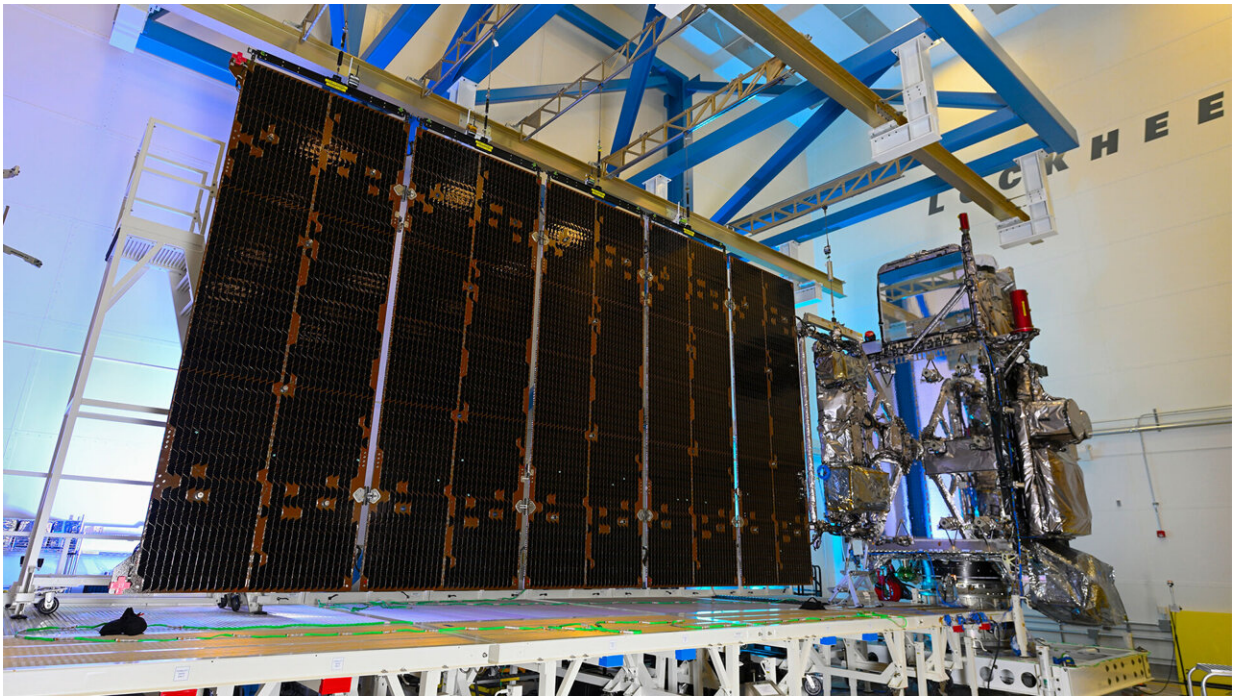


NOAA's GOES-T completes solar array deployment test

April 26 2021



The GOES-T satellite with solar array fully deployed. Credit: Lockheed Martin

On March 3, 2021, engineers completed a successful test deployment of the GOES-T solar array as part of a series of tests to prepare the satellite for a planned December 2021 launch.

This critical [test](#) verified that the [satellite](#)'s large, five-panel solar array—which is folded up when the satellite is launched—will properly

deploy when GOES-T reaches geostationary orbit. During this test, engineers unfurled the five panels on rails that simulated the zero-gravity environment of space. Each solar panel is approximately 13 feet tall by 4.5 feet wide and weighs approximately 45 pounds.

Once GOES-T reaches orbit, the deployed [solar panels](#) will form a single solar array wing that will rotate once per day to continuously point its photovoltaic (solar) cells toward the sun. These cells will convert [solar energy](#) into electricity to power the entire satellite, including the instruments, computers, data processors, sensors, and telecommunications equipment. The solar array will generate more than 5,000 watts of power for the satellite. This is equivalent to the power needed to run a central air conditioning system in your home.

The solar array was developed and built at Lockheed Martin in Sunnyvale, California, and tested at Lockheed Martin's facility in Littleton, Colorado, where the spacecraft was assembled.



Engineers conduct the GOES-T solar array deployment test. Credit: Lockheed Martin

The [solar array](#) deployment was the latest in a series of rigorous tests GOES-T recently completed to prepare for its upcoming launch. [GOES-T also underwent vibration, acoustic, and shock testing](#). These tests ensure the satellite can withstand the harsh conditions of launch and properly function in orbit 22,236 miles above Earth.

GOES-T is on track for a December 2021 launch from Cape Canaveral Air Force Station in Florida. The satellite will be renamed GOES-18 once it reaches [geostationary orbit](#). After GOES-18 completes on-orbit checkout of its instruments and systems, NOAA will consider the health and reliability of the overall GOES observing system before deciding

whether GOES-18 will reside in on-orbit storage or go immediately into operational service.

NOAA's GOES-R Series satellites comprise the Western Hemisphere's most advanced weather-observing and environmental-monitoring system. The GOES-R Program is a four-satellite mission that includes GOES-R (GOES-16, launched in 2016, and operational as NOAA's GOES East), GOES-S (GOES-17, launched in 2018, and operational as GOES West), GOES-T, and GOES-U (planned for launch in 2024).

The satellites provide critical data for weather forecasts and warnings, detection and monitoring of environmental hazards like fire, smoke, fog, volcanic ash, and dust, and monitoring of solar activity and space weather.

The GOES-R Series satellites are planned for operation into the 2030s. Meanwhile, NOAA is beginning work on the next-generation geostationary mission called [GEO-XO](#). GEO-XO will continue the observations provided by GOES-R and bring new capabilities to address major environmental challenges of the future in support of U.S. weather, ocean, and climate operations.

The GOES-R and GEO-XO programs are collaborative efforts between NOAA and NASA. NASA builds and launches the satellites for NOAA, which operates them and distributes their data to users worldwide.

Provided by NASA

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