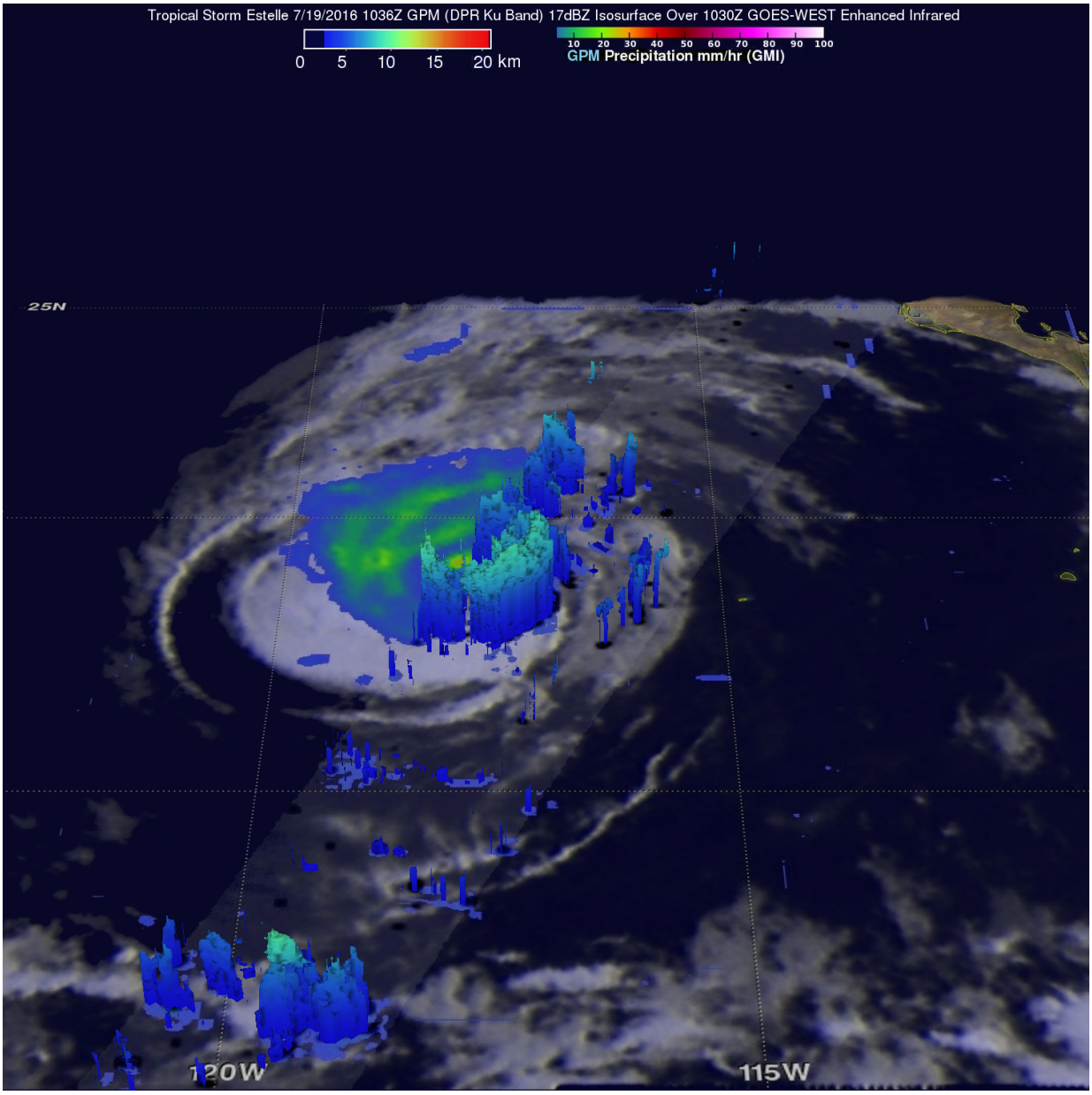
GPM measured heavy rain in Tropical Storm Estelle

July 21 2016



The GPM core satellite measured rain falling at a rate of over 65 mm (2.6 inches) per hour and some storm top heights above 11.6 km (7.2 miles) on the eastern side of Tropical Storm Estelle on July 19. Credit: NASA/JAXA/SSAI, Hal Pierce

The Global Precipitation Measurement mission or GPM core observatory satellite traveled above tropical storm Estelle and found heavy rainfall occurring on its eastern side. That heavy area of rainfall was later found west of center.

Heavy rainfall within a tropical cyclone can shift as the storm continues to change. Such was the case with Estelle.

On July 19, 2016 at 1036 UTC (6:36 a.m. EDT) when GPM passed over the storm, Estelle contained well organized convective bands of thunderstorms that were producing heavy rainfall within the storm. Precipitation within Estelle was analyzed using data collected by GPM's Microwave Imager (GMI) and Dual-Frequency Precipitation Radar (DPR) instruments. GPM's radar (DPR Ku band) data were used to perform a 3-D examination of the precipitation on the eastern side of tropical storm Estelle. Some rainfall was measured by DPR falling at a rate of over 65 mm (2.6 inches) per hour in storms in that area.

DPR's 3-D scans of Estelle found that some storm top heights were reaching to above 11.6 km (7.2 miles) on the eastern side of the tropical storm. An animation of DPR 3-D slices were also used to show radar reflectivity values of precipitation on the eastern side of the storm.

GPM is a joint mission between NASA and the Japan Aerospace Exploration Agency.

At 11 a.m. EDT (1500 UTC) on Thursday, July 21, 2016 Estelle's heaviest precipitation and strongest convection (rising air that forms the thunderstorms that make up the tropical cyclone) consisted of a small area mainly to the northwest of the estimated low-level center location.

At that time the center of Tropical Storm Estelle was located near latitude 20.1 north and longitude 128.1 west. That's about 1,185 miles (1,905 km) west of the southern tip of Baja California, Mexico. Estelle is moving toward the west-northwest near 15 mph (24 kph), and the National Hurricane Center expects this motion to continue through Saturday. Maximum sustained winds are near 60 mph (95 kph) with higher gusts. The estimated minimum central pressure is 997 millibars.

The National Hurricane Center forecast shows that Estelle will be moving over coolers sea surface temperatures and vertical wind shear is expected to increase. NHC said that those factors should result in Estelle losing organized deep convection and becoming post-tropical in 24 to 36 hours. The remnant low of Estelle should dissipate in 4 or 5 days.

Provided by NASA's Goddard Space Flight Center