Kennedy Space Center receives NASA's Tracking and Data Relay Satellite

December 10 2013

A truck hauls NASA's TDRS-L satellite to the Astrotech facility in Titusville for launch processing. The TDRS is the latest spacecraft destined for the agency's constellation of communications satellites that allows nearly continuous contact with orbiting spacecraft ranging from the International Space Station and Hubble Space Telescope to the array of scientific observatories. Credit: NASA/Charisse Nahser

(Phys.org) —NASA's newest Tracking and Data Relay Satellite (TDRS) is in a temporary home at the agency's Kennedy Space Center in Florida

waiting to be attached to a United Launch Alliance Atlas V rocket that will take it into Earth orbit Thursday, Jan. 23.

The TDRS-L spacecraft arrived at Kennedy Friday, Dec. 6. After being unloaded from a U.S. Air Force C-17 aircraft, it was unpacked and inspected to ensure it sustained no damage on its flight from the Boeing Space and Intelligence Systems satellite factory in El Segundo, Calif.

As a vital information pipeline for space-based research and exploration, TDRS fulfills NASA's broadest communication demands. For more than 30 years, the TDRS fleet has provided critical communication support to NASA's human spaceflight endeavors that began during the space shuttle era and continues with support of the International Space Station. It also provides communications support to an array of science missions, as well as several launch vehicles.

"The launch of TDRS-L ensures continuity of services for the many missions that rely on the system every day," said Jeffrey Gramling, TDRS project manager at NASA's Goddard Space Flight Center in Greenbelt, Md.

TDRS-L is the second of three replenishment satellites for the TDRS constellation, which currently consists of eight spacecraft. TDRS-K was launched in January 2013. The last of the three, TDRS-M, is on track to be ready for launch as early as 2015.

Of the 11 TDRS satellites launched, eight still are operational. Four of those already are beyond their design life. Two have been retired. One was lost in a space shuttle accident.

These three constitute the third-generation of TDRS satellites, which changes the location for communication signal processing of some services from the spacecraft to the ground. This change supports the

evolving needs of the users, providing more flexibility and unique tailoring options for use of these services, including unscheduled access on demand.

NASA's Space Communications and Navigation Program, a part of the Human Exploration and Operations Mission Directorate at NASA Headquarters in Washington, is responsible for the TDRS network. Launch management of the Atlas V launch service for TDRS-L is the responsibility of the mission directorate's Launch Services Program at Kennedy.

Provided by NASA