

# ORIENTIS AURA

MACAU PERSPECTIVES IN RELIGIOUS STUDIES

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NO. 3 | 2018



聖若瑟大學<sup>†</sup>  
UNIVERSITY OF  
SAINT JOSEPH

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Publication Date: December 2019

Publisher: University of Saint Joseph, Macau SAR (China)

ISSN 2519-5417

USJ Journals Website: <http://journals.usj.edu.mo>

Email: [library@usj.edu.mo](mailto:library@usj.edu.mo)

Sponsoring Institutions: Fundação Macau

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# THREE EIGHTEENTH CENTURY PORTUGUESE JESUITS IN CHINA REVISITED: ANDRÉ PEREIRA, DOMINGOS PINHEIRO AND FÉLIX DA ROCHA

Noël Golvers\*

## ABSTRACT

This contribution focuses on three 18<sup>th</sup>-century Portuguese missionaries of the China mission. It gauges especially the relationship between their education in Portuguese Jesuit colleges and their activities in China, particularly with regard to the *Qintianjian* (Beijing Bureau of Astronomy, including the Observatory). It tries notably to ascertain whether the attempts to improve the level of mathematical instruction in the Jesuit colleges since the 1690s had indeed an effect on the Portuguese missionaries sent to the Beijing Court. These three analyses – partly hampered by our incomplete information – suggest that there was not a linear correlation between education and commitments inside China: A. Pereira never succeeded in replacing Kögler, and the best mathematical talent (D. Pinheiro) was committed only to administrative and logistical functions, not to the Observatory; Da Rocha got his engagements from the Chinese-Manchu authorities. This apparent lack of interest from the Portuguese Jesuit authorities in assigning competent Portuguese Jesuits for an efficient management of the *Qintianjian* explains also the disapproval of the German astronomers in the Bureau (A. von Hallerstein; Fl. Bahr) towards their Portuguese colleagues.

**Keywords:** André Pereira, Domingos de Pinheiro, Félix da Rocha, Jesuits, China mission, Mathematical training in Portugal

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## INTRODUCTION<sup>1</sup>

The history of the Jesuit mission in China in the late sixteenth to the eighteenth centuries, although part of the history of the *padroado*, was to a large extent made and written by non-Portuguese missionaries, including such key personalities as the Italian Matteo Ricci (1552-1610), the German Adam Schall von Bell (1592-1666), the Polish Michael Boym (1612-1659), the Flemish Ferdinand Verbiest (1623-1688), the Walloon Antoine Thomas (1644-1709), *inter alios*. This multi-national aspect created some tensions more than once within the Jesuit Society in the Portuguese Assis-tancy, and between Portuguese Jesuits in China and their 'external' colleagues: amongst the latter the loyalty towards the Portuguese Crown was sometimes ques-tionable, showing changing attitudes and creating suspicions on the part of the Por-tuguese, which was felt as unpleasant and created uneasy situations. All this repre-sents a topic rich of opportunities for further observations, on which, however, we cannot dwell here in more detail. Notwithstanding the large participation of 'foreign' *Indipetae*, the basic fact remains that during the entire history of the mission the majority of missionaries in China were of Portuguese nationality,<sup>2</sup> among them many interesting characters, to whom so far only secondary attention has been paid in the current research on the China mission, which was mainly guided by specialists from outside the country. Therefore, apart from Tomás Pereira (1646-1708) and Gabriel de Magalhães (1610-1677), most of them are often only mentioned in the margins of the mission's history.

Another problematic aspect of the *padroado* mission in China concerns the ten-sion in this top-down mission between the following: on the one hand, the particular demands of this mission, with its focus on the role of mathematics, astronomy and sciences to get access to the Chinese élite, and on the other hand, the rather low level of mathematical training within the Jesuit colleges precisely in the Portuguese province. The practical solution consisted mostly in the integration of the aforemen-tioned 'foreign' missionaries, on a temporary basis, in the Portuguese colleges es-pecially of Coimbra, Lisbon and Evora. However, this was felt as insufficient by the Jesuit Superiors in Rome, since Charles de Noyelle (1615-1686) and his successor Tirso Gonzalez (1624-1705), who therefore insisted on appropriate measures to up-grade the level of mathematical instruction in the colleges.

The results of this process of upgrading, and the position of individual Portuguese missionaries after this process within the China mission will be investigated here on the basis of three case studies. This investigation will be done by analyzing the ed-ucation, the curriculum and the activities of three Portuguese missionaries of the

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<sup>1</sup> Abbreviations: ARSI: Archivum Romanum Societatis Jesu, Rome; JA: *Jesuitas na Ásia*; Lisbon; JS: *Japonica Sinica* (collection within the Archivum Historicum Societatis Jesu); Lus.: *Lusitana* in the same Jesuit archives of ARSI; SBB-PKB: Staatsbibliothek Berlin – Preussischer Kulturbesitz; W= J. Wicki, 'Liste der Jesuiten-Indienfahrer 1541 – 1758', in *Aufsätze zur Portugiesischen Kulturgeschichte*, 7 (Mün-ster: Aschendorffsche Verlagsbuchhandlung, 1967), 252-450.

<sup>2</sup> See the list of nationalities in J. Dehergne, *Répertoire des jésuites de Chine de 1552 à 1800* (Rome: Institutum Historicum, S.I., 1973), 397.

eighteenth century – the period of the mission’s decline –, leaving the description of the process of upgrading of the mathematical training within the Portuguese colleges to a later occasion. This investigation will also be, at the same time, an occasion to complete and correct several biographical data in the current biographical instruments on these three actors.

## ANDRÉ PEREIRA<sup>3</sup> (1689-1743)

### CURRICULUM<sup>4</sup>

A first representative example of this Portuguese China-missionary ‘new style’ was André Pereira. He was born in Porto, from English parents, apparently called ‘Jackson’,<sup>5</sup> on 4th February 1689 or 1690.<sup>6</sup> He entered the Jesuit novitiate in Lisbon on 17 June or 17 July 1707.<sup>7</sup> After the usual two-year novitiate, he entered the *Universidade de Évora* in 1709.<sup>8</sup>

For the period he stayed as a student in Évora, there is only one of the ‘*Catalogi Triennales*’ of the *Provincia Lusitana* (*Lus.* 47), viz. that of 1711 (*Lus.* 47, fol. 129v etc.), which comes in consideration for information on his stay there, the others being too early (1705) or too late (1717, i.e. after his departure for China).

In the *Catalogus Triennalis* of 1711 (*Lus.* 47, fol. 133v), we find his name, as no. 363 among the then ‘*scholastic*’, as a student of the second year of his philosophical course:

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<sup>3</sup> Pereira himself signs his (Latin) autograph documents as: Andreas Pereyra.

<sup>4</sup> See the current literature in: L. Pfister, *Notices biographiques et bibliographiques sur les Jésuites de l'ancienne Mission de Chine 1552-1773* (Shanghai: Imprimerie de la Mission Catholique, 1932-1934), 652-654; C. Sommervogel, *Bibliothèque de la Compagnie de Jésus*, vol. 4 (Bruxelles: Société Belge de Librairie, Oscar Schepens et Cie; Paris: Librairie des Archives nationales et Bibliothèque de l'École des Chartes, 1893), col. 498; Fr. Rodrigues, *Jesuitas portuguesas astrónomos na China (1583-1805)* (Porto: Tipografia Porto Médico, 1925), 23-54, 83-113; J. Dehergne, *Répertoire des jésuites de Chine*, 197-8; *Grande Enciclopédia Portuguesa e Brasileira*, s.v. “Pereira (Padre André),” vol. 21, 116; U. Baldini, “The teaching of mathematics in the Jesuit colleges of Portugal, from 1640 to Pombal,” in *The Practice of Mathematics in Portugal*, ed. L. Saraiva & H. Leitão (Coimbra: Imprensa da Universidade, 2004), 424-5; Wang Yusheng, “P. Andreas Pereira and his Contribution to Mathematics and Astronomy in China,” in *História das ciências matemáticas. Portugal e o Oriente*, ed. L. Saraiva (Lisbon: Fundação Oriente, 2000), 219-26.

<sup>5</sup> This according to a much later indirect testimony by Antoine Gaubil from Beijing: R. Simon, ed., *Correspondance de Pékin, 1722-1759* (Geneva: Droz, 1970), 702. As this was shortly after the creation of a commercial contract between England and Porto in 1703, resulting in the establishment in 1717 of a first English trading post, there may be a connection between this fact and the appearance of his family in Porto in 1707.

<sup>6</sup> Cf. *JS* 25, fol. 279 (in the *Catalogus Prov[inciae] Japoniae anno 1722; Patres nondum Professi secundum Tempus religionis*) and *JS* 134, fol. 434 (the *Catalogus Sociorum V[ic]e-] P[rovinciae] Sinens[is]* Anno 1741) resp.; the origin of this difference is not clear.

<sup>7</sup> According to *JS* 134, fol. 435 and *JS* 25, fol. 279 respectively.

<sup>8</sup> Founded 1559, starting from the Colégio do Espírito Santo; instruction entrusted to the SJ (until 1759).

“Fr(ater) Andreas Pereira Portuensis eiusdem dioeces(is) (Conimbricensis) natus 7 (sic) Febr. 1689. Ingressus Soc(ietatem) 27 (sic) Jun(ii) 1707, bonis viribus, Philosophus 2i anni.”

From this, we can infer that Pereira’s four-year philosophical course spanned the periods of 1709-10 (first year); 1710-11 (second); 1711-12 (third) and 1712-13 (fourth year). At the end of his fourth year, he was ‘*magister artium*’.

Conspicuous – in view of his later career in China – is the fact that nothing is said about a mathematical course. However, as will be observed below we can induce that he followed a one-year mathematical course in Évora in 1713-1714, following his philosophical studies and preceding one year of teaching humanities at Coimbra University in 1714-1715. This Portuguese part of his career finished when Pereira embarked in Lisbon on 14 March 1716 (W 1606).

Arriving in Macau in the late 1716 or early 1717, he remained in the Macau – Canton (Guangzhou) area in the next following years: the first four years (roughly between August 1716 – August 1719), was spent on his theological studies,<sup>9</sup> and was followed by his ordination. Simultaneously, he certainly started his studies of Chinese, and received his Chinese name *Xu Maode* 徐懋德.<sup>10</sup> In August 1719, he made a lunar eclipse observation in Canton, reported later by Maximilian Hell (cf. infra). His main activities in Canton, however, were those of a common missionary; probably he was also rector of the local college (A. Viegas). It was still in Canton that he was professed with 4 vows, to be precise on 17 June 1724.<sup>11</sup>

At any rate, in the late Summer of 1724, he arrived in Beijing. This was immediately after the promulgation of the anti-Christian decree of the Yongzheng Emperor (1678-1735) on the 1st of July 1724. He was apparently engaged at Beijing for his ‘mathematical’ (i.e. astronomical) expertise, demonstrated, e.g., during the lunar eclipse in Canton.

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<sup>9</sup> This looks acceptable, but I found it only in A. Viegas, “Ribeiro Sanches e os Jesuítas,” *Revista de História* 9 (1920-1921): 257, without source indication. Pereira’s presence in Canton is confirmed in *Lus. 14* (see below note 12): “Cantone in ecclesia residentiae S.J. sub titulo Immaculatae Conceptionis die 18 Junii 1724.” See also the text on his tombstone: “Cantonem venit an(no) MDCCXVI, ubi per XIV an(nos) Fidem non mediocri fructu propagavit”; as the editor of the Zhalan inscriptions remarks (p. 283n2): “As for this “fourteen years in Guangdong,” in actual fact he stayed there for eight years (1716-1724); possibly ‘fourteen’ (“yi shi si”) should read: “two times four.”

<sup>10</sup> Different from Chinese, he probably later, or never learned Manchu: “Le P(ère) Pereyra et l’interprète chinois ne savent rien de la langue tartare”: A. Gaubil, *Correspondance de Pékin*, 189 (1727).

<sup>11</sup> See *Lus. 14*: Ad gradum admissi 1541 – 1773 juxta formulas votorum in ARSI asservatas, vol. 6, p. 13, from *Lus. 14*, fols. 243-244: “Cantone in ecclesia residentiae S.J. sub titulo Immaculatae Conceptionis die 18 Junii 1724.”



In 1727, after three years, he was appointed assessor (Chin. title: *Qintianjian jianfu* 欽天監監副<sup>12</sup>) of Kögler († 1746) in the Astronomical Bureau (*Qintianjian* 欽天監). He remained in this status within the *Qintianjian* until the end of his life.

Likewise, as a Jesuit, he had several official functions: twice he was Vice-Provincial in 1729-1732 and 1735-1741; Rector of the Nantang 南堂 Portuguese college in an unspecified period.

He died in Beijing on December 2, 1743. For his official funeral, there is an eyewitness report by Johann Walter, of December 2, 1744.<sup>13</sup> His tomb inscription is preserved and was published by Malatesta.<sup>14</sup>

### MATHEMATICAL INSTRUCTION

In view of his position in the process of exchange of Western astronomical knowledge in China, an important question, which remains open so far, concerns the context. In terms of the place and time, where and when did he received his mathematical expertise, and at which level? Yet, the evidence available enables us to formulate here a solution.

Although as already mentioned, the *Catalogi triennales* of the Portuguese province did not contain any reference to a mathematical instruction in Évora, two other reliable (mutually independent?) sources refer to a one-year special study in mathematics:

a. The *Catalogus* of the Chinese Vice-Province of 1741 (JS 134), fol. 435r, in the usual concise way:

s.v. P(ater) Andreas Pereyra: “stud(uit) Ph(ilosophae) an(nos) 4; Theol(ogiae) an(nos) 4; Math(esi) an(num) 1”;

b. Antonio Franco, SJ, in: *Imagem do Segundo século da Companhia de Jesus* (BNP, Ms. no. 750), 2a parte, fol. 207:

“(…) P(adre) André Pereira do Porto estudava mathematica.”

António Franco (1662-1732) is a well-informed source, given that he had in the years of Pereira's departure access to the archives of the Portuguese province, since

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<sup>12</sup> N. Standaert, ed., *Handbook of Christianity in China*, vol. 1: 635-1800 (Leiden: Brill, 2001), 720.

<sup>13</sup> Der Neue Welt-Bott mit allerhand nachrichten deren Missionarien Soc. JESU Allerhand so Lehr-als Geist=reiche Brief/Schriften und Reisbeschreibungen / welche (...) bis auf das Jahr 1726 in Europa angelangt seynd (...), (Augsburg - Graz, 1726), no. 683.

<sup>14</sup> E.J. Malatesta and Gao Zhiyu, eds., *Departed, yet present. Zhalan: The oldest Christian Cemetery in Beijing*, (Macau: Instituto Cultural de Macau-Ricci Institute; San Francisco: University of San Francisco, 1995), 282-3.

for the previous 5 years he had been 'socius' of the Portuguese provincial.<sup>15</sup> But neither he, nor the official *catalogus* go beyond this 'simple' confirmation, nor do they give an indication with regard to place / time: it can be expected to have been situated between the end of his Philosophical instruction – of which it was a kind of logical (but exceptional) prolongation / deepening – and his departure in March 1716.<sup>16</sup>

Yet, we can infer a more exact date from another statement by Pereira himself, in a much later letter of 10 May 1737 to António Nunes Ribeiro Sanches (1699-1783) – the latter *estrangeirado*, physician and scholar – in which he expresses regret for not having known Sanches in Coimbra, during the period in which he was teaching 'humanities' for one year, as he left Coimbra in 1715, i.e. just before Sanches entered the University:

"Eu não tive a fortuna de conhecer a V(ossa) M(ercê) na Universidade de Coimbra, porque de la [= Universidade de Coimbra] parti para esta China no anno 1715."<sup>17</sup>

With this, the chronology of Pereira's last years in Portugal seems to be definitely clarified: as he was in the academic year 1714-1715 for one year in Coimbra, only 1713-1714 remains for his one year of mathematical studies. At the end of the academic year 1714-1715 he left Coimbra to prepare himself in Lisbon for the departure in the next Spring. Due to the lack of the Catalogi Triennales of these years, we cannot expect any confirmation from them.

The extant catalogue of 1711 contains some more indirect information, with regard to the 'context', and probably with regard to the possible teacher.

First, in 1711 there was, among the *magistri* in Évora only one with a mathematical profile, namely Luis Mendez, but his teaching was situated in the past:

"P(ater) Ludovicus Mendes...fuit magister Mathesis."<sup>18</sup>

It is, however, among his colleagues-*scholastici*, that we find the teacher of that year, namely: "*Em(manuel) De Campo Ulyssiponensis (...) docet modo Mathesim, et est theologus 2i anni*" (fol. 131v; no. 310).<sup>19</sup> This student of the second year of

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<sup>15</sup> On A. Franco: Carlota Miranda Urbano, "O biógrafo António Franco, SJ, autor da *Imagem da Virtude*," *Humanitas* 66 (2014): 297-308.

<sup>16</sup> U. Baldini, "The teaching of mathematics," 424n300.

<sup>17</sup> "Del P. Andrés Pereyra al Doctor Antonio Riveyro Sánchez, dándole noticias de la China y del estado de las misiones," *Revista de archivos, bibliotecas y museos* 10 (1904): 307.

<sup>18</sup> *Lus.* 47, fol. 129v, etc., no. 290. This Lud. Mendes was 'screened' (and instructed?) by Joh. Hildred, SJ, the specialist appealed to Portugal to 'upgrade' the level of the mathematical colleges in Portugal: "Item censeo... Ludovicum Mendez quasi mediocritatem attingere, pro suo modulo in isto studio laborârunt" (*JS* 180, fol. 284/5). Because of the past tense of "laborârunt," he cannot be considered to have been Pereira's teacher.

<sup>19</sup> He apparently succeeded Manuel Leitão: *Lus.* 47, fol. 131, no. 300: "P(ater) Manuellus Leytão...docuit humaniores litteras et mathematicam per quadriennium." Some of the mathematical students were:

theology, who had apparently a sufficient mathematical level to teach his colleagues certainly was the Jesuit mathematician Manuel de Campos (1681-1758), considered as probably the best mathematician of his generation in Portugal, and was also the translator of André Tacquet.<sup>20</sup> In 1719-21 he was a lecturer at the *Aula da Esfera* in the *Colégio de Santo Antão*, so that there remains at least a possibility that he was also teaching mathematics in Évora after 1711, including the academic year 1713-14, while anticipating his transfer to Lisbon. In that case, Pereira could have received his one-year mathematical training from an eminent mathematical teacher.

### ANDRÉ PEREIRA'S SCIENTIFIC ACTIVITIES IN CHINA AND IN BEIJING

After the aforementioned profile, it is obvious that Pereira's scholarly activities were in the field of astronomy.

A first observation he made in China – apparently on his own – was the lunar eclipse observation of 30 August 1719, mentioned by Augustin von Hallerstein,<sup>21</sup> and made in Canton (cf. *supra*):

“Pekini ob densas nubes nihil videri potuit de hac eclipse. Cantone autem observatum est a Patre Andrea Pereira Sic. [sic! i.e. Soc. [Jesu?]].”

From Hallerstein's comments, it appears that the observation was not correct (p. 11): “*Unde fit Grenovicum [ = Greenwich] occidentalius Cantone 7h 40' 26"*; *est autem occidentalius solum 7h 31' Videtur error in observatione Cantonensi.*”

Nevertheless, it was in all probability on the basis of this (and other similar?) experiences that in 1724 he was summoned by the Emperor to come to Beijing. Three years later, he was appointed *Qintianjian jianfu*, as direct collaborator (“assessor”) of the official ‘Head’ of the Bureau, the German Jesuit Ignatius Kögler (1680-1746).

Central in Pereira's ‘early’ period in Beijing was the astronomical ‘revolution’ of 1722, described by Pereira in his letter of 20 November 1732:<sup>22</sup> following Pereira's perception, it concerns the introduction of a ‘new’ comprehensive astronomical manual in 1722, entitled *Lixiang Kaocheng* 曆象考成, made on the command of the late Kangxi Emperor, intending to counter a too strong Western influence in the calculation of the yearly calendar: activists were one “*Ho*” (i.e. He Guozong 何國宗), who

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Franc. Dias: “studuit mathematicae per biennium” (no. 322); Johannes de Abreu: “studet mathematicae,” i.e. in the present tense: he is now studying...” (no. 327); “Dominicus Pinheyro in oppido Loures; absolvit philosophiam” (no. 340); see the next item.

<sup>20</sup> For his mathematical profile: L.C. Guimarães, J.B. Pitombeira & G. Schubring, “Manoel de Campos, un precursor,” *Llull. Revista de la Sociedad española de historia de las Ciencias y de las Técnicas* 34, no. 74 (2<sup>nd</sup> sem., 2011): 315-40 (his role in the correction of Euclid, *Theorema* XI, 28).

<sup>21</sup> Augustin von Hallerstein, SJ (1703-1774), Slovenian astronomer in Beijing; published in: Maximilian Hell, SJ, *Observationes astronomicae ab anno 1711 ad annum 1752 a Patribus Societatis Jesu Pekini factae* (Vienna, 1768), 11.

<sup>22</sup> JS 181, fols. 54r-55v; Rodrigues, *Jesuítas portugueses astrónomos*, 83.

promoted one “*Mey*” (i.e. Mei Juecheng 梅穀成, 1681-1763); after apparent errors, manifested during the eclipse of 15 July 1730, this work was sent back to the Jesuits of the *Qintianjian* for revision. Therefore, Kögler and Pereira first corrected the eclipse factor of the solar eclipse of 15 July 1730 from 8’10” into 9’22”, and added in 1737 two appendices to the (*Yuzhi*) *Lixiang kaocheng*, namely the tables called *Ri Chan Biao* and *Yue Li Biao* (tables, the latter derived from Nicasius Grammatici’). Between 1737 and 1742, they compiled (*Yuzhi*) *Lixiang kaocheng houbian* (御制) 曆象考成後編 (“Supplement to a true investigation of Calendrical astronomy, ‘Imperially composed’ (= *Yuzhi*; abbr.: L XKCHB), where within the Tyconian cosmological framework – which, despite the acquaintance with Grammatici etc. was retained – several innovations were introduced, including, among others, Kepler’s equation and I. Newton’s lunar theory.”<sup>23</sup>

It is, after all, difficult to pinpoint precisely the contribution of A. Pereira in this mostly collective work, published by the Director of the Bureau, I. Kögler. Although he was perceived as the ‘assistant’ of Kögler during the observations<sup>24</sup> – which, institutionally speaking, was also his role – he was apparently not simply secondary, or receptive: not only because of his observation in Canton in 1715, but also because apparently, it was he who suggested to Kögler to introduce the Tables of Grammatici. This, at least, is reported by A. Gaubil:

“C’est lui (i.e. Pereira) qui engagea le P(ère) Kogler à ranger pour le Tribunal (d’Astronomie) les tables du P. Grammatici” fondées sur les principes anglois” (i.e. Newton).”<sup>25</sup>

In 1727 he was also involved in another collective project, this time a cartographical one, which was ordered by the ‘13<sup>th</sup> Regulo’,<sup>26</sup> in collaboration with Antoine Gaubil and Joseph De Mailla, and aimed at mapping the area between the *Sahalien Oula* (i.e. the Amur River), the sea of the North and that of the East. This is reported by Gaubil in his correspondence with Etienne Souciet in Paris,<sup>27</sup> who already mentioned in October of 1727, the Regulo’s satisfaction with the result, despite his own frustra-

<sup>23</sup> For this technical matter, I rely on: Shi Yunli & Xing Gang, “The first Chinese version of the Newtonian Tables of the Sun and Moon,” in *Proceedings of the Fifth International Conference on Oriental Astronomy*, ed. K-Y. Chen, W. Orchiston, B. Soonthornthum, and R. Strom (Chiang Mai, Chiang Mai University, 2006), 91-96; Shi Yunli, “Reforming astronomy & Compiling Imperial Science in the post-Kangxi era: the social dimension of the *Yuzhi lixiang kaocheng koubian*,” *East Asian Science Technology and Medicine* 28 (2008): 36-81; Han Qi, “The compilation of the *Lixiangkaochenghoubian*: its origin, sources and social context,” in *History of Mathematical Sciences. Portugal & East Asia*, ed. Luís Saraiva, vol. 2: *Scientific Practices and the Portuguese Expansion in Asia* (Singapore: World Scientific Publishing Co., 2004), 147-52.

<sup>24</sup> See the laconic remark of A. Gaubil in Simon, ed., *Correspondance de Pékin*, 309 (1732): “Le Père Pereyra, Portugais, a été donné pour adjude au P. Kögler et observe avec lui.”

<sup>25</sup> *Ibid.*, 702.

<sup>26</sup> Namely Prince Yi, or Yinxiang (1686-1730), 13th son of the Kangxi Emperor.

<sup>27</sup> A. Gaubil, in Simon, *Correspondance de Pékin*, 172/3.

tions about the low quality: that these maps were, indeed, not made through measurements-in-the-field, but were derived from regional reports or descriptions (“*mémoires*”) and beyond any application of contemporary Western cartographical theories or practices.<sup>28</sup> Anyway, also here it must be unclear what, if any, was Pereira’s contribution.

This project likewise shows a form of collaboration between the Portuguese College Nantang and the French residence Beitang 北堂, where Pereira was appreciated as ‘a friend’: “*A. Pereyra, Portugais, bon sujet, et mon ami.*”<sup>29</sup> This appears also from other forms of exchanges, on the level of Western books: an interesting first hand testimony is the copy of Souciet’s *Observations mathématiques, astronomiques, géographiques, chronologiques (...)*, Paris, 1729: a copy of volumes 1 and 2 – still in the Beitang collection, currently in the National Library of Beijing<sup>30</sup> – has a handwritten dedication to André Pereira – by Souciet himself – but was commented by Antoine Gaubil, as emerges from his autograph remark on the frontispiece of volume 1.<sup>31</sup> This can only be understood if we accept the idea that ‘new’ books with advanced information were exchanged between the ‘Portuguese college’ Nantang (where Pereira stayed) and the French residence, where Gaubil worked.

Besides these ‘local’ contacts/collaboration inside Beijing, occasionally also outsiders arrived in Beijing. This was the case with some Korean visitors: In 1741, the Korean astronomer An Kukpin, the interpreter-secretary of the Korean Embassy to China, met him in Beijing.<sup>32</sup>

## CORRESPONDENCE NETWORK WITH EUROPE

Pereira’s merits on the Europe-China scholarly interaction, however, appear most clearly in his correspondence and other exchanges, creating and using a wide-ranging network of communications, which embraced the entire Euro-Asian continent. Classified according to the addressees, we can distinguish:

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<sup>28</sup> A. Gaubil, in Simon, *Correspondance de Pékin*, 186-7.

<sup>29</sup> A. Gaubil, in Simon, *Correspondance de Pékin*, 297.

<sup>30</sup> See H. Verhaeren, *Catalogue de la bibliothèque du Pé-t’ang* (Beijing: Imprimerie des Lazaristes, 1949), no. 656.

<sup>31</sup> This autograph remark runs as follows: “Hic liber scate plurimis mendis. Pleraque in alio exemplari emendavi. De correctionibus faciendis monui R(everendum) P(atrem) Stephanum Souciet”; the latter remark to Gaubil’s letter to Souciet, of... I thank Dr. Emily Zaodaying of the National Library (Beijing), who sent me the photographs of the book inscription, which enabled identification of the author of the inscription.

<sup>32</sup> Cf., e.g., Joseph Needham, Lu Gwei-Djen, John H. Combridge, and John S. Major, *The Hall of Heavenly Records. Korean astronomical instruments and clocks 1300-1780* (Cambridge: Cambridge University Press, 1986), 178-179; on the pictorial and epigraphical representation of this collaboration with Kögler & Pereira on the ‘Spanish’ wall of the Royal Palace of the Yi-Dynasty in Seoul, see J. Needham, “A Korean Astronomical Screen of the Mid-Eighteenth Century from the Royal Palace of the Yi Dynasty,” *Physis* 8 (1998): 137-62 (esp. 146).

## A. ST. PETERSBURG

His correspondence with the Academy (*Academia Imperialis*) of St. Petersburg – of which he was appointed a member in 1736 – spanned roughly the decade 1732-1742.

See part of the correspondence in Francisco Rodrigues, *Jesuítas portuguesas astrónomos na China*, Porto, 1925, pp. 33-48 (20 Nov. 1732); 101-103 (28 Dec. 1736); 105-107 + App. (12 May 1737). Rodrigues's transcription was based on the ones made by Father François-Marie Gaillard (1852-1927) in 1911 in the St. Petersburg archives; other copies from these Gaillard transcriptions were transmitted to Henri Bosmans in Brussel, the historian of the Belgian Jesuit missions in China; these are now in the KADOC-archives in Leuven-Heverlee.<sup>33</sup>

Also letters exchanged with the Portuguese physician António Nunes Ribeiro Sanches<sup>34</sup> – the one, whom he had 'missed' during his one year at the University of Coimbra in 1714-1715<sup>35</sup> and who afterwards arrived in St. Petersburg, where he stayed from 1731 until 1748): four of these letters were published by Artur Viegas, in *Revista de História*, 9, 1920, 268 ff. (letters of 30 December 1736; 10 May 1737;<sup>36</sup> 28 June 1740; 23 April 1742); a letter of 30 July 1743 is published in: *Tratado da conservação da saúde dos povos* (Paris, 1757, p. 79), another one originally addressed to Policarpo de Souza in Macau of 30 July 1743 is on p. 5; both concern observations on the relation between climate and diseases (incl. the plague).<sup>37</sup> The contents of this correspondence are both general and more specific, even scholarly. It describes China as a 'complete' country (an idea we already find in the *Novus Atlas Sinensis* of Martino Martini, 1655), its recent history, the arrival of the Jesuits thanks to their astronomical skills, China's 'political' (civilized) character, counterbalanced by "*superbia*" ('haughtiness; pride'). More specific are the paragraphs, in which Pereira gives thanks for the arrival of (astronomical) books, describes the practice of the struggle against locusts ("*locustas*"); the contents of some medicinal dispatches, the use and 'virtues' of black and green tea, and refers to the observation of the comet of March 1742, of which he sent a Chinese map, made by a Jesuit *irmão* (probably to be identified as Ferdinando Moggi?), to be shown / offered to the members of the St. Petersburg Academy.

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<sup>33</sup> On these Gaillard transcriptions and his mission in Russia: see F.-M. Gaillard, "Ma mission en Russie (décembre 1908 – septembre 1911)," *Lettres de Vals* 4 (1932): 173-331.

<sup>34</sup> For his biography see: J.L. Doria, "António Ribeiro Sanches. A Portuguese doctor in 18th century Europe," *Vesalius* 6 (2001): 1-35.

<sup>35</sup> "Eu não tive a fortuna de conhecer a V(ossa) M(ercê) na Universidade de Coimbra, porque dela parti para esta China no anno 1715 (...):" see "Del P. Andrés Pereyra al Doctor Antonio Riveyro Sánchez," 307.

<sup>36</sup> Also in: *Ibid.*, 407-31.

<sup>37</sup> I used the reprint published by the Universidade da Beira Interior. Covilhã, 2003 (with the original pagination).

His correspondence – always together with Kögler (& Karl Slaviček, SJ) – with Theophil Siegfried Bayer (1694-1738), working in St. Petersburg since 1726: see *Miscellanea Berolinensia*, V, 1737, pp. 188-189 (12 Sept. 1732) and pp. 190-192 (VII Kal. Sext. 1734 = 26 July 1734).<sup>38</sup> Not only letters, but also books were exchanged in both directions: see the dedication by Bayer to Kögler, Pereira and Slaviček in Verhaeren, no. 3100<sup>39</sup> and in the *Acta Medicorum Berolinensium in incrementum artis & scientiarum collecta & digesta*, which were published in Berlin and prepared to be sent to Beijing.<sup>40</sup> In the reverse direction, a list of books Pereira shipped to St. Petersburg, dated May 12, 1737 is published in Rodrigues, pp. 105ff.;<sup>41</sup>

With Joseph-Nicolas Delisle (1688-1768), living in Saint Petersburg between 1726-1747: A. Pereira sent him (the only extant copy of) the printed *Yuzhi* (cf. supra), now preserved among the Delisle-papers in Paris: *Bibliothèque de l'Observatoire*, A B1/11.

## B. LONDON

Pereira's main addressee there was Jacob de Castro Sarmiento (1692-1762), an *alumnus* of the Évora University (matriculated in 1709, i.e. almost simultaneously with Pereira himself), later student in Coimbra; he left Portugal for London in 1720, living there as a '*estrangeirado*', and becoming a strong advocate of Newtonianism, also spreading it into Portugal: dedication of, among other texts, his *Observações do Eclipse do Sol 15 Julho 1730* and the *Immerções dos satelites de Jupiter 1729-1730*.<sup>42</sup>

Several of Pereira's observations were published in the *Transactions of the London Philosophical Society*; more precisely in:

- Volume 36 (1730) nos. 414 and 416, pp. 366-71 (1727-1728: an. to Candone) and 455-461 (1728-1729 to Candone) resp.;

- Volume 37, 1731-1732), nos. 420 and 421, pp. 179-183 (Kögler & Pereira) and 316-320.

Sarmiento was in all probability also the person behind the shipment of many advanced English scientific books to Beijing, either through Lisbon or St. Petersburg: I

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<sup>38</sup> See also K. Lundbæk, *T. Bayer (1694-1738). Pioneer Sinologist*, Scandinavian Institute of Asian Studies Monograph Series no. 54 (London; Malmö: Curzon Press, 1986), 156.

<sup>39</sup> A copy of Christian Wolfius, *Cosmologia Generalis methodo scientifica pertractata, qua ad solidam, imprimis Dei atque naturae cognitionem via sternitur* (Frankfurt; Leipzig, 1731) with Bayer's dedication.

<sup>40</sup> A set of 20 issues of the 1st edition (Berlin, 1717-1731) is still in Beijing, and has the Bayer dedication to Kögler, Pereira and Slaviček; see Verhaeren, *Catalogue*, no. 723.

<sup>41</sup> With a "Catalogus Librorum, qui ad Imperatoriam Academiam Petropolitanam mittuntur ex Pekini S.J. Collegio Australi" ("Collegium Australe" being a Latinized version of Chinese Nantang: 'the South Church').

<sup>42</sup> Viegas, "Ribeiro Sanches e os Jesuítas," 257n1.

have references to John Flamsteed (Tables, translated in Chinese by Pereira<sup>43</sup>), David Gregory (*Astronomia Physica & Geometria*), and John Keill.

### C. LISBON

Letter to Henrique de Carvalho (1667-1740), Jesuit confessor of Infante Don José, the later archbishop of Braga (1703-1756), dated 30 “*Weinmonat*” [‘Month of the Wine / vintage’ = October] 1732: a German translation is published in *Der Neue Welt-Bott*, Augsburg – Grätz, vol. 4.25, 1748, no. 526.

Through Joseph Ritter, SJ (1698-1761) – Royal Confessor of the Queen-Mother Dona Maria Anna (Marianna) at the Lisbon Court – copies of Keill & Gregory are arriving in Beijing (1742).<sup>44</sup> Another indication of Ritter’s interest in the China mission may be two theology books from his private library, which arrived in China and are still extant (Verhaeren, nos. 2529 and 2530).

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<sup>43</sup> Tables of Flamsteed & Cassini transmitted into Chinese by A. Pereira & I. Kögler: H. Bernard-Maître, “Les adaptations chinoises d’ouvrages européens: Bibliographie chronologique depuis la venue des Portugais à Canton jusqu’à la mission française de Péking 1514-1688,” *Monumenta Serica, Journal of Oriental Studies* 19, no. 630 (1960); J. Needham, *Science and Civilisation in China*, vol. 3: Mathematics and the Sciences of the Heavens and the Earth (Cambridge: Cambridge University Press, 1959), 448.

<sup>44</sup> A first echo appears at the end of 1736, when Andreas Pereira reports on 20 December to António Ribeiro Sanches in St. Petersburg to have seen (“vi”) a copy, but this had at that time not yet arrived; he apparently refers to the ‘last edition from Genève’: “*Ainda que ja vi [I saw] o Gregorio – Astronomia Physica e Geometria, todavia não o temos aqui, e he mais estimada a ultima edição que se fes em Genova [confusing Geneva and the Italian Genova?] no anno 1726*” (ed. Viegas, “Ribeiro Sanches e os Jesuítas,” 262). The next year, I. Kögler refers again to this title in his letter of 6 November 1737 (concerning a problem in Newton): “*sed nec hebetudini meae sat lucis affundunt, quae Gregorius habet in sua Astron(omia) Phys(ica)*” (SBB-PKB, Ms. Lat. Fol., 640, fol. 137r); id., on 25 October 1738: “*ex praefatione ad editionem Gregorii Genevensis (!)*” (ibid., fol. 140v); at least the last reference concerns the second Latin edition, published in Geneva in 1726; despite its firmly positive contents, the reference does not imply he had a copy at hand, as this had arrived only in the early 1740s; therefore, both Pereira and Kögler may have referred to a review of the 1<sup>st</sup> edition, published in *Philosophical Transactions* 23, no. 283, Jan.-Febr. 1703, 1312-1320; *Acta Eruditorum*, Oct. 1703, 452-462). This emerges from other letters by A. Pereira, of June 28, 1740 and April 23, 1742, always to the same correspondent. According to these, R. Sanches had explained, in a letter of July 29, 1737 to have handed over the book order (and the money) to two Bavarian Franciscans, Seraphin Rumpel and Herculanus Schneider (for this identification, see Standaert, *Handbook of Christianity*, 334); these reported they could not find a copy in Amsterdam, and had in their turn transmitted the order to the Confessor of the Lisbon Court, Father Joseph Ritter: “*Os dittos R(everendos) P(adres) Franciscanos não trouxeram a Astronomia de Gregorio, e disserão que a não acharão em Amsterdão, mas chegando a Lisboa a deyxarão encomendada ao R(everendo) P(adre) Confessor da S. Raynha para que ma (me a?) mandasse e fortasse chegue nesta monção seguinte: notavelmente fico obrigado a V.M. pela excessiva deligencia, que fez por ma mandar...*” (*Revista de História* 9 (1920-1921): 267); “*muyto mais pelos livros dos dous insignes authores Keill e Gregorio; e desde foy dobrado o beneficio pela deligencia tão insigne de os ter ja mandado, dando o dinheyro para se comprarem em Hollanda aos R(everendos) P(adres) Franciscanos, os quaes quando chegarão a Macao e me remeterão a carta (on..) disseram que em Hollanda não acharam os dittos livros, e chegando a Lisboa deyxarão ali o dinheyro para se comprarem...*” (ibid., 268). From these references, it seems that the copy of the revised Latin edition finally arrived in Beijing in 1741, when I. Kögler is mentioning on Oct. 22, 1741: “*Gregorii Astronomia Physica in 2 Tomis*” (SBB-PKB, Ms. Lat. Fol., 640, fol. 146v).



An important acquaintance there was also João Baptista Carbone, SJ, counselor of the Portuguese King João V (1722-1750) and himself a mathematician / astronomer and an ex-Indipeta;<sup>45</sup> cf. also A. Gaubil: “*Le Père Carboni donne des mouvements pour les Pères Kögler & Pereyra jusqu’en Angleterre.*”<sup>46</sup>

Until 1739, A. Gaubil remarks that Pereira got from the Portuguese Court all he wants: “*Le Père Pereira a de la Cour de Portugal ce qu’il veut, et le Roy de Portugal [i.e. João V] leur procure bien des secours, et vient de nommer évêque de Pékin le Père [Policarpo de] Sousa, qui est ici procureur des Portugais*” (i.e. of the Jesuits in the Portuguese college Nantang).<sup>47</sup>

#### D. VIENNA

Maximilian Hell, *Observationes astronomicae ab anno 1717 ad annum 1752 a Patribus Societatis Jesu Pekini factae*, Vienna, 1768; in the first of the two parts, of which this book consists, Maximilian Hell, SJ (1720-1792)<sup>48</sup> published the observations made between 1717 and 1745, of which only one, namely the lunar eclipse observation of 30 August 1719 is attributed to André Pereira (cf. supra): later the names of Kögler, Simonelli, and Gaubil appear occasionally. From this first part, it cannot be understood why Pereira’s name is mentioned as the first of the Western observers, in the Praefatio: “*a viris praestantissimis Europae Societatis JESU, R(everendissimis) P(atribus) Pereyra, Köglero, etc.*”

*Epistola. Pekino, 1730, de Terrae motu*: mentioned by Carlos Sommervogel in Vienna;<sup>49</sup> to be compared with other reports on the same topic, mentioned below.

#### E. PARIS

Observations sent to Etienne Souciet, SJ (1671-1744), astronomer and librarian in the Jesuit *Collège de Clermont (Louis-le-Grand)* in Paris: afterwards published in his: *Observations mathématiques, astronomiques (...)*, Paris, I, pp. 50-52 (“*Eclipsis eadem lunae observata Pekini in Collegio S.J. AD 1725 die 21 Oct(obris) post meridiem à P(atre) Slaviček & P(atre) Pereyra e S(ocietate) J(esu)*”) and pp. 67-68 (“*Insignis lunae congressus cum Pleiadibus per medium earum transeuntis, observatus Pekini in Collegio S.J. à R(everendis) P(atribus) Ignatio Kogler & Andrea Pereyra die 30 Octobris 1727 post meridiem*”).

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<sup>45</sup> See now the basic study of L.A. Marques Tirapicos, “Ciência e diplomacia na Corte de D. João V: a acção de João Baptista Carbone, 1722-1750” (PhD diss. Faculdade de Ciências da Universidade de Lisboa, 2017), esp. 159-60.

<sup>46</sup> Gaubil in Simon, ed., *Correspondance de Pékin*, 507.

<sup>47</sup> Gaubil in Simon, ed., *Correspondance de Pékin*, 527.

<sup>48</sup> See on him: N. Pär, *Maximilian Hell und sein wissenschaftliches Umfeld im Wien des 18. Jahrhunderts*, Religionsgeschichte der Frühen Neuzeit, Bnd. 14 (Nordhausen: Verlag Traugott Bautz, 2013).

<sup>49</sup> According to C. Sommervogel, *Bibliothèque de la Compagnie de Jésus*, vol. 6 (1895), col. 498, s.v. Pereyra, André, where a “Catal. MSS. Vindobon III, p. 244, n. 28” is referred to, which I could so far not trace in the actual *Österreichische Nationalbibliothek*.

## F. ROME

Various letters in ARSI, JS 180 and 181, sent to the successive Generals of the Jesuit Society, viz. Michelangelo Tamburini (31 January 1706 – 28 February 1730) and Franz Retz (7 March 1730 – 19 November 1750), in his function of Rector of the Portuguese College and/or Vice-Provincial of the Chinese Vice-Province:

- 19 October 1729 in JS 180, fols. 276r / 277v. He expresses his feelings after his appointment as rector: he feels himself completely unworthy; the situation of the mission, in which many missionaries – after the anti-Christian decree – are hiding themselves; imminent complaints from a *gelao* (official) called Cham against other missionaries and churches still active;

- 30 Oct. 1730: Letter to the General (?): contemporary copy in a Miscellaneous volume in the *Biblioteca Corsiniana*, Ms. 33 B 14, fols. 141r-144r (in Latin);<sup>50</sup>

- 6 November 1730: JS 180, fols. 296r/297r (on the damage caused by the earthquake of September 1730 to the Nantang; problems of financing the restoration of the church; donation of the Emperor and the Marquis De Villa Puente; they need the finances from the Chinese Vice-province);

- 3 November 1731: JS 181, fols. 30-31; on the pretensions of the French Jesuits, with extracts from archival material for the period 1700-1713 (on fols. 32r/v);

- 20 November 1731: JS 181, fols. 38r/v;

- 20 November 1732: JS 181, fols. 54r/55v: on the astronomical work of the Beijing Jesuits, the 'reformation' in 1725 and the victory of the Western over the Chinese astronomers;<sup>51</sup>

- 29 October 1732: JS 181, fols. 58r/59r & 60r/61r: 29.10.1732 (Varia; also on the 'degree' ["gradus"] of Policarpo de Sousa);

- 28 October 1733: JS 181, fols. 78-79 (varia);

- 20 November 1734 JS 181, fols. 113r-114v (on the financing of the restoration of the Nantang church).

Pereira manifested himself, thus, as an active partner in this continent-spanning network, which connected Beijing, Paris, St. Petersburg, London and Lisbon, as João Manuel Miranda described it mainly on the basis of Russian academic archives in St. Petersburg.<sup>52</sup> As far as scholarly contents are represented in his correspond-

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<sup>50</sup> The same miscellany contains still more letters from China, especially from the years 1729-1730, which may have been the period the volume was composed, probably within the context of the *Congregatio Propaganda Fide*.

<sup>51</sup> Rodrigues, *Jesuítas portuguesas astronómas*, 83.

<sup>52</sup> João Manuel S.A. Miranda, "Alguns aspectos do intercâmbio científico e cultural entre a Academia das Ciências de Petersburgo e a comunidade dos "Jesuítas Matemáticos" em Pequim nas décadas de

ence, they all confirm that he was a competent astronomical observer, but he remained always on the secondary level, as the assistant of I. Kögler and/or K. Slavıçek who survived him.

Outside this scholarly inspired network, Pereira's contacts with the Jesuit authorities were related to his hierarchical position within the Chinese Vice-Province.

## DOMINGOS PINHEIRO (1688-1748)<sup>53</sup>

### CURRICULUM

Born on 21 March 1688 at Loures (Lisbon), Domingos Pinheiro entered the Jesuit Society (in Lisbon?) on 9 November 1704 (JS 134, fol. 435r), at the age of sixteen. Normally speaking, his two-year novitiate would have been in 1704-1706. Afterwards he entered the Jesuit University of Évora: in the *Catalogi Triennales* of 1711 (Lus. 47, fol. 129v) he is, indeed, mentioned among the “*scholastici*,” as already having finished his studies of Philosophy: “*Dominicus Pinheyro in oppido Loures; absolvit philosophiam.*” This implies, that his four-year philosophical studies happened between the academic years 1707-1708 and 1710-1711.

Part of this instruction was also a ‘special’ two-year mathematical course, not as part of the philosophical course, but as an extension of it. See the *Catalogus Vice-Provinciae China* (JS 134, fol. 435ff.):

“P(ater) Dom(inicus) Pinheiro...stud(uit) Math(esi) an(nos) 2; docuit litt(eras) human(iores) an(nos) 5, Math(esim) an(nos) 5.”

We would expect this was organized in the academic years following his ‘philosophical’ studies, viz. in 1711-1712 and 1712-1713. This is indirectly proven by the fact that in February 1713, both Filipe Pereira and Domingos Pinheiro sent their “*theses*” to General Tamburini, who praised them by letters of 17 June 1713.<sup>54</sup> In 1711-1712, it was Manuel de Campos who – as a second-year theology student – was teaching mathematics, and probably continued teaching the following year.

From 1714 onwards, Pinheiro was teacher (“*magister*”) of the *humanities* and the *rhetoric class*, always in Évora;<sup>55</sup> this would span 5 years, namely 1714/1715 until 1718/1719. Among his students was the Infante Don José de Bragança (1667-1740).

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30-50 do século XVIII,” in *A Companhia de Jesus e a missionaçao no Oriente. Actas do Colóquio Internacional promovido pela Fundação Oriente e pela Revista Brotéria*, Lisboa 21 a 23 de Abril de 1997 (Lisbon: Brotéria; Fundação Oriente, 2000), 331-64.

<sup>53</sup> Pfister, *Notices biographiques et bibliographiques*, 696-97; *Grande Enciclopédia Portuguesa e Brasileira*, s.v. “Pinheiro (Padre Domingos),” vol. 21, 742; Sommervogel, *Bibliothèque de la Compagnie de Jésus*, vol. 6, col. 820; Dehergne, *Répertoire des Jésuites de Chine*, 204.

<sup>54</sup> Baldini, “The teaching of mathematics,” 422n288, referring to Lus. 35, fols. 196v, 197r.

<sup>55</sup> ARSI, Lus. 76, fol. 198 (no. 2811): “*Dom(inicus) Pinheiro...docuit litteras.*”

The (literary) theses (“*Conclusiones / conclusões*”) of the Infante that he sent to General Tamburini were well received, based on his letter of 27 November 1714 (*Lus.* 35, fols. 218r-218v).<sup>56</sup> The title was:

“Olympiacum, sive Gymnicum Certamen quinque Palaestris absolutum, in quibus de prima liberalium artium facultate decertandum” (Eborae: Typis Academiae, 1714).

So far, not a single extant copy was found.

A second series of the Infante’s humanistic theses<sup>57</sup> Pinheiro published in 1717: *Eloquentia coronata seu novem Musarum coronae, lectissimis Rhetorices et humaniorum litterarum flosculis concinnatae ac pretiosissimis omnigenae eruditionis gemmis variegatae*, etc., Eborae: Typis Academiae, 1717. Likewise, no single copy could be traced of these theses.

From a certain period on, but not precisely indicated, he started in Évora teaching *mathematics*: the only sources for this aspect of his education were so far Carlos Sommervogel, s.v. Pinheyro (“[il] professa les mathématiques à Evora”), the article in the *Enc. Port. & Brasileira*, s.v., p. 742 (“Foi...lente de Matematica na Universidade de Évora”), and a statement of Rodrigues in his history of the Portuguese Jesuit Province.<sup>58</sup> None of them, however, refer to an historical source.

This mathematical teaching spanned a total of five years, from the time Pinheiro left Portugal in 1724/5:

“P(ater) Dom(inicus) Pinheiro....; docuit litt(eras) human(iores) an(nos) 5, math(esim) an(nos) 5.”<sup>59</sup>

From this I deduce it may have started in 1719/1720 (1720-21; 1721-22; 1722-23; 1723-1724; 1724-1725), following five previous years of philosophical teaching in Évora, which seems to fit the general picture, but cannot be confirmed from institutional sources.

In 1721, always in Évora, he presided the discussion on the mathematical theses of the Jesuits Jacinto da Costa and António Nunes, titled *Astronomica Corona* and *Demonstrationes Mathematicae* respectively, both published in Évora, 1721: ‘*Praeside R(everendo) P(atre) ac S(cientiae) M(agistro) Dominico Pinheyro S.J. Mathesis Professore.*’<sup>60</sup> No copy of either theses could be found so far.

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<sup>56</sup> Mentioned in Baldini, “The teaching of mathematics,” 424n297.

<sup>57</sup> See F. da Fonseca, *Évora Gloriosa* (Rome: Officina Komarekiana, 1728), 428: “Sendo em Evora a mestre de Rhetorica...imprimio huas conclusões humanisticas com o titulo de *Eloquentia Coronata.*”

<sup>58</sup> Rodrigues, *História da Companhia de Jesus na Assistência de Portugal*, t. 3, vol. 1 (Porto: Livraria Apostolado da Imprensa, 1944), 208: “lente de matematica no colegio de Évora.”

<sup>59</sup> Cf. JS 134 (Cat. Vice-Prov. Chinae 1741), fol. 435.

<sup>60</sup> Baldini, “The teaching of mathematics,” 430n339, 734-5.

In the same year, he moved to Lisbon, where on 2 February 1722 he made his 'votes'.<sup>61</sup> He was engaged in the mathematical instruction in the *Aula da Esfera* of the *Colégio de Santo Antão* as curricular teacher of mathematics; none of his courses have been preserved to my knowledge. In this position, he was also 'invited' to assist in 1724 to the lunar eclipse observation of 1 November 1724 with Giovanni Battista Carbone, Domenico Capacci and Coronel Manuel da Maia.<sup>62</sup> This was a crucial moment in the relations between the Jesuits, the Royal Palace and the Portuguese academic world, and it was understood as the start of a new 'era' in Portugal; anyway: a 4-fol. laudatory document on King João V's liberality towards arts and science was printed and through the current diplomatic channels diffused through Europe.<sup>63</sup>

Finally, Pinheiro – who never applied for the Chinese mission himself<sup>64</sup> – was added to the company of the legate Alexandre Metelo de Sousa Meneses (1687-1766), together with Paulo de Mesquita, SJ.<sup>65</sup> Both were added to the Embassy as professional *mathematici*.<sup>66</sup> It was apparently in the preparatory phase of this journey that he composed the manuscript *Compendio da Historia de como varias Pessoas de familia Imperial Tartaro Sinica abraçaram a Religiam Christam*, of which only two copies exist: one in the National Library of Portugal, the other in the Public Library of Évora.<sup>67</sup> They embarked from Lisbon at an unspecified time in 1725 (W 1688).

The embassy – and Pinheiro – arrived in Macau on 26 August 1726,<sup>68</sup> and in Beijing in early July 1727;<sup>69</sup> since the beginning he was installed in the Dongtang, the branch of the Portuguese college.<sup>70</sup> He received the Chinese name *Chen Shance* 陳善策.

In this branch of the Portuguese Nantang college he was the Rector for twenty years, i.e. between 1728 and 1748.<sup>71</sup> In this period, he had been assigned some

<sup>61</sup> ARSI, *Vota*, vol. 6, p. 157, referring to *Lus.* 14, 189-91.

<sup>62</sup> Rodrigues, *História da Companhia de Jesus na Assistência de Portugal*, t. 4, vol. 1 (1950), 416, 1, with reference to the *Gazeta de Lisboa* of 1724, fol. 360; A. A. de Andrade, *Vernei e a cultura do seu tempo* (Coimbra: Imprensa da Universidade, 1966), 281; R. de Carvalho, *A astronomia em Portugal no século XVIII* (Lisbon: Instituto de Cultura e Língua Portuguesa, 1985), 47; Tirapicos, "Ciência e diplomacia na Corte de D. João V," 122.

<sup>63</sup> *Ibid.*, 122.

<sup>64</sup> At least, there is no extant *Litterae Indipetae*, but this remains a weak argument by itself.

<sup>65</sup> An alumnus from the Coimbra University: Baldini, "The teaching of mathematics," 430n338.

<sup>66</sup> On this company – and embassy – see Mariagrazia Russo, *A Embaixada enviada por D. João V ao Imperador Yongzheng (1725-1728) através da documentação do Arquivo Distrital de Braga* (Lisbon: Centro Científico e Cultural de Macau, 2007).

<sup>67</sup> Biblioteca Nacional de Portugal, Lisbon, Cód. 32 (Sept. 1724); Biblioteca Pública de Évora, Cod. CXVI/1-29.

<sup>68</sup> Dehergne, *Répertoire des Jésuites de Chine*, 204.

<sup>69</sup> Gaubil, in R. Simon, *Correspondance de Pékin*, 188.

<sup>70</sup> Gaubil, in R. Simon, *Correspondance de Pékin*, 181.

<sup>71</sup> Cf. Florian Bahr in *Der Neue Welt-Bott*, vol. 5.35, no. 693, p. 95, ca. 1748: "er war diesem Haus zwanzig Jahr als Superior;" cf. a note in Gaubil's correspondence: "*dans la Résidence portugaise de St.*

'special' services to the Dongtang 東堂, first of all – since ca. 1690 – the *pharmacopolium* (pharmacy) of the Portuguese Jesuits. Its history is not yet completely clear, but from the sources, we know it had also a 'commercial' function, as pharmaca – imported and locally produced ones alike – were sold to Chinese customers; therefore there had been a dispute between Nantang and Dongtang, when the former was trying to get the pharmacy for itself, which eventually led to a temporary closure of the same.<sup>72</sup> In addition, since the 1720s, also the *Procuratura* of the Chinese Vice-Province was transferred from Macau to Beijing, and located in the Dongtang. Several, also financial documents in JS 134 are testimonies of this period,<sup>73</sup> as well as a series of twelve letters in the archives of the former *Congregatio Propaganda Fide* archive from Canton, now in Rome.<sup>74</sup>

Despite his mathematical education and teaching, and his position as mathematician in the company of ambassador Alexandre Metelo de Sousa e Meneses (1725-1728),<sup>75</sup> he was in Beijing but was never attached to the Astronomical Bureau. Also surprising is the information, given by Florian Bahr (arrived in Beijing in 1739), who refers to various (Chinese) texts composed by Pinheiro on theology and (canon) law to the benefit of the missionaries.<sup>76</sup> There are no titles or copies of his theological productions known in the Chinese Christian Texts (CCT) database,<sup>77</sup> but Bahr's information fits another isolated reference in a letter of A. Gaubil, of 12 November 1739,<sup>78</sup> which confirms Pinheiro's theological skills, and his systematic search – sponsored by the Portuguese King João V – for European books on theological themes for the residence library of Dongtang:

"Il y a quelques jours que le Sup(erio)r de la residence portugaise de St. Joseph me parla fort de votre edition du livre du P(ère) Deschamps sur l'hérésie jansénienne, et il parla en termes fort avantageux pour V(otr)e R(évérénc)e. Ce jésuite est bon théologien, et comme il est fort curieux des livres, et qu'il a beaucoup d'argent de Portugal, il

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*Joseph: De Rezende, Mesquita; Pignero, Castiglione, Moges"* (R. Simon, *Correspondance de Pékin*, 181: Oct. 1727).

<sup>72</sup> For the history of the Beijing Jesuit pharmacy I refer to a separate note (in preparation).

<sup>73</sup> JS 134, fol. 428r: (signed: "D. Pinheiro, Residentiae Superior"); id. for 1733 in JS 134, fol. 430 (without signing).

<sup>74</sup> See on this archive, which was founded in 1705: J. Metzler, "Propaganda und Missionspatronat," in *Sacrae Congregationis de Propaganda Fide, 1622-1972*, ed. J. Metzler, vol. 2 (Rome: Herder, 1975), 199; F. D'Arelli, "La Sacra Congregatio di Propaganda Fide e la Cina nei secoli XVII-XVIII: le missioni, la Procura ed i Procuratori nella documentazione dell'archivio storico di Roma," *Annali dell'Istituto Universitario Orientale* 55 (1995): 223; E. Menegon, "Interlopers at the Fringes of the Empire: the Procurators of the Propaganda Fide Papal Congregation in Canton and Macao, 1700-1823," *Cross-currents: East Asian History and Culture Review* 7, no. 1 (2018): 30-69.

<sup>75</sup> See on this embassy: Mariagrazia Russo, *Embaixada de D. João V de Portugal ao Imperador Yongzheng, da China (1725-1728)* (Lisbon: Fundação Oriente, 2005).

<sup>76</sup> *Der Neue Welt-Bott*, no. 693.

<sup>77</sup> Online database by A. Dudink and N. Standaert of Chinese Christian texts. See <https://www.arts.kuleuven.be/sinologie/english/cct>

<sup>78</sup> Gaubil, in Simon, ed., *Correspondance de Pékin*, 527/8.

en fait venir tous les ans de bien des endroits. Il m'a fort prié de lui procurer cette édition du P(ère) Deschamps; si V(otr)e R(évérénc)e peut le faire sans inconvenient, je la prie de me faire ce plaisir, et de m'envoyer deux exemplaires, un pour le Père portugais, et l'autre pour moy; j'aurai soin de vous faire tenir le prix de ces deux exemplaires."

His demand concerned Etienne Agard de Champs (Dechamps), SJ (1613-1701), *De Haeresi Janseniana ab Apostolica Sede Merito Proscripta Libri Tres (...)*, 1<sup>st</sup> ed. Paris: S. & G. Cramoisy, 1654, more precisely the edition, procured by E. Souciet (Lutetiae Parisiorum: G. Martin, 1728, 2 tomes in 1 vol., in-fol.), an influential anti-Jansenist theological publication. Pinheiro's insistent interest suggests that he was well acquainted with the recent European theological debates, and the French polemic theological literature. Possible texts he produced were lost, or circulated only as a manuscript.

During two periods, Pinheiro was also Vice-Provincial of the Chinese Vice-Province, viz. in 1732-35 and 1741-45.<sup>79</sup> In 1734 and 1738 he was also involved, as the representative of the administrator of the Beijing diocese, Manuel da Silva, in granting the 'imprimatur' to some of De Mailla's Chinese texts, published in 1734 (*Sheng jing guang yi* 聖經廣益) and 1738 (*Sheng nian guang yi* 聖年廣益).

As in the case of André Pereira, also, in that of Pinheiro, part of his book acquisition may have gone through St. Petersburg and its Imperial Academy. From one document of May 15, 1737, published in Rodrigues,<sup>80</sup> we see Pinheiro, as the Superior of the Dongtang (called "*Novum Collegium*"), involved in collecting Chinese books on behalf of the Russian Academy concerning a copy of the Kangxi lexicon *Kangxi Zidian* 康熙字典; explanations of the Chinese Classics and Chinese publications of the Jesuits, by M. Ricci and G. Aleni, all together 64 'volumina' or yuan. It is in all probability for these services, that he was also awarded with an appointment as (honorary?) member in the same Academy.<sup>81</sup>

As Superior of the Portuguese Dongtang, Pinheiro was beneficiary of significant funds sent by the Portuguese King to the Dongtang (and Nantang) residence, as A. Gaubil jealously reports. Therefore, he also felt very responsible towards the Portuguese King. When the Jesuit artists Giuseppe Castiglione and Ferdinando Moggi unfolded their plan to make a book of designs / plans of the Dongtang residence, he

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<sup>79</sup> Dehergne, *Répertoire des Jésuites de Chine*, 317-9. At the end of his first term as Vice-Provincial, on October 30, 1735 he wrote to the General a *Notitia Missionis Sinicae*, now in JS 126, fols. 243r-265v (with a postscript dated 13.11.1735).

<sup>80</sup> Rodrigues, *Jesuítas portugueses astrónomos*, 113-6.

<sup>81</sup> See António Lopes, "A educação em Portugal de D. João III à expulsão dos Jesuítas, em 1759," *Lusitania Sacra* 5 (1993): 31.

convinced them to send their original drawing(s) to the Portuguese King, and the copies to the General in Rome.<sup>82</sup>

During his second term as Vice-Provincial, Pinheiro was also involved at a distance in the systematic transcription of Jesuit archives, a gigantic project organized in the mid-eighteenth century in the Jesuit college of Macau, *Colégio da Madre de Deus*, by irmão João Álvares, on demand of the Portuguese *Academia da Historia*. This is discussed in his correspondence with irmão João Álvares, now in JA 49-V-21 and 49-V-29, viz.<sup>83</sup>

He died in Beijing – which he had apparently never left – on 16 June 1748, at the age of sixty years. He was buried at the cemetery of Zhalan, where his stele was lacking, but was recently found again, according to an oral communication from Beijing.<sup>84</sup>

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From his correspondence are preserved to my knowledge:

a. Rome: twelve letters in the archives of CPF, from the *Procuratura* in Canton (cf. supra); ARSI, JS 180 and 181: some correspondence with the General;

b. Évora: in the *Biblioteca Municipal* some letters and administrative documents for the period 1733-1734;<sup>85</sup>

c. Lisbon: Biblioteca da Ajuda: JA 49-V-21 and 49-V-29: correspondence with Irmão João Álvares in Macau;

d. *Der Neue Welt-Bott*.

- No. 579: vol. 4, 30, pp. 38-45: Pinheiro to a Jesuit: November 13, 1735;

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<sup>82</sup> See JS 184, fols. 37. (Castiglione) and 41r/v (Moggi). These drawings are mostly identified with the drawings, preserved now in Lisbon, Arquivo Histórico Ultramarino, Cart. Ms., XI CM 758-9; doubts still remain with regard to the identification of the church as the Dongtang, as the two 'steles-with-shelter' at the front of the church rather fit the identification as the Nantang: see N. Golvers, *History of the Catholic Church in China. From its beginnings to the Scheut Fathers and 20<sup>th</sup> Century*, Leuven Chinese Studies 29 (Leuven: F. Verbiest Institute, 2015), 9-21; see recently E. Corsi, "L'opera grafica di Ferdinando Bonaventura Moggi (1684-1761) e i 'Laboratori di arti applicate', Zaobanchu 造辦處 alla corte Qing," in *Ferdinando Moggi (1684-1761). Architetto e gesuita fiorentino in Cina*, ed. Stefano U. Baldassarri, Carlo Cinelli, Giuseppe de Juliis, and Francesco Vossilla (Florence: Angelo Pontecorboli, 2018), 73.

<sup>83</sup> More precisely Biblioteca da Ajuda (BA), Lisbon, 49-V-21, fols. 1r/v, 2r; BA, 49-V-29, fols. 121-122, 123.

<sup>84</sup> According to an oral communication by Xinyu Chen on the International Conference on *Religion and the Rule of Law* (Leuven, August 2018).

<sup>85</sup> See J.H. da Cunha Rivara, *Catalogo dos manuscritos da Biblioteca Publica Eborense*, vol. 1 (Lisbon: Imprensa Nacional, 1850), 412-4 ("Papeis....").



- No. 682: vol. 4, 34, pp. 78-84 (= R. Streit, etc., *Bibliotheca Missionum*, vol. 7, no. 3304): Pinheiro to a Jesuit: Beijing, November 1743;

None of these had any connection with the history of science or mathematics.

FÉLIX DA ROCHA (1713-1781)<sup>86</sup>

### CURRICULUM

Félix da Rocha is the only Lisbon-born Jesuit of the triad being studied in this contribution. Born on 31 August 1713, he entered the Society of Jesus on 1 May 1728 at the age of fifteen.<sup>87</sup>

As for his studies during the following years, the provincial *Catalogi Triennales* – which are composed according to the alphabet and not localities (Colleges and residences) – of 1730 and 1734 give us the following information: in the one of 1730, he is listed among the ‘*Philosophi et rhetorici*’<sup>88</sup>, and in that of 1734<sup>89</sup> as a ‘*Philosophus 3ii anni*’. This should normally be followed by a 4<sup>th</sup> year of philosophy in the next year (1734-1735), of which the corresponding Catalogues are lacking. Of a special mathematical course there is no evidence available, but in view of his later engagement in the Astronomical Bureau – to be described below – it looks almost impossible that he had not followed some mathematical training, either a ‘private’ one or a ‘special’ course. Normally none of these are mentioned in the *Catalogi*, contrary to the ‘curricular’ mathematical courses of one to two years. Neither was he an ordained priest when he left Lisbon on 13 April 1735 (W 1824; *Lus.* 48, 200), which was not an unusual situation either.

According to the normal timing of the *Carreira da Índia* he arrived late in 1735 or early in 1736 in Macau. There he stayed in the new ‘Seminary’ of the Chinese Vice-Province. This we know thanks to a note in *JS* 134, 434: “*In seminario Macaensi pertinente ad Vice-Provinciam Sinensem: P(ater) Felix da Rocha dat operam theologiae. Lusitanus.*” There, he finished his theological studies.

The *Catalogi* specify that on 12 January 1738, he entered the Mission (“*Ingressus Missionem*”), a formula which refers to the transfer from Macau to the Chinese Empire (*JS* 134, fol. 435). In Beijing, he received the Chinese name Fu Zuolin. In the following years, he stayed in the Nantang, together with Anton Gogeisl (1701-1771)

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<sup>86</sup> For the current literature, see: Pfister, *Notices biographiques et bibliographiques*, 773-7; C. Sommervogel, *Bibliothèque de la Compagnie de Jésus*, vol. 6, col. 1930; Dehergne, *Répertoire des jésuites de Chine*, 223; *Grande Enciclopédia Portuguesa e Brasileira*, s.v. “Rocha (Padre Félix da),” vol. 25, 841.

<sup>87</sup> ARSI, *Lus.* 48, fol. 44.

<sup>88</sup> ARSI, *Lus.* 48, no. 233.

<sup>89</sup> *Ibid.*, no. 176.

and Florian Bahr (1706-1771).<sup>90</sup> He was professed with 4 vows on 2 February 1747,<sup>91</sup> and took several responsibilities, as Superior of the Nantang college and as Vice-provincial in 1753-1759.<sup>92</sup> After the suppression (in China, 1762) he stayed in Beijing.

In 1753, at the occasion of the embassy of Francisco Xavier Assis Pacheco e Sampaio Melo<sup>93</sup> he was appointed assessor (*Qintianjian jianfu*) of the Mathematical Bureau (*Qintianjian*), acting since 1753 as *Qintianjian you jianfu* 欽天監右監副, since 1771 as *Qintianjian jianfu*; since 1774 (after the death of Augustin von Hallerstein) as *zhili lifa* 治理曆法, called since 1725 *jianzheng* 監正.<sup>94</sup> This steady promotion within the *Qintianjian* suggests great competence and progress in the field of astronomy. Yet, there is the negative opinion of both Jesuits Florian Bahr and Augustin von Hallerstein, other members of the *Qintianjian*, expressed in some letters of 1752 to General Visconti. From these, I could only trace back the letter of von Hallerstein, of 6 December 1752, in which one reads the following assessment on da Rocha's competences as a collaborator in the Astronomical Bureau:

“(ordinationis) a Pat(ernitat)e Vestra Adm(odum) R(everenda) recens saepius repetitae, ne in curiam Pekinensem intromittantur homines, qui absolute necessarii non sint, et maxime idonei, ut munus aliquod apud Imperatorem cum satisfactione enotescant. Sunt acta (sic) Pekini ex Vice-Prov(inci)a duo (homines), titulo mathematicorum: P(ater) Felix da Rocha et P(ater) Josephus Espinha, quorum tamen iste (= da Rocha) iam nullam, hic (d'Espinha) exiguam etiamnum spem facit ut in mathematicum evadat talem, quales hîc necessarii sunt. Certe peritiores habemus in Tribunali Mathematico huius scientiae homines Tartaros & Sinas, quam uterque sit. Altius enim jam evecta et promotae est apud Sinas huius scientiae cognitio et perfectio, quam vulgo non in Europa solum, sed hîc etiam putant aliqui, quibus nullum aut rarum cum externis commercium vel etiam minor harum scientiarum intelligentia,

<sup>90</sup> For his domicile, see A. Von Hallerstein, on September 24, 1766: “Sunt nostrum ex Societate universim sexdecim Europaei: in hac domo, quod collegium vocamus (= Nantang) quinque: duo Lusitani, P(ater) Felix de Rocha et Pater Josephus Bernardus; tres Germani, P(ater) Antonius Gogeisl Bavarus, & P(ater) Florianus Bahr Silesius et ego; sunt praeterea duo sacerdotes Sinae, Jang Vincentius et Zuei Paulus” (Epistolae anecdotae R(everendi) P(atris) Augustini e Comitibus Hallerstein ex China scriptae [= Appendix to: G. Pray, *Imposturae* 218 in dissertatione Benedicti Cetto (...)], Budae, 1781, p. LII).

<sup>91</sup> ARSI, *Vota*, vol. 6, p. 157: Felix da Rocha: 02.02.1747 Beijing: ARSI, *Lus.* 16, fols. 265-266.

<sup>92</sup> Dehergne, *Répertoire des jésuites de Chine*, 319.

<sup>93</sup> For the connection between the one and the other, see indeed the text of his stele on the graveyard of Zhalan: “*In gratiam Lusitanae Legationis factus assessor in Trib(unali) matheseos an(no) MDCCLIII (1753)*”; cf. Gaubil, in Simon, ed., *Correspondance de Pékin*, 758: “P(ater). Felix Darocha fuit nominatus paulo ante discessum Legati.” Promoted at the same time were also Giuseppe Castiglione; José d'Espinha, Anton Gogeisl and Augustin von Hallerstein; Jean-Denis Attiret refused his promotion.

<sup>94</sup> Standaert, *Handbook of Christianity in China*, 721.

quam ut de re iudicare possint, quantum autem detrimentum famae nostrae per tot annos hîc conservatae!

(...)

Desolationes de P(atre) Felice da Rocha ex meo consilio ad Pat(er)nitatem Vestram Adm(odum) R(everen)dam perscribet P(ater) Florianus Bahr, qui eidem convixit easque melius novit quam ego.”<sup>95</sup>

(Tr.). ‘(...) the order, recently repeatedly recommended by Y. Rev. Father (i.e. the Superior General) not to introduce at the Beijing Court people, who are not absolutely necessary or who are not highly competent, so that they would become known to the Emperor, to his satisfaction, for one or other service. In Beijing are installed two (fathers) from the Vice-Province under the pretext of being mathematicians: Father Félix da Rocha and José (d’)Espinha; from them the former gives no hope, and the latter still a little to become, in time, a mathematician of such a level, as we need here. Surely, we have in the Mathematical Bureau, Manchu and Chinese collaborators who are more well versed in this science, than each of these two fathers. The knowledge and perfection of this science (namely, astronomy) has indeed risen and has been promoted among the Chinese to a level higher than some people believe, not only in Europe, but also here: people who have no – or only rarely have – contact with the foreigners, or have less understanding of these sciences than necessary to judge about the question; how great a damage to our reputation, which we have preserved for so many years!

(...)

Father Florian Bahr will describe, on my advice, his despair about F. da Rocha, as he lived with him and knows this despair better than I.’

This explicit opinion appears in a broader context, in which the German head of the *Qintianjian*, Father von Hallerstein complained about the policy of the Portuguese superiors of the mission who, according to him, were intentionally introducing as many Portuguese fathers as possible, irrespective of their competences, for purely strategic reasons, namely to ‘control’ the mission and the ‘foreign’, non-Portuguese missionaries of the *Padroado*. As to our knowledge, Florian Bahr’s announced detailed report is lost (or was never written nor sent), therefore it is hard to assess to what extent this rather shocking analysis was based on real experiences and facts – in the sense of da Rocha’s meagre observational and computational competences – or to what extent was it inspired or coloured, if not exaggerated for some personal aversions. From other evidence, it emerges that indeed, F. da Rocha had a ‘bad’ character and revealed a luxurious lifestyle akin to a Chinese mandarin, which was a stumbling block for some missionaries.

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<sup>95</sup> ARSI, JS 181, fols. 252v-253v.

All this did not prevent the Emperor from entrusting various cartographical and geodesic commitments to da Rocha and d'Espinha. This happened the first time in 1749, when both fathers were sent to 'Tartary' for geodesic measurements, more precisely to the area of Muran.<sup>96</sup>

A more comprehensive order he received in 1753, which aimed at mapping the area of the Ölöth, accompanied by José d'Espinha, some Chinese mandarins (like He Guozong), the Mongol Mingantu, and some lamas;<sup>97</sup> the intention was to describe the recently conquered territories of Dzungaria, Turkestan and part of Buchará:

"Imperator volens habere mappam harum regionum novam, dixerat semel et iterum, me iturum ad eam describendam (...). Tandem ipse edixit (...) iret, qui mecum iverat ante hos annos ad describendam mappam regionis Muran dictae, quae est extra murum boreum & adscisceret socium, quem vellet. Fuit is P(ater) Felix de (sic) Rocha Lusitanus: ivit ergo cum P(atre) Josepho Espinha, item Lusitano, semel ad describendam mappam regionis Eluthorum, iterum ad regionem Mahumetanorum. Retulerunt mappas, quales facere potuerunt; Imperator contentus fuit."<sup>98</sup>

(Tr.). 'The Emperor wanted to have a new map of these areas, and he said to me (= Von Hallerstein) once and again, that I should go there to describe this area (...). Finally, he himself ordered (...) that the one who went there with me some years ago should go there to describe the map of the area called Muran, which is outside the northern part of the Wall, and that he should select the companion, whom he wished. This was Father Félix da Rocha, a Portuguese: he left, together with Father José d'Espinha, a Portuguese as well, to describe for the first time the map of the area of the Ölöth, and again that of the Muslims. They brought maps, as far as they were able to make them; the Emperor was happy (with them).'

From another, undated letter of A. von Hallerstein, we learn that these maps were made "*sine ulla observatione astronomica, aut operatione geodaetica*" ('without any astronomical observation, or geodetic operation').<sup>99</sup>

The operation – of which we have several more echoes in Jesuit and other sources<sup>100</sup> – took two to three years, the period during which F. da Rocha was absent

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<sup>96</sup> See Pfister, *Notices biographiques et bibliographiques*, 774.

<sup>97</sup> The date "1753" is clearly mentioned on his stele inscription: "An(no) MDCCLIII missus ad mappas describendas Regni Eluthorum in Tartaria Occidentali." See Standaert, *Handbook of Christianity in China*, 762-3.

<sup>98</sup> A. Von Hallerstein, on 29 Oct. 1761, in: *Epistolae anecdotae R.P. Augustini e Comitibus Hallerstein ex China scriptae* [= Appendix to: G. Pray, *Imposturae 218 in dissertatione Benedicti Cetto (...)*, Budaë, 1781], p. XXXIX.

<sup>99</sup> *Epistolae anecdotae R.P. Augustini e Comitibus Hallerstein ex China scriptae* [= Appendix to: G. Pray, *Imposturae 218 in dissertatione Benedicti Cetto (...)*, Budaë, 1781], p. XLII.

<sup>100</sup> See e.g. A. Gaubil, in: R. Simon, *Correspondance de Pékin*, 843, 849 (1757: visited were [in contemporary transcription] Hami, Turphan, Manas, Porotala, Ili, etc.; they were not able to observe all they

from Beijing. The Emperor compensated da Rocha in 1756 with a promotion to the mandariate of the third order.<sup>101</sup> After some new observations in the area in 1759, they had ‘determined 43 different geographical positions’;<sup>102</sup> the final maps – after having been checked by the French Jesuit Michel Benoît<sup>103</sup> – were printed and published as a woodblock edition in 1761, entitled *Huangyu quantu* 皇輿全圖 (‘Complete Map of the Empire’), followed in 1775 by a copperplate edition *Qianlong shisanpai tu* 乾隆十三排圖 (‘Map of the Qianlong Reign in Thirteen Rows’).<sup>104</sup>

In August 1774, and again in March 1777, a next commitment brought him to the recently conquered Small (i.e. Eastern) Tibet, for mapping the entire area. This journey had also a military agenda, viz. to carry drawings of ‘advanced’ artillery, with design of mortars (*chongtianpao* 衝天砲) and ‘guns for attacking heaven’ (popularly called: *xiguapao* 西瓜砲) to the area, to increase the accuracy of the Manchu artillery.<sup>105</sup> In 1777, especially during the second campaign, da Rocha succeeded in making a map of the Jinchuan (Tibetan Chuchen) County, now only extant in the First Historical Archives.<sup>106</sup>

Félix da Rocha died in Beijing on 22 May 1781. He was buried like his predecessors in the cemetery of Zhalan, where the stele is still extant.<sup>107</sup>

## SUMMARY

The short biographies of these three Portuguese missionaries show different personalities, whose presence in China spans a period from 1717 to 1781, that is from the beginning of the mission’s decline until the post-Suppression period. All three achieved the highest positions in the administration of the mission, and two of them seem to have earned the respect and friendship of their colleagues, including those of the parallel French mission (A. Pereira; D. Pinheiro).

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wanted to observe (possibly due to a lack of suitable instruments?); the maps were at the Imperial Palace; a copy would probably be sent to the Royal Palace in Lisbon]; p. 861; *Mémoires concernant l’histoire, les sciences, les arts, les mœurs, les usages, &c. des Chinois*, t. 2 (Paris: Nyon, 1777), 508: “Les RR. PP. Siguha (i.e. Espinha) et Rocha ont été chargés ces dernières années de faire les cartes du Pays des Tourgouths et des Eleuths jusqu’assez près de la mer Caspienne;” id., t. 6 (1780), 316.

<sup>101</sup> The stele inscription speaks of a promotion to the 3rd degree in 1755: “Donatus fuit ab Imperatore Mandarinatu tertii ordinis et congrua gradu respondente an(no) MDCCCLV.”

<sup>102</sup> Pfiser, *Notices biographiques et bibliographiques*, 774, relying on the *Mémoires concernant l’histoire, les sciences (...) des Chinois*, t. 1 (1776), 399-400.

<sup>103</sup> On this phase: Standaert, *Handbook of Christianity in China*, 763.

<sup>104</sup> J. Klaproth, “Critique littéraire. Histoire de la ville de Khotan of Abel-Rémusat,” *Journal Asiatique* 3 (1823): 295.

<sup>105</sup> Joanna Waley-Cohen, “China and Western Technology in the Late Eighteenth Century,” *The American Historical Review* 98, no. 5 (1993): 1536, making it very probable that Verbiest was at the origin of these drawings; Stephen R. Platt, *Autumn in the Heavenly Kingdom: China, the West, and the Epic Story of the Taiping Civil War* (New York: Knopf, 2012).

<sup>106</sup> Waley-Cohen, “China and Western Technology,” 1540n52.

<sup>107</sup> Malatesta and Gao, eds., *Departed, yet present*, 234-5.

In addition to their curriculum within the Chinese Vice-Province, and in all the different kinds of responsible positions, as well as in their professional respects, two of the three, viz. Pereira and Pinheiro, have – on the level of their education in Portugal – a clearly attested mathematical profile. However, the third, Félix da Rocha does not have. For them, and especially for the two former, the recommendations of the Generals Charles de Noyelle and Tyrso Gonzalez towards the Portuguese Province therefore seem to have had their effect. It is certainly ironical that, while the one with the strongest evidence of a mathematical training – Domingos Pinheiro as a student (two years) and a teacher (five years) – got no responsibility in the *Qintian-jian*, and André Pereira – with only one year's training – was only active on a secondary level as an assessor; that the only one, for whom no evidence of a 'mathematical' training exists in the *catalogi*, has traversed all the levels of the hierarchy within the same Bureau, until the top.

This – and especially the case of Pinheiro – seems to indicate that the policy applied by the authorities of the Portuguese Assistancy in assigning the *Indipetae* to a particular position, had only secondary attention for the proven competences of the candidates. This was, indeed, one of the sources of irritation – and a complaint – of Augustin von Hallerstein towards the General, in his letter of 1752. For his personal criticism on the competences – or the absence thereof – in the case of da Rocha and to a lesser extent d'Espinha, we cannot exclude that his professional assessment was colored by personal feelings and aversions. Nonetheless, the further promotions of da Rocha were decisions made only by the Chinese authorities, and certainly point to a positive acceptance of his person and his work. The most 'visible' of his achievements and the source of his success among Chinese courtiers were, however, in the field of cartography (also marginally exercised by A. Pereira) – certainly a sensitive matter among the Chinese authorities, for which no advanced mathematical knowledge was required.

Within the perspective of knowledge exchange between China and Europe, it is certainly André Pereira who played a most important role, whereas da Rocha's cartographic and related achievements had in the first place a China-bound public, and effect.

In all respects, all three had – in spite of the difficult situations – a leading role. This is clearly visible and reflected in contemporary sources and in the continuation of the Jesuit mission in China, even after the Suppression.