



News Release

Defense Advanced Research Projects Agency

"Providing technological innovation for national security for almost 50 years."

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IMMEDIATE RELEASE

March 9, 2007

ORBITAL EXPRESS SPACECRAFT SUCCESSFULLY LAUNCHED

Two Defense Advanced Research Projects Agency (DARPA) Orbital Express demonstrator spacecraft were launched yesterday at 10:10 p.m. EST, from Space Launch Complex 41, Cape Canaveral Air Force Station, Fla., aboard an Atlas V 401 booster. The launch was sponsored by the Department of Defense Space Test Program (STP), as part of the STP-1 mission, which includes, in addition to Orbital Express, the STPSat-1 spacecraft and three other microsattellites.

Orbital Express consists of a next generation serviceable "client" satellite (NextSat) and a prototype servicing spacecraft (Autonomous Space Transport Robotic Orbiter or ASTRO). They were deployed together into a circular, 492-kilometer, low earth orbit with an inclination of 46 degrees. They will spend the next three months in orbit, demonstrating for the first time fully autonomous rendezvous and capture of client spacecraft, satellite-to-satellite refueling, and replacement of battery and flight-computer orbital replacement units.

The technologies developed by DARPA's Orbital Express program are intended to support a broad range of future U.S. national security, civil, and commercial space activities. "What we're showing with Orbital Express is how on-orbit refueling and modular upgrades will make it possible for us to work around some key obstacles: stringent maneuvering constraints, part failures, and technological obsolescence," noted Lt. Col. Fred Kennedy, USAF, DARPA's Orbital Express program manager. "We're hoping that mission designers will see the advantages of a flexible architecture, where you can pop in a better flight computer, a fresh battery, or a decade's worth of additional propellant."

On-orbit satellite refueling would provide the United States with the flexibility to maneuver its satellites and optimize their time over ground targets, avoid both debris and other spacecraft, change orbits to counter denial and deception activities on the ground, and, more generally, provide tactical agility for a wide range of emerging missions. Refueling commercial satellites would extend their service life without incurring the construction and launch costs for replacement assets. The ability to replace or upgrade electronic components on deployed spacecraft would support more rapid deployment of new technologies to satellites, without fielding new vehicles. Satellites could be upgraded with technologies that become available after launch, or components that fail prematurely could be replaced.

(more)

Boeing Phantom Works, Huntington Beach, Calif., is DARPA's prime integrator for the Orbital Express program. They fabricated, assembled, and tested the ASTRO servicing spacecraft. Ball Aerospace constructed the NextSat client satellite. Other members of the Orbital Express team include NASA; Northrop Grumman Space Technology; MacDonald, Dettwiler and Associates; Charles Stark Draper Laboratory; and Starsys Research.

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Media with questions, please contact Jan Walker, (703) 696-2404, or [jan.walker\[at\]darpa.mil](mailto:jan.walker@darpa.mil). Images and mission updates will be available online at www.darpa.mil/orbitalexpress.