

# Global Tropics Hazards And Benefits Outlook

7/27/2021

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

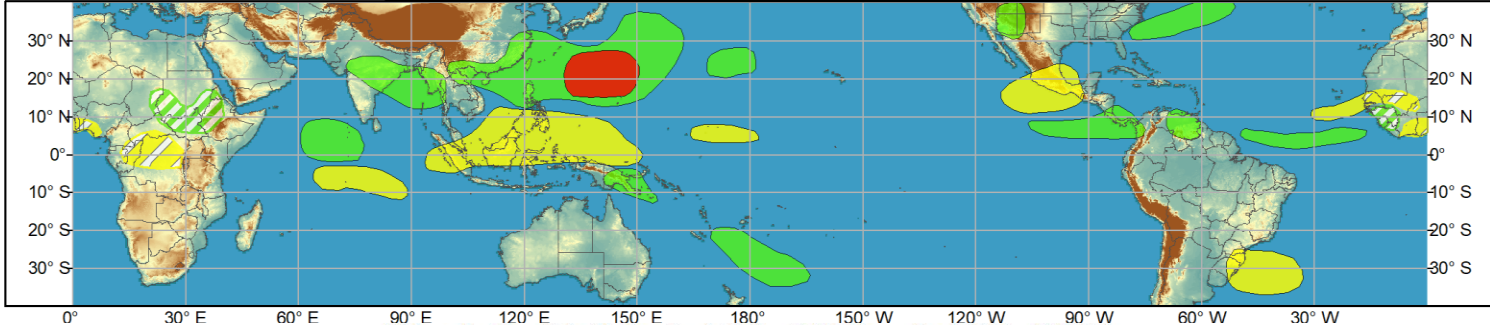
# Outlook Review



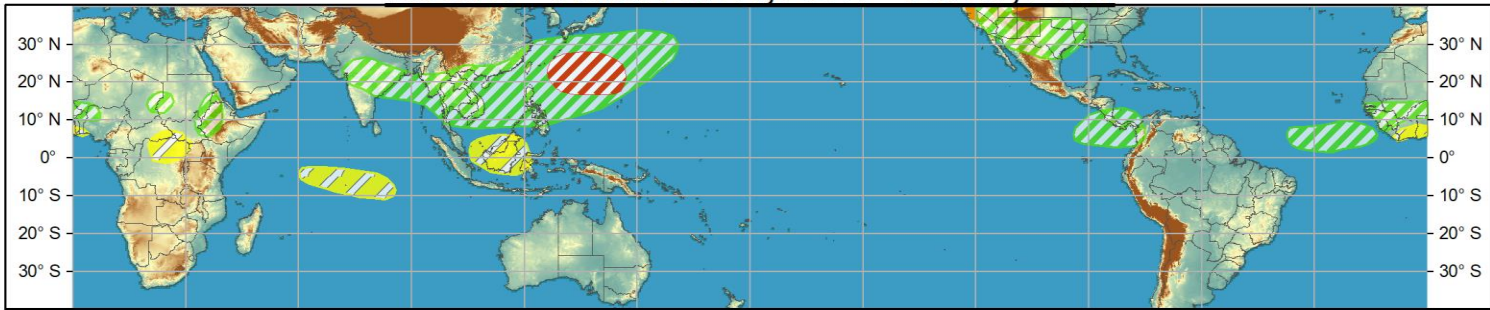
## Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



**Week 1 - Valid: Jul 21, 2021 - Jul 27, 2021**

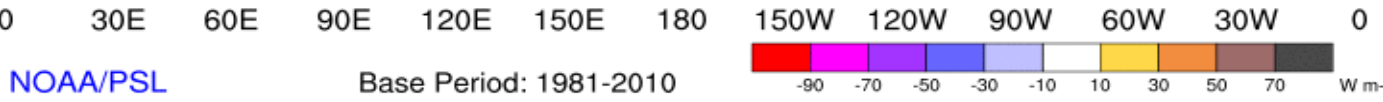
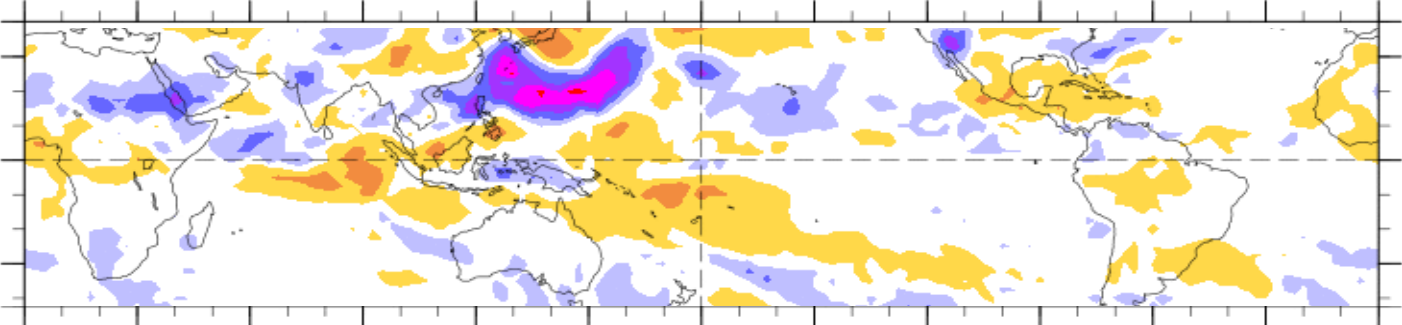


**Week 2 - Valid: Jul 21, 2021 - Jul 27, 2021**



7-Day Average OLR Anomaly

2021/07/19 - 2021/07/25



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

NOAA/PSL

Base Period: 1981-2010

-90 -70 -50 -30 -10 10 30 50 70 W m.

# Synopsis of Climate Modes

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

*next update on 12<sup>th</sup> of Aug.!*

- 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).

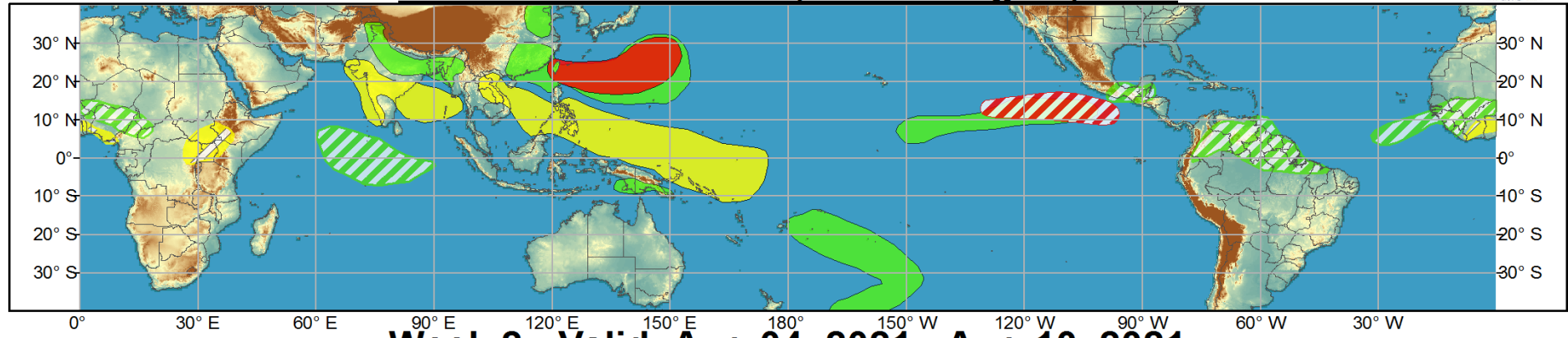
## **MJO and other subseasonal tropical variability:**

- The MJO remained active, with the enhanced phase entering the West Pacific.
- A strong Kelvin wave is currently crossing the East Pacific ahead of the main MJO envelope.
- A weakening MJO is forecast as the Kelvin gains more separation and the MJO enhanced phase destructively interferes with the Pacific base state.
- The MJO and Kelvin wave activity may increase favorability for Pacific TC activity. High uncertainty regarding influence on the Atlantic, with favorable impacts remaining mainly outside the two-week outlook period if they occur.

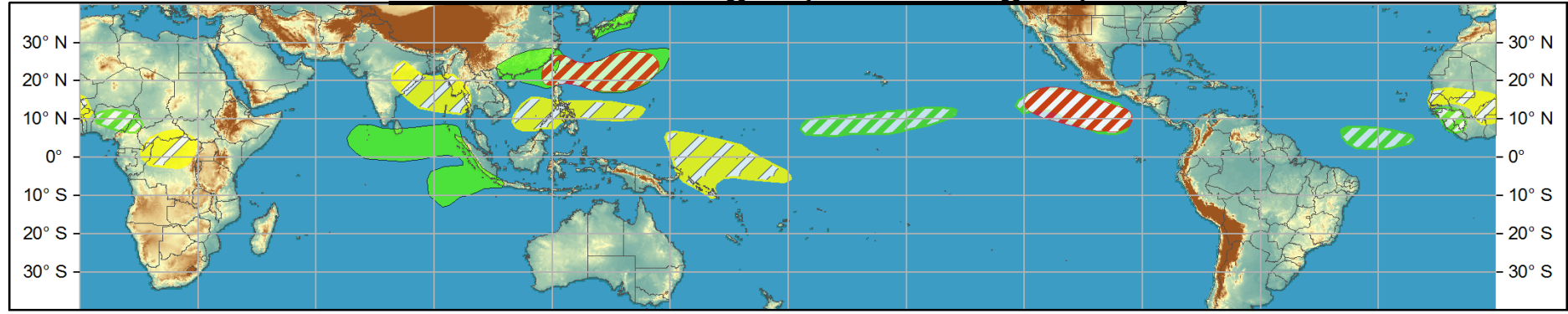


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Jul 28, 2021 - Aug 03, 2021













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



Produced: 07/27/2021

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.
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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

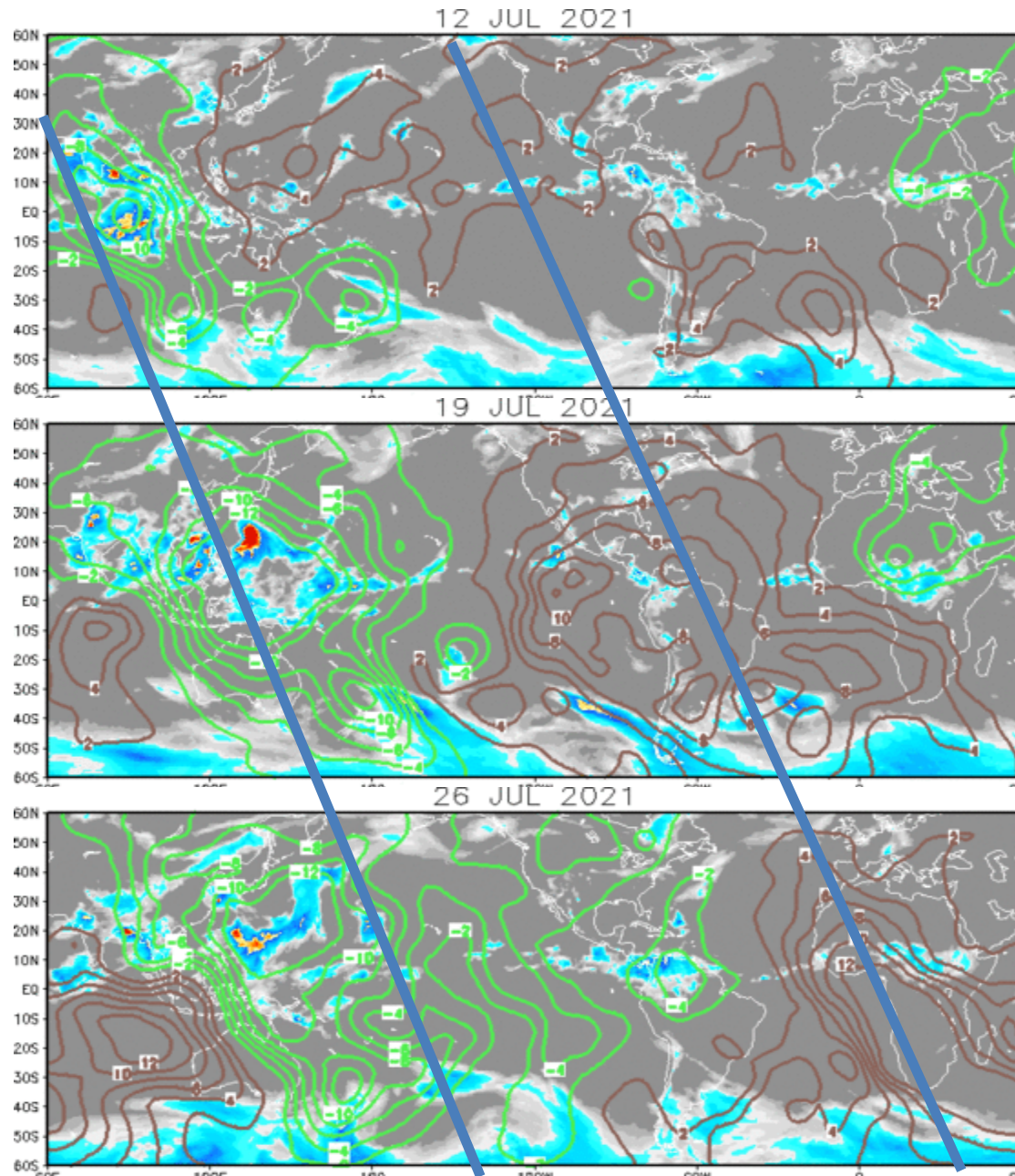
Green: Enhanced Divergence

Brown: Enhanced Convergence

Developing MJO event brought widespread enhanced convection to the Indian Ocean basin.

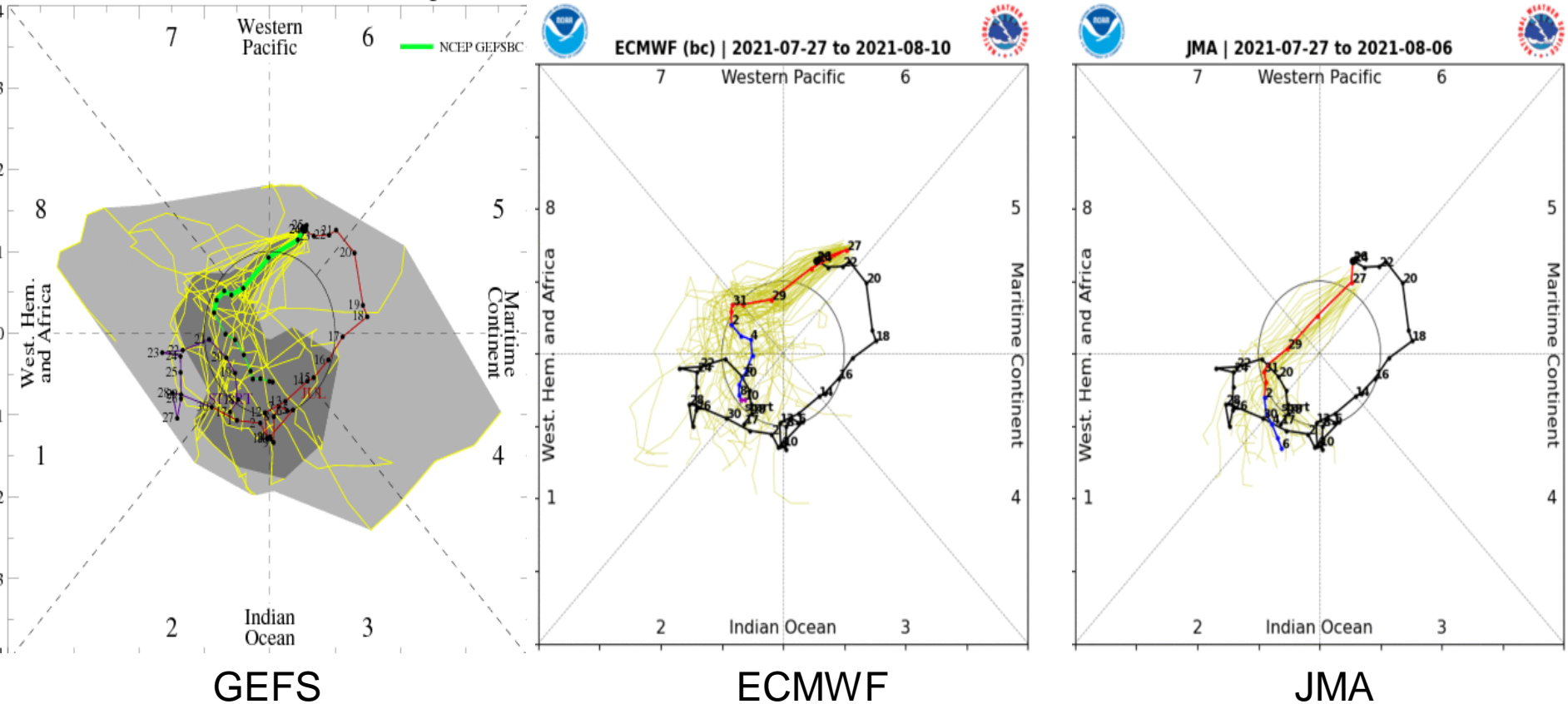
Well organized MJO crossing the Maritime Continent, with monsoonal interactions and tropical cyclones resulting in areas of copious rainfall.

As the MJO moved to the Pacific, the enhanced phase became more elongated as a Kelvin wave over the East Pacific begins to separate from the main envelope.



# MJO Observation/Forecast

[RMM1, RMM2] forecast for Jul-27-2021 to Aug-10-2021

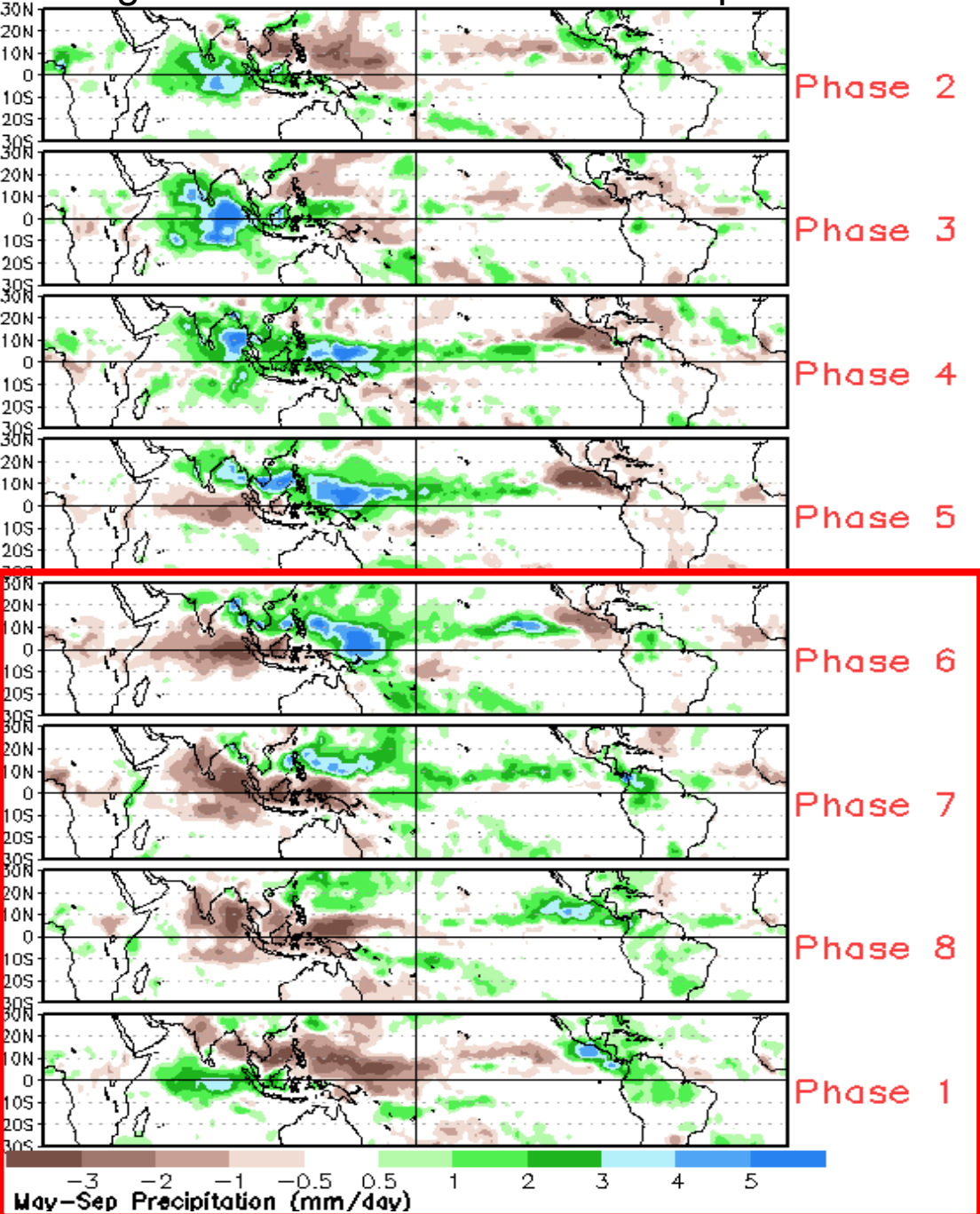


All models show a pronounced eastward “jump” to the Western Hemisphere as the Kelvin wave gains prominence.

Eastward propagation over the Western Hemisphere is favored, but uncertainty remains regarding the amplitude of the event.

Intraseasonal events entering the Indian Ocean tend to result in a period of favorability for TC genesis across the tropical Atlantic.

# Average Conditions when the MJO is present



The northward displaced NW Pacific monsoon gyre already more closely resembles Phase-8

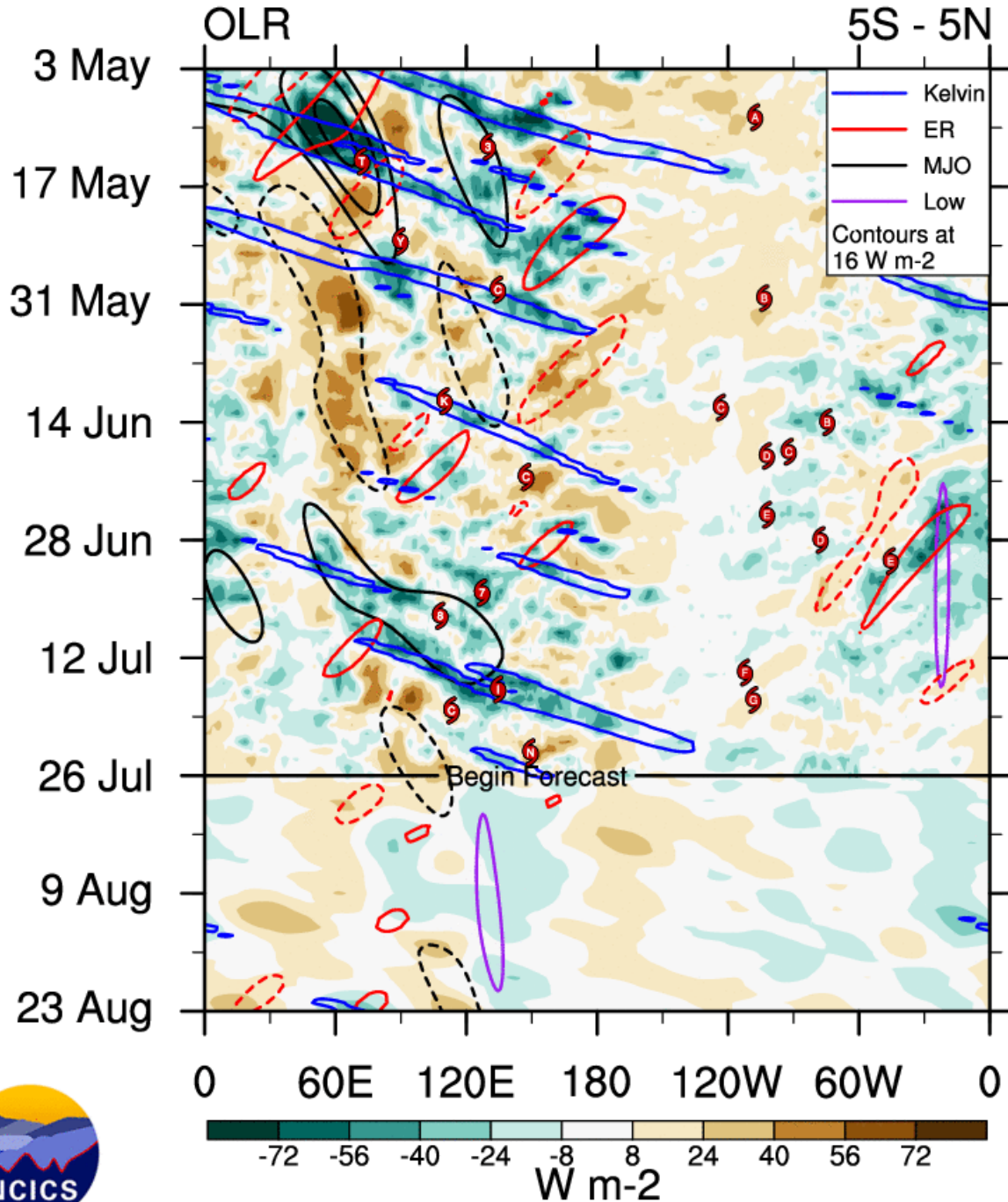
CAVEAT: These panels are representative of robust MJO events.



**MJO** activity came through the filtering through mid-July, but has since been supplanted by...

**Kelvin wave** activity crossing the Pacific may favor additional East Pacific TC activity.

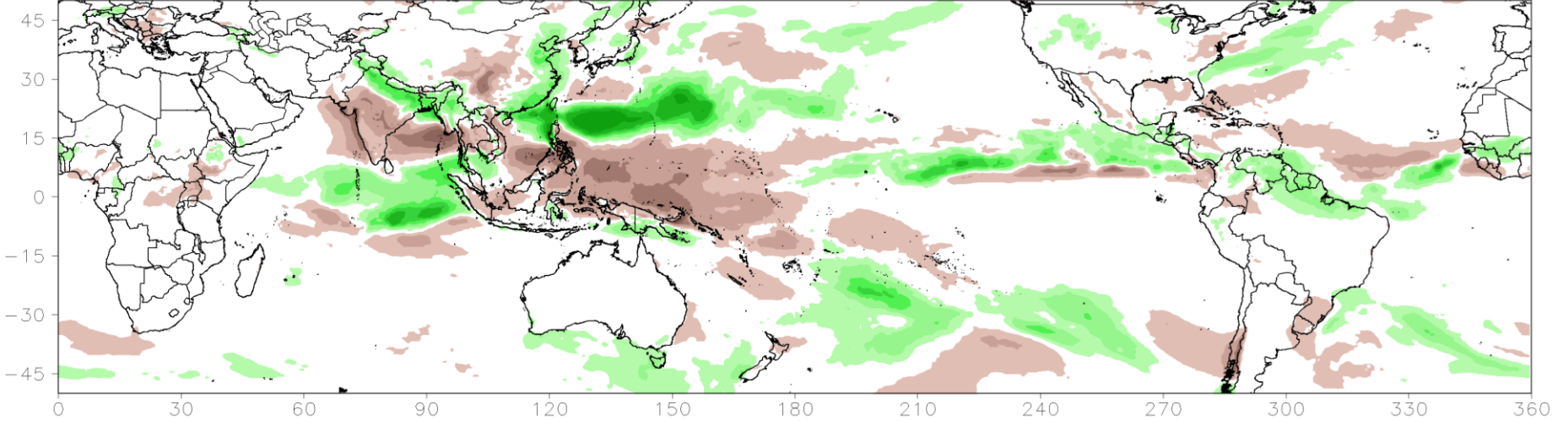
No low frequency contours coming through the filtering, but the CFS forecast resembles a weak La Niña response.





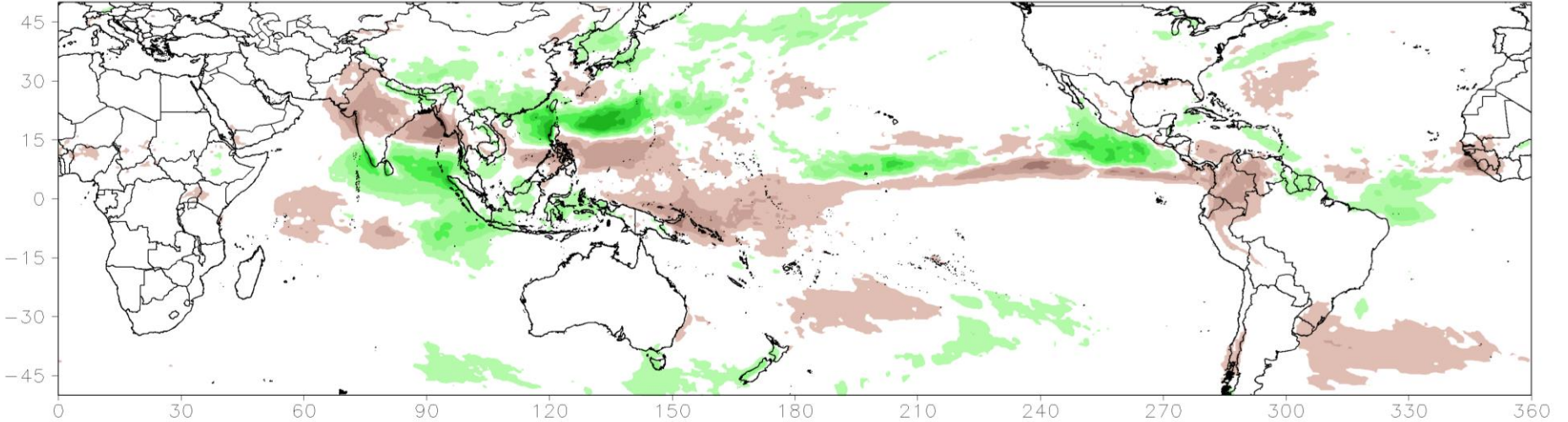
# GEFSv12 00z Ensemble Mean: Week1 Total Rainfall Anomaly (mm)

Valid: 28Jul2021-03Aug2021



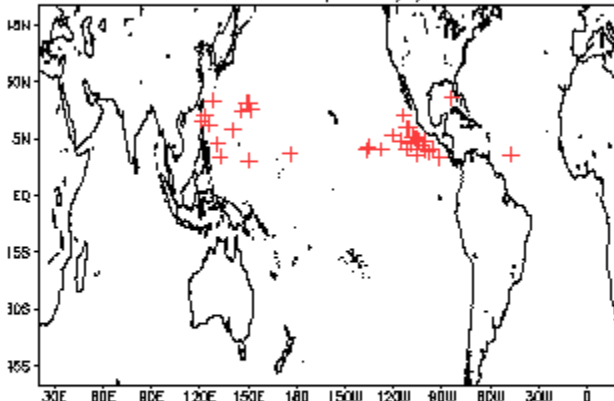
# GEFSv12 00z Ensemble Mean: Week2 Total Rainfall Anomaly (mm)

Valid: 04Aug2021-10Aug2021

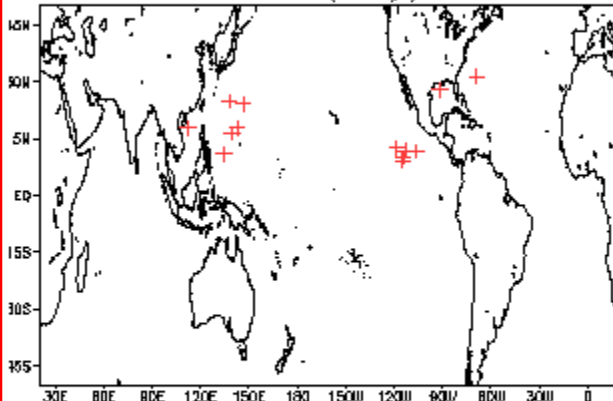


# July Tropical Storm Formation by MJO phase

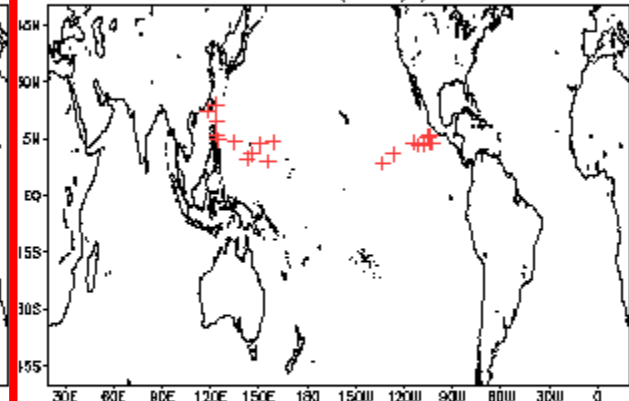
Phase 1 (144 days) 37 storms



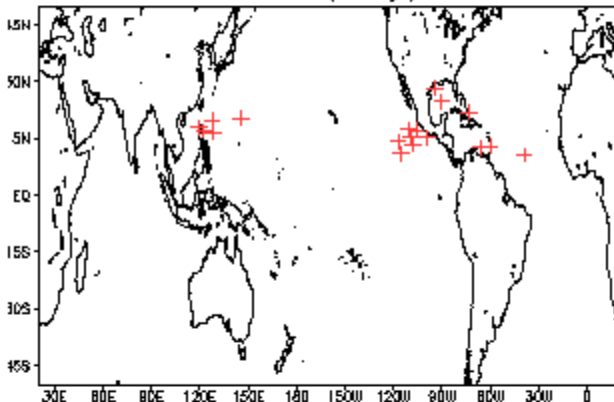
Phase 4 (40 days) 14 storms



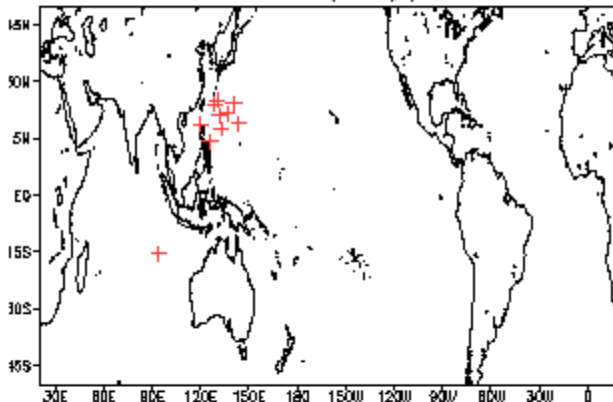
Phase 7 (87 days) 21 storms



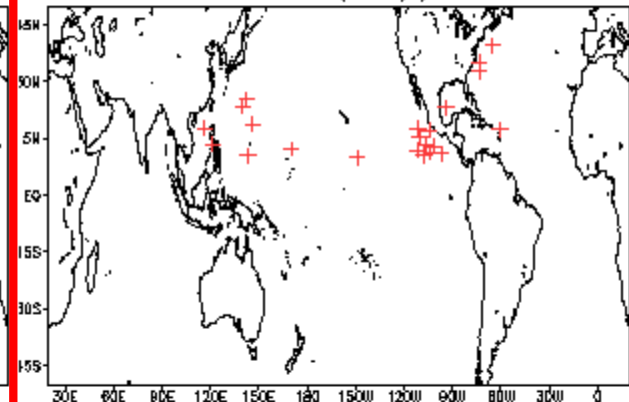
Phase 2 (74 days) 20 storms



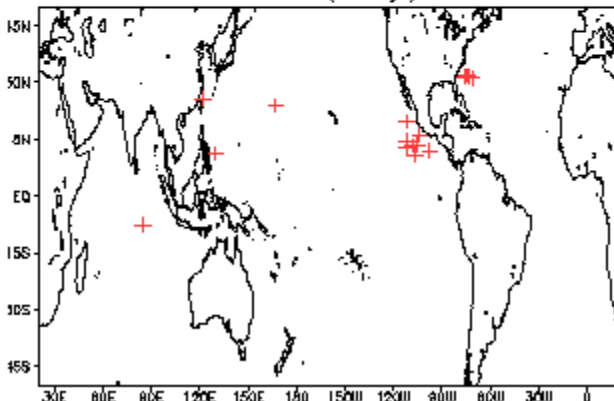
Phase 5 (63 days) 11 storms



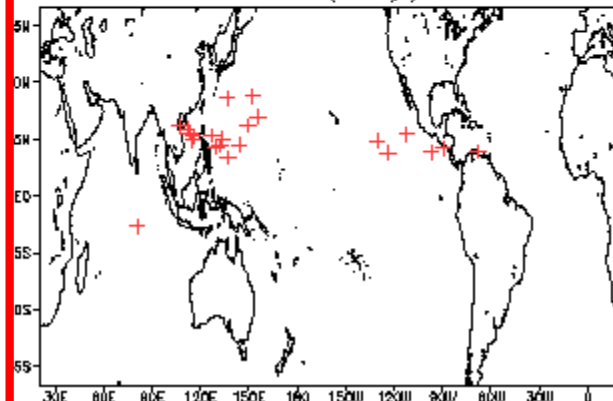
Phase 8 (61 days) 24 storms



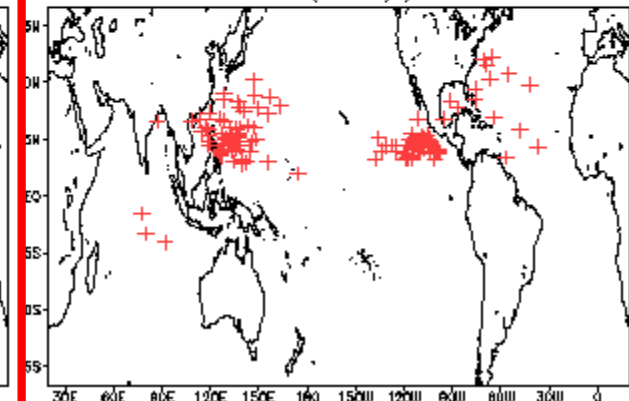
Phase 3 (49 days) 17 storms



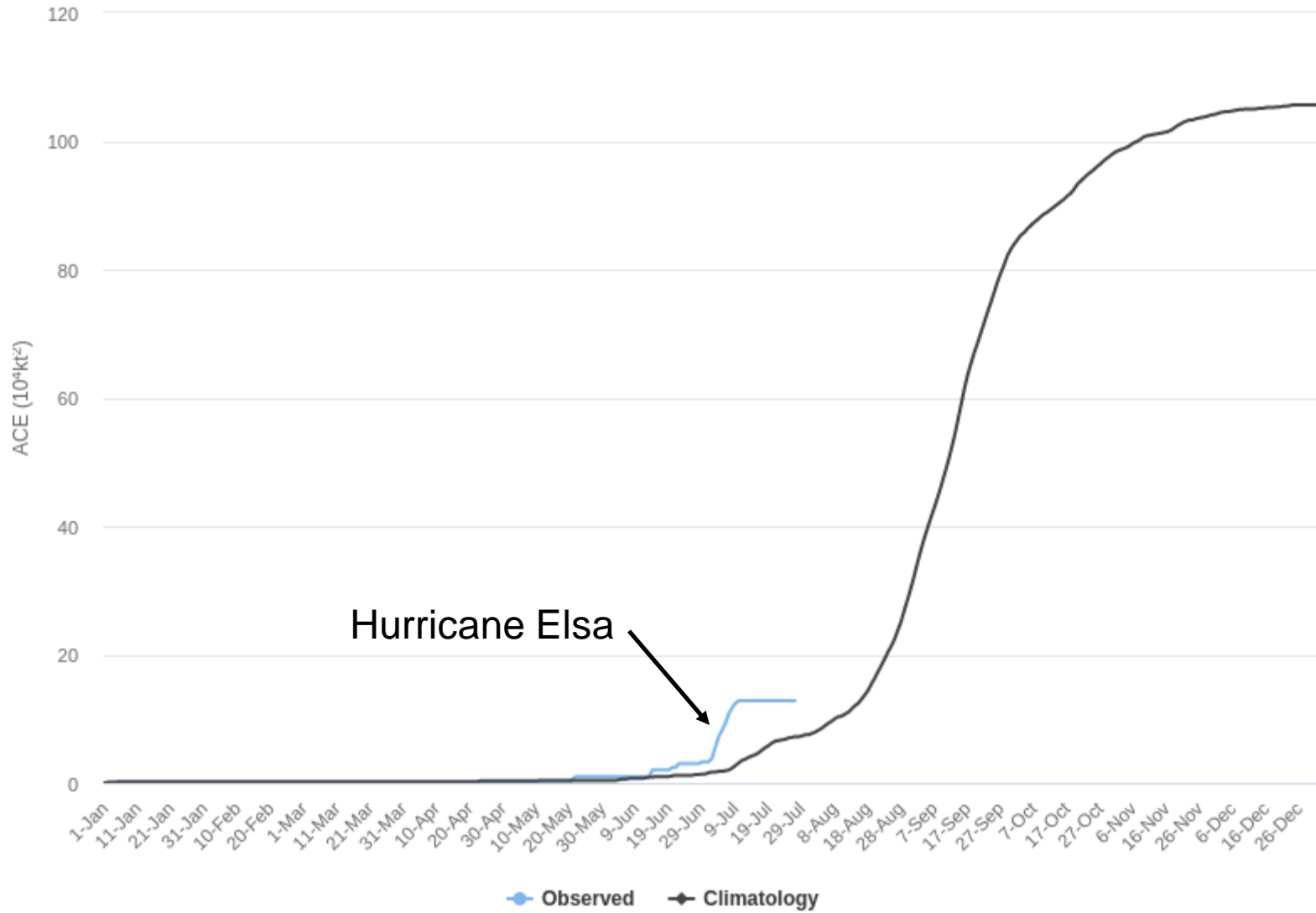
Phase 6 (60 days) 23 storms



Null (480 days) 130 storms



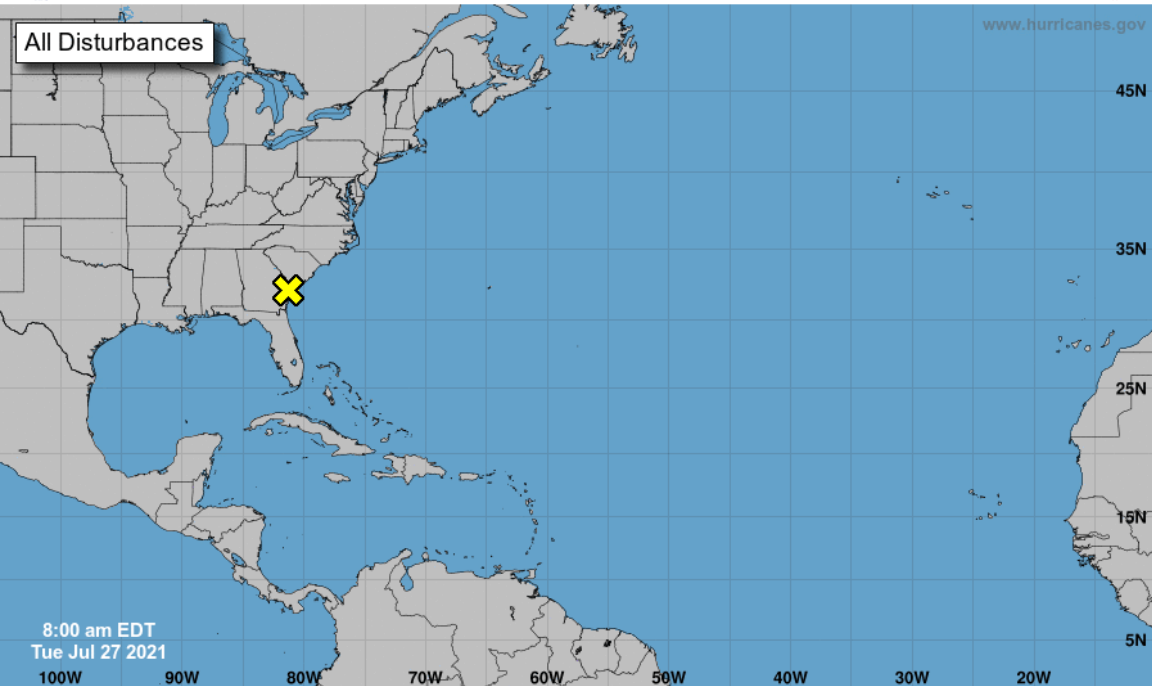
# Current Season North Atlantic Ocean ACE (1981-2010 Climo)





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



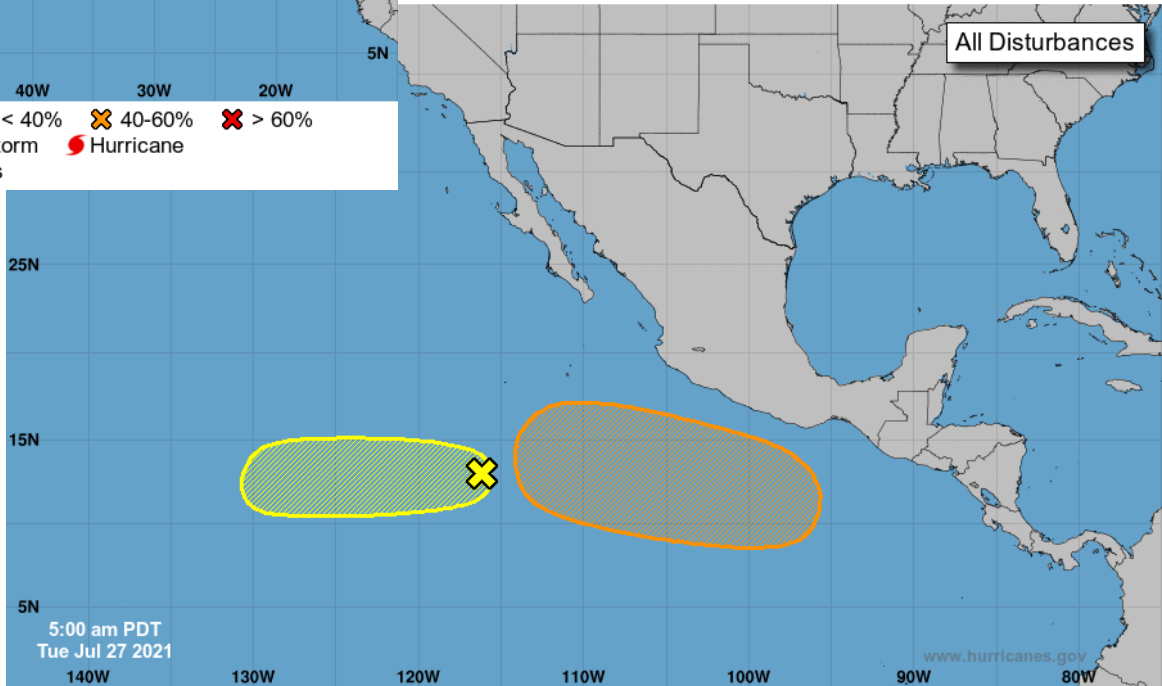
Current Disturbances and Five-Day Cyclone Formation Chance: X < 40% X 40-60% X > 60%

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: X < 40% X 40-60% X > 60%

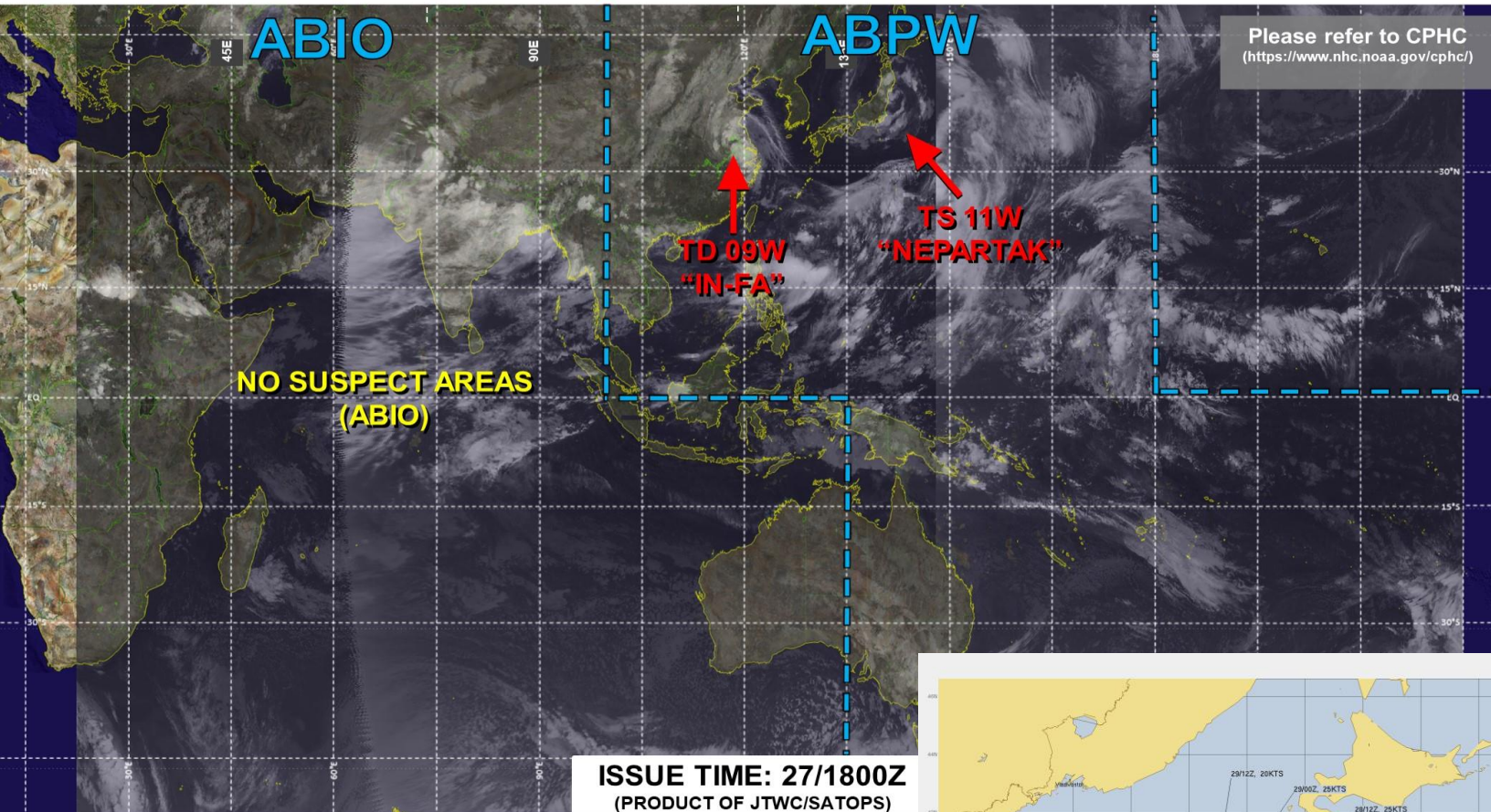
Tropical or Sub-Tropical Cyclone: ○ Depression ○ Storm ○ Hurricane

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# JOINT TYPHOON WARNING CENTER



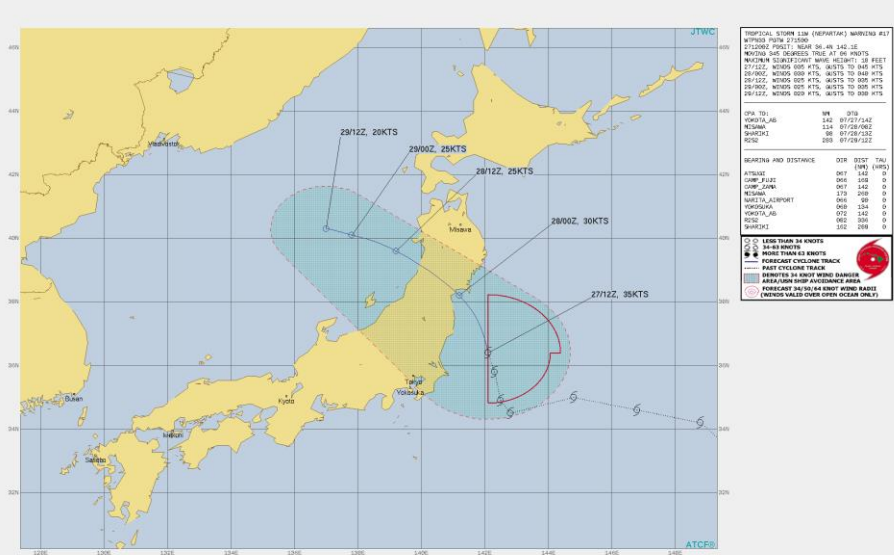
Please refer to CPHC  
[\(https://www.nhc.noaa.gov/cphc/\)](https://www.nhc.noaa.gov/cphc/)

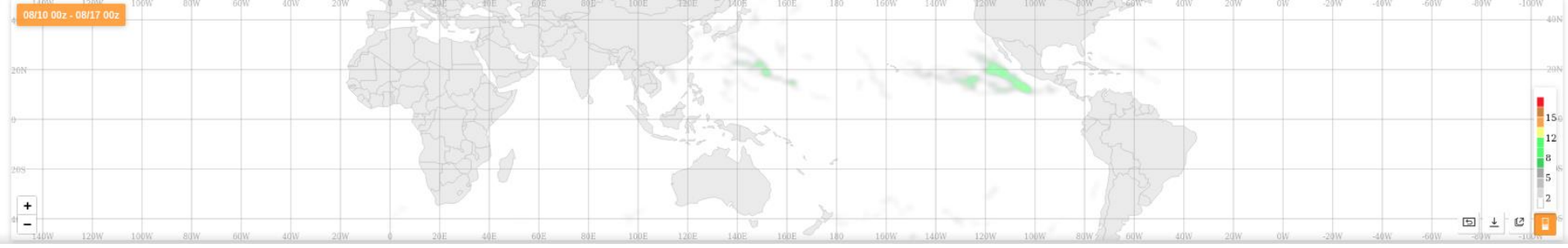
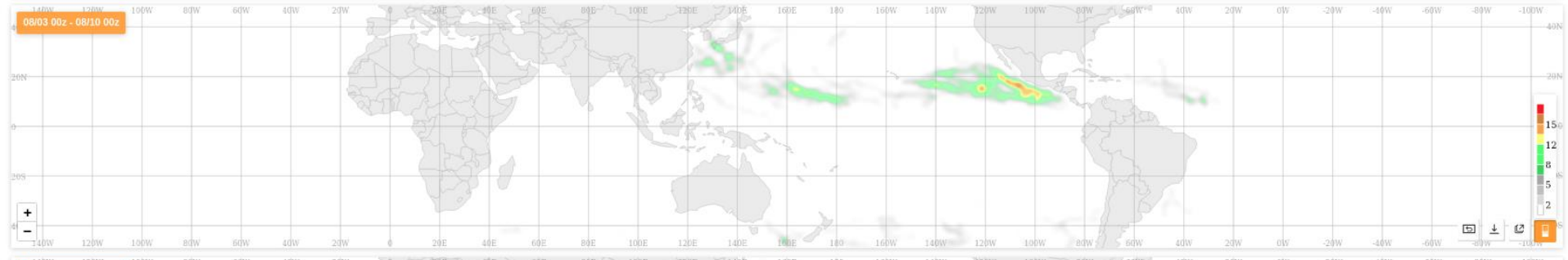
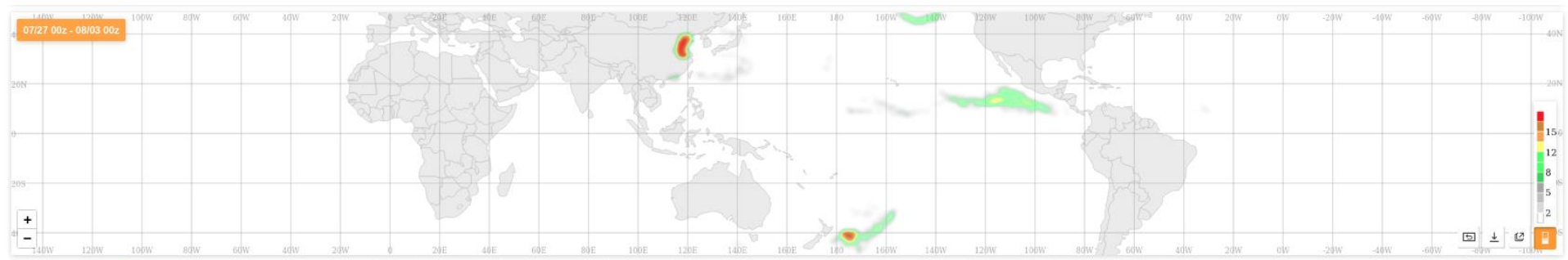
**ISSUE TIME: 27/1800Z**  
**(PRODUCT OF JTWC/SATOPS)**

**LOW** TC development unlikely within 24 hours

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

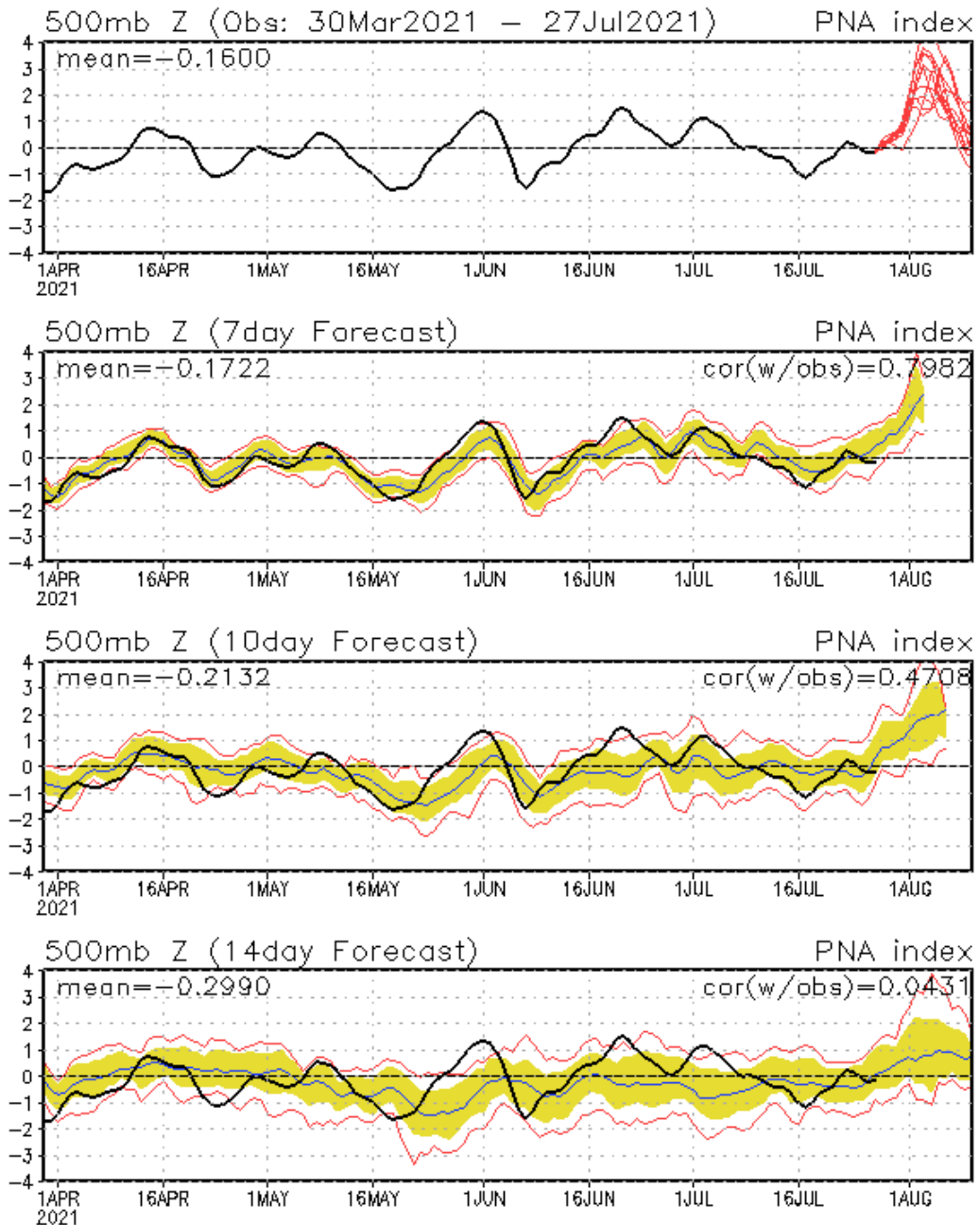
**HIGH** TC development likely within 24 hours (Reference TCFA)





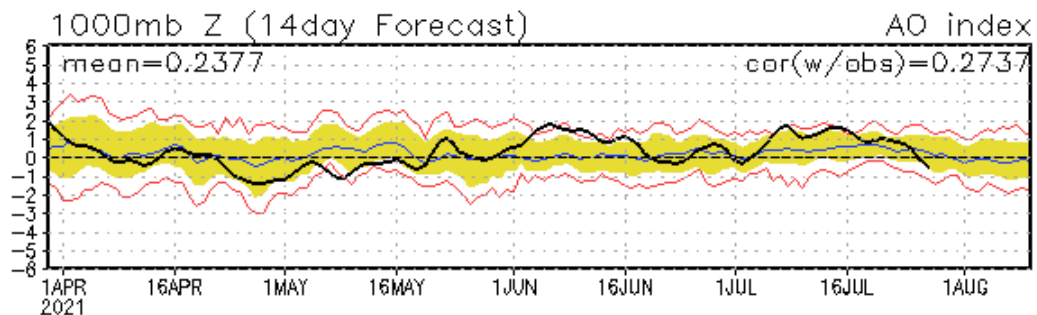
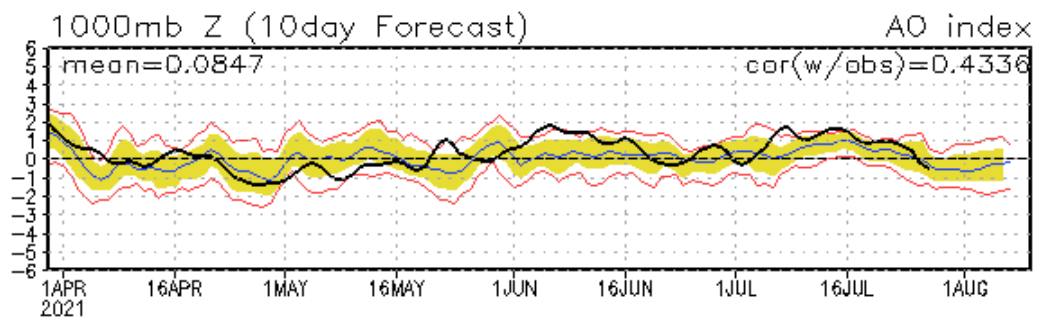
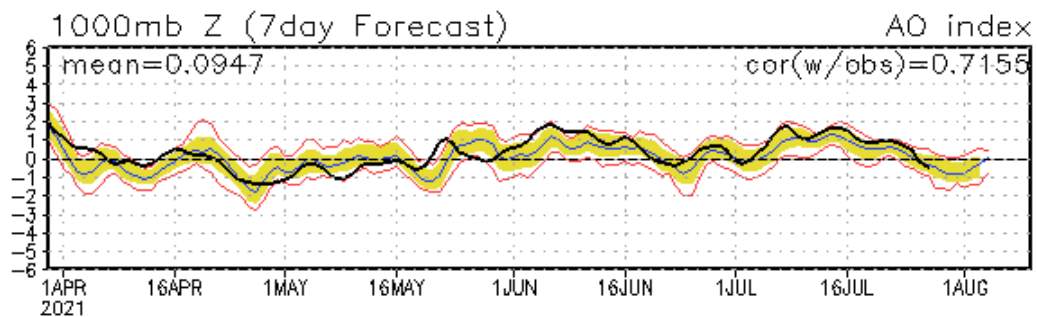
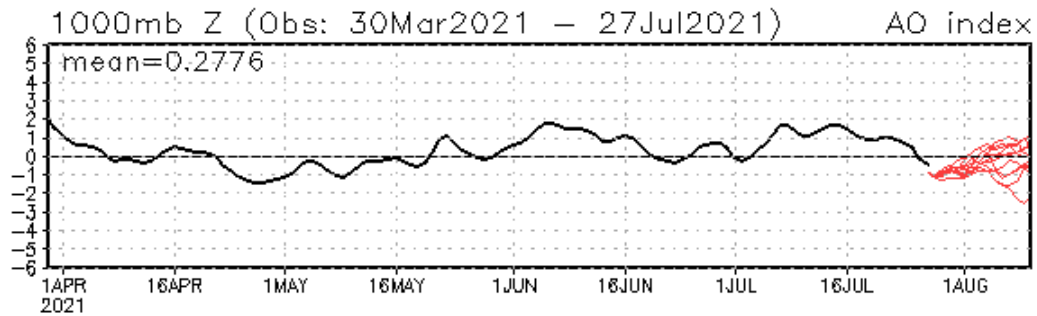
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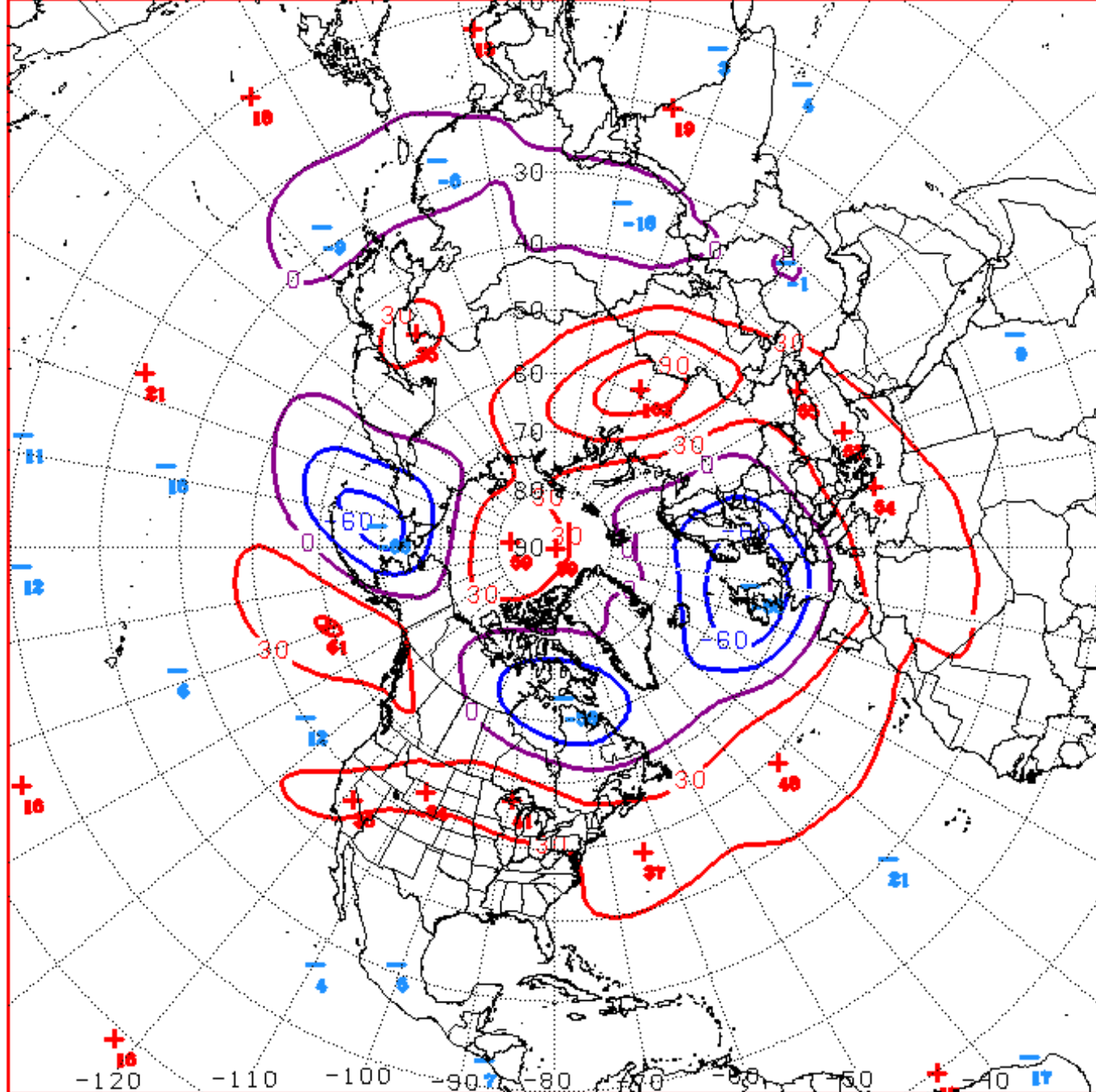
# PNA: Observed & ENSM forecasts





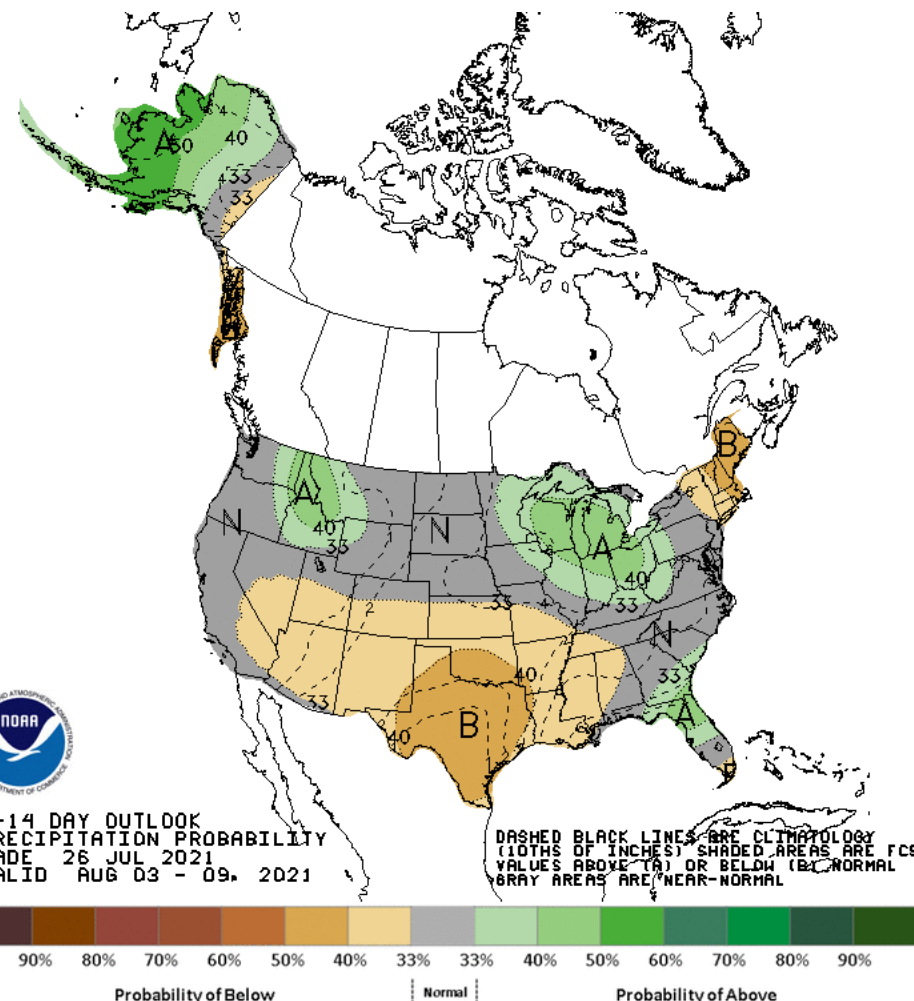
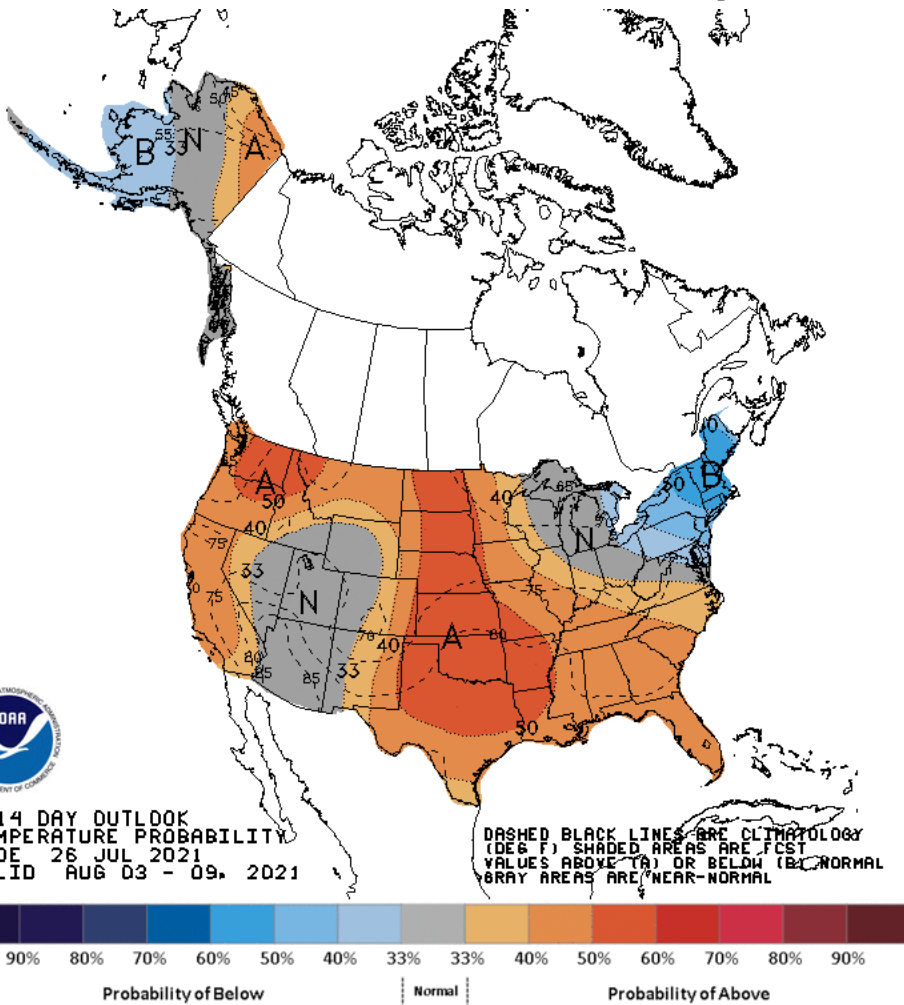
## AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE JUL 27 2021 1401 UTC CNTD AUG 07 2021

# Week 2 – Temperature and Precipitation

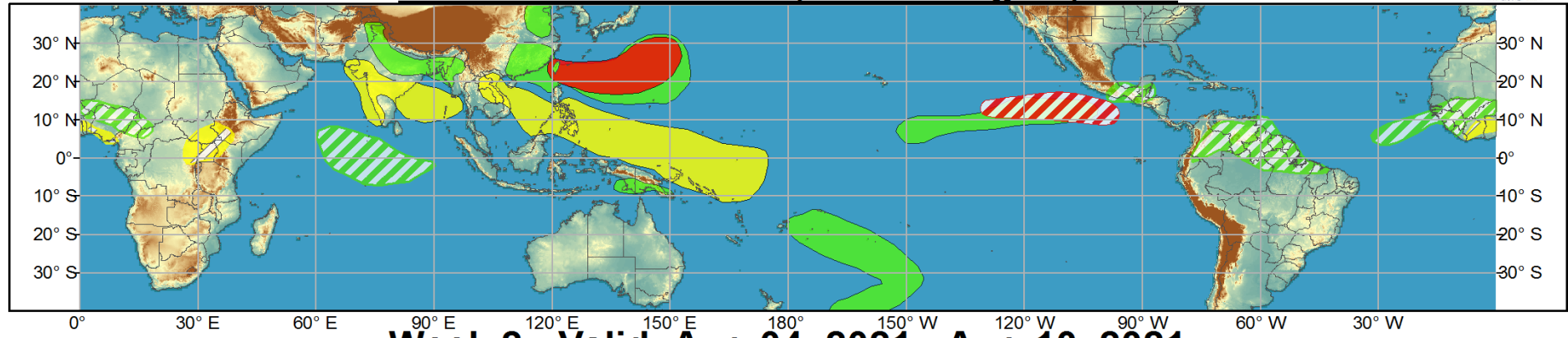


Since we are in an amplified, stable pattern today's outlooks are likely to be similar.

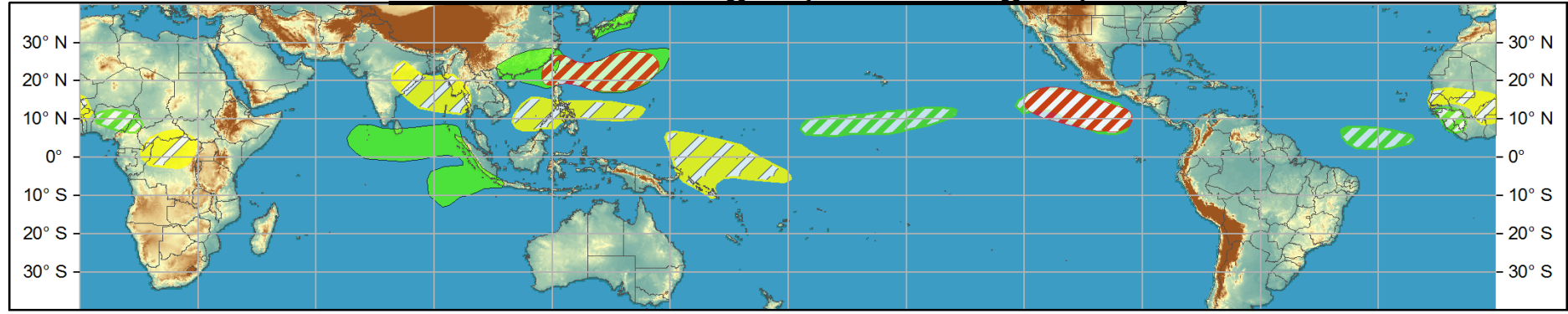


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