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The Correspondence of Michał Antoni Hacki and Johannes Hevelius

Artykuł przedstawia korespondencję opata oliwskiego Michała Antoniego Hackiego (ok. 1630–1703) z gdańskim astronomem Janem Heweliuszem (1611–1687), prowadzoną nieregularnie w latach 1654–1686. Omawia obecne w niej zagadnienia, które uzupełniają dotychczasowe ustalenia dotyczące biografii obu korespondentów, w tym m.in. zainteresowania Hackiego muzyką czy przekonanie Heweliusza o niesłuszności stosowania pozycyjnych instrumentów astronomicznych zaopatrzonych w lunety. Ponadto przedstawia nieznanе dotychczas okoliczności wyznaczenia gwiazdozbioru Tarczy ku czci Jana III i dedykowania mu książki Heweliusza.

The article presents the correspondence of Michał Antoni Hacki (*ca.* 1630–1703), abbot of the Oliwa monastery, and Johannes Hevelius (1611–1687), astronomer from Gdańsk, which was conducted irregularly between 1654 and 1686. The article discusses elements of the correspondence that supplement the present findings about biographies of both correspondents, including e.g. Hacki's interests in music and Hevelius's belief that positional astronomical instruments with telescopes should not be used. Moreover, it presents hitherto unknown circumstances of introducing the constellation of Scutum to honor the King John III and of dedicating to him a book by Hevelius.

Słowa kluczowe: Michał Antoni Hacki (ok. 1630–1703), Jan Heweliusz (1611–1687), korespondencja w XVII w., kontakty naukowe, Rzeczpospolita uczonych, gwiazdozbiór Tarczy

Key words: Michał Antoni Hacki (*ca.* 1630–1703), Johannes Hevelius (1611–1687), correspondence in the 17th century, scholarly contacts, Republic of Letters, Scutum constellation

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The letters of Johannes Hevelius (1611–1687) is the last major unpublished, and insufficiently researched, collection of the scholar's correspondence from the early modern era. Stored in Paris, the corpus contains evidence of the Gdańsk astronomer's contacts with astronomers, patrons of the sciences and arts, and other prominent figures of Europe at the time.

The present article covers a section of Hevelius's letters – his correspondence with Michał Antoni Hacki (*ca.* 1630–1703). The information they comprise is an interesting and significant addition to the biographies of the two correspondents, expanding upon and complementing the study of their biographies and achievements. They also provide insight into the mental life of the 17th-century Polish-Lithuanian Commonwealth. I do not discuss each subsequent letter or present them *in extenso*, but focus on their main themes.

Hevelius, Hacki and their letters

Hevelius, an astronomer from Gdańsk, earned respect in the scholarly world with his *Selenographia*, published in 1647 and devoted to observations of the Moon and its cartography. He had his own observatory, considered one of the most sophisticated of the era. For a time he also had a printing plant dedicated to his publications. In 1664, he became a fellow of the Royal Society of London. Around the same time he began to receive a stipend from King Louis XIV of France, although it was paid irregularly and intermittently. He took an active part in the Republic of Letters and his network of contacts with fellow scholars covered most of Europe. In addition to scientific research, he pursued business activities in keeping with his family tradition – he owned a brewery – and also held public offices in Gdańsk. Although the accuracy of his observations and research methods were sometimes criticized, and his observatory was destroyed in a fire in 1679, he was well respected up until his death.¹

¹ Currently, the primary biography of Hevelius is the work of Chantal Grell, published in the first volume of the edition of the Gdańsk astronomer's correspondence: Ch. Grell, "Hevelius en son temps", in: *Correspondance de Johannes Hevelius*, vol. 1: *Prolégomènes critiques*, sous la direction de Ch. Grell (Turnhout, 2014; *De diversis artibus*, vol. 94 [N.S. 57]), pp. 19–144; the Polish edition: ead., *Jan Heweliusz i jego czasy*, tłum. I. Kraszewski (Warsaw–Gdańsk, 2016; *Bibliotheca Heveliana*, vol. 1).

Hacki, the other correspondent, was a Cistercian monk about 20 years younger than Hevelius. In addition to his clerical duties, he was involved in diplomatic and political affairs. In the second half of the 1660s he became involved with the court of Christina, the former Queen of Sweden, to whom he became chaplain and almoner. From the mid-1670s he served with the court of John III of Poland, where he held various official and diplomatic posts. With the King's support, Hacki rose to high positions in his order – he became a coadjutor at Oliwa abbey in 1680, and then the abbot in 1683. His scientific interests have not been thoroughly researched to date.²

Over the years, the prominence of both correspondents grew. This is evident in the letters – in the topics covered and the ways in which they addressed each other. Hevelius was respected in the scientific world, and as time went on, he earned further acknowledgments of his status. Hacki went from being a young monk to a confidant of heads of state.

We know of Hevelius's correspondence with Hacki through the former's collection of letters. To my knowledge, there is no material preserved in the archives related to the friar. The correspondence is incomplete and does not cover the entirety of their contacts. Undoubtedly, the two men had known each other before the first preserved letter was sent. They also occasionally refer to conversations and personal meetings. Few of Hevelius's replies to Hacki's letters have survived, although sometimes, I believe, it can be surmised that there was a reply, but for some reason a copy was not included in the astronomer's archive.

The letters by Hevelius are kept in Paris. The collection consists of two main parts. The first is a corpus of original manuscripts stored in the Library of the Paris Observatory (Bibliothèque de l'Observatoire), containing letters received by Hevelius and copies of the ones he sent. This collection is incomplete, and some of the letters (among them a portion of the astronomer's correspondence with Hacki) are in the National Library (Bibliothèque nationale) in Paris, among other locations. The Bibliothèque nationale also houses the second main part of the astronomer's letters – a copy of the original corpus, sometimes

² K. Piwarski, "Hacki Michał Antoni", in: *Polski słownik biograficzny*, vol. 9, issue 2 [41] (Kraków, 1961), pp. 220–221; Z. Iwicki, *Konwent oliwski (1186–1831)*. *Słownik biograficzny i nie tylko...*, współpraca M. Babnis (Gdańsk–Pelplin, 2010), pp. 66–72.

referred to in the literature on the astronomer as the *grande copie*. In his late years, Hevelius planned to publish the correspondence, so he had it transcribed. The copy contains transcripts, not written by the astronomer's hand, of most of the letters in the main collection. It is incomplete (one volume out of four is missing), and most likely intentionally did not include certain letters.³

The entire body of Hevelius's correspondence contains nearly 2,800 pieces. Both the original collection and the copies are arranged in roughly chronological order – the earliest letters are dated 1630, the latest 1686. The primary language of the astronomer's correspondence is Latin. Some of the letters are also written in other languages, mainly French and German.⁴

The Hevelius–Hacki correspondence amounts to 32 letters. This is a fairly small section of the astronomer's corpus of correspondence, but as a collection of letters exchanged with one person it is a substantial number. It is also the second largest collection of letters exchanged with a Polish correspondent. The largest, with 92 pieces, is the astronomer's correspondence with the anti-Trinitarian émigré Stanisław Lubieniecki (1623–1675).⁵ Next in terms of volume are the following collections: correspondence with Elbląg councilor, writer and historian Gottfried Zamehl (1629–1684, 25 letters), Bishop of Warmia and later of Gniezno Jan Stefan Wydzga (*ca.* 1610–1685,

³ See the discussion of the history of the letters of Hevelius and its status in the first volume of the edition of the correspondence: H. Siebert, “De Dantzig à Paris”, in: *Correspondance de Johannes Hevelius*, vol. 1, pp. 149–178; S. Keyes, “The thefts of Guglielmo Libri (1802–1869) and their consequences”, in: *Correspondance de Johannes Hevelius*, vol. 1, pp. 179–219; ead., “Description of the manuscripts”, in: *Correspondance de Johannes Hevelius*, vol. 1, pp. 221–246. Cf. A. Siemiginowska, J. Urban, “Korespondencja Jana Heweliusza w zbiorach Bibliothèque Nationale i Bibliothèque de l'Observatoire w Paryżu”, *Libri Gedanenses* 1 (1967), pp. 135–138; A. Siemiginowska, “Z korespondencji Jana Heweliusza”, *Rocznik Gdański* 48, issue 1 (1988), pp. 21–26; ead., “The Epistolarian Legacy of Hevelius”, *Organon* 24 (1988), pp. 181–194. Notable letters missing from the *grande copie* are the ones young Hevelius exchanged with his teacher Peter Krüger (1580–1639) (publication of this collection has been planned for several years), see: S. Keyes, K.-D. Herbst, “Chronological List of Letters”, in: *Correspondance de Johannes Hevelius*, vol. 1, pp. 294–297.

⁴ S. Keyes, “General description of the contents”, in: *Correspondance de Johannes Hevelius*, vol. 1, pp. 249–251.

⁵ See the correspondence of Hevelius and S. Lubieniecki: M. Jasiński, *The Correspondence of Johannes Hevelius*, vol. 4: *The Correspondence with Stanisław Lubieniecki* (Turnhout, 2021; *De diversis artibus*, vol. 108 [N.S. 71]).

24 letters) and Tito Livio Burattini, Italian constructor who settled in Poland (1617–1681, 19 letters). The largest sets of Hevelius's correspondence are the exchanges with Queen Louis Marie's secretary Pierre des Noyers (1606–1693, 259 letters), with French astronomer Ismaël Boulliau (1605–1694, 204 letters) and with Royal Society Secretary, Henry Oldenburg (*ca.* 1618–1677, 118 letters).⁶

The letters exchanged between Hevelius and Hacki are very unevenly distributed. The astronomer authored six of them, while the monk penned twenty-six. The writing continued for more than thirty years: the first letter bears the date of 8 March 1654, and the last – 12 February 1685. While this gives an average of about one letter per year, they were not written so regularly. The correspondence can be divided into four phases, preceded by shorter or longer periods of silence. In each of these periods, Hacki acted in a different role.

The first period covers the years 1654–1656, and consists of five letters authored solely by Hacki, who signed them as *professus Oliven-sis*, “Oliwa professed monk”.

Then comes an eight-year gap, and there are two letters from 1664, also sent by Hacki, who puts the title *notarius apostolicus*, “apostolic notary”, next to his affiliation with the Cistercian Order.

The next interval was shorter, but in the meantime Hacki achieved a significant rise in stature. The next exchange begins in 1668 and lasts until 1673, and includes sixteen letters: eleven from Hacki and five

⁶ Data cited after: K.-D. Herbst, “Alphabetical list of the correspondents”, in: *Correspondance de Johannes Hevelius*, vol. 1, pp. 254–275. Collection of letters exchanged between Hevelius and H. Oldenburg have been published (in a multi-volume edition of correspondence: *The Correspondence of Henry Oldenburg*, ed. and transl. by A. R. Hall, M. Boas Hall, vols. 1–10 [Madison–Milwaukee–London, 1965–1976], vols. 11–13 [London–Philadelphia, 1977–1986]), as well as between Hevelius and P. des Noyers (Ch. Grell, *Correspondance de Johannes Hevelius*, vol. 3: *Correspondance avec Pierre des Noyers, secrétaire de la Reine de Pologne, 1646–1686* [Turnhout, 2020; *De diversis artibus*, 106 (N.S. 69)]); there is also astronomer's correspondence with the court of King Louis XIV (ead., *Correspondance de Johannes Hevelius*, vol. 2: *Correspondance avec la cour de France* [Turnhout, 2017; *De diversis artibus*, vol. 99 (N.S. 62)]). Cf. ead., “The Correspondence between Johannes Hevelius and Pierre des Noyers, as the Mirror of Scientific Novelties”, *Kwartalnik Historii Nauki i Techniki* 64, issue 1 (2019), pp. 117–123; D. Mallet, “Pierre des Noyers, a Scholar and a Courtier”, *Kwartalnik Historii Nauki i Techniki* 64, issue 1 (2019), pp. 139–146; J. Włodarczyk, “‘Peripheral’ Astronomy in the Correspondence of Johannes Hevelius: A Case Study of Maria Cunitia and Elias von Loewen”, *Kwartalnik Historii Nauki i Techniki* 64, issue 1 (2019), pp. 147–155.

from Hevelius. Hacki stayed mainly in Hamburg during this period, in the court of Christina, the Queen of Sweden. Hence the title with which he usually signs the letters: “ESCRS”, or *elemosynarius serenissimae Christinae, reginae Sueciae* – “almoner of the most glorious Christina, Queen of Sweden”. In his final letter from this period, Hacki also notifies Hevelius that he has become abbot of the Kolbatz (Kołbacz) monastery in West Pomerania.⁷

Ten years passed until the correspondence was resumed. Nine letters come from 1683–1685: eight from Hacki (three of which are invitations to various ceremonies at the Oliwa abbey) and one by Hevelius. In 1683, Hacki became abbot of Oliwa, and that is the title – *abbas Olivensis* or *abbas Olivae* – he uses to sign the letters. In addition, he was royal secretary and commissioner for the pile fee, a tax levied on ships and goods in the port of Gdańsk, half of which went to the royal budget.⁸ He also refers to these functions when signing his letters.

Past research on the correspondence

Hevelius’s correspondence with Hacki has so far been used only marginally by researchers. Karolina Targosz drew on it her description of the scholarly contacts of the court of John III Sobieski.⁹ Although the results of her research remain fundamental to this topic, the description of contacts between Hevelius and Hacki was not K. Targosz’s primary goal. She discussed only a section of the collection, which was connected with the reign of John III. In addition, she did not use all the sources, so in this article I will fill in some important elements of the picture she presented. The basis of her research was the *grande copie* of the correspondence from the Paris National Library.

⁷ Bibliothèque de l’Observatoire de Paris (hereinafter cited as BO), *Correspondance de Johannes Hevelius*, C1, vol. 11, 1616/134, Hevelius to Hacki, 31 October 1673.

⁸ M. Foltz, *Geschichte des Danziger Stadthaushalts* (Danzig, 1912), pp. 212–215; Cz. Biernat, “Życie portowe Gdańska w XVII–XVIII wieku”, in: *Szkice z dziejów Pomorza*, vol. 3: *Pomorze nowożytne*, red. G. Labuda, S. Hoszowski (Warszawa, 1959), p. 226.

⁹ K. Targosz, *Jan III Sobieski mecenasem nauk i uczonych*, 1st edn. (Wrocław–Warszawa–Kraków, 1991; Monografie z dziejów nauki i techniki, vol. 149), pp. 308–357, 2nd edn. (Warszawa, 2012), pp. 536–623.

Of the nine letters from the period 1683–1685, only two made it into the copied collection, and these are less significant for Hevelius's contacts with Hacki and the court of John III.¹⁰

1654–1656 period: Hacki's young years

Even the first surviving letter of the collection discussed, sent by Hacki on 8 March 1654, indicates that the contacts went beyond what can be gleaned from the messages. For almost two-thirds of the text, the sender praises the addressee, emphasizing his virtues and achievements, as well as the respect he enjoys among scholars throughout Europe. Having only prepared the ground in this way, he gets to the point and asks if he can keep the book that Hevelius lent him for a longer period of time.¹¹ We are not familiar with the astronomer's letters to Hacki from this period, but it is likely that the permission, at least tacit one, was granted, since almost three months later the monk returns the book along with another letter. He indicates that he treated the book with the utmost respect and the damage could only have occurred by accident.¹²

Hevelius, as is to be expected, already had a library in the mid-1650s, and the example cited shows that he sometimes permitted others to use it. We do not know under what circumstances he met Hacki and the exact nature of their relationship during this period. Perhaps a study of Hevelius's contacts with correspondents in Gdańsk will allow one to paint a broader picture and determine whether lending books to youths was the astronomer's standard behavior, or whether Hacki enjoyed special favors.

What we are almost sure of, however, is the title of the volume Hacki borrowed from Hevelius. It was not an astronomical study, but one on music. Its title is not mentioned in the letter, but the words Hacki uses to describe it lead one to surmise what book he was referring to. It was a *liber musurgicus*, which in my opinion clearly suggests the work of Jesuit polymath Athanasius Kircher (1602–1680) *Musurgia universalis*, published in Rome in 1650.¹³ I infer

¹⁰ Keyes, Herbst, "Chronological List", pp. 511–521.

¹¹ BO, C1, vol. 3, 396, Hacki to Hevelius, 8 March 1654.

¹² BO, C1, vol. 3, 397, Hacki to Hevelius, 29 May 1654.

¹³ For more on this book and on music regarding A. Kircher, see E. Knobloch, "Musurgia Universalis: Unknown Combinatorial Studies in the Age of Baroque

this from the adjective *musurgicus*. The word *musurgia*, derived from Greek, is quite rare. It is unattested in Classical Latin,¹⁴ and in Greek it appears earliest in the works of Lucian of Samosata (2nd century AD). As its construction suggests, it means dealing with the creations of the Muses, i.e. singing and poetry.¹⁵ Also in later Latin, the word was not common. I was able to find only one other work from the first half of the 17th century that uses it in the title: the French poet Sébastien Rouillard (d. 1639) used the word to describe his poems published in 1605.¹⁶ Moreover, we also know that Hevelius had met A. Kircher as far back as during his student *grand tour*, taken in 1630–1634, and that the two later corresponded.¹⁷ This fact, and Hacki's use of such a rare expression, rather rules out the possibility that he borrowed another book on music, which he referred to by the uncommon term.

The evidence that Hacki was interested in writings on music dovetails with studies that indicate his familiarity with the field. In a study of music at Oliwa Abbey, Jan Janca points out that the 18th-century composer Johann Mattheson (1681–1764), in his work on German musicians, *Grundlage einer Ehren-Pforte, woran der Tüchtigsten Capellmeister, Componisten, Musikgelehrten, Tonkünstler &c. Leben, Wercke, Verdienste &c. erscheinen sollen* (Hamburg 1740) cites information about a certain Abbot of Oliwa who was said to compose music. The abbot is not mentioned by name, but the circumstances suggest that he was actually Hacki. According to the author, he was a student of Pietro Marc'Antonio Cesti (1623–1669), an Italian composer. The latter had ties with the court of

Absolutism”, *History of Science* 17, issue 4 (1979), pp. 258–275; M. Murata, “Music History in the *Musurgia universalis* of Athanasius Kircher”, in: *The Jesuits: Cultures, Sciences, and the Arts, 1540–1773*, eds. J. W. O'Malley, G. A. Bailey, S. J. Harris, T. F. Kennedy (Toronto–Buffalo–London, 1999), pp. 190–207; J. Z. McKay, “Musical Curiosities in Athanasius Kircher's Antiquarian Visions”, *Music in Art* 40, issue 1/2 (2015), pp. 157–172; J. Levenberg, “Worth the Price of the *Musurgia universalis*: Athanasius Kircher on the Secret of the ‘metabolic style’”, *Recreate* 28, issue 1/2 (2016), pp. 43–88.

¹⁴ The word is not recorded by the *Oxford Latin Dictionary*, ed. P. G. W. Glare (Oxford, 1996).

¹⁵ *A Greek-English Lexicon*, compiled by H. G. Liddell, R. Scott (Oxford, 1996), s.v. μουσουργία.

¹⁶ Sebastiani Rolliardi [...] *Agrocharis* [...]. *Adiecta sunt et IX eiusdem Rolliardi Musurgia* (Parisiis, 1605).

¹⁷ Grell, “Hevelius”, pp. 58–59; ead., *Jan Heweliusz i jego czasy*, pp. 84–85.

Christina of Sweden, which the monk was affiliated with.¹⁸ We should keep in mind that this is a presumption, although J. Janca points out that later 18th-century musicological studies contain information about Hacki's studies with P. M. Cesti as well.¹⁹ He also makes a conjecture as to where the would-be abbot may have first encountered the study of music. From 1647 he studied at the Jesuit college in Braniewo, where the theologian and composer Szymon Berent (1585–1649) was the rector.²⁰ Correspondence with Hevelius is another indication of Hacki's interest in music at an early age.

The correspondence yields another addendum to what is known about the young Hacki. During the war with Sweden (in the Polish historiography called the "Deluge"), in September 1655, five professed monks from Oliwa were sent incognito to Belgium by sea, via Amsterdam. These were Albericus Uberlender, Martin Schulz, Gregorius Eichelbrenner, Petrus Werner (d. 1665)²¹ and Hacki. Three of them were ordained in Belgium, including Hacki, who may have earned a doctorate degree in theology at the same time.²² Hevelius's correspondent stayed in Belgium for five years, and he sent the 1656 letters to the Gdańsk astronomer's from St. Bernard's Monastery in Antwerp.²³

The journey was a perilous one, compounded by dangers at sea. The chronicles of the Oliwa Abbey, published in the second decade of the 20th century, conclude the passage about the departure of the monks with the remark: *pericula, quae in mari perpessi sunt, ab ipsis*

¹⁸ J. Janca, "Beiträge zur Geschichte der katholischen Kirchenmusik in Westpreußen und im Ermland. I. Zur Musikgeschichte des Klosters Oliva bei Danzig von 1224–1831", *Musik des Ostens* 12 (1992), pp. 38–40; in Polish: id., *Zarys historii muzyki w klasztorze oliwskim w latach 1224–1831* (Gdańsk, 1991; Kultura muzyczna północnych ziem Polski, issue 5), pp. 40–42.

¹⁹ Id., "Beiträge zur Geschichte", p. 41; id., "Zarys historii muzyki", p. 44.

²⁰ Id., "Beiträge zur Geschichte", p. 39; id., "Zarys historii muzyki", p. 41; Iwicki, *Konwent oliwski*, p. 66.

²¹ Other than the date of death of P. Werner the years of life of the other Hacki confraters are unknown, see *ibid.*, pp. 262, 429–430, 458, 467–468.

²² *Annales monasterii Olivensis ord. cist. aetate posteriores*, fasciculus 2, curavit P. Czaplewski (Toruni, 1917), p. 331; Iwicki, *Konwent oliwski*, p. 67.

²³ Bibliothèque nationale de France (hereinafter cited as BnF), MS. NAF 5856, *Lettres Autographes de Savants et d'Erudits du XVII^e et du XVIII^e Siècle*, f. 110rec.–ver., Hacki to Hevelius, 4 February 1656; BO, C1, vol. 4, 489, Hacki to Hevelius, 17 July 1656.

*aliquando commodius addi poterunt.*²⁴ And although the chronicle does not elaborate on this topic, we find a description of the journey in Hacki's letter to Hevelius:

Ad initium Sept[embris] Anni praeteriti navi conscensa non adeo faventibus Aeolo ac Neptuno progressus fui, utpote in proximo naufragii periculo constitutus et alias pene continuo repugnantibus Ventis provectus lustrata Norvegia quaterna hebdomade denique 11 Novemb[ris] Amstelodamum appuli, unde Holandia et Zeelandia peragrata Brabantiam ingressus prope eius Metropolim, Antverpiam intelligo, consedi, ac etiamnum quiesco.²⁵

Hacki's use of the singular may be puzzling. He does not mention in the letter that other monks took part in the voyage. I think that it can be assumed that Hevelius was not familiar with the other monks from Oliwa, so Hacki wrote only about himself.

The first period of Hevelius's correspondence with Hacki does not contain any matters concerning astronomy or even science in general, except for music. In my opinion, it is reasonable to assume that Hevelius did not ignore the young monk's letters, and their contacts at this time were not one-sided. Perhaps, however, he did not consider his own replies important enough to copy and archive them.

²⁴ *Annales monasterii Olivensis*, p. 331, "The dangers they faced at sea and which one day they will be able to describe here themselves".

²⁵ BnF, MS. NAF 5856, f. 110rec., Hacki to Hevelius, 4 February 1656, "In early September of last year I sailed away by ship accompanied by the unfavorable Aeolus and Neptune, and finding myself in imminent danger of sinking, and, moreover, constantly repelled by adverse winds, I reached Norway. Then, finally, after four weeks, on 11 November I arrived in Amsterdam, from where, having traversed Holland and Zeeland, I entered Brabant and stopped near its metropolitan city, that is, Antwerp, and am still resting". In transcribing the manuscripts, I follow the principles adopted in the publishing series of the correspondence of Hevelius; see the description in the most recent published volume: M. Jasiński, "Introduction", in: id., *The Correspondence of Johannes Hevelius*, vol. 4, p. 93. I maintain the original spelling, punctuation, and lowercase and uppercase characters, with the following exceptions: I omit diacritics; I standardize the writing of the letters "u" and "v" according to modern spelling rules; I put the letter "j" at the beginning of a word if it comes before a vowel (except for "i"), and replace it with the letter "i" in all other cases. I expand abbreviations in square brackets. I deviate from the rules adopted in the edited correspondences in two situations: I do not mark deletions and corrections in the manuscripts (they would not affect the meaning of any of the cited passages); I do not indicate page breaks in the manuscript.

1664: a book for provost Gotard Franz Schaffgotsch

No replies or traces of other reactions to the letters Hacki sent Hevelius in 1664, the second period of their correspondence, have survived. In July of that year, the friar contacted the astronomer at the request of Gotard Franz Schaffgotsch (1629–1668), a Wrocław provost and member of an influential Silesian magnate family.²⁶ He wrote that the latter was assembling a library in which he already had *Selenographia* by Hevelius and would like to receive his *Cometographia* as well.²⁷ Hevelius could not offer the latter work in 1664, because although he was already working on it and even began printing the book, he was significantly delayed by the comets of 1664 and 1665, for the study and description of which he halted the publishing process. The book was ultimately published in 1668.²⁸ There is no circumstantial evidence that Hevelius responded to Hacki's letter, which he wrote on behalf of the prominent individual. In the Gdańsk astronomer's correspondence there are no letters exchanged with G. F. Schaffgotsch, but only with his older brother, Christoph Leopold (1623–1703), but these come from 1679 and 1684.²⁹ Hevelius was very careful to be on good terms with potential influential patrons, so one might expect that he would have responded to Hacki or established communication with the Wrocław provost.³⁰

After G. F. Schaffgotsch passed away, his book collection was transferred to the Chapter Library in Wrocław, where it remains to this day. It was documented by Wincenty Urban.³¹ The scholar,

²⁶ W. Urban, "Gotard Franciszek Schaffgotsch, prepozyt kapituły wrocławskiej, jako bibliofil XVII wieku", *Colloquium Salutis. Wrocławskie Studia Teologiczne* 13 (1981), pp. 41–49.

²⁷ BnF, MS. NAL 1640, *Correspondance de Hevelius. II, G–N*, f. 29rec.–ver., Hacki to Hevelius, 2 July 1664.

²⁸ Grell, "Hevelius", pp. 99–107; ead., *Jan Heweliusz i jego czasy*, pp. 151–164; M. Jasiński, "Introduction", p. 43.

²⁹ Herbst, "Alphabetical list", p. 271.

³⁰ K. Targosz, "Jana Heweliusza zabiegi o pozyskanie królewskich mecenasów", *Studia i Materiały z Dziejów Nauki Polskiej*, series E, 6 (1977), pp. 121–164. See also a detailed discussion of Hevelius's contacts with the court of Louis XIV, largely concerning the stipend paid by the Sun King: Ch. Grell, "Introduction", in: ead., *Correspondance de Johannes Hevelius*, vol. 2, pp. 7–135; in Polish: ead., *Jan Heweliusz i dwór francuski* (Warszawa–Gdańsk, 2020; Bibliotheca Heveliana, vol. 3).

³¹ Urban, "Gotard Franciszek Schaffgotsch", pp. 50–150.

however, did not find *Selenographia* among the provost's books. Instead, he mentions two other works by Hevelius that are part of the collection – *Mercurius in Sole visus* (Gedani 1662) and *Descriptio cometae* (Gedani 1666).³² The former is said to contain information that it was donated to G. F. Schaffgotsch by the author, so it cannot be ruled out that Hevelius, having been asked for a book on comets but not having completed it yet, sent the provost his last publication. The second book, *Descriptio cometae*, was supposedly given to the provost, but not by the author himself. The current state of research of the collection of the Wrocław Chapter Library does not allow us to conclude – but also to exclude – whether Hevelius's *Selenographia* and *Cometographia* were among the books donated by G. F. Schaffgotsch.³³ Their absence could suggest that the astronomer from Gdańsk deemed the search for patrons and sponsors in Wrocław to be a rather unpromising endeavor.

There is also no record of Hevelius replying to Hacki's second letter of 1664, sent in December. This is the first letter dealing with astronomical matters in the entire collection, as it contains information about a recent observation of a comet by Gerard van Gutschoven (1615–1668), a professor of mathematics and anatomy in Leuven.³⁴

1668–1672: Hacki at the court of Christina of Sweden

The correspondence of Hevelius and Hacki is lacking not only the former's response to the requests to send the book to G. F. Schaffgotsch. In letters written in April 1670 from Rome, the Oliwa abbey monk, already having found a place in the entourage of Christina of Sweden at the time, describes to the astronomer his meeting with mathematician and philosopher Juan Caramuel y Lobkowitz (1606–1682), who would like to receive a copy of *Cometographia*.³⁵ There is no mention that Hevelius fulfilled this request.³⁶

³² Ibid., p. 97.

³³ I would like to thank Fr. Paweł Andrejczuk of Archdiocesan Archives and Chapter Library in Wrocław for providing this information.

³⁴ BnF, MS. NAL 1640, f. 30rec.–ver., Hacki to Hevelius, 28 December 1664.

³⁵ BO, C1, vol. 9, 1361/1361bis, Hacki to Hevelius, 19 April 1670; BO, C1, vol. 9, 1360/1360bis, Hacki to Hevelius, 26 April 1670.

³⁶ Although Hevelius corresponded with J. Caramuel y Lobkowitz for nearly a quarter of a century (1650–1674), they exchanged only 8 letters, the majority before 1661; and there are only two letters from the period following Hacki's

Reading Hevelius's correspondence, one sometimes gets the impression that he shied away from sharing his discoveries, research results and findings. Some examples of such an attitude can be found in other letters by Hacki from this period. The first concerns a plemoscope. This instrument operated on a principle similar to today's periscopes, and was described by Hevelius in *Selenographia* and dedicated to King Ladislaus IV of Poland, who received copies of both the device and the book.³⁷ For an undisclosed reason, Hacki was very keen to learn more about the plemoscope. In May 1668, he asked Hevelius to give him additional explanations and expand on the description presented in *Selenographia*, with details of the lens sizes and the distance between lenses and the mirrors. This was not casual curiosity, but genuine interest – Hacki specified that he did not necessarily expect a written explanation, but that the astronomer could pass this information on to his brother, Jan Franciszek (1637–1696), a Jesuit priest and lecturer at the college in Stare Szkoty near Gdańsk.³⁸ The astronomer must not have responded to the friar's request, because Hacki reiterated it more than two years later, in September 1670, again asking about the necessary lenses and other details of the plemoscope's construction.³⁹ It is interesting, by the way, that the letter begins with a reminder that during his last visit to Gdańsk, Hacki briefly spoke with Hevelius. Perhaps the meeting was too fleeting to discuss matters of instrument construction.

In November 1671, Hacki asked the astronomer to give him some pointers on the construction of large telescopes. He did not explain exactly why he needed this knowledge. The letter does mention some paradox that Hevelius had presented to Hacki at their last face-to-face meeting, which the latter would like to solve; however, the lack of context makes it impossible to say whether this was an issue related to telescopic observations.⁴⁰ There is no doubt, however, that the friar cared deeply about this information, because within a week he sent Hevelius two more letters repeating the question.⁴¹

request, dated 1673–1674; Herbst, "Alphabetical list", p. 257; Keyes, Herbst, "Chronological List", pp. 316–439.

³⁷ Targosz, "Jana Heweliusza zabiegi", pp. 123–131.

³⁸ BnF, MS. NAL 1640, f. 31rec.–ver., Hacki to Hevelius, 15 May 1668.

³⁹ BO, C1, vol. 10, 1409/28, Hacki to Hevelius, 19 September 1670.

⁴⁰ BO, C1, vol. 11, 1483/8, Hacki to Hevelius, 24 November 1671.

⁴¹ BO, C1, vol. 11, 1502/28, Hacki to Hevelius, 27 November 1671; BO, C1, vol. 11, 1503/29, Hacki to Hevelius, 1 December 1671.

One gets the impression that Hacki wanted to be absolutely sure that it would reach the addressee and be acknowledged, but it should also be noted that at the time he was acting as an intermediary in forwarding other letters to the Gdańsk astronomer, and perhaps he thought it worthwhile to remind him of the question on this occasion. Hevelius replied in January 1672, stating that if he had been sure that Hacki had the right lenses, he would have sent him an instruction on how to construct a telescope. But since he does not have them, he can calmly wait for the publication of *Machina coelestis*: the first volume of that work, *Machinae coelestis pars prior* (Gedani 1673), contains a richly illustrated discussion of Hevelius's observational instruments.⁴² The astronomer wrote that he would send him a copy as soon as it was printed.⁴³

It seems that Hevelius did not attach much importance to this promise. Almost two years later, in October 1673, Hacki repeated his question about the construction of telescopes and inquired about the book the astronomer had promised him.⁴⁴ The latter replied that it had already been published and that Hacki would learn from it the answer to his question. However, he did not explicitly state whether he was sending him a copy.⁴⁵

On some occasions, other correspondents also asked Hevelius for sharing data before their publication. In such instances, he also declined to answer, remarking that they would be available in a book in progress. This was the case with S. Lubieniecki, to whom the astronomer did not send observations of comets from 1664 and 1665 for the *Theatrum cometicum* (Amstelodami 1667), and whom he referred to lesser writings on these phenomena and to the *Cometographia*, in preparation at the time.⁴⁶ He reacted in the same manner to a request from Zamość astronomer and astrologer Stanisław Niewieski (d. 1699), who asked for star positions needed for his predictions and was referred to a planned catalog of stars.⁴⁷

Hacki's letters from that period further reveal that he was approached by Swedish astronomer and mathematician Anders Spole

⁴² I. Kampa, *Die astronomischen Instrumente von Johannes Hevelius* (Hamburg, 2018; Nuncius Hamburgensis – Beiträge zur Geschichte der Naturwissenschaften, vol. 47), pp. 81–84.

⁴³ BO, C1, vol. 11, 1484/9, Hevelius to Hacki, 23 January 1672.

⁴⁴ BO, C1, vol. 11, 1616/134, Hacki to Hevelius, 31 October 1673.

⁴⁵ BO, C1, vol. 11, 1618/136, Hevelius to Hacki, 25 November 1673.

⁴⁶ M. Jasiński, "Introduction", pp. 42–43.

⁴⁷ BO, C1, vol. 12, 1760/86, Hevelius to S. Niewieski, 16 April 1677.

(1630–1699). Hacki writes that he had known the man before, and now learned that he had become a professor at the newly established university in Lund. A. Spole wanted to acquire Hevelius's works, and was assembling equipment for his new workplace. Hacki relays that the Swedish scholar found a wooden quadrant he had constructed inadequate due to deformation of the material, and is now working on a new one, made of metal and equipped with telescopes.⁴⁸

That claim, possibly unbeknownst to Hacki, struck a nerve with Hevelius. He was the last prominent astronomer to conduct observations with positional instruments – quadrants, sextants and other devices used to determine the position of celestial bodies in the firmament – not fitted with telescopes, but with sight-vanes.⁴⁹ He had a well-established opinion on this type of apparatus and believed that instruments with vanes were more precise than those with telescopes. This was the cause of a dispute over the exactness of his observations, which he got into after the publication of *Machinae coelestis pars prior*. Hevelius's research method was criticized by Robert Hooke (1635–1703), an English scientist and experimentalist and fellow of the Royal Society. The latter, in his work titled *Animadversions on the First Part of the Machina Coelestis* (London 1674), accused the astronomer that he would have obtained much more accurate results by using telescope-equipped instruments. This view was shared by other scholars, including John Flamsteed (1646–1719), the first English astronomer royal. And although the accuracy of Hevelius's instruments and observations was confirmed by Edmond Halley (1656–1742), who visited him in Gdańsk in 1679, the astronomer's conviction that telescopes were ineffective was a thing of astronomy's past.⁵⁰

With Hevelius's view of positional instruments fitted with telescopes in mind, his response to Hacki comes as no surprise:

⁴⁸ BO, C1, vol. 11, 1483/8, Hacki to Hevelius, 24 November 1671.

⁴⁹ P. Rybka, *Instrumentarium astronomiczne Heweliusza (geneza i rozwój konstrukcji)* (Wrocław et al., 1987; Monografie z dziejów nauki i techniki, vol. 139), pp. 66–68.

⁵⁰ J. Vertesi, "Instrumental images: the visual rhetoric of self-presentation in Hevelius's 'Machina Coelestis'", *The British Journal for the History of Science* 43, issue 2 (2010), pp. 209–243; V. Saridakis, "The Hevelius–Hooke Controversy in Context: Transforming Astronomical Practice in the Late Seventeenth Century", in: *Johannes Hevelius and His World. Astronomer, Cartographer, Philosopher and Correspondent*, eds. R. L. Kremer, J. Włodarczyk (Warsaw, 2013; Studia Copernicana, vol. 44), pp. 103–135; Grell, "Hevelius", pp. 108–117; ead., *Jan Heweliusz i jego czasy*, pp. 165–178; Kampa, *Die astronomischen Instrumente*, pp. 137–148.

Laetor D[ominum] Andream Spohle Londini Scanorum Quadrantem ferreum pro observationibus Caelestibus adornare, sed dioptris illis Telescopi-
cis, ut ut illae nonnullis valde arrideant, profecto metam non attinget,
prout suo loco commonstrabitur. Qui Theoriae solummodo et non praxi
operam dant, hisce pinnacidiis, aureos Montes sibi pollicentur, sed, credo,
res ipsa non respondebit votis.⁵¹

There is no surviving proof that Hevelius kept up a correspondence with A. Spole.⁵² However, it should be noted that his reply to Hacki reveals that even before the conflict with R. Hooke and J. Flamsteed, the Gdańsk astronomer was ready to argue with the proponents of instruments with telescopes as sighting devices.

Hacki had several opportunities to remind Hevelius of his question about the construction of telescopes, as he acted as an intermediary in forwarding other letters to the astronomer. He helped deliver to Gdańsk the correspondence of French astronomer Jean Picard (1620–1682), who in 1671 traveled to the island of Hven, via Hamburg, to determine the exact geographic coordinates of the former observatory of Tycho Brahe (1545–1601).⁵³ The letters of Hevelius and J. Picard have already been published and commented on by Guy Picolet,⁵⁴ so I shall only point out that this topic is present in Hevelius's correspondence with Hacki.

⁵¹ BO, C1, vol. 11, 1484/9, Hevelius to Hacki, 23 January 1672, "I am glad that Master Anders Spole in Lund is constructing an iron quadrant for sky observation, but with these telescopic sights, however much they appeal to many, will certainly not achieve the goal, as I will prove in due course. For those who are only concerned with theory, not practice, such sighting instruments hold a lot of promises, but I believe that reality will not live up to expectations".

⁵² He is absent from: Herbst, "Alphabetical list", pp. 254–275.

⁵³ T. Brahe was a Danish aristocrat and astronomer who, with the financial support of King Frederick II, conducted observations for many years at his estate on the island of Hven (today: Ven) in the Sound Strait. Conflicted with the entourage of Christian IV, Frederick II's successor, he left Denmark and settled in Prague as an imperial astronomer at the court of Rudolf II. He was an opponent of the Copernican system and he authored his own model of the Universe, widely adopted by opponents of heliocentrism in the following century. He left behind a rich collection of accurate observations, based on which his assistant and successor, Johannes Kepler (1571–1630), discovered the laws of planetary motion. See: V. E. Thoren, *The Lord of Uraniborg. A Biography of Tycho Brahe*, with contribution by J. R. Christianson (Cambridge et al., 1990).

⁵⁴ G. Picolet, "La correspondance de Jean Picard avec Johann Hevelius (1671–1679). Edition et traduction française", *Revue d'histoire des sciences* 31, issue 1 (1978), pp. 3–42; see also: Grell, "Hevelius", p. 110; ead., *Jan Heweliusz i jego czasy*, pp. 166–167.

According to Hacki's letter of August 1671, he was the one to persuade J. Picard to contact Hevelius.⁵⁵ The topic of correspondence with the French astronomer continues through the letters for half a year – Hevelius mentioned it for the last time in January 1672, when he wrote that he had not yet received a reply from J. Picard.⁵⁶ As many as four of Hevelius's six surviving letters to Hacki date from this six-month period, and the correspondence with the French astronomer is a featured topic in all of them, and the main subject for most of them. Hevelius replied to the friar's first letter just ten days after it had been posted.⁵⁷ On the same day he sent a letter to J. Picard at the specified Hamburg address.⁵⁸ When Hacki forwarded another letter from the Frenchman to the Gdańsk scholar in early September and asked if he had received the previous one,⁵⁹ Hevelius became noticeably concerned; he confirmed that he had replied and instructed Hacki to contact the Hamburg intermediary – he wrote that just eight days after the letter was posted in Hamburg.⁶⁰ After nine more days, Hacki confirmed that the letters had reached their destination.⁶¹

Hevelius's correspondence with J. Picard was quite brief and did not progress as the former would have liked. However, Hevelius's behavior clearly indicates that he was particularly eager to establish and maintain contact with the French scientist. Ch. Grell points out that this took place shortly after Hevelius's dispute with Adrien Auzout (1622–1691) over the accuracy of cometary observations,⁶² and adds, after G. Picolet, that Hevelius may have alienated J. Picard by questioning his and Giovanni Domenico Cassini's (1625–1712) measurements.⁶³ Picard's reluctance to enter into another polemic with the Gdańsk astronomer may have played a role in severing their correspondence.

⁵⁵ BnF, MS. NAL 1640, f. 32rec.–ver., Hacki to Hevelius, 18 August 1671.

⁵⁶ BO, C1, vol. 11, 1484/9, Hevelius to Hacki, 23 January 1672.

⁵⁷ BO, C1, vol. 10, 1452/89, Hevelius to Hacki, 28 August 1671.

⁵⁸ Picolet, "La correspondance de Jean Picard", pp. 9–10.

⁵⁹ BO, C1, vol. 10, 1453/90, Hacki to Hevelius, 8 September 1671.

⁶⁰ BO, C1, vol. 10, 1455/93, Hevelius to Hacki, 16 September 1671.

⁶¹ BO, C1, vol. 10, 1461/100, Hacki to Hevelius, 25 September 1671.

⁶² A. Auzout, a French astronomer, in February 1665 accused Hevelius of inaccuracy in his observations of the comet in late 1664/early 1665 (C/1664 W1) and erroneous inferences about its trajectory. Despite Hevelius's fierce defense, the opinion of the academic community did not agree with him. See: Grell, "Hevelius", pp. 99–107; ead., *Jan Heweliusz i jego czasy*, pp. 151–164.

⁶³ Picolet, "La correspondance de Jean Picard", pp. 13–14; Grell, "Hevelius", pp. 110–112; ead., *Jan Heweliusz i jego czasy*, pp. 166–169.

It should be mentioned that Hacki wrote about sky observations in his letters to Hevelius from this period. Notifying Hevelius of his meeting with J. Picard, he mentioned that the latter told him about a recently spotted sunspot, which they later watched together.⁶⁴ The sunspots must have intrigued Hacki, as he later relayed that he had observed them himself.⁶⁵

The presence of sunspots was discovered in the early years of the application of the telescope to astronomical research, at the turn of the first decade of the 17th century. Galileo Galilei (1564–1642) and Jesuit astronomer Christoph Scheiner (1573 or 1575–1650) argued over the priority of the discovery.⁶⁶ Shortly thereafter, the sunspots disappeared. The years 1645–1715 mark the Maunder Minimum – a period of significant decline in solar activity; one of the visible symptoms of which was the much less frequent appearance of sunspots. The period was named after the British astronomer Edward Walter Maunder (1851–1928), one of the first to notice the reduction in solar activity recorded in historical observational data.⁶⁷ For this reason, the observation of a spot on the Sun was considered an unusual phenomenon at the time and caught the eye of J. Picard and Hacki.

Despite the fact that Hevelius had been conducting observations of sunspots for many years,⁶⁸ he was not particularly impressed by Hacki's message. He brushed off his remarks:

⁶⁴ BnF, MS. NAL 1640, f. 32rec.–ver., Hacki to Hevelius, 18 August 1671.

⁶⁵ BO, C1, vol. 10, 1453/90, Hacki to Hevelius, 8 September 1671; BO, C1, vol. 10, 1461/100, Hacki to Hevelius, 25 September 1671.

⁶⁶ See: G. Galilei, Ch. Scheiner, *On sunspots*, transl. and introd. by E. Reeves, A. Van Helden (Chicago–London, 2010).

⁶⁷ J. A. Eddy, "The Maunder Minimum", *Science* 192, issue 4245 (1976), pp. 1189–1202; R. Rek, "Observacje plam słonecznych w wieku XVII", *Kwartalnik Historii Nauki i Techniki* 50, issue 3/4 (2005), pp. 231–238; G. Parker, *Global crisis. War, climate change and catastrophe in the seventeenth century* (New Haven–London, 2013), pp. 12–14.

⁶⁸ R. Rek, "Hevelius's Sunspot Observations", in: *Johannes Hevelius and His World*, pp. 81–102; V. M. S. Carrasco, J. Villalba Álvarez, J. M. Vaquero, "Sunspots During the Maunder Minimum from Machina Coelestis by Hevelius", *Solar Physics* 290, issue 10 (2015), pp. 2719–2732; V. M. S. Carrasco, J. M. Vaquero, M. C. Gallego, A. Muñoz-Jaramillo, G. de Toma, P. Galaviz, R. Arlt, V. Senthamizh Pavai, F. Sánchez-Bajo, J. Villalba Álvarez, J. M. Gómez, "Sunspot Characteristics at the Onset of the Maunder Minimum Based on the Observations of Hevelius", *The Astrophysical Journal* 886, issue 1 (2019), 18.

Maculam Solarem illam hucusque non animadverti: siquidem illis secundariis phaenomenis, ut quidem olim a me factum est, invigilare modo nequeo; Primaria Caeli corpora, utpote Fixae et Planetae, (quorum maior habenda cura est), tantum mihi facessunt negotii, ut vix solus illis omnibus par sim.⁶⁹

He added that on 16 and 30 September as well as on 2 October he did not notice any sunspots.⁷⁰ Hevelius, as can be surmised from this passage, considered the main task of astronomy to be the study of the movements of the sky – the constant movements of the stars and the irregular movements of the planets – and therefore did not want to pay undue attention to other matters. However, it should be noted that in 1671, the year of the letter in question, he conducted observations of sunspots, published in a collection of his studies in *Machinae coelestis pars posterior* (Gedani 1679). He noticed the spots on 9 August and 5 September that year, and their absence on the days mentioned in the letter to Hacki.⁷¹

Despite Hevelius's lack of enthusiasm, Hacki informed him in a subsequent letter that he had not observed any more sunspots, from which it should be inferred that the ones previously described had disappeared.⁷² The subject did not reappear in their later correspondence.

1683–1686: Hacki as the abbot

In the final phase of their correspondence, in the 1680s, Hacki's position definitely outweighs that of Hevelius. As the abbot of Oliwa and, above all, the King's secretary, with direct access to the ear of John III, he was able to assist, more and less discreetly, individuals he wished to support.

⁶⁹ BO, C1, vol. 10, 1462/101, Hevelius to Hacki, 10 October 1671, "I have not yet noticed this sunspot; I cannot now deal with such secondary phenomena as much as I used to do; the primary celestial bodies, such as the fixed stars and planets (which should receive more attention), give me so much work that I can hardly handle them all by myself".

⁷⁰ Ibid.

⁷¹ J. Hevelius, *Machinae coelestis liber tertius*, in: id., *Machinae coelestis pars posterior* (Gedani, 1679), p. 21, PAN Biblioteka Gdańska, Ta 2562 2°, accessed on 15 February 2015 in Pomorska Biblioteka Cyfrowa, <https://pbc.gda.pl/dlibra/doccontent?id=10533>; cf. Carrasco et al., "Sunspot Characteristics", p. 2731.

⁷² BO, C1, vol. 11, 1483/8, Hacki to Hevelius, 24 November 1671.

Hacki became abbot in 1683. He had previously served as coadjutor, and was thrust into the new office by John III, against local opposition who preferred to see a Prussian nobleman in that post.⁷³ One of the letters of the collection from this period is an invitation to the funeral of Krzysztof Łoknicki (d. 1683), Hacki's predecessor in office. The ceremony was organized by the new abbot, who, as he writes, "took upon himself the duty of directing the Oliwa Abbey".⁷⁴ The invitation was a secretarial letter, not written in Hacki's hand, only signed by him. Hevelius's correspondence contains two more similar invitations from Oliwa. We can assume that there were more, but only a handful were included in the astronomer's collection of letters.

Hevelius also enjoyed the favors of John III Sobieski. From 1677 he bore the title of "royal astrologer and mathematician", and above all received an annual salary of 1,000 florins from the King, paid from the revenues of the port of Gdańsk. He expressed his gratitude in 1679 when, in the second part of *Machina coelestis*, he named a group of not very impressive but as yet unnamed stars as "Sobieski's Stars", *Stellae Sobieckianae*. The King further earned Hevelius's gratitude when, after the Gdańsk observatory was destroyed in a fire along with the astronomer's houses in September 1679, he granted him additional financial support. The Battle of Vienna in 1683 was an occasion to return the favor; after the battle Hevelius, in honor of the King as a defender of Christianity, designated the constellation of Sobieski's Shield, *Scutum Sobiescianum*.⁷⁵ The name referred both to the triumph over the Turks and to the Sobieski family coat of arms, Janina.

Commemorating rulers with constellations named after them was quite popular in that era. Examples include E. Halley, who named the constellation of Charles's Oak, *Robur Carolinum*, named after Charles II of England; or the German astronomer Gottfried Kirch (1639–1710), who proposed as many as four constellations: The Imperial Apple, *Pomum Imperiale*, commemorating Emperor Leopold I; the Saxon Electoral Sword, *Enses* (or: *Gladii*) *Electores Saxonici*, in honor of John George III, Elector of Saxony; the Brandenburg Sceptre, *Sceptrum Brandenburgicum*, awarded to Frederick William,

⁷³ Piwarski, "Hacki Michał Antoni", p. 220; Iwicki, *Konwent oliwski*, pp. 69–70.

⁷⁴ BnF, MS. NAL 1640, f. 33rec., Hacki to Hevelius, 8 December 1683.

⁷⁵ Targosz, "Jana Heweliusza zabiegi", pp. 152–156; ead., *Jan III Sobieski*, 1st edn., pp. 321–329, 339–341, 2nd edn., pp. 562–575, 591–594.

Electors of Brandenburg; and the Hungarian Crown of Joseph, *Corona Hungarica Josephi*, dedicated to Joseph I, Habsburg King of Hungary.⁷⁶ However, Hevelius's constellation, under the abbreviated name of the Shield, *Scutum*, is the only of the then-designated sets of stars that has been adopted into modern astronomical nomenclature.

Naming the constellation in honor of John III and, most importantly, the gratification associated with it is mentioned in Hevelius's correspondence with Hacki. The letters are an interesting source which provides additional details of placement of the *Scutum* in the sky. The first letter to address this topic is preserved only in the original version of the correspondence and is not included in the copy that was prepared for publication during the astronomer's lifetime. Hacki wrote to Hevelius:

Nupera vice, quod breviter salutaverim Ill[ustrem] et Ampl[issimam] D[ominationem] V[estram], ignoscat quaeso impeditissimo. Interea non neglexi amici opus; et nudius tertius per postam S[erenissimae] R[egiae] M[aiestati] D[omino] meo Clem[entissimo] insinuavi ratione Commissariatus mei; ubi haec formalia scripsi, siquidem festum S[ancti] Joannis imminet, quo aliquae pensiones distribuuntur, inter alias ea quoque est 1000 fl[orens] quae D[omino] Hevelio annuatim traditur, V[estra] S[erenissima] R[egia] M[aiestas] dignabitur gratiose declarare utrum ratione novi meriti ipsius quo Arma V[estrae] M[aiestatis] caelo intulit, et respectu libri quem honori V[estrae] M[aiestatis] dedicare intendit, vel auctio pensionis, vel honorarium condignum ipsi sit una tribuendum. Haec ego ad Regem. Inde spero me habiturum gratiosam in favorem V[estrae] Ill[ustris] et Ampl[issimae] D[ominationis] respensionem, quod faxit Deus.⁷⁷

⁷⁶ J. Dobrzycki, J. Włodarczyk, *Historia naturalna gwiazdozbiorów* (Warszawa, 2002), pp. 68–70; J. C. Barentine, *The Lost Constellations. A History of Obsolete, Extinct, or Forgotten Star Lore* (Cham et al., 2016), pp. 335–356, 363–383; id., *Uncharted Constellations. Asterisms, Single-Source and Rebrands* (Cham et al., 2016), pp. 57–66, 115–124; J. Rogińska, “Gottfried Kirch (1639–1710), życie i działalność pierwszego astronoma Królewskiego Pruskiego Towarzystwa Nauk”, *Kwartalnik Historii Nauki i Techniki* 66, issue 3 (2021), pp. 110–111; K.-D. Herbst, *Gottfried Kirch (1639–1710). Astronom, Kalendermacher, Pietist, Frühaufklärer* (Jena, 2022; Acta Calendariographica – Forschungsberichte, vol. 10), pp. 184–189. We may note that the custom continued in later decades as well. In the 1770s, the astronomer Marcin Poczobutt-Odlanicki (1728–1810) determined the constellation of Poniatowski's Bull, *Taurus Poniatovii*, referring to the coat of arms of King Stanisław August, see: Dobrzycki, Włodarczyk, *Historia naturalna gwiazdozbiorów*, pp. 70–72, Barentine, *The Lost Constellations*, pp. 385–399.

⁷⁷ BO, C1, vol. 16, 2321/58, Hacki to Hevelius, 10 June 1683, “I would ask you, most illustrious and greatest Sir, to forgive me, as I was so busy that I had

As we can see, Hacki was able to look after the interests of his friends and support them in their various endeavors at the court of John III. This would be very commendable, but the impression is marred by the second paragraph of the letter:

Eadem occasione volui recomendare Ill[ustri] et Ampl[issimae] D[omina-
tion]i V[estrae] Franciscum ex parte Chirurgum et Balneatorem ex pro-
fessione qui duobus annis bene, fideliter, modeste absque omni querela
se gessit in servitio monasterii. Quandoquidem vacat officina Balneato-
ris, in antiqua civitate quatenus ipsum ad eandem dignetur promovere,
tanquam virum dignum; in hac professione expertum; eiusdemque reli-
gionis Augustanae consortem. Quidquid ei beneficii conferet, mihi colla-
tum aestimabo, et reserviam.⁷⁸

The source materials for the Old Town bathhouse have survived in fragments, and they do not mention a person with the name or surname Franciscus (or similar) served as a bathmaster there at the time. However, since there is also no mention of such an individual in Gdańsk's town rights granting books (*libri iuris civilis*), and since having citizenship was required to run a bathhouse, it can be assumed that Hacki's request was not granted.⁷⁹ This topic shows a different context from the earlier, social-scientific one of the correspondence.

only greeted you briefly last time. Meanwhile, I have not neglected a friendly duty, and three days ago I sent a letter to His Majesty the King, in relation to my position as commissioner [for the pile fee – M.J.], where I wrote as follows: 'since the feast of St. John is approaching, when certain remunerations are distributed, including the 1,000 florins, which is annually given to Master Hevelius, may His Majesty generously decide whether, because of his new merit, i.e., transferring His Majesty's arms to the skies, and because of the book he intends to dedicate to His Majesty, an increase in salary or a corresponding honorarium should be granted to him.' This is what I wrote to the King. I expect to receive a magnanimous answer, favorable to you, most illustrious and greatest Sir, as God will".

⁷⁸ Ibid., "On this occasion, I would like to recommend to you, most illustrious and greatest Sir, Master Franciscus, a surgeon and a bathhouse-keeper by profession, who for two years has performed well, reliably, modestly and without any reproach in the service of the monastery. Since there is a vacancy at the bathhouse in the Old Town, it is worth entrusting this position to him as a man of dignity, proficient in this profession and adhering to the same [as councilors of Gdańsk – M.J.] Augsburg religion. However much benefit he gets from it, I will consider it as having been granted to me and I will reciprocate".

⁷⁹ I would like to thank Prof. Dariusz Kaczor of the Faculty of History of the University of Gdańsk for providing this information.

Hacki and Hevelius both held prominent positions and were able to help each other when necessary.

This was not the only time correspondents asked Hevelius to make use of his positions and connections. S. Lubieniecki suggested that the Gdańsk astronomer should support Jacob de Groot (1628–1694), nephew of Hugo Grotius (1583–1645), in his bid to become a representative of the Hanseatic cities in The Hague.⁸⁰

The most significant part of the cited letter from Hacki to Hevelius is the mention of “transferring the arms of His Majesty to the skies”, which, we should assume, means honoring King John III Sobieski by designating a constellation in his honor. The existing literature accepts that the Scutum constellation was first mentioned by the astronomer in a letter to the monarch on 30 March 1684.⁸¹ The letter of the Oliwa abbot is earlier and thus would be the oldest known source mentioning the new constellation. Moreover, it bears the date of 10 June 1683, i.e. three months before the Battle of Vienna.

Since changing the date of the designation in honor of John III before the Battle of Vienna would significantly change the history of this constellation, one must consider whether the date of the letter’s sending could be corrected in order to uphold the previous findings. An error in the monthly date is unlikely, since Hacki writes about St. John’s feast approaching. Perhaps the key, then, would be to move the letter by a year forward – if it had been sent in 1684, it would fit into the previously accepted chronology of events. The letter’s signature might be an argument for this correction. Hacki signed the letter as *Abbas Olivae*, abbot of Oliwa, and he did not assume that position until December 1683, six months after the supposed date of the letter – he had previously served as coadjutor and was a strong candidate for the next abbot. A strong argument against dating the letter one year forward is Hacki’s own handwriting of the year’s date. It is doubtful that a man pursuing an administrative career and holding the office of royal secretary would make such an obvious mistake as putting the wrong year date. It may also very well be that the letter in question speaks of the initial, preliminary plans of the Gdańsk astronomer to honor John III. The name of the new constellation is not mentioned in the text – there is a reference to *arma*, the arms,

⁸⁰ M. Jasiński, *The Correspondence of Johannes Hevelius*, vol. 4, p. 458, S. Lubieniecki to Hevelius, 12 March 1669.

⁸¹ K. Targosz, *Jan III Sobieski*, 1st edn., p. 340, 2nd edn., p. 592.

not *scutum*, the shield. Name *Scutum* is mentioned in Hacki's letters to Hevelius from April and July 1684, addressing the subject of honoring the King.⁸²

We should also consider whether amending the date by a year would be in keeping with the content of the rest of the correspondence. The letter in question speaks of paying Hevelius his emoluments for the year of 1683. If we were to consider that it was indeed sent in 1684, it would precede by a month the letter which stated the following:

Successit bene instantia mea apud S[acram] R[egiam] M[aiestatem] D[ominum] Meum Clem[entissimum] pro parte Ill[ustris] et Ampl[issimae] D[ominationis] V[estrae]. Primum enim declaravit Pensionem dandam solitam. Ratione Extraordinariae ob Uraniam dedicandam, et Scutum in Astra relatum, petit sua M[aiestas] a me iudicium. Ego vero quid respondeam nescio. Neque enim alienae bursae dispensator esse volo. Quid censes Ill[ustris] et Ampl[issima] D[ominatio] V[estra]? Aperiat mihi sensum suum et sit certus, quod lubens inserviam.⁸³

If Hacki's letter of 10 June was indeed sent a year later than the date inscribed therein, the letter cited above would be a good complement to it. While this may be a rationale for correcting the date of the other one, it cannot be ruled out that the above letter is a reply to a request from Hevelius to Hacki or someone else in John III's entourage, a request that has not been preserved or as yet identified.

Perhaps further research will yield new clues on the determination of the Scutum constellation. In my opinion, it is impossible to conclusively determine whether the letter of 10 June was indeed sent a year later than the date inscribed in it, but neither can it be ruled out that it is a hitherto unrecorded testimony to Hevelius's preliminary plans for another celestial commemoration of John III. On the

⁸² BO, C1, vol. 16, 2334/72, Hacki to Hevelius, 29 April 1684; BO, C1, vol. 16, 2338/76, Hacki to Hevelius, 7 July 1684.

⁸³ Ibid., "I succeeded in my intercession with His Majesty the King regarding your matter, most illustrious and greatest Sir. For He first stated that the usual compensation would be paid. As for an additional payment due to the planned dedication of Urania and the Shield carried to the stars, His Majesty is asking for my opinion. Whereas I do not know what to answer and do not want to be in charge of another man's purse. What do you think, most illustrious and greatest Sir? May you reveal your opinion to me and be sure that I will be happy to be of service".

other hand, it certainly brings additional context of how the new constellation was created.

The correspondence between Hacki and Hevelius also touches upon another issue related to the commemoration of John III, namely the title of the book dedicated to the King. It was eventually published in 1690, after the astronomer's death, through the efforts of Hevelius's wife, Elisabeth (1647–1693). It was titled *Firmamentum Sobiescianum*, "Sobieski's Firmament". K. Targosz supposes that the idea of honoring John III with the title of the book was conceived in 1686.⁸⁴ This date should be moved back. As we have seen, as early as 1683, and definitely in 1684, the King was informed of Hevelius's plans to dedicate a book to him.⁸⁵ Moreover, in February 1685, Hacki and Hevelius pondered the title of the planned publication. The abbot conveyed that the King wished it to be titled *Atlas Sobiescianus*, "Sobieski's Atlas". However, Hacki believed it was not particularly apt and would prefer to call the book *Neouranographia Sobiesciana*, "Sobieski's New Uranography", or *Caelum novum Hevelianum a sole Sobiesciano orbi patefactum*, "Hevelius's New Sky Presented to the World by Sobieski's Sun".⁸⁶ The astronomer replies that in his opinion the most appropriate title would be *Uranographia Sobiesciana*, "Sobieski's Uranography". He also cites examples of other astronomical works named after their patrons, beginning with J. Kepler's *Tabulae Rudolphinae*, "Rudolphine Tables" (Ulm 1627).⁸⁷ Hevelius's letter concludes his correspondence with Hacki.

Correspondence of two prominent figures

After analyzing the entirety of Hevelius's correspondence with Hacki, the most striking aspect is the monk's rise to prominence in comparison to the astronomer. This manifests itself both in the matters discussed and in the phrases and expression employed. The first letter of the collection opens with lofty praise of Hevelius's scholarly prowess.⁸⁸ In the closing letter of the correspondence, on the other

⁸⁴ Targosz, *Jan III Sobieski*, 1st edn., p. 346, 2nd edn., p. 601.

⁸⁵ BO, C1, vol. 16, 2321/58, Hacki to Hevelius, 10 June 1683; BO, C1, vol. 16, 2338/76, Hacki to Hevelius, 7 July 1684.

⁸⁶ BO, C1, vol. 16, 2405/142, Hacki to Hevelius, 3 February 1685.

⁸⁷ BO, C1, vol. 16, 2407, Hevelius to Hacki, 12 February 1685.

⁸⁸ BO, C1, vol. 3, 396, Hacki to Hevelius, 8 March 1654.

hand, the astronomer refers to the addressee as the “illustrious excellency”, *perillustris excellentia*.⁸⁹

The letters of Hacki and Hevelius do not provide significant changes in the biographies of the correspondents, but they nonetheless add some elements that reinforce or clarify various findings. The correspondence contains traces of the future Oliwa abbot’s interest in music, which supplement our assumptions about his later activity in this field. They also contain an addendum to a mention in the abbey chronicle of the journey that Hacki made with other monks to Belgium. Equally interesting are the parts that complete the picture of Hevelius’s scientific endeavors: a firm pronouncement against the use of telescopes in instruments for positional observations, which precedes the astronomer’s most well-known arguments on the subject, and, above all, information about early plans to dedicate a constellation and a book to John III. It cannot be ruled out that further research on the Paris collection of Hevelius’s letters will yield further discoveries.

It is surely disappointing that the correspondence covers only a snippet of contacts between Hevelius and Hacki. In the letters one can come across dropped threads, matters popping up without any introduction or references to personal meetings and conversations. To show that the correspondence can contain gaps, it is worth recalling the following quote:

Interea si libuerit nonnunquam literas mecum commutare, atque de re literaria conferre, haud erit iniucundum; ego vicissim quoad occupationes meae gravissimae permittent officio meo haud deero.⁹⁰

These words were sent by Hevelius to Hacki in November 1673. There then follows a ten-year gap in the surviving correspondence. While it seems unlikely that further letters exchanged by the astronomer and the abbot will be found, the presentation of the existing ones makes one hope that, if ever discovered, they would also yield interesting information.

⁸⁹ BO, C1, vol. 16, 2407, Hevelius to Hacki, 12 February 1685.

⁹⁰ BO, C1, vol. 11, 1618/136, Hevelius to Hacki, 25 November 1673, “Meanwhile, if you prefer to occasionally contact me by letter and discuss scholarly matters, I will not be displeased; for my part, I will not neglect my duty, as far as my serious occupations will permit”.

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The Correspondence of Michał Antoni Hacki and Johannes Hevelius

The article presents the correspondence of Michał Antoni Hacki (*ca.* 1630–1703), abbot of the Oliwa monastery, and Johannes Hevelius (1611–1687), astronomer from Gdańsk, which contains 32 letters and was conducted irregularly between 1654 and 1686. Its source is the collection of letters of Hevelius which is housed in the Bibliothèque de l’Observatoire and the Bibliothèque nationale in Paris. The article discusses elements of the correspondence that supplement the present findings about biographies of both correspondents. For Hacki, they concern his musical education, his journey to Belgium during the Polish-Swedish war, and his interests in science, including astronomy. For Hevelius, the letters contain information about his belief that positional astronomical instruments with telescopes should not be used, predating his controversy with English scholars over it, and his opinions about observations of sunspots. The correspondence also contains examples of the astronomer’s attitude toward sharing his findings and gaining patrons. Moreover, the article presents hitherto unknown circumstances of introducing the constellation of Scutum to honor the King John III and of dedicating to him a book by Hevelius, published in 1690 as *Firmamentum Sobiescianum*.

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