GOES-R
OUR NATION'S NEXT-GENERATION WEATHER SATELLITE

LOCKHEED MARTIN

We never forget who we're working for®

IMPROVED REAL-TIME WEATHER FORECASTS AND EARLY WARNING

Since 1975, NOAA has operated a system of Geostationary Operational Environmental Satellites (GOES) that provide continuous weather imagery and monitoring of meteorological and space environments across the U.S. and the Western Hemisphere.
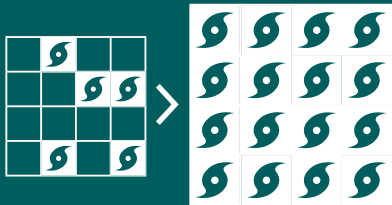
Lockheed Martin is developing the next generation called GOES-R. These four weather satellites will provide major improvements in quality, quantity and timeliness of critical weather data. They will improve the detection and observations of meteorological events that directly affect public safety, protection of property, and ultimately, economic health.

The GOES-R spacecraft bus is a derivative of the Lockheed Martin A2100 bus which has seen hundreds of years of on-orbit operations. The 6,280-pound (2,850-kg), three-axis stabilized spacecraft was designed for an on-orbit life of 15 years. The stability of the satellite will allow it to operate through periodic adjust maneuvers that will provide near-continuous instrument observations.

The GOES-R program is a collaborative mission between NOAA and NASA. Vital GOES-R data will be used in every NOAA National Weather Service office from the National Hurricane Center to the Storm Prediction Center to NWS Forecast Offices, as well as by other agencies and private forecasters.
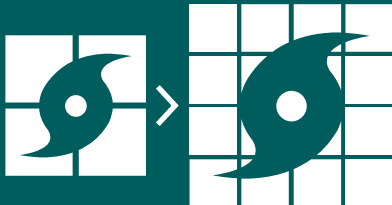
3X MORE CHANNELS

Improves every product from current GOES imager and will offer new products for severe weather forecasting, fire and smoke monitoring, volcanic ash advisories, and more.

4X BETTER RESOLUTION

The GOES-R series of satellites will offer images with greater clarity and four times better resolution than earlier GOES satellites.

5X FASTER SCANS

GOES-R will increase full scans of the Earth to every five minutes, or even every 30 seconds of an area with severe storms.

SUVI – Provided by Lockheed Martin, this instrument will observe the Sun in extreme ultraviolet wavelength range, providing full-disk solar images with increased resolution, sensitivity and dynamic range over current capabilities.

ABI – The satellite's primary instrument, used for applications related to weather, oceans, land, climate and hazards such as fires, volcanoes, hurricanes and storms that spawn tornadoes. Greatly improved from the current GOES imager, it will allow for many new weather data products.

EXIS – EXIS will provide significant improvements to specific forecast models of the Sun's thermosphere and ionosphere where solar flares are produced – which can disrupt communications and degrade navigational accuracy.

GLM – Provided by Lockheed Martin, this single-channel, near-infrared instrument will take hundreds of images every second, mapping both cloud-to-cloud and cloud-to-ground lightning. Research shows that increased lightning rates can be a predictor of impending severe weather, and GLM could increase lead times for severe storm and tornado warnings.

SEISS – This suite will monitor the space-charge-particle environment in real time. It will give insight into the effects of space weather on the Earth's environment and help track natural radiation in and around the Earth.

MAG – Provided by Lockheed Martin, the magnetometer will measure the space environment magnetic field that impacts the outer region of the Earth's magnetosphere. Increased charged particles penetrating the magnetosphere can be dangerous to spacecraft and human spaceflight.

For more information about GOES-R visit: www.lockheedmartin.com/goesr or www.goes-r.gov