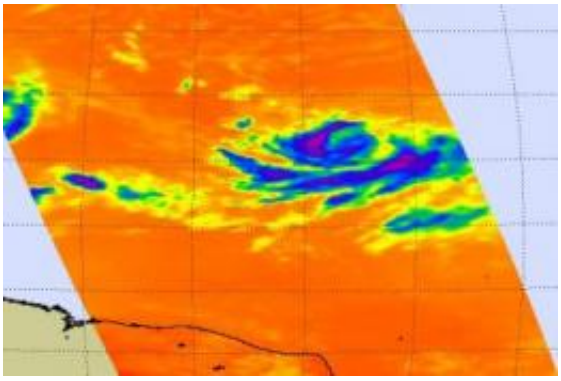
Ana's path being mapped by NASA Satellites; she's drenching Puerto Rico

August 17 2009



This AIRS infrared satellite image shows Ana's clouds (depicted in blue) when she was a tropical storm on Aug. 15. By mid-day on Aug. 16, she weakened to a tropical depression. In infrared imagery, NASA's false-colored purple clouds are as cold as or colder than 220 Kelvin or minus 63 degrees Fahrenheit. The blue colored clouds are about 240 Kelvin, or minus 27F. The colder the clouds are, the higher they are, and the more powerful the thunderstorms are that make up the cyclone. Credit: NASA/JPL, Ed Olsen

Tropical Depression Ana is currently drenching Puerto Rico, and tropical storm watches are posted for Puerto Rico and the Virgin Islands as Ana continues westward. Both the Aqua and GOES satellites have captured Ana on her westward track in the Atlantic.

For a live look at the National Weather Service Radar in Puerto Rico, go to:

http://radar.weather.gov/radar.php?rid=JUA&product=NCR&overlay=11101111&loop=yes. Ana is expected to produce rainfall amounts of 2 to 4 inches over Puerto Rico, the U.S. and British Virgin Islands and the Dominican Republic with isolated maximum amounts of 6 inches over mountainous terrain.

Tropical Depression Ana has taken a long time to get going and she's still squeaking by as a tropical depression. Over the weekend, NASA satellite imagery captured her short stint as a tropical storm, but she's weakened again and is expected to now rain on Hispaniola before heading to Florida.

By 11 a.m. EDT on Monday, August 17, Ana's center was located 75 miles south of San Juan, Puerto Rico, near 17.3 north and 66.2 west. She was moving at a good clip toward the west-northwest near 28 mph, which means that she won't linger as long and dump as much rain. However, she's expected to slow down in the next day or two. Maximum sustained winds remain near 35 mph, and minimum central pressure is 1008 millibars.

The Atmospheric Infrared Sounder (AIRS) flies on Aqua and provides visible, infrared and microwave images and measures cloud top temperature and pressure. AIRS captured an image of Ana on August 15 when she was a tropical storm and had good cloud formation. By mid-day on August 16, Ana deteriorated into a tropical depression.

NASA creates images from NOAA's Geostationary Operational Environmental Satellite, or GOES fleet. GOES-12 covers the Atlantic Ocean, and is managed by NOAA. On August 17 at 12:15 p.m. EDT, GOES-12 captured Tropical Depression Claudette over Alabama, and Tropical Depression Ana raining on Puerto Rico. Credit: NASA/GOES Project

How does infrared imagery know how high clouds are in the sky? The coldest ones are higher in the sky (because in the troposphere, the lowest layer of atmosphere where weather happens, temperatures fall the higher up you go until you get to the stratosphere). The highest clouds are as cold as or colder than 220 Kelvin or minus 63 degrees Fahrenheit (F) and second highest level of clouds are about 240 Kelvin, or minus 27F. The colder the clouds are, the higher they are, and the more powerful the thunderstorms are that make up the cyclone.

Another satellite that NASA uses is the Geostationary Operational Environmental Satellite, or GOES. GOES-12 covers the Atlantic Ocean, and is managed by NOAA. On August 17 at 12:15 p.m. EDT, GOES-12 captured Tropical Depression Claudette over Alabama, and Tropical Depression Ana raining on Puerto Rico.

Forecasters are closely watching Ana because she may degenerate

further. However, her remnants or the depression, whichever she becomes, is expected to track to Florida's west coast.

Source: NASA/Goddard Space Flight Center