

## Summary

A broad area of clouds exists over the study area with low level southwesterly monsoon winds. Strong northwesterly mid- and upper-level winds means high shear are causing strong shear in around 12N, 135E which is expected to persist over the next 5 days. There are two regions of interest both outside of the operation area in terms of TC activity, but development is not expected in the short term with any impacts on operation. Invest 93W is circled in Fig. 1 and Invest 96W is shown by the L. Possible genesis may occur in the South China Sea just west of Luzon with possible implications for operations leaving Taiwan (Fig. 2). Invest 96W will be the focus of future discussions because of disagreement in the models beyond the next 48 hours.

**Day One (24 hr) Outlook:** No TC formation expected near the operation area in the next 24-h.

**Day Two (48 hr) Outlook:** No TC formation is expected with impacts on the operation region due to high amounts of shear. The broad area of low level vorticity in the South China Sea is expected to move northward towards Hainan but again no TC genesis is expected.

**Extended Outlook:** Models suggest possible TC formation in the vicinity of Taiwan, but do not agree on track or intensity. GFS shows the occurrence of a TC 120 hours out at 12 Z August 11 (Fig. 2). The ECMWF disagrees with the low level vorticity tracking north possibly developing into a weak TC and interacting with Hainan.

## Discussion

**TCs:** The environment near the research domain is unfavorable for tropical cyclogenesis with high vertical wind shear exceeding 30-40 kts over much of the domain. Meanwhile, near Taiwan, JTWC has identified two areas of interest: 93W southeast of Taiwan (~18.6N, 134.2E) and 96W southwest of Taiwan over the South China Sea (~13.4N, 115.4E). 93W is a broad circulation with associated convection located on the edge of the high wind shear, placing the area in low to moderate wind shear currently. The deterministic GFS spins up a TC that travels northward, while the deterministic ECMWF spins up a weaker storm that makes a hard left turn that passes north of Taiwan (12Z 8/12). 96W is a broad circulation currently with comparatively weaker convection currently. Models disagree on what will happen: GFS deterministic produces a moderately strong cyclone that skirts the southern edge of Taiwan (00Z 8/12), while the deterministic ECMWF does not spin up a storm and brings it into southeastern China.

**Convection:** Enhanced convective activity is expected in the region. COAMPS suggests increasing precipitation intensity and coverage over the research domain in the next 48 hours shown in Fig. 3.

**MJO/BSISO:** Both the BOM and ECM ensembles are suggesting that we are currently have a weak amplitude BSISO signal. The BOM is forecasting the transition towards the Bay of Bengal in phase 6 for BSISO 1 and phase 3 for BSISO 2. OLR anomalies in Fig. 4 show a mixed trend over the coming weeks with enhanced convective activity transitioning towards a more inactive phase in the ship operating domain.

**SSTs:** SSTs over the operating area are between 28- 30°C

**Currents and Wave Heights:** Significant wave heights from COAMPS indicate 4-6 ft waves through 00Z August 7 declining to 2-3 ft by 00Z August 8.

FORECASTERS: TRABING and DEHART

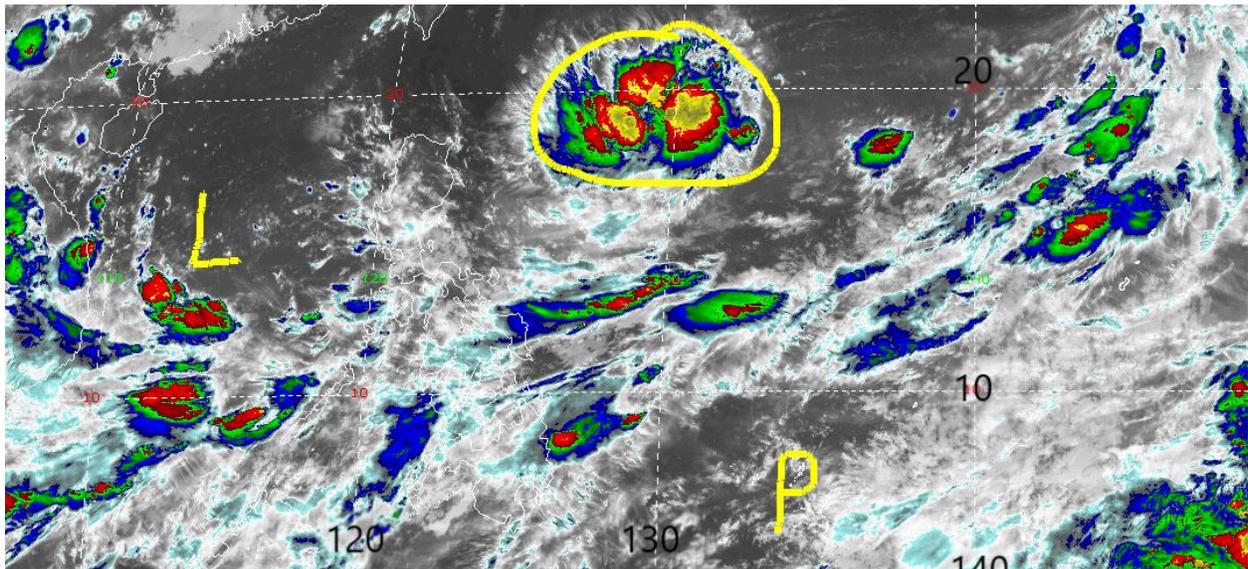


Fig. 1. 11.2 micron IR imagery from CIRA at 1830 Z August 6. Circled is invest 93W moving towards the northeast. [1]

GFS 850mb Geopotential Height (dam), Cyclonic Vorticity ( $10^{-5} \text{ s}^{-1}$ , shaded), and Wind (kt)

Init: 12z Aug 06 2018 Forecast Hour: [120] valid at 12z Sat, Aug 11 2018

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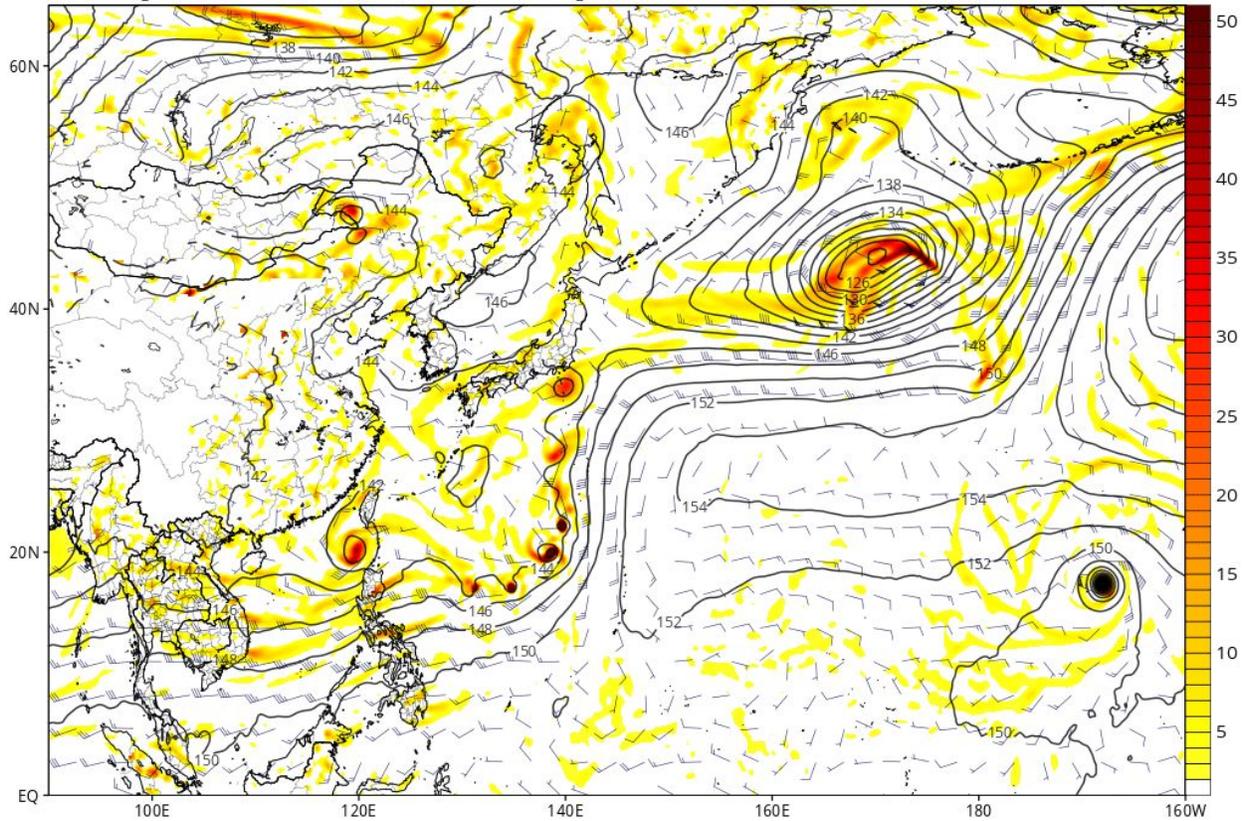


Fig. 2. 120-h GFS 850 mb vorticity forecast initialized at 12Z August 6. [2]

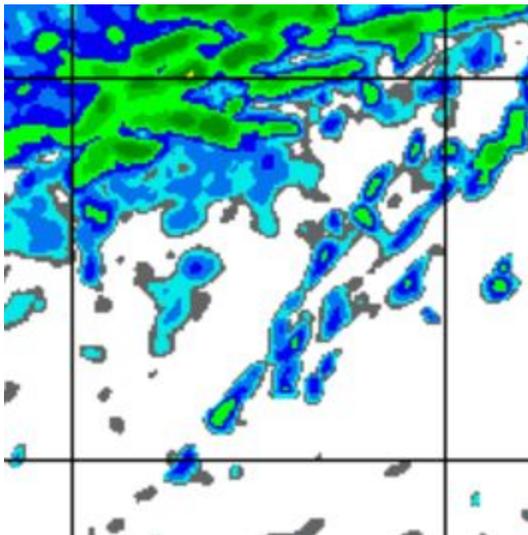
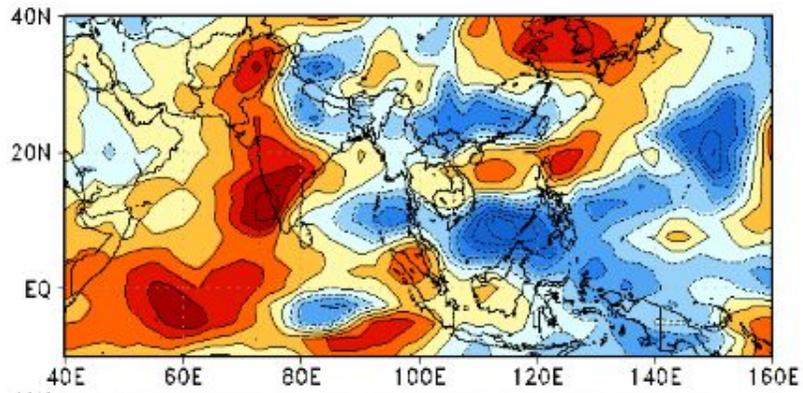


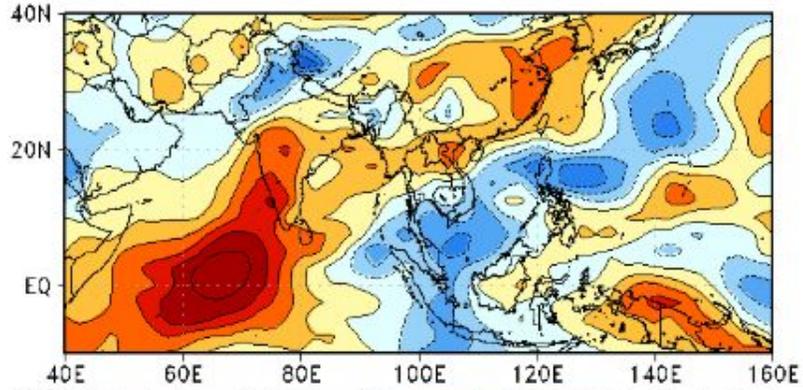
Fig 3. 36-h COAMPS radar reflectivity also shown in the COAMPS Discussion. [3]

Initial Date  
(02/08/2018)

Days 1–5 Ave  
forecast



Days 6–10 Ave  
forecast



Days 11–15 Ave  
forecast

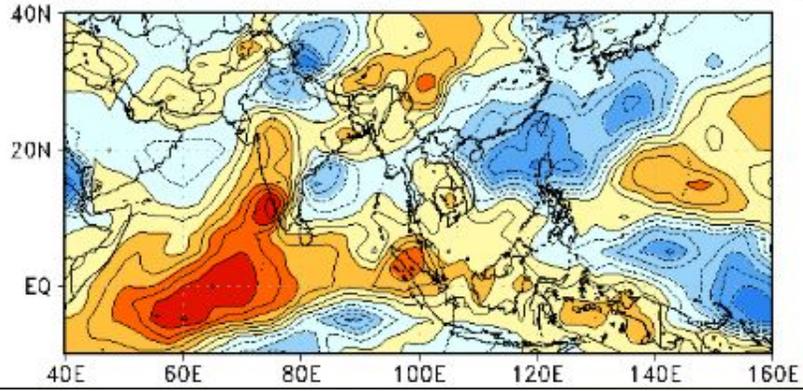


Fig. 4. ECM BSISO OLR Forecast initialized August 2. [4]