



# Weeks 2-3 Global Tropics Hazards Outlook

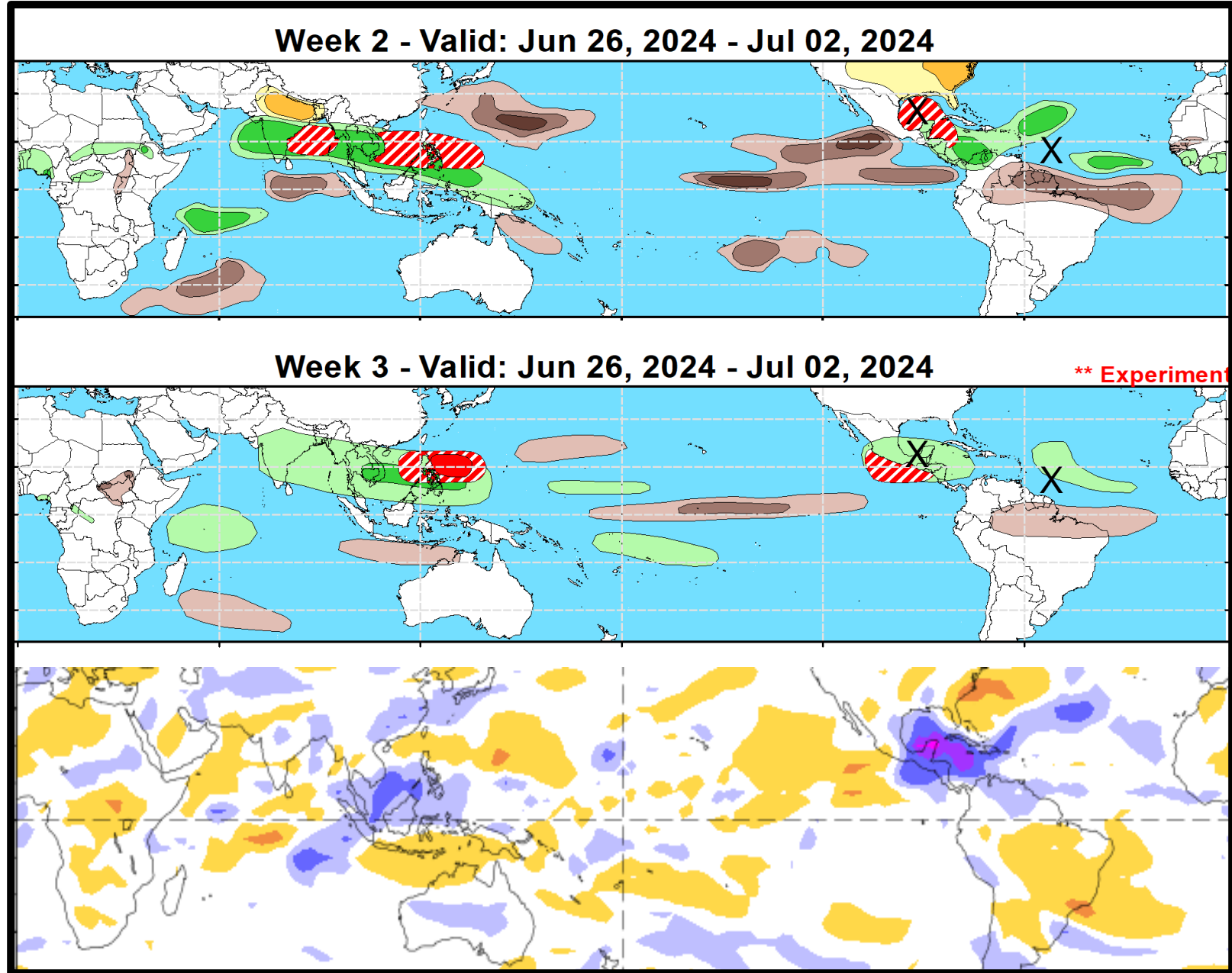
7/2/2024

Nick Novella

NWS / NCEP / Climate Prediction Center

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

- ATL: TC Chris
- ATL: TC Beryl



# Synopsis of Climate Modes:

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**ENSO**: (Jun 13, 2024 Update)      *next update on Thursday, Jul 11<sup>th</sup>*

- ENSO Alert System Status: **Final** El Niño Advisory / [La Niña Watch](#)
- ENSO-neutral conditions are present. La Niña is favored to develop during Jul-Aug-Sep (65% chance) and persist into the Northern Hemisphere winter 2024-25 (85% chance during Nov-Dec-Jan)

## **MJO and other subseasonal tropical variability:**

- The MJO has been largely incoherent for much of June, but has shown signs of renewed activity during the past week over the Indian Ocean.
- While RMM forecasts generally favor a low amplitude MJO crossing the Maritime Continent (weeks 1-2), and reaching the western Pacific (week-3), upper-level velocity potential forecasts point to more coherent intraseasonal activity later in July.
- Based on these forecasts, the MJO looks to constructive interfere with an persistent (low frequency) area of enhanced divergence aloft over Maritime Continent and provide favorable conditions for tropical cyclogenesis across the western Pacific.
- Conversely, there are decreased chances for additional tropical cyclone development in eastern Pacific and Atlantic towards the middle of July.

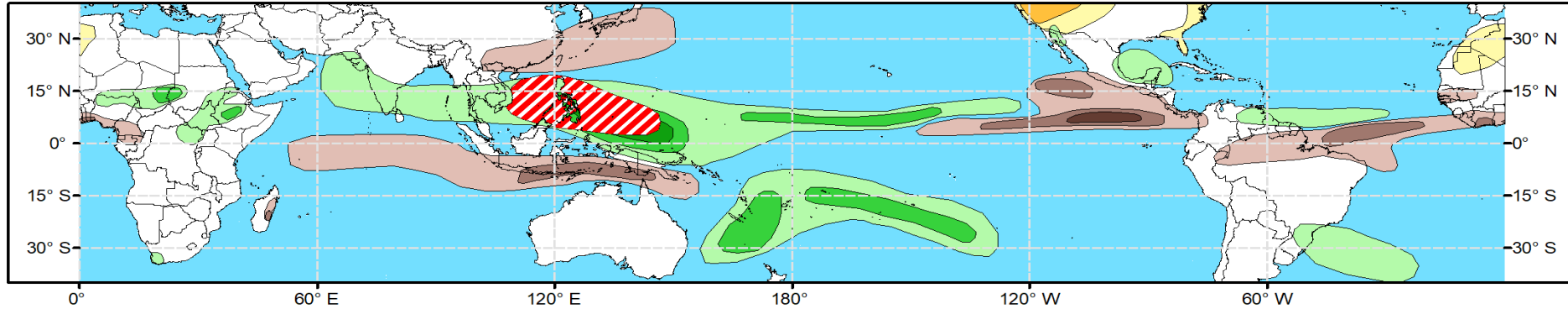
# GTH Outlook:



## Global Tropics Hazards Outlook Climate Prediction Center

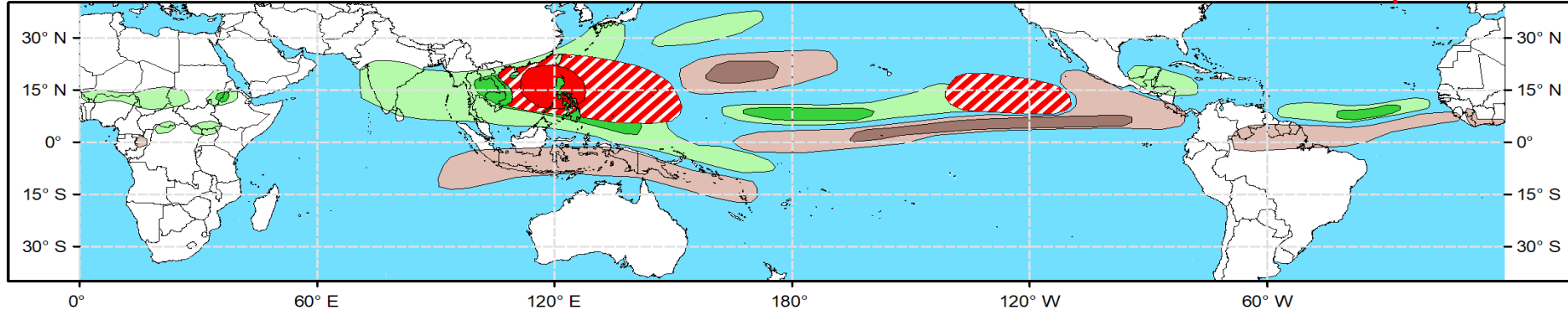


**Week 2 - Valid: Jul 10, 2024 - Jul 16, 2024**



**Week 3 - Valid: Jul 17, 2024 - Jul 23, 2024**

**\*\* Experimental \*\***



**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  
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**Below-Average  
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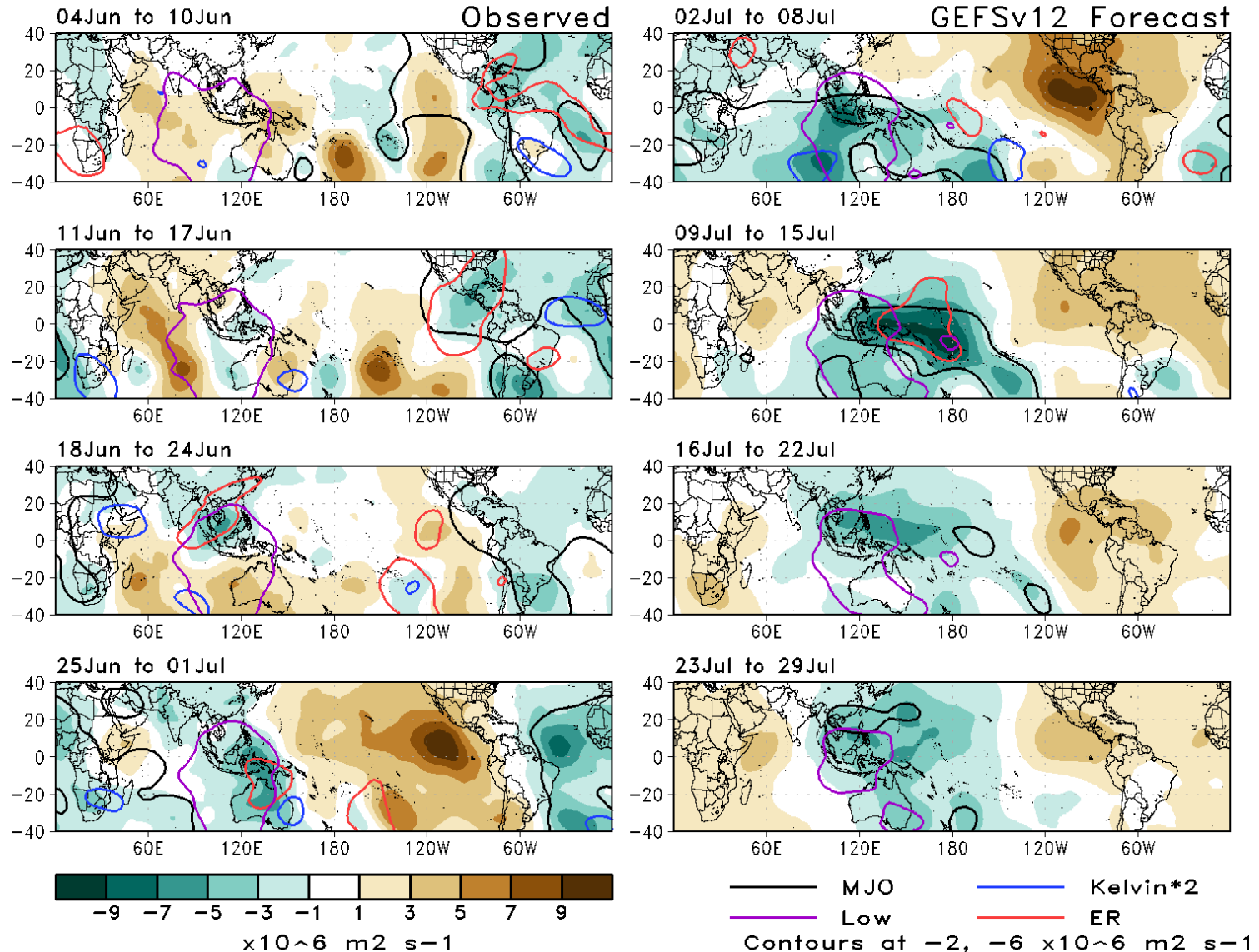
**Issued: 07/02/2024  
Forecaster: Novella**

**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:

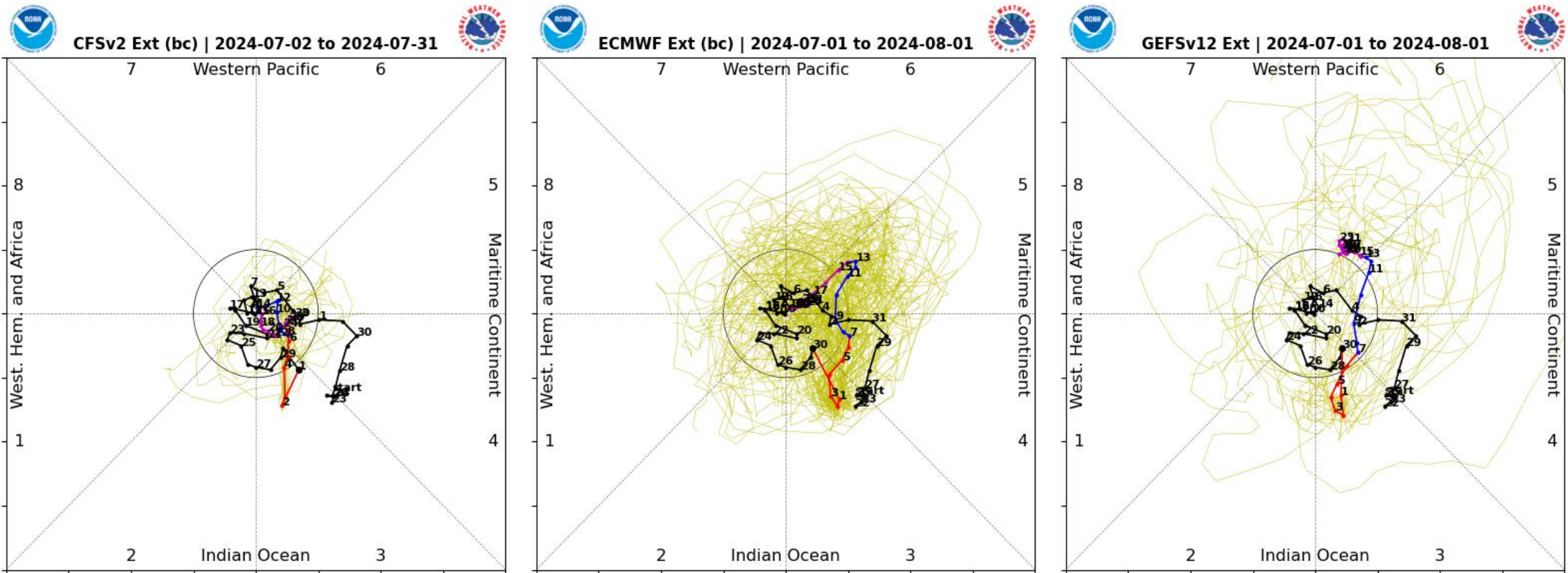
Green: Enhanced Divergence Aloft    Brown: Enhanced Convergence Aloft

## CHI200 7-Day Means



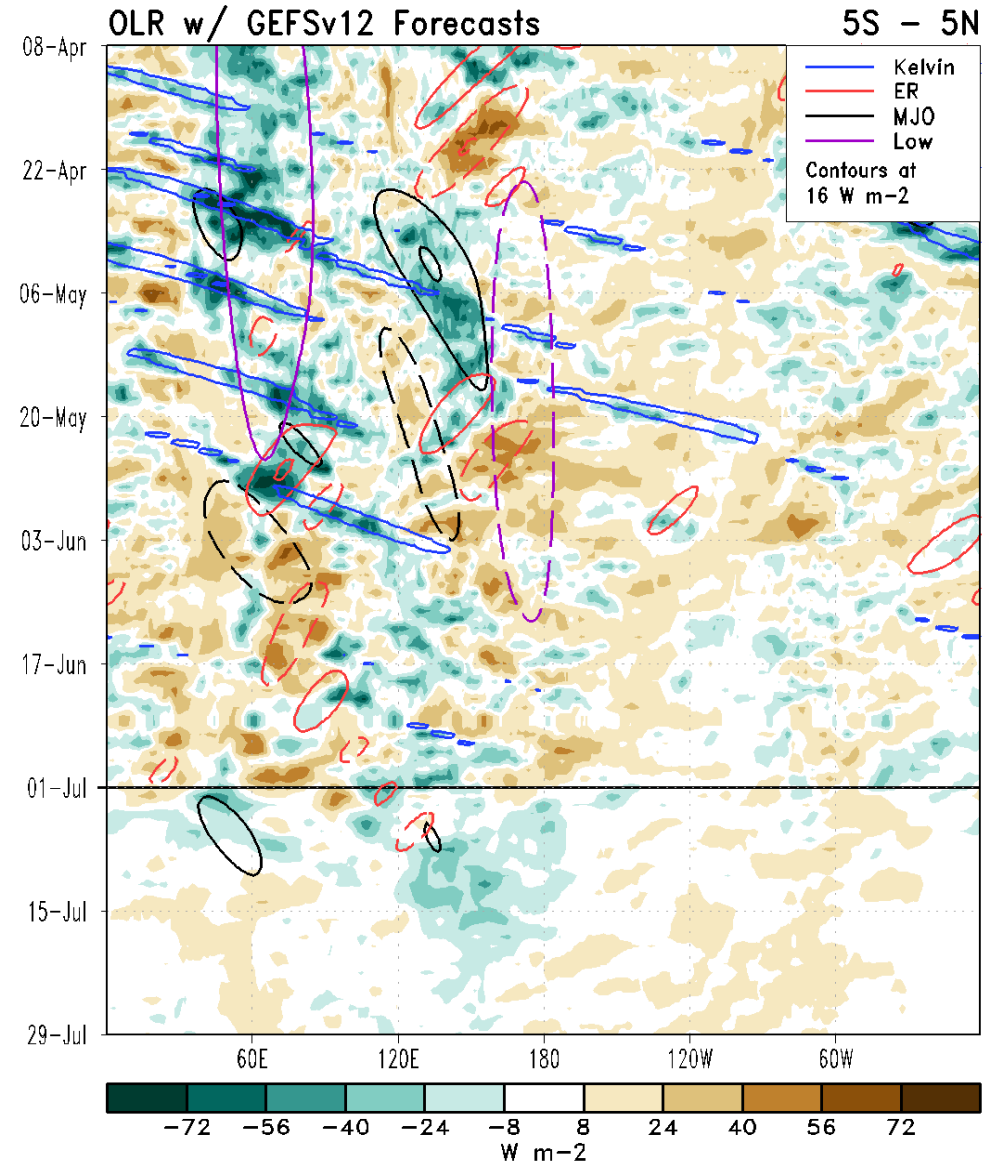
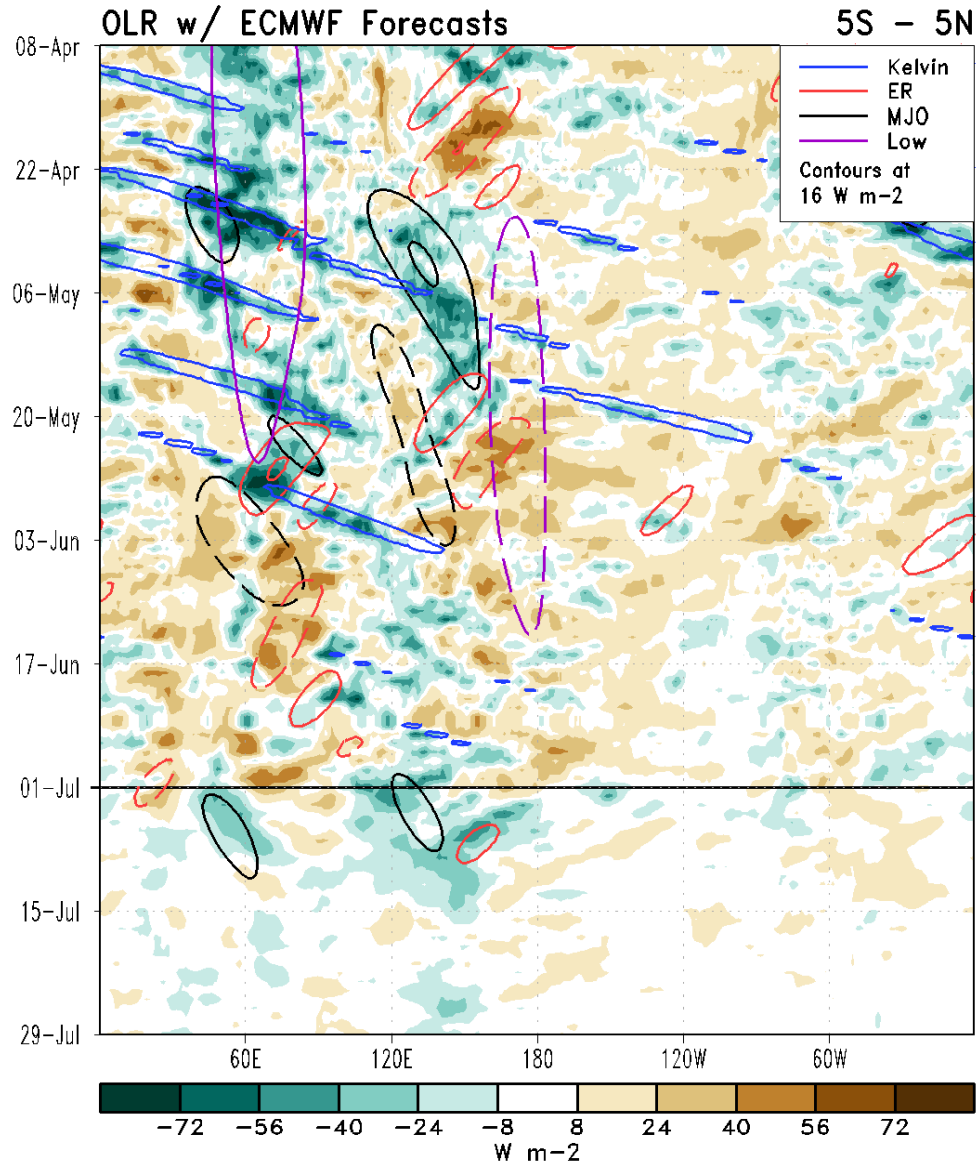
- During late June, a wave-1 pattern became more evident in the observations consistent with renewed MJO activity.
- A wave-1 pattern remains evident in the forecasts, with **MJO activity** coming through the filtering but maintains a slow phase speed.
- The MJO looks to constructively interfere with **Low-frequency variability** and **equatorial Rossby wave** activity towards the middle of July
- The suppressed phase of the MJO is favored to overspread the tropical Americas, Atlantic and Africa.

# RMM Index Observations & Forecasts:



- Consistent with previous RMM forecast, models generally favor an eastward propagating MJO signal, but maintain a low amplitude with high ensemble spread at longer leads.

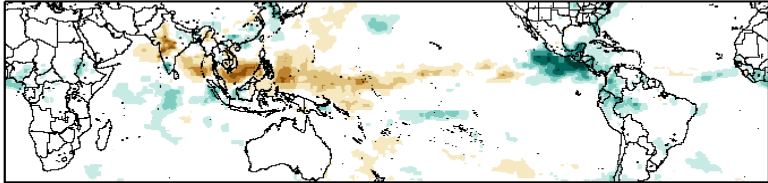
# Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



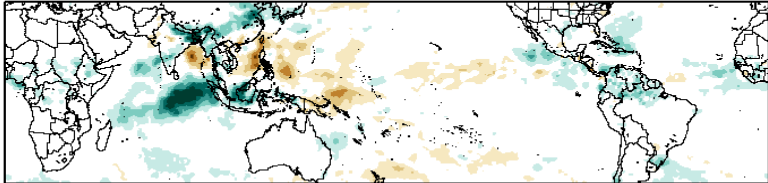
# Historical Precipitation Anomalies By MJO Phase:

JJA MJO Composite: GPCP1DD (mm/day)

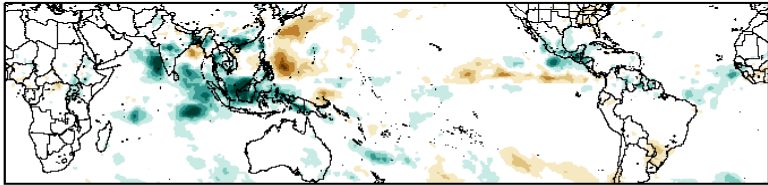
Phase 1



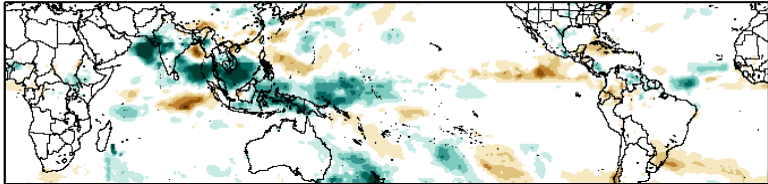
Phase 2



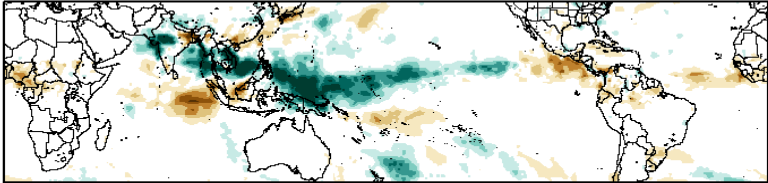
Phase 3



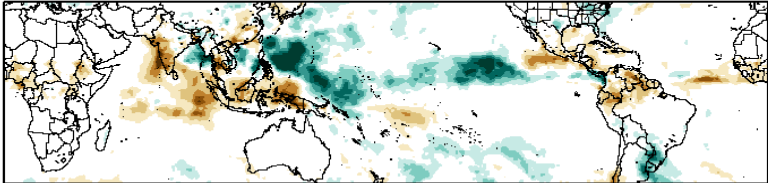
Phase 4



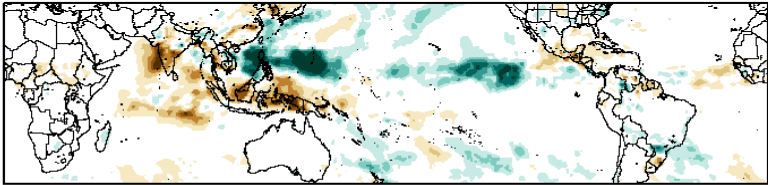
Phase 5



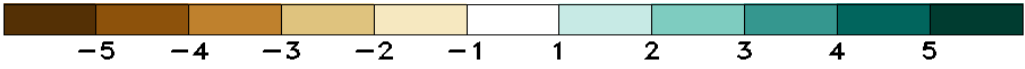
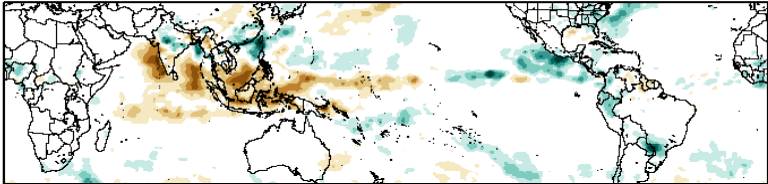
Phase 6



Phase 7



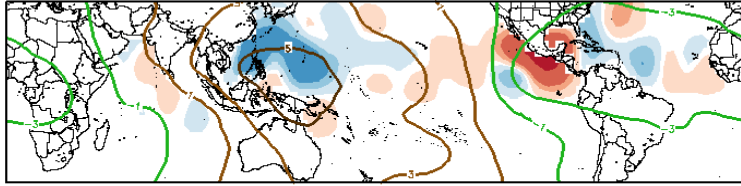
Phase 8



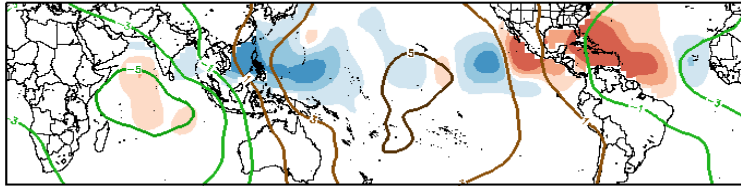


# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

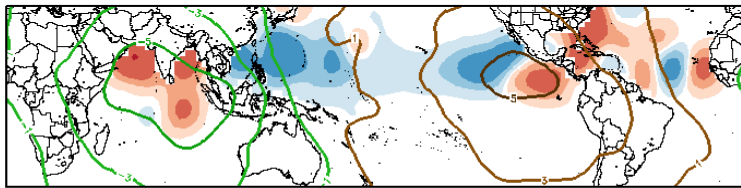
JJA MJO Composite: Mean TC Origin Density Anomaly ( $\#TCs/277km^2*100$ )  
 w/ JJA CHI200 ( $\times 10^{-6} m^{-2} s^{-1}$ ) / Contours every  $2 \times 10^{-6} m^{-2} s^{-1}$



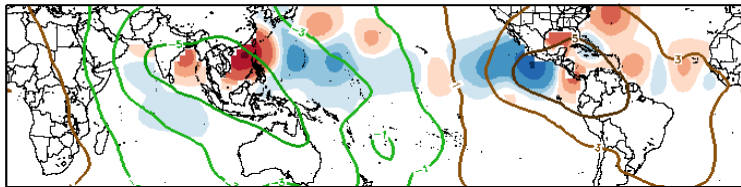
Phase 1



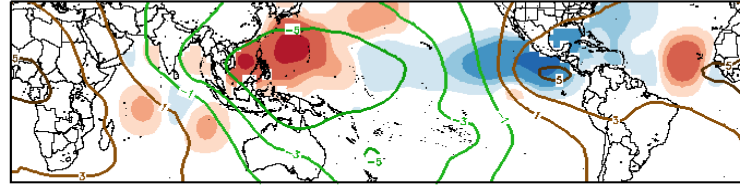
Phase 2



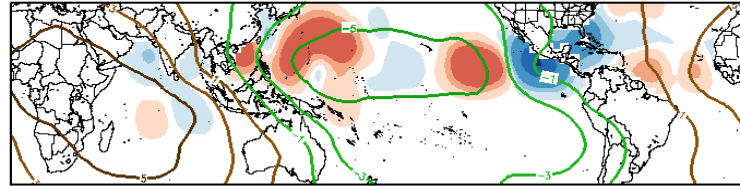
Phase 3



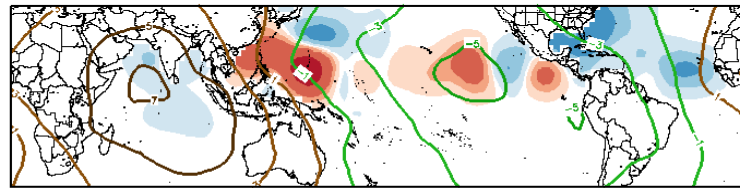
Phase 4



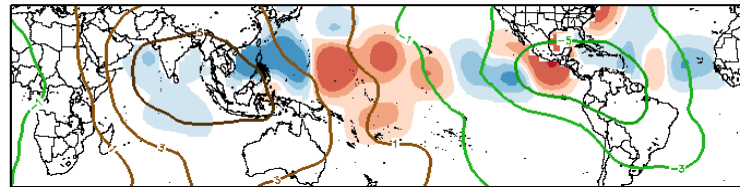
Phase 5



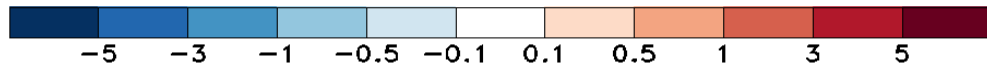
Phase 6



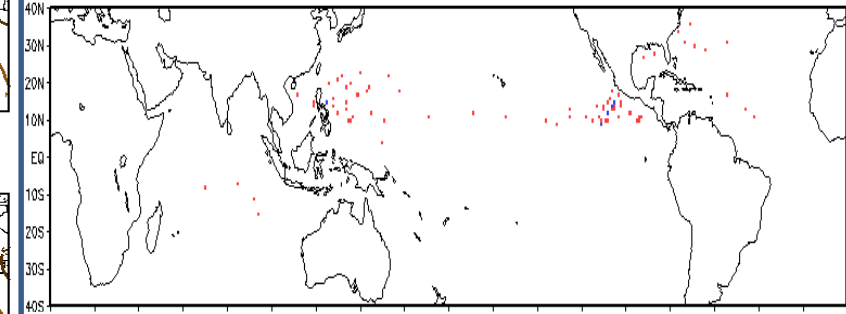
Phase 7



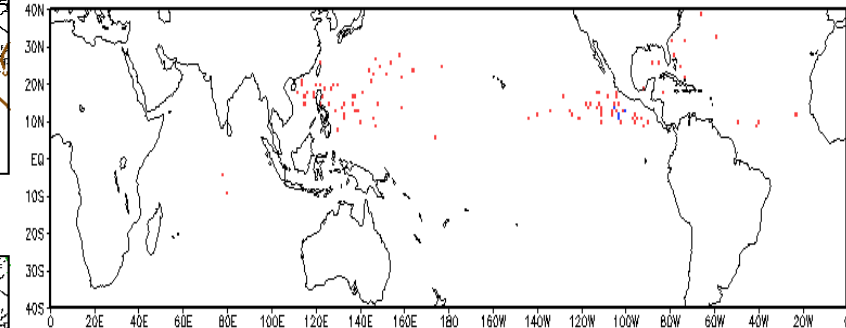
Phase 8



Observed TC Genesis, 1979-2021  
 7-day Period 0710 to 0716



Observed TC Genesis, 1979-2021  
 7-day Period 0717 to 0723

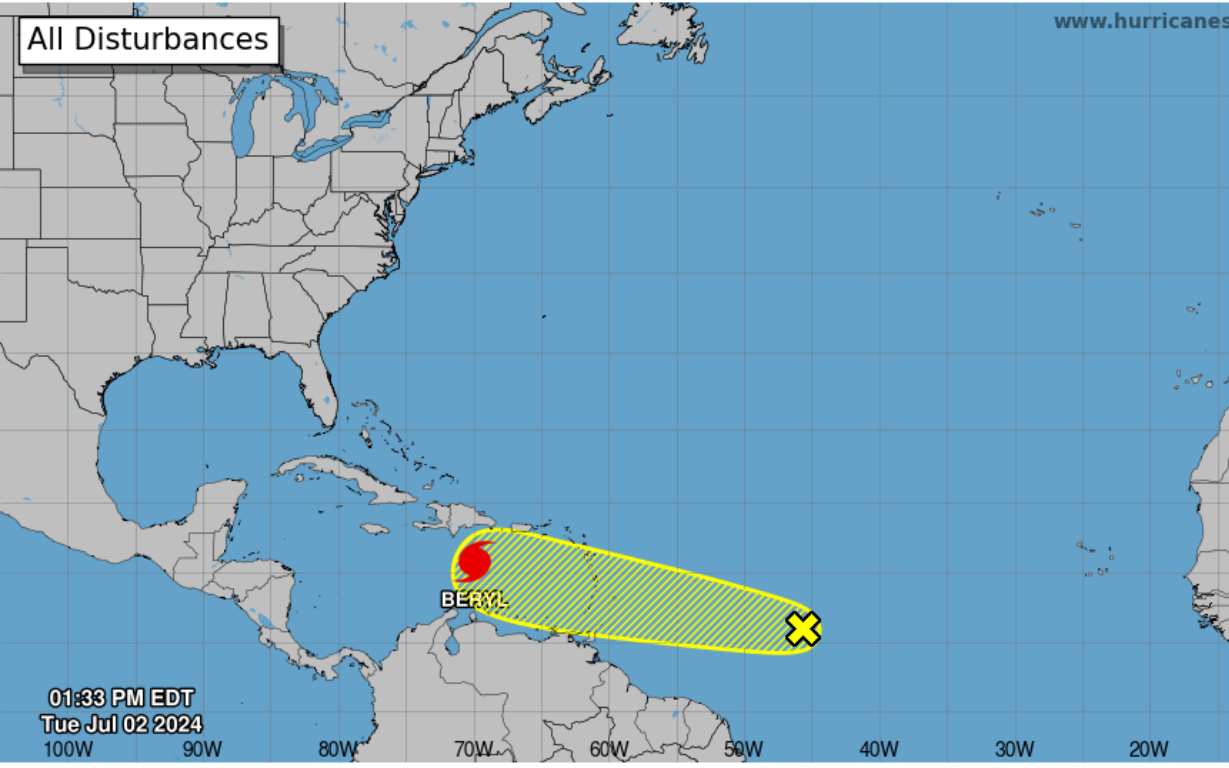


\*Experimental\*

# Tropical Cyclone Monitoring/Forecast: NHC / CPHC

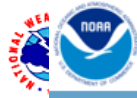


## Seven-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida

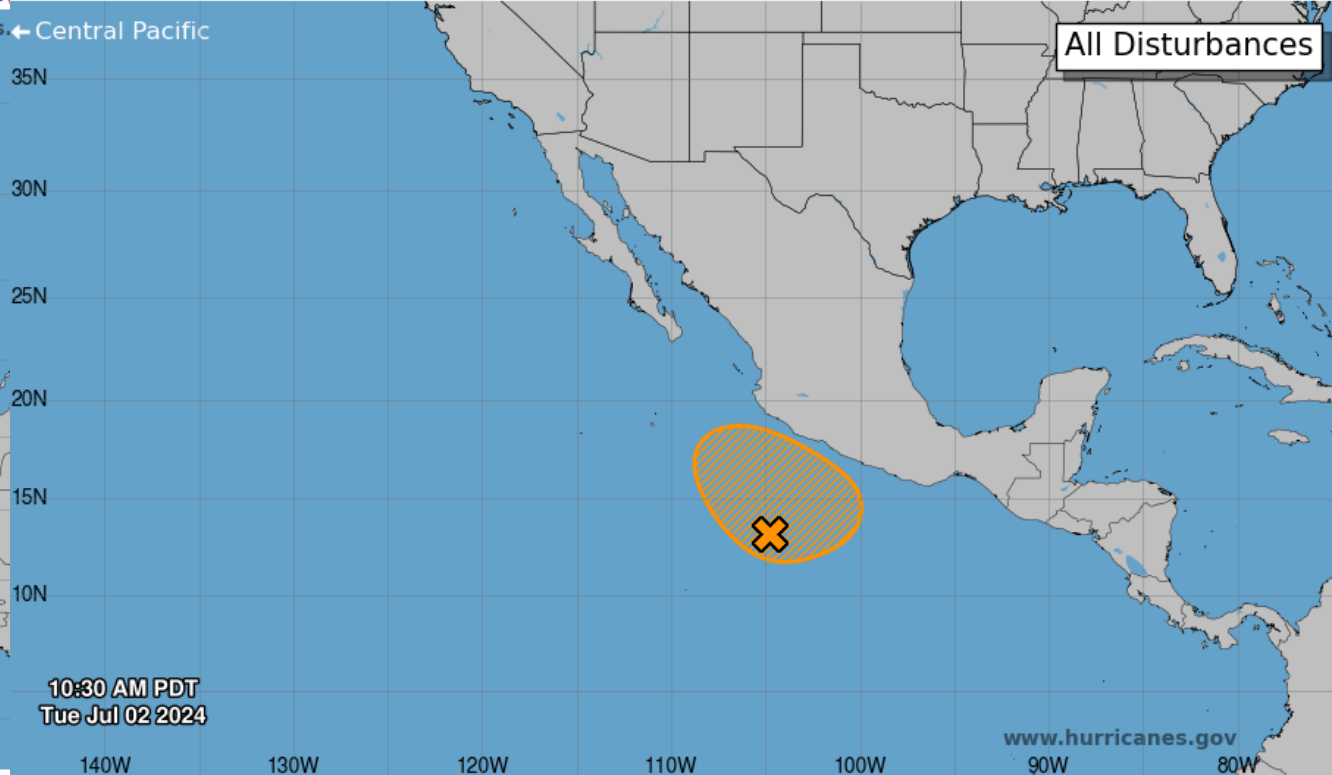


01:33 PM EDT  
Tue Jul 02 2024

Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%  
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane  
 Post-Tropical Cyclone or Remnants



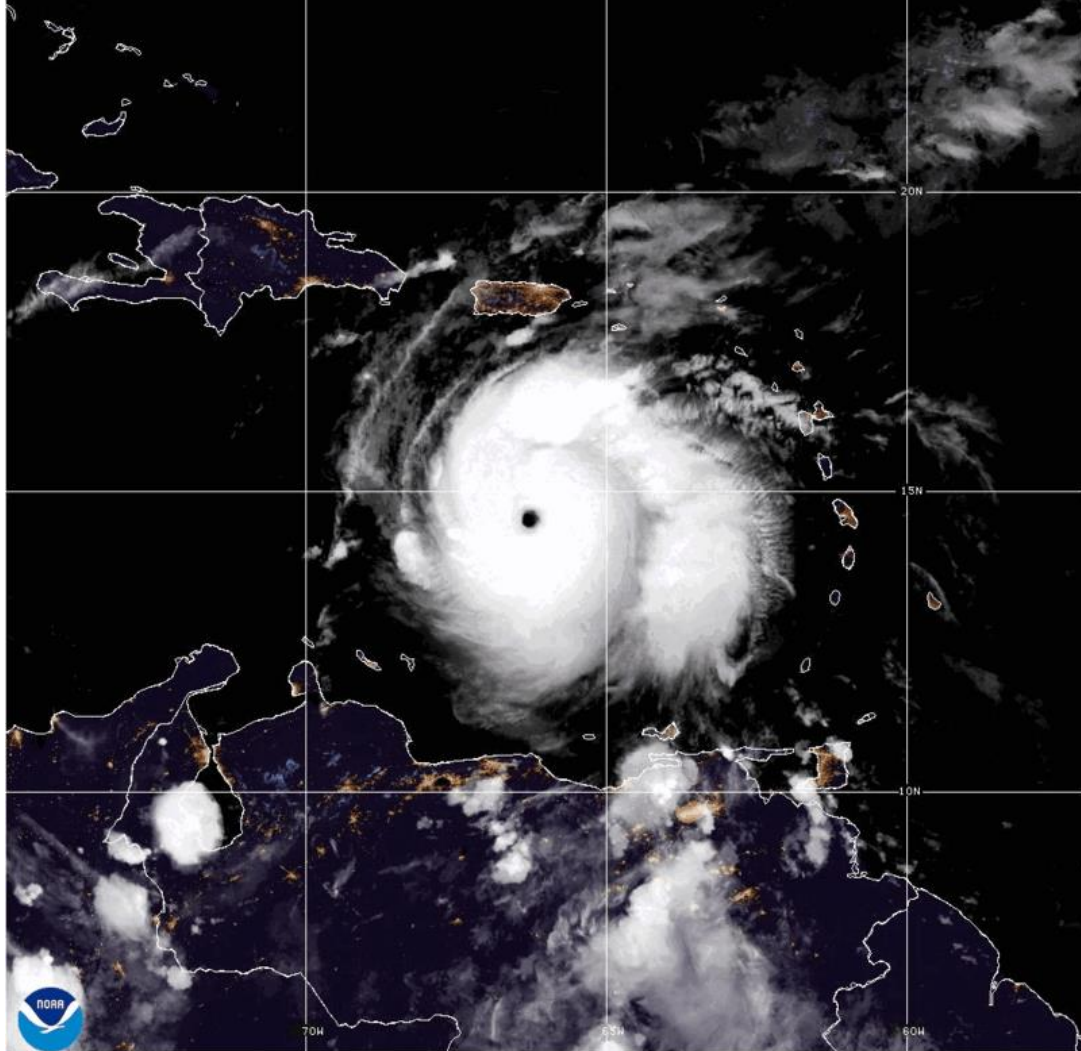
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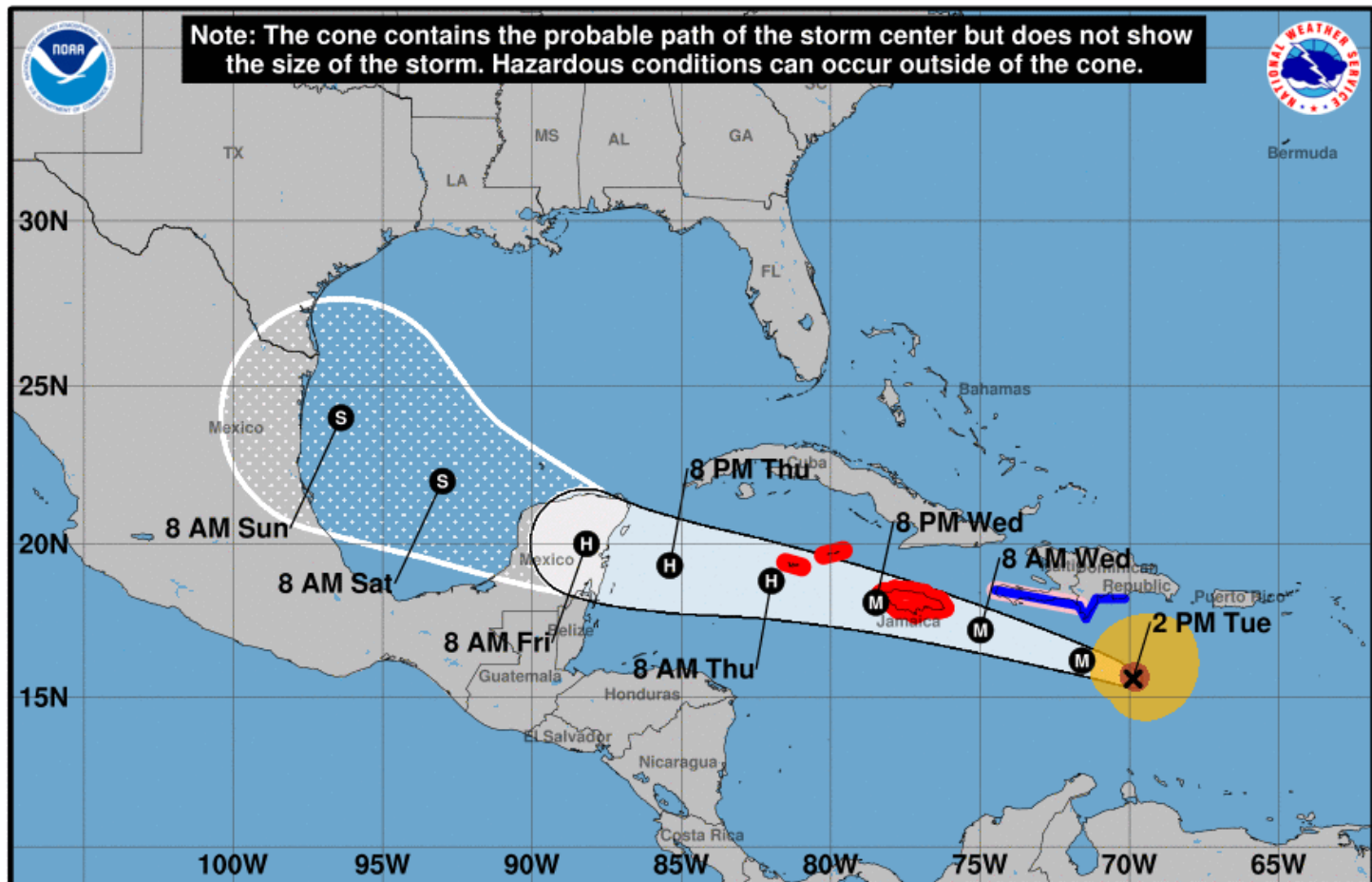
10:30 AM PDT  
Tue Jul 02 2024

Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%  
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane  
 Post-Tropical Cyclone or Remnants





02 Jul 2024 07:10Z - NOAA/NESDIS/STAR - GOES-East - GEOCOLOR Composite - AL022024



**Hurricane Beryl**

Tuesday July 02, 2024  
 2 PM AST Intermediate Advisory 16A  
 NWS National Hurricane Center

**Current information: x**

Center location 15.6 N 69.9 W  
 Maximum sustained wind 155 mph  
 Movement WNW at 22 mph

**Forecast positions:**

● Tropical Cyclone ○ Post/Potential TC  
 Sustained winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110 mph

**Potential track area:**

Day 1-3 Day 4-5

**Watches:**

Hurricane Trop Stm

**Warnings:**

Hurricane Trop Stm

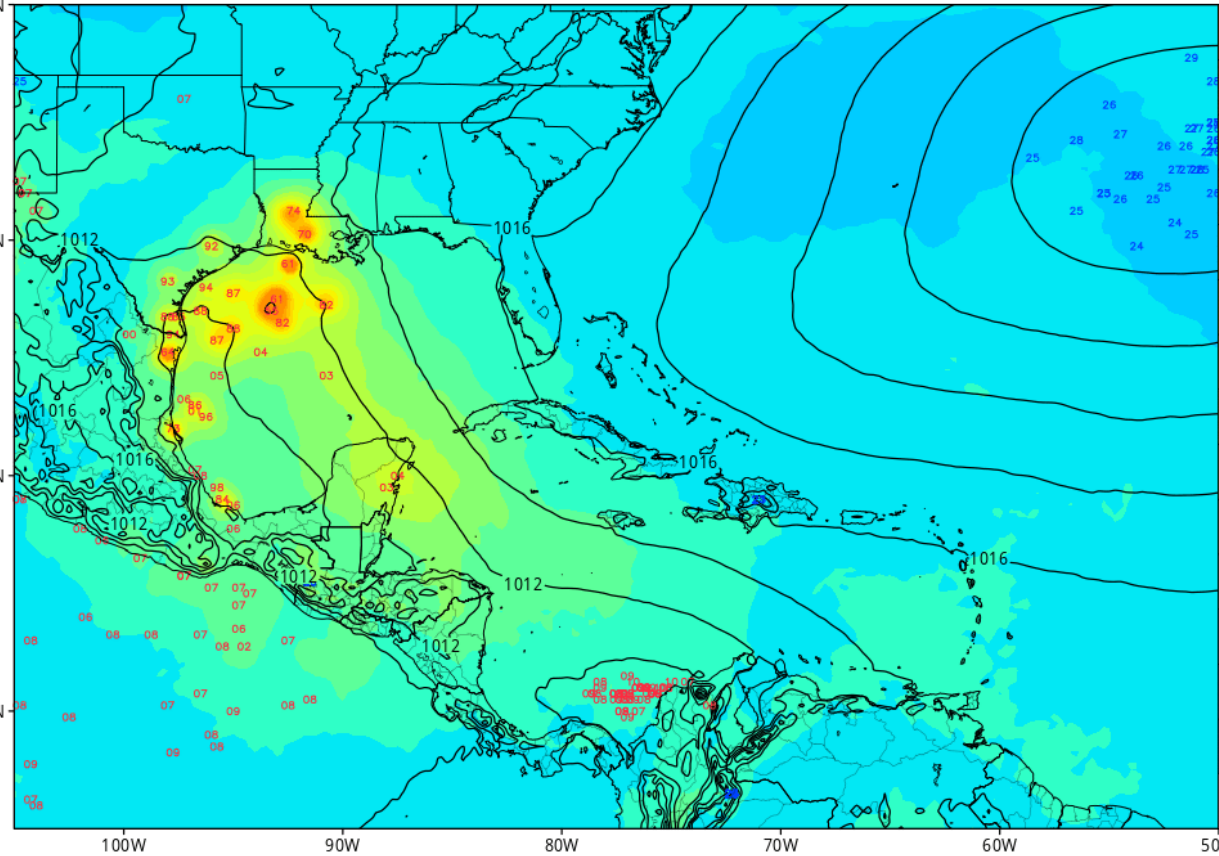
**Current wind field estimate:**

Hurricane Trop Stm

EPS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | High: blue), & Normalized Spread ( $\sigma$ )

Init: 00z Jul 02 2024 Forecast Hour: [156] valid at 12z Mon, Jul 08 2024

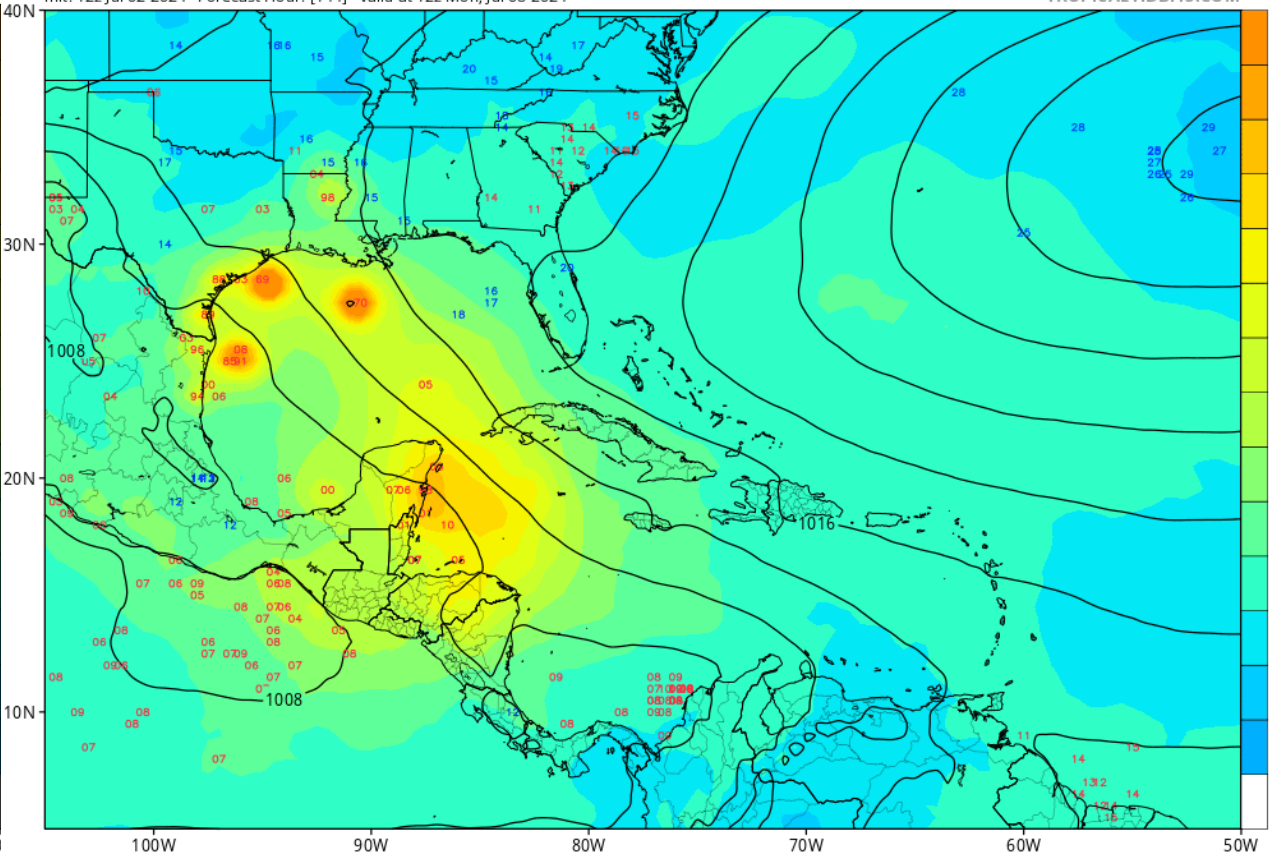
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GEFS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | High: blue), & Normalized Spread ( $\sigma$ )

Init: 12z Jul 02 2024 Forecast Hour: [144] valid at 12z Mon, Jul 08 2024

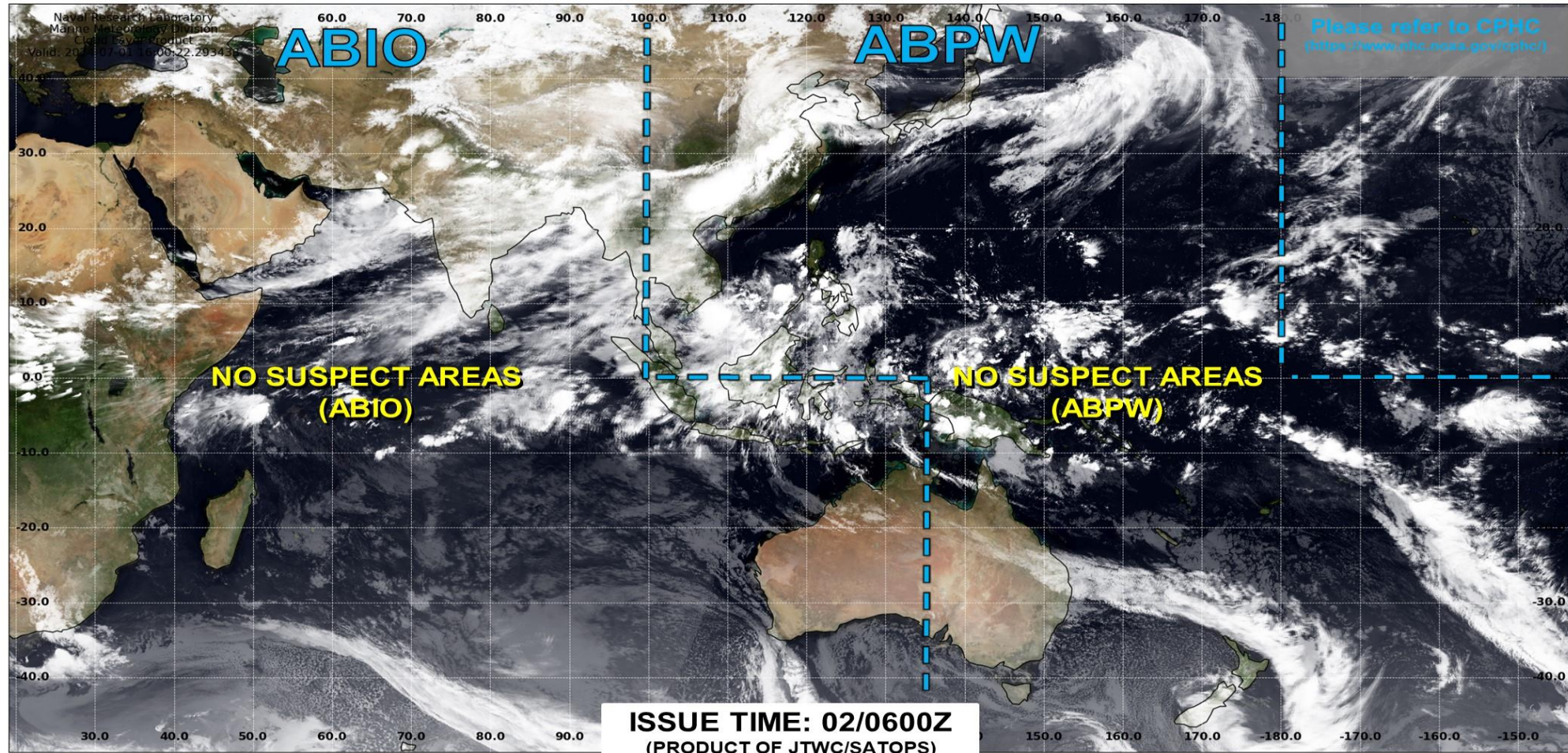
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# Tropical Cyclone Monitoring/Forecast: JTWC



## 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

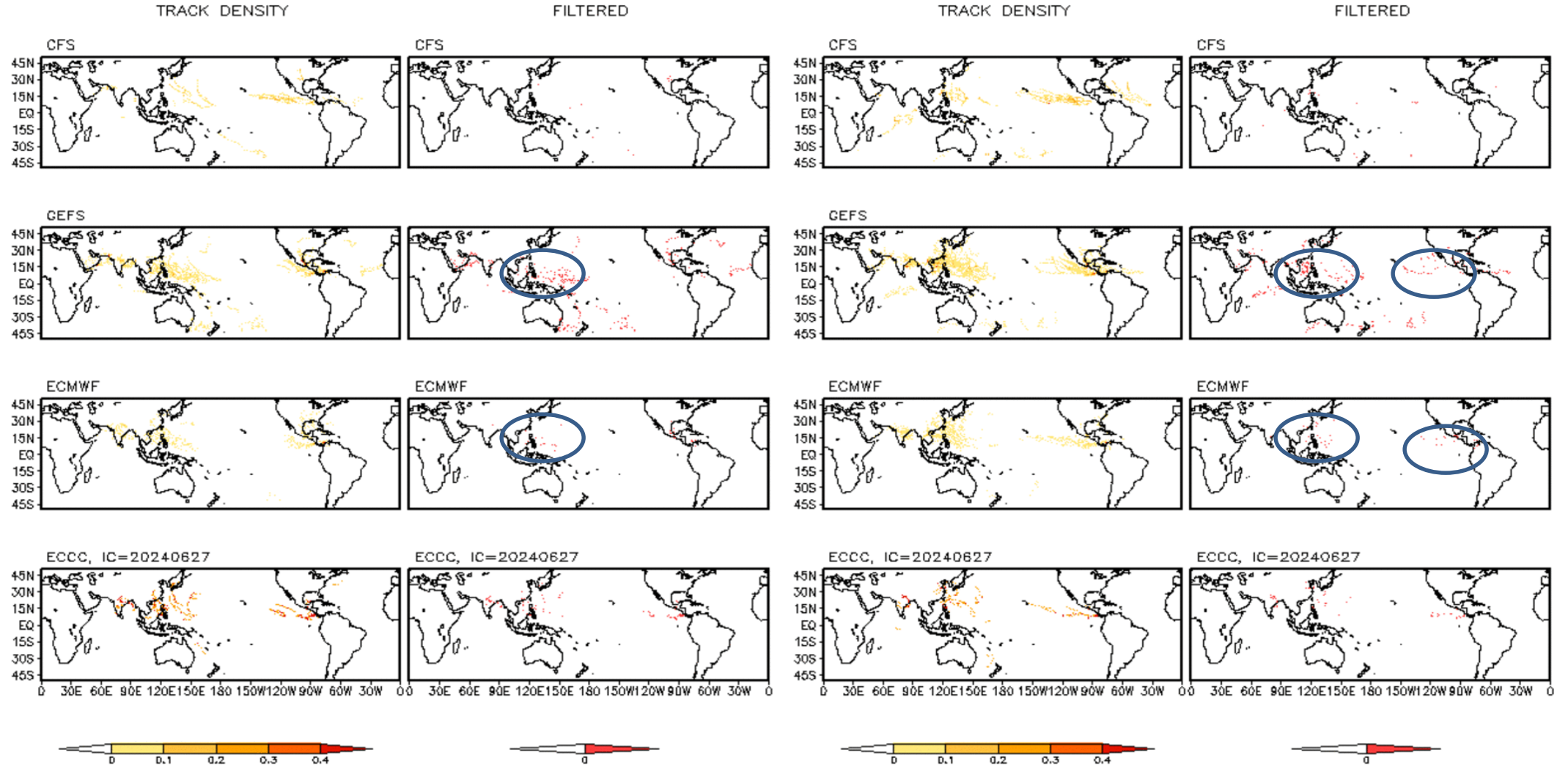


Tropical Cyclone (Reference Warning)

# Multi-Model TC Track Densities: Weeks 2+3

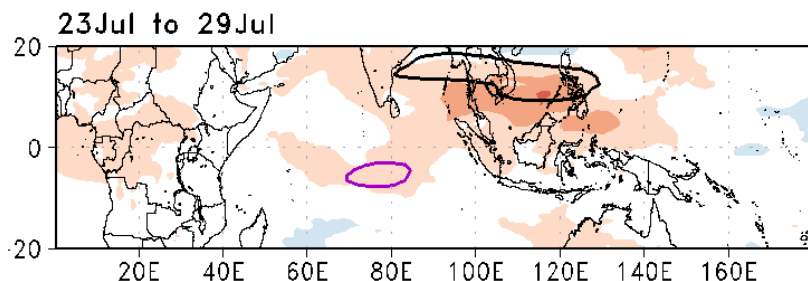
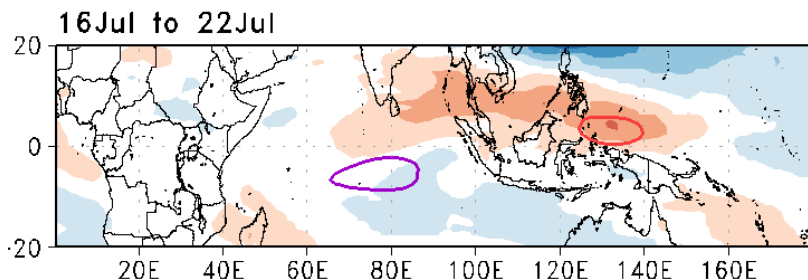
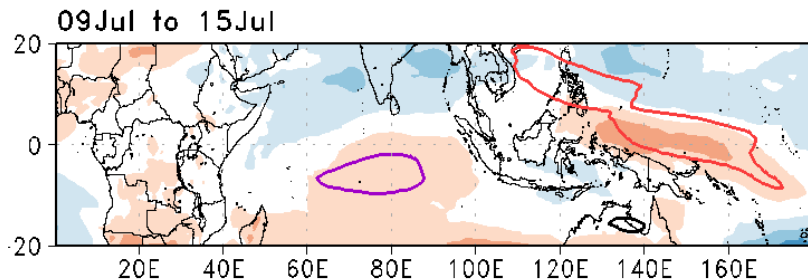
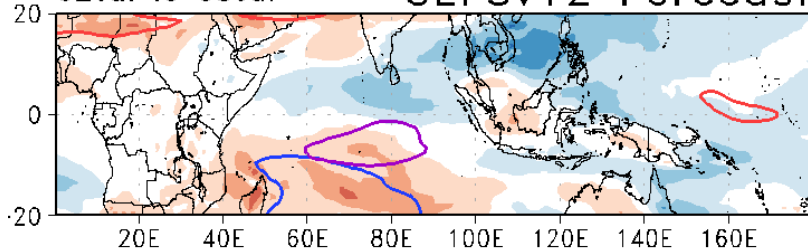
Storm Track Density Distribution, IC=20240701  
Week 2 Forecast: 0710-0716

Storm Track Density Distribution, IC=20240701  
Week 3 Forecast: 0717-0723



# -Day Means

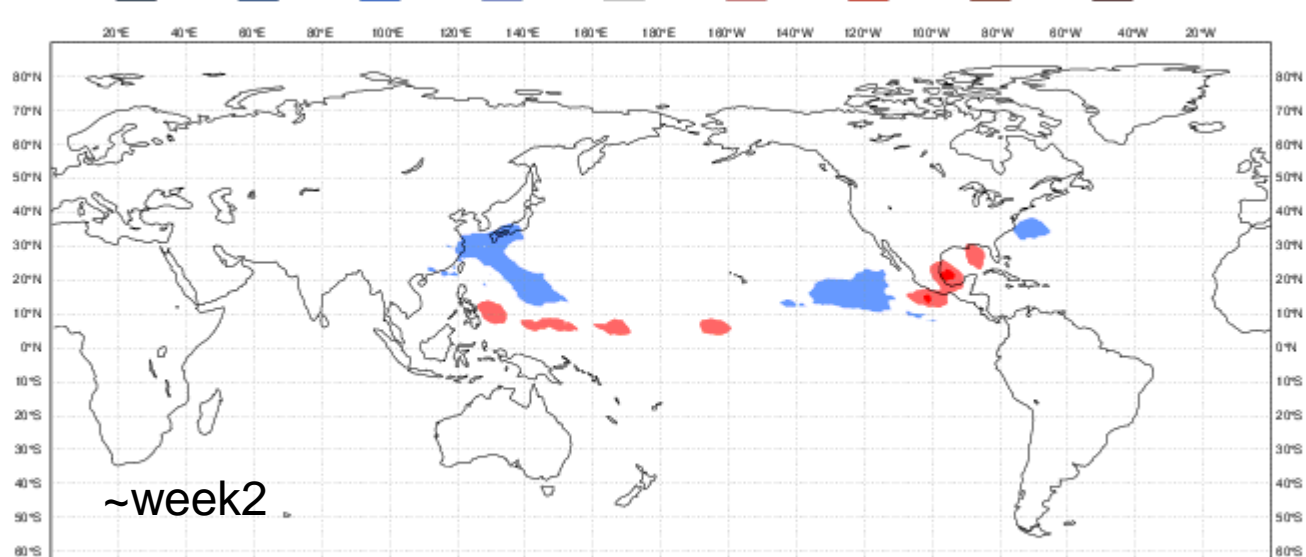
02Jul to 08Jul **GEFSv12 Forecast**



— MJO      — Kelvin\*2  
— Low      — ER  
 Contours at 2, 6 m s<sup>-1</sup>

Weekly Mean Anomaly of Tropical Cyclone Strike Probability. Date:20240701 0 UTC t+(168-336)

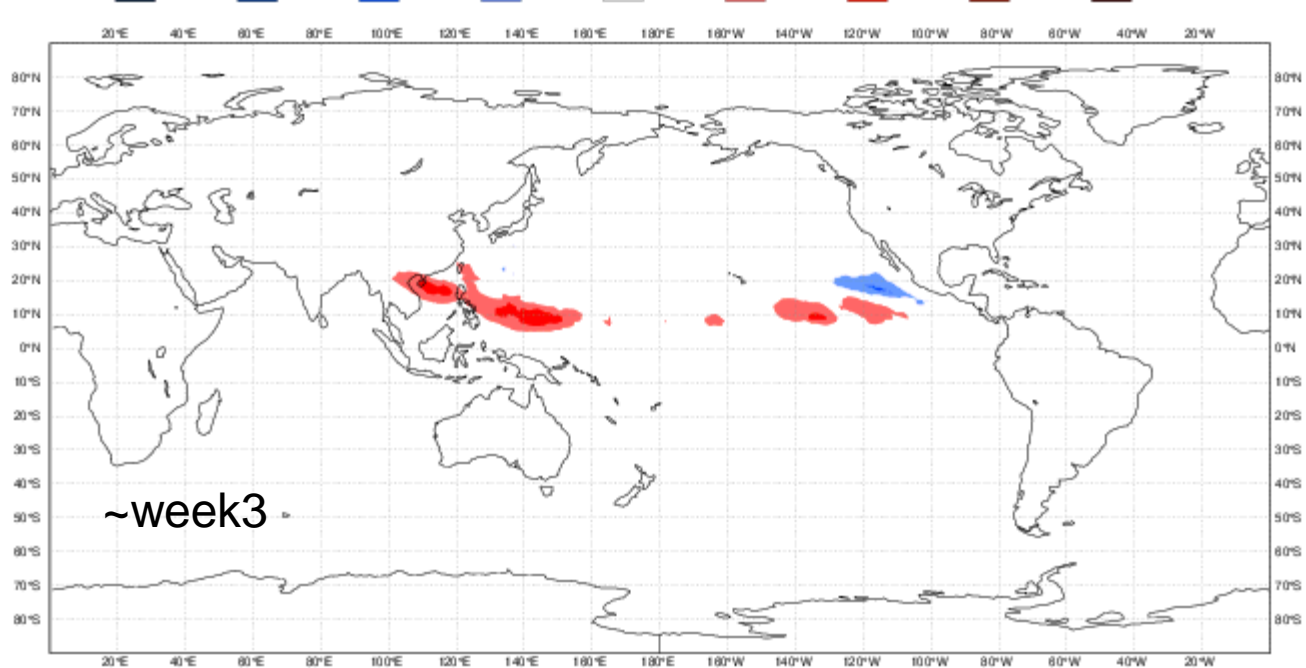
Probability of a TC passing within 300km radius



~week2

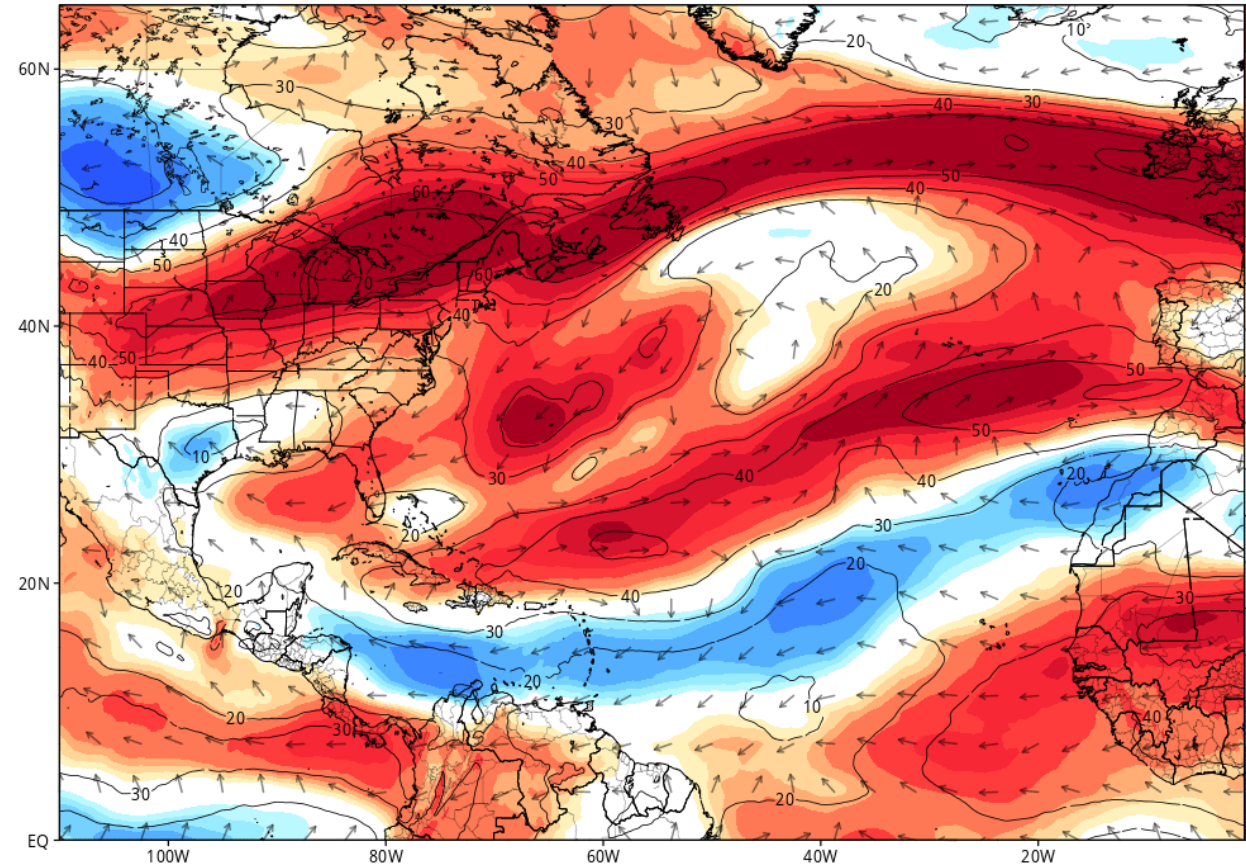
Weekly Mean Anomaly of Tropical Cyclone Strike Probability. Date:20240701 0 UTC t+(336-504)

Probability of a TC passing within 300km radius

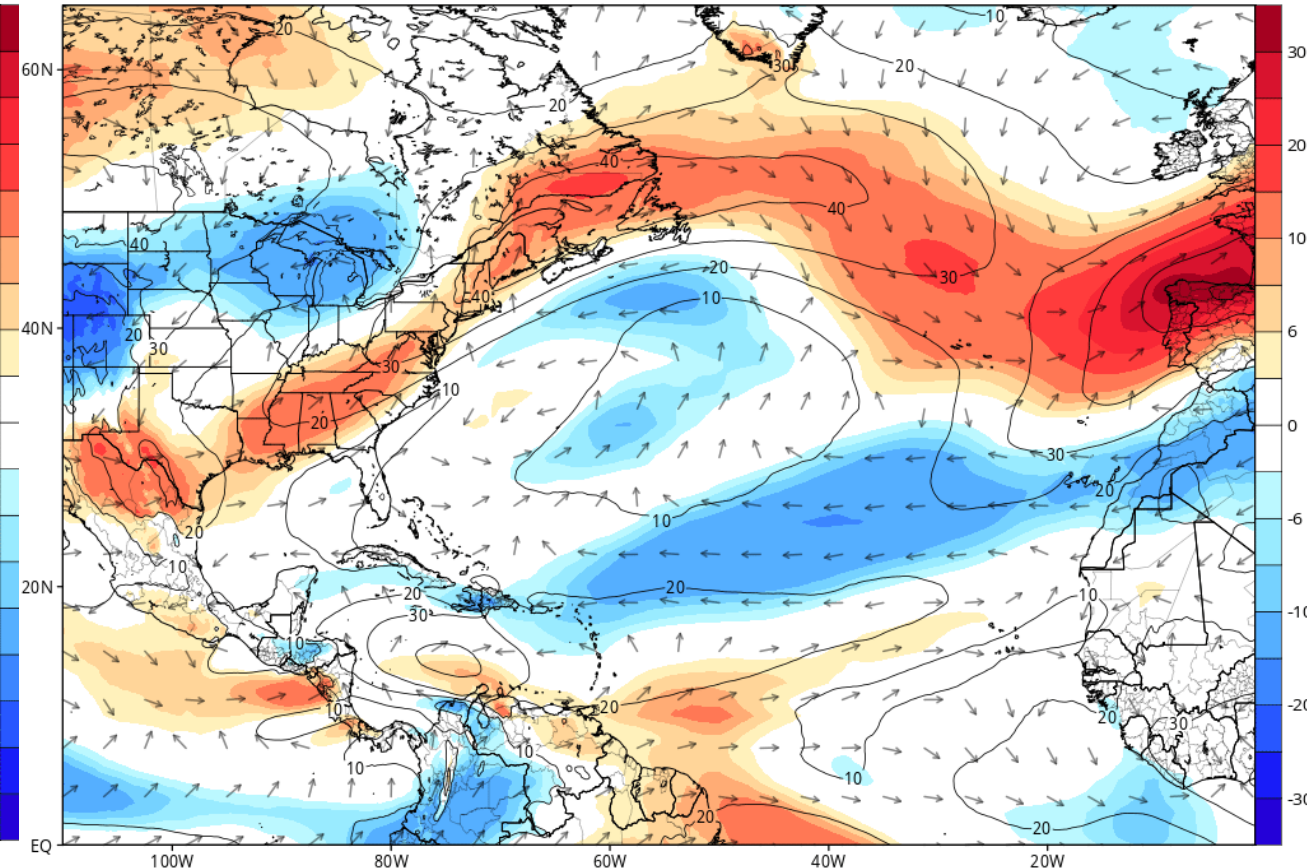


~week3

EPS Mean 850-200 hPa Bulk Shear (kt, contour) & Anomaly (kt, shaded/vector) from 00z02Jul to 00z07Jul (Days 1-5)  
Init: 00z Jul 02 2024 Forecast Hour: [120] valid at 00z Sun, Jul 07 2024  
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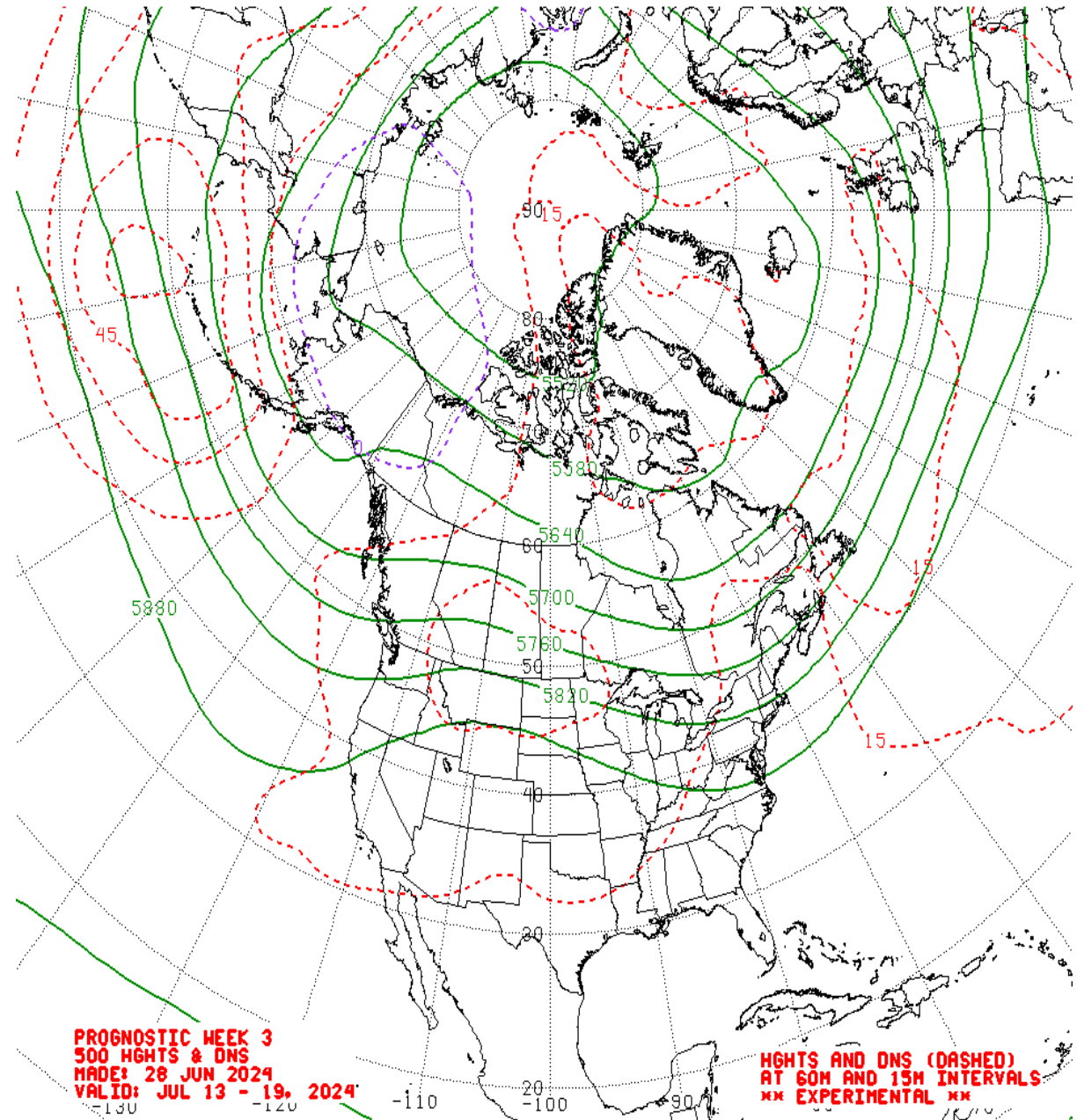
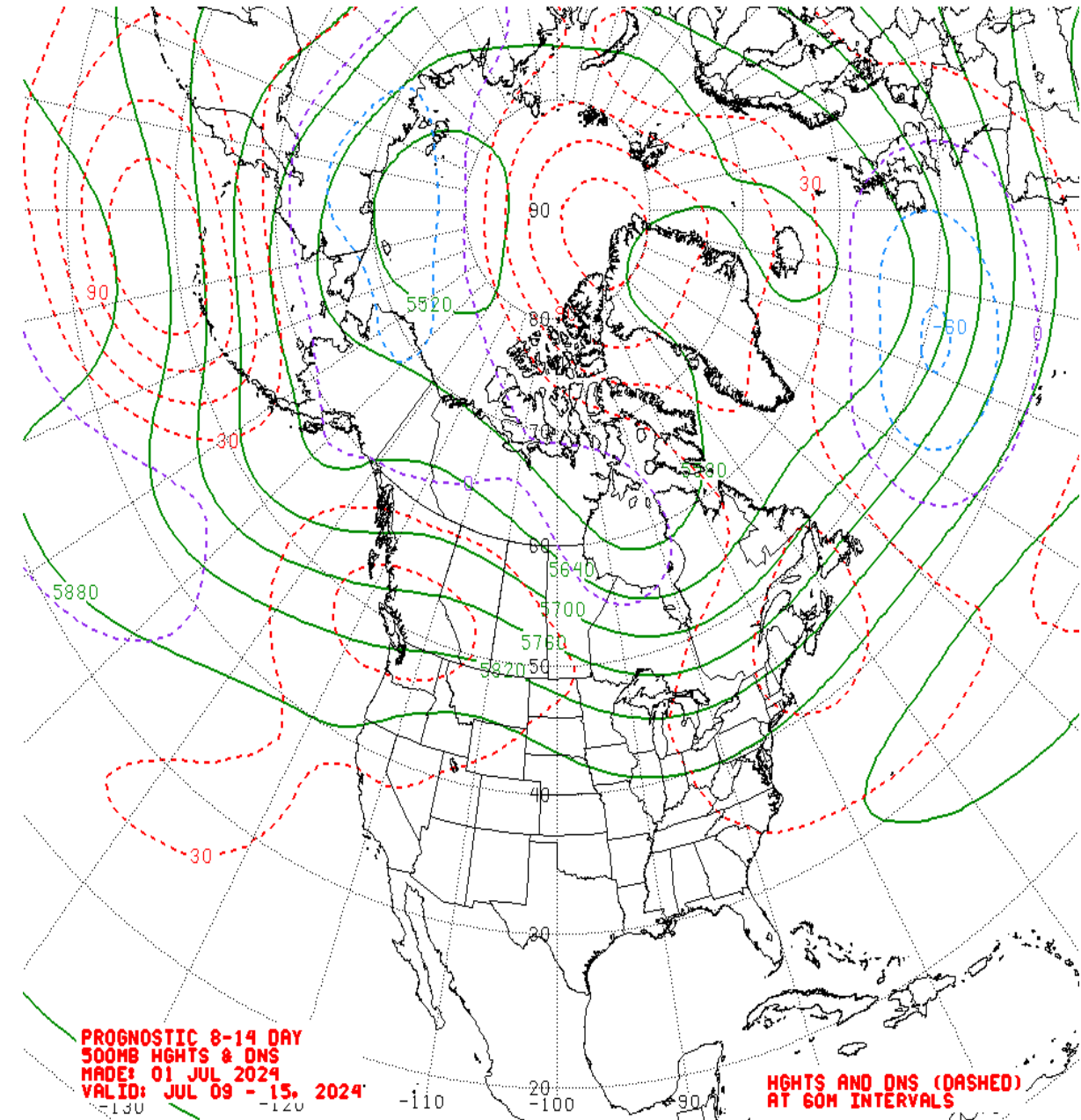


EPS Mean 850-200 hPa Bulk Shear (kt, contour) & Anomaly (kt, shaded/vector) from 00z11Jul to 00z16Jul (Days 10-14)  
Init: 00z Jul 02 2024 Forecast Hour: [336] valid at 00z Tue, Jul 16 2024  
TROPICALTIDBITS.COM

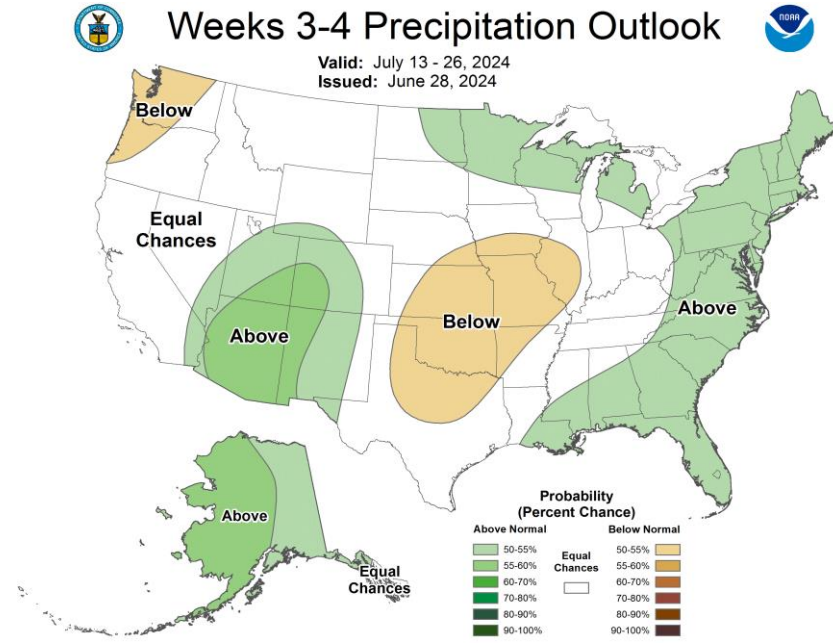
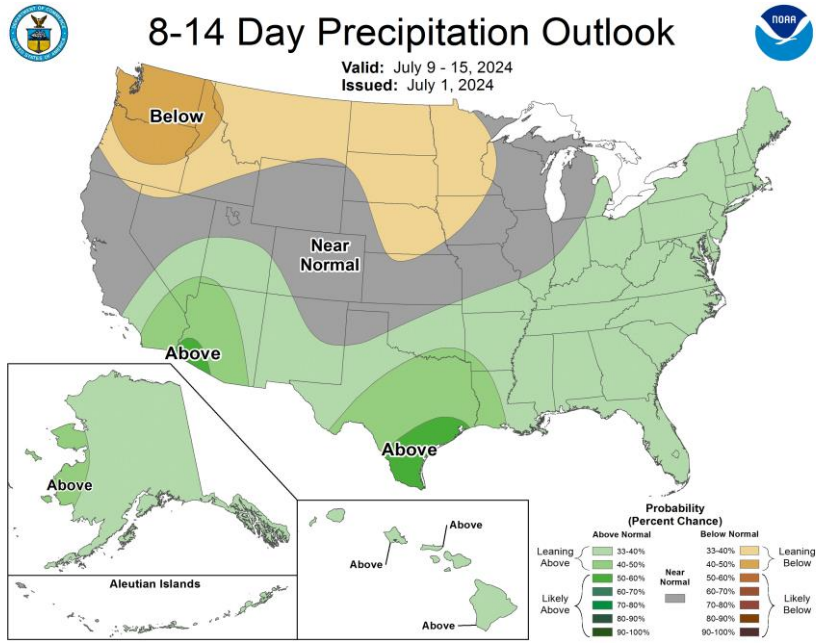
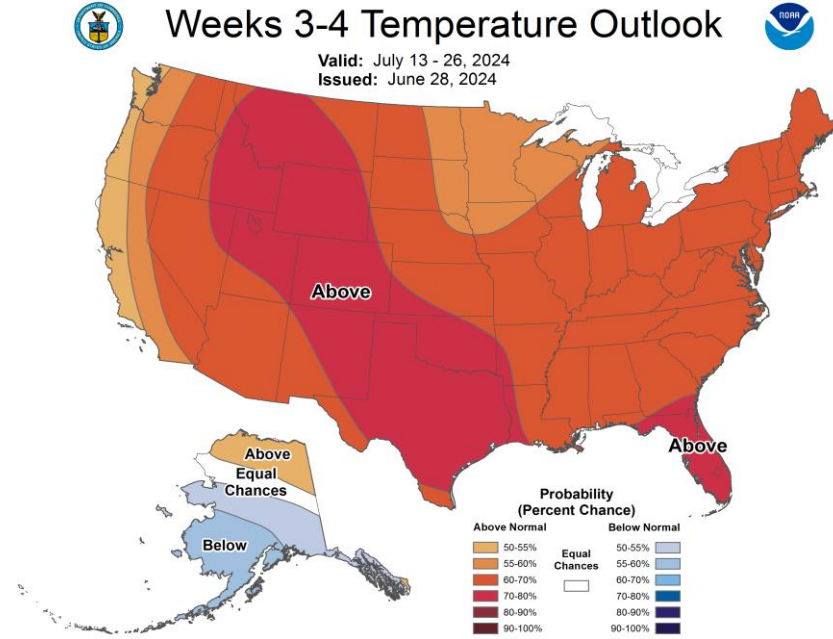
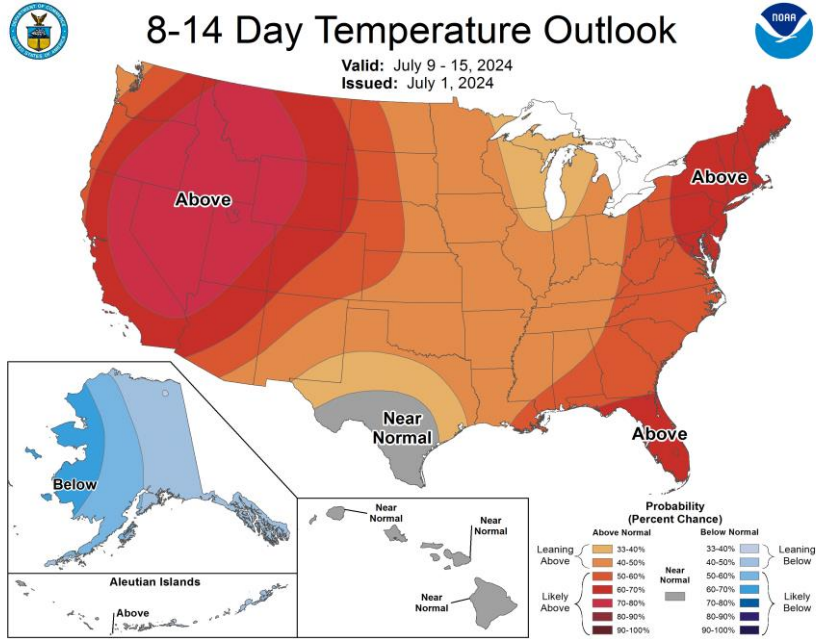




# Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



# Official Temperature & Precipitation Forecasts:



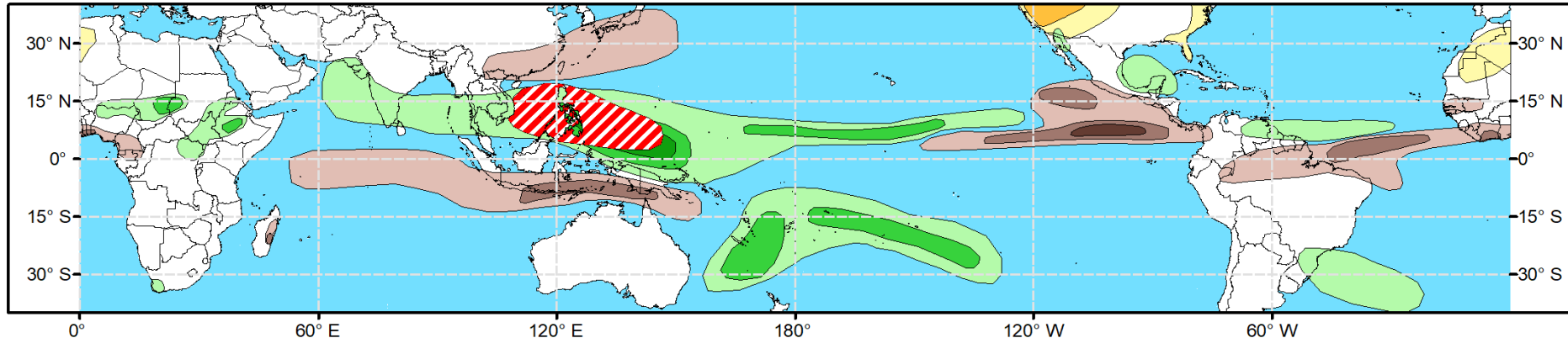


# Global Tropics Hazards Outlook

Climate Prediction Center

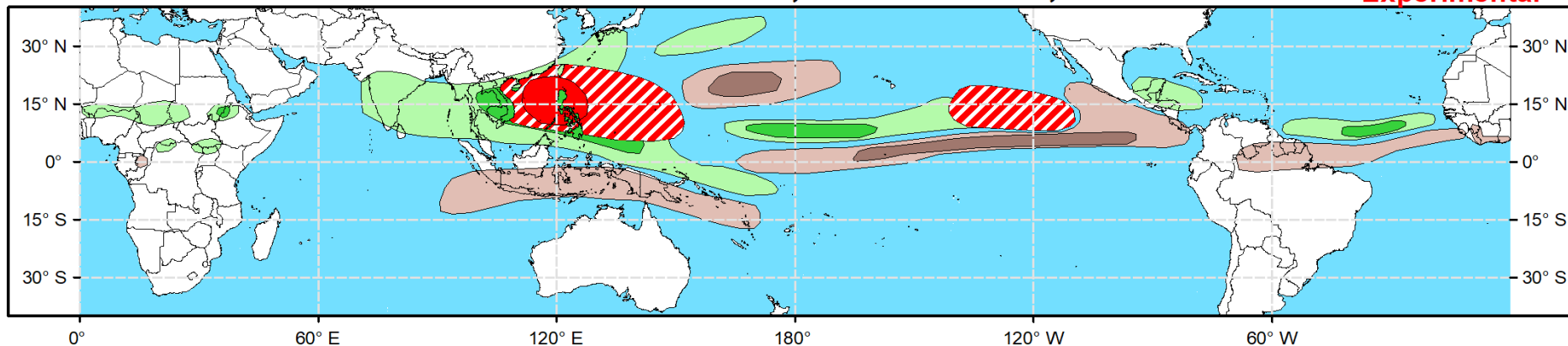


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