

Abstract

MARS GLOBAL SURVEYOR MISSION

by

Glenn E. Cunningham

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California, USA

The development of a new mission to observe Mars from orbit is underway by the National Aeronautics and Space Administration and the Jet Propulsion Laboratory. **This mission**, the Mars Global surveyor, will be launched in late 1996, and is the first mission of the new Mars Surveyor Program, a program with international participation, that will characterize the planet Mars from orbital observations and from surface measurements.

This paper discusses the technical and programmatic considerations which have been combined to formulate the plans for the Mars Global Surveyor (MGS).

The first objective of the mission is to complete, as fully as possible, the five original science objectives of the failed Mars Observer mission. The MGS spacecraft, which will accommodate part of the Mars Observer instrument payload, will **focus on surface science** to provide the data base for landed missions that will follow in the Mars Surveyor Program in later years. Secondly, the spacecraft will provide a two-way relay capability for US and international landed and atmospheric missions. Thirdly, the mission will provide special emphasis on those measurements which could impact landing site selection.

The performance requirements for the MGS spacecraft will be discussed and the payload will be described.

The implementation of this mission will be affordable, engaging to the public and provide numerous public educational benefits. It will have a high technology content, and its management will be cost, rather than performance, driven. Low cost mission operations will be incorporated.

The programmatic approach and plans will be described.

Finally, lessons learned from the Mars Observer experience will be shown to provide enhancements to the affordability and success of the Mars Global Surveyor Mission.