

## Summary

The Himawari-8 IR satellite imagery currently shows suppressed convective activity over the area of operation. A chance for isolated and scattered convection over the area of operation will persist throughout the 48-h forecast period. Both the GFS and ECMWF have developed a region of low-level (850-hPa) cyclonic vorticity, labeled circulation 2, to the east of Guam as was discussed over the weekend. Circulation 2 is expected to slowly track westward towards the area of operation. Both the GFS and ECMWF show a potential tropical depression genesis event over or slightly north of the area of operation in the 144-h forecast (valid 1200 UTC 23 September). We will continue to closely monitor the development of circulation 2 in the coming days.

**Day One (24 hr) Outlook:** Isolated convection over the area of operation is expected during the beginning of the 24-h forecast period, gradually transitioning to scattered convection. Winds will remain primarily from the E between 5-15 knots. Both COAMPS and FNMOC WW3 forecast significant wave heights near the area of operation between 5-7 ft during the beginning of the 24-h forecast period, gradually decreasing to 4-5 ft by the end.

**Day Two (48 hr) Outlook:** The GFS shows an increasing chance for scattered convection over the area of operation throughout the 24-48 h forecast. Winds will transition from the E to E-NE between 5-15 knots as the northwestern flank of circulation 2 approaches the area of operation in the 24-48 h forecast period, shown in the 1200 UTC 17 September GFS deterministic run. FNMOC WW3 shows significant wave heights remaining 4-5 ft throughout the 24-48 h forecast period.

**Extended Outlook:** Both the GFS and ECMWF continue to show a region of low-level (850-hPa) cyclonic vorticity, labeled circulation 2, approaching Guam during the 48-72 h forecast period. The western flank of this circulation will move over the area of operation near the end of the 48-72 h forecast period, bringing an increased chance for scattered and possibly organized convection with winds from the N-NE between 5-15 knots. Circulation 2 will track slowly to the W-NW throughout the 72-144 h forecast period and during this time, both the GFS and ECMWF deterministic runs show a potential genesis event occurring over the area of operation. The GFS favors a slightly northward position compared to the ECMWF, placing the potential genesis event directly north of the area of operation in the 144 hour forecast. FNMOC WW3 shows significant wave heights remaining 4-5 ft throughout the 48-72 h forecast period, gradually increasing to 5-7 ft in the 72-144 h forecast as circulation 2 makes its way over the area of operation.

## Discussion

**TCs:** No TC genesis events are expected in the next 48 h. The next potential for TC genesis will occur during the 72-120 h forecast period after circulation 2 tracks west of Guam. Both ECMWF and GFS show the forecasted track of circulation 2 towards the W-NW, moving over the area of operation around 1200 UTC 23 September (valid at 144 h). There is a possibility that circulation 2 will develop into a tropical depression (or tropical storm) in the 120-144 h forecast period.

**Convection:** There is suppressed convection in the area of operation, and increasing scattered precipitation is expected over the next 48 h. The Himawari-8 IR satellite imagery shows deep convection associated with circulation 2 around 10N, 155E. As circulation 2 gets closer to the area of operation during the 72-120 h forecast period, the chance for scattered convection, and potentially organized convection, will increase.

**MJO/BSISO:** The MJO forecast provided by the ECMWF has been updated to show the two week period beginning on 17 September, and the BOM continues to show the two week period beginning on 13 September. The two models show a low-amplitude MJO signal persisting throughout their respective one week forecast periods followed by a potential phase 8 signal emerging in the second week. The ECMWF favors a higher-amplitude phase 8 signal in the second week. The BSISO forecasts have not been updated, with both the BOM and ECMWF showing the 13 September through 02 October forecast period. As such, we are now entering the 5-9 day forecast period. The ECMWF shows a potential BSISO phase 3-4 signal (enhanced convective activity over Eastern Asia and the Maritime Continent) while the BOM shows a low-amplitude BSISO1 signal.

**SSTs:** Sea surface temperatures are forecasted to remain between 28-29 C throughout the 24-h forecast period.

**Currents and Wave Heights:** Significant wave heights between 5-7 ft are forecasted near the area of operation during the beginning of the 24-h forecast period and then decrease to 4-5 ft throughout the 72-h forecast period.

FORECASTERS: MARTINEZ, CHA

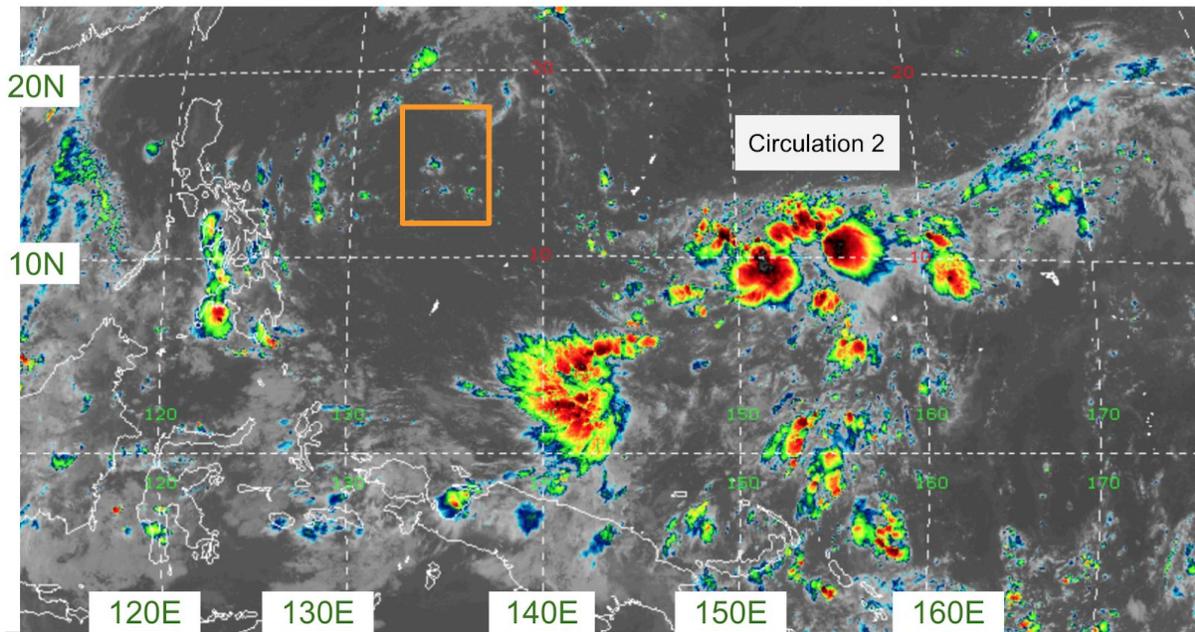


Fig. 1. Himawari IR imagery (10.4 microns) valid at 1810 UTC 17 September 2018. [1]

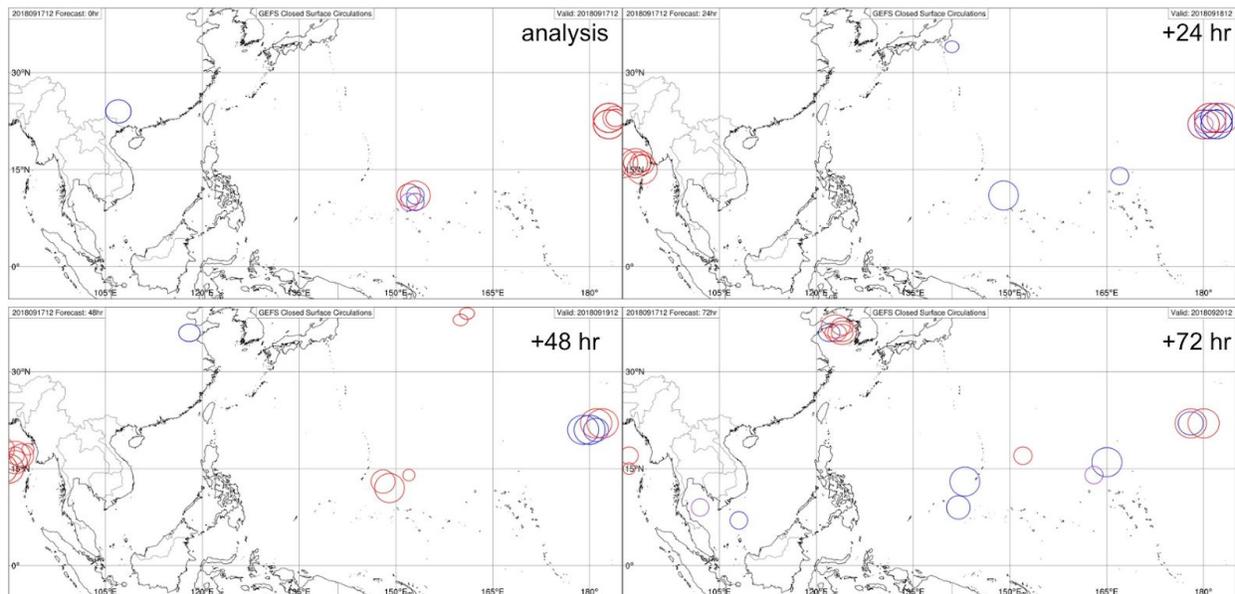


Fig. 2. GEFS ensemble 10-m circulation forecast initiated at 1200 UTC 17 September 2018 and valid through 1200 UTC 20 September. Circulation centers are colored with respect to maximum wind speed. Purple:  $\leq 20$  knots, Blue: 20-34 knots, Red:  $> 34$  knots. [2]

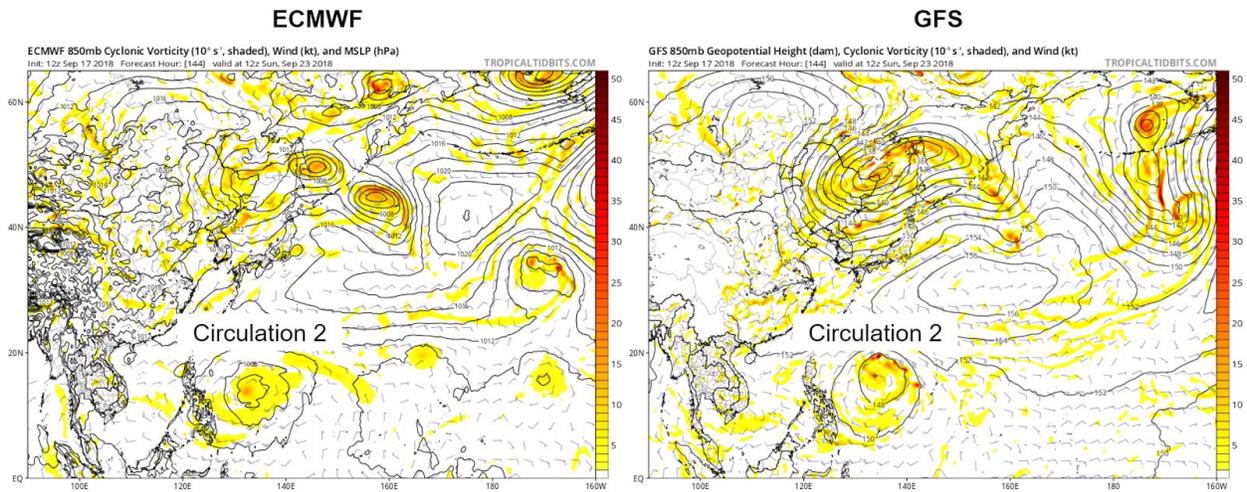


Fig 3. (left) ECMWF and (right) GFS 850-hPa vorticity (shaded) and wind barbs, and MSLP (contoured) initiated at 1200 UTC 17 September 2018 and valid at 1200 UTC 23 September 2018. [3]

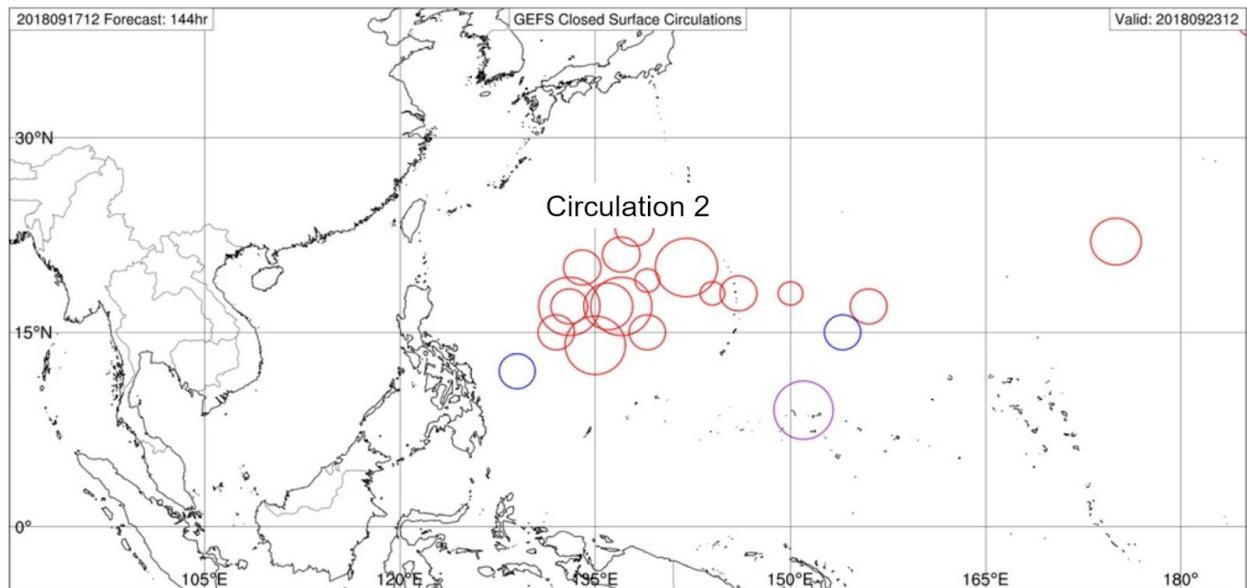


Fig. 4. GEFS ensemble 10-m circulation forecast initiated at 1200 UTC 17 September 2018 and valid at 1200 UTC 23 September. Circulation centers are colored with respect to maximum wind speed. Purple:  $\leq 20$  knots, Blue: 20-34 knots, Red:  $> 34$  knots. [4]

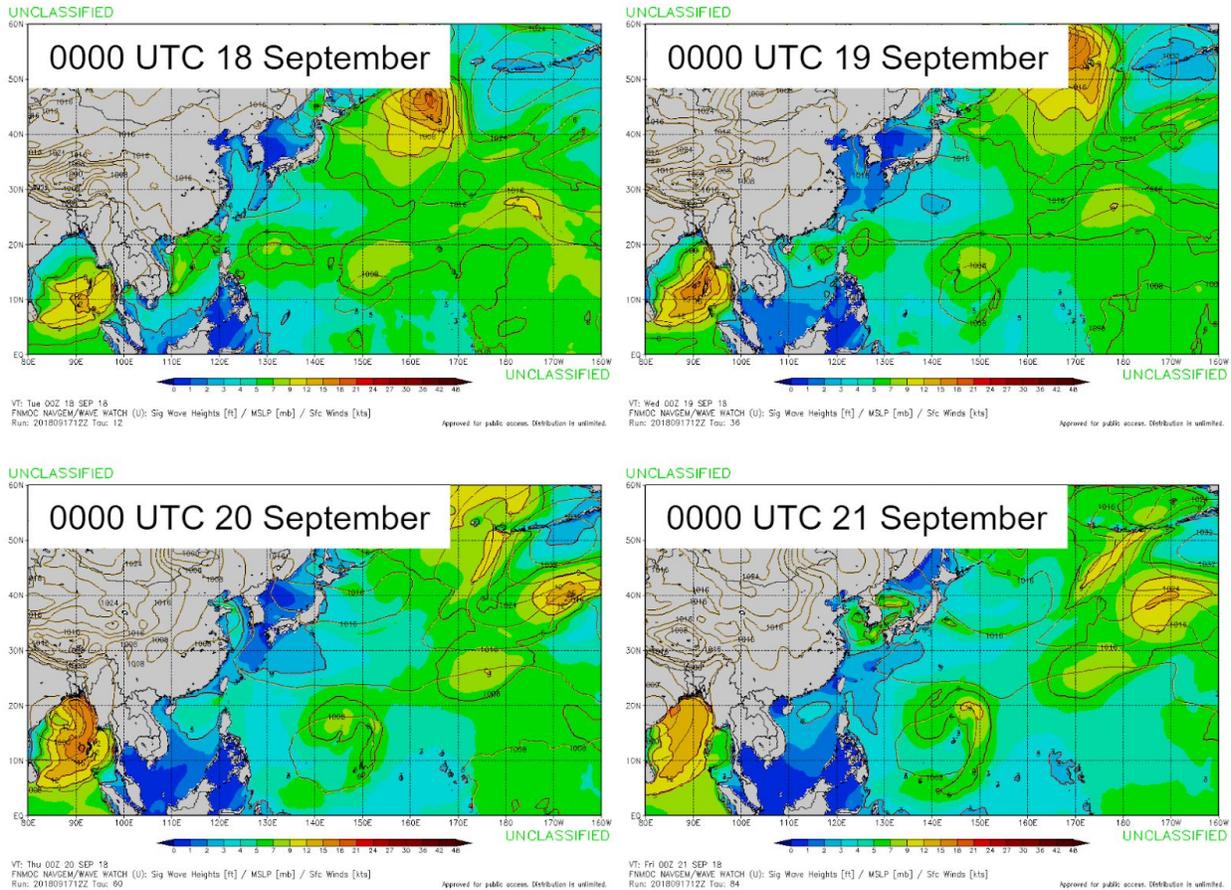


Fig. 5. FNMOC WW3 significant wave height forecast initiated at 1200 UTC 17 September and valid at (top left) 0000 UTC 18 September, (top right) 0000 UTC 19 September, (bottom left) 0000 UTC 20 September, and (bottom right) 0000 UTC 21 September. [5]