

## Isaac Newton (1642-1727)

Isaac Newton's standing in the history of science is unparalleled both with respect to the breadth of his accomplishments and their revolutionary nature. His ground-breaking work on mathematics, optics and physics began in earnest shortly after receiving his BA at Cambridge University in 1665. He was appointed Lucasian Professor of Mathematics there while only twenty-six and in 1703 was elected President of the Royal Society of London. Newton's 1672 paper on colours revealed the heterogeneous nature of white light. His *Principia* (1687) introduced not only a powerful, new mathematical physics with which natural philosophers could describe both terrestrial and celestial mechanics with unprecedented precision, but also demonstrated the law-like nature of the cosmos. The *Opticks* (1704) elaborated in spectacular and comprehensive ways the principles of optics. Newton also co-invented calculus and through his publications made lasting contributions to the inductive and experimental methods in science. It is in part because of these achievements in the sciences that during the 18<sup>th</sup> century Newton was transformed into a 'saint' of the Age of Reason and his physics came to be interpreted in increasingly secular ways. But the recent availability of his unpublished theological papers reveals a Newton radically different from the icon of popular imagination.

Justly celebrated for his achievements in science, Newton published virtually nothing in his lifetime on religion. Yet the single greatest area of growth in Newtonian studies over the past decades has been Newton's theology. Even in the *Principia* and the *Opticks* it was clear that Newton believed that natural philosophy points to the existence of the Creator through the inductive study of nature. Newton's firm commitments to natural theology are brought out in the General Scholium he added to the *Principia*. "This most beautiful System of the Sun, Planets, and Comets," he wrote, "could only proceed from the counsel and dominion of an intelligent and powerful being". In the General Scholium Newton also asserts that discussions about God are a part of natural philosophy. Newton's theological private papers help confirm that he was attempting to construct a science that would be meaningless if the world were not a Creation and if a sovereign, all-powerful God did not constantly uphold its laws and operations. Newton's private manuscripts have deepened our understanding of Newton's belief in the design argument and have revealed his animus towards atheism. It is also now clear that Newton's concept of absolute space was based partially on his powerful biblical belief in God's omnipresence, just as his understanding of absolute time owed much to his belief in God's eternal duration.

Newton's theological manuscripts also reveal much about the relationship between his science and religion that would not have been clear to his contemporaries. In a treatise on the Apocalypse he composed in 1670s, Newton lays out inductive principles for prophetic interpretation that would later serve as a foundation for the *Principia's* Rules of Reasoning. This same manuscript demonstrates that Newton was not only committed to the doctrine of the Two Books—that God revealed himself in Nature and Scripture—but that he believed similar (inductive) methods could be used in the interpretation of both Books. His study of ancient philosophy and religion also led him to conclude that the original religion involved both the worship of One God and the study of nature, a conclusion that was likely prescriptive for Newton.

Newton can also be studied as a theologian in his own right. His vast studies of Daniel and Revelation point to his passion for deciphering the apocalyptic symbols, which he took to be one of the highest intellectual endeavours for a Christian scholar. Newton's biblical researches led him to conclude that the Trinity is a post-New Testament corruption of monotheism that owed much to the unwarranted intrusion of Greek philosophy into Christianity. While this belief that the One God was the Father alone would render Newton a heretic in the eyes of mainstream Christianity, it must be stressed that his theological views were not the product of deism or any incipient rationalism. Newton remained a traditional theist as well as a passionate biblicalist.

## Key Points/Challenges

- Recent research has begun to correct the Enlightenment portrayal of Newton, the dominant view today among scientists and in popular culture. The new understanding of Newton rejects the vision of a rational “scientist” who separated science from religion to create a clockwork universe in which God is superfluous.
- Although still a point of contention among Newton scholars, it is now accepted that there was some sort of relationship between Newton’s science and religion.
- Newton’s unorthodox theology has provided insight into his natural philosophy, compounding its importance to Newton studies. While Newton’s religious non-conformity may have helped reinforce his willingness to take new paths in the sciences, it is clear that Newton linked purity in religion with purity in natural philosophy and that he thought both Christianity and natural philosophy (particularly Cartesianism) were in need of dramatic and thorough-going reform.

### **Proponents/Discussion Partners**

Cohen, I. Bernard and George E. Smith, ed. (2002) *The Cambridge Companion to Newton*. Cambridge: Cambridge University Press.

*Introductory essays on Newton’s natural philosophical, theological and alchemical thought.*

Force, James E. Force and Sarah Hutton (2004) *Newton and Newtonianism: new studies*. Dordrecht: Kluwer.  
*A collection of essays on aspects of Newton’s religious thought written by leading scholars.*

Newton, Isaac (1995) *Newton: Texts, Backgrounds, Commentaries*, ed. I. Bernard Cohen and Richard S. Westfall. New York: Norton.

*A selection of Newton’s writings on natural philosophy, theology and alchemy with helpful overviews by two respected Newton scholars.*

The Newton Project: [www.newtonproject.sussex.ac.uk](http://www.newtonproject.sussex.ac.uk)

*Online repository of Newton’s theological and natural philosophical writings.*

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