CHAP. II.

CHAP. III.

CHAP. IV.

CHAP. V.

duty and dominion

figure 35
One of Newton's copies of the Bible, with his annotations on the Book of Revelation, Trinity College, Cambridge, Adv.d.1.10, sig. 2Z6v-7r.

Both as mathematician and as alchemist, Newton showed deep respect for antiquity. During the 1680s, his reading of theology also encouraged him to believe in historical links between the ideas of the ancient Hebrews, the geometry of classical Greece, and the divinity of the true Christian Church, which had been corrupted by monks and by the Papacy. These beliefs took shape in a series of 'scholia' or clarifications that Newton composed for the *Principia* during the 1690s. In the end, he decided to omit most of them from the second edition of the *Principia* (1713), but incorporated some of their ideas in its 'Scholium Generale'. There he tried to set out the metaphysical implications of his work in a way that reflected the nature of his beliefs. The fullest expression of Newton's sense of antiquity, however, remained in his theological writing. Using both secular and biblical history, and concentrating in particular on those events that appeared to be the fulfilment of prophecies, Newton reconstructed the history of the Church. He did so in a way that vindicated his own increasingly heretical creed, especially his rejection of the divinity of Christ and of the Holy Ghost. These convictions, which derived in part from the moral and biblical literalism of his puritan upbringing, now underpinned both his interpretation of the natural world and his account of human history.

56 cambridge university library, ms. add. 3965, f. 268r
31.3 × 19.3 cm

When he visited Cambridge during the first week of May 1694, David Gregory recorded several pieces of news about Newton's intentions for a second edition of the *Principia*. He noted that 'He will spread himself in exhibiting the agreement of this philosophy with that of the Ancients and principally with that of Thales. The philosophy of Epicurus and Lucretius is true and old, but was wrongly interpreted by the ancients as

atheism.' During the early 1690s, Newton indeed spent much time drafting clarifications or 'scholia' to his arguments at the start of Book III of the *Principia* (see catalogue numbers 43 and 44). One of the most difficult of these proved to be the 'scholium' that he decided to write for proposition vii, corollary 2: 'Gravity towards the individual equal particles of a body is inversely as the square of the distance from those particles'.

Newton wished to argue that the ancient atomist philosophers had shared his understanding of gravity. This knowledge had reached them from the mystical philosophy of the Egyptians and Phoenicians, who had learned it from Moses and other lawmakers among the ancient Hebrews, before their religion had become corrupted. The philosophy of Epicurus as expressed in the poetry of Lucretius embodied these ideas, which had once been those of the Pythagoreans, the inventors of Greek geometry. They had understood the harmonic relationship between the sun and the planets, mediated by gravity, through the metaphor of Apollo and his lyre (see catalogue number 51). The correct form of human worship replicated this harmony in the structure of temples built around sacred fires (see catalogue numbers 15 and 62).

The arguments that Newton painstakingly developed in the viciously corrected draft that is on display also manifested themselves in other passages that he eventually sent to David Gregory. They show that Newton had certainly not abandoned the interpretation of his earlier drafts for Book III. Indeed, notes for this particular scholium appear in the interleaved copy of the *Principia* in which he was recording the changes to be made in the second edition (see catalogue number 43). Halley's awareness of Newton's concerns was reflected in his choice of Lucretius as the stylistic model for the ode that he composed for the first edition of the *Principia*. Although Newton did not in the end publish the 'classical scholia' to Book III of the *Principia*, David Gregory rehearsed the core of their arguments in the preface to his *Elementa astronomiae physicae et geometricae* (1702). He did not, however, mention his source.

It is important to realise that the ideas set out in the 'classical scholia' to Book III of the *Principia* do not constitute a version of the deism that perturbed English churchmen and moralists during the 1690s. The assimilation of primitive pagan religion to pristine Jewish and Christian teaching was orthodox enough in its assumptions, if not in the degree to which Newton carried the argument. There was no doubt in Newton's

mind that the active and omnipresent God to whom he referred was also a being who intervened in human history, albeit normally through some sort of intermediary. The evidence for this came from the fulfilment of prophecy.

J.E. McGuire and P.M. Rattansi, 'Newton and the "Pipes of Pan"', *Notes and Records of the Royal Society of London*, 21 (1966), 108–143; Paolo Casini, 'Newton: The Classical Scholia', *History of Science*, 22 (1984), 1–58; I. Bernard Cohen, *Introduction to Newton's 'Principia'* (Cambridge, 1971), pp. 188–94.

Presented to Cambridge University Library by the fifth Earl of Portsmouth. See *A Catalogue of the Portsmouth Collection of Books and Papers written by or belonging to Sir Isaac Newton* (Cambridge, 1888), pp. 4–5.

57 *The Holy Bible*
(London, 1660)
(figure 35)
8^{o}: a-$2m^{8}$, $2n^{2}$; a-h^{8}; $2n^{3}$-$3a^{4}$
16 × 10.5 cm
Trinity College, Cambridge, shelfmark Adv.d.1.10

Newton had begun to study the Bible in earnest during the 1670s, when the issue of having to take holy orders had seemed pressing. His temperament and upbringing convinced him to read the text in a strongly literalist manner and to pay particular attention to biblical prophecy. This was an area of study that contemporary lay people were urged to avoid because of its complexity and the danger of falling into error as a result of misunderstanding. Undeterred, Newton developed a method for the interpretation of prophecy based on the writings of the early seventeenth-century Cambridge divine, Joseph Mede. Mede's views were widely accepted and the scheme that Newton propounded to bring consistency to the unravelling of prophetic symbolism was not in itself controversial. As his skill as an interpreter developed, however, Newton's biblical criticism became more overtly unusual.

Its development took two principal forms. The first, which was undoubtedly present in Newton's earlier theological work but became particularly apparent in his writing from the late 1680s or early 1690s, was a close interest in finding prophetic and historical references to the Arian controversy of the fourth century (see catalogue number 59). This was a natural enough consequence of Newton's doubts about the scriptural and historical basis for the doctrine of the Trinity, which

nevertheless seems to have become more pressing in the context of the struggle with Catholicism in England during the 1680s (see catalogue number 17) and the European war between Protestant and Catholic powers in the 1690s. Newton's anxieties about the exercise of the power of the Church over the individual conscience had long made him a sympathiser with Arius and his followers, who denied that Christ or the Holy Spirit were truly divine. To Newton, the growth and spread of Catholicism, and the multiplication of spiritual errors that he attributed to it, had their origins in the persecution of Arius. The undermining of Christianity that this represented was a defining example of the recurrent corruption of the pure, original religion of mankind that Newton had started to explore during the mid-1680s. Furthermore, like the rediscovery of the truth about ancient philosophy, the recovery of pure Christianity promised to support the arguments of Newton's natural philosophy.

The second change in the emphasis of Newton's theological writing also took place at the start of the 1690s. It took the form of an increasingly precise regard for the text of the Bible as it had been transmitted historically. Newton argued that scripture had been corrupted in order to justify the doctrines of Arius' opponents. An interest in the meaning and implication of the words of the Bible had been one of the earliest aspects of Newton's theology in the 1670s. Then he had been convinced by the implications of his reading to make a thorough investigation of the historical understanding of particular scriptural passages. The historical reconstruction of the transmission of parts of that text, however, only became an obsession in Newton's writing some twenty years later. Despite these developments, the whole of Newton's theological work drew on conclusions and assumptions that he had made early in his life. One of these was that it should be 'a duty of the greatest moment' to 'search the scriptures thyself… by frequent reading and constant meditation'.

The Bible on display was owned by Newton and bears witness to many of his theological concerns. It also indicates the importance of a relatively small number of works by contemporary interpreters that Newton felt were particularly worthy of note. Thus, the passages in the Old Testament that Newton marked by turning down page corners refer extensively to the doctrines of the primitive religion of Noah and to Jewish legal and religious development. They also draw attention to the detail of the prophecies of Daniel that Newton read in conjunction with

the Book of Revelation from the New Testament. Passages that Newton noted in the New Testament relate partly to difficulties with the text of the Gospels as well as to descriptions of the nature of God in the letters of Paul. One of the most heavily annotated parts of this Bible was the Book of Revelation (sig. 2Z6r-7r on display, see figure 35). At the foot of the left hand page, Newton has included a reference to a discussion of Revelation 2:22 in Sir Norton Knatchbull's *Annotations upon Some Difficult Texts in all the Books of the New Testament* (Cambridge, 1693). Knatchbull was one of the authors whose interpretations Newton found interesting. Newton noted references to and sometimes disagreements from Knatchbull's alternative translation of individual New Testament verses on many pages of this Bible. The written annotations in this copy of the Bible relate largely to the translation and structure of the text and may well have been composed during the 1690s.

This is one of numerous Bibles that Newton owned. He possessed vernacular translations into English and French, editions in the original languages of Hebrew and Greek, many Latin translations, and polyglot compilations of versions that were held to be important for establishing the true text of scripture. The appearance of this particular Bible also suggests more than a purely scholarly interest in the book. It is a Bible designed for personal devotion, either in Church or at home, bound with the Book of Common Prayer and the Metrical Psalms. The binding in gold-tooled green morocco with gilded edges to the pages again indicates that it was intended for something other than a don's bookcase when it was purchased.

John Harrison, *The Library of Isaac Newton* (Cambridge, 1978), pp. 101–4, 173; Jewish National and University Library, Jerusalem, Ms. Yahuda 1.

Presented to Trinity College by John Cox, July 1878. According to his uncle, Joseph Cox of Hurstborne Priors, 'the Bible… was in the possession of my father-in-law Mr Edward Golding… His statement respecting it was that it was given by Sir Isaac Newton in his last illness to the woman who nursed him — it was given either by her or some member of her family to Mr Golding's mother…'

58 king's college, cambridge, keynes ms. 5, f. 138v
31 × 19.2 cm

This is a typical page from one of the numerous manuscripts that Newton wrote to set out the historical interpretation of prophecy. From the 1670s, he emulated Joseph Mede's method of comparing the

prophecies of Daniel and Revelation and combining them to tell a single, chronological story that could be checked and dated by its apparent fulfilment in the events of human history. The opening pages of this manuscript, entitled 'The First Book Concerning the Language of the Prophets', probably date from the 1690s, although subsequent chapters of the work appear to have been written rather later, perhaps after 1700. The manuscript as a whole provides a chronological reading of the prophecies in Daniel and in Revelation with reference to the history of the Roman Empire and its successors. This was a subject that Newton had first written about in the 1670s. It occupied him in one way or another for much of the rest of his life.

In the part of the manuscript that is on display, Newton employed a chronological framework drawn from Revelation 8–11 that he interpreted in the light of Daniel 12. He concluded an analysis of the spread of Islam and the rise of the Turks by commenting: 'I leave it to be decided by time, whether the Turkish Empire come to its end before the sounding of the seventh Angel, or whether we are only to understand that its last hostile act against the Catholicks will be over at the fall of the tenth part of the great city or soon after, but the Empire it self not ruined before the sounding of the seventh Angel.' Newton argued that the punishments that God sent against the corrupted Christian Church would culminate in the delivery of the righteous by the return of the Messiah. He chose to describe this figure in the terms of the Old Testament, as 'Michael… that great Prince of Israel whom Daniel calls ~~Messiah~~ the anointed Prince', rather than in an overtly Christological manner. He also described the first resurrection of the elect and the subsequent restoration of the true worship of God on earth. Then he turned to the question of the timing of these apocalyptic events, arguing that the period specified by Daniel's 'numbers relating to [the] time of the end… [seems] to me to begin either with that time [ad] 609 or perhaps a little later.' When Newton wrote these words, he was arguing that the time from the utter corruption of Christianity by Trinitarians and Catholics and the establishment of the power of the Papacy until the restoration of the primitive religion might cover the period from the beginning of the seventh century to the year 1900. But he remained cautious over the beginning of Daniel's chronology, suggesting that Eastern Christendom resisted idolatry for longer than the West, perhaps until 841 ad. The return of the Messiah might thus be delayed by a corresponding period.

Newton's interpretation of prophecy was intimately linked to his sense of the indivisible and omnipotent nature of God the Father and his denial of Christ's divinity. These beliefs helped to determine the history of the corruption of religion that he identified. That history itself depended on the characterisation of primitive religion that Newton had drawn up in the 1680s. Newton's Arianism was even apparent in the manner in which he chose to express the dates in his chronology. Occasionally his pen slipped, for example once in this manuscript when he wrote the date 'ad 841'. He quickly corrected this error to 'ac 841', thus using a notation that was common among his contemporaries but which for him had additional meaning. In Newton's eyes, the historical Christ was certainly a special figure, sent by God, and after his birth the world had indeed been changed. But only God the Father could be called 'Lord' without risk of idolatry (see catalogue number 60).

Sotheby sale, 14 July 1936, lot 242; purchased by Maggs Brothers for £170. Offered to J.M. Keynes for a twenty percent commission on 30 July 1936.

59 king's college, cambridge, keynes ms. 10/1, f. 1r
29 × 18 cm

During the late 1680s and early 1690s, Newton reformulated his interpretation of the corruption of the Christian Church. He began to concentrate more closely on the historical figures involved in the early Church's adoption of the doctrine of the Trinity and to try to work out what was said about them, particularly in the writings of the Church Fathers. The two individuals on whom Newton focussed his attention most clearly were the theologians Arius and Athanasius. Arius (d. 336) was the champion of the position that Christ – though not simply a man – was subordinate to God the Father and had been created by him at the beginning of time. Athanasius (c. 296–373) was bishop of Alexandria from 328. He was largely responsible for the condemnation of Arius at the Council of Nicaea in 325 and subsequently refused to receive him back into communion in Alexandria.

Newton had access to abundant, if highly contradictory, material about both of these men in the writings of the Church Fathers, including Athanasius himself, and the historians of the early Church. Most of the relevant sources had originally been written in Greek, but Newton seems largely to have worked from translations and editions made by his

contemporaries in Latin. He teased out an account of the actions and beliefs of Arius and Athanasius that ran against the grain of most previous historical writing about the Arian controversy. In a long manuscript entitled 'Paradoxical Questions concerning the morals & actions of Athanasius & his followers', he vilified Athanasius' behaviour and cast doubt on the negative remarks made by historians about Arius. He tried to show that the beliefs of the Arians had been those of true Christians before the Council of Nicaea. In Newton's eyes, the short-lived persecution of the Athanasians by the Emperor testified to their sinfulness as well as their heresy. Newton praised the later actions of the Arian kings of the Vandals and the Goths both for their punishment of Athanasian immorality and for their tolerance of genuine religious belief. The significant dates identified through this historical work also helped Newton to clarify the interpretation of the events described in prophecy. He argued that the triumph of idolatry in the Christian Church, represented by the success of Trinitarian doctrine, was one of the principal subjects described in the visions given in Daniel and in Revelation.

The main target of Newton's criticism throughout his historical writing was the Catholic Church, which, he argued, had added the idolatrous worship of saints and the tyranny of Papal power to the errors of Trinitarianism. In a number of manuscripts, he suggested that whereas Catholicism should be uprooted, toleration was appropriate for other Christians who shared the fundamentals of the true faith. He appears to have believed that the doctrine of the Church of England could one day be made compatible with those fundamentals, although he was careful not to reveal the full extent of his heretical ideas beyond a narrow circle of friends. Nevertheless, Newton's theological conclusions were ultimately incompatible with those of the Church in which he was born and would die.

William Andrews Clark Memorial Library, Los Angeles, Newton Ms. 'Paradoxical Questions'; Fondation Martin Bodmer, Geneva, Newton Ms. 'Of the Church'; Maurice Wiles, *Archetypal Heresy* (Oxford, 1996); Alan E. Shapiro, 'Beyond the Dating Game: Watermark Clusters and the Composition of Newton's *Opticks*', in P.M. Harman and Alan E. Shapiro (eds), *The Investigation of Difficult Things* (Cambridge, 1992), pp. 181–227.

Sotheby sale, 14 July 1936, lot 268; purchased by J.M. Keynes for £34.

60 isaac newton, *Philosophiae naturalis principia mathematica*
2nd edition (Cambridge, 1713)
(figure 36)
4^{o}: a-c^{4}, d^{2}, b-$3q^{4}$, $3r^{2}$
19.2 × 12.6 cm
Cambridge University Library, shelfmark Adv. b. 39.2

During the 1690s, Newton seemed set on the production both of a new edition of the *Principia* and of some contribution to public debate about the status of the doctrine of the Trinity. Several of his friends published books that hinted at the direction of Newton's scholarly activity. Yet, in the end, Newton remained silent. The text of the *Opticks*, in particular the additional queries included in the Latin edition of 1706 (see catalogue numbers 29 and 30), reflected in many ways his continuing puzzlement concerning any physical mechanism that might lie behind the effects of gravity, magnetism and chemical transmutation, as well as the behaviour of light. The solutions that Newton had advanced in the *Opticks*, although they indicated further shifts in his thinking, also provoked controversy, as did the publications of several of his disciples, notably William Whiston. Furthermore, despite the efforts of David Gregory, it appeared that the second edition of the *Principia* was running into the sand.

It seems that material concerns, as much as anything else, finally brought a second edition of the *Principia* to the press. Richard Bentley, who had been one of the first serious expositors of the *Principia* in the early 1690s, noticed that copies of the work were becoming increasing hard to find and fetched a high price. In the mid-1690s, Bentley had been instrumental in the establishment of the University Press in Cambridge under the direction of the Vice-Chancellor. Despite its considerable scholarly achievements, the new Press was not a financial success and Bentley and his collaborators remained on the lookout for suitable books that might turn a small profit. A second edition of the *Principia* appeared to be one of these. In 1708, Bentley persuaded Newton to allow him to prepare a specimen for this publication at the Cambridge University Press. He had already managed to talk Newton into permitting Whiston to edit and print a manuscript of his lectures on algebra, supposedly delivered in the 1670s and early 1680s. He was now able to offer Newton freedom from the concerns that perhaps most bothered him about a new edition of his most important work: the

trouble of finding suitable printers and the cost in terms of time of correcting and seeing the book through the press. Bentley was well aware of the difficulty that English compositors had in setting complex Latin texts and of the extra demands that this might impose on the author. At first, he proposed to look after the production of the *Principia* himself, but as its demands became more complicated he abandoned the work. He recommended, however, that Roger Cotes (see catalogue number 37) should supervise the edition for Newton. The result was a collaboration that substantially improved the text of the *Principia*, despite the delays that were introduced by the realisation that several parts of Book III in particular needed further consideration.

On 6 January 1713, Newton wrote to Cotes to send him some final corrected calculations and warn him about two possible additions to the second edition of the *Principia*, which was already all but printed off. One of these was a proposed appendix on 'the attraction of the small particles of bodies', worrying away further at the problems that Newton had tried to solve in previous, rejected scholia (see catalogue number 56); the other was 'a Scholium of about a quarter of a Sheet to be added to the [end] of the book'. Newton never completed the appendix that he mentioned. It almost certainly would have contained a discussion of an electrical spirit through which he now believed 'the particles of bodies mutually draw one another together at short distances'. These were ideas that he would develop in the changes that he made to the second edition of the *Opticks* in 1717. The other addition that Newton proposed fared better. This was the General Scholium that he sent to Cotes on 2 March 1713. It discussed the broader cosmological implications of the action of gravity and included a final paragraph that mentioned Newton's theories about an electrical spirit.

The General Scholium argued that the ordered and unified system of the heavens that Newton had described in the *Principia* testified to creation and government by an all-powerful God. In this passage, Newton surprisingly reintroduced some of the evidence that he had been considering in the 1690s, in the form of a footnote to biblical and classical references that supported his account of the nature of God (see p. 483 on display and figure 36). That account was a strange one. It stressed the power and independence of God and suggested that he was defined by lordship and by the dominion that he held over the whole of his creation: 'For God is a relative word and refers to servants: & divinity

figure 36
Describing God and his activity: additions and corrections to the General Scholium, University Library, shelfmark Adv. b. 39.2, p. 483.

is the absolute dominion of God, not over his own body… but over servants.' The terms that Newton used to describe God were unusual and reflected his covert Arian beliefs, in which Christ himself was a creature, subordinate to God. They echoed the language of a number of Socinian authors, who also denied the doctrine of the Trinity.

In 1712, Newton's close friend, Samuel Clarke, published his *Scripture Doctrine of the Trinity*. Clarke had translated Newton's *Opticks* into Latin and, from 1709, had been the rector of the London parish in which Newton lived. There, he was said to have modified the saying of the Creed, in order to take into account reservations about the doctrine of the Trinity that he shared with Newton. Clarke's book, which made public his doubts about the Trinity, caused an immediate furore at a time of considerable political uncertainty. It is just possible that the debate over *The Scripture Doctrine of the Trinity* encouraged Newton to be uncharacteristically bold in the clarification of his ideas in the General Scholium.

In the form in which Newton sent it to Cotes, the General Scholium occupied half of a sheet of paper (4 pages) when printed. Its extent had been determined in part by the layout of the rest of the text of the *Principia* and the plans that Cotes and Newton had made for its printing.

Unsurprisingly, Newton both revised and amplified the General Scholium in the third edition of the *Principia*. Some of his additions, for example the expansion of the list of classical authorities that supported the account of the nature of God, can be seen in the pages from his interleaved copy of the second edition that are on display (see figure 36).

D.F. McKenzie, *The Cambridge University Press 1696–1712*, 2 vols (Cambridge, 1966), vol. 1, 330–6; I. Bernard Cohen, *Introduction to Newton's 'Principia'* (Cambridge, 1971), pp. 239–45; Alexandre Koyré and I. Bernard Cohen (eds), *Isaac Newton's Philosophiae Naturalis Principia Mathematica*, 2 vols (Cambridge, 1972), vol. 2, 759–65; H. W. Turnbull, J.F. Scott, A.R. Hall and Laura Tilling (eds), *The Correspondence of Isaac Newton*, 7 vols (Cambridge, 1959–77), vol. 4, 518–20; vol. 5, 361–9; Larry Stewart, 'Seeing through the Scholium: Religion and Reading Newton in the Eighteenth Century', *History of Science*, 34 (1996), 123–65; Stephen D. Snobelen, 'Isaac Newton, Heretic: The Strategies of a Nicodemite', *British Journal for the History of Science*, 32 (1999), 381–419; John Harrison, *The Library of Isaac Newton* (Cambridge, 1978), p. 202.

Presented to Cambridge University Library by the fifth Earl of Portsmouth. See *A Catalogue of the Portsmouth Collection of Books and Papers written by or belonging to Sir Isaac Newton* (Cambridge, 1888), p. 47.

61 cambridge university library, ms. add. 3965, f. 357r

30.5 × 18.6 cm

Cotes was dissatisfied with some aspects of the first version of the General Scholium, which was sent to him on 2 March 1713. Newton reworked the text in a number of drafts over the rest of the month. In the page on display, Newton has rearranged the opening passages of the General Scholium, numbering paragraphs to produce the sequence that later appeared in print.

A. Rupert Hall and Marie Boas Hall (eds), *Unpublished Scientific Papers of Isaac Newton* (Cambridge, 1962), pp. 348–64.

Presented to Cambridge University Library by the fifth Earl of Portsmouth. See *A Catalogue of the Portsmouth Collection of Books and Papers written by or belonging to Sir Isaac Newton* (Cambridge, 1888), pp. 4–5.

62 cambridge university library, ms. add. 3988, f. 102r

(figure 37)

32 × 20.4 cm

The history of worship played a substantial role in almost all of Newton's theological writings. The correct form of worship had been

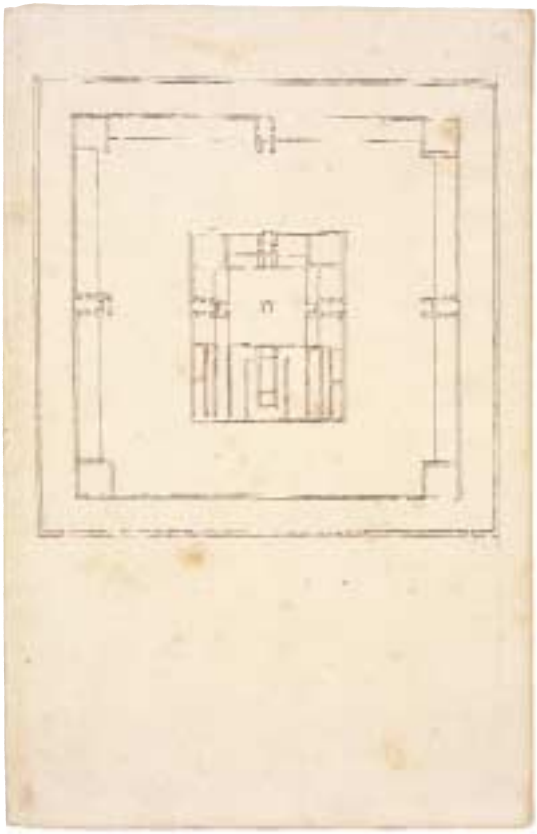

figure 37
The ground-plan of the Temple of Solomon, from the manuscript of Newton's *Chronology of Ancient Kingdoms Amended* (published posthumously in 1728), University Library, Ms. Add. 3988, f. 102r.

established by the patriarchs and was preserved for a time among both Jews and Gentiles. The history of its corruption was one of the major themes of Newton's interpretation of prophecy. Within that history, the idolatry of the Athanasians and their Catholic successors had a special place of infamy. Newton began to investigate the history of worship in the 1670s. The study of the building and liturgy of the Temple of Jerusalem was particularly important for his exposition of the Book of Revelation, in which the Temple was the setting for the unveiling of prophecy. Newton's understanding of the Temple and its cult was transformed by his reading of Maimonides (see catalogue number 15) and other Jewish sources, probably in the early 1680s.

Newton made several attempts to reconstruct the appearance of the Temple. Of necessity, these were based largely on the account given in

Ezekiel. They also drew heavily on earlier interpretations of this biblical text, especially those printed in the prolegomena to the London polyglot Bible, which Newton owned. Newton's task was made harder by the problem of determining the length of the ancient Hebrew cubit, the measure used in Ezekiel's description of the Temple.

The plan of the Temple of Solomon that is on display (figure 37) is taken from the manuscript used in the publication of Newton's *Chronology of Ancient Kingdoms Amended* (see catalogue number 63). It shows the Temple itself and the Court of Priests that surrounded it, both of which are enclosed by the larger Court of the People, around which a pavement runs on three sides.

Similar drawings by Newton (formerly in the library of Babson College, Wellesley, Massachusetts, Ms. 434) may be found in the Dibner Library at the Massachusetts Institute of Technology.

Presented to Cambridge University Library by the fifth Earl of Portsmouth. See *A Catalogue of the Portsmouth Collection of Books and Papers written by or belonging to Sir Isaac Newton* (Cambridge, 1888), p. 47.

63 cambridge university library, ms. add. 3988, binding *(figure 38)*

Newton's *Chronology* appeared in 1728, the year after his death, and was edited by John Conduitt (1688–1737). Conduitt had married Newton's niece in 1717 and acted as executor for the estate. He posted a bond to cover Newton's expenses at the Mint, where he succeeded Newton as Master. Newton left no will when he died on 20 March 1727. In return for his expenses, Conduitt received Newton's manuscripts, although he had to cede any profits that might result from publication to be divided among the heirs. Newton's papers were appraised for probate on 18 April and subsequently moved to Conduitt's house in London. Thomas Pellet, a fellow of the Royal Society, drew up an inventory of the manuscripts in May and then tried to determine what might be suitable for publication. He decided that five titles might be candidates for the press, of which three were successfully sold to booksellers and prepared for publication over the next few years. Conduitt had the manuscripts of these three books bound specially (see figure 38) but otherwise seemed largely unconcerned about the appearance of Newton's papers.

It was not surprising that the papers that made up the *Chronology of Ancient Kingdoms Amended* should have been among the unpublished

38

39

figure 38
The manuscript of Newton's *Chronology* bound for his executor, John Conduitt, University Library, Ms. Add. 3988, binding.

figure 39
Editing Newton's unpublished theological manuscripts for publication, University Library, Ms. Add. 3988, f. 106r.

works by Newton that found a buyer after his death. Newton himself had been preparing his chronology for the press when he died. His decision to undertake this work was prompted by the publication in Paris in 1725 of a pirated edition of one of his historical manuscripts. After Newton's death, a text was established by Conduitt with the assistance of Pellet and Martin Folkes (see figure 39). Conduitt successfully obtained permission to dedicate the work to Queen Caroline, who had discussed it with Newton several years before in an interview that led indirectly to the Parisian piracy of part of its text. The printed *Chronology* was not, however, a success. Despite the inclusion of a chapter discussing the Temple of Solomon, most of the work was based around an attempt to redate the history of the Greek, Egyptian, Assyrian, Babylonian and Persian empires. Newton ingeniously compared differing historical records and deployed astronomical as well as calendrical evidence to draw up a new chronology for the ancient world. Unfortunately, the material that Newton had been preparing to publish was deliberately shorn of most of its context in the history of ancient religion.

In April 1727, James West, an observer at Newton's funeral in Westminster Abbey, informed the Oxford scholar Thomas Hearne that Newton's *Chronology* 'was near finished… It is very short and I am told, will be a Diminution of his Learning if ever it appears.' Although the printed *Chronology* was longer than West had expected, it sold sufficiently poorly to mean that its publishers, who had paid the massive sum of £350 for the work, still had copies on their hands over forty years later. A second edition, really a reissue, was published in 1770. Rather pathetically, this was printed alongside some scholarly correspondence that discussed possible explanations for the deficiencies of the book. Here it was noted that abundant drafts and relevant papers had existed in Newton's study and that he had worked on the subject of the book for many years, altering and abbreviating what he had written. The writer of one letter, Zachary Pearce, who had visited Newton in 1725 or 1726 while he was editing the *Chronology*, suggested that 'It is a pity, that he took so much of the same method in his Chronology which he took in his *Principia*, &c; concealing his proofs, and leaving it to the sagacity of others to discover them.'

Frank E. Manuel, *Isaac Newton. Historian* (Cambridge, 1963); D.T. Whiteside (ed.), *The Mathematical Papers of Isaac Newton*, 8 vols (Cambridge, 1967–81), vol. 1, xvii–xx; Rob Iliffe, 'A "Connected System"? The Snare of a Beautiful Hand and the Unity of Newton's Archive', in Michael Hunter (ed.), *Archives of the Scientific Revolution* (Woodbridge, 1998), pp. 137–57; Cambridge University Library, Mss. Add. 3987–90; Bodleian Library, Oxford, Ms. Rawlinson Letters 11, number 121.