银川当代美术馆·文明的维度丛书
THE DIMENSION OF CIVILIZATION

The Dimension of Civilization

Chief Editor / **Lu Peng**

中国青年出版社

Contents

*The Silk Road and East-West Cartographic Exchange from the 14th to the 17th Century**

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The Silk Road was the Eurasian channel for East-West trade, as well as the link for exchanges between the civilizations of East and West. There is a long history of cartographic exchanges along the Silk Road and the compilation of maps of the Silk Road has a long history. The period from the14th to the 17th century was an important period as world history moved in the direction of modernization and integration, and the corresponding Yuan and Ming dynasties in China were a flourishing period for map exchanges between East and West, and it was a glorious age for the compilation of maps of China, and especially those of the Silk Road.

Eurasian transport opened up in the Yuan dynasty, and Islamic scholars took the knowledge of Islamic, and even European, maps to China. The spherical terrestrial sphere and the map Colorful General Geographical Map of "the world" (Chinese title: *Tianxia Dili Zong Tu*) both made by the Persian scholar Jamal ad-Din Mu ammad ibn āhir ibn Mu ammad al-Zaydī al-Bukhārī (variously transcribed Jamal ud-Din, Jamal al-Din, etc., Chinese name used hereafter: Zhamaluding) had a profound influence on the history of China. The Early Ming inherited the legacy of the Sino-Islamic cartographic exchange of the Yuan dynasty, and with the direct Sino-European map exchange of the Mid-LateMing, at least six maps of world significance remain to us today: (1) *Da Ming Hunyi Tu* (Amalgamated Map of the Great Ming Empire) (1398) that provided the contours of Europe, Asia, and Africa, and reflected the interchange of Sino-Arab cartographic cultures; (2) *Zheng He Hanghai Tu* (Zheng He's Nautical Charts) (1425-1430) that reflected Zheng He's voyages to the "Western Seas" in the early 15th century and documented

the maritime Silk Roads of the Ming across the Pacific and Indian Oceans, as well as the Mediterranean; (3) *Xiyu Tudi Renwu Tu* (Map of the Land and People of the Western Regions) (1523-1541) that reflected the overland Silk Road of the 16th century; (4) the comprehensive set of large format maps titled *Guang Yu Tu* (Enlarged Ferrestrial Atlas, 1555) that reflected the best of Yuan and Ming dynasty maps and the overall geographical situation of 16th century China and Asia, and which influenced Japanese and Korean maps as well as European geographic concepts; (5) *Kunyu Wanguo Quantu* (Complete Map of all Nations on Earth, 1602) that was drafted by the 17th century Italian Jesuit scholar in China Matteo Ricci, and reflected European geographic discoveries, the view that the world is spherical, and the Sino-Western interchange of cartographic cultures; and (6) *Da Ming Jiangli Fenye Dong Xi Yang Tu* (Map of Territorial Demarcation and East-West Oceans of Great Ming Empire, 1619) a color map that reflected early 17th century independent ocean voyages by people from South-east China, as well as Asian sea routes and East and Southeast Asian nations. These six maps were the crystallization of the East-West exchange of knowledge about geography and mapping and reflected the interchange and influence of East-West civilizations, and promoted the process of integration in world history. This paper will study these six maps, examine Sino-Islamic and Sino-European cartographic exchanges from the 14th to the 17th century, and through these maps examine changes during this period along the overland and maritime Silk Roads.

I . Sino-Islamic Cartographic Exchanges in the Yuan Period and the East Asian World Map Hunyi Tu

Yuan maps demarcating the territory of important political districts included Zhamaluding's *Tianxia Dili Zong Tu* (1303), Zhu Siben's *Yudi Zong Tu* (1320) that was part of the series *Yudi Tu*, and Li Zemin's *Shengjiao Guang Bei Tu* (around 1330), all of which are no longer extant. *Guanglun Jiangli Tu* took full advantage of Zhu Siben's *Yudi Tu*, as well as such Yuan dynasty illustrated geographies as *Yuan Jingshi Dadian* (1331) and *Da Yuan Da Yitong Zhi* (1346). The Early Ming inherited the Mongol Yuan era world view; reflecting the 15th century East Asian world view were *Da Ming Hunyi Tu* drawn in the Hongwu reign-period (1368-1398), which included the three continents of Europe, Asia and Africa, and *Hunyi Jiangli Lidai Guodu Zhi Tu* compiled by a Korean scholar in the Jianwen period (1399-1402) of the Ming on the basis of Chinese maps and maps drawn by Korean and Japanese scholars.

The First Historical Archives of China hold a copy of *Da Ming Hunyi Tu* painted on silk

and dated to Hongwu 22 (1389). However, in the Early Qing all Chinese notes on the map were covered with labels in Manchu. The map measures 386 cm in length and 456 cm across, and is a Ming map of "the world" (*tianxia*) based on a Yuan map.[1]

The map oriented with north at the top and the west on the left encompasses the three continents of the Old World (Europe, Asia and Africa), and extends from Japan in the east, to Europe and Africa in the west, to Java in the south, and to Mongolia in the north, a map of the entire world known in the Ming dynasty. The map has the Ming dynasty at its center, emphasizing the Ming dynasty's territorial frontiers and administrative regions. Prominently shown are important elements of human geography, such as market towns, stockade towns, fortresses, and post-stations, as well as irrigation canals, ponds and salt mines; natural geographic features such as mountains, rivers, lakes, and swamps are also marked. In all, more than one thousand toponyms are noted. The key elements of the legend are relatively unified. The thirteen Provincial Administrations of the Ming dynasty are shown and their dependent prefectures, sub-prefectures, and counties, the names of which are provided in pink rectangular cartouches, while the names of various other settlements are directly indicated. The "Imperial Capital" (Nanjing, Jiangsu) and "Central Capital" (Fengyang, Anhui) are shown in square blue cartouches with red lettering; mountain ranges are shown in the style of Chinese landscape painting; the Yellow River is denoted with a crude yellow curving line, while all other bodies of water are shown with gray-green wavy lines. Subsequently, the Qing dynasty covered all Chinese text on the Chinese Central

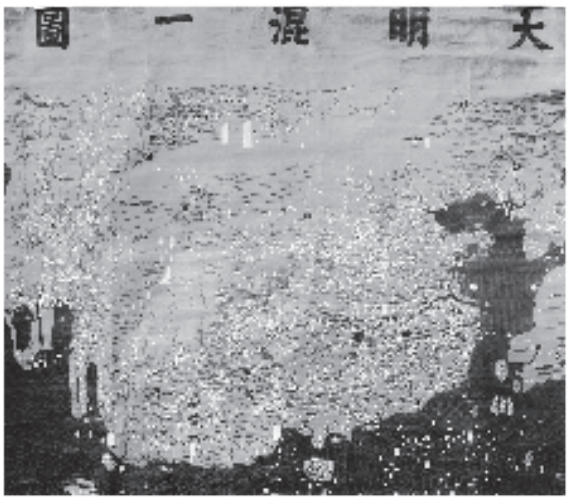

fig.1 First Historical Archives of China, copy of *Da Ming Hunyi Tu* painted on silk and dated to Hongwu 22 (1389)

Plains section of the map with Manchu labeling of different sizes, for the use of the Qing court and to make known the Qing's power to govern the world.

Da Ming Hunyi Tu was not drafted strictly according to scale, but deliberately magnified the territory of the Ming dynasty, using differently colored toponym cartouches for the names of places inside and outside Ming territory. The most detailed description of places outside Ming territory was for Central Asia, followed by Europe and Africa; the location of South Africa's Cape of Good Hope was accurately shown, indicating that this map was influenced by Islamic geographic knowledge. On the basis of the map's content and documentary speculation, it would seem that the domestic parts of the map were based on Zhu Siben's *Yudi Tu* and the extraterritorial sections were influenced by Zhamaluding's terrestrial globe and color map of the world (*Tianxia Dili Zong Tu*) (1303) and other Islamic maps, as well by the Late Yuan Li Zemin's *Shengjiao Guang Bei Tu*; as a result, rivers and freshwater lakes on the map are colored blue, and the oceans and salt lake are painted green, which is consistent with the coloring method of slightly earlier Islamic maps and globes, suggesting that this map was influenced by Islamic maps. Available information suggests that after Islamic maps of the Mongol Empire were introduced into China, China began producing large numbers of color painted maps.

Da Ming Hunyi Tu is the largest, earliest, and best preserved Chinese language world map; it not only preserves a great deal of long lost Yuan dynasty geographic knowledge and knowledge of Yuan cartographic typology, but also reflects the Chinese "world view" and the results of Sino-foreign map exchange of the Yuan-Ming period; it had far-reaching influence in

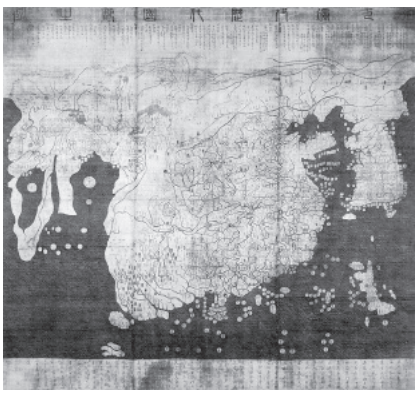

fig.2 Painted copy of *Hunyi Jiangli Lidai Guodu Zhi Tu* (1402), Collection of Ryukoku University Library, Tokyo

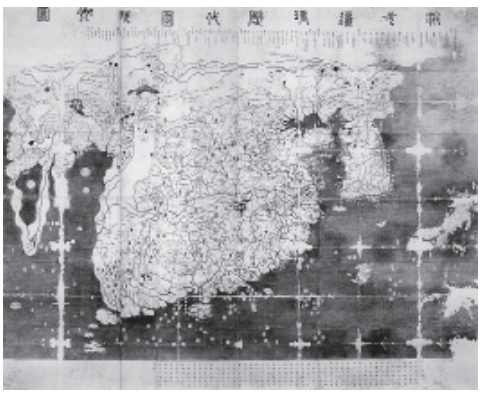

fig.3 Painted copy of *Hunyi Jiangli Lidai Guodu Zhi Tu* (1402), Collection of Honkō-ji [temple], Shimabara, Japan

the Mid-Late Ming on the "world view" of East Asian Confucian cultural circles and their maps of the world, by reasonably accurately presenting for the first time the shape of Africa in a world context. In the history of Chinese and world maps, *Da Ming Hunyi Tu* has an important position.

In the fourth year (1402) of the Jianwen reign period of the Ming, the Yi dynasty Korean scholar Kwon Kun drew up *Hunyi Jiangli Lidai Guodu Zhi Tu* on the basis of the Late Yuan dynasty Li Zemin's *Shengjiao Guang Bei Tu* and the Buddhist monk Qingrui's *Hunyi Jiangli Tu*, as well as combining information from Korean and Japanese maps. The scope and content of this map were similar to *Da Ming Hunyi Tu*, the main difference being that this map shows the Great Wall while Korea and Japan are proportionately larger and have a more accurate outline. Several painted copies of this map have been handed down in Japan and Korea, the main examples being in the collections of: Ryukoku University Library, Tokyo; Honkō-ji [temple], Shimabara, Japan; Honmyō-ji [temple], Kumamoto, Japan (called *Da Ming Guo Ditu*); and, Japan Tenri University Library (called *Da Ming Guo Tu*).[2] These copies are all part of the pedigree of *Hunyi Tu*, and reflect the cartographic exchange between East Asia and the Islamic world.

Ⅱ. The 15th Century and the Nautical Maps Zheng He Hanghai Tu

The period from the 15th to the 17th centuries was famous in world history as the age of sail and the era of great geographical discoveries. From the 3rd to the 8th year of the Yongle period (1405-1433), the eunuch Zheng He was ordered to lead the world's largest fleets on seven voyages to the "Western Seas" to proclaim the orthodoxy and authority of the Ming state. In the Early Ming, Chinese regarded Borneo (Indonesia's Kalimantan Island) and Brunei as marking the boundary between the "Eastern Seas" and the "Western Seas". Zheng He set sail in a flotilla of massive dragon ships from the port of Liujiagang, sailed through the Straits of Malacca, crossed the Indian Ocean, and reached as far as the Red Sea. He visited more than thirty countries including Java, Sumatra, Sulu, Pengheng, Zhenla, Guli, Siam, Aden, Arabia, Mecca, Sofala, Hormuz, and Mogadishu, traveling as far as the east coast of Africa, strengthening relations between China and Southeast Asia and East Africa, opening up China's great maritime age ahead of that of Europe, and thereby entering the annals of world navigation. But because the Ming dynasty's ocean voyages had no economic or military purpose, they were a colossal waste of national resources and could not be sustained as they lacked visible benefits. During his seven voyages, Zheng He compiled many sea charts, of which *Zheng He Hanghai Tu* is the only one to have survived.

Zheng He Hanghai Tu, originally known as *Zi Baochuan Chang Kai Chuan Cong Longjiang-guan*

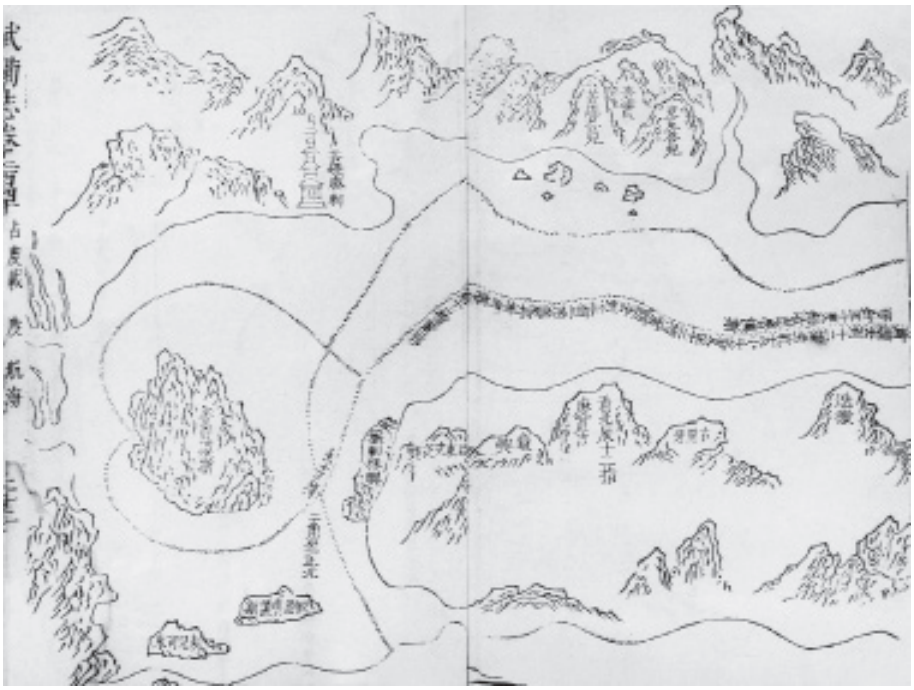

fig.4 Ming Xuande, *Zheng He Hanghai Tu*, end of fascicle showing the India Ocean routes

Chushui Zhidi Waiguo Zhufan Tu, was included in Mao Yuanyi's Late Ming compilation titled *Wu Bei Zhi*. The map was drawn in 1430 (Xuande 5) before Zheng He's seventh and final voyage. The map was cut on woodblocks and published in an album folio measuring 20 cm horizontally and 520 cm vertically. It depicts the routes of Zheng He's first six voyages to the Western Seas and the geographical positions along the routes.[3]

The orientation of the maps is not fixed, but changes according to the direction sailed, moving from right to left and, with the land and the sea below; the shoreline is distorted and stretched so that it forms a straight line for reference. The fascicle begins at the Nanjing shipyard, goes down the Yangtze River, and after emerging at the ocean follows the coast southwards, passing Indochina and the coast of the Malay Peninsula. It then passes through the Malacca Strait, passes by Sri Lanka and reaches the Maldives, where the route diverges into two ocean routes: one directly crosses the Indian Ocean to Malindi (present day Kilwa Kisiwani in Tanzania); the other passes Mauritius heading across the Arabian Sea and arriving at Hormuz. The entire map details Zheng He's previous seafaring routes and the coasts, reefs, bays, estuaries, and cities

along the way. The map has the compass path as its main content and style of presentation, for reference in determining navigational positions and directions. The compass path includes the direction (the compass position) and the "leg" of the voyage (sometimes also indicating the depth of the channel, navigational considerations, and so on), the "leg" being calculated as a "*geng*" (a two-hour interval equivalent to roughly 60 *li*, with ten *geng* being roughly equivalent to the distance covered in a day and night's sailing with a downwind). Most of the map shows both shores along the route indicating the location of coasts, mountains, bays, estuaries, islands, and reefs, as well as cities, fortresses, temples, government offices, pagodas, bridges, flagpoles, and other landmarks, to aid navigation. The important landforms are drawn very clearly, so that sandbars, shallow sand, and shoals can be clearly distinguished; the flat and steep sections of reefs are depicted and the ocean depth along the route is marked.

Zheng He Hanghai Tu combines two types of navigation chart – the periplus and the star chart, with the periplus describing the coastal routes and intended to aid coastal navigation, and the star chart depicting the deep sea legs of the voyage that required use of the stars for navigation. On *Zheng He Hanghai Tu*, the stretch of the journey across the Indian Ocean from the Maldives to Hormuz has no landforms to serve as reference and so to this section is appended a star chart to aid navigation. Such "ocean crossing star charts" came from Arab charts and would have been used by the Arab navigators ("Fan huozhang") on Zheng He's fleet, fully reflecting Early Ming Sino-Islamic cartographic exchange along the maritime Silk Road.

The maps contain more than five hundred toponyms, with more than two hundred in China and three hundred in foreign places. It depicts the shoreline of the Western Pacific, the Indian Ocean, and the Red Sea, greatly enriching the Chinese view of geography and knowledge of overseas geography, and constituting a valuable resource for researching Chinese and foreign geography and the history of Sino-foreign relations during this period. The maps, based on the practice of Zheng He and his fleet on their distant voyages, was the crystallization of Zheng He's navigational feat. The use in the maps of navigational information such as the compass path system of the periplus, the compilation of navigation channels, compass positions, the *gengshu* measure for sections of the voyage, the depths of the ocean, and the star chart data were the integration of Chinese and Arab seafaring knowledge, providing a fairly comprehensive set of charts. As the crystallization of Sino-Islamic cartographic exchange, they have great historical value and played an important role in the history of the development of navigational maps in China, and the rest of the world.

Ⅲ . 16th Century Sino-Islamic Map Exchange and the Map of the Overland Silk Road Xiyu Tudi Renwu Tu

Although the northwestern overland Silk Road had by the Ming dynasty declined significantly from its heyday in the Han and Tang dynasties, the Ming dynasty nevertheless inherited Mongol Yuan political, intellectual and cartographic concern for the Western Regions, formulated policy for managing and planning the Western Regions, and conducted tributary trade with various states in the Western Regions. The passage of Muslim pilgrims through the area prompted the compilation of maps of the overland Silk Road in the Ming dynasty. As early as 1415 (Yongle 13) the Ming Yongle Emperor's envoy Chen Cheng included a map titled *Xi Shi Xingcheng Tu* in his account of his Western trip titled *Xiyu Xingcheng Ji*, but unfortunately this map was lost in the Late Qing dynasty and is no longer extant. The most detailed and most widely circulated Ming map of the overland Silk Road existing today is the map titled *Xiyu Tudi Renwu Tu* and its explanatory volume titled *Xiyu Tudi Renwu Lüe*, which were compiled in the Jiajing reign period of the Ming. This map describes in great detail the mountains, rivers, produce, cities, towns, and ethnic groups of the Western Regions from Jiayuguan to Istanbul (Lumi), and thus serves as a 16th century map of the overland Silk Road across Eurasia.

Xiyu Tudi Renwu Tu and its explanatory volume *Xiyu Tudi Renwu Lüe* depicted and recorded more than 300 mountains, rivers, cities, towns, products, races, religions, customs, and other content along the road from Jiayuguan to Istanbul in the Jiajing period of the Ming dynasty, encompassing more than ten countries of today's Europe, Asia and Africa: China, Uzbekistan, Tajikistan, Afghanistan, Iran, Lebanon, Tunisia, Saudi Arabia, Syria, and Turkey. Chinese characters were used to denote place names derived from more than ten different languages including Chinese, Turkish, Mongol, Sogdian, Persian, Arabic, Greek, and Armenian. The map included illustrations of merchants leading horses or camels, travelers carrying bags on their back, Muslims with turbans drinking wine, an envoy leading a tribute lion to the Chinese court, warriors on swift horses wearing Mongol hats, farmers immersed in working their fields, and an aristocrat in a carriage with panoply receiving guests bowing; in addition, the map depicts towns with rectangular and oval layout, a range of topographic vistas with watermills, windmills, mining shafts, observatory towers, and Tibetan-style stupas, all of which made the exotic geographic landscape of the Western Regions different from that of the Central Plains. It is worth noting that, with the exception of the Islamic ethnic groups noted as "Huihui" and "Huihui with head

covering", the figures shown in many West Asian towns indicate Han settlements: for example Kermanshah in Iran (Chinese: Qiemi) has "four ethnic groups, foreigners and Han"; in the town whose name is given as Wengulu (either southwest of Amman in Jordan or the Maghreb of Egypt) they are noted as "all Han sons with long hair under a hat working dry fields"; the town of Yeqin'gasi (Tartous, Syria), "all Han sons with long hair under a hat working wet fields (paddy)"; Saheisi walled city (northeast of Aleppo, Syria), "all Han sons with long hair under a hat"; the town of Feiji (district in Asia Minor, Turkey) , "all Han sons with trimmed whiskers and dishevelled hair under a hat working dry fields"; and Lumi city (Istanbul), where the inhabitants are described as "Muslims with head covering and sons of Han, engaged in business".[4]This reflected how in the Yuan and Ming dynasties Han people traveled to Western Asia and lived there, as well as general East-West interchange on the overland Silk Road. The reference to "sons of Han" and describing Muslim adherents as "Huihui lay monks" shows that this map and its encyclopedic explanation of the Western Regions were drafted by a non-Han and non-Muslim person whose background was in the Western Regions.

At least three copies of this map and explanatory volume have been handed down: (1) One is in the National Palace Museum in Taipei. The color painted map on paper is titled *Xiyu Tudi Renwu Tu* (appended to *Gansu Zhen Zhan Shou Tu Lüe*) and its explanatory volumes are titled *Xiyu Tudi Renwu Lüe* and *Xiyu Yan'ge Lüe*.[5] (2) The Geographic Society of Italy has in its collection a map titled *Xiyu Zhuguo Tu* and nine other album page maps in its *Gansu Quan Zhen Tu Ce*.[6] (3) Beijing's Oujiang Caotang Wenhua Yishu Youxian Gongsi purchased a large-format scroll map titled "Menggu Shanshui Ditu" from the Museum of Fujii Yurinkan. There are two other Ming dynasty woodblock editions that are extant: (1) One is a Ming dynasty Jiajing 21 (1542) titled *Xiyu Tudi Renwu Tu* included in Ma Li's edited *Shaanxi Tongzhi* (Gazetteer of Shaanxi).[7] (2) The other is a map titled *Xiyu Tu Lüe* in the volume *Shaanxi Sizhen Tushuo* in the Tōyō Bunko collection in Japan. The volume was compiled in Wanli 44 (1616) of the Ming dynasty by a team of seven including the Yan-Sui Military Governor Jin Zhongshi, a Mr. Jun of Jingzhou, and Ma Congpin. Prefaces for the volume were written by Liu Minkuan, Governor of the Shaanxi Three Borders, and Li Nan, Military Governor of Shaanxi.[8] *Xiyu Tudi Renwu Lüe* was also included in several gazetteers treating frontier policy: Zhang Yu ed., Bianzheng Kao, Ming Jiajing 26 (1547); Li Yingkui ed., *Su Zhen Hua Yi Zhi*, Ming Wanli 44 (1617); Gu Yanwu ed., *Tianxia Junguo Libing Shu*, Late Ming; and, Liang Fen ed., *Qin Bian Ji Lüe*, Qing Kangxi period. Generally speaking, the map and explanations were widely distributed in the Mid-Late Ming dynasty, probably as a result of

fig.5 National Palace Museum, Taipei, *Xiyu Ditu Renwu Tu*, Ming Jiajing period (approximately 1541), showing section of Silk Road from Hami to Aksu

fig.6 National Palace Museum, Taipei, *Xiyu Ditu Renwu Tu*, Ming Jiajing period (approximately 1541), showing final section of Silk Road from Mecca to Istanbul

the inclusion of the map *Hetao Xiyu Tu* in *Shaanxi Tongzhi*.[9].

The large painted scroll handed down by the Liulichang Shang Youtang antique store in the Late Qing – Early Republican period which is inscribed "Shang Youtang" and titled *Menggu Shanshui Ditu*, was acquired by the Fujii Yurinkan of Japan for their collection during the Republican years. In 2004 Yi Suhao and Fan Zechun of the Beijing Oujiang Caotang Wenhua Yishu Youxian Gongsi bought this map as an ordinary Qing dynasty landscape painting and later Lin Meicun, to great acclaim, studied the work and determined that it was a Ming dynasty map of the Silk Road. It was subsequently exhibited in Rome and Jiayuguan, then in May 2013 it appeared in Beijing at the Poly Spring Auction with a starting price of 80,000,000 yuan. At a conference in January 2014 organized by the University of Bonn on the theme of Chinese and Asian Geographical and Cartographical Views on Central Asia and its Adjacent Regions, the map attracted great attention. Painted on stiff silk, the map is 0.59 m wide, and 30.12 meters in length, and it covers the route from Jiayuguan to Mecca (the section from Arabia to Istanbul is missing). Compared with other painted and block-printed editions, the biggest difference is that this map uses the Ming green landscape painting technique, and the towns and buildings of the Western Regions are painted in the style of the Central Plains; there are few colors for foreign countries, and no painted icons or explanations of people and customs.

According to Lin Meicun, the starting point of the map is Jiayuguan, but it does not depict the first customs post outside Jiayuguan, so it would seem that the map was painted between the 3rd and 18th year of the Jiajing reign-period, and it would seem to be a map prepared for the use of the Jiajing Emperor in the light of the map held in the collection of the National Palace Museum in Taipei Palace, for which it was probably the prototype. He also maintains that it was clearly painted earlier than the other versions and on the basis of its painting

fig.7 Shang Youtang inscribed *Menggu Shanshui Ditu*, opening section showing Jiayuguan stretch

fig.8 Shang Youtang inscribed *Menggu Shanshui Ditu*, middle section showing Samarkand stretch

style, suggesting that the artist was Xie Shichen, a Ming dynasty painter of the Wumen painting school, [10] although his methods and conclusions are still subject to debate.

Xiyu Tudi Renwu Tu was widely distributed in the Jiajing and Wanli reign-periods. If the Shang Youtang *Menggu Shanshui Ditu* for sale in Beijing's Liulichang in the Late Qing – Early Republican period (a time when forged antiquities were extremely popular) is a genuine Ming work and not a later forgery, then it would have been a simplified and modified copy of *Xiyu Tudi Renwu Tu* by a Ming dynasty painter of the Central Plains. As for the green landscape painting method used to produce the work, it shows many similarities to other maps painted in the Ming dynasty, although it was not necessarily by a famous painter or a court master. If *Menggu Shanshui Ditu* was the prototype of a map prepared for the use of the Jiajing Emperor, as Lin Meicun argued, then without discussing whether an ordinary person could get hold of a secret palace scroll, then how could other copies have added to a blank prototype the many details of mountains, springs, lakes, figures, and customs and even more so how could they have changed the Chinese-style cities and buildings on the prototype to the more realistic and diverse city forms and architectural landscapes that conform to those of the Western Regions?

Moreover, given the hatred and contempt for the Mongols on the part of the Jiajing Emperor and his officials, with all official and private documents referring to the Mongols as "brigands" and Ming people holding superior xenophobic attitudes maintaining that "all under Heaven belongs to the Emperor", then a map covering a geographic range described in the Ming as the "Western Regions" could not possibly have been designated "a map of Mongolian landscapes", thereby implying that the Western Regions were in fact Mongolian. However the titles *Xiyu Tudi Renwu Tu* and *Xiyu Shanshui Tu* do not conform to Ming dynasty nomenclature and values. Therefore, the title of *Menggu Shanshui Ditu* could not possibly be one used by the Imperial Court or by a scholar, but must be the name given to the work by Liulichang's Shang Youtang. In short, even if *Menggu Shanshui Ditu* were painted by a Ming dynasty artist and is not a later forgery,

then it only has higher value as an antique and a work of art, and its historical value and its value for research fall far short of the other versions of *Xiyu Tudi Renwu Tu*.

In addition, the Tōyō Bunko edition in the volume *Shaanxi Sizhen Tushuo* was clearly attributed to the Yan-Sui Military Governor Jin Zhongshi, a Mr. Jun of Jingzhou, and Ma Congpin and there is a preface dated 1616 by Liu Minkuan, Governor of the Shaanxi Three Borders, and Li Nan, Military Governor of Shaanxi, yet Lin Meicun says this book was edited anonymously and suggests inexplicably that the book was compiled by Wang Chonggu, Assistant Minister in the Ministry of War, in the 1st year of the Longqing reign (1568). Lin Meicun also argues that the orientation of the map with the south at the top was influenced by Islamic maps, but this argument also does not hold. The orientation of ancient Chinese maps sought to cater to the map's usability and so various orientations occurred. From the Song dynasty onwards, however, the vast majority of regional maps were oriented with the south at the top, and generally only maps showing all the territory of the country were oriented with the north at the top, so the orientation of this map was not influenced by Islamic maps.

Beginning in the late 15th century, Portugal and Spain began initiating long distance ocean voyages that far exceeded in scale those of Zheng He's fleet, and they opened up new routes from Europe to India via Africa's Cape of Good Hope, discovered the American continent, and circumnavigated the globe, initiating the history of European discovery and colonization of the "world". The arrival of the age of maritime hegemony spelled out the relative decline of the overland Silk Road. *Xiyu Tudi Renwu Tu* painted by Chinese in the early 16th century appeared at the turning point from the overland age to the maritime age and its realistic depiction of interactive multicultural scenes against the backdrop of the Western Regions transformed by the Mongols and Islam reflected the final brilliance of the overland Silk Road and its global significance.

IV . The Spread of European Maps to the East in the 17th Century and the Chinese Language Map of the World map Kunyu Wanguo Quantu

In the Late Ming dynasty, the Italian Jesuit Matteo Ricci (1552-1610) compiled two hemispherical Chinese language maps of the world titled *Kunyu Wanguo Quantu*, and the Jesuits Giulio Aleni (1582-1649) and Diego de Pantoja (1571-1618) also compiled European-style Chinese language maps of the world that underscored the spread of modern European geographic knowledge to China.

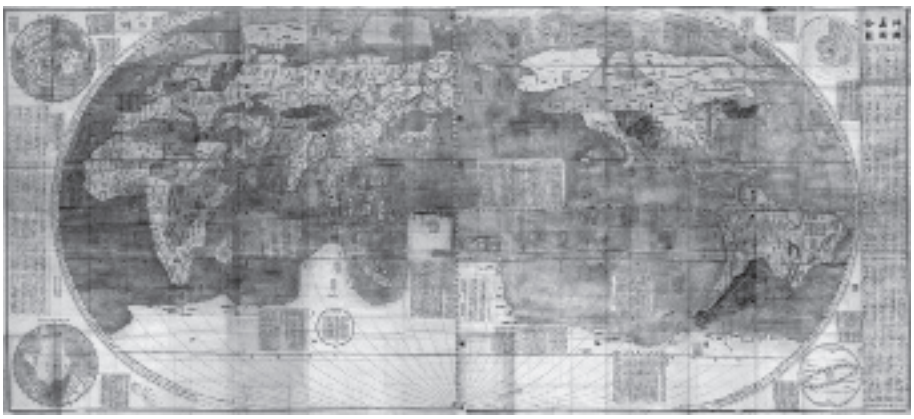

fig.9 Nanjing Museum, Matteo Ricci, *Kunyu Wanguo Quantu*, 1603, facsimile

In the collection of the Nanjing Museum is a copy of *Kunyu Wanguo Quantu*, a map compiled in the 36th year (1608) of the Wanli reign-period of the Ming dynasty by a group of Chinese and foreign scholars working under the Italian Jesuit Matteo Ricci. The map is painted in color on paper, and measures 192 cm in length and 346 cm in width. The map uses Western geographic concepts and schemata and it integrates Chinese cartographic information into a Chinese language map of the world. [11]

Kunyu Wanguo Quantu uses equal area projection and meridians of latitude and longitude and presents the world as two adjacent hemispheres. It depicts the five continents known at that time: Asia, Africa, Europe, America, and Antarctica. With the exception of Antarctica, the land and sea outlines of all the continents conform to the measurements taken by European navigators and so they are comparatively accurate. Antarctica was drawn according to European legend of that time and is thus larger than its actual size; Oceania was yet to be discovered and so it does not appear on the map. At each corner of the frame are small circular cartouches, supplementing the map of the five continents. Of them, the upper right corner cartouche shows a map of the heavens, in the upper right is a picture of an armillary sphere, in the upper left cartouche is the northern hemisphere, and in the lower left corner is the southern hemisphere, pictorially and directly reflecting the European view of the Earth.

The map uses three colors to represent the five continents, blue-green three-dimensional figures to depict the mountain ranges, double wavy lines to show the rivers, and light blue wavy lines to show the sea. At the same time, the map uses the typical cartographic painting methods in Europe at that period, with sailing ships, large marine animals such as whales and sea

fig.10 Ortelius's map of the world in *Theatrum Orbis Terrarum* (1570)

monsters painted on the oceans, and images of tropical animals such as lions, elephants, rhinos, and ostriches imaginatively depicted in Antarctica, vividly reflecting both European maritime exploration and the unknown world of the imagination. Larger and smaller font sizes are used for the names of the five continents and other place names, respectively, and under each toponym are notes describing local history, customs, and special products, allowing readers to quickly understand basic facts about the world.

Regarding its sources, this map integrates cartographic data used to draft maps in Europe at that time. The maps uses the renowned Abraham Ortelius' (1527-1598) Latin map of the world *Theatrum Orbis Terrarum* as its model, combining it with Chinese maps compiled in the Ming dynasty such as *Guangyu Tu*, *Da Ming Yitong Zhi*, and *Gujin Xingsheng Zhi Tu*. In order to facilitate Chinese officials and scholars more readily accepting the map, Matteo Ricci put Ming China at the center of the world at variance with European maps that placed the Atlantic Ocean at the center. Ricci also provided very detailed description of the East Asian region. On both sides of the map are Ricci's explanations, epilogue, and preface, providing detailed knowledge about the Earth and the method of Western mapping projection. There is also Wu Zhongming's preface to Ricci's map *Shanhai Yudi Tu*, a preface written by Li Zhizao,

and colophons by Chen Minzhi, Yang Jingchun, and Qi Guangzong, that provide important reference material regarding Ricci's compilation of the map, the processing of printing the map of the world, and its block-printing.

The Italian Jesuit missionary Matteo Ricci came to China in Wanli 10 (1582) of the Ming dynasty, first working as a missionary in Zhaoqing, Guangdong, and later becoming head of the Jesuit order in China. He advocated respect for Chinese customs and used his relationships with officials and scholars to advance his mission. He utilized astronomical, calendrical, and geographic knowledge for the missionary endeavor. He drew a number of Chinese language maps of the world, including *Shanhai Yudi Tu* completed in Wanli 12 (1584) in Zhaoqing, *Yudi Shanhai Quantu* compiled in Wanli 23-26 (1595-1598) in Nanchang, and *Shanhai Yudi Quantu* compiled in Wanli 28 (1600) in Nanjing.

In Wanli 29 (1601) Matteo Ricci went to the capital and presented his *Kunyu Wanguo Quantu* to the Wanli Emperor, and it attracted the attention of Chinese officials and scholars. Under its influence, some Chinese scholars began to cooperate with the Jesuits or they independently prepared world maps adopting Ricci's method of showing the two hemispheres. In this phase of Sino-Western cartographic interchange, the following Chinese scholars and their world maps all showed the influence of Western knowledge of geography and cartographic methods: Wang Qi's *Shanhai Yudi Quantu* in *Sancai Tuhui*; Zhang Huang's *Yudi Shanhai Quantu* in *Tushu Bian*; Xiong Mingyu's *Kunyu Wanguo Quantu* in *Gezhi Cao*; Pan Guangzu's *Dong Xi Banqiu Tu* in *Yudi Beikao*; and, Cheng Bai'er's *Shanhai Yudi Quantu* in *Fangyu Shenglüe*. Among these maps, copies of *Kunyu Wanguo Quantu* and *Liangyi Xuanlan Tu* would have a profound and widespread impact on the Korean peninsula and in Japan.[12]

The publishing and dissemination in China of *Kunyu Wanguo Quantu* greatly widened the Chinese vision of geography, with knowledge that the earth is spherical and such geographic concepts as the five continents, the four oceans, and climate that were all the outcome of the great geographical discoveries of Europe, as well as the introduction of knowledge of field measurements and mapping projection into China, all had a great impact on Chinese scholars at that time. Matteo Ricci's translations of the terms for Asia (Yaxiya), the Mediterranean, the Nile, the South Pole, the North Pole, and the Equator are still in use as geographic terms. Ricci's success in compiling *Kunyu Wanguo Quantu* and subsequent maps synthesizing Chinese and Western geography made up for the deficiencies and inaccuracies in mapping East Asia in the European maps of the world at that time, promoting the development of cartography in China

and of cultural exchanges between China and the West and playing an important role in the history of the map in China and even in the history of the development of world maps.

V . 17th Century Cartographic Exchanges between China, the Islamic World, and the West and the Maritime Silk Road Map Da Ming Jiangli Fenye Dong Xi Yang Tu

In the collection of the Bodleian Library at Oxford University is a Ming dynasty Wanli period nautical chart that shows ocean routes of the Eastern and Western Seas between territories and Quanzhou. The map was donated to the Bodleian by the lawyer John Selden and so it is known by Western scholars as the Selden Map. [13]The map, measuring 1 meter vertically and 1.5 meters horizontally, was compiled in Wanli 47 of the Ming dynasty (1619) by people in Fujian synthesizing Chinese, Arab, and Western cartographic materials and compiling a nautical map of Asia showing Ming boundaries.

This map ranges from Siberia in the north to Java and the Moluccas (Spice Islands) in the south and from the Japanese archipelago in the northeast, south to the Philippines, and west to Myanmar and southern India. It is a map suitable for hanging on a wall. The comprehensive map outlines the boundaries of the Ming dynasty in East Asia, as well as the Korean peninsula, the Japanese archipelago, and Southeast Asia, and the ocean routes to the Eastern and Western Seas. Thick green lines mark the boundaries between the administrative divisions of the Ming dynasty; thick red circles and small brown circles mark respectively all levels of administration, commercial ports, and ancient country names. The main navigation routes to the Eastern and Western Seas are marked with black lines. In the middle at the top of the map is a scale and a picture of a traditional compass, identifying the eight cardinal directions. In addition, the map also shows mountains, forests, pagodas and buildings using Chinese traditional landscape brush painting techniques, and these are then lightly tinted or highlighted with contrastive red and yellow to indicate topographical features in different regions, and to distinguish between produce and specialties from different places, the colors and brush work showing the influence of Arab maps.

The Ming territory on the map includes the two capitals, the 13 provincial administrations, as well as Liaodong, Hezhou, and Taiwan. As well as listing the names of the ancient Nine Provinces, the main mountains and lakes, the map also denotes the 28 constellation "control zones" (*fenye*). The map is based on *Ershiba Xiu Fenye Huang Ming Gesheng Diyu Quantu* in vol. 2 of the atlas titled *Xuehai Qunyu* carved by Xiong Chongyu of Jianyang in Fujian in the

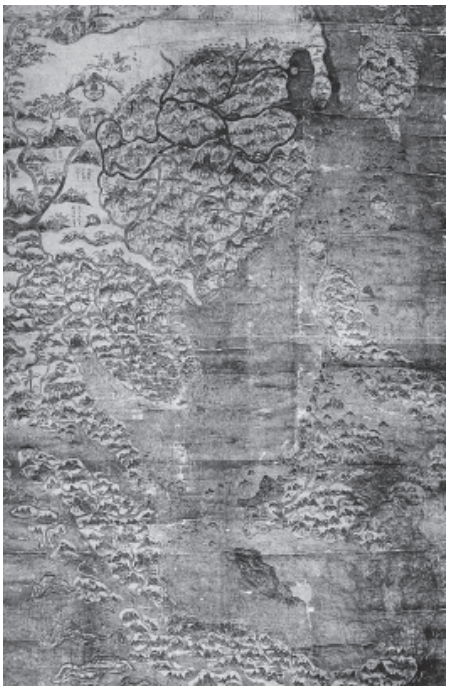

fig.11 *Da Ming Jiangli Fenye Dong Xi Yang Tu* (1619), Bodleian Library at Oxford University

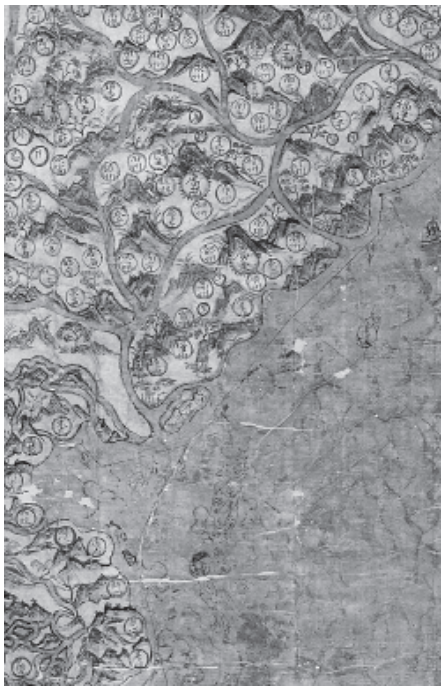

fig.12 *Da Ming Jiangli Fenye Dong Xi Yang Tu* showing navigation routes in the Western Seas

35th year of Wanli (1607). On the map Korean and Japanese place names are marked in detail, although mostly they are the popular names in the vernacular of southeast China's fishermen and merchants. Southeast Asia is drawn accurately, reflecting the cartographic success of the Western missionaries Matteo Ricci, Giulio Aleni and others in the Late Ming, but also relying on the navigational experience and knowledge of sailors and boatmen from Fujian province and of Southeast Asians and Arabs. It is a comprehensive map synthesizing Chinese, European, and Arab knowledge of cartography and geography. The map is aptly titled.

There are 18 routes through the Eastern and Western Seas shown on the map; six lead to Japan and twelve lead to the Western Seas. The sea routes across the Eastern Seas are as follows: 1. Zhangquan (Zhangzhou and Quanzhou) to Okinawa; 2. Zhangquan to Nagasaki; 3. Zhangquan to Luzon; 4. Chaozhou to Luzon; 5. Luzon to Sulu; and 6. Luzon to Brunei. The routes across the Western Seas are as follows: 1. from Zhangzhou and Quanzhou via Zhancheng (Champa) and Cambodia to Yaoliuba (Batavia, Jakarta); 2. from Zhangzhou and Quanzhou via Champa and

Cambodia to Malacca; 3. from Zhangzhou and Quanzhou via Champa and Cambodia to Siam; 4. from Zhangzhou and Quanzhou via Champa and Cambodia to Dani (now Pattani, Thailand) and Kelantan (Malayan east coast); 5. Zhangzhou and Quanzhou via Champa and Cambodia to Palembang (in Sumatra) and Banten (in western Java); 6. from Malacca to Timor; 7. from Malacca to Bandjarmasin (in southern Kalimantan); 8. from Malacca along the west coast of the Malayan peninsula northwards to southern Myanmar; 9. from Banten around the southern coast of Sumatra; 10. from Batavia through the Straits of Malacca to Banda-Aceh (in northern Sumatra); 11. from Batavia to Banten; 12. from Banda-Aceh across the Indian Ocean to Bengal and Calicut (now Kerala). Among the above routes, apart from the three voyages from the Fujian coast to Nagasaki, Manila, and via southern Cambodia to Batavia that all cut directly across the ocean, the other navigation routes are all basically coastal.

This map has inherited the characteristic integration of illustration and text from Chinese traditional maps, so that many of the compass directions for sailing to specific places are provided as annotation. For example: "From Calicut to Aden, go northwest for a total of 185 *geng*; from Calict to Fars go northwest for more than 100 [text missing] *geng*. From Calicut to Hormuz, go by the *qian* compass point for five *geng*, go by the *qianhai* compass point for 45 *geng*, go by the *xu* compass point for 100 *geng*, go by the *xinxu* compass point for 15 *geng*, rely on the *zikui* compass point for 20 *geng*, rely on the *xinyou* compass point for five *geng*, take the *hai* point for ten *geng*, the *qianhai* point for thirty *geng*, and a single *zi* for five *geng*". This accurately reflects the voyage from Kerala to Hormuz, and this periplus basically conforms to the information regarding navigation routes in another Ming work in the Bodleian titled *Shunfeng Xiangsong*. The sea route from India to Persia provided in textual form on the map reflects how in the Late Ming Chinese ships were sailing the Indian Ocean less frequently.

Particularly noteworthy is that the Ming dynasty's territory is not at the center of the map and that it is aligned with South-East Asia. The map's center, focus and details are mostly the southeastern coast, as well as the trading harbors and islands of the Japanese archipelago, the Ryukyu Islands, Taiwan Island, the Philippines, Indochina, the Malay Peninsula, the Indonesian archipelago, and the Indian subcontinent, as well as the routes through the Eastern and Western Seas frequented by Fujian merchants engaged in trade activities. Those using the map can intuitively understand China's position in the Asian maritime world, then appreciate the area of overseas trading operations and the main sea routes plied by Chinese boats in the Mid Ming in East and Southeast Asia and it can be described as a nautical chart reflecting the maritime trading

activities of Fujian merchants in the Ming dynasty. If we say that *Zheng He Hanghai Tu* reflects the nautical achievements of Chinese officials in the Early Ming, then *Da Ming Jiangli Fenye Dong Xi Yang Tu* reflects Late Ming Chinese non-official nautical achievements and the ocean routes and commercial networks of South-East Asia, endowing this map with extremely high academic and heritage value.

VI . A 17th Century Map of China Goes to the West and Zhongguo Xin Tuzhi

In the Late Ming Sino-European cartographic exchange became a two-way street. At the same time as Matteo Ricci and other Jesuits were taking European knowledge systems of modern geography and cartography to China, the Italian Jesuits Michele Ruggieri (1543-1607) and Martino Martini (1614-1661), as well as the Polish Jesuit Michel Boym (612-1659) and others who continued to come to China were taking Ming maps such as *Guangyu Tu* back to Europe, and on the basis of this edited atlases of China in Latin, including *Atlas Sinensis* and *Novus Atlas Sinensis*. [14] These greatly changed European views of Chinese geography and promoted European understanding of Chinese geographical knowledge and geographic mapping style.

Since the Italian Renaissance in the 14th century, the great geographical discoveries and the improvement of the printing press greatly promoted the development of European cartography. In the 16th century European scholars adopted new methods and technologies for compiling maps of the Old World and the New World, opening up the modernization of European cartography. In 1584, Abraham Ortelius (1527-1598) of Flanders compiled the first modern atlas of the world, *Theatrum Orbis Terrarum*, and this included a map of China by the Portuguese map maker Luiz Jorge de Barbuda (1520-1580), which was the first European single map of China. It remained the blueprint for a European map of China for more than sixty years after its publication. China as depicted in the map is a mixture of classical European geographical knowledge, Marco Polo's medieval recorded tales, and the fruits of early modern European colonial adventures in Southeast Asia, while the outline and river systems of China are seriously distorted.

In 1655, Martino Martini published *Novus Atlas Sinensis* in Amsterdam and this was the first accurate and systematic reflection of China's geographic overview, which altered Westerners' fuzzy awareness of East Asian, and especially Chinese, geography, and it made a big impact on European people drafting maps of China. Martino Martini has been described by Europeans as Europe's "father of Chinese geography".

fig.13 Map of China in Ortelius' atlas *Theatrum Orbis Terrarum* (1584)

Novus Atlas Sinensis contained 17 maps, including one national map, 15 provincial maps (the 13 Provincial Administrations and the two capital territories of the Ming dynasty), as well as a map of Japan, and the atlas consisted of 171 pages of maps and explanations. The maps used a latitude and longitude grid to indicate the locations of Chinese provinces, and accurately depicted the outline contours of the Chinese provinces, the coastlines, and the river courses. Also marked on the maps of the provinces in the atlas were mineral resources such as gold, silver, iron, lead, mercury, and stone materials, while the maps of Shandong and Jiangnan showed salt resources. Various different colors were specifically used on the maps, indicating the direction in which cartography was developing.

The content and style of *Novus Atlas Sinensis* were greatly influenced by *Guang Yu Tu*. The latter compiled in Ming Jiajing 20 (1541) by Luo Hongxian was based on Zhu Siben's Yuan dynasty work *Yu Di Tu*, which was a large comprehensive atlas integrating Yuan and Ming cartography. [15] *Guang Yu Tu* was the first comprehensive atlas of ancient China, preserving a

treasure trove of maps and materials of the Yuan and Ming dynasties, and having important implications for the history of Chinese and world maps. *Guang Yu Tu* comprised a total of 113 maps, including 45 main maps and 68 supplementary maps. The main maps were: one general map; 16 maps being two of the directly administered capital territories and fourteen of the thirteen provincial administrations (with Shaanxi province represented by two maps); 11 maps of the nine frontiers; five maps of the Taohe, Songpan and Qianzhen borders; three maps of the Yellow River; three maps of the Grand Canal; two maps of ocean routes for transporting grain; one map each of the four "extremities", namely Korea, Shuomo ("Northern Desert", Mongolia), Annam (now Vietnam), and the Western Regions (Xinjiang, Central Asia, and West Asia); and most of the maps came with illustrations. At the front of the atlas was a preface, legend, and style sheet. With its rich content, it can be regarded as the culmination of Ming mapping, and it became the model for later atlases of the Ming and Qing dynasties. In the two hundred years from the Jiajing period of the Ming to the Jiaqing period of the Ching, this atlas was prepared on wood-blocks and printed many times and there are many different block-printed editions, as well as series of atlases similar to and derived from *Guang Yu Tu*. In Korea and Japan there were also a large number of derivative versions of *Guang Yu Tu*, and it became the content and stylistic source for East Asian atlases from the Mid Ming to the Mid Qing.

Novus Atlas Sinensis was directly influenced by *Guang Yu Tu* in having a general map and provincial maps, while by adding latitude and longitude as well as information on minerals and other resource, the content was rich and comprehensive. The atlas shifted the European understanding of China's geography from legend and the imagination closer to reality, not only

fig.14 United States Library of Congress, Martino Martini, *Novus Atlas Sinensis*

fig.15 National Library of China, Luo Hongguang, *Guang Yu Tu. Yudi Zongtu* (1541)

showing the overall outline of China and coastal areas, but also depicting China's provincial boundaries and political divisions, so that Europeans could for the first time understand the geography of China's hinterland. At the same time, this atlas was the first comparatively accurate European cartographic depiction of the Korean peninsula and the Japanese archipelago, enhancing European understanding of East Asia. From when the atlas was published until 1736 when French geographers compiled their atlas of China based on the Kangxi Emperor's *Huang Yu Quan Lan Tu*, it remained the blueprint for European maps of China and played an important role in the history of East-West cartographic communication.

Conclusion

The establishment of the Mongolian empire in the 13th century and the feat of Zheng He's seven voyages in the 15th century promoted Sino-Islamic cartographic exchange from the 14th to the 16th century. The great European geographical discoveries and the Reformation of the 15th and 16th centuries promoted direct Sino-European cartographic exchange from the 16th to the 18th century. The Mongol Yuan empire established a Trans-Eurasian empire with unimpeded passage along the overland Silk Road, and created excellent conditions for exchanges in science, technology, and culture between East and West. With the opening of East-West transport routes, many Islamic scholars born in Central Asia and West Asia began arriving in China, and they brought Islamic maps and the geographical knowledge and world concepts of the Arabs and Europeans to China. For example, the Persian Zhamaluding responded to being summoned to the Yuan court and there presided over the compilation of *Da Yuan Yitong Zhi*, the production of armillary spheres (globes) and the drafting of the color map titled *Tianxia Dili Zongtu*, substantially broadening the geographical horizons of the Chinese. Thereafter, maps of the lands beyond the Central Plains, including Central Asia, West Asia, Europe, and Africa, began to appear. Moreover, because the Mongols stressed the unity of the world, the distinction between Chinese and foreigners was diluted and the concept of an amalgamated or integrated world map (*hunyi tu*) replaced the Tang and Song notion of a map of Chinese and barbarians (*hua yi tu*), so that people of the Yuan came to know of the world map as a cartographic category.

The Early Ming inherited the geographic knowledge and cartographic heritage of the Yuan period, with a geographic vision based on the whole of Eurasia and Africa. In the Hongwu reign the Ming dynasty, on the basis of the Yuan comprehensive or amalgamated maps (*hunyi tu*), oversaw the drafting of *Da Ming Hunyi Tu* encompassing all of the Old World (Asia, Africa

and Europe). In 1402 the Korean Yi dynasty scholar Kwon Kun drafted *Hunyi Jiangli Lidai Guodu Zhi Tu*, which was based on the Late Yuan Chinese map of Li Zemin titled *Shengjiao Guang Bei Zhi* and the Late Yuan Tiantai monk Qingrui's *Hunyi Jiangli Tu*, as well as combining Korean and Japanese cartographic drafting. This generated many copies reflecting the view of the world and geographic knowledge in East Asian Chinese cultural circles in the 14th and 15th centuries and East Asia and Islamic cartographic exchanges.

The era from the 15th to the 17th centuries is renowned in world history as the age of great ocean voyages and geographical discoveries. The Arab Empire which had controlled East-West trade routes and the Indian Ocean sea routes from the 7th to the 13th century was in decline. In the early part of the 15th century, to proclaim its state power the Ming dynasty sent Zheng He on "seven voyages" to the Western Seas, before the era when the Europeans opened the world to the age of sail, and he absorbed the knowledge of Arab nautical charts and created *Zheng He Hanghai Tu* that constitutes a brilliant chapter in the history of Chinese navigation and Sino-Islamic cartographic exchange.

In the Late Ming, European Jesuits came to China via the maritime Silk Road, bringing modern European astronomy and geography with them as part of their missionary work, gradually winning the trust of Chinese bureaucrats, scholars and the Emperor. The Italian Jesuit scholar Matteo Ricci during the Wanli years prepared a Chinese language map of the world with two hemispheres and with China at the center of the world titled *Kunyu Wanguo Quantu*, and the Italian Jesuit scholar Giulio Aleni used this as the basis for his *Wanguo Quantu*, while the Spanish Jesuit scholar Diego de Pantoja translated many Western maps of the world into Chinese, so that geographic knowledge of , for example, "the spherical earth", climate zones, the four oceans and the New World of the Americas, as well as methods of field measurement and projection mapping were introduced to China, where they had an impact on Chinese scholars.

At the same time in China, the Italian Jesuit Martino Martini, on the basis of *Guang Yu Tu*, drafted his geographical atlas of China *Novus Atlas Sinensis* in Latin which transformed European views of Chinese geography and promoted European understanding of China's geography and the style of geographic maps. From the 16th century on, European maps of China moved from crude approximation to accuracy and from vagueness to specificity, and this evolution from spatiotemporal displacement to synchronicity reflected the deepening of Sino-European cartographic interchange.

East-West exchanges also promoted the compilation of maps of the Silk Road, such

as *Xiyu Tudi Renwu Tu* that depicted the overland Silk Road between Istanbul and Jiayuguan in the 16th century, *Zheng He Hanghai Tu* that illustrated the feat of Zheng He's voyages to the Western Seas and the ocean routes between Ming China, the Pacific and Indian Oceans, and the Mediterranean in the 15th century, and *Da Ming Jiangli Fenye Dong Xi Yang Tu* that reflected Asian sea lanes in the 17th century, all becoming media and witnesses of the interchange between Eastern and Western civilization. In these four centuries, the East Asian Confucian, Islamic and Christian cultural spheres effected cartographic exchanges via the overland and maritime Silk Roads, promoting the dissemination and exchange of geographical knowledge of Eurasia and the New World, and accelerating the process of world modernization and integration.

4. For information on Cammidge's life and career, see the author's *History of Photography in China: Western Photographers 1861-1879,* London: Quaritch, 2010, pp.123-132.

5. *ibid.,* pp.56-78.

6. See the chapter 'Photography in Fuzhou' in the author's *History of Photography in China: Chinese Photographers 1844-1879,* London: Quaritch, 2013, pp.149-214.

7. For Lai Fong (Afong Studio) examples of his work can be found in the Moonchu Collection of Early Photography of China, Hong Kong and the National Gallery of Australia, (NGA 2009.167). Tung Hing's work can be seen in the Getty Research Institute, Los Angles (2003.R.22, box 5) and the Harvard-Yenching Library, Edward Bangs Drew Collection, EBD06;

8. See: Crossman, Carl L. *The Decorative Arts of the China Trade: Paintings, Furnishings and Exotic Curiosities.* Woodbridge: Antique Collectors' Club, 1991.

9. Crossman (pp. 151-5).

10. Preble, George Henry. *The Opening of Japan: A Diary of Discovery in the Far East, 1853-1856*, Norman: University of Oklahoma Press, 1962.

11. Thomson, John. 'Hong-Kong Photographers', *British Journal of Photography*, vol. 19, no. 656, 29th November 1872, p.569.

12. Griffith, David Knox. 'A Celestial Studio', *Photographic News*, vol. 19, no. 873, 28th May 1875, pp. 259–60.

13. 'Photography in Eastern Asia'. *Photographic News*, vol. 28, no. 1330, 29th February 1884, p. 129.

14. Thomson, John. *The Straits of Malacca*, *Indo-China and China or Ten Years' Travels, Adventures and Residence Abroad.* London: Sampson Low, Marston, Low & Searle, 1875 (pp. 189–90). In the 1899 edition of his book *Through China with a Camera*, (London: Harper & Brothers) Thomson added that the Chinese 'love of symmetry is also observed in carrying two watches in place of one in pockets placed one each side of the coat' (p.32).

15. This ability to successfully alternate between Chinese and Western styles of portraiture can be readily seen in the reproduction of some 150 carte de visite portraits which appear as an appendix in the author's book: *History of Photography in China: Chinese Photographers 1844-1879*, London: Quaritch, 2013 (pp.291-310).

16. 'Photography in Eastern Asia', p. 129.

17. Black, John Reddie, ed. *The Far East*, Shanghai, New Series, vol. 3, no. 3, September 1877, p. 69. The photographer is unnamed but was probably Kung Tai.

18. Headland, Isaac Taylor 'Photography in China', *British Journal of Photography*, vol. 48, no. 2173, 27th December 1901, pp. 822–3.

19. Thomson, John. *The Straits of Malacca*, *Indo-China and China or Ten Years' Travels, Adventures and Residence Abroad.* London: Sampson Low, Marston, Low & Searle, 1875 (pp. 188–9).

20. For background on the studio price wars and William Floyd's career, see the author's *History of Photography in China: Western Photographers 1861-1879*, London: Quaritch, 2010 (pp.7-18).

21. John Gulick and Samuel Brown were American missionaries in Japan who practised photography in their spare time. Gulick in particular was a rare case of a missionary who used his photographic skill to support himself financially. For further information, see the author's 'John Thomas Gulick (1832-1923) - Pioneer Photographer in Japan' *Trans-Asia Photography Review*, vol. 1, no. 2, Spring 2011 (online journal).

22. Collins' work is briefly mentioned in the author's *History of Photography in China 1842-1860*, London: Quaritch, 2009 (p.117).

23. For Jocelyn see *ibid.,*(pp.129-139).

24. Thomas Child's interesting career is discussed at length in the author's *History of Photography in China: Western Photographers 1861-1879*, London: Quaritch, 2010 (pp.56-78)

25. Those located are listed in *ibid.*, p.70.

26. See: 'Peking', in *Journal of the Society of Arts,* vol. 43, 1st February 1895, p.219.

27. The album is in the author's collection.

28. See the references to the journal kept by one of Hart's agents who was sent to buy silk in the country areas between Ningbo and Shanghai then held by the Taiping. The journal speaks of how well he was treated by the Taiping and how he noticed that the areas occupied by the Rebels were peaceful. This diary was discussed in the British Parliament which was then re-considering its position with the Rebels and Qing Government. Hansard: *HC Deb 06 July 1863 vol 172 cc270-330*. The diary is reproduced in the book Sykes, William Henry. *The Taeping Rebellion in China*, London: Warren Hall & Co., 1863.

*3-4. The Silk Road and East-West Cartographic Exchange from the 14th to the 17th Century**

* Research funded by the Shaanxi Provincial Department of Education's Humanities and Social Science's Special Funding Program "The investigation, collection and study of ancient maps of Shaanxi" (approval number:12JK0178).

1. Walter Fuchs, "Drei neue Versionen der chinesich-koreanischen Weltkarte von 1402", H. Franke herausgegeben *Studia Sino-Altaica*, *Festschrift für Erich Haenisch zum 80,* Wiesbaden, 1961, pp.75-77; Walter Fuchs, "Notiz zur Pekinger Weltkarte der Ming-Zeit", translated into Japanese by Oda Takeo as "Pekin no Mindai sekaito ni tsuite", *Chirigaku Shi Kenkyū* (Studies in the history of geography), vol. 2, 1962; Wang Qianjin, Hu Qisong, and Liu Ruofang, "Juanben caihui *Da Ming Hunyi Tu* yanjiu" (The

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