

ABSTRACT

The 1998 Mars Surveyor Lander and Orbiter Project

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The Mars Surveyor Program has been developed as an aggressive but tightly cost-constrained program to explore Mars over the decade from 1997 through 2006. Small orbiters and landers built by industry will be launched at each of the opportunities, 26 months apart, afforded by the relative motion of Earth and Mars in their orbits around the sun. These multiple launches of small spacecraft will provide significant science return in a program that is not reliant on the success of any single component or mission.

The Mars Surveyor Program for the 1998 Earth-Mars transfer opportunity consists of a lander and an orbiter mission. The 1998 Surveyor lander spacecraft will launch in January/February 1998 on a Med-Lite vehicle (Delta 7325 configuration). The general science theme for the 1998 Surveyor Lander mission is "Volatiles and Climate History." The specific science complement for the lander mission will be selected in October 1995 via the NASA Announcement of Opportunity process.

The 1998 Surveyor orbiter spacecraft will launch in December 1998 also on Med-Lite vehicle (Delta 7325). The 1998 orbiter mission will carry a duplicate of the Mars Observer Pressure Modulated Infrared Radiometer (PMIRR) and a small, high technology visible imager. The visible imager will be selected in October 1995 through the NASA Announcement of Opportunity process. In addition, the orbiter spacecraft will provide an on-orbit data day capability for the 1998 lander and potentially other U.S. and/or international surface stations.

The development funding for the lander and orbiter missions which comprise the 1998 Surveyor Lander and Orbiter Project is capped at \$183.6M (Real Year \$'s). After accounting for inflation, this is approximately the same level of funding provided for the development of the Near Earth Asteroid Rendezvous, Mars Pathfinder, and Mars Global Surveyor single spacecraft development projects. In order to accomplish this aggressive development activity, non-traditional approaches have been implemented in the:

- Procurement of the lander and orbiter spacecraft from industry,
- Design, development, integration, and test of the lander and orbiter spacecraft,
- Payload selection process,
- Mission operations strategy, anti
- Streamlining of the project management and contract management overhead.

This paper provides a description and status of the 1998 Mars Surveyor Lander and Orbiter Project and details regarding the aggressive implementation and management approaches which enable the required development within the Project cost cap.