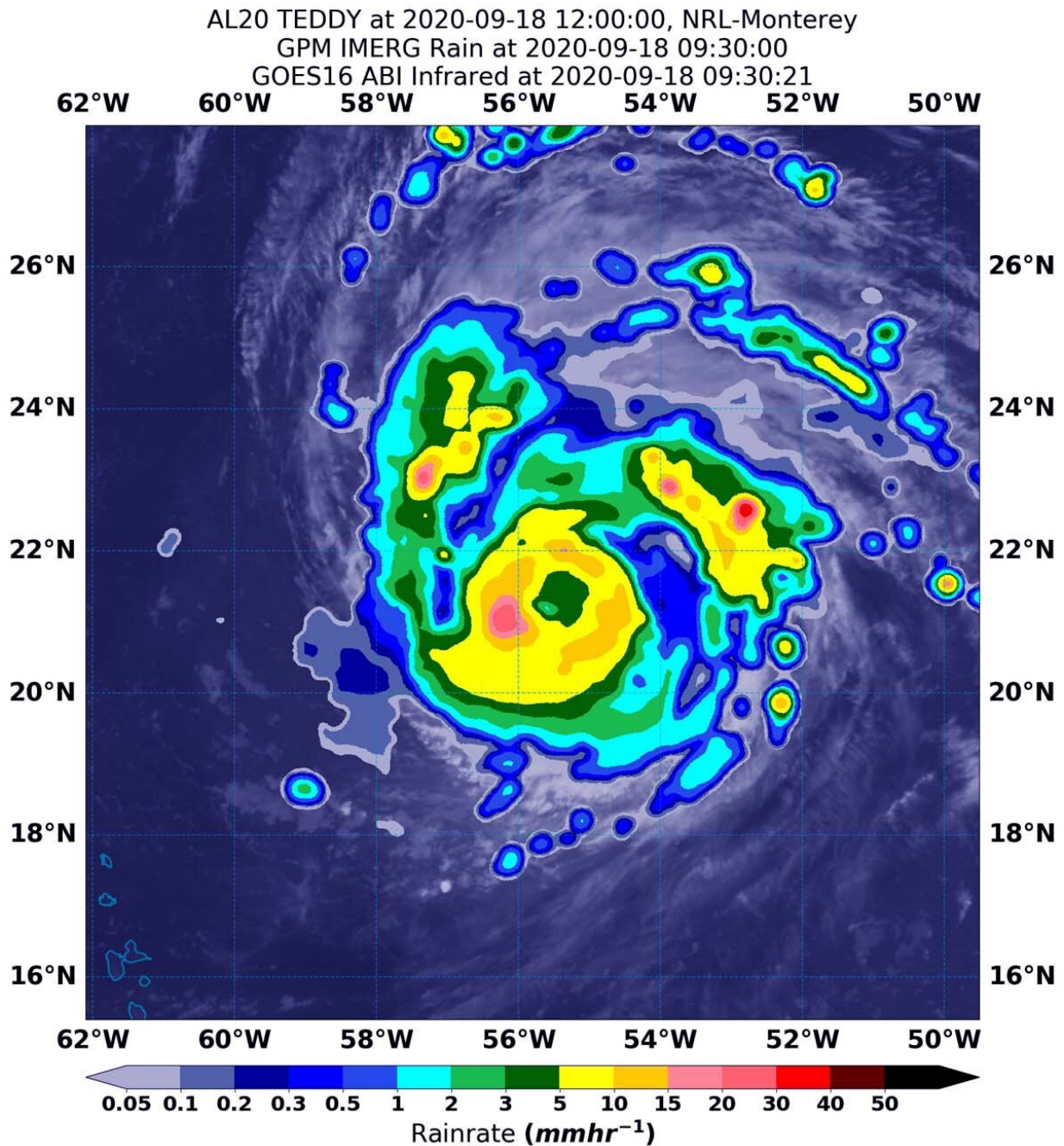


NASA estimates powerful hurricane Teddy's extreme rainfall

September 18 2020



On Sept. 18 at 8 a.m. EDT (1200 UTC), NASA's IMERG estimated Hurricane Teddy was generating as much as (30 mm/1.18 inches of rain (dark pink) on the western side of its eye. Rainfall throughout most of the storm was occurring between 5 and 15 mm (0.2 to 0.6 inches/yellow and green colors) per hour. The rainfall data was overlaid on infrared imagery from NOAA's GOES-16 satellite. Credit: NASA/NOAA/NRL

Using a NASA satellite rainfall product that incorporates data from satellites and observations, NASA estimated Hurricane Teddy's rainfall rates. Teddy is a major hurricane in the Central North Atlantic Ocean.

On Sept. 18, NOAA's National Hurricane Center (NHC) warned that Teddy remains a powerful [hurricane](#) over the Central Atlantic Ocean, and large ocean swells are forecast to spread across much of the western Atlantic increasing a rip current threat.

Hurricane Teddy's Status on Sept. 18

At 5 a.m. EDT (0900 UTC), the center of Hurricane Teddy was located near latitude 21.6 degrees north and longitude 55.4 degrees west. That is about 550 miles (890 km) east-northeast of the Northern Leeward Islands, and about 935 miles (1,510 km) southeast of Bermuda.

Teddy is moving toward the northwest near 12 mph (19 kph) and this general motion is expected to continue for the next couple of days, followed by a turn to the north by early next week. Maximum sustained winds are near 130 mph (215 kph) with higher gusts. Teddy is a category 4 hurricane on the Saffir-Simpson Hurricane Wind Scale. Some fluctuations in strength are expected during the next day or so. The estimated minimum central pressure is 947 millibars.

Estimating Teddy's Rainfall Rates from Space

NASA's Integrated Multi-satellitE Retrievals for GPM or IMERG, which is a NASA satellite [rainfall](#) product, estimated on Sept. 18 at 8 a.m. EDT (1200 UTC), Hurricane Teddy was generating as much as 30 mm (1.18 inches) of rain per hour on the western side of its eye. That

was the area of where the heaviest rainfall was occurring.

Rainfall throughout most of the rest of the storm was estimated as falling at a rate between 5 and 15 mm (0.2 to 0.6 inches) per hour. At the U.S. Naval Laboratory in Washington, D.C., the IMERG rainfall data was overlaid on infrared imagery from NOAA's GOES-16 satellite to provide a full extent of the storm.

"Teddy remains a powerful category 4 hurricane with a well-defined eye and intense eyewall," said John Cangialosi Senior Hurricane Specialist at NHC in Miami, Fla. "There have been occasional dry slots that have eroded some of the convection in the eyewall and rain bands, but these seem to be transient."

What Does IMERG Do?

This near-real time rainfall estimate comes from the NASA's IMERG, which combines observations from a fleet of satellites, in near-real time, to provide near-global estimates of precipitation every 30 minutes. By combining NASA precipitation estimates with other data sources, we can gain a greater understanding of major storms that affect our planet.

Instead, what the IMERG does is "morph" high-quality satellite observations along the direction of the steering winds to deliver information about rain at times and places where such satellite overflights did not occur. Information morphing is particularly important over the majority of the world's surface that lacks ground-radar coverage. Basically, IMERG fills in the blanks between weather observation stations.

NHC Key Messages for Teddy

The NHC issued key messages for Teddy, including about its forecast track and the ocean swells it is generating.

NHC said Teddy is expected to approach Bermuda as a hurricane this weekend and make its closest approach to the island late Sunday or Monday (Sept. 20 or 21). While the exact details of Teddy's track and intensity near the island are not yet known, the risk of strong winds, storm surge, and heavy rainfall on Bermuda is increasing.

Large swells produced by Teddy are expected to affect portions of the Leeward Islands, the Greater Antilles, the Bahamas, Bermuda, and the southeastern United States during the next few days. These swells could cause life-threatening surf and rip current conditions.

NASA Researches Tropical Cyclones

Hurricanes/tropical cyclones are the most powerful weather events on Earth. NASA's expertise in space and scientific exploration contributes to essential services provided to the American people by other federal agencies, such as hurricane weather forecasting.

For more than five decades, NASA has used the vantage point of space to understand and explore our home planet, improve lives and safeguard our future. NASA brings together technology, science, and unique global Earth observations to provide societal benefits and strengthen our nation. Advancing knowledge of our home planet contributes directly to America's leadership in space and scientific exploration.

Provided by NASA's Goddard Space Flight Center

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