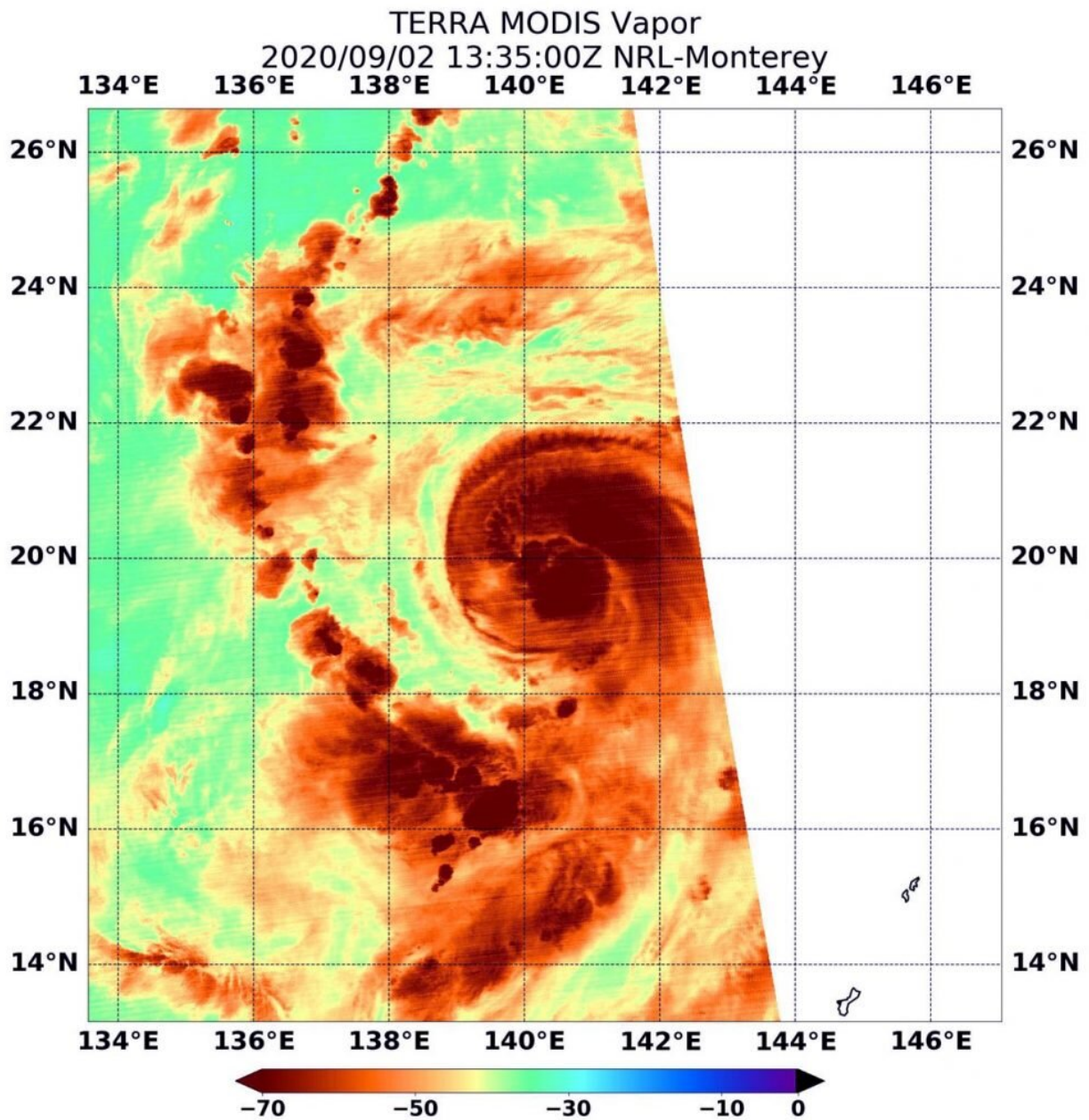


NASA analyzes typhoon Haishen's water vapor concentration

September 2 2020, by Rob Gutro



On Sept. 2 at 9:35 a.m. EDT (1335 UTC), NASA's Terra satellite passed over Typhoon Haishen in the Northwestern Pacific Ocean. Terra found highest concentrations of water vapor (brown) and coldest cloud top temperatures were around the center and northeastern quadrant. Credits: NASA/NRL

When NASA's Terra satellite passed over the Northwestern Pacific Ocean, it gathered water vapor data on recently developed Typhoon Haishen and found powerful storms in two locations.

Haishen strengthened quickly. It developed on August 31 as Tropical Depression 11W, and by Sept. 1, it had reached tropical storm status. By Sept. 2, it was a typhoon.

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 the storms.

NASA's Terra satellite passed over Haishen on Sept. 2 at 9:35 a.m. EDT (1335 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 were around the center of circulation and in a large band of thunderstorms in the northeastern quadrant of the storm.

MODIS data also showed coldest cloud top temperatures were as cold as or colder than minus 70 degrees Fahrenheit (minus 56.6 degrees Celsius)

in those storms. Storms with cloud top temperatures that cold have the capability to produce heavy rainfall.

On Sept. 2 at 11 a.m. EDT (1500 UTC), Typhoon Haishen had maximum sustained winds near 70 knots (80 mph/130 kph) and it was strengthening. It was centered near latitude 19.5 degrees north and longitude 140.4 degrees east, about 812 nautical miles east-southeast of Kadena Air Base, Okinawa, Japan. Haishen was moving to the west-northwest.

Haishen's forecast path expected similar to Maysak's

As Typhoon Maysak approaches landfall in southern South Korea today, forecasters at the Joint Typhoon Warning Center now expect Haishen to follow a similar path.

Haishen will veer to the northwest while intensifying to 120 knots. The [storm](#) is forecast to move west of Kyushu, Japan, and will make landfall in South Korea after four days.

NASA's Terra satellite is one in a fleet of NASA satellites that provide data for hurricane research.

Provided by NASA's Goddard Space Flight Center

Citation: NASA analyzes typhoon Haishen's water vapor concentration (2020, September 2) retrieved 4 May 2024 from <https://phys.org/news/2020-09-nasa-typhoon-haishen-vapor.html>

<p>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.</p>
--