

Preface

Since the first flyby of Mariner 4 in 1965, Mars has been visited by a number of spacecraft including Pathfinder and Global Surveyor. Despite considerable efforts to understand the Martian environment, several fundamental questions still remain unanswered. Planet-B, the first Japanese mission to Mars, is scheduled for launch in July 1998 and is expected to arrive at the planet in the fall of 1999. It is intended that this mission will unravel some of the mysteries of the Martian upper atmosphere, magnetic fields, and solar wind interaction.

The objective of this special issue of Earth, Planets and Space (EPS) is to provide information on the Planet-B experiments as well as on recent theoretical studies of Mars with emphasis on the upper atmosphere and solar wind interaction. Thus, the issue contains 17 papers covering both theoretical and experimental studies. Eleven papers describe the instruments onboard the Planet-B spacecraft together with the scientific goals of the experiment and the remaining six papers cover theoretical studies using numerical models and data from the Soviet Phobos-2 spacecraft. A few more papers describing other instruments onboard Planet-B will appear in future issues of EPS.

In addition to Planet-B, several other Mars missions are currently being planned in the United States and in Russia, and it is our sincere hope that this special issue will serve as a reference for ongoing and future Mars exploration and scientific research.

All the papers submitted to this issue were reviewed by referees, following the same reviewing processes as for regular issues of the journal. We would like to thank all the authors of the published papers, the referees, Professor Yoshimori Honkura who is the chief editor of EPS, and Terra Scientific Publishing Company for supporting our efforts.

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