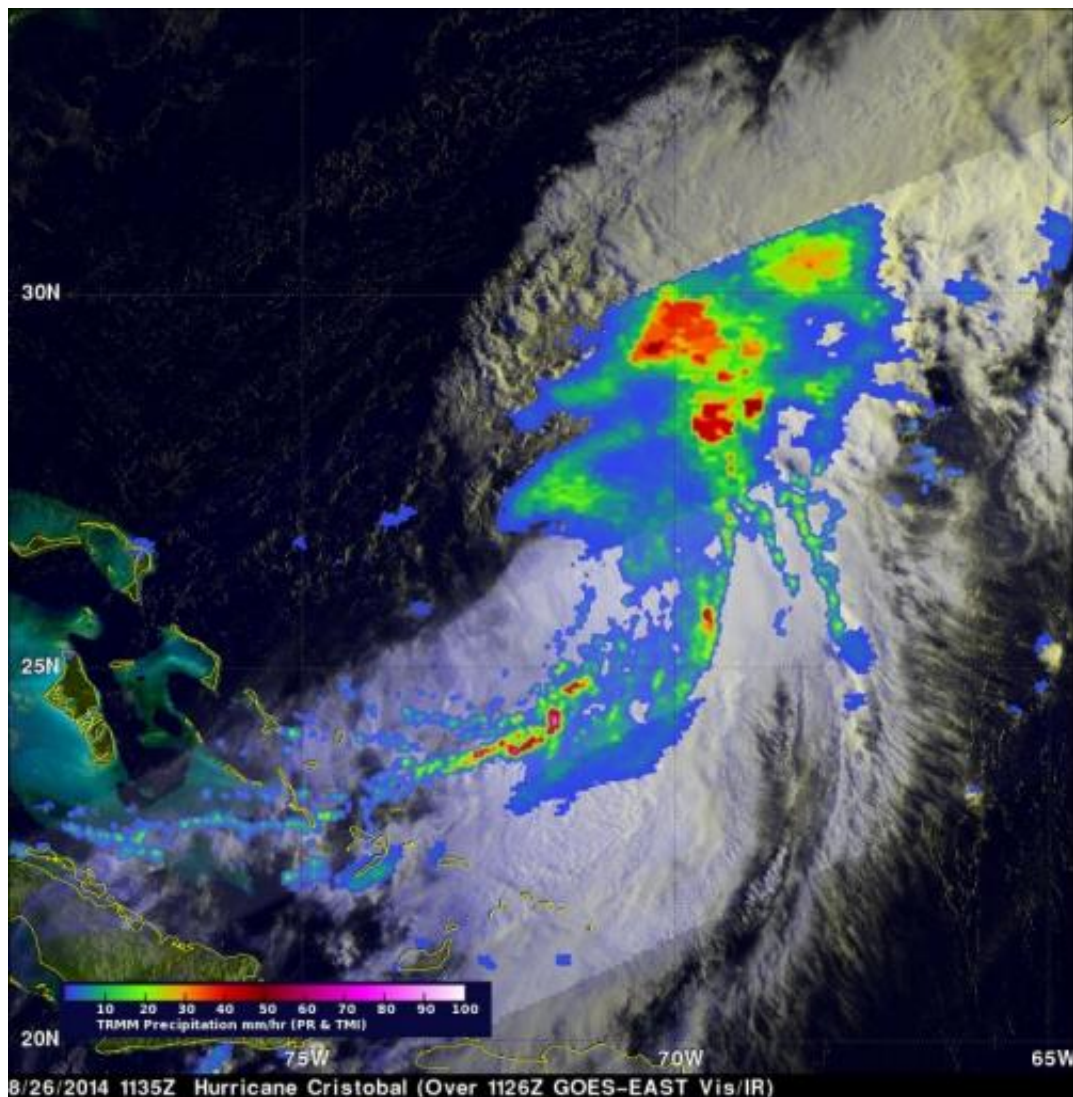


NASA's TRMM Satellite sees powerful towering storms in Cristobal

August 27 2014



On Aug. 26, NASA's TRMM Satellite saw a band of thunderstorms with heights of over 15km (about 9.3 miles) and was generating heavy rain. That band was wrapping into the center of Cristobal. Credit: NASA/SSAI, Hal Pierce

NASA's TRMM satellite identified areas of heavy rainfall occurring in Hurricane Cristobal as it continued strengthening on approach to Bermuda.

NASA's Tropical Rainfall Measuring Mission or TRMM satellite flew above Hurricane Cristobal on August 26 at 11:35 UTC (7:35 a.m. EDT) gathering rainfall data. A rainfall analysis derived from TRMM's Microwave Imager (TMI) and Precipitation Radar (PR) data instruments were overlaid on visible/infrared image from NOAA's GOES-East satellite to create a total picture of the storm. The image was made at NASA's Goddard Space Flight Center in Greenbelt, Maryland. NASA and the Japan Aerospace Exploration Agency manage TRMM.

When TRMM captured that [rainfall](#) data, Cristobal was a category one hurricane with sustained winds estimated to be slightly above 65 knots (about 75 mph). Cristobal didn't have a clearly defined eye because vertical wind shear was still affecting the tropical cyclone's appearance and pushing clouds and storms away from the center. TRMM PR and TMI [rainfall data](#) found heavy rain to the northeast of Cristobal's center and in intense convective storms within a feeder band streaming in from the southwest. Some of the powerful storms in the feeder band were found by TRMM PR to be dropping rain at a rate of 133.8 mm (5.2 inches) per hour.

TRMM's Precipitation Radar (PR) reflectivity data were used to create a 3-D view of precipitation within the feeder band (band of thunderstorms wrapping into the center) south of Cristobal's center. Those data showed that some energetic storms in this band were reaching heights of over 15km (about 9.3 miles) and were generating heavy rain.

Satellite imagery on August 27 showed some strong thunderstorms had

redeveloped near the center of Cristobal mainly in the western semicircle. Satellite imagery also showed that dry air was wrapping south and east of the center.

At 11 a.m. EDT on Wednesday, August 27, Cristobal's maximum sustained winds were near 80 mph (130 kph) and some strengthening is possible. It was centered near latitude 31.8 north and longitude 72.2 west. That puts the center of Cristobal about 435 miles (700 km) west of Bermuda and even closer to Cape Hatteras, North Carolina at 300 miles (485 km) to the Cape's southeast.

Cristobal has a large wind field where hurricane force winds extend outward from the center up to 60 miles (95 km) and tropical storm force winds extend outward up to 205 miles (335 km). The estimated minimum central pressure is 983 millibars.

Cristobal is moving toward the north near 12 mph (19 kph) and the National Hurricane Center (NHC) expects a turn to the northeast. NHC noted that the center of Cristobal will pass well northwest of Bermuda late on August 27 and stay away from the U.S. and Canadian mainland on its track to the North Atlantic Ocean.

Cristobal is expected to become a powerful extra-tropical cyclone over the north Atlantic by Friday, August 29.

Provided by NASA's Goddard Space Flight Center

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