

GOES-13 catches 3 tropical cyclones thrashing through the Atlantic

August 31 2010



The GOES-13 satellite captured an image of the busy Atlantic Ocean at 1145 UTC (7:45 a.m. EDT) on Aug. 31. In the visible image, was the large and powerful Hurricane Earl (lower left) passing Puerto Rico, Tropical Storm Fiona located to Earl's east, and Tropical Storm Danielle far in the Northern Atlantic. Credit: NASA GOES Project

Powerful Hurricane Earl, growing Tropical Storm Fiona and fading Danielle were all captured in today's visible image from the GOES-13 satellite. The Geostationary Operational Environmental Satellite called GOES-13 captured an image of the busy Atlantic Ocean at 1145 UTC (7:45 a.m. EDT) on August 31. In the visible image, was the large and powerful Hurricane Earl passing Puerto Rico, Tropical Storm Fiona located to Earl's east, and Danielle far in the Northern Atlantic. Hurricane Earl's eye appear to be covered with high-clouds in the

GOES-13 image, while Fiona appeared somewhat disorganized with no apparent center. Farther north in the North Atlantic Ocean, Danielle appeared more "U" shaped on the satellite imagery, although her maximum sustained winds were still near 70 mph at that time.

GOES satellites are operated by NOAA, and the NASA GOES Project at NASA's Goddard Space Flight Center in Greenbelt, Md. provides images and animations of satellite data.

DANIELLE NOW A LOW IN THE NORTHERN ATLANTIC

Danielle has already transitioned into a cold-core low pressure area in the Northern Atlantic Ocean today. [Tropical cyclones](#) are warm-core systems, so when the core temperatures change, the dynamics of the system also changes. The final warning for Danielle was issued today (August 31) at 0300 UTC (Aug. 30 at 11 p.m. EDT). At that time, Danielle was about 475 miles southeast of Cape Race, Newfoundland, Canada near 41.3 North and 47.1 West and headed east-northeast at 15 mph. Her sustained winds were near 70 mph, but waning.

Danielle's effects are being felt along the shores of Newfoundland with heavy surf and waves up to 3 meters (10 feet).

EARL STILL A POWERFUL HURRICANE THREATENING THE U.S.

[Hurricane](#) Earl is a storm that's about 400 miles in diameter and the hurricane force winds are about 140 miles in diameter from side-to-side of the storm's eye. Earl is still a Category Four hurricane on the Saffir-Simpson scale, one category stronger than Hurricane Katrina was when she made landfall in Mississippi in 2005.

At 11 a.m. EDT on August 31, Hurricane Earl was located about 205 miles east of Grand Turk Island. That's about 1070 miles south-southeast of Cape Hatteras, North Carolina. Earl's center was located at 21.2 North and 67.9 West. Earl's maximum sustained winds were near 135 mph and he is moving west-northwest near 14 mph. Minimum central pressure is 939 millibars.

Earl's eye has become obscured in the latest imagery from the GOES-13 satellite, and the central pressure has increased. Forecasters believe that it's because Earl is undergoing "eyewall replacement." What that means is a new eye begins to develop around the old eye. The new eye gradually decreases in diameter and finally replaces the old eye.

Currently there is a warning and a watch in effect. A tropical storm warning is in effect for Turks and Caicos Islands and a tropical storm watch is in effect for the southeastern Bahamas. Meanwhile, residents from the Carolinas northward to New England should monitor the progress of Earl. A hurricane watch could be required for portions of the mid-Atlantic coast later today.

FIONA CAUSES WARNINGS AND WATCHES IN THE ISLANDS

Tropical Storm Fiona is battering the same areas that Hurricane Earl swept through days ago. A tropical storm warning is in effect for St. Martin and St. Barthelemy. A tropical storm watch is in effect for, Antigua, Barbuda, Montserrat, St. Kitts, Nevis, and Anguilla and St. Maarten, Saba, and St. Eustatius. The National Hurricane Center noted in its forecast this morning, August 31, Tropical storm conditions could spread over portions of the Northern Leeward Islands tonight or early Wednesday.

At 11 a.m. EDT, Tropical Storm Fiona had [maximum sustained winds](#) near 40 mph and some strengthening is possible. It was located about 440 miles east of the Leeward Islands near 15.9 N and 55.3 W. Fiona is moving west-northwest near 24 mph and is expected to slow down.

Estimated minimum central pressure is 1006 millibars. Fiona's forecast track does not take her behind Earl, so she does not appear to be a threat to the U.S. mainland at this time.

Earl and Fiona are two storms keeping NASA satellites busy this week, and providing the scientists on NASA's Hurricane Genesis and Rapid Intensification Processes (GRIP) experiment with a lot of data.

More information: To see what's happening with GRIP, visit: www.nasa.gov/grip/.

Provided by NASA's Goddard Space Flight Center

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