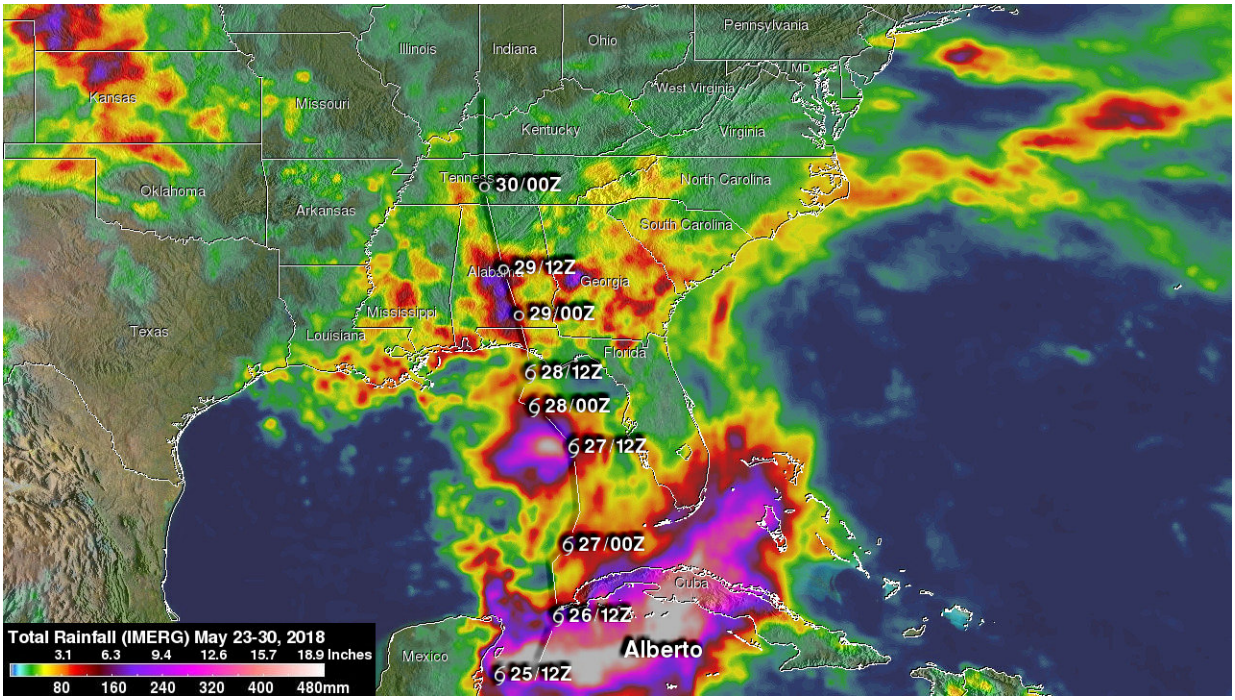
NASA adds up Alberto's soaking rainfall in the US Southeast and Tennessee Valley

May 31 2018, by Steve Lang



IMERG rainfall estimates were compiled for the 1-week period from May 23 at 4:30 a.m. EDT (0830 UTC) to May 30 at 4 a.m. EDT (0800 UTC) showed upwards of 500 mm of rain (~20 inches) over the northwestern Caribbean. Rainfall amounts of at least 5 to 15 inches (shown in dark red, purple and pink) cover most of western Cuba. Credit: NASA/JAXA, Hal Pierce

Subtropical Storm Alberto brought soaking rainfall to the southeastern U.S. up through the Tennessee and Ohio Valleys. Using a variety of

resources to gather data, including the Global Precipitation Measurement mission or GPM core satellite, NASA estimated the rainfall Alberto created over its path.

By May 31, Alberto became a post-tropical cyclone as it moved to exit northeastern lower Michigan.

Alberto's History

Alberto formed out of a broad area of low pressure at the surface that was located over and around the Yucatan Peninsula. Because the area of low pressure was under the influence of a nearby upper-level trough, Alberto was designated as a subtropical storm by the National Hurricane Center (NHC) on the morning of Friday May 25, which is rather unusual as most subtropical storms form at higher latitudes. The storm initially formed just east of the Yucatan Peninsula.

A large subtropical ridge over the southwestern Atlantic steered Alberto on a northward track, and the storm brushed the far western tip of Cuba on Saturday May 26 before the center re-formed as it moved northward into the southeast Gulf of Mexico as a still minimum subtropical storm with maximum sustained winds of around 40 mph. As it moved north further into the Gulf, Alberto initially struggledto organize and intensify. The storm remained under the influence of an upper-level trough (elongated area of low pressure) with most of the active thunderstorms located well to the east of the center.

Finally, as it was passing through the central Gulf around midday on May 27, Alberto showed signs of strengthening with thunderstorm activity becoming closer to the center and beginning to wrap around the western side of the storm. However, despite some intensification, NHC reported that dry air was wrapping around the storm and inhibiting the thunderstorms and hence Alberto's ability to strengthen. As a result,

Alberto made landfall the next day on May 28 on the northern Gulf Coast still as a subtropical storm with maximum sustained winds of 45 mph.

The center made landfall near Laguna Beach in the Florida panhandle at around 4 p.m. CDT and proceeded to track north-northwest through the center of Alabama where it weakened into a depression before moving into central Tennessee.

Estimating Alberto's Rainfall Track

At NASA's Goddard Space Flight Center in Greenbelt, Maryland, the Integrated Multi-satellitE Retrievals for GPM or IMERG is used to make estimates of precipitation from a combination of passive microwave sensors, including the GMI microwave sensor onboard the GPM satellite, and geostationary IR (infrared) data. GPM is a joint satellite mission between NASA and the Japan Aerospace Exploration Agency.

IMERG rainfall estimates were compiled for the 1-week period from May 23 at 4:30 a.m. EDT (0830 UTC) to May 30 at 4 a.m. EDT (0800 UTC) the Southeast U.S., Gulf of Mexico and the surrounding region.IMERG estimates showed upwards of 500 mm of rain (~20 inches) over the northwestern Caribbean; the bulk of which fell before Alberto actually formed due to the ongoing area of disturbed weather from which Alberto formed. Rainfall amounts of at least 5 to 15 inches covered most of western Cuba.

Rainfall amounts over the southern Gulf were relatively light but picked up over the central Gulf where Alberto showed signs of strengthening before decreasing again over the northern Gulf. Over the Southeast U.S., summertime shower activity contributed about 2-4 inches over much of the area during this period as a result moist southerly flow.

However, rainfall from the passage of Alberto pushes these rainfall totals to near 8 inches over much of central Alabama, prompting several flood warnings, and is responsible for about 2-4 inches of rain over parts of mostly western Tennessee. Because of the storm's steady forward progress, rainfall amounts have not been as high as they could be. So far 2 deaths are being blamed on the storm in North Carolina and 4 in Cuba.

Flood Watches in Effect On May 31

On Thursday, May 31, 2018 Flash Flood Watches remain in effect for the western Carolinas, northwest Virginia, and far eastern West Virginia.

Center of Post-Tropical Cyclone Alberto on May 31, 2018

At 5 a.m. EDT (0900 UTC) the National Weather Service's Weather Prediction Center in College Park, Maryland noted that the center of Post-Tropical Cyclone Alberto, now a wave of low pressure along a frontal zone, was located near latitude 44.9 degrees North and longitude degrees 83.9 west. That's about 20 miles (30 km) west-southwest of Alpena, Michigan. Maximum sustained winds are near 30 mph (45 km/h) with higher gusts. The estimated minimum central pressure is 994 millibars.

The post-tropical cyclone is moving toward the north-northeast near 35 mph (55 kph) and this motion is expected to continue until it attempts to merge with an approaching frontal wave in southeast Ontario during the afternoon on May 31.

The 5 a.m. advisory was the last public advisory issued by the Weather Prediction Center on Alberto.

Provided by NASA's Goddard Space Flight Center