The Society of Astrologers (c. 1647–1684): Sermons, Feasts, and the Resuscitation of Astrology in Seventeenth-Century London

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Abstract. Before the Royal Society there was the Society of Astrologers (c. 1647–1684), a group of around forty practitioners who met in London to enjoy lavish feasts, listen to sermons, and exchange instruments and manuscripts. This article, drawing on untapped archival material, offers the first full account of this overlooked group. Convinced that astrology had been misunderstood by the professors who refused to teach it and the preachers who railed against it, the Society of Astrologers sought to democratize and legitimize their art. In contrast to the received view of seventeenth-century London astrologers, which emphasizes their bitter interrelationships, this article draws attention instead to their endeavours to mount a united front in defence of astrology. The article locates the Society's attempts to promote astrological literacy within broader contemporary programmes to encourage mathematical education. Unlike other mathematical arts, however, astrology's religious credibility was an area of serious concern. The Society therefore commissioned the delivery and publication of apologetic sermons that justified astrology on the basis of its sacred history. In this context, the legitimacy of astrology was more a religious than a scientific question. The Society's public relations campaign ultimately failed, however, and its members disbanded in the mid-1680s. Not only were they mounting a rear-guard action, but they built their campaign on out-of-date historical arguments.

On the evening of 14 August 1651, a number of prominent Londoners, who had just heard a sermon on *The New Jerusalem*, retired to the Painters-Stainers' Hall on Little Trinity Lane for a convivial feast of venison and ale. The company, which was predominantly composed of mathematicians, medical practitioners, and instrument makers, engaged in learned conversation until the early hours of the morning, when one of their number, the antiquarian

Elias Ashmole (1617–1692), regrettably fell ill with a 'surfeit'.[1] In the months that followed, the guests kept in touch through the postal service, requesting further details from their conversations in August and planning additional collaborative projects.[2] Like Ashmole, many of those present were keen participants in the vibrant culture of practical mathematics that thrived in London in the second half of the seventeenth century. Indeed, although this was clearly a fun-loving group, these were studious people whose lively feast was underpinned by very serious aims. Their feast in August 1651 was one of a great many similar events organised over a forty-year period. The group was the Society of Astrologers of London, and this was their annual general meeting.

Before the formation of the Royal Society in 1660, London was home to several voluntary institutions in pursuit of knowledge of nature. The little-studied Society of Astrologers, who also went by the names 'Society of Artists' and 'Learned Students in Astrology', was one of these collectives.[3] From 1647 until the mid-1680s, this energetic group met in London churches and taverns to enjoy feasts, listen to sermons, exchange instruments and manuscripts, and translate astrological texts. Their main objective was to 'resuscitate' the science of the stars, which they believed was desperately suffocating under the weight of persistent attacks.[4] Not only was astrological education increasingly difficult to come by in English universities, but aspersions cast upon astrology by English preachers meant the art was 'of late despised', and in desperate need of 'vindication…from the Scandalls of the Ignorant and Malitious'. The Society saw their task in distinctly national terms. Astrology was 'hardly knowne to this…Segment of the Terrestrial-Globe', and the Society accordingly hoped to teach it widely, making it 'publique to the Benifitt of this Nation'.[5] In the face of accusations that astrology was 'a wicked Art, whose original is from the Devil', the Society took it upon themselves to convince the public that it was instead a 'Divine-science' with a venerable biblical history.[6] Emerging on the eve of the decline of astrology throughout Europe, the Society of Astrologers

was in the business of public relations. The present article, drawing on untapped archival material, offers the first full account of this little understood Society, focusing on their dual attempts to democratize and legitimize their art.

The Society of Astrologers has received little attention from historians. This is perhaps unsurprising considering that, when compared with the Royal Society, limited contemporary testimony has survived. Moreover, early historians of science tended to overlook 'unsuccessful' knowledge systems like astrology.[7] Coming of age in a period associated with experimental science and its institutionalization, the Society of Astrologers has frequently met with derision and dismissal by scholars.[8] These days historians of science take astrology far more seriously. Beginning in the 1970s, Keith Thomas, Peter Wright, and Patrick Curry produced some initial work on the Society of Astrologers.[9] Vittoria Feola has more recently provided a short description of the Society's origins and activities.[10] These accounts offer us only a partial view, however, because none considers the full range of available evidence. Taken together, manuscript sources, the publications of Society members and their critics, and, especially, the Society's commissioned sermons, generate a rich picture of an ephemeral institution fighting for celestial causation. Studying the overlooked Society of Astrologers enriches our understanding of seventeenth-century intellectual culture by shedding new light on a frequently disregarded subset of the London mathematical community and, secondly, by fleshing out our current understanding of astrology's contested status in this period with new evidence of a reactionary socio-religious campaign. Moreover, in contrast to the received picture of London astrologers in this period, which emphasises their bitter competition and fiery interchanges, this article draws attention instead to their attempts at unity, their endeavours to mount a united front in defence of astrology in spite of their admittedly complicated and often thorny interrelationships.[11]

As the practical part of astronomy, astrology was a complex mathematical art. The first section of this article, which outlines the Society's origins, members, and meetings, locates their democratizing aims within broader contemporary programmes to promote mathematical education. Yet, unlike other mathematical arts, astrology's religious credibility was under serious threat. The Society of Astrologers, desperately aware of this, embarked on a campaign to restore astrology's religious credentials. As I show in section two, a key part of this strategy was the organization of a series of six sermons in London churches in the 1640s and 1650s. I argue that the Society commissioned the delivery and publication of apologetic sermons with the aim of legitimizing astrology on the basis of its sacred history. This tactic makes sense when we consider that a large amount of English attacks against astrology in this period were more religiously than scientifically based.[12] While work on the decline of astrology in England has paid much attention to the success of satirical assaults on the art, we should not ignore the serious religious and theological issues that were at stake.[13] That the Society invested so much into defending astrology's religious credentials suggests that they saw this as a primary barrier to wider acceptance of the art. Nevertheless, as I outline in the final section, which introduces several hitherto unknown critiques of the Society, the astrologers failed to persuade, and the Society soon dissolved. Not only were they mounting a rear-guard action, but they built their legitimizing campaign on obsolete historical arguments.

The Society of Astrologers: Origins, Members, and Activities

The Society of Astrologers came into being at a time when mathematical practitioners thrived in London. Those with expertise in timekeeping, navigation, surveying, hydrography, and other fields grew in popularity and sophistication from the mid-seventeenth century and were increasingly organized in professional and commercial institutions.[14] This was a culture that privileged arts that were practical. Called upon to provide guidance on relationships, travel,

agriculture, and health, astrologers enjoyed extraordinary popularity in England especially during the Civil War (1642–1651) and Interregnum (1649–1660), when practitioners promised to address various personal and political needs.[15] Yet, the formation of the Astrologers' Society was prompted by the knowledge that the art was being seriously challenged in learned circles.[16] It was also harder to access astrological teaching at the universities. The Savilian statutes of 1619, for example, had 'utterly debarred' the professor of astronomy at Oxford from teaching 'all judicial astrology without exception'.[17] Such circumstances called for the opportunities afforded by institutionalization. Like other mathematical clubs, the Astrologers' Society originated in gatherings at Gresham College during the 1640s. Gresham lectures on astronomy and geometry provided a forum for like-minded people—mechanical craftspeople as well as gentlemen natural philosophers—to socialize over shared interests.[18] In November 1646, Jonas Moore (1617–1679), leading mathematician and central figure in this community, introduced two people who would become intimate friends and leading members of the Society of Astrologers: Elias Ashmole and the astrologer William Lilly (1602–1681).[19] Ashmole was shortly invited to a 'Feast of Mathematicians' at Gresham and The White Hart.[20] Soon the astrologers in the group organized their own 'Feast of Astrologers', which was held annually, alongside other informal gatherings. Six of their feasts were preceded by sermons on astrology's religious legitimacy, held on at least two occasions at the wealthy Church of Saint Mary Aldermary.[21] Some of the Society's events were particularly well-timed. Their meeting on 28 March 1652, for example, was held the day before the notorious 'Black Monday' solar eclipse, a major media event.[22] After 1656, however, there is no consistent record of regular Society meetings for almost two decades. After a handful of events in the late 1670s and 1680s, which Ashmole describes as a restoration of the feast by the mathematician and globe-maker Joseph Moxon, the Society disbanded (see Table 1).[23]

Table 1. *Known meetings of the Society of Astrologers*[24]

Date of Meeting	Additional Information
14–16 February 1647	'Mathematical Feast' at Gresham College and The White Hart
31 October 1648	Meeting at unknown location
1 August 1649	Feast at Painters-Stainers' Hall; sermon by Robert Gell
31 October 1649	Feast at unknown location
8 August 1650	Feast Painters-Stainers' Hall; sermon by Robert Gell
14 August 1651	Feast at Painters-Stainers' Hall; sermon by Edmund Reeve
28 March 1652	Meeting at unknown location; sermon by John Swan
18 March 1653	Feast at unknown location; sermon by Thomas Swadlin
22 August 1654	Feast at unknown location
29 August 1655	Feast at unknown location
Late 1656[25]	Sermon by Richard Carpenter
2 November 1658	Feast at unknown location
24 October 1660	Meeting at William Lilly's house
October 1673	Meeting at The Five Bells
22 June 1677	Meeting at unknown location 'about Strand Bridge'
13 July 1682	Feast at unknown location
29 January 1683	Feast at the Three Cranes Tavern
1684	Meeting at unknown location

The Astrologers' Society was not a small group. Lilly claimed in 1649 that there were 'above forty' attendees that year.[26] Although we lack an official list of Society members, we can reconstruct membership by drawing on various contemporary sources (see Table 2).[27] Alongside practicing astrologers, membership included instrument makers, physicians, and mathematicians with astrological interests. Along with Lilly and Ashmole, leading members included the celebrated physician and herbalist Nicholas Culpeper (1616–1654), as well as the astrologers John Booker (1602–1667), George Wharton (1617–1681), and Richard Saunders (1613–1675). Contemporary pamphlets provide names of additional members. As Feola has shown, in 1657 the Quaker leader George Fox registered several practitioners linked with the Society: Lilly, Booker, Saunders, and Wharton, but also Charles Scarborough, Jonathan Goddard, and several other physicians.[28] Unknown to Feola, the satirical *His Perpetual*

Almanack (1662) similarly listed 26 guests expected at 'our next Feast', including many aforementioned names alongside the astrologers John Gadbury, Jeffrey le Neve and John Tanner.[29] The astrologer and midwife Sarah Jenner, known for her short-lived *The Womans Almanack*, was likewise named, although it seems unlikely that a woman would have attended the feasts.[30] The pamphlet also listed the pseudonymous compilers of several popular almanacs, often named for birds: Jonathan Dove, John Swallow, John Woodhouse, and Poor Robin.[31] Some of these were real people whose names continued to be used on ghost-written almanacs long after their death, while others were entirely fictional.[32] It is most likely that the collection of names in *His Perpetual Almanack* was simply a list of popular almanac writers, even if some of those listed had genuine connections with the Society. Gadbury, for example, was named as a member by John Partridge.[33] In any case, the exact makeup of the Society doubtless differed at each meeting, and it is probable that Londoners interested in astrology or simply curious about the meetings took part on occasion. Samuel Pepys attended in October 1660, but this was likely a one-off.[34] Moreover, when the feasts were 'restored' in the 1680s, the Society's membership was likely altered, especially considering many former members had now died. All in all, the members we do know of had various political and confessional allegiances.[35] One contemporary complained that the Society indiscriminately admitted sectarians: 'Presbyterians, Independents, Anabaptists, Quakers, Shakers, Seekers and Tearers'.[36] Yet, in 1649 Lilly claimed that during their annual meeting there was 'no dispute of King, Parliament, or Army'.[37] While historians have extrapolated from this the unfounded conclusion that political disputes were banned, it is nonetheless remarkable that they joined forces despite their differences and the deeply strained relationships between many members.[38]

Table 2. *Membership of the Society of Astrologers*

Known Associates			
Elias Ashmole	Nicholas Fiske	Francis Prujean	Thomas Streete
William Backhouse	John Gadbury	William Ramsay	Thomas Swadlin
Richard Barker	Robert Gell	Edmund Reeve	John Swan
George Bate	Ralph Greatorex	John Rowley (jnr)	John Tradescant
John Booker	Jonathan Goddard	John Rowley (snr)	William Wagstaffe
Richard Carpenter	John King	Richard Saunders	George Wharton
Henry Coley	William Lilly	Charles Scarborough	Bulstrode Whitelock
Henry Crispe	Jonas Moore	Jeremy Shakerley	Vincent Wing
Nicholas Culpeper	Joseph Moxon	John Spong	Lawrence Wright
Edward Dering	William Oughtred		
Possible Attendees			
John Aubrey	John Evans	George Parker	William Salmon
Joshua Childrey	John Heydon	John Partridge	John Tanner
Richard Edlyn	Jeffrey Le Neve	Samuel Pepys	John Webster

Little is known about the Society's internal organization. In contrast to the Royal Society, for example, no charter or constitution survives. We know it was predominantly patronized by Ashmole, who financed books produced by its members.[39] In return, Ashmole acquired the reputation of a scholar and virtuoso, and used his newfound network to support his voracious collecting.[40] The Society also won the patronage of Bulstrode Whitelocke (1605–1675), a powerful parliamentarian whom Lilly befriended in 1643.[41] Some administrative duties in the Society were performed by Stewards, who were appointed periodically. Ashmole was made 'Steward of the Astrologers Society' in 1650, and some three decades later, in 1683, Sir Edward Dering and William Wagstaffe were given the same role. Dering was re-appointed the following year alongside Henry Crispe (c. 1650–1700).[42] The Steward's role may have been secretarial, as Feola suggests.[43] Yet while Ashmole certainly acted upon correspondence delivered to the Society, which in the first instance was typically directed to the address of

Ralph Greatorex's instrument shop, Dering and Wagstaffe—who led busy political lives—were presumably not burdened with this responsibility. It is not known who organized the meetings, although on at least one occasion Lilly played a key role. In July 1651, John Rowley of Luton wrote to Lilly saying that his father had told him the Society 'intend[s] a meeting shortlye', and he asked Lilly to give him 'warning' of the proposed date so that he could join (the meeting was held one month later).[44] Invitations may have been distributed in small print or manuscript summonses. Other mathematical clubs used this method; surviving examples suggest Stewards were responsible for issuing, although not delivering, invitations.[45] Members of the Society used similar notes for informal gatherings: in September 1649, Ashmole was invited to dine with Wharton and other astrologers in the Three Tunns pub via a short poetical memorandum.[46]

What were the Society's key activities? One historian has characterized the Society of Astrologers as 'more of a social and trade association than a research motivated group'.[47] But although the Astrologers' Society did not undertake the systematic investigations we associate with the Royal Society, they nevertheless engaged in the science of the stars in practical and textual ways. On a spectrum of seventeenth-century clubs and associations, we can place the Society of Astrologers in between learned societies and Colleges and more trade-based livery companies and guilds. A large amount of material attests to research projects undertaken by the Society. For example, they collaborated to produce new astronomical tables and exchanged letters about eclipses and other astronomical phenomena.[48] In letters addressed to the Society in late 1652, William Oughtred described a comet he had witnessed for eleven subsequent nights, and asked for his colleagues' opinions.[49] Lilly later printed Oughtred's descriptions alongside the observations of other members, comparing them with his own calculations and reading of comet lore.[50] John Aubrey, whose astrological interests and close relationships with Society members make him a possible candidate for Society membership, worked with

Ashmole in the 1680s to compile nativities of distinguished men from the records preserved in Lilly's papers.[51] It seems that more junior members were often put to work by senior members. In a letter to Lilly, the young Rowley asked for both Lilly's patronage and explicit directions about what 'peece of Astrologye' he should next 'Convert into the English tongue'.[52] Though an admittedly hostile source, William Rowland claimed in his 1651 attack on astrology that 'it is brought to me by good hands' that William Ramsay, who was 'but a Boy', was 'set [to] work' by the Society to defend the art.[53] Jeremy Shakerley likewise worked extensively for Lilly, furnishing him with weather records and various calculations.[54]

Society members engaged closely with mainstream mathematical culture. Booker, licenser of mathematical publications from the 1640s, was in close contact with astronomers at Gresham, who sent him up-to-date observations.[55] Oughtred taught many Royal Society mathematicians and maintained relationships with leading practitioners. Many Society members were primarily specialists in mathematical arts other than astrology, and in their astrological publications advertised their non-astrological books as well as private mathematical tuition.[56] Vincent Wing, whose circle included the mathematicians and astronomers John Flamsteed, Laurence Rooke, and William Leybourne, among others, promoted his surveying services in his almanacs, telling readers he was also 'ready to teach…several other branches of the Mathematicks'.[57] It is well-known that there was considerable overlap between instrument makers and learned natural philosophers and mathematicians in this period.[58] As an example of a similar crossover between astrologers, practical mathematicians, and instrument makers, when advertising his surveying textbook in his astrological almanac, Wing told his readers that if they wanted access to 'the Instruments there described', they could find them at Walter Hayes' instrument shop.[59] Members also publicized mathematical instruments built by their Society colleagues, such as Oughtred's dials and Moxon's globes.[60]

In the later seventeenth century, mathematical practitioners endeavoured to increase public knowledge of their fields through popular books and public lectures and demonstrations.[61] The Astrologers' Society likewise conducted a campaign to democratize astrological knowledge. Their efforts included private tutoring.[62] The postal service was a useful additional medium. Society members corresponded with amateur astrologers, providing advice on casting horoscopes, interpreting phenomena, and making prognostications.[63] In 1647, Lilly and Booker received letters 'from sundry parts of this kingdom' about a recent parhelion; Lilly used his almanac for that year to provide an explanation.[64] While Feola concludes that these letters do not technically constitute a 'network' because Lilly's correspondents outside London only ever sent him just one letter, it must be noted that the letters in the Ashmole archive in the Bodleian Library are only a small proportion of what Lilly received; we know this because Lilly often published letters that no longer survive in manuscript.[65] The print market was central to the Society's operation. Fiske believed one of his key tasks as a member of the Society was to republish, and thus make more available, older English astrological works.[66] As Feola has shown, the Society also translated Latin astrological texts. In 1650, William Backhouse coordinated a workshop in his Berkshire home, where several members translated such texts into the vernacular.[67] Shakerley worked on translations of Ptolemy's *Tetrabiblos* for Lilly in the late 1640s.[68] A complex pre-modern science, astrology was largely locked away in Latin tomes until Society members offered accessible English accounts. Lilly's pedagogical *Christian Astrology* (1647), for example, was widely read, and Lilly received letters from budding astrologers thanking him for it.[69]

In sum, the Society of Astrologers was a product of the mathematical culture bourgeoning in London in this period. The Society joined their mathematical colleagues in a programme to expand public mathematical knowledge. In a context in which astrology was under threat in educated circles, the Society declared that its main goal was the restoration, or

resuscitation, of their field. In a letter to Whitelocke transcribed in the below Appendix, the Society explained that throughout history, astrology 'hath had her Wax, & her Waine, her Assertors & Assassinates'. With Whitelocke's help, the Society would ensure it was restored to a respected state.[70] This involved activities not only to democratize the art, but also to legitimize it. As I argue below, the Society endeavoured to accomplish the latter by establishing astrology as a divine art with an august history.

Sermonizing at the Society of Astrologers

The Astrologers' Society attempted to revive their field with a robust response to attacks mounted against it by ministers and theologians. To this end, the Society actively sought out relationships with preachers who were sympathetic to astrology. The Society of Astrologers' network therefore included not only mathematical practitioners and aspiring prognosticators, but also the local clergy. Astrology had always been controversial in Christian Europe, but widespread acceptance was facilitated by its ambiguous biblical status. Genesis 1:14 pointed to God's intended use of celestial bodies as signs, and Job 38:31 highlighted 'the sweet influence of Pleiades'. But scripture seemed to object to astrology in passages like Leviticus 19:26 (which cautioned against divination) and Jeremiah 10:2 (which disparaged the pagans who were 'dismayed at the signs of heaven'). Society members were aware that many English men and women were 'prejudiced or dis-affected unto Astrology' because contemporary ministers told their auditors it was unlawful and pagan.[71] The Society therefore appointed their own preachers to exploit these biblical ambiguities, elevating scriptural evidence that seemingly supported astrology, and contesting passages that did not.

The Society convinced five local ministers to support their cause. While Society members had their political and religious differences, their preachers were all royalists and members of the English Church. This may have been intended to help to distance the Society

from religious and political radicalism.[72] Many preachers were strategic choices, even if Curry dismisses them as obscure.[73] Before preaching two sermons to the Society, Robert Gell (1596–1665) was a popular preacher and chaplain to the Archbishop of Canterbury. From 1641 onwards, he was a clergyman at St Mary Aldermary, a rich London parish with parishioners sympathetic to his astrological interests.[74] As Gell acknowledged, the Society 'made choice of me…as being one of your judgement touching your Art'.[75] Thomas Swadlin (1599/1600–1669), another well-known Society preacher, had a loyal following amongst Laudians at St Botolph's, Aldgate. Ashmole heard Swadlin preach in October 1646, which likely led to his invitation to preach to the Society a few years later.[76] Other Society preachers were Laudians: Edmund Reeve (d. 1660), who taught Biblical languages in London, and John Swan (1605–1671), minister in Cambridgeshire and Booker's personal friend.[77] Only Richard Carpenter (1604/5–1670) offered a more complex story; he declared himself a Roman Catholic in 1625, only to apostatize in a recantation sermon in 1637.[78] At least Gell, Swadlin, and Swan were known to Society members before they preached.[79] In Reeve's case, however, the Society seemed eager to vet his sermon before its delivery. In a prognostication of the 1652 eclipse dated 10 March 1651, Lilly claimed that a sermon on Jeremiah 10:2 would soon be forthcoming. He then included a two-paragraph long quotation from Reeve's sermon, some five months before Reeve delivered it.[80] As one sharp reader noticed, either Lilly 'did by the Stars foresee, that such a Sermon…should be preached', or else the preacher, 'having penned it…, did tender a Copy of it to M[aster]. L[illy]. his Client…with a purpose to dispose of it, as he should either like or mislike it'.[81]

The Society's sermons were public affairs. When delivering his sermon, Swadlin addressed himself to those who 'professe yourselves Students in Astrology, and for all others, who are here assembled'.[82] One contemporary described Swan's sermon as 'prepared for, and preached unto a popular Auditorie'.[83] Gell remarked that before his sermon appeared in print,

he was censured by people who were 'hired to take notes' during its initial delivery.[84] As a result of the sermons' public nature, the Society became well-known in popular culture, as attested by the references made to it in the 1650s and 1660s.[85] That the sermons had an image management function is suggested by the fact they were the only material published explicitly in connection with the Society. One sermon was printed even though it was never delivered due to the preacher's illness.[86] Nathaniel Brooke, a stationer who worked closely with Ashmole and Lilly, printed and distributed most of the sermons.[87] Brooke printed many works by Society members, including a medical lecture delivered to the Society by Culpeper in the early 1650s.[88] A selection of the Society's sermons were later sold together as *Five Several Sermons Preached for and Dedicated to the Society of Astrologers* (1684), at the 'command' of Dering and Crispe.[89] Yet the Society had to campaign its preachers extensively to ensure their cooperation. Gell admitted he was 'not easily perswaded to speak in publique' in defence of astrology, and did so only after several Society members 'importuned' him. He was then 'more averse [than] I ever have been' to 'exposing my thoughts in print', but the Society eventually convinced him.[90] Even Lilly admitted that Gell only agreed to 'suffer that learned Sermon of his…to be printed' at 'our many importunities'.[91]

The subject of the sermons was the legitimacy of astrology for Christians. Historians have tended to sideline the Society's sermons as unoriginal and therefore uninteresting. While Curry rightly suggests they would have been unconvincing for Puritans and Presbyterians, he unfairly dismissed them as 'hackneyed arguments', 'standard Biblical defences of astrology, many centuries old'.[92] While the preachers' arguments were largely unoriginal, their age was the point: the fact that historical Christian leaders could be called upon was key. Besides, their arguments made sense in light of the obstacles astrology was facing: astrology and pagan superstition were increasingly connected in the public imagination.[93] In contrast, the sermons revealed astrology as a divine, Hebraic art, which God had used to bring the Magi to Christ.

This strategy sheds light on the Society's extensive use of the term 'restore' to describe their project: implicit in the 'Restauration of Astrologie' is the assumption that there existed at some point in the art's long history a Golden Age that could be reinstated.[94]

The Society's preachers emphasized astrology's Hebraic origins. This was hardly an original claim. Various Jewish and early Christian sources explained how Abraham had expertise in astrology and astronomy and introduced both to the Egyptians.[95] Renaissance introductory lectures on *scientia stellarum* used biblical mytho-histories to display its legitimacy and splendour.[96] Antiquity was associated with religious and philosophical purity in these narratives. The preachers followed this convention, maintaining that the biblical patriarchs excelled in astrology. Astrology's root was 'not Idolatrie, but Innocency; Adam in Paradise was the Father of this Art'.[97] Genesis 4:20–22 provided useful evidence in its suggestion that while Cain and his children invented the inferior arts, the most noble arts (i.e., those considering the heavens) were developed by the sons of Seth. In *Jewish Antiquities*, Josephus emphasized Seth's role in the invention of astrology, explaining how his sons wrote their learning on pillars to ensure its longevity.[98] Thus, the preachers maintained that Adam founded astrology, but Seth's children 'ripen'd it into an *Art* or *Discipline*'. In his sermon, Carpenter referred to the Society as the 'learned children of Seth'.[99] The Society exploited this tradition in their letter to Whitelocke, claiming that they hoped astrology would remain 'like so many Pillars, whereon are Engrav'n the Principles of Arts & Sciences to preserve them from…the Injuries & Affronts of time'.[100] Gell also followed Philo and Acts 7:22 when he argued that Moses's skill in 'Egyptian wisdom' included astrology.[101] Similarly for Swadlin, Solomon was 'the best Astrologer the world ever entertained'.[102] The fact the patriarchs were astrologers proved the art was both ancient and condoned by God.[103]

A second central argument of the sermons revolved around Matthew 2:1–12, which described how 'Magi' from the east followed a star to see Christ in his manger. Commentators had long drawn attention to the similarity of this text with Numbers 24:17 ('there shall come a star out of Jacob'), one of several oracles of the prophet Balaam that was seen as a messianic prophecy. These parallels allowed commentators to link the Magi and Balaam, who was said to dwell in the east; this explained how the Magi had known the star's meaning.[104] Some of the preachers went so far as to suggest that the Magi were themselves descendants of Balaam (himself kin to Jacob). After all, Balaam lived in Arabia, which was east of Jerusalem and boasted native products of gold, frankincense, and myrrh.[105] This was crucial evidence for the preachers for two reasons. First, by using astrology, God had 'vouchsafed a speciall respect unto the well-minded Students in the Starres'.[106] God accommodated himself to the gentiles, using the stars to literally and allegorically bring them to Christ.[107] Secondly, the text implied that a tradition of pure astrology had been handed from the Hebrews to the Magi, which again served to highlight its divine history.[108]

The sermons acknowledged that although astrology had pure roots, it had been subject to corruption during its life. A critical issue was idolatry. Gell admitted that many pagan astrologers had become 'worshippers of Stars'.[109] Carpenter singled out Zoroaster as 'the Father of those who perverted the noble Science of Astrology'.[110] But the preachers argued that astrology was not necessarily yoked with pagan worship. Swadlin explained that he knew from firsthand experience that some astrologers engaged in demonic activity, but this was not representative of 'the true Astrologer'.[111] The preachers knew pagan astrology was at risk of being determinist, a theologically sensitive issue. Thus, the preachers found the maxim *astra non necessitant sed inclinant* useful, for it clarified how astrologers could predict inclinations, which could then be heightened by 'holy Ambition' or thwarted by 'good Education'.[112] As Reeve wryly noted, while some claimed that astrology should be rejected because of these

historical corruptions, 'may not by the same reason the Studie of sacred Theologie bee omitted, seeing that not few errours have entered into Bookes of the same?'[113] Astrology had at times been corrupted by idolatry, the preachers suggested, but original, pure astrology could still be salvaged. 'Purge away the dross, and keep the gold', Swan declared.[114]

After the sermons were printed, Society members referred to them repeatedly. Citing a sermon became shorthand that allowed the astrologers to eschew in depth theological arguments in favour of a quick response to their opponents.[115] The sermons also enabled Society members to play different preachers off each other; Gadbury, for example, wrote in 1654 that while some ministers were certainly against astrology, Gell, Reeve, Swadlin and 'many more' were greatly in favour of it.[116] Society members consistently referenced astrology's divine origins in their own books. For Lilly, God's angels taught astrology to the first men, who then trained their descendants.[117] Booker wrote a poem for Gadbury's *Doctrine of Nativities* (1658), which declared 'Adam first Man, found out Stars Influence, / And taught his Sons'.[118] Ramsay (who, believing he was descended from the Egyptians, spelled his name 'Ramesey') argued throughout his oeuvre that astrology had ancient and divine foundations.[119] In *Lux Veritatis* (1651), he included a genealogical table of hundreds of 'Astronomers and Astrologers from the Creation', which began with the Hebrew patriarchs.[120] Ramsay copied this list from Sir Christopher Heydon, a hero of the Society, but added to it the names of several Society members.[121] Such a list was designed not only to highlight famous past practitioners of the art, but also to show a line of succession since Adam. As one contemporary remarked, the Society and its preachers ultimately laboured to make the biblical patriarchs 'member[s] of the society of Astrologers'.[122]

Contemporary Responses

In August 1650, the *Mercurius Politicus* newspaper included a review of the Society of Astrologer's recent feast. According to the anonymous reviewer, they

> saw more of true piety this day in a Lay-Congregation, than ever was found in the Scotified Clergy: It was a day dedicated to Devotion, and friendly Converse, by the learned Society of Astrologers, who met together at Aldermary Church in London…After which, they Treated each other civilly at dinner at Painters-Hall; where was so grave an Appearance of Doctors and Students in several Faculties, as made up a compleat Academy.[123]

This glowing report notwithstanding, the majority of the surviving evidence suggest that, in spite of their efforts, the Society's public relations campaign failed to convince many. Historico-religious attacks continued to be mounted against astrology. Unfortunately for the Society, their enemies had on their side the consensus of leading scholars who, drawing on the discoveries of Renaissance humanists, increasingly located astrology's origins not amongst the biblical patriarchs, but instead within ancient paganism.[124] To name one prominent and influential example, in his famous *Disputationes adversus astrologiam divinatricem* (1496), Giovanni Pico della Mirandola placed astrology's origins squarely in Chaldea and Egypt, arguing that these eastern nations did not deserve admiration because of their idolatry and superstition.[125] This revisionist account was incredibly successful, and was taken seriously by leading seventeenth-century intellectuals. In England, the experimentalist *par excellence* Robert Boyle critiqued astrology principally on historical grounds: the art was a product of idolatrous eastern star-worship.[126] This scholarship also trickled down into more popular anti-astrological works. In his assault on the Society, Fox claimed astrology stemmed from idolatrous Egyptian practices.[127] In 1652, John Gaule argued that astrology began life 'as a Religion, amongst the vilest of Heathenish Idolators'.[128] Gaule professed himself shocked that

the astrologers had the gall to 'assemble…and set up themselves for a *society*; amidst all others discociations [sic], and distractions' during the Civil War and Interregnum.[129] Gaule explained that in the second century, two preachers, Fugatius and Damianus, had abolished native British astrology. Meanwhile, the Society's preachers were now aiming to restore 'the Religion, as it was held and used among Pagans'.[130]

The Society's sermons elicited refutations from rival ministers. In 1653, the aging clergyman Thomas Gataker (1574–1654) rebutted Swan's sermon on Jeremiah 10:2. Gataker had recently published annotations on the same passage, and he now chastised Swan for misinterpreting it.[131] Gataker's *Vindication* was also directed at Lilly, who in his *Annus Tenebrosus* (1651) had dismissed Gataker's annotations on this verse as a waste of 'a whole side of paper' that would soon be superseded by the 'exposition of a reverend Minister…equall in years to Mr. Gataker; and in true divinity and knowledge of the Orientall tongues, far surmounting him'.[132] Lilly then included the excerpt of Reeve's sermon mentioned above which interpreted this passage as favourable to astrological prognostication. Gataker was understandably riled up by these comments, and Lilly's failure to provide the author and title of the sermon left Gataker and his friends 'to seek after a needle in a bottle of hay'.[133] When Gataker eventually came across Swan's sermon of 1652 on Jeremiah, he assumed it was the sermon to which Lilly had referred. Gataker therefore dedicated over two hundred pages to refuting Lilly and Swan, and his *Vindication* was printed with separate title pages for seven different booksellers across London, likely in expectation of a large readership. Gataker had a good deal of ammunition against the Society of Astrologers, as by this point it had become clear that the 1652 eclipse and its effects were not nearly as bad as the astrologers had predicted. But Gataker spent most of his time questioning Lilly and Swan's claims for the antiquity and divinity of astrology. Swan had argued that Jeremiah's censure of pagans who were 'dismayed' at heavenly signs taught Christians to be unafraid of ostensibly frightening astrological

predictions. For Gataker, however, the correct reading was that astrology was a direct path to pagan idolatry.[134] After all, Gataker asked, 'whence had people these frivolous fancies and superstitious conceits?'[135] Lilly and 'his Complices' claimed Adam and Abraham were the first astrologers, but in reality it was the Egyptians, Chaldeans, and other 'idolatrous Pagans'.[136]

Similarly, when John Raunce took aim at Gell's second Society sermon, he accused the preacher and his auditors of being 'deluded with a superstitious and heathenish opinion', and for striving to delude others.[137] Raunce claimed to see through the astrologers' strategy: 'we are not able to prove Astrologie a lawfull and honest Art', so we have employed preachers like Gell to 'prove it for us'.[138] Their endeavours were in any case a waste of time, Raunce argued, as astrology was clearly an art with origins in all things idolatrous, heathen, and diabolical.[139] The Astrologers' Society, armed with out-dated mytho-histories, was seemingly fighting a losing battle.

While Feola has claimed that Fox's pamphlet was 'the only printed attack openly directed against…the Society of Astrologers', the Society in fact received numerous direct attacks.[140] Many were satirical, and ridiculed the Society's dubious morals. *His Perpetuall Almanack* poked fun at their feasts and their manipulation of clients. In the guise of giving serious advice on 'how to judge of things happening suddainly whether they be good or ill', the author explained that finding twenty shillings on the ground should be considered a good thing, while a deadly fall from a horse should be considered a bad thing.[141] Another pamphlet, primarily concerned with satirizing the skill of coal-dealers in inflating prices, imagined a fruitful collusion between coal merchants and Lilly 'and the rest of the star-gazers'. If a coal-dealer could encourage the astrologers to predict 'snow and frost and flabby cold weather', this could 'bring in our Customers the faster'. For this service, the coal-dealer would 'finde in my heart to spare halfe a chaldron of Coales to bee distributed amongst the star-gazing fraternity,

to warm their Noses at their Critical Conventions'.[142] To construct a respectable image for the Society in response to popular ridicule, the engraver Thomas Cross (fl. 1632–1682) was engaged to produce portraits of several members that depicted them in studious aspect, surrounded by astrological books, mathematical instruments, and depictions of the heavens.[143] Yet, their efforts were lampooned in the broadside *Lillies Banquet: or, the Star-Gazers Feast* (1653), which boasted an engraving of a scholar at work on an astrological book, except that the scholar was an owl, complete with gown and ruff. This was a play on the symbolic folly of the owl common to satirical literature.[144] Following the image was eleven stanzas of verse recommending a complex feast suitable for guests of all Zodiac signs, brimming with sexual references.[145]

Other attacks on the Society sought to undermine their astronomical credibility. *Black Munday Turn'd White* (1652) refuted the predictions of 'Mr. Lillie, Mr. Culpeper, and the rest of the Society of Astrologers' concerning the 1652 eclipse. After reporting grave errors in their calculations, the author scolded them for not being better skilled in 'the speculative part' of the science of the stars (astronomy) before they 'adventured on the Practick' (astrology).[146] The pamphlet also questioned the Society's piety. Lilly's almanac on the eclipse included 'unchristian like words' and made references to heaven when the author was sure 'Heaven hath little to do with him, since he hath so much to do with Hell'.[147]

Conclusion

The Society of Astrologers was a last-ditch effort to save astrology from decline. Despite their often fractious relationships, members of the Society came together in a unified attempt to resuscitate the art through programmes of public education and religious legitimization. The first should be considered part of the world of contemporary mathematical culture. Excellent recent studies have taught us much about practical mathematics in this period, and have

encouraged a 'move away from a concentration on the Royal Society'.[148] However, astrology remains conspicuously absent from these accounts.[149] The evidence offered here suggests a more comprehensive account of this important aspect of seventeenth-century intellectual life requires us to consider astrology and practical mathematics in tandem.

The Society of Astrologers endeavoured to vindicate their art through apologetic sermons. In all treatments to date, the Society's sermons have either been overlooked or dismissed as a 'gloss of sanctity'.[150] Taking the establishment of the sermons seriously, this article has shown how they aimed to locate astrology within an authentic and religiously sound historical tradition. In this the Society in fact proceeded in a comparable way to the Royal Society. Wright argues that while the Royal Society's main preoccupation was 'the explanation of puzzling natural phenomena', the Society of Astrologers' main concern was the legitimization of their art.[151] Yet, historians have since demonstrated the Royal Society's necessary interest in justifying experimental natural philosophy.[152] Both societies remind us that learned sodalities often formed not at the height of their field's success, but when its members felt it was in jeopardy. When faced with a crisis of intellectual identity, the early Royal Society responded in part by constructing historical defences of experimental science.[153] On first glance a key difference between the two societies might be that while astrology was millennia old, the new experimental philosophy was just that—new. Yet proponents of the new science also located their methods within the long history of philosophy. That the historical rhetoric of both societies fell short was in good part because they did not rely on the best and most up-to-date historical scholarship.[154]

The Society of Astrologers disbanded in the mid-1680s. The question of why this occurred is tied to the larger issue of astrology's decline more generally in this period, which remains an area of active research.[155] In terms of the Society more specifically, Curry has

argued that its dissolution was the result of its members' radical politics, which were unpalatable after the Restoration.[156] Feola's account of the Society's politico-religious diversity challenges this somewhat, although the Society's 'real' politics is a different issue to their reputation in the eyes of the public.[157] Though it is tempting to point to experimental philosophy and its institutionalization in the Royal Society, this too cannot offer a full answer.[158] In 1697, Gadbury asked the Royal Society why they did not patronize 'Experiments in Astrology'.[159] The answer may partly lie in Michael Hunter's suggestion that the early Royal Society avoided discussion of magic and occult practices because its Fellows' views were so divided.[160] Several Royal Society Fellows were, after all, also members of the Society of Astrologers.[161] It is in any case probable that by democratizing astrology, the Society unwittingly helped redefine it as 'vulgar knowledge', thereby undermining its credibility and the Society's own scholarly pretensions.[162] Yet a simpler explanation for the end of the Society might be that many of its leading associates had died by the 1680s.[163] Already in 1669, Gadbury's biography of Wing included a poem 'On the Death of So Many Eminent Astrologers'.[164] And, in 1677, Ashmole told Lilly rather melancholically that he had recently 'summoned the remainder of our old Club about Strand Bridge that are left alive'.[165] Surviving Society members, moreover, were becoming preoccupied with other things: Ashmole with the Royal Society, for example, while Lilly, for his part, moved to the country following the fallout from his scandalous prediction of the Great Fire of London. Lack of direct contemporary testimony renders the issue perhaps unanswerable, at least by a single explanation. The attacks discussed here, however, are likely representative of a wider sense that the Society had failed to achieve religious legitimization. The Society of Astrologers, armed with out-dated and ineffective arsenal, struggled to resist astrology's marginalization.

Appendix

Document: The Society of Astrologers to Bulstrode Whitelocke, 24 April 1650, Oxford, Bodleian Libraries, MS Ashmole 423, fol. 168r–v.

For the Right Hono*ra*ble the Lord Whitlock[166]

Right Hono*ra*ble

Such hath ever bin the happy Fate of Learning, that although in her restlesse Progresse through the World she hath sometimes mett w*i*th Declinations & Eclipses, yet has she still bin supported by the favour & Munificence of Noble Patrons; whose worth wee find transmitted to Posteritie, by the Gratfull Penns of every Age.

Amongst other, Astrology, (a Divine-science, & no lesse Necessary then Famous for the Dignity of her Admirers) hath neverthelesse incurr*e*d the Brunt of all Ages & Humors: she hath had her Wax, & her Waine, her Assertors & Assassinates.

And considering how great an Obligation is due to such Generous spirits, whose Devotion or Bounty, renders them like so many Pillars, whereon are Engrav*e*n the Principles of Arts & Sciences to preserve them from the Deluge, (the Injuries & Affronts of time.)

Wee, (seriously weighing your Lords*hi*ps Noble & Pious Disposition, as to all manner of good and profitable Learning; so, more especially to that (untill of late despised) part, Astrology;) assume the boldnesse to present you w*i*th our Tribute of Thankes for your good Affection, & the great Encouragement you have given to the Advancement thereof, more then others.

And the rather, because it is a Science was hardly known to this (herein unhappy) Segment of the Terrestriall-Globe: Or (if at all) but lodg*e*d in the retired bosomes of some few, untill made publique to the Benifitt of this Nation, & the cleare vindication of it selfe from the Scandalls of the Ignorant and Malitious, by the dexterous Scrutiny and Paines of M*aste*r Lilly: whose deservings therein are indeed very great, but your Noblenesse most to be Celebrated; who (as himselfe ingenuously acknowledges) not only ledd him by the Hand when first he stept abroad; but have ever since afforded him your Countenance & Assistance, in the whole Course & Conduct of his Studies: the most Signall Productions whereof, (for the Ease and Benifitt of all Students in that Science;) weare your name, as theire greatest Badge of Honour, & Bulworke of Protection.

Yet should wee not imagine our Thread-bare-Thanks a Present acceptable, for so truly-Noble Favours, but that they come to the hands of so Worthy a Personage as your Lords*hi*pp whose Genus and Genius make you verè Nobilem et Notabilem,

> Unde magis magisq*ue* Tuj nunc Gloria claret;[167]

And that therewithall, wee cannot but Blesse & Magnify God for you, as being every way so Eminent for Hono*ra*ble Endowments, & so completly fitted w*i*th an Heart open to all Noble Overtures, aiming at the further Advancement of what is Learned and Ingenious: And (w*hi*ch we count the ἀκμὴ[168] of all Gratitude) that your Lords*hi*pp may be ever blest w*i*th an happy Encrease of Favour w*i*th God and Good-men, to make your Name and Fame flourish on Earth

> _____ Donec fluctus formica marinos
>
> Ebibat, & totum Testudo perambulet Orbem;[169]

And be afterwards æternally blest in Heav*e*n, you shall never want the unfeigned Devotions of

Your Lords*hi*pp's Humble Servants

The Society of Astrologers, of London
Aprilis 24 die Labente Anno 1650

* Fellow by Examination, Magdalen College, Oxford. Email: michelle.pfeffer@history.ox.ac.uk.

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[1] C.H. Josten (ed.), *Elias Ashmole: His Autobiographical and Historical Notes, His Correspondence, and Other Contemporary Sources*, Oxford: Oxford University Press, 1967, vol. 2, p. 580. The sermon, later printed, was Edmund Reeve, *New Jerusalem…in a Sermon Composed for the Learned Society of Astrologers, at their Generall Meeting*, London: Nathaniel Brook, 1652.

[2] E.g., George Wharton to Elias Ashmole, 30 September 1651, Bodleian Libraries, MS Ashmole 423, fol. 272r.

[3] John Gadbury, *Animal Cornutum*, London: William Larnar, 1654, p. 1; John Partridge, *Defectio Genituarum*, London: Benjamin Tooke, 1697, p. 17.

[4] John Webster used the term 'resuscitation' to describe the activities of Society members in *Academiarum Examen*, London: Giles Calvert, 1654, p. 51.

[5] The Society explained their motivations in a letter to the lawyer and prominent parliamentarian Bulstrode Whitelocke on 24 April 1650, their patron. The letter, which is the only surviving manuscript signed by the Society of Astrologers, is Ashmole 423, fol. 168r–v. A transcription is provided in the Appendix. Contrary to Vittoria Feola's account, this letter was not addressed to the Cambridge scholar Abraham Wheeloc. Cf. Vittoria Feola, *Elias Ashmole and the Uses of Antiquity*, Paris: Librairie Blanchard, 2013, p. 133.

[6] John Raunce, *Astrologia Accusata Pariter & Condemnata*, London: W. Learner, 1650, p. 4; Ashmole 423, fol. 168r.

[7] Liba Taub, 'The rehabilitation of wretched subjects', *Early Science and Medicine* (1997) 2(1), pp. 74–87, esp. pp. 74–5.

[8] Sir Walter Scott claimed that the Society tried to institutionalize 'the dupe of astrology'. Walter Scott, *Letters on Demonology and Witchcraft*, London: John Murray, 1830, pp. 347–8.

[9] Keith Thomas, *Religion and the Decline of Magic*, New York: Oxford University Press, 1997, p. 304; Peter Wright, 'Astrology in mid-seventeenth-century England: a sociological analysis' (1983), unpublished PhD thesis, University of London, pp. 120–3; Patrick Curry, *Prophecy and Power: Astrology in Early Modern England*, Cambridge: Cambridge University Press, 1989, pp. 40–4.

[10] Feola, op. cit. (5), pp. 108–36, pp. 160–3.

[11] The quarrels of London astrologers were often very public, and played out in their pamphlets and almanacs. Accounts of various feuds can be found in William E. Burns, 'Astrology and politics in seventeenth-century England: King James II and the Almanac Men', *The Seventeenth Century* (2005) 20(2), pp. 242–53, esp. pp. 248–50; Folke Dahl, *King Charles Gustavus of Sweden and the English Astrologers William Lilly and John Gadbury*, Uppsala: Almqvist and Wiksells Boktryckeri-A.-B., 1937.

[12] Thomas, op. cit. (9), Chapter 12; Peter Wright, 'Astrology and science in seventeenth-century England', *Social Studies of Science* (1975) 5(4), pp. 399–422, esp. p. 404, p. 413; Bernard Capp, *Astrology and the Popular Press*, New York: Cornell University Press, 1979, pp. 190–1. There were, of course, 'scientific' attacks, but they were rarer in seventeenth-century England than on the continent. The most notable English example remained unpublished: see Michael Hunter, 'Science and astrology in seventeenth-century England: an unpublished polemic by John Flamsteed', in Patrick Curry (ed.), *Astrology, Science, and Society*, Woodbridge: The Boydell Press, 1987, pp. 261–300.

[13] For English parodies of astrology, see Hugh G. Dick, 'Students of physic and astrology: a survey of astrological medicine in the age of science', *Journal of the History of Medicine and Allied Sciences* (1946) 1(3), pp. 419–33, esp. pp. 430–1; Nicolas H. Nelson, 'Astrology, Hudibras, and the Puritans', *Journal of the History of Ideas* (1976) 37(3), pp. 521–36, esp. pp. 529–33; Curry, op. cit. (9), p. 90–1; Frank Palmeri, 'History, nation, and the satiric almanac, 1660–1760', *Criticism* (1998) 40(3), pp. 377–408; John Clements, 'The intellectual and social declines of alchemy and astrology, circa 1650–1720', unpublished PhD thesis., University of York, 2017, Chapter 5. Perhaps the most famous example is Jonathan Swift's mock prediction, under the pseudonym Isaac Bickerstaff, of John Partridge's death in 1708: William A. Eddy, 'The wits vs. John Partridge, astrologer', *Studies in Philology* (1932) 29(1), pp. 29–40.

[14] See the articles in Jim Bennett and Rebekah Higgitt (eds.), 'London 1600–1800: communities of natural knowledge and artificial practice', *The British Journal for the History of Science* (2019) 52(2).

[15] Thomas, op. cit. (9), Chapter 11; Curry, op. cit. (9); Ann Geneva, *Astrology and the Seventeenth Century Mind*, Manchester: Manchester University Press, 1995, Chapters 7 and 8; Burns, op. cit. (11), pp. 242–53.

[16] For astrology's success amongst lower and middling classes but diminishing respect amongst the learned in England, see Patrick Curry, 'Astrology in early modern England: the making of a vulgar knowledge', in Stephen Pumfrey, Paolo Rossi, and Maurice Slawinski (eds.), *Science, Culture, and Popular Belief in Renaissance Europe*, Manchester: Manchester University Press, 1991, pp. 274–91.

[17] G.R.M. Ward (ed. and trans.), *Oxford University Statutes*, London: William Pickering, 1845, vol. 1, p. 274; Phyllis Allen, 'Scientific studies in the English universities of the seventeenth century', *Journal of the History of Ideas* (1949) 10(2), pp. 219–53, esp. p. 226; Thomas, op. cit. (9), p. 354.

[18] Mordechai Feingold, 'Gresham College and London practitioners: the nature of the English mathematical community', in Francis Ames-Lewis (ed.), *Sir Thomas Gresham and Gresham College*, Oxon: Abingdon, 2016, pp. 174–88; Mordechai Feingold, 'The origins of the Royal Society revisited', in Margaret Pelling and Scott Mandelbrote (eds.), *The Practice of Reform in Health, Medicine, and Science, 1500–2000*, Oxon: Routledge, 2005, pp. 177–9; Philip Beeley, '"To the publike advancement": John Collins and the promotion of mathematical knowledge in Restoration England', *Journal of the British Society for the History of Mathematics* (2017) 31(1), pp. 61–74, esp. pp. 64–5.

[19] Josten, op. cit. (1), vol. 2, p. 339. Feola argues, contra Ashmole's diary, that Lilly and Ashmole met earlier, drawing principally on a horoscope Lilly apparently drew up in 1643

that included Ashmole's birthdate. Vittoria Feola, 'Antiquarianism, astrology, and the press in William Lilly's network(?)', in Vittoria Feola (ed.), *Antiquarianism and Science in Early Modern Urban Networks*, Paris: Blanchard, 2014, pp. 191–4. Yet Lilly may have accessed Ashmole's birthdate without having met him, and there seems no reason for Ashmole to be dishonest in his diary. Moreover, Lilly elsewhere confirmed they met in 1646. William Lilly, *Merlini Anglici Ephemeris*, London: Company of Stationers, 1664, sig. A1v. It is also worth mentioning that although Moore was at times hostile towards astrology, especially later in life, he nevertheless maintained close connections with Society members, and Wharton claimed that Moore taught astrology: Frances Willmoth, *Sir Jonas Moore: Practical Mathematics and Restoration Science*, Woodbridge: The Boydell Press, 1993, pp. 166–7; George Wharton, *Merlini Anglici Errata*, London, 1647, p. 58.

[20] Josten, op. cit. (1), vol. 2, pp. 417–19. Feola claims that it was Oughtred who persuaded Ashmole to attend Gresham lectures, but offers no evidence for this: Vittoria Feola, 'Elias Ashmole's *Theatrum Chemicum Britannicum* (1652): the relation between antiquarianism and science in seventeenth-century England', in Konrad Eisenbichler (ed.), *Renaissance Medievalisms*, Toronto: Centre for Reformation and Renaissance Studies, 2009, p. 322.

[21] It is of course possible that more sermons were delivered to the Society, and that the six we know of were the only ones deemed fit to publish.

[22] The Society's minister for that day noted 'the great noise…among the common people' regarding the eclipse. John Swan, *Signa Coeli*, London: John Williams, 1652, pp. 3–4. The astrologers' predictions about the eclipse sparked extensive criticism and debate: William E. Burns, '"The terriblest eclipse that hath been seen in our days": Black Monday and the debate on astrology during the Interregnum', in Margaret J. Osler (ed.), *Rethinking the Scientific Revolution*, Cambridge: Cambridge University Press, 2000, pp. 137–52.

[23] Josten, op. cit. (1), vol. 4, p. 1712. Various societies by the same name have since been formed, including a recent revival in the US in 2007 explicitly in the image of its seventeenth-century predecessor.

[24] Evidence for these meetings is derived from Josten, op. cit. (1), vol. 2, pp. 418–19, pp. 492–3, p. 539, p. 580, p. 640, p. 665, p. 679, p. 751, vol. 4, pp. 1485–6, p. 1705, p. 1712; William Lilly, *Merlini Anglici Ephemeris*, London: Humphrey Blunden, 1649, sig. B1r; *Mercurius Politicus*, London, 15 August, 1650, Issue 10; Swan, op. cit. (23); Richard Carpenter, *Astrology Proved Harmless, Useful, Pious*, London: John Allen and Joseph Barber, 1657; Richard Lord Braybrooke (ed.), *The Diary of Samuel Pepys*, New York: Frederick Warne, 1887, p. 57; Ashmole to Lilly, 23 October 1673, Bodleian Libraries, Rawl. D 864, fol. 57r. The fact that Stewards were chosen in 1684 for the following year suggests the Society met in 1684 and at least planned to meet in 1685. John Gadbury, *Ephemeris*, London: Company of Stationers, 1684, sig. C8v.

[25] I have dated the delivery of Carpenter's sermon to 1656 because the Thomason copy includes an annotation that alters the printing date from 1657 to '1 January 1656'. Considering George Thomason tended to write Old Style dates on pamphlets that used the New Style, this would mean 1 January 1657, suggesting the sermon itself was delivered the year prior. If my dating is correct, it would mean Feola's claim that Carpenter's sermon was a direct response to Fox's anti-astrological pamphlet of 1657 may be unfounded. Cf. Feola op. cit. (5), pp. 130–1.

[26] Lilly, op. cit. (25), sig. B1r.

[27] This table is undoubtedly incomplete. Many of those listed here were unlikely to have attended every meeting, if just for the simple fact that some had died by the 1670s. Possible addition members have been named in Curry, op. cit. (9), p. 41ff, p. 43ff: Joseph Blagrave, Joseph Atwell, John Goad, Francis Bernard, John Butler, William Eland, Robert Turner,

Nathaniel Nye, Hardick Warren, Francis Moore, Richard Kirby, John Bishop, John Merrifield, and John Holwell.

[28] George Fox, *Several Queries*, London: Giles Calvert, 1657; Feola, op. cit. (5), pp. 108–9, p. 116.

[29] Jack Adams, *His Perpetual Almanack*, 2nd edn, London, 1663, p. 38.

[30] For Jenner's almanacs, see Louise Curth, *English Almanacs, Astrology and Popular Medicine, 1550–1700*, Manchester: Manchester University Press, 2018, pp. 68–70.

[31] Adams, op. cit. (30), p. 38. John Flamsteed poked fun at how 'Lilly, Tanner, Swallow, Fly, Dade, and a number of like Birds shall fly abroad, and be permitted, because of their Names, to usurp on the Vulgar'. John Flamsteed to John Collins, 1 January 1672, Royal Society LBO/29/73, p. 308.

[32] For pseudonymous naming of almanac authors, see Timothy Feist, *The Stationers' Voice: The English Almanac Trade in the Early Eighteenth Century* (Philadelphia: American Philosophical Society, 2005), pp. 44–5; Capp, op. cit. (12), p. 43.

[33] John Partridge, *Nebulo Anglicanus*, London, 1693, p. 21.

[34] Braybrooke op. cit. (25), p. 57.

[35] Feola, op. cit. (5), pp. 111–17.

[36] *Lillies Banquet: or, the Star-Gazers Feast*, London: R. Eels, 1653.

[37] Lilly, op. cit. (25), sig. B1r.

[38] To name just a few examples, at various points Booker and Wharton, Shakerley and Lilly, Lilly and Gadbury, and Gadbury and Partridge were at odds with each other. For the claim that political discussion was forbidden, see Curry, op. cit. (9), p. 40; Mary Ellen Bowden, 'The scientific revolution in astrology: the English reformers, 1558–1686' (1974), unpublished PhD thesis, Yale University, p. 45; Derek Parker, *Familiar to All: William Lilly*

and Astrology, London: Jonathan Cape, 1975, p. 164; Benson Bobrick, *The Fated Sky: Astrology in History*, New York: Simon & Schuster, 2005, p. 219.

[39] Ashmole also gave Lilly extensive assistance with his almanacs. Rawl. D 864, fols. 45r, 53r, 55r. Bowden oddly claims Ashmole was 'minimally involved' in the Society. Bowden, op. cit. (39), p. 52.

[40] Feola, op. cit. (5), pp. 126–8, p. 161.

[41] Geneva, op. cit. (15), p. 57; *The Lives of those Eminent Antiquaries Elias Ashmole, Esquire, and Mr. William Lilly*, London, T. Davies, 1774, p. 64.

[42] Josten, op. cit. (1), vol. 2, p. 513, vol. 4, p. 1712; Gadbury, op. cit. (25), sig. C8v.

[43] Feola, op. cit. (5), p. 125.

[44] Rowley to Lilly, 14 July 1651, Ashmole 423, fol. 187r.

[45] Philip Beeley, 'Practical mathematicians and mathematical practice in later seventeenth-century London', *The British Journal for the History of Science* (2019) 52(2), pp. 225–48, esp. p. 243, p. 245.

[46] Wharton to Ashmole, 11 September 1649, Ashmole 423, fol. 278r.

[47] Bruce Scofield, 'A history and test of planetary weather forecasting' (2010), unpublished PhD dissertation, University of Massachusetts Amherst, p. 27; Curry, op. cit. (9), pp. 40–4; Wright, op. cit. (9), pp. 412–13.

[48] William Lilly, *An Easie and Familiar Method Whereby to Judge…Eclipses*, London: Company of Stationers, 1652, sig. A2v; Wharton to Ashmole, 30 September 1651, Ashmole 423, fol. 272r.

[49] Oughtred to Lilly, 14 and 19 December 1652, Bodleian Libraries, MS Ashmole 394, fols. 56r, 57r.

[50] William Lilly, *Merlini Anglici Ephemeris*, London: Company of Stationers, 1654, sigs. A4v–A7v.

[51] Geneva, op. cit. (15), p. 160ff. This followed Aubrey's own attempt in the 1670s to compile *Collection of Genitures*: see John Britton, *A Memoir of John Aubrey*, Cambridge: Cambridge University Press, 2014, pp. 48–9. For Aubrey and astrology, see Michael Hunter, *John Aubrey and the Realm of Learning*, London: Duckworth, 1975, pp. 112–47.

[52] Rowley to Lilly, 14 July 1651, Ashmole 423, fol. 187r.

[53] William Rowland, *Judicial Astrologie, Judicially Condemned*, London: Joseph Blaiklocke, 1651, p. 2, p. 33. The work to which Rowland refers is William Ramsay, *Lux Veritatis*, London: Nathaniel Brook, 1651.

[54] Bowden, op. cit. (39), p. 48; Shakerley to Lilly, 26 January 1648, Ashmole 432, fols. 111–14. Notably, through these efforts Shakerley was working to gain Lilly's patronage: Allan Chapman, 'Jeremy Shakerley (1626–1655?) astronomy, astrology and patronage in Civil War Lancashire', in Allan Chapman (ed.), *Astronomical Instruments and their Users: Tycho Brahe to William Lassell*, Aldershot: Variorum, 1996, Chapter 6.

[55] John Booker, *Celestiall Observations*, London: Company of Stationers, 1654, sigs. D6v, E2r.

[56] Lilly publicized mainstream mathematical textbooks like Euclid's *Elements*. E.g., William Lilly, *Merlini Anglici Ephemeris*, London: Company of Stationers, 1661, sig. C8v. For advertisements in almanacs see Capp, op. cit. (12), pp. 54–6. For mathematical advertisements more generally, see Beeley, op. cit. (46), pp. 228–30.

[57] Vincent Wing, *Olympia Domata*, London: Company of Stationers, 1689, sig. C8v.

[58] Bennett and Higgitt, op. cit. (14); Rob Iliffe, 'Material doubts: Hooke, artisan culture and the exchange of information in 1670s London', *The British Journal for the History of Science* (1995) 28(3), pp. 285–318; Felicity Henderson, 'Robert Hooke and the visual world of the early Royal Society', *Perspectives on Science* (2019) 27(3), pp. 395–434.

[59] Vincent Wing, *Olympia Domata*, London: Company of Stationers, 1665, sig. C8v.

[60] John Booker, *Celestiall Observations*, London: Company of Stationers, 1653, sig. C8v.

[61] Bennett and Higgitt, op. cit. (14); Katherine Hill, '"Juglers or schollers?": negotiating the role of a mathematical practitioner', *The British Journal for the History of Science* (1998) 31(3), pp. 253–74.

[62] Henry Coley, for example, taught astrology and mathematical instruments at his London home. William Lilly, *Merlini Anglici Ephemeris*, London: Company of Stationers, 1681, sig. F7v.

[63] See the correspondence in Ashmole 423.

[64] William Lilly, *The Worlds Catastrophe*, London: Humphrey Blunden, 1647, pp. 63–4, p. 71. For parhelia in the seventeenth-century, see Geneva, op. cit. (15), pp. 99–117.

[65] Moreover, some of these printed letters were by individuals for whom only one manuscript letter survives. See, for example, Robert Sterrell to Lilly, 14 January 1649, Ashmole 423, fol. 147r; Sterrell to Lilly, 14 December 1652, in William Lilly, *Merlini Anglici Ephemeris*, London: Company of Stationers, 1654, sigs. A5r–v. Cf. Feola, op. cit. (20), p. 202.

[66] Christopher Heydon, *An Astrological Discourse*, London: Nathaniel Brook, 1650, sig. A5v.

[67] Vittoria Feola, 'Elias Ashmole's collections and views about John Dee', *Studies in History and Philosophy of Science Part A* (2012) 43(3), pp. 530–8, esp. p. 531. For the importance of translation in the history of astrology, see Jacques E. Halbronn, 'The revealing process of translation and criticism in the history of astrology', in Patrick Curry (ed.), *Astrology, Science, and Society: Historical Essays*, Woodbridge: Boydell Press, 1987, pp. 197–217.

[68] Letters from Shakerley to Lilly, February, March, and April 1649, Ashmole 423, fols. 117r–122r.

[69] See, for instance, Edward Bishop to Lilly, 12 January 1649, Ashmole 423, fol. 135r. Ashmole and Lilly collaborated to make *Christian Astrology* appear both accessible and scholarly: Feola, op. cit. (20), pp. 195–9.

[70] Ashmole 423, fol. 168r.

[71] William Lilly, *Merlini Anglici Ephemeris*, London: Humphrey Blunden, 1650, sig. A5r; John Booker, *Celestiall Observations*, London: Company of Stationers, 1651, sigs. C1r–C3v.

[72] Wright, op. cit. (9), pp. 121–2.

[73] Curry, op. cit. (9), p. 42.

[74] Matthew Poole claimed that many of Gell's parishioners were astrologers. G.F. Nuttall and N.H. Keeble (eds.), *Calendar of the Correspondence of Richard Baxter*, Oxford: Clarendon Press, 1991, vol. 1, p. 335. Notably, at Christ College, Cambridge, Gell was tutor to Henry More, who later wrote vehemently against astrology.

[75] Robert Gell, *Stella Nova, A New Starre, Leading Wisemen unto Christ*, London: Samuel Satterthwaite, 1649, sig. C2r.

[76] Josten, op. cit. (1), vol. 2, p. 364.

[77] For astrology amongst Laudians, see Thomas, op. cit. (9), p. 369.

[78] Alison Shell, 'Multiple conversion and the Menippean Self: the case of Richard Carpenter', in A. Marotti (ed.), *Catholicism and Anti-Catholicism in Early Modern English Texts*, Basingstoke: Macmillan, 1991, pp. 154–97. Feola refers to Carpenter as the Society's 'Catholic' preacher, but Carpenter recanted before preaching to the Society. Cf. Feola, op. cit. (5), pp. 130, 133, 135.

[79] For Gell's acquaintance with Society members, see Gell, op. cit. (76), p. 21; Robert Gell, *A Sermon Touching God's Government of the World*, London: Nathaniel Webb, 1650, p. 43, p. 47.

[80] William Lilly, *Annus Tenebrosus*, London: Henry Blunden, 1651, sig. A4r. The quotation is from Reeve, op. cit. (1), p. 24.

[81] Thomas Gataker, *Vindication*, London: Richard Thrayle, 1653, p. 94. As we will see below, Gataker was defending his own annotations upon Jeremiah 10:2 against both Lilly and

Swan. Gataker likely pointed out this vetting process in an attempt to discredit the minister by making him look like a preacher for hire.

[82] Thomas Swadlin, *Divinity No Enemy to Astrology*, London: Nathaniel Brook, 1653, p. 21.

[83] Gataker, op. cit. (82), p. 95.

[84] Gell unfortunately offers no further clues as to the identity of these notetakers. However, the fact that Gell admits to having experienced this 'indirect dealing' before might suggest that the employer was motivated by a personal animosity with Gell rather than general aversion to astrology. Gell, op. cit. (76), sig. A3v.

[85] As well as the examples in section three, see Edward Allen, et al., *Vavasoris Examen, & Purgamen*, London: Thomas Brewster and Livewell Chapman, 1654, pp. 9–10; *The Feign'd Astrologer*, London: Thomas Thornycroft, 1668, p. 32. Although the latter was based on a French and Spanish text, it contains various English allusions, including a reference to the Society: see Alberto Zambrana Ramírez, "¿La astrología como cienca? Un studio comparativo entre el 'Astrólogo Fingido' de Calderón de la Barca y la version en Inglés "The Feign'd Astrologer" (1668)', *RILCE: Revista de filología hispánica* (2004) 20(1), pp. 99–116, esp. p. 100.

[86] This is made clear on the title page of Swadlin's printed sermon.

[87] On Brooke, see Willmoth, op. cit. (20), pp. 64–5.

[88] Nicholas Culpeper, *Semeiotica Uranica*, London: Nathaniel Brooke, 1651. The date and location of this lecture are unknown.

[89] Advertised in 1684 in Gadbury, op. cit. (25), was *Five Several Sermons Preached for and Dedicated to the Society of Astrologers…Brought into One Volume*. I have been unable to locate this volume, which is not listed in the English Short Title Catalogue. It is likely that the bookseller simply bound together unsold copies of the sermons rather than having them printed anew.

[90] Gell, op. cit. (76), sig. B2r.

[91] Lilly, op. cit. (72), sig. A5r.

[92] Curry, op. cit. (9), p. 42.

[93] Examples of the perceived connection between astrology and paganism in England are manifold. See, for instance, Gataker, op. cit. (82); Rowland, op. cit. (54); Raunce, op. cit. (6); John Brayne, *Astrology Proved to be the Old Doctrine of Demons*, London: John Hancock, 1653; Henry More, *An Explanation of the Grand Mystery of Godliness*, London: William Morden, 1660, p. 358; Edward Stillingfleet, *Origines Sacrae*, London: Henry Mortlock, 1662, p. 42. See section three for more discussion on this point.

[94] E.g., William Lilly, *Christian Astrology*, London: John Partridge and Henry Blunden, 1647, sig. A3v.

[95] Philo, *On the Migration of Abraham*, 32–4; Josephus, *Jewish Antiquities*, Book 1, Chapter 8; Clement Alexandria, *Stromata*, Book 5.

[96] Nicholas Jardine, *The Birth of History and Philosophy of Science*, Cambridge: Cambridge University Press, 1984, pp. 259–69.

[97] Gell, op. cit. (80), p. 35; Swadlin, op. cit. (83), pp. 19–20; Reeve, op. cit. (1), p. 20; Carpenter, op. cit. (25), p. 4.

[98] Josephus, op. cit. (96), Book 1, Chapter 2.

[99] Carpenter, op. cit. (25), pp. 4–5, p. 37.

[100] Ashmole 423, fol. 168r.

[101] Gell, op. cit. (80), pp. 36–7.

[102] Swadlin, op. cit. (83), p. 20.

[103] Swan, op. cit. (23), p. 17.

[104] Tim Hegedus, 'The Magi and the star in the Gospel of Matthew and early Christian tradition', *Laval théologique et philosophique* (2003) 59(1), pp. 81–95, esp. pp. 85–8.

[105] Swadlin, op. cit. (83), pp. 5–7.

[106] Reeve, op. cit. (1), sig. A3v.

[107] Swadlin, op. cit. (83), pp. 13, 21; Gell, op. cit. (76), p. 14.

[108] Swadlin, op. cit. (83), pp. 5–7; Gell, op. cit. (76), pp. 3–8.

[109] Gell, op. cit. (80), p. 46. See also Swan, op. cit. (23), p. 6; Carpenter, op. cit. (25), p. 27.

[110] Carpenter, op. cit. (25), pp. 24–5.

[111] Swadlin, op. cit. (83), pp. 18–19.

[112] Swadlin, op. cit. (83), p. 19; Gell, op. cit. (76), p. 19; Carpenter, op. cit. (25), p. 27.

[113] Reeve, op. cit. (1), sigs. A2r–v.

[114] Swan, op. cit. (23), p. 22.

[115] Booker, op. cit. (72), sigs. D4v, D5r, E5r is one of many examples.

[116] John Gadbury, 'Envy diffected, or an examination of a spurious pamphlet', in Gadbury, op. cit. (3), p. 20.

[117] William Lilly, *Merlini Anglici Ephemeris*, London: Humphrey Blunden, 1647, sig. A3v.

[118] John Gadbury, *Doctrine of Nativities*, London: Giles Calvert, 1658, sig. B4r. See also Vincent Wing, *An Ephemerides*, London: Company of Stationers, 1658, sigs. *3r–v.

[119] Ramsay claimed Adam was taught astrology by God himself: see William Ramsay, *Astrologia Restaurata* London: Robert White, 1653, sigs. *1v–*2r.

[120] Ramsay, op. cit. (54), pp. 21–5.

[121] Christopher Heydon, *A Defence of Judicial Astrologie*, Cambridge: John Legat, 1603, sigs. zzz4v–Aaaa3r; Ramsay, op. cit. (54), p. 26. Such catalogues were common currency, though they usually emphasized that the list was of astronomers, not astrologers; see, for example, Edward Sherburne, *The Sphere of Marcus Manilius*, London: Nathaniel Brooke, 1675, pp. 6–127, which was itself taken from Giovanni Battista Riccioli's *Almagestum Novum* (1651).

[122] Gataker, op. cit. (82), p. 163.

[123] Anon., op. cit. (25), Issue 10.

[124] This story is yet to be told in full. For preliminary work, see Wouter Hanegraaff, *Esotericism and the Academy: Rejected Knowledge in Western Culture*, Cambridge: Cambridge University Press, 2012, pp. 161–73; Anthony Grafton, *Cardano's Cosmos*, Cambridge: Harvard University Press, 1999, pp. 127–41; Nicholas Popper, '"Abraham, Planter of Mathematics": histories of mathematics and astrology in early modern Europe', *Journal of the History of Ideas* (2006) 67(1), pp. 87–106.

[125] Eugenio Garin (ed.) and Giovanni Pico della Mirandola, *Disputationes adversus astrologiam divinatricem*, 2 vols., Florence: Vallecchi, 1952, vol. 2, pp. 476–500.

[126] Robert Boyle, *A Free Enquiry into the Vulgarly Received Notion of Nature*, London, 1686.

[127] Fox, op. cit. (29), pp. 2–5.

[128] John Gaule, *The Mag-Astro-Mancer*, London: Joshua Kirton, 1652, sigs. A2r–v.

[129] Gaule, op. cit. (130), pp. 133–4.

[130] Gaule, op. cit. (130), p. 376, p. 129.

[131] Thomas Gataker, *Annotations*, 2nd edn, London: John Legatt, 1651, sigs. O3r–O4r.

[132] Lilly, op. cit. (81), sig. A4r. Lilly believed that Gataker's criticism of astrology in *Annotations* was specifically directed at himself: see Lilly, op. cit. (81), p. 8.

[133] Gataker, op. cit. (82), p. 32, p. 93.

[134] Gataker, op. cit. (82), pp. 93–186.

[135] Gataker, op. cit. (82), p. 175.

[136] Gataker, op. cit. (82), p. 4, p. 92. It is worth noting that in an attack on Lilly published in 1654, Gataker included a long 'Character' of Carpenter, in which he condemned the latter's 'Popish conceits' and writings against the Presbyterians. Gataker claimed that Carpenter was

on good terms with Lilly, and in fact had received money from him to 'write in defence of him against my former Vindication'. Thomas Gataker, *Discours Apologetical; Wherein Lillies Lewd and Lowd Lies…are Clearly Laid Open*, London: Thomas Newberry, 1654, pp. 64–95, esp. p. 82. Yet, by this point Carpenter's Society sermon had not yet been delivered, and Gataker did not mention any interest of Carpenter's in astrology. Gataker's concern with Carpenter stemmed from Lilly's 1654 almanac, in which the astrologer responded to Gataker's 'late frothy Vindication' with a Latin slur from 'Master Carpenter' against the 'sectæ Calvinisticæ'. Lilly, op. cit. (51), sig. F8r.

[137] Raunce, op. cit. (6), p. 32.

[138] Raunce, op. cit. (6), p. 20.

[139] Raunce, op. cit. (6); John Raunce, *A Brief Dclaration [sic] Against Judicial Astrologie*, London: W.L., 1650.

[140] Feola, op. cit. (5), p. 109.

[141] Adams, op. cit. (30), p. 28.

[142] *The Two Grand Ingrossers of Coles*, London: John Harrison, 1653, pp. 14–15.

[143] See, for example, National Portrait Gallery D21637, D30331, D30389, D31571, D29138, and D30395.

[144] John Astington, 'Visual texts: Thomas Middleton and prints', in Gary Taylor and John Lavagnino (eds.), *Thomas Middleton and Early Modern Textual Culture*, Oxford: Clarendon Press, 2007, pp. 238–9. The woodcut, originally used in the satirical *The Owl's Almanac* in 1618, appeared in several other pamphlets and broadsides critiquing or lampooning Lilly in the early 1650s.

[145] Anon., op. cit. (37).

[146] *Black Munday Turn'd White*, London: G. Whiting, 1652, p. 3, pp. 6–8.

[147] Anon., op. cit. (148), p. 6.

[148] Jim Bennett and Rebekah Higgitt, 'Introduction, London 1600–1800: communities of natural knowledge and artificial practice', *The British Journal for the History of Science* (2019) 52(2), pp. 183–96, esp. p. 188.

[149] Mordechai Feingold claims that ignoring astrology 'contradict[s] the nature of scientific enterprise' in the seventeenth century. Yet he nevertheless washes his hands of astrology. Mordechai Feingold, *The Mathematician's Apprenticeship: Science, Universities and Society in England, 1560–1640*, Cambridge: Cambridge University Press, 1984, p. 18. An exception is E.G.R. Taylor, *The Mathematical Practitioners of Tudor and Stuart England*, Cambridge: Cambridge University Press, 1954.

[150] Curry, op. cit. (9), pp. 42–3.

[151] Wright, op. cit. (9), p. 413.

[152] Michael Hunter, *Establishing the New Science: The Experience of the Early Royal Society*, Woodbridge: The Boydell Press, 1989; Paul Wood, 'Methodology and apologetics: Thomas Sprat's "History of the Royal Society"', *The British Journal for the History of Science* (1980) 13(1), pp. 1–26.

[153] Michael Hunter and Paul Wood, 'Towards Solomon's House: rival strategies for reforming the Early Royal Society', *History of Science* (1989) 24, pp. 185–244.

[154] For the Royal Society, see Dmitri Levitin, *Ancient Wisdom in the Age of the New Science: Histories of Philosophy in England, c. 1640–1700*, Cambridge: Cambridge University Press, 2015, pp. 295–328.

[155] Rienk Vermij and Hiro Hirai, 'The marginalization of astrology: introduction', *Early Science and Medicine* (2017) 22(5), pp. 405–9; Michelle Pfeffer, 'Scientific Revolution, Enlightenment, and the decline of astrology: recent work on a major desideratum in the history of science and culture', forthcoming.

[156] Curry, op. cit. (9), pp. 45–56.

[157] Feola, op. cit. (5), pp. 111–17. Curry is in fact aware of Royalist counter-examples within the Society, but suggests that this did not moderate or obviate 'a widespread association of astrologers with radicalism'. Curry, op. cit. (9), p. 38. See also Nelson, op. cit. (13); Burns, op. cit. (11); Bernard Capp, 'Wing and political astrology', *Rutland Record* (2010) 30, pp. 386–96.

[158] For the latest on astrology and science, see Vermij and Hirai, op. cit. (157), p. 407.

[159] John Gadbury, *Ephemeris*, London: Company of Stationers, 1697, sigs. A2v–A3r.

[160] Michael Hunter, *The Decline of Magic: Britain in the Enlightenment*, Yale: Yale University Press, 2020. It is worth mentioning that Hunter's book deliberately side-steps astrology. Although see Michael Hunter, 'The Royal Society and the decline of magic', *Notes and Records of the Royal Society of London* (2011) 65(2), pp. 103–19, esp. p. 108, p. 110. Wright makes a similar point at op. cit. (12), p. 414.

[161] Members of both Societies included Elias Ashmole, Charles Scarborough, Joseph Moxon, William Wagstaffe, Jonathan Goddard, and (perhaps) Jonas Moore. Contra Feola, Prujean and Wharton were not Royal Society Fellows. Feola, op. cit. (5), p. 117.

[162] On the 'vulgarization' of astrology in England, see Curry, op. cit. (16).

[163] Josten, op. cit. (1), vol. 4, pp. 1485–6; Capp, op. cit. (12), p. 238; Curry op. cit. (9), p. 55.

[164] John Gadbury, *A Brief Relation*, London: T. Milbourn, 1669, pp. 35–6.

[165] Josten, op. cit. (1), vol. 4, pp. 1485–6.

[166] This is a semi-diplomatic transcription. Superscript letters have been lowered and contractions expanded, with supplied letters italicised, and thorns replaced with 'th'.

[167] This is a slight twist on a famous line from the Roman poet Ennius's 2nd century BCE *Annales* ('ergo plusque magisque viri nunc gloria claret'). This line marks the end of fol. 168 recto, and the letter continues on verso.

[168] Greek ἀκμὴ, meaning 'zenith', although the term is misspelled in the manuscript.

[169] This is a shortened version of the Latin epigram ‘Stet domus haec donec fluctus formica marinos ebibat, et totum testudo perambulet orbem’.