

The Introduction of the Idea of the Hypothetical Magellanica Continent into China during the Seventeenth Century

FEI Jie 费杰*

(Institute of Historical Geography, Fudan University, Shanghai 200433, China)

Abstract: The idea of the hypothetical Magellanica Continent (*Terra Australis Incognita*) was introduced into China by the Jesuit missionaries during the seventeenth century. While not accepted by the Chinese government, it was affirmed and transmitted to the public by a few Chinese scholars, including Feng Yingjing, Cheng Bai'er, Zhang Huang, Xiong Mingyu, Xiong Renlin, You Yi, Zhou Yuqi, Jie Xuan, Wang Honghan, and Ye Zipei. Most of them communicated closely with the Jesuit missionaries, and several even helped the missionaries compose the maps. The concept was updated progressively by Matteo Ricci, Giulio Aleni, Johann Adam Schall von Bell, Francesco Sambiasi, and Ferdinand Verbiest. Chinese scholars copied the missionaries' relevant maps and textual introductions without much modification. However, they paid little attention to advancements in the idea, and many of them circulated outdated knowledge. It was not until the middle- and late-nineteenth century that Chinese scholars reexamined the correctness of this hypothetical continent.

Keywords: Magellanica Continent, hypothetical, Jesuit missionary, Matteo Ricci, world map

摘要: 17 世纪, 天主教耶稣会传教士将假想的墨瓦蜡泥加洲(南方未知大陆)这一概念传入中国。这一概念并未得到中国官方的认可, 但是一部分中国学者接受并传播了这一概念, 这些学者包括冯应京、程百二、章潢、熊明遇、熊人霖、游艺、周于漆、揭暄、王宏翰、叶子佩等。他们大都与传教士有密切交往, 有的还协助传教士编绘地图。传教士利玛窦、艾儒略、汤若望、毕方济和南怀仁等对墨瓦蜡泥加洲这一概念不断更新。中国的学者则对传教士的地图和图说进行了传抄和简化, 但是他们往往只传抄过时的知识, 很少关注到墨瓦蜡泥加洲这一概念的更新。直到 19 世纪中晚期, 中国学者才关注到了墨瓦蜡泥加洲这一假想大陆的真实性问题。

关键词: 墨瓦蜡泥加洲, 假想的, 耶稣会传教士, 利玛窦, 世界地图

Received: October 31, 2020. Revised: January 2, 2024.

This article was copyedited by Victor Hu.

* Research interest: History of geography. Email: jiefei@fudan.edu.cn

1 Introduction

In the late sixteenth century, European Jesuit missionaries began to introduce the knowledge of modern world geography into China.¹ The idea of the hypothetical Magellanica Continent was brought to China alongside other world geography knowledge. A few studies focused on the introduction of general knowledge of world geography into China during the past four hundred years.² It was concluded that world geography as a science was first introduced into China in the seventeenth century by the Jesuit missionaries, and the modernization of geography in China mainly occurred in the mid-nineteenth century.³

Studies on the history of Chinese Christianity focused on the missions, the missionary-scholars, and their maps and books (Latourette 1929). In particular, Matteo Ricci 利玛竇 (1552–1610) and his world maps attracted widespread attention.⁴

The introduction of the idea of five continents during the last four hundred years was discussed in previous research.⁵ A few studies examined the introduction of the knowledge of Australia into China during the past centuries (Yu 1991; Zou 2015). However, the hypothetical Magellanica continent was not differentiated with the continents of Australia and Antarctica (Wang 2009).

The Magellanica Continent is also known as Magallanica Continent, *Terra Australis Incognita*, and Southern Continent. This continent was hypothesized by the Europeans.⁶ The age-old concept that a vast southern landmass must necessarily exist to counterbalance that in the Northern Hemisphere was given graphic expression by ancient and renaissance cartographers, including Ptolemy (ca. 90–168), Johannes Schöner (1477–1547), Oronce Finé (1494–1555), and Gerard Mercator (1512–1594) (Richardson 1992). Prior to the eighteenth century, the Europeans believed that there was a continent in the Southern Hemisphere extending into temperate latitudes and named it Magellanica. It was not until the mid-eighteenth century that James Cook and other explorers identified New Zealand and Australia, and eventually eliminated the possibility of the existence of an extensive land mass in the South Pacific (Fogg 1992; Day 2013).

All in all, previous studies did not focus on the idea of the Magellanica Continent in

1 See Needham (1954), (1959); Yee (1994); Tang and Yang (2000); Wang (2005); Zhang (2015).

2 See Needham (1959); Yee (1994); Tang and Yang (2000); Wang (2005); Guo (2000); Wang (2006); Zou (2000); Zou (2007).

3 See Guo (2000); Wang (2006); Zou (2000), (2007); Zhou (2007); Ge (2007); Wang (2009); Barnett (1970).

4 See Baddeley (1917); Giles (1918); Ayuzawa (1936a), (1936b); Ch'en (1939); Wallis (1965); Walravens (1991); Huang and Gong (2004); Gong (2018).

5 See Zou (2000); Zhou (2007); Ge (2007).

6 See Enterline (1972); Fogg (1992); Elman (2002); Zhang (2003); Tsien (1954); Waley-Cohen (1993); Wong (1963); Wang (2012).

the history of China. Studying its introduction and transmission in the seventeenth century provided a unique perspective for better understanding the history of modern geography science in China. The dissemination of the Magellanica Continent concept during the seventeenth century has a complicated history, and requires a careful and detailed examination.

Here we conduct an extensive and systematic survey of the relevant Chinese historical sources, and carefully examine the history of the introduction and transmission of the idea of the hypothetical Magellanica Continent in early modern China.

2 Introduction of the idea of the hypothetical Magellanica Continent into China by the Jesuit missionaries

2.1 Matteo Ricci

The *Complete Map of All the Countries in the World* (*Kunyu wanguo quantu* 坤輿万国全图) was composed by Matteo Ricci, a famous Italian Jesuit missionary. Ricci was sent on mission to China in 1582 and passed away in Beijing in 1610. In the years 1584–1606, Ricci composed a total of six world maps in Chinese.⁷ The most famous of these was the *Complete Map of All the Countries in the World*,⁸ made in 1602 and reprinted several times thereafter. His *Map of the Two Hemispheres* (*Liangyi xuanlan tu* 两仪玄览图)⁹ was very similar to the *Complete Map of All the Countries in the World* in terms of the distribution of continents and oceans. The other four world maps were lost, including the *Complete Map of the Mountains and Oceans of the World* (*Shanhai yudi quantu* 山海輿地全图, drawn by Ricci in Nanjing in 1600), and *Maps of the Two Hemispheres of the World* (*Shijie yudi liang xiaotu* 世界輿地两小图, drawn in the 1600s in cooperation with Feng Yingjing 冯应京). Research indicates that these lost maps were possibly quite similar to the *Complete Map of All the Countries in the World* and the *Map of the Two Hemispheres* in terms of the distribution of continents and oceans (Huang and Gong 2004).

Ricci was the first person who introduced the knowledge of the hypothetical Magellanica Continent into China. In his world maps, the Antarctic region and the temperate region of the Southern Hemisphere were drawn as a large southern continent named *Mo wa la ni jia* (墨瓦蜡泥加), a transliteration of Magellanica. There are brief captions for the Magellanica continent in the *Complete Map of All the Countries in*

7 See Huang and Gong (2004); Ricci and Trigault (1953); Giles (1918); Wallis (1965); Ch'en (1939).

8 It is preserved in the Nanjing Museum, China. See Huang and Gong (2004, 136, plate 4). The large continent in the lower part of the map is the hypothetical Magellanica continent.

9 It is preserved in the Liaoning Provincial Museum, China. See Huang and Gong (2004, 136, plate 8). The large continent in the lower part of the map is Magellanica.

the World, which read “This is the southern land, and little is known about it as few people reached there.”¹⁰ “Magellan is the name of a Portuguese person who crossed the strait and arrived in the land sixty years ago, therefore the Europeans named the land, strait, and sea after him.”¹¹

On this map the Magellanica continent is portrayed as an immense land mass surrounding the Antarctic region and extending into the temperate latitudes. Its northern boundary extends to Australia, New Zealand, New Guinea, and the island of Tierra del Fuego at the southern tip of South America. The Strait of Magellan was mistaken as the boundary between Magellanica and South America. New Guinea was mistaken as a large peninsula of the Magellanica continent and was transliterated as *Xin ru ni* (新入匿).

2.2 Giulio Aleni

Giulio Aleni (1582–1649, also known as 艾儒略) was an Italian Jesuit missionary who was sent to China in 1610. Aleni wrote the book *Chronicle of Foreign Lands* (*Zhi fang wai ji* 职方外纪) in 1623 with the help of Chinese scholar Yang Tingyun 杨廷筠 (1557–1627). Yang was converted to Catholicism in 1611 and contributed greatly to the translation of geographical knowledge (Zhao and Wan 2007; Cheng 2013). Jesuit missionaries Diego de Pantoja (1571–1618, a Spanish Jesuit missionary, also known as 庞迪我) and Sabbathinus de Ursis (1575–1620, an Italian Jesuit missionary, also known as 熊三拔) contributed greatly to the early manuscript of the book (Aleni 1623; see also Aleni [1623] 1996, preface, 1–11). This book is the first Chinese world geography book in history.

Chronicle of Foreign Lands contained a chapter “The General Description of the Magellanica Continent” (*Mo wa la ni jia zongshuo* 墨瓦蜡尼加总说, see Figure 1), which described the story of Ferdinand Magellan’s (1480–1521) discovery of the Magellanica continent. As mentioned above, what Magellan actually discovered was not a new continent, but the island of Tierra del Fuego on the southern tip of South America.

Aleni’s Magellanica continent was a little smaller than Ricci’s, but much larger than the real continents of Antarctica and Australia. Owing to the discovery of the Torres Strait between New Guinea and Australia by Luis Baez de Torres in 1606, New Guinea was established as an island and not a part of the hypothetical Magellanica continent (Hilder 1975). Aleni might have known this and thus modified his world map (Wallis 1965). New Guinea was drawn as an island and was transliterated as *Xin wei ni ya* (新为匿亚).

10 “此南方地，未有人到，故不详其诸国。”

11 “墨瓦蜡泥系佛郎几国人姓名，前六十年始过此峡，并至此地，故欧罗巴士以其姓名名峡名海名地。”

However, Australia and New Zealand were still included as part of the Magellanica continent in Aleni's world maps (Aleni 1623, 20, 22). The Island of Tierra del Fuego (named as *Huo di* 火地) was still mistaken as a part of Magellanica, and the Magellan Strait (transliterated as *Mo wa la ni xia* 墨瓦蜡泥峡) was drawn as the boundary between Magellanica and South America.

Some scholars argue that *Chronicle of Foreign Lands* was modified after Ricci's world maps (see also Aleni [1623] 1996). The significant difference in the contents regarding Magellanica between *Chronicle of Foreign Lands* and Ricci's world maps indicates that either the original sources for *Chronicle of Foreign Lands* were not Ricci's world maps, or Aleni updated the world map using the latest world geography knowledge at that time.



Figure 1: "The General Description of the Magellanica Continent" written by Giulio Aleni, printed in 1623 (chapter 4, 12) (see also Aleni [1623] 1996, 141-142).

2.3 Johann Adam Schall von Bell

Johann Adam Schall von Bell (1592-1666, also known as 汤若望) was a famous German missionary who contributed greatly to the dissemination of Western astronomy and engineering in China. He developed an astronomical chart titled *Twelve Divisions Chart of the Celestial Globe and the Earth* (*Tiandi ge qiu shi'er changyuanxing tu* 天地各球十二长圆形图) in his astronomical book *Introduction to Armillary Sphere* (*Huntianyi shuo* 浑天仪说), published in 1636 (Schall von Bell 1636, chapter 5).¹² Part of this astronomical chart was actually a unique world map, in which the world was divided into twelve

¹² The continents in the lower parts of the maps are Magellanica.

divisions along the longitudes, and further divided into twenty-four divisions along the equator. In this map, New Guinea was noted as *Xin wei ni* (新为匿) and was not included in the Magellanica Continent. The Island of Tierra del Fuego was noted as *Huo di* (火地), but was still mistaken as a part of Magellanica.

In addition, Schall von Bell possibly also created maps of the Eastern and Western Hemispheres, but these two maps were lost. A late seventeenth century Chinese book *Introduction to the Heaven and Earth* (*Qianxiang kuntu gejing* 乾象坤图格镜)¹³ included two maps of the Eastern and Western Hemispheres and noted that these two maps were copied from Schall von Bell's relevant maps (Ma 2013a).¹⁴

2.4 Francesco Sambiasi

Francesco Sambiasi (1582–1649, also known as 毕方济) was an Italian Jesuit missionary who was sent on mission to China in 1610. He produced a Chinese world map titled *Terrestrial Map of the World* (*Kunyu quantu* 坤輿全图) circa 1648.¹⁵ With regard to the outline of the Magellanica Continent, this map has more in common with Aleni's and Schall von Bell's maps than Ricci's.¹⁶

2.5 Ferdinand Verbiest

Ferdinand Verbiest (1623–1688, also known as 南怀仁) was a Flemish Jesuit missionary. Upon his arrival in China in 1658, he contributed greatly to the introduction of knowledge of geography and cartography. He composed the *Terrestrial Map of the World* (*Kunyu quantu* 坤輿全图) and the *Explanation of the "Terrestrial Map of the World"* (*Kunyu tushuo* 坤輿图说) in 1674, and brought the latest knowledge on the Antarctic region into China (Cao et al. 1997; Walravens 1991). In Verbiest's *Terrestrial Map of the World*, the Antarctic region was also drawn as a Magellanica Continent, but the extent of the continent was updated (Cao et al. 1997, 4).¹⁷

The Drake Passage between South America and Antarctica was discovered by Francis Drake in 1587, but was considered top secret by England until it was re-discovered by Willem Schouten in 1616 (*The Relation of a Wonderfull Voiage* 1619; Dutch 1982; Clancy, Manning, and Brolsma 2014). The Jesuits remained in the dark for decades for reasons unknown, but Verbiest likely learned of this via his connection

13 The author of the book was Wang Honghan 王宏翰.

14 The book was finished in 1691 but was not published, and the manuscript was preserved in the Library of Zhejiang University. See Ma (2013b).

15 See Heirman, De Troia, and Parmentier (2009). The large continent in the lower part of the map is Magellanica.

16 See Heirman, De Troia, and Parmentier (2009); Walravens (1991); Chen (1987).

17 The continent in the lower part of the map is Magellanica.

with the famous Dutch cartographer Willem Blaeu, and updated the outline of the Magellanica Continent in his Chinese world map accordingly. About thirty years before Verbiest composed his world map, the Dutch explorer Abel Janszoon Tasman demonstrated that Australia (New Holland or Van Diemensland) and New Zealand were separated by sea from the hypothetical Magellanica Continent.¹⁸

The most significant improvement in Verbiest's Magellanica Continent is that it excluded Australia, New Zealand, and the Island of Tierra del Fuego. The three regions were transliterated by Verbiest as *Xin a lan di ya* (新阿兰地亚), *Xin se lan di ya* (新瑟兰第亚), and *Huo di*, respectively. The extent of the Magellanica continent was therefore significantly reduced and appeared only slightly larger than the real Antarctic continent.

The textual description of the Magellanica continent in Verbiest's *Explanation of the "Terrestrial Map of the World"* was akin to that in Aleni's *Chronicle of Foreign Lands*. So while Verbiest had updated his map concerning the total size of the Magellanica Continent, he failed to update the textual description.¹⁹

In 1669, a Chinese book titled *Concise Records of the Western World* (*Xifang yaoji* 西方要记) was composed by Jesuit missionaries Ludovico Buglio, Gabriel de Magalhaes, and Ferdinand Verbiest. The book recorded that "the fifth continent in the world lies in the Antarctic region, and it is named Magellanica" (Buglio, Magalhaes, and Verbiest [1669] 2013).

In addition, several other missionaries also introduced knowledge of the Magellanica Continent to China. In 1623, Jesuit missionaries Manuel Dias (1574-1659) and Nicolò Longobardi (1559-1654, also known as 龙华民) made a Chinese terrestrial globe, now preserved in the British Museum (Wallis and Grinstead 1962). The distribution of continents and oceans, including the outline of the Magellanica Continent on this globe are very similar to those in Giulio Aleni's *Chronicle of Foreign Lands*.

In 1628, Portuguese missionary Francisco Furtado (1589-1653, also known as 傅汎际) and Li Zhizao 李之藻 (1565-1630) compiled a book *Annotations of the World* (*Huan you quan* 寰有诠), which was in essence a translation of *Commentarii Collegii Conimbricensis Societatis Jesu in quatuor libros De Coelo Aristotelis Stagiritae*, a Coimbra commentary on Aristotle's (384-332 BCE) *De Caelo* (*On Heaven*) in the sixteenth century.²⁰ Li Zhizao was a close friend of Matteo Ricci and several other missionaries, and was eventually converted to Catholicism. The Magellanica Continent was denoted

18 See Delaney (2010); "Calendar of Geographical Exploration" (1932); Walker (1896). See Blaeu's famous *Mappa Mundi* of 1548, which was actually presented to the Chinese emperor during the first Dutch embassy to China in 1655.

19 See Cao et al. (1997); Walravens (1991). See Verbiest ([1674] 2013).

20 Francisco Furtado and other missionaries went to Hangzhou in circa 1620. At the same time, Li Zhizao retired and lived in Hangzhou. Li and Furtado thus worked together and compiled the book. See Furtado and Li ([1628] 2013); Zhao and Wan (2007).

as the fifth continent in the world in this book.

2.6 Michel Benoist

French Jesuit missionary Michel Benoist (1715–1774, also known as 蒋友仁) was sent to China in 1744. He composed a new *Terrestrial Map of the World* (*Kunyu quantu* 坤輿全图) in 1760 (Cao et al. 1997). He added an explanatory book titled *Explanation of the World Map* (*Diqiu tushuo* 地球图说), which was published in 1799.²¹

Benoist's world map was very different from those of the earlier missionaries. The map and its explanation only included four continents, Asia, Europe, Africa, and the Americas. The Antarctic and adjacent regions were drawn as an ocean instead of a Magellanica Continent (Cao et al. 1997, 52). This map was also not accurate, as the Antarctic Continent, unknown at that time, was missing. It was possibly the first time that an ocean appeared in the Antarctic and adjacent regions in a Chinese world map. From then on, the Magellanica Continent no longer appeared in the world maps that were introduced into China by the Europeans. As mentioned above, the existence of an extensive land mass in the South Pacific was eliminated by the voyages of James Cook and other explorers.

3 Transmission of the idea by Chinese scholars

The new knowledge in world geography introduced by these missionaries was overlooked by the Chinese government. Official background literature rarely mentioned the five continents. After a careful survey, only two records of the five continents (including the hypothetical Magellanica Continent) were identified.

The first record can be found in the official history of the Ming dynasty (1368–1644), *History of the Ming* (*Mingshi* 明史):

During the Wanli reign period (1573–1620), a person from that country (Italy), Li Madou (Matteo Ricci), went to Peking. He drew a *Complete Map of All the Countries in the World* (*Wanguo quantu* 万国全图), and illustrated that there were five continents in the world, . . . the fifth being Magellanica. . . . This opinion is absurd and ridiculous. (Zhang [1739] 1974, chapter 326, 8459)²²

The second reference can be found in an encyclopaedia book titled *Comprehensive Examination of the Literature during the Qing Dynasty* (*Qingchao wenxian tongkao* 清朝文献通考) (Zhang et al. [1787] 1988). The compilation of this book was organized by the

²¹ See Benoist ([1799] 2013).

²² “万历时，其国人利玛窦至京师，为万国全图，言天下有五大洲。……最后得墨瓦腊泥加洲为第五。……其说荒渺莫考。”

central government, and it even shared some references with *History of the Ming*. This source states:

As to the statement made by the Italian (Ricci) that the world consists of five continents, this is no more than a repetition of what Zou Yan (邹衍, ca. 324–250 BCE), who lived during the Warring States Period (475–221 BCE), said in his theory of the small oceans. He (Ricci) however dared to say that the Middle Kingdom was one of the five countries, and was named Asia. According to his account, the fifth continent was Magellanica, a new land beyond the straits extending over one thousand *li*²³ suddenly discovered by Magellan during his voyage around the world and named after him for being the first one to reach that region. (Zhang et al. [1787] 1988, chapter 298, 7467–7474)²⁴

Despite the Chinese government's dismissive attitude, quite a few Chinese scholars accepted the knowledge of the hypothetical Magellanica Continent. Some of these scholars were also officials, but no evidence suggests that their attitudes towards this knowledge were related to that of the government. Most of these scholars were friends of the Jesuit missionaries, and their references to the new continent are as follows.

3.1 Feng Yingjing

Introduction to Monthly Ordinances (*Yueling guangyi* 月令广义) was a book on the climate and phenology of China (Feng 1602). Its author was Feng Yingjing 冯应京 (1555–1606), a scholar from Nanjing Province (now Anhui Province). Feng was a close friend of Matteo Ricci. He was converted to Catholicism but suddenly died before the baptism ceremony (Xu [1938] 2015; Kang 1995). Ricci drafted a map titled *Maps of the Two Hemispheres of the World* (*Shijie yudi liang xiaotu* 世界舆地两小图) in Nanjing in 1600, which was possibly printed with the help of Feng. This map was somehow lost, but Feng drew a copy and included it in his *Introduction to Monthly Ordinances* (Ayuzawa 1936a; Huang and Gong 2004; Gong 2018). It is very possible that Feng's *Complete Map of the Mountains and Oceans of the World* (*Shanghai yudi quantu* 山海舆地全图)²⁵ was derived from one of Ricci's world maps, as well as the lost *Maps of the Two Hemispheres of the World*.

The Magellanica Continent on this map is very similar to Ricci's, and New Guinea (*Xin ru ni* 新入匿) and the Island of Tierra del Fuego (*Huo di* 火地) are also included in the continent.

23 *Li* 里 is a Chinese length unit, and 1 *li* is approximately 0.5 kilometer.

24 The English translation of the original Chinese text is modified after Wong (1963).

“至意达里亚人所称天下为五大洲，盖沿于战国邹衍裨海之说，第敢以中土为五洲之一，又名之曰亚细洲。而据其所称第五洲曰墨瓦蜡泥加洲者，乃以其臣墨瓦兰辗转经年，忽得海峡亘千馀里，因首开此区，故名之曰墨瓦蜡泥加洲。”

25 See Feng (1602, “Section of Geography,” chapter 1, 93). The continent in the lower part is Magellanica.

Interestingly, this world map was also included in another book, *Universal Encyclopaedia* (*San cai tu hui* 三才图会), which was an encyclopaedia of China (Wang and Wang [1609] 1988).²⁶

3.2 Cheng Bai'er

Cheng Bai'er 程百二 (1573–1629), a native of Nanjing Province (now Anhui Province) in southern China, published a Chinese geography book titled *Concise Introduction of the Landscape* (*Fangyu shenglüe* 方輿胜略) in 1612 (Cheng 1612).

Cheng (1612) compiled a world map,²⁷ which was very similar to Ricci's world maps. This map was actually derived from a lost world map by Ricci. The lost map was named *Maps of the Two Hemispheres of the World* (*Shijie yudi liang xiaotu* 世界輿地两小图), drawn by Ricci and printed by Feng Yingjing in the 1600s (Huang and Gong 2004). That is, both Feng Yingjing and Cheng Bai'er's world maps were simplified versions of Ricci's world maps including the lost world map *Maps of the Two Hemispheres of the World*. However, Cheng Bai'er's copy was more detailed and preserved more information than that of Feng.

The map's Southern Hemisphere shows the Magellanica Continent, which the author calls *Mo wa la ni jia* (墨瓦蜡泥加) in Chinese. Its outline and extent are very similar to those in Ricci's world maps, and New Guinea (*Xin ru ni* 新入匿) and the Island of Tierra del Fuego are also included in the continent.

In addition, this book included a brief textual introduction of the Magellanica Continent, which is very similar to the caption in Ricci's world map. Cheng's world map was also included in an atlas titled *Huiji yutu beikao quanshu* (*A Complete Collection and Examination of the Terrestrial Maps* 汇辑輿图备考全书) (Pan and Li [1633] 1997).

3.3 Zhang Huang

Zhang Huang 章潢 (1527–1608) was a scholar and a close friend of Matteo Ricci (Deng 2004). Zhang collected figures and maps from various sources and composed the book *Collected Illustrations from Books* (*Tushu bian* 图书编) (Zhang 1613). Two world maps were included in this book. The first one was titled *Complete Geographical Map of the Mountains and Seas* (*Yudi shanhai quantu* 輿地山海全图). This map was somewhat strange, as it depicted the continents as patches of land. The Magellanica Continent was

26 The book was written by Wang Qi 王圻 (1530–1615), a scholar from Shanghai, and his son, Wang Siyi 王思义.

27 See Pan and Li ([1633] 1997, 366–367). The continent in the lower part of the map is the Magellanica Continent.

depicted as a land mass to the south of South America.²⁸ On the second world map *Map of the World* (*Yudi tu* 輿地图),²⁹ the Magellanica Continent is depicted similarly to that in Ricci's world maps. New Guinea (*Xin ru ni* 新入匿) and the Island of Tierra del Fuego are also included in the continent. Zhang Huang made the connection that *Complete Geographical Map of the Mountains and Seas* and *Map of the World* were actually different projections of the same world map. The original source map was a lost world map drawn by Ricci during his stay in Nanchang in the 1590s (Huang and Gong 2004).

3.4 Xiong Mingyu

Xiong Mingyu 熊明遇 (ca. 1579–1649) was a Chinese scholar from Jiangxi Province (Fung 1997). He communicated frequently with Ricci, Sambiasi, and other Jesuit missionaries (Fung 1997; Deng 2004). Circa 1615, Xiong finished a book titled *Draft to Natural Sciences* (*Gezhi cao* 格致草), introducing the Western sciences, particularly astronomy (Xiong ca. 1615). A simple world map titled *Complete Map of All the Countries in the World* (*Kunyu wanguo quantu* 坤輿万国全图) was included in this book (Xiong ca. 1615, 152),³⁰ but the quality of the map was poor. Apparently, Australia, New Zealand, and the Island of Tierra del Fuego were included in the Magellanica Continent, but it is difficult to determine whether New Guinea also was included.

3.5 Xiong Renlin

Xiong Renlin 熊人霖 (1604–1666), son of Xiong Mingyu, was the author of *Geography* (*Di wei* 地纬), an early world geography book (Xiong 1644). *Draft to Natural Sciences* and *Geography* were combined and published in 1648 as *General Introduction of the Universe* (*Han yu tong* 函宇通) by Xiong Zhixue 熊志学, a relative of Xiong Mingyu and Xiong Renlin (Xiong 1648; Ma 2009).

A world map titled *Complete Map of the World* (*Yudi quantu* 輿地全图) was included in *Geography* (Xiong [1644] 2018, 212).³¹ The map was very simple, and its outline of the Magellanica Continent was similar to that in *Draft to Natural Sciences*. The possible sources of Xiong Mingyu and Xiong Renlin's world maps could be Giulio Aleni's *Chronicle of Foreign Lands* (Xiong [1644] 2018). It was also suggested that Xiong's world maps were directly translated and modified after Flemish cartographer Abraham Ortelius (1527–1598)'s world atlas (Huang and Gong 2004). However, Xiong's maps contained much less text than Abraham Ortelius's atlas, and more evidence is needed

28 See Zhang (1613, chapter 29, 44). The Magellanica Continent is the land mass to the south of South America.

29 See Zhang (1613, chapter 29, 49). The continent in the center of the map is Magellanica.

30 The large continent in the lower part of the map would be Magellanica.

31 The large continent noted as "Mo wa la" in the lower part of the map is Magellanica.

to support this viewpoint.

3.6 You Yi

You Yi 游艺 was the author of *First Collection of Queries on the Patterns of Heaven* (*Tianjing huowen qianji* 天经或问前集), a book on astronomical science (You [1675] 2008). A world map titled *Complete Map of the Countries on the Earth* (*Dadi yuangiu zhuguo quantu* 大地圆球诸国全图) was included in this book (ibid., 581–582). The map was derived from the *Complete Map of the Mountains and Oceans of the World* in the book *Introduction to Monthly Ordinances* by Feng Yingjing (1602) (Huang and Gong 2004). Therefore, the original source of You Yi's map was also a lost world map by Matteo Ricci.

Regarding the Magellanica Continent, its outline and the notes on the continent were very similar to that in Ricci's world maps.

3.7 Zhou Yuqi

Zhou Yuqi 周于漆 wrote *Encyclopaedia of Astronomy and Calculations* (*Sancai shiyi tianji* 三才实义天集), a book about astronomy and calculations published in 1680. A world map *Map of the World* was included in this book, which very much looks like Ricci's world maps. In this case New Guinea was included in the Magellanica Continent (Zhou [1680] 2002, 273). This indicates that the map was possibly derived from Ricci's world maps, and the author might not have seen the updated world maps by Aleni and Verbiest.

3.8 Jie Xuan

Knowledge of Astronomy (*Xuanji yishu* 璇玑遗述), an introduction in the traditional Chinese astronomical knowledge, was authored by Jie Xuan 揭暄, a scholar from Jiangxi Province. This work included a world map titled *A Complete Map of the Five Continents on the Earth* (*Dadi hunlun wuzhou yuangiu quantu* 大地浑轮五州圆球全图) (Jie [1689] 2002, 609–610; Sun 2009). New Guinea (Xin wei ni ya 新为匿亚) was not included in the Magellanica Continent, which was in the lower part of the map, but Australia still was.

This map was significantly different from any missionaries' world maps except that of Johann Adam Schall von Bell in terms of content and projection (Schall von Bell 1636). It was likely derived from Johann Adam Schall von Bell's world map *Twelve Divisions Chart of the Celestial Globe and the Earth*. No evidence indicates that Jie Xuan communicated directly with Johann Adam Schall von Bell; Jie possibly learned of Von Bell's literature and maps through friends (Chen 2009).

3.9 Wang Honghan

Wang Honghan 王宏翰 (ca. 1648–1700) was a famous scholar and doctor. He was born in Shanghai, communicated frequently with Jesuit missionaries, and was eventually converted to Catholicism (Fan [1942] 2012). His *Introduction to the Heaven and Earth*, an introduction to Western astronomy, was written in 1691 (Wang 1691; Ma 2013b).

The book contains three sets of world maps. The first set was composed of two hemispheric maps titled *Map of the Southern Hemisphere of the World* (*Kunyu wudazhou Nanji tu* 坤輿五大洲南极图) and *Map of the Northern Hemisphere of the World* (*Kunyu wudazhou Beiji tu* 坤輿五大洲北极图). These two maps were derived from Aleni's *Map of the Southern Hemisphere* and *Map of the Northern Hemisphere*. The *Map of the Southern Hemisphere of the World* (Wang 1691, chapter 10, 9)³² was very similar with Aleni's *Map of the Southern Hemisphere*, and the Magellanica Continent did not include New Guinea but did include Australia.

The second set of world maps, the *Twelve Divisions World Map* (*Shi'er changyuanxing shijie ditu* 十二长圆形世界地图), was very similar to Schall von Bell's world map. The third set of world maps comprised the *Map of the Eastern Hemisphere of the World* (*Kunyu wudazhou dongtu* 坤輿五大洲东图) and *Map of the Western Hemisphere of the World* (*Kunyu wudazhou xitu* 坤輿五大洲西图). However, part of the *Map of the Eastern Hemisphere of the World* was lost, and it is impossible to infer the outline of the Magellanica Continent.

The preface of the book notes that these two maps were derived from Johann Adam Schall von Bell's *Map of the Eastern Hemisphere* and *Map of the Western Hemisphere*, which also has been lost.

3.10 Ye Zipei

The Magellanica Continent was rarely mentioned by Chinese scholars during the eighteenth and early nineteenth centuries. *Complete Map of All the Countries in the World* (*Wanguo dadi quantu* 万国大地全图) is a Chinese world map composed in 1851 by Ye Zipei 叶子佩, a scholar from Jingshi region (modern Hebei Province) (Li et al. 2002, 78). This significantly updated map was derived from Ferdinand Verbiest's world map, but the Magellanica Continent was still very similar to that in Verbiest's original map. It excluded Australia (also known then as New Holland), New Zealand, and the Island of Tierra del Fuego. He named these three regions *Xin a lan di ya* (新阿兰地亚), *Xin se lan di ya* (新瑟兰第亚), and *Huo di* (火地).

32 The large continent in the middle of the map is Magellanica.

4 Discussions

4.1 Introduction of the knowledge by the missionaries

During the seventeenth century, modern world geography knowledge was introduced into China by the Jesuit missionaries, who were perceptive enough to see that the best way to convert Chinese scholars to Christianity was through indirect means. Matteo Ricci and his successors attempted to win over intellectuals using the scientific achievements of European culture, in mathematics, geography, and cartography (Yee 1994). They noticed that geography might be an important tool for piquing Chinese scholars' interest in European learning, including Christianity (Walravens 1991). It was not the primary aim of the Jesuits to train the Chinese in modern cartography and geography; however, their cartographic works did introduce new geographical knowledge to China.

The relationship between the Catholic missionaries and the Chinese government worsened in the early eighteenth century, and resulted in the expulsion of all missionaries from China in 1724 and the dissolution of the Society of Jesuit in China in 1773 (Latourette 1929). The introduction of new knowledge from the West was almost entirely interrupted until the arrival of the Protestant missionaries in the early nineteenth century.

Though knowledge on the Magellanica Continent was progressively updated by missionaries during the seventeenth century, Chinese scholars paid little attention and continued to adhere to outdated knowledge. The first significant update of the outline of the Magellanica Continent was made in 1623 by Aleni, who excluded New Guinea from the continent. Not until 1689–1691 did Jie Xuan and Wang Honghan take note of this.

The second significant update was made in 1674 by Verbiest, who excluded Australia, New Zealand, and the Island of Tierra del Fuego from Magellanica. Two centuries would pass before Ye Zipei followed suit in 1851.

Table 1 shows the historical process of introduction and transmission of the idea of Magellanica introduced by the Jesuit missionaries into China. We compared the evolution of the maps by Jesuit missionaries and those made by Chinese scholars.

4.2 Transmission of the knowledge by the Chinese scholars

At first, some Chinese scholars were fascinated with Matteo Ricci's world maps; however, they did not really understand the new geographic knowledge. While Chinese scholars accepted the idea of the hypothetical "Magellanica Continent," their passion and interest faded and they failed to consider updates to the knowledge about

this fifth continent. All the maps were simplified versions of the relevant maps of the missionaries.

The idea of the “Magellanica Continent” was not compared with the traditional knowledge of areas to the south of China. No one paid attention to, or was even aware of the update to the extent of the “Magellanica Continent.” No one noticed that the Magellanica Continent was replaced by an “Antarctic Ocean” in the eighteenth century. Starting from the middle of the eighteenth century, the idea of the hypothetical “Magellanica Continent” effectively vanished and was rarely mentioned in Chinese literature.

Though the Magellanica Continent disappeared in Michael Benoist’s world map in the mid-eighteenth century, this update was ignored again by Chinese scholars who continued to subscribe to the outdated knowledge of Ferdinand Verbiest well into the nineteenth century.

As mentioned, Feng Yingjing, Cheng Bai’er, Zhang Huang, You Yi, and Zhou Yuqi’s world maps were copied from Matteo Ricci’s world maps. Xiong Mingyu, Xiong Renlin, and Wang Honghan’s maps were copied from Giulio Aleni’s. Jie Xuan’s world map was copied from Johann Adam Schall von Bell’s, and Ye Zipei’s map was copied from Ferdinand Verbiest’s.

It was not until the middle nineteenth century that a Chinese scholar Liang Tingnan 梁廷枏 ([1846] 1997) noticed that the “Magellanica Continent” had disappeared in the contemporary world geography literature.³³

In 1888–1889, Jin Weixian 金维贤 published an article titled “An Examination of New Land in Antarctica” in *Shen Bao*, an early Chinese newspaper. He differentiated between the hypothetical “Magellanica Continent,” the Australian Continent, and the newly discovered Antarctic Continent, and expressed doubts about the existence of the so-called “Magellanica Continent” for the first time in Chinese history (Jin [1888–1889] 1983).

Professional geographers with modern geographical background did not emerge in China until the nineteenth century. Some of the seventeenth century Chinese scholars were interested in the modern science introduced by the missionaries, but had very little knowledge of modern world geography. These scholars knew little of the Magellanica Continent in the Southern Hemisphere, and therefore did not notice the update to the boundary of the continent. They either copied or simplified the provided world maps. None of them carefully studied the geography books, and nobody examined the geography knowledge in the new world maps introduced by the missionaries.

33 Liang Tingnan (1796–1861) was a scholar from Guangdong Province.

Table 1: Timeline of the introduction of the idea of the Magellanica Continent into China by the Jesuit missionaries, and the transmission by the Chinese scholars during the seventeenth century

	Was New Guinea included in Magellanica	Were Australia and New Zealand included in Magellanica	Was the Island of Tierra del Fuego included in Magellanica
Matteo Ricci (1584–1606)	yes	yes	yes
Giulio Aleni (1623)	no	yes	yes
Johann Adam Schall von Bell (1636)	no	yes	yes
Francesco Sambiasi (1648)	no	yes	yes
Ferdinand Verbiest (1674)	no	no	no
Michael Benoist (1760)	(No Magellanica)		
Feng Yingjing (1602)	yes	yes	yes
Cheng Bai'er (1612)	yes	yes	yes
Zhang Huang (1613)	yes	yes	yes
Xiong Mingyu (1615)	?	yes	yes
Xiong Renlin (1648)	?	yes	yes
You Yi (1675)	yes	yes	yes
Zhou Yuqi (1680)	yes	yes	yes
Jie Xuan (1689)	no	yes	yes
Wang Honghan (1691)	no	yes	yes
Ye Zipei (1851)	no	no	no

5 Conclusion

From the 1580s to the 1670s, the idea of the hypothetical Magellanica Continent was introduced into China by the Jesuit missionaries Matteo Ricci, Giulio Aleni, Johann Adam Schall von Bell, Francesco Sambiasi, Ferdinand Verbiest, and others. Even if the idea was rejected by the Chinese government, it was accepted by a few Chinese scholars, including Feng Yingjing, Cheng Bai'er, Zhang Huang, Xiong Mingyu, Xiong Renlin, You Yi, Zhou Yuqi, Jie Xuan, Wang Honghan, and Ye Zipei. Most of these scholars communicated closely with the Jesuit missionaries, and some of them were even converted to Catholicism. These seventeenth-century Chinese scholars had very little knowledge of modern world geography and could not distinguish between old and new geography knowledge. The knowledge on the Magellanica Continent was progressively updated by missionaries during the seventeenth century, but Chinese scholars did not notice these updates, and merely copied and simplified the world maps they were shown.

It was not until the mid-late nineteenth century that two Chinese scholars, Liang

Tingnan and Jin Weixian, noticed the disappearance of the Magellanica Continent from the new world maps.

References

- Aleni, Giulio. 1623. *Zhifang waiji* 职方外纪 [Chronicle of Foreign Lands]. In *Siku quanshu* 四库全书 [Complete Collection in Four Treasuries], vol. 594. Taipei: The Commercial Press.
- Aleni, Giulio. [1623] 1996. *Zhifang waiji jiaoshi* 职方外纪校释 [Annotation of the *Chronicle of Foreign Lands*], annotated by Xie Fang 谢方. Beijing: Zhonghua Book Company.
- Ayuzawa, Shintaro 鮎澤信太郎. 1936a. 月令廣義所載の山海輿地全圖と其の系統 [Complete Map of the Mountains and Oceans of the World in the *Introduction to Monthly Ordinances* and Its Source]. *地理学評論* [Geographical Review of Japan] 12 (10): 899–910.
- Ayuzawa, Shintaro. 1936b. 利瑪竇の世界地圖に就いて [On the World Maps by Matteo Ricci]. *地球* [The Earth] 26 (4): 261–277.
- Baddeley, J. F. 1917. “Father Matteo Ricci’s Chinese World-Maps, 1584–1608.” *The Geographical Journal* 50 (4): 254–270.
- Barnett, Suzanne Wilson. 1970. “Wei Yüan and Westerners: Notes on the Sources of the *Hai-Kuo T’u-Chih*.” *Ch’ing-shih wen-t’i* 2 (4): 1–20.
- Benoist, Michel. [1799] 2013. *Diqiu tushuo* 地球图说 [Explanation of the World Map]. In *Mingqing zhiji Xixue wenben* 明清之际西学文本 [Literature of the Western Learning during the Late Ming and Early Qing Dynasties], edited by Huang Xingtao 黄兴涛 and Wang Guorong 王国荣, vol. 4. Beijing: Zhonghua Book Company.
- Buglio, Ludovico, Gabriel de Magalhaes, and Ferdinand Verbiest. [1669] 2013. *Xifang yaoji* 西方要记 [Concise Records of the Western World]. In *Mingqing zhiji Xixue wenben*, edited by Huang Xingtao and Wang Guorong, vol. 2. Beijing: Zhonghua Book Company.
- “Calendar of Geographical Exploration.” 1932. *Nature* 130 (3276): 249–250.
- Cao, Wanru 曹婉如, Zheng Xihuang 郑锡煌, Huang Shengzhang 黄盛璋, Niu Zhongxun 钮仲勋, Ren Jincheng 任金城, Qin Guojing 秦国经, and Wang Qianjin 汪前进, eds. 1997. *Zhongguo gudai ditu ji: Qingdai* 中国古代地图集·清代 [An Atlas of Ancient Maps in China: The Qing Dynasty, 1644–1911]. Beijing: Cultural Relics Publishing House.
- Chen, Fu Meei 陈富美. 1987. “Zhongguo ditu zhi yanjiu” 中国地图之研究 [A Study on Maps and Atlases of China]. *Dili yanjiu baogao* 地理研究报告 [Geographical Research (Taipei)], no. 13, 127–150.
- Ch’en, Kenneth. 1939. “Matteo Ricci’s Contribution to, and Influence on, Geographical Knowledge in China.” *Journal of the American Oriental Society* 59 (3): 325–359.
- Chen, Yue 陈悦. 2009. “Jie Xuan de xueshu jiaowang jiqi zhushu” 揭暄的学术交往及其著述 [Jie Xuan’s Scholarly Interchange and His Writings]. *Ha’erbin Gongye Daxue xuebao (shehui kexue ban)* 哈尔滨工业大学学报 (社会科学版) [Journal of HIT (Social Sciences Edition)] 11 (2): 1–9.
- Cheng, Bai’er 程百二. 1612. *Fangyu shenglüe* 方輿胜略 [Concise Introduction of the Landscape]. A copy is preserved in the Shanghai Library.
- Cheng, Yu-Yin. 2013. “Changing Cosmology, Changing Perspectives on History and Politics: Christianity and Yang Tingyun’s (1562–1627) Reflections on China.” *Journal of World History* 24

(3): 499–537.

- Clancy, Robert, John Manning, and Henk Broelsma. 2014. *Mapping Antarctica: A Five Hundred Year Record of Discovery*. Dordrecht: Springer.
- Day, David. 2013. *Antarctica: A Biography*. Oxford: Oxford University Press.
- Delaney, John. 2010. *Straight Through: Magellan to Cook and the Pacific, an Illustrated History*. Princeton: Princeton University Library.
- Deng, Aihong 邓爱红. 2004. “Li Madou, Zhang Huang, Xiong Mingyu yu Nanchang diqu de Xixue Dongjian” 利玛窦、章潢、熊明遇与南昌地区的西学东渐 [Matteo Ricci, Zhang Huang, Xiong Ming-yu, and the Dissemination of Western Learning into Nanchang Area]. *Jiangxi Jiaoyu Xueyuan xuebao (shehui kexue)* 江西教育学院学报（社会科学） [Journal of Jiangxi Institute of Education (Social Sciences)] 25 (4): 105–109.
- Dutch, Steven I. 1982. “Notes on the Nature of Fringe Science.” *Journal of Geological Education* 30 (1): 6–13.
- Elman, Benjamin A. 2002. “Jesuit Scientia and Natural Studies in Late Imperial China: 1600–1800.” *Journal of Early Modern History* 6 (3): 209–232.
- Enterline, J. 1972. “The Southern Continent and the False Strait of Magellan.” *Imago Mundi* 26: 48–58.
- Fan, Xingzhun 范行准. [1942] 2012. *Mingji Xiyang chuanru zhi yixue* 明季西洋传入之医学 [Medicine Introduced from the West during the Late Ming Dynasty]. Shanghai: Shanghai People’s Press.
- Feng, Yingjing 冯应京. 1602. *Yueling guangyi* 月令广义 [Introduction to Monthly Ordinances]. A copy is preserved in the Fudan University Library.
- Fogg, J. E. 1992. *A History of Antarctic Science*. Cambridge: Cambridge University Press.
- Fung, Kam Wing. 1997. “Mingmo Xiong Mingyu Gezhi cao neirong tanxi” 明末熊明遇《格致草》内容探析 [A Critical Study of Xiong Mingyu’s Draft to Natural Sciences]. *Ziran kexueshi yanjiu* 自然科学史研究 [Studies in the History of Natural Sciences] 16 (4): 304–328.
- Furtado, Francisco, and Li Zhizao 李之藻. [1628] 2013. *Huan you quan* 寰有诠 [Annotations of the World]. In *Mingqing zhiji Xixue wenben*, edited by Huang Xingtao and Wang Guorong, vol. 3. Beijing: Zhonghua Book Company.
- Ge, Zhaoguang 葛兆光. 2007. “Gudai Zhongguo ren de tianxia guannian” 古代中国人的天下观念 [The Opinion on the World of the Ancient Chinese]. In *Jiuzhou* 九州 [Nine States], compilation no. 4, 119–132. Beijing: The Commercial Press.
- Giles, Lionel. 1918. “Translations from the Chinese World Map of Father Ricci.” *The Geographical Journal* 52 (6): 367–385.
- Gong, Yingyan 龚缨晏. 2018. “Xiancun zuizao de Li Madou shijie ditu yanjiu” 现存最早的利玛窦世界地图研究 [The Earliest Extant World Map by Matteo Ricci]. *Lishi dili* 历史地理 [Historical Geography], no. 38, 1–12.
- Guo, Shuanglin 郭双林. 2000. *Xichao jidang xia de Wanqing dilixue* 西潮激荡下的晚清地理学 [Geography under the Effects of Western Science in the Late Qing Dynasty]. Beijing: Peking University Press.
- Heirman, Ann, Paolo De Troia, and Jan Parmentier. 2009. “Francesco Sambiassi, a Missing Link in European Map Making in China?” *Imago Mundi* 61 (1): 29–46.
- Hilder, Brett. 1975. “The Discovery of Torres Strait.” *Journal of the Royal Historical Society of*

- Queensland* 9 (6): 89–99.
- Huang, Shijian 黄时鉴, and Gong Yingyan. 2004. *Li Madou shijie ditu yanjiu* 利玛窦世界地图研究 [A Study of Matteo Ricci's World Maps]. Shanghai: Shanghai Ancient Books Publishing House.
- Huang, Xingtao 黄兴涛, and Wang Guorong 王国荣, eds. 2013. *Mingqing zhiji Xixue wenben* 明清之际西学文本 [Literature of the Western Learning during the Late Ming and Early Qing Dynasties]. Beijing: Zhonghua Book Company.
- Jie, Xuan 揭暄. [1689] 2002. *Xuanji yishu* 璇玑遗述 [Knowledge of Astronomy]. A copy is preserved in the Fudan University Library. In *Xuxiu siku quanshu* 续修四库全书 [Complete Collection in Four Treasuries Continued], vol. 1033, 609–610. Shanghai: Shanghai Ancient Books Publishing House.
- Jin, Weixian 金维贤. [1888–1889] 1983. “Nanji xindi bian” 南极新地辨 [An Examination of New Land in Antarctic] (Parts 1, 2, 3). *Shen Bao* 申报, no. 5638 (December 27, 1888), 1; no. 5643 (January 1, 1889), 1; no. 5645 (January 3, 1889), 1. In “*Shen bao*” *yingyin ben* 《申报》影印本 [Photocopy of *Shen Bao*], edited by the Shanghai Bookstore Publishing House. Shanghai: Shanghai Bookstore Publishing House.
- Kang, Zhijie 康志杰. 1995. “Feng Yingjing yu Li Madou” 冯应京与利玛窦 [Feng Yingjing and Matteo Ricci]. *Anhui shixue* 安徽史学 [Historical Research in Anhui], no. 3, 16–17.
- Latourette, Kenneth Scott. 1929. *A History of Christian Missions in China*. New York: Macmillan.
- Li, Shengwu 李胜伍, Wang Guocai 王国才, and Gu Lizhen 谷丽珍, eds. 2002. *Wanguo dadi quantu: Qingdai guoren hui de shijie ditu* 万国大地全图：清代国人绘的世界地图 [Complete Map of All the Countries in the World: World Map Drawn by Chinese in the Qing Dynasty]. Beijing: Encyclopedia of China Publishing House.
- Liang, Tingnan 梁廷枏. [1846] 1997. “Heshengguo shuo” 合省国说 [Introduction of the United States]. In *Haiguo sishuo* 海国四说 [Four Introductory Books of the Maritime Countries]. Beijing: Zhonghua Book Company.
- Ma, Qiong 马琼. 2009. “Di wei de chengshu kanke he liuchuan” 《地纬》的成书、刊刻和流传 [The Writing, Publishing, and Spread of *Di wei*]. *Jiangnan Daxue xuebao (renwen shehui kexue ban)* 江南大学学报（人文社会科学版）[Journal of Jiangnan University (Humanities and Social Sciences)] 8 (4): 72–76.
- Ma, Zhihui 马智慧. 2013a. “Gezhi yu tiaoshi: Wang Honghan Zhong Xi huitong yanjiu” 格致与调适：王宏翰中西会通研究 [Science and Adaption: A Study on Wang Honghan's Converging of Chinese and Western Cultures]. *Zhejiang xuekan* 浙江学刊 [Zhejiang Academic Journal], no. 5, 55–61.
- Ma, Zhihui. 2013b. “Gezhi yu tiaoshi: Wang Honghan Zhong Xi huitong yanjiu” 格致与调适：王宏翰中西会通研究 [Science and Adaption: A Study on Wang Honghan's Converging of Chinese and Western Cultures]. PhD diss., Zhejiang University.
- Needham, Joseph. 1954. *Introductory Orientations*. Vol. 1 of *Science and Civilisation in China*. Cambridge: Cambridge University Press.
- Needham, Joseph. 1959. *Mathematics and the Sciences of the Heavens and the Earth*. Vol. 3 of *Science and Civilisation in China*. Cambridge: Cambridge University Press.
- Pan, Guangzu 潘光祖, and Li Yunxiang 李云翔, eds. [1633] 1997. *Huiji yutu beikao quanshu* 汇辑舆图备考全书 [A Complete Collection and Examination of the Terrestrial Maps]. In *Siku jihui*

- shu congkan: Shi bu 四库禁毁书丛刊 • 史部 [Collection of the Books Listed as “to be Banned or Destroyed” outside Complete Collection in Four Treasuries: History Branch], vols. 21 and 22. Beijing: Beijing Press.
- The Relation of a Wonderfull Voiage made by William Cornelison Schouten of Horne. Shewing how South from the Straights of “Magelan,” in “Terra Delfuego”: he found and discovered a newe passage through the great South Sea, and that way sayled round about the world.* 1619. London: Imprinted by T. D. for Nathanaell Newbery.
- Ricci, Matthew, and Nicolas Trigault. 1953. *China in the Sixteenth Century: The Journals of Matthew Ricci: 1583–1610*, translated by Louis J. Gallagher. New York: Random House.
- Richardson, W. A. R. 1992. “Mercator’s Southern Continent.” *The Globe* 37:1–17.
- Schall von Bell, Johann Adam. 1636. *Huntianyi shuo* 浑天仪说 [Introduction to Armillary Sphere]. Europeana Collections.
- Sun, Chengsheng 孙承晟. 2009. “Jie Xuan Xuanji yishu chengshu ji liuchuan kaolüe” 揭暄《璇玑遗述》成书及流传考略 [On the Composition and Circulation of Jie Xuan’s *Xuanji yishu*]. *Ziran kexueshi yanjiu* 28 (2): 214–226.
- Tang, Xiren 唐锡仁, and Yang Wenheng 杨文衡. 2000. *Zhongguo kexue jishu shi: Dixue juan* 中国科学技术史 • 地学卷 [History of Science and Technology in Pre-modern China: Earth Sciences]. Beijing: Science Press.
- Tsien, Tsuen-hsui. 1954. “Western Impact on China through Translation.” *The Far Eastern Quarterly* 13 (3): 305–327.
- Verbiest, Ferdinand. [1674] 2013. *Kunyu tushuo* 坤輿图说 [Explanation of the “Terrestrial Map of the World”]. In *Mingqing zhiji Xixue wenben*, edited by Huang Xingtao and Wang Guorong, vol. 4. Beijing: Zhonghua Book Company.
- Waley-Cohen, Joanna. 1993. “China and Western Technology in the Late Eighteenth Century.” *The American Historical Review* 98 (5): 1525–1544.
- Walker, James Backhouse. 1896. *Abel Janszoon Tasman: His Life and Voyages*. Tasmania: William Grahame, Jun., Government Printer, Hobart.
- Wallis, Helen. 1965. “The Influence of Father Ricci on Far Eastern Cartography.” *Imago Mundi* 19:38–45.
- Wallis, Helen M., and E. D. Grinstead. 1962. “A Chinese Terrestrial Globe, A. D. 1623.” *The British Museum Quarterly* 25 (3 & 4): 83–91.
- Walravens, Hartmut. 1991. “Father Verbiest’s Chinese World Map (1674).” *Imago Mundi* 43:31–47.
- Wang, Chengzu 王成祖. 2005. *Zhongguo dilixue shi: Xianqin zhi Mingdai* 中国地理学史 • 先秦至明代 [History of Geography in China, from the Pre-Qin to the Ming Dynasty]. Beijing: The Commercial Press.
- Wang, Guorong 王国荣. 2009. “Mingmo Qingchu chuanjiaoshi dui wudazhou shuo de zaoqi chuanbo” 明末清初传教士对五大洲说的早期传播 [Early Introduction of the Knowledge on Five Continents by the Missionaries during the Late Ming and Early Qing Dynasties]. *Chuanshan xuekan* 船山学刊 [Chuanshan Journal], no. 1, 82–86.
- Wang, Honghan 王宏翰. 1691. *Qianxiang kuntu gejing* 乾象坤图格镜 [Introduction to the Heaven and Earth]. The book was finished in 1691, and was not published, and the manuscript is preserved in the Library of Zhejiang University. Photographed by the Library of Zhejiang University.

- Wang, Licheng 王立诚. 2006. "19 shiji Zhongguo ren lishi guannian de xinjiu guodu" 19 世纪中国人历史观念的新旧过渡 [The Transition of Ideas of History of the Chinese in the Nineteenth Century]. *Fudan xuebao (shehui kexue ban)* 复旦学报 (社会科学版) [Fudan Journal (Social Sciences Edition)], no. 1, 1-9.
- Wang, Mingming 王铭铭. 2012. "All under Heaven (Tianxia): Cosmological Perspectives and Political Ontologies in Pre-modern China." *HAU: Journal of Ethnographic Theory* 2 (1): 337-383.
- Wang, Qi 王圻, and Wang Siyi 王思义. [1609] 1988. *San cai tu hui* 三才图会 [Universal Encyclopaedia]. Shanghai: Shanghai Ancient Books Publishing House.
- Wong, George H. C. 1963. "China's Opposition to Western Science during Late Ming and Early Ch'ing." *Isis* 54 (1): 29-49.
- Xiong, Mingyu 熊明遇. ca. 1615. *Gezhi cao* 格致草 [Draft of Natural Sciences]. A digital copy is preserved in the Library of University of Science and Technology of China.
- Xiong, Renlin 熊人霖. 1644. *Di wei* 地纬 [Geography]. A copy is preserved in the National Library of China.
- Xiong, Renlin. [1644] 2018. *Han yu tong jiaoshi: Diwei* 函宇通校释: 地纬 [Annotation of General Introduction of the Universe: Geography], annotated by Hong Jianrong 洪健荣. Shanghai: Shanghai Jiao Tong University Press.
- Xiong, Zhixue 熊志学, ed. 1648. *Han yu tong* 函宇通 [General Introduction of the Universe]. A copy is preserved in the National Library of China.
- Xu, Zongze 徐宗泽. [1938] 2015. *Zhongguo Tianzhujiao chuanjiao shi gailun* 中国天主教传教史概论 [Introduction to the History of Catholic Missions in China]. Reprint, Beijing: The Commercial Press.
- Yee, Cordell D. K. 余定国. 1994. "Cartography in China." In *Cartography in the Traditional East and Southeast Asian Societies*. Vol. 2, book 2 of *The History of Cartography*, edited by J. B. Harley and David Woodward, 35-231. Chicago: University of Chicago Press.
- You, Yi 游艺. [1675] 2008. *Tianjing huowen qianji* 天经或问前集 [First Collection of Queries on the Patterns of Heaven]. A copy is preserved in the Fudan University Library. In *Siku Quanshu*, vol. 793. Taipei: The Commercial Press.
- Yu, Dingbang 余定邦. 1991. "Jindai Zhongguo ren dui Aozhou de renshi yu Zhong'Ao zaoqi jiaowang" 近代中国人对澳洲的认识与中澳早期交往 [Knowledge of Australia by the Chinese in the Late Ming and Qing Dynasties and Early Sino-Australian Interactions]. *Zhongshan Daxue xuebao (shehui kexue ban)* 中山大学学报 (社会科学版) [Journal of Sun Yat-sen University (Social Science Edition)], no. 4, 94-102.
- Zhang, Baichun. 2003. "The Introduction of European Astronomical Instruments and the Related Technology into China during the Seventeenth Century." *East Asia Science, Technology, and Medicine*, no. 20, 99-131.
- Zhang, Huang 章潢. 1613. *Tushu bian* 图书编 [Collected Illustrations from Books]. A copy is preserved in the Fudan University Library.
- Zhang, Qiong. 2015. *Making the New World Their Own: Chinese Encounters with Jesuit Science in the Age of Discovery*. Leiden: Brill.
- Zhang, Tingyu 张廷玉, et al. [1739] 1974. Vol. 326 of *Mingshi* 明史 [History of the Ming]. Beijing: Zhonghua Book Company.
- Zhang Tingyu, et al. [1787] 1988. *Qingchao wenxian tongkao* 清朝文献通考 [Comprehensive

- Examination of the Literature during the Qing Dynasty]. Hangzhou: Zhejiang Ancient Books Publishing House.
- Zhao, Hui 赵晖, and Wan Bin 万斌. 2007. *Ye Ru zhushi: Li Zhizao, Yang Tingyun zhuan* 耶儒柱石: 李之藻、杨廷筠传 [Bibliographies of Zhizao Li and Tingyun Yang]. Hangzhou: Zhejiang People's Press.
- Zhou, Yuqi 周于漆. [1680] 2002. *Sancai shiyi tianji* 三才实义天集 [Encyclopaedia of Astronomy and Calculations]. A copy is preserved in the Fudan University Library. In *Xuxiu siku quanshu* vol. 1033. Shanghai: Shanghai Ancient Books Publishing House.
- Zhou, Zhenhe 周振鹤. 2007. "Wanming Zhongguo dilixue jindaihua de liangge biao Zheng" 晚明中国地理学近代化的两个表征 [Two Characters of the Modernization of Geography in China during the Late Ming Dynasty]. *Jiuzhou*, compilation no. 4, 190–202. Beijing: The Commercial Press.
- Zou, Zhenhuan 邹振环. 2000. *Wanqing Xifang dilixue zai Zhongguo* 晚清西方地理学在中国 [Western Geography in China during the Late Qing Dynasty]. Shanghai: Shanghai Ancient Books Publishing House.
- Zou, Zhenhuan. 2007. "Shijiu shiji Xifang dilixue yizhu yu Zhongguo dilixue sixiang cong chuantong dao jindai de zhuanhuan" 十九世纪西方地理学译著与中国地理学思想从传统到近代的转换 [Chinese Geography and the Translated Works of Geography from the West: Mental Changes from the Traditional to the Modern]. *Sichuan Daxue xuebao (zhexue shehui kexue ban)* 四川大学学报 (哲学社会科学版) [Journal of Sichuan University (Philosophy and Social Science Edition)], no. 3, 26–36.
- Zou, Zhenhuan. 2015. "Kaituo shijie dili zhishi de xin kongjian: Qingmo Zhongguo ren de Aozhou xiangxiang" 开拓世界地理知识的新空间: 清末中国人的澳洲想像 [Opening Up a New Space of World Geographical Knowledge: Vision of Australia by the Chinese in the Late Qing Dynasty]. *Nanjing Zhengzhi Xueyuan xuebao* 南京政治学院学报 [Journal of Nanjing Institute of Politics] 31 (2): 65–75, 141.