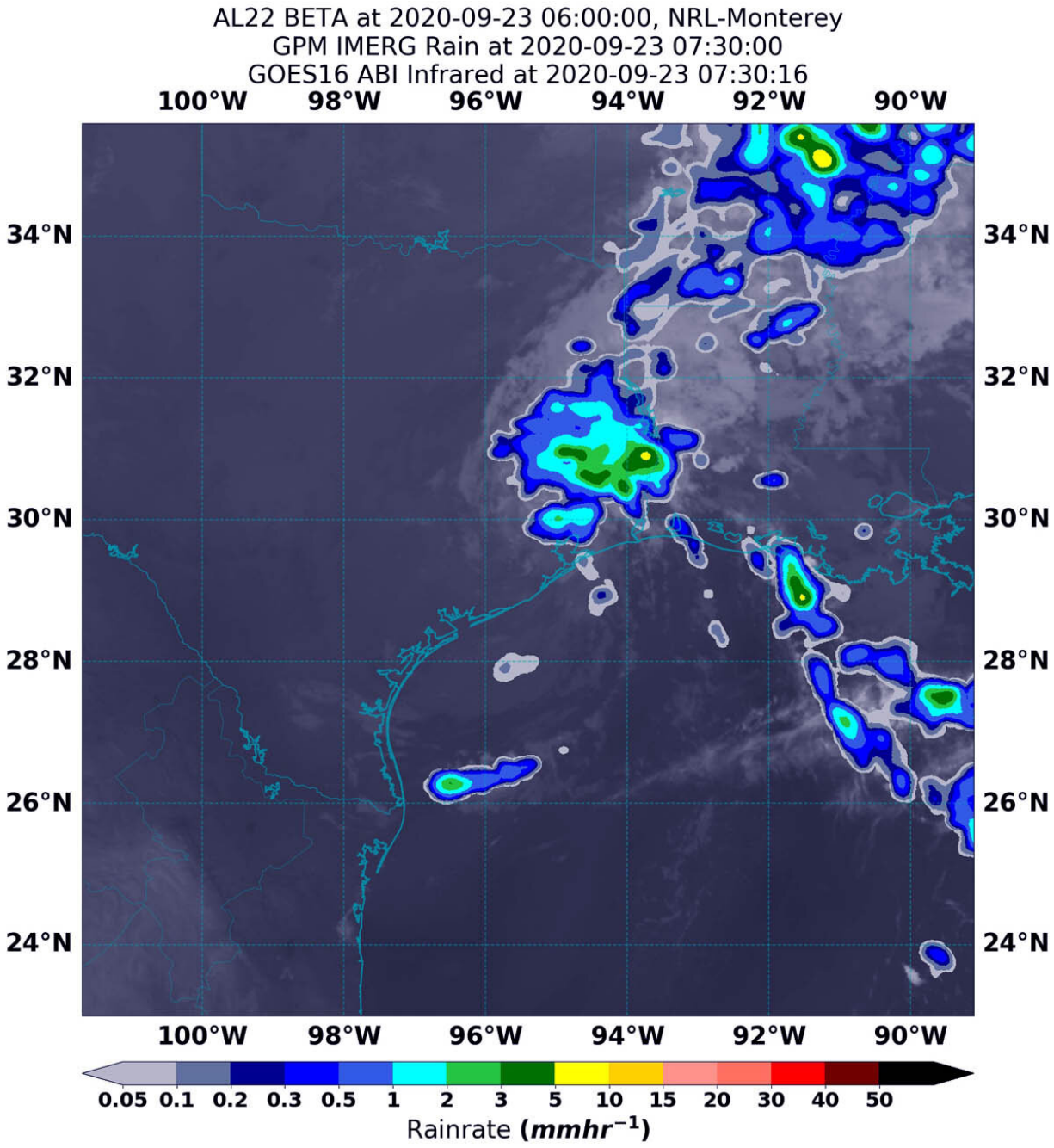
NASA tracking Beta's heavy rainfall into lower Mississippi Valley

September 23 2020



NASA's IMERG rainfall product estimated on Sept. 23 at 3:30 a.m. EDT (0730 UTC) that Beta was generating between 1 and 5 mm (0.04 and 0.2 inches) of rain per hour around the center of circulation in east Texas and in areas extending northeast into Louisiana and out over the Gulf of Mexico. Rainfall throughout most of the storm was estimated as falling at a rate between 0.3 and 1 mm (0.01 to 0.04 inches) per hour. The rainfall data was overlaid on infrared

imagery from NOAA's GOES-16 satellite. Credit: NASA/NOAA/NRL

Slow-moving post-tropical storm Beta continues to drop large amounts of rainfall in Texas as it moves into the Lower Mississippi Valley on Sept. 23. A NASA satellite rainfall product that incorporates data from satellites and observations estimated Beta's rainfall rates.

Flash Flood Watches in Effect on Sept. 23

NOAA's National Weather Service issued warnings and watches for Beta on Sept. 23. There are Flash Flood Watches currently in effect across southeast Texas and southern Louisiana.

What is a Post-tropical Cyclone?

NHC defines a post-tropical cyclone as a former tropical cyclone. This generic term describes a cyclone that no longer possesses sufficient tropical characteristics to be considered a tropical cyclone. Post-tropical cyclones can continue carrying heavy rains and high winds. Former tropical cyclones that have become fully extratropical as well as remnant lows are both classes of post-tropical cyclones.

Beta's Status on Sept. 23

At 5 a.m. EDT (0900 UTC), the center of Post-Tropical Cyclone Beta was located near latitude 29.5 degrees north and longitude 95.0 degrees west. That is about 30 miles (45 km) east-southeast of Houston, Texas and about 70 miles (115 km) west-southwest of Port Arthur, Texas.

The post-tropical cyclone is moving toward the east-northeast near 9

mph (15 kph) and this motion is expected to shift more toward the northeast during the next 48 hours.

Maximum sustained winds are near 30 mph (45 kph) with higher gusts. Slow weakening is forecast during the next 48 hours. The estimated minimum central pressure is 1007 millibars.

Estimating Beta'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. 23 at 3:30 a.m. EDT (0730 UTC) that Beta was generating between 1 and 5 mm (0.04 and 0.2 inches) of rain per hour. IMERG also found that rainfall was occurring around the center of circulation in east Texas and in areas extending northeast into Louisiana and out over the Gulf of Mexico. Rainfall throughout most of the storm was estimated as falling at a rate between 0.3 and 1 mm (0.01 to 0.04 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.

NHC Key Messages

NOAA's National Weather Service Weather Prediction Center in College Park, Md. issued two key messages about Beta on Sept. 23:

RAINFALL: For the upper Texas coast, additional rainfall of 3 to 5 inches with isolated storm totals up to 15 inches is expected through Wednesday afternoon. Significant urban flooding will continue as well as minor to isolated moderate river flooding. Flash flooding will remain possible through Wednesday afternoon. Rainfall totals of 2 to 5 inches

are expected east into the Lower Mississippi Valley, portions of the Tennessee Valley, and the southern Appalachians through the end of the week. Flash and urban flooding is possible, as well as isolated minor river flooding on smaller rivers.SURF: Swells generated by a combination of Beta and a stationary front over the northern Gulf of Mexico will continue from the Upper Coast of Texas to the Western Florida Panhandle during the next couple of days. These swells are likely to cause life-threatening surf and rip current conditions.

Beta is forecast to continue moving in an easterly direction into the Lower Mississippi Valley, portions of the Tennessee Valley, and the southern Appalachians through the end of the week.

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. Basically, IMERG fills in the blanks between weather observation stations.

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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