

THE MARS PATHFINDER MISSION

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The Mars Pathfinder mission is a Discovery class mission that will place a small lander and rover on the surface of Mars on July 4, 1997, about 20 years after the Viking landings. The Pathfinder flight system is a single small lander, packaged within an aeroshell and backedover with a minimal cruise stage. The vehicle will be launched, injected into a trans-Mars trajectory, fly independently to Mars, and enter the atmosphere directly on approach behind an aeroshell. The vehicle is slowed by a parachute and 3 small solid rockets before landing on inflated airbags. Petals of a small tetrahedron shaped lander open up, to right the vehicle. The lander is solar powered with batteries and will operate on the surface for a month, with an extended mission of a year. A high-gain antenna will downlink data directly to the Earth. Instruments carried by Pathfinder include a stereo multispectral surface imager on a pop up mast, an atmospheric structure instrument-surface meteorology package, and an alpha proton x-ray spectrometer. The micro-rover will deploy the alpha proton x-ray spectrometer against a number of different rocks and surface materials, and perform a number of rover technology experiments in addition to assessing the condition of the lander with forward stereo and rear color imaging systems.

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3) MSO
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4)

5) Oral presentation