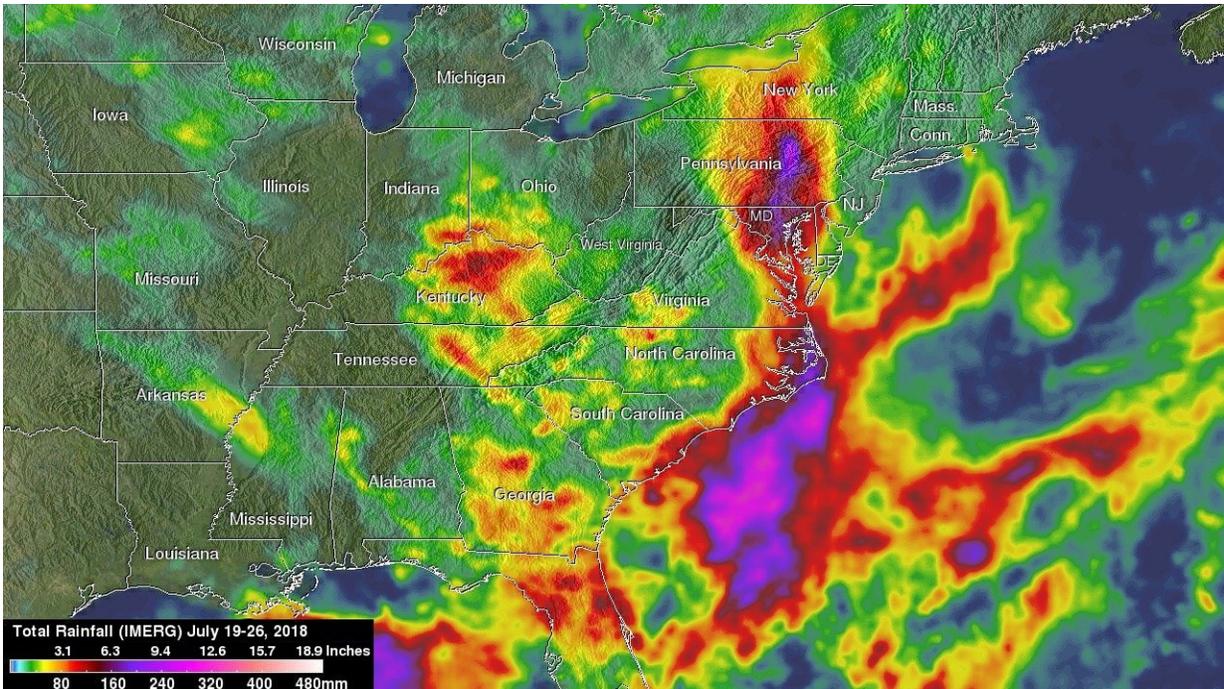


# NASA analyzes US east coast persistent rains

July 31 2018, by Steve Lang / Rob Gutro



During the period of July 19 to 26, 2018 NASA calculated the highest rainfall totals overland for the period are over the Outer Banks, central Maryland and central Pennsylvania where IMERG estimates are on the order of 180 mm or more (~7 inches, shown in purple). Numerous areas received on the order of 50 to 100 mm (~2 to 4 inches, shown in yellow and red) with locally higher amounts of up to 140 mm (~5.5 inches, shown in dark red) over northern Kentucky and parts of northern Florida. Credit: NASA/JAXA, Hal Pierce

A stalled weather pattern led to persistent showers and thunderstorms moving up the eastern seaboard during the week of July 22, resulting in

significant rainfall amounts and numerous flood warnings. NASA utilized satellite data to analyze and tally the rainfall from the storms.

A nearly stationary elongated upper-level trough or elongated area of [low pressure](#) stretching down from the Great Lakes to Florida combined with a persistent Bermuda High off the coast to channel a steady flow of warm, humid air up the eastern seaboard. The result was a week of re-occurring showers and thunderstorms across the region.

That's where the Global Precipitation Measurement mission or GPM constellation of satellites comes in. GPM is a joint mission between NASA and the Japan Aerospace Exploration Agency, JAXA and measures precipitation from space.

The Integrated Multi-satellitE Retrievals for GPM or IMERG is used to estimate precipitation from a combination of passive microwave sensors, including GPM's GMI microwave sensor and geostationary infrared data. Accumulated IMERG rainfall estimates for the 1-week period of July 19 to 26, 2018 showed most of the eastern third of the U.S. receiving some rain.

The heaviest accumulations extend from the north-central Gulf of Mexico across northeast Florida, up along the coast of the Carolinas, through central Maryland and Pennsylvania and into central New York State.

Early in the period, a stationary front draped across southern Georgia helped to focus showers and thunderstorms over north Florida and off the coast of South Carolina, while a trough of low pressure over the northern Gulf of Mexico did the same for that area. In the middle of the period, a wave of low pressure formed along the front over southeast Georgia and moved up the coast, then over the Chesapeake Bay, across central Pennsylvania and into central New York before weakening over

the Great Lakes. This brought the first round of heavy rains to the Outer Banks of North Carolina, central Maryland and central Pennsylvania. After that more showers and thunderstorms formed in the moist southeast onshore flow, bringing additional rains to the coastal Carolinas and across the Piedmont into the Appalachians.

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Provided by NASA's Goddard Space Flight Center

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