

## Foreword

The Mariner and Viking missions have explored Mars and have removed much of the mystery that has intrigued mankind for centuries. This knowledge allows scientists to pose complex questions about the origin, surface history, magnetic field and interior, atmosphere, and climate of Mars. We know enough to pose such questions, typically based on a single data set, but we do not have additional data sets with which to test these questions.

Mars Observer was conceived as a mission whose observations would constitute a synergistic array of data sets that would be readily available to the global community of planetary scientists. It provides a low, Sun-synchronous, polar orbit about the planet from which the entire surface and atmosphere can be repetitively observed and mapped by remote sensing instruments for an entire Mars year. This long period of continuous observations promises a rich harvest of global and seasonal information. It will provide a basic understanding of Mars as it exists today and a framework for understanding its past.

Mars Observer stands between the initial exploration of Mars and the more intensive explorations, possibly involving human beings, that are only now being planned.

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