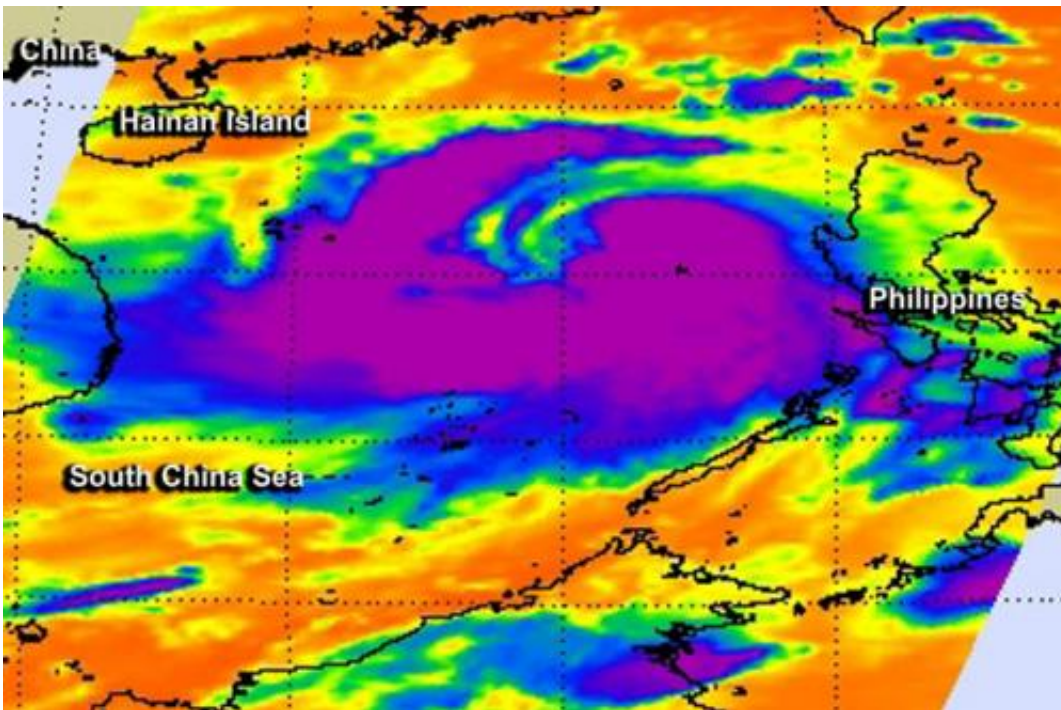


TRMM satellite adds up Typhoon Rammasun's Philippines deluge

July 17 2014



NASA's Aqua satellite passed over Rammasun on July 16 and the AIRS instrument aboard captured infrared data that showed powerful thunderstorms (purple) continued to circle the storm's center. Credit: NASA JPL, Ed Olsen

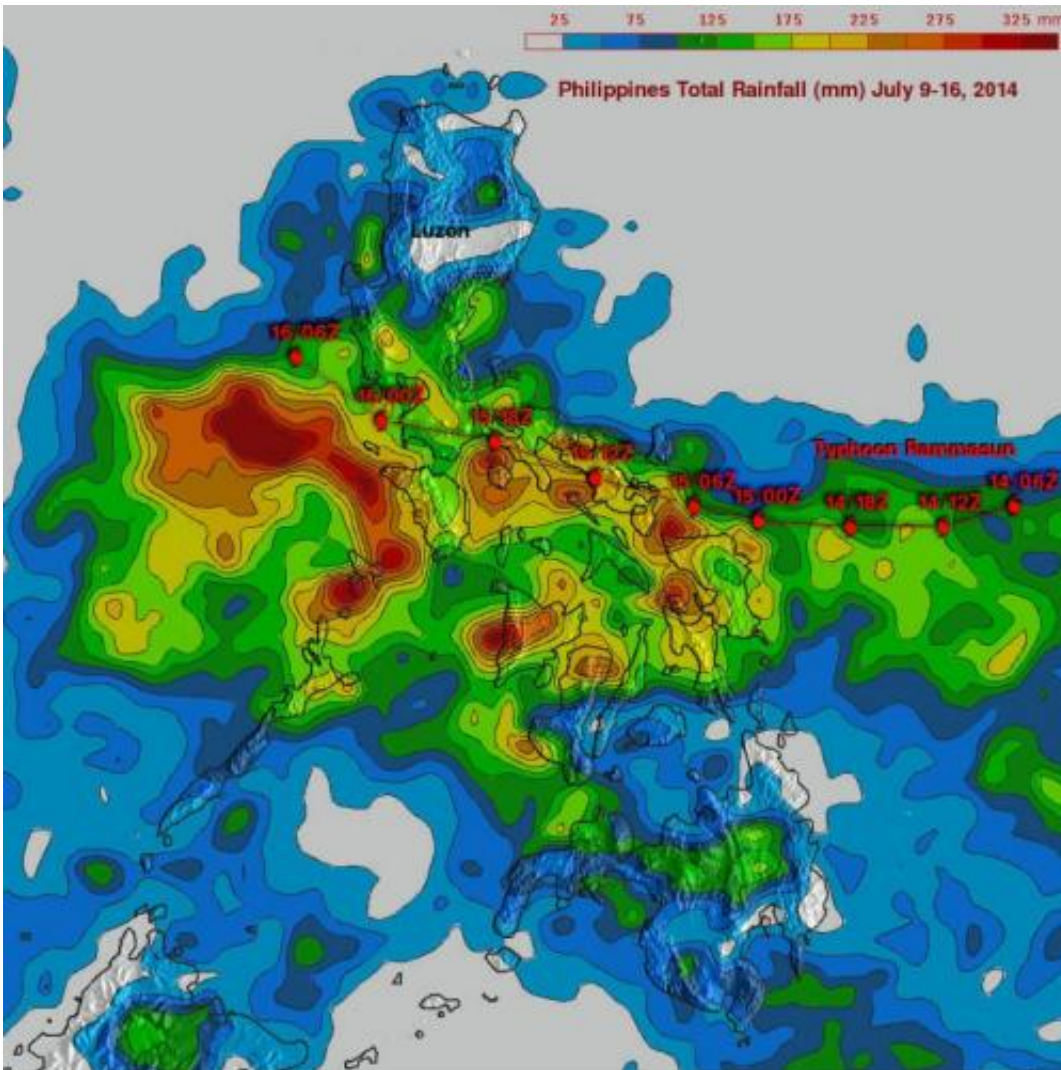
Typhoon Rammasun dropped large amounts of rainfall over the Philippines, and the TRMM satellite was used to measure it from space. Rammasun is now making its way toward Hainan Island, China.

NASA and the Japanese Aerospace Exploration Agency partner on the

Tropical Rainfall Measuring Mission or TRMM satellite. As TRMM orbits the Earth it has the ability to calculate rainfall occurring in storms and a [rainfall analysis](#) using TRMM and other data helps scientists calculate total rainfall.

A preliminary analysis of rainfall during the period when typhoon Rammasun was moving over the Philippines. The analysis is the result of a TRMM-calibrated merged global Multi-satellite Precipitation Analysis (TMPA) performed at NASA's Goddard Space Flight Center in Greenbelt, Maryland. These TMPA rainfall total estimates were for the period from July 9-16, 2014. The analysis indicated that rainfall totals of over 325 mm (about 12.8 inches) were located over many parts of the Philippines. The analysis also showed that northern Luzon had received lower amounts of rainfall than the central Philippines.

Typhoon Rammasun known locally as "Glenda" is the most powerful typhoon to hit the Philippines this year. As of today, At least ten deaths have been attributed to Rammasun. Typhoon Rammasun's track was north of Super Typhoon Haiyan's path of destruction through the Philippines in November 2013.



TRMM data showed that rainfall totals of over 325 mm (about 12.8 inches) were located over many parts of the Philippines. Credit: SSAI/NASA, Hal Pierce

NASA's Aqua satellite passed over Rammasun on July 16 and the Atmospheric Infrared Sounder or AIRS instrument aboard captured infrared data that showed powerful thunderstorms continued to circle the storm's center. Cloud top temperatures around the center of circulation were colder than -63 F/-52C indicating cloud tops were near the top of the troposphere and there was strong uplift in the storm. Cloud top temperatures that high indicate strong storms with the potential for

heavy [rainfall](#), according to previous NASA studies.

On July 17 at 0900 UTC (5 a.m. EDT) Rammasun's maximum sustained winds were near 75 knots (86.3 mph/138.9 kph). It was located near 17.2 north latitude and 114.5 east longitude, about 333 nautical miles (383.2 miles/ 616.7 km) south of Hong Kong, China. The Joint Typhoon Warning Center (JTWC) expects the storm to strengthen slightly over the next day. The China Meteorological Agency (CMA) issued an orange warning for Hainan Island and the mainland. CMA forecasters expect that Rammasun will approach the coastal area of eastern Hainan to western Guangxi and will make landfall on Lingshui of Hainan Island at 0600 UTC (2 a.m. EDT) on the morning of July 18 before heading toward Vietnam. The JTWC expects a second and final landfall near the northeastern border of Vietnam and China on July 19.

Provided by NASA's Goddard Space Flight Center

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