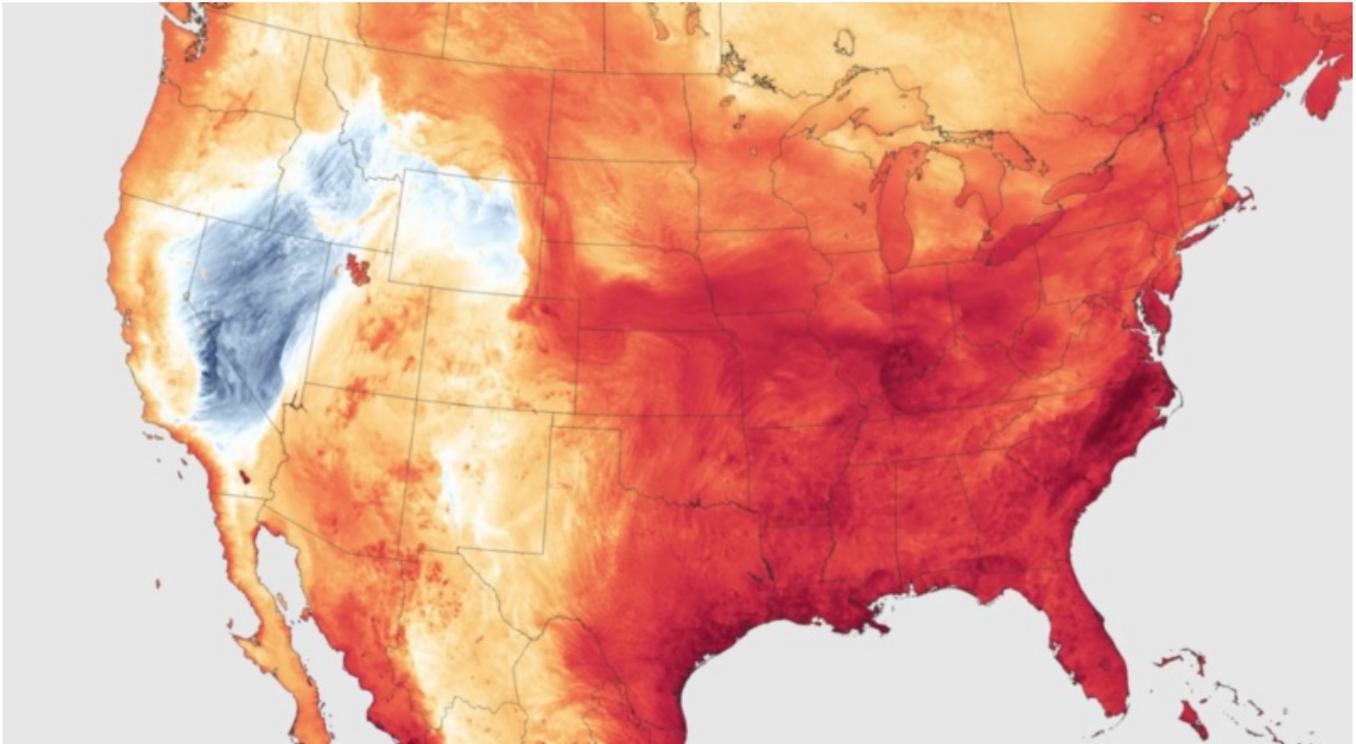


NESDIS NEWS

National Environmental Satellite, Data, and Information Service

July 2016



The week of July 18, 2016 saw a [heat wave sweep across the United States](#), that caused the National Weather Service to issue alerts for more than a dozen states. Heat index values for parts of the United States reached as high as 115°F. The above image depicts predicted high surface temperatures and is based on data from NOAA's [High-Resolution Rapid Refresh Model](#), which uses data from NOAA's geostationary and polar-orbiting satellites. The VIIRS instrument, aboard Suomi NPP, NOAA's primary polar-orbiting satellite, also provides measurements of the atmospheric, land, and oceanic parameters which are referred to as Environmental Data Records (EDRs). The Land Surface Temperature (LST) EDR is the measurement of the skin temperature over global land coverage including coastal and inland water. In the United States, LST data - including the [VIIRS LST EDR](#) - are used by many different governmental agencies, including NOAA, NASA, Department of Agriculture, Environmental Protection Agency, Department of the Interior, and Department of Defense, as well as by universities and research institutes worldwide.

DID YOU KNOW?



Search and Rescue: 46 People Rescued from Sinking Boat off Alaska

On Tuesday, July 26, 2016, a fishing vessel, the F/V *Alaska Juris*, sank with 46 people on board off the coast of Alaska. When the vessel began taking on water, all crew members donned survival suits and got

On July 27, 2016, NOAA's Space Weather Prediction Center (SWPC) began using the [Deep Space Climate Observatory \(DSCOVR\)](#) as the primary data source for operations. DSCOVR replaces data that were used operationally at SWPC from NASA's aging research satellite, the Advanced Composition Explorer (ACE), launched August 25, 1997.

NOAA's DSCOVR satellite has been making headlines in the last month. NASA's Earth Polychromatic Imaging Camera (EPIC), on board the DSCOVR satellite, took a snapshot (above) of a fully illuminated dark side of the moon between 11:50 pm on July 4 and 3:18 am on July 5, 2016. To capture this lunar transit EPIC's frequency of pictures was changed from once every two hours to once every 30 seconds.

Due to the satellite's orbit pattern approximately 1 million miles from Earth, the moon appears between it and our planet only once or twice each year. The last time it was recorded by the satellite was in [July 2015](#).

SARSAT Saves

The [Search and Rescue Satellite Aided Tracking](#) system detects and locates mariners, aviators, and recreational enthusiasts in distress. The satellites relay distress signals from emergency beacons to a network of ground stations and ultimately to the U.S. Mission Control Center in Suitland, Maryland. The Center processes the distress signal and alerts the appropriate search and rescue authorities to who is in distress and where they are located.

Select recent SARSAT rescues:

1) On July 4, 2016, the signal from a personal locator beacon was detected approximately 75 nautical miles northeast of Fairbanks, Alaska. A hiker activated the PLB when he realized that he had hiked in the wrong direction for about 20 hours. The signal was received by NOAA's Satellite Operations Facility in Suitland, Maryland, and was sent to the Alaska Rescue Coordination Center, who requested assistance from U.S. Army Alaska. U.S. Army Alaska dispatched a helicopter and rescued the hiker.

2) On July 5, 2016, the signal from an emergency position-indicating radio beacon was detected approximately

into three life rafts.

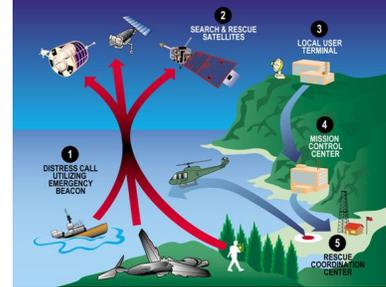
This is the single largest rescue event in the United States, attributable to [NOAA's Search and Rescue Satellite Aided Tracking \(SARSAT\)](#), in the history of the program.

Signals from an emergency position-indicating radio beacon and a personal locator beacon were detected in the Bering Sea near Kiska Island. The signal was received by NOAA's Satellite Operations Facility in Suitland, Maryland, who immediately notified the U.S. Coast Guard (USCG). The USCG issued a Urgent Marine Information Broadcast (UMIB), dispatched a helicopter and two C-130 planes, and diverted the USCG Cutter *Midgett*.

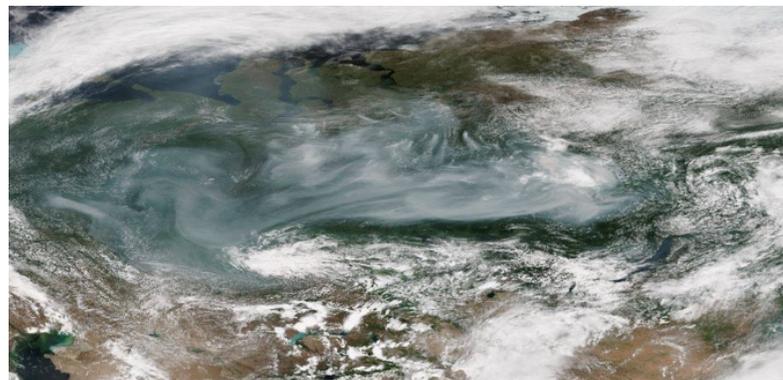
Two good samaritan vessels received the UMIB and responded, picking up the crew while the C-130 circled overhead. The crew members were transferred from life rafts to the merchant ships, and transported to Adak, AK. There are no reports of any injuries.

The signal that was received from the personal locator beacon was registered to an employee of NOAA's National Marine Fisheries Service who was on board the F/V *Alaska Juris*.

The SARSAT Program encourages individuals to obtain and [register](#) their emergency location beacons.



Fighting Forest Fires from Afar with Satellites



Visible smoke from Russian forest fires from July 20, 2016

The increased temperatures and thunderstorms that come with summer raise the chance for forest fire outbreaks, which can be hard to spot when they begin in remote areas.

Traditionally, forest managers utilize fire lookouts for spotting of forest fires. However, NOAA's geostationary and polar-orbiting satellites can assist in [detecting and monitoring wildfires](#) across the United States. As wildfires occur, these satellites provide hundreds of images of the blazes, pinpointing their exact location, size, and direction. They provide invaluable information to NOAA's incident meteorologists, decision makers, and first responders on the ground.

The image above, taken July 20, 2016, by the VIIRS instrument

59 nautical miles off the coast of Great Inagua Island, Bahamas. The signal was received by NOAA's Satellite Operations Facility in Suitland, Maryland, and was sent to Coast Guard District 7, who launched a helicopter to the location of the M/V *Verseau I* after transmitting an Emergency Group Call (EGC). Upon receipt of the EGC, the Coast Guard Cutter *Escanaba* diverted course to the position indicated by the SARSAT alert. The Coast Guard helicopter arrived on scene where the M/V *Verseau I* had sunk, and found 13 people in a life raft. The helicopter rescued 1 person via hoist before the *Escanaba* arrived to rescue the remaining 12 people.

Select Publications

1) Scientists from [NOAA's Center for Satellite Applications and Research \(STAR\)](#) recently published an article on satellite detection of sea surface salinity in the Journal of Applied Remote Sensing, titled [Assessing satellite sea surface salinity from ocean color radiometric measurements for coastal hydrodynamic model data assimilation](#). The article compares two satellite algorithms for retrieving sea surface salinity at higher spatial and temporal resolution than is currently available. Satellite input is verified using *in situ* observations and the results of NOAA's Chesapeake Bay Operational Forecast System hydrodynamic model. Sea surface salinity is a critical factor in understanding and predicting physical, chemical, and biological processes in the coastal ocean.

2) An article was recently published in the journal Nature, which used data from Pathfinder Atmospheres Extended (PATMOS-x) satellite climate data set to study changes in cloudiness over the last 30 years. The study, titled [Evidence for climate change in the satellite cloud record](#), was able to show that patterns in the satellite record matched those predicted by climate models. PATMOS-x was developed in collaboration between NESDIS and the Cooperative Institute for Meteorological Satellite Studies, and PATMOS-x data are hosted by [NOAA's National Centers for Environmental Information](#). This is groundbreaking research that was featured in the [Washington Post](#).

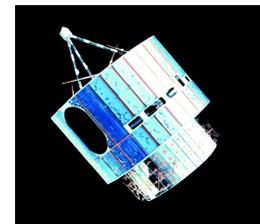
NESDIS in the NEWS

aboard the NOAA/NASA Suomi NPP satellite, depicts the smoke from multiple wildfires burning in Russia. True-color images like this one are created using three of the VIIRS instrument's 22 channels – the RGB color channels 5, 4, and 3, which are sensitive to the red, green, and blue wavelengths of light respectively. In addition, data from several other channels are also included to cancel out atmospheric interference, such as clouds and aerosols, which can cause a blurry picture.

Closer to home, [wildfires](#) have burned tens of thousands of acres in southern and central California so far this summer. These fires, and forest fires worldwide, are monitored 24/7 by the [Office of Satellite and Product Operations](#). In addition, weather forecasters, using data from the Suomi NPP satellite, are helping local responders stay on top of weather conditions that trigger fires and track the resulting smoke drifting across the state.

GOES-3 Decommissioned After 38 Years in Orbit

After 38 years and 13 days in orbit, GOES-3 reached the end of its life, and on June 29, 2016, completed the decommissioning process.



The third of NOAA's Geostationary Operational Environmental Satellites (GOES), GOES-3 was launched on June 16, 1978, and was one of the oldest continuously operating satellites in orbit.

The GOES-3 was used by NOAA to monitor Earth's weather system for about a decade. In 1988, the imaging capabilities on GOES-3 failed, rendering it useless to the National Weather Service. However, the communication capabilities were still in place. After repositioning the satellite, it was then used to provide reliable internet and telecommunications access to the Pacific Islands through a program called the [Pan-Pacific Education and Communications Experiments by Satellite Program \(PEACESAT\)](#).

In 1995, GOES-3 again changed hands. Through a series of agreements, NOAA permanently transferred the satellite from PEACESAT to the National Science Foundation to be used for direct digital communications between the continental United States and the Amundsen-Scott South Pole Station. Read their press release [here](#).

As fuel began to run low, the satellite had to be decommissioned. The remaining fuel was used to move the satellite into a "graveyard" orbit, safely removed from operating geostationary satellites. In the end GOES-3 had an operational life spanning five decades and six U.S. presidents. Please visit [here](#) for the full story, and [here](#) for a story on decommissioning of satellites.

U.S. National Ice Center Supports U.S. Government

You can find the most recent editions of NESDIS Newsletters [here](#).

Bloomberg

[Summer-on-Steroids Kicks off with Record Global Temperatures](#)

National Review

[The Calcification of Climate Science](#)

Huffington Post

[Watch the Moon Photobomb the Earth](#)

National Geographic

[Watch a Year on Earth as Seen From Space](#)

Washington Post

[Watch a whole year on earth spin by from a million miles away](#)

Aerospace Manufacturing and Design

[Cobham wins \\$8 million satellite motion control order from Northrop Grumman](#)

SpaceFlight Now

[Delta 2 rocket being assembled at Vandenberg for penultimate launch](#)

Missions in Ice-Infested Waters

The U.S. National Ice Center (USNIC) will support two missions for the U.S. Government.



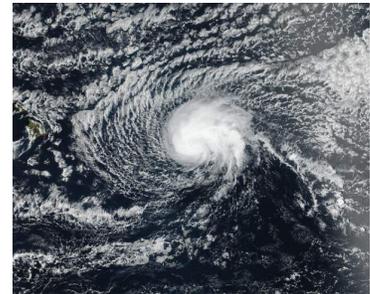
The first is the resupply of Thule Air Base, located on the northwest coast of Greenland. Thule is frozen in with thick ice nine months of the year, but beginning each July, the ice thins on Baffin Bay to less than four feet - thin enough for ice breakers to clear a path for ships to enter. The USNIC works with the Military Sealift Command (MSC) to support this mission known as Pacer Goose.

The USNIC will also support the U.S. Coast Guard Cutter *Healy* during all three of her Arctic West Summer 2016 missions. These missions will be conducted within ice infested waters of the Chukchi and Beaufort Seas to map the undersea floor and deploy buoys, moorings, and other sensors to monitor the U.S. polar environment.

Tropical Storm Darby Brings Heavy Rains to Hawaii

Tropical Storm Darby approached and crossed the Hawaiian Island chain over July 23 - 25, 2016.

Satellite analysts from the [Office of Satellite and Product Operations](#) Satellite Analysis Branch provided technical guidance and satellite support to the local National Weather Service Weather Forecast Office in Honolulu, Hawaii during the event.



Tropical Storm Darby as viewed from Suomi NPP on July 22, 2016

While all of the Hawaiian Islands received beneficial rainfall from Tropical Storm Darby, excessive rains fell across the island of Oahu during the night of July 24 - 25. Several rain gauges in eastern Oahu received 4-8 inches of precipitation over a three hour period with maximum 24 hour totals of over 10 inches causing flash flooding.

Through July 25, a total of seven Satellite Precipitation Estimates text products had been issued along with four graphical outlooks outlining the expected heavy rain threat.

The Satellite Analysis Branch serves as the operational focal point for real-time imagery products and multi-disciplinary environmental analyses within NESDIS. The Branch schedules and distributes real-time satellite imagery products from global geostationary and polar orbiting satellites for dissemination to environmental customers, and supports disaster mitigation and warning services for U.S. Federal agencies and the international community.

Message from Dr. Stephen Volz

Assistant Administrator for NESDIS

NESDIS continues to progress in executing the Commercial Weather Data Pilot (CWDP).



On July 27, 2016, NOAA released a Request for Quotations (RFQ) to support the CWDP. This RFQ, previously released in draft form on June 21, 2016, for public comment, seeks on-orbit radio occultation data from commercial sources for the purpose of demonstrating the data's quality and potential value to NOAA's weather forecasts and warnings.

NOAA anticipates awarding one or more contracts based on RFQ responses by the end of this fiscal year. Evaluation of the data would take place through FY 2017.

Information on all of NOAA's commercial activities can be found at the "[Business with NOAA](#)" section of the Office of Space Commerce website.

I thank Congress for your continued support of our important work. Please contact Sierra Jones at 202.482.6140 or sierra.jones@noaa.gov if you have any questions regarding NOAA's [NESDIS](#), or would like to set up a meeting.

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