Preface

This quarterly publication provides archival reports on developments in programs managed by JPL's Office 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, in supporting research and technology, in implementation, and in operations. Also included is 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 Operations (OSO). The TDA Office also performs work funded by two other NASA program offices through and with the cooperation of the Office of Space Operations. These are the Orbital Debris Radar Program (with the Office of Space Station) and 21st Century Communication Studies (with the Office of Aeronautics and Exploration Technology).

In the search for extraterrestrial intelligence (SETI), the *TDA Progress Report* reports on 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. These three programs are performed for NASA's Office of Space Science and Applications (OSSA) with the Office of Space Operations for funding DSN operational support.

Finally, tasks funded under the JPL Director's Discretionary Fund and the Caltech President's Fund which 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, for the following categories:

- OSO 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
- OSO Cooperative Tasks:
  - Orbital Debris Radar Program
  - 21st Century Communication Studies

OSSA Tasks:

- Search for Extraterrestrial Intelligence
- Goldstone Solar System Radar
- Radio Astronomy

Discretionary Funded Tasks