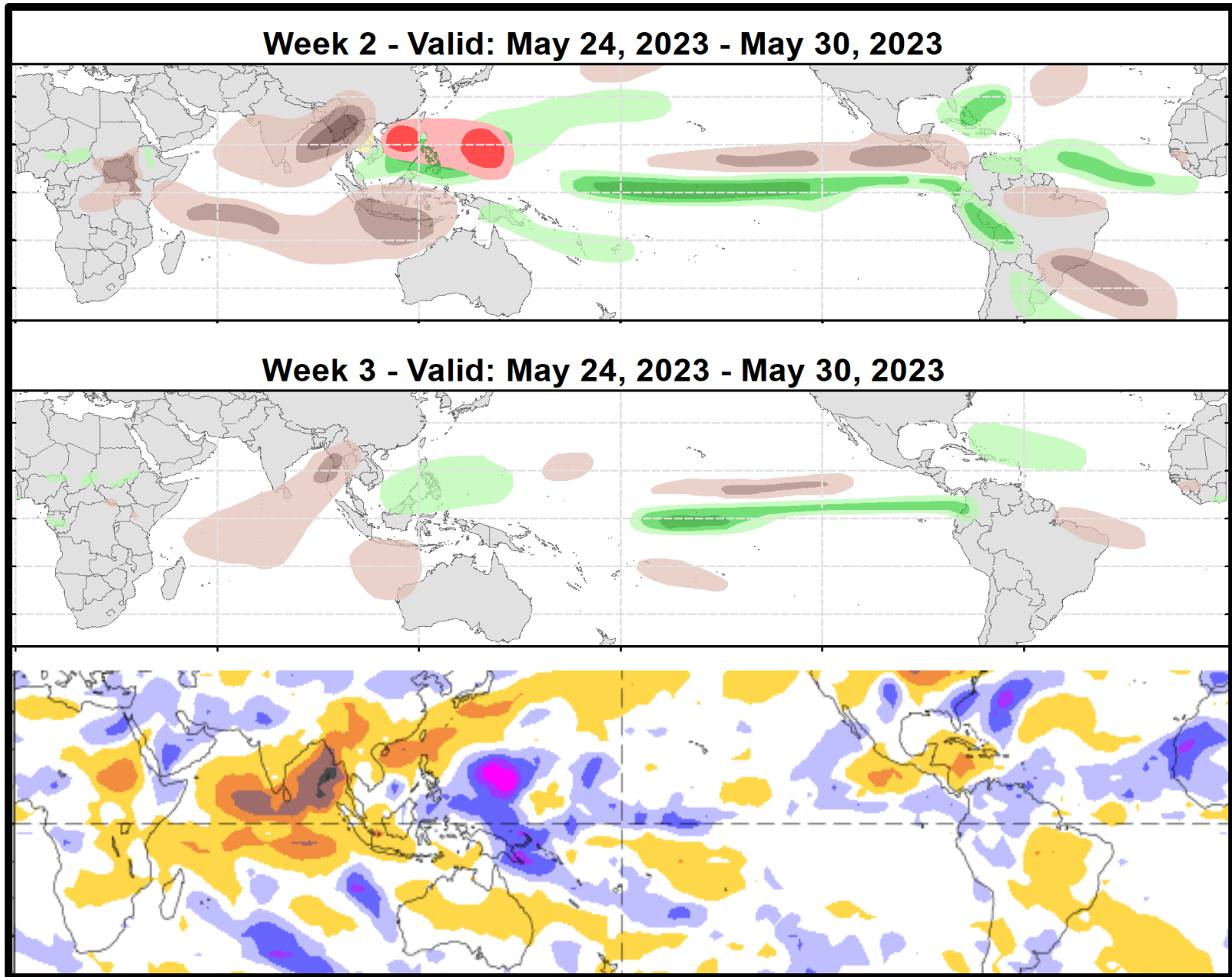
Weeks 2-3 Global Tropics Hazards Outlook

5/30/2023

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

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

- No TCs formed this week. Typhoon Mawar formed within the forecast area, however genesis was May 20, prior to valid period.
- Precipitation forecast is quite good for this valid period. Both forecasts are mostly consistent with each other, and capture major anomalous features well.



Synopsis of Climate Modes:

ENSO: (May 11, 2023 Update) ***next update on Thursday, June 8th***

- ENSO Alert System Status: El Niño Watch

- A transition from ENSO-neutral is expected in the next couple of months, with a greater than 90% chance of El Niño persisting into the Northern Hemisphere winter.

MJO and other subseasonal tropical variability:

- The MJO remains active, with recent observations showing the enhanced convective phase now over the Western Hemisphere.

- The MJO signal has become more coherent over the past week after destructive interference and an apparent reduction in phase speed due to interactions with the strong Typhoon Mawar.

- Dynamical model MJO index forecasts are mixed, with models generally agreeing on continued propagation of MJO signal while disagreeing on the amplitude.

- The MJO may provide an opportunity for early season tropical cyclone formation across the East Pacific basin.

GTH Outlook:

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Climate Prediction Center

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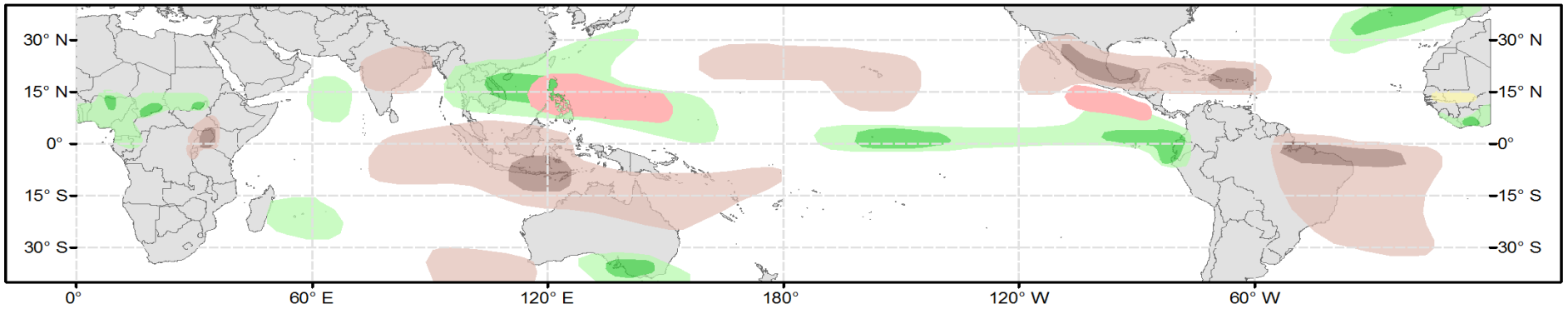

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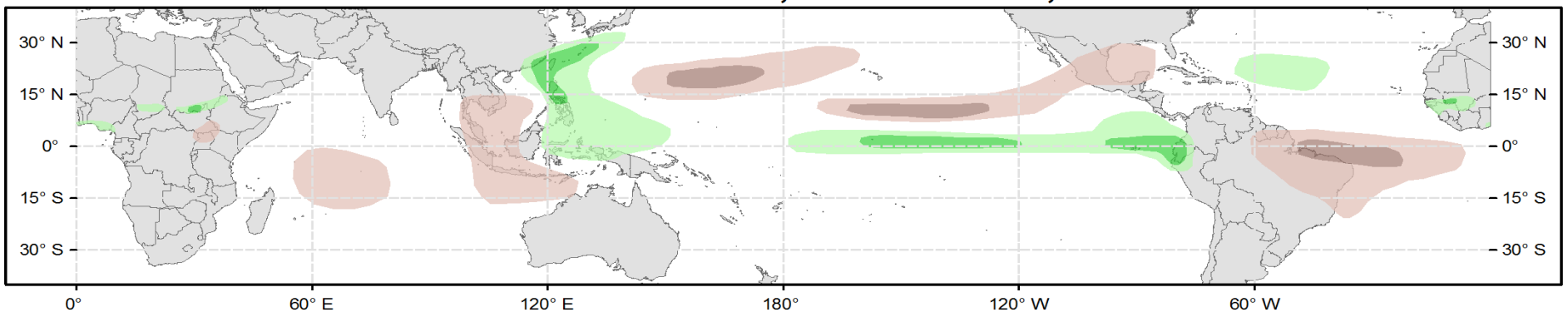

Week-2 Only
Tropical Cyclone (TC) Formation Probability
>20% >40% >60%
Tropical Depression (TD) or greater strength

Above-Average Rainfall Probability
>50% >65% >80%
Weekly total rainfall in the Upper third of the historical range

Below-Average Rainfall Probability
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Above-Average Temperatures Probability
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7-day max temperatures in the Upper third of the historical range

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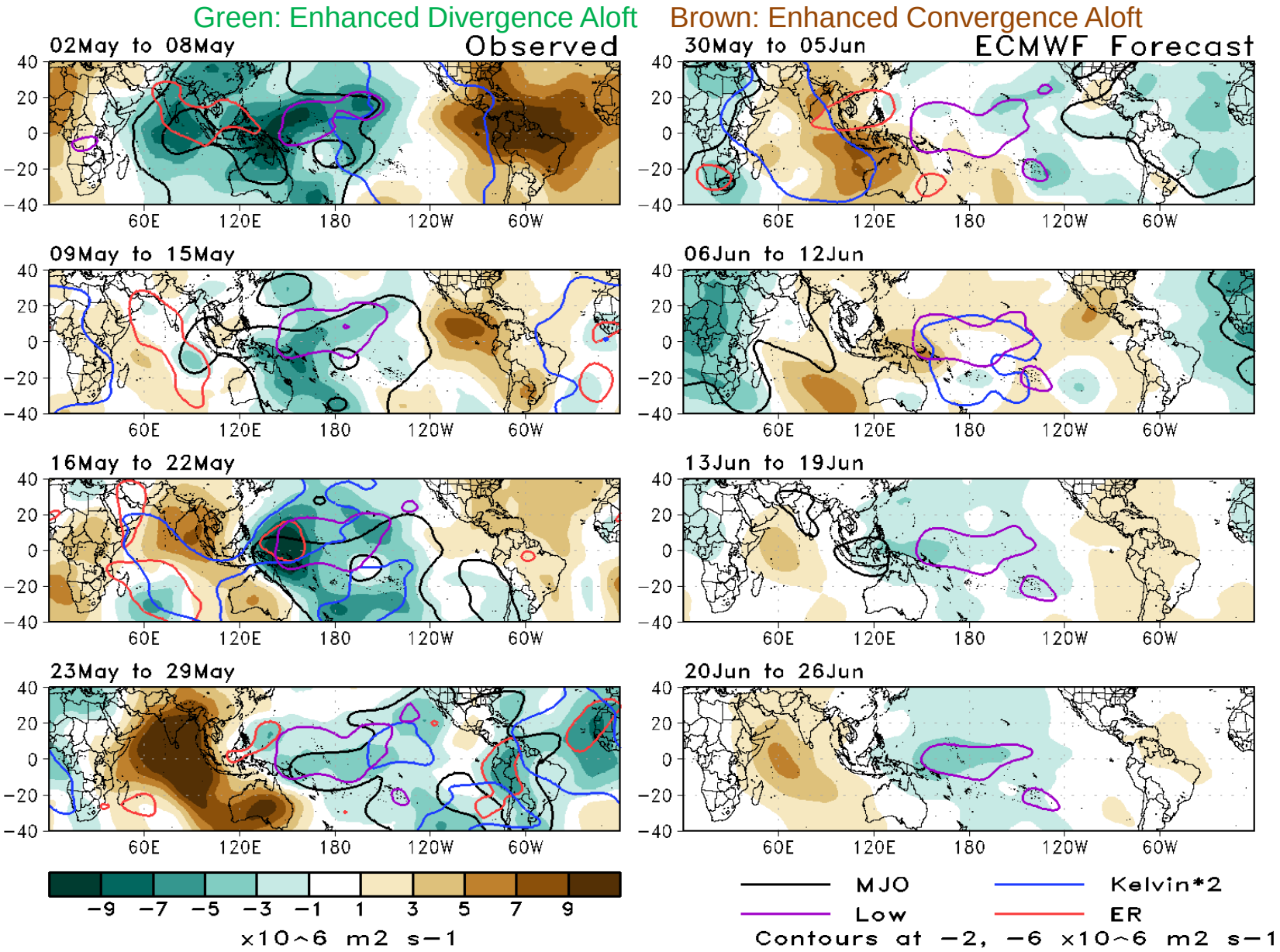
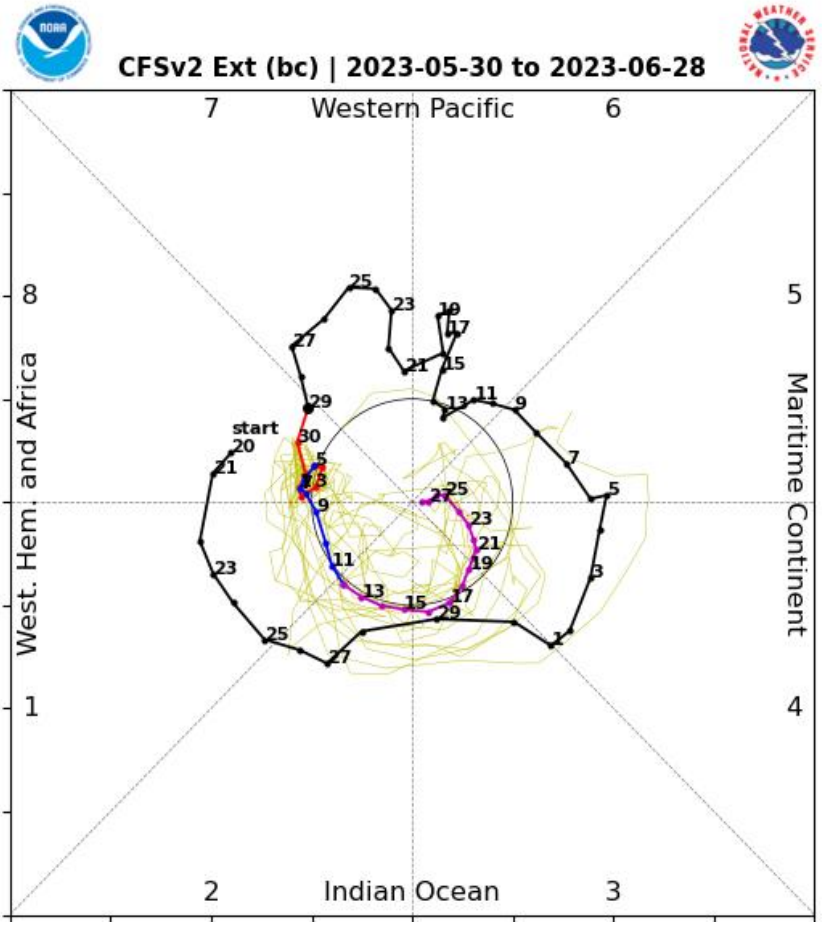
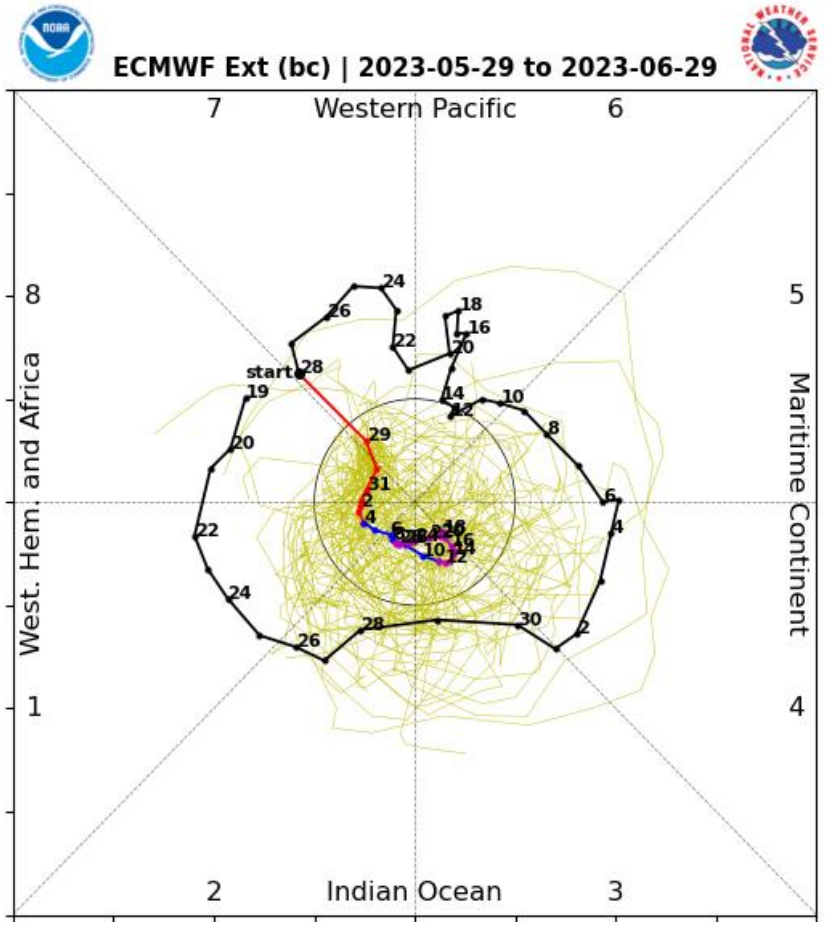
200-hPa Velocity Potential Anomaly Maps:

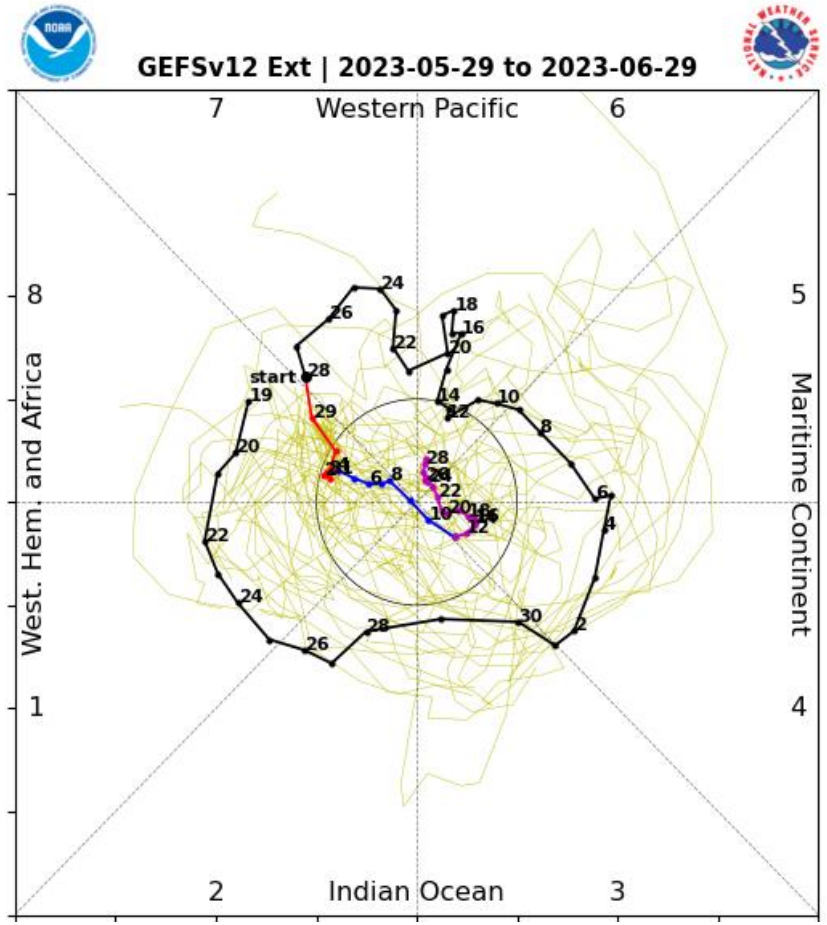
- Continued MJO activity is evident over the last month, with the enhanced convective envelope most recently over the Western Hemisphere.
- Model guidance indicates a slower MJO propagation during weeks 1&2, possibly due to Rossby wave interference.
- Maritime Continent and Western Pacific switch from convergence to divergence aloft during week-3.



RMM Index Observations & Forecasts:

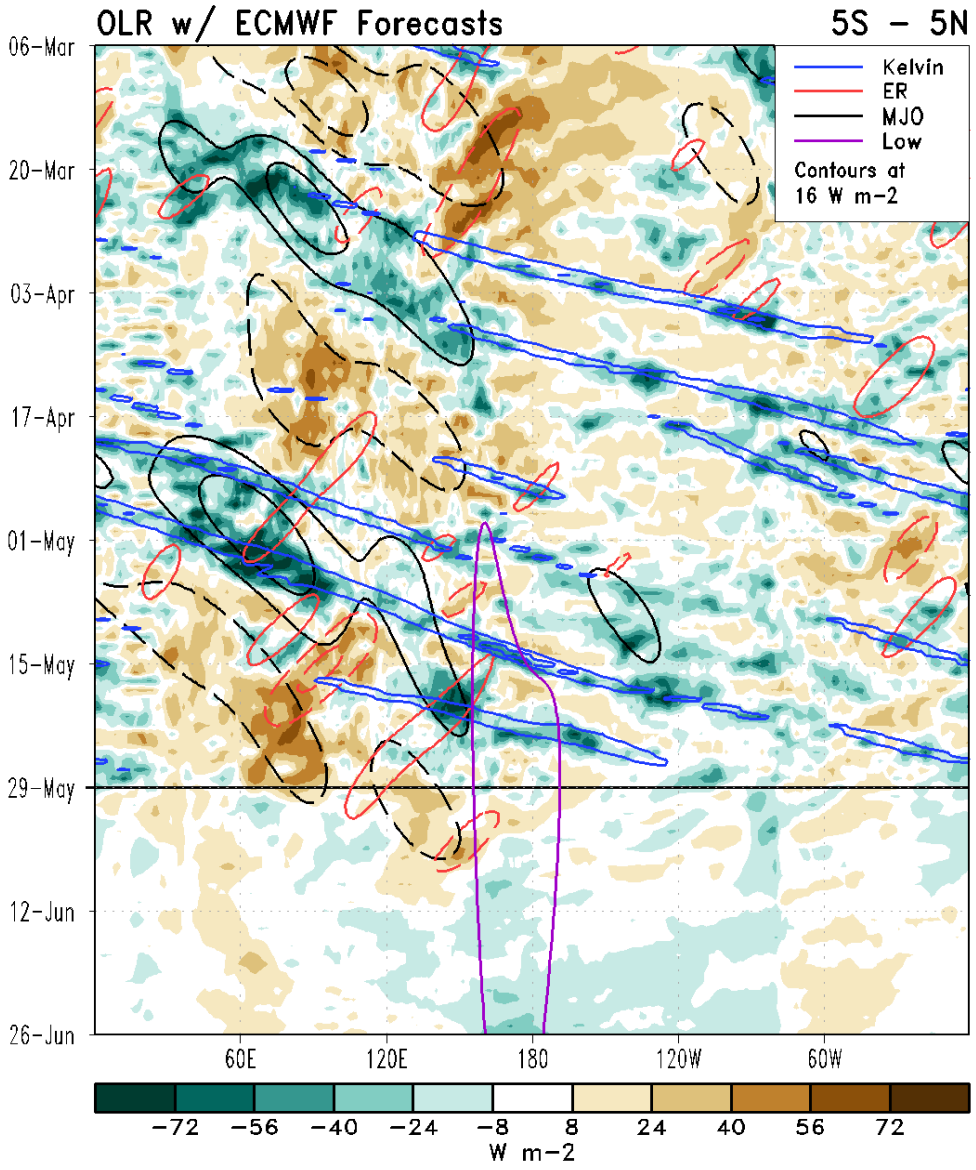


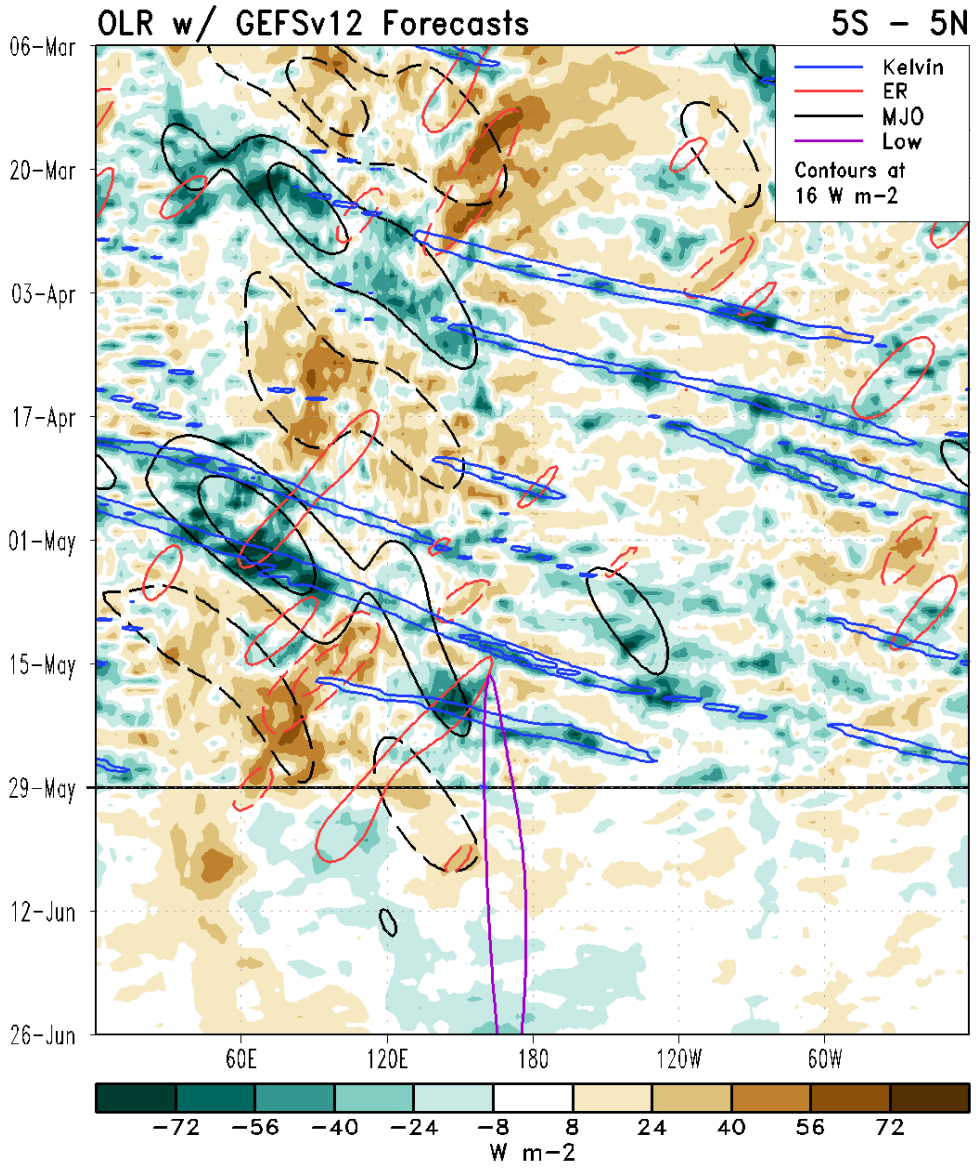




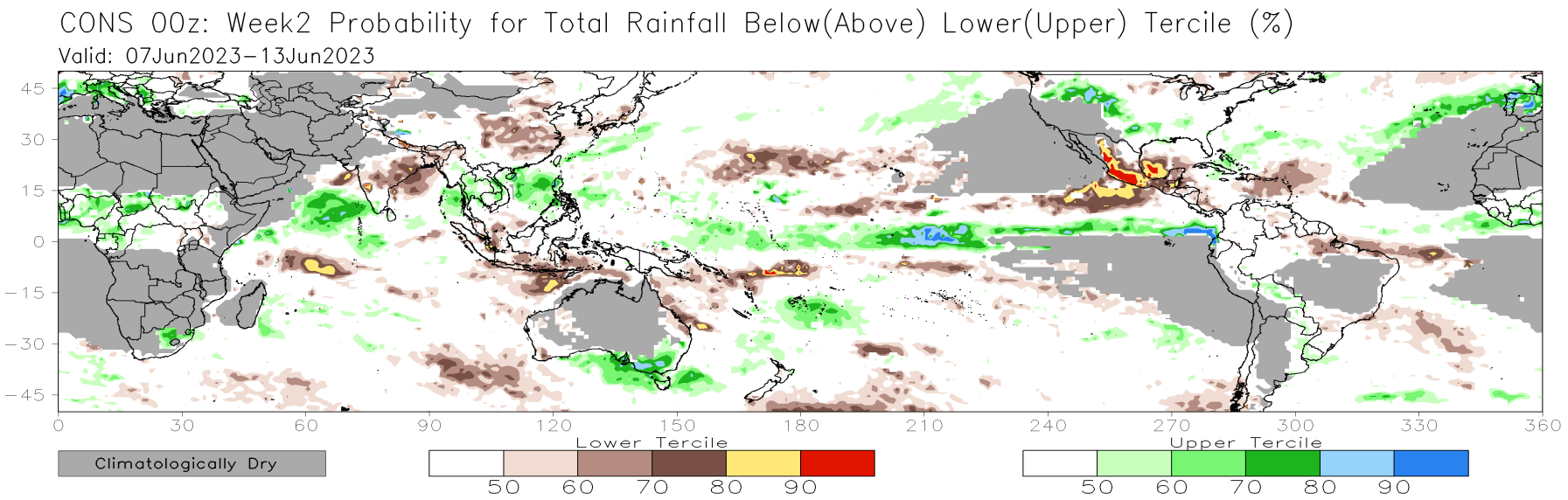
- Most dynamical models favor a continued eastward propagation of the MJO signal through the week-2 time period, although there is considerable spread with regard to amplitude of RMM signal.
- Many models also have large ensemble spread resulting in lower forecast confidence, at least compared to prior forecast cycles.

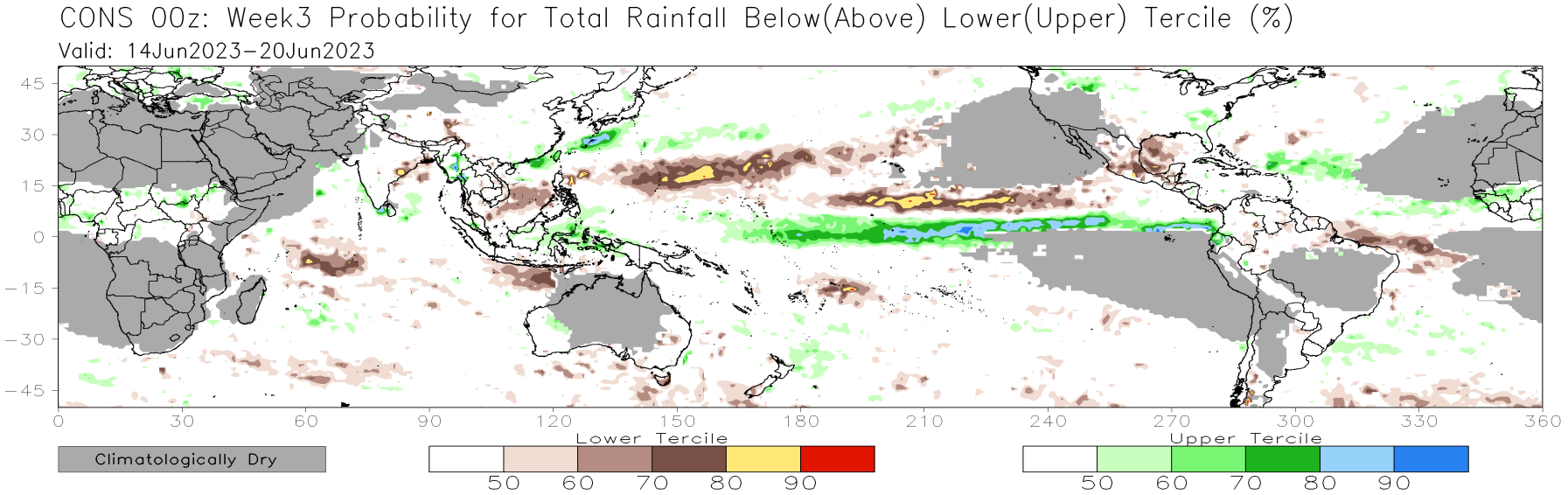
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



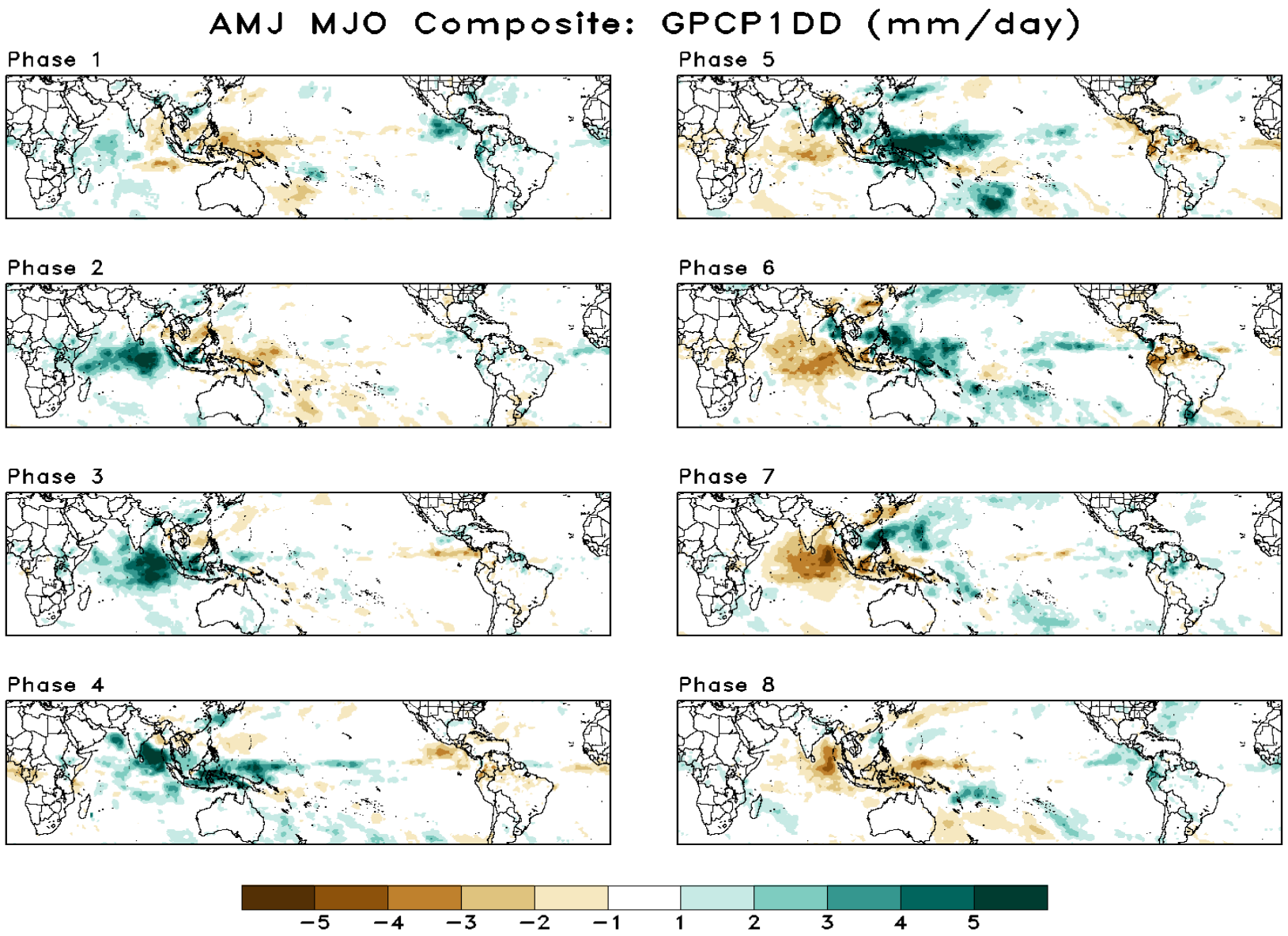


Consolidated Probabilistic Precipitation: Weeks 2 & 3

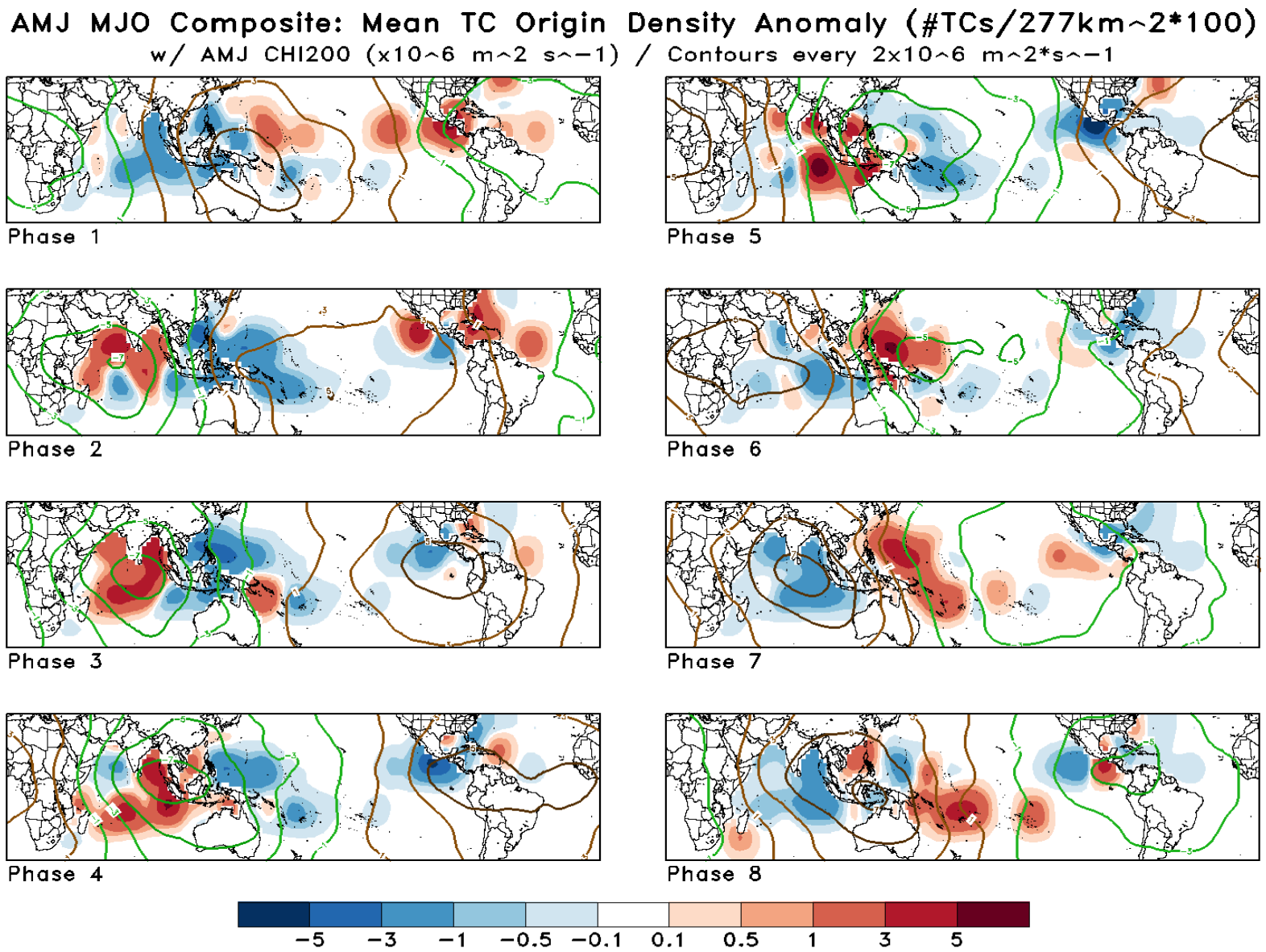


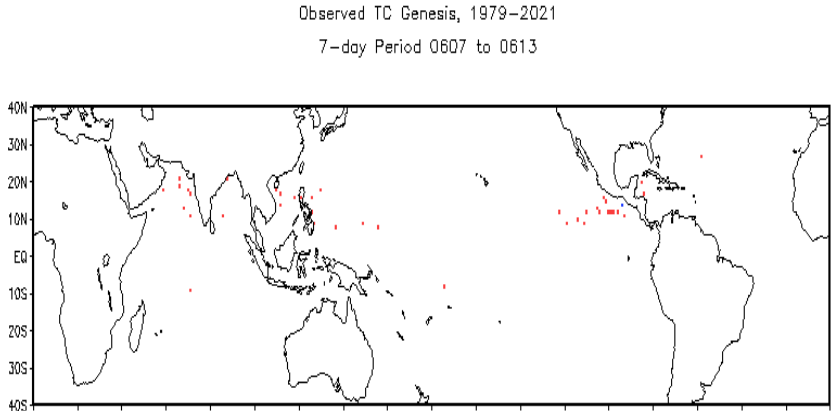


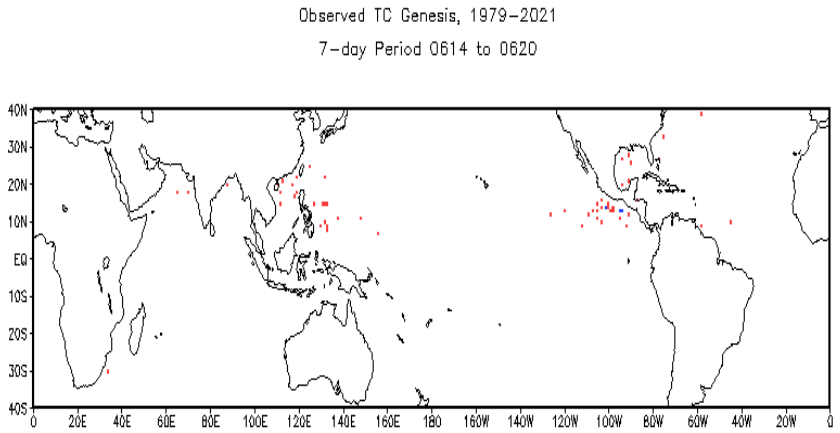
Historical Precipitation Anomalies By MJO Phase:



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

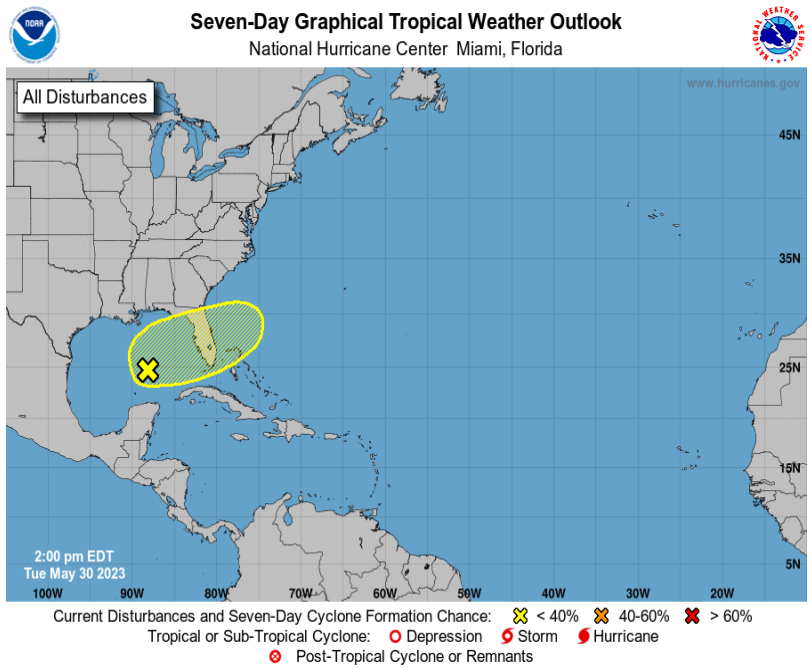


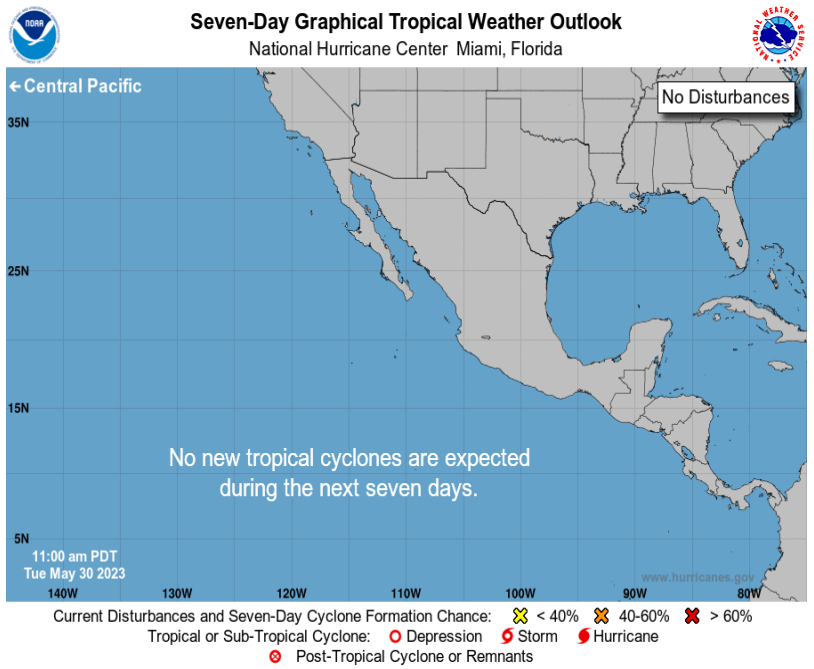


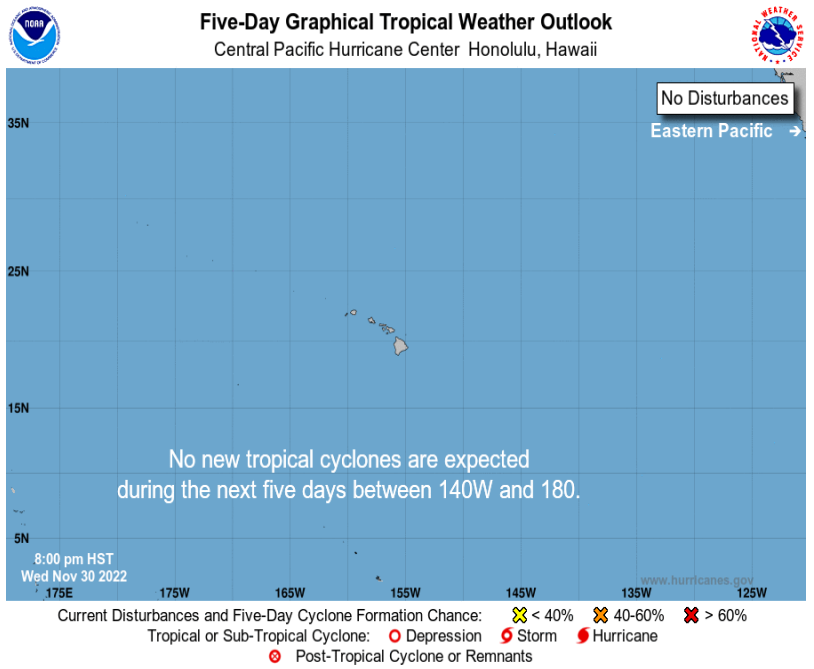


Experimental

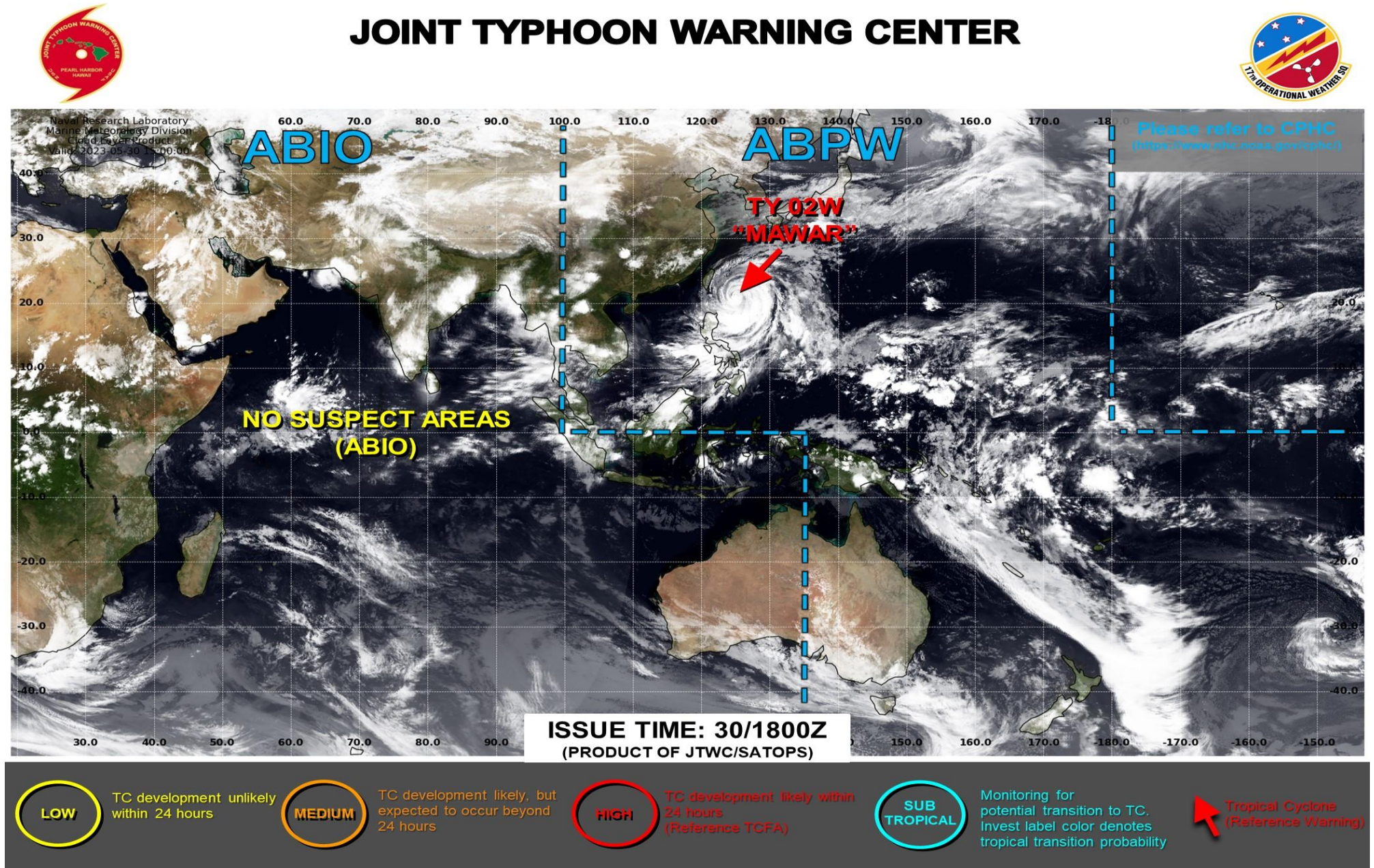
Tropical Cyclone Monitoring/Forecast: NHC

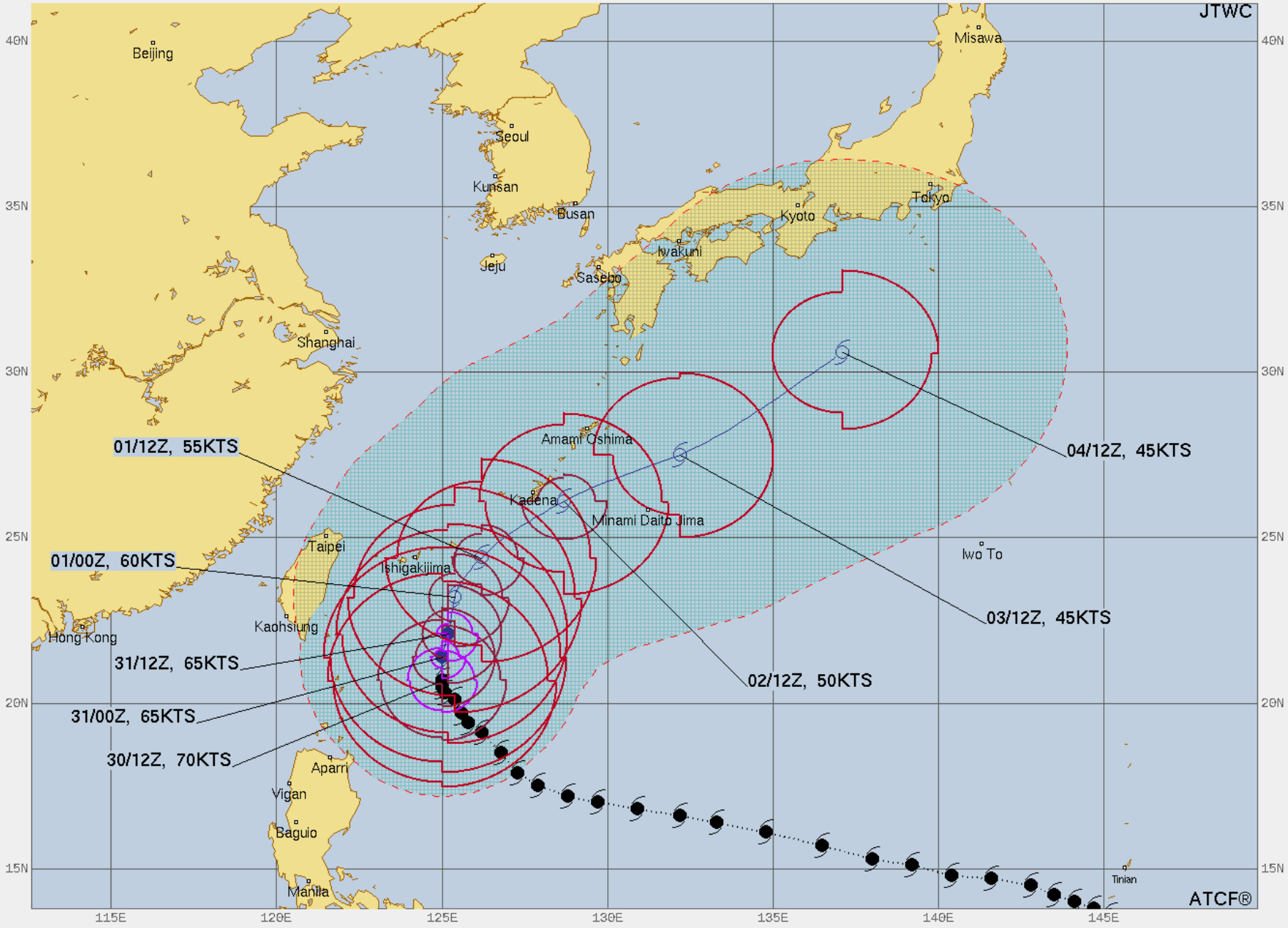






Tropical Cyclone Monitoring/Forecast: JTWC





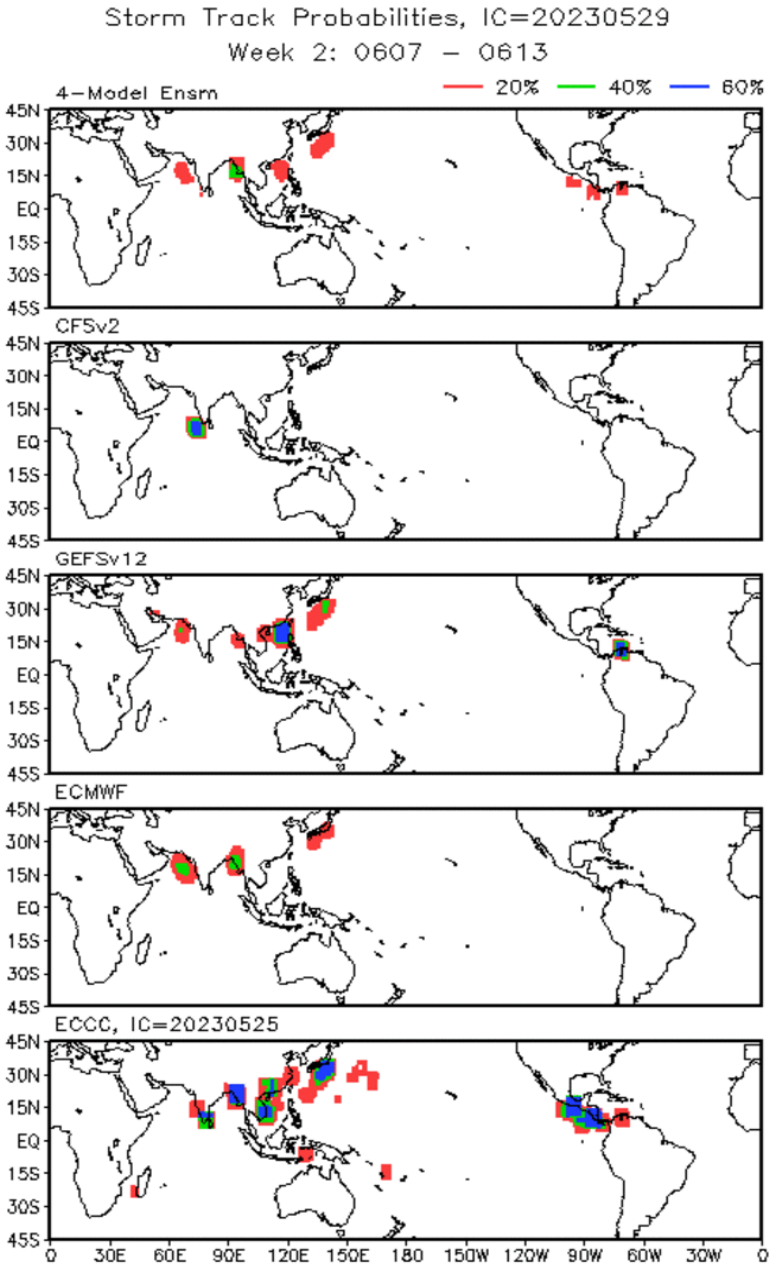
TYPHOON 02W (MAWAR) WARNING #43
WTPN31 PGTW 301500
301200Z POSIT: NEAR 20.7N 125.0E
MOVING 360 DEGREES TRUE AT 02 KNOTS
MAXIMUM SIGNIFICANT WAVE HEIGHT: 30 FEET
30/12Z, WINDS 070 KTS, GUSTS TO 085 KTS
31/00Z, WINDS 065 KTS, GUSTS TO 080 KTS
31/12Z, WINDS 065 KTS, GUSTS TO 080 KTS
01/00Z, WINDS 060 KTS, GUSTS TO 075 KTS
01/12Z, WINDS 055 KTS, GUSTS TO 070 KTS
02/12Z, WINDS 050 KTS, GUSTS TO 065 KTS
03/12Z, WINDS 045 KTS, GUSTS TO 055 KTS
04/12Z, WINDS 045 KTS, GUSTS TO 055 KTS

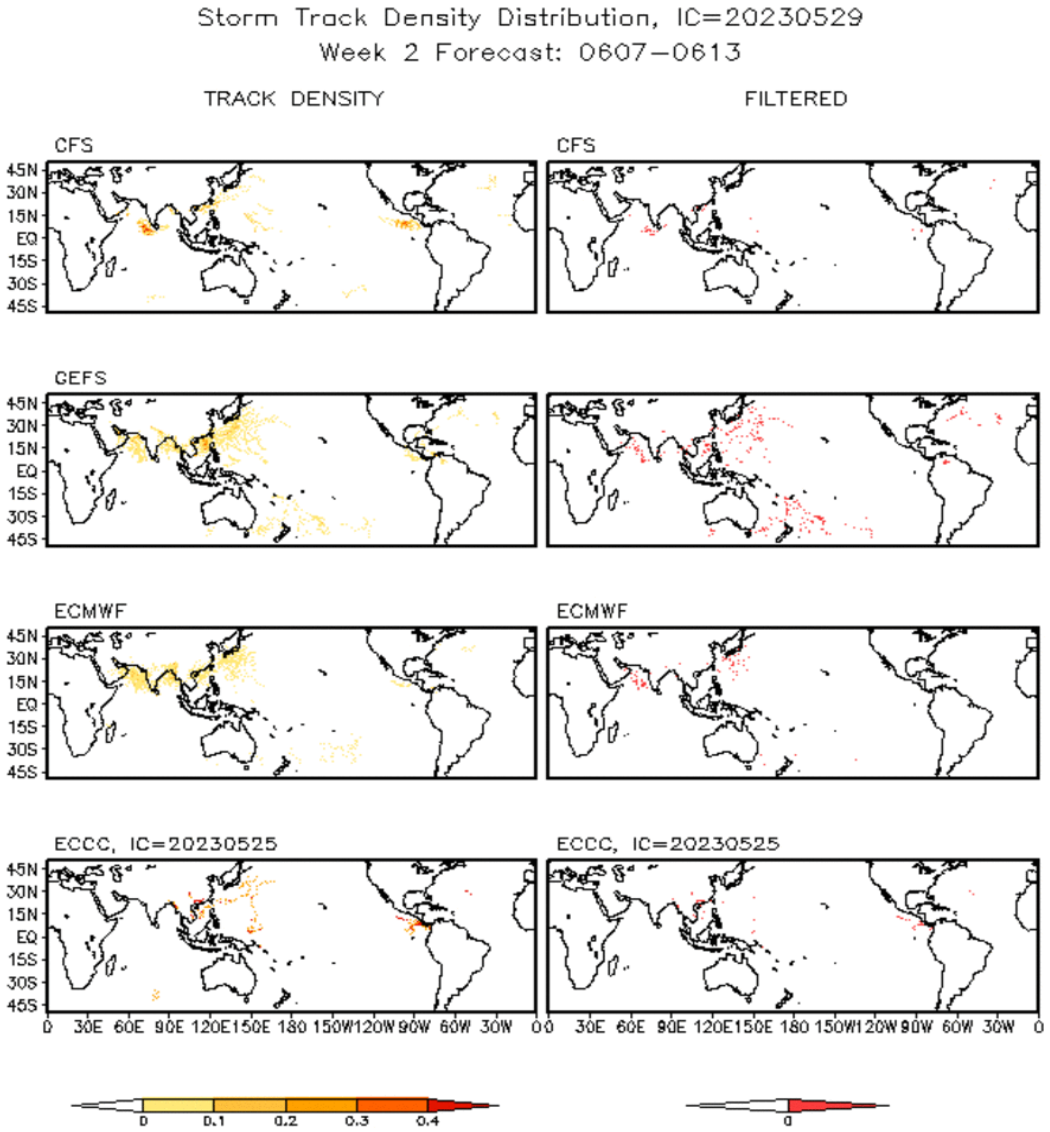
CPA TO:	NM	DTG
KAOHSIUNG	271	05/31/03Z
TAIPEI	241	06/01/02Z
KADENA_AB	40	06/02/08Z
OKIDAITO_JIMA	141	06/03/00Z
MINAMIDAITO_JIMA	68	06/03/03Z
KANOYA	233	06/03/19Z
SASEBO	356	06/03/20Z
CAMP_KENGUN	300	06/03/23Z
IWAKUNI	320	06/04/08Z
ATSUGI	316	06/04/12Z
CAMP_FUJI	296	06/04/12Z
CAMP_ZAMA	316	06/04/12Z
CHICHI_JIMA	340	06/04/12Z
NARITA_AIRPORT	353	06/04/12Z
R2S2	326	06/04/12Z
YOKOSUKA	311	06/04/12Z
YOKOTA_AB	325	06/04/12Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
KADENA_AB	205	375	0
TAIPEI	143	327	0
KAOHSIUNG	113	286	0

LESS THAN 34 KNOTS
34-63 KNOTS
MORE THAN 63 KNOTS
FORECAST CYCLONE TRACK
PAST CYCLONE TRACK
DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)

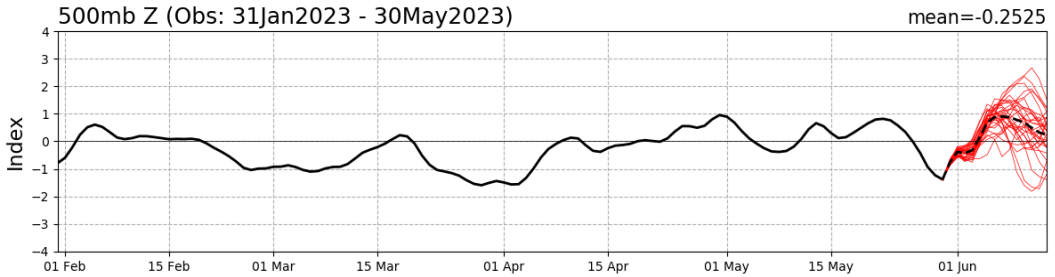
Multi-Model TC Track Probabilities/Densities: Week-2

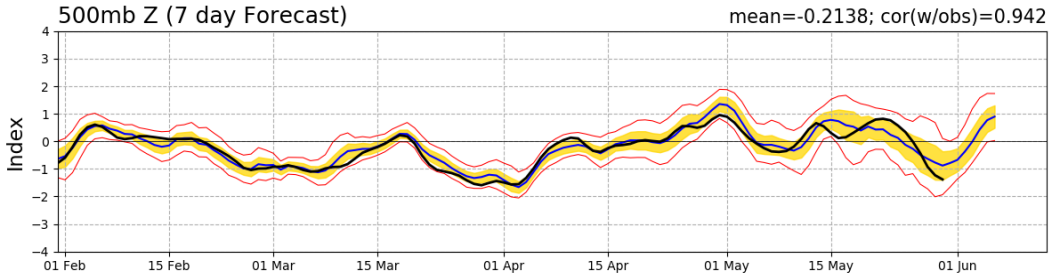


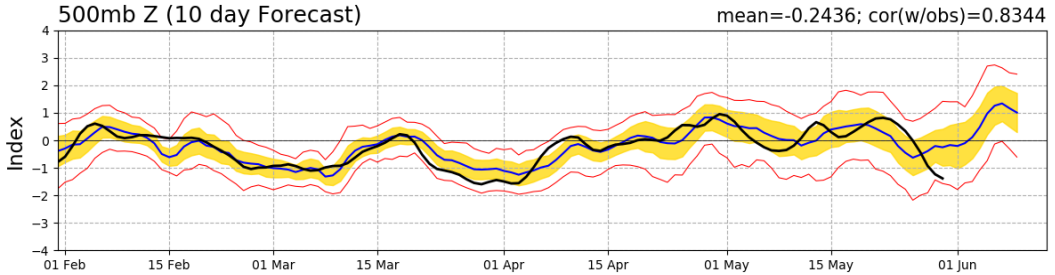


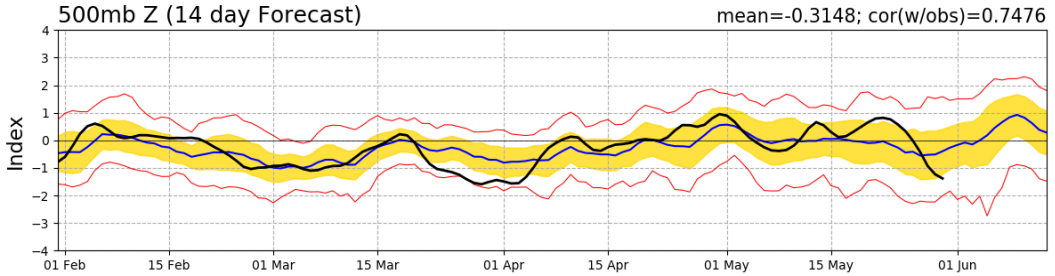
Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

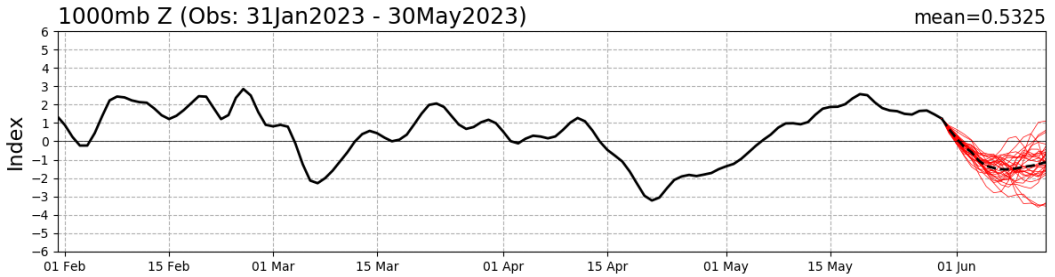


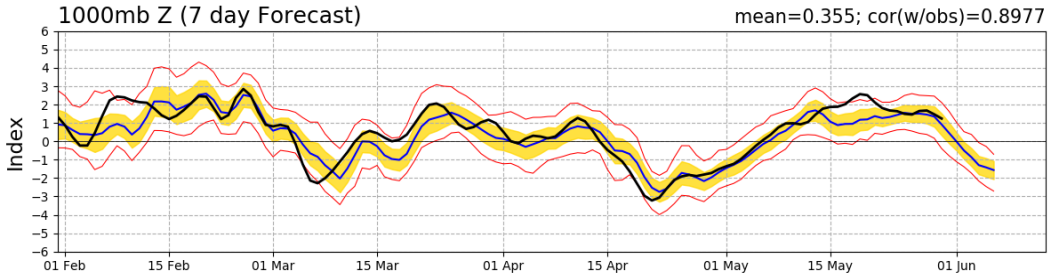


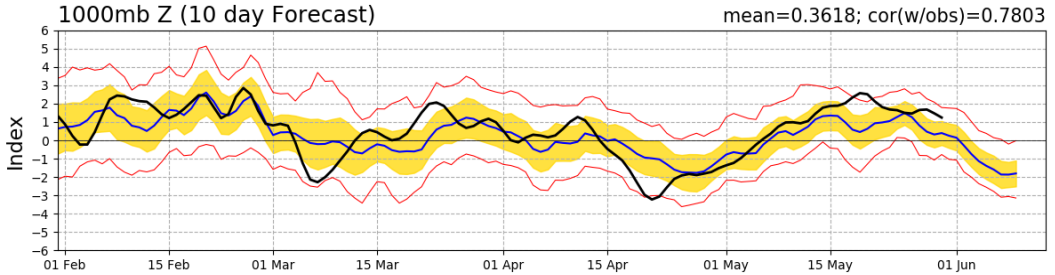


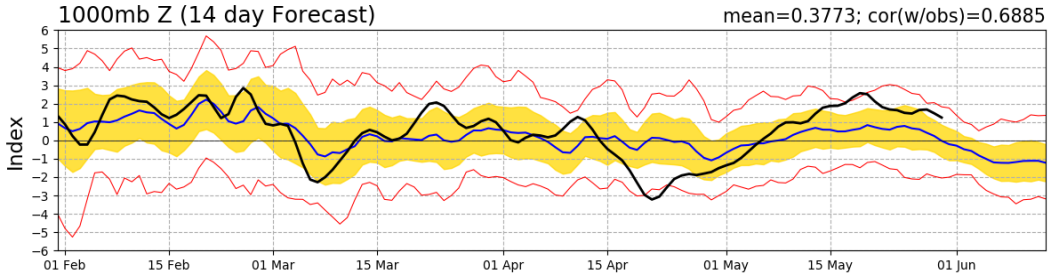


AO Index: Observed & GEFS Forecasts

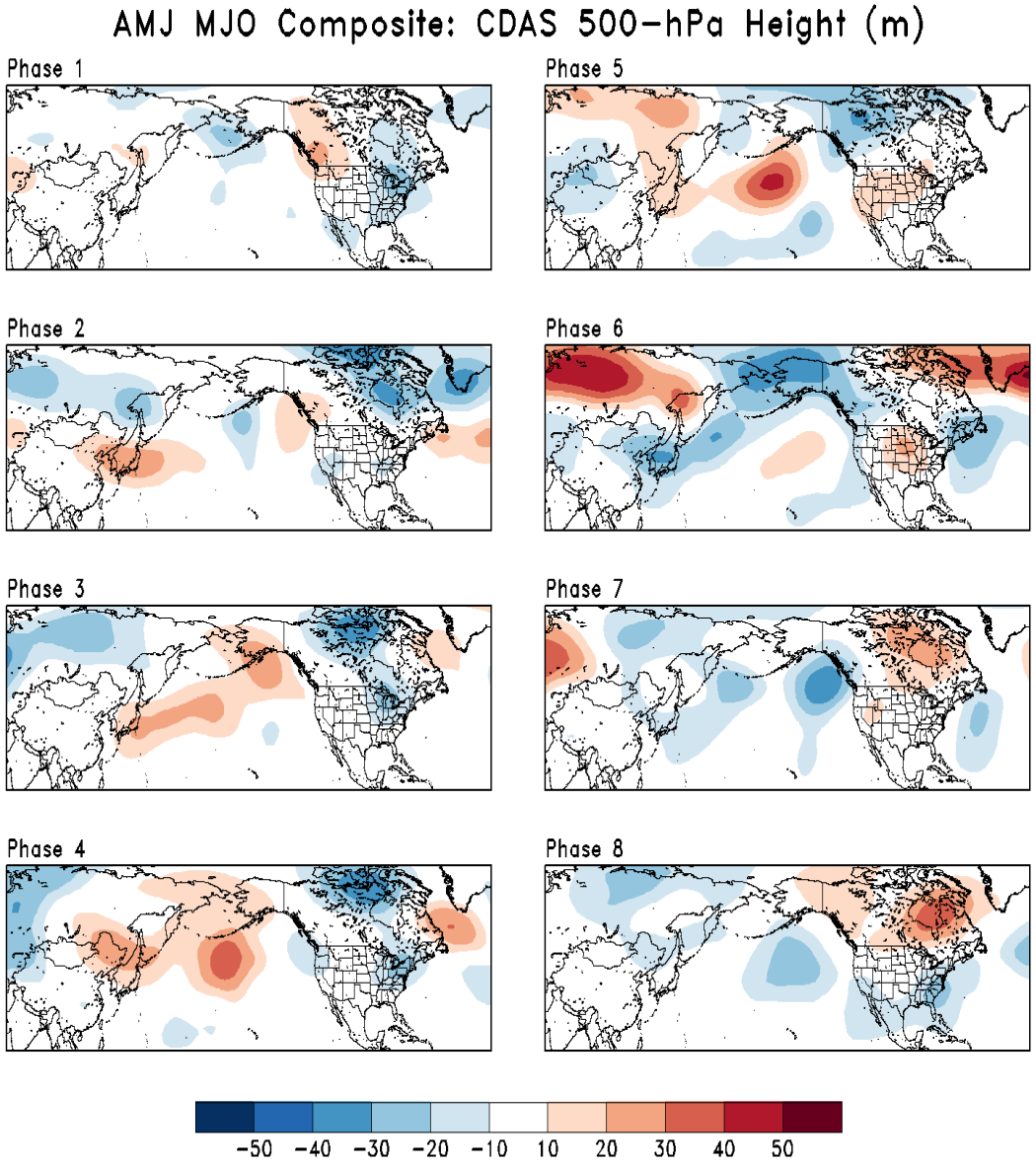


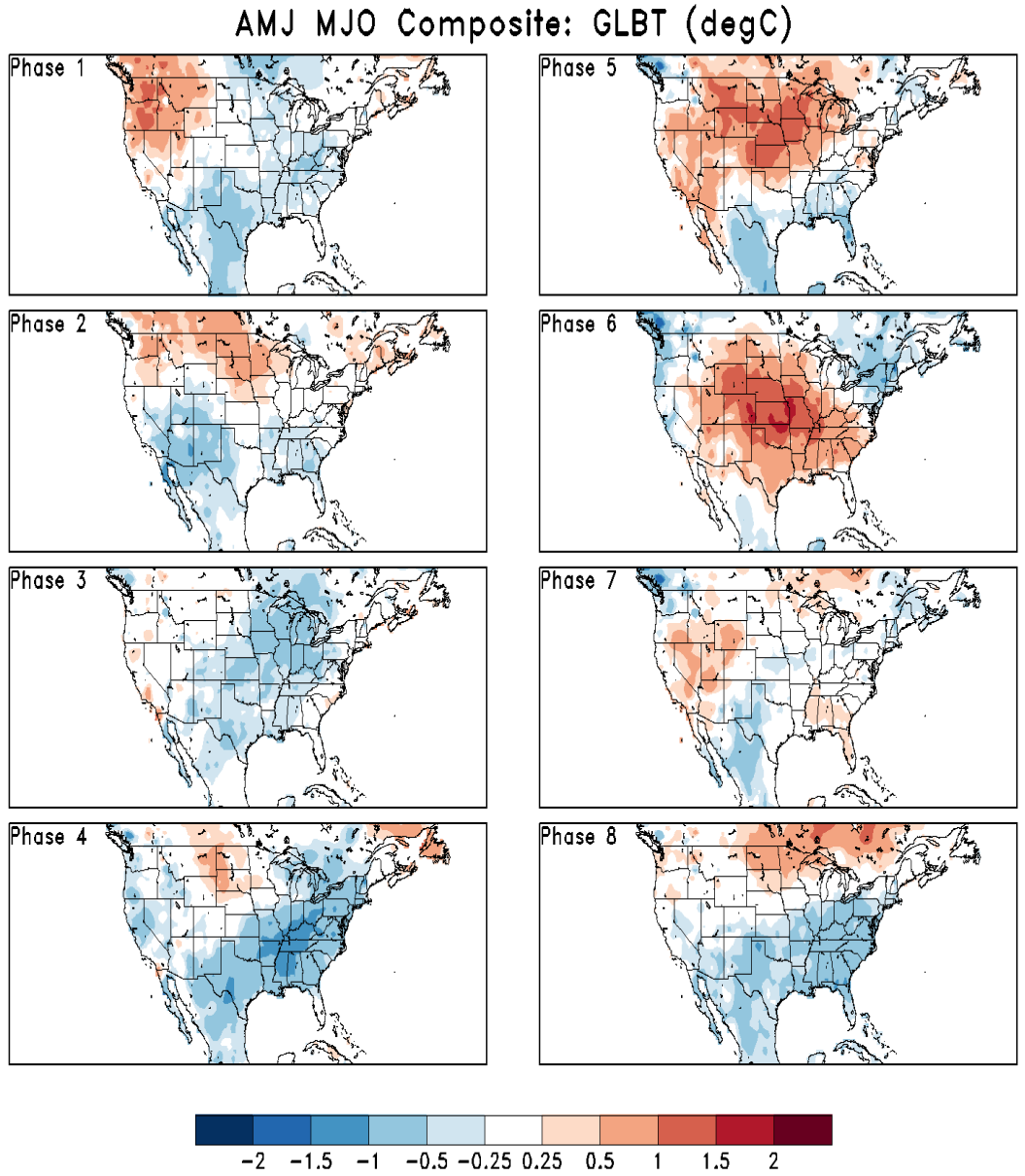




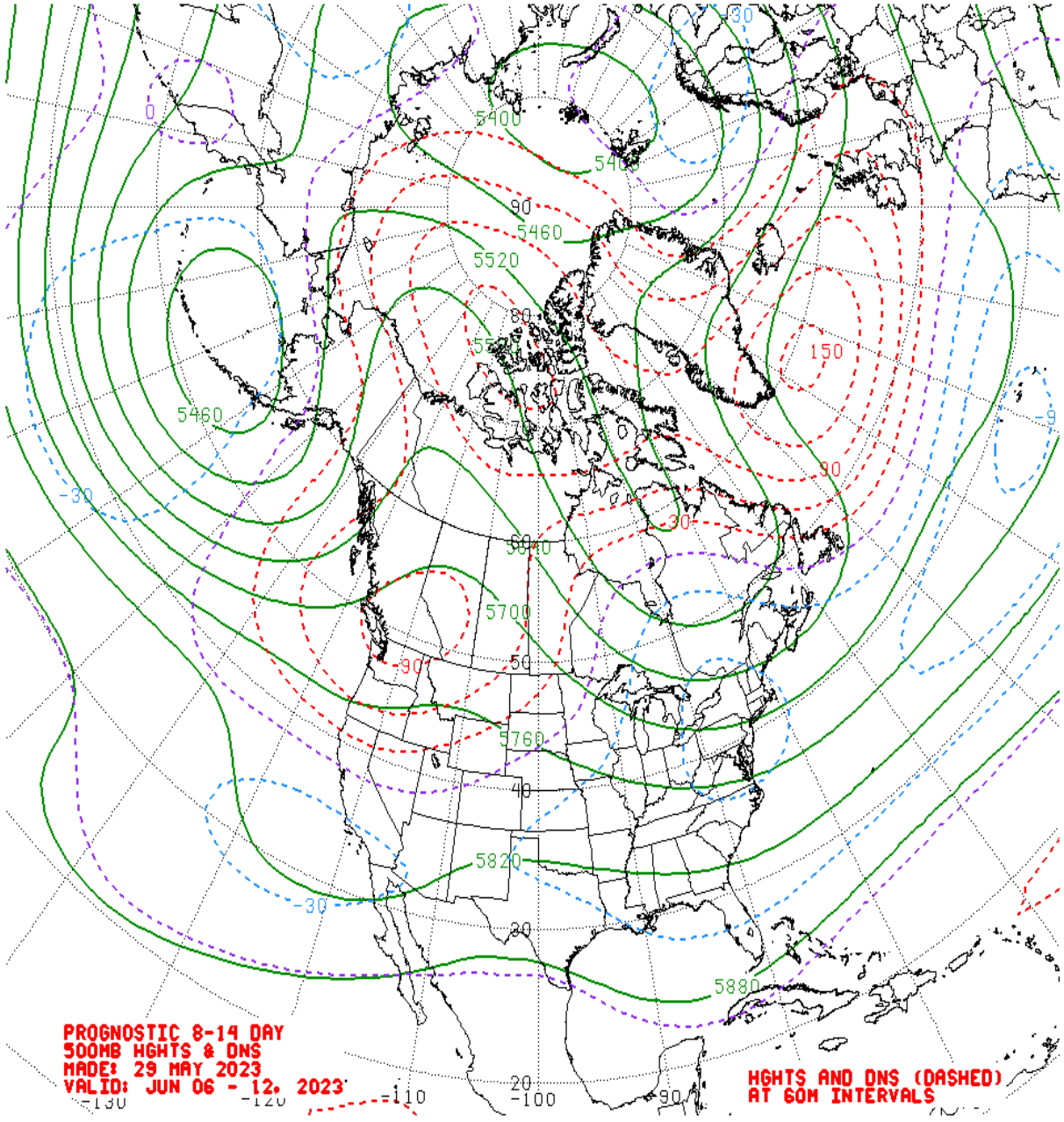


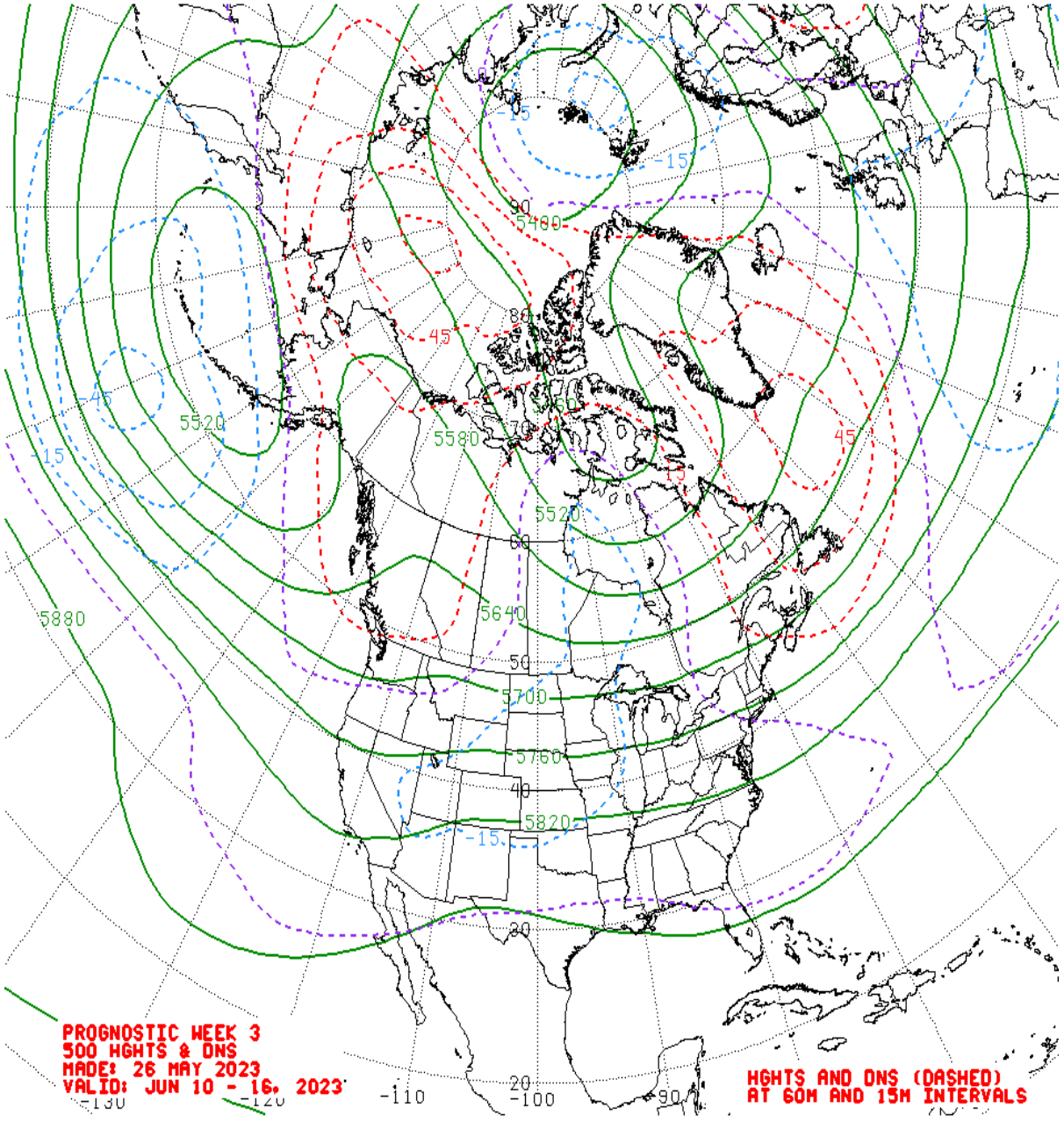
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:



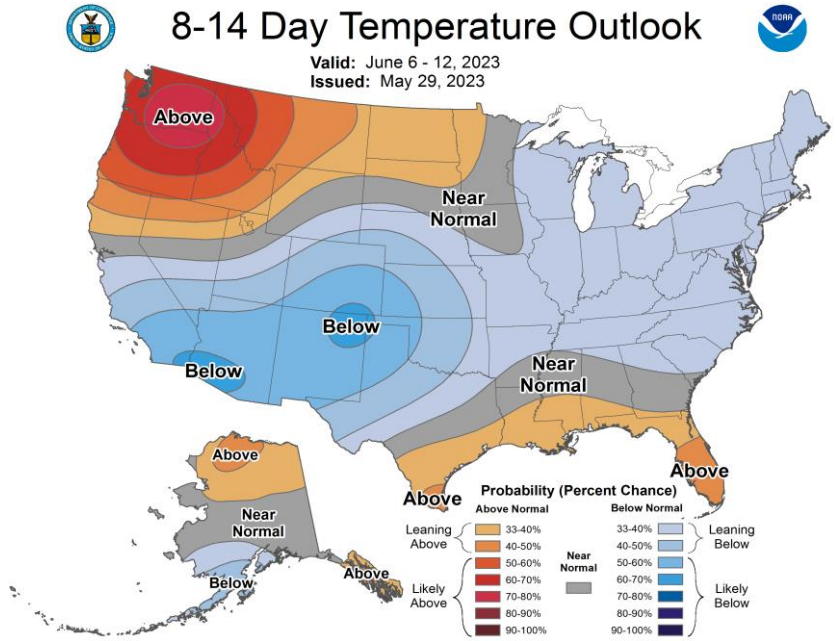


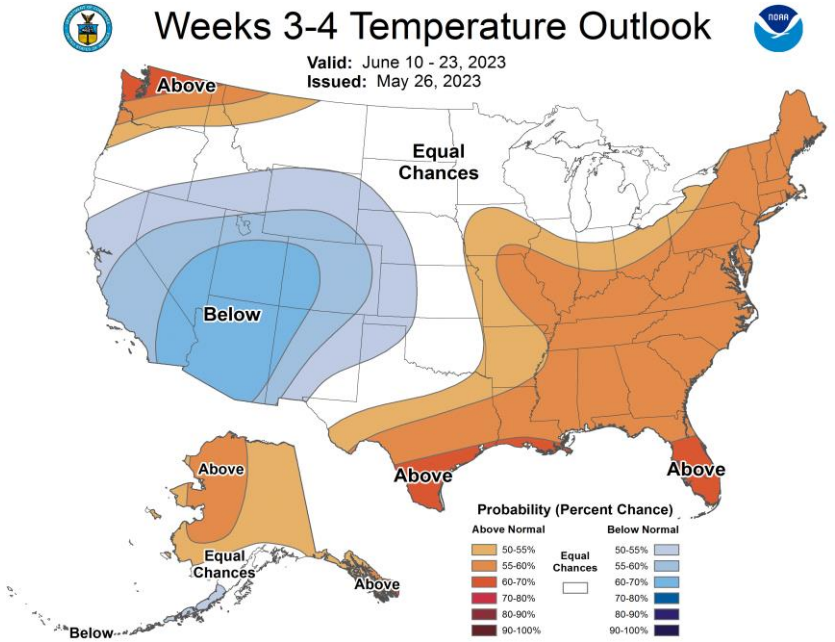
Mean 500-hPa Height Anomaly Forecasts:

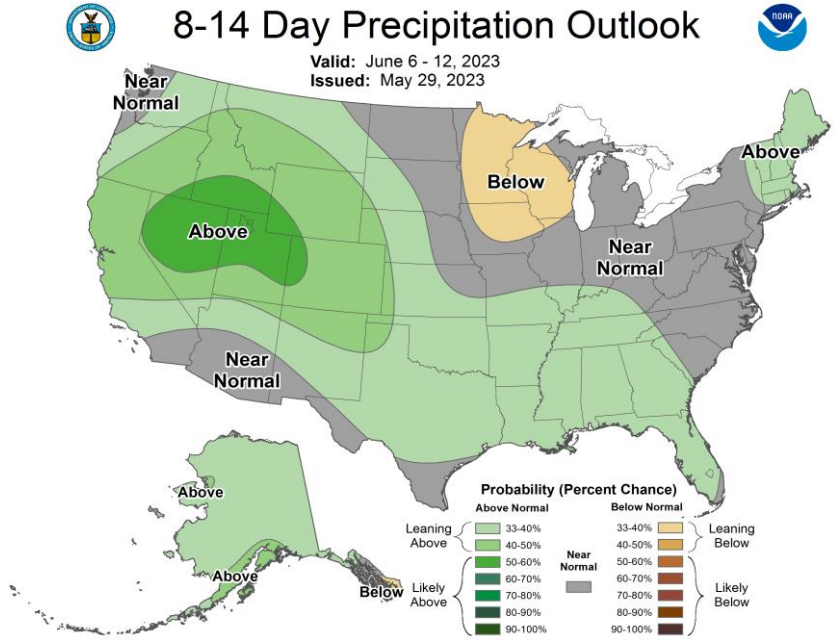


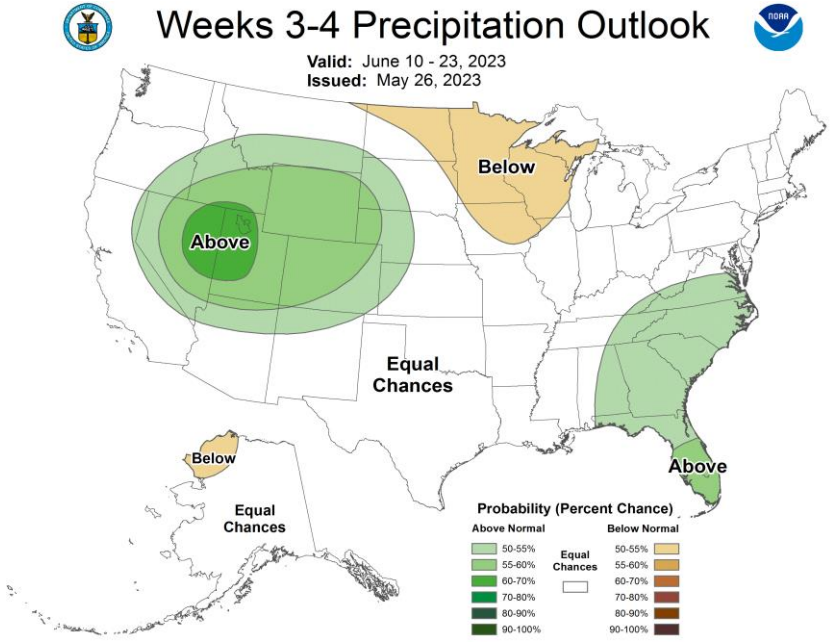


Official Temperature & Precipitation Forecasts:









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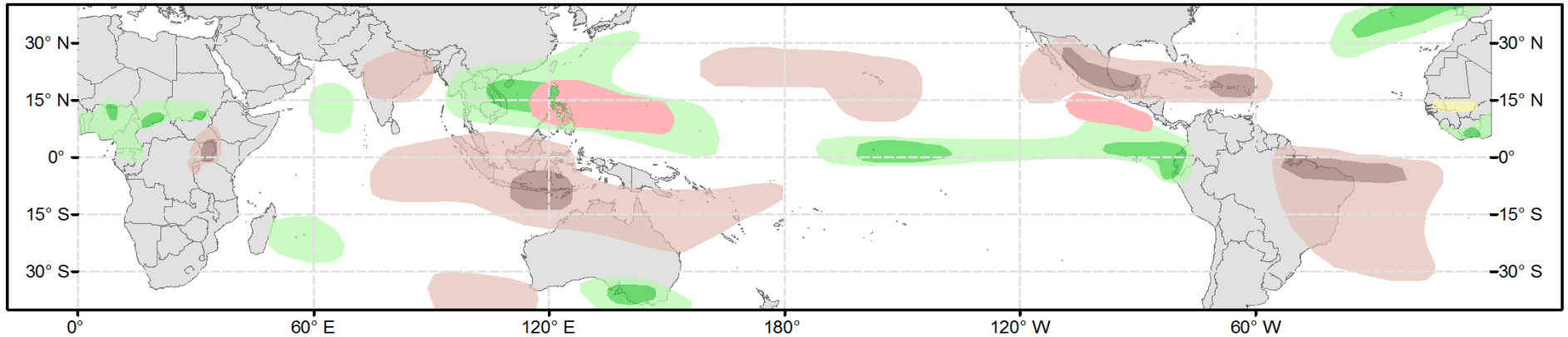

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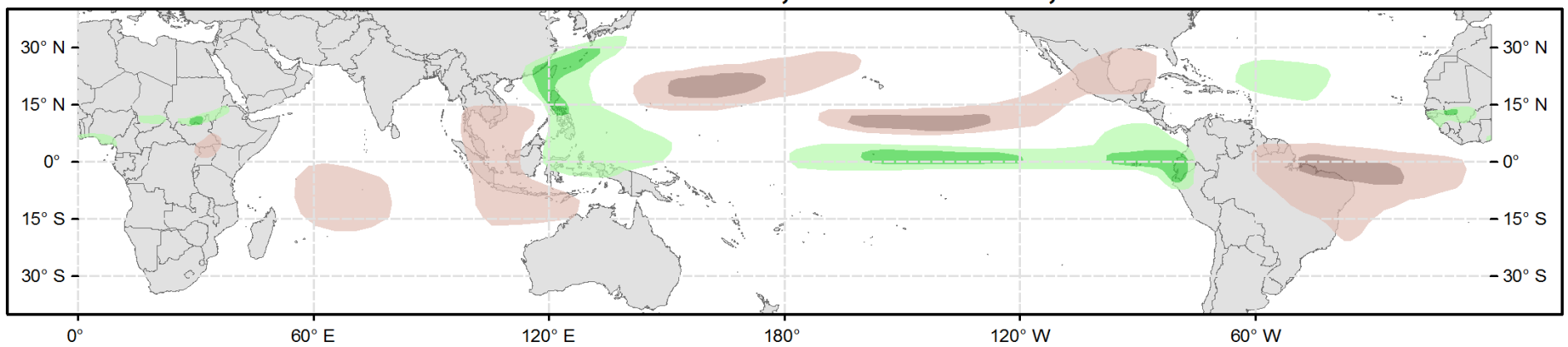

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