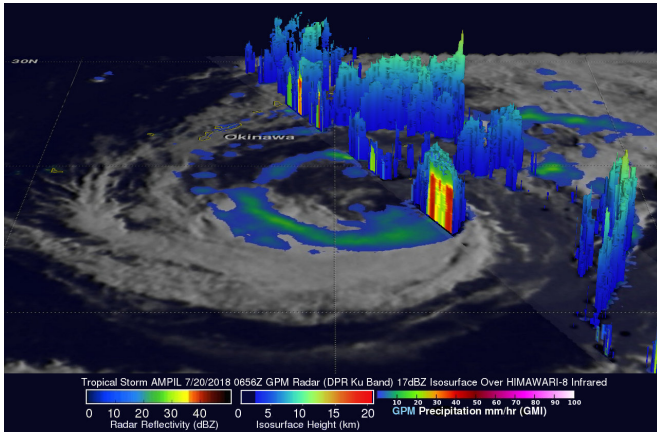


# Two NASA satellites confirm Tropical Cyclone Ampil's heaviest rainfall shift

20 July 2018, by Rob Gutro



DPR showed that the northern side of the tropical storm was nearly dry and that rain bands in that area were producing only light to moderate rainfall. However, the most intense downpour was occurring in a band of thunderstorms well to the northeast of Ampil's center. Precipitation in that area was measured by GPM's radar (DPR Ku Band) falling at a rate of over 139 mm (5.5 inches) per hour.

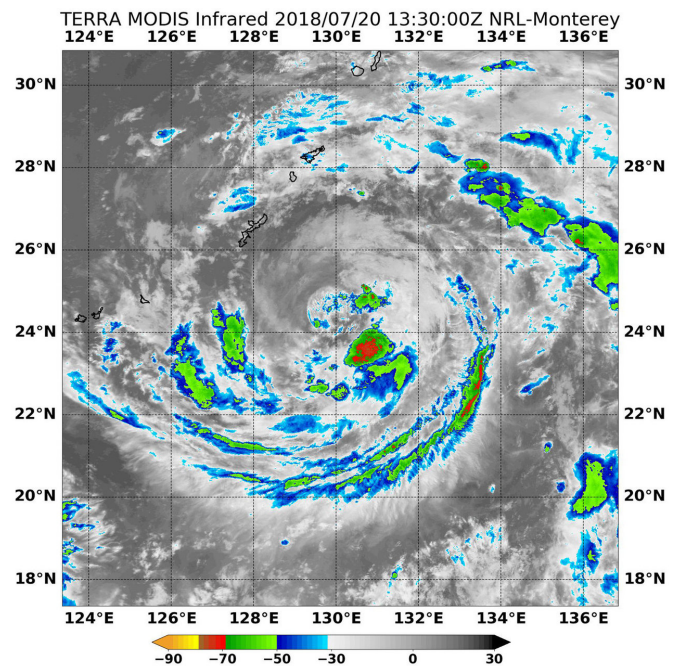
GPM found moderate to heavy precipitation in a rain band wrapping around the southern side of the tropical cyclone's center of circulation. GPM is a joint mission between NASA and the Japan Aerospace Exploration Agency, JAXA.

The GPM core observatory satellite flew above on July 20, 2018 at 2:56 a.m. EDT (0656 UTC) and the most intense downpour (red) was occurring in a band of thunderstorms well to the northeast of Ampil's center. Precipitation in that area was measured by GPM's radar (DPR Ku Band) falling at a rate of over 139 mm (5.5 inches) per hour. Credit: NASA/JAXA, Hal Pierce

Two NASA satellites observed Tropical Storm Ampil in six and a half hours and found the storm's heaviest rainfall occurring in a band of thunderstorms shifted from north to south of the center. NASA's GPM satellite passed over the storm first and NASA's Aqua satellite made the second pass.

Tropical Storm Ampil was moving toward the northwest with winds of about 50 knots (57.5 mph) when the Global Precipitation Measurement mission or GPM core observatory satellite flew above on July 20, 2018 at 2:56 a.m. EDT (0656 UTC).

Data received by the GPM core satellite's Microwave Imager (GMI) and Dual-Frequency Precipitation Radar (DPR) instruments were used in an analysis of Ampil's precipitation. GMI and



NASA's Aqua satellite passed over Ampil on July 20 at 9:30 a.m. EDT (1330 UTC) and looked at the storm in infrared light. Aqua found cloud top temperatures as cold or colder than minus 70 degrees Fahrenheit (red)/minus 56.6 degrees Celsius. Credit: NASA/NRL

At NASA's Goddard Space Flight Center in Greenbelt, Maryland, a 3-D image of Ampil's precipitation was made possible by using data collected by GPM's radar (DPR Ku and). A few of the most intense storms north of Ampil's center of circulation were found by DPR to reach heights above 14 km (8.7 miles). A 3-D animation showing cloud top heights within Tropical Storm Ampil was constructed with GPM's radar data (DPR Ku Band). DPR's Ku Band instrument provided three dimensional measurements of precipitation within a 152 mile (245 km) wide swath east of AMPIL's center. Cloud top heights over a larger area were made possible by blending measurements from GPM's radar (DPR Ku band) with cloud top heights based on Japan's HIMAWARI-8 satellite's infrared temperatures.

Provided by NASA's Goddard Space Flight Center

Six and a half hours later, NASA's Aqua satellite passed over Ampil on July 20 at 9:30 a.m. EDT (1330 UTC). The MODIS or Moderate Resolution Imaging Spectroradiometer instrument aboard NASA's Aqua satellite looked at the storm in infrared light. In one small area southeast of the center, Aqua found cloud top temperatures as cold or colder than minus 70 degrees Fahrenheit/minus 56.6 degrees Celsius. Cloud tops with temperatures that cold have the potential to generate very heavy rainfall. The band of thunderstorms containing the heaviest rainfall had shifted from the northern quadrant to the southern quadrant.

At 11 a.m. EDT (1500 UTC), Tropical storm Ampil was located near 24.1 degrees north latitude and 130.1 degrees east longitude, just 191 nautical miles southeast of Andersen Air Base, Okinawa Island, Japan. Ampil's maximum sustained winds were near 45 knots (52 mph/83 kph). It was moving to the north-northwest at 10 knots (11.5 mph/18.5 kph).

The Joint Typhoon Warning Center (JTWC) predicts that the tropical [storm](#) will intensify over the next few days as Ampil moves over the East China Sea toward China. Peak winds are predicted to reach 55 knots (62 mph/102 kph) before making final landfall in eastern China after a day or two.

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