



# Weeks 2-3 Global Tropics Hazards Outlook

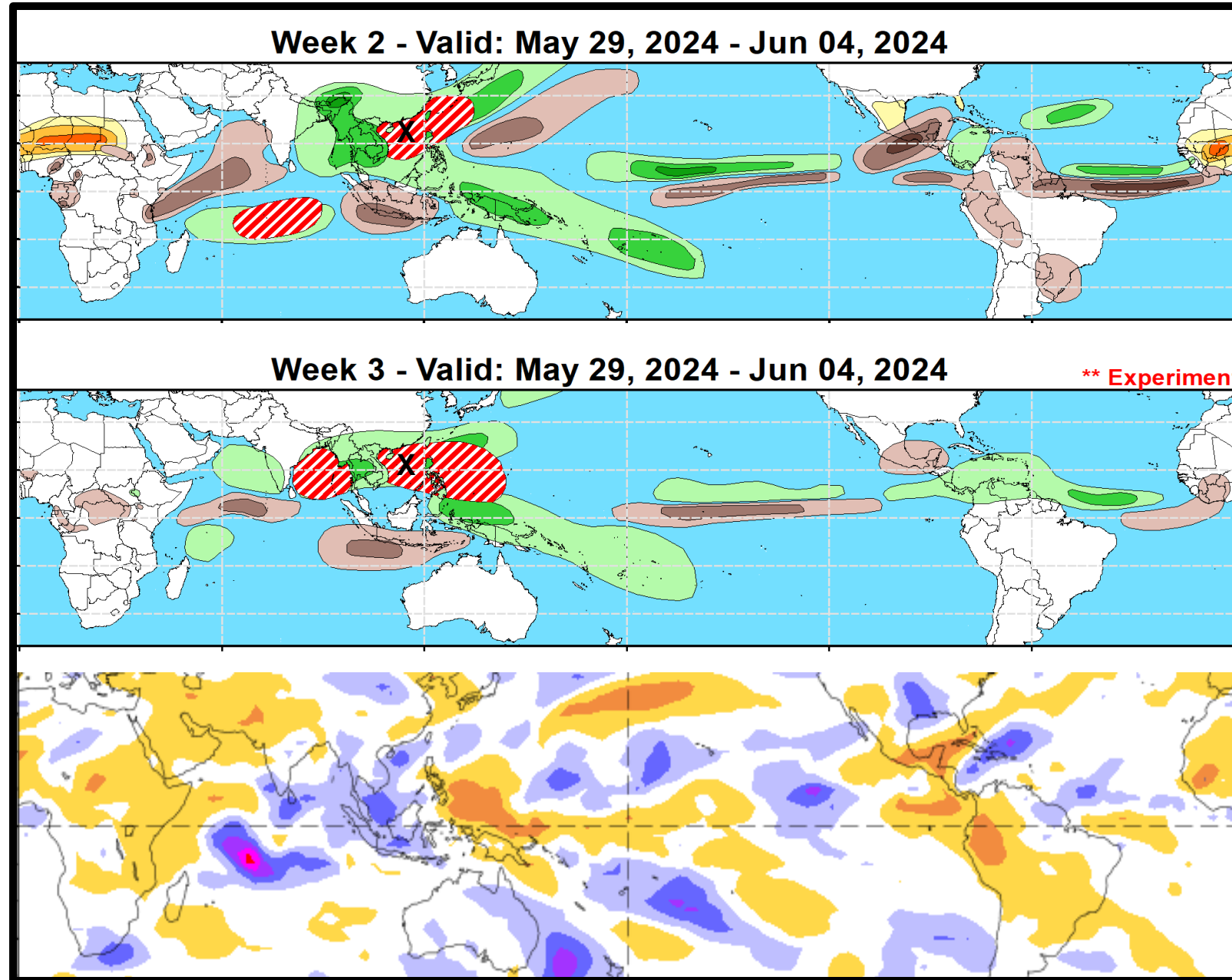
6/4/2024

Adam Allgood

NWS / NCEP / Climate Prediction Center

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

- The JTWC upgraded 02W to a tropical depression just prior to landfall over southeastern China.
- An intrusion of strong subsidence east of the Philippines was not well captured by the forecast tools.



# Synopsis of Climate Modes:

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**ENSO:** (May 9, 2024 Update)      *next update on Thursday, Jun 13<sup>th</sup>*

- ENSO Alert System Status: [El Niño Advisory](#) / [La Niña Watch](#)
- A transition from El Niño to ENSO-neutral is likely in the next month. La Niña may develop in June-August (49% chance) but more likely by July-September (69% chance).

## **MJO and other subseasonal tropical variability:**

- After strengthening over the Maritime Continent, the MJO signal weakened in early June.
- Kelvin wave (Pacific), Rossby wave (Maritime Continent) and low frequency signals all contributed to an incoherent intraseasonal signal.
- Dynamical model MJO index forecasts show weak activity, but shift the enhancement to the Pacific and Western Hemisphere during Weeks 2-3.
- Enhanced CAG activity and westerlies may promote TC genesis in the vicinity of Central America during the outlook period. West Pacific activity becomes slightly more favored in Week-3.

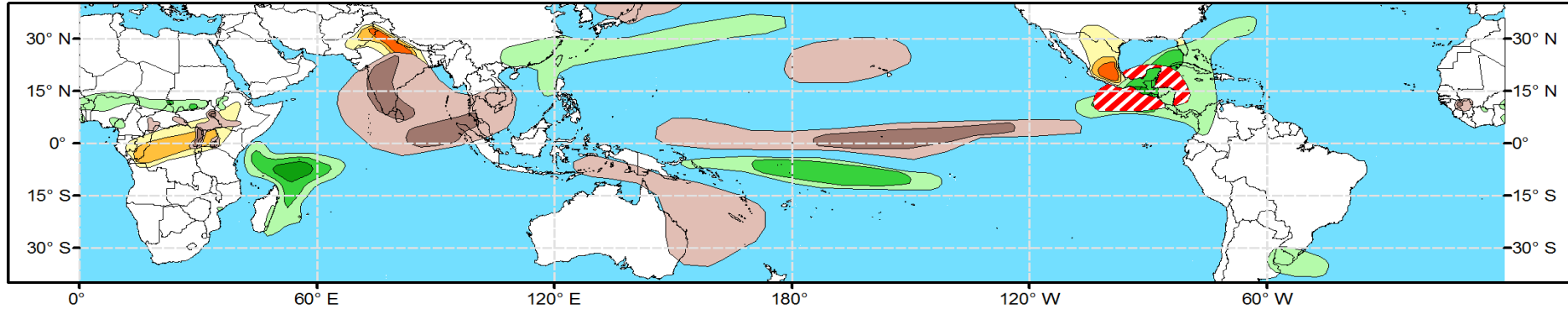
# GTH Outlook:



## Global Tropics Hazards Outlook Climate Prediction Center

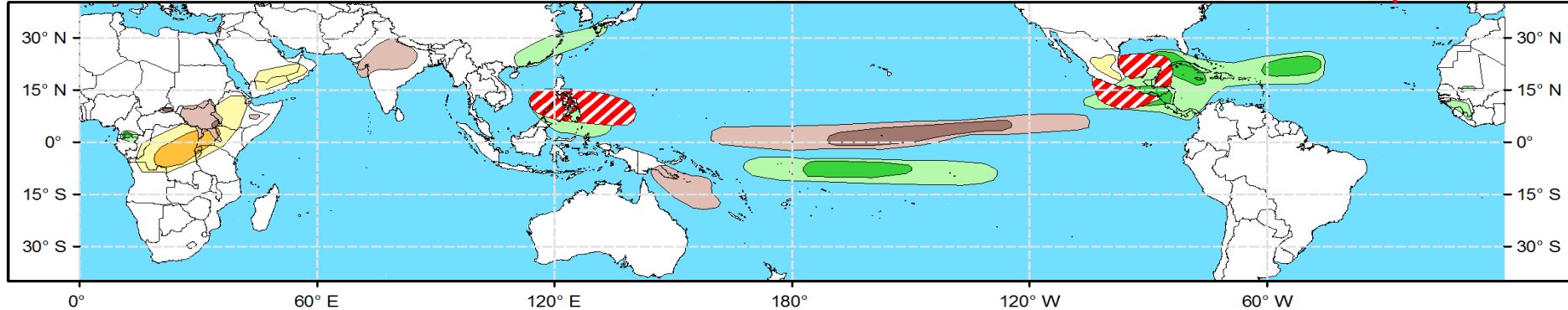


**Week 2 - Valid: Jun 12, 2024 - Jun 18, 2024**



**Week 3 - Valid: Jun 19, 2024 - Jun 25, 2024**

**\*\* Experimental \*\***



**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 max temperatures in the  
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**Below-Average  
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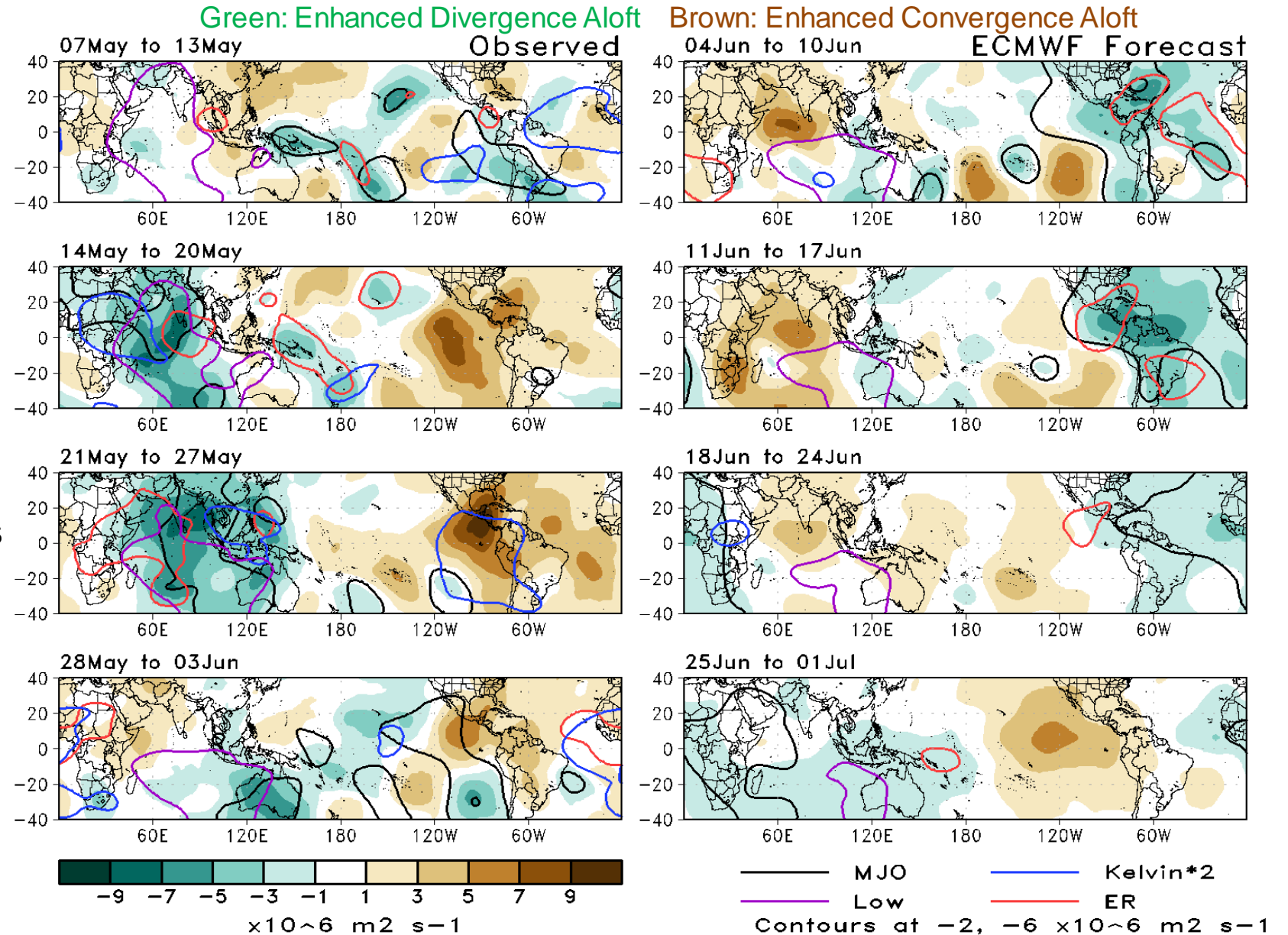
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**Issued: 06/04/2024  
Forecaster: Allgood**

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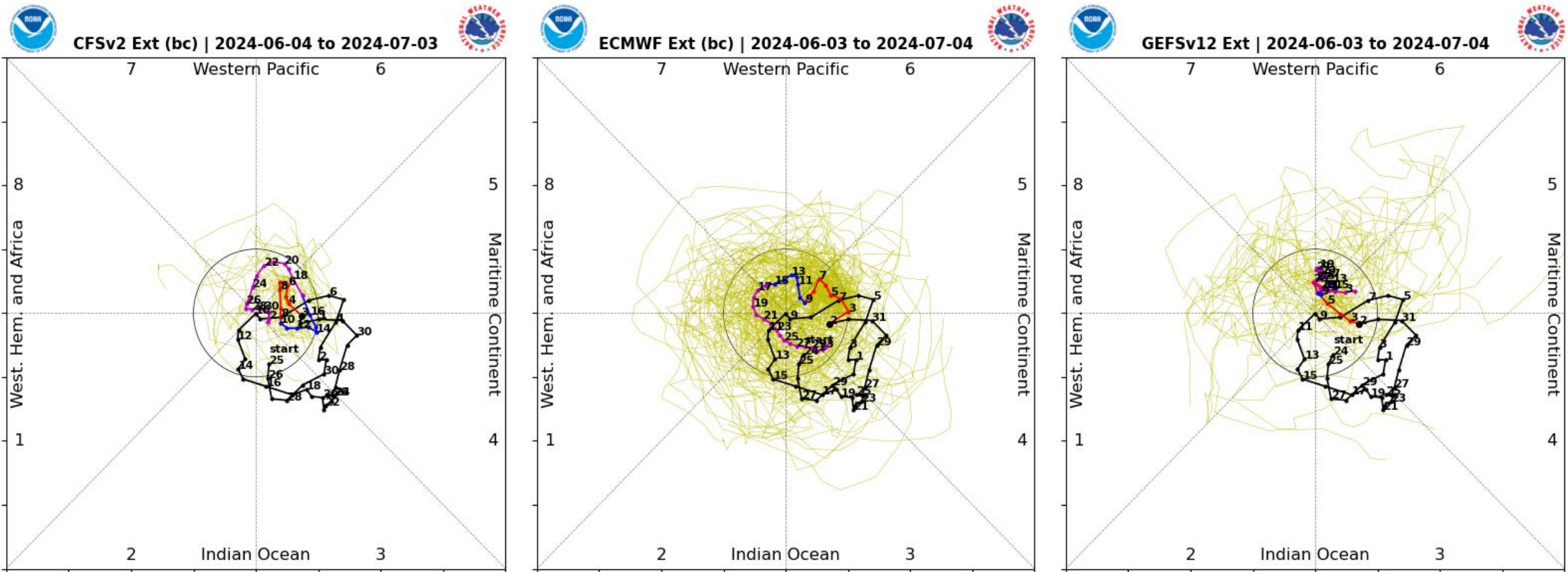
# 200-hPa Velocity Potential Anomaly Maps:

- Robust MJO activity can be seen during mid- to late May.
- By early June, the signal largely broke down.
- During June, the ECMWF favors a more enhanced signal across the Western Hemisphere, and delayed monsoon activity across southern Asia.



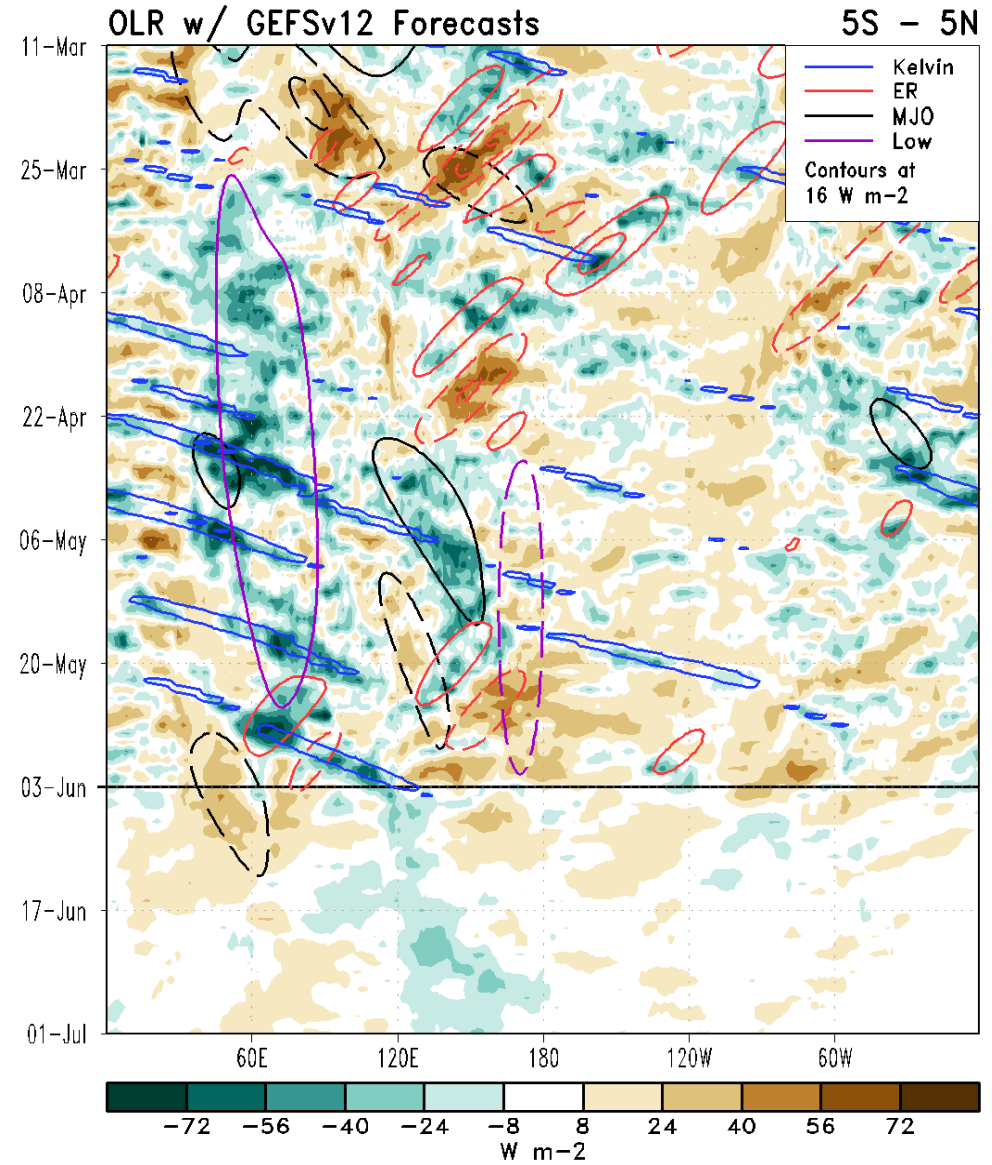
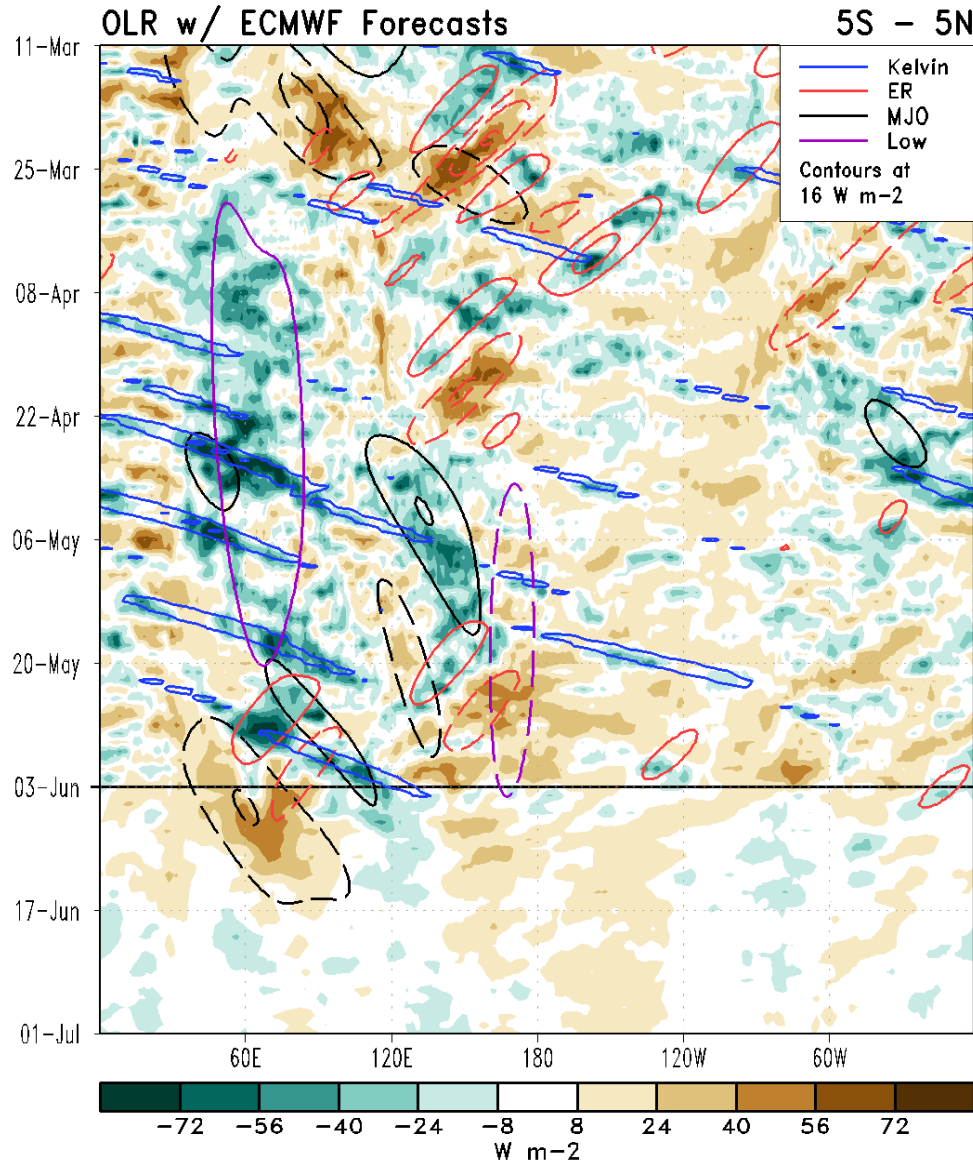


# RMM Index Observations & Forecasts:



- All operational model runs remain within the unit circle during the outlook period.
- Note the increased activity on the “top half” of the unit circle vs. the Indian Ocean and Maritime Continent observed during May.

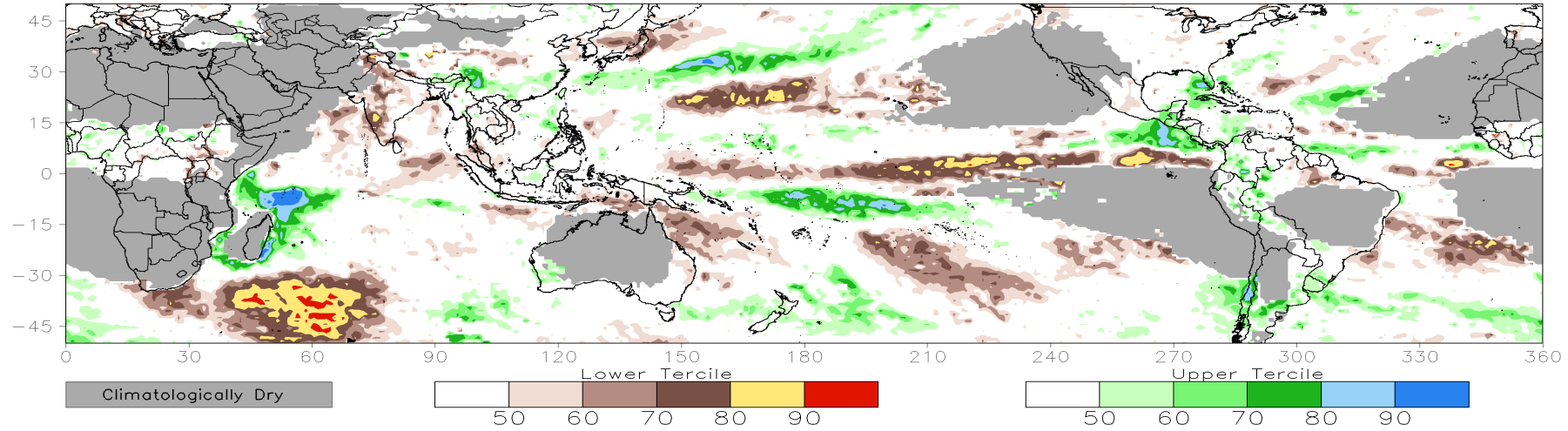
# Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



# Consolidated Probabilistic Precipitation: Weeks 2 & 3

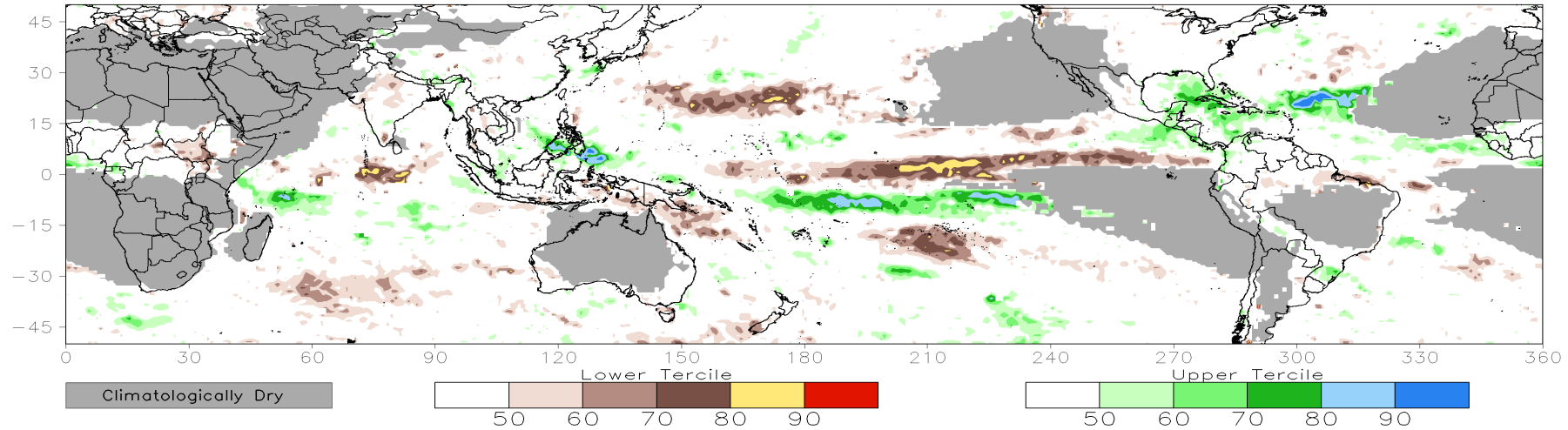
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 12Jun2024–18Jun2024



CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 19Jun2024–25Jun2024

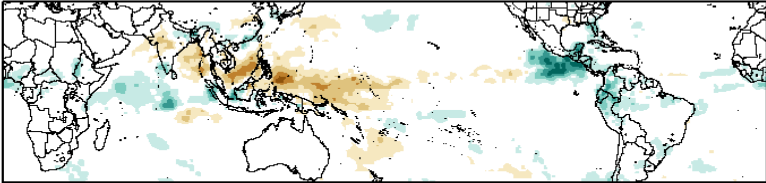




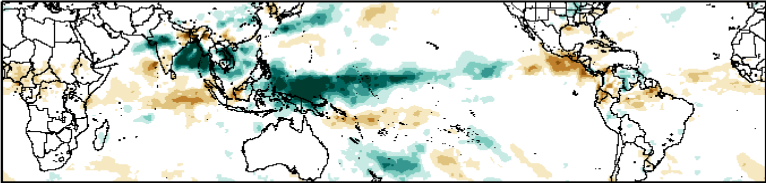
# Historical Precipitation Anomalies By MJO Phase:

MJJ MJO Composite: GPCP1DD (mm/day)

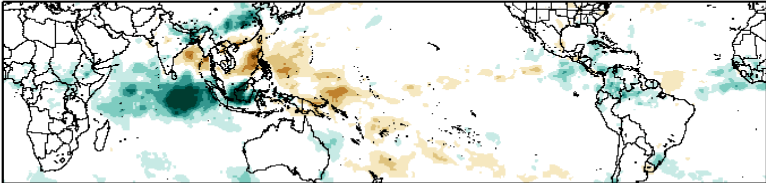
Phase 1



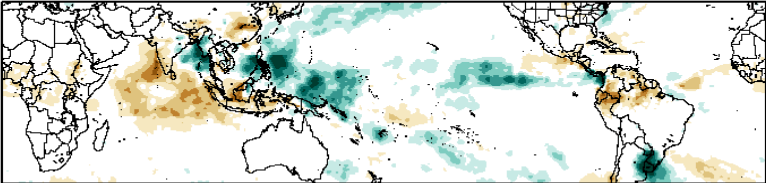
Phase 5



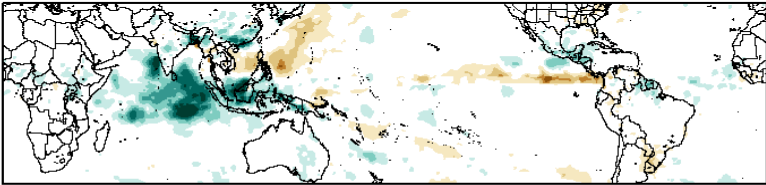
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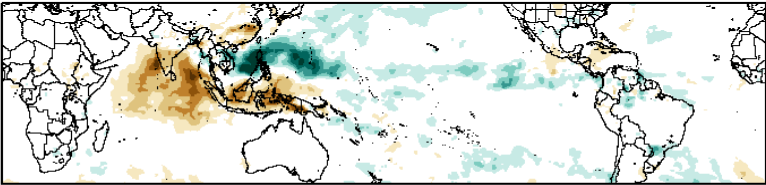
Phase 6



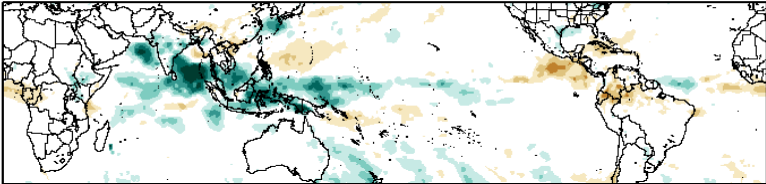
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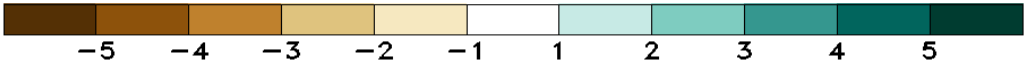
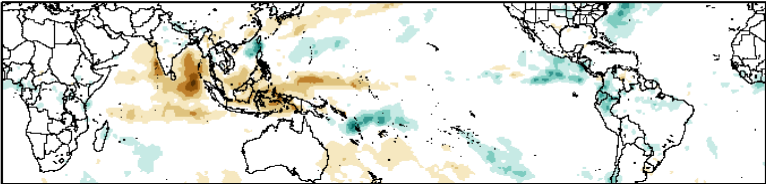
Phase 7



Phase 4

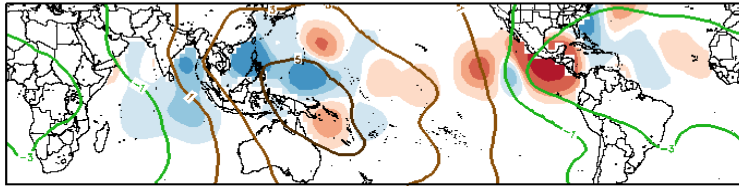


Phase 8

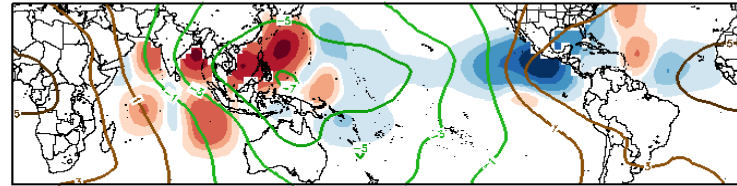


# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

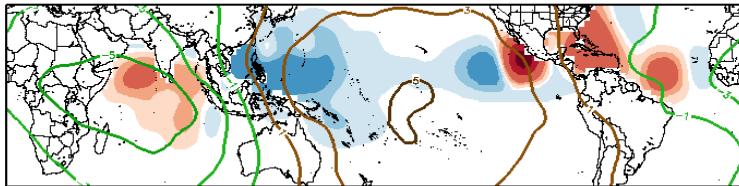
MJJ MJO Composite: Mean TC Origin Density Anomaly ( $\#TCs/277km^2*100$ )  
w/ MJJ CHI200 ( $\times 10^6 m^2 s^{-1}$ ) / Contours every  $2 \times 10^6 m^2 s^{-1}$



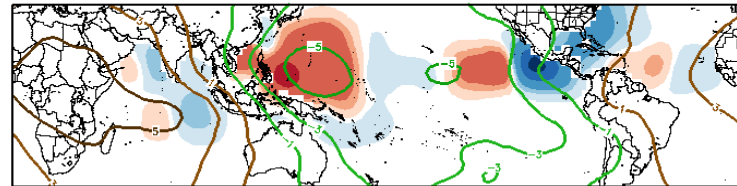
Phase 1



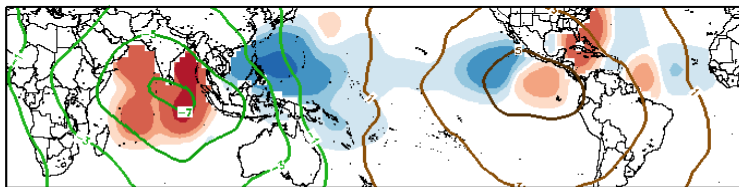
Phase 5



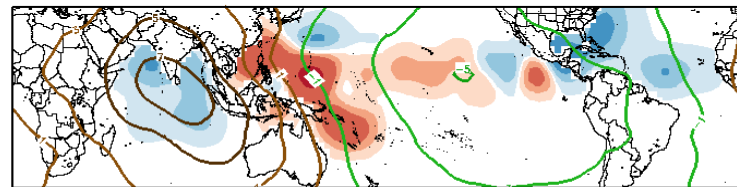
Phase 2



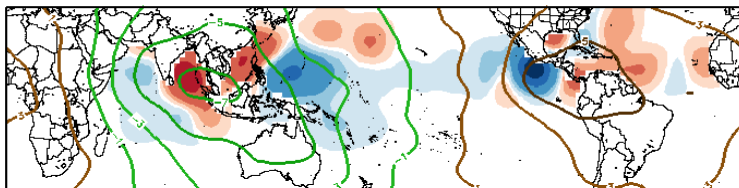
Phase 6



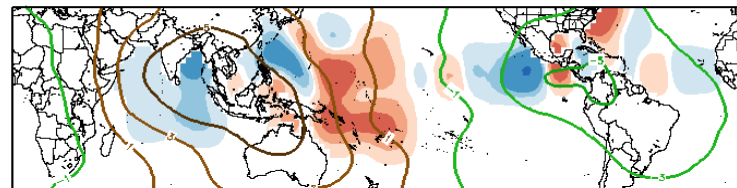
Phase 3



Phase 7

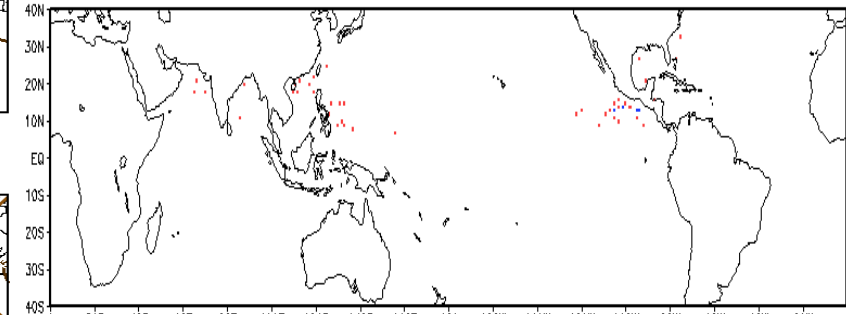


Phase 4

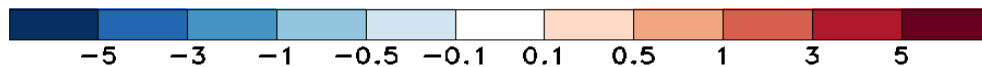
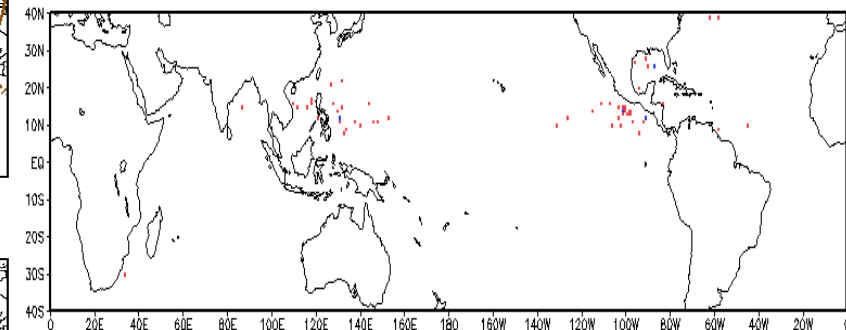


Phase 8

Observed TC Genesis, 1979-2021  
7-day Period 0612 to 0618

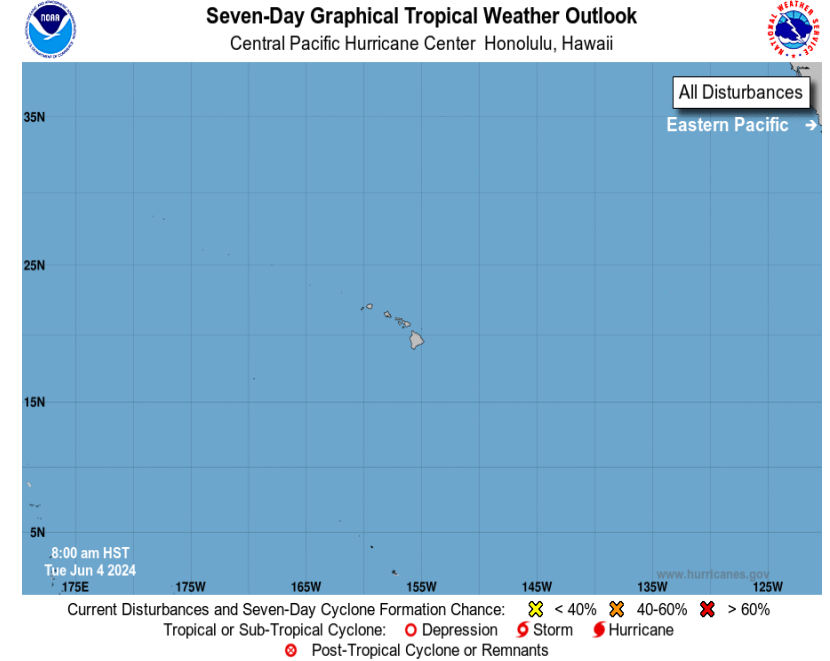
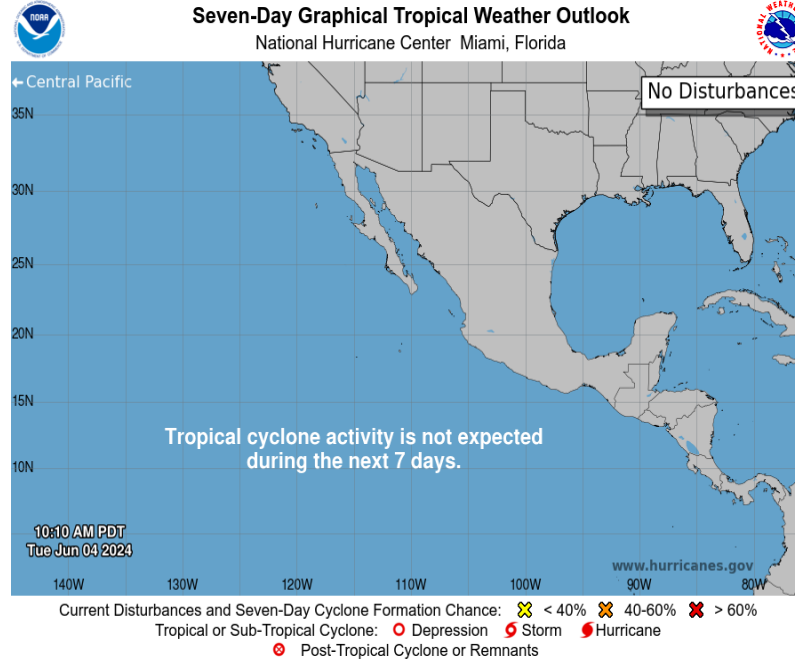
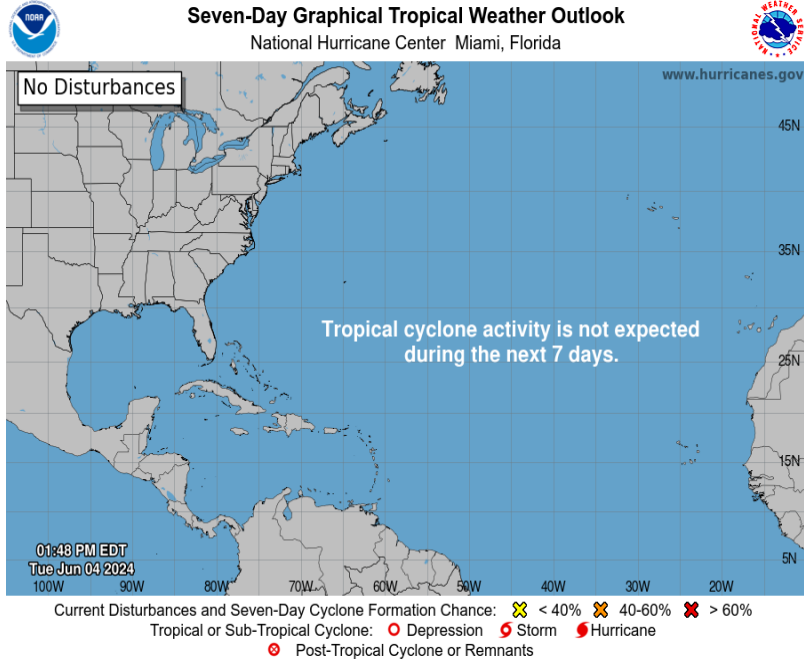


Observed TC Genesis, 1979-2021  
7-day Period 0619 to 0625



\*Experimental\*

# Tropical Cyclone Monitoring/Forecast: NHC / CPHC

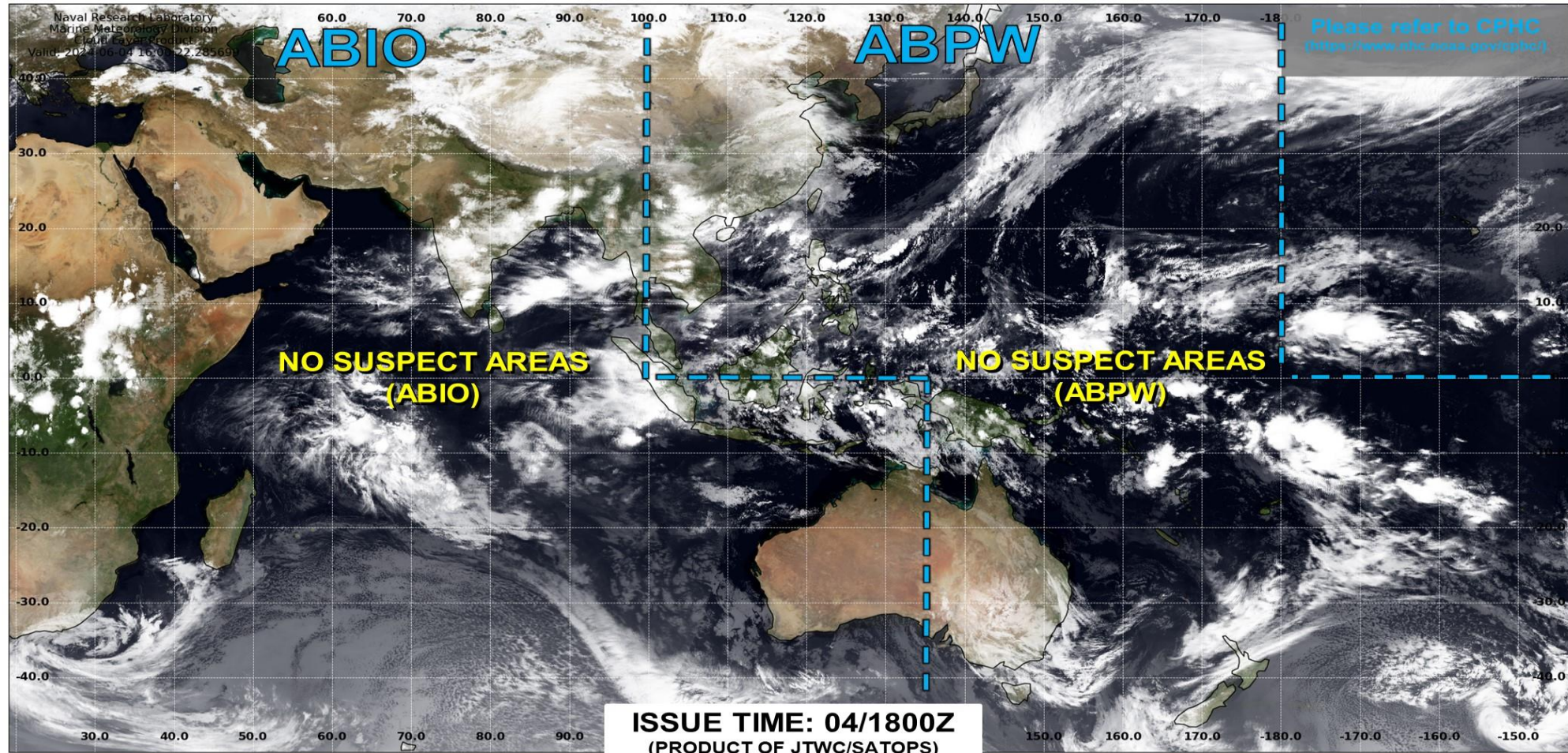




# Tropical Cyclone Monitoring/Forecast: JTWC



## JOINT TYPHOON WARNING CENTER



TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours



TC development likely within 24 hours (Reference TCFA)



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

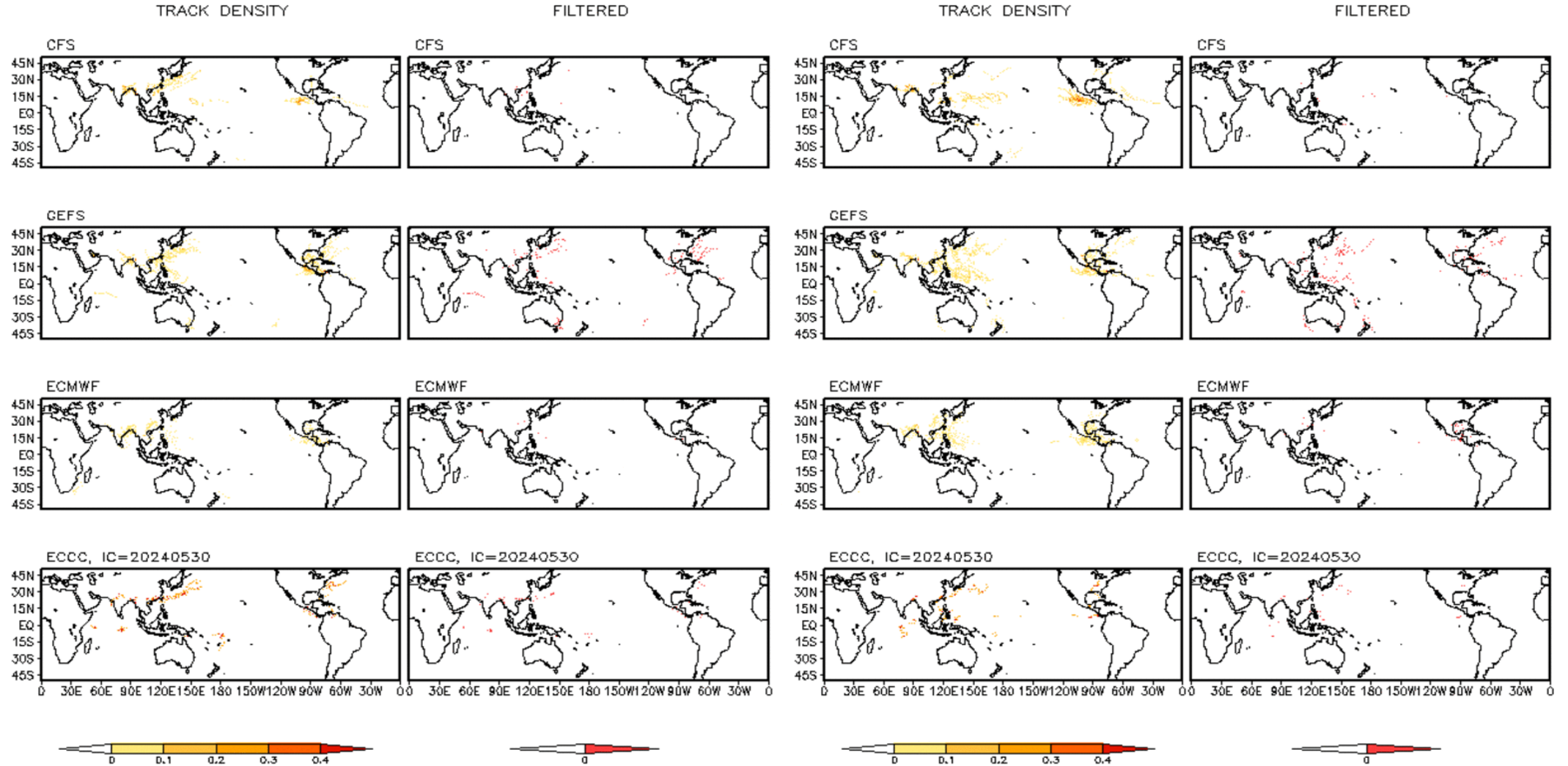
 Tropical Cyclone (Reference Warning)



# Multi-Model TC Track Densities: Weeks 2+3

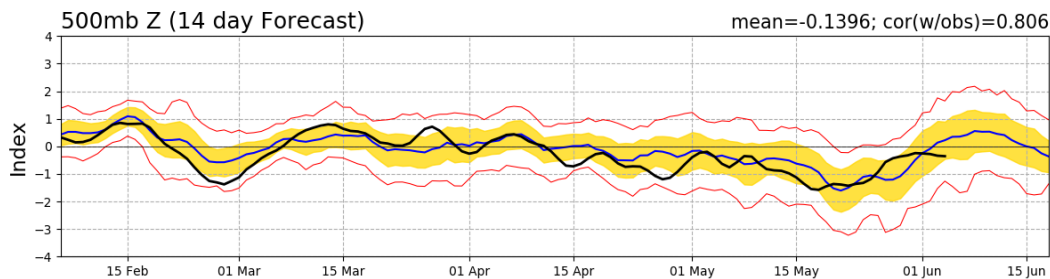
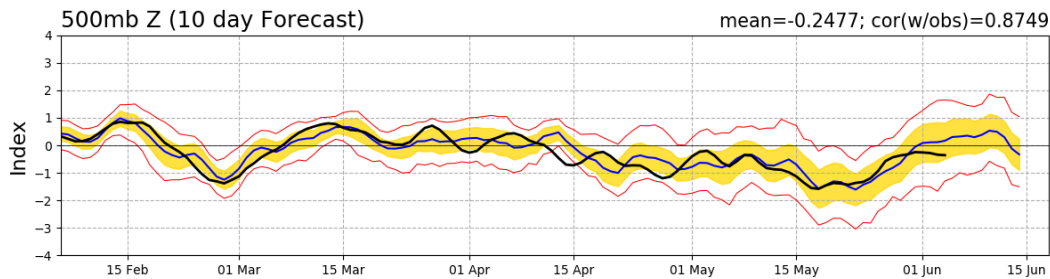
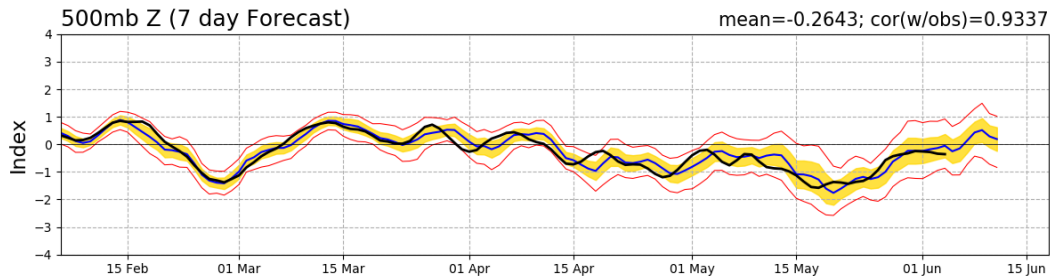
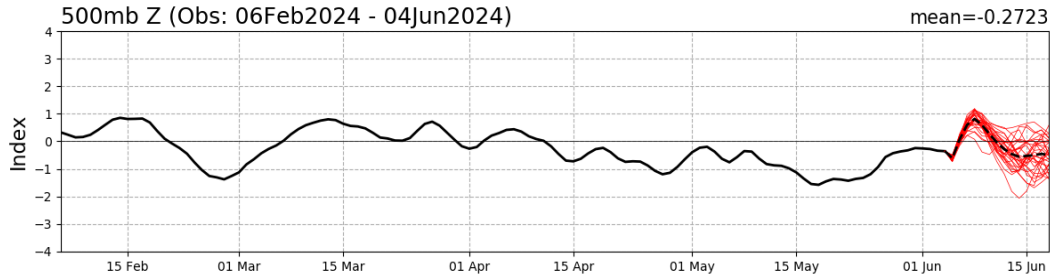
Storm Track Density Distribution, IC=20240603  
Week 2 Forecast: 0612-0618

Storm Track Density Distribution, IC=20240603  
Week 3 Forecast: 0619-0625

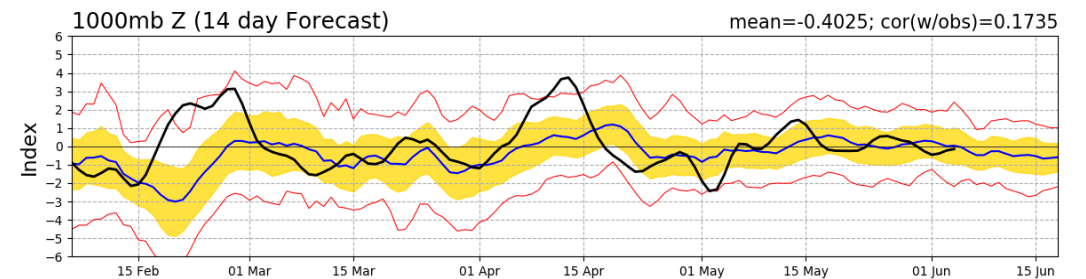
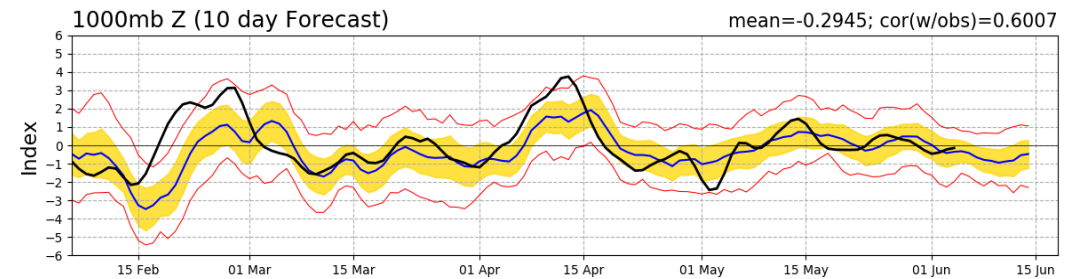
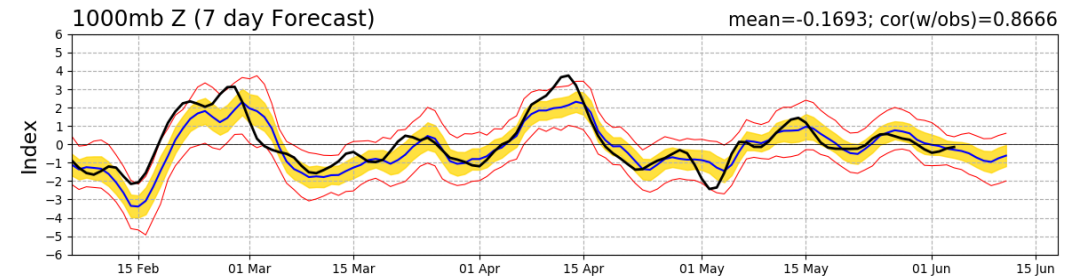
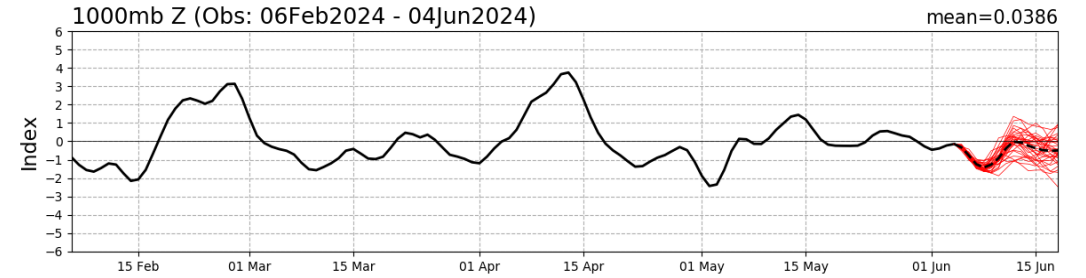


# Teleconnection Indices: PNA / AO:

## PNA Index: Observed & GEFS Forecasts



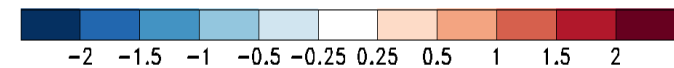
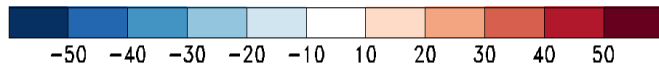
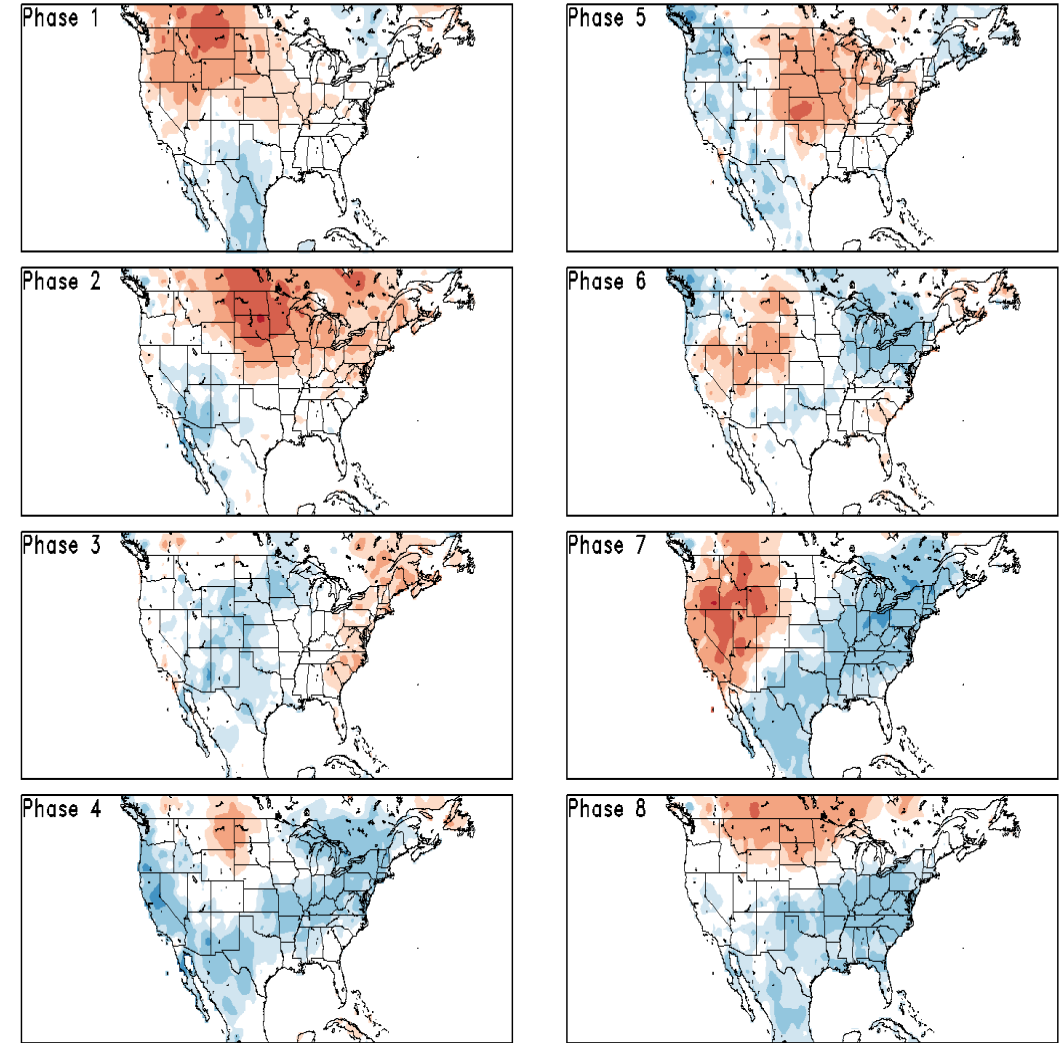
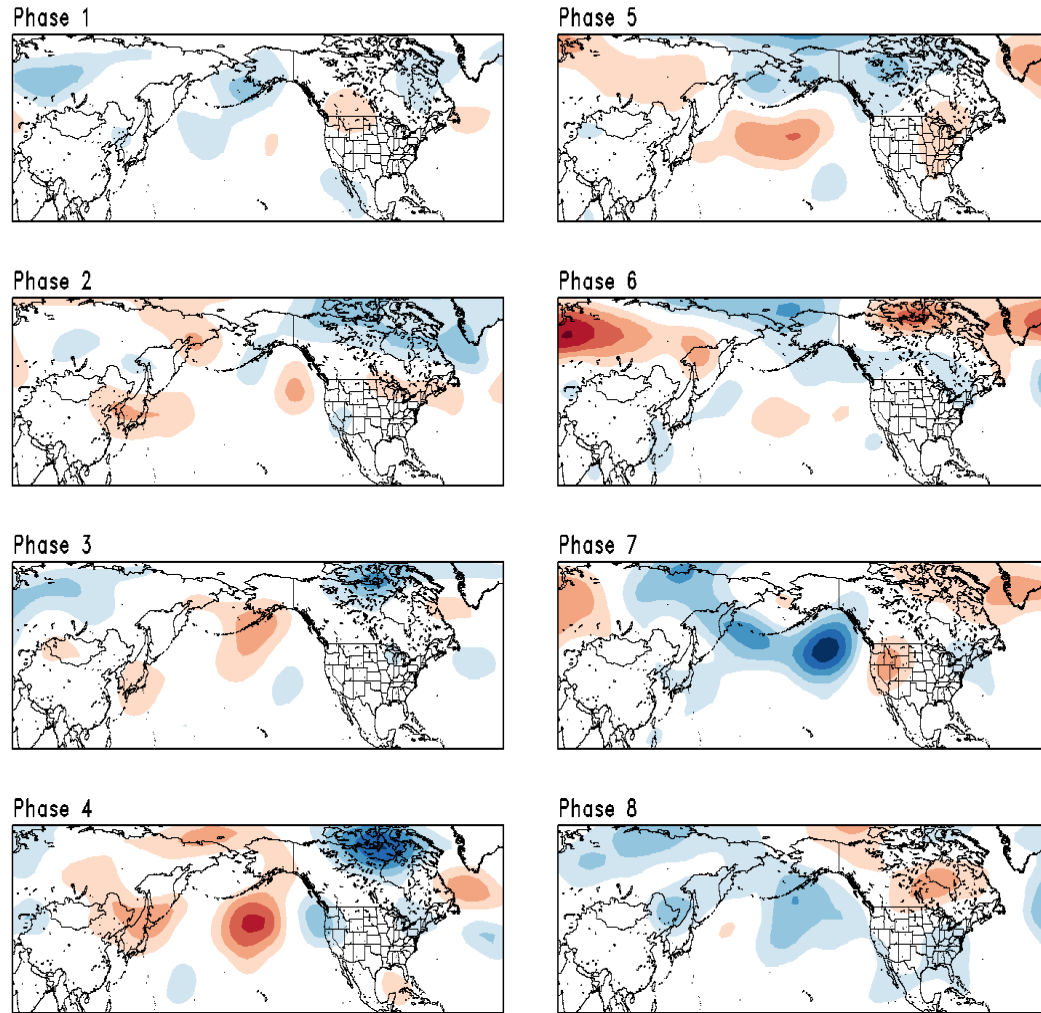
## AO Index: Observed & GEFS Forecasts



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

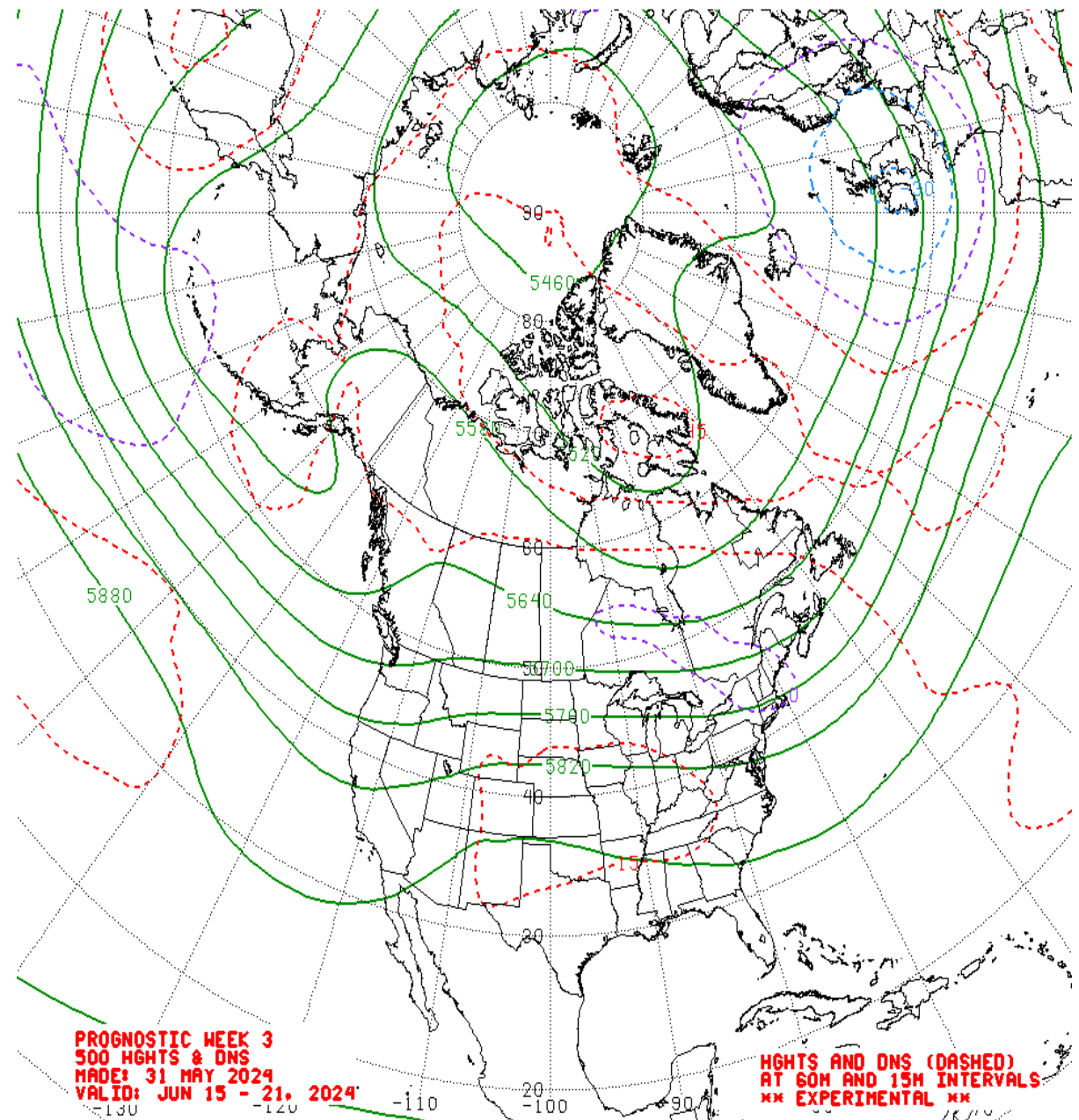
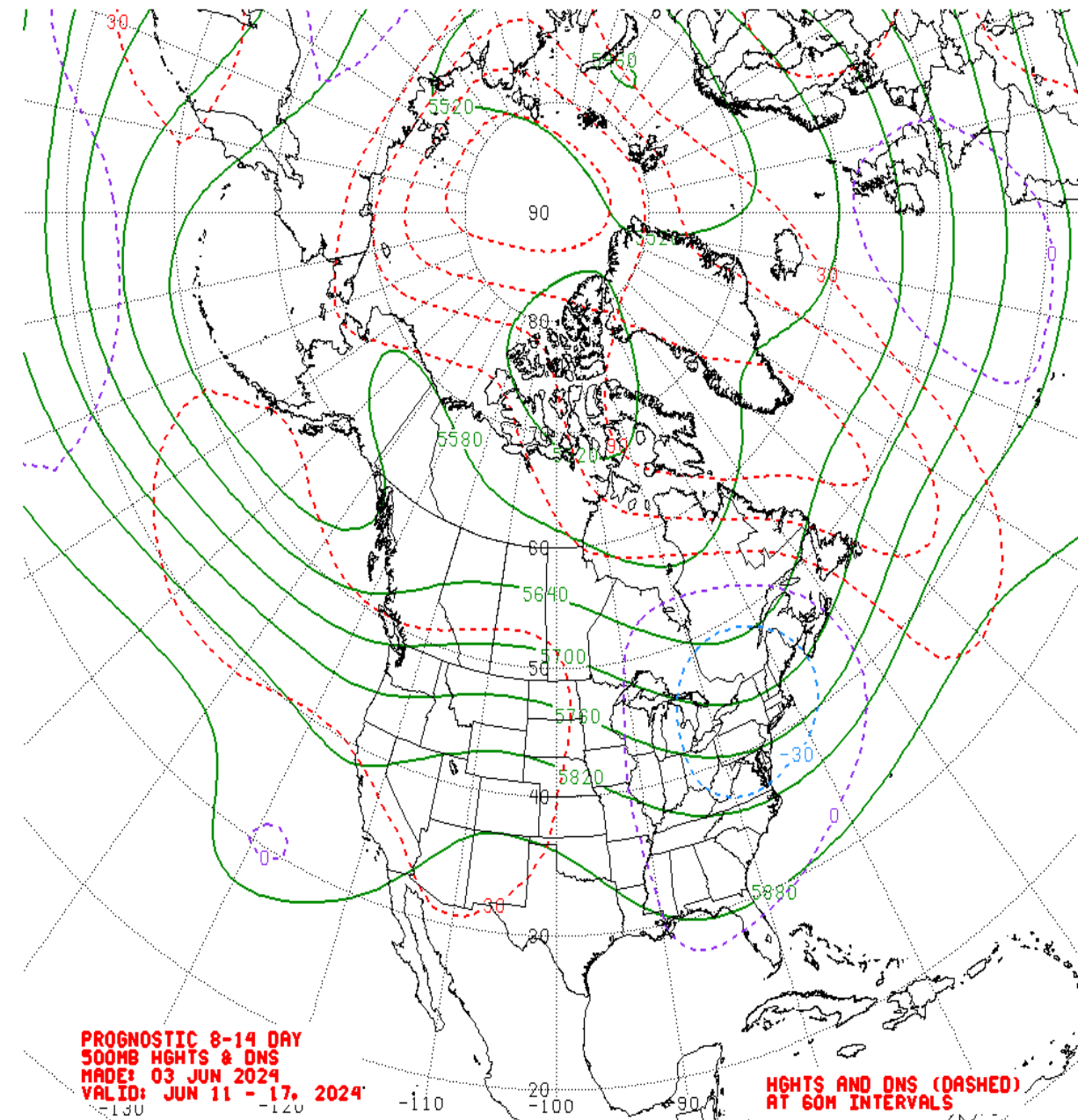
MJJ MJO Composite: CDAS 500-hPa Height (m)

MJJ MJO Composite: GLBT (degC)



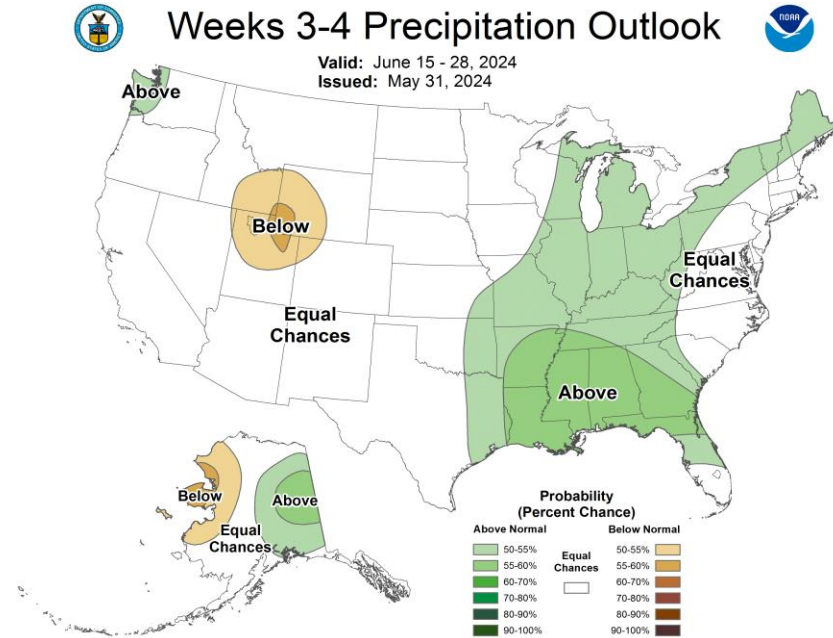
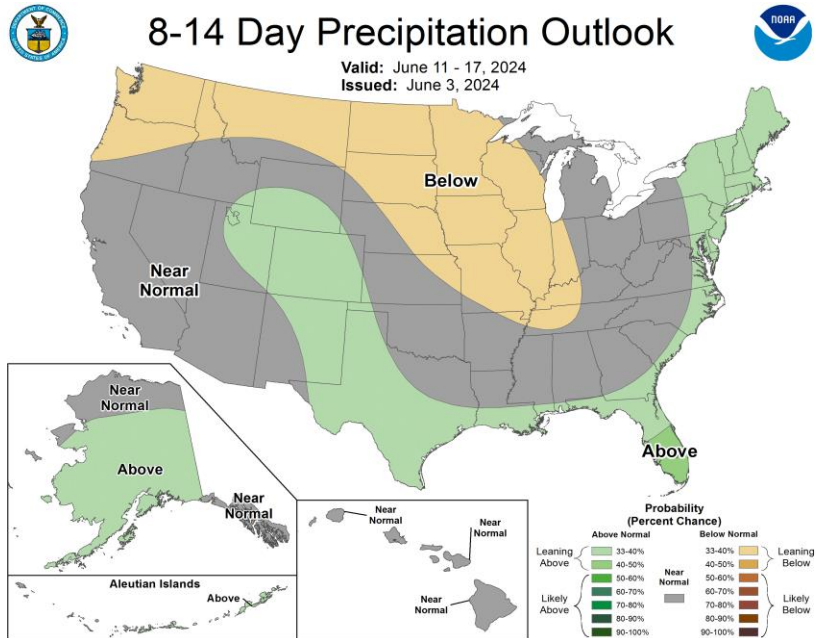
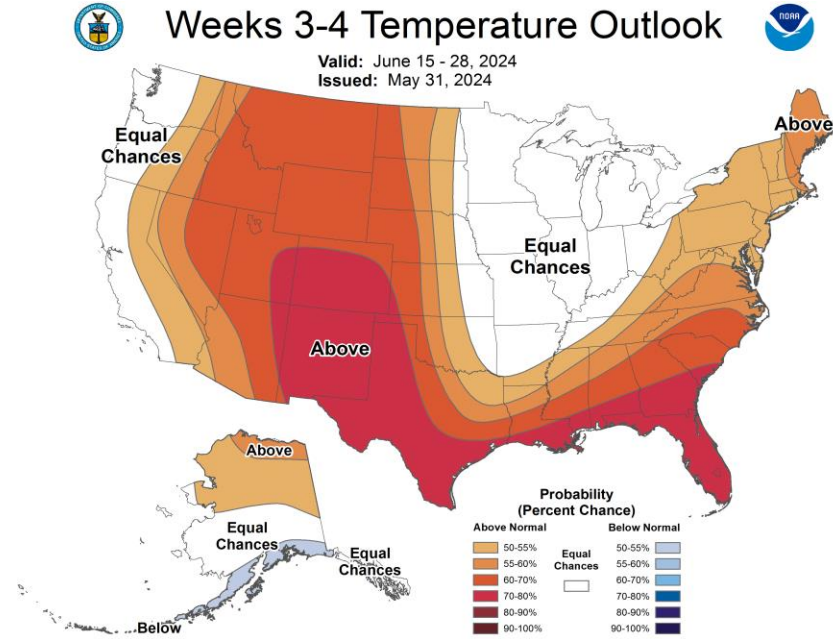
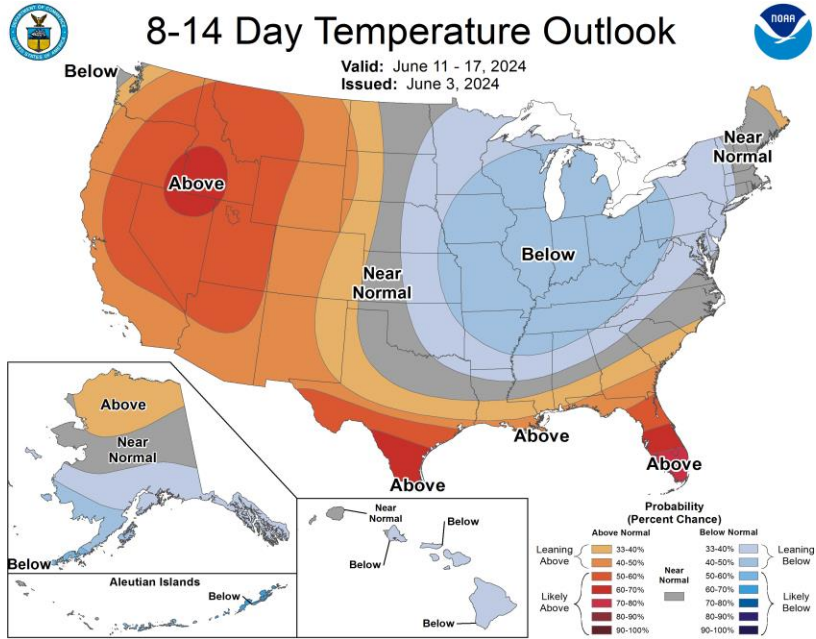


# Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3





# Official Temperature & Precipitation Forecasts:



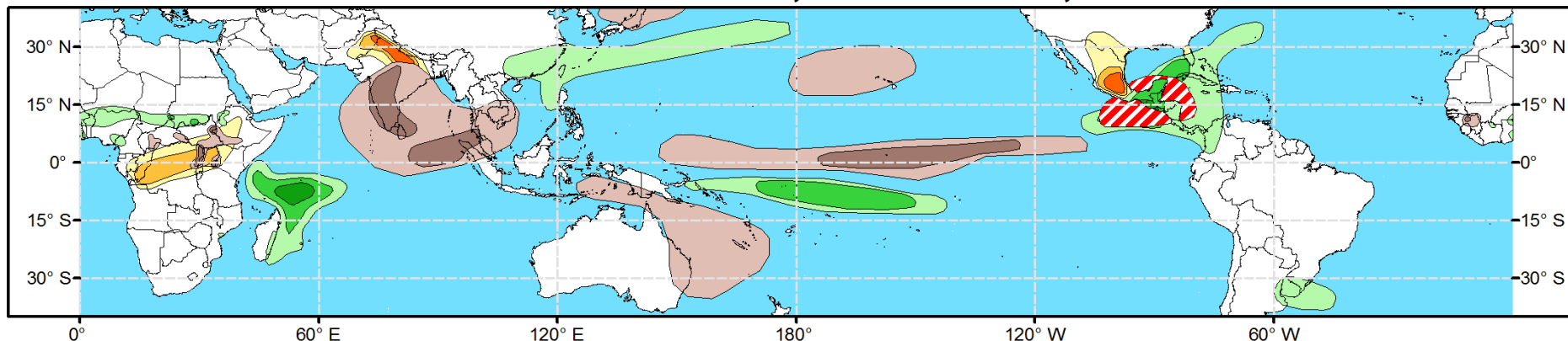


# Global Tropics Hazards Outlook

Climate Prediction Center

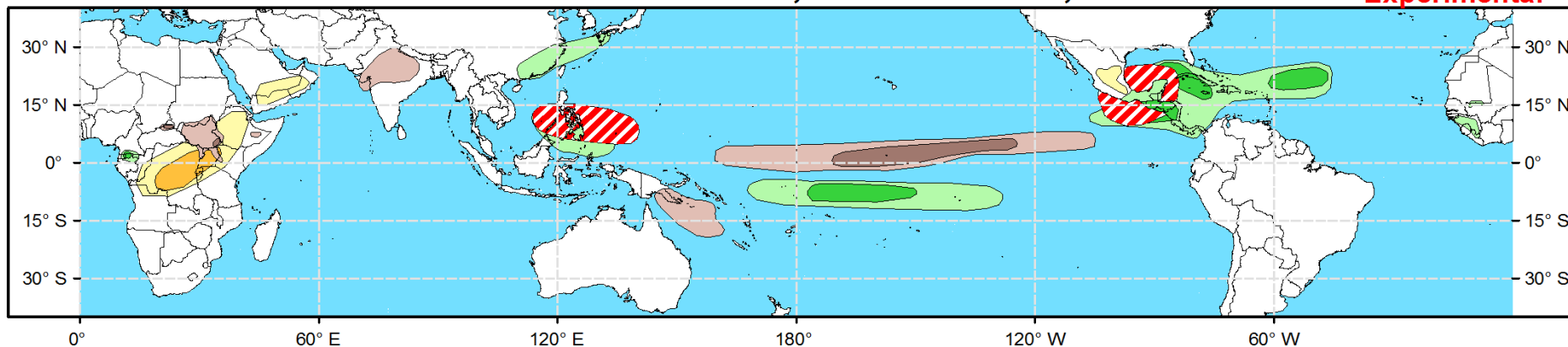


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