



Comets and asteroids

The Solar System contains a large number of small pieces of rock and ice. These are called asteroids, meteoroids and comets.

There are many rocky fragments in our Solar System that have never been swept together to form planets. They are called **ASTEROIDS**, **METEORIDS** and **COMETS**.

Asteroids

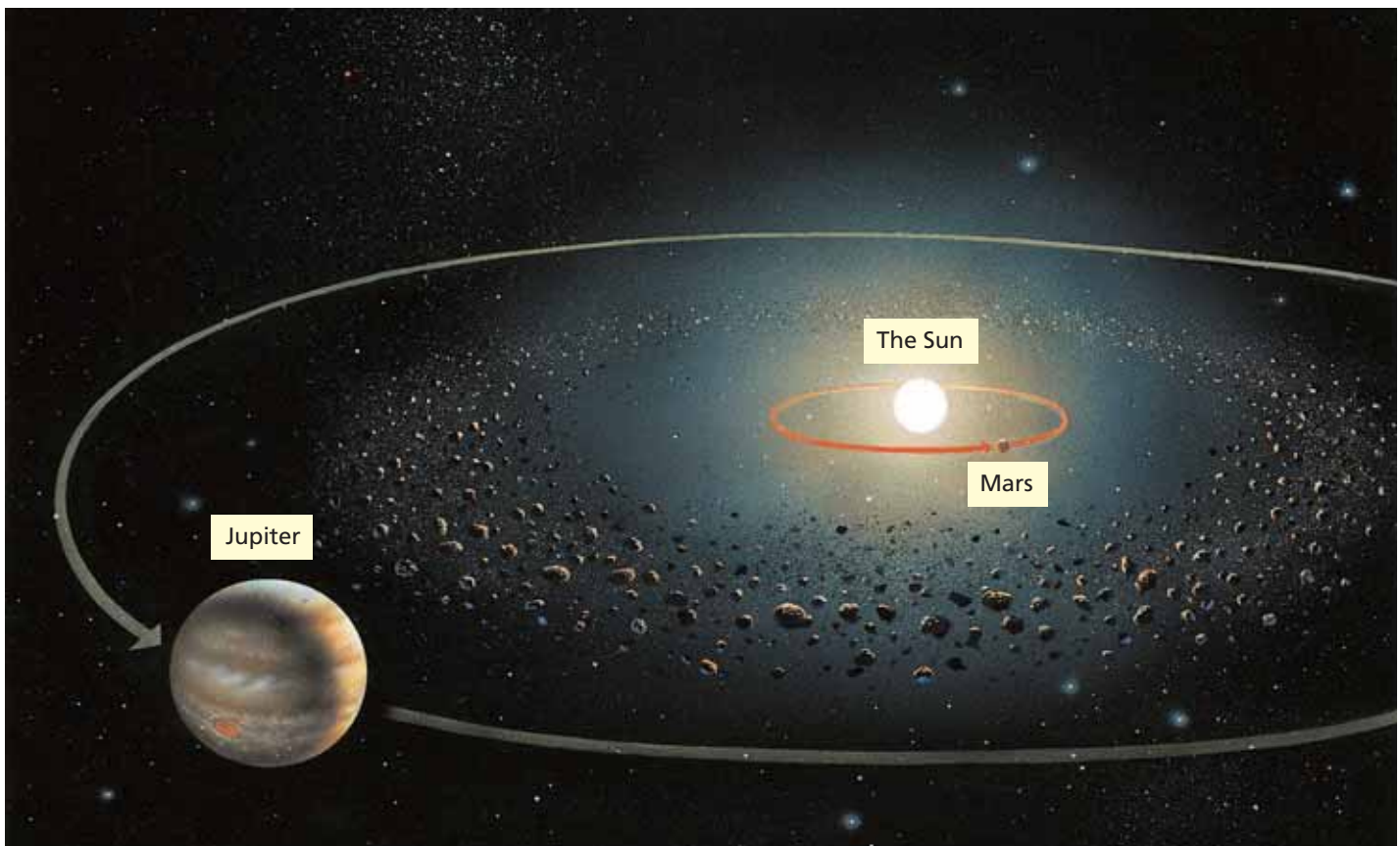
Most of the larger rocky fragments in the Solar System – called asteroids – orbit the Sun in a belt between Mars and Jupiter (Picture 1). A few follow orbits that take them past the Earth.

Meteoroids

Meteoroids are very small rocky bodies, often no more than a few centimetres across, that are scattered through space. They cross the path of the Earth all the time and can be seen burning up in the sky at night, making faint flashes of light called shooting stars.

The larger meteoroids reach the Earth before they burn up completely and can form giant **CRATERS** (Picture 2) where they land.

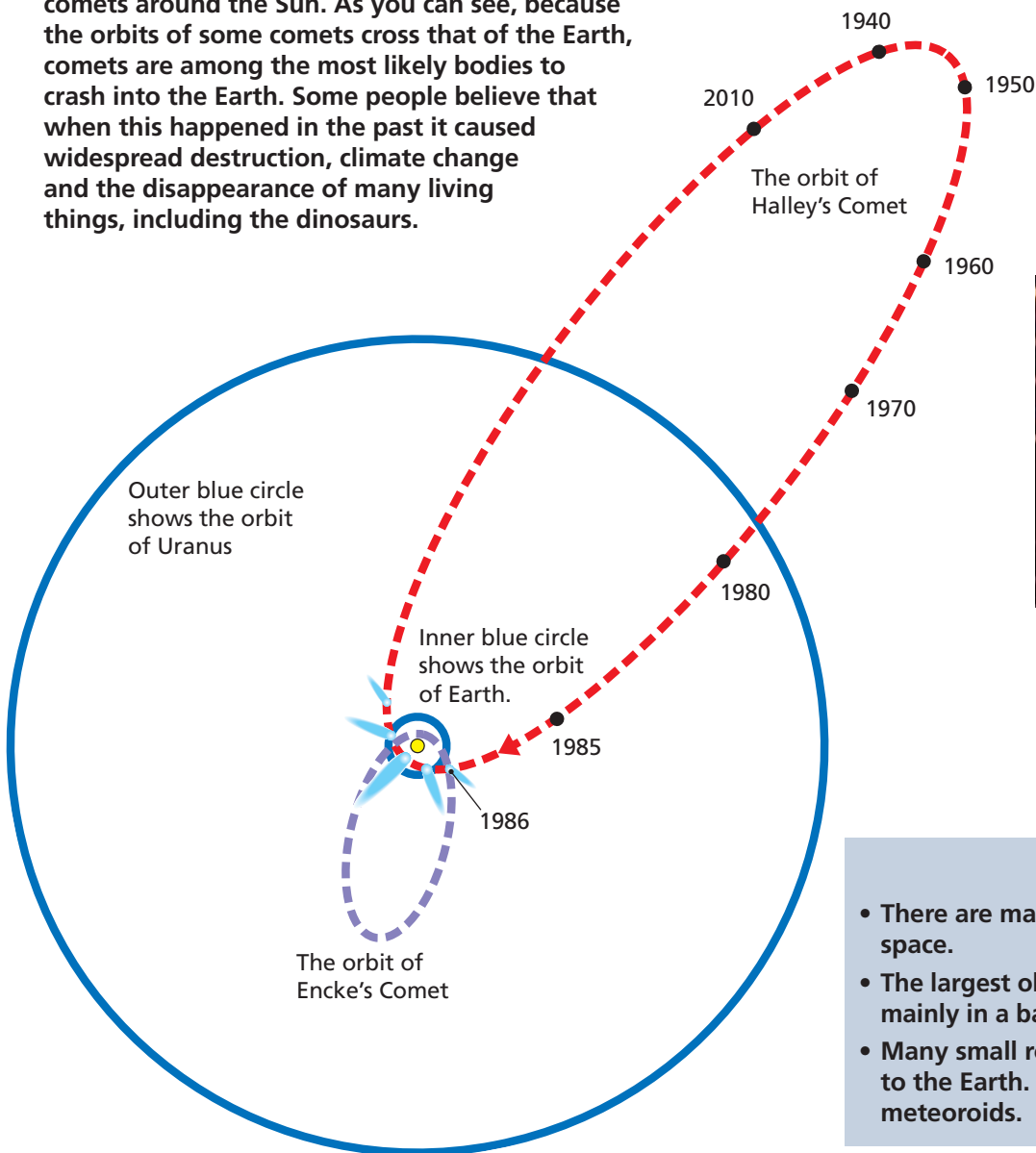
▼ (Picture 1) Asteroids between Mars and Jupiter.



▼ (Picture 2) Meteor Crater in Arizona, USA.



▼ (Picture 3) This diagram shows the orbits of some comets around the Sun. As you can see, because the orbits of some comets cross that of the Earth, comets are among the most likely bodies to crash into the Earth. Some people believe that when this happened in the past it caused widespread destruction, climate change and the disappearance of many living things, including the dinosaurs.



Comets

Comets are mixtures of ice and rock, usually just a few kilometres across. As they fly through space they develop spectacular glowing tails that can reach up to 100 million kilometres in length.

The orbits of comets are very elongated (Picture 3), so that they come very close to the Earth for a short while and then speed off into space and are lost from sight for many years (Picture 4).



▲ (Picture 4) Because they are so small, most comets are only detected as they come close to the Earth. This is Comet Hale-Bopp.

Summary

- There are many small rocky objects in space.
- The largest objects are asteroids. They are mainly in a band between Mars and Jupiter.
- Many small rocky objects pass close to the Earth. They include comets and meteoroids.