

# National Environmental Satellite, Data, and Information Service (NESDIS) December 2014 Newsletter

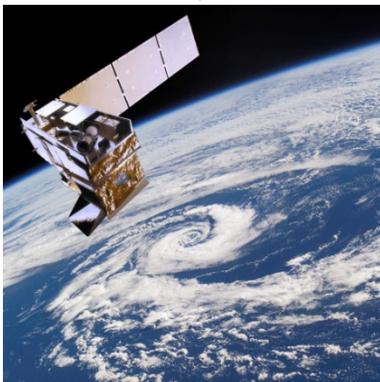


## Operations – Suomi NPP

### Three-Year Anniversary of Launch

October 28, 2014 marked the three-year anniversary of the launch of the NOAA/NASA Suomi National Polar-orbiting Partnership (Suomi NPP) satellite from Vandenberg Air Force Base, California. Suomi NPP has orbited Earth over 15,550 times since its launch three years ago. In addition, 2014 marks the year that Suomi NPP was designated as the primary operational polar-orbiting spacecraft for NOAA's operational weather forecasting mission.

NOAA's National Weather Service (NWS) uses Suomi NPP data in its numerical weather prediction models. Observations from the satellite are improving the accuracy and extending the range of global forecasts three to seven days in advance of significant weather events, including hurricanes and winter storms. These early warnings enable emergency managers to make timely decisions to protect American lives and property. These data are also used by other Federal agencies, including the Department of Defense, U.S. Coast Guard, Federal Aviation Administration, among others.



## Spotlight – DSCOVR Satellite

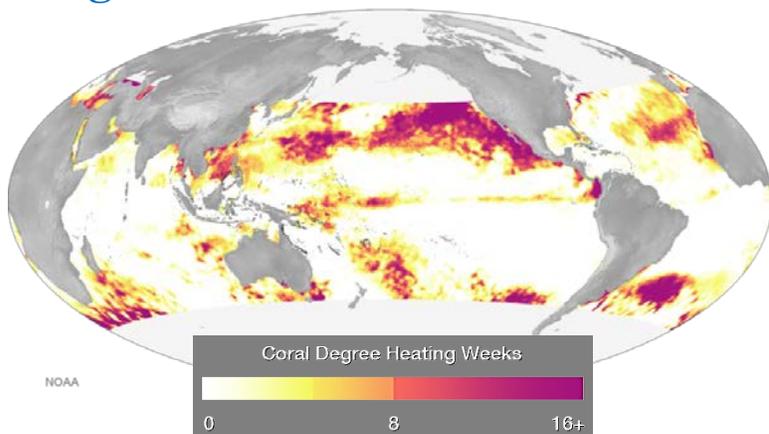
### Delivered for Launch

The Deep Space Climate Observatory (DSCOVR) satellite, a partnership between NOAA, NASA, and the U.S. Air Force, has been delivered to the Astrotech payload processing facility in Titusville, Florida, near Kennedy Space Center. Launch is currently scheduled for early 2015 aboard a SpaceX Falcon 9 v1.1 launch vehicle from Cape Canaveral Air Force Station, Florida.

DSCOVR will maintain the nation's real-time solar wind monitoring capabilities from the Lagrange 1 position, one million miles from the surface of the Earth. These capabilities are critical to the accuracy and lead time of NOAA's space weather alerts and forecasts, provided by the NWS Space Weather Prediction Center in Boulder, Colorado. Without timely and accurate warnings, space weather events like geomagnetic storms have the potential to disrupt nearly every major public infrastructure system, including power grids, telecommunications, aviation, and GPS. Experts estimate damages from the most extreme of these types of severe solar storms could range as high as \$1- \$2 trillion.



## Image of the Month



### Satellites Observe Intense Bleaching Conditions in 2014

Warm global temperatures along with emergence of El Niño-like conditions in the Pacific combined to create a very stressful year for coral reefs. This image shows the maximum degree heating weeks for 2014 – or the number of weeks that each location experienced sea surface temperatures that were a degree or more above normal. Yellow areas indicate mild thermal stress; orange areas are associated with bleaching conditions; pink areas may have experienced coral mortality due to bleaching. Reefs of the Florida Keys observed their worst bleaching impacts since 1997-1998. NOAA's polar orbiting satellites are used to measure sea surface temperatures and calculate the heat stress experienced by tropical reefs around the world.

## Message from Dr. Stephen Volz

### Assistant Administrator for NESDIS

NESDIS has reached many milestones in Calendar Year 2014. The December edition of the Newsletter highlights several of these accomplishments, from acquisition and operations of our satellite programs to products and services generated for the good of the Nation.

For my part, I have been enjoying meeting with many of the staff and leadership within NOAA, Members and staff of Congress, and our Federal and industry partners. This is a busy time to be at NESDIS and I look forward to what 2015 has to bring. We have an exciting year ahead of us with the planned launches of DSCOVR and the Jason-3 satellite, followed shortly thereafter by the GOES-R satellite in early 2016.

I hope you share my excitement about the future of NESDIS as we work toward our upcoming launches and develop new capabilities with satellites, and satellite products, as we create the weather and environmental monitoring system of the future.

I am very pleased with the support that Congress has demonstrated for NESDIS in the FY 2015 Omnibus bill. Thank you for your continued support of our programs – we couldn't do this without you! From all of us here at NESDIS, we wish you a happy, healthy, and safe holiday season and a Happy New Year!

# Looking Back: Accomplishments in Calendar Year 2014

## GOES-R Series Program

GOES-R has had an exciting year. Key program reviews are complete, the spacecraft core and system modules have successfully mated, and the full suite of instruments have been delivered *and* integrated.

Instruments on board GOES-R:

- [Advanced Baseline Imager \(ABI\)](#) .
- [Space Environment In Situ Suite \(SEISS\)](#)
- [Solar Ultra-Violet Imager \(SUVI\)](#)
- [Extreme UV/X-Ray Irradiance Sensors \(EXIS\)](#)
- [Magnetometer \(MAG\)](#)
- [Geostationary Lightning Mapper \(GLM\)](#)

With completion of the instrument integration, preparations are underway for the GOES-R satellite to enter into the environmental testing phase. This phase is to ensure the satellite is prepared to withstand the rigors of launch and operation in the extreme environment of space. The satellite is on schedule for launch in early 2016, and we couldn't be happier about it.



*The GLM instrument integration on GOES-R. Credit: Lockheed Martin*

Development for the following GOES-S satellite is also executing on schedule. Two instruments, ABI and EXIS, are already complete and work on the spacecraft is well underway.

## JPSS Program

Numerous milestones have been reached this year. The JPSS-1 spacecraft is complete and integration of the instruments has begun.

Instruments on board JPSS-1:

- [Clouds and Earth's Radiant Energy System \(CERES\)](#) – integration with the spacecraft is complete!
- [Ozone Mapping and Profiler Suite-Nadir \(OMPS-N\)](#) – instrument has been delivered and integration to the spacecraft is underway.
- [Cross-track Infrared Sounder \(CrIS\)](#) – instrument complete and awaiting delivery.
- [Visible Infrared Imaging Radiometer Suite \(VIIRS\)](#) – instrument complete and awaiting delivery.
- [Advanced Technology Microwave Sounder \(ATMS\)](#) – instrument in corrective action and will be delivered mid 2015.

The JPSS-1 mission passed its Critical Design Review in 2014, which confirmed that the mission remains within budget and on schedule for a launch no later than the 2<sup>nd</sup> Quarter of FY 2017.



*The CERES instrument prior to integration on JPSS-1. Credit: Ball Aerospace & Technologies Corp.*

For the JPSS-2 satellite, NASA, on behalf of NOAA, has awarded sole source contracts for all key instruments. In addition, the JPSS-2 spacecraft procurement activity has been initiated.

## Other Highlights

### National Geophysical Data Center (NGDC):

On December 15, NOAA's NGDC released an updated [World Magnetic Model](#). This model, updated every 5 years, is the standard used by the Department of Defense, the U.K. Ministry of Defence, NATO, and the International Hydrographic Organization for navigation, attitude, and heading referencing systems. It is also used widely in civilian applications ranging from the compass app in smartphones to energy exploration. This work is a collaboration between NGDC and the National Geospatial-Intelligence Agency.

### National Oceanographic Data Center (NODC):

The NODC, in collaboration with the Arctic and Antarctic Research Institute (Russia), Geophysical Institute, University of Bergen (Norway), released a [Climatological Atlas of the Nordic Seas and Northern North Atlantic](#). The Atlas is based on data collected from more than 500,000 stations between the years 1900 and 2012. It contains decadal, periodic, annual and monthly climatological fields for water temperature, salinity, and density on a 0.25° grid at different depths.

### National Climatic Data Center (NCDC):

NOAA's NCDC is co-hosting a [Workshop on Water Resources and Drought Information in the Southwest United States](#) in Phoenix, Arizona, on January 8, 2015. The workshop aims to grow public awareness of NCDC, NESDIS, and other NOAA products and services useful to inform drought-related decision making, and help better define the data and information needs of affected stakeholders. Interested parties may participate in the plenary sessions virtually.

### Search and Rescue:

For the US Search and Rescue Region, there was one rescue event with 21 rescues between November 28 and December 5. On November 30, an emergency signal was detected near Honolulu, Hawaii. One vessel was discovered on fire, and the Coast Guard rescued all 21 people. Please visit [here](#) for more information.

### Numbers by the Year:

- Total numbers of rescues in the U.S. for FY 2015: 56
- Total numbers of rescues in the U.S. for CY 2014: 226

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