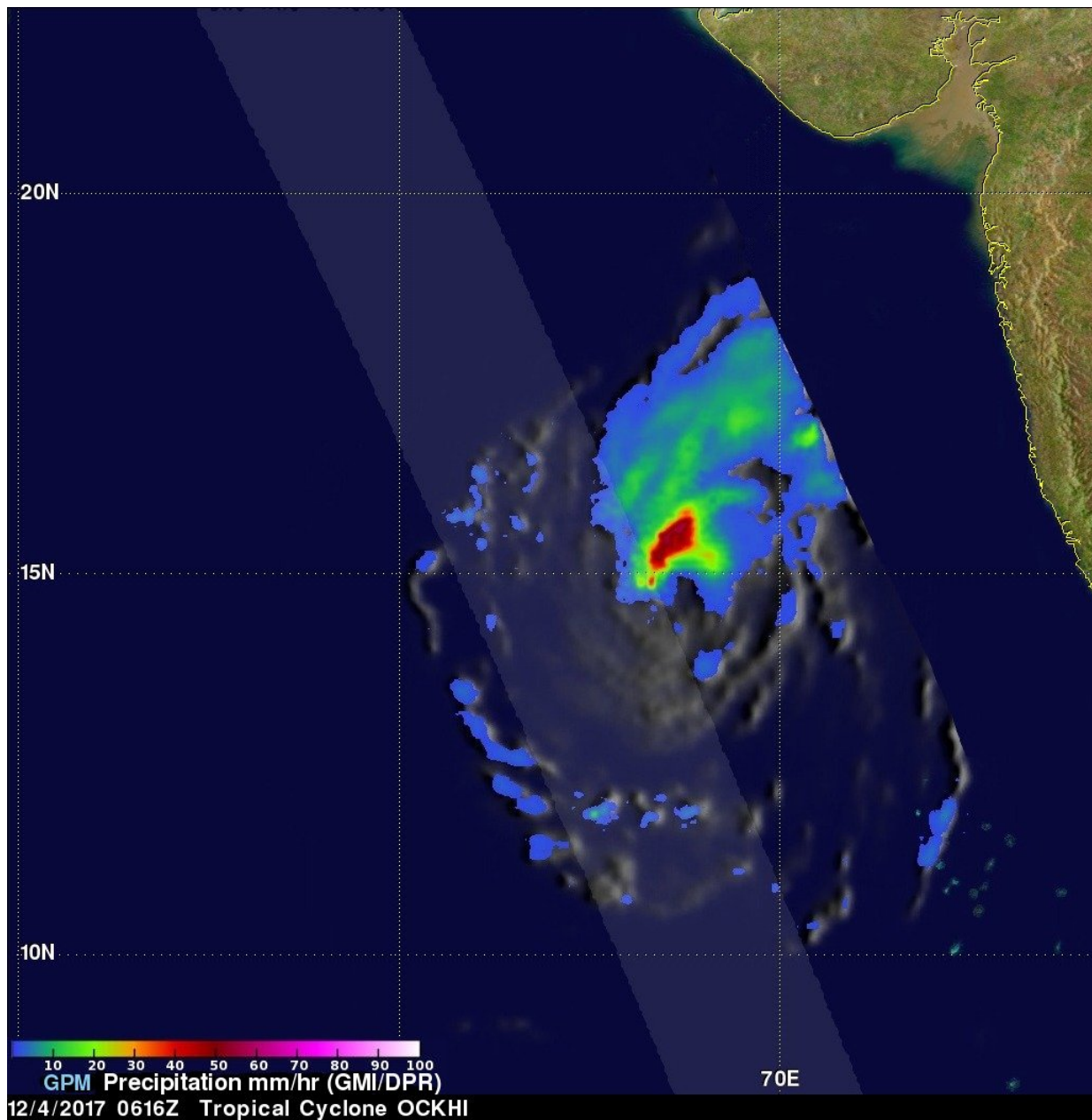


NASA gets a final look at Tropical Cyclone Ockhi's rainfall

December 5 2017



On Dec. 4, GPM found rain falling at a rate of over 62 mm (2.44 inches) per hour in storms northeast of the center. On the western side storms rainfall was occurring at a rate of over 60 mm (2.27 inches) per hour. Credit: NASA/JAXA, Hal Pierce

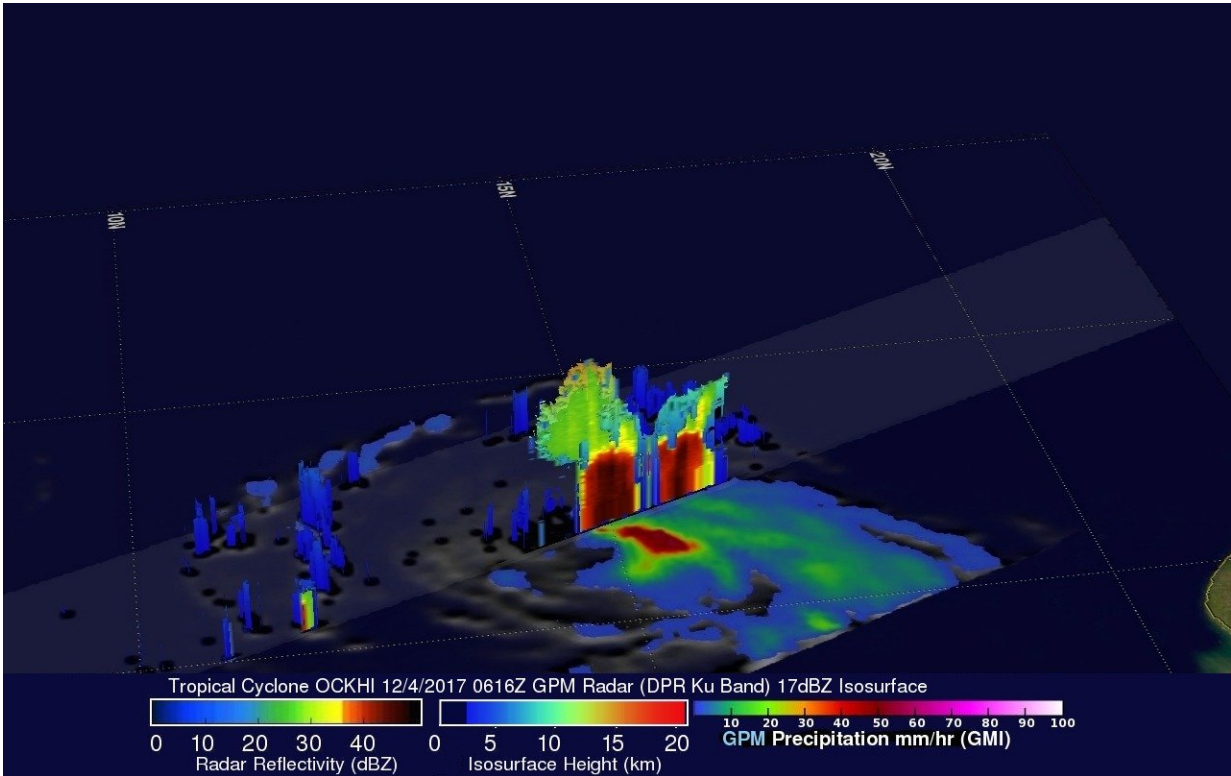
Tropical Cyclone Ockhi is quickly weakening in the Arabian Sea and is expected to dissipate on Dec. 6 when it makes landfall in northwestern India. The Global Precipitation Measurement mission or GPM core satellite passed over Ockhi and looked at its rainfall as wind shear was affecting the storm.

On Dec. 2, Ockhi became the first tropical [cyclone](#) of the year to form in the Arabian Sea. Fortunately for India the tropical cyclone remained off India's southwestern coast. Ockhi intensified to the equivalent of a category 3 hurricane on the Saffir-Simpson hurricane wind scale before it started to weaken. Vertical [wind shear](#) caused Ockhi to weaken as the tropical cyclone started moving north-northeastward toward India's Gulf of Khambhat.

NASA's GPM Core Observatory satellite passed over Tropical Cyclone Ockhi on Dec. 4 at 1:16 a.m. EST (0616 UTC). GPM is a joint mission between NASA and the Japanese space agency JAXA.

The rainfall coverage was derived from data collected by GPM's Microwave Imager (GMI) and Dual-Frequency Precipitation Radar (DPR) instruments. Those data showed that very heavy rainfall was being produced by powerful storms northwest of Ockhi's eye. Wind shear was already pushing the strongest storms away from the center of circulation.

GPM's GMI found rain falling at a rate of over 62 mm (2.44 inches) per hour in those storms. GPM's radar (DPR Ku Band) sliced through the western side of the tropical cyclone. DPR found that powerful storms on that side of Ockhi were dropping precipitation at a rate of over 60 mm (2.27 inches) per hour.



On Dec. 4, 3-D GPM data through the western side of Ockhi revealed storm tops above 16 km (9.92 miles) and many radar reflectivity values were greater than 50 dBZ in downpours on the western side. Credit: NASA/JAXA, Hal Pierce

At NASA's Goddard Space Flight Center in Greenbelt, Md. a 3-D view of tropical cyclone Ockhi was created using GPM's radar (DPR Ku Band) data. The 3-D image showed a slice through the western side of

the tropical cyclone and revealed [storm](#) tops reaching heights above 16 km (9.92 miles). The 3-D cross-section by GPM's DPR revealed that many radar reflectivity values were greater than 50 dBZ in downpours on the western side of the tropical cyclone.

The Joint Typhoon Warning Center (JTWC) issued their final bulletin on Ockhi on Dec. 5 at 4 a.m. EST (0900 UTC). At that time, Ockhi's maximum sustained winds were near 45 knots (52 mph/83 kph) and weakening. Ockhi was centered near 8.7 degrees north latitude and 70.8 degrees east longitude. That's about 444 nautical miles south-southeast of Karachi, Pakistan. Ockhi has tracked north-northeastward at 9 knots (10.3 mph/16.6 kph).

JTWC noted at that time "Animated multispectral satellite imagery depicts a rapidly-decaying, fully-exposed, broad low-level circulation center with limited deep convection sheared well northeast of the low-level center due to strong (40-50 knots) southerly [vertical wind shear](#)." The storm was also becoming extra-tropical.

JTWC predicts that Ockhi will continue to weaken. Ockhi is expected to become a remnant low when it makes landfall near the Gulf of Khambhat early on Dec. 6.

Provided by NASA's Goddard Space Flight Center

Citation: NASA gets a final look at Tropical Cyclone Ockhi's rainfall (2017, December 5) retrieved 10 April 2024 from <https://phys.org/news/2017-12-nasa-tropical-cyclone-ockhi-rainfall.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>
--