

# Chapter 3

## Hans Philip Fuchs von Bimbach (ca. 1567–1626), Patron of Simon Marius



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The colonel, later general Hans Philip Fuchs von Bimbach (ca. 1567–1626) was for some years the most influential official at the court of the Protestant Margrave Joachim Ernst of Brandenburg-Ansbach and was engaged as a diplomat beyond the state's borders. However, later he fell out with the Margrave and entered into imperial (i.e., Catholic) service. He changed sides again and finally fell at the Battle of Lutter in the service of the Danish crown. Fuchs von Bimbach informed Simon Marius about the invention of the telescope already in the autumn of 1608 and as patron helped him to obtain one of the first copies. Thus, he seems to have played a considerable role in the early history of the telescope. This article gives biographical data about Fuchs von Bimbach. It attempts to define more precisely his role in the first astronomical applications of the telescope and also presents new insights into Simon Marius's work.

### Introduction

The name of his sponsor Fuchs von Bimbach zu Möhren arises several times in the literature about Simon Marius, without mentioning his biographical dates and without examining the relationship between this general and politician and Simon Marius. Certainly, without his help Marius would only have received and used a telescope much later—maybe even not at all—and may have been in the history of astronomy just one of many calendar makers; additionally, this concerns one of the earliest ever mentions of telescopes, only weeks or months after its invention.

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Who was this man with the exceptional name? Which business had a military man and politician at the Frankfurt fair, where he saw one of the first telescopes in 1608? What is secure knowledge about Simon Marius, Fuchs von Bimbach, and the telescope and what is only speculation? The present study undertakes an initial examination of these questions.

A scientific biography of Hans Philip Fuchs von Bimbach using archival sources is still a desideration of research; this is also desirable for a biography of Marius. For general reasons I could use only secondary literature and couldn't consult all relevant publications for the present study. Using new or previously unused literature gives, nevertheless, a more comprehensive picture of Marius's sponsor, compared to previous biographies. Some incorrect statements about Fuchs von Bimbach and Simon Marius that were perpetuated in popular as well as in scientific literature are debunked (see section "[Errors and Speculations about Fuchs von Bimbach in the Literature](#)"). Yet I can't verify that all biographic dates mentioned in the other sections are correct. Much of the following information should in general be treated with caution, as they originate from particularly unreliable sources. The review with original sources, as far as this is possible, remains a task for future historians.

The following description is more detailed in terms of family origins and the early years of his life, because there has been almost no information in Fuchs's biographies until now. There is a lot of material about the Ansbach years and the later period that can only be bundled together for a brief characterization. The main focus is on the cooperation with Simon Marius. Concerning this, all known facts will be named and reinterpreted. The final section outlines approaches for further research.

## **Biographical Data About Hans Philip Fuchs von Bimbach**

### ***The Fuchs von Bimbach Family***

The family of the Fuchs von Bimbach with the manor Bimbach belonged to several cantons of the Franconian Ritterkreis (Knight's Company), especially to the canton Baunach from the end of the tenth century until 1806 (Köbler 1999, p. 184).<sup>1</sup> Several other families named Fuchs existed until the seventeenth and eighteenth centuries in Franconia (e.g., Fuchs von Dornheim, von Neidenfels, and von Wiesentheid). Almost all of them died out (Tittmann 1998).<sup>2</sup> The Fuchs von Bimbach belonged in the seventeenth century to the lower or middle untitled Franconian nobility. In 1699 they were awarded the title baron ("Freiherr") (Fuchs von Bimbach 1975; B [ressensdorf] 1988). It is significant that the Franconian Fuchses, among them the Fuchs von Bimbach, held the rank of Franconian Reichsritter (imperial knights) and so were subordinated only to the emperor, not to the sovereigns. Nevertheless there

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<sup>1</sup>Also contains leads to literature on the Franconian knights and the Fuchs families.

<sup>2</sup>Köbler 1999, p. 184, lists only four of these lines.

were tight-woven, partly symbiotic bonds to fiefdoms, patronates, and court employments but also conflicts resulting from struggles for independence from the liege lords.

Founding father of the family Fuchs von Bimbach was the Franconian nobleman Dietrich Fuchs who bought Bimbach in 1404. The local castle, destroyed during the German Peasants' Revolt and later rebuilt, was in the family's possession until 1913. The little town Bimbach belongs to Prichsenstadt (county of Kitzingen) in Unterfranken (Lower Franconia) since 1972.<sup>3</sup> The Fuchs we are interested in had little to do with Bimbach.<sup>4</sup> In his lifetime five family lines of the Fuchs von Bimbach existed. They were differentiated by their family seats. One of them resided in Bimbach, the others in Burgpreppach, Gleisenu, Eltmann, Bischofsheim, and Möhren.<sup>5</sup>

Hans Philip's great uncle Dietrich as the eldest son received the dominion Bimbach and founded the line Fuchs von Bimbach-Bimbach. His younger brother Christoph, grandfather of Hans Philip, purchased the castle of Mehren (later written Möhren) in the Duchy of Palatinate-Neuburg in 1522. Christoph's sons Endres and Sigmund called themselves from 1545 on Fuchs von Bimbach zu Mehren (= Möhren) or Fuchs von Bimbach-Möhren (Tittmann 1998, p. 79, note 385). The community of Möhren is a part of Treuchtlingen (county of Weißenburg-Gunzenhausen) in Mittelfranken (Middle Franconia) since 1972,<sup>6</sup> while Neuburg today belongs to the Bavarian administrative district of Oberbayern (Upper Bavaria). That Möhren belonged to Palatinate-Neuburg, at that time, was a decisive factor for the life of Hans Philip Fuchs von Bimbach.

The male line of the Fuchs von Bimbach has expired today but the name is continued in the female line.<sup>7</sup> The present seat of the Fuchs von Bimbach is the castle of Burgpreppach, where the family archives is also stored.

After the reformation most family members probably became Protestants, though Hans Philip's uncle Hans Fuchs von Bimbach (b. 1562) was a Catholic clergyman, Domkapitular (canon) in Bamberg and Würzburg (Biedermann 1747, Tabvla LIX). For Hans Philip no special faith preferences are known; he served on the Protestant side as well as the Catholic. His nephew, last of the Bimbach-Möhren line, converted to Catholicism to take possession of his heritage with the Emperor's help. Today the family Fuchs von Bimbach und Dornheim is Catholic (Fuchs von Bimbach 1975).

<sup>3</sup>[https://de.wikipedia.org/wiki/Bimbach\\_%28Prichsenstadt%29](https://de.wikipedia.org/wiki/Bimbach_%28Prichsenstadt%29) (accessed on May 2, 2016).

<sup>4</sup>However, he must have known his relatives there, as in 1581 his father became one of the custodians of mentally ill Hans Dietrich Fuchs von Bimbach zu Bimbach (ca. 1522–1586) and his children (Müller 2001, p. 11).

<sup>5</sup>An extract of the family's genealogy over eight generations can be found in Flurschütz da Cruz 2014, p. 385; compare the not clearly structured but complementary genealogical tabloids in Biedermann 1747, Tittmann 1998, p. 93, und Müller 2001, p. 13.

<sup>6</sup>[https://de.wikipedia.org/wiki/M%C3%B6hren\\_%28Treuchtlingen%29](https://de.wikipedia.org/wiki/M%C3%B6hren_%28Treuchtlingen%29) (last accessed on May 17, 2016).

<sup>7</sup>[https://de.wikipedia.org/wiki/Fuchs\\_%28Adelsgeschlecht%29](https://de.wikipedia.org/wiki/Fuchs_%28Adelsgeschlecht%29) (last accessed on May 7, 2016), with further references. To the later history of the family line, see also Rößner/Hammerich 2011.

## *Family, Birth, and Youth in Palatinate-Neuburg*<sup>8</sup>

His father Endres (ca. 1519–1599)<sup>9</sup> is believed to have already come to the court of Palatinate-Neuburg in 1537 (Ludwig 1968, p. 42) then under Otto Henry, Elector Palatine (Ottheinrich von der Pfalz), from 1557 on under Wolfgang of Palatinate-Zweibrücken. In 1556 he became Landrichter (state judge) of Grailsbach and Pfleger (governor) of Monheim and in 1561 Statthalter (governor) of Neuburg/Donau.<sup>10</sup> After Wolfgang's death in 1569, the Duchy of Palatinate-Neuburg was separated and became independent under the new duke Philip Ludwig. As a governor Endres was some kind of representative in his absence and consultant of the sovereign; besides he was chief of protocol when foreign nobleman had to be welcomed. He also conducted negotiations, e.g., about marital contracts. His activities as a diplomat, administrator, and judge are documented in detail (Schöndorf 2006). His biographer writes about his “gradlinigen, etwas raubeinig wirkenden Art” (“straight, somewhat roughnecked character”) and describes his efforts to increase and protect his possessions.

In 1546 Endres married Margaretha von Seckendorff-Aberdar who died in 1564; the marriage remained childless.<sup>11</sup> His mother-in-law, also Margaretha, was his cousin and was brought up in his father's household.<sup>12</sup> On November 28 or December 8 or 18, 1566, he re-married to Anna von Zeiskam (Zaiskam) from the Electoral Palatinate, the daughter of another governor of Wolfgang of Palatinate-Zweibrücken.<sup>13</sup> It would be interesting to know the exact date for the earliest date of birth of the eldest child, as it has to be excluded that Endres and Margaretha had “in

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<sup>8</sup>Some biographic dates were, if not otherwise noted, extracted from Buchner/Mavridis (2009). See section “[Source Situation and Approaches for Further Researches](#)” for a discussion of this biography.

<sup>9</sup>Also called Endriß, Andreas, or Andrä. Endres stated he was 79 years old in 1598 (Schöndorf 2006, note 6); Schöndorf concludes, “somit dürfte das Geburtsjahr 1519 feststehen” (“so 1519 as the year of birth should be certain”), what is not correct as his birth could just as well have been at the end of 1518. Müller 2001, p. 13 (family tree), indicates without proof 1522 as the year of birth, and Flurschütz da Cruz 2014, p. 385 (genealogy), names none. The year of death 1599 is given in both family trees and also by Biedermann 1747, Tabvla LIX. Ludwig 1968 gives 1519 to 1592 as the dates of his life but 1592 is verifiably wrong.

<sup>10</sup>Ludwig 1968, p. 42, and Rechter 1997, p. 124, both refer to two different archival sources.

<sup>11</sup>Rechter 1997, p. 124, with archival references. Schöndorf (2006) calls her Magdalena.

<sup>12</sup>Rechter 1997, p. 108; he cites an archival source according to which she was the sister of Heinrich Fuchs von Bimbach. Heinrich existed in the line Bimbach-Gleisenau (Flurschütz da Cruz 2014, p. 385). According to Biedermann 1747, Tabvla LVIII, she was the sister of Hans Diet[e]rich from the line Bimbach-Bimbach. This genealogical confusion shows how insufficiently the family has been studied to date.

<sup>13</sup>Rechter 1997, p. 124, names November 28 with reference to an archival source. Ludwig 1968 sets December 18 as the date of marriage with reference to a Neuburg parish register. Schöndorf 2006, p. 6, names December 8. Between each of these three dates lie 10 days; it should be investigated whether one of the authors converted from the Julian to the Gregorian calendar though 1566 was before the Gregorian calendar reform of 1582.

Unehren zusammengekrochen” (“dishonorably crept together”), as the pastor of Bimbach would have called such cases.<sup>14</sup> In this marriage eight sons and two daughters were born. Four survived, Hans Philip, Lud[e]wig Veit, [Hans] Carl, and Anna Maria.<sup>15</sup> Without proof Hans Philip is considered to be the eldest, but I doubt this (see below).<sup>16</sup>

His brother Ludwig Veit served as a Hofmeister (court tutor/master of ceremonies) in Palatinate-Neuburg. He seems to be the only brother who had children, Hans Carl and Anna Maria.<sup>17</sup> Ludwig Veit died accidentally in 1607,<sup>18</sup> and his brother Carl fell in Hungary in a battle against the Turks in 1604.<sup>19</sup>

The first names of the son, who interests us, are written very variably in the literature: Hans/Han[n]ß/Johan[nes] Philip[p][s], latinized Iohannes Philippus (by Marius; Marius 1614/1988, p. 36) or Iohan Philip (in the cartridge of his portrait; see Fig. 3.4). Even finding the baptismal register wouldn’t give clarification about the “correct” spelling, as there were no fixed orthographical rules for names at those times. I presume that today’s widespread notation “Johann Philipp” results from the assumption (in admissible analogy to modern use) that Hans could only be a modified version of the baptismal name Johann. Hans (in different spellings) instead of Johann obviously was the contemporary form, for Fuchs von Bimbach, as well as for other persons. The parish register of Bimbach from 1576 to 1588 (Schmidt/Müller 2001), for example, lists in the entries of marriages and baptisms only “Hans” as first name of several persons in various spellings (occasional three spellings for

<sup>14</sup>See Schmidt/Müller 2001 for his parish register with numerous cases of premarital or illegitimate relationships among commoners.

<sup>15</sup>Schöndorf 2006, p. 6; Biedermann 1747, Tabvla LIX. In 1587 Anna Maria married a Kämmerer (chamberlain) of Palatinate-Neuburg. Zwanziger 1919, p. 23, gives 1557 as the year of her birth which can’t be correct. This date is from Biedermann, *ibidem*, and obviously refers to the husband’s year of birth.

<sup>16</sup>This assumption in the literature has no source and presumably dates back to Biedermann (*ibidem*), who lists the brothers in this order. Apparently he had no birth dates so the order could well be random. A comparison of his Tabvla LVIII with the genealogical table in Müller 2001, p. 13, shows that Biedermann made the list not in the order of birth but on graphical principles in order to better illustrate the family lines. Therefore the widespread view that Hans Philip was the eldest son seems unsubstantiated to me.

<sup>17</sup>Biedermann 1747, Tabvla LIX: Here the son is called Johann Carl but he might have been called Hans Carl.

<sup>18</sup>Biedermann, *ibidem*, “kam an[no] 1607. im Wasser ums Leben” (“died in water in 1607”); Zwanziger 1919, p. 23, “ertrank 1608 in der Donau” (“drowned in the Danube in 1608”); Veh 1984–1985, p. 150, “war der bedrohten Stadt zu Hilfe geeilt und hatte durch Sturz vom Pferd das Leben verloren” (“rushed to help the threatend town [Donauwörth that was occupied by Catholic troops in December 1607] and lost his life falling from his horse”); *ibidem*, p. 151, note 36, “dem in Donauwörth 1607 verunglückten Ludwig Veit” (“the in Donauwörth in 1607 lethally injured Ludwig Veit”); Flurschütz da Cruz 2014, p. 385 (genealogy), “† 1607.”

<sup>19</sup>Zwanziger 1919, p. 23; Veh 1984–1985, p. 151, note 36: “hatte nach 1603, im kaiserlichen Dienst gegen die Türken in Ungarn kämpfend, bei Kaschau den Tod gefunden” (“lost his life near Kaschau after 1603 fighting in imperial service against the Turks in Hungary”). Košice (German: Kaschau) today lies in Eastern Slovakia near the Hungarian border.

one and the same man), but I couldn't find a "Johann." The introduction to Marius's translation of Euclid he signed "Hanß Philips Fuchs von Bimbach" (Marius 1610, sig. A4<sup>v</sup>); a letter written short before his death he signed "Hannß Philip Fuchsen" (Lichtenstein 1850, p. 145); also the nobleman today known as Johann Ernst von Anhalt he called "Hanß Ernst" (see below), which indicates his own use of Hans instead of Johann. Also other representatives of the family before and after him were called Hans; a Johann can be found only in the eighteenth century ([Gotha] 1924, p. 253). So I decided to use "Hans" instead of "Johann" and to write both first names in their shortest form, though "Philipp" would be as correct as the today unknown "Philips" or a spelling of Hans in other, today unusual forms.

Nothing is known directly until now about the birth of Hans Philip; conclusions can only be drawn from other data. If he really was the eldest son, as it is assumed, he could have been born in the second half of 1667, however not earlier, as second eldest son in 1668 but not much later.<sup>20</sup> The most likely birthplaces are Möhren or Neuburg.

In 1580 Hans Philip is verifiable in the Fürstliche Schule (Princely School) in Lauingen, where he held two reported speeches as a student; the school's historian assumes a stay from at least 1579 to 1583 (Ludwig 1968, p. 42).

The next biographical date given in the literature is a stay in Padua in October 1587 at the age of not more than 20.<sup>21</sup> It has been concluded that Fuchs studied there from this date alone. But he is not included in the registers of the German Nation in Padua,<sup>22</sup> so studies there seem very unlikely. There's nothing known about possible university studies until now; all information concerning this are nothing but speculations. From his further work and from his and Marius's writings, we can only conclude that he had extensive military experiences and some knowledge of military history, which he also recorded in writing (see section "[Fuchs von Bimbach as a Military Author](#)"). He had acquired at least basic skills in optics (see section "[Fuchs, Marius and the Telescope](#)") and concerned himself with geometry and its applications (see section "[The Translation of Euclid](#)").

The stay in Padua may have been during a "Kavalierstour" (educational tour), as was usual for young noblemen (often after finishing their university studies). About 100 years later, this is documented in detail for some of his relatives (Rößner 2003; Flurschütz da Cruz 2014, Sect. 1.3.1). There are indications that he might have stayed in Lyon in his younger years (Zwanziger 1919, p. 24).

Certain conclusions about his education might possibly be drawn by considering the education of 16-year-old Ludwig Reinhold Fuchs von Bimbach in 1682, who was expected to follow his famous relative Hans Philip in his military career

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<sup>20</sup>Lent 2006 names "ca. 1567," Buchner/Mavridis 2009 "about 1568," Flurschütz da Cruz 2014, p. 385 (genealogy), "ca. 1567." Ludwig 1968, p. 42 and note 118, calculated a birth around 1567 from the average age of the Tertiani of the "Gymnasium illustre" in Lauingen.

<sup>21</sup>Biedermann 1747, Tabvla LIX, without further details about this stay.

<sup>22</sup>See section "Simon Marius in Padua" in Chap. 2. According to Zwanziger 1919, p. 24, he couldn't be found in the university registers of either Altdorf or Heidelberg.

(cf. section “[Attempt to Assess of Hans Philip Fuchs von Bimbach](#)”). His godfather recommended his mother that the son “eine gute Wißenschafft, in der Rechen=, Meß=, Kriegs= und Friedens=Bau=Kunst, auch etwa eine Verständnüss in Ernst= und Lust=Feüern, dann in der Geographie bey zubringen wäre.”<sup>23</sup> “Die frantzösische Sprache, Reiten, Fechten und Tantzen”<sup>24</sup> would also be important. Ludwig Reinhold was sent to the University of Tübingen and afterward to France.

From his own records, it is clear that Fuchs von Bimbach had been taken part in military campaigns since the 1580s (Jähns 1890, p. 922; cf. section “[Fuchs von Bimbach as a Military Author](#)”). If he was born in 1567/1568, he would have been 17–18 years old in 1585.

In 1596 he became Hauptmann (captain) of Neuburg and was assigned to bring the contingent of the Protestant estates to the war against the Turks in Hungary.<sup>25</sup>

In 1599 Hans Philip inherited together with his two brothers the property Möhren and the family properties near Gerolzhofen (Buchner/Mavridis 2009). His brother Ludwig Veit became Lord of Möhren.<sup>26</sup> So one could assume that Ludwig Veit was the older brother and Hans Philip’s year of birth would be 1568 at the earliest.<sup>27</sup> Possibly he added “auf Möhren” to his name only after his brother’s death; that means from 1607/1608 on.

His father’s inheritance was obviously not insignificant. For example, in 1582 Endres bought several properties and rights in Sulzfeld and five other places for 3700 guilders; in 1594 he sold the castle Rauenbuch that he had inherited from his mother-in-law with all belongings and rights to Margrave Georg Friedrich of Brandenburg-Ansbach and Bayreuth for 16,000 guilders (Rechter 1997, p. 112 and 125).

The connections of the family to their liege lord, the Duke of Palatinate-Neuburg, seemed to have been close. For example, in a chronicle of Möhren, the following is

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<sup>23</sup>“A good knowledge, in the arts of calculating, measuring, war and peace architecture and also some knowledge of serious and joyful celebrating and in geography should be achieved.” Rößner 2003, p. 106, s.a. p. 105 and the introduction to this book.

<sup>24</sup>The French language, riding, fencing and dancing.

<sup>25</sup>Veh 1984–1985, p. 146. Veh refers to information from the Österreichisches Staatsarchiv (State Archives of Austria) about the military career of Hans Philip.

<sup>26</sup>Veh 1984–1985, p. 146. Biedermann 1747, Tabvla LIX, calls Hans Philip and Carl only “Fuchs zu Bimbach,” Ludwig Veit instead “Fuchs von Bimbach zu Mehren anno 1599.” A chronicle about Möhren (Boller 1834, p. 8) placed Ludwig Veit at the beginning: “1599 folgten dem Andrä Fuchs seine drei Söhne—Veit Ludwig, Hans Philipp und Hans Karl im Besitze von Möhren [. . .]” (“In 1599 the three sons of Andrä Fuchs followed him in the possession of Möhren—Veit Ludwig, Hans Philipp and Hans Karl”). Note that the third brother is called “Hans Karl” here—maybe a confusion with Ludwig Veit’s son.

<sup>27</sup>Veh 1984–1985, p. 146, claims without reference that Hans Philip, “obschon ältester der drei Söhne” (“though the eldest of the three sons”), was “nicht dazu bestimmt worden, als Majoratsherr das Rittergut zu übernehmen, sondern sollte im gehobenen Hofdienst eines Landesherrn auf militärischem oder diplomatisch-verwaltungsmäßigem Gebiet sein Glück machen.” (“not designated to assume responsibility of the manor as lord but should find his luck at the court of a sovereign in military or diplomatic-administration service”). But Veh claims several demonstrably wrong or very doubtful facts about Fuchs von Bimbach and Simon Marius, so that his statements are not to be trusted.



reported in connection with the death of Carl in Hungary in 1604: “Seine beiden Brüder feierten seine Leichengottesdienste dahier, und luden zu dieser Feier den Herzog Philipp Ludwig von Neuburg ein, welcher in höchster Pracht in Person erschien, und den Leichengottesdiensten beiwohnte.”<sup>28</sup> About 1601 Hans Philip quit the service in Palatinate-Neuburg but stayed connected to the dukes there, partly because of the fief Möhren but certainly also through a, then usual, patronage.

Nothing is known about a marriage or a family of his own. After his brother’s, Ludwig Veit’s, death, he became guardian of his son Carl.<sup>29</sup> Later this nephew succeeded him. As Hans Carl died in 1662, the family line Fuchs von Bimbach-Möhren expired.

### *Serving the Brandenburg Margraves in Ansbach*

In 1599 Hans Philip led Ansbach troops in the so-called Straßburger Fehde (Strasbourg Feud). This started his career at the Ansbach court.<sup>30</sup> Whether he had already entered this service in that year or was just “lent out” from Palatinate-Neuburg for this military campaign has still to be investigated. Generally, all of his military service was interim, as was then usual. In 1601/1602 Fuchs von Bimbach fought again in the “Long Turkish War” (1593–1606) (Veh 1984–1985, p. 146) in which his brother would fall 3 years later. Later he remembered one episode where “wir selbst anno 1601 vor Wienn vnd Preßburg, da wir des Obersten Fürsten Hanß Ernst von Anhalt Oberstlieutenant gewesen, gesehen.”<sup>31</sup>

Also in 1601 he became Kriegsrat (military advisor) to Margrave Georg Friedrich. One year later he joined the Spanish-Dutch war as some kind of custodian for the margrave’s 19-year-old relative and designated successor, Joachim Ernst, which led to a close relationship between them.

Joachim Ernst inherited the Margravate of Ansbach in 1603. In the fall of this year, he gave Schwaning and Rechenberg to Fuchs von Bimbach and his brothers as fiefs to very favorable conditions. Fuchs von Bimbach immediately started to build his own castle in Schwaning, today’s Unterschwaningen in the Middle Franconian

<sup>28</sup>Boller 1834, p. 8: “His two brothers celebrated his funeral service here and invited Duke Philipp Ludwig of Neuburg who joined the funeral services dressed resplendently.”

<sup>29</sup>Zwanziger 1919, p. 23, who calls the nephew Karl Johann. Biedermann, *ibidem*, gives “Johann Carl.” “Johann Karl” is indicated in the genealogy at Flurschütz da Cruz 2014, p. 385.

<sup>30</sup>For details about his time at the Ansbach court, see Herold 1973; for the numerous references to Fuchs von Bimbach, see the personal register or search for “Fuchs” in the digital copy.

<sup>31</sup>“We met in the year 1601 outside of Vienna and Preßburg [Bratislava], when we were the lieutenant colonels of the Archduke Hanß Ernst von Anhalt.” Cited after Jähns 1890, p. 925; cf. section “Fuchs von Bimbach as a Military Author”. This was certainly Johann Ernst von Anhalt-Zerbst (1578–1601), who died in December 22, 1601, in Vienna and who was significantly younger than his inferior Fuchs von Bimbach; compare his criticism of too young and unexperienced colonels (section “Fuchs von Bimbach as a Military Author”).



administrative district of Ansbach, halfway between Ansbach and Möhren.<sup>32</sup> From 1604 to 1606, he dwelled in the Netherlands again with the young Margrave, from 1605 on as an “Obrist” (colonel). At the inducement of Joachim Ernst, he assembled a battalion of soldiers for the Dutch States General.<sup>33</sup>

Simon Marius called Fuchs von Bimbach in 1614 “a man of the highest celebrity, not only for his ancient and noble lineage, but also and chiefly for his great deeds, his heroic exploits, and his consummate skill in war throughout France, Hungary, Belgium, and Germany.”<sup>34</sup> “France” could mean the Strasbourg feud; “Belgium” was the name for the Netherlands at that time.

After his return from the Netherlands, his short political career at the Ansbach court began. From 1607 to 1610, Fuchs von Bimbach was the director of the Geheimer Rat (Privy Council), as well as of the Hof- und Kammerrat (Court and Chamber Council). He was the most powerful court official and highly paid.<sup>35</sup> He also worked outside the margravate, e.g., through participation in the founding of the Protestant Union in 1608, and was often underway in diplomatic missions across the Empire, e.g., in Frankfurt am Main.

From 1610 on Fuchs withdraw bit by bit from the Ansbach court. This was related to quarrels between him, other court officials, and also later the Margrave. First he quit his position as director of the Court and Chamber Council but continued leading the conferences of the Privy Council (Herold 1973, p. 209). His full income was paid until 1614.

In 1610 the building of his castle was almost finished but he seems not to have retired to his estates. Instead he became an artillery general in the Jülich-Klevische Erbfolgestreit (War of the Jülich Succession, an inheritance dispute). This was in the interest of his Palatinate-Neuburg liege lord Philip Ludwig, who was supported by the dukes of the Protestant Union (Jähns 1890, p. 922).

In 1616 the break with Margrave Joachim Ernst was definitive when Fuchs von Bimbach approached the Catholic side. There were also financial claims by Fuchs, who started litigation at the Reichskammergericht (Imperial Superior Court of Justice) against Joachim Ernst, as well as other conflicts (Zwanziger 1919, p. 27; Herold 1973, p. 46 and pp. 209–212).

It might have been an unfavorable coincidence for Simon Marius that his *Mundus Iovialis*, in which he praised Fuchs von Bimbach, was published just when Fuchs’s conflicts with the Ansbach court escalated. Nothing is known about tangible impacts on Marius, but he complained about intrigues to his detriment just at that time.<sup>36</sup>

<sup>32</sup>To the history of the castle, see especially Veh 1984–1985, also [Unterschwaningen] 2009 and <https://de.wikipedia.org/wiki/Unterschwaningen> (last access May 17, 2016).

<sup>33</sup>Jähns 1890, p. 922, who used Fuchs von Bimbach’s own report (cf. section “Fuchs von Bimbach as a Military Author”).

<sup>34</sup>Marius 1614/1916/2019, Preface.

<sup>35</sup>See the comparison with Marius in Chap. 2.

<sup>36</sup>See Chap. 2.

## *Fuchs von Bimbach as a Military Author*

The state library of Württemberg holds a handwritten military tract, whose author is not mentioned, but who is obviously Fuchs von Bimbach.<sup>37</sup> This manuscript also includes autobiographical notes. It was written at the earliest in 1610, military historian Jähns assumed it originates from around 1612.

After a short historical introduction, the essay expands on many organizational grievances in the military, based on the author's own experiences, e.g., as the following:

Unter Kaiser Rudolf<sup>38</sup> habe man geradezu die jungen unerfahrenen Herren, zumal wenn es hohe Standespersonen gewesen, den erfahrenen Obersten grundsätzlich vorgezogen, weil sie sich mit geringer Besoldung begnügt und den oft fehlerhaften Anweisungen aus Wien nicht widersprochen hätten.<sup>39</sup>

As an evil custom of the foot soldiers he reprimanded “das Mitschleppen eines übermäßig großen Weibertrosses” (“that they dragged an abundantly large train of women”) but admitted:

Wiewol die Teutschen weiber den Soldaten beuorab in Ungarn mit tragender notturfft sowohl in wartung in krankheiten denen Soldaten sehr nützlich sein. Zum tragen findet man selten eine, die vnder 50 oder 60 Pfund tregt; da etwan der Soldat mit Victualien oder ander dergleichen tragende wahren nit versehen, so ladet er ihr Stroh oder Holz daruor auf, zu geschweigen, daß manche ein, zwei oder mehr Kinder uf dem Ruckhen tregt.<sup>40</sup>

Then he listed in detail the clothing and tableware that a woman carried for a man along with their tent.

After this introduction the following three chapters primarily apply to the training of soldiers, especially the infantry (in today's parlance) with a lot of drawings. Chapter II presents for the most part a “in ganz unwesentlichen Punkten geänderte Abschrift der ‘Instruction’ des Landgrafen Moriz von Hessen v. J. 1600, die jedoch nicht genannt wird.” “Das IV. Kapitel gibt einen kurzen Abriß der Feuerwerkerei ohne besonderen Wert.”<sup>41</sup>

<sup>37</sup>According to Herold 1973, p. 67, note 79: Württembergische Landesbibliothek, Stuttgart, Handschriftenabt., Cod. milit. 2° 65. Herold was the first to point to Fuchs von Bimbach as the author. A summary can be found in Jähns 1890, pp. 922–925 and 1034.

<sup>38</sup>Rudolf II (1552–1612).

<sup>39</sup>Jähns 1890, p. 923: “Under Emperor Rudolf the young and unexperienced men, especially persons of high rank, were preferred to experienced colonels, because they were satisfied with low salaries and didn't contradict the often wrong orders from Vienna.” This quote presents not Fuchs von Bimbach's own words but an analogous rendition by Jähns.

<sup>40</sup>Quoted after Jähns 1890, p. 924: “The German women were of use to the soldiers in Hungary for carrying their gear and caring for them in case of illness. One rarely finds one that carries less than 50 or 60 pounds; as the soldier has no grocery or other goods, he loads her up with straw or firewood, not to mention that some carry one, two or more children on their back.”

<sup>41</sup>Jähns 1890, p. 925: “in insignificant details modified copy of the ‘Instruction’ by Landgrave Maurice of Hesse from the year 1600, which however is not named.” “Chapter IV gives a short summary of fireworks without special value.”

Jähns discussed the unpublished work of Fuchs von Bimbach within the framework of *Geschichte der Wissenschaften in Deutschland* (“History of science in Germany”—a history of astronomy by Rudolf Wolf was also published in this series). One can’t refer to this work as “scientific” in the narrow sense whereby the general level of military lore at that time must be taken into consideration. It contains a lot of empirical findings as well as pragmatic conclusions and might have been intended as an instructional and textbook.

It is remarkable that Fuchs von Bimbach probably worked on his book during the same years in which Simon Marius wrote *Mundus Iovialis*. Did they perhaps inspire each other to compose a longer publication?

### *In the Thirty Years’ War*

From the following years until Fuchs’s death, no more contacts to Simon Marius are known. Therefore this period of time will be handled very briefly, though a lot of material exists.<sup>42</sup>

Fuchs von Bimbach entered imperial service after lengthy negotiations in 1618. As a reason for his change of station, Johann Ernst’s biographer cites the insults at the Ansbach court, from which Fuchs suffered as an imperial knight (Herold 1973, p. 46). As background it has to be taken into consideration that his new Palatinate-Neuburg liege lord and patron, Wolfgang Wilhelm, had converted to the Catholic Church in 1614, shortly before his father’s death and against his will. In particular he hoped for the Emperor’s support in the War of the Jülich Succession. Thirdly, as an imperial knight, Fuchs was formally only subordinated to the emperor, so serving him was normal rather than scurrilous. Confessional concerns seem unimportant to him. And finally he was principally an officer and therefore always on search for new appointments.

Emperor Matthias appointed Fuchs von Bimbach on July 7, 1618, to his “Obristen, Hofkriegsrat und Obristfeldzeugmeister” (colonel, court counselor of war and colonel gun master).<sup>43</sup> (“Feldzeugmeister,” literally “battlefield ordnance master,” was the name of the artillery officers; they were subordinated to a colonel.<sup>44</sup>) It is disputed whether he was involved in the Battle of White Mountain in 1620. Afterward he was accused that, as commander of the artillery, he had willfully ordered too short bombardments and was discharged without full payment (Zwanziger 1919, p. 27). So he also had to put up with an insult in imperial service.

<sup>42</sup>Detailed, partly contradictory data inter alia in Zwanziger 1919–1920 and Veh 1984–1985.

<sup>43</sup>Veh 1984–1985, p. 151, with reference to a note from the Österreichisches Staats-Kriegsarchiv (Austrian State Military Archive).

<sup>44</sup>Concerning the artillery officers in the foot soldier troops of the fifteenth and sixteenth centuries, see <https://de.wikipedia.org/wiki/Landsknecht#Artillerie> (accessed May 2, 2016) and the literature given there. The statements might also be basically valid for the beginning of the seventeenth century.

From 1621 on we find him again on the Protestant side as an officer and diplomat. The relationship to his (meanwhile Catholic) liege lord Wolfgang Wilhelm of Palatinate-Neuburg however remained very close. The latter lobbied for him against the Emperor for Fuchs's dominion Möhren and assigned to him the mediation between Emperor Ferdinand II and the Danish king Christian IV, which remained unsuccessful. In 1625 Fuchs was urged by Christian IV to join his service as an infantry general and later artillery general (Lichtenstein 1850, p. 143), which resulted in a condemnation by Ferdinand II and a threat to confiscate his estates.

Like other officers, Fuchs had deposited his most valuable movable possessions at the company of Samuel Rademacher in Hamburg during the war (Zwanziger 1920, p. 15).

### *Death in the Battle of Lutter*

On August 27, 1626 (on the Julian calendar, this was August 17), one of the biggest and most momentous battles of the Thirty Years' War took place on a plane west of the Harz and south of Salzgitter near the village Lutter am Barenberge (Fig. 3.1).



**Fig. 3.1** View from road B 248 in direction Nauen (Fuchs's dying place) to a part of the Lutter battlefield; under the tree the memorial stones for Fuchs von Bimbach on a rest area. Photo by the author, March 15, 2008



**Fig. 3.2** (a, b) Memorial stones for Fuchs von Bimbach at road B 248 (details). To the left the memorial stone of 1908. Photo by the author, March 15, 2008

Instead of defeating the troops of Tilly and Wallenstein, as intended, the Danish king suffered a disastrous defeat. The battle finally ruined his imperial aspirations and after the war he possessed less than before. Fuchs von Bimbach, the highest ranking officer next to the King, is said to have warned him about entering the battle.

Whether the following description of Fuchs von Bimbach's death is authentic or was elaborated later has still to be researched:

Groß und stark beleibt war ihm an dem heißen Schlachttage die Rüstung zu unbequem, er trug dafür eine weiße seidene Aermelweste (Wamms) und über diese einen kurzen leichten Oberrock (Casake) von grauer Farbe, so daß die hohe Figur überall leicht zu erkennen war. Verwundet nahm er, der anfänglich von einigen Ligisten für den König gehalten, den ihm angebotenen Pardon nicht an und wurde, von noch mehrten Streichen tödtlich getroffen noch lebend nach Nauen in des Königs gewesenes Quartier, den riemschneiderschen Hof gebracht und auf die Bank hinter den Ofen niedergelegt. Er befahl hier, ihn an der Stelle, wo er gefallen, zu begraben, auch sein Grab zu respectieren und starb dann.<sup>45</sup>

So Hans Philip Fuchs von Bimbach died on August 27, 1626 in the small village Nauen near Lutter at the most 59 years old. Today two memorial stones stand on a parking area near to his former grave (Fig. 3.2). The oldest dates from 1908 (Melzner 1982). The Fuchs von Bimbach family paid an annual amount to the owner of the field to maintain the grave until the end of the eighteenth century. Around 1800 a road from Lutter to Seesen was built, today's B 148. The ditch went through Fuchs

<sup>45</sup>Lichtenstein 1850, p. 143: "Tall and corpulent as he was, his body armor was uncomfortable on hot battle days, instead he wore a white, silk doublet and over this a short, light, grey tunic (Casake), so that his tall figure was easily recognizable everywhere. Wounded he, who first was thought to be the King by some Catholic League soldiers, did not accept the offered pardon and was, lethally injured by several blows, brought still alive to Nauen in the King's former quarters, the Riemenschneider Court, and laid on a bank behind the oven. He ordered them to bury him here where he had fallen, to respect his grave and then he passed away."



von Bimbach's grave, which was opened. It contained a remarkable tall skeleton and a valuable sword (Lichtenstein 1850, pp. 143–144). To the facts about the grave and the memorial stones, more exact researches are desirable because the dates in literature and in the Internet are inaccurate, contradictory, and partially grossly incorrect.

In passing it is noted that before the Battle of Lutter, a nightly luminous effect was reported in the form of a sword that pointed from the imperial to the Danish troops and inspired the former to fight. This could be interesting for astronomers and meteorologists who deal with reports about noctilucent clouds and similar phenomenon. However, it can't be excluded that this was only a rumor put into the world by Tilly as psychological warfare (Lichtenstein 1850, pp. 134–135).

### *Fuchs's Financial Circumstances*

Through inheritance and purchase in the form of fiefs, Fuchs von Bimbach owned several estates and castles. Besides the main property of Möhren, this included the large, richly endowed castle Schwanningen (Fig. 3.3), Rechenberg manor, and the castle of Cronheim near Gunzenhausen. From these he received income from the farms and payment in kind such as fish, wood, and the hunt bag.



**Fig. 3.3** Castle Schwanningen. Etching of Matthaeus Merian, in Zeiller 1648 (Digitized version of the original print: <http://bildsuche.digitale-sammlungen.de/?c=viewer&bandnummer=bsb00065888&pimage=00218>), printed facsimile around 1960. Collection of the author

After his departure from Ansbach, he was criticized for not having paid for the fiefdom of Schwaningen and through abuse of office to have used margravian material and workers for the building of the castle (Veh 1984–1985, p. 148 and pp. 151–152). The truth of these accusations might be difficult to verify.

The worth of the fiefdoms can be assessed by the amount the widowed Margravine Sophie paid in 1630 to the heir Hans Carl Fuchs von Bimbach for the return of Schwaningen and Rechenberg, namely, more than 75,000 guilders (Veh 1984–1985, p. 153).

His annual income in Ansbach was 2581 guilders, additionally a large payment in kind of wine, cereals, and fish (Herold 1973, p. 46, note 66). In 1612 he lent the margrave 20,000 guilders for his marriage. For repayment Joachim Ernst used all the incoming taxes (Herold 1973, p. 191). His income in earlier and later assignments, as an officer, has not yet been determined.

The inheritance deposited in Hamburg included cash, silverware, precious clothing, jeweled harnesses, canons, horses, and other things amounting to 10,000 thalers (= 240,000 guilders).<sup>46</sup>

To roughly estimate these amounts in today's currency, we set Marius's annual payment of 150 guilders<sup>47</sup> as today equal to 10,000 € as a lower limit. We receive for the value of both fiefdoms not less than five million euros, for Fuchs's annual pay about 170,000 €, for the credit to the Margrave 1.3 million euros, and for his disposable inheritance 16 million euros.

### *Fuchs's Physical Appearance*

We are mostly informed about Hans Philip Fuchs von Bimbach's appearance by his portrait (Fig. 3.4). A comparison to the portrait of Simon Marius from about 1614 (see Fig. 5.2) shows a great similarity stemming from the beard style, the haircut, and the clothing, whereby Fuchs's one is of course more splendid. Portraits of other contemporaries (see Chap. 2) show less similarities. It remains speculation as to whether Marius adapted his appearance to match his patron.

Fuchs is described as "groß und stark beleibt" (tall and corpulent); later an "auffallend große[s] Skelett" (remarkable tall skeleton) was found in his grave (Lichtenstein 1850, p. 143 and 144). In his inheritance in Hamburg was "eine Stadtliche, fürstliche, ja Königl. Kleidung" (splendid, princely, even royal clothing; quoted after Zwanziger 1920, p. 15), so he attached value to a representative appearance.

<sup>46</sup>Zwanziger 1920, p. 15; Buchner/Mavridis 2009, p. 77; in both cases without naming sources. Buchner/Mavridis call this inheritance a spoil of war which is inaccurate.

<sup>47</sup>Cf. Chap. 2.



**Fig. 3.4** (a) Portrait of Fuchs von Bimbach in an earlier version with mistakes in the epigraphs. Source: Wien, Österreichische Nationalbibliothek (see footnote 48). (b) Portrait of Fuchs von Bimbach in a later, corrected version. Source: Staatsbibliothek Berlin—Preußischer Kulturbesitz (see footnote 49). (c, d) Details of the Portraits (a, b)



The eye patch seen in the portrait indicates a severe injury or even the loss of his right eye, maybe in the battle, but I couldn't find anything about that.<sup>48</sup> He has a vertical scar across his right eye, apparently from a sword strike. If the portrait was painted posthumously, it could be a wound from one of the last battles before his death.

The form of his eye patch obviously results from artistic freedom of expression; an earlier version (or draft?)<sup>49</sup> shows the patch bigger and rectangular (Fig. 3.4a, c);

<sup>48</sup>Veh 1984–1985, p. 151, note 36: “Johann Philip had—it is not known when—lost his right eye.” This statement might have been made on the basis of the portrait and so have no validity.

<sup>49</sup>Wien, Österreichische Nationalbibliothek, Bildarchiv und Grafiksammlung, Porträtsammlung, Inventar-Nr. PORT\_00099848\_01, Digitized version with high resolution: <http://www.portraitindex.de/documents/obj/0ai:baa.onb.at:7847095>; this version contains the typing error “Wimbach” instead of “Bimbach” in the cartouche and in the sign of the image, what indicates a draft or a very early version.

the final version<sup>50</sup> shows it smaller and semicircular (Fig. 3.4b, d).<sup>51</sup> The first version shows clearer that it could be a provisional covering of the wound with a piece of cloth that was attached to a string around his head and fixed with a second string on top of the cloth. For a permanent eye patch after the loss of an eye, I would expect another material (leather), another form, and a more comfortable fitting, but only a medical historian could give more precise information about that. One can at least assume that he wore this eye cover only at the end of his life. The engraving was made around 1626, maybe only posthumously, as the signature shows, but possibly also from an earlier template.

## Fuchs von Bimbach as Sponsor of Simon Marius

### *Introduction*

All that I have observed, developed and already published in this regard, I owe to this great and most noble gentleman, my protector and patron, who holds all my reverence.<sup>52</sup>

The Latin word Marius uses here, translated as “protector,” is “Patron”—again we come across *patronat*, very usual in those times. Protection and sponsoring by Fuchs von Bimbach, who was the highest official in the margravate with significant influence on the margrave, made him at least temporarily feel more secure. Contrary to Kepler, who found patrons in Rudolf II and later Wallenstein only for short periods, Marius was secured by the patronage of the Ansbach margraves in a long term, and so he was more or less independent of his second protector Fuchs von Bimbach.

John Robert Christianson assumed that Marius did not hurry to publish his discoveries due to his secure position, differing from Galileo who was looking for a good position.<sup>53</sup> This could have been a reason but just one among others such as uncertainty as discoverer, inexperience with respect to priority claims, relative isolation from other scientists, lack of time because of his calendar production, health problems, etc.

The most important events in the relationship between Simon Marius and Fuchs were the acquisition and use of early telescopes. For the history of their invention, Marius’s report about Fuchs’s visit to the Frankfurt fair in 1608 is very important

<sup>50</sup>Berlin, Staatsbibliothek zu Berlin—Preußischer Kulturbesitz, Handschriftenabteilung, Inventar-Nr. Portr. Slg/Mil. m/Fuchs von Bimbach, Johann Philipp, Nr. 1, b019047, Digitized version: <http://www.portraitindex.de/documents/obj/33017232>

<sup>51</sup>The later version is held in different archives and has been published several times; see also [https://de.wikipedia.org/wiki/Datei:Fuchs\\_von\\_Bimbach.png](https://de.wikipedia.org/wiki/Datei:Fuchs_von_Bimbach.png) (seen May 26, 2016).

<sup>52</sup>Marius 1614/1916/2019, Preface.

<sup>53</sup>Christianson 2000, p. 320: “Galileo [...] rushed into print with his discoveries [...] to achieve the scientific and patronage triumph of his career. Marius was already assured of patronage and did not rush [...]”.

because this seems to be one of the earliest recorded dates that we have. The first exact date is September 25, 1608 (Gregorian).<sup>54</sup> It would be desirable to narrow the time span of Fuchs's visit in Frankfurt am Main, as the question of which of the three Dutch inventors could have been to Frankfurt depends on this.<sup>55</sup> Besides the general question arises (though irrelevant to the telescope), why an officer and politician visited a trade fair. Therefore in the following section, general remarks about trade fairs of the period and about Fuchs's visit at the fair of 1608 will be made before we focus on the description given by Marius. Finally we will discuss the cooperation of Marius and Fuchs on a translation of Euclid's writings that was published in 1610.

Possibly Fuchs von Bimbach came closer to Marius only during the telescope episode in 1608 though he must have known him and his calendars earlier. (Contrary to Wallenstein, nothing is known about any interest in astrology that Fuchs might have had.) Unfortunately, we know nothing at all about their relationship before the fall of 1608 and after 1612. Marius's statement that Fuchs "... frequently talked the matter over with me after supper" (see below) indicates that Marius was invited to supper several times and their relationship must have been quite close at least in the fall of 1608. For the year 1612, Fuchs's assistance to Marius is documented.<sup>56</sup> Hans Gaab assumes in his chapter (section "Life at Court and Publications" in Chap. 2) that the problems Marius had in Ansbach were somehow related to his good relationship to the unpopular Fuchs von Bimbach.

### *The Visit of the Frankfurt Fair in 1608*

At that time, the Frankfurt Reichsmessen (Imperial fairs) were not only important economic events but also top-ranking social occasions (Stahl 1991; Brübach 1994). They served trade among merchants as well as the retail sector. What was lacking at ordinary markets could be found here, e.g., gems and books (also antiquarian). It was a place for settlements (often cashless but also with cash) and a financial center for exchange, credits, and investments. As many people met there, the fairs were also used for the exchange of information, not only between the merchants, and also for entertainment; there were theater productions, jugglers performed, and exotic animals were displayed (e.g., an elephant in 1629) or just pictures. Besides, tolerated by the councilmen, prostitution flourished, with which the local women would be protected from the many strangers. The fair replaced that which is matter of course for us today: shopping centers, banks, newspapers, television, theater, variété, circus, and so on. Noblemen loved to visit the fair to meet their peers, to shop, or to just be entertained.

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<sup>54</sup>Van Helden 1977, pp. 35–36; cf. Willach 2007, p. 109. The following statements about the general history of the telescope are based on these two publications. There is also an English version of Willach 2007, 2008.

<sup>55</sup>See the discussion of this question in Van Helden 1977, pp. 21–22.

<sup>56</sup>See Chap. 2.

Fuchs von Bimbach had been to Frankfurt on other occasions. Marius's report about a merchant "whose acquaintance he [Fuchs] had formerly made" suggests that Fuchs had also visited the trade fair in earlier years (Marius 1614/1916/2019, Preface). He might not only have had private motives (shopping, investment) but also business reasons such as purchasing for the Ansbach court together with other officials,<sup>57</sup> negotiating credits for the margrave, repaying his debts, and meeting other noblemen for diplomatic conversation. It might well be that he and other armed travelers guarded money or goods transports between Ansbach and Frankfurt.

When did the trade fair take place in 1608? For this there are earlier considerations in the literature about the history of the telescope, without taking all circumstances into consideration. A detailed history of the Frankfurt trade fair from 1765, evaluated by Albert van Helden (1977, pp. 21–22), reports that originally the trade fair took place between Assumption Day (August 15) and the Nativity of Mary (September 8). Already in the sixteenth century, its start had switched to the Nativity of Mary.<sup>58</sup>

To that another tradition must be considered; if the Nativity of Mary fell on Monday, Tuesday, or Wednesday, the trade fair started on Monday; if the holiday fell on Thursday, Friday, Saturday, or Sunday, it first started on the Monday of the following week.<sup>59</sup>

Finally it must be taken into account that in the imperial city Frankfurt, as well as in Ansbach, the old Julian calendar was still valid until 1700 (Brübach 1994, p. 136). However, in the Republic of the Seven United Provinces (the Netherlands), the Gregorian calendar had been valid since 1582.

Taking all these conditions into consideration, the date of the beginning of the fair, determined by Emil Wohlwill, responds exactly: "Nach Erkundigungen, die ich im Frankfurter Archiv eingezogen habe, wurde die Frankfurter Herbstmesse des Jahres 1608 am 12. September eröffnet [. . .]."<sup>60</sup> On the Julian calendar of 1608, the Nativity of Mary fell on a Thursday; the following Monday was September 12.<sup>61</sup> On the Gregorian calendar, this Monday was already September 22.

<sup>57</sup>It has been examined in detail, for the court of Landgrave Maurice of Hesse-Kassel (reigned 1592–1627), how regularly and to what extent royal courts satisfied their needs for consumer goods and luxury at the fairs in Frankfurt and Leipzig: Becker 1991.

<sup>58</sup>[Orth] 1765, pp. 64–65 and 544–546; see also the quote in the chapter "Priority, reception and rehabilitation of Simon Marius" by Pierre Leich (Chap. 15).

<sup>59</sup>[Orth] 1765, p. 66; Dietz 1910/1970, p. 40. I owe the reference to the last source to Dr. Michael Matthäus, Institut für Stadtgeschichte, Frankfurt am Main.

<sup>60</sup>Wohlwill 1926, p. 347: "According to inquiries I made in the Frankfurt archives, the Frankfurt fall fair of 1608 was opened on September 12 [. . .]." In his researches, Wohlwill does not take the calendar differences into consideration as he continues: "erst drei Wochen später bildet das Patentgesuch des Brillenmachers Johann Lippersher zum erstenmal den Gegenstand der Beratungen der holländischen Generalstaaten." ("It was only 3 weeks later that the patent application of the spectacle maker Johann Lippersher was for the first time part of the consultations of the States General of the Netherlands.")

<sup>61</sup>Compare Marius's own calendar for 1608: two digital copies in libraries are linked on the *Marius Portal*.

In the second half of the sixteenth century, there were 18 fair days in Frankfurt (Brübach 1994, p. 31). This might have been the same in 1608, because the original fair date between August 15 and September 8 also stretched over approximately 3 weeks. I assume that the 18 fair days mentioned excluded Sundays and the fair took place on  $3 \times 6$  days. Thus, the last day would have been Saturday, October 1, on the Gregorian calendar October 11.

The dating by Wohlwill and the calculated end of the 1608 fair are confirmed by the following archival registrations: “Anfang der Herbstenmeß, NB. Ist die Meß ausgeleut worden donnerstags vf Nat. Mar. vor anfang der Meß.”<sup>62</sup> So the fall trade fair of 1608 started after Nativity of Mary, in accordance with the rules above on the following Monday, September 12 (Julian date). “Alß man Montags den 3t. 8bris 1608 nach vollend[er] herbstmeß an den Velpf[orten] vfgeschlossen, Ist seither jungsten Meß vber gefallen [...]”<sup>63</sup> So in 1608 the fair was finished before October 3, according to the calculations above, on Saturday, October 1 (Julian).

A verification of the begin and end of the 1608 fair using contemporary calendars seems impossible, though they also included fair dates (they are missing in Marius’s own calendar for 1608). I was unable to consult a calendar for 1608 other than Marius’s; however, an example for 1606 only mentions the start of the fair and that only approximately.<sup>64</sup>

As for the presence of the merchants, it must be taken into account that they arrived and left only in large “Geleiten” (convoys) because of the danger of holdups. By imperial order, these convoys had to be protected by the respective sovereign ([Orth] 1765, pp. 75–99; Dietz 1910/1970, pp. 41–44). Less than ten convoys existed that were obviously assembled in some meeting places in larger cities and were composed of mounted merchants, four-in-hand freight carriers, and numerous (certainly armed) escorts. In 1446 the Nuremberg convoy, though quite small in that year, was composed of 250 people, 450 horses, and 69 carriages (Dietz 1910/1970, p. 61). The convoys arrived before the official beginning of the fair, on Wednesday or Thursday of the previous week, and the merchants unpacked their goods (Dietz 1910/1970, p. 40 and 44).

As to the further procedure of the fair, there are different claims; a Frankfurt jurist and (amateur) historian Alexander Dietz claimed, without source references, first a business week and then a week to settle up (Dietz 1910/1970, p. 40). A new academic investigation refers to 5 days of accounting for the repayment of debts,

<sup>62</sup>“Begin of the fall fair trade. NB. Fair was rung [i.e. announced by bell ringing] on Thursday of the Nativity of Mary before the beginning of the fair.” Diurnal of 1608/09, Institut für Stadtgeschichte, Frankfurt am Main, Call number: Rechneiamt: Bücher 448, fol. 24<sup>v</sup>; by kind information from Dr. Michael Matthäus, Institut für Stadtgeschichte, Frankfurt am Main, E-Mail of July 5, 2016.

<sup>63</sup>“As on Monday the 3rd October 1608 after completion of the fair, the field gates were opened, is from this time the latest fair finally over [ . . . ]” Ibidem, fol. 37<sup>v</sup>.

<sup>64</sup>Krabbe [ca. 1605], p. [62]: “Franckfurt am Mayn helt Meß/[ . . . ]/Die 2. [d.h. Herbstmesse] auff Marie Geburt.”; Transl.: “Frankfurt am Main held a fair/[ . . . ]/The 2nd [i.e. fall fair] on the Nativity of Mary.” I owe this information to Dr. Klaus-Dieter Herbst, Jena. Link to the corresponding page: [http://reader.digitalesammlungen.de/de/fs1/object/display/bsb10392756\\_00062.html](http://reader.digitalesammlungen.de/de/fs1/object/display/bsb10392756_00062.html)

followed by a week of trading for the sale of goods (Brübach 1994, p. 310). The convoys “wurden in der dritten Woche [...] größtenteils schon am Dienstag abgeführt. Als letztes zog am Samstag Nachmittag das hessendarmstädtische ab.”<sup>65</sup> Residual sales to small customers were continued until 3 p.m. on Saturday (Dietz 1910/1970, pp. 40–41).

We don't know how long Fuchs von Bimbach stayed in Frankfurt in 1608. Considering the long distance, about 200 km, between Frankfurt and Ansbach, it would probably have been a 3-day ride,<sup>66</sup> and taking into account the many things, he would have had to accomplish and to enjoy, and he certainly would not have stayed for only a couple of days. Let us suppose that he stayed until the middle of the third week and left, for example, on September 28 (a Wednesday in Julian calendar); he would have arrived at Ansbach not earlier than the evening of September 30 (October 10 in Gregorian calendar). At least, it is very unlikely that he would have returned before the beginning of October (Gregorian). If Frankfurt was only an intermediate stop on a longer journey, his return might well have been significantly delayed.

Dutch merchants had a far longer journey of about 450 km, and with loaded carriages and in a large convoy, the traveling speed would have been much slower than for riders. We can certainly calculate 10 days for the journey if not more. Such a trip was only worth it if one stayed in Frankfurt for the whole fair, so that the Dutchmen would have only returned to Amsterdam or other places at the earliest around October 20 (Gregorian). In individual cases merchants might have traveled without a convoy, though a very short stay also seems unlikely for them, considering the long, arduous, and dangerous route. This also applies to the visitors.

### *Fuchs, Marius, and the Telescope*

Everything in the literature on how Simon Marius got his first telescopes obviously goes back to his own presentation in *Mundus Iovialis* and is only occasionally supplemented with details, which are not to be found by Marius. Though often cited, Marius's account will be repeated literally, because in certain details the exact wording is important. Primarily, Prickard's and van Helden's translation is used. A new analysis of the Latin original with regard to the following considerations would be desirable:

In the year 1608, when the Frankfurt autumn fair was going on, it happened that there was at the same place the most noble, gallant, and energetic John Philip Fuchs, of Bimbach in Mohr, [...] Various things went on there, and among others it chanced that a certain merchant met the nobleman mentioned above, whose acquaintance he had formerly made,

<sup>65</sup>Dietz 1910/1970, p. 44: “The convoys left for the most part already on Tuesday in the third week. The one from Hesse-Darmstadt left finally on Saturday afternoon.”

<sup>66</sup>To traveling speed, see, for example, <https://de.wikipedia.org/wiki/Reisegeschwindigkeit>



and told him that there was then present in Frankfurt at the fair a Belgian, who had invented an instrument by means of which the most distant objects might be seen as though quite near. Hearing this, he begged the merchant to bring the Belgian to him, which the merchant at last consented to do. Our nobleman had a long discussion with the Belgian first inventor, and felt doubts as to the reality of the new invention.<sup>67</sup>

This “first inventor” (“primus inventor”) is unknown. Cornelis de Waard drew in 1906 the conclusion, “dass es sich mit großer Wahrscheinlichkeit um Sacharias Janssen gehandelt hat.”<sup>68</sup> Arjen Dijkstra argued that it could have been Jacob Metius, who would have had the best reasons to travel to the Frankfurt fair.<sup>69</sup> To discuss this question, we have to recapitulate, which inventors of telescopes are currently known.

It is recorded that Hans Lipperhey and Jacob Metius applied for patents on their inventions on October 2 and 15, 1608, respectively. They were both refused because neither was the unique inventor. A document from October 14 quotes, in this context, a third, unnamed inventor (Van Helden 1977, pp. 36–40). Earlier in the literature, Sacharias Janssen was supposed to be this third inventor. But Huib Zuidervaart argued convincingly that Janssen was unable to create telescopes in 1608 and proposed Lowys Lowyssen as a more suitable candidate (Zuidervaart 2010).

If the “Belgian” whom Fuchs met was a merchant, stayed until the third fair week, and left with a convoy, so according to the calculation in the previous section, it probably wasn’t one of the two known inventors, because they wouldn’t have made it home until October 15. Lipperhey can be excluded, and also Metius had to leave significantly before the fair ended, which seems unlikely, however not impossible. Apart from the known inventors, there might have been another Dutch optician, who manufactured a functioning telescope in 1608:

At last the Belgian produced the instrument, which he had brought with him, and one glass of which was cracked, and told him to make trial of the truth of his statement. So he took the instrument into his hand, and saw that objects on which it was pointed were magnified several times. Satisfied of the reality of the instrument, he asked the man for what sum he would produce one like it. The Belgian demanded a large price, and when he understood that he could not get what he first asked, they parted without coming to terms.<sup>70</sup>

A detailed analysis of this report shows that the demonstration of the first telescope was a private, nonpublic matter. Fuchs von Bimbach didn’t meet the “Belgian” himself but heard about him through an acquaintance. The owner didn’t demonstrate his instrument straight away but only after a lengthy discussion. Therefore it can’t be concluded that this telescope was offered for sale at the fair. Without

<sup>67</sup>Marius 1614/1916/2019, Preface.

<sup>68</sup>“that in all probability it must have been Sacharias Janssen.” Willach 2007, p. 111; Wohlwill 1926, p. 347, calls this “a very weak proof.” I couldn’t examine the original publication.

<sup>69</sup>Dijkstra 2012, p. 137. For a summary of Dijkstra’s thesis, see the chapter “In the Turmoil of the Early 17th-century Cosmology Debate—Simon Marius as a Supporter of the Tychonic System” by Pierre Leich in the present volume.

<sup>70</sup>Marius 1614/1916/2019, Preface.



the merchant, who he had known for some time, Fuchs von Bimbach probably would not have heard about the telescope. The “first inventor,” e.g., a spectacle maker, could have been selling lenses and glasses or in the case of Metius his brother’s new book. However, Marius’s report nowhere states why he was at the fair; he might as well have been a visitor just like Fuchs and not a merchant.

In the literature about Marius, it is presumed that Fuchs von Bimbach was interested in the telescope for military reasons. This is an obvious assumption as Dutch documents of 1608 mention this and also a desired secrecy; but there are no statements by Fuchs or Marius about this. We also don’t know if Fuchs ever used one of the instruments he later bought for military purposes. As he handed them over to Marius, his interest might well have been purely scientific. The image quality of the first telescopes was very low and their field of view very limited, so their military value was low. It would be desirable to find out since when telescopes were actually used for military purposes.

Also the conclusion that there was no trade because of the large price claimed is just a presumption. The main reason may have been that “one glass [. . .] was cracked.” The statement “The Belgian demanded a large price” may not necessarily have been the reason that “they parted without coming to terms.” We don’t know what sum had been demanded, whether Fuchs eventually would have accepted it, if a usable instrument had been for sale immediately, and how much he paid nearly 1 year later for a Dutch instrument. The repeated mention of the high price as an obstacle for the sale certainly goes back to Klug, whose original translation of *Mundus Iovialis* was truncated and therefore false: “Der Belgier verlangte eine hohe Summe; deswegen zerschlug sich der Handel.”<sup>71</sup> Anyway, Fuchs couldn’t get a telescope at once, and the “delivery” of another copy under the prevailing conditions would certainly have taken a long time, maybe even until the next fair. The attempt to build his own telescope could have been a question of time rather than costs<sup>72</sup>:

When he returned to Ansbach, the Nobleman sent for me, and told me that an instrument had been devised by which very remote objects were seen as though quite near. I heard the news with the utmost surprise. He frequently talked the matter over with me after supper, and at last came to the conclusion that such an instrument must necessarily be composed of glasses, of which one was concave, the other convex. He took up a piece of chalk and with his own hand drew a sketch on the table to show what sort of glasses he meant. We afterwards took

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<sup>71</sup>Klug 1906, p. 410: “The Belgian demanded a large amount of money; so the trade was abandoned.”

<sup>72</sup>Please note that the English and the German translations differ. The English one reads: “The Belgian demanded a large price, and when he understood that he could not get what he first asked, they parted without coming to terms.” The German one is: “Der Belgier forderte eine hohe Geldsumme. Als Philipp nun kennengelernt hatte, was er aufs erste Mal nicht erhalten konnte, schied man also unverrichteter Dinge voneinander.” (Marius 1614/1988, p. 38 [“The Belgian demanded a large amount of money. As Philipp had seen what he couldn’t get at the first time, they left without having achieved anything.”]) The English translation more clearly suggests a relation between the large price and the fact that Fuchs did not obtain the instrument.

glasses out of common spectacles, a concave and a convex, and arranged them one behind the other at a convenient distance, and to a certain extent ascertained the truth of the matter.<sup>73</sup>

The calculation above shows that Marius probably wouldn't have met Fuchs and heard about the telescope before October 10 (Gregorian date).

Marius's report shows that he had never before heard or read about the possibility of such an instrument, though the enlarging effect of such a combination of lenses had been known since the sixteenth century (Van Helden 1977; Willach 2007, pp. 105–109). Rolf Willach assesses that at the end of this century, “die Kenntnis des teleskopischen Effektes sicher weithin Allgemeingut unter den Brillenmachern und Gelehrten geworden war.”<sup>74</sup> At least for Marius this was not correct; it is not generally known if he had been concerned with optics before or after 1608 and his access to scientific literature was limited. In contrast to Kepler, he just used telescopes and didn't care about their construction and theory. So unfortunately, we have no detailed specifications of his instruments, only a picture together with his portrait (see Fig. 5.2).

It must also be doubted whether Fuchs von Bimbach knew about the telescopic effect of a combination of a concave and a convex lense before. It is therefore all the more remarkable that he recognized the form of the lenses in the telescope he inspected in Frankfurt. As he was probably about 40 years old, he could have been in contact with spectacles and their makers. However he failed to notice something else—the diaphragm, with some certainty, present in front of the objective lens.

Experimenting with two spectacle lenses, Fuchs and Marius persuaded themselves of the magnifying effect of the lens arrangement. Thus they repeated what others had found out decades before; however just like their predecessors, they were unable to construct a telescope with only this knowledge:

But as the convexity of the magnifying-glass was too great, he made a correct mould in plaster of the convex glass, and sent it to Nuremberg to the makers of ordinary spectacles that they might prepare glasses like it; but it was no good, as they had no suitable tools, and he was unwilling to reveal to them the true principle of the process. No expense was spared, and several months elapsed. If we had been acquainted with the method of polishing glasses, we should have produced excellent spy-glasses immediately after our return from Frankfurt.<sup>75</sup>

With the last sentence, Marius was fundamentally wrong. Rolf Willach, who examined numerous sixteenth-century spectacle lenses, stated that most of them were of insufficient quality to be used in telescopes. He concludes “dass die Erfindung eigentlich nur einem guten Brillenmacher gelingen konnte, dem ein entsprechend großer Vorrat an Linsen für seine Versuche zur Verfügung stand. Gelehrte und Halbgelehrte [. . .], welche vielleicht bestenfalls über ein halbes Dutzend Gläser verfügten, hatten nur eine sehr geringe Chance.”<sup>76</sup>

<sup>73</sup>Marius 1614/1916/2019, Preface.

<sup>74</sup>Willach 2007, p. 109: “the telescopic effect was certainly common knowledge among the spectacle makers and scholars.”

<sup>75</sup>Marius 1614/1916/2019, Preface.

<sup>76</sup>Willach 2007, p. 116: “that only a good spectacle maker with a large reserve of lenses for his attempts could succeed in the invention. Scholars and semi-scholars [. . .] who at the best had half a dozen lenses, had only a very small chance.”

For the construction of a telescope, the magnification effect is insufficient; one also needs to produce a sufficiently sharp image. Most lenses didn't provide the necessary result because the quality of the glass was inadequate and/or they were not ground well enough. In 1608 and the following years, even the best lenses needed a modification to meet with the requirements of a telescope, a diaphragm that reduced the aperture of the objective. This improves the quality of the image significantly. Willach found that around 1608 lenses were only a little better than before and it was only the diaphragm, which led to the decisive breakthrough. For example, a lens of 3 cm diameter was stopped down to 1 cm. He proposed the thesis that the telescope only gained such a rapid dissemination by copyists because a craftsman immediately noticed the diaphragm in front of the lens.<sup>77</sup>

But Fuchs and Marius were no experts; the function of the diaphragm obviously remained unknown to them because it is nowhere reported. Therefore and because of their small selection of lenses, they were unable to recreate a telescope. All future purchases were of complete telescopes.

In the Marius literature, there is discussion that the failure of Fuchs and Marius was because Fuchs “was unwilling to reveal to them [the Nuremberg spectacle makers] the true principle of the process.” Apart from the fact that Fuchs's understanding of this method was minimal and his knowledge was not sufficient to construct a telescope (which Marius however didn't know), this statement is dependent on the correct translation. In the original it says “veram conficiendi rationem illis revelare noluit.” The translator Joachim Schlör pointed to the form of “revelare” in this sentence that is basic to his German translation (Schlör 2012, p. 57 and 59), which is similar to the English one used here. Josef Klug translated the sentence more than 100 years before as “das Geheimnis der Fertigstellung wollte sich ihnen [den Brillenmachern] nicht offenbaren”<sup>78</sup> for which according to Schlör the form in the sentence had to be “revelari.” So one letter, e or i, makes a significant difference in the statement. On the other hand, Schlör lists some grammatical mistakes in *Mundus Iovialis*, and, as the chapter by Richard Kremer in the present volume shows, Marius's publications are not always clear in their claims and partially incorrect. As well as an inaccurate formulation or a grammatical mistake made by Marius, a printing error of the typesetter is also possible, who misunderstood the meaning of the sentence or didn't understand it at all. As was discussed above, there is no other proof that Fuchs was interested in secrecy for military reasons. Actually he had to assume that sooner or later others would also receive a telescope from the Netherlands or copy one. The interpretation of Klug, though grammatically wrong, seems more plausible to me. At least one can't clearly decide between the two possibilities. Whatever choice is made, the reason for the failure to construct a telescope was another one. Because of its dubiousness, it is inadequate as proof of Fuchs's pursuit of secrecy; equally through circular reasoning, the assumed secrecy

<sup>77</sup>Willach 2007, pp. 112–117. For new insights in the history of telescope invention, see also Van Helden 2009.

<sup>78</sup>Klug 1906, p. 410: “the mystery of completion wouldn't reveal to them [the spectacle makers].”

cannot be used as proof of the correctness of the new translation—for which the only evidence is the letter “e”.

In the meantime, glasses of the same kind were becoming common in Belgium, and a fairly good one was sent, with which we were highly pleased. This was in the summer of 1609. From this time I began to look into the heavens and the stars with this instrument, whenever I was at the house of the nobleman so often mentioned, at night time; sometimes he used to allow me to carry it home, and in particular about the end of November, when I was observing the stars according to my custom in my own observatory.<sup>79</sup>

In October 1608 Marius was probably the first astronomer outside of the Netherlands who learned about the invention of the telescope, but it took about another 9 months until he could hold one in his hands.

Though Marius wrote “a fairly good one was sent,” it was obviously Fuchs’s property, who with certainty paid for it. At first, Marius was only sometimes allowed to take it home. As Marius could not expect assistance from the Ansbach court, which was always in financial difficulties, Marius stayed dependent on a private sponsor.

Arjen Dijkstra noted that in June 1609 Adamus Valentinus Fuchs von Bimbach was enrolled in Leiden and could have got the telescope for his relative in Ansbach.<sup>80</sup> But there is no proof for this until now. Adam Valentin Fuchs von Bimbach zu Burgbreitbach (= Burgpreppach), younger son of Georg Fuchs von Bimbach zu Gleisenu, was a generation younger than Hans Philip Fuchs von Bimbach zu Möhren and was related to him in the male line through his great-great-grandfather (Biedermann 1747, Tabvla LX; Flurschütz da Cruz 2014, p. 385).

Meanwhile, two glasses extremely well polished, a convex and a concave, were being sent from Venice by that most distinguished and accomplished man, the Lord John Baptist Leucius,<sup>81</sup> who had returned from Belgium to Venice after peace was made, and who had already been thoroughly acquainted with the instrument. These glasses were fitted into a leaden tube, and made over to me by the most noble and active nobleman whom I have mentioned already, in order that I might try what they would show among the constellations and stars near Jupiter. Accordingly, from this time until January 12, I gave my diligent attention to these Jovian stars . . .<sup>82</sup>

As the lenses were “fitted into a leaden tube,” Marius in this case also received a complete telescope. In Venice particularly high-grade glass was produced so that the lenses in Marius’s and Fuchs’s second telescope were probably better than those in the first. The receipt of this instrument can be dated around mid-January 1610 (Gregorian calendar), as Marius reports his observations made earlier with the first telescope that he recorded from December 29, 1609 (Julian date) on. He received the new instrument obviously some days before January 12, 1610 (Julian date). This time he didn’t have to observe at Fuchs’s home but could take the telescope home

<sup>79</sup>Marius 1614/1916/2019, Preface.

<sup>80</sup>Dijkstra 2012, p. 138. I owe the reference to this dissertation to Dr. Günther Oestmann, Bremen.

<sup>81</sup>To John Baptist Leucius, see section “Life at Court and Publications”, Chap. 2.

<sup>82</sup>Marius 1614/1916/2019, Preface.

immediately. From January 13 until February 8, Marius traveled and left the instrument at home. Afterward he continued his observations with this telescope and got it from Fuchs as a gift or “permanent loan,” because:

In order that I might observe the Jovian stars with greater closeness and diligence, the illustrious nobleman whom I have frequently mentioned, out of his special affection towards these astronomical studies, placed the instrument entirely at my disposal. From that time accordingly to the present, I have made continuous observations with this instrument and with others afterwards constructed.<sup>83</sup>

About the “afterwards constructed” instruments, nothing is known, also not how Marius obtained them. Had prices lowered since then, so he could afford them himself or did Fuchs von Bimbach help again? We don’t know. It can be excluded that Marius could construct them himself. He lacked the necessary manual skills and knowledge, the indispensable tools, the access to good glass or numerous finished lenses, and the abilities of an experimenter. As opposed to Galilei, there is no information that Marius had carried out experiments. Self-constructing would have taken a lot of time and he certainly would have written about it. The production of the annual calendars and prognostica might have left him with no time for the complex construction of telescopes.

Indirectly Marius makes Fuchs a witness to the correctness of his report about the acquisition of telescopes and the observations made with them:

This is the exact truth. I should never be allowed thus in a public document to say what was not true about so great a man [...].<sup>84</sup>

Marius might have remembered incidents from the past when others wanted to “say what was not true” about Fuchs von Bimbach. It was just around 1614 that Fuchs vented his anger about two court officials who mocked him through indiscretion and finally even addressed the Reichskammergericht (Imperial Chamber Court) (Herold 1973, p. 46).

### *The Translation of Euclid*

Marius’s translation of Euclid, which was published in 1610, is discussed by Hans Gaab in more detail (section “Life at Court and Publications” in Chap. 2; see also Fig. 2.14). Here we only outline Fuchs von Bimbach’s intentions with this book.

The title page and the introductions show that Marius did the translation at Fuchs’s instigation. The title page also mentions the applications: “Alles zu sonderm Nutz denjenigen/so sich der Geometria/im Rechnen/Kriegßwesen/Feldtmässen/Bauen/vnd andern Künsten vnnd Handtwerckern zugebrauchen haben.”

<sup>83</sup>Marius 1614/1916/2019, Preface.

<sup>84</sup>Marius 1614/1916/2019, Preface.

(“Everything shall be of special profit to those who have to use geometry, in reckoning, warfare, field surveying, constructing and other arts and crafts.”)

Fuchs added an introduction, dated January 1, 1610 in which he, after a detailed explanation why the German language is important for such books, described the applications:

[...] zufferst aber im Kriegswesen/die jenigen/so Quartier schlagen/Schantzen/Vestungen etc. bawen vnd zervbrechen/mit Zeug: oder Geschützwesen/Werkcken [...] Wie viel sind der Werckleut/deren handtwerck allein auff der Geometria bestehet?<sup>85</sup>

He explained which mistakes architects and builders make because they know too little about geometry and asked:

Inn was grossem Irthumb stecken die Landtmässer? Deren meiner Meinung nach gar nimmer/oder selten zwen gefunden/die in dem *facit* übereinstimmen [...].<sup>86</sup>

He estimated which errors come together in large areas (10,000 acres) when small errors are made in measuring and reckoning.

As an officer Fuchs occasionally must have come into contact with geometry, e.g., when directing a canon or using maps. Ruling over several territories where border conflicts happened, Fuchs had a relationship to surveying. As owner of a castle, he employed architects, builders, and craftsmen.

However, it seems astonishing to use Euclid’s rather abstract book for these practical purposes instead of an instruction manual for land surveyors or other textbooks. But at that time Euclid’s book was the primary text among the introductions to geometry. Fuchs had probably first heard about it at school in Lauingen. He wrote on the significance of Euclid’s “Elements” that they “der gantze grundt und Fundament der Geometria seind” and “in vielen Handthierungen vnvermeidlich gebraucht muß werden.”<sup>87</sup>

He then expresses his hope that the margraves of Ansbach and Bayreuth to whom the book is dedicated:

nicht allein [...] mir zu gut halten/Daß gedachten dero Mathematicum [d.h. Marius] ich dieser Verdeutschung/So gleichwol nicht ohne sondere Mühe und Versäumnuß abgangen/an vnd vielleicht von andern Verrichtungen abgehalten/Sondern auch mit ihm Allergnädig zu frieden seyn [...].<sup>88</sup>

<sup>85</sup>Marius 1610, sig. A3<sup>v</sup>: “First in warfare/those who prepare the quarters/build or deconstruct redoubts/fortresses/with things or ordnance/works [...] How many craftsmen are there whose craft is based only on geometry?”

<sup>86</sup>Marius 1610, sig. A4<sup>r</sup>: “Which large errors are made by land surveyors? In my opinion never or rarely two are found who agree on the *facit* [result] [...].”

<sup>87</sup>Marius 1610, sig. A3<sup>v</sup>: “are the complete basis and fundament of geometry” and “inevitably must be used in many actions.”

<sup>88</sup>Marius 1610, sig. A4<sup>r</sup>: “not only [...] due to me that I requested their Mathematicum [mathematician, i.e. Marius] this translation into German, which couldn’t be made without some effort and omissions, and possibly kept him from other duties; however are most graciously content with him [...].”

Marius writes in his introduction that his translation:

geschehen ist auß Befehl deß Edlen vnd gestrengen Herrn Hanß Philips Fuchßen von Bimbach etc. So der Geometrischen sachen nicht allein ein besonderer Liebhaber vnd Beförderer ist/sondern daß der Anfang vnd Grunde denjenigen/so sich darinnen zu üben willens zu wissen für hochnötig geachtet/vnnd durch sein vielfältiges nachfragen experimentiren vnnd außsinnen/den gewaltigen vnd groben Irrthumb vermercket/darinnen gemeine Feldtmässer alle mit einander stecken/und daher in Kauffen und Verkauffen grosser und augenscheinlicher irrthumb vorgehet [. . .].<sup>89</sup>

Afterward he lists further applications of geometry in which ignorance leads to mistakes. If Marius was not exaggerating, Fuchs von Bimbach seems to have engaged intensively with geometry and its applications, through “manifold inquiries, experiments, and cogitation.”

### Attempt to Assess of Hans Philip Fuchs von Bimbach

To describe Fuchs von Bimbach as a shrill figure (Buchner/Mavridis 2009, p. 78) because of his switching sides and his combativeness is too shortsighted. To a certain extent, the same applies to him, as was written about his liege lord, Margrave Joachim Ernst of Ansbach, “daß auch er von den Tendenzen seiner Zeit zum Abenteuerium nicht unberührt geblieben war, die den Individualismus übersteigerte und das Kondottierentum<sup>90</sup> förderte. Immer haftete seinen politischen Entscheidungen etwas Verwegenes an. Zudem gingen Joachim Ernsts religiöse Bindungen nicht sehr tief.”<sup>91</sup> However, Fuchs’s military book and his military and political approach show him to be more prudent than Joachim Ernst or King Christian IV. As an imperial knight, officer, and a landlord, he was typical for his times.

Changing sides for actual or supposed advantage was common, also for sovereigns. In this, Fuchs von Bimbach probably followed his main liege lord and patron, Wolfgang Wilhelm of Palatinate-Neuburg.

The tendency to quarrels was also widespread. “Adelige des 16. Jahrhunderts befanden sich anscheinend mit jedermann in Konflikt.”<sup>92</sup> In distinction to earlier

<sup>89</sup>Marius 1610, sig. A5<sup>r</sup>: “was made by order of the most noble and strict gentleman Hanß Philips Fuchßen von Bimbach etc. who is not only a special enthusiast and sponsor of geometry but considers the introduction and fundament for those willing to learn to exercise therein as urgently necessary and recognizes through his manifold inquiries, experiments and cogitation the massive and primitive errors land surveyors have in common in this and therefore in buying and selling proceed with large and obvious errors [. . .].”

<sup>90</sup>Condottieri were Italian leaders of soldiers up to the sixteenth century who for better salary often changed sides, even during a battle.

<sup>91</sup>Herold 1973, p. 65: “that he didn’t remain untouched by the tendency to adventurism of his time that overemphasized individuality and supported condottierism. His political decisions were always tainted with something foolhardy. Moreover Joachim Ernst’s religious ties were not very deep.”

<sup>92</sup>Flurschütz da Cruz 2014, p. 14: “Noblemen of the 16th century seemed to have conflicts with everyone.”



centuries, blood feuds had been replaced by confrontations in court, at least on a regional level. In the disputes about power and territories between the emperor and the sovereigns, between realms and religious confessions, war was often the chosen solution.

Fuchs von Bimbach was primarily an officer; he was a politician only for a few years of his life. Naturally, during all the years, he also had to supervise the administration of his territories, but not much is known about this to date.

In the early modern era, it was absolutely common to plunder in order to finance war and also for personal enrichment. A colonel like Fuchs von Bimbach was not only an officer but also a small-scale businessman. He had to employ his subordinated officers and foot soldiers temporarily and to pay them. For this he did not always get money from his employer but also had to acquire credit, and for their repayments sufficient revenue had to be generated.<sup>93</sup> For the spoils of war, there were quite fixed rules, for example, what share of the conquered canons a quartermaster had to give to the colonel. There was also an official (Beutmeister), who was responsible for “fair” distribution. Which part of Fuchs’s large assets came from the military expeditions and what was from other sources (inheritances, high income in Ansbach, financial investment, management of goods) can’t be answered here.

In Ansbach Fuchs seems not to have been liked—except by Marius and in the beginning by the Margrave. Other court officials complained about him (envy certainly played a role here); when his star began to descend, satirical poems circulated and finally he fell from the Margrave’s grace.<sup>94</sup> It is hard to decide what was true about his alleged immoral way of life and his “course” manners, and what was exaggerated or even fictional.<sup>95</sup> Marius must have known the accusations but nevertheless praised him highly.

Christian IV made Fuchs posthumously responsible for the defeat at the Battle of Lutter, but it seems that he was diverting attention from his own unsound decision (Zwanziger 1920, p. 14). In the older military literature, it is said: “Fuchs stand bei Freund und Feind als alter, erfahrener und listiger Kriegsoberster in sehr großem Ansehen und war der ausgezeichneteste Officier in der königlichen [dänischen] Armee.”<sup>96</sup>

In the Fuchs von Bimbach family, Hans Philip obviously was held in high esteem. In 1682 a young family member is admonished that he should “in weyland Hannß Philipp Fuchs von Bimbach, Fusstapfen treten, und eben den Nachruhm hinterlaßen

<sup>93</sup>To get an impression of the different matters and people for which Fuchs was responsible as a colonel, read, for example, the detailed Wikipedia article about foot soldiers: <https://de.wikipedia.org/wiki/Landsknecht>

<sup>94</sup>On the different incidents and reproaches, see Zwanziger 1919, p. 26, Herold 1973, and Veh 1984–1985.

<sup>95</sup>How dubious, at least partly, the accusations were from today’s standpoint, one of the reproaches claims: Fuchs would use magic to make himself bulletproof (Zwanziger 1919, p. 26). Compare Herold 1973, pp. 43–44 on the accusations.

<sup>96</sup>Lichtenstein 1850, pp. 144–145: “Fuchs was held in high standing by friend and foe as an older, experienced and cunning colonel and was the most excellent officer of the royal [Danish] army.”

möge, daß er in angeführten Wißenschafftten wohlerfahren, und Oberster geworden seye [. . .].”<sup>97</sup>

However, basically Hans Philip failed in his principal occupations. He was not particularly successful either as a politician, a diplomat, or an officer, which however in the given constellation of various parties, interests, and confessions of the period was extremely difficult; Wallenstein has gone down in history and in art as a similarly failed player. In his three most important positions as court official in Ansbach, imperial colonel, and general of the Dutch King, Fuchs suffered extensive slights and died finally as a defeated military commander.

His interest in sciences was less pronounced than, for example, his contemporaries Rudolf II or Maurice of Hesse-Kassel (called “The Learned”). According to Simon Marius, he was “not only benefactor and admirer of the whole of mathematics and other similar sciences but also their greatest patron.” A remaining merit for the cultural history of mankind is the support of Simon Marius and one of the first astronomical uses of the telescope. Fuchs von Bimbach would probably have considered it an insult if he had ever imagined that four centuries later he is appreciated for his support of astronomy but not for his service in battle.

## Errors and Speculations About Fuchs von Bimbach in the Literature

Unfortunately, all existing biographies about Fuchs von Bimbach contain errors and speculative statements that are formulated as facts, which is also true for the statements about Fuchs in the literature about Marius. Without any claim to completeness, some of these mistakes that are perpetuated again and again without verification will be listed here. Further minor errors have already been discussed in the text above and in the footnotes.

The errors begin with his name. In an eighteenth-century review of people with the family name “Fuchs,” he is falsely called “Johann Philip Fuchs von Fuchsberg.”<sup>98</sup>

In the *Braunschweigisches Biographisches Lexikon*, he is registered as “Fuchs von Bimbach, Hans Philip Freiherr von” (Lent 2006), what rewritten would result in “Freiherr von Fuchs von Bimbach.” Apart from the wrong title “Freiherr” (baron, see below), “Hans Philip von Fuchs von Bimbach” is meaningless. Dijkstra refers to him in short as “Von Bimbach,” what is also inadmissible (Dijkstra 2012, p. 137 and 138). The family name was Fuchs; “von Bimbach” was an addition to mark the lineage. Later family members were called “Freiherr Fuchs von Bimbach [und

<sup>97</sup>Quoted from Rößner 2003, p. 105: “follow the footsteps of the erstwhile Hans Philip Fuchs von Bimbach and may leave as posthumous fame that he achieved in the previously mentioned sciences and as a colonel [. . .].”

<sup>98</sup>Lauterbach 1783, pp. 16–17; the entry gives two older books as sources.

Dornheim],” in no case “Freiherr von Fuchs von Bimbach” or “Freiherr von Bimbach.”

In the earlier literature both first names are always used, although in various spellings. It is not known whether there was a preferred first name. Joachim Schlör repeatedly uses only the second name Philipp<sup>99</sup> what seems unreasonable to me because in contemporary documents both names are always used.<sup>100</sup>

Occasionally 1567 is stated as his year of birth,<sup>101</sup> but the exact year is unknown. 1567 is just a plausible but unsubstantiated presumption.

In 1892 Julius Meyer speculated about Marius’s choice of Padua as his place of study: “Von Einfluß auf die Wahl der Universität Padua mag auch der Umstand gewesen sein, daß sein Landsmann, der markgräfllich onolzbach’sche Geheimrath und Kriegsoberste Freiherr Hans Philipp von Fuchs-Bimbach auf Möhren [...] i. J. 1587 auf derselben Universität seine wissenschaftliche Ausbildung genommen hatte.”<sup>102</sup> This sentence is full of mistakes and unproven claims. Fuchs’s attendance at the University of Padua is not documented, nor is his influence on Marius already recorded in 1602. Besides the name of the family line (von Fuchs-Bimbach) is wrong. Strictly speaking he wasn’t a fellow countryman of Marius, but came from neighboring Palatinate-Neuburg. Fuchs was no “Geheimrat” (privy councilor)—at least not in the meaning of this title as used in the nineteenth century—and not a baron. This title is wrongfully ascribed to him in many publications. This claim of studies in Padua and the title Freiherr were also included in the biographical Wikipedia article<sup>103</sup> and in the record in the “Gemeinsame Normdatei (GND)” of German libraries, which obviously was based on the Wikipedia entry.<sup>104</sup>

A newer essay about Marius and the telescope says: “Janssen stellte bereits 1608 sein Fernrohr auf der Frankfurter Messe vor.” “Im Herbst 1608 erfuhr Marius vom Artillerie-Offizier, Freiherr Hans Philip Fuchs von Bimbach, daß auf der Frankfurter Herbstmesse Fernrohre angeboten wurden [ . . .].”<sup>105</sup> As explained above, there is no

<sup>99</sup>In his translation of Marius (1614/1988), the first name Philipp repeatedly stands for Fuchs von Bimbach but is missing in the Latin original at these points. Because of the special sentence construction in Latin without personal pronouns, translations have to insert one or a name. See also the use of a singular “Philipp” in Schlör 2012.

<sup>100</sup>Another publication that uses a singular “Philipp” is Ritter 1870, p. 451, in a note by the publisher, not in a document. This might have been Ritter’s error; the index p. 744 has “Johann Philipp.”

<sup>101</sup>For example, Dijkstra 2012, p. 136.

<sup>102</sup>Meyer 1892, p. 56: “The choice of the University of Padua might also have been the circumstance that his fellow countryman, the Ansbachian margravian privy councilor and colonel, Baron Hans Philipp von Fuchs-Bimbach auf Möhren, [...] received his academic education at the same university in 1587.”

<sup>103</sup>[https://de.wikipedia.org/wiki/Hans\\_Philipp\\_von\\_Fuchs\\_von\\_Bimbach](https://de.wikipedia.org/wiki/Hans_Philipp_von_Fuchs_von_Bimbach) (Versions from April 25, 2016 and before, corrected by me on June 23, 2016).

<sup>104</sup>Fuchs von Bimbach, Hans Philipp, <http://d-nb.info/gnd/1026798078> (last seen May 17, 2016).

<sup>105</sup>Wolfschmidt 2012, p. 219 and 225: “Already in 1608 Janssen presented his telescope at the Frankfurt fair.” “In the fall of 1608 Marius heard from the artillery officer, Baron Hans Philip Fuchs von Bimbach that telescopes were offered for sale at the Frankfurt fair [ . . .].”

direct evidence, who had the telescope in Frankfurt; that it was Sacharias Janssen is not a fact, but a theory. Marius's report mentions one telescope, not telescopes in the plural. From Marius's report it can't be concluded that the telescope was "presented" in public and "offered for sale."<sup>106</sup> To name Fuchs von Bimbach, an artillery officer (a modern term) is not accurate for the year 1608; this can only be stated for later years, as he belonged to the "infantry" (also a modern term) before 1610.

Naming the "inventor" who showed Fuchs von Bimbach a telescope at Frankfurt am Main a "merchant"<sup>107</sup> is pure speculation. It might originate from the presumed identification with Janssen who among other things was a merchant.

At this point attention will be drawn once more to a popular error concerning Marius. He didn't construct his own telescopes as is often claimed<sup>108</sup> but used complete ones. That he received his first telescope in October 1608<sup>109</sup> appears much too early; he only got it in summer of 1609.

An extremely absurd statement can be found in a popular book about historical places in Lower Saxony, in this case about the battlefield of Lutter: "Unter den Toten auf protestantischer Seite befand sich auch General Fuchs [. . .] Dieser aus Bayern stammende Haudegen, der mit vollem Namen Hans Philipp Freiherr Fuchs von Rimbach [sic] hieß, war eine recht ungewöhnliche Persönlichkeit. Er war eigentlich Astronom und hatte entscheidenden Anteil daran, daß im Jahre 1610 Galileo Galilei die Entdeckung der vier Jupitermonde gelang. Zudem war Fuchs Mathematiker und Herausgeber der ersten 15 Bücher des altgriechischen Mathematikers Euklid. Was ihn in den Krieg getrieben hat, wußte wohl nur er selber."<sup>110</sup> This needs no comment. However, this "source" was used to create an article for Wikipedia about the Battle of Lutter in which the general was called a "kursächsischer Mathematiker und

<sup>106</sup>Compare, for example, Van Helden (1975) who wrote inaccurately "that a *Belga* was trying to sell a telescope at the autumn fair at Frankfurt in 1608."

<sup>107</sup>For example, by Christianson 2000, p. 320: "peddler."

<sup>108</sup>For example: Van Helden 1974, p. 39, note 3: "It seems thus likely that Galileo constructed his first telescope in much the same way as Simon Marius did"; Dijkstra 2012, p. 137: "received their first working specimen from the Netherlands, which enabled Marius to construct new telescopes"; Riekher 1990, p. 21: "Nach diesen Angaben [von Fuchs] ist es gelungen, ein Fernrohr zu bauen." ("With this information [from Fuchs] it was possible to build a telescope.") But Rolf Riekher could use only inadequate literature about Marius for the first edition of his book in 1957—especially the good translation of *Mundus Iovialis* by Joachim Schlör was lacking and he had to base himself on Klug 1906.

<sup>109</sup>Van Helden 2011 [1997], p. 510: "Simon Marius in Ansbach probably obtained his first spyglass as early as October 1608."

<sup>110</sup>Friedrich 1989, p. 196: "General Fuchs was also among the dead on the Protestant side [. . .]. This Bavarian warhorse, whose full name was Hans Philipp Freiherr Fuchs von Rimbach [sic] was a quite extraordinary personality. He was actually an astronomer and played a decisive role in Galileo Galilei's discovery of the four moons of Jupiter in 1610. Besides Fuchs was a mathematician and publisher of the first 15 books of the ancient Greek mathematician Euclid. Only he knows what drove him to war."

Astronom” (“mathematician and astronomer from the Electorate of Saxony”).<sup>111</sup> As a curiosity I remark that it was just this crude mistake that first drew my attention to the Franconian imperial knight. Through an Internet search in 2007 for memorial stones, etc. about astronomers, I found this Wikipedia page about the Battle of Lutter and the “astronomer” Fuchs von Bimbach who was missing in the *Biographical Index of Astronomy* (BIA) (Brüggenthies/Dick 2005). Though he wasn’t an astronomer, we have meanwhile included him together with other patrons of astronomy in the second edition of the BIA (Brüggenthies/Dick 2017).

## Source Situation and Approaches for Further Researches

Until now there is no academic biography of Fuchs von Bimbach, only popular portrayals and a few encyclopedia entries, as well as a lot of details, spread over numerous publications. Almost all sources cited here in turn refer to older sources that also had to be consulted for a comprehensive biography. The existing printed material would be enough to write a book about Fuchs von Bimbach, but without intensive archival studies, this would be of only small academic value.

The most comprehensive biography until now is by Karl Hermann Zwanziger of 1919/20 that contains much interesting data but unfortunately indicates its sources insufficiently. A newer one can be found in a local history book about Unterschwaningen (Buchner/Mavridis 2009); it cites its sources fairly precisely but is also based on unreliable ones and gives room to speculations that are not marked as such. These local history researches and publications are often very valuable because they exploit local sources—but unfortunately often lack exact references and are not always on an academic level. The latter also applies to many publications of the early twentieth century and before; however, their authors had access to archival documents that have in the meantime been lost. As well as the already quoted biographies, there is a completely useless one of 1899 (Clementi 1899; based on Meyer 1892 and Lichtenstein 1850) that, however, was used repeatedly as a source for others and another one without value from 1982 ([Klay?] 1982).

With one exception everything known about the relationship between Fuchs and Marius, as well as about their acquisition and use of telescopes comes from Marius himself. Independent sources would be valuable but have not been found to date. The extensive literature about the early history of the telescope and about Marius offers at least various approaches as to how Marius’s descriptions can be interpreted and classified in the comprehensive history of the telescope. This literature could only be reviewed to some extent here.

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<sup>111</sup>[http://de.wikipedia.org/wiki/Schlacht\\_bei\\_Lutter](http://de.wikipedia.org/wiki/Schlacht_bei_Lutter) (Version from February 21, 2016 and before, corrected by me June 23, 2016); the incorrect lineage goes back to Lichtenstein 1850, p. 143: “Aus dem Kursächsischen gebürtig” (“Born in the Electorate of Saxony”).

In the literature about the Thirty Years' War and especially about the Battle of Lutter, Fuchs von Bimbach is mentioned repeatedly; this could also only be used very selectively here. The only entry in a big (printed) biographical reference book, the *Dansk biografisk leksikon* (Danish biographical encyclopedia)<sup>112</sup> only deals with his time in Danish military service and is of little biographical use. Additional findings about his military career up to 1610 may be won from his own memories in the Stuttgart manuscript (see section “[Fuchs von Bimbach as a Military Author](#)”).

Many details to Fuchs von Bimbach at the Ansbach court on an archival basis are presented in the dissertation by Hans-Jörg Herold about Joachim Ernst (Herold 1973). At the same time, it demonstrates how much previously unknown data can be found in archives. The newer dissertation of Andreas Flurschütz da Cruz deals with a conflict between the Franconian knight families Fuchs von Bimbach and Wolf von Wolfsthal in the second half of the seventeenth century but contains also valuable information about previous family history and references to archival holdings especially in Franconia, among them the Fuchs von Bimbach family archives.<sup>113</sup> Numerous other files in state, ecclesiastical and private archives mentioning Hans Philip Fuchs von Bimbach might exist. To him, his ancestors and siblings information might also be found in archival documents about the Neuburg/Donau and Jülich courts, in maybe still existing parish registers of Neuburg and Möhren, in imperial files in Vienna and Prague, in Dutch and Danish archives, maybe also in Padua and elsewhere. And probably there, in a remote place, Simon Marius is also named . . . .

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<sup>112</sup>Fuchs v. Bimbach, Hans Philipp. In: *DBL 1*. Reproduktion: Scandinavian Biographical Archive (SBA). Mikrofiches. London [u.a.]: Saur [1990], I A–89, 192–193. I consulted the online version in World Biographical Information System (WBIS) Online, <http://db.saur.de/WBIS/>. Later editions: Rockstroh; *DBL 3* (the latter couldn't be consulted yet).

<sup>113</sup>Herold 1973, “Ungedruckte Quellen” (unpublished sources) and numerous individual references particularly to H. Ph. Fuchs von Bimbach in the text; Flurschütz da Cruz 2014, “Quellen und Archive” (sources and archives). Zwanziger 1919, p. 24, mentions a “handschriftlichen Nachlaß Hans Philipps im Kreisarchiv zu Nürnberg” (manuscript paper of Hans Philipp in the Nuremberg District Archives).

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