Weeks 2-3 Global Tropics Hazards Outlook

11/19/2024

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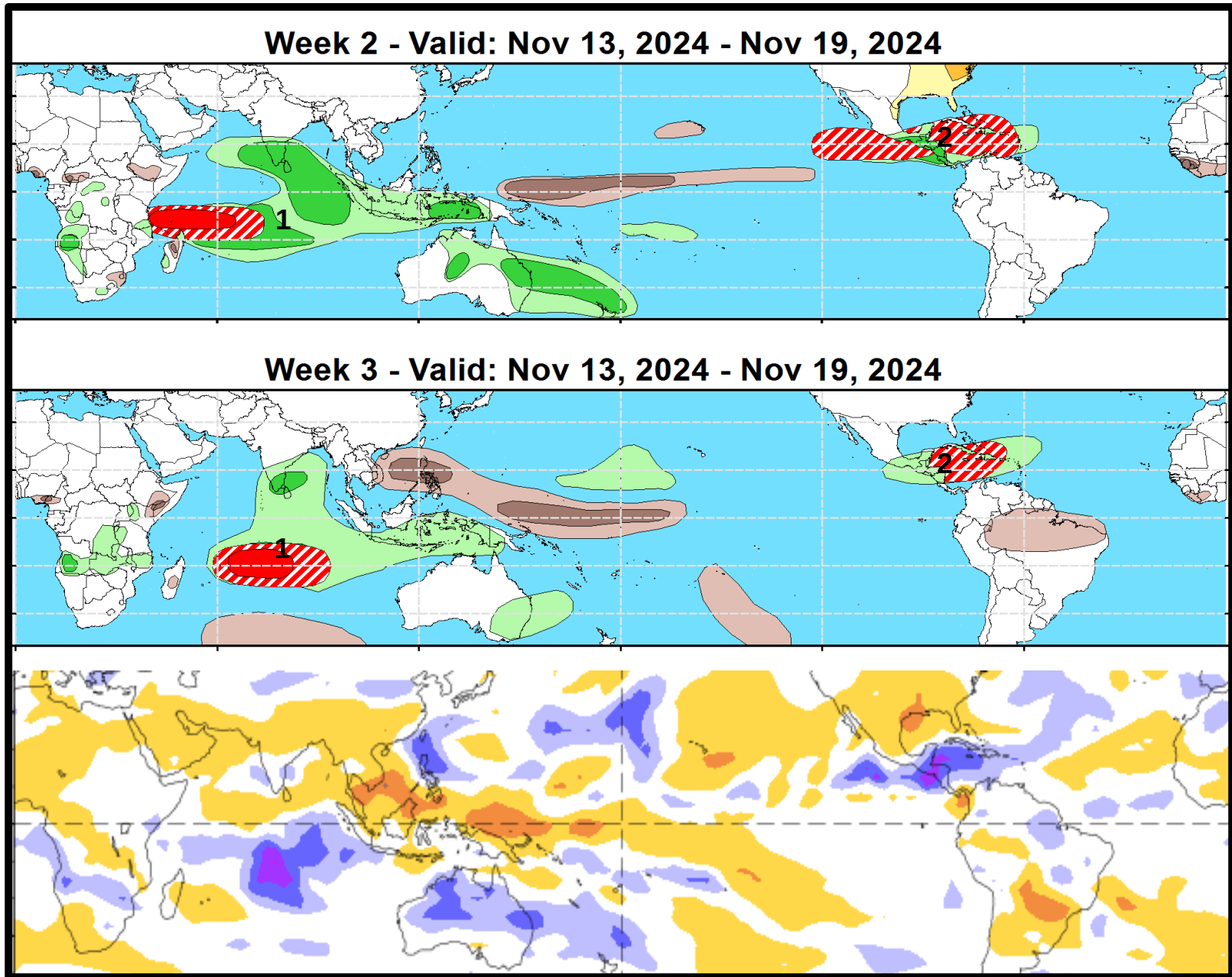
Outlook Review: TC development & anomalous precipitation during the past week

- 1: TS Sara, 11/14
- 2: TC Bheki, 11/14



Synopsis of Climate Modes:

ENSO: (Nov 14, 2024 Update) ***next update on Thursday, Dec 12th***

- ENSO Alert System Status: La Niña Watch

- La Niña is most likely to emerge in October-December 2024 (57% chance) and is expected to persist through January-March 2025.

MJO and other subseasonal tropical variability:

•The MJO has been quite active over the last month, completing a full circumnavigation of the globe during that period, and at a high amplitude as the enhanced convective envelope moved over the Maritime Continent and Western Pacific.

•The MJO has slowed and weakened somewhat as the enhanced convective envelope moved over the Indian Ocean during the last week, likely the result of interactions with the emerging La Nina footprint and other modes of tropical variability.

•This forecast slowing of the enhanced convective envelope is likely to promote enhanced TC activity across the Bay of Bengal throughout the forecast period. TC activity is also possible in week-3 over the southeast Indian Ocean, as well as the Western Pacific due to MJO forcing despite the basin being less active in December.

GTH Outlook:

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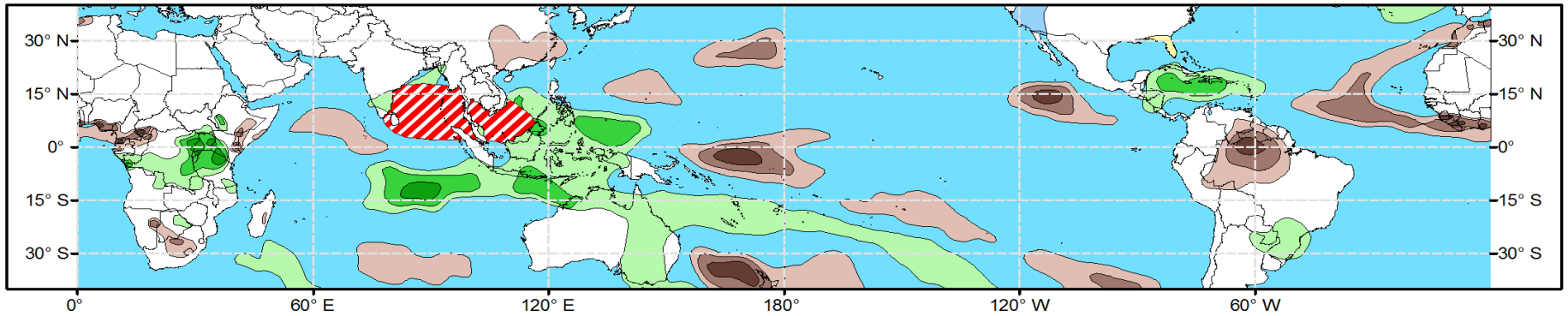

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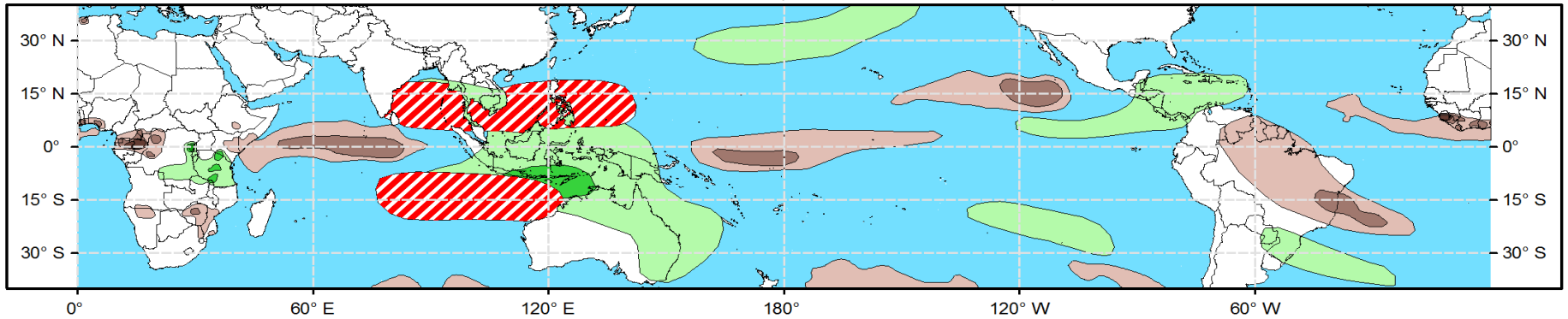

Tropical Cyclone (TC) Formation Probability

>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 Upper third of the historical range

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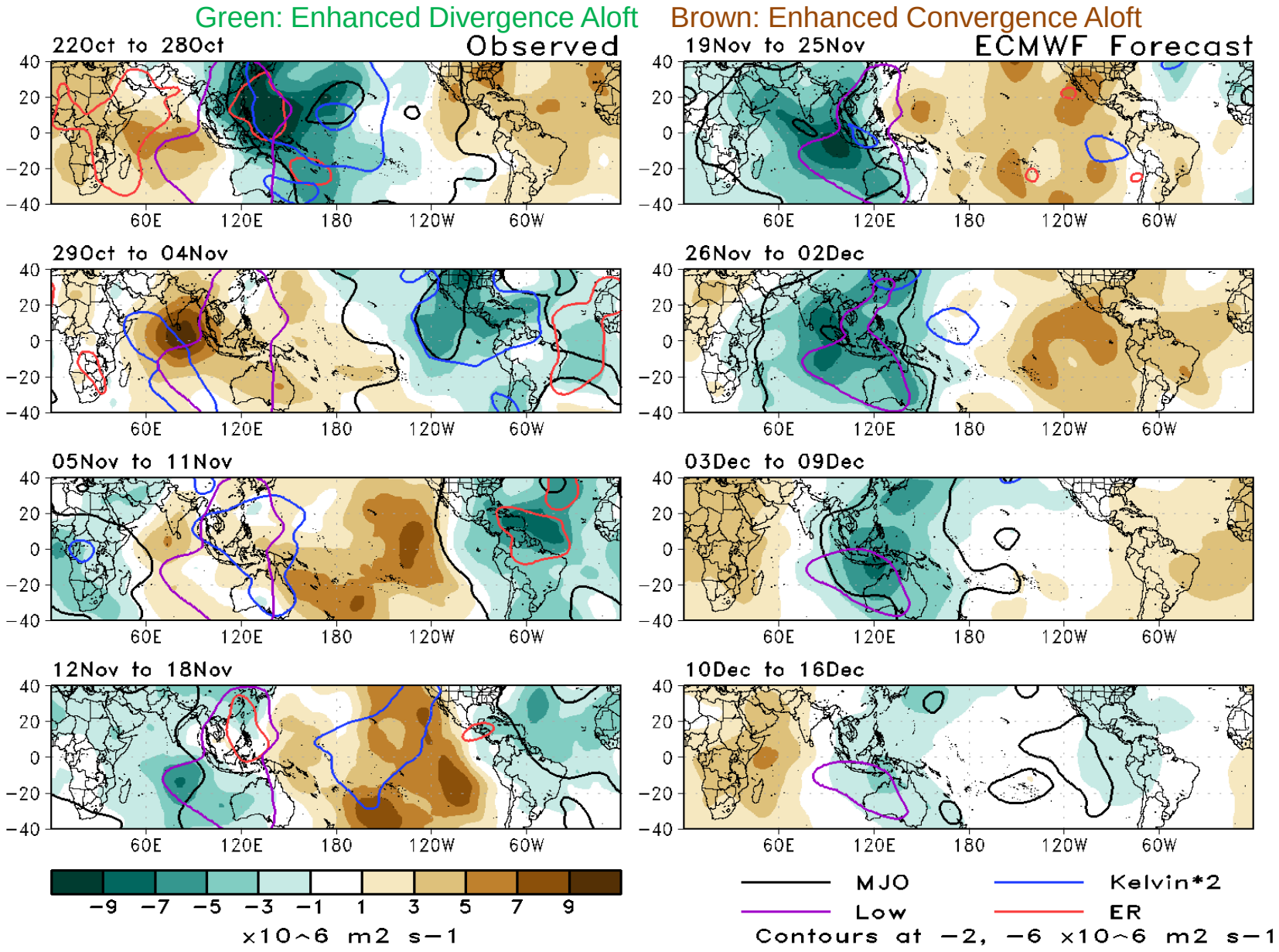
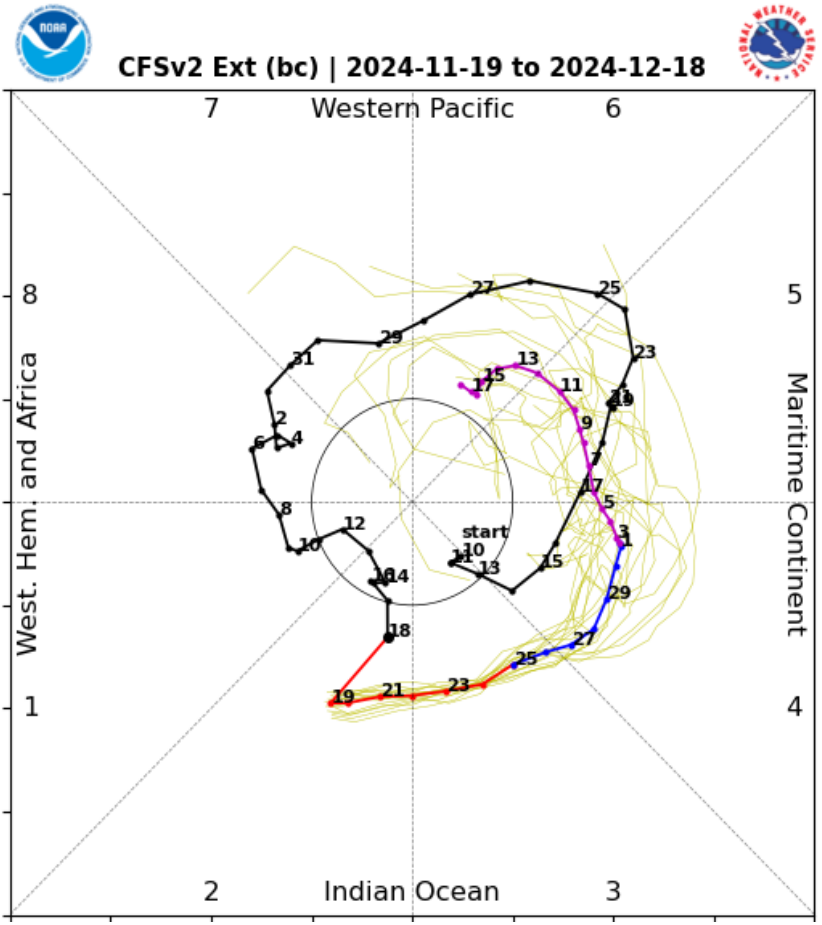
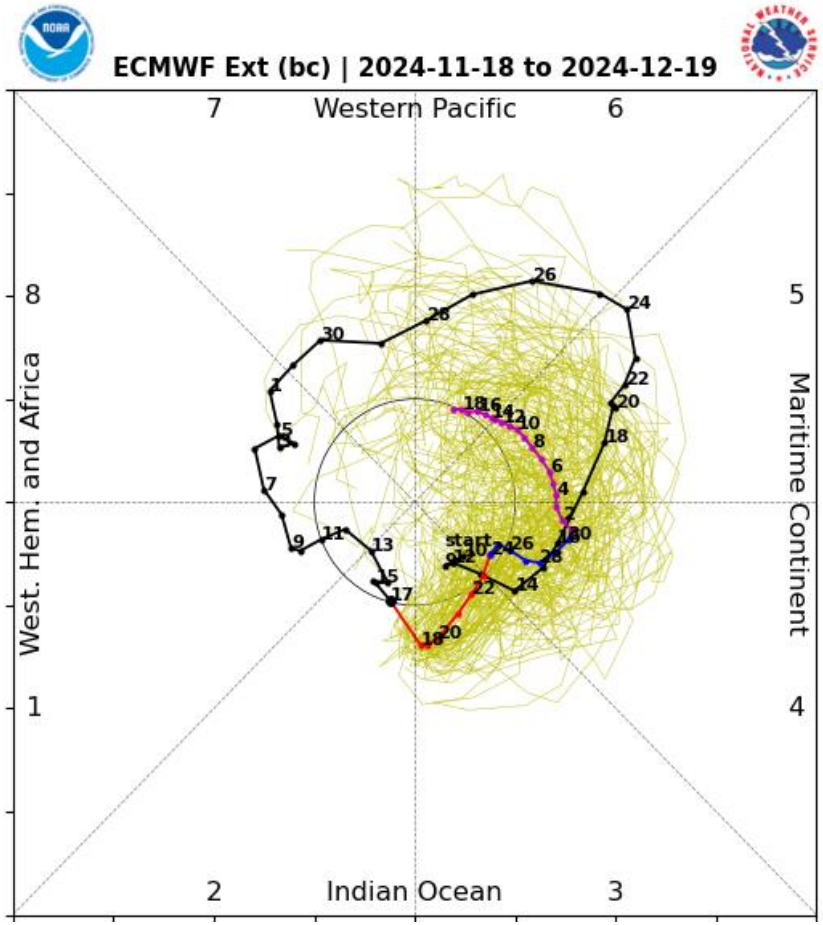
200-hPa Velocity Potential Anomaly Maps:

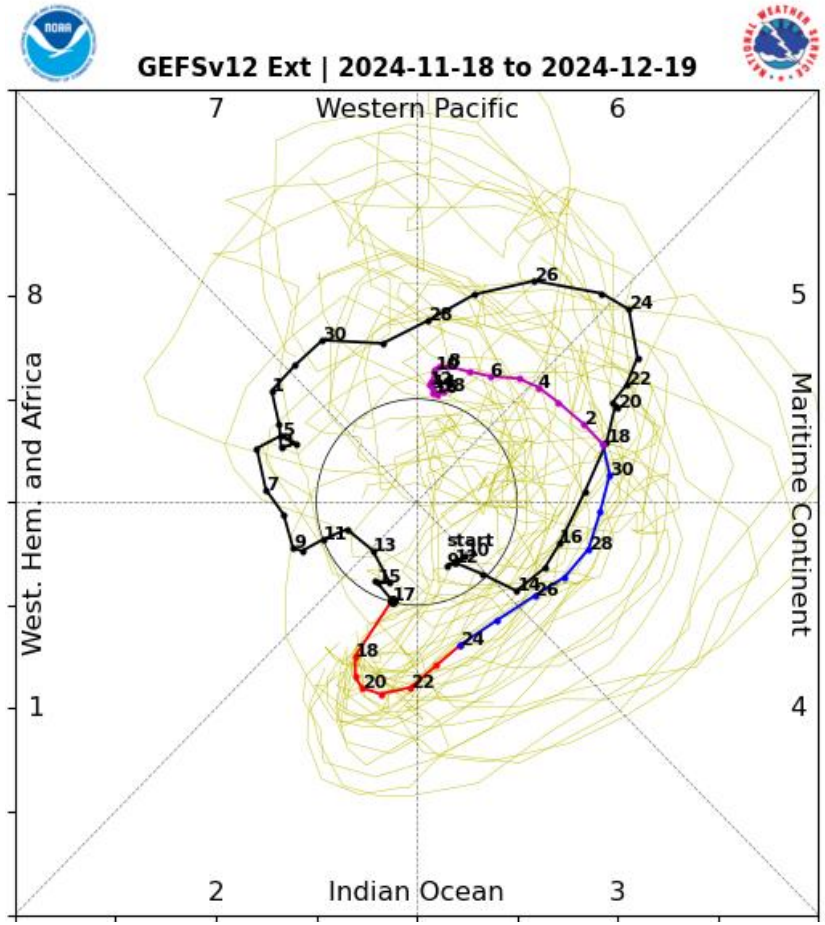
- Wave-1 asymmetry in global upper-air divergence is evident over the last month with the MJO moving over the Pacific and Americas and finally over Africa and into the Indian Ocean.
- The ECMWF depicts enhanced divergence associated with the MJO over the Indian Ocean during week-1 with a slow eastward propagation over the Maritime Continent over weeks 2-3.



RMM Index Observations & Forecasts:

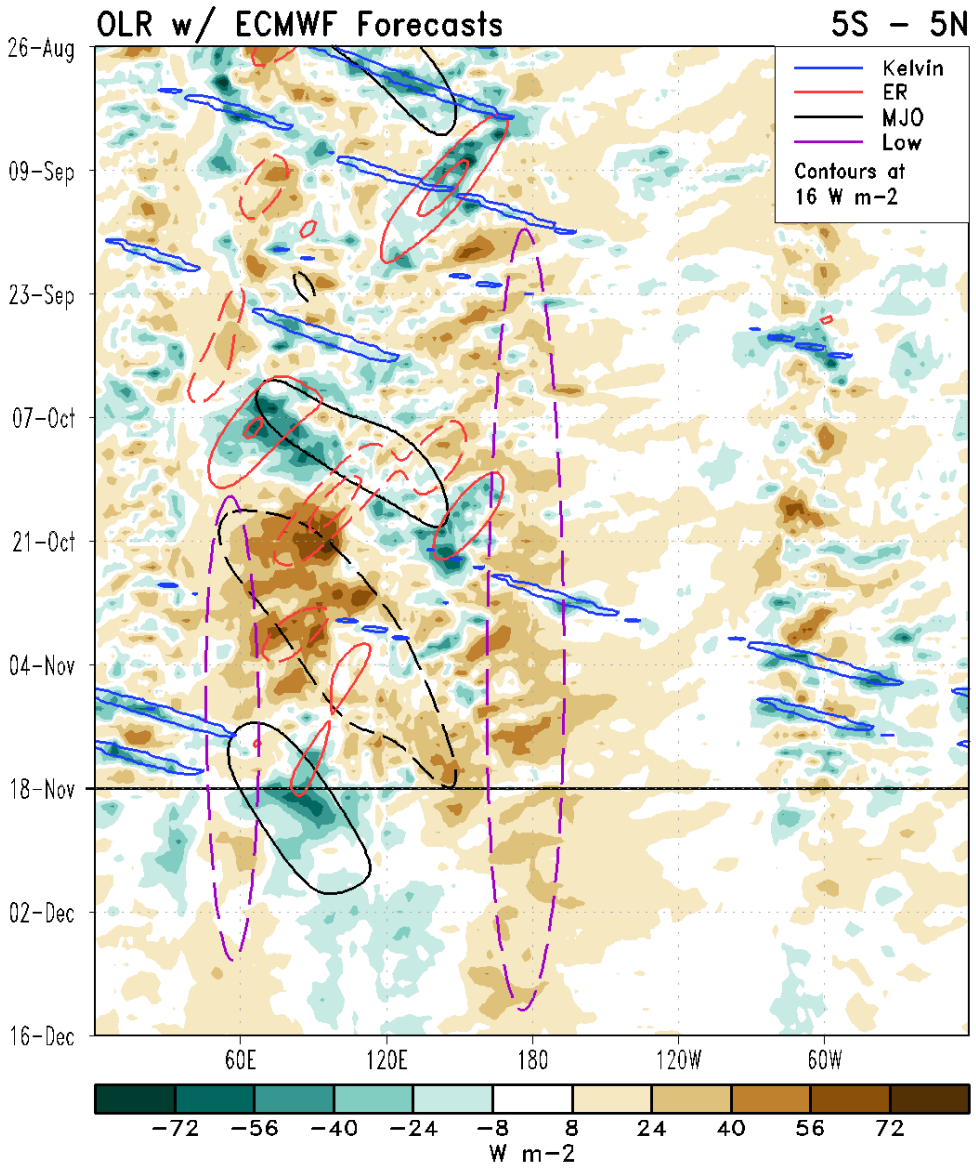


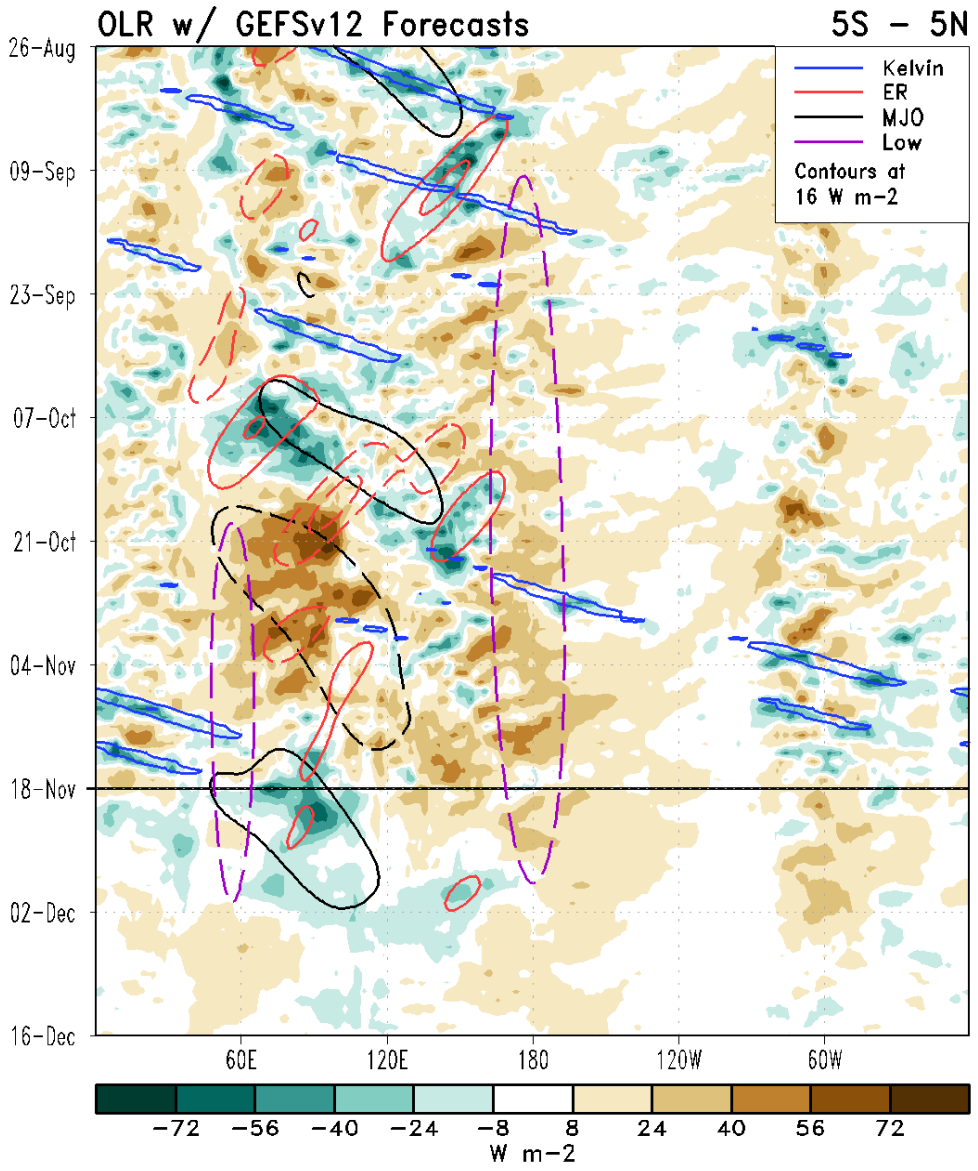




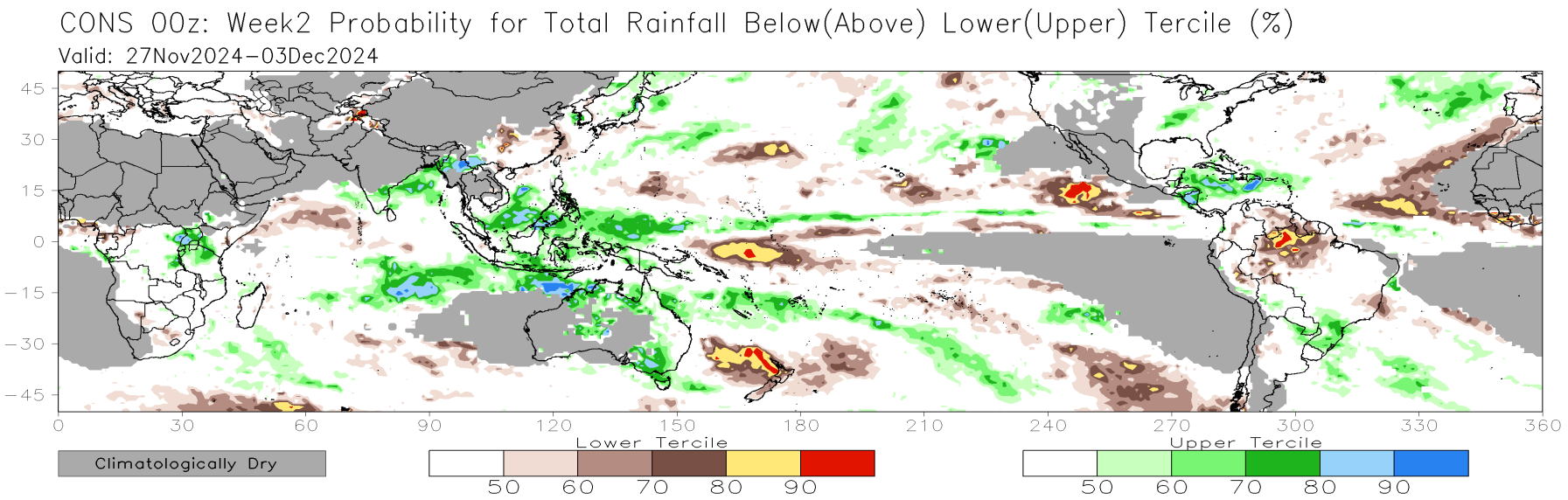
- The GEFS, CFS and ECMWF models all depict the RMM-based MJO index stalling over the Indian Ocean during week-1, likely a reflection of the convective envelope beginning to constructively interact with the emerging low-frequency La Nina footprint.
- The ECMWF indicates a faster progression through phases 2 & 3 but is a bit of an outlier in that regard, with model consensus on RMM forecasts more in line with the GEFS and CFS solutions.

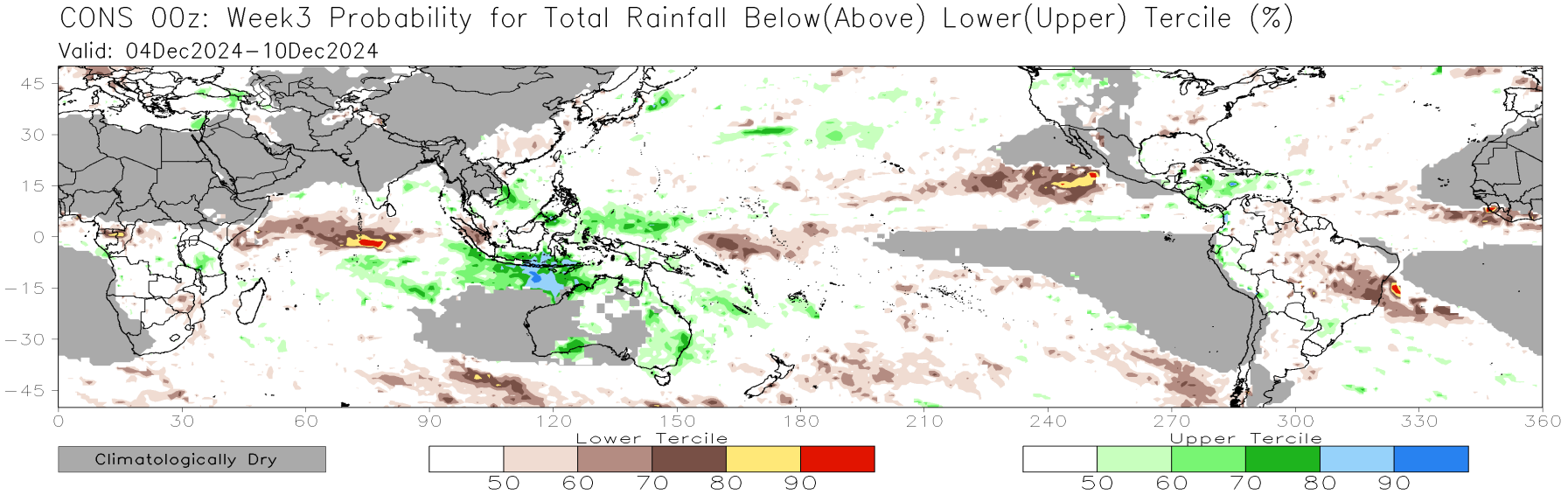
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



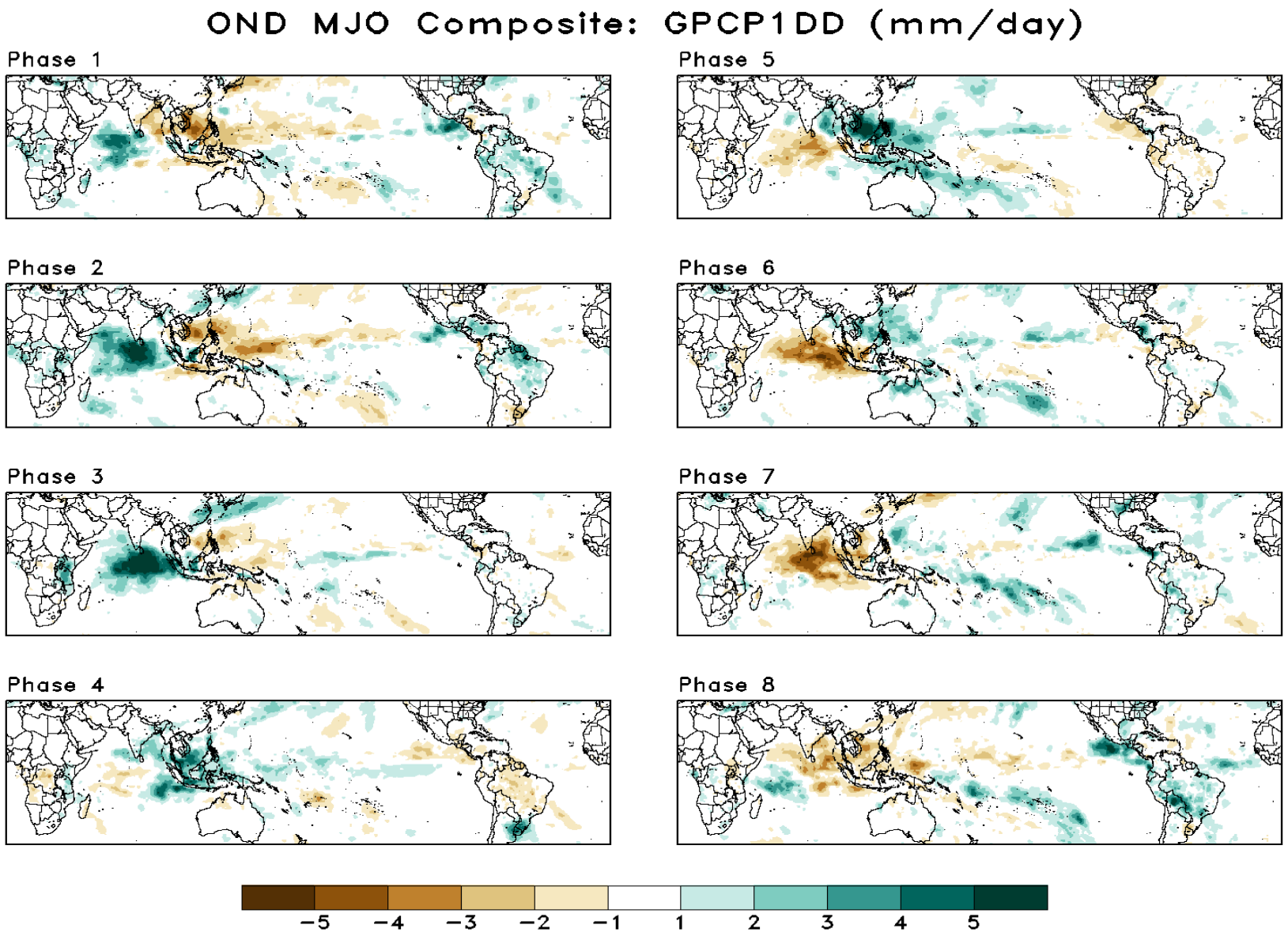


Consolidated Probabilistic Precipitation: Weeks 2 & 3

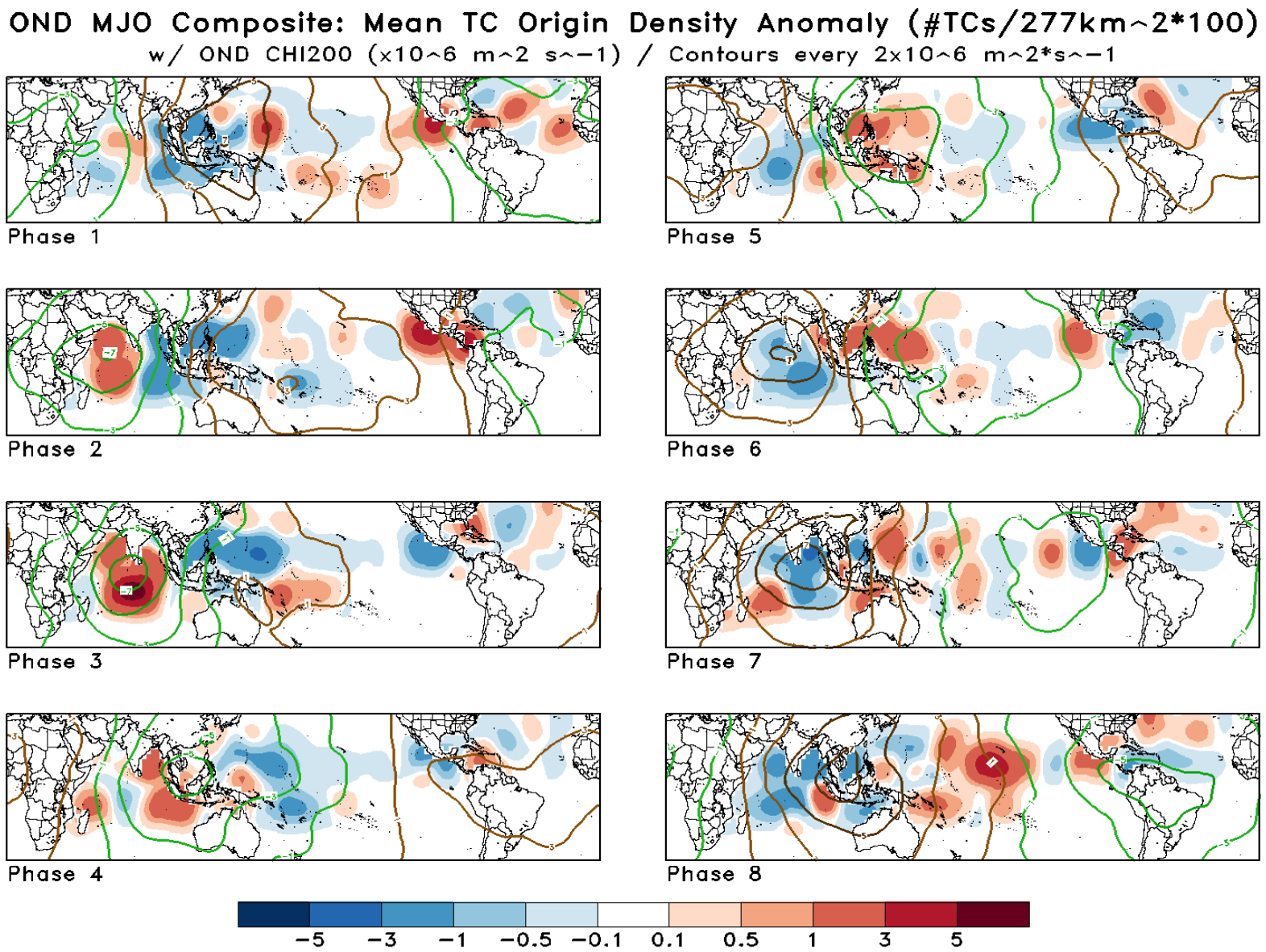


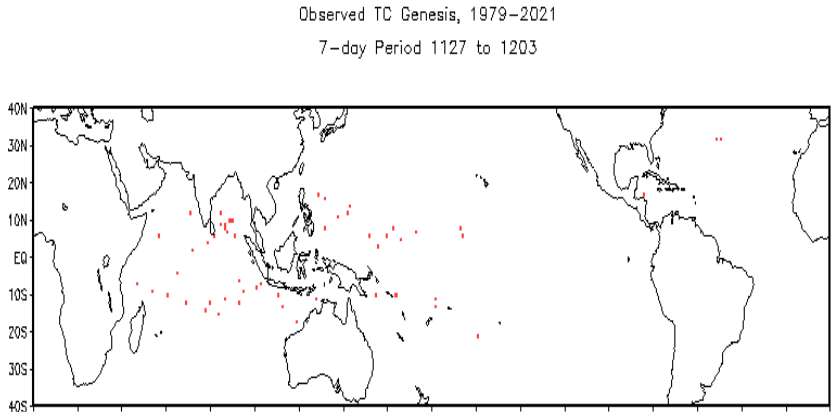


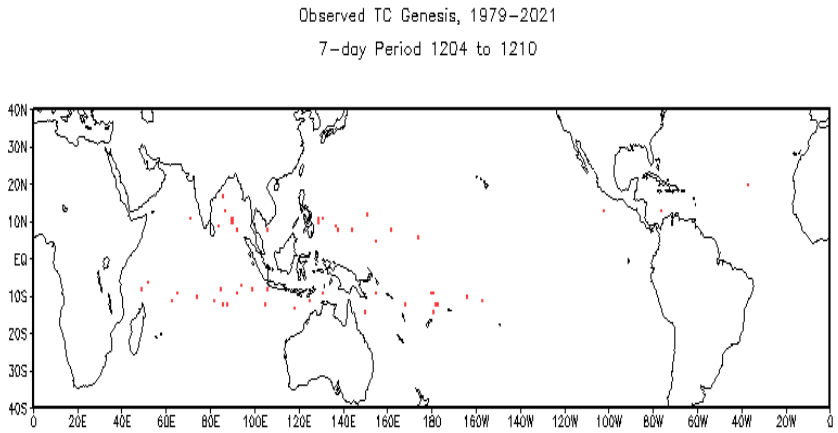
Historical Precipitation Anomalies By MJO Phase:



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

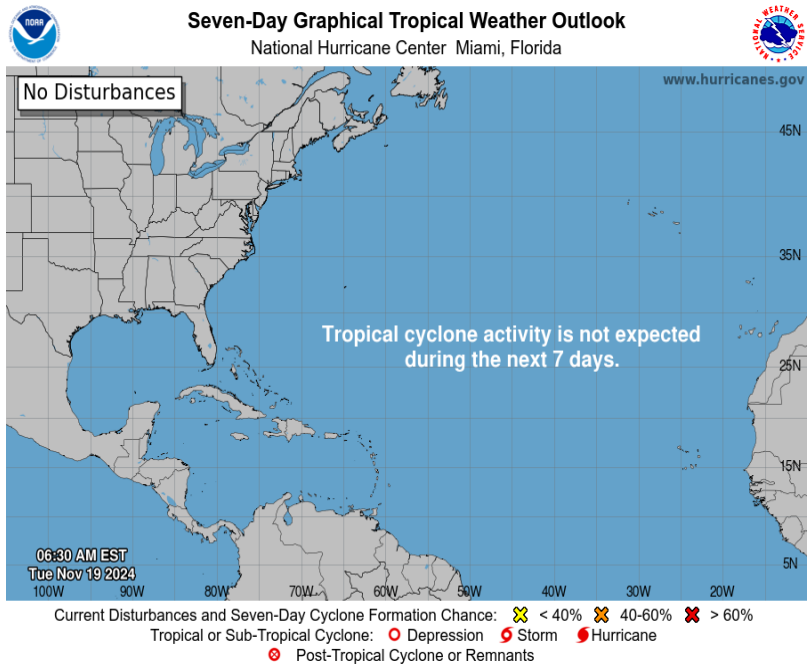


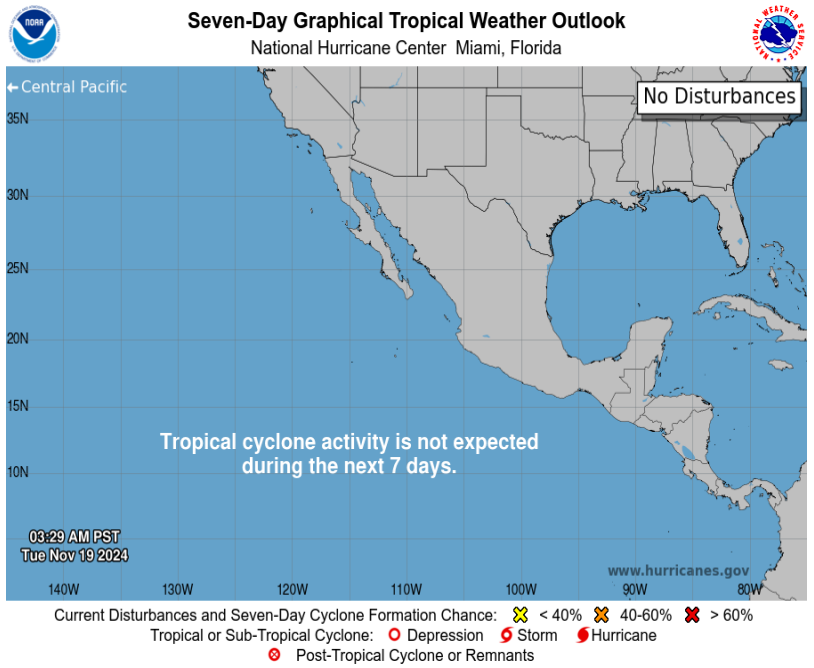


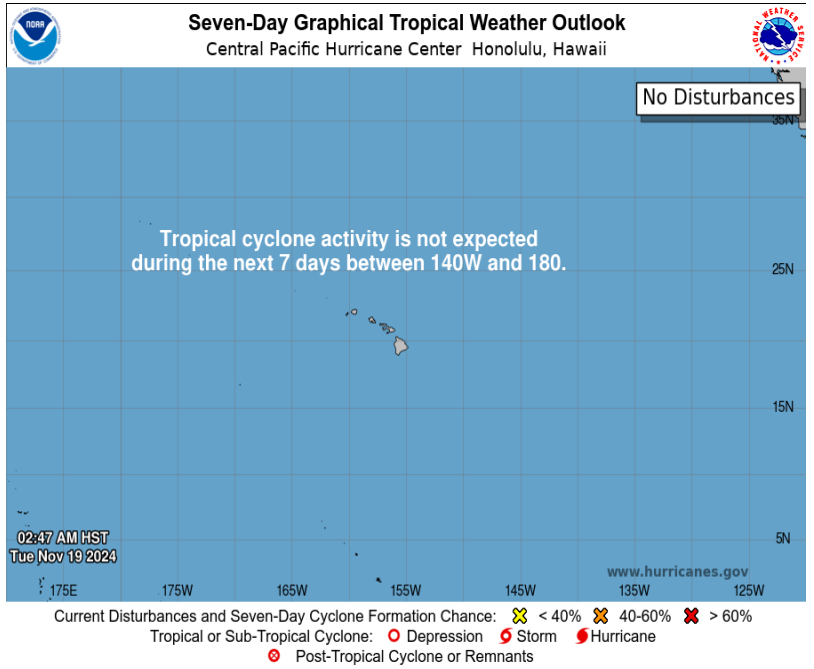


Experimental

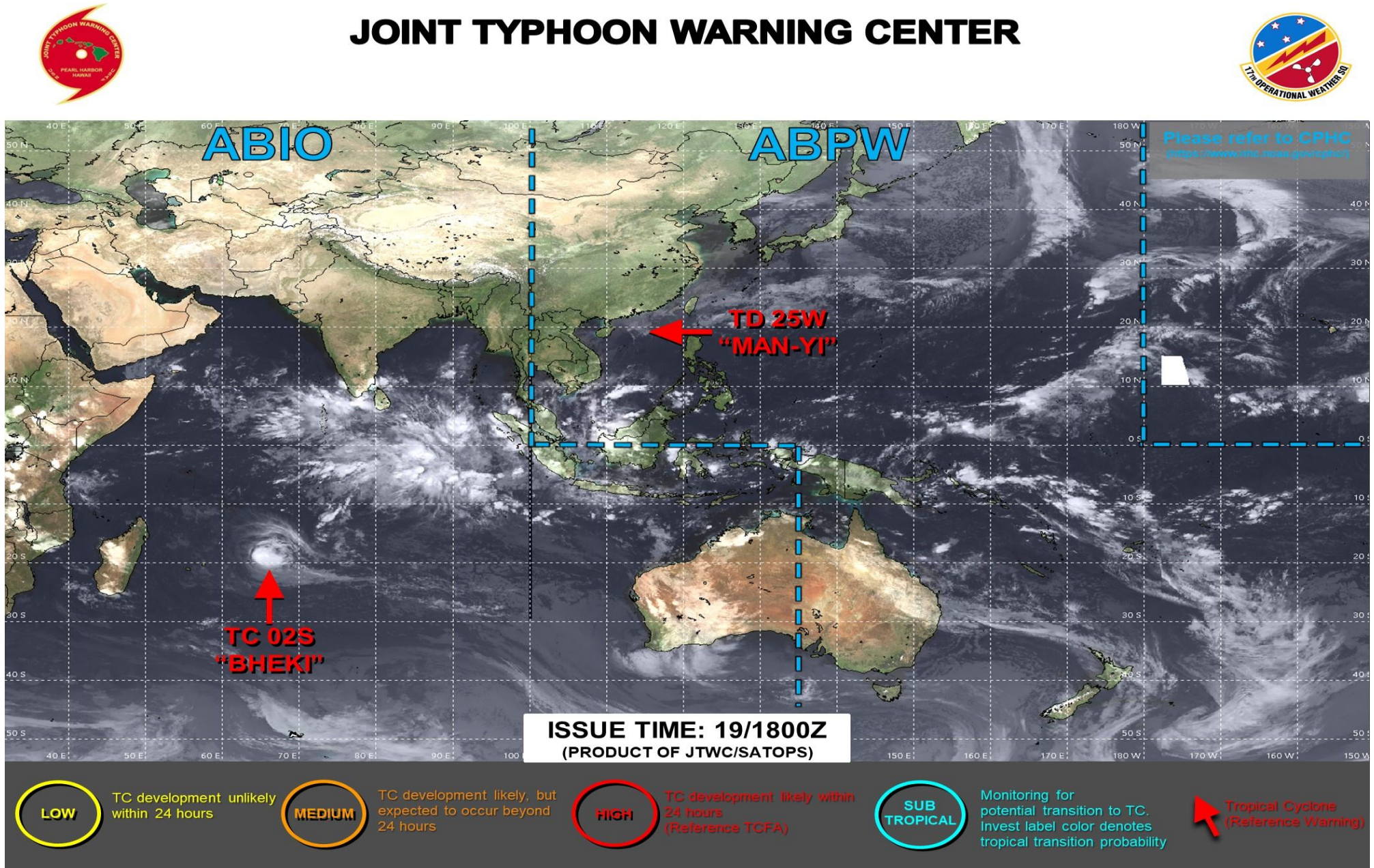
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



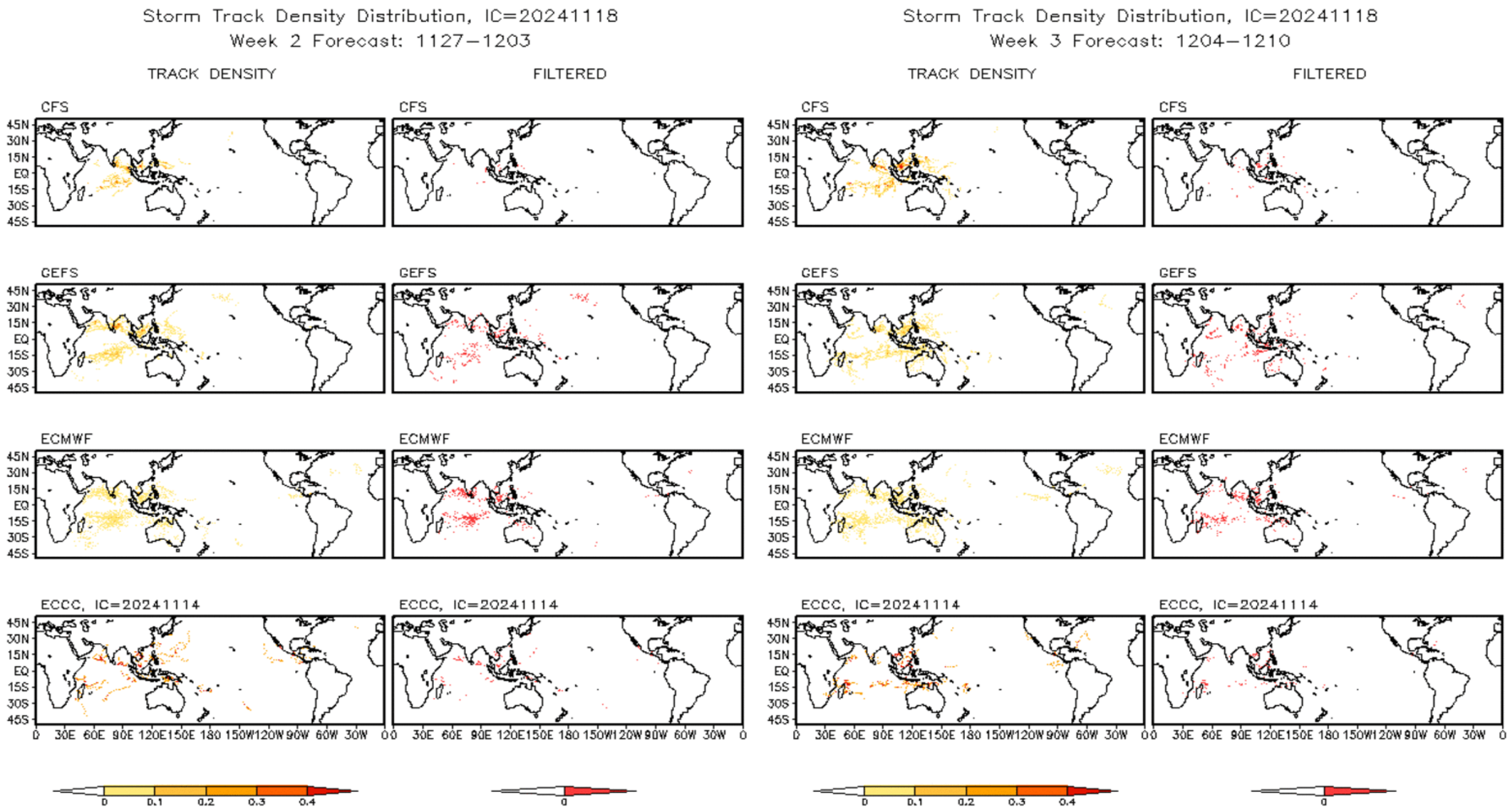




Tropical Cyclone Monitoring/Forecast: JTWC

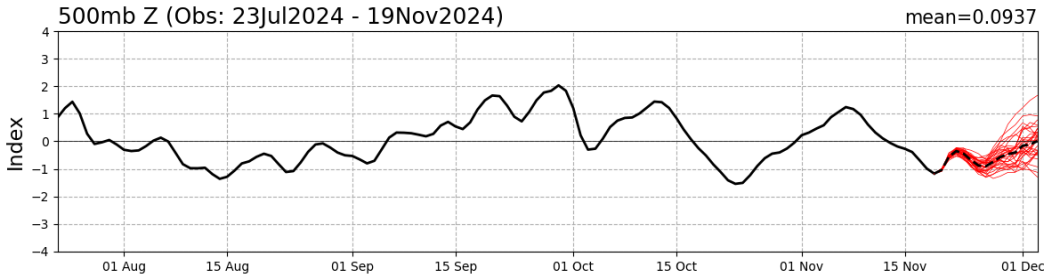


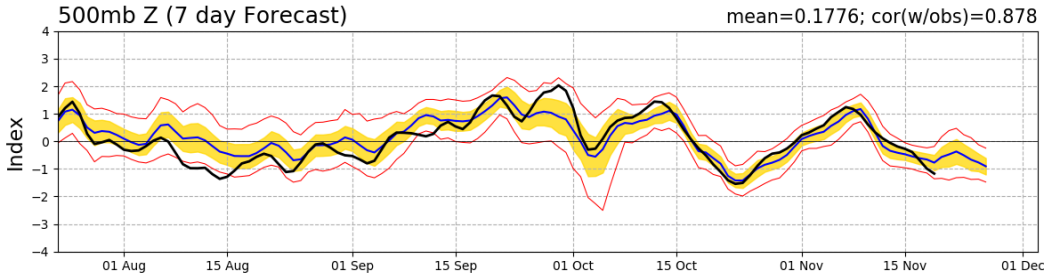
Multi-Model TC Track Densities: Weeks 2+3

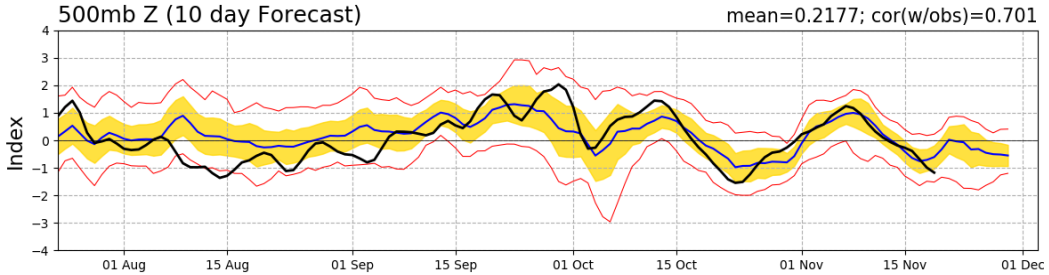


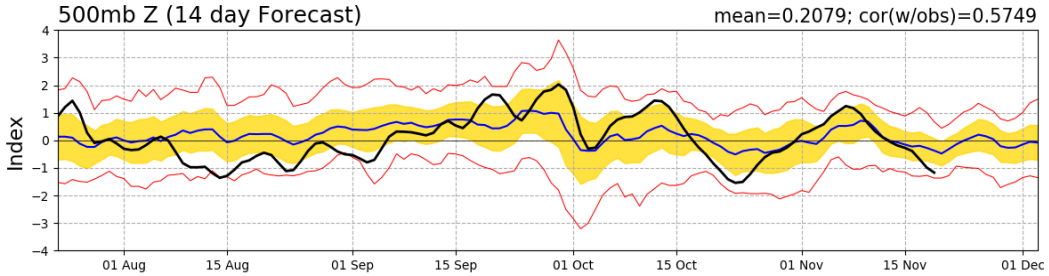
Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

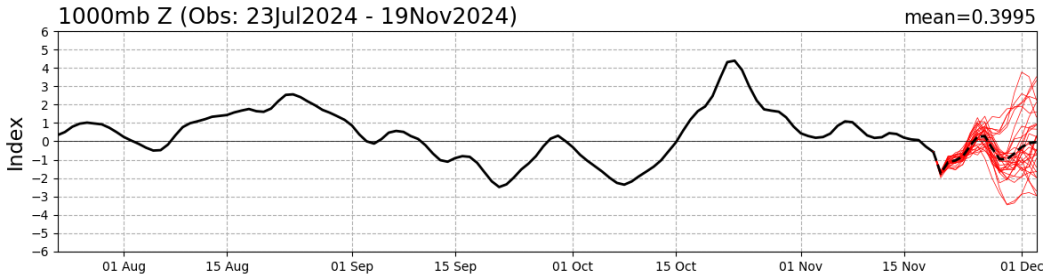


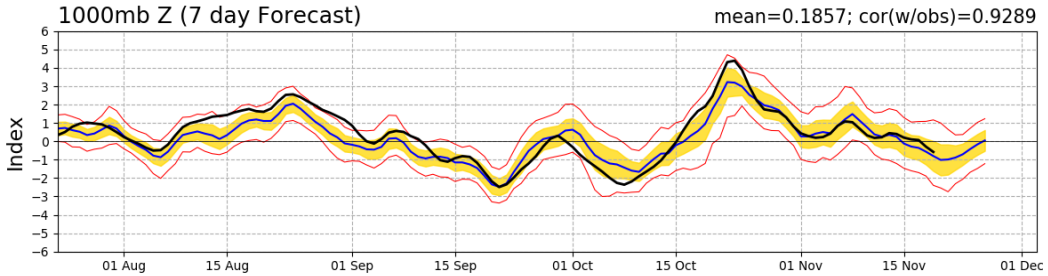


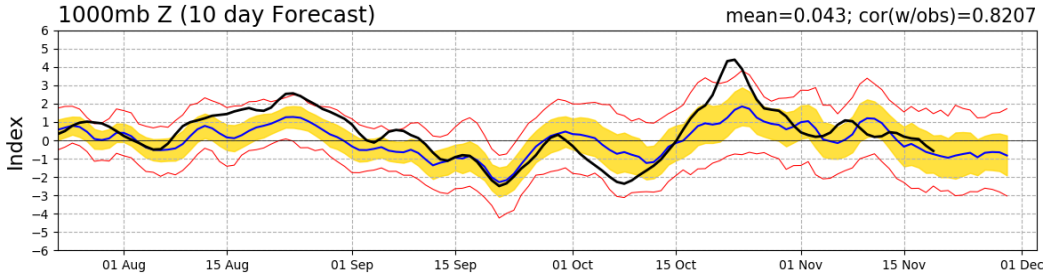


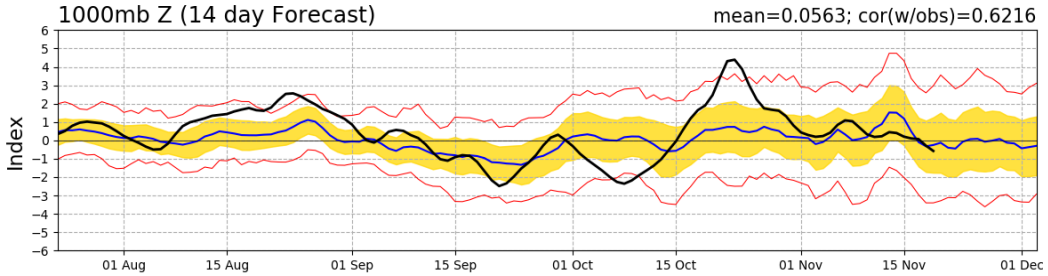


AO Index: Observed & GEFS Forecasts

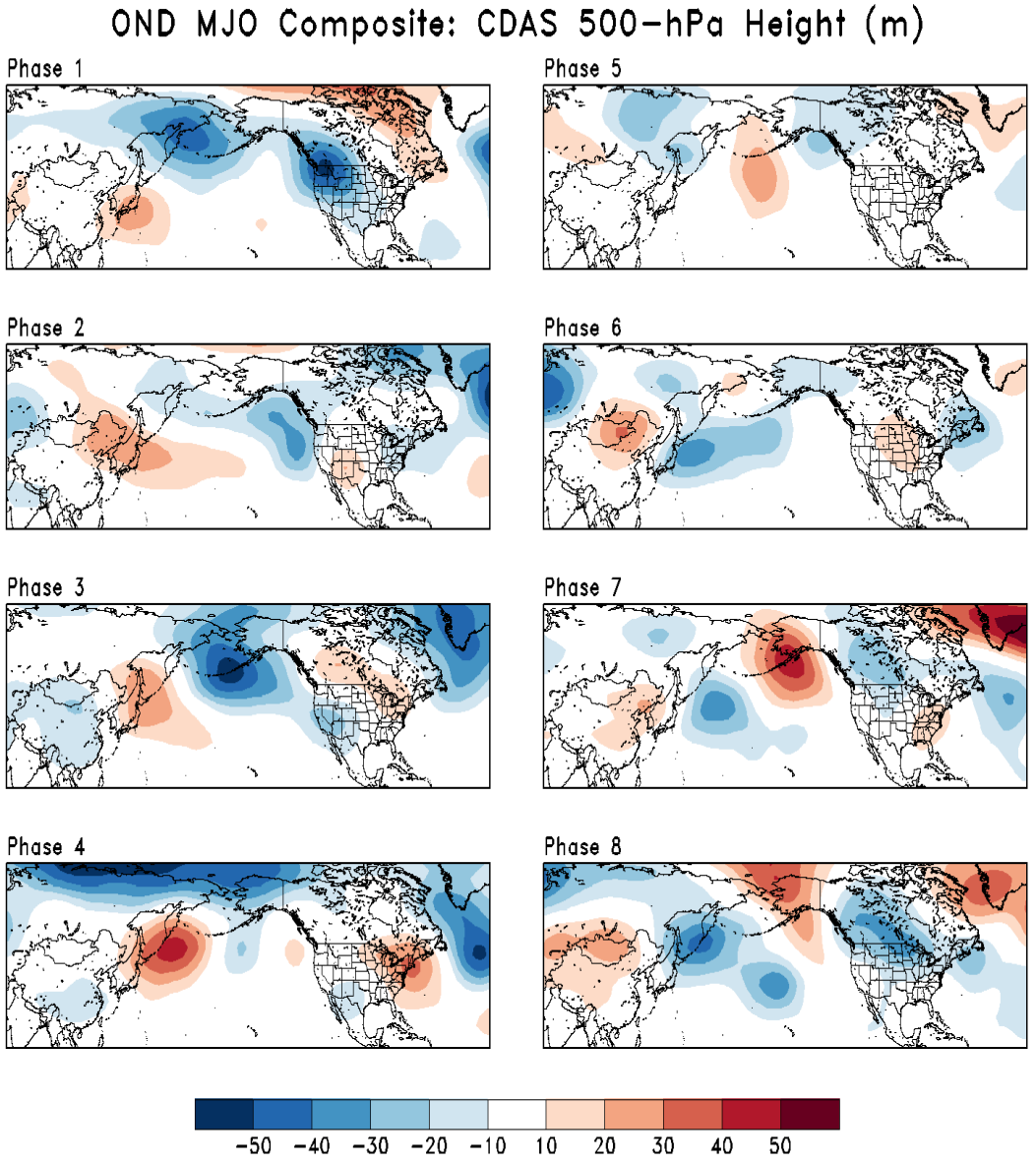


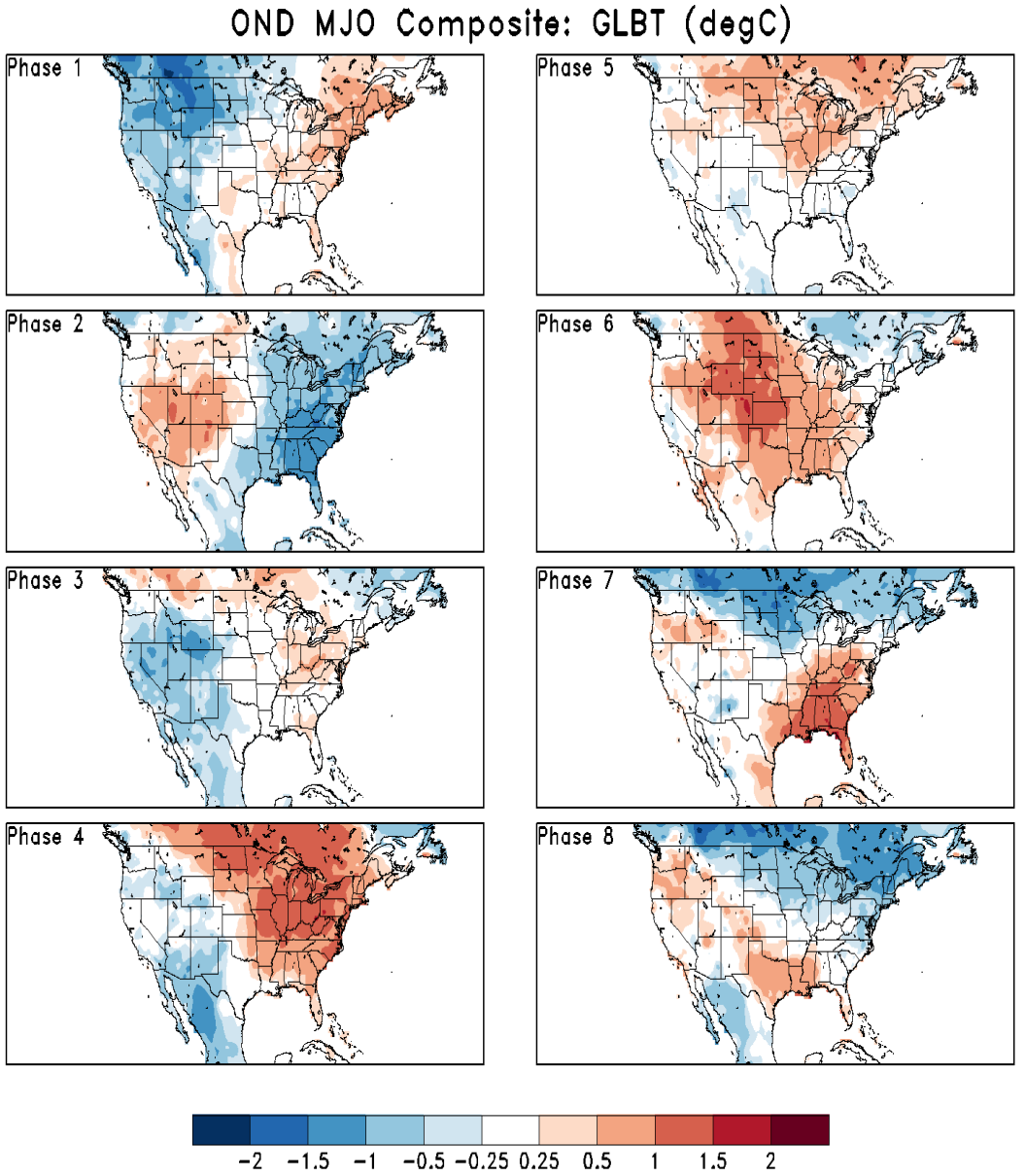




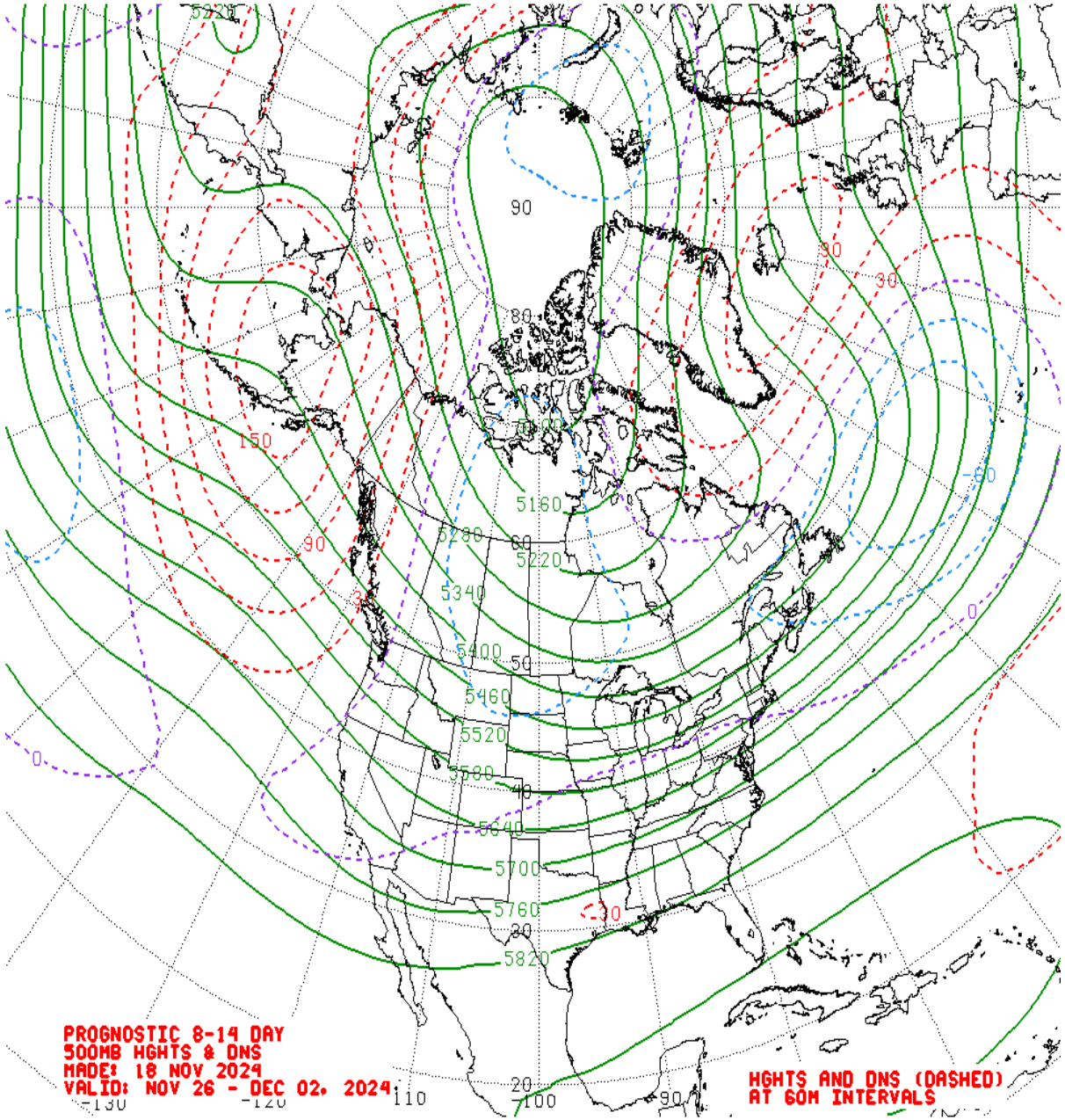


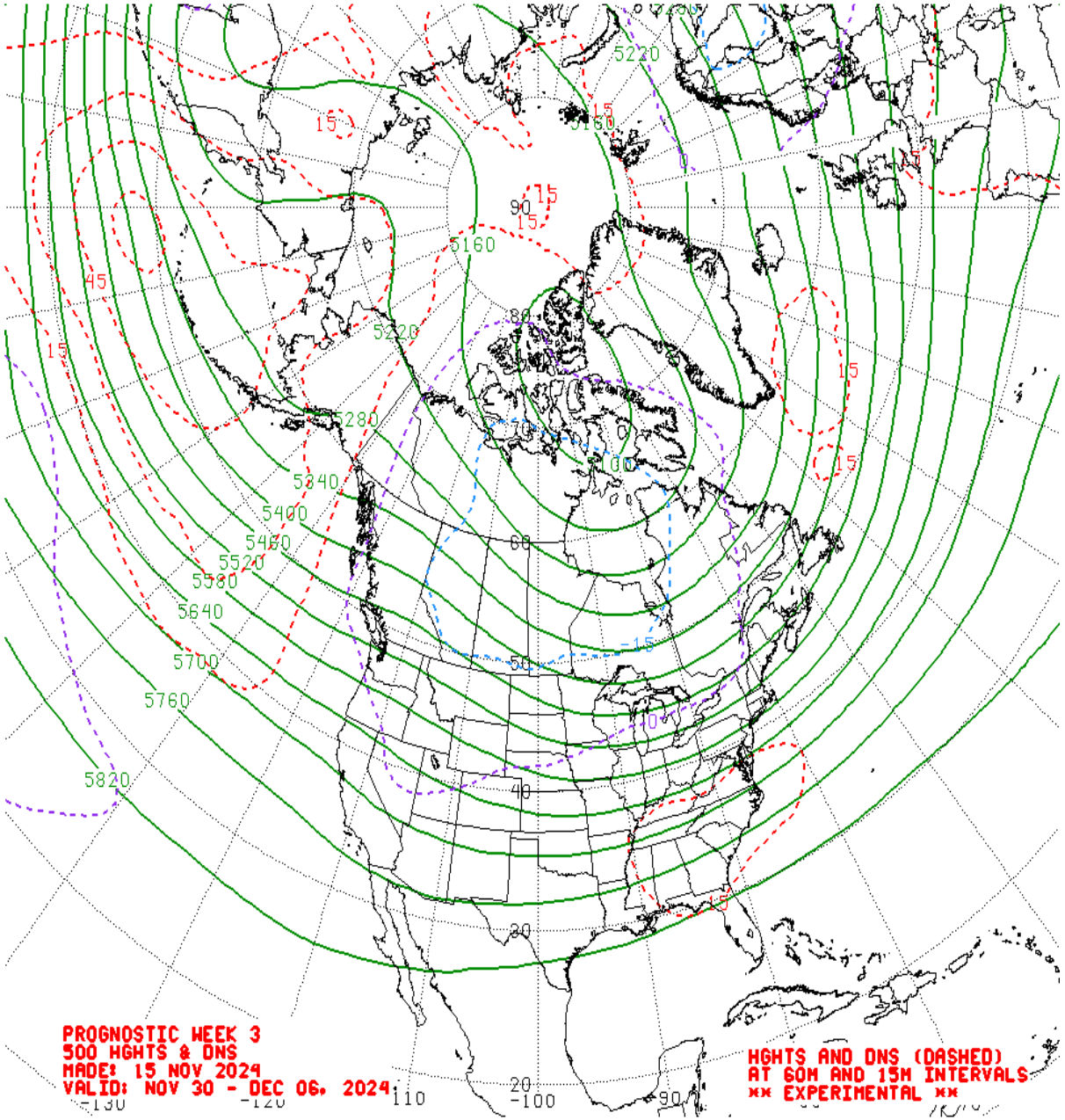
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:



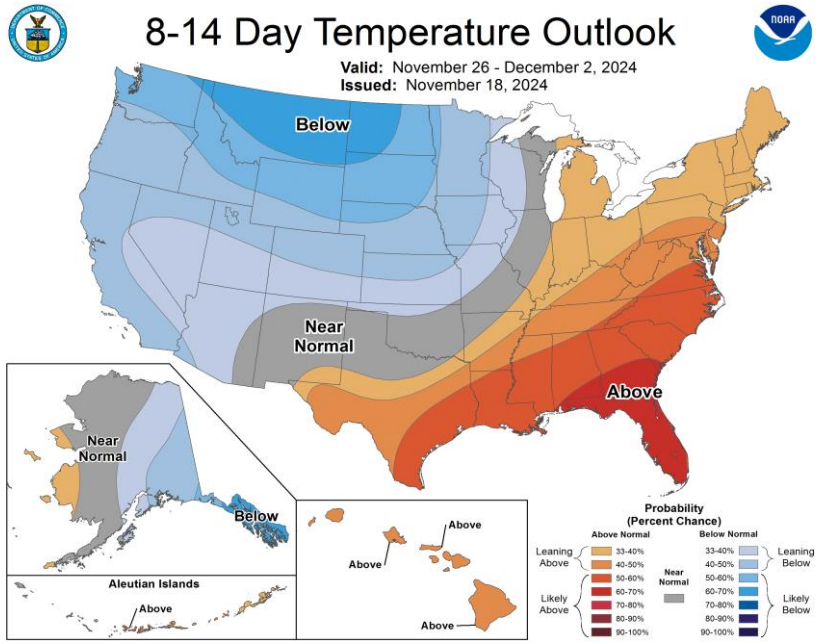


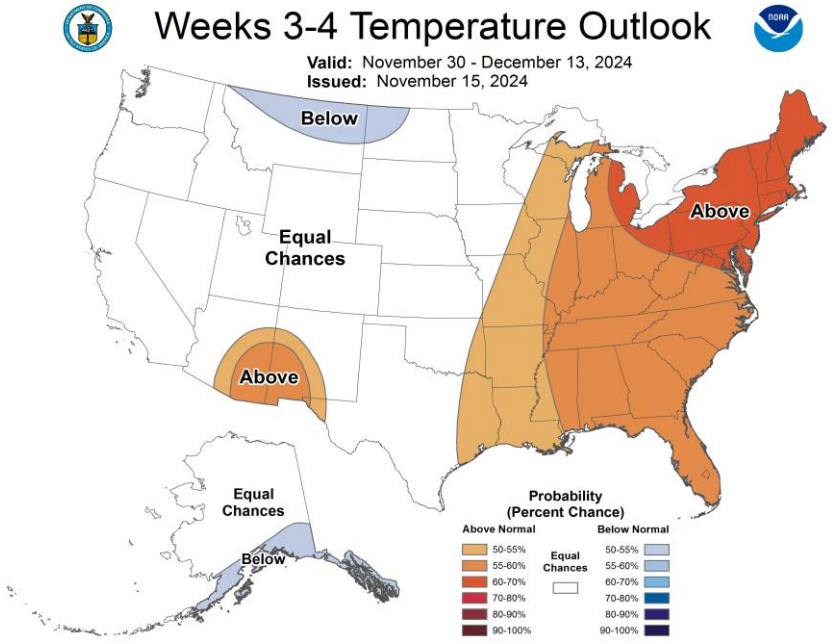
Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3

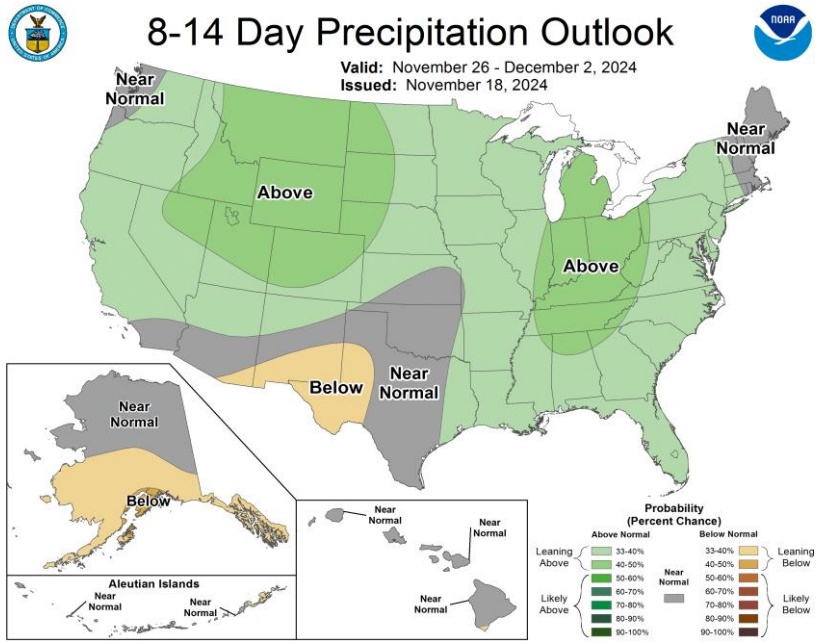


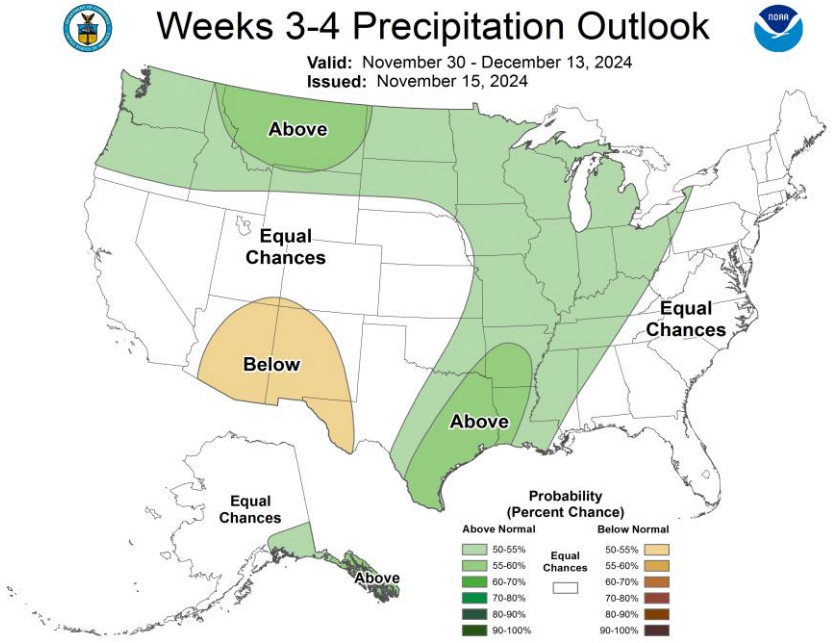


Official Temperature & Precipitation Forecasts:









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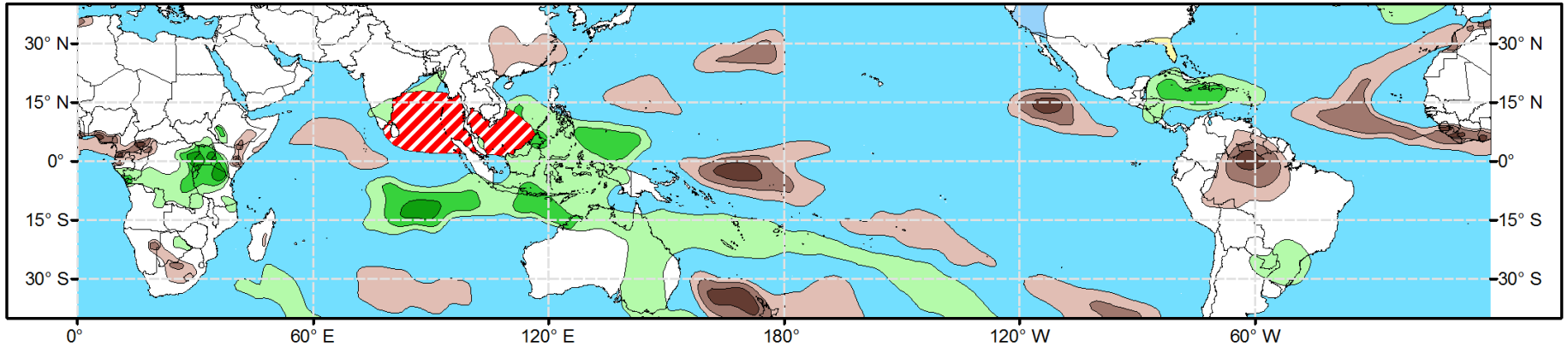

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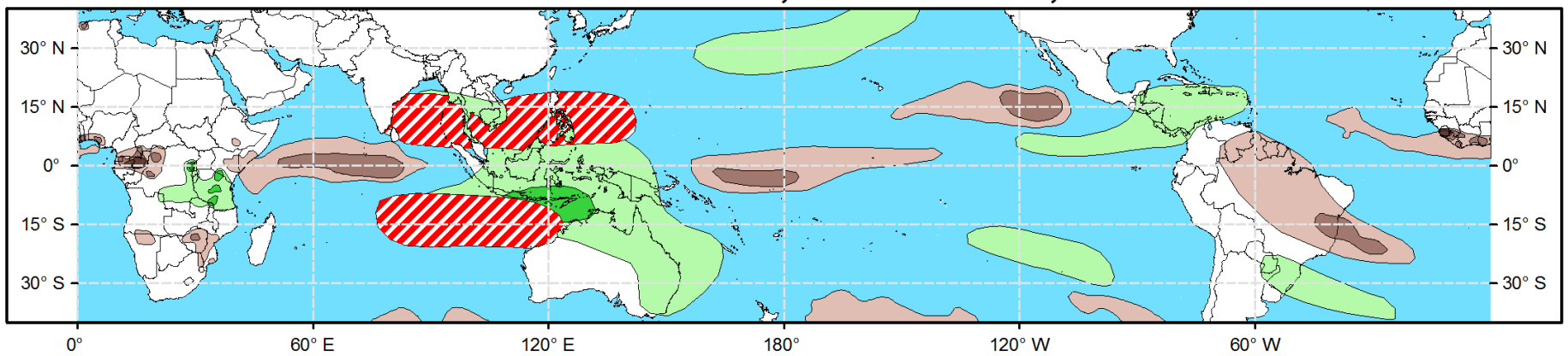

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