

Foreword

I am very pleased to commend the Jet Propulsion Laboratory (JPL) Space Science and Technology Series, and to congratulate and thank the authors for contributing their time to these publications. It is always difficult for busy scientists and engineers, who face the constant pressures of launch dates and deadlines, to find the time to tell others clearly and in detail how they solved important and difficult problems, so I applaud the authors of this series for the time and care they devoted to documenting their contributions to the adventure of space exploration.

JPL has been NASA's primary center for robotic planetary and deep-space exploration since the Laboratory launched the nation's first satellite, Explorer 1, in 1958. In the 50 years since this first success, JPL has sent spacecraft to all the planets except Pluto, studied our own planet in wavelengths from radar to visible, and observed the universe from radio to cosmic ray frequencies. Current plans call for even more exciting missions over the next decades in all these planetary and astronomical studies, and these future missions must be enabled by advanced technology that will be reported in this series. The JPL Deep Space Communications and Navigation book series captured the fundamentals and accomplishments of these two related disciplines, and we hope that this new series will expand the scope of those earlier publications to include other space science, engineering, and technology fields in which JPL has made important contributions.

I look forward to seeing many important achievements captured in these books.

Charles Elachi, Director
Jet Propulsion Laboratory
California Institute of Technology