After Newton's *Principia*

Edmond Halley (1656–1742) is primarily remembered for the comet whose return he predicted and which is named after him. While still a student at Oxford University, Halley sailed to St Helena to prepare the first accurate catalogue of the stars in the southern sky. The stamp shows his **planisphere of the southern stars**.

In the 1680s Halley persuaded Isaac Newton to develop his ideas on gravitation and publish them in the *Principia Mathematica*. In 1704 he became Savilian Professor of Geometry in Oxford, where he prepared a definitive edition of Apollonius's *Conics*. In 1720 he became Astronomer Royal.

Halley's comet made spectacular appearances in 1066,

being depicted in the **Bayeux tapestry** of the Norman conquest, and 1301, when it inspired the Italian painter Giotto to include it in his **Adoration of the Magi**. Halley himself observed the comet in 1682, and realised that it was the same as the one that had appeared in 1531 and 1607. In 1705 he predicted its return in late 1758 or early 1759, and its appearance then, several years after his death, did much to vindicate Newton's theory of gravitation. It was on the basis of this prediction that the comet came to be named "Halley's comet."

Reactions to Newton's approach to gravitation in his *Principia* were mixed; in particular, it raised awkward questions about the shape of the earth. Descartes had proposed a vortex theory of the universe, which implied that the earth is 'lemon-shaped', whereas Newton predicted a flattening of the earth at the poles, so that it is 'onion-shaped'. In 1735 geodetic missions led by **la Condamine** and **Maupertuis** were dispatched to Peru and Lapland to settle the matter by comparing pendulum swings. These missions confirmed that Newton's theory was correct: the earth is flattened at the poles.

Edmond Halley

Halley's comet, 1066

Halley's comet, 1301

Halley's planisphere

La Condamine mission

Maupertuis mission

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