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*The Occult Sciences in Byzantium* edited by Paul Magdalino and Maria Mavroudi

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Few fields of European intellectual history are as richly documented, yet as little known, as the history of Byzantine science and philosophy. This pioneering collection of essays, based on a symposium hosted at Dumbarton Oaks in Washington, DC in November of 2003, seeks to reduce this gap in our knowledge by examining 'occult science as a distinct category of Byzantine intellectual culture' [11]. In the category of the 'occult sciences', the editors, both well-established Byzantine historians, include astrology, alchemy, dream interpretation, and a variety of other divinatory traditions that fall somewhere between the poles of 'science' and 'magic'. The problem with the label 'magic', they argue, is that it collapses any distinction between, on the one hand, the much-maligned practitioners of magic at the poorest and least educated levels of society and, on the other hand, those 'sophisticated masters of occult knowledge', who sometimes held, in Byzantium, the highest offices of church and state. As a prime example of the latter group, the editors point to the career of Michael Psellus, the 11th-century polymath and court philosopher, who composed, among other things, a treatise on alchemy at the request of the patriarch Michael Cerularius (1043-1058). Psellus' writings even provide, in the editors' view, 'a coherent Byzantine definition of occult science as a discrete epistemological category' [20].

The category 'occult science' deserves a more robust and systematic explication than it receives in the book's introduction [11-37]. Magdalino and Mavroudi contend that the Byzantines possessed 'a clear notion of the occult sciences as distinct from, but consistently associated with, other types of learning, both practical and theoretical' [27]. But the assertion of this distinction by Michael Psellus and

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other Byzantine writers only underscores how fluid such definitions could be in practice. The editors themselves emphasize the variability of the manuscript tradition, in which one encounters a bewildering mixture of treatises on alchemy, astronomy and astrology, botany, dream interpretation, geomancy, medicine, magic, numerology, and Christian apocrypha [21–25]. Fortunately, the book's value does not hinge on its ability to demonstrate a unified Byzantine definition of the 'occult sciences'. What it does offer is a learned introduction to a set of closely related themes in the history of Byzantine science, philosophy, and magic.

The collection's first essay, Maria Mavroudi's 'Occult Science and Society in Byzantium: Considerations for Future Research' [39–96], reviews the modern historiography of Greek science that underlies the entire volume. This historiography includes landmark achievements, such as the 12 volumes of the *Catalogus Codicum Astrologorum Graecorum* [Brussels, 1898–1953], and the nine volumes of the *Catalogue des manuscrits alchimiques grecs* [Brussels, 1924–1932]. No less noteworthy, though, are its gaping holes. Despite the creation of appropriate series in the early 1980s, fewer than a dozen Byzantine astrological and alchemical texts have been published so far in proper editions [45]. Mavroudi contrasts this neglect with the relatively abundant evidence for divinatory practices throughout Byzantine history, not only at the court, but even among the ranks of the clergy [81]. The prestige of Byzantine 'occult science' also cut across linguistic and political frontiers. Few readers will dispute Mavroudi's call for new studies in the circulation and reception of Byzantine science in the Islamic world and the Latin West. I would add only that scholars of Syriac and Armenian literature, notably absent from this volume, could have much to contribute to this dialogue.

In her contribution, 'The Greek Concept of *Sympatheia* and its Byzantine Appropriation in Michael Psellos' [97–117], Katerina Ierodiakonou explores how one (admittedly idiosyncratic) Byzantine intellectual remolded the ancient philosophical concept of cosmic sympathy (*συμπάθεια*) to accord with Christian doctrine. Psellus agreed with the Neoplatonists that all the parts of the world were bound together by an 'ineffable (*ἄρρητος*) sympathy' analogous to the unity of a living organism [106], but rejected the Neoplatonists' belief in the ability of human beings to manipulate these bonds. The duty of man was rather to observe and study the signs embedded in this world.

For Psellus, the mysteries of God's creation could be discerned in signs as intimate as the motions of an icon or the letters of the Greek alphabet. Psellus promotes observation as a viable strategy for intellectual inquiry since direct knowledge of the Divine is impossible. As Psellus reminds his audience in his commentary on the letters of the Greek alphabet, since 'we cannot experience God's light in all its glory, it is at least possible to see its reflection in water' [116].

Paul Magdalino's essay, 'Occult Science and Imperial Power in Byzantine History and Historiography (9th–12th Centuries)' [119–161] explores the 'close but tense relationship' between experts in divination and Byzantine rulers. The major Byzantine historians relate numerous anecdotes attesting to the prevalence of astrology, statue magic, and other forms of divination at the court of Constantinople. According to these narratives, divinatory practices peaked during the reigns of the iconoclast emperors and patriarchs. The mid-10th century history known as *Theophanes Continuatus*, for instance, presents a savage invective against the iconoclast patriarch John the Grammarian (ca 837–843), who allegedly kept a stable of good-looking nuns to assist him in the dark arts of divination. Byzantine historians generally paint a more ambivalent picture of astrology, accepting the 'interpretation of celestial phenomena as a legitimate *technē*' in principle, but condemning its use in practice [137–138]. Magdalino documents this strain of ambivalence among nearly all the major historians of the Middle Byzantine period. *Theophanes Continuatus*, the same chronicle that skewers John the Grammarian for his addiction to divination, preserves an admiring portrait of the astrological expertise of John's cousin, Leo the Mathematician, 'an account that has been enormously influential in creating modern perceptions of the "first Byzantine humanism"' [124]. Magdalino's study thus underscores the risk of citing individual episodes from the histories without sufficient attention to the larger narrative patterns in which these episodes are embedded.

The difficulty of segregating the 'occult sciences' from other forms of philosophical inquiry is well illustrated by Maria Papathanassiou's essay, 'Stephanos of Alexandria: A Famous Byzantine Scholar, Alchemist, and Astrologer' [163–203]. Building on the work of the Polish Byzantinist Wanda Wolska-Conus, Papathanassiou argues that Stephanus, a distinguished teacher of medicine and philosophy in early seventh-century Alexandria, was also deeply engaged in both

astrology and alchemy. Furthermore, Stephanus combined this expertise with explicit Christian piety; his treatise *On the Great and Sacred Art of Making Gold* begins and ends ‘with prayers greatly influenced by the works of the early Christian fathers’ [192].<sup>1</sup> Later Greek and Arabic tradition attributed to a certain ‘Stephanus the astrologer’ an astrological treatise known as the *Apotelesmatike Pragmateia*, which includes a famous horoscope of Islam. Papatthanassiou supports this attribution by identifying the astrological content in Stephanus’ alchemical lectures, where she finds evidence for astral observations made on 1 September AD 621. If she is right, scholars will need to give more credence to the 10th-century reports linking Stephanus to the court of the emperor Heraclius (reg. 610–644).

The larger history of alchemy in Byzantium is addressed in Michèle Mertens’ contribution, ‘Greco-Egyptian Alchemy in Byzantium’ [205–229]. Mertens considers, in particular, the formation of the Byzantine alchemical corpus. References to alchemy, sparse in Byzantium before *ca* AD 500, surge during the reign of Heraclius; but the situation in subsequent centuries remains obscure. The surviving corpus, Mertens argues, was probably formed in the ninth or 10th century in parallel with the formation of other encyclopedic compendia such as the *Geoponica*, the Hippocratic corpus, and the *Palatine Anthology*. Passing references by writers such as Photius, George the Monk, and the *Suda*, indicate that interest in Zosimus of Panopolis (writing *ca* 300 AD) and other esoteric writers extended ‘widely beyond strictly alchemical circles’ during the Middle Byzantine period [229]. Such fundamental questions of dating and citation will need to be answered before a proper intellectual history of Byzantine alchemy can be written.

Other essays in the volume address the circulation and translation of texts between Byzantium and its neighbors. In his contribution, ‘Late Antique and Medieval Latin Translations of Greek Texts on Astrology and Magic’ [329–359], Charles Burnett provides a brief bibliographic introduction to an intriguing array of anonymous and pseudonymous Latin texts. The influence of these translations, he contends, has frequently been underestimated by scholars focusing

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<sup>1</sup> Hopefully, Papatthanassiou will document which fathers, in particular, Stephanus draws upon and how he uses them in her forthcoming edition of the treatise.

on the Arabic sources for Latin astrology and magic. As *exempla*, Burnett chooses two texts from the ‘large and murky field’ of prognostication texts. Patterns of diction, vocalization, and syntax suggest that these texts, including, for example, the *De luna secundam Aristotilem*, derive from Greek prototypes. An appendix to the article presents a new edition of the *De luna* and two other short texts based on manuscripts that were previously unknown or unavailable to Burnett.

In the hands of a master like David Pingree (d. 2005), to whose memory the editors dedicate this volume, patterns in the circulation of texts can reveal broader patterns of cultural interaction across the medieval world. In his article, ‘The Byzantine Translations of Māshā’allāh on Interrogational Astrology’ [231–243], Pingree explains why the works of this Abbasid court astrologer (a Persian Jew from Basra) were highly influential in the West but largely ignored in Byzantium. Māshā’allāh’s treatises, composed between the 760s and *ca* 810, contain a sophisticated fusion of Indian, Persian, and Greek astrology; but his work became ‘antiquated’ by the ninth century, as Islamic astrologers ‘revised and systematized Māshā’allāh’s inept and unintegrated borrowings from both the Greek and Indo-Persian traditions’ [242]. Translators in the Latin West, which had inherited only one major work of ancient astrology, the fourth-century *Mathesis* of Firmicus Maternus, found Māshā’allāh’s treatises both accessible and exciting. Byzantine translators, by contrast, turned directly to the more advanced treatises of the ninth-century astrologers Sahl ibn Bishr and Abū Ma’shar.

Debates over the legitimacy of astrology in Byzantium intensified during the reign of Manuel Comnenus (reg. 1143–1180), the bold, Western-influenced emperor whose own devotion to astrology is well documented. In his essay, ‘Did the Biblical Patriarchs Practice Astrology? Michael Glycas and Manuel Comnenus I on Seth and Abraham’ [245–263], William Adler carefully dissects the 12th-century debate over the legitimacy of astrology, in which both sides appealed to the authority of the patriarchal tradition. The emperor Manuel and other proponents of astrology claimed that Adam’s son Seth had learned the practice of astrology from an angel, and that the patriarch Abraham, a Chaldaean by birth, had practiced a sanctioned form of astral observation. Manuel’s contemporary, the monk Michael Glycas, countered with his own reading of the patriarchal models. As

proof that Abraham had rejected the astrology of his youth, Michael pointed to Abraham's victory over the magicians of Egypt as described in the ninth-century *Chronicle* of George the Monk [261]. Adler rightly emphasizes here the delicate crux in Michael's argument, which required separating astrology from its legitimate cousin, astronomy. As a chronicler himself, Michael was sensitive to the power of small details. Departing from previous tradition, Michael Glycas asserts that God had sent the angel Ouriel to reveal to Seth the science of astronomy.

Byzantine intellectuals of the Palaeologan period continued to debate the propriety of predictions based on astral observation. In her essay, 'Astrological Promenade in Byzantium in the Early Palaeologan Period' [265–289], Anne Tihon surveys the extensive data on astronomy and astrology in the works of six major Byzantine scholars of the 13th and 14th centuries. Vocal opponents of astrology, such as George Pachymeres [1242–1307], rejected the legitimacy of casting any individual's horoscope since such horoscopes negated the significance of free will. This standard Christian objection to astrology, articulated already in the fourth century by the Cappadocian fathers, still carried weight in the 13th century. By the end of the century, though, the patronage of the emperors of Trebizond encouraged the importation of new astronomical data and methods from Iran. This Persian material was soon thoroughly mixed with other forms of Byzantine science. One Greek manuscript from the Vatican, copied during the reign of Andronicus II (reg. 1282–1328), juxtaposes treatises by Euclid, Aristarchus, Ptolemy, and John Philoponus (among others) with astrological texts and tables of Persian astronomy [276]. As Tihon observes, a 'more precise inventory' of these manuscripts could clarify the volume and nature of this scientific exchange between Byzantium and Persia.

Jewish intellectuals in Byzantine South Italy also became embroiled in debates over the legitimacy of astrology. In his essay, 'Hebrew Astrology in Byzantine Southern Italy' [291–323], Joshua Holo closely examines the presentation of astrology in two Hebrew texts from the region: the *Chronicle of Ahimaa* composed in Capua in AD 1054 and Shabbetai Donnolo's *Sefer hakhmoni*, a late 10th-century treatise commenting on a late antique mystical cosmogony. Both works 'unambiguously embrace' the use of astrology, but they

adopt very different strategies to do so [293]. The *Chronicle*, for example, assiduously distinguishes astrology from astronomy, presenting the latter as more neutral and, therefore, less consequential. In one telling episode, an unnamed Christian archbishop of South Italy proves more adept at calculating the appearance of the new Moon than his rival, Rabbi Hananel. The rabbi's astronomical error, however, causes no harm since God intervenes to match the position of the stars to Hananel's prediction [309]. The author of the *Chronicle* thus separates the issue of astronomical precision from the question of the righteousness of the practitioner. The same *Chronicle* emphasizes the benefits accrued by pious astrologers: in a later section, Hananel's great-grandson Paltiel earns the favor of the future Fatimid caliph al-Mu'izz by the accuracy of his astrological predictions. Holo argues that the endorsement of astrology in this and other Hebrew texts from Byzantine South Italy belongs to the tradition of *aggadah*, in which 'ambivalence and theological daring can flourish without encroaching on the fundamentals of Jewish doctrine and law' [320]. This openness to astrology among prominent Jewish intellectuals of Byzantium contrasts with the sharp opposition to astrology articulated in the following century by Maimonides (1135–1204).

In the final essay of the volume, 'Revisiting the Astronomical Contacts Between the World of Islam and the Renaissance Europe: The Byzantine Connection' [361–373], George Saliba scrutinizes a well-known problem in the study of Copernicus (d. 1543), namely, how much did Copernicus' concept of linear motion as the product of two combined circular motions owe to the advances of much earlier Muslim astronomers? How, in particular, could he have become familiar with the crucial theorem by the great Muslim astronomer, Naṣīr al-Dīn al-Ṭūsī, director of the Marāgha observatory in north-western Iran founded in AD 1259? Byzantine astronomers of the early 14th century were well versed in the latest developments in Islamic astronomy, but there is no direct evidence that any of them copied al-Ṭūsī's theorem. Building on an insight of the historian of science Willy Hartner, Saliba argues that Copernicus learned the theorem directly from an Arabic manuscript. Saliba identifies the cities of Padua, Bologna, or Ferrara in North Italy as the most plausible setting in which Copernicus could have collaborated with a translator who possessed the necessary fluency in written Arabic.

The book concludes with a 60-page bibliography and an index that could have been made more useful by the addition of subheadings for key entries (for instance, planets, predictions, and stars). A separate 2-page index of manuscripts highlights how much of the raw material for these studies remains unpublished. In sum, the essays in this volume provide stimulating insights into the evolution of astrology, alchemy, and other 'occult sciences' that flourished in the medieval world. While portions of some essays are dense with technical detail and several would have benefited from tighter organization, the collection as a whole admirably achieves its goal. Brought together in a single affordable volume, the essays mark a significant advance in the study of a vital, yet often neglected, component of Byzantine culture and society.