

Summary

The Himawari-8 IR satellite imagery currently shows suppressed convective activity over the area of operation with an organized line of convection directly to the south. There is a chance for isolated and scattered convection over the area of operation during the 24-48 forecast period, and significant wave heights are expected to be approximately 4-5 ft for the next 48 hr.

Circulation 2 has been labeled Invest 92W by JTWC, and the western flank is expected to approach the area of operation towards the end of the 48-h forecast period as shown in COAMPS, GFS, and ECMWF. There is a large amount of uncertainty in both the track and intensity of Invest 92W throughout the 120-h forecast period. Both the GFS and ECMWF place the center of 92W near the ship's location during the 72-96 h forecast period, although its precise location at this time is still unclear. Genesis (tropical depression) is becoming increasingly probable with Invest 92W in the 96-120 h forecast, but it is currently not expected to intensify beyond tropical storm strength (see below for a more detailed discussion). We will continue to closely monitor the development of Invest 92W as it progresses towards the area of operation.

Day One (24 hr) Outlook: The GFS shows a decreasing chance of convection over the area of operation during the beginning of the 24-h forecast period. Winds will remain primarily from the NE to E between 5-15 knots. Both COAMPS and FNMOC WW3 forecast significant wave heights near the area of operation between 4-5 ft during the beginning of the 24-h forecast period.

Day Two (48 hr) Outlook: Increasing chance for scattered convection over the area of operation throughout the 24-48 h forecast period. Winds will transition from the NE to N between 5-15 knots as the broad cyclonic circulation of Invest 92W approaches the area of operation during the 24-48 h forecast period. Both COAMPS and FNMOC WW3 show significant wave heights remaining 4-5 ft throughout the 24-48 h forecast period, increasing to 5-7 ft by the end as Invest 92W tracks closer to the area of operation.

Extended Outlook: JTWC has designated circulation 2, tracked during the past 72 hours, as Invest 92W. Both the GFS and ECMWF show the western flank of the circulation will move over the area of operation towards the end of the 48-h forecast. Invest 92W will track slowly to the W-NW, and stall over the area of operation during the 48-102 h forecast period. Both the GFS and ECMWF deterministic runs show a potential genesis event (as of yesterday's forecast) occurring over or near the area of operation in the 96-120 h forecast period. The GFS favors a northeastward position with stronger vorticity compared to the ECMWF in the 144-h forecast. FNMOC WW3 shows significant wave heights remaining 5-7 ft throughout the 48-102 h forecast period, increasing to 7-9 ft in the 102-114 h forecast period as Invest 92W begins to intensify.

Discussion

TCs: Circulation 2, which has been tracked over the past 72 h, is now labeled Invest 92W by JTWC. It is given a medium chance for development (i.e., tropical cyclone development is likely, but beyond the 24-h forecast period). Both the GFS and ECMWF continue to track Invest 92W slowly towards the W (slightly NW) over the next 120 hours. There is still a large amount of uncertainty regarding the precise center of 92W and its potential for genesis throughout the 120-h forecast period. Both the GFS and ECMWF place the center of 92W near the ship's location at 12N, 134.5E during the 72-96 h forecast period. Development then appears to occur primarily in the northeastern quadrant of 92W during the beginning of the 96-120 h forecast and the system undergoes a sharp turn to the NW at the end of this period. Several ensemble members from the GEFS spin-up 92W into a tropical storm, although the average position of these circulation centers appears to remain NE of the area of operation. The COAMPS-TC simulation initiated at 0600 UTC 18 September and valid at 120 h (0600 UTC 23 September) also spins up Invest 92W and places the center to the NE of the area of operation. On the other hand, several of the EPS ensemble members track 92W directly over the area of operation, but as a weaker system relative to the GEFS. We will continue to closely monitor the development of 92W.

Convection: The Himawari-8 IR satellite shows an organized line of convection directly south of the area of operation which has formed over the last 6 hours, and continues to track towards the west. Conditions will remain relatively calm over the next 24 hours with an increasing chance for scattered convection throughout the 48-h forecast period as Invest 92W tracks towards the area of operation. The chance for scattered convection will continue to increase throughout the 48-96 h forecast period as the center of 92W tracks near (or over) the area of operation. Depending on the precise track of 92W, there will also be an increased chance for organized convection over the area of operation throughout the 48-120 h forecast period.

MJO/BSISO: The MJO forecast provided by the ECMWF has been updated to show the two week period beginning on 18 September, and the BOM continues to show the two week period beginning on 13 September. The ECMWF shows a phase 8 signal emerging in the 96-120 h forecast period and remaining phase 8 throughout the 2-week forecast period ending on 02 October. The BSISO forecast for the ECMWF has not been updated since 13 September, while the BOM forecast has recently updated to reflect the forecast period between 16 September through 05 October. Both models continue to show a BSISO1 phases 3-4 signal over the next 5 days, and then remaining in either phase 2 or 3 in the 5-9 day outlook.

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 are expected to remain 4-5 ft over the next 48 h, but will increase to 5-7 ft as Invest 92W tracks towards the area of operation. The

timing of the arrival of 5-7 ft will depend on how quickly Invest 92W moves towards the west and how much it intensifies.

FORECASTERS: MARTINEZ, CHA, CASAS (DELAP)

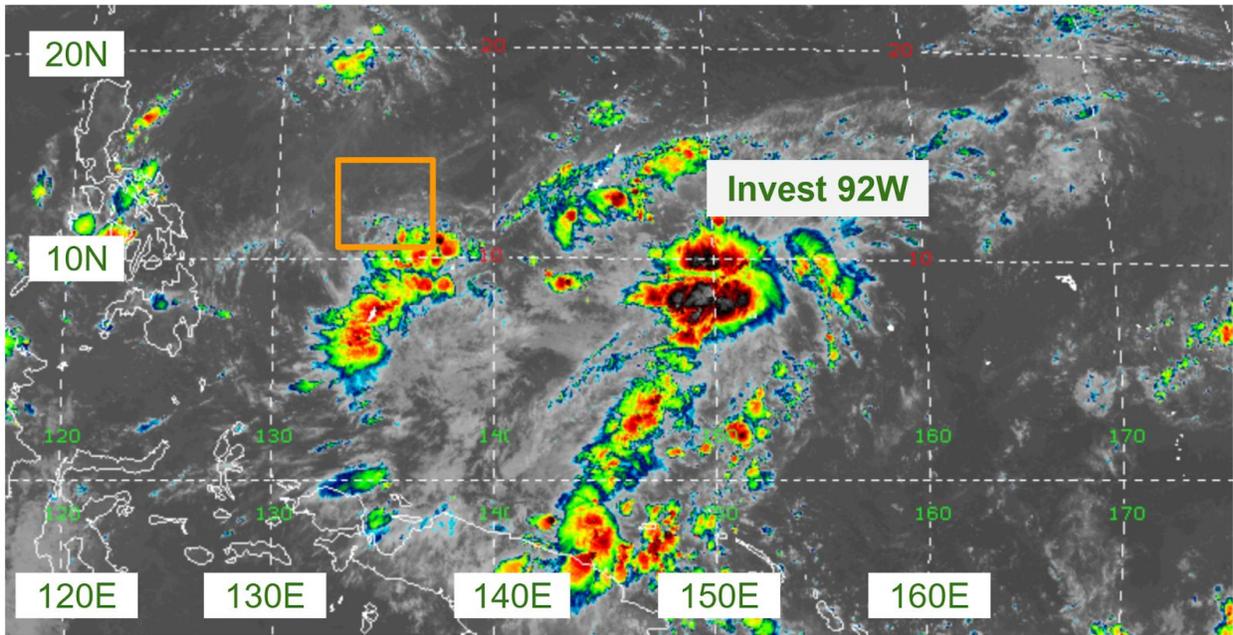


Fig. 1. Himawari IR imagery (10.4 microns) valid at 1800 UTC 18 September 2018. [1]

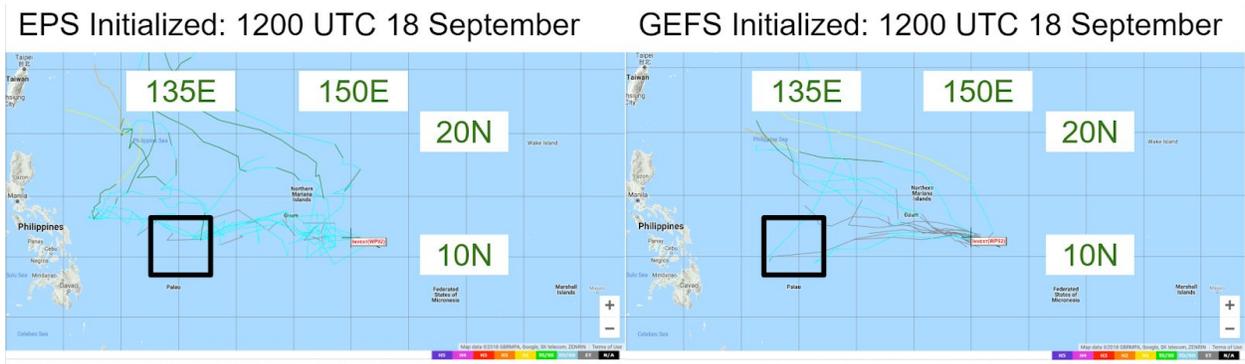


Fig. 2. NOAA HFIP experimental tropical cyclone tracks for Invest 92W from (left) the EPS and (right) GFS initiated at 1200 UTC 18 September. [2]

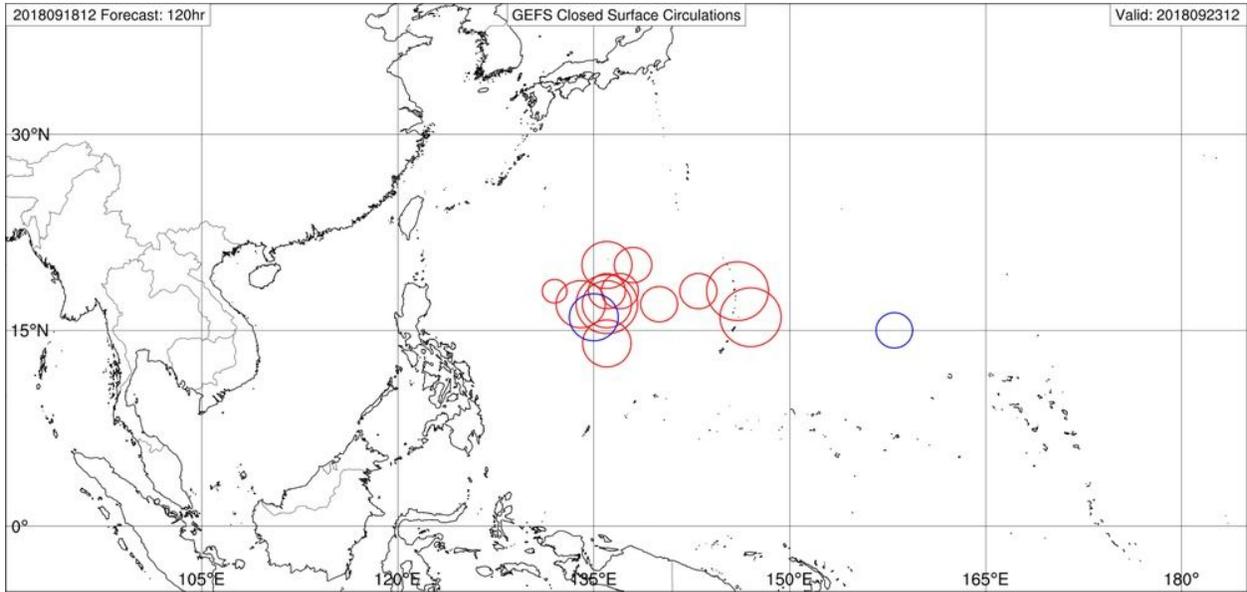


Fig. 3. GEFS ensemble 10-m circulation forecast initiated at 1200 UTC 18 September 2018 and valid at 1200 UTC 23 September. Circulation centers are colored with respect to maximum wind speed. Purple: ≤ 20 knots, Blue: 20-34 knots, Red: > 34 knots. [3]

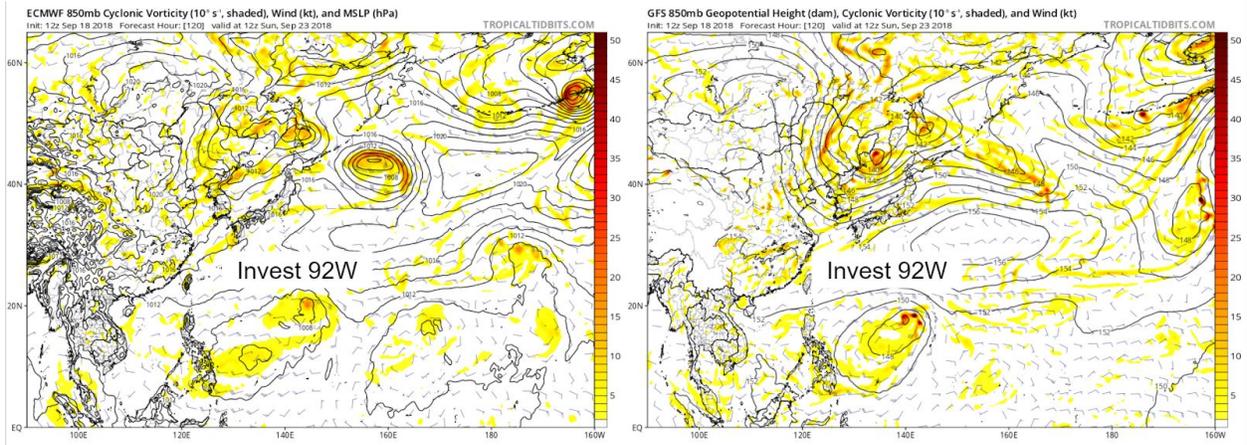


Fig 4. (left) ECMWF and (right) GFS 850-hPa vorticity (shaded) and wind barbs, and MSLP (contoured) initiated at 1200 UTC 18 September 2018 and valid at 1200 UTC 23 September 2018. [4]

+120h - 0600 UTC 23 Sep 2018

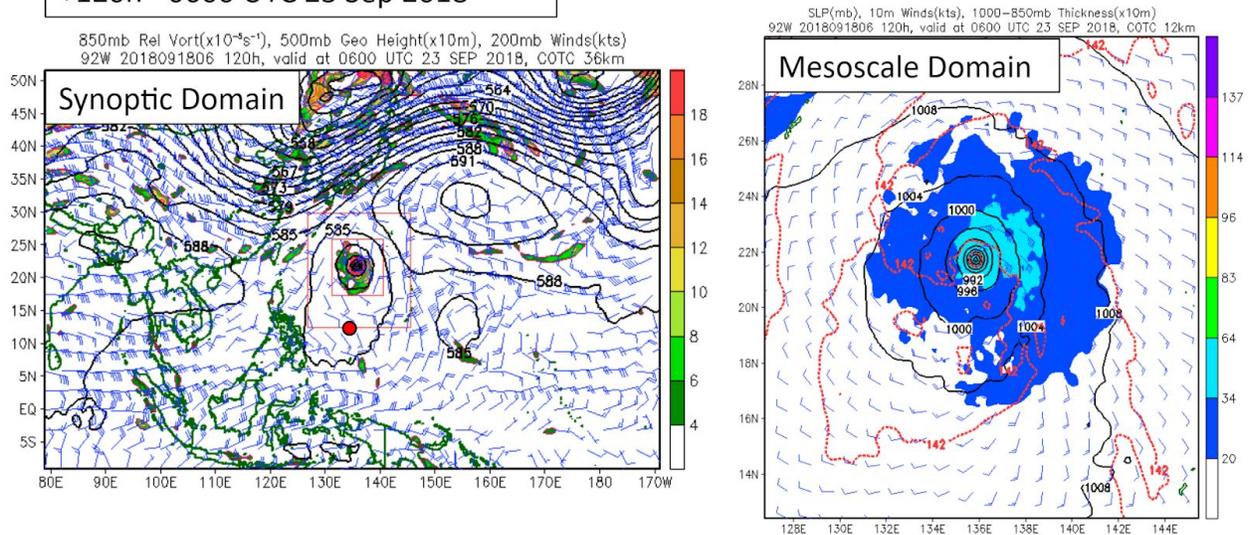


Fig. 5. COAMPS-TC 120-h forecast for Invest 92W initialized at 0600 UTC 18 September and valid at 0600 UTC 23 September. (Left) Synoptic domain showing 850-hPa relative vorticity (shaded), 500-hPa geopotential heights (black contours, $\times 10 \text{ m}$), and 200 hPa wind bars. (Right) Mesoscale domain showing sea-level pressure (black contours), 10-m wind (shaded), and 1000-850 hPa thickness (red-dashed contours, $\times 10 \text{ m}$).

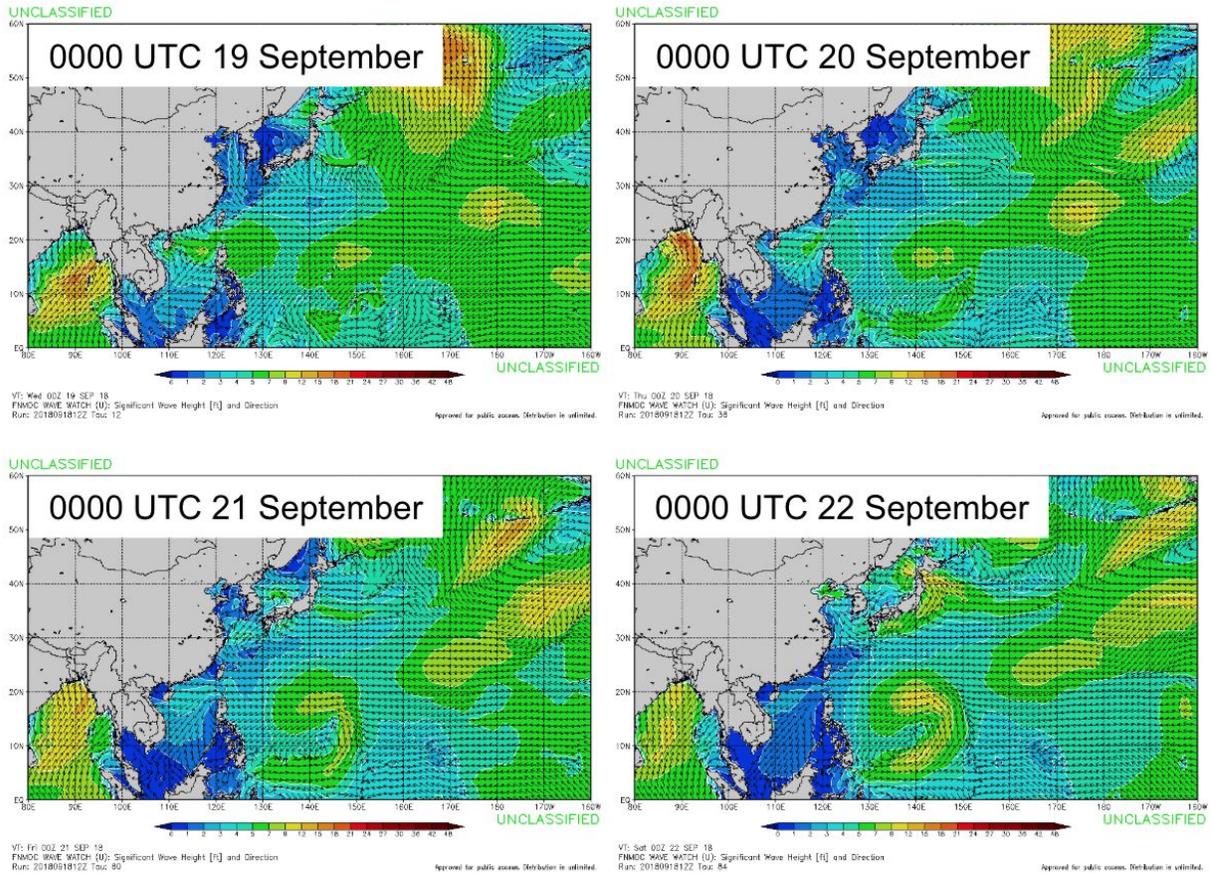


Fig. 6. FNMOC WW3 significant wave height forecast initiated at 1200 UTC 18 September and valid at (top left) 0000 UTC 19 September, (top right) 0000 UTC 20 September, (bottom left) 0000 UTC 21 September, and (bottom right) 0000 UTC 22 September. [6]