Preface

Beginning with Volume XX, the Deep Space Network Progress Report changed from the Technical Report 32- series to the Progress Report 42- series. The volume number continues the sequence of the preceding issues. Thus, Progress Report 42-20 is the twentieth volume of the Deep Space Network series, and is an uninterrupted follow-on to Technical Report 32-1526, Volume XIX.

This report presents DSN progress in flight project support, tracking and data acquisition (TDA) research and technology, network engineering, hardware and software implementation, and operations. Each issue presents material in some, but not all, of the following categories in the order indicated:

Description of the DSN

Mission Support
- Ongoing Planetary/Interplanetary Flight Projects
- Advanced Flight Projects

Radio Science
- Radio Science Support
- Special Projects

Supporting Research and Technology
- Tracking and Ground-Based Navigation
- Communications—Spacecraft/Ground
- Station Control and Operations Technology
- Network Control and Data Processing

Network Engineering and Implementation
- Network Control System
- Ground Communications
- Deep Space Stations

Operations
- Network Operations
- Network Control System Operations
- Ground Communications
- Deep Space Stations

Planning and Facilities
- TDA Planning
- Facility Engineering

In each issue, the part entitled "Description of the DSN" describes the functions and facilities of the DSN and may report the current configuration of one of the five DSN systems (Tracking, Telemetry, Command, Monitor and Control, and Test and Training).

The work described in this report series is either performed or managed by the Tracking and Data Acquisition organization of JPL for NASA.