



Weeks 2-3 Global Tropics Hazards Outlook

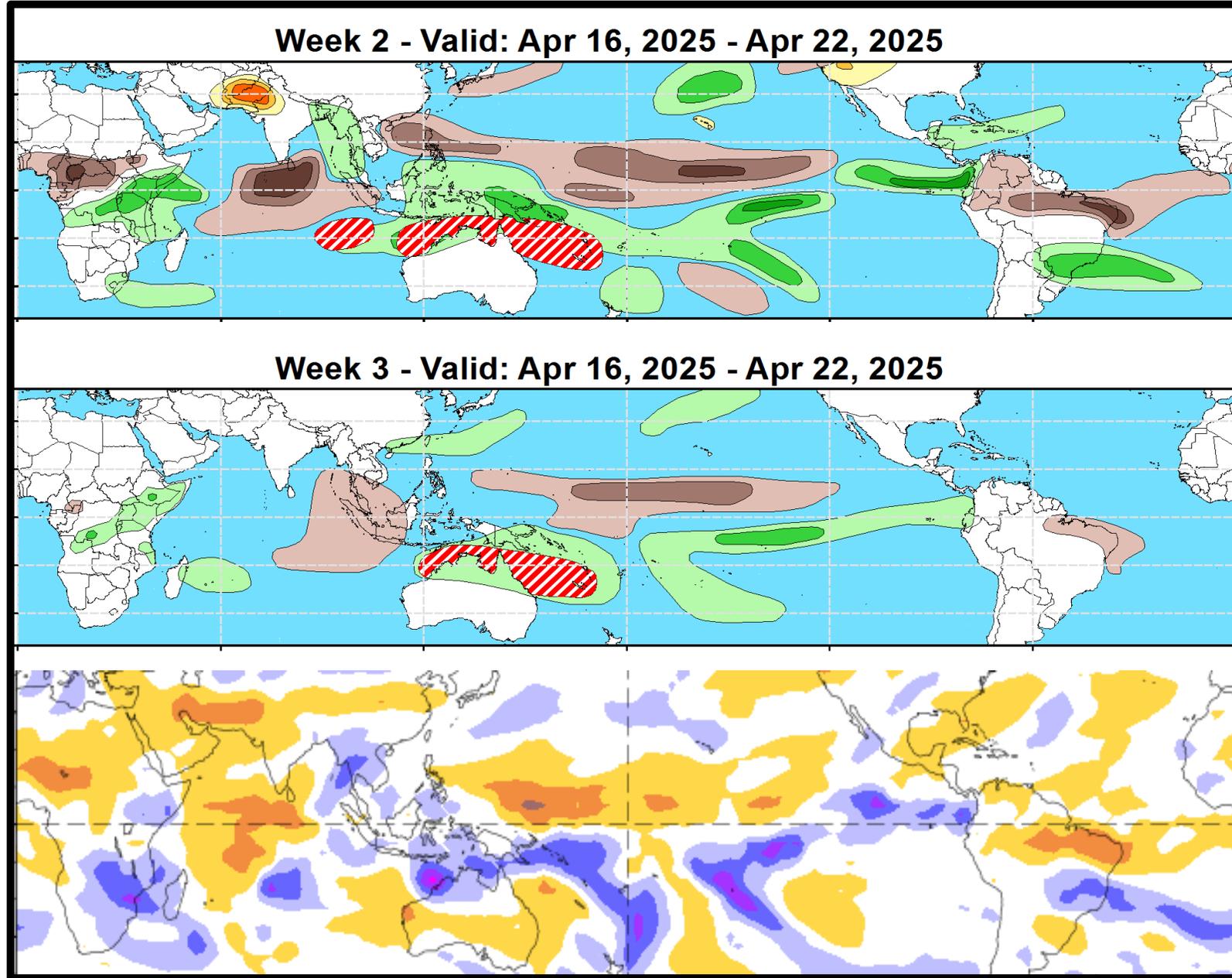
5/16/2023

Nick Novella

NWS / NCEP / Climate Prediction Center

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

- Bullet #1
- Bullet #2



Synopsis of Climate Modes:

ENSO: (Apr 10, 2025 Update) *next update on Thursday, May 8th*

- ENSO Alert System Status: [Final La Niña Advisory](#)
- ENSO-neutral is favored during the Northern Hemisphere summer, with a greater than 50% chance through August-October 2025.

MJO and other subseasonal tropical variability:

- The MJO has been a minimal contributor to tropical variability since late March with the RMM-based index meandering within the unit circle for the past couple of weeks.
- RMM-based forecasts differ between the GEFS and ECMWF ensemble means. Many of the GEFS ensemble members depict a strengthening MJO propagating east over the Western Hemisphere during the next two weeks and shifting back to the Indian Ocean by mid-May. However, the ECMWF model maintains a weak MJO into early May.
- If the MJO gains amplitude and propagates eastward over the Western Hemisphere during the next two weeks, then the large-scale environment would become more favorable for an early season tropical cyclone in the East Pacific.

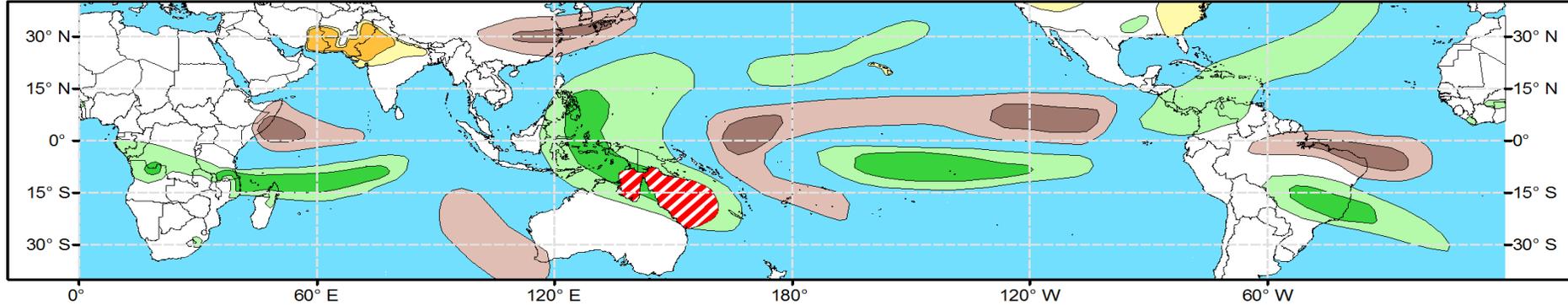
GTH Outlook:



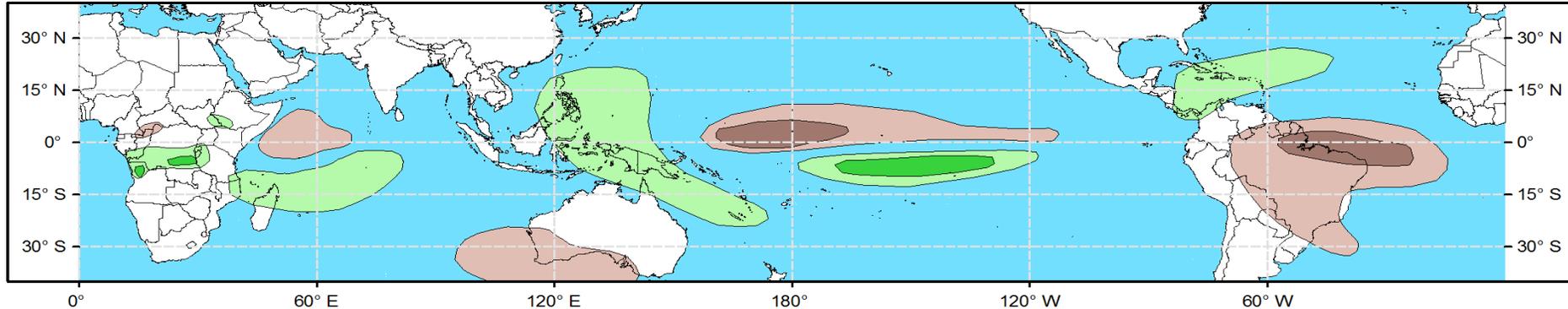
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Apr 30, 2025 - May 06, 2025



Week 3 - Valid: May 07, 2025 - May 13, 2025



**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*

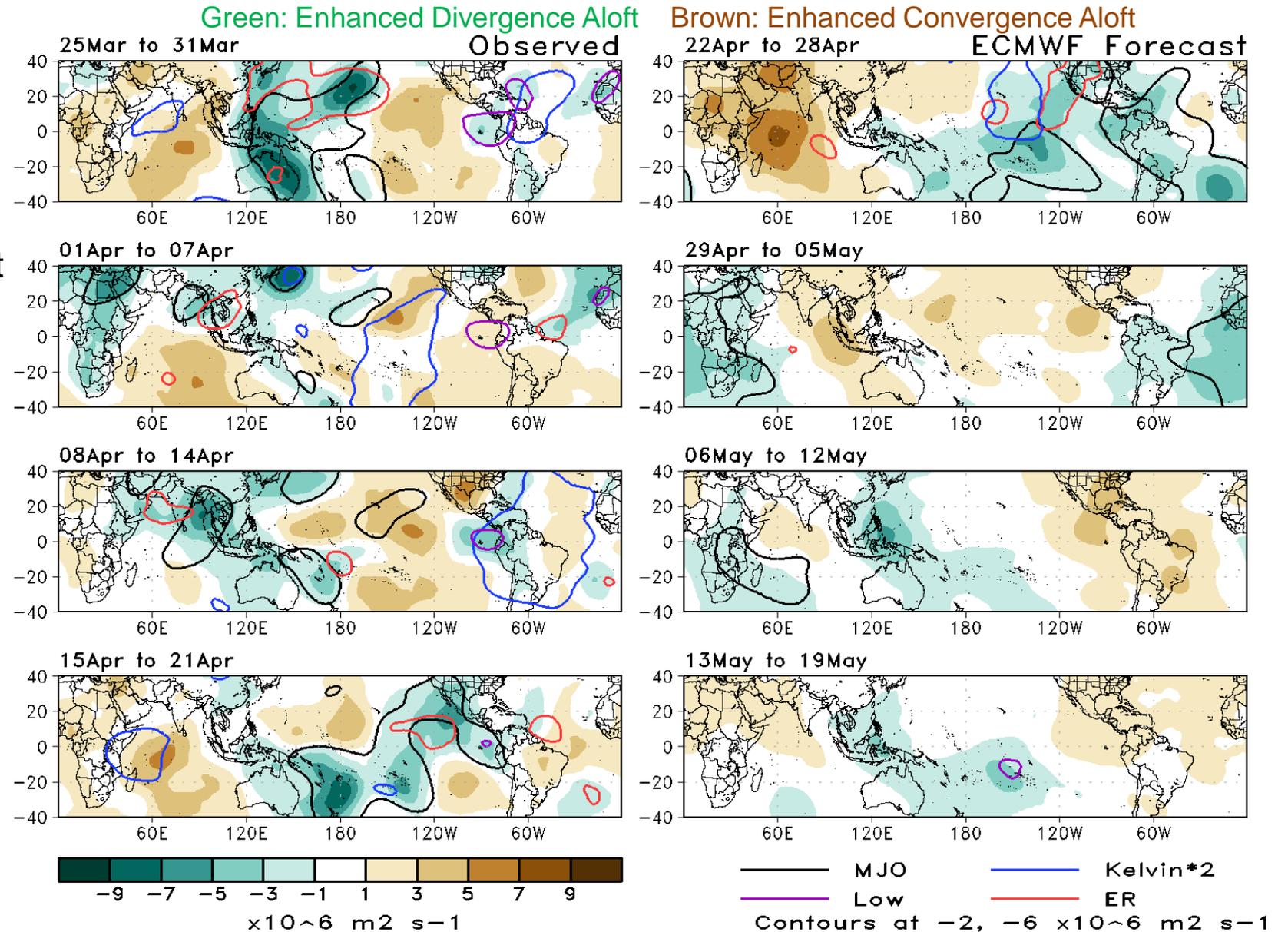
Issued: 04/22/2025

Forecaster: Barandiaran

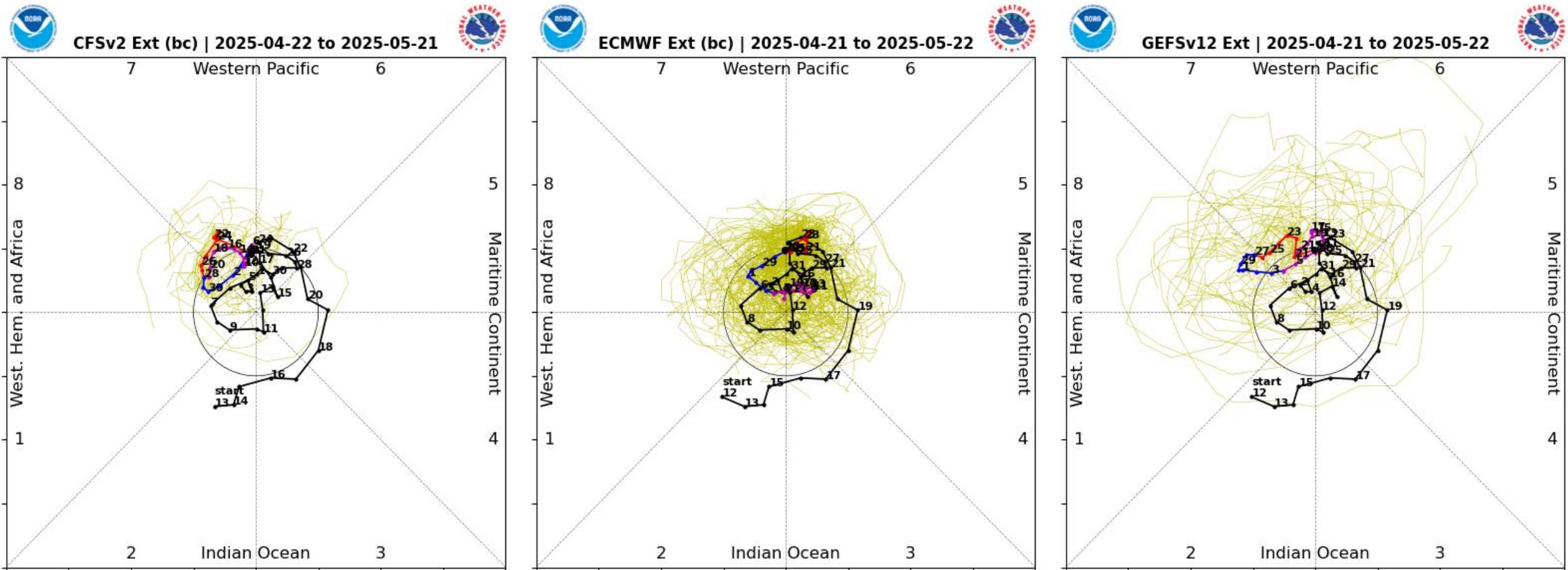
**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only.
Consult your local responsible forecast agency.**

200-hPa Velocity Potential Anomaly Maps:

- Velocity potential anomalies over the last several weeks highlight the disorganized state of tropical variability of late. Most recently however there is some indication of a return to a wave-1 pattern
- ECWMMF forecasts indicate an apparent return of MJO activity over the Western Hemisphere in week-1 and moving east to the Maritime Continent by week-3, although VP anomalies are generally weak.

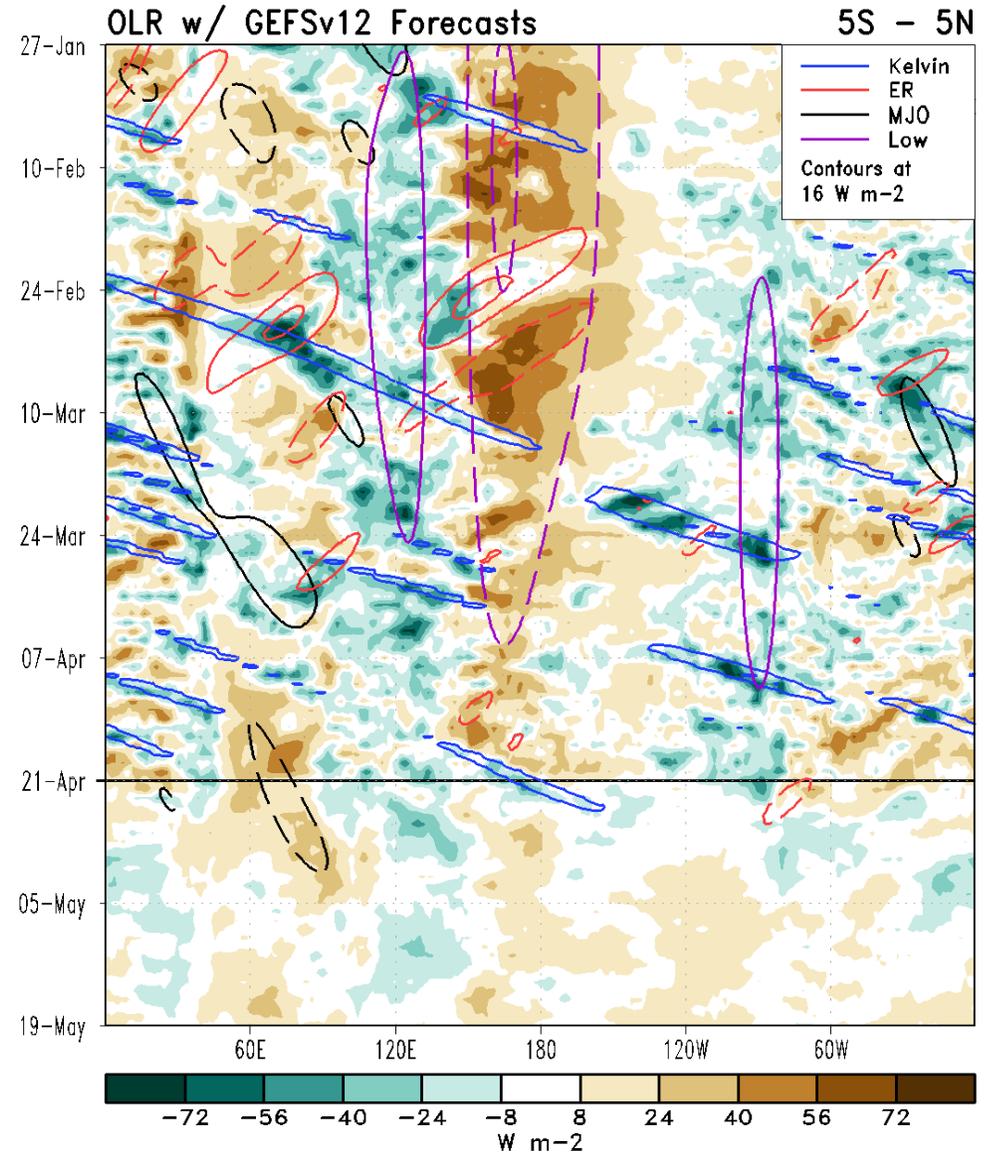
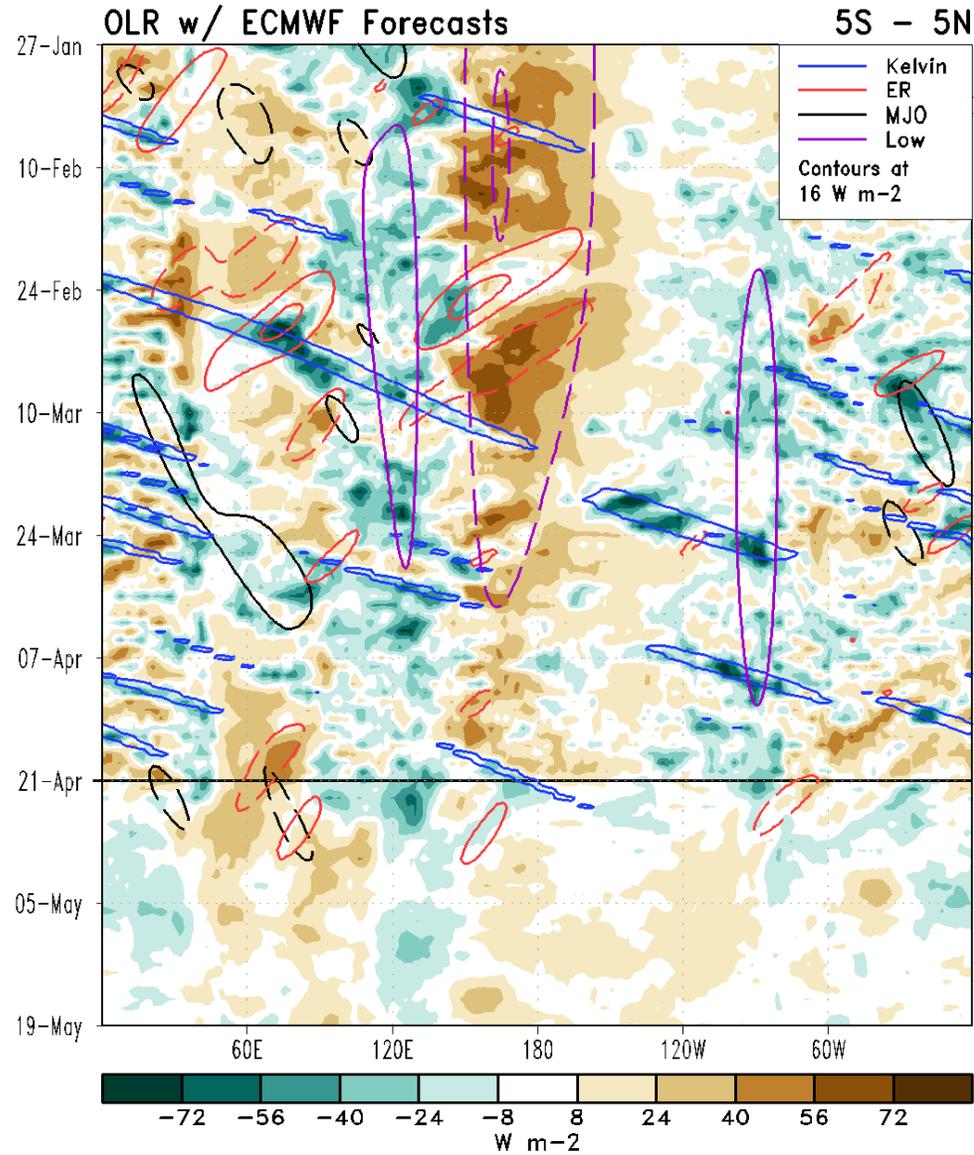


RMM Index Observations & Forecasts:



- RMM-based MJO forecasts from various model ensembles indicate continued weak MJO activity over the next several weeks. Additionally, there is wide spread among ensemble members, reducing forecast confidence. The ECWMF members cluster closer to the unit circle while the GEFS exhibits many amplified solutions.

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

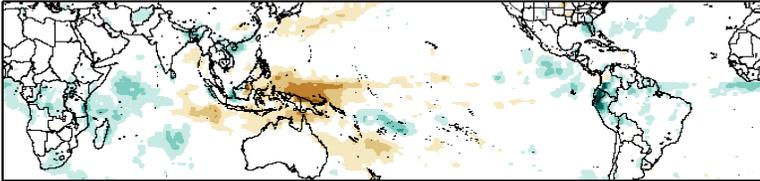


Consolidated Probabilistic Precipitation: Weeks 2 & 3

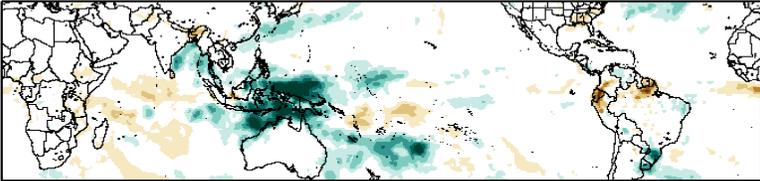
Historical Precipitation Anomalies By MJO Phase:

MAM MJO Composite: GPCP1DD (mm/day)

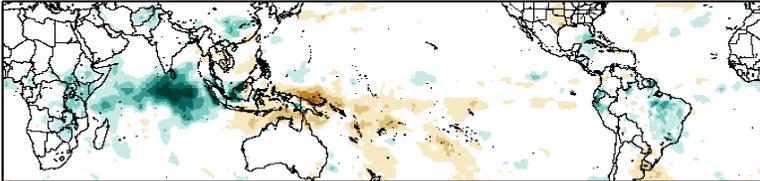
Phase 1



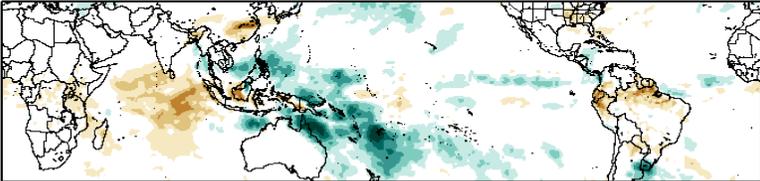
Phase 5



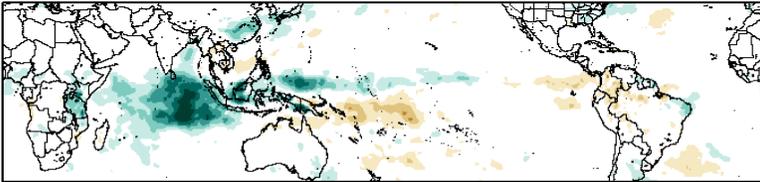
Phase 2



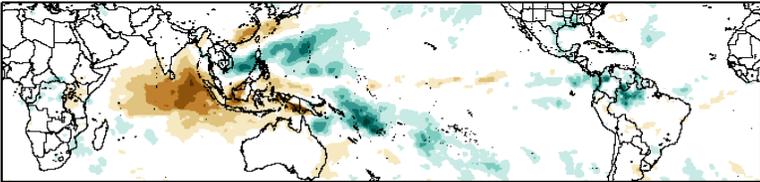
Phase 6



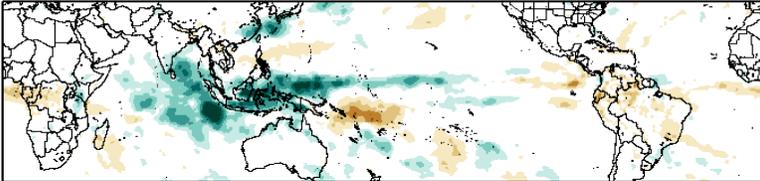
Phase 3



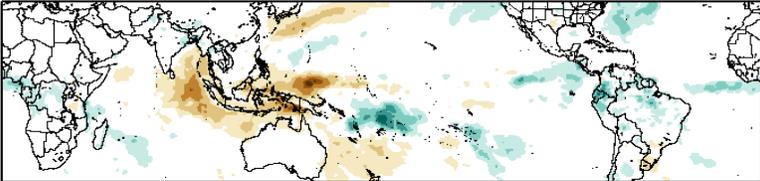
Phase 7



Phase 4

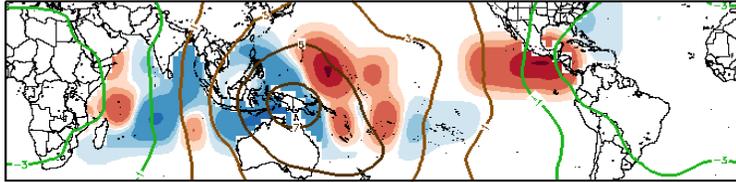


Phase 8

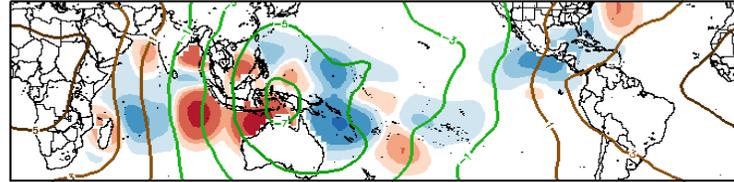


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

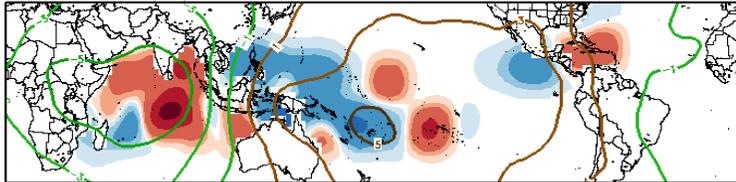
MAM MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ MAM CHI200 ($\times 10^{-6} m^{-2} s^{-1}$) / Contours every $2 \times 10^{-6} m^{-2} s^{-1}$



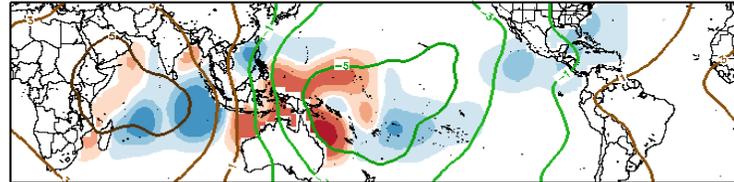
Phase 1



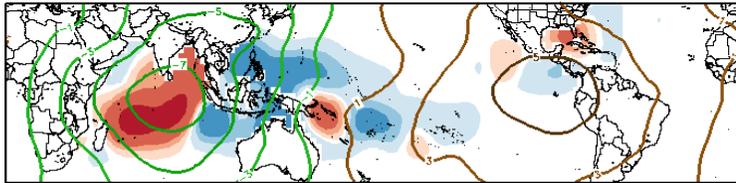
Phase 5



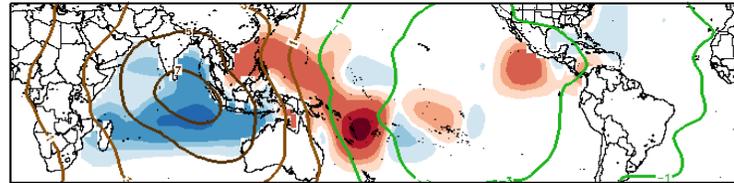
Phase 2



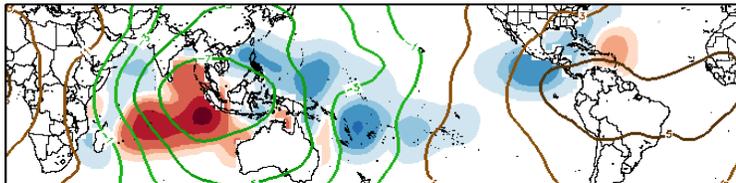
Phase 6



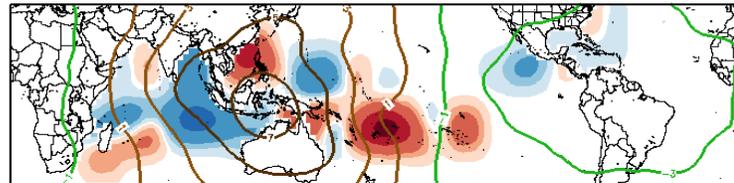
Phase 3



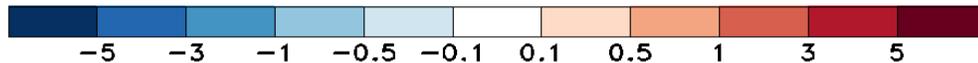
Phase 7



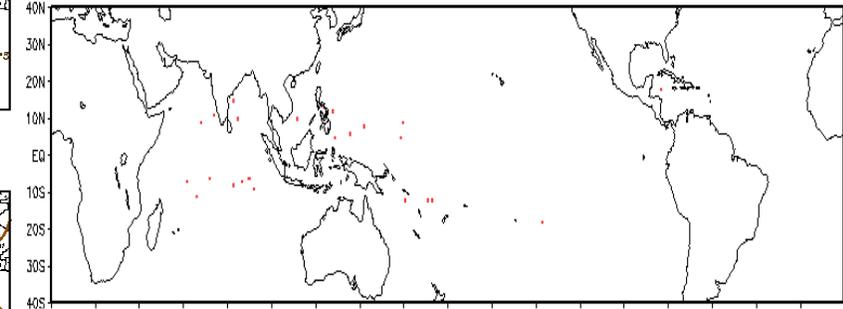
Phase 4



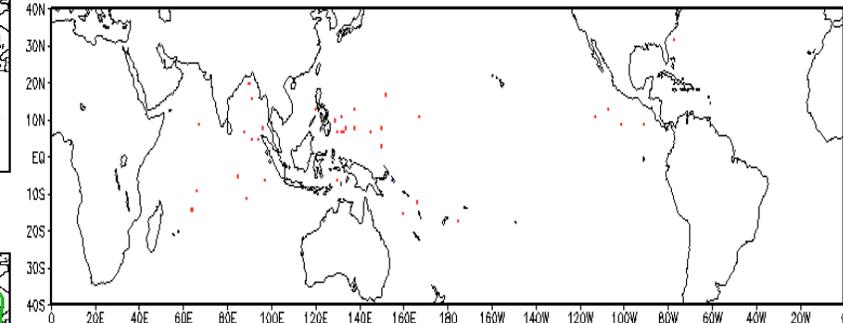
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 0430 to 0506

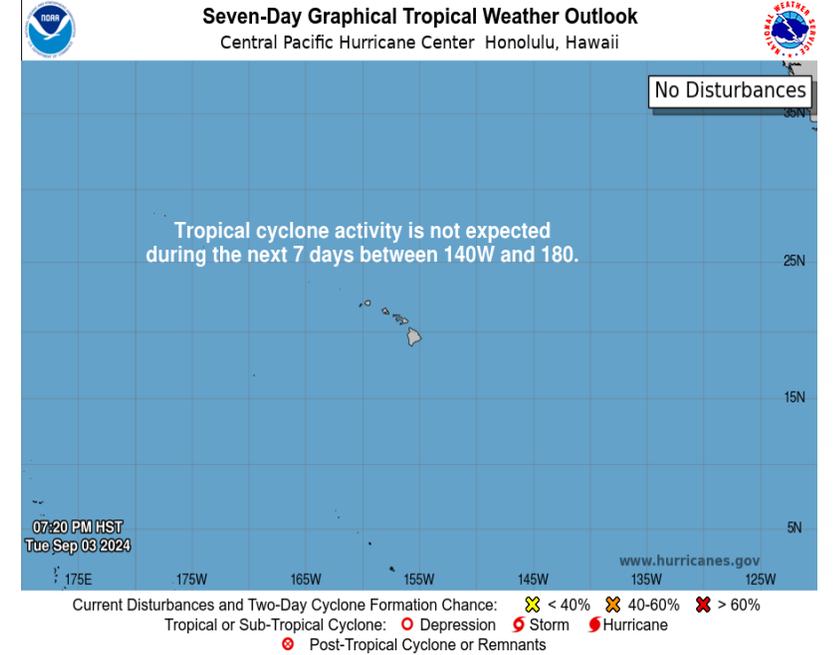
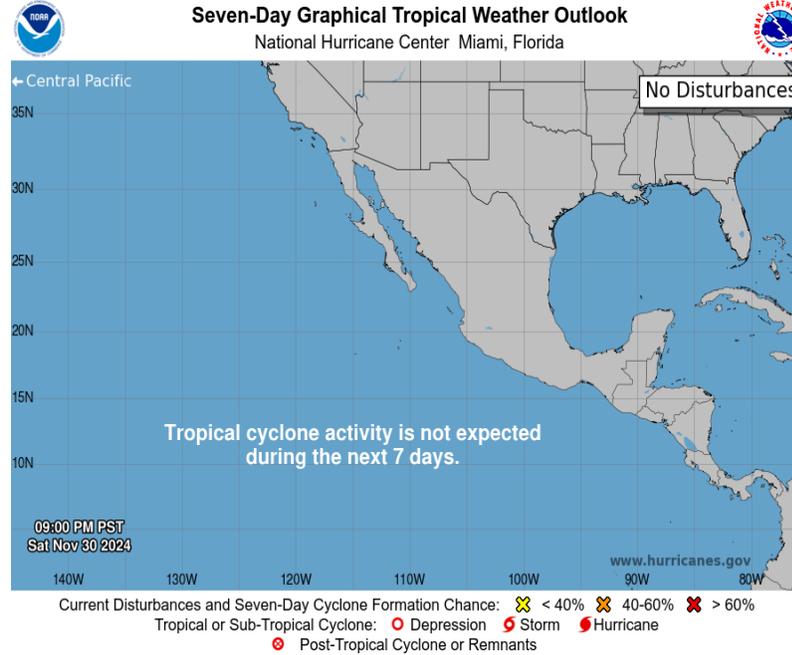
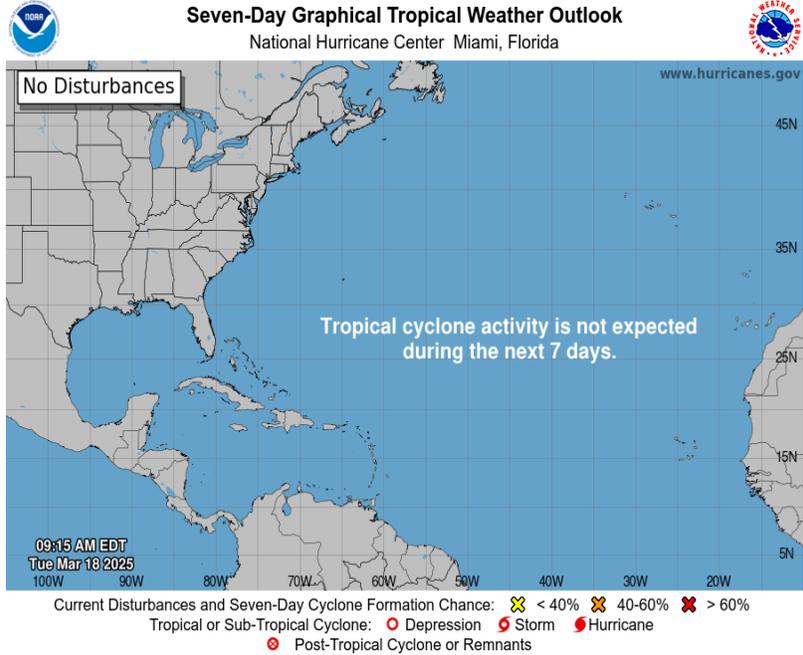


Observed TC Genesis, 1979-2021
7-day Period 0507 to 0513



Experimental

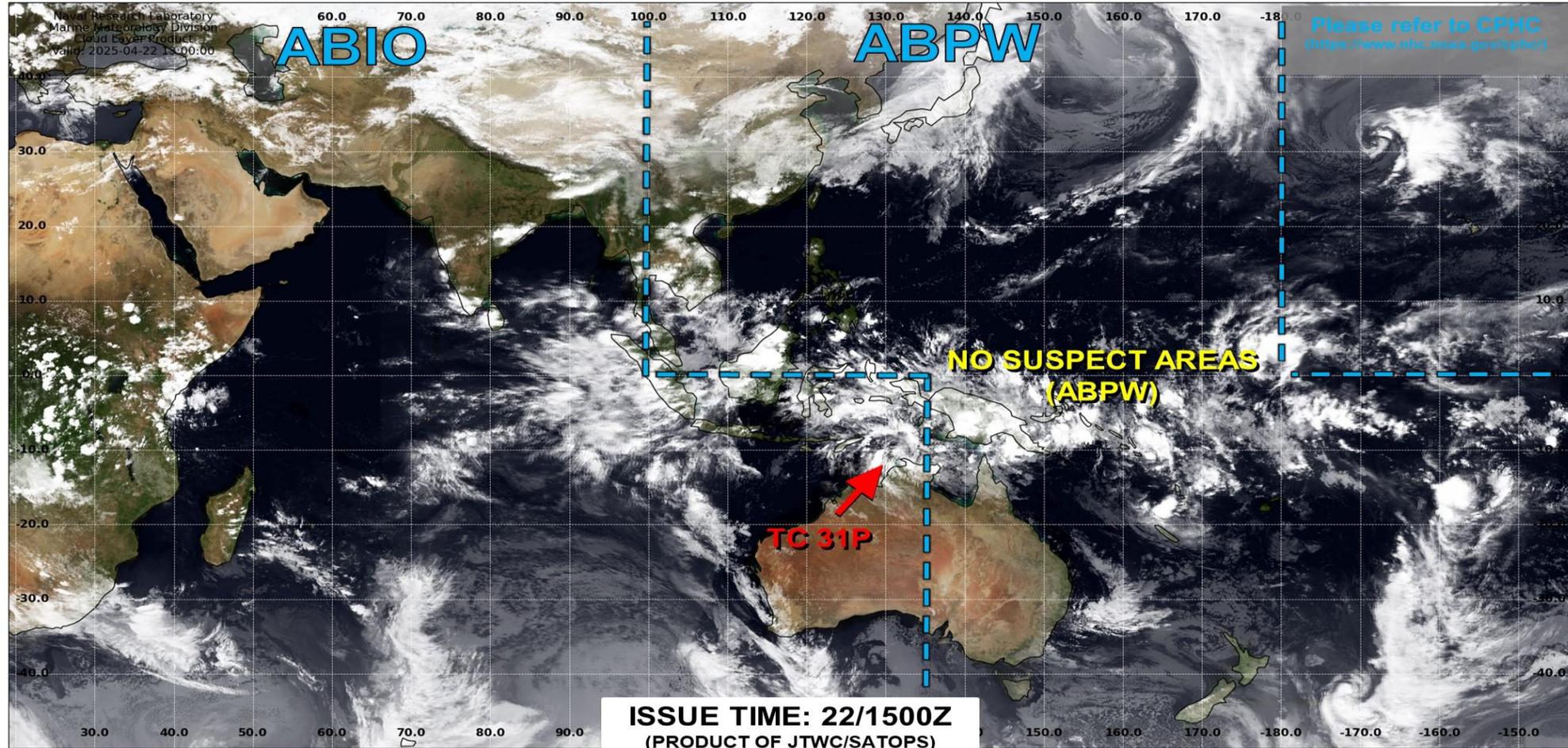
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



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



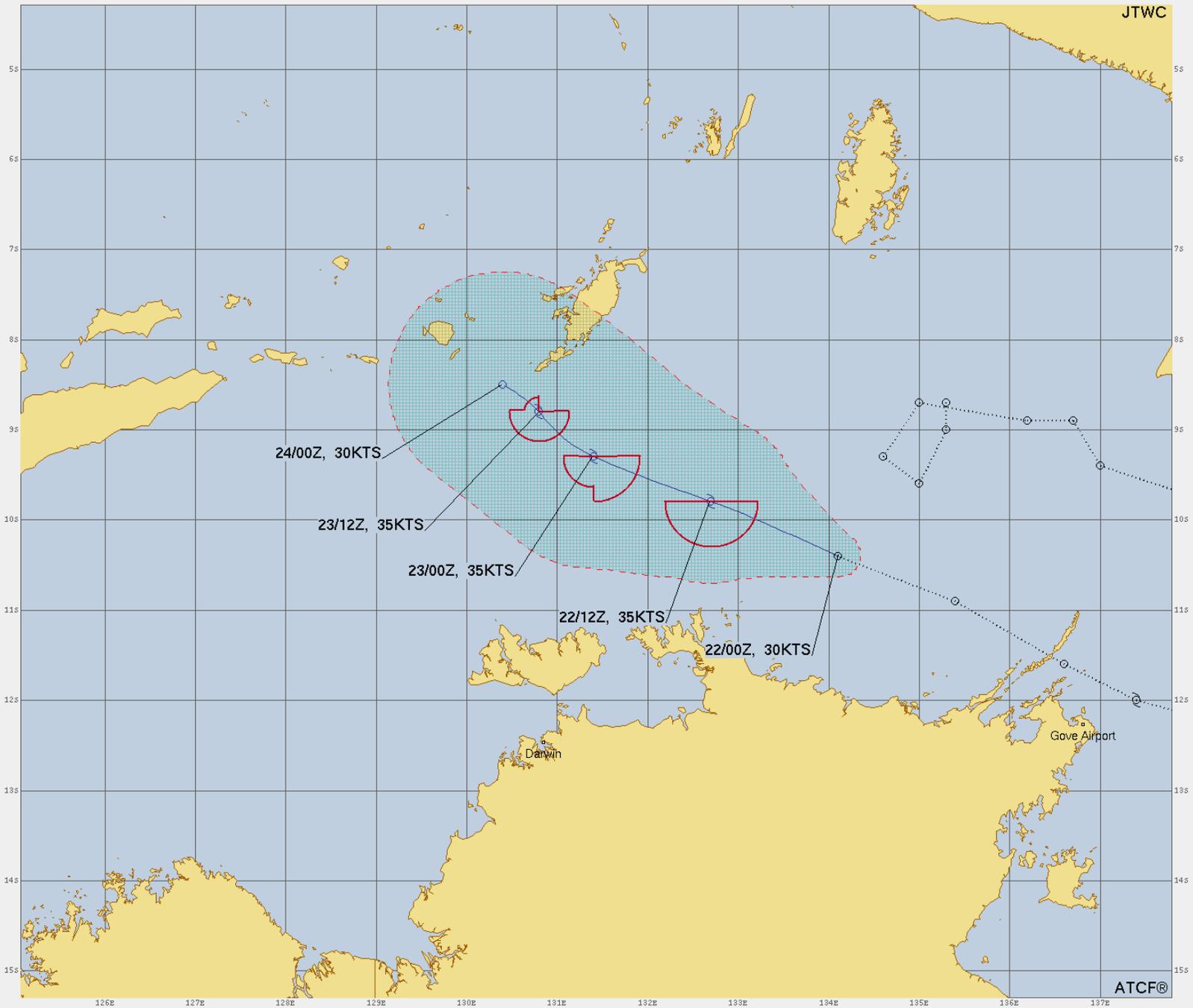
TC development likely within 24 hours (Reference TCFA)



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



Tropical Cyclone (Reference Warning)



JTWC

TROPICAL CYCLONE 31P (THERTONE) WARNING #16
 WTSS31 POTW 220300
 220000Z POSIT: NEAR 10.4S 134.1E
 MOVING 290 DEGREES TRUE AT 14 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 22 FEET
 22/00Z, WINDS 030 KTS, GUSTS TO 040 KTS
 22/12Z, WINDS 035 KTS, GUSTS TO 045 KTS
 23/00Z, WINDS 035 KTS, GUSTS TO 045 KTS
 23/12Z, WINDS 035 KTS, GUSTS TO 045 KTS
 24/00Z, WINDS 030 KTS, GUSTS TO 040 KTS

CPA TO: NM DTG
 DARWIN 189 04/22/182

BEARING AND DISTANCE	DIR	DIST	TRU
	(NM)	(KTS)	
DARWIN	057	226	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)

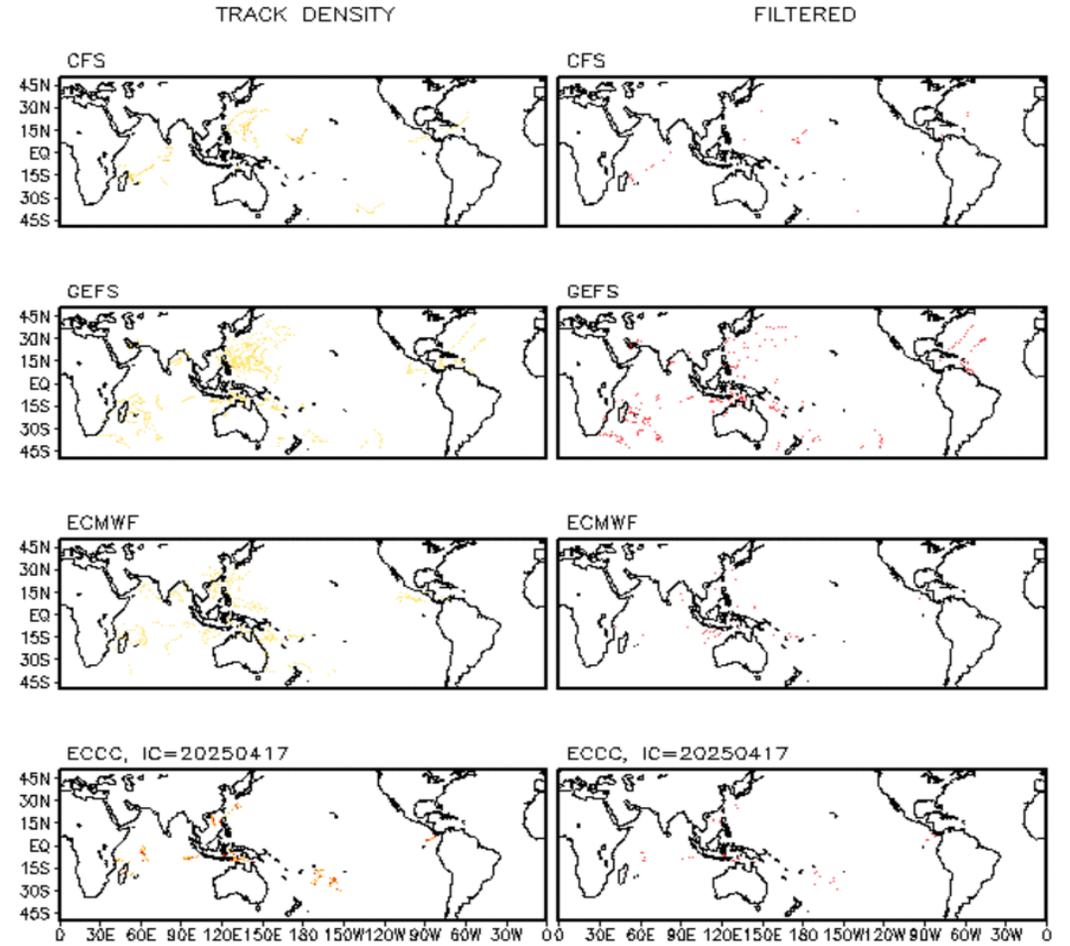
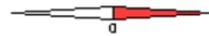
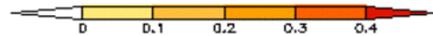
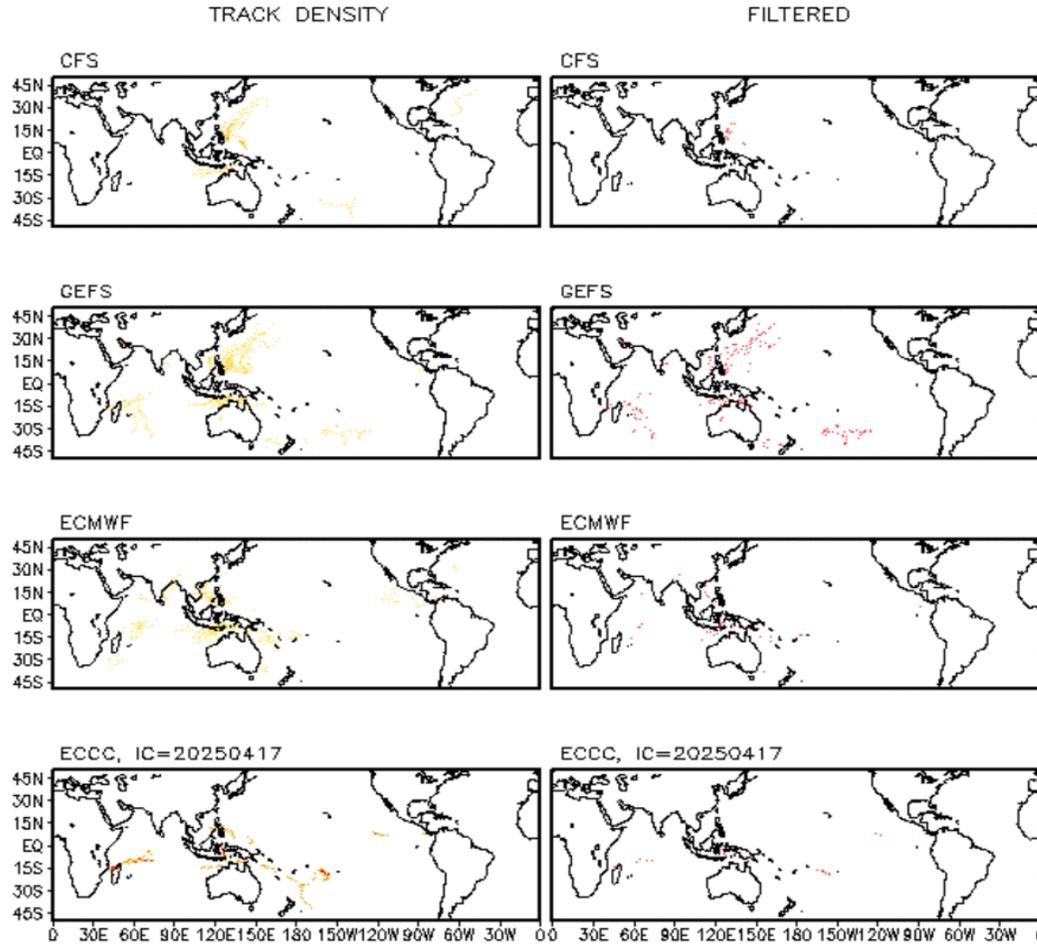


ATCF®

Multi-Model TC Track Densities: Weeks 2+3

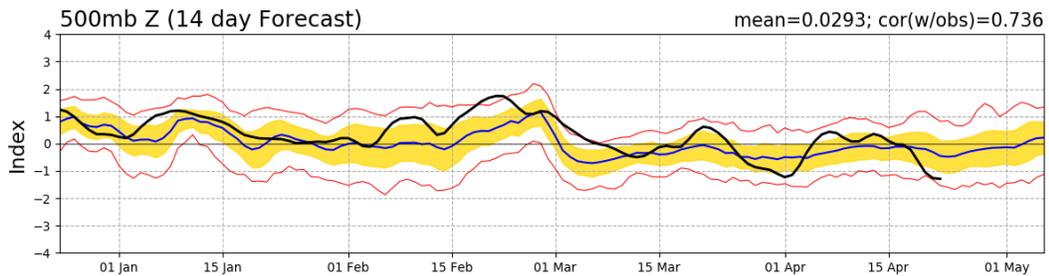
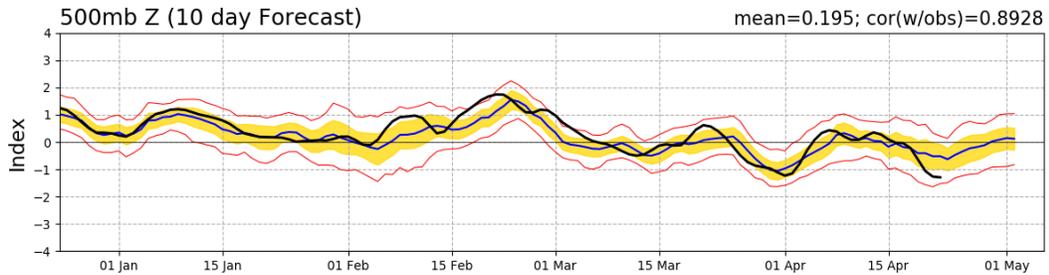
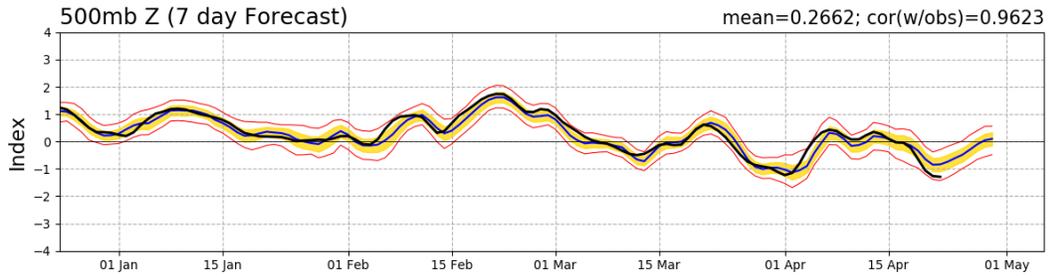
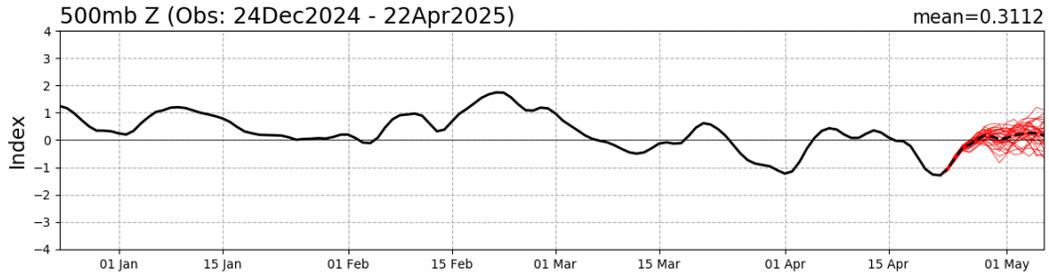
Storm Track Density Distribution, IC=20250421
Week 2 Forecast: 0430-0506

Storm Track Density Distribution, IC=20250421
Week 3 Forecast: 0507-0513

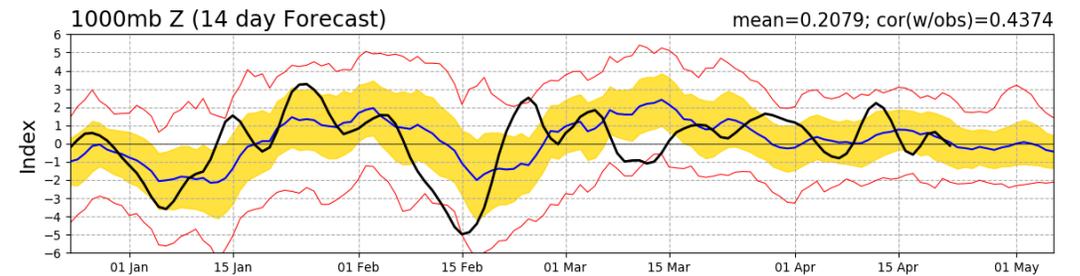
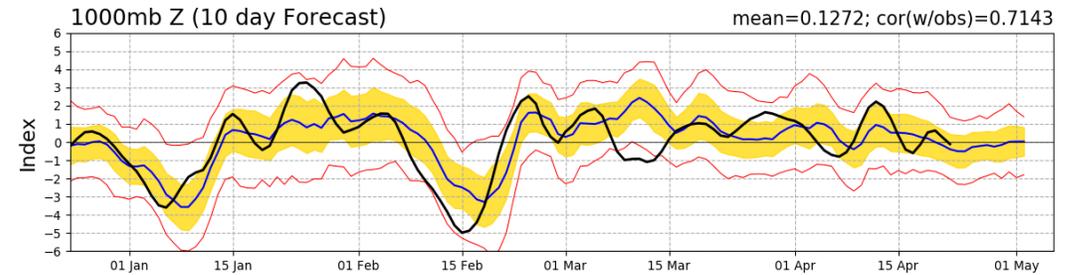
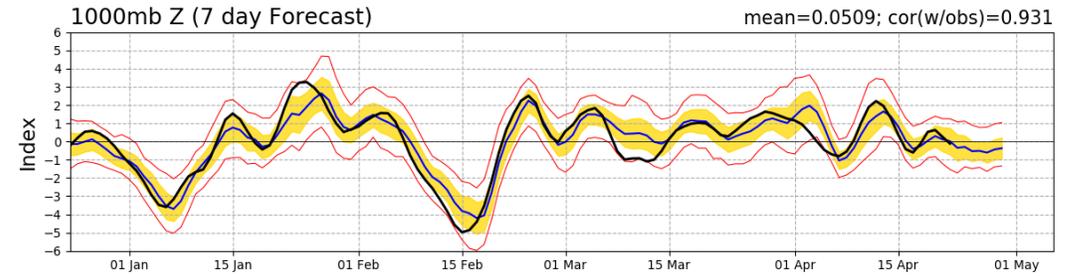
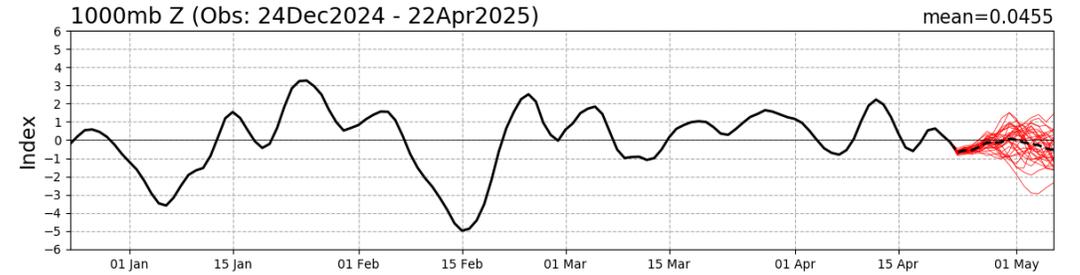


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

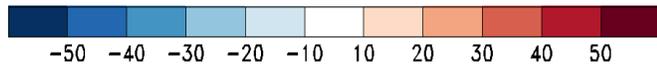
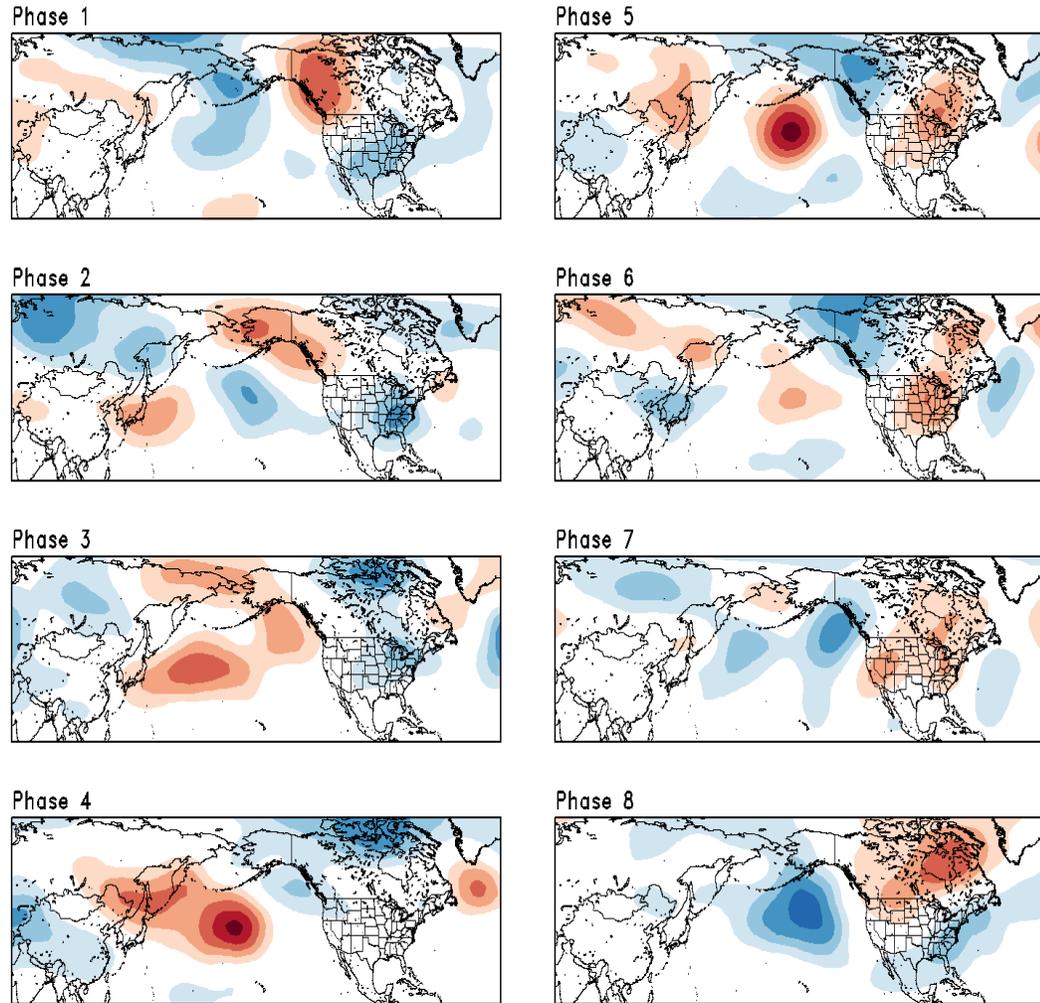


AO Index: Observed & GEFS Forecasts

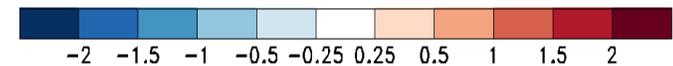
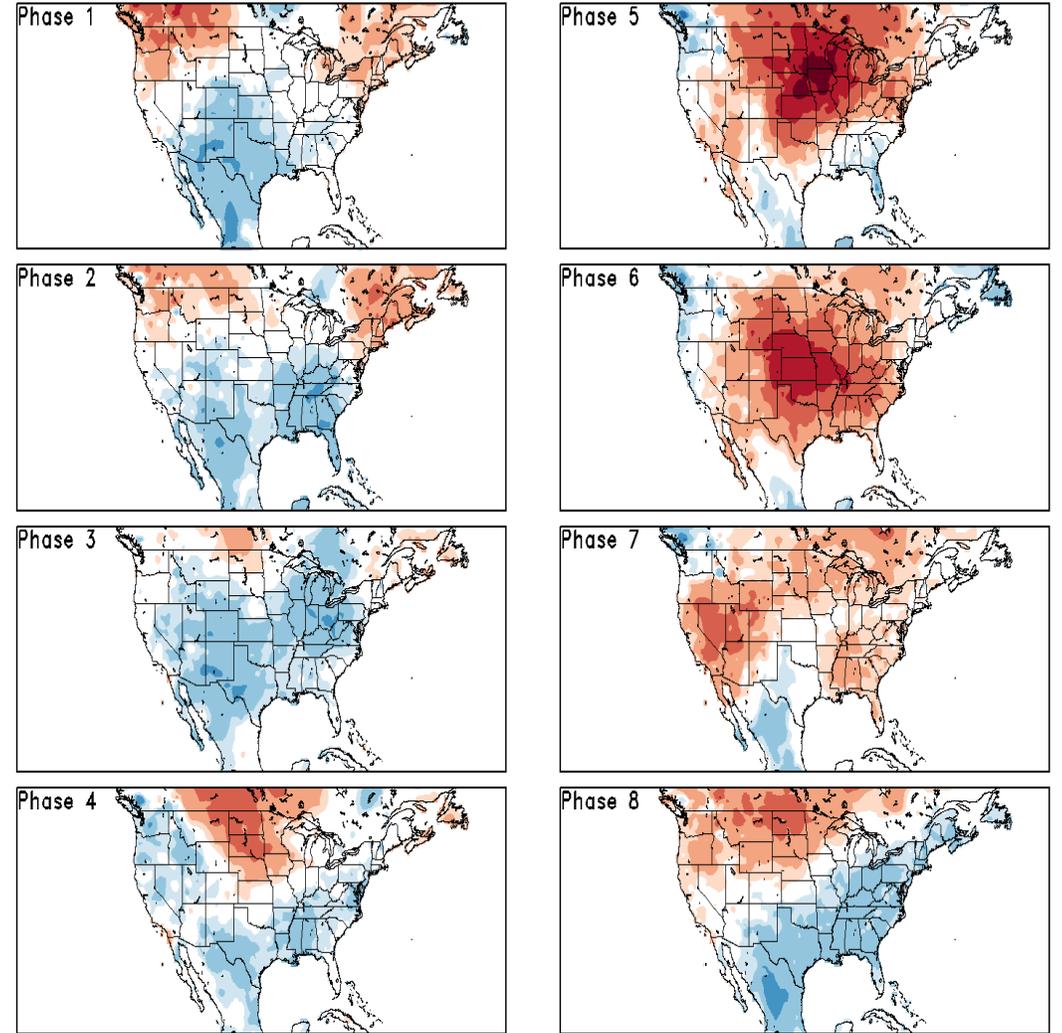


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

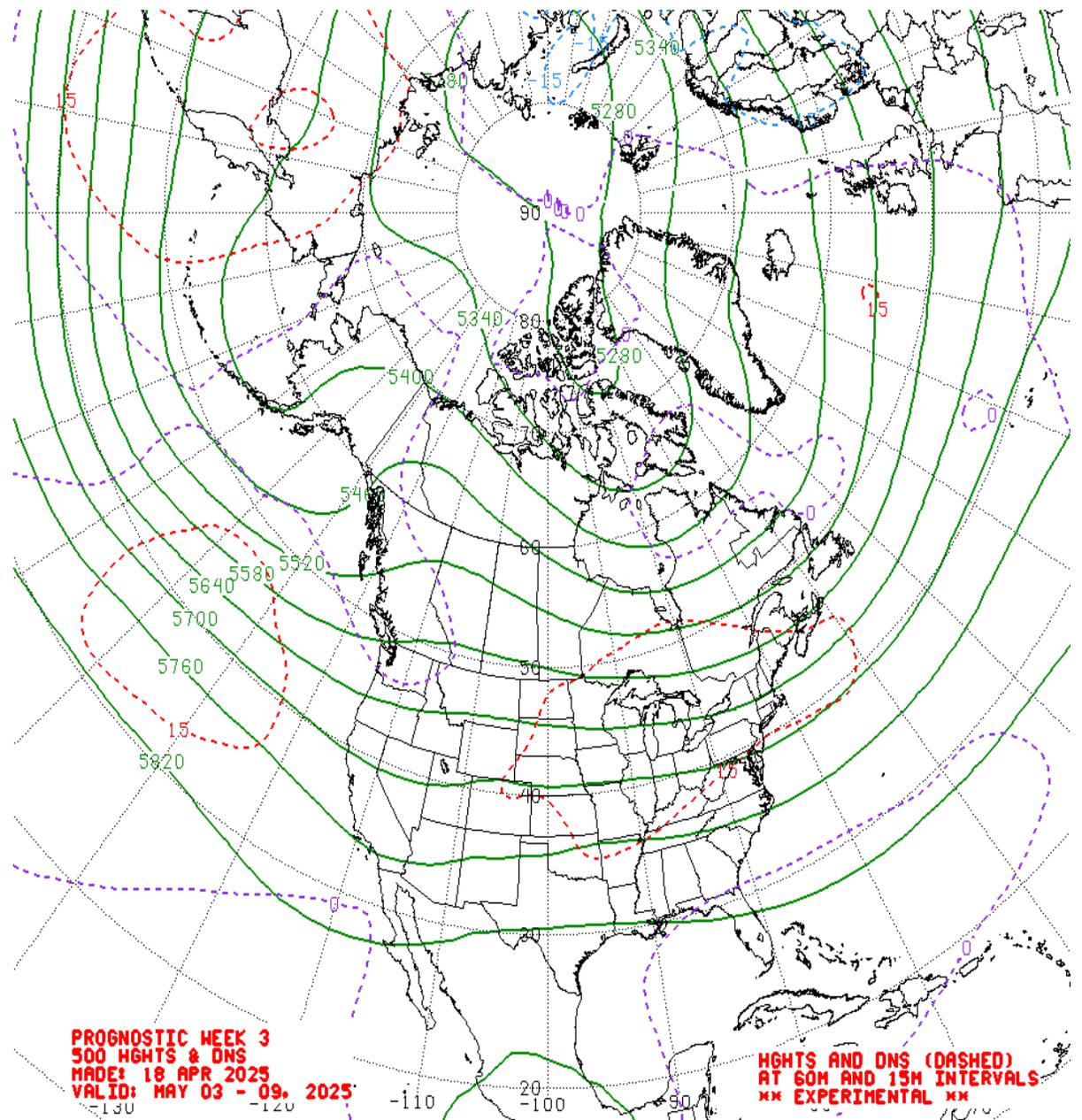
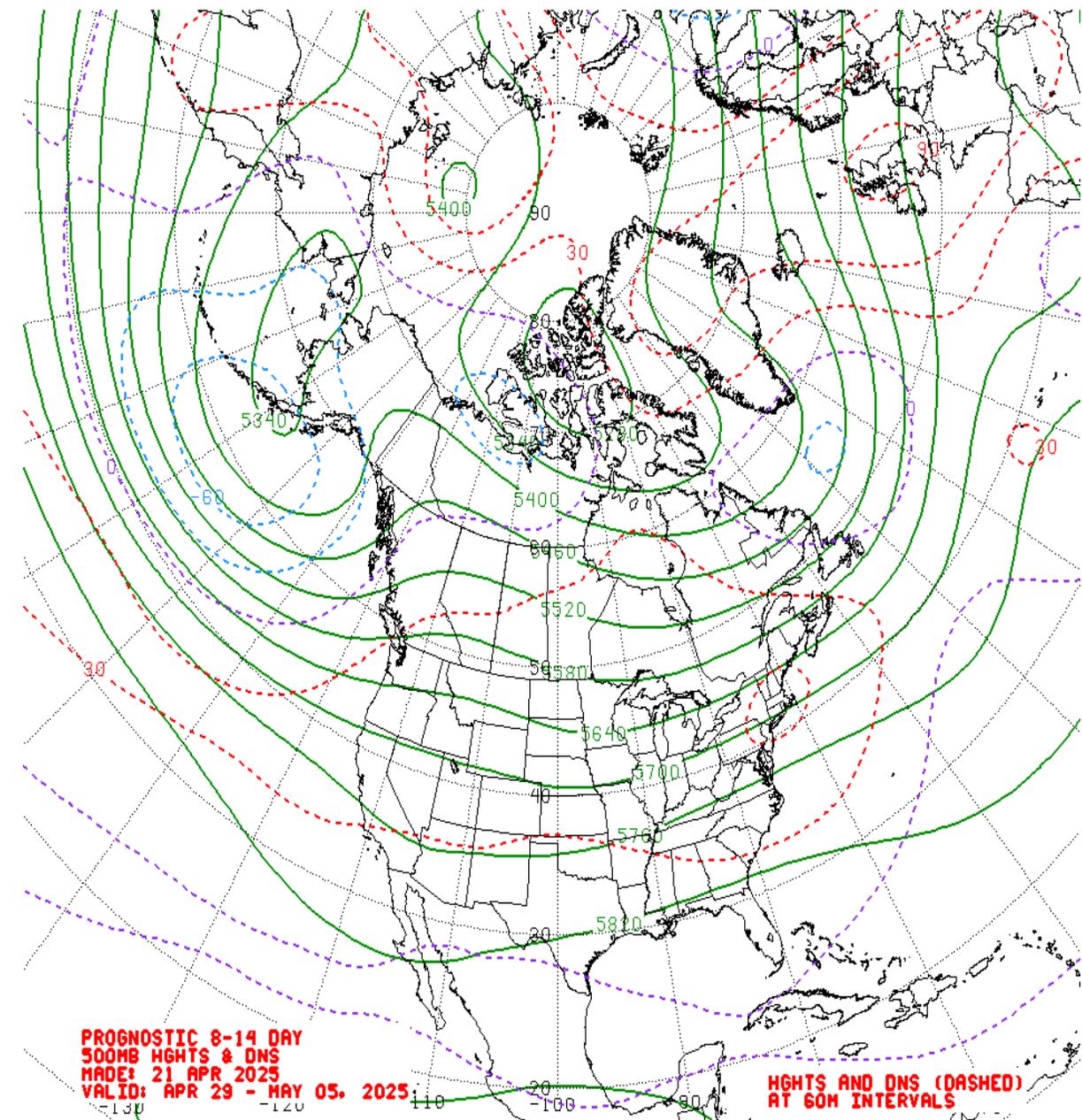
MAM MJO Composite: CDAS 500-hPa Height (m)



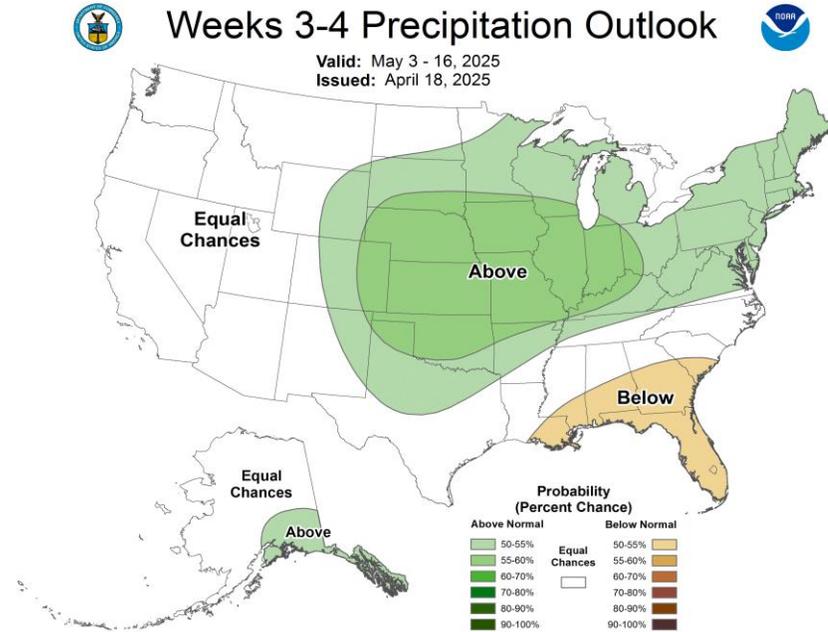
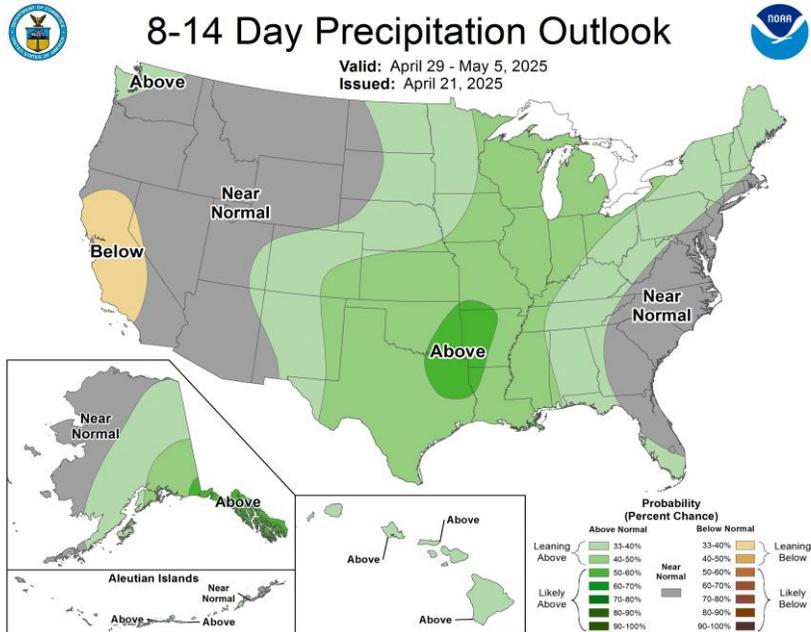
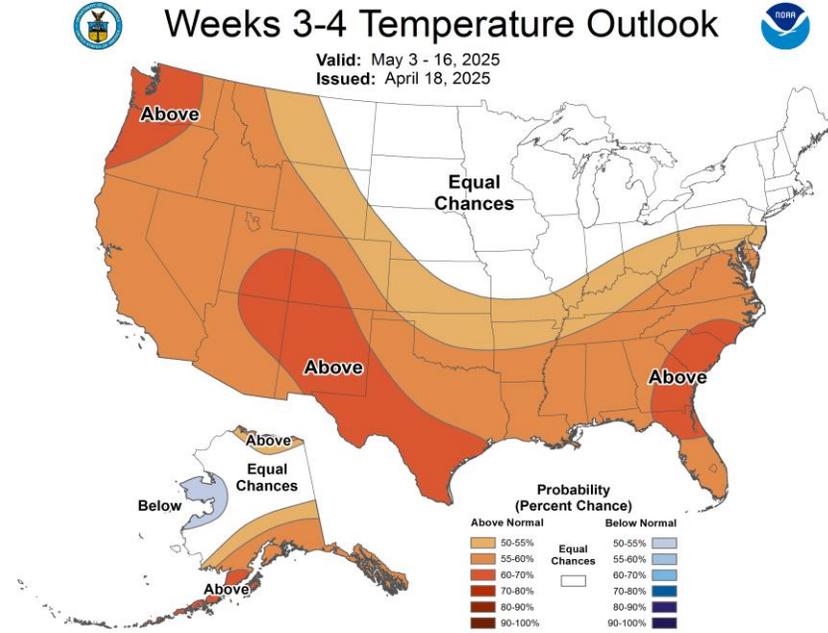
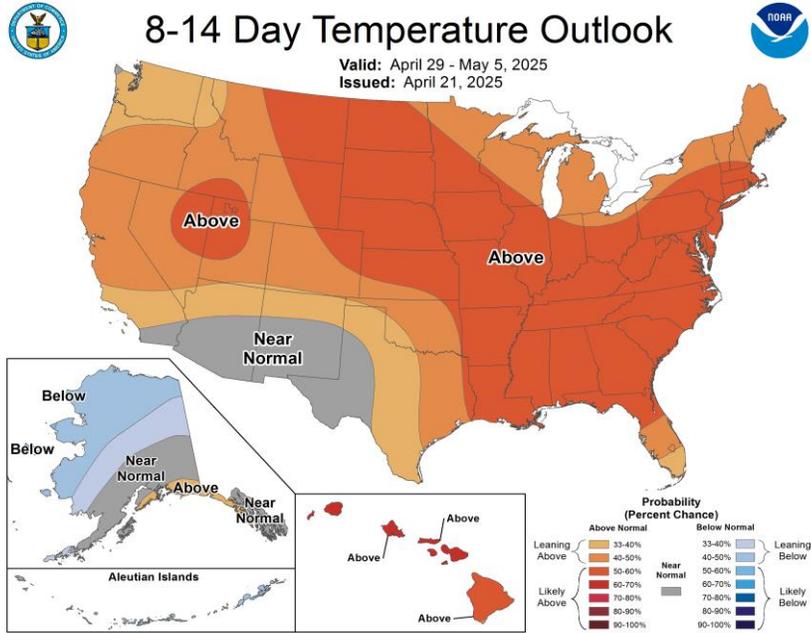
MAM MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



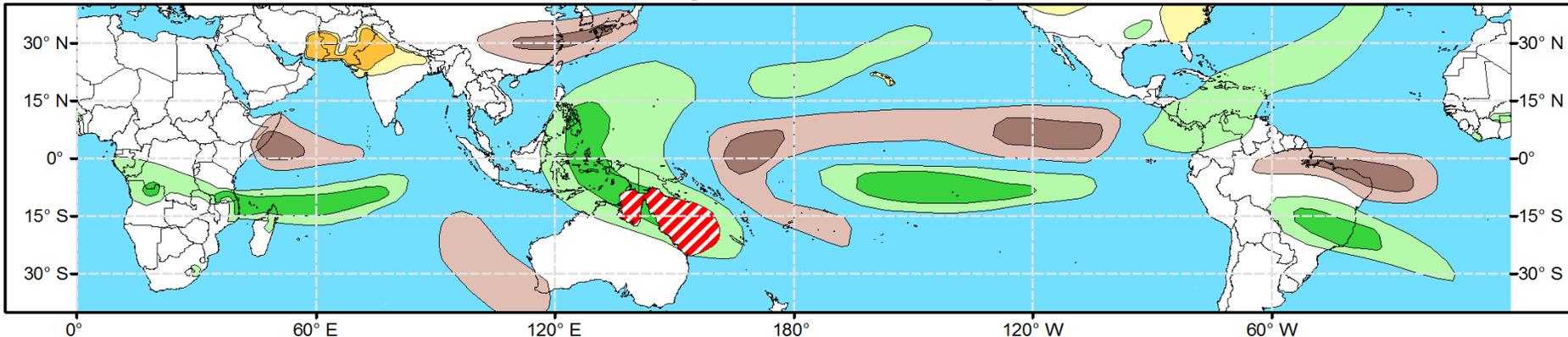


Global Tropics Hazards Outlook

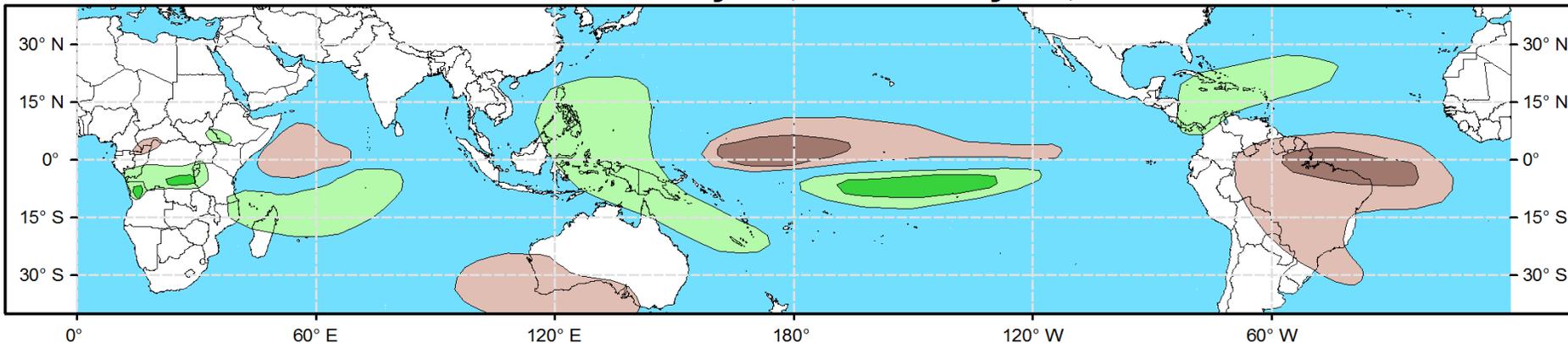
Climate Prediction Center



Week 2 - Valid: Apr 30, 2025 - May 06, 2025



Week 3 - Valid: May 07, 2025 - May 13, 2025



**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: 04/22/2025

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.