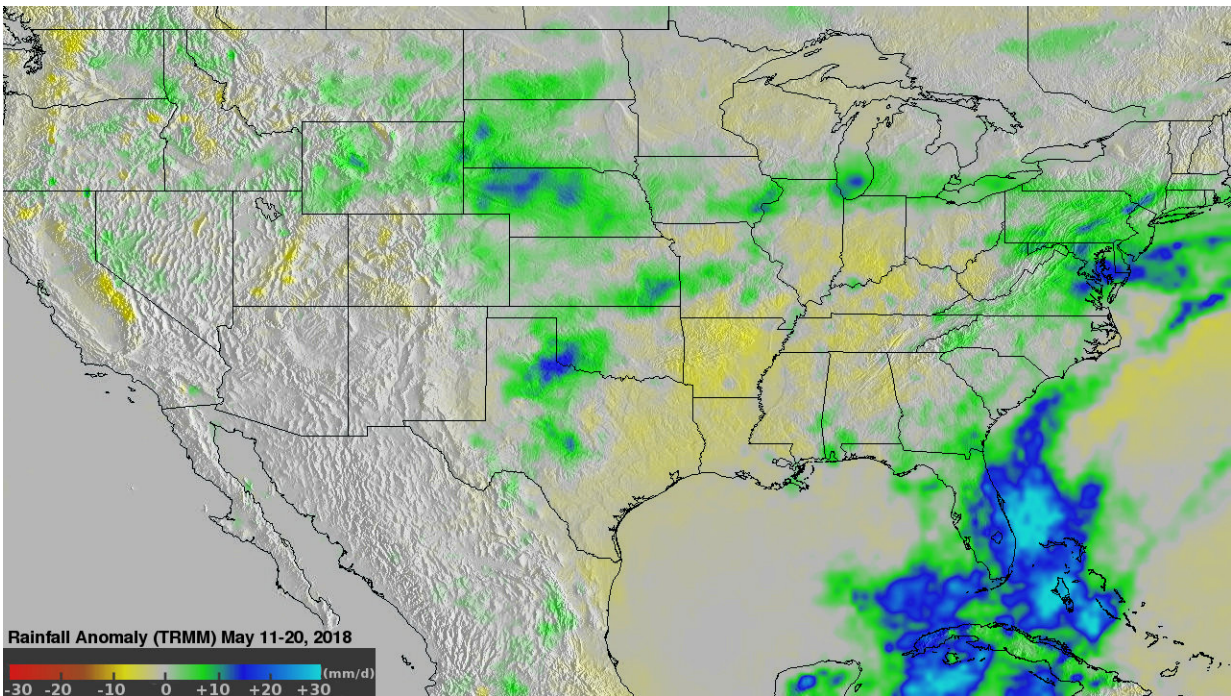


NASA measures heavy US rainfall from space

May 22 2018



Data revealed anomalous rainfall for the period from May 11 to 20, 2018. Mid-Atlantic rain was falling at a rate of greater than 15 mm (.59 inches) per day above normal (blue). It also indicates that the Mississippi valley was receiving less than normal rainfall during the same period (yellow). Much of the desert Southwest was receiving the same or lower than normal precipitation. Credit: NASA/JAXA, Hal Pierce

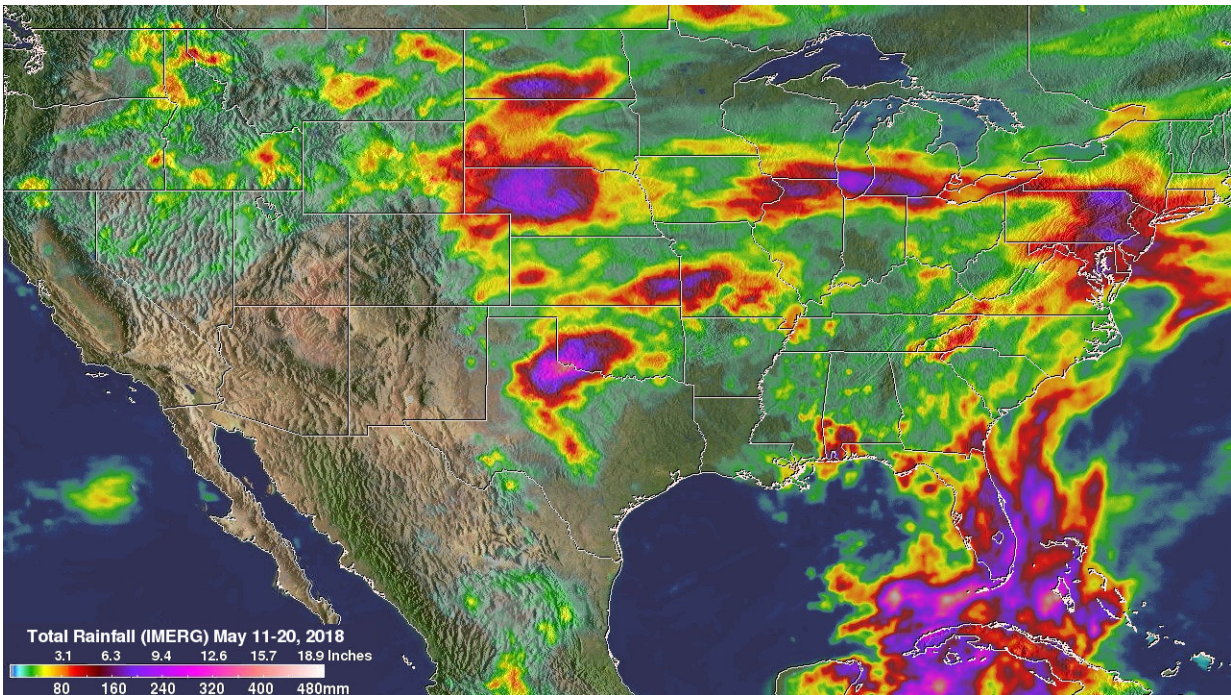
For close to two weeks the combination of a nearly stationary front and

tropical moisture caused almost continuous precipitation over much of the Mid-Atlantic. Using data from a constellation of satellites, NASA calculated the extreme rainfall that occurred in parts of the U.S.

Record amounts of rain fell over the eastern United States with over a foot of rain reported in some parts of the Mid-Atlantic. The excessive rain led to flooding along several rivers including Washington D.C.'s Potomac River.

Data revealed anomalous [rainfall](#) for the period from May 11 to 20, 2018. That analysis used climatology data that were based on measurements gathered by the Tropical Rainfall Measuring Mission (TRMM) satellite from 1997 to 2015. The TRMM satellite collected data that contributed to a unique dataset of global tropical rainfall. The rainfall anomaly analysis was made possible by comparing [rainfall data](#) compiled during the twelve year period from 2001 to 2012 to "near real-time" Multi-satellite Precipitation Analysis (TMPA-RT 3B42RT) data. That analysis indicated that Mid-Atlantic rain was falling at a rate of greater than 15 mm (.59 inches) per day above normal. It also indicates that the Mississippi valley was receiving less than normal rainfall during the same period. Much of the desert Southwest was receiving the same or lower than normal [precipitation](#).

The estimate of accumulated rainfall over the continental United States was made possible using Multi-satellite Retrievals data (IMERG). Algorithms developed by NASA's



IMERG data collected during the period from May 11 to 20, 2018 were added together to produce an estimate of total rainfall. The most rainfall occurred in purple areas. Credit: NASA/JAXA, Hal Pierce

Precipitation Measurement Missions (PMM) science team at NASA's Goddard Space Flight Center in Greenbelt, Maryland were used to merge data from the satellites in the Global Precipitation Measurement mission or GPM Constellation. IMERG data collected during the period from May 11 to 20, 2018 were added together to produce an estimate of total rainfall.

Highest rainfall totals were seen in areas in North Dakota, Nebraska, southwestern Oklahoma, Northern Texas, eastern Kansas and western Missouri, northern Illinois and southern Michigan, eastern Pennsylvania, southern New Jersey and south Florida. Those areas received 6 or more inches of rain over that period.

GPM is a joint mission between NASA and the Japan Aerospace Exploration Agency, JAXA.

On May 21, NOAA's National Weather Service forecast noted "Unsettled weather will continue across the Southeast and Gulf Coast with periodic showers and thunderstorms through at least Wednesday. Rainfall amounts may exceed three inches in some locales. Elsewhere, a few severe thunderstorms are possible for the Ohio Valley and central Plains through Tuesday."

Provided by NASA's Goddard Space Flight Center

Citation: NASA measures heavy US rainfall from space (2018, May 22) retrieved 9 April 2024 from <https://phys.org/news/2018-05-nasa-heavy-rainfall-space.html>

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