



PRESS RELEASE

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ONE DOWN, THREE TO GO: MARS LAUNCH COUNTDOWNS BEGIN

A flurry of missions to Mars, to explore the surface and sub-surface of the Red Planet, commenced today with the successful launch of the European Space Agency's Mars Express spacecraft, to be shortly followed by NASA's twin Mars rovers. These missions have the potential to reveal whether life exists or existed on the Red Planet, and could lead to a future human mission to Mars, according to Guy Murphy, President of Mars Society Australia.

"With three landers and an orbiter scheduled to arrive at Mars by January next year, we are entering an exciting new phase of exploration. If we find evidence of life on Mars, past or present, however slim, there will be a great deal of pressure to send people to Mars to further investigate. So these missions could go down in the history books as important precursors to a human presence on Mars, as significant as Cook's eighteenth century voyages to the Pacific," said Mr. Murphy. "Mars Society Australia, along with its international affiliates, is very excited about these missions, and we plan to cover them during presentations at our annual conference in Perth this year."

"The Beagle 2 lander is a particularly innovative mission, carrying an unprecedented proportion of instrumentation by mass. We wish Colin Pillinger and the Beagle 2 team the utmost success in their extraordinary endeavour. The successful launch of the Mars Express orbiter and Beagle 2 also marks the entry of a new participant in Mars exploration, the European Space Agency, which now joins the Japanese, Russian and American space agencies in having an active robotic exploration program. Australia is sadly one of the few advanced industrialised nations not directly participating in this pioneering activity."

The European Space Agency launched its first spacecraft bound for Mars on a Soyuz launcher from Baikonur, Kazakhstan. Mars Express launched as a box that measures a mere 1.5 by 1.8 by 1.4 metres (excluding solar panels), and weighs 1223 kilograms. It incorporates an orbiter and the Beagle 2 lander, which will map the Martian surface and sub-surface, studying the planet's atmosphere and ionosphere from orbit, and conduct observations and experiments on the surface with the lander. Beagle 2 should arrive on the surface of Mars on Christmas Day 2003. It will not however have Mars to itself for long. The first of NASA'S two Mars Exploration Rover robots is scheduled to be launched on a Boeing's Delta II missile on June 8, and will also conduct geological research on the Red Planet. The second NASA Mars rover launch is then scheduled for June 25. NASA's first robot is expected to reach Mars on January 4, 2004, regardless of the launch date, provided that the latter occurs by June 19, while the second robot is scheduled to arrive on Mars on January 25, 2004, provided it is launched by July 15. The pressure to launch the missions this winter (northern summer) is due to the fact that, although launch opportunities to Mars occur every 26 months, when the Sun, Earth and Mars form a straight line, at the moment Earth and Mars are at their closest, which only happens every 15 to 17 years.

The Mars Express orbiter will investigate the Martian surface, subsurface, and atmosphere for at least two years, while Beagle 2 will operate on the surface for about six Earth months, relaying data back to Earth via the orbiter. The

Beagle 2 landing site covers a large ellipsis, 300 kilometres long and 150 kilometres wide, in the Isidis Planitia region, which was chosen in part because of the relatively smooth surface of this area of Mars, which will optimise the chances of a successful landing. The mission will involve a number of instruments, including ASPERA (Energetic Neutral Atoms Analyser) to study how the solar wind interacts with the Martian atmosphere, and discover how water vapour and other gases could have escaped from Mars in the past. The HRSC (High/Super Resolution Stereo Colour Imager) is a stereoscopic camera that will photograph the Martian surface, revealing details as small as 2 metres. Other instruments will measure temperature, pressure and variations in gravity in the atmosphere, map the distribution of water and ice in the upper sub-surface, determine the mineral content of the surface and molecular content of the atmosphere, and study the composition of the Martian atmosphere.

The Beagle 2, named after the ship that took Charles Darwin around the world in the 19th century, weighs just 68 kg and is about two ruler lengths across (65 cm). Costing just 300 million euros, which is much less than comparable missions, the team cut costs by reusing existing hardware and instruments and giving more responsibility to industry in the development of the mission. Beagle 2 will be launched folded up like a pocket watch according to the U.K. team members. Once it lands on Mars, the outer casing will be opened and the solar panels unfold, charging the batteries that power the lander. Then a robotic arm will start to operate, with most of the experiments attached to its end. These include a corer/grinder and mole, which will be used to collect rock and soil samples for analysis. The mole will be able to crawl up to several metres on the surface, but its pace is slow, at just 1 cm every six seconds. It can burrow underground to collect samples up to 1.5 metres below the surface. Ovens on the Beagle 2 can heat these samples in the presence of oxygen, to look for signs of past or present life.

Geologist and Mars Society Australia director, Dr. Jonathan Clarke, says that Mars has been profitably studied from both an astronomical and geological perspective in the past, and hopes that the Mars Express mission, along with the two NASA landers due to be launched over the next month and a half, will help to answer questions about the creation and evolution of the Martian landscape. Dr. Clarke has studied Australian environments as an possible analogue to those found on Mars, such as the Dalhousie Mound Spring Complex in the Australian Outback, and says that, "there will be a lot of work for scientists in the future analysing observations from the score of spacecraft that have returned data from Mars to date, as well as the other 20 spacecraft that are scheduled over the next 10 years."

Leader of the Beagle 2 team, Professor Colin Pillinger of the Open University in the U.K. will be speaking via video-link to delegates at the Australian Mars Exploration Conference in Perth, which will be held during National Science Week (August 22-24). David Cooper, Mars Society Australia Vice-President and Conference Convenor, has been instrumental in arranging this videoconference, which he hopes will be just one of the highlights of the annual gathering of Mars researchers who will put forward new ideas and designs, discuss social and philosophical implications of missions to the Red Planet, and report on Mars-related science and technology.

"We are looking forward to hearing from Colin about the development of Beagle 2 and its contribution towards finding life on Mars," says David Cooper. "The next few years will hopefully allow us to learn more about the mysteries of the Red Planet and perhaps solve one of the most fundamental questions faced by mankind – are we alone in the Universe?"

For interviews with Guy Murphy, David Cooper or Dr. Jonathan Clarke of Mars Society Australia, please direct inquiries to Jennifer Laing, Public Relations Officer on email at pr@marssociety.org.au or phone her (Melbourne, Australia) on 0417 135 113.

The Mars Society was founded to further the goal of the exploration and settlement of the Red Planet.

For further information on MSA, see <http://www.marssociety.org.au>