

March 23 - March 29, 2001

The Terra spacecraft is operating in Nominal Mode and all five instruments are in functioning well in Science Mode.

The Terra Command and Data Handling (CDH) subsystem continues to operate nominally. Routine Master Oscillator frequency adjustments were performed on DOY 081 (March 22) and on DOY 088 (March 29).

An MDA2BITE failure (High Gain Antenna Motor Drive Assembly upset) occurred during a Solid State Recorder (SSR) playback on DOY 086 (March 27) at 00:37z. 120,970 CADUs of ASTER data were lost beginning from March 26 at 22:58 to March 27 at 00:38z, and approximately 20,000 CADUs of MODIS data were lost. A second MDA2BITE failure occurred on DOY 086 (March 27) at 15:03:00z, approximately 3 minutes before AOS on TDRSS, delaying the Solid State Recorder (SSR) playback by several minutes during that contact. No data were lost.

A Coronal Mass Ejection (CME) hit the Earth's magnetic field on DOY 086 (March 27) and continuing throughout DOY 087, causing the Terra Y-Axis Magnetic Torque Rod to saturate up to 10 minutes per orbit for multiple orbits. Onboard Reach Wheels ramped up higher than normal but remained well within limits. Wheel Momentum has also increased, as has happened for previous large CMEs. Terra's attitude remained nominal throughout the event.

Due to the increasing solar activity, long-range planning products show the next drag make-up maneuver being required as early as April 18. However, a major solar flare erupted at approximately 10:15z on March 29, and a confirmed full halo CME is in-progress. It is anticipated that a major Earth-directed CME impact from this disturbance will occur on March 29 or April 1. This may result in the anticipated drag make-up maneuver date being moved earlier. Also, this is likely to cause an increase in Single Event Upsets of Terra's High Gain Antenna and MDA2BITE events.

Two Microprocessor loads were uplinked for CERES on DOY 88 (March 29) to support future lunar scanning calibrations.

The Mars Odyssey 2001 spacecraft (planned for launch on April 7) is being added to the Terra database for JPL Deep Space missions with which the Terra X-band Direct Broadcast system may interfere. Terra Direct Broadcast will be turned off when Terra passes within the "conflict zone" (a 10° half-angle cone) of this spacecraft. This brings the total number of missions with potential RFI back up to 10. The total was stable at nine for approximately two months, after the completion of the NEAR mission.

A review of the MISR software patch for May was held on March 29.

ANOMALIES ENCOUNTERED:

Twenty minutes of MODIS data were lost on March 28 due to network slowdown from multiple contributing causes. Problems encountered with switchover to C.4 software version in EOS Operations Center (EOC), and a GSIP failure at WGST, contributed to a network slowdown. A back-up ground station pass to dump the recorder was not successful due to reconfiguration problems at the ground station. An anomaly investigation is in process.

PLANS:

MISR - Local Mode will be on March 30.

The Flight Ops Team will support the MODIS Field Campaign (Appalachian Transect) on March 27-30.

The new MISR software upload was scheduled for May 22.

