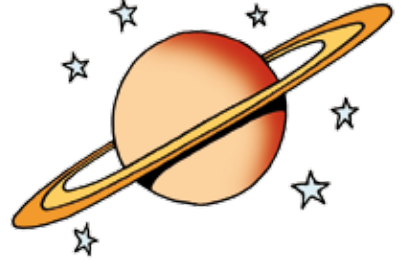


# The Universe: An Introduction

Most people who have looked at the skies at night have wondered what it would be like to travel through space.

Over five thousand years ago, in the temples of Memphis, Egypt, the accuracy of the calendars was maintained using the stars. The arrival or departure of familiar stars predicted important annual events, such as the flooding of land near the river Nile.

About three thousand to five thousand years ago, Stonehenge was built in England. This structure of large stones (megaliths) is thought to have been used as a calendar to predict eclipses, equinoxes and solstices,



The entire celestial world is called the universe. The universe contains every planet, moon, star and black hole, right down to the tiniest piece of 'space dust'. An eclipse occurs when one celestial body is obscured, or overshadowed, by another planet or moon. When day and night are of equal length an equinox occurs. The longest and shortest days of each year are called the summer solstice and the winter solstice respectively. 'Solstice' means 'Sun stands still' which is the way it appears at these times.

- 1 Define 'eclipse'. \_\_\_\_\_
- 2 Define 'equinox', \_\_\_\_\_
- 3 Define 'solstice'. \_\_\_\_\_

'Solar' means 'of the Sun' and a 'system' is an organised group of things, so the Sun and everything in its vicinity is called the Solar System. The Sun is found at the centre of our Solar System with everything else, including nine planets and many moons, travelling around it. Our Sun is fairly average both in age and luminosity (brightness). It is the source of all our energy on Earth. Moons are often called satellites, because a satellite is an object that orbits (circles) a larger celestial object.

It is generally believed that our Solar System is about 4500 million years old (debate continues) and is estimated to be about half way through its life. Our Solar System is the only one known to exist, but some scientists think they have found other planets orbiting far away with suns of their own,

- 4 Name two groups of people who might be concerned about floods from rivers.  
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- 5 What is a megalith? \_\_\_\_\_
- 6 What does "Solar" mean? \_\_\_\_\_
- 7 In which country is the river Nile? \_\_\_\_\_
- 8 How many planets are in our Solar System? \_\_\_\_\_
- 9 Which celestial object is at the centre of our Solar System? \_\_\_\_\_
- 10 What is the source of all energy on Earth? \_\_\_\_\_
- 11 What is meant by 'luminosity'? \_\_\_\_\_
- 12 Why can we describe the Earth's moon as a satellite? \_\_\_\_\_  
\_\_\_\_\_
- 13 What is the estimated age of the Solar System? Write the answer in figures and in words.  
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