

Summary

A region of organized convection is currently making its way through the area of operation, moving to the W-SW. Precipitation is expected to decrease as a broad low-pressure circulation continues to track westward away from the area of operation. Scattered precipitation is expected throughout the 48 h forecast period. Winds between 5-15 knots are forecasted during this time period, shifting from the N-NW to E-SE. Furthermore, significant wave heights between 3-5 ft are expected in the area of operation during the 48 h forecast period.

JTWC has upgraded Mangkhut to a tropical storm, now located at ~14.8 N, 159.1 E with a heading of 285 degrees at 17 knots. JTWC places Mangkhut on the eastern periphery of Rota (NE of Guam) as a 100-knot typhoon at 1200 UTC 10 September. Mangkhut is forecasted to continue intensifying to 120 knots between 1200 UTC 10 September and 1200 UTC 11 September as it moves westward away from Guam. Significant wave heights are forecasted to begin increasing near Palau around 0000 UTC 11 September between 5-7 ft. As Mangkhut passes to the north of Palau, significant wave heights anywhere between 9-15 ft are forecasted near Palau beginning 0000 UTC 12 September and persisting through 0000 UTC 14 September. In addition to increased significant wave heights, Mangkhut's passage to the north will increase the chance of organized convection over Palau during this time period due to its trailing rainbands.

Day One (24 hr) Outlook: Scattered precipitation is forecasted during the next 24 h as a broad low-pressure circulation tracks westward of the area of operation. Winds from the N-NW shifting to NE between 5-15 knots are expected over the area of operation with transient shifts in both wind speed and direction due to local convective activity. Wave heights of 3-5 ft are forecasted for the area of operation during the 24 h forecast period.

Day Two (48 hr) Outlook: Scattered precipitation is forecasted to diminish during the beginning of the 24-48 h forecast period as the broad low-pressure circulation will have exited the area of operation to the west. Towards the end of the 24-48 h forecast period, chances for scattered precipitation will increase with the approach of (current) TS Mangkhut. Winds will shift to the E-SE between 5-15 knots during the beginning of the forecast period. GFS and COAMPS diverge toward the end of the forecast period with the GFS favoring winds from the W-SW between 5-15 knots and COAMPS favoring winds from the E-SE between 5-10 knots. Wave heights of 3-5 ft are forecasted for the area of operation during the 24-48 h forecast period.

Extended Outlook: JTWC is currently forecasting Mangkhut to continue its westward track and pass north of Palau at ~1200 UTC 12 September. Mangkhut is forecasted to continue intensifying, reaching 135 knots at 1200 UTC 13 September. As Mangkhut makes its closest approach to Palau during the 3-5 day forecast, precipitation is forecasted to increase due to rainbands on the southern side of Mangkhut. Winds will shift to the W-SW between 15-25 knots,

drawing in moisture from the S-SW during this time period. Significant wave heights near Palau are forecasted to reach anywhere between 9-15 ft between 0000 UTC 12 September and 0000 UTC 14 September as Mangkhut passes to the north and curves to the NW. We will continue to closely monitor Mangkhut's track as any slight shifts to the north or south can produce distinct conditions over Palau.

Discussion

TCs: JTWC has upgraded Mangkhut to a TS and it's currently located at ~14.8 N, 159.1 E with a heading of 285 degrees at 17 knots. The deterministic GFS forecast initiated at 1200 UTC 08 September tracks Mangkhut slightly to the north compared to the ECMWF deterministic forecast initiated at the same time. Both models have Mangkhut passing near or over Guam between 0000-1200 UTC 10 September. JTWC appears to be splitting the difference between the two models, bringing Mangkhut near the eastern periphery of Rota (NE of Guam) at 1200 UTC 10 September with an intensity of 100 knots. Mangkhut is forecasted to continue intensifying to 120 knots during its 24 h passage near this region, with an environment characterized by sea-surface temperatures between 29-31 C and moderate deep layer (850-200 mb) shear between 10-20 knots. Furthermore, JTWC is forecasting Mangkhut to continue intensifying to 135 knots as its track begins to shift to the NW while passing north of Palau.

Convection: An area of organized convection is currently passing through the area of operation, likely associated with large-scale forcing from the presence of a broad low-pressure circulation. As this circulation continues to track westward and exits the area of operation, precipitation is expected to decrease and transition to a scattered convection regime during the 24-48 h forecast period. Precipitation is expected to increase in the 48-120 h forecast as Mangkhut begins to make its closest approach to Palau. Rainbands on the southern side of Mangkhut will increase the chance for organized convection near Palau during this time period.

MJO/BSISO: The MJO forecast provided by the ECMWF was updated to include the two week period beginning on 08 September while the BOM has not been updated since 02 September. The phase 8 MJO signal is forecasted to decay with an overall weak-amplitude MJO signal during the next two weeks. The BSISO indices from ECMWF and BOM have been updated and now show forecasts for the 06-25 September time period. Both the BOM and ECMWF indicate a weak-amplitude signal for phases 3 & 4 in the BSISO1 index over the 0-4 day forecast period, indicative of enhanced convective activity near Eastern Asia and the maritime continent. Both models show a weak-amplitude signal for phase 6 in the BSISO2 index over the 0-4 day forecast period (enhanced convective activity over SE Asia).

SSTs: Sea surface temperatures are expected to be between 29-31 C.

Currents and Wave Heights:

Significant wave heights are forecasted between 3-5 ft during the 48 h forecast period. As Mangkhut begins to make its closest approach to Palau, significant wave heights are forecasted to increase. Between 48-72 h (~0000 UTC 11 September through 0000 UTC 12 September), significant wave heights near Palau are forecasted to increase from 5-7 to 9-12 ft according to the FNMOC WW3 model. FNMOC shows significant wave heights near Palau anywhere between 9-15 ft persisting from 0000 UTC 12 September through 0000 UTC 14 September.

FORECASTERS: MARTINEZ

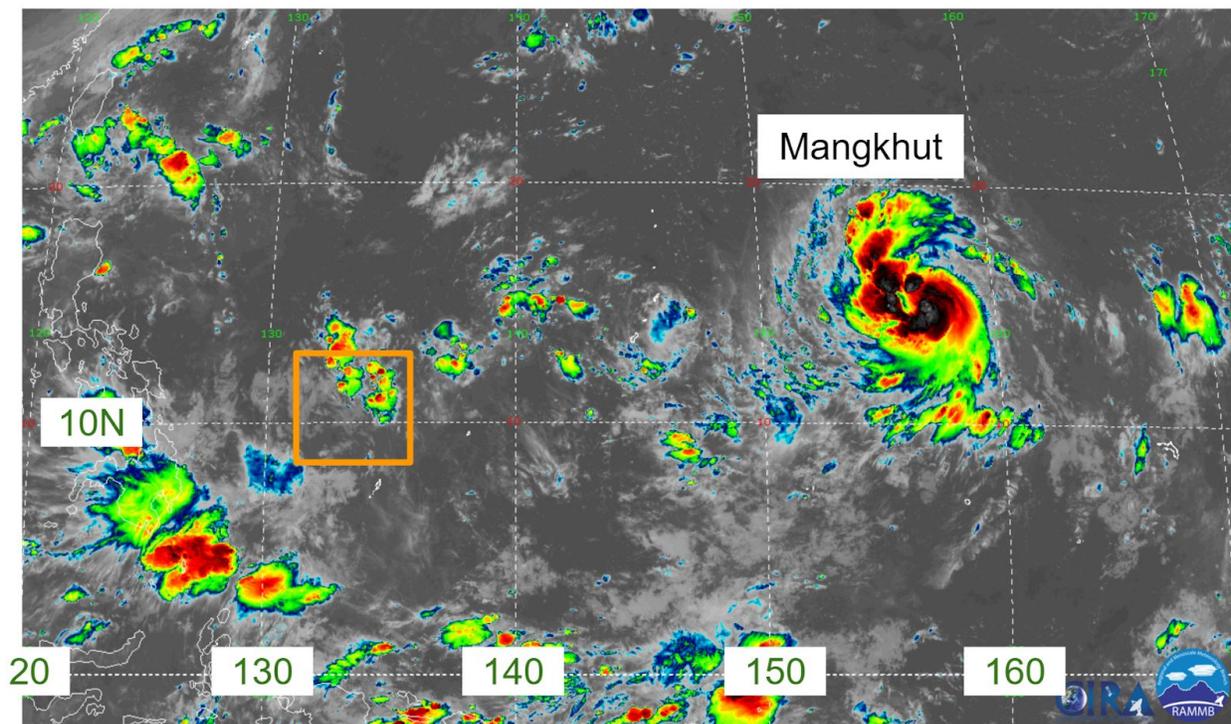


Fig. 1. Himawari IR imagery (10.4 microns) valid at 1800 UTC 08 September 2018. [1]

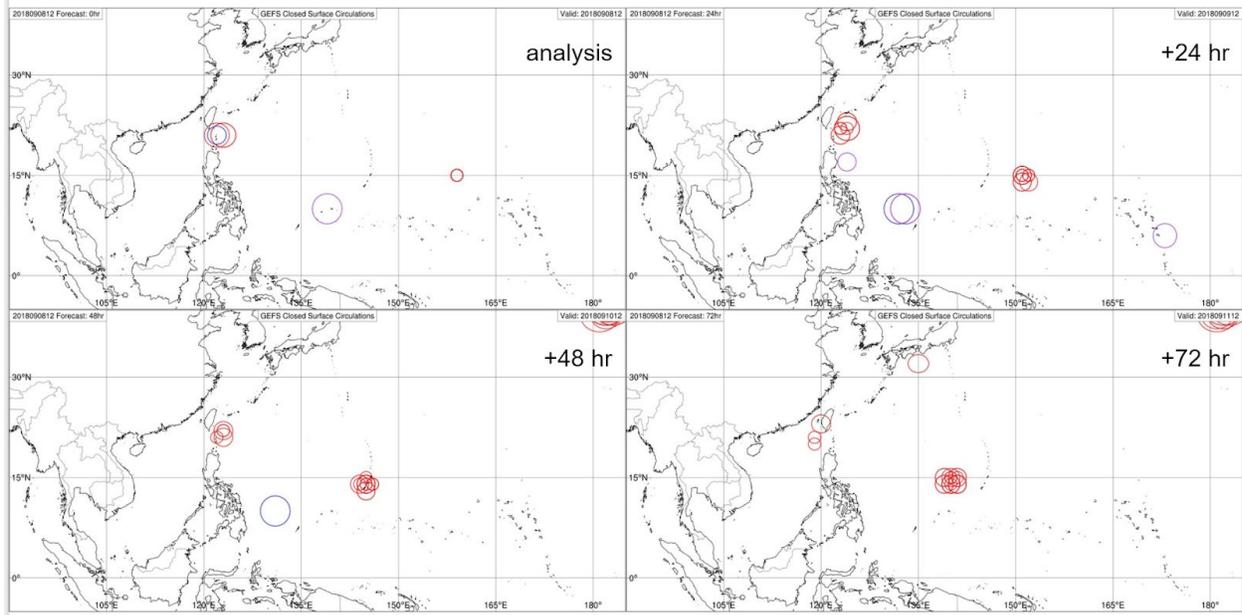


Fig. 2. GEFS ensemble 10m circulation forecast initiated at 1200 UTC 08 September 2018. [2]

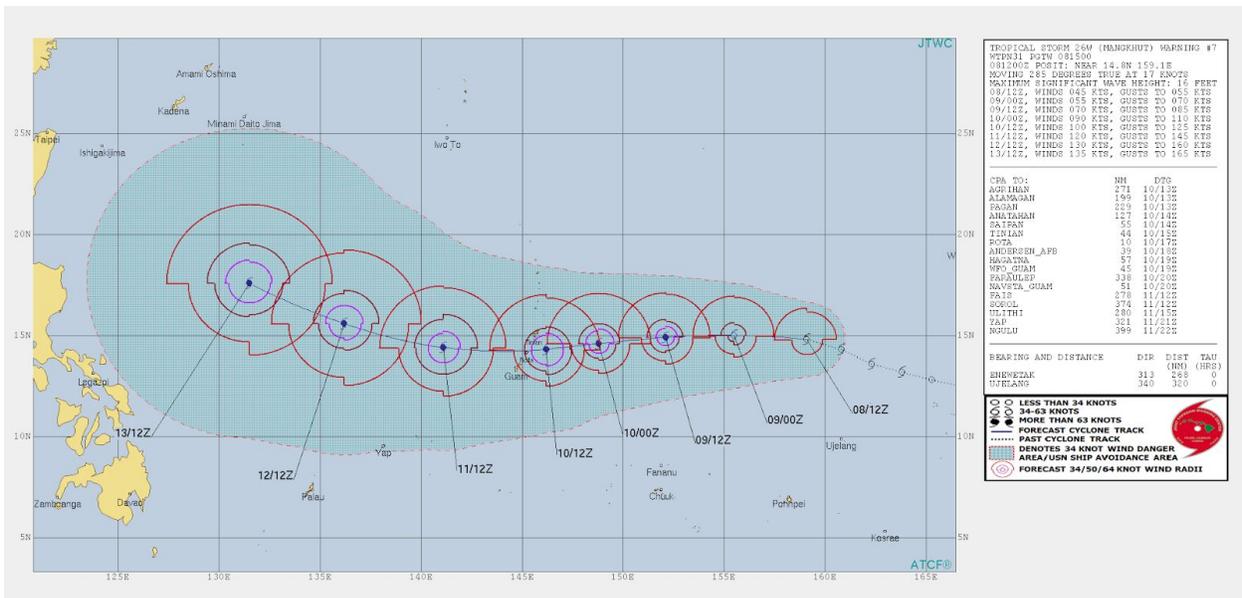
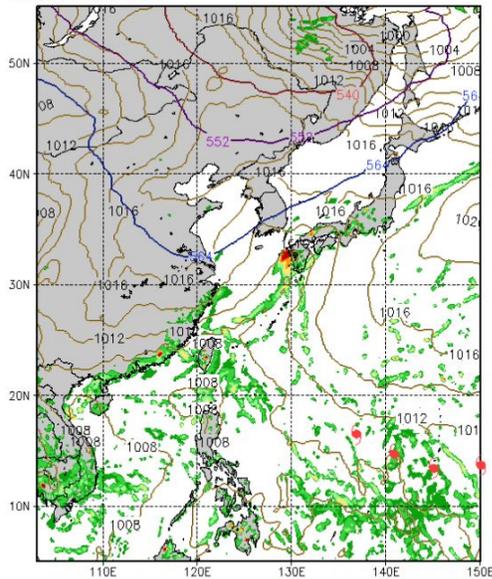


Fig 3. JTWC forecasted track/intensity for TS Mangkhut at 1200 UTC 08 September 2018. [3]

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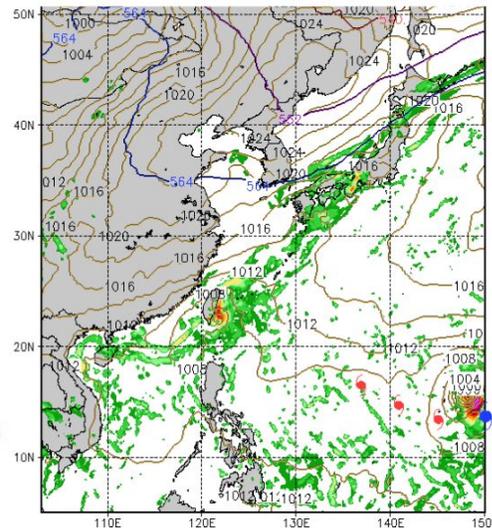
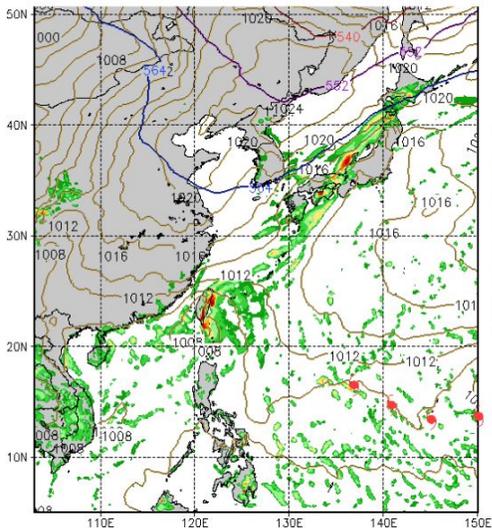
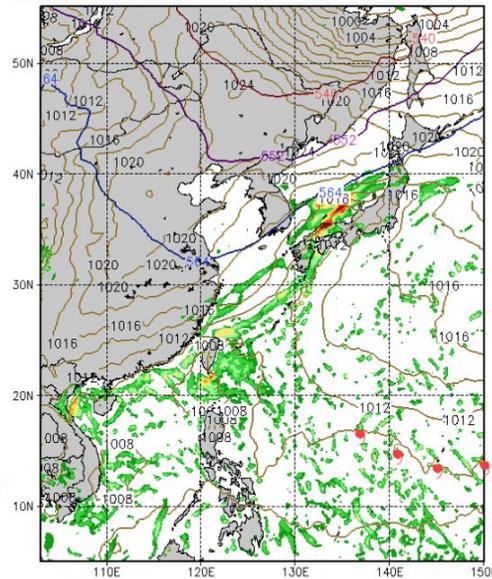


Fig. 4. COAMPS 3 hourly precipitation (shaded, mm) and MSLP (contours) initiated at 0000 UTC 08 September 2018. Forecasts are valid at (top left) 1200 UTC 08 September, (top right) 0000 UTC 09 September, (bottom left) 1200 UTC 09 September, and (bottom right) 0000 UTC 10 September.

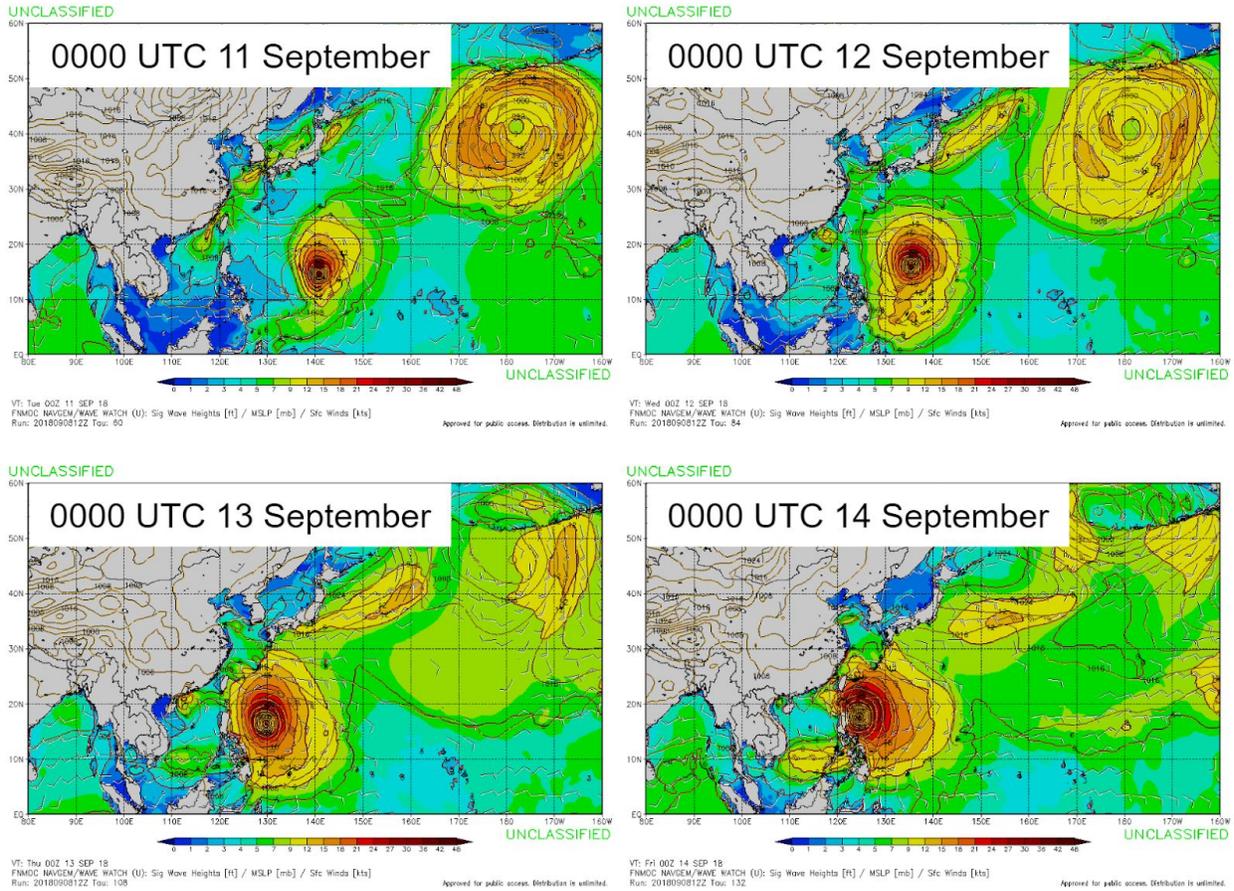


Fig. 5. FNMOC WW3 significant wave height forecast initiated at 1200 UTC 08 September and valid at (top left) 0000 UTC 11 September, (top right) 0000 UTC 12 September, (bottom left) 0000 UTC 13 September, and (bottom right) 0000 UTC 14 September. [5]