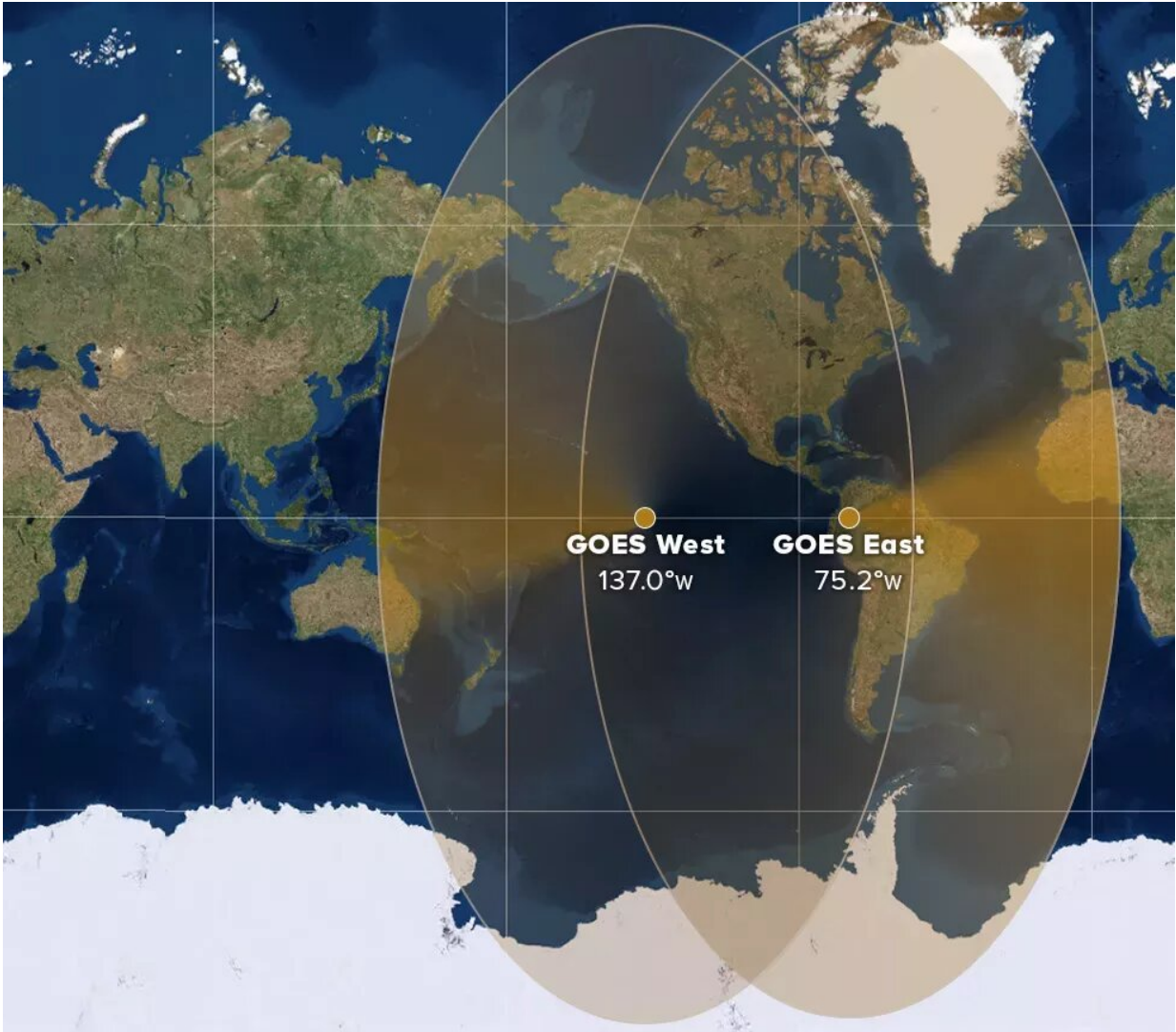


New geostationary satellite enters service

January 5 2023



Map showing the geographical coverage of the GOES East and West satellites.
Credit: NOAA

NOAA's operational satellite fleet has a new member. GOES-18 entered service as GOES West on Jan. 4, 2023.

The milestone comes after a Mar. 1, 2022, launch and post-launch testing of the satellite's instruments, systems, and data. GOES-18 replaces GOES-17 as GOES West, located 22,236 miles above the equator over the Pacific Ocean. GOES-17 will become an on-orbit standby.

In its new role, GOES-18 will serve as NOAA's primary geostationary satellite for detecting and monitoring Pacific hurricanes, atmospheric rivers, coastal fog, wildfires, [volcanic eruptions](#), and other environmental phenomena that affect the western contiguous United States, Alaska, Hawaii, Mexico, and Central America.

The satellite delivers high-resolution visible and infrared imagery, atmospheric measurements, and real-time mapping of lightning activity. It is ideally located to monitor the northeastern Pacific Ocean, where many weather systems that affect the continental U.S. originate. GOES-18 also watches the sun and detects approaching space weather hazards.

GOES-18 joins GOES-16 (GOES East) in operational service. Together the two satellites watch over more than half the globe, from the west coast of Africa to New Zealand and from near the Arctic Circle to the Antarctic Circle. Their data assists weather forecasters, emergency managers, first responders, the aviation and shipping industries, and more.

While GOES-18 has just officially entered operational service, the satellite has been assisting NOAA National Weather Service forecasters for months. Usually, GOES satellites complete post-launch testing in a location over the central U.S., but GOES-18's [early successes](#) allowed

NOAA to move it to its future operational location early. GOES-18 began sending imagery from its new location in June.

Due to an issue with the cooling system on GOES-17's Advanced Baseline Imager (ABI) instrument, some GOES-17 imagery was degraded during certain times of the year. In August, NOAA implemented a unique solution to mitigate the loss of some GOES-17 imagery during these "warm" periods. From Aug. 1 to Sept. 8 and from Oct. 13 to Nov. 16, NOAA provided data from the GOES-18 ABI to GOES West data users. This was accomplished through a data "interleave" that delivered GOES-18 ABI data alongside GOES-17 lightning mapper and space weather data. This allowed forecasters to utilize GOES-18 imagery during the height of the Pacific hurricane season.

Now that GOES-18 is operating as GOES West, GOES-17 will be moved to a central location between GOES East and GOES West to serve as a backup for the operational constellation.

The GOES-R Series Program is a four-[satellite](#) mission that includes GOES-R (GOES-16, launched in 2016), GOES-S (GOES-17, launched in 2018), GOES-T (GOES-18), and GOES-U, which is scheduled to launch in 2024. The program is a [collaborative effort](#) between NOAA and NASA. NASA builds and launches the satellites for NOAA, which operates them and distributes their data to users worldwide.

GOES-R Series satellites are planned to operate into the 2030s. NOAA and NASA have already begun work on the next-generation geostationary mission called Geostationary Extended Observations (GeoXO). The Department of Commerce formally approved the GeoXO Program on Dec. 14, 2022. GeoXO will continue observations provided by GOES-R and bring new capabilities to address our changing planet and the evolving needs of NOAA's data users.

Provided by NOAA Headquarters

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