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# Was Copernicus an Astrologer? From the Perspective of a Historian of Astrology

## Abstract

Nicolaus Copernicus's achievements in the field of astronomy are widely known and undisputed, but few people know that he also studied astrology – in his time recognised as a science and a subject of academic lectures. Evidence of this activity, though scarce, is preserved in the margins of one of the popular astrological treatises of the 15th and 16th centuries, which was owned by Nicolaus Copernicus. Thanks to these marginal notes it is possible to undertake a consideration of the scale and reasons for the involvement of the astronomer in the exploration of astrology.

**Keywords:** *Nicolaus Copernicus*, *Cracow University*, *astrology*, *marginal notes*

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Sylwia Konarska-Zimnicka


# Czy Kopernik był astrologiem? Z perspektywy historyka astrologii

**Abstrakt**

Osiągnięcia Mikołaja Kopernika na polu astronomii są powszechnie znane i niepodważalne, niewielu jednak wie, iż uczony zgłębiał również astrologię – w czasach, w których żył, uznawaną na naukę i będącą przedmiotem wykładów akademickich. Świadectwa tej aktywności, choć nieliczne, zachowały się na marginesach jednego z popularnych w stuleciach XV i XVI traktatów astrologicznych, który był własnością Mikołaja Kopernika. Dzięki tym notom marginalnym można podjąć rozważania na temat skali i powodów zaangażowania astronoma w eksplorację astrologii.

**Słowa kluczowe:** *Mikołaj Kopernik*, *uniwersytet krakowski*, *astrologia*, *noty marginalne*

## 1. Introduction[1]

The centuries in which Nicolaus Copernicus lived and worked (19.02.1473–24.05.1543)[2] were permeated with the belief in the causal

[1] The article is an extension of the theses of a paper presented during the conference 'Copernicus and Astrology' organized by the Commission on the History of Science, Polish Academy of Arts and Sciences and Science Studies Research Unit, Institute for the History of Science, Polish Academy of Sciences (29.05.2024).

I would like to thank Prof. Michał Kokowski for the invitation to participate in the conference and publish an article in the *Studia Historiae Scientiarum* and for valuable discussions, and Piotr Piotrowski, PhD for valuable tips, particularly regarding astrological terminology.

During the conference, three weeks after submitting the text to the editor of the *Studia Historiae Scientiarum*, I found out that Prof. David Juste was carrying out research on the same topic. Thanks to George Borski, there was an exchange of texts and consequently an online meeting. Prof. Juste drew my attention to some errors resulting from the use of editions of Copernicus notes by M. Curtze and L. Birkenmajer and gave me permission to refer in the text to the edition prepared by him (David Juste, Copernicus's Astrological Expertise, 22.05.2024). I am extremely grateful for this, as well as for all the comments we had the opportunity to discuss, which helped to refine this article.

[2] Dobrzycki, Hajdukiewicz 1968–1969; Kesten 1961; Markuszewska (ed.) 2013; Górski 2012; Małłek 2015; Mikulski 2015; see also Kokowski 1996; 1997; 2001a; 2001b; 2004; 2008; 2009; 2012, 2024a.

influence of the so-called lunar world. This paradigm, which was prevalent back then, was adopted (consciously or unconsciously) by representatives of all social classes, involving the most enlightened minds of the time. Divergences and perceptual doubts, if they appeared, concerned the scale (determinism was usually rejected) and the spheres of influence (free will and reason were usually excluded from the cosmic influence). What was not contested, however, was the interdependence of the aforementioned lunar world and the sublunar world, linked by a close weave of multiple parallels resulting from the belief in the commonality of the macro- and microcosm.

This conviction was undoubtedly fostered by the educational system of the time. This is because learning about nature in its broadest sense, understood as both close and distant nature (celestial bodies), was a prerequisite for obtaining an academic education.[3] The faculties of liberal arts at the best universities in the 15th and 16th centuries (Bologna, Padua, Paris, Krakow, Salamanca) offered classes in astronomy and astrology (astrology, alongside long-established astronomy, became an academic subject), providing students with scientific arguments for the existence of relationships between man, plants, animals, and the planets, the luminaries – the Sun and the Moon (regarded as planets), comets, stars, etc. The most eminent representatives of the scientific world produced extensive treatises and short notes affirming astrology, which developed vigorously not only on a theoretical, but also a practical level. The courts of kings, magnates, bishops and even the pope were constantly attended by astrologers, who often also functioned as medical doctors (or rather iatromathematicians[4]). They created horoscopes for their clients and – in the case of iatromathematicians – patients (birth charts, horary charts,[5] electional charts,[6] decumbitures[7]) as well as iudicia. The remaining, less affluent population had prognostics and almanacs, as well as astrological calendars, at their disposal. They

[3] North 1992.

[4] Iatromathematics – astrological medicine or medical astrology. See Sudhoff 1902; Konarska-Zimnicka 2019, pp. 165–181.

[5] A horary chart is prepared for the moment when a question about an event or an issue is asked and makes it possible to obtain an answer to the question.

[6] An electional chart is said to indicate the best astrological moment to undertake specific actions.

[7] I.e. the astrological chart of a disease.

provided astrologically grounded answers to the questions: what, how, where, when, and, above all, whether (something will happen).

Such were the times in which Nicolaus Copernicus lived.

## 2. Education

Nicolaus Copernicus's studies at the Faculty of Liberal Arts in Krakow, probably initiated inthe autumn of 1491 (the beginning of the winter semester of 1491–1492), opened up the possibility for him to explore not only astronomy, but also astrology, for the Chair of Astrology had existed within the university structure since the middle of the century. It offered education in what was then called "the divine art and science."[8] What is more, at that time astronomy even became the propaedeutics for astrology, since a course in mathematical and astronomical subjects preceded lectures on astrology.

Therefore, the laws governing the motion of celestial bodies had to be learned in-depth as first, and the predictive information derived from them, as well as from the resulting dynamically changing alignments of the said bodies, was to be learned later. In order to do this, it was necessary to know the textbooks listed as compulsory reading. In addition to the works of Aristotle (384–322 BC), Euclid (c. 365–270 BC),[9] Gerard of Sabbionetta (13th century), Johannes de Sacrobosco, known as John of Holywood (c. 1195–1256), John Peckham (d. 1292), or Johannes de Muris (c. 1290–1350), in addition to Georg von Peurbach (1423–1461) and Johannes Regiomontanus (1436–1476), students were introduced to works that were strictly astrological, i.e. *Tetrabiblos* by Claudius Ptolemy (c. 100–168), as well as *Centiloquium* attributed to him; then the works of Albumasar (787–886), above all, the fundamental *Introductorium in astrologiam* and the immensely popular *Flores astrologiae*; as well as *Epitome astrologiae* by Alcabitius (d. 967).[10] The statute of 1476, in addition to the textbooks mentioned, approved "alios libros spectantes

[8] See Malewicz 1985, p. 168, v. 31–32; cf. Konarska-Zimnicka 2018a, p. 330.

[9] In fact, a commentary on Euclid's *Elements* by the Italian astronomer and mathematician John Campana of Novara (c. 1220–1296) was used. See Markowski 1972, p. 357.

[10] *Codex diplomaticus Universitatis Studii Generalis Cracoviensis continet privilegia et documenta quae res gestas academiae eiusque beneficia illustrant*, Pars tertia: *Ab Anno 1471 ad Annum 1506*, Kraków 1880, pp. 45–48. See Górski 2012, pp. 91–108; Markowski 1975a; 1975b; 1975c.

ad Astrologiam,"[11] and the rector at the time, Jakub of Schadek (1412––1487), did so by "sticking to the earlier arrangements of 18th of October 1449."[12] Assumption of the reform of the Chair of Astrology, initiated on 29.12.1508 by Maciej of Miechow, meant that the new curriculum also included the primary textbook for teaching astrology, the eighth part of the treatise *Liber completus in iudiciis astrorum* by Albohazen (d. after 1037), who was known in Latin Europe as Haly (Hali) Abenragel.[13] Given the fact that in the manuscript collection of the Jagiellonian Library, many evidences from the second part of the 15th century have survived attesting to the knowledge, at least in part, of Haly Abenragel's treatise, it cannot be ruled out that it was this textbook that may have been discussed during the *De astrologia* (*In astrologia*) lectures.[14] Nevertheless,

[11] *Codex diplomaticus Universitatis Studii Generalis Cracoviensis continet privilegia et documenta quae res gestas academiae eiusque beneficia illustrant, Pars tertia: Ab Anno 1471 ad Annum 1506*, Kraków 1880, No. 250, p. 47.

[12] *Ibid*, p. 45: "Iacobus de Schadek Decretorum Doctor, Canonicus ecclesiae cathedralis Cracoviensis, Rector cum tota Universitate studii generalis Cracoviensis, inhaerendo conclusioni Anno 1449 die 18 mensis Octobris factae, novum Collegium minus Artistarum erigit."

[13] *Codex diplomaticus Universitatis Studii Generalis Cracoviensis continet privilegia et documenta quae res gestas academiae eiusque beneficia illustrant, Pars quarta: Ab Anno 1507 ad Annum 1548*, Kraków 1884, No. 348, pp. 85–90; Barycz 1960: Appendix I: *Fundaciones doctoris olim Miechovite Canonici Cracoviensis*; Wiszniewski 1857, pp. 474–82, where: *Privilegium ordinationis Colegiaturae Astrologiae adaucte in censu et priori adjuncte, per eximium pie memorie Doctorem Mathiam de Myechow, pariter cum confirmatione Reverendissimi domini Petri Tomycij Episcopi Cracovien.*; Muczkowski 1842, pp. 141–152, where: *Instrukcja dla profesora astrologii tudzież zatwierdzenie powiększenia funduszu tej posady przez Macieja z Miechowa uczynionego*; cf. Konarska-Zimnicka 2024. See Wisłocki 1886, pp. 269, 306, 347.

[14] It is possible that these could also have been excerpts from a text by Haly Abenragel, which was referred to by many Kraków astrologers in their manuscript and printed texts of the late 15th and especially early 16th centuries. This premise is supported by the numerous minor mentions and references to Abenragel, or quotations of extensive passages from his legacy, dating from the second half of the fifteenth century precisely. See Rosińska 1984, Nos. 9, 138, 366, 596–599, 627, 770, 793, 804, 938, 1638, 1906, 2110 (notes dating from the 15th century to the turn of the 16th century); Nos. 847, 900, 936, 937, 939, 1481, 2237, 2316 (notes dated after the Miechowita Reform); cf. Wisłocki 1877, pp. 179, 186, 189, 435, 438; p. 461, 594, 622, 636. Cf. Markowski 1990, p. 39. It is also worth emphasizing the fact that as many as 5 copies of the treatise by Albohazen Haly (1485 edition) have been preserved in the collections of the Jagiellonian Library: Albohazen Haly, *Liber in iudiciis astrorum*, Erhard Ratdolt, Venetiae 1485, the Jagiellonian Library, St. Dr. Inc. vol. 2139 III; the Jagiellonian Library, St. Dr. Inc. vol. 448 III; the Jagiellonian Library, St. Dr. Inc. 2466 III;

the requirement to be familiar with astrological textbooks only applied to those students who were vitally interested in astrology and who voluntarily attended subject-specific classes, since at Krakow University the attendance of astrological lectures was not compulsory or included among the examination requirements for prospective bachelors or masters.[15] However, what is important, Nicolaus Copernicus apparently considered them a key element of academic education, for it seems that at the end of his Krakow studies, i.e. in the summer semester of 1494 and in the winter semester of 1494–1495,[16] he attended the lectures of master Adalbert Krypa of Szamotuły (d. 1507), who, in a class called *In astrologia*, was at that time concerned with explaining astrological textbooks to his students. In the summer semester of 1494, this could be any of the texts included in the program (not excluding the treaty by Haly Abenragel)[17]; in the winter semester, as recorded in the *Liber diligentiarum*, it was Ptolemy's *Tetrabiblos*.[18]

Although Copernicus did not complete his studies in Krakow, as he did not obtain any degrees or titles, it is highly probable that he "consumed" the effects of several years of this education in Italy, where he went to study law and medicine (he studied intermittently between 1496 and 1503 at the universities of Bologna and Padua).[19] This is because, according to the local tradition, every student in the so-called higher faculty (and the Faculty of Medicine was regarded as such) was obliged to teach astronomy/astrology in the lower faculty (i.e. Liberal

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the Jagiellonian Library, St. Dr. Inc. 2467 III; the Jagiellonian Library, St. Dr. Inc. vol. 2140 III, where we find the notation: "Liber Mgri Michael Rusoczki plebani in Samborecz et Stavisino, oretur pro eo ad dominum deum om[n]ipotentem" Ibid, f. 1r. A similar view of the Haly Abenragels's treaty was expressed by Dobrzycki 1975, p. 128.

[15] Birkenmajer 1924, p. 64.

[16] Wisłocki (ed.) 1886, pp. 28, 29.

[17] Unfortunately, the *Liber diligentiarum* was kept rather carelessly, so we can only surmise what readings were discussed in the *De astrologia* (*In astrologia*) lectures. Undoubtedly, the treatise was valued for its merits, since Nicolaus Copernicus decided to buy it.

[18] Birkenmajer 1924, p. 57; we read that in the years 1491–1496, that is, during Copernicus's studies in Krakow, the *Tetrabiblos* was taught only once, exactly in the winter semester of 1494–1495.

[19] Chachaj 2023; Górski 2012, pp. 108–122; Sikorski 2023, pp. 23–28, 30–32; Wołyński 1873.

Arts).[20] These duties also involved the preparation of an astrological forecast, including dates of solar and lunar eclipses, phases of the moon, and predictions for the coming year indicating astrologically favorable and unfavorable days.[21] Unfortunately, no source material is available to prove this kind of activity by Copernicus.[22] However, this does not negate the likelihood of such activity.

## 3. Astrological aspects of Copernicus's works

The surviving work of Nicolaus Copernicus is scanty in information regarding his links with astrology, for it is impossible to regard the lost almanac for the year 1536 as astrologically oriented, or to suspect that Copernicus was more interested in the prophetic considerations of the appearance (or, more precisely, reappearance) of a comet in 1533[23] than in its astronomical aspects. There is no doubt that there were such links, as one can see from his private book collection, which contained many astrological and astrologically oriented works.[24] However, far more suggestive are the handwritten margin notes preserved in Copernicus's copy of the astrological treatise *Liber completus in iudiciis astrorum* (Venice 1485) by the aforementioned Albohazen vel Haly Abenragel.[25] Young Nicolaus Copernicus took this treatise with him, bound together with

[20] Dobrowolski 1986, p. 311, proceeds further, claiming that "at almost all universities during the Renaissance, the teaching of astronomy was entrusted to those who had a degree in medicine or were studying medicine."

[21] Westman 1993, pp. 1–5; cf. Birkenmajer 1900, pp. 89–98, 211–219; Chachaj 2023, pp. 195–224.

[22] Blumenthal 2015, pp. 96–115; 2014, pp. 1–32.

[23] Jervis 1985, p. 123, indicates that Copernicus wrote a treatise devoted to this comet. Curtze, 1878, pp. 41, 43, provides information about the polemic between Copernicus and other scholars on the appearance of a comet in 1533, but does not write a treatise on the issue. The issue is extensively discussed by Hilfstein 1987, pp. 195–196; cf. Drewnowski 1978, p. 71.

[24] Rosińska 2002, pp. 105–123; Jarzębowski 1971, p. 80. See Westman 2017; Biskup 1974, pp. 625–630; Birkenmajer 1924, pp. 321–324; Czartoryski 1978, pp. 355–396. Garwoliński 2015, pp. 409–431; Borawska, Rietz 2014, pp. 329–360; Barwiński, Birkenmajer, Łoś 1914; Duczko 2010, p. 34.

[25] Jarzębowski 1971, pp. 9–10. I do not cast doubt on the authorship of the notes, recognising that this issue has been duly investigated, and I concur with the opinion that they are notes made by the hand of Nicolaus Copernicus. Rosińska 2002; Czartoryski 1978; Goddu 2004, pp. 202–226; Kokowski 2024b.

Euclid's *Elementa Geometriae* (Venice 1482), when he travelled to Italy to study there. It is difficult to say when he took these notes. From their content, however, it is clear that he was particularly interested in issues related to the creation and interpretation of natal horoscopes. The notes in question are excerpts from Claudius Ptolemy's *Quadripartitum*, a fundamental work for astrologers, taught at universities (including the University of Krakow). The notes reveal that Copernicus studied the text with great care, as he faithfully quoted whole passages, rarely paraphrasing them, and he did so in a precise manner, marking the places in the quoted text.

An analysis of the content of the notes leads to an assumption that Nicolaus Copernicus used the Venetian edition of 1493, which was a collection of works by various astrologers, where, in addition to the text of Claudius Ptolemy's *Quadripartitum* translated by Plato of Tivoli, an extensive commentary by Abu'l Hassan Alī ibn Riḍwān Al-Misri – in Latin Europe known as Haly Abenrudani (c. 988–1061) – was also included.[26] This is supported by the considerable content of the notes made by Copernicus's hand, especially those being a free paraphrase of *Tetrabiblos* with commentary by Haly Abenrudani. Moreover, the sequence of lectures given by Adalbert Krypa of Szamotuły (who expounded Pseudo-Ptolemy's *Centiloquium* in the winter semester of 1495/1496) also makes it possible to speculate that the lectures on *Tetrabiblos* and *Centiloquium* were held on the basis of the very same textbook, containing both works (1493 edition precisely!).[27] It should also be noted here that no incunabula of the 1484 edition have survived in the collection of the Jagiellonian Library, while three copies from

[26] Cf. Birkenmajer 1900, p. 192. Research was conducted based on incunabula: Albohazen Haly, *Liber in iudiciis astrorum*, Erhard Ratdolt, Venetiae 1485, the Jagiellonian Library, St. Dr. Inc. vol. 2140; Ptholemeus, *Liber Quadripartiti*, Erhard Ratdolt, Venetiae 1484, https://archive.org/details/OEXV762_2_P3 [accessed January, 12, 2021]; Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, Bonetus Locatellus, Venetiae 1493, the Jagiellonian Library, St. Dr. Inc. vol 2701, ff. 2r–106v; further copies of this edition stored in the Jagiellonian Library: Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, Bonetus Locatellus, Venetiae 1493, the Jagiellonian Library, St. Dr. Inc. vol. 1433 III; the Jagiellonian Library, St. Dr. Inc. vol. 1846 III; see Juste 2024b, 2024c; see also Klaudiusz Ptolemeusz 2012.

[27] I.e. at a time when Copernicus was probably no longer attending lectures in Kraków. Wisłocki (ed.) 1886, p. 31.

1493 have survived to the present day (the Jagiellonian Library Inc. vol. 1433 III, Inc. vol. 1846 III, Inc. vol. 2701).

We find the first notes on page 63r, containing a fragment of the chapter *He sunt forme planetarum*[28], dedicated to the influence of the planets and the signs of the zodiac on human physical characteristics. In the upper margin of the page, Copernicus noted: "Ptolemaeus 3º Quadripartiti capitulo octavo de monstruosis signis dicit…", referring to the specific chapter of Ptolemy's work (In monstruosis signis[29]) devoted to the astrological conditions responsible for the birth of deformed fetuses. An extensive passage is quoted here with great faithfulness to the original version. Copernicus noted the astrological considerations that determined births of deformed fetuses, focusing on the placement of the so-called luminaries, that is, the Sun and the Moon, in specific parts of the chart (above all, in the cadent houses; the third, sixth, ninth and twelfth were regarded as such[30]), on their presence (which was particularly sought for) in the Ascendant, that is, the first house, which was considered to be the most important, and on checking whether the angular houses (also called cardinal houses, namely the first, fourth, seventh and tenth) were not affected by malefic planets (Saturn was regarded as the greater malefic, and Mars was the lesser malefic). It was also important to note the alignment of the luminaries (the conjunction and the opposition were the most noteworthy) at the moment of birth, and where the aspect between them took place and whether it was in the so-called quadrupedal signs (Aries, Taurus, Leo, Sagittarius, Capricorn).[31] This is because such an arrangement of celestial bodies, Copernicus noted, was supposed to result in the newborn "erit forme monstruose seu valde turpis."[32] In turn, in the upper margin of the page on which the

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[28] Albohazen Haly, *Liber in iudiciis astrorum*, ff. 62vb–63rb.

[29] Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, III, 8, ff. 62ra–63vb.

[30] In the astrological tradition, there was a distinction between domiciles (planetary houses) and astrological houses. A domicile of a planet is a sign ruled by this planet. The astrological houses are 12 parts of the celestial sphere – this division results from the daily motion of the Earth around its axis. To each of these parts, a particular sphere of existence in the sublunar world is assigned. See: Holden 1996, p. 150; 1982, pp. 19–29; Casulleras, Hogendijk 2012, pp. 33–102; Konarska-Zimnicka 2018b, pp. 11–20.

[31] Michał Falkener z Wrocławia 2014, Chapter 1.

[32] Curtze 1875, pp. 57–58.

notes were made, the first two lines of Column b contain information concerning the influence of the planet Mercury on man's physical appearance, a small fragment of which reads: "Et quando infortunatus infortune appodeantur in eo erit turpis et avarus."[33] Further paragraphs in this section of the treatise refer to the influence of the Moon, including "Luna albus pulchre faciei et pulchri aspectus amator quietis, pulchre barbe, clari coloris, sani corporis, bonorum morum; longus et de complexione humida."[34] Other planets were presented in a similar manner. Therefore, one can infer that Copernicus was interested in the astrological determinants of the birth of deformed fetuses. However, David Juste pointed out that the word 'gibbosus' was listed separately (Maximilian Curtze's edition did not include this information)[35]. None of the surviving narrative or iconographic sources allows us to presume that Copernicus was hunchbacked. Could it be, then, that this physical deformity interested him for medical reasons? Or perhaps someone close to him struggled with this disorder? These questions remain open, as in the case of a short note, omitted by Maximilian Curtze and read by David Juste, (p. 66 of the glossed treatise), in which Copernicus noted: "☋ [Cauda Draconis – SKZ] in ascendente privat visum"[36]. Thus, another medical thread but this time, it should be emphasized, taken not from the *Tetrabiblos*[37] but apparently from an extensive astrological treatise by the mysterious Leopold of Austria (*Tractatus septimus De nativitatibus*),[38] and from the text which was well known among the Krakow scholars and which they readily referred to in their treatises. It is possible that Copernicus either became acquainted with it personally

[33] Albohazen Haly, *Liber in iudiciis astrorum*, f. 63rb.

[34] Albohazen Haly, *Liber in iudiciis astrorum*, f. 63rb.

[35] Juste 2024a, pp. 8–9.

[36] Ibidem, p. 10. See Albohazen Haly, *Liber in iudiciis astrorum*, p. 66rab, where information on the Tail of the Dragon was not included.

[37] Attention to this was drawn by D. Juste (2024a, p. 10), rightly suggesting that Copernicus must have used some treaties on nativities.

[38] Leopoldus de Austria 1520, f. 47r: "Cauda Draconic quoto gradu in ascendente fuerit, tot annis qui cum nascitur cecut erit"; see Leopold of Austria 2015, p. 218, where: "By how many degrees the Tail of the Dragon was in the Ascendant, for that many years the one who is born will be blind". Remarkably, in the same chapter, Leopold of Austria included a great deal of information on the birth of deformed persons, which surprisingly also coincides with a note left by Copernicus! Cf. Leopoldus de Austria 1520, ff. 47r–v.

or heard about it while attending lectures on astrology. We cannot be certain, but we cannot rule it out…

Another sentence, a short one, referring to the *Tetrabiblos*, was left by Copernicus in the right margin of page 68r, and it was as follows: "Ptolemeus indicat solum per ⊗ [partem fortunae – SKZ] et gubernatores ipsius parte quarta capitulo primo."[39] Here, Copernicus cited a passage in which the ancient scholar explained how to use the part (lot) of fortune to assess the native's wealth. In a horoscope, the Ascendant was used to determine this point, and it was also necessary to know the positions of the Sun and the Moon. Claudius Ptolemy stated that this point should be in the same relation to the Moon as the ascendant is to the Sun.[40] Astrologers determined the part of fortune depending on the time of birth: during the day, by adding the difference in length between the positions of the Sun and the Moon to the ecliptic length of the Ascendant measured according to the sequence of the Zodiac signs; if the birth took place at night, this difference was subtracted from the ecliptic length of the Ascendant[41]. According to Claudius Ptolemy, the position of the part of fortune, but also, as Copernicus remarked in his note, the planet ruling it (individual degrees of the signs of the zodiac were ruled by specific planets), its configuration with other planets and the strength of their influence, provided the answer to the question concerning financial success. Ptolemy stated that "When planets ruling the part of fortune are in a strong position, they create wealthy [individuals], particularly when the luminaries give them favorable testimony."[42] According to this principle, Saturn was said to bring wealth from buildings, agriculture, or navigation; Jupiter – from holding offices, administration, or priesthood; and Mercury – from speech or trade. Furthermore, Saturn, particularly associated with financial success, in alignment with Jupiter was additionally expected to multiply one's possessions as a result of the emergence of new inheritance circumstances, particularly when "this alignment occurs in

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[39] Curtze 1875, p. 58. Cf. Albohazen Haly, *Liber in iudiciis astrorum*, f. 68rb.

[40] Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 1, ff. 85rb–86rb; Klaudiusz Ptolemeusz, *Czworoksiąg*, IV, 2.1 p. 190.

[41] Piotrowski 2011, p. 25.

[42] Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 1, f. 85va; quot. By Klaudiusz Ptolemeusz 2012, IV, 2.1–2, p. 190.

the superior angles, and Jupiter finds itself in a bicorporal sign[43] or is connected with the Moon."[44] Ptolemy even indicated when this was supposed to happen: "the estimated time when this occurs is determined on the basis of whether [the planets] involved incline towards axial points[45] or areas ascending in their direction."[46] Therefore, Nicolaus Copernicus was interested in the financial aspect, all the more so as he wrote the sentence in question in the right-hand margin of the page, where, in Column b, Chapter 12, entitled *In sciendo fortunam substantie*, begins.[47] And, although the subject matter discussed in this part of the treatise coincides with that of the work of Ptolemy referred to, the manner of determining the financial condition of the native differs, as Copernicus noted. For Albohazen did not focus on the necessity of determining the part of fortune, but directed the efforts of astrologers towards the study of the dignities of the planets (the essential dignities of planets were as follows: domiciles,[48] exaltations,[49] triplicities,[50]

[43] I.e. mutable or double signs: Gemini, Virgo, Sagittarius, Pisces. Their nature is double, as "they find themselves between fixed and tropical, equinoctial ones, and somewhat, at their beginning and end, take the qualities characteristic for both neighbouring [seasons]." Klaudiusz Ptolemeusz 2012, I, 12.4, pp. 84–85. Cf Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, I, 12, ff. 19ra–b.

[44] Klaudiusz Ptolemeusz 2012, IV, 2.3, p. 191. Cf. Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 1, ff. 85rb–va.

[45] I.e. Ascendant, Descendant, Medium Coeli, and Immum Coeli.

[46] Klaudiusz Ptolemeusz 2012, IV, 2.4, p. 191. Cf. Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 1, f. 86rb.

[47] Albohazen Haly, *Liber in iudiciis astrorum*, ff. 68rb–69vb.

[48] Domicile – the planet placed in its own domicile/house (not to be confused with the astrological house) is said to be among the strongest; this means it is placed in a sign it rules. The Sun and the Moon rule the signs of Leo and Cancer, respectively. Each one of the remaining planets rules two signs, i.e. its diurnal and nocturnal domicile. Mercury rules Gemini and Virgo, Venus – Taurus and Libra, Mars – Aries and Scorpio, Jupiter – Sagittarius and Pisces, Saturn – Capricorn and Aquarius. See *Słownik* [in:] Konarska-Zimnicka, Piotrowski 2020, pp. 182–183.

[49] Exaltation – a position in a sign where a planet is elevated (particularly strong). The Sun is elevated in Aries, the Moon – in Taurus, Mercury – in Virgo, Venus – in Pisces, Jupiter – in Cancer, and Saturn – in Libra. See *Słownik* [in:] Albumasar 2020, p. 159.

[50] Triplicity – a dignity of planets resulting from the division of signs into 4 groups, each one consisting of 3 signs related to a particular element – fire, water, earth, and air. Each triplicity is ruled by 3 planets. *Słownik*, [in:] Konarska-Zimnicka, Piotrowski 2020, p. 188; cf. Piotrowski 2011, p. 36.

terms,[51] and faces[52]). In the first sentence of the chapter, he wrote: "Aspice primum dominum triplicitatis domus substantie,"[53] i.e. he pointed out that the house of wealth and all material possessions, which in astrological tradition was considered to be the second house of the chart, was crucial in judging financial matters. Triplicities and the zodiac signs that constitute them (the fire triplicity: Aries, Leo, Sagittarius; the earth triplicity: Taurus, Virgo, Capricorn; the air triplicity: Gemini, Libra, Aquarius; and the water triplicity: Cancer, Scorpio, Pisces) were ruled by three planets each. The diurnal planets (Sun, Jupiter, Saturn) ruled the diurnal triplicities, and the nocturnal planets (Moon, Mars, Venus) ruled the nocturnal ones.[54] The fire triplicity was ruled by the Sun, Jupiter, and Saturn (in this order) in a diurnal chart, and by Jupiter, the Sun, and Saturn in a nocturnal chart. The earth triplicity was ruled by Venus, the Moon and Mars during the day, and by the Moon, Venus and Mars at night. The air triplicity was attributed to Saturn, Mercury, and Jupiter in a day chart, and to Mercury, Saturn, and Jupiter in a night chart. Finally, the water triplicity was attributed to Venus, Mars, and the Moon by day, and to Mars, Venus, and the Moon by night.[55] The system of triplicities and their ruling planets was important for some ancient astrologers (Dorotheus of Sidon wrote on this subject as early as the 1st century AD),[56] just like for scholars with origins in the Arab-Muslim culture (Albumasar, Sahl ibn Bishr (c. 786–845)) or Christianity (Guido Bonatti (d. c. 1296–1300), Krakow masters of astrology). It was apparently

[51] Terms of planets, a dignity resulting from the division of each sign info five uneven parts (from 2 to 12 angular degrees), which were assigned the rulership of 5 planets, excluding the luminaries. The so-called Egyptian terms were used most frequently. *Słownik*, [in:] Konarska-Zimnicka, Piotrowski 2020, p. 183.

[52] Faces, a.k.a. decans, result from the division of each zodiac sign into three 10-degree parts ruled by different planets, starting from the first decan of Aries, which is ruled by Mars, the following one ruled by Venus, and the last one by the Sun. This attribution was based on the so-called Chaldean order of planets, resulting from the sequence of geocentric celestial spheres, of which the Saturn sphere was the most distant from the Earth, and the Moon sphere was the closest. *Słownik*, [in:] Konarska-Zimnicka, Piotrowski 2020, p. 185.

[53] Albohazen Haly, *Liber in iudiciis astrorum*, f. 68rb.

[54] Mercury was said to rule the air triplicity by day, although the rulership of the earth triplicity was sometimes attributed to it. Cf. Piotrowski 2011, p. 36.

[55] Piotrowski 2011, p. 36.

[56] Dorotheus of Sidon 2005, pp. 161–162.

not that important for Claudius Ptolemy himself, which can be seen from a simplified, and, therefore, distorted description of triplicities in *Tetrabiblos*.[57] However, Copernicus did not pay attention to this.

On the page of the glossed treatise, its author Albohazen recommended analyzing the position of the first ruler of the said house as the most important one as far as the prediction of the potential financial status was concerned. As the next step, he suggested looking at the position of the second ruler; and, only at the end, at the placement of the third ruler, which usually played a supporting role.[58] He devoted considerable space to this information, apparently considering it crucial. It was only in the later part of the text that he referred to the part of fortune, analyzing its position and the planet ruling it, which coincided with the interpretation presented by Claudius Ptolemy. Copernicus overlooked this fact – perhaps he was interested in the issue of prioritization, i.e. it was the part of fortune that was crucial for Ptolemy, but for Albohazen, the location of the rulers of the triplicity of the second house was essential. It is interesting that he did not note the fact that Ptolemy did not describe the meaning of the houses in the *Tetrabiblos* at all.

Meanwhile, at the bottom of the same page, the future astronomer cited a paragraph, supposedly from Chapter 2 of the same section of the *Tetrabiblos*, stating that "Ptolemy […] relies on the argument of the luminaries and the surrounding stars."[59] He explained further that if the the Sun and the Moon were placed in masculine signs[60] and, at the same time, in angular houses, and the morning planets surrounded the Sun, and the evening (occidental) planets surrounded the Moon, it would be the easiest to determine the ruler and, similarly, it would be possible to determine the dignity on the basis of the observation of the rulers

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[57] Klaudiusz Ptolemeusz 2012, I, 19.1–7, pp. 89–91. Cf. Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, I, 19, ff. 23ra–24ra.

[58] Albohazen Haly, *Liber in iudiciis astrorum*, ff. 68rb–69vb.

[59] "Ptolemaeus parte quarta capitulo II° de statu et prosperitate nati accipit argumentum a Luminaribus et stellis circa quae circumvenientes." See Curtze 1875, p. 58. Cf. Albohazen Haly, *Liber in iudiciis astrorum*, p. 68rb; Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 2, f. 86ra; Klaudiusz Ptolemeusz 2012, IV, 3.1, p. 190.

[60] I.e. Aries, and then Gemini, Leo, Libra, Sagittarius, and Aquarius. The feminine signs are Taurus, Cancer, Virgo, Scorpio, Capricorn, and Pisces.

of two angles, the rising point[61] and Medium Coeli.[62] This particular passage, despite the precise indication of its source, was taken by Copernicus not only from Chapter 2 of Book IV[63], but (probably) also from the following chapter, entitled *In magisterio nati et eius opere*.[64] Here, he noted a passage on how to analyze a birth chart in terms of determining the social rank of the native. Significantly, this excerpt was not quoted explicitly, but it was a rather free interpretation of the relevant paragraph of the *Tetrabiblos*, which read: "Ministerium autem et opus nati sciri potest a duabus rebus: videlicet a Sole et Luna, et a signo in celi medio existente."[65] Moreover, Albohazen's commentary under the quoted sentence faithfully captures the sense of Copernicus's thought, noted in the margin of Albohazen's work.

Another passage that caught Nicolaus Copernicus's attention was the chapter *In sciendo valorem fratrum*[66], in which, in the right-hand margin of the page, he wrote an extensive excerpt from Book III, Chapter 5 of the *Tetrabiblos*. The excerpt came from the chapter entitled *In fratribus et sororibus*[67] and began with the information that, according to Ptolemy, the status of a brother can be known from observing the houses X, XI, IV and V and the planets in these places, as the Medium Coeli designates the mother, and the eleventh house corresponds to her son.[68] He also

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[61] I.e. Ascendant, or the first house of the chart.

[62] Curtze 1875, p. 58; the tenth house (Medium Coeli) is usually regarded as the next most important house after the first one (Ascendant); according to certain conceptions, it is even more important. The houses are placed between two main axes which divide the celestial sphere into four quarters. We distinguish the Ascendant-Descendant axis, which consists of the points of intersection of the ecliptic and the horizon in the eastern and western parts of the sky, and the Medium Coeli and Immum Coeli axis – the points of intersection of the ecliptic and the local meridian above and below the horizon. All houses are important because in astrological symbolism they represent various spheres of life. However, some houses weaken, and others strengthen the power of the planets residing in them. Michał Falkener z Wrocławia 2014, p. 97, fn. 132.

[63] Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 2, ff. 86rb–87vb; cf. Klaudiusz Ptolemeusz, *Czworoksiąg*, IV, 3, pp. 191–193.

[64] Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, IV, 3, ff. 87vb–91ra; cf. Klaudiusz Ptolemeusz, *Czworoksiąg*, IV, 4, pp. 193–197.

[65] Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, IV, 3, f. 87vb.

[66] Albohazen Haly, *Liber in iudiciis astrorum*, ff. 71ra–vb.

[67] Ptholemaeus, *Liber Quadripartiti* […] *cum commento Hali Heben Rodan*, III, 5, ff. 60rb–61rb; Klaudiusz Ptolemeusz 2012, III, 6, pp. 150–151.

[68] Curtze 1875, p. 58.

remarked that as Medium Coeli was "signum matris", the eleventh house indicated the mother's sons.[69] The further part of the note is a direct quotation of a passage from the *Tetrabiblos*: "Masculorum datores sunt planetae masculini in suis qualitatibus mundi; largitores vero suarum sunt femini in suis qualitatibus mundi,"[70] which means that masculine planets and those which assumed such qualities were the "givers" of male siblings, and, accordingly, female planets were the "givers" of girls. Copernicus went on to note that the brothers to be born first were signified by the oriental planets, while the next [literally – the last] – by the occidental planets.[71] He was extremely interested in the issue of harmony between the brothers. He quoted Ptolemy almost verbatim (omitting individual words): "Again, when the giver of siblings (i.e. a planet) in the horoscope chart is associated with the sign signifying the brothers' affairs, this will indicate the brothers' agreement and harmonious existence. And if such an arrangement is additionally associated with the part of fortune, it will indicate the brotherhood of the brothers in their affairs. If, on the other hand, such a conjunction occurs in signs that have no connection with each other, it indicates the opposite."[72] He also took astrological information on the brothers from the treatise by Albohazen. In the referred chapter, the Arab scholar not only instructed the reader to have a close look at the rulers of the triplicity of the house of brothers (i.e. third house), as well as to check their placement, whether they move straightforward,[73] or are retrograde,[74] if they are strong or weak,[75] where

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[69] Ibidem, p. 58.

[70] Ibidem, p. 58; Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, III, 5, f. 61ra; Klaudiusz Ptolemeusz 2012, III, 6.3, p. 151.

[71] Curtze 1875, p. 58; Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, III, 5, f. 61ra; Klaudiusz Ptolemeusz 2012, III, 6.3, p. 151.

[72] Curtze 1875, p. 58, misread several words and misinterpreted some of the abbreviations. Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, ff. 60va–b.

[73] A planet in a straightforward motion is one which moves forward, is not retrograde. *Słownik*, [in:] Konarska-Zimnicka, Piotrowski 2020, p. 185.

[74] Retrograde motion – from the geocentric point of view, the phenomenon of an apparent backward motion of a planet. *Słownik* [in:] Konarska-Zimnicka, Piotrowski 2020, p. 186.

[75] A weakness (debility) of a planet is the opposite of its dignity. It occurs when a planet is placed in a sign opposing the sign of its rulership, e.g. Sun in Aquarius, Moon in Capricorn, etc. *Słownik* [in:] Albumasar 2020, p. 158.

and with which planets they are configured,[76] and what their dignities are, but his advice was also to look at the placement of the lunar nodes, the *Caput Draconis* and the *Cauda Draconis*.[77] For instance, if the *Caput Draconis* (to which the qualities of benefic planets were attributed) found itself in the house of brothers, this would mean that the native would be of low social status and poorer than their brother; however, if the *Cauda Draconis* (characterized by malefic nature) found itself there, it would indicate that the native would have a more dignified status and would be wealthier than their brother.[78] Albohazen, just like Ptolemy, paid attention to the placement of the part of fortune in the birth chart. By reading both works, Copernicus received a solid dose of knowledge on how to construct and interpret a birth chart.

On the next page, 73v, where we find a chapter entitled *In sciendo statum patris*[79], in the left-hand margin, Copernicus noted information excerpted from Chapter 4 of Book III of Ptolemy's *Tetrabiblos*, entitled *In parentibus*[80], and referring to the fate of parents based on their birth horoscope, particularly their wealth status and length of life. Young (presumably) Nicolaus noted that if Saturn and Venus were placed in the east, in the almugea,[81] "sibi propria," or in one of the angles of the chart, then it was possible to determine the fate of both parents.[82] He remarked, without expanding on the topic, that Ptolemy had derived this information from the placement of the part of fortune and surrounding

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[76] E.g. Albohazen Haly, *Liber in iudiciis astrorum*, f. 71rb: "Et si Jupiter ibi [i.e. in the third house] cum Luna fuerint, significat quod erit sapiens in astronomia et astrologia et totius servirii quod eis fiet".

[77] Lunar nodes are the points where the Moon's orbit intersects with the plane of the ecliptic. The North Node is Caput Draconis, the South Node is Cauda Draconis. *Słownik* [in:] Konarska-Zimnicka, Piotrowski 2020, pp. 183, 185.

[78] Albohazen Haly, *Liber in iudiciis astrorum*, f. 71ra.

[79] Albohazen Haly, *Liber in iudiciis astrorum*, ff. 72rb–vb.

[80] Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, III, 4, ff. 58ra–60rb; Klaudiusz Ptolemeusz 2012, III, 5.1–13, pp. 147–150.

[81] This term is a transliteration of an Arabic expression al-muwâjaha, which means facing the luminary. "[…] when planets face the Sun or the Moon as if greeting it, they suddenly gain new power, which the Arabs called almugea; that is, when, following the Sun, they are placed in such a distance from it, as their house is from the house of the Sun, or when, following the Moon, they approach it at the same distance as their house is placed from the house of the Moon." Marsilio Ficino 2017, pp. 43–44, fn. 88.

[82] Curtze 1875, p. 58. Cf. Juste 2024a, pp. 12–13.

planets signifying the parents, just like the fact that a good configuration of the Sun with Saturn strengthened the position of the father, and a bad one contradicted this, even more strongly when these planets were situated in the angles or in succedent houses.[83] This latter point could have been of particular interest to Copernicus in relation to his mother, as his father died when Copernicus was a young boy: "Non aliter de matre iudicamus. Quando enim in figura ☽ vel ♀ ♃, [♀] vel ♀ Lune, laudabiliter configurabitur, vitam matris elongabunt."[84] Here, Copernicus additionally wrote: "Note that, just like Mars is absent in the misfortune of the father, Saturn is also absent in the case of [the misfortune of] the mother."[85]

Therefore, it seems that Copernicus was interested in those matters which, in astrological tradition, provided information about the lives of the parents of the native. Based on this, it can be assumed that Nicolaus Copernicus might have been in possession of his own natal chart (it is possible that at a later date this chart was rectified by one of his friends, possibly G. J. Rheticus),[86] for the rules of Ptolemy that he cites evidently refer precisely to the birth chart (genitura). The rules pertaining to the calculation of the annual horoscope, known as the solar return, had been developed by Albumasar and then adopted by subsequent generations of astrologers, including Albohazen. If, therefore, Copernicus had attempted to draw his solar return chart by himself, he would have been able to rely solely on Albohazen's work. However, he evidently sought to compile the knowledge derived from the works of both astrologers. Of course, it cannot be ruled out that Copernicus was analyzing a completely different horoscope to his own, especially as the data contained in the known birth horoscope (or rather horoscopes) of the astronomer do not coincide with the information contained in the glosses left behind.[87] Nevertheless, we are

[83] The succedent houses of the chart are houses XI, V, II, and VIII.

[84] Juste 2024a, p. 13. Birkemnajer 1924, p. 52 and Curtze 1875, p. 58 misread the notes. Cf. Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, III, 4, f. 59rb; Klaudiusz Ptolemeusz 2012, III, 5,5–8, pp. 148–149.

[85] Juste 2024a, p. 13: "Nota: quemadmodum per<…>s infortunium patris et a ♂ [Marte-SKZ], ita similiter matri abest ♄ [Saturnus-SKZ]"; cf. Curtze 1875, p. 58.

[86] Birkenmajer 1900, pp. 404–411, where Copernicus's charts are discussed extensively.

[87] Cf. Piotrowski 2023, pp. 62–63.

not sure whose horoscope chart provided the astronomer's inspiration for the notes, and therefore it cannot be ruled out that Copernicus was also interested in issues that corresponded to his personal affairs. The coincidence here is surprising…

The last of the preserved Copernicus's notes[88] was made on page 75v, where the chapter entitled *In sexta domo in suis significationibus*[89] can be found. The note was short: "Idem dicit Ptolemaeus 14. Capitulo parte 3° de epilentiis." Below it, a sentence was crossed out: "Demoniaci in quorum capitibus superabundat venenosa quaedam humiditas."[90] Here, Copernicus cited a chapter from the Tetrabiblos entitled In impendimentis anime[91], the relevant passage of which reads almost identically.[92] Albohazen wrote about persons called "diabolici," fittingly to Copernicus's note, that they were those "qui habent multam humiditatem in cerebris apparentem."[93] Here, therefore, Copernicus was interested in a passage concerning an issue related as much to astrology as to humoral medicine, according to which all sorts of ailments of the type that we would call psychological today were supposed to be caused by an excessive accumulation of damp melancholy, i.e. black bile. It is impossible to say why he was interested in this particular passage. Quite likely that likely that the so-called illnesses of the soul were an interesting medical issue for him.[94] Why did he cross out the note? It is possible that, after careful reading, he realized that both coryphaei of astrology presented the issue of these "diabolicorum" in the same way.

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[88] Juste 2024a, p. 2, emphasized that "besides the annotations, Copernicus underlined, marked in the margin and/or added short titles to 18 passages". See Juste 2024a, pp. 15–17.

[89] Albohazen Haly, *Liber in iudiciis astrorum*, ff. 75rb–76va.

[90] Curtze 1875, p. 58.

[91] Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, III, 14, ff. 82va–85ra; Klaudiusz Ptolemeusz 2012, III, 15.1–12, pp. 184–187.

[92] Ptolemaeus, *Liber Quadripartiti* […] *cum commento Haly*, III, 14, f. 83rb: "Demoniaci […] in quorum capitibus superabundat humiditas"; Klaudiusz Ptolemeusz 2012, III, 15.5–6, p. 186.

[93] Albohazen Haly, *Liber in iudiciis astrorum*, f. 75va.

[94] This issue seems to have been of great interest to Nicolaus Copernicus, who, notably, while in Italy, had the opportunity to listen to lectures by Pietro Trampolini, a physician who explored psychological and psychiatric aspects. See Bakker 2012, pp. 11–59.

## 4. Was Copernicus an astrologer?

Therefore, Nicolaus Copernicus knew astrology in theory. The preserved margin notes make it possible to conclude that he used astrological terminology quite freely and, it seems, quite consciously. This, as Ludwik A. Birkenmajer stated, was due to the fact that Copernicus attended lectures on astrology at Krakow University, having first listened attentively to lectures on theoretical astronomy.[95] Although some terms were used both in astrology and in astronomy, some words and phrases, such as *almugea* were *sensu stricto* astrological. The astrological symbols were also known to him, suffice it to mention the symbol of the part of fortune (graphical signs of planets and zodiac signs were present in astronomy).

He was also familiar with and consciously compared the astrological rules presented in the two works of Ptolemy and Albohazen, which are crucial to the field of astrology. And although he was strongly interested in the passages dealing with all sorts of aspects related to the astrological houses, he confined himself exclusively to information drawn from the very textbooks mentioned. However, one of the works in his possession was a treatise by Johannes Regiomontanus, *Tabulae directionumque*, which introduced improvements in the positioning of astrological houses, which were crucial for the correct creation and interpretation of astrological forecasts.[96] Not only did Copernicus refrain from taking up the topic, but Ludwik A. Birkenmajer claimed that it was clear from the surviving notes that his interest was in trigonometric issues.[97]

We can therefore assume that Copernicus's interest in astrology, with particular emphasis on natal astrology (for there is clearly no interest whatsoever in horary or electional astrology), stemmed not only from purely cognitive motives or the academic duty of an eager student, but possibly also from personal motives, for, as Copernicus's biographers

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[95] Birkenmajer 1924, p. 60; Kokowski 2024b, pp. 1-49.

[96] Birkenmajer 1924, p. 77, fn. 2, claimed that this treatise was never the subject of lectures at Krakow University, and the information found in Wislocki (ed.) 1886, p. 372, is the result of a clerical error. Following this line, it is highly significant that Copernicus was in possession of this work, devoted only partly to spherical trigonometry, and mostly to astrological issues.

[97] Birkenmajer 1900, pp. 60–64.

stress, he expressed "astrological interests in the fate of his mother and brother."[98] The astronomer's mother was then (i.e. at the end of the 15th century) about 60 years old, while Copernicus's brother was said to have been "willful, reckless, adventurous", "a ruffian and aristocratically vain," and therefore probably did not provide support for his elderly mother.[99] Thus, this short-lived 'love affair' of Copernicus with astrology may have been of a utilitarian nature, aimed at finding out the fate of his loved ones. His interest in these specific issues allows us to assume that Nicolaus Copernicus may have given a practical dimension to the theoretical framework by preparing his own birth chart, or analyzing the chart that he already owned (although, as mentioned, the information noted does not correspond to the known charts of Copernicus's horoscopes). Of course, it is not impossible that he analyzed a completely different birth horoscope. It is quite likely that the notes left in the astrological treatise and the extracts from the *Tetrabiblos* were the result of 'consuming' the knowledge heard at the lecture, and a kind of exercise aimed at verifying acquired theoretical knowledge.

However, it is clear from them that, with regard to astrology, Copernicus routinely copied patterns (this is particularly evident from reading Haly Abenrudani's commentaries on Ptolemy's *Tetrabiblos*), and although he did so in an inquisitive and, it should be stressed, precise manner, there is not a shadow of analytical thought in the context of a possible intention to apply astrological rules. Moreover, Copernicus was probably not even interested in deepening his astrological knowledge, since he limited himself to reading only two, albeit rudimentary, textbooks on the subject (although it seems that he may also have used an astrological treatise by Leopold of Austria, well known and commented on in the circle of Krakow masters[100]).

Perhaps this was because of the young age of the curious researcher,[101] who limited the exploration of astrological issues to the bare minimum

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[98] Jarzębowski 1971, p. 14.

[99] Wasiutyński 2007, pp. 87, 130.

[100] Konarska-Zimnicka 2018a, p. 311, fn. 5.

[101] Rosińska 2002, p. 120, thought that Copernicus "dealt with Albohazen only during the earliest phase of his studies, as proved by glosses written in his so-called 'youthful handwriting', recognised by palaeographers as characteristic of the period before Copernicus went to Italy."

required in the curriculum, as well as the lectures available during his Krakow studies. The reading (however thorough) of the previously mentioned textbooks did not make it possible to build a solid astrological skill set. And yet Copernicus may undoubtedly have had access to treatises by respected authors, above all, Albumasar (787–886), Omar Tiberiades (d. c. 815), Abraham ibn Ezra (d. 1167), Mashallah (c. 740–815), Guido Bonatti, etc., which circulated in Krakow at the end of the 15th century (as evidenced by inventories of Krakow professors' libraries[102]) and in scholarly circles. It is impossible to assume that Copernicus, consciously exploring the works of Arab-Muslim astronomers, was unfamiliar with the works of the aforementioned authors, especially since he attended lectures or was in the circle of those who repeatedly referred to the said authors and their works. In Krakow, these included the masters of the local Almae Matris – Wojciech of Pniewy (d. 1504), Bartłomiej of Lipnica (d. after 1538), Szymon of Sierpc (d. 1512), Bernard Kapustka of Biskupie (d. 1531), Michał Falkener of Wrocław (c. 1460–1534), Marcin Bylica of Olkusz (c. 1433–1493), and (probably) John of Głogów (c. 1445–1507)[103][104]. In Italy, the future astronomer had an opportunity to interact with Giovanni Garzoni (1419–1506),[105] Domenico Maria Novara (1454–1504), Giovanni d'Aquila of Lanciano (1460–1506), Alessandro Benedetti (c. 1450–1525).[106] Among his closest friends and colleagues were also Bernard Wapowski (1450–1535), Marcin Biem of Olkusz (c. 1470–1540), Mikołaj Prokopiades of Szadek (1489–1564) and Georg Joachim Rheticus (1514–1574),[107] who were meritorious contributors to astrology. They were probably united not only by friendship, but also by a similarity of interests, which was evident in their joint astronomical observations.[108] Thus, it seems impossible that Copernicus did not come into contact with works that were iconic to astrologers. Indeed, he himself referred, albeit in a strictly astronomical context, to the

[102] Szelińska 1966; Barycz 1935, pp. 266, 687–699.

[103] Chachaj 2023, p. 84, doubts that Copernicus attended lectures given by Jan of Głogów.

[104] Birkenmajer 1924, pp. 57–79, 83–97; Chachaj 2023, pp. 84–87.

[105] Kibre 1968, pp. 504–514.

[106] Konopka 1973, p. 13; Siraisi 1990, p. 68.

[107] Borawska, Rietz 2014, pp. 223–290; cf. Małłek 2015, pp. 65–76.

[108] Biskup 1973; Sikorski 2023; zob. Gomółka 1972, pp. 333–341; Sobotko 1991, pp. 153–174.

authority of Mashallah who, in addition to being a respected astronomer, successfully practiced astrology.[109] It must therefore be assumed that the rules of astrological knowledge drawn from the treatises mentioned above were considered by Copernicus to be quite sufficient in relation to the needs that motivated him.

It also seems significant that Nicolaus Copernicus, who successfully devoted himself to the practice of medicine, did not consider it legitimate to use the tools available to iatromathematicians (the charts of the patient and the physician, the chart of the disease – decumbitur, the principle of melothesia etc.), restricting himself only to the application of *sensu stricto* medical principles[110]. Since he used the Venetian edition of the collection of astrological works, he was familiar not only with the *Quadripartitum* he cited, but also with the famous *Centiloquium* attributed to Ptolemy at the time, which was on the compulsory reading list at the universities of the time. Despite this, in none of the prescriptions and medical advice he left behind did he show any knowledge regarding any of the aphorisms. Therefore, it must be assumed that he did not notice the need to use them, either in the field of healing or in other spheres of human life included in the *Centum verborum* collection.

## 5. Summary

Nevertheless, in none of the surviving works will one find even a subtle shadow of doubt contesting any aspect of the astrology in which the 15th- and 16th- century community was immersed. Therefore, Copernicus did not question this field of study or analyze the principles that constitute its foundation. He regarded astrology as a discipline with many 'faces'. In the introduction to *De revolutionibus*, he wrote:

> If then the value of the arts is judged by the subject matter which they treat, that art will be by far the foremost which is labeled astronomy by some, astrology by others, but by

[109] In John Sacrobosco's treatise *Sphera mundi* of 1499, which he owned, Copernicus wrote '…debetis scire quod, sicut dicit Mesalach in libro de causis orbium, unus planeta eclypsat alterum: ut luna eclypsat Mercurium: quandoque inter eos non est latitude […]' next to the information 'unus planeta eclipsat alterum' Birkenmajer 1924, p. 297.

[110] See also Kokowski 2024b, pp. 12–15.

> many of the ancients, the consummation of mathematics (trans. by Edward Rosen)[111].

However, the interchangeable nomenclature, the atmosphere of the time which was dense with astrological forecasts, the incomplete academic education in astrology, the circle of declared astrologers gathered around Copernicus, his youthful 'love affair' with astrology, or, finally, the lack of denial or even questioning of the validity of this discipline do not make Nicolaus Copernicus a professional astrologer, although in some circles he was regarded as an expert in the art of making horoscopes (if we refer to Copernicus specifically).[112] Moreover, it should be emphasized that, despite the accumulation of circumstances conducive to an interest in astrology, Copernicus did not opt for an in-depth, predictively focused exploration of it, directing his mind and heart towards astronomy. In astrology, the rules could at most be made more specific, as their core was fixed and unchangeable (15th–16th century astrologers, including the Krakow masters, merely reproduced, or adapted to local needs, the principles they had adopted from their predecessors. Copernicus's discovery of the 'motionlessness' of the Sun and the 'motion' of the Earth did not change this either, as the Earth was not a point of reference in astrological forecasts, but a place of cumulative influence of the lunar sphere). It was different in astronomy; here the laws governing the universe turned out to be based on erroneous assumptions, which the brilliant mind of Nicolaus Copernicus recognized, investigated and corrected.

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[111] *Nicolai Copernici Toruniensis* 1854, p. 10: "Proinde, si artium dignitates penes suam de qua tractant materiam aestimantur, erit haec longe praestantissima: quam alii quidem astronomiam, alii astrologiam, multi vero proscorum mathematices consumationem vocant". Waniakowa 2003, pp. 89–91; cf. Losev 2012, pp. 42–46; Westman 2011, p. 36. See Swerdlow 2012, pp. 353–378; Kokowski 2024b.

[112] Johanes Apelt (1486–1536) in a letter to Cardinal Albrecht Hohenzollern (1490–1545) in 1535 enclosed a horoscope prepared by Joachim Cameriarus (1500–1574) of Nuremberg, writing that if the cardinal could not find anyone to explain it to him, he could turn to the old canon in Frombork. Westman 2011, p. 534; cf. Włodarczyk 2015, p. 42. However, we cannot exclude the possibility that this was not about Copernicus, as Copernicus was not the only canon, and the Warmia Chapter was famous for its well-educated representatives. Although, of course, we do not know whether anyone other than Copernicus could read horoscopes. See Pawluk 1974, pp. 3–22; Zins 1959, pp. 399–434. Cf. Borawska 1996; Kokowski 2024b.

Thus, Nicolaus Copernicus was a scientist who acquired basic theoretical knowledge of astrology and tried to implement this knowledge in practice. It is impossible to decide whether this effort was a need resulting from educational or personal reasons. Regardless, his knowledge of astrology was of a reconstructive nature, it was not an independent analytical and profound thought[113]. And surely, if Copernicus had felt the need to deepen his knowledge of the arcana of astrology and to verify them in practice, he would have had plenty of opportunities to do so. There would also have been no shortage of those willing to give lessons. Moreover, with a solid background in astronomy and astrology acquired in Krakow, Italy, and while studying medicine, he could have successfully devoted himself to iatromathematics. Since he did not do so, this was probably due to his conscious choice of a scientific path on which astrology, although present, played a short-lived and rather marginal role.

And although in the 16th century Copernicus was called an astrologer (sometimes with ironic overtones[114]), despite his proficiency in the art of reading horoscopes, which he undoubtedly possessed, neither he himself nor his contemporaries left behind a testimony allowing him to be called a fully-fledged astrologer (in the understanding of astrology as the art of forecasting future events and the fate of human beings based on the observation of the changing alignments of celestial bodies[115]).

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[113] This is also indicated by a comparative analysis of hundreds of notes left by Kraków astrologers of the late 15th and early 16th centuries. See Markowski 1990; Rosińska 1984; Konarska-Zimnicka 2018a.

[114] Luther contemptuously referred to Copernicus as an astrologer (*Tischreden oder Colloquia* (1566), edited by Johann Goldschmidt Aurifaber; reprinted in: *D. Martin Luther's Werke: Kritische Gesamtausgabe. Tischreden* (Weimar: H. Böhlaus Nachfolger 1912), vol. I, no. 885, pp. 412–413): "Mention was made of a new astrologer who wanted to prove that the Earth moves and goes around, not the firmament or the sky, the Sun and the Moon […]. But that's the way it gets away now: whoever wants to be clever there, he has to invent something of his own, it has to be the best he can do! This fool wants to subvert the whole art of astronomy! But, as the Scripture, Joshua told the Sun to stop, not the Earth!" Quoted for Wasiutyński 1938, p. 473; Sikorski 1967, p. 204; Wardęska 1975, p. 39, fn. 19 (German and Latin original); Kokowski 2009, p. 347, fn. 270; Kokowski 2024b. In 1541, a pamphlet entitled *Morosophus* by Wilhelm Gnapheus (c. 1493–1568), which had been staged the year before in Elbląg, was published as a satire on 'astrology' and it was thought to refer to Copernicus. Sikorski 1967, p. 204. Bartel 1962, p. 49; cf. Wołyński 1873, p. 240; Borski, Kolkov 2024.

[115] Kokowski 2024b. Terminological issues require a separate, in-depth analysis based on definitions recorded in the sources. The author is working on an article on this issue.

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