



Weeks 2-3 Global Tropics Hazards Outlook

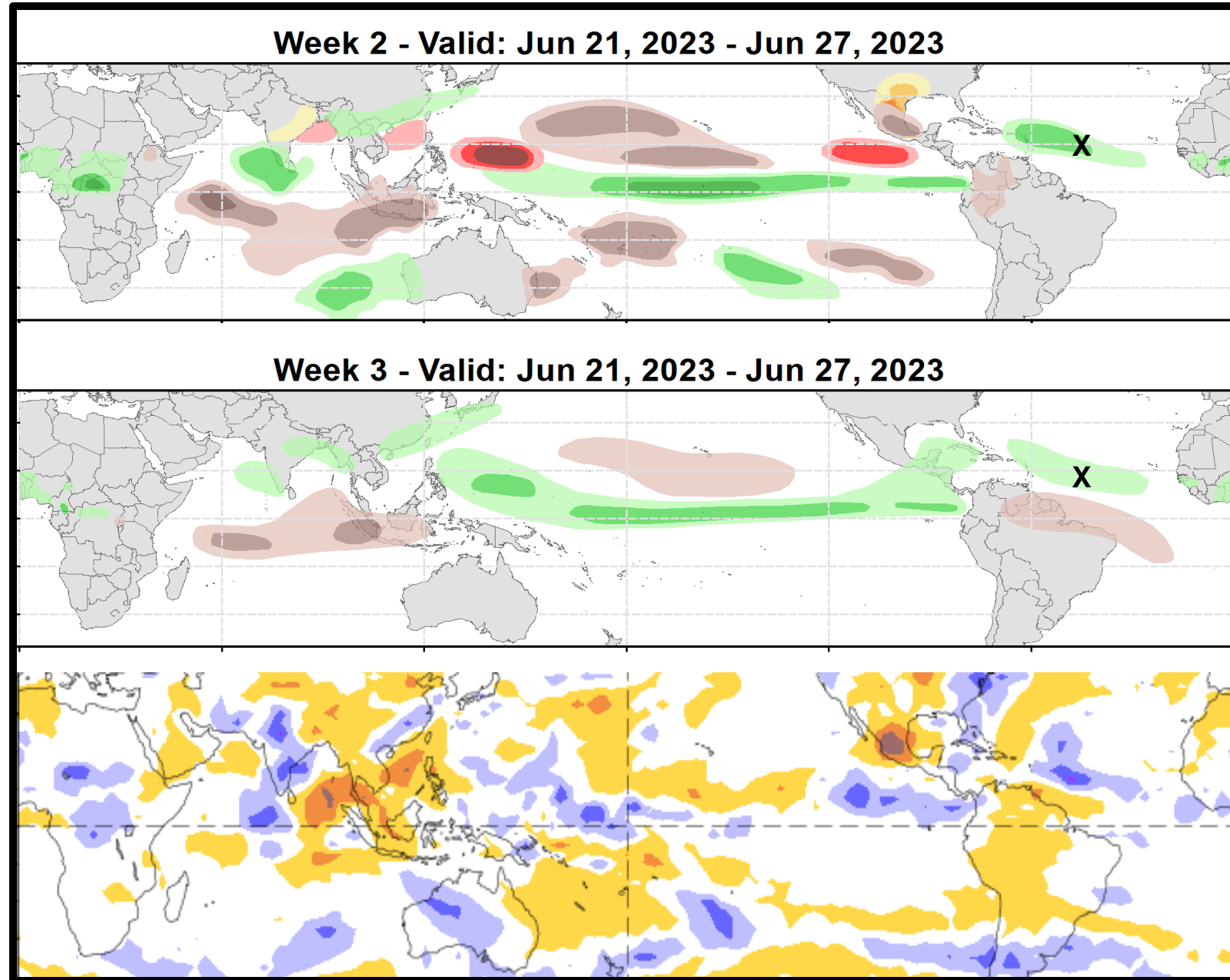
6/27/2023

Adam Allgood

NWS / NCEP / Climate Prediction Center

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

- One TC (Cindy) formed globally during the past week.
- Suppressed convection over the western Maritime Continent was well captured in the previous forecasts.
- El Nino-related enhanced rainfall over the equatorial Pacific has not materialized as strongly as anticipated.



Synopsis of Climate Modes:

ENSO: (June 8, 2022 Update) *next update on Thursday, Jul 13th*

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño conditions are present and are expected to gradually strengthen into the Northern Hemisphere winter 2023-24.

MJO and other subseasonal tropical variability:

- MJO activity remained weak over the past week, with the upper-level velocity potential pattern becoming increasingly incoherent.
- The RMM-index is currently within the unit circle, and convection is not robust across the equatorial Indian Ocean.
- Given the lack of coherent intraseasonal activity and the strengthening low frequency ENSO base state, El Niño climate anomalies are favored to become increasingly dominant over the next several weeks.
- Tropical cyclone activity is lackluster in the dynamical model guidance, but climatology (and ENSO) favor potential development in both the East and West Pacific basins.

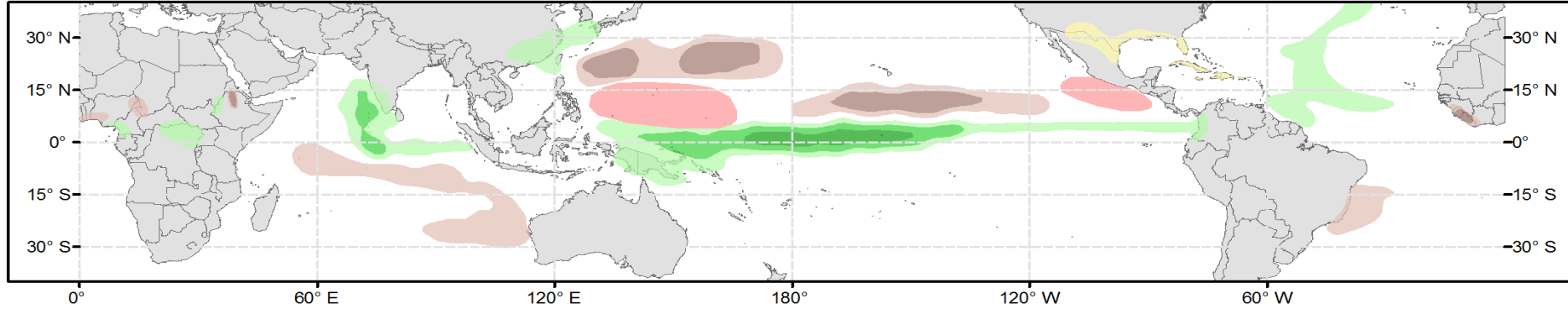
GTH Outlook:



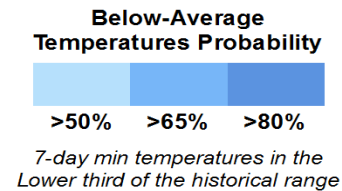
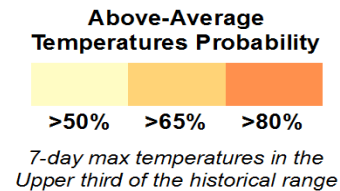
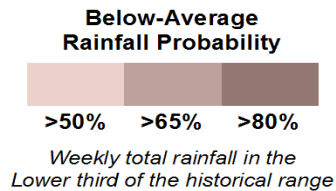
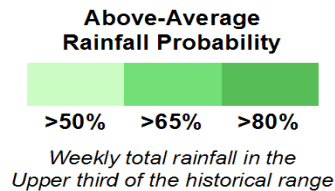
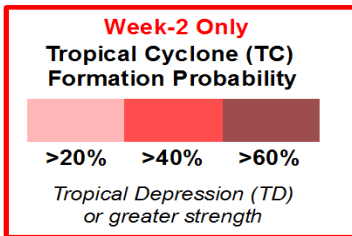
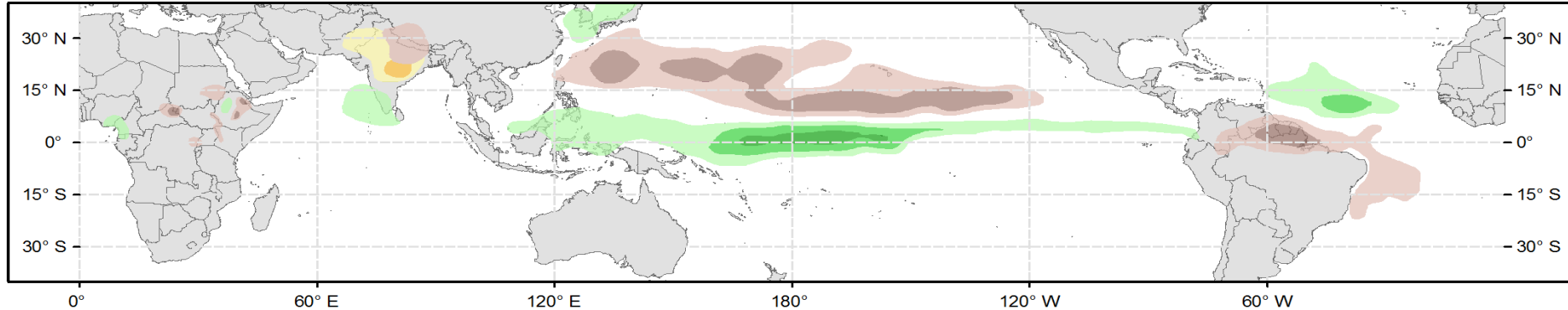
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Jul 05, 2023 - Jul 11, 2023



Week 3 - Valid: Jul 12, 2023 - Jul 18, 2023

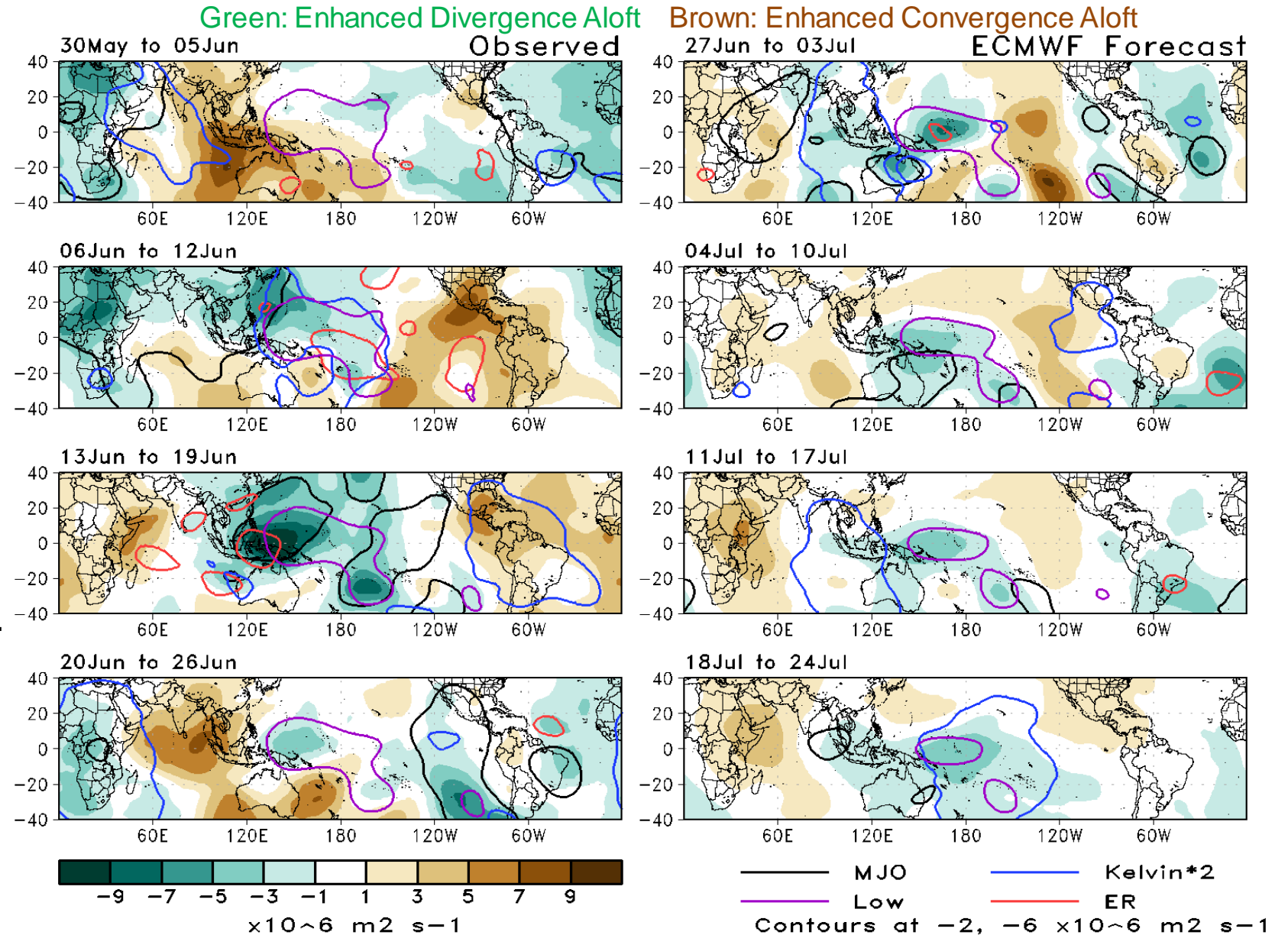


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Forecaster: Allgood

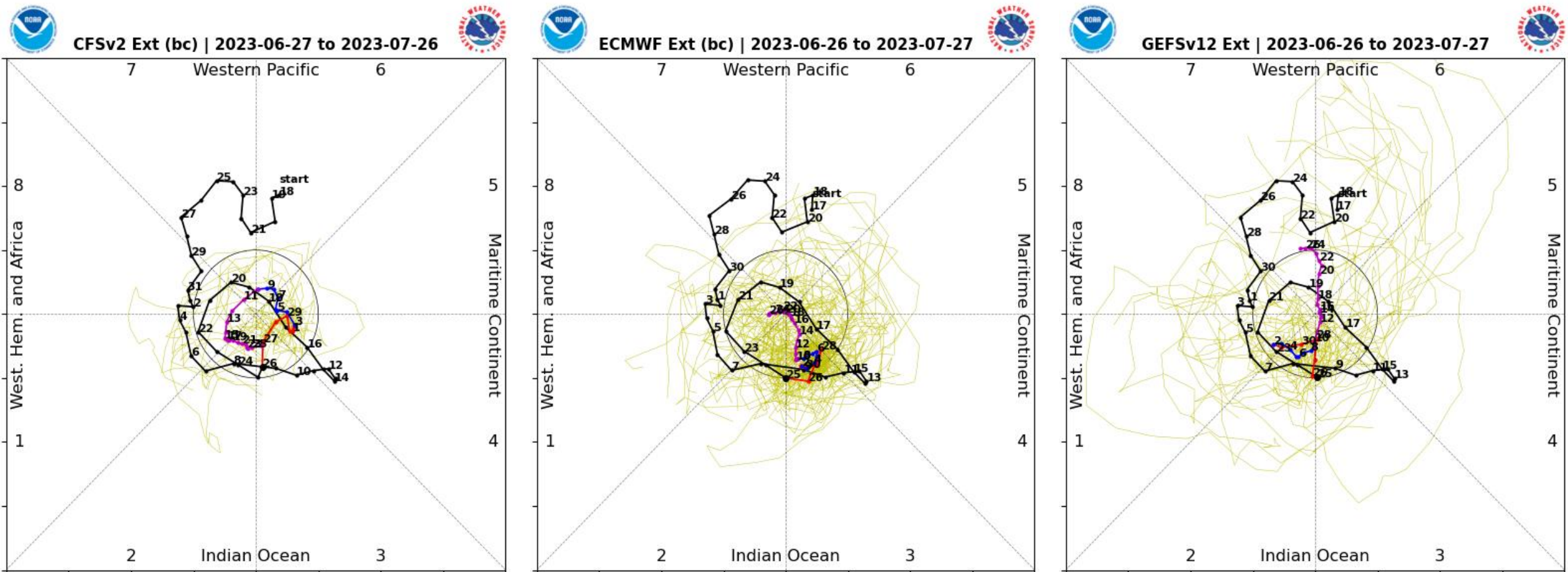
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200-hPa Velocity Potential Anomaly Maps:

- A wave-filtering analysis of the upper-level velocity potential pattern shows MJO activity shifting from the Pacific to the Western Hemisphere during early and mid-June, followed by weakening.
- The ECMWF forecast shows weak intraseasonal activity, with an increasingly stationary footprint associated with El Niño.

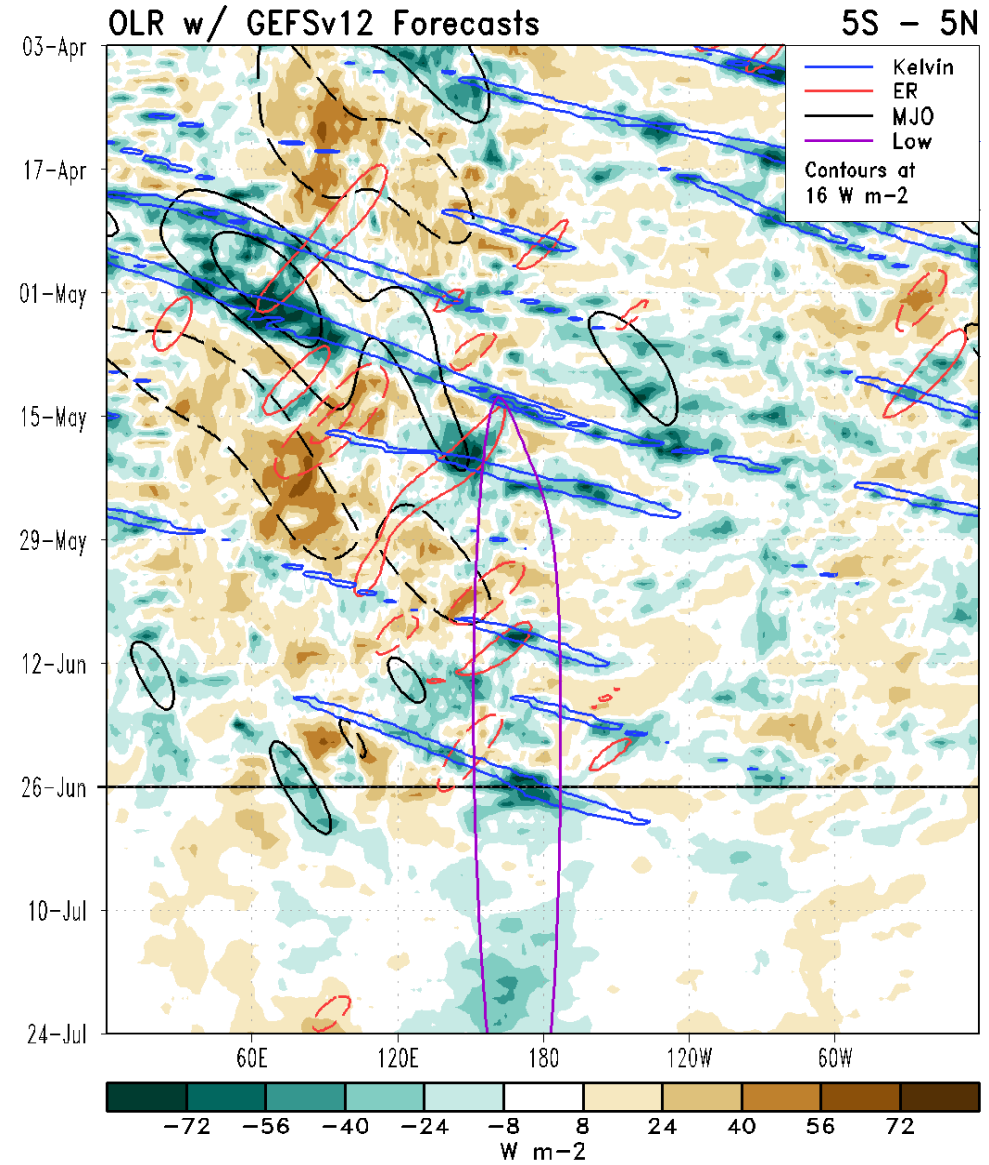
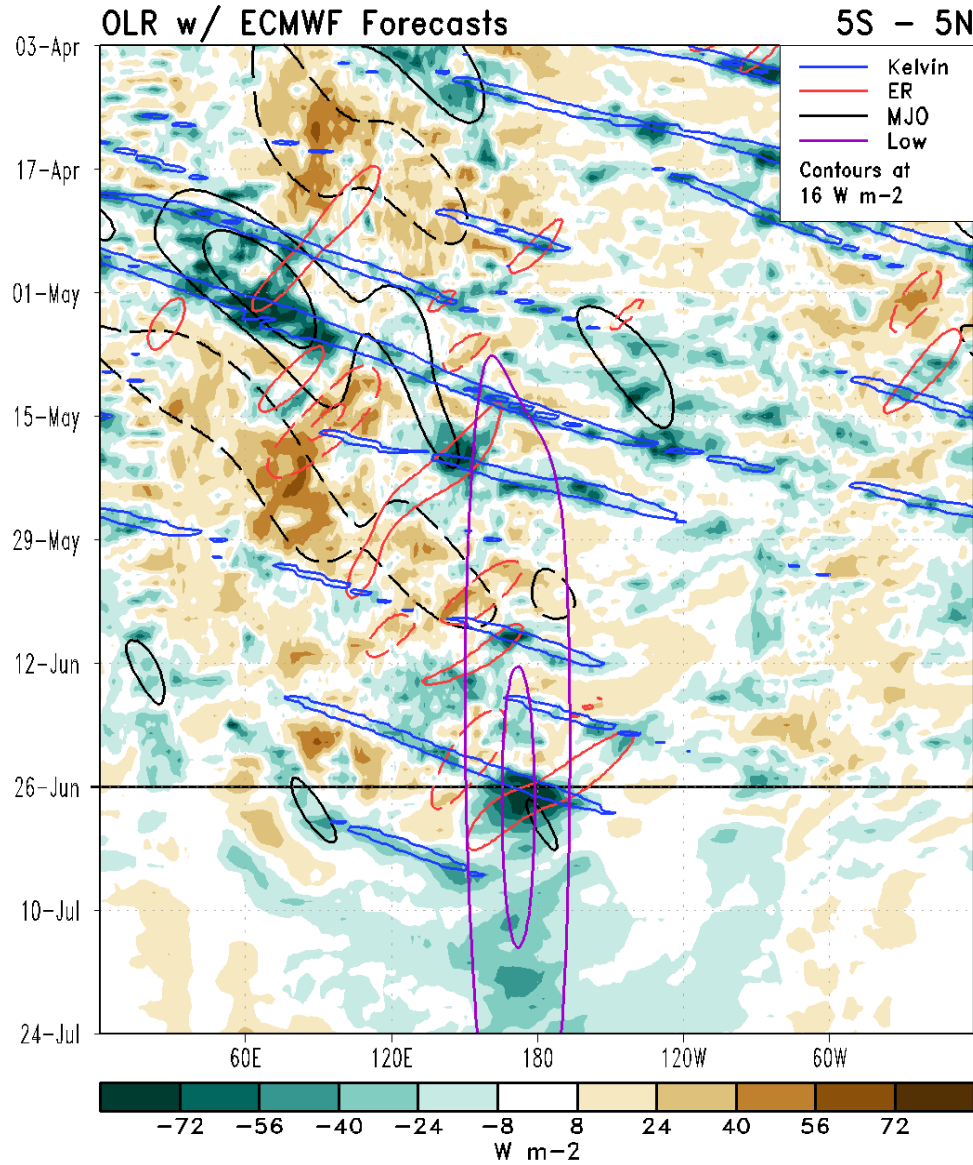


RMM Index Observations & Forecasts:



- The ECMWF and CFS both generally favor a weak signal in the RMM-based MJO index over the next few weeks.
- The GFSv12 ensembles depict a higher amplitude signal, but place that signal everywhere.

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

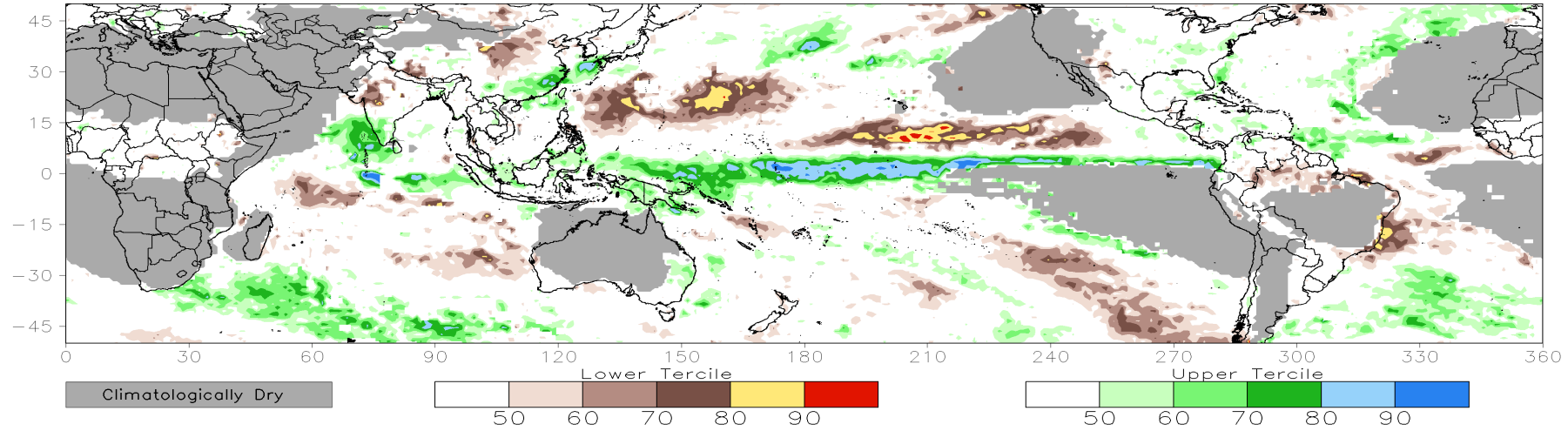


Return of the purple contours!

Consolidated Probabilistic Precipitation: Weeks 2 & 3

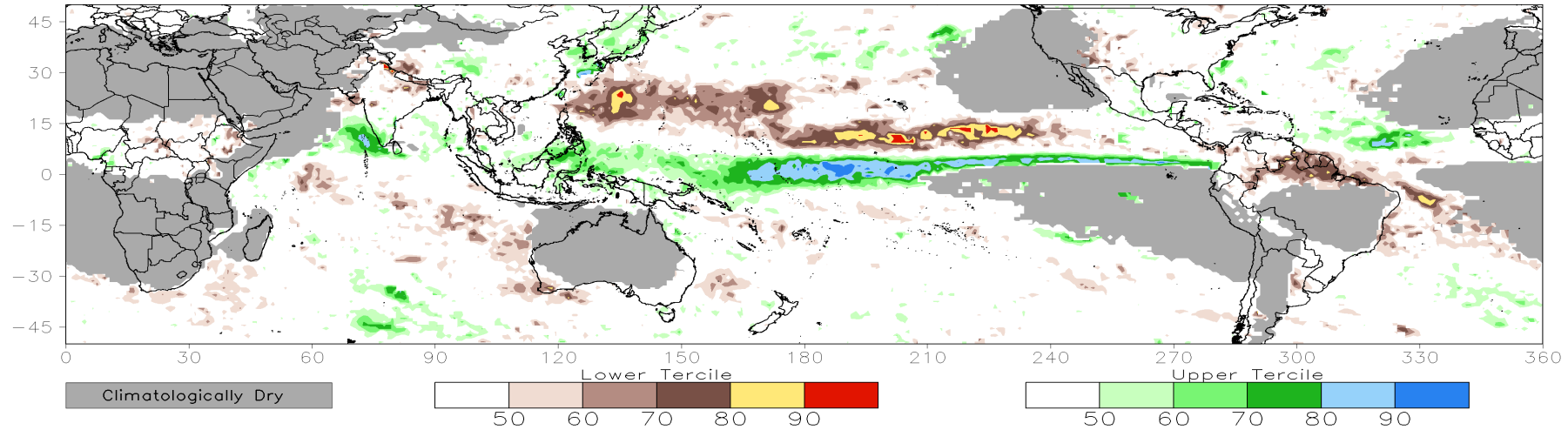
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 05Jul2023–11Jul2023



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

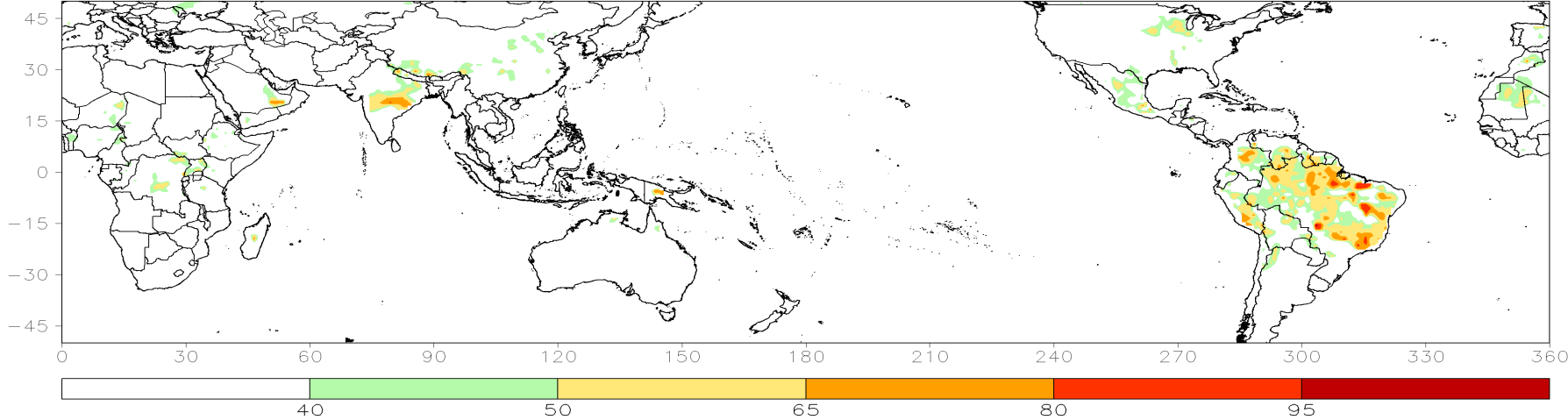
Valid: 12Jul2023–18Jul2023



Consolidated Probabilistic Temperatures: Week-3

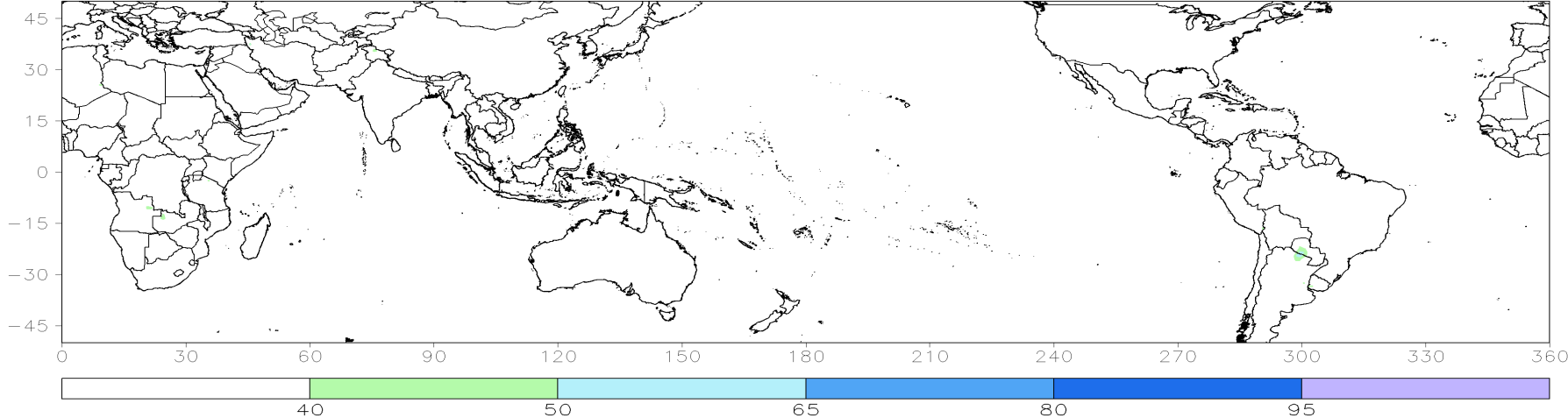
CFS/ECMWF/GEFS Correlation Weighted: Week3 Probability for Tmax Above Upper Tercile (%)

Valid: 12Jul2023-18Jul2023



CFS/ECMWF/GEFS Correlation Weighted: Week3 Probability for Tmin Below Lower Tercile (%)

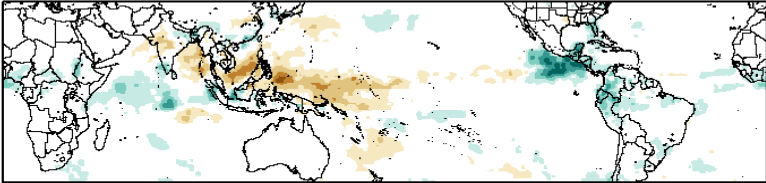
Valid: 12Jul2023-18Jul2023



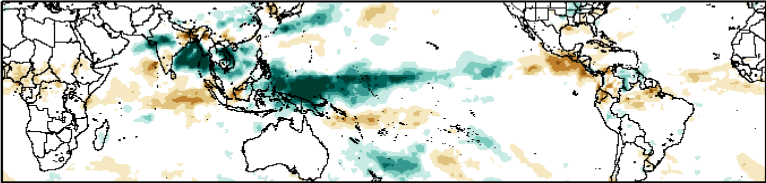
Historical Precipitation Anomalies By MJO Phase:

MJJ MJO Composite: GPCP1DD (mm/day)

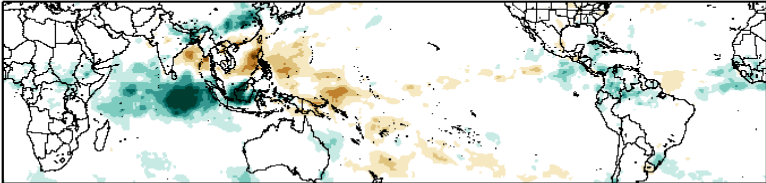
Phase 1



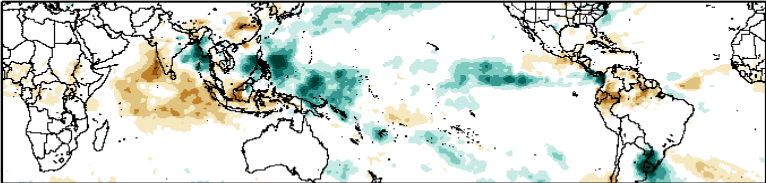
Phase 5



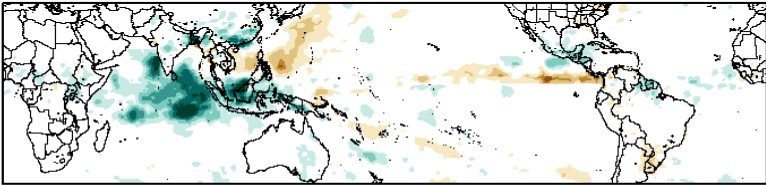
Phase 2



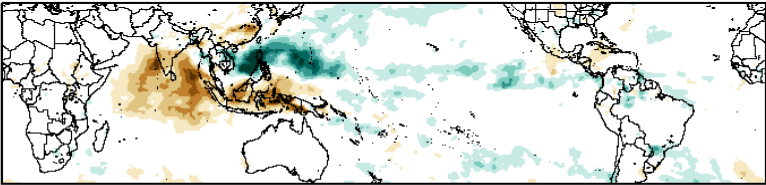
Phase 6



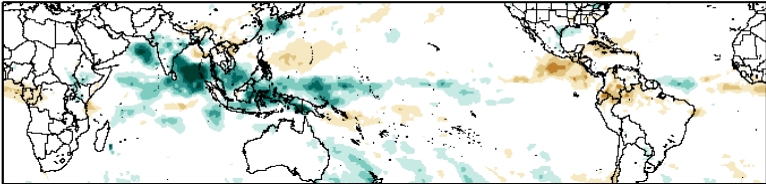
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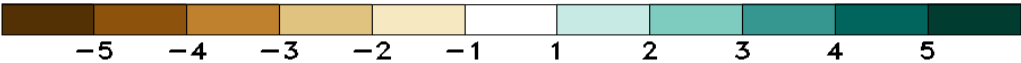
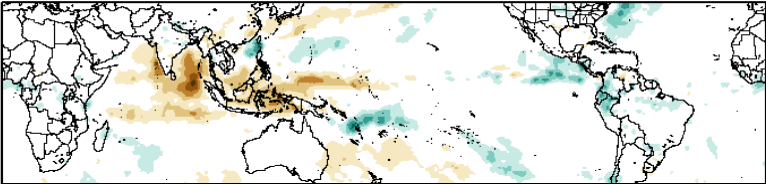
Phase 7



Phase 4

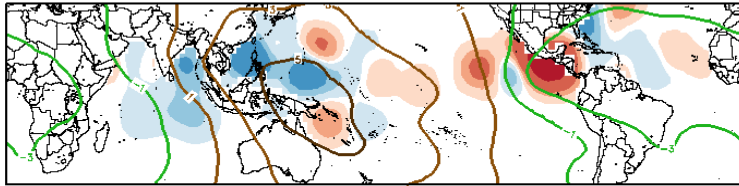


Phase 8

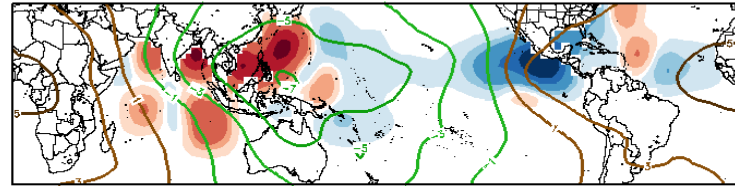


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

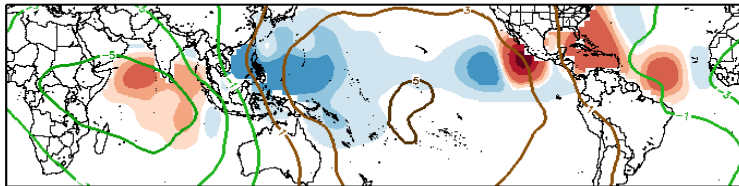
MJJ MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ MJJ CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



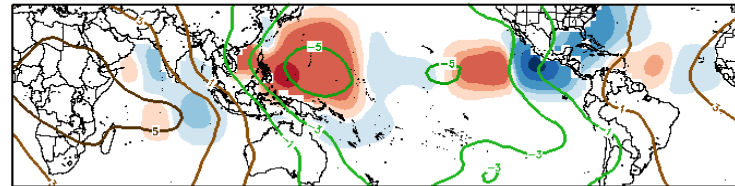
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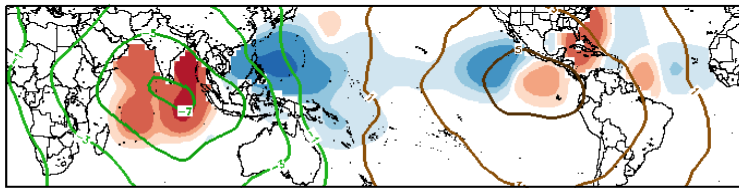
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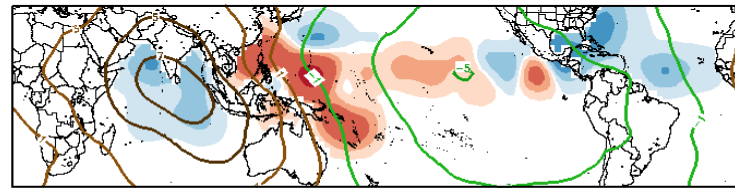
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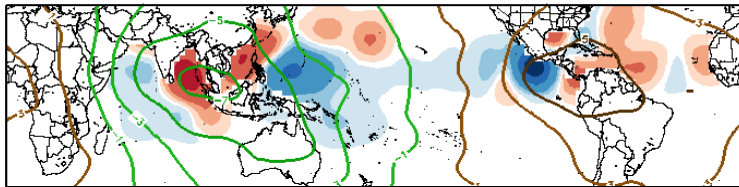
Phase 6



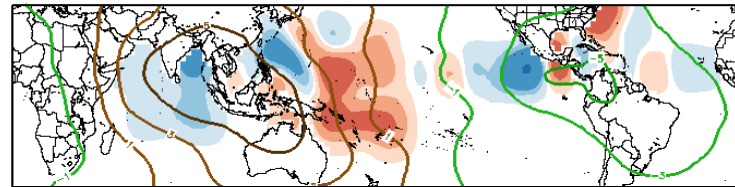
Phase 3



Phase 7

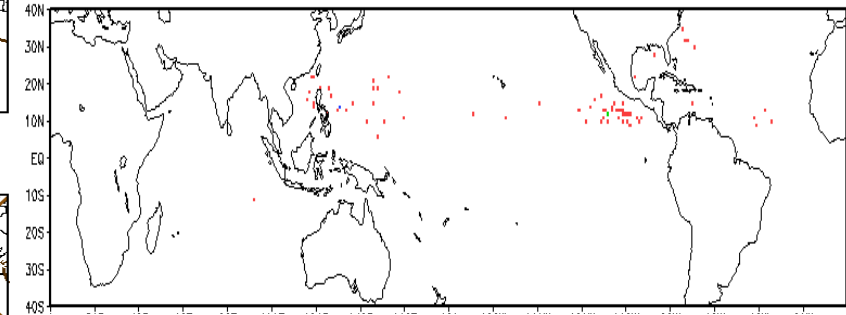


Phase 4

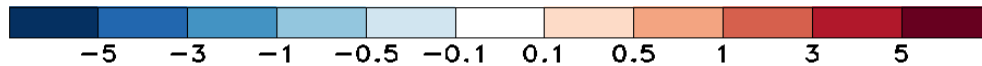
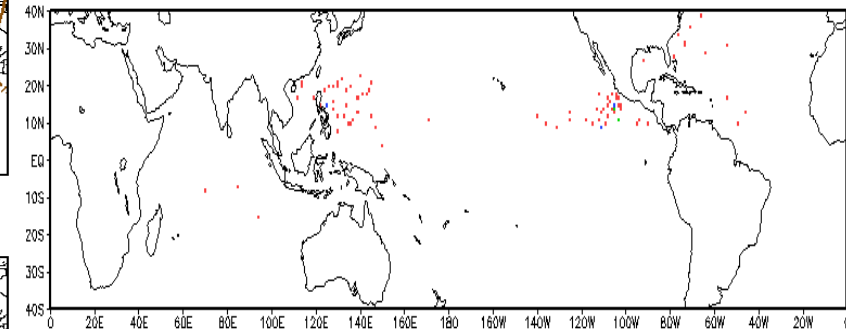


Phase 8

Observed TC Genesis, 1979-2021
7-day Period 0705 to 0711

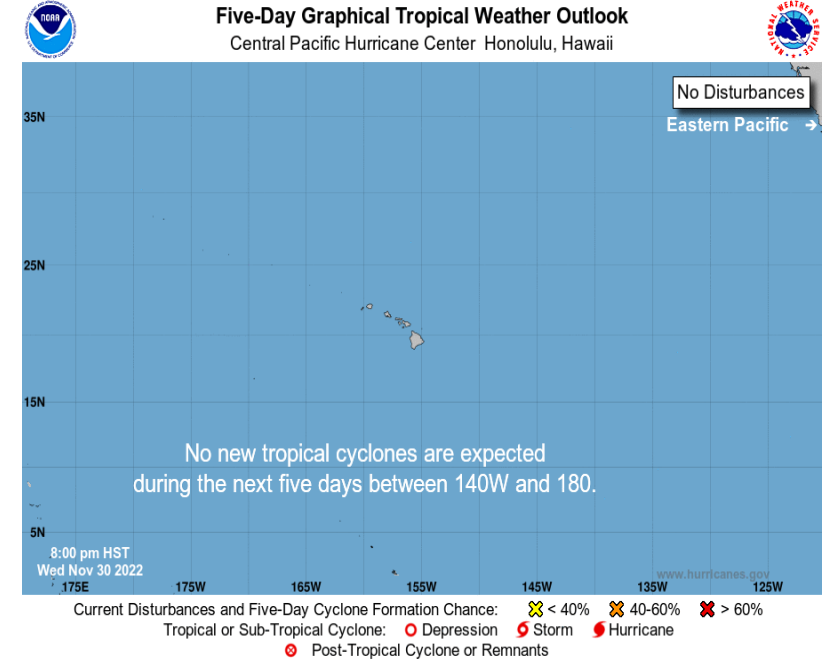
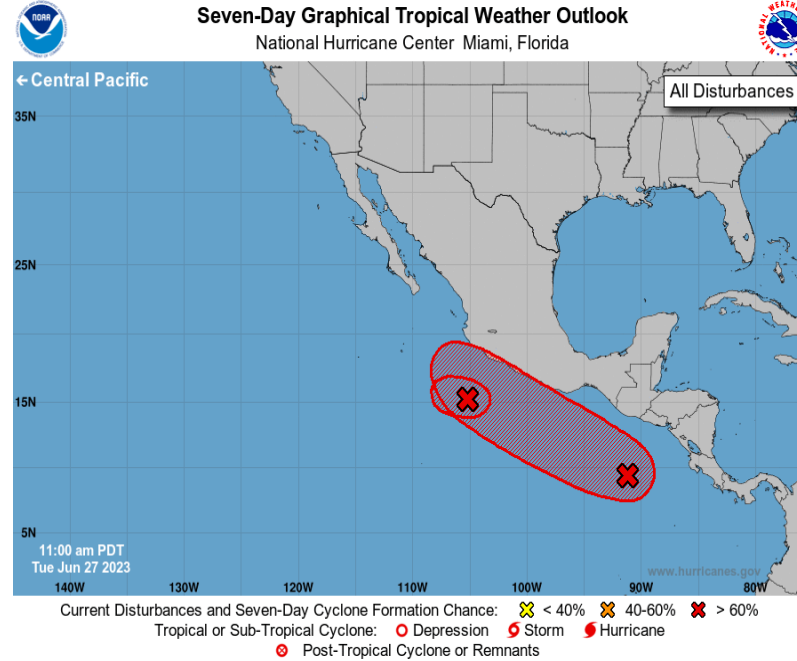
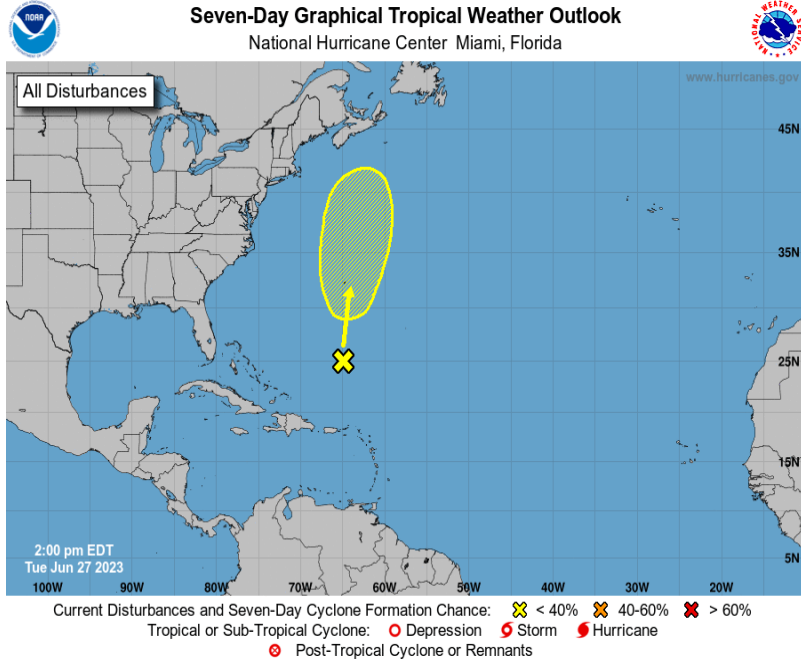


Observed TC Genesis, 1979-2021
7-day Period 0712 to 0718



Experimental

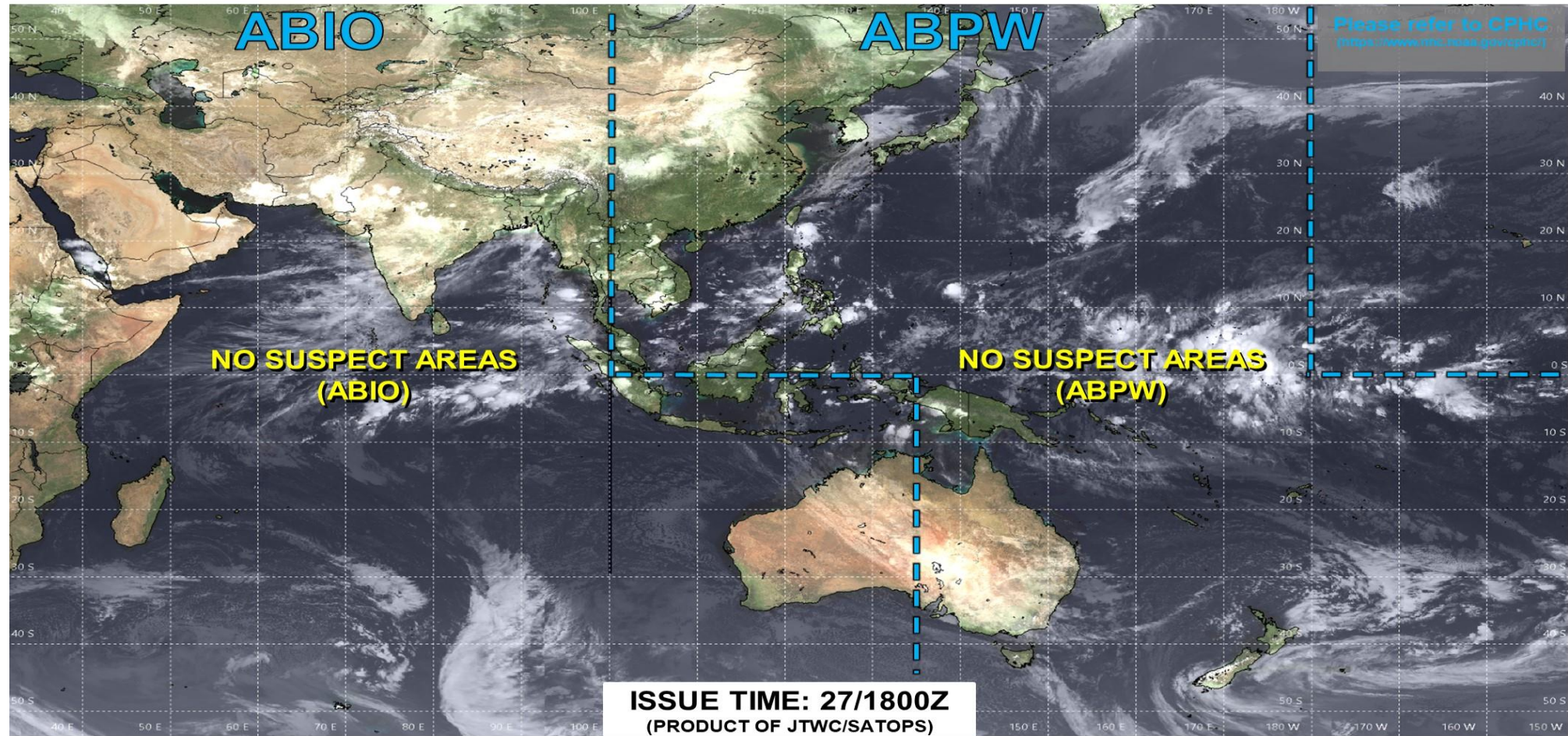
Tropical Cyclone Monitoring/Forecast: NHC



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)

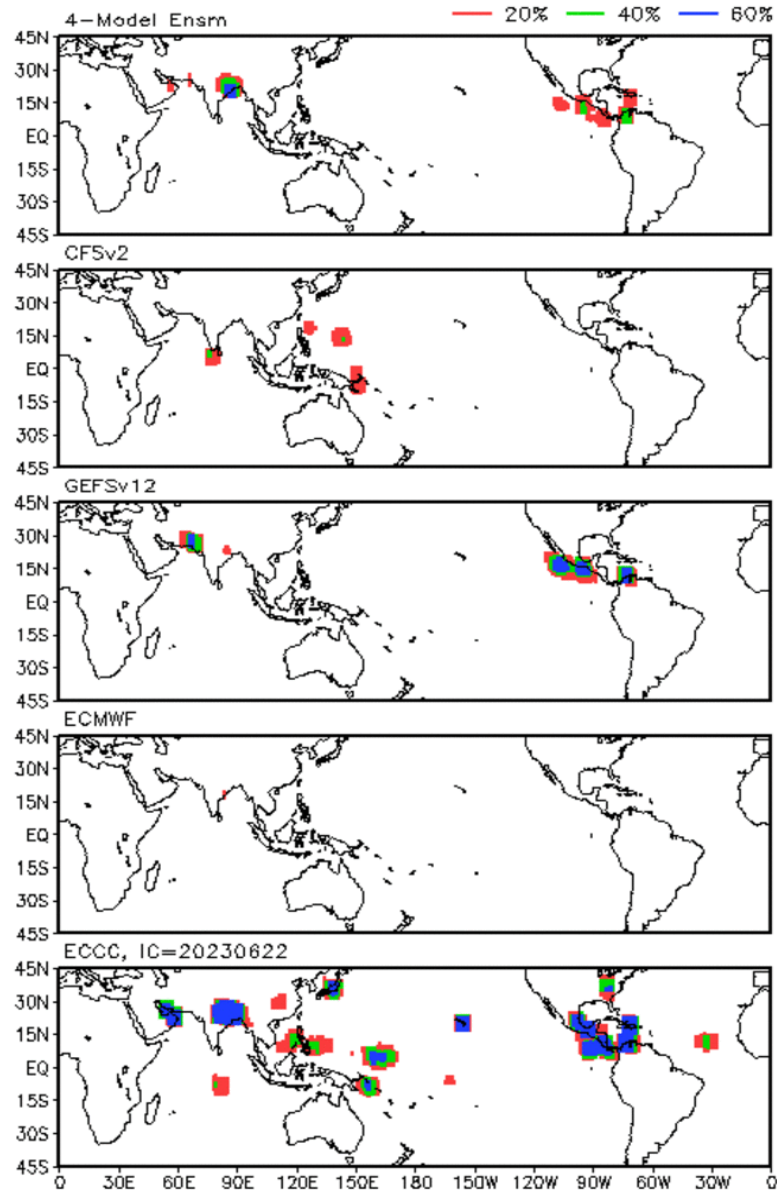


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

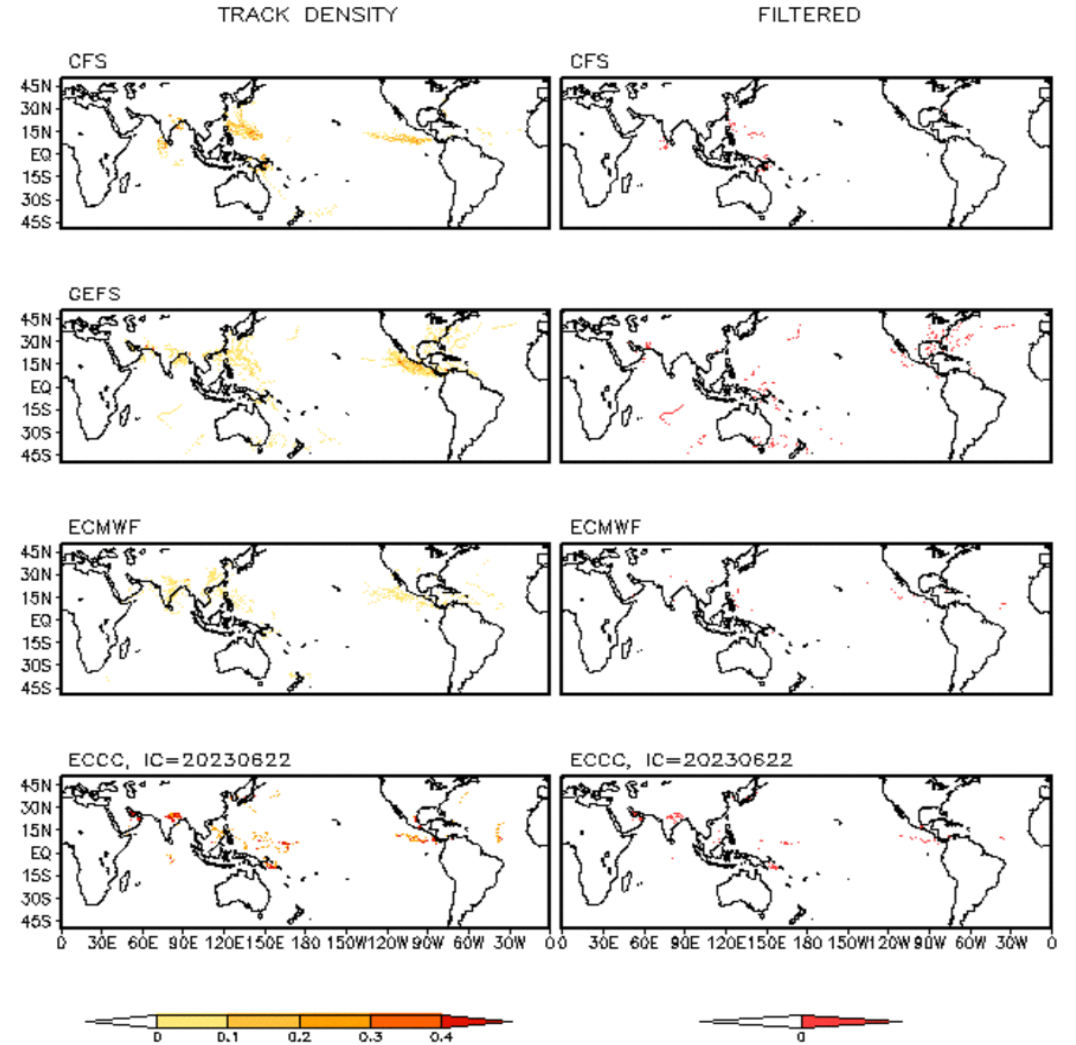
 Tropical Cyclone (Reference Warning)

Multi-Model TC Track Probabilities/Densities: Week-2

Storm Track Probabilities, IC=20230626
Week 2: 0705 - 0711

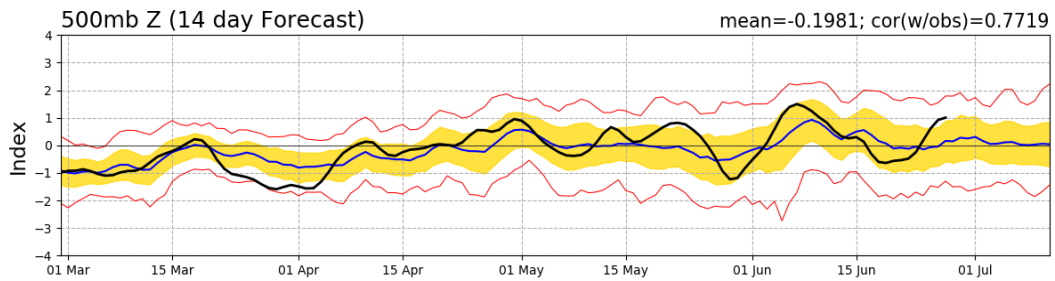
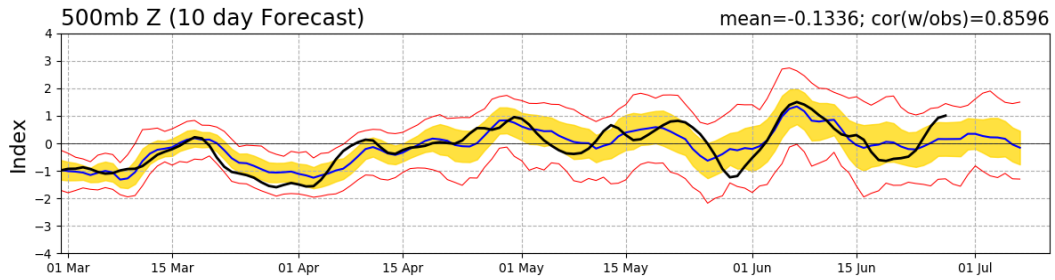
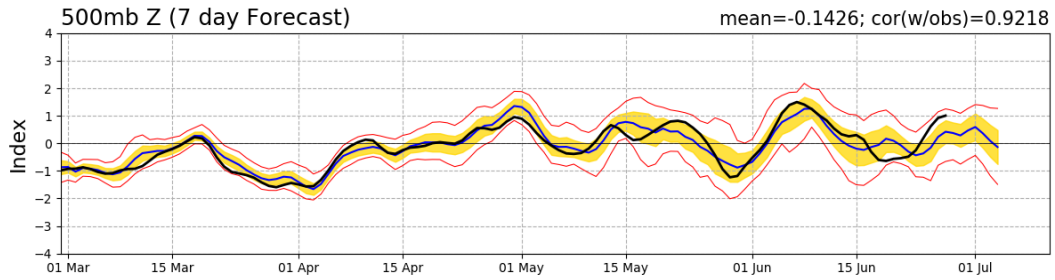
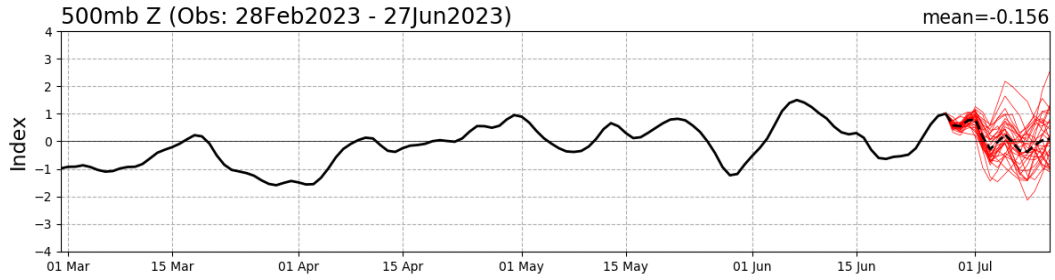


Storm Track Density Distribution, IC=20230626
Week 2 Forecast: 0705-0711

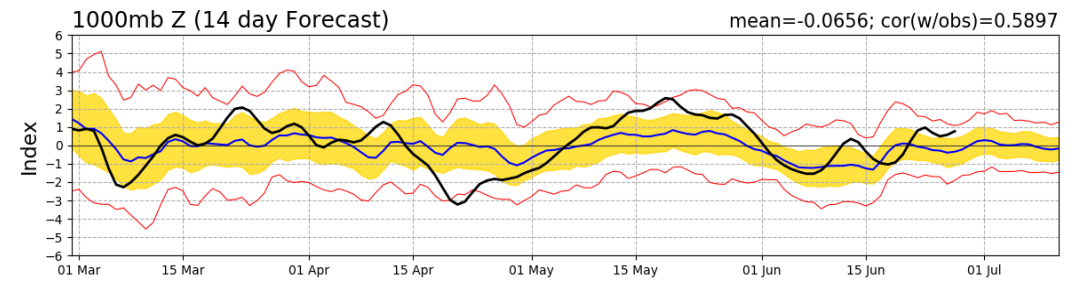
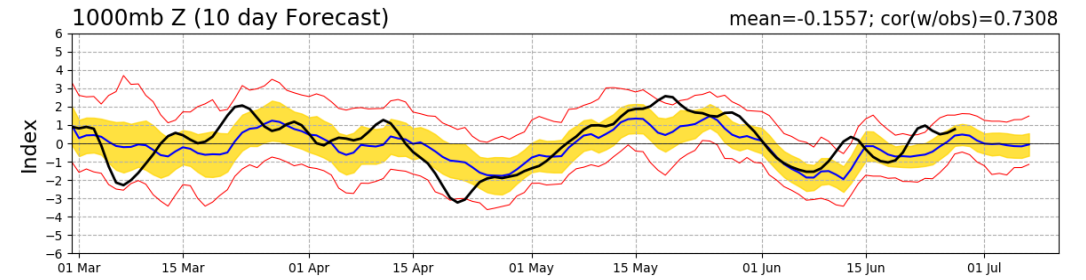
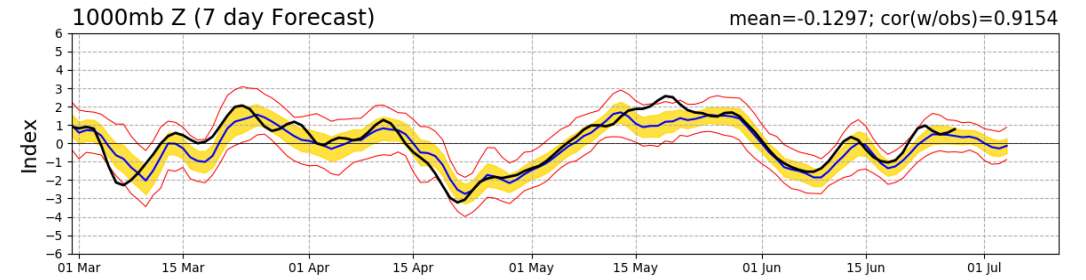
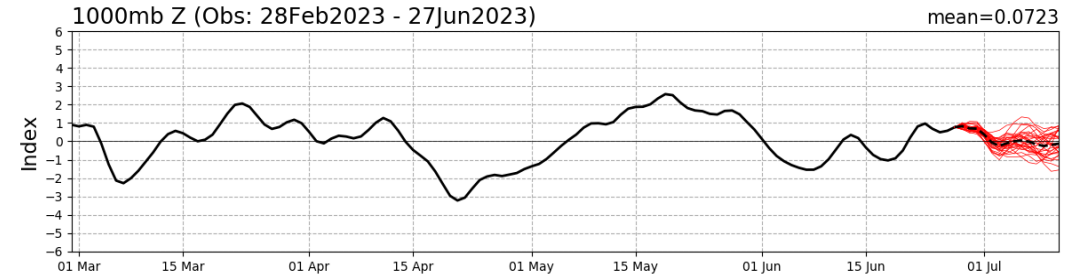


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

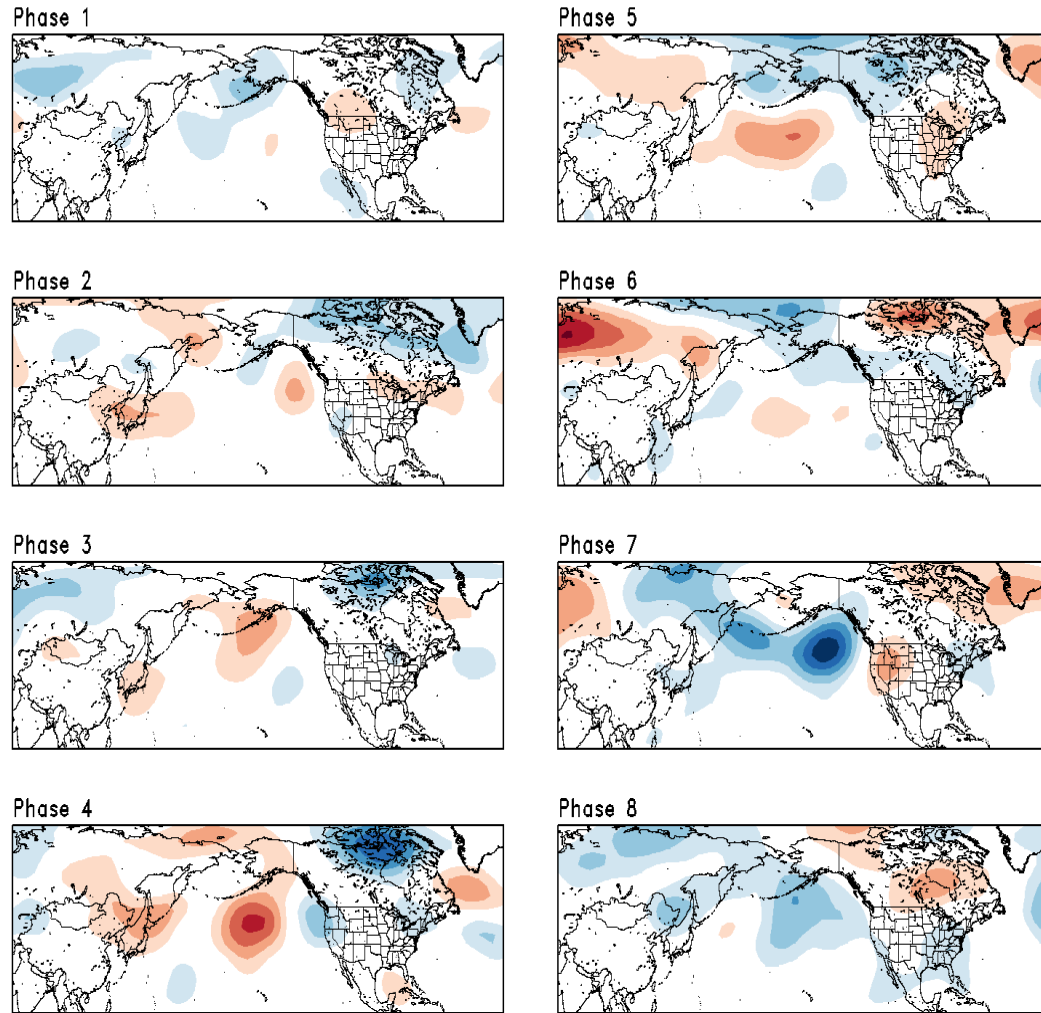


AO Index: Observed & GEFS Forecasts

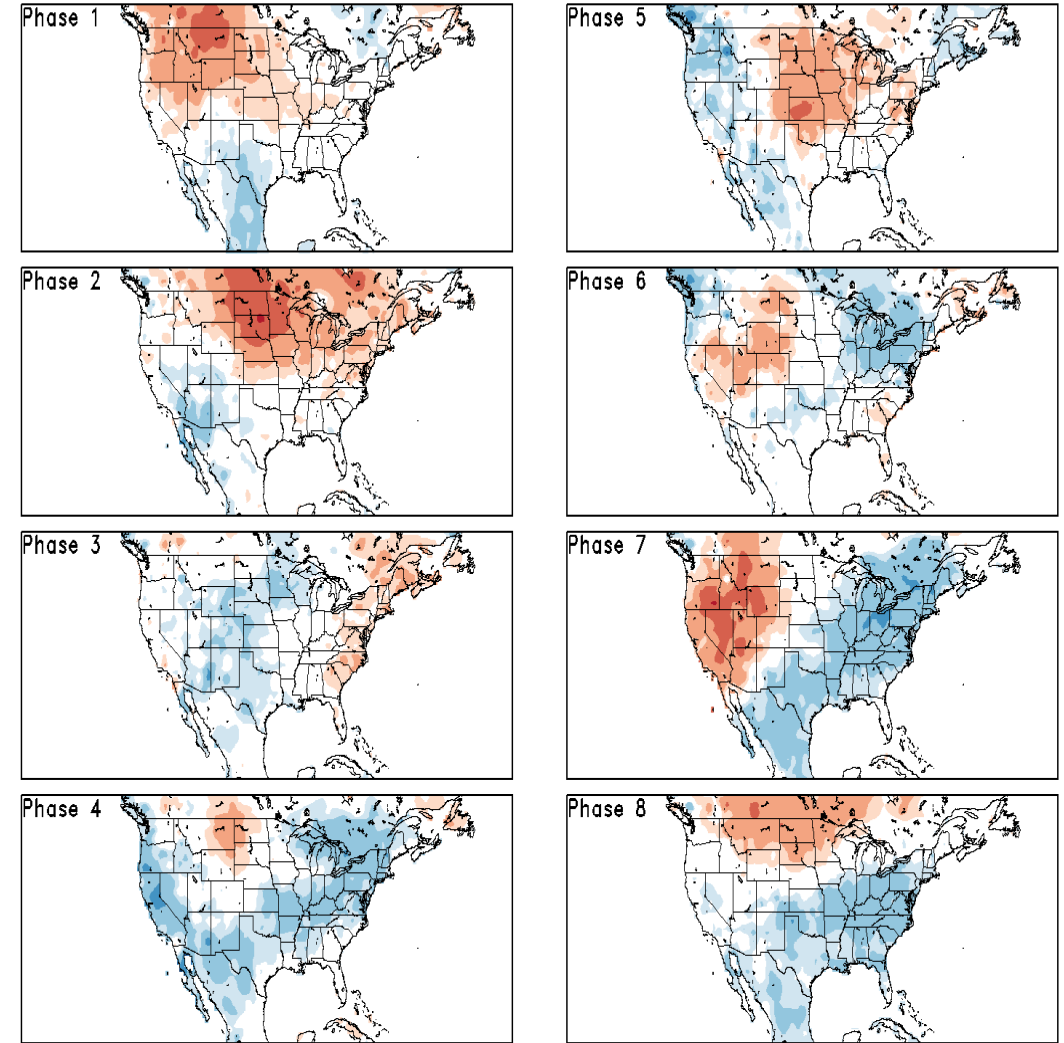


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

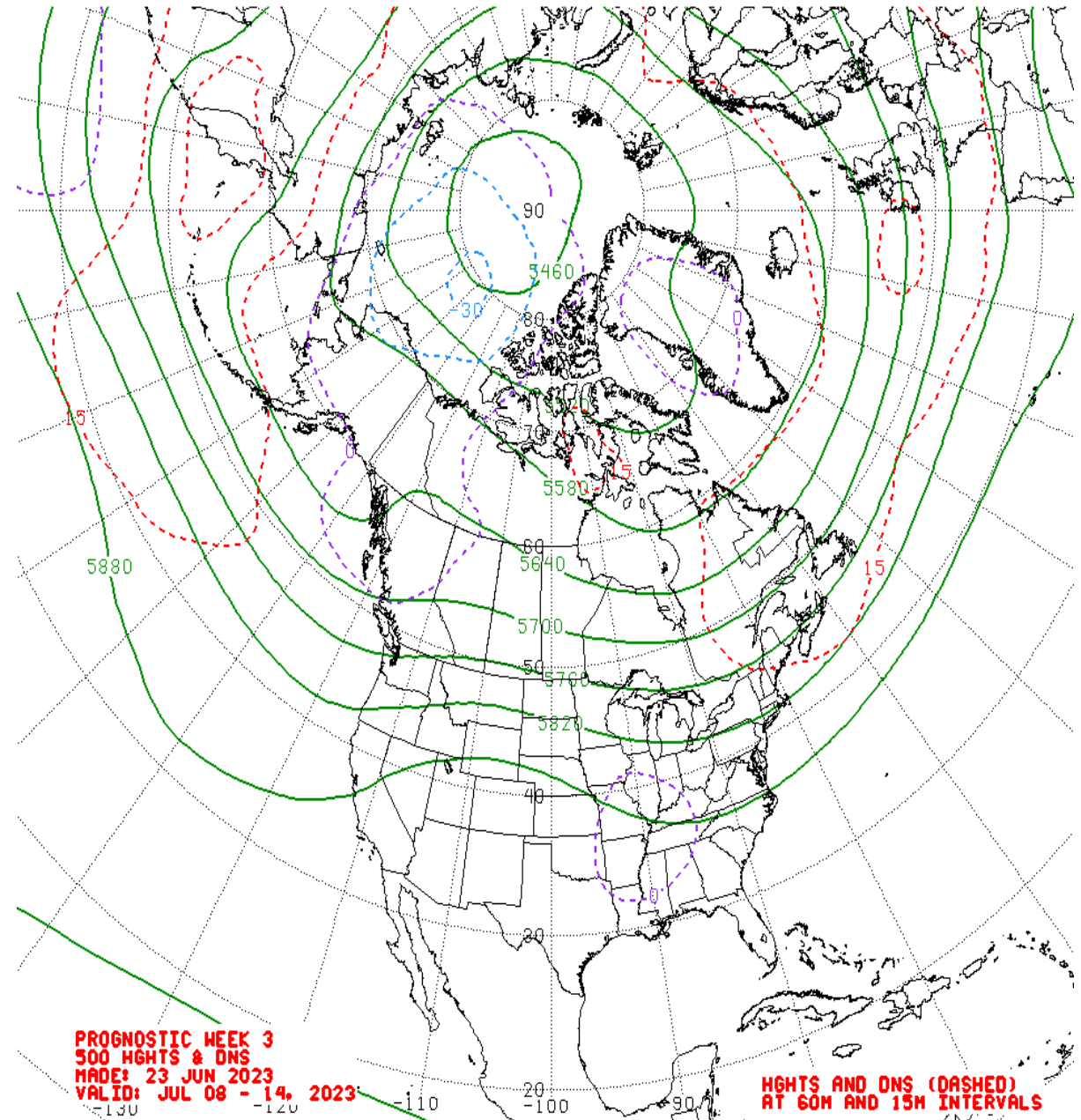
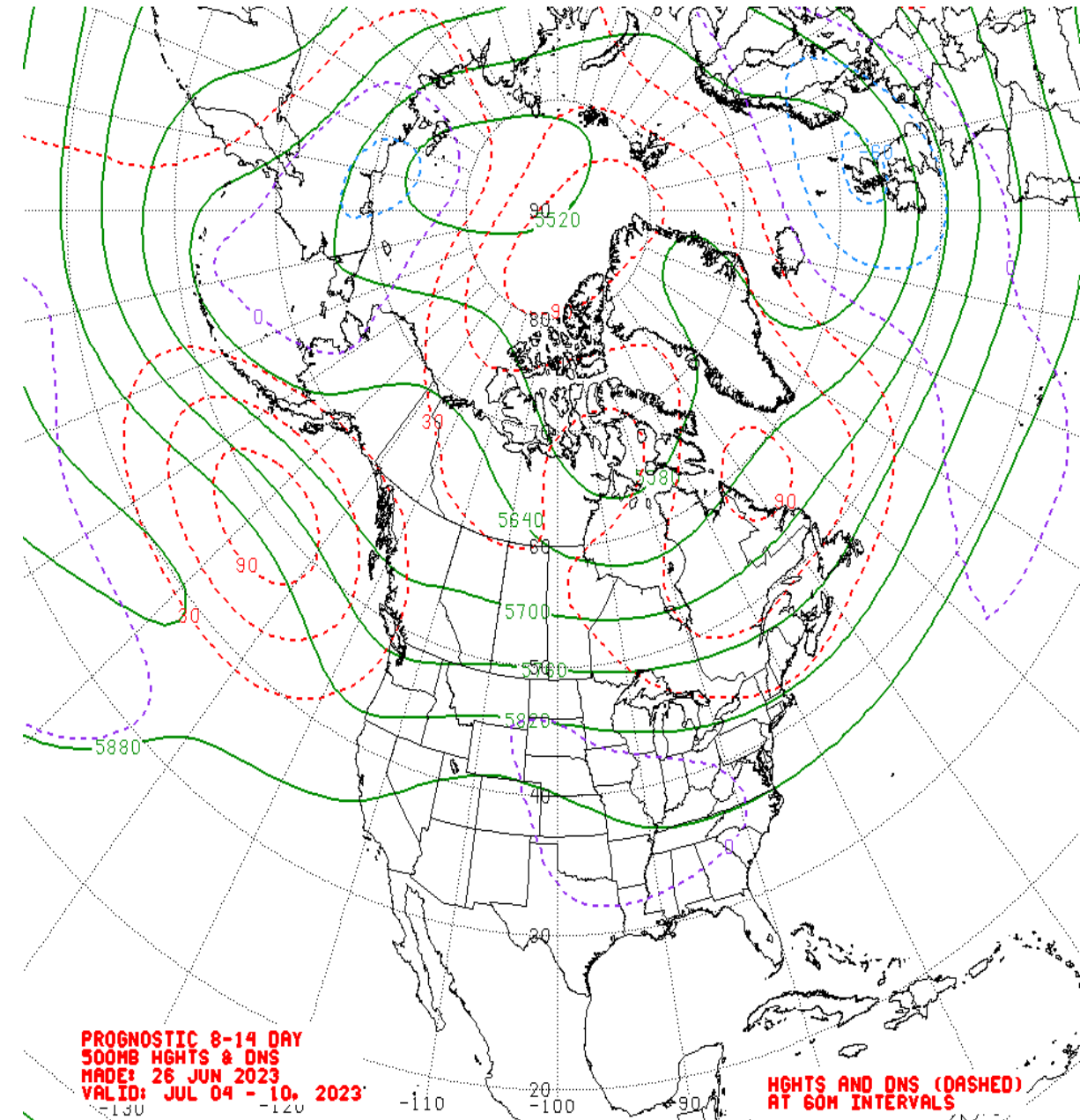
MJJ MJO Composite: CDAS 500-hPa Height (m)



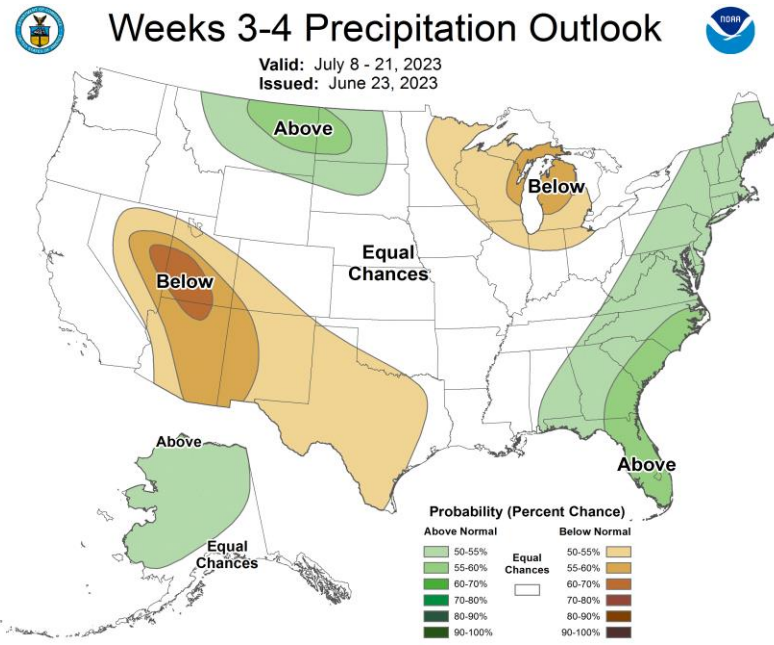
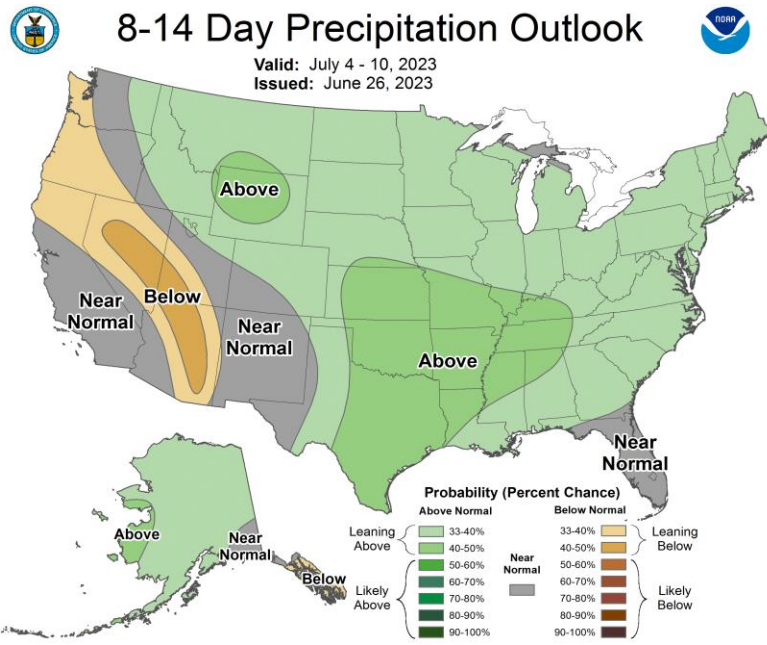
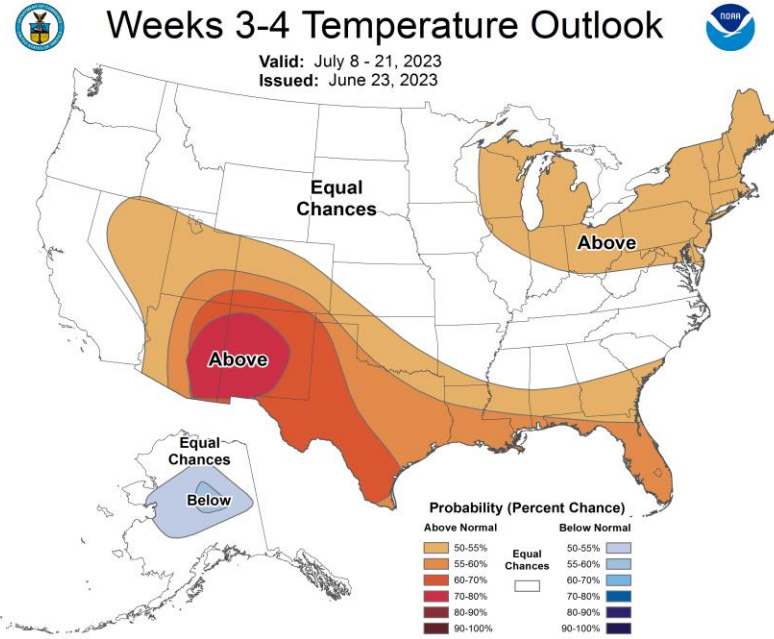
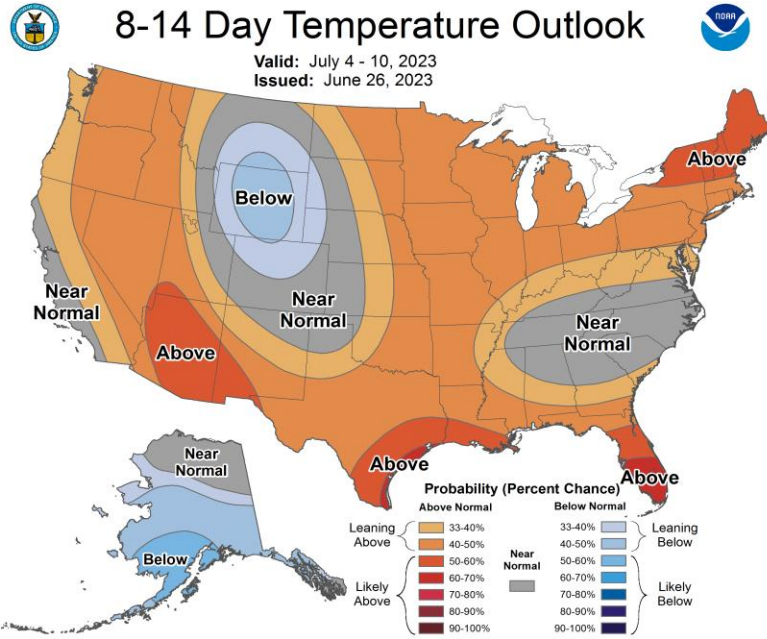
MJJ MJO Composite: GLBT (degC)



Mean 500-hPa Height Anomaly Forecasts:



Official Temperature & Precipitation Forecasts:



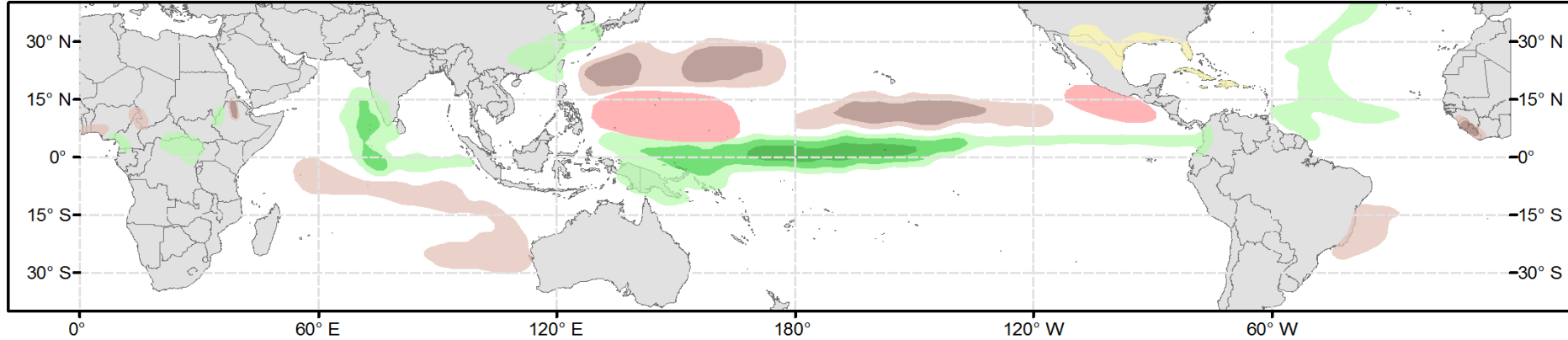


Global Tropics Hazards Outlook

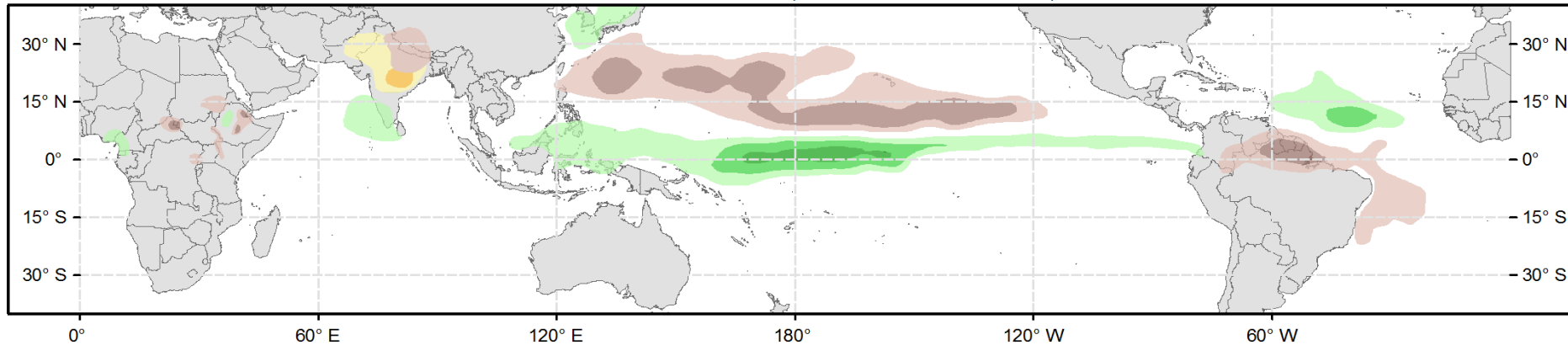
Climate Prediction Center



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Week 3 - Valid: Jul 12, 2023 - Jul 18, 2023



Week-2 Only

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 Upper third of the historical range

Below-Average Temperatures Probability

>50% >65% >80%

7-day min temperatures in the Lower third of the historical range

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