



Weeks 2-3 Global Tropics Hazards Outlook

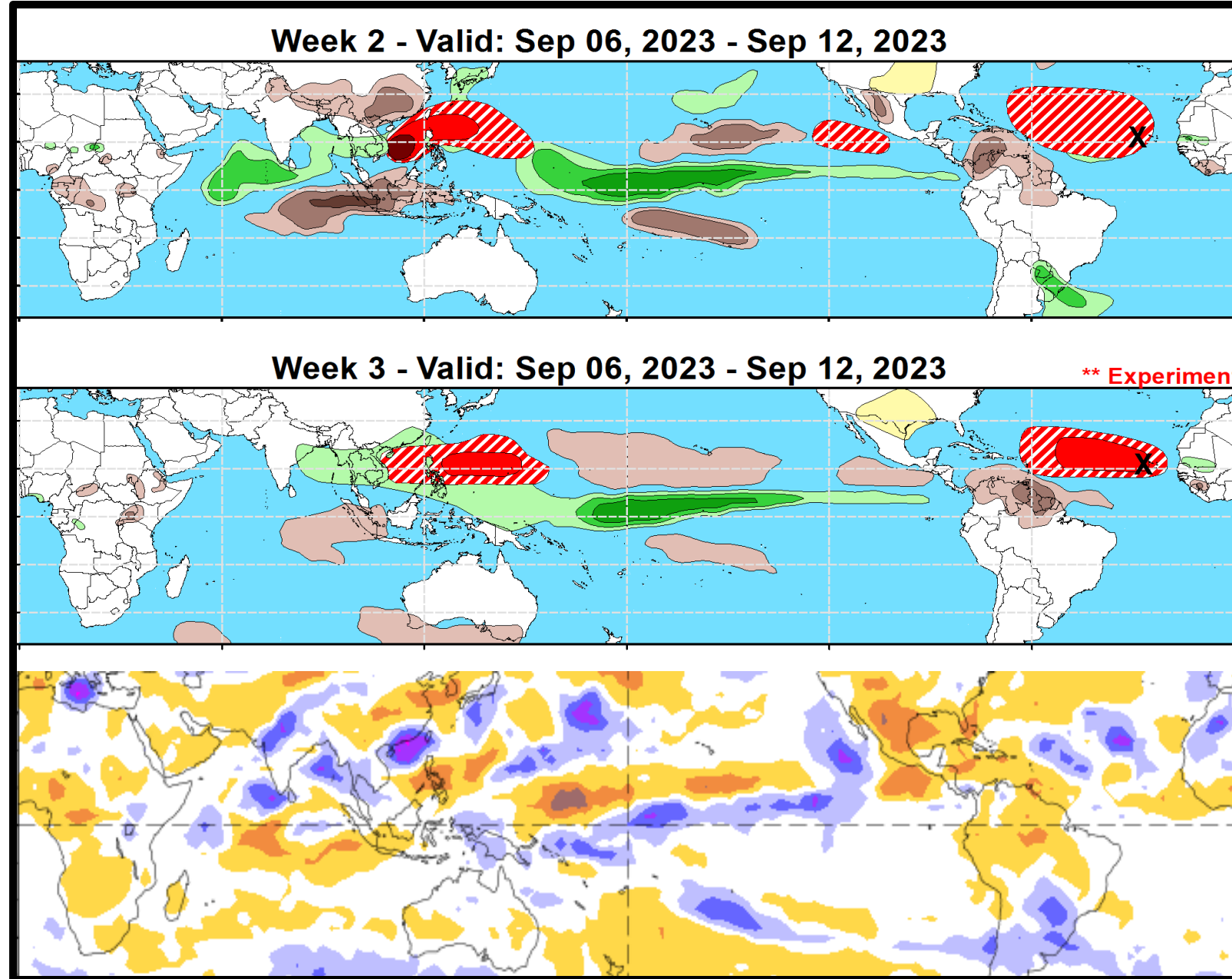
9/12/2023

Adam Allgood

NWS / NCEP / Climate Prediction Center

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

- Following Hurricane Lee, Hurricane Margot formed just west of the Cape Verde Islands
- Jova (East Pac) and Yun-Yeung (West Pac) formed immediately prior to this period.



Synopsis of Climate Modes:

ENSO: (Aug 10, 2023 Update) *next update on Thursday, Sep 14th*

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño is anticipated to continue through the Northern Hemisphere Winter (>95% through DJF).

MJO and other subseasonal tropical variability:

- The MJO appears somewhat active, with the enhanced convective phase now over the Maritime Continent. However, the signal is broken up due to interference from higher frequency modes, Rossby wave activity, and El Niño conditions.
- Dynamical model MJO index forecasts are mixed, but there is some support for continued MJO activity, with the enhanced convective phase reaching the West Pacific by Week-3.
- Confidence in robust MJO activity, and consequently MJO influences on the broader tropical and extratropical patterns, is very low.

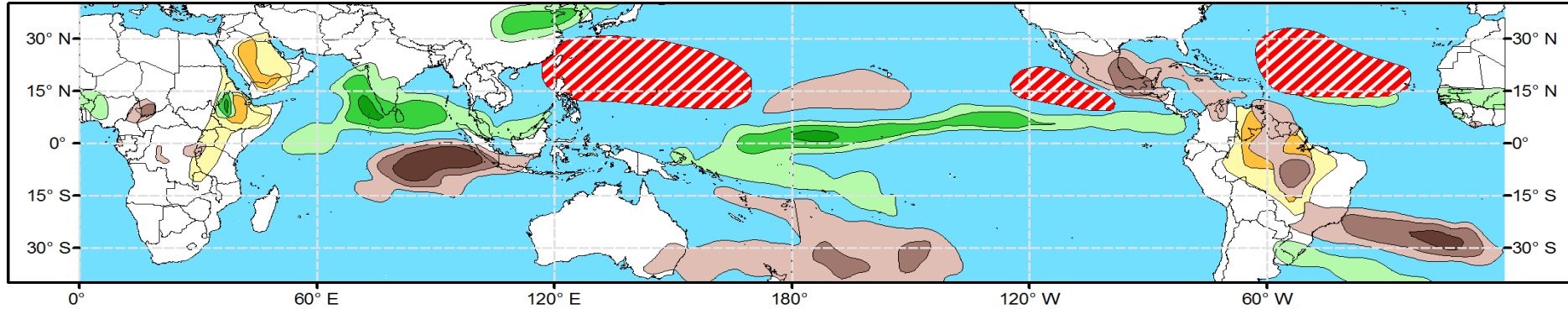
GTH Outlook:



Global Tropics Hazards Outlook Climate Prediction Center

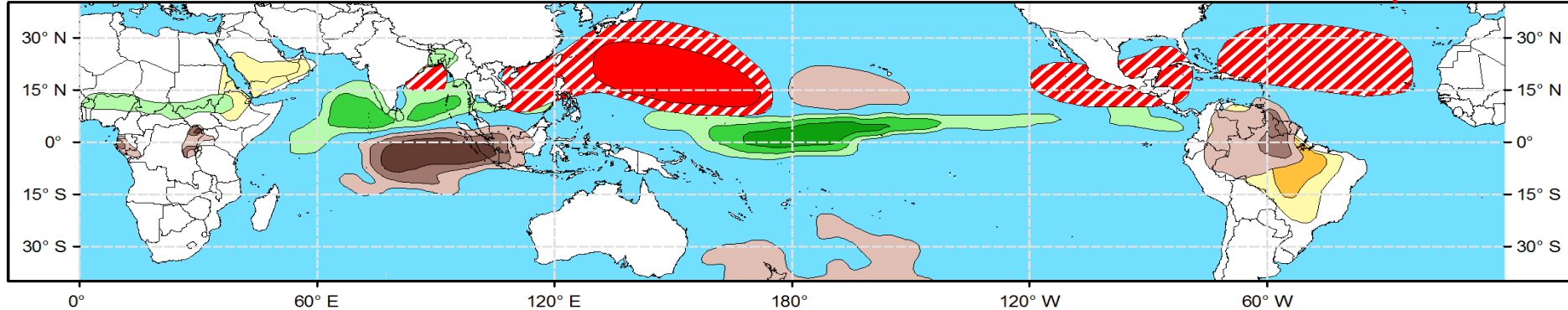


Week 2 - Valid: Sep 20, 2023 - Sep 26, 2023



Week 3 - Valid: Sep 27, 2023 - Oct 03, 2023

**** 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**



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*7-day max temperatures in the
Upper third of the historical range*

**Below-Average
Temperatures Probability**



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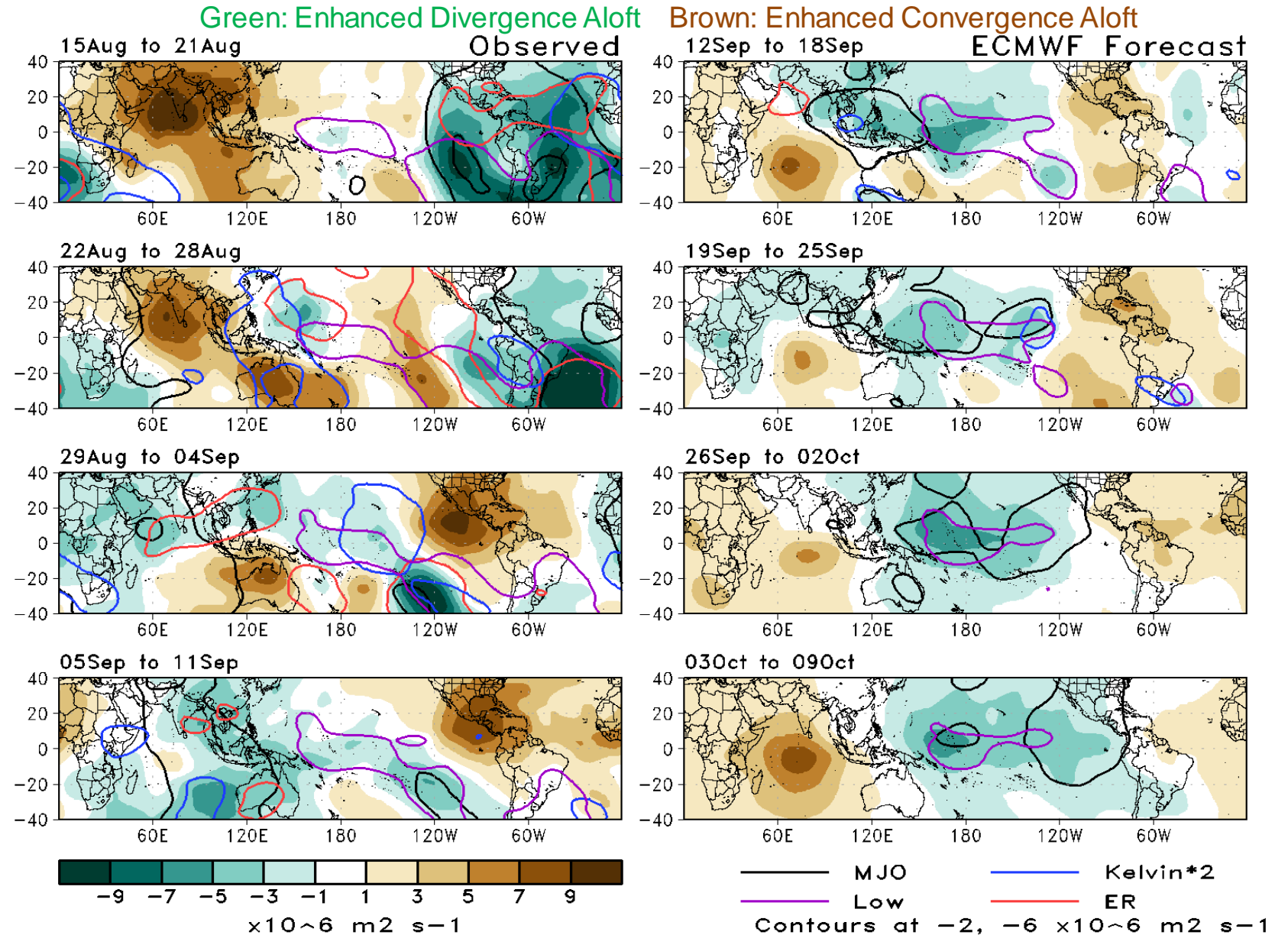
*7-day min temperatures in the
Lower third of the historical range*

**Issued: 09/12/2023
Forecaster: Allgood**

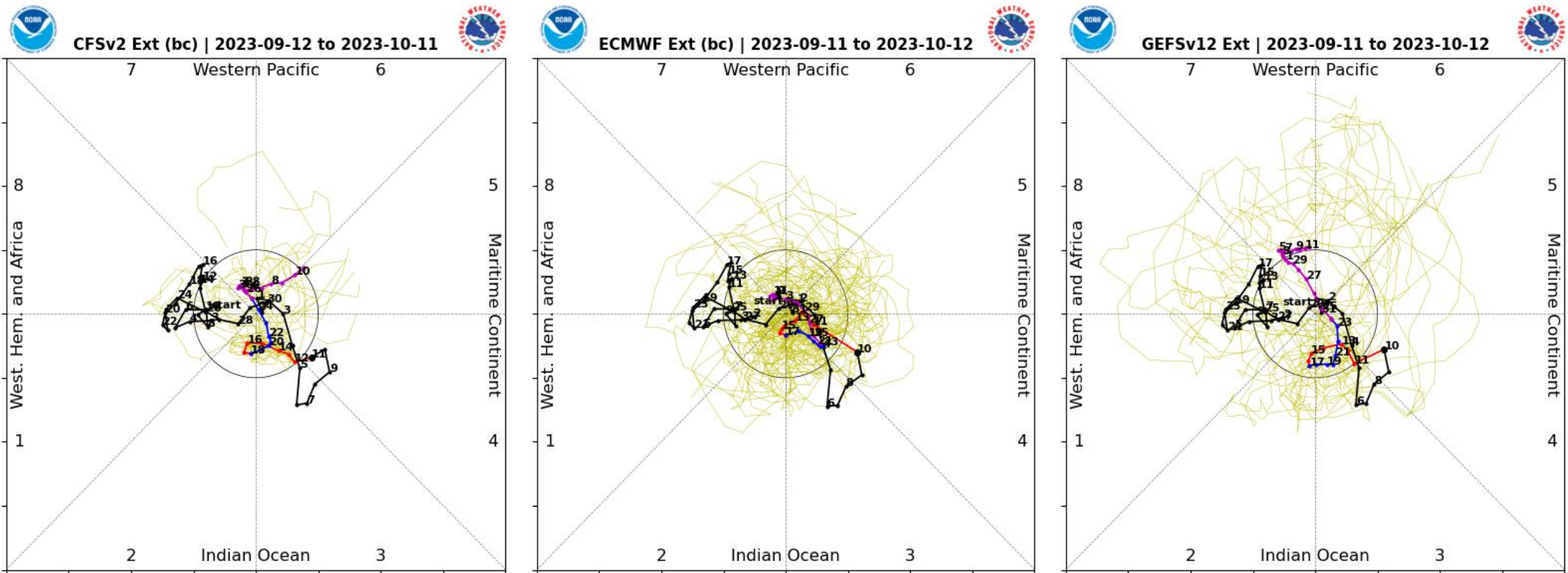
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Consult your local responsible forecast agency.**

200-hPa Velocity Potential Anomaly Maps:

- Eastward propagating envelopes of enhanced and suppressed convection were evident through late August and early September, though the pattern became incoherent due to Rossby and Kelvin wave activity.
- The ECMWF forecast shows a more coherent signal propagating slowly from the Maritime Continent to the Pacific over the next four weeks, with some interference ongoing in Week-1.

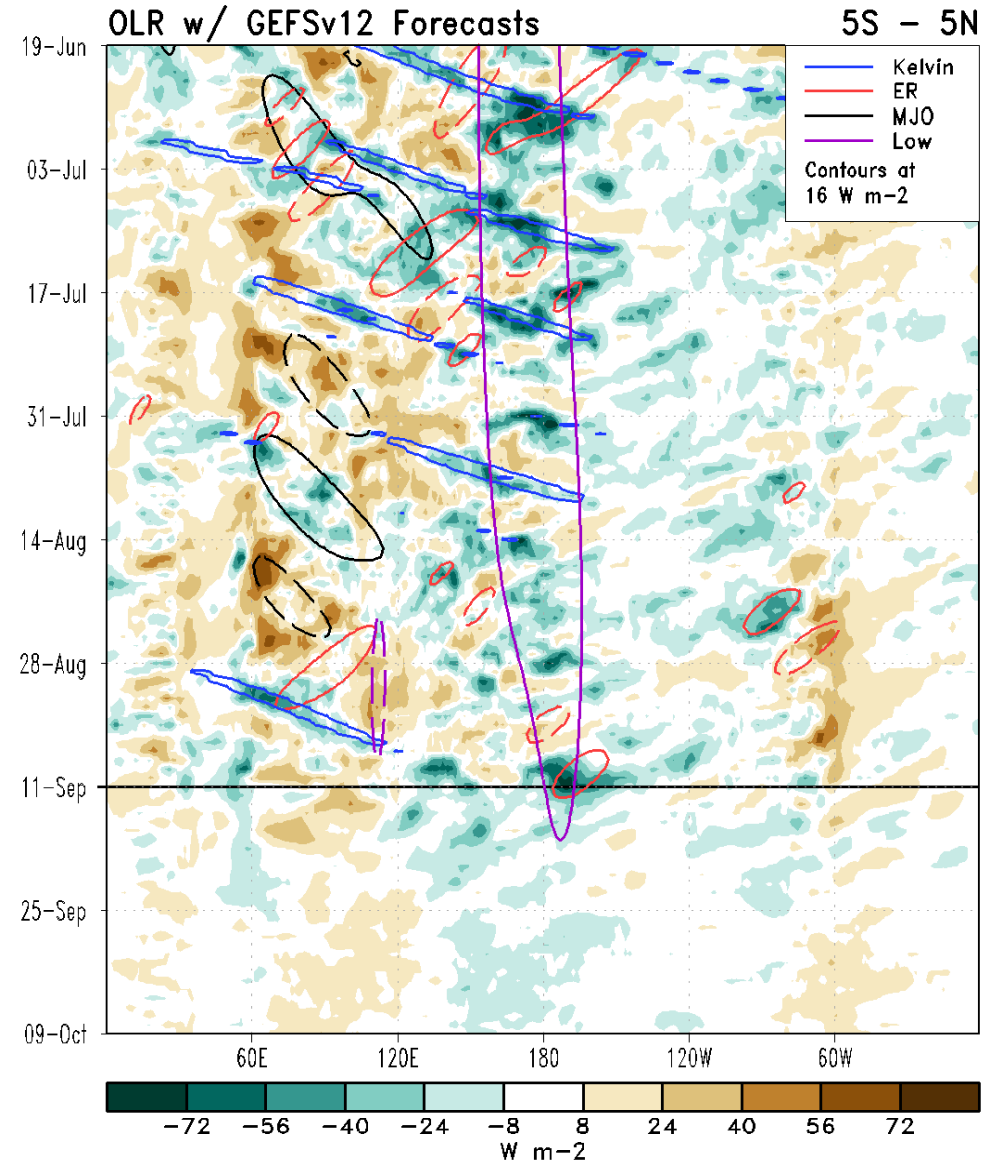
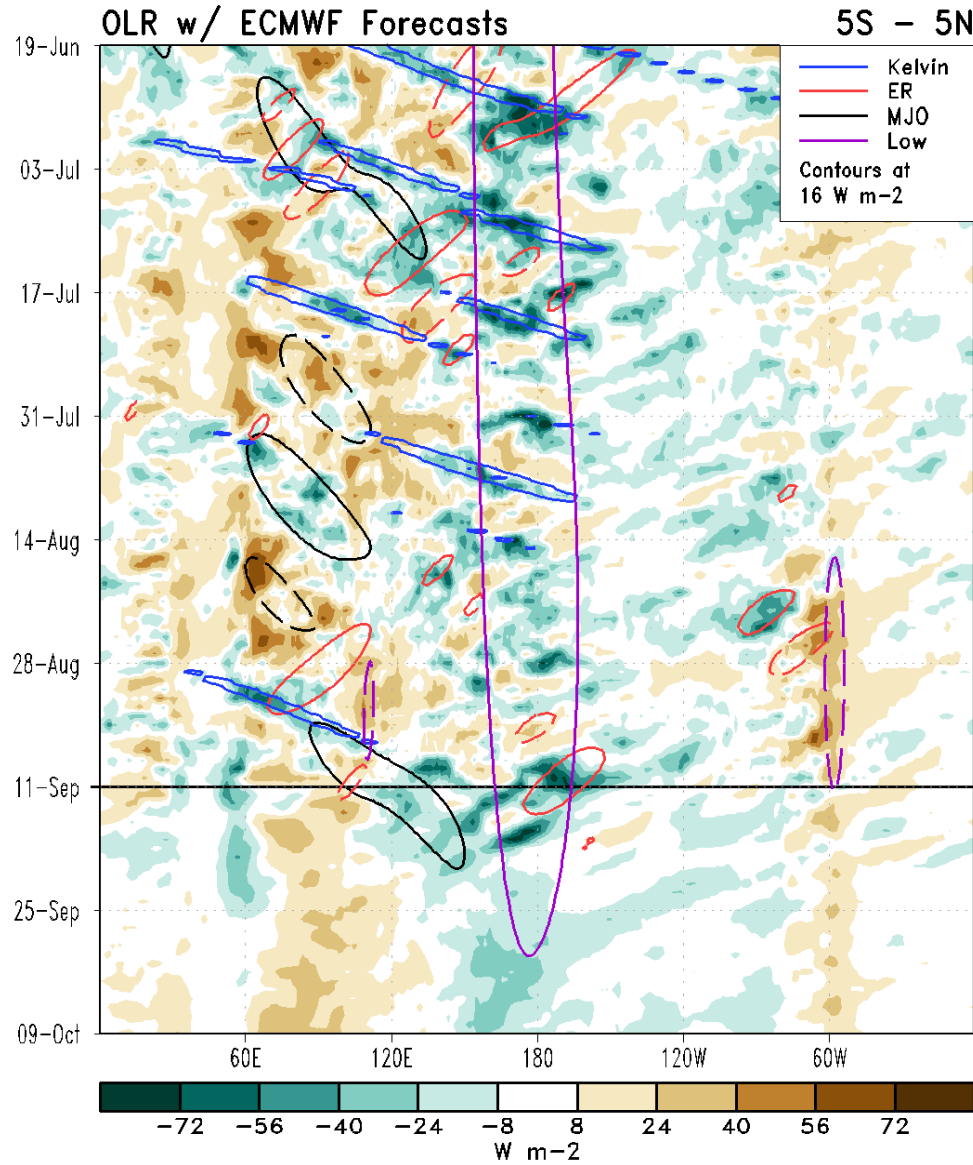


RMM Index Observations & Forecasts:



- The RMM-index plots exhibit the high degree of uncertainty in the MJO forecast.
- The ECMWF bias-correction brings the signal more towards the Indian Ocean. The non-bias corrected version shows more signal over the Pacific during Weeks 3-4.

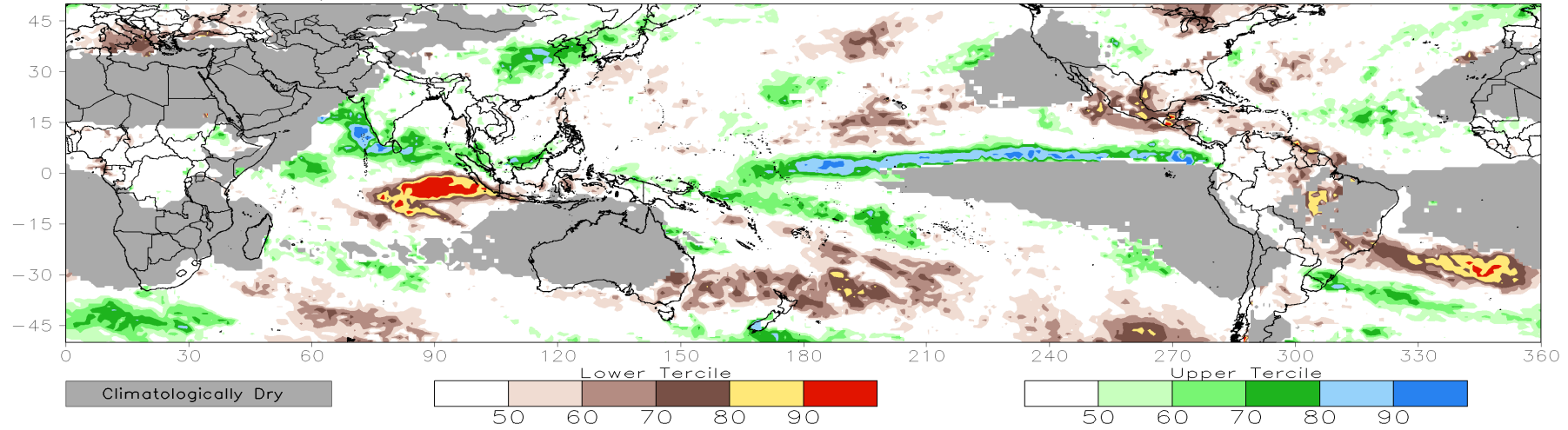
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

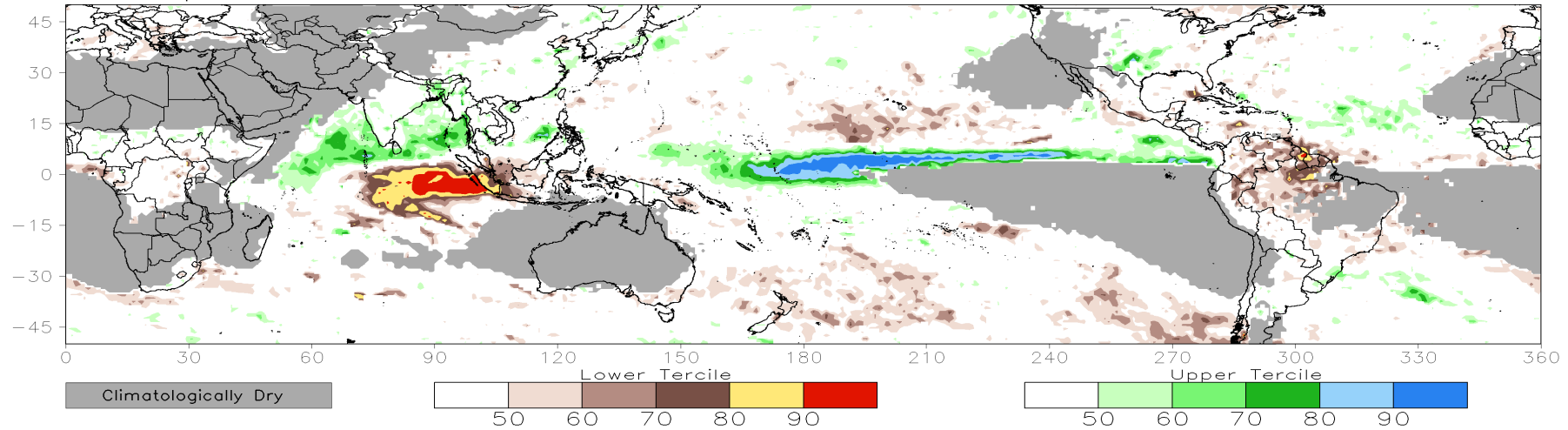
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 20Sep2023–26Sep2023



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

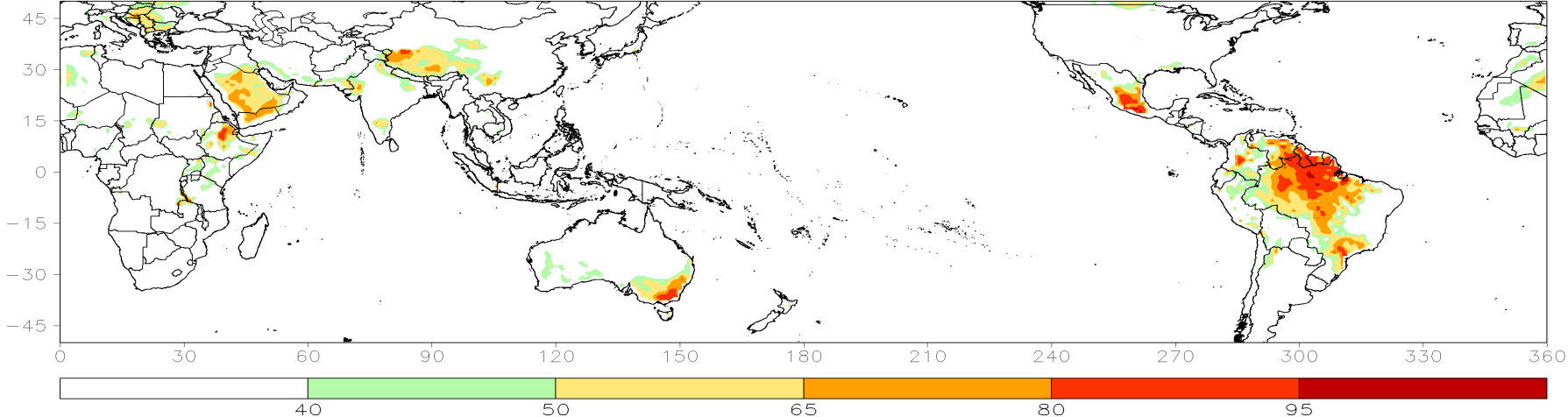
Valid: 27Sep2023–03Oct2023



Consolidated Probabilistic Temperatures: Week-2

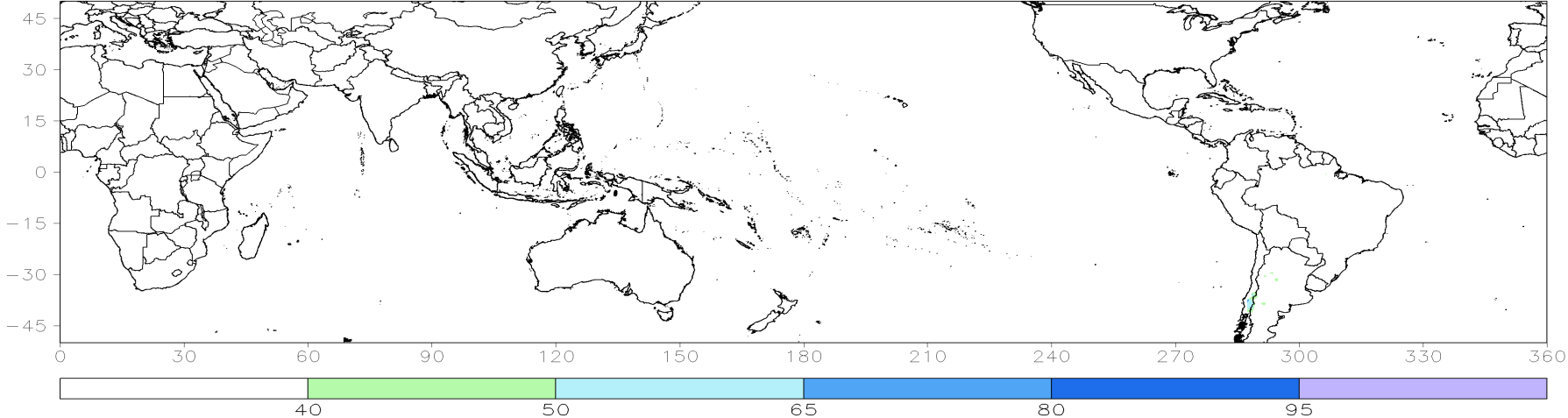
CFS/ECMWF/GEFS Correlation Weighted: Week2 Probability for Tmax Above Upper Tercile (%)

Valid: 20Sep2023-26Sep2023



CFS/ECMWF/GEFS Correlation Weighted: Week2 Probability for Tmin Below Lower Tercile (%)

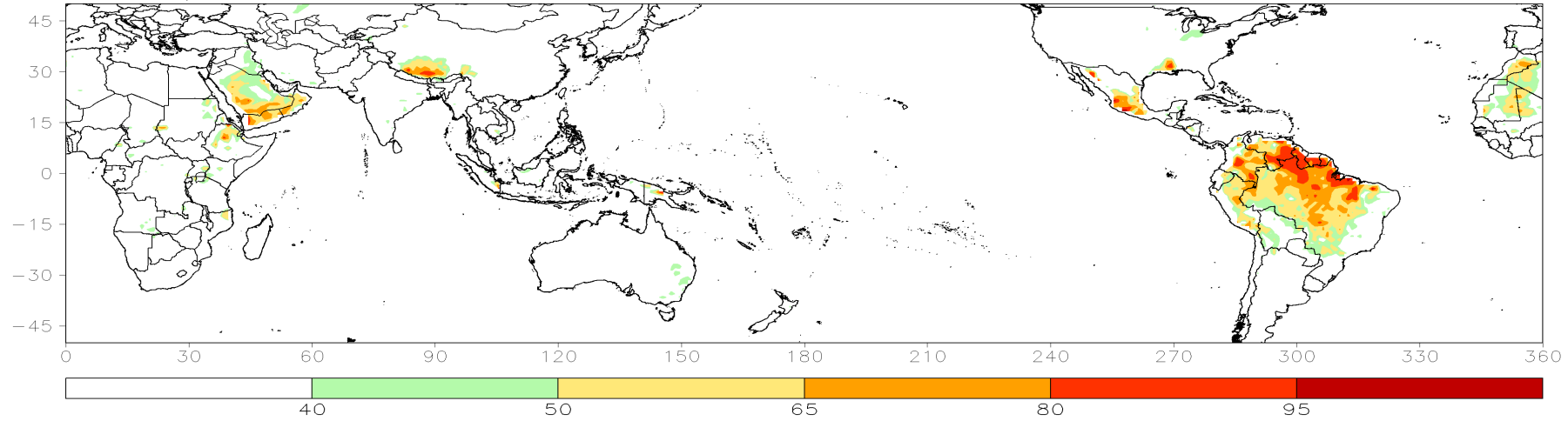
Valid: 20Sep2023-26Sep2023



Consolidated Probabilistic Temperatures: Week-3

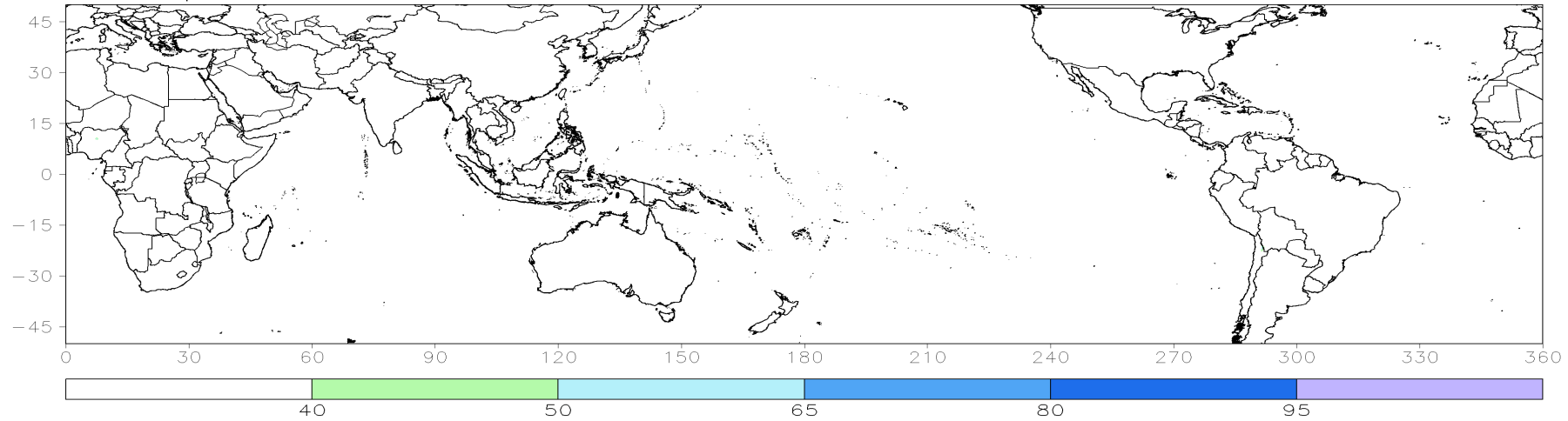
CFS/ECMWF/GEFS Correlation Weighted: Week3 Probability for Tmax Above Upper Tercile (%)

Valid: 27Sep2023-030Oct2023



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

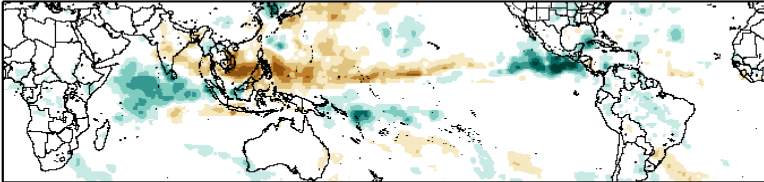
Valid: 27Sep2023-030Oct2023



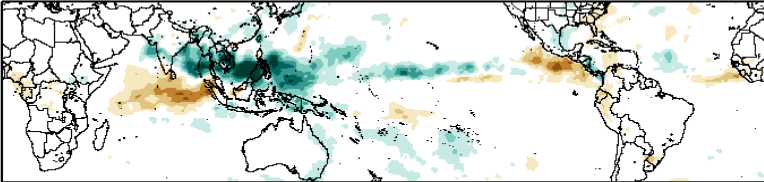
Historical Precipitation Anomalies By MJO Phase:

ASO MJO Composite: GPCP1DD (mm/day)

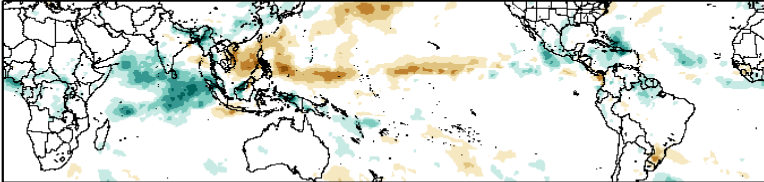
Phase 1



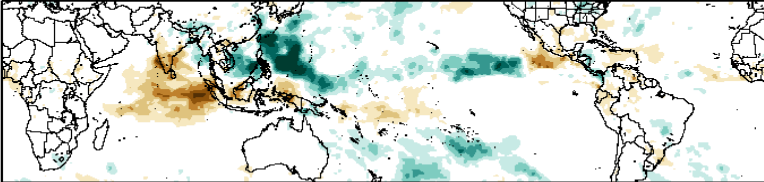
Phase 5



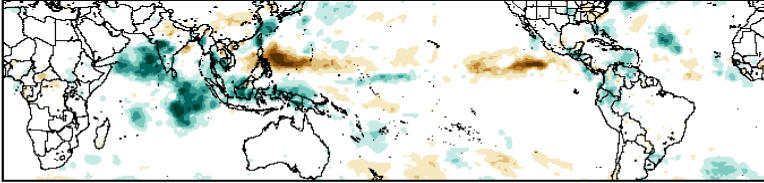
Phase 2



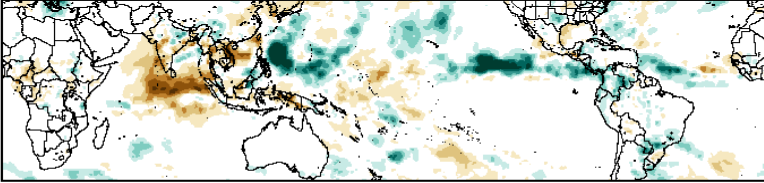
Phase 6



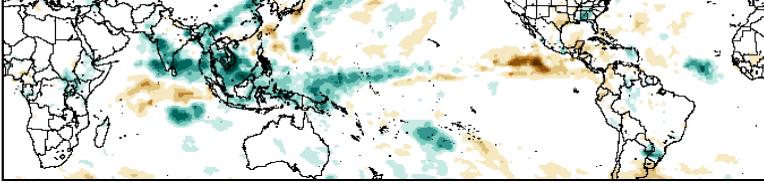
Phase 3



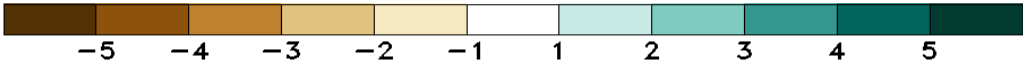
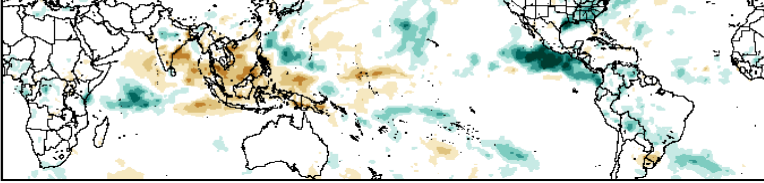
Phase 7



Phase 4

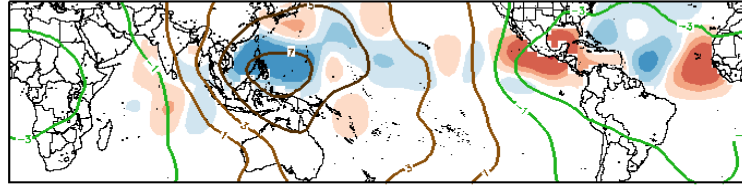


Phase 8

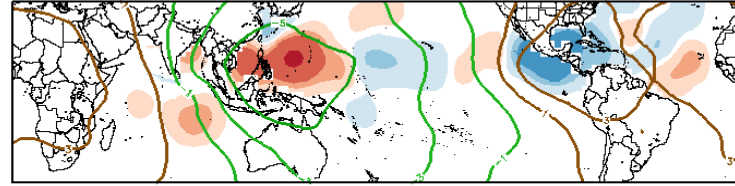


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

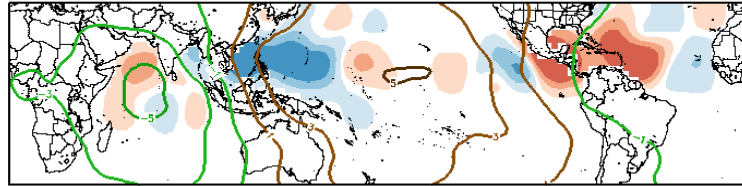
ASO MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ ASO CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



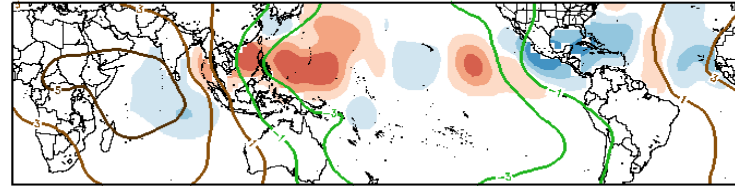
Phase 1



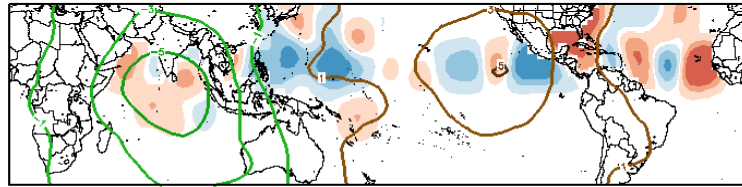
Phase 5



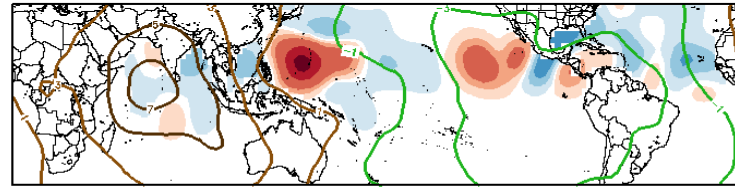
Phase 2



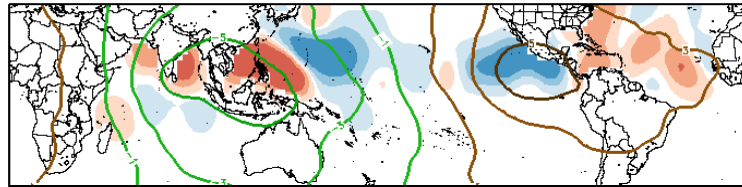
Phase 6



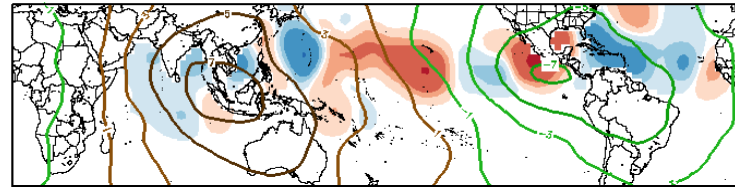
Phase 3



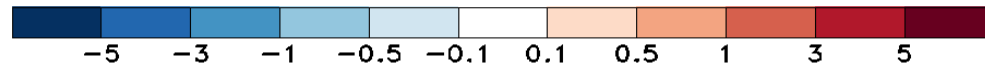
Phase 7



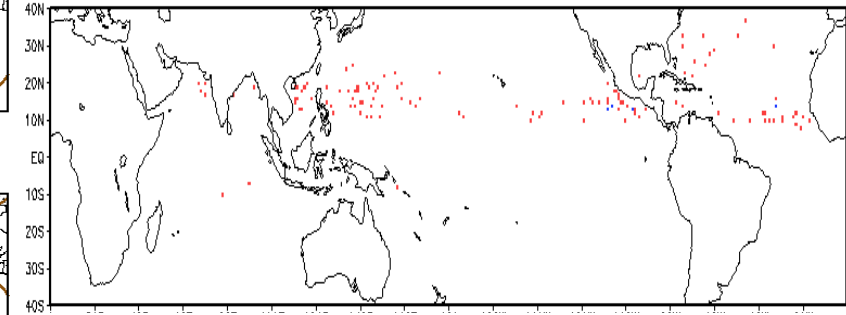
Phase 4



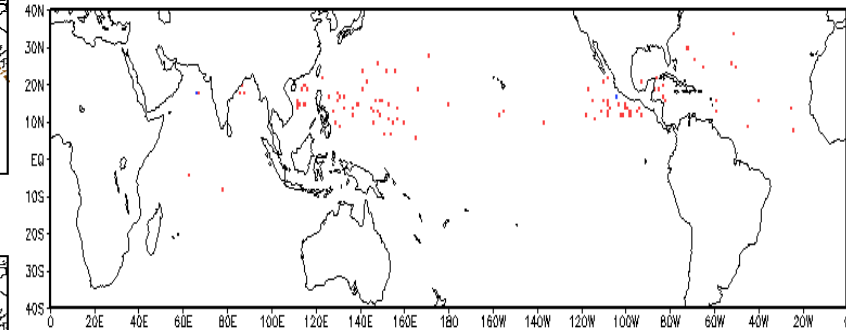
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 0920 to 0926

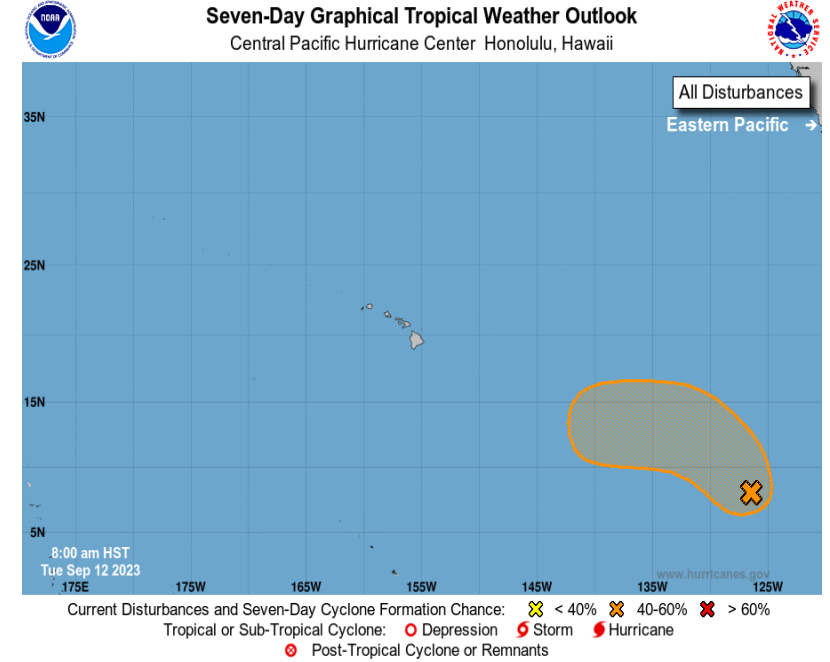
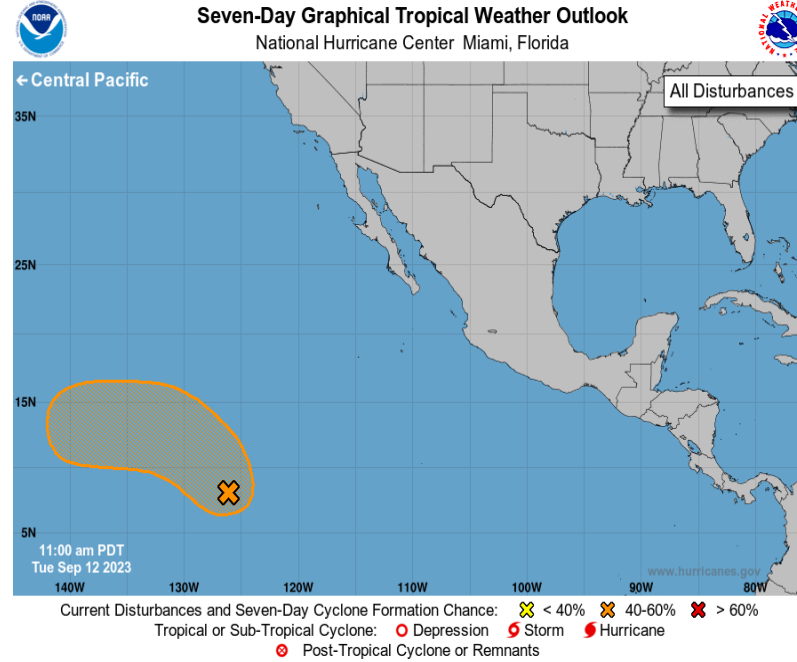
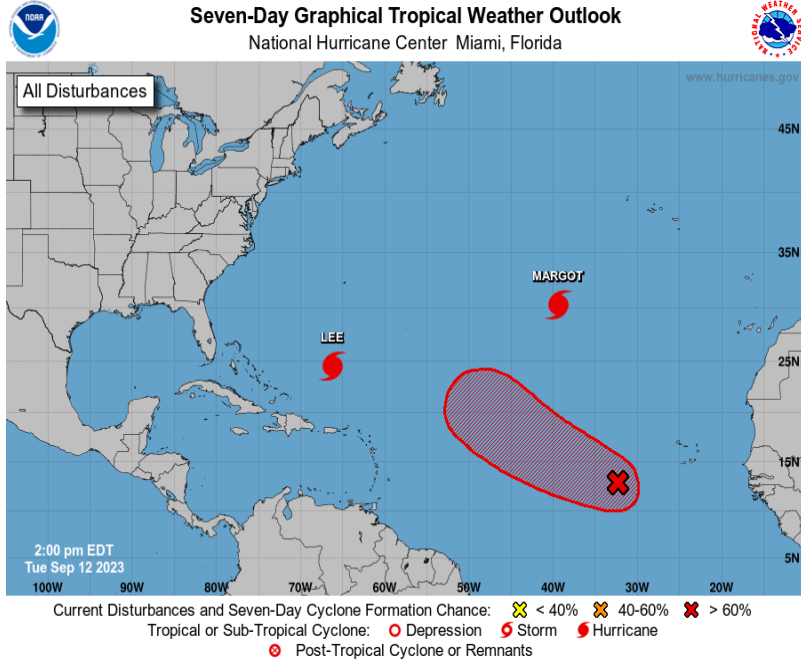


Observed TC Genesis, 1979-2021
7-day Period 0927 to 1003



Experimental

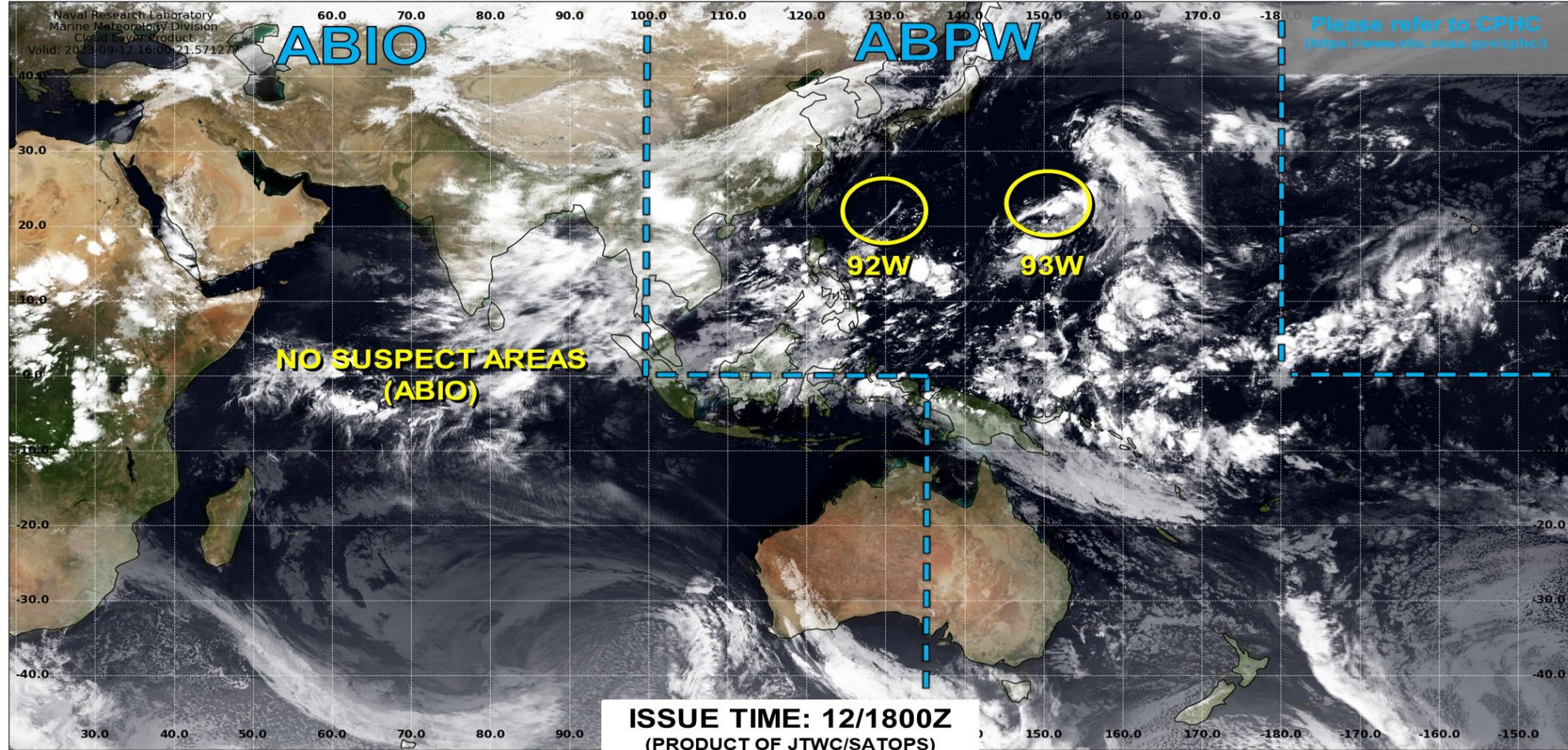
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



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)



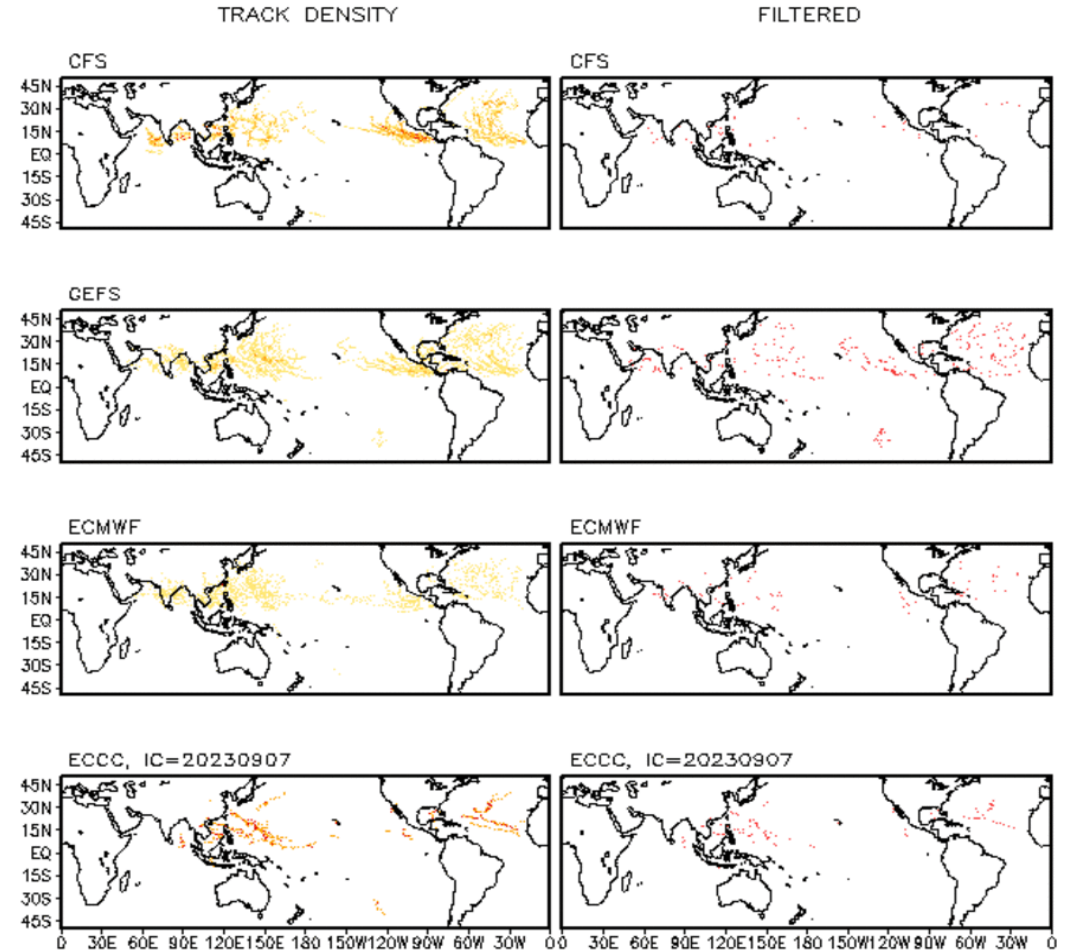
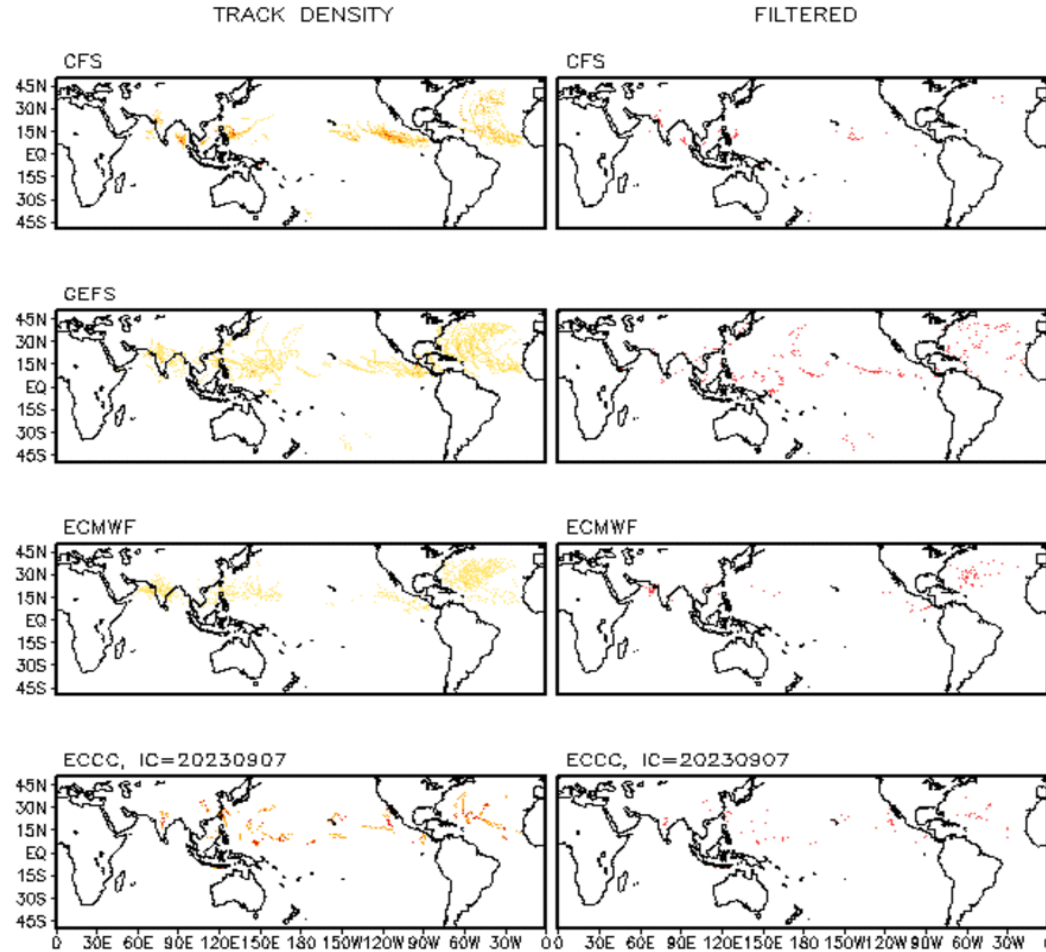
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

 Tropical Cyclone (Reference Warning)

Multi-Model TC Track Densities: Weeks 2+3

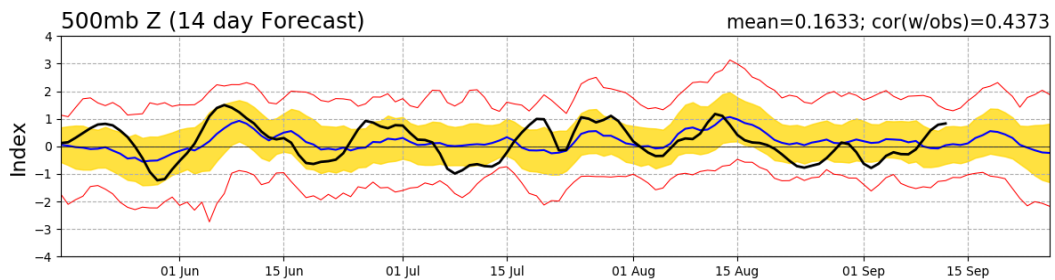
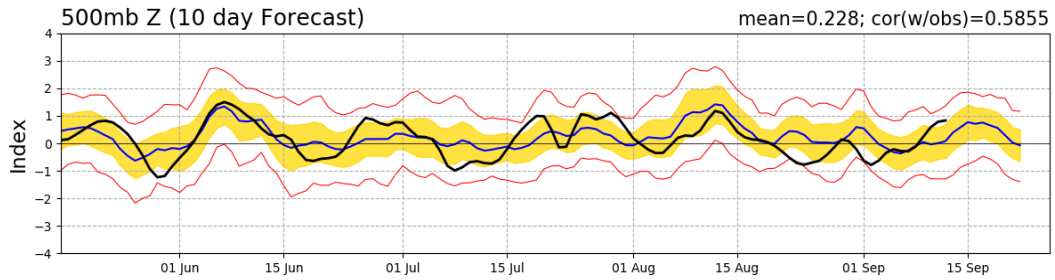
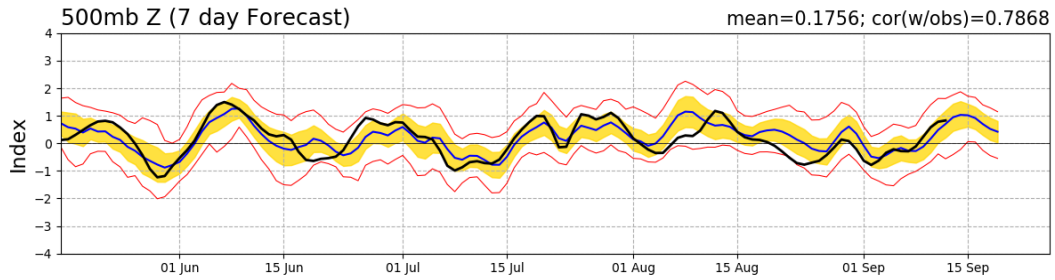
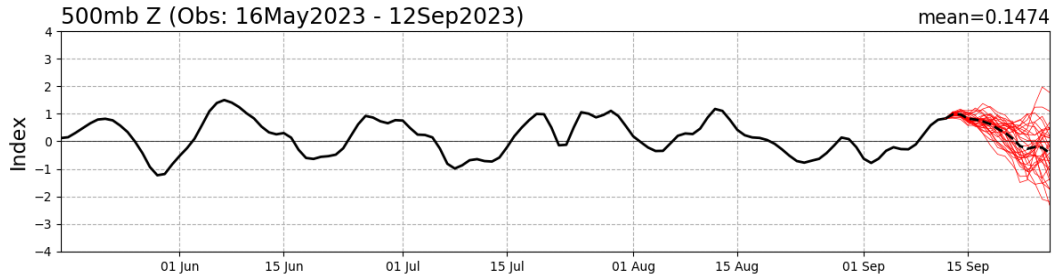
Storm Track Density Distribution, IC=20230911
Week 2 Forecast: 0920-0926

Storm Track Density Distribution, IC=20230911
Week 3 Forecast: 0927-1003

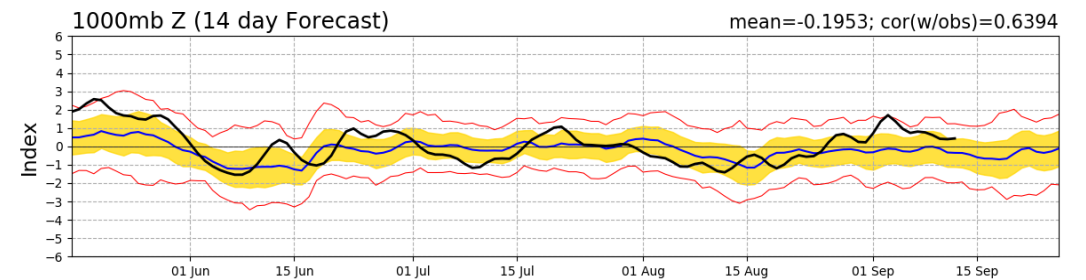
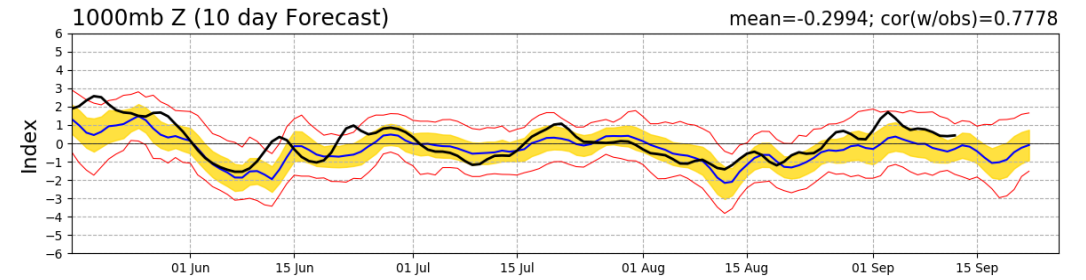
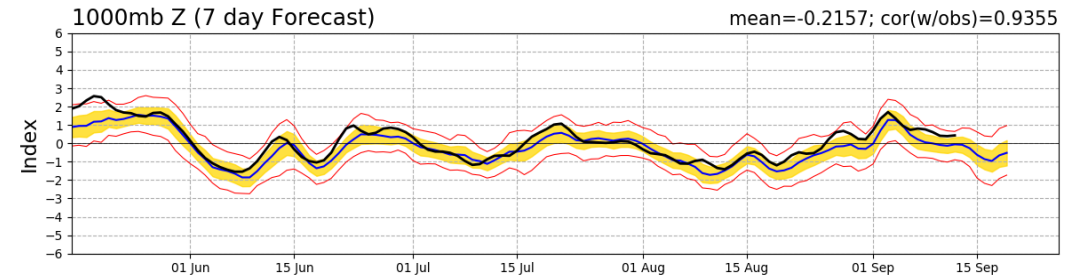
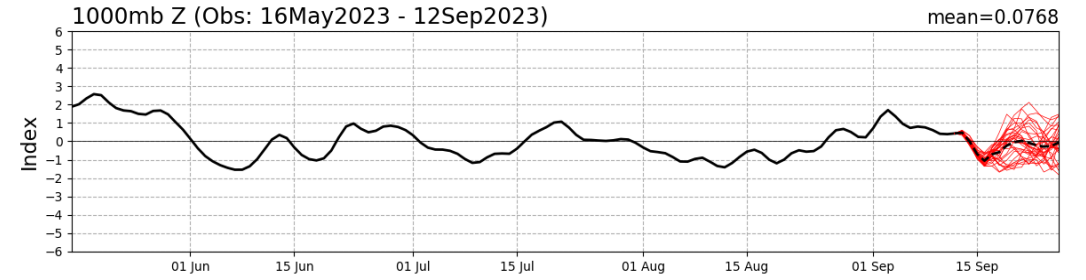


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

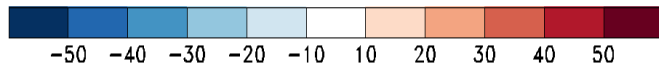
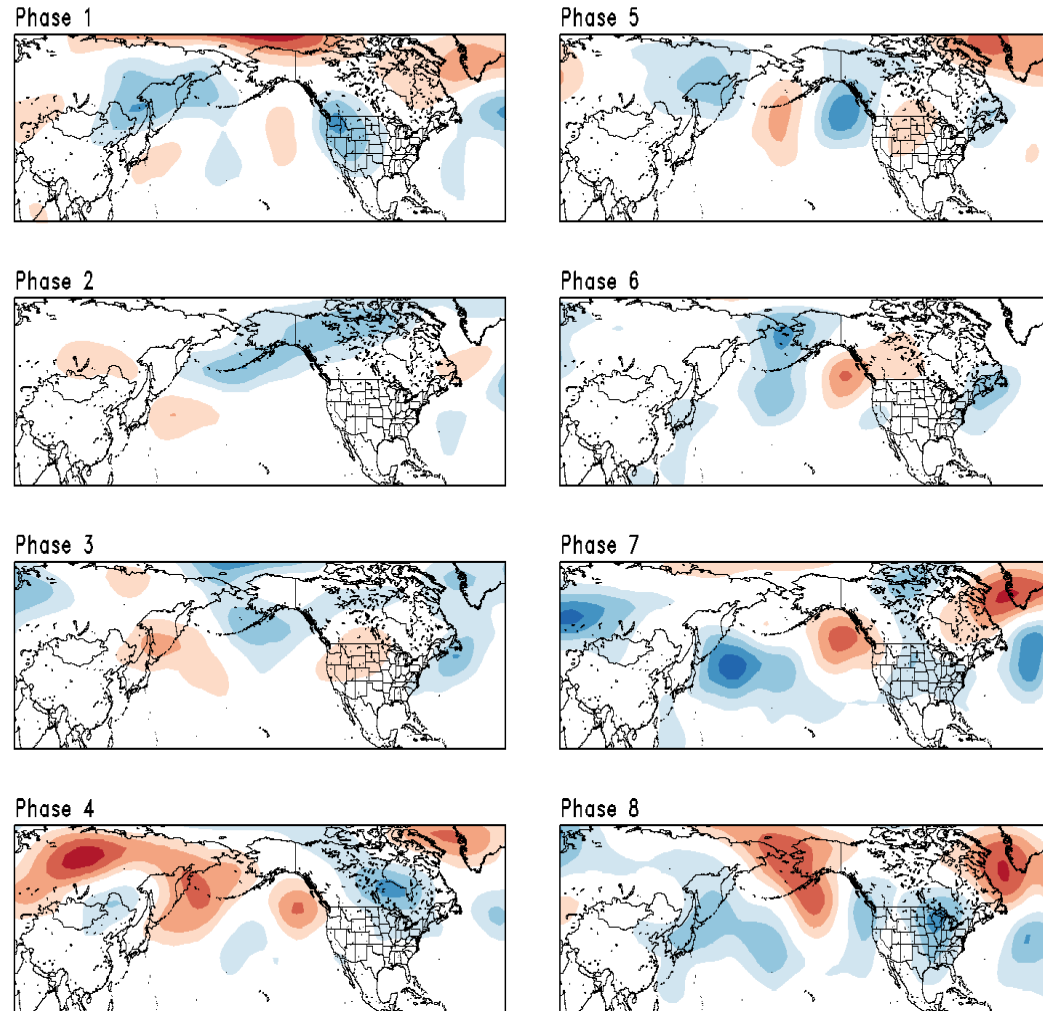


AO Index: Observed & GEFS Forecasts

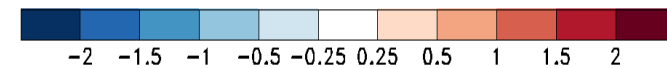
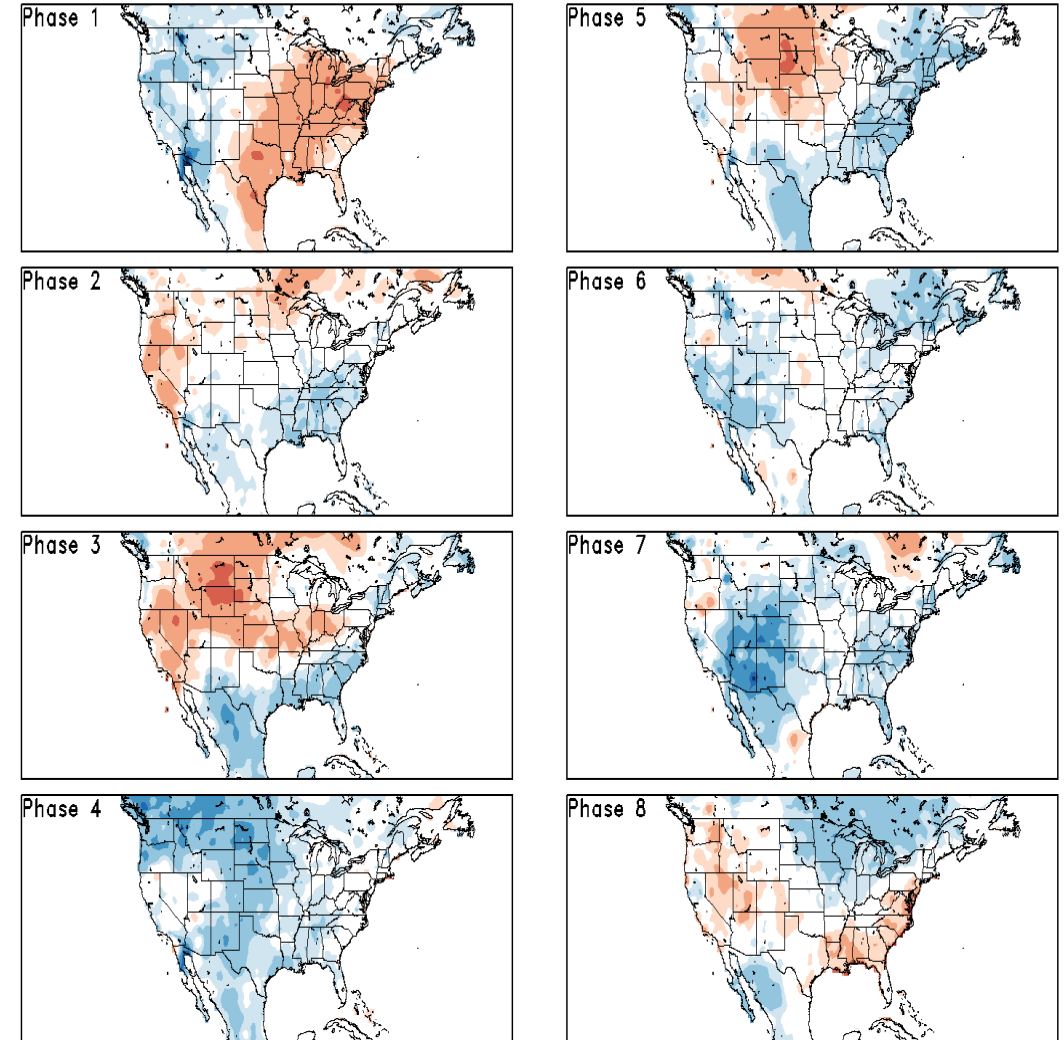


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

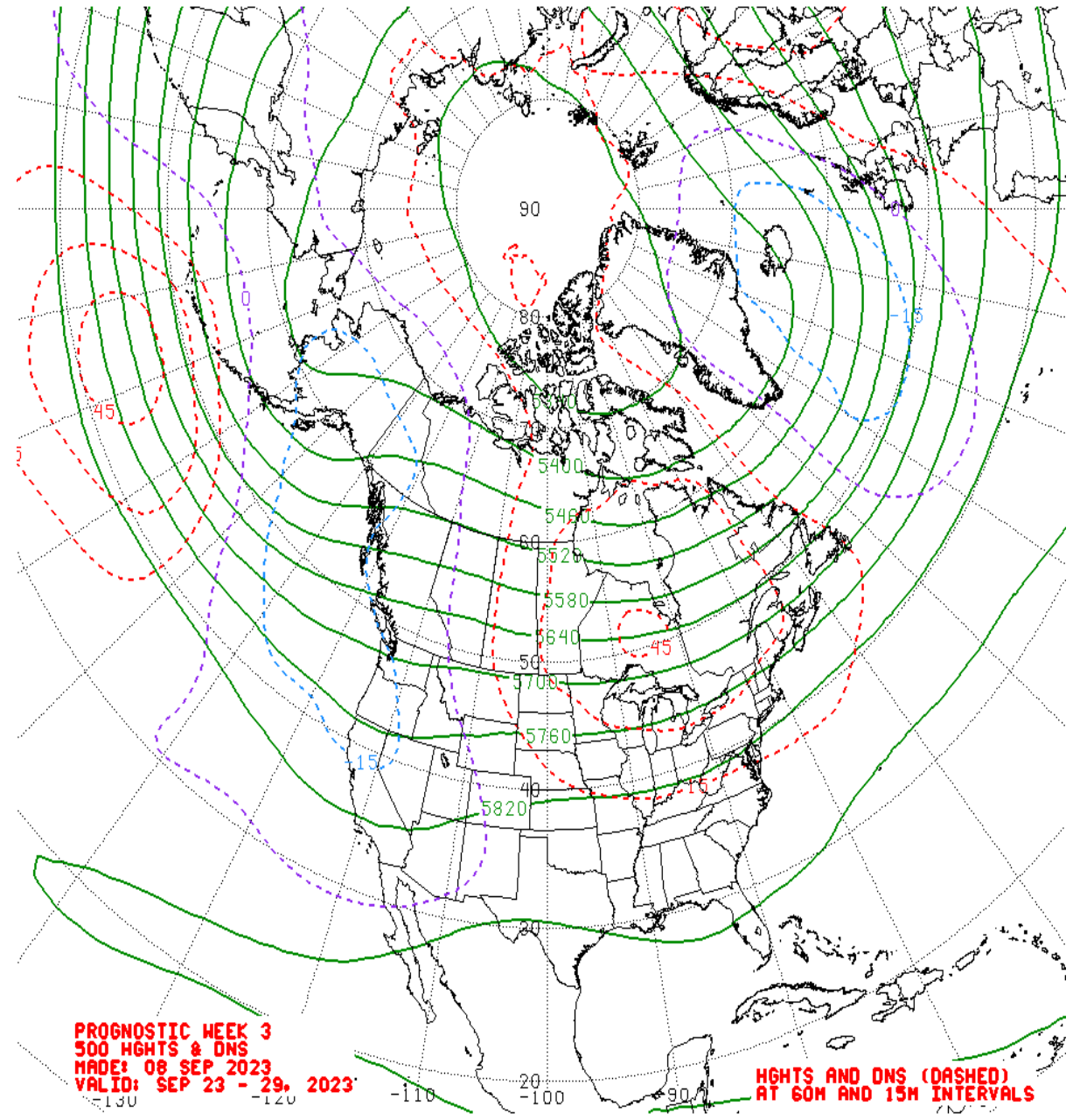
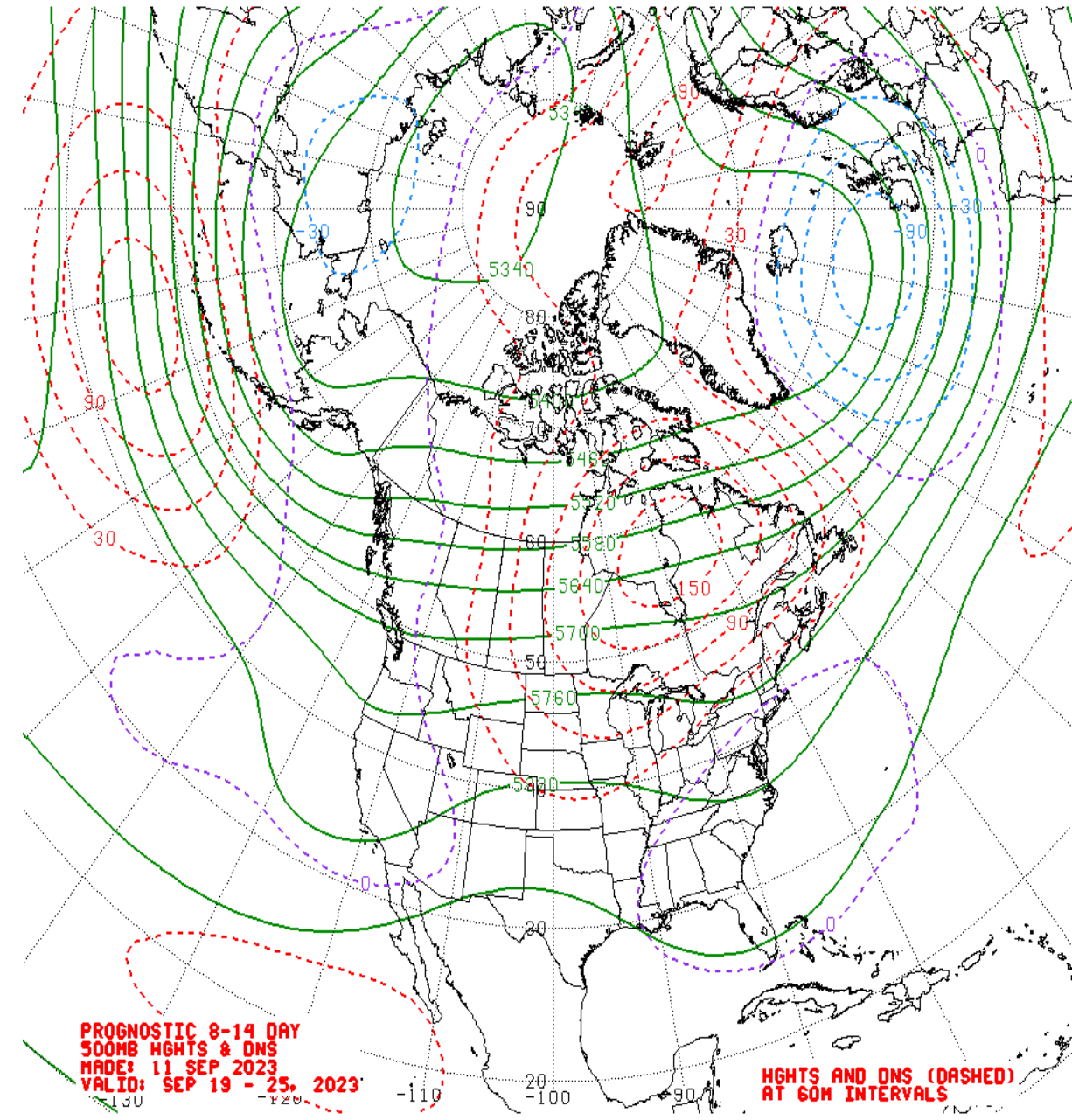
ASO MJO Composite: CDAS 500-hPa Height (m)



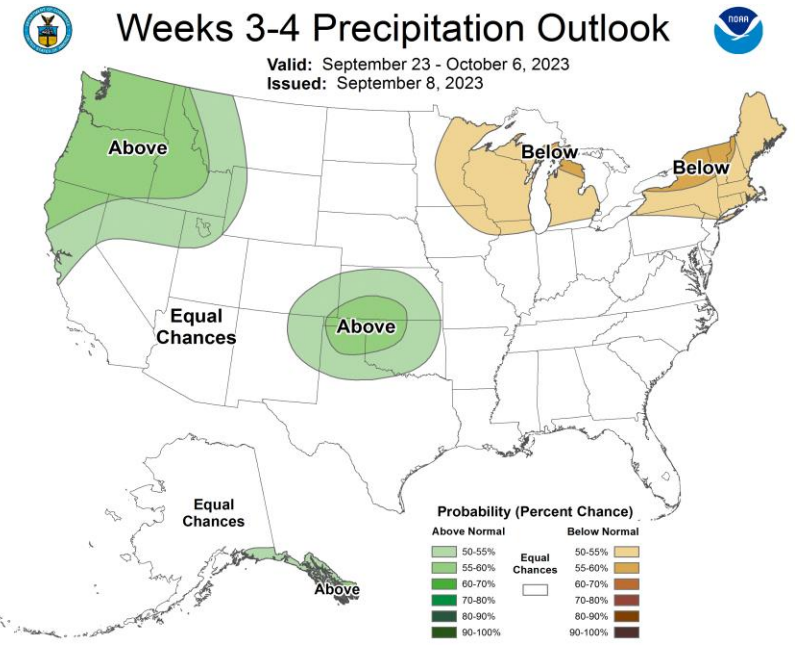
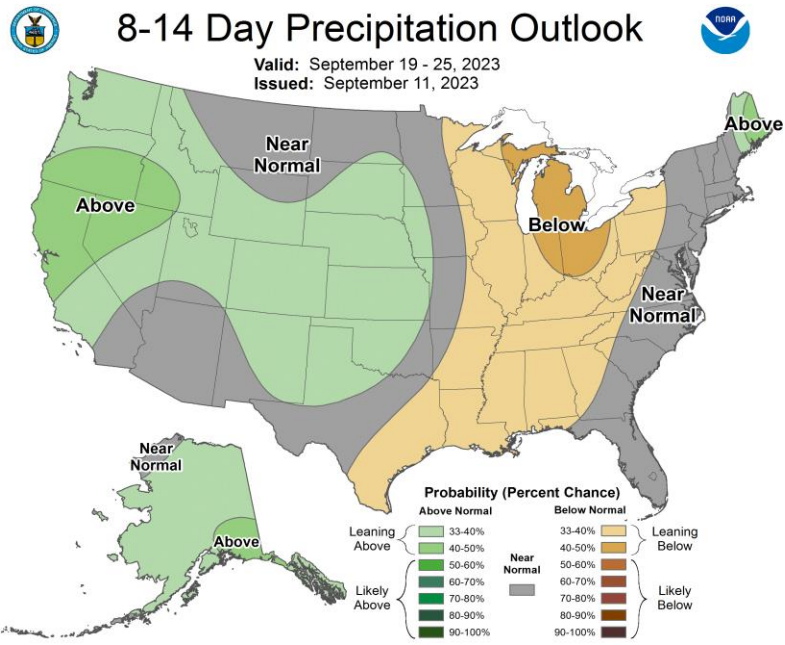
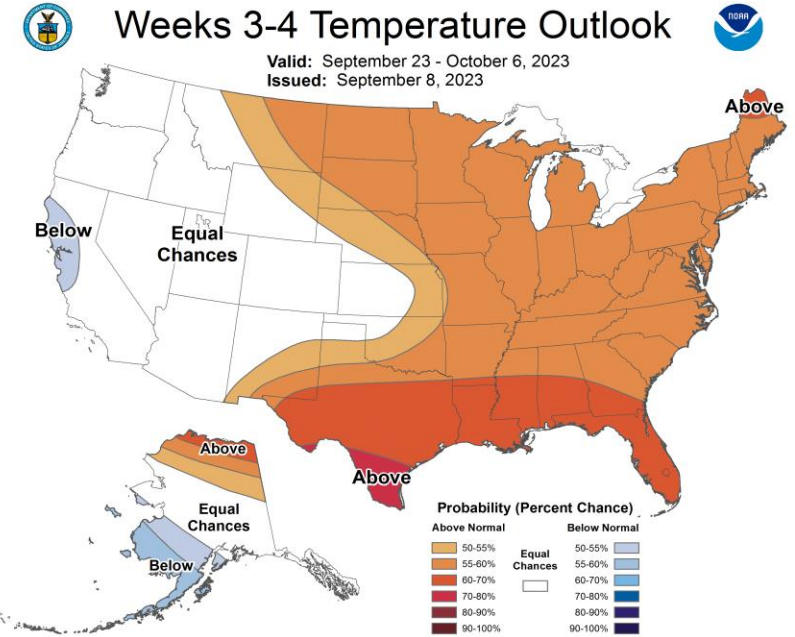
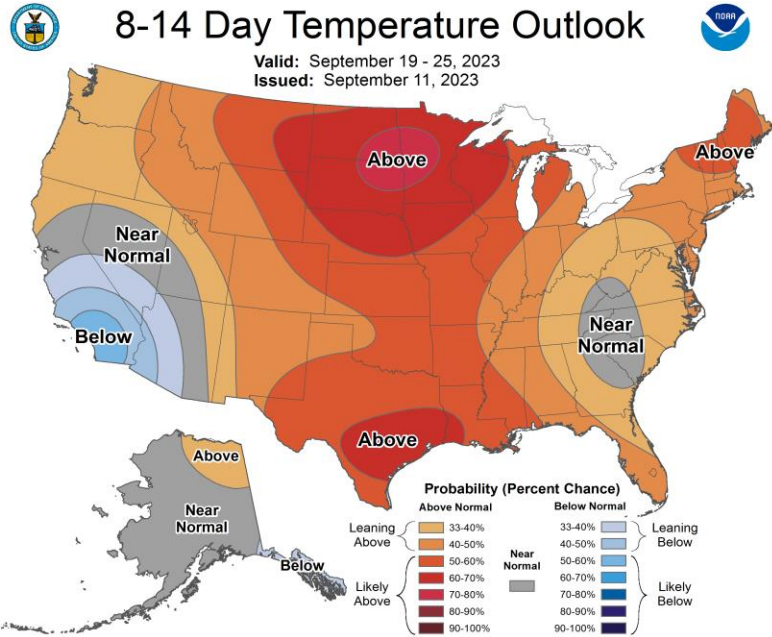
ASO MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



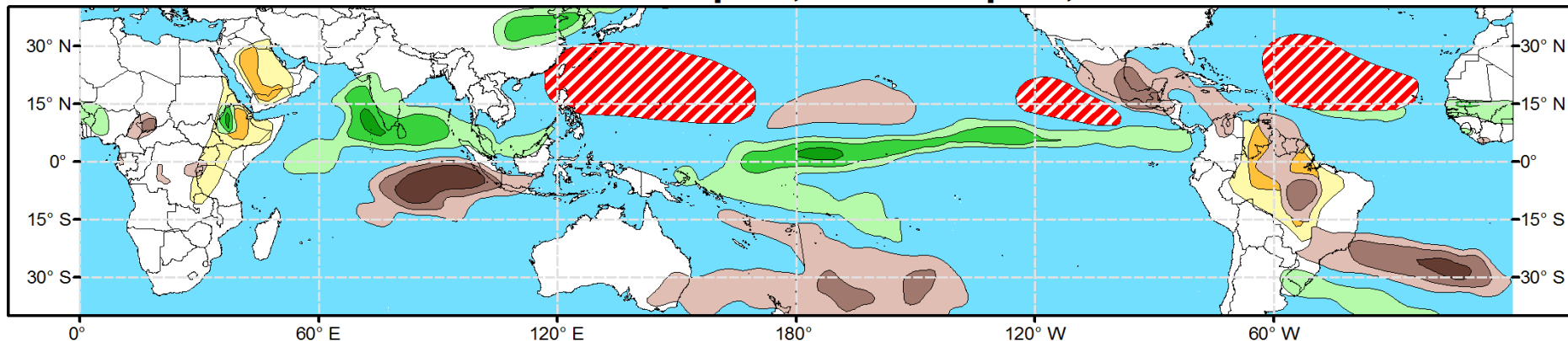


Global Tropics Hazards Outlook

Climate Prediction Center

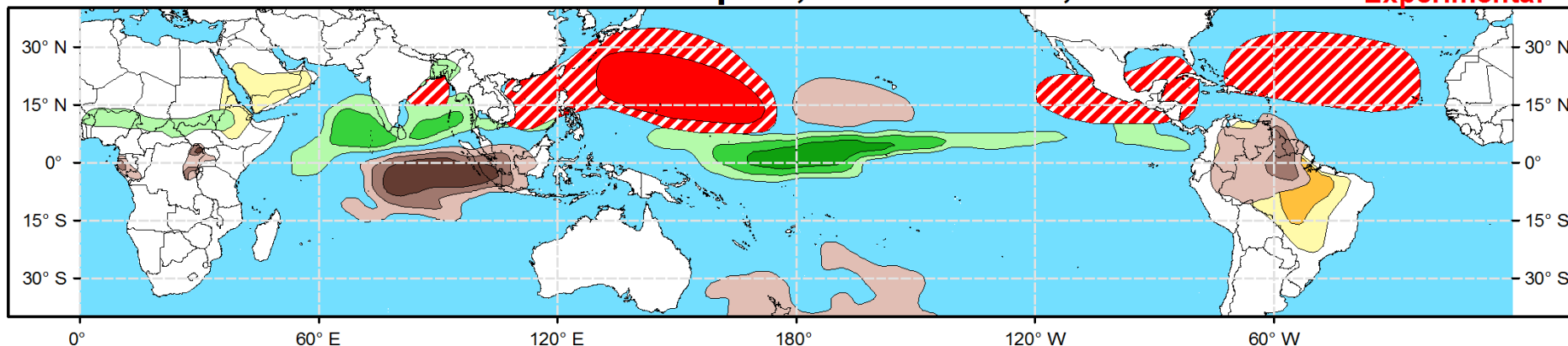


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