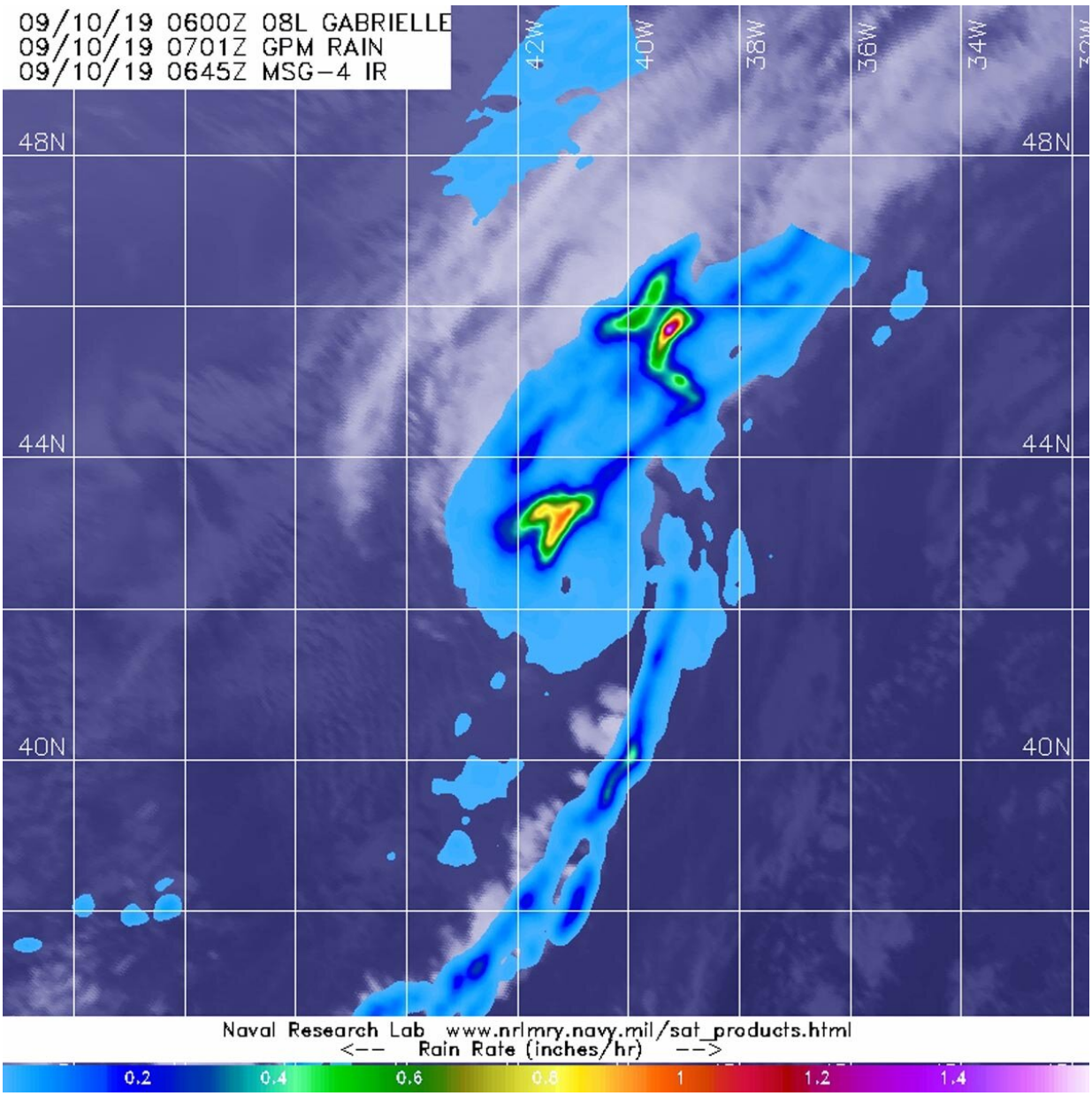
GPM finds rainfall waning in extra-tropical storm Gabrielle

September 10 2019



The GPM core satellite passed over Post-Tropical Storm Gabrielle in the eastern North Atlantic Ocean on Sept. 9 at 3:01 a.m. EDT (0701 UTC). GPM found the heaviest rainfall (yellow) north of the center where it was falling at a rate of over 25 mm (about 1 inch) per hour. Credit: NASA/JAXA/NRL

The Atlantic Ocean's Gabrielle has made a second transition and the Global Precipitation Measurement mission or GPM core satellite provided information about the rate in which rain was falling within the now extra-tropical storm.

Gabrielle made its first transition to a post-tropical cyclone on Sept. 6 and regained tropical storm status later that same day. Now, the storm has become extra-tropical.

The GPM or Global Precipitation Measurement mission's core satellite passed over Tropical Storm Gabrielle in the eastern North Atlantic Ocean on Sept. 9 at 3:01 a.m. EDT (0701 UTC). GPM found the heaviest rainfall north of the center where it was falling at a rate of over 25 mm (about 1 inch) per hour. GPM is a joint mission between NASA and the Japan Aerospace Exploration Agency, JAXA.

NOAA's National Hurricane Center noted at 11 a.m. EDT (1500 UTC) on Sept. 10, "Gabrielle has now completed its transition to an extra-tropical cyclone this morning based on the latest GOES-16 satellite imagery. The center of the storm has now become exposed with convection displaced to the north of the center, and a well-defined baroclinic zone has become established in association with the low center."

When a storm becomes "extra-tropical" it means that a tropical cyclone has lost its "tropical" characteristics. The National Hurricane Center

defines "extra-tropical" as a transition that implies both poleward displacement (meaning it moves toward the north or south pole) of the cyclone and the conversion of the cyclone's primary energy source from the release of latent heat of condensation to baroclinic (the temperature contrast between warm and cold air masses) processes. It is important to note that cyclones can become extratropical and still retain winds of hurricane or tropical storm force.

The center of Post-Tropical Cyclone Gabrielle was located near latitude 43.9 degrees north and longitude 37.8 degrees west. That puts the center about 695 miles (1,114 km) northwest of the Azores islands. The post-tropical cyclone is moving toward the northeast at near 29 mph (46 kph), and this general motion with an increase in forward speed is expected over the next couple of days. Maximum sustained winds are near 50 mph (85 kph) with higher gusts. The estimated minimum central pressure is 998 millibars.

Gabrielle is expected to weaken over the next two days and dissipate over the far North Atlantic west of the British Isles on Thursday, Sept. 12.

Provided by NASA's Goddard Space Flight Center

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