

# Probes visit Mars' polar region

When the *Mars Polar Lander* touches down on the south pole of the Red Planet on Friday, the experiments it will carry out will pave the way for an eventual manned exploration of the planet. The lander's most important task is to look for water on Mars' barren surface. Water is a vital resource for astronauts and its presence could give clues to where life on Mars – even in its most primitive form – might have existed

Two small probes – *Deep Space 2* – will smash into planet at 450mph, penetrating up to 2.5 feet

**Thermal and evolved gas analyzer (Tega):**  
Eight sample ovens – each is gradually heated to 900 degrees C to see if the soil contains water or volatile-bearing minerals

**Robotic arm:**  
6.5 feet long.  
Digs trenches up to 1.5 feet deep, scoops samples and places them in analyzer

Camera to record samples

Data link to Earth

**Meteorological package (MET):**  
Weather sensors at various heights on main 6.5 feet-high mast

**Surface stereo imager (SSI):** Multispectral camera and Light Detection Ranging instrument to look for ice and dust clouds

Solar panels

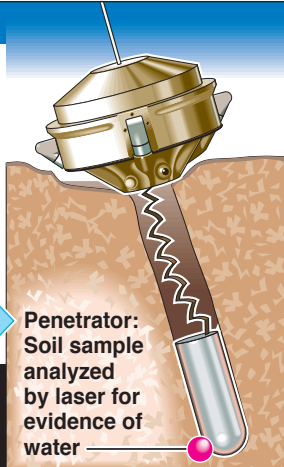
Microphone

## Mars Polar Lander

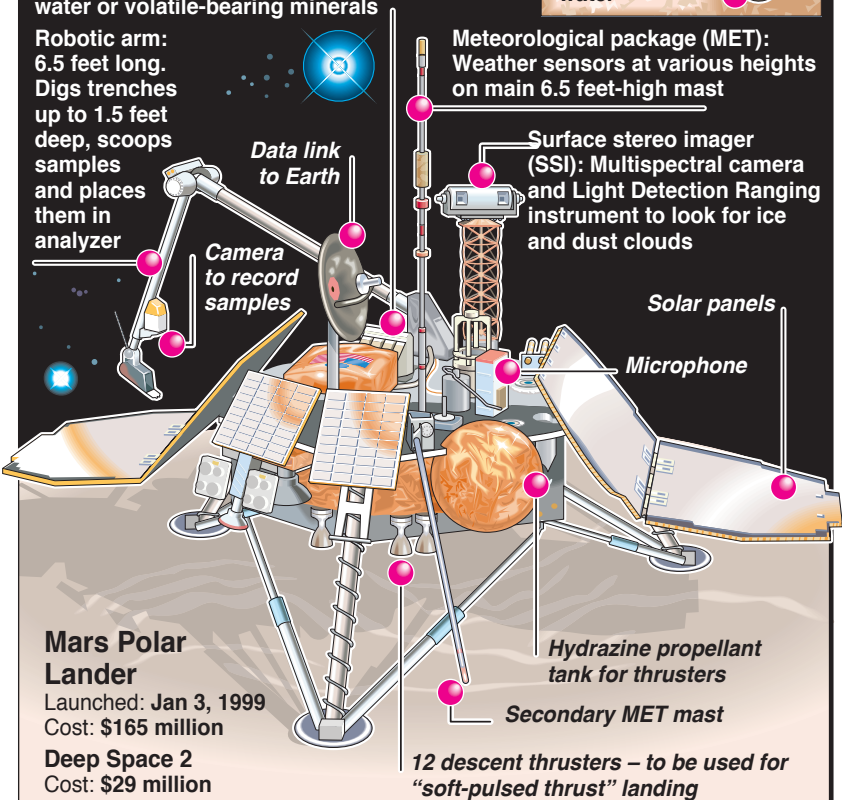
Launched: Jan 3, 1999  
Cost: \$165 million

## Deep Space 2

Cost: \$29 million



**Penetrator:**  
Soil sample analyzed by laser for evidence of water



Hydrazine propellant tank for thrusters

Secondary MET mast

12 descent thrusters – to be used for “soft-pulsed thrust” landing