

Planets: A Very Short Introduction
By David Rothery

This *Very Short Introduction* discusses the nature of planets, gas giants, and their rings and moons. It also looks beyond Pluto, in the Kuiper Belt, at the knowledge we have about planets around other stars. With many striking photos to illustrate the details, it demonstrates the unique world of every planet.

Questions for thought and discussion

- Have you ever seen a planet through a telescope? What impression did it make on you?
- Bearing in mind that it is not a simple issue, how would you define the term ‘planet’?
- Do you think the International Astronomical Union made the right decision in 2006 when it stripped Pluto of its status as a planet?
- If you had to choose between funding for competing (unmanned) missions to objects in our Solar System, which of these would be your top priority, and why?
 1. A fly-by of Eris, the largest known Kuiper belt object.
 2. A robotic Mars rover, equipped with more sensitive instruments than previously.
 3. A probe to land on the surface of Europa.
 4. A probe to return a sample of an asteroid to Earth.
- What would be your second choice, and why?
- Is there a mission not on this list that you would like to add? If so, where should it go, and what should its aims be?
- Galileo was imprisoned for propounding what we now know to be a correct description of the Solar System. What areas of scientific advocacy could lead to a scientist being persecuted by state or religious authorities in today’s world?
- What are the most significant differences between the giant planets and the terrestrial planets?
- In what ways does ice elsewhere in the Solar System differ from ice on Earth?
- If Jupiter had never existed, in what ways would our Solar System be different?
- Could the Earth ever end up like Venus?
- Which nation will be the next to land humans on the Moon? Is it important who does it?
- Would you approve of ‘terraforming’ Mars so that humans could live there?
- What attributes of the planet Mercury make it an important target for scientific investigation?
- Why do the Earth and Io have active volcanoes, but not the Moon or Mars?
- Can you suggest a suitable way to define the upper limit of a planet’s atmosphere?
- Can you suggest a suitable way to define the base of a giant planet’s atmosphere?
- Can you describe several different methods by which a planet can acquire a satellite?
- What would be the scientific and cultural implications of (i) the discovery of microbial life on Mars? (ii) the discovery of microbial life on an exoplanet? (iii) the discovery of intelligent life on an exoplanet?

Other books by this author:

Rothery, D. A. Satellites of the Outer Planets (Oxford University Press, 2nd edition 1999)

Rothery, D. A. (4th edition) Geology, Teach Yourself Series, (Hodder & Stoughton Educational, 2010)

Rothery, D. A., (2nd edition) Volcanoes, earthquakes and tsunamis, Teach Yourself Series, (Hodder & Stoughton Educational, 2010)

Rothery, D. A., (2nd edition), Planets, Teach Yourself Series, (Hodder & Stoughton Educational, 2003)

Further reading

Beatty, J. K., Peterson, C. C. and Chaikin, A (eds) The New Solar System (Sky Publishing Corporation and Cambridge University Press, 4th edition, 1999)

Stern, S. A. (ed.) Our Worlds: The magnetism and thrill of planetary exploration (Cambridge University Press, 1999)

Weintraub, D. A. Is Pluto a Planet? (Princeton University Press, 2007).

Greenberg, R. Unmasking Europa (Springer, 2007)

Lopes, R. M. C. and Gregg, T. K. P. (eds) Volcanic Worlds: Exploring the Solar System's Volcanoes (Springer Praxis, 2004)