



Interreligious Transfers in the Middle Ages: The Case of Astrology

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Abstract

This article describes the discipline of astrology as an example of manifold interreligious contacts and transfers in the Middle Ages. Over against an image of the Middle Ages as being predominantly Christian and striving to violently suppress science, philosophy, and astrology, it is shown that in fact Christian, Muslim, and Jewish communities shared common interests and participated in an ongoing communication, even if in polemical differentiation. The case of astrology also illuminates the intellectual ties between the Middle Ages and the Renaissance, which are much stronger than traditional historiography would like to portray them as.

Keywords

astrology, Middle Ages, science, religion, Europe, Spain, interreligious transfers, pluralism

1. Introduction: The Construction of the ‘Christian Occident’

With regard to the Middle Ages, a number of prejudices are still widespread. The first is apparent in the characterization of the era as a ‘middle age,’ for this suggests that this was a time of transition or incubation before a more positively valued ‘modern age,’ which through constant progress led to the achievements of the present, and that only with the Renaissance did Europe supposedly awaken from the deep slumber of the Middle Ages, recalled the sciences and culture of the ancient world, shook off its magical and mystical habits of thought, and finally blossomed in the Enlightenment.

This suggestive historical construction distorts the real meaning of the periods following antiquity.¹ It is true that many Christian theologians in Rome and Byzantium conducted a fierce battle against the ancient cultures of knowledge, but generalizations can be misleading. On closer examination, one finds great differences from region to region and from ruler to ruler. Quite a few Christian potentates demonstrated an unbroken interest in fostering these sciences, and it was the monastic schools of the Middle Ages that busied themselves with the classical texts of philosophy and science. Hence, there are scholars who even talk of a ‘medieval enlightenment.’² The second prejudice is the assumption that the West is Christian. This idea has hindered the perception of Europe as a region of religious and cultural pluralism right up to the present, and still remains the core of a rhetorical ‘European identity,’ to be defended against the Islamic East, with all its implications for European Muslims today.³

If we consider two features of religious history in Europe, it is clear how contestable these assumptions are. To begin with, all scriptural religions—Judaism, Christianity, and Islam—*migrated* into Europe. Here, they met with already established complex cultures and had to negotiate their relation with them. This happened by attempting to eliminate the alternative forms of religion, through superseding them, or by assimilating local tradition into the new religion. All these processes can be seen in the Middle Ages, and it is important to note that the Christian extrusion of older forms of religion varied locally, as well as with regard to its success and intensity. Often, the pre-Christian religions remained attractive for many adherents.

¹) For the Renaissance see Karlheinz Stierle, “Renaissance: Die Entstehung eines Epochenbegriffs aus dem Geist des 19. Jahrhunderts,” in: Reinhart Herzog & Reinhart Koselleck (eds.), *Epochenschwelle und Epochenbewusstsein* (Munich: Fink, 1987), 453–492 (and see the whole volume). As for the ‘turn to pluralism and complexity’ that has taken place in historiography of the Middle Ages see Michael Borgolte, *Christen, Juden, Muselmanen: Die Erben der Antike und der Aufstieg des Abendlandes 300 bis 1400 n.Chr.* (Munich: Siedler, 2006; cf. my review in this issue of the *Journal of Religion in Europe*).

²) See Kurt Flasch & Udo Reinhold Jeck (eds.), *Das Licht der Vernunft: Die Anfänge der Aufklärung im Mittelalter* (Munich: C.H. Beck, 1997).

³) See the critical study of Mary Anne Perkins, *Christendom and European Identity: The Legacy of a Grand Narrative since 1789* (Berlin & New York: de Gruyter, 2004). See also Kocku von Stuckrad, “Die Rede vom ‘Christlichen Abendland’: Hintergründe und Einfluss einer Meistererzählung,” in: Christian Augustin, Johannes Wienand & Christiane Winkler (eds.), *Religiöser Pluralismus und Toleranz in Europa* (Wiesbaden: VS Verlag für Sozialwissenschaften, 2006), 235–247.

The new Christian religion usually did not so much adapt the symbolism and the ritual aspects of the older traditions—the religious semantic—but rather the religious pragmatics, for instance the taxing rules and the calendars. What is more, the Christian domains were not established in a vacuum, but were linked with the empires under Muslim authority through various economic, political, cultural, and of course military contacts. This led to processes of exchange and mutual fertilization, which even found an institutional basis in some countries, as for example in the Kingdom of Castile. For these processes of interreligious communication, Steven M. Wasserstrom coined the term *interconfessional circles*.⁴

There were naturally vast areas in the Christian domains where scarcely anyone could read and write, let alone understand Greek, Hebrew, or Arabic. But there were also numerous Christian courts where the classical sciences were maintained and taught. As time went on, a need to catch up with Islamic culture was felt, leading to a growing interest in natural science, philosophy, and astrology from the tenth century onward. Therefore, this period has to be regarded as a shared cultural space,⁵ in which several interacting religions gave rise to a distinct pluralism that was often heightened by polemics and rhetoric.⁶ Instead of sticking to a monolithic image of the Middle

⁴ Steven M. Wasserstrom, “Jewish-Muslim Relations in the Context of Andalusian Emigration,” in: Mark D. Meyerson & Edward D. English (eds.), *Christians, Muslims, and Jews in Medieval and Early Modern Spain: Interaction and Cultural Change* (Notre Dame, IN: University of Notre Dame Press, 2000), 69–87. Although Wasserstrom addresses the processes of exchange between Muslims and Jews, a similar dynamic can be attested to in the relation between Christianity and the other scriptural religions.

⁵ Hence, Molly Greene’s notion of a *shared world* is applicable as early as the Middle Ages. Greene describes the conflict between the Ottomans and Venice after the conquering of Crete by the Venetians (1669) not as a cultural break but as a continuation of cultural conditions. In addition to Latin Christianity and Islam, for Greene, Orthodox Christianity is the third relevant player on the early modern religious scene of the Mediterranean. See Molly Greene, *A Shared World: Christians and Muslims in the Early Modern Mediterranean* (Princeton: Princeton University Press, 2000).

⁶ Borgolte, *Christen, Juden, Muselmanen*. See also Michael Borgolte, *Europa entdeckt seine Vielfalt, 1050–1250* (Stuttgart: Ulmer, 2002); Mark D. Meyerson & Edward D. English (eds.), *Christians, Muslims, and Jews in Medieval and Early Modern Spain: Interaction and Cultural Change* (Notre Dame, IN: University of Notre Dame Press, 2000); Ross Brann, *Power in the Portrayal: Representations of Jews and Muslims in Eleventh- and Twelfth-Century Islamic Spain* (Princeton & Oxford: Princeton University Press, 2002); Gil Anidjar, “Our Place in al-Andalus”: *Kabbalah, Philosophy, Literature in Arab Jewish Letters* (Stanford: Stanford University Press, 2002).

Ages, the application of recently suggested new conceptual frameworks of analysis are worthwhile for a better understanding of the complex dynamics of religious and cultural transfers in those centuries. Besides addressing a pluralism of religious communities, scholars of religion have also begun to conceptualize a pluralism of cultural domains and systems, such as religion, philosophy, science, law, art, etc.⁷ As I argue in this article, astrology is an excellent example of both aspects of pluralistic discourses.

There is a third prejudice that is widely held both in popular and scholarly discussions, namely that the Middle Ages was a ‘persecuting society.’ This catchword was coined by Robert I. Moore in an influential study, which states that in the high Middle Ages the orthodox Christian belief system radically imposed itself against a variety of diverse religious options that were henceforth excluded as heresies.⁸ Although there can be no doubt that the Catholic Church was driven by an attempt to unify diversity and to claim control over all aspects of life, this attempt was by no means successful, which makes a generalization of Moore’s thesis contestable.⁹

⁷ For the step from an ‘additive’ conceptualization of the religions in Europe to what can be called an integrative or processual approach, see Burkhard Gladigow, “Europäische Religionsgeschichte,” in: Hans G. Kippenberg & Brigitte Luchesi (eds.), *Lokale Religionsgeschichte* (Marburg: Diagonal, 1995), 21–42; idem, “Europäische Religionsgeschichte seit der Renaissance,” *zeitenblicke* 5/1 (2006), http://www.zeitenblicke.de/2006/1/Gladigow/index_html; URN: urn:nbn:de:00 09-9-28 66 (accessed 15 October 2007). See also Hans G. Kippenberg & Kocku von Stuckrad, *Einführung in die Religionswissenschaft: Gegenstände und Begriffe* (Munich: C.H. Beck, 2003), 126–134; Hans G. Kippenberg & Kocku von Stuckrad, “Religionswissenschaftliche Überlegungen zum religiösen Pluralismus in Deutschland: Eine Öffnung der Perspektiven,” in: Hartmut Lehmann (ed.), *Multireligiosität im vereinten Europa: Historische und juristische Aspekte* (Göttingen: Wallstein, 2003), 145–162.

⁸ Robert I. Moore, *The Formation of a Persecuting Society: Authority and Deviance in Western Europe, 950–1250* (2nd ed., Malden, MA: Blackwell Publishing, 2007; first ed. 1987); see also idem, *The Origins of European Dissent* (London: Allen Lane, 1975; 2nd ed. Oxford: Basil Blackwell, 1985; reprinted Toronto: University of Toronto Press, 1994). On the discussion of Moore’s thesis see Michael Frassetto (ed.), *Heresy and the Persecuting Society in the Middle Ages: Essays on the Work of R.I. Moore* (Leiden: Brill, 2006); in this volume, R.I. Moore wrote the concluding chapter on “Afterthoughts on *The Origins of European Dissent*” (pp. 291–326). A very useful critique of Moore’s one-sided position can also be found in David Nirenberg, *Communities of Violence: Persecution of Minorities in the Middle Ages*, 2nd ed. (Princeton: Princeton University Press, 1996). See also Nirenberg’s contribution to the present issue of the *Journal of Religion in Europe*.

⁹ Cf., for instance, the arguments provided by Gustavo Benavides in his contribution to the present issue of the *Journal of Religion in Europe*.

Over against such a simplification, Cary J. Nederman argues in his treatment of discourses of tolerance in the Middle Ages

that forms of religious diversity, at an intellectual as well as a practical level, subsisted throughout medieval Europe, even when the institutional Church made a concerted attempt to eliminate them. In turn, recognition of these pockets of tolerant attitudes and behavior provides a crucial context for understanding the emergence of medieval criticisms of intolerance and concomitant defenses of toleration.¹⁰

All three prejudices have had considerable impact on the historical interpretation of astrology in cultural and religious contexts of the Middle Ages. Against this common view, in what follows I want to present astrology as an example of interreligious transfers on the one hand, and as an intersection between religion and science on the other.¹¹ Referring to selected representatives, I will first give an overview of medieval Muslim astrology before I will turn to the Christian astrology of the same period, which can be described as an adaptation of Muslim traditions of knowledge, but which also reveals its own transmission and reworking of ancient doctrines leading to astonishing results already in the ninth century.¹²

¹⁰ Cary J. Nederman, *Worlds of Difference: European Discourses of Tolerance c. 1100–c. 1550* (University Park, PA: Pennsylvania State University Press, 2000). Central to Nederman's study are the writings of John of Salisbury, William of Rubruck, Marsiglio of Padua, Nicholas of Cusa, and Bartholomé de las Casas. The examples support the thesis that religious *pluralism* can be distinguished from religious *plurality* by the fact that in the context of pluralism the political community defines rules and instruments for the coexistence of competing concepts, and that the worldviews of the religious communities involved respond to the pluralistic situation (see Kippenberg & von Stuckrad, *Einführung*, 132).

¹¹ In fact, medieval and early modern astrology is much closer linked to mathematics, medicine, and philosophy of nature, than to what scholars have vaguely addressed as 'occult sciences.' On the status of astrology in these historical contexts see William R. Newman & Anthony Grafton, "Introduction: The Problematic Status of Astrology and Alchemy in Premodern Europe," in: William R. Newman & Anthony Grafton (eds.), *Secrets of Nature: Astrology and Alchemy in Early Modern Europe* (Cambridge & London: The MIT Press, 2001), 1–37; see also Günther Oestmann, H. Darrel Rutkin & Kocku von Stuckrad, "Introduction: Horoscopes and History," in: Günther Oestmann, H. Darrel Rutkin & Kocku von Stuckrad (eds.), *Horoscopes and Public Spheres: Essays on the History of Astrology* (Berlin & New York: Walter de Gruyter, 2005), 1–9.

¹² For a more detailed description of medieval astrology, see Sophie Page, *Astrology in Medieval Manuscripts* (London: The British Library, 2002); Kocku von Stuckrad, *Geschichte der Astrologie: Von den Anfängen bis zur Gegenwart* (Munich: C.H. Beck, 2007), 159–206;

2. Astrology in Medieval Islam

From the beginning, most Muslim rulers were open to science and philosophy. This led to a very fruitful transmission of ancient knowledge. What is more, the pre-Islamic traditions of Mesopotamia and Persia still had a considerable influence, which is revealed by the continuing presence of alchemy, magic, and astrology.¹³ When in 762 the Abbasids founded their new capital in Baghdad, they built the city gates in concordance with the four directions as an *imago mundi* (“image of the world”). As it was common practice already in the Roman Empire, the founding of the city was calculated in advance.¹⁴ The second center of Islamic culture was Spain (Arabic *al-Andalus*), where the Umayyads had founded the Emirate of Cordoba in 755. Subsequently, Cordoba became one of the most important European cultural centers of the Middle Ages.

Between the eighth and the tenth centuries, we witness an increase of scientific activity that not only integrated and translated Hellenistic and eastern traditions of learning but also renewed theory, practice, and

Jim Tester, *A History of Western Astrology* (Woodbridge: Boydell Press, 1987), 98–201 (surprisingly, Tester deals with the Latin Middle Ages only, thus almost completely ignoring the Islamic influence).

¹³ Often, it has been argued that the Renaissance magic of a Marsilio Ficino and others is something entirely ‘new’; see particularly Frances Yates, *Giordano Bruno and the Hermetic Tradition* (London: Routledge and Kegan Paul, 1964). Over against this simplified view, Frank Klaassen has demonstrated that Renaissance magic is built on medieval traditions; see Frank Klaassen, “Medieval Ritual Magic in the Renaissance,” *Aries: Journal for the Study of Western Esotericism* 3/2 (2003), 166–199. Arabic tradition plays a significant role in this transmission; see particularly Jean Marquès-Rivière, *Amulettes, talismans et pentacles dans les traditions orientales et occidentales* (Paris: Payot, 1938); Richard Kieckhefer, *Magic in the Middle Ages* (Cambridge: Cambridge University Press, 1989); Charles Burnett (ed.), *Magic and Divination in the Middle Ages: Texts and Techniques in the Islamic and Christian Worlds* (Aldershot: Variorum, 1996); Claire Fanger (ed.), *Conjuring Spirits: Texts and Traditions of Medieval Ritual Magic* (Stroud: Sutton, 1998); Nicholas Weill-Parot, *Les “images astrologiques” au moyen âge et à la renaissance: spéculations intellectuelles et pratiques magiques (XI^e–XV^e siècle)* (Paris: Champion, 2002); Jan N. Bremmer & Jan R. Veenstra (eds.), *The Metamorphosis of Magic from Late Antiquity to the Early Modern Period* (Leuven: Peeters, 2002).

¹⁴ See Kocku von Stuckrad, *Das Ringen um die Astrologie: Jüdische und christliche Beiträge zum antiken Zeitverständnis* (Berlin & New York: Walter de Gruyter, 2000), 149. The astrologer who calculated the date was Ma’shallāh, a Jew who had converted to Islam. With Jupiter, the ruler of the ‘birth chart’ of Baghdad, the Babylonian tutelary divinity Marduk merged with the highest god of Rome.

technology in many ways. In the beginning, Persians, Indians, Jews, and Greeks were the main importers of astrological traditions the practice of which was fostered by the Islamic rulers.¹⁵ Particularly the Abbasid caliphates of Baghdad provided a climate that was fruitful for the development of science and philosophy, among them Abū-Ja‘far al-Mansūr, Hārūn al-Rashīd, and ‘Abdallah am-Ma‘mūn. Under the regency of am-Ma‘mūn (813–833) the library of Baghdad, with its most important task being the translation of all available older literature into Arabic, reached the height of its influence. Am-Ma‘mūn saw to it that Greek manuscripts were shipped to Baghdad from Byzantium and Cypress. Teams of translators worked on a critical comparison of the respective documents and tried to differentiate older from newer versions, thus within 200 years they helped to establish a concise collection of ancient sciences. Among those translations were highly important works, such as Ptolemy’s *Almagest*, the major astrological work from the second century CE.

At that time an astronomical genre was created that was to become an important resource for practicing astrologers—the co-called *zīj*.¹⁶ This Persian word, in Latin versions translated as *canon*, means “table” and refers to a compilation of astronomical rules and dates that can be found in writings as early as those of Ptolemy’s, and that allows astrologers to calculate in a relatively simple way the planetary positions and ascendants for specific times and places (thus, *canones* is the word not only for the tables but also for the instruction manuals that explain how to use the tables). Some of the *zījes* served purely arithmetical or trigonometric means, often for the calculation and conversion of calendars, others helped with the calculation of risings and settings of the sun, moon, and

¹⁵ An overview is provided in the following publications: Francis J. Carmody, *Arabic Astronomical and Astrological Sciences in Latin Translations: A Critical Bibliography* (Berkeley, Los Angeles: University of California Press, 1956); Richard Lemay, *Abu Ma’shar and Latin Aristotelianism in the Twelfth Century: The Recovery of Aristotle’s Natural Philosophy through Arabic Astrology* (Beirut: American University of Beirut Press, 1962); Edward Grant (ed.), *A Source Book of Medieval Science* (Cambridge, MA: Harvard University Press, 1974); Valerie Flint, “The Transmission of Astrology in the Early Middle Ages,” *Viator: Medieval and Renaissance Studies* 21 (1990), 1–27; Julio Samsó, *Islamic Astronomy and Medieval Spain* (Aldershot: Variorum, 1994); Edward Grant, *The Foundations of Modern Science in the Middle Ages: Their Religious, Institutional, and Intellectual Contexts* (Cambridge, MA: Harvard University Press, 1996).

¹⁶ The astronomical relevance of this genre is explained in John North, *The Fontana History of Astronomy and Cosmology* (London: Fontana Press, 1994), 180–183.

the planets. In many cases, they were also used for concrete tasks, for instance to calculate the hourly movement of planets, their average speed, the times of their standstills and retrograde movements, as well as prognoses of new moons and eclipses (which were needed for the exact calculation of the religiously important beginnings of the lunar months). Star lists—mostly derived from Ptolemy's list of 1022 stars—also served to aid in the exact determination of time and the correct use of the astrolabes that the Muslim astronomers had technically improved.

The *zījes* were of crucial importance for casting horoscopes for two reasons: First of all, they helped to figure out correct data; astrologers consulted the tables for the place of birth or transferred the data from one place to the longitude and latitude of another place in order to calculate the ascendant and the culminating point, the so-called midheaven. Furthermore, the tables comprised methods of calculating the lifetime and the life conditions to be expected for the person in question. From the middle of the eighth century through the end of the fifteenth century, more than 200 clearly distinct *zījes* had been produced, about twenty of them presenting new parameters and calculations that were derived from empirical observation of the sky. Most *zījes* followed the theory of the *Almagest*, but there were also influential tables—among them the famous *zīj* by al-Khwārizmī (c. 840)¹⁷—that integrated Hindu and Persian mathematical systems. Baghdad certainly was the center of this production, the first real successor of ancient Alexandria. In the east, from the middle of the tenth century Iran became the new focal point of *zīj* production, while in the west, especially in Spain, the Jews played a leading role in further developing the genre. The astrologers welcomed the use of tables because now they were able to derive more or less exact dates for their horoscopes without having to master the complex methods of calculation in every detail.

Among the most important astrologers of the time, special mention must be made of Ma'shallāh (Latin Messallah, the Jewish astrologer who after his conversion to Islam calculated the founding date for Baghdad), al-Kindī, Abū Ma'shar, and al-Battānī.¹⁸ Later Latin texts regularly call

¹⁷ See North, *History of Astronomy and Cosmology*, 184–185, 210–217.

¹⁸ Detailed references are provided in Fuat Sezgin, *Geschichte des arabischen Schrifttums VII: Astrologie – Meteorologie und Verwandtes bis ca. 430 H* (Leiden & Cologne: Brill, 1979), 98–199; Manfred Ullmann, *Die Natur- und Geheimwissenschaften im Islam*. Handbuch der Orientalistik, Ergänzungsband VI, 2 (Leiden & Cologne: Brill, 1972), 303–358.

upon these four astrologers, but al-Kindī and his pupil Abū Maʿshar were undoubtedly the art's most influential representatives. Born at the end of the eighth century to an aristocratic family—his father was governor of al-Kurfan under Hārūn al-Rashīd—al-Kindī (Yaʿqūb ibn Itshāq al-Kindī) laid the foundation of a philosophical defense of 'esoteric' disciplines, including astrology, magic, and other divinatory techniques.¹⁹ Al-Kindī became the teacher and physician of the great patron of the sciences, the caliph am-Maʿmūn. He died presumably in 866.

According to the narrative of the great chronicler an-Nadīm, the 47-years old Abū Maʿshar (Abū Maʿshar Jaʿfar ben Muhammad ʿUmar al-Balkhī, Latin Albumasar, 787–886) met al-Kindī and became his most ambitious student.²⁰ Convinced by his teacher that he had to study mathematics in order to understand philosophy, he turned to the science of the stars and subsequently wrote an oeuvre that in its influence on later generations of astrologers and astronomers, particularly in the Christian domain, can only be compared to that of Ptolemy.²¹ Abū Maʿshar was born in (or near by) the city of Balkh in Khurasan, a place where Jews, Nestorians, Manichaeans, Buddhists, Hindu, and Zoroastrians had settled. Abū Maʿshar became familiar with these various teachings early on. Although he presumably served for the Abbasid ruler in Baghdad early in his life, he always remained close to Shiite Islam. This important branch did not accept the Sunnite claim of the caliphate, because only the 'true' caliph—who operates as imam in hiding and who would reappear at the right moment—would be able to bring the rightful rule. Abū Maʿshar left an enormous work that includes the following titles: the *Flores astrologiae* ("Flowers of Astrology"), a collection of brief but helpful suggestions and aphorisms that many people used as a consultation book; *De revolutionibus nativitatum* ("The Revolutions of Nativities"); two works on *Electiones* ("Elections" of right moments for action), and an influential *zīj*.

Particularly responsible for his impact in the West, however, was *The Great Introduction to the Predictions from the Stars*. In 1133, this treatise

¹⁹ See particularly Pinella Travaglia, *Magic, Causality and Intentionality: The Doctrine of Rays in al-Kindī* (Florence: Sismel, Edizioni del Galluzzo, 1999).

²⁰ See David Pingree, *The Thousands of Abū Maʿshar* (London: The Warburg Institute, 1968).

²¹ His influence is stressed particularly by Richard Lemay, *Abu Maʿshar and Latin Aristotelianism*, while others—such as David Pingree—are more cautious about the impact and quality of his writings.

was translated by John of Seville (who translated other works of Abū Maʿshar, as well) as *Liber introductorius maior* (“The Great Book of Introduction”). Independently of John, Hermann of Carinthia prepared another translation in 1140 under the title *Introductorium in astronomiam* (“Introduction to Astronomy/Astrology”). While other works focused on technical aspects, the *Liber introductorius* was relevant in a more general way, because this book presented a detailed nature-philosophical foundation and an apology of astrology as a mathematical science. Through this book, Aristotle was introduced to the Christian West long before his specific works were actually known. For Abū Maʿshar astrology is an important natural science, including all branches of this art, even those that the opponents of astrology called *astrologia superstitiosa*, namely the interpretation of horoscopes and the making of concrete predictions.

This combination of a theoretical scientific foundation and a concrete overview of all branches of astrology made Abū Maʿshar’s text for the Latin West an ideal handbook that immediately opened up for them central areas of knowledge about nature. Hence, three hundred years after it was written, this book exerted a much more important influence in the West than it had ever had in the Islamic East.²²

To be sure, this evaluation does not fit the impact of Abū Maʿshar’s other works in the same way. How important his contribution to the Islamic astrological discourse in fact was, becomes apparent when we look at his ‘table,’ the *zīj al-hazarāt*, because in this work he goes beyond the presentation of astronomical calculations and bases his science on a ‘Hermetic’ conceptual framework. Astrology, Abū Maʿshar tells us, was once revealed from a divine source to the wise, but people had forgotten this knowledge. His *zīj* was based on a document that according to him was hidden before the deluge in Isfahan and would now become available to the people again. Abū Maʿshar used Indian planetary parameters in his book, combining them with Ptolemy’s system—thus, instead of being “antediluvian,” his *zīj* reveals the progressive development of ancient astrology in Muslim cultural frameworks.

The Shiites, with their theology focusing on the ‘hidden imam,’ embraced another theory of Abū Maʿshar, as well. As early as antiquity, astrologers were interested in interpreting the cycles of planetary conjunctions, that is,

²²) Dieter Blume, *Regenten des Himmels: Astrologische Bilder in Mittelalter und Renaissance* (Berlin: Akademie Verlag, 2000), 22 (my translation).

the repeated ‘meeting’ of planets in the sky.²³ In his influential work on the “Great Conjunctions”²⁴ that summarizes ancient techniques in al-Kindī’s interpretation, the Baghdad astrologer sketches a historical picture that relates the rise and fall of human institutions—religious communities and political systems—to planetary cycles. Harking back to ancient theories, Abū Ma’shar tells us that the Great Conjunctions of Jupiter and Saturn, in particular, with the addition of Mars, are responsible for world history. Many Shiites who were waiting for the restoration of the rightful caliphate in Persia were inspired by this doctrine because it provided the philosophical and religious explanation and—often even more important—the determination of the concrete time of this event in salvation history. While the Shiites, under the skeptical looks of the Sunnite Abbasids, used Abū Ma’shar’s model for calculating the return of the Mahdi, Christians and Jews later were to adopt the model themselves, applying it to the expected moment of the final judgment or the messianic time. The best-known predictions in this regard come from al-Birūnī, Ali ben Ragel (eleventh century), and Abraham ibn Ezra²⁵ (twelfth century). Around 1470 it was Isaac Abarbanel who caused a sensation with his prediction that the return of the great trigon into the sign of Pisces signifies the arrival of the messiah and the beginning of the Jewish salvation period.²⁶ And the Great Conjunction

²³ For ancient examples, particularly on the ‘Great Conjunctions of Jupiter and Saturn,’ see von Stuckrad, *Ringens um die Astrologie*, index “Große Konjunktion.” For an interesting, though at times highly speculative, interpretation of the role of the Great Conjunctions in western history see Giuseppe de Cesaris, *Congiunzioni Giove-Saturno e storia Giudaico-Cristiana* (Rome: Keybooks, 2001).

²⁴ Keiji Yamamoto & Charles Burnett (eds./trans.), *Abū Ma’shar on Historical Astrology: The Book of Religions and Dynasties (on the Great Conjunctions)*, 2 vols. (Leiden: Brill, 2000).

²⁵ See Josefina Rodríguez-Arribas, “Historical Horoscopes of Israel: Abraham bar Hiyya, Abraham ibn Ezra, and Yosef ben Eliezer,” in: Günther Oestmann, H. Darrel Rutkin & Kocku von Stuckrad (eds.), *Horoscopes and Public Spheres: Essays on the History of Astrology* (Berlin & New York: Walter de Gruyter, 2005), 145–164. On Jewish astral magic in the Middle Ages see Dov Schwartz, “La magie astrale dans la pensée juive rationaliste en Provence au XIV^e siècle,” *Archives d’histoire doctrinale et littéraire du Moyen Âge* 69 (1994), 31–55; Dov Schwartz, *Studies on Astral Magic in Medieval Jewish Thought* (Leiden: Brill, 2005).

²⁶ He made use of Bar Hiyya’s version of this theory, which stated that the Great Conjunction of Jupiter and Saturn in Pisces saw the revelation of the Torah; their seventh Great Conjunction in Virgo represented the rise and spread of Christianity, while the second meeting of these planets in Pisces in the year 1464 will lead to the nations’ final downfall and the beginning of Israel’s deliverance. See Eric Lawee, *Isaac Abarbanel’s Stance Toward Tradition: Defense, Dissent, and Dialogue* (Albany: State University of New York Press, 2001), 129–130.

of the year 1483/4 led to a heated discussion among European scholars.²⁷—Astrology is interreligious and open for a great variety of rhetorical charging.

In close contact with the eastern centers of the Islamic world, between the eighth and the fifteenth centuries the Spanish caliphates—in addition to the Staufer rule in Italy that I do not have the space to address here²⁸—formed the most important focal points of science and philosophy. Without them, the flourishing of astrology in the early modern period would have been impossible. In the course of time the research in al-Andalus outmatched the schools of Baghdad, and Spain became the new intellectual center of Islam. Spain had a scientific tradition already before the Muslim conquest—due to the influence of Isidore of Seville whose encyclopedic work I will introduce later—but astronomy in those days was mainly interested in simple questions such as the synchronization of calendars or (later on) determining the *qibla*, that is, the direction of Mecca, toward which Muslims face to pray. Only in the tenth century a flourishing of research can be seen. During the caliphate of Abd al-Rachman III (912–961) the emirate of Cordoba began to surpass the Abbasid caliphate in scientific performance. The emir sent agents to Baghdad, Damascus, and Cairo to get hold of all available publications, and in the second half of the tenth century schools for mathematics, astronomy, and other arts were founded that systematized, commentated, and extended the material from the east. The astronomer al-Majritī (died c. 1007), who worked in Cordoba, transferred al-Khwārismi's table to the meridian of Cordoba and synchronized the

²⁷⁾ This discussion was related, among other issues, to the birth chart of Martin Luther; the reformer later even faked his year of birth in order to let it correspond to the Great Conjunction. On the overall discussion see Germana Ernst, "From the Watery Trigon to the Fiery Trigon: Celestial Signs, Prophecies and History," in: Paola Zambelli (ed.), *Astrologi hallucinati: Stars and the End of the World in Luther's Time* (Berlin & New York: Walter de Gruyter, 1986), 265–280; Robin Bruce Barnes, *Prophecy and Gnosis: Apocalypticism in the Wake of the Lutheran Reformation* (Stanford: Stanford University Press, 1988), 141–181; Laura Ackerman Smoller, *History, Prophecy, and the Stars: The Christian Astrology of Pierre d'Ailly, 1350–1420* (Princeton: Princeton University Press, 1994); Ann Geneva, *Astrology and the Seventeenth-Century Mind: William Lilly and the Language of the Stars* (Manchester: Manchester University Press, 1995), 118–140; Deborah E. Harkness, *John Dee's Conversations with Angels: Cabala, Alchemy, and the End of Nature* (Cambridge: Cambridge University Press, 1999), 69–71; von Stuckrad, *Geschichte der Astrologie*, 232–241, 244–249.

²⁸⁾ See von Stuckrad, *Geschichte der Astrologie*, 196–199.

Islamic calendar that began with the Hijra.²⁹ Al-Majritī educated a whole group of famous astronomers, and soon other places on the Spanish peninsula, among them Seville, Valencia, Saragossa, and Toledo, followed the example of Cordoba.

From the beginning Spain had been characterized by a vivid exchange between religious traditions, fostered not only by the Muslim rulers. Jews and converts had a key position in these processes, since their multilingualism made them first-class translators. The borders between religions—we should not forget that ‘conversions,’ in whichever direction they may occur, are never complete—were more fluent in those days than during other periods, and all parties shared a common cultural milieu that radiated into the Latin north even before the translation endeavors actually started. This does not mean, of course, that the situation was a happy multiculturalism without any tension, quite the contrary: religious identities were formed through polemical differentiation.³⁰ The status of Jews, for instance, was extremely precarious. But those periods wherein religious tolerance was practiced—such as under Alfonso X of Castile—were culturally very productive. We thus find a rich astrological discourse in Andalusia that involved reputed followers and critics of astrology. One of them was Ali ben Ragel.

Ali ben Ragel (‘Ali ibn Abīr-Rijāl, Latin Abenragel Haly, 1016–1062) is one of the astrologers who were most received in the high Middle Ages. Some scholars assume that he had enjoyed an astrological education in Baghdad, but that is not certain. What we know is that he was employed as notary and astrologer at the court of the Zirid al-Mu‘izz ibn Bādīs in Tunis. His major work is the “Great Book about the Judgments from the Stars,” consisting of eight parts, in which the author systematically compiled the whole knowledge of his time. Ali ben Ragel refers explicitly to old masters such as ‘Hermes,’ Dorotheus, Ptolemy, Ma‘shallāh, or al-Kindī, and he discusses the advantages and disadvantages of their respective doctrines. The work became known in Europe through the translation into Old Castilian (1254), prepared by Yehuda Moshe, the personal physician of King Alfonso X, on the latter’s request. Unfortunately, of this translation only the first five books are extant. Yehuda Moshe’s version was the basis for subsequent Latin translations, printed for the first time as

²⁹⁾ North, *History of Astronomy and Cosmology*, 184–185.

³⁰⁾ See Meyerson & English (eds.), *Christians, Muslims, and Jews*.

Praeclarissimus liber completes in judiciis astrorum at Erhard Ratdolt in Venice (1485). Renaissance astrologers made ample use of it, which can be seen from the fact that the book was reprinted six times between 1503 and 1571. In those days, Ali ben Ragel was celebrated as *summus astrologus* (“highest astrologer”) or even as *Ptolemaeus alter* (“second Ptolemy”). Rafael Gil Brand notes: “It is a strange feeling to hold in one’s hands a book that was written by a Muslim on request of a Christian king, translated by a Jew.”³¹

The *mélange* between Islamic, Jewish, and Christian contributions to astrological and astronomical debates in the Middle Ages was particularly complex and manifold in Spain between the tenth and the twelfth centuries. While this is increasingly acknowledged in recent research, not many scholars address the period before the tenth century. Such a lacuna can lead to the assumption that only the schools of translators in Spain and the cultural contacts of that epoch brought those regions that were dominated by Christian culture into contact with philosophy and science. This, however, is a misperception. Therefore, I will begin my overview of Christian astrology in the early Middle Ages.

3. Christian Astrology in the Middle Ages

Quite contrary to a widely held assumption, astrology continued to flourish in medieval Christian contexts, as well.³² Not only did scholars of the time try theologically and philosophically to find a possibility for distinguishing ‘permissible’ from ‘prohibited’ astrology; politicians, too, time and again supported astrology and used it for legitimating their power, exactly as the Roman emperors had done before.³³ This is true, for instance, for Charlemagne, Louis the Pious, Henry II, and the Staufer Emperor Frederick II.

³¹ Rafael Gil Brand, *Lehrbuch der klassischen Astrologie* (Mössingen: Chiron Verlag, 2000), 10 (my translation).

³² On late antiquity see von Stuckrad, *Ringens um die Astrologie*. On the subsequent history of reception see Wolfgang Hübner, *Zodiacus Christianus: Jüdisch-christliche Adaptationen des Tierkreises von der Antike bis zur Gegenwart* (Königstein: Hain, 1983); von Stuckrad, *Geschichte der Astrologie*, 185–206. Cf. also Blume, *Regenten des Himmels*.

³³ Henri Stierlin, *L’astrologie et le pouvoir de Platon à Newton* (Paris: Payot, 1986), especially chs. 5 and 7.

Especially in the Byzantine east, within ‘Greek Christianity,’ we have to assume a living tradition of astrological doctrines that were, of course, transformed according to Christian myths and theological positions.³⁴ Somewhat different was the history of ‘Latin Christianity’ in the west. Here, it was the writings of Firmicus Maternus in particular that were repeatedly copied until the high Middle Ages. Slowly, the increasing exchange with the Arabic cultures of Europe and the translation of astrological texts into Latin led to an adaptation of more learned scientific astronomy and astrology.

Important for subsequent generations was the Roman senator Anicius Manlius Severinus Boethius (c. 480–524) who led a tragic career under the Eastern Gothic king Theodoric the Great. Shortly before his death in the dungeon of Pavia, Boethius wrote his most influential work, the *Consolatio philosophiae* (“Consolation of Philosophy”). In the form of a dialogue that he has with the “Lady Philosophy,” Boethius here presents once more the complete ancient traditions and thus conveys them to the Christian world.³⁵ With regard to astrology this was important insofar as Boethius strengthened Neoplatonism and also provided important arguments for the discussion of providence, determinism, fatalism, and free will.

Boethius’ influence was significantly superseded by the impact of Isidore of Seville (c. 570–636) who worked under the Western Goths and became an important point of reference for subsequent Christian opinions concerning astrology. From 601 until his death, Isidore was bishop of Seville. He penned a large amount of work that addressed all sorts of knowledge important in his day. In order to improve the educational level of the Western Gothic court, Isidore collected ancient pieces of knowledge and combined them in a twenty-volume encyclopedia,³⁶ known under the title *Origines* or *Etymologiae*, because his main method of explanation was a (more or less

³⁴ An overview is provided in Wilhem Gundel & Hans Georg Gundel, *Astrologumena: Die astrologische Literatur in der Antike und ihre Geschichte* (Wiesbaden: Franz Steiner, 1966), 213–254.

³⁵ The manuscripts were widely spread in the Middle Ages. King Alfred (d. 901) translated the work into the Anglo-Saxon language, the monk Notker Labeo (d. 1022) into German, and Maximos Planudes (d. 1310) into Greek.

³⁶ In fact, this work remained incomplete, and the twenty-volume edition was prepared by Isidore’s friend Braulio, bishop of Saragossa, who also was initiator and addressee of the work. The *Etymologiae* are usually filed among the most important transmitters of ancient knowledge into the Middle Ages, along with Martianus Capella’s *De nuptiis Mercurii et Philologiae* and Cassiodorus’ *Institutiones*.

reasonable) etymological derivation. Besides the *artes liberales*, medicine, jurisprudence, theology, philosophy, social sciences, anthropology, zoology, physics, geography, architecture, minerals, agriculture, warfare, theater, clothing, handwork, household equipment, and other things, the learned bishop also addressed astrology and astronomy. Although determined differently on an etymological basis, Isidore—as all of his contemporaries—saw those disciplines as two aspects of the same interest. Another work (*De rerum natura*, “On the Things in Nature”) that engaged cosmology and astrology he dedicated in 613 to King Sisebut who himself had written an astrological didactic poem.

Isidore distinguishes between *astrologia superstitiosa* and *astrologia naturalis*. The first, insofar as it intends to predict the character and fate of an individual, is regarded as superstition that has become superfluous due to the birth of Christ. As can be seen from his explanation of the ‘Star of Bethlehem,’ however, this did not mean that astrology was wrong—it simply was illicit, which is a big difference. Thus, Jim Tester correctly notes: “The idea, at least, of a potentially valid science of astrology was kept alive by the very authorities who condemned it.”³⁷ From the reading of individual horoscopes Isidore differentiated *astrologia naturalis*, which tries to scientifically fathom the nature of things and is by no means at odds with Christian doctrine. Among these accepted branches of astrology he lists meteorological, and in particular, medical astrology. He even claimed that every physician should have an astrological education, a claim that was to gain wide acceptance up until the Renaissance. It certainly is no exaggeration when we say that with this distinction Isidore of Seville provided an interpretational framework for Christians that ultimately led to the acceptance and increased practice of astrology from the eleventh century onward.

The history of reception of Boethius and Isidore began right after their demise. Already Bede (673–735), whom later generations called Beda Venerabilis (“the Venerable Bede”) and whom the Church in 1899 declared the only English doctor of the Church, built on their teachings and used them for his chronological calculations that defined the Christian festal calendar until the Renaissance. We should not forget that dividing and measuring time was a difficult task because precise instruments for determining the sun’s positions were scarce. Charlemagne thus must have been

³⁷ Tester, *History*, 126.

delighted when in 807 the caliph Hārūn al-Rashīd gave him an elaborate water clock that could exactly measure hours of equal and unequal length. Charlemagne was highly interested in astronomy and astrology, as we know from his correspondence with Alcuin of Tours, his friend and teacher. His court scribe Einhard, too, repeatedly confessed Charlemagne's interest in astronomical observation. Therefore, it is not surprising that this king—and after him his son Louis the Pious about whom it was said that he had astrologers around him all the time—continuously supported the educational system of his empire. Already before Charlemagne, missionaries had founded monastery schools in Fulda, St. Gallen, Reichenau, and Regensburg, and from the ninth century interest in a good education of the clergy grew. The monks in these schools were not only engaged in theological, philological, and philosophical disciplines but also in agriculture, music, and astronomy. The latter was, as noted, especially important for calendrical issues.

The genre of the *computus*, a system for calculating calendars developed by Bede, found wide acceptance and was soon supplemented by country sayings and astrological rulings that people took from Firmicus Maternus' didactic poem or from other sources. Our modern word "computer" is derived from *computus*, another indication of the fact that much of our modern concept of time stems from medieval elaborations of ancient considerations.³⁸ An enormous task of the ninth century was the calendrical reform of Charlemagne whose 'imperial calendar' remained valid until the thirteenth century.³⁹ Of this calendar there are more than fifty manuscripts in eight different versions extant, stemming from all over Europe. There are Romanic, Germanic, and Celtic versions (a Slavic has not yet been found); the oldest—Rhine-Frankish—version was written in 789 in the abbey of Lorsch.

Therefore, as early as the early ninth century, a transfer of knowledge from Muslim to Christian cultural domains took place, and Christians combined this knowledge with their own tradition. One century later—that is before the great translation projects from Arabic into Latin which

³⁸ See Arno Borst, *Computus: Zeit und Zahl in der Geschichte Europas* (Munich: Deutscher Taschenbuch Verlag, 1999).

³⁹ An excellent edition was published by Arno Borst (ed.), *Der karolingische Reichskalender und seine Überlieferung bis ins 12. Jahrhundert* (Hannover: Hahn, 2001); see also the humorous sketch of the research history in Arno Borst, *Die karolingische Kalenderreform* (Hannover: Hahn, 1998), 1–29.

began later—monks at the Benedictine monastery of Santa Maria de Ripoll, which lies before the Pyrenees, collected treatises on arithmetic, geometry, astronomy, and calendrical issues, the translations of which soon circulated all over Europe. For a long time, historians did not understand how Hermann of Reichenau, also known as Hermann the Lame (1013–1054), in his remote valley of the Austrian Alps could write a detailed treatise on the use of the astrolabe. The answer is simple: he had access to an edition of the Ripoll texts.⁴⁰ Hermann, an excellent mathematician, published in 1040 a critique of Bede's calculations and synchronized the Easter calendar, so important for Christians, with the actual mathematical data. In his work *De mensura astrolabii* ("On Measuring with the Astrolabe"), written around 1045, Hermann reorganized the Arabic lunar calendar of his Spanish sources into the Latin, Julian, solar calendar.⁴¹

With Hermann we have reached a period that was characterized by a lively process of cultural encounters between Muslims and Christians. Let me illustrate this exchange between Greek-Arabic science and Christian culture with Gerbert of Aurillac (c. 940–1003). The career of this scholar is representative of the clergy's high interest in scientific innovation in the tenth century.⁴² As a novice in Barcelona, Gerbert had already been educated in the free arts; he learned Arabic, mathematics, arithmetic, and music, and was one of the first to bring that knowledge across the Alps. Soon his erudition became famous and impressed the pope in Rome. In 983 he was appointed abbot of the monastery in Bobbio and in 991 archbishop of Rheims (even if first without papal acknowledgment). While some people were hostile to him because of his simple descent, it was very fortunate for his career that he was the teacher of Emperor Otto III; Pope Gregory V (996–999), Otto III's cousin, appointed him archbishop of Ravenna in 998. The Emperor elected him to succeed Gregory V as pope in 999. Gerbert took the name of Sylvester II, alluding to Pope Sylvester I (314–335), the advisor of Emperor Constantine I (324–337). In his writings, Gerbert stresses how important it is for the proliferation of Christianity to absorb Arabic science. Due to his influence he succeeded in spreading astronomical knowledge in monastery schools and the large European centers. Referring particularly to the astrolabe texts of Ripoll, he promoted

⁴⁰ North, *History of Astronomy and Cosmology*, 205.

⁴¹ Borst, *Die karolingische Kalenderreform*, 329–334.

⁴² See Uta Lindgren, *Gerbert von Aurillac und das Quadrivium: Untersuchungen zur Bildung im Zeitalter der Ottonen* (Wiesbaden: Steiner, 1976).

the introduction of Arabic terminology and the translation of relevant texts into Latin. This policy made it possible that other Christian scholars—Fulbert of Chartres, Hermann of Reichenau, or Walcher of Malvern—could be studied intensively. John North notes: “This was a time when Hindu-Arabic numerals were slowly finding favour among astronomers in Europe. The change was far from sudden.”⁴³ Certainly, for Gerbert the science of the stars occupied the first position among the four classic arts, the so-called Quadrivium of arithmetic, music, geometry, and astronomy.⁴⁴

In his work on the astrolabe Gerbert also addressed astrology. In the same vein as Isidore of Seville before him, the learned pope repudiated the interpretation of birth charts as illicit superstition, but he clearly advocated “natural astrology” as an important element of natural science. Presumably, Gerbert had already used the astrolabe in 989 at the cathedral school of Rheims. It is not difficult to reconstruct the way in which the knowledge of using the astrolabe spread from this and other places—for instance the monastery of Reichenau—to the whole of Christian Europe in the eleventh century and how this instrument soon belonged to the basic technical equipment of Christian astrologers. The astrolabe made observation of the sky much easier, because with this instrument it is sufficient to measure the angle of a single, well perceivable star, and calculate its position. The positions of all other fixed stars could then simply be read from the astrolabe. In this way it was easy to determine the ascendant, which is a crucial prerequisite for calculating horoscopes. In the beginning, however, its usefulness for calculating time and calendar was given priority.

The second half of the eleventh century saw an intensive occupation of Christian scholars with Arabic astronomy and astrology. With translation projects, and later also with their own research, Christians tried to catch up with the progressive knowledge of Muslims and Jews, and both upon the terrain of literature and the terrain of art and iconography a significant rise of astrological motives can be observed.⁴⁵ The crusades had their share, too, in intensifying processes of cultural exchange,⁴⁶ with the result that from the twelfth century at the latest we have to talk of a pan-European tradition of knowledge and science. Firstly, it was centers such as the School

⁴³ North, *History of Astronomy and Cosmology*, 206.

⁴⁴ Lindgren, *Gerbert von Aurillac*, 38–39.

⁴⁵ See Blume, *Regenten des Himmels*, 18–63.

⁴⁶ Hans Eberhard Mayer (ed.), *Die Kreuzfahrerstaaten als multikulturelle Gesellschaft: Einwanderer und Minderheiten im 12. und 13. Jahrhundert* (Munich: Oldenbourg, 1997).

of Chartres that adopted Muslim doctrines and combined them with Christian theology. The theologian Peter Abelard (c. 1100–1140) was affiliated with this school, too. He became known for his scholastic dialectic, which he of course applied to astrology, as well. He argued that astrology indeed was able to document and predict the *naturalia*, namely the natural causes of changes in agriculture or medicine, but not the *contingentia* that are dependent on chance and the will of God. This interpretation—an elaboration of Isidore's distinction—was shared by Hugo of St. Victor (died 1141) who lectured at the monastery school in Paris. It determined the official Church's position for centuries.

A contemporary of Peter Abelard and Hugo of St. Victor was the famous scholar Adelard of Bath who worked at the court of King Henry I of England. Although many details of his biography are still unknown, there can be no doubt that Adelard played a central role in the transmission of Arabic science and the new flourishing of astronomy and astrology in Christianity.⁴⁷ He did not restrict his studies to pure reception but carried out his own research in which he systematically interpreted the information he had collected on his travels to Sicily, Syria, and presumably also to Spain. He translated the tables of al-Khwārisīmī and speculated, referring back to Abū Ma'shar, on the rise and demise of world empires and religions. He explained the difference between the Christians on the one hand, and Jews and Muslims on the other, with the fact that Christians were under the influence of sun and Jupiter, while Muslims and Jews were influenced by Saturn, Mars, and Venus. One reason for this was that Muslims sanctified Friday (Venus), the Jews Saturday (Saturn), and the Christians Sunday (sun). Such speculations were picked up by other thinkers. Joachim of Fiore (died 1202), for instance, predicted in his *Evangelium aeternum* for the year 1260 the dawning of a new age of the Holy Spirit and the establishment of an entirely spiritualized Church. The Lateran Council of 1215 was constrained to declare such positions, which spread rapidly, as heretic.

By the end of the twelfth century, many important works of antiquity and their Arabian successions were available in Latin translation. John of

⁴⁷ See already Charles H. Haskins, *Studies in the History of Medieval Science* (New York: Ungar, 1960 [first published in 1924]), 20–42; for more recent research see Charles Burnett (ed.), *Adelard of Bath: An English Scientist and Arabist of the Early Twelfth Century* (London: The Warburg Institute, 1987), with Burnett's own chapter on "Adelard, Ergaphalau and the Science of the Stars" (pp. 133–145); Louise Cochrane, *Adelard of Bath, the First English Scientist* (London: British Museum Press, 1994).

Seville, Gerard of Cremona, Plato of Tivoli, Robert of Chester, Hermann of Dalmatia, and others have contributed to a thorough renewal of the sciences in European centers of learning, a renewal for which Charles Homer Haskins coined the catchy expression “Renaissance of the twelfth century.” Although all translators were clerics, the cathedral schools, particularly in France, were swamped by aspirants, and famous teachers drew students from all over Europe. The result was a dissemination of these fields of knowledge beyond the clerical domain into circles of court and nobility.

Hence, what can be termed the European Renaissance—contrasting the Italian Renaissance which is more or less the construct of nineteenth-century German intellectual culture—had been already prepared in this period. Absorbing ancient philosophy and science through the transmission of the Muslims changed the attitude of the observing human being vis-à-vis the cosmos. Nature as a this-worldly object became the center of interest, which at the same time led to nature’s desacralization and subjugation under human control. Astrology played a significant role in the formation of the modern natural sciences.⁴⁸

4. Conclusion

At this point I would like to conclude this overview. Many other examples could have been mentioned, for instance the scientific activities of the Staufer Emperor Frederick II and the scholar Michael Scot who worked at his court.⁴⁹ But the overall conclusion would be the same: astrology was an accepted science in the Middle Ages that was practiced and shared beyond religious borders. Hence, let me end with a few theses that summarize the main arguments of this article.

First of all, it is apparent that describing the Middle Ages as an era of brute violence and a lack of ‘science’ and ‘enlightenment’ is a misleading oversimplification. The example of astrology shows that in the ninth century a peaceful transfer of knowledge between Muslims, Christians, and Jews had already begun; paradigms of reason and rationality, as well as philosophical issues, belonged to the shared heritage of these religious

⁴⁸) See von Stuckrad, *Geschichte der Astrologie*, 199–206, 213–226, 525–274.

⁴⁹) See von Stuckrad, *Geschichte der Astrologie*, 196–199; on Michael Scot’s *Liber introductorius* see also Blume, *Regenten des Himmels*, 52–63.

communities, notwithstanding the difference in interpretation due to religious rhetoric and interest.

This conclusion leads to a challenge of accepted periodizations of European history. The stylization of the Renaissance as the birth period of enlightened modernity is today more doubtful than ever. On closer investigation, the ‘revolutions’ between the fifteenth and seventeenth centuries in many aspects turn out to be a continuation of medieval thought and cannot be generalized for a complete epoch. Instead, these changes have to be located in their respective scientific, social, political, religious, and cultural contexts.

Similar to the differentiation of epochs, we can state that the rhetorical differentiation of religious communities or ‘traditions’⁵⁰ likewise seems to be the result of an artificial maneuver. Members of different religious communities shared common philosophical and scientific modes of interpretation. Even if they looked from their specific perspectives at astrological issues, the result was anything but a distinct Muslim, Jewish, or Christian astrology. What we are dealing with is a plural field of astrological discourses on which manifold processes of exchange determined the respective positions.

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⁵⁰ For an assessment of the academic use of the term ‘tradition’ see Kocku von Stuckrad, “Whose Tradition? Conflicting Ideologies in Medieval and Early Modern Esotericism,” in: Steven Engler & Gregory P. Grieve (eds.), *Historicizing “Tradition” in the Study of Religion* (Berlin & New York: Walter de Gruyter, 2005), 211–226 (see also other contributions to that volume).

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