
HoST - Journal of History of Science and Technology

Vol. 18, no. 1, June 2024, pp. 6-30

10.2478/host-2024-0002

THEMATIC DOSSIER

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

Fenye by the Numbers: A Quantitative Analysis of Astrological Contents in Chinese Local Gazetteers

Shih-Pei Chen

Max Planck Institute for the History of Science, Germany

schen@mpiwg-berlin.mpg.de

Abstract: *Fenye* (分野, lit., “field allocation”), is a traditional Chinese astrological system that associated celestial phenomena with regions on earth since ancient times. During middle and late imperial China, many literati writings criticized this system as illogical. Yet in the local gazetteers that were compiled in late imperial China to document local data within each administrative region, compilers continued to use *fenye* as the canonical way to identify their regions within the vast empire. The Jesuit introduction of Western sciences to China, in particular the technology that could precisely locate any place or region with latitude and longitude, appeared to render *fenye* obsolete, which fueled even more literati criticism. Modern scholars consider the public criticism from the Qianlong emperor and the resulting removal of *fenye* from the 1781 Rehe Gazetteer the end of *fenye* in imperial orthodoxy. However, by quantitatively analyzing a collection of 4,410 titles of local gazetteers and their section headings, this paper reveals many examples of local literati who resisted removing *fenye* entirely from their local history, well into the late Republican period.

Keywords: history of astrology; history of astronomy; cosmology; East-West exchange; digital humanities

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Introduction

Fenye (分野, lit. “field allocation”)¹ is a heaven-earth correspondence system that associated celestial bodies with territorial regions since ancient China. Based on the Chinese cosmology of inseparable heaven, earth, and the human world, *fenye* offered a framework for one to know what was happening even in far off regions by observing phenomena in the sky.² It works on three levels: at the first two levels, the sky and the land are each divided into regions; at the third level, the regions on land are paired to correspond with regions in the sky. *Fenye* emerged as a result of the chaotic politics among the weak Zhou state and its many regional vassals during the Spring and Autumn and Warring States periods (eighth to third centuries BCE) and was used for political prognostication. Kings, lords, and emperors hired diviners to constantly observe the night sky to identify unusual celestial phenomena. They would then prognosticate what was taking place and where, based on the region of the sky in which a celestial phenomenon occurred. According to Pankenier, unlike Hellenistic astrology, which is unidirectional, Chinese astrology works both ways, and human actions are affected by, and also affect, celestial bodies. This is the reason why one can observe human events in celestial movements.³

Detailed studies on the development of *fenye* from the second century BCE to the tenth century CE have identified various competing systems of how to correspond sky and land divisions and their relations and differences.⁴ The official dynastic *History of Jin* (*Jinshu* 晉書), published in the seventh century (648 CE), gave one stable correspondence in its *Treatise on Heavenly Patterns* (*Tianwen zhi* 天文志) by combining the two most popular sky divisions: the “Twenty-eight Lodges” (*Ershiba xiu* 二十八宿) and the “Twelve Jupiter Stations” (*Shier ci* 十二次), and corresponding them with the two most popular land divisions that were based on

¹ The sources required for this article were made available via *Staatsbibliothek zu Berlin's* (Berlin State Library) CrossAsia portal, <https://crossasia.org/>, last accessed on April 30, 2024.

² For the development of such astral-territorial correspondence in early China, see David W. Pankenier, *Astrology and Cosmology in Early China: Conforming Earth to Heaven* (Cambridge: Cambridge University Press, 2013), in particular pages 6-7 and Chapter 9; Qiu Jingjia 邱靖嘉, *Tiandi zhijian: 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 on the ‘Field Allocation’ Astrology in Chinese Tradition] (Beijing: Zhonghua shuju, 2020); and Li Zhijun 李智君, “Fenye de xushi zhi bian” 分野的虚实之辨 [On the True Meaning of *Fenye*], *Zhongguo lishi dili luncong* 中国历史地理论丛 [Journal of Chinese Historical Geography] 20, no.1 (2005): 61-69.

³ Pankenier, *Astrology and Cosmology*, 299-300.

⁴ Li, “Fenye de xushi zhi bian,” 61-69. Qiu, *Between Heaven and Earth*. Lü Chuanyi 吕传益, “Zhongguo gudai zhanxing shu zhong de fenye” 中国古代占星術中的分野 [*Fenye* in Chinese Ancient Astrology], *Changjiang wenshi luncong* 长江文史论丛 [Yangzi River Forum of Literature and History], no. 1 (2017): 184-198. Qiu Jingjia 邱靖嘉, “Putian zhi xia: chuantong tianwen fenye shuozhong de shijie tujing yu zhengzhi hanyi” 普天之下：传统天文分野说中的世界图景与政治涵义 [All Under Heaven: The Cosmology and Political Meaning Behind *Fenye*], *Zhongguoshi yanjiu* 中国史研究 [Journal of Chinese Historical Studies], no. 3 (2017): 174-193.

ancient history: the “Thirteen Kingdoms” (*Shisan guo* 十三國) and the “Twelve Regions” (*Shier zhou* 十二州). This correspondence then became the most popular *fenye* system among many competitors throughout imperial China, and was visually depicted in various manuscripts, including many local gazetteers (see Figure 1).⁵ Records of political divination that are based on *fenye* are commonly seen in the official dynastic histories of China. Such records describe a terrestrial event in a certain region, and associate this with a phenomenon in the corresponding celestial region to provide an astrological explanation for the event.⁶

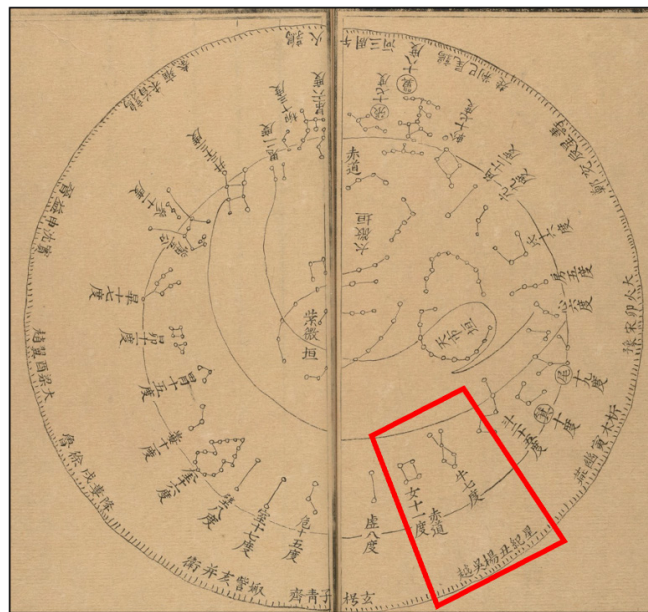


Figure 1. The *Illustration of Heavenly Patterns* (*Tianwen zhi tu* 天文之圖), depicted in the 1684 *Zhejiang Provincial Gazetteer*. The half-celestial sphere, flattened as a full circle, illustrates the united *fenye* system given in the *History of Jin*: the inner circle depicts the “Twenty-eight Lodges” and their shapes, while the outer circle shows the mapping among the “Twelve Jupiter Stations,” the “Twelve Double-hours” (*Chen* 辰), the “Thirteen Kingdoms,” and the “Twelve Regions.” For example, “Star Chronicle” (*xingji* 星紀), one of the sky divisions defined by the “Twelve Jupiter Stations,” together with the *Chou* (丑) hour, *Yang* (楊) *Zhou*, and the *Wu* (吳) and *Yue* (越) Kingdoms, are roughly mapped to Dipper (*Dou* 斗), Ox (*Niu* 牛) and Woman (*Nü* 女) in the “Twenty-Eight Lodges.” Image source: Zhang Heng 張衡. *Zhejiang Tongzhi* 浙江通志 [Gazetteer of Zhejiang], (清康熙二十三年[1684] ed., [China]: n.p., 1684), v.2 “卷首圖” 1b-2a. Harvard College Library

⁵ Qiu, *Tiandi zhijian*, 117-120.

⁶ An example of such records is documented in the ‘Treaties on Five Phases’ (*Wuxing zhi* 五行志) of the *History of Han* (*Hanshu* 漢書) as follows: “宋襄公伐齊行伯，卒為楚所敗。劉歆以為是歲歲在壽星，其衝降婁。降婁，魯分壄也，故為魯多大喪。” It associates the defeat of Song Xiangong’s troops by Chu (kingdom) with the celestial phenomenon that Jupiter in that year was passing the Shouxing region (one of the Twelve Jupiter Stations) and that was in direct opposition from Xianglo, *fenye* for Lu (kingdom). Ban Gu 班固, *Hanshu* 漢書 [History of Han] (Beijing: Zhonghua shuju, 1974) j. 27.2, 1519.

Harvard-Yenching Library. Accessed May 15, 2024. Persistent link: [https://nrs.lib.harvard.edu/urn-3:fhcl:14265319?n=131](https://nrs.lib.harvard.edu/urn:3:fhcl:14265319?n=131).

Scholars believe that *fenye* correspondence gradually lost its practical prognostic function after the Western Han dynasty (202 BCE-8 CE) and became a symbolic belief system,⁷ which might partly have been due to the relatively stable political situation, that is, China had become an empire-state and each regime ruled a large and stable territory. However, Chinese local gazetteers, a genre documenting local information that emerged in the Song dynasty (960-1279 CE), which served local communities (of officials and literati) more than the court, consistently included a section dedicated to, and named *fenye*, as the canonical way to identify the local region within the vast empire. Local gazetteers were cumulative records published in book format about specific territorial entities—mostly administrative units such as counties, prefectures, and provinces. They were mostly compiled by local governments, and the editorial team was usually led by a governor, who was an outsider to the region sent by the court, while the actual compilation might be done by a group of local literati.⁸ Throughout late-imperial China, local gazetteers were pervasively compiled by local governments across the empire. The genre started as an answer to top-down requests from the court to know about its vast empire by asking each local governor to collect data about their region—its history, topography, flora and fauna, customs, its people, and so on.⁹ Such requests were common at the beginning of a new regime.¹⁰ In later times, when new territories were acquired, such as the conquest of Yunnan during the Ming dynasty (1368-1644 CE) or Xinjiang during the Qing dynasty (1644-1911 CE), among the first items on the political agenda was the compilation of local gazetteers which incorporated these regions into the empire via the written word.¹¹ Local gazetteers were also working documents that were updated by local officials collecting up-to-date data and where local literati could promote their own agendas. *Fenye* is among the core categories in

⁷ Li, “Fenye de xushi zhi bian,” 61-69.

⁸ Joseph Dennis, *Writing, Publishing, and Reading Local Gazetteers in Imperial China, 1100–1700* (Cambridge, MA: Harvard University Asia Center, 2015).

⁹ Alexis Lycas, “The Patterned Guidelines of Shazhou (*Shazhou tujing*) and Geographical Practices in Tang China,” *Centaurus* 62, no. 3 (2020): 479–497.

¹⁰ For example, both Yuan and Ming courts requested such information to be compiled right after their establishment. See: Dennis, *Writing, Publishing, and Reading*, 35-48.

¹¹ Lin Kai-Shyh 林開世, “Fangzhi de chengxian yu zaixian: yi ‘Gemalan zhi’ wei li” 方志的呈現與再現——以《噶瑪蘭廳志》為例 [Presentation and Representation of Local Gazetteers: The Case of the Gazetteer of Kavalan Subprefecture], *Xin shixue* 新史學 [New History] 18, no. 2 (2007): 1-60. Meng Fansong 孟凡松, “Qingdai Guizhou junxianzhi ‘xingye’ xushu zhong de guannian yu kongjian biaoda” 清代貴州郡縣志‘星野’敘述中的觀念與空間表達 [Concepts and Expressions in the Xing-Ye Narratives in the Local Chronicles of Guizhou Province in the Qing Dynasty], *Qingshi yanjiu* 清史研究 [The Qing History Journal], no. 1 (2009): 10-20. Hung Chien-jung 洪健榮, “Qingdai Taiwan fangzhi zhong de xixue lunshu” 清代臺灣方志中的西學論述 [The Discourse of ‘Western Learning’ in Taiwan’s Gazetteers in the Ching Dynasty], *Taiwan wenxian* 臺灣文獻 [Taiwan Historica] 62, no. 2 (2011): 105-143.

local gazetteers. Many gazetteers even open with the *fenye* section, documenting the historical record regarding which sky lodge this land region corresponded to and should be associated with. As the function of *fenye* at court during late imperial times is unclear, the question can be raised: why did local gazetteers take up the *fenye* tradition and continue to make it an essential part of most local gazetteers?¹²

During the late Song, Yuan (1279-1368 CE), and Ming dynasties, many literati criticized *fenye*, mostly for its illogical, disproportional correspondence.¹³ The *fenye* system had been outstripped by historical expansion; most lodges were associated with the small central plain that had constituted ancient China, which left only a few lodges for the new territories that made up the majority of the current land mass to share between them. The *fenye* theory of correspondence seemed particularly absurd after Western cosmological knowledge (the earth was round, and there existed vast lands outside of China) was widely disseminated—China occupied all of the twenty-eight lodges, leaving no lodges for foreign lands. At the dynastic turn from Ming to Qing, the Jesuits successfully entered the court and compiled new calendars based on Western astronomy, which accelerated the circulation of Western methods (*xifa* 西法) outside of the court and a rise in the popularity of the criticism of *fenye* among literati writings.¹⁴ This was the background of the Qianlong emperor's (r. 1736-1795) critique of *fenye* cited in the 1781 *Imperially-commissioned Rehe Gazetteer* (*Qinding Rehe Zhi* 欽定熱河志), that resulted in the removal of the *fenye* section in that gazetteer. This episode is considered by scholars today as the official fall of *fenye* from imperial orthodoxy.¹⁵

But did this really mark the departure of *fenye* from local gazetteers? This paper uses a data-driven quantitative approach to re-examine this narrative. The analysis of a collection of

¹² In a conversation in August 2023 between the author and Ping-ying Chang 張秉瑩, author of “The Chinese Astronomical Bureau, 1620–1850 Lineages, Bureaucracy and Technical Expertise,” she mentioned that officials in the Bureau were responsible for reporting unusual celestial phenomena to the emperor as secret memorials. In such reports, officials included possible outcomes based on astrological divination manuals. See a collection of such reports in: Cui Zhenhua 崔振華 and Zhang Shucaï 張書才, eds., *Qingdai tianwen dang'an shiliao huibian* 清代天文檔案史料匯編 [Compilation of Astronomical Materials in Qing] (Zhengzhou: Daxiang chubanshe, 1997).

¹³ Qiu Jingjia 邱靖嘉, “Tianwen fenye shuo zhi zhongjie: jiyu chuantong zhengzhi wenhua shanbian ji xixue dong Zhe jianzi chao de kaocha” 天文分野說之終結—基於傳統政治文化嬗變及西學東漸思潮的考察 [The End of the Theory of Tianwen *Fenye*: An Examination Based on the Transmutation of Traditional Political Culture and the Eastern Advance of Western Learning], *Lishi Yanjiu* 歷史研究 [Historical Research], no. 6 (2016), 34-51. Qiu, *Tiandi zhijian*, 227-256. John B. Henderson, *The Development and Decline of Chinese Cosmology* (New York: Columbia University Press, 1984), 214-217.

¹⁴ Qiu, *Tiandi zhijian*, 246-251.

¹⁵ Qiu, “Tianwen fenye shuo zhi zhongjie,” 39-40. Nie Yi 聶毅, “Chuantong fangzhi xingye xushu de zhongjie: yi Qinding Rehe zhi wei zhongxin de kaocha 傳統方志星野敘述的終結—以《欽定熱河志》為中心的考察 [The End of the Traditional *Fenye* Narrative: Investigation Centered on the ‘Imperially-commissioned Rehe Gazetteer’],” *Yanhuang dili* 炎黃地理 [Yanhuang Geography], no. 3 (2023), 4-6.

4,410 digitized local gazetteers, in particular of their tables of contents, provides an empirical overview of the use of *fenye* as a section heading across gazetteers that offers an alternative narrative. I propose treating section headings of local gazetteers as knowledge categories that reflect their compilers' conscious decisions. *Fenye* is one such data category: each team of compilers autonomously decided whether or not to include *fenye* in their gazetteer. Taking a quantitative view of a large set of tables of contents reflects what the empire-wide group of gazetteer compilers thought the function of *fenye* was and what their gazetteers were supposed to document for both their local society and the empire-wide literati community.

This study uses Local Gazetteers Research Tools (LoGaRT) to obtain statistical overviews of the collection.¹⁶ LoGaRT contributes to our understanding of how gazetteers dealt with the inconsistent astral correspondences of the locality inherited from a long history of *fenye*- and canon-interpretation. It advances our knowledge about the ways in which the compilers of the gazetteers reconciled their local identity when facing the conceptual conflict experienced after Western science destabilized the traditional heaven-centered cosmology. LoGaRT allows users to efficiently explore this large collection by combining and switching between birds-eye overviews and close reading. This paper shows that *fenye* in fact remained a prominent section in this collection long after the publication of *Rehe Gazetteer*, contradicting the common understanding that *fenye* was abandoned by gazetteer compilers once the *Rehe Gazetteer* had set the precedent. Furthermore, the paper argues that the gradual process whereby *fenye* was superseded by better technologies stimulated by Western science lasted until the end of the Republican era (1912-49 CE). The large quantitative approach offered by LoGaRT—which covers around half of all the extant local gazetteers—enables scholars to trace the popularity of *fenye* in this large collection and to analyze how influential Emperor Qianlong's criticism and *Rehe Gazetteer's* removal of *fenye* were in terms of how many gazetteers adopted this new model and replaced *fenye* with an alternative.

Contents of the *fenye* section

Fenye was the canonical way of asserting the place of the locality in relation to the rest of the vast empire for local gazetteers. As mentioned earlier, this is done by identifying the local region on land and its corresponding region in the sky, usually by mentioning the celestial lodge, and sometimes even the astronomical degrees within that lodge. Of the local gazetteers that contain a dedicated *fenye* section, a high proportion of them put *fenye* in the opening

¹⁶ “LoGaRT: Local Gazetteers Research Tools,” Max Planck Institute for the History of Science, last accessed April 30, 2024. <https://www.mpiwg-berlin.mpg.de/research/projects/logart-local-gazetteers-research-tools>. Shih-pei Chen, Calvin Yeh, Sean Wang, and Qun Che, “Treating a Genre as a Database: A Digital Research Methodology for Studying Chinese Local Gazetteers,” *International Journal of Digital Humanities*, 4 (2023): 171–193.

chapter, mostly under headings that refer to land, earth, or territory, and in fewer cases under headings that refer to heaven or astrology.¹⁷

A typical *fenye* section in local gazetteers started by citing a passage in the *Rites of Zhou* (*Zhou li* 周禮) as the origin of documenting the *fenye* of a place in local gazetteers:

The *baozhang shi*. . . . Based on the correspondences between stars and earth, he distinguishes the Nine zhou [regions] of the empire. Since all the lands have their corresponding stars, [the *baozhang shi*] can prognosticate the ominous and the auspicious.¹⁸

保章氏……以星土辨九州之地，所封封域皆有分星，以觀妖祥。¹⁹

Baozhang shi (保章氏) was an official in the ancient Zhou State who was responsible for observing the movement and changes of celestial bodies with the objective of deriving prognostications, mostly political ones. After giving the orthodox background to the gazetteer's documenting of *fenye*, this section continued with a historiography of what had been written about the *fenye* correspondence of this place. For example, in the 1656 *Quzhou County Gazetteer* (*Quzhou Xian Zhi* 曲周縣志), the *fenye* section recorded the following:

Quzhou falls into the ancient region of *Ji Zhou* [one of the Twelve *Zhou*'s]. According to the 'Book of Heavenly Officials' [*Tianguan shu* 天官書] of the Records of the Historian [*Shiji* 史記], *Ji Zhou*'s *fenye* is Mane [*Mao* 昴] and Net [*Bi* 畢] [among the Twenty-eight Lodges]. According to the 'Treaties on Heavenly Patterns' [*Tianwen zhi* 天文志] of the History of Jin [*Jinshu* 晉書], the nearby prefecture Guangping is seven degrees into Mane. Hence, [the *fenye* of] Quzhou should also be seven degrees into Mane. Another saying is, both Yongnian and Quzhou that subordinate Guangping should be fifteen degrees into Stomach [*Wei* 胃].

¹⁷ In LoGaRT, a section search based on the terms *fenye* 分野 or *xingye* 星野 (star allocation), an alternative term for *fenye*, yields 2,711 sections. While about half of the upper headings that *fenye* and *xingye* subordinate refer to volume numbers, around a thousand are under headings that refer to land, earth, or territory, such as "Earth" (*yudi* 輿地), "Land Principles" (*dili* 地理), "Territory" (*jiangyu* 疆域); around 230 of them are under headings related to heaven or astrology, such as "Heavenly Patterns" (*tianwen* 天文) and "Astral Prognostication" (*xinghou* 星候).

¹⁸ This translation is based on Pankenier's with a slight modification. See: Pankenier, *Astrology and Cosmology*, 7. Please note that not all the *fenye* sections cite exactly this passage on *baozhang shi* as the origin of documenting *fenye*, but this quotation is among the most popular sources. All translations in this article are the author's own except when otherwise mentioned.

¹⁹ Zhou Cong 周淙, (*Qiandao*) *Lin'an zhi* (乾道)臨安志 [Gazetteer of Lin'an in the Qiandao era], (清光緒七年[1881]武林掌故叢編本 ed., [China]: n.p., 1881), *juan* 2, 3b. Beijing Airusheng shuzihua jishu yanjiu zhongxin 北京愛如生數字化技術研究中心. *Zhongguo fangzhiku* 中國方志庫 [Database of Chinese Local Records] (Beijing Airusheng shuzihua jishu yanjiu zhongxin, 2017). Accessed May 1, 2024. Access provided by CrossAsia <https://crossasia.org/>.

曲周屬冀州域，天官書分野昴畢冀州，晉天文志廣平入昴七度，曲周密
邇廣平，亦當昴之七度矣。一云，廣平府永年、曲周俱胃宿十五度。²⁰

In order to know which lodge a place should be associated with, gazetteer compilers often cited all the canonical sources that mentioned a correspondence, such as the *Rites of Zhou* (dated second century BC), the *Records of the Historian* (*Shiji* 史記, dated first century BC), the *History of Han* (*Hanshu* 漢書, dated second century AD), to the *History of Jin* (*Jinshu* 晉書, dated 648 CE), to name just a few. Because early *fenye* theories were based on very broad divisions of land (the Thirteen Kingdoms and Twelve Regions that divided China) and no fine-grained correspondence down to the level of prefecture and county appeared until the *History of Jin*,²¹ gazetteer compilers had to extract information from all available historical and contemporary records to reason which lodge their locality could be associated with. This was done in the above *Quzhou Gazetteer* by borrowing the *fenye* correspondence mentioned in the *History of Jin* for its superordinate prefecture Guangping, as this was the closest to Quchou in terms of granularity. The compiler eventually listed two conflicting assertions about Quzhou's *fenye*: one is “seven degrees into *Mao*” reasoned from the *fenye* of Guangping; the other is “fifteen degrees into *Wei*” from an uncited source.

The situation is even more ambiguous when a locality's geographical range was wide and overlapped with more than one ancient land. In the case of the 1822 *Guangdong Provincial Gazetteer* (*Guangdong Tongzhi* 廣東通志), since the area of Guangdong included both *Yue* (粵) and *Chu* (楚) of the Thirteen Kingdoms, the compiler used several pages and quoted eleven sources chronologically to list all of the historical and contemporary records to support his argument about where in the ancient land divisions Guangdong and each of its subordinating prefectures should belong, as this impacts their *fenye*. The compiler first cited the *History of Han*, which affiliates *Yue* with Wing (*Yi* 翼) and Axletree (*Zhen* 軫) and *Chu* with Ox (*Niu* 牛) and Woman (*Nü* 女) in the Twenty-eight Lodges. Then, he cited the *History of Jin*, which further associated the above with *Yangzhou* (揚州) and *Jingzhou* (荊州) in the Twelve *Zhou* system and mapped them with Star Chronical (*Xingji* 星紀) and Quail Tail (*Chunwei* 鶉尾) in the Twelve Jupiter Stations accordingly. Such mapping reads: from twelve degrees into Dipper (*Dou* 斗) to seven degrees into Woman (*Nü* 女) is the region of the Star Chronical; from seventeen degrees into Spread (*Zhang* 張) to eleven degrees into Axletree is the region for Quail Tail. The compiler also provided two other sets of historical data that gave different correspondences, differing by several degrees. He then continued to quote further sources dated from the ninth

²⁰ As agreed with the other authors in this thematic dossier, the translations of the *Twenty-eight Lodges* are taken from: Edward H. Schafer, *Pacing the Void: T'ang Approaches to the Stars* (Portland: Floating World Comics, 2005), 76.

²¹ The *History of Jin* was the first to extend such celestial-territorial mapping to prefectures. However, the list of prefectures was also not complete and is mixed with prefectures from different time periods. See: Qiu, *Tiandi zhijian*, 117-120.

to the nineteenth centuries, documenting the various ways in which historical records found a correspondence between Guangdong and its subordinates with *Yue* and *Chu*, *Yangzhou* and *Jingzhou*, Star Chronical and Quail Tail, and the lodges.

This kind of comprehensive reporting of all of the different and even contradictory assertions about a place's *fenye* is commonly seen across local gazetteers, hinting that gazetteer compilers thought their gazetteers were supposed to be an archive of all of the relevant records on their *fenye*.

In most local gazetteers, the *fenye* section ended after reporting on historical assertions about a place's *fenye*. They usually did not include astral prognostication records that correlated terrestrial events with celestial phenomena that took place in a place's *fenye*. When some of them did draw the relevance of *fenye* to the locality, such records were put under sub-headings of “Investigation and Evidences for Astral Prognostication” (*zhanxing kaozheng* 占星考證), as in the 1602 and 1697 editions of the *Guangdong Provincial Gazetteer*, or “Verification of Astral Prognostication” (*zhanyan* 占驗) as in the 1873 *Revised Chengdu County Gazetteer* (*Zhongxiu Chengdu xianzhi* 重修成都縣志). It is notable that such prognostication records rarely mention contemporary events dated after the Song era. The 1873 *Chengdu County Gazetteer* is an exception, as it included two quotations from contemporary writings by Qing literati on Zhang Xiangzhong's massacres in Sichuan at the dynastic turn from Ming to Qing and both authors associated the event with a rare celestial phenomenon: Beak (*zi* 觜) and Triaster (*shen* 參) switched their positions. While this episode might be too devastating to be explained through rare celestial phenomena and included in local gazetteers, there is no evidence in the local gazetteers read for this study that *fenye* played any practical roles in local governments or in local societies.²²

Replacing *fenye* with *guidu*: the *Rehe Gazetteer*

The *fenye* system had not been designed to adapt to changes in provincial administration, whether these were due to territorial expansion, or responses to changes in population density (i.e. more or less counties, provinces etc.). The previous section gives examples of how some compilers struggled to calculate their local *fenye* as there seemed to be no clear logical way to extrapolate correspondences to low-level administrative regions or new territories.²³ The

²² Tristan Brown hints that local yin-yang officers might influence the compilation of the *fenye* section in local gazetteers with this example in the 1873 *Chengdu County Gazetteer*. See: Tristan G. Brown, *Laws of the Land: Fengshui and the State in Qing Dynasty China* (New Jersey: Princeton University Press, 2023), 131-132.

²³ Tian Qian 田阡, Meng Fansong 孟凡松, “Kongjian biaoda yu diyu rentong: yi Wuling diqu Qingdai dangzhi xingye wei li” 空间表达与地域认同—以武陵地区清代方志星野为例 [Spatial Expression and Local Identity: an Example on Qing Gazetteers in the Wuling Region], *Wenhua yichan* 文化遗产

introduction of Western science by Jesuits at court and the major expansion of the empire's territory gave Qing literati a new set of arguments to rely on when criticizing *fenye*.²⁴

The 1781 *Rehe Gazetteer* marks the most influential episode in all of the literati writings that rejected *fenye*. This was the local gazetteer for Rehe (熱河), the old name for the Chengde prefecture (承德府), where the Qing royal family built its summer palace. Emperor Qianlong commanded the compilation of this local gazetteer and it was led by important court official Heshen (和紳). Thus, it was not actually a “local” gazetteer rather it represented the royal family and the emperor himself. In the “Table of Contents” (*mulu* 目錄) in the front matter, where the compilers explain the editorial principles of the book, it was stated that the *xingye* (星野, lit. “star allocation”) section has been removed and replaced with one named *guidu*.

Remove the narrative of heaven by [the section of] *xingye*, and [to include] the measurement of altitude of the polar star, and it [the section] is called *guidu*.

刪星野之談天，測斗極之出地，曰晷度²⁵

Later in the new *guidu* section, the compiler revealed the reason behind this editorial decision.²⁶ He cited Qianlong's poem and note for *Yugong Zhinan* (禹貢指南), a commentary on the *Tribute of Yu* (*Yugong* 禹貢) by Song scholar Mao Huang (毛晃). The *Tribute of Yu* is dated five to three centuries BCE and is the earliest geographical treaty in China that divides China into Nine *zhou* (*jiu zhou* 九州), which later became the Twelve *zhou* that the major *fenye* systems are based upon. Qianlong criticized *fenye* for its disproportional assignment of only a few lodges to the vast peripheral lands and its irrational allocation of twenty-eight lodges to the Twelve *zhou* covering China that left no lodges for the newly conquered land of Xinjiang and for countries beyond China. Qianlong concluded his note with a direct condemnation of *fenye*: “the theory of *fenye* is not trustworthy, and interpreting disasters and auspicious events based on *fenye* is closed to divination; neither are ways of orthodoxy (蓋分野之說本不足信，而災祥則更鄰於讖緯，皆非正道).” Such strong criticism by Qianlong toward *fenye* may have circulated later among officials across the whole empire through its publication in the *Complete Library of the Four Branches* (*Qinding Siku Quanshu* 欽定四庫全書), a large literary compilation project commissioned by Qianlong himself and completed in 1782. At least, the criticism must have reached the leading compiler of the *Rehe Gazetteer*, Heshen, and urged him to take corresponding actions in his compilation to support his mighty and knowledgeable

[Journal Of Cultural Heritage] 2013, no. 1 (2013): 122-126.

²⁴ Qiu, “Tianwen fenye,” 45-51.

²⁵ Heshen 和紳. *Qinding Rehe zhi* 欽定熱河志 [Imperially Commissioned Rehe Gazetteer] (*Siku quanshu* 四庫全書ed.), *Mulu* 目錄, 17a/b.

²⁶ The original text goes: “我皇上學貫天人，識超今古，闢分野拘墟之舊說，而占候讖緯尤灼，知其傳會難徵，臣等仰窺御製禹貢指南詩，旨固已曠，若發蒙茲論次，承德府諸境極度晷景，謹為分屬排纂。” Heshen, *Qinding Rehe zhi*, *juan* 64, 1b/2a.

emperor's suggestion by removing the narrative on heaven in the *xingye* section and, replacing it with the measurement of polar altitude in a section named *guidu*.

Stipulating *guidu* as replacement for *fenye* might not have been the emperor's idea, although the other important gazetteer published around the same time, the *Gazetteer of the West Territory* (*Huangyu xiyu tuzhi* 皇輿西域圖志), compiled for the newly conquered Xinjiang, also replaced *fenye* with *guidu*. *Rehe Gazetteer's guidu* section starts with a narrative that takes the discussion about this editorial decision further and explains why *guidu* qualifies as the replacement:

Granting the seasons [by observing the sky and compiling calendar] and ordering the Seven Governors [the sun, the moon, and the five planets] are since Yu [Shun 舜]'s court. Methods for measuring [celestial bodies] in later generations are to get *jidu* [極度 an acronym for 北極出地高度, the altitude of the North polar star] and *guiying* [晷影 gnomon shadow length], which are usually [the technology] on land to observe the sky. One always takes the altitude of the polar star as pivot and the *ziwu* line [Beijing-based meridian] as central to get the east-west offset degrees. From there the solar term lines are added.

授時齊政，肇始虞廷，而後世測量之法，以起極度晷影，每憑地以規天，而總以北極出地高卑度分爲樞紐，又以子午線爲中、得東西偏度，由是分布時刻加入節氣諸線，得節氣度分。²⁷

Here *jidu* and *guiying*, in short *guidu*, are presented as the fundamental technology for measuring celestial bodies and observing the sky. Although the technology described here looks very similar to that behind latitude and longitude, the *Rehe Gazetteer* was not referring to the technology brought from the West, but a technology that had been used in China at least since the Eastern Han dynasty (25-220 CE).²⁸ In Chinese history, there were several major surveys commissioned by court to measure the gnomon shadow lengths at different locations across the empire, mainly to reform the calendar.²⁹ The earliest empire-wide survey was conducted in 721 CE by the Buddhist monk Yixing (一行), who compiled the *Dayan calendar* (*Dayan li* 大衍曆) for the Tang (618–907 CE) court. In this survey, *jidu* and *guiying* records were measured at twelve locations across China. In 1276 CE, Guo Shoujing (郭守敬) conducted another survey on twenty-seven locations across the empire to compile the *Shoushi calendar* (*Shoushi li* 授時曆) for Yuan. Such data were documented and disseminated in the official dynastic histories and can be easily cited by literati.

²⁷ Heshen, *Qinding Rehe zhi*, juan 64, 1a.

²⁸ An early documentation of measuring gnomon shadow length can be found in the *Book of the Later Han* in its *Treaties on Rhythm and the Calendar*, Part One: “是故天子常以日冬至御前殿，合八能之士，陳八音，聽樂均，度晷景，候鍾律，權土灰，放陰陽。” Fan Ye 范曄. *Hou Hanshu* 後漢書 [Book of the Later Han], *zhi di yi* 志第一, 3016.

²⁹ Yang Binyong 楊彬鏞, “Fangzhi zhong de fenye yu dili zuobiao 方志中的分野与地理坐标 [*Fenye* and Geographical Coordinates in Local Gazetteers],” *Zhongguo cebui bao* 中国测绘报 [China Surveying and Mapping News](2002).

The next paragraph in the *Rehe Gazetteer* does mention and praise *xifa* (西法, or Western methods) for its being “so precise that it can tell the exact scope of Chengde to be between $40-42\frac{1}{12}$ degrees north of the equator and $43-47\frac{1}{12}$ degrees east of the prime meridian,” and “based on which the lengths of gnomon shadow and the exact time for day and night on the solstices and equinoxes can all be calculated.”³⁰ The argument concludes by praising this technology for its solid logic and for the fact that ambiguity can thus be avoided.³¹ The *Rehe Gazetteer* then continues to give the following data points for each of Rehe’s subordinates: (1) north polar altitude (北極出地高度), which is equivalent to latitude; (2) east-west offset degree from the capital (東西偏度), which is equivalent to longitude; and, on the two solstices and equinoxes of the year: (3) the gnomon shadow length (日景), and (4) the lengths of day time and night time of a place.

Despite the *Rehe Gazetteer*’s high praise of the “Western method,” the name of the new section that replaced *fenye*, *guidu*, was a Chinese term for a technology very similar to that behind longitude and latitude. Such a decision might reflect the choice of Chinese-based technologies over Western ones. After all, despite their similarity, *guidu* and longitude and latitude come from very different worldviews and reflect different cultures.

Scholars have assumed that this public criticism by the emperor and the removal of *fenye* in the *Rehe Gazetteer* set a model for the disappearance of *fenye* in local gazetteers from then on. Whereas the first section of this paper focused on two local gazetteers to show specific examples of the continued use of *fenye*, the next section re-examines this narrative through quantitative methods. With actual data on the tables of contents from a large collection of digital local gazetteers, the paper reveals further evidence of the resilience of *fenye*.

***Fenye* by the numbers: a chronology**

In this section, I focus on two questions through a quantitative data-driven approach: my goal is to understand the popularity of *fenye* across local gazetteers and to determine how influential the *Rehe Gazetteer*’s model of replacing *fenye* with *guidu* was. For the purpose of this analysis, I rely on the assumption that section headings of local gazetteers represent the knowledge

³⁰ Heshen, *Qinding Rehe zhi*, juan 64, 1b.

³¹ The original text goes: “言天文家歷代遞沿，而西法尤為精密，承德府全境居赤道北四十四度至四十二度強，在地圖東面中線偏東四十三度至四十七度強，京師偏東一度至四度強，與夫分至日景及晝夜刻候，皆可以按地分考。蓋天象雖虛，而地體則實，據表器之器，精心以求高卑贏縮芒忽，難淆理固然也。” Heshen, *Qinding Rehe zhi*, juan 64, 1a/b. The character *qiang* (強) denotes the fraction of $\frac{1}{12}$. See further notions for degrees less than one in: Wu Shouxian 吳守賢 and Quan Hejun 全和鈞, *Zhongguo gudai tianti celiangxue ji tianwen yiqi* 中国古代天体测量学及天文仪器 [Astrometry and Astronomical Instruments in Ancient China] (Beijing: Zhongguo kexue jishu chubanshe 中国科学技术出版社, 2013), 50-52.

categories in compilers' minds about what to record for their localities. Thus, I assume that adopting, removing, and creating categories involved conscious decision-making on the part of the compilers. For this reason, I examine the above-mentioned questions by looking *only* at section headings in the collection of 4,410 titles of historical gazetteers dated from the twelfth century to the end of the Republic of China (1949). I mainly take advantage of the local gazetteers' Tables of Contents (*mulu* 目錄), namely the section headings, which were typed and stored in LoGaRT. Although this collection does not contain every extant gazetteer, it includes roughly half of them and thus should be statistically representative of the complete set. While it is not possible to ascertain whether the Tables of Contents are without errors, considering the number of entries, I argue it is safe to draw statistical observations from this collection, i.e., to use this collection to observe how certain phenomena are distributed. As LoGaRT allows a search by section headings and provides visualized statistical overviews of search results, all of the following figures and maps are directly outputted from LoGaRT.

Figure 2 shows a temporal distribution of sections that contain *fenye* and *xingye* (星野, or star allocation) as part of the heading in this collection. The matched sections are grouped into every twenty years and shown as purple columns. We use precisely the following Chinese phrases: 分野, 分壘, and 分壘—all are variations of writing *fenye*—and 星野, 星壘, and 星壘—which are written variations for *xingye*. *Xingye* was an alternative section heading that first appeared in local gazetteers later than *fenye*, but somehow became more popular. Despite the name change, I have not yet found any significant difference in their contents. By comparing the data for both sections, I also found hardly any overlap between the use of the two phrases in section headings, suggesting that they were used interchangeably but not concurrently. Hence, in the rest of the paper, I use *fenye* to refer to both section headings. Combining both phrases and their writing variations, this search yields 2,711 sections in LoGaRT.³²

Figure 2 shows a broad trend of *fenye* being used as a section heading in this collection. Starting around 1460 (before then, there are too few extant local gazetteers to make a statistical claim), *fenye* appeared very frequently, about 65-80% in each of the twenty-year time slots.³³ The frequency remains high until 1840. During 1840 and 1900, the proportion of *fenye* dropped slightly to 49%, 67%, and 57% in the three twenty-year slots respectively. During 1900 and 1949, when imperial China ended and the Republic started, the proportion

³² There are indeed other section headings where *fenye* contents can be found, such as *xingtu* (星土, or star and land), *xingfen* (星分, or star allocation), *fenxing* (分星, or allocating the stars), *xingji* (星紀, or star chronicle), and so on. Since they appear in a minority of gazetteers, we chose to use the most popular *fenye* and *xingye* phrases to conduct our analysis.

³³ Moving back to earlier periods, in the forty-three known extant local gazetteers published during the Song and Yuan dynasties, *fenye* seems not as popular as in later periods—in LoGaRT, we only find 40% of Song and Yuan local gazetteers containing a *fenye* section. However, according to Jingjia Qiu, his unpublished study on lost Song and Yuan gazetteers found indications that the proportion of *fenye* sections during Song and Yuan could also be high (personal conversation, May 2023).

of gazetteers containing *fenye* dropped further: 1900-1920 to 40%, 1920-40 to 30%, and eventually in 1940-49 down to 18%, which also marks the end date of the collection.

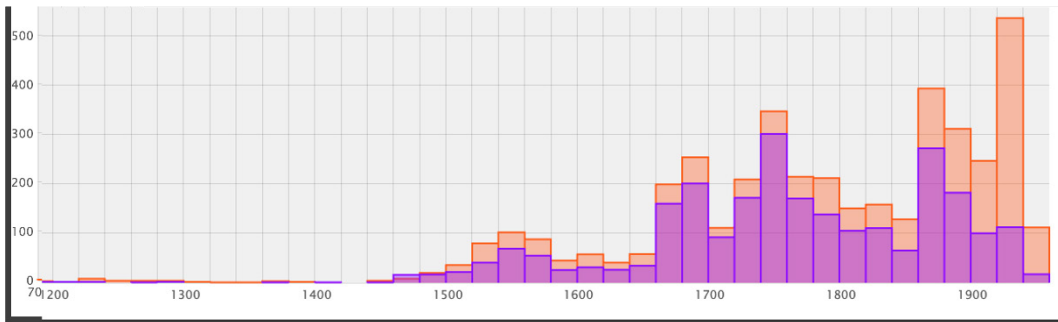


Figure 2. Temporal distribution of sections named *fenye* (in purple) per every 20 years, in comparison with the temporal distribution of all of the gazetteers in the database (in orange).

This temporal chart shows that *fenye* was indeed a prominent section throughout most of imperial China, at least between 1460 and 1840. It remains a mystery why *fenye* was initially adopted by local gazetteers, as the theory was developed in ancient times and was mainly used for the state and the local warlords in their internal conflicts, and as a tool for political prognostication. While in early canonical texts and official dynastic histories *fenye* was often put in practical use to associate celestial phenomena with natural and political events, in local gazetteers such association is rarely documented. Local gazetteers usually contain a standalone section recording disastrous historical events, named either *xiangyi* (祥異, or Auspicious Events and Anomalies), *zaiyi* (災異, or Disasters and Anomalies), or *zaixiang* (災祥, or Disasters and Auspicious Events), or sometimes *wuxing* (五行, or Five Phases), in which disaster records are mostly detached from a place's *fenye*. As mentioned earlier, within the *fenye* sections, documenting historical prognostications based on *fenye* is also not a must. In this sense, the function of *fenye* in local gazetteers does not appear to be prognostic or astrological. On the other hand, *fenye* and *xiangyi* often appear close to each other in gazetteers, suggesting that they are still related to each other in compilers' minds.

Indeed, this consistent choice of data categories—among them *fenye*—must be rooted in how the genre started, following the court-issued guidelines regarding the kind of data local officials were supposed to collect and submit to the court.³⁴ The 1418 Compilation Guidelines for Local Gazetteers issued by the Ming court (永樂十六年纂脩志書凡例) is the earliest extant. It lists twenty-two categories for local compilers to follow, *fenye* being the second, after *jianzhi yange* (建置沿革, History of Establishment and Course of Development).³⁵

³⁴ Dennis, *Writing, Publishing, and Reading*, 35-48.

³⁵ The complete text of the 1418 guidelines can be found in the 1515 *Xin County Gazetteer* (*Xin xian zhi*

Item. *Fenye* [name of section heading]: to give which of the Twelve Zhou's this place belongs to, and under heavenly pattern which lodge this place is associated with.

一分野，屬某州，天文某宿分野之次

In the following *Comprehensive Gazetteer of the Great Ming* (*Da Ming yitong zhi* 大明一統志) published in 1461, all prefectures within the empire are presented in a consistent twenty to twenty-one categories. In this case, *fenye* was not a category itself but was positioned under *jianzhi yange*, probably because the content about *fenye* was very brief—only the lodge association was given. In the *Comprehensive Gazetteer of the Great Qing* (*Da Qing yitong zhi* 大清一統志), published in 1744 by the succeeding Qing dynasty, the compilation guidelines changed the order of sections and moved *fenye* first, before *jiangzhi yange*, which matches the pattern seen in many local gazetteers. The text for *fenye* in the *Qing yitongzhi* is also much longer than the *Ming yitongzhi*, as it includes first the associated lodges and the Jupiter Station, and then an overview of related historical records. Unquestionably, the adoption of *fenye* in local gazetteers was reinforced by the Ming and Qing courts' publication of comprehensive gazetteers, which must have contributed to making *fenye* a standard section in local gazetteers.

From the local perspective, the *fenye* section does look more like an archive documenting all related historical and contemporary assertions about a place's *fenye*, rather than something of practical use. *Fenye* was detached from records of disasters or auspicious events, and there is no evidence that local officials or literati could really see their lodges at certain points of time in the year. It is even difficult to judge how many authors of this section understood astronomy and the *fenye* theory. Only very few of the authors of this section were known astronomers.³⁶ It is worth mentioning that for a long period in Chinese history, astronomical and calendrical knowledge—including predicting celestial phenomena and compiling calendars—was restricted to the Astronomy Bureau of the court. Every source that local literati could draw from to write the *fenye* section was in public writings. Classics such as *The Rites of Zhou* and *The Tribute of Yu* provided a theoretical basis. Official dynastic histories contain records on field allocation based on different *fenye* systems that can be borrowed, as can earlier editions of gazetteers of the same place or of the administrative superordinate unit, and the empire-wide gazetteers. All of these are cited by compilers when writing about *fenye*.³⁷ Although local

莘縣志). See Dennis, *Writing, Publishing, and Reading*, 43-46 for a complete translation.

³⁶ Zhu Haohao 朱浩浩 and Zhou Qi 周琦 presented an analysis on Mei Wending 梅文鼎 and his writing of the *Xingye* section in the *Ningguo fuzhi* 寧國府志 (Ningguo Prefectural Gazetteer) in “The ‘Intermediary Status’ of *Fenye* in Local Gazetteer: Study on Mei Wending's *Ningguo Fuzhi* ‘Xingye’ in early Qing China” (paper presentation, “Empire under the Night Sky: The Role of *Fenye* (Astrological Contents) in Late Imperial China Workshop, Max Planck Institute for History of Science, Berlin, May 25-26, 2023).

³⁷ One of the popular sources for Qing gazetteers is *Da Ming qinglei tianwen fenye zhishu* (大明清類天文分野之書)[Book of the Neatly Categorized Heavenly Patterns and Field Allocation of the Great

gazetteers had become a genre in which local officials and local literati could flexibly implement different agendas (for local governance or for expressing local identity), there are reasons to believe that in the background it may still have also been a communication outlet that local officials and literati used to communicate with the whole empire—not only with the court but also within the broad literati community. This perspective might help to explain the local need to describe a place's location in the empire within the traditional cosmology that was widely recognized by literati, even if *fenye* was no longer convincing in comparison to Western science.

Now let us turn to the popularity of the *Rehe Gazetteer's* model of *guidu* among subsequently published gazetteers. Figure 2 shows there was indeed a slight decrease in the use of *fenye* after 1780, but in general *fenye* remained a popular section in local gazetteers for at least another century, until the 1880s. Subsequently, the number of *fenye* sections in local gazetteers continuously dropped as the new Republican regime was established and as China underwent a process of modernization. At the end of the chart (1940–49, also the end of Republican China), 20% of local gazetteers still contained a *fenye* section. The following Table 1 gives a more precise measure by Qing reigns:

Reign	Number of gazetteers in LoGaRT	Number of <i>fenye</i> sections	Proportion of gazetteers containing a <i>fenye</i> section
Shunzhi (1644-1661)	71	48	67%
Kangxi (1662-1722)	628	505	80%
Yongzheng (1723-1735)	112	98	88%
Qianlong (1736-1795)	817	669	82%
Jiaqing (1796-1820)	216	144	66%
Daoguang (1821-1850)	260	159	61%
Xianfeng (1851-1861)	50	25	50%
Tongzhi (1862-1874)	284	212	74%
Guangxu (1875-1908)	574	316	55%
Xuantong (1909-1911)	55	21	38%

Table 1. A break-down of local gazetteers during Qing (1644-1911) containing a *fenye* section.

Ming], completed and presented to the Hongwu Emperor of the Ming dynasty in 1384. It allocated Ming administration regions down to the level of prefectures and counties to the Twelve Jupiter Stations and the Twenty-eight Lodges, and thus was often cited by Ming and Qing gazetteers. However, there was no documentation on records that associated earth events and celestial phenomena in the *Fenyeshu* to hint how such detailed *fenye* allocation could be practiced.

Studies have shown the new model of using *guidu* to replace *fenye* as represented by the *Rehe Gazetteer* had a profound impact on later gazetteers.³⁸ Scholars have presented examples of how gazetteer compilers quoted the *Rehe Gazetteer* and argued against *fenye*. Indeed, in the 1822 Guangdong Gazetteer discussed in the first section of this paper, after documenting all the historical assertions about the *fenye* for Guangdong's subordinates, the compiler expressed his views about the *fenye* theory, stating he was dissatisfied with it and thought it was illogical and superstitious. At the end, he cited Qianlong's removal of *fenye* and agreed with it: this gazetteer had a *guidu* section that preceded the *fenye* section, which was not exactly the practice promoted by the *Rehe Gazetteer*—the Guangdong Gazetteer kept both sections. The compiler defended his decision to include a *fenye* section by claiming he was following the model set in the *Comprehensive Gazetteer of the Great Qing*. The compiler argued that, despite the removal of *fenye* by his emperor, “observing celestial patterns for prognostication is a cultural practice with a long history” and thus he was “documenting such arguments to keep a record of the ancient methods.”³⁹

Surprisingly, when searching for *guidu* (with the term “晷度”) in LoGaRT for section headings, there are only 115 sections named *guidu* among the 4,410 gazetteers. Figure 3 shows the temporal distribution produced from this search. The first group of followers were only published in the 1820s across the entire collection. Although this collection is incomplete, given the dramatically small number of *guidu* sections found, one can still make the following statistical observations. First, *guidu* was not as widely adopted by local gazetteers as some scholars have argued. Second, there was a temporal gap between the publication of the *Rehe Gazetteer* and its followers, which might be reasonable considering the time needed for its distribution and for later gazetteers to be compiled, although this long gap is surprising. Third, given that the technology of *jidu* and *guiying* had existed in China for a millennium before the *Rehe Gazetteer*, borrowing the terminology of *guidu* and using it in local gazetteers as a section heading was an innovation by Qianlong's court.

³⁸ Qiu, “Tianwen Fenye.” Nie, “The End of the Traditional *Fenye* Narrative.”

³⁹ The original text goes: “.....以闡古星土堪輿之絕學，不亦顛乎。高宗純皇帝刪星野之談天，洵為千古不刊之至論矣，第觀象玩占由來已久，今敬遵欽定大清一統志之例，畧採諸說以存舊術焉。” See: *Guangdong tongzhi* 廣東通志 [Guangdong Provincial Gazetteer], 1822 edition, *juan* 89, 20b (*Yudi lüe* 輿地畧 [Treaties on Geography]).

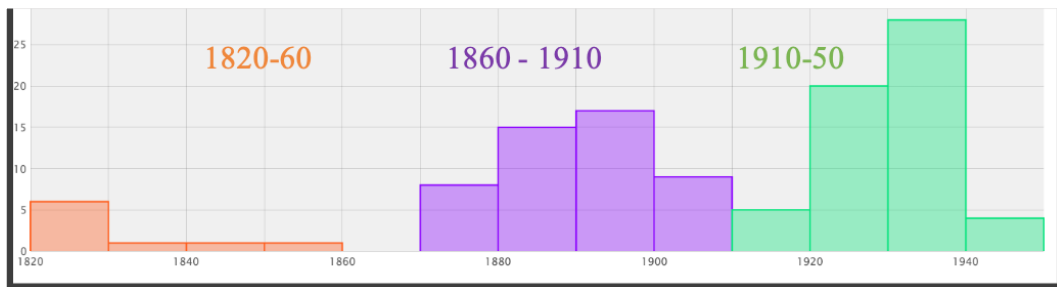


Figure 3. Temporal distribution of the one-hundred and fifteen *guidu* sections in the collection, color coded by three temporal periods.

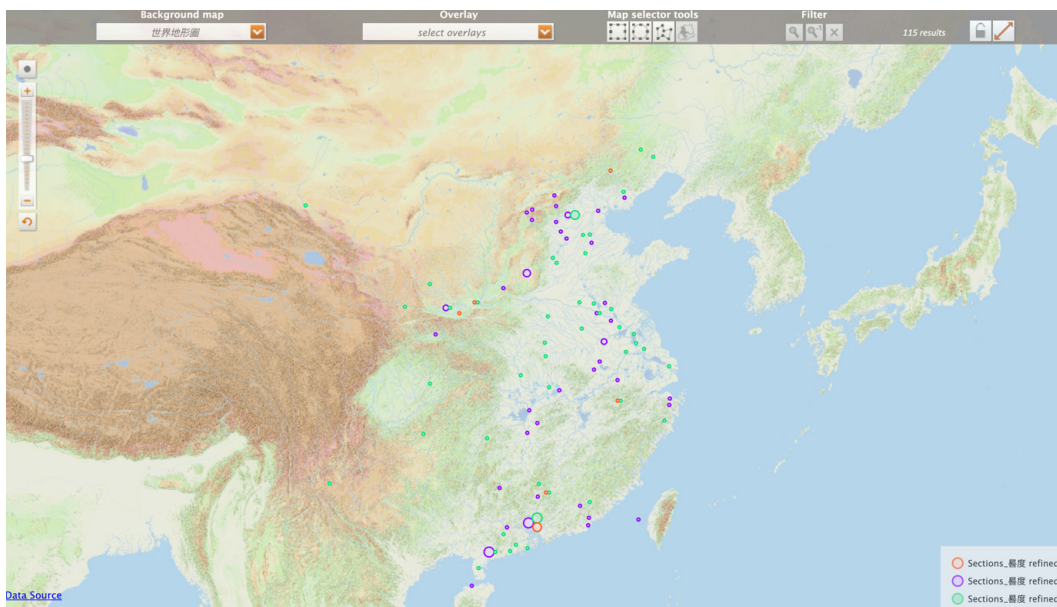


Figure 4. Geographical distribution of the one-hundred and fifteen *guidu* sections in the collection, color coded by three temporal periods as indicated in Figure 3. Source: LoGART.

To further understand the geographical spread of the *guidu* followers, I divided them into three temporal groups as shown in Figure 4: 1820 to 1860 (color-coded in orange), 1860 to 1910 (in purple), and 1910 to 1950 (in green). The earliest followers (nine gazetteers) were from Guangdong (five gazetteers), Shaanxi (two gazetteers), Zhili (the district where Chengde was located, one gazetteer), and Anhui (one gazetteer). Between 1860 and 1910, the use of *guidu* spread out to other provinces, namely Hunan, Shanxi, Hubei, Zhejiang, north Jiangsu, and south Shandong (the latter two seem to be a cluster). In the last temporal group of 1910-1949 (which roughly corresponds to the Republican period), the geography of *guidu* adopters spreads a bit further, but still did not reach across all of the provinces: the northeastern provinces were absent, as were the southwestern and western ones. Intriguingly, it seems that only Guangdong

and Zhili gazetteers kept *guidu* in their later editions—the purple dots (representing the second temporal group) in Figure 4 do not always have green dots (representing the last temporal group) accompanying them. This could be explained by the fact that there is no later edition for those places. It is more likely however that it was due to the fact that after its introduction *guidu* was not a stable category, and it may have been dropped or replaced by other categories.

Most of the *guidu* followers quoted the *Rehe Zhi* explicitly, such as the 1822 *Guangdong Gazetteer*. A smaller number quoted *Huangyu Xiyu Tuzhi* instead, with no mention of the *Rehe Gazetteer*, such as the 1820 *Chang'an County Gazetteer* (*Jiaqing Chang'an xian zhi* 嘉慶長安縣志) and the 1850 *Dali County Gazetteer* (*Daoguang Dali xian zhi* 道光大荔縣志). This shows an alternative circulation route of the *guidu* model through the *Huangyu xiyu tuzhi*. Given that both the *Rehe Gazetteer* and *Huangyu xiyu tuzhi* were commissioned by Qianlong, his influence in this process is still present.

However, in all the 115 gazetteers that adopted *guidu*, only sixty-three actually removed *fenye*, while the other fifty-two included both sections, indicating an implicit resistance from local compilers to removing *fenye* entirely, as shown in the 1822 *Guangdong Gazetteer*. A comparison of the number of *guidu* and *fenye* sections shows that, despite having avid followers, the number of gazetteers that introduced *guidu* cannot compete with the number who remained loyal to *fenye*—those who did not respond to their emperor's call. This can be observed in Figure 5 by comparing the heights of the yellow columns (representing *guidu*) and the green columns (representing *fenye*). Even if they responded to and set up *guidu*, some compilers continued to respect *fenye* as a canonical body of knowledge that could not be simply erased from their local history. On the other hand, between 1820 and 1900 the proportion of gazetteers containing *fenye* did start to drop while those with *guidu* increased.

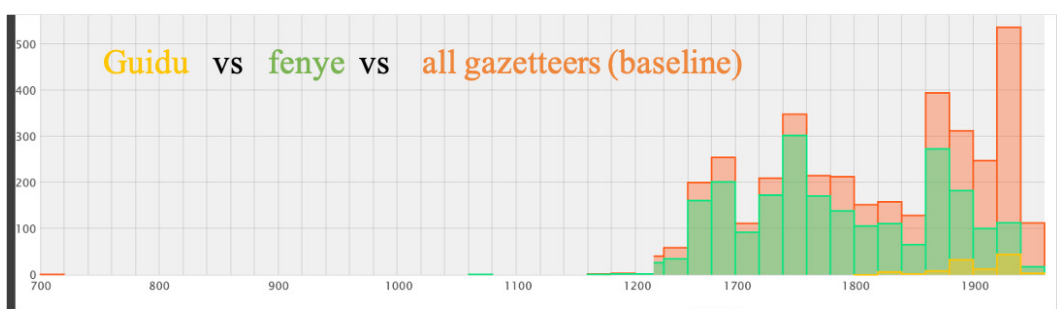


Figure 5. Temporal distribution comparing: (1) sections named *guidu* (in yellow); (2) sections named *fenye* (in green), and (3) the entire collection of 4,410 gazetteers (in orange).

Such resistance even appears in the *Rehe Gazetteer* itself—after claiming to have removed *fenye*, the compiler in fact appended the usual *fenye* content at the end of the *guidu* section: he first praised the method of measuring longitude and latitude as it could always be verified

and was thus reasonable, but then he turned to *fenye*, introducing the original theory and quoting passages from classics and dynastic histories that discussed the *fenye* of Rehe—a typical *fenye* narrative. Later the compiler indeed criticized the original *fenye* theory for its method of associating the Twenty-eight Lodges with the Central region of China (*zhongtu* 中土), as this used up the lodges in the central plain, and he cited Qianlong's critique that such correspondences were developed to be used by diviners and could not usually be verified nor reasoned. However, at the very end, the compiler did in fact offer a refined synthesis based on the Twenty-eight Lodges which absorbs Western scientific knowledge by using 360 degrees for the sky (instead of the Chinese way of dividing the sky into $365\frac{1}{4}$ degrees) and assuming the distance around the earth to be 72,000 *li* (里). He proposed distributing the lands over 360 degrees in a circular way (so that each degree covers 200 *li* of distance) and used the cardinal directions of the lodges to re-allocate them to lands in a circular way centered around the capital. He argued: "If we use this way to talk about *fenye*, then the numbers will not be exhausted and the theory of *fenye* can still be depended on (如是以言分野，則數不窮，而理猶可據)。"⁴⁰ The compiler appears to establish a long narrative to hide his resistance to his emperor's will. Western science, in this case, does not provide him with an argument to reject *fenye* and the traditional cosmology behind it, but rather provides a new methodology to refine and prolong it.

Nevertheless, *guidu* was the first explicit attempt in the long history of local gazetteers to replace *fenye*. The kind of data that was used in the *guidu* section— polar altitude, gnomon shadow length, east-west offset degree from the capital, and lengths of day and night—all reflect the actual location of a place on earth. While one still cannot draw a conclusion on why *fenye* became a part of local gazetteers in the first place and what local officials thought the function of *fenye* was, after replacing *fenye* with *guidu*, the function of this section seems to have become purely geographical, reasonable, and scientific, and left no room to host the heaven-earth-man cosmology that existed for two millenniums.

Qianlong's initiative of replacing *fenye* with *guidu* represents one explicit attempt to update the knowledge structure in local gazetteers when China encountered Western science. I see this episode as one instance within the overall transformation of traditional Chinese knowledge system to a modern one, i.e., the Western system that included not only astronomy, geography, but also new types of schools and other societal structures. Such replacements were not always immediate or straightforward. In the case of *fenye*, certain new knowledge about the world, for example, the earth was round and the land beyond China was huge, lent literati and Qianlong the foundation to further criticize *fenye* and ancient astrology. However, despite his knowledge of Western astronomy and geography, Qianlong chose another Chinese technology rather than the equivalent Western method. In addition, the way Qianlong implemented this replacement

⁴⁰ Heshen, *Qinding Rehe zhi*, juan 64, 14a.

was by declaring his criticism in a text and letting his officials cite it—the literati way—rather than issuing an official edict using his political authority—the emperor’s way. This subtle tactic might suggest that Qianlong had foreseen such resilience.

A long transformation: other successors for *guidu*

Both the findings in Figure 4—that *guidu* had long-time followers only in Guangdong and Zhili—and from Figure 5—that *guidu* was never as popular as *fenye* even after 1900—lead us to consider that *guidu* might not have replaced *fenye* in the long run. Rather, *guidu* seems to be a temporary replacement, a phase in the long transformation of the Chinese knowledge structure and adoption of Western science completed during the Republican period. In the Republican local gazetteers, various new categories emerged and reflected the upending of both knowledge structure and society.⁴¹

In the search of a better technology to locate a place on earth, eventually the popularity of longitude and latitude in Chinese society spread beyond local gazetteers.⁴² In order to understand what other terminology was used in local gazetteers during this transformation, I cross-checked the full texts in LoGaRT and found further section headings that embraced concepts similar to *guidu*, gnomon length, polar altitude, and length of day and night. Table 2 includes a list of terms and their frequencies. It is important to note that all these terms first appeared during the Qing era, but not before. While the use of *guidu* during the Qing and Republican eras are roughly equal (60 versus 55), others became more popular during the latter period, which supports our hypothesis that *guidu* had been put aside at this point. The frequency of all these terms combined surpasses that of *fenye* after 1920. See Figure 6.

⁴¹ Examples of such new categories include: industry (*gongye* 工業), commerce (*shangye* 商業), politics (*zhengzhi* 政治), foreign policy (*waijiao* 外交), society (*shehui* 社會), agriculture (*nongye* 農業), plants (*zhiwu* 植物), animals (*dongwu* 動物), telegram (*dianbao* 電報), railway (*tielu* 鐵路), among others. Note that even if the concepts had already existed in imperial China, the Republican gazetteers used new terminology to describe them. See: Shih-Pei Chen, “What One Should Know about a Locality: Analyzing Knowledge Categories in the Chinese Local Gazetteers” (paper presentation, Knowing the Empire: Imperial Science in Early Modern Chinese and Spanish Empires Workshop, Max Planck Institute for History of Science, Berlin, November 21-22, 2019).

⁴² See Jiajing Zhang’s contribution in this thematic dossier.

<i>Section headings</i>	<i>Number of occurrences in LoGaRT</i>	<i>Number in Ming and before</i>	<i>Number in Qing</i>	<i>Number in Republic</i>
<i>guidu</i> 晷度 (combining <i>jidu</i> , polar altitude, and <i>guiying</i> , gnomon shadow length)	115	0	60	55
<i>weidu</i> 緯度 (latitude)	65	0	9	56
<i>jingwei</i> 經緯 (longitude and latitude)	101	0	21	80
<i>jingdu</i> 經度 (longitude)	9	0	3	5
<i>weihou</i> 緯候 (latitude and climate), <i>guike</i> 晷刻 (gnomon and clock), <i>guijing</i> 晷景 or <i>guiying</i> 晷影 (gnomon length), <i>richuru</i> 日出入 (time of sunrise and sunset), <i>gaodu</i> 高度 or <i>chudi jidu</i> 出地極度 (polar altitude), <i>piandu</i> 偏度 (east-west offset degree), <i>tiandu</i> 天度 (degrees of heaven), <i>beiji</i> 北極 (polar), <i>zhouye</i> 晝夜 (time of day and night)	128	0	37	91

Table 2. Further section headings encapsulating the concept of polar degree, gnomon, and longitude/latitude and their amount.

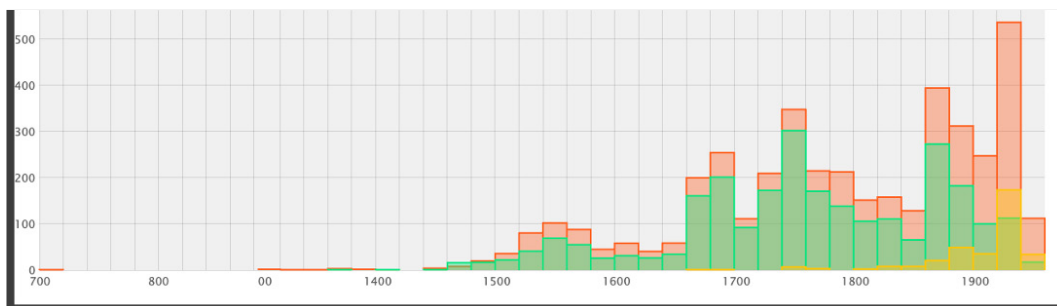


Figure 6. Temporal distribution comparing: (1) sections named *guidu* and further keywords comprising the same concept (in yellow); (2) sections named *fenye* (in green); and (3) the entire collection of 4,410 gazetteers (in orange).

Concluding remarks

This article re-examines the Qianlong court's attempt to abolish the local gazetteer *fenye* section and replace it with *guidu*, a practice advocated in the 1781 *Rehe Gazetteer* and the 1782 *Huangyu xiyu tuzhi*. Both gazetteers cited the Qianlong emperor's poem which criticized *fenye* for its illogical and uneven distribution of the Twenty-eight Lodges to all lands on earth, particularly in light of the vast lands beyond China, information sourced from Western sciences. By quantitatively analyzing section headings from 4,410 local gazetteers, this paper provides an empirical overview of *fenye*'s rise in the Ming and Qing eras, shows how it was then challenged and replaced with *guidu* in the mid- and late-Qing period, and finally how *guidu*

was implemented in the long process of transformation, as Chinese cosmology was displaced by Western sciences. Most surprising in my findings is that *guidu* was not as popular as scholars had previously expected, demonstrating a strong resistance among gazetteer compilers to the pressure to remove *fenye* from their gazetteers entirely. Scholars have found narratives that support the replacement of *fenye* with *guidu* in literati writings and in local gazetteers, but such research may have neglected the silent majority—those who showed their rejection by keeping *fenye* and by not adopting *guidu* as knowledge categories in their gazetteers. The passive action of not doing something is made visible and obvious through the quantitative approach.

The process through which traditional cosmologies and knowledge structures across different regions and cultures were replaced by Western sciences has been discussed in many different ways.⁴³ This paper helps to reveal that the process of replacing the Chinese knowledge structure with new categories inspired by Western sciences was not always straightforward, in particular for those that concern the traditional Chinese cosmology of the inseparability of heaven, earth, and the human world. While Qianlong's criticism of *fenye* had a huge influence on court officials and literati nation-wide, resistance from local gazetteer compilers who thought they were preparing archives for future generations was just as strong. Qiao Zhizhong and Cui Yan have closely examined this incident and given possible reasons why this step toward replacing illogical field allocation with verifiable scientific methods did not succeed.⁴⁴ Yet, counting section headings without looking at their content risks not being able to capture what was actually documented in those sections. We have seen in the *Rehe Gazetteer* that although the author removed *fenye* as a section heading, he still documented and supported *fenye*. It is important to remember that even before the *Rehe Gazetteer* many compilers criticized *fenye* within the *fenye* section. Parallel research by Tan Dan has disregarded the section headings and analyzed what makes into related sections (no matter what the section is called), observing whether *fenye*, *guidu*, or longitude and latitude are recorded, and if so, disjointly or in parallel.⁴⁵

⁴³ John Henderson discussed the decline of Chinese cosmology in comparison with the demise of Aristotelian cosmology, Ptolemaic cosmography, and theories of correspondence in seventeenth-century Europe. See: Henderson, *Development and Decline*, 149 and chapters 6, 7, and 8. Zhang Hongbin's work is another example: Zhang Hongbin 张洪彬, *Tianren ganying jindai kexue yu wan Qing yuzhou guannian de shanbian* 天人感应、近代科学与晚清宇宙观念的嬗变 [Disenchantment: Heaven-Mankind Interaction, Modern Science and the Transmutation of Cosmology in Late Qing Dynasty] (Shanghai: Shanghai guji chubanche, 2021).

⁴⁴ Qiao Zhizhong 乔治忠 and Cui Yan 崔岩, "Qingdai lishi dilixue de yi ci kexuexing kuayue: Qianlong di 'Ti Mao Huang 'Yugong zhinan' liu yun' de xueshu yiyi" 清代历史地理学的一次科学性跨越—乾隆帝《题毛晃〈禹贡指南〉六韵》的学术意义 [A Scientific Advancement of Historical Geography in the Qing Dynasty: The Academic Significance of Emperor Qianlong's Six Rhymes on Mao Huang's Yugong Zhinan], *Shixue yuekan* 史学月刊 [Journal of Historical Science], no. 9 (2006): 5-11.

⁴⁵ Tan Dan 譚丹, "Uneven Transformation of the *Fenye* Section of Local Gazetteers in Qing Dynasty" (paper presentation, "Empire under the Night Sky: The Role of *Fenye* (Astrological Contents) in Late Imperial China Workshop, Max Planck Institute for History of Science, Berlin, May 25-26, 2023).

While officials in the Qing dynasty Astronomical Bureau (*qintian jian* 欽天監) were still responsible for making observations of celestial phenomena and prognostications from them, it is unclear the extent to which similar astrological practices were carried out by the local governments and societies, given the restriction of practicing *tianwen* (天文) outside of the court. It is also unclear how much astronomical and astrological knowledge the gazetteer compilers possessed when compiling contents for the *fenye* section: some examples seem to be merely an archive documenting all the related records and customizing them for the locality, and others include speculation about *fenye* theory. If we consider that the officially sanctioned replacement for *fenye* was *guidu*, we might conclude that the purpose of including *fenye* in local gazetteers was to fulfill a geographical rather than astrological function. The quantitative analysis on *fenye*'s upper categories further supports this argument, as *fenye* is listed far more often under geographical headings than astrological headings. However, the resistance to the replacement of *fenye* with *guidu* among gazetteer compilers might be due to their reluctance to detach the traditional heaven-earth-man cosmology from their local histories and their cultural identities. Perhaps the fact that Emperor Qianlong avoided making an official proclamation banning the use of *fenye* shows an awareness that he could not compete with a traditional cosmology that was deeply rooted in Chinese culture.⁴⁶ After all, Qianlong was just one literati in a long history, only one of the many “sons of the heaven” (*tianzi* 天子) with a limited time span on earth, while carefully compiled local gazetteers continued to survive and to be read.

As the quantitative analysis indicates, *guidu* was a temporary replacement for *fenye*, and other headings encompassing the scientific concept of longitude and latitude continued to emerge in the Republican period. However, it also seems that longitude and latitude did not become fully established in local gazetteers as a pervasive category until the end of the Republican period, which also marks the end of this paper's data set. This article has shown one way in which further knowledge of the practices of local gazetteer compilers as a nation-wide literati community can provide a nuanced understanding of the process through which traditional knowledge structures were eroded and new knowledge categories established.

Acknowledgments

The arguments of this article benefit from the “Empire under the Night Sky: The Role of *Fenye* (Astrological Contents) in Late Imperial China” Workshop held at the Max Planck Institute for History of Science, Berlin, May 25-26, 2023. In particular, comments from Tristan Brown, Mario Cams, Ping-ying Chang, Christopher Cullen, Joseph Dennis, Catherine Jami, Chuanyi Lü, Daniel P. Morgan, Jingjia Qiu, Dagmar Schäfer, Yunli Shi, Sarah Schneewind, Mengmeng Sun, Dan Tan, Huiyi Wu, Qiao Yang, Jiajing Zhang, and Haohao Zhu greatly helped me to

⁴⁶ Qiao and Cui, “Qingdai lishi dilixue.”

articulate my arguments. The author would like to thank the two anonymous reviewers for their constructive criticism and detailed guidance in helping to strengthen this paper. Thanks also go to Gina Grzimek for helping to rephrase the writing elegantly and for Cathleen Paethe for her extensive knowledge in Chinese sources.

Funding

Research for this article has been made possible by the generous support of the Department Artifacts, Action, Knowledge at the Max Planck Institute for the History of Science, Berlin.

Competing interests

The author has declared that no competing interests exist.