Preface

This quarterly publication provides archival reports on developments in programs managed by JPL's Office of Telecommunications and Data Acquisition (TDA). In space communications, radio navigation, radio science, and ground-based radio and radar astronomy, it reports on activities of the Deep Space Network (DSN) in planning, supporting research and technology, implementation, and operations. Also included are standards activity at JPL for space data and information systems and reimbursable DSN work performed for other space agencies through NASA. The preceding work is all performed for NASA's Office of Space Communications (OSC). The TDA Office also performs work funded by another NASA program office through and with the cooperation of OSC. This is the Orbital Debris Radar Program with the Office of Space Systems Development.

The TDA Office is directly involved in several tasks that directly support the Office of Space Science (OSS), with OSC funding DSN operational support. In radio science, *The TDA Progress Report* describes the spacecraft radio science program conducted using the DSN. For the High-Resolution Microwave Survey (HRMS), the report covers implementation and operations for searching the microwave spectrum. In solar system radar, it reports on the uses of the Goldstone Solar System Radar for scientific exploration of the planets, their rings and satellites, asteroids, and comets. In radio astronomy, the areas of support include spectroscopy, very long baseline interferometry, and astrometry.

Finally, tasks funded under the JPL Director's Discretionary Fund and the Caltech President's Fund that involve the TDA Office are included.

This and each succeeding issue of *The TDA Progress Report* will present material in some, but not necessarily all, of the following categories:

OSC Tasks:
- DSN Advanced Systems
  - Tracking and Ground-Based Navigation;
  - Communications, Spacecraft–Ground; Station Control and System Technology;
  - Network Data Processing and Productivity
- DSN Systems Implementation
  - Capabilities for Existing Projects; Capabilities for New Projects;
  - New Initiatives; Network Upgrade and Sustaining
- DSN Operations
  - Network Operations and Operations Support;
  - Mission Interface and Support; TDA Program Management and Analysis
- Ground Communications Implementation and Operations
- Data and Information Systems
- Flight–Ground Advanced Engineering
- Long-Range Program Planning

OSC Cooperative Tasks:
- Orbital Debris Radar Program

OSS Tasks:
- Radio Science; High-Resolution Microwave Survey;
- Goldstone Solar System Radar; Radio Astronomy

Discretionary Funded Tasks