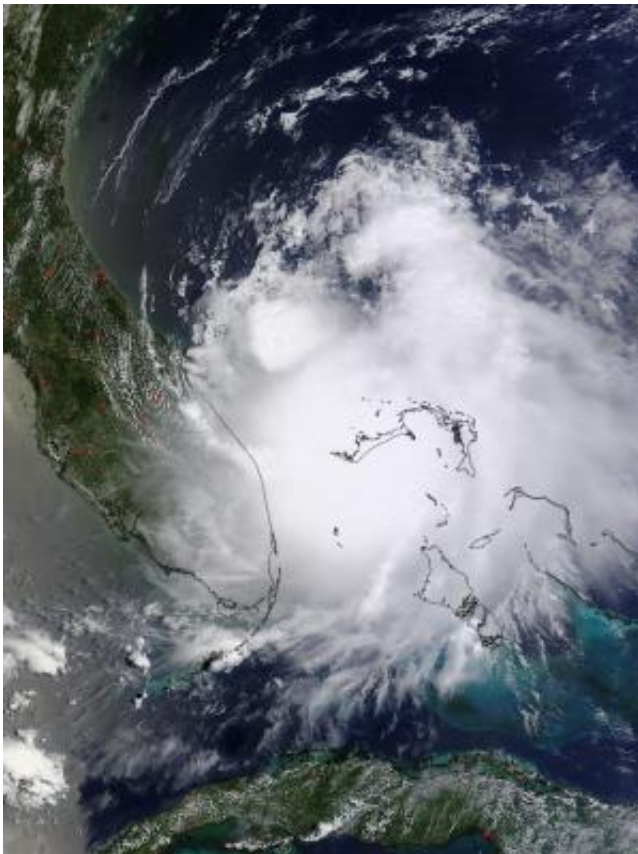# TRMM satellite spots heavy rainfall around Tropical Storm Arthur's center

July 2 2014, by Rob Gutro



NASA's Terra satellite captured this visible image of Tropical Storm Arthur on July 1 at 16:30 UTC (12:30 p.m. EDT) over the Bahamas. Credit: NASA Goddard MODIS Rapid Response Team

Tropical Storm Arthur appears to be ramping up, and NASA's Tropical Rainfall Measuring Mission or TRMM satellite spotted heavy rainfall

occurring around the storm's center on July 1 when it was centered over the Bahamas.

Those heavy rains are expected to affect the southern U.S. coastline over the next several days as the National Hurricane Center expects Arthur to strengthen into a hurricane. On July 2, the NHC issued a Hurricane Watch for Bogue Inlet to Oregon Inlet, North Carolina and Pamlico Sound. In addition, a Tropical Storm Watch is in effect for the east coast of Florida from Sebastian Inlet to Flagler Beach, South Santee River South Carolina to south of Bogue Inlet, North Carolina, north of Oregon Inlet, North Carolina to the North Carolina/Virginia Border, and the Eastern Albemarle Sound.

The TRMM satellite had a good daylight look at tropical storm Arthur on July 1, 2014 at 1620 UTC (12:20 p.m. EDT) less than two hours after it was upgraded from a tropical depression. At NASA's Goddard Space Flight Center in Greenbelt, Maryland rainfall from TRMM's Microwave Imager (TMI) and Precipitation Radar (PR) data were overlaid on a GOES-East satellite infrared/visible image taken at 1626 UTC (12:26 p.m. EDT). The TMI instrument showed very heavy rainfall around Arthur's center. The heaviest rainfall was occurring at a rate of about 2 inches per hour. Powerful thunderstorms in that area reached heights above 15.5 km (about 9.6 miles).

Shortly after TRMM flew over Arthur and gathered rainfall and cloud height data, NASA's Terra satellite captured a visible image of the storm over the Bahamas. The image, created by the NASA Goddard MODIS Rapid Response Team, used visible data from the Moderate Resolution Imaging Spectroradiometer instrument that flies aboard Terra. The image showed a concentration of powerful storms around the center and northwestern quadrant of the storm. Arthur's western quadrant continued to affect the east coast of Florida.

This image of rainfall occurring in Tropical Storm Arthur on July 1, 2014 at 12:20 p.m. EDT showed heavy rain (red) around the center of the storm. Credit: NASA/SSAI, Hal Pierce

On July 2 at 8 a.m. EDT (12:00 UTC) the center of Tropical Storm Arthur was near latitude 28.8 north and longitude 79.0 west. That's about 100 miles (160 km east-northeast of Cape Canaveral, Florida and NASA's Kennedy Space Center. Arthur's center is also 275 miles (445 km) south of Charleston, South Carolina.

The National Hurricane Center (NHC) noted that Arthur is moving toward the north near 6 mph (9 kph) and this motion is expected to continue today. A turn toward the north-northeast is expected tonight, July 2, followed by a turn toward the northeast. Maximum sustained winds remain near 60 mph (95 kph). Some strengthening is forecast during the next two days and Arthur is expected to become a hurricane by Thursday, July 3.

NHC noted that Arthur is expected to move east of the east-central coast of Florida today, July 2, pass east of Northeastern Florida tonight, move parallel to the coast of South Carolina on Thursday July 3, and approach the hurricane watch area Thursday night. For expected conditions along the watch areas, please visit the National Hurricane Center website: http://www.nhc.noaa.gov.

Provided by NASA's Goddard Space Flight Center