

Kepler between cosmos and calendar. A socio-historical study of Johannes Kepler (1571-1630) as prognosticator

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Preface

There is an English saying: “No man is an island.” Over the past year, I have truly experienced its meaning. Throughout the process of researching and writing this thesis, I have relied on the support of many people, both academic and personal, for which I am deeply grateful.

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Abbreviations

KGW Johannes Kepler, *Gesammelte Werke*, München, 1937-2012.

Introduction

1 Historical Context

"For my part, I believe that, since astronomers are in a way priests of the most high God through the book of nature, our aim should not be the praise of our own intellect, but above all the glory of the Creator."¹

- Kepler to Herwart von Hohenburg

Johannes Kepler (1571–1630) penned these words to his patron Herwart von Hohenburg in 1598, only months before he was forced to leave Graz due to his adherence to the Lutheran faith. At the time, Kepler held the position of district mathematician for Styria and mathematics teacher at the Protestant *Stiftsschule* in Graz. He had initially enrolled at the University of Tübingen, intending to pursue a career as a Lutheran theologian. However, this trajectory soon changed. Even during his university years, Kepler encountered opposition from the theological faculty for his defence of the Copernican system, prompting him to seek an alternative professional path.²

As district mathematician, Kepler was responsible, among other duties, for producing annual prognostications. These texts, often published alongside astrological calendars, forecasted events for the coming year based on the positions of the celestial bodies. Typically, they included predictions related to planetary movements, crop yields, health, and political developments.³ In the same 1598 letter to Herwart von Hohenburg, Kepler famously described the task of producing prognostications as “a most vain, yet necessary task.”⁴ Some scholars have deduced from this and the many critiques on the contemporary practice of and reliance on prognostications that Kepler engaged in this work purely for financial reasons.⁵ While it is true that prognostications provided a reliable source of income, such an interpretation overlooks the significant intellectual and theological investment Kepler made in the genre. Far from treating the task as a mere formality, he consistently sought to reform and elevate the practice of prognostication. His

¹ Kepler to Herwart von Hohenburg, in Max Caspar, *Kepler Gesammelte Werke Briefe I. 1590-1599*, vol. 13, 25 vols, Kepler Gesammelte Werke (München: C.H.Beck, 1982), 193: “Ego vero sic censeo, cum Astronomj, sacerdotes deij altissimj ex parte librij Naturae simus: decere non ingenij laudem, sed Creatoris praecipue gloriam spectare.”; This thesis has been created with the support of (Gen)AI for the basis of the transcriptions and translations, as well as for the usage of proper idiomatic expressions.

² Klaus-Dieter Herbst, *Biobibliographisches Handbuch Der Kalendermacher*, Acta Calendariographica. Forschungsberichte 9 (Jena: Verlag HKD, 2020), online, consulted 20.07.2025: <https://www.presseforschung.uni-bremen.de/>.

³ Robin B. Barnes, *Astrology and Reformation* (Oxford: Oxford University Press, 2015), 93.

⁴ Kepler, KGW 13, pp. 190: “ab anno 1594 seriò sim adortus, et potissimum tempus in prognosticis, vanissimo labore, sed necessariò”

⁵ Max Caspar, *Kepler* (London, New York, Abelard-Schuman, 1959), 60.

writings reflect a deep philosophical engagement with astrology and its place within a Christian worldview, revealing a thinker who experimented with new methods and aimed to integrate astrological inquiry into a broader theological and cosmological framework.

From the opening quote, it is clear that Kepler understood his role as district mathematician to be far more than that of a mere stargazer. For him, it was a deeply religious vocation. By analysing the stars, he believed he was engaging directly with God's creation and seeking insight into the divine will. Through his prognostications, Kepler saw himself as a mediator between the heavens and humanity, revealing God's intentions to the public in much the same way that a priest interprets and communicates divine truth through scripture.

In *Astrology and Reformation*, Robin Barnes argues that the paradoxical rise of popular astrology during the early years of the Reformation was part of a broader movement of religious and cultural disenchantment. During this period, astrology evolved from an elite scholarly discipline into a widespread popular phenomenon, enabled in large part by the advent of mass print production. Prognostications provided townspeople with a framework to understand nature as a mirror of divine power and will. Astrology thus offered practical guidance on how to align oneself with natural forces and nurture an internal, personal relationship with God, replacing the older practice of petitioning saints for intervention. It granted the public both a conceptual grasp of natural law and the awareness that ultimate power remained in God's hands alone. Thus, prognosticators enhanced the relationship to God through applying mathematics.⁶

In this way, Kepler's interpretation of the religious role of the astrologer sheds light on the broader community of Lutheran astrologers. Prognostications were not merely tools for predicting future events; rather, they reflected a deeply rooted religious practice. These astrologers employed mathematics and the science of the stars as a means of coming closer to God. Their work was grounded in theological conviction, guided by the belief that God's will could be discerned not only through scripture but also through the natural order of the cosmos. Studying Kepler within the wider network of Lutheran astrologers thus allows for a reevaluation of the prognosticators, not as practitioners of superstition, but as participants in a theologically meaningful endeavour.

Just as Kepler offers insight into the broader community of Lutheran astrologers, embedding him within this tradition adds a valuable dimension to the study of his work. In much of the historiography, Kepler is often treated in isolation or grouped with a select set of seemingly exceptional thinkers, portrayed as precursors to modern scientific rationality. However, situating

⁶ Barnes, *Astrology and Reformation*, 64-69.

Kepler within the wider network of Lutheran astrologers reveals that his intellectual and religious pursuits were far less anomalous than is often assumed. His engagement with astrology, theology, and natural philosophy was deeply embedded in a larger confessional and intellectual culture that shared similar goals and methods.

2 Kepler's Cosmology

Johannes Kepler (1571-1630) is best known today as the astronomer who brought us the three laws of planetary motion. However, these findings were part of a much larger attempt to describe the composition of the whole universe. Kepler constructed a cosmology that was to be published in its finalised form in the *Harmonice mundi* (1619). Yet, his interests in the universe date far back, to his years as a theology student at the University of Tübingen. There, he wrote a *disputatio* defending the heliocentric model of the universe in which he questioned how celestial phenomena would be perceived by an observer stationed on the moon. Although he never presented this *disputatio* due to the rejection by his anti-Copernican professor, Kepler used this work as the basis for his posthumously published *Somnium* (1634).⁷ Nevertheless, he considered the science of the stars at this point in his life to be a side interest to his religious studies.⁸

His studies in theology ended abruptly in 1594, when he was appointed mathematics teacher at the Protestant *Stiftsschule* in Graz, Styria.⁹ At first, Kepler saw this position as a temporary obligation before returning to Tübingen to complete his studies. However, he quickly found a calling in his astronomical interests. He saw the study of the universe as complementary to theological studies of Scripture, describing astrologers as ‘the priests of God concerning the book of nature.’¹⁰ In other words, the science of the stars was another way of studying God's creation.

Kepler embraced the Copernican model of the universe. However, this meant that the traditional Aristotelian subdivision between the sublunar and supralunar world would not hold up.¹¹ If the Earth is merely one of many planets orbiting the Sun, this distinction with the moon as the divider becomes meaningless. With his cosmology, Kepler tried to bring out the profound unity of the sublunar and supralunar world.¹² He did this by basing his theory on geometry and harmonics,

⁷ Johannes Kepler, *Kepler's Somnium: The Dream, or Posthumous Work on Lunar Astronomy*, vert. Edward Rosen (Mineola, N.Y.: Dover Publications, 2003) xxii.

⁸ James R. Voelkel, ed., *Johannes Kepler and the New Astronomy*, Oxford Portraits in Science (New York: Oxford University Press, 1999).

⁹ Voelkel, *Johannes Kepler and the New Astronomy*, 23.

¹⁰ KGW, 13, pp. 193: “Ego vero sic censeo, cum astronomi, sacerdotes dei altissimi ex parte libri naturae simus.”; Patrick J. Boner, *Kepler's Cosmological Synthesis: Astrology, Mechanism and the Soul*, History of Science and Medicine Library 39 (Leiden: Brill, 2013) 40.

¹¹ Gérard Simon, *Kepler astronome astrologue* (Gallimard, 1979) 41.

¹² Gérard Simon, “Kepler's astrology: the direction of a reform,” *Vistas in astronomy* 18 (1975): 440.

arguing that all celestial and terrestrial phenomena, from the motions of the planets to the weather, fundamentally stem from a set of geometrical principles.¹³ Every material entity, from as small as humans and plants to as big as the Earth and celestial bodies, possesses a geometrical soul that resonates with the harmonics of the universe. The celestial bodies are moved by the soul of the Sun. These movements create a geometrical symphony that influences the soul of the Earth and, in turn, alters phenomena like the weather. Kepler explained this through an analogy with dancing farmers. Just like these farmers are moved to dance without fully understanding the mathematics of music, the Earth instinctively changes the weather due to the celestial geometry it senses.¹⁴ In this way, what we now separate into astronomy and astrology was inherently intertwined for Kepler, as how the universe was structured affected how the celestial phenomena influenced the Earth, and thus how future events could be foretold according to him.

While Kepler criticised astrology, he mainly targeted its contemporary practice, not its overall usefulness. In a letter to his former teacher, Michael Mästlin, he described it as follows: ‘I am a Lutheran astrologer, who rejects the nonsense and keeps the core.’¹⁵ For Kepler, this ‘nonsense’ meant everything that was not based on nature, and thus not on God. He tried to rid the practice of everything that was purely based on cultural conventions. In his reform, Kepler specifically focused on judicial astrology, the part of astrology that revolved around predicting the future.¹⁶ He argued that the core of this kind of astrology, based on nature, was the theory of aspects. All other theories in traditional astrology were to be rejected. In a letter to Thomas Harriot in 1606, Kepler wrote:

“For a decade, I have rejected all things, such as the division into twelve equal signs, the houses, rulerships, triplicities, etc., retaining only the aspects and translating astrology into a harmonic doctrine.”¹⁷

An *aspect* is an angular relation between two celestial bodies with the Earth as reference point. In the astrological tradition, there are five main aspects: conjunction (0°), opposition (180°), trine (120°), quadrate (90°) and sextile (60°). Kepler’s initial discussion of the aspects is found in his first major cosmological treatise, called the *Mysterium cosmographicum* (1596), in which he argued that the universe is structured through the five Platonic solids. In chapter 12 of this work, he

¹³ Boner, *Kepler’s Cosmological Synthesis*, 42.

¹⁴ Boner, *Kepler’s Cosmological Synthesis*, 154; Patrick J. Boner, “Soul-Searching with Kepler: An Analysis of Anima in His Astrology,” *Journal for the History of Astronomy* 36, nr. 1 (2005): 11-12.

¹⁵ KGW, 13, pp. 184: “ego sum Lutheranus astrologus, qui nugis abjectis retineo nucleum.”

¹⁶ Simon, *Kepler astronome astrologue*, 44.

¹⁷ KGW, 15, pp. 349-50: “Ego iam a decennio divisionem in 12 aequalia, domus, dominationes, triplicitates etc. omnia rejicio, retentis solis aspectibus et traducta astrologia ad doctrinam harmonicam.”

discussed the aspects and how they relate to his geometrical and harmonic view of nature. He explained

Aspect	Angle	Fraction	Ratio	Consonance
opposition	180°	1/2	2:1	octave
trine	120°	1/3	3:2	fifth
quadrate	90°	1/4	4:3	fourth
sextile	60°	1/6	6:5	minor third

Figure 1: overview of the primary aspects and their respective angles, fractions, ratios and consonances. Source: Juste 2010, 180.

that each aspect forms a specific angle, which corresponds to a musical consonance. These angles divide the circle into fractions, mirroring the mathematical ratios that determine harmonious musical intervals (figure 1). For example, an opposition creates a 180° angle, dividing the circle in half (1/2). This fraction corresponds to the 2:1 ratio of string lengths that produces an octave in music.¹⁸

Kepler was not the first to present this theory, the combining of the science of the stars with mathematics and musical theory. The earliest remnants of the so-called *harmony of the spheres* date back to ancient Greek writings by Pythagoras and Plato.¹⁹ Ptolemy subsequently linked these ratios to the primary aspects in his *Tetrabiblos*. Kepler pointed out, however, that three important consonances were missing from the equation: the major third (5:4), the minor sixth (8:5), and the major sixth (5:3). This would equate to aspects with angles of 72°, 135°, and 144°, respectively. Through this, he planted the seed for his new aspects. However, in his *Mysterium cosmographicum*, Kepler did not explicitly name them. He only suggested that these angles should be taken into account.²⁰

By 1599, Kepler appeared confident in his choice of aspects. That year, he corresponded extensively with Herwart von Hohenburg about his aspect theory. In a letter dated April 10th, Kepler explicitly named his three new aspects for the first time and assigned each a (temporary) symbol. He called them the *quintile* (72°), *sesquiquadrate* (135°), and *biquintile* (144°).²¹ Herwart von Hohenburg, however, was critical of Kepler's new aspects. In a letter of May 16th, he pointed out that by adding these new aspects, Kepler opened the floodgates for adding an infinite number of new aspects.²² Kepler countered this by referring back to harmonics, saying that there are only

¹⁸ David Juste, "Musical theory and astrological foundations in Kepler: the making of the new aspects," in *Music and Esotericism*, ed. Laurence Wuidar (BRILL, 2010), 180.

¹⁹ Francis Maes, *Een geschiedenis van de Europese muziek tot 1900* (Gent: Academia Press, 2019) 30-31.

²⁰ Simon, *Kepler astronome astrologue*, 44-48; Juste, "Musical Theory And Astrological Foundations, 179-81."

²¹ KGW, 13, pp. 310: "Et cum sint harmoniae octo: unisonus, tertia mollis, tertia dura, quarta, quinta, sexta mollis, sexta dura, octava: erunt etiam ut est in meo libello Cosmographico, octo radiationes, conjunctio, sextilis, quintilis, quadratus, trigonus, sesquiquadratus, biquintilis, opp.ositus, quos sic soleo signare [...]. Animadverto enim, et hos operari novos sc: [...]."

²² KGW, 13, pp. 333: "Cum eadem ratione, plurimi et tandem infiniti quoque aspectus effingi queant, que consimilibus rationibus non careant"

seven (or eight, if you count the perfect unison) harmonic divisions of the string.²³ He then connected these string divisions to segments of a circle, linking each one to a specific astrological aspect. To illustrate his argument, he provided a clear overview that matched each aspect

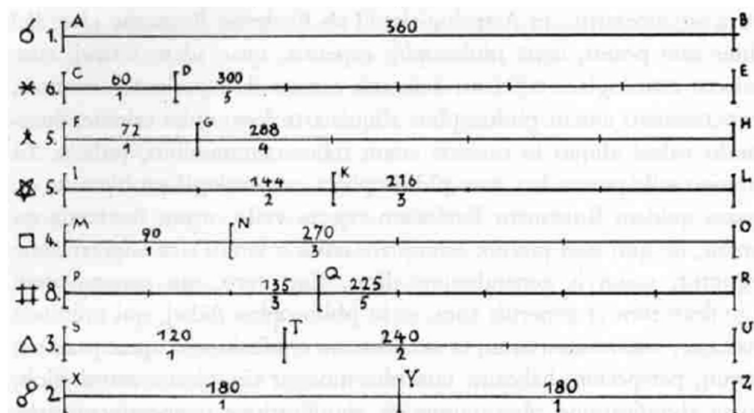


Figure 3: illustration of Kepler's harmonic and geometrical aspect theory, from top to bottom: conjunctio, sextilis, quintilis (new), biquintilis (new), quadratus, sesquiquadratus (new), trigonus and oppositus. Source: KGW 13, letter 123, 349, Kepler to Herward von Hohenburg.

with its corresponding string ratio, fractional division, and angle in degrees on the circle (figure 2). By 1599, Kepler had become more confident in his specific additions to aspect theory, asserting that these were the only ones necessary, as they followed the logic of the harmonic scale.

The next step in the development of Kepler's astrological theory came with the publication of *De fundamentis astrologiae certioribus* (1602), or *On the sounder foundations of astrology*. This work consists of 75 theses, divided into a theoretical part and a prognostication for the year 1602. In the first part of the work (theses I-LI), he lays out his reformed, nature-based astrological theory. He builds his theory from the ground up, starting with the role of the sun and the moon, followed by the planets and their relations due to their angular positions. He ends the theoretical section with a reflection on the role of the Earth's soul and the cycle of its humours as a body. In the second part of the *De fundamentis* (theses LII-LXV), Kepler used his theory described in the previous theses to make predictions for the year 1602. Although this section followed the formal structure of a prognostication, its main purpose seems to have been to demonstrate the validity of Kepler's theories, rather than to serve as a practical forecasting tool. With this work, Kepler officially integrated the three new aspects into both his theory and practice.²⁴

His account of the aspects described in *De fundamentis*, was mostly in accordance with the explanation in his letters to Herwart von Hohenberg from 1599. However, the selection of aspects was still subject to change throughout the following year. In *De Fundamentis*, Kepler justified his three new aspects not only by their harmonic basis, but more importantly, by the fact that their

²³ KGW 13, pp. 349: "Non sunt enim plures fides divisiones harmonicae quam 7, aut, si, cum non dividitur fides, id accenseas, octo."

²⁴ KGW 4, pp. 5-35; J. V. Field, "A Lutheran astrologer: Johannes Kepler," *Archive for History of Exact Sciences* 31, nr. 3 (1984): 189-272.

effects had been confirmed through experience. Yet it was precisely this appeal to experience that would later cause him to reconsider his selection of aspects in later years. In March 1608, Kepler was questioned by the physician Johann Georg Brengger (1559-1637) about these “meteorological experiences” mentioned by Kepler. Brengger did not believe it was possible to prove the influence of aspects based on weather observations.²⁵ In his response, Kepler attempted to persuade Brengger of his chosen aspects using the same arguments he had previously shared with Herwart von Hohenburg. This time, however, he supplemented them with examples of this observational evidence. Kepler highlighted the importance of experience, admitting that his observations had led him to revise some of the conclusions he had drawn from his earlier theoretical work:

“I do confess that these three [aspects], the quintile, biquintile, and sesquiquadrate, were brought to me through reason [...], while the semi sextile was supplied to me only by the most pure experience, against all reason. And for that reason, my own observations on the sesquiquadrate make me suspicious.”²⁶

Kepler clarified that while his theory led him to select the quintile, biquintile, and sesquiquadrate, these choices were not consistent with his observations. The sesquiquadrate had no noticeable effects on the weather. Furthermore, he noted that an entirely new aspect, the semi sextile, has significantly more influence. As a result, his selection of the eight aspects based on harmonics proved to be inadequate. Throughout the following year, he examined other potential aspects solely based on geometry, such as the “decile” (36°), “semi quadrate” (45°), “tridecile” (108°), and “quincunx” (150°). He therefore dismissed the analogy between aspects and consonances and concentrated on the geometrical ratios for his selection.²⁷

Kepler’s aspect theory reached its final form in the fourth book of his magnum opus, the *Harmonices mundi* (1618). He presented a revised selection of aspects, justified through geometry. He connected his twelve selected aspects with the regular polygons formed by the arcs of those aspects. The more accurately the polygon could be inscribed within a circle, the stronger the aspect’s influence.²⁸ Based on this principle, Kepler ranked the aspects in a hierarchy of power, from most to least influential:

²⁵ Boner, *Kepler’s Cosmological Synthesis*, 65.

²⁶ KGW 16, letter 488, 140: “Hoc quidem fateor, tres hos [quintilis] ☆☿ ratio mihi suppeditavit (iam examinata) sed semisextum nudissima experientia contra omnem rationem. Itaque circa ☿ experientia mea mihi ipsi fit suspecta.”

²⁷ Boner, *Kepler’s Cosmological Synthesis*, 66-67; Simon, *Kepler astronome astrologue*, 169.

²⁸ Simon, *Kepler astronome astrologue*, 70-74.

1. Conjunction (0° or 360°) and opposition (180°)
2. Quadrate (90°)
3. Trine (120°), sextile (60°), semi-sextile (30°)
4. Quintile (72°), biquintile (144°), quincunx (150°)
5. Decile (36°), tridecile (108°), octile (45°), sesquiquadrate (135°)

While he moved away from harmonics for the selection of influential aspects, it was still relevant to his theory. He still compared aspects and consonance, as they were both forms of harmonics. They can both be perceived by the soul and influence it. Just like the soul can be moved to dance through the harmonies of music, it can sense the geometrical harmonies of the aspects.²⁹

Kepler's reformed astrological theory was thus closely linked to his broader cosmology. He rejected all means of prediction, except for the theory of the aspects. He argued that this was the only theory that was purely based on nature, in contrast with, for example, the signs of the zodiac, which he deemed cultural constructs. Kepler made adjustments to the existing aspect theory. Initially, he had added three new aspects, the quintile (72°), biquintile (144°), and sesquiquadrate (135°), based on harmonics. However, when observations proved this theory to be wrong, he pivoted to a theory based more on geometry. The finalized version of his astrological theory was included in the *Harmonices Mundi* (1618).

3 Status Questionis

The seemingly paradoxical coexistence of the Reformation and the widespread popularity of astrology has been noted as early as the 1920s in Aby Warburg's *Heidnisch-antike Weissagung*. The art historian specifically observed a pronounced Lutheran preoccupation with the science of the stars.³⁰ Lynn Thorndike later situated this Lutheran astrology within the University of Wittenberg, identifying a circle around Philipp Melanchthon (1497–1560) of his pupils, colleagues and friends.³¹ Together with him, they displayed an active interest in natural science as a tool for religious advancement. Thorndike identified a list of scholars who would have been part of this so-called "Melanchthon circle". Thirty-four years after Thorndike's publication, Robert Westman revisited the idea of the "Melanchthon circle", revising the list of figures associated with it. Additionally, Westman no longer described it as an occult circle of enthusiastic followers, as

²⁹ Judith Veronica Field, *Kepler's Geometrical Cosmology* (Bloomsbury, 1988) 129-31.

³⁰ Aby Warburg, *Heidnisch-Antike Weissagung in Wort Und Bild Zu Luthers Zeiten*, Sitzungsberichte Der Heidelberger Akademie Der Wissenschaften, Philosophisch-Historische Klasse (Heidelberg: Winter, 1920); Richard Woodfield, *Art History as Cultural History: Warburg's Projects* (London: Routledge, 2014), 93-5.

³¹ Lynn Thorndike, *Volume V and VI: sixteenth century*, vol. 5, *History Of Magic And Experimental Science* (New York: Columbia University Press, 1941), 378-405.

Thorndike did, but rather as an informal circle of scholars who had come together within the confines of Wittenberg under Melanchthon's leadership.³²

In 2004, Claudia Brosseder offered an in-depth analysis of the political, religious, and intellectual culture of the Lutheran astrologers at the University of Wittenberg in her book *Im Bann der Sterne*. In contrast to Thorndike and Westman, she rejected the notion of a “Melanchthon circle,” explicitly characterising it as a myth. While she acknowledged Melanchthon’s pivotal role in promoting the study of astrology at Wittenberg, she argued that the movement extended beyond his immediate influence and should not be reduced to a close-knit circle of followers. Despite Brosseder’s explicit opposition to the conceptual frameworks of Thorndike and Westman, her revision appears to be largely semantic rather than substantive, as both earlier scholars also recognized the broader reach and institutional embeddedness of astrological thought at Wittenberg.³³

Robert Barnes adopted the idea of the Wittenberger astrologers within his 2016 study of the connection between astrology and the emergence of the Reformation.³⁴ While he did not look exclusively at the Lutheran astrologers at Wittenberg, they played a crucial role within his narrative. The idea that the science of the stars was an important addition to the Christian faith did not stay confined within the walls of the university. Former students of the University of Wittenberg, who remained in close contact with their alma mater, went on to become mathematicians, priests, or physicians who actively engaged in astrological practice. In doing so, they contributed to the dissemination of the idea that astrology was a legitimate and valuable discipline. As a result, successive generations of Lutheran astrologers emerged who, although not always trained at Wittenberg, nonetheless inherited and perpetuated the intellectual legacy cultivated there.

One of the universities profoundly shaped by Melanchthon’s intellectual legacy was the University of Tübingen. In her monograph based on her doctoral research, Charlotte Methuen offers an in-depth analysis of the university’s intellectual climate, which helped set one of its most distinguished alumni, Johannes Kepler, on the path of employing mathematics to investigate

³² Robert S. Westman, ‘The Melanchthon Circle, Rheticus, and the Wittenberg Interpretation of the Copernican Theory’, *Isis* 66, no. 2 (June 1975): 165–93; Robert S. Westman, *The Copernican Question: Prognostication, Skepticism, and Celestial Order* (Berkeley: University of California Press, 2011), 147-50; Claudia Brosseder, *Im Bann der Sterne: Caspar Peucer, Philipp Melanchthon und andere Wittenberger Astrologen* (Berlin: Akademie Verlag, 2004), 14-15.

³³ Brosseder, *Im Bann der Sterne*, 11-16.

³⁴ Barnes, *Astrology and Reformation*.

divine creation. Her study highlights the significant influence of Wittenberg thought on Kepler's education, particularly as mediated through his astronomy teacher, Michael Mästlin.³⁵

Methuen argues that Kepler's astronomical work must be understood in light of its deeply religious motivation, making his theological training at the University of Tübingen particularly significant. Contrary to earlier interpretations, most notably that of Alexander Koyré, who viewed Kepler's formulation of the three laws of planetary motion as a decisive step in the development of the empirical method, Kepler's ideas were, in fact, rooted in a theological vision.³⁶ His planetary laws emerged not from a purely scientific revolution, but from a quest to uncover a divinely ordained, harmonically structured cosmos.³⁷ This mathematical and natural-philosophical complexity of Kepler's cosmology has been widely studied, most notably by Simon, Field and Boner.³⁸

As has been noted above, Kepler's works on the geometrical composition of the universe did not solely envision the purely structural components, but fundamentally questioned the relationship between the sub- and supra-lunar world. The animal soul (*anima*), present in the earth, as well as in animals and human beings, makes it possible to be influenced by the celestial positions, through its innate knowledge of the geometrical proportions.³⁹ This aspect of Kepler's cosmology closely aligns with the astrological dimension of his work, specifically his effort to understand how celestial bodies influence earthly events. Kepler's relationship to astrology and his efforts to reform the discipline have been the subject of considerable scholarly attention; however, much of this research has concentrated primarily on his theoretical engagement with the science of the stars.⁴⁰ Consequently, it disregards a large portion of what sixteenth-century astrology entailed: the production of astrological calendars and prognostications.

The neglect of practical astrological texts has not been limited to studies on Kepler. In earlier scholarship on the early modern science of the stars, there was a marked tendency to overlook calendars and prognostications in favour of theoretical or philosophical approaches.⁴¹ However,

³⁵ Charlotte Methuen, *Kepler's Tübingen: Stimulus to a Theological Mathematics* (Brookfield, VT: Ashgate, 1998).

³⁶ Alexandre Koyré, *The Astronomical Revolution; Copernicus, Kepler, Borelli* (London: Methuen, 1973).

³⁷ Methuen, *Kepler's Tübingen*, 8-9.

³⁸ Simon, *Kepler Astronome Astrologue*; Field, *Kepler's Geometrical Cosmology*; Boner, *Kepler's Cosmological Synthesis*.

³⁹ Boner, 'Soul-Searching with Kepler,' 7-8.

⁴⁰ Examples include Fritz Krafft, 'Tertius Interveniens: Johannes Keplers Bemühungen Um Eine Reform Der Astrologie', in *Die Okkulten Wissenschaften in Der Renaissance*, ed. August Buck, Wolfenbütteler Abhandlungen Zur Renaissanceforschung 12 (Wiesbaden: Harrassowitz, 1992), 197-225; Edward Rosen, 'Kepler's Attitude toward Astrology and Mysticism', in *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers (Cambridge: Cambridge University Press, 1984), 253-72; Field, 'A Lutheran Astrologer'.

⁴¹ Klaus-Dieter Herbst, *Die Schreibkalender Der Frühen Neuzeit – Eine Noch Wenig Genutzte Quelle Für Die Astronomiegeschichte* (2010), S. 31-48.

in recent years, there has been a rehabilitation of the source as a valuable source for the history of astronomy. Central within this movement have been the works of Klaus-Dieter Herbst. He not only provided essential tools for the study of early modern calendar makers, such as his *Biobibliographisches Handbuch der Kalendermacher*, but also highlighted the importance of these practical astrological documents within knowledge production.⁴² Within the scholarship on Kepler's astrology, his calendars and prognostications have received attention from Richard Kremer and Patrick Boner, who have respectively examined their computational foundations and the rhetorical strategies employed in their dedicatory letters.⁴³

4 Sources and methodology

In this master's thesis, I will use Kepler's prognostications as a lens through which to explore his astrological project within the broader network of Lutheran astrologers. I will compare the prognostications produced by Kepler with those of two of his contemporaries within the Wittenberg tradition of Lutheran astrologers: Johannes Krabbe (1553-1616) and Melchior Schärer (1563-1624). Through this approach, I aim to recontextualise Kepler's work not as an isolated case, but as part of a wider intellectual, religious, and scientific milieu.

The main sources for this research are the prognostications of Kepler, Krabbe, and Schärer. These annually published forecasts offered predictions on a wide range of topics, including weather, harvest yields, health, and political events for the coming year. Prognostications typically constituted the second part of an annual calendar, following the *Schreibkalender*. The *Schreibkalender* was formatted as a table listing the days of the month alongside the positions of celestial bodies, often accompanied by brief notes on their earthly implications. It earned its name from its layout, which left space, typically on the left-hand pages, for readers to record personal notes. Due to this tabular format, however, it wasn't easy to provide in-depth commentary or overarching forecasts for the year. This is where the prognostications played a crucial role. Their extended textual format allowed for more comprehensive interpretations of celestial phenomena. In addition to monthly predictions, the prognostications often included

⁴² Herbst, *Biobibliographisches Handbuch*; Klaus-Dieter Herbst, 'Das Vermitteln astronomischen Grundwissens in Schreibkalendern des 16. und 17. Jahrhunderts', in *Popularisierung der Astronomie: Proceedings der Tagung des Arbeitskreises Astronomiegeschichte in der Astronomischen Gesellschaft in Bochum 2016*, ed. Gudrun Wolfschmidt and Astronomische Gesellschaft, Nuncius Hamburgensis, Band 41, Popularisierung der Astronomie, Hamburg (Hamburg: tredition, 2017).

⁴³ Patrick J. Boner, 'Finding Favour in the Heavens and Earth: Stadius, Kepler and Astrological Calendars in Early Modern Graz', in *Johannes Kepler: From Tübingen to Žagań*, ed. Richard L. Kremer and Jarosław Włodarczyk (Warsaw: Institut Historii Nauki PAN, 2009), 159–77; Richard Lynn Kremer, 'Kepler and the Graz Calendar Makers: Computational Foundations for Astrological Prognostication.', in *Johannes Kepler: From Tübingen to Žagań*, ed. Richard Lynn Kremer, Jarosław Włodarczyk, and Richard Lynn Kremer, *Studia Copernicana* 42 (Warsaw: Institute for the History of Science, 2009), 77–100.

thematic chapters addressing broader subjects, such as health or politics, for the entire year. When referring specifically to one of these components, I will distinguish between the *Schreibkalender* and the prognostication. When speaking about the document as a whole, I will use the term (astrological) calendar.

Prognostications were generally referred to by two terms: *Practica* or *Prognostica Astrologica*. It remains unclear whether these terms denoted a qualitative difference or were effectively synonymous. Present-day scholarship often treats them interchangeably in discussions of astrological calendars.⁴⁴ In his study of astrology and politics at the court of Maximilian I (1459–1519), Darin Hayton dedicates separate chapters to *Practica* and *Prognostications*, yet he does not explicitly define a distinction between the two. Within the chapter on prognostications, Hayton primarily discusses predictive texts tied to specific astronomical events, such as comets, rather than the annually issued prognostications that accompanied the *Schreibkalender*.⁴⁵ His use of the term *Practica* seems more closely aligned with what is generally understood as the second part of the annual astrological calendar. It is possible that the preferred terminology evolved over time: *Practica* may have been more common in the early sixteenth century (the period covered by Hayton), whereas *Prognostica Astrologica* became more prevalent later. That both terms were used interchangeably is evidenced by their concurrent appearance on title pages. For instance, Schärer consistently titled his works *Prognosticon oder Practica*, indicating that the terms were seen as equivalent by him. For the sake of clarity and consistency, I will use the term *prognostications* to refer to the second part of the calendars, unless the original title of a work specifies *Practica*.

Mostly written in German, the astrological calendars were among the most widely circulated forms of print in the Holy Roman Empire during the early modern period. As Kepler remarked in his *Tertius Interveniens* (1610): “There is no book under the sun that sells so many copies, each year again, as the calendars and prognostications of a celebrated astrologer.”⁴⁶ Due to their low cost and accessible language, prognostications reached a broad audience among the literate

⁴⁴ The interchangeable use of the terms is very apparent in works who use the annual calendars as their main source, such as Jonathan Green, *Printing and Prophecy: Prognostication and Media Change, 1450–1550*, *Cultures of Knowledge in the Early Modern World* (Ann Arbor: University of Michigan Press, 2012); Barnes, *Astrology and Reformation*.

⁴⁵ Darin Hayton, *The Crown and the Cosmos: Astrology and the Politics of Maximilian I* (Pittsburgh, Pa: University of Pittsburgh Press, 2015).

⁴⁶ Kepler, *Tertius Interveniens*, KGW 4, pp. 150: „weil kein Buch unter der Sonnen ist / dessen so viel Exemplaria verkaufft / unnd alle Jahr wider erneuert werden / als eben die Calendaria und Prognostica eines beschreyeten Astrologi.“

public. At the same time, they were also read and analysed by more educated and elite circles. As a result, they formed a unique genre of print that bridged popular and learned readerships.⁴⁷

Not only was the readership of prognostications remarkably diverse, but so too were the backgrounds of the astrologers who produced them. These annual calendars were not exclusively the work of elite or learned individuals such as mathematicians, astronomers, and physicians. They were also authored by priests, schoolteachers, and even individuals with limited formal education, including farmers and other burghers who referred to themselves as *Liebhabs* of the art.⁴⁸ Of the priest-astrologers, many had studied with Melanchthon at the University of Wittenberg.⁴⁹

All three of the studied prognosticators published their works almost annually between the 1590s and 1620s. However, the number of surviving documents varies considerably. All known and extant astrological calendars and prognostications by Kepler have been compiled in the second part of volume 11 of the *Kepler Gesammelte Werke* (KGW).⁵⁰ Kepler issued his first calendar in Graz for the year 1595. Unfortunately, the earliest surviving prognostication covers the year 1597. Between 1597 and 1606, all subsequent prognostications are extant except those for 1602 and 1603. Between 1607 and 1616, Kepler did not publish any prognostications, a significant hiatus that will be explored in greater detail later in this thesis. In total, Kepler published 17 calendars, 13 of which have survived.⁵¹

Unlike Kepler's prognostications, the works of Krabbe and Schärer have not been officially compiled. For this research, scans of their prognostications were consulted via the VD16 and VD17 databases. Johannes Krabbe published astrological calendars annually from 1592 until he died in 1616. However, calendars continued to appear under his name until 1622. It remains uncertain who authored these posthumous publications, though Klaus-Dieter Herbst has

⁴⁷ Jonathan Green, *Printing and Prophecy: Prognostication and Media Change, 1450-1550*, Cultures of Knowledge in the Early Modern World (Ann Arbor: University of Michigan Press, 2012), 64-65.

⁴⁸ Klaus-Dieter Herbst, 'Bäuerliche Autodidakten Als Astronomen Und Kalendermache', in *Selbstlesen-Selbstdenken-Selbstschreiben: Prozesse Der Selbstbildung von 'Autodidakten' Unter Dem Einfluss von Aufklärung Und Volksaufklärung Vom 17. Bis Zum 19. Jahrhundert*, ed. Holger Böning et al., Philanthropismus Und Populäre Aufklärung, Band 10 (Bremen: Edition Lumière, 2015), 175-90.

⁴⁹ Klaus-Dieter Herbst, 'Die Kalendermacher - Namen, Leumund, Sozialer Status', in *Schreibkalender Und Ihre Autoren in Mittel-, Ost- Und Ostmitteleuropa (1540-1850)*, ed. Klaus-Dieter Herbst and Werner Greiling, Presse Und Geschichte - Neue Beiträge, Band 124 (Edition Lumière, 2018), 32-37; Robin B. Barnes, 'Die deutschen Kalenderschreiber im Zeitalter der Konfessionsbildung 1531-1630: Register und Analyse', in *Schreibkalender und ihre Autoren in Mittel-, Ost- und Ostmitteleuropa (1540-1850)*, ed. Klaus-Dieter Herbst, Acta Calendariographica Forschungsberichte, Band 7 (Verlag HKD, 2018), 55-56.

⁵⁰ Volker Bialas and Helmuth Grössing, *Gesammelte Werke Calendaria et Prognostica, Astronomica minora, Somnium*, Nachdruck, Gesammelte Werke, 11.2 (München: C.H. Beck, 1993).

⁵¹ Herbst, *Biobibliographisches Handbuch*.

proposed Caspar Dauthendey (1588–1640) as a likely candidate.⁵² From 1596 onward, nearly all of Krabbe's prognostications have survived, although there is a significant gap between 1609 and 1614. Melchior Schärer began producing prognostications in the mid-1580s, although his works only began to be published in Tübingen from 1595 onwards. He temporarily stopped prognosticating in 1604. From this early period, however, only the prognostication for the year 1597 has survived. Schärer resumed publishing prognostications in 1607, and works continued to appear under his name until 1629, despite his death in 1624. For this later period, nearly all prognostications have been preserved.⁵³

Because this thesis examines a period of approximately thirty years, it was necessary to make a selection from the available prognostications. To allow for an in-depth analysis that remained feasible within the scope of a one-year research project, while still enabling a diachronic perspective, a sample of three publications was chosen for each prognosticator. For both Krabbe and Schärer, posthumously published prognostications were excluded, as the astrologers themselves did not author them. The selected sample reflects the chronological spread of their publications, allowing for an examination of the evolution in each astrologer's forecasting practices. Given that Kepler's prognostications are significantly shorter than those of his contemporaries, one additional text by him has been included. Finally, because the limited timeframe did not allow me to conduct archival research in Germany, only prognostications for which high-quality digital scans were available online could be considered. Based on these criteria, the following prognostications were selected:

- Johannes Kepler: 1598, 1604, 1618, 1624
- Johannes Krabbe: 1597, 1609, 1614
- Melchior Schärer: 1607, 1615, 1621

In addition to the prognostications, various published theoretical works and correspondence by the three astrologers will be consulted in order to contextualise their prognosticative practice within the broader social and intellectual frameworks in which they operated.

When engaging with the early modern *science of the stars*, it is essential to critically reflect on the terminology used to describe this field. Modern distinctions between "astronomy" and "astrology" cannot be anachronistically applied to the early modern period. Today, astronomy is typically regarded as a scientific discipline focused on the empirical observation and

⁵² Herbst, "Krabbe, Johannes," in *Biobibliographisches Handbuch*.

⁵³ Nicolas Roudet and Nils Lenke, 'Die Drei Leben Des Melchior Schaerer (1563-1624). Biographische Skizze Und Bibliographie Des Schwäbischen Pfarrers, Musikers Und Astrologen', *Acta Historica Astronomiae* 50 (January 2014): 35–66; Herbst, *Biobibliographisches Handbuch*.

mathematical modelling of celestial phenomena, while astrology is often dismissed as a superstitious belief in a causal relationship between the positions of celestial bodies and earthly events. This modern antagonism between astronomy and astrology, however, does not reflect the conceptual framework of early modern thinkers.

To historicise the terminology and structure of celestial science, Steven Vanden Broecke proposes a four-part model that accounts for both astronomy and astrology in their theoretical and practical dimensions. Within this schema, *theoretical astronomy* denotes the demonstrative science concerned with celestial motions, while *practical astronomy* applies these theories to compute the positions of heavenly bodies. On the astrological side, *astrological physics* refers to the foundational principles of the science of judgments, such as the meanings of planets, signs, and houses, while *judicial astrology* involves the application of those principles to make prognostications based on celestial configurations. In referring to astrology throughout this thesis, I adopt this historically grounded understanding, which recognises both the theoretical and practical components of early modern astrology and its integral role within the broader science of the stars.⁵⁴

To understand how Kepler fits into the community of Lutheran astrologers and how his work specifically compares to that of Krabbe and Schärer, I will employ a close reading of the sources. Each subsequent chapter will involve an increasingly in-depth analysis of the source material.

This thesis aims to answer the central research question: How did Johannes Kepler's role and approach as a prognosticator compare to those of his contemporaries within the broader community of Lutheran astrologers? To address this overarching question, three sub-questions guide the structure of this thesis: (1) How did the title pages and structure of prognostications reflect each astrologer's self-positioning and broader conception of the genre? (2) What mathematical and natural-philosophical foundations underpinned their predictive methods, and how did these shape their engagement with contemporary astrological practice? (3) How did prognostications function as tools of religious instruction, and to what extent did they express a distinctly Lutheran worldview?

Each sub-question will be addressed in one of the three chapters of this thesis. The first chapter focuses on the structure and paratextual elements of the prognostications. Although each prognosticator was expected to provide predictions for the coming year, there were no fixed rules regarding the specific topics to be addressed or the level of detail required; only implicit

⁵⁴ Steven Vanden Broecke, *The Limits of Influence: Pico, Louvain, and the Crisis of Renaissance Astrology*, *Medieval and Early Modern Science* 4 (Leiden: Brill, 2003).

conventions applied. While broad similarities existed among many prognostications, there were also significant differences. By examining front pages, the length of the texts, and their overall structural composition, I will explore how each astrologer presented himself and his work to the reader, and how this reflected his broader understanding of the practice of prognostication.

Secondly, I will analyse the mathematical and natural-philosophical basis for the astrological predictions. It differs greatly from practitioner to practitioner which astrological theories were used to make predictions. It was common for them to criticise each other's work based on the theories they used and how they understood those theories. Rivalries between astrologers frequently took the form of back-and-forth accusations that the other's predictions lacked a scientific basis. Which theories each prognosticator employed were closely tied to their understanding of the cosmos and the possibilities or limitations of astrological predictions.

In the final chapter, I will look at the religious and metaphysical purpose ascribed to the prognostications. Despite the controversies about the ability of prognostications to make well-founded predictions about the future, it was a widespread and popular genre of text well into the seventeenth century.⁵⁵ This enduring appeal suggests that prognostications served a function beyond merely forecasting future events. In this chapter, I will investigate how Kepler, Krabbe, and Schärer each employed prognostications in their own way as instruments of religious instruction and as vehicles for promoting a distinctly Lutheran worldview.

⁵⁵ Green, *Printing and Prophecy*, 19-20.

Chapter 1: Structure and paratext of the prognostications

The first and most noticeable differences between the various prognostications are evident in their structure and composition. While this very popular genre of print was practised by many, there was no hard-set rule on its contents. Although every prognosticator was tasked with making predictions about the coming year, he had a certain freedom as to which topics he predicted and how elaborate these predictions had to be. Generally speaking, most astrologers made predictions about, for example, the positions of celestial bodies, the harvest, the weather, health and the political affairs of the year ahead.⁵⁶ There were broad similarities between several prognostications, but also many variations.⁵⁷

This chapter will, therefore, focus on the composition of the prognostications. I will analyse how each of the three prognosticators structured their works and which topics they selected for their forecasts. I will focus on both the differences and similarities between Kepler, Krabbe, and Schärer and their evolutions throughout the years.

1 Comparative analysis of title pages

When reading a prognostication, the first element that confronted the reader was its title page. This page had an important function: it conveyed essential information about the text at a glance. Title pages generally adhered to a standardised format, typically including the title formulation, the target year and location of the prognostication, and most crucially, the names of the author and publisher. Such details were considered necessary to establish the credibility and authority of the work. Prognostications issued anonymously were often regarded with suspicion and considered untrustworthy.⁵⁸ In addition to the author's name, the title page usually featured a brief description of the astrologer's credentials. This typically included their professional status and their relationship to the science of the stars, offering further assurance of the prognosticator's reliability.

The self-descriptions provided by prognosticators on their title pages not only revealed their professional affiliations but also shed light on how they sought to present themselves to their readers and how this self-fashioning evolved over time. For instance, Melchior Schärer initially

⁵⁶ Richard Lynn Kremer, "Kepler and the Graz calendar makers: computational foundations for astrological prognostication.," in *Johannes Kepler: from Tübingen to Žagań*, eds. Richard Lynn Kremer, Jarosław Włodarczyk, en Richard Lynn Kremer, *Studia Copernicana* 42 (Warsaw: Institute for the History of Science, 2009), 78.

⁵⁷ Jonathan Green, *Printing and prophecy: prognostication and media change, 1450-1550*, *Cultures of knowledge in the early modern world* (Ann Arbor: University of Michigan Press, 2012), 94.

⁵⁸ Green, *Printing and prophecy*, 95-6.

identified himself in his 1607 and 1615 prognostications as a “*Pastor in Menzingen in the Kraychgau region, a lover (Liebhaber) of astronomy*” (see Appendix 8 and 9). This modest designation reflects both his clerical profession and a more amateur relationship to the science of the stars. By 1621, however, a noticeable shift had occurred: Schärer no longer referred to himself as a *Liebhaber*, but instead adopted the more formal and authoritative title “*Astronomum & Mathematicum*” (see Appendix 10). This change suggests a deliberate effort to enhance his scientific credibility and to present himself as a more professional figure within the broader astrological community.

Schärer’s earlier designation as a *Liebhaber* of astronomy is consistent with his background as an autodidact in the field of astrology. He studied theology at the University of Tübingen, as did Johannes Kepler. However, the astronomical lectures of Michael Maestlin, which Kepler attended, only began in June 1583, by which time Schärer had already completed his studies and obtained the degree of *Magister*. Nonetheless, Schärer’s interest in the science of the stars appears to have taken root during his student years. He claimed in the dedication to his 1607 prognostication that he had already been practising astrology for twenty years, indicating that his studies likely began in the mid-1580s.⁵⁹ Supporting this, several astrological manuscripts once belonging to Schärer have been preserved in the University Library of Tübingen, attesting to his long-standing engagement with the discipline.⁶⁰

After graduating from the University of Tübingen in 1583, Schärer assumed his first clerical post as deacon in Löchau in 1585. That same year, he married into the Mögling family, thereby establishing familial ties with Michael Maestlin, the renowned Tübingen professor of mathematics and astronomy. Schärer would later draw on this connection by arranging to have his early prognostications printed in Tübingen. In 1591, he became a pastor in the town of Widdern. However, the region was marked by a strong polemic against astrology, which led Schärer to temporarily cease his astrological activities. It was only after his appointment to the parish of Menzingen in 1605 that he resumed the practice of composing prognostications. Throughout his years in Menzingen, Schärer increasingly took up the defense of astrology against its critics. These

⁵⁹ Schärer, 1607, A ii r: “Dann vor dreym Jahren/ als ich noch der Pfarth Widern vorgewesen/ hatte ich auß beweglichen ursachen gäntzlich bey mir beschlossen/ mich deß Astrologischen studii, (darinnen ich mich/ beneben meinem ordinari studio der Theology nun über die 20. Jahr oblectirt) etwas zu mäsigen/ sonderlich aber deß jährlichen prognosticirns und Calenderschreibens mich allerdings zu enthalten/ Sihe/ so schickts der allmächtig Gott/ daß ich nun mehr meine Tabulas und Ephemerider widerumb von newem herfür sucht/ und mit meinem Prognestico und Calender nochmalen auff die Bahn komme. Darzu dann gelegenheit gibt/ nicht allein die verenderung meines Kirchenberuffs/”

⁶⁰ Roudet and Lenke, ‘Die Drei Leben Des Melchior Schaerer (1563-1624). Biographische Skizze Und Bibliographie Des Schwäbischen Pfarrers, Musikers Und Astrologen,’ 42-3.

efforts to advocate for the legitimacy and usefulness of astrology may have motivated him to adopt the more professional title of *Astronomum & Mathematicum*, replacing his earlier self-description as merely a “lover of astronomy.”⁶¹

Just like Schärer, Krabbe began his publishing career with a modest self-description. In his 1597 prognostication, he referred to himself simply as “someone who has a particular love for the mathematical arts” (see Appendix 5). By that time, he had already been active at the court of Wolfenbüttel for approximately seven years, though not yet in the capacity of court mathematician. A written record from 1592 describes his duties as “chamber servant, land surveyor, architectural draftsman, and geometer.” Over time, however, Krabbe took on increasingly specialised responsibilities at court, eventually being referred to as a geographer, instrument maker, and mathematician, whose tasks encompassed the creation of calendars, astronomical tables, and technical instruments related to the science of the stars. Although he had briefly attended the University of Helmstedt, Krabbe largely acquired his mathematical and mechanical expertise through his close association with the renowned astronomer and instrument maker Jost Bürgi (1552–1632). While it remains unclear exactly when he took up more tasks related to the science of the stars, by 1609, Krabbe presented himself on the title page of his prognostication as the “appointed servant and court geometer to the Princely House of Brunswick at Wolfenbüttel” (see Appendix 6).⁶²

In contrast to Krabbe and Schärer, Kepler consistently presented himself as a mathematician from the outset of his prognosticating career (see Appendix 1). This is understandable, as his earliest prognostications were composed during his tenure as district mathematician of Styria. After being appointed Imperial Mathematician, this title got a prominent place on the title pages of Kepler’s prognostications (see Appendices 2-4). The association with the imperial court conferred considerable authority and credibility upon his publications: that the Emperor’s own mathematician had authored the document significantly enhanced its perceived reliability and status.

In addition to stating that the document was a prognostication for a specific year, the title formulation could also include further information about the contents of the work. Given that annual calendars were an immensely popular print genre, the market for prognostications was

⁶¹ Roudet and Lenke, “Die drei Leben des Melchior Schaerer,” 42-53; Herbst, “Schaerer, Melchior,” in *Biobibliographisches Handbuch Der Kalendermacher*.

⁶² Herbst, “Krabbe, Johannes,” in *Biobibliographisches Handbuch Der Kalendermacher*; Patrick J. Boner, *Celestial Novelty and the Science of the Stars: Kepler vs. Krabbe on Accuracy and Authority in Early Modern Germany* (Leiden: Brill, 2020), 93-106.

highly competitive.⁶³ It was therefore important for authors to distinguish their publications from others. This is especially evident in the elaborate title formulations used by Krabbe. On the title page of his 1609 prognostication, for instance, Krabbe emphasised the scientific foundations of his predictions, stating that they were based on true astronomical principles and natural causes. He also highlighted the inclusion of additional instructional material, such as a guide for recognising the planetary stars:

“Astrological Prognosticon: For the four seasons after the gracious birth and incarnation of our dear Lord and Saviour Jesus Christ, 1609. Compiled with special care from ancient observations and true astronomical principles, according to the nature and quality of planetary aspects and fixed stars, together with a renewed report on how to recognize the planetary stars by their motions, and how the fixed stars, such as *Oculus Tauri* and *Cor Leonis*, etc., will be covered and eclipsed by the Moon.”⁶⁴

Kepler, for his part, used the title formulation of his later prognostications to subtly reference his own cosmological views. On the title pages of both his 1618 and 1624 prognostications, he described the works as dealing with “the natural influence of the stars upon this lower world” (see Appendices 3–4). While Krabbe and Schärer also occasionally made references to nature in their title formulation, such as noting their intention to predict various natural events, Kepler’s phrasing is more specific.⁶⁵ By emphasising “natural influence,” he deliberately framed his astrological practice as a science grounded in nature, in line with his broader project to reform astrology and rid it of the purely cultural theories that were not based in nature.⁶⁶ This formulation, then, was not

⁶³ Richard Lynn Kremer, ‘Simon Marius as a Tychonic Calendar Maker’, in *Simon Marius and His Research*, ed. Hans Gaab and Pierre Leich, Historical and Cultural Astronomy Ser (Cham: Springer International Publishing AG, 2019), 321.

⁶⁴ Krabbe, 1609, title page: „PROGNOSTICON Astrologicum. Auff die vier JahrZeiten/ nach der gnadenreichen Geburt und Menschwerdung unsers lieben Herren und Heilandes Jesu Christi/ M. DC. IX. Mit sonderlichem Fleiß aus den alten Observationibus. unnd rechtem Astronomischen Grunde nach Natur und Eigenschafft der Aspecten mit den Planeten und unbeweglichen Sternen/ sampt abermalichen Bericht/ wie man die PlanetSternen/ und durch derselbigen Lauff/ auch die andern Firstern soll kennen lernen/ Und endlicher Bericht/ wie die mey Stellae Firae/ Als Oculus Tauri und Cor Leonis/ etc. von dem Monde werden bedeckt und verfinstert werden.”

⁶⁵ Schärer consistently used the same title formulation in which he stated: „was nächst Göttlicher Allmacht/ auß dem Lauff und Stand der Planeten und andern Gestirns/ auch der Finsternussen Wirkungen (tanquam causis secundis) für Gewitter und andere Zufäll natürlicher weise zu gewarten.” (see Appendices 8-10), thus stating that he would predict events in nature, but not specifically stating that those were because of “natural influences.”

⁶⁶ Gérard Simon, “Kepler’s astrology: the direction of a reform,” *Vistas in astronomy* 18 (1975): 444-45; Patrick J. Boner, *Kepler’s Cosmological Synthesis: Astrology, Mechanism and the Soul*, History of Science and Medicine Library 39 (Leiden: Brill, 2013), 78.

merely descriptive but reflective of the deeper epistemological value Kepler attributed to his work, distinguishing his work from those that did more than only predict those “natural influences.”

In his prognostication for the year 1618, Kepler explicitly stated that his predictions were based on the new *Rudolphine Tables* (see Appendix 3). While the prognostication for 1617 has not survived, correspondence suggests that he had already used the tables for that earlier work as well.⁶⁷ The *Rudolphine Tables*, which incorporated Tycho Brahe’s empirical observations and Kepler’s own astronomical theories, had long been anticipated by the scholarly community. Numerous correspondents urged Kepler to publish them, eager for the more precise predictive power they promised.⁶⁸ However, the tables would not appear in print until 1627. As a result, the 1618 prognostication offered readers an early look at predictions derived from these long-awaited tables. This made it a significant selling point and warranted prominent mention on the title page.

Aside from the text on the title pages, most prognostications also featured a woodcut, usually representing the ruling planets of the year in an anthropomorphic iconography.⁶⁹ The title page of Schärer’s 1607 prognostication most closely followed this pattern (see figure 3). The centre of the title page featured a woodcut representing Saturn on the left, holding a scythe in one hand and a child in the other, and Mars, as an armoured man, on the right. They are both depicted with the animal forms of the signs, which are situated by their side, respectively, Sagittarius and Pisces.



Figure 5: woodcut from the title page of Schärer’s 1607 prognostication. Source: Google books

The 1607 prognostication, however, is the only work that followed this tradition. Schärer’s works of 1615 and 1621 depicted the coat of arms of the Mentzingen family, which he served during this time (see Appendices 9-10). While Krabbe’s title pages had a woodcut in the centre, they did not depict planets anthropomorphically. Rather, they depicted several celestial bodies, most probably the sun or the different phases of the moon, surrounded by symbols of the signs of the zodiac (see figure 4).

⁶⁷ Bialas and Grössing, *Gesammelte Werke Calendaria et Prognostica, Astronomica minora, Somnium*, 250-52.

⁶⁸ Kremer, ‘Simon Marius,’ 354-57.

⁶⁹ Green, *Printing and prophecy*, 96.



Figure 7: woodcut of Krabbe's 1597 (top) and 1609 (bottom) prognostication. Source: Bayerische Staats Bibliothek.

In contrast to Schärer and Krabbe, Kepler did not use woodcuts referring to the celestial bodies. Either there is a woodcut of a crest on the front page, or there was no iconography at all. However, the prognostication for the year 1604 is an exception to this. On the bottom of this title page, a woodcut shows two men, a larger one above and a smaller one below, both looking up at the sky. In between them, there is a globe. In the margins of the image is written '*suspiciendo despicio*' (through looking up, I look down). This woodcut seems to comment more on the higher purpose of astrology than on the specific constellations of the stars for that year. By stating that this work looks down through looking up, Kepler could be hinting at the fact that he saw the prognostications more as a study of and guidance for the sublunary soul than a study of the stars.



Figure 9: woodcut of Kepler's 1604 prognostication. Source: Bayerische Staats Bibliothek.

2 Comparative analysis of length and compositional structure

In comparing the works of different prognosticators, the length of each work is important to take into account throughout the analysis. However, while differences in length may offer useful

insights, they are not conclusive on their own. With this in mind, the following analysis highlights patterns that may contribute to a broader understanding of the differences in the production of astrological calendars between Kepler, Krabbe and Schärer.

Comparing Kepler to Krabbe and Schärer, there is an apparent difference in the length of their prognostication. While the works of the latter range between 11,000 and 15,000 words, Kepler predicted for the whole year within 4,000 to 8,000 words. Within the prognostication itself, Kepler also took noticeably more time to introduce the work through the dedicatory letter. Krabbe's and Schärer's dedicatory prefaces took up approximately ten percent of the work, while Kepler's prefaces took almost half of the length of his prognostication. This speaks to the importance Kepler placed on embedding his prediction within his broader view on the science of the stars and his critiques on the current practice of it. This will be further discussed in the third chapter of this thesis.

While their prognostications differ greatly in length, Kepler, Krabbe and Schärer mostly predicted about the same topics and in doing so mostly followed the same structure. They started their prognostication by outlining the positions of the celestial bodies from the winter of the current year. This would be repeated in the prognostication at the start of all the seasons in the coming year. In addition, they indicated the dates and times of the different phases of the moon and the weather predictions for December. They started at the end of the previous year because the effect of some constellations from December still influenced the world in the next year.

The astrologers then proceeded with their forecasts for the coming year. Typically, they began by moving through the months sequentially, explaining which constellations would exert influence on the Earth and what kind of weather this would produce. Both Krabbe and Schärer provided near-daily predictions, amounting to roughly one to two pages per month. These monthly forecasts were structured according to the phases of the Moon, with each new paragraph marking the inception of a new moon phase. Kepler, by contrast, adopted a far more selective approach. He highlighted only a handful of days each month that, based on planetary constellations, would bring significant shifts in the weather. This more targeted method suggests that Kepler was less concerned with routine daily variations and more focused on identifying broader meteorological changes. As a result, his monthly predictions were typically limited to one or two paragraphs per month.

Having gone over the weather for each month, the prognosticators proceeded to list all the eclipses of the upcoming year, both of the moon and the sun and their influence on the world. They mostly covered the eclipses visible in their region, but sometimes they also elaborated on

eclipses visible in other parts of the world. It seemed to be a point of discussion whether these eclipses in other regions were relevant to their prognostications. At the beginning of his forecast on the eclipses of the year 1607, Schärer wrote:

“In our horizon, we will observe three eclipses in this year 1607: one of the sun, and two of the moon. However, in South America (otherwise called Brazil), they will also observe a fourth, and indeed a great eclipse of the sun. But we will concern ourselves with describing the ones visible to us.”⁷⁰

Schärer did mention that there would be an eclipse of the sun visible in Brazil, but directly after stated that this was not relevant as he wanted to only describe those visible in the region for which he was prognosticating. However, in 1615, when there was no visible eclipse in his region, he described two eclipses of the sun, one visible in India and one in New Guinea.

In contrast, Krabbe consistently mentioned eclipses happening in other parts of the world. Not only, like Schärer, when there were no other visible eclipses to be talked about. In 1614, Krabbe predicted four eclipses, of which only two would be partly visible in Europe.⁷¹ For the year 1609, he described six eclipses. Only one of those would be visible in Europe, the rest partly or not at all.⁷² Throughout all his prognostications, he specifically addressed the tradesmen who would be sailing to the regions where the described eclipses would take place. From this, it is possible to conclude that the customer base for Krabbe’s prognostications, more than for those of Schärer, was tradesmen sailing around the world. Consequently, Krabbe saw the need to include eclipses happening outside Europe.

Kepler seems to have taken a rather pragmatic approach to including non-European eclipses in his predictions, adding them only if they would help him in any way. In his *De fundamentis*, he explicitly stated that it was only relevant to predict those eclipses visible in his lands because only those had a relevant influence.⁷³ However, in his prognostication for the year 1618, he did describe the eclipses visible in the Americas. The reason why he did this becomes apparent in the last paragraph of this section. He wrote:

⁷⁰ Schärer, 1607, B ii v: „In unserm Horizonte werden wir diß 1607. Jahr dreyer Finsternussen gewar werden. Einer an der Sonnen/ und zweyer an dem Mon. Wiewol die/ so in America Meridionali (sonst Brasilia genannt) auch die vierdte/ und zwar ein grosse Finsternuß an der Sonnen werden warnemen. Wir wöllen aber die unsere Beschreiben“

⁷¹ Krabbe, 1614, Diii r – E i r.

⁷² Krabbe, 1609, E ii r – E iii v.

⁷³ Kepler, *De fundamentis astrologiae certioribus*, Thesis LXV; J. V. Field, “A Lutheran Astrologer: Johannes Kepler,” *Archive for History of Exact Sciences* 31, nr. 3 (1984): 263.

“Only in conclusion would I wish that this prognostication might in part fall into the hands of those who are sailing to the New World, to whom I would gladly entrust the commission, along with a wish for their joyful return, that on the 6th of August, in the morning before sunrise, they give careful attention to the full moon, whether it might not be tinged with a slight discoloration toward the south in its lower part.”⁷⁴

In his quest to improve his calculations, Kepler needed observations on the moon from the New World. To make sure that as many people who could make these observations would be reading his work, and therefore reading his request, he included information on the eclipses relevant to this targeted audience, namely sailors going to the Americas. However, he did not follow up on this with an account of the possible influence of those eclipses.

Astrologers described the influence of the eclipses mostly either intertwined with the list of eclipses or in a separate chapter. The eclipses were predominantly seen as affecting wars, both worldly and religious ones. On numerous occasions, the prognosticators stated that an eclipse would coincide with either political or religious upheavals. The deaths of high-ranking people were frequently caused by such a celestial event. However, sometimes it was also predicted to exert an influence on pregnancies, health or the food supply.

The prognosticators typically ended their works with three chapters, respectively predicting on agricultural fertility, illness and war. This sequence of chapters had already been present in astrological treaties from the Middle Ages.⁷⁵ Krabbe, Schärer and Kepler were no exception to this rule. Next to these conventional chapters, each prognosticator added his own personal touches. Schärer, for example, ended each prognostication by listing the sign of the zodiac under which different cities, countries and kingdoms were situated. Krabbe, on the other hand, consistently added a chapter on the fortunes of the mines and minerals.

While Schärer and Krabbe were very consistent in the composition of their prognostications, Kepler was not. He did predict on the same topics as his colleagues, but the way he presented them to his readers changed each year. In 1597, the preface was followed by a chapter combining the weather, the agricultural fertility and the illnesses of the coming year. After that, he discussed the eclipses and their influence on worldly affairs in a separate chapter. There was no monthly

⁷⁴ Kepler, 1618, KGW 11.2, pp. 169: „Allein zum bschluß möcht ich wünschen/ das dieser prognosticorum etliche denen zu thail wurden/ welche in die neue Welt schiffen/ welchen ich mit wünschung einer frölichen widerkunfft/ gern diese commission auffgeben wolte/ das sie auff den 6. Augusti zu morgens vor auffgang der Sonnen ihr vleissiges auffsehen auff den Volmond haben wolten/ ob er nit mit seinem untern thail gen Suden sich ein wenig entferben werde.“

⁷⁵ Green, *Printing and prophecy*, 97.

division in this work. This changed in his work for the year 1604. He kept the compilation of weather, fertility and illness in the same chapter, but divided this chapter into the separate months of the year. In addition to this, he started every month with a list of the phases of the moon and on which date and time they would occur. He ended this prognostication with some paragraphs foretelling the worldly affairs of the following year. In the extreme case of his 1606 prognostication, he threw the whole format overboard and simply gave a list for each month with the relevant planetary constellations.⁷⁶ He only provided minimal interpretations and had no other separate chapters. In his later prognostications for the years 1618 and 1624, he seemed to be conforming to the general conventions described above. He started with monthly predictions on the weather and the positions of the heavenly bodies, followed by subsequent chapters on eclipses and their influence, agricultural fertility, illness and worldly affairs. In his earlier works, he seemed to have been experimenting with different formatting types, while he later settled on the traditional structure of the prognostications used by his peers.

It can be concluded that Kepler was far more experimental with the structure of his prognostications than Krabbe and Schärer. While the works of the latter stayed essentially the same throughout their whole career, Kepler's differed each year. However, the topics on which they predicted stayed mostly the same. Kepler's predictions remained generally far shorter and less detailed than those of Krabbe and Schärer.

3 Conclusion

In this chapter, I examined the title pages and general structure of the prognostications, considering how they reflected each astrologer's self-positioning and broader conception of the genre. While the title pages generally conveyed the same essential information, their specific formulations were a key means of distinguishing each work within a crowded market. In this regard, the self-descriptions of the astrologers played an important role. Both Schärer and Krabbe initially presented themselves as Liebhabers, but later adopted more formal professional titles. This shift not only reflected an evolution in their careers but also an increased need to establish credibility in the face of both received and anticipated criticism. Kepler's designation as Imperial Mathematician likewise functioned as an authoritative stamp of approval. Beyond job titles, the broader wording of the titles also served to set each work apart, often highlighting attractive or distinctive features, such as Kepler's reference to the use of the Rudolphine Tables, to entice potential readers.

⁷⁶ KGW 11.2: pp. 126-35

The internal structure of the prognostications likewise revealed both commonalities and differences. Although Kepler's prognostications were considerably shorter than those of Krabbe and Schärer, all three addressed several core topics: monthly predictions, eclipses, agricultural fertility, illness, and war. Kepler, however, was more selective in the information he presented and experimented with the format by merging multiple topics within a single section. By contrast, the works of Schärer and Krabbe, while structurally closer to one another, each displayed distinctive stylistic traits and personal emphases, often including additional chapters on subjects they themselves deemed significant. Both the title pages and the overall structure thus revealed broad similarities, yet also clear distinctions between the prognostications. While Kepler introduced more radical changes, Schärer and Krabbe likewise incorporated personal touches to set their works apart from the crowd.

Chapter 2: Mathematical and natural-philosophical basis for astrological predictions

After discussing the general structure of the prognostications, I will now turn to the predictions themselves. I will analyse how each prognosticator formulated his predictions and the theories on which these were based. Kepler attempted to reform astrology rigorously. This chapter investigates how he implemented these reforms in practice and explores the extent to which his style may have influenced Schärer and Krabbe, or conversely, whether or not they influenced him.

1 Kepler and the prognosticators: his early critiques

Astrologers often critiqued each other in their work. Rivalries between astrologers frequently manifested themselves as back-and-forth accusations that the other's predictions lacked a scientific basis or that they used the astrological principles incorrectly.⁷⁷ Kepler doubled down on this practice in the dedicatory letter to his *Practica* of 1598, where he did not single out an individual astrologer but instead stated a critique of contemporary astrological practice as a whole. This dedication outlined the fundamental issues within astrology that he would later attempt to address more systematically in his *De Fundamentis* of 1602.

Following his address to the nobleman to whom the *Practica* was dedicated, Kepler turned to the central issue: the declining reputation of astrology. He identified two primary causes for this phenomenon. First, he pointed to the misuse of prognostications by readers, emphasising that these texts were not intended to provide definitive forecasts but should instead serve as instruments of Christian moral instruction. This point will be explored in greater detail in the third chapter of this study. Second, he criticised the malpractice of fellow astrologers who wrote overly detailed predictions, a fundamentally flawed approach, Kepler argued. Because there were no solid theoretical foundations for astrology, Kepler maintained that, it was not possible to predict specific events.⁷⁸

⁷⁷ Jonathan Green, *Printing and prophecy: prognostication and media change, 1450-1550*, Cultures of knowledge in the early modern world (Ann Arbor: University of Michigan Press, 2012), 110-13.

⁷⁸ Kepler, 1598, KGW 11.2, pp. 38-39: „Auff dise weiß weissset ein Kriegs verständiger von künfftigem glück oder unglück/ ein rechts erfahrner von außgang/ seiner sachen/ ein Weltweiser von veränderung der regiment/ [...] ein jeder von seiner fürhabenden materi vil besser zusagen/ als lein Astrologus. dieweil inen die nechst verwante ursachen/ Als beeder Feldherrn volch/ Proviant/ Munition/ sin und gewonheit/ des Richters brauch/ des Landes guette oder böse ordnungen/ [...]Da hingegen dem Astrologo nut die einige general et universal ursach/ des Himmels künfftiger lauff zubesichtigen vorstehet.“

To make his point clear, he compared astrologers with specialists in other fields. Military strategists, for instance, could far better predict the specifics of a war for the coming year than an astrologer, because they had a technical expertise that astrologers didn't have. He wrote:

“In this way, a knowledgeable military leader can predict future success or failure, an experienced lawyer the outcome of a case, a wise man changes in government, [...] each better than any astrologer, because they are familiar with the immediate causes: the troops of both commanders, supplies, munitions, customs, the judge's habits, the country's good or bad regulations, [...]. In contrast, the astrologer has only the general and universal cause of the heavens' future course to consider.”⁷⁹

Kepler asserted that astrologers could make the most accurate predictions possible when they based them solely on nature. In later works, he would elaborate on this idea by distinguishing the theory of the aspects, which he saw as a theory based on nature, from theories that were merely cultural conventions, according to him. However, even when the astrologer based his predictions on nature only, the practice still had its limitations. Kepler pointed out at the end of the dedication that even the most experienced astrologer could not foresee specifics, because these are subject to human free will on the one side and God's will on the other.

Kepler subsequently solidified the critiques he had expressed in the dedicatory letter within his predictions for the coming year. His short *practica* for 1598 only contained three chapters: one on weather, harvest, and illness, one on the eclipses of the coming year and a last one on the effects of those eclipses. The first chapter, more accurately described as a single paragraph due to its brevity, condensed what was traditionally presented as three separate sections: an extended chapter offering a month-by-month overview of the weather and the positions of the celestial bodies, followed by two chapters addressing the harvest and illnesses of the coming year.

Although the title of the first chapter suggested it would address weather, harvest, and illness, in practice, Kepler discussed only the weather. He justified this focus by arguing that weather is the area in which prognosticators can make predictions with the greatest degree of certainty, as it was primarily governed by natural causes and least influenced by human free will.⁸⁰ The actual prediction only took up one sentence:

“Since the winter after Christmas appeared mostly warm, windy, and wet; March foggy and gloomy; April natural; May, June, and July hot, humid, and inclined to earthquakes;

⁷⁹ Kepler, 1598, KGW 11.2, pp. 38-39.

⁸⁰ Kepler, 1598, KGW 11.2, pp. 40

August foggy and melancholic; September wet; October and November mild; and December again unnaturally warm. Those experienced in agriculture and medicine may draw better conclusions than I about what is to come.”⁸¹

For each month, Kepler provided only two or three words describing the weather for that month. Directly after, he again emphasised that farmers and doctors would be far better equipped in predicting the harvest and illnesses for that year.

Not only was Kepler very scarce with his predictions, but he also chose not to elaborate on the astrological theories he used to make these predictions. In later years, he included all the aspects that would be important for the predictions of that month. Here, however, he only vaguely referred to ‘ill-placed constellations’ that would affect harvest and health in the autumn.⁸² This may point to an uncertainty that was still present in Kepler’s early critiques on astrology. While he was confident in pointing out the problems present in the contemporary practice of astrology, Kepler was not explicit about the constellations he used to make his own predictions.

Kepler mainly used his 1598 *Practica* to critique the practice of astrology and remind his readers that they should not lean on these works as providers of certainties in the future. In his writings, his general predictions were immediately followed by a reminder that these were very uncertain and not the end-all be-all. After having addressed the political climate for each month in a similar fashion to his weather predictions, Kepler stated:

“In sum: the heavens bring little harm to the stronger of two enemies, and little help to the weaker. Whoever strengthens himself with good counsel, troops, weapons, and bravery, he draws the heavens to his side. And even if he is opposed to them [the heavens], he overcomes them and all misfortune.”⁸³

By ending his prognostications with such words, Kepler clearly communicated that the goal of his work was not to give precise and guiding predictions for the coming year. That role was reserved

⁸¹ Kepler, 1598, KGW 11.2, pp. 40: Demnach der Winter nach Weyhenächten mehrer theils warm/ windig und naß/ der Mertz nebelich und halt/ der April natürlich/ May/ Junius und Julius hitig/ dampfecht und zu erdbidem geneigt/ Augustus nebelich und melancholisch/ September naß/ October und November gelind/ December widerum unnatürlich warm erscheint. Das hierauf die Felds und Artzney erfahrene besser als Ich schliessen können.

⁸² Kepler, 1598, KGW 11.2, pp. 40: „das böse constellationes zu herbst zeit einfallende (wie sich in künfftigem Jahr zu end Augusti ein vereinigung Saturni und Martis begibt) Dem Weinwachs verhinderlich/ und böse krancheitten mit under das volck einführen“

⁸³ Kepler, 1598, KGW 11.2, pp. 44: „Summa dem stärckern under zweyen feinden han der Himmel nicht vil schaden/ dem schwächern nicht vil nutzen. Wer sich nun mit gueten rath/ mit volck/ mit waffen/ mit dapfferkeit/ sterckhet/ der bringt auch den Himmel auff seine seitten/ und da er ime zuwider/ überwind er ine und alles unglück/ etc.“

for specialists in either agriculture, medicine or warfare. With this small paragraph, he both challenged the astrologers who claimed to be able to give these kinds of predictions and the people who read these works to gain specific insights into the future.

2 Computational tools

Within the prognostications, a standard set of astronomical data was typically presented to the reader. This included the dates and times of the Sun's entry into the cardinal points of the zodiac (i.e. the solstices and equinoxes), the syzygies (new and full moons), and the solar and lunar eclipses. The accurate computation of these celestial events required complex mathematical procedures. Consequently, many astrologers relied on contemporary ephemerides as reference tools for their calculations. These comprehensive volumes provided daily planetary positions, aspects, and the predicted times of syzygies and eclipses across extended periods. Such ephemerides were readily available to early modern calendar makers and enabled them to extract the necessary astronomical data to support their astrological interpretations.⁸⁴ In the following section, I will examine how Schärer, Krabbe, and Kepler communicated their computational methods and source material within their prognostications. This analysis will shed light on the epistemic strategies and disciplinary practices that shaped their respective approaches to astrological forecasting.

In his 1597 prognostication, Krabbe clearly identified the ephemeris on which he based his calculations, specifically, the ephemeris of the Antwerp astrologer Georg Stadius (1550–1593). He cited this source each time he mentioned the Sun's entry into a cardinal point. Despite his reliance on ephemerides, Krabbe did not simply reproduce the data uncritically. For the entry of the Sun into Aries, Cancer, and Libra, he compared the times provided by Stadius with both the figures of Ptolemy and his own observations. For the beginning of spring, he wrote:

“Spring, when day and night are each 12 hours long, begins, according to the reckoning of the Stadius, on the 10th day of March before noon, at 7 o'clock and 8 minutes in the morning, when in the Ascendant the 9th degree of Taurus rises, along with the star in the Whale, called *luba Ceti*. According to the current new observation, however, this will occur on the aforementioned day, early before dawn at 1 o'clock, that is, a full 7 hours and 8 minutes earlier. Thirdly, if we wish to follow the teaching and opinion of Ptolemy, we are to

⁸⁴ Richard Lynn Kremer, 'Simon Marius as a Tychonic Calendar Maker', in *Simon Marius and His Research*, ed. Hans Gaab and Pierre Leich, Historical and Cultural Astronomy Ser (Cham: Springer International Publishing AG, 2019), 327.

begin spring with the most recent preceding new moon in March, which falls on the 8th day of March, early before dawn, precisely at 1 o'clock.”⁸⁵

Krabbe presented all three options to his readers (Stadius’s, Ptolemy’s, and his own) without offering a definitive conclusion as to which should be followed. However, in his discussion of the beginning of summer, he expressed a more explicit preference. After once again laying out the different results, he endorsed Ptolemy’s reasoning, which holds that a new season begins with the new moon. He justified this by repeating Ptolemy’s teaching that “the position of the Sun cannot be known as precisely as one might think, but often fails not only by one hour, but even by 8 or 12, yes even at times by a full 20 hours, so that this [entry] happens either too early or too late.”⁸⁶ The uncertainty surrounding the exact position of the Sun may explain why Krabbe refrained from committing to a single option, ultimately favouring Ptolemy’s method as the most cautious and reliable alternative.

Because of the flaws he observed in the existing calculations of the Sun’s position, Krabbe was prompted to carry out his own observations and computations. In his 1606 prognostication, after comparing the equinox times as computed by Stadius, Leovitius, Origanus, and himself, he stated the following:

“From this, it can now be seen how far the astronomical tables differ from one another in regard to the sun’s motion, namely, not merely by one or two hours, but by a full 15 hours, as has been shown. Because of such discrepancies, I was compelled to undertake diligent observation of the entire full course of the sun. In doing so, I have for the first time observed the true equinox, and, as I have now determined it in our own time, I have calculated it from the year 1604 onward, for several years, until the year 1651, based on the foundation of Copernicus.”⁸⁷

⁸⁵ Krabbe, 1597, B ii r: „Der Früeling/ wenn Tag und Nacht jedes 12. Stunde lang ist/ fehlet sich nach Stadii Rechnung an den 10. tag Martii vor mittage/ des morgens umb 7. uhr 8. minuten/ wenn im Ascendente der 9. grad Tauri auffsteiget/ mit dem Stern im Walfische/ luba Ceti genant/ eine. Nach der itzigen newen Observation aber wird solches an ermeltem Tage geschehen/ früe vor Tage umb 1. uhr/ das ist gantzer 7. Stunde und 8. minuten früher/ eine. Zum dritten/ wollen wir nach der Lehre und meinung Ptolomaei den Früeling anfahren mit dem nechst vorher gehenden newen Mertzschein den 8. tag Martii früe vor Tage gerade umb 1. uhr/“

⁸⁶ Krabbe, 1597, C v: „Weil man den locum Solis so gewis nicht haben kan/ als man wol vermeint/ sondern fehlet oft nicht allein eine Stunde/ sondern wol 8. oder 12. Ja wol bisweilen gantzer 20. Stunde/ das solches entweder zu früe oder zu spat geschicht/ derwegen wir billich dem Ptolomaio folgen wollen.“

⁸⁷ Krabbe, 1606, Cr: „Hierauß nun zu sehen, wie weit die Tabulae Astronomicae, in der Sonnenlauff, von einander sein, nemlich nicht allein eine oder zwo Stund, sondern gantzer 15 Stunden, wie angezeigt worden, derhalben nd wegen solcher Ungleichheiten, ich dann bin verursacht worden, den gantzen vollen Lauff der Sonnen fleisig zu observiren, fürgenommen, da ich denn zum ersten das wahre AEquinoctium

By 1609, Krabbe had come to rely entirely on his own observations and calculations for his predictions. He no longer compared his results to existing tables, and when giving the times for the Sun's entry into the cardinal points, he explicitly referenced his 'new observations and newly calculated tables'. For the summer and autumn entries, he even referred to them as his 'improved tables'. However, such citations about computational tools should not always be taken at face value, as Richard Kremer has shown in the case of Simon Marius (1573–1624).⁸⁸ Because Krabbe's own tables have not been preserved, it is difficult to state with certainty that all the predictions were made according to his own tables. However, a recalculation of his data according to the Alfonsine, Prutenic, and Tychonian tables rules out the use of these popularly used tables.⁸⁹

However, Krabbe's omission of comparisons to other astrologers in his 1609 prognostication may not have stemmed solely from confidence in his own calculations. It could also have served as a strategic decision to limit readers' ability to assess his predictions against those of other practitioners. By only presenting his own figures, readers could judge his accuracy only against actual celestial events, without being able to determine whether another astrologer had produced results that more closely aligned with reality. This tactic must be understood in the context of the public criticism Krabbe had received just a few years earlier from none other than the Imperial Mathematician Johannes Kepler. In his *De stella nova* of 1606, Kepler launched a sharp critique of Krabbe's observational competence and went so far as to accuse him of deceit, specifically concerning Krabbe's reported observations of the comet of 1604. Kepler wrote:

“One must therefore assume an enormous degree of vanity in Krabbe, who, based on extremely faulty observations, arranged with deceit, dared to assign to our star a most sluggish motion, [...] Had he shared only the observations themselves, however imperfect, we would have been grateful. But since he praises them with such certainty that he attributes a minimal motion to the star based on their supposed reliability, he deserves to be blamed as a deceiver.”⁹⁰

abservirt, vnd wie ich das zu vnser jetzigen Zeit gefunden, von Anno 1604 an, auff etliche Jahre, biß daß man schreiben wird 1651 nach deß Copernici Fundament, außgerechnet”

⁸⁸ Kremer, 'Simon Marius,' 358.

⁸⁹ These recalculations were done by using the astromodel spreadsheets by Richard Kremer and Lars Gilson, available at DISHAS (<https://dishes.obspm.fr/>)

⁹⁰ Kepler, *De stella nova*, KGW 1, pp 161-62: “Ingentem itaque CRABBI vanitatem oportet esse, qui ex vitiosissimis observationibus, fraude in ordinem dispositis, ausus est stellae nostrae tribuere motum tardissimum, [...] Si observations solas, quantumvis imperfectas, nobis communicasset, gratiam erat habiturus. At quia tantum illas de certitudine commendat, ut earum fiducia. stellae motum tribuat minimum: jure, ut deceptor, vituperium habebit.”

Kepler's accusations of deception and fraud would have had a significant impact on Krabbe's credibility as both a mathematician and an observer. Krabbe and Kepler operated within the same intellectual and professional milieu of court astrologers and astronomers, where access to patronage and prestige depended heavily on one's reputation for accuracy, skill, and scientific integrity. In this tightly knit community, reputations were built on the reliability of observations and the persuasiveness of one's theoretical framework. A public refutation by the Imperial Mathematician, arguably the most authoritative figure in the field at the time, would have significantly undermined Krabbe's standing among colleagues, patrons, and readers alike.⁹¹

Despite Kepler's claims, Krabbe maintained that his observations of the 1604 comet were accurate.⁹² Moreover, he actively responded to the accusations levelled against him at the beginning of his 1609 prognostication. As was customary, he began his prognostication by revisiting the astronomical conditions at the onset of the previous winter. In this context, he launched into an extended discussion on how to correctly calculate the Sun's entry into Capricorn. He reported the moment of occurrence with remarkable precision: December 11th at 2 hours, 28 minutes, and 56 seconds. Although it was not unheard of for astrologers to record such timings to the exact second, this level of precision was unusual for Krabbe, suggesting a deliberate attempt to assert the reliability and accuracy of his methods. He then explained his application of the principle of parallax, claiming that this adherence grounded his observations and calculations on "a solid and irrefutable foundation in the astronomical art."⁹³ He went on to refute the criticism of "other astrologers" that, in itself, parallax would not be sufficient to make correct observations. Notably, he did not call anybody by name when speaking of these "other astrologers".

Subsequently, he claimed that by following the methods advocated by those "other astrologers," the calculated altitude of the Sun would be off by as much as eight minutes. This discrepancy, he asserted, had been confirmed not only by his own observations but also by those of other practitioners.⁹⁴ Having thus demonstrated the reliability of his own approach and the

⁹¹ Patrick J. Boner, *Celestial Novelty and the Science of the Stars: Kepler vs. Krabbe on Accuracy and Authority in Early Modern Germany* (Leiden: Brill, 2020), 100-1.

⁹² Boner, *Celestial novelty*, 104.

⁹³ Krabbe, 1609, A iii r: „Dieses hat nun in der Astronomischen Kunst gewaltigen und unwiderleglichen Grund“

⁹⁴ Krabbe, 1609, A iii v: „durch die Observation von andern Astronomis tan probirt/ und alsdaun befunden werden/ daß die Refractio die Höhe der Sonnen daselbst in Meridiano zur Zeit des Aequinoctii gantzer 8. Minut. zu wenig bringe/ wie ich solches hiebevör mit meinen Observationibus der Sonnen/ die ich etzliche Jahrlang hero gethan/ auch probirt und erfahren habe/ Auch ferne/ in meinen Observationibus Planetarum davon handeln und beweiseu wil.“

shortcomings of competing methods, he turned to directly address the accusations made against him in print. Referring to Kepler's *De stella nova*, he wrote:

“For this reason, the author of the tractate *De stella nova*, published in 1604, though only released two years later, should rightly have refrained from casting criticisms and should have considered that learned and reasonable people find little delight in such envious writings, which are written merely to diminish the reputation of another.”⁹⁵

The dispute between Krabbe and Kepler was eventually resolved through private correspondence.⁹⁶ In the years that followed, Krabbe adopted a more reserved stance. By the time of his 1614 prognostication, he refrained from making any extended commentary on the foundations of his computations or the accuracy of his observations. He merely noted that the data were based on his “own observations of the Sun.”⁹⁷

Kepler, on his part, had been actively collecting observations to improve the predictions in his annual calendars. Although he did not explicitly cite his sources, his 1598 *Practica* appears to have been based on the ephemeris of Giovanni Antonio Magini (1555–1617).⁹⁸ Nevertheless, Kepler openly acknowledged the potential inaccuracies in the predicted times of eclipses. He cautioned readers that “if all this were to occur somewhat later, such would be in accordance with what has been experienced in past years.”⁹⁹

By 1604, it was evident that Kepler was actively experimenting with his calculations in pursuit of more accurate predictions. Although he promoted the improved Tychonic computations to his readers within the prognostication, asserting that these offered the most reliable results, his own reported syzygy times do not align with the Tychonic tables.¹⁰⁰ However, they also do not correspond to the later *Rudolphine Tables*, suggesting that Kepler was testing a revised or transitional version of his computational methods. In his 1618 prognostication, Kepler took the syzygy times directly from his ephemeris. Although he stated on the title page that these predictions were based on the Rudolphine Tables, the data do not correspond exactly to the final

⁹⁵ Krabbe, 1609, A iii v – A iv r: „Derowegen wich dann der Auctor eines Tractats de stella nova. Anno 1604. Welchen er doch 2. Jahr hernacher erst ausgelassen/ billich unperstringirt lassen/ und bedencken sollen/ daß gelehrte/ verstendige Leute dergleichen an neidischen Schrifften/ so nur u Berachtung eines andern ge meint/ wenig Gefallens tragen.”

⁹⁶ Boner, *Celestial Novelty*, 103-4.

⁹⁷ Krabbe, 1614, A iii v: „nach meiner geschehenen Sonnen Observation“

⁹⁸ Kremer, ‘Kepler and the Graz Calendar Makers,’ 88-89.

⁹⁹ Kepler, 1598, KGW 11.2 pp 41: „Ob aber alles dises sich späetter erzeugte. wäre solches/ wie droben gehört/ der vergangenen Jahren unnd der erfahrung gemäß.“

¹⁰⁰ Kepler, 1604, KGW 11.2 pp 93: „sintemahl Hern Tychonis Brahe verbesserte Rechnung inen schon ein Jahr lang für der Masen und in allen Buechläden zu finden ist. Ob auch sie auß kindischem unverstand noch nit wusten/ ob sie mehr der alten oder Newen rechnung trawen solten.“

Rudolphine computation, indicating that he may have been using a preliminary version of the tables. Kepler himself frequently expressed dissatisfaction with his lunar theory, making it plausible that he implemented various adjustments to the tables between the production of his ephemerides and the eventual publication of the Rudolphine Tables.¹⁰¹

When examining the computational tools employed by the astrologers, Schärer stands out as an outsider within the selected group of this study. Unlike Kepler and Krabbe, who were both active within courtly and scholarly networks, Schärer was just a priest with a personal interest in the science of the stars. He lacked the institutional support and technical training available to professional court astrologers. As such, he did not attempt to carry out his own astronomical observations or calculations, an endeavour far too complex for most autodidacts. Yet despite being an outlier within this trio, Schärer was in fact representative of the broader community of early modern astrologers. Like many of his contemporaries, he was not paid to be an astrologer by profession, but pursued it alongside another primary occupation, in his case, priesthood.¹⁰²

Because Schärer lacked the education, resources, and social standing of a court astrologer, he had to rely much more heavily on the authority of established figures in the astrological tradition to lend weight to his predictions. In contrast to Krabbe and Kepler, who presented their prognostications based on their own observations and calculations, Schärer frequently invoked the names of respected authorities to validate his interpretations. For instance, in his forecast for June 19–21, 1607, he predicted a range of negative outcomes, including turbulent weather and political unrest, based on an opposition between Saturn and Mars. To support this prediction, he cited both Haly (11th century CE) and Bonatus (13th century CE), not only naming them but also referencing the specific books and chapters in which they discussed the effects of such planetary oppositions. In doing so, Schärer anchored his prognostications in the textual canon of astrology, using scholarly citation as a substitute for direct observational authority:

"Concerning such an opposition, the old Arabic astrologer Haly writes: *'If this application occurs in the form of an opposition, it signifies that people will fall into discord with one another and will pursue each other with mutual hatred, and they will cease to visit each other in friendship, and each will speak ill of the other'* (Book 8, Chapter 25). And Bonatus says: *'Evils will arise, wrongs, quarrels, disputes, and oppositions among the great ones of the regions,'* etc. (Book 4, Chapter 58)."¹⁰³

¹⁰¹ Kremer, 'Kepler and the Graz Calendar Makers,' 93-94.

¹⁰² Herbst, 'Die Kalendermacher - Namen, Leumund, Sozialer Status,' 32-37.

¹⁰³ Schärer, 1607, B v: „Von solchem gegenschein schreibet der alte Arabische Astrologus Haly. Si applicatio ista fuerit de oppositione, significat, quod homines in se invicem discordabunt & prosequentur se

When predicting the eclipses of 1607 and their effects, Schärer once again turned to the authority of established astrologers, this time citing Cardanus (1501-1576), Melanchthon (1497-1560), and Joachim Heller (1548 – 1590), to substantiate his claims about the misfortunes that would follow.¹⁰⁴ He used their writings to underscore the dangers typically associated with eclipses. What is particularly striking here is that Schärer felt the need to appeal to such external authorities at all. In the prognostications of Krabbe and Kepler, the idea that eclipses heralded misfortune was treated as common knowledge and required no further justification.

In 1607, Schärer relied on the Prutenic tables to determine the syzygies and the Sun's entry into the cardinal points, a choice that has been confirmed through recalculation. However, by 1615, he had transitioned to using the astronomical tables of Tycho Brahe. Much like Krabbe in his earlier prognostications, Schärer did not merely copy Brahe's figures; he also presented alternative calculations by other contemporary astronomers, namely David Origanus and Martinus Everhard. In his discussion of the vernal spring, he wrote:

“The delightful brightness of spring, according to common astronomical reckoning, begins with the entrance of the Sun into the first point of Aries, when day and night become equal for the first time in the entire world. This, according to the tables of the noble Tycho Brahe, now takes place on the 10th (new style: 20th) of March, at 9 o'clock, 11 minutes, and 49 seconds after noon. [...] Origanus places the entrance of the Sun into the first point of Aries on the 21st (new style: 21st) of March, at 1 o'clock and 35 minutes after noon, 16 hours and 23 minutes later [than Brahe]. Everhardus, however, places it on the same day at 8 o'clock, 21 minutes in the morning, thus 11 hours and 9 minutes later than Brahe.”¹⁰⁵

Although Schärer laid out the differences in timing between the three authorities, he refrained from evaluating which computation was the most accurate. Instead, he limited himself to

mutuoodio. & cessabunt se familiariter invisere. & detrahet quilibet alteri. parte 8. Cap 25. Und Bonatus sagt. Venient mala, injuriae. rixae contentiones atque contrarietates inter magnates Regionum etc. parte 4. Cap. 58.”

¹⁰⁴ Schärer, 1615, B vi r: „Man hat es aber auß der ersahrung nicht/ das die Finsternissen jemalen viel guts gebracht haben. Multitudine enim Eclipsium refrigeratur terra, unde necessario sterilitas succedit, ut Cardanus testatur. Et Philippus Melanchthon scribit. Omnium atatum exempla testantur, magnas mutationes rerum, aestus, diluvia, pestilentias, bella & magnas clades statim post Luminum defectus accidisse. Haudscio (ait Joach. Hellerus) an ulla Eclipsis, sine tristi effectu abierit.“

¹⁰⁵ Schärer, 1621, B iii r-v: „Der liebliche Glantz oder Fröling gewinnet nach gemeiner Astronomischer Rechnung seinen anfang mit dem eingang der Sonnen in den ersten puncten deß Widers/ wann tag und nacht zum ersten mal in der gantzen Welt gleich werden. Welches jetzo nach den Tabulis deß Edlen Tychonis Brahe geschicht/ den 10. (N. 20.) Martii/ umb 9. uhr/ 11. min. 49. Secun. [...] Origanus gibt diesem Eingang der Sonnen inn den ersten puncten deß Widers an/ auff den 21. (N. 21.) Martii/ umb 1. uhr 35. min. n. 16. stund/ 23. min. später Everhardus aber/ auff gemelten tag/ umb 8. uhr/ 21. min v. und also 11 stund/ 9. mi. später/ dann Brahe.“

reporting the time discrepancies relative to Brahe's tables, thereby allowing the reader to draw his own conclusions.

These same tendencies are evident in Schärer's 1621 prognostication. In his treatment of the eclipses, he compared the start, maximum, and duration of the events according to both the Brahean and Prutenic tables. Notably, he once again refrained from judging which of the two sets of calculations was more accurate, instead deferring to future observational confirmation. He wrote:

"The first eclipse occurs of the Sun on the 11th (new style: 21st) of May, in 0 degrees, 17 minutes, and 24 seconds of Gemini, near the Dragon's Tail. According to Tycho Brahe's reckoning, it will reach a magnitude of 10 parts and 44 minutes and 30 seconds. The beginning takes place at 7 o'clock and 25 minutes in the morning, the maximum at 8 o'clock and 24 minutes, and the end at 8 o'clock and 35 minutes in the morning. It lasts from beginning to end 2 hours and 10 minutes. According to the Prutenic calculation, it should begin about a quarter of an hour earlier, and end nearly half an hour later. Which of these is more accurate, this experience will show."

While Schärer did not pursue astronomical precision in the same way as Krabbe and Kepler, who actively conducted their own observations and produced original calculations, he nonetheless sought accuracy through a different strategy. By offering multiple authoritative options to the reader, he left room for empirical verification and increased the likelihood that one of the provided timings would correspond with the actual event. Although their social and institutional context resulted in different abilities, all three prognosticators strived for predictions based on astronomical data that were as accurate as possible.

3 Monthly weather predictions

Prognosticators were typically quite transparent about the astrological theories underlying their predictions, particularly in their monthly and seasonal weather forecasts. The structure of these documents made this clear: each month or season began with a listing of the relevant planetary positions, which was then followed by the corresponding predictions derived from the aforementioned configurations.

One of the most important additions within prognostications, compared to the *Schreibkalender*, was their seasonal predictions. These were general predictions for each season, based on the planetary constellations at the moment the Sun entered one of the cardinal points, marking a solstice or equinox. Such seasonal forecasts were absent from the *Schreibkalender*, which

typically appeared in the same print before the prognostication. Due to their day-by-day format, *Schreibkalenders* did not accommodate broader seasonal overviews.¹⁰⁶

The prognostications began by describing the planetary constellations for the winter before the to-be-predicted year: they started by giving the exact date and time at which the sun would enter Capricorn, resulting in the winter solstice. This was followed by a description of the planetary positions at that moment in time, specifically the houses in which the planets resided and the influential aspects formed. Schärer followed this tradition at the start of his 1607 prognostication:

“We begin winter, according to common astronomical reckoning, with the entry of the Sun into the first point of the cold Capricorn, when the day is shortest for us and the night longest, and the dear Sun, in its course, begins to turn back toward us. According to the *Tabulae Prutenicae* (calculated for our horizon of the Kraychgöw district), this will happen on the 12th (N. 22nd) of December of this concluding year 1606, at 10:39 in the morning. At that moment, the 19th degree of Aquarius will be rising on the Ascendant, and in the midheaven will be the 11th degree of Sagittarius. Saturn is located in his own sign, Capricorn, between the Sun and Mercury, in the 11th house, and Venus, due to her proper motion, is gradually drawing closer to them in the 10th house. Mars stands in sextile aspect to Saturn and the Sun in the 1st house, between Jupiter and the Dragon’s Tail. The Moon, in her waning half, is found in the 7th house, near the Dragon’s Head.”¹⁰⁷

Prognosticators treated the planetary constellations at the beginning of a season as though it were a birth chart. At the time of birth, the sky was divided into twelve equal parts, not to be confused with the twelve signs of the zodiac. Starting on the Eastern horizon, each of these houses was numbered I to XII and corresponded to a specific facet of the individual's life, e.g. death, life, marriage, children, health, money, etc.¹⁰⁸

Thus, this same theory was applied to construct a nativity for each season, placing each planet within a house according to its position in the heavens when the Sun entered a cardinal point.

¹⁰⁶ Kelly M. Smith, “The Science of Astrology: Schreibkalender, Natural Philosophy, and Everyday Life in the Seventeenth-Century German Lands” (PhD diss., University of Cincinnati, 2018), 22.

¹⁰⁷ Schärer, 1607, A iii v: „Den Winter fahen wir nach gemeiner Astronomischer Rechnung an/ mit dem eingang der Sonnen/ in den ersten puncten deß kalten Steinbocks/ wenn der Tag bey uns am kürzesten/ und die Nacht am längsten ist/ und sich die liebe Sonne mit ihrem Lauff widerumb gegen uns herwendet. Welches jetzo nach den Tabulis Prutenicis (auff unsern Hartzont deß Kraychgöwes gerechnet) geschicht den 12. (N. 22.) Decembris/ diß zu end lauffenden 1606. Jars/ umb 10. uhr/ 39. minuten vormittag. Findet sich im auffgang der 19. grad deß Wassermans. Im hohen Himmel aber der 11. grad deß Schützen. Saturnus ist in seinem Steinbock zwischen der Sonnen unnd Mercurio im 11. Haus/ und ruckt die Venus im 10. Haus (ratione motus proprii) immer auch näher zu ihnen. Mars in Sextili Saturni & Solis im 1. Haus/ zwischen dem Jove und deß Drachenschwanz. Luna dimidiata senescenim 7. Haus/ bey deß Drachenhaupt.”

¹⁰⁸ Simon, “Kepler’s astrology,” 444-45.

When a planet was located in its own house, it was the designated ruler of that particular season, meaning it would exert the greatest influence over the general weather conditions during the period. For example, in Schärer's prognostications for 1607, Saturn was identified as the ruler of the winter of 1606:

"I attribute the rulership of this winter quarter (as indeed also of the whole year in general) to Saturn. And although Jupiter and Mars, considering that they too will soon enter their own houses, will play no small role alongside him, one will nevertheless perceive that, due to the notable configurations of Saturn with the other planets, the winter will, for the most part, be Saturnine, that is, cold, snowy, and quite severe for about five weeks."¹⁰⁹

Together with these seasonal predictions, the prognosticators provided monthly forecasts within the first chapter of the prognostications. These mainly provided predictions on the weather for the forthcoming months. Small mentions of predictions relating to agriculture, health or politics were also added. However, each of these topics also had its own chapter later on in the work.

The Moon phases formed the backbone for the structure of the monthly prognostications. The discussion of each month was separated into four paragraphs, one for each phase of the moon. Generally, the month started with a prediction on the occurrence of either the full or new Moon, whichever occurred first. Next, the key celestial positions for the current quarter of the month (up until the following quarter) were discussed, along with their anticipated influence on the weather during that period.

In addition to the Moon, numerous other celestial bodies played a role in monthly weather predictions, particularly the planets. Prognosticators drew on both the inherent influence each planet was believed to exert on Earth and the influence of their relationships with other celestial bodies, especially through aspects. It depended on the prognosticator how the influence of the planets was considered. Krabbe placed significantly greater emphasis on the inherent influence of the planets, an approach largely absent from Schärer's works. This is clearly demonstrated in Krabbe's predictions for February 1614:

"February will mostly be unsettled, alternating between cold and rainy, foggy weather. Although the planet Jupiter, at the end of January and beginning of this month, would like

¹⁰⁹ Schärer, 1607, A iii v: „Saturno schreib ich das Regiment dieser Wintersquart (wie zwar auch in gemein deß gantzen Jahrs) zu/ und wiewol Jupiter und Mars/ in betrachtung/ daß sie ohne langst hernach auch in ire eigne Häuser treten/ nicht wenig darneben thun/ wird man doch spurn/ daß von wegen der namhafften Configurationen deß Saturni mit den andern Planeten/ der Winter mehrertheils Saturnisch/ kalt/ Schneeicht/ und auff fünff Wochen lang streng gnug seyn wird.“

to support milder, foggy conditions, Saturn, being the stronger planet, is unlikely to allow it and will instead repeatedly reinforce the cold.”¹¹⁰

Krabbe used these intrinsic influences of the planets to make general statements on the weather for the whole month. However, he combined these general predictions with celestial events happening at more specific points in time, such as aspects between certain planets or planets moving into a zodiac sign, which influenced meteorological affairs on certain dates. He continued his predictions for February 1614 as follows:

“On the first of February, a quadrature between Jupiter and Mercury (and a conjunction between Saturn and the moon) will occur that indicates foggy weather with snow, rain, and sleet. On the third, Mars enters Aquarius, which also points to foggy, moist thaw weather, provided that Saturn does not prevent it. Otherwise, the significations of Mars and Venus all point to mild, foggy, and damp rainy weather, along with great floods. Which influence will prevail, however, that remains to be shown by God and time. On the fifth, a sextile will occur between Saturn and Mercury and a trine between Jupiter and the Sun, which points to sharp frost, with eastern wind and snow mixed in.”¹¹¹

In contrast to Krabbe, Schärer focused more heavily on the use of aspects to make his predictions:

“The moon will be full on the 3rd (N[ew]. 13th) of February, and many aspects will follow one after another. Venus and the Sun are in biquintile with Mars, and in a square aspect with Jupiter; and both are also in a semi-square with Saturn. Mercury, however, is in a quintile with Jupiter and a sextile with Saturn. Therefore, the weather over the next eight days, until the next quarter, will be wondrously unsettled, and without doubt there will be mild, soft weather [as well as] much snow, rain, and flooding, [...]”¹¹²

¹¹⁰ Krabbe, 1614, B i v: „Der Februarius wird sich auch mehrentheils umbestendig/ bald kalt/ bald mit Regen und neblichem Wetter erzeugen/ denn ob wol der Planet Jupiter mit dem außgange des Januarii. und anfang dieses Februarii. auch zu weichlichen neblichen Wetter gerne wolte Hülffe thun/ so wird ihm doch solchs der Saturnus schwerlich nachgeben/ sondern als der stärckeste Planet/ die kälte offtmals befördern helfen“

¹¹¹ Krabbe, 1614, B i v: „den ersten Februarii geschicht □ ♃ ♀ und ♂ ♄/ zeigen auff neblich Schnee und Regenwetter/ und Schlossen/ den 3. gehet Mars in den Wasserman/ zeigt auch wol auff neblich feucht Dauwetter/ woforne es der Saturnus nit verhindert/ sonst sind des Marti und der Venere bedeutung alle auff gelinde/ neblich/ weichlich Regenwetter/ beneben grossen Wasserfluten/ gerichtet/ welche Wirckung nun die Aberhand wird gewinnen/ das wird wils Gott die Zeit außweisen und geben/ den sünfften geschicht * ♄ ♀ und ♃ ♄ ♀/ zeigen auff hartfröstig Wetter/ mit Ostenwind und Schnee vermischet.“

¹¹² Schärer, 1615, B ii v: „Der Mond wird voll den 3. (N. 13.) Februarii und folgen viel Aspect nacheinander. Dann Venus und die Sonn stehen in biquintili Martis. und in einem gevierdten schein Jovis. und beyde auch in einen semiquadrato Saturni. Mercurius aber in einem Quintili Jovis/ und Sextili Saturni. Wird derhalben das wetter diese acht tage über/ biß auff die nachfolgende Quart/ wunderbarlich durcheinander gehen/ und ohne zweissel ein gelind weich wetter/ vies Schnee/ Regen und Gewässer geben“

In addition to the various astronomical data, the prognosticators used observational and historical data to make their predictions more accurate. They compared the celestial configurations of the upcoming year with those of previous years and identified patterns by drawing parallels between the weather conditions observed in years with similar planetary constellations. They backed this up when making a certain prediction by stating that similar weather conditions were observed in previous years. Oftentimes, when stating this, they also explicitly mentioned the sources from which they pulled this information. For example, Schärer wrote in 1607:

“This year also corresponds to 1489, of which it is written in the *Chronicle of Mansfeld* that at the beginning of the year a great snowfall occurred, so heavy that it weighed down and broke large, sturdy trees, some of which were thicker than a man. And again with the year 1430, in which grapevines and grain froze and there was much rain, whereby the waters overflowed, not without causing damage.”¹¹³

Schärer and Krabbe consistently followed a traditional structure in their monthly predictions. Although there were variations in their approaches, they largely adhered to the same foundational astrological theories (houses, aspects, historical parallels). This is not to say that there was no difference in their practices. Krabbe placed greater emphasis on the inherent influence of the planets, whereas Schärer relied more heavily on aspects and historical comparisons. Nevertheless, both authors incorporated all of these elements within their prognostications. This is not the case for Kepler. As has been shown for the structure of his prognostications, Kepler was very experimental in his earlier work and left behind any tradition. But later in his career, the more he aligned his work formally with the traditional structure seen in the works of Schärer and Krabbe. In what follows, I will be describing the evolution within Kepler’s monthly forecasts, focusing specifically on the astrological theories behind his predictions.

As has been described earlier in this study, Kepler’s predictions in his 1598 *Practica* were very brief and contained only very vague mentions of the astrological theories used to make them. This changed, however, in his prognostication for the year 1604. While his predictions remained concise, Kepler elaborated more on the planetary constellations on which he based his predictions.

¹¹³ Schärer, 1607, A iii v- A iii r: „Es vergleicht sich diß Jahr auch mit dem 1489. Jahr/ darvon in Mansfeldischer Chronick stehet/ daß im anfang des Jahrs ein grosser Schnee gefallen/ der so schwer war/ daß er grosse starcke Bäume zur Erden niderdruckte/ unnd zerbrach deren etlich/ die doch dicker denn ein Mensch gewesen. Und widerumb mit dem 1430. Jahr/ in welchem Wein unnd Korn erfroren/ und war viel Regens/ darvon sich die Wasser sehr ergossen/ welch nicht ohn schaden abgangen.“

In line with his 1598 *Practica*, he titled the first chapter of his 1604 prognostication ‘*On the Four Seasons, Their Weather, Illnesses, and Fruitfulness.*’ Despite this broad title, the chapter focused almost exclusively on weather predictions for the upcoming year, with only brief and occasional references to health or agricultural outcomes. By doing so, Kepler once again emphasised that predicting the weather was the most worthwhile endeavour as it was most closely tied up with natural causes, an argument he had already presented in his earlier prognostications and theoretical works. In this prognostication, however, Kepler introduced a more structured approach by organising his weather predictions on a month-by-month basis, aligning more closely with traditional formats. He started off each section with a list of the moon phases and the date and time when they would appear. This stood in stark contrast to the traditional approach of Schärer and Krabbe, who structured their monthly predictions around the lunar quarters, dividing each month into four parts and aligning their forecasts accordingly. Kepler, by contrast, presented the moon phases as preliminary information at the beginning of each monthly section, followed by a discussion of the most significant planetary aspects for that month and their anticipated influence on the weather.

Throughout the whole first chapter, Kepler exclusively used aspects, combined with the influences of the sun and moon, to make predictions. In doing so, he put the theories he published two years prior in his *De fundamentis* into practice. There, Kepler argued that direct light influenced heat, while reflected light affected humidity on Earth. This light could originate directly from the sun, or be reflected by the moon or one of the planets. Each planet, according to Kepler, emitted its own light and also reflected light from the moon toward Earth. Due to their distinct colours, each planet possessed a unique balance of direct and reflected light, and thus exerted a specific influence on the Earth's heat and humidity. However, the Earth's soul could only be influenced by this when two celestial bodies were positioned in one of the influential aspects. This could be one of the five traditional aspects, or one of the three he had recently added to this: the quintile (72°), biquintile (144°) or sesquiquadrate (135°). Kepler made extensive use of these three new aspects to make his predictions for the year 1604.¹¹⁴

The monthly predictions for 1618 and 1624 increasingly aligned with the prototype of a prognostication described above. This is the case for both the structure, as studied in the previous chapter, and the astronomical data Kepler described. One of the most notable developments in these later works is the introduction of seasonal transits, accompanied by calculations of the sun's movements through the cardinal points, corresponding to the equinoxes and solstices. Even

¹¹⁴ J. V. Field, “A Lutheran Astrologer: Johannes Kepler,” *Archive for History of Exact Sciences* 31, nr. 3 (1984): 232-49.; KGW 4: *De fundamentis*, thesis V-XXX.

more striking is Kepler's inclusion of planetary placements within astrological houses, a practice he had explicitly criticised in earlier writings as an unreliable basis for prediction.

Kepler made a clear distinction between what he saw as natural and what was cultural. The division of the Zodiac into twelve signs did not correspond to any physical cause. Consequently, he claimed, there was no reason to believe that the specific properties assigned to each sign would have any natural effects on Earth. By denying this, he also denied the doctrine of planetary domification. Each sign was believed to be the principal house of one planet and the secondary house of another. When one of these planets was found in its house, it was credited that its influence increased.¹¹⁵

In addition, traditional astrologers used the twelve astrological houses, not to be confused with the twelve signs of the zodiac, to predict the weather for the seasons. This theory originated in the calculation of birth charts. Kepler argued that it was futile to make predictions for the whole season based on this nativity. He maintained that astrological aspects exerted influence on a day-to-day basis. Therefore, he claimed it was more accurate to make daily predictions grounded in the specific aspects occurring at that time.¹¹⁶

Kepler's inclusion of references to the houses in which planets resided did not seem to be caused by a newfound acceptance of this theory. Immediately after presenting these data for the first time in his predictions for the winter of 1617, Kepler emphasised that its inclusion was out of adherence to tradition. He wrote:

“At that moment, Jupiter is found high in the sky, Mercury on the descendant, Mars in the ninth house just past the square with Saturn, who occupies the twelfth house; Venus lies opposite him in the sixth, and the Moon is beneath the Earth in square aspect to Mars. I dare say little about this figure, which I have introduced according to old custom.”¹¹⁷

Kepler kept it to small comments like these for his 1618 prognostications. He either referenced his adherence to tradition or stated that no meaningful conclusions could be drawn from these data. However, when he repeated the mention of astrological houses in his 1624 prognostication, he was far more explicit about his critiques. For the spring of 1624, Kepler wrote:

¹¹⁵ Gérard Simon, “Kepler's astrology: the direction of a reform,” *Vistas in astronomy* 18 (1975): 444-45; Gérard Simon, *Kepler astronome astrologue* (Gallimard, 1979), 88-90.

¹¹⁶ KGW 4: *De fundamentis*, thesis XLIX.

¹¹⁷ Kepler, 1618, KGW 11.2, pp. 160: „damahlen findet sich Jupiter am hohen Himmel/ Mercurius im Nidergang/ Mars im 9. Hauß ein wenig ubern quadratum Saturni hinauß/ welcher das zwölffte Hauß eingenommen/ Venus gegen ihme uber im sechsten/ und der Mond under der Erden im quadrato Martis. Ich wenß auß dieser Figur/ die ich nach alter Gewonheit eingeführt/ wenig zu urtheylen.“

“[...] Mars becomes *Dominus Anni* (Ruler of the Year) according to the custom of astrologers [...] I, however, remain with the explanation I gave 24 years ago: namely, that there is no foundation in nature for casting a nativity for the year, as if it were a newly born person, based on the point of the sun’s entry into Aries, and from it learning the qualities of the entire year. Rather, I maintain that: *Each day’s constellation is sufficient unto itself* [...]”.¹¹⁸

This paragraph was followed by three pages in which he extensively repeated the critiques and theories written down in his *De Fundamentis*. Consequently, he reiterated that he did not agree with the practice of using the astrological houses to make predictions for the coming year. The possible reasons for this return to the mentioning of more traditional astrological theories will be explored at the end of this chapter.

Kepler’s continually evolving approach to prognostications stood in stark contrast to the very consistent works of Schärer and Krabbe. For the latter, there was little to no evolution in the astrological theories used within their works throughout the years. In each of their prognostications, Schärer and Krabbe appeared to keep relying on their own core set of astrological theories. While their practices differed from each other, both emphasising other ways of predicting future events, neither Schärer nor Krabbe so radically challenged the status quo as Kepler did.

4 Eclipses and their influence

The next chapter in a prognostication typically covered the eclipses and their influence on the world. The authors first listed all the eclipses of the sun and moon that would be visible in their region in the coming year. To this, they added astronomical specifications, such as the specific date and time of their occurrence, their position in the sky, the magnitude of the eclipses, and their full duration.

Eclipses that were only visible in other parts of the world were occasionally included in prognostications; however, this typically occurred only when no eclipses were visible in Central Europe, or when they were observable in regions connected to important trade routes. In his 1597

¹¹⁸ Kepler, 1624, KGW 11.2, pp. 252: „Weil dann Mars nach der Astrologorum brauch Dominus Anni wird/ Er selber aber in detrimento suo stehet/ also schöpfen die Astrologi hierauß jhr general urtheil/ darumben sie selber in grosser anzahlzuvernemen seynd/ wer nur zeit genug hierzu hat. Ich bleid bey meiner alten Erklärung vor 24 Jahren beschehen/ daß es nit grund in der Natur habe/ daß man dem Jahr als gleichsam einem neugebornen Menschen auff diesen puncten deß eintritts der Sonnen in den Wider eine Nativitet stellen/ und auß derselben deß gantzen Jahrs Qualiteten erlernen könne/ Sondern es heisset bey mir/ *Sufficit cuilibet diei constellatio sua*.“

prognostication, Krabbe explicitly noted that no eclipses would be visible in Germany that year, but that he nonetheless chose to describe the two solar eclipses occurring elsewhere for the benefit of merchants:

“For this reason, I wish to describe both of these solar eclipses for the benefit of merchants and seafarers, those who sail across the sea from Germany, Spain, France, and other regions, and who may arrive in the aforementioned locations at the appointed times. In this way, they can take note of the eclipses should they happen to be in those regions when they occur.”¹¹⁹

Even when such eclipses were discussed, prognosticators did not typically offer specific predictions regarding their effects. Instead, they provided straightforward astronomical information, including the date and local time of the eclipse's occurrence. These details were particularly useful for those travelling to the regions where the eclipses would be visible. Since the influence of an eclipse was believed to be strongest in the areas where it could be observed, Krabbe considered it unnecessary to elaborate further on their potential impact.¹²⁰

Schärer's prognostication for 1615 was an exception to this rule. When he predicted a solar eclipse for Calicut, he added a prediction on its influence in one brief line, saying that “It will undoubtedly bring those regions severe drought, fiery fevers, cattle plague, and war and bloodshed.”¹²¹ However, as will be shown, these predictions are far shorter and more general than those typically given for eclipses.

To determine the influence eclipses would have on the coming year, prognosticators generally employed the same astrological theories used in monthly weather forecasting, namely: the twelve astrological houses, the signs of the zodiac, and planetary aspects. For example, in predicting the continued impact of a solar eclipse that had occurred the previous year but was believed to affect 1609 as well, Krabbe drew on all three of these theoretical frameworks:

“In the recently past year 1608, we experienced a solar eclipse on July 31 at 5:30 PM. It occurred in Leo 18°, in the 7th house of enemies, and the Ascendant was Capricorn 17°30'. The two luminaries, Sun and Moon, were most unhappily afflicted and infected by

¹¹⁹ Krabbe, 1597, D3 v: „Derwegen wil ich den Kauffherrn und Seefahrenden Leuten/ welche aus Deutschland/ Hispanien/ Franckreich und andern Orten/ etc. welt ubers Meer schiffen/ und derer Orte ankomen/ diese beide Finsternissen zu gute beschreiben/ dorauff denn dieselbigen so auff gemelte Zeit der Orte ankomen/ achtung geben können.“

¹²⁰ Krabbe, 1597, D4 v: „Was ferner anbelanget dieser beiden Sonnen Finsternisse Wirckung/ werden sie iren Effect der Orten/ da sie geschehen/ am meisten erzeigen und aus giessen/ derwegen unnötig davon weitleufftirge zu schreiben/ Und sey also genug von diesen Finsternissen geschrieben.“

¹²¹ Schärer, 1615, D i v: „Bringt denselbigen Völckern ohn weiffel grosse dürre/ hitzige Fieber/ Viehe sterben/ Krieg und Blutvergiessen/“

the bloodthirsty Mars through a hostile opposition. Likewise, Jupiter viewed them with enmity through a square aspect. Also, in the ascendant was found a malefic planet, namely Saturn, and although he possessed great power and influence therein, as it is his own house of Capricorn, and although both Jupiter and Mercury looked upon them with a favourable trine aspect, yet the earlier misfortune could not thereby be entirely prevented or held back."¹²²

Historical examples were also used to support eclipse predictions. In keeping with his approach to monthly forecasts, Schärer made more extensive use of historical parallels than Krabbe. While Krabbe typically referenced no more than two previous years for comparison, Schärer cited ten historical examples for the first eclipse of 1607 alone.¹²³ For each of these years, he described the specific placement of the eclipse and its perceived influence on events that followed.

Schärer, in contrast, was not always this detailed. The length of his discussion often depended on the perceived significance of the eclipse in question. For instance, in his treatment of the second eclipse of 1607, after providing an interpretation of its expected influence, he simply listed dates of similar past eclipses and referred the reader to earlier prognostications for further details. He justified this brevity by noting that the eclipse was of such minor importance that a more elaborate explanation was not worthwhile:

"I have referenced many examples of such eclipses in the sign of Virgo in the Prognostication for the year 1599, namely, the eclipses of the years 1588, 1569, 1551, 1542, 1523, 1504, 1487, 1486, 1477, 1356, 1216, 1178, 807, 137, and also from several years before the birth of Christ. However, because this current eclipse is so minor, I consider it unnecessary to recount at length the occurrences of previous eclipses in this place. Whoever is interested may look them up in that Prognostication of 1599 or search for them in historical records."¹²⁴

¹²² Krabbe, 1609, E iii v- E iiiii r: „im nechst vergangenen 1608. Jahre/ den 31. Julii des Nachmittages umb 5. Uhr und 30. Minut. eine Finsternis an der sonne gehabt/ ist geschehen im 18 Grad und 10. Minut des ♄ im 7. Hause der Feindschafft/ und ist nach der Observation der Ascendens gewesen der 17 1/2 Grad ♃ / und seind die beyde Liechter/ Sonn und Mond von dem blutdürstigen Marte durch eine feindliche Oppositionem gar unglücklich angesehen/ und inficirt worden/ wie dann auch der ♄ dieselb per Quadratum Aspectum feindlich hat angesehen/ auch in ascendente ein böser Planet/ als der ♄ gefunden worden/ und ob er wol darinn grosse Krafft und Wirkung/ als in seinem eigen Hause des ♃ hat/ zu deme auch beydes von dem ♄ und ♃ durch ein schönen glücklichen Trinum Aspectum angesehen/ so kan doch voriges Unglück dadurch nicht allerdings auffgehalten/ oder verhindert werden/“

¹²³ Schärer, 1607, B ii v - B iiiii r.

¹²⁴ Schärer, 1607, B iiiii r: „Exempla solcher Finsternussen in dem Zeichen der Jungfrawen/ hab ich im Prognostico deß 1599. Jahrs viel angezogen/ Als nemlich die Finsternuß der Jahren 1588. 1569. 1551. 1542. 1523. 1504. 1487. 1486. 1477. 1356. 1216. 1178 807. 137. Auch etlicher Jahr vor Christi Geburt. Weil aber die Finsternuß jetzt so gering/ achte ich für unnötig/ die zufäll verschieener Finsternussen an disem ort

The influence of the eclipses touched on many different aspects of life, according to prognosticators, from agriculture, the death of nobles, and political or religious upheavals to friendships, health, and childbirth. The forecasts consistently attributed negative effects to eclipses, regardless of the domain in question; their impact was invariably portrayed as harmful or disruptive. To predict which cities or people would specifically be affected by the negative effects of these eclipses, Schärer employed the signs of the zodiac. At the end of each prognostication, he listed all the signs of the Zodiac and which cities or countries were under the influence of which sign. Within his actual predictions, he referred back to this list and specifically warned those cities situated in the same sign as the eclipse, as well as the individuals with this sign in their nativity.¹²⁵

Schärer offered predictions on a wide range of topics and then identified the cities that should be especially vigilant, linking them to the astrological sign associated with the predicted threats. In contrast, Krabbe adopted a more targeted approach, specifying for each individual topic which particular countries or cities are likely to be affected:

“Thus, we can expect deaths by the sword and clergy losing property and life due to fires caused by religious conflict. This will especially be felt in Bohemia and England. More generally, the eclipse portends crop failures, religious changes, particularly in England, Bohemia, Switzerland, and elsewhere, a great famine in the Oberland, and the death of sheep and other livestock. It also foreshadows religious strife, especially in Bohemia, England, Saxony, Thuringia, and parts of Mansfeld, where towns such as Nordhausen and Bremen might be drawn into conflict.”¹²⁶

Kepler attributed significantly less power to eclipses than Schärer and Krabbe. He expressed scepticism about their natural effects, arguing that any influence they might exert would be

weitleufftig zuerholen/ wer lust hat/ mag sie in disem Prognostico deß 1599. Jahrs besehen/ oder in Historien selbst nachsuchen.”

¹²⁵ Schärer, 1621, D ii v: „Allein mögen sich dabey fürsehen die Länder und Stätte/ welche unter den Zwill. gelegen/ Item die Personen/ welche in ihrer Natwitet den Horoscopū. medium coeli, & loca luminarium im 7. gr. der Zwill oder ja auff das nechst darbey haben.“

¹²⁶ Krabbe, 1614, D iii r: „dahero zu besorgen das viel durch die schärffe des Schwerds fallen/ auch etliche Geistliche Personen durch Brand wegen der Religion/ ihre Haab und Güter veclieren und ihr Leben enden/ Wie solches in Böhmen und in Engelland wird erfahren werden/ sonst in gemein bedeut diese Finsternis/ Mißwachffung de Früchte/ Enderung in der Religion/ sonderlich in Engelland und in Böhinen/ wie auch in der Schweiz und andern orten mehr/ und eine groffe Tewrung in Oberland/ auch ein sterben unter den Schaffen und andern Viehe/ u. Drawet auch viel Zwiespalt und Uneinigkeit wegen der Religion/ sonderlich in Böhmen Engelland/ Sachsen/ und Düringen/ wie auch eins Theils in der Graffschafft Mansfeldt Enderung und Bneinigkeit gedrawet wird/ da dann auch die Stadt Nordhausen und Bremen leichtlich mit in diß Spiel kommen und angefochten werden könten/“

minimal due to their brief duration.¹²⁷ This position is evident already in the chapter title of his 1598 *Practica*, where he deviated from the conventional heading “On the Effects of the Eclipses” by adding the phrase “and Other Aspects”, thus grouping the eclipses with other optical phenomena that depended on the position of the observer. With this deviation from the traditional title, Kepler signalled that his predictions were not grounded solely in the influence of eclipses, even though he did not write them off as wholly unnecessary, but rather considered them as a visible warning God used for his people:

“Yet that they nonetheless have some meaning appears likely, for God the Lord seems to delay the punishments long since deserved by mankind until such time as nature brings forth an eclipse, upon which He then allows those punishments to follow.”¹²⁸

In doing so, Kepler still adhered to the convention that eclipses signalled negative or disastrous events, much like Schärer and Krabbe. However, he diverged in his interpretation of causality: whereas Schärer and Krabbe attributed an active influence to eclipses themselves, Kepler viewed them primarily as divine warnings, with God as the direct cause behind the events they appeared to foretell. Notably, in this passage, Kepler portrays God as voluntarily aligning His divine will with the rhythms of nature, delaying judgment until the natural event of an eclipse occurs. In doing so, God appears to subject Himself, at least in timing, to the natural order He Himself created.

The criticisms Kepler expressed in his chapter on eclipses are in line with what he wrote in the rest of his 1598 *Practica*. He once more stated that it was impossible to make specific predictions on, for example, where and to whom certain things would happen. In the same passage, he reiterated that astrological theories that were used to predict these specifics, such as the twelve astrological houses and the planetary rulers, lacked a firm foundation.¹²⁹ He continued to make his own predictions for the next year, mostly based on aspects and historical parallels.

Kepler not only critiqued the practice of other astrologers, but he also brought forward his own theories within his prognostications. In his 1598 *Practica*, he already hinted at some parts of what would later become his cosmology from the *Harmonices Mundi*. On the influence of the heavenly

¹²⁷ Kepler, 1598, KGW pp. 42: „Ein Finsternuß hat in warheit zureden von irer natur gar keine/ oder doch schlechte und geringe würckung/ da es unversehens nacht/ und demnach halt würdt.“

¹²⁸ Kepler, 1598, KGW pp. 42: „Das sie aber nichts desto weniger etwas zubedeütten/ hat es das ansehen/ als laße Gott der Herr denn menschen ire lengst wolverdiente straffen so lang anstehn/ biß die natur ein Finsternuß gegeben/ auf die er dan die straffen ervolgen laße/“

¹²⁹ Kepler, 1598, KGW pp. 42: „Wo aber/ und mit welcher Person sich dergleichen zutragen werde. das han ein Sternseher auß dem blossen anblick der Finsternussen nicht namhafft machen. Es haben gleichwol die Astrologi noch vil regeln von den zwölf Heusern Herschafften und Terminis der Planeten/ die aber wegen ires ungrunds nicht wehrt/ das man irer gedencke.“

motions, he, for example, said that “they exert a kind of resonance upon earthly things, which adjust themselves in some measure to the heavens, being moved by a kind of natural sympathy.”¹³⁰ This sentence seemed to be an early version of what would later become his theory on the ensouled earth, roused by the geometry in the heavens.

He also clearly stated his views on the predictions about political events, such as war:

“But whether the Turkish war or some other conflict will continue, that lies not with the stars, for as said above, their influence is general, not specific. The heavens do not cause war or peace, but rather affect that which is already susceptible to influence. [...] While individual nativities may be affected by celestial causes, it is impossible for any astrologer to consult them all, and even those are but general indications applied to specific persons.”¹³¹

This paragraph is reminiscent of Thesis LXIX from *De Fundamentis*, which Kepler would compose a few years later. There, he argued that while astrologers may offer meaningful political predictions, these must remain general and pertain only to inclinations of the soul. An astrologer, he asserted, cannot foresee specific events such as peace or war, but may indicate, for example, when the souls of soldiers would be ready to fight. In this way, Kepler seemed to prefigure the argument in his 1598 *Practica*, effectively testing it in practice before formalising it in his theoretical writings.¹³²

Kepler did not consistently deal with eclipses across all his prognostications. After 1598, rather than openly criticising the limited predictive value of eclipses, he took distance from their interpretive use more subtly, by omitting them from his predictions altogether. In his 1599 prognostication, for instance, he still noted the occurrence of a lunar eclipse, but only in a descriptive capacity. He informed the reader of its visibility and expressed uncertainty about the accuracy of the predicted timing, referencing the noticeable errors in the previous year's calculations. Notably, he refrained from attributing any influence the eclipse had on earthly

¹³⁰ Kepler, 1598, KGW pp. 43: „Zum andern was den uberigen Himmels lauff betrifft/ hat gleichwol der selbige für sich selber seine starcke würckung/ oder vilmehr seinen anhang auff erden. da sich nach demselben ein jedes wandelbare ding auff erden etlicher massen richtet/ und mit jenem/ durch ein nafürlich mitleiden verändert. Solche würchung aber/ weil sie gar general.“

¹³¹ Kepler, 1598, KGW pp. 43: „Ob aber in specie der Türchen oder ein anderer Krieg fortgehen werde/ das stehet nicht zu den sternem/ weil droben gesagt dz deren würchung general seye. das ist/ weil der Himmel nicht Krieg odet fried machen und erhalten han/ sondern regiert welches er findet/ sovil es sich von seiner natur und Gottes verhengnuß regirn lesset.[...] In besonderbarer Personen Nativiteten zwahr begeben sich solche Himmlische antrib zu zanch und zorn. die Nativiteten aber alle zuerfragen ist eim Astrologo unmöglich/ und seind dieselbe zwar auch nichts anders/ als general bedeutungen über ire Personen.“

¹³² Field, “A Lutheran Astrologer,” Thesis LXIX, 265.

events. In his 1604 prognostication, Kepler entirely omitted any mention of eclipses. Where one would typically expect a dedicated chapter titled “*On the Eclipses and Their Influence*,” Kepler instead proceeded directly to the chapter “*On Worldly Affairs*.” There, he offered political predictions grounded exclusively in astrological aspects, aligning with the theoretical positions he articulated in his *De Fundamentis*. This deliberate omission underscores his growing scepticism toward the predictive value of eclipses and marks a further shift away from traditional astrological practice.

This shift, however, was not permanent. As noted above, Kepler later returned to a more traditional structure in his prognostications, at least in terms of formal composition. His prognostications for 1618 and 1624 once again included a chapter dedicated to eclipses. Although no eclipses would be visible in Germany during 1618, Kepler nonetheless provided brief descriptions of those occurring in other regions. These entries were limited to concise astronomical data, such as placement and timing, without any accompanying interpretations or predictions regarding their potential influence.¹³³

In his 1624 prognostication, Kepler conformed even more closely to the traditional model by including predictions on the influence of eclipses based on established astrological theories, such as the signs of the zodiac. However, he clearly distanced himself from these interpretations by explicitly stating at the outset that the predictions were derived from Ptolemaic doctrine rather than his own views. He concluded the passage by noting that such predictions could now be easily contested, thereby pre-emptively undermining their authority and signalling his continued scepticism toward conventional astrological reasoning:

“Therefore, according to Ptolemy’s teaching, its effect or significance should begin around that same time in our lands and extend into June. It is interpreted as indicating the poisoning of the air, since it occurs in an airy sign; as indicating monstrous births, because Libra is said to be the house of Venus; [...] Indeed, in our present times, the situation is such that disputes are easily kindled, so that one party, if not both, would undoubtedly declare this prognostication (which I am merely presenting here according to the established rules of the astrologers) to be entirely true.”¹³⁴

¹³³ Kepler, 1618, KGW 11.2: pp. 168-69

¹³⁴ Kepler, 1624, KGW 11.2, pp. 259: Soll derohalben ihre würckung oder bedeutung nach Ptolomaei Lehr/ gleich damalen bey uns anfahren und sich biß in Junium hinein erstrecken. Man legt sie auß auff vergiffung der Lufft/ weil sie in einem lüfftigen Zeichen geschcht/ auff Mißgeburten/ wel die Waag Veneris Hauß sein soll/ [...] da ist es zu dieser unserer Zeit leyder also beschaffen/ daß man hie leichtlich zu stretten kommt/ da dann der eine/ wo nit beede/ theil dit prognosticum (welches ich doch nur ex Regulis Astrologorum ietze) unfehlbarlich für waarhafftig preisen wurden.

It is clear from this analysis that Kepler had a vastly different stand on the usage of eclipses to make predictions from Schärer and Krabbe. While the latter used them consistently to make predictions, in combination with other astrological theories, such as the twelve astrological houses and the signs of the zodiac, Kepler had been sceptical from the beginning. He generally refrained from making predictions solely based on eclipses and even omitted them fully in his 1604 prognostication. While in later years, he returned to including eclipses, he still clearly distanced himself from any predictions on the influence of the eclipses on the coming year.

5 Kepler's new aspects

As demonstrated earlier, Kepler used his prognostications not only as predictive tools but also as platforms to experiment with and spread his theoretical innovations. This applied not only to his critique of traditional prognostication practices but also to his active exploration of new astrological methodologies. One of the most important parts of his theoretical contributions was the addition of his new aspects. In what follows, I will explore how Kepler used his new aspects within his prognostications and how Schärer and Krabbe responded to these innovations, thus considering Kepler's prognostications both as testing grounds and as vehicles for promoting reform within astrology.

Beginning in 1604, Kepler began to explicitly incorporate his new aspects (*quintile* (72°), *biquintile* (144°), and *sesquiquadrate* (135°)) within his prognostications. This marked a significant addition to his earlier works: in both the 1598 and 1599 *Practica*, he had not mentioned any astrological theories, including the traditional aspects. By 1604, however, not only did he reintroduce theoretical framing into his prognostications, but he also employed all three of his new aspects frequently and systematically, making them a cornerstone of his predictive framework.

Kepler's use of the aspect differed slightly in his 1618 prognostication. While he still systematically used the *quintile* and *biquintile*, there was no mention of the *sesquiquadrate* throughout the whole work. However, he added a new aspect in this prognostication: the *semi-sextile* (30°). This aspect had been added to his theory ten years earlier. In 1608, Kepler had written to Brengger that while the *quintile*, *biquintile* and *sesquiquadrate* would theoretically be important aspects, observations had led him to the conclusion that the *sesquiquadrate* had no noticeable effects on the weather, while the *semi-sextile* did.¹³⁵

A year later, in 1619, Kepler published the *Harmonices Mundi*, where he established a hierarchical system of astrological aspects according to their presumed strength of influence, grounded in

¹³⁵ Boner, *Kepler's Cosmological Synthesis*, 66-67; Simon, *Kepler astronome astrologue*, 169.

geometrical and harmonic principles. The five traditional aspects (*conjunction*, *opposition*, *trine*, *square*, and *sextile*), along with the *semi-sextile*, were assigned to the first three tiers, indicating their primacy in astrological influence. The *quintile* and *biquintile* were placed in the fourth tier, alongside the *quincunx* (150°), which notably never appeared in Kepler's prognostications. The fifth and least influential tier comprised the *decile* (36°), *tridecile* (108°), *octile* (45°), and *sesquiquadrate* (135°). Of this last tier, only the *sesquiquadrate* appeared in Kepler's prognostic works. This selective usage reveals a key distinction between Kepler's theoretical and practical astrology: while certain aspects were developed to complete his harmonical model, only those he deemed practically significant were employed within his predictions.

Kepler's usage of the aspects drastically changed by 1624. Whereas in earlier prognostications (most notably in 1604), he employed aspects extensively and innovatively, by 1624, they had largely receded into the background of his forecasts. Only a handful of aspects are mentioned in this later work, and nearly all of them belong to the traditional set. The only exception is a solitary reference to the *semi-sextile*. This notable reduction in the use of his own new aspects coincides with Kepler's broader return to traditional astrological practices. As discussed earlier in this chapter, this reversal is evident not only in the structural features of the prognostications but also in his renewed engagement with long-established theories, such as the zodiacal signs and planetary houses, although contextualised with critiques on these same theories. Thus, Kepler's 1624 prognostication reflects a superficial realignment with astrological convention, both formally and in terms of aspect usage, the reasons for which will be explored at the end of this chapter.

Schärer was certainly aware of Kepler's reforms within the astrological practice. Although he continued to rely on traditional astrological theories that Kepler had explicitly rejected in *De Fundamentis*, including the twelve astrological houses and the zodiacal signs, Schärer nevertheless adopted Kepler's innovations in other areas. From 1615 onward, he began incorporating Kepler's new aspects into his prognostications. This selective integration suggests that while Schärer did not fully abandon established methods, he was open to elements of Kepler's reforms that he deemed practically useful or theoretically compelling.

Notably, Schärer used the aspects as they were described in Kepler's *Harmonices Mundi*. In his prognostications for both 1615 and 1621, he made reference to the *semi-quadrate* and *semi-quintile*, terms corresponding to the *octile* and *decile* in *Harmonices Mundi*. These aspects are particularly significant because they were never used by Kepler himself in his own prognostications, appearing only in his theoretical writings. The fact that Schärer was already

making use of these less prominent aspects in 1615, three years before the publication of *Harmonices Mundi* in 1618, strongly suggests that Kepler's ideas were circulating in scholarly circles well before their formal publication.

It remains difficult to determine whether Schärer learned of Kepler's new aspects directly from Kepler himself. A brief note from Schärer to Kepler dated 1593 confirms that the two were in contact and exchanged ideas, suggesting a scholarly relationship of some kind.¹³⁶ However, this is the only surviving piece of correspondence between them, and it contains no detail regarding the content of their discussions or the duration of their exchange. Therefore, we cannot establish with certainty whether Schärer's adoption of the new aspects stemmed from direct communication with Kepler or from other channels within the network of astrologers. Nevertheless, the early uptake of these theories by Schärer still attests to their pre-publication circulation and influence.

In contrast to Schärer, Johannes Krabbe only adopted Kepler's new aspects once. In his prognostications for the year 1609, he referenced a *quintile*, after which he immediately remarked that this was different from the traditional astrological theories, but that it should be considered. He wrote:

“Around December 24 and 25, sleet may easily occur, that is, a mix of snow and rain. The reason: Mercury views the Hyades and Aselli under a *quintile* aspect. Many astronomers may be surprised that I use more aspects than the Ancients did. But if they examine these things closely, and consider how the planets are positioned relative to the fixed stars, they will discover and learn of a great hidden principle in nature, and thus have no cause for wonder.”¹³⁷

This statement reflects an openness to innovation, characteristic of an experimental methodology in which Krabbe was willing to engage with reforms that might enhance astrological practice. However, his later works reverted to the traditional aspects, suggesting that this experiment did not yield results convincing enough to warrant continued use. His brief

¹³⁶ KGW 13, nr. 5, pp. 6, Schärer to Kepler: “Intelligo te in illis studiis haud vulgariter esse versatum: cujus rei non solum testes mihi sunt illi, qui te familiariter norunt; sed literae etiam tuae ad me tatae, insertaque Themata, in quibus industriam tuam satis probas.”

¹³⁷ Krabbe, 1609, A iiiii v: „Umb den 24 und 25. Decembris/ kan sich leicht Schneeregen mit untermengen/ Ursache/ weil Mercurius die Hyades und Asellos durch einen Quintil. Aspectum ansihet/ darüber sich viel Astronomi/ daß ich mehr Aspecten denn die Alten/ setze/ verwundern werden/ Wenn sie aber diese Sachen fleißig in acht nemen/ und wie die Planeten gegen den unbeweglichen Sternen iren Stand haben/ erwegen/ so werden sie eine grosse Heimlichkeit in der Natur finden und erfahren/ und ihnen keine Verwunderung darüber machen.“

engagement with Kepler's theory thus remained an isolated yet telling instance of reform-minded exploration.

It should, however, be noted that Krabbe's adoption of the quintile occurred in the same prognostication in which he issued a defence against Kepler's accusations in the *Tertius Interveniens*, as described above. This one-time use of the quintile may have been intended as a superficial gesture of openness to new or improved theories. That Krabbe refrained from using Kepler's newly proposed aspects in subsequent prognostications could be interpreted as a silent statement of his ultimate rejection of their validity or, alternatively, as a deliberate decision shaped by the personal and professional tension between him and Kepler.

The engagement of other astrologers with Kepler's new aspects demonstrates a notable openness to reform within the tradition of Lutheran astrology. Kepler's innovations were not confined to theoretical speculation; rather, they were intended to improve the practical application of astrology, and this intention found traction among his contemporaries. Importantly, the reception of his reforms was not uncritical. Astrologers like Schärer and Krabbe selectively incorporated Kepler's new aspects into their own prognostications, indicating that his ideas were evaluated, tested, and adapted according to individual judgment and experience. There were practitioners, like Schärer, who were fully convinced of the functionality of the new aspects and integrated them consistently into their work. Others, like Krabbe, approached these innovations more cautiously: while open to experimentation, they ultimately chose to abandon the new aspects after trial. This reflects a dynamic scholarly environment in which tradition and innovation were negotiated rather than blindly followed.

6 Kepler's later prognostications: a stylistic shift

Throughout the analysis of both the structure and contents of Kepler's prognostications, a striking evolution has become apparent. While his works from 1598 and 1604 were highly experimental, both in form and in terms of the implemented astrological theories, Kepler's later prognostications reveal a reversion to a more conventional format, closely resembling the works of Schärer and Krabbe. The overall length of his works increased, while dedicatory sections were reduced in scope. More significantly, Kepler began to adopt the standard structure of a prognostication, which typically opened with monthly weather predictions and was followed by chapters on eclipses, agricultural fertility, illnesses, and political or worldly affairs. Although his treatment of each of these topics remained notably shorter and less specific than that of his contemporaries, the structural shift marks a clear departure from the more experimental format of his earlier writings. This formal change was accompanied by a theoretical one: Kepler began to

incorporate astrological concepts he strongly criticised, such as the system of astrological houses, the assignment of ruling planets, and the influence of the signs of the zodiac.

Despite these immediately apparent changes in his astrological practice, Kepler did not fully abandon the ideas he had articulated in *De Fundamentis* nor his criticisms of conventional astrological methods. As noted above, the title pages of his 1618 and 1624 prognostications stated that they were concerned with “the natural influence of the stars upon this lower world” (see Appendices 3–4). While it is not definitive proof of Kepler’s continuing reform, this formulation does closely align with his broader cosmology and signals an emphasis on the *natural* influences he promoted in his earlier works. Furthermore, Kepler continued to voice his objections to central elements of traditional astrology even while incorporating them. For instance, when placing the planets in their respective houses for the winter of 1617, he explicitly remarked that he did so “*according to old custom*,” thereby distancing himself from the theoretical legitimacy of the houses.¹³⁸ Similarly, in his 1624 prognostication, he criticised the practice of assigning a planetary ruler to the year immediately after stating which planet would be considered the ruler for that year. He stated that he was still convinced of what he had written 24 years ago: that there is no natural foundation for a nativity for the whole year, thus reaffirming his rejection of both the astrological houses and the notion of a planetary ruler of the year.¹³⁹

The apparent shift in the style of Kepler’s prognostications followed a ten-year hiatus in his production of annual calendars. His final work before this break, predicting on the year 1606, still stood out as highly unorthodox: it contained no substantial predictions and primarily listed celestial positions on specific days, accompanied only by brief descriptive notes on the weather.¹⁴⁰ Although Kepler resumed writing prognostications with one for the year 1617, this work has not survived. The earliest extant prognostication after the hiatus, for 1618, already largely conformed to the standard format observed in the works of his contemporaries. There is thus no

¹³⁸ Kepler, 1618, KGW 11.2, pp. 160: „damahlen findet sich Jupiter am hohen Himmel/ Mercurius im Nidergang/ Mars im 9. Hauß ein wenig ubern quadratum Saturni hinauß/ welcher das zwölffte Hauß eingenommen/ Venus gegen ihm über im sechsten/ und der Mond under der Erden im quadrato Martis. Ich wenß auß dieser Figur/ die ich nach alter Gewonheit eingeführt/ wenig zu urtheylen.“

¹³⁹ Kepler, 1624, KGW 11.2, pp. 252: „Weil dann Mars nach der Astrologorum brauch Dominus Anni wird/ Er selber aber in detrimento suo stehet/ also schöpfen die Astrologi hierauß jhr general urtheil/ darumben sie selber in grosser anzahlzuvernemen seynd/ wer nur zeit genug hierzu hat. Ich bleid bey meiner alten Erklärung vor 24 Jahren beschehen/ daß es nit grund in der Natur habe/ daß man dem Jahr als gleichsam einem neugebornen Menschen auff diesen puncten deß eintritts der Sonnen in den Wider eine Nativitet stellen/ und auß derselben deß gantzen Jahrs Qualiteten erlernen könne/ Sondern es heisset bey mir/ *Sufficit cuilibet diei constellatio sua*.“

¹⁴⁰ Kepler, 1606, KGW 11.2, pp 126-35

evidence of a gradual transition toward conventionality; rather, the change appears to have occurred abruptly following his decade-long break.

In the *nachbericht* of volume 11.2 of the KGW, in which Kepler's annual calendars were compiled, editors Bialas and Grössing reflect on possible reasons for the ten-year interruption of Kepler's work as a calendar maker. They suggest two primary motivations for his initial break: first, his growing frustration with the constant scrutiny he faced when his predictions failed to materialise, and second, his desire to devote himself fully to the study of the elliptical orbit.¹⁴¹ As Kepler had long balanced the production of annual prognostications with his broader astronomical work, the second reason on its own does not seem to be a sufficient explanation. However, the first argument, based on the introduction to his 1606 prognostication, is compelling. Kepler started his temporary final work by discussing both the limitations of the science of the stars in predicting events on Earth and his personal difficulties with the art of prognosticating. He started the work with the following verses:

"On the certainty and uncertainty of predictions

Fortuna prostitutes herself, while nature is modest;

Glory is absent from that side, and disgrace from this side.

Honour encourages me, I despise easy luck;

The wise agrees with me, while the soothsayer (*anus*) condemns me. - I.K."¹⁴²

These verses essentially reiterated a message Kepler had emphasised since his earliest works: that predictions should be grounded in nature. While Bialas and Grössing interpret these verses as Kepler contrasting the rational knowledge of nature with the superstitious art of prognostication, another interpretation is possible, namely, that Kepler was distinguishing between a superstitious form of prediction (based on luck through cultural convention) and what he considered the correct method (grounded in nature). This latter reading appears more consistent with his subsequent address to the reader, in which he emphasised that not only the heavens, but also the Earth itself, and above all, God, play a role in shaping future events.¹⁴³ Kepler thus did not fully condemn the practice of prognostication, but rather urged readers to remain aware of its limits. No extant letters reveal his reasons for ceasing the production of annual prognostications, but the introduction to his provisional final work suggests that his frustration

¹⁴¹ Bialas and Grössing, KGW, 250.

¹⁴² Kepler, 1604, KGW 11.2, pp 127: "De certitudine et incertitudine praedictionum: Prostituit fortuna sinum, natura pudica est: Gloria abest illinc, dedecus hinc et abest. Me pudor irritat, promptam fastidio fortem: Me probat hinc sapiens, lusaque damnat anus. I. K."

¹⁴³ Kepler, 1606, KGW 11.2, pp 127.

with readers' overreliance on, and misinterpretation of, his predictions played a significant role in his decision.

His decision to start prognosticating again is explained in his personal correspondence. In 1618, Kepler wrote to Matthäus Wacker von Wackenfels:

“As soon as I returned home to Prague, I resumed work on the Tabulae [Rudolphinae] and the Ephemerides, and in order to cover the costs of the two years' ephemerides, I wrote a cheap calendar with a prognostication, which is only slightly more honourable than begging, except that in doing so, I spared the honour of the Emperor, who wholly abandons me, so that, despite his repeated and recent official mandates, I may be allowed to starve to death.”¹⁴⁴

Within this letter, Kepler touched upon two important reasons for resuming his work on prognostications: first, his precarious financial situation, and second, his continued work on the Rudolphine Tables. His difficulties in securing proper payment had already been alluded to in the introduction to his 1604 prognostication, where he urged the Emperor to continue supporting the science of the stars. By 1616, however, his financial circumstances had evidently worsened to the point where he returned to calendar-making as a necessary source of income. This financial motivation may explain the sudden and marked shift toward a more conventional structure in his later prognostications, as well as the apparent contradictions in his treatment of certain astrological theories. In order to sell enough calendars to sustain his other pursuits, Kepler could not afford to be provocative by presenting radically unconventional formats or content. Instead, he embedded his criticisms of conventional astrological practices more subtly within a familiar framework.

This is not to suggest, however, that money was his sole motivation. During this same period, Kepler was also deeply engaged in preparing the Rudolphine Tables and his ephemerides. Producing prognostications based on these new and more accurate tables allowed him to test their predictive capabilities in practice. In this sense, the prognostications became public laboratories for Kepler's astronomical work. Moreover, they offered his readers an early glimpse of the improved accuracy and potential of the Rudolphine Tables, which would not be formally published until 1627.

¹⁴⁴ Kepler to Matthäus Wacker von Wackenfels, KGW 17, pp 253-54, letter 783: “Ut primum Praga domum redii, ad Tabularum et Ephemeridum opus redii, utque sumptus ad Ephemeridas duorum anno rum expedirem, vile et Calendarium cum Prognostico scripsi; quod paulo admodum honestius est quam mendicare: nisi quod sic honori Caesaris parcitum, qui me in solidum deserit, ut per ipsius Mandata Cameralia, quantumvis crebra et recentia, mihi fame perire liceat.”

While the immediate need for money may have been the tipping point that prompted Kepler to resume writing prognostications, it does not appear to have been the sole motivation. As in his earlier works, Kepler continued to use these publications as a platform for presenting and testing new methods of making predictions. Although these innovations were less overt than in his earlier prognostications, they were still present, albeit concealed beneath a superficial alignment with conventional astrological practices.

7 Conclusion

In this chapter, I examined the mathematical and philosophical foundations that underpinned the predictions of the various prognosticators, and how these differing bases shaped their engagement with contemporary astrological practice. While the chapter has highlighted significant differences in the astrological theories adopted by Krabbe, Schärer, and Kepler, one common thread unites them: a shared aspiration to improve the practice through more reliable foundations, and an openness to reform fostered by critical scholarly debate. Although they disagreed on which specific theories could best achieve this higher standard, they all pursued the same overarching goal.

The study of the mathematical foundations also revealed considerable diversity in how these theories were applied, particularly in the use of Kepler's newly introduced aspects. All three astrologers experimented with them in their prognostications, yet each reached different conclusions: Krabbe abandoned them after a single attempt, Kepler adapted his usage in response to observational evidence, and Schärer retained them but prioritised different aspects than Kepler considered most influential. For all three, though most explicitly for Kepler, the prognostications served as a testing ground, a public laboratory in which they assessed the effectiveness of various astrological theories. While Schärer and Krabbe tended to make very small adjustments, such as adding or omitting individual aspects, Kepler's approach was more radical, discarding entire theories he deemed irrelevant and continually experimenting with the fundamental principles of the practice. Even in the later prognostications, in which he returned to a more conventional practice on the surface, he was still very critical of those theories that he deemed not based on natural influences.

Chapter 3: The religious and metaphysical purpose of prognostications

It was no secret that the predictions made in the prognostications did not offer a precise or infallible account of what would unfold in the coming year. In fact, inaccuracies in the forecasts were not only tolerated but often expected.¹⁴⁵ This acknowledged uncertainty in astrological predictions created space for two essential forces: human free will and Divine intervention. Astrologers frequently warned of impending misfortunes or disasters, only to follow such predictions with exhortations to prayer and repentance, actions that, they argued, could prompt God to avert or lessen the foretold events. The prognostications, then, did not assert a fixed future but rather outlined possibilities shaped by celestial signs, contingent on both earthly behaviour and divine will.¹⁴⁶

Kepler was especially explicit about the limitations of astrology. In the dedicatory letter to his 1598 *Practica*, he candidly stated: “In all of nature, there is no prediction of future things so certain and specific as some demand from astrology; therefore, one should not rely on astrological calendars.”¹⁴⁷ This explicit disavowal of certainty raises a critical question: why, if prognostications could not provide true knowledge of the future, did astrologers like Kepler continue to produce them, and why did the public continue to read them?

This chapter explores that question by considering the higher purposes prognostications served. Rather than being purely predictive, they functioned as moral, religious, and pedagogical tools. They offered reflections on divine order, promoted moral reform, and fostered cosmic awareness. Ultimately, their enduring relevance lay not in their predictive accuracy, but in the theological frameworks they provided for interpreting the world and guiding human action within it.

1 The Lutheran astrologers: a family portrait

When questioned by his former teacher, Michael Mästlin (1550-1631), about including critiques on astrology into his prognostications, Kepler answered him by stating: “I am a Lutheran astrologer, who rejects the nonsense and keeps the core.”¹⁴⁸ With this statement, Kepler

¹⁴⁵ Michelle Aroney, ‘Reassessing the Marginalization of Astrology in the Early Modern World’, *The Historical Journal* 66, no. 5 (December 2023): 1155-56.

¹⁴⁶ C. Philipp and E. Nothaft, ‘Glorious Science or ?Dead Dog?? Jean de Jandun and the Quarrel over Astrology in Fourteenth-Century Paris’, *Vivarium* 57, nos. 1–2 (2019): 60.

¹⁴⁷ Kepler, 1598, KGW 11.2, pp. 39: „in der gantzen Natur kein so gewisse specificirte vorsagung künfftiger dinge/ als etliche von der Astrologi erfordern/ zufinden/ und darumb sich auff die Practiken nit zuverlassen seye.“

¹⁴⁸ Kepler to Mästlin 1598, KGW 13, letter 89, pp. 184: “Ego sum Lutheranus astrologus, qui nugis abjectis retineo nucleum.”

positioned himself within a distinct intellectual and religious tradition: that of the Lutheran astrologers. These were practitioners who did not simply use astrology as a predictive tool but framed it within the theological and moral principles of Lutheran thought. Among them were not only Kepler himself but also figures like Schärer and Krabbe, who, despite notable differences in their approaches, shared this religious and intellectual identity. Understanding the role prognostications played for these three astrologers requires first examining what it meant to be a Lutheran astrologer. By sketching a family portrait of this community, I will highlight their shared values. At the same time, this portrait allows room to highlight the individual styles, emphases, and theoretical innovations that distinguished each astrologer's work.

The practice of astrology was not without controversy within early modern Lutheran circles. Martin Luther (1483–1546) himself strongly condemned the practice of it, denouncing it as an illicit art and a dangerous game with the devil.¹⁴⁹ His critique reflected the deep concern within orthodox Lutheran circles that astrological practices could undermine human free will and promote superstition. This position stood in stark contrast to that of his son-in-law Philipp Melanchthon, who became one of the most influential figures in shaping this distinctly Lutheran form of astrology. Melanchthon not only defended astrology as compatible with Christian doctrine but actively promoted it as a tool for understanding God's creation and discerning His will in the natural world. At the University of Wittenberg, where Melanchthon taught, the foundation was laid for a network of Lutheran astrologers who sought to integrate astrological knowledge with theological and moral instruction.¹⁵⁰

The divergence between Luther and Melanchthon illustrates the complex and often contested place of astrology within the broader landscape of Lutheran thought. One of the main arguments against astrology was its supposed nature as a diabolical art. This aligns with a broader concern within Lutheranism regarding diabolism, as described by Stuart Clark in his book *Thinking with Demons*. Luther had condemned all magical practices as sins based on the first commandment ('You shall have no other gods before Me'). He subsequently listed the ways in which demonological practices went against the first Commandment in his two catechisms. In this list, he included the usage of astrological signs.¹⁵¹

¹⁴⁹ Claudia Brosseder, "The writing in the Wittenberg sky: astrology in sixteenth-century Germany," *Journal of the History of Ideas* 66, nr. 4 (2005): 559.

¹⁵⁰ Claudia Brosseder, *Im Bann der Sterne: Caspar Peucer, Philipp Melanchthon und andere Wittenberger Astrologen* (Berlin: Akademie Verlag, 2004).

¹⁵¹ Stuart Clark, *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe* (Oxford, New York: Oxford University Press, 1999), 490-91.

However, Melanchthon and the Wittenberg astrologers did not consider astrology a diabolical or illicit practice. On the contrary, they regarded it as a valuable and legitimate complement to their faith. Lutheran astrologers justified their engagement with astrology through two primary arguments. First, they claimed that astrology offered a means to understand God through His creation in what is commonly called the “book of nature.” Just as Scripture revealed God’s will spiritually, the orderly motions of the heavens were seen as physical manifestations of Divine Providence.¹⁵² When interpreted in tandem with theology, astrology allowed believers to be reminded of God’s ongoing sovereignty over the world. It is within this intellectual and theological framework that Kepler’s self-description as a “Lutheran astrologer who rejects the nonsense and keeps the core” must be understood. Like many of his contemporaries within the network of Lutheran astrologers, Kepler sought to reform astrology by stripping away what he perceived as unfounded or superstitious elements, thereby aligning it more closely with natural philosophy and divine order. In doing so, he remained faithful to the tradition of Melanchthon, aiming to refine astrology into a more rational and theologically sound discipline.

Secondly, astrology was understood by the Wittenberg astrologers as a means of spiritual self-care and moral discipline. The stars were interpreted not as deterministic forces but as divine signs, placed in the heavens to awaken human beings to the presence of God and the reality of their own immortality.¹⁵³ By contemplating celestial configurations, believers were encouraged to reflect on their inner moral state and take steps to align their lives with divine order. When astrology revealed an individual’s inclination toward a certain wrongdoing or danger, the Lutheran response was not resignation but moral effort: one could actively resist these tendencies and instead cultivate righteous inclinations. In this way, astrology functioned not as a restriction of human freedom but as a tool for its cultivation. This view directly challenged Martin Luther’s criticism of astrology as inherently incompatible with the doctrine of free will. Whereas Luther feared that astrology restricted the possibility of human free will, the Wittenberg astrologers, including figures like Melanchthon and later Kepler, reframed astrological practice as an aid in the exercise of free will, alerting the soul to its weakness and calling it to order.¹⁵⁴

The division on the position of astrology within the Lutheran faith persisted long after Luther died in 1546. Over time, two main factions emerged: the Gnesio-Lutherans and the Philippists. The Gnesio-Lutherans, often considered the more orthodox and conservative branch, upheld what

¹⁵² Brosseder, “The writing in the Wittenberg sky,” 575.

¹⁵³ Steven Vanden Broecke, “Astrology in the Early Modern Period: Practices and Concepts,” in *Encyclopedia of Early Modern Philosophy and the Sciences*, eds. Dana Jalobeanu and Charles T. Wolfe (Cham: Springer International Publishing, 2020), 4.

¹⁵⁴ Brosseder, *Im Bann der Sterne*, 172.

they saw as the pure, unaltered teachings of Martin Luther. In line with Luther's own scepticism, they were generally critical of astrology. Luther himself had warned against the superstitions and overconfidence that often accompanied astrological predictions, and the Gnesio-Lutherans continued this sceptical approach. In contrast, the Philippists (followers of Philip Melancthon) took a far more favourable view of astrology. As a result, the stance on astrology within the Lutheran tradition was far from homogeneous. The growing acceptance of astrology by Wittenberg-trained scholars and calendar-makers represented only one side of the debate. Even within Lutheran regions and institutions, significant tensions and disagreements remained over whether astrology could be reconciled with true doctrine.¹⁵⁵

To understand what is specifically *Lutheran* about this interaction with astrology, it is necessary to compare it with how Catholic astrologers approached the practice. Astrology in the early modern period was not the domain of one confession: both Catholics and Protestants had notable defenders and vocal critics.¹⁵⁶ However, the *function* and *spiritual role* of astrology diverged significantly between the two traditions, shaped by their distinct theological understandings of salvation and divine agency. In Catholic contexts, astrology was primarily tolerated as a *practical tool*, a means to maintain and manage the *corporeal aspects* of life: predicting weather, supporting medical diagnoses, or guiding agricultural activities. The use of astrology for predicting human fate or moral outcomes, however, clashed with Catholic teachings on *salvation by works*. If prognostications concerning human destiny were accurate, then one's fate would be seen as predetermined, undermining the Catholic doctrine that an individual's salvation hinges on their actions, repentance, and participation in the sacraments. The idea that one's sins or salvation could be foreseen and thus fixed would deny the existence of free will, which was central to Catholic soteriology. As a result, it was specifically predictions about human affairs and moral outcomes that were restricted or condemned by papal bulls, such as those of 1586 and 1631, while what they would call natural astrology (focused on weather, medicine, and agriculture) remained permissible.¹⁵⁷

Lutherans, in contrast, held a fundamentally different view of salvation: one that opened up a space for astrology to play a more overtly spiritual and moral role. Rooted in *salvation by grace*, Lutheran theology emphasised that redemption came not through human effort but through God's unearned gift. As stated in Ephesians 2:8-9: "For it is by grace you have been saved, and this

¹⁵⁵ Barnes, *Astrology and Reformation*, 193-94.

¹⁵⁶ Brosseder, *Im Bann der Sterne*, 275-76.

¹⁵⁷ Luís Campos Ribeiro, *Jesuit Astrology: Prognostication and Science in Early Modern Culture*, Time, Astronomy and Calendars: Texts and Studies, volume 13 (Leiden: Brill, 2023), 23; 31-4; 42-51.

not from yourselves, it is the gift of God, not by works, so that no one can boast.”¹⁵⁸ This belief allowed Lutheran astrologers to approach prognostications not as deterministic scripts but as divine signs: reminders of God’s sovereign power and the unfolding of His providential plan. Prognostications thus became spiritual exercises in humility and trust: moral prompts to reflect, pray, and remain faithful, rather than precise forecasts of unchangeable destinies. For Lutheran audiences, the prognostications’ warnings of disaster, illness, or misfortune were not to be read as fixed outcomes but as calls to repentance and faithful vigilance. They reminded believers that, although the stars might signal troubling times ahead, God’s grace was still available and ultimately decisive. This theological framework allowed astrologers like Kepler, Schärer, and Krabbe to operate within an accepted religious paradigm, even as they dealt with fate, prediction, and the role of the heavens in earthly affairs.¹⁵⁹

Thus, the Lutheran approach to astrology was closely tied to its religious worldview. While not accepted by all Lutherans, the astrologers of Wittenberg saw the science of the stars as complementary to their reading of scripture. It was a way of understanding God and His creation through “the book of nature,” and a reminder of his ultimate grace. Additionally, it was a way to practice self-discipline and cultivate the right inclinations. Though astrology was not exclusive to the Lutheran faith, they were better equipped to defend the art against criticism through justification from scripture.

2 Defending their art: the dedications to their prognostications

Prognosticators typically began their work by writing a dedicatory letter or, less often, an introduction addressed to the reader.¹⁶⁰ This section served as a space for the author to defend his work, respond to anticipated criticisms, or reflect on feedback from earlier publications. Here, the prognosticators seized the opportunity to persuade readers that engaging with their prognostication would be profitable. As such, this opening is a crucial part of the text for understanding how each author articulated the purpose and value of their work.

In Melchior Schärer’s 1607 prognostication, it was essential to justify the value of prognosticating, as he had abandoned the practice twenty years earlier. He therefore had to clearly explain why he had changed his mind and returned to it. To do this, he gave a list of five reasons. He first stated that it was guided by God, and used this turn of events to remind the reader of God’s divine sovereignty. He stated:

¹⁵⁸ *Zondervan NIV Study Bible* (Grand Rapids: Zondervan, 2002).

¹⁵⁹ Robin B. Barnes, *Astrology and reformation* (Oxford: Oxford University Press, 2015), 14-15; 258-9.

¹⁶⁰ Green, *Printing and prophecy*, 96.

“The truth of the Christian and well-known saying *Homo proponit, Deus disponit* (“Man proposes, but God disposes”) or *Der Mensch sinnt's, Gott wendet's* (“Man plans it, God changes it”), I myself now experience quite plainly and tangibly.”¹⁶¹

He then addressed what was likely a highly influential factor: the socio-political climate in which he worked. After studying in Tübingen, where astrology was an accepted part of the curriculum, Schärer served as a priest in the town of Widdern from 1591 to 1604. In the dedication, he hinted that engaging with astrology was not tolerated in Widdern. It was only after he was appointed priest in Metzingen in 1605 that he found himself in a more supportive environment, where he started to create prognostications again:

“Three years ago, when I was still serving as pastor in Wüdern, I had firmly resolved for good reasons to withdraw somewhat from the study of astrology (in which I had, alongside my ordinary theological studies, taken pleasure for over 20 years), and especially to give up prognosticating and calendar-making altogether. Behold, God Almighty has willed otherwise: I now once more reach for my tables and ephemerides and step again onto the path with my *Prognosticon* and calendar. This has come about partly because of the change in my pastoral position”¹⁶²

Unlike Krabbe and Kepler, Schärer was not an officially appointed mathematician expected to produce annual prognostications. As a result, lacking the support of even part of his community would have had a much greater impact on his socio-economic position than it would have for Krabbe or Kepler. Although he attributed the change to the will of God, it is reasonable to conclude that Schärer made a pragmatic decision to resume the practice of prognostication only within a context where it was socially and institutionally supported.

Schärer went on to use two rather traditional arguments in defence of astrology, asserting that it continued to be valued by intelligent individuals and invoking ancient authorities (Greek, Roman and Biblical) who regarded astrology as a significant and legitimate discipline.¹⁶³ Additionally, his

¹⁶¹ Schärer, 1607, A ii r: “daß nämlich waar sey/ was Christlich und wol gesagt wird. Homo proponit. Deus disponit. Dei Mensch sinnts/ Gott wendts. Das erfahr auch ich/ zu gegenwertiger Zeit/ augenscheinlich/ im Werck selber.“

¹⁶² Schärer, 1607, A ii r: “Dann vor dreyen Jahren/ als ich noch der Pfarth Wüdern vorgewesen/ hatte ich auß beweglichen ursachen gänzlich bey mir beschlossen/ mich deß Astrologischen studii, (darinnen ich mich/ beneben meinem ordinari studio der Theology nun über die 20. Jahr oblectirt) etwas zu mäsigen/ sonderlich aber deß jährlichen prognosticirns und Calenderschreibens mich allerdings zu enthalten/ Sihe/ so schickts der allmächtig Gott/ daß ich nun mehr meine Tabulas und Ephemerider widerumb von newem herfür sucht/ und mit meinem Prognestico und Calender nochmalen auff die Bahn komme. Darzu dann gelegenheit gibt/ nicht allein die verenderung meines Kirchenberuffs/”

¹⁶³ Schärer, 1607, A ii v.

final justification aligned closely with what has been identified above as characteristically Melancthonian: the use of astrology as a means to establish order, practice spiritual self-care, and discern God's will through the stars. He argued that astrology is essential for maintaining proper temporal structure and for carrying out activities at their appropriate times, ranging from religious festivals and holy days to agricultural tasks:

“Indeed, it is quite necessary, unless we intend to live as dumb and irrational beasts, that such annual timebooks and almanacs be produced and made public, not only so that the church can maintain the proper order of festivals and holy days (since all things in God’s church should proceed decently and in order, 1 Corinthians 14), but also so that in household and agricultural matters, such as necessary physical treatments, sowing, planting, harvesting, wood-cutting, and so on, we may take and execute our labours at the right and proper times (for “everything has its season,” Ecclesiastes 2), and this without any superstition.”¹⁶⁴

After 1607, Schärer did not elaborate much on the religious or metaphysical purpose of his prognostications within the dedicatory letter. However, he did take the time to either explicitly or implicitly engage with criticisms of his earlier prognostications or the practice in general. In 1615, he dedicated nearly his whole introduction to an etymological explanation of the names of the celestial bodies. He stated that all the contemporary names date back to their Hebrew names, thus directly linking the science of the stars to a biblical origin. Schärer was not the first to argue the Hebraic origins of astrology. Already in the first century, Jewish general and historian Flavius Josephus (37 – ca. 100) claimed this same genealogy.¹⁶⁵ While Schärer did not state this explicitly, this section was likely meant to defend astrology against the critique that it was a diabolical art.

The argument that engagement with the planetary influences was indirectly an engagement with diabolical powers can be traced back to the Church Fathers. Because the planets had once represented the gods of antiquity, any engagement with them to gain insight into the future could be seen as, at best, idolatrous and, at worst, a pact with the devil’s agents.¹⁶⁶ Melancthon sought

¹⁶⁴ Schärer, 1607, A ii v: “Inmassen es dann auch wol von nothen seyt wil/ wo wir anderst nicht/ als das thumme unnd unvernünftige Vihe in Tag hinein leben wollen/ solche Zeit unnd Jahrbüchlein jährlichs zu stellen/ unnd öffentlich aufzuschlagen/ nicht allein/ daß man in der Kirchen die rechte Ordnung der Fest und Feyertag erhalte (dann in der Kirchen Gettes soll alles ehrlich und ordenlich zugehen/ 1. Cor. 14. Cap.) Sondern daß man auch in der Haußhaltung und Feldbaw/ die Geschäften/ mit notwendiger Leibscur/ saen/ pflanzen/ abnemung und sammlung der Früchten/ Holtz fellen und anderm/ zu rechter und bequemer Zeit (dann alle ding hat seine Zeit/ Prediger Salo. 2. Cap.) doch ohn allen Aberglauben wisse für zu nemen und zu führen.”

¹⁶⁵ Nicholas Popper, “‘Abraham, Planter of Mathematics’”: Histories of Mathematics and Astrology in Early Modern Europe’, *Journal of the History of Ideas* 67, no. 1 (2006): 92.

¹⁶⁶ Barnes, *Astrology and reformation*, 8-9.

to counter this view through biblical exegesis, aiming to demonstrate, via a literal reading of Scripture, that the interpretation of celestial signs was divinely embraced.¹⁶⁷ Schärer's argument is thus part of a long tradition concerned about the diabolical influence of astrology.

Schärer began the dedicatory letter of his 1615 prognostication by invoking the Platonic dialogue between Cratylus and Socrates on whether things are more accurately understood through their names or through their intrinsic nature.¹⁶⁸ He aligned himself with Cratylus' view: that names are given according to the essence of things. By adopting this position, Schärer established a connection between the intrinsic nature of the celestial bodies and their Hebrew names, even though the names of the planets (in contrast to the sun and moon) are not explicitly mentioned in Scripture. He argued that these names were divinely instituted: God named the celestial bodies according to their inherent characteristics. This reasoning gave theological legitimacy to the traditional planetary attributes employed in prognostications, suggesting that their perceived influences were not arbitrary but rooted in divine recognition of their essential qualities. Schärer wrote:

“Although the other planets' names, apart from the two luminaries, are not mentioned in Holy Scripture, the Hebrews nevertheless call Saturn Schabtai, that is, quiet and tranquil (quietum & tranquillum), from the root Schabath, meaning he ceased, he rested (cessabit, quievit), and so forth. [...] They call Jupiter Tedek, that is, just (justum, gerecht). [...] They call Mars Maadim, that is, strong or robust (robustum, starck), because of its natural disposition, [...] which tends to make them somewhat martial and warlike. Nonetheless, Rantorius reports that some believe it is called so because of its reddish fiery colour and its brilliance. [...] Venus, accordingly, receives its name from the excellence of its splendour, because she surpasses all other stars of the heavens in brilliance. The root is Nagal, he shone (splenduit). [...] Mercury is called Meni by the Hebrews, and it has received this name from numbering or distribution of things (a numeratione seu rerum distributione), for the root is Manah, he counted (numeravit), because this planet gives rise to intelligent minds and inclines people to poetry and the mathematical sciences, arithmetic, geometry, astronomy, since these arts concern themselves with numbers.”¹⁶⁹

¹⁶⁷ Brosseder, *Im Bann der Sterne*, 271.

¹⁶⁸ Schärer, 1615, A ii r: “Der fürtreffliche unnd berühmte Philosophus Plato (welchen auch etliche Divinum Platonem pflegen zu nennen) hat inn seinem Cratylō ein schöne und liebliche Disputation. *An res verius per Nomina. an vero per se ipsas cognoscantur*,”

¹⁶⁹ Schärer, 1615, A ii v – A iii r: “Ob nun wol der andern Planeten Namen/ ausser den Luminaribus. in der H. Schrifft nicht gedacht wird/ so nenen doch die Hebreer sonsten den Saturnum Schabtai, id est, quietum & tranquillum, richtig und still/ a Radice Schabath, cessabit, quie vit, und solches/ [...] Den Jovem nennen sie Tedek, id est justum, gerecht [...] Den Martem nennen sie Maadim, id est, robustum/ starck/ von wegen der

By grounding planetary names in Hebrew etymology and associating them with divine intent, Schärer countered the idea that the planets were diabolical remnants of pagan religion. Instead, he framed their study as consistent with both linguistic tradition and theological order.

Krabbe, just like Schärer, employed various arguments to defend astrology and prove its worth. He invoked several characteristically Lutheran reasons to justify the art, especially within his 1597 and 1614 prognostications. He, for example, noted the importance of structure and order in both worldly and churchly matters, as well as the role of astronomy in providing this structure.¹⁷⁰ Further on in his dedicatory letter, he also noted that while astrology has been misused and is therefore looked upon with suspicion, it should not be fully rejected. Rather, it could be used in its proper, Christian manner.¹⁷¹ Following the traditional argument of Lutheran astrologers, Krabbe thus promoted a reform of judicial astrology, rather than a plain rejection or uncritical adoption of the art.

Importantly, Krabbe also invoked the concept of the ‘book of nature’ in the dedicatory letter to his 1597 prognostication. The idea that astrology served as a means to comprehend divine providence was a common argument among the Wittenberg astrologers.¹⁷² However, Krabbe extended this reasoning beyond astrology itself: he employed it to legitimise the use of knowledge derived from ancient philosophers. He argued that, although these philosophers lacked access to divine revelation through Scripture, they were nonetheless able to know God through the science of the stars. In doing so, Krabbe reframed the engagement with pre-Christian

natürlichenneygung/ die er bey denen hat [...] daß er sie etlicher massen Martialisch und Kriegerisch machet/ Gleichwol sagt Rantzorius/ ettliche halten dafür/ er werde also genennet/ von wegen seiner rotfeurigen farbe/ und glantz so er hat. [...] Hat demnach die Venus den Namen ab excellentia splendoris, von der fürtrefflichkeit ihres glantet/ darmit sie alle andere Sternen deß Himmels übertrifft/ Radix est Nagal splenduit. [...] Mercurius heist bey den Hebreern Meni, hat den Namen überkommen/ a numeratione seu rerum distributione (Dann die Radix ist Manah, Numeravit) weil dieser Planet gute ingenia gebüret/ und ad poësin. studia Mathematica, Arithmetica, Geometria, Astronomia (dann diese Künsten gehen mit den Numeris umb) [...]

¹⁷⁰ Krabbe, 1597, A ii v: “Denn aus dieser Kunst wird uns nicht allein offenbaret der beiden schönen himlischen Liechter/ Sonn und Mond/ sampt der Planeten und andern Gestirn des Firmaments/ von Gott verordenter Lauff und Bewegung/ sondern gibt uns auch den Nutzen/ das wir doraus nach der Sonnen und des Monden Lauff das Jahr mit seinen Festen/ und andern Feiertagen fein ordentlich/ gemeinem Nutzen zum besten/ abtheilen können/ one welche ordentliche Abtheilung/ wir keine Historien eigentlich vorzeichnen/ und im Gedechinis behalten/ und ander Händel ordentlicher weise verrichten können/ Derwegen wir diese Kunst Astronomia in Geistlichen und Weltlichen Sachen/ so wenig als Feuer und Wasser entraten oder entberen können.“

¹⁷¹ Krabbe, 1597, A iii r: “Und ob wol Astrologia sonderlich oft und von vielen mit Aberglauben schendlichen mißbraucht ist/ und noch diese Zeit wird vordechtig gemacht/ Dennoch sol sie darumb nicht verachtet oder gar verworffen werden/ Denn so der Mißbrauch wird davon gethan/ so kan sie in irem werd recht und Christlich gebraucht werden/“

¹⁷² Brosseder, “The writing in the Wittenberg sky,” 575.

philosophical sources, not as interaction with heathen knowledge, but as participation in a legitimate, natural theology grounded in celestial observation:

“At the same time, we should not, like the crude Epicureans, despise the teachings and opinions of the aforementioned philosophers, especially not those that align with the Word of God, nor dismiss them as merely heathen, but rather hold them in esteem and consideration. For God has not only planted within human nature the awareness that there is a God who rewards good and punishes evil, but has also set forth His invisible almighty divine majesty in the natural world as in a transparent, beautiful mirror, and likewise in the liberal arts that deal with the contemplation of divine works.”¹⁷³

In 1614, Krabbe opened his prognostication with a brief address to his readers, focusing in particular on the omnipotence of God. He attributed the discrepancies between the predictions in his previous prognostication and the actual course of events to the overriding authority of divine will. The apparent errors, he maintained, were not due to any mistake in his calculations. While the stars may have indicated certain outcomes, God had ultimately willed otherwise.¹⁷⁴ To demonstrate that divine intervention had indeed shaped the events of the previous year, Krabbe pointed to a series of disasters as manifestations of God’s power:

“In the past year, His divine power, activity, and wonders were clearly felt, heard, seen, and recognised on earth and in the air: through earthquakes of unusual severity, through almost unnatural storm winds and unseasonably warm weather, and also through other signs both on earth and in the skies. All of this I have wished to remind the kind-hearted reader of, as a preface to this, my prognostication, thereby commending ourselves to God’s divine protection.”¹⁷⁵

¹⁷³ Krabbe, 1597, A ii r-v: “So sollen wir doch nicht/ gleich wie die groben Epicurer/ obgedachter Philosophen Lere und Meinung/ sonderlich die/ welche mit Gottes Worte uberein stimmen/ verachten/ oder fur Heidnisch halten/ sondern viel mehr lieb und werd halten/ und wol bedencken und erwegen/ Denn Gott hat nicht all in dem Menschen in seine Natur eingepflantzet// das er wisse das ein Gott sey/ welcher das gute und böse belohnen werde/ Sondern hat auch ferner in der Natur/ als in einem durchsichtigen schönen Spiegel/ desgleichen in den freien Künsten/ die da mit Betrachtung Göttlicher Wercke umgehen/“

¹⁷⁴ Krabbe, 1614, A iii r-v: “Gunstiger lieber Leser/ dieweil Ich vernommen/ daß sich etliche Leute damit nicht wenig belüstigen wollen/ das die Witterung verschieenen Jahrs im Vorwinter/ biß in den Januarium/ mit meinen und anderer Astrologen außgangenen Calendern und Prognosticationen. nicht eingetroffen/ so muß Ich zwar solches dahin gestalt seyn lassen/ Ich zweiffel aber nicht/ weil die Göttliche Allmacht an die Natur und des Himmels Lauff nicht verbunden/ Sondern alles nach seinem Göttlichen Willen und Gefallen schicket und richtet (In massen ich denn solchs jedesmals in meinen Prognosticis gnugsam bezeuget/ und gebeten habe/ sich dero selben ohne Aberglauben zugebrauchen) Es werde demnach der vernünfftige Leser solchs nicht meiner Calculation oder unfleiß/“

¹⁷⁵ Krabbe, 1614, A iii v: “im selbigen vergangenen Jahr/ seine Göttliche Macht/ Wirkung und Wunder/ durch Erdbiedem ungeheuer/ und fast uber natürlichen Sturmwinden und warmen ungewöhnlichem Wetter/ Auch

In this section, Krabbe alluded to the apocalyptic character often associated with Lutheran thought. For Melancthon, celestial signs were clear indicators of impending catastrophe, but at the same time, they conveyed an indirect promise of divine mercy.¹⁷⁶ Similarly, Krabbe asserted that God revealed Himself particularly through disasters, thus linking divine power to catastrophic events. These disasters, however, also served to remind the reader of God's providential plan and the promise of redemption. The inaccuracies in his prognostication were therefore not failures, but rather opportunities to direct the reader's attention back to God and His will.

Both Schärer and Krabbe essentially did two things within their dedicatory letters. First, they defend astrological prediction against an array of critiques, for example, stating that mistakes within their predictions are not due to wrong calculations, but because God chose to intervene. Second, they emphasised the spiritual significance of prognostications, presenting them as instruments for drawing closer to God. Prognostications were not only a means of discerning divine order in the cosmos, but also a way to be reminded of God's providential will as expressed through the natural world.

While Kepler essentially sought to convey the same message, namely the spiritual importance of prognostication for the Christian faith, he approached it differently from his contemporaries. Instead of defending the art and its abilities to predict the future, Kepler appealed to his critics by acknowledging the limited power of astrology to make specific predictions. In 1598, he stated that it was because too much had been attributed to the science of the stars that the practice had fallen into dismay. He followed this up by stating that nothing specific could be known from prognostications and that they served only one purpose: theological instruction. He wrote:

“Therefore, in the past two years I have applied myself in my practica to cutting back this immoderate glorification of astrology and to showing that nothing should be built upon the annual prognostications typically appended to calendars; rather, they should be read for Christian edification, especially by learned, prudent, and sober-minded individuals. For the art itself offers no foundation from which any particular event (in specie) can be predicted, only generalities.”¹⁷⁷

sonsten auff der Erden/ und in Lüfften gnugsam gespüret/ gehöret/ gesehen und befunden hat/ welchs Ich dan dem guthertzigen Leser/ zum Eingang in diß mein Prognosticon zubedeucken/ habe erinnern wollen/ uns hiemit in Göttlichen Schutz empfelende.”

¹⁷⁶ Brosseder, *Im Bann der Sterne*, 274.

¹⁷⁷ Kepler, 1598, KGW 11.2, pp. 37: „Alß hab Ich mich in zweyen nechst vergangener Jahr meinen Practiken understanden/ sollichen unmassigen Rhuem der Astrologia zubeschneiden/ und anzuzeigen/ das auff die jährliche Prognostica. so man den Calendern anhefftet/ khaines wegs zubawen/ sondern vil mehr zu einer Chrlichen ergetzlichkeit/ und sonderlich von gelehrten/ verständigen/ und rhüewigen Leütten sollen gelesen

After having critiqued the contemporary practice of astrology, Kepler explained the reason why he claimed that prognostications were an unreliable source of knowledge about the future. For this, he leaned especially on the concept of 'free will'. Stating that, along with natural causes, the daily happenings were also influenced by "the free will of human beings, of good and evil spirits, and indeed of God Himself".¹⁷⁸ Interestingly, this very same argument has been used to argue that prognosticating is mere superstition and should not be practised at all. However, Kepler did not draw the same conclusion. While prognostications had no direct practical use because of their inability to make specific predictions, they had, according to Kepler, an important spiritual use that must not be neglected:

"Nonetheless, gracious and sovereign Lords, in a well-ordered government, not everything can or should be directed solely toward gain and utility. One must also uphold whatever serves to honour God, to benefit humankind, and to foster peace. And this praiseworthy encouragement, which flows from astrology and from the contemplation of the divine order established in nature, has long been particularly esteemed by this most noble Estate above many other nations."¹⁷⁹

Six years later, in his 1604 prognostication, Kepler reiterated the argument for the spiritual value of astrology within a Christian framework. However, the need to convince the public of the practical utility of his work appeared more urgent than ever. In the dedicatory letter of 1604, Kepler repeatedly addressed both the financial realities of the time and the significance of his role as Imperial Mathematician. His defence extended beyond responding to intellectual critiques of astrology; it also engaged with pressing economic concerns. At the heart of his justification lay a fundamental question: when the Emperor faced financial constraints, why should resources still be allocated to support an imperial mathematician?

For Kepler, the answer was straightforward: the study of the stars served as a means to draw closer to God, and this alone justified continued investment in it. He portrayed the role of the

werden. In ansehung/ das die kunst selber kheinen sollichen grund habe/ darauß einiger zufall in specie. oder anderst alß generaliter könne vorgesagt werden"

¹⁷⁸ Kepler, 1598, KGW 11.2, pp. 39: „sintemahl ausser der natürlichen ursachen/ auch noch der Menschen/ guetter und böser Geister/ ja Gottes selber freyer wil fürhanden/ Wölche neben der Natur würcken/ und auch zu täglich fürlauffenden fallen krefftig seind/ aber von keiner Creatur/ sonder allein von Gott vorgesehen werden khönden.“

¹⁷⁹ Kepler, 1598, KGW 11.2, pp. 39: „Demnach aber Gnedig und Gebiettunde Herrn/ in einem wolbestelten regiment nicht alles kan noch sol auff gewin und nutzen gericht werden/ sondern man auch/ waß sonst zu Gottes ehr und des Menschen wolgefallen taugt/ und den friden zieret/ handhaben mueß. und dise löbliche anmuenung/ so auß der Astrologia und betrachtung Göttlicher in die Natur eingeführter ordnung herfließet/ diser einer Er. La. für andern nationen sonderlich beliebt/“

imperial mathematician as one tasked with deciphering God's will, inscribed in the heavens. Drawing on the well-established analogy of the 'book of nature,' Kepler cast himself as both translator and priest, someone who revealed divine messages encoded in the cosmos to the people:

“For just as no one can read a closed book, it follows that this must be an imperial, royal, and princely endeavour, to dedicate the necessary expense so that this splendid book and its antiquity might be ever more opened, the art of reading it brought forth, its language translated, and its content revealed to humankind, so that all people may with one voice proclaim to God the Creator His due honour and thanks.”¹⁸⁰

Kepler's emphatic proclamation of the significance of the science of the stars and, in particular, the role of the Imperial Mathematician in the service of divine teaching, was likely not only a response to general critiques but also a pointed reminder to the Emperor of his own duties before God. As Max Caspar notes in his authoritative biography of Kepler, the astronomer faced persistent difficulties in securing his salary from Rudolf II and his successors, a struggle that would continue until his death.¹⁸¹ This fervent dedicatory letter was likely one of several strategic efforts to appeal for payment by framing his position as divinely ordained. At one point, Kepler even took the bold step of criticising the lavish spending on courtly festivities and banquets, remarking that if funds could be found for such extravagance, “a poorer man may rightly reason that a ruler can also afford to spend just as much for the honour of God.”¹⁸²

After having “sufficiently demonstrated that in a well-ordered polity, astronomy is a service to the honour of God, and for that reason should be no less (indeed even more) maintained and supported than the other things,” Kepler proceeded to present two further arguments in support of the value of astronomy and astrology: spiritual self-care and self-discipline.¹⁸³ As noted above, these themes were commonly invoked by Lutheran astrologers as key justifications for their

¹⁸⁰ Kepler, 1604, KGW 11.2, pp. 84: „Weil dann in einem verschlossenen Buch niemand lesen kan. so folget/ das ditz ein Kayserlich Königlich und Fürstlich werck sein muesse/ notwendigen uncosten drauff zu wenden/ damit sollich treffentlich. Buch und Antiquitet zu allen zeiten je mehr und mehr aufgethon/ die kunst solliches zu lesen herfür gebracht/ seine sprach verdolmetschet/ und der innhalt dem Menschlichen geschlecht entdeckt werde. damit alle Menschen mit einhelliger stimme Gott dem schöpffer seine gebührende Chr und danckh vermelden.”

¹⁸¹ Max Caspar, *Kepler* (London, New York, Abelard-Schuman, 1959).

¹⁸² Kepler, 1604, KGW 11.2, pp. 85: „Ja alldieweil zu schawspielen/ zu costlicher kleidung/ zu hochzeitlichen ehren zu Banqueten zu außhaltung einer grossen anzahl mües siger diener (nämlich zu erhaltung eines jeden privat reputation) gnueg fürhanden. macht ime ein anderer dürttiger billich die rechnung/ daß ein Potentat noch wol so vil auch Gott zu ehren zuspendiren haben/“

¹⁸³ Kepler, 1604, KGW 11.2, pp. 85: „Und ist hiermit sovil erwisen/ daß in eim wolbestellten Regiment die Aftromia zu der ehr Gottes dienstlich. und derohalben so wenig und weniger als andere erzehlte sachen/ zu übergehen seg.“

practice. Kepler argued that the study of the stars, and the ensuing contemplation of God's creation, offered spiritual delight and fostered personal growth:

Likewise, just as in spiritual matters, the honour which a person shows to his Creator through daily worship is not meant for God Himself, as though He needed it for His own sake, but rather, and even more so, it is intended for the benefit of the human being himself, for he is thereby daily improved, and in such devotion he finds his spiritual joy, delight, and daily consolation. [...] Moreover, these contemplations have a hidden power to shape a person's will, more than all philosophers have been able to recognise thus far, restraining his unruly desires. For as a person becomes accustomed to the beautiful order found in geometrical and astronomical matters, he also, often more so as a student than as a master, begins to develop a love for justice, gentleness, modesty, and graciousness, because without these virtues, one must expect nothing but a sullen and distressing confusion in the governance of society.¹⁸⁴

Although Kepler explicitly aligned himself with the tradition of Lutheran astrologers and employed many of the same arguments to underscore the value of celestial science within Christianity, he did not adopt all of their explanatory frameworks. Notably, the apocalyptic tone present in Krabbe's dedications is absent from Kepler's. As discussed above, Krabbe explicitly interpreted the unpredicted disasters of the previous year as manifestations of divine power. Kepler, in contrast, only mentioned that it was not possible to predict anything specific because the free will of both God and men influenced every event.

Schärer, Krabbe, and Kepler each used their dedicatory letters to defend the legitimacy of prognostications against a range of criticisms. While their emphases and rhetorical strategies varied, they all advanced the same fundamental argument: engaging with prognostications is a meaningful endeavour because it draws one closer to God.

¹⁸⁴ Kepler, 1604, KGW 11.2, pp. 85-86: „Nebens aber/ und wie es in geistlichen/ sachen beschaffen daß die senige ehr/ wölliche der Mensch seinem Schöpffer mit täglichem Gottes/ dienst erzeiget/ nit allein von Gottes selbst wegen gleich als bedürffte Er für sich deren so hoch/ sondern auch/ und vil mehr zu sein des menschen bestem gemeint/ vnd er hierdurch nit allein täglich gebessert/ sondern auch hieran sein geistliche woñ und freud/ und tägliche ergetzlicheit hat. [...] Nebens biegen dise speculationes auch dem Menschen verborgener weise/ mehr dan alle philosophi bißhero befunden könden/ seinen willen/ zamen ime seine unordentliche begirden. das weil er zu der schönen ordnung in Geometrischen und Astronomischen sachen gewohnet/ er auch hernach (wiewot oft mehr der Jünger als der Maister) zur gerechtigkeit/ lindigkheit/ ehrbarkheit und holdseligkeit eine liebe gewinnet. weil ohne dise Tugenden ein lauttere verdrießliche Confusion der policeyen zugewarten.“

3 The Lutheran future

As demonstrated above, Lutheran astrologers primarily understood their prognostications as instruments for guiding believers closer to God and reminding them of their religious obligations. This spiritual emphasis was not confined to the dedicatory letters, where it served to legitimise the practice, but also permeated the predictive sections of the texts themselves. In what follows, I will analyse the main body of the prognostications to explore how forecasts of future events were employed to exhort readers to fulfil their duties as faithful Lutherans.

Prognostications have often been interpreted as expressions of anxiety or pessimism about the future.¹⁸⁵ Barnes, for instance, argues that such texts played a central role in sustaining the apocalyptic expectations that were so prevalent during the German Reformation.¹⁸⁶ By predicting catastrophic events, the prognosticators encouraged their readers to remain steadfast in their faith, reinforcing the belief that the end times were near. These ominous predictions served as reminders not only of God's wrath but also of the grace and salvation that He would ultimately bestow upon the faithful. As noted above, Krabbe employed this same argument in his dedicatory letters.

However, this sole focus on misfortune and divine punishment overlooks the presence of hopeful or favourable forecasts within the same texts. While Barnes does acknowledge the emergence of positive fortunes, he claims they only begin to appear around the year 1600, as part of a larger shift in prophetic literature toward consolation and a more hopeful outlook. According to this view, the early seventeenth century marked a reaction against a previously dominant pessimistic worldview, one that emphasised human helplessness in the face of divine judgment.¹⁸⁷

This account, however, oversimplifies the diversity of astrological predictions throughout the sixteenth and early seventeenth centuries. A review of the works of Schärer, Krabbe, and Kepler shows that prognostications consistently included both favourable and unfavourable forecasts. Rather than marking a dramatic shift, the inclusion of good fortune appears as a persistent element of astrological literature, complementing the unfavourable predictions.

The unfavourable predictions were the most clearly linked to a religious purpose, as they often explicitly called upon the reader to pray for a different outcome. In the prognostications of both

¹⁸⁵ Steven Vanden Broecke, 'Self-Governance and the Body Politic in Renaissance Annual Prognostications', in *From Masha'Allah to Kepler : Theory and Practice in Medieval and Renaissance Astrology* (Sophia Centre Press, 2015), 492-3.

¹⁸⁶ Barnes, *Astrology and Reformation*, 14.

¹⁸⁷ Barnes, *Astrology and Reformation*, 266-67.

Schärer and Krabbe, repeated calls for prayer can be found throughout the monthly and thematic forecasts. Whenever a misfortune was predicted, it was typically followed by phrases such as: *“May Almighty God prevent it; for this reason, it is indeed most necessary to pray sincerely.”*¹⁸⁸ These warnings were not merely ritualistic. They served to remind readers to live a pious, Christian life in fear of God, with the hope that righteous behaviour might avert divine punishment. For example, in his 1597 prediction for the harvest, Krabbe juxtaposed potential bad and good outcomes, explicitly tying the actual result to the moral conduct of the people:

"But as said above, fruit such as apples, pears, nuts, cherries, and the vine will have to endure great danger due to the aforementioned cold, frosty, and rainy weather, and will be badly damaged, devoured by caterpillars, and ruined. Yet if the gracious God, who has power over all things, should mercifully avert this, which He surely can do for the sake of devout and God-fearing people, then we may expect a good and fruitful year in regard to all kinds of produce. May Almighty God grant us such a heart that we may use His gifts with thanksgiving for the sustenance of our bodies, and also be helpful to our poor neighbours with them, so that they, out of great poverty and abandonment, may not resort to stealing and thereby dishonour the name of God."

While these bad fortunes more explicitly reminded readers of their religious obligations, often through direct calls to prayer, the positive predictions likewise fulfilled a spiritual function. As discussed above, one of the core purposes of the prognostication was to instil a sense of self-discipline in its readers. By offering a structured overview of the coming year, it provided a sense of cosmic order and regularity, reassuring the reader that the universe operated according to a divinely instituted natural order. This order was not merely physical or celestial but also moral.

According to Lutheran theology, humanity is fundamentally inclined to sin ever since the Fall.¹⁸⁹ As a result, people required constant guidance in their conduct. The prognostication helped to provide such guidance by structuring time itself, most notably through the monthly forecasts. These forecasts offered readers a spiritual and practical rhythm to follow throughout the year, implicitly reinforcing the notion that human life should conform to God's ordained structure of creation. In this way, even predictions of favourable conditions served to remind the faithful of God's continued presence in the world and their own duty to live in accordance with His order.

¹⁸⁸ For example in Krabbe, 1609, C ii r: „Gott der Allmechtige wolle es abewenden/ Darümb in warheit zu bitten hoch von nöten sein will“

¹⁸⁹ Sachiko Kusakawa, *The Transformation of Natural Philosophy: The Case of Philip Melancthon*, Ideas in Context (Cambridge: Cambridge University Press, 1995), 29.

For instance, at the end of his 1607 prognostication, Schärer reminded his readers, through the use of a biblical verse, that good years granted by God should inspire repentance and gratitude, not complacency. He wrote:

“But then it will be said: ‘Do you not know that God's kindness is meant to lead you to repentance?’ God has richly blessed us for several years now; for that, we truly ought to thank Him without ceasing, with all humility and from the heart. But where are the nine? A dreadful misuse of His gifts, it would be no wonder if God were to let neither leaf nor grass grow. Indeed, in a godless and unrepentant land, the curse may consume everything (Isaiah 24). But for those who fear God, nothing good shall be lacking (Psalm 34).”¹⁹⁰

This passage underscores the Lutheran emphasis on God's grace as a call to moral responsibility. Even in times of prosperity, the believer is reminded to remain humble, thankful, and faithful; otherwise, the blessings could be withdrawn. Thus, the prognostication was not simply a calendar of celestial movements or earthly events, but a tool of religious discipline.

The fact that the purpose of religious discipline in the prognostications extended beyond the warnings of bad fortune, but permeated the entire work, is especially evident in the writing of Johannes Kepler. He, notably, did not call upon his readers to pray, with the exception of a single reference in his 1618 prognostication. However, this absence of explicit appeals to prayer does not mean that Kepler's prognostications lacked religious purpose. On the contrary, he often articulated a clear moral and spiritual intention behind his writing. For example, at the end of his 1598 prognostication, he expressed the hope that the coming year would lead his readers toward moral virtue and away from sin:

“God Almighty, grant us such a grace-filled new year, in which we are led to moderation, sobriety, courage, prudence, and all virtues, and in which we are not given room to fulfil the full measure of our sins.”¹⁹¹

Rather than rallying his audience to prayer in response to specific disasters, Kepler framed the entire exercise of prognostication as one that should cultivate moderation and virtue. His

¹⁹⁰ Schärer, 1607, 17v: „Es wird aber heissen/ weissestu nicht/ das dich Gottes Güte zur Bußleitet? Es hat uns Gott nun etlicht Jahr nechst hin reichlich gesegnet/ dafür wir ihm ja ohn Niterlaß/ in aller demut/ von hertzen dancken solten, Novem autem ubi? Wo seind aber die neun? Schröcklicher Mißbrauch seiner gaben/ dat nicht wunder were/ wann schon Gott weder laub noch Graß wachsen ließ. Wolan der Gottlosen und unbußfertigen Land kan der fluch fressen/ Esa. 24. aber den Gottsförchtigen wird nicht mangeln an irgend einem Güte/ Psal. 34.“

¹⁹¹ Kepler, 1598, KGW 11.2, pp. 44: „Gott der Allmechtig wölle uns ein sollich gnadenteich new Jaht verleihen/ darinnen wir zur massigkeitt/ nüchterheit/ dapfferkeit/ fürsichtigkeit/ und allen tugenden gedrunge/ Und uns nicht die maß unserer sunden zuerfüllen raum gelassen werde.“

emphasis on personal responsibility and moral improvement aligns with the broader Lutheran aim described above of using astrology not merely to foretell fate, but to encourage ethical self-regulation in accordance with divine order.

4 Conclusion

This chapter examined the religious and metaphysical purposes of the prognostications and how these aims reflected the specifically Lutheran worldview of Krabbe, Schärer, and Kepler. While their rhetorical styles varied, it is evident that all three regarded the prognostication as an inherently religious document. The Wittenberg astrologers framed it as a complement to Scripture, enabling the study of God through the “book of nature” and serving as a reminder of His ultimate grace. At the same time, it functioned as a tool for cultivating self-care and moral discipline, principles central to Lutheran soteriology. In this way, the prognostication not only instructed readers in the movements of the heavens but also guided them toward a virtuous life. Krabbe, Schärer, and Kepler all drew upon these arguments to defend their art against critics, whether Catholic or Lutheran, positioning astrology as a practice that, when rightly understood, supported rather than undermined true Christian faith.

Conclusion

This thesis has examined Johannes Kepler's role and approach as a prognosticator in comparison to two of his contemporaries within the broader community of Lutheran astrologers. To do so, it focused on three key elements: the structure, mathematical foundations, and religious purposes of their prognostications. Across all three areas, two recurring themes emerged: the shared commitment of these astrologers to improving their practice by building on firmer foundations, and the diversity of methods through which they sought to achieve this aim.

Krabbe, Schärer, and Kepler all considered the prognostication to be a fundamentally religious and spiritual instrument, complementary to Scripture, intended to bring readers closer to God and to guide their lives in accordance with Christian principles. In this sense, their efforts to improve astrological practice were also efforts to align it more closely with God's will. All three critically engaged with their sources, whether ephemerides, authoritative astrological works, or their own observations, to produce what they believed to be the most accurate predictions possible. They also embraced, to varying degrees, new theories such as the Keplerian aspects, seeing these as tools to enhance the precision of their forecasts. Furthermore, they defended astrology's validity by framing it as a religious exercise rather than a purely speculative art.

Yet, despite these commonalities, Kepler distinguished himself through the radical nature of his critiques and reforms. While Krabbe and Schärer only engaged with possible new theories, Kepler actively invented new theories, such as the Keplerian aspects and went much further in discarding conventional ideas and restructuring the prognostication itself. He occupied a unique position, standing with one foot in the camp of astrology's defenders and the other among its critics. While still affirming astrology's religious value, he rejected many of its traditional foundations, ultimately producing predictions based solely on planetary aspects and limiting himself to broad, general forecasts.

Kepler also used the prognostication as a "public laboratory," continually experimenting with both its structure and theoretical underpinnings. He first tested his new aspects in these popular works before formalising them in theoretical treatises, modifying their application in later prognostications based on observational results. Unlike Schärer and Krabbe, whose modifications were minor, Kepler's works exhibited no consistent format, with each of his early prognostications differing sharply from both the previous one and from contemporary norms. Even in his later, seemingly conventional works, he embedded veiled critiques and used them to trial the Rudolphine Tables and revisions to his lunar theory.

In conclusion, Kepler operated within a tradition of Lutheran astrologers who understood their craft as inseparable from their faith and sought to improve it in accordance with divine natural law. While diversity characterised the forecasting practices of the Wittenberg milieu, Kepler stood out as a radical reformer whose innovations reshaped both the form and content of the prognostication.

This study has been conceived as a microstudy within the broader field of research on Wittenberg astrologers. Due to its scope, it has been limited to three prognostications per astrologer. While this comparison offers a strong starting point, a wider survey, either of more prognosticators or of a greater number of prognostications per individual, would deepen our understanding of the diversity within the Lutheran astrological tradition. Of particular value would be a focused investigation into the reception and adaptation of Keplerian aspects, as it could trace how knowledge of these reforms circulated and how they were received within the wider astrological community.

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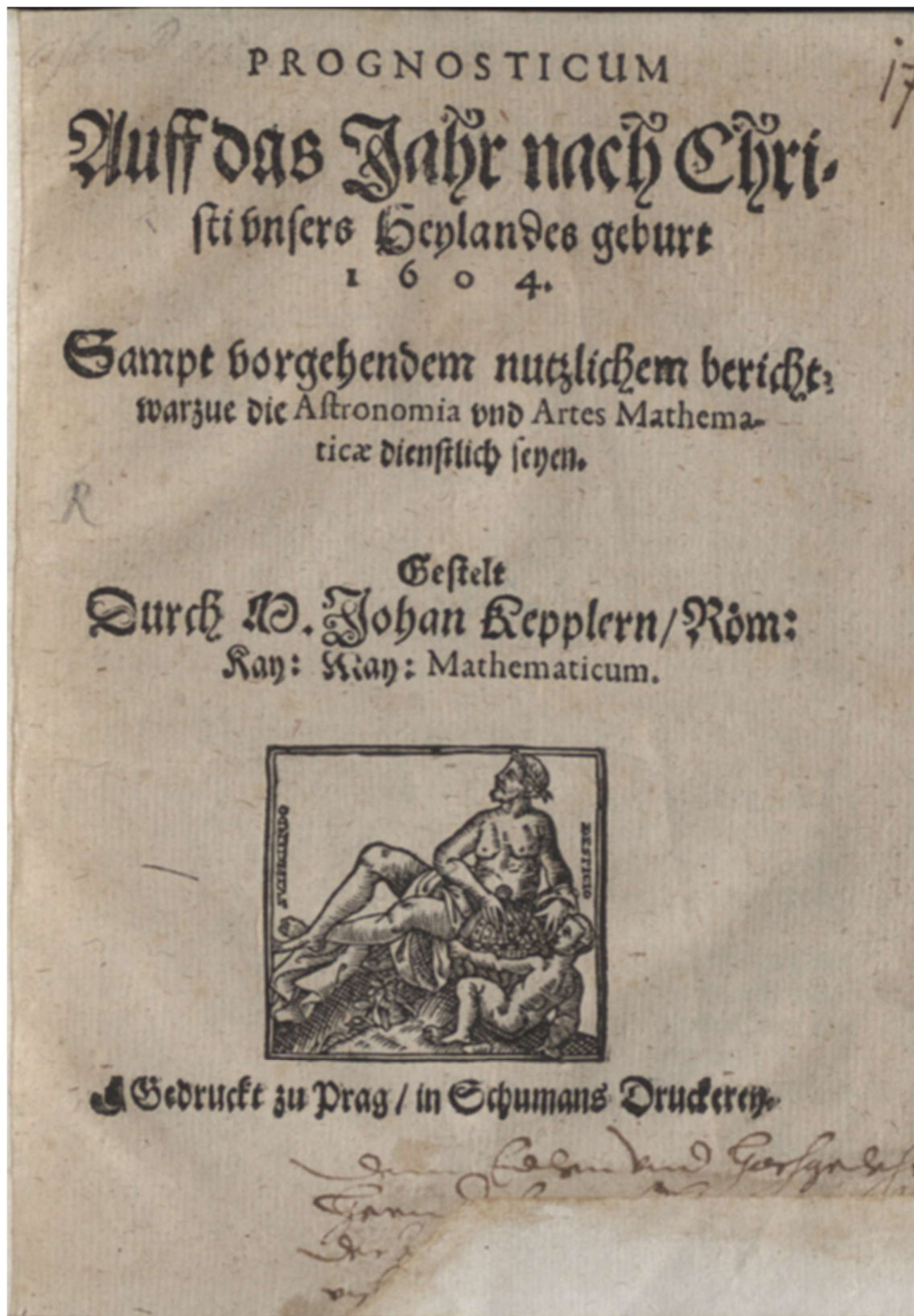
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Appendix: Title pages

1 Kepler, *Practica* 1598





PROGNOSTICUM ASTROLOGICUM
Auff das Jahr nach der
Gnadenreichen Menschwerdung unsers
Herrn vnd Heilands Jesu Christi / nach gmainer
bey der Occidentalschen Kirchen veblicher rech-
nung

M. DC. XVIII.

Von Natürlicher Influentz der Sternen
in diese Nidere Welt

Auß der neuen rechnung Tabularum
RUDOLPHI.

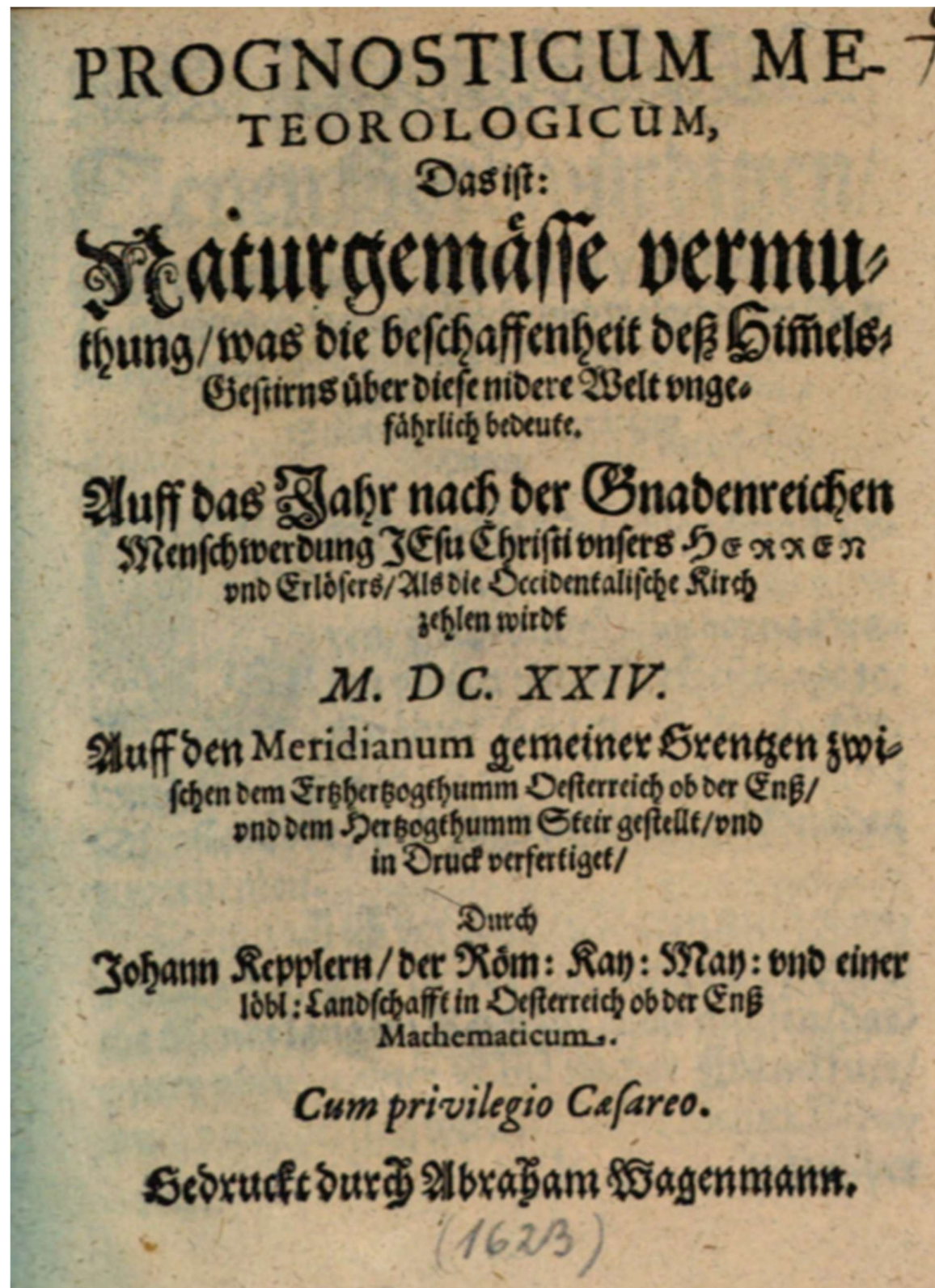
Auff das Land Oesterreich ob der Enß / vnd desson
Haubtsstatt Linß gestellt

Durch

Johann Kepplern / der Röm. Kay. M^t. vnd Dero L^{ob}. Landt: deß Erbs-
hertzogthums Oest. ob der Enß Mathematicum.



Gedruckt in Linß / bey Johann Blawcken /
M. DC. XVIII.





PROGNOSTICON Astrologicum:

Auff die vier Jahr-
Zeiten/nach der gnadenreichen Geburt vnd
Menschwerdung vnserß lieben HErren vnd Hei-
landes Jesu Christi/

M. DC. IX.

Mit sonderlichem Fleiß aus den alten Ob-
servationibus, vnd rechtem Astronomischen Grunde
nach Natur vnd Eigenschafft der Aspecten mit den Planeten vnd vns
beweglichen Sternen / sampt abermalichen Bericht / wie man die Planet-
Sternen/vnd durch derselbigen Lauff/auch die andern Fixstern soll kennen lernen/
Vnd endlicher Bericht/wie die zwey Stellæ fixæ/Als Oculus Tauri vnd
Cor Leonis/etc.von dem Monde werden bedeckt vnd
verfinstert werden.



Gestellet vnd beschrieben/
Durch Johannem Krabben von Münden / der Mathematischen
Kunst besondern liebhaber vnd Fürstl. Braunschweigischen bestalteten Diener
vnd Geometram zu Wolfenbüttel.

Welt Römischer Kay: May: Freyheit auff Zehen
Jahrlang nicht nach zu drucken.

Gedruckt zu Erfordt/ Bey Martin Spangenberg.



J. 1607. (ii.)

PROGNOSTICON,

Oder

Practica/was nechst Göttli-
cher Allmacht / auß dem Lauff vnnnd Stand der
Planeten vnd andern Gestirns / auch der Finstermussen Wir-
kungen (tanquam causis secundis) für Gewitter vnd andere
zufall natürlicher weiß zu erwarten.

Auff das Jahr/nach der Gnadenreichen Geburt vnseres
Heylands Jesu Christi/

M. D.C. VII.

Nach erschaffung der Welt 5569. Nach der Sündflut 3913.



Mit fleiß gestellt vnd beschrieben

Durch M. Melchiorum Schärerum Stutgardianum,
Pfarrern zu Menzingen auff dem Krachydor/
der Astronomy Liebhabern.

1615
PROGNOSTICON Oder
Practica / was nächst Gött-
licher Allmacht / auß dem Lauff vnd Stand der Plas-
neten vnd andern Gestirns / auch der Finsternussen Wirkungen
(tanquam causis secundis) für Gewitter vnd andere Zufall
natürlicher weise zu erwarten :
Auff das Jahr / nach der Gnadenreichen Geburt vnsers
Heylands Jesu Christi :

M. DC. XV.



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Cum Gratiâ & Privilegio Cæsareæ Majestatis.

PROGNOSTICON Oder
Practica/was nächst Gött-
licher Allmacht/auß dem Lauff vnd Stand der Pla-
neten vnd andern Gestirns / auch der Finsternissen Wirkungen
(tanquam causis secundis) für Gewitter vnd andere Zufall
natürlicher weise zu erwarten:
Auff das Jahr/nach der Gnadenreichen Geburt vnser
Heylands Jesu Christi:

M. DC. XXI.



Mit Fleiß gestellet vnd beschrieben
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Werningen auff dem Reichgöw/ Astronomum
& Mathematicum:
Gedruckt zu Adenberg/ in der Lehmannischen Druckerey/
bey Johann Friderich Sartorio,
Cum Gratia & Privilegio S. Caesaris Majestatis.