

GOES-R improvements to provide stunning, continuous full-disk imagery

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The National Oceanic and Atmospheric Administration's next generation of GOES satellites, beginning with GOES-R, will have the ability to take full-disk images of Earth at five-minute intervals.

That means that GOES-R will be able to image everything it can see in the same length of time it takes the current GOES (short for Geostationary Operational Environmental Satellite) series to provide one small image of a stormy region. Increased imagery over a shorter time period will provide more timely and informative data to forecasters everywhere in the Western Hemisphere.

A full-disk image is a picture of one side of Earth from space. For example, a [geostationary satellite](#) (one that always hovers over the same spot on Earth) that orbits above the West Coast of the United States would capture that area—the central Pacific Ocean including Hawaii and Polynesia, and south to Antarctica—all in one sphere-shaped image.

Currently, the GOES-East and GOES-West satellites do not have the capability to take those full-disk images every five minutes. The current GOES satellites scan Earth every 30 minutes, or the United States every 15 minutes, or a stormy region every five minutes, but not all at the same time. This change in imaging is a NOAA mission requirement that will enable simultaneous rapid regional coverage and continuous hemispheric weather monitoring.

Because of NOAA's back-up operations in June, NASA's GOES Project

was able to simulate an animation of full-disk imagery that shows what GOES-R would provide daily. "When GOES-13 experienced a disruption of service as GOES-East late on May 21, NOAA initiated back-up full-disk scans from GOES-15," said Dennis Chesters, project scientist of NASA's GOES Project at NASA's Goddard Space Flight Center in Greenbelt, Md. "The full-disk scans from GOES-West were used to observe weather as far east as the Atlantic seaboard, while NOAA activated the spare satellite, GOES-14."

While GOES-14 was being activated, NASA's GOES project used continuous full disk imaging from GOES-West to create a simulation of what GOES-R will be able to do on a daily basis. The result is a low-speed example of the global weather monitoring that will be available in the GOES-R era.

NOAA manages the GOES-R Series Program with an integrated NOAA-NASA program office organization, staffed with personnel from NOAA and NASA, and supported by industry contractors. The program is co-located at Goddard.

More information: www.goes-r.gov/

Provided by NASA's Goddard Space Flight Center

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