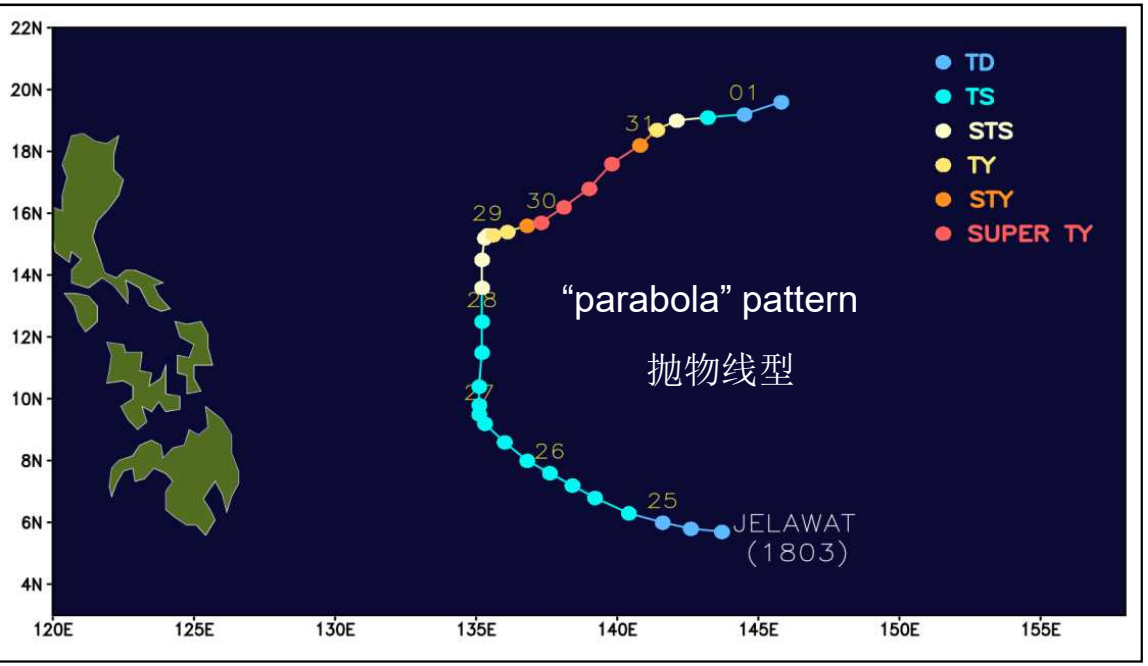
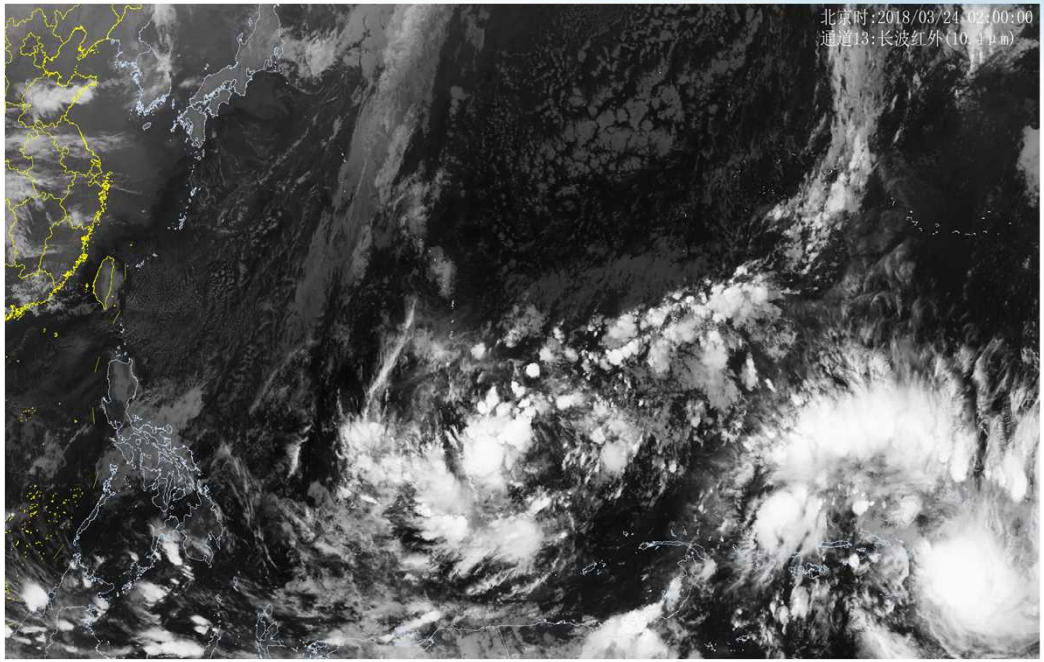
JELAWAT (1803) Track Forecast Analysis

NMC/CMA

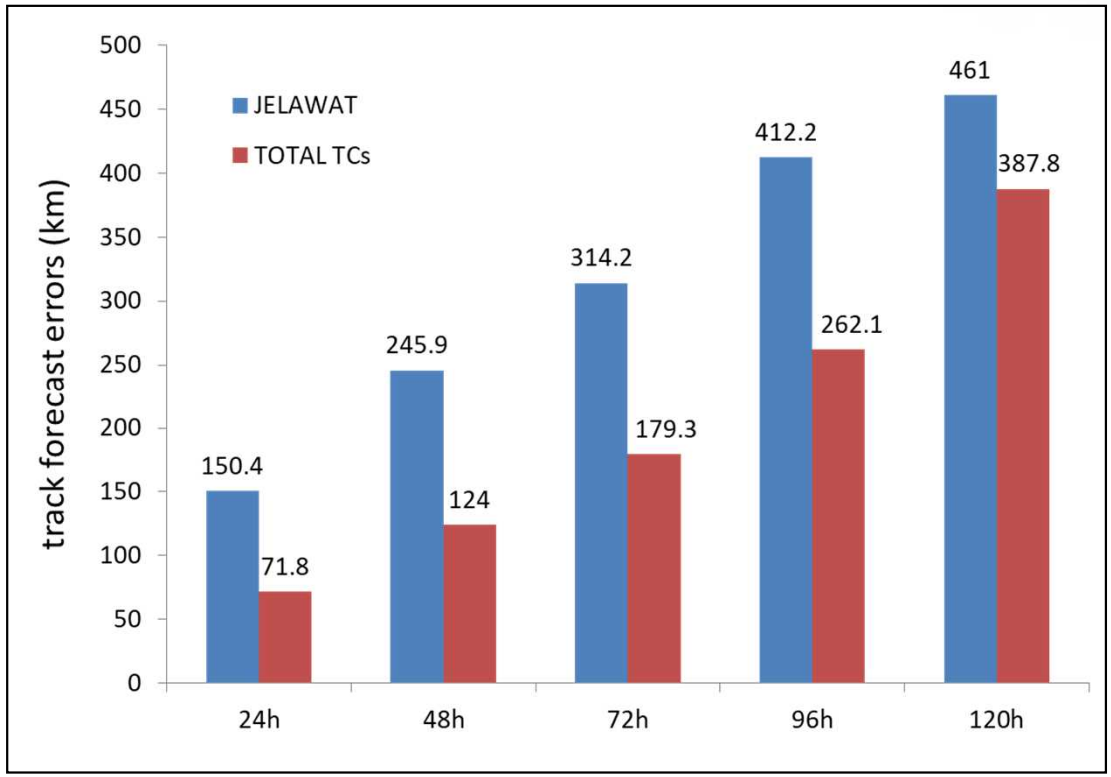
Overview of Jelawat's Track Forecast Errors



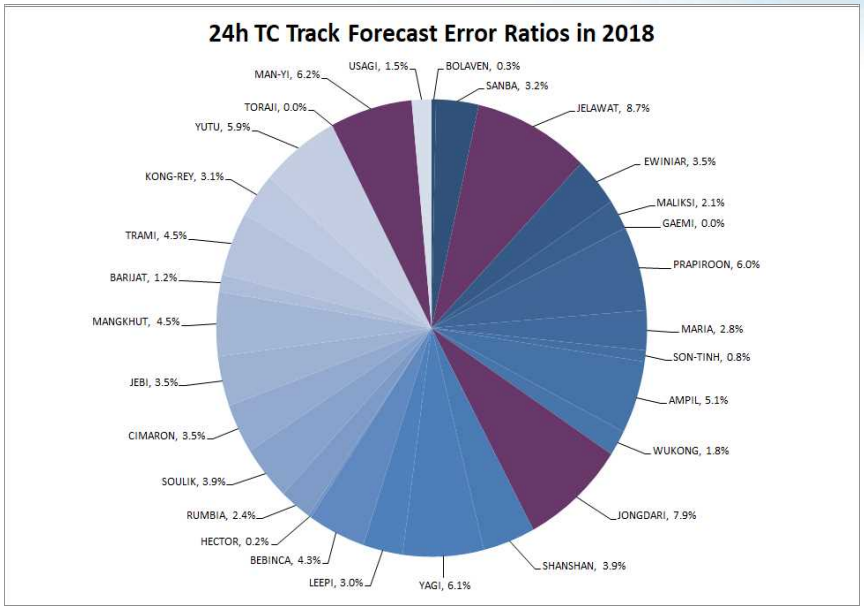
Jelawat's track



Himawari 8 animation for Jelawat

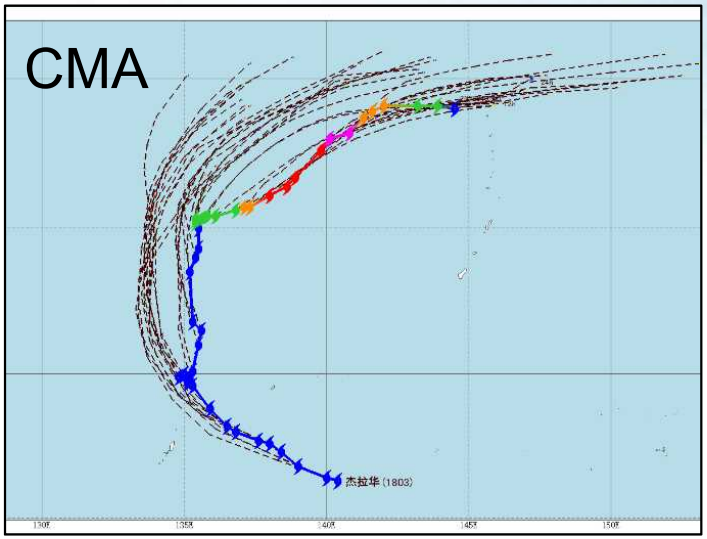


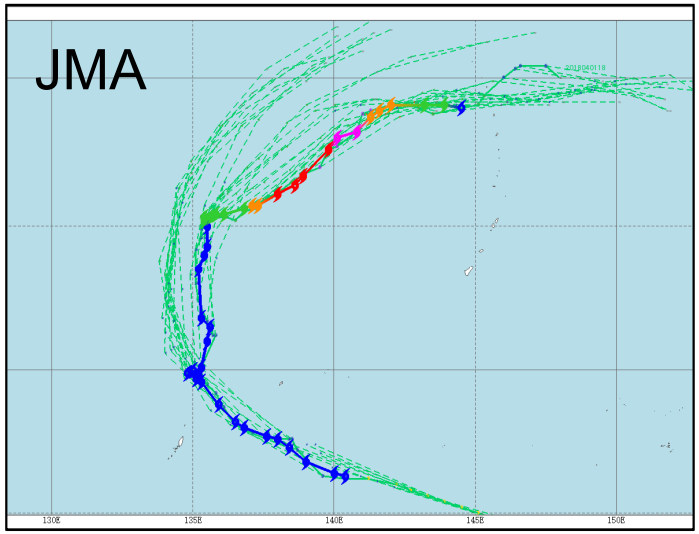
CMA official track forecasts errors of Jelawat

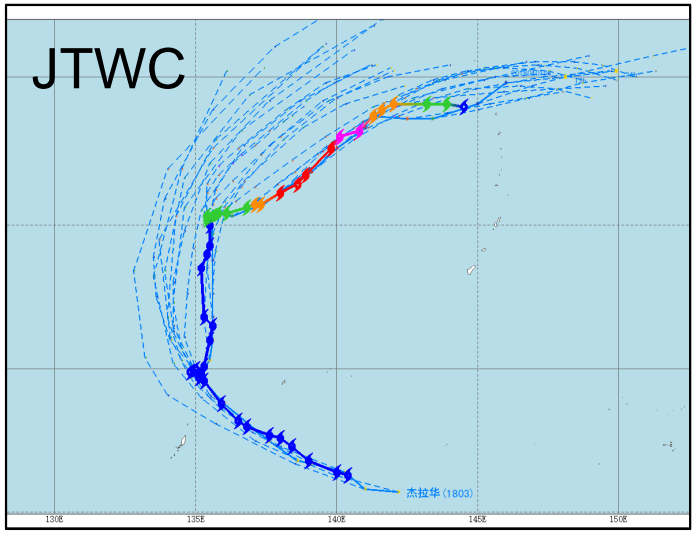


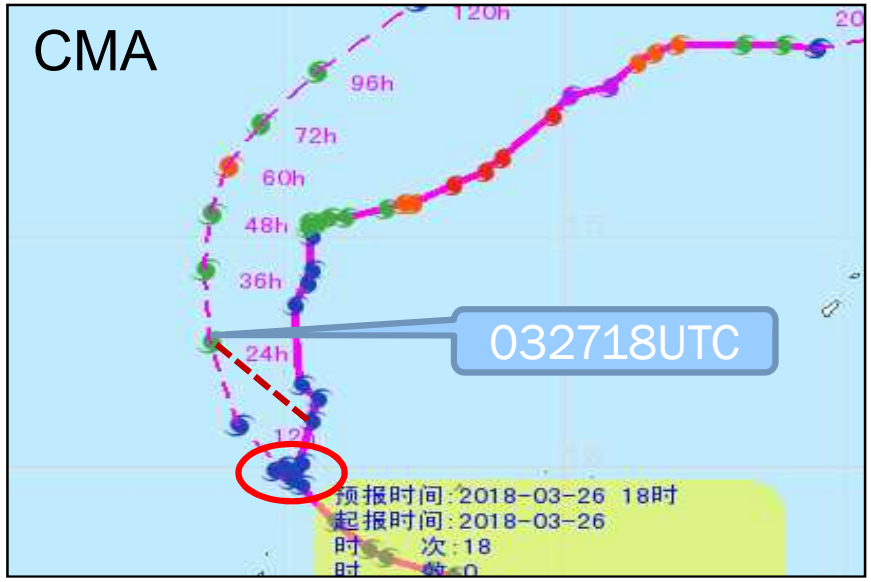
Jelawat contributed the most track error in 2018

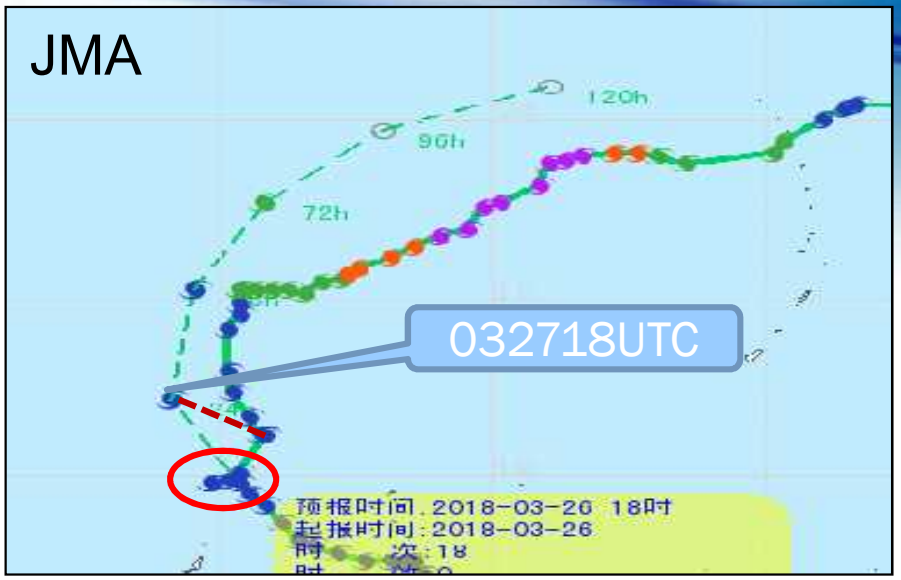
Jelawat's official track forecasts

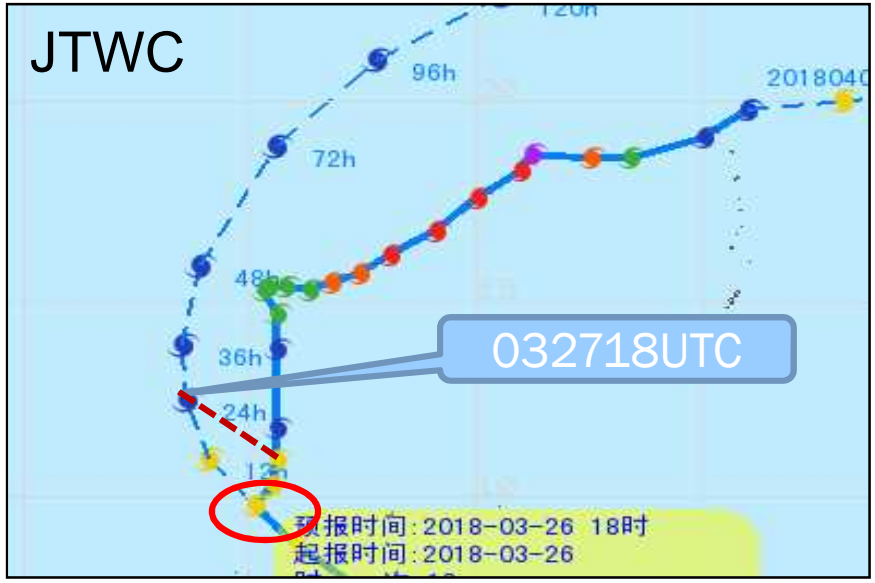








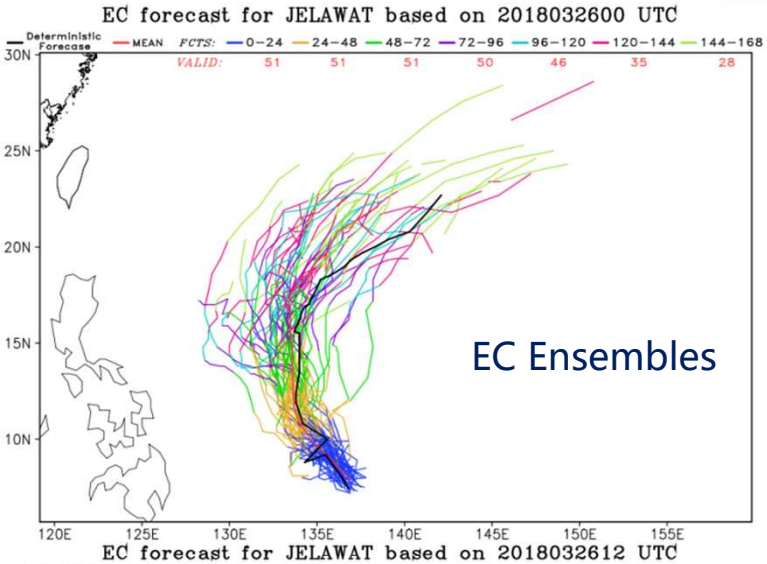


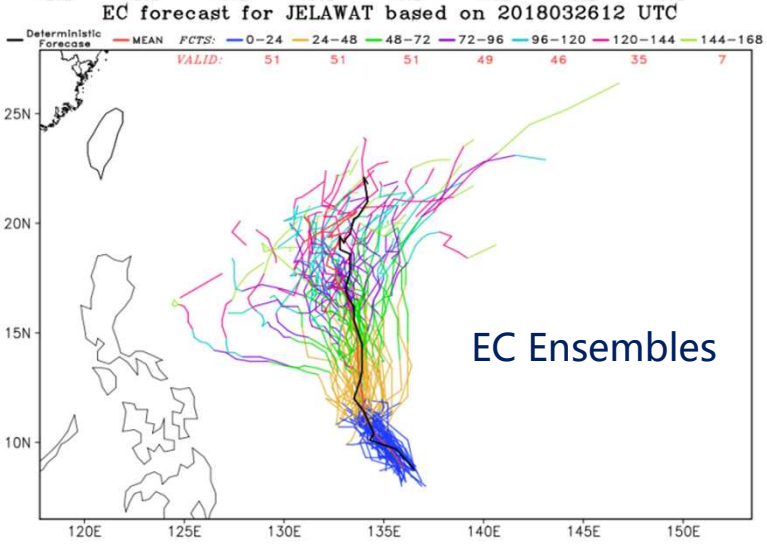


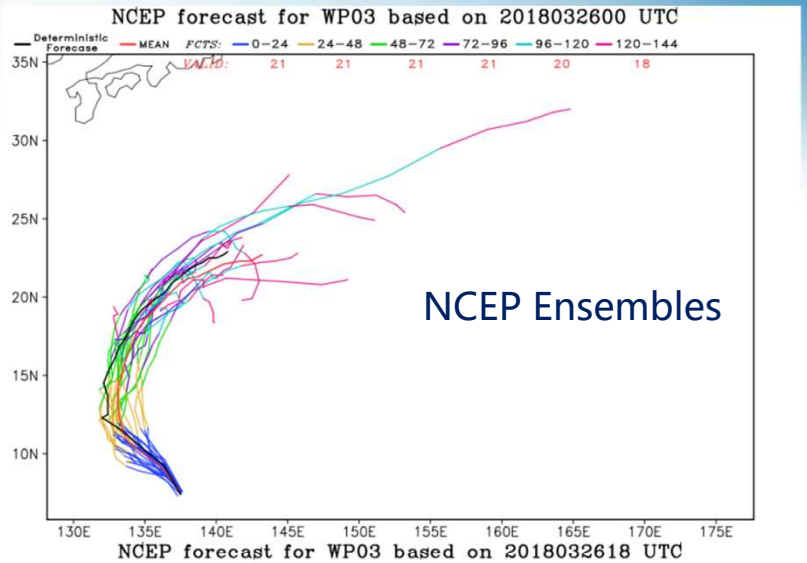
Official track forecasts failed to make the small looping or stationary movement prediction （turning point）, resulting left-biased track forecasts.

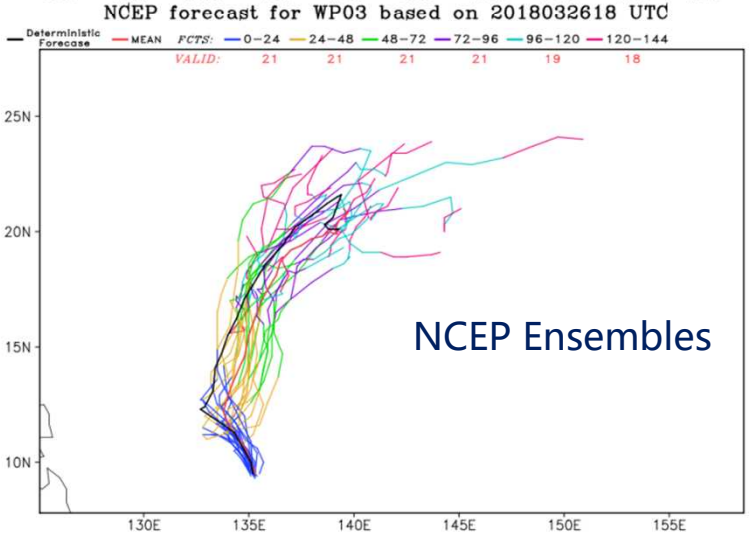
24h track forecast errors initiated at 1800UTC 26 March 2018:
CMA 272km, JMA 216km, JTWC 280km.

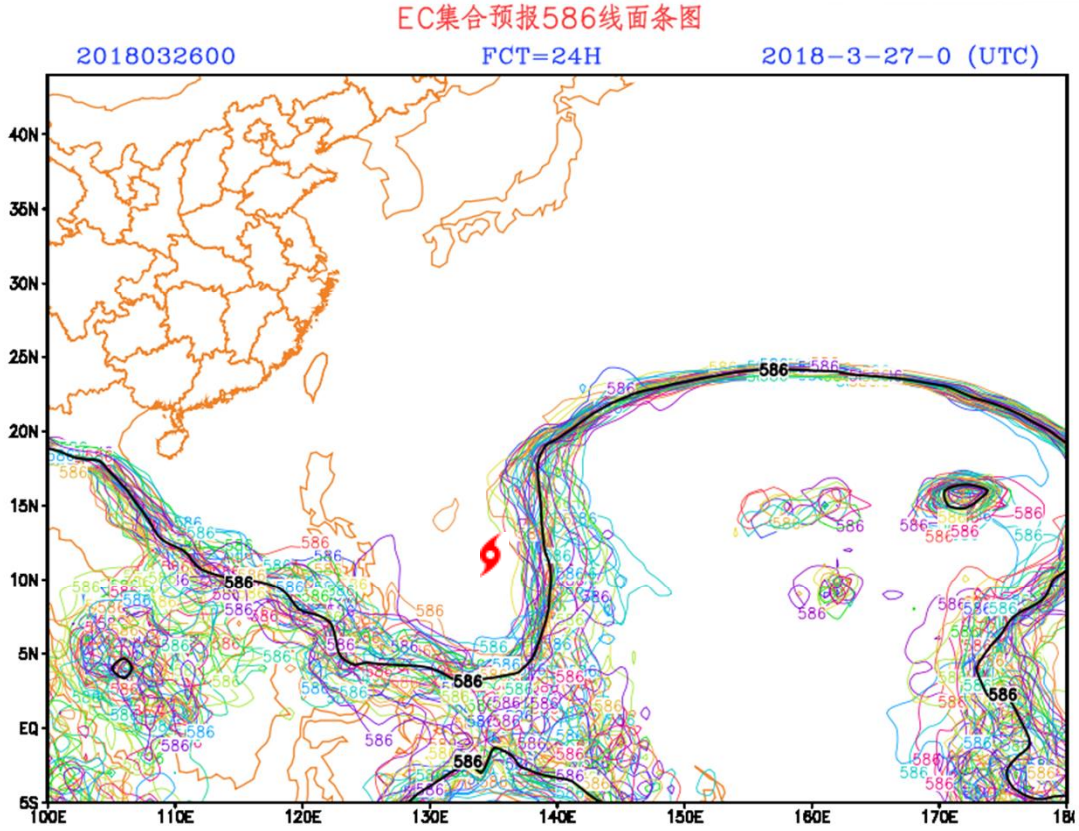
Part Two: Forecast Challenges

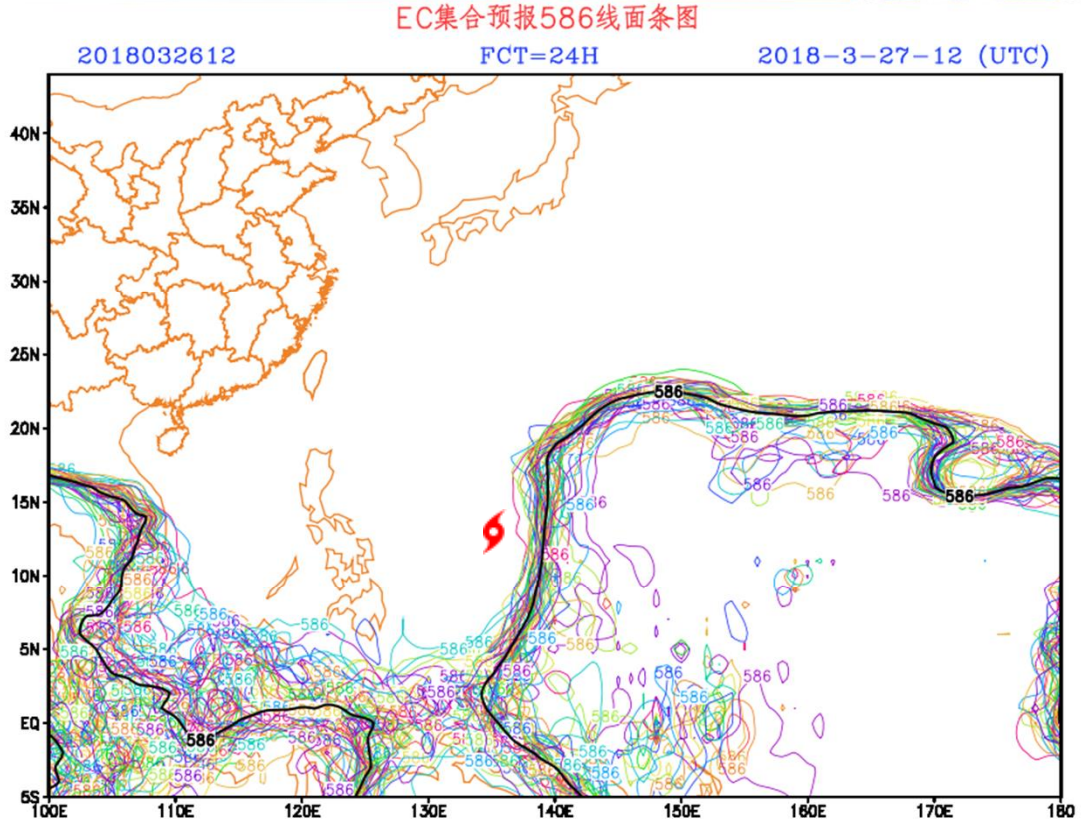




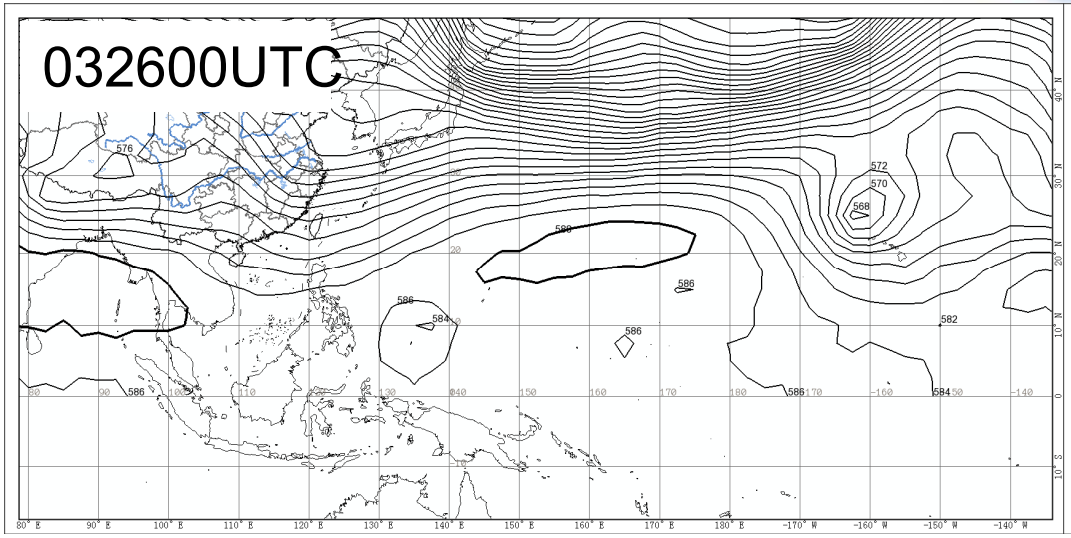


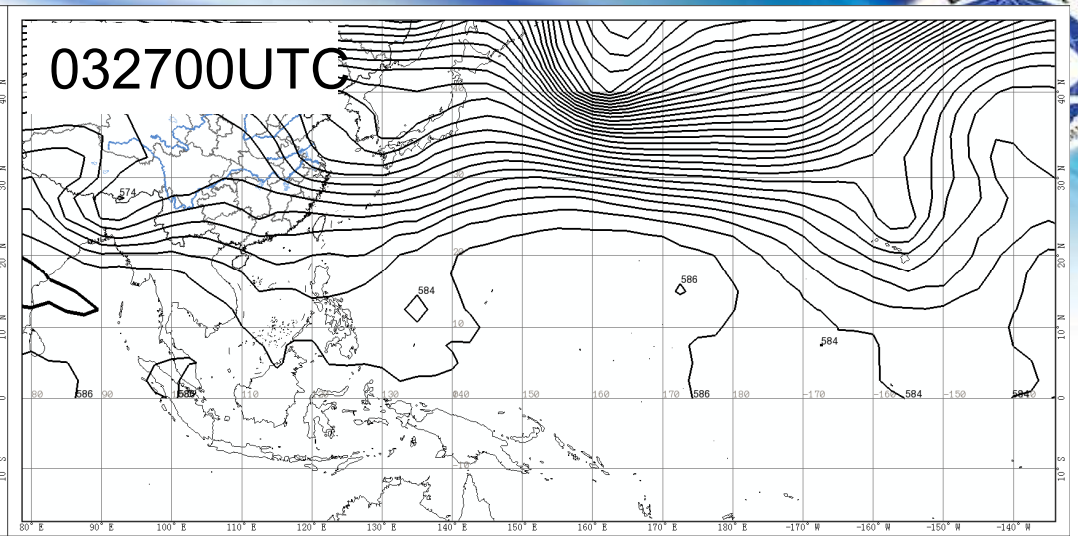


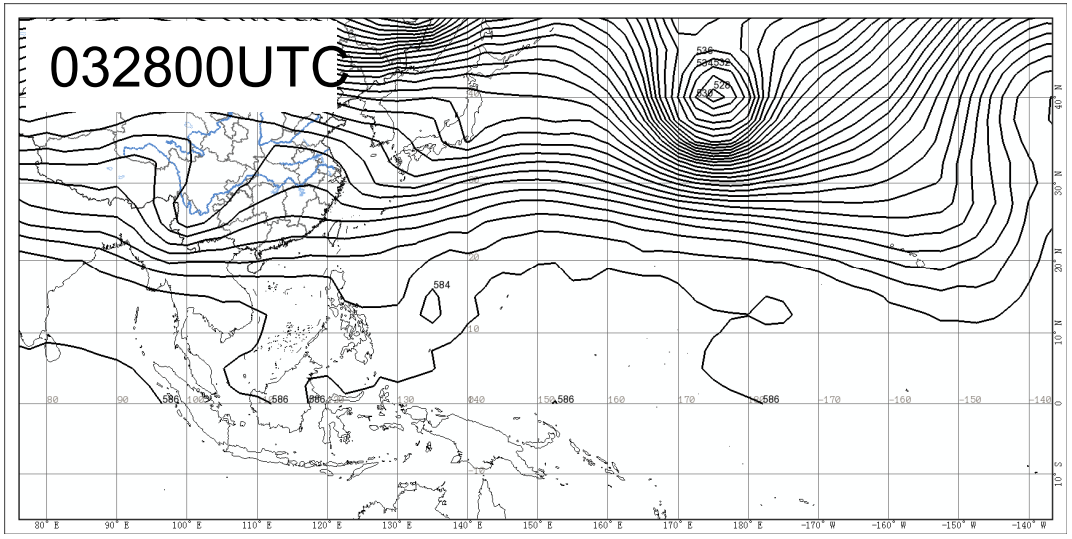




Wide ensemble spread for 586 dagpm on 500hPa.

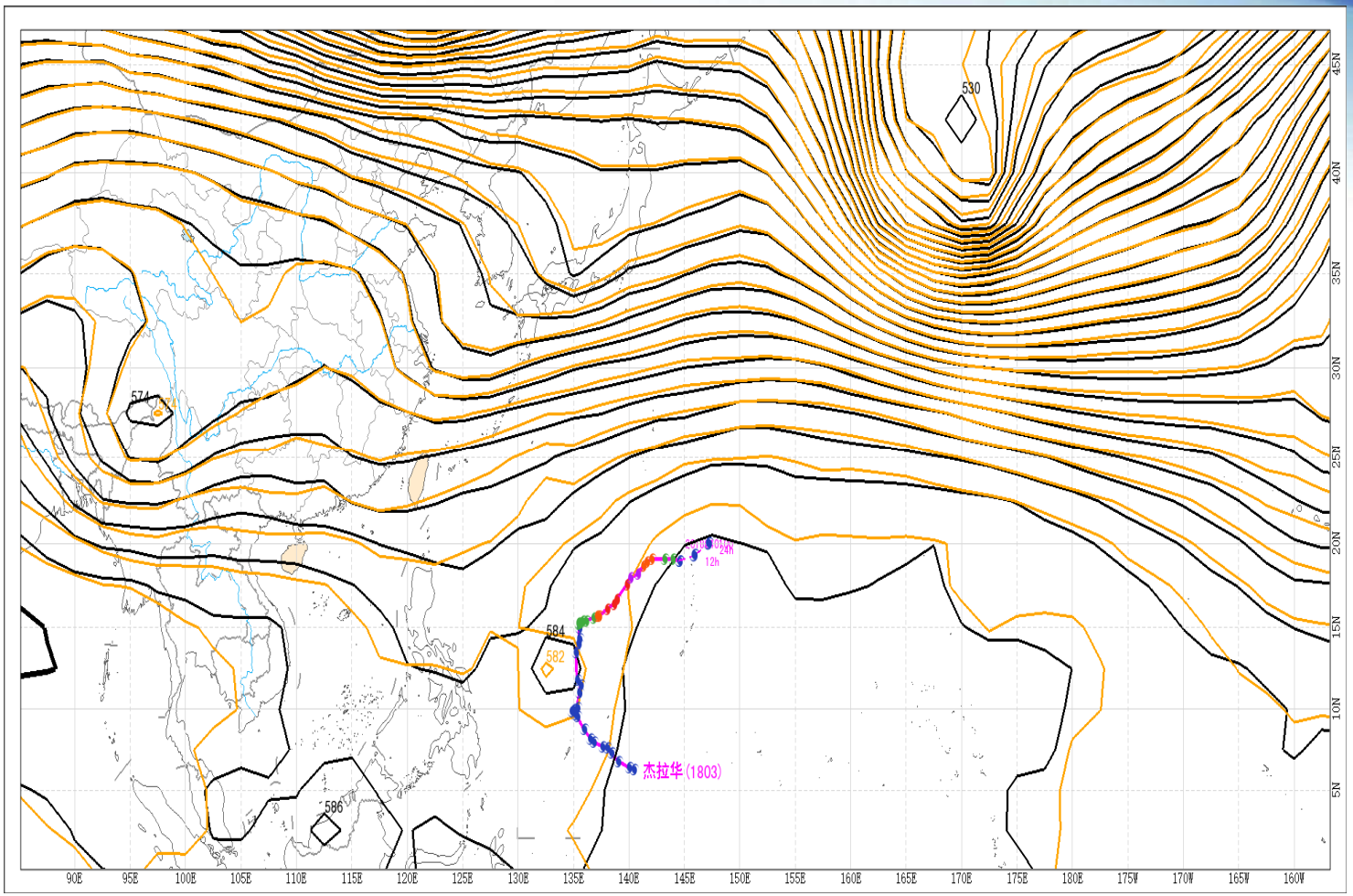






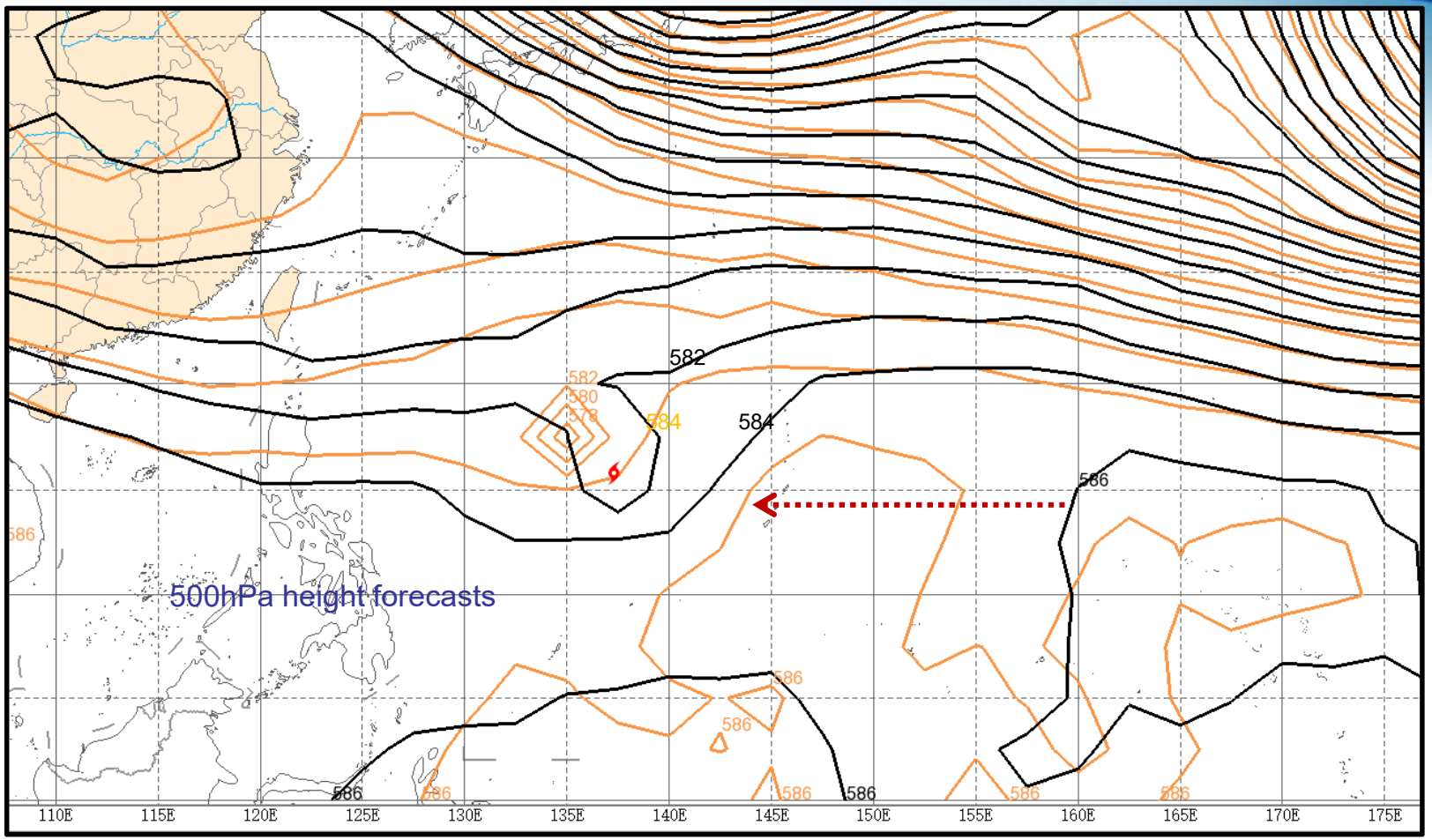
From 00UTC 26Mar. To 00UTC 27 Mar., steering flows very weak, leading to a looping track.

EC 500hPa



Orange lines: 24h 500hPa height forecasts initiated at 1200UTC 26 Mar. 2018
Black lines: 500hPa height analysis at 1200UTC 27 Mar. 2018

EC 500hPa



Orange lines: 72h 500hPa height forecasts initiated at 00UTC 27 Mar. 2018

Black lines: 500hPa height analysis at 00UTC 30 Mar. 2018

Conclusion:

1) Jelawat was a normal track TC, and situated in an environment of weak steering flows before curving to the north and northeast at very low latitude, resulting big track forecast errors.
2) NWP made west-biased forecasts for the Subtropical High, and forecasters could not make added-value prediction based on NWP.
3) Accurate SH forecast is still one of the challenges for NWP and operation forecasters.