

Expertise *ex Stellis*: Comets, Horoscopes, and Politics in Renaissance Hungary

By *Darin Hayton**

ABSTRACT

Martin Bylica became the favorite court astrologer to the Hungarian king Matthias Corvinus in 1468 and then enjoyed royal patronage throughout the remainder of Corvinus's reign. Initially, Bylica's success at the Corvinian court was based on his performance before the Hungarian diet, where he used an astrolabe to solve a technical astrological problem: rectifying a natal horoscope. Once he had gained the king's patronage, Bylica solidified his position at court by emphasizing the various layers of his astrological expertise—academic credentials, personal experience, the use of instruments, and his collection of horoscopes. Bylica's expertise was based not on privileged access to the natural world, but on his ability to offer expert interpretations of that world. Because of his success, Bylica's career at Corvinus's court also reveals how the king distinguished between competing claims to astrological expertise and the place of that expertise in his political program.

In 1485, when the Hungarian king Matthias Corvinus besieged the city of Vienna, he was accompanied by his favorite court astrologer and political adviser, the Pole Martin Bylica. Presumably Bylica offered advice on the siege and, perhaps, calculated propitious times to attack.¹ Corvinus captured Vienna on the first of June and two days later marched triumphantly into the city. Bylica was already inside Vienna and present to record the celebration. He described the king riding into the city on his finest horse, surrounded by Hungarian lords, and resplendent in his parade armor. Corvinus processed through the streets of Vienna and finally arrived at the central square. Bylica recounted the king's entry into St. Stephen's Cathedral, where he granted audiences to the city council and the masters from the University of Vienna.² When he

*History Department, Haverford College, 370 Lancaster Ave., Haverford, PA 19041; dhayton@haverford.edu.

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¹Bylica is almost certainly the astrologer Antonio Bonfini mentions in his *Rerum Ungaricarum Decades*; see I. Főgel, B. Iványi, and L. Juhász, eds., *Rerum Ungaricarum Decades*, vol. 4, pt. 1, *Bibliotheca Scriptorum Medii Recentisque Aevorum* (Leipzig, 1936), 135.

²Bylica, epistola, Vienna, 3 June 1485, in *Hunyadiak Kora Magyarországon*, vol. 12, ed. József Teleki (Pest, 1857), 282–4.

captured Vienna, Corvinus rejoiced in finally controlling an important university. He had long been a patron of the sciences and had twice before tried to establish universities in Hungary, both of which had failed, for different reasons.³ Consequently, he was eager to restore the University of Vienna to its stature of the time when such luminaries as Johannes de Gmunden, Georg Peuerbach, and Regiomontanus had been associated with it. He immediately appointed Bylica to be his liaison to the university, and through him Corvinus reaffirmed the university's rights and privileges and promised to increase faculty salaries.⁴ Shortly after Corvinus left Vienna, Bylica followed him back to Buda, where he continued to provide astrological advice until the king died five years later.

Bylica's central place in all aspects of this episode—offering advice during the siege, recording Corvinus's entry, negotiating between the king and the university masters, and finally returning to Buda with the king—hints at the many roles that astrologers could play at a court. Bylica's career at the Hungarian court reveals the contours of astrological expertise that the king rewarded. His efforts to establish himself as an expert occurred within the specific political and social contexts of the Hungarian diet, in a contentious debate with another astrologer and aspiring expert. Along with the requisite academic credentials, Bylica initially constructed his expertise around the prominent and public use of astrological instruments to solve a central problem in astrology: rectifying a geniture. His use of an astrolabe to correct the birth time for a person's horoscope was calculated to appeal to the king's own fascination with astrology and astrological instruments. At the same time, by using an astrolabe Bylica demonstrated his command of a specialized body of knowledge and distinguished himself from his rival. Corvinus publicly acknowledged and thereby legitimated Bylica's expertise—a combination of some prerequisite academic training, theoretical knowledge, and technical skill.⁵ Once Bylica had secured Corvinus's patronage and support, he adapted his expertise to the new political contexts and expectations. No longer hoping to establish himself as an expert, Bylica concentrated on maintaining and deploying his astrological expertise in the service of the monarch. Bylica now emphasized his academic experience through familiarity with a canon of astrological knowledge, explicitly drew on his own astrological experience, and displayed his command of astrology's technical, mathematical reference tools—horoscopes—in

³ Corvinus had supported the universities in the western capital of Pozsony (see below) and in Buda. See Leslie S. Domonkos, "A History of Three Early Hungarian Universities: Obuda, Pozsony and Buda" (PhD diss., Univ. of Notre Dame, 1966).

⁴ "Acta Facultatis Artium Universitatis Vindobonensis," vol. 3, pt. 2, "1471–1497," *Universitätsarchiv Wien* (hereafter cited as UAW), Vienna, Cod. Ph 8, fol. 317v. See also Leslie S. Domonkos, "The Polish Astronomer Martinus Bylica de Ilkusz in Hungary," *Polish Review* 13 (1968): 71–9, on 75. Corvinus seems never to have realized his plans, for by his death in 1490 the masters of the university were complaining about a lack of funds and dwindling student enrollments. See Joseph Ritter von Aschbach, *Die Wiener Universität und ihre Humanisten im Zeitalter Kaiser Maximilians I.* (Vienna, 1877), 16.

⁵ I treat expertise here not as a reified thing, in the manner of Collins and Evans, but as an attribute applied to a person (H. M. Collins and Robert Evans, "The Third Wave of Science Studies: Studies of Expertise and Experience," *Social Studies of Science* 32 [2002]: 235–96; Collins and Evans, *Rethinking Expertise* [Chicago, 2007]). As such, expertise does not exist except insofar as some authority affirms that expertise. Rejecting the idea that expert knowledge is some "thing," I focus on the specific forms of persuasion and the instruments and other resources Bylica used to portray himself as an expert and to get his claims accepted as true. For a review of the issues involved in expertise, see Eric H. Ash's introduction to this volume.

order to demonstrate that he possessed a productive and predictive body of knowledge.⁶

While Bylica certainly benefited from Corvinus's legitimation, the king's own status was elevated through a reflected authority from Bylica's expertise. By attracting Bylica to his court and exploiting his astrological knowledge, Corvinus enhanced his own legitimacy. Through his patronage of Bylica Corvinus now possessed a useful body of knowledge, a technical expertise, that could be used to achieve political goals through predictive knowledge that promised to inform the monarch's decisions and through the projection of power that reinforced the monarch's efforts to construct his own image.⁷

CORVINUS AND ASTROLOGY

Corvinus's early interest in astrology was informed by his experience at his father's court in Transylvania. Johannes Hunyadi had supported various astrologers, including the famous Polish astrologer Martin Król from Żurawica, who spent a number of years at the Hunyadi court during Corvinus's youth.⁸ Because the Hunyadi family had only recently risen to prominence, Corvinus's father probably relied on astrologers to confirm and reinforce his family's newly acquired authority. By the time Corvinus became king, he recognized that astrology provided the Renaissance monarch with a powerful set of tools for solidifying his own authority, legitimating his rule, and transforming the institutions of government.⁹ In particular, historico-

⁶On the state's interest in predictive knowledge, see Steven Shapin, *The Scientific Life: A Moral History of a Late Modern Vocation* (Chicago, 2008); Shapin, "Science and the Modern World," in *The Handbook of Science and Technology Studies*, ed. Edward J. Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman (Cambridge, Mass., 2008), 433–48.

⁷On the various forms of legitimation that princes enjoyed through their patronage of technical experts, see Bruce T. Moran, "German Prince-Practitioners: Aspects in the Development of Courtly Science, Technology, and Procedures in the Renaissance," *Technology and Culture* 22 (1981): 253–74; Moran, ed., *Patronage and Institutions: Science, Technology, and Medicine at the European Court, 1500–1750* (Woodbridge, 1991); Mario Biagioli, *Galileo, Courtier: The Practice of Science in an Age of Absolutism* (Chicago, 1993); Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, N.J., 1985), esp. chap. 8.

⁸Mieczysław Markowski, "Martin Bylica aus Olkusz als Vermittler zwischen Johannes Regiomontanus und der krakauer astronomischen Schule in der vorkopernikanischen Zeit," *Studia Mediewistyczne* 26 (1989): 125–32, on 125.

⁹On Corvinus's efforts to transform the Hungarian government, see Pál Engel, *The Realm of St. Stephen: A History of Medieval Hungary, 895–1526*, trans. Tamás Pálosfalvi (London, 2001), 298–344; János Bak, "The Kingship of Matthias Corvinus: A Renaissance State?" in *Matthias Corvinus and the Humanism in Central Europe*, ed. Tibor Klaniczay and József Jankovics (Budapest, 1994), 37–47. See also Valery Rees, "Transformation and Self-Fashioning: Matthias Corvinus and the Myth of Hercules," *Annual of Medieval Studies at CEU* 11 (2005): 167–86. For the general importance of astrology in politics during the fifteenth century, see Hilary M. Carey, *Courting Disaster: Astrology at the English Court and University in the Later Middle Ages* (New York, 1992); Laura Ackerman Smoller, *History, Prophecy, and the Stars: The Christian Astrology of Pierre d'Ailly, 1350–1420* (Princeton, N.J., 1994); Anthony Grafton, *Cardano's Cosmos: The Worlds and Works of a Renaissance Astrologer* (Cambridge, Mass., 1999); Monica Azzolini, "The Politics of Prognostication: Astrology, Political Conspiracy and Murder in Fifteenth-Century Milan," *History of Universities* 22 (2008): 6–34; Azzolini, "Reading Health in the Stars: Politics and Medical Astrology in Renaissance Milan," in *Horoscopes and Public Spheres: Essays on the History of Astrology, Religion and Society* 42, ed. Günther Oestmann, H. Darrel Rutkin, and Kocku von Stuckrad (Berlin, 2005), 183–205; Gerd Mentgen, *Astrologie und Öffentlichkeit im Mittelalter*, Monographien zur Geschichte des Mittelalters 53 (Stuttgart, 2005).

astrological analysis demonstrated the connection between the motions of the planets and political dynasties and religions. Princes used astrology—especially the theory of great conjunctions—to locate the basis for their authority in the stars and to confirm the natural, unassailable source for their rule.¹⁰ The skilled astrologer promised to interpret the motions of the celestial bodies to reveal God’s plan. Astrology in the service of the prince could simultaneously bolster that prince’s claims to power and undermine efforts to resist his authority. During periods of political instability or regime change, astrology’s political significance grew.¹¹ From the beginning of his reign Corvinus sought to recruit the best astrologers. In the late 1450s, as the newly elected king of Hungary, Corvinus relied on his family’s connections with Dalmatia to attract architects, artists, and astrologers to his court. The first astrologer Corvinus invited to Buda was the Dalmatian Johannes Gazulus. Although Gazulus declined the invitation, he sent in his place copies of his astrological texts.¹² The king’s interest in astrology increased throughout his reign and formed a common thread linking his architectural, artistic, and bibliographic achievements.¹³ Corvinus had the two ceilings in his famous library decorated with astrological frescoes depicting horoscopes for important events in his life. The ceiling in the first room of the library was painted with Corvinus’s geniture, his birth horoscope. The horoscope for the king’s coronation covered the ceiling in the second room.¹⁴ These two astrological frescoes were fitting decorations for the books in Corvinus’s library, which reflected the king’s strong interest in astrology.

His collection included classical texts on astrology, such as Manilius’s *Astronomicon* and Firmicus Maternus’s *Matheseos Libri Octo*. Arabic commentaries and Latin translations of Greek texts were well represented: he had Hali Abenrudian’s commentary on Ptolemy’s *Quadripartitum*, Albohali’s *De Judiciis Nativitatum*, an Arabic-Latin version of Ptolemy’s *Centiloquium*, as well as George of Trebizond’s translation of Ptolemy’s *Almagest*.¹⁵ Along with more recent Byzantine Greek manuscripts on

¹⁰For an introduction to the theory of great conjunctions, see J. D. North, “Astrology and the Fortunes of Churches,” in *Stars, Minds and Fate: Essays in Ancient and Medieval Cosmology*, ed. North (London, 1989), 59–89. See also the recent critical edition of Abu Ma’shar’s *On Great Conjunctions*, the theoretical foundation for the theory: *Abū Ma’shar on Historical Astrology: The Book of Religions and Dynasties (“On the Great Conjunctions”)*, 2 vols., ed. and trans. Keiji Yamamoto and Charles Burnett (Leiden, 2000). For the theory’s use in the Great Schism, see Smoller, *History, Prophecy, and the Stars* (cit. n. 9).

¹¹For early examples of emperors’ efforts to use astrology to reinforce their authority, see Alfred Schmid, *Augustus und die Macht der Sterne: Antike Astrologie und die Etablierung der Monarchie in Rom* (Cologne, 2005), 245–77.

¹²Mirko Dražen Grmek and Žarko Dadić, “O Astronomu Ginu Gazulu i Dubrovačkom Traktatu o Astrolabu,” *Anali Historijskog odjela Centra za znanstveni rad JAZU u Dubrofniku* 13–14 (1976): 53–94, on 57–60.

¹³The literature on Corvinus’s artistic patronage is enormous. See the encyclopedic work of Jolán Balogh, *A Művészeti Mátyás Király Udvarában*, 2 vols. (Budapest, 1966); Balogh, *Die Anfänge der Renaissance in Ungarn: Matthias Corvinus und die Kunst*, trans. Hildegard Baranyai (Graz, 1975). See also Rózsa Feuer-Tóth, *Art and Humanism in Hungary in the Age of Matthias Corvinus*, *Studia Humanitatis* 8 (Budapest, 1990); Thomas DaCosta Kaufmann, *Court, Cloister, and City: The Art and Culture of Central Europe, 1450–1800* (Chicago, 1995), 40–5; Engel, *Realm of St. Stephen* (cit. n. 9), 318–22.

¹⁴Balogh, *Anfänge der Renaissance in Ungarn* (cit. n. 13), 65–7.

¹⁵Csaba Csapodi, *The Corvinian Library: History and Stock*, trans. Imre Gobos (Budapest, 1973), 120, 282; Csaba Csapodi and Klára Csapodi-Gárdonyi, *Bibliotheca Corviniana: The Library of King Matthias Corvinus of Hungary*, trans. Zsuzsanna Horn (New York, 1969), 73; Ernst Gamillscheg, Brigitte Mersich, and Otto Mazal, eds., *Matthias Corvinus und die Bildung der Renaissance: Handschriften aus der Bibliothek und dem Umkreis des Matthias Corvinus* (Vienna, 1994), 72.

astrological instruments, Corvinus also collected the works of contemporary astrologers.¹⁶ Many of Regiomontanus's works ended up in the king's collection, including his *Tabulae Directionum et Projectionum*, composed with the assistance of Martin Bylica, his *Tabulae Primi Mobilis*, his commentary *In Tabulam Primi Mobilis*, the *Epitome "Almagesti,"* his *Ephemerides* for the years 1475–1506, his *Defensio Theonis contra Trapezuntium*, and his two texts on astrological instruments—*De Usu Astrolabii Armillariorum* and *Super Torqueto Astronomico*.¹⁷ Georg Peuerbach's works were well represented, including his *Theoricae Novae Planetarum* and his treatise on instruments, *Canones pro Compositione et Usu Gnomonis Geometrici*.¹⁸ Corvinus also collected the works of less famous astrologers. Along with Gazulus's texts on astrology and astrolabes, Johannes Tolhopf's *Stellarium*, Johannes Angelus's *Astrolabium Planum*, Jan Stercze's *judicia* on eclipses in 1463 and 1467, as well as Martin Bylica's own *judicia* on the comets of 1468 and 1472 all ended up on the library shelves.¹⁹ Corvinus's library and its books were not merely ornamentation for his reign. He recognized that the contents and fame of his library projected an image of his monarchy as one steeped in astrology and learning, an image that he carefully crafted to suit his needs. To ensure the dissemination of this image, Corvinus opened his library to visiting scholars, encouraging them to read, annotate, and emend the books in his collection.²⁰ In this way, Corvinus's library and its contents were key components of his political propaganda that served to legitimate and glorify his kingdom.²¹

Corvinus's collection of astrological texts did not happen accidentally. In 1465 Corvinus appointed the Italian humanist and astrologer Galeotto Marzio da Narni to oversee the library. Marzio had first come to Hungary a few years earlier at the request of Johannes Vitéz, whose palace in Esztergom was a center for humanist activities. Marzio returned briefly to Italy before he relocated to Buda in 1465 to become the chief librarian for Corvinus's collection. In addition to having humanist skills, which Corvinus certainly would have found desirable in his chief librarian, Marzio was also an accomplished astrologer. He had written works on both astrology and chiromancy. His interest in astrology and humanism complemented the king's. Marzio had recognized Corvinus's interests and abilities in astrology, even referring to the king at one point as *rex et astrologus*.²² In another work, Marzio recounted Corvinus's harsh judgment of astrologers, claiming that the king based his opinion on his own considerable knowledge in astrology. Marzio was probably responsible for ensuring that the library realized Corvinus's goals and fit into the king's broader political agenda.²³

¹⁶Csapodi and Csapodi-Gárdonyi, *Bibliotheca Corviniana* (cit. n. 15), 372–3.

¹⁷Ibid., 76; Csapodi, *Corvinian Library* (cit. n. 15), 343–6.

¹⁸For a list of Peuerbach's texts, see Csapodi, *Corvinian Library* (cit. n. 15), 314.

¹⁹On Tolhopf, see Lynn Thorndike, "John Tolhopf Again," *Isis* 24 (1936): 419–21. On Stercze, see Mieczysław Markowski, *Astronomica et Astrologica Cracoviensia ante Annum 1550* (Florence, 1990), 94.

²⁰Bylica's own annotations survive in at least one volume, a manuscript copy of Johannes de Sacrobosco's "De Sphaera" (cod. 275).

²¹Csapodi and Csapodi-Gárdonyi, *Bibliotheca Corviniana*, 25; Csapodi, *Corvinian Library*, 31, 52. (Both cit. n. 15); Martyn Rady, "The Corvina Library and the Lost Royal Hungarian Archive," in *Lost Libraries: The Destruction of Great Book Collections since Antiquity*, ed. James Raven (New York, 2004), 91–105, on 95.

²²Quoted in Enikő Békés, "Galeotto Marzio and the Court of King Matthias Corvinus," *Studi Umanistici Piaceni* 29 (2009): 287–96, on 295.

²³Ibid.; Tibor Klaniczay, "La corte di Mattia Corvino e il pensiero accademico," in *Matthias Corvinus*, ed. Klaniczay and Jankovics (cit. n. 9), 165–74; Klaniczay, "Galeotto Marzio és Mátyás,"

By 1467, when Martin Bylica arrived in Hungary, Corvinus's efforts to amass an impressive collection of astrological texts, as well as his own interests and purported abilities, were widely known.²⁴ Indeed, Bylica succeeded in becoming one of Corvinus's most trusted political advisers because he recognized the importance of astrology in Corvinus's political agenda and was able to demonstrate his own astrological expertise. Bylica's expertise was based on his academic credentials, his technical knowledge, and, most important, his use of astrological instruments. Bylica's career literally hinged on a technical detail: the proper technique for rectifying a geniture. His solution to this problem, displayed initially before the king and the assembled counts, reveals how he performed his own astrological expertise. At the same time, Bylica's success illuminates the role of astrology and astrological instruments in Corvinian politics and at Corvinus's court.

BYLICA'S ACADEMIC TRAINING

Martin Bylica benefited from the most advanced training in astrology available in northern Europe. He had matriculated at the University of Krakow in 1452, where Martin Król had recently established chairs in mathematics and astrology to promote the study of astrology in Krakow.²⁵ As a student, he heard lectures by Andreas Gryzmalas, who had recently been appointed to the chair in astrology and mathematics at the university. Bylica received his bachelor's degree in 1456 and began offering lectures on the *compotus*—the various methods for calculating important calendrical data, especially the date of Easter. Three years later Bylica was promoted to master and assumed the chair in astrology. In this role he lectured on various astrological texts, including Ptolemy's *Quadripartitum* and *Centiloquium* and Abu Ma'shar's *Introductorium*.²⁶ Like many students at Krakow, Bylica left for Bologna to study medicine and astrology.²⁷ At the University of Bologna, Bylica held lectures on astrology during the 1463/4 academic year. His reputation as a skilled and knowledgeable astrologer—he was referred to as the “distinguished and preeminent doctor, Master Martin of Poland”—attracted the attention of powerful patrons.²⁸ Cardinal

Világosság 18 (1977): 32–5. See also Lynn Thorndike, *A History of Magic and Experimental Science*, vol. 4, *Fourteenth and Fifteenth Centuries* (New York, 1958), 399–405.

²⁴Scholars frequently mention Corvinus's interest in astrology: e.g., Thorndike, *History of Magic* (cit. n. 23), 399; Jean-Claude Margolin, “L'humanisme européen et Mathias Corvin,” in *Matthias Corvinus*, ed. Klaniczay and Jankovics (cit. n. 9), 7–35, on 11, 15. Similarly, Corvinus's interest in astrological instruments has been noted but not explored: e.g., Balogh, *Anfänge der Renaissance in Ungarn* (cit. n. 13), 287–8; Balogh, *A Művészet Mátyás Király Udvarában*, vol. 1, *Addatár* (Budapest, 1966), 447–9.

²⁵“Liber Promotionum Facultatis Artium,” *Bibliotheka Jagiellonska* (hereafter cited as BJ) 263, fol. 44r. On Król's chairs, see Aleksander Birkenmajer, “Les centres de la science des astres,” in *Études d'histoire des sciences en Pologne*, *Studia Copernicana* 4 (Krakow, 1972), 455–9; Mieczysław Markowski, “Die Mathematischen und Naturwissenschaften an der krakauer Universität im XV. Jahrhundert,” *Mediaevalia Philosophica Polonorum* 18 (1973): 121–31, on 125.

²⁶Aleksander Birkenmajer, “Marcin Bylica,” in *Études d'histoire des sciences en Pologne*, *Studia Copernicana* 4 (Krakow, 1972), 533; Markowski, “Martin Bylica aus Olkusz” (cit. n. 8), 125–6.

²⁷Three decades later Nicolaus Copernicus, shortly after seeing Bylica's astrological instruments and library in 1494, would follow in Bylica's footsteps, moving to Bologna to improve his own astrological skills. See Robert S. Westman, “Copernicus and the Prognosticators: The Bologna Period, 1496–1500,” *Universitas* 5 (1993): 1–5.

²⁸Quoted in L. Birkenmajer, “Martinus Bylica von Olkusz und die astronomischen Instrumente, welche er der Krakauer Universität vermacht hat,” *Anzeiger der Akademie der Wissenschaften in Krakau* (1892): 98–110, on 102 (this English translation and all others in the article are my own).

Rodericus Borgia persuaded Bylica to be his court astrologer and, in the summer of 1464, to travel to Rome, where Borgia participated in the Papal Conclave.

In Rome Bylica befriended Regiomontanus, who was also working in Rome as court astrologer for Cardinal Bessarion.²⁹ Bylica's well-known astrological skills must have contributed to the close friendship that developed between the two astrologers. They discussed at length the problems in the standard textbook used to teach astronomy, Gerard of Cremona's *Theorica Planetarum*.³⁰ In August Regiomontanus composed his *Dialogus inter Viennensem et Cracoviensem adversus Gerardum Cremonensem in Planetarum Theoricas Deliramenta* in which he detailed their critique. In the dialogue, the two friends were readily identifiable as the two interlocutors, Johannes from Vienna and Martin from Krakow.³¹

Regiomontanus and Bylica soon left Rome and moved to Hungary. They had been invited to teach mathematics and astronomy at the newly established Academia Istropolitana, but when they arrived in Hungary in 1465 the university was not yet open, so the pair spent nearly two years at Johannes Vitéz's palace in Esztergom. There they collaborated on a number of technical astrological texts that complemented Vitéz's as well as Corvinus's interests in astrology. Regiomontanus's *Tabulae Directionum Profectionumque* was a product of this early period of collaboration. Bylica noted on the flyleaf of his copy of this work that he, Bylica, "was present and assisted in numerous places."³² Bylica's earlier training had clearly given him the technical skills to assist Regiomontanus in producing what became the standard astrological reference tool. More important, his collaboration with the German astrologer solidified his own reputation as a skilled astrologer. Over the next year while the two friends worked together, Regiomontanus produced his *Tabulae ac Problemata Primi Mobilis* and his *Tabula Sinuum*. Annotations in Bylica's copies of these texts indicate that he was a careful and competent editor.³³

THE IMPORTANCE OF GETTING IT RIGHT—RECTIFYING A GENITURE

On July 20, 1467, one month after the Academia Istropolitana opened, Bylica and Regiomontanus were welcomed into the city of Pozsony, where the town council hosted an elaborate feast in their honor.³⁴ Bylica began lecturing on astrology that fall. In the late spring or early summer of 1468, Bylica was given the opportunity to display his astrological expertise before the king. Corvinus had convened the Hungarian diet in Pozsony, the western capital of Hungary and conveniently located near

²⁹ Ernst Zinner, *Leben und Werken des Joh. Müller von Königsberg genannt Regiomontanus* (Osnabrück, 1968), 125.

³⁰ See Birkenmajer, "Martinus Bylica von Olkusz" (cit. n. 28), 102.

³¹ On the dialogue, see Claudia Kren, "Planetary Latitudes, the *Theorica Gerardi*, and Regiomontanus," *Isis* 68 (1977): 194–205. On the problems Regiomontanus had identified, see Noel M. Swerdlow, "Regiomontanus on the Critical Problems of Astronomy," in *Nature, Experiment and the Sciences: Essays on Galileo and the History of Science*, ed. Trevor W. Levere and William R. Shea (Dordrecht, 1990), 169–95.

³² Regiomontanus, "Tabulae Directionum Profectionumque," BJ cod. 597.

³³ Bylica's copies of these texts survive in Krakow. See Regiomontanus, "Tabulae ac Problemata Primi Mobilis," BJ cod. 597 DD III 59; Regiomontanus, "Tabula Sinuum," BJ cod. 574.

³⁴ The horoscope for the founding of the Academia Istropolitana survives in "Figura Coeli Hora Institutionis Universitatis Histropolitane," Österreichische Nationalbibliothek (hereafter cited as ÖNB), cod. lat. 24, fol. 212r. On the celebration in Pozsony, see Astrik Gabriel, *The Medieval Universities of Pécs and Pozsony* (Frankfurt, 1969), 44.

Moravia, which the king had recently invaded. In front of the king and the assembled Hungarian counts and nobles, Bylica and his former student, Jan Stercze, debated the proper astrological techniques for casting a horoscope. In 1467 Stercze had cast a geniture for Renold Rozgon's son. The Rozgon family had risen to prominence in Hungary, enjoyed Corvinus's support, and had supplied the kingdom with royal judges and other ministers. Johannes Rozgon, the patriarch, had appointed Stercze the court astrologer to the Rozgon family.³⁵ When Rozgon asked Bylica to confirm Stercze's horoscope, Bylica apparently identified a number of errors. Letters passed between the two astrologers without resolving the matter.³⁶ When the diet convened in 1468, Stercze and Bylica found themselves thrust into the center of royal politics. Corvinus, Rozgon, and the rest of the diet watched as the two astrologers debated the geniture Stercze had cast.³⁷

The debate over the proper construction and interpretation of a geniture brings into sharp focus the political risks that practicing astrologers faced and what astrological techniques they employed to succeed in that context. Astrology had always been fraught with political peril. When called on to predict their own patron's future success or health, astrologers had to tread delicately around sensitive subjects, such as impending danger or illness.³⁸ When patrons requested prognostications for their rivals, astrologers also had to be careful not to find themselves on the wrong side of treasonous plots.³⁹ Practicing astrologers often found themselves tempted by political success and authority and threatened by political demise, imprisonment, and even death.

The debate between Stercze and Bylica centered on a specific astrological technique: the proper rectification of a geniture. Rectifying a geniture involved retrospectively adjusting the time of a birth horoscope. Since antiquity astrologers had struggled to calculate more accurate natal charts. In his *Quadripartitum*, Ptolemy claimed that natal charts were consistently inaccurate because people either had not recorded the time of birth or had relied on inaccurate and imprecise timekeeping instruments. Consequently, astrologers needed to have a rational method for determining the precise hour and minute of birth.⁴⁰ Ptolemy himself had presented two different methods. The first method, commonly referred to as the *animodar*, required finding the location of the ruling planet for the most recent new or full moon that preceded the birth. The ruling planet's degree in its zodiacal sign was then

³⁵The Rozgon family had since Sigismund played an important role in Hungarian politics. János Rozgon's support helped Corvinus strengthen his centralized authority. Corvinus appointed Rozgon royal judge and *magister tavarnicorum* (master of the treasury) for more than a decade.

³⁶Birkenmajer, "Centres de la science des astres," (cit. n. 25), 459–60.

³⁷Two different accounts of this event survive. Bylica's own account survives in a letter to his nephew. Another account, possibly written by Johannes de Glogavia, was destroyed during the Second World War. For the former, see Bylica, "Epistola ad Stanislaum Bylica de Olkusz de Modo Rectificandi Genituras Humanas," BJ cod. 616, fols. 146v–147r. The catalog description of the other account is found in Franciszek Pułaski, *Opis 815 rękopisów: Biblioteki Ord. Krasieńskich* (Warsaw, 1915), 43–5.

³⁸For an excellent example of this at the Sforza court in Milan, see Azzolini, "Politics of Prognostication" (cit. n. 9).

³⁹For two astrologers imprisoned for their participation in a plot, see Carey, *Courting Disaster* (cit. n. 9), 149. Italian astrologers also found themselves wrapped up in conspiratorial plots; see Azzolini, "Politics of Prognostication" and "Reading Health in the Stars." (Both cit. n. 9).

⁴⁰Claudius Ptolemy, *Cl. Ptolemaei Librorum de Iudiciis Astrologicis Quatuor, Duo Priores Conversi in Linguam Latinam à Ioachimo Camerario Pabergense*, ed. Johannes Camerarius (Nuremberg, 1535), 29.

used as the degree of the ascendant in the natal chart.⁴¹ Ptolemy presented a second method in his *Centiloquium*, a technique referred to as the Trutine of Hermes. It relied on the position of the moon, which was thought to influence the time of pregnancy. The degree and sign of the ascendant at birth is the same as the degree of the moon at the time of conception.⁴² Regiomontanus's teacher, Georg Peurbach, had used this technique to rectify Empress Leonore's geniture, which geniture Regiomontanus later copied.⁴³ By the fifteenth century, astrologers had refined these two techniques and had developed other methods. Commonly, astrologers discussed the various methods before adopting the one they thought most accurate.⁴⁴ These discussions reveal both the importance of the practice and the variety of techniques available to practicing astrologers. By the sixteenth century, rectifying genitures became an important part of an astrologer's professional identity—Luca Guarico and Girolamo Cardano disputed in print the proper methods for correcting a birth time.⁴⁵ Certain horoscopes attracted considerable attention—Martin Luther's geniture received repeated analysis by both Catholic and Protestant astrologers.⁴⁶ Astrologers used analogous techniques to rectify horoscopes for the foundation of buildings and institutions, including St. Peter's Basilica in Rome and the Academia Istropolitana.⁴⁷ Far from being an esoteric technicality, rectifying a geniture was central to the practice of astrology.

Bylica and Stercze certainly knew of the various methods available to rectify genitures, and each man clearly had his preferred technique. Those techniques were not, however, equally valid in the eyes of Corvinus and the other Hungarian magnates who had assembled to witness the contest. In a letter to his nephew Stanislaus, Bylica explained the importance of using and being seen to use the correct method. There was more at stake than simply getting the geniture correct. Bylica pointed out that the astrologer's career was also at risk. He encouraged his nephew not to open himself up to ridicule,

⁴¹ Ibid., 29–30. This general technique continued to be refined well into the seventeenth century. See, e.g., William Lilly's discussion in his *Christian Astrology, Modestly Treated in Three Books* (London, 1647), 505–6.

⁴² Ptolemy, *Cl. Ptolemaei Librorum de Iudiciis Astrologicis Quatuor* (cit. n. 40), 35.

⁴³ On Peurbach's authorship, see Helmuth Grössing and Franz Stuhlhofer, "Versuch einer Deutung der Rolle der Astrologie in den persönlichen Entscheidungen einiger Habsburger des Spätmittelalters," *Anzeiger der phil.-hist. Klasse der Österreichischen Akademie der Wissenschaften* 117 (1980): 267–83. The geniture has been printed in Regiomontanus, "Judicium super Nativitate Imperatricis Leonore, Uxoris Imperatoris Friederici III," in *Johannis Regiomontani Opera Collectanea*, ed. Felix Schmeidler (Osnabrück, 1972), 2–33, on 3.

⁴⁴ See, e.g., Johannes Schöner's comments in the opening pages of his *De Iudiciis Nativitatum Libri Tres* (Nuremberg, 1545), 1r–3v, or Melanchthon's introduction to Schöner's *Opera Mathematica* (Nuremberg, 1551), 57r. Astrologers in the late sixteenth and seventeenth centuries still reviewed the various methods before defending one of them. See Oger Ferrier, *A Learned Astronomical Discourse, of the Judgement of Nativities*, trans. Thomas Kelway (London, 1593), fols. 1v–3r; Lilly, *Christian Astrology* (cit. n. 41), 500–19.

⁴⁵ Anthony Grafton, "Geniture Collections, Origins and Uses of a Genre," in *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine (Cambridge, 2000), 49–68.

⁴⁶ On attempts to rectify Luther's horoscope, see most recently Grafton, *Cardano's Cosmos* (cit. n. 9), 74–7.

⁴⁷ On the horoscope for the Academia Istropolitana, see Jean-Patrice Boudet and Darin Hayton, "Matthias Corvin, János Vitéz et l'horoscope de la fondation de l'Université de Pozsony en 1467," in *Matthias Corvin, les bibliothèques princières et la genèse de l'État moderne* (Budapest, 2009), 205–13. On St. Peter's Basilica, see Mary Quinlan-McGrath, "The Foundation Horoscope(s) for St. Peter's Basilica, Rome, 1506: Choosing a Time, Changing the *Storia*," *Isis* 92 (2001): 719–21.

in the same way as master Johannes Stercze, who one time added thirty-two minutes to the equation of the day for the geniture for the son of Lord Renold Rozgon and then constructed a false and erroneous figure, on account of which he was then mocked and scorned by Lord King Matthias and the Lords of Rozgon, and he thus became destitute.⁴⁸

When Corvinus judged the contest he declared Bylica the winner and awarded him 100 florins. More important, Bylica's victory led directly to his role as Corvinus's adviser, while Stercze left the court and spent the remainder of his career in obscurity.⁴⁹ Stercze and Bylica both possessed the requisite academic credentials and experience to appear before the king and the assembled lords. Those credentials were insufficient, however, to determine which of the two was the expert. The attribution of expertise had to rest on some other distinction.⁵⁰ Understanding how Stercze's errors could have been so significant that both Corvinus and Rozgon recognized them and derided the astrologer reveals an important facet of astrological practice at the Hungarian court and Corvinus's own preference for astrological instruments.

To rectify a geniture, Stercze preferred a technique based on Ptolemy's animodar. He explained in a letter to Janós Rozgon that finding the ruling planet of the preceding conjunction or opposition of the luminaries provided more accurate birth times. The important step in the process was to determine the precise time and location of the actual new or full moon rather than relying on mean conjunctions and oppositions. To underscore his approach, Stercze included a set of tables that he used to calculate the new and full moons.⁵¹ Bylica rejected this approach, adopting instead a technique based on the time of conception.⁵² His technique for determining the time of conception was an eclectic mix drawn from Ptolemy, Leopold of Austria, Hermes, and Abraham ibn Ezra.⁵³ Neither Bylica nor Stercze provided convincing arguments for his own approach or against the other. On paper, the two seemed equivalent.

Whatever the merits of Bylica's mathematical technique for rectifying a geniture, another aspect of his approach set him apart from Stercze and simultaneously attracted the king's attention. In a crowded assembly, where the finer points of mathematical analysis would have been difficult to convey, Bylica distinguished his technique through the conspicuous use of a large, eleventh-century astrolabe, which he used to determine the hour and minute of conception.⁵⁴ His performance with the astrolabe must have been impressive. In his letter to Stanislaus, Bylica explained briefly how to use an astrolabe to determine the exact time of conception. Working backward from the reported date of birth, the astrologer calculated the day of conception. He then consulted a set of tables to determine the locations of the sun and the moon on that day. At this point, Bylica introduced the astrolabe: rotate the *rete*, the star map on the front of the instrument, until the moon's position is on the eastern

⁴⁸ Bylica, "Epistola ad Stanislaum" (cit. n. 37), fol. 146v.

⁴⁹ Birkenmajer, "Centres de la science des astres" (cit. n. 25), 459–60.

⁵⁰ Bylica's success and Stercze's subsequent demise suggest that in fifteenth-century Hungary, expertise was an attribute applied to somebody rather than some real thing (cf. Collins and Evans, "Third Wave of Science Studies" and *Rethinking Expertise*. [Both cit. n. 5]).

⁵¹ Johannes Stercze, "Epistola ad Magnificum Comitem Johannem de Rozgon de Rectificatione Geniture Humanae," MS Bibliotheca Electoralis f. 73, fols. 133r–135r.

⁵² In a letter written some time later to a student at Krakow, Bylica explicitly rejected the animodar; "An per Luminaria Poterint Rectificari Figure Geniturarum," BJ cod. 1846, fol. 286.

⁵³ Bylica, "Epistola ad Stanislaum" (cit. n. 37), fol. 146v.

⁵⁴ Markowski, "Die Mathematischen und Naturwissenschaften" (cit. n. 25), 126.

horizon line;⁵⁵ set the *regula* on the sun's location in the zodiac for the day of conception; and read the exact time of birth from where the *regula* crosses the time scale on the limb of the astrolabe.⁵⁶ Finally, Bylica discussed the different methods for dividing the horoscopic houses. In a clear reference to his colleague Regiomontanus, Bylica mentioned the "rational method" and Regiomontanus's recently completed tables.⁵⁷ He also alluded to using the lines engraved on the front of an astrolabe to divide the houses.⁵⁸ In his debate with Stercze Bylica probably used his astrolabe to divide the horoscopic houses precisely because doing so would have provided a better performance, distinguishing his technique from Stercze's and displaying clearly his expertise with astrological instruments. In particular, his use of an astrolabe to rectify Rozgon's geniture must have been calculated to appeal to Corvinus's interest in astrological instruments. By 1468 Bylica knew that Johannes Gazulus's texts, which discussed the use of astrolabes in constructing horoscopes, had been in circulation at Corvinus's court in Buda since the late 1450s, when Gazulus had sent copies of his texts to Corvinus—Regiomontanus and Bylica had encountered the texts at the court, and Regiomontanus discussed Gazulus's texts in his *Tabulae Directionum*.⁵⁹

Bylica's use of an astrolabe to rectify a geniture was not mere showmanship. Astrolabes and related astrological instruments stood at the center of his astrological practice. Later, when a student at Krakow wrote to him to ask whether or not it was possible to rectify a geniture by using the location of the two luminaries, Bylica once again emphasized the importance of an astrolabe to determine the time of conception. After mentioning the methods proposed by Ptolemy and the Jewish astrologer Abraham Ibn Ezra, Bylica boasted that he had frequently used his own technique to identify errors in other people's genitures and to construct correct ones. He claimed that his technique was not only accurate but also remarkably easy.⁶⁰ He then described in slightly more detail than he had provided in his letter to his nephew Stanislaus how to find the location of the moon and sun, how to rotate the rete until the moon is on the eastern horizon line and to rotate the *regula* until it crosses the sun's location, and finally how to read the time of conception from where the *regula* crosses the time scale on the limb of the astrolabe. Bylica suggested that the astrolabe was the most efficient way to determine the horoscopic houses and to construct the rectified geniture. Indeed, he expected the student to have an astrolabe at hand and to use it to divide the houses. Only when lacking an astrolabe should the astrologer rely solely on tables, in which case Bylica referred the student to the set of tables he had composed for use at latitude 50°, in Krakow.⁶¹

Although he had recently appointed the astrologer and humanist Galeotto Marzio as his chief librarian, the king was now actively seeking a court astrologer. The contest between Stercze and Bylica allowed the king to assess the two astrologers and to select the most skilled one for his court. In judging the debate, Corvinus was also able

⁵⁵The best introduction to the astrolabe remains J. D. North, "The Astrolabe," *Scientific American* 230 (1974): 96–106.

⁵⁶Bylica, "Epistola ad Stanislaum" (cit. n. 37), fol. 146r.

⁵⁷Ibid. On the term "rational method," see J. D. North, *Horoscopes and History* (London, 1986), 27–30.

⁵⁸There were a number of techniques in circulation for using the astrolabe to determine the house divisions. See the discussion in North, *Horoscopes and History* (cit. n. 57), 56–69.

⁵⁹Cit. n. 32.

⁶⁰Bylica, "An per Luminaria" (cit. n. 52), fol. 286.

⁶¹Ibid.

to display his own knowledge of astrology—thereby reinforcing Marzio’s image of him as a skilled practitioner—and to endorse and support a particular form of astrology.⁶² Bylica’s performance with the astrolabe appealed to the king’s particular interest in astrology and especially astrological instruments. Corvinus acted quickly, bringing Bylica into the role of court astrologer and political adviser.

The king had immediate need for a court astrologer and political adviser. In March he had declared war on Victorin Podebrady, the governor of Moravia and the son of George Podebrady, the Utraquist king of Bohemia.⁶³ Although Corvinus had been married to Podebrady’s daughter, Catherine, tensions between Bohemia and Hungary had been increasing since her death in 1464.⁶⁴ Podebrady’s continued alliance with the Utraquists in Bohemia had aggravated his relations with the pope and Catholic monarchs. Considering himself the defender of Bohemian Catholics and the leader of a crusade against heretics, Corvinus invaded southern Moravia shortly after declaring war.⁶⁵ Although Corvinus returned to Pozsony for the diet, he marched back into Moravia as soon as the diet ended and renewed his siege of Hradiště, an Utraquist stronghold in southern Moravia. Failing to capture the city, Corvinus turned to his court astrologer. On July 25, 1468, Corvinus sent a letter to the town council in Pozsony, instructing it to provide Bylica and Marzio with a carriage, horses, and any provisions necessary so that they could travel immediately to Hradiště to advise the king.⁶⁶ Whatever Bylica’s advice was, Corvinus soon captured and briefly occupied the city before returning to Hungary.⁶⁷

HOROSCOPES AND COMETS

After advising the king at his siege of Hradiště, Bylica returned to Pozsony, where in the autumn term he resumed his lectures on astrology at the Academia Istropolitana. Although he was now a recognized expert, Bylica had to solidify his expertise and position as Corvinus’s astrologer and adviser. Whereas Bylica initially had to demonstrate his expertise in a very orchestrated context, the Hungarian diet, he now had to display his expertise in texts and through the advice he gave to the king. To accomplish his goal, Bylica had to base his expertise in his academic credentials, his personal experience, his demonstrated control of the technical details of astrology, and his contributions to Corvinus’s pressing political issues.

⁶²Here Corvinus can be seen as acting like prince-practitioners of the later sixteenth century who through their patronage promoted particular efforts to study the natural world. Corvinus shared with the later prince-practitioners a preference for precision instruments, in his case, the astrolabe, a preference that had its basis in practical political problems. On the later prince-practitioners, see Moran, “German Prince-Practitioners” (cit. n. 7).

⁶³On Podebrady and relations between Bohemia and other European states, see Otakar Odložilík, *The Hussite King: Bohemia in European Affairs, 1440–1471* (New Brunswick, N.J., 1965), and Frederick G. Heymann, *George of Bohemia: King of Heretics* (Princeton, N.J., 1965).

⁶⁴Odložilík, *Hussite King* (cit. n. 63), 190–221; Engel, *Realm of St. Stephen* (cit. n. 9), 304.

⁶⁵Pope Paul II had excommunicated Podebrady in December 1465. In April 1468 the pope was offering numerous indulgences for any ruler who helped to drive Podebrady from the throne. See the pope’s letter in Hermann Markgraf, ed., *Politische Correspondenz Breslaus im Zeitalter Georgs von Podiebrad*, vol. 2, *Politische Correspondenz Breslaus, 1463–1469*, *Scriptores Rerum Silesiacarum* 9 (Breslau, 1874), 265–70. On April 8, 1468, Corvinus compared Podebrady to the Turks and portrayed his own war against Podebrady as a crusade. See *ibid.*, 262–3.

⁶⁶Matthias Corvinus, *Epistola ad Istropolitanam, Hradiště*, 25 July 1468, in *Hunyadiak Kora Magyarországon*, vol. 11, ed. József Teleki (Pest, 1855), 351.

⁶⁷Unfortunately, Bylica’s advice to the king does not survive.

Rectifying a geniture, through complicated mathematical calculations and the use of an astrolabe, was anything but a boring astrological debate. Much of astrology depended on having constructed accurate and precise horoscopes. Astrologers often collected horoscopes for famous people and patrons and used those horoscopes in their practices. Bylica himself had started to build his own collection of horoscopes, which he drew on throughout his career at Corvinus's court. Unlike later astrologers, most famously Luca Guarico and Girolamo Cardano, whose efforts focused on compiling vast numbers of genitures, Bylica did not limit himself to birth charts. Alongside the genitures, he constructed horoscopes for the election and coronation of kings and popes as well as charts recording the founding of cities and kingdoms. Unlike his sixteenth-century successors, Bylica rarely recorded substantial interpretations along with his charts. Bylica's collection was never published—he did not depend on its circulation for his professional identity.⁶⁸ The horoscopes in his collection were, instead, the reference material that he drew on when he needed it and were essential to his success as an astrologer.

Bylica had begun compiling his collection of horoscopes by the summer of 1468. Over the next twenty-five years, he continued to calculate new horoscopes for rulers and cities throughout Europe. He did not, however, simply add to his collection; he also returned to previous charts again and again, adding new information or highlighting specific details. Occasionally, he added a brief explanatory comment or other working note.⁶⁹ Bylica probably used these horoscopes to offer advice to Corvinus during his various military and diplomatic efforts. The real value of these horoscopes, however, was realized when Bylica used them to interpret two comets. Bylica's two *judicia*, on the comets of 1468 and 1472, reveal the extent to which the horoscopes provided the foundation for his broader efforts to interpret prodigious phenomena.

On September 22, 1468, Bylica observed a comet that prompted him to compose a *judicium* in which he interpreted this prodigious event. Two weeks later, on October 6, Bylica dedicated his interpretation to Corvinus and assured the king that the comet heralded favorable outcomes for Corvinus's political endeavors.⁷⁰ From his opening lines Bylica emphasized his role as one of Corvinus's political advisers and the political significance of the comet:

Because I know that your majesty, most serene prince, desires nothing more than the health of your kingdoms, the care and governance of which God has recently placed in your hands, I myself decided to explain to you my judgment of things to come from this comet to which I will add the arguments of the most learned astrologers and things learned from experience.⁷¹

⁶⁸In contrast, Guarico and Cardano rushed their collections of genitures into print precisely to solidify their standing as astrologers. See Grafton, *Cardano's Cosmos* (cit. n. 9), 71–90, and “Geniture Collections” (cit. n. 45). For a different interpretation of Cardano's collection of genitures, see Steven Vanden Broecke, “Evidence and Conjecture in Cardano's Horoscope Collection,” in *Horoscopes and Public Spheres: Essays on the History of Astrology*, ed. Günther Oestmann, H. Darrel Rutkin, and Kocku von Stuckrad (Berlin, 2005), 207–23.

⁶⁹Bylica bequeathed his collection of horoscopes along with the rest of his library to the University of Krakow. The original horoscopes were recopied at the end of the fifteenth century. The copies are preserved in Bylica, “Nativitates,” BJ cod. 3225.

⁷⁰Bylica, “Judicium de Cometa Que Apparavit Anno Domini Mcccc 68,” Bayerische Staatsbibliothek, Munich, Codici Latini Monacenses 9024, fol. 113v.

⁷¹*Ibid.*, fol. 107r.

Bylica's reference to the "most learned astrologers" emphasized his academic credentials, while his reference to "things learned from experience" drew attention to his own astrological expertise. In October 1468 Bylica brought that expertise to bear on Corvinus's most pressing political, religious, and military concerns: Corvinus's efforts to convey his own image as the true defender of the Catholic Church against Pödebrady.

Throughout the 1460s relations between Pödebrady and Rome had steadily deteriorated. In 1461, to bolster support from the Bohemian Utraquists, Pödebrady had appointed John of Rokycany archbishop of Prague and subsequently began to staff his offices with Utraquist nobles. The following year he sent delegates to Rome to petition Pope Pius II to recognize the *compactata* from the Council of Basel, which allowed Bohemian laity to receive communion in both kinds. The church had intended the *compactata* to be a temporary concession. Consequently, Pius II rejected Pödebrady's petition and demanded instead that Pödebrady outlaw the *compactata*. Pödebrady's final break from the Catholic Church came after he tried to form a league of princes free from papal influence. The new pope, Paul II, resolved to deal with the Utraquist problem and summoned Pödebrady to Rome in 1465 to answer charges of heresy.⁷² When Pödebrady ignored the summons, Paul excommunicated him. A year later the pope declared Pödebrady a heretic and urged Corvinus to depose him.⁷³ Corvinus quickly adopted the mantle of a crusading knight and declared himself the savior of the Bohemian Catholics. Comparing Pödebrady to the Turkish infidels, he cast his aggression in terms of a crusade to recover Bohemia.⁷⁴ In early 1468 Corvinus declared war on Bohemia and invaded Moravia, hoping to use a successful campaign in Bohemia to generate support for a crusade against the Turks.⁷⁵

Bylica, who had recently returned from the Bohemian campaign, was intimately familiar with Corvinus's political situation. When he composed his *Judicium de Cometa Que Apparavit Anno Domini Mcccc 68*, Bylica aligned his rhetoric with Corvinus's political ambitions. Among the events signaled by the comet, Bylica reassured Corvinus that it portended

the swift death of that most sinful heresiarch George of Pödebrady, who holds himself up as king of Bohemia, Pödebrady the most severe enemy of the orthodox faith and the Roman Church. To defend the Catholic faith, Your Majesty has begun a war with him in the present year.⁷⁶

In addition to reassuring the king that his efforts to drive Pödebrady from the Bohemian throne would succeed, Bylica's *judicium* also reinforced his role as Corvinus's

⁷² A concise summary of Pödebrady's difficulties with Rome can be found in Otakar Odložilík, "Problems of the Reign of George of Pödebrady," *Slavonic Yearbook*, American ser. 1 (1941): 206–14.

⁷³ Paul had initially urged Emperor Frederick III to depose Pödebrady, but when the emperor failed to take any action the pope turned to Corvinus. See the letters in Markgraf, *Politische Correspondenz Breslau* (cit. n. 65), 210–4, 230–3, 261–3.

⁷⁴ See, e.g., Matthias Corvinus to Bishop Protasio of Olomouc, Pozsony, 8 April 1468, in Markgraf, *Politische Correspondenz Breslau* (cit. n. 65), 264. The crusading rhetoric was not limited to Corvinus. Bishop Rudolf of Breslau used similar terms in his letter to Paul of Moravia in May 1467; Breslau, 4 May 1467, in *ibid.*, 228.

⁷⁵ Odložilík, "Problems of the Reign of George of Pödebrady" (cit. n. 72) and *Hussite King* (cit. n. 63), 476–511; Engel, *Realm of St. Stephen* (cit. n. 9), 302–6.

⁷⁶ Bylica, "Judicium de Cometa" (cit. n. 70), fol. 107.

political adviser. Bylica reminded the king of his own role in Corvinus's siege of Hradiště and promised to predict the outcome of future events. Bylica was attempting to carve out a space for himself at Corvinus's court.

Bylica's *judicium* was entirely traditional. He opened with the basic observational information, then discussed the nature of comets, and finally offered specific interpretations of this particular comet.⁷⁷ "The comet first appeared," he told Corvinus, "near the beginning of Leo, conjoined with respect to its latitude to Jupiter and then through its own proper motion it infected the entire sign of Leo and the entire sign of Virgo."⁷⁸ From this information, Bylica was able to determine the comet's complexion and general characteristics. The head of the comet was of the nature of Saturn, black and cold. Its tail, extending north toward the seven stars in Ursa Major, shared with them a rich cerulean blue color.⁷⁹ Bylica used this information to make his specific predictions, which as he promised relied on experience and the authority of learned astrologers.

Since Aristotle, comets had signaled droughts, famines, wars, diseases, and earthquakes.⁸⁰ Although Bylica's interpretation did not deviate from this general framework, he was more concerned with specific predictions. He drew attention to the aspects of the most recent comet that portended the death of a king and the destruction of his realm. He argued that the historical record, one form of experience, supported this interpretation. The comet in 1444 had portended an earthquake later that same year and the deaths of Vladislaus III, the king of Poland and Hungary, and many barons at the hands of the invading Turks. Similarly, the comet of 1456 had foreshadowed earthquakes.⁸¹ "Thus, without a doubt, our comet will be followed by earthquakes in places subdued by the sign of Leo," causing the destruction of cities, towns, and castles.⁸² Corvinus, who expended great effort to associate himself with leonine imagery, must have read Bylica's prediction as a metaphor for his campaign in Bohemia.⁸³ Turning from experience to authority, Bylica drew on classical and contemporary astrologers. His catalog of learned astrologers included Aristotle, Pliny, Ptolemy, Haly Abenragel, John of Damascus, and Leopold of Austria. According to their writings, comets always threatened wars, the deaths of kings, and the overthrow of kingdoms.⁸⁴ Drawing closely on Ptolemy's *Quadripartitum*, Bylica reassured Corvinus that towns and castles under the influence of Leo would soon be destroyed. In an unusual reference, Bylica claimed that both Homer and Haly Abenragel had determined that comets in the sign of Leo signaled "wars between kings and immense bloodshed."⁸⁵ Even in his general predictions, Bylica focused on the war between Corvinus and Podebrady.

When Bylica turned his attention to specific predictions, he relied on another form

⁷⁷ For a representative sample of cometary tracts, see Lynn Thorndike, *Latin Treatises on Comets between 1238 and 1368 A.D.* (Chicago, 1950).

⁷⁸ Bylica, "Judicium de Cometa" (cit. n. 70), fol. 107v.

⁷⁹ *Ibid.*, fol. 108r.

⁸⁰ Jane L. Jervis, *Cometary Theory in Fifteenth-Century Europe* (Boston, 1985), 11–33; Sara Schechner Genuth, *Comets, Popular Culture, and the Birth of Modern Cosmology* (Princeton, N.J., 1997).

⁸¹ Bylica, "Judicium de Cometa" (cit. n. 70), fol. 109v.

⁸² *Ibid.*

⁸³ On Corvinus's efforts to portray himself as the lion, see Enikő Békés, "The Lion and King Matthias Corvinus: A Renaissance Interpretation of a Classical Physiognomic Image," *Annual of Medieval Studies at the CEU* 10 (2004): 77–94.

⁸⁴ Bylica, "Judicium de Cometa" (cit. n. 70), fols. 108v–109r.

⁸⁵ *Ibid.*, fol. 109r.

of expertise: his collection of horoscopes. This body of reference material revealed Bylica's technical and mathematical expertise and allowed him to construct detailed and no doubt persuasive predictions. The bulk of Bylica's *judicium* contains predictions about the pope, other European rulers, and the Turks before concluding with dire predictions for Bohemia. His predictions were typically replete with warnings of plagues and mortal dangers. Corvinus, if he was careful and diligent, would escape serious injury or death.⁸⁶ In each case, Bylica drew on his collection of horoscopes, often employing more than one horoscope in a prediction. His predictions for Pope Paul II were typical of his practice and underscored the necessary connection between casting horoscopes and interpreting comets. In addition to general astrological doctrines of influence, Bylica's prediction for Pope Paul II depended on three specific horoscopes: the pope's geniture, the chart for the pope's election, and the horoscope for his coronation.⁸⁷ Initially, Bylica warned that the pope should fear death because the comet appeared near Jupiter, which held influence over spiritual people. Moreover, the comet had appeared in the earth sign that ruled Italy and was especially threatening to Rome itself.⁸⁸ To these general claims Bylica added three specific arguments. He began by stating that the comet had appeared in the tenth house of the pope's election chart. Further, when the comet appeared, the sun was in the same fiery sign it had occupied at the time of the pope's coronation. Finally, the comet had appeared in the ascending sign of the pope's geniture. Although Bylica stopped short of stating his conclusion, the implication of these disastrous correlations was clear: the pope was in mortal danger.⁸⁹ What made Bylica's prediction so convincing was the rigor of his analysis, demonstrated by the constant reference to the horoscopes that he had constructed and analyzed in order to determine the most significant astrological correlations. While Bylica's prediction for Paul II relied most explicitly on his collection of horoscopes, his other predictions shared a similar degree of detailed analysis.

Bylica had reserved his most virulent attack for his real targets: the Bohemian heretics, George Podebrady and his Utraquist priest John of Rokycany. Once again he drew on two types of experience: a shared historical narrative and his own technical skills. He reminded Corvinus that the comet in 1410, which had the nature of Mercury and had appeared near Jupiter in the sign of Leo, had brought about the death of the Bohemian king Wenceslaus and the spread of the Wycliffe heresy throughout Bohemia through the teachings of Jan Hus.⁹⁰ Bylica implied that the comet in 1410 had set in motion the changes that ultimately had led to the two current Bohemian heretics. The connection between comets and political and religious change was inescapable. To make his argument for the current comet, Bylica drew on his technical expertise, embodied in his collection of horoscopes: "Clearly the condemned heretic George Podebrady, who acts as if he is the king of Bohemia and who had, at the hour of his coronation, Leo as the ascending sign . . . and Rokycany, the seducer of Bohemia, will be killed by this comet."⁹¹ He concluded optimistically, suggesting that

⁸⁶ *Ibid.*, fols. 111r–111v.

⁸⁷ Unfortunately, I have not yet been able to identify these horoscopes.

⁸⁸ Bylica, "Judicium de Cometa" (cit. n. 70), fol. 110v.

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*, fol. 112r.

⁹¹ *Ibid.*, fols. 111v–112r.

the comet promised to bring about the annihilation of the entire Utraquist sect and Bohemia's return to the true church.⁹² Corvinus, who conquered Moravia and most of Silesia by the end of the year, must have found Bylica's predictions reassuring. Then, in May 1469, the Bohemian Catholics secured Corvinus's election to the Bohemian throne.⁹³

By 1472, when Bylica composed a *judicium* on the comet that appeared on January 11 that year, the general political context and Bylica's immediate milieu had changed in important ways. In 1471 the Academia Istropolitana had closed, prompting Bylica to relocate to Corvinus's court in Buda. The university, which had struggled for three years to survive, finally closed when its chancellor and most ardent supporter, Johannes Vitéz, was imprisoned for plotting against the king. Vitéz along with his nephew Pannonius and a number of Hungarian magnates had grown dissatisfied with Corvinus's war against Bohemia. In early 1471, when Pödebrady and Rokycany died, the disaffected Hungarian lords connived with Bohemian Catholics to place the Catholic Casimir of Poland, son of Jagiellonian King Casimir IV of Poland, on the Bohemian throne. Corvinus not only lost his excuse for invading Bohemia but also had to contend with domestic unrest—Vitéz and his co-conspirators had further plotted to elect Casimir to the Hungarian throne. Corvinus quickly learned of their plot and acted to reestablish his authority in the kingdom. Some of the conspirators fled the country. Others were imprisoned or executed.⁹⁴ Vitéz's own imprisonment signaled the death knell for the Academia Istropolitana, which closed before the end of the year. At that time, Bylica moved immediately to Corvinus's court in Buda. Bylica's *judicium* on the comet of 1472 reflects both the altered political landscape as well as his own new secure position at Corvinus's court in Buda.

However much the general context had changed, Bylica adopted the same basic contours for his *judicium*. He established the comet's location, its color, and its complexion. The comet had appeared in Libra, had an extremely long tail, was ruddy in color, and had the nature of the planets Mars and Mercury.⁹⁵ His specific predictions again consumed most of the *judicium*. Once again he argued from shared historical experience and his own expertise in constructing horoscopes. In mid-January 1472, Bylica appropriated the recent deaths of Pödebrady and Rokycany as evidence for his own skill in making predictions.⁹⁶ As before, Bylica considered the fortunes of Hungary's allies and enemies. This time he singled out for special attention Emperor Frederick III. Bylica claimed that rulers who had the sun in Libra in their genitures were especially at risk of death, "just as happens in the geniture of the invincible prince, Frederick, king of the Romans and present emperor, who has the sun at 6 degrees 39 minutes of Libra near which degree the comet was inflamed."⁹⁷ The specific reference to a detail in Frederick's geniture indicates that Bylica consulted his collection of horoscopes when writing his *judicium*. In fact, Bylica's copy of the emperor's rectified geniture was part of his collection. In Frederick's geniture the sun is found at

⁹² *Ibid.*, fol. 112r.

⁹³ Engel, *Realm of St. Stephen* (cit. n. 9), 304.

⁹⁴ *Ibid.*, 304–5.

⁹⁵ Bylica, "Judicium de Comete Qui Apparavit Anno Domini M° cccc° lxxij°," Stiftsbibliothek Melk, Melk, Austria, Cod. Mellicensis 751/2, fol. 319v–320r.

⁹⁶ *Ibid.*, fol. 324r.

⁹⁷ *Ibid.*, fol. 323v.

the bottom of the chart, in the fourth house, at $6^{\circ}39'$ of Libra.⁹⁸ Bylica's dire prediction for Frederick, combined with the earthquakes and similar disasters that he predicted for various Austrian towns, suggest that by 1472 Bylica had shifted his focus from Bohemia to Austria. Relations between Austria and Hungary had always been strained. In 1469 they had deteriorated, and negotiations in 1470 did little to relieve tensions. Bylica was, perhaps, echoing and reinforcing Corvinus's own hopes for western expansion. Five years later, the king invaded Austria and besieged Vienna. Although Corvinus did not capture the city, he was able to compel Frederick to accept a peace agreement acknowledging Corvinus as the king of Bohemia and paying an indemnity of 100,000 florins.⁹⁹ The peace lasted only until April 1482, when Corvinus openly declared war on Frederick.

When Corvinus invaded Austria in 1482, Bylica was once again at his side giving him advice. On June 28, 1482, Bylica cast an election chart for Corvinus. Bylica claimed that the superior planets strengthened Corvinus's chances in war.¹⁰⁰ At a later date, Bylica returned to the geniture he had constructed for Emperor Frederick III. Bylica identified a specific astrological cause to explain Frederick's previous military failures, when the emperor had been forced to take shelter in the Hofburg because his brother, Albrecht, had besieged Vienna. Bylica also noted along the bottom of the chart that in 1483 Frederick lost many towns to the Hungarian king.¹⁰¹ Bylica's predictions about Frederick's difficulties must have reassured Corvinus of his impending successes against the emperor. In January 1485 Corvinus besieged Vienna; six months later he marched triumphantly into the city, which he occupied until his death in 1490.

Corvinus's reliance on astrological experts was not aberrant. Many other princes relied on astrologers throughout their reigns. Unsurprisingly, perhaps, Corvinus's reliance shares most with that of his rival, Emperor Frederick III in Vienna. During Frederick's reign the Habsburg court increasingly turned away from medical astrologers and looked to mathematically trained astrologers at the University of Vienna.¹⁰² Frederick viewed the university masters as a resource, a ready body of academic experts who could be consulted on state matters. One of the masters Frederick had consulted was a young Regiomontanus, who in 1459 cast a geniture for the birth of the emperor's son, the future Emperor Maximilian I.¹⁰³ A decade later Corvinus tried to entice Regiomontanus to come to Buda as one of Corvinus's own astrologers. Corvinus's use of astrologers shares more with Vienna than simply Regiomontanus. Like his rival Frederick, Corvinus relied on mathematically trained experts more than physician-astrologers. Corvinus also tried to found specific institutions, universities

⁹⁸ Bylica labeled Frederick's geniture "Ffigura [sic] Verior Geniture Domini Imperatoris Ffrederici [sic] Anno 1415 Currente in Septembri Tempore Equato. D 21 h 10 m 22 s 40." Bylica, "Nativitates" (cit. n. 69), fol. 13r.

⁹⁹ Engel, *Realm of St. Stephen* (cit. n. 9), 306.

¹⁰⁰ Bylica, "Nativitates" (cit. n. 69), fol. 11r.

¹⁰¹ *Ibid.*, fol. 13r.

¹⁰² See Michael Shank, "Academic Consulting in 15th-Century Vienna: The Case of Astrology," in *Texts and Contexts in Ancient and Medieval Science: Studies on the Occasion of John E. Murdoch's Seventieth Birthday*, ed. Edith Sylla and Michael McVaugh (Leiden, 1997), 245–70.

¹⁰³ The geniture as well as Regiomontanus's interpretation of it survive in the Österreichische Nationalbibliothek in Vienna: Regiomontanus, "Epistola ad Quendam Imperatricem Judicium Astrologicum de Ejusdem Filio Continens," ÖNB cod. lat. 5179.

and an observatory, that would allow him unfettered access to astrologers as well as other experts. In 1485 Corvinus seemed finally to secure access to such an institution when he captured Vienna.¹⁰⁴

Corvinus's preference for mathematically trained astrologers who conspicuously used astrological instruments seems to distinguish astrology at the Hungarian court from astrology at the English or Milanese courts. In England, precisely during the later fifteenth century, the monarchy was growing increasingly suspicious of astrologers, who had been implicated in treasonous plots. As the prominence of academic astrologers faded, the court turned to medically trained astrologers, who in their roles as court physicians were also called upon to provide astrological advice on political issues.¹⁰⁵ In Milan there was a similar close connection between physicians and astrology. Court physicians offered advice to the Sforza dukes Galeazzo Maria Sforza and later Ludovico Sforza. Physician-astrologers in Milan offered advice on political matters—for example, entering cities, interpreting comets, and the deaths of rivals—as well as health questions. And just as in England, astrologers at rival courts were implicated in treasonous plots against the Sforza dukes.¹⁰⁶ In Hungary, by contrast, astrologers seem to have escaped suspicion during any of the plots against the king.

CONCLUSION

Bylica continued in Corvinus's service until the king died on April 6, 1490. Bylica noted on the geniture that he had cast for Corvinus that the "causes of death include a conjunction of Jupiter and Mars at 16 degrees of Capricorn; also a conjunction of Mars and Mercury at 8."¹⁰⁷ During his long career at Corvinus's court, Bylica had made himself indispensable to the king. Corvinus, who from the earliest years of his reign eagerly sought to attract astrologers to his court, appreciated Bylica's astrological expertise and relied on him to provide important political advice. Bylica's specific form of expertise combined technical mathematics with the use of astrological instruments and ensured that he succeeded where other astrologers, notably Stercze, failed. Corvinus rewarded Bylica by providing him with the income from various prebends. The king also wrote to Pope Innocent VIII, requesting that the pope provide Bylica with additional prebends.¹⁰⁸

Bylica was not the only astrologer to enjoy Corvinus's patronage. Corvinus tried but ultimately failed to retain Regiomontanus, whose expertise in both mathematics and astrological instruments surely exceeded Bylica's. Corvinus did succeed in attracting Hans Dorn, the most gifted instrument maker in the later fifteenth century. He had come to Pozsony, enticed by the promise of Corvinus's rich patronage. When the Academia Istropolitana closed in 1471, Dorn returned for a short time to Vienna before joining Bylica at Corvinus's court in Buda. Corvinus hoped to use Dorn and Bylica as the core experts around whom he could build an institution that could pro-

¹⁰⁴ A proper study of Corvinus's use of institutions, especially his relationship to the University of Vienna after he captured the city in 1485, is still wanting.

¹⁰⁵ See Carey, *Courting Disaster* (cit. n. 9), esp. 138–63.

¹⁰⁶ On the court at Milan see Azzolini, "Reading Health in the Stars" and "Politics of Prognostication." (Both cit. n. 9).

¹⁰⁷ Bylica, "Nativitates" (cit. n. 69), fol. 8v.

¹⁰⁸ See Domonkos, "Polish Astronomer Martinus Bylica" (cit. n. 4).

vide his court with a ready pool of astrological experts.¹⁰⁹ The king charged Bylica and Dorn with building an observatory and hoped to use these two astrologers as the core astrology faculty for a university in Buda. In 1478, Corvinus sent them to Nuremberg to purchase Regiomontanus's library and instruments for the observatory and university. Although they returned empty-handed, Corvinus remained committed to supporting astrology at his court. Shortly after Bylica and Dorn returned to Buda, Dorn constructed a new astrolabe, a large celestial globe, and a *torquetum* for Bylica. The bronze globe was the largest metal globe made in Europe before 1500.¹¹⁰ Although the instruments might have been intended for Corvinus's observatory or the university in Buda, they all bear Bylica's coat of arms and were used by him in his astrological practice.

Bylica's career points to the central role of astrology in Corvinian politics. At the same time, Bylica's astrological practice, relying as it did on a mastery of technical details, academic credentials, personal experience, and astrological instruments, reveals Corvinus's particular interests in astrology. Corvinus's patronage activities were all calculated to improve his own image and to solidify his position as a Renaissance monarch. His adoption of Renaissance architecture, his collection of illuminated manuscripts, and his patronage of humanists all contributed to his reputation. His patronage of astrologers, similarly, helped to reinforce his claim to be a Renaissance monarch. Corvinus's support for Bylica suggests that he recognized and appreciated Bylica's particular technical expertise. Bylica's astrological expertise, however, was not limited simply to mathematical details. His use of astrolabes, which could function not only as technical instruments but also as instruments of display and authority, must have appealed to Corvinus. For Corvinus, Bylica's astrolabes provided visual and public trappings of astrology that could be displayed before the assembled lords at the annual diet, to his invading armies, or to the city fathers and university masters in a conquered city. Later, after Bylica had solidified his position at the court, Corvinus benefited from the reflected authority of Bylica's astrological expertise. Whether or not Corvinus followed any of Bylica's advice was beside the point. Corvinus was an astute monarch who understood that his success in constructing his image as a modern, Renaissance ruler required more than beautiful palaces, gardens, and libraries. He also had to support an intellectually vibrant court that could attract the best scholars from all over Europe. The astrologers who came to Corvinus's court along with their astrolabes and other astrological instruments played a central role in the king's efforts to create the ideal of a Renaissance monarchy.

¹⁰⁹Michael Shank has detailed how Corvinus's contemporary and rival, Emperor Frederick III, relied on the academic experts at the University of Vienna as a pool of political advisers; see "Academic Consulting" (cit. n. 102).

¹¹⁰On the instruments, see Birkenmajer, "Martinus Bylica von Olkusz" (cit. n. 28); Zofia Ameisenowa, *The Globe of Martin Bylica of Olkusz and Celestial Maps in the East and in the West*, trans. Andrzej Potocki (Wrocław, 1959). Tadeusz Przykowski corrects some of Ameisenowa's mistakes; see "Bylicas Sternglobus und die ersten neuzeitlichen Himmelskarten," *Der Globusfreund* 10 (1962): 103–12. See also Lajos Bartha, "Egy Reneszász éggomb, mint csillagászati műszer: A Dorn-Bylica glóbusz, 1480-ból," *Technikatörténeti Szemle* 18 (1990–1): 87–96; Bartha, "A Renaissance Celestial Globe as an Analogue Computer," in *The Role of Visual Representations in Astronomy: History and Research Practice*, ed. Klaus Hentschel and Axel D. Wittmann (Frankfurt, 2000), 44–52.