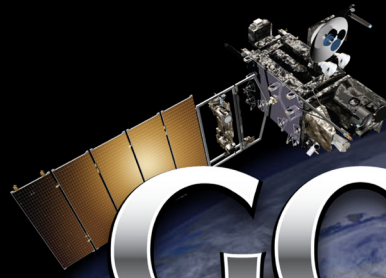




Quarterly Newsletter
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Issue 9



GOES-R

Geostationary Operational Environmental Satellite R-Series



A Note from Greg Mandt, GOES-R System Program Director

We are now less than a year away from the launch of GOES-R and I am proud of the great work the program has achieved to date. Spacecraft integration and testing activities are underway in preparation for environmental testing, and the ground segment completed installation and integration of the GOES-R series IT infrastructure. Significant progress has also been made in the development of the GOES-S/T/U satellites. We also continue to focus on user readiness activities and have received excellent feedback from our National Weather Service partners who are excited about the capabilities the GOES-R series satellites will provide. I look forward to continued success in our run-up to launch.

Highlights

In March 2016, the first satellite in the GOES-R series will be launched into space, providing new and improved observational capabilities. On March 16, [NOAA](#) and [NASA Goddard](#) began highlighting the countdown to launch, and NESDIS released the [Top 5 Reasons Why NOAA's GOES-R Satellite Matters](#) to build public excitement about the new satellite. NOAA, NESDIS, NASA and the GOES-R Series Program participated in a five-day social media campaign focused on next year's launch.

GOES-R spacecraft integration and testing activities are in full swing in preparation for the satellite's pre-environmental review (PER) in April. In January, pre-environmental comprehensive performance tests (CPTs) were completed for the spacecraft bus subsystems and the Advanced Baseline Imager (ABI), Geostationary Lightning Mapper (GLM) and Space Environment In-Situ Suite (SEISS) instruments. In February, the pre-environmental CPT covering the spacecraft bus subsystems was completed, and the on-board computer was delivered for integration and testing. In March, the Search and Rescue and Global Positioning System antennas were installed, the sun-pointing subsystem was mated to the solar array wing assembly, and the wing assembly was integrated with the spacecraft. Also in March, the first flight battery completed thermal vacuum testing.



...data from the GOES-R series satellites can aid firefighting efforts? The Fire/Hot Spot Characterization product will use the higher spatial and temporal resolution available from the ABI to better monitor wildfires and, more importantly, rapid changes in individual fires.



GOES-R spacecraft with solar wing installed. Credit: Lockheed Martin

Harris Corporation has delivered all hardware and completed installation and integration of the GOES-R ground segment IT infrastructure supporting operational systems at NOAA Satellite Operations Facility (NSOF) in Suitland, Maryland, Wallops Command and Data Acquisition Station (WCDAS) in Wallops, Virginia, and the Consolidated Backup (CBU) in Fairmont, West Virginia. The system includes 2,100 servers and storage services totaling three petabytes. Harris issued a [press release](#) on February 25 to mark this achievement.

The GOES-R ground system successfully completed site verification testing for Release Mission Management Flight Ready in February. Operationalization and transition from the precursor software is now in progress. In March, the site verification testing for another ground system software release, Final Product Set (FPS), was completed, and integration of FPS with the Product Distribution and Access system began.

In March, the ground segment project successfully completed integration of the ground system data simulator with the intermediate frequency distribution switch at the CBU. This signal router enables the uplink and downlink of raw data through the antenna systems to the ground system. This was a key risk reduction activity for upcoming data operations exercises and the government-led ground system testing.

On the GOES-R antenna system, part one of the site acceptance test of the W-2 antenna at WCDAS was completed in January. Also in January, the N-4 antenna was delivered to NSOF and site integration concluded in February.

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Considerable progress has been made in the development of the GOES-S/T/U instruments:

- All environmental testing of the GOES-S SEISS instrument is complete.
- The GOES-S Extreme Ultraviolet and X-ray Irradiance Sensors (EXIS) and Solar Ultraviolet Imager (SUVI) are complete and being prepared for delivery to Lockheed Martin in Denver.
- The ABI that will fly on GOES-T successfully completed its PER in January and is undergoing thermal vacuum testing.
- The GOES-T SUVI instrument is being prepared for pre-environmental testing.
- Post-environmental calibration of the GOES-T EXIS is in progress.
- Four of the five GOES-T SEISS flight units are complete.
- The GOES-U EXIS successfully completed pre-environmental calibration and magnetics testing in March.
- Two of the GOES-U SEISS units have completed integration and test, and the other three units are in subassembly test.

Integration of the GOES-S spacecraft propulsion core was completed in February, followed by the propulsion module acceptance test. GOES-S spacecraft system module integration is underway. The system module completed its initial power-up test in March.

Conferences and Events

The American Meteorological Society's 95th Annual Meeting was held January 4–8 in Phoenix. The AMS meeting also hosted the 11th Symposium on New Generation Operational Environmental Satellite Systems which highlighted many of the development activities, program science and user-readiness preparations underway in the GOES-R Series Program. GOES-R presentations and posters from the conference are available on the [GOES-R website](#). The GOES-R Series Program also participated in WeatherFest, staffing the NOAA SciJinks booth and providing information about forecasting, satellite meteorology and Earth science. WeatherFest is an annual weather fair attended by weather enthusiasts of all ages.



The NOAA SciJinks booth at WeatherFest, which took place prior to the AMS 95th Annual Meeting. Credit: GOES-R program

GOES-R program systems engineering personnel participated with AMS and the Secure World Foundation to host a panel discussion, [“Challenges in Sharing Weather Satellite Spectrum with Terrestrial Networks”](#) on March 27 in Washington, D.C. The purpose was to raise awareness of impending changes in United States domestic spectrum policy. Representatives from NESDIS, the National Weather Service (NWS), United States Geological Survey,



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the National Emergency Management Association, and AccuWeather participated in the discussion.

On January 13, GOES-R System Program Director Greg Mandt, presented an overview of the GOES-R Series Program at the Glen Gerberg Weather and Climate Summit in Breckenridge, Colorado. The summit brought together leading scientists, government officials and broadcast meteorologists to discuss extreme weather and climate science and advance communication of the latest research and operational meteorology. [Video](#) of Mandt's presentation is available on the summit's website.



Richard Knabb, Ph.D., Director of the National Hurricane Center (left), and Greg Mandt, GOES-R System Program Director (right), take questions at the Glen Gerberg Weather and Climate Summit. Credit: Dave Jones

NOAA Satellite Science Week was held February 23–27 in Boulder, Colorado, with focus on the GOES-R and JPSS missions. Science themes for the meeting reflected national and NOAA priorities and included sessions on

clouds and aerosols, space weather, high impact and severe weather, climate, the arctic, tropical cyclones and new frontiers. GOES-R presentations and posters from Science Week are available on the [GOES-R website](#).

Proving Ground and Program Science

On February 10, the NWS Operations Proving Ground began a six-week evaluation of one-minute geostationary satellite imagery, which simulates the capabilities of the GOES-R series satellites. The goal of the evaluation is to provide quantitative and qualitative guidance to

NWS management and the GOES-R Program Office on how one-minute satellite imagery affects NWS forecaster decision-making in a variety of weather situations. Follow progress of the evaluations via the [Satellite Liaison Blog](#).

Awards and Accolades

Jun Li, Ph.D., senior scientist at the University of Wisconsin's Cooperative Institute for Meteorological Satellite Studies, received the University of Wisconsin Chancellor's Award for Excellence in Research: Independent Investigator. Li is the principal investigator for GOES-R legacy profile product develop-



ment, GOES-R high impact weather studies, and GOES-R instrument and requirement studies. He is currently funded under the GOES-R risk reduction science program, developing a product that uses the three moisture bands on the ABI for use at the National Centers for Environmental Prediction and NWS Weather Forecast Offices. Li was honored at a reception on April 7 at the Fluno Center in Madison, Wisconsin.

Employee Spotlight

Monica Todirita is the GOES-R Series Deputy Instrument Systems Manager, also responsible for the EXIS and Magnetometer instruments. As Instrument Manager, Monica is responsible for overall leadership, along with technical and programmatic direction and management of flight instrument developments through the mission life cycle. This includes formulation, preliminary and critical design, integration and test, and launch and mission operations.

On February 3, Todirita was honored with a Department of Commerce 2015 Bronze Medal for her exceptional leadership in managing the development and delivery of the GOES-R EXIS and Magnetometer instruments. The Bronze Medal recognizes superior performance by federal employees and is the highest honor award granted by the Under Secretary of Commerce for Oceans and Atmosphere. Regarding the award, Todirita said, "The most important achievement for me is being part of an amazing team of professionals at GOES-R and having the opportunity to make a contribution to ensure that the next generation of weather satellites become a reality."

Her favorite part of her job is interacting with people and getting things moving from concept to reality. "There is nothing like seeing something on paper and then watching it work, passing rigorous testing in all phases, and then capturing data," Todirita stated. "I am looking forward to the GOES-R launch and the turn-on of all of our instruments. We all worked hard to make it happen and as we approach the launch and operations phase, we are confident that we built instruments that will deliver crisper

data products and potentially improve and save lives."

Todirita and her husband take pride in supporting an orphanage in Romania, where they are from, by providing financial support and sending used computers and educational games to engage the 33 boys of various ages who are in institutionalized state care.



Monica Todirita (center) accepts her Bronze Award from NOAA Administrator Kathryn Sullivan, Ph.D. (left). Also pictured is Cherish Johnson, NOAA Satellite and Information Service Chief Financial Officer/Chief Administrative Officer. Credit: NOAA

