



Weeks 2-3 Global Tropics Hazards Outlook

4/15/2025

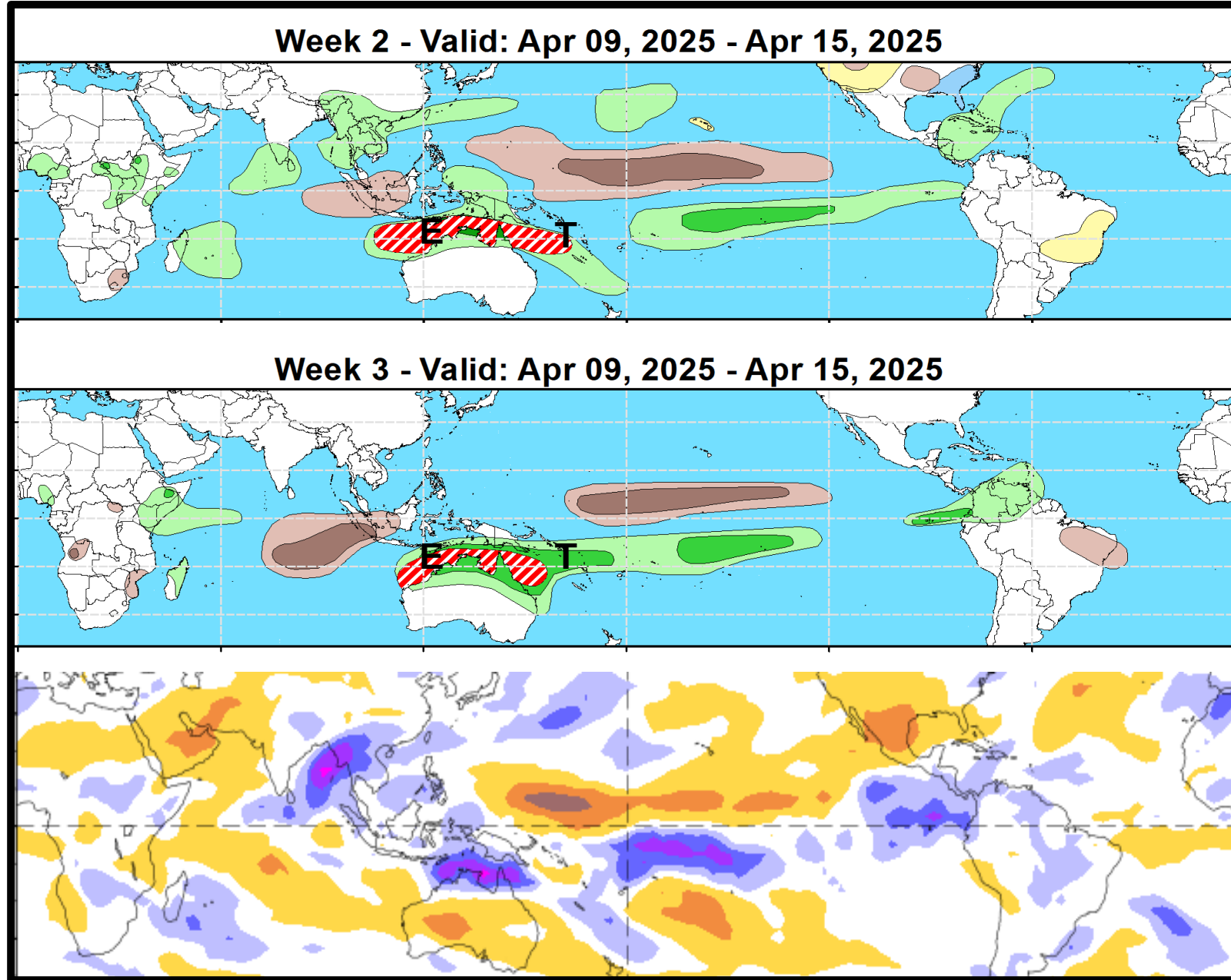
Thomas Collow

NWS / NCEP / Climate Prediction Center

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

Tropical Cyclone Errol (April 11)

Tropical Cyclone Tam (April 14)



Synopsis of Climate Modes:

ENSO: (Apr 10, 2025 Update) *next update on Thursday, May 8th*

- ENSO Alert System Status: [Final La Niña Advisory](#)
- ENSO-neutral is favored during the Northern Hemisphere summer, with a greater than 50% chance through August-October 2025.

MJO and other subseasonal tropical variability:

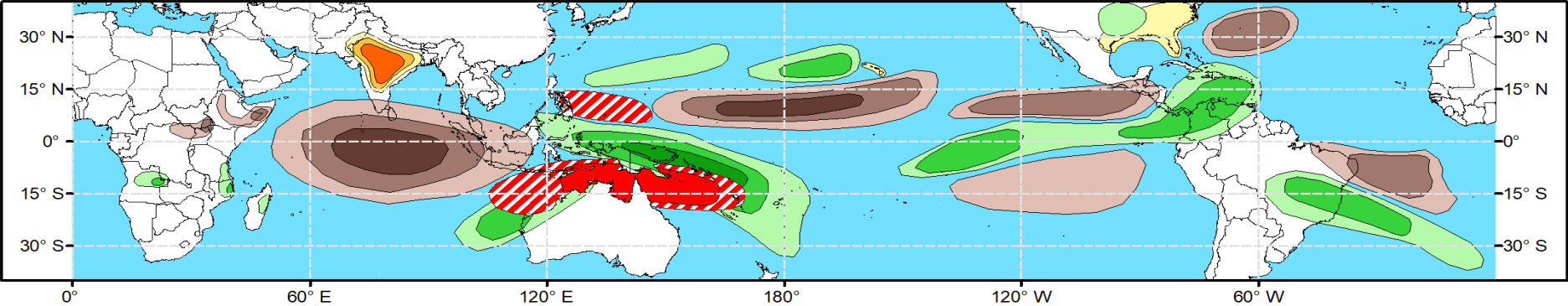
- The MJO has been inactive since late March with the RMM-based index meandering within the unit circle for the past couple of weeks.
- The ECENS and GEFS ensembles indicate a re-emergence of the MJO across the Western Pacific by week-2, but this is more likely tied to an enhanced low frequency convective state developing over the region, with limited eastward propagation.
- Despite reduced influence from tropical forcing (MJO or ENSO) and the global TC climatology minimum, TC development chances remain elevated across the South Pacific due to a continued low wind shear environment and an enhanced convective envelope over the region.



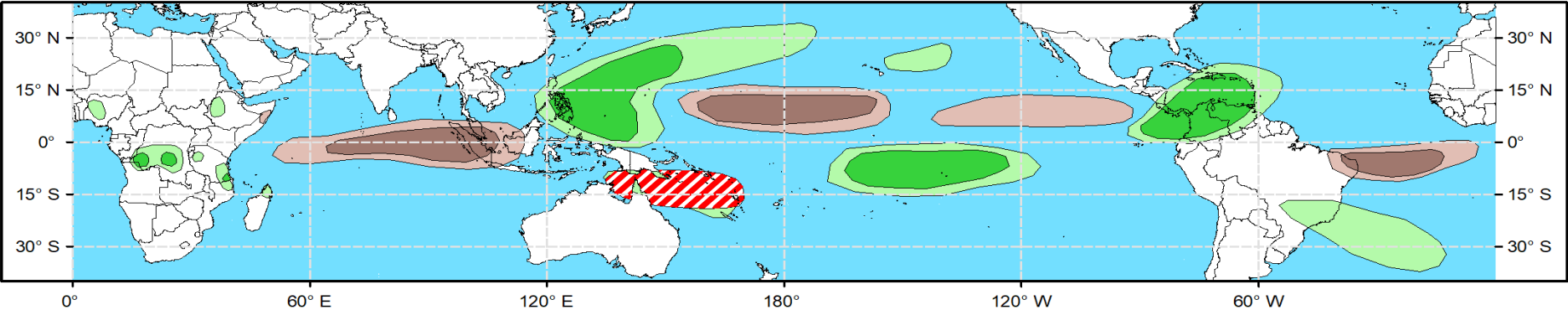
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Apr 23, 2025 - Apr 29, 2025



Week 3 - Valid: Apr 30, 2025 - May 06, 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*

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**Above-Average
Temperatures Probability**



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*7-day max temperatures in the
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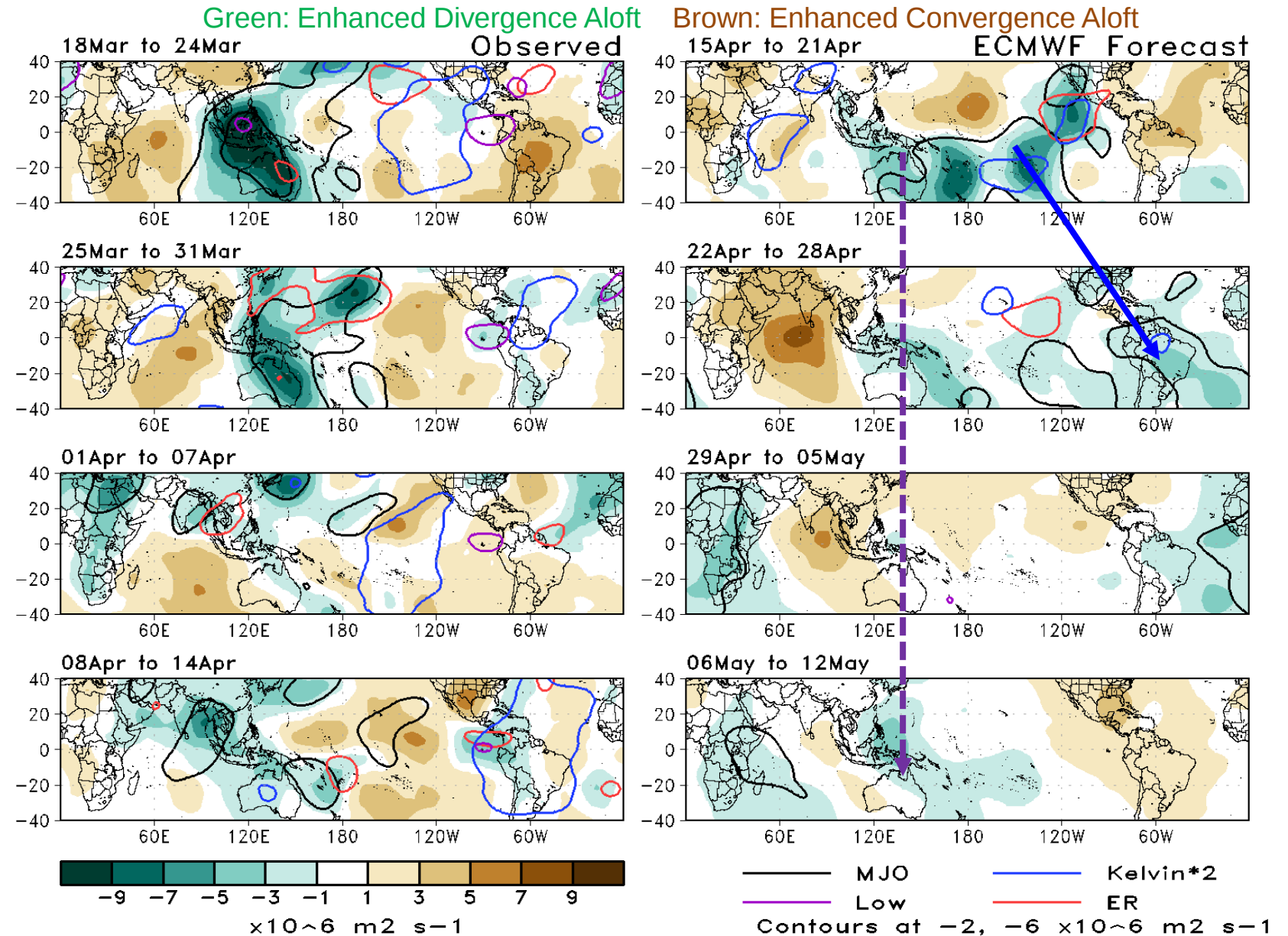
Issued: 04/15/2025

Forecaster: Collow

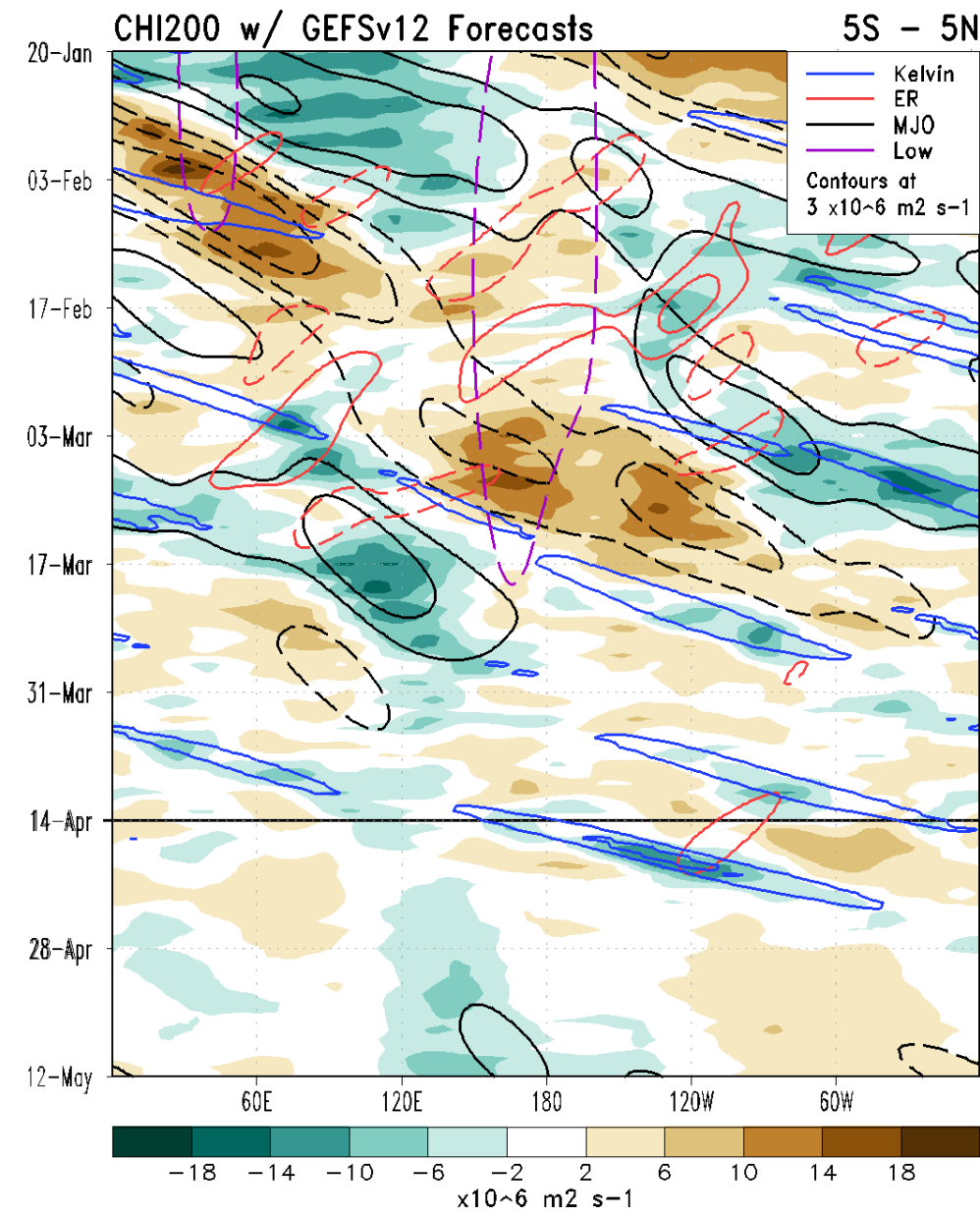
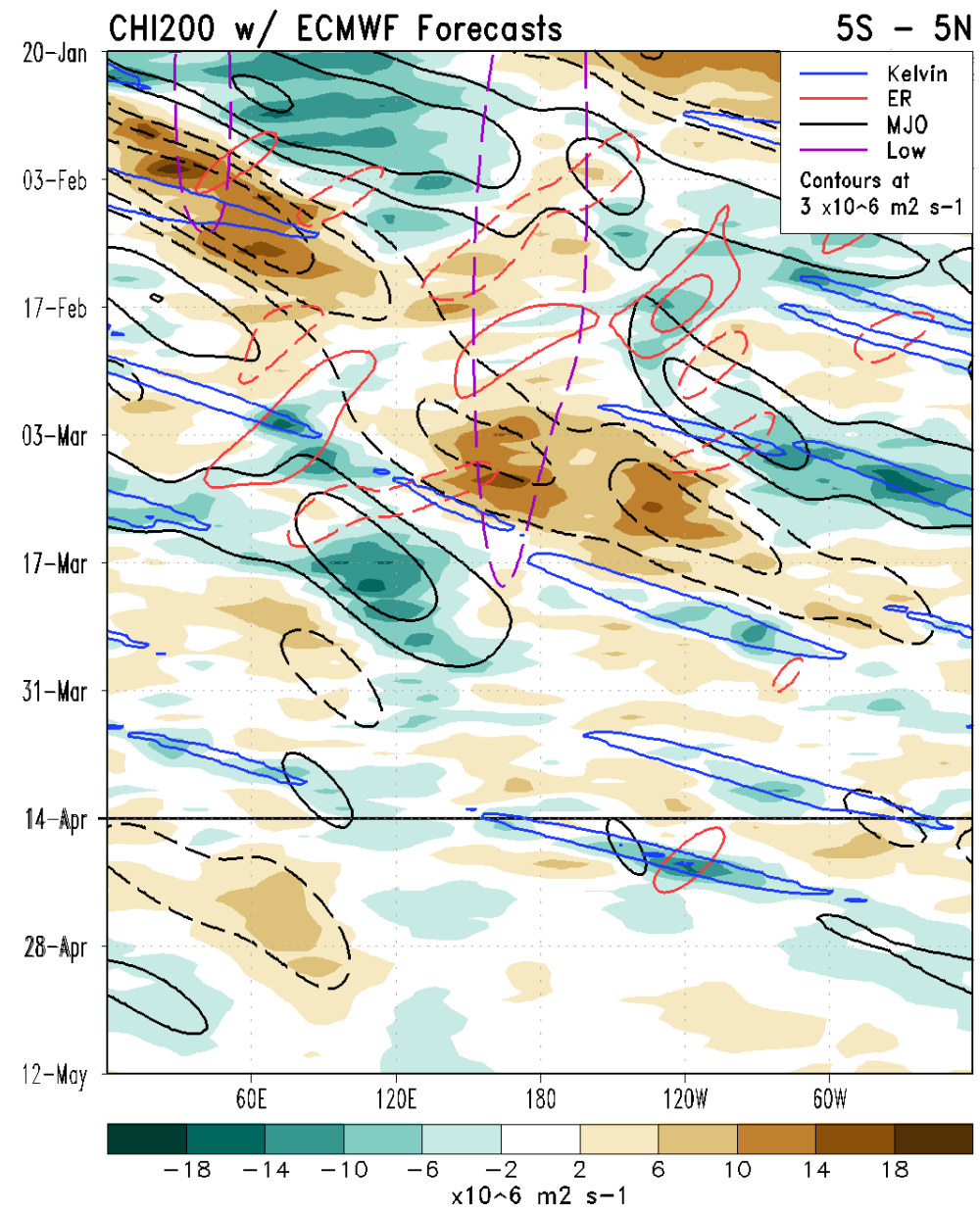
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200-hPa Velocity Potential Anomaly Maps:

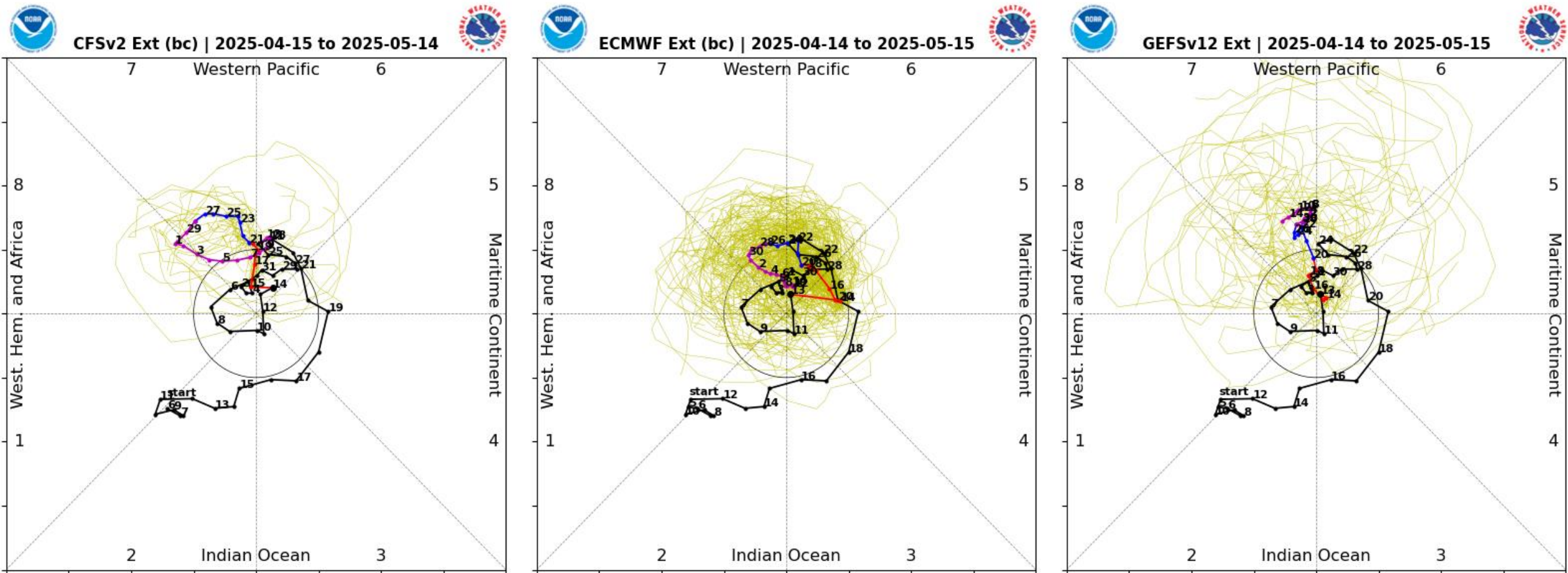
- A fast moving **Kelvin Wave** moving across the Pacific is forecast to spread enhanced convection into the eastern Pacific and the Americas.
- Suppressed convection is forecast across the Indian Ocean, and this may destructively interfere with the **low frequency** convective signal across the Western Pacific. However, the GEFS is less robust with this scenario.



Upper-Level Velocity Potential Anomaly Time/Lon Plots:

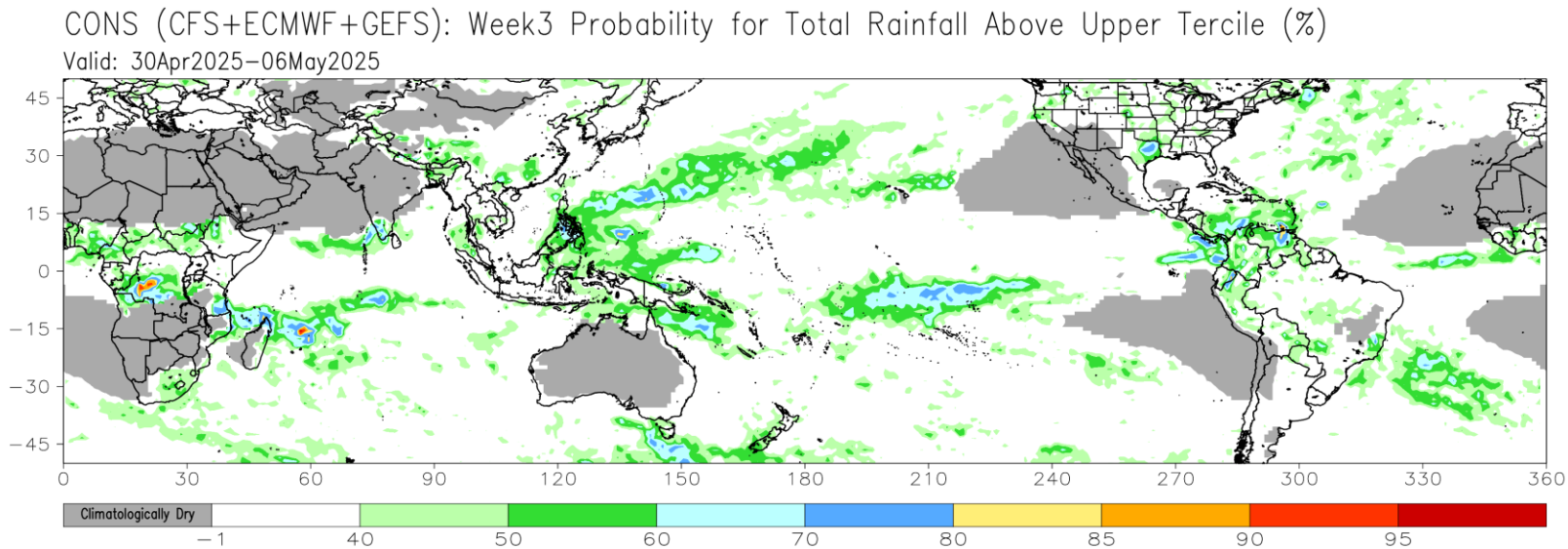
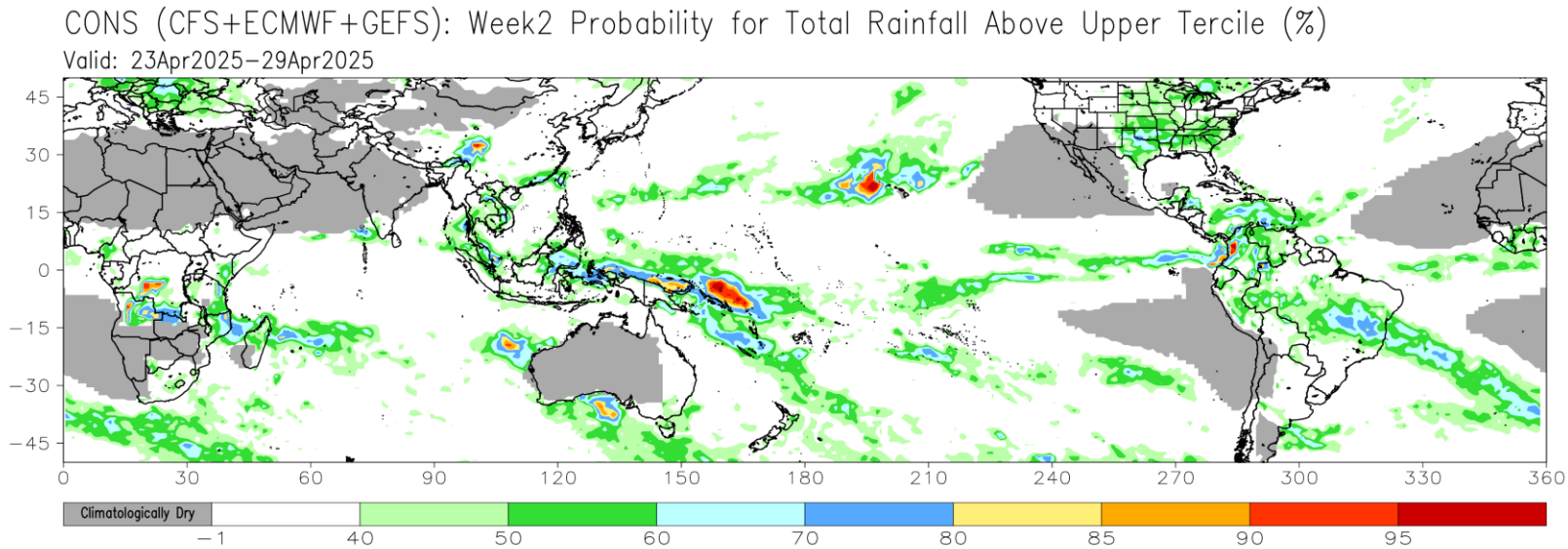


RMM Index Observations & Forecasts:



- Models depict a re-emergence of the RMM-based MJO index into the Western Pacific by late April (Phases 6-7).
- There is no discernible pattern in the individual ensemble members from any model, with a nearly stationary convective feature persisting across the Western Pacific through week-3.
- While some members depict a high amplitude signal (GEFS), the ensemble means are generally weaker and close to or within the unit circle highlighting the uncertainty.

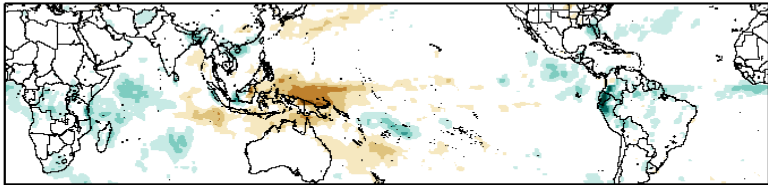
Consolidated Probabilistic Precipitation: Weeks 2 & 3



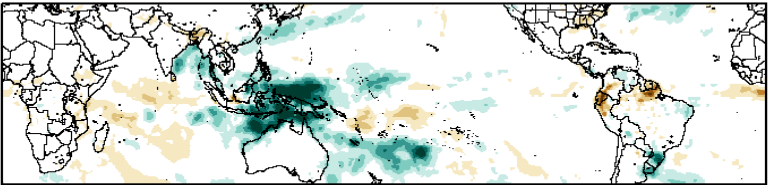
Historical Precipitation Anomalies By MJO Phase:

MAM MJO Composite: GPCP1DD (mm/day)

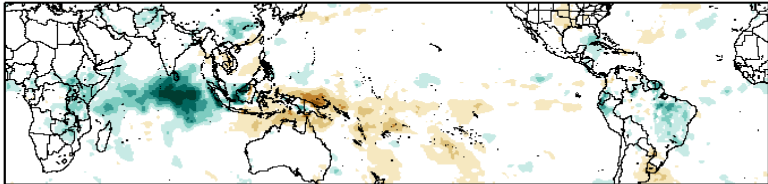
Phase 1



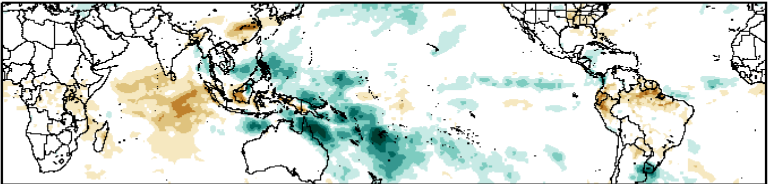
Phase 5



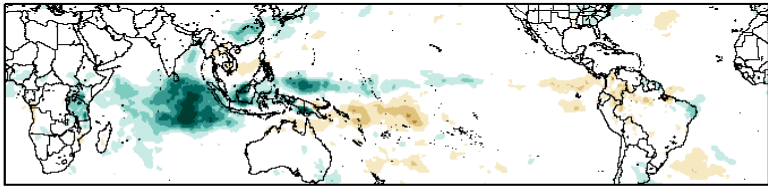
Phase 2



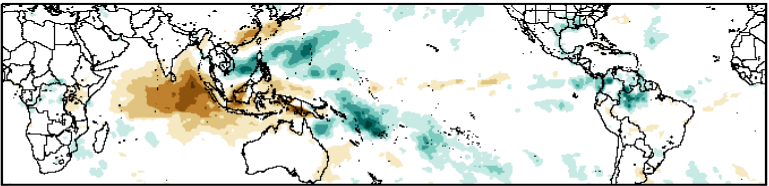
Phase 6



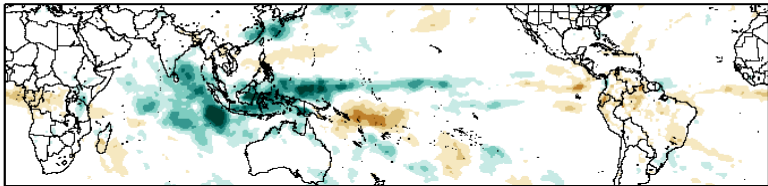
Phase 3



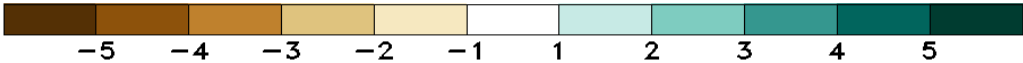
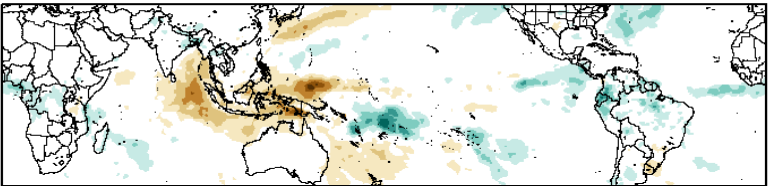
Phase 7



Phase 4

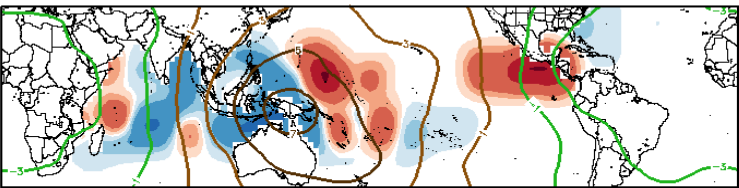


Phase 8

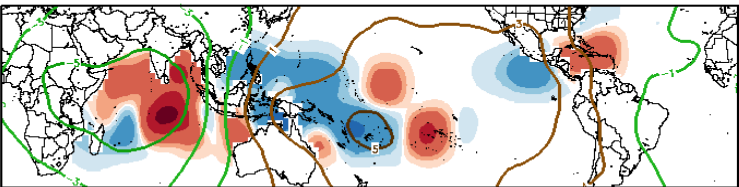


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

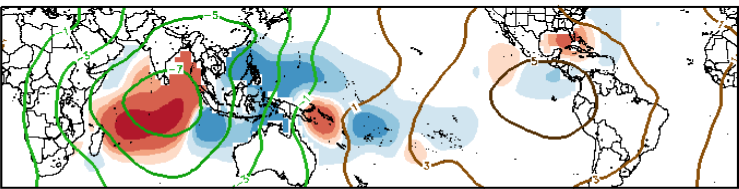
MAM MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ MAM CHI200 ($\times 10^{-6} m^{-2} s^{-1}$) / Contours every $2 \times 10^{-6} m^{-2} s^{-1}$



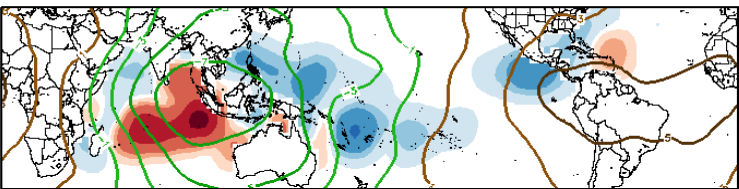
Phase 1



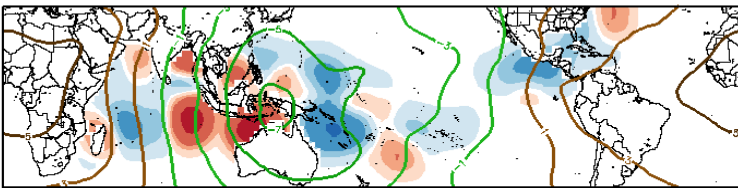
Phase 2



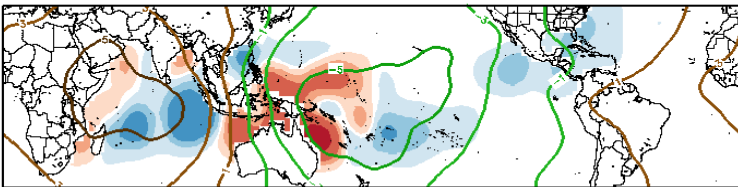
Phase 3



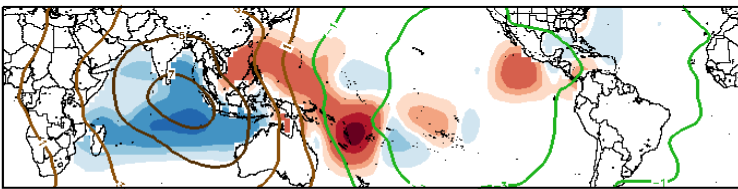
Phase 4



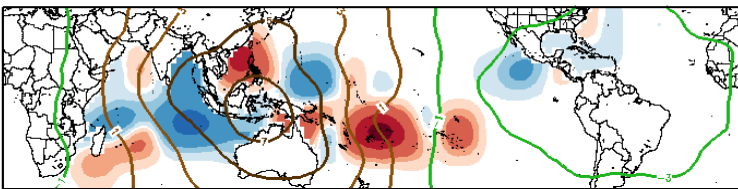
Phase 5



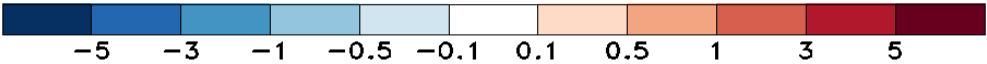
Phase 6



Phase 7

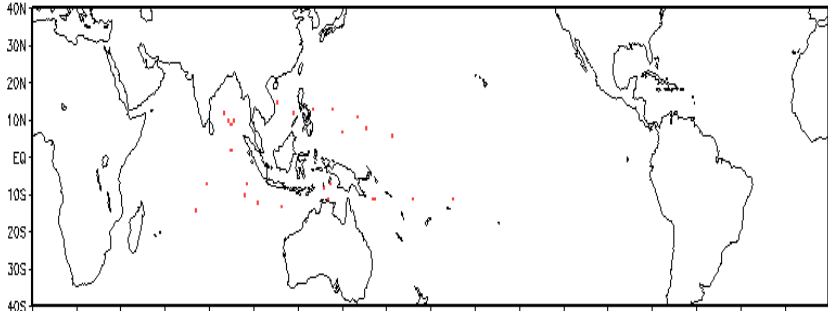


Phase 8



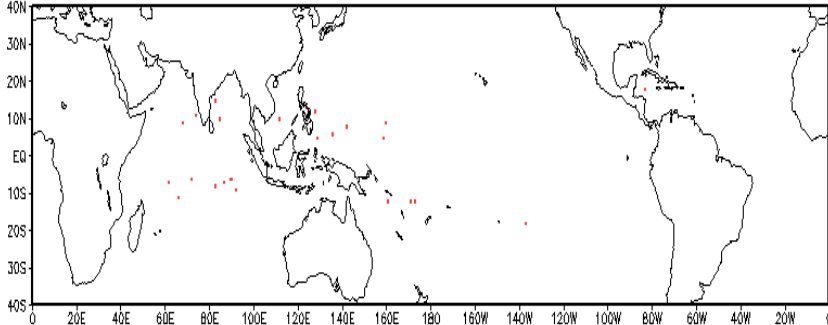
Observed TC Genesis, 1979–2021

7-day Period 0423 to 0429



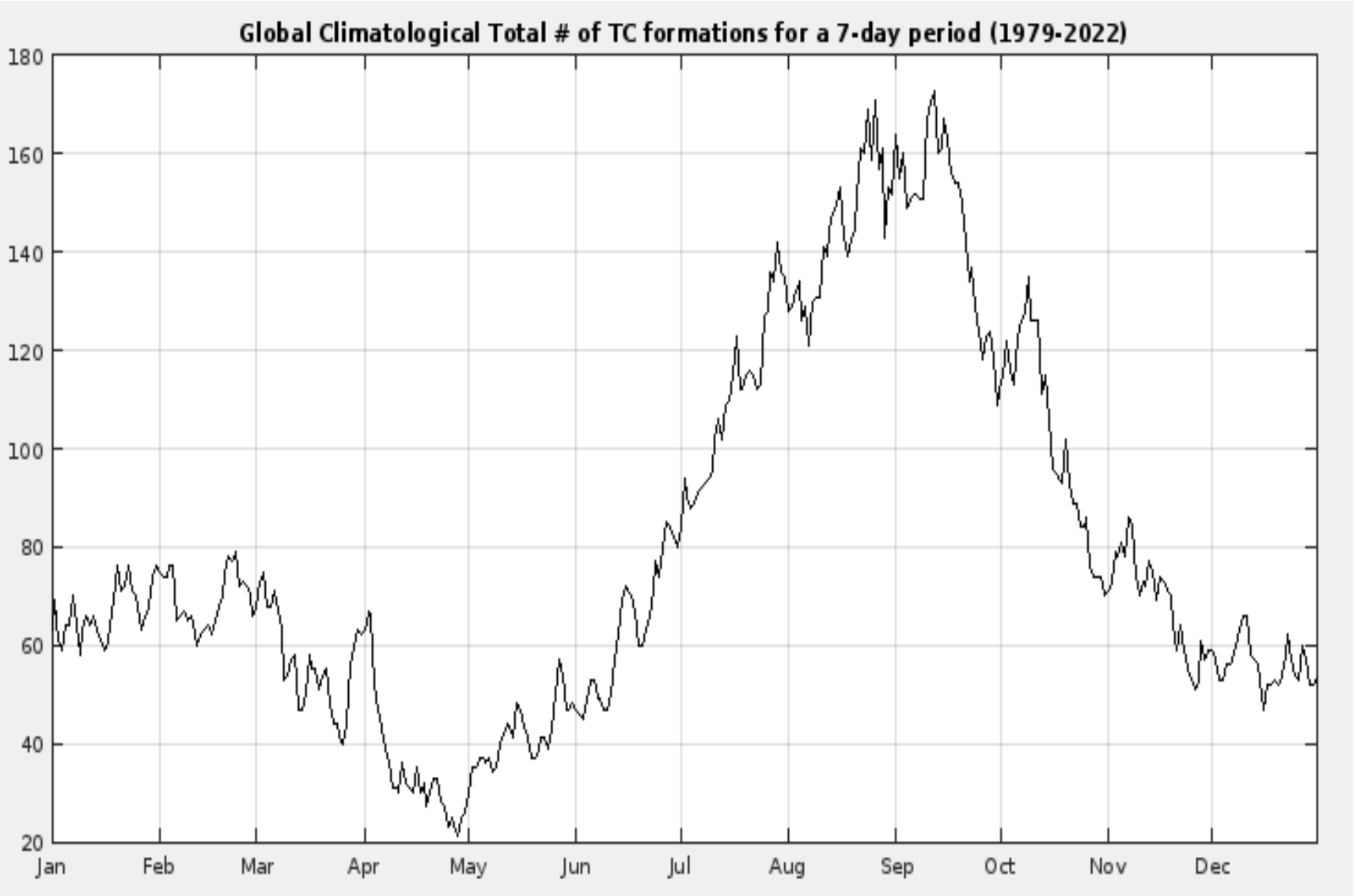
Observed TC Genesis, 1979–2021

7-day Period 0430 to 0506



Experimental

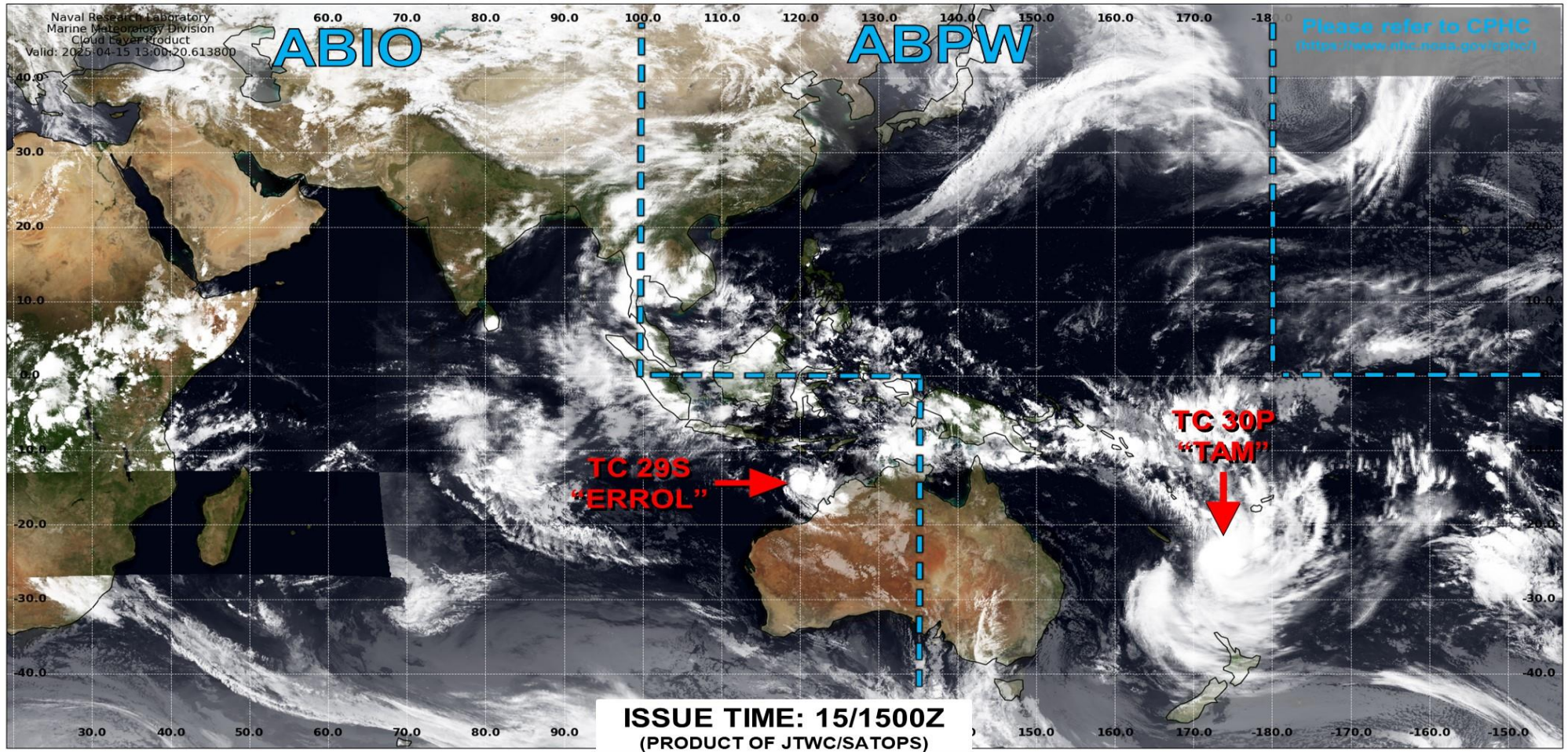
TC Climatological Genesis



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

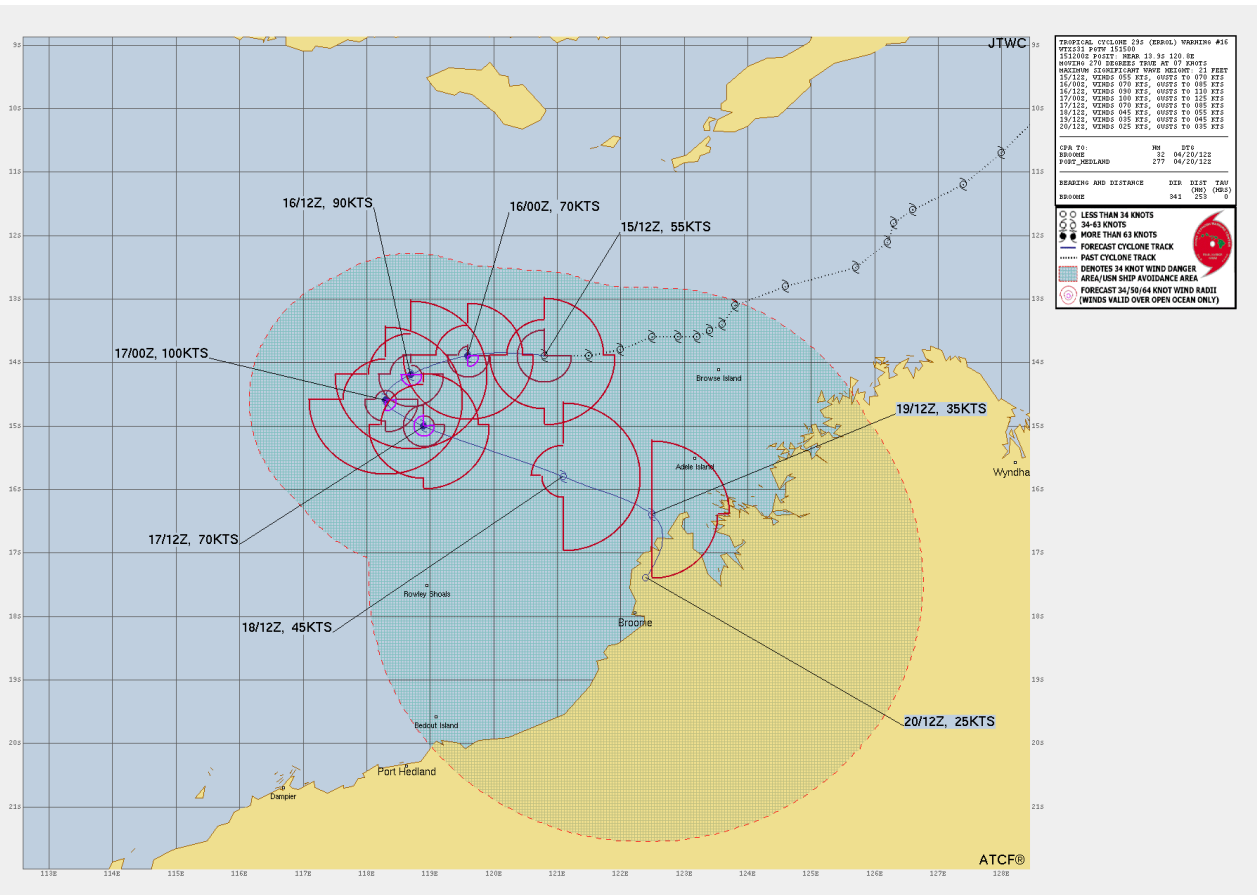
TC development likely within 24 hours (Reference TCFA)

SUB TROPICAL

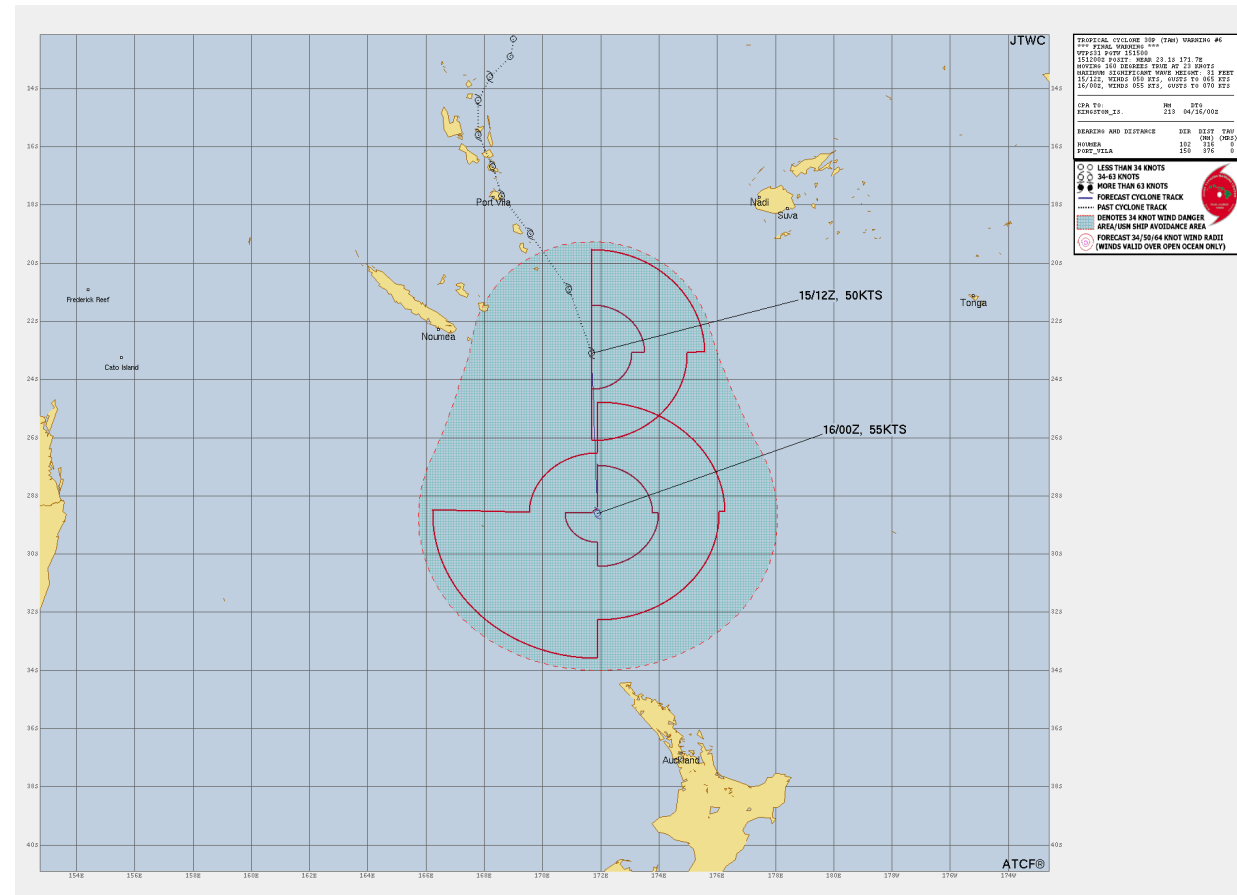
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

Tropical Cyclone (Reference Warning)

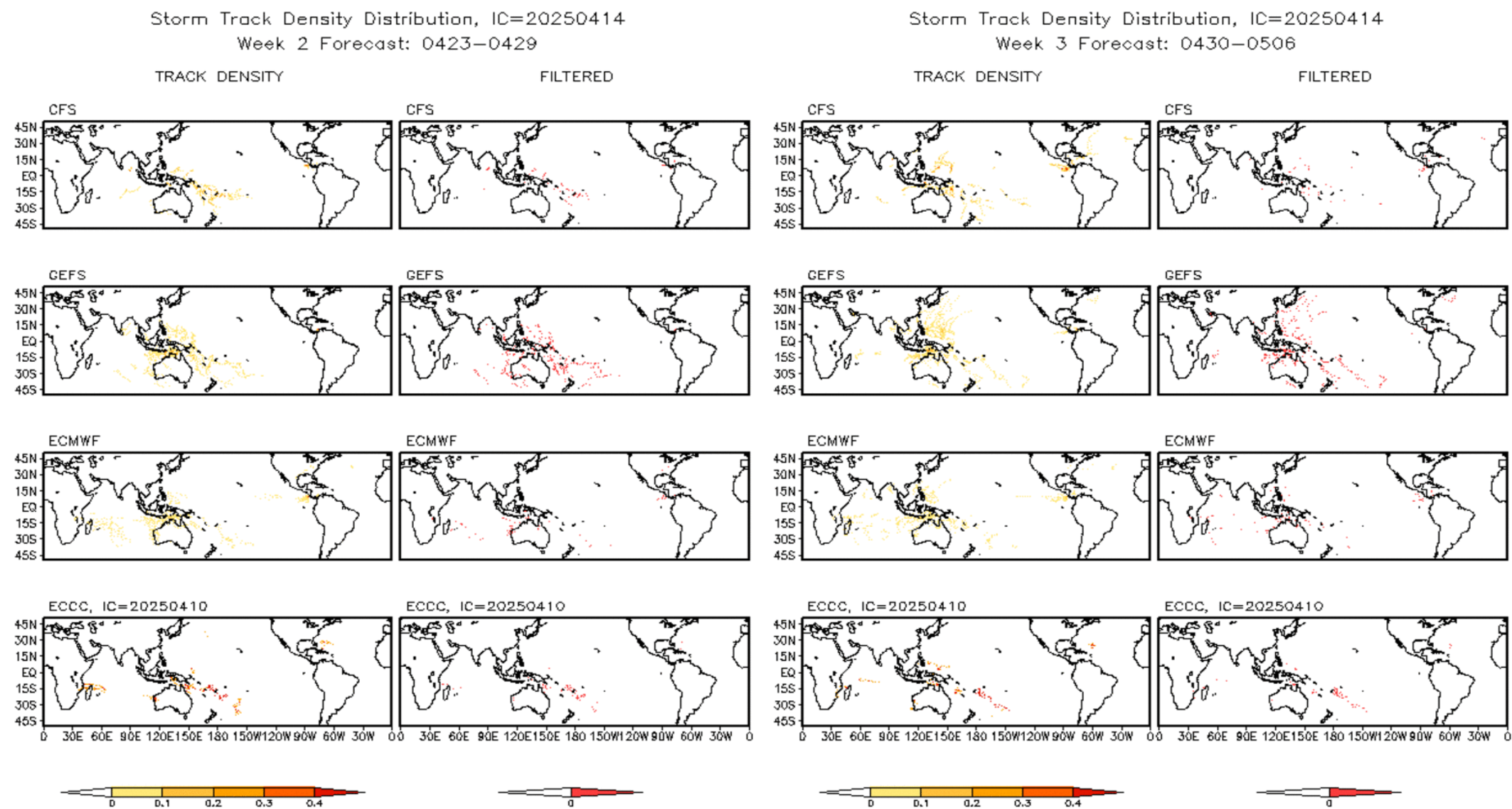
Errol



Tam

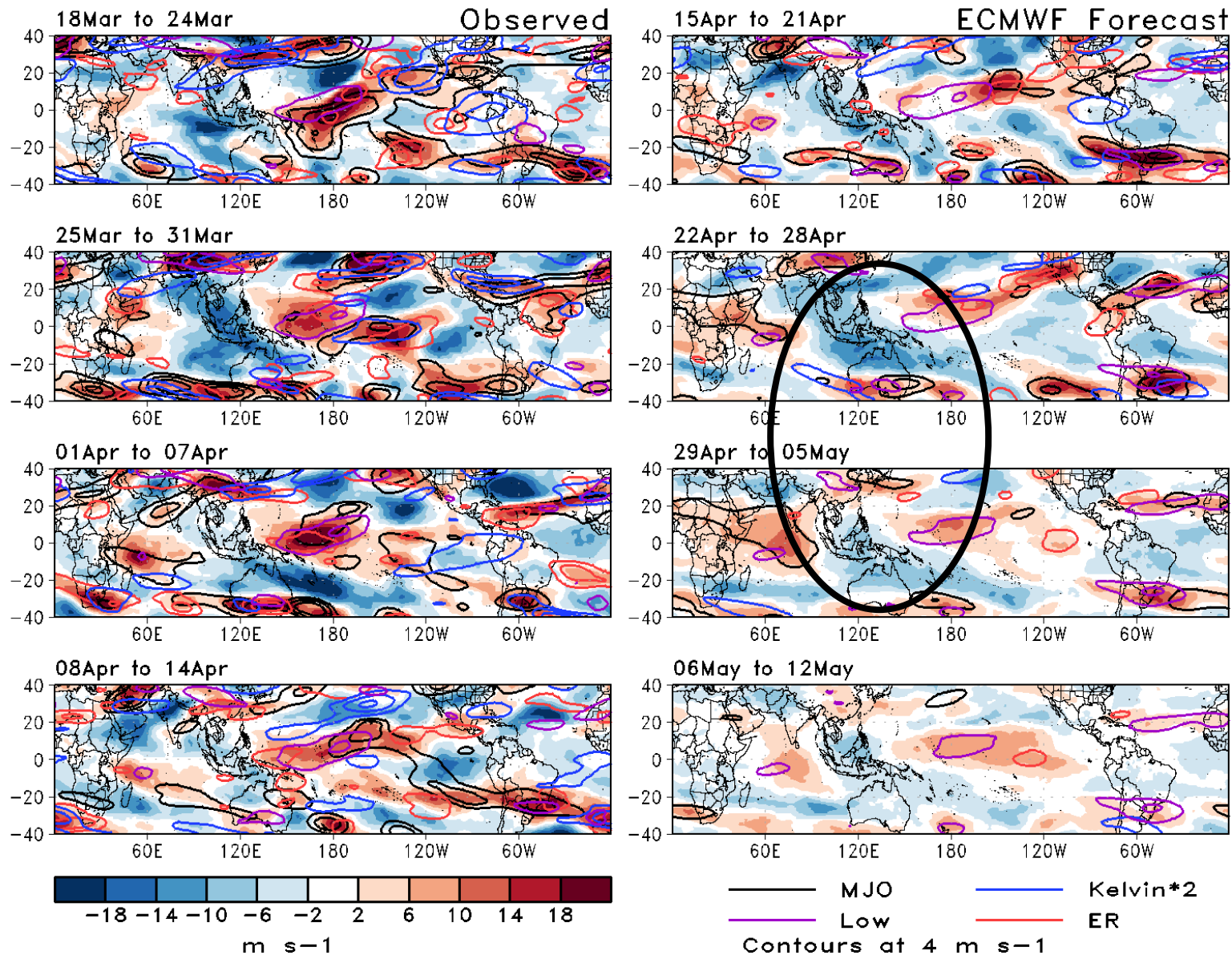


Multi-Model TC Track Densities: Weeks 2+3



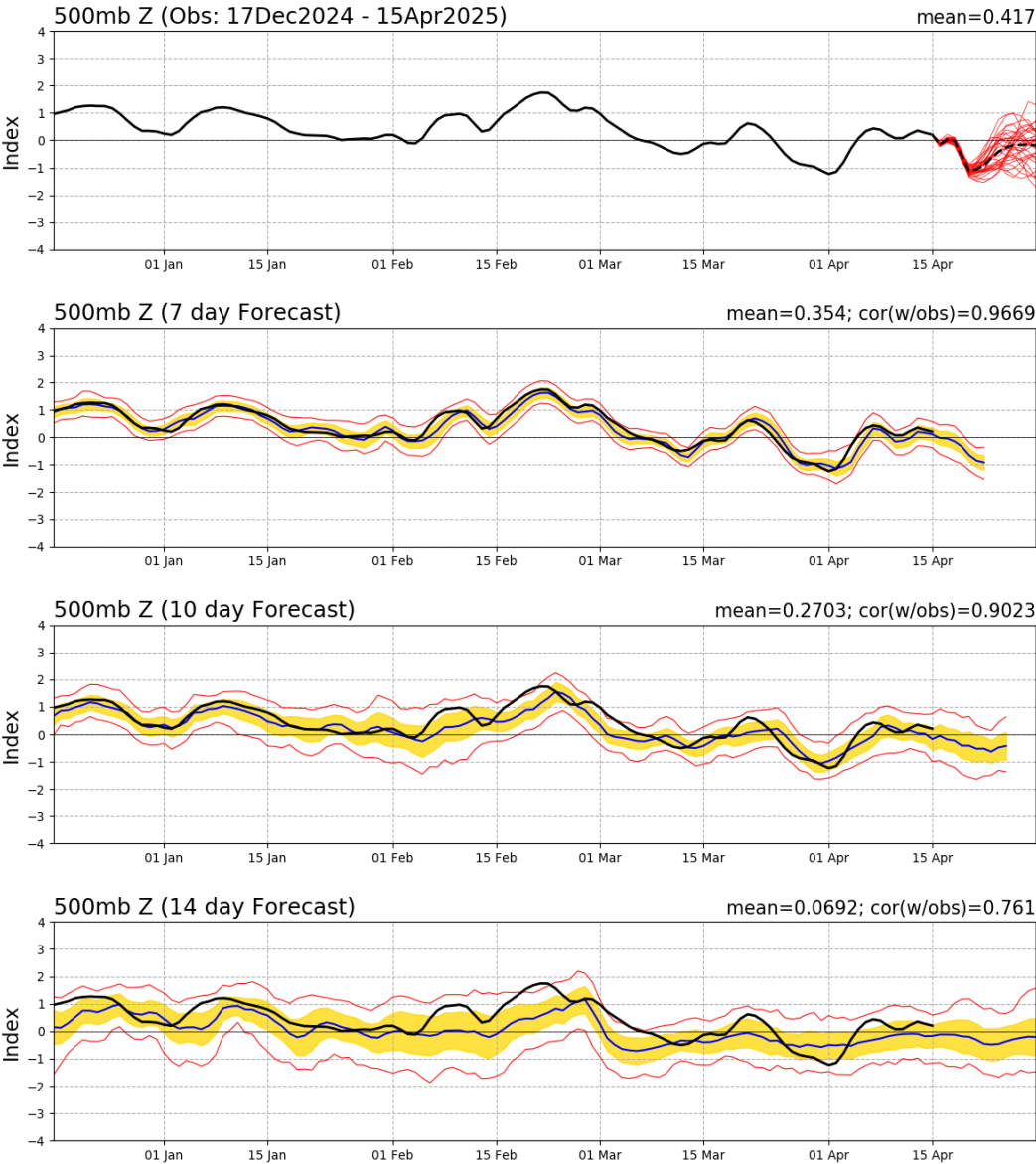
Zonal Wind Shear

USHEAR 7-Day Means

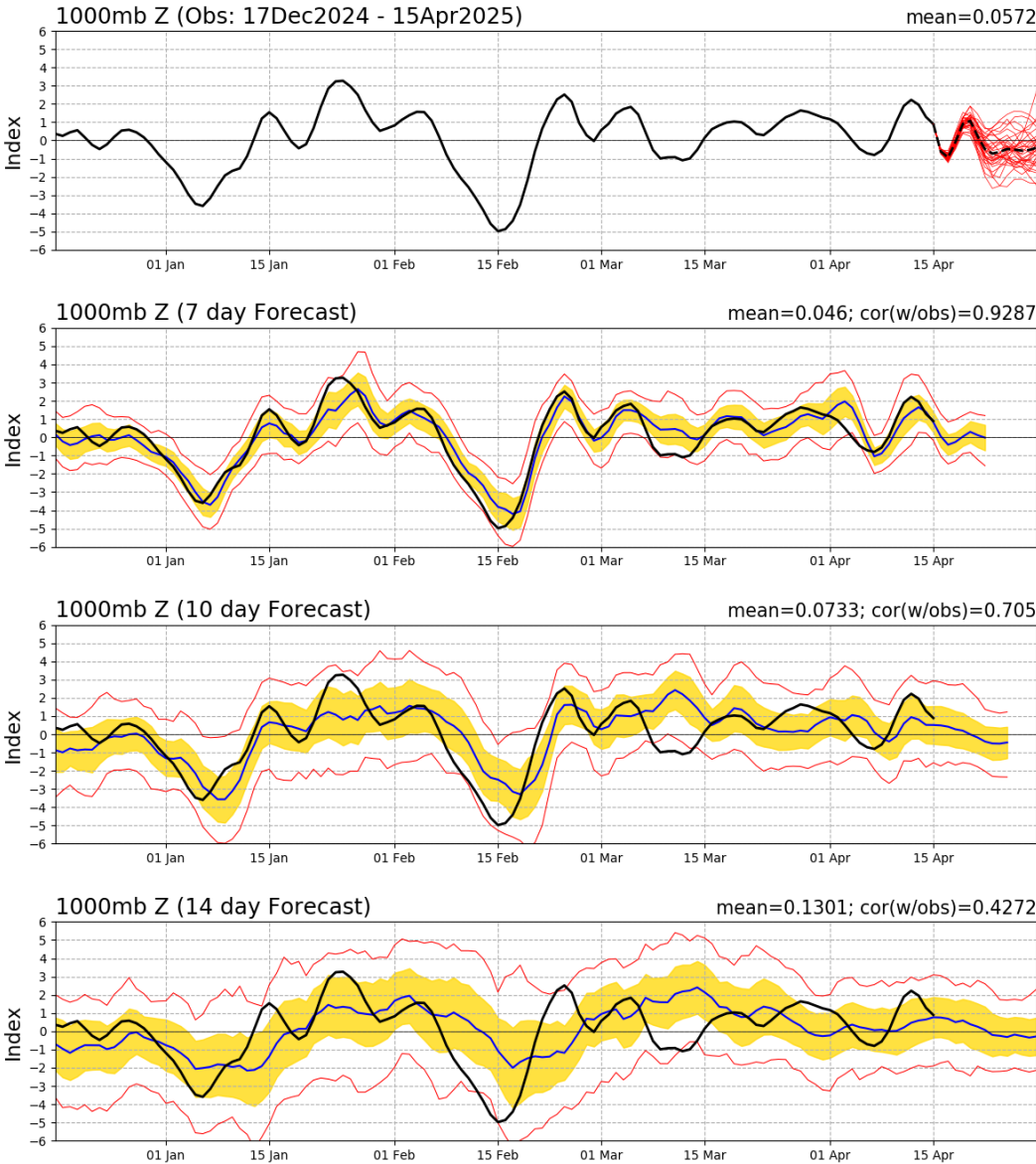


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

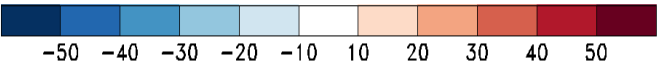
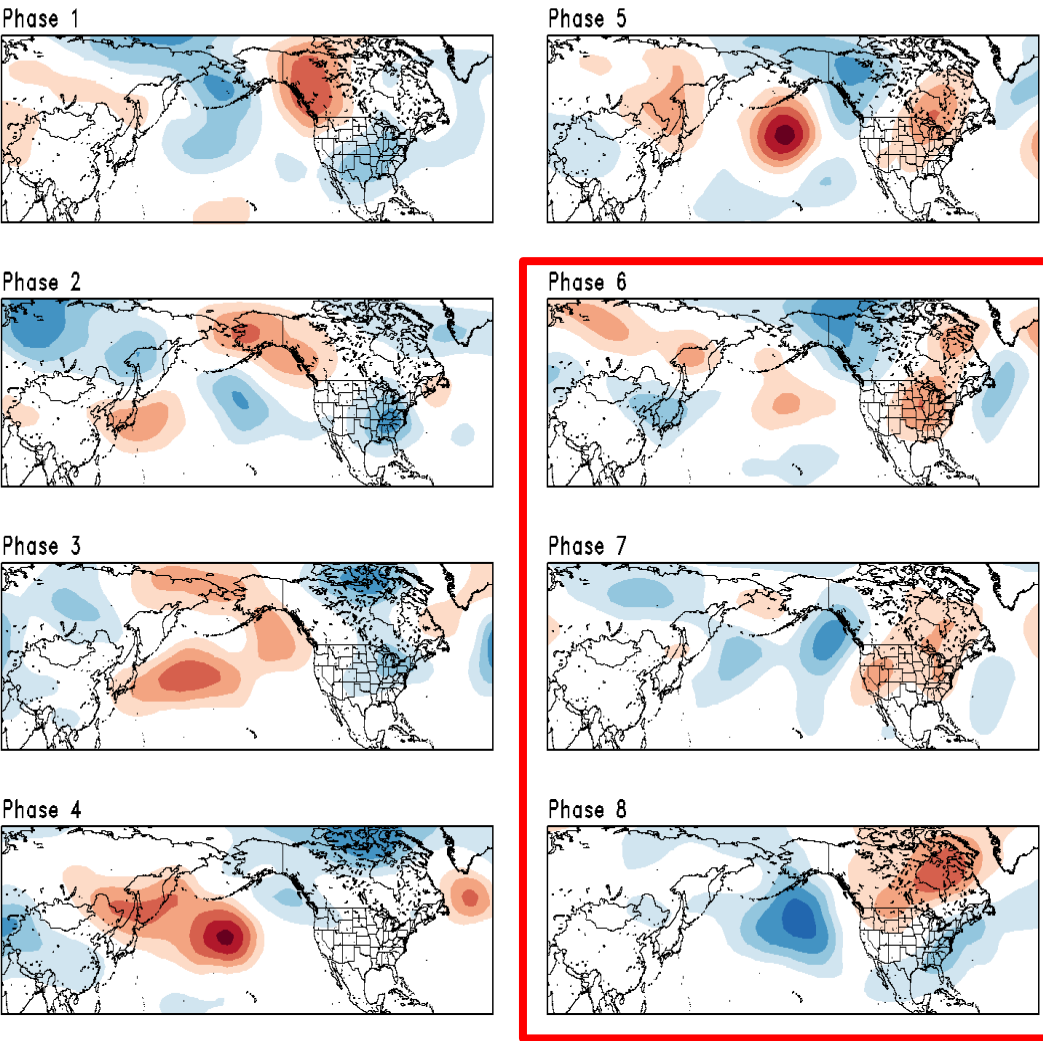


AO Index: Observed & GEFS Forecasts

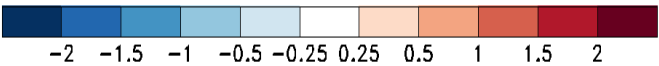
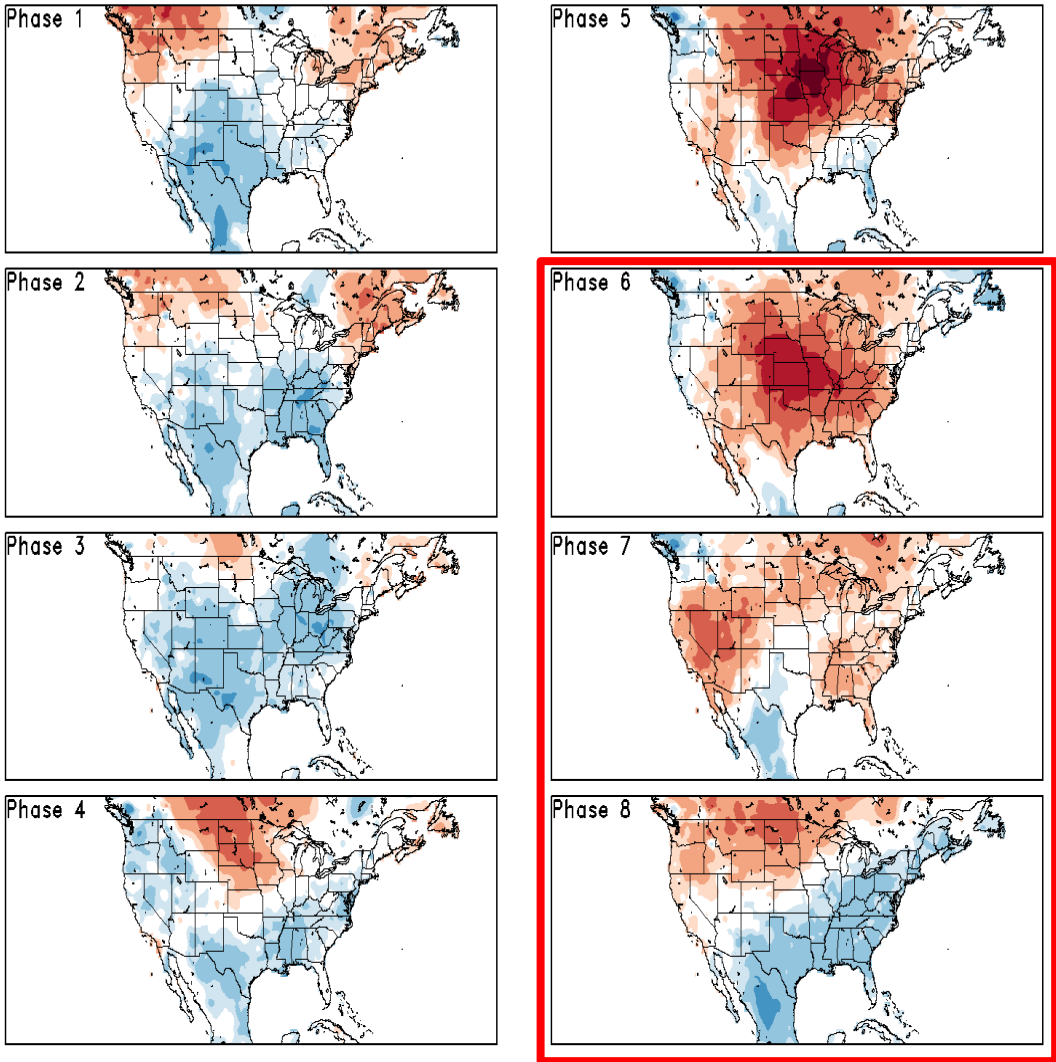


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

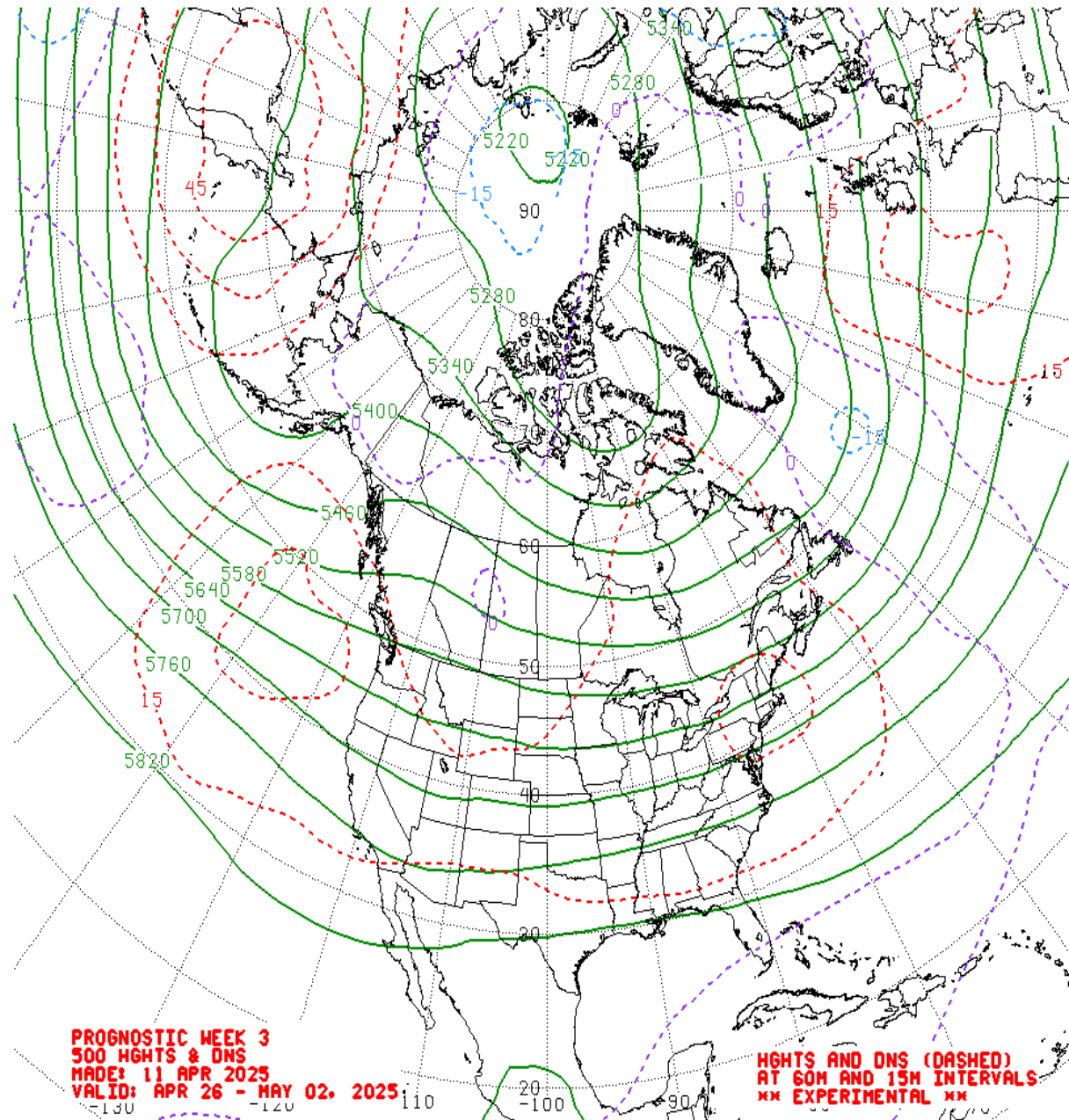
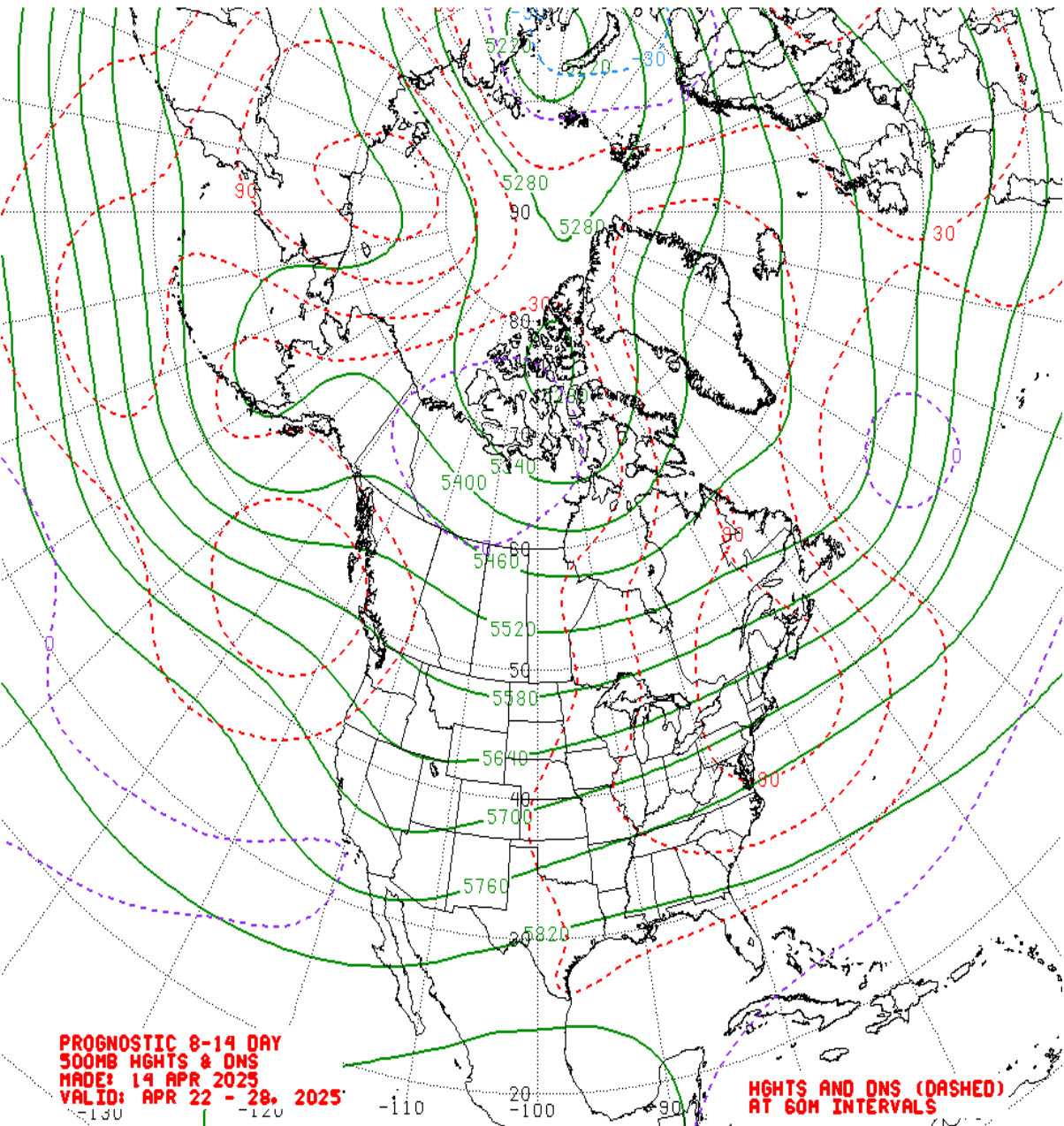
MAM MJO Composite: CDAS 500-hPa Height (m)



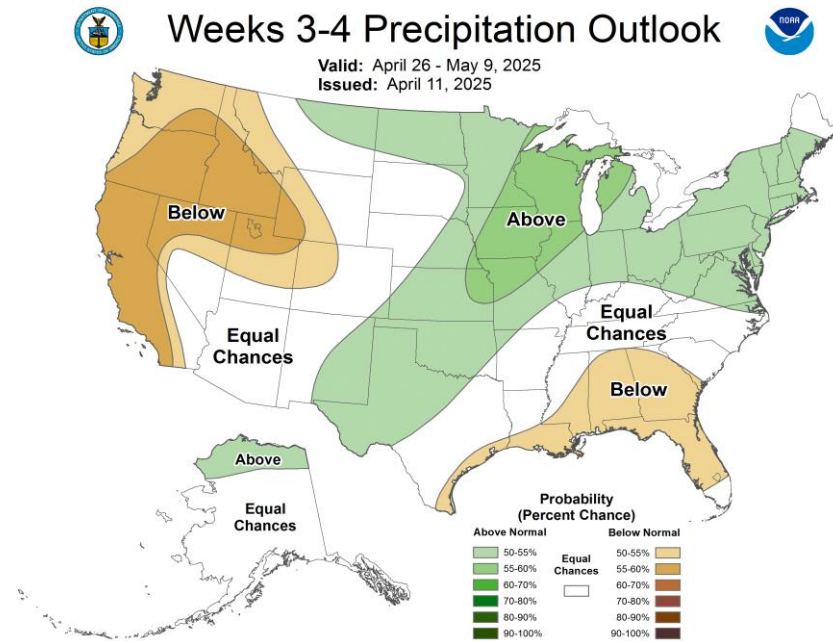
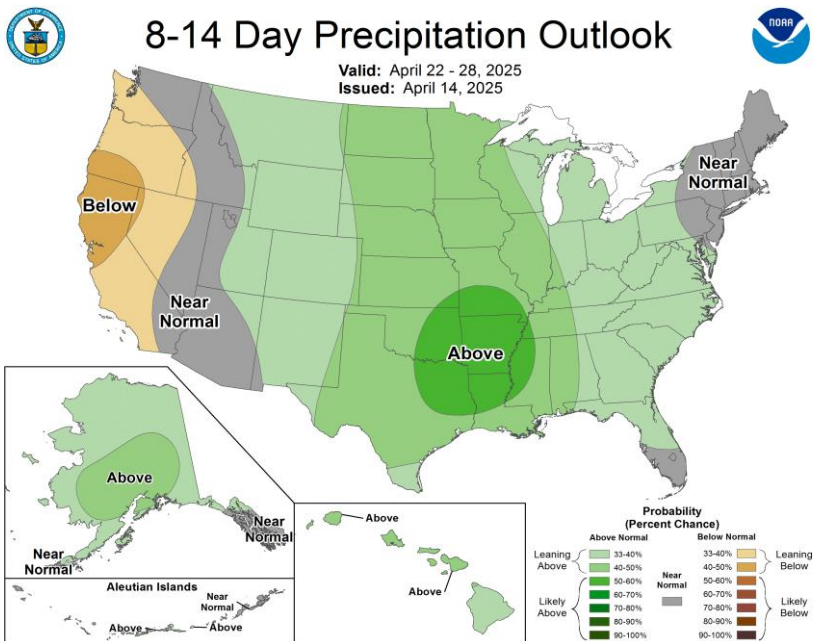
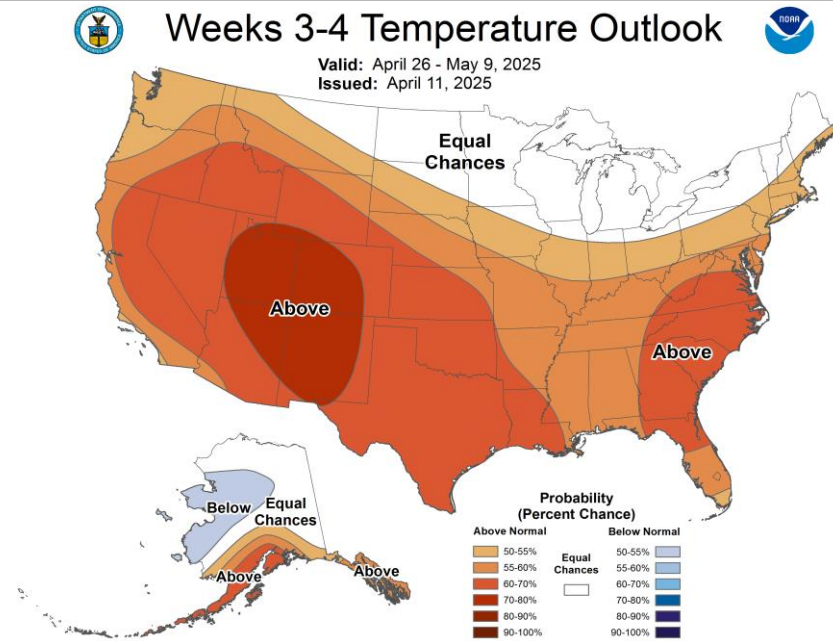
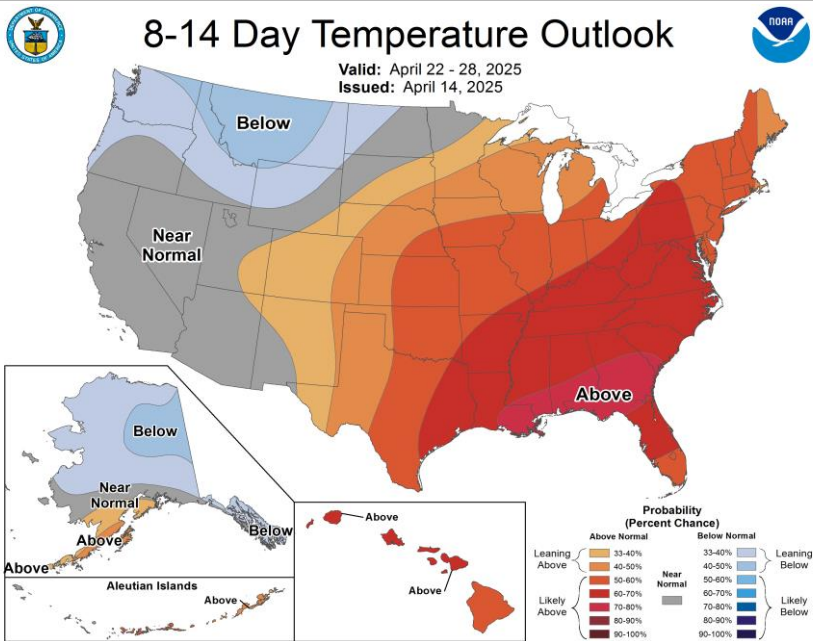
MAM MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



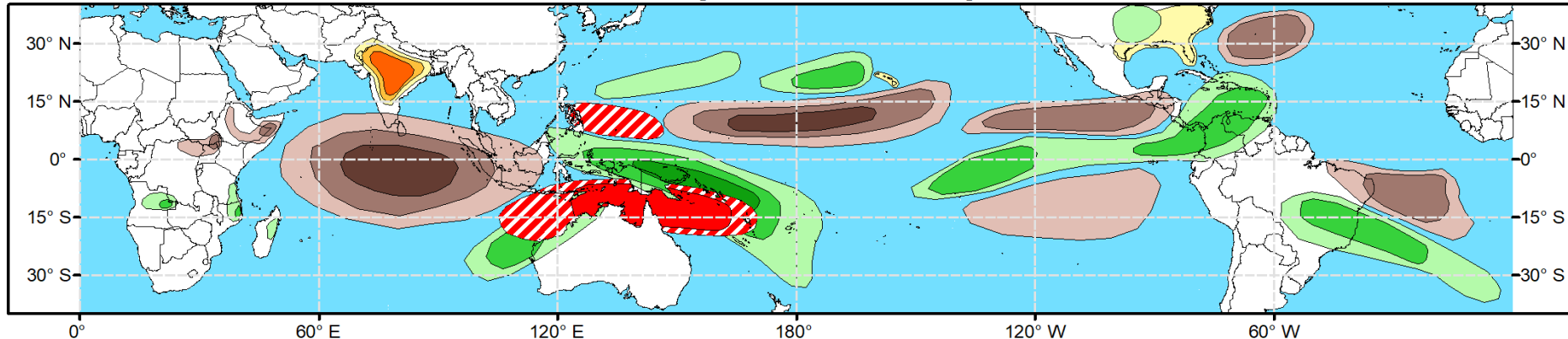


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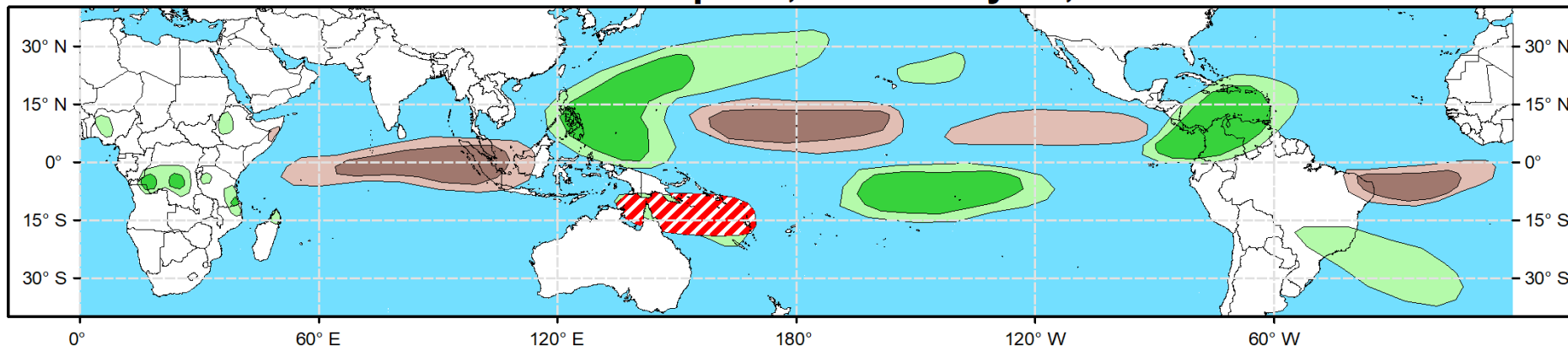
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