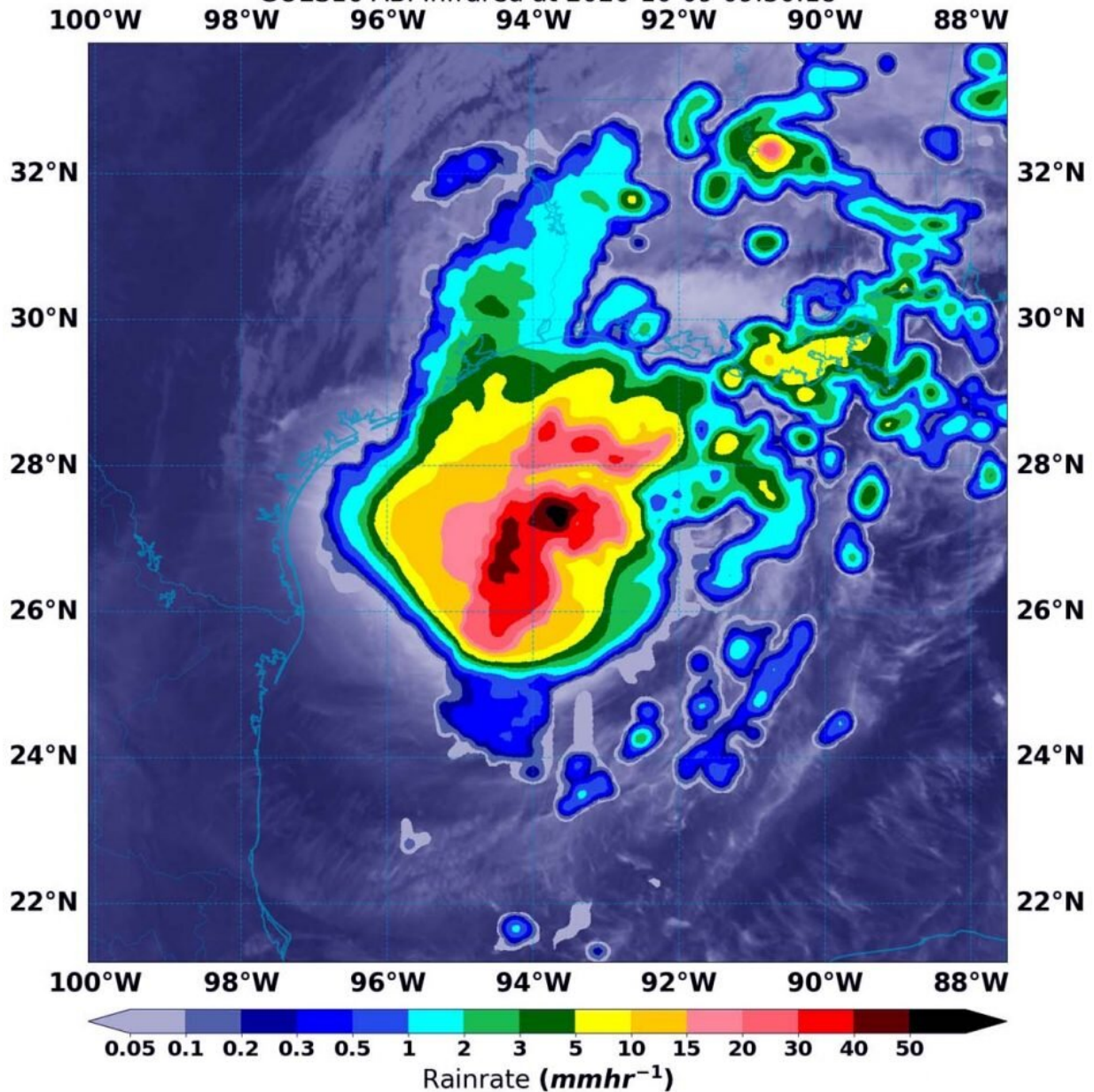


# NASA finds hurricane Delta packing heavy rainfall

October 9 2020, by Rob Gutro

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AL26 DELTA at 2020-10-09 12:00:00, NRL-Monterey  
 GPM IMERG Rain at 2020-10-09 09:30:00  
 GOES16 ABI Infrared at 2020-10-09 09:30:18



On Oct. 9 at 5:30 a.m. EDT (0930 UTC), NASA’s IMERG estimated Delta was generating as much as 50 mm (~2 inches of rain [dark red]) around the center of circulation. Rainfall rates in storms surrounding those areas of heaviest rainfall (green, pink, red) were estimated as falling at a rate between 10 and 40 mm (0.4 to 1.6 inches) per hour. The rainfall data was overlaid on infrared imagery from NOAA’s GOES-16 satellite. Credit: NASA/NOAA/NRL

NASA's satellite rainfall product that incorporates data from satellites and observations found that Hurricane Delta was bringing along heavy rainfall as it headed to the U.S. Gulf Coast on Oct. 9.

## **Warnings and Watches in Effect on Oct. 9**

There are many warnings in effect, as Delta approaches the U.S. Gulf coast. A Storm Surge Warning is in effect from High Island, Texas to Mouth of the Pearl River, Louisiana including Calcasieu Lake, Vermilion Bay, and Lake Borgne.

A Hurricane Warning is in effect from High Island, Texas to Morgan City, Louisiana. A Tropical Storm Warning is in effect from west of High Island to Sargent, Texas and east of Morgan City, Louisiana to the mouth of the Pearl River, including New Orleans and Lake Pontchartrain and Lake Maurepas.

## **Delta's Status on Oct. 9**

At 11 a.m. (1500 UTC), the center of Hurricane Delta was located near latitude 28.0 degrees north and longitude 93.8 degrees west. That is about 130 miles (205 km) south-southwest of Cameron, Louisiana.

Delta is moving toward the north near 13 mph (20 kph). A turn toward the north-northeast is expected this afternoon, followed by a northeastward motion during the day Saturday. Maximum sustained winds are near 115 mph (185 kph) with higher gusts. Delta is a category 3 hurricane on the Saffir-Simpson Hurricane Wind Scale. The latest minimum central pressure estimated from NOAA Hurricane Hunter aircraft data is 962 millibars.

## **Estimating Delta's Rainfall Rates from Space**

NASA's Integrated Multi-satellitE Retrievals for GPM or IMERG, which is a NASA satellite rainfall product, estimated Delta's rainfall rates.

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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.

### **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.

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. IMERG fills in the blanks between weather observation stations.

### **Delta's Heavy Rainfall Forecast**

NASA's rainfall data is provided to forecasters at the National Hurricane Center and is reflected in one of the key messages.

NHC said, "Today through Saturday, Delta is expected to produce 5 to 10 inches of rain, with isolated maximum totals of 15 inches, from southwest into central Louisiana. These rainfall amounts will lead to significant flash, urban, small stream flooding, along with minor to major river flooding.

For extreme east Texas into northern Louisiana, southern Arkansas, and western Mississippi, Delta is expected to produce 3 to 6 inches of rain, with isolated maximum totals of 10 inches. These rainfall amounts will lead to flash, urban, small stream, and isolated minor river flooding.

As the remnants of Delta move further inland 1 to 3 inches of rain, with locally higher amounts, are expected in the Tennessee Valley and Mid-Atlantic this weekend. There is a potential for 3 to 6 inches in the Southern Appalachians, which could lead to isolated flash, urban, and small stream flooding."

## **Additional NHC Key Messages**

In addition the heavy and flooding [rainfall](#) expected, NHC's other key messages are about storm surge, hurricane-force winds, isolated tornadoes and dangerous surf:

**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 could reach the following heights above ground somewhere in the indicated areas if the peak surge occurs at the time of high tide:

- Rockefeller Wildlife Refuge to Morgan City, LA including Vermilion Bay...7-11 ft
- Holly Beach, LA to Rockefeller Wildlife Refuge, LA...5-8 ft
- Sabine Pass to Holly Beach, LA...3-5 ft
- Morgan City, LA to Port Fourchon, LA...4-7 ft
- Port Fourchon, LA to the Mouth of the Mississippi River...2-4 ft
- Calcasieu Lake...2-4 ft
- High Island, TX to Sabine Pass...2-4 ft
- Mouth of the Mississippi River to Mouth of the Pearl River...2-4 ft
- Lake Borgne...2-4 ft
- Lake Pontchartrain and Lake Maurepas...1-3 ft
- Mouth of the Pearl River, LA to the AL/FL border including Mobile Bay...1-3 ft
- Sabine Lake...1-3 ft
- Port O'Connor, TX to High Island, TX including Galveston Bay...1-3 ft

It is important to note that small changes in the track, structure, or intensity of Delta could have large impacts on where the highest storm surge occurs.

**WIND:** Hurricane conditions are expected within the [hurricane warning](#) area by this afternoon, with tropical storm conditions expected within this area later this morning. Tropical storm conditions are expected within the tropical storm warning areas later today.

**TORNADOES:** A few tornadoes are possible today and tonight over southern portions of Louisiana and Mississippi.

**SURF:** Swells from Delta are affecting portions of the northern and western Gulf coast. These swells are likely to cause life-threatening surf and rip current conditions.

## Delta's Expected Track

NHC forecasters said slow weakening is expected before landfall, with rapid weakening expected after the center moves inland. On the forecast track, the center of Delta should make landfall along the coast of southwestern Louisiana later this afternoon or this evening, and then move across central and northeastern Louisiana tonight and Saturday morning.

**More information:** For more information about NASA's IMERG, visit: [pmm.nasa.gov/gpm/imerg-global-image](http://pmm.nasa.gov/gpm/imerg-global-image)

For updated forecasts, visit: [www.hurricanes.gov](http://www.hurricanes.gov)

Provided by NASA's Goddard Space Flight Center

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