

GOES-13 sees an unholy matrimony: Nicole and low pressure swamp the US East Coast

October 1 2010



On Oct. 1 at 1401 UTC (10:01 a.m. EDT), the GOES-13 satellite captured a visible image of the extensive cloud cover of the coupled system of an upper level low and Nicole's remnants. The cloud cover stretches from New Brunswick and Nova Scotia, Canada, over New England and the Mid-Atlantic states, then southeast over the Atlantic to Puerto Rico. Credit: NOAA/NASA GOES Project

In a "marriage" that U.S. east coast residents would object to, the remnants of Tropical Storm Nicole coupled with an upper level low pressure area have dumped record rainfall from the Carolinas to New England on Sept. 30. The GOES-13 Satellite captured that massive "union" of a system as it begins to push off the northeastern U.S. coast today, Oct. 1.

At 1401 UTC (10:01 a.m. EDT) on Oct. 1, the [Geostationary Operational Environmental Satellite](#) called GOES-13 captured a visible image of the extensive cloud cover of this coupled system. The GOES image shows the system's cloud cover stretches from New Brunswick and Nova Scotia, Canada, over New England and the Mid-Atlantic states, then southeast over the Atlantic all the way to Puerto Rico.

The GOES series of satellites are managed by the National Oceanic and Atmospheric Administration (NOAA), and GOES-13 keeps an eye on the weather over the eastern half of the U.S. NASA's GOES Project, located at the NASA Goddard Space Flight Center in Greenbelt, Md. uses the data from the GOES satellites and creates images and animations of weather systems.

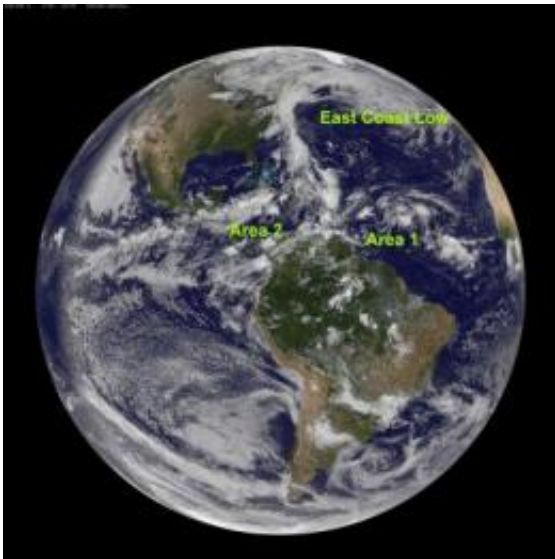
NOAA's Hydrometeorological Prediction Center noted on Friday, Oct. 1, that "Heavy rains will continue to drench the northeastern (U.S.) coast throughout the day Friday. The east coast deluge will finally draw to a close in the early hours Saturday morning."

The frontal boundary had lingered over the U.S. east coast for over 24 hours and is forecast to push off-shore late Saturday, clearing skies behind it as cold, Canadian high pressure will build in.

Some of the rainfall totals were impressive from Sept. 30. The Baltimore Washington International Airport recorded a record-breaking 6.02 inches of rain. That's about one and a half months of rainfall in 24 hours. Washington D.C.'s Reagan National Airport recorded 4.66 inches of rain, also breaking a record for that day.

To the west, Martinsburg, W.Va. received 3.29 inches of rain yesterday. Further south, Norfolk Va. International Airport recorded 7.85 inches of rainfall while Richmond, Va. broke a record with 3.69 inches of rain. New Bern, N.C. received a record-breaking 8.93 inches while in

Jacksonville, N.C., a foot of rain fell in six hours during the morning hours.



The GOES Full-disk image of the Atlantic Ocean shows the huge trough of low pressure coupled with remnants of Nicole over the US Northeast (top center), System 97L, labeled Area 1 (right center), and Area 2 (left center) over the western Caribbean. Credit: NOAA/NASA GOES Project

As the system moved northward on Sept. 30, its heavy rainfall had not yet been totally experienced, but it still broke records. Its rainfall there today is expected to create more records. On Sept. 30, however, Newark, N.J. received 1.21" of rain in 24 hours and broke a record. The National Weather Service reported that Bridgeport, Conn. received 0.73 inches, which established a new record for rainfall on Sept. 30.

On Oct. 1, GOES-13 satellite imagery showed that the system was still drenching Vermont, New Hampshire, Maine, Connecticut, Rhode Island and Massachusetts today. Although this unholy union of the upper-level low and Nicole's remnants are expected to be off the coast and over the

Atlantic Ocean late Saturday, there are other rainmakers in the tropics that NASA is watching.

At NASA Goddard, one of the images created from GOES satellite imagery is called a "full-disk" image. In today's full-disk image there are two other areas of tropical disturbances that have caught the attention of forecasters.

One area of disturbed weather is called "System 97L" and it contains disorganized showers and thunderstorms. That low pressure area is about 900 miles off the Lesser Antilles in the Atlantic Ocean. The system is moving west at between 15 and 20 mph. Forecasters at the National Hurricane Center noted that the upper-level winds are expected to weaken near this system, allowing for more development over the weekend. They've given System 97L a 40 percent chance of becoming a tropical depression over the weekend.

The other area of disturbed weather has a much lesser chance of developing over the weekend. That is a broad trough of low pressure in the Northern Caribbean. A trough is an elongated area of low pressure, just like the one that lingered over the eastern U.S. and brought the deluge. This second low pressure area doesn't appear to be developing. However, it is expected to bring locally heavy [rainfall](#) over the weekend to northern Central America, the Cayman Islands, eastern Cuba, Jamaica and Hispaniola and that will keep the GOES-13 satellite busy.

Provided by NASA's Goddard Space Flight Center

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