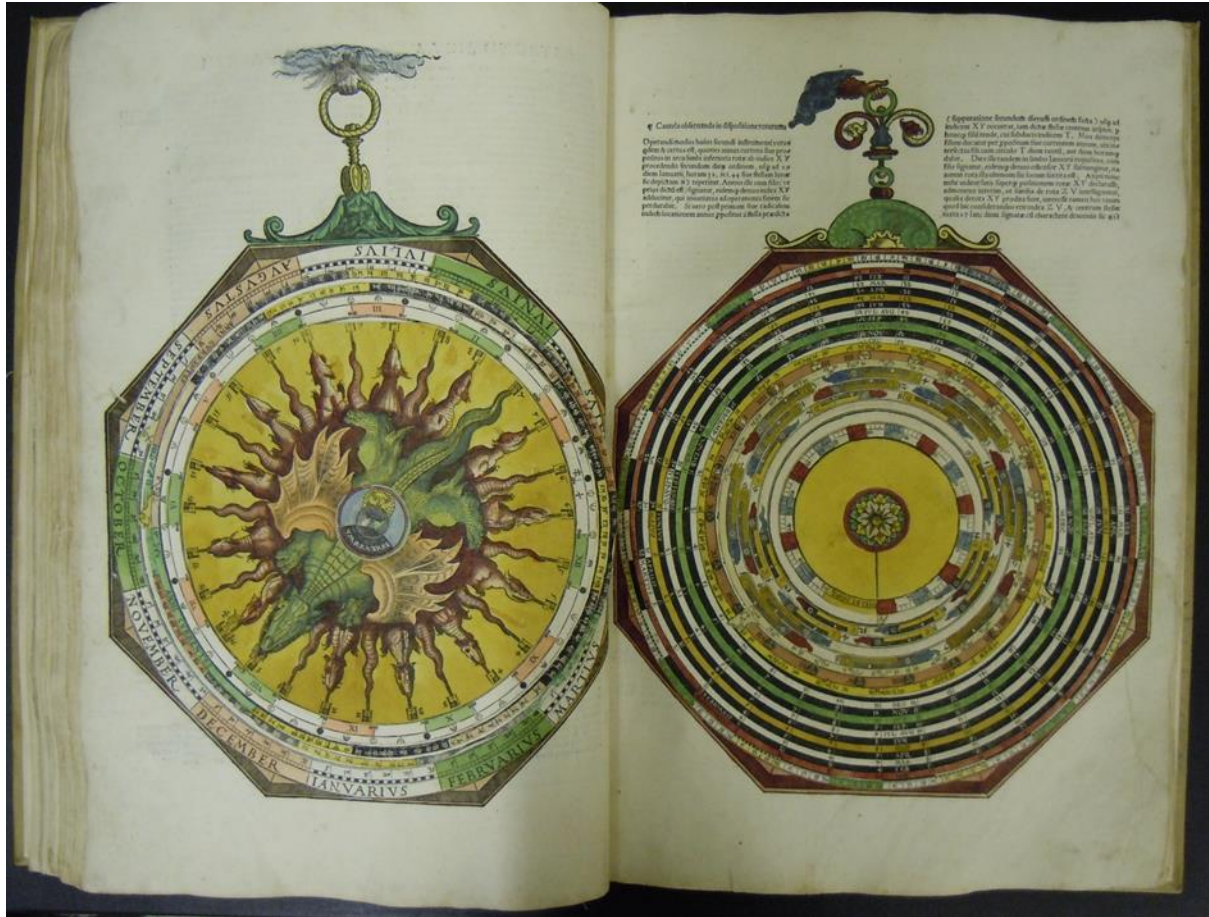


Stephen Standish and the Provenance of the New College *Astronomicum Cæsareum* (1540)

*A contribution to our celebration of the 400th Anniversary of the
Savilian Professorships in Geometry and Astronomy*



Astronomicum Cæsareum (1540), GIII verso–GIIII recto
New College Library, Oxford, BT1.70.2

The German mathematician and astronomer Peter Apian's *Astronomicum Cæsareum* ('The Imperial Astronomy') (Ingolstadt, 1540) is one of the more astonishing printed books of the sixteenth century. It is best described as a huge, coloured paper computer for the casting of horoscopes. It is headed by a patent issued in July 1532, and its colophon is dated May 1540, so it took at least seven years to design and print. Surviving copies are hand-coloured throughout, and the book contains around forty full-page illustrations, of which just over half contain volvelles, or moving paper discs, up to six layers superimposed on one another. These discs are anchored by threads often bearing seed pearls, the pearls themselves sliding to act as markers.¹ It presents, of course, a

¹ For studies see S. A. Ionides, 'Caesars' Astronomy', *Osiris* 1 (1936), pp. 356–89; Diedrich Wattenberg, *Peter Apianus und sein Astronomicum Cæsareum* / *Peter Apianus and his Astronomicum Cæsareum* (Leipzig, 1967); Owen Gingerich, 'Apianus' *Astronomicum Cæsareum*', *Journal of the History of Astronomy* 2 (1971), pp. 168–77, although his census of copies lacks New College's exemplar. It also features in our recent publication, *Geometry and Astronomy in New College, Oxford* (Oxford, 2019). There is a good blog post from the National Library of Scotland on the book and its operations,

classical view of physical astronomy, based on Ptolemy; Copernicus's revision to that world view was only to appear in 1543, and would take well over a century to command common assent.

The book was printed by Apian, the humanistic name for Peter Bienewitz (1495–1552), in his own house ('in aedibus nostris', the colophon says), and at his own cost, which must have been considerable. Its typography is elaborate, and even features two unusual instances of 'mirror script', the letter forms running back-to-front. This deluxe project was undertaken to impress the Holy Roman Emperor, Charles V, and his brother Ferdinand, King of Spain. They were suitably impressed: Apian was awarded 3,000 gold coins for his pains, and raised to the hereditary nobility. His rights included the ability to award doctorates and to legitimise offspring born out of wedlock.

The *Astronomicum Casareum* was attractive for two reasons. First, it is an exceptionally beautiful book, a prestige object. Secondly, it explicitly allowed those interested in the heavens to be able to carry out some simple instrumental operations without having to do any mathematics at all. As Apian wrote in his preface, his book offered 'the universal theory of the heavens . . . reduced to instruments without the use of numbers and calculations'. The structure of his work followed that of an elementary astronomical textbook of the time: first we are given some calendrical materials and a basic description of the Ptolemaic (geocentric) universe; then paper machines are presented for modelling the movements of the fixed stars, the seven planets of the Ptolemaic system (Moon, Mercury, Venus, the Sun, Mars, Jupiter, Saturn, but treated in reverse from Saturn inwards); next Apian provides volvelles for predicting eclipses of the Sun and Moon. The second part of his work deals with comets, and presented Apian's most noted astronomical discovery—that comets always point their tails away from the sun.

The *Astronomicum Casareum* was a one-off in its grandeur and presumably retail cost. (As for the present day, a copy up for auction at Sotheby's in 2017, carried the estimate £500,000–700,000.) But when Apian published it he was already well established as one of the major authors of more affordable mathematical textbooks, with over sixty publications to his name. New College library also owns a 1551 imprint of his edition of the thirteenth-century optical writer Witelo, as well as the 1584 Antwerp edition of his most popular textbook, the *Cosmographicus liber* (first edn, 1524). This latter work also featured volvelles and paper instruments, and went through over thirty editions in fourteen languages before the end of the sixteenth century.² And yet the reception of the *Astronomicum Casareum* itself was mixed. Despite its initial impact it was very much one of the last of the great Ptolemaic books. Copernicus's disciple Georg Joachim Rheticus dismissed it as 'an art of threads', and Johannes Kepler in his *Astronomia nova* (1609), although appreciative of Apian's technical skill, regarded the whole work as enslaved to a false system.³

The *Astronomicum Casareum* remains fairly rare. Fewer than a hundred copies of this book survive, and it is unlikely ever to have been numerous. There are four copies in Oxford: in the Bodleian, and in Magdalen, St John's, and New College libraries. The Bodleian did not acquire its copy until the Victorian period. Magdalen's copy came along with most of his books from the college librarian and benefactor John Fitzwilliam, who died in 1699. This fascinating character—musicologist and non-Juror—also endowed his own library with a substantial income for purchasing books.⁴ The St John's copy, rather appropriately given the grandeur of this publication, came from Archbishop William Laud, in 1635.

The mysterious copy is New College's one. It has survived unusually well: the seed pearls on its volvelle threads are largely intact, unlike in other Oxford copies. But our only evidence of its earlier life before it entered the college is the name written on the title page, 'Stephanus Standish', repeated beneath the colophon.

<<https://blog.nls.uk/astronomicum-caesareum/>>, and there are various online facsimiles, including one from the University of Vienna's Astronomy Library: <www.univie.ac.at/hwastro/books/1540_apian_Collow.pdf>.

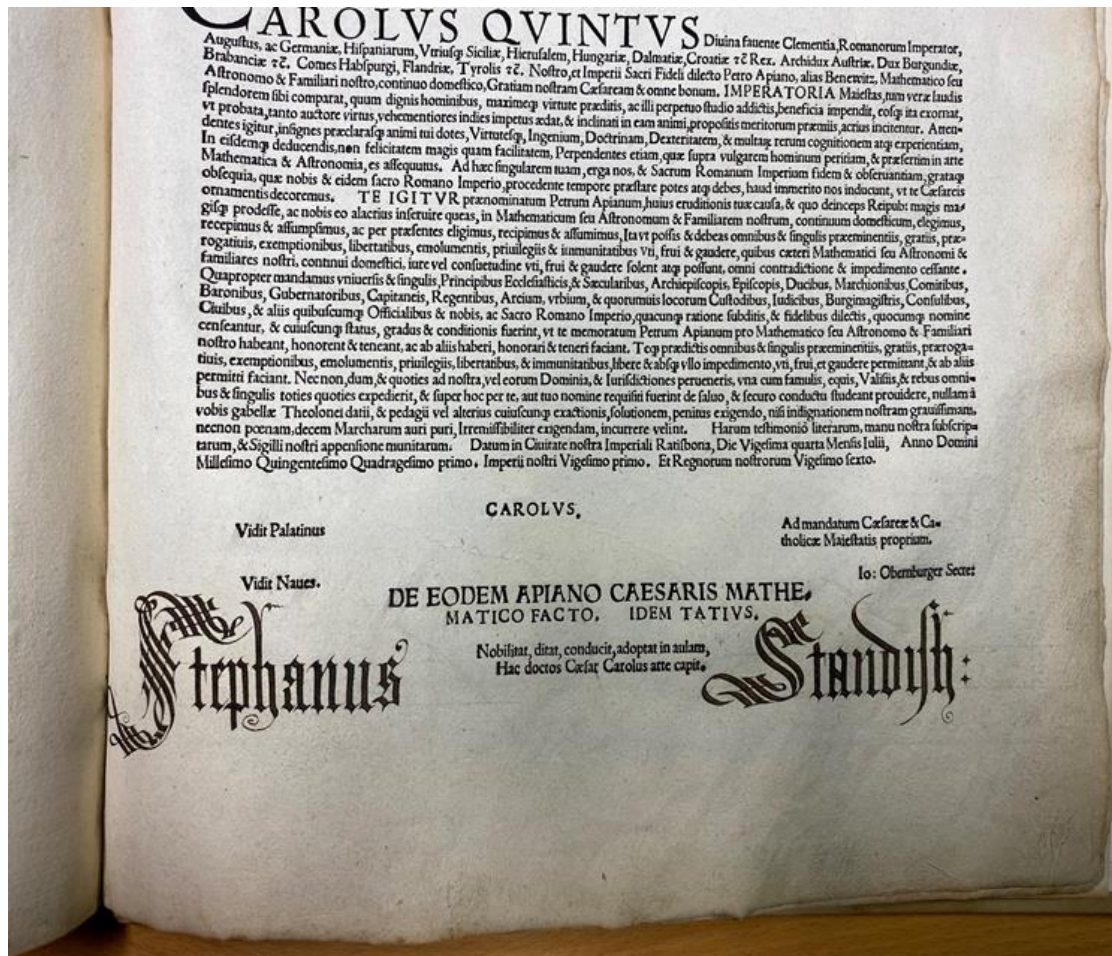
² For a quick introduction, see the 'Thinking 3D' project post at <<https://www.thinking3d.ac.uk/Apian1524/>>.

³ Both cited in Wattenburg, *Apianus*, p. 62.

⁴ William Poole, *John Fell's New Year Books, 1666–1686* (Oxford, 2018), pp. xviii–xix.



New College Library, Oxford, BT1.70.2, with 'Stephanus Standish' written on the title page



The calligraphic inscription beneath the colophon

Who was this ‘Stephanus Standish’? Now there was an Oxford Standish who has been noticed in passing by historians of astronomy. A man of that surname sent some observations to the great mathematician and astronomer Thomas Harriot on the comet of 1607 (later identified as ‘Halley’s Comet’).⁵ Mordechai Feingold has supposed that this Standish was ‘probably the Nicholas Standish who took his MA from Brasenose College in 1602’. He has also noted that some eclipse observations of ‘Standish’ came into the hands of John Bainbridge, the first Savilian Professor of Astronomy, among whose papers they are found.⁶

Nicholas Standish is certainly a possibility; but there were several Standishes in Oxford in the period, and given the signature in the New College Apian, we wonder if the Standish who owned our book and the Standish who observed comets were not one and the same man, namely Stephen Standish of Magdalen Hall, who matriculated in 1581 at the age of fourteen, then described as from a Buckinghamshire armigerous family, and who took his BA in late 1586.⁷ This

⁵ See S. P. Rigaud (ed.), *Miscellaneous Works and Correspondence of the Rev. James Bradley* (Oxford, 1832), p. 511. Henry Stevens, *Thomas Harriot* (London, 1900), p. 138, claims Standish was also in correspondence with Harriot about the comet of 1618.

⁶ Mordechai Feingold, *The Mathematicians’ Apprenticeship: Science, universities and society in England, 1560–1640* (Cambridge, 1984), pp. 136, 144, citing Andrew Clark, *Register of the University of Oxford*, vol. 2, part 3 (Oxford, 1888), p. 175, and Trinity College, Dublin, MS 386/6, fols 155r, 159r, 164v, respectively. We have not been able to verify the latter references.

⁷ See Joseph Foster, *Alumni Oxonienses 1500–1714* (Oxford, 1891), s.n.; and Clark, *Register*, vol. 2, part 3, p. 138. This Standish was probably from the Thornborough family of that name (*Victoria County History: Buckinghamshire*, vol. 4 (1927), under Thornborough (pp. 237–242), ‘Magdalen College Manor’, where in 1595 one John Standish had a lease).

would make him around forty at the time ‘Standish’ was sending observations from Oxford to Harriot in 1607. This Stephen is surely he who witnessed the codicil to the will of the aged and wealthy Robert Barnes, MD, of Oxford in 1604.⁸ Given ‘our’ Standish’s interests, it may be significant that Barnes’s study included ‘xviij old bookes of Astronomy’, and at his death Barnes bequeathed to his college, Merton, copies of Ptolemy, Stoeffler, Euclid, Agricola, Regiomontanus, and Copernicus.⁹ Again, it is quite likely that it is our man once more who appears in the casebooks of the astrologer-physician Richard Napier in 1610 as ‘Mr Standish’, and then again in 1630 and 1631, where he is described as ‘M^r Standish the mathem[atician]’ and ‘M^r Steaphen Standish’.¹⁰ He therefore lived from c. 1567 to at least 1631, although no will has been recovered.

There are also some hitherto unnoticed references to a Standish in a book-turned-notebook belonging to Robert Burton (1577–1640), author of *The Anatomy of Melancholy* (first edn, Oxford, 1621).¹¹ The relevant volume comprises three printed books, as well as a number of blank leaves, on which Burton has made voluminous notes. The dating of these notes is often speculative, since Burton returned to this book on multiple occasions; additionally, Burton’s 1603 ownership inscription on the title page of one of the printed books might have been made before it was bound into this volume. There are, however, at least two certainties in dating these notes: on the flyleaf, Burton describes himself as ‘ex Aede Christi Oxon’ (‘of Christ Church, Oxford’), which he could not have done before 1599; and there is a manuscript note dated 12 September 1612. This puts the active life of the notebook comfortably within the stretch of Standish’s activity. On one page, Burton has recorded the latitudes and longitudes for various places in England, presumably to aid in his astrological predictions. At the bottom of that page, he has written ‘variatio compassi Oxoniæ 9°.20’. Mr Standishe’ and ‘Oxon lat: 51°.40’.15”. secundum Magistrum Standishe’, thus implying that he received this information on the variation of the compass in Oxford and Oxford’s latitude from a ‘Master Standishe’.¹²

There is a final piece of collateral evidence about Stephen Standish and his mathematical interests. Balliol College possesses a copy of the famous Jesuit mathematician Christopher Clavius’s *Astrolabium* (Rome, 1593), which bears on its title page the inscription ‘Stephen Standish ex dono Th. Aylesburie’.¹³ ‘Aylesburie’ is surely Sir Thomas Aylesbury (1579/80–1658), the well-to-do patron of mathematics. He himself took a BA in 1602 from Christ Church and an MA in 1605, and remained in that college pursuing mathematical and other studies until 1611. Now Aylesbury was also friends with Thomas Harriot, and this strengthens our hypothesis that the Stephen Standish of the New College Apian and the Balliol Clavius is the astronomical ‘Standish’ of Harriot’s acquaintance and also the mathematician known to Napier. What we do not know is why or indeed how this obscure Oxonian came to own such a splendid book. But we may now tentatively associate all these pieces of evidence to reveal Stephen Standish, forgotten astronomer of Elizabethan and Jacobean Oxford.

⁸ Barnes, a fellow of Merton College, had been appointed Linacre lecturer 1558 (Anthony Wood, *Athenae Oxonienses*, ed. Philip Bliss, 4 vols. (London, 1813), vol. 1, col. 45; Foster, *Alumni Oxonienses*, s.n.). For his will see Oxford University Archives, Wills, A-Be, Hyp/B/21, fol. 121; also partially available through <<http://wills.oxfordshirefhs.org.uk/>>.

⁹ Feingold, *Mathematicians’ Apprenticeship*, p. 117.

¹⁰ Bodleian, MS Ashmole 334, fol. 24r; MS Ashmole 238, fol. 130r, also available through <https://casebooks.lib.cam.ac.uk/>.

¹¹ Bodleian, 4° R 9 Art. Some of Burton’s corrected proof-sheets for the 1632 edition of *The Anatomy* are to be found as waste paper in the binding of a New College book: see William Poole, ‘Robert Burton and his Anatomy of Melancholy: Some New College Musings’, *NCN* 6 (2015), no. 4.

¹² Fol. 17v. (The volume has no continuous pagination).

¹³ Balliol, St Cross, 470 a 27. There is an earlier inscription, heavily deleted, which may read ‘Roberti sum Francisci’ (i.e. ‘I belong to Robert Francis’). Thanks to the Balliol librarians for allowing an inspection of their copy at sudden notice.



New College Library, Oxford, BT1.70.2, BIII recto

As for the book's entry into New College, we suspect that it only came into the collections in the early twentieth century. It bears none of the shelfmarking systems used in the earlier periods, and its binding, sturdy vellum, does not reveal much. Our only help is a short autograph letter inserted

into the front of the book. It is written on paper headed 'University Observatory, Oxford', dated 29 June 1913, and reads:

Dear Mr Jackson

The book you found is not mentioned in the library Catalogue of either the Royal Astronomical Society, or the Royal Society. It looks as though it might be very rare; I am writing to a good authority & will let you know further

Yours truly

H H Turner

Now 'H H Turner' is Herbert Hall Turner (1861–1930), from 1893 both Savilian Professor of Astronomy and Director of the University Observatory.¹⁴ He was therefore a fellow of New College too. The recipient of the letter is probably Thomas Watson Jackson (1839–1914), Vice President of Worcester College, Oxford, and Curator of the Bodleian Library.¹⁵ One wishes for just a little more information! Where did Jackson find the book? Did he then present it to Turner who in turn presented it to his college? Frustratingly, the library's original Benefactors' Register ceases in 1909, and so can offer no assistance. It does seem a rather remarkable gift for Jackson to offer, and we must assume that it was his to give, and so not found in either Worcester College or the Bodleian.

Another purely hypothetical option might be that the Apian was transferred to New College from the collection of the University Observatory.¹⁶ It is possible that Jackson had been dispatched to the Observatory to catalogue or organize its library; it is equally possible that Jackson volunteered for the task, given his eclectic interests in all of Oxford's collections, detailed in footnote 15. One might imagine that Jackson found the Apian, realized that it might be significant, and asked Turner for more information, since Turner was also responsible for the oversight of the Observatory's collections, including its books.¹⁷ Once Turner established the importance of what they had found, he might have decided to rehouse it in his own society, especially since Turner

¹⁴ Neither the Royal Astronomical Society nor the Royal Society holds correspondence with Turner on this matter. By coincidence, he is the second Savilian Turner: the first was Peter Turner, Savilian Professor of Geometry from 1631 to 1648.

¹⁵ Jackson's own interests were eclectic, and not tethered to one time period. He was Keeper of Oxford's F. W. Hope collection of engravings, and sometime Keeper of the University Gallery, the contents of which he would catalogue. Jackson also took notes on seventeenth-century Oxford life, from sources including the correspondence of John Wallis, Savilian Professor of Geometry from 1649 to 1703; that notebook is now at Bod., MS Top. Oxon. d. 141. In 1888 Jackson also purchased some papers of Thomas Brett, the seventeenth-century non-Juror, which were later sold to the Bodleian (Bod., MSS Eng. th. c. 24-35). Finally, Jackson donated 155 Sumerian tablets to the Bodleian in 1911, at around the time this letter was sent from Turner. That Jackson was in the habit of presenting material to Oxford libraries—and that he took an active interest in various Oxford collections—might account for this potential donation to New College.

¹⁶ The Savilians had been banned from running the Radcliffe Observatory by the University Statutes of 1840. Instead they worked in the University Observatory, located in the University Parks. The Radcliffe Observatory would be relocated to South Africa in 1930, a move which Turner supported. See Vera Reade, 'The University Observatory, Oxford—founded 1875', *Journal of the British Astronomical Association* 85 (1975), pp. 448-49.

¹⁷ Turner's annual reports from the University Observatory included sections on the institutions' library holdings—although there is admittedly no mention of either Jackson or Apian in any of his reports. These reports are attached to the *Miscellaneous Papers of the Oxford University Observatory*, which Turner edited. He donated copies of the *Papers* to New College Library, all now held at shelfmark NC/Tur. Vol. III contains an autograph donation inscription; another, vol. VI, contains a loose photocopy of a letter from Turner suggesting the book be 'placed for a few days in the Common Room' since 'it might interest some of the Fellows to glance at it'.

had ‘entered fully into the life of New College’.¹⁸ There is but a single piece of evidence that supports this hypothesis: the Museum of the History of Science now holds some of the University Observatory’s collection, which includes a copy of Apian’s *Cosmographiae Introductio* (1551).¹⁹ New College’s *Astronomicum* might have sometime sat alongside it on the Observatory’s shelves.

For now, then, we can only rather loosely track this book through time: it was in Oxford in private hands by the late sixteenth or early seventeenth century; it then effectively disappears, only to surface just before the First World War, still probably in Oxford. ‘Jackson’, probably but not certainly the man identified above, ‘found’ it, then sent it to the Savilian Professor of Astronomy as the obvious man to assess it and establish its rarity or otherwise. It would seem that Jackson or Turner then presented it to New College, presumably because of the college’s association by that time with the Savilian Professorships. It remains perhaps our most visually striking printed book, and it is pleasant to reflect in this Savilian anniversary year that it came into the hands of the Savilian Professor of Astronomy almost four centuries after its publication.

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New College Library, Oxford, BT1.70.2, FIII verso [detail]

¹⁸ ODNB.

¹⁹ MHS shelfmark D/Ano. There has regrettably not been time to inspect this copy.