

Primary GOES-R instrument ready to be installed onto spacecraft

October 31 2013



The GOES-R Satellite's Advanced Baseline Imager, or ABI prototype model is shown. Credit: Excelis

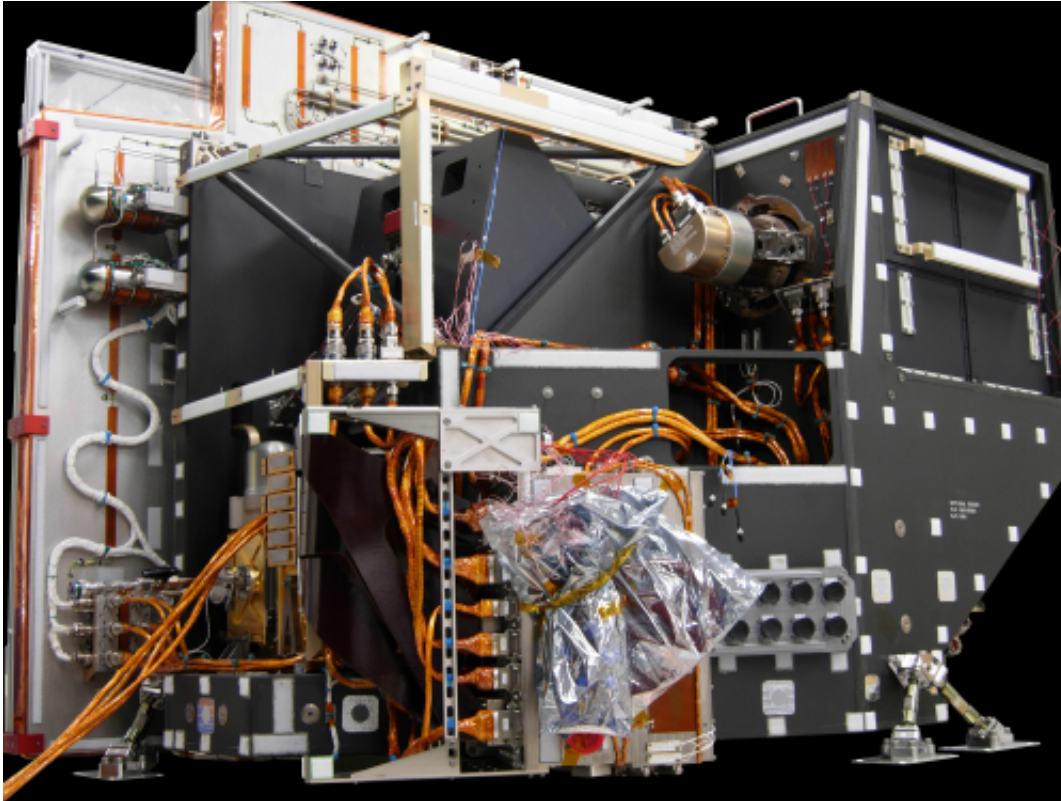
A key instrument that will fly on the Geostationary Operational Environmental Satellite – R (GOES-R) spacecraft, NOAA's next-generation of geostationary satellites, is cleared for installation on the spacecraft.

The Advanced Baseline Imager, or ABI, is GOES-R's primary instrument for scanning Earth's weather, oceans, and environment and is a significant improvement over instruments on NOAA's current geostationary satellites. The ABI will offer faster imaging with much higher detail. It will also introduce new forecast products for severe weather, volcanic ash advisories, fire and smoke monitoring and other hazards.

"The United States is home to some of the most severe weather in the world including tornadoes, hurricanes, snowstorms, floods, and wildfires," said Mary Kicza, assistant administrator for NOAA's Satellite and Information Service. "The ABI offers breakthrough technology that will help NOAA develop faster and more accurate forecasts that will save lives and protect communities."

The first satellite in the GOES-R Series is currently scheduled for launch in early 2016. GOES-R's instruments will also feature improved lightning detection and solar weather monitoring tools, and will provide near real time data to forecasters during [severe weather](#) events.

The ABI has two scan modes. It will have the ability to continuously take an image of the entire planet, or a full disk image, every five minutes compared to every 30 minutes with the current GOES imager. It also has an alternative, or flex mode, which will concurrently take a full disk image every 15 minutes, an image of the continental U.S. every five minutes, and smaller, more detailed images of areas where storm activity is present, as often as every 30 seconds. This kind of flexibility and increased frequency of images is a boon for forecasters.



The GOES-R Satellite's Advanced Baseline Imager, or ABI sensor unit is shown.
Credit: Exelis

"Completing ABI is a major milestone for the program, the culmination of nine years of work to develop an instrument with extraordinary capabilities for weather observation," said Pam Sullivan, project manager of the GOES-R Flight Project at NASA Goddard. "With its increased resolution and faster scan times, ABI is comparable to a hi-definition upgrade for our geostationary weather satellites."

In early 2014 the ABI will be shipped from its developer, ITT Exelis, in Ft. Wayne, Ind. to the spacecraft developer, Lockheed Martin Space Systems Co. in Littleton, Colo., to be installed onto the first GOES-R spacecraft. Lockheed is building the spacecraft for the GOES-R series.

The remaining GOES-R instruments to be delivered are:

Geostationary Lightning Mapper, which will provide continuous surveillance for the first time of total lightning activity from geostationary orbit over the western hemisphere;

Space Environment In-Situ Suite, which consists of sensors that will monitor radiation hazards that can affect satellites, radio communications and navigation systems;

Solar Ultraviolet Imager, a high-powered telescope that observes the sun, monitoring for solar flares and other solar activity that could impact Earth by disrupting power utilities communication and [navigation systems](#) and causing damage to orbiting satellites and the International Space Station; and

Magnetometer, which will provide measurements of the magnetic field surrounding Earth that protects the planet from charged particles released from the sun. These particles can be dangerous to [spacecraft](#) and human spaceflight. The geomagnetic field measurements will provide alerts and warnings to [satellite](#) operators and power utilities.

A sixth instrument, the Extreme X-Ray Irradiance Sensor (EXIS), was completed in May 2013 and was the first of GOES-R's instruments to be ready for integration. EXIS will provide important early warnings of impending solar storms and give scientists a more accurate measure of the power of solar energy radiating toward earth, which can severely disrupt telecommunications, air travel and the performance of power grids.

NOAA manages the GOES-R Series program through an integrated NOAA-NASA office, staffed with personnel from both agencies and located at NASA's Goddard Space Flight Center in Greenbelt, Md.

Provided by NASA's Goddard Space Flight Center

Citation: Primary GOES-R instrument ready to be installed onto spacecraft (2013, October 31) retrieved 14 May 2024 from <https://phys.org/news/2013-10-primary-goes-r-instrument-ready-spacecraft.html>

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