A satellite image of Hurricane Irene, showing its characteristic eye and spiral cloud structure, positioned over the Eastern United States. The hurricane is centered over the Atlantic coast, with its eye clearly visible. The surrounding cloud bands are dense and well-defined. The landmasses of the United States and parts of Canada are visible in the background, with state and provincial boundaries outlined in thin white lines.

Irene first struck the U.S. as a Category 1 hurricane in eastern North Carolina, then moved northward along the Mid-Atlantic Coast. Wind damage in coastal North Carolina, Virginia, and Maryland was moderate, with considerable damage resulting from falling trees and power lines. Irene made its final landfall as a tropical storm in the New York City area and dropped torrential rainfall in the Northeast that caused widespread flooding. More than 7 million homes and businesses lost power during the storm, and Irene caused at least 45 deaths and more than \$7.3 billion in damages.

Hurricane Irene is an example of increasing accuracy in forecasting storm track. Its landfall in eastern North Carolina and path northward were accurately predicted more than four days in advance by NOAA's National Hurricane Center, which used information from weather satellites, hurricane models, aircraft observations, and other data.

5

**NATIONAL  
ENVIRONMENTAL  
SATELLITE, DATA, &  
INFORMATION SERVICE**





# NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

The National Environmental Satellite, Data, and Information Service's (NESDIS) vision is to be the world's most comprehensive source and recognized authority for satellite products, environmental information, and official assessments of the environment in support of sound decision-making. NESDIS is dedicated to providing timely access to global environmental data to enhance the Nation's economy, security, and quality of life. In collaboration with the National Aeronautics and Space Administration (NASA) and the U.S. Air Force, NESDIS manages and operates weather and environmental monitoring satellites.



*A Delta II rocket launches with the Suomi National Polar-orbiting Partnership (Suomi NPP) spacecraft payload from Space Launch Complex 2 at Vandenberg Air Force Base, CA. on Friday, Oct. 28, 2011. Suomi NPP is the first NASA satellite mission to address the challenge of acquiring a wide range of land, ocean, and atmospheric measurements for Earth system science while simultaneously preparing to address operational requirements for weather forecasting. Photo Credit: (NASA/Bill Ingalls)*

To fulfill its responsibilities, NESDIS acquires and operates the Nation's operational environmental satellites, manages the NOAA National Data Centers, provides data and information services, including Earth system monitoring, performs official assessments of the environment, and conducts related research. The NESDIS satellite command and control program acquires data from on-orbit U.S and international satellites 24 hours per day, 365 days per year. This includes monitoring satellite operations, which occur at the NOAA Satellite Operations Facility in Suitland, Maryland; satellite command and data acquisition stations in Wallops, Virginia; and Fairbanks, Alaska. The Fairbanks Satellite Operations Facility (FSOF) opened in FY 2011. This state of the art facility is farther north than any other satellite communications facility in North America and, as a result, it receives more environmental satellite data than any other station and is a vital link to satellites operated by NOAA and other agencies. From these ground stations, NESDIS operates and acquires data from Polar-orbiting Operational Environmental Satellites (POES), Geostationary Operational Environmental Satellites (GOES), the Department of Defense (DoD) Defense Meteorological Satellite Program (DMSP), and Jason-2.

Using environmental satellites to observe the Earth from space is one of the key tools in forecasting weather, analyzing climate, and monitoring hazards worldwide. Such timely and accurate information supports the National Weather Service, Federal and state agencies, and local emergency management agencies, enabling advance warnings of emerging severe weather such as hurricanes, flash floods, winter storms and wild land fires. Along with the skill of NOAA meteorologists, NOAA's satellites are critical to the success of our national forecasts and are the backbone of the global earth observing



system and global weather prediction capability. Satellite observations also assist the National Ocean Service in monitoring coastal ecosystem health, such as coral bleaching, and identifying and monitoring maritime hazards from sea ice.

The products and services NESDIS provides have become more important in decision-making, with increased demand and capacity for satellite derived information. Such information additionally serves as the basis for achieving NOAA's Next Generation Strategic Plan (NGSP) goals and objectives of enhancing climate adaptation and mitigation techniques, developing a weather-ready nation, and ensuring healthy oceans and resilient coastal communities and economies. NESDIS contributes to the effort along with other agencies and countries in establishing a global observing system to meet the world's information needs for weather, climate, oceans, and disasters.

### FY 2011 ACCOMPLISHMENTS

As part of the GOES-R program, the Center for Satellite Applications and Research (STAR) team used satellite detections to develop imagery that was successfully applied in monitoring floods after the March 2011 tsunami in Japan and the Mississippi river breach in May 2011. Precise mapping of floods and standing water is crucial for detecting deficiencies in existing flood control and for damage claims. The satellite imagery was used to develop a map of the levee breaches near the confluence of the Ohio and Mississippi rivers and was rapidly disseminated to decision makers and the public to support making informed responses to the disasters.

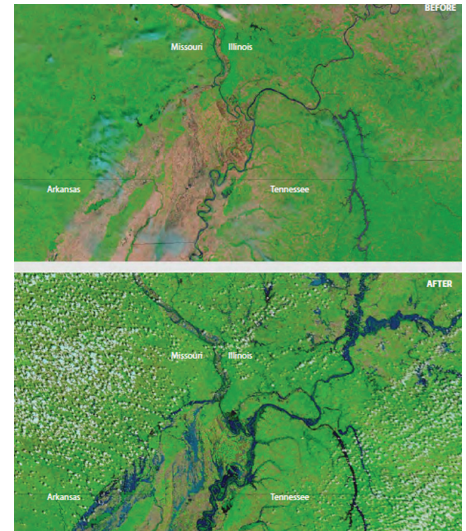
The National Climatic Data Center (NCDC) released the 1981–2010 Climate Normals in 2011, which serve as a baseline for climate conditions at over 7,500 locations across the United States. Climate Normals are three-decade averages of numerous climatological variables, such as temperature, precipitation, and snowfall that can be produced hourly, daily, monthly, seasonally, and annually. Normals are utilized in countless applications across a variety of sectors such as construction, insurance, and engineering for planning and risk management. Specifically, energy companies use the information to predict fuel demand, and agribusinesses use Normals to monitor departures from normal conditions throughout the growing season and to assess past and current crop yields.

### FY 2013 REQUEST

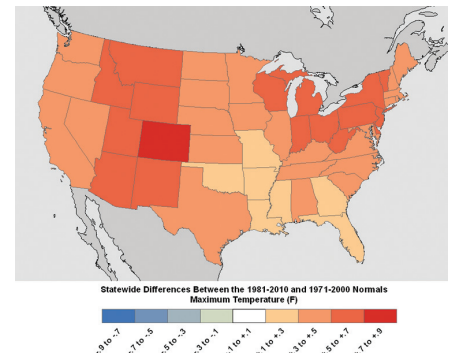
**\$2,041,406,000**

NOAA requests a total of \$2,041,406,000 and 818 FTEs to support the continued and enhanced operations of the National Environmental Satellite, Data, and Information Service. This total includes Operations, Research, and Facilities (ORF) and Procurement, Acquisition, and Construction (PAC) accounts. This is an increase of \$163,561,000 and a decrease of 9 FTEs from the FY 2012 estimate. This includes an increase of \$1,518,000 and 0 FTEs in Adjustments to Base (ATB).

The FY 2013 President's Budget supports the highest priority and most essential services for developing, acquiring, and managing satellite and satellite data operations. NOAA recognizes that a significant majority of its missions and programs are supported by satellite data. NESDIS is responsible for ensuring the improved products and services from the next generation of environmental satellites, and has made the Joint Polar Satellite System (JPSS) and the GOES-R programs two of NOAA's highest priorities.



These two false colored images from the NASA Terra satellite show the Cairo, IL region on April 28, 2011 and April 29, 2010. The differences are stark. Blue colors indicate water, while green and brown is dry land. MODIS, the visible and infrared sensor on Terra, is the precursor to the visible and infrared sensors to be flown on NOAA's future geostationary and polar-orbiting satellites, GOES-R and JPSS.



Climate Normals are the latest three-decade averages of climatological variables, including temperature and precipitation. This new product replaces the 1981-2000 Normals product. Additional Normals products; such as frost/freeze dates, growing degree days, population-weighting heating and cooling degree days, and climate division and gridded normals.



FY 2012 funding support from the Consolidated and Further Continuing Appropriations Act, 2012 (P.L. 112-55) provided a foundation from which NOAA could make significant progress towards developing its next generation polar orbiting satellite system, JPSS. Currently, there is a potential polar observational satellite data gap from the projected end of life of the current polar mission, the Suomi National Polar-orbiting Partnership (Suomi NPP) satellite, to the beginning of the JPSS mission, and NOAA is assessing options to mitigate any gap in weather data.

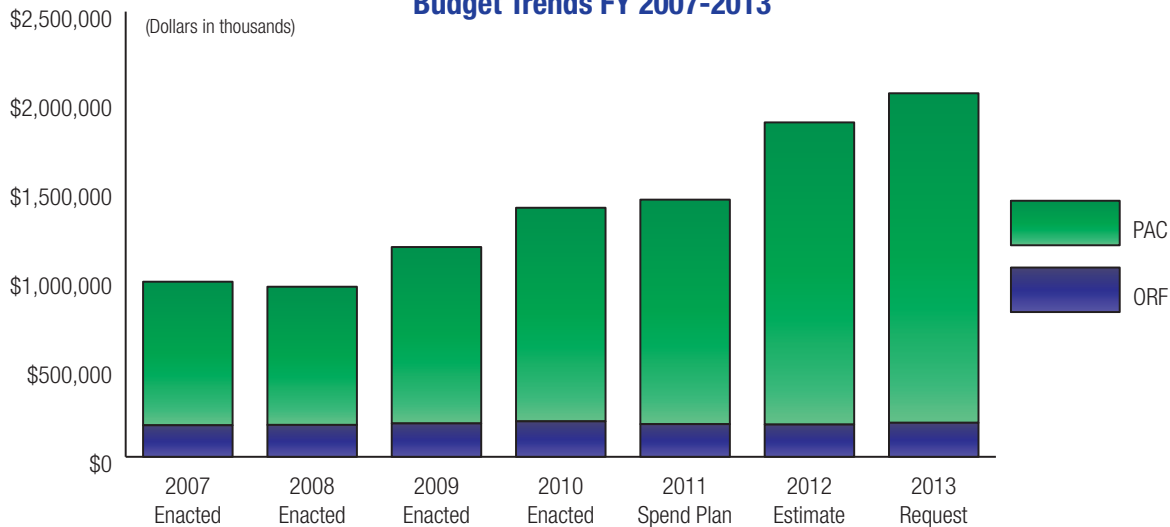
NOAA is conducting a comprehensive re-evaluation of its space-based observation requirements with a goal to maintain and acquire critical services that meet the Nation's national environmental data needs. NESDIS will continue to pursue collaborative opportunities with other national and international agencies and organizations and partner with industry, academia, and other research and development agencies. These partnerships will bring robust information and service delivery to our customers and invest in effective relationships with stakeholders. In particular, NESDIS will continue participating in global partnerships, such as with the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), to help the United States and Europe provide increased capability to monitor global weather and climate.



## NATIONAL ENVIRONMENTAL SATELLITE, DATA, & INFORMATION SERVICE

(DOLLARS IN THOUSANDS)	FY 2011 SPEND PLAN	FY 2012 ESTIMATE	FY 2013 REQUEST	INCREASE (DECREASE)
NESDIS — ORF				
Environmental Satellite Observing Systems	\$114,573	\$112,478	\$123,199	\$10,721
NOAA's Data Centers & Information Services	69,083	68,722	67,898	(824)
<b>Total, NESDIS - ORF</b>	<b>183,656</b>	<b>181,200</b>	<b>191,097</b>	<b>9,897</b>
Total, NESDIS - PAC	1,260,422	1,696,645	1,850,309	153,664
<b>GRAND TOTAL NESDIS (Direct Obligations)</b>	<b>\$1,444,078</b>	<b>\$1,877,845</b>	<b>\$2,041,406</b>	<b>\$163,561</b>
<b>Total FTE</b>	<b>827</b>	<b>827</b>	<b>818</b>	<b>(9)</b>

**NATIONAL ENVIRONMENTAL SATELLITE, DATA, & INFORMATION SERVICE  
Budget Trends FY 2007-2013**



ORF: Operations, Research, and Facilities

PAC: Procurement, Acquisition, & Construction



## FY 2013 ORF BUDGET SUMMARY

NOAA requests a total of \$191,097,000 and 669 FTEs to support NESDIS activities funded in the Operations, Research, and Facilities (ORF). This is an increase of \$9,897,000 and a decrease of 9 FTEs from the FY 2012 estimate. This includes a net increase of \$8,379,000 in program changes and a decrease of 9 FTEs and an increase of \$1,518,000 and 0 FTEs for Adjustments to Base (ATB). Adjustments include the following transfers:

- NOAA requests a technical adjustment to transfer the NESDIS Satellite Command and Control Product Processing and Distribution line items to the new NESDIS line item, Office of Satellite and Product Operations (OSPO). No adjustments have been made to the three PPAs, except in the alignment under this new line item.
- NOAA requests a technical adjustment to rename the Regional Climate Centers PPA the Regional Climate Services PPA. No funding or FTE changes are associated with this request.

### NESDIS – ORF PROGRAM CHANGE HIGHLIGHTS FOR FY 2013:

Select program changes (generally above \$500,000) are highlighted below at the sub-activity level. A summary of funding by Program, Project and Activity (PPA) is located in Chapter 9, Appendices. Detailed descriptions of all program changes by PPA are located in the NOAA FY 2013 Congressional Justification.

#### ENVIRONMENTAL SATELLITE OBSERVING SYSTEMS

**\$123,199,000**

NOAA requests an increase of \$9,679,000 and 0 FTEs for a total of \$123,199,000 and 409 FTEs under the Environmental Satellite Observing Systems sub-activity.

Office of Satellite and Product Operations: NOAA requests an increase of \$9,586,000 and 0 FTEs. This is comprised of three increases, two of which are below \$500,000:

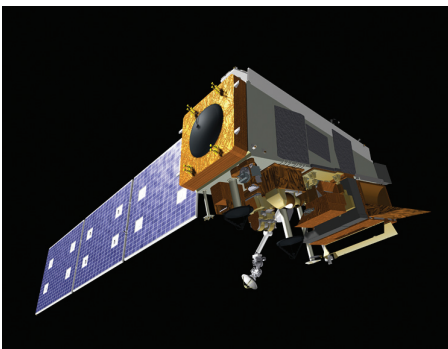
#### **Suomi-NPP and Polar Continuity Data Processing and Distribution: NOAA requests an increase of \$9,435,000 and 0 FTEs to process and distribute environmental data from the Suomi NPP mission.**

The Suomi NPP satellite was successfully launched in October 2011. The checkout period under the National Aeronautics and Space Administration (NASA) will be completed during the seven months following the launch. The Suomi NPP satellite will provide essential continuity of polar environmental observations. The Suomi NPP Production Environment system provides the only national link to get near real-time Suomi NPP data to NOAA operational centers and other NOAA partners in the civilian user community. Funding will be used to procure a robust IT capability needed to generate operational products on a 24 x 7 basis from Suomi-NPP that will lead to improved daily weather forecasts and warnings, hurricane landfall warnings, and harmful algal bloom assessments, which have the potential to mitigate economic losses.

#### NOAA'S DATA CENTERS & INFORMATION SERVICES

**\$67,898,000**

NOAA requests a decrease of \$1,300,000 and 9 FTEs and a total of \$67,898,000 and 260 FTEs under the Data Centers & Information Services sub-activity.

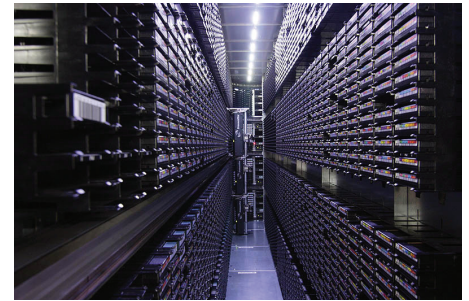


*Suomi-NPP artist rendering*



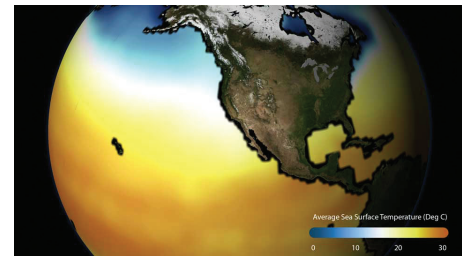
Archive, Access, & Assessment: NOAA requests a decrease of \$552,000 and 9 FTEs. This is comprised of one increase and three decreases.

**National Climatic Data Center, Data Center Operations: NOAA requests an increase of \$5,822,000 and 0 FTEs for Data Center Operations to maintain NOAA's ability to provide long-term preservation (safe storage) and access to the Nation's environmental data and information.** NOAA's Data Centers have begun the transition from their legacy archive storage systems to the new Enterprise Archive system. Data Centers are being equipped to handle expanding volumes of data from satellites, weather radars, high resolution weather, ocean, and climate models, and other large volume data sets. Data Center Operations will accommodate the storage and retrieval of these data sets. In FY 2013, funds will be used to provide operations and maintenance of NOAA's new Enterprise Archive and Access system and communications bandwidth to deliver large data volumes. The archive system will accommodate data from new or improved observations planned by NOAA: Suomi-NPP, JPSS, GOES-R, and Dual Polarization-modified weather radar. In addition, funds will support facility infrastructure and Federal IT security requirements including training of systems operators and administrators.



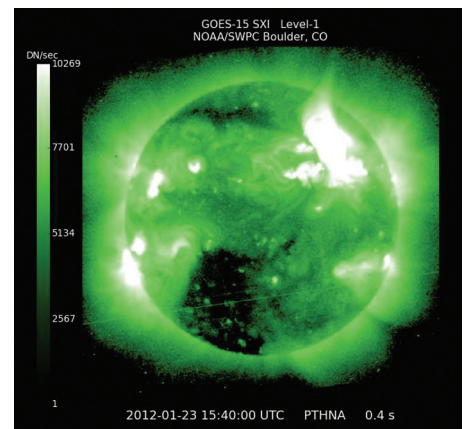
Massive tape library transitioning to new Enterprise Archive System

**National Oceanographic Data Center: NOAA requests a decrease of \$3,796,000 and 6 FTEs to reduce funding to the National Oceanographic Data Center.** The National Oceanographic Data Center (NODC), located in Silver Spring, MD, with offices in Stennis, MS; Honolulu, HI; San Diego, CA; and Charleston, SC, is the Nation's permanent archive for oceanographic data, ensuring public access to and the scientific stewardship (quality control, analysis and management) of long-term observational records of the global ocean, and U.S. coastal waters and their ecosystems. In FY 2013, NODC will begin to consolidate its operations, centralizing Information Technology (IT) functions in Mississippi and administrative functions in Maryland. The consolidation will reduce requirements for contractor support for IT operations. There will be a temporary decrease in the number of data sets going online until the NODC archive is migrated to the Comprehensive Large Array-data Stewardship System. NODC will continue to provide a permanent archive for ocean and coastal data.



This image, developed by NOAA Environmental Visualization Laboratory was generated from NODC's World Ocean Atlas. It shows the long-term average sea surface temperature.

**National Geophysical Data Center: NOAA requests a decrease of \$578,000 and 3 FTEs to the divisions of the National Geophysical Data Center (NGDC) responsible for space weather and natural hazard data, as well as the National Snow and Ice Data Center.** In FY 2013, NOAA proposes to discontinue support for specific sea-ice products that are developed for the NASA funded National Snow and Ice Data Center; some of these products could potentially be funded through other sources outside of NGDC or NOAA. Two FTE will be reduced from the NGDC division responsible for providing scientific data stewardship for the Nation's operational space environmental data and information; even with this reduction NGDC maintains the ability to provide mission critical space weather data sets to support NOAA's forecasting and monitoring abilities. An additional FTE will be reduced from the NGDC division responsible for archiving and assimilating natural hazard information, since funding provided by sources outside of NGDC was already scheduled to decrease.



The GOES-15 spacecraft carries a sophisticated Solar X-ray Imager to monitor the Sun's X-rays for the early detection of solar flares, coronal mass ejections, and other phenomena that impact the geospace environment.





**Climate Database Modernization Program: NOAA requests a decrease of \$2,000,000 and 0 FTEs to terminate the Climate Database Modernization Program (CDMP).**

This program scans images and keys data from paper and microfilm of new incoming and historical records and makes the digital data available on the web to businesses and members of the climate and environmental communities. The CDMP program is a partnership with four private sector contractors, currently supporting approximately 35 contractor personnel. CDMP's goal is to preserve and make available climate data going back several hundred years. To date, over 57 million images have been digitized for on-line access. Over 14 terabytes of data have been keyed and converted to digital format, extending the historical climate record back to the early 1800s, and in some cases, the 1700s. Environmental publications and historical documents are now available in electronic form and can be downloaded to a computer. NWS is in the process of digitally converting its remaining stations that still record and report via paper, which will reduce the immediate operational need for CDMP supported service.

**Coastal Data Development: NOAA requests a decrease of \$500,000 and 0 FTEs to reduce funding to the National Oceanographic Data Center/National Coastal Data Development Center (NODC/NCDDC).**

NCDDC is located in Stennis, MS. NODC/NCDDC supports marine environmental and ecosystems stewardship by providing access to the nation's coastal data resources. NCDDC uses established and emerging technologies to support end-to-end data management for NOAA and NOAA's partners in Federal, State, local, academic, and other organizations. NCDDC focuses on the development of products and services intended to bring together scientists and coastal managers to act as an important source of coastal ecological and observational data and information for the American public at large. The FY 2013 budget will reduce NODC regional project development and science contractor support at the NCDDC. With increased collaboration with existing partnerships in other agencies, NODC will continue to identify and obtain coastal data sets for ingest into the national ocean and coastal archive.

**Regional Climate Services: NOAA requests a decrease of \$1,048,000 and 0 FTEs for Regional Climate Services (RCS), which includes the six Regional Climate Centers (RCCs) and the six Regional Climate Services Directors (RCSDs).**

Each RCSD is located at an NWS Regional Office. They are charged with coordinating and organizing relationships and projects within their respective region across NOAA business units, their respective regional RCC, and other non-agencies (government, private, academic, research). The RCSDs also provide oversight and direction regarding the tasks included in the individual contracts with each RCC. Through a competitive award process, six new RCC contracts will be awarded for FY 2013. Each RCSD will directly manage the NOAA contract for a specific RCC, thereby reducing the management overhead costs under the contract and providing improved contract oversight regarding deliverables and performance measures. The intent is to better align the geographical regions and area of responsibilities managed by NOAA through the RCSDs and the NWS regions. Together, the RCSDs and RCCs will serve as trans-boundary experts identifying stakeholder needs and matching those needs with the emerging science and observations developed through NOAA's Data Centers, labs and partners.



*Devil's Lake water level has risen over 25 feet over the last 20 years. Devil's Lake, N.D., July 21, 2011 --A road that had lead to a farm near Devil's Lake is underwater. Devil's Lake has been overtaking the towns surrounding the lake, forcing local and state officials to try and stop the land erosion. Photo by Patsy Lynch/FEMA*



**Environmental Data Systems Modernization: NOAA requests an increase of \$800,000 and 0 FTEs for the Satellite Active Archive for web-based digital access to satellite data.**

The NOAA Satellite Active Archive mission provides robust and safe archive storage and stewardship, and open access to data sets and derived climate model products for present and future generations of users. This next generation archival and access capability enables NOAA and the Nation to maintain and improve its science programs in support of economic growth and improved environmental stewardship. Business, research, and government leaders have critical needs for quality long time-series of historical and recent national and global data to evaluate the current status of the environment, to assess long-term environmental trends, and to assist in predicting future environmental conditions and events. In FY 2013, funds will be used for the communications circuits specific to connecting the CLASS archive system at the National Climatic Data Center, Asheville, NC, and National Geophysical Data Center, Boulder, CO, to the NSOF in Suitland, MD, which is NOAA's state-of-the-art home for 24/7 satellite program operations.

**FY 2013 PAC BUDGET SUMMARY**

NOAA requests a total of \$1,850,309,000 and 149 FTEs to support the Procurement, Acquisition, and Construction (PAC) of the National Environmental Satellite, Data, and Information Service. This is an increase of \$153,664,000 and 0 FTEs from the FY 2012 estimate. This includes an increase of \$153,664,000 in net program changes and \$0 and 0 FTEs in Adjustments to Base (ATB). Adjustments include the following transfers:

- NOAA requests a technical adjustment to move \$25,880,000 and 0 FTEs from the Restoration of Climate Sensors PPA to the NESDIS Joint Polar Satellite System PPA, in order to more accurately reflect the actual costs of the JPSS Program and its observation requirements.

**NESDIS — PAC PROGRAM CHANGE HIGHLIGHTS FOR FY 2013:**

Select program changes (generally above \$500,000) are highlighted below at the sub-activity level. A summary of funding by Program, Project and Activity (PPA) is located in Chapter 9, Appendices. Detailed descriptions of all program changes by PPA are located in the NOAA FY 2013 Congressional Justification.

**ACQUISITION \$1,848,081,000**

NOAA requests an increase of \$153,664,000 and 0 FTEs for a total of \$1,848,081,000 and 149 FTEs. This is comprised of two increases and three decreases:

(BA IN THOUSANDS)	FY 2013 REQUEST	FY 2014	FY 2015	FY 2016	FY 2017
GOES-N	\$29,900	\$29,900	\$29,900	\$29,900	\$25,000

**GOES-N: NOAA requests a decrease of \$2,567,000 and 0 FTEs for the GOES-N program.** A planned decrease in funding is proposed to reflect reduced requirements in NASA's system engineering and support of the GOES-N Series based on the launch of the last satellite of the GOES-N series in March 2010. With the successful handover of GOES-15 command and control from NASA to NOAA, funds are still required to support ground



systems, continue product development, and provide technical management, maintenance support and operations of the on-orbit assets. The purpose of the GOES-N Series is to provide environmental satellite continuity of the eastern and western hemispheres until the GOES-R Program launches its first satellite in FY 2016.

(BA IN THOUSANDS)	FY 2013 REQUEST	FY 2014	FY 2015	FY 2016	FY 2017
GOES-R	\$802,000	\$950,761	\$844,744	\$781,653	\$706,251



GOES-R artist rendering

**GOES-R: NOAA requests an increase of \$186,378,000 and 0 FTEs to provide continued satellite engineering development and production activities for the GOES-R Series (GOES-R, -S, -T, & U) that are necessary to meet a launch readiness date (LRD) of Q1 FY 2016 for the first GOES-R satellite.** The GOES-R Series will provide continuity of GOES data coverage after the GOES-N series and will provide critical weather observations for severe weather events such as hurricanes, and also provide key enhancements in observational capabilities for climate, oceans and coasts, and the space environment through 2036. The procurement of GOES-R satellites and ground systems is a cooperative venture between NOAA and NASA. While NOAA defines program requirements, provides funding, and operates the GOES satellites, NASA procures and launches the satellites on NOAA's behalf. In FY 2013, this planned increase will continue spacecraft and ground system development, and support integration, testing, and delivery of initial Flight Units for five instruments. FY 2013 funding will allow a ramp up of ground system integration and test activities, including the new antennas, and launch vehicle acquisition activities. These activities are critical to meeting a first quarter 2016 launch necessary to backup the GOES-west satellite at the end of its expected life in 2017.

(BA IN THOUSANDS)	FY 2013 REQUEST	FY 2014	FY 2015	FY 2016	FY 2017
Jason-3	\$30,000	\$40,000	\$6,000	\$6,000	\$6,000



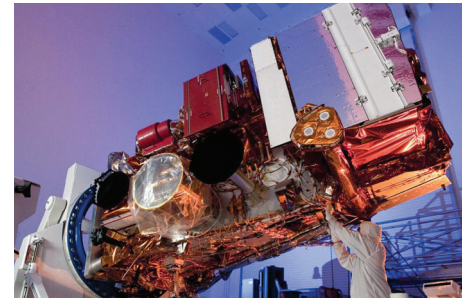
JASON-3 artist rendering

**Jason-3: NOAA requests an increase of \$10,300,000 and 0 FTEs to continue the development of the Jason-3 satellite in partnership with EUMETSAT and CNES.** The most accurate measurements of sea surface heights are made by the Jason series of satellites. It is critical to our understanding of global and regional climate variability that we continue to collect, analyze and maintain a continuous record of sea surface height data. Jason-2 continues the systematic collection of sea level observations initiated by TOPEX/Poseidon in 1992. The Jason-3 satellite will be functionally equivalent to the Jason-2 satellite. The requested funds are necessary to complete development activities on the U.S. instruments, including a microwave radiometer and precision orbit determination components (e.g., GPS). This increase is required to meet a launch date in FY 2015 to ensure the continuity of measuring sea surface height, which is a critical climate data record that has been maintained for over 20 years. Funds will also continue to support launch services and associated engineering services for Jason-3. EUMETSAT and CNES, who have secured their funding contributions, are providing the spacecraft, altimeter, precision orbit components, ground system, and operations. Data from Jason-3 will also be used to assist in forecasting short-term, severe weather events, including tropical cyclones.



(BA IN THOUSANDS)	FY 2013 REQUEST	FY 2014	FY 2015	FY 2016	FY 2017
Joint Polar Satellite System (JPSS)	\$916,364	\$956,000	\$958,628	\$943,600	\$921,100

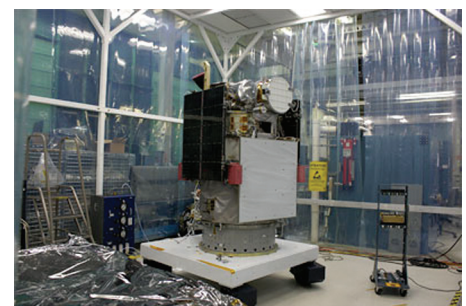
**Joint Polar Satellite System (JPSS): NOAA requests a decrease of \$33,530,000 and 0 FTEs to continue development of the JPSS instruments, ground system, and spacecraft.** The FY 2013 proposed funding profile maintains all planned weather instruments and supports a second quarter FY 2017 Launch Readiness Date for the first JPSS satellite to minimize any gap in weather coverage between the Suomi NPP satellite and the launch of the first JPSS satellite. FY 2013 funding is necessary to continue development of the JPSS ground system, spacecraft and instruments, including sensors for measuring ozone, earth radiation and solar irradiance. FY 2013 funding will complete the development of the Total Solar Irradiance Sensor (TSIS)- 1 and the Clouds and Earth Radiant Energy System instrument (CERES), and continue the development of the Ozone Mapping Profiler Suite-Nadir instrument (OMPS-Nadir). CERES will fly on the JPSS-1 spacecraft sustaining the measurement from the Suomi NPP satellite. TSIS-1 cannot be accommodated on the JPSS-1 spacecraft, and NOAA and NASA are evaluating options for flying the instrument. NOAA and the Administration continue to seek cost-effective ways of implementing satellite missions and are evaluating options to achieve a life-cycle cost of \$12.9 billion or less for the JPSS program.



JPSS under construction

(BA IN THOUSANDS)	FY 2013 REQUEST	FY 2014	FY 2015	FY 2016	FY 2017
Deep Space Climate Observatory (DSCOVR)	\$22,883	\$19,275	\$3,200	\$3,200	\$2,400

**Deep Space Climate Observatory (DSCOVR): NOAA requests a decrease of \$6,917,000 and 0 FTEs to continue the refurbishment of DSCOVR, which will provide solar wind data for geomagnetic storm warnings.** Space weather has demonstrated the potential to disrupt significant portions of the U.S. infrastructure, including transportation systems, power grids, telecommunications, and GPS. The NWS Space Weather Prediction Center forecasters use information derived from NASA's Advanced Composition Explorer (ACE) satellite to issue forecasts and warnings for geomagnetic storms. NOAA provides these warnings to allow key industries such as the commercial airline, electric power, and GPS industries to prepare for and avoid the harmful effects of space weather. DSCOVR will provide the same kinds of measurements that ACE currently provides after its launch in FY 2014. FY 2013 funds will continue the refurbishment of the NASA Satellite, DSCOVR, by the NASA/ Goddard Space Flight Center (GSFC). On behalf of NOAA, NASA is conducting this work on a reimbursable basis. The U.S. Air Force (USAF) is a partner and will provide the launch vehicle and services based on funds appropriated for the USAF in the FY 2012 Consolidated Appropriations Act (P.L. 112-74).



DSCOVR