



Destination: MARS

Rovers, and Landers, and Satellites...oh my!

MARS has long been a place that has fascinated humans and stirred our imaginations.

It is a world that seems to have been most similar to our own planet. Water once flowed across its now dry and rocky surface. Clouds and storms still rage across its sky. Massive volcanoes, and deep valleys dominate its surface, and icy white polar caps contrast against the red martian terrain.

The total surface area of Mars is nearly the same as the total land surface area of the Earth. Our world however is 70% covered in water, something that is missing from today's martian landscape.

If water was flowing across Mars millions of years ago, where is it today?

Has the water been locked up in deposits at the poles, or is it now deep underground in the form of ice or cold liquid lakes?

If there is water there, is there also life there?

This question is among many that the latest fleet of robotic explorers hopes to answer.

Every two years or so, when the Earth and Mars are relatively close to each other in their orbits, new spacecraft are launched to explore the red planet.

In 2003/04, an unprecedented number of missions will arrive at Mars, signalling the start of one of the busiest period in space exploration.

The Canberra Deep Space Communication Complex and other facilities in NASA's Deep Space Network, and some European antennas will provide continuous two-way communication between these new spacecraft and those already in martian orbit.

These new spacecraft begin arriving at Mars between December 2003 and January 2004.



Mars Exploration Rovers

NASA's latest mission will land two robotic vehicles on separate sides of the planet. There they will study the local environment, examining rocks and soil samples over a wide area. Unlike previous missions they will be able to travel long distances from their landing sites.

More: <http://mars.jpl.nasa.gov/mer/>



Mars Express

This is the first mission sent to Mars by the European Space Agency. The spacecraft will arrive in martian orbit where it will map the planet in 3-D, use instruments to look beneath the surface, and study the atmosphere. The study will also help to determine if Mars ever supported life.

More: <http://sci.esa.int/marsexpress/>



Beagle 2

This is the first mission into deep space by a British spacecraft. Beagle 2 - named after Charles Darwin's ship of discovery - will land on Mars. There it will use a robotic arm and drill to study local rocks and soil, and look for water-ice below the planet's surface where life may exist.

More: www.beagle2.com/index.htm



Nozomi

This mission was launched in 1998, but a failure of the booster rocket meant that a new flightpath using gravity assist was needed to enable the spacecraft to reach Mars successfully. It is expected to arrive in December 2003 where it will orbit the planet and study its atmosphere.

More: www.isas.ac.jp/e/enterp/missions/nozomi/