



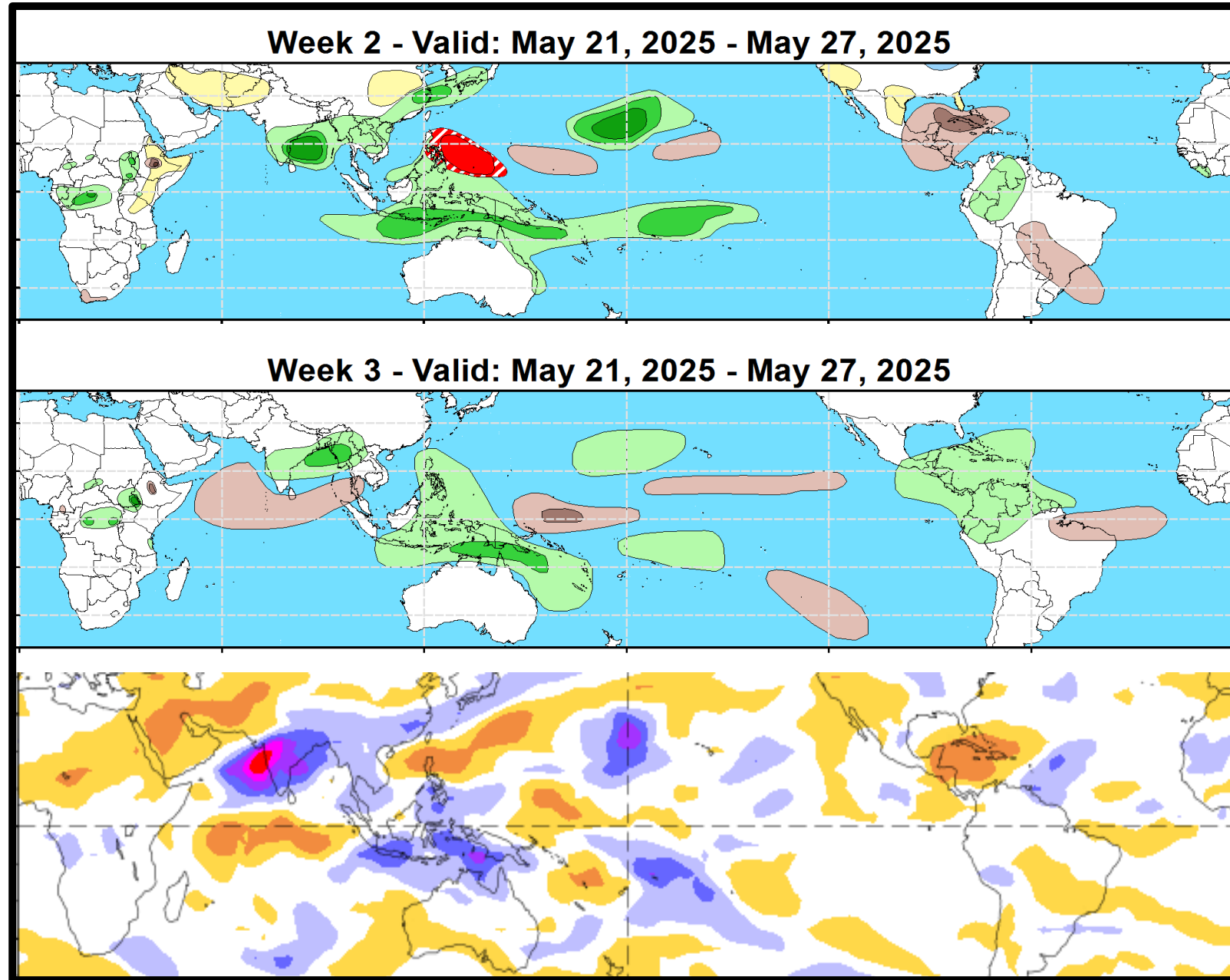
Weeks 2-3 Global Tropics Hazards Outlook

5/27/2025

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

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

- No TCs this week



Synopsis of Climate Modes:

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

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

MJO and other subseasonal tropical variability:

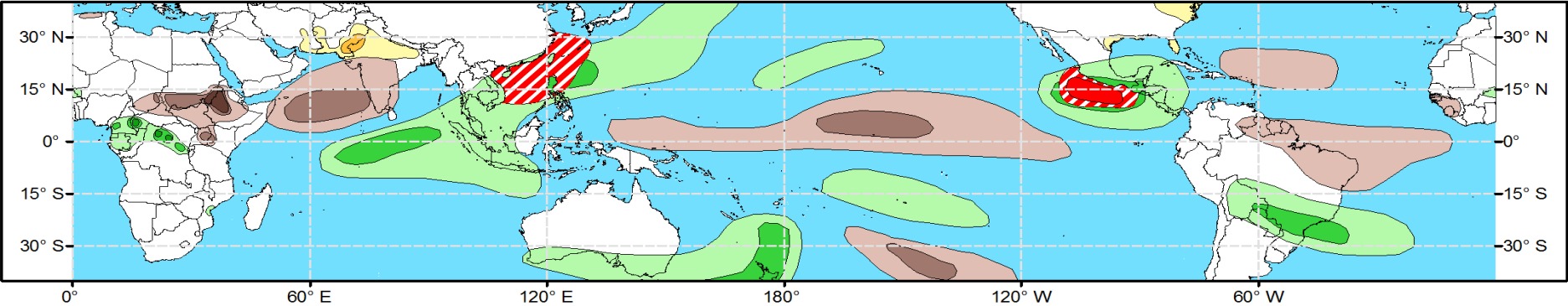
- The MJO remains incoherent based on RMM observations and other fields. Kelvin Wave activity and a low frequency convective footprint near the Maritime Continent appear to remain the predominant modes of tropical variability since late March.
- There is general agreement in the dynamical model RMM forecasts depicting eastward propagation from phase 4 to phase 7-8 in the coming weeks. However, there is a lot of spread with regard to signal strength and coherence.
- With the likely continuation of weak MJO activity and ENSO-neutral conditions, tropical variability that occurs over the next few weeks is likely to be triggered by other modes of variability, such as Kelvin or equatorial Rossby waves.



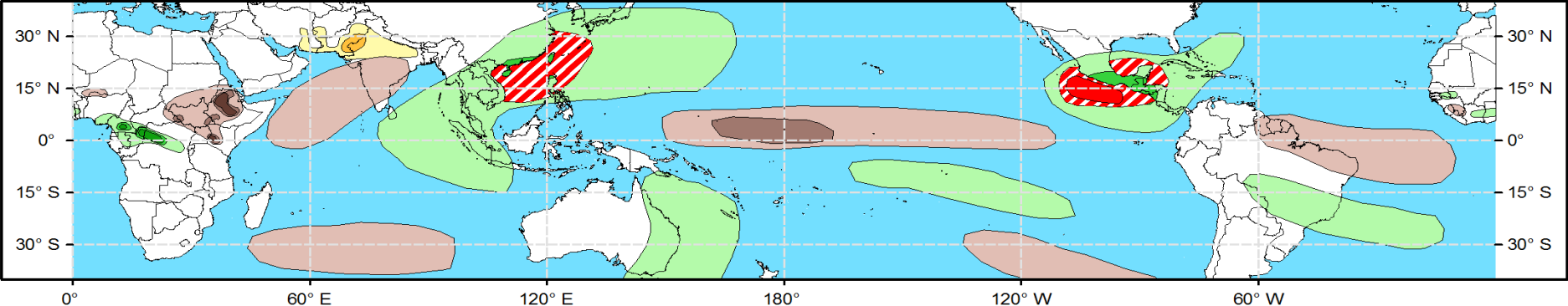
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Jun 04, 2025 - Jun 10, 2025



Week 3 - Valid: Jun 11, 2025 - Jun 17, 2025



**Tropical Cyclone (TC)
Formation Probability**



>20% >40% >60%

*Tropical Depression (TD)
or greater strength*

**Above-Average
Rainfall Probability**



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*Weekly total rainfall in the
Upper third of the historical range*

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**Above-Average
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*7-day max temperatures in the
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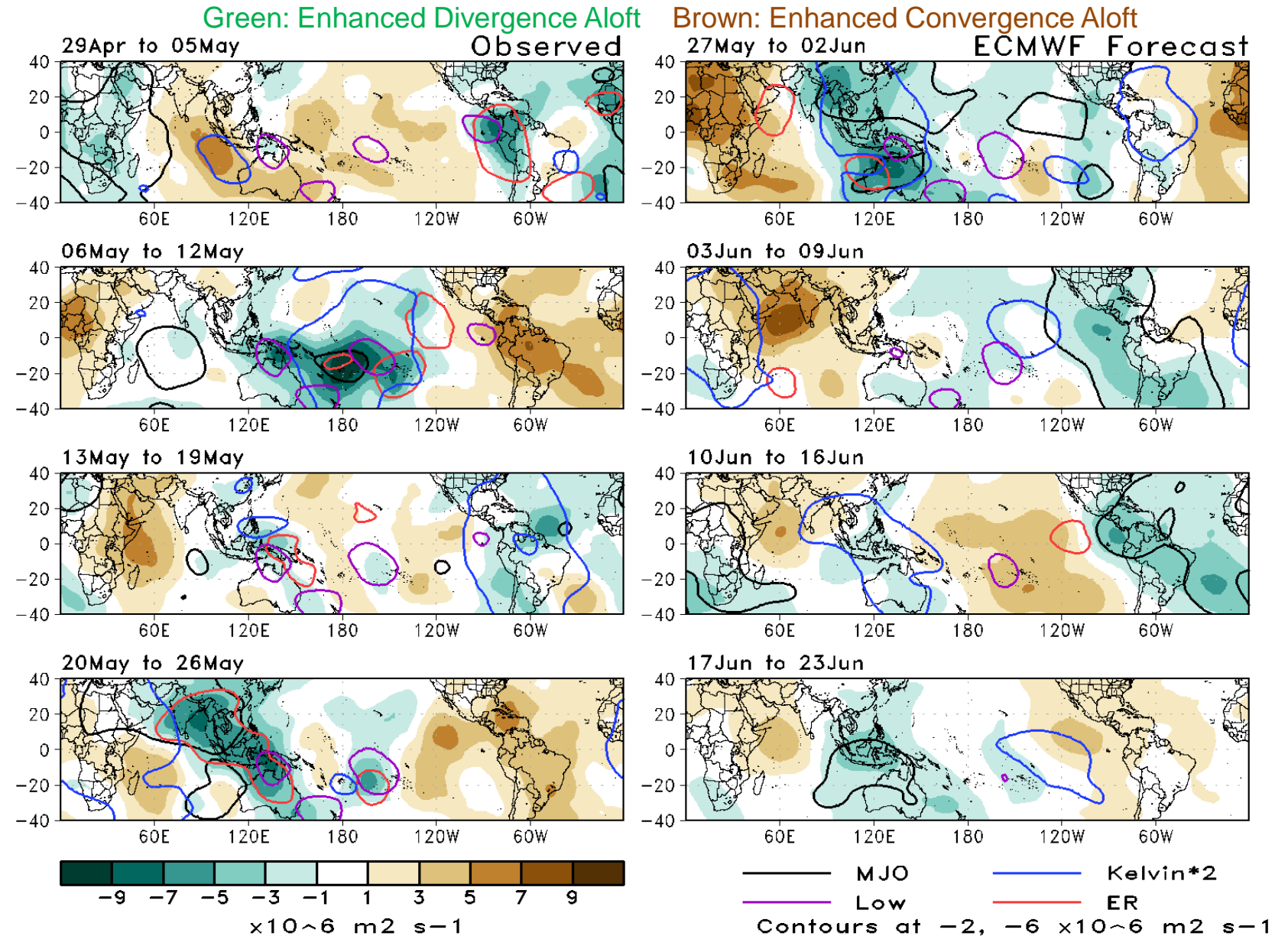
Issued: 05/27/2025

Forecaster: Barandiaran

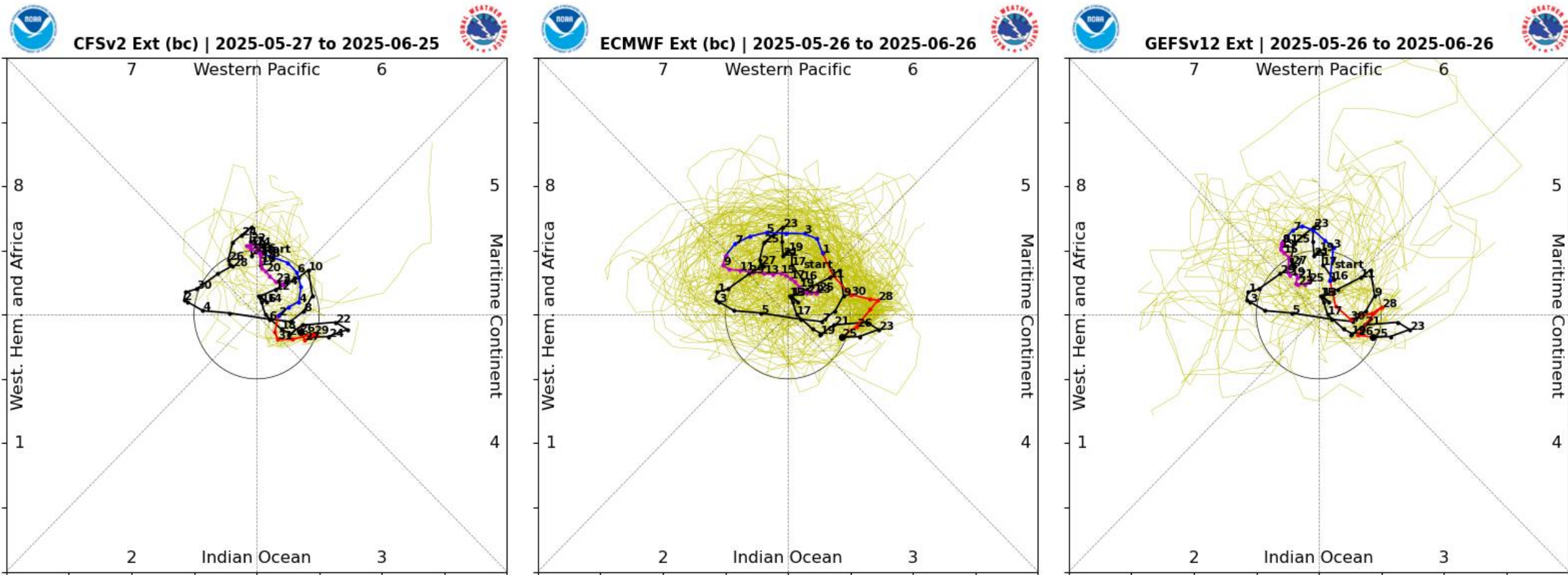
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200-hPa Velocity Potential Anomaly Maps:

- Over the last month the global tropics have switched between wave-1 and wave-2 asymmetries and back, reflecting competing modes of variability and a weak MJO.
- The ECMWF is the most bullish in terms of MJO activity, although some large eastward shifts are depicted, suggesting a Kelvin wave rather than MJO.
- Of note is upper-level divergence over the Americas during weeks 2-3.

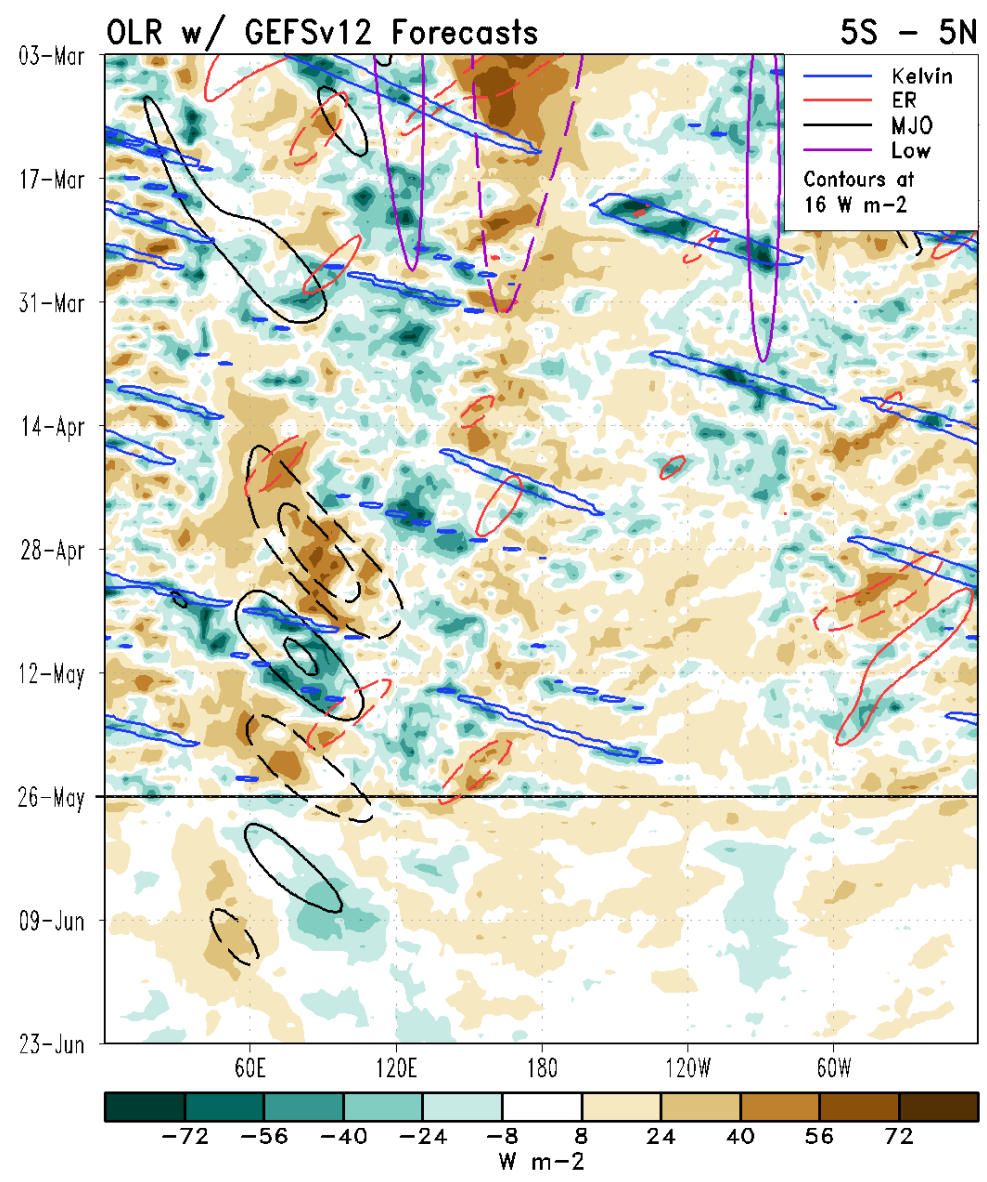
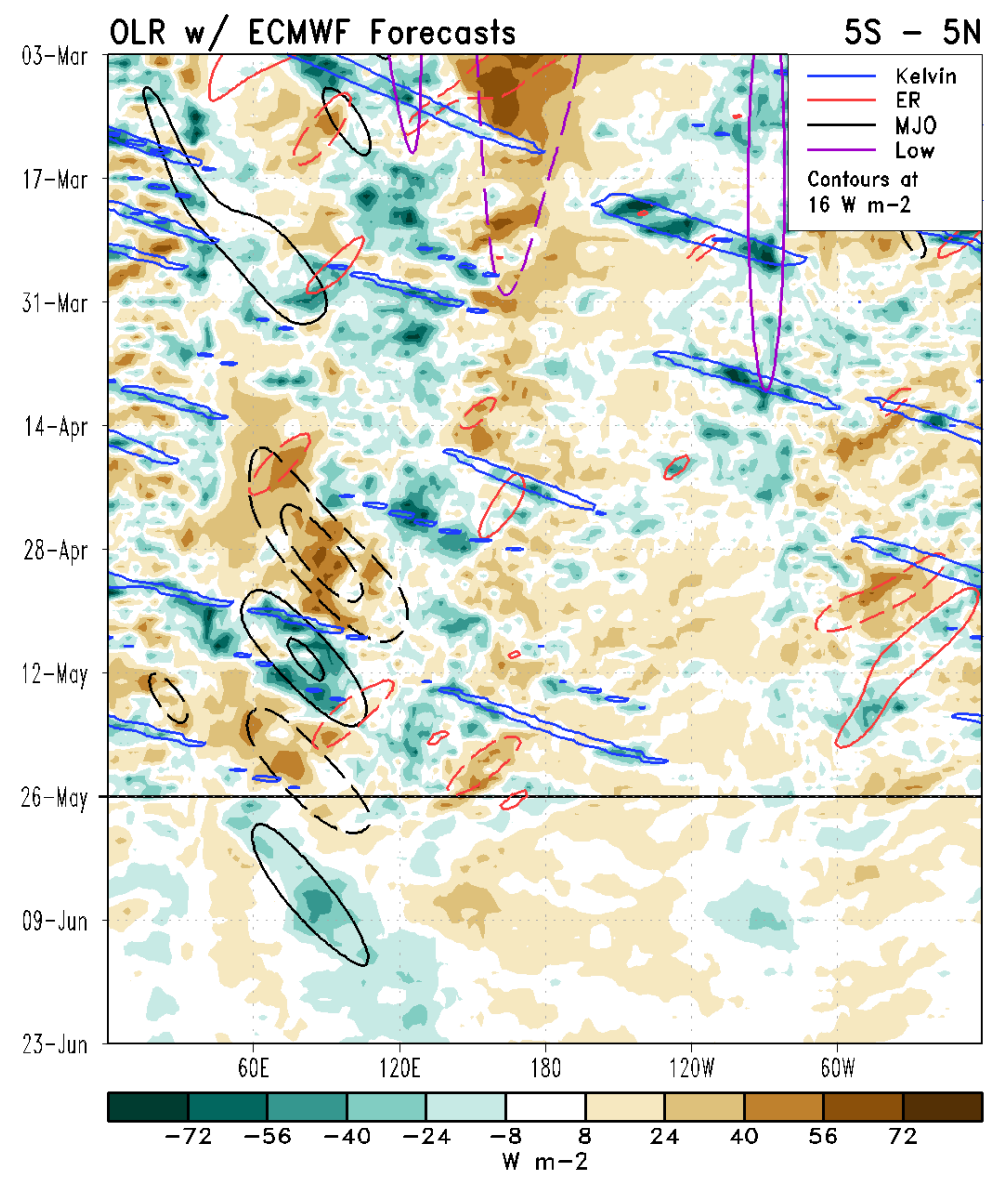


RMM Index Observations & Forecasts:



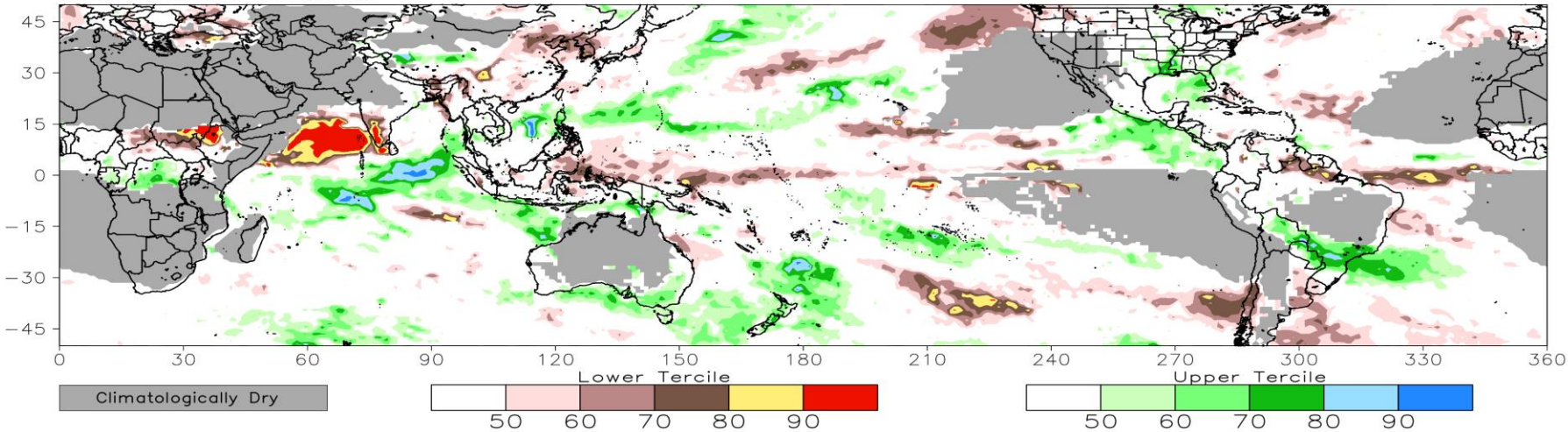
- RMM-index forecasts from both the GEFS and ECMWF favor a shift from phase 4 to phase 7-8 over the next two weeks, although they differ quite a bit with regard to signal strength and coherence.
- With other models also generally favoring further weak/incoherent MJO activity, tropical variability is likely to continue to be driven by other modes such as Kelvin or equatorial Rossby waves.

Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:

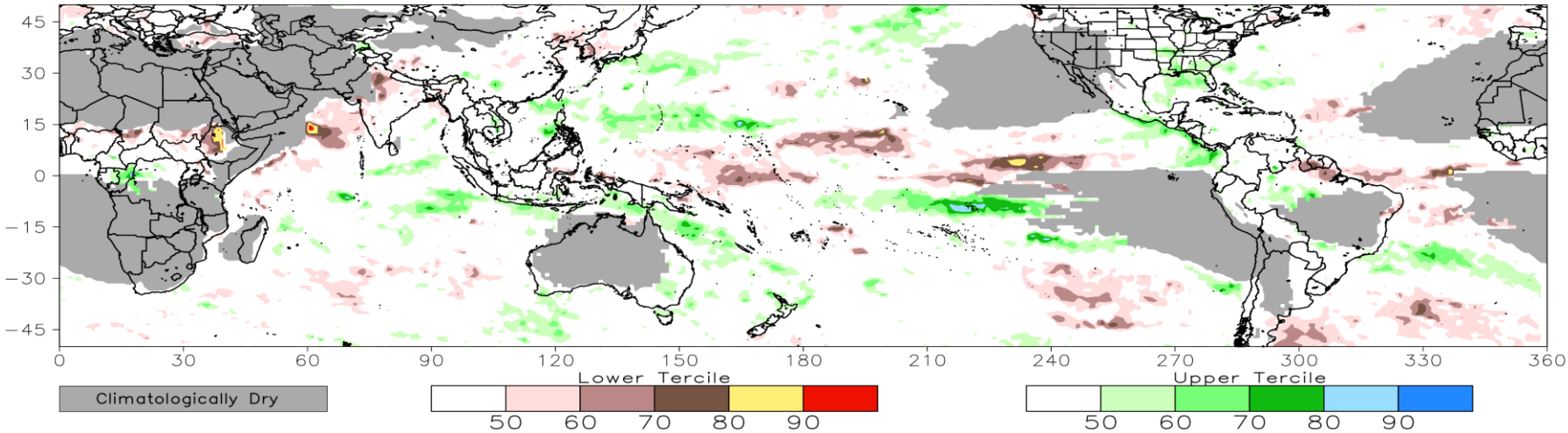


Consolidated Probabilistic Precipitation: Weeks 2 & 3

CONS (CFS+ECMWF+GEFS): Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)
Valid: 04Jun2025–10Jun2025



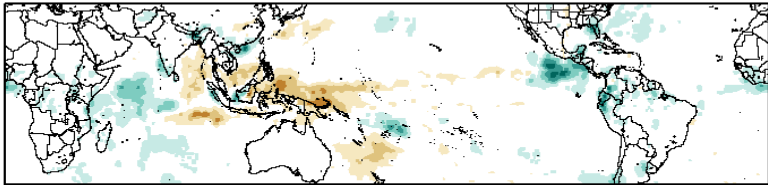
CONS (CFS+ECMWF+GEFS): Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)
Valid: 11Jun2025–17Jun2025



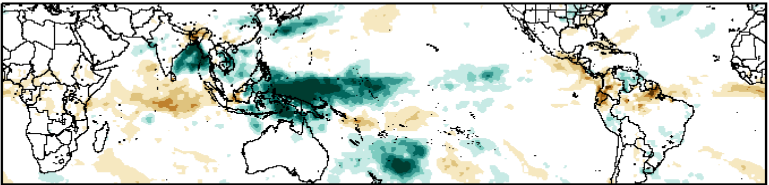
Historical Precipitation Anomalies By MJO Phase:

AMJ MJO Composite: GPCP1DD (mm/day)

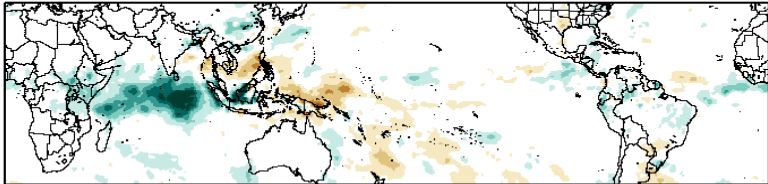
Phase 1



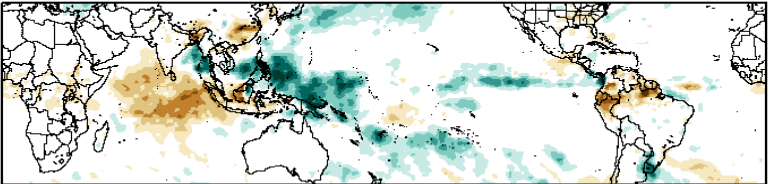
Phase 5



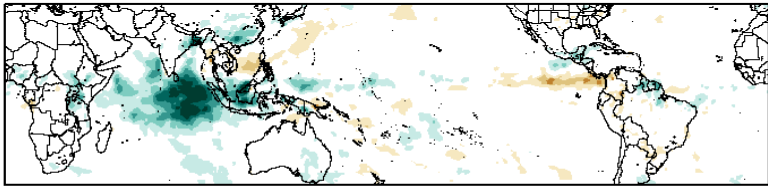
Phase 2



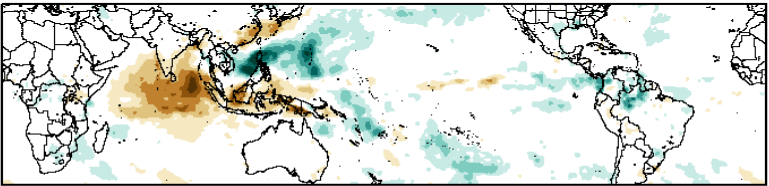
Phase 6



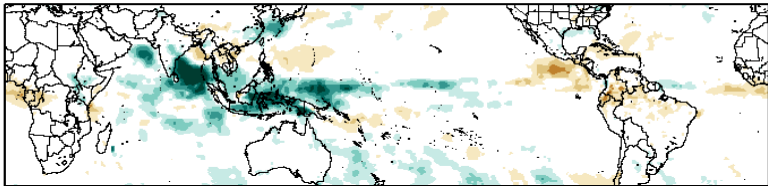
Phase 3



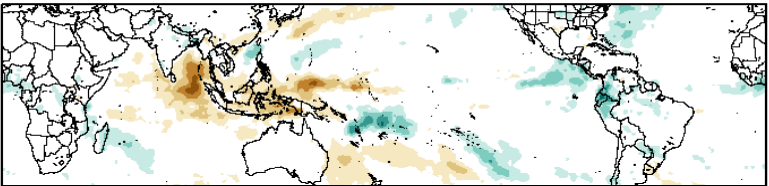
Phase 7



Phase 4

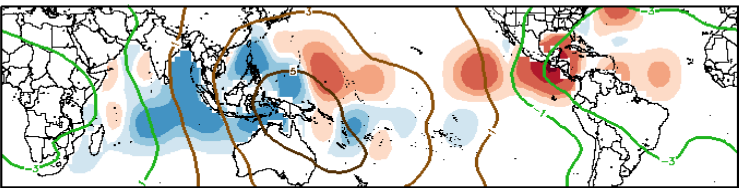


Phase 8

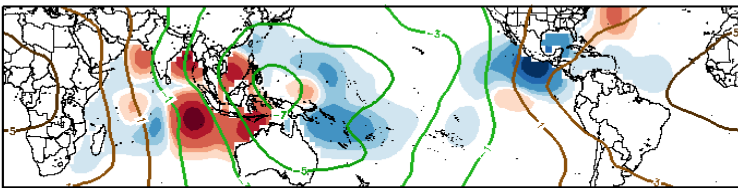


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

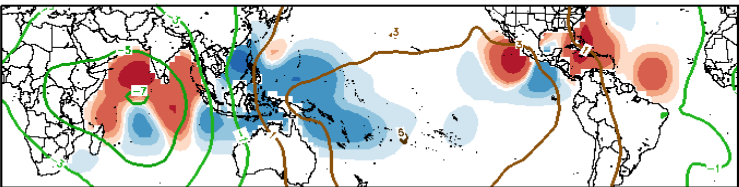
AMJ MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ AMJ CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



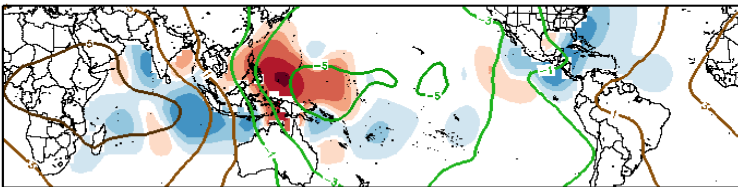
Phase 1



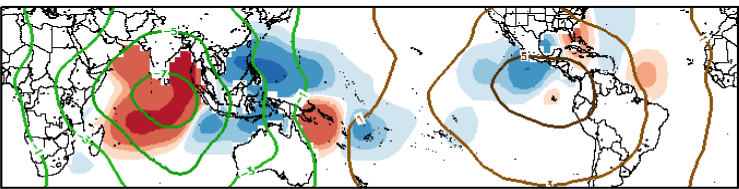
Phase 5



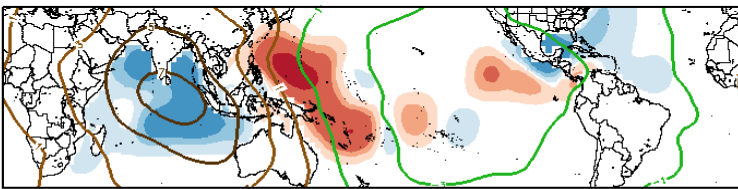
Phase 2



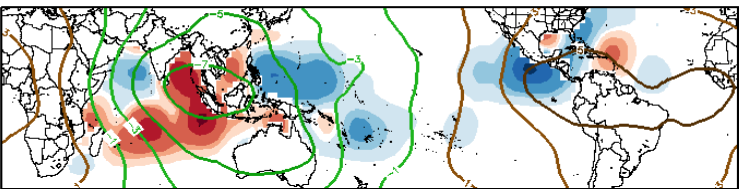
Phase 6



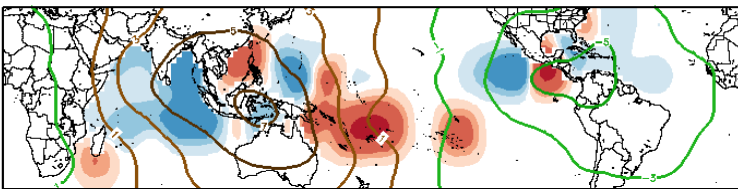
Phase 3



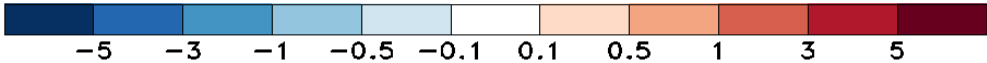
Phase 7



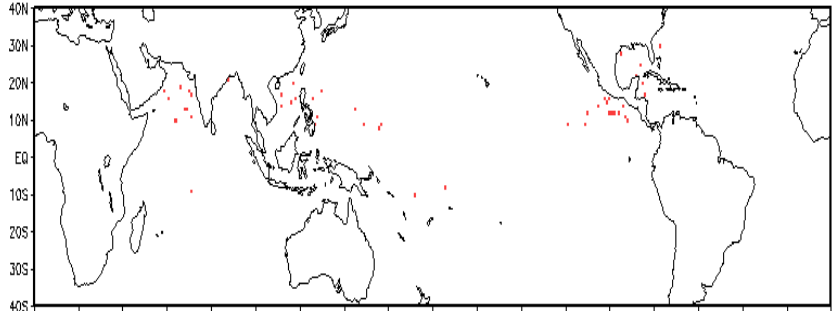
Phase 4



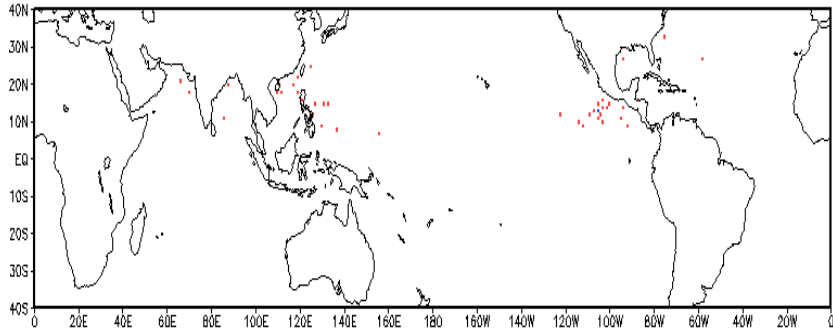
Phase 8



Observed TC Genesis, 1979–2021
7-day Period 0604 to 0610

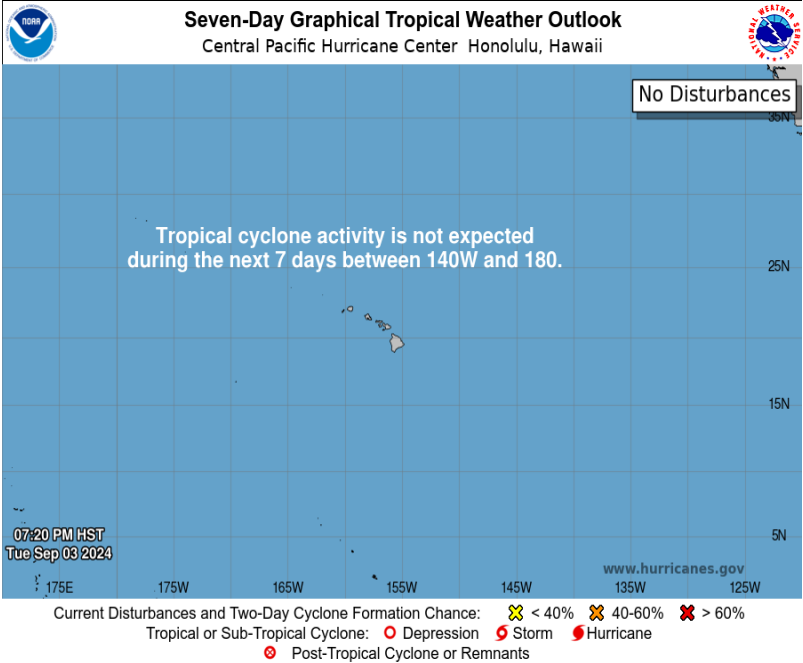
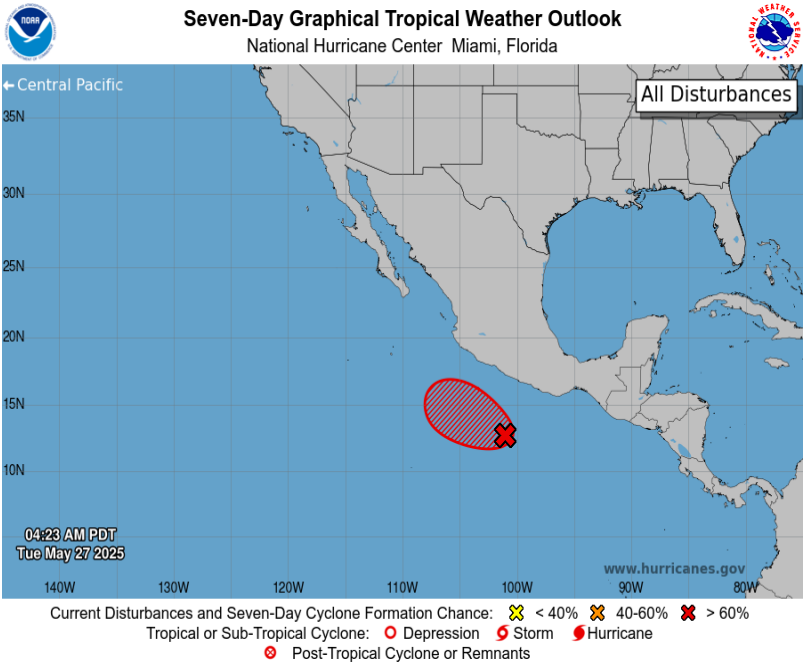
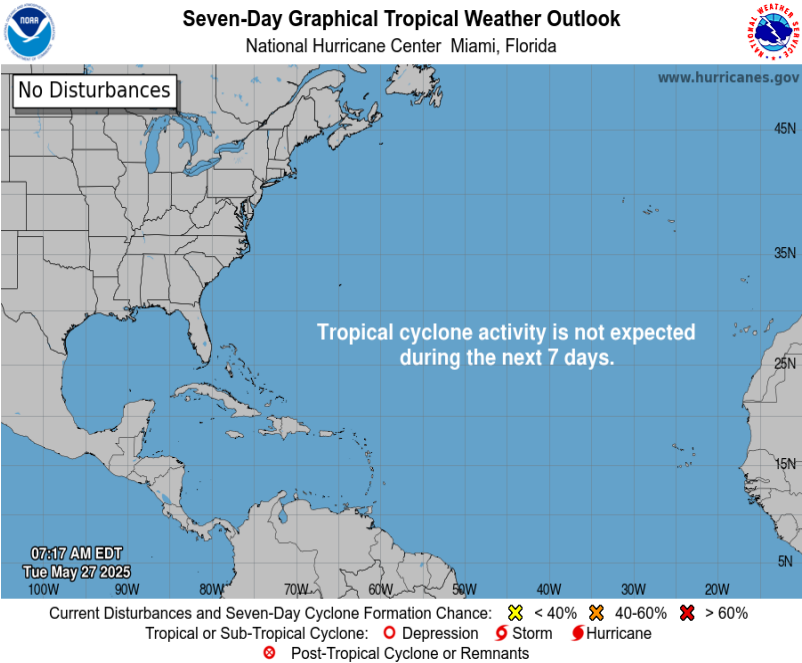


Observed TC Genesis, 1979–2021
7-day Period 0611 to 0617



Experimental

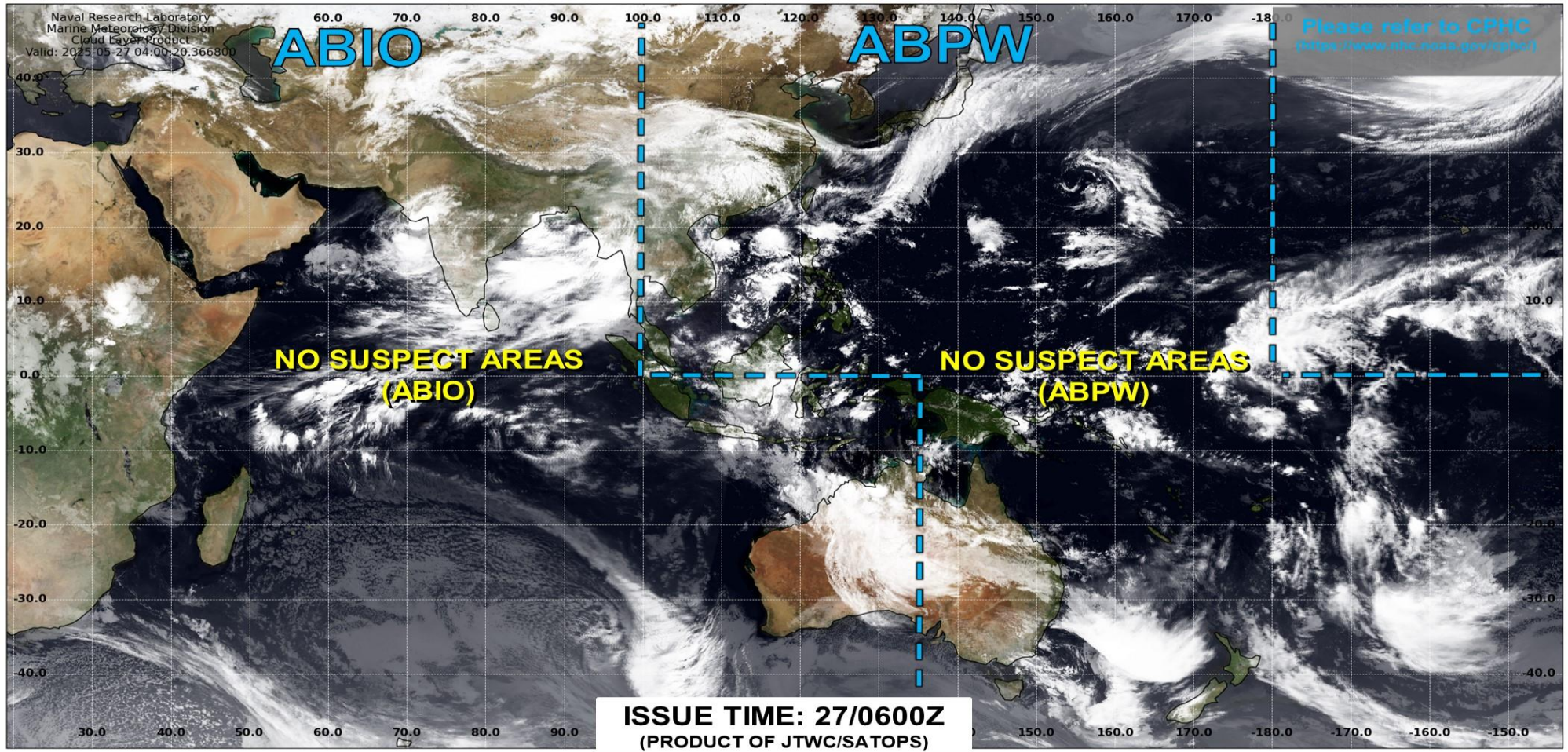
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



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

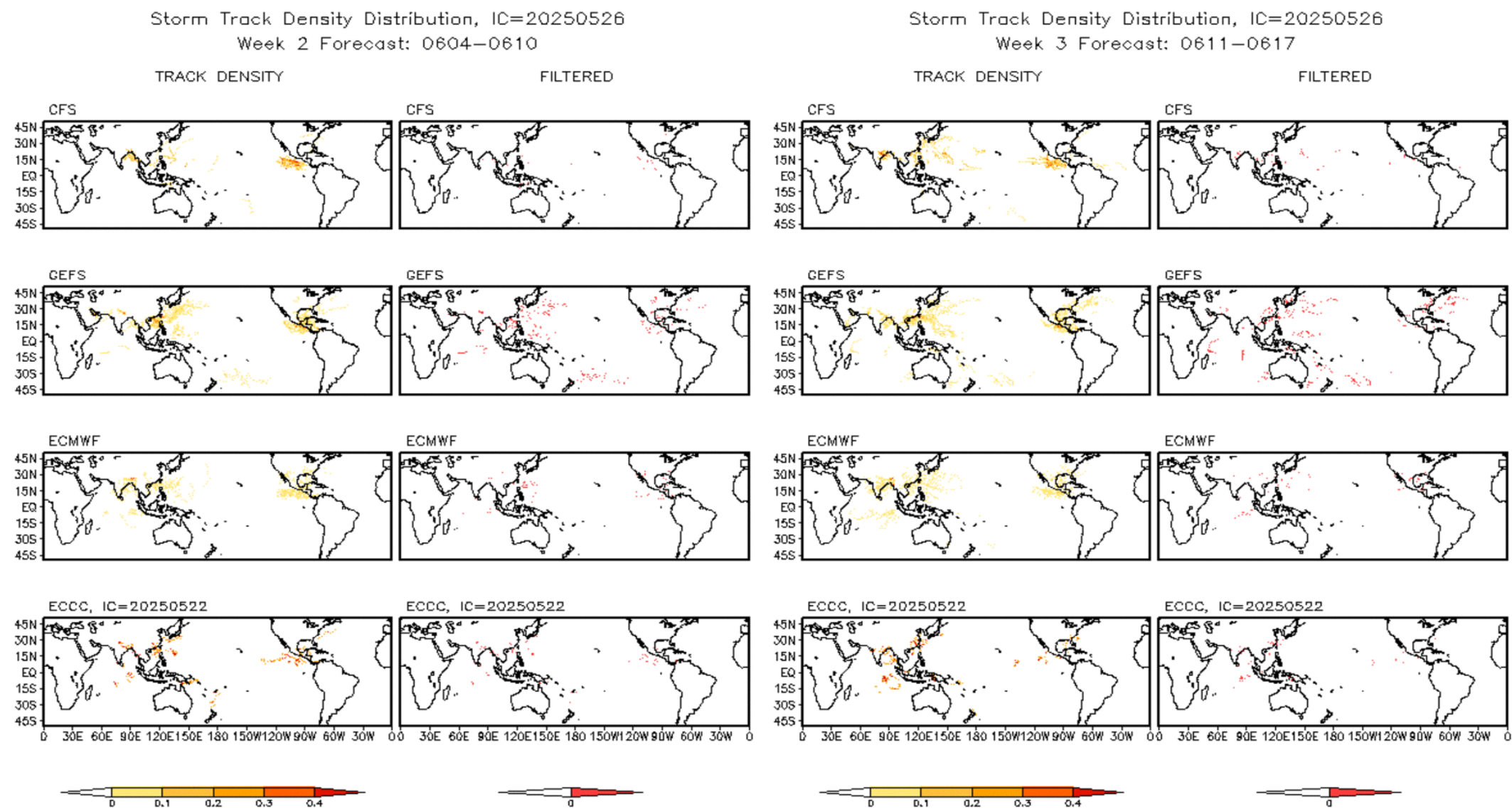
TC development likely within 24 hours (Reference TCFA)

SUB TROPICAL

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

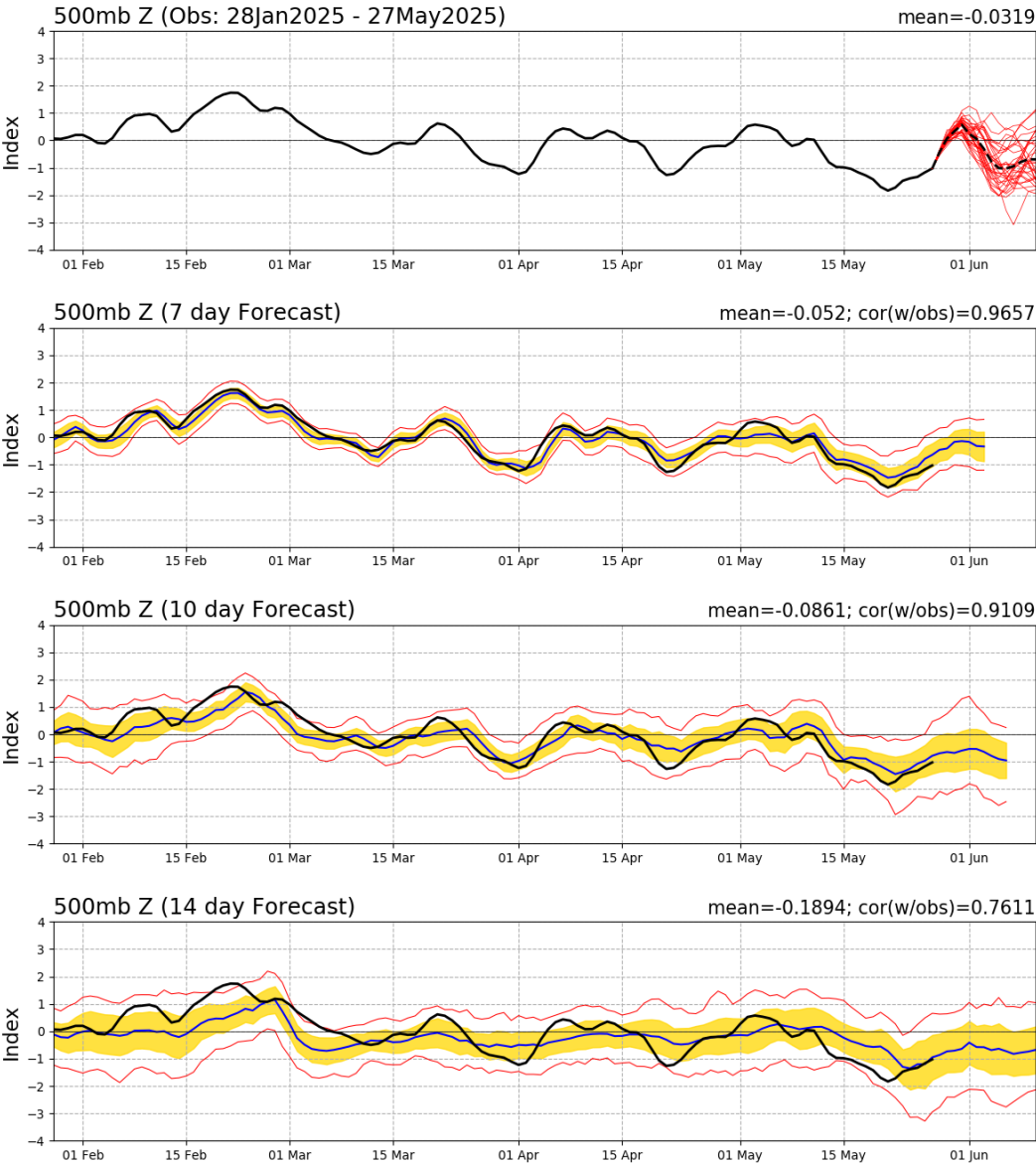
Tropical Cyclone (Reference Warning)

Multi-Model TC Track Densities: Weeks 2+3

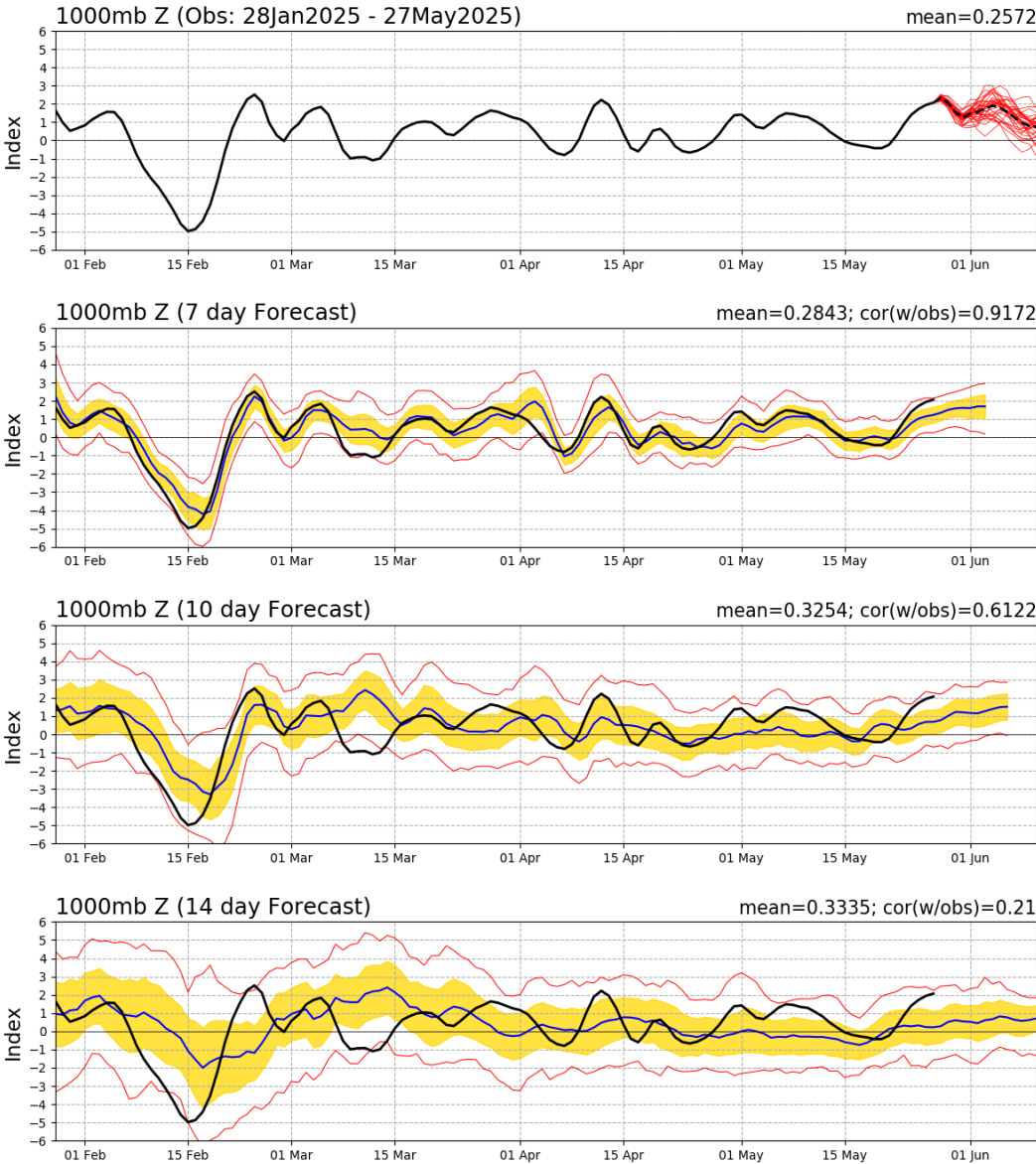


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

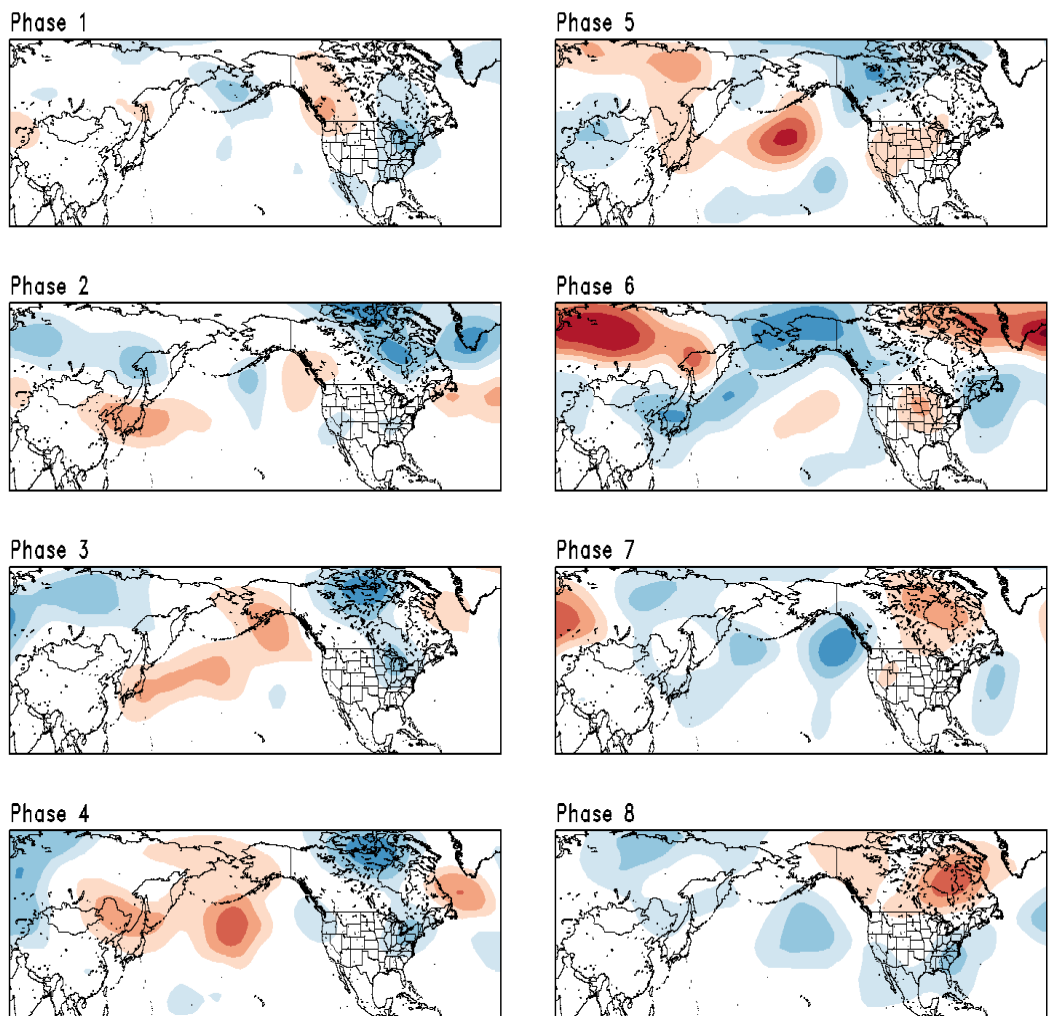


AO Index: Observed & GEFS Forecasts

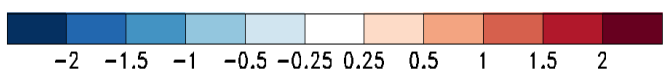
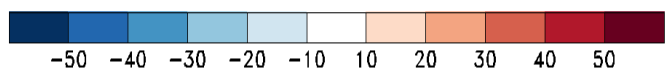
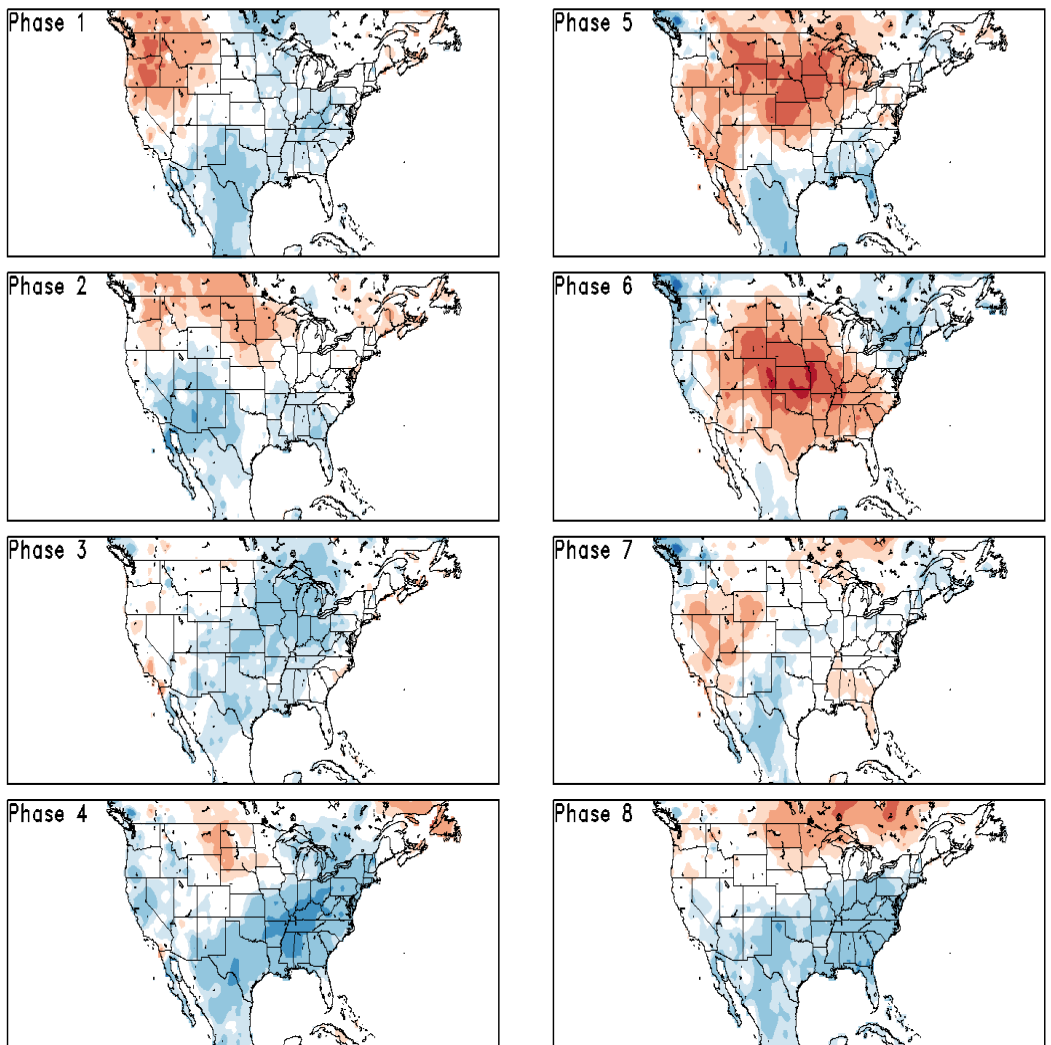


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

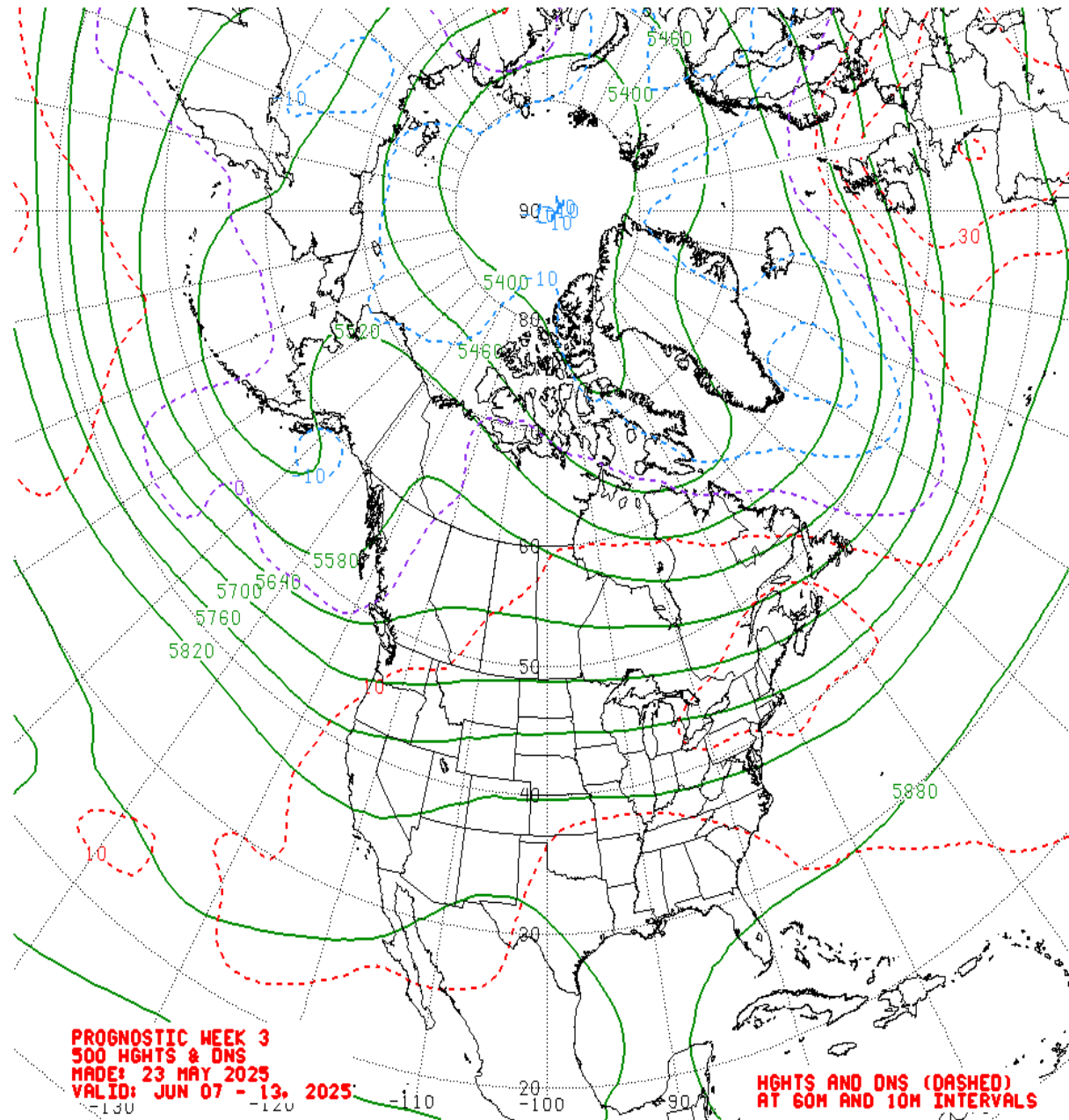
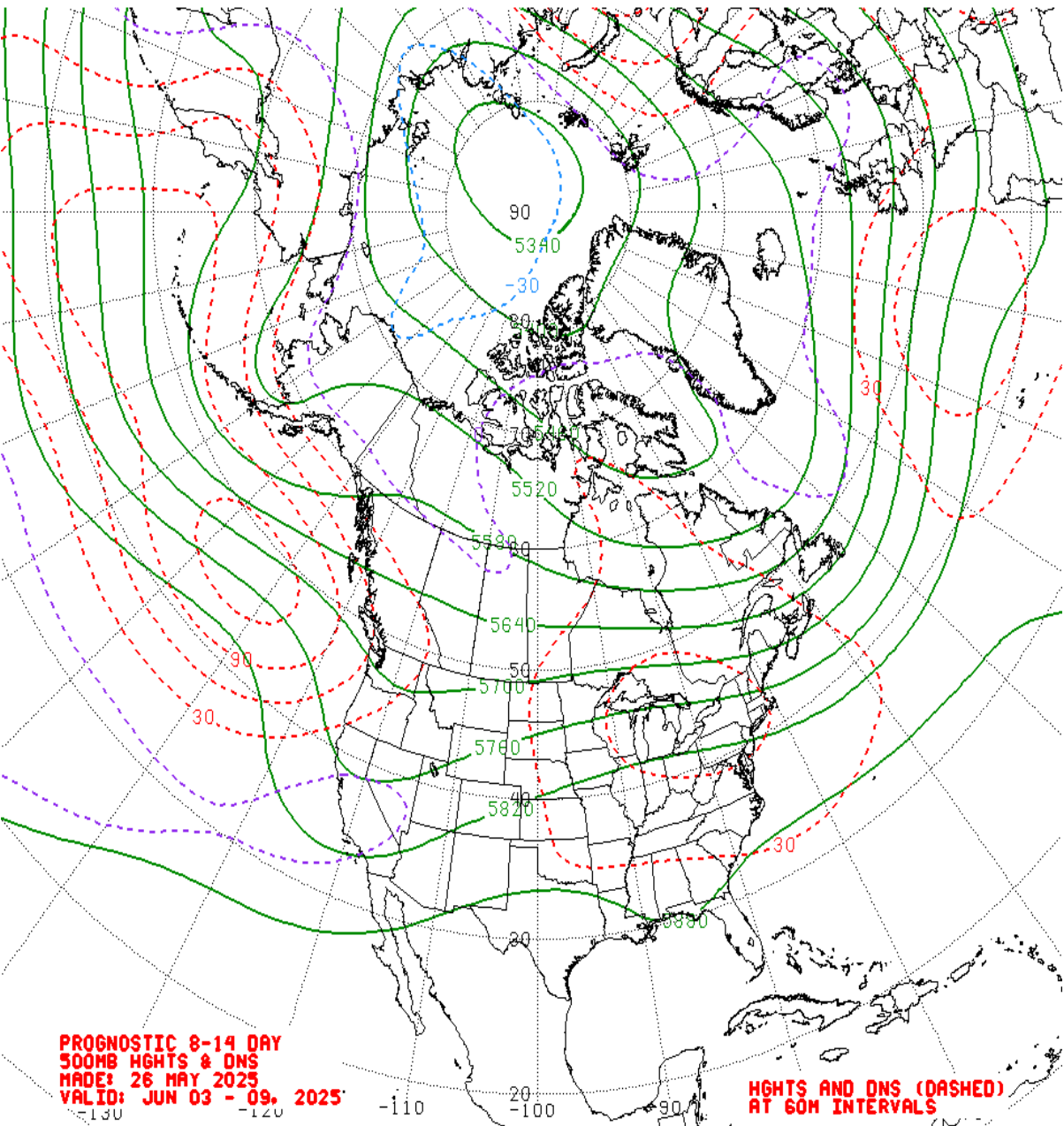
AMJ MJO Composite: CDAS 500-hPa Height (m)



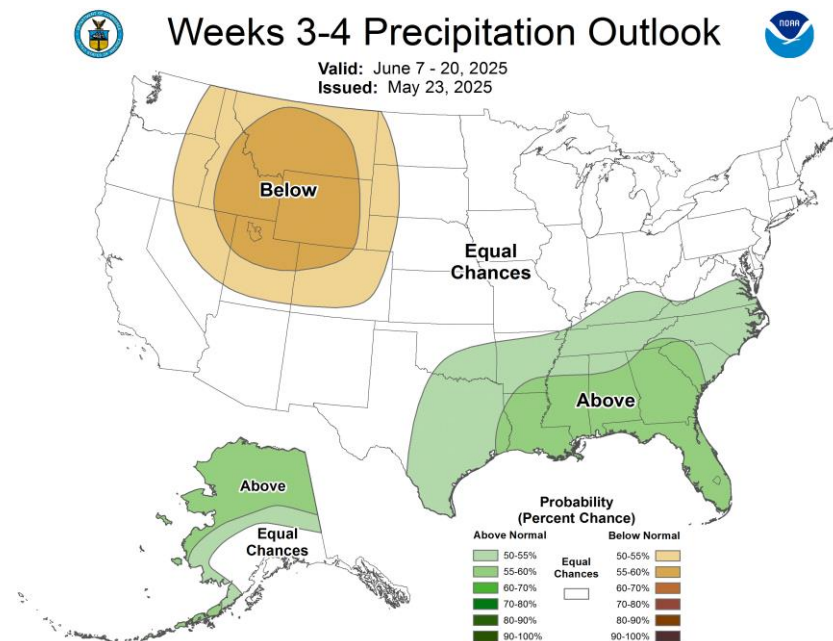
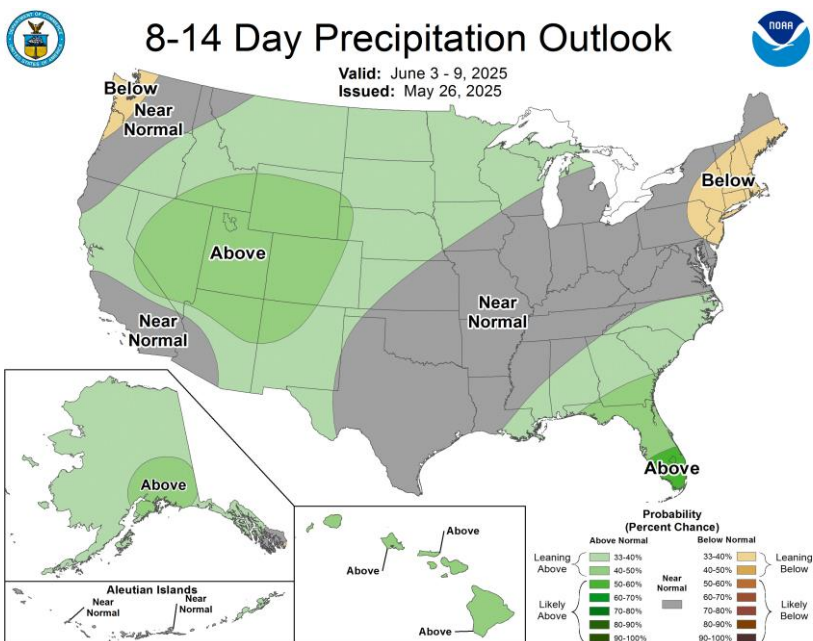
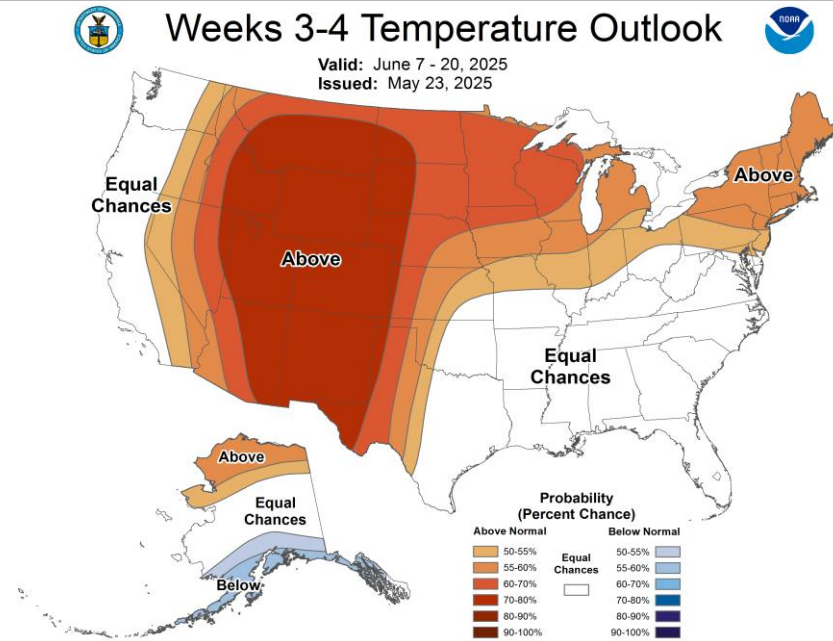
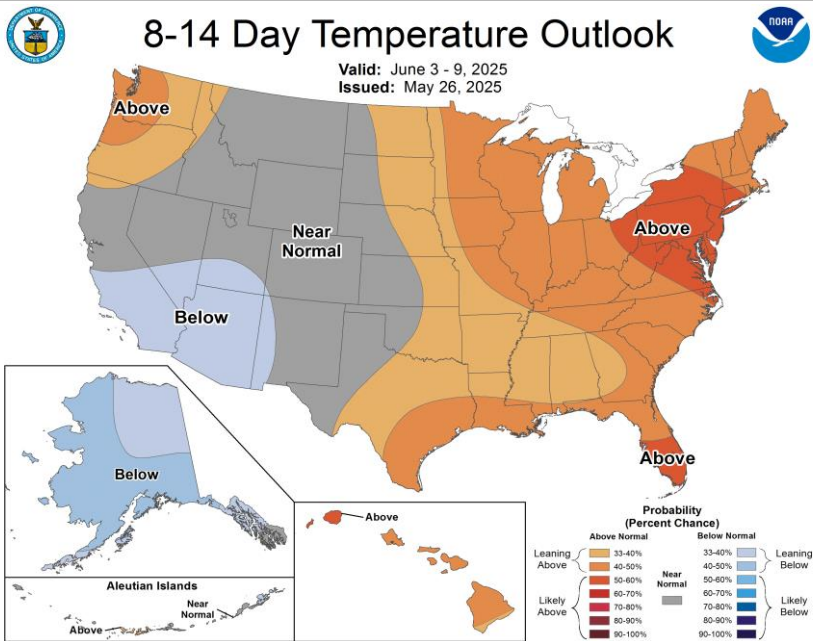
AMJ MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



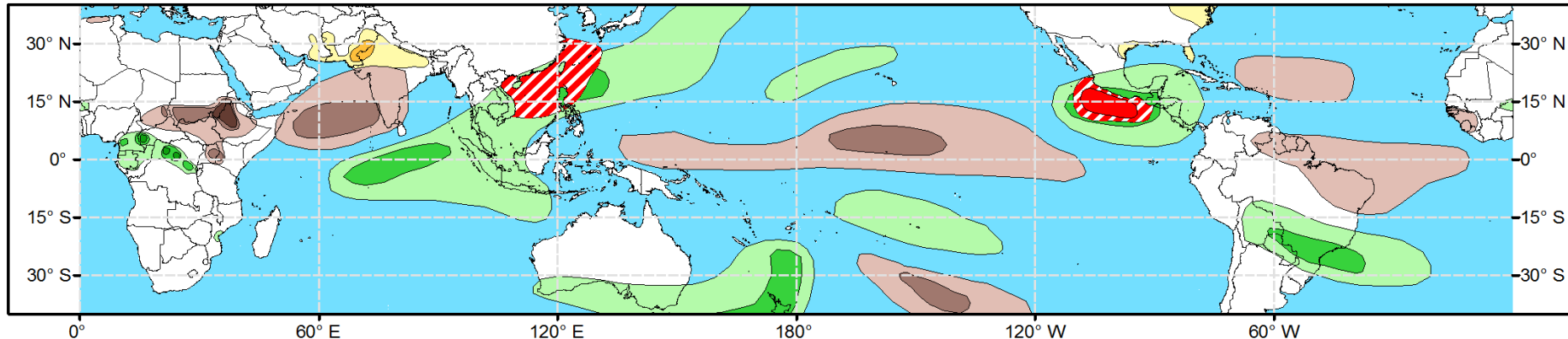


Global Tropics Hazards Outlook

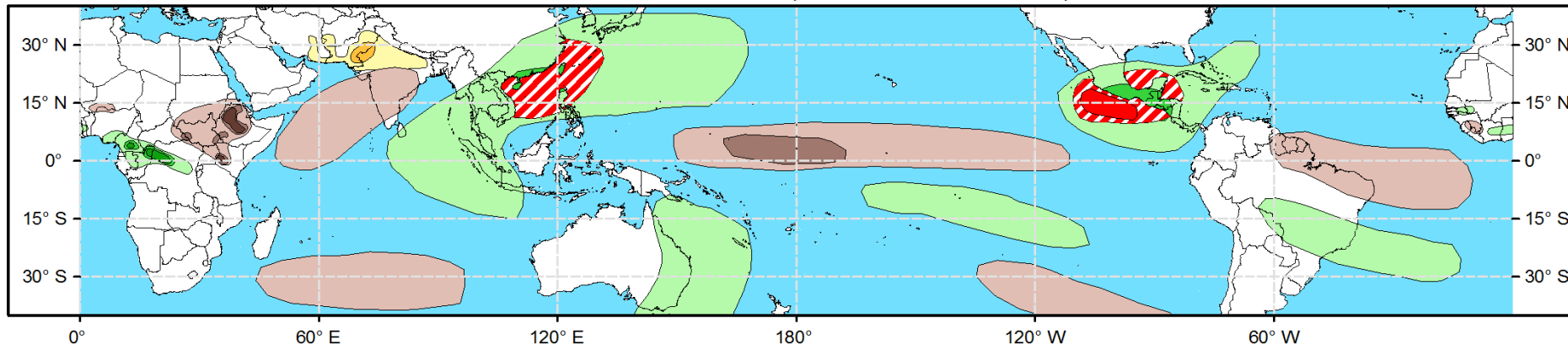
Climate Prediction Center



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