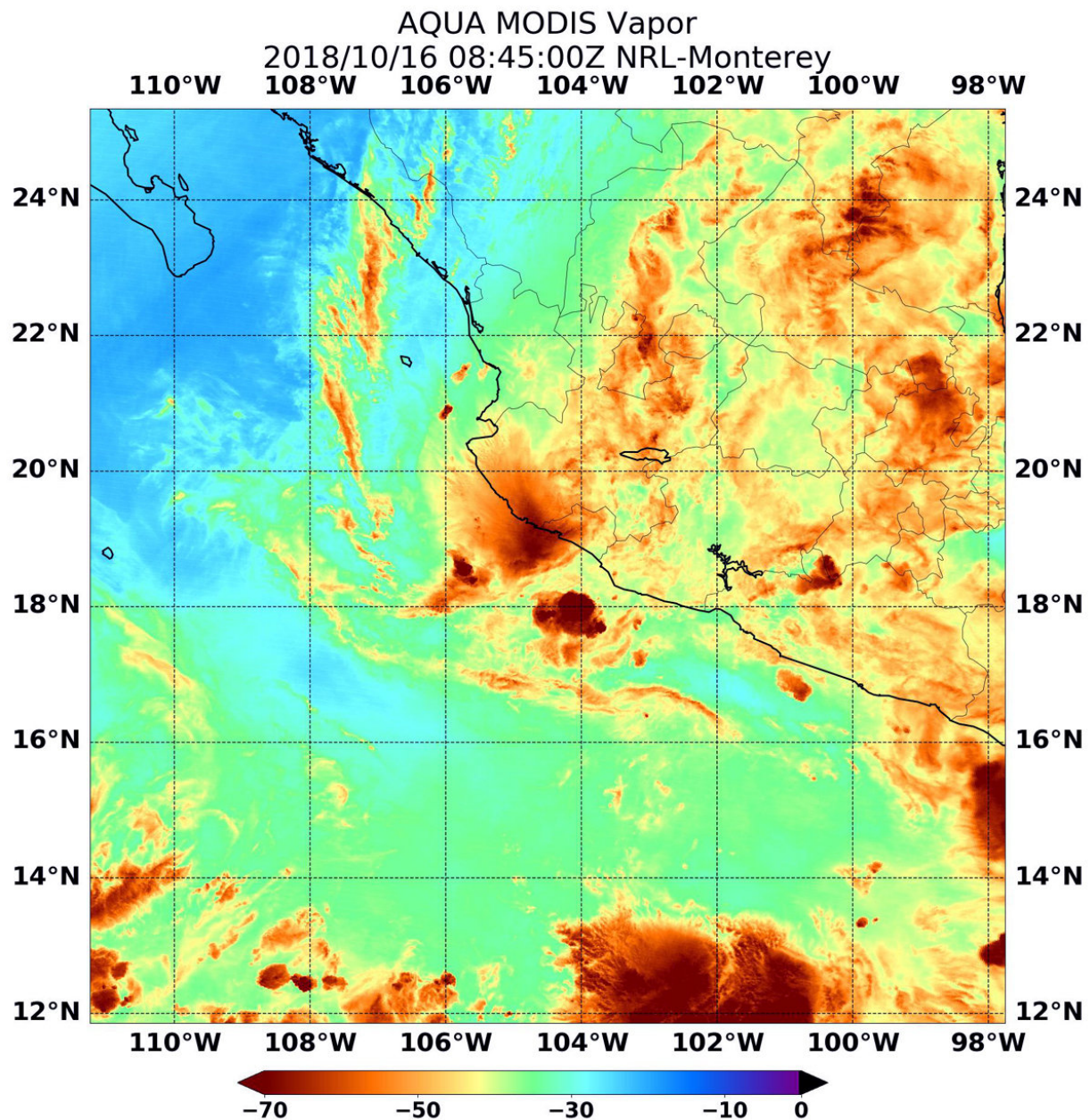


Tropical Storm Tara's water vapor concentrations seen by NASA's Aqua satellite

October 16 2018



NASA's Aqua satellite passed over Tropical Storm Tara in the Eastern Pacific Ocean on Oct. 16, 2018, at 4:45 a.m. EDT (0845 UTC). The MODIS instrument showed highest concentrations of water vapor (brown) and coldest cloud top temperatures were around the center (over water) and north of the center over western Mexico. Credit: NASA/NRL

When NASA's Aqua satellite passed over the Eastern Pacific Ocean on Oct. 16 the MODIS instrument aboard analyzed water vapor within Tropical Storm Tara.

On Oct. 16, a Tropical Storm Warning is in effect from Manzanillo to Cabo Corrientes, Mexico and a Tropical Storm Watch is in effect from east of Manzanillo to Punta San Telmo, Mexico.

Water vapor analysis of tropical cyclones tells forecasters how much potential a [storm](#) has to develop and shows where the heaviest rainfall may be found. 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.

NASA's Aqua satellite passed over Tropical Storm Tara on Oct. 16 at 4:45 a.m. EDT (0845 UTC) and the Moderate Resolution Imaging Spectroradiometer or MODIS instrument gathered [water vapor](#) content and temperature information. The MODIS image showed highest concentrations of water vapor and coldest cloud top temperatures circled the center and extended in areas over mainland Mexico to the north-northeast including the coast.

MODIS saw coldest cloud top temperatures were as cold as minus 70 degrees Fahrenheit (minus 56.6 degrees Celsius) in those areas. Storms with cloud top temperatures that cold have the capability to produce [heavy rainfall](#). After Aqua passed by, locally heavy rainfall continued along the immediate coastal areas of western Mexico.

The National Hurricane Center or NHC said at 11 a.m. EDT (1500 UTC), the center of Tropical Storm Tara was located near latitude 18.6 degrees north and longitude 104.5 degrees west.

Tara is drifting toward the north-northwest near 1 mph (2 kph). A very slow northwestward motion is expected during the next day or so. Maximum sustained winds have decreased to near 45 mph (75 kph) with higher gusts.

On NHC's forecast track, the center of Tara should pass very close to the coast of southwestern Mexico, or possibly move inland, today or Wednesday, Oct. 13. Gradual weakening is forecast as Tara's circulation interacts with the mountains of southwestern Mexico, and the system is forecast to degenerate into a remnant low by Wednesday evening.

NHC forecaster Stewart noted in the 11 a.m. Discussion, "Regardless of the exact track or intensity of Tara or its remnants, heavy rainfall will continue to be a threat along the immediate coast of southwestern Mexico due to the system's slow motion, and life-threatening flash flooding will be possible in mountainous areas."

Provided by NASA's Goddard Space Flight Center

Citation: Tropical Storm Tara's water vapor concentrations seen by NASA's Aqua satellite (2018, October 16) retrieved 9 April 2024 from <https://phys.org/news/2018-10-tropical-storm-tara-vapor-nasa.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.