

# Global Tropics Hazards And Benefits Outlook

8/9/2022

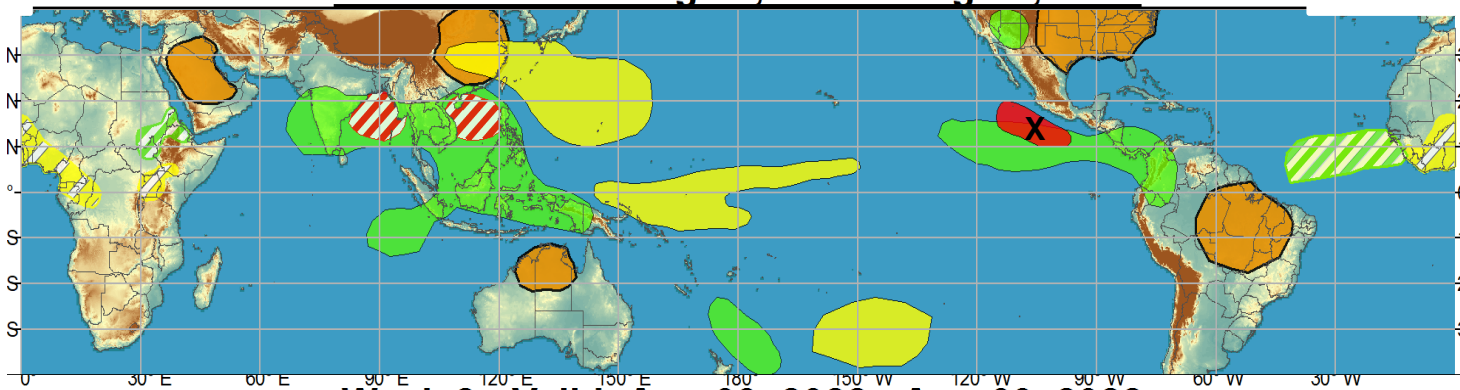
Nick Novella

## Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

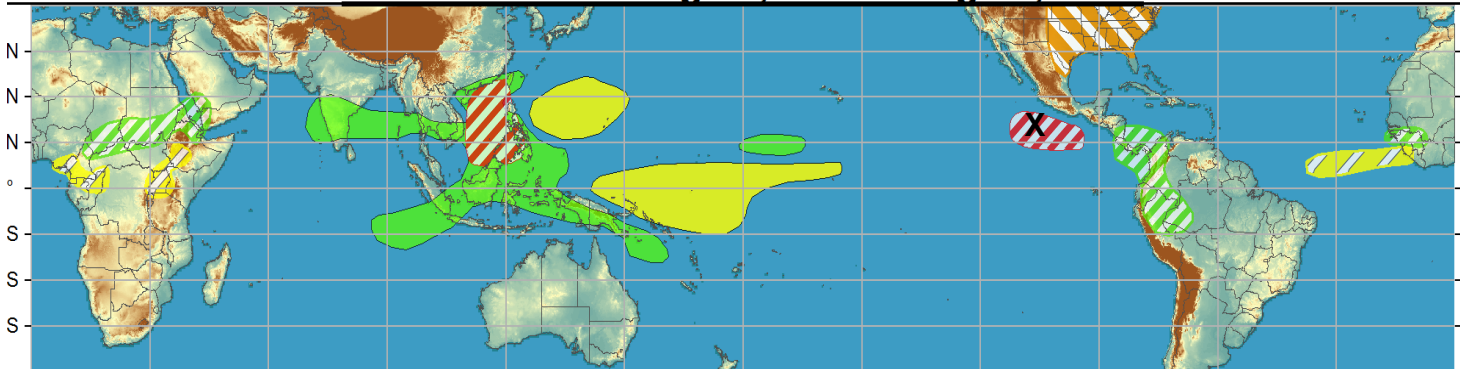
# Outlook Review

**Week 1 - Valid: Aug 03, 2022 - Aug 09, 2022**



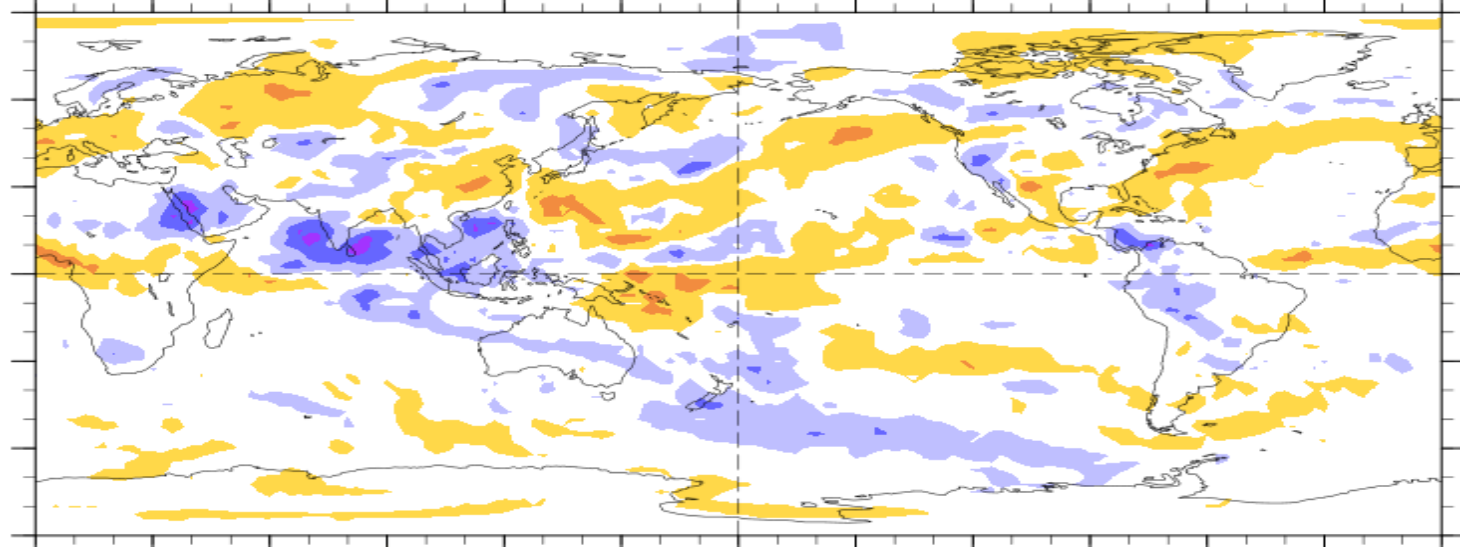
X =TC Howard (8/6)

**Week 2 - Valid: Aug 03, 2022 - Aug 09, 2022**



7-Day Average OLR Anomaly

2022/08/01 - 2022/08/07



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

## **ENSO: (14 July, 2022 Update)**

*next update on 11<sup>th</sup> of Aug.!*

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is favored to continue through 2022 with the odds for La Niña decreasing into the Northern Hemisphere late summer (60% chance in July-September 2022) before increasing through the Northern Hemisphere fall and early winter 2022 (62-66% chance).

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

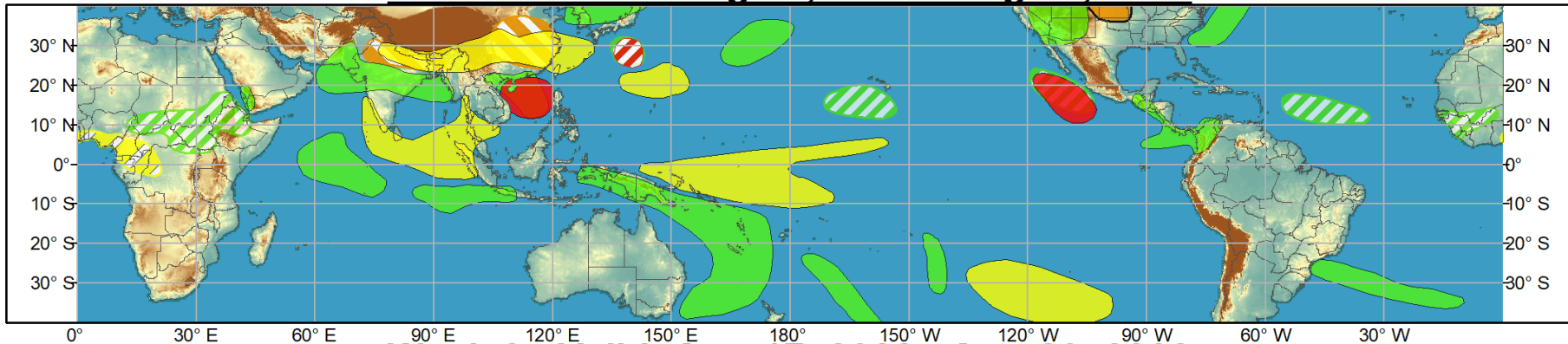
- The MJO continues to be not well defined, as reflected in the upper-level velocity potential fields and RMM observations during the past week.
- Dynamical model RMM forecasts are in general agreement favoring a fast eastward propagation of the intraseasonal signal across the Pacific and possibly reaching the Indian Ocean during the next two weeks. The rapid phase speed in the forecasts falls more in-line with a convectively coupled Kelvin wave than a canonical MJO, however a more coherent MJO is possible later in the outlook period.
- Other modes of tropical variability appear more likely to be primary contributors to precipitation and tropical cyclogenesis in the Pacific and Atlantic.



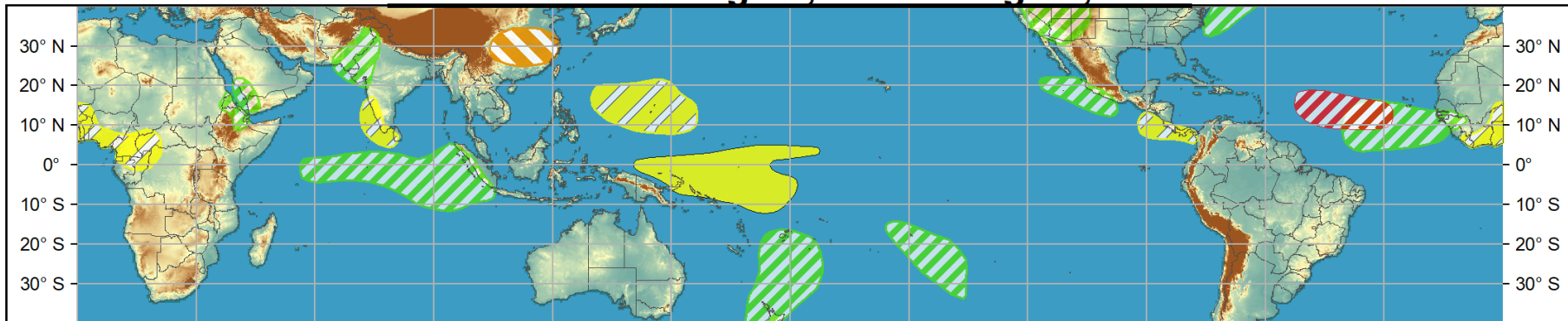
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Aug 10, 2022 - Aug 16, 2022



## Week 2 - Valid: Aug 17, 2022 - Aug 23, 2022



**Confidence**  
 High Moderate

- Tropical Cyclone Formation** Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Above-average rainfall** Weekly total rainfall in the upper third of the historical range.
- Below-average rainfall** Weekly total rainfall in the lower third of the historical range.
- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
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Produced: 08/09/2022

Forecaster: Novella

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



# IR Satellite & 200-hpa Velocity Potential Anomalies

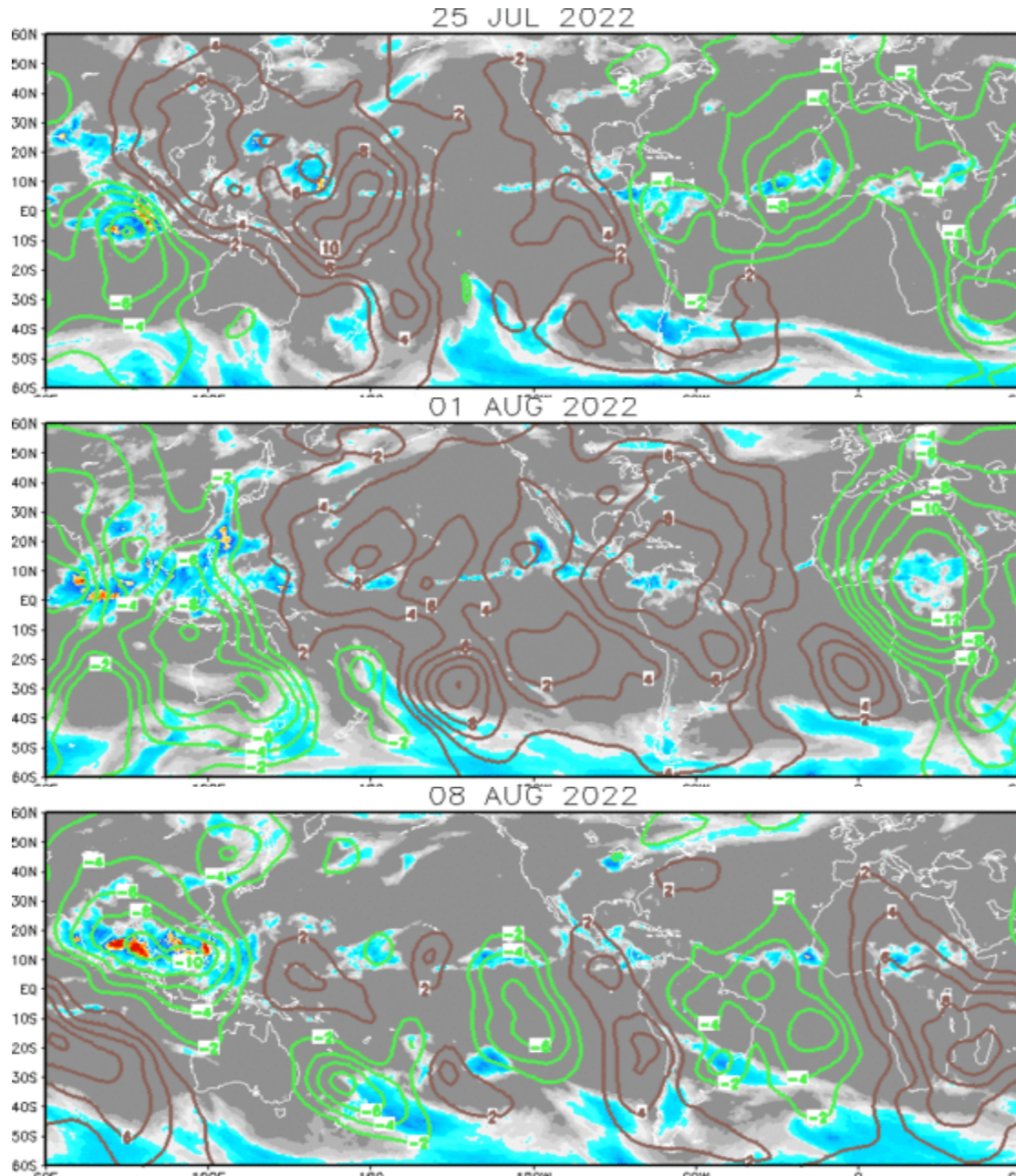
Green: Enhanced Divergence

Brown: Enhanced Convergence

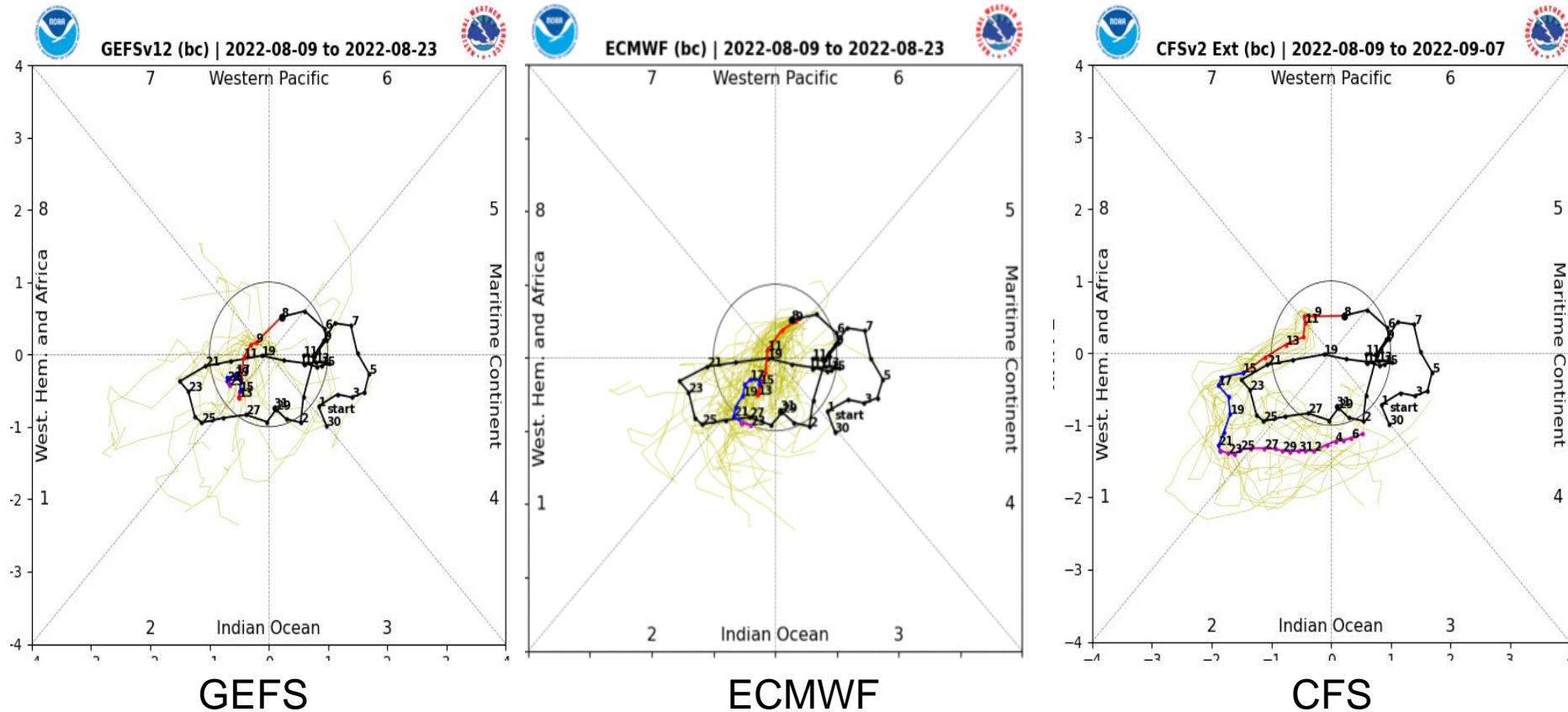
A wave-1 pattern became evident during late July, with the enhanced MJO envelope shifting east into Africa and the IO.

Envelopes of enhanced and suppressed conditions continued to shift eastward by early August.

Pattern has become much less defined with increasing anomalous divergence aloft over the Pacific and Atlantic. Enhanced convection remains entrenched over the IO / MT



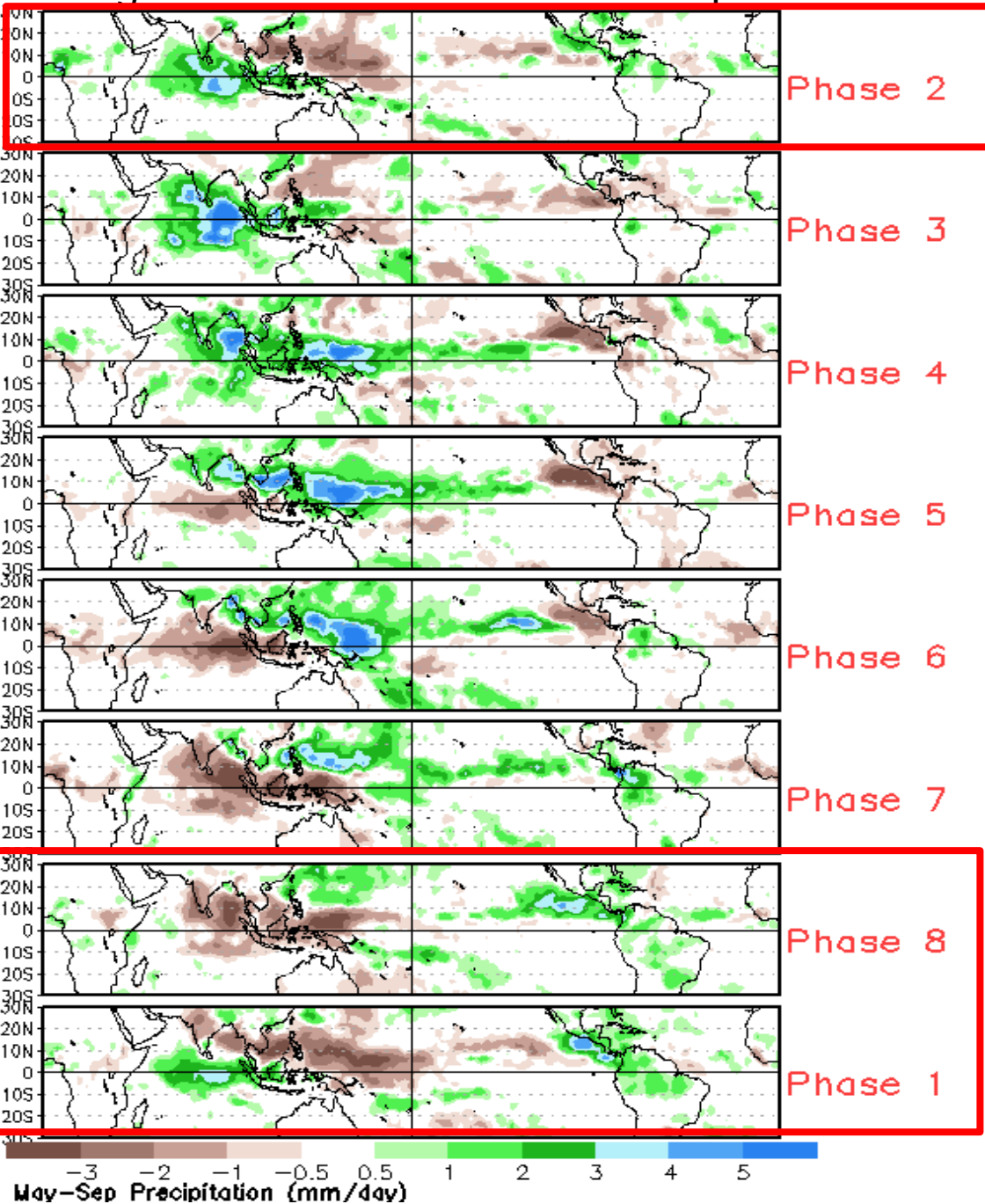
# MJO Observation/Forecast



There is better agreement among the dynamical models favoring fast, continued eastward propagation of the signal across the western Pacific and reaching the Indian Ocean, but maintain a low amplitude. The rapid phase speed is suggestive of Kelvin wave activity projecting onto the RMM index.

However, such fast moving activity may aid in the reorganization of the MJO later in August, which is depicted in some RMM mean solutions (CFS, BOM) pointing to a more coherent signal emerging by the week-2 period and beyond.

# Average Conditions when the MJO is present

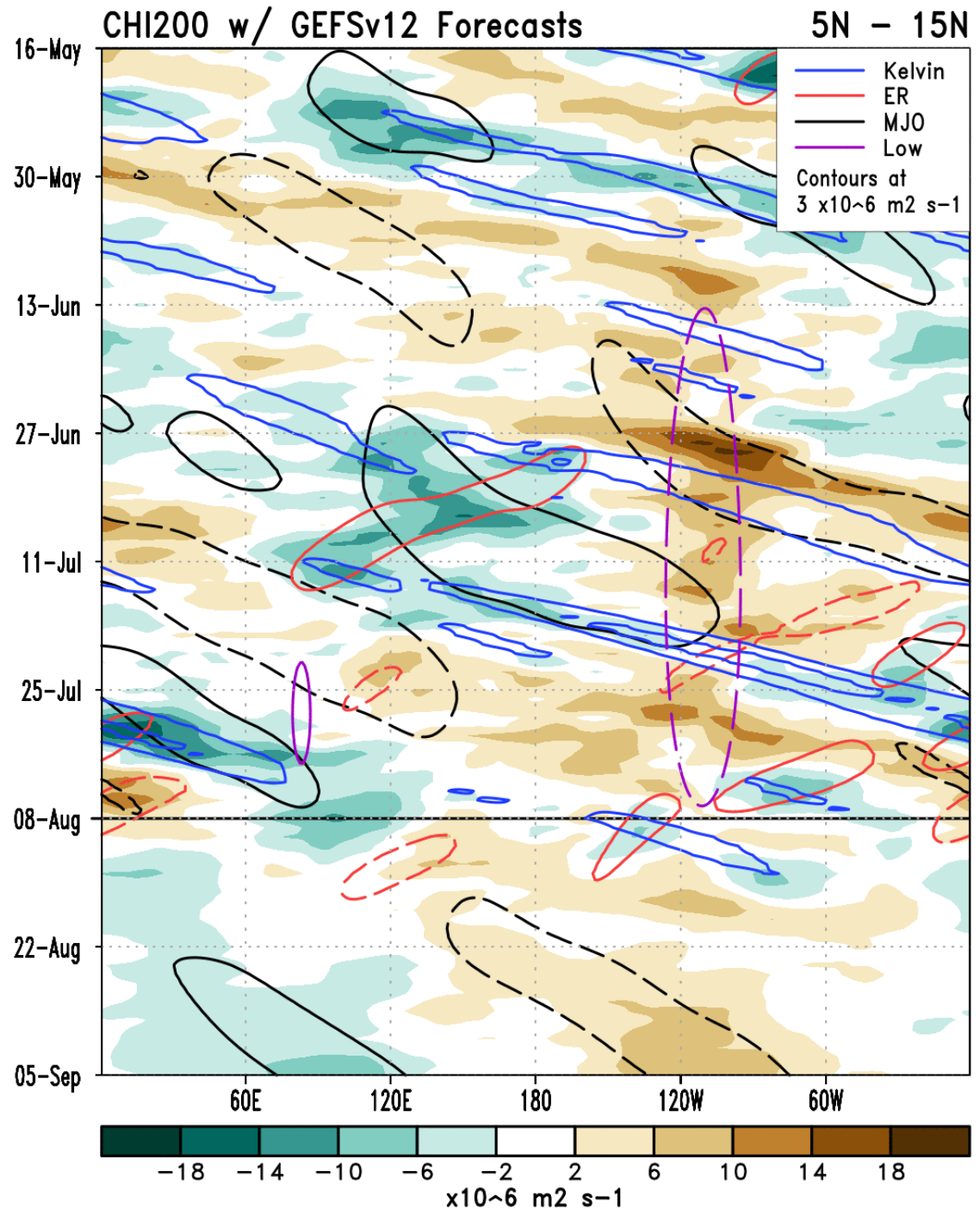


CAVEAT: These panels are representative of robust MJO events.

**Kelvin wave** activity has been a chief player in TC genesis over the eastern Pacific as additional activity is favored during week-1.

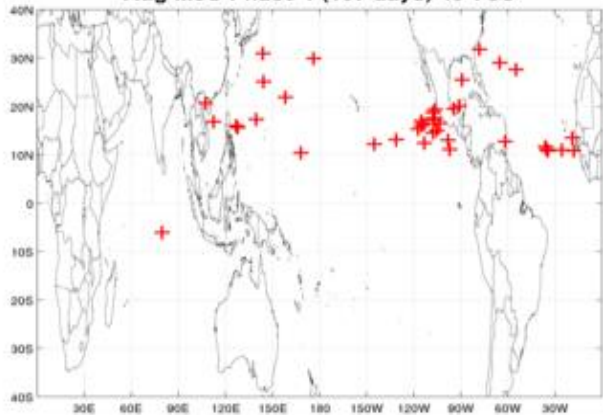
**Rosby Wave** activity is observed shifting westward over the Americas.

**MJO** activity is coming through the filtering beyond the week-2 period, with a more wave-1 type pattern emerging.

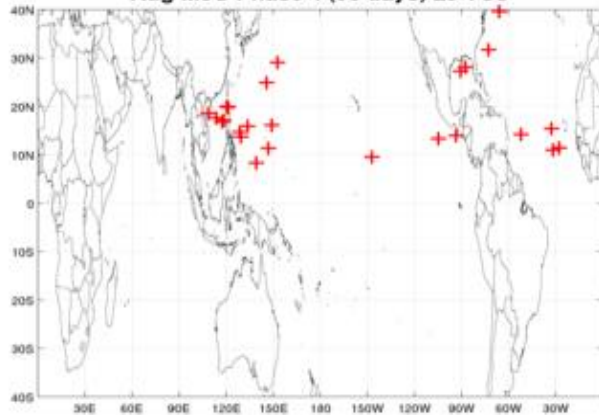




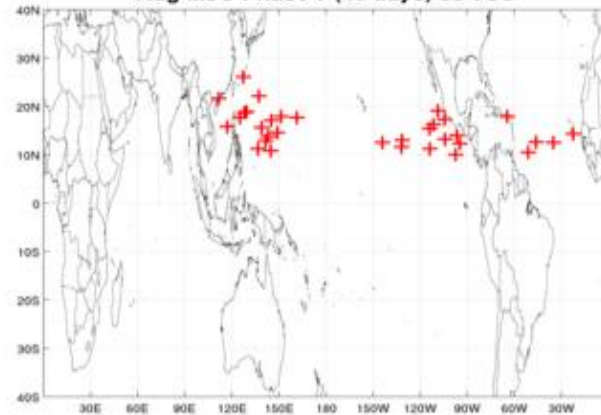
**Aug MJO Phase 1 (107 days) 40 TCs**



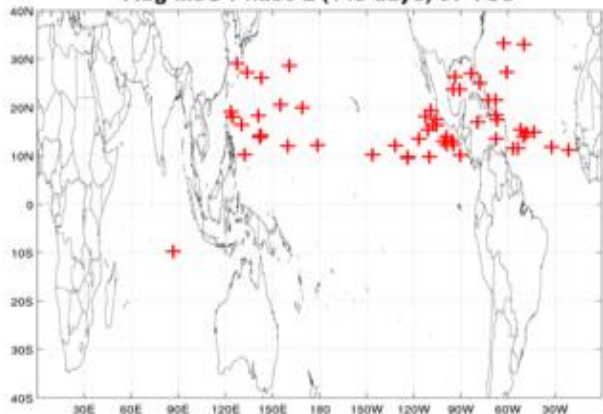
**Aug MJO Phase 4 (53 days) 25 TCs**



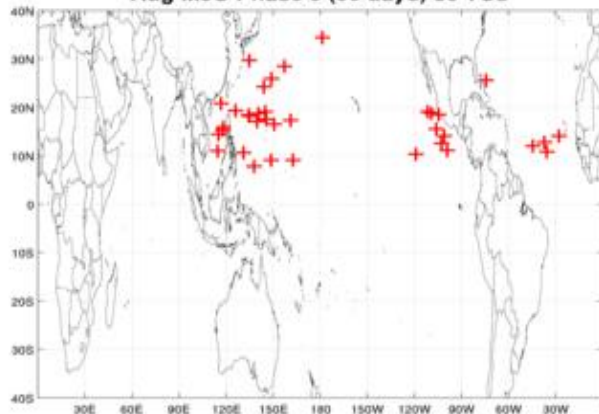
**Aug MJO Phase 7 (46 days) 33 TCs**



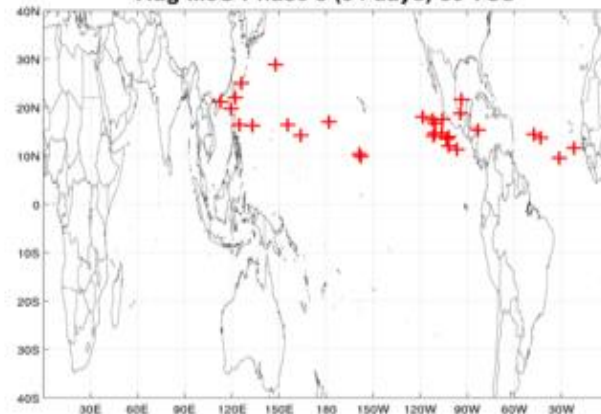
**Aug MJO Phase 2 (148 days) 57 TCs**



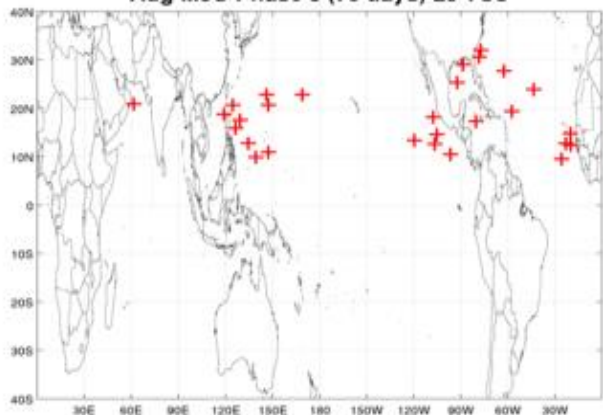
**Aug MJO Phase 5 (96 days) 36 TCs**



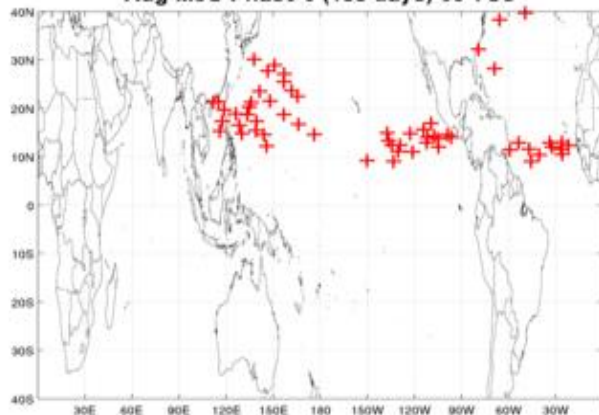
**Aug MJO Phase 8 (54 days) 30 TCs**



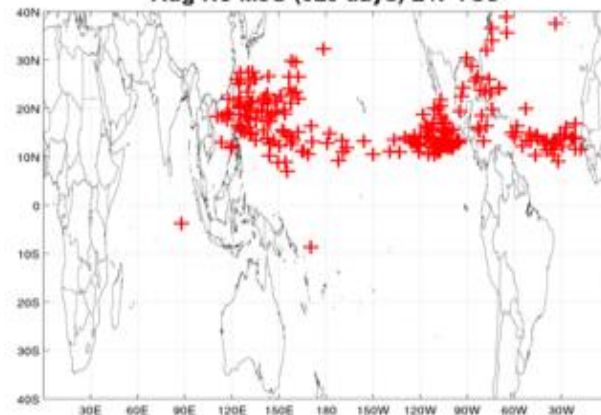
**Aug MJO Phase 3 (70 days) 28 TCs**



**Aug MJO Phase 6 (138 days) 60 TCs**



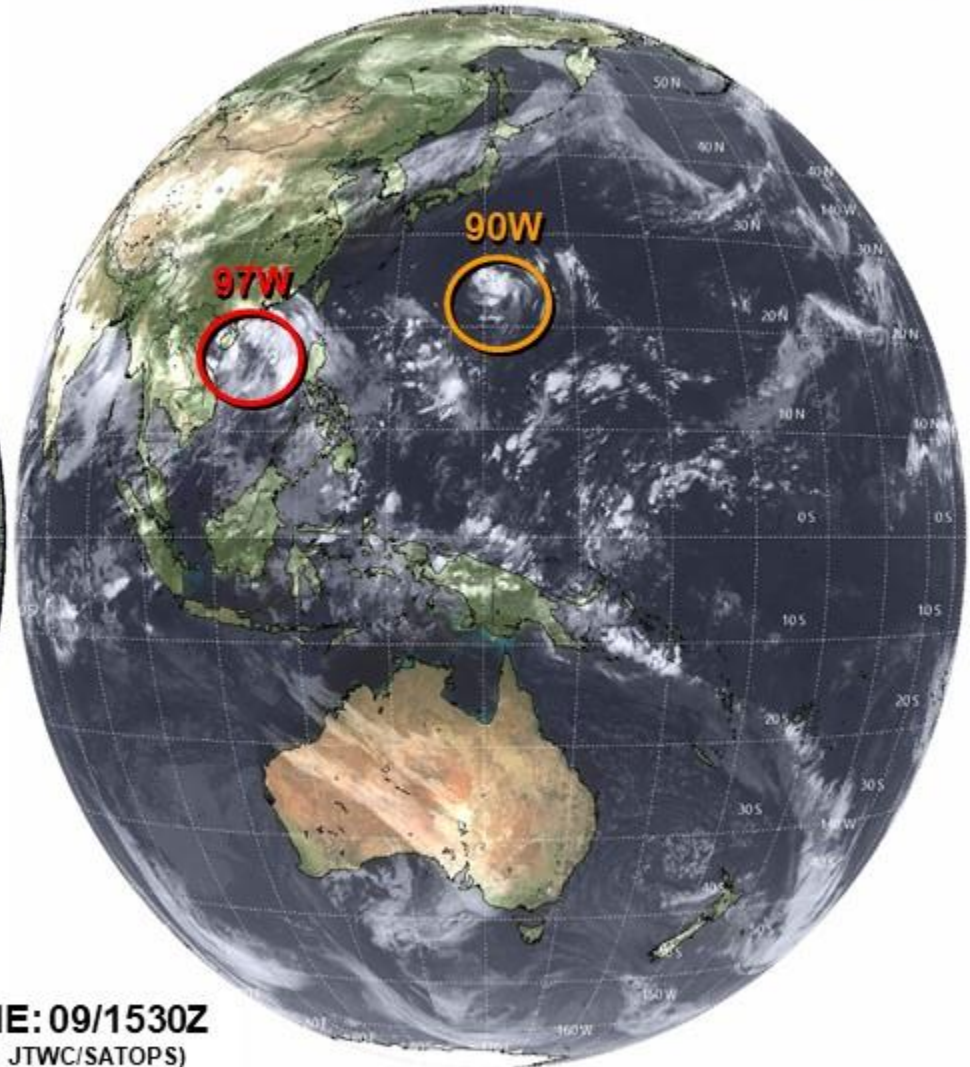
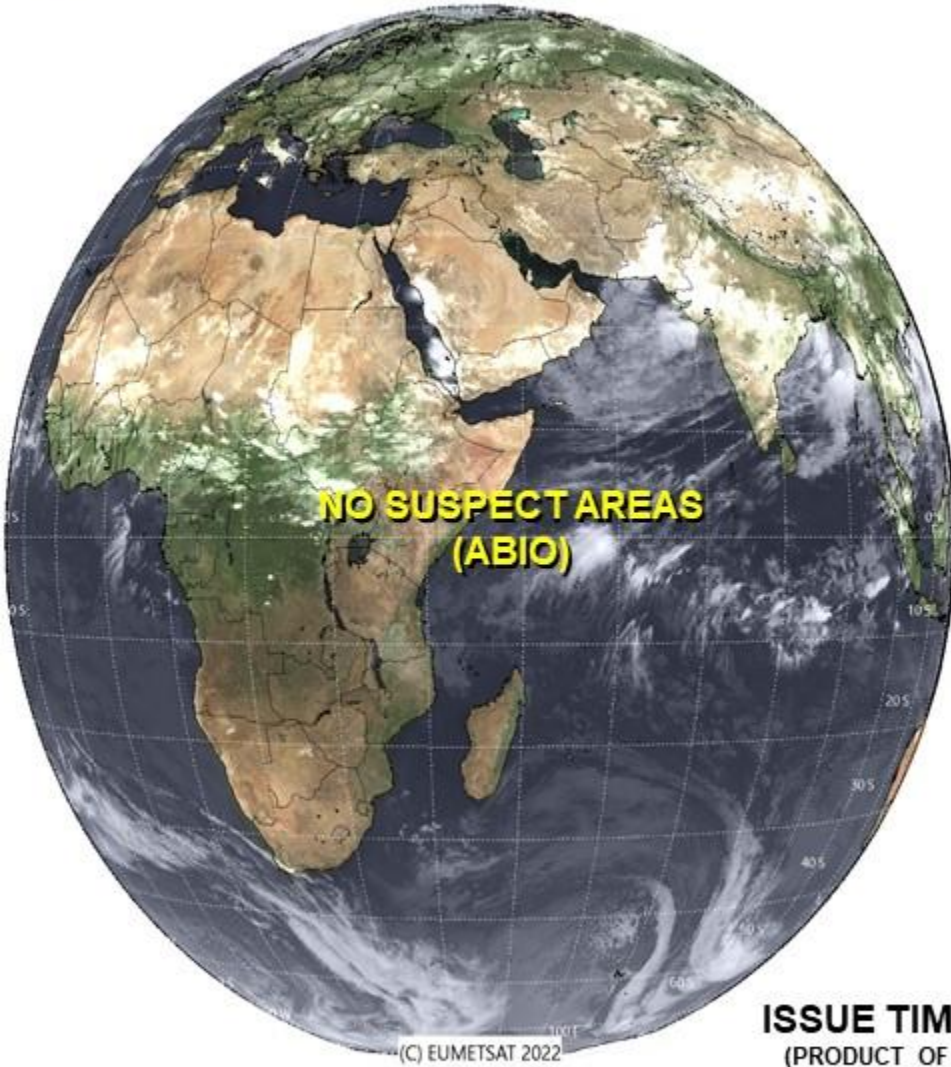
**Aug No MJO (620 days) 247 TCs**





# JOINT TYPHOON WARNING CENTER

## ABIO ABPW



**ISSUE TIME: 09/1530Z**  
(PRODUCT OF JTWC/SATOPS)

**LOW**

TC development unlikely within 24 hours

**MEDIUM**

TC development likely, but expected to occur beyond 24 hours

**HIGH**

TC development likely within 24 hours (Reference TCFs)

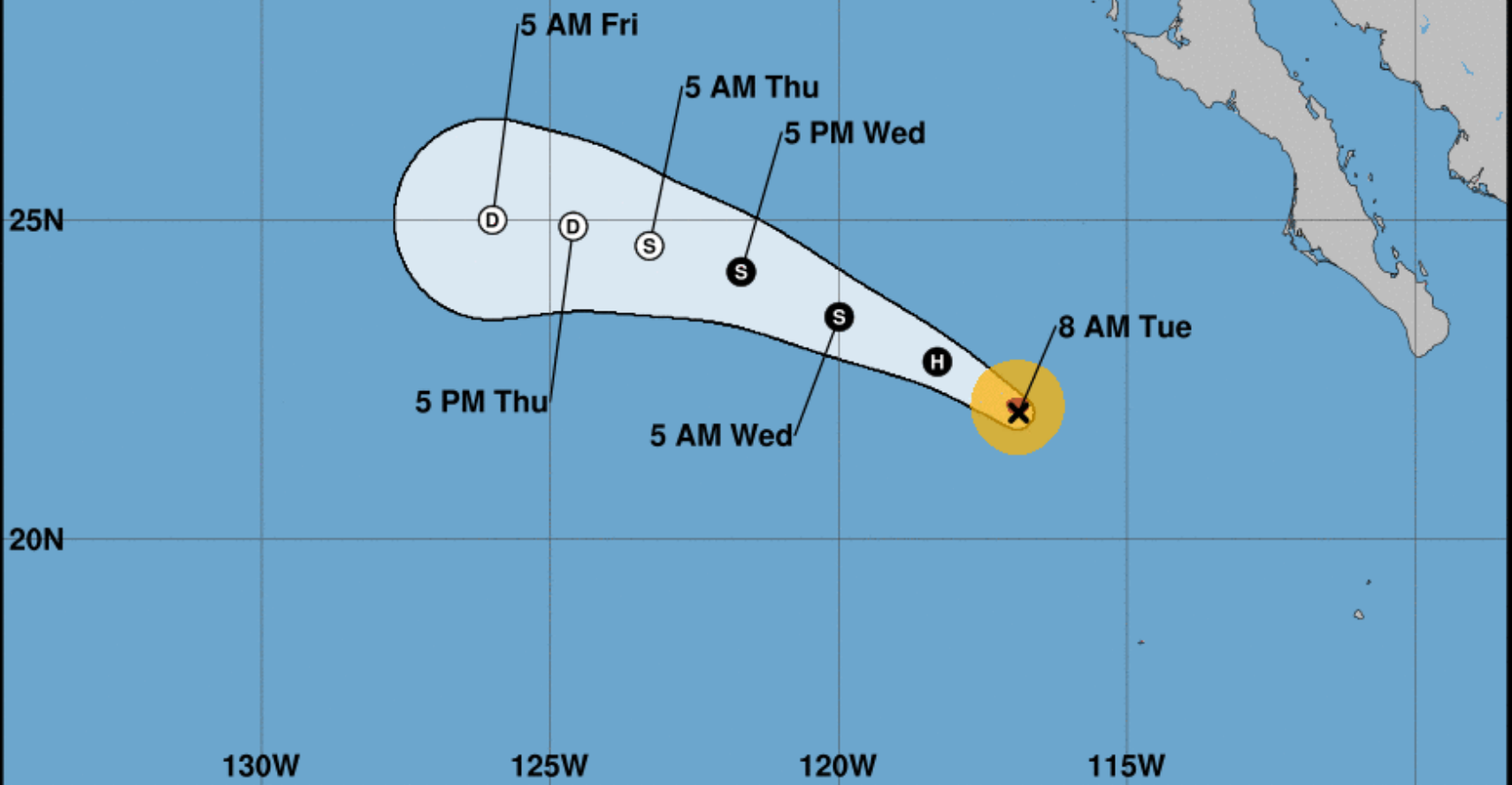
**SUB TROPICAL**

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

**Tropical Cyclone (Reference Warning)**



**Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.**



**Hurricane Howard**  
 Tuesday August 09, 2022  
 8 AM PDT Advisory 13  
 NWS National Hurricane Center

**Current information: x**  
 Center location 22.0 N 116.9 W  
 Maximum sustained wind 85 mph  
 Movement WNW at 10 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:**  
 [Solid line] Day 1-3 [Dotted line] Day 4-5

**Watches:**  
 [Pink] Hurricane [Yellow] Trop Stm

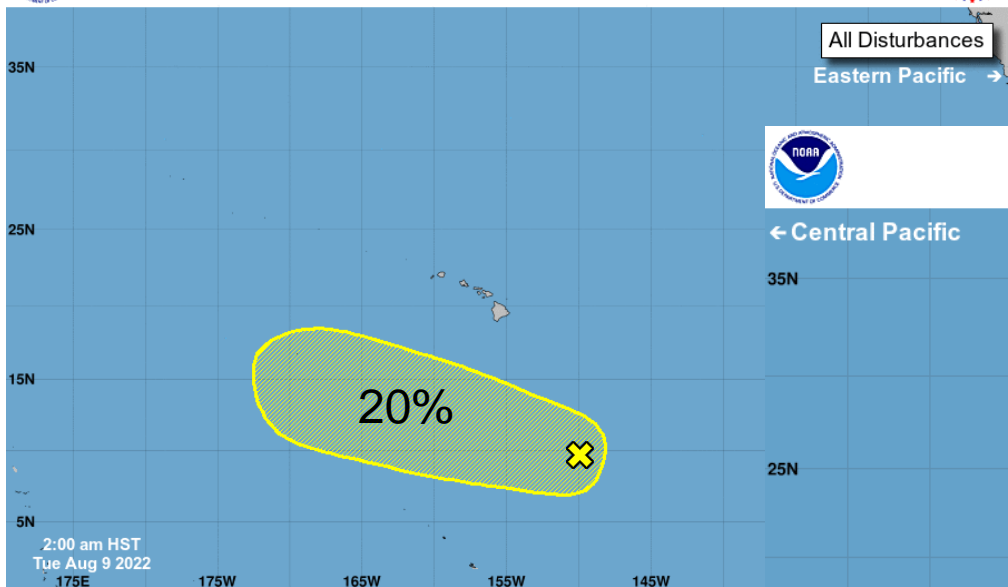
**Warnings:**  
 [Red] Hurricane [Blue] Trop Stm

**Current wind extent:**  
 [Brown] Hurricane [Orange] Trop Stm



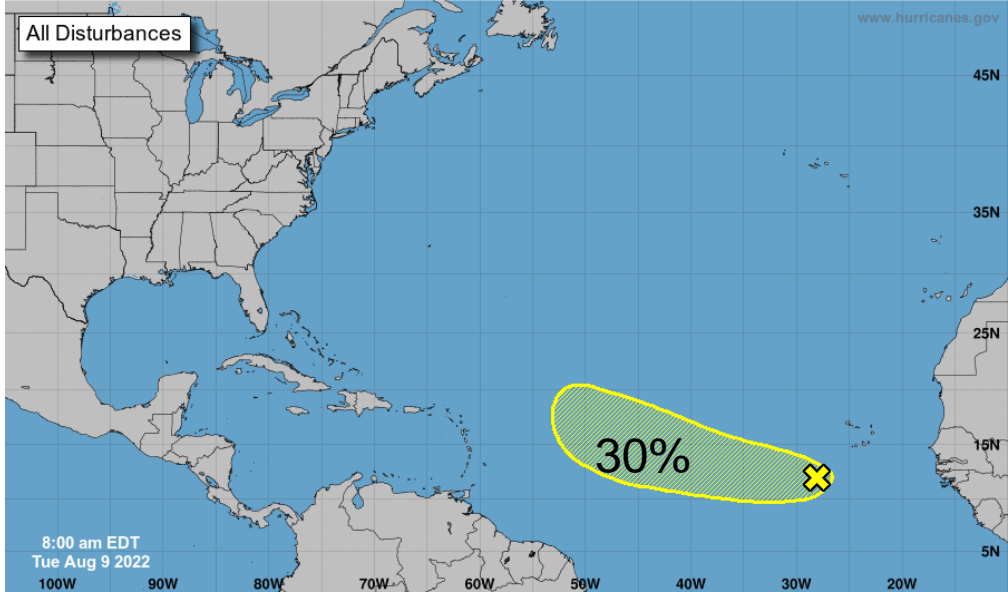
# Five-Day Graphical Tropical Weather Outlook

Central Pacific Hurricane Center Honolulu, Hawaii



# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



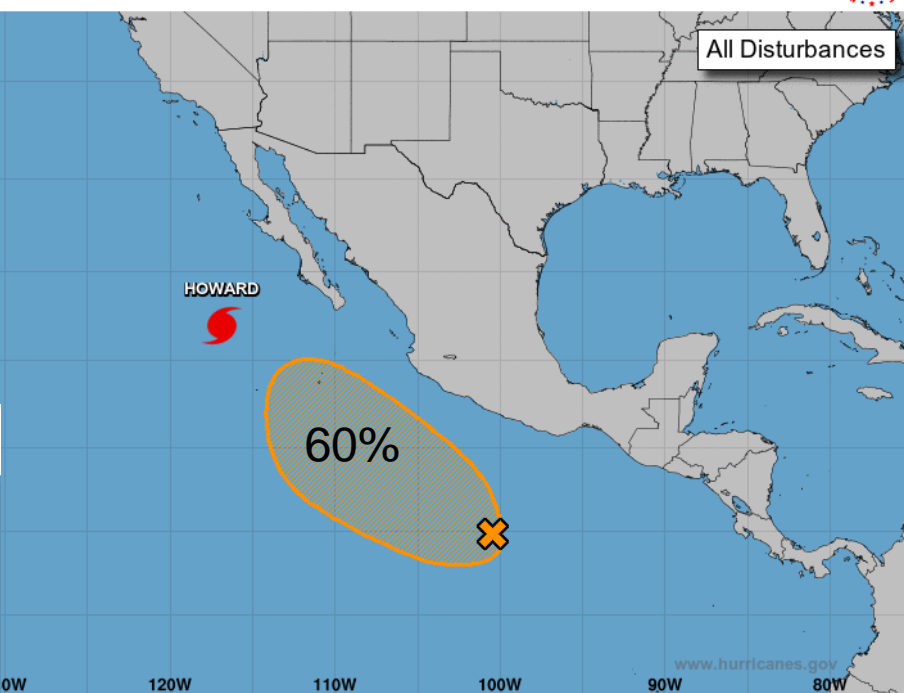
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

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National Hurricane Center Miami, Florida



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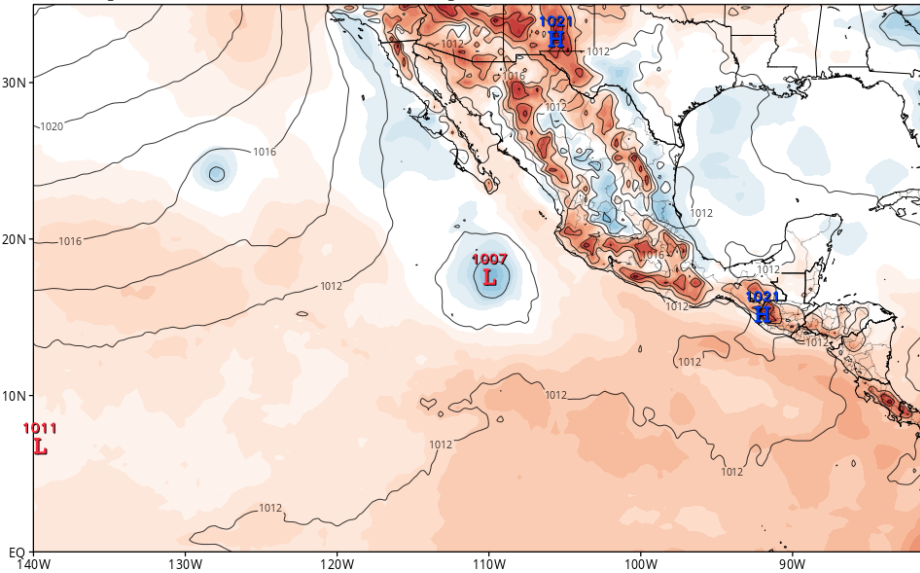
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 06z Aug 09 2022 Forecast Hour: [90] valid at 00z Sat, Aug 13 2022

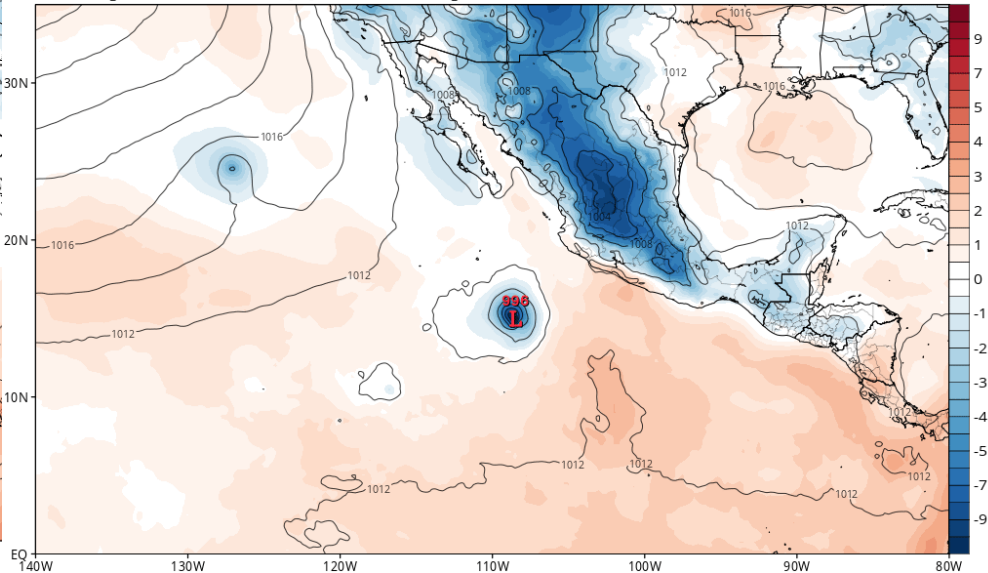
TROPICALTIDBITS.COM



GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 12z Aug 09 2022 Forecast Hour: [84] valid at 00z Sat, Aug 13 2022

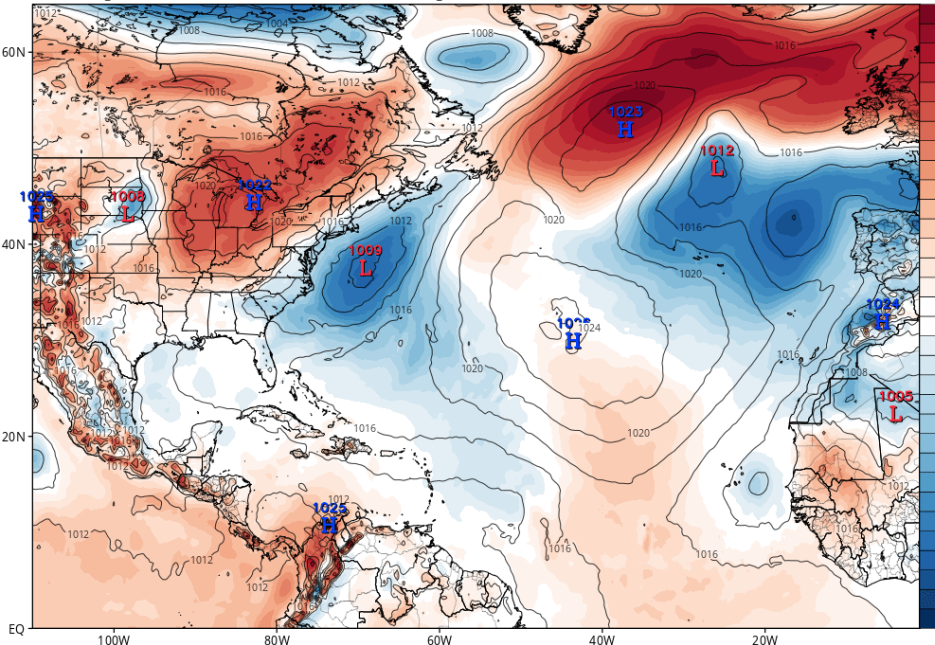
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Init: 06z Aug 09 2022 Forecast Hour: [90] valid at 00z Sat, Aug 13 2022

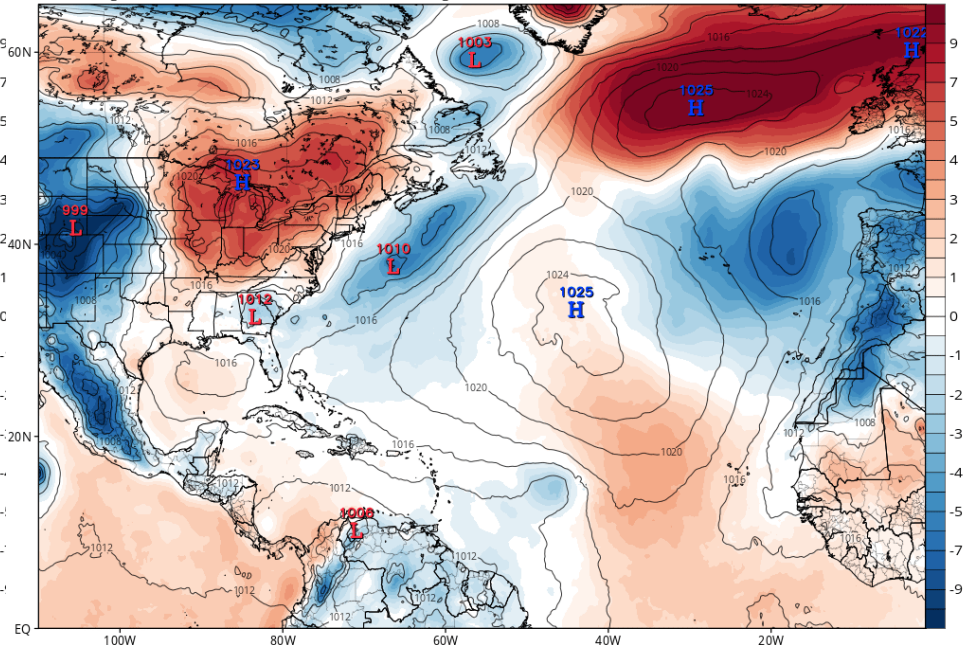
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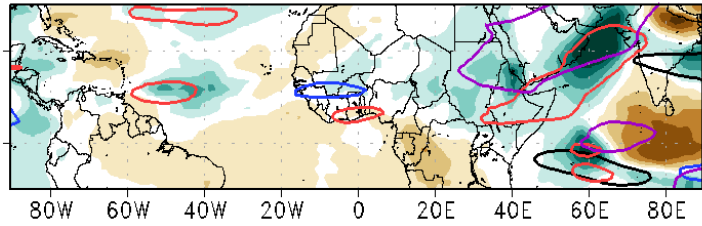
Init: 00z Aug 09 2022 Forecast Hour: [96] valid at 00z Sat, Aug 13 2022

TROPICALTIDBITS.COM

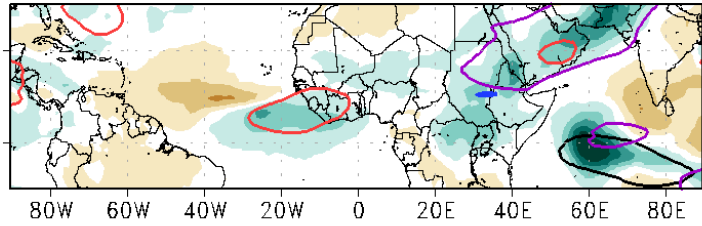


# ay Means

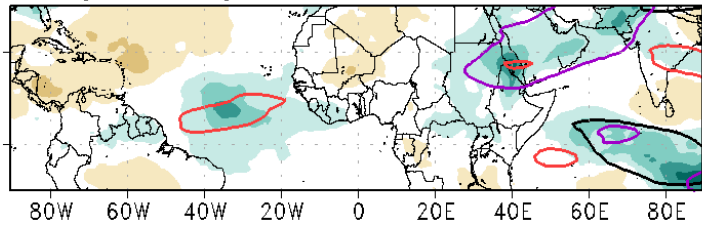
09Aug to 13Aug **ECMWF Forecast**



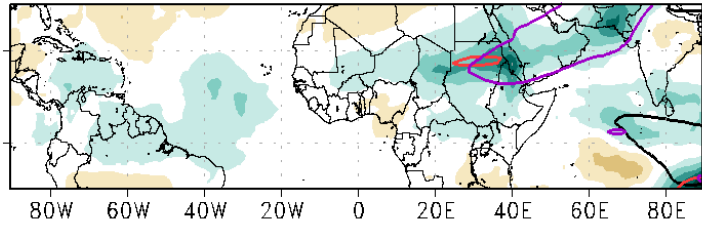
14Aug to 18Aug



19Aug to 23Aug



24Aug to 28Aug

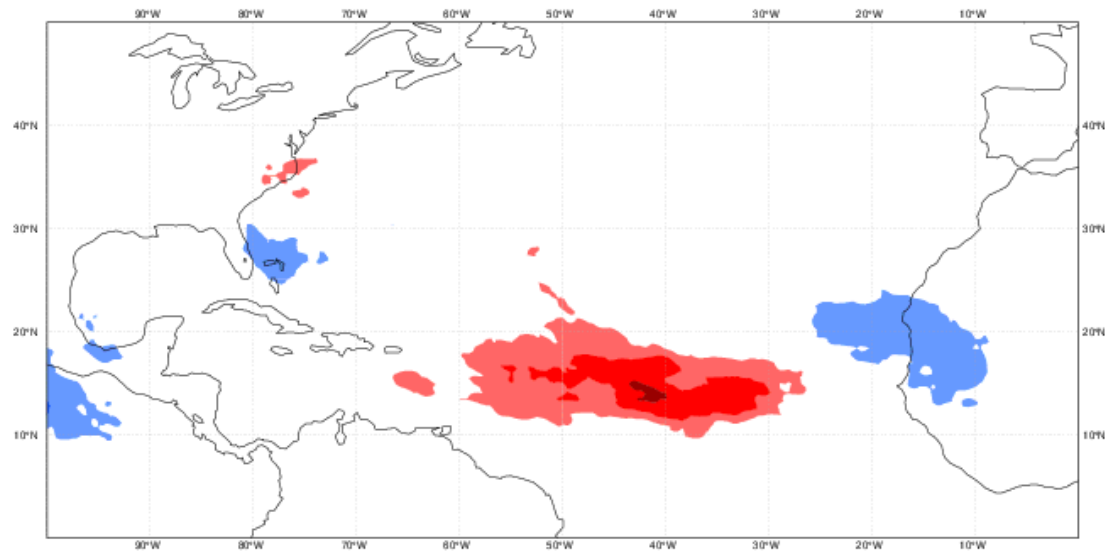


— MJO      — Kelvin\*2  
 — Low      — ER  
 Contours at  $-12, -36 W m^{-2}$

Weekly Mean Anomaly of Tropical Cyclone Strike Probability. Date:20220808 0 UTC t+(336-504)

Probability of a TC passing within 300km radius

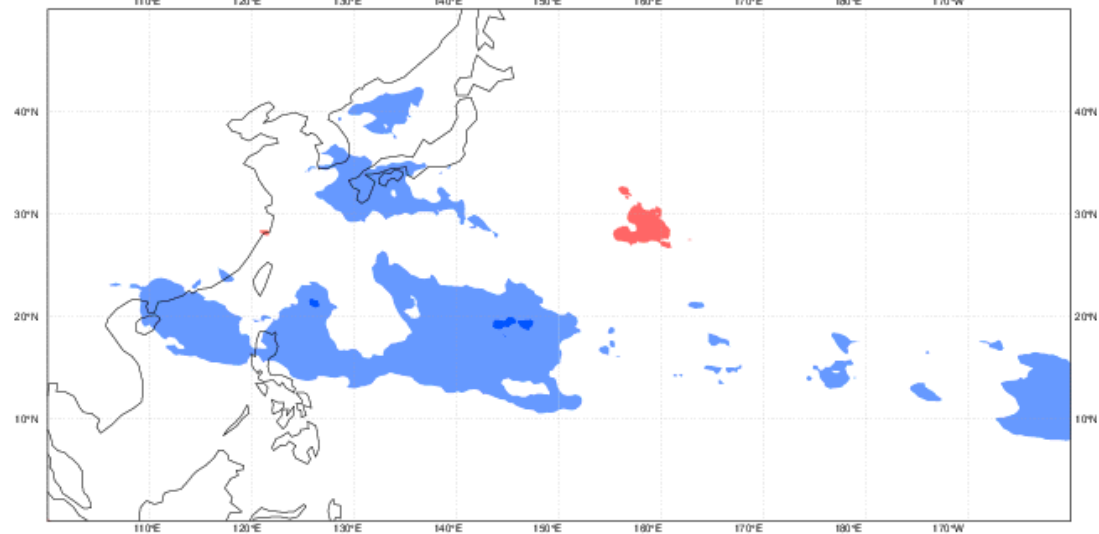
-100-40   -40-30   -30-20   -20-10   -10-10   10-20   20-30   30-40   40-100



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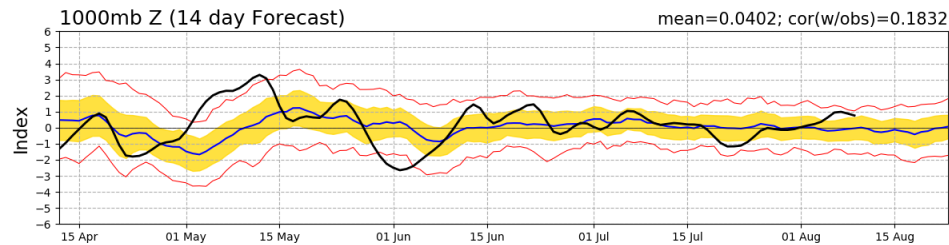
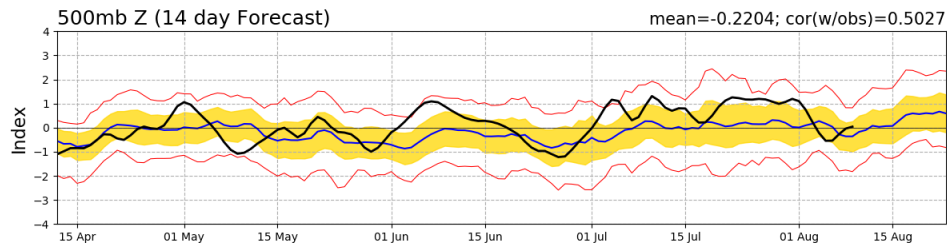
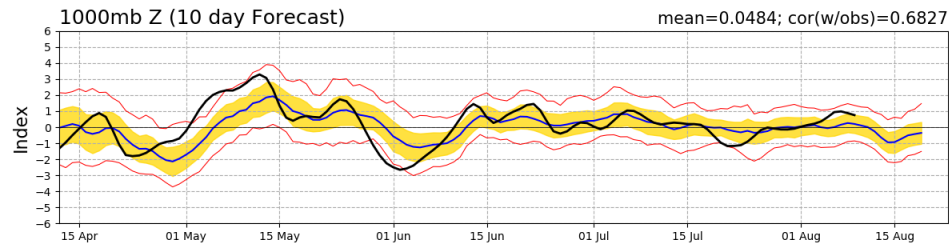
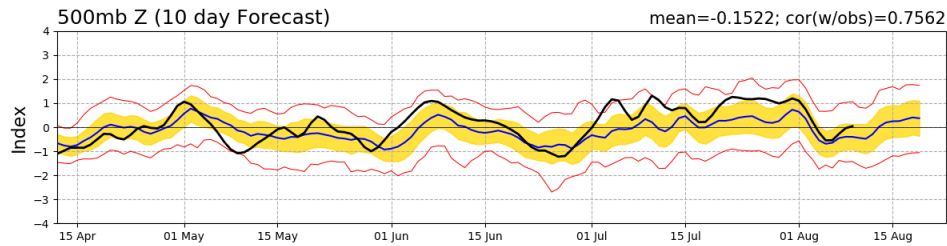
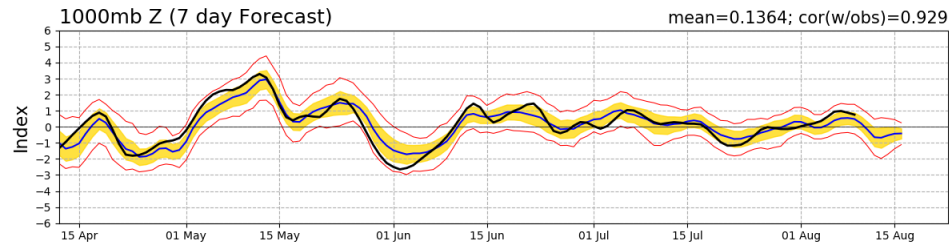
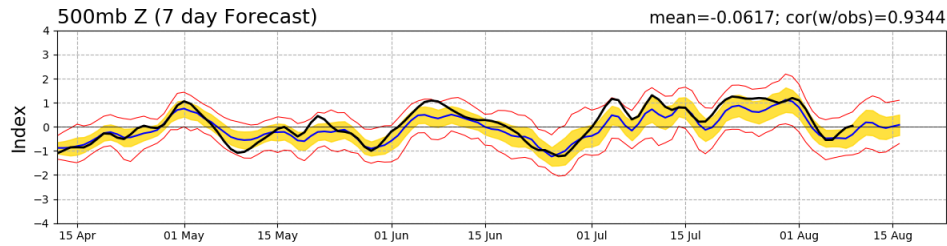
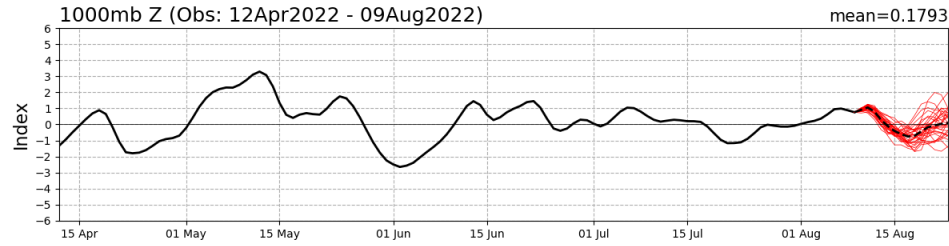
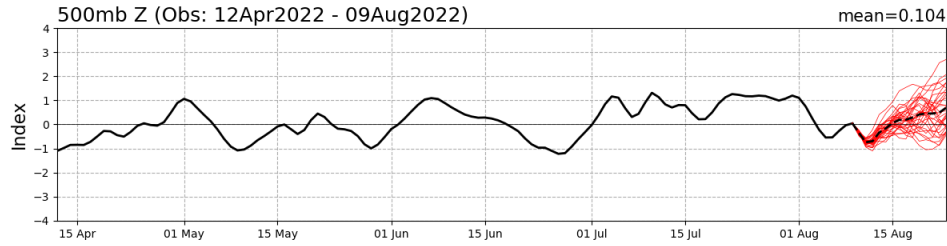
-100-40   -40-30   -30-20   -20-10   -10-10   10-20   20-30   30-40   40-100



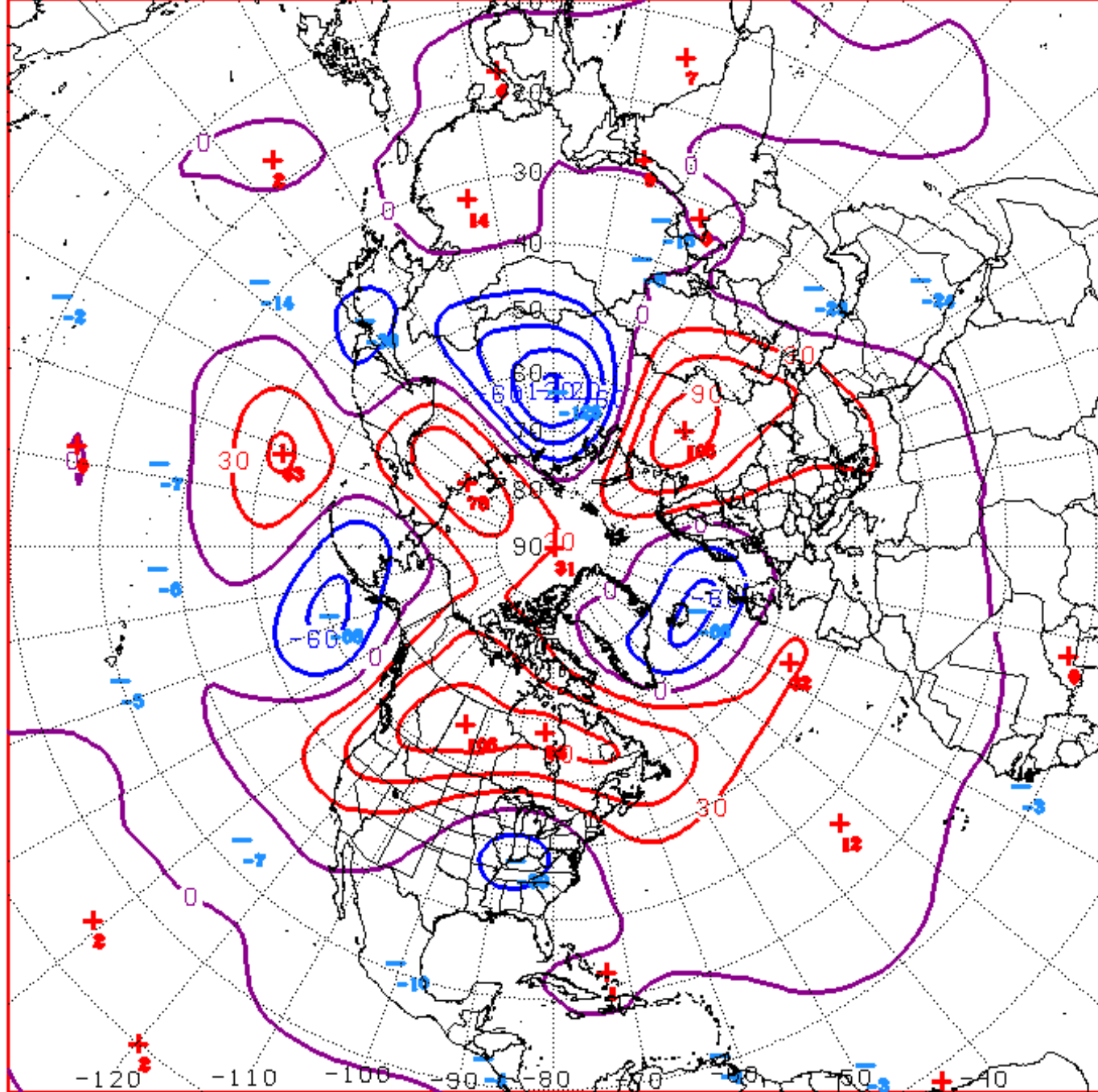
# Connections to U.S. Impacts

# PNA Index: Observed & GEFS Forecasts

# AO Index: Observed & GEFS Forecasts







D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE AUG 09 2022 1351 UTC CNTD AUG 20 2022

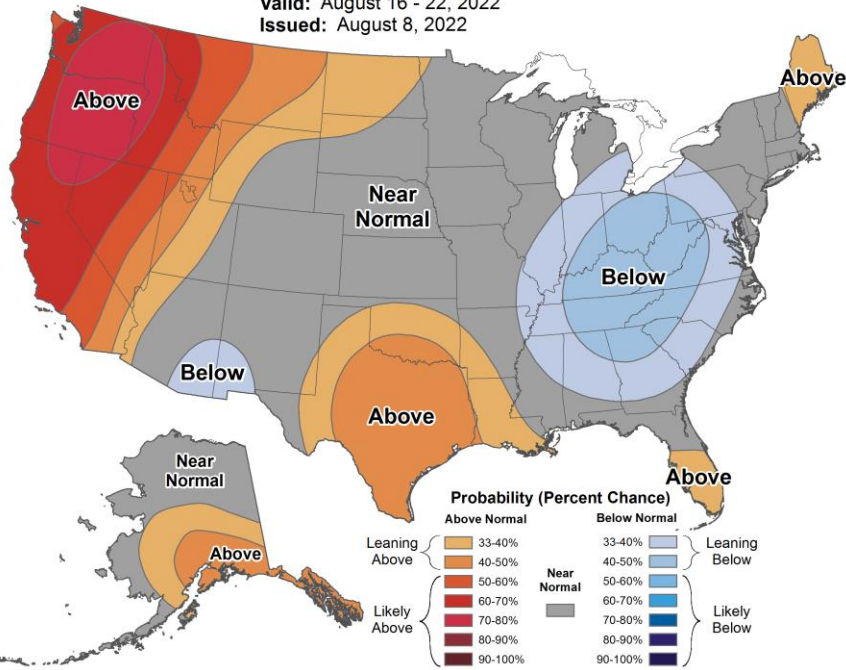
# Week 2 – Temperature and Precipitation



## 8-14 Day Temperature Outlook



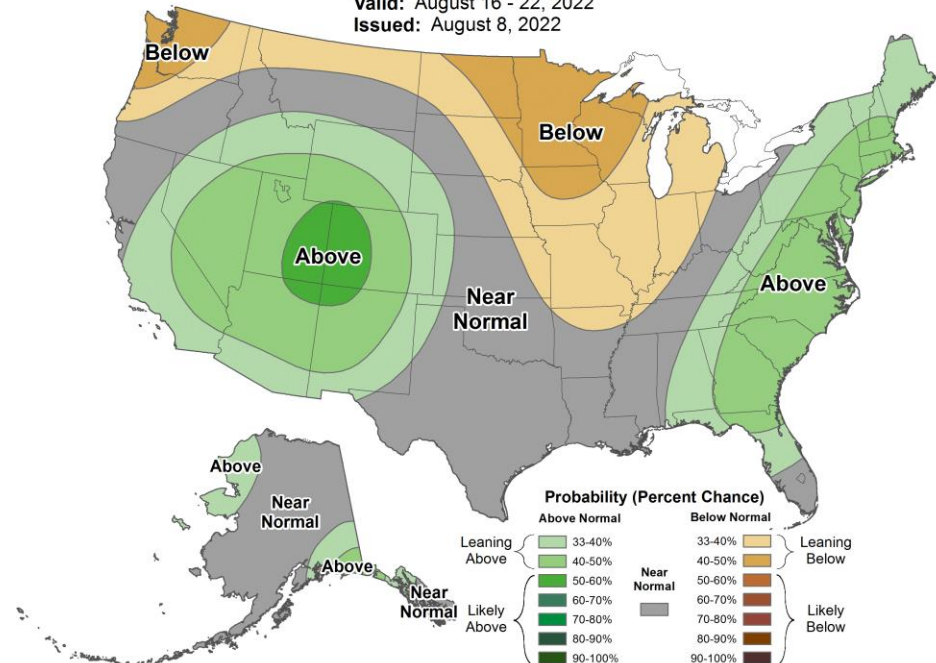
Valid: August 16 - 22, 2022  
 Issued: August 8, 2022



## 8-14 Day Precipitation Outlook



Valid: August 16 - 22, 2022  
 Issued: August 8, 2022



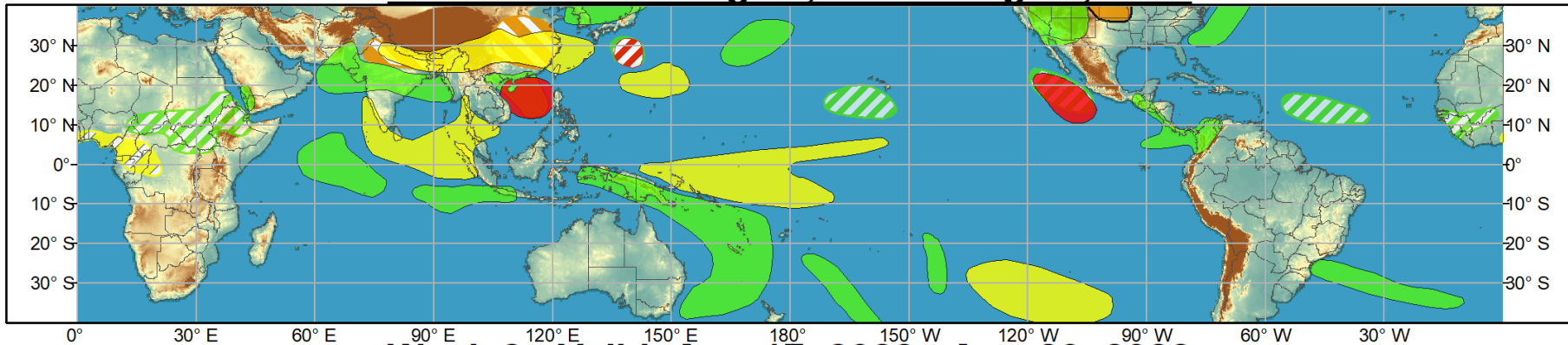
A more amplified pattern favored aloft is likely to bring higher chances for warm(cold) in the PacNW (central CONUS)



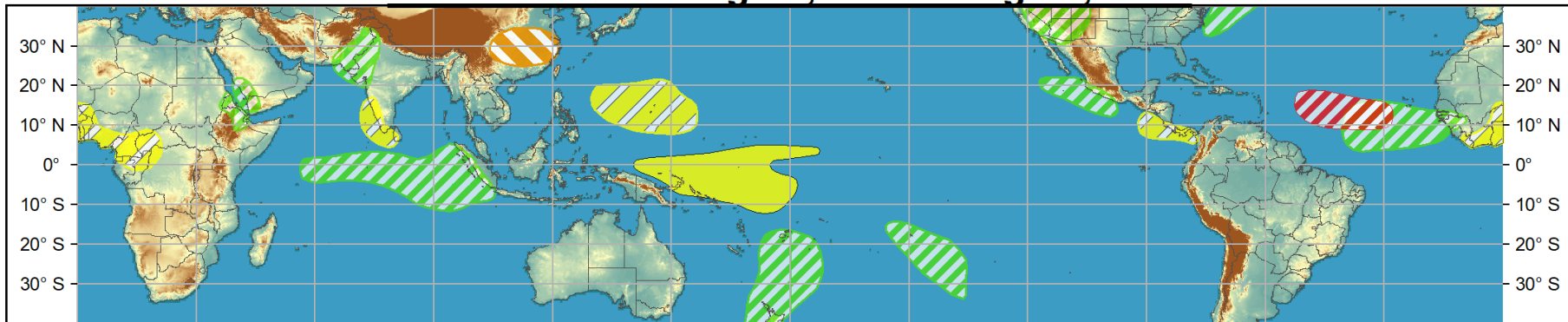
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