

# Global Tropics Hazards And Benefits Outlook

8/10/2021

Adam Allgood

## Outline

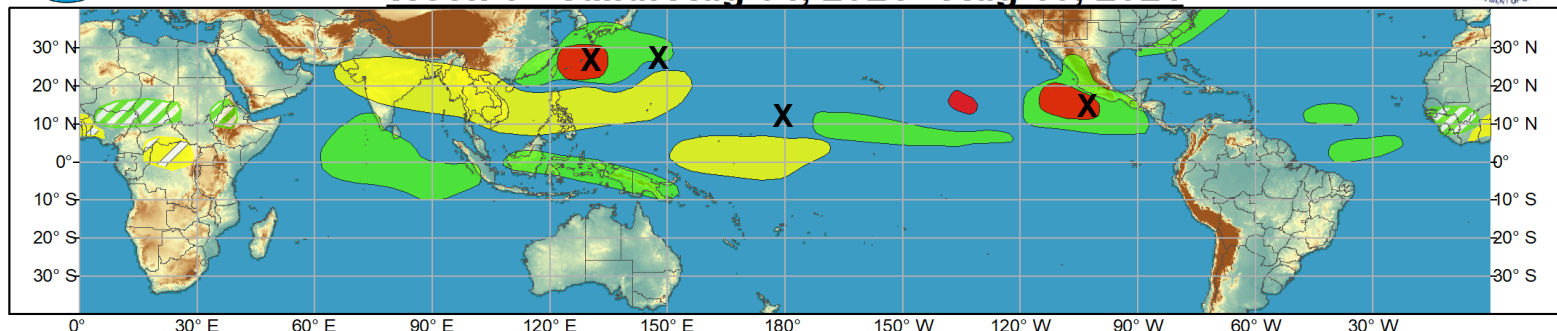
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review

Lots of TC formations, no intense cyclones this week.



**Week 1 - Valid: Aug 04, 2021 - Aug 10, 2021**



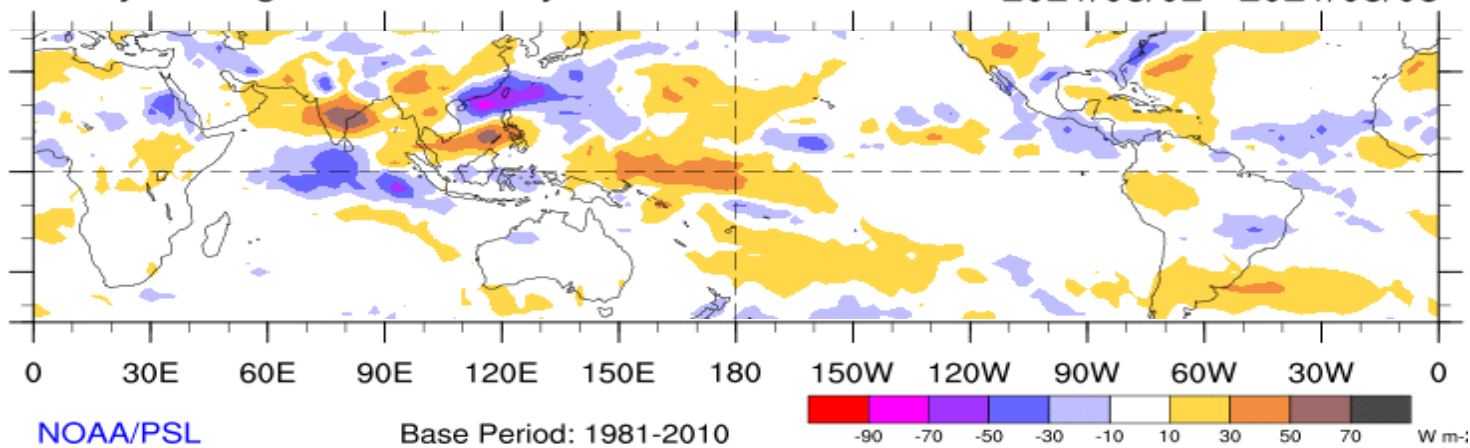
**Week 2 - Valid: Aug 04, 2021 - Aug 10, 2021**



Cool shading  
More clouds/rain

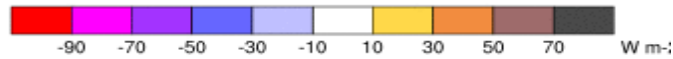
Warm shading  
Less clouds/rain

7-Day Average OLR Anomaly 2021/08/02 - 2021/08/08



NOAA/PSL

Base Period: 1981-2010



# Synopsis of Climate Modes

**ENSO:** (July 8, 2021 Update)

*next update on 12<sup>th</sup> of Aug. (stay tuned)!*

- ENSO Alert System Status: [La Niña Watch](#)
- ENSO-neutral is favored through the Northern Hemisphere summer and into the fall (51% chance for the August-October season), with La Niña potentially emerging during the September-November season and lasting through the 2021-22 winter (66% chance during November-January).

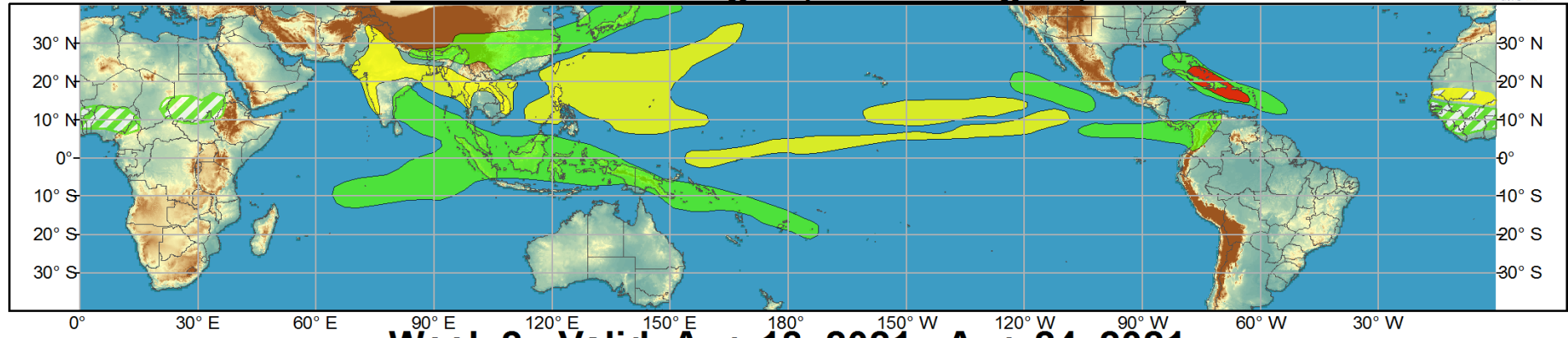
## **MJO and other subseasonal tropical variability:**

- The MJO is active, with the enhanced phase crossing the Western Hemisphere (Atlantic and Africa).
- Interference from Rossby waves (and possibly Atlantic TC activity) may slow down the eastward propagation and amplify the signal over the next week.
- Resumed eastward propagation across the Indian Ocean is favored for Week-2.
- The current position of the MJO favors an increase in Atlantic tropical cyclone activity.

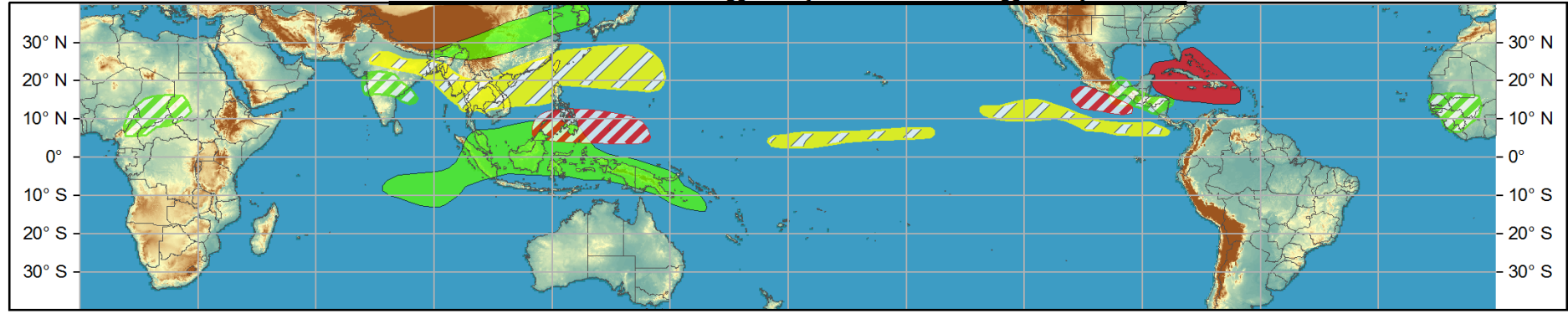


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Aug 11, 2021 - Aug 17, 2021



## Week 2 - Valid: Aug 18, 2021 - Aug 24, 2021



Produced: 08/10/2021  
Forecaster: Allgood

Confidence		
High	Moderate	
		<b>Tropical Cyclone Formation</b> Development of a tropical cyclone (tropical depression - TD, or greater strength).
		<b>Above-average rainfall</b> Weekly total rainfall in the upper third of the historical range.
		<b>Below-average rainfall</b> Weekly total rainfall in the lower third of the historical range.
		<b>Above-normal temperatures</b> 7-day mean temperatures in the upper third of the historical range.
		<b>Below-normal temperatures</b> 7-day mean temperatures in the lower third of the historical range.

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# IR Satellite & 200-hpa Velocity Potential Anomalies

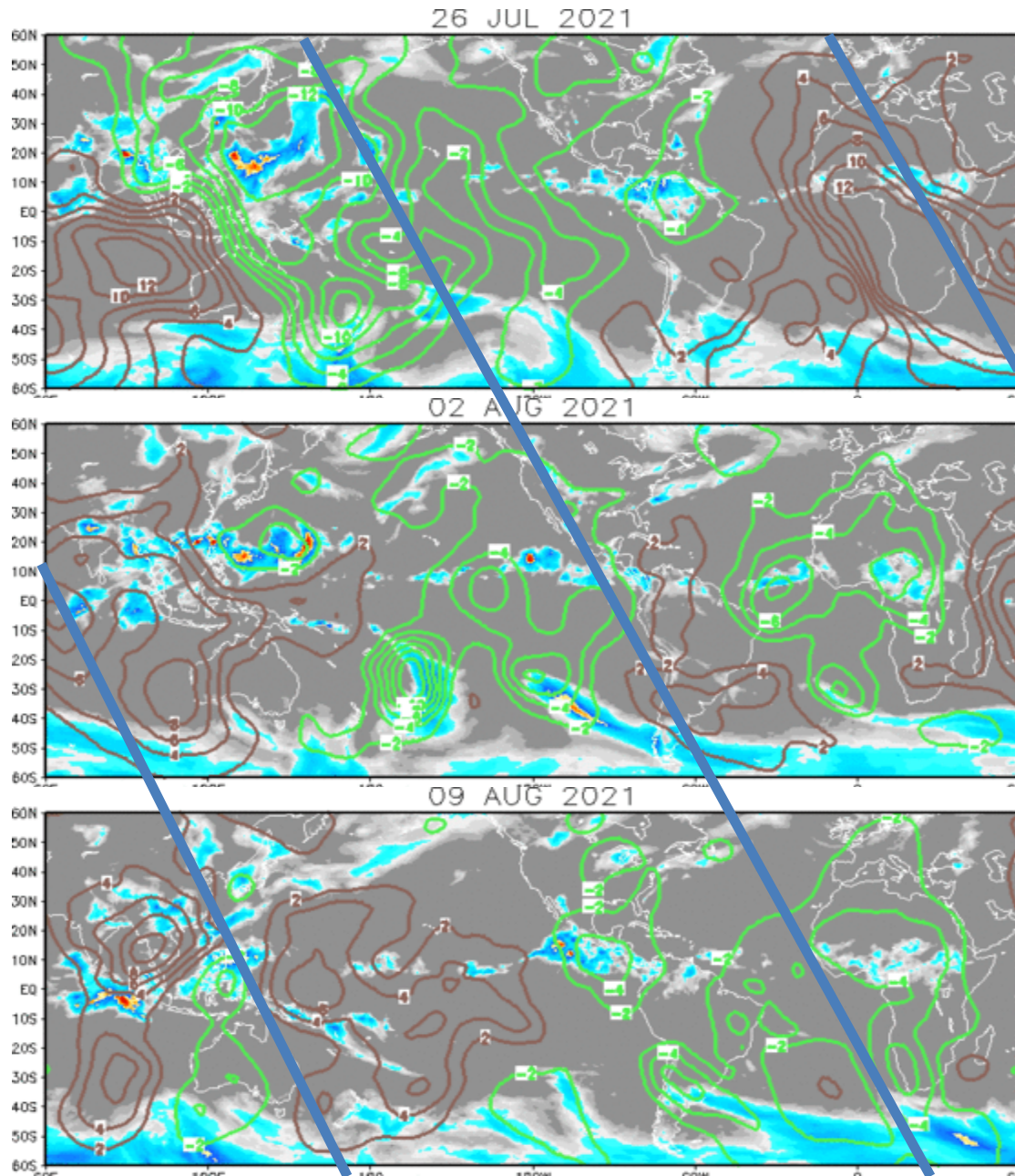
Green: Enhanced Divergence

Brown: Enhanced Convergence

Robust Wave-1 asymmetry very consistent with MJO (strong projection on CPC index), note northward displaced monsoon trough over the West Pacific.

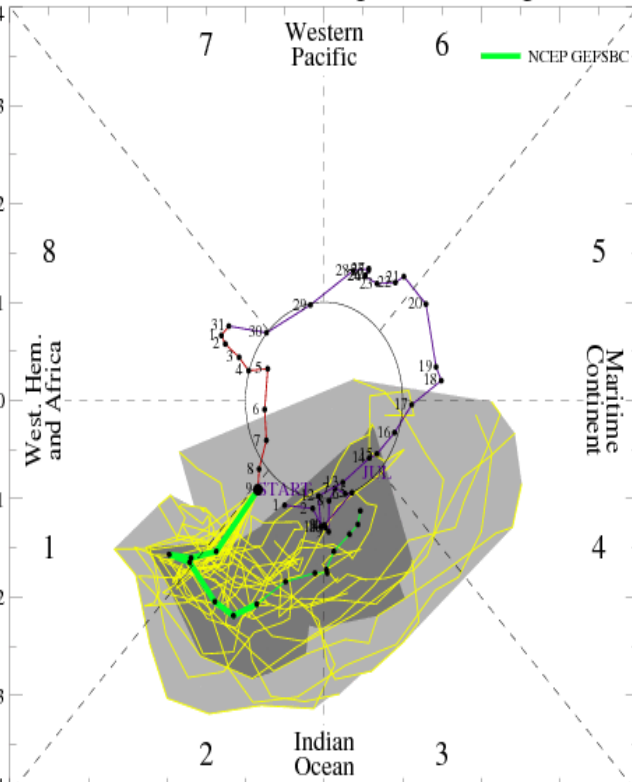
Wave-2 asymmetry as a Kelvin wave ahead of the main MJO envelope crossed the Atlantic.

Enhanced phase now over the Western Hemisphere, note Rossby wave interference over the Maritime Continent.

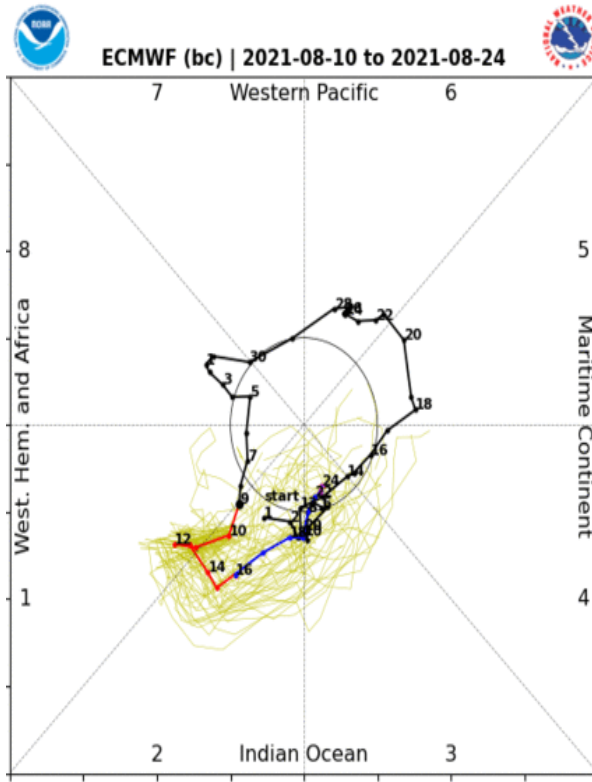


# MJO Observation/Forecast

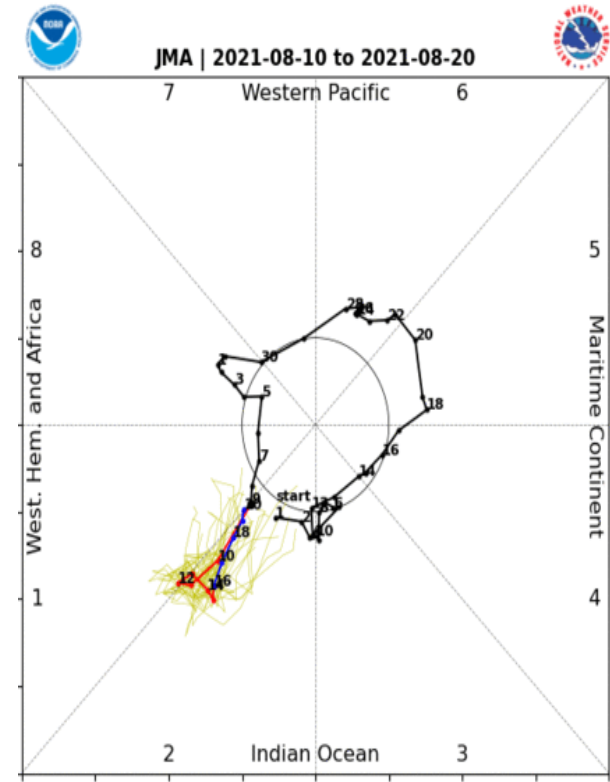
[RMM1, RMM2] forecast for Aug-10-2021 to Aug-24-2021



GEFS



ECMWF

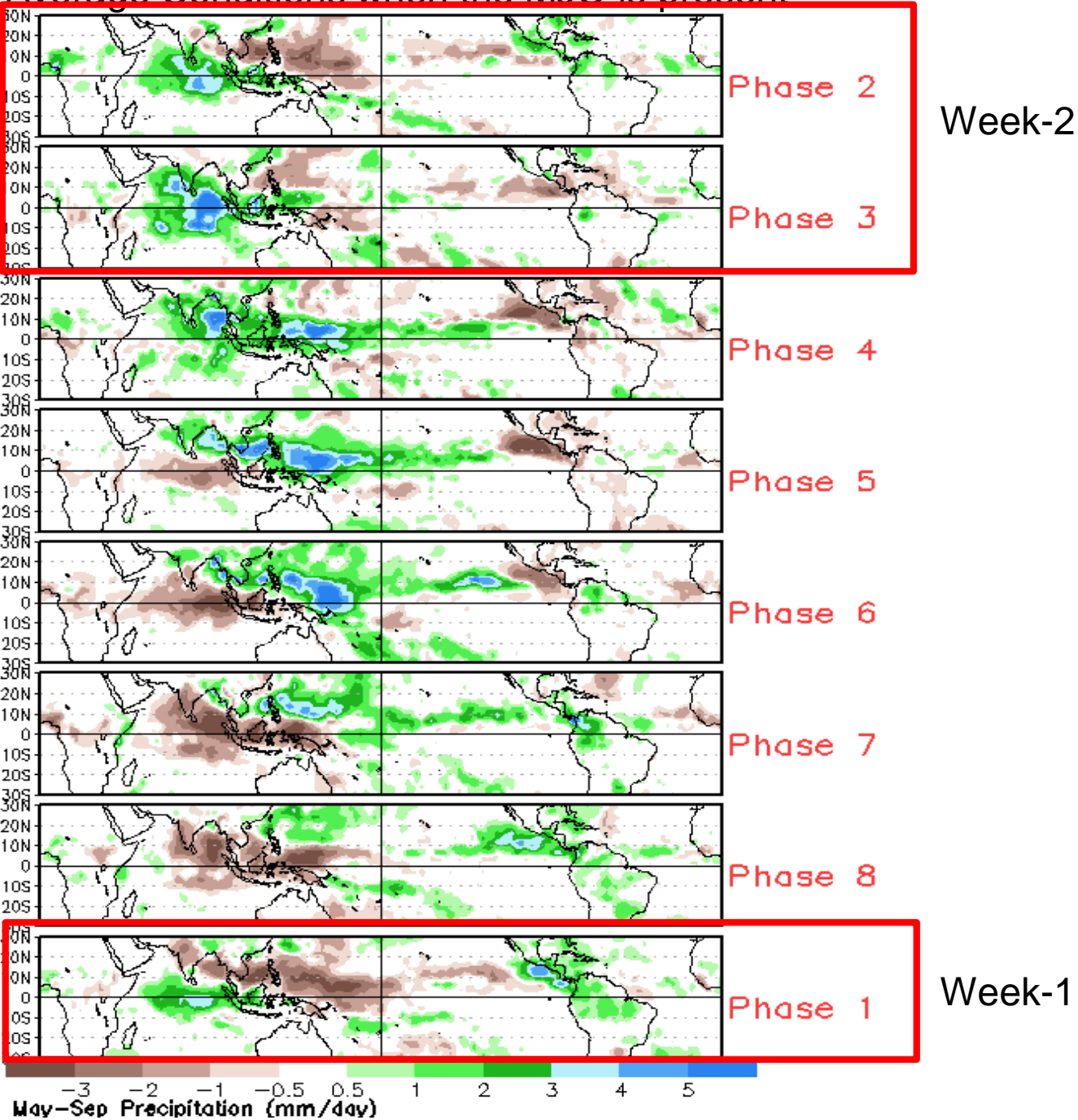


JMA

GEFS and ECWMMF in good agreement supporting slower propagation and amplification during Week-1, followed by eastward propagation across the I.O. during Week-2.

Both models have ensemble members returning to Phase-1, possibly in response to TC activity or strong Rossby wave activity.

# Average Conditions when the MJO is present



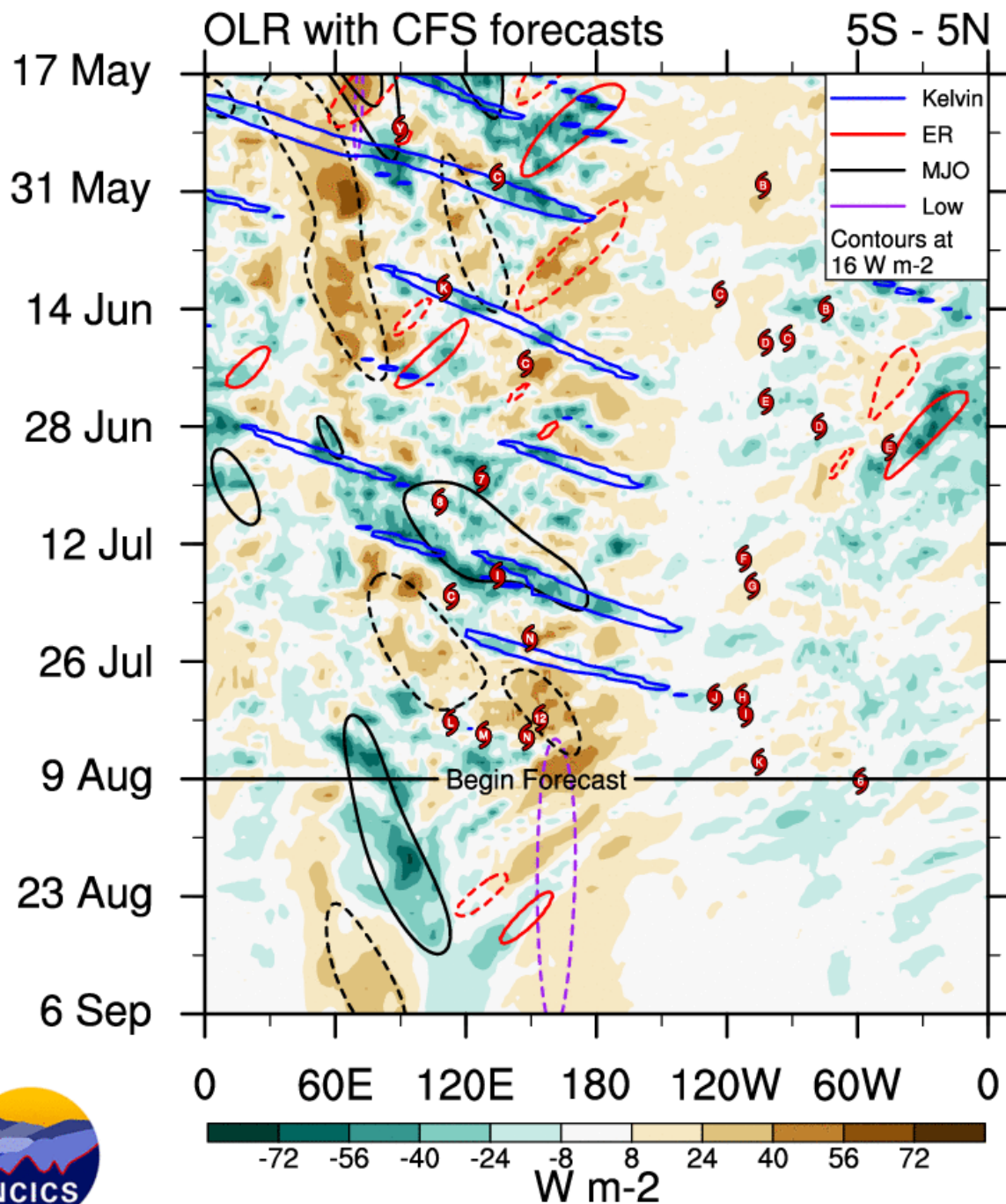
CAVEAT: These panels are representative of robust MJO events.



**MJO** activity apparent in the filtering during late June and early July

**Kelvin wave** activity over the East Pacific may have helped TC formation.

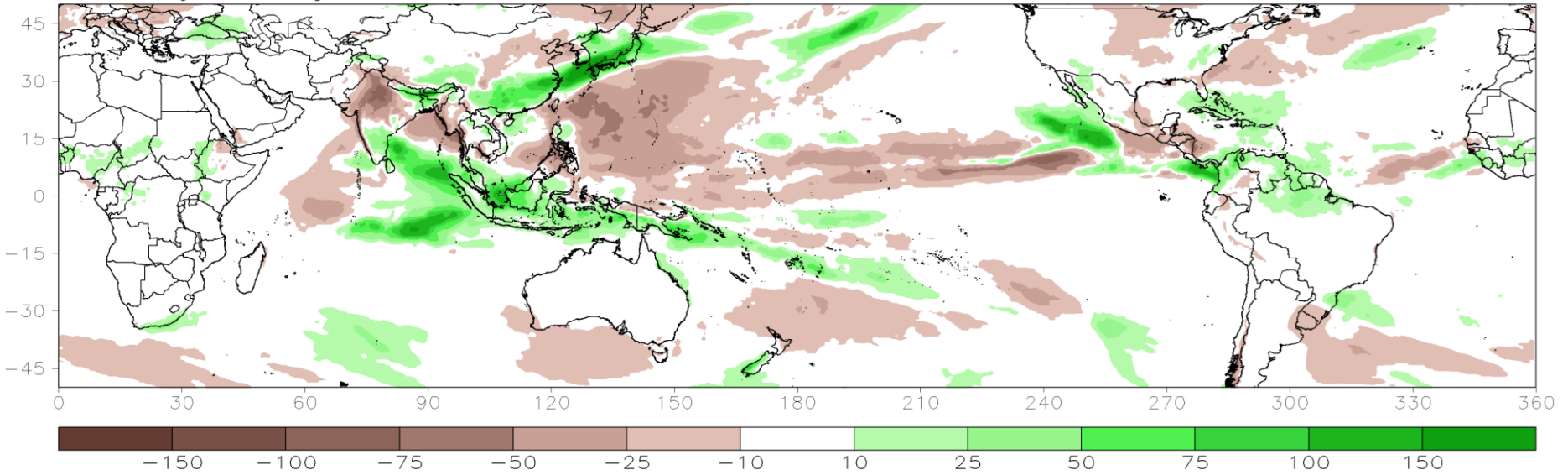
**Rossby wave** activity is not coming through the filtering, but is apparent over the Maritime Continent.





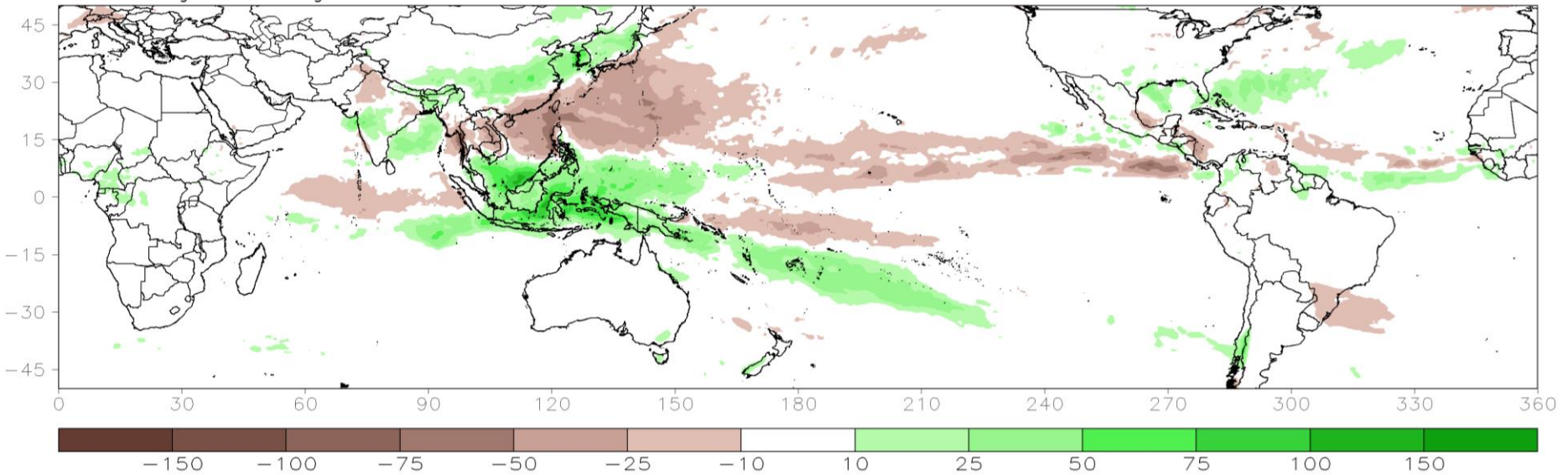
# GEFSv12 00z Ensemble Mean: Week1 Total Rainfall Anomaly (mm)

Valid: 11Aug2021–17Aug2021



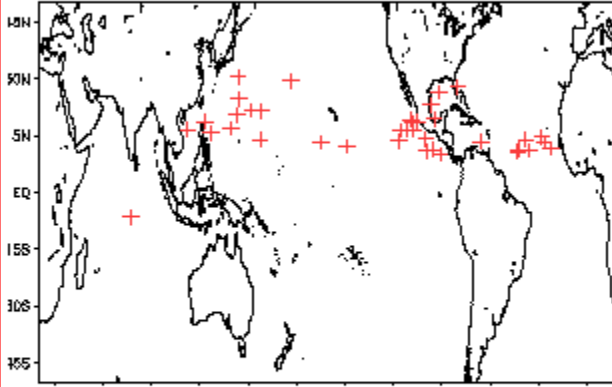
# GEFSv12 00z Ensemble Mean: Week2 Total Rainfall Anomaly (mm)

Valid: 18Aug2021–24Aug2021

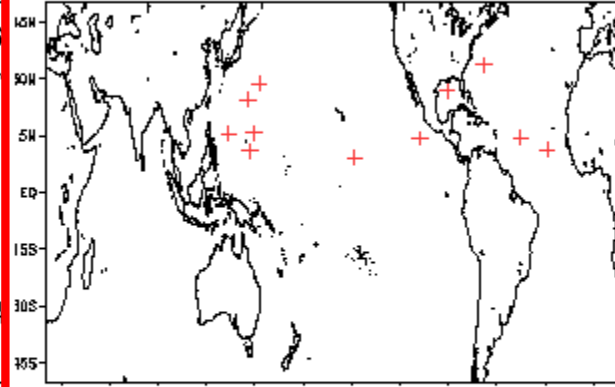


# August Tropical Storm Formation by MJO phase

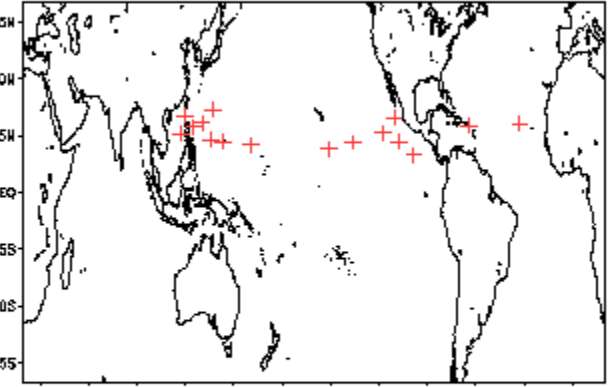
Phase 1 (101 days) 38 storms



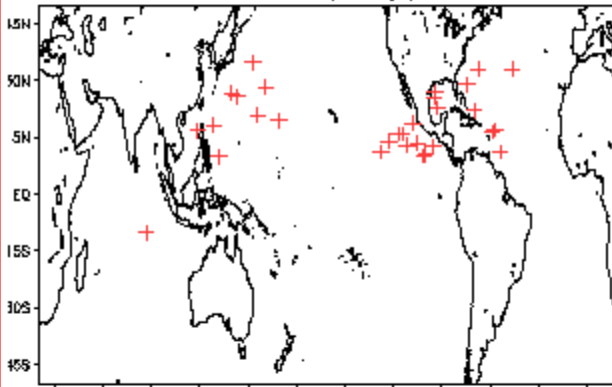
Phase 4 (40 days) 12 storms



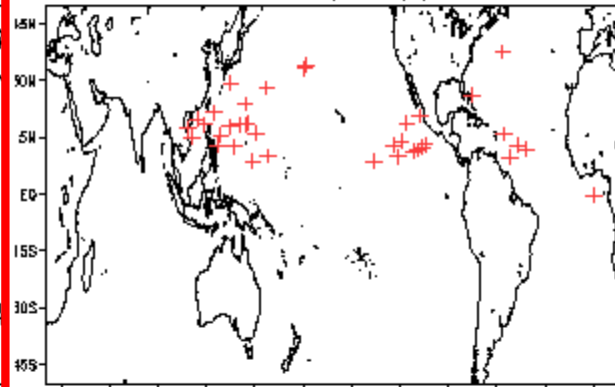
Phase 7 (43 days) 17 storms



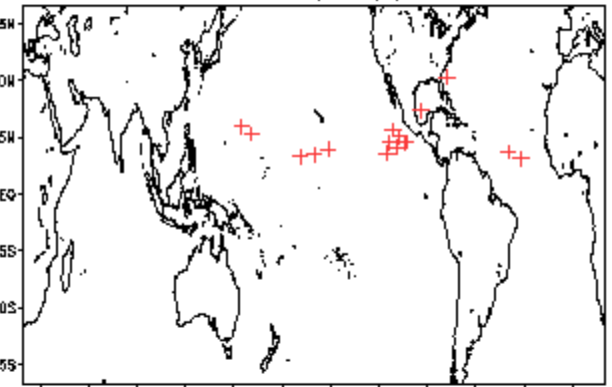
Phase 2 (79 days) 31 storms



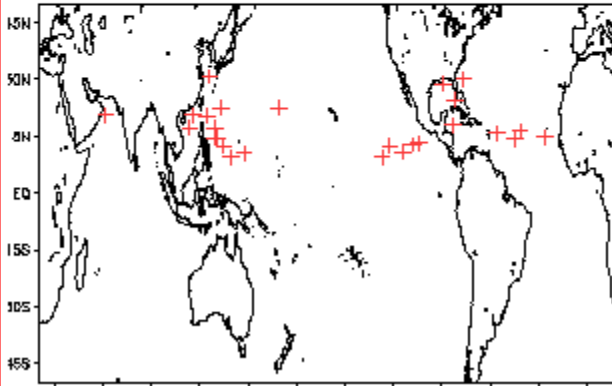
Phase 5 (117 days) 40 storms



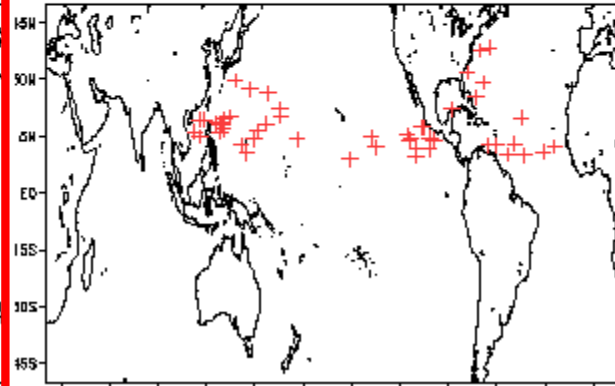
Phase 8 (25 days) 17 storms



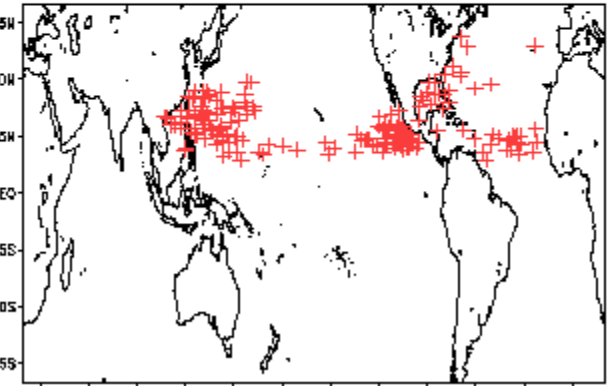
Phase 3 (51 days) 27 storms



Phase 6 (101 days) 50 storms



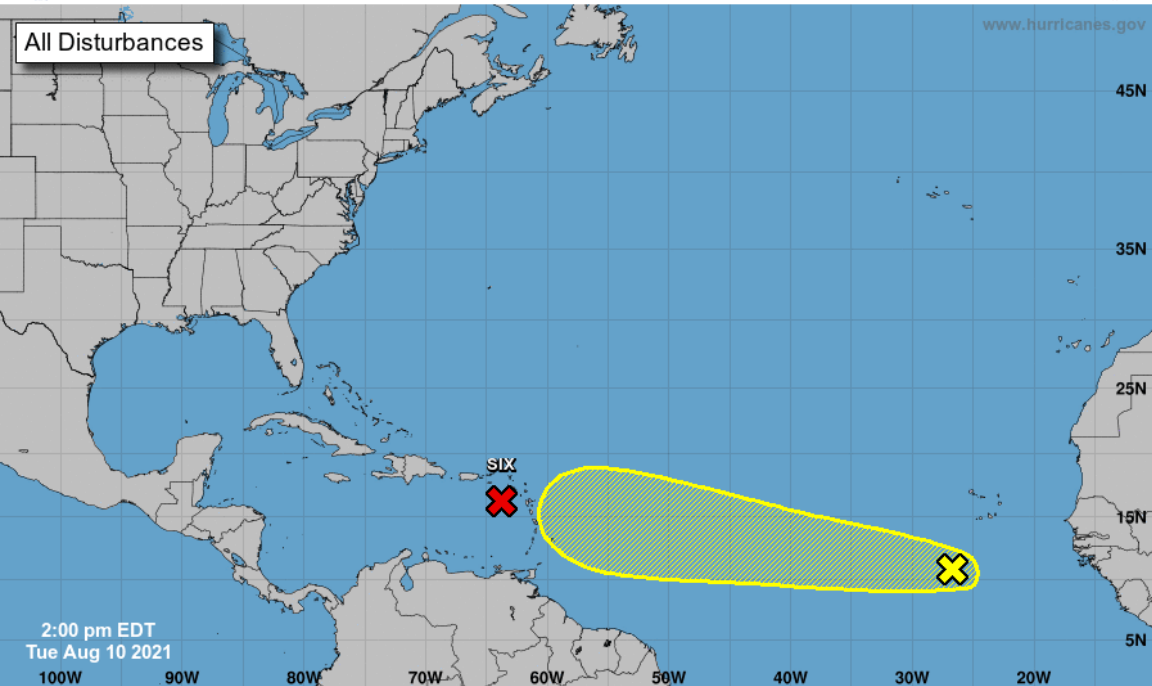
Null (466 days) 189 storms





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



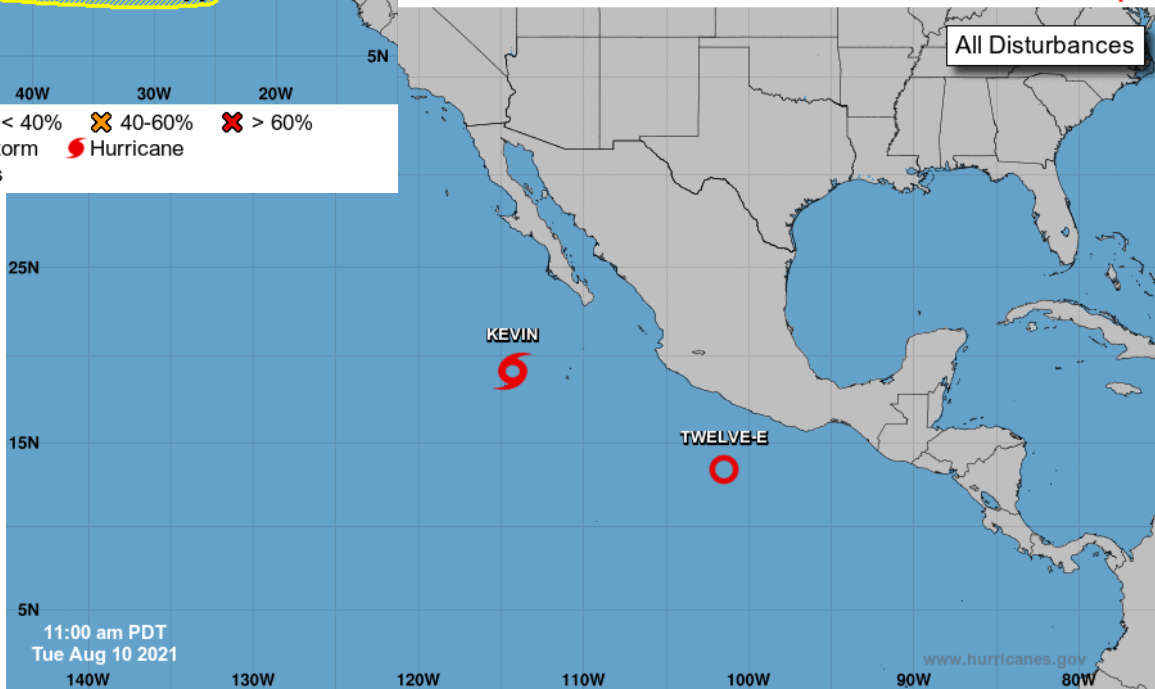
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

## Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



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

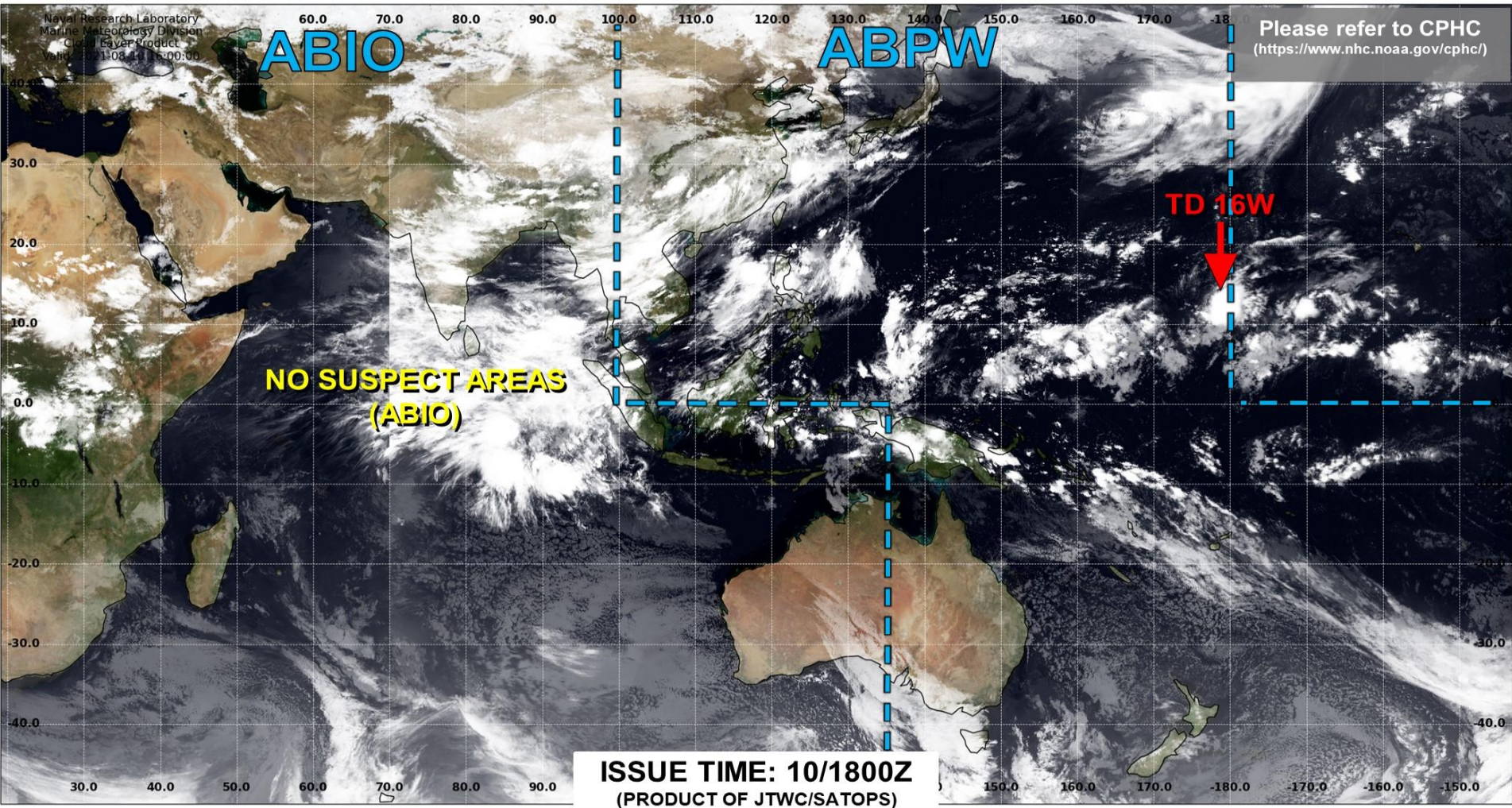
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants





# JOINT TYPHOON WARNING CENTER



**LOW** TC development unlikely within 24 hours

**MEDIUM** TC development likely, but expected to occur beyond 24 hours

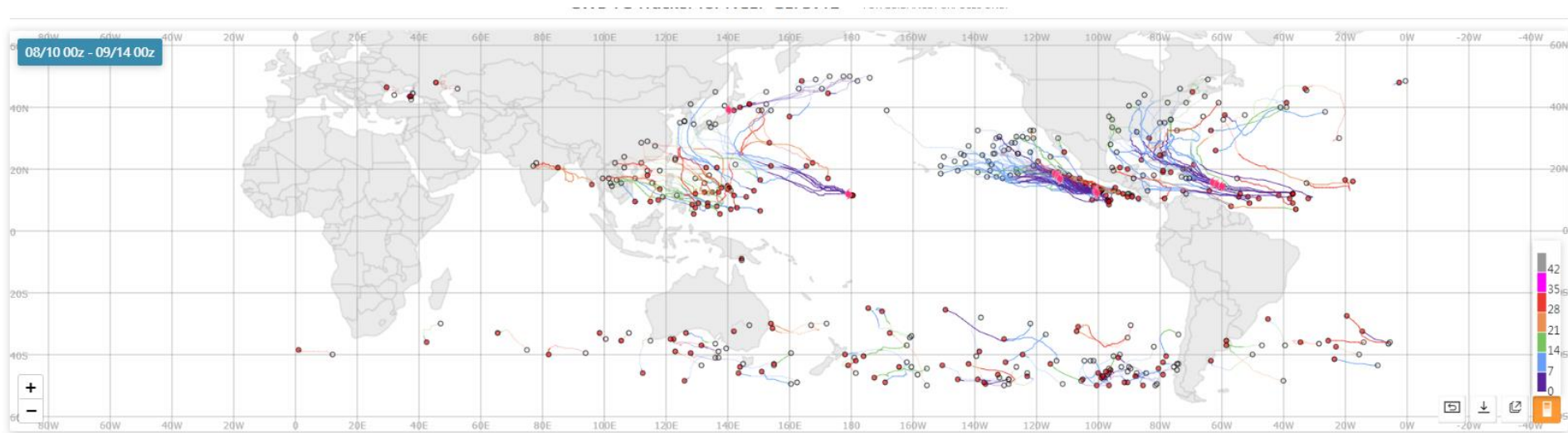
**HIGH** TC development likely within 24 hours (Reference TCFA)

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

Tropical Cyclone (Reference Warning)

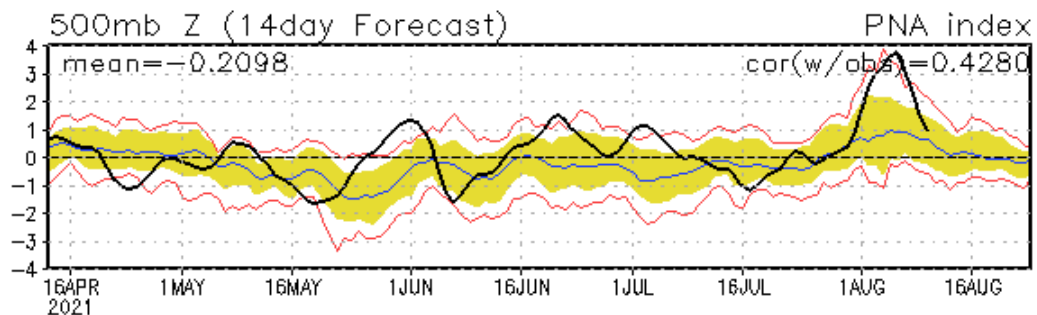
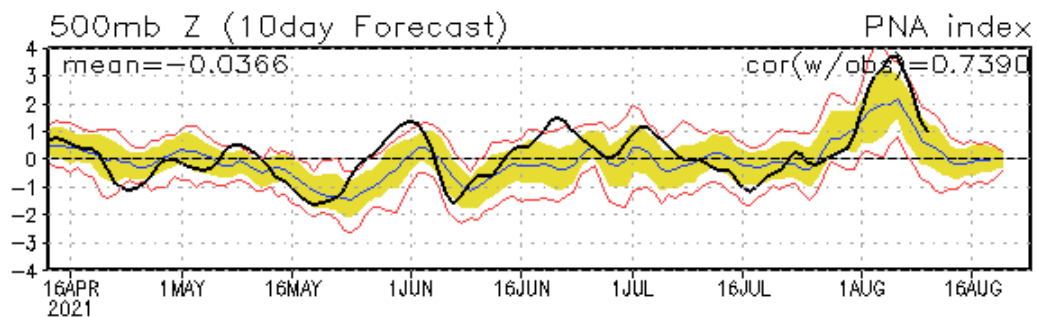
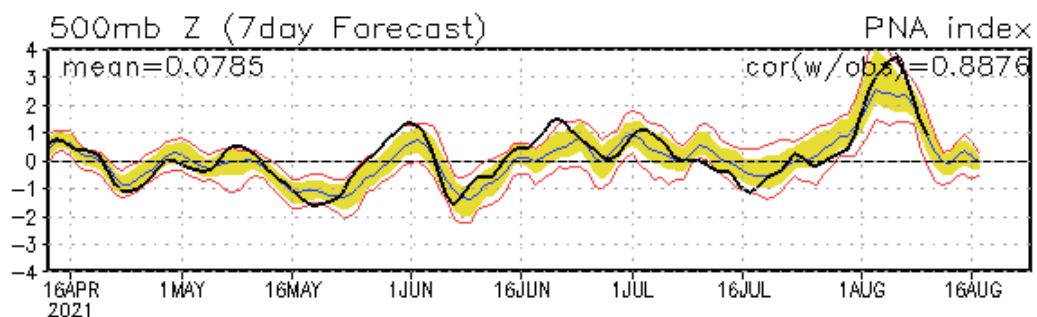
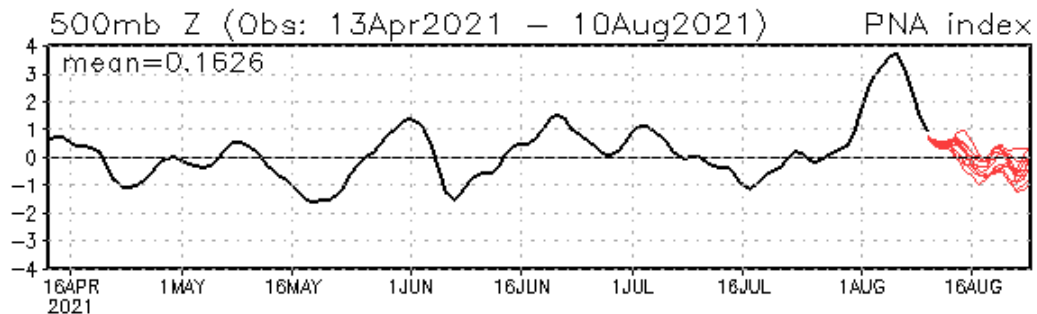


# GEFS-based tropical cyclone tracking tool from CWB Taiwan

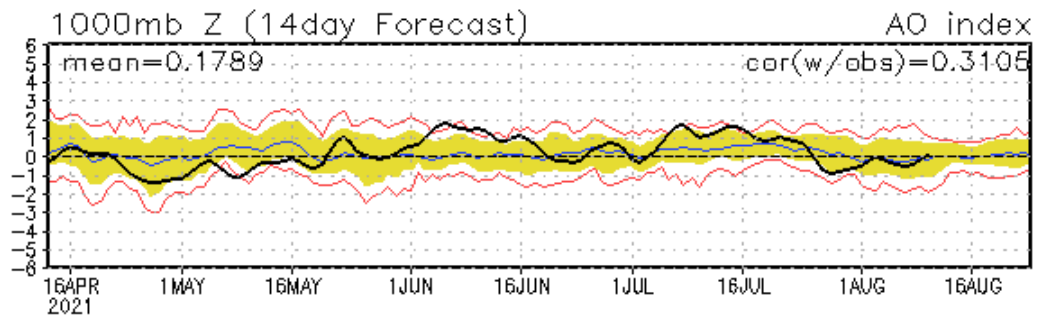
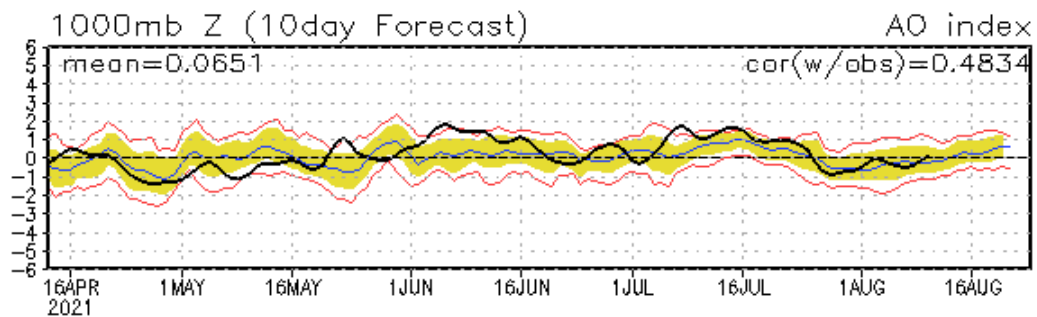
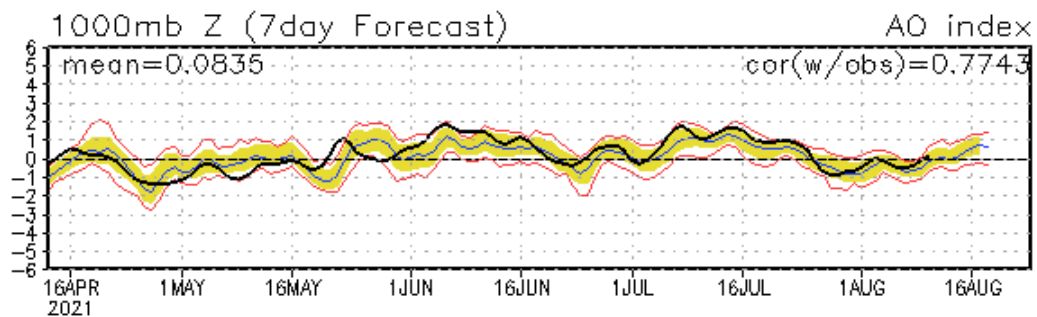
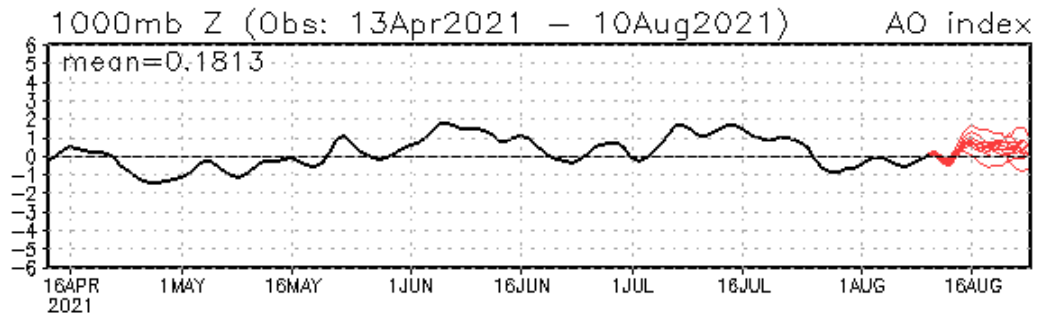


# Connections to U.S. Impacts

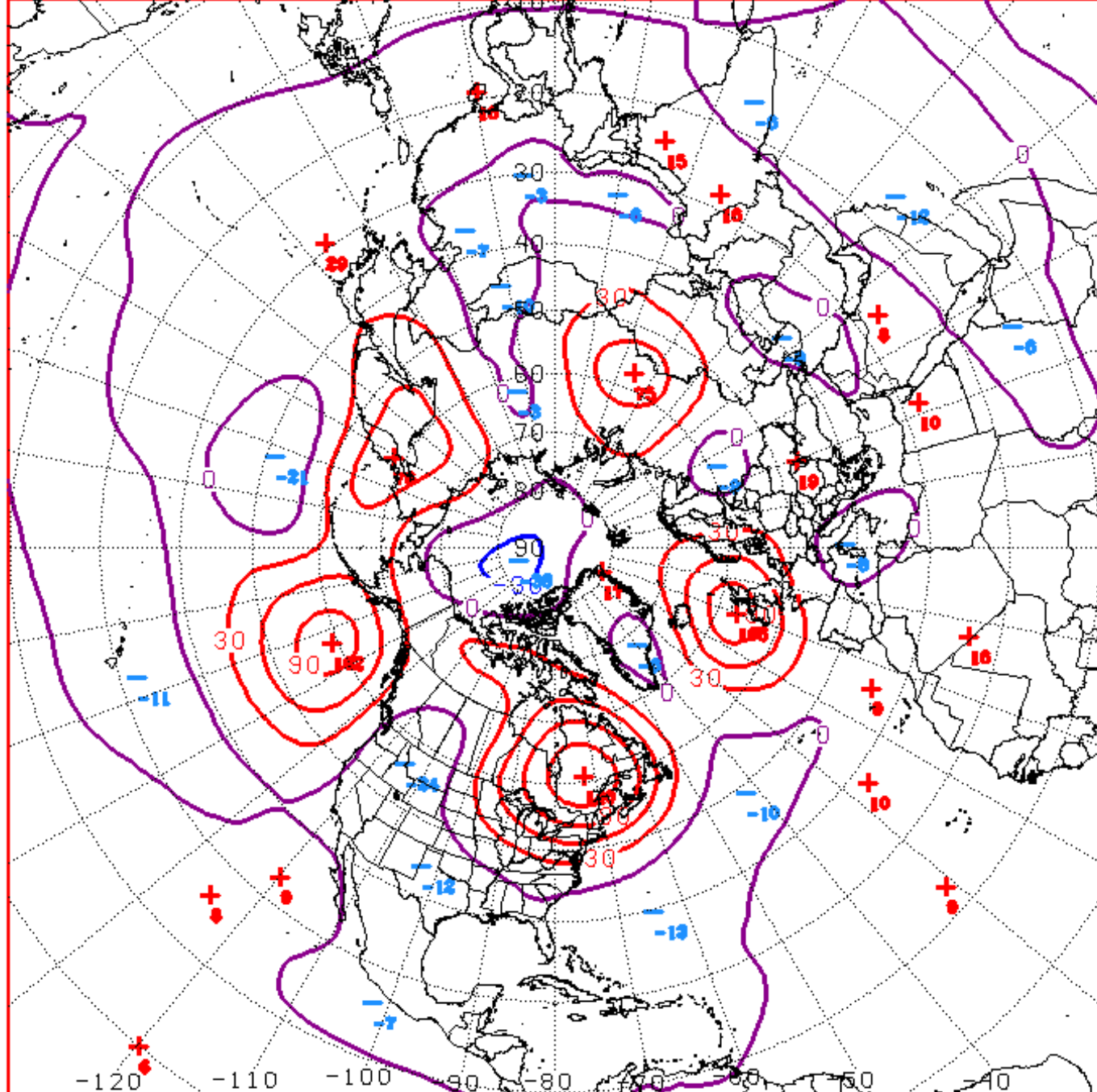
## PNA: Observed & ENSM forecasts



## AO: Observed & ENSM forecasts

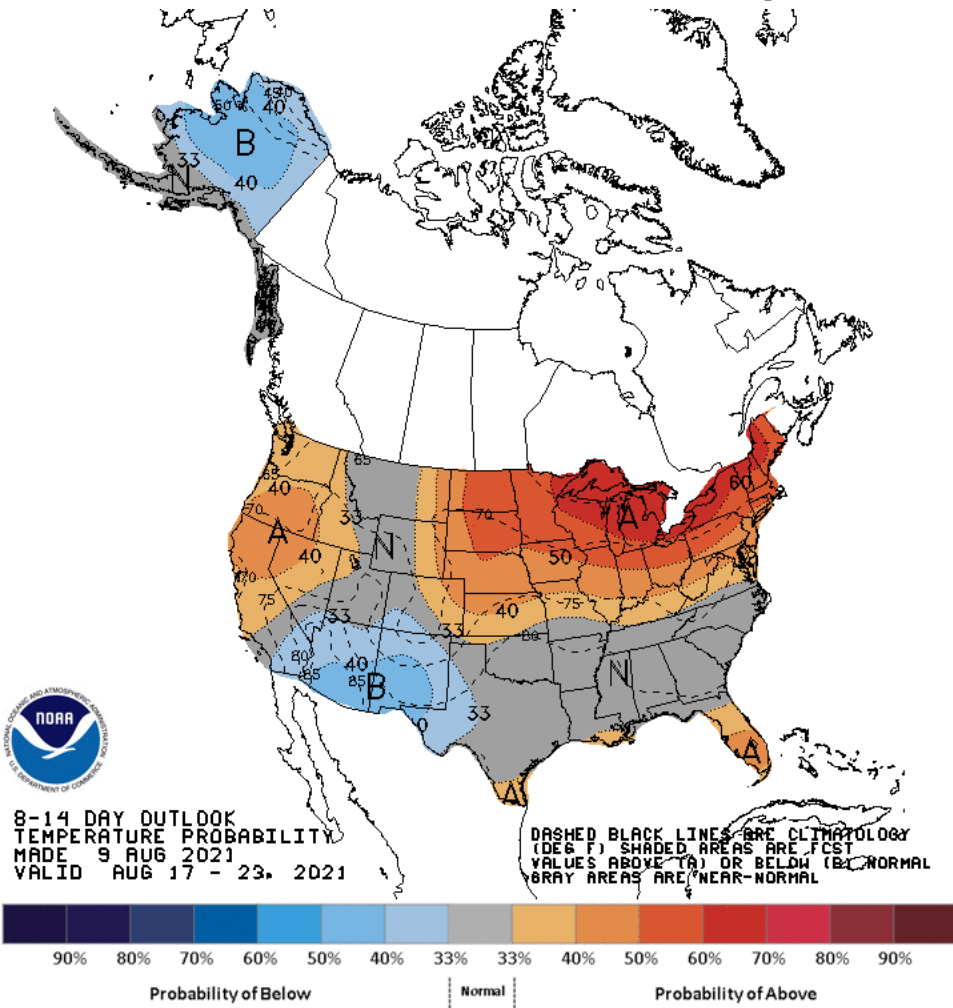




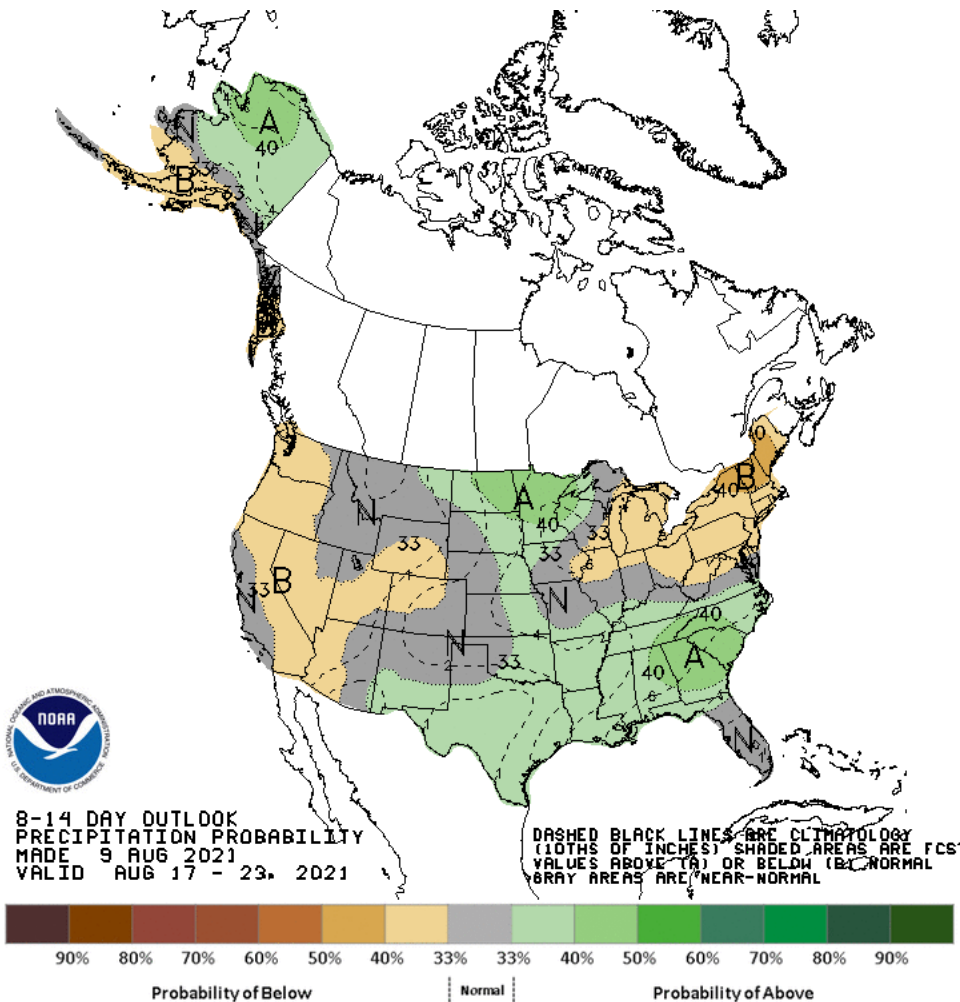


D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE AUG 10 2021 1401 UTC CNTD AUG 21 2021

# Week 2 – Temperature and Precipitation



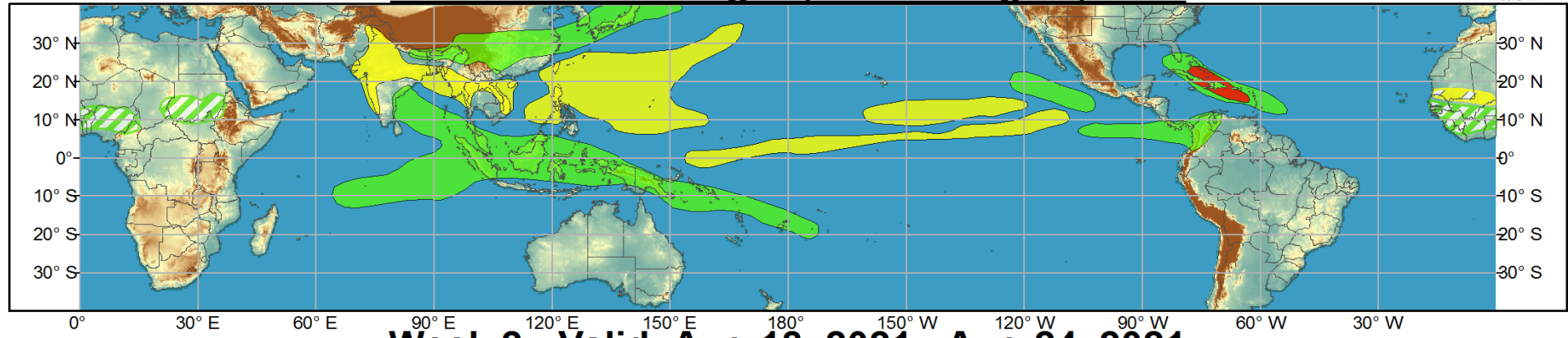
Today's manual blend is showing a stronger signal favoring below-normal temperatures for the West.



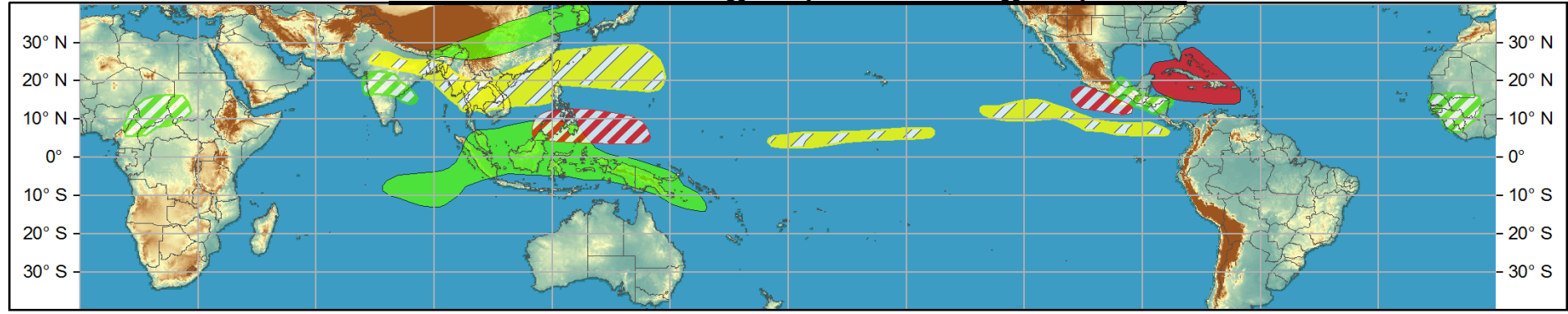


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