Preface

Spaceborne Antennas for Planetary Exploration traces the development of the Jet Propulsion Laboratory (JPL) spacecraft antennas from the very first Explorer satellite in 1958 to the present. It primarily deals with the radio frequency (RF) design and performance of the antennas although it includes material on environmental and mechanical considerations. It describes all the new designs and technological innovations introduced throughout their evolution. There is also a thorough treatment of all the analytical and measurement techniques used in the design and performance assessment. This monograph can serve as an introduction to newcomers in the field as well as a reference for the advanced practitioner. The technical terms in the text assume that the reader is familiar with basic engineering and mathematical concepts as well as material typically found in a senior level course in electromagnetics.

This book is complementary to *Large Antennas of the Deep Space Network*[1] published in 2002, which describes all the ground antennas used in support of the spacecraft. Taken together, these books completely describes all JPL antenna technology and is in keeping with the JPL Deep Space Communications and Navigation Series to capture the many technological innovations that helped make significant improvements in deep-space telecommunications over the decades.

As with most Spacecraft antennas, many people contributed to the success of the project, and it would be impossible to include everyone's name on the Chapter. Indeed, this is not the proper place. Proper credit is given by completely and thoroughly citing all the references and sources from which the material is derived. The only person's name on the chapter is the one who actually wrote the contribution and followed it through the editing process, not

[1] William A. Imbriale, John Wiley and Sons, Inc.

that they necessarily did the work described. It also allows someone who was not even involved in the actual design to write or coauthor a chapter. For completeness, this is sometimes required in this type of endeavor. That is because the people who actually did the work may not be available or even be alive, as in the case with some of the very early spacecraft.

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Editor
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