



Weeks 2-3 Global Tropics Hazards Outlook

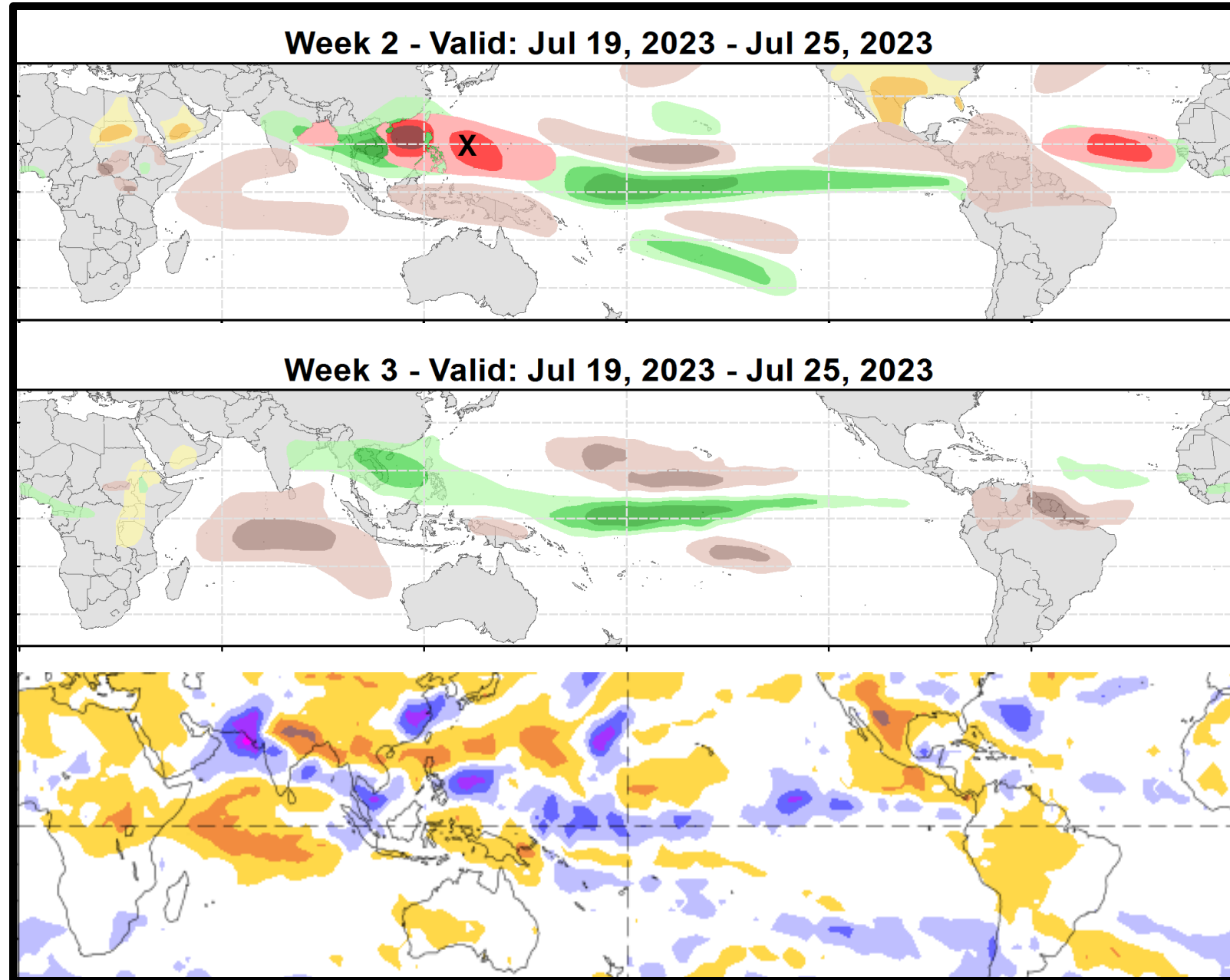
7/25/2023

Adam Allgood

NWS / NCEP / Climate Prediction Center

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

- Typhoon Doksuri (Category-4 on the Saffir-Simpson scale) formed on July 22, and is currently just north of Luzon.
- Hurricane Don, the first hurricane of the 2023 season, formed at a high latitude over the Atlantic prior to the outlook period. Typhoon Talim also formed over the West Pac near the Philippines immediately prior to the period.



Synopsis of Climate Modes:

ENSO: (July 13, 2022 Update) *next update on Thursday, Aug 10th*

- ENSO Alert System Status: [El Niño Advisory](#)
- There is a greater than 90% chance that El Niño will continue through the Northern Hemisphere winter.

MJO and other subseasonal tropical variability:

- The MJO signal became increasingly coherent in the upper-level velocity potential anomaly field (CPC index), with a Wave-1 structure and eastward propagation from the Maritime Continent to the West Pacific.
- The signal in the wind field is zonally narrow, encompassing only the Pacific, resulting in a poor projection of the signal on the RMM-based MJO index.
- Dynamical model MJO index forecasts show a weak signal over the next week or so, with the GEFS bringing a strengthening signal from the Maritime Continent to the West Pacific during the outlook period, and some ECMWF ensemble members building a West Pacific signal during the Weeks 3-4 period.
- Due to considerable uncertainty, the MJO may contribute to the evolution of the pattern, but the response to the ENSO base state is likely to remain the dominant driver of large-scale global tropical convective anomalies.

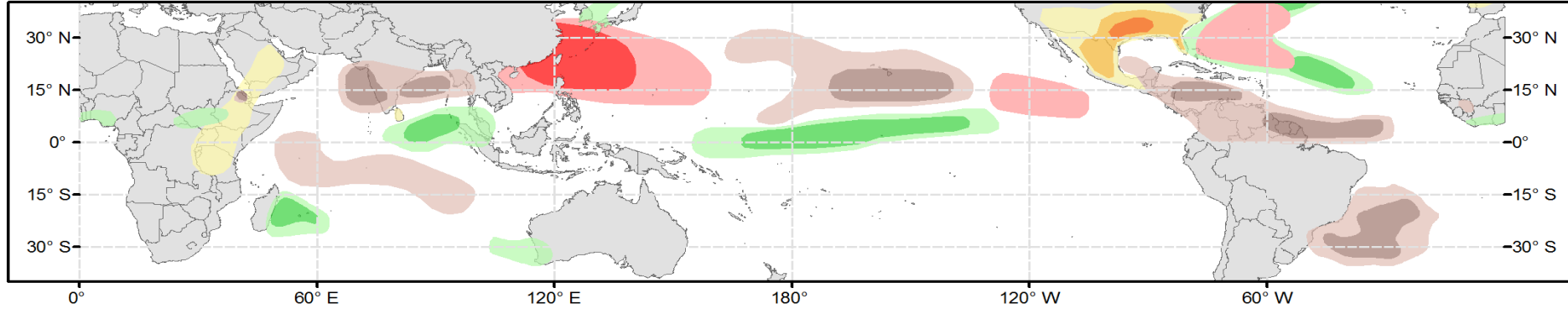
GTH Outlook:



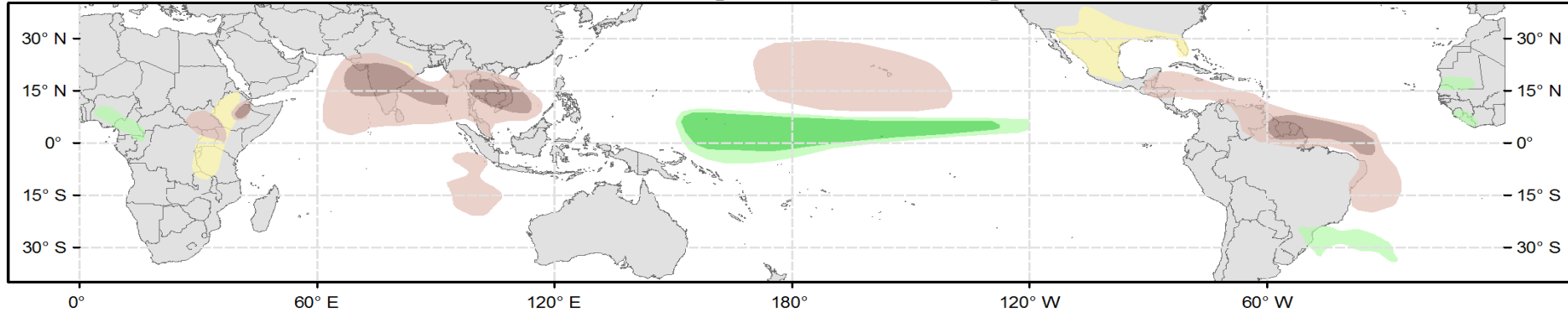
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Aug 02, 2023 - Aug 08, 2023



Week 3 - Valid: Aug 09, 2023 - Aug 15, 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**

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*7-day max temperatures in the
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**Below-Average
Temperatures Probability**

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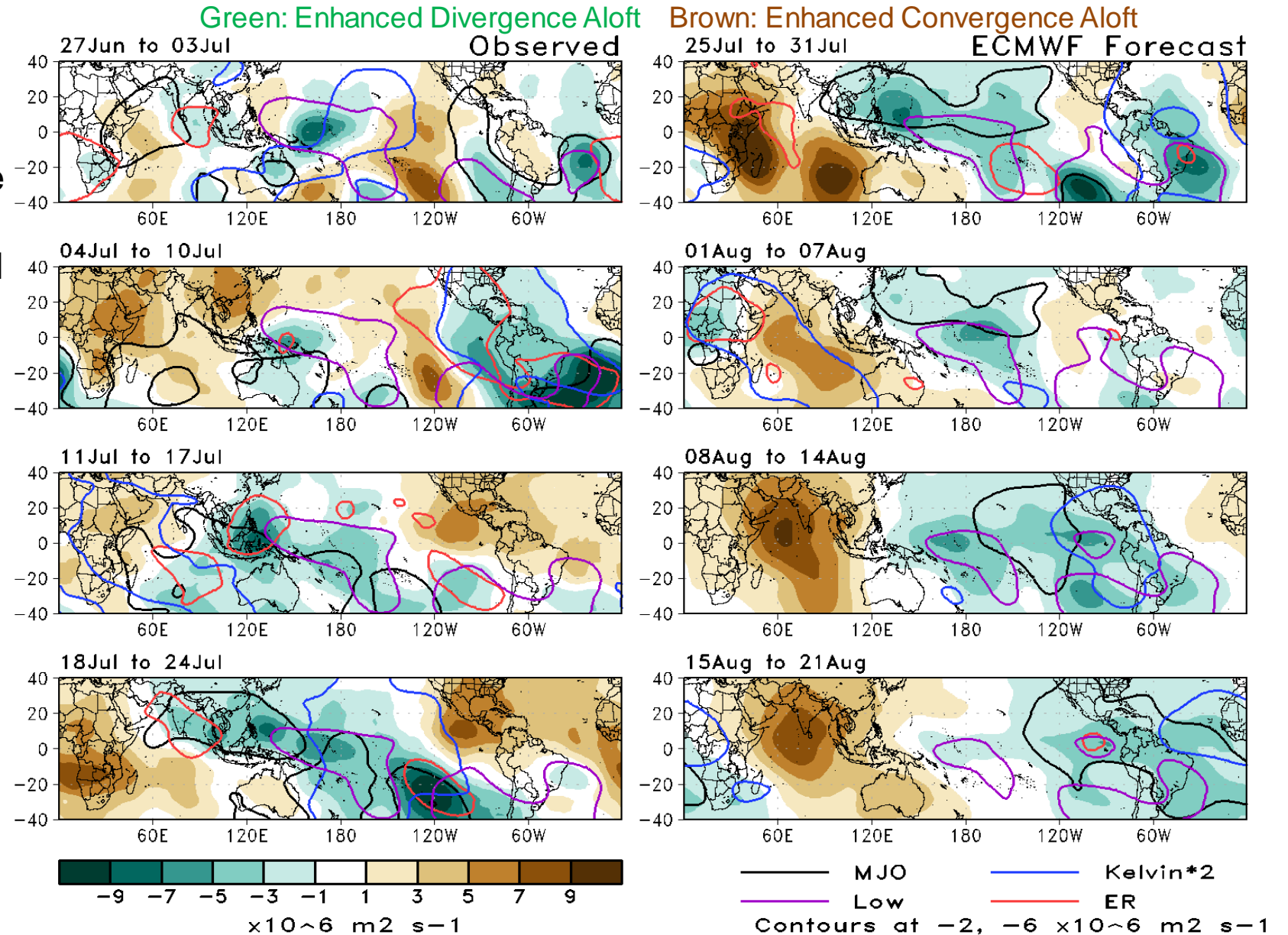
*7-day min temperatures in the
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Issued: 07/25/2023
Forecaster: Allgood

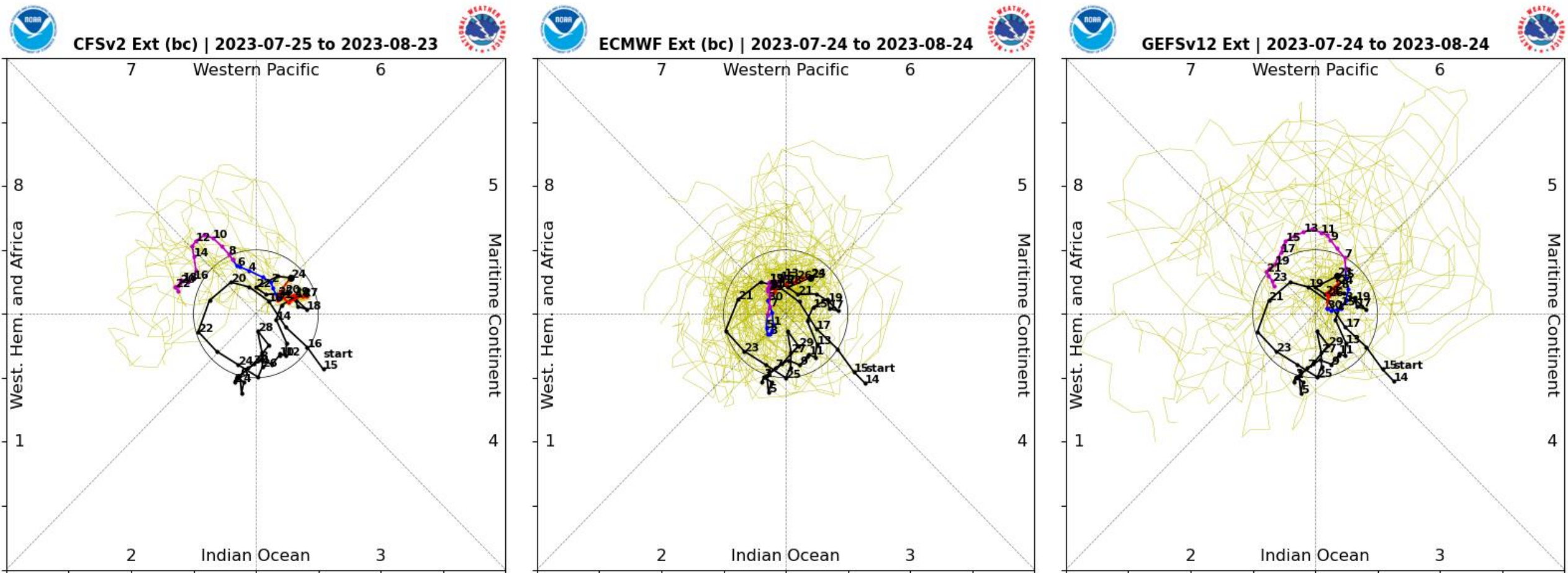
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200-hPa Velocity Potential Anomaly Maps:

- An incoherent field in late June and early July began to organize by late July, resulting in a Wave-1 pattern and a better developed monsoon trough over Asia and the West Pacific.
- ECMWF forecasts show a slowly evolving signal over the next four weeks.

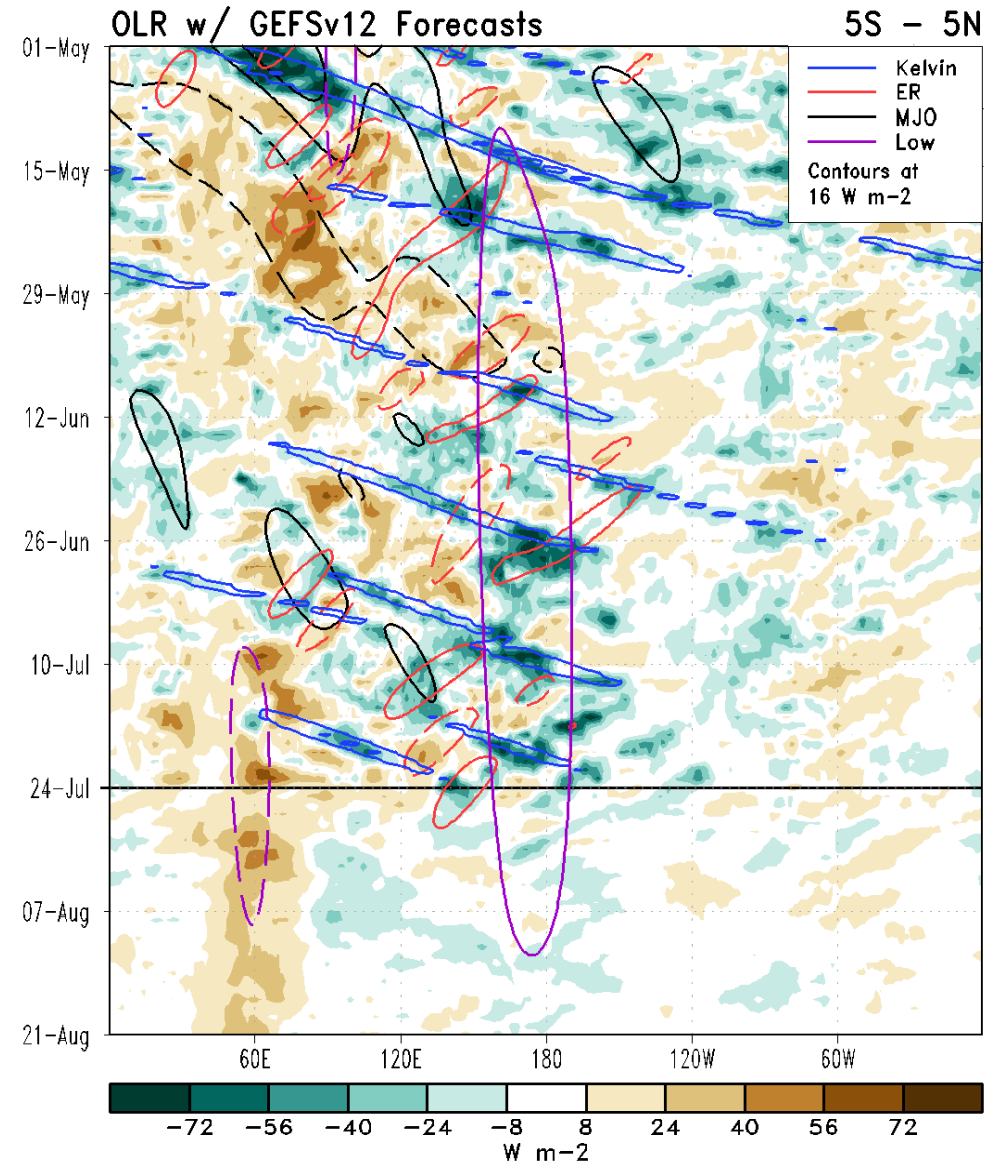
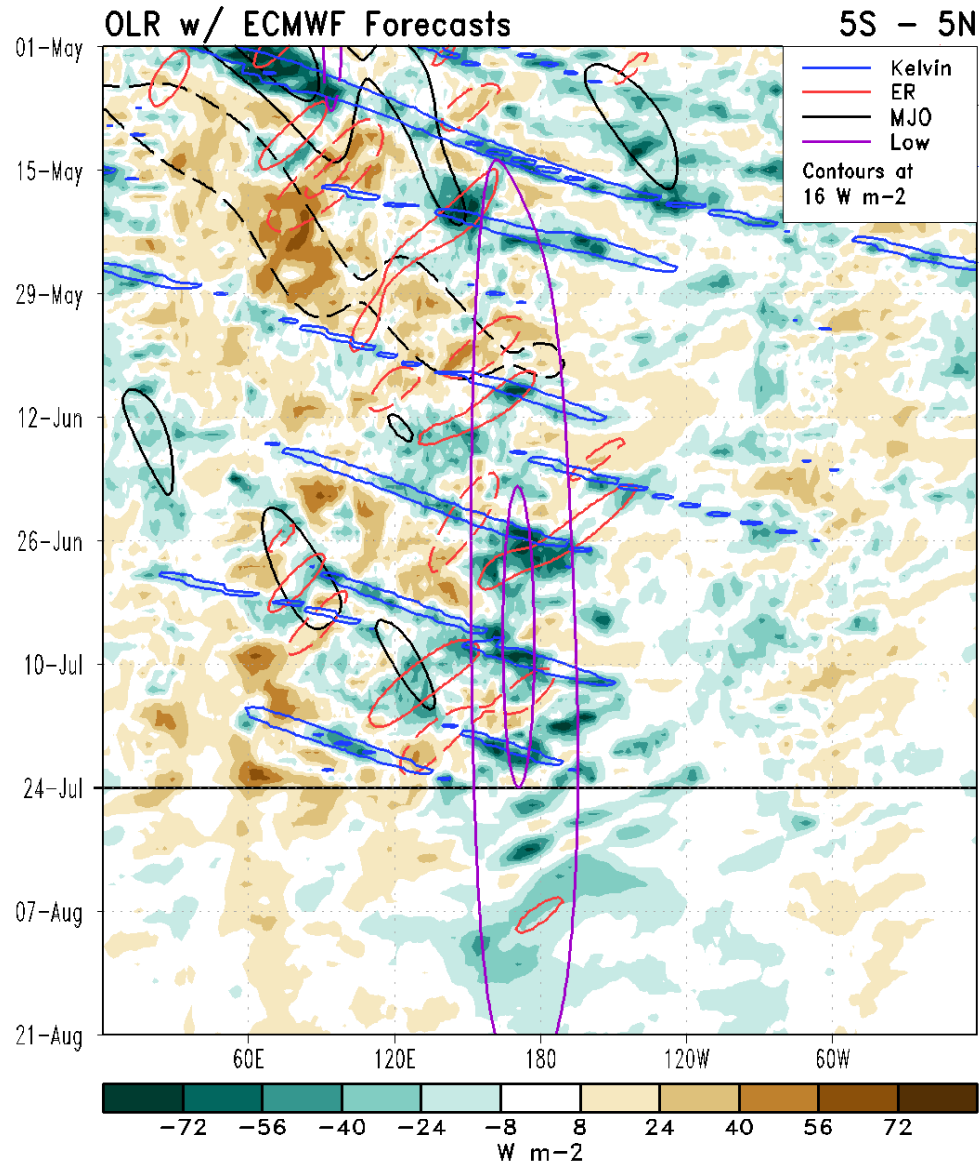


RMM Index Observations & Forecasts:



- The CFS is the most progressive with the MJO signal, bringing it to the Western Hemisphere during Week-2.
- The GEFsv12 depicts a new signal emerging over the Pacific during August.
- There is more uncertainty in the ECMWF forecasts, though a number of ensemble members continue to depict a West Pacific signal.

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

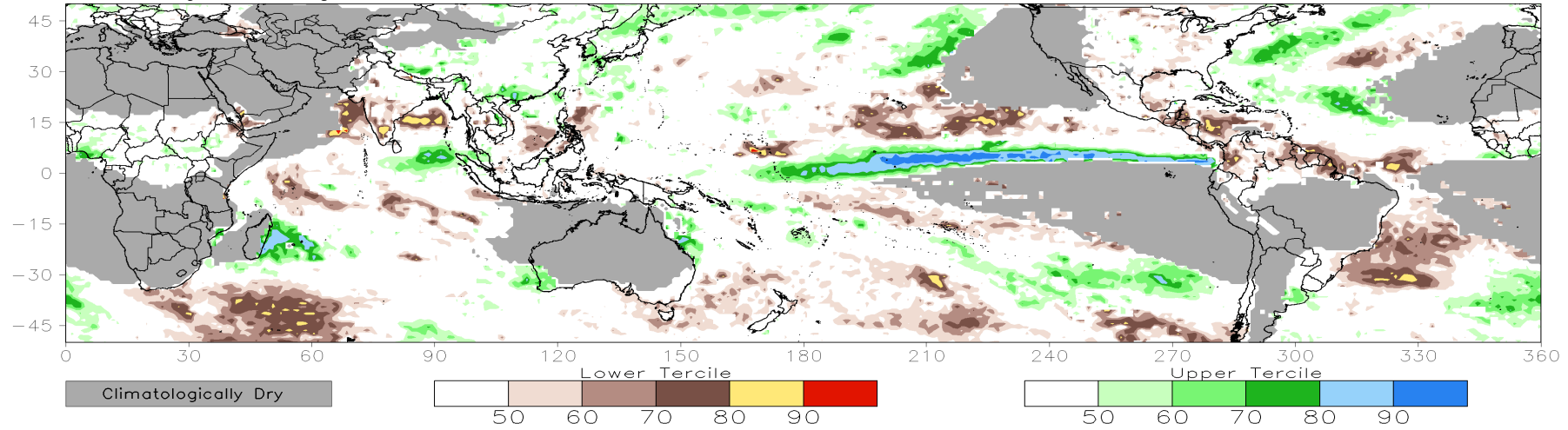


No MJO activity coming through the filtering in these OLR forecasts.

Consolidated Probabilistic Precipitation: Weeks 2 & 3

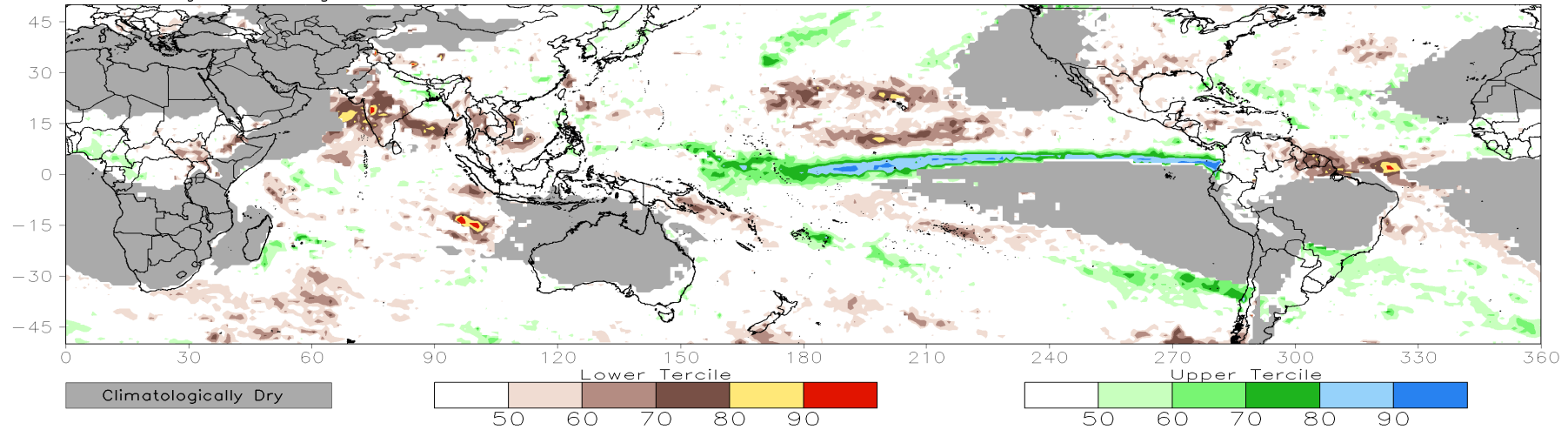
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 02Aug2023–08Aug2023



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

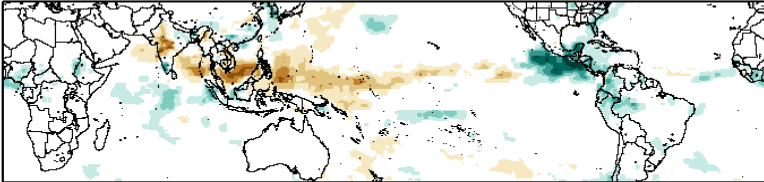
Valid: 09Aug2023–15Aug2023



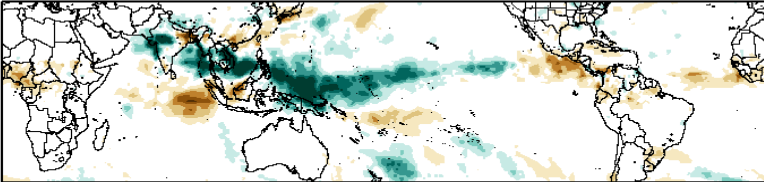
Historical Precipitation Anomalies By MJO Phase:

JJA MJO Composite: GPCP1DD (mm/day)

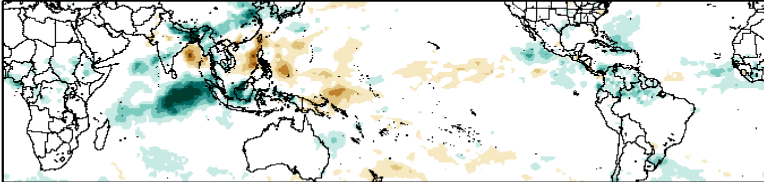
Phase 1



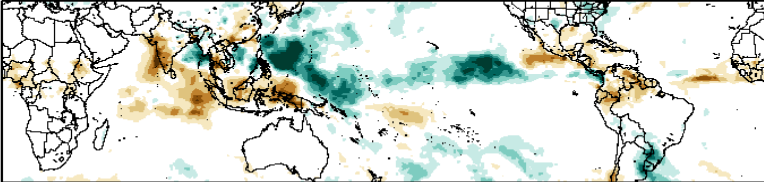
Phase 5



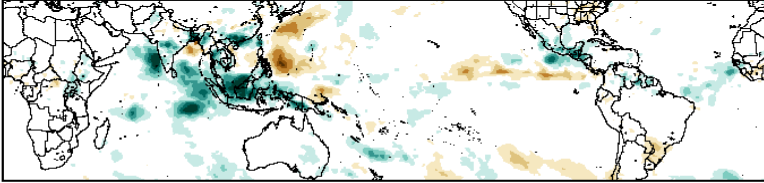
Phase 2



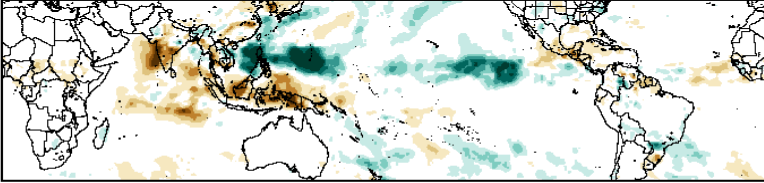
Phase 6



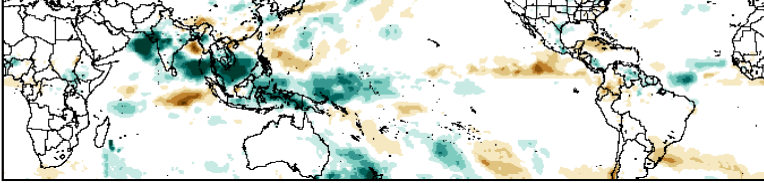
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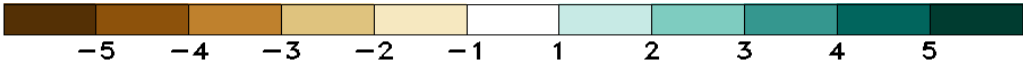
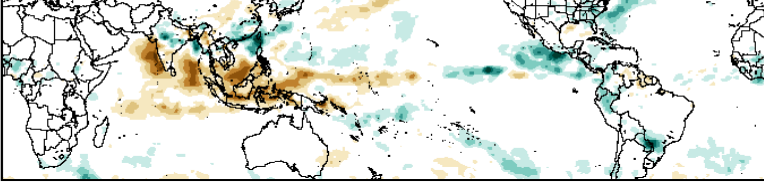
Phase 7



Phase 4

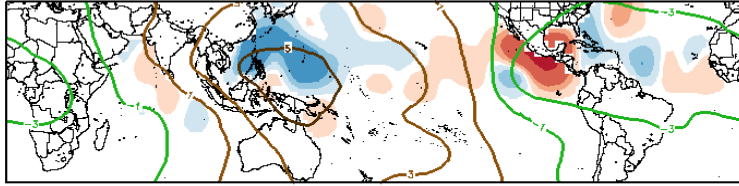


Phase 8

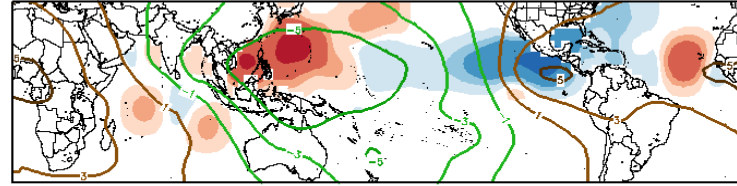


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

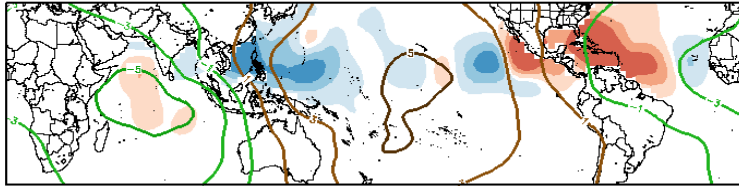
JJA MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ JJA CHI200 ($\times 10^{-6} m^{-2} s^{-1}$) / Contours every $2 \times 10^{-6} m^{-2} s^{-1}$



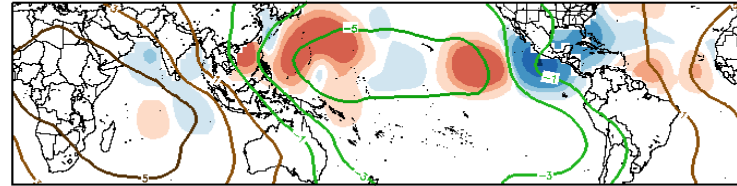
Phase 1



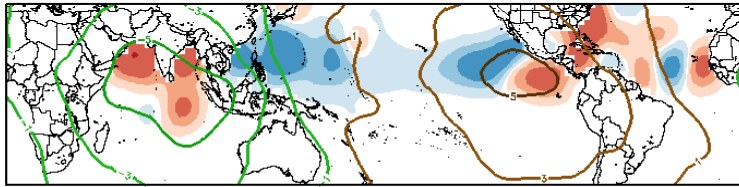
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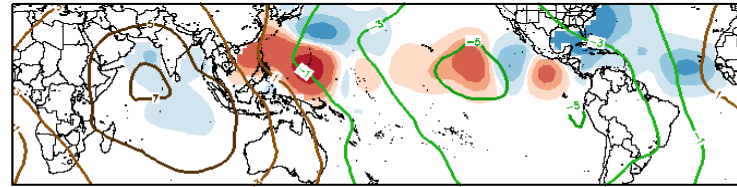
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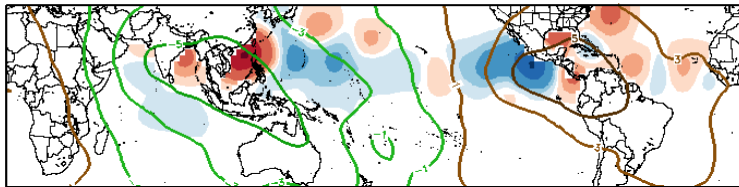
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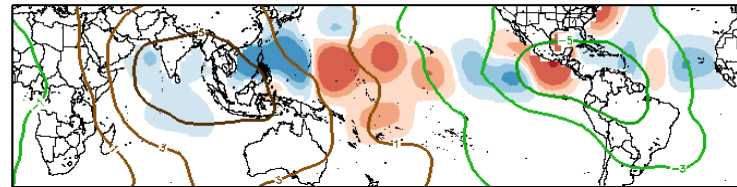
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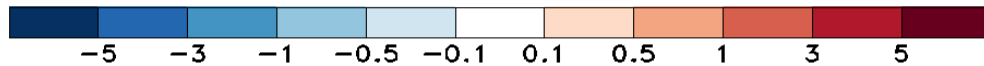
Phase 7



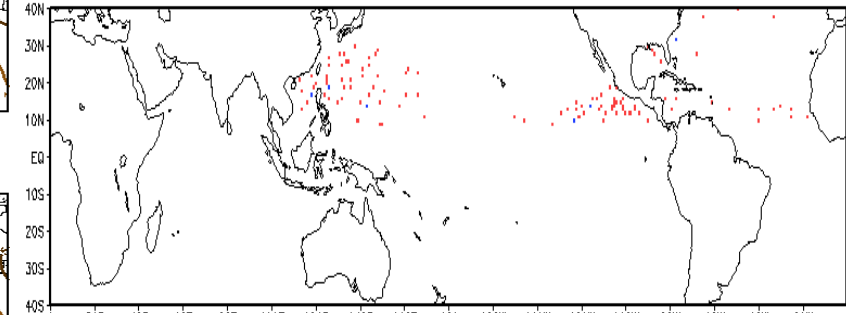
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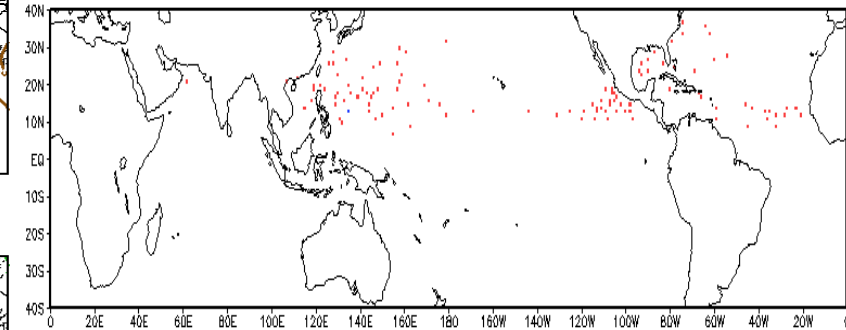
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 0802 to 0808

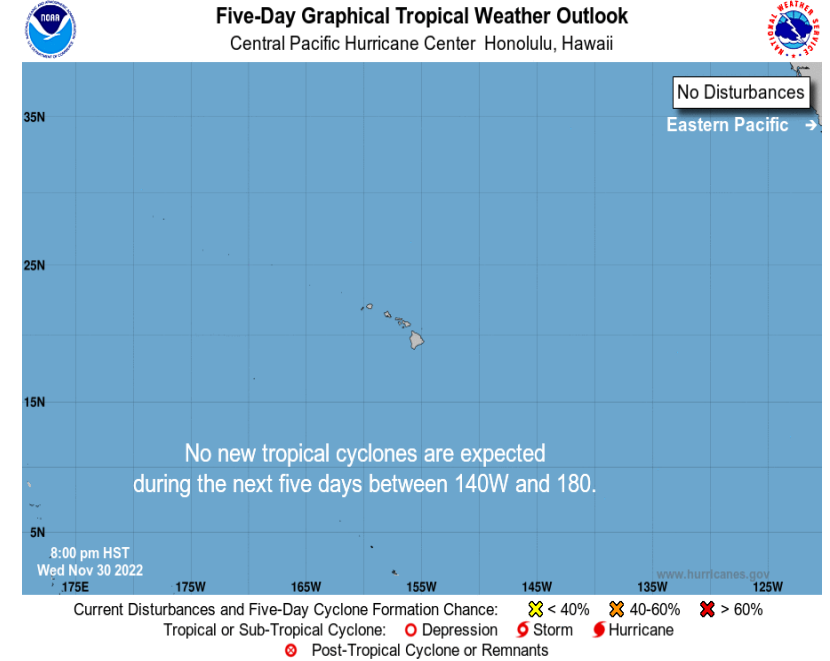
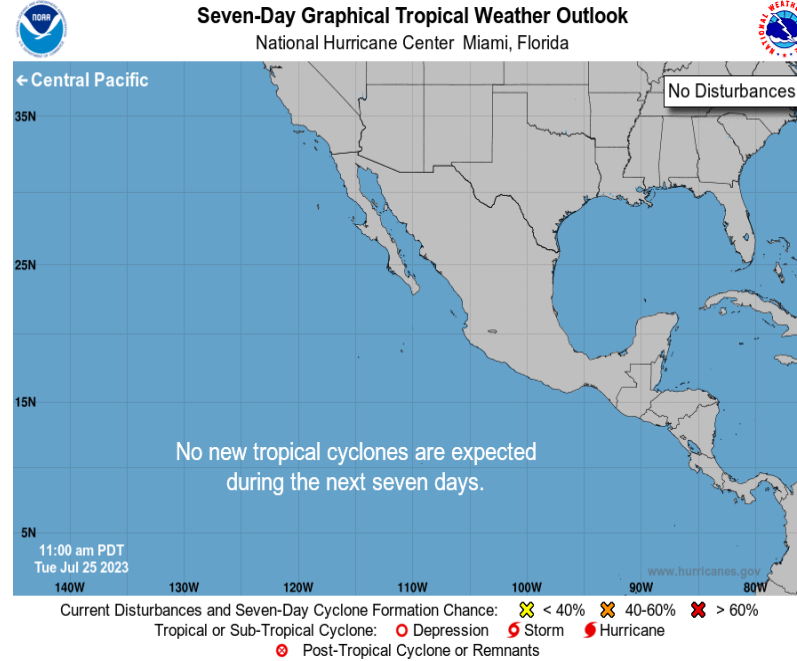
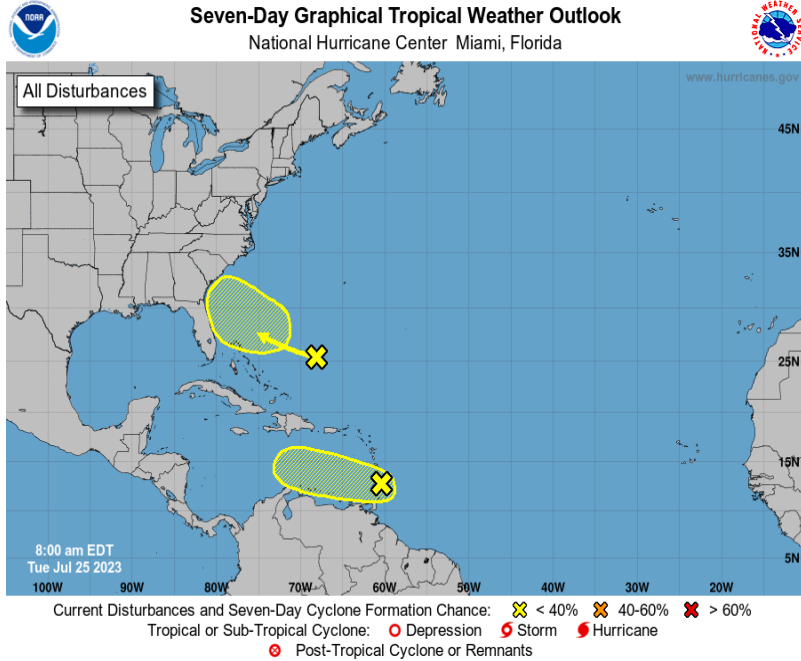


Observed TC Genesis, 1979-2021
7-day Period 0809 to 0815



Experimental

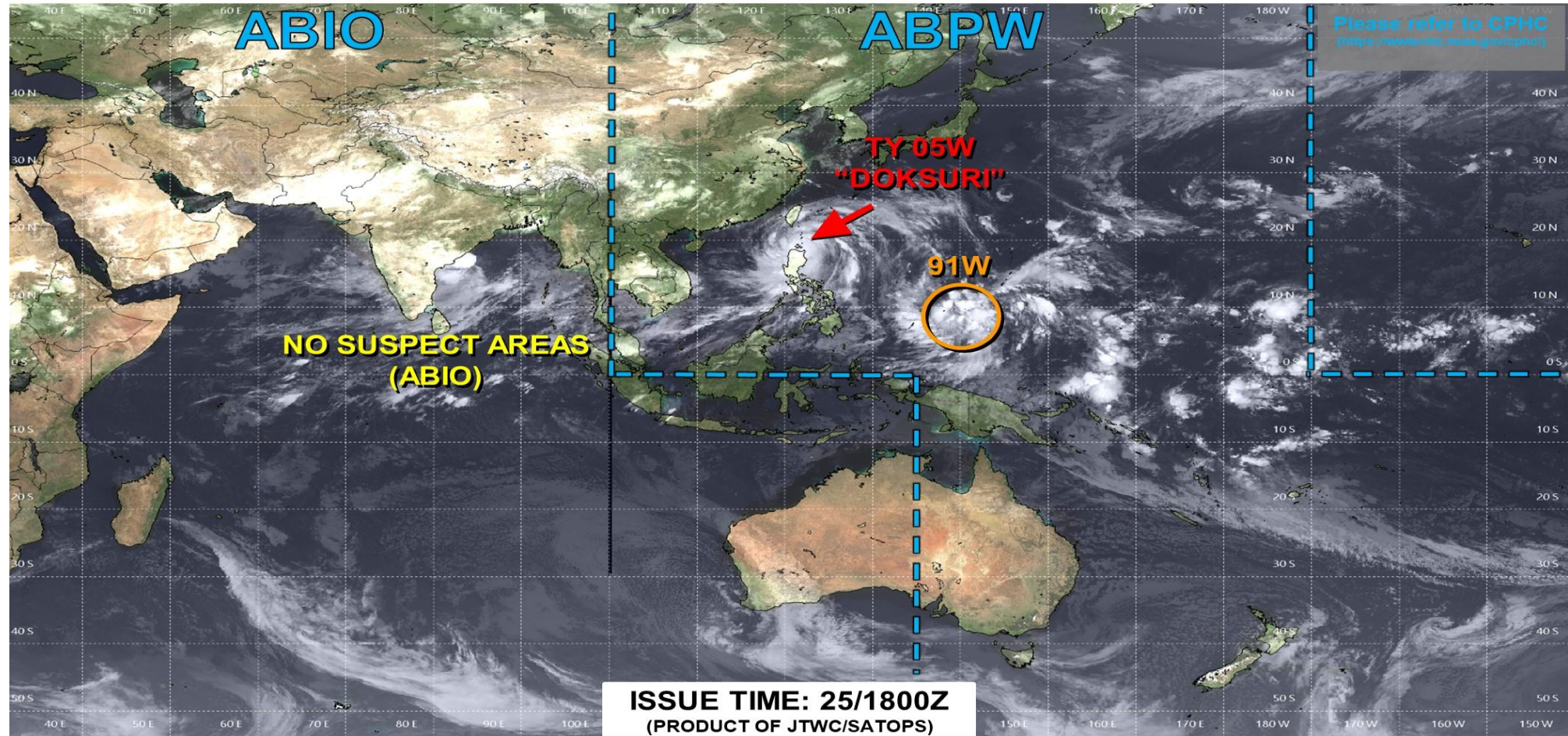
Tropical Cyclone Monitoring/Forecast: NHC



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)

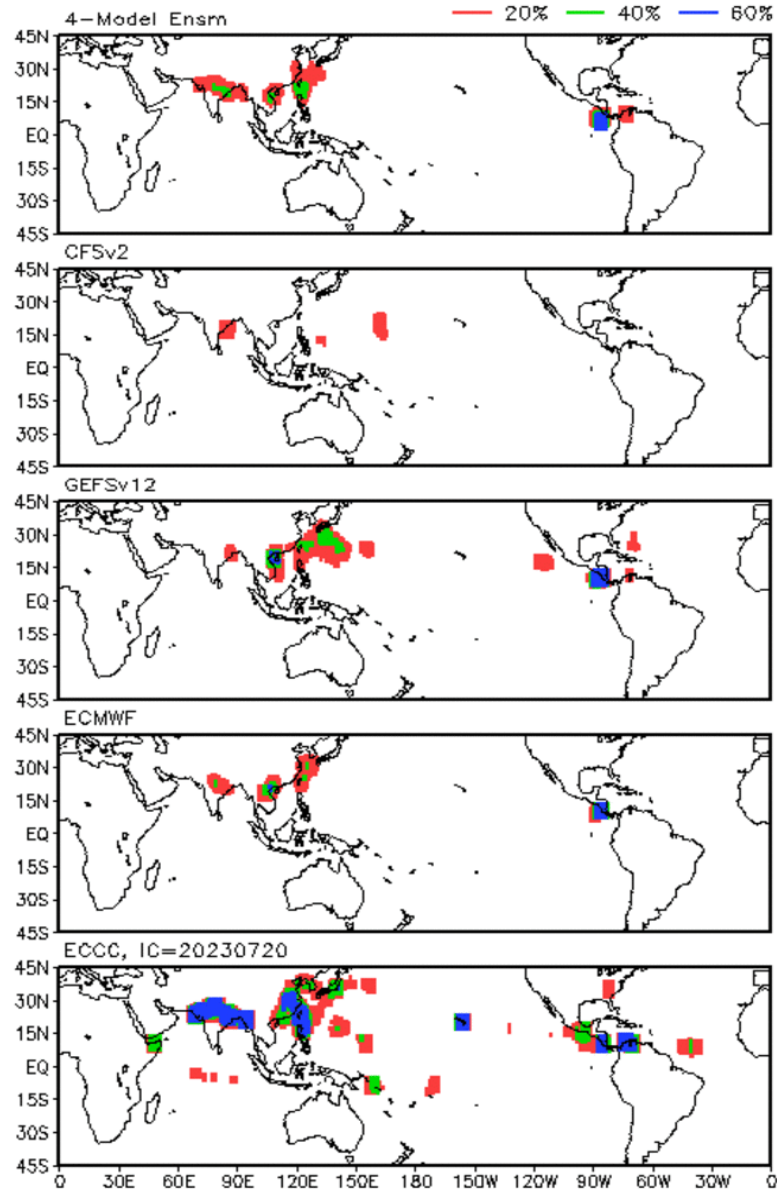


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

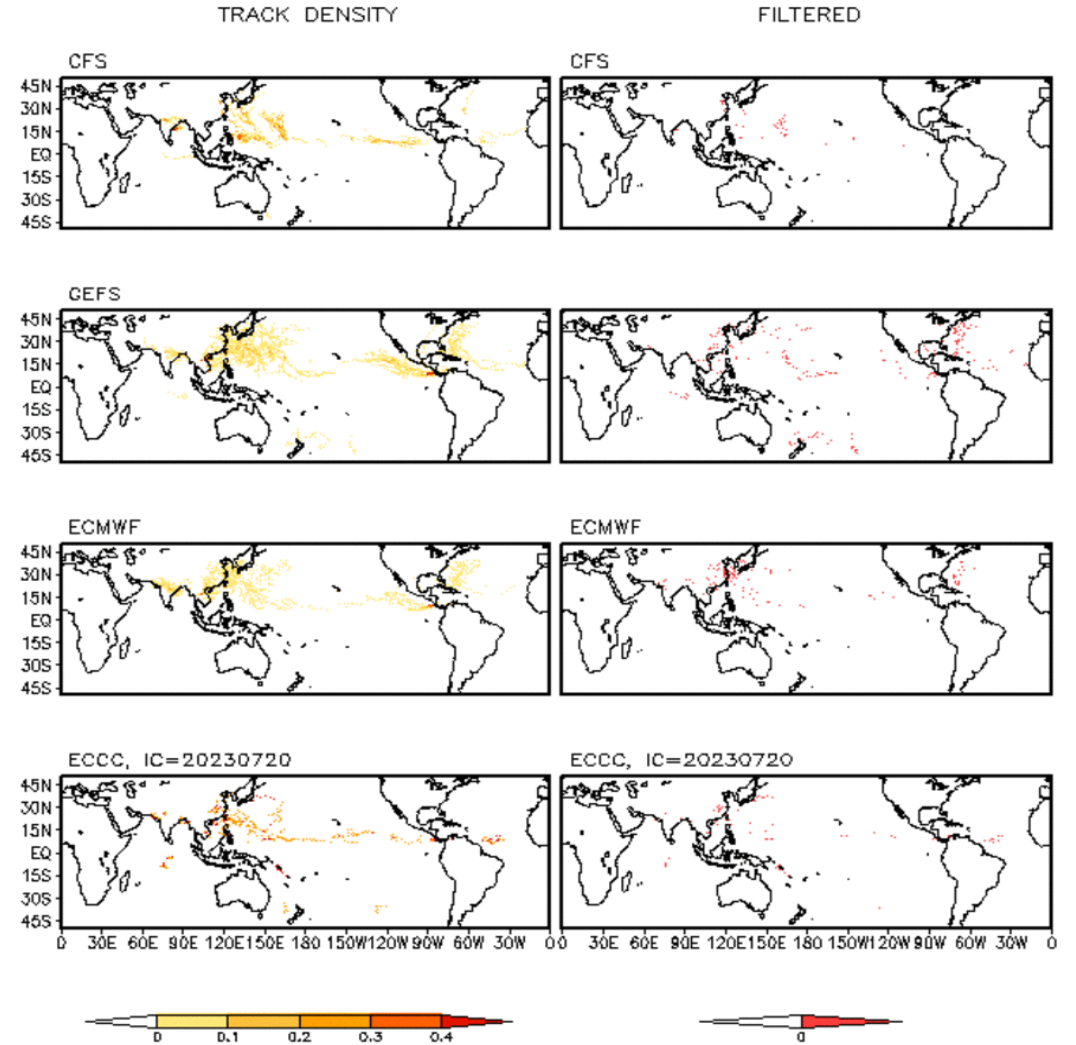
 Tropical Cyclone (Reference Warning)

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

Storm Track Probabilities, IC=20230724
Week 2: 0802 - 0808

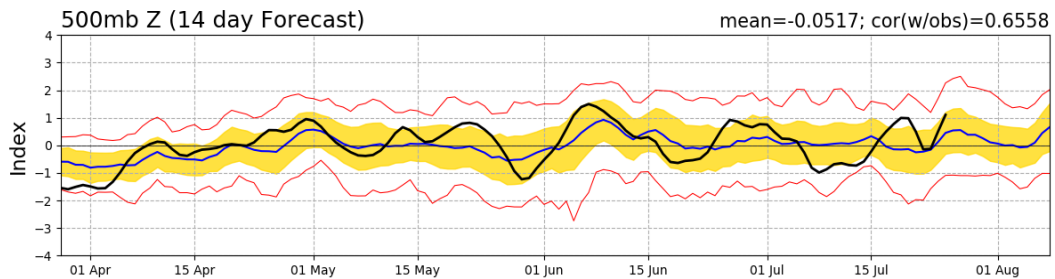
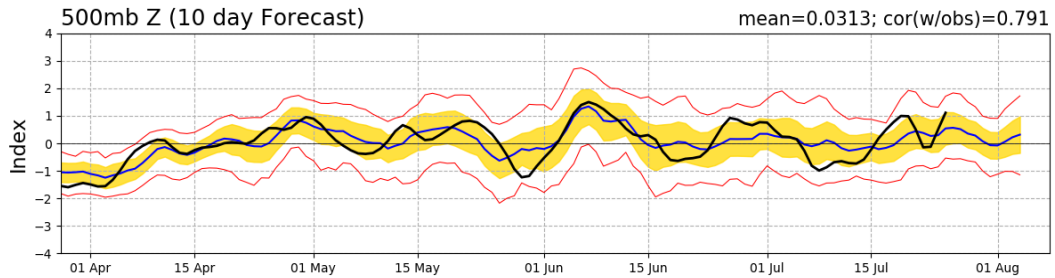
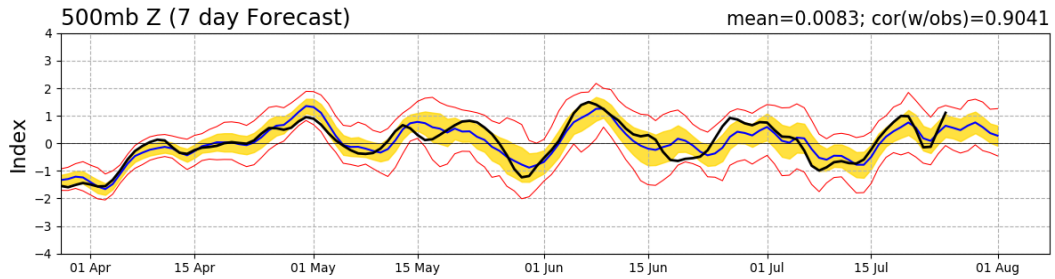
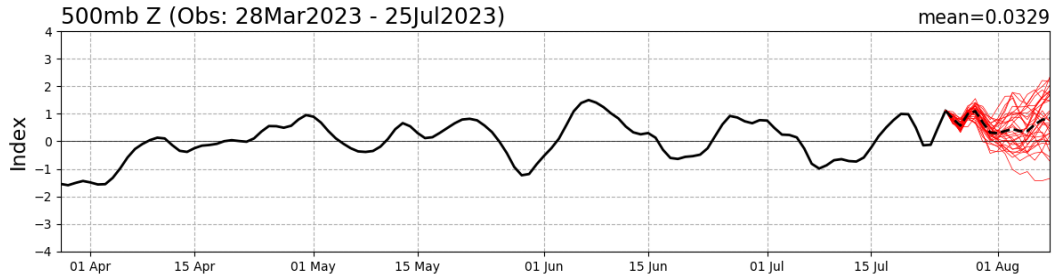


Storm Track Density Distribution, IC=20230724
Week 2 Forecast: 0802-0808

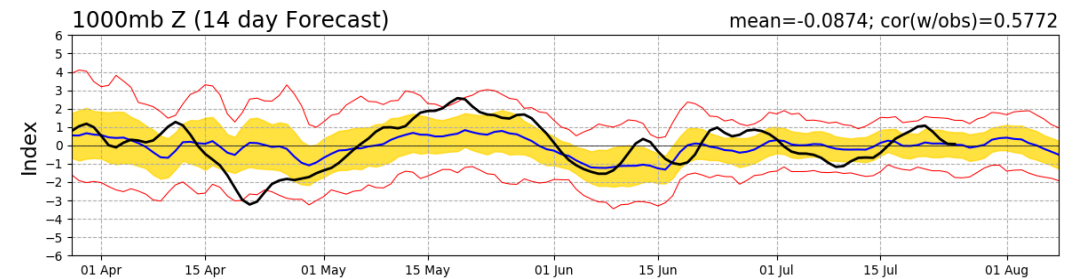
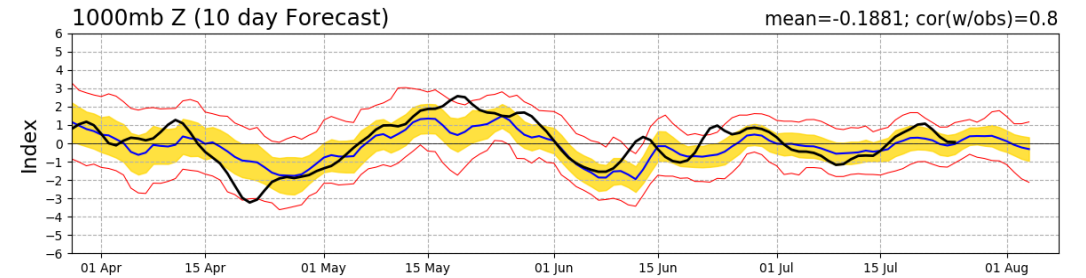
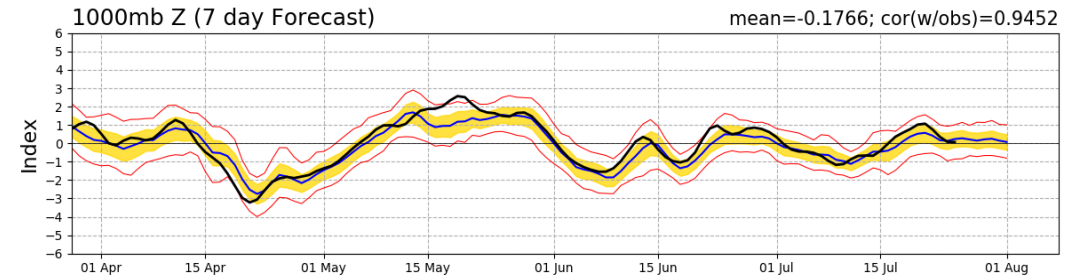
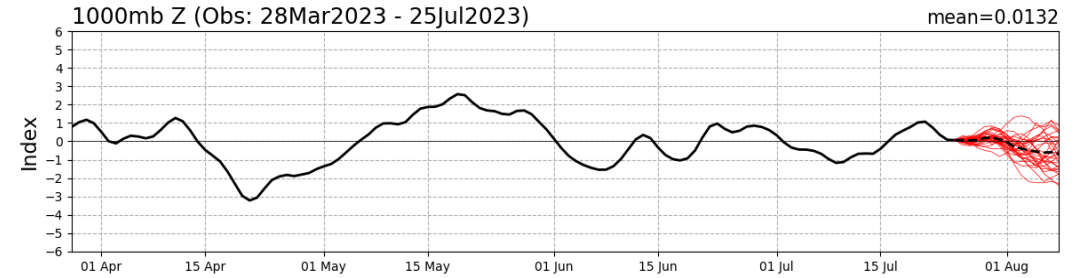


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

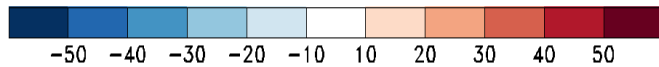
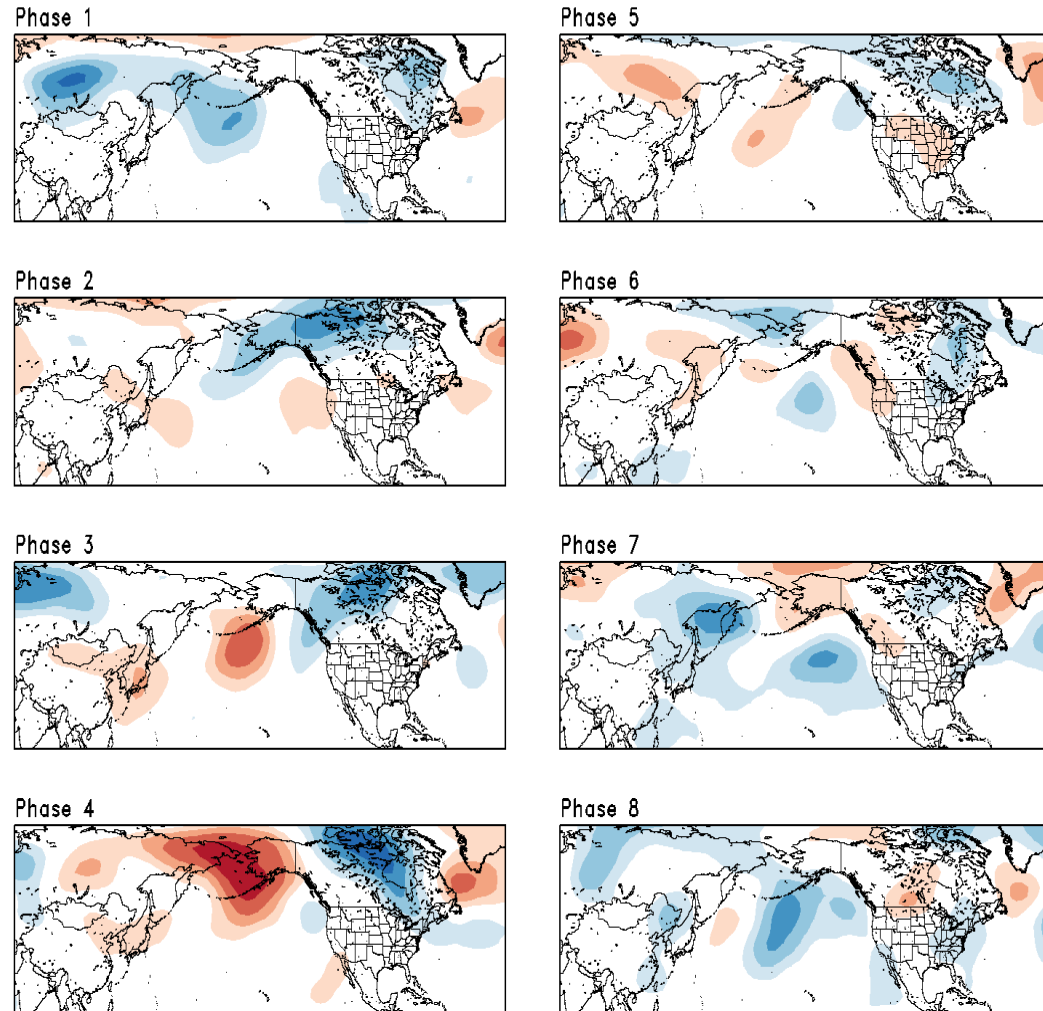


AO Index: Observed & GEFS Forecasts

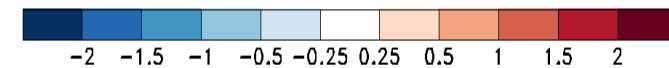
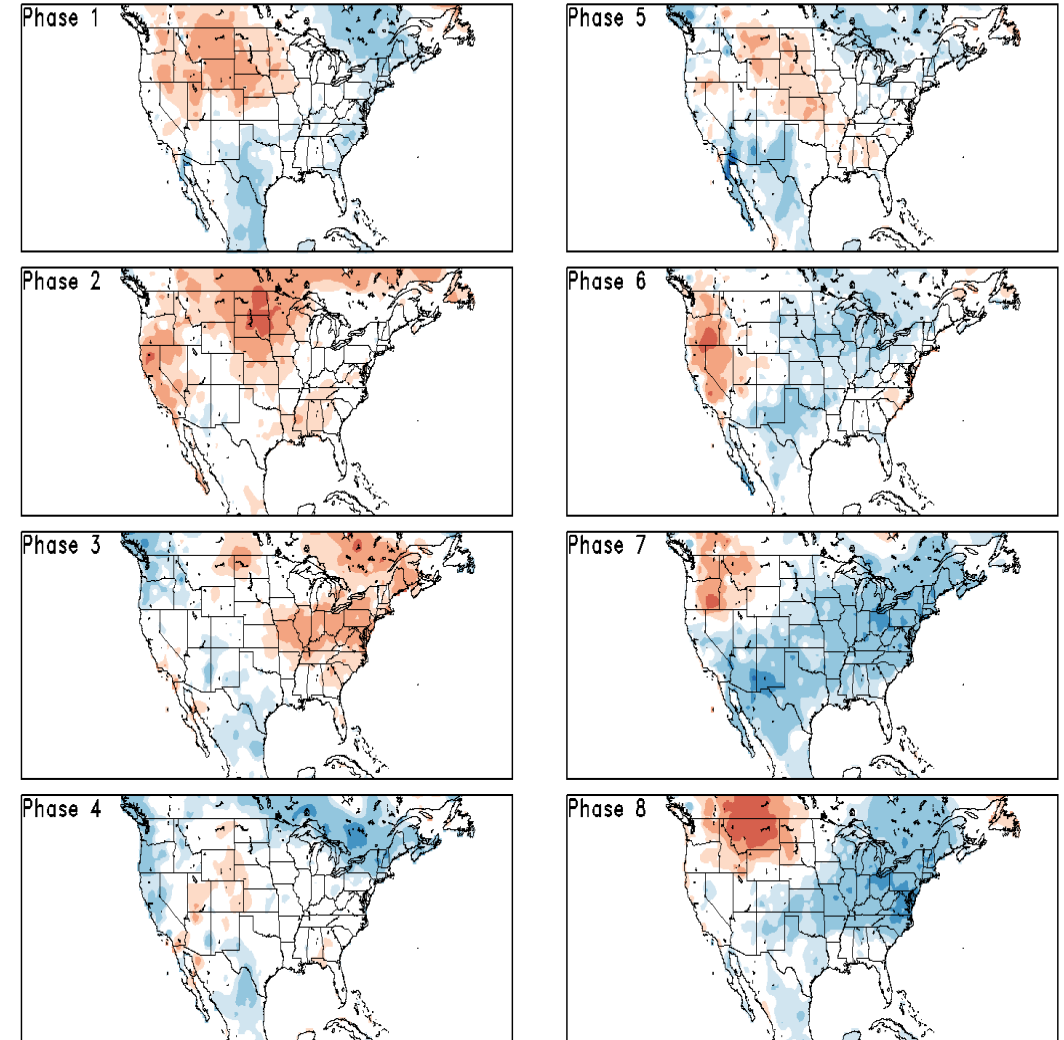


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

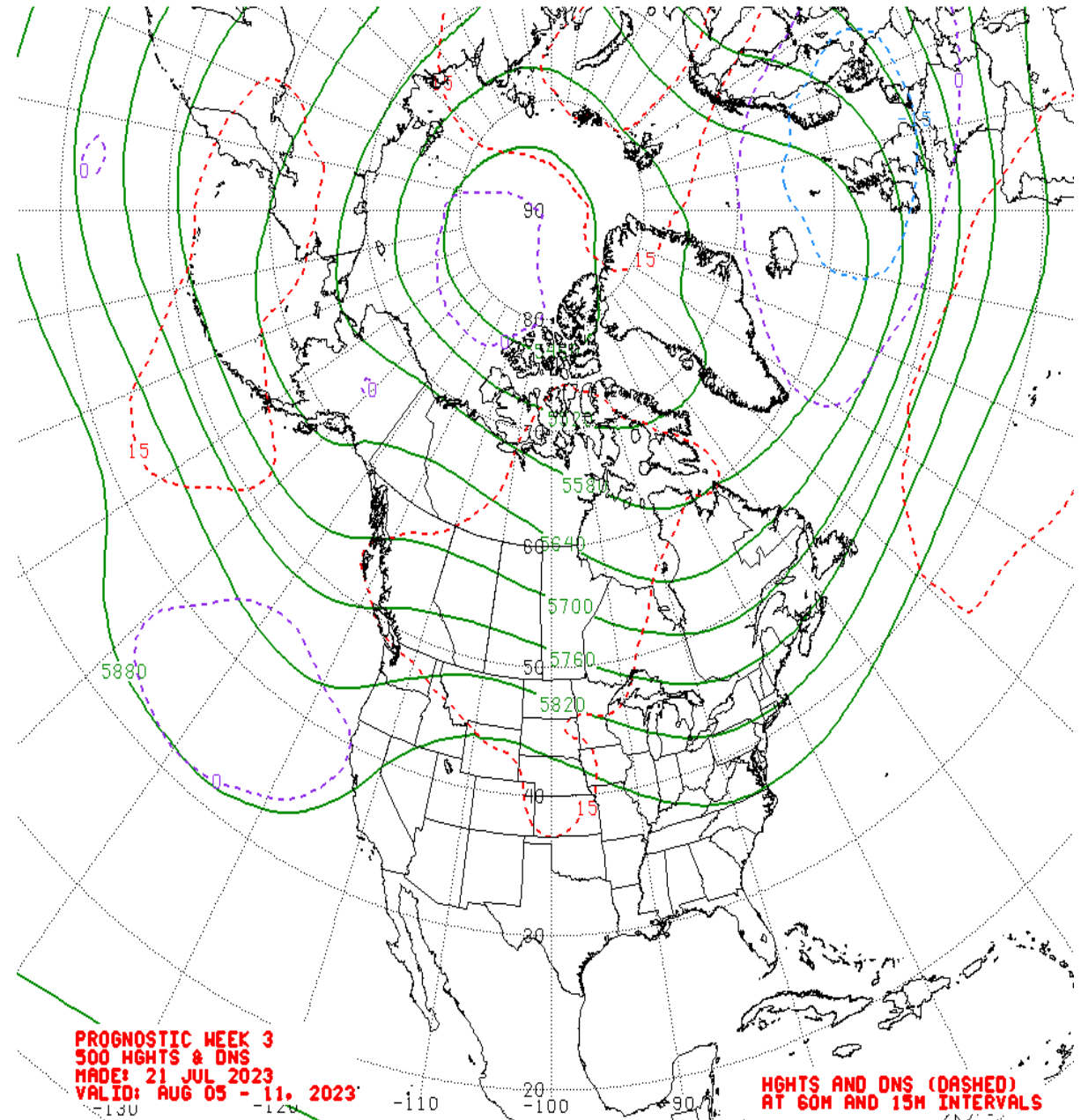
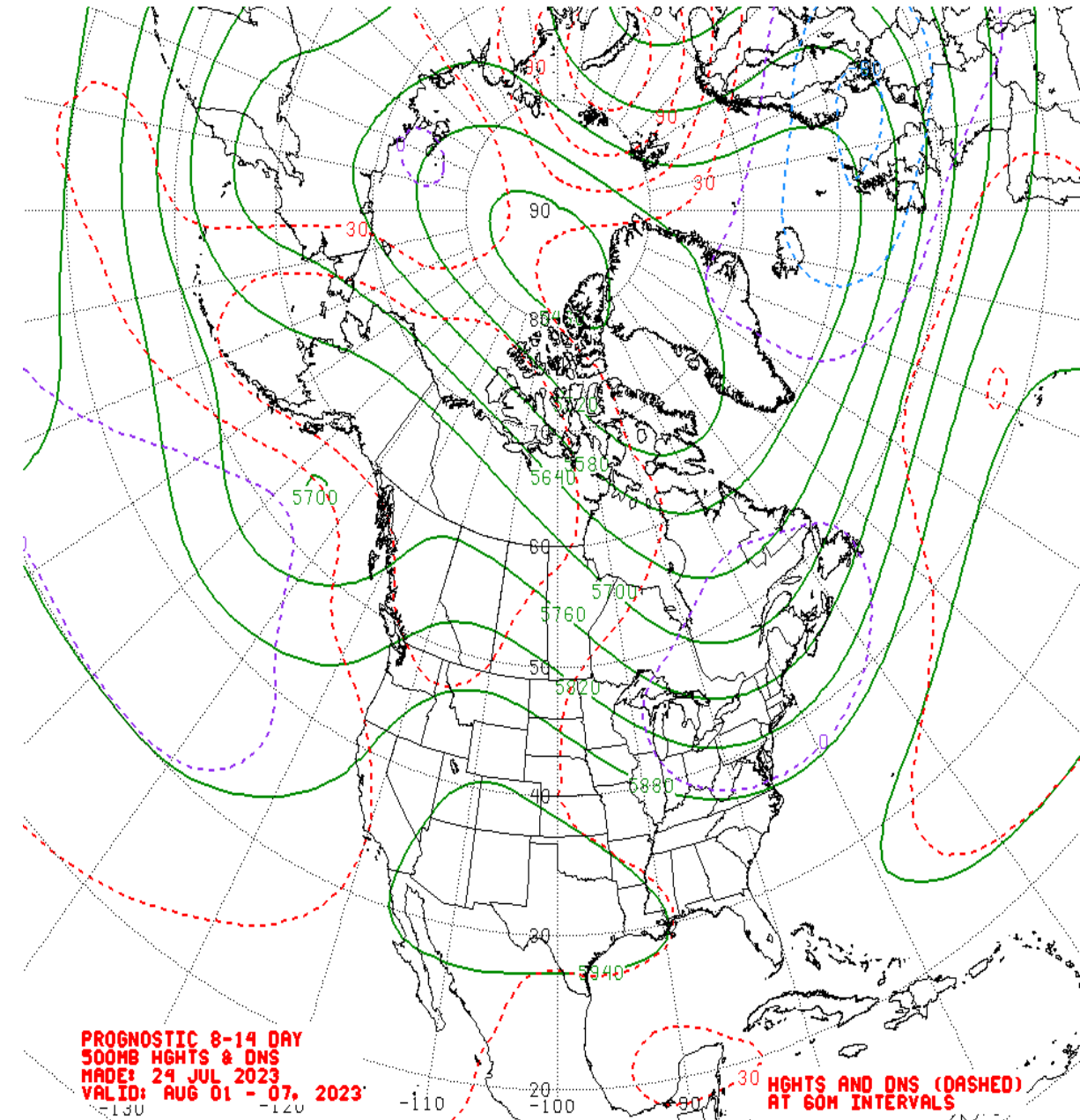
JJA MJO Composite: CDAS 500-hPa Height (m)



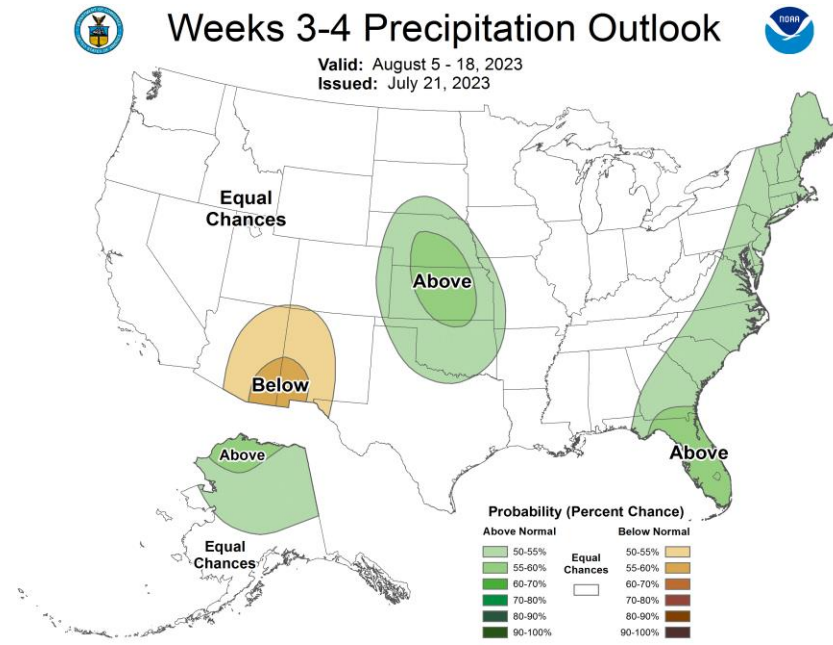
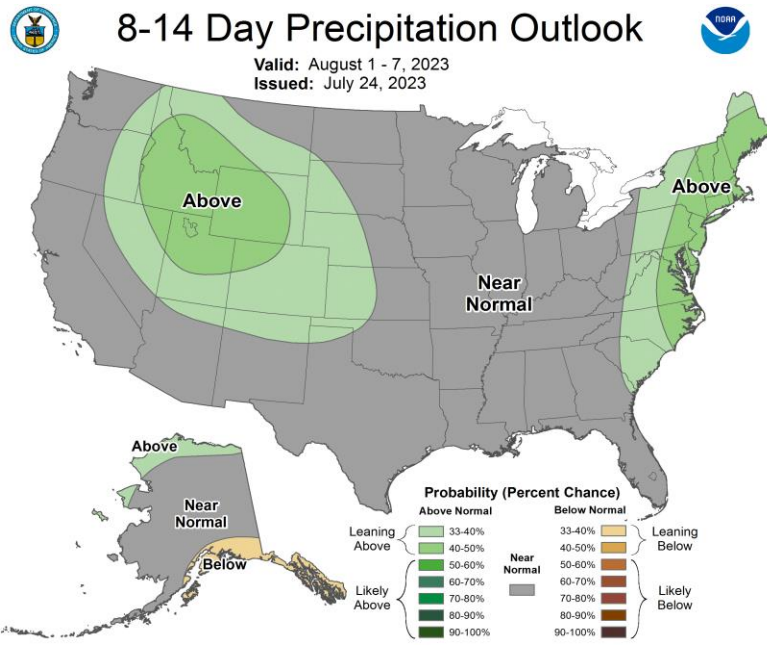
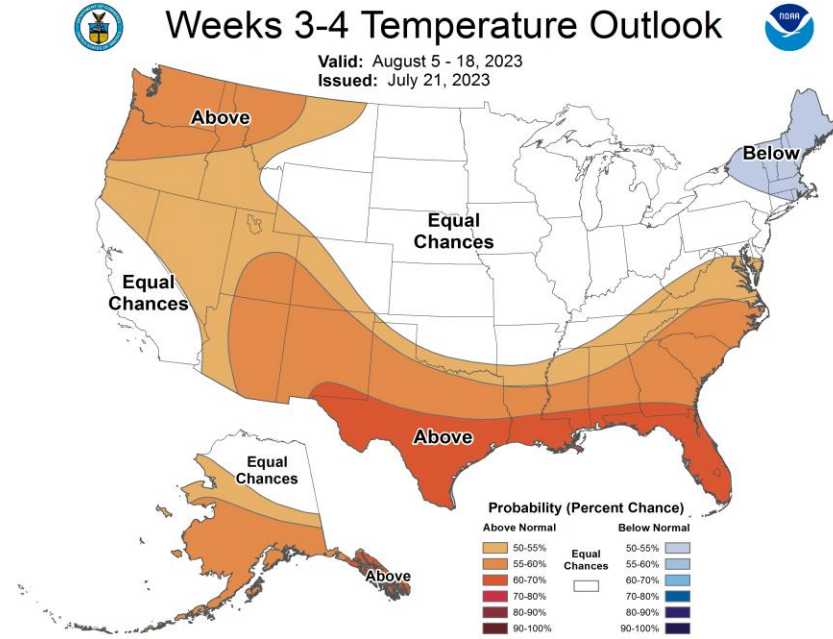
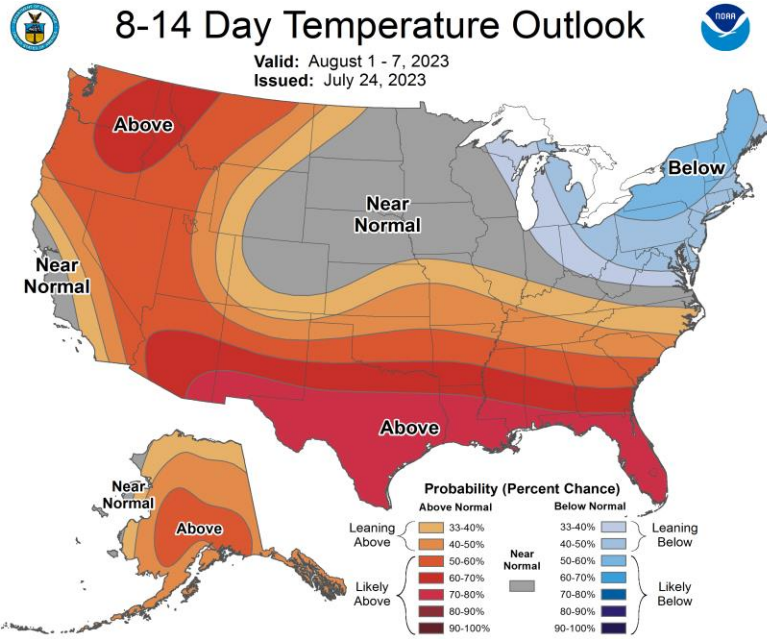
JJA MJO Composite: GLBT (degC)



Mean 500-hPa Height Anomaly Forecasts:



Official Temperature & Precipitation Forecasts:



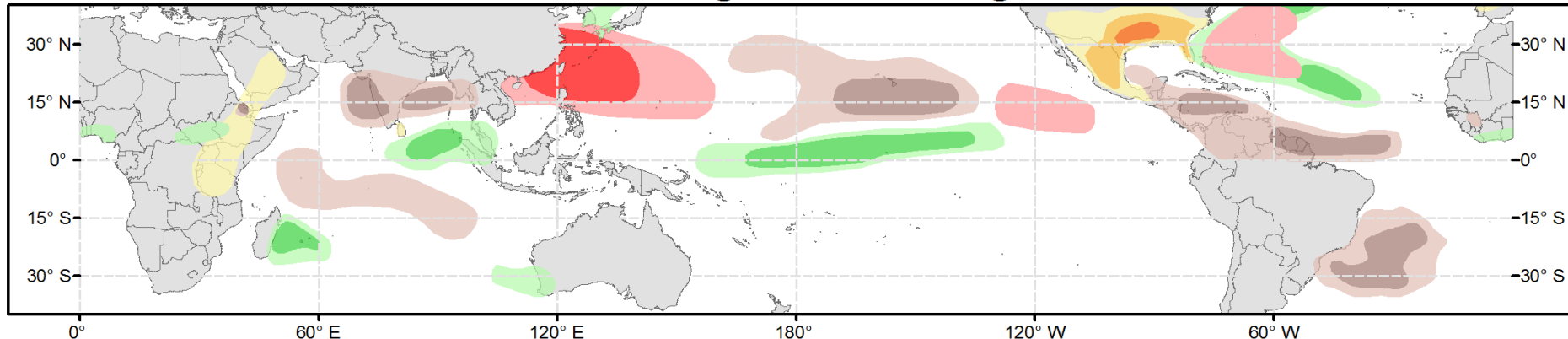


Global Tropics Hazards Outlook

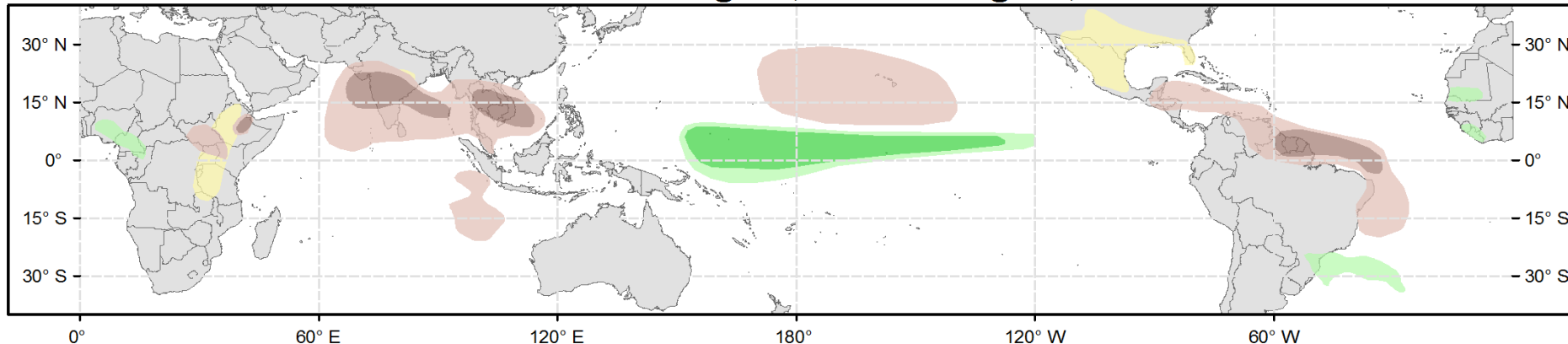
Climate Prediction Center



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