



William Kent and Michael Rysbrack, Isaac Newton's Monument in Westminster Abbey (1731).
Photo courtesy of the Dean & Chapter of Westminster.

UNFREEZING TIME

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It's the most famous myth of scientific history – that Isaac Newton watched an apple fall from a tree and conceived the theory of gravity. Whether or not that ever happened, the story only began circulating long after he died. In contrast, his massive marble monument in Westminster Abbey provides an impression of how he was celebrated at the time. This less familiar version of Britain's greatest scientific figurehead is packed with references to the past, but was created as a permanent commemoration of the Enlightenment's legacy to the future.

Scientists point to Newton as the supreme rationalist, the world's first great physicist who stamped out scriptural superstition and replaced it with objective truth. In fact, he was a deeply religious man who dedicated his life to interpreting God's two great works: the Bible and the Book of Nature. From a modern perspective, Newton pointed the way forwards by introducing interpretations of time and space that became central to physics and engineering. Yet he himself never knew about his future fame: from his point of view, he was standing on the shoulders of his giant predecessors. As the economist Maynard Keynes expressed it, 'Newton was not the first of the age of reason. He was the last of the magicians, the last of the Babylonians and Sumerians, the last great mind which looked out on the visible and intellectual world with the same eyes' as our predecessors 10,000 years ago.

Sculpted in a classical style, Newton reclines like a Roman, his elbow resting on four marble books. Unexpectedly, the titles carved on their spines indicate that Chronology and Theology formed as crucial a component of his scholarly legacy as Gravity and Optics. Correcting the timelines of ancient history formed a central component of Newton's academic pursuits. Obsessively researching the history of ancient dynasties from the Persians up to Alexander the Great, he collated a wide range of textual and physical evidence to recalculate the timetables of the past. This was no arcane interest: such topics

preoccupied many of his contemporaries, and he was regarded as a great expert all over Europe. Edward Gibbon – chronicler of the Roman Empire – admired Newton's initiative to quantify ancient history, declaring that 'The name of Newton raises the image of a profound Genius, luminous and original. His System of Chronology would alone be sufficient to assure him immortality.'

Newton's monument is dominated by a large globe with a Greek goddess draped across the top. She is Urania, muse of astronomy, fulfilling the conventional female function of symbolising a science even though not allowed to practise it. Celestial spheres provide a curved map of the stars as they would be perceived by an imaginary observer positioned at the centre of the earth. But unlike terrestrial globes, they also indicate time, because the patterns of the heavens are constantly changing. This one refers to Newton's Principia, his great book on gravity, by showing the path of the 1680 comet that had proved crucial for consolidating his theories. More surprisingly for modern viewers, the constellations on Urania's sphere indicate how Newton set out to derive a more accurate date for the voyage of the Argonauts. His book *The Chronology of Ancient Kingdoms Amended* opens by claiming that, before accurate timekeeping was introduced, every nation chauvinistically extended its ancestry back into the distant past. Refusing to rely solely on tradition and ancient poetry, Newton mathematically matched astronomical data with recorded events, such as eclipses. After some prodigious feats of calculation, he sliced around three centuries from traditional timetables.

For Newton, the events of ancient history were intertwined with biblical accounts and divine cosmology. On his 83rd birthday – Christmas Day 1725 – Newton was visited by his younger admirer William Stukeley, an expert on Stonehenge. Newton maintained that long ago, before original knowledge was lost and when one single religion was followed all over the world, Stonehenge had been a temple where worshippers could cluster around a central fire, like the planets revolving around the sun. He regaled Stukeley with similar ideas about King Solomon's Temple, revered by Jews and Christians

alike as ancient Jerusalem's holiest of holies; the Temple was, he believed, the physical manifestation on earth of a divine abode. As he put it, 'Temples were anciently contrived to represent the frame of the Universe as the true Temple of the great God.' For him, the Temple was important not only as a template for the cosmos, but also as a key to understanding the Apocalypse and the millennial kingdom of God that would follow.

God, wrote Newton, 'is Eternal and Infinite, Omnipotent and Omniscient...He endures for ever, and is every where present; and by existing always and every where, he constitutes Duration and Space.' The marble representation of his spirit still gazes out eternally down the nave of Westminster the Abbey, but his reputation has shifted over time in ways he would not have recognized.

Main Sources and Further Reading

Buchwald, Jed Z. and Mordechai Feingold, *Newton and the Origin of Civilization* (Princeton and Oxford: Princeton University Press, 2013).

Iliffe, Rob. *Priest of Nature: The Religious Worlds of Isaac Newton* (Oxford: Oxford University Press, 2017).

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