

December 14 - December 20, 2001

The Terra spacecraft is in nominal mode. All instruments are operating in nominal science mode. Terra completed 2 full years on orbit on December 18, 2001.

The first maneuver in the sequence of Inclination Adjust maneuvers was executed successfully on December 13, 2001. The MODIS Nadir Aperture Door (NAD) was manually closed for this maneuver to mitigate the risk of contamination from the Terra thrusters. A micro-switch anomaly during this activity caused a false reading on the NAD closure status telemetry, requiring the door to be stepped open by a different command than was originally planned for re-opening the NAD. Proper re-opening via the step command was confirmed through other telemetry indicators, as well as a Direct Broadcast image obtained over GSFC at the time the re-opening was in progress.

The Terra Flight Operations Team and the MODIS Instrument Team are continuing to work issues related to the potential for contamination and solar impingement in association with the next Inclination Adjust maneuver, currently scheduled for January 16, 2002. The teams would prefer to leave the NAD open for the next maneuver. Although the risks of contamination and solar impingement appear minimal, these issues must be addressed before the final MODIS configuration for the next maneuver is determined. The likely implementation will involve automatic door closure via stored commands in the unlikely event that the maneuver does not execute properly. These commands can then be inhibited upon successful completion of the maneuver. This is viewed as a very safe "belt and suspenders" approach, as the safehold condition that would result from non-nominal maneuver execution would automatically close the MODIS doors.

A Drag Make-up Maneuver was successfully executed on December 18, 2001.

A partial solar eclipse (sun eclipsed by the moon) occurred from Terra's perspective on December 14, 2001. As expected, only a minor drop in Solar Array current was observed. This eclipse was an annular solar eclipse from certain locations on earth.

Several MDA2BITE trips (High Gain Antenna Motor Drive Assembly opto-coupler Single Event Upsets) occurred during this reporting period, with no data loss.

Terra Plans:

- Planning for the next Drag Make-up Maneuver, MODIS Roll, Inclination Adjust, and Deep Space Calibration maneuvers is underway;
 - Commercial Ground Site Validation planning will continue once the DataLynx antenna is declared operational;
 - Continued planning for ASTER Direct Downlink (DDL) demonstrations over Polar Ground Stations is ongoing; and
 - There is continued planning for additional Polar Ground Station Science Data Downlink demonstrations.
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