



## **ORBITAL EXPRESS DEMONSTRATION PROGRAM**

March 14, 2007

The Defense Advanced Research Projects Agency (DARPA) Orbital Express program will validate the technical feasibility of robotic, autonomous on-orbit refueling and reconfiguration of satellites during a three-month demonstration mission that began on March 8, 2007.

The Orbital Express demonstration consists of a pair of satellites, the ASTRO servicing vehicle and the NextSat demonstration client vehicle. The two experimental satellites were successfully launched into their desired orbit as a mated pair on an Atlas V launch vehicle from Cape Canaveral on the evening of March 8.

Following release from the Centaur upper stage, the Orbital Express ASTRO vehicle experienced a guidance anomaly during initialization. The ASTRO spacecraft responded to this problem by attempting to achieve a sun-safe attitude (with the mated pair of spacecraft maintaining a position with their solar arrays pointing toward the sun), but the guidance error prevented the system from achieving a proper sun-safe attitude. To correct for this problem, control of the mated pair was shifted from ASTRO to NextSat and the Orbital Express team used NextSat's guidance system to successfully point the mated stack towards the sun.

NextSat continued to control the stack while the Orbital Express team worked to determine the root cause of the problems experienced during initialization and sun-safe pointing. The team has uploaded a software fix to correct the anomaly and successfully tested ASTRO's sun-safe mode on March 13.

ASTRO and NextSat are both currently in a sun-safe attitude, and the Orbital Express team will resume the originally planned checkout and mission operations early next week.