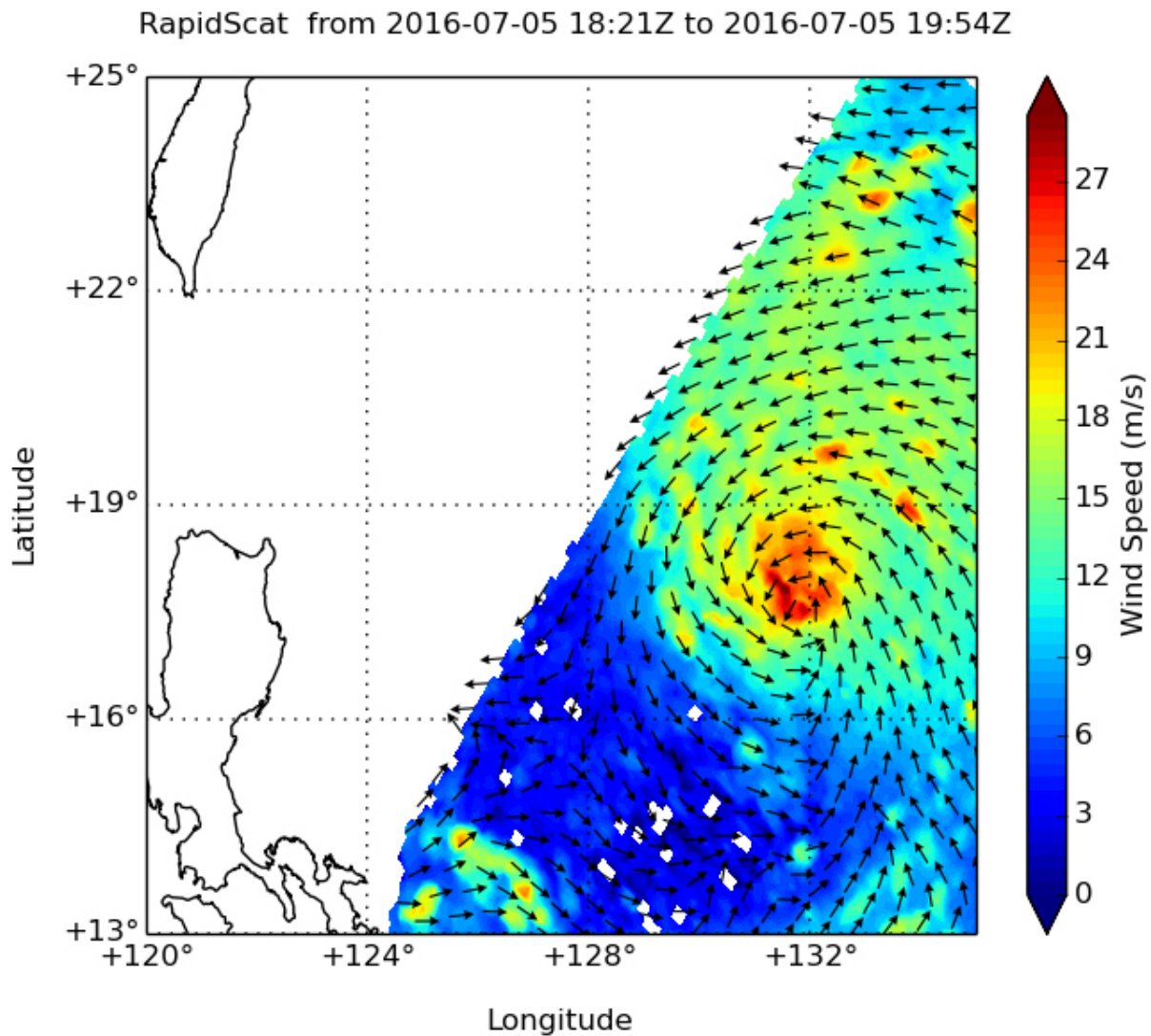


Rapidly intensifying typhoon examined by NASA's GPM, RapidScat

July 6 2016



On July 5, RapidScat measured Nepartak's wind speeds near or above 30 meters per second (67 mph/108 kph) around the center of the storm. Credit: NASA

JPL/Doug Tyler

NASA looked at winds and rainfall within the first typhoon of the Northwestern Pacific 2016 hurricane season called Nepartak as it continued to intensify. On July 6, Nepartak strengthened into a super typhoon.

NASA's RapidScat instrument measured winds around the system while NASA-JAXA's Global Precipitation Measurement or GPM core satellite analyzed rainfall rates with the typhoon.

Nepartak developed on July 3, 2016 south of Guam. Nepartak has moved to the west-northwest of Guam and has started to rapidly intensify. Warm water, low vertical [wind shear](#) and favorable outflow due an upper level trough are providing favorable environmental conditions for the typhoon.

The GPM core observatory satellite flew above Nepartak on July 4, 2016 at 2151 UTC (5:51 p.m. EDT) when the tropical cyclone was still classified as a tropical storm. GPM's Microwave Imager (GMI) and Dual-Frequency Precipitation Radar (DPR) data showed that Nepartak was very close to forming an eye at that time. Very powerful storms near the center of Nepartak's circulation were found to be dropping rain at a rate of over 193 mm (7.6 inches) per hour.

GPM radar sliced through Nepartak and measured the 3-D vertical structure of very tall thunderstorm towers near the center of the intensifying [tropical storm](#). These tall thunderstorms called "hot towers" were found to reach heights of 17.0 km (about 10.5 miles). These powerful storms near the center of a tropical cyclone are often seen prior to intensification. Energy released by rainfall into the center of a tropical

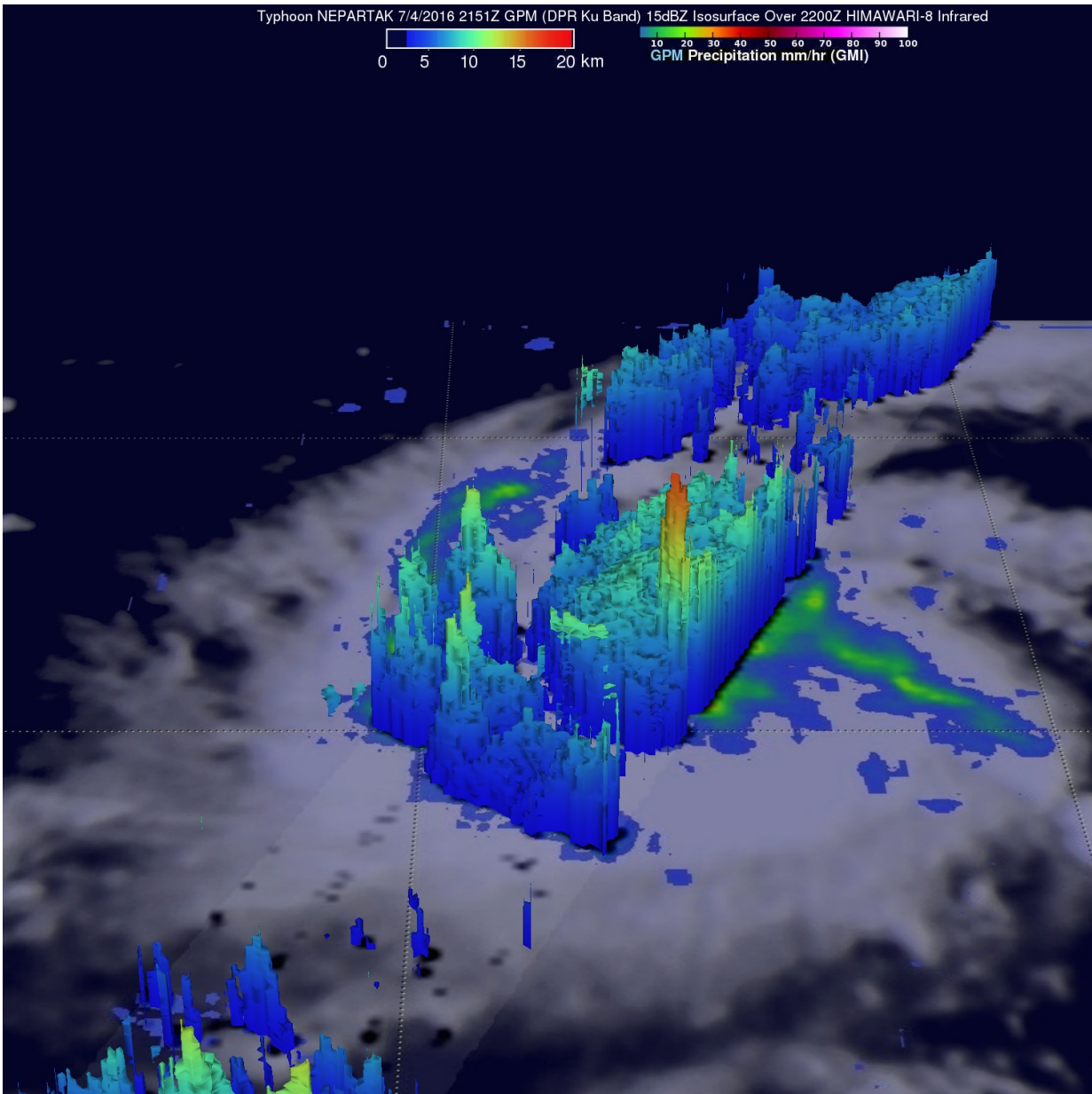
cyclone provides the energy upon which tropical cyclones thrive.

On July 5, NASA's RapidScat instrument measured Nepartak's wind speeds near or above 30 meters per second (67 mph/108 kph) around the center of the storm as the storm continued to strengthen. RapidScat measures winds on the surface of the ocean from its platform on the International Space Station.

Nepartak intensified over the next two days as it tracked under very warm sea surface temperatures, encountered very little wind shear and had good outflow of air at the top of the tropical cyclone.

Typhoon Warnings are in effect in Taiwan for Hualien and Taitung Counties. Hualien County is the largest county in Taiwan and is located on the mountainous eastern coast. Taitung county is south of Hualien County on the east coast. For updated warnings, visit Taiwan's Central Weather Bureau website at: <http://www.cwb.gov.tw/eng/>.

On July 7 at 1500 UTC (11 a.m. EDT) Super Typhoon Nepartak's maximum sustained winds had increased to 150 knots (172.6 mph/ 277.8 kph), making it a Category 5 hurricane on the Saffir-Simpson Scale. Nepartak was located approximately 509 nautical miles southeast of Taipei, Taiwan, near 19.8 north latitude and 127.7 east longitude. The storm was moving to the west-northwest at 18 knots (20.7 mph/33.3 kph). Nepartak is generating wave heights to 48 feet (14.6 meters).



The GPM core observatory satellite flew above Nepartak on July 4 at 2151 UTC (5:51 p.m. EDT) and saw powerful storms near the center dropping rain at a rate of over 193 mm (7.6 inches) per hour. Credit: NASA/JAXA/SSAI, Hal Pierce

Because Nepartak entered the eastern edge of the Philippine Atmospheric Geophysical and Astronomical Services Administration or

PAGASA's forecast coverage boundaries PAGASA has designated the storm as "Butchoy." PAGASA always assigns [tropical cyclones](#) local names to storms.

The Joint Typhoon Warning Center forecast expects Nepartak to move northwest and gradually weaken beginning July 7. The cyclone is forecast to approach Taiwan

Provided by NASA's Goddard Space Flight Center

Citation: Rapidly intensifying typhoon examined by NASA's GPM, RapidScat (2016, July 6) retrieved 29 April 2024 from <https://phys.org/news/2016-07-rapidly-typhoon-nasa-gpm-rapidscat.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.