

GOES-R SERIES: THE NEXT GENERATION OF GOES

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The first satellite of the NOAA GOES-R series, scheduled for launch in 2015, will usher in a new era in geostationary environmental satellites, providing improved spatial, spectral and temporal resolutions. The Advanced Baseline Imager (ABI), for example will scan the Earth nearly five times faster than the current GOES. The satellites will provide the user communities, including the general public, television meteorologists, private weather companies, the aviation and agricultural communities, oceanographers, hydrologists, climatologists, and national and international government agencies with about 30 times the amount of data currently provided.

GOES-R will also host a totally new instrument, the Geostationary Lightning Mapper (GLM). The GLM is designed to continuously map all forms of lightning with a high spatial resolution and detection efficiency over the Western Hemisphere. It will provide information to improve severe storm monitoring and warnings and contribute to improved aircraft safety and efficient flight route planning.

GOES are a mainstay of weather forecasts and environmental monitoring in the United States. Their images of the clouds are seen daily on television weather forecasts and are available in real-time from many weather related Web sites. The next generation GOES will provide critical atmospheric, hydrologic, oceanic, climatic, solar, and space data. Additional capabilities include improved direct services, such as GOES-R Re-Broadcast (GRB), Search and Rescue (SAR), Data Collection System (DCS), Emergency Managers Weather Information Network (EMWIN) and Low Rate Information Transmission (LRIT).

All of the GOES-R Instruments are under contract, the Ground Segment Contract was awarded to Harris Corporation, and Lockheed Martin was selected to build the spacecraft. In addition to the acquisition of the GOES-R System, the GOES-R Program is also actively involved in user readiness activities, such as the GOES-Users' Conferences, the GOES-R Proving Grounds, user education through COMET, VISIT, and SHyMet, and the GOES-R website. The goal is to ensure that GOES-R products will provide full benefits to the user communities from the first day of operations.

A proving ground is a place where technologies and ideas are tested and proven before they are finalized and incorporated into critical operations. The key mission of the GOES-R Proving Ground (PG) is to demonstrate new satellite observing data, products and capabilities in operational NOAA Offices. This key activity facilitates the transfer of new capabilities into NOAA operations in an efficient and reliable manner. This program directly addresses the concerns raised by various studies that identified the major challenges posed when trying to move new products into NOAA's operational programs, also known as trying to "Cross the Valley of Death". In the GOES-R PG, developers at

the Cooperative Institute of Meteorological Satellite Studies (CIMSS) in Madison Wisconsin, and the Cooperative Institute for Research in the Atmosphere (CIARA) in Fort Collins, Colorado and NASA's Short-term Prediction Research and Transition (SPoRT) program in Huntsville, AL, and NWS forecasters are testing and applying algorithms for new GOES-R satellite data and products. These products were generated using proxy and simulated data sets, including observations from new instruments (MODIS, AIRS, IASI, SEVIRI, NAST-I, NPP/VIIRS/CrIS, LIS), lightning networks, and computer simulated products.

The new instruments, improved Spacecraft, and Ground System will allow for a host of new environmental products and services, while improving most of the products and services that are currently provided. The new observations will contribute to dramatically improved weather, water, and space environmental services in the next decades, enhancing public safety and providing economic benefits to the U.S. and our international partners.

This presentation will provide an overview of the GOES-R program and the strategies, plans, and schedules leading to an operational GOES-R system.

Greg Mandt Bibliography:

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