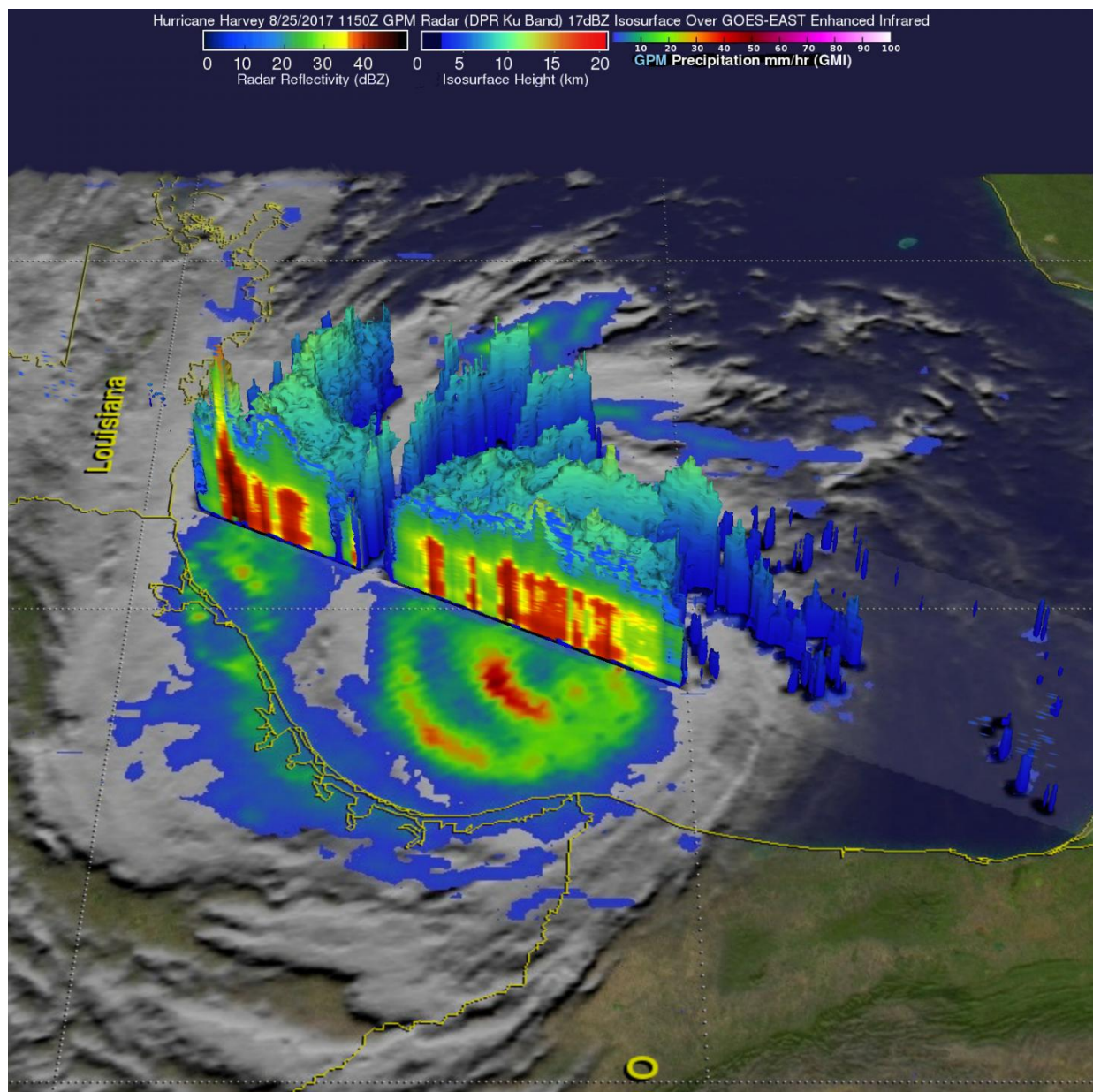


NASA analyzes Hurricane Harvey's rainfall, sees landfall

August 28 2017, by Rob Gutro



The GPM satellite measured rainfall in Hurricane Harvey on Aug. 25, at 7:50 a.m. CDT (1150 UTC) and found that intense storms in the eastern side were dropping rain at a rate greater than 3.2 inches (82 mm) per hour. Credit: NASA/JAXA, Hal Pierce

Satellites have been providing forecasters with valuable information as Harvey intensified to a Category 4 hurricane before making landfall in southeastern Texas. NASA's GPM satellite and NOAA's GOES-East satellite provided a look at Harvey's heavy rainfall, cloud heights, temperatures and extent of the storm.

At 6 pm CDT on Aug 25, the National Hurricane Center noted that Harvey had strengthened to a Category 4 Hurricane on the Saffir-Simpson Hurricane Wind Scale. Harvey's winds had increased to 130 mph (215 kph).

At 8:55 p.m. EDT when Harvey's large eye was at the coast between Port Aransas and Port O'Connor, NOAA's GOES East satellite provided an infrared picture of the massive [storm](#). The eye appeared clear in the image created at NASA/NOAA GOES Project at NASA's Goddard Space Flight Center, Greenbelt, Maryland.

Harvey's eye made landfall around 10 p.m. CDT (11 p.m. EDT) on Friday, Aug 25 as a Category 4 hurricane between Port Aransas and Port O'Connor, Texas. The NHC said Harvey's landfall was over the northern end of San Jose Island about 4 miles (6 km) east of Rockport.

Harvey is the first Category 4 hurricane to make landfall in Texas since Carla in 1961.

Measurements of Winds and Pressure Just After

Landfall

At 11 p.m. CDT (12 a.m. EDT) a station at Aransas Pass run by the Texas Coastal Observing Network reported a sustained wind of 102 mph (165 kph) with a gust to 132 mph (213 kph). A station at Rockport, Texas, reported a pressure of 945 millibars on the western side of the eye.

At 12 a.m. CDT (1 a.m. EDT) on Aug. 26, a station at Copano Bay, Texas, reported a sustained wind of 74 mph (118 kph) with a gust to 110 mph (178 kph) in the northern eyewall. A station at Aransas Wildlife Refuge run by the Texas Coastal Observing Network recently reported a sustained wind of 78 mph (126 kph) with a gust to 105 mph (170 kph). A station at Rockport, Texas, reported a minimum pressure of 942 millibars in the eye.

NASA Measures Harvey's Rainfall

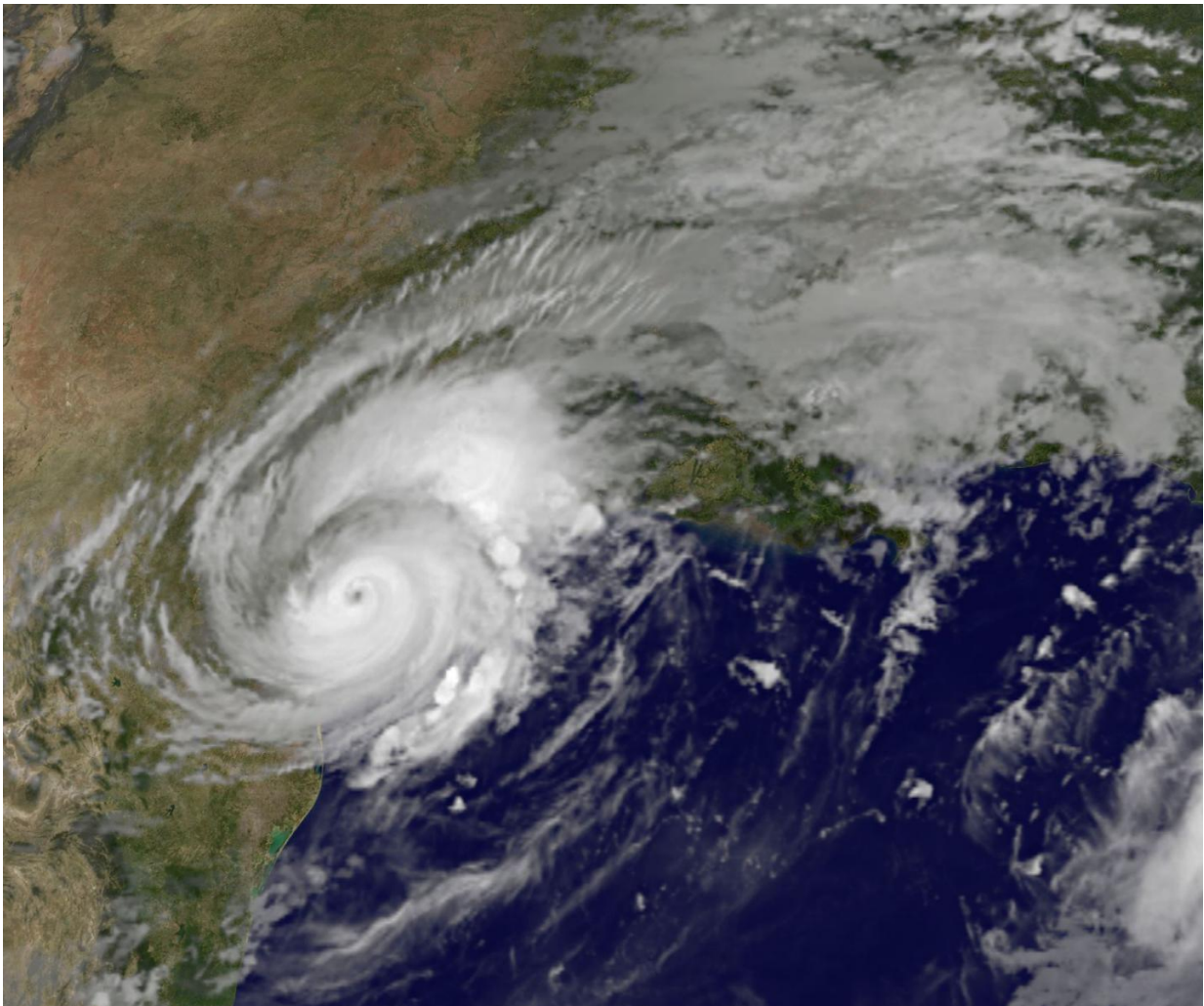
The Global Precipitation Measurement (GPM) mission core observatory satellite had another look at Hurricane Harvey on Aug. 25, at 7:50 a.m. CDT (1150 UTC) as it was menacing the Texas gulf coast. GPM's Dual-Frequency Precipitation Radar (DPR) instrument scanned precipitation within powerful storms wrapping around the eastern side of the hurricane. DPR found that intense storms in that area were dropping rain at a rate greater than 3.2 inches (82 mm) per hour.

GPM's Radar (DPR Ku Band) also was used to examine the 3-D configuration of precipitation within the storms on hurricane Harvey's eastern side. DPR showed that storm tops there reached altitudes above 9.2 miles (14.8 km). GPM's radar found the tallest of these powerful storms in a band of precipitation that was approaching the coastline near the Texas and Louisiana borders. These storms were measured by GPM's

radar reaching an altitude of over 10.3 miles (16.6 km).

GPM is co-managed by NASA and the Japan Aerospace Exploration Agency, JAXA.

On Saturday, Aug. 26, almost 10 inches of rain have already been reported at a few locations in southeastern Texas as of 4 a.m. CDT (5 a.m. EDT).



At 6 a.m. CDT (7 a.m. EDT) on Aug. 26 as Harvey's center continued to slowly meander over land, NOAA's GOES East satellite provided an infrared picture of

the massive storm. Harvey's eye was still apparent in the image. Credit: NASA/NOAA GOES Project

Warnings and Watches on Saturday, August 26

At 4 a.m. CDT (5 a.m. EDT) on Saturday, August 26, 2017 the warnings continued as Harvey moved slowly inland. A Storm Surge Warning is in effect for Baffin Bay to High Island, Texas. A Hurricane Warning is in effect for Baffin Bay to Port O'Connor, Texas and a Tropical Storm Warning is in effect from north of Port O'Connor to High Island, Texas.

Harvey's Status at 5 a.m. EDT on August 26

At 4 a.m. CDT (5 a.m. EDT) the National Hurricane Center (NHC) the eye of Hurricane Harvey was located by NOAA Doppler radar near 28.5 degrees north latitude and 97.2 degrees west longitude. That's about 30 miles (50 km) southwest of Victoria, Texas.

Harvey was moving toward the northwest near 6 mph (9 kph). NHC said Harvey is expected to slow down through the day and meander over southeastern Texas through the middle of next week. Doppler radar data indicate that maximum sustained winds have decreased to near 100 mph (155 kph) with higher gusts. Additional weakening is forecast, and Harvey is likely to become a [tropical storm](#) later today.

Hurricane-force winds extend outward up to 35 miles (55 km) from the center, and tropical-storm-force winds extend outward up to 140 miles (220 km). The estimated minimum central pressure is 963 millibars.

GOES East Satellite View of Harvey at 7 a.m. EDT on

Aug. 26

At 6 a.m. CDT (7 a.m. EDT) as Harvey's center continued to slowly meander over land, NOAA's GOES East satellite provided an infrared picture of the massive storm. Harvey's eye was still apparent in the image created at NASA/NOAA GOES Project at NASA's Goddard Space Flight Center, Greenbelt, Maryland.

NHC Forecast: Hazards Affecting Land

Rainfall: Harvey is expected to produce total rain accumulations of 15 to 30 inches and isolated maximum amounts of 40 inches over the middle and upper Texas coast through next Wednesday. During the same time period Harvey is expected to produce total rain accumulations of 5 to 15 inches in far south Texas and the Texas Hill Country over through southwest and central Louisiana. Rainfall of this magnitude will cause catastrophic and life-threatening flooding.

Storm Surge: The combination of a dangerous storm surge and the tide will cause normally dry areas near the coast to be flooded by rising waters moving inland from the shoreline. The water is expected to reach the following heights above ground if the peak surge occurs at the time of high tide...

Port Aransas to Port O'Connor...6 to 12 ft
Port O'Connor to Sargent...6 to 9 ft
Sargent to Jamaica Beach...4 to 6 ft
Baffin Bay to Port Aransas...3 to 6 ft
Jamaica Beach to High Island...2 to 4 ft
Mouth of the Rio Grande to Port Mansfield...1 to 3 ft
High Island to Morgan City...1 to 3 ft

The deepest water will occur along the immediate coast near and to the northeast of the landfall location, where the surge will be accompanied by large and destructive waves. Surge-related flooding depends on the

relative timing of the surge and the tidal cycle, and can vary greatly over short distances. For information specific to your area, please see products issued by your local National Weather Service forecast office.

Wind: Hurricane conditions are occurring inland from the coast within Harvey's eyewall, and hurricane-force winds, especially in gusts, are still possible near the middle Texas coast for the next several hours. Tropical storm conditions are occurring in other portions of the hurricane and tropical storm warning areas. Tropical storm conditions are likely to persist along portions of the coast through at least Sunday.

Surf: Swells generated by Harvey are affecting the Texas, Louisiana, and northeast Mexico coasts. These swells are likely to cause life-threatening surf and rip current conditions.

Tornadoes: Tornadoes are possible today and tonight near the middle and upper Texas coast into far southwest Louisiana.

Provided by NASA's Goddard Space Flight Center

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