

NRL space test program experiments ship to Japan for flight to the ISS

May 15 2013

The DoD Space Test Program STP-H4 payload complement, which includes three Naval Research Laboratory (NRL) experiments bound for the International Space Station, has been shipped to Japan for integration on the HTV-4 vehicle that is expected to launch from the Tanegashima Space Center in August 2013.

The STP-H4 payload complement is a suite of experiments managed, integrated, and flown to the [International Space Station](#) (ISS) under the direction of the DoD [Space Test Program](#) (STP). The complement consists of five payloads developed by the DoD and three experiments from NASA.

Three of the DoD payloads were developed and built at the [Naval Research Laboratory](#). NRL's Space Science Division developed the Small Wind And Temperature Spectrometer (SWATS) and Miniature Array of [Radiation Sensors](#) (MARS), and the Space Systems Development Division, part of NRL's Naval Center for Space Technology (NCST), developed the Global Awareness Data-Exfiltration International Satellite Constellation Concept (GLADIS) experiment. The Spacecraft Engineering Department, also part of NRL's NCST, provided the flight harness for the STP-H4 platform and the Power Control Electronics Box for STP-H4.

The STP-H4 payload complement is scheduled for launch in August 2013 from Tanegashima Space Center in Japan, on an H-II Transfer Vehicle (HTV) launch. After launch the HTV will free-fly to the ISS and

then berth to the ISS. The HTV Exposed Palette (EP) will then be transferred to a temporary storage location on the ISS. The STP-H4 complement will be removed from the HTV-EP and installed on the Express Logistics Carrier (ELC-1) for initial checkout and operations.

The SWATS experiment is a low size, weight, and power space weather experiment suite that will acquire simultaneous co-located, in-situ measurements of [atmospheric density](#), composition and winds of both ions and neutrals. MARS consists of an array of nine micro dosimeters that measure the total [dose radiation](#) at different locations on the STP-H4 complement for 3-D radiation modeling. The GLADIS will demonstrate nano-satellite technology including commercial electronics and small, lightweight antenna arrays to provide two-way communications to widely distributed terrestrial and maritime sensor arrays.

NRL researchers look to these experiments to improve their ability and understand and forecast space weather at Earth that can affect military and civilian space and communication systems.

Provided by Naval Research Laboratory

Citation: NRL space test program experiments ship to Japan for flight to the ISS (2013, May 15) retrieved 25 April 2024 from <https://phys.org/news/2013-05-nrl-space-ship-japan-flight.html>

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