



Weeks 2-3 Global Tropics Hazards Outlook

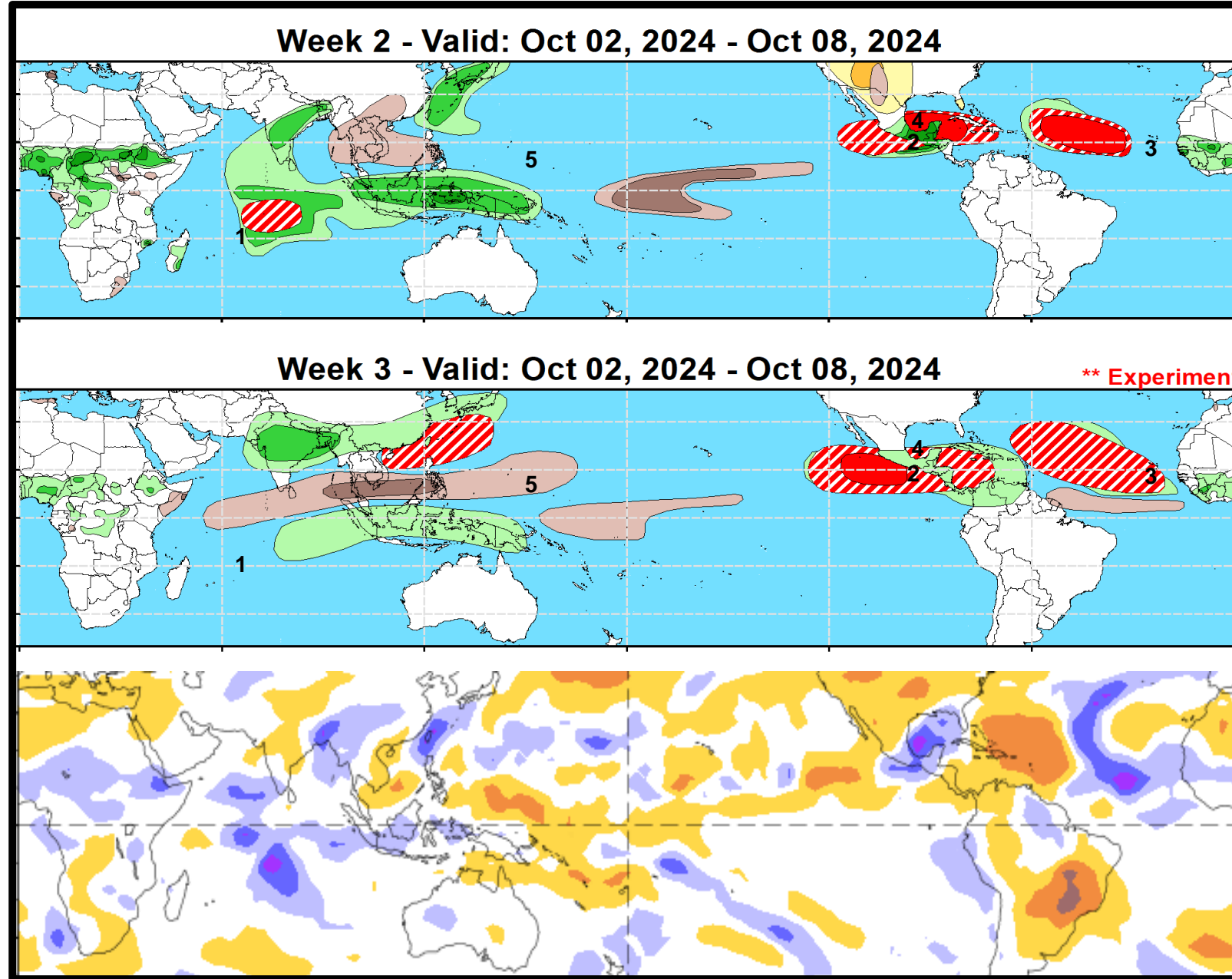
5/16/2023

Nick Novella

NWS / NCEP / Climate Prediction Center

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

- 1: Ancha, 9/30
- 2: TD 11, 10/1
- 3: Leslie, 10/2
- 4: Milton, 10/5
- 5: TD 21W, 10/6
-



Synopsis of Climate Modes:

ENSO: (Sep 12, 2024 Update) *next update on Thursday, Oct 10th*

- ENSO Alert System Status: [La Niña Watch](#)
- La Niña is favored to emerge in September-November (71% chance) and is expected to persist through January-March 2025.

MJO and other subseasonal tropical variability:

- The MJO continues to be a significant player in the global tropics. The RMM index currently places the enhanced convective envelope over the Indian Ocean.
- Dynamical model MJO forecasts depict eastward propagation of the intraseasonal signal into the Maritime Continent and Western Pacific during the next several weeks, with a more suppressed convective pattern developing across North America in the wake of the MJO.
- Tropical cyclone (TC) activity is favored to be greatest over the Indian Ocean and Western Pacific during weeks 2 and 3. The suppressed phase of the MJO is depicted over the Americas during this period which would tend to inhibit TC formation, however potential destructive Kelvin wave interference leads to lingering chances for TC activity on either side of Central America throughout the forecast period.

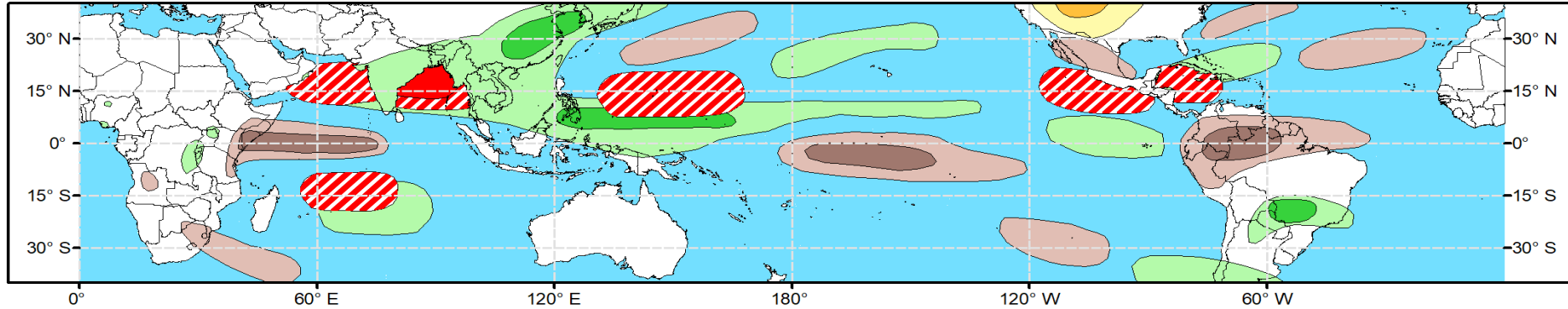
GTH Outlook:



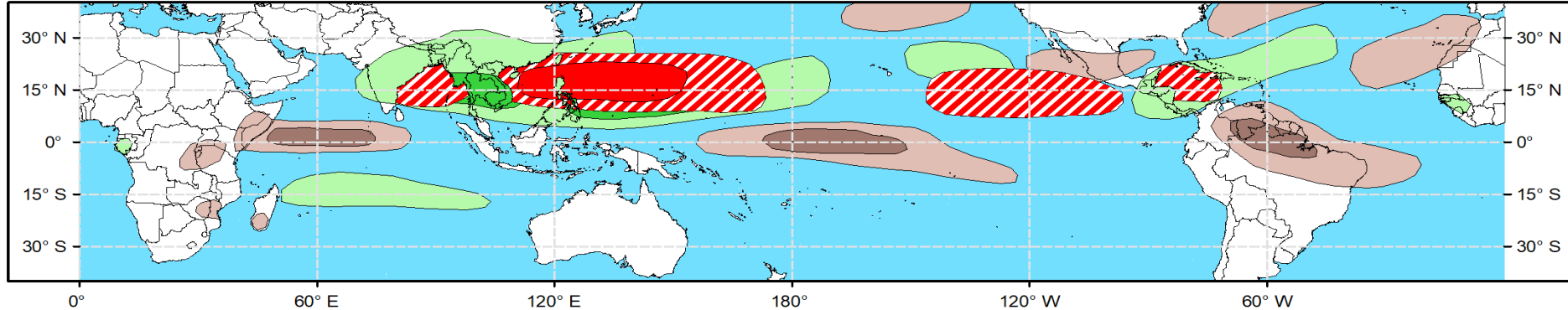
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Oct 16, 2024 - Oct 22, 2024



Week 3 - Valid: Oct 23, 2024 - Oct 29, 2024



**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*

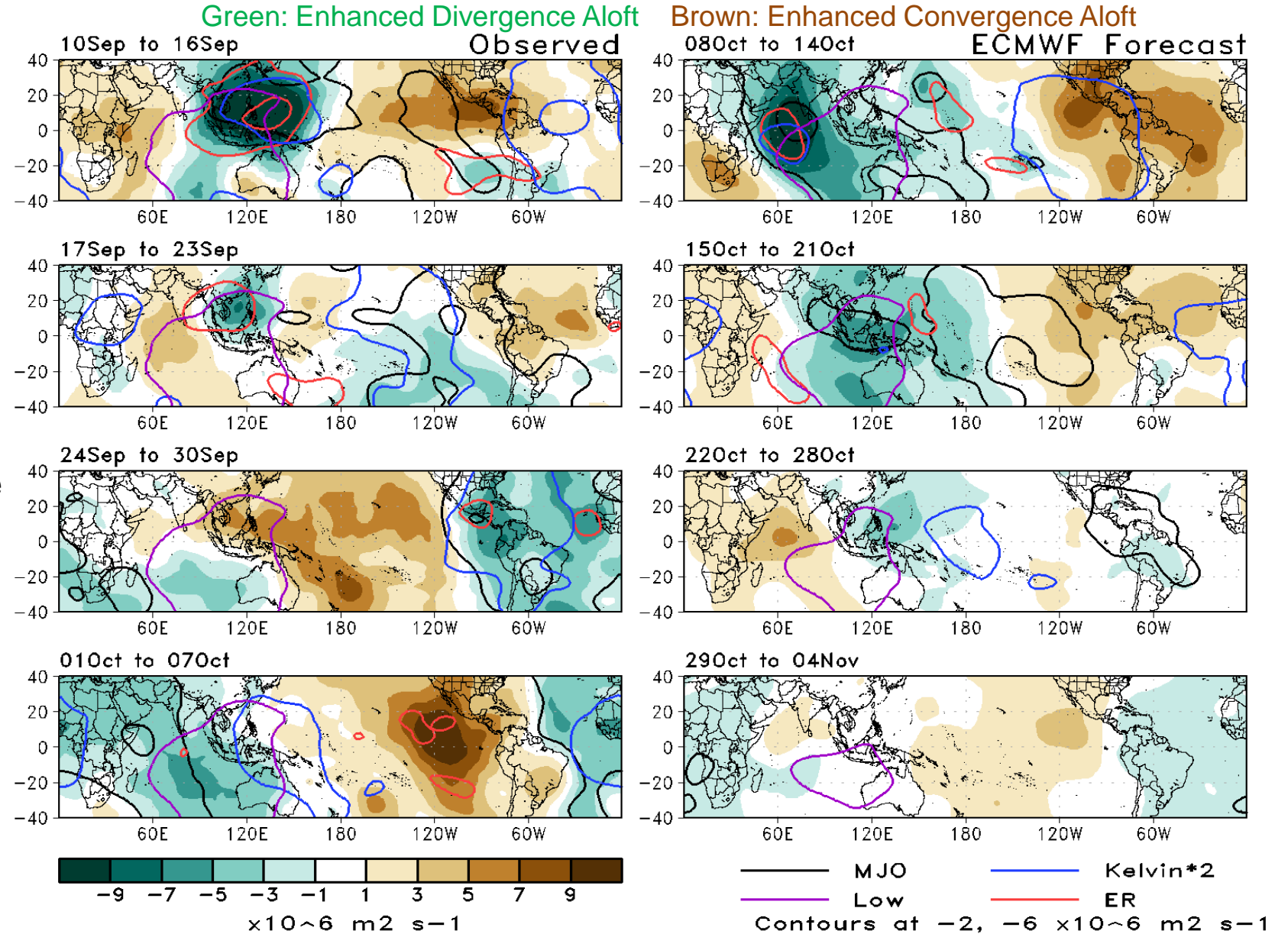
Issued: 10/08/2024

Forecaster: Barandiaran

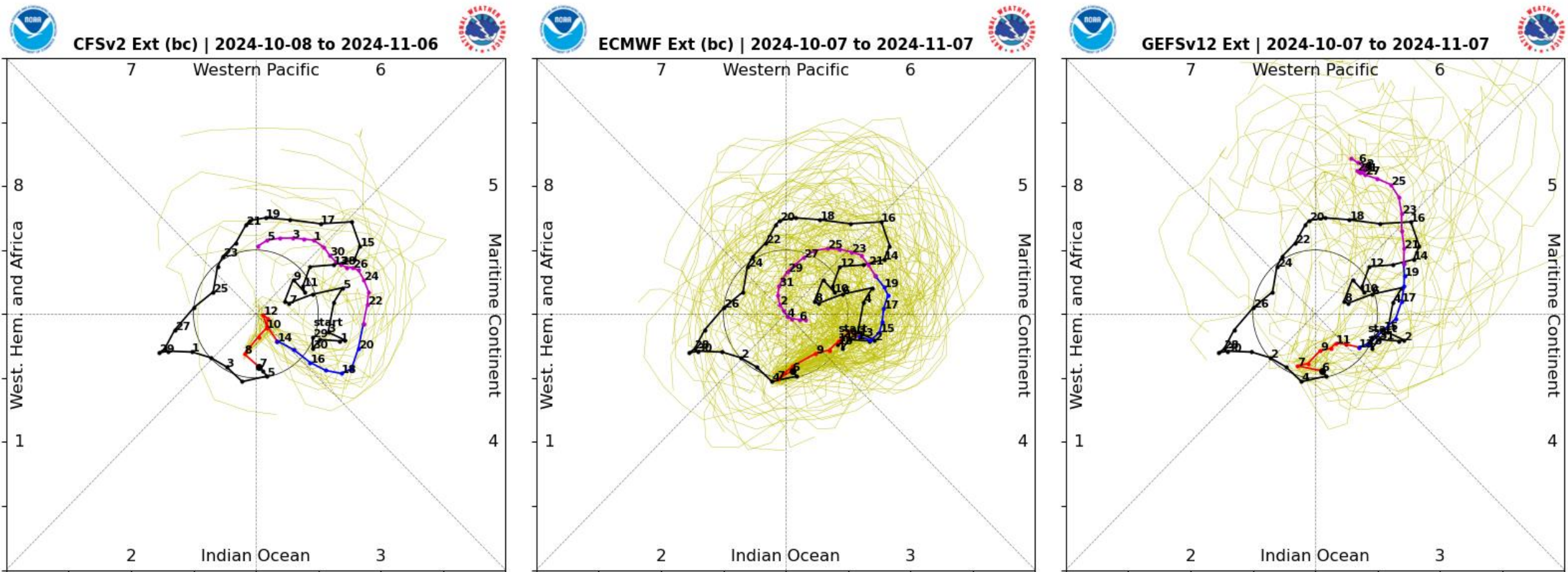
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

200-hPa Velocity Potential Anomaly Maps:

- The MJO has become more coherent lately, and over the coming weeks the enhanced convective envelope will be moving over the Indian Ocean and the Maritime Continent.
- Suppressed convection over the Americas may potentially reduce the amount of TC activity in the Western Hemisphere after a very active period.

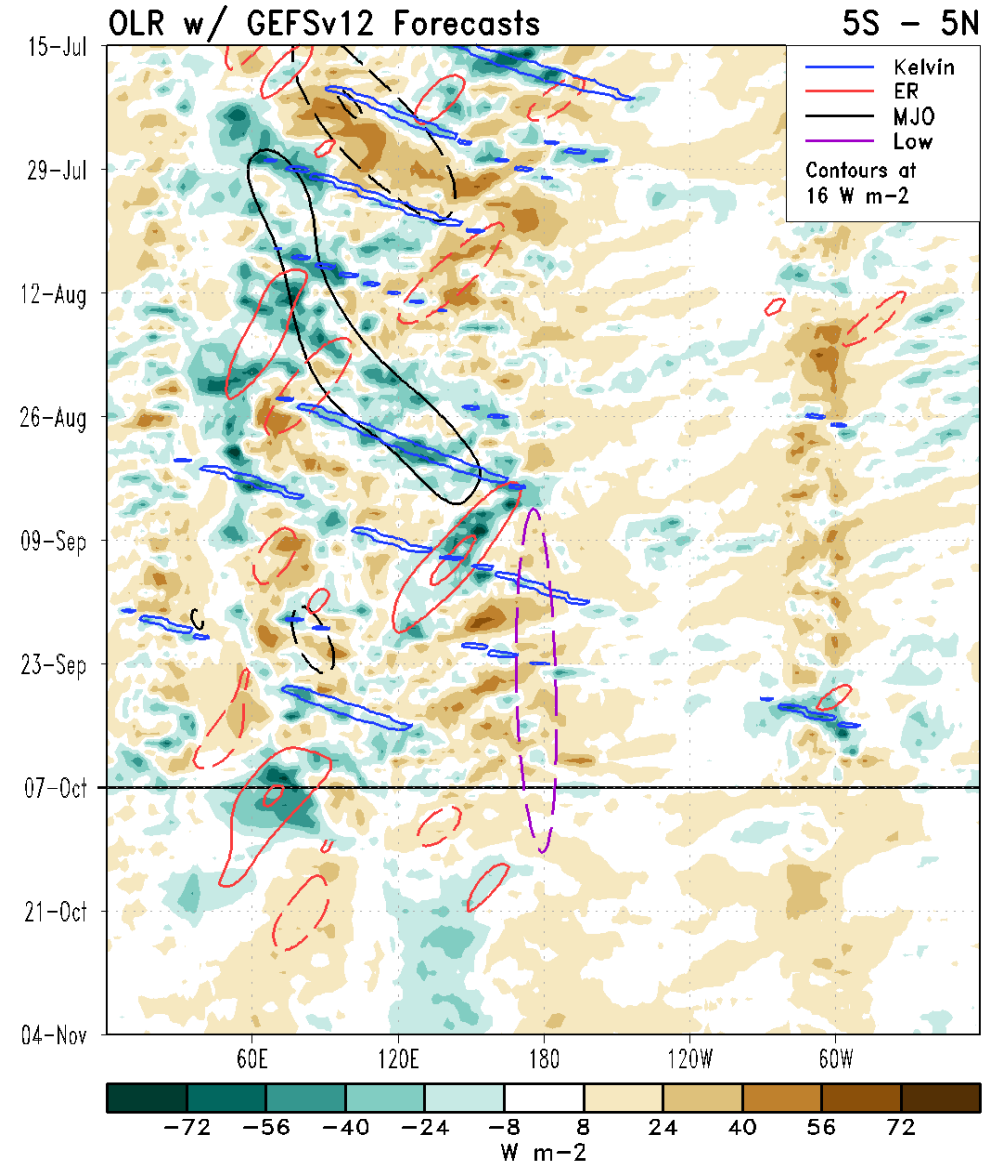
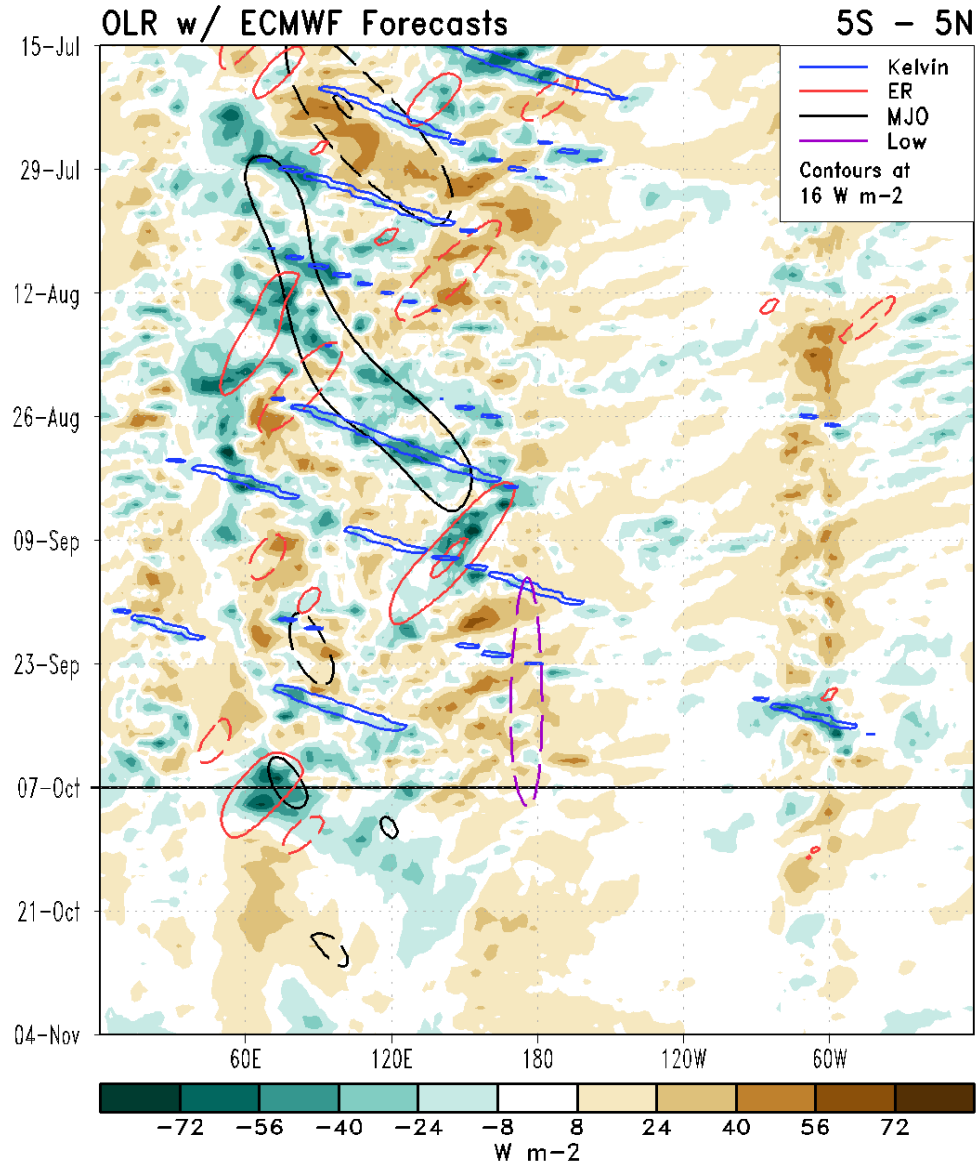


RMM Index Observations & Forecasts:



- Dynamical models are in pretty good agreement on the future evolution of the MJO, with RMM forecasts almost universally depicting an orderly propagation of the MJO signal for the next several weeks. The GEFS favors a highly amplified signal by the end of week-3, but other models suggest a weaker MJO.

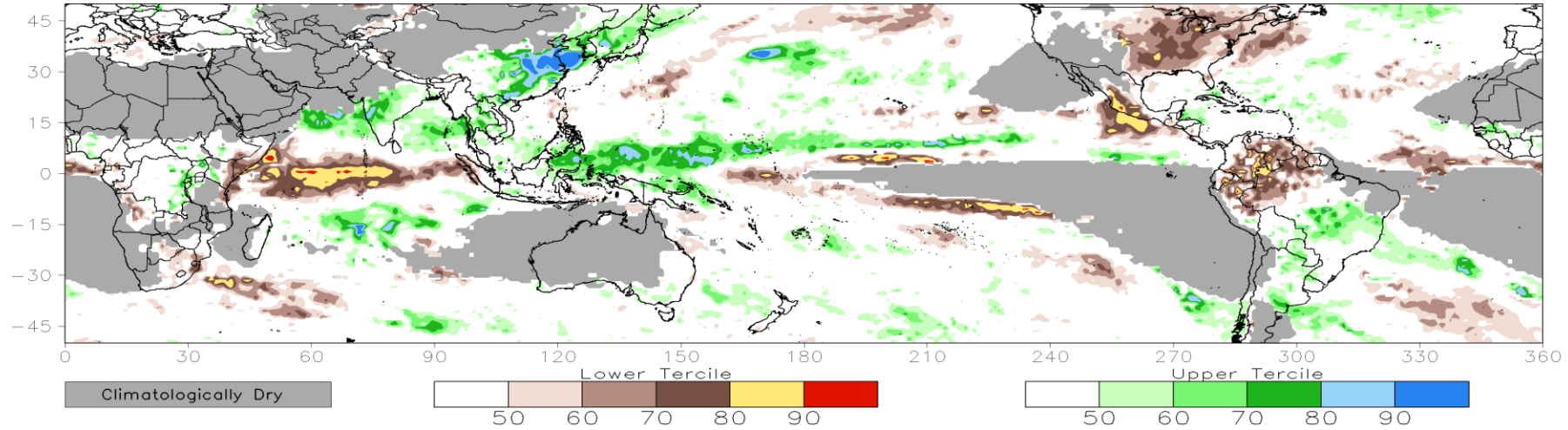
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

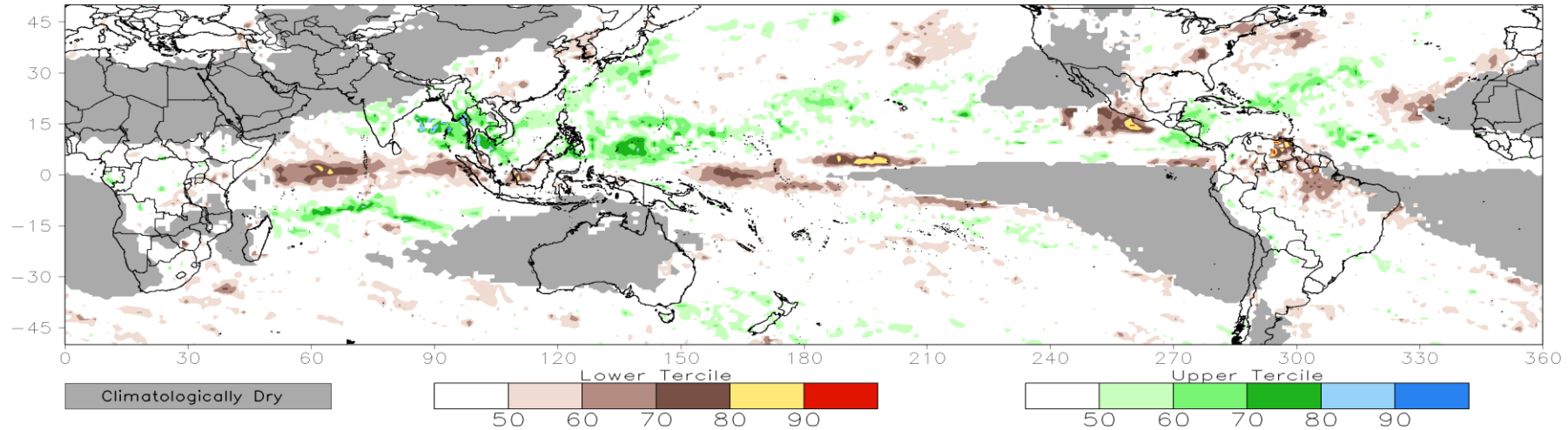
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 16Oct2024–22Oct2024



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

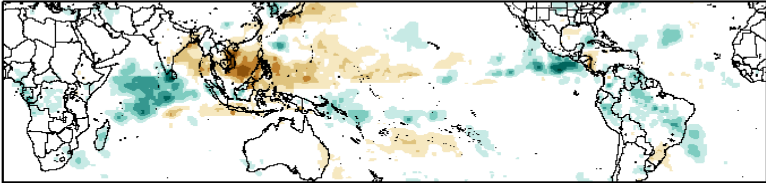
Valid: 23Oct2024–29Oct2024



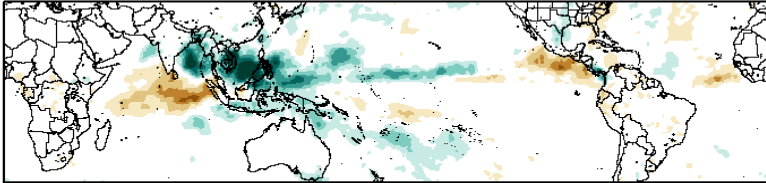
Historical Precipitation Anomalies By MJO Phase:

SON MJO Composite: GPCP1DD (mm/day)

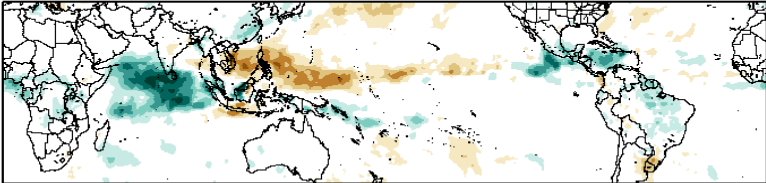
Phase 1



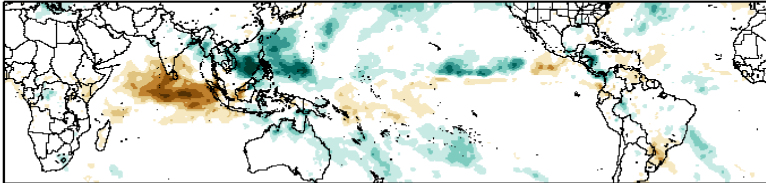
Phase 5



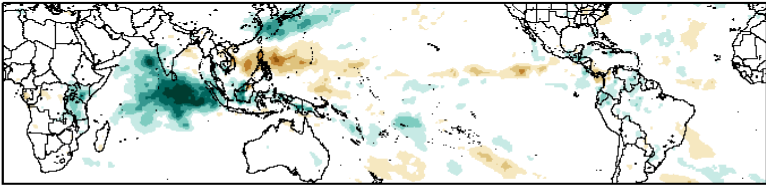
Phase 2



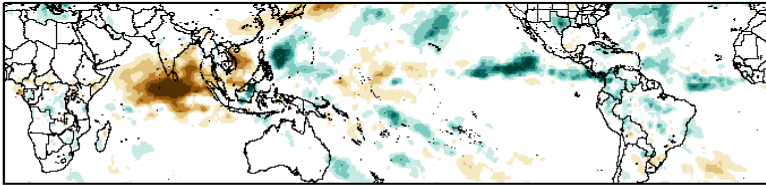
Phase 6



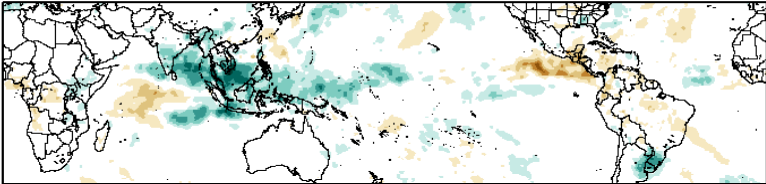
Phase 3



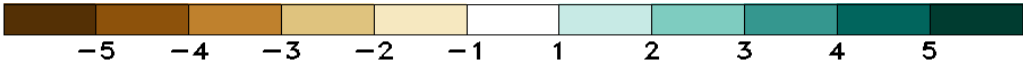
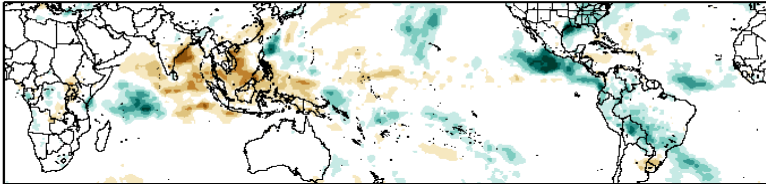
Phase 7



Phase 4

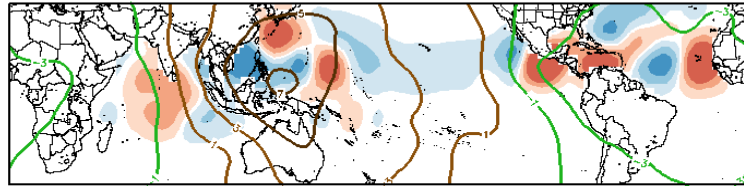


Phase 8

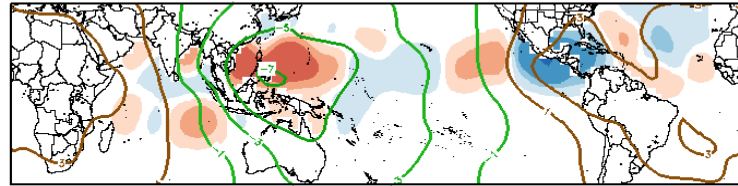


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

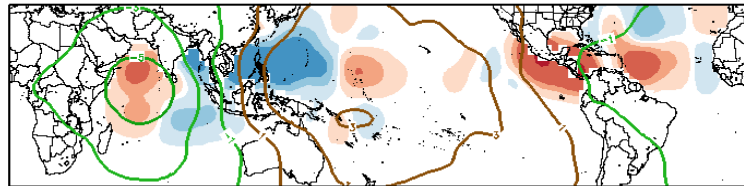
SON MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ SON CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



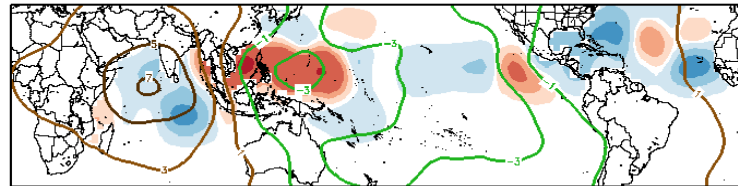
Phase 1



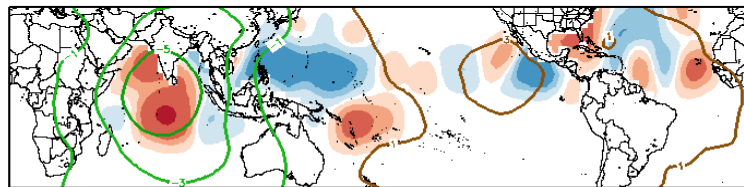
Phase 5



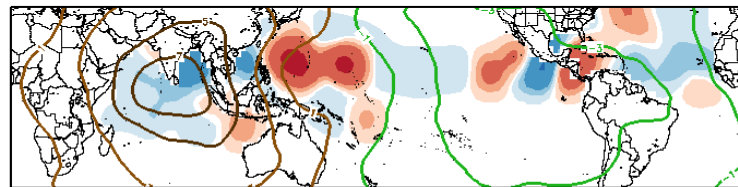
Phase 2



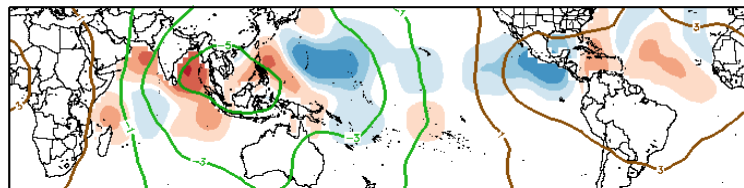
Phase 6



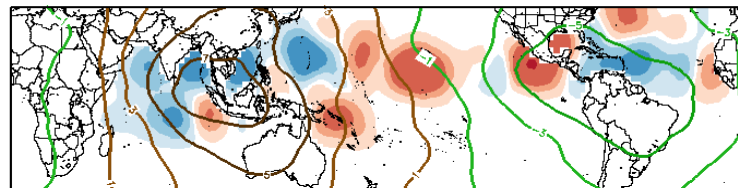
Phase 3



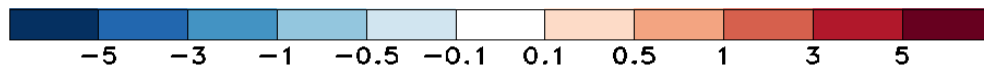
Phase 7



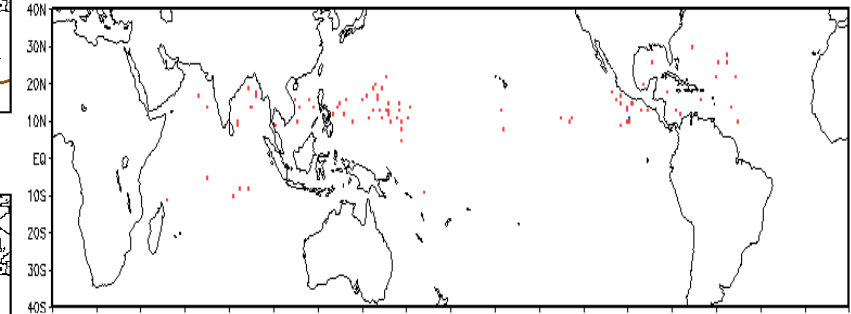
Phase 4



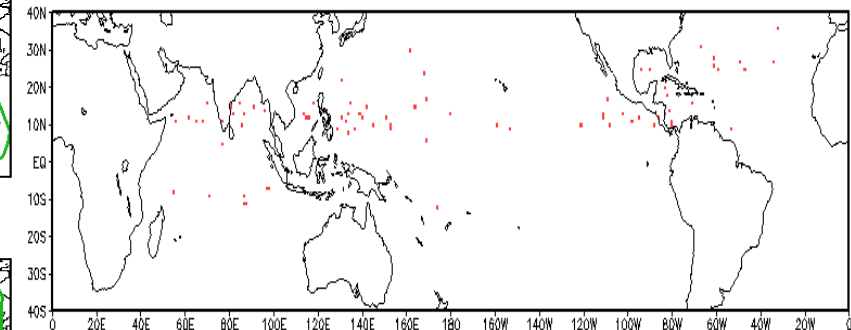
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 1016 to 1022

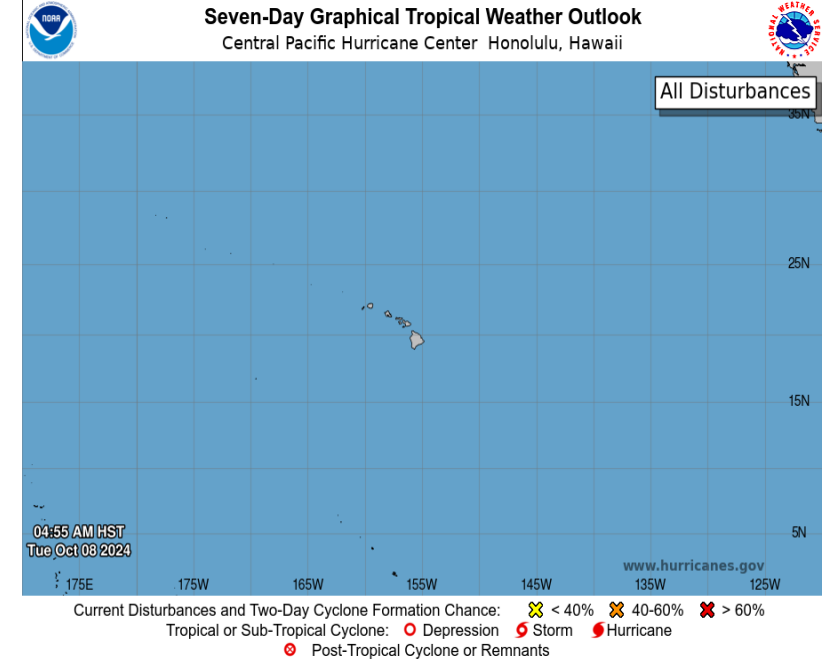
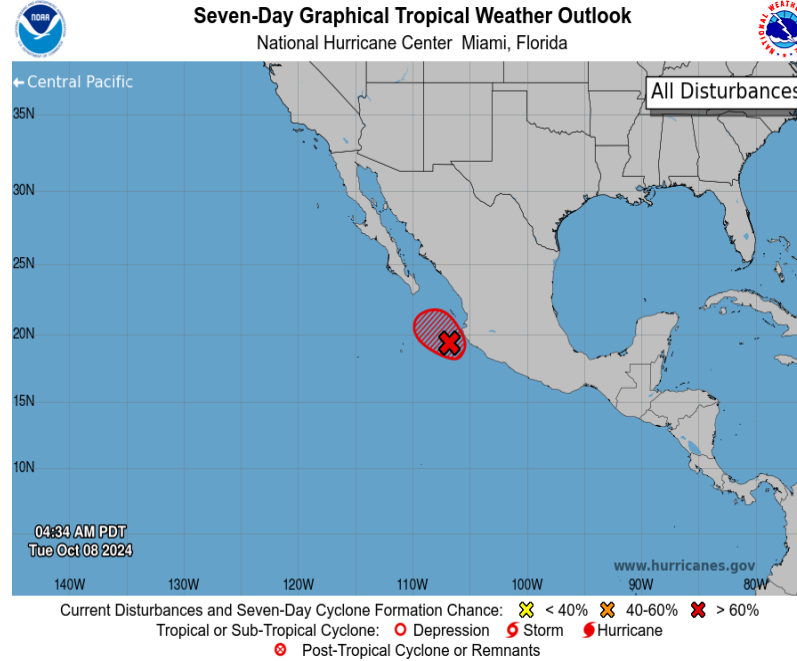
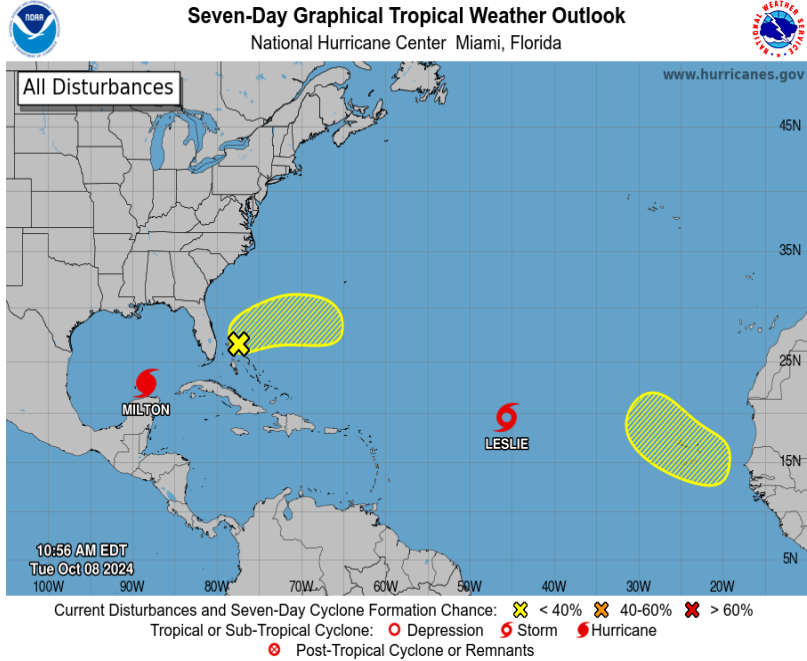


Observed TC Genesis, 1979-2021
7-day Period 1023 to 1029



Experimental

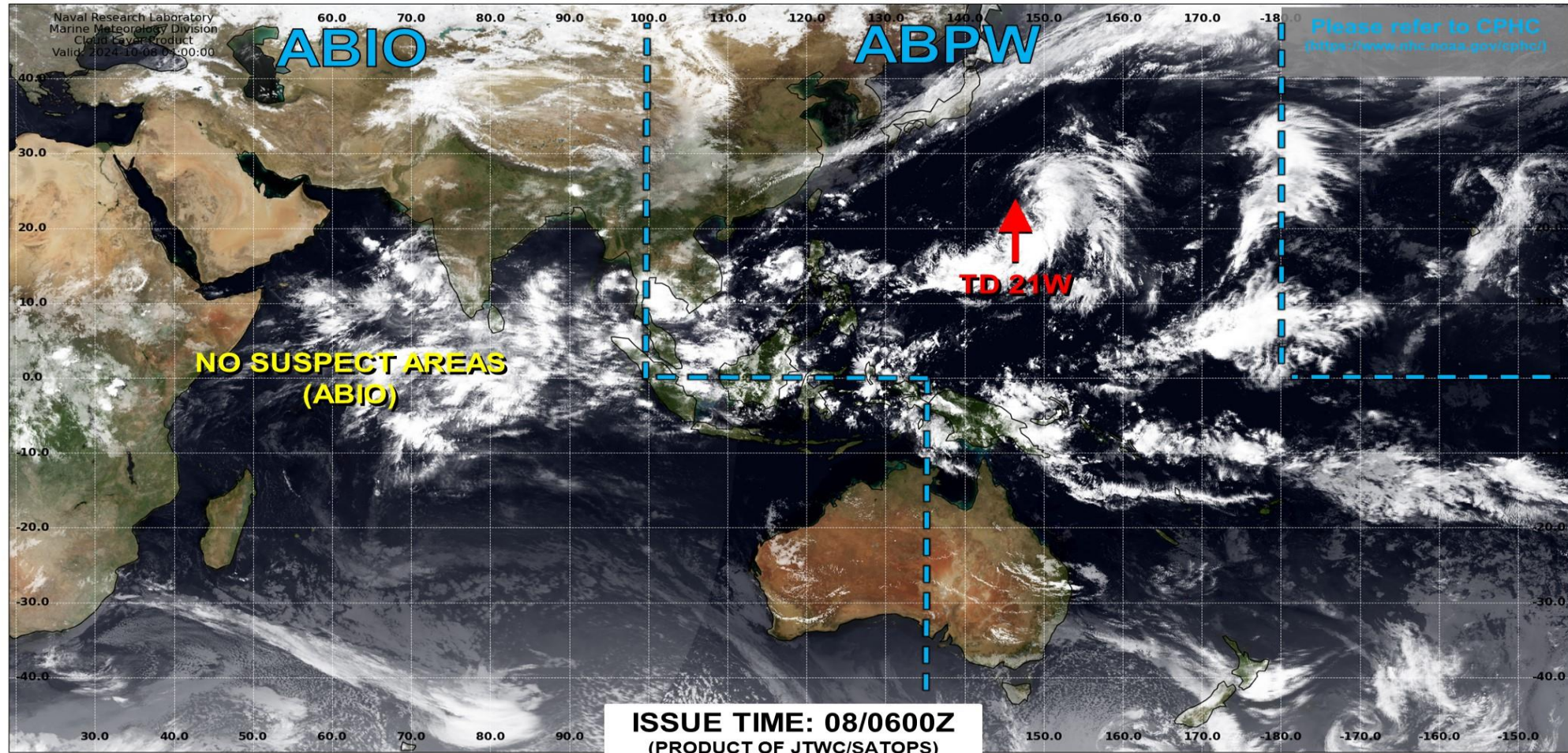
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



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)



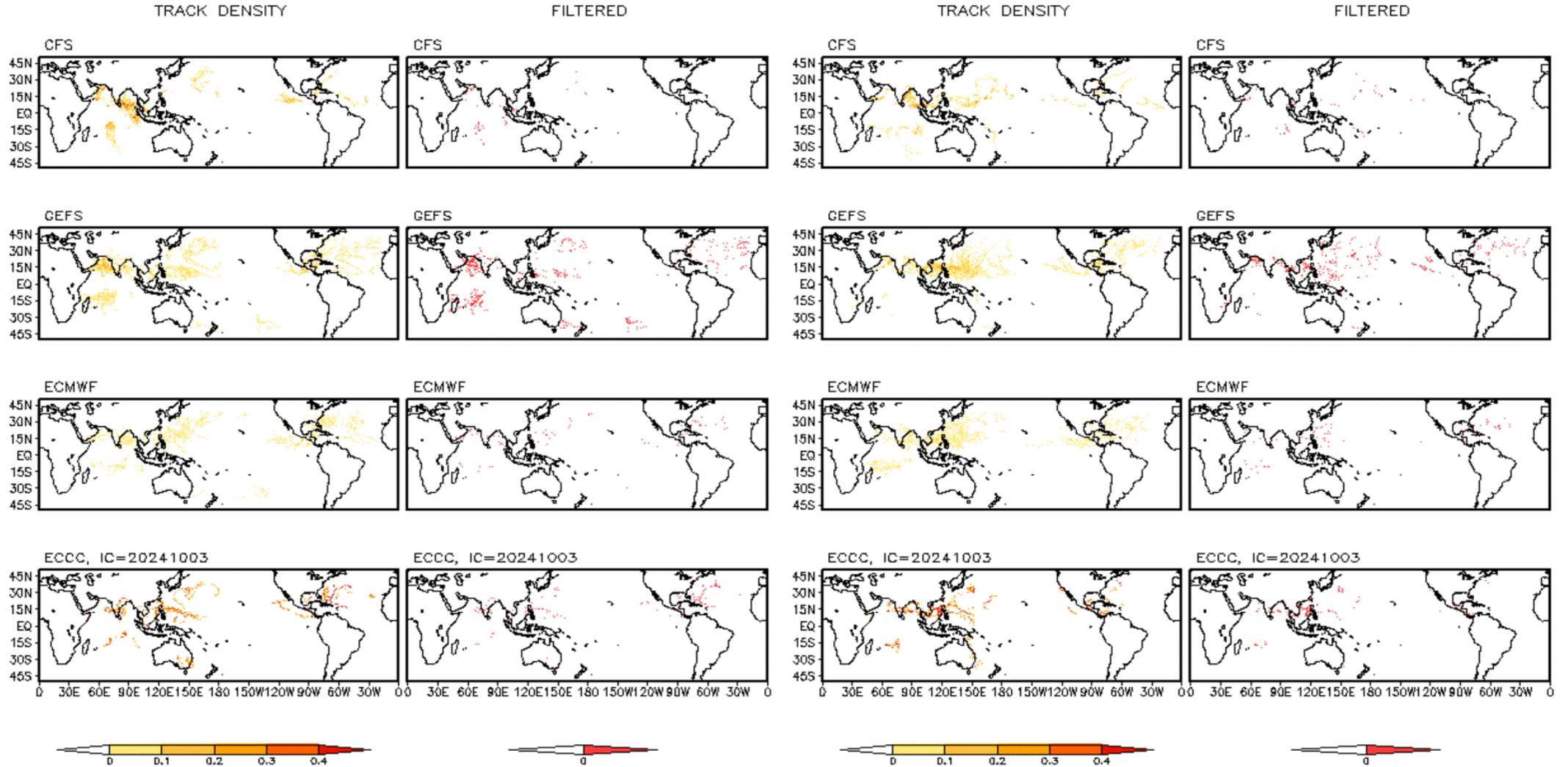
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



Multi-Model TC Track Densities: Weeks 2+3

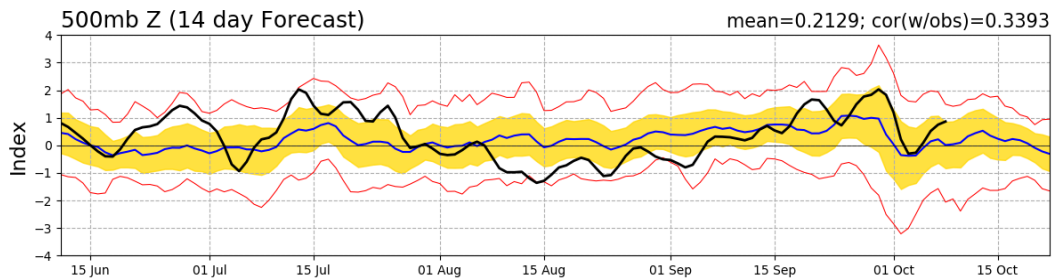
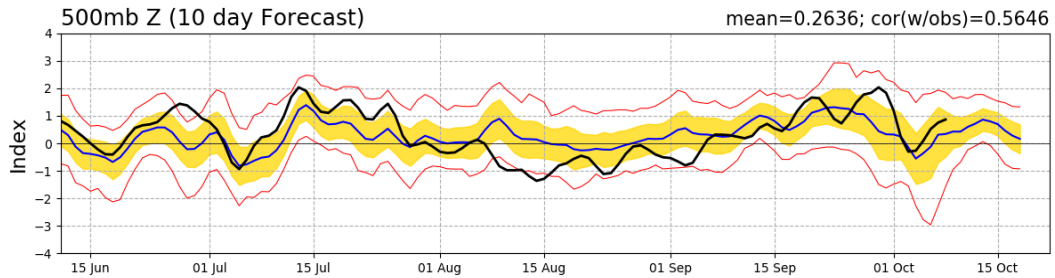
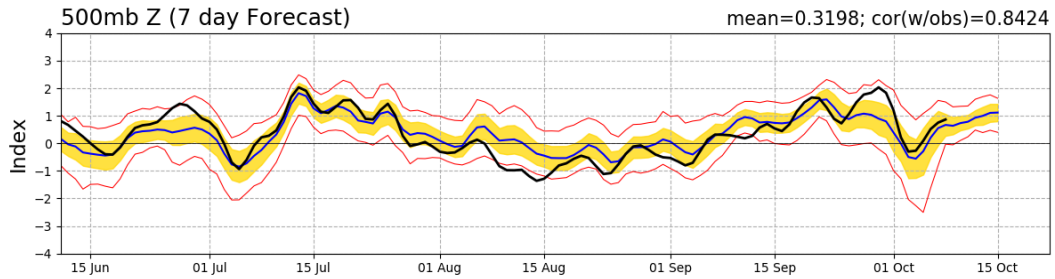
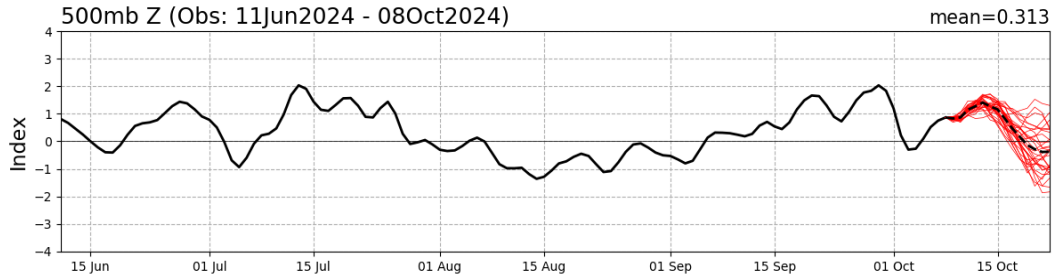
Storm Track Density Distribution, IC=20241007
Week 2 Forecast: 1016-1022

Storm Track Density Distribution, IC=20241007
Week 3 Forecast: 1023-1029

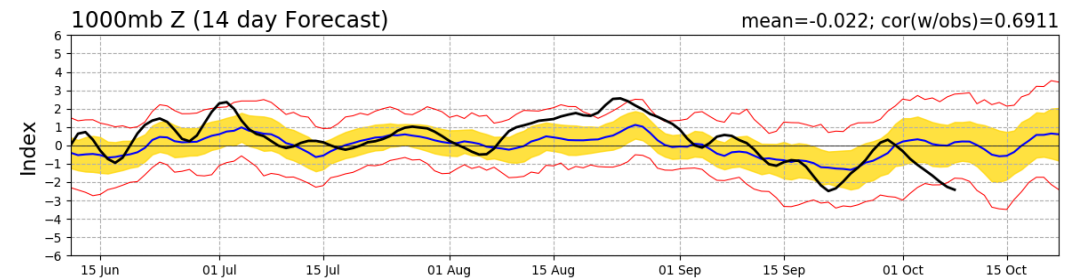
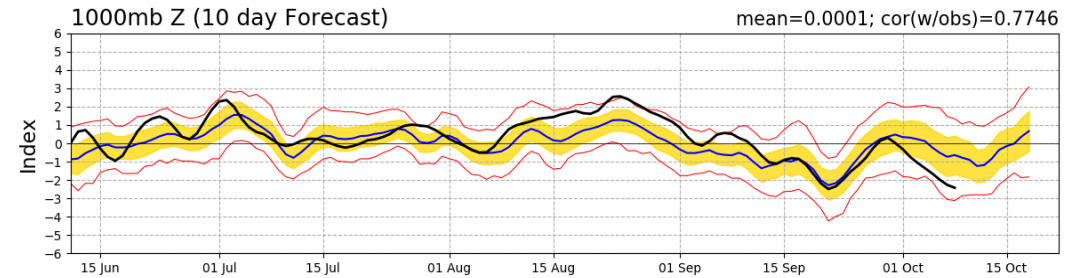
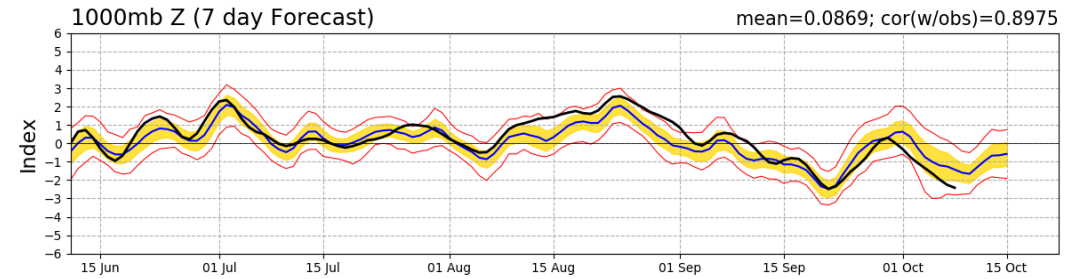
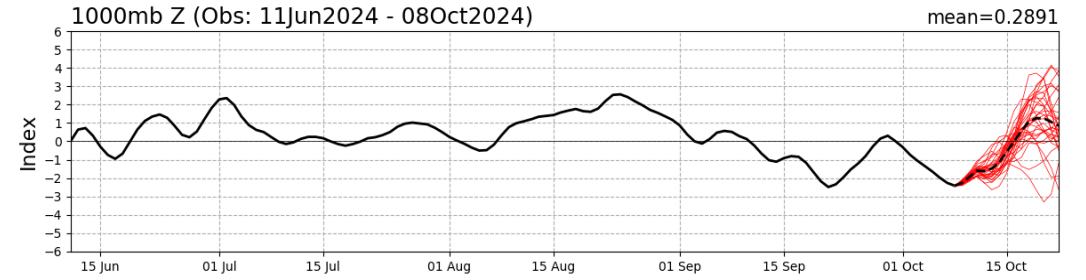


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

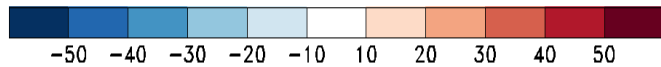
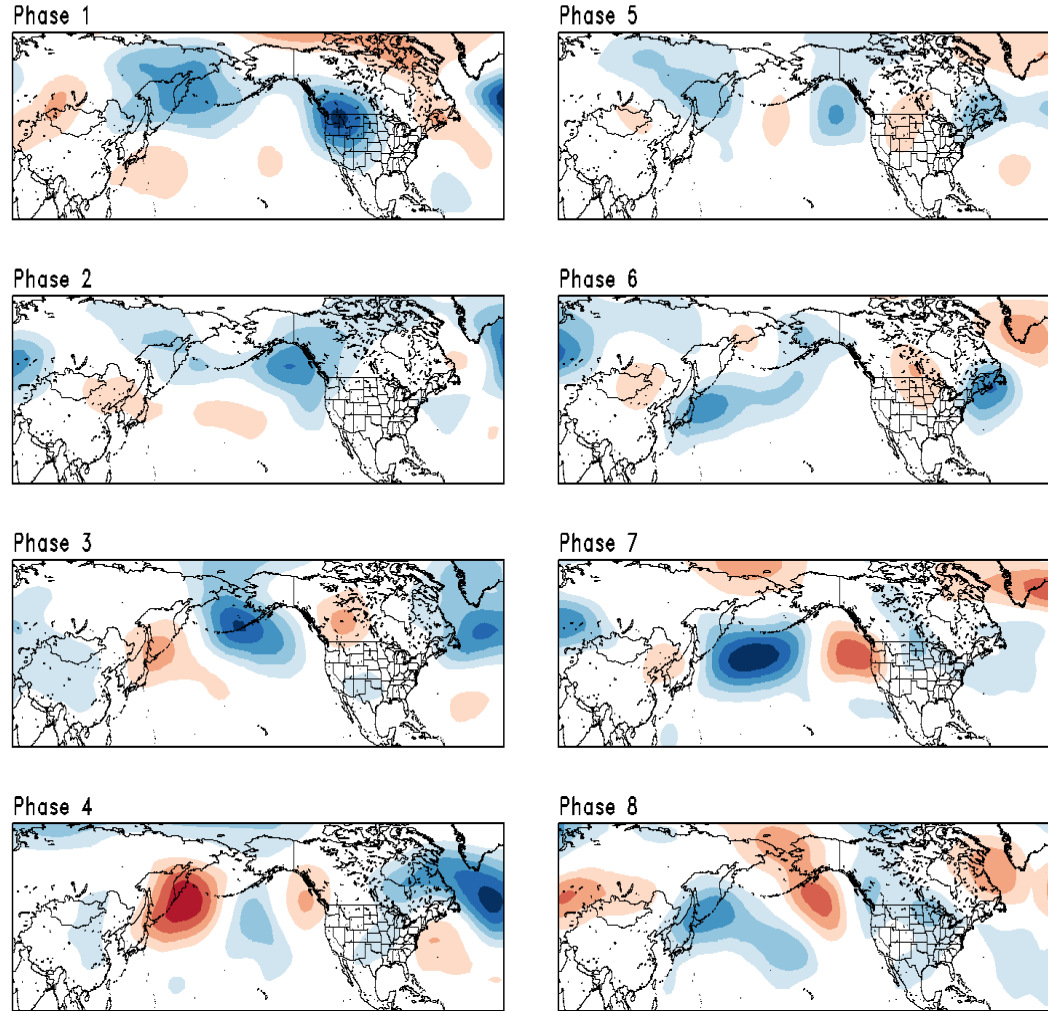


AO Index: Observed & GEFS Forecasts

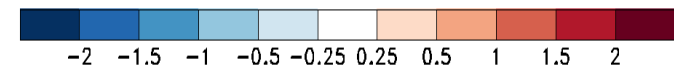
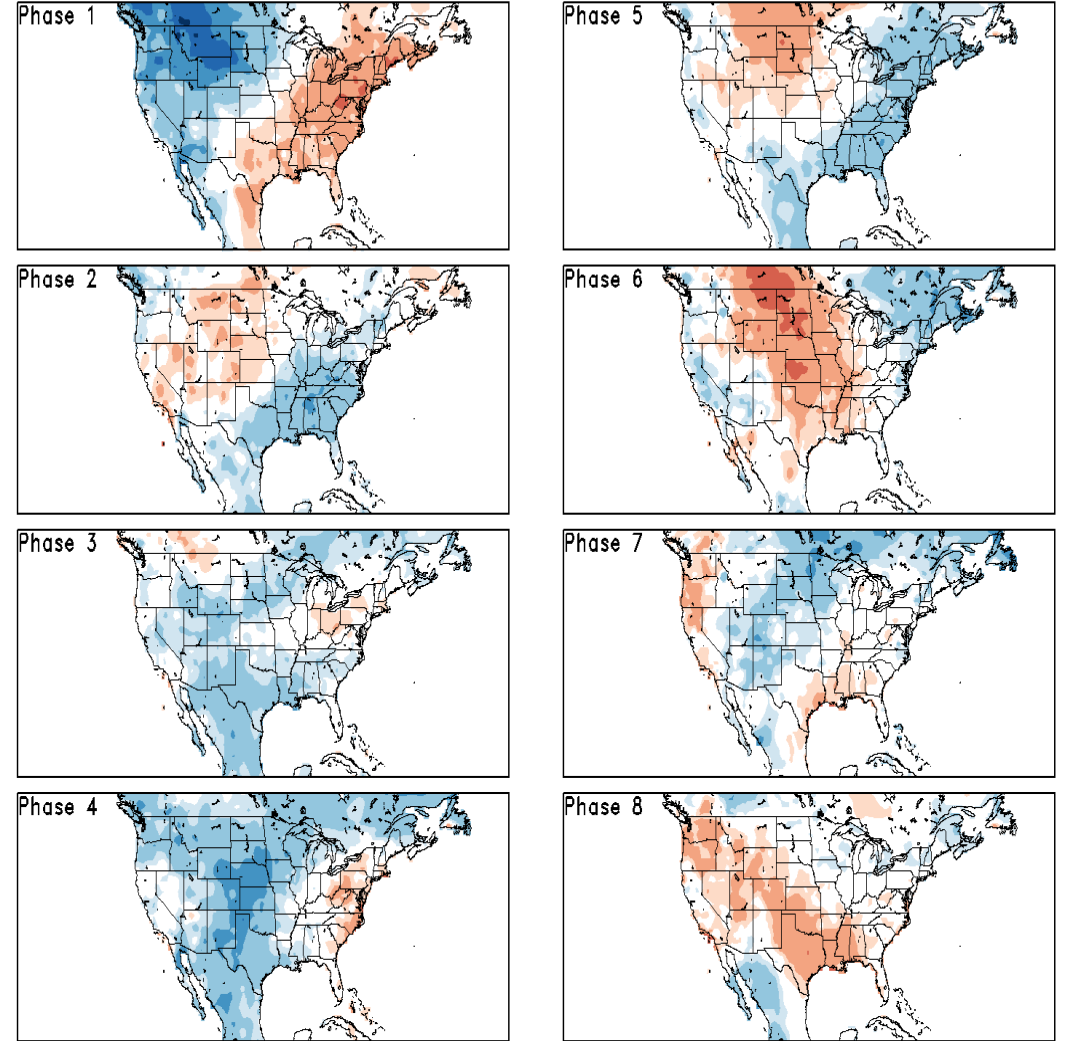


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

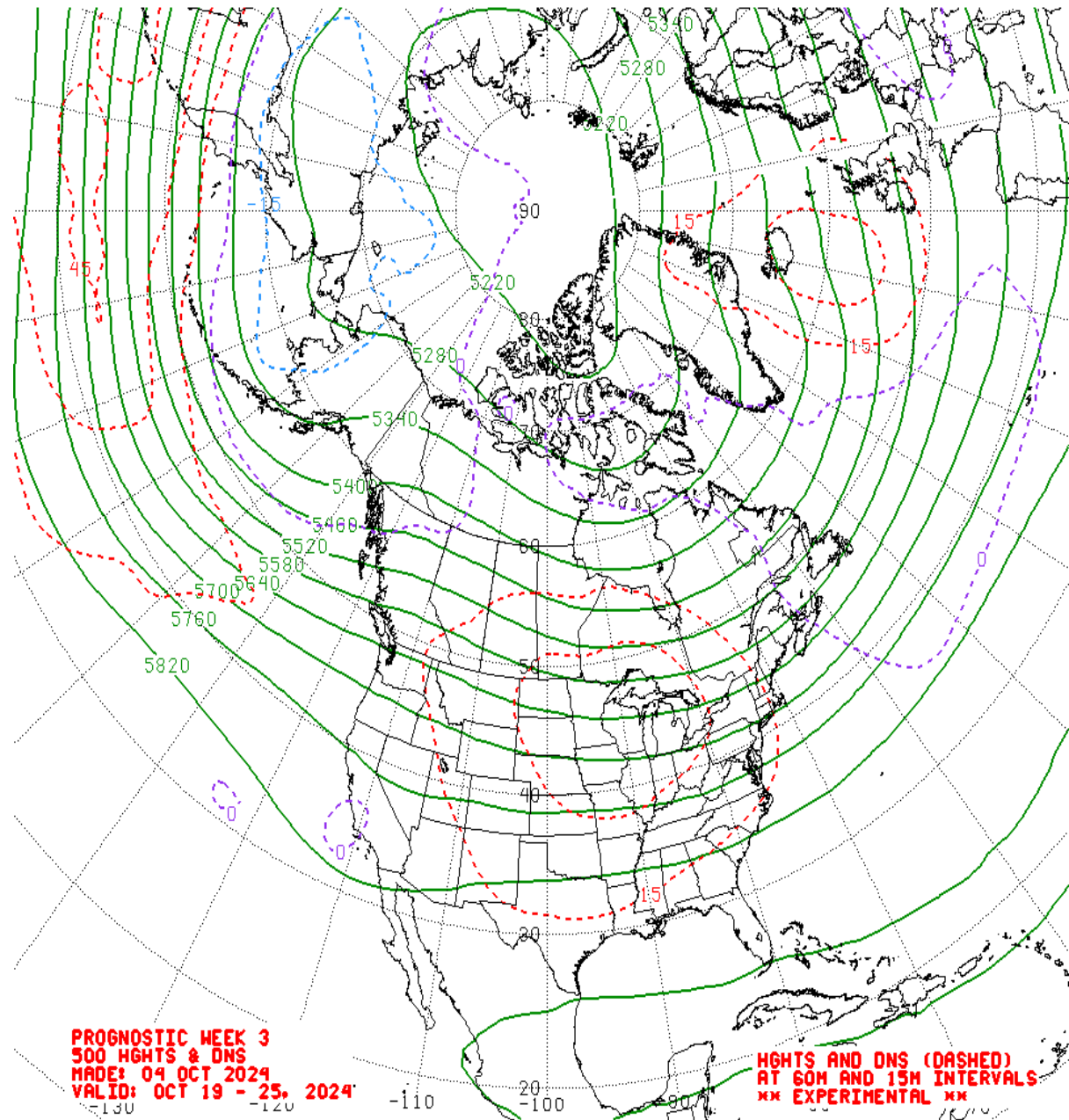
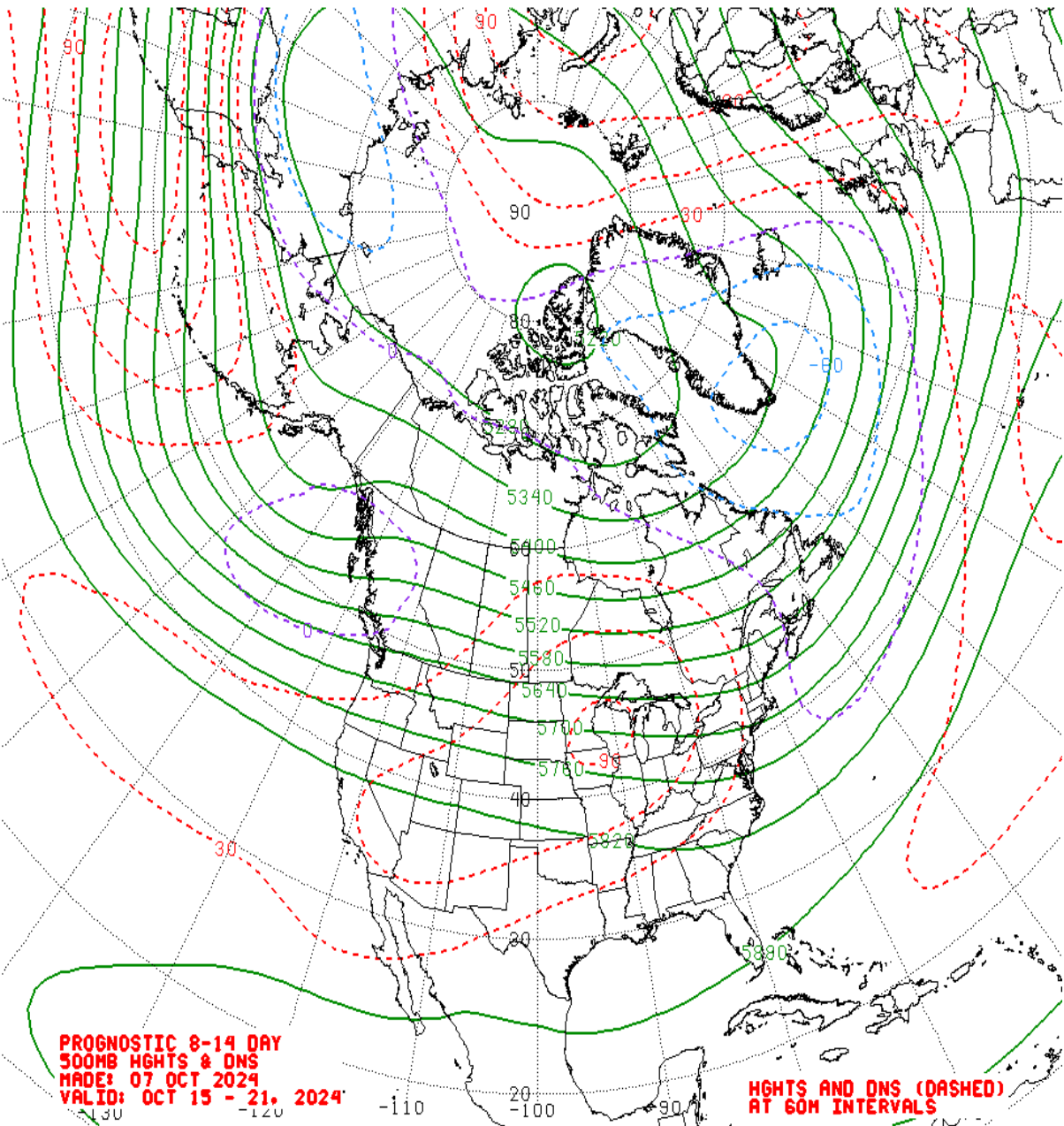
SON MJO Composite: CDAS 500-hPa Height (m)



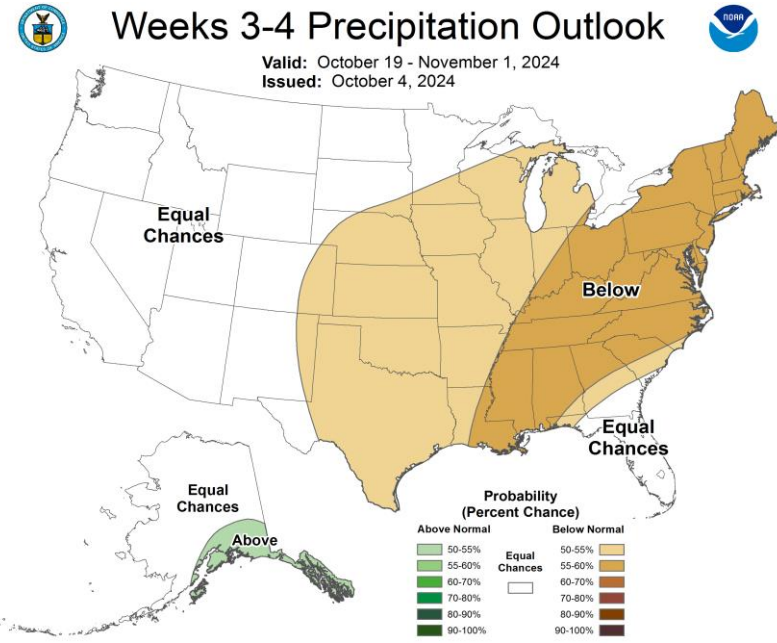
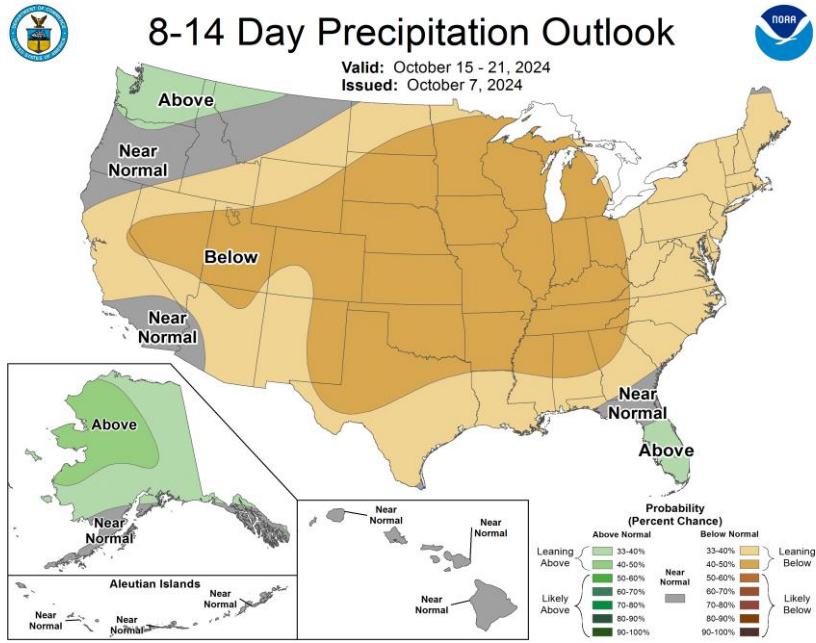
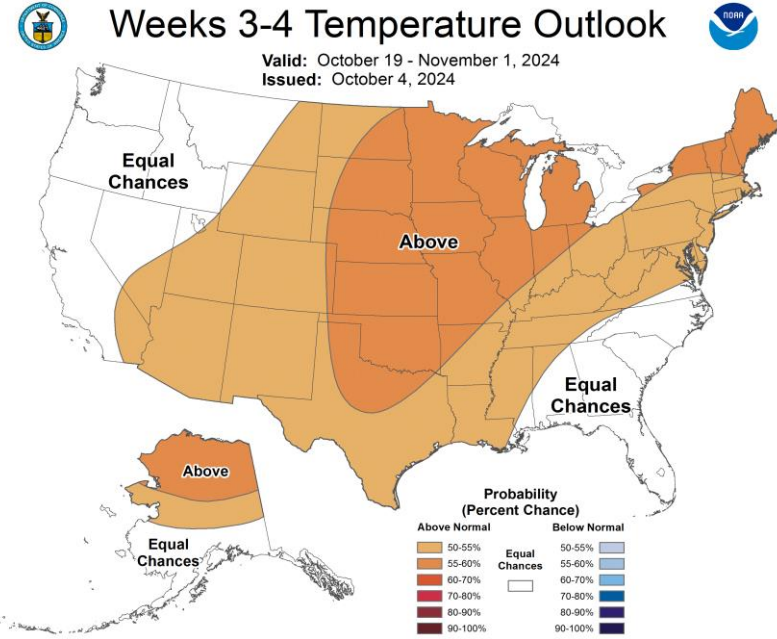
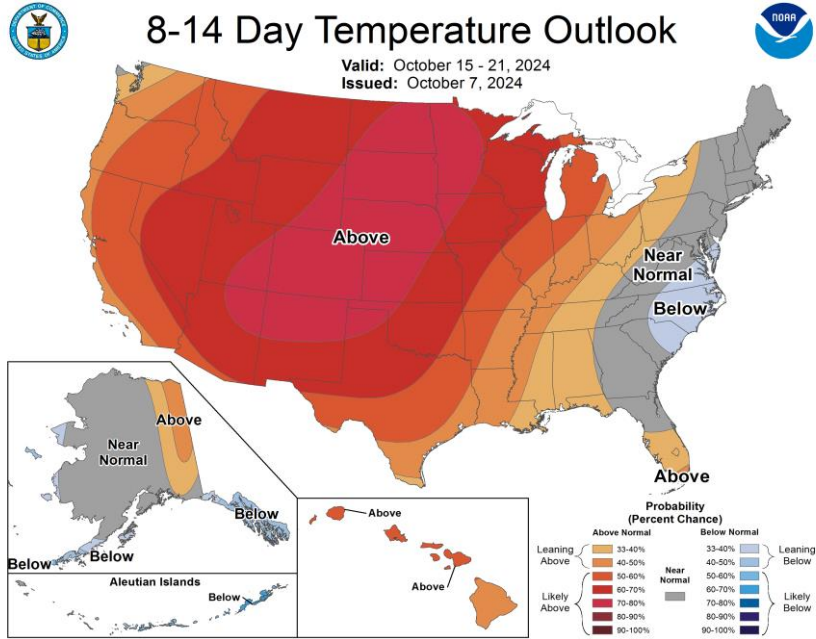
SON MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



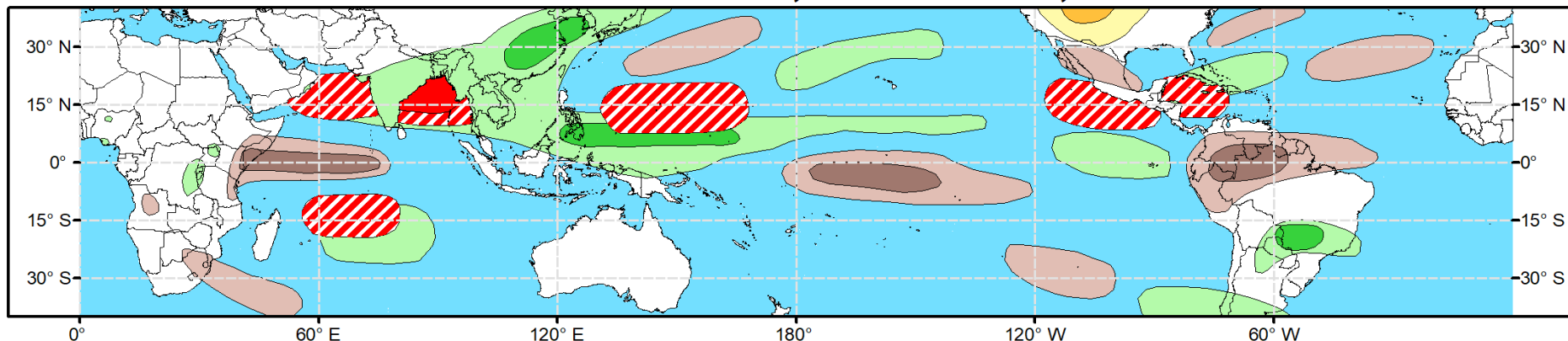


Global Tropics Hazards Outlook

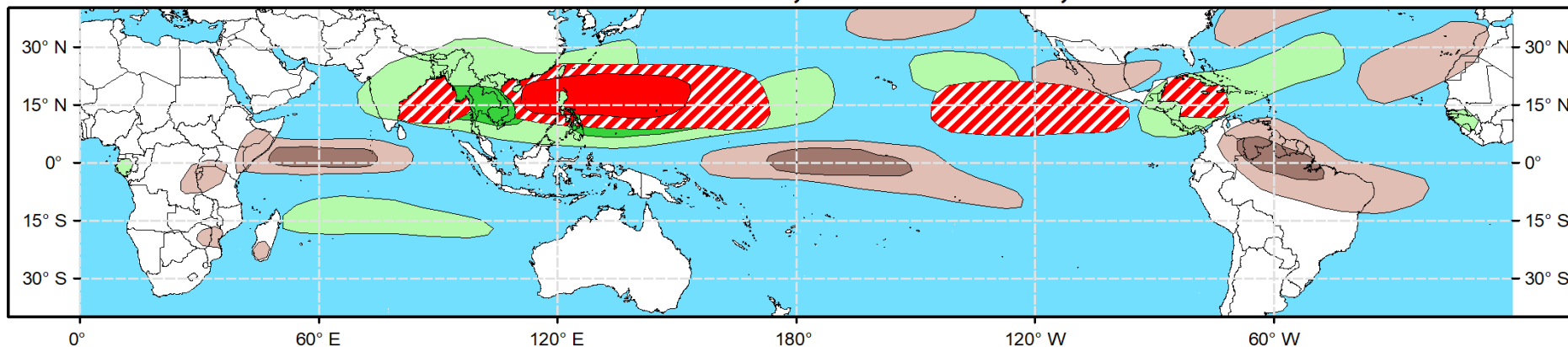
Climate Prediction Center



Week 2 - Valid: Oct 16, 2024 - Oct 22, 2024



Week 3 - Valid: Oct 23, 2024 - Oct 29, 2024



**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*

Issued: 10/08/2024

Forecaster: Barandiaran

This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.