

## A Navigation Summary of OMM19 Performance

OMM19 was successfully implemented on 18 September 2001 at the scheduled burn centroid time of 05:07 UTC. This maneuver occurred on orbit number 42,590 near the boundary between repeat cycles 331 and 332 (pass #254). The ideal maneuver magnitude (after the tweak) and the commanded value were both 5.3 mm/sec. This maneuver was applied in the orbit along-track direction to increase the mean semi-major axis by 11.38 meters to reverse the satellite ground track drift westward and thereby remain inside the +/- 1 km control band. At the time of the maneuver, the ground track was 390 meters east of the reference ground track, having a projected control band exit on about 27 September 2001.

Operational orbit determination solutions following the maneuver were used by the NAVT to estimate an achieved maneuver magnitude of 5.00 mm/sec, which is -5.66% lower than the 5.3 mm/sec. The achieved change in semi-major axis was 10.73 meters compared to the 11.38 meters design value. This was based on a tracking arc of ~4 days.

Based on the above brief performance evaluation and due to changes in the orbit due to drag, solar activities, anomalous forces, and luni-solar perturbations, the ground track is expected to exit the control band the last week of December 2001 near repeat cycles 341 and 342.

To enhance future maneuver design activities, and compensate for errors in OMM19 execution and/or in predicting solar activities and anomalous forces, the NAVT will recommend use of a *boost strategy in the fixed yaw period of November*. The NAVT is projecting OMM20 to be either in November fixed yaw (11/26) or yaw steering (12/6 or 12/16) depending upon *Jason activities and the outcome of November fixed yaw boost*.

Ahmed Salama  
Project Element Manager  
Navigation & POD  
Earth Science Mission Operations