

Initial Results from Deep Space 2, The Mars Microprobe Mission

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The Deep Space 2 (DS2) Mission is the second of the New Millennium Program technology demonstration missions, and is carried to Mars by the Mars Polar Lander. The two identical DS2 probes are scheduled to land on the southern polar layered deposits near 75S, 196 W on Dec. 3, 1999. Each miniaturized probe has an entry mass of 3.6 kg. The single stage aeroshell delivers the probes all the way to the surface, where the probes hit at roughly 180 m/s. This high velocity should cause one part of the probe, the forebody, to bury itself under the surface to a depth of 0.3-0.6 m. The other part of the probe remains at the surface to relay data to the Mars Global Surveyor orbiter. Each probe contains four instruments: an atmospheric descent accelerometer, an impact accelerometer, a soil sampling/water experiment, and subsurface temperature sensors. Initial results on the atmospheric pressure and temperature and regolith properties, including water ice content, hardness, layering, and thermal conductivity,

will be presented. This data will be used to better understand the nature of the polar layered terrain.