



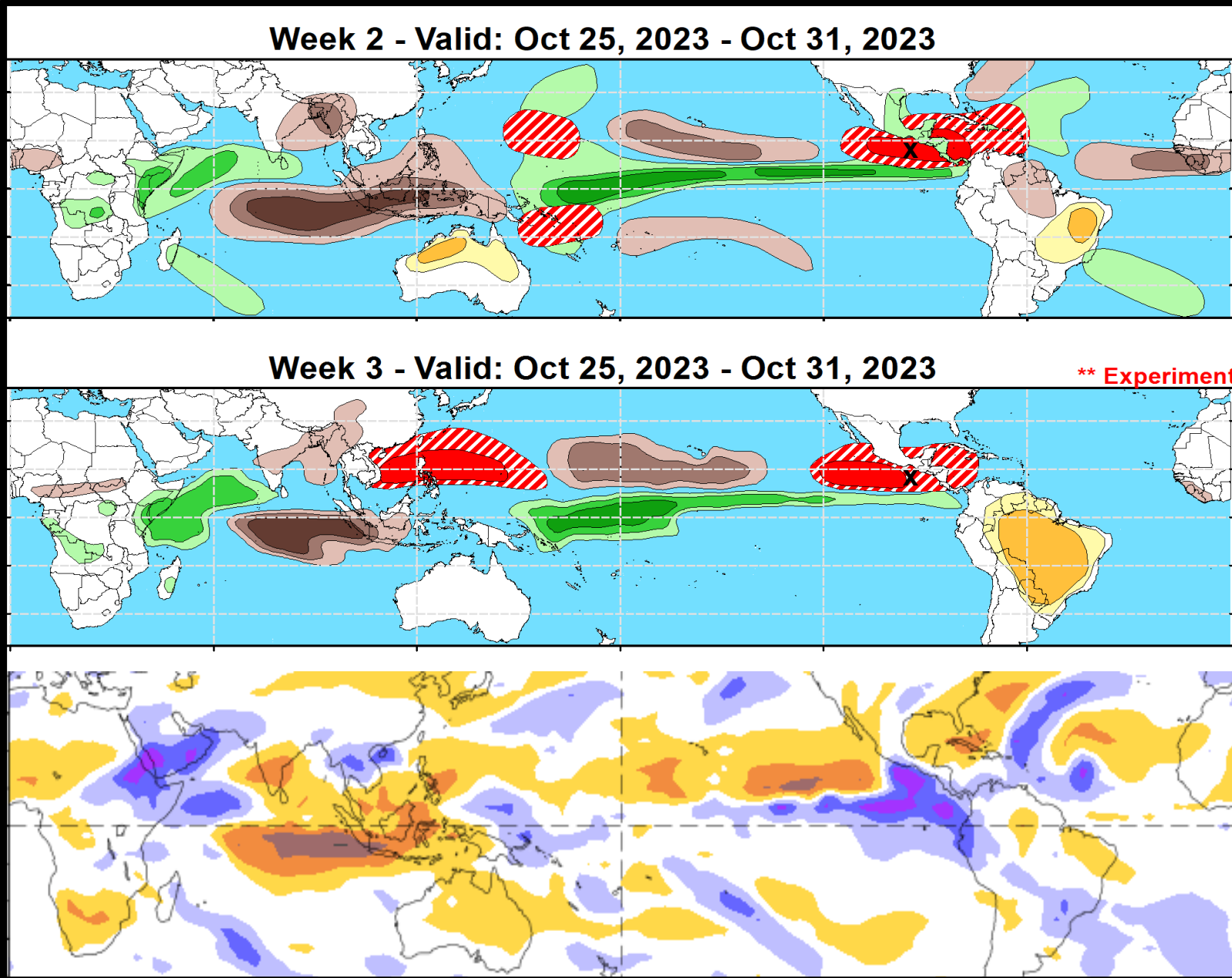
Weeks 2-3 Global Tropics Hazards Outlook

10/31/2023

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

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

- 10/28: Pilar



Synopsis of Climate Modes:

ENSO: (Oct 12, 2023 Update) *next update on Thursday, Nov 9th*

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño is anticipated to continue through the Northern Hemisphere spring (with an 80% chance during Mar-May 2024).

MJO and other subseasonal tropical variability:

- Low-frequency modes of variability (i.e. ENSO, SOI) continue to dominate weather in the Tropics. RMM index indicates a fairly strong MJO signal currently in phase 1 (W. Hem. and Africa) but low-frequency interference makes interpretation of RMM index and diagnosis of MJO difficult.
- Dynamical models favor the strongest convective signal over Africa and the far western Indian Ocean during the next 2-3 weeks, consistent with the low frequency El Niño state as well as a positive phase of the Indian Ocean Dipole (IOD).
- The Central American Gyre (CAG) favors enhanced chances for tropical cyclone (TC) development across the Eastern Pacific and Caribbean continuing into mid-November, despite decreasing climatology becoming a factor.

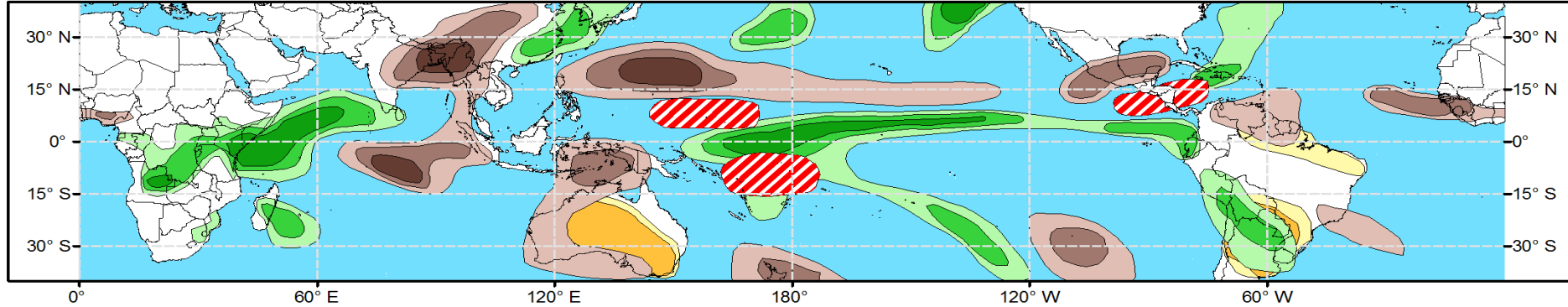
GTH Outlook:



Global Tropics Hazards Outlook Climate Prediction Center

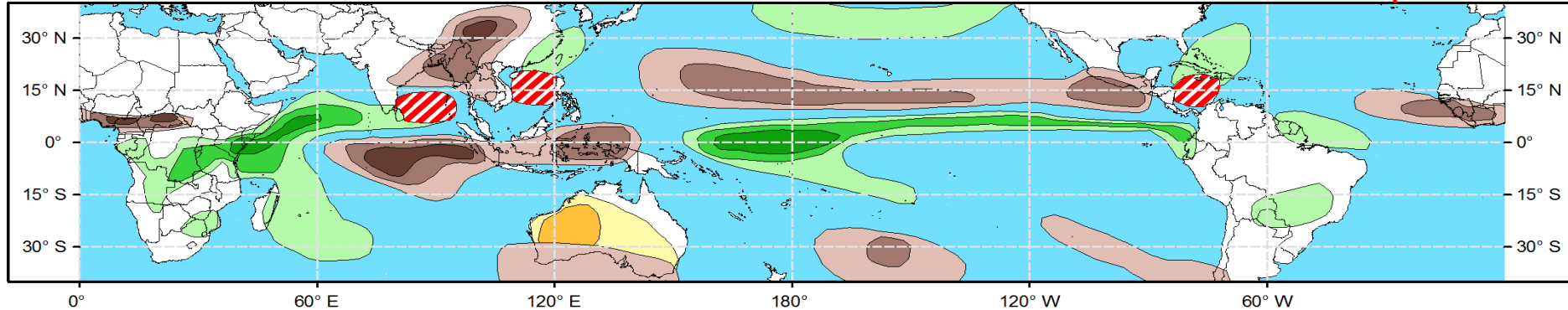


Week 2 - Valid: Nov 08, 2023 - Nov 14, 2023



Week 3 - Valid: Nov 15, 2023 - Nov 21, 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**



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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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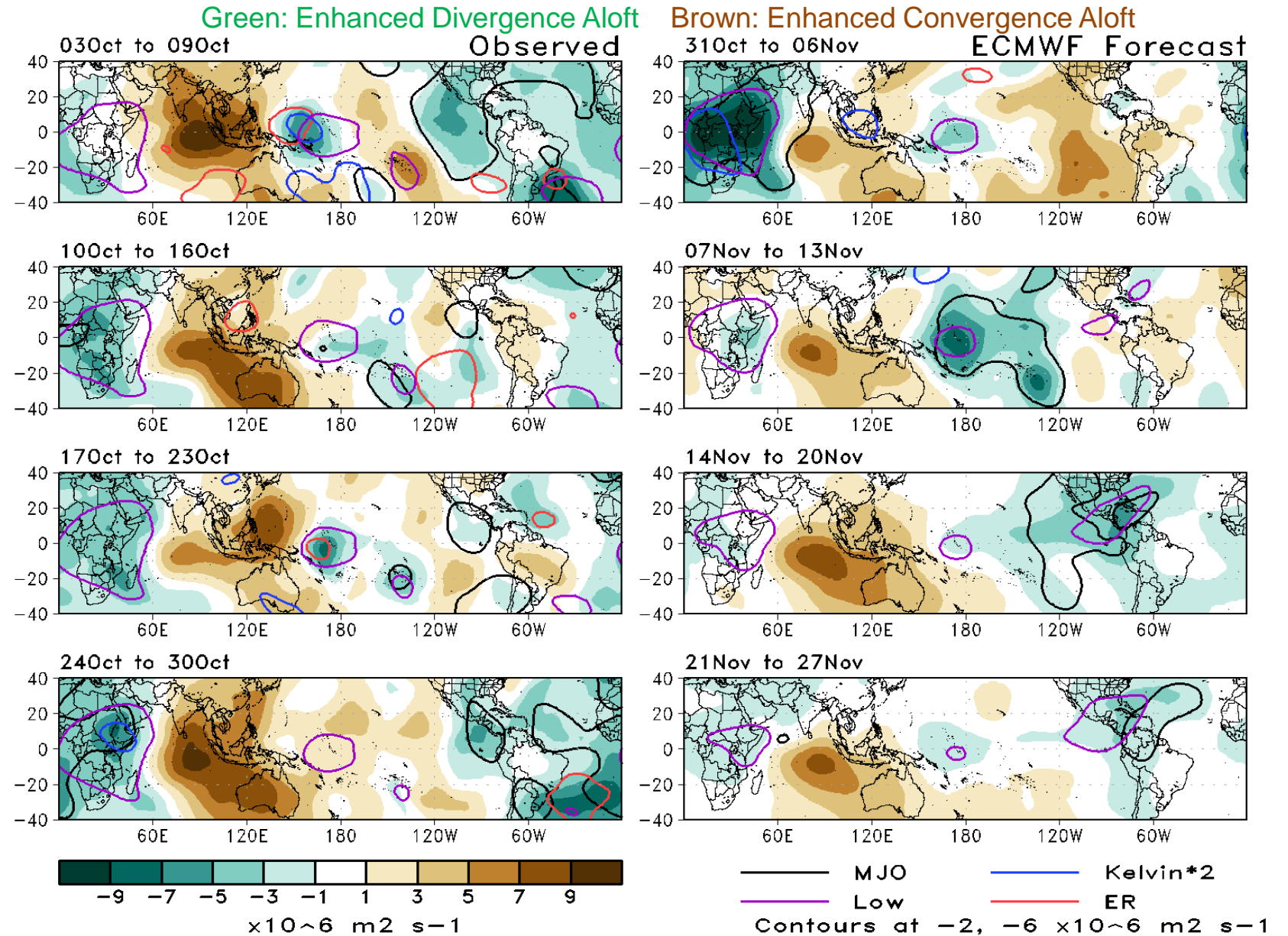
Issued: 10/31/2023

Forecaster: Barandiaran

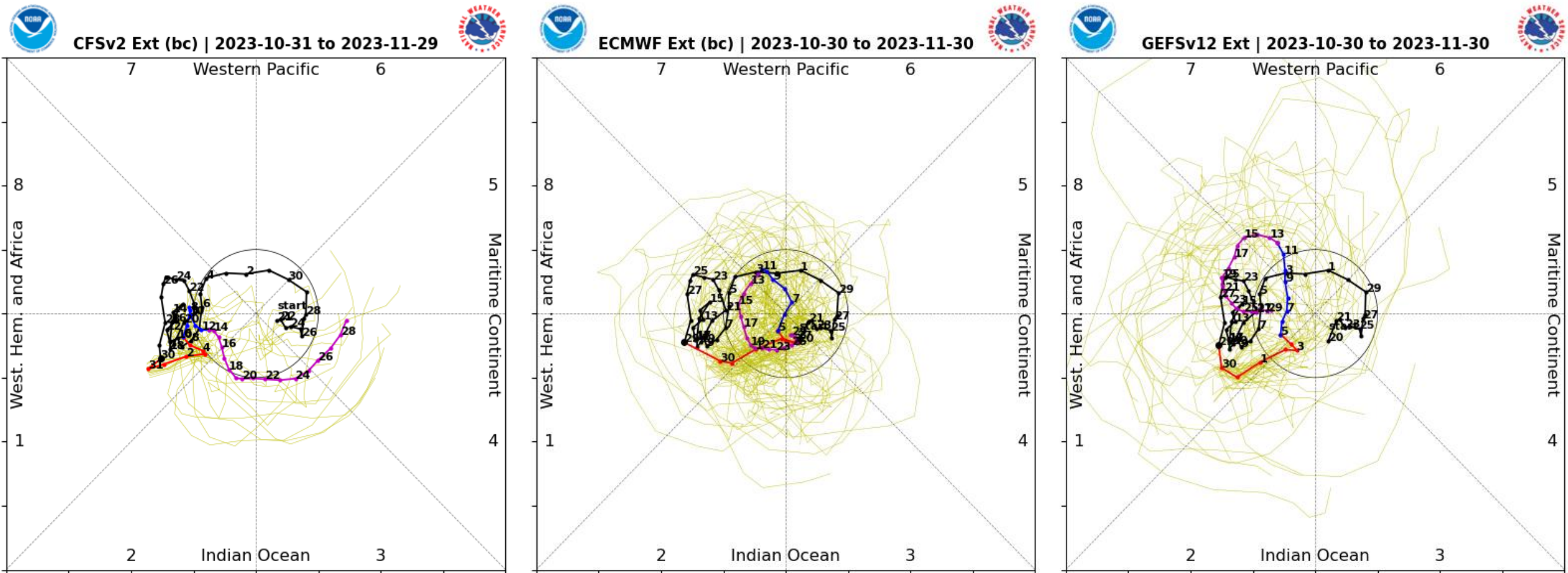
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200-hPa Velocity Potential Anomaly Maps:

- Tropical convection on the global scale has been moving in and out of coherent structures over the last month. Most recently a wave-1 pattern has reemerged, with the enhanced convective envelope over the Western Hemisphere and Africa.
- Beginning in week-2 the ECMWF depicts the emergence of an eastward propagating wave from the ENSO-enhanced precip region in the Central Pacific.

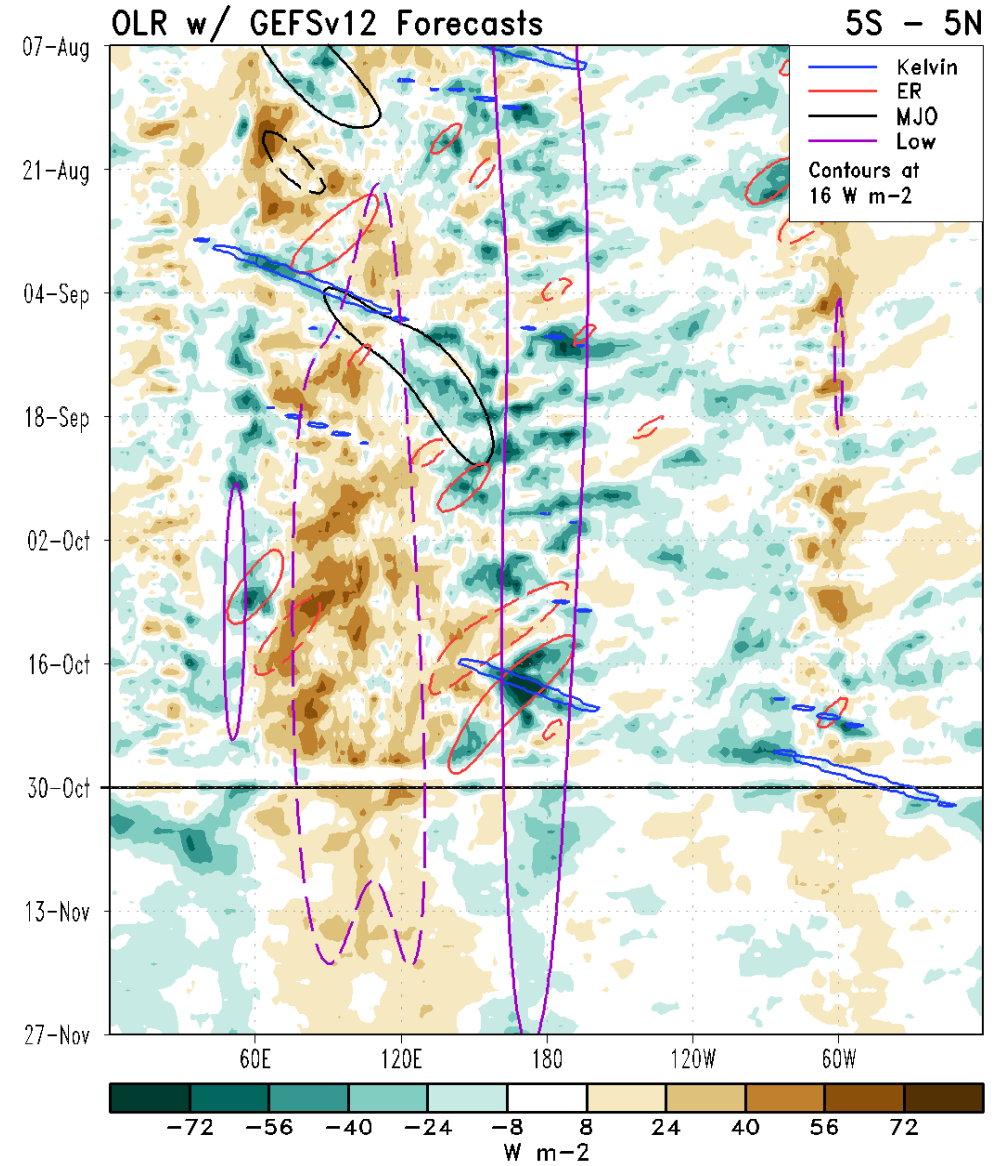
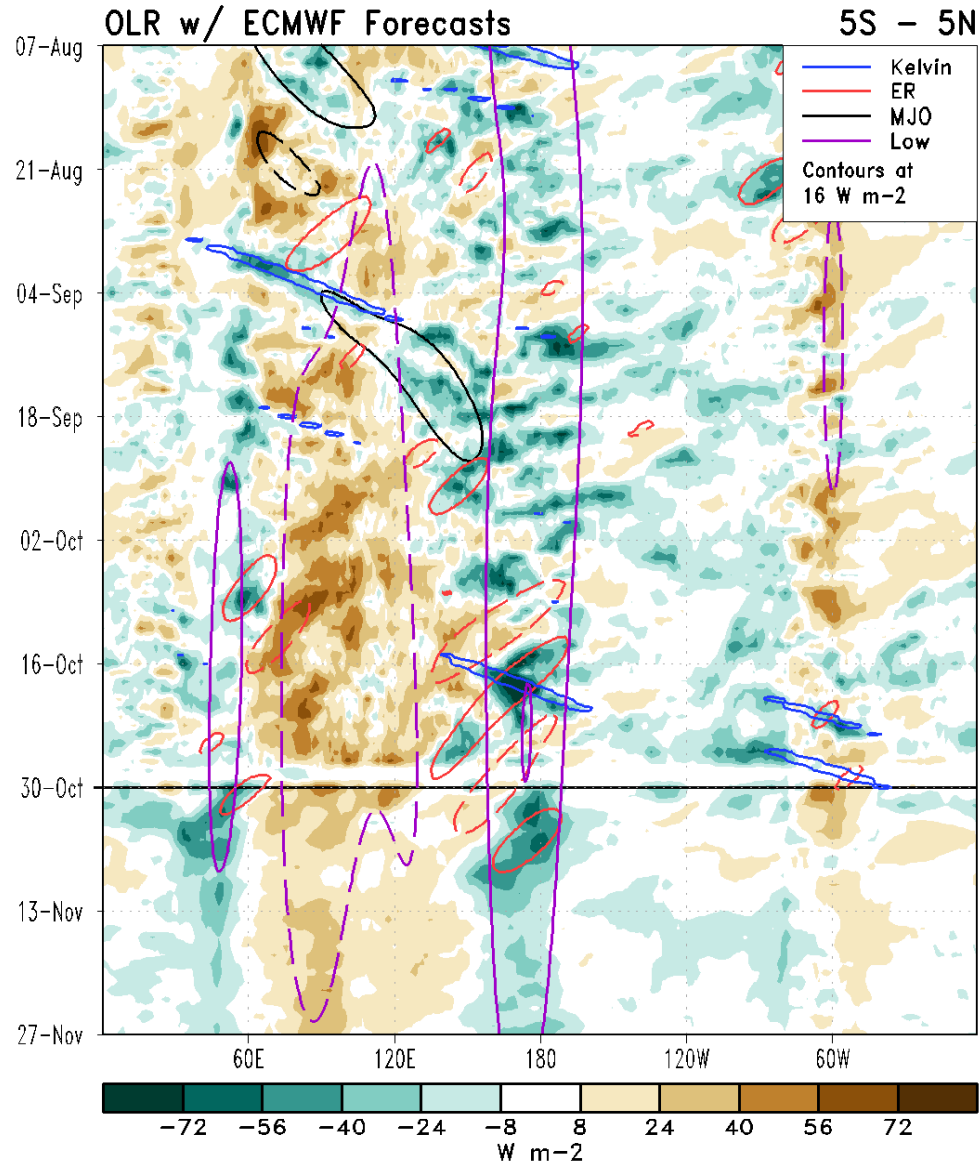


RMM Index Observations & Forecasts:



- There is a wide spread among dynamical models with regard to the evolution of the MJO over the coming weeks. Most solutions keep the RMM index on the left side of the diagram, likely at least partially the result of El Nino's considerable influence on the fields used to calculate the RMM.
- Given the uncertainty and spread among models, it is reasonable to assume that the MJO will continue to have a diminished role in the state of the global Tropics.

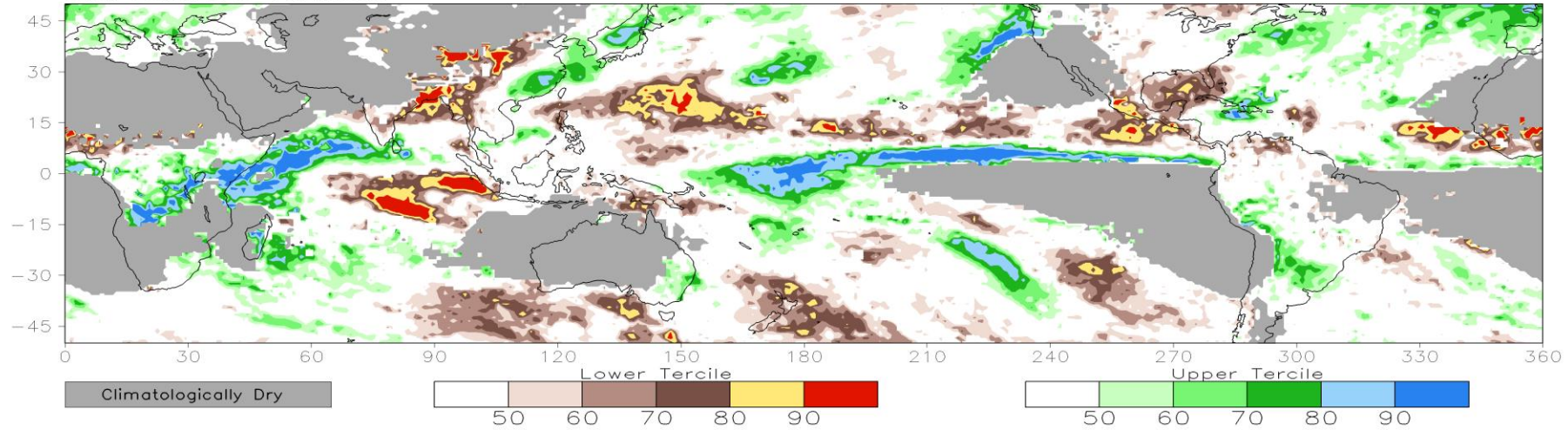
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

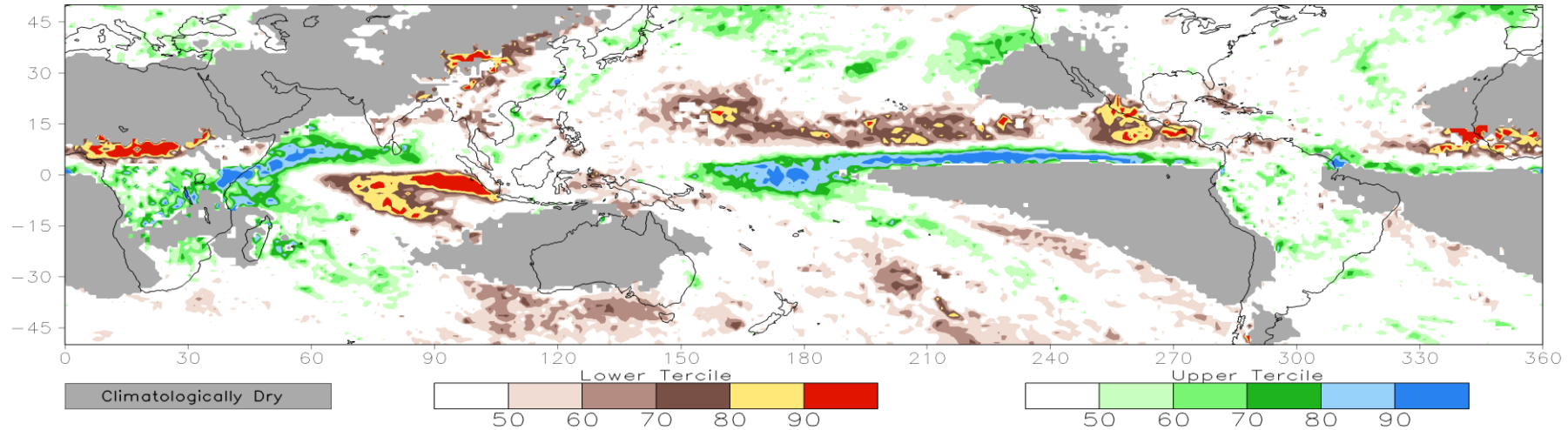
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 08Nov2023–14Nov2023



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

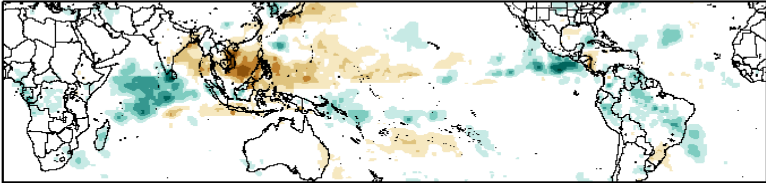
Valid: 15Nov2023–21Nov2023



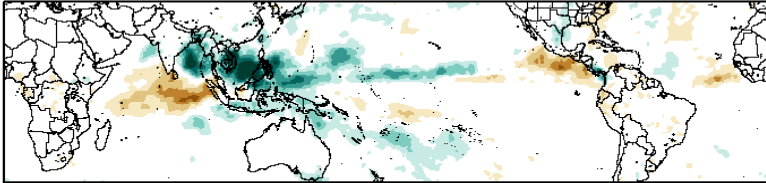
Historical Precipitation Anomalies By MJO Phase:

SON MJO Composite: GPCP1DD (mm/day)

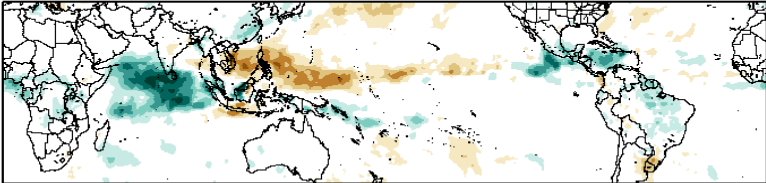
Phase 1



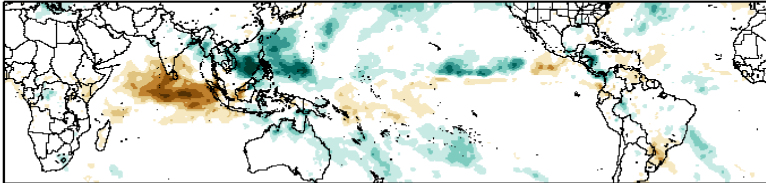
Phase 5



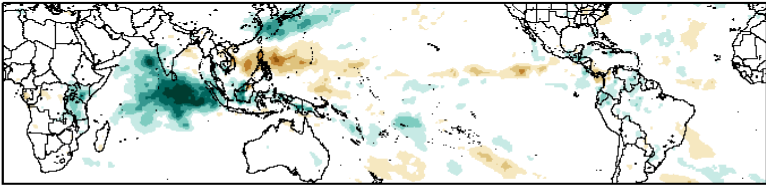
Phase 2



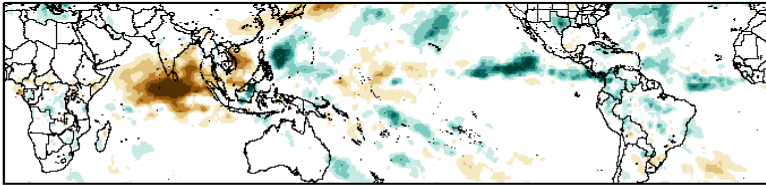
Phase 6



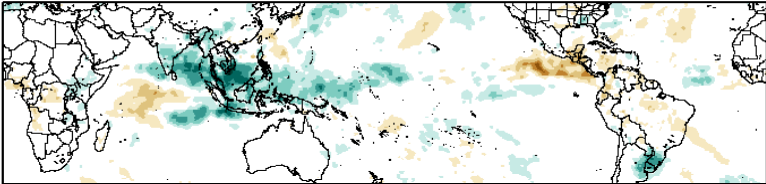
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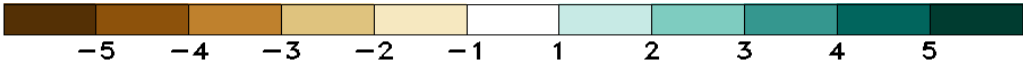
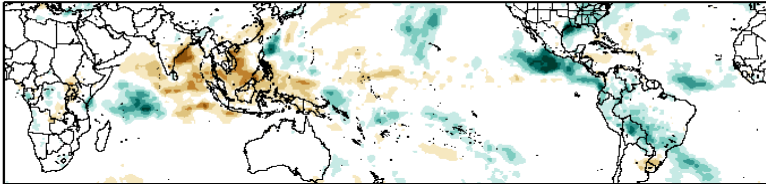
Phase 7



Phase 4

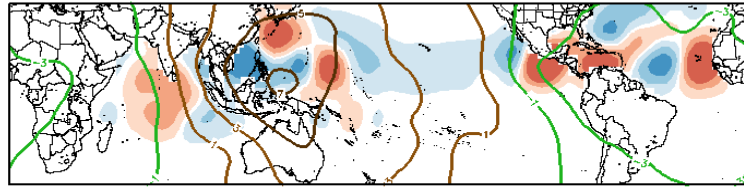


Phase 8

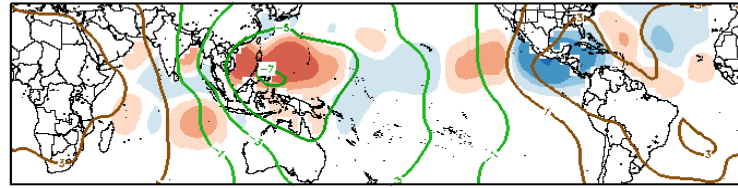


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

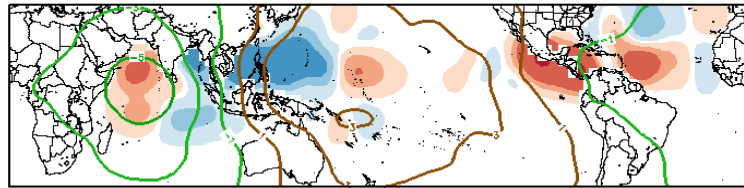
SON MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ SON CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



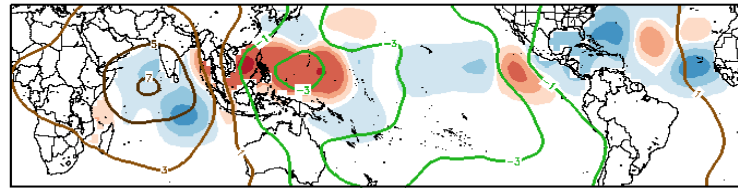
Phase 1



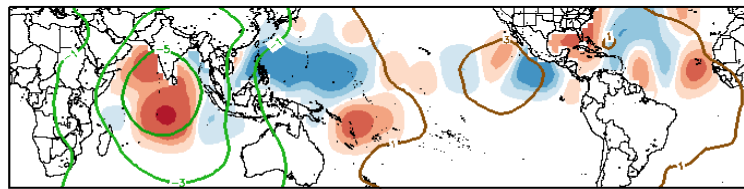
Phase 5



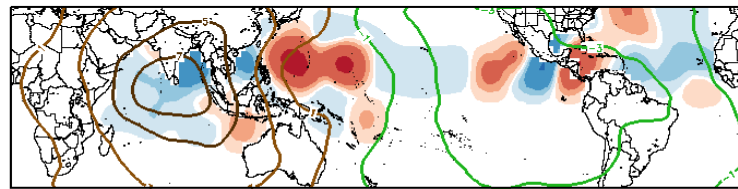
Phase 2



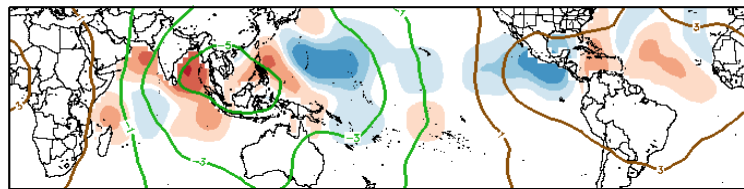
Phase 6



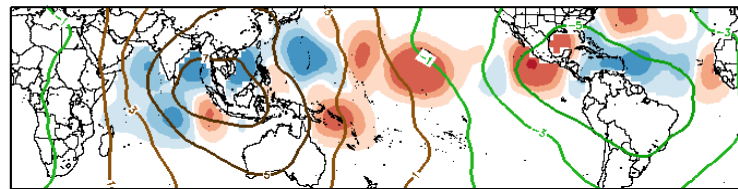
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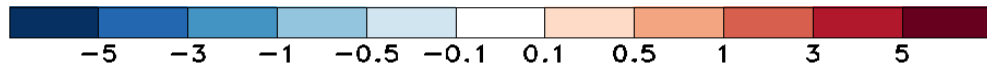
Phase 7



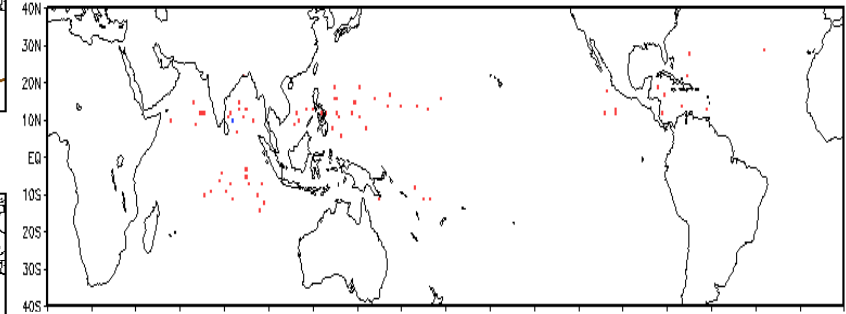
Phase 4



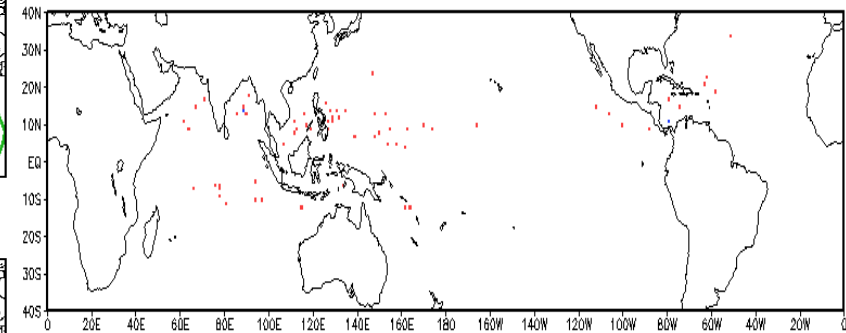
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 1108 to 1114

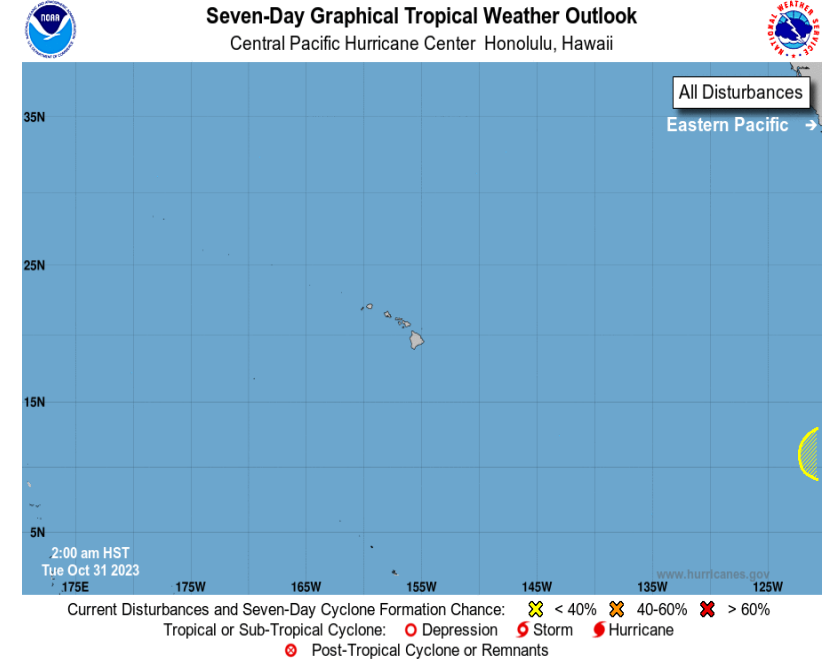
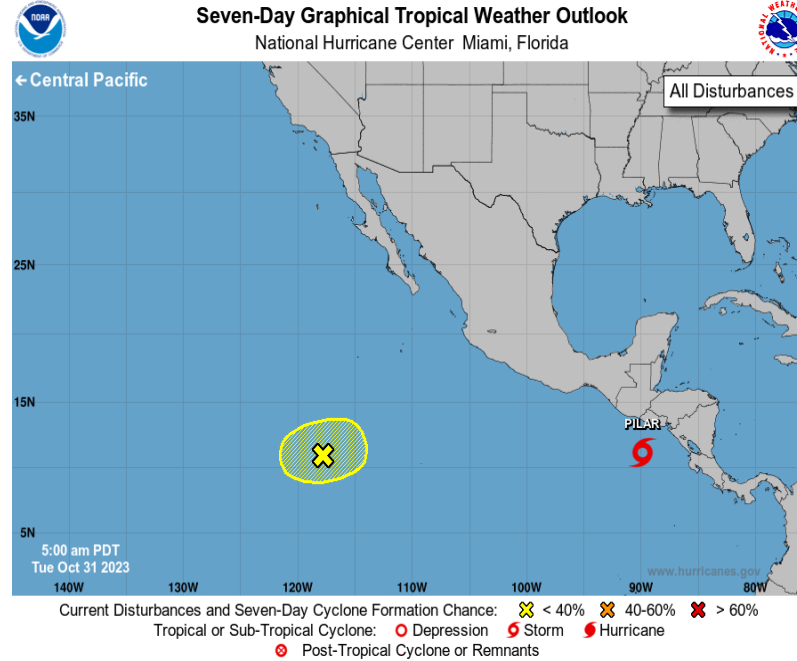
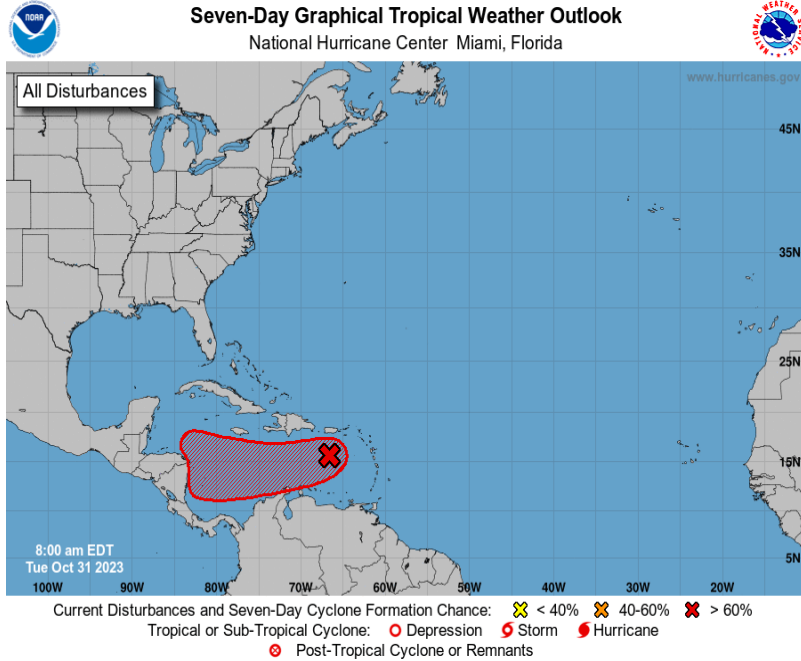


Observed TC Genesis, 1979-2021
7-day Period 1115 to 1121



Experimental

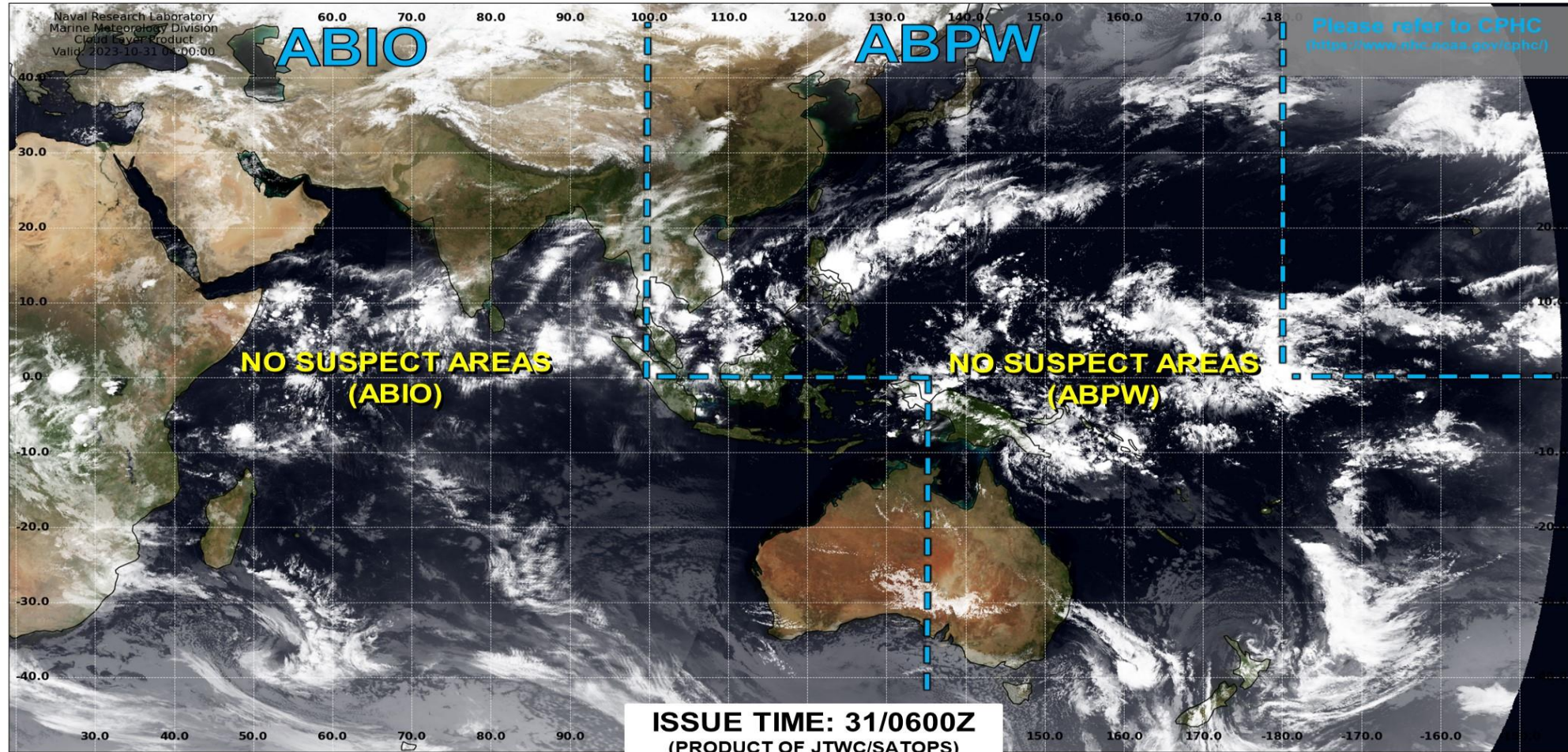
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



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)



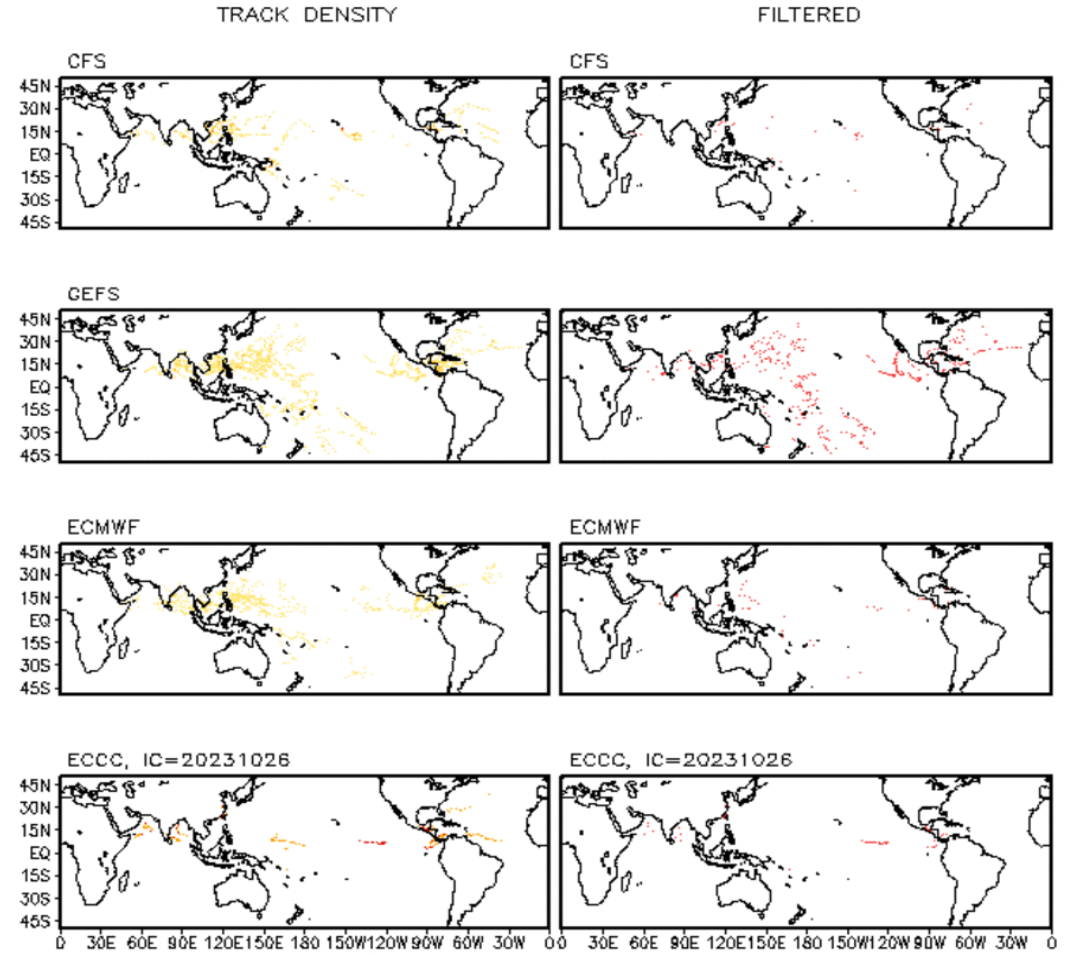
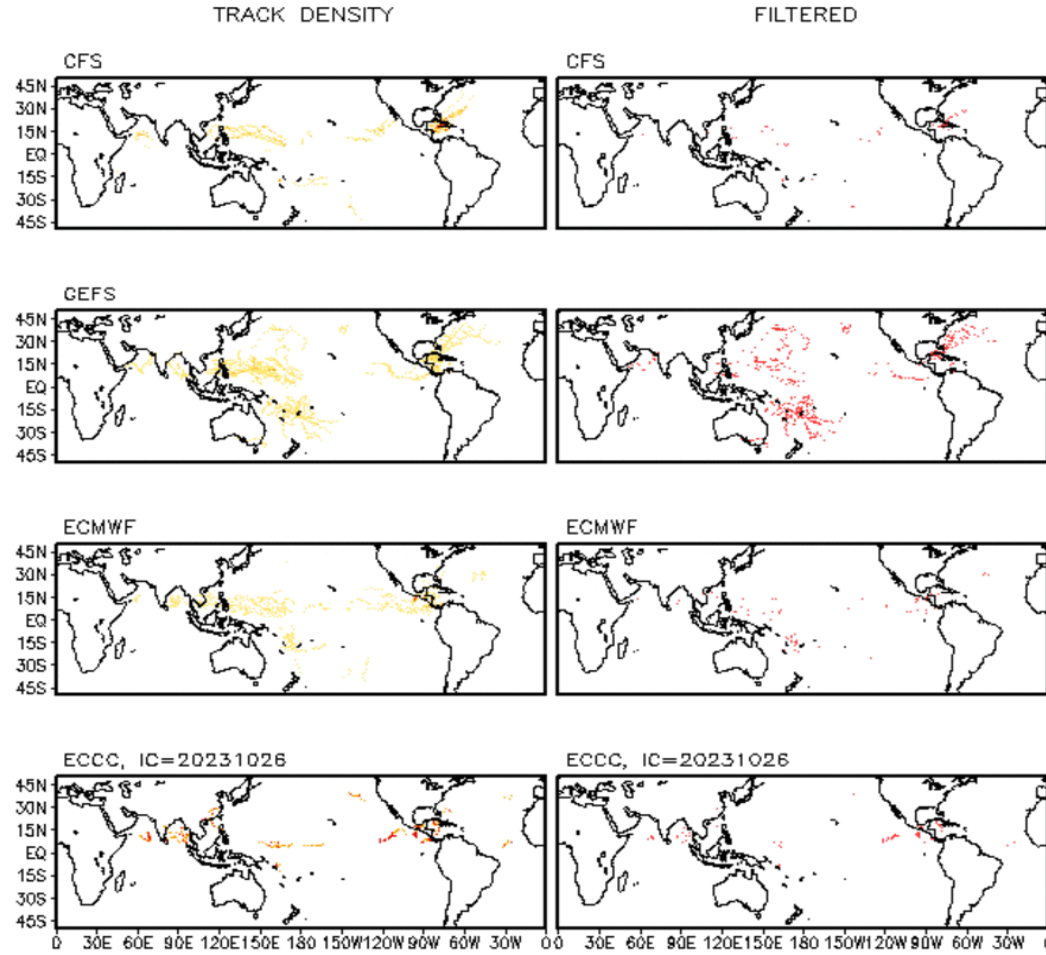
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



Multi-Model TC Track Densities: Weeks 2+3

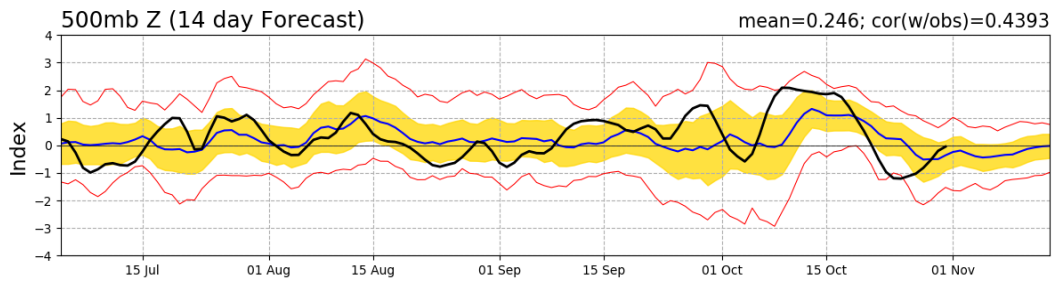
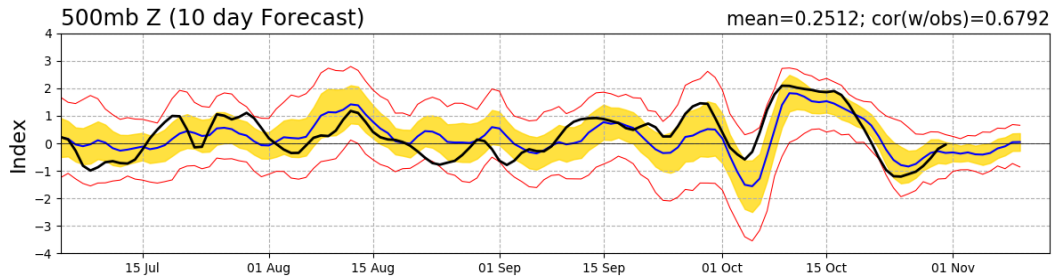
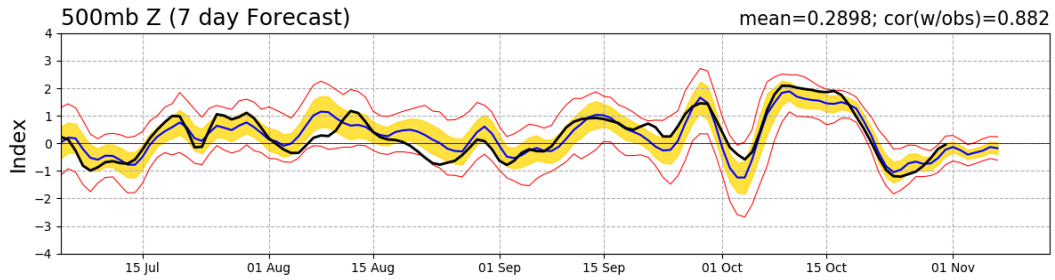
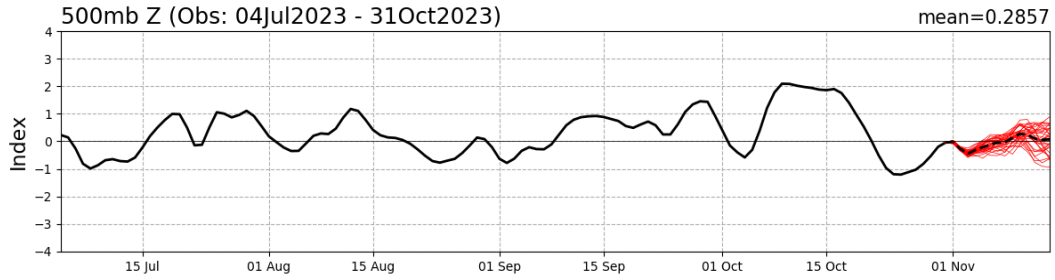
Storm Track Density Distribution, IC=20231030
Week 2 Forecast: 1108–1114

Storm Track Density Distribution, IC=20231030
Week 3 Forecast: 1115–1121

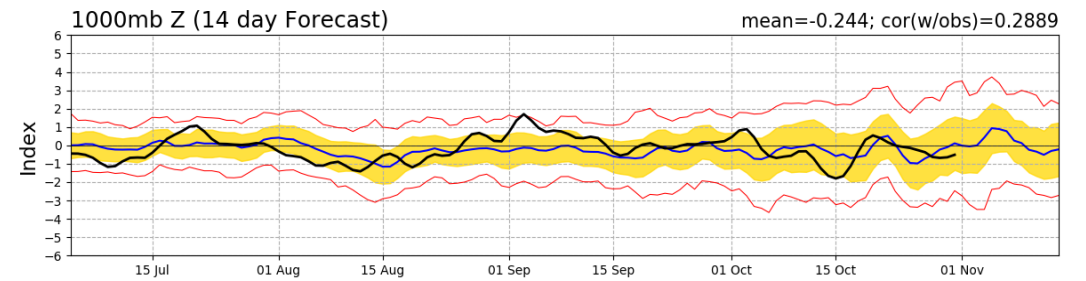
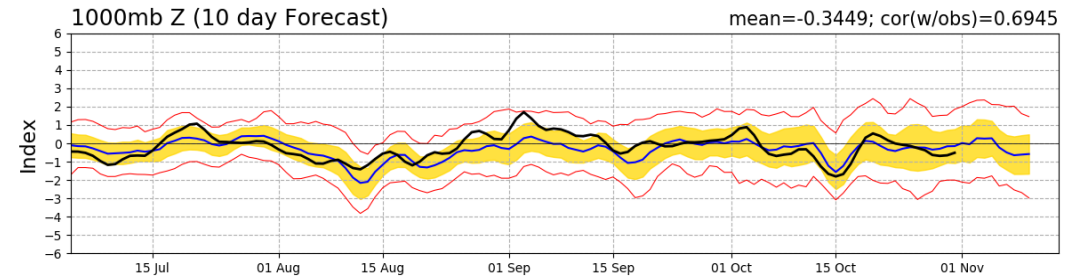
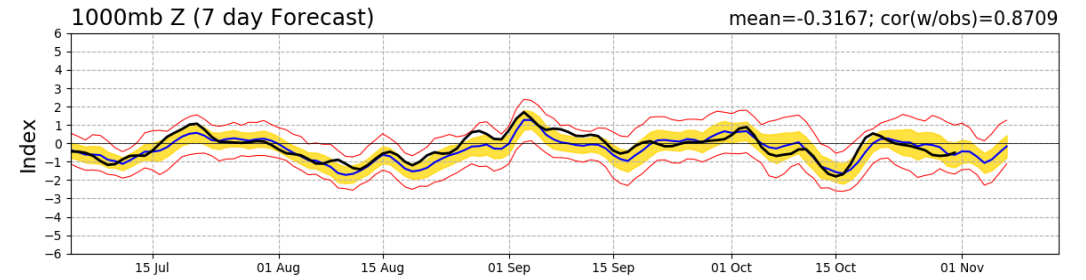
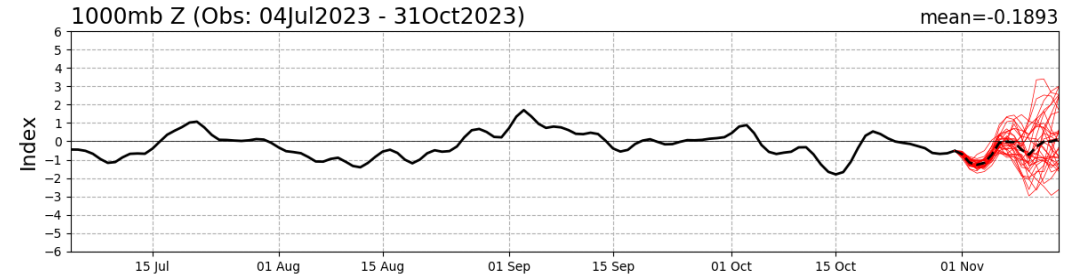


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

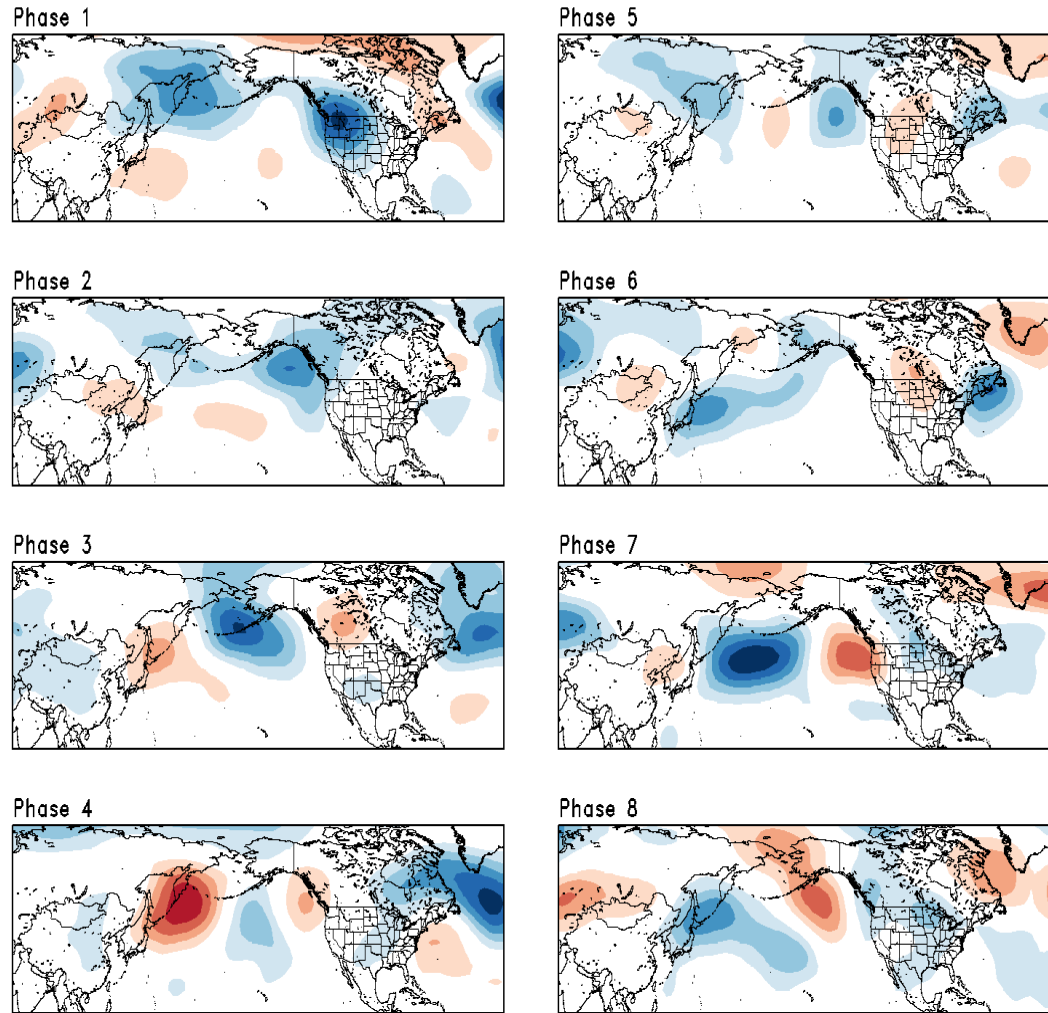


AO Index: Observed & GEFS Forecasts

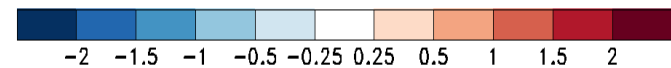
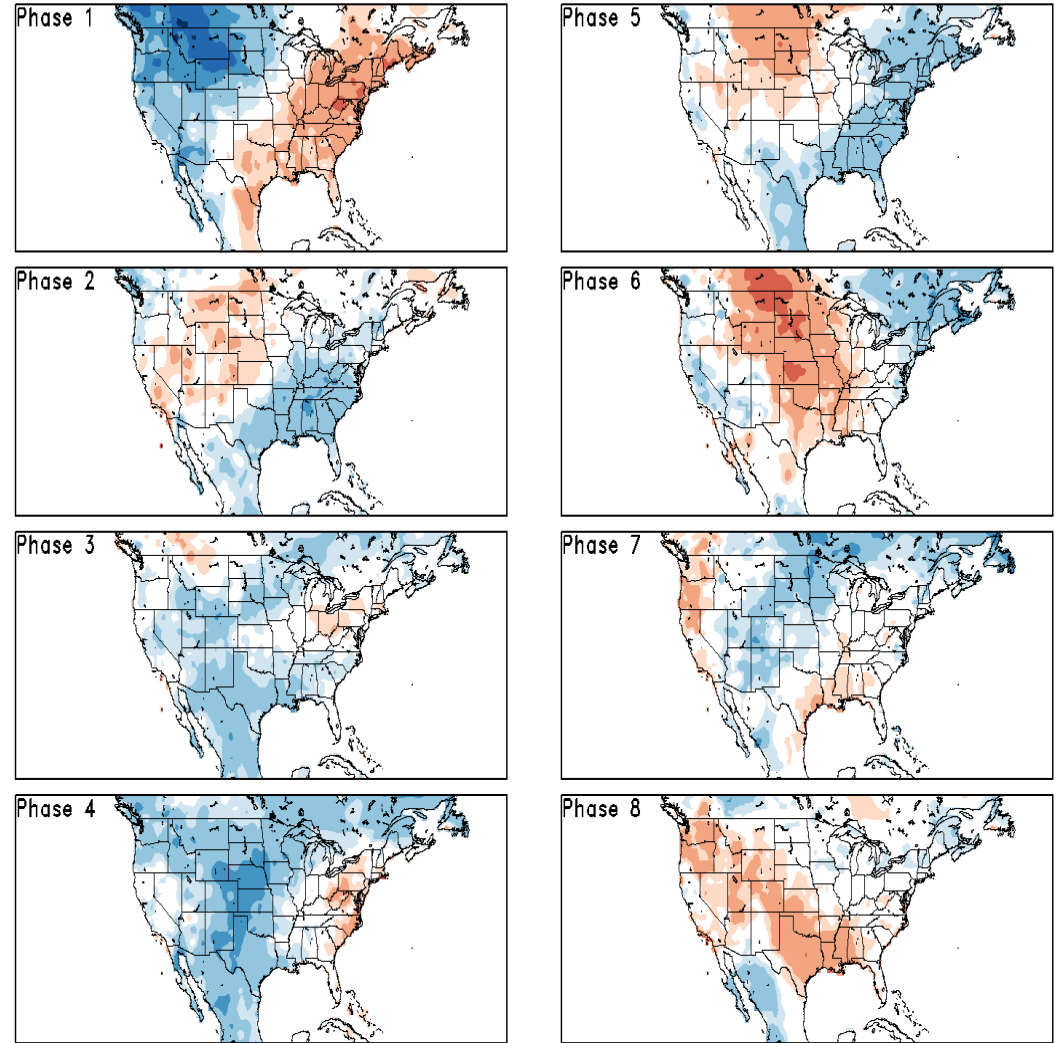


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

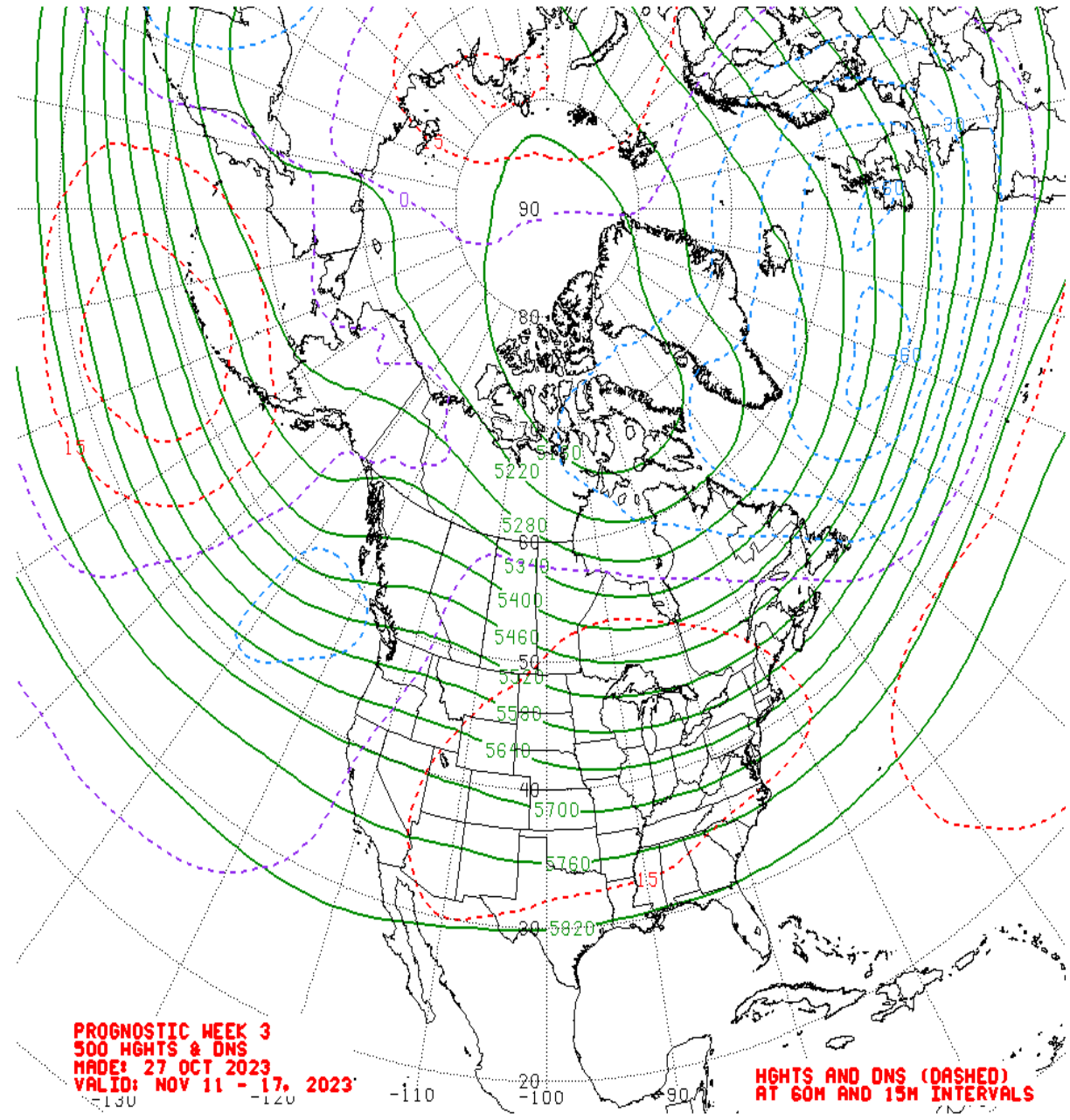
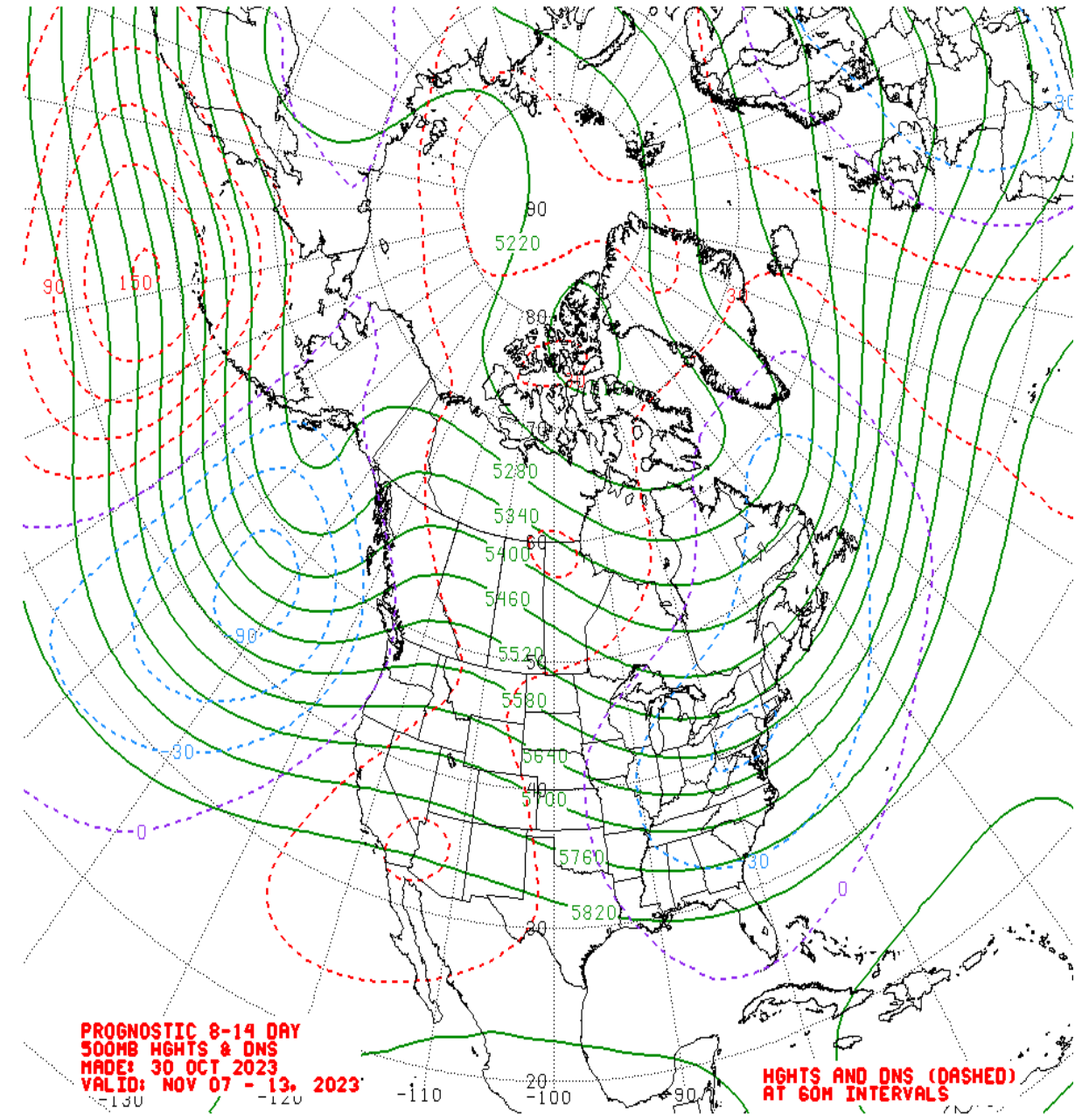
SON MJO Composite: CDAS 500-hPa Height (m)



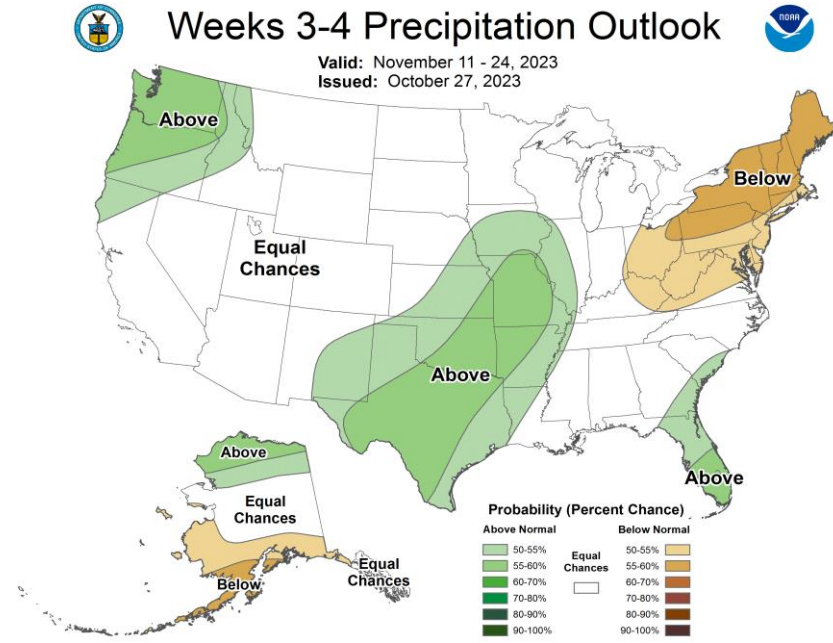
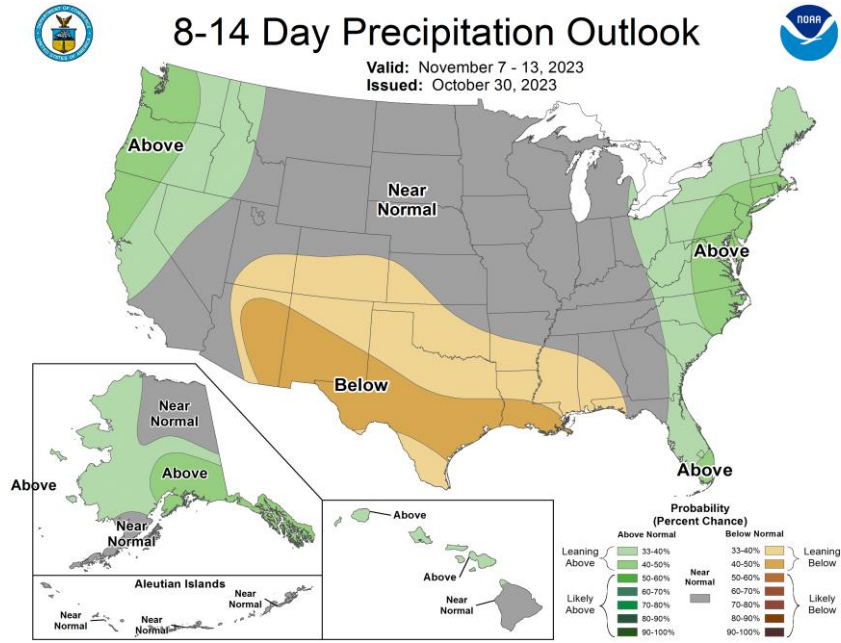
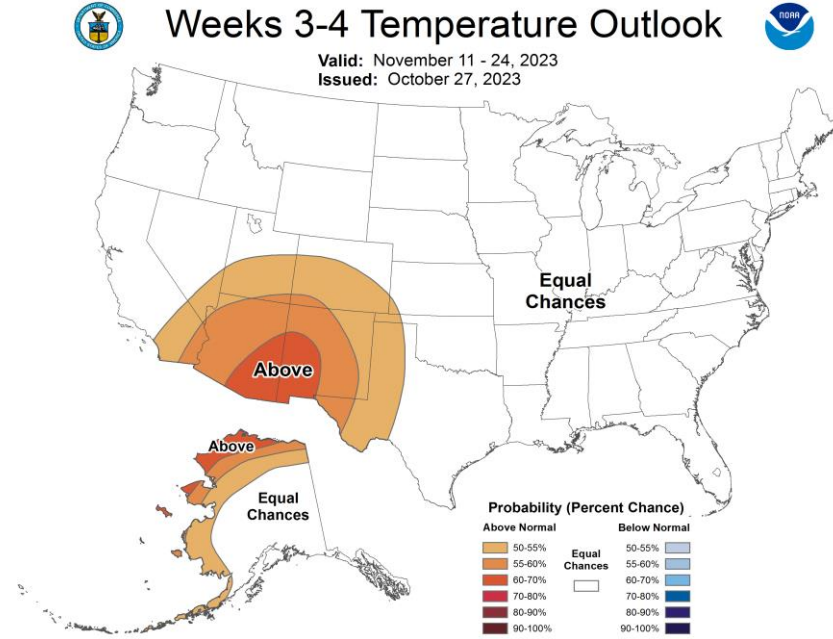
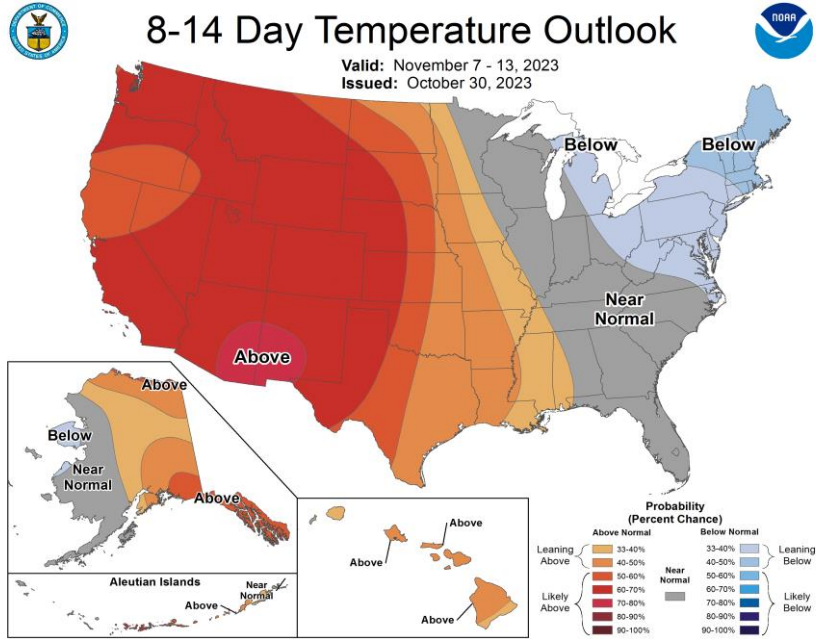
SON MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



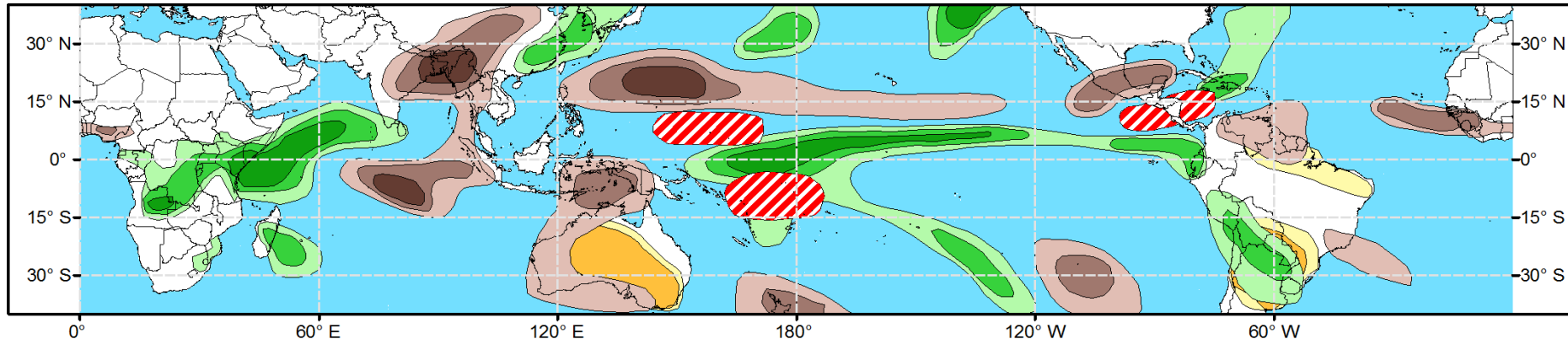


Global Tropics Hazards Outlook

Climate Prediction Center

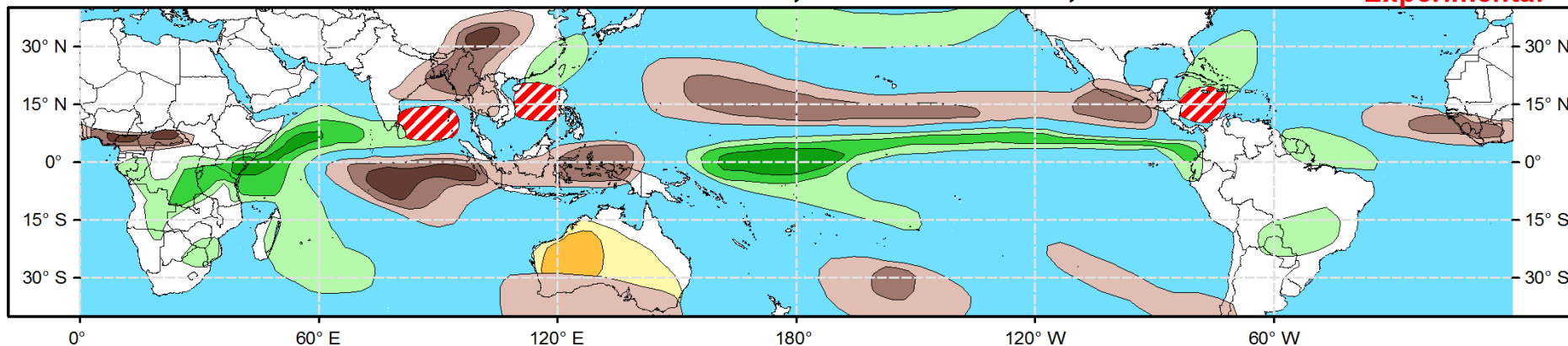


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