue attest to the fact that people indeed tried to replace *fenye* with newer systems during the dynasty. Nonetheless, the mountain of material about *fenye* cosmology indicate the system's continued relevance and usefulness—for the Qing government, for local elites, and for its applications to adjacent fields.

Government invocations of *fenye* in the nineteenth century

As mentioned elsewhere in this special issue, some Qing emperors made critical comments about *fenye* cosmology, particularly in relation to the growing borders of the empire. In 1774, Qianlong explicitly singled out the vast territories of Xinjiang to express incredulity that the reach of two astral lodges—Well (*jing* 井) and Ghost (*gui* 鬼)—extended all the way from Xi'an to Kashgar.¹² Considering Qianlong's harsh comments, one might be thereupon tempted to conclude that *fenye*'s influence within dynastic politics was finished by the late eighteenth century, if not before.

Yet, evidence from the nineteenth century undercuts such an impression. The dynasty's *Veritable Records* make it clear that emperors continued to consult astral portents, especially comets, with reference to *fenye* into the nineteenth century. The newly enthroned Daoguang Emperor (r. 1820-50) for instance took a keen interest in an inauspicious comet sighted near the lunar lodge affiliated with Northeastern Henan, a sensitive area through which the Yellow River ran:

[On DG1.1.25, i.e., 27 February 1821], the Emperor declares the following edict to the Ministers of the Grand Council: according to a memorial from the Astronomical Bureau, on the 18th of this lunar month, at the *you* time [c. 15:00-17:00], a comet appeared in the west. It was divined as heralding soldiers and fire; one saying is that there will be great floods and displaced people. [The memorial also stated that] the Eastern Wall Lodge in *fenye* is associated with the region of Wei [i.e., an ancient state existing in the Zhou located in northeast Henan]. I,

¹¹ Some premodern texts do make distinctions between these terms, but many do not. Modern Chinese does make distinctions between these compasses.

¹² Qiu Jingjia, *Tiandi zhijian*, 232-33.

the Emperor, upon careful deliberation, have concluded that this is a sign from Heaven serving as a warning, and although the principles of *fenye* theory are difficult to fathom, by following the path of self-reflection we must consider preemptive measures for avoiding disaster.

諭軍機大臣等，據欽天監奏正月十八日酉刻，正西方出有彗星，其占為兵、為火。一曰大水民流，東壁分野應在衛地等語。朕思：上天垂象，所以示儆，雖其理幽遠莫測，然修省之道不可不思患豫防。

The region of Wei is in Henan Province, around the Prefecture of Weihui to the north of the Yellow River. This place is of great importance; it is also the place where the Yellow River and Qin River meet. Since last year the two places of Mayingba and Yifeng were connected via building projects, the dikes on the south and north banks must be carefully protected, and the Weihui area on the north bank of the river is particularly in urgent need of attention.

衛地現屬豫省河北衛輝一帶，地方緊要；又為黃沁交匯之區；上年馬營壩、儀封兩處大工合龍之後，南北兩岸隄工處處均當慎重防護，而北岸衛輝一帶尤為喫緊。

I order Zhang Wenhao [Director-General of the Grand Canal] and Yao Zutong [Governor of Henan Province] urge local officials to add caution while supervising maintenance and repairs. From the period of the rising waters of spring to the great floods of summer and the autumn rains, all embankment works across this region must be inspected, taking precautions day and night without any negligence so that the construction projects are stable and protect the safety of the area. The care of local affairs must also be in order, and the governors must pay close attention to issues in administration and never be idle. Announce this edict so that the officials know of it.¹³

著張文浩、姚祖同督飭河工及地方官員倍加小心。自桃汛以至伏秋大汛，各隄工均須周歷巡查，晝夜防範，不可稍有疏懈，務期工程穩固，獲保安瀾。其地方事宜該撫亦當密為留心，加意撫綏，不可怠玩。將此諭令知之。

Seeking to prevent an impending crisis involving the Yellow River, the Daoguang Emperor found it useful to invoke *fenye* to mobilize local officials stationed in a vulnerable part of Henan province. Consider that thirty-four years after this imperial edict, in 1855, the Yellow River disastrously changed course in one of only twenty-six instances over the past 2,500 years. Writing of precisely this era, Ruth Mostern stresses that “by the turn of the nineteenth century, the floodplain infrastructure was aging, and the equilibrium of the hydrosocial system was facing

¹³ *Qing Daoguang shilu* 清道光實錄 [Qing Veritable Records of the Daoguang Reign], *juan* 12: DG1.1.25 (*dingchou* 丁丑). For the entire quotation in print, see Piao Xingzhen 樸興振, ed., *Zhongguo ershiliu shi ji Ming-Qing shilu dongya sanguo guanxi shiliao quan ji* 中國二十六史及明清實錄東亞三國關係史料全輯 [A Complete Collection of the Twenty-Six Histories of China as well as the Veritable Records of the Ming and Qing Dynasties Concerning Historical Relations Between the Three Countries of East Asia], Vol. 5 (Yanbian: Yanbian daxue chubanshe, 2007), 606.

pressure from many directions. Few tasks of infrastructure building and management took place after the 1820s.” Perhaps the emperor was sincerely concerned about the astral portents, or perhaps he wanted to galvanize the local bureaucracy into action against the potential social unrest that could accompany flooding in the wake of sensitive repair projects.¹⁴ Maybe both reasons applied. In any case, Daoguang’s embrace of *fenye*-derived portents suggests that the system remained a valuable option for those with the power to interpret the night sky decades after Qianlong’s criticisms of its applications to Xinjiang. In the 1820s, Qianlong’s grandson felt he needed them.

It is also possible that Qing elites tended to take *fenye* correlations for the central Chinese heartlands around the Yellow River as more relevant relative to other places, since that region is where the correlative system was first conceived in antiquity. Henan Province was divided along many astral lodges, so specific interpretations of *fenye*-derived portents were possible there in ways that they were not in Xinjiang or Taiwan. Astral lodges could be correlated with discrete prefectures—such as the Wall lodge and Weihui Prefecture—to an unusually precise degree in Henan compared to other parts of the empire. Accordingly, the province supported a history of distinctive star maps that visually correlated specific constellations with prefectures in a single frame, as seen in the 1660 illustration from Henan’s provincial gazetteer reproduced below.

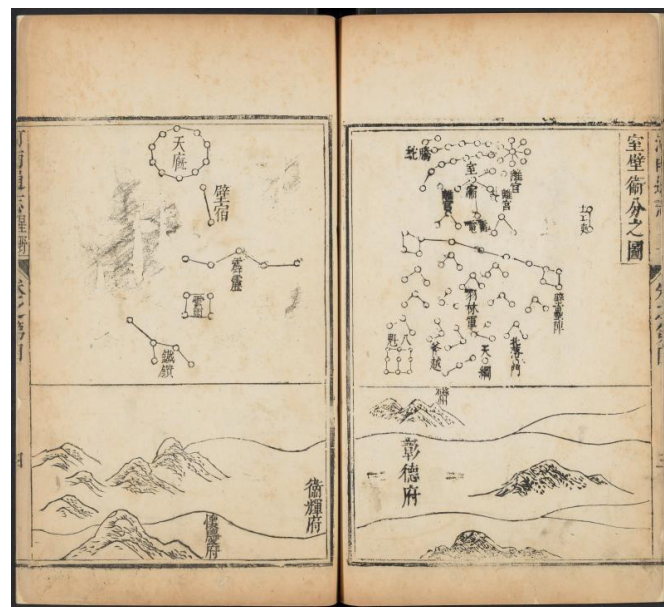


Figure 1. A Map of the Wall (壁) and House (室) Lodges. As referenced in Daoguang’s edict, the Wall Lodge can be seen directly over Weihui Prefecture on the left panel above. Image from *Henan tongzhi* 河南通志 [Comprehensive Gazetteer of Henan; 1660] 4: 3-4.

¹⁴ Ruth Mostern, *The Yellow River: A Natural and Unnatural History* (New Haven: Yale University Press, 2021), 231.

The Daoguang Emperor's episode with the Yellow River is not the only reference to applied *fenye* cosmology in late Qing dynastic records. Other examples exist. In 1853, the year that Taiping rebels captured the city of Nanjing, the Xianfeng Emperor administered a palace examination question concerning military strategy and the geographical conditions of the greater Nanjing region—mentioning the area's *fenye* affiliations with the Dipper, Ox, and Woman lodges.¹⁵ In another instance from 1862 (TZ1.7.25-26, i.e., 20-21 August 1862), the imperial court connected the appearance of a comet in the northwest to an outbreak of pestilence in Beijing.¹⁶

The references above refer only to relatively publicized imperial invocations of *fenye*, that is, the kinds selected in later eras for inclusion in the officially curated dynastic chronicles, the *Veritable Records*. Yet, palace memorials from the Imperial Astronomical Bureau (*Qintianjian* 欽天監)—the government office responsible for interpreting astral portents, annually creating the official calendar, and selecting the times and locations of imperial burials—make clear that officials also invoked *fenye* interpretations in more private communications to the emperor. The year after authorities reported an outbreak of pestilence in Beijing for instance, Prince Gong memorialized the throne on TZ2.5.26 (11 July 1863) with a divinatory interpretation of Venus's location when it remained visible in daylight (*taibai zhouxian* 太白晝見).¹⁷ In providing possible interpretations of this inauspicious celestial phenomenon, Prince Gong pointed to the medieval text, *Divination Based on Observing Celestial Phenomena* (*Guanxiang wanzhan* 觀象玩占; traditionally dated to c. seventh century CE), which associated Venus with the ancient state of Qin in northwest China and by extension an outbreak of war. In fact, a major Muslim rebellion had begun the previous year, 1862, in Shaanxi province, where the state of Qin had been based during the the Spring and Autumn (770-481 BCE) and Warring States (481-221 BCE) eras. Palace memorials documenting inauspicious sightings of Venus or comets continued to invoke correlative astrology well into the early twentieth century.¹⁸

That imperial authorities continued to consult and invoke *fenye* does not discount the fact that the cosmological system had its share of detractors. Nor does it dismiss vanguard efforts

¹⁵ *Like zhuangyuan ce* 歷科狀元策 [Complete Record of the Policy Essays of the First Ranked Scholars in the Palace Exams], Volume 3 (Taipei: Guangwen shuju, 1976), 745.

¹⁶ Yang Jialuo 楊家駱, ed., *Shitong fenlei zongzuan* 十通分類總纂 [Compilation of the Ten Comprehensive Encyclopedias by Topical Classification], Volume 24 (Taipei: Dingwen shuju, 1975), 503.

¹⁷ Zhongguo diyi lishi dang'an guan 中國第一歷史檔案館 and Beijing tianwen guan gu guanxiangtai 北京天文館古觀象台, eds., *Qingdai tianwen dang'an shiliao huibian* 清代天文檔案史料彙編 [A Collection of Archives and Historical Materials Related to Astronomy from the Qing Dynasty] (Zhengzhou: Daxiang chubanshe, 1997), 403.

¹⁸ Reports of comets were offered to the throne and interpreted through texts such as the *Imperially Endorsed Correct Meaning of Astronomy* (*Qinding tianwen zhengyi* 欽定天文正義; c. 1736-1795) through at least XT2.4.6, or 14 May 1910. *Ibid.*, 407. For further examples, see: Ting Chen and Lingfeng Lü, "Astronomical or Political: Interpretation of Comets in Times of Crisis in Qing China," *Journal for the History of Astronomy* 53 (1): 13-26.

to replace *fenye* with “modern” scientific measurements, as Jiajing Zhang and Shih-Pei Chen document elsewhere in this special issue. But the picture that emerges from dynastic records is not one of *fenye*'s inexorable decline into irrelevance. The historical reality was less linear and more contingent on the broader political climate. Qianlong may have felt confident enough to dismiss *fenye*, but some of his descendants—facing a fraying imperial order, dramatic environmental crises, and numerous domestic and foreign conflicts—did not.

Imperial applications of *fenye* in the nineteenth century naturally varied in importance, and *fenye* was surely one consideration among many others undertaken by the imperial court. The palace examination question referred to above was more of a passing reference in contrast to Daoguang's more engaged discussion of the cosmology. Nonetheless, these examples demonstrate that powerful people in the Qing empire were consulting *fenye* interpretations into the last days of the dynasty. That fact would suggest that local elites were as well.

Astrological information in Qing gazetteers

Indeed, they were. Local scholars in collaboration with a presiding officials compiled and published gazetteers, or books about a given locality's history, politics, and culture. These gazetteers routinely contained chapters devoted to the *fenye* correlations of a county, prefecture, or province. Many of these chapters were updated during the dynasty with new knowledge introduced from the West via Jesuit missionaries, from sources sanctioned by Qing authorities, or in some cases, both. This section documents those changes in two ways. First, it demonstrates that hundreds of local Qing gazetteers cited a work (by title) on astronomy or history produced during the dynasty. Second, it shows that literati on Qing frontiers like Xinjiang invoked *fenye* to connect their settlements to the broader Qing Empire.

Local gazetteer chapters on *fenye* reveal two dimensions of the correlative system. On the one hand, these chapters stress the system's ancient pedigree, with authors frequently citing texts such as *Records of the Grand Historian* (*Shiji* 史記), *Writings of the Huainan Masters* (*Huainanzi* 淮南子), as well as the astronomical chapters of the *Book of Han* (*Hanshu* 漢書), *Book of Jin* (*Jinshu* 晉書), or *Book of Wei* (*Weishu* 魏書) to demonstrate a county's longstanding astrological affiliations. For a specific astrological correlation to have explanatory power, it needed to be traced to an early source.

Yet, many chapters also included new information drawn from recently produced sources. Why were newer sources sometimes understood as necessary? One reason is because the astral spans of a county or prefecture's affiliated lodges changed over time. A major recalibration in lodge widths occurred at the end of the Ming dynasty, when the astral spans of the twenty-eight lodges were measured with techniques introduced by the Jesuits. These new techniques changed the meaning

of *du* (度) from referring to 365.25 degrees (or one degree per day in the calendrical year and 100 *fen* equaling one degree)—an understanding that can be traced back to the Han Dynasty—to 360 degrees where 60 *fen* equaled one degree. These values were later included in the officially published *History of the Ming Dynasty* (*Mingshi* 明史; 1739).¹⁹ The following chart provides the new values as observed in the late Ming alongside the earliest list of the measured lodges as found in the Han-era text, *Writings of the Huainan Masters*, also known as the *Huainanzi* (c. 139 BCE).

v	Equatorial Lodge Widths 赤道宿度 in <i>du</i> and <i>fen</i> (1/60) as observed in 1628	Ecliptical Lodge Widths 黄道宿度 in <i>du</i> and <i>fen</i> (1/60) as observed in 1628	Equatorial Lodge Widths recorded in the <i>Huainanzi</i> 淮南子 (c. 139 BCE)
Horn 角	11 (<i>du</i>)-44 (<i>fen</i>)	10 (<i>du</i>)-35 (<i>fen</i>)	12
Gullet 亢	9-19	10-40	9
Base 氐	16-41	17-54	15
Chamber 房	5-28	4-46	5
Heart 心	6-9	7-33	5
Tail 尾	21-6	15-36	18
Winnower 箕	8-41	9-20	11.25
Dipper 斗	24-24	23-51	26
Ox 牛	6-50	7-41	8
Woman 女	11-7	11-39	12
Barrens 虚	8-41	9-59	10
Rooftop 危	14-53	20-7	17
House 室	17 (<i>du</i>)	15-41	16
Wall 壁	10-28	13-16	9
Straddler 奎	14-30	11-29	16
Harvester 婁	12-4	13 (<i>du</i>)	12
Stomach 胃	15-45	13-01	14
Mane 昴	10-24	8-29	11
Net 畢	16-34	13-58	16
Triaster 參	24 (<i>fen</i>)	1-21	9
Beak 觜	11-24	11-33	2
Well 井	32-49	30-25	33
Ghost 鬼	2-21	5-30	4
Willow 柳	12-4	16-6	15
Stars 星	5-48	8-23	7
Spread 張	17-19	18-4	18
Wing 翼	20-28	17 (<i>du</i>)	18

¹⁹ *Mingshi* 明史 [History of the Ming Dynasty, 1739] 25: 12-13.

Axletree 軫	15-30	13-3	17
Total	360	360	365.25

Table 1. Lodge Span Values as offered in the *History of the Ming Dynasty* (1739).²⁰

The ordering and astral spans of the twenty-eight lodges mattered for a host of reasons. While astral spans did not consistently correlate with geographical area—some smaller lodges governed vast territories while other larger lodges governed small ones—every province, prefecture, and county in the Qing claimed a connection with two or more lodges, at least in theory. Reliable information about a lodge’s astral span thus was required information for gazetteer writers compiling a chapter on astrological correlations.

The Qing also presided over ruptures in astronomical knowledge, with Triaster and Beak changing positions and astral spans in the ordering of the twenty-eight lodges.²¹ Through the late Ming, Beak—historically measured around 2 degrees—preceded Triaster. But in the early Qing, the two lodges switched positions and obtained for a time new astral spans, with Triaster becoming the smallest lodge into the early eighteenth century.²² Their order and values reverted in 1744.²³ For the counties affiliated with these two lodges—which were mainly located in Shanxi and Sichuan—the new Qing values posed consequences. In 1873 for instance, Chengdu’s gazetteer recorded a seventeenth century portent that depended on the newly introduced astral span for Triaster via the “Western Calendric Method”—implicitly affirming the new system’s validity.²⁴

One way to trace the dissemination of newly introduced astronomical knowledge is to identify the primary sources of information that local gazetteers cite in their astrological chapters. The table in this paper’s Appendix provides an analysis of the Qing-era sources for gazetteers included in the LoGaRT database.²⁵ Of the database’s collection of over 3,000 Qing-era local gazetteers,

²⁰ These English translations of the twenty-eight lodges as well as the width values from the *Huainanzi* are taken from the following reference: Cullen, *Heavenly Numbers*, 187.

²¹ Huang Yinong 黃一農, “Qing qianqi dui zi, shen liangxiu xianhou cixu de zhengzhi: Shehui tianwenxue shi zhi yi ge an yanjiu” 清前期對齋、參兩宿先後次序的爭執——社會天文學史之一個案研究 [Disputes over the Order of the Beak and Triaster Lodges in the Early Qing Dynasty: A Case Study in the Social History of Astronomy], *Jindai Zhongguo keji shi lunji* 近代中國科技史論集 [A Collection of Essays on the History of Science and Technology in China], eds. Yang Cuihua 楊翠華 and Huang Yinong 黃一農 (Taipei: Zhongyang yanjiu yuan jindai shi yanjiusuo and Guoli Qinghua daxue lishi yanjiu suo, 1991), 71-93.

²² Reflecting this change in astronomical measurements conducted in the final years of the Ming, *History of the Ming Dynasty* records Triaster as preceding Beak.

²³ Huang Yinong 黃一農, “Qing qianqi dui zi, san liang xiu xianhou cixu de zhengzhi,” 91.

²⁴ *Tongzhi Chengdu xian zhi* 同治成都縣志 [Gazetteer of Chengdu County from the Tongzhi Reign; 1873], *fenye* chapter.

²⁵ Shih-Pei Chen, Calvin Yeh, Qun Che, and Sean Wang, *LoGaRT: Local Gazetteers Research Tools*

at least 1,517 unique titles contain chapter sections involving *fenye*-related information. Of the texts containing astrological chapters, 544 unique gazetteers—over a third—cite astronomical and geographical information from Qing-era sources.²⁶

The data contained in this paper's Appendix reveal that gazetteers employed a broad array of texts for their astronomical chapters.²⁷ Such texts included dynastic histories, the imperial calendar and related almanacs, and gazetteers composed with a national scope. By far the most cited text was the officially compiled *History of the Ming Dynasty*, which pervaded astrological chapters following its long-anticipated release in 1739. Official histories produced far back in China's past, including *History of the Ming Dynasty*, routinely made note of peculiar astronomical phenomena. As previously mentioned, palace memorials from the nineteenth century reporting inauspicious phenomena such as comets cited historical examples from *Book of Sui* (*Suishu* 隋書), *History of the Song Dynasty* (*Songshi* 宋史), and *History of the Ming Dynasty* to anticipate future events. Officials at the Astronomical Bureau and the gentry compilers of local gazetteers were, at least in some circumstances, consuming the same literature.

Interest in updated astronomical knowledge was not limited to the capital or coastal regions. Indeed, as shown by Huiyi Wu's paper and further substantiated later in this paper, imperial frontier spaces were, at least in some cases, magnets for updated astronomical information. Local gazetteers from Sichuan Province, which was a frontier for the first century of Qing rule, cited more Qing-era sources for astrology than those of any other province.²⁸ Perhaps the destruction of woodblocks and existing texts during the violent Ming-Qing transition created a clean slate for new information, encouraging gazetteer compilers to consider sources like the *Imperially Commissioned Thorough Investigation of Dynastic Records* (*Qinding huangchao wenxian tongkao* 欽定皇朝文獻通考; 1787), which appeared in thirteen Sichuan local gazetteers but nowhere else. Another potentially compelling explanation relates to the fact that parts of Sichuan were affected by the changing positions of the Triaster and Beak lodges, as discussed above.

Even in frontier spaces where few gazetteers were published during the Qing, local elites expressed an interest in *fenye*. At least that was the case in corners of Xinjiang by the middle

(software). Berlin: Max Planck Institute for the History of Science, 2017. <https://www.mpiwg-berlin.mpg.de/research/projects/logart-local-gazetteers-research-tools>

²⁶ It is worth recognizing the existence of gazetteers that updated their contents without citing new sources. The nineteenth century *Gazetteer of Hami*, introduced in this paper, is one such example.

²⁷ Some texts were invoked in relation to administrative hierarchy. The *Imperially Commissioned Complete Library of the Four Treasuries* (*Qinding siku quanshu* 欽定四庫全書; 1783) was cited in the astrological chapters of nearly a dozen provincial-level gazetteers, even as few or no "local" gazetteers invoked the collection by name—at least in their astronomical chapters.

²⁸ See Appendix. On Sichuan's status as a frontier in the early Qing, see Yingcong Dai, *The Sichuan Frontier and Tibet: Imperial Strategy in the Early Qing* (Seattle: University of Washington Press, 2009).

of the nineteenth century. Although the Qianlong Emperor critiqued *fenye* as applied to the vast territories of Xinjiang in 1774, the 1846 gazetteer of Hami (located in eastern Xinjiang) included an astrology chapter, complete with *fenye* correlations (Well and Ghost) and an accompanying list of portents, including an earthquake in 1760, the appearance of locusts in 1765, and the birth of a calf with six legs by Muslim farmers in 1768.²⁹ Read closely, one can see that the fourteen portents recorded to 1845 precisely narrate the process of Qing expansion and colonization of the area, beginning with the appearance of a five colored cloud (*wuse yun* 五色雲) above a military embankment in 1732, which coincided with a temporary truce between Qing and Mongol (Dzungar) forces in the area. For the writers of Hami's gazetteer, the astrology chapter provided an opportunity to record the messy history of the politically contested region under Qing rule.

Portents aside, the writers of Hami's gazetteer exhibited an application of new *fenye* knowledge in their composition of the astrology chapter. Instead of quoting from ancient or newer (Qing-era) texts on astronomy, the writers directly assessed Hami's astrological position within the *fenye* system, estimating that because the garrison town was located 4,430 *li* (里) (approximately 2,375 kilometers) from Xi'an Prefecture and 250 *li* (approximately 134 kilometers) were approximately equivalent to one astral degree, Hami was located seventeen astral degrees from Xi'an.³⁰ As Xi'an Prefecture was affiliated with the Well and Ghost lodges, Hami fit comfortably in the approximately 30-degree astral span of the Well lodge—the largest of the twenty-eight lodges.

Regardless of whether one regards the Hami gazetteer's astronomical data as authoritative, the key point is that its writers felt compelled to include this information for linking Xinjiang to the rest of the empire in the wake of dramatic political changes in the nineteenth century.³¹ Other frontier-based gazetteers for regions such as Taiwan and Tibet also included *fenye*-related information through that time.³² This resilient interest in *fenye* among frontier based

²⁹ *Daoguang Hami zhi* 道光哈密志 [Gazetteer of Hami from the Daoguang Reign; 1846], 1: 1. On the issue of locusts in Qing history, see David Bello, "Consider the Qing Locust," *East Asian Science, Technology, and Medicine* 48, no. 1 (2018): 49-80.

³⁰ Note that this ratio changed in 1702 from 250 *li* to one degree to 200 *li* to one degree. It is significant that this new ratio had not reached the gazetteer's authors, who were presumably relying on pre-Qing texts. For the change in ratio, see Jami, *The Emperor's New Mathematics*, 185. See also Mario Cams, *Companions in Geography: East-West Collaboration in the Mapping of Qing China (c. 1685-1735)* (Leiden: Brill, 2017), 73-75.

³¹ *Daoguang Hami zhi* (1846), 1: 2-3. For more on these political changes in late Qing Xinjiang, see Eric Schluessel, *Land of Strangers: The Civilizing Project in Qing Central Asia* (New York: Columbia University Press, 2020).

³² Huang Peiqiao's *Xizang tukao* 西藏圖考 (1886) for instance contains *fenye* correlations for Tibet. *Guangxu Xizang tukao* 光緒西藏圖考 [Illustrated Study of Tibet from the Guangxu Reign; 1886], 8: 12. Note that the reference to *fenye* in this illustrated gazetteer is reproducing an earlier text, with Tibet's correlations being invoked in terms of historical geography. For a discussion of Taiwan's *fenye*

Sinophone elites mirrors the continued engagement with the imperial government in *fenye*-related matters. Ironically, whereas scholars like Fang Yizhi (方以智, 1611-1671), Huang Zongxi (黃宗羲, 1610-1695), and Yan Ruoqu (閻若璩, 1636-1704) pointed out that the empire's expanded administrative boundaries bore little resemblance to the allocated territories of antiquity, literati living along the empire's expanding frontiers found *fenye* persistently relevant for staking imperial claims.³³

***Fenye* and the compass**

In addition to its resilient influence in imperial astrology and in the compilation of local gazetteers, *fenye's* impact continued to be felt in another realm of study and practice: *fengshui*. The changes heralded by the Jesuit-introduced “New Western Calendrical Method” required updates to the compass that had been used in China through the Ming period. Geomantic texts began discussing these changes in the seventeenth century, but I largely draw on printed manuals from the nineteenth century in the following discussion.

Before proceeding, it is worth underlining the technical importance of the compass, the use of which was not limited to *fengshui* by the Qing period. It is universally recognized that compasses as scientific instruments emerged through the practice of geomantic divination during the Han dynasty (202 BCE-220 CE), yet its history after the Tang dynasty is murkier, and requires further study beyond the scope of this paper.³⁴ As Joseph Needham once observed, there are many examples of “elaborate” geomantic compasses and more practical “navigational” compasses by the early modern era. By that point, did the theoretical framing of the magnetic compass diverge into two traditions—one navigational and one geomantic? The answer to that question remains unclear. What is clear is that these instruments were known interchangeably by the terms *luopan*, *luojing*, or *zhinan zhen* (“south pointing needle”) through most of the Qing era. A *luopan* might be used for charting river flows, building and construction, and measuring the forces of *yin* and *yang*—sometimes within the same public works project.³⁵ One suspects that, even if navigators commissioned and used simpler devices on board seabound vessels, geomancers never completely lost influence over the theoretical underpinnings of compass usage.

correlations in the Qing, see Emma Jinhua Teng, *Taiwan's Imagined Geography: Chinese Colonial Travel Writing and Pictures, 1683-1895* (Cambridge, Mass.: Harvard University Press, 2006), 56-57.

³³ Benjamin Elman, *On Their Own Terms: Science in China, 1550-1900* (Cambridge, Mass.: Harvard University Press, 2005), 196.

³⁴ For a condensed history of the compass, see Colin A Ronan and Joseph Needham, *The Shorter Science and Civilisation in China: 3* (Cambridge: Cambridge University Press, 1986), 6-7.

³⁵ For the use of a geomantic compass for charting the river flows of the Grand Canal, see: Lu Yao 陸耀, *Shandong Yunhe beilan* 山東運河備覽 [Complete Conspectus of the Grand Canal in Shandong; 1775], Preface: 2-3.

From the Ming period if not earlier, the geomantic compass came to contain many encircling layers of cosmological correspondence, including but not limited to the eight trigrams, the twenty-four earthly directions, the seventy-two mountains, the twelve section of the celestial equator, the twenty-four solar terms, and the twenty-eight astral lodges. Eventually reaching well over a dozen layers on Qing-era compasses, these circular spheres correlated direction, time, heaven, and earth within a single instrument used for calculating the auspicious placement and orientations of structures. Although *fengshui* and *fenye* were not interchangeable, *fengshui* reinforced the latter's underlining principle that astral bodies could be correlated with terrestrial geography.

The problem for Qing practitioners of *fengshui* was that, as previously discussed, the astral spans of the twenty-eight mansions changed from the late Ming onward with the arrival of Western calculation methods. The implications of these changes on the compass and the questions they posed were significant. Should the aggregate number of *du* on the geomantic compass equal 360, following the values offered via the Qing calendric method? Or should the compass's *du* total 365.25, following longstanding pre-Jesuit precedent? What should the assigned values of the twenty-eight lodges be? And in what order should the twenty-eight lodges appear on the compass?

Joseph Needham anticipated this precise question. In his volume *Science and Civilisation in China: Physics and Physical Technology*, Needham provides examples of *luopan* with 360 *du*—noting that, “the New Degrees adopted by the Present (i.e., the Chhing) Dynasty. . . . The division of the circle into 360 degrees was a Jesuit innovation, the Chinese having formerly divided it into 365.25.”³⁶ The same compass analyzed by Needham has an additional circle dedicated to *fenye* that amounted to 365.25 degrees—so that practitioners could use either or both as they saw fit. Both the 365.25- and 360-degree layers depended on the sum of the values of the twenty-eight lodges that constituted the heart of *fenye* correlations.

In accounting for these two layers on the compass, Needham reasonably assumed that the 365.25-degree layer had been retained through the Qing because that was the system “used in medieval times when the divination rules were fixed.”³⁷ Qing-era geomantic manuals add to Needham's keen observation. Consider for instance *A Thorough Explication of the Geomantic Compass* (*Luojing toujie* 羅經透解; 1823), composed in Dingyuan County, Sichuan by a geomancer named Wang Daoheng. Wang began his text by enumerating a lineage of reliable geomantic texts, beginning with the officially issued *Imperially Endorsed Treatise on Harmonizing*

³⁶ Joseph Needham, *Science and Civilisation in China. Volume IV: Physics and Physical Technology, Part I: Physics* (Cambridge: Cambridge University Press, 1962), 294.

³⁷ *Ibid.*, 295.

Times and Distinguishing Directions (*Qinding Xieji bianfang shu* 欽定協紀辨方書; 1739). This introduction established the book as authoritative, erudite, and well-sourced.

Wang's manual eventually turns to the problem of correlating the twenty-eight astral lodges to the twenty-four directions ("mountains") of the geomantic compass. Here, Wang recounts the different astral values offered by the various calendars of China's history, before turning to the need to update the compass to align with the "Western Calendric Method." Note that the following passage does not exclusively contain Wang's own words, as he was copying some of these sentences from earlier geomantic manuals:

The twenty-eight lodges are arranged around the compass over 365 *du* and 25 *fen*; they are divided according to the natural course and are ordered properly. Every degree (*du*) represents 100 *fen*, and one degree can be divided into four parts, with each part equal to 25 *fen*—which is called a quarter degree. . .³⁸

蓋二十八宿，乃羅經周圍三百六十五度二十五分官度，分毫自然，次序不混。每一度額定一百分，以一度分作四分，故一分該二十五分，謂之四分度之一。

The "Concord-with-Heaven" (*Tongtian*) Calendric System [used between 1199-1207 CE] records the Woman lodge as passing the *zi* Jupiter Station at two degrees and 95 *fen* and 9 *miao*; the "Spreading Joy" (*Kaixi*) Calendric System [used between 1208-1251 CE] records Woman passing at 92 *fen* and 9 *miao*; the "Coincidence with Heaven" (*Huitian*) Calendric System [used between 1256-1270 CE] records 92 *fen* and 8 *miao*. The "Season Granting" (*Shoushi*) Calendric System [used between 1281-1384] records 96 *fen* and 3 *miao*.³⁹ The ancient calendars recorded the rising and setting of the sun, which in Yao's [a legendary emperor of antiquity] time saw the sun rise at the *ji* degree, while in our era it rises at the *xu* degree.

.....《統天曆》載女二度過子九十五分秒九，《開禧曆》載女宿度九十二分秒九，《會天曆》載女九十二分秒八，《授時曆》載女九十六分秒三。查古曆其太陽出沒，堯時出箕度，今時出虛度。

The natural characteristics of the atmosphere vary [with time], so the calendrical values are subsequently different; Our Dynasty's calendar can be clearly investigated, so I used the principle of equinox precession to deduce problems in compass calculations. All the dynasties of the past have modified their calendars, and since the Western Calendric System precisely aligns with the "Time-Modelling Calendar," the geomantic compass should be updated to match the newly measured placements of astral bodies. That way, we may properly analyze

³⁸ This section of the manual refers to the division of each *du* into smaller segments, namely *shaodu* (少度), *bandu* (半度), and *taidu* (太度).

³⁹ The source for the translations of the calendric names is Nathan Sivin, *Granting the Seasons: The Chinese Astronomical Reform of 1280, with a Study of its Many Dimensions and a Translation of its Records* (New York: Springer, 2009), 51.

mountains for the dispelling of poisonous *qi*, obtain auspiciousness and avoid inauspiciousness, and create fortune for people.⁴⁰

風氣厚薄遠近不同，故有多寡之異；而我朝之曆昭昭可考，餘以歲差之理推之。歷代無不改之歷，而西洋曆法於《時憲》正合，因謂羅經宿度一盤，應當改舊從新，以便收山出煞，趨吉避凶，為人間造福。

Jesuit-introduced knowledge was relevant to the divisions of the geomantic compass, and some geomancers wanted their compasses to be in line with the imperial calendric system, particularly for selecting auspicious times when practicing *fengshui*. Specifically, the shifting positions and values of the Beak and Triaster lodges, coupled with the transformation of the circle's measurement from 365.25 *du* to 360 *du*, necessitated a significant update to the layout and calculations of the compass.

Yet, these changes were contested and only sporadically accepted, as geomancers across China from the seventeenth to the nineteenth centuries grappled with their implications. Not everyone welcomed the alterations brought to *fengshui* by the new calendric system and the accompanying values for the twenty-eight astral lodges. A Manchu bannerman in Beijing, Gūwalgiya Lianrui (瓜爾佳廉瑞), composed a *fengshui* manual that critiqued the “new [Qing] method” for being more difficult to use than earlier ones.⁴¹ As shown in the chart below, his manual was not the only geomantic text to revert to older, pre-Qing values. Why might the older values been easier to work with? Gūwalgiya claimed that under the “New Method,” lodge widths were observed as dynamically shifting from year to year. In the chart below for instance, Winnower was observed under the “New Method” as 9 degrees in 1730 and 11 degrees in 1824. By contrast, Winnower was 9.5 degrees under the pre-Qing 365.25-degree system in 1824 and remained so nearly a century later in 1907. For people who needed to produce and use physical compasses, consistency had undoubtable appeal.

What was the resolution for practicing geomancers? Some manuals supported the earlier values of the circle, others supported the Qing-era values, and ultimately, many geomantic compasses (and manuals) ended up including both—as in the case of Needham's example or the *Comprehensive Explanation of the Geomantic Compass* (*Luojing toujie* 羅經透解) below. Indeed, one reason compasses became so large and complex by the late imperial era is because newer degree values were added on top of older ones without deleting the latter.

⁴⁰ Wang Daoheng 王道亨, *Wang shi luojing tou jie* 王氏羅經透解 (1823), *Xia juan*: 38.

⁴¹ Gūwalgiya Lianrui 瓜爾佳廉瑞, *Qingnang dili jiyao* 青囊地理集要 (1907), 7: 3-4.

	<i>Collection of Geomantic Measurements of the Golden Needle</i> (<i>Dili du jinzhen ji</i> 地理度金鍼集; Preface 1730)	<i>Comprehensive Explanation of the Geomantic Compass</i> (<i>Luojing toujie</i> 羅經透解; Sichuan, 1824)		<i>Essential of Earthly Principles from the Green Satchel Classic</i> (<i>Qingnang dili jiyao</i> 青囊地理集要; Beijing, 1907)
	Lodge Widths Assessed with the New Qing System	Lodge Widths Assessed with a Pre-Qing System	Lodge Widths Assessed with the New Qing System	Lodge Widths Assessed with a Pre-Qing System
Horn 角	11	12.75	12	12.75
Gullet 亢	11	9.75	9	9.75
Base 氏	18	16.25	15	16.25
Chamber 房	3	5.25	5	5.75
Heart 心	8	6	5	6
Tail 尾	15	18.25	18	18
Winnower 箕	9	9.5	11	9.5
Dipper 斗	24	22.75	26	22.75
Ox 牛	8	7	8	7
Woman 女	11	11	12	11
Barrens 虛	10	9.25	10	9.25
Rooftop 危	20	16	17	16
House 室	16	18.25	16	18.25
Wall 壁	13	9.75	9	9.75
Straddler 奎	11	18	16	18
Harvester 婁	13	12.75	12	12.75
Stomach 胃	12	15.25	14	15.25
Mane 昴	11	11	11	11
Net 畢	15	16.5	12	16.5
Beak 觜	1	1	2	0.5

Triaster 參	11	9.5	9	9.5
Well 井	31	30.25	32	30.25
Ghost 鬼	5	2	4	2.5
Willow 柳	17	13.5	15	13.5
Stars 星	8	6	7	6.75
Spread 張	18	18.75	18	17.75
Wing 翼	17	20.25	18	20.25
Axletree 軫	13	18.75	17	18.75
Total No. of du	360	365.25	360	365.25

Table 2. Reception of “Western Learning” in Qing *Fengshui* Texts on the Compass.⁴²

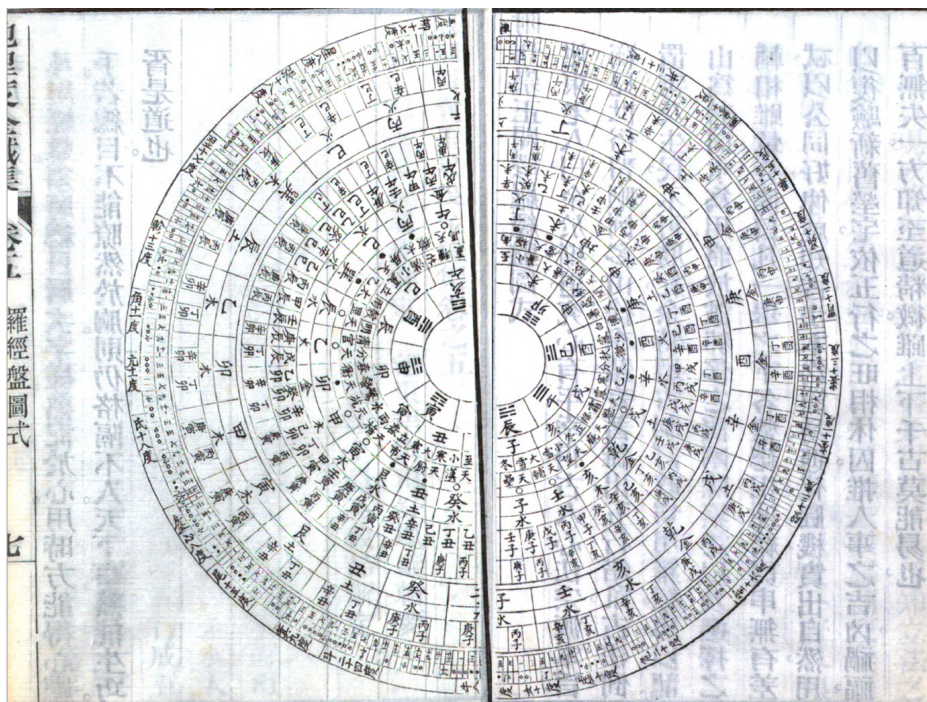


Figure 2. Diagram of a Compass with Outer Layer Dedicated to the Twenty-Eight Lodges. Shu Fengyi 舒鳳儀, *Measuring with the Needle for Earthly Principles* 地理度金鍼集 (1730/1890) 5: 6-7. In accordance with the Qing calendrical method, this compass diagram offers a total of 360 *du* for the circle’s outer edge.

⁴² Note that the values of lodge widths assessed through a pre-Qing system differ slightly between the 1824 text and the 1907 manual. The reason for this is that the values of these widths had changed across imperial history, and while the Song-era Kaixi methods were popular option amongst Qing geomancers, Ming methods also saw continued usage.

Discussions surrounding Qing-era compass draw our attention to the fact that *fenye* not only mattered for imperial astrology. Because *fenye*-related knowledge was applied to different fields, it could have practical consequences. To a builder, a navigator, or a geomancer, whether a compass had 360 or 365.25 *du* was a consequential question. More broadly, these extensions and applications of *fenye* correlations help explain the reasons said knowledge did not decline through the nineteenth century.

Concluding remarks

In the context of this special issue on *fenye*, this paper addressed several questions: how did people in Qing dynasty China make use of *fenye*? Why did the information produced from *fenye* knowledge matter? What ultimately came of the seventeenth century criticisms of *fenye*? I have concluded that much evidence from the Qing points to the idea that *fenye*'s presence and influence persisted after the introduction of Western knowledge. Indeed, *fenye* absorbed and selectively incorporated foreign knowledge—as did *fengshui*.

One noticeable area of agreement between Huiyi Wu's contribution and this one relates to the reason these observations have been overlooked for so long. Geomantic application of astrological knowledge was not a field in which the Jesuits were especially interested. Nor was *fenye* in general. Yet, it was in these fields where Jesuit influence on Chinese institutions and cultural practices was relatively consequential. In centering the ways in which *fenye* remained relevant through the nineteenth century, this paper thus helps demonstrate when and how “Western Learning” mattered in and spread throughout Chinese elite society.

Finally, this paper suggests that intellectual or scholarly criticism of a system or practice has little bearing on its actual position or roles in society. In place of selective criticism, one must look to key markers of institutional status: government recognition, examination curricula, practical applications, roles in legal or political discussions, and so forth. Undoubtedly, *fenye* came under heightened criticism in China during the seventeenth century, just as astrology did in Europe. Yet, that parallel can only be taken so far. Astrology was dropped from university departments in Europe by the early 1700s, but retained an official, if contested, position in China until the end of the imperial system in 1912.

Likewise, criticisms of *fenye* in China tended to not dismiss the idea of cosmographic resonance between Heaven and Earth, but rather claimed that the existing knowledge attributed to *fenye* was not accurate enough to be worthy of belief. With the proper skill and knowledge, it remained possible for a person to offer an astrological interpretation of astronomical phenomena that was deemed persuasive by a wide range of people. Such practices not only persisted into the final century of imperial rule, but they may have even taken on special significance considering the

political threats of that era. At least one Confucian scholar, Liao Ping (廖平, 1852-1932), assigned correlative *fenye* lodges to each world continent in constructing spatial alternatives to encroaching Western geographical frameworks.⁴³

Rather than read a linear decline in *fenye*'s influence from the seventeenth to the nineteenth centuries, we might characterize Qing dynasty China by the ebbs and flows of historical contexts in which correlative cosmography could be dismissed or ignored in some moments, and mobilized and embraced in others. *Fenye* was easy to criticize but difficult to replace because a sizeable audience was invested in it being there. For both county and country, *fenye* was too big to fail.

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Competing interests

The author has declared that no competing interests exist.

⁴³ Jenny Huangfu Day, *Qing Travelers to the Far West: Diplomacy and the Information Order in Late Imperial China* (Cambridge: Cambridge University Press, 2018), 224-225.

Appendix

Contemporary Sources Cited in Qing-era Gazetteer Astrological Chapters			
Note: In the LoGaRT Database, at least 1,517 unique Qing-era gazetteers contain sections entitled <i>fenye</i> 分野/分埜/分埜, <i>xingye</i> 星野/星埜/星埜, <i>xingji</i> 星紀, <i>xingzhan</i> 星占, <i>xingtu</i> 星土, <i>xingbiao</i> 星表, <i>xingdu</i> 星度, <i>xingfen</i> 星分, <i>fenxing</i> 分星, or <i>tianwen</i> 天文. ⁴⁴			
Name of Text	Year Issued	Number of Unique Qing-era Gazetteers that Cite the Text in their Astrological Chapters	Provinces of the Citing Gazetteers, Cited in Order of Frequency of Appearance (Example: “Sichuan-44” means that 44 unique Sichuan local gazetteers cite the given source in their astrological chapters)
<i>Imperially Commissioned History of the Ming Dynasty</i> 欽定明史	1739	399	Sichuan (44), Zhili (41), Hubei (34), Hunan (30), Henan (30), Jiangxi (29), Shandong (29), Guangdong (25), Anhui (23), Jiangsu (23), Fujian (21), Shaanxi (19), Shanxi (12), Guizhou (11), Zhejiang (10), Guangxi (7), Yunnan (6), Gansu (4), Liaoning (1)
<i>The Perpetual Calendar</i> 萬年曆/萬年歷, <i>Timely-Modelling Book</i> 時憲書, <i>Timely-Modelling Calendar</i> 時憲曆, <i>Dynastic Calendar</i> 國朝曆書, or <i>Imperially Commissioned Perpetual Calendar of the Seven Heavenly Bodies and Four Stars</i> 欽定七政四餘萬年曆 (sometimes written just as 欽定七政四餘) ⁴⁵	Annually Issued Imperial Calendar and Related Almanacs	123	Jiangsu (17), Fujian (15), Anhui (15), Hubei (12), Zhejiang (8), Guangdong (7), Yunnan (7), Guangxi (7), Jiangxi (6), Sichuan (5), Zhili (5), Shandong (4), Hunan (4), Henan (4), Guizhou (4), Shanxi (2), Liaoning (1)

⁴⁴ Shih-Pei Chen expands the scope of terms searched within the database and arrives at 2,197 *fenye* (broadly defined) sections in Qing-era gazetteers. Regardless of how broadly such sections are defined, Chen and I arrive at similar conclusions regarding the more commonly cited sources for astrological chapters. See Shih-Pei Chen in this thematic dossier.

⁴⁵ It is debatable whether the printed calendar for a given year should be called “a book.” The Qing state issued calendars of varying specificity and lengths, and commercial publishers printed various versions of the calendar.

<i>Records of the Unity of the Great Qing</i> 大清一統志 or 皇朝一統志	1744	58	Sichuan (19), Zhili (7), Guangdong (6), Hunan (4), Shanxi (4), Yunnan (4), Hubei (3), Anhui (2), Zhejiang (2), Guizhou (2), Shaanxi (1), Jiangsu (1), Jiangxi (1), Guangxi (1), Shandong (1)
<i>Imperially Commissioned Gazetteer of Rehe</i> 欽定熱河志	1781	22	Guizhou (4), Yunnan (4), Jiangsu (3), Jiangxi (2), Shandong (2), Guangdong (2), Zhejiang (1), Sichuan (1), Shaanxi (1), Zhili (1), Hunan (1)
<i>Imperially Commissioned Thorough Investigation of Instruments and Phenomena</i> 欽定儀象考成	1756	16	Sichuan (7), Zhejiang (3), Zhili (2), Guangdong (1), Shaanxi (1), Yunnan (1), Jiangsu (1)
<i>Collected Statutes of the Great Qing</i> 大清會典	1684, with later editions	14	Hubei (4), Fujian (3), Jiangxi (3), Guangdong (1), Shandong (1), Guizhou (1), Hunan (1)
<i>Essentials for Looking Through the Bamboo Tube</i> 管窺輯要	1655	13	Henan (4), Shaanxi (4), Shanxi (2), Guizhou (1), Hunan (1), Shandong (1)
<i>Imperially Commissioned Thorough Investigation of Dynastic Records</i> [欽定]皇朝文獻通考	1787	13	Sichuan (13)
<i>Imperially Commissioned Book on Harmonizing Times and Distinguishing Directions</i> 欽定協紀辨方書	1739	11	Guizhou (3), Hunan (2), Henan (1), Jiangxi (1), Shandong (1), Zhejiang (1), Zhili (1), Yunnan (1)
<i>Imperially Commissioned Complete Library of the Four Treasuries</i> 欽定四庫全書	1783	11	Zhejiang (2), Jiangsu (2), Shandong (2), Shaanxi (1), Yunnan (1), Fujian (1), Gansu (1), Guangxi (1)
<i>Record of the Astronomical Instruments in the Imperial Observatory</i> 靈臺儀象志	1674	10	Anhui (2), Henan (2), Zhejiang (2), Hunan (1), Sichuan (1), Guizhou (1), Guangxi (1)

<i>Comprehensive Refinement</i> 通雅	1666	6	Shanxi (3), Jiangxi (3)
<i>Tables [of the Historical Geography] of Imperial Territory</i> 皇輿表	c. 1680-1705	6	Shandong (3), Zhejiang (2), Yunnan (1)
<i>Collection of Treatises on Calendrical Sciences</i> 歷學會通 or 曆學會通 (by Xue Fengzuo 薛鳳祚, 1600-1680)	1662	5	Sichuan (3), Shaanxi (2)
<i>Overview Maps of the Imperial Territories</i> 皇輿全圖 or 皇輿全覽圖 ⁴⁶	1718/1719; Reprinted in the Qi- anlong Era	5	Fujian (3), Jiangxi (1), Yunnan (1)
<i>Imperially Commissioned Investigation of Calendrical Astronomy</i> 欽定曆象考成 or simply 歷象考成	1722	5	Hubei (2), Shaanxi (1), Jiangsu (1), Sichuan (1)
<i>Latter Volumes of the Imperially Commissioned Investigation of Calendrical Astronomy</i> 欽定曆象考成後編	1742	4	Zhejiang (1), Sichuan (1), Yunnan (1), Hunan (1)
<i>Imperially Commissioned Comprehensive Treatise to Instruct People During All Seasons</i> 欽定授時通考	1742	3	Shanxi (1), Jiangxi (1), Zhejiang (1)
<i>Imperially Commissioned Compilation of Commentaries on the Book of Documents</i> 欽定書經傳說	1730	3	Sichuan (1), Guizhou (1), Zhejiang (1)

⁴⁶ *Huangyu quantu* 皇輿全圖 refers to the title used during the Yongzheng reign. Mario Cams, “The Printed Life of the *Huangyu Quanlan tu* 皇輿全覽圖,” in *History of the Mathematical Sciences: Portugal and East Asia: Visual and Textual Representations in Exchanges between Europe and East Asia, 16-18th Centuries*, eds. Luis Saraiva and Catherine Jami, 245-266 (Singapore: World Scientific Publishing, 2018), 260.

<i>Imperially Composed Essence of Numbers and Their Principles</i> 御製數理精蘊	1723	2	Shandong (1), Hubei (1)
<i>Origins of Pitchpipes and the Calendar</i> 律曆淵源	1712	1	Shandong (1)
<i>Imperially Composed Correct Interpretation of Pitchpipes</i> 御製律呂正義	1713	1	Shandong (1)
<i>Imperially Commissioned Record of the Empire's Western Territories</i> 欽定皇輿西域圖志	1782	1	Zhejiang (1)
<i>Terrestrial Map of the Unification of China and Foreign Counties by the Imperial Dynasty</i> 皇朝中外一統輿圖 or <i>Terrestrial Map of the Unification of China and Foreign Counties by the Great Qing</i> 大清中外一統輿圖	1863	1	Hubei (1)
<i>Complete Works on the Seven Heavenly Bodies</i> [秦氏]七政全書 by Qin Wen Yuan 秦文淵 (late Ming-early Qing)	Qing, c. 1662-1722	1	Hubei (1)
Total Number of References to Unique Titles (734) Per Province: Sichuan (96), Hubei (58), Zhili (57), Jiangsu (48), Shandong (47), Jiangxi (47), Hunan (45), Fujian (43), Guangdong (42), Anhui (42), Henan (41), Zhejiang (35), Shaanxi (30), Guizhou (28), Yunnan (27), Shanxi (24), Guangxi (17), Gansu (5), Liaoning (2)			
A total of 544 Unique Gazetteers or ~ 35.8% of the 1,517 Qing-era gazetteers containing a section entitled <i>fenye</i> 分野/分埜/分壘, <i>xingye</i> 星野/星埜/星壘, <i>xingji</i> 星紀, <i>xingzhan</i> 星占, <i>xingtu</i> 星土, <i>xingbiao</i> 星表, <i>xingdu</i> 星度, <i>xingfen</i> 星分, <i>fenxing</i> 分星, <i>tianwen</i> 天文, or <i>tianxiang</i> 天象 cite at least one Qing-era (contemporary) source by name. Note that some gazetteers cite more than one Qing-era astronomical or historical source, so that the sum of 734 distinct references to the texts listed above are spread over 544 unique gazetteers.			