

NASA's next laser communications demo installed, integrated

July 20 2020, by Katherine Schauer



Northrop Grumman technicians in front of the LCRD payload fully installed and integrated on the Space Test Program Satellite (STPSat-6). Credit: NGSS

On July 16, 2020, the Laser Communications Relay Demonstration (LCRD) payload was installed and integrated on the U.S. Department of Defense Space Test Program Satellite 6 (STPSat-6) in preparation for a 2021 launch. As an experimental payload, LCRD will demonstrate the robust capabilities of laser communications, which can provide significant benefits to missions, including bandwidth increases of 10 to 100 times more than radio frequency systems.

Prior to spacecraft integration, the LCRD payload went through several tests and blanket installations at Northrop Grumman's integration and test facility in Sterling, Virginia. While LCRD underwent testing, Northrop Grumman technicians also prepared the spacecraft for LCRD's integration. Now that the two components have been fully integrated, they will undergo environmental testing and end-to-end compatibility testing to ensure the spacecraft and payload can properly communicate with one another.

LCRD will be NASA's first two-way optical relay, sending and receiving data from missions in space to [mission control](#) on Earth. LCRD is paving the way for future optical communications missions, which could use LCRD to relay their data to the ground. In 2022, the Integrated LCRD Low-Earth Orbit User Modem and Amplifier Terminal (ILLUMA-T), hosted on the International Space Station, will be the first LCRD demonstration from low-Earth orbit.



LCRD payload fully integrated with STPSat-6 in the Northrop Grumman facility. Credit: NGSS

Provided by NASA's Goddard Space Flight Center

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