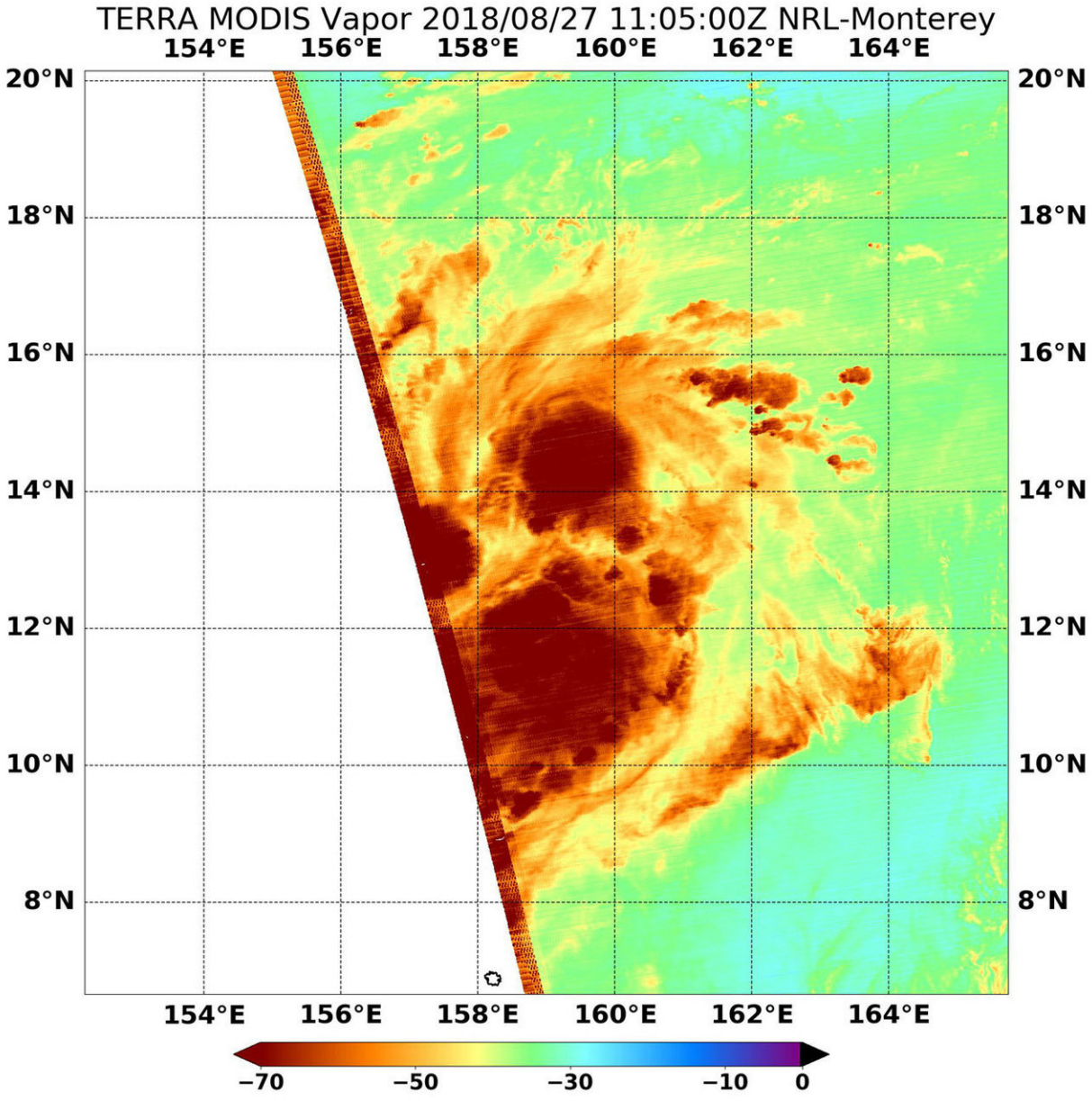
NASA looks at water vapor concentration in Tropical Depression 25W

August 27 2018



NASA's Terra satellite passed over Tropical Depression 25W on Aug. 27, 2018 at 7:05 a.m. EDT (1105 UTC) and highest concentrations of water vapor (brown) and coldest cloud top temperatures in three areas of the storm. Credit: NASA/NRL

When NASA's Terra satellite passed over the Northwestern Pacific Ocean on Aug. 27 it analyzed water vapor within newly formed Tropical Depression 25W and revealed three areas of strong concentrations.

The low pressure area previously known as System 94W strengthened and consolidated enough to be re-classified as a depression. NASA's Terra satellite passed over 25W on Aug. 27 at 7:05 a.m. EDT (1105 UTC) and the Moderate Resolution Imaging Spectroradiometer or MODIS instrument gathered water vapor content and temperature information.

Water vapor analysis of tropical cyclones tells forecasters how much potential a storm has to develop. Water vapor releases latent heat as it condenses into liquid. That liquid becomes clouds and thunderstorms that make up a tropical cyclone. Temperature is important when trying to understand how strong storms can be. The higher the cloud tops, the colder and the stronger they are.

MODIS saw coldest cloud top temperatures were as cold as minus 70 degrees Fahrenheit (minus 56.6 degrees Celsius) in three areas around the center of circulation. Storms with cloud top temperatures that cold have the capability to produce heavy rainfall.

The National Weather Service (NWS) in Tiyan, Guam noted at 11 a.m. EDT (1 a.m. CHST local time/1500 UTC) on Aug. 27, the center of

Tropical Depression 25W was located near Latitude 14.5 degrees North and Longitude 158.4 degrees East. That's about 345 miles northwest of Enetewak, and about 525 miles north of Pohnpei.

There are no watches or warnings in effect. NWS said "Residents of the Northern Marianas Islands...including Agrihan, Pagan and Alamagan should carefully monitor the progress of Tropical Depression 25W."

Tropical Depression 25W is moving toward the north-northwest at 10 mph. It is expected to make a turn toward the northwest with little change in forward speed during the next 24 hours.

Maximum sustained winds have increased to 35 mph. Tropical Depression 25W is forecast to intensify through Wednesday possibly becoming a tropical storm.

Provided by NASA's Goddard Space Flight Center