

TAHOPE Weather Summary (08/05~08/10)

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Analysis of current weather (0805 morning)

From true-color satellite imagery we can see that there are only shallow clouds scattered around Taiwan (Figure 1a). The tropical disturbance 97W is near the east coast of Luzon island (Figure 1b). Its intensity is still weak, the wind speed is only 20 knots at 00 UTC (Figure 2). The wind shear around 97W is strong, providing an unfavored environment for TC development (Figure 3).

From radar imagery, there is no significant rainfall system around Taiwan this morning (Figure 4).

From the skew-T diagram in Banqiao (Figure 5), weak wind speed appears below 850hPa level, and there is a weak inversion layer around 950hPa due to the subsidence between 800hPa and 550hPa, we can see that the subtropical high has enhanced gradually. Near 500hPa level, the air becomes dryer compared to yesterday. The sea breezes along Danshui River Valley and Keelung River Valley are rather weak (Figure 6), so the afternoon thunderstorm may not be easily initiated during this afternoon in Taipei basin.

8/4 18Z Synoptic Forecast: (Figure 7)

8/5-6 Tropical disturbance 97W is nearly stationary over southern Luzon and merges with monsoon trough gradually. Subtropical high covered above Okinawa, the background wind around Taiwan shifts to southeasterly.

8/7-8 Subtropical high retreats to the south of Japan, the wind around Taiwan is still southeasterly. The monsoon depression has been developing from the monsoon trough in the South China sea, and a new tropical disturbance has formed at east of the Philippines.

8/9-10 The wind around Taiwan is still southeasterly. The tropical depression in the South China sea keeps intensifying and follows the steering flow, moving northwest toward southern China, and making landfall at Hainan island after 00 UTC on August 10. The disturbance to the east of the Philippines moves northwest and still lacks of development

8/4 12Z EC Ensemble forecast for tropical system: (Figure 8)

Most ensemble members forecast the track of monsoon depression in the South China sea, and the trend of heading toward southern China. About the disturbance at the east of Philippines, members also show the trend that it will move northwestward, then enter the region ranging from the Ryukyu islands to Bashi channel, with the central pressure around 1000hPa or even weaker intensity for the tropical disturbance.

QPF verification (Figure 9):

The four models (EC,NCEP,WRFD,TWRF) forecast the rainfall areas and hotspots well, and the EC model catches the rainfall area better than the NCEP model.In the regional models, the afternoon thunderstorms rainfall areas and hotspots are overestimated in northwestern Taiwan.

QPF forecast (Figure 10):

On August 5, the subtropical high extends westward and covers all Taiwan area, and in low level environments, the wind turns to southeasterly gradually, there will be afternoon thunderstorms near the mountain area, and the rainfall will be more intense in southwestern Taiwan.

Before August 7, the precipitation will be mainly caused by afternoon thunderstorms. Since the subtropical high still plays the main role in Taiwan weather these days, the rainfall areas and hotspots are constrained in the mountains, and the rainfall intensity will be weak.

After August 8, according to the tropical disturbance 97W location, wind direction and rainfall pattern will be different after August 8. Since the environmental wind is southeasterly, there might be more rainfall in southeastern Taiwan, and in western areas are mainly caused by afternoon thunderstorms. The intensity of the rainfall might be more intense and it depends on the water vapor brought from the tropical disturbance, therefore lots of uncertainties remain unclear.

Figure 1. Himawari Satellite Imagery (true-color) on 08/04, at 01:00 UTC.

(a).Imagery around Taiwan

(b).Imagery of 97W

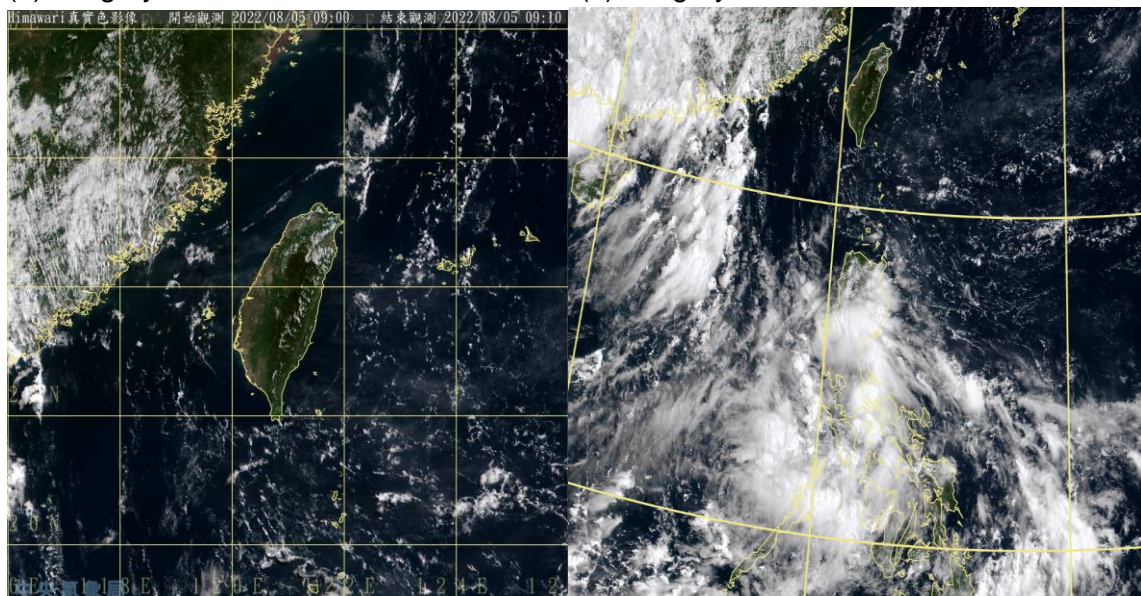


Figure 2. Himawari Satellite Imagery (IR) at 01:50 UTC 08/05.

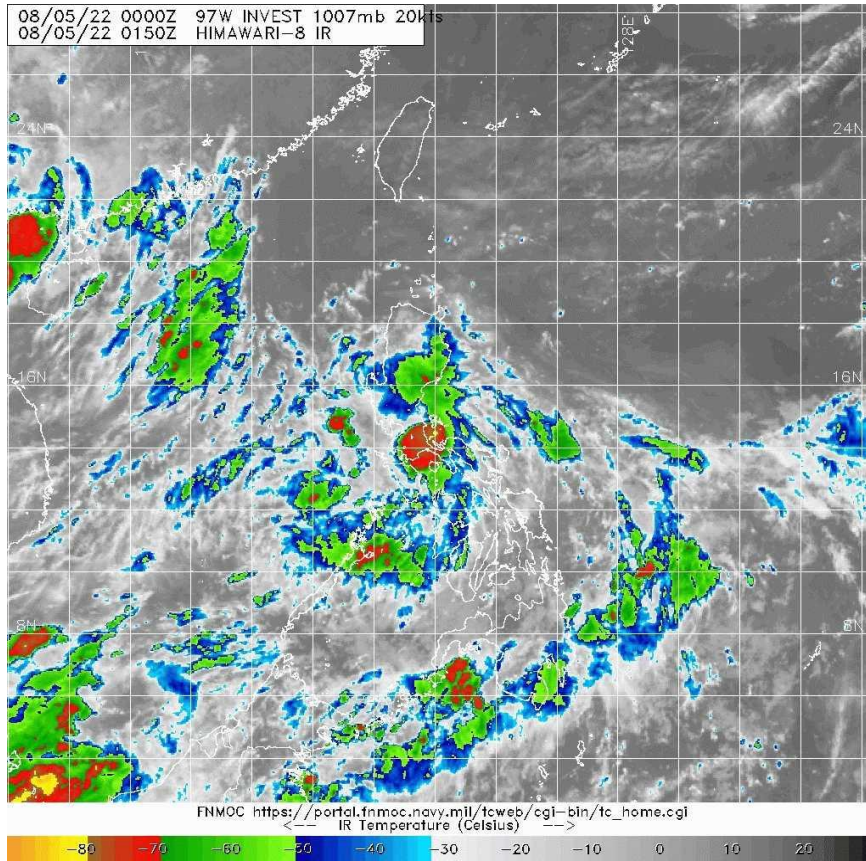


Figure 3. Image of Deep-Layer Wind Shear on 8/5, at 00:00 UTC

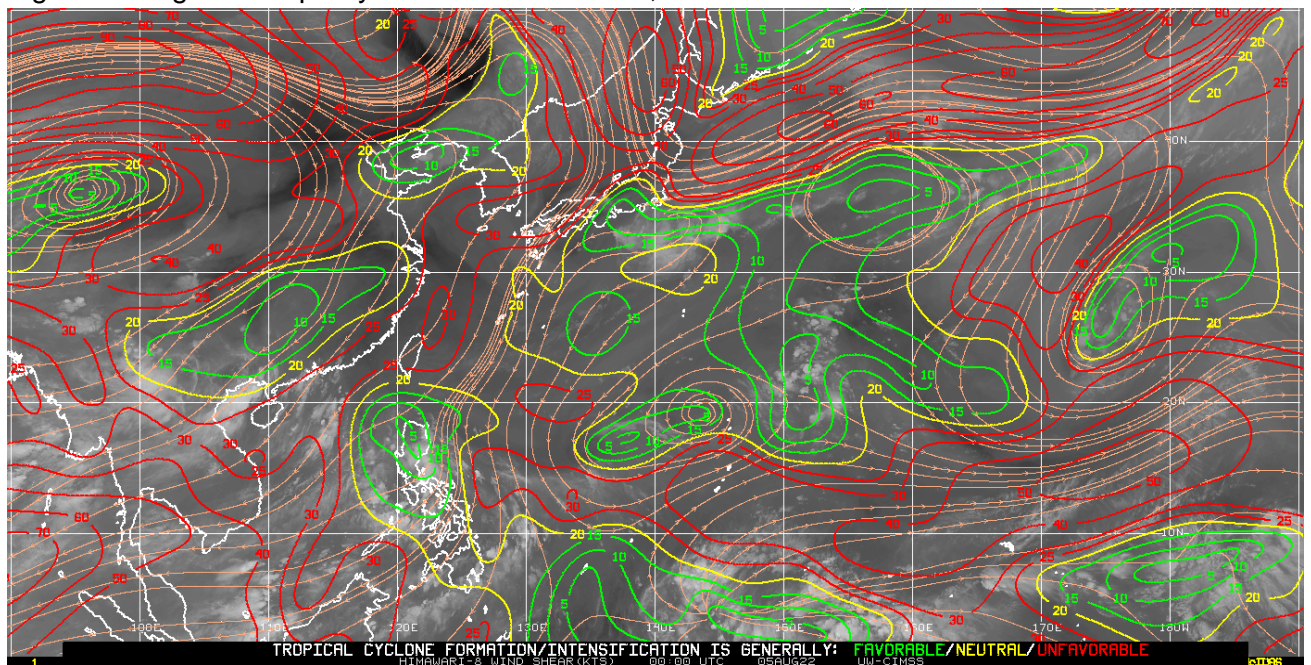


Figure 4. Radar image around Taiwan on 8/5, at 01:00 UTC

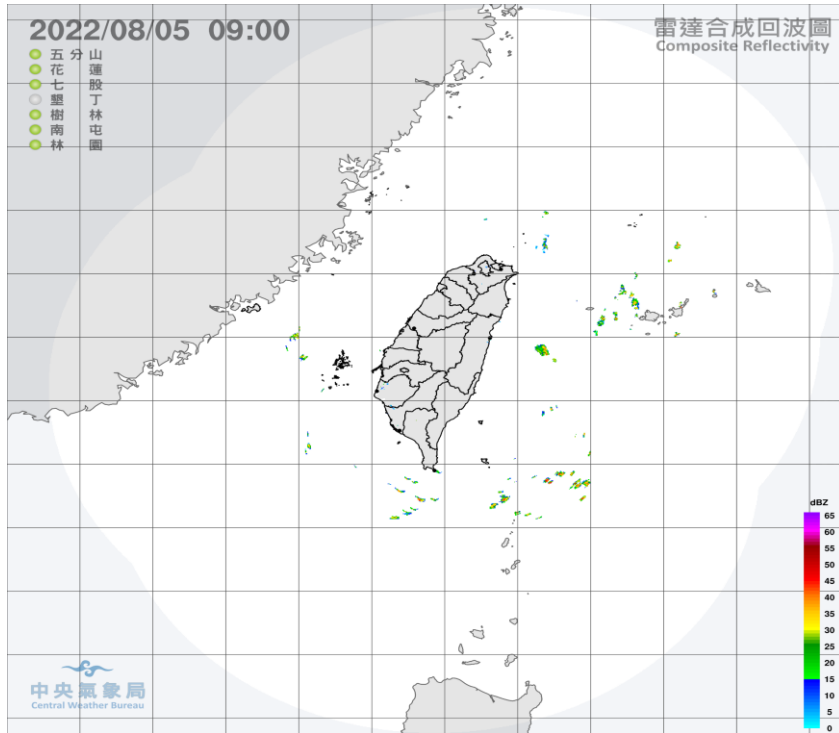


Figure 5. Skew-T Log-P Diagram in Banqiao station on 8/5, at 00 UTC.

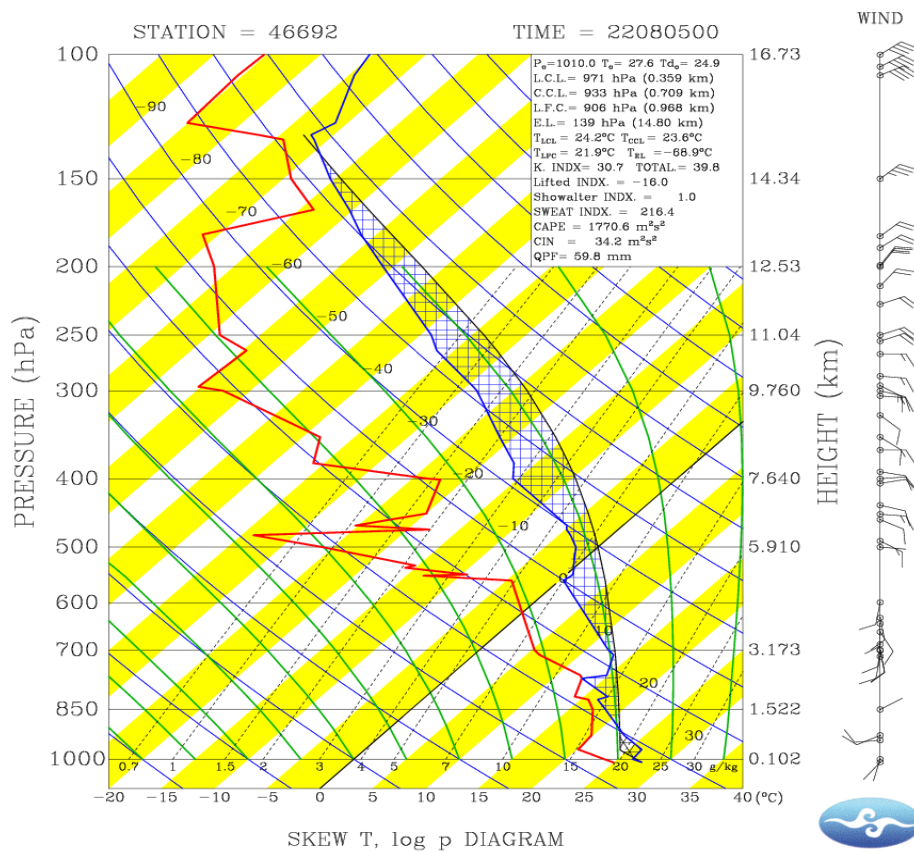


Figure 6. The wind speed and wind direction from observation stations on 8/4, at 01 UTC.

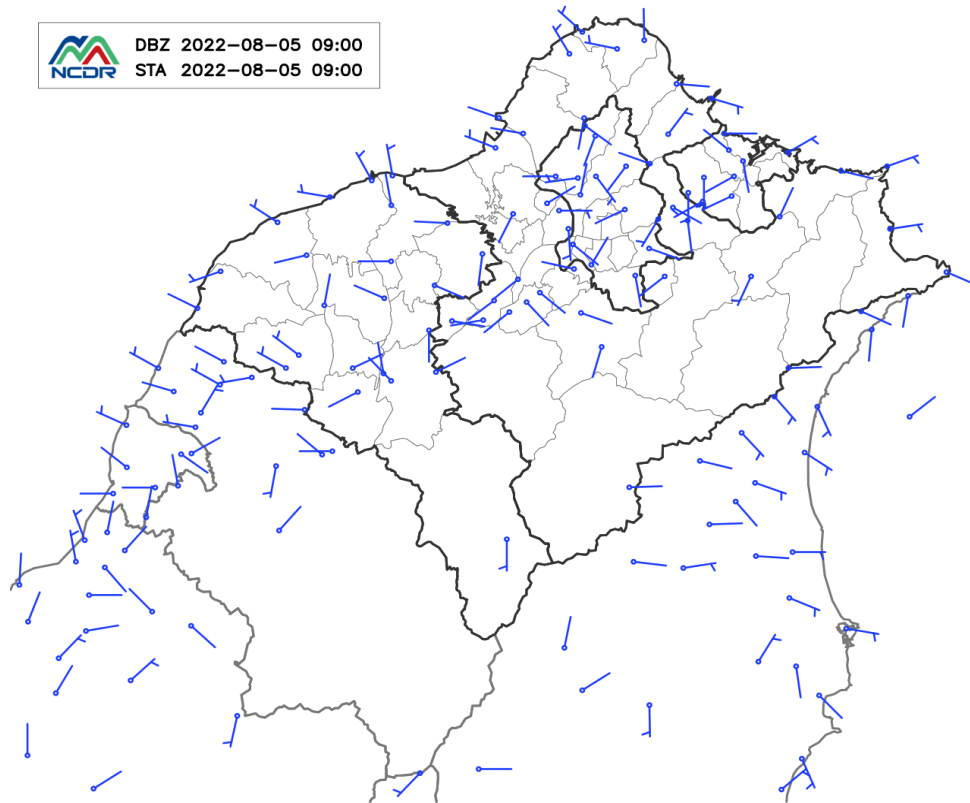
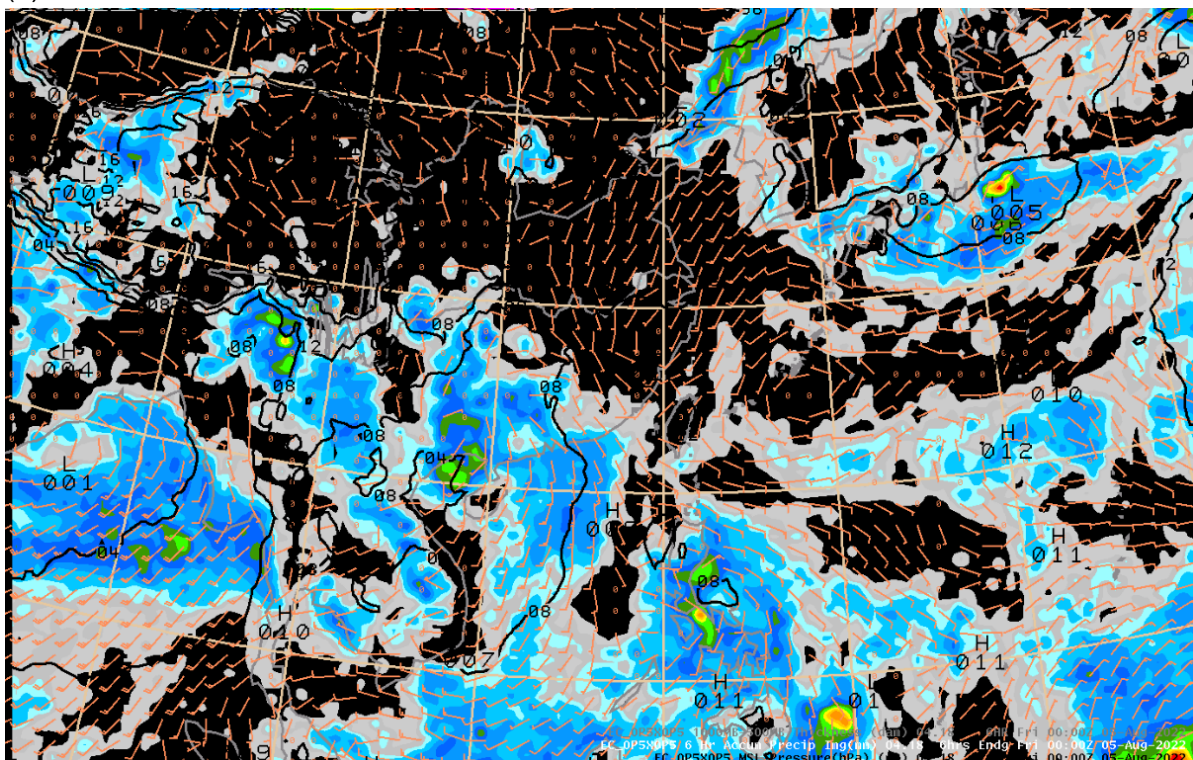
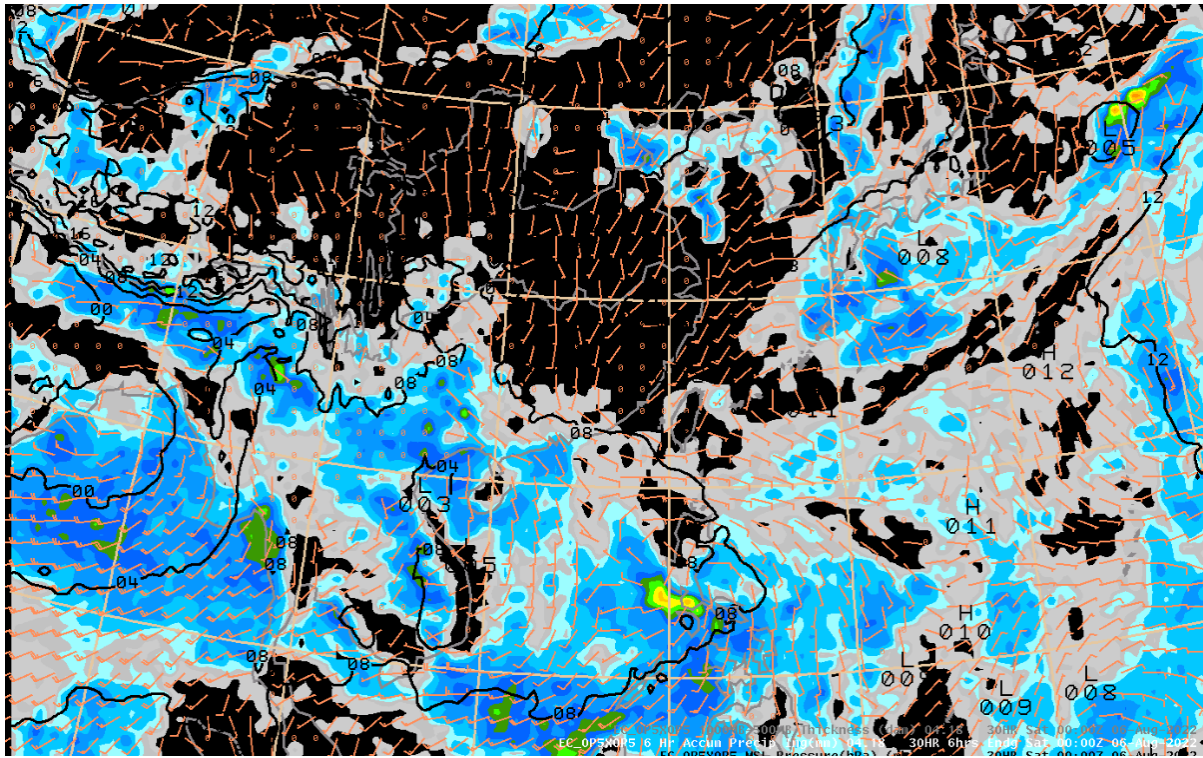


Figure 7. 8/4-8/10 Synoptic field forecast(Init: 8/4 18 UTC)

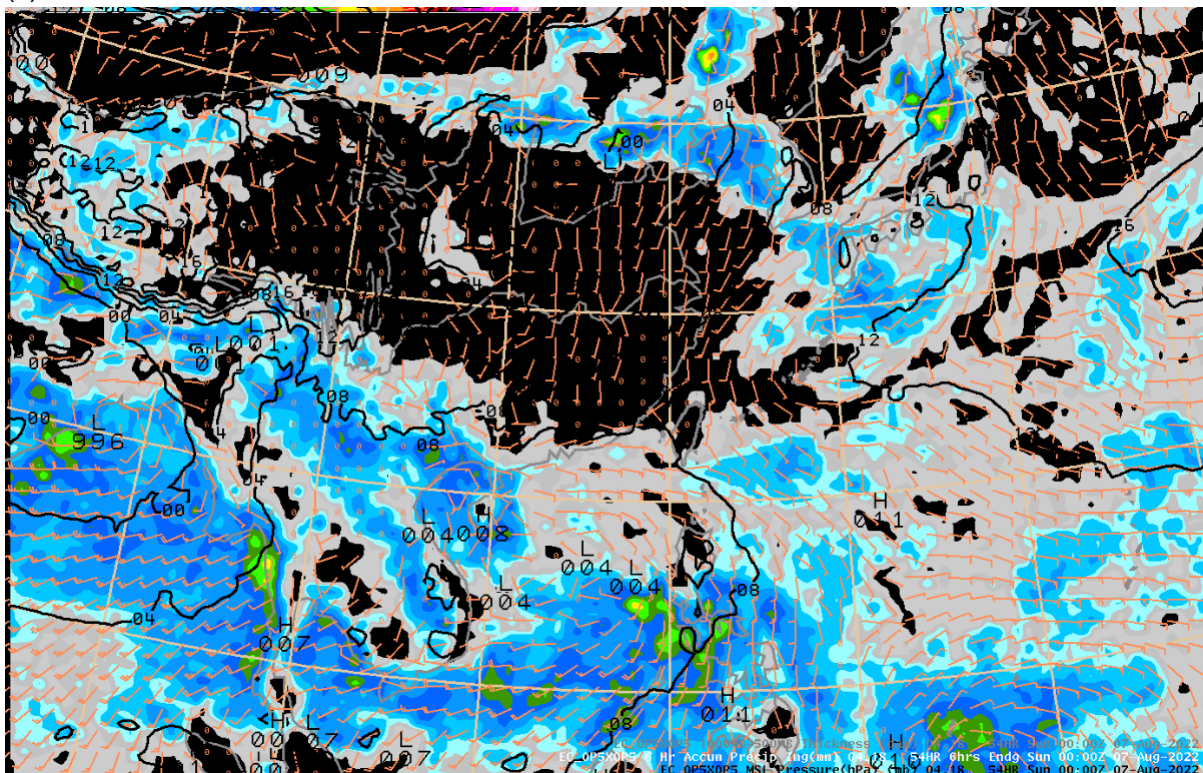
(a) 8/5 00 UTC



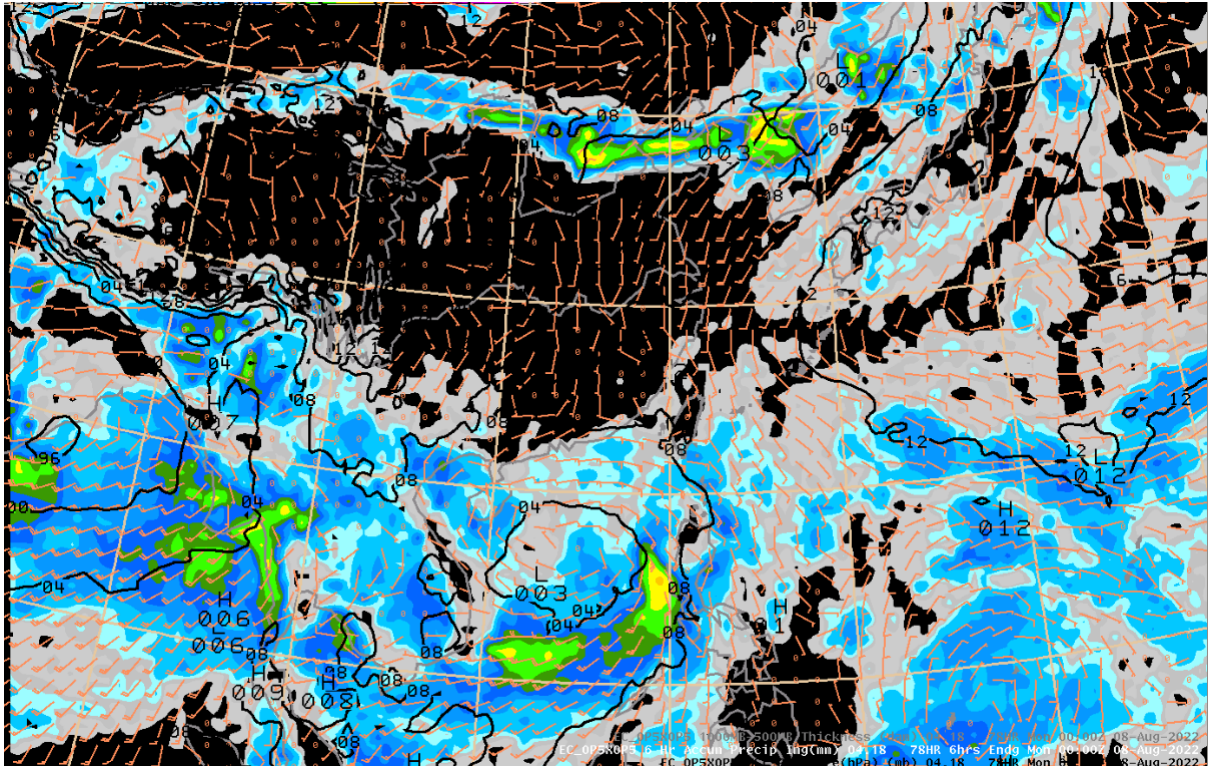
(b) 8/6 00 UTC



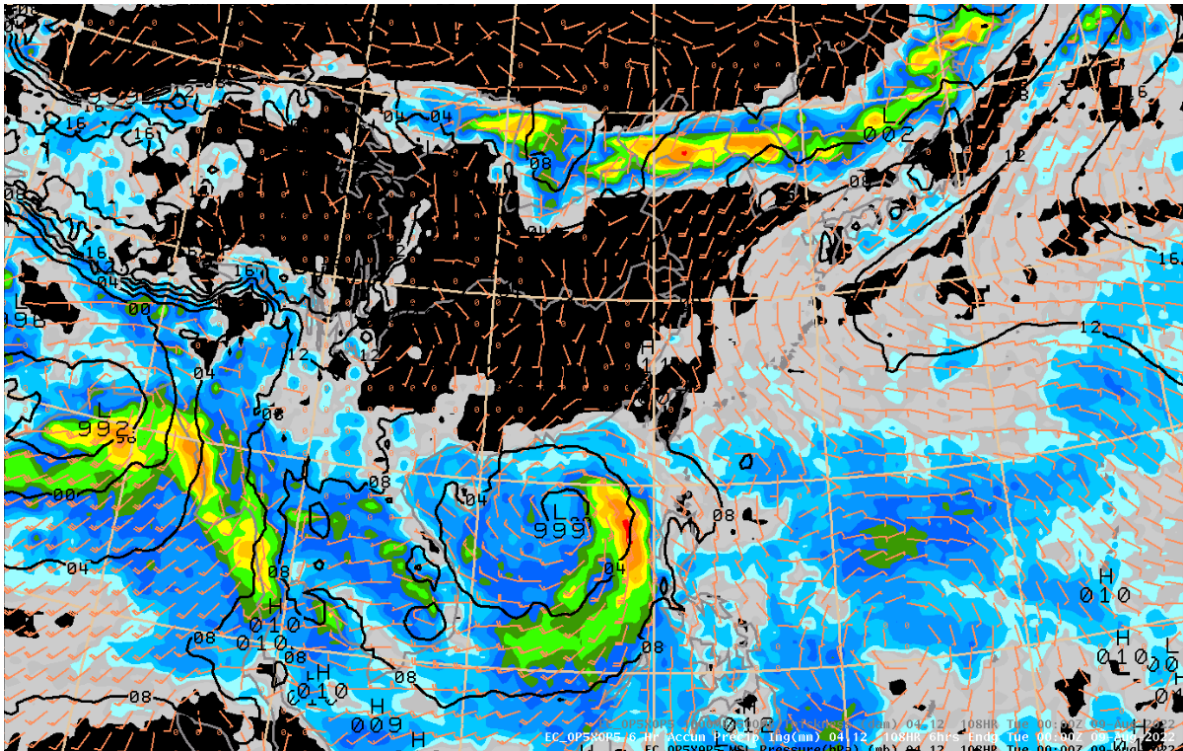
(c) 8/7 00 UTC



(d) 8/8 00 UTC



(e) 8/9 00 UTC



(f)8/10 00 UTC

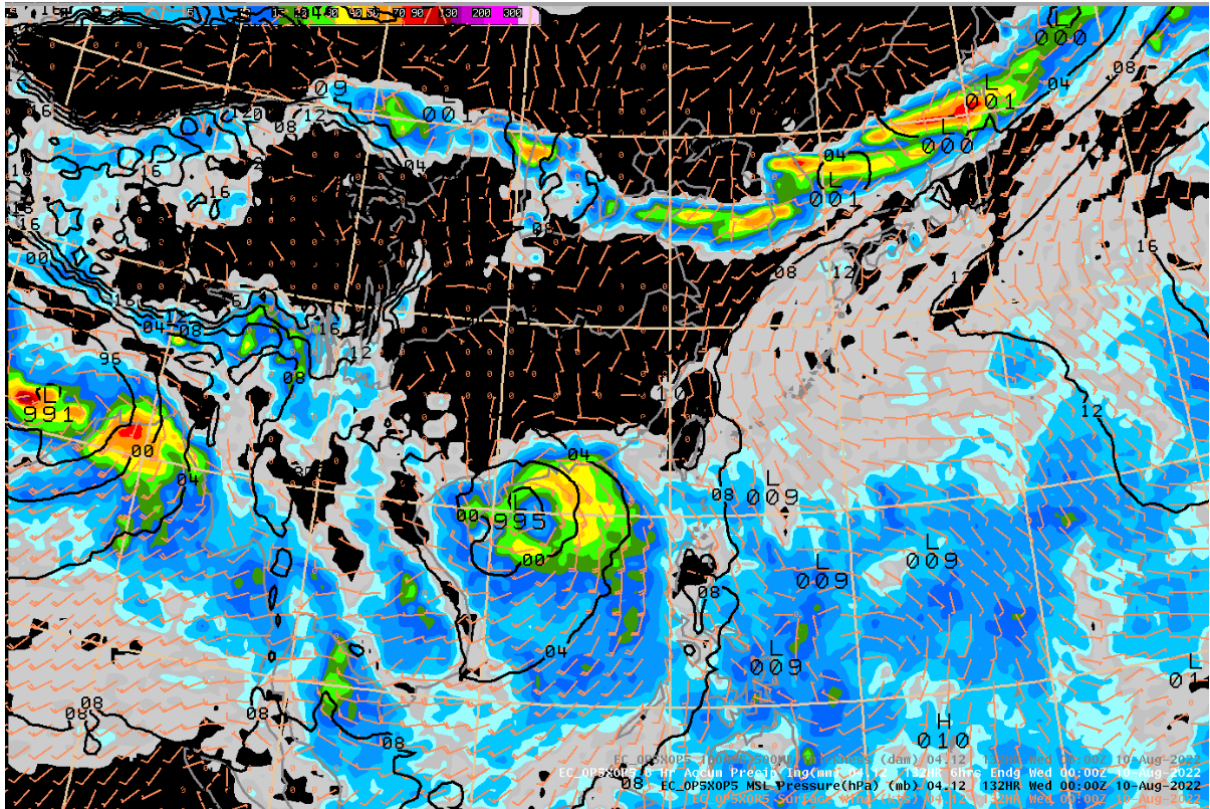


Figure 8. EC ensemble forecast (initial on 8/4, at 12 UTC, 240 hrs forecast)

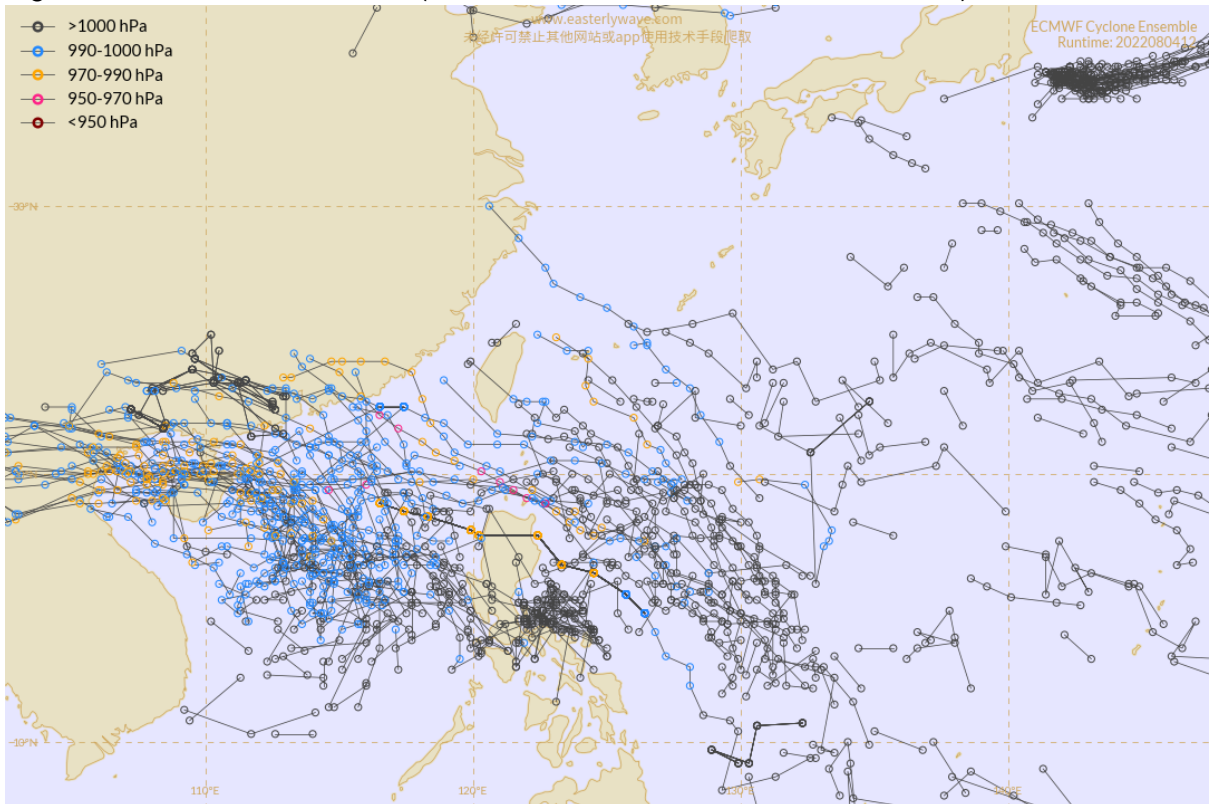


Figure 9. QPF Verification (initial on 8/3, at 18 UTC, forecast time: 8/4 00-12 UTC)

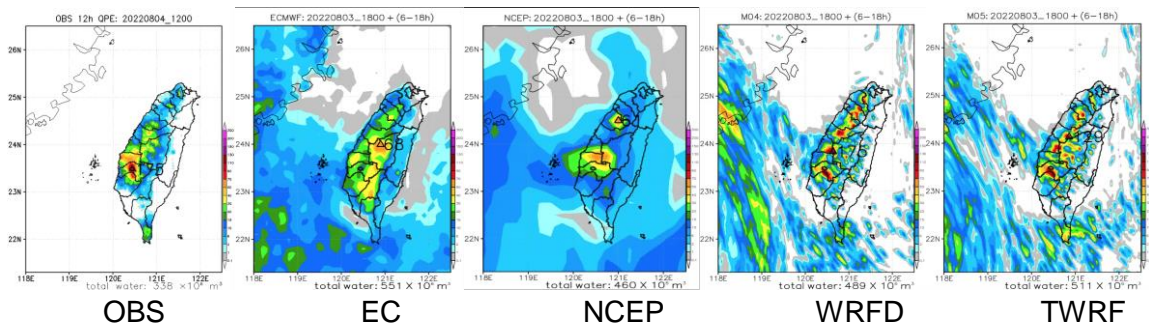


Figure 10. 8/5-8/10 QPF forecast (initial time on 8/4, at 18 UTC)

EC, NCEP, WRFD, TWRP (8/5-8/10)

