



Weeks 2-3 Global Tropics Hazards Outlook

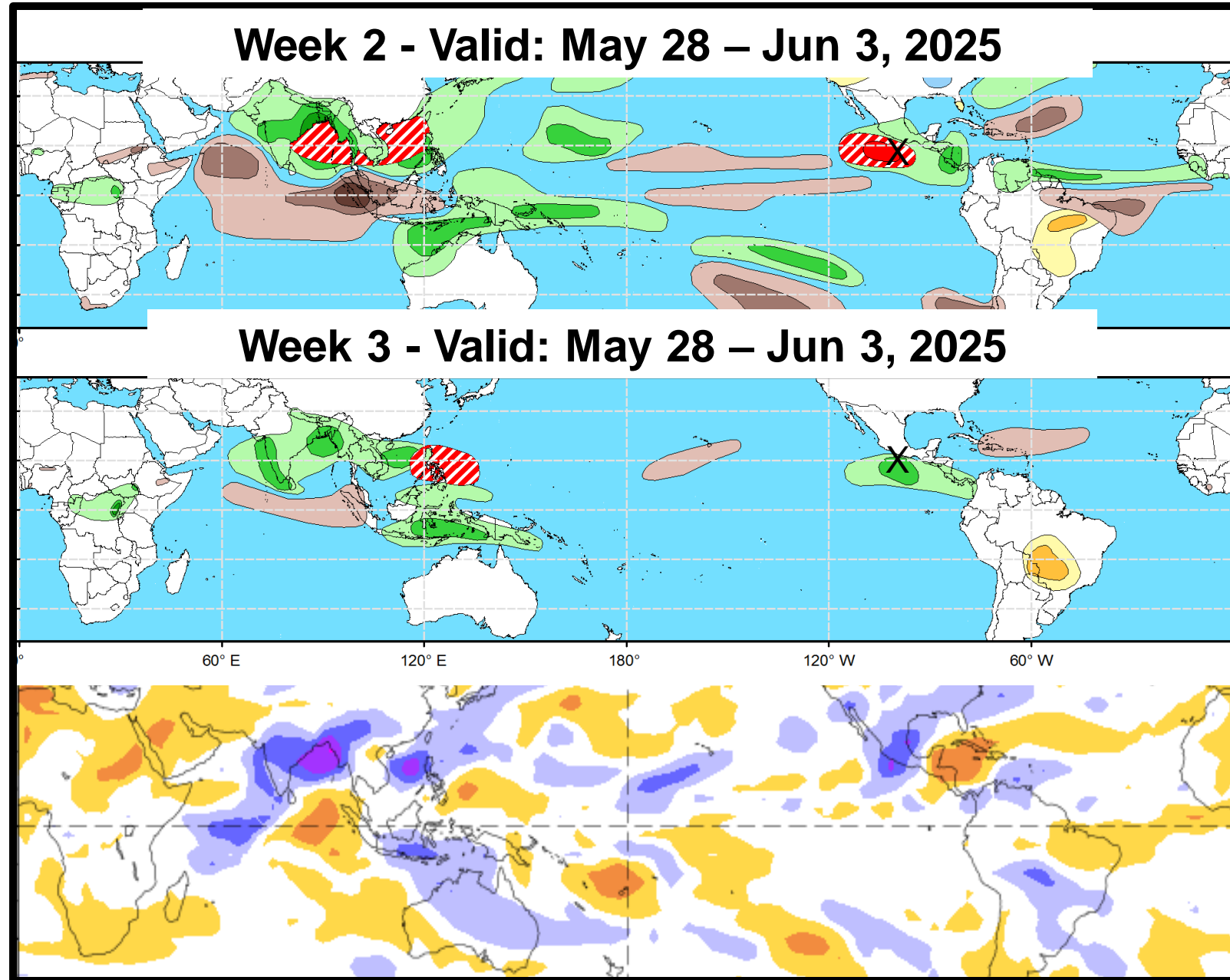
6/3/2025

Nick Novella

NWS / NCEP / Climate Prediction Center

Outlook Review: TC development & anomalous precipitation during the past week

- EPAC: TC Alvin (5/29)



Synopsis of Climate Modes:

ENSO: (May 8, 2025 Update) *next update on Thursday, Jun 12th*

- ENSO Alert System Status: Not Active
- ENSO-neutral is favored through the Northern Hemisphere summer 2025 (74% chance during Jun-Aug), with chances exceeding 50% through Aug-Oct.

MJO and other subseasonal tropical variability:

- Latest observations continue to point to disorganized MJO activity, with the RMM signal weakly meandering over the Maritime Continent during the past few weeks.
- Dynamical models continue to advertise a reorganizing MJO over the Pacific during the next few weeks, but some models fail to maintain eastward propagation and its coherence over the Western Hemisphere.
- Given these renewed subseasonal activity favored, there are increased chances for tropical cyclone development in the eastern Pacific with genesis possible in the Atlantic basin. Conversely, the suppressed phase of the MJO overspreading the eastern Hemisphere favors decreasing chances for development in the northern Indian Ocean and western Pacific.

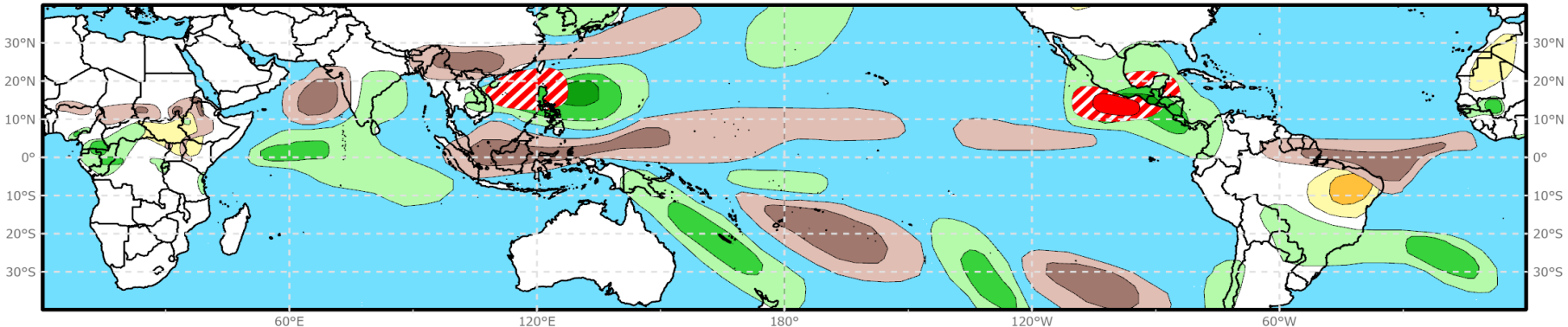


Global Tropics Hazards Outlook

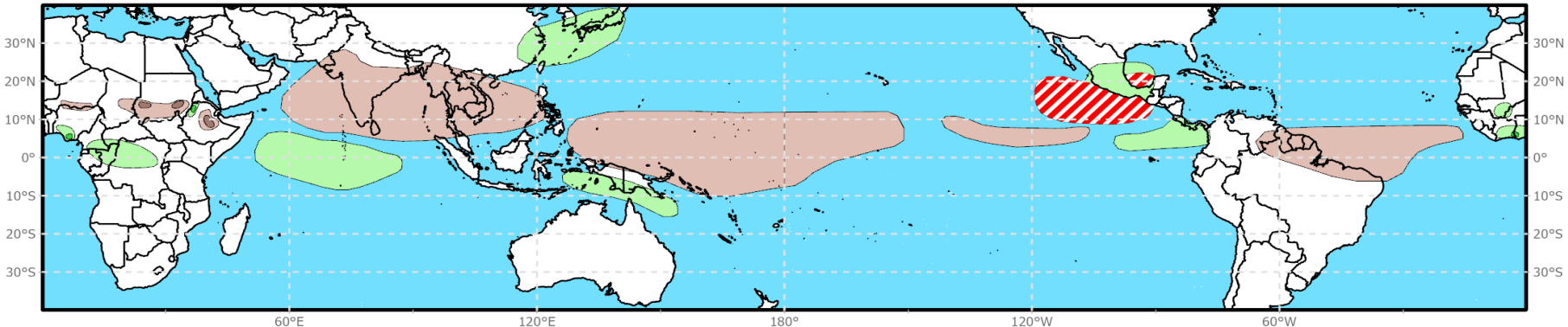
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Week 2 - Valid: Jun 11, 2025 - Jun 17, 2025



Week 3 - Valid: Jun 18, 2025 - Jun 24, 2025



**Tropical Cyclone (TC)
Formation Probability**



>20% >40% >60%

Tropical Depression (TD)
or greater strength

**Above-Average
Rainfall Probability**



>50% >65% >80%

Weekly total rainfall in the
Upper third of the historical range

**Below-Average
Rainfall Probability**



>50% >65% >80%

Weekly total rainfall in the
Lower third of the historical range

**Above-Average
Temperatures Probability**



>50% >65% >80%

7-day mean temperatures in the
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Temperatures Probability**



>50% >65% >80%

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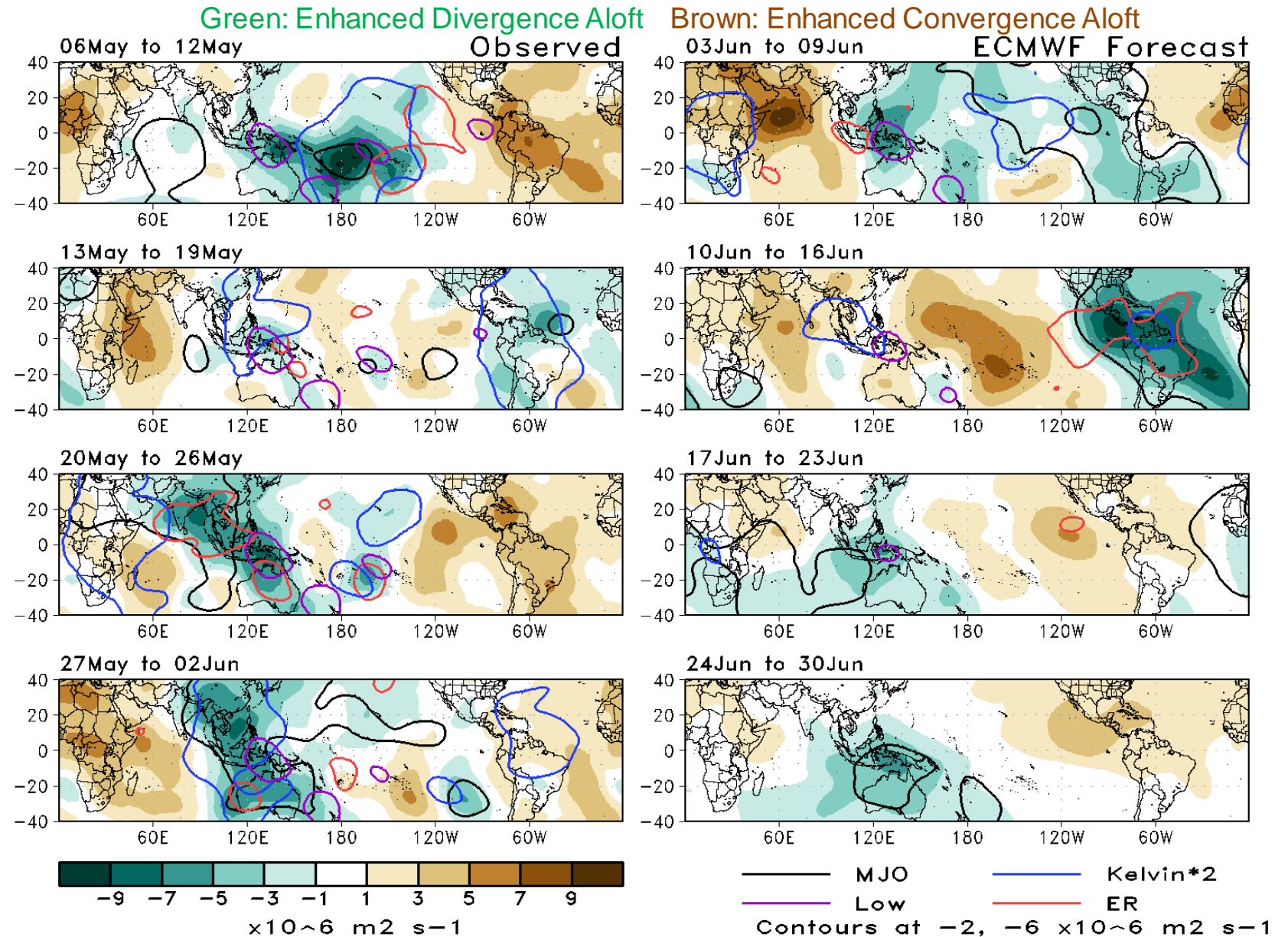
Issued: 06/03/2025

Forecaster: Novella

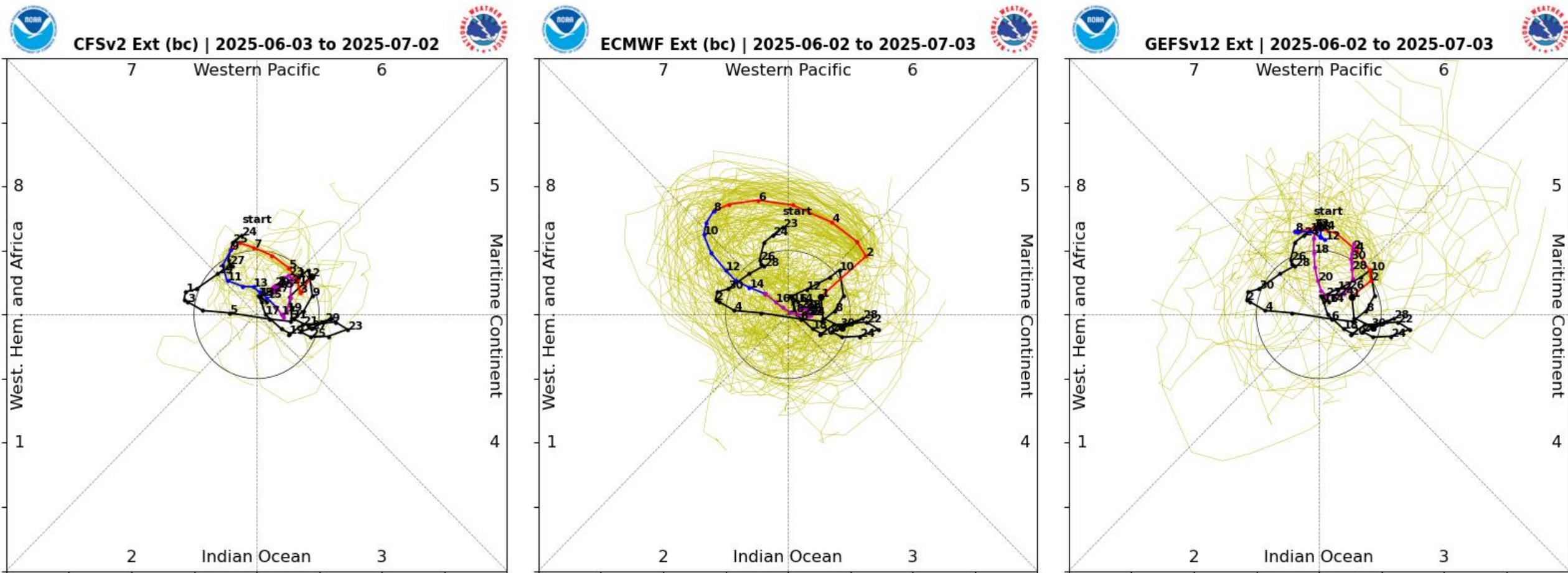
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Consult your local responsible forecast agency.**

200-hPa Velocity Potential Anomaly Maps:

- Observations continue show a disorganized spatial pattern, with high and low frequency variability dominating the tropics during May and entering June.
- Consistent with previous model runs, the ECMWF favors more of wave-1 **MJO** pattern taking shape, where the intersection of both **Kelvin** and **Rossby** wave activity over the tropical America leads to strongly enhanced divergence aloft during week-2.
- Later in June, the enhanced **MJO** phase reenters the eastern Hemisphere, but remains at odds with the GEFS forecasts (not pictured)

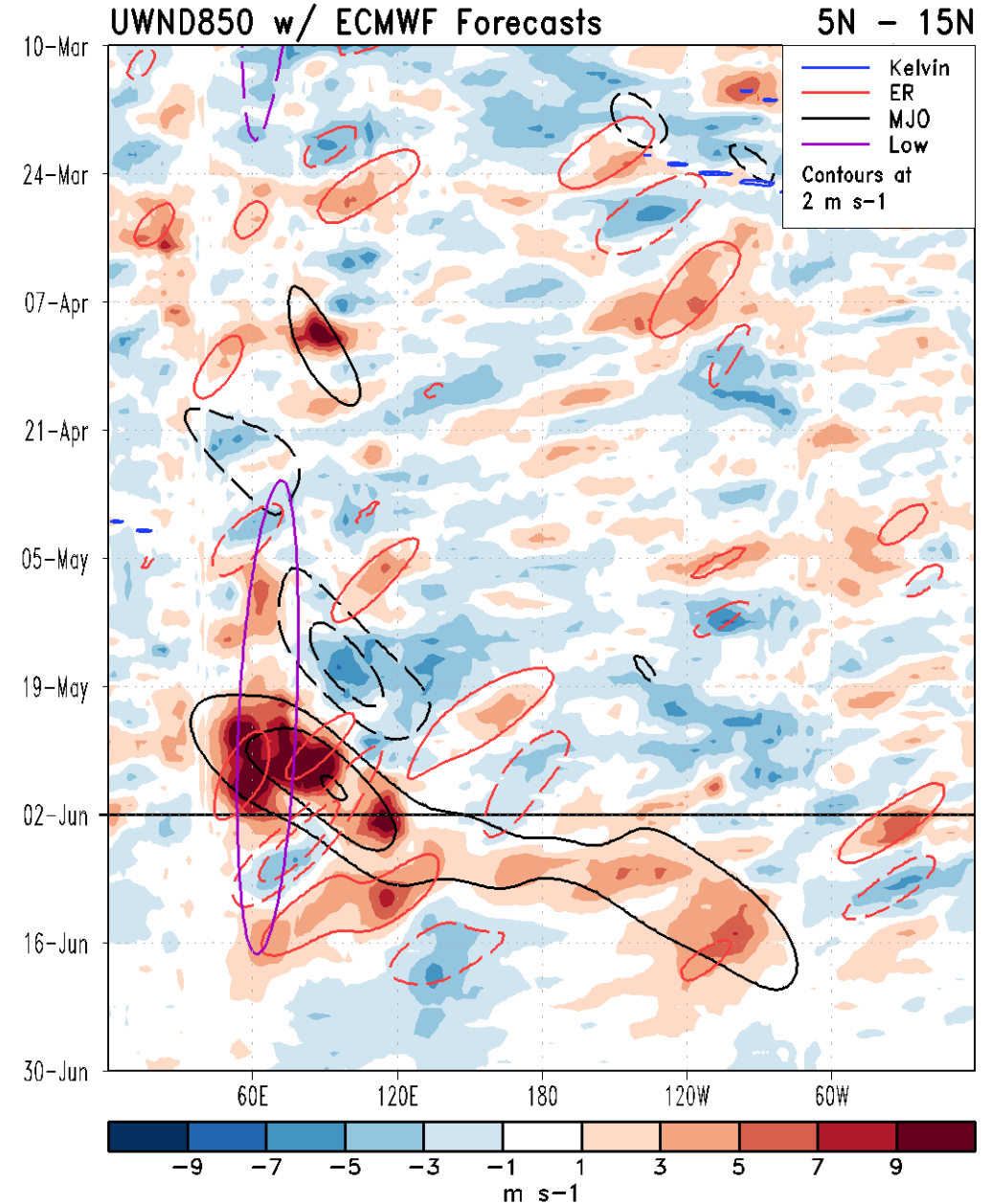
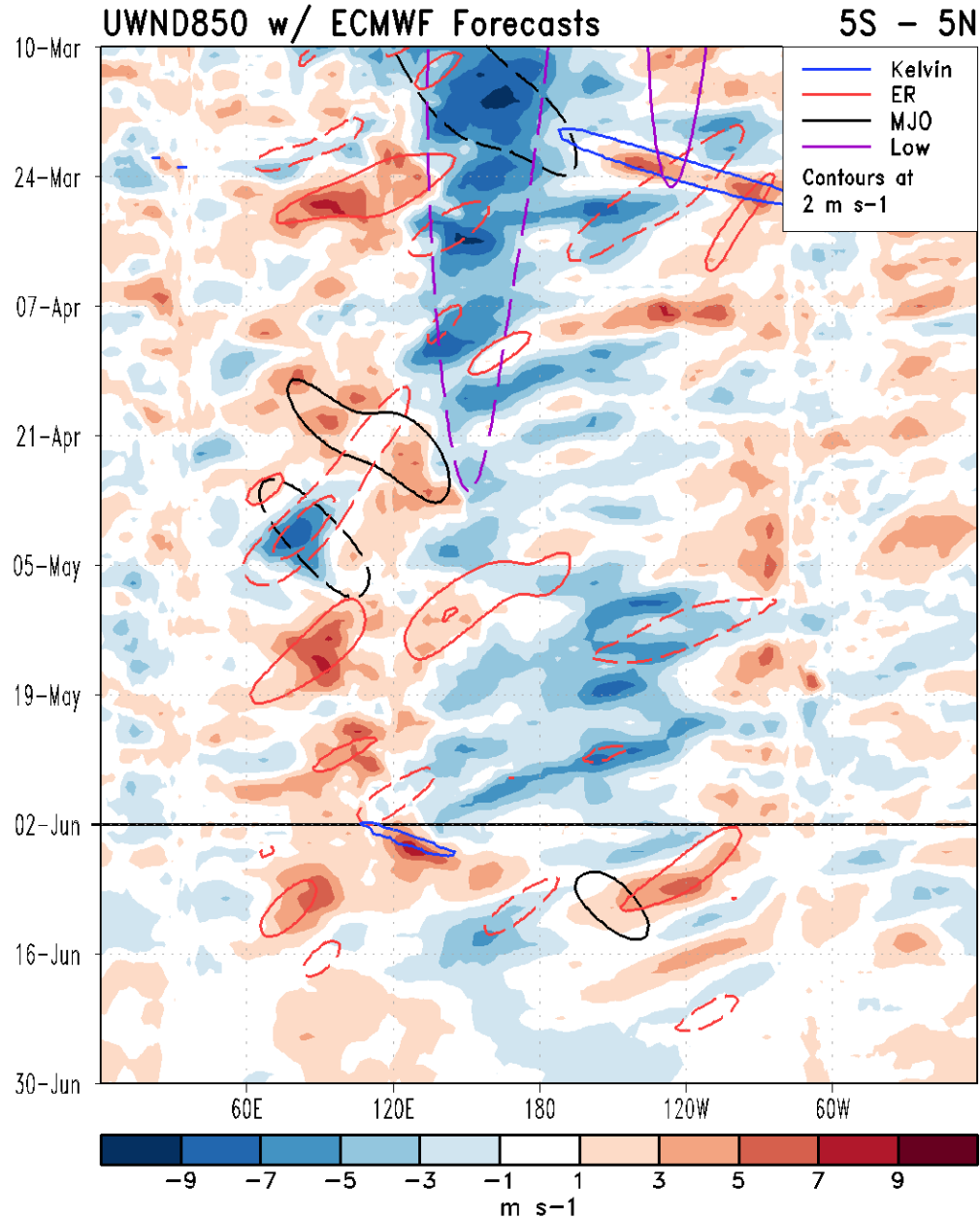


RMM Index Observations & Forecasts:



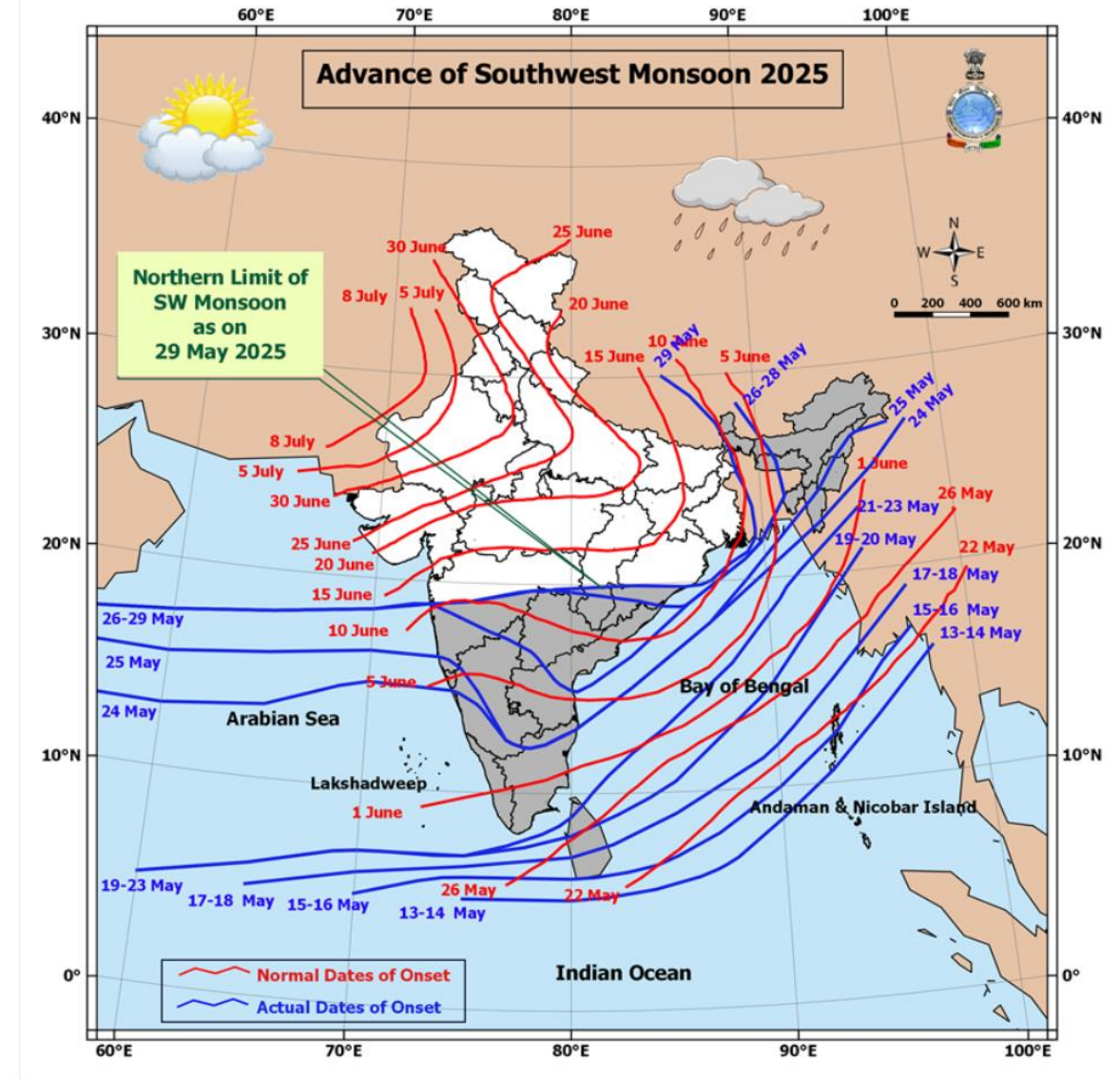
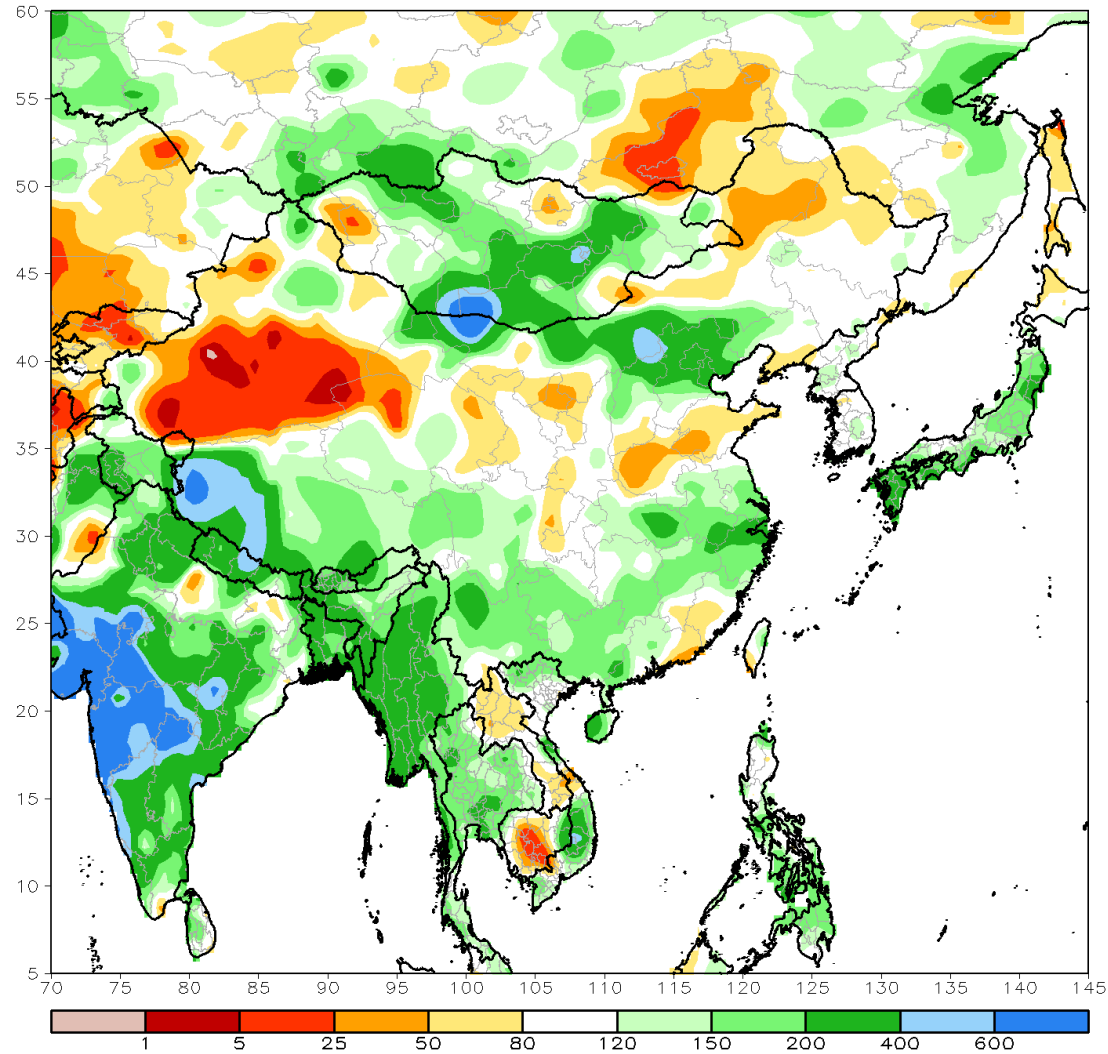
- There is growing support in the RMM forecasts for renewed MJO activity during the next few weeks.
- The ECMWF is the most bullish with the subseasonal potential, featuring a tight clustering of ensemble members at a higher amplitude, whereas the GEFS and CFSv2 struggle to fully propagate the signal into phases 8 and 1.

Lower-level Zonal Wind Anomaly Time/Lon Plots:



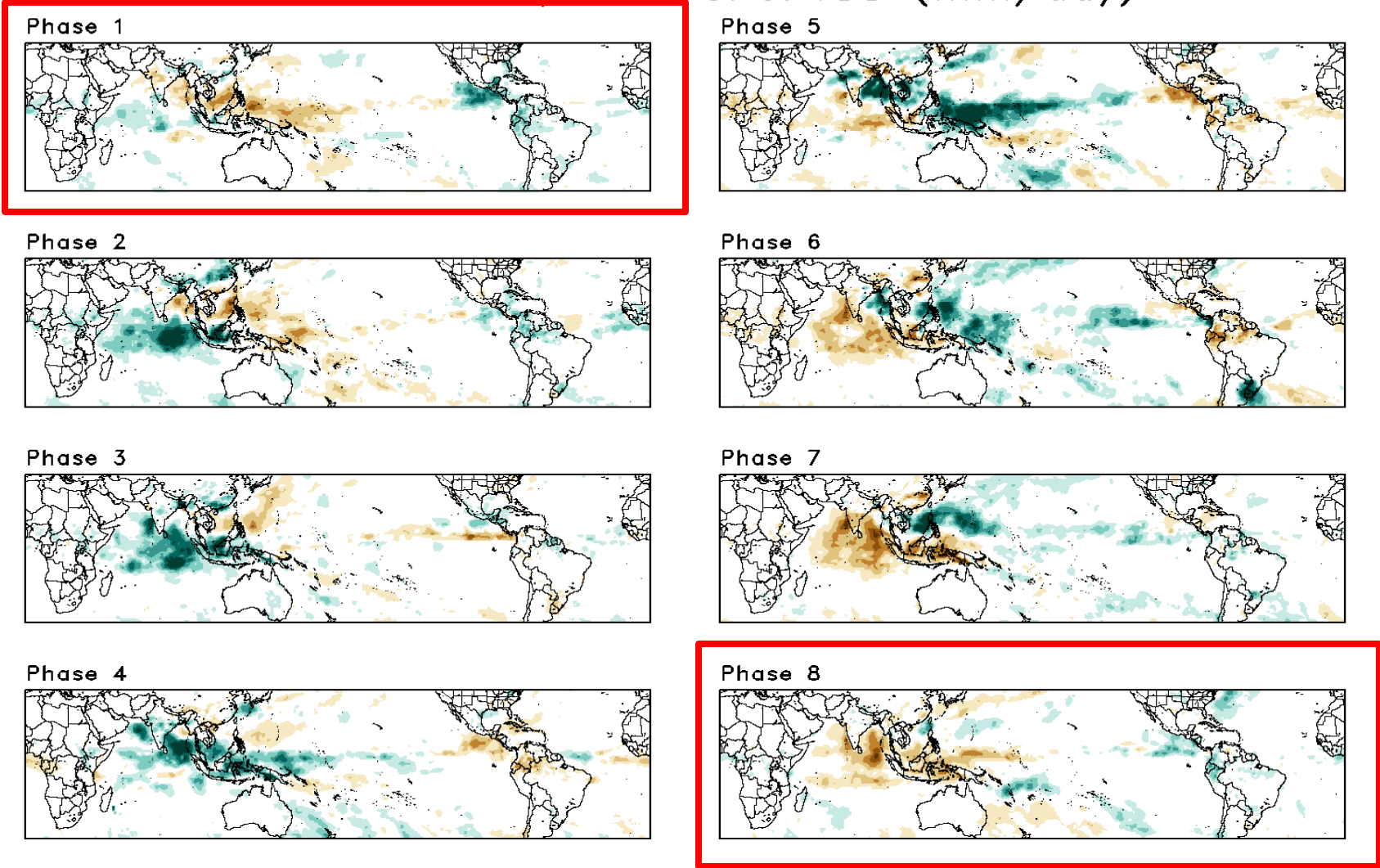
CPC Unified Gauge 30-Day Percent of Normal Rainfall (%)

Period: 03May2025 - 01Jun2025



Historical Precipitation Anomalies By MJO Phase:

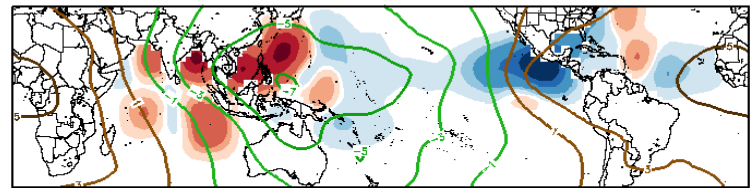
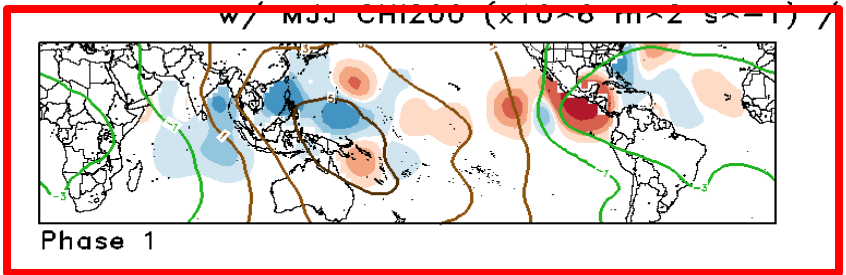
MJJ MJO Composite: GPCP1DD (mm/day)



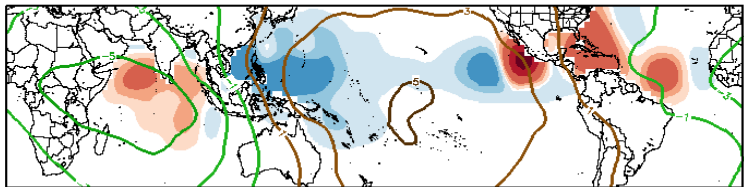
Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

MJJ MJO Composite: Mean TC Origin Density Anomaly (#TCs/277km²*100)

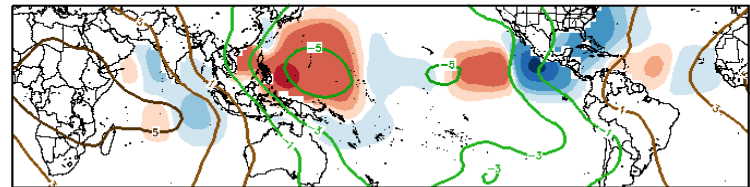
w/ MJO CH200 ($\times 10^{-6} \text{ m}^2 \text{ s}^{-1}$) / Contours every $2 \times 10^{-6} \text{ m}^2 \text{ s}^{-1}$



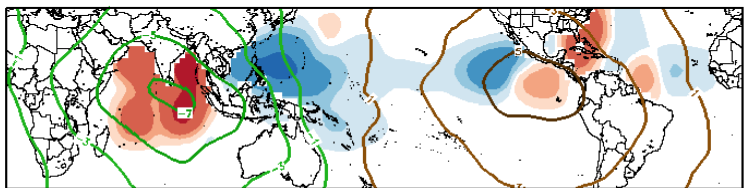
Phase 5



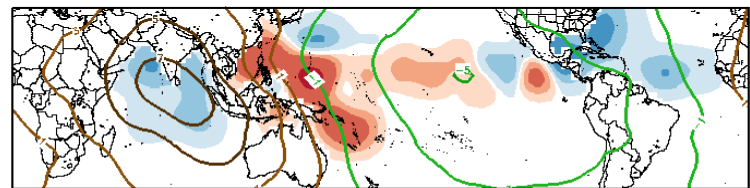
Phase 2



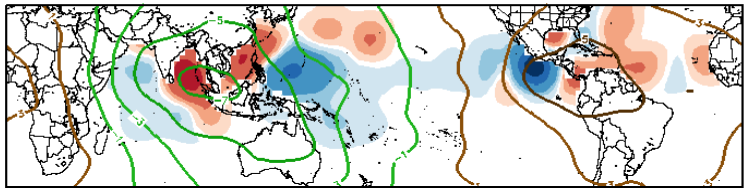
Phase 6



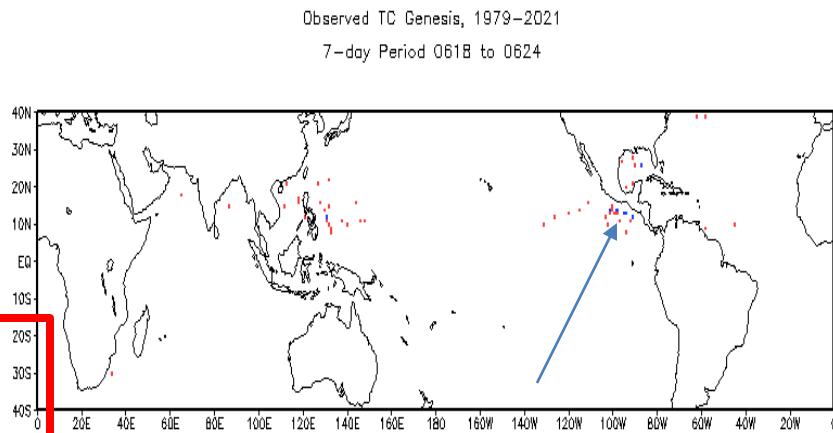
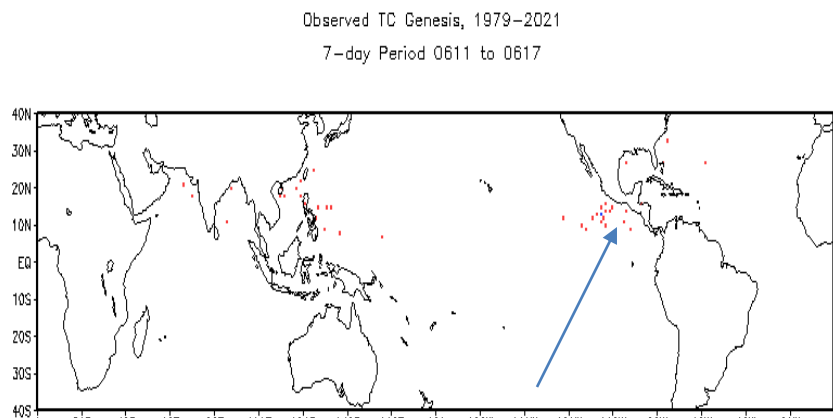
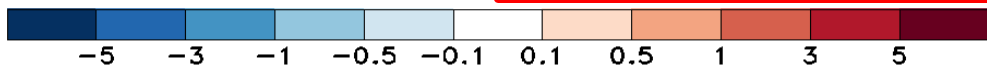
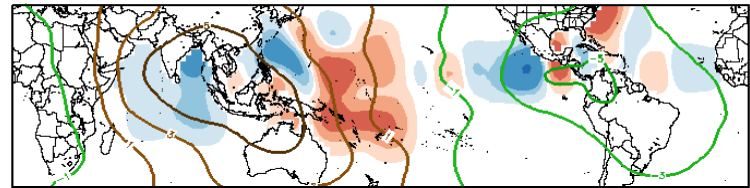
Phase 3



Phase 7

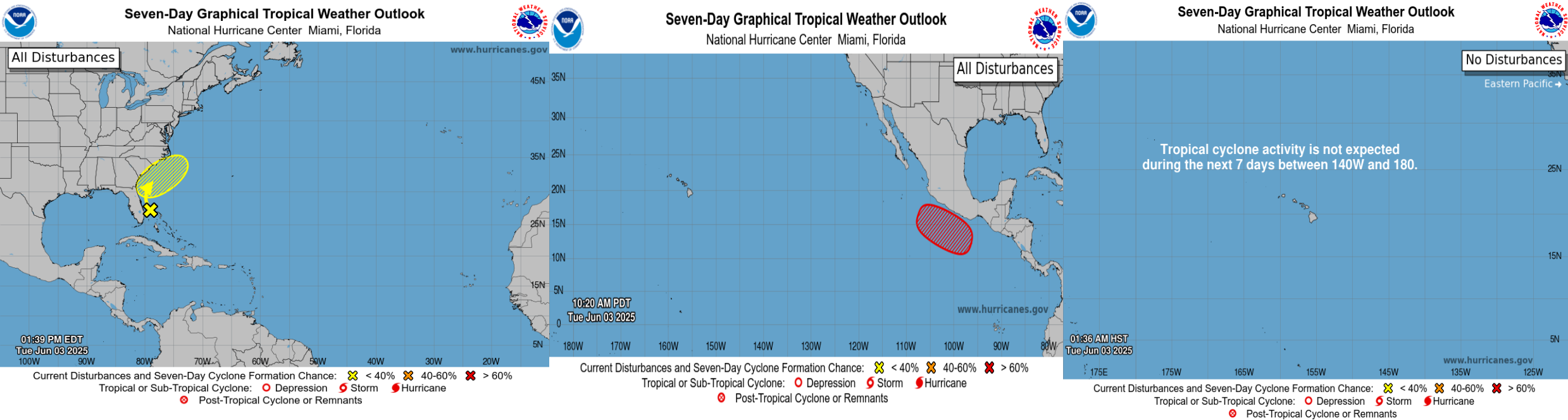


Phase 4



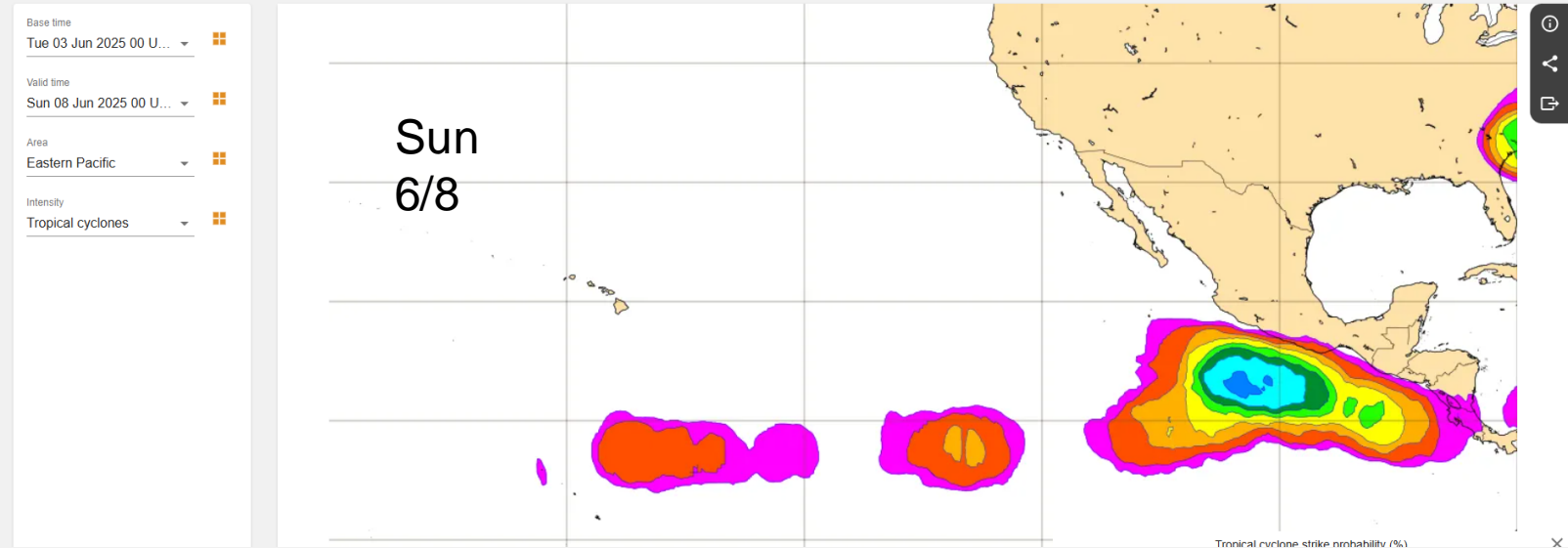
Experimental

Tropical Cyclone Monitoring/Forecast: NHC / CPHC



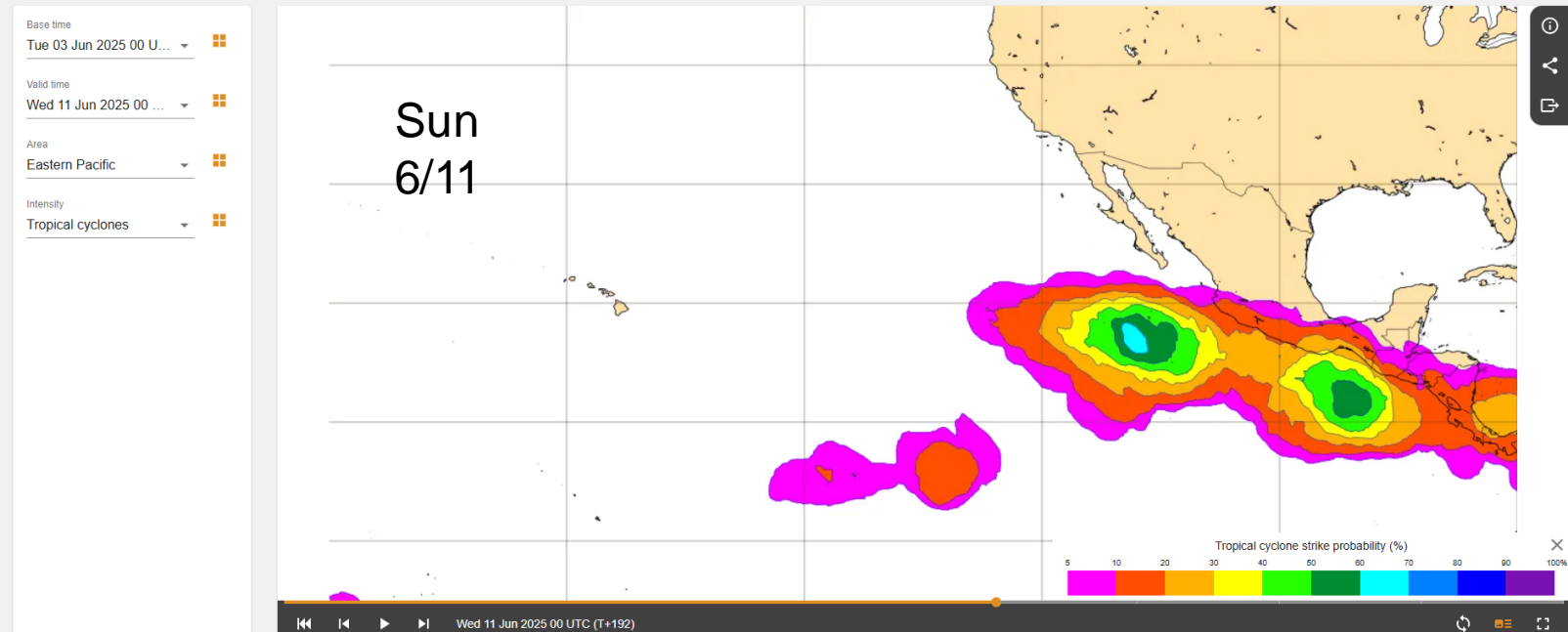
Tropical cyclone activity (Including genesis)

Tropical cyclone activity (including genesis)



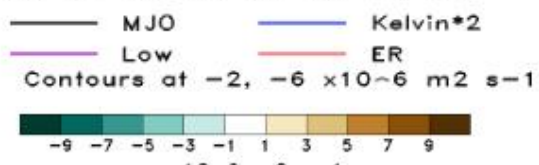
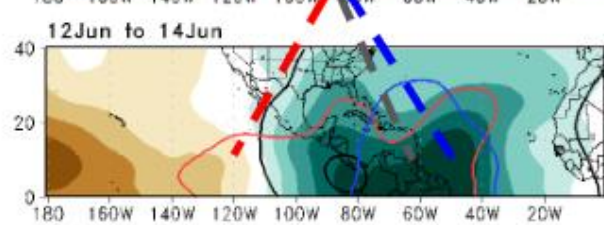
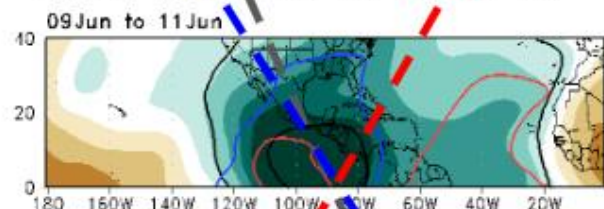
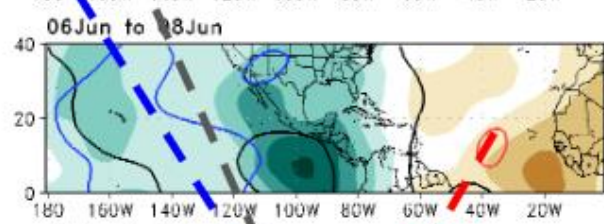
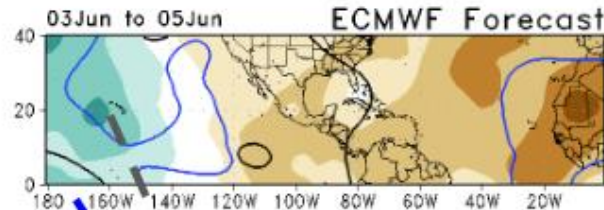
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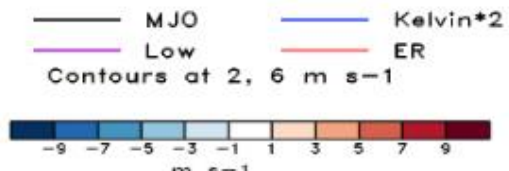
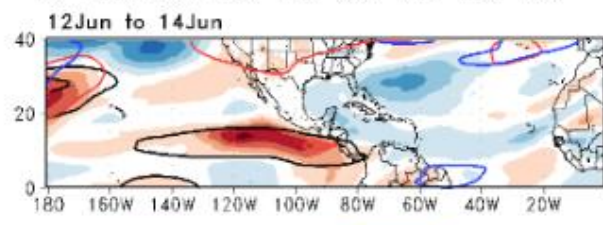
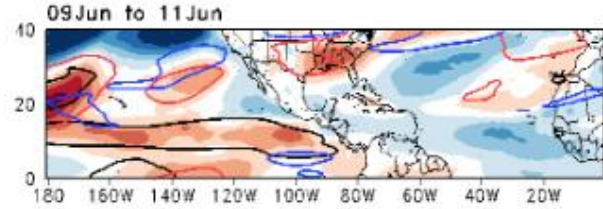
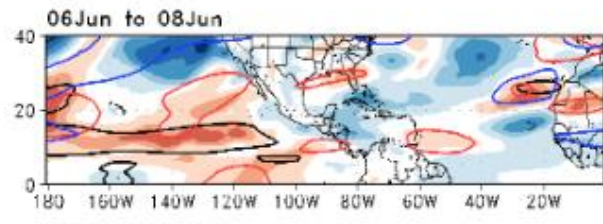
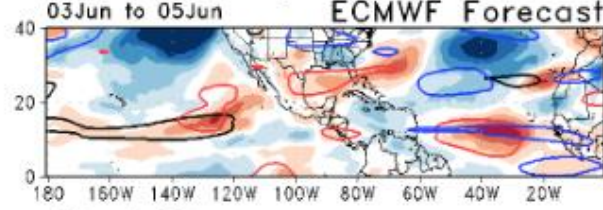
CHI200 3-Day Means

ECMWF Forecast



UWIND850 3-Day Means

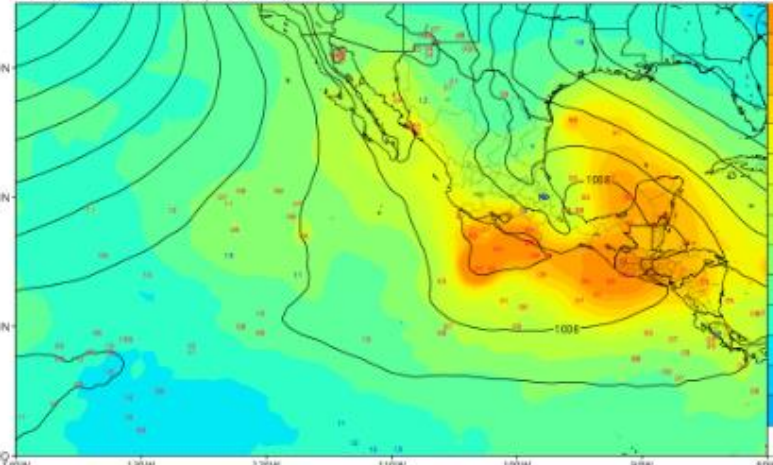
ECMWF Forecast



GEFS
12z 6/13

ECENS
12z 6/13

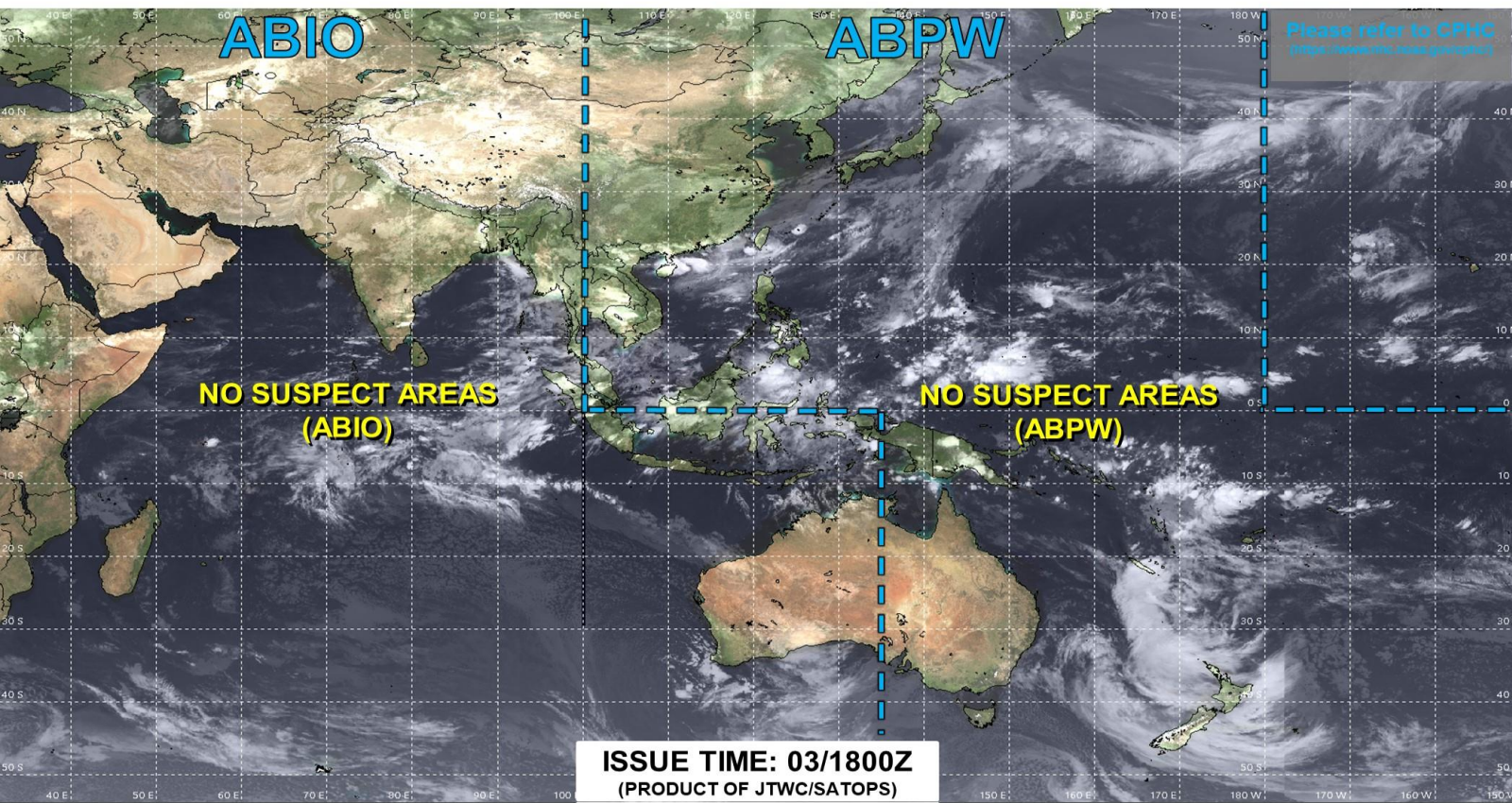
GEFS Mean MSLP (mb), Ensemble Member Pressure Centers (Low: red | High: blue), & Normalized Spread (#)



Tropical Cyclone Monitoring/Forecast: JTWC



JOINT TYPHOON WARNING CENTER



LOW

TC development unlikely within 24 hours

MEDIUM

TC development likely, but expected to occur beyond 24 hours

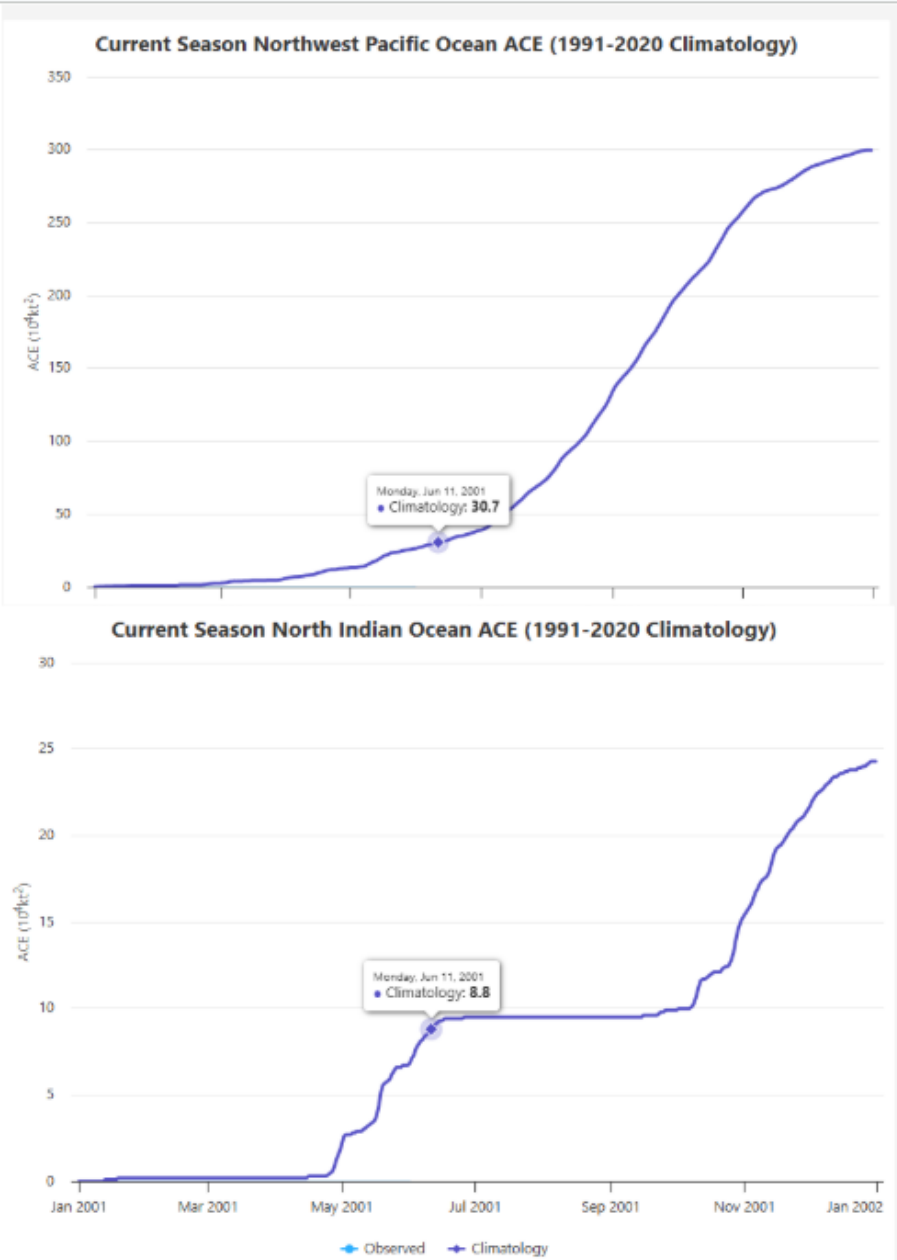
HIGH

TC development likely within 24 hours (Reference TCFA)

SUB TROPICAL

Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

Tropical Cyclone (Reference Warning)



Base time

Tue 03 Jun 2025 00 U...

Valid time

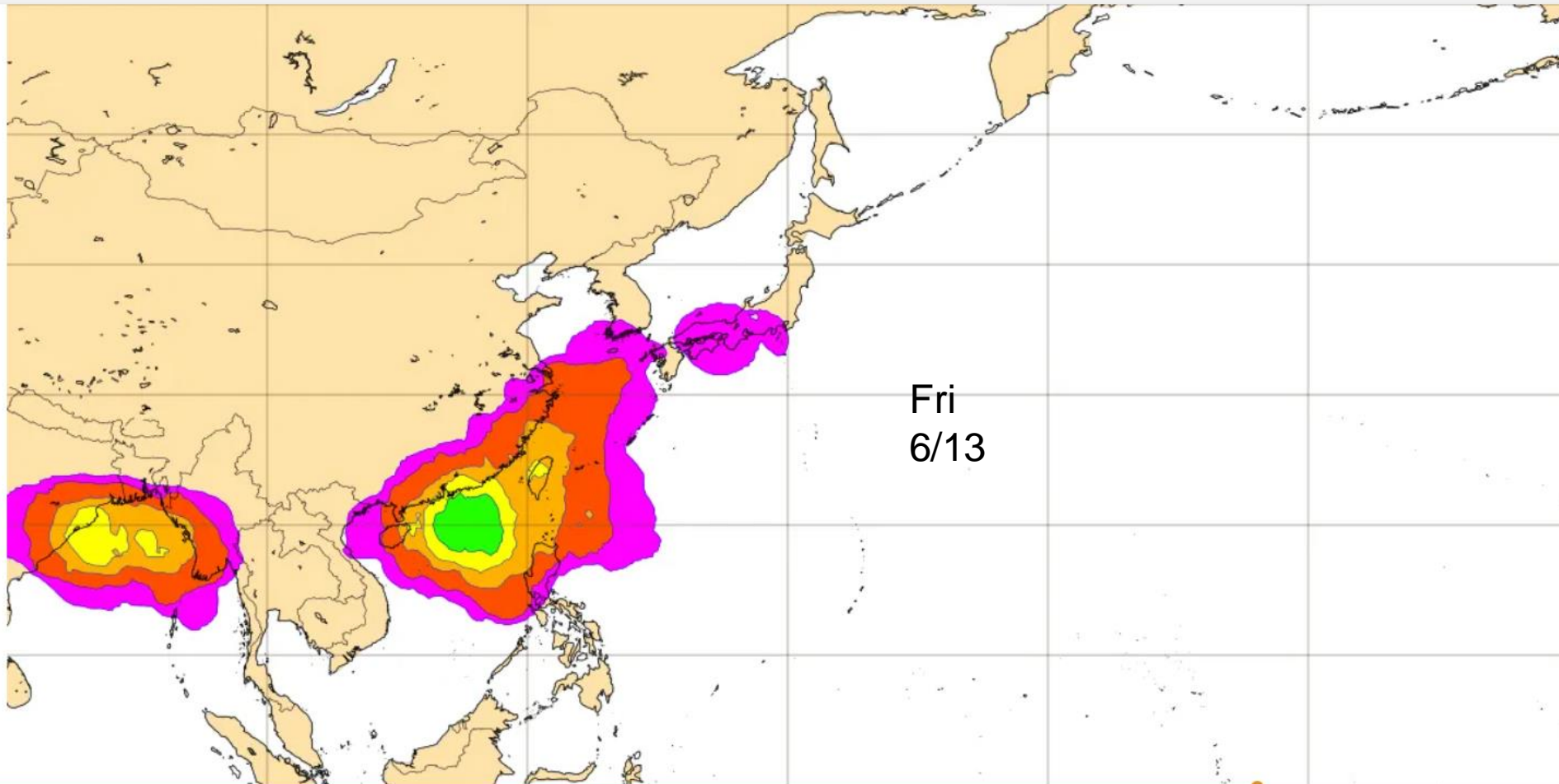
Fri 13 Jun 2025 00 UT...

Area

Western North Pacific

Intensity

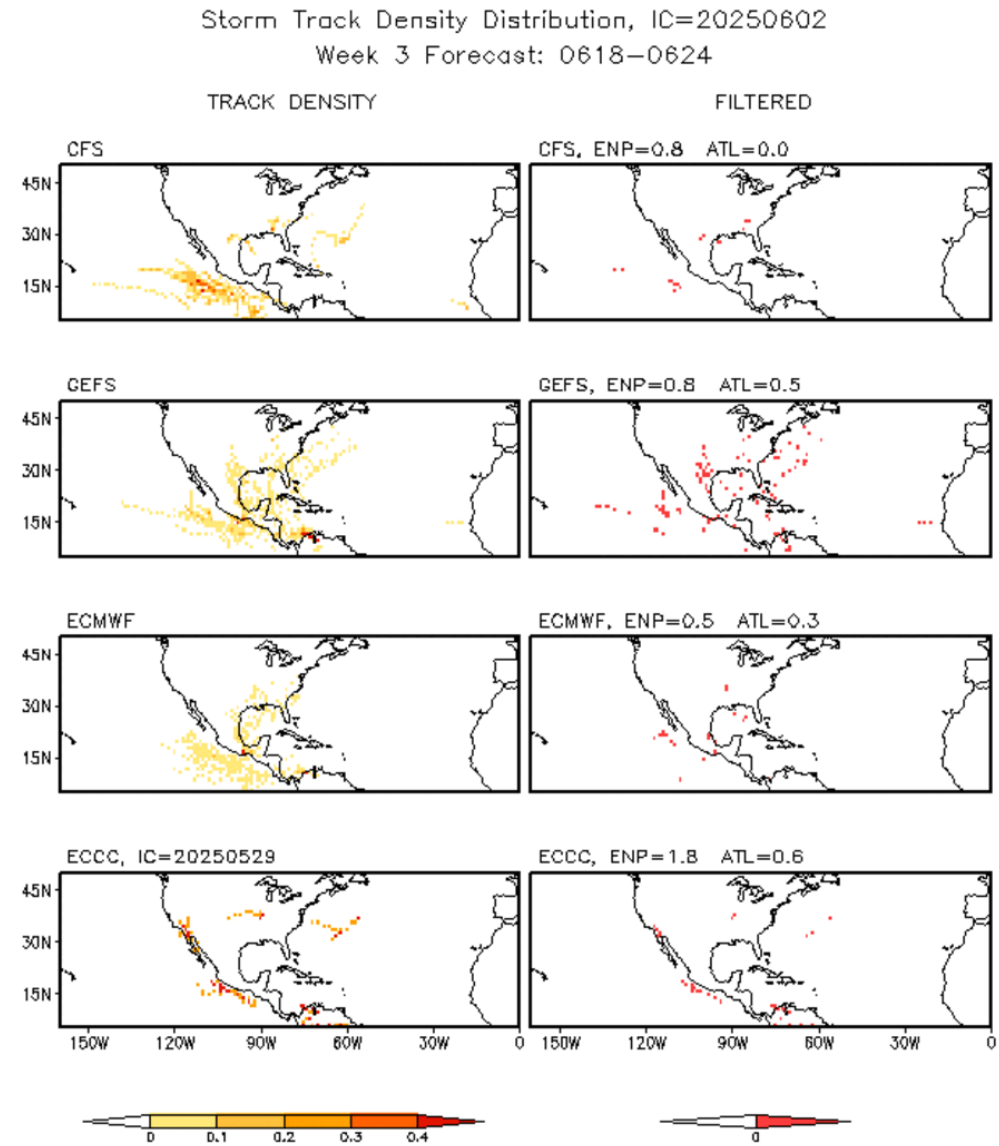
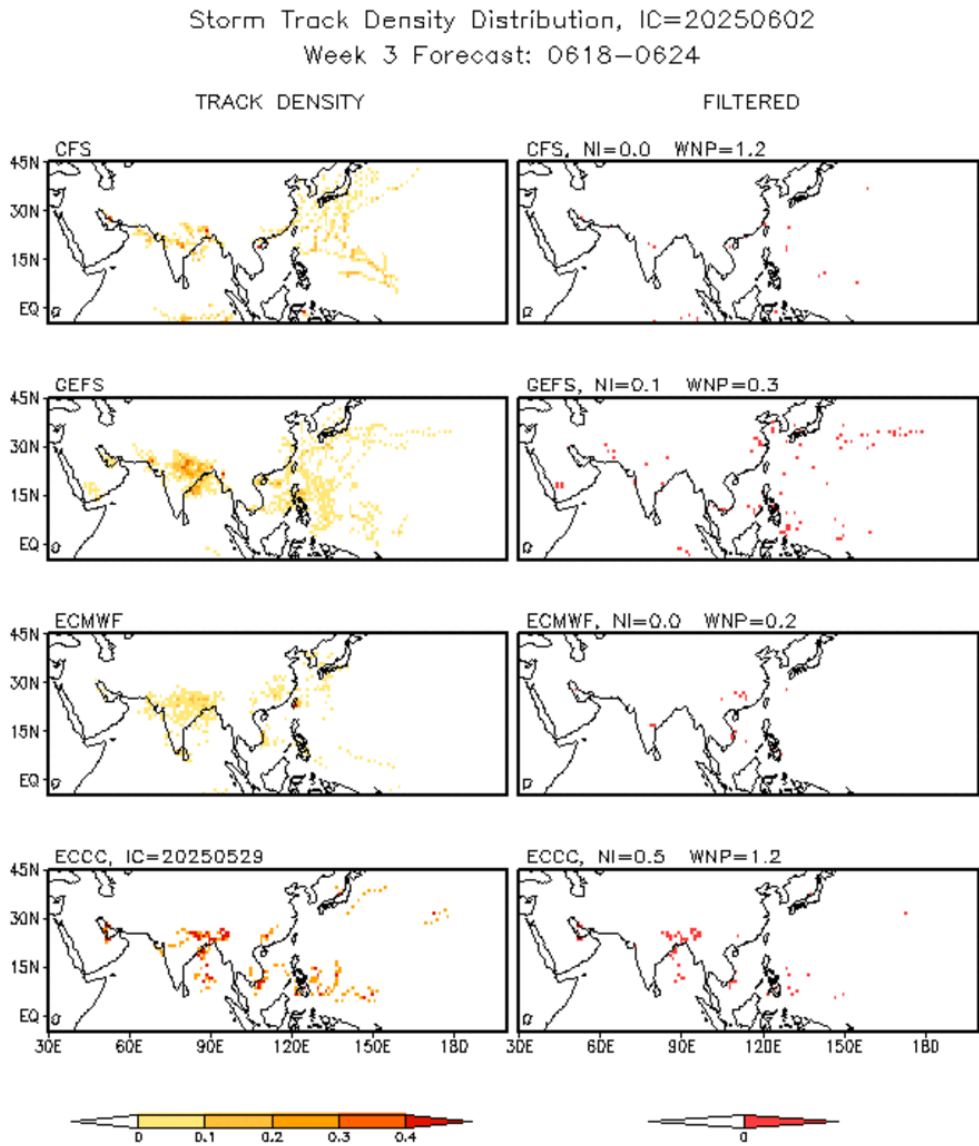
Tropical cyclones



Fri 13 Jun 2025 00 UTC (T+240)

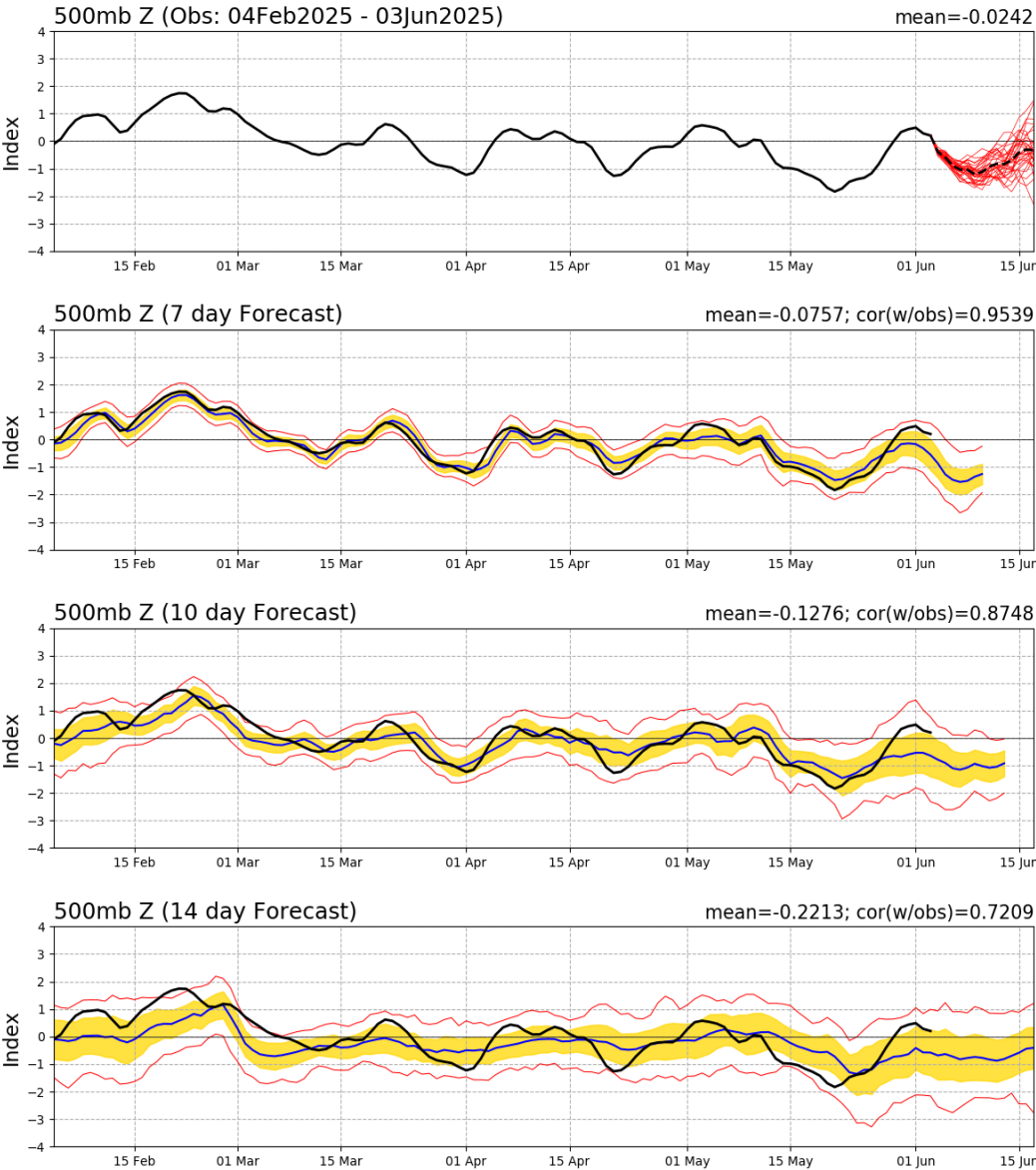


Multi-Model TC Track Densities: Week-3

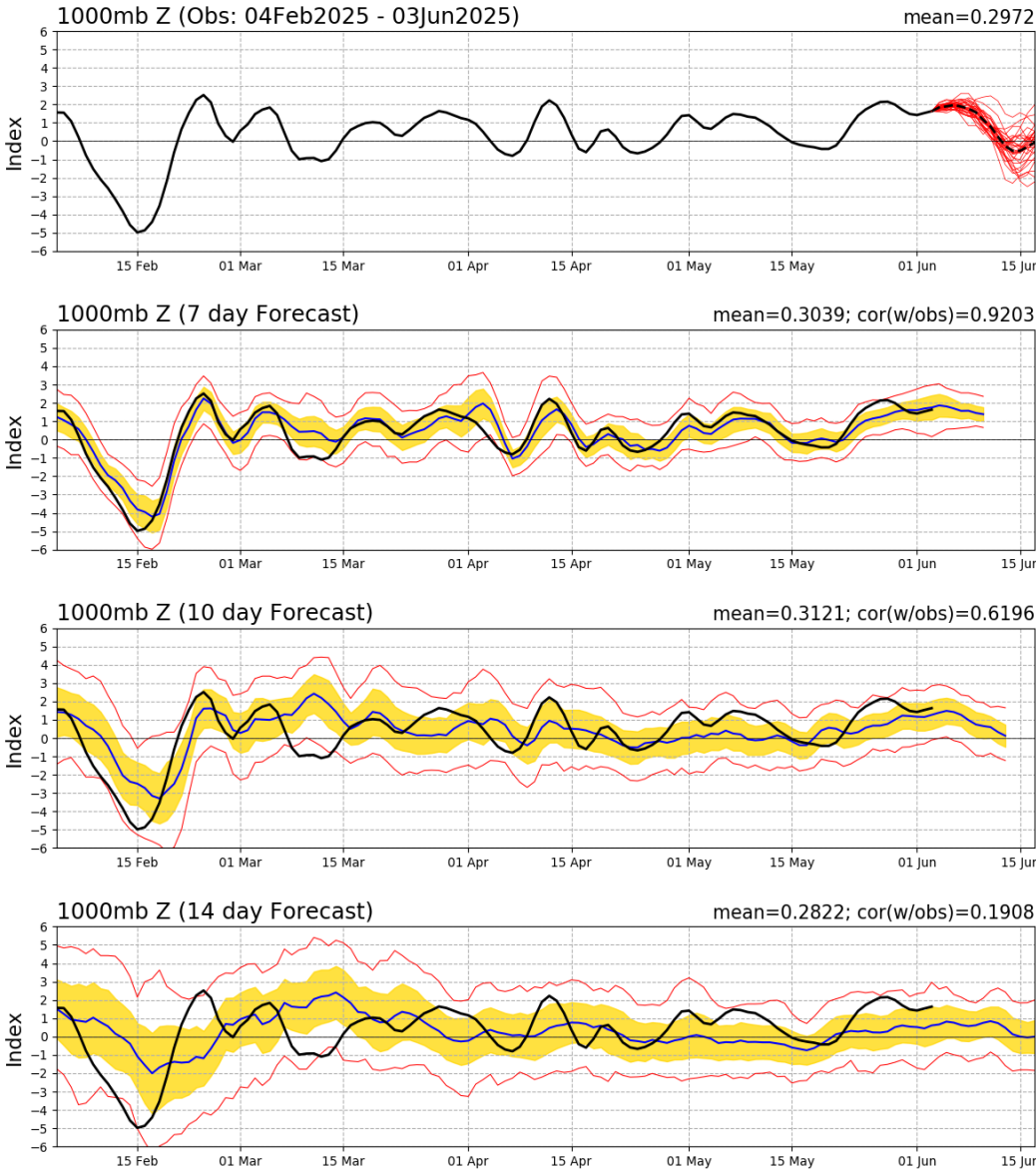


Teleconnection Indices: PNA / AO:

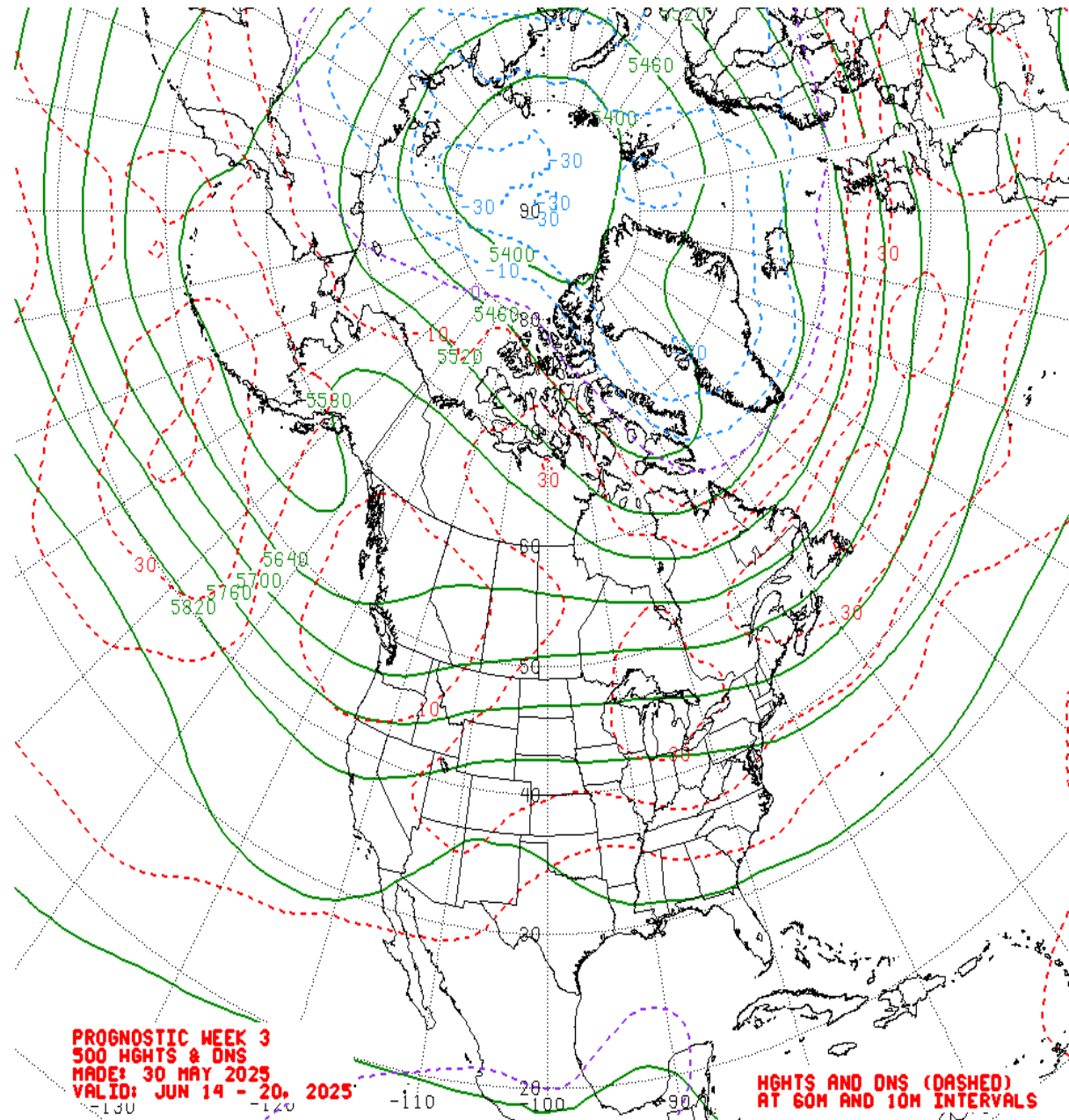
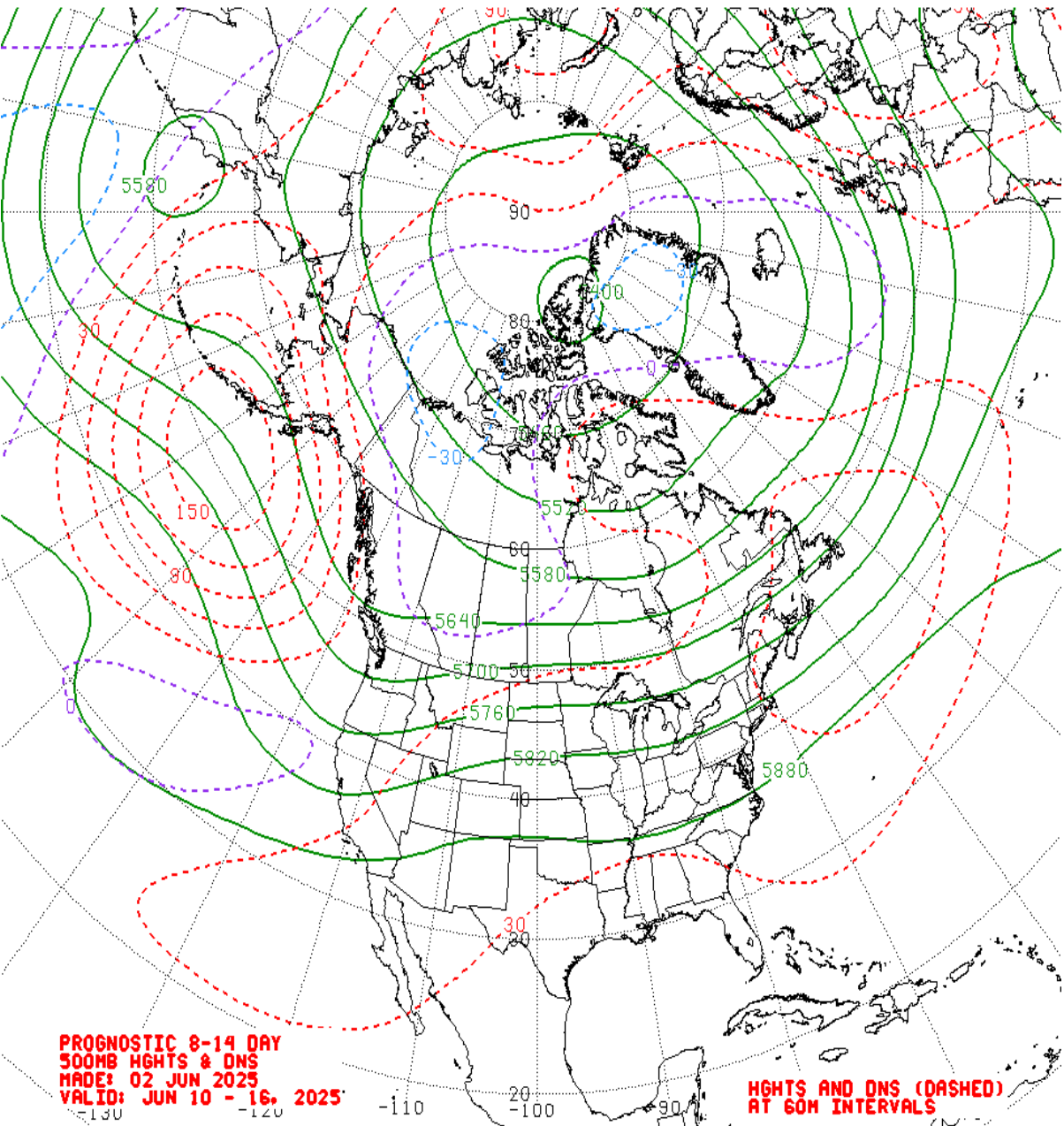
PNA Index: Observed & GEFS Forecasts



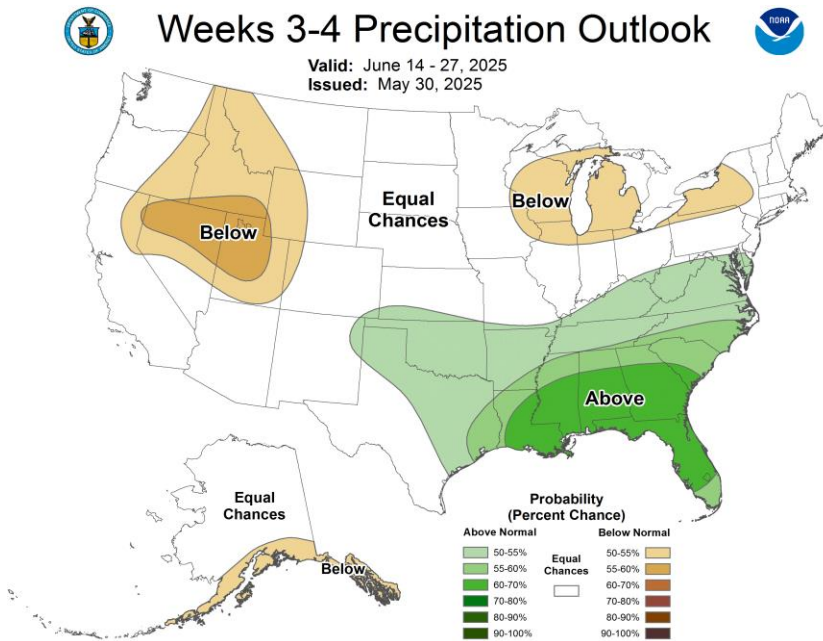
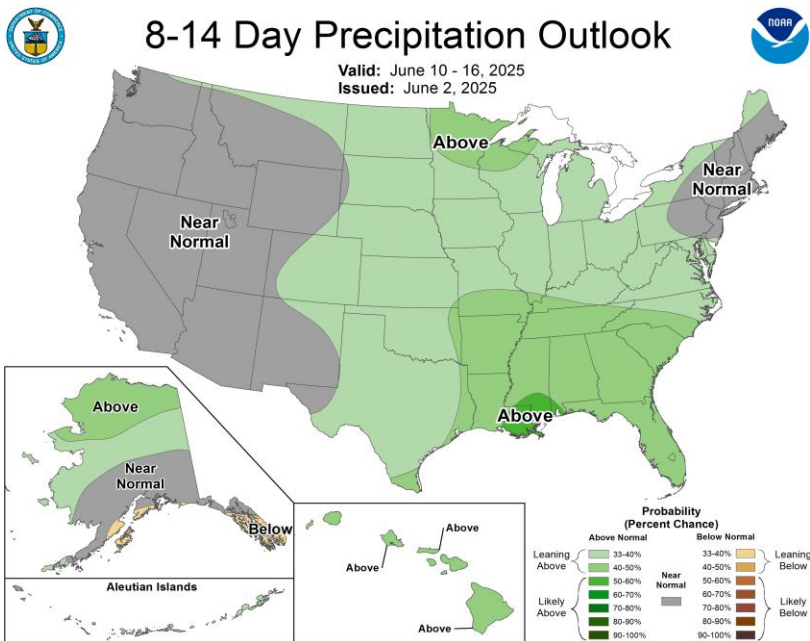
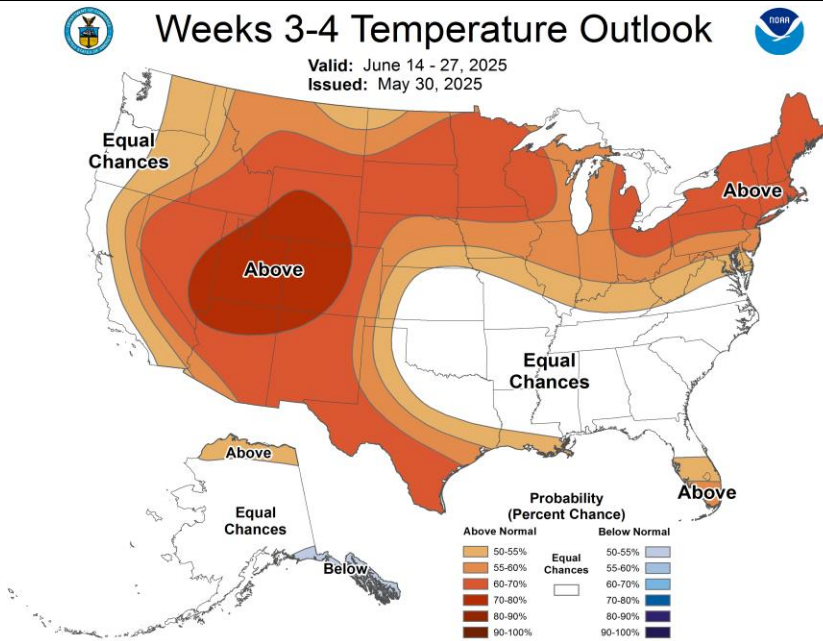
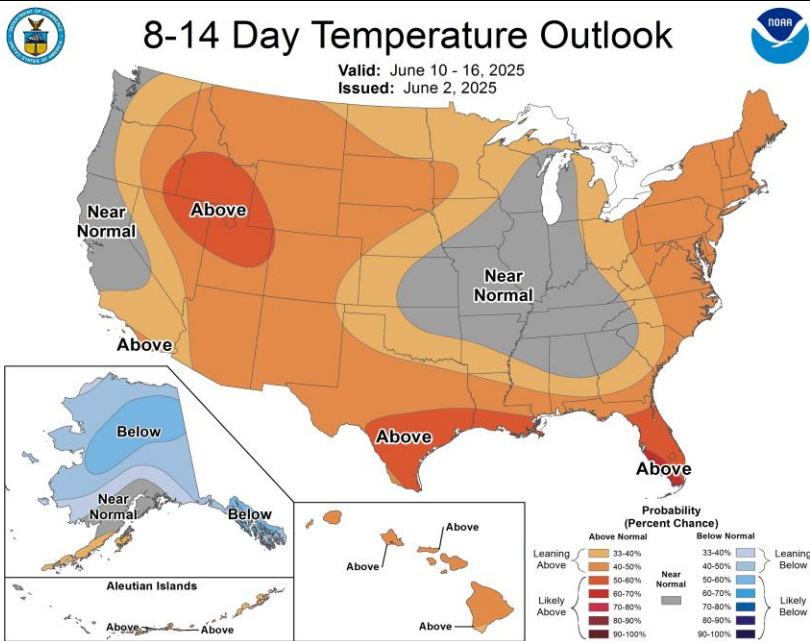
AO Index: Observed & GEFS Forecasts



Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



Official Temperature & Precipitation Forecasts:



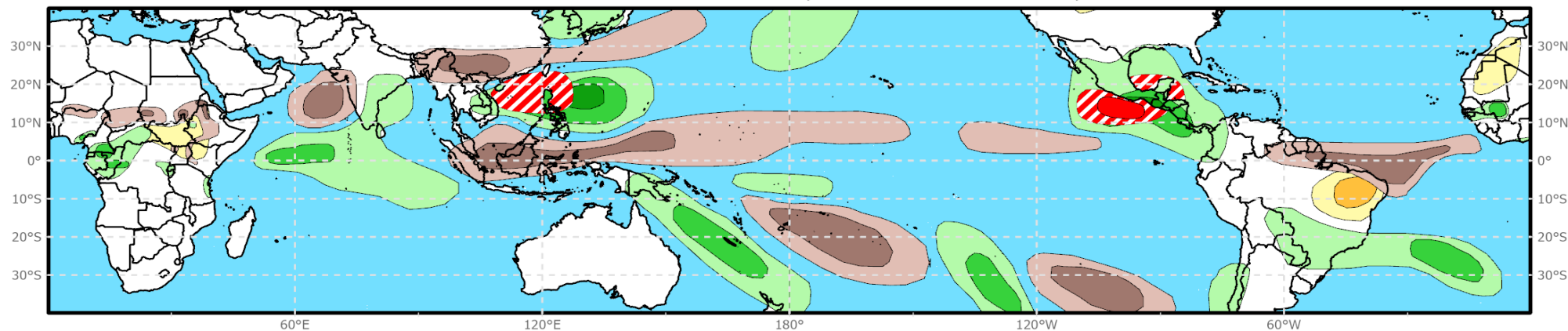


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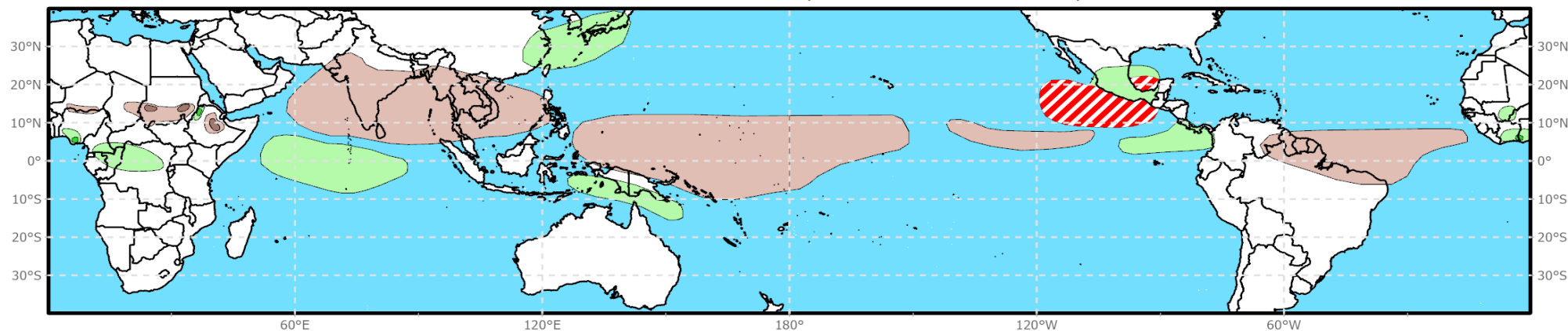
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