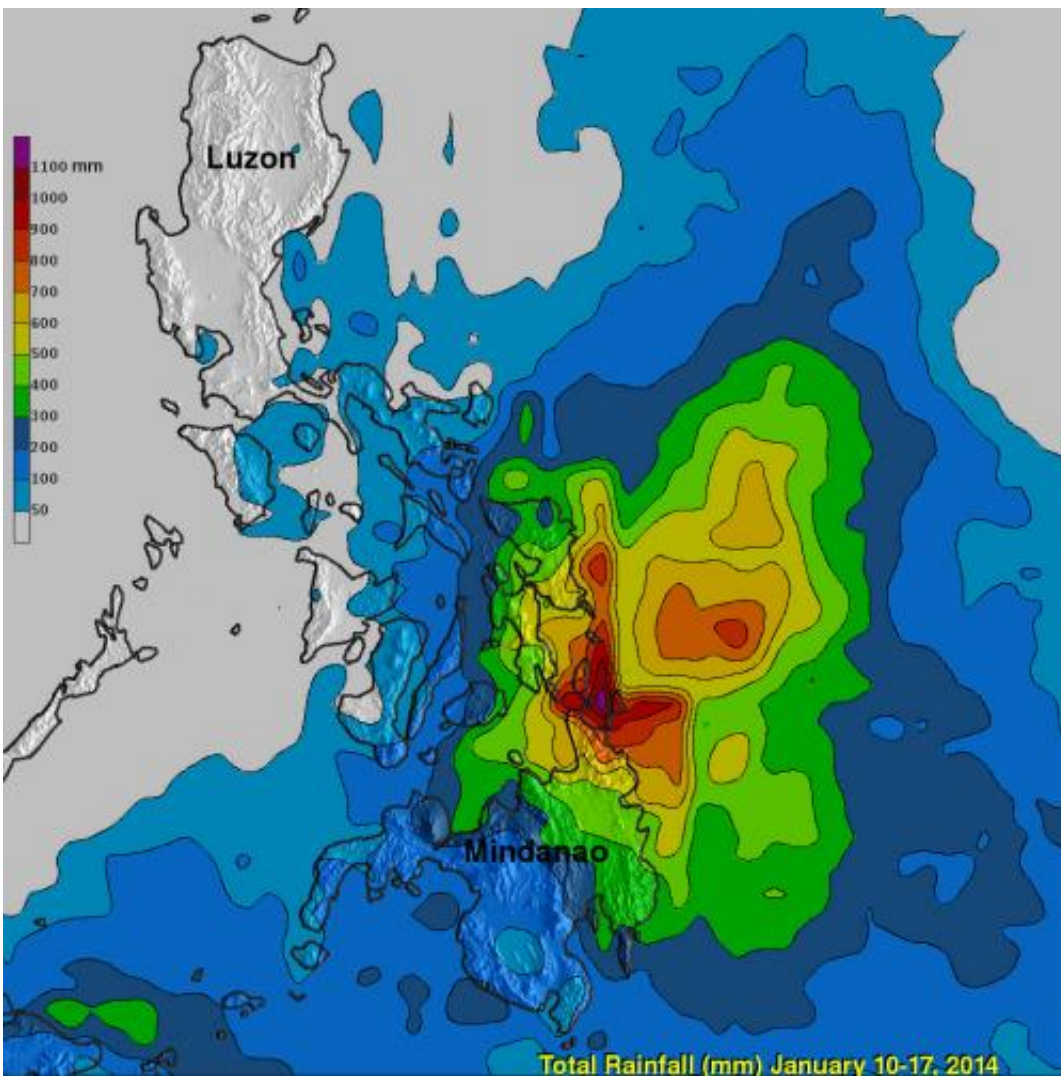


# TRMM satellite calculates System 91W's deadly Philippine flooding

January 17 2014, by Hal Pierce, Rob Gutro



NASA/JAXA's TRMM satellite data was used to calculate the extremely high rainfall totals of over 1,168 mm (about 46 inches) that fell from Jan. 10-17, 2014, near northeastern Mindanao, Philippines. Credit: SSAI/NASA, Hal Pierce

People in the southern Philippines are used to heavy rainfall this time of the year but rainfall totals have recently been exceptionally high. A tropical low known as System 91W, located northeast of Mindanao has been an almost permanent feature on weather maps for the past week. NASA and the Japan Aerospace Exploration Agency's TRMM satellite has provided data on rainfall and flooding that was used to create a map of the event.

System 91W has caused nearly continuous rain in the area of northeastern Mindanao triggering floods and landslides that have caused the reported deaths of 34 people.

The Tropical Rainfall Measuring Mission or TRMM satellite data was used in a TRMM Multi-Satellite Precipitation Analysis (TMPA), produced at NASA's Goddard Space Flight Center, in Greenbelt, Md. The TMPA combines the rainfall estimates generated by TRMM and other satellites. The analysis was done for the period from January 10-17, 2014. Extremely high rainfall totals of over 1,168 mm (about 46 inches) for that week were found near northeastern Mindanao. This past Monday, January 13, a landslide on Dinagat Island caused the deaths of six people in this area.

Heavy rain amounts (calculated from satellite data), flood inundation calculations (from a hydrological computer models) and landslide potential maps are updated as often as every three hours globally. Results are shown at the "Global Flood and Landslide Monitoring" TRMM web site pages: [trmm.gsfc.nasa.gov](http://trmm.gsfc.nasa.gov).

System 91W, known locally as "Agaton," continues to drop [heavy rainfall](#) on parts of the Philippines, and warnings remained in effect on January 17-18. Philippines warnings in effect include Public Storm Warning Signal #1 for southern Leyte, Surigao del Norte and Sur, Siargao Island, Dinagat Province, Agusan del Norte and Sur, Davao

Oriental and Compostella Valley.

On January 17 at 1500 UTC/10 a.m. EST, System 91W was centered near 9.7 north latitude and 127.6 east longitude, about 370 nautical miles/425.8 miles/685.2 km east-northeast of Zamboanga, Philippines. Satellite data indicated that convection continued to flare up along the northern quadrant of the storm. The Joint Typhoon Warning Center gives System 91W a high chance for becoming a tropical depression in the next 24 hours.

Residents of the Philippines should be on guard for more heavy [rainfall](#), flash floods, and mudslides as System 91W lingers.

Provided by NASA's Goddard Space Flight Center

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