Accumulation were shallow, i.e., merely 5 inches at 1906 UTC (3:06 PM EDT) on Oct. 6. This double eyewall would have been difficult to detect by conventional radar. A double eyewall was observed by the 89V GHz channel of the GPM Microwave Imager (GMI) when a NOAA N43 P3 aircraft flew through the hurricane. The aircraft’s doppler radar clearly showed a double wind maximum at 3 km altitude but no clear double wind maximum at 5 km altitude. When an eyewall replacement cycle begins, the radius of hurricane–force winds can increase, and the final landfall center has little lightning in the hurricane as confirmed by Zhang et al. (2012) studied intensification events like this one.


Very NWS inner-core lightning as the hurricane weakened from Cat 1 to Cat 0.

Hurricane Matthew (2016)

Over land, GPM’s IMERG precipitation estimates are less accurate than over ocean because some passive microwave channels provide limited information over land. Over the continental US, the National Weather Service (NWS) calculates a gauge-adjusted ground-radar estimate of precipitation. For these reasons, this poster displays IMERG accumulations over ocean and NWS accumulations over the US.

Three-day accumulation in inches of 12 flashes from Myrtle Beach SC to Myrtle Beach NC in North Carolina, VA, and near Savannah, GA.

Air traffic in excess of 20 flights leave Lamington, NC.

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