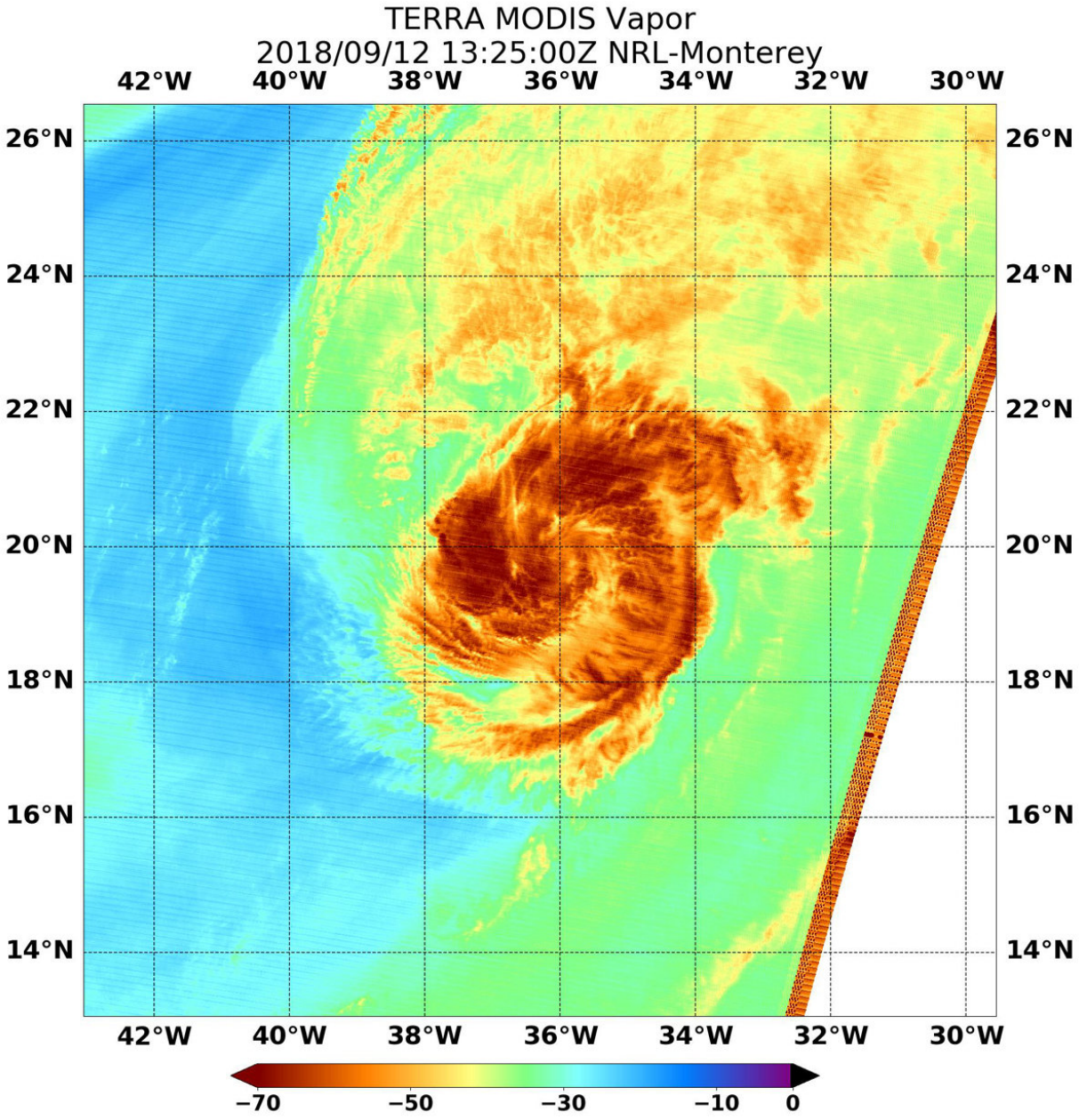
NASA looks at Hurricane Helene's water vapor concentration

September 12 2018



NASA's Terra satellite passed over Hurricane Helene on Sept. 12 at 9:25 a.m. EDT (1325 UTC) and highest concentrations of water vapor (brown) and coldest cloud top temperatures were around the center and a band of thunderstorms spiraling in from the east. Credit: NASA/NRL

When NASA's Terra satellite passed over the Eastern Atlantic Ocean on Sept. 12 it analyzed water vapor within Hurricane Helene.

NASA's Terra satellite passed Hurricane Helene on Sept. 12 at 9:25 a.m. EDT (1325 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 and a band of thunderstorms spiraling in from the east. The MODIS image also showed that the eye has become less distinct, although the storm remains well organized and symmetric.

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.

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.

At 11 a.m. EDT (1500 UTC), the eye of Hurricane Helene was located

near latitude 20.3 degrees north and longitude 36.5 degrees west. Helen is 1,350 miles (2,170 km) south-southwest of the Azores Islands.

Helene is moving toward the north-northwest near 14 mph (22 kph). A turn toward the north and northeast with an increase in forward speed is expected during the next few days. Maximum sustained winds remain near 90 mph (150 kph) with higher gusts. Gradual weakening is forecast over the next couple of days, and Helene is expected to become a tropical storm on Thursday, Sept. 13.

NHC said that Helene forecast to weaken over the eastern Atlantic and that interests in the Azores Islands should monitor the progress of Helene.

Provided by NASA's Goddard Space Flight Center