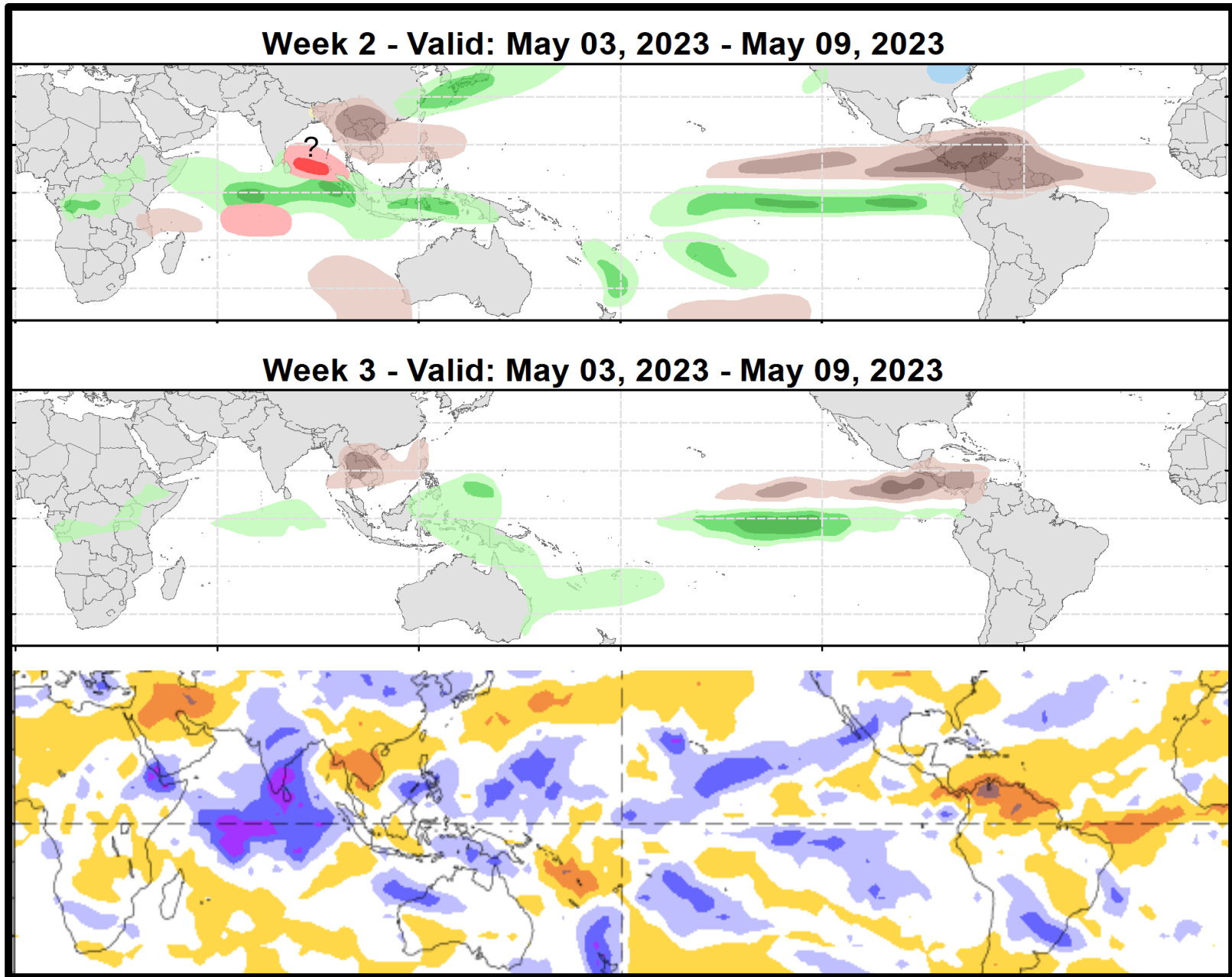
Weeks 2-3 Global Tropics Hazards Outlook

5/9/2023

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

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

- ? – Invest 91B



Synopsis of Climate Modes:

ENSO: (Apr 13, 2023 Update) ***next update on Thursday, May 11th***

- ENSO Alert System Status: El Niño Watch

- ENSO neutral conditions are expected to continue through the Northern Hemisphere spring, followed by a 62% chance of El Nino developing during May-July 2023.

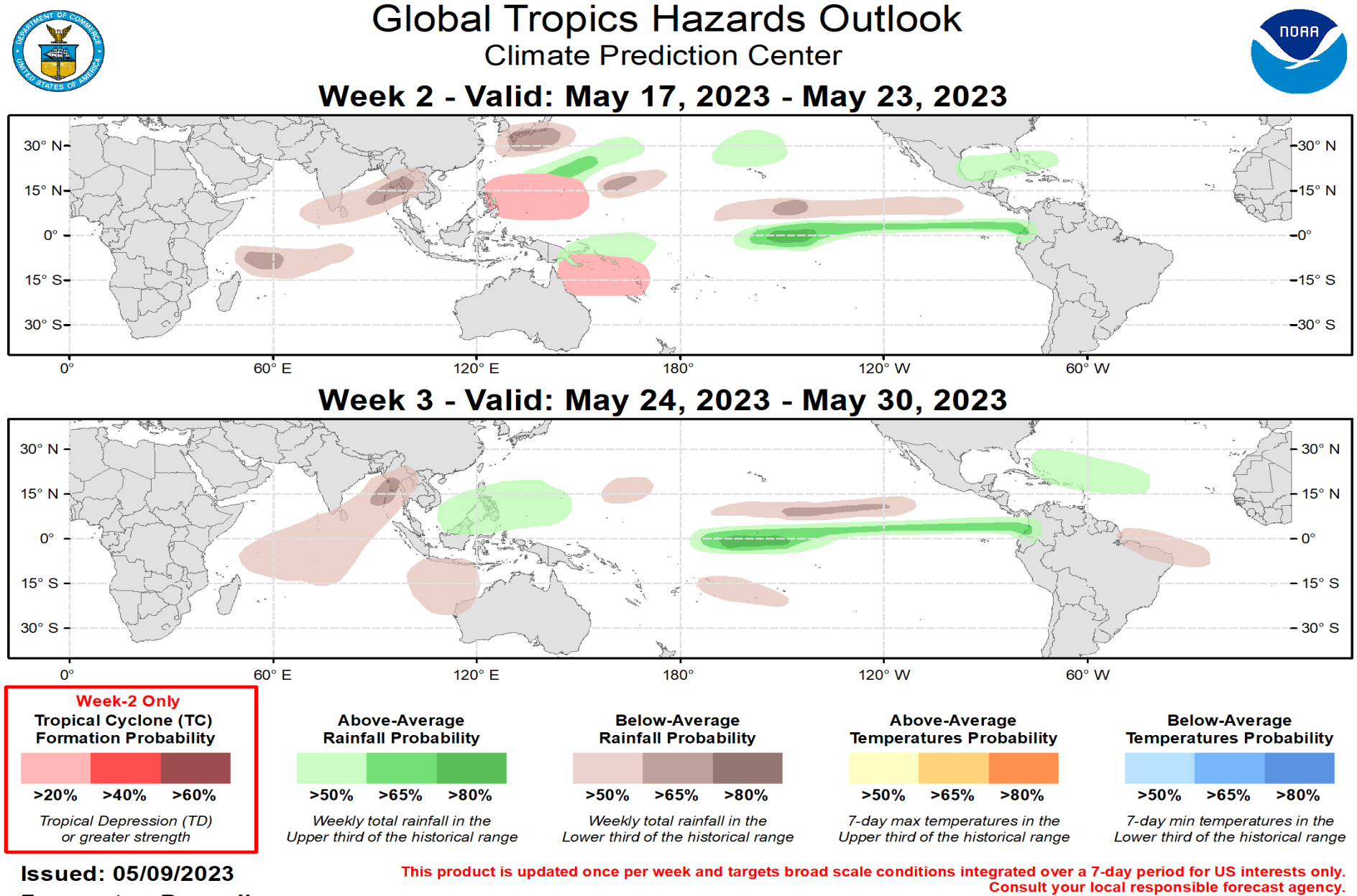
MJO and other subseasonal tropical variability:

- Robust MJO activity continues and has largely supplanted ENSO as the dominant mode of variability in the Tropics.

- Dynamical models depict continued MJO activity, with enhanced convective envelope moving from the Maritime Continent into the Western Pacific during the coming two weeks and suppressed convection emerging over the Indian Ocean by week-2.

- The enhanced MJO phase moving into phase 6 favors increased probabilities of tropical cyclone (TC) formation over the Western Pacific coinciding with a climatological uptick in TC activity over the basin.

GTH Outlook:


Global Tropics Hazards Outlook
Climate Prediction Center
Week 2 - Valid: May 17, 2023 - May 23, 2023
Week 3 - Valid: May 24, 2023 - May 30, 2023
30° N
15° N
0°
15° S
30° S
0°
60° E
120° E
180°
120° W
60° W
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 Upper third of the historical range
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Issued: 05/09/2023
Forecaster: Barandiaran
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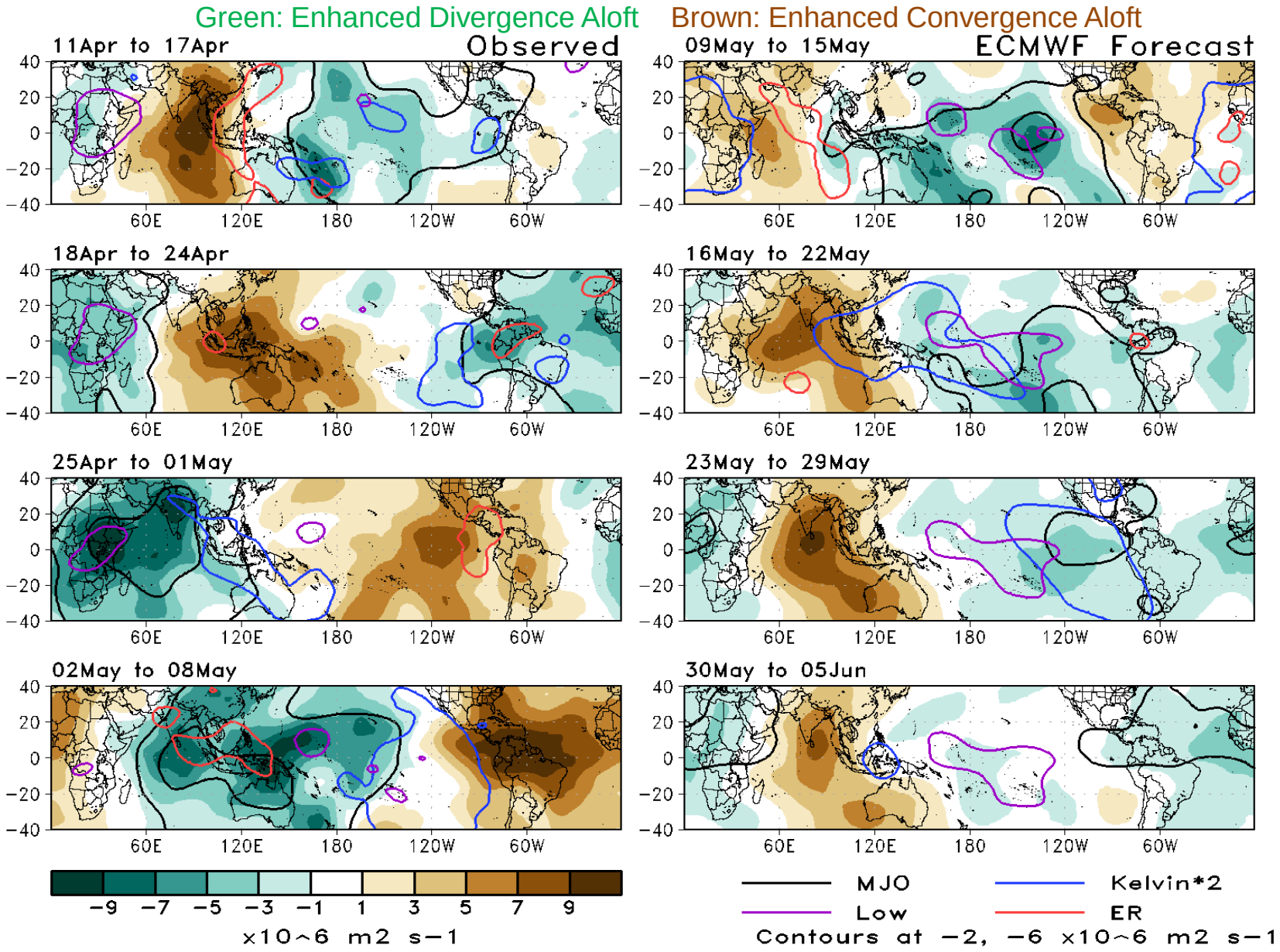
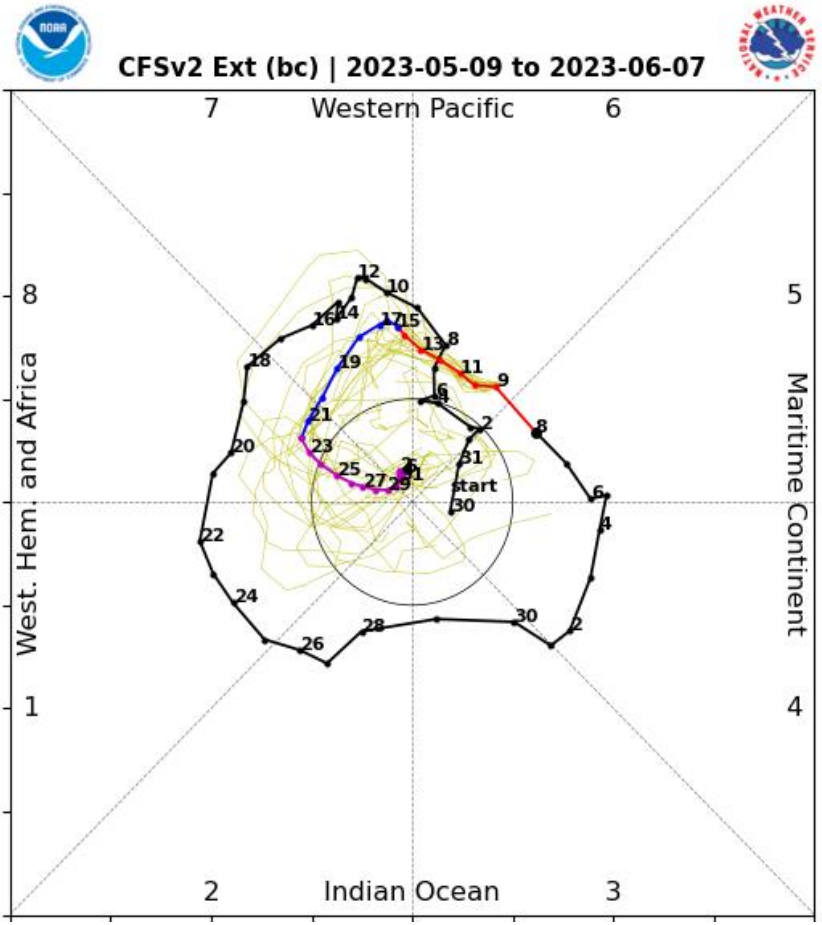
200-hPa Velocity Potential Anomaly Maps:

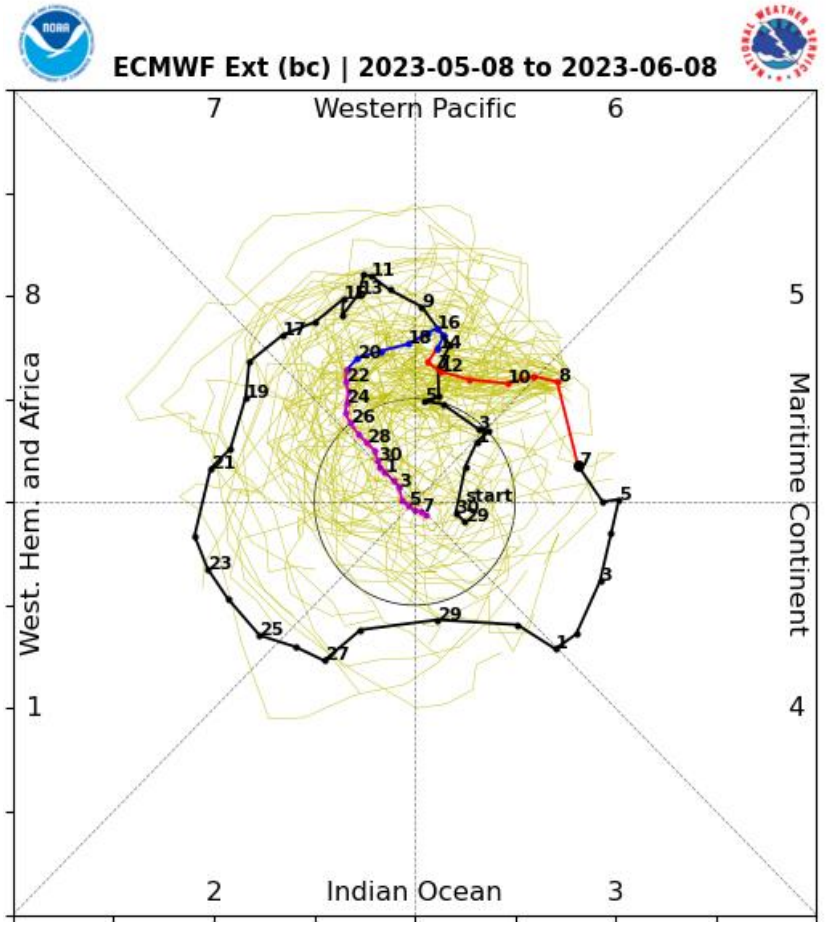
- Recent robust MJO activity is evident with a well-defined wave-1 symmetry strengthening over the last few weeks up to present. Steady eastward propagation is also clear.

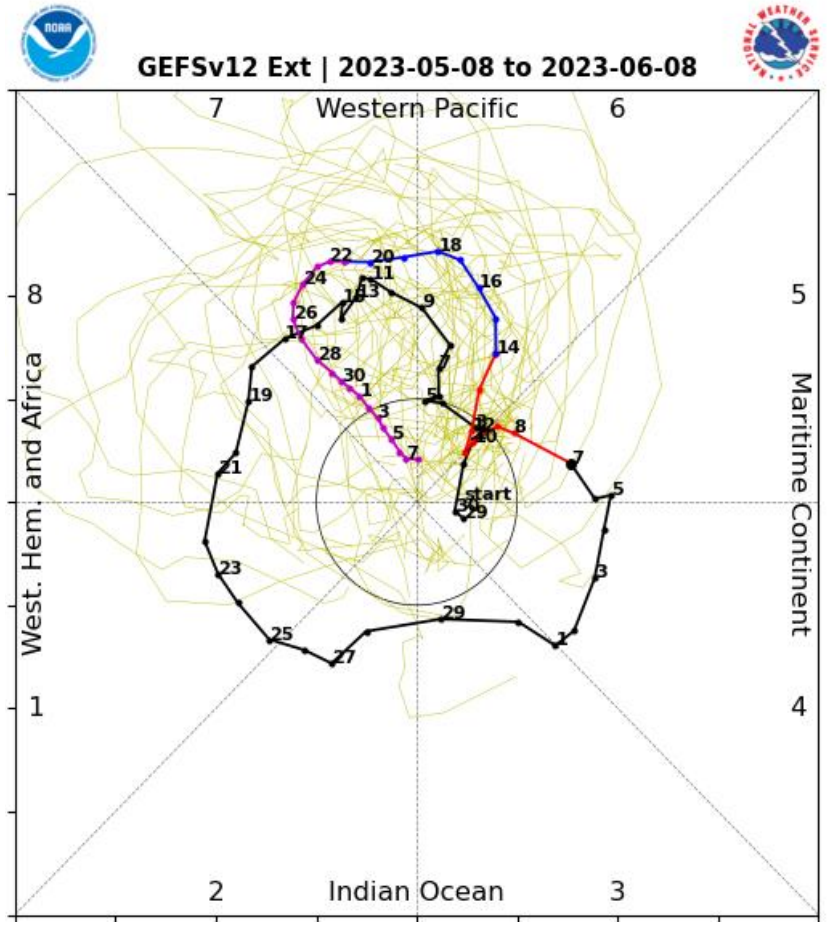
- Looking ahead, the ECMWF depicts steady eastward propagation of the enhanced convective envelope into the Western Hemisphere and the Americas by week-3, while suppressed convection tracks more slowly but moves into the Maritime Continent by week-3.



RMM Index Observations & Forecasts:

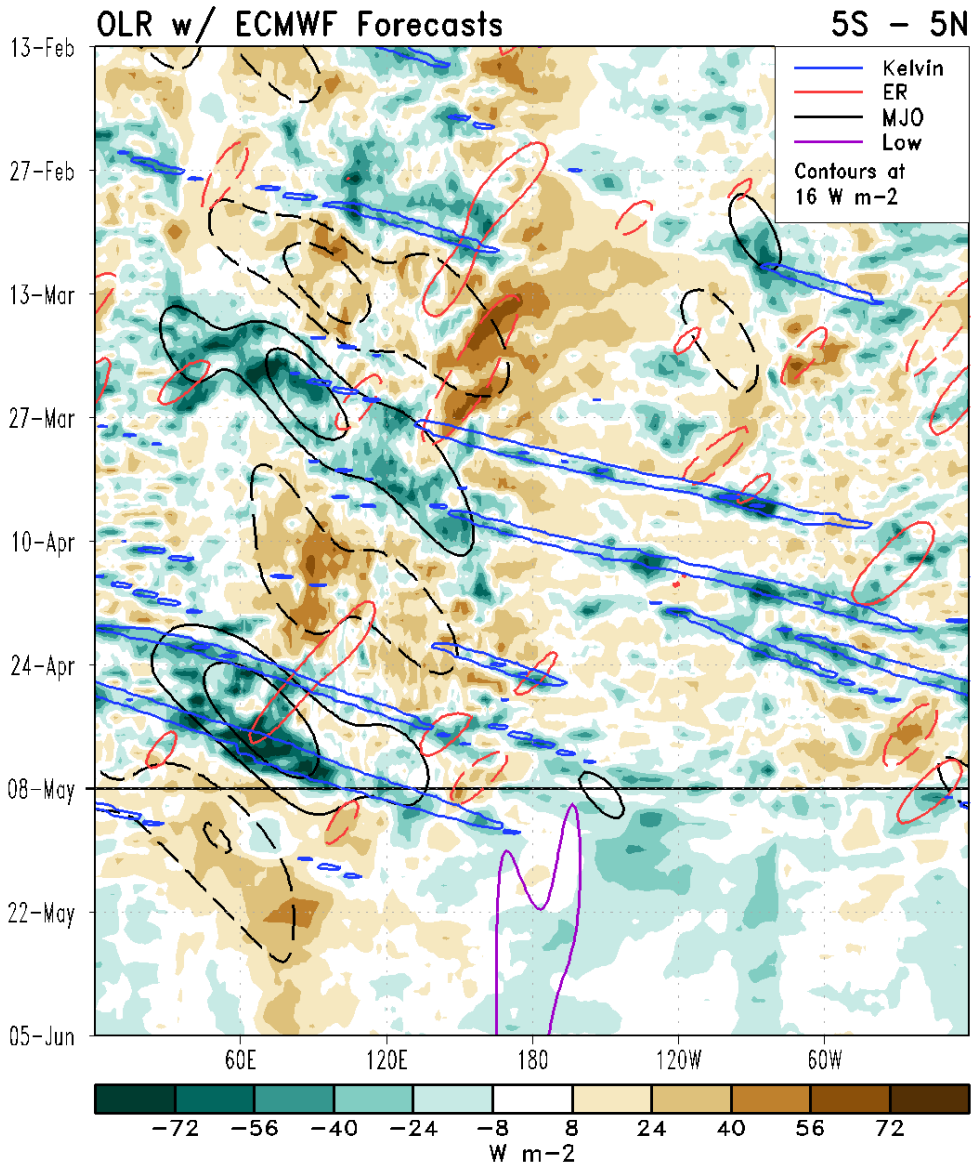


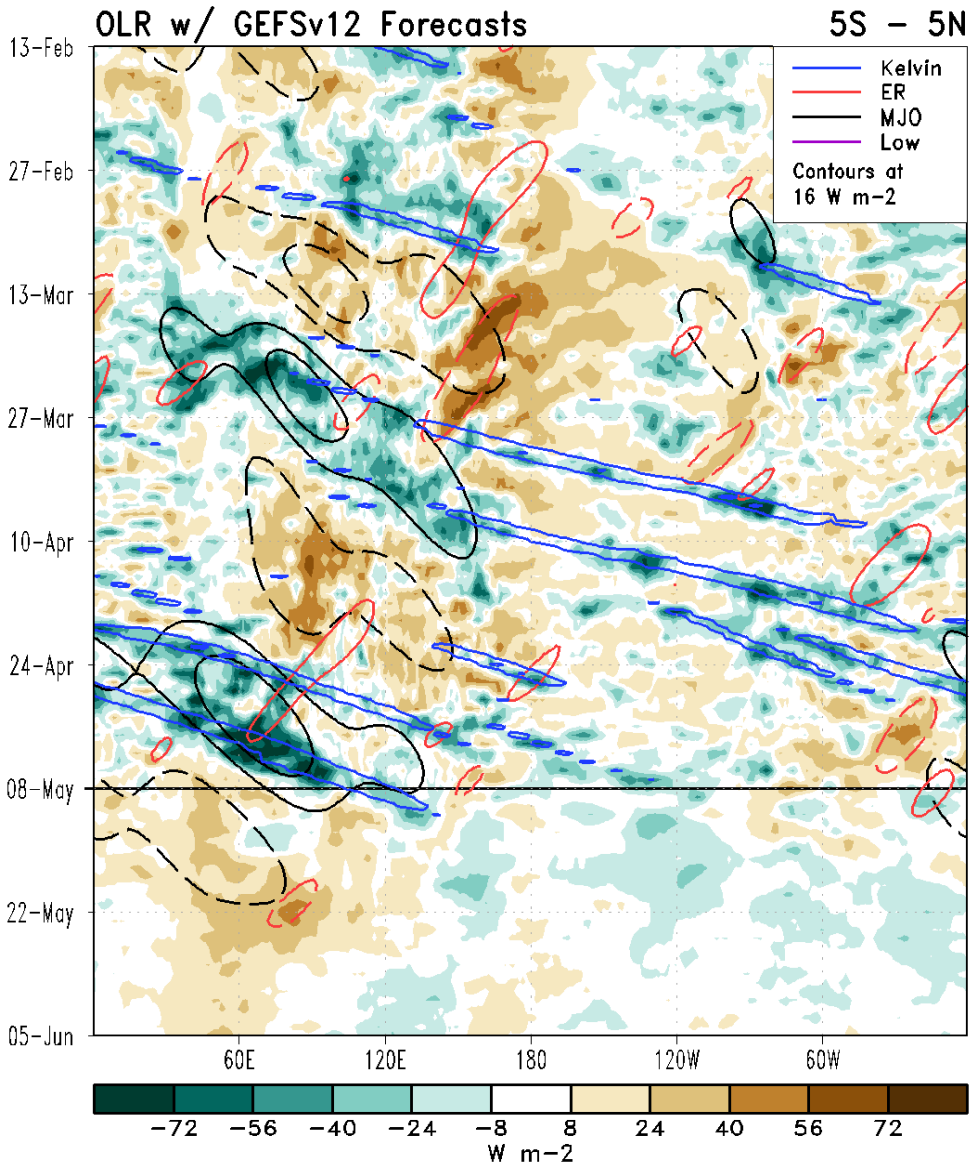




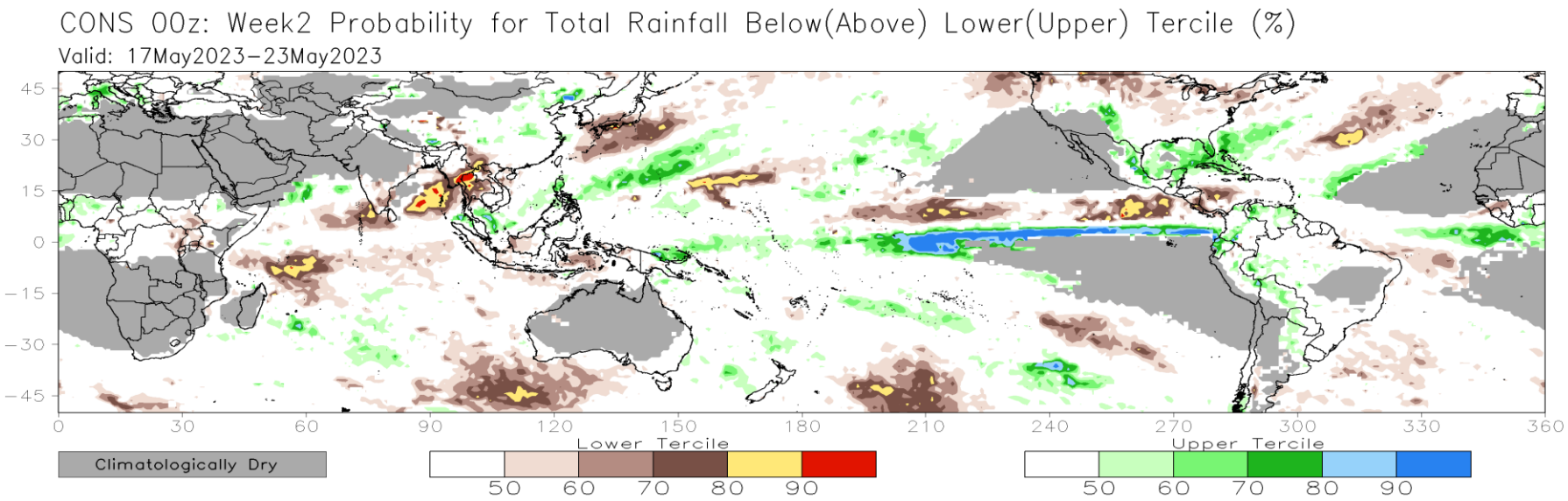
- Both the GEFS and ECMWF ensembles depict continued propagation of the MJO signal into week-3. The GEFS increases signal strength in week-2 after being initially weaker than the ECMWF, which favors a more consistent amplitude. The CFS has a similar solution to the ECMWF.
- The ECMWF and CFS ensemble spreads are lower than the GEFS, but all models have solutions ranging from very low MJO activity to continued a robust MJO, with extreme events depicted by some GEFS members.

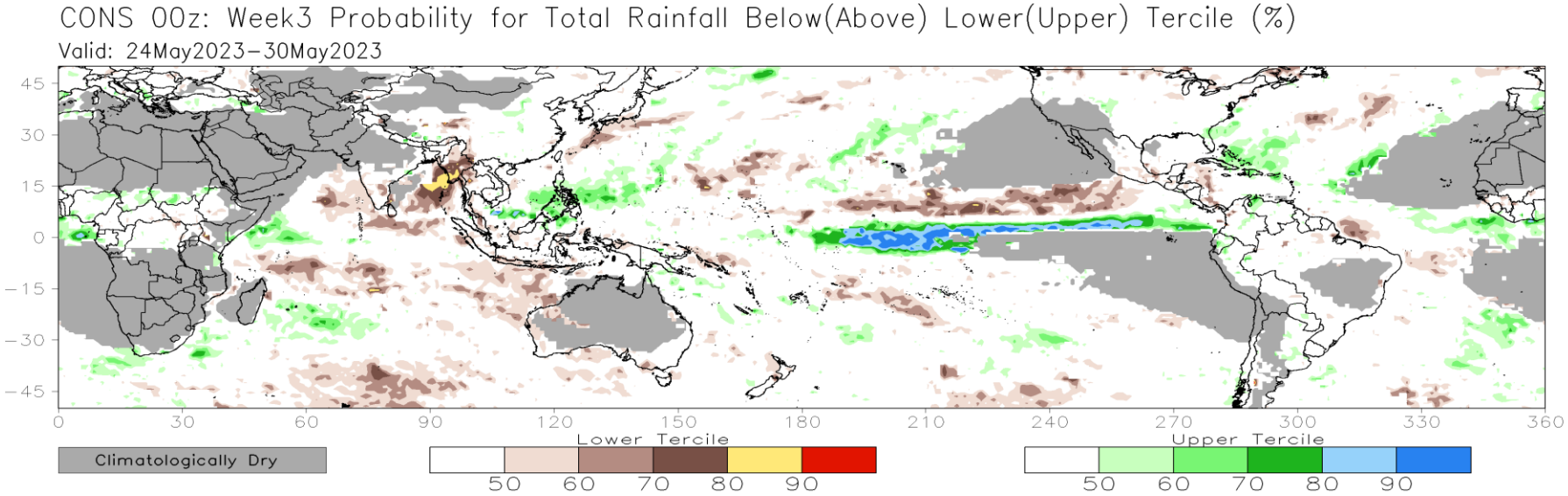
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



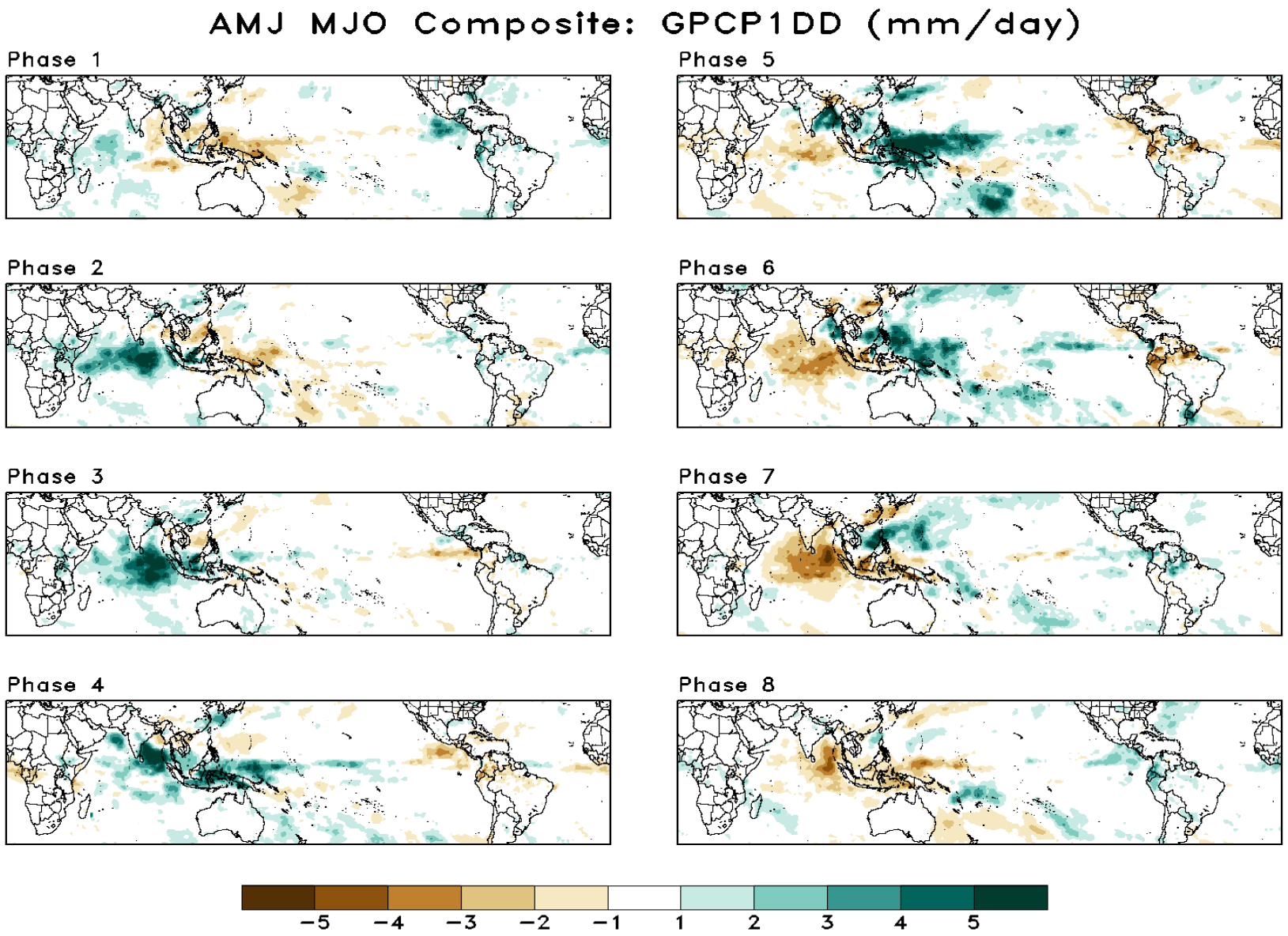


Consolidated Probabilistic Precipitation: Weeks 2 & 3

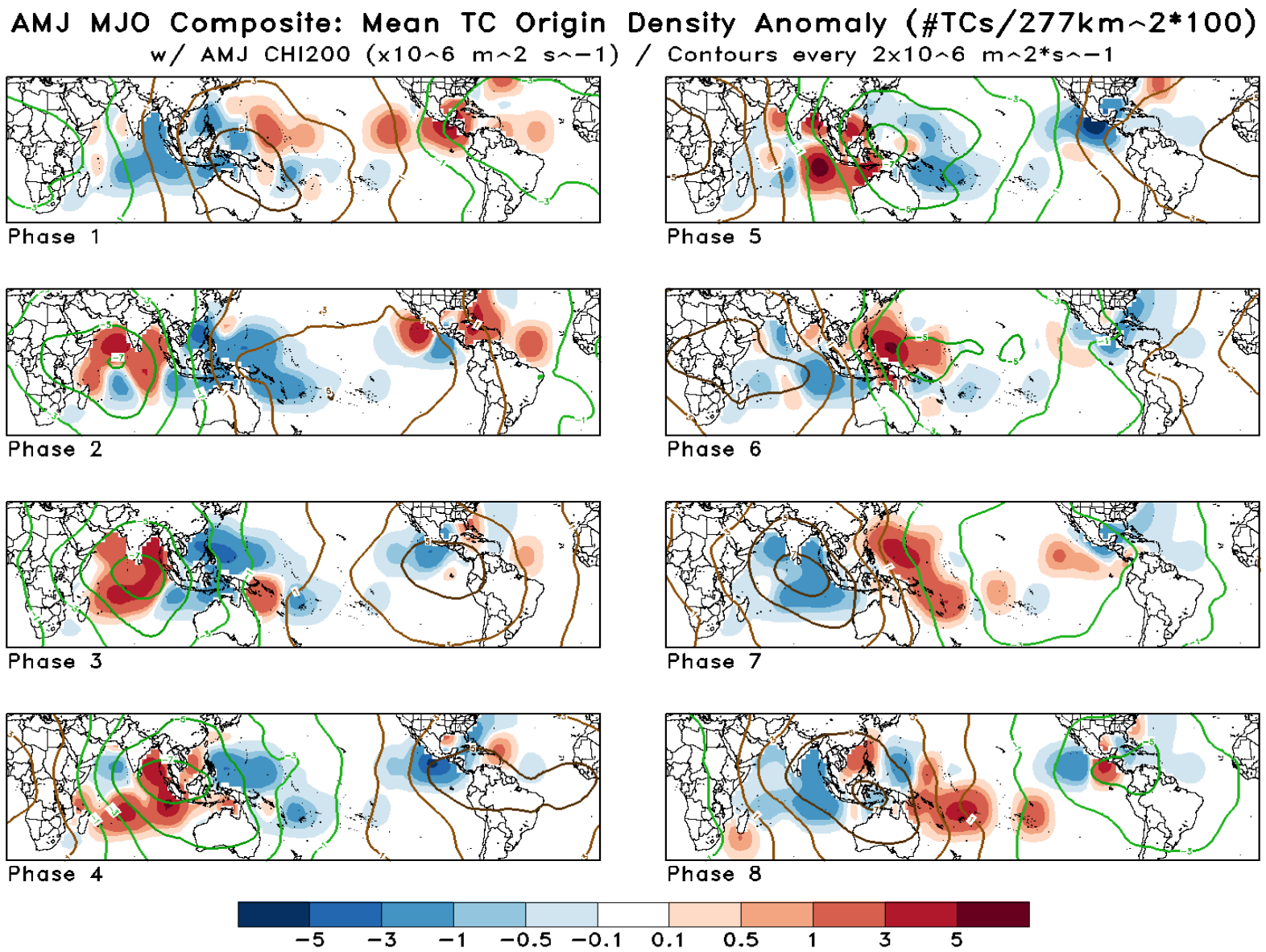


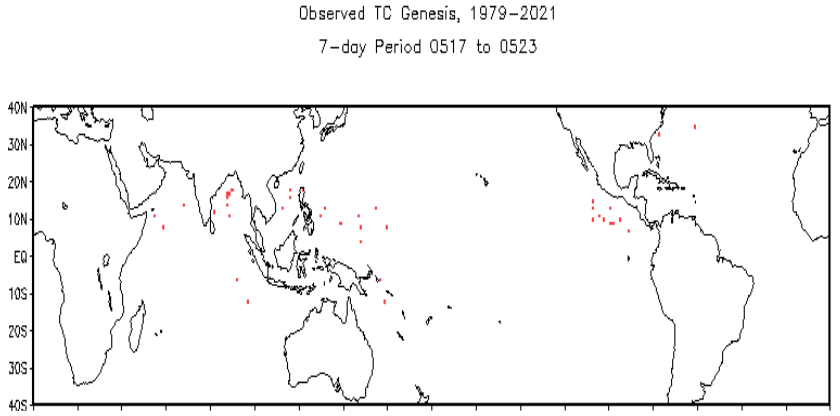


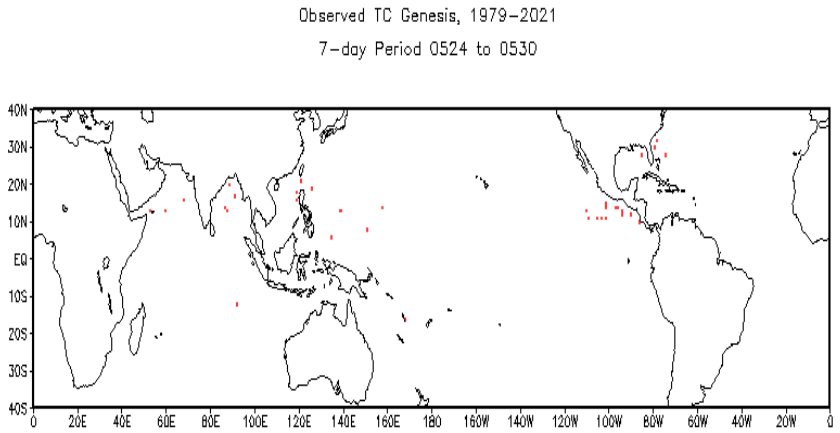
Historical Precipitation Anomalies By MJO Phase:



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

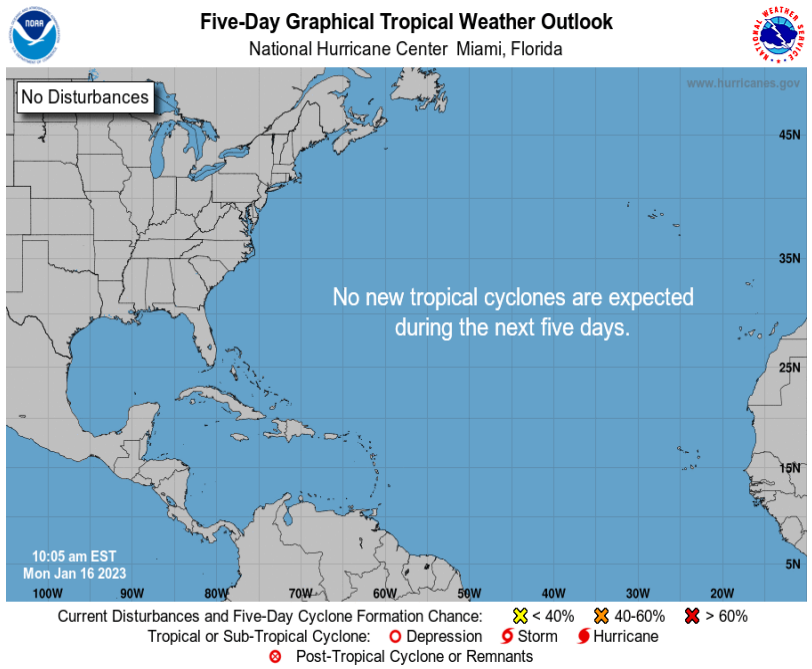


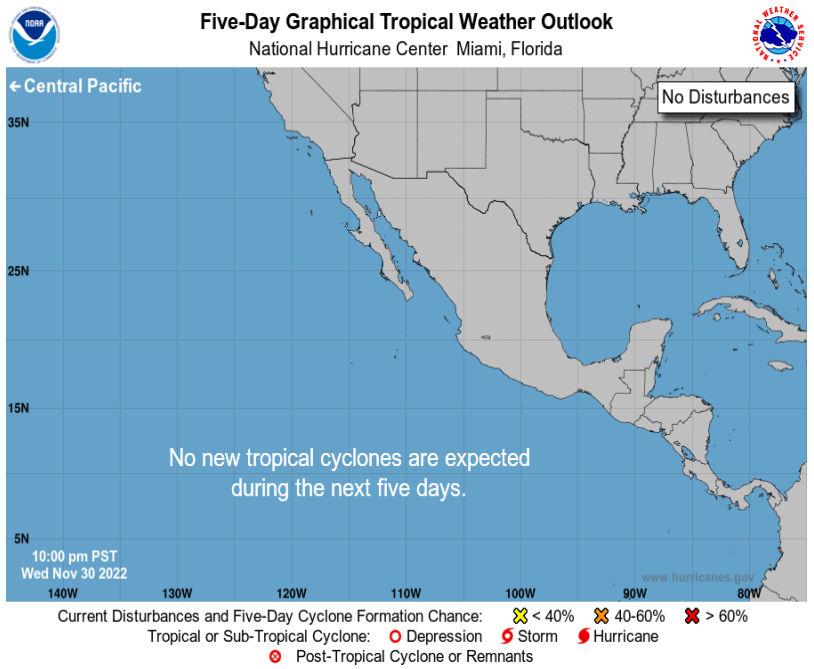


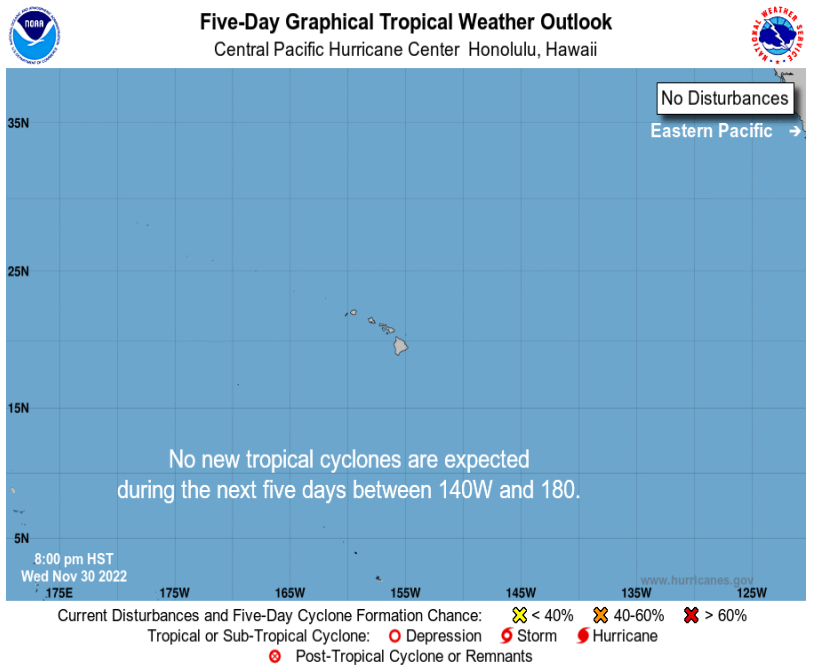


Experimental

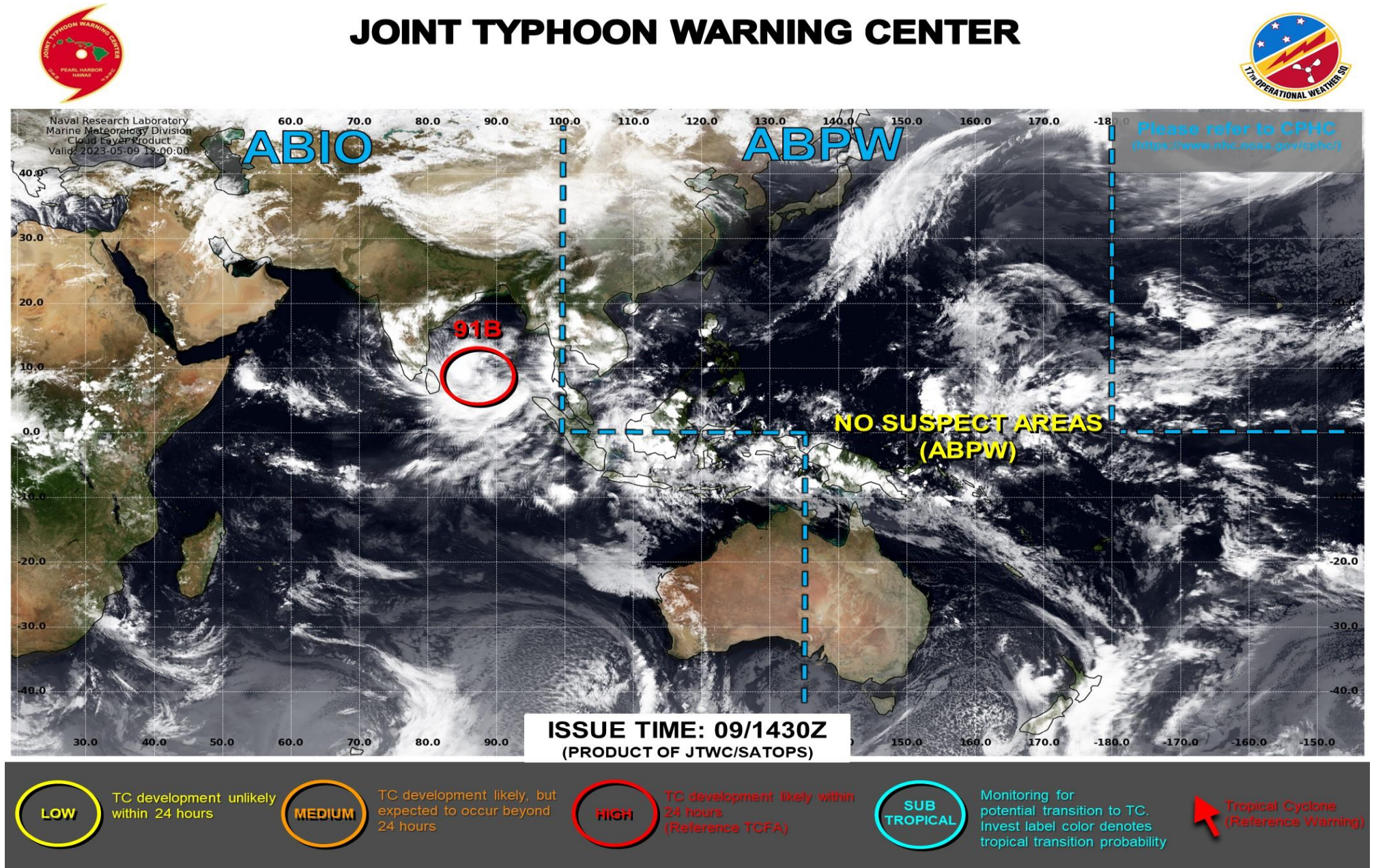
Tropical Cyclone Monitoring/Forecast: NHC



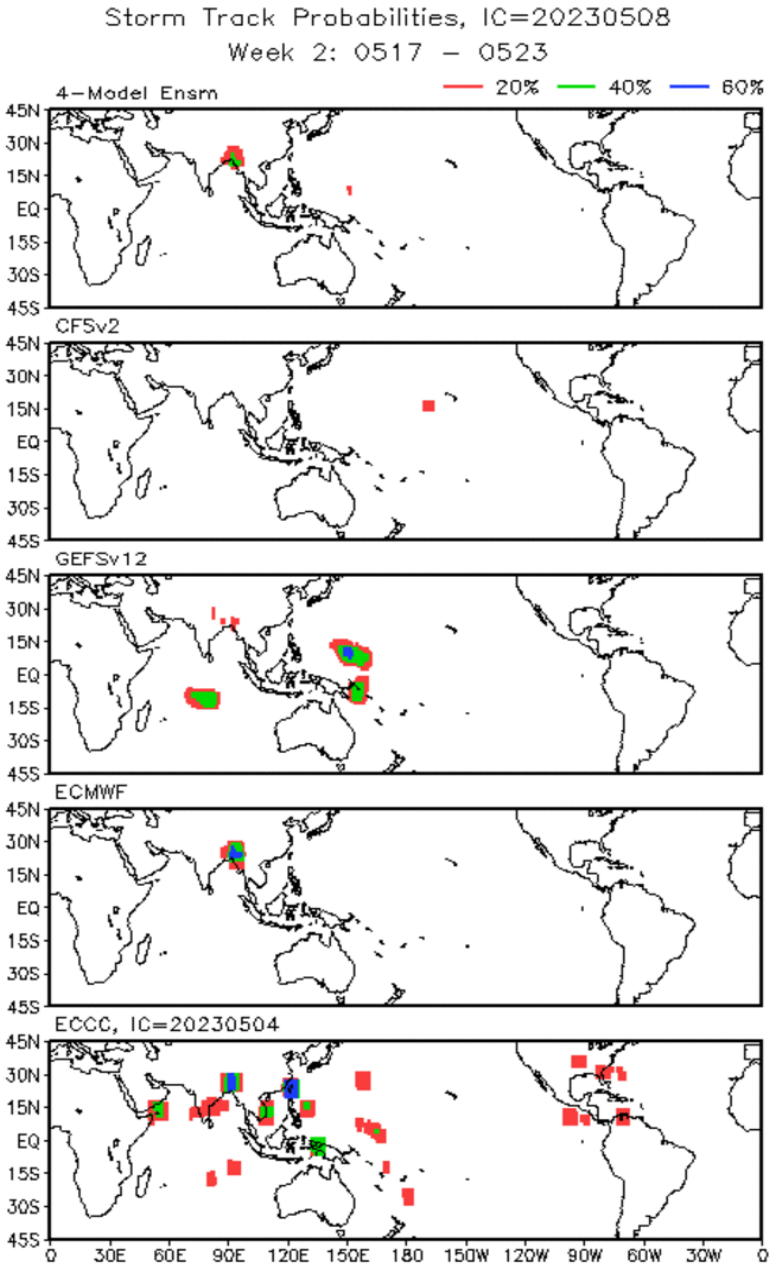


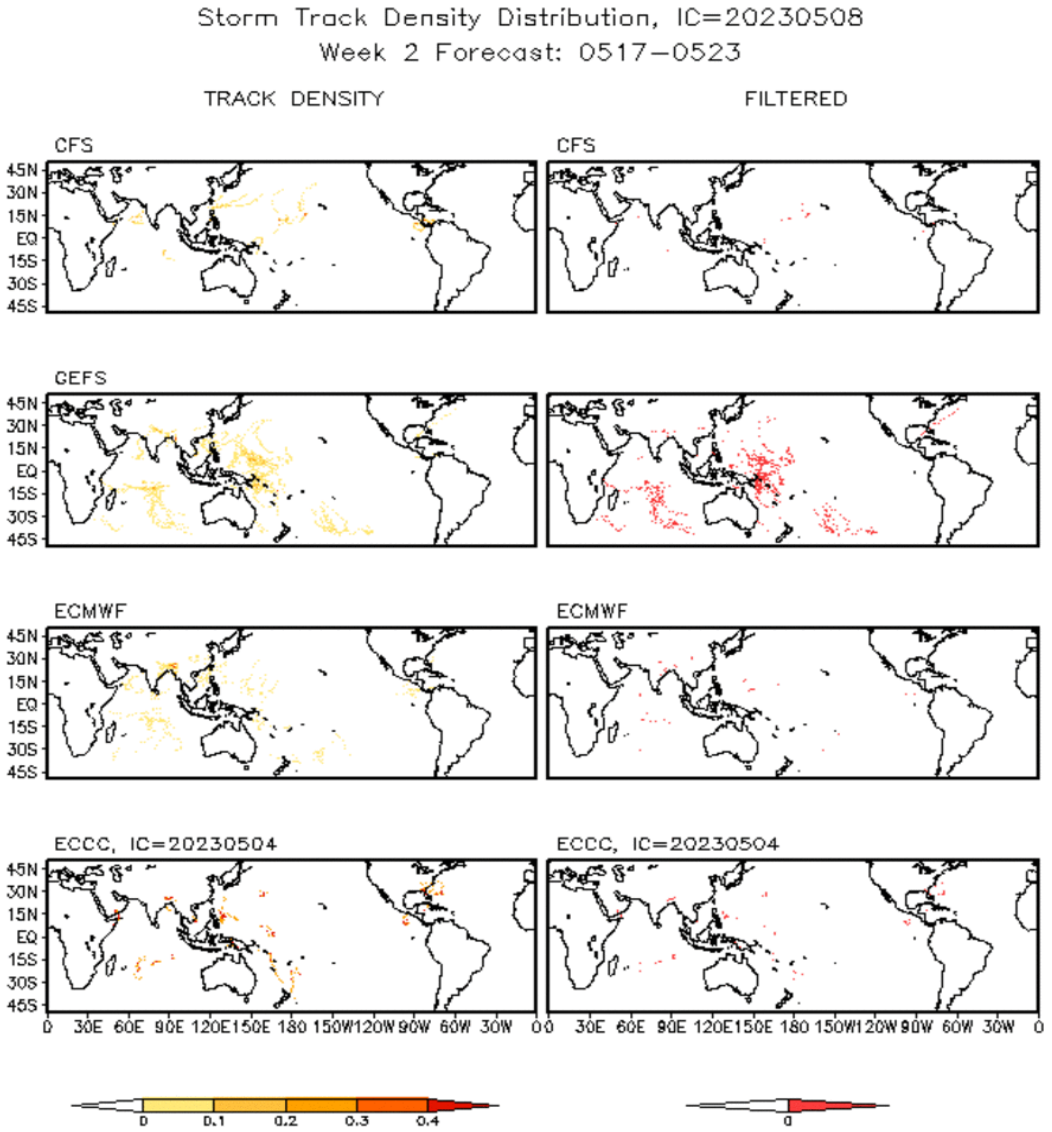


Tropical Cyclone Monitoring/Forecast: JTWC



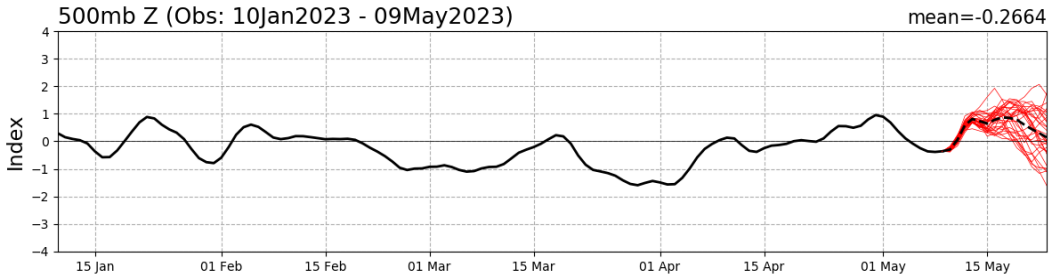
Multi-Model TC Track Probabilities/Densities: Week-2

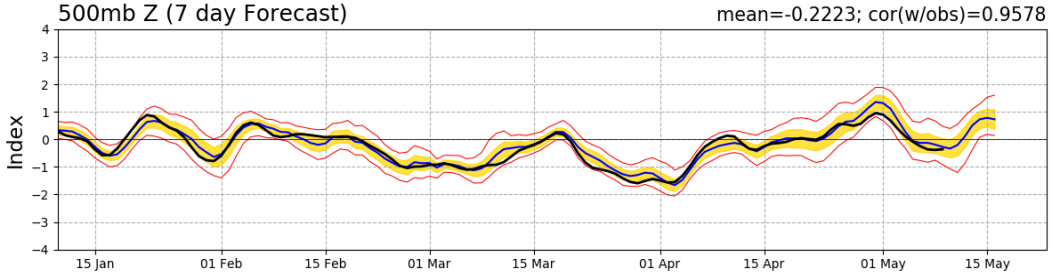


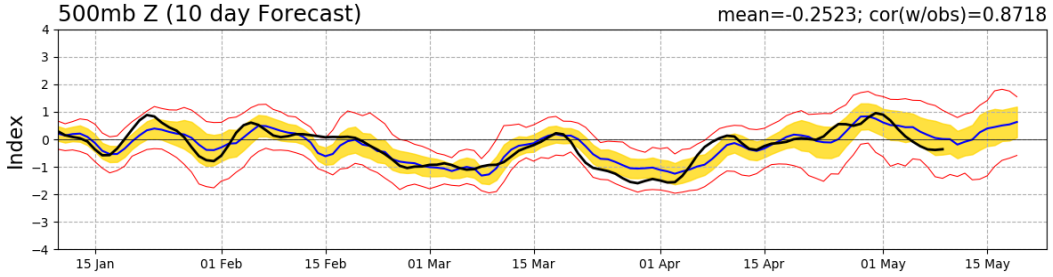


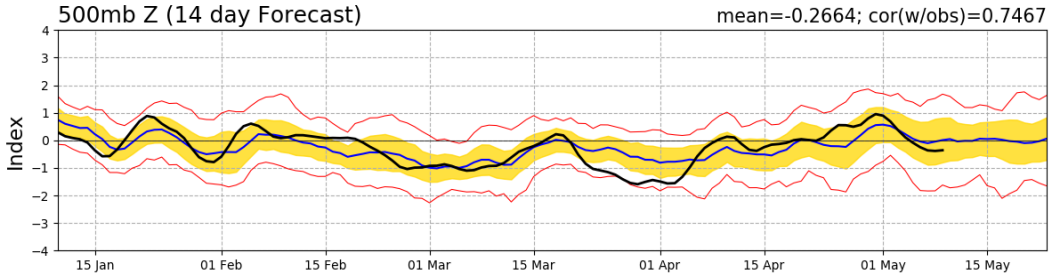
Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

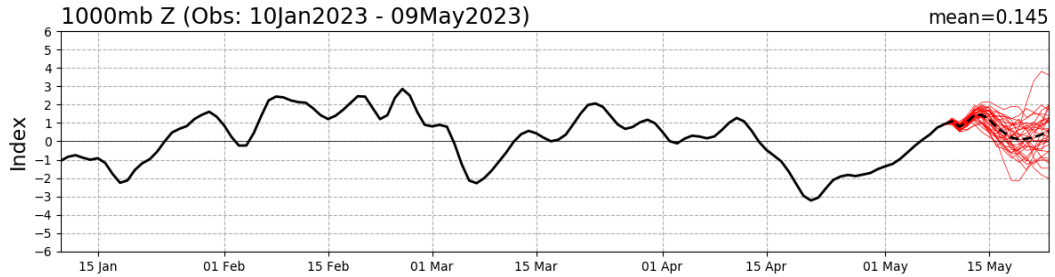


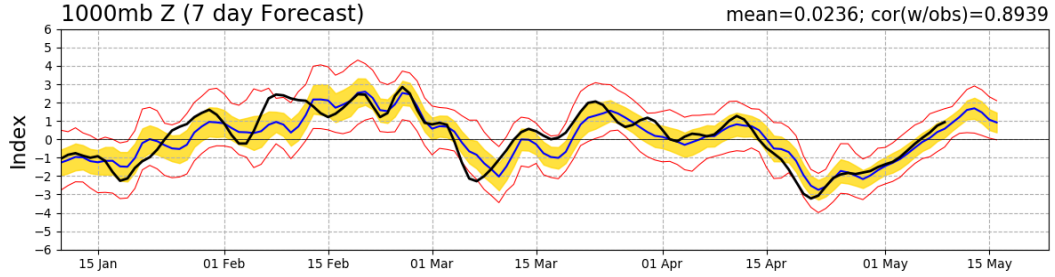


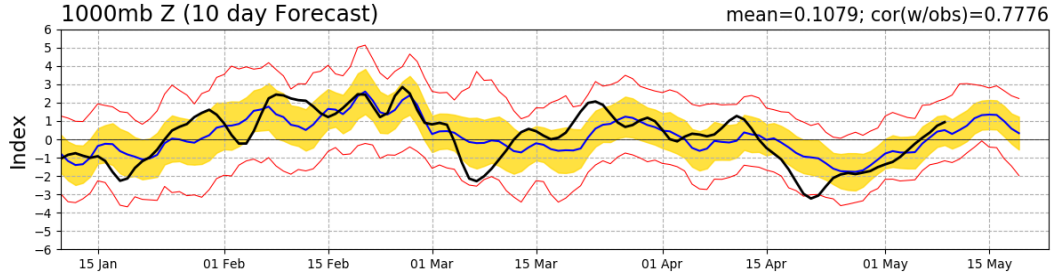


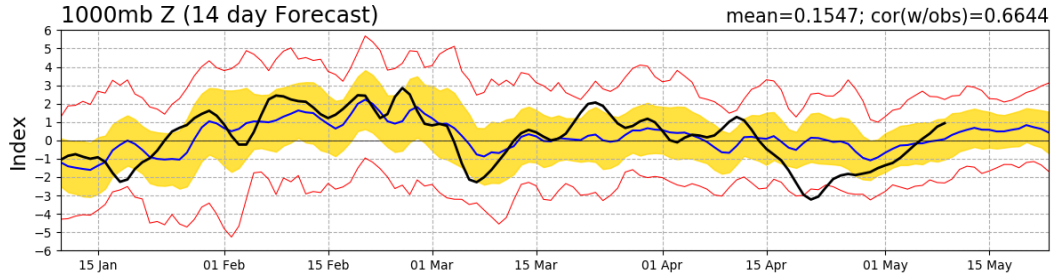


AO Index: Observed & GEFS Forecasts

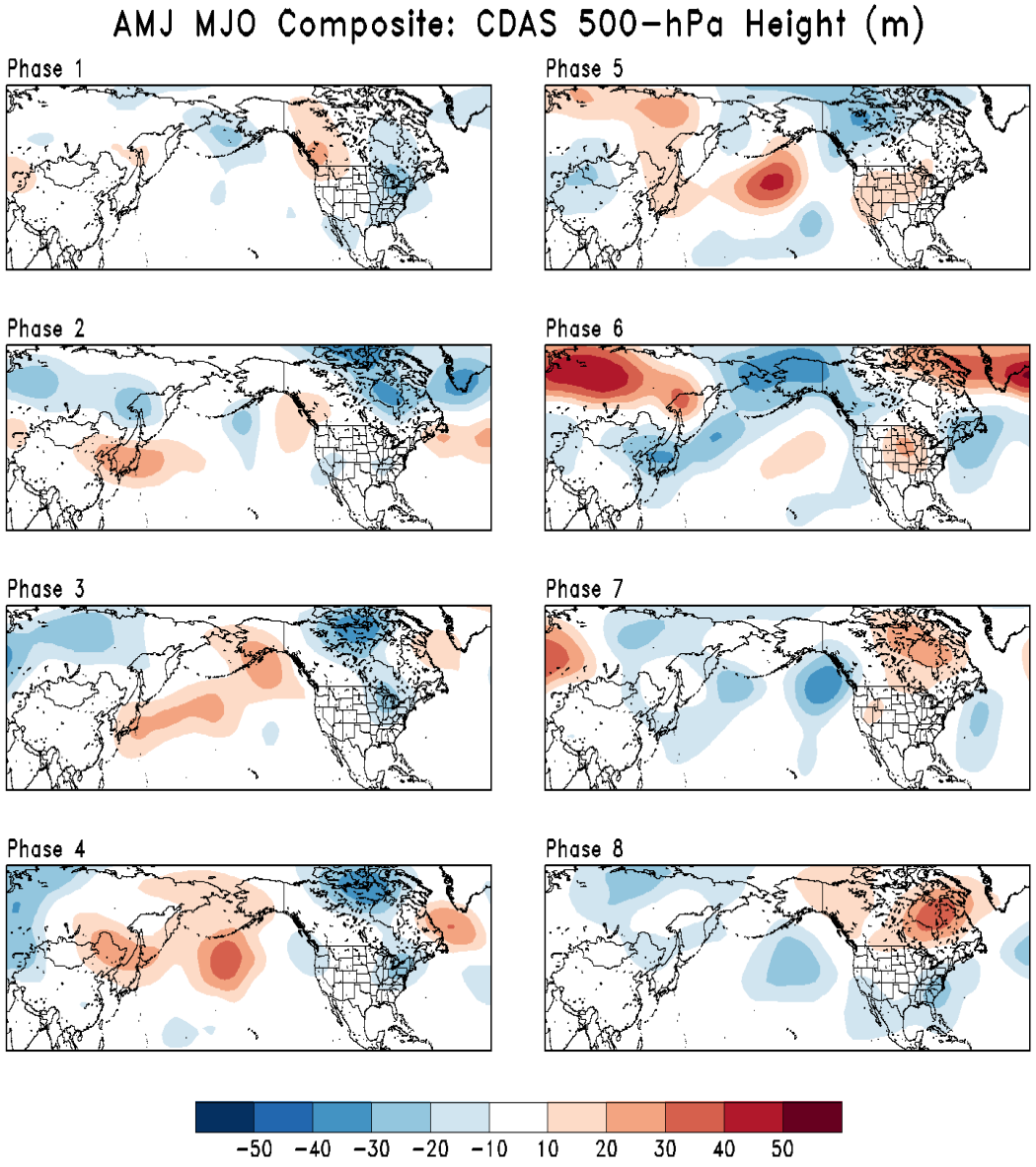


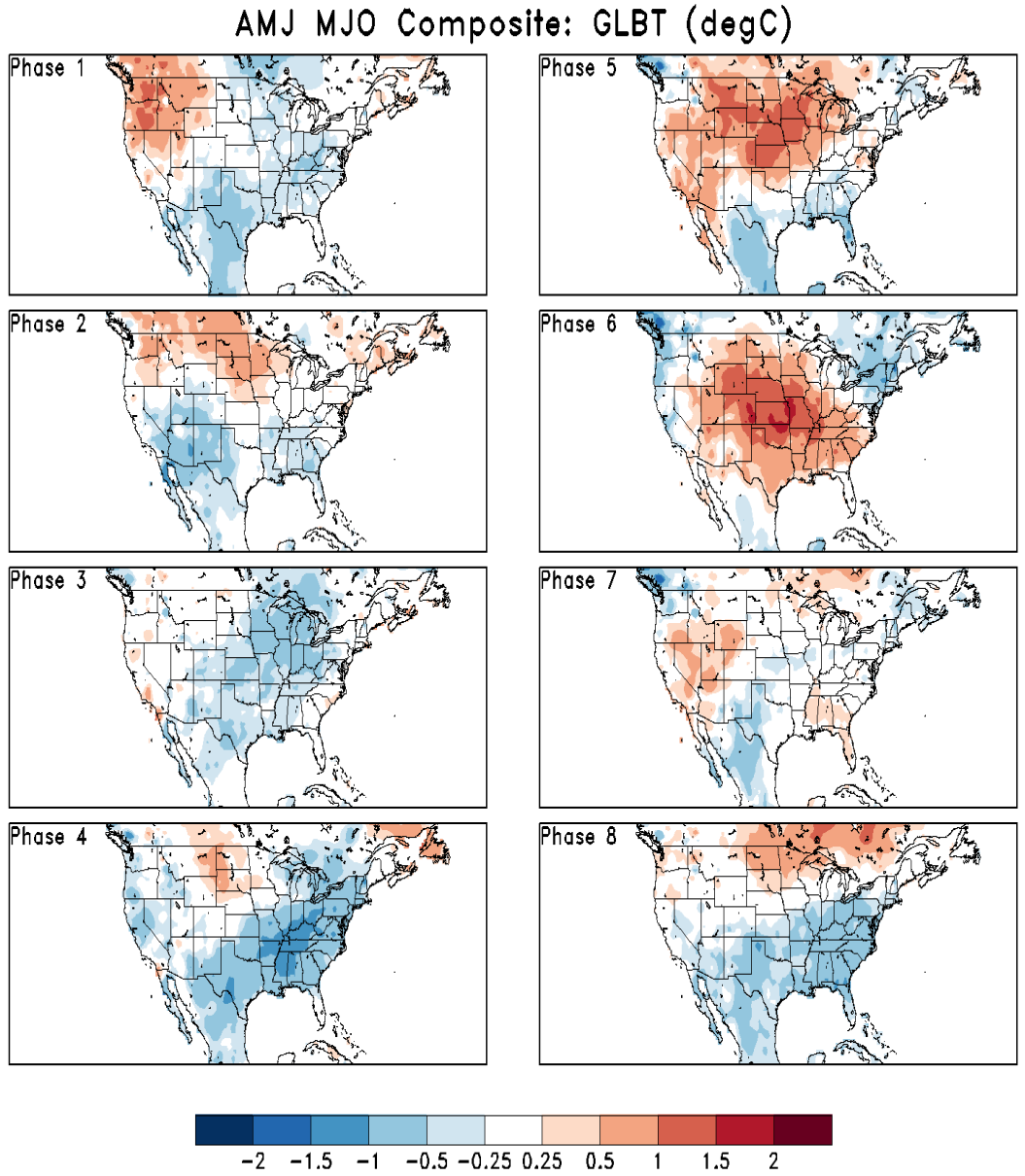




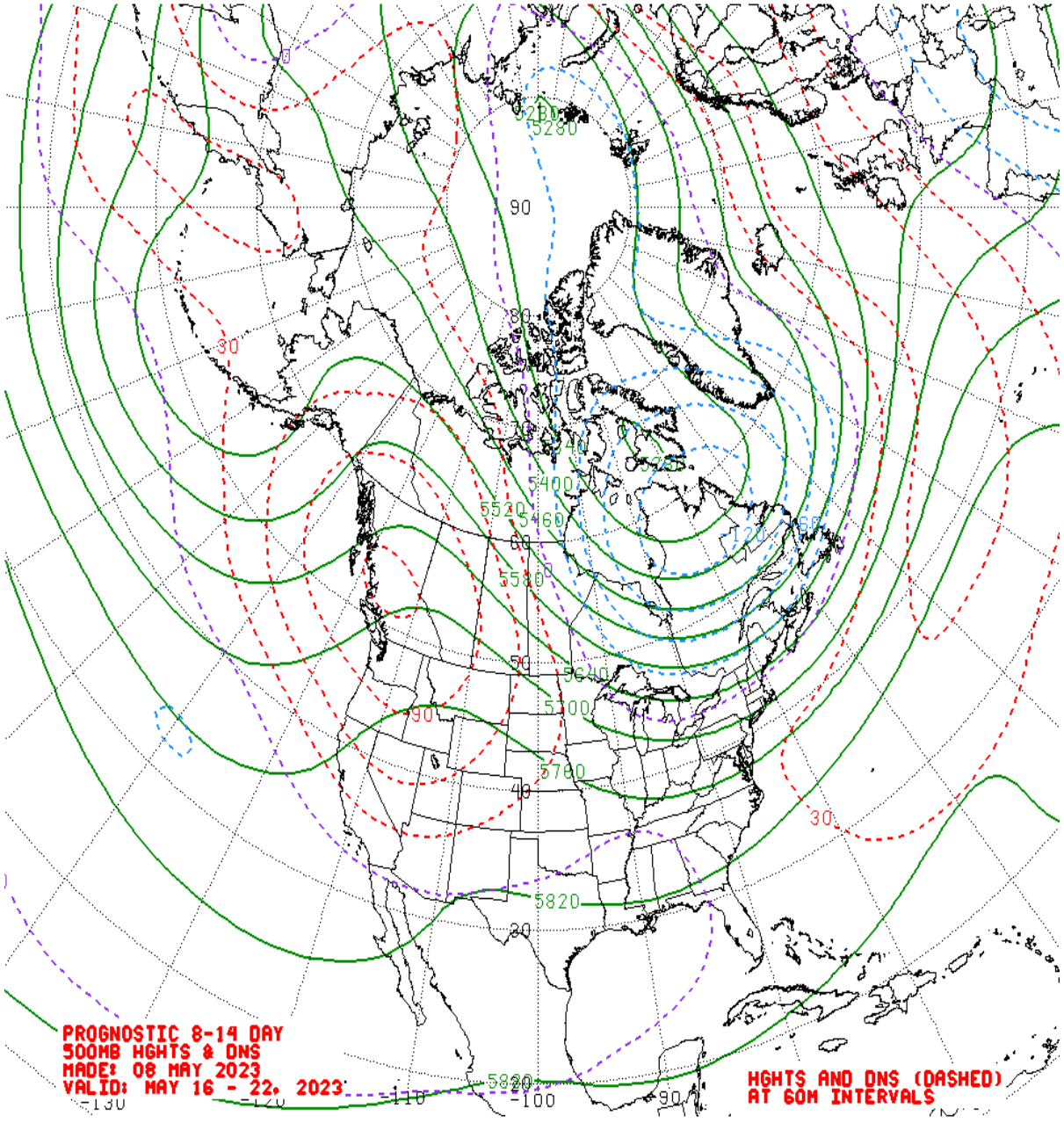


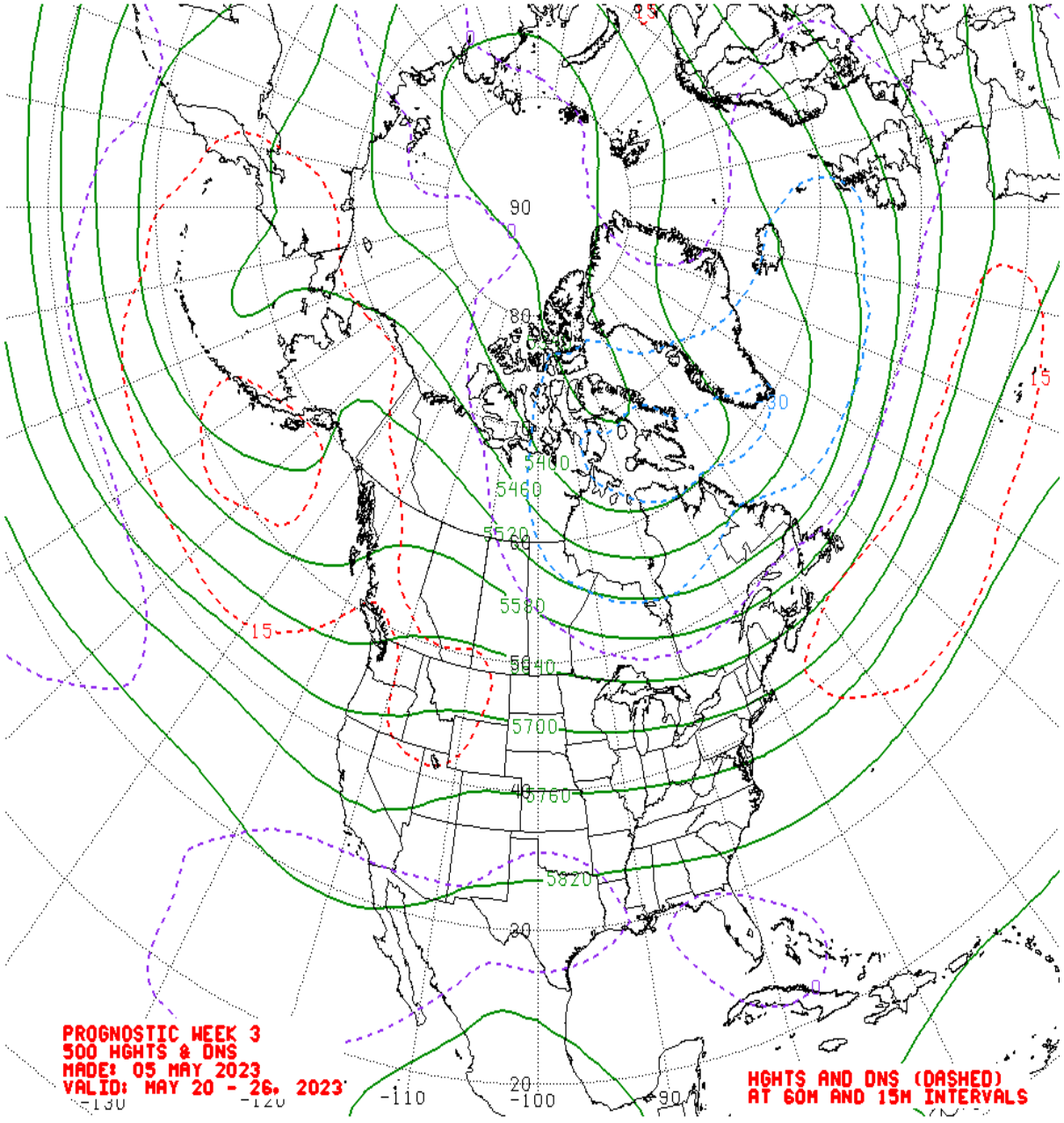
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:



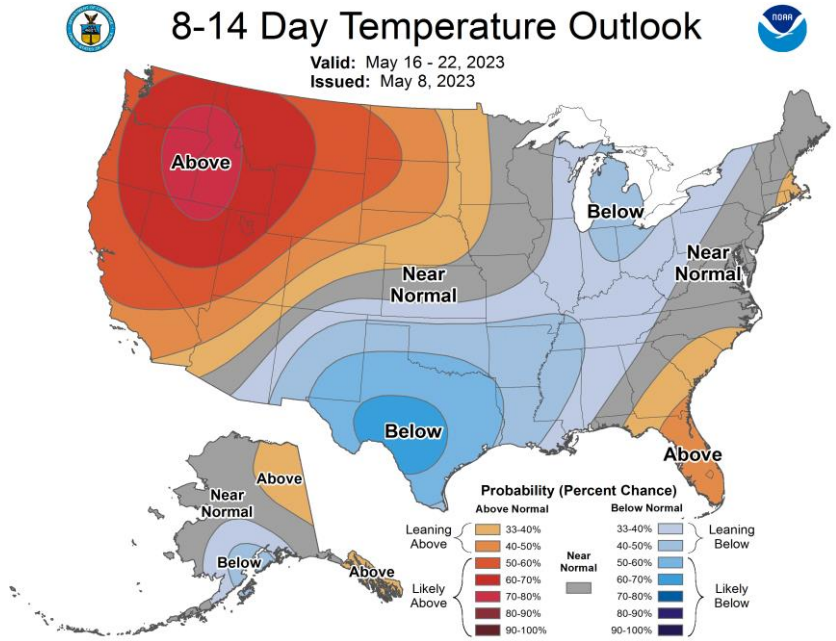


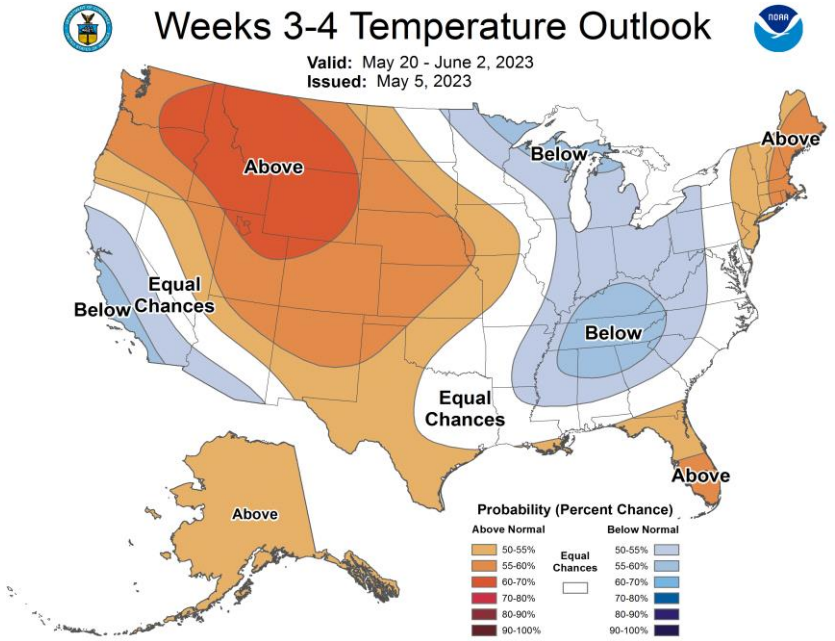
Mean 500-hPa Height Anomaly Forecasts:

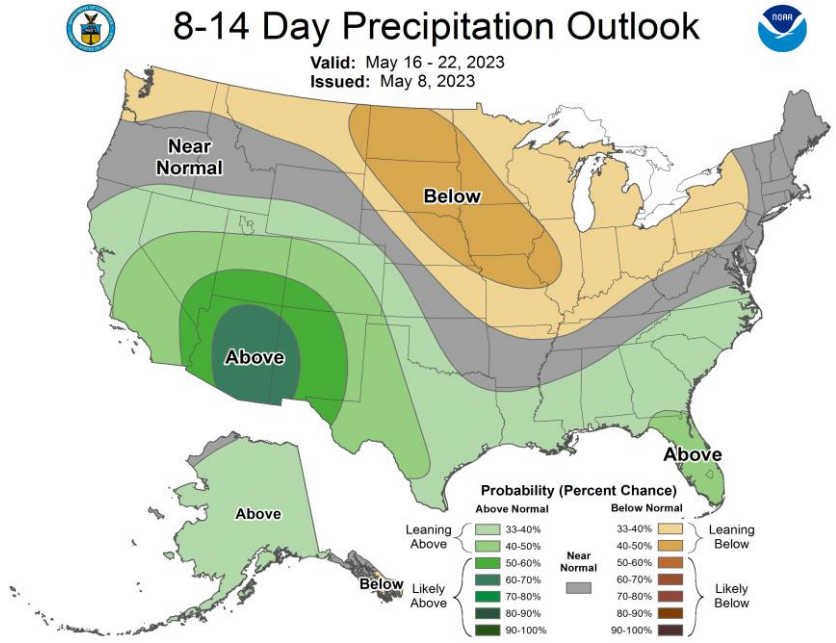


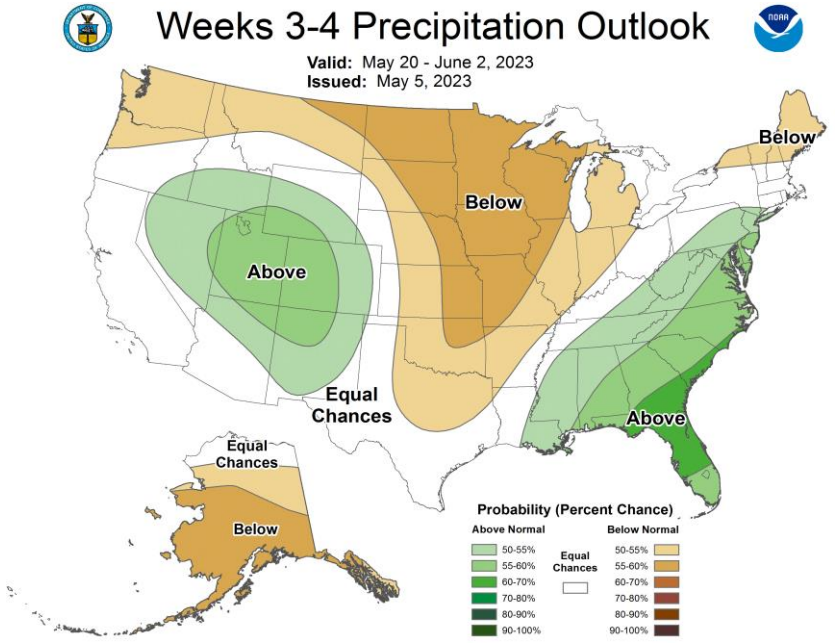


Official Temperature & Precipitation Forecasts:









Global Tropics Hazards Outlook

Climate Prediction Center

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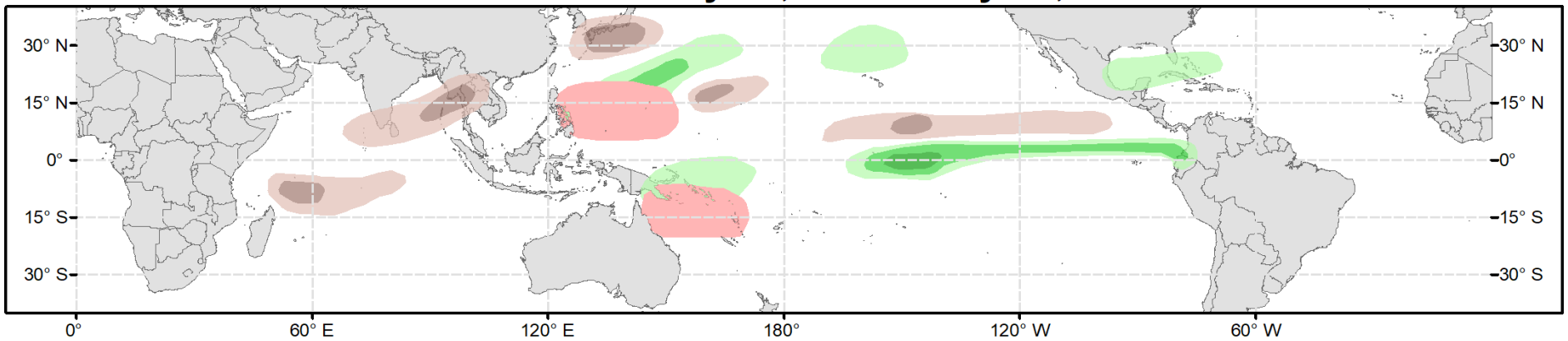

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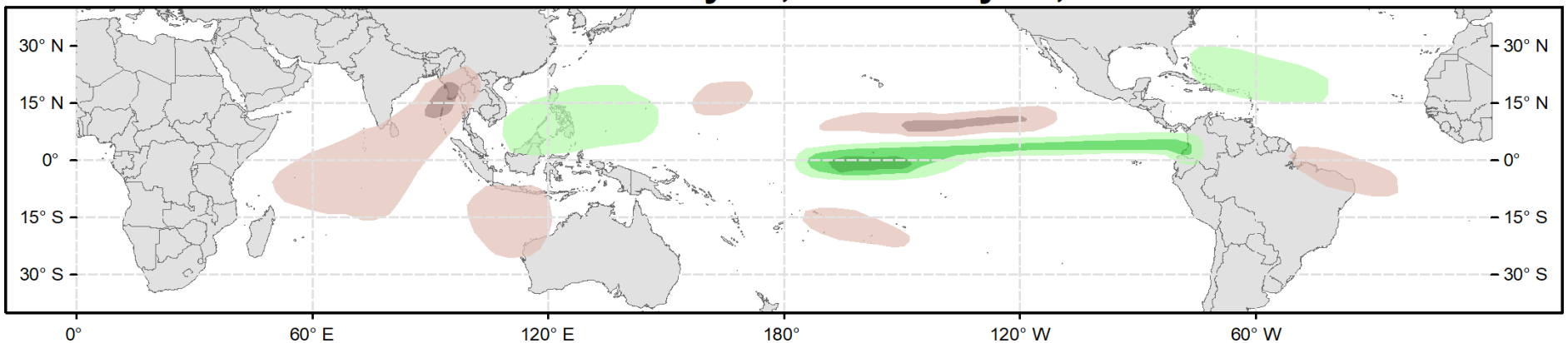

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