

# Global Tropics Hazards And Benefits Outlook

9/14/2021

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

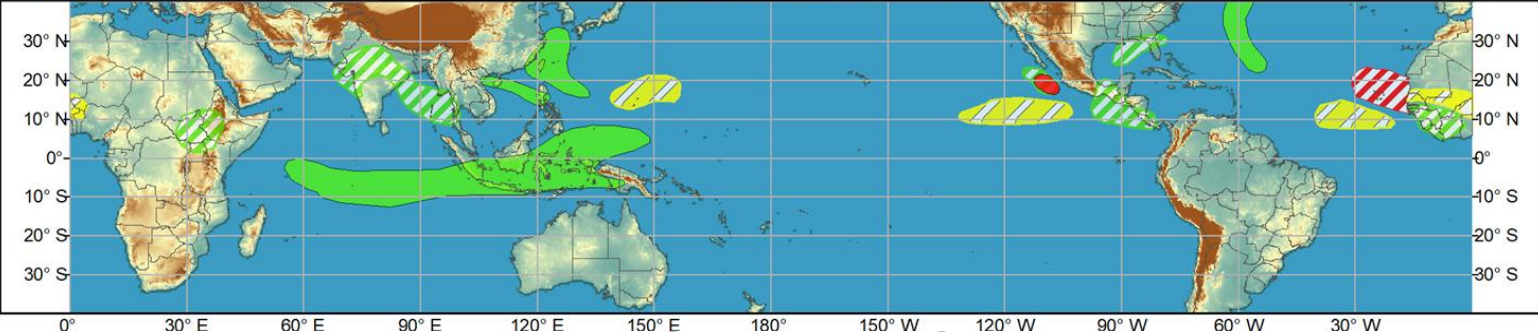
# Outlook Review



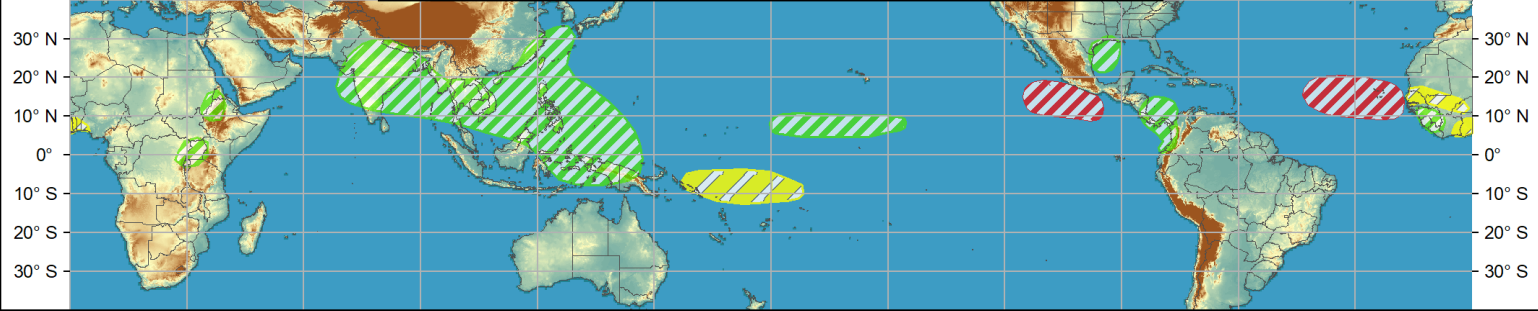
## Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



**Week 1 - Valid: Sep 08, 2021 - Sep 14, 2021**



**Week 2 - Valid: Sep 08, 2021 - Sep 14, 2021**

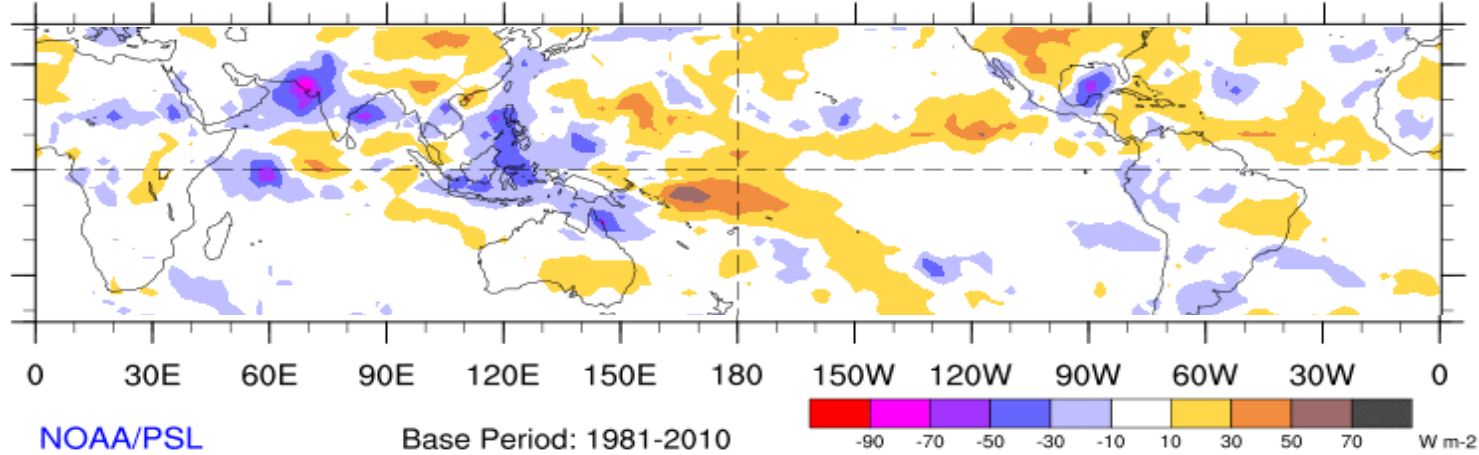


7-Day Average OLR Anomaly

2021/09/06 - 2021/09/12

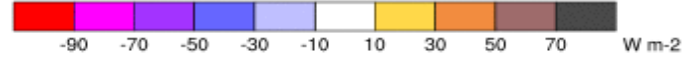
Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain



NOAA/PSL

Base Period: 1981-2010



# Synopsis of Climate Modes

## **ENSO: (September 10, 2020 Update)**

*next update on 14<sup>th</sup> of Oct.!*

- ENSO Alert System Status: [La Niña Watch](#)
- A transition from ENSO-neutral to La Niña is favored in the next couple of months, with a 70-80% chance of La Niña during the Northern Hemisphere winter 2021-22.

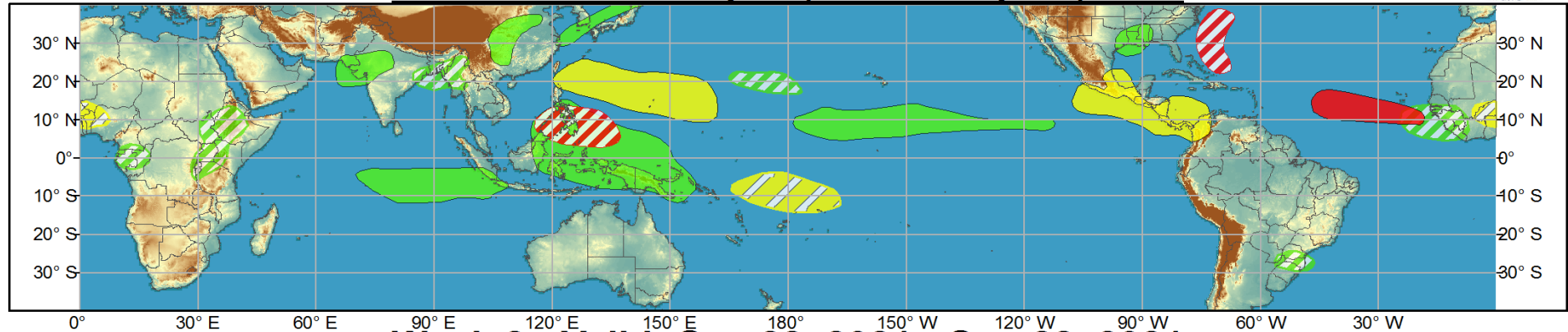
## **MJO and other subseasonal tropical variability:**

- The tropical pattern has increasingly resembled a MJO pattern, with the enhanced phase over the far eastern Indian Ocean/Maritime Continent. No eastward propagation has been established.
- Dynamical models favor a continuation of the largely stationary pattern, with perhaps some renewed eastward propagation during Week-2. Uncertainty is high.
- There is more model confidence in an eastward propagating suppressed signal crossing the Pacific to the Western Hemisphere.
- The large-scale pattern favors a reduction in East Pacific and Atlantic tropical cyclone activity (western Caribbean/near Central America); however, continued MDR activity is likely.

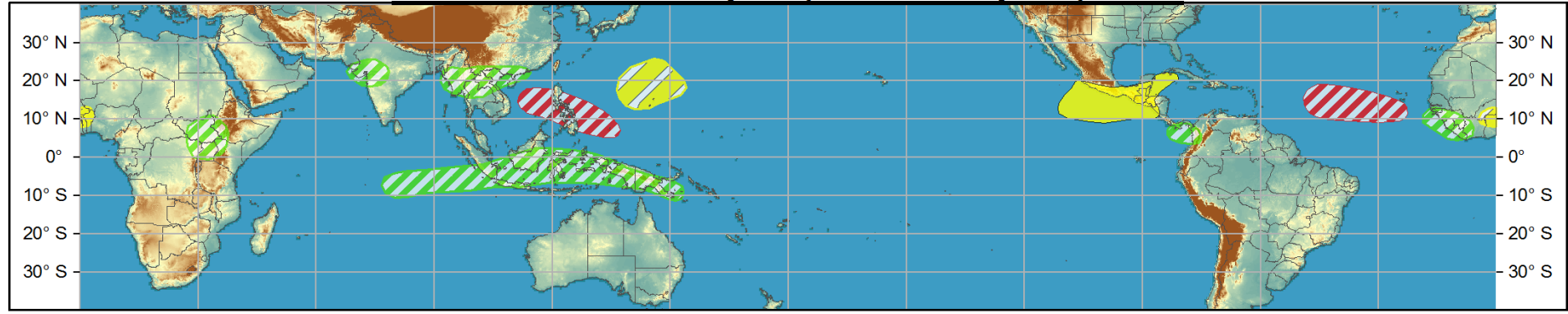


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Sep 15, 2021 - Sep 21, 2021



## Week 2 - Valid: Sep 22, 2021 - Sep 28, 2021



Produced: 09/14/2021  
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.

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

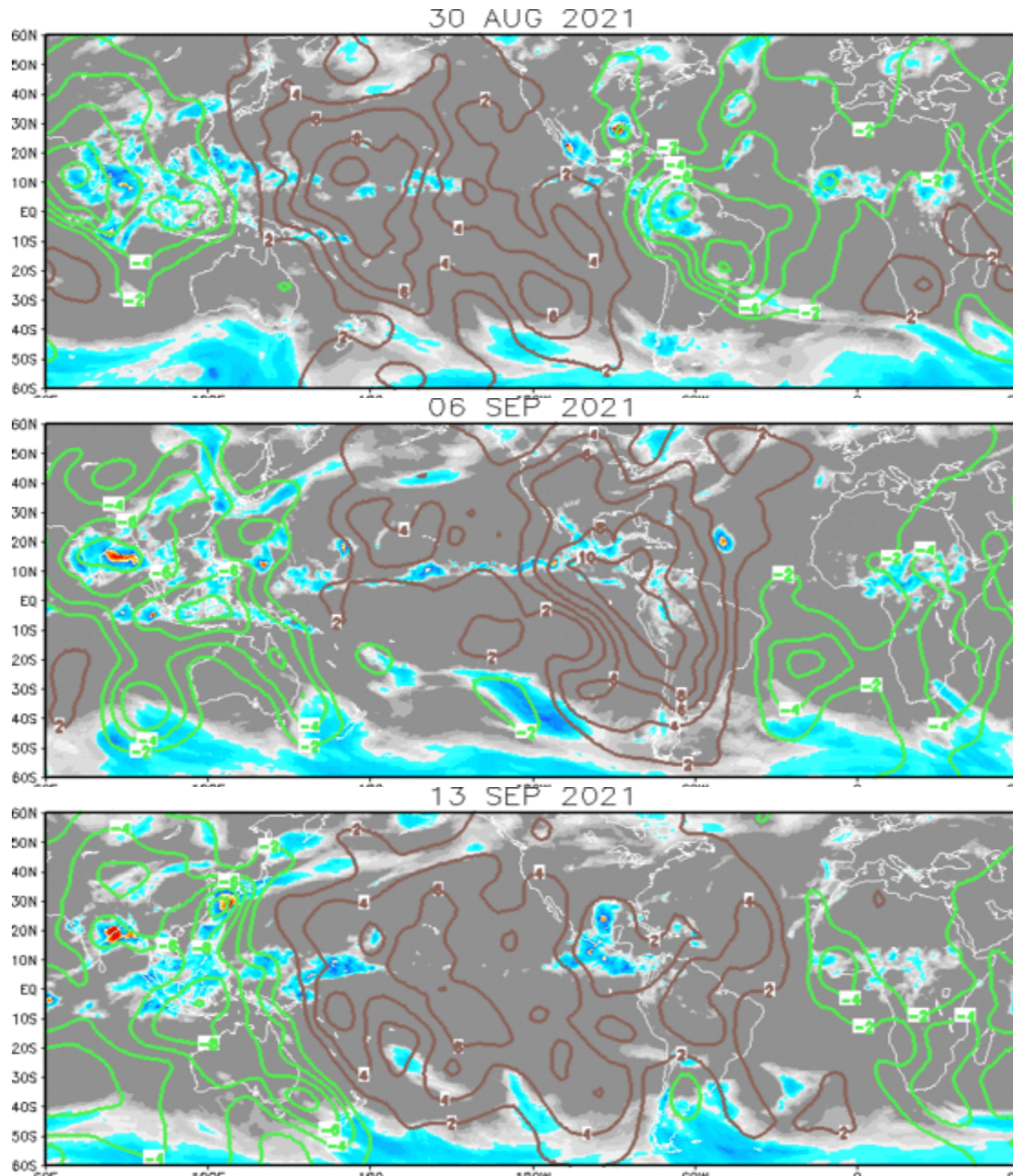
Green: Enhanced Divergence

Brown: Enhanced Convergence

Enhanced divergence aloft was favorable for Atlantic tropical cyclone activity.

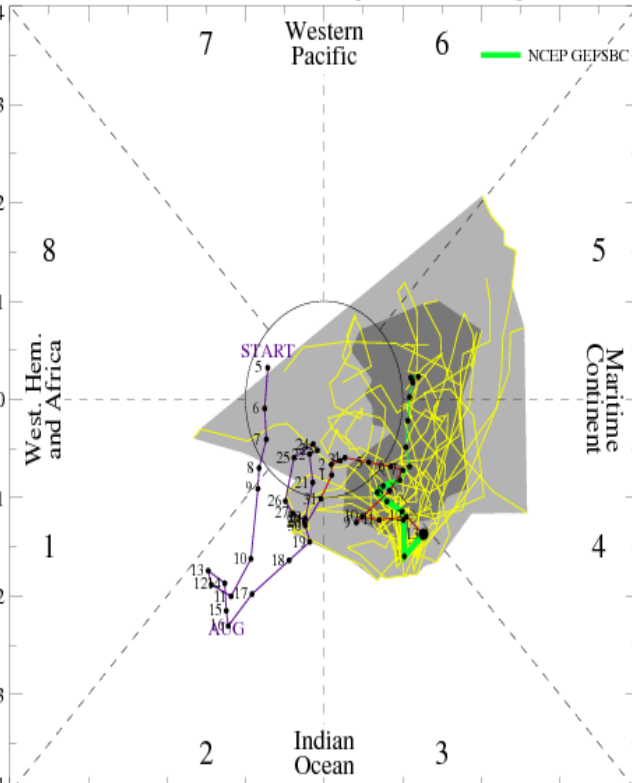
A suppressed signal began to overspread the Americas, note Hurricane Larry over the central Atlantic.

The broad-scale pattern remained largely unchanged during the past week.

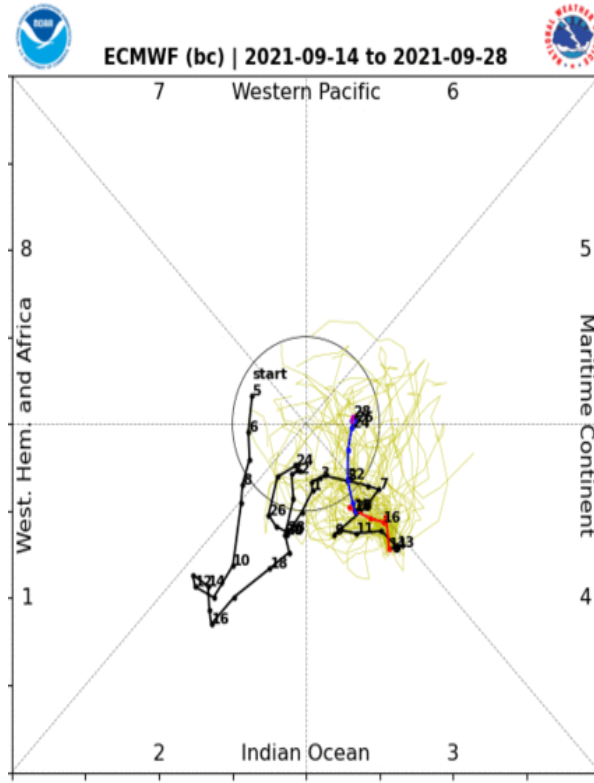


# MJO Observation/Forecast

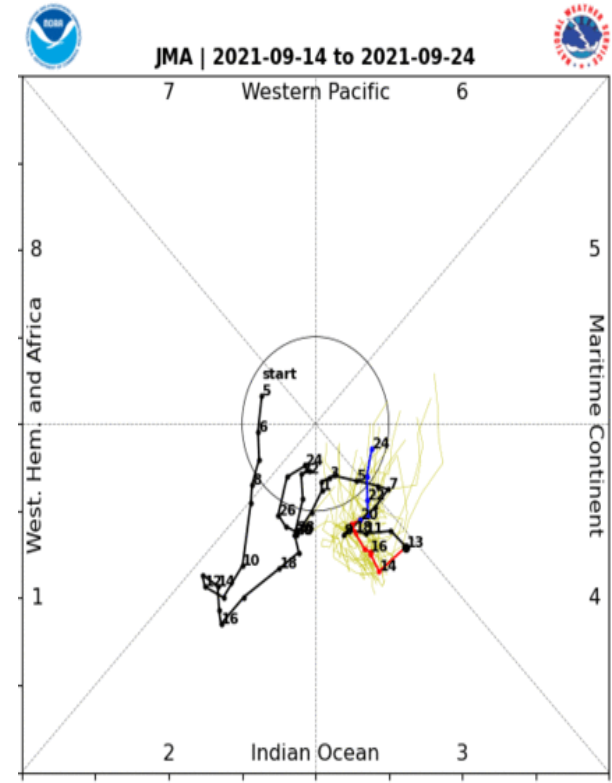
[RMM1, RMM2] forecast for Sep-14-2021 to Sep-28-2021



GEFS



ECMWF



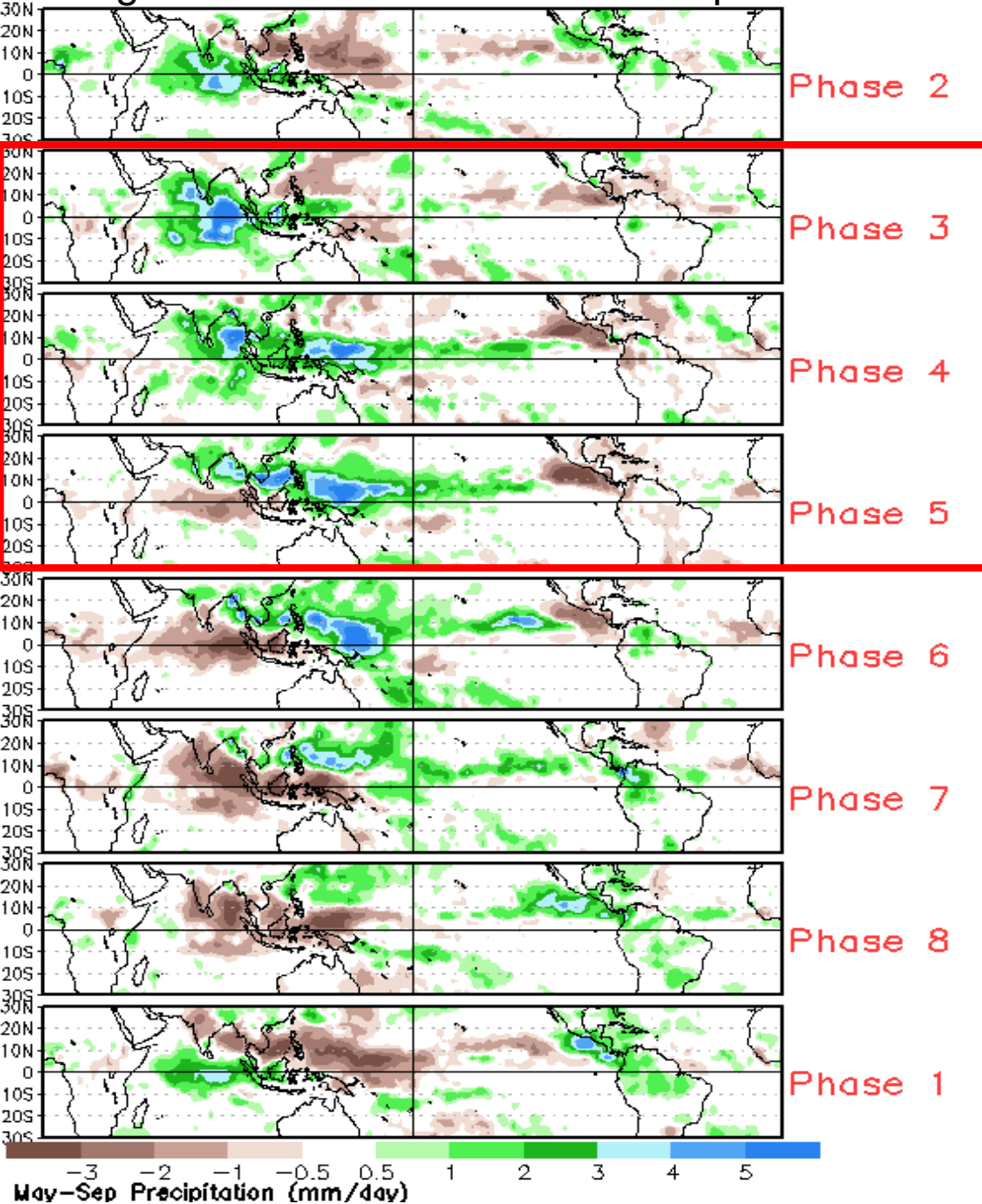
JMA

Dynamical models favor limited eastward propagation during Week-1.

Some eastward propagation across the Maritime Continent is favored for Week-2, especially by the GEFS.

Note the large spread of solutions from individual ensemble members – a few even approaching Phase-1!

# Average Conditions when the MJO is present

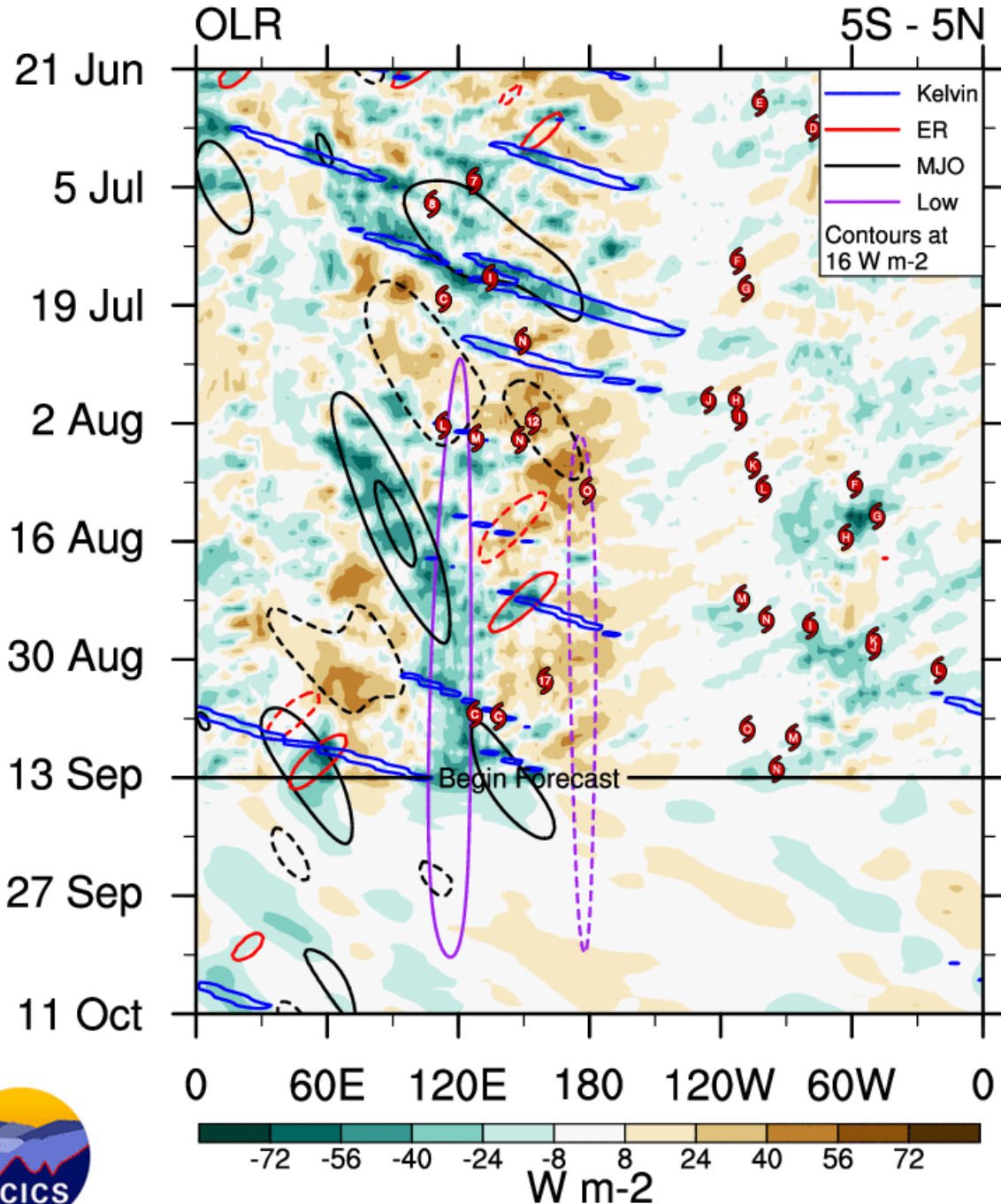


CAVEAT: These panels are representative of robust MJO events.



**MJO** activity was apparent during early August.

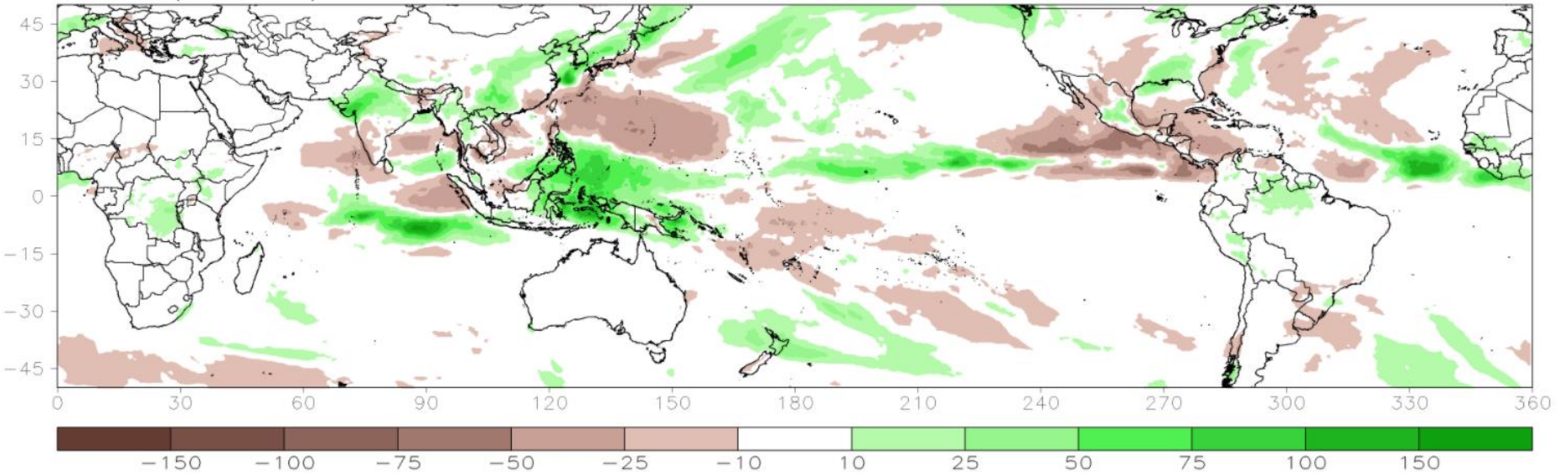
**Low frequency** contours have re-appeared, and are fairly consistent with La Niña conditions (though perhaps displaced a bit to the west).





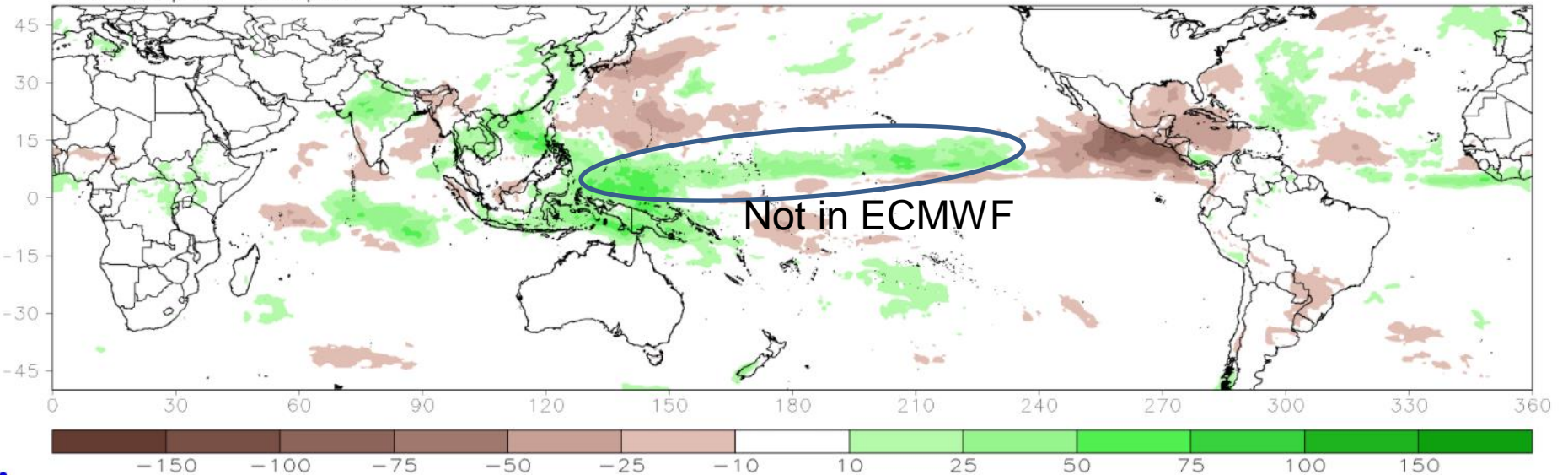
### GEFSv12 00z Ensemble Mean: Week1 Total Rainfall Anomaly (mm)

Valid: 15Sep2021-21Sep2021



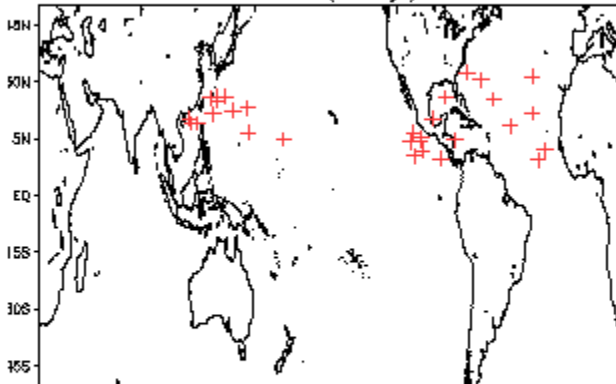
### GEFSv12 00z Ensemble Mean: Week2 Total Rainfall Anomaly (mm)

Valid: 22Sep2021-28Sep2021

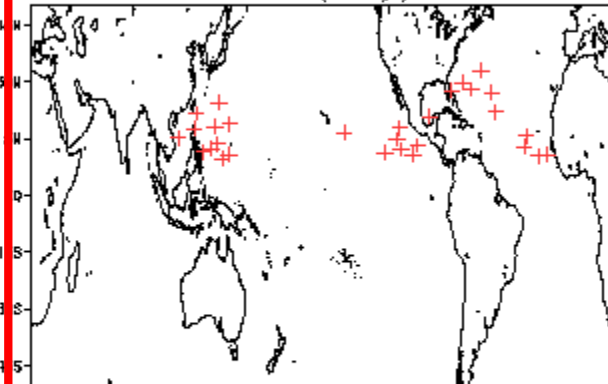


# September Tropical Storm Formation by MJO phase

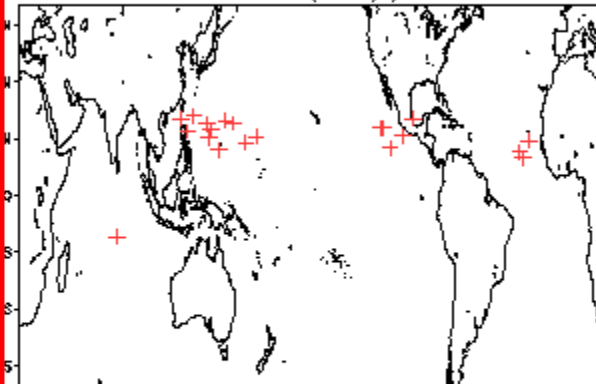
Phase 1 (81 days) 31 storms



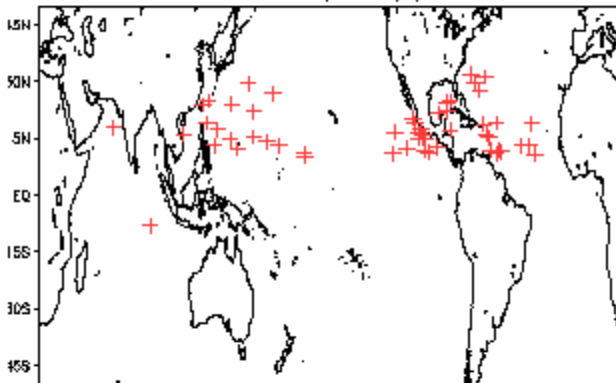
Phase 4 (70 days) 30 storms



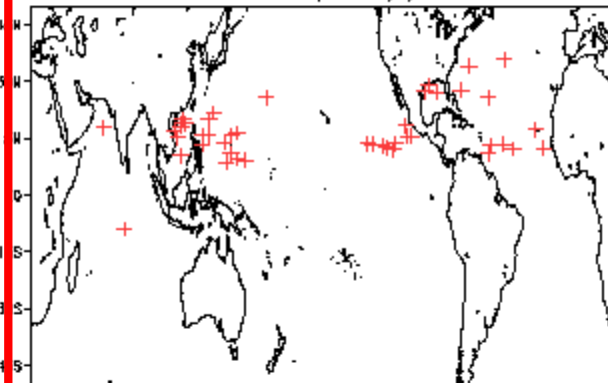
Phase 7 (38 days) 22 storms



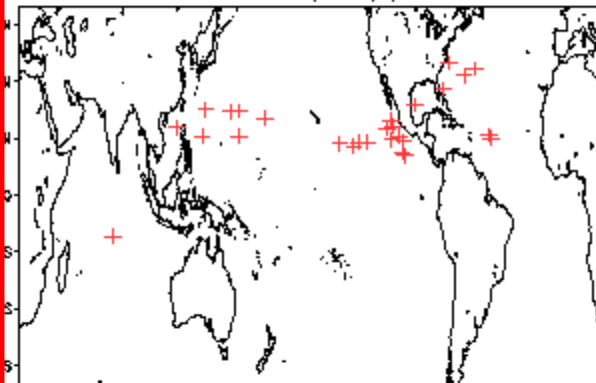
Phase 2 (122 days) 56 storms



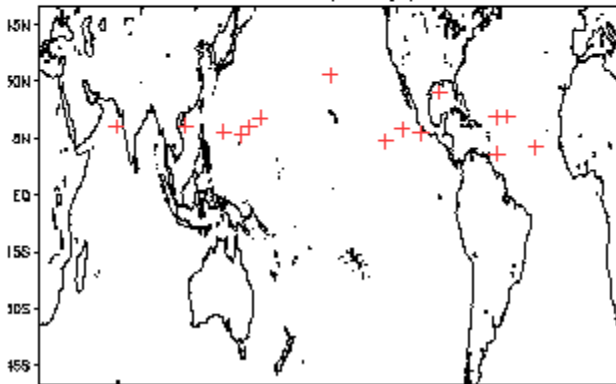
Phase 5 (106 days) 45 storms



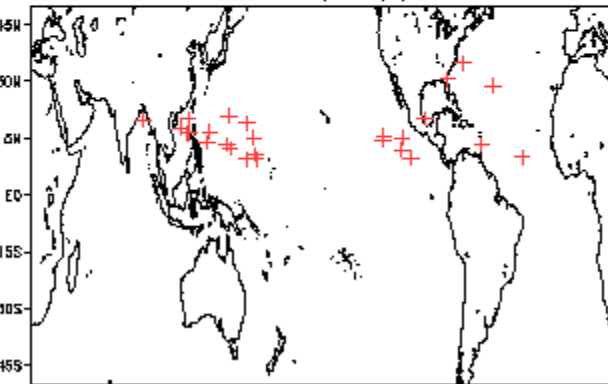
Phase 8 (67 days) 29 storms



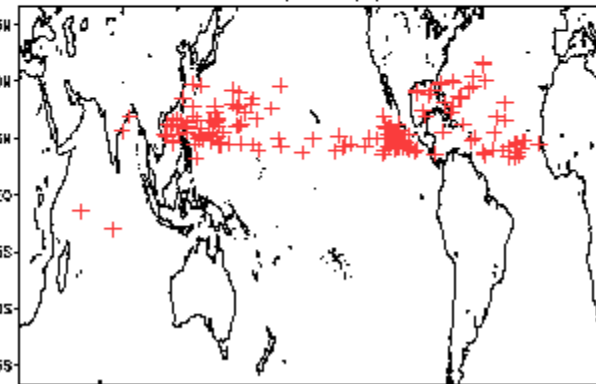
Phase 3 (51 days) 16 storms



Phase 6 (61 days) 27 storms



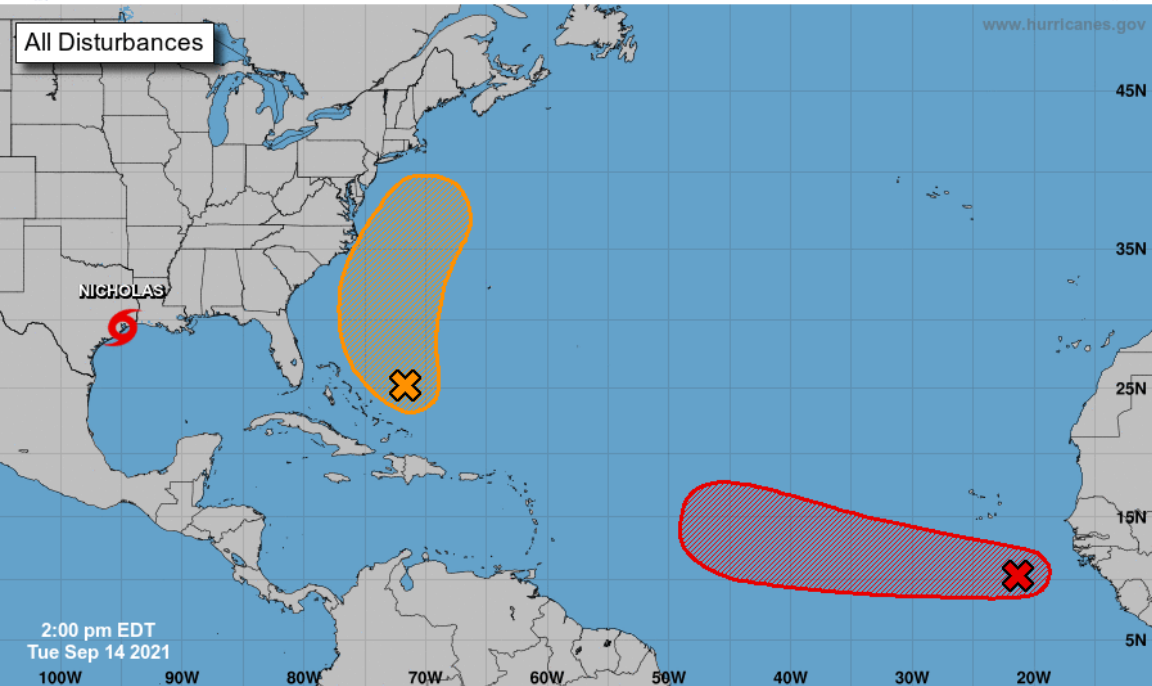
Null (393 days) 189 storms





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



2:00 pm EDT  
Tue Sep 14 2021

100W 90W 80W 70W 60W 50W 40W 30W 20W

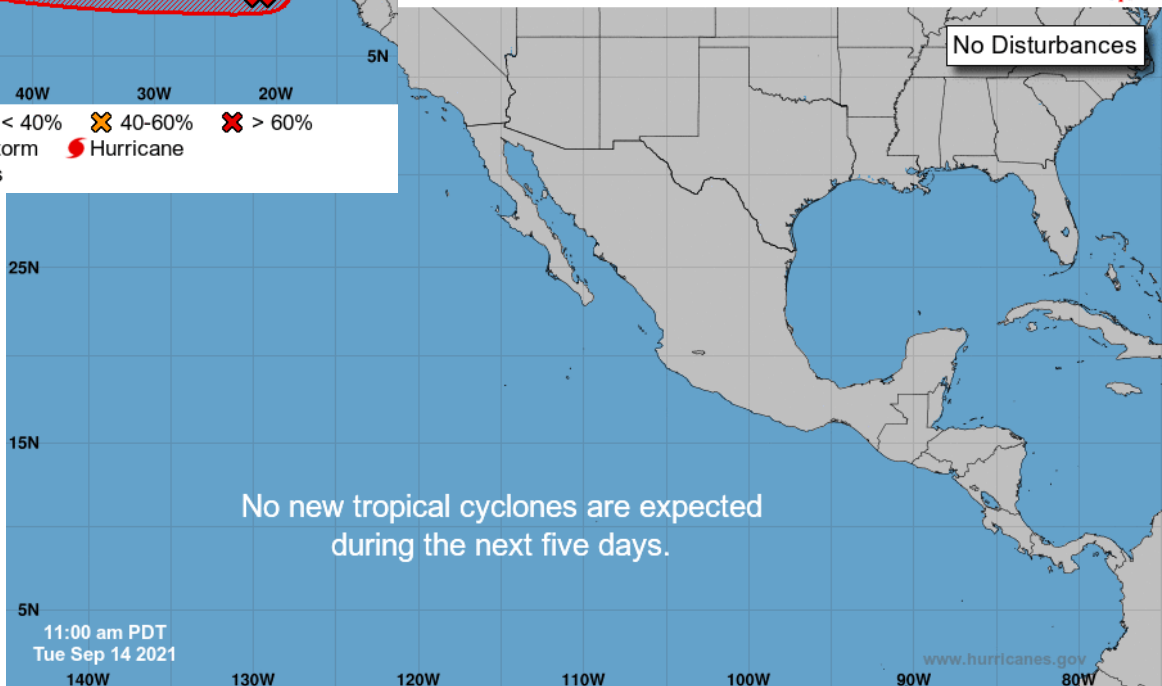
Current Disturbances and Five-Day Cyclone Formation Chance:   
 X < 40%    X 40-60%    X > 60%  
 Tropical or Sub-Tropical Cyclone:    O Depression    O Storm    O Hurricane  
 O Post-Tropical Cyclone or Remnants

www.hurricanes.gov

45N  
35N  
25N  
15N  
5N

## Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



No Disturbances

11:00 am PDT  
Tue Sep 14 2021

140W 130W 120W 110W 100W 90W 80W

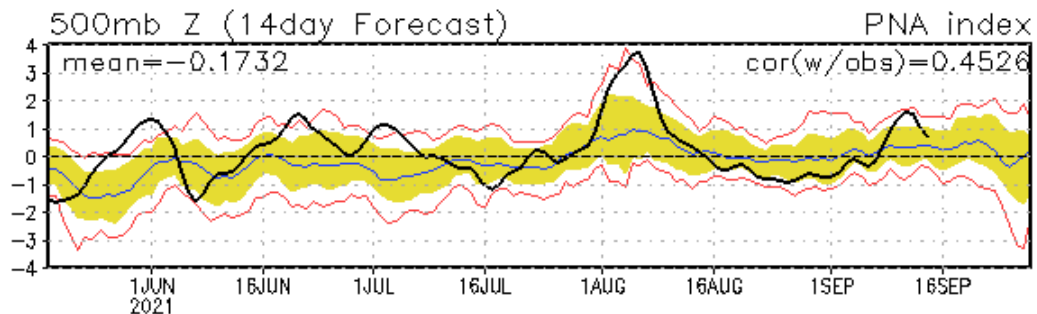
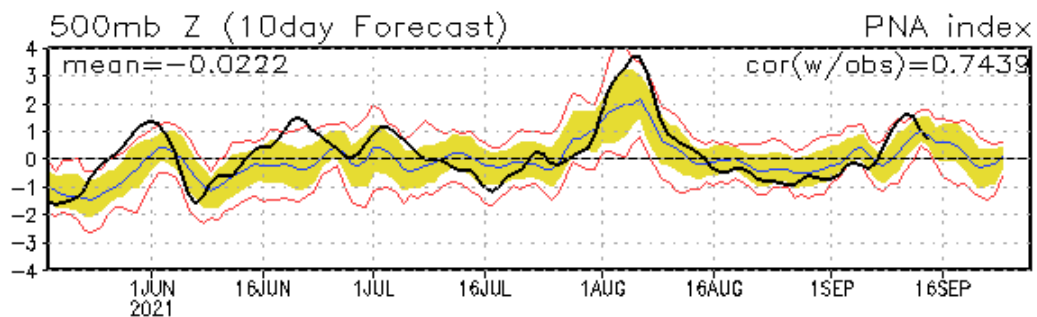
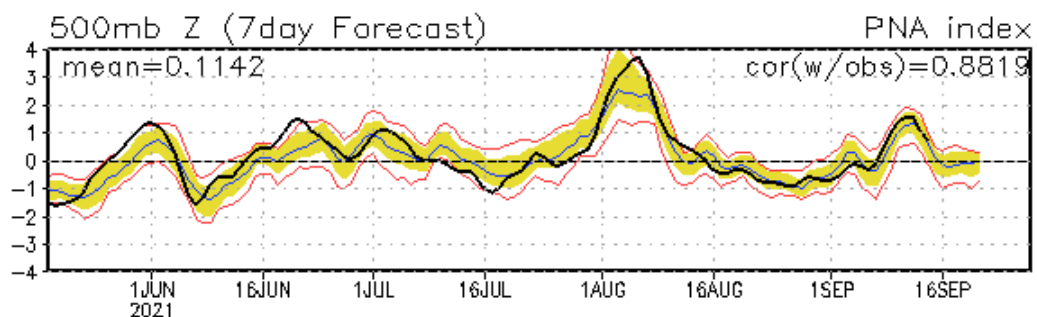
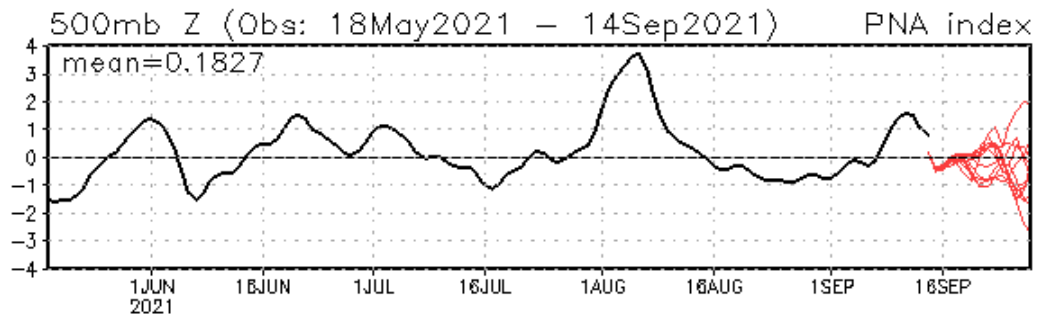
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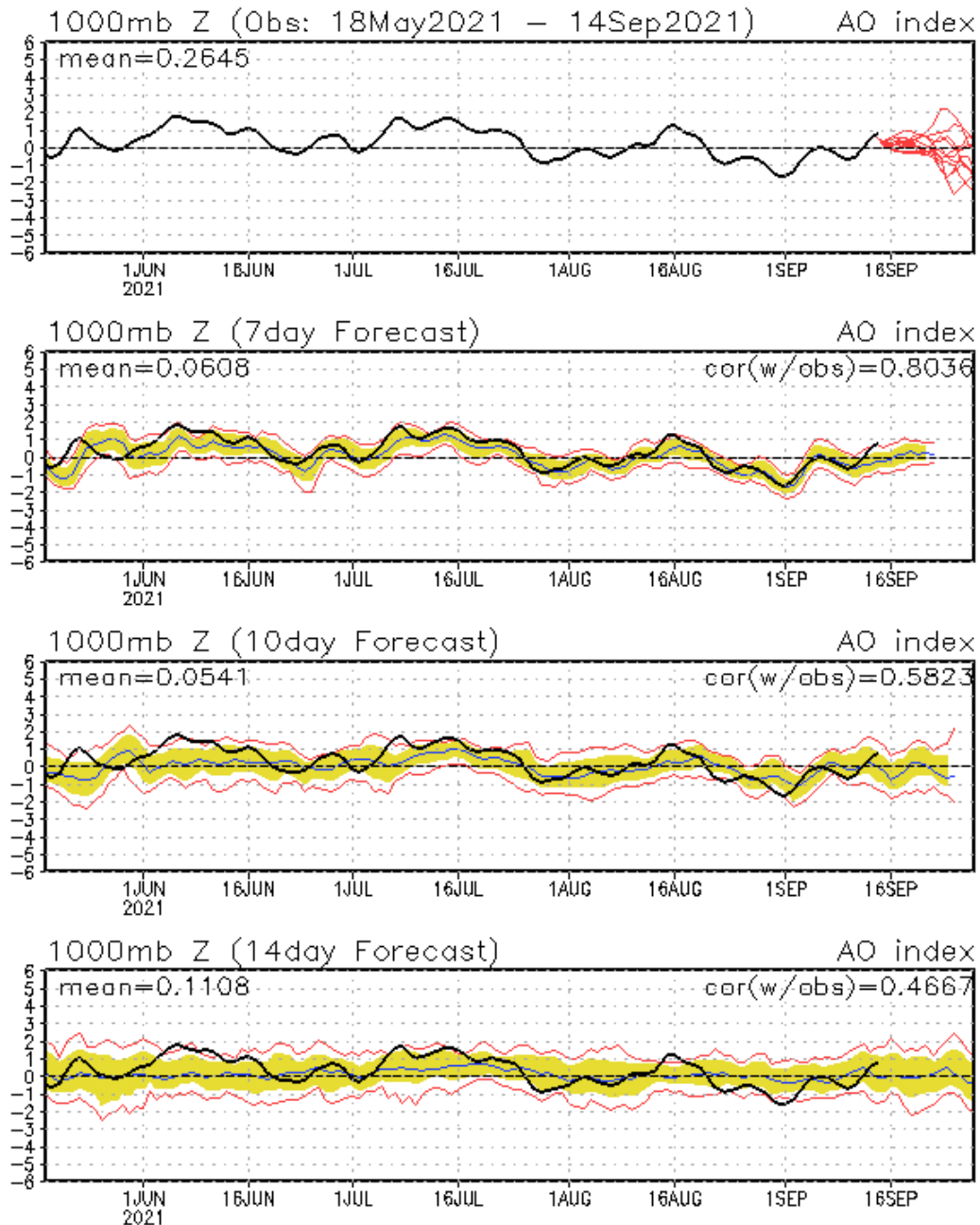
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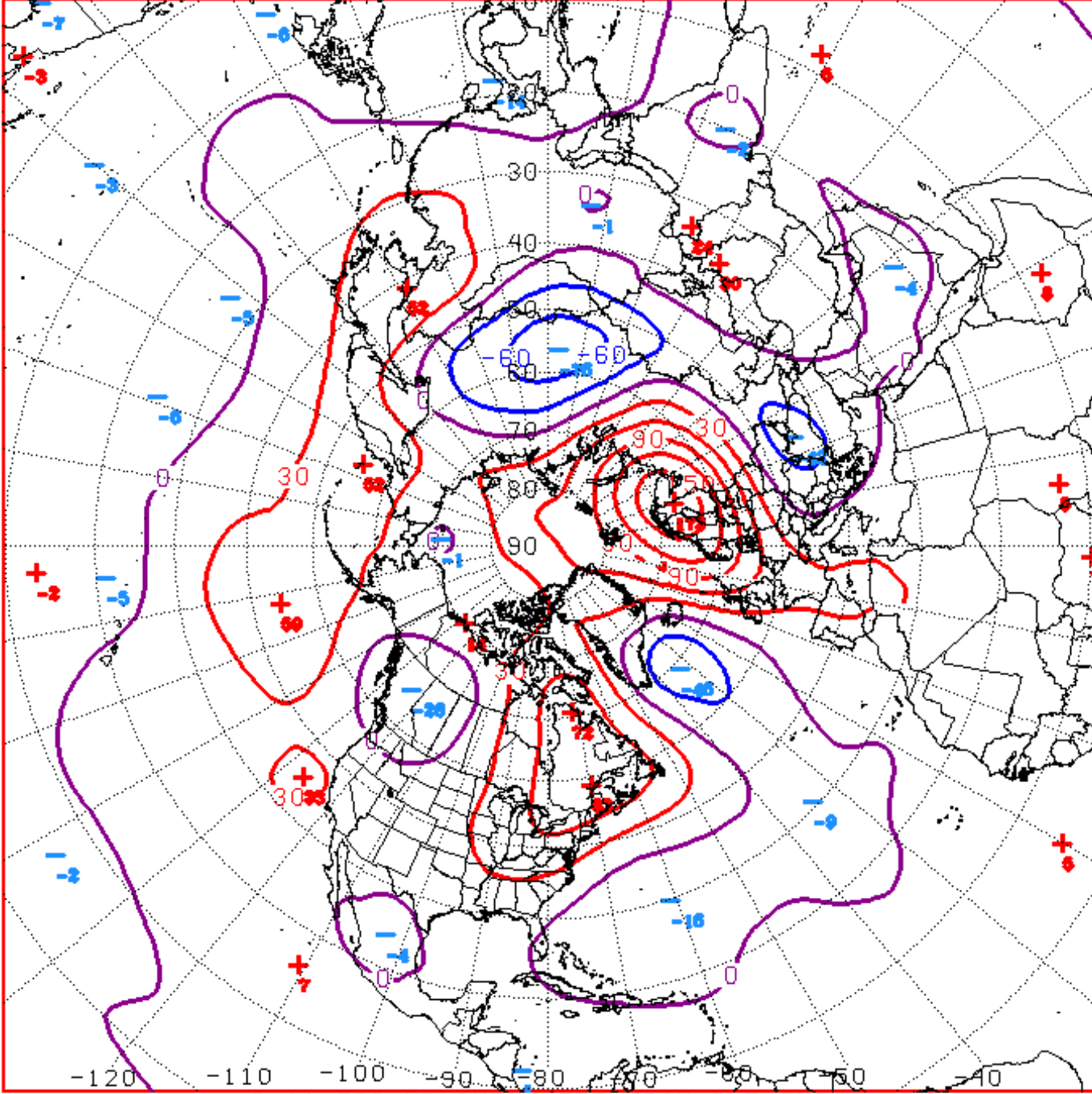


## PNA: Observed & ENSM forecasts



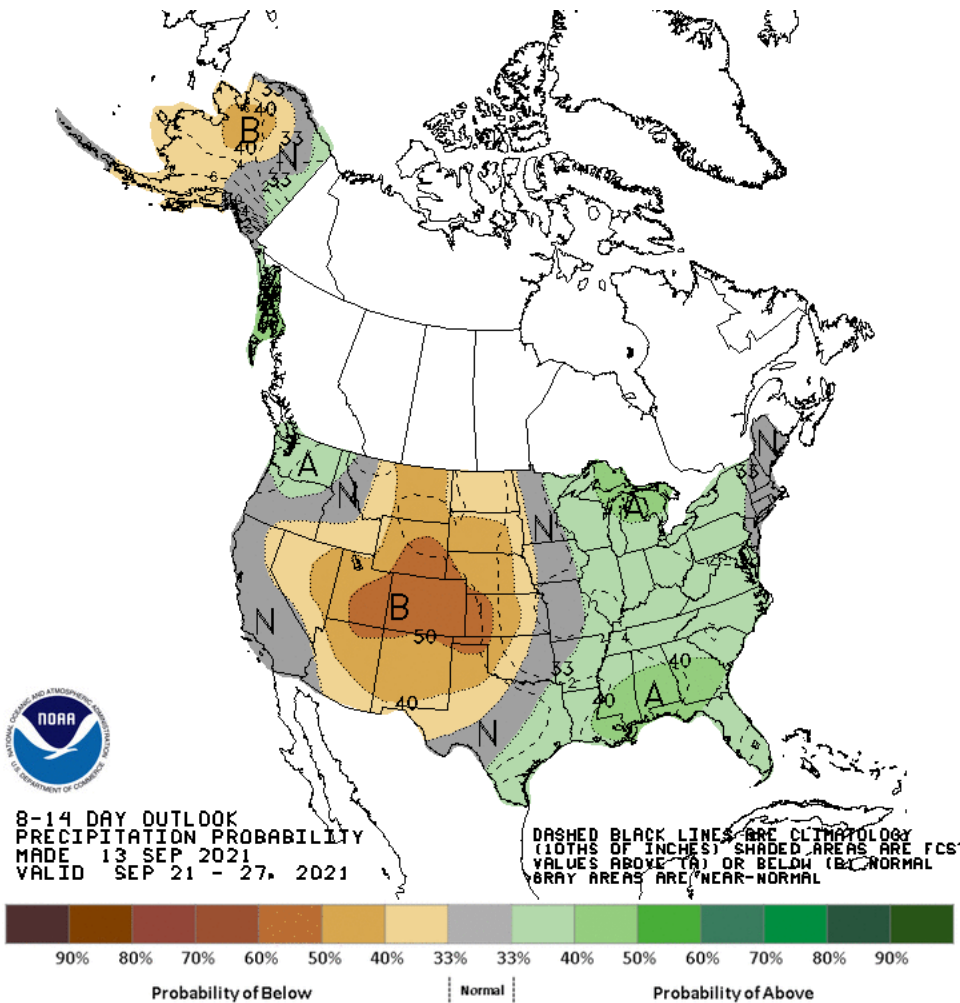
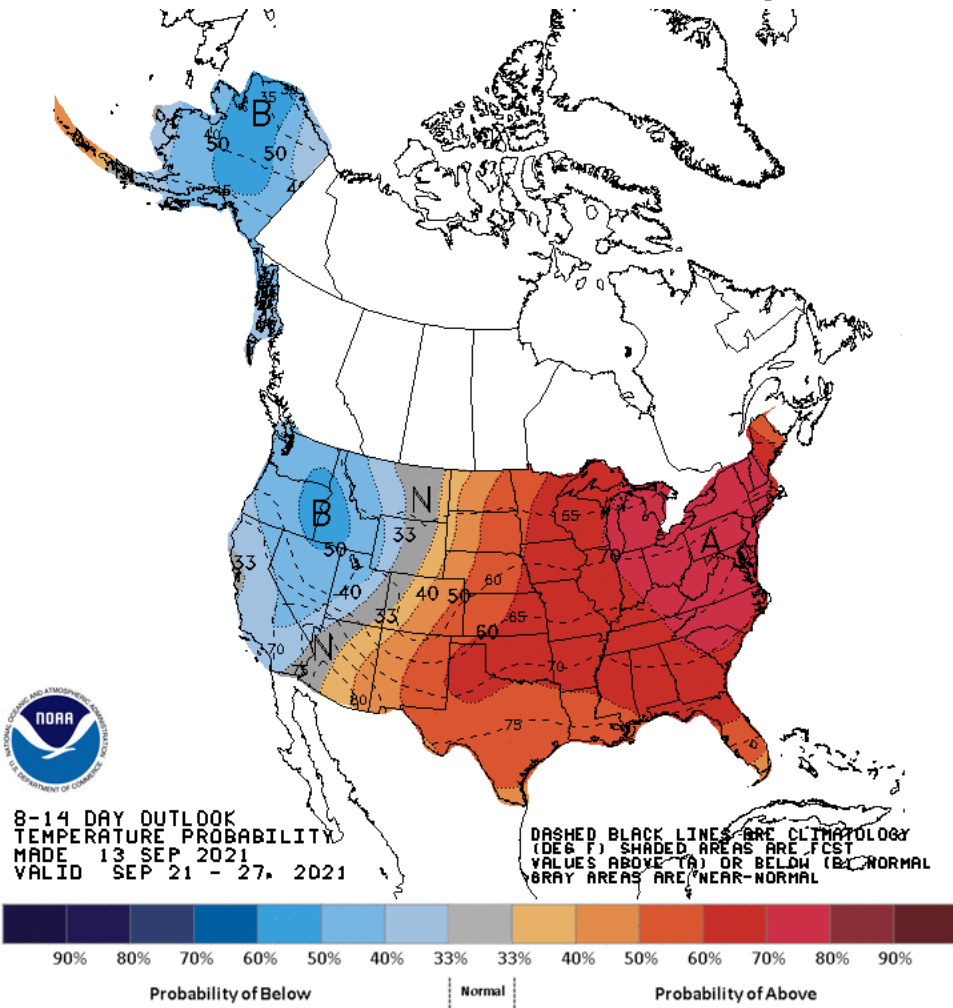
## AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM  
CPC MAP MADE SEP 14 2021 1359 UTC CNTD SEP 25 2021

# Week 2 – Temperature and Precipitation



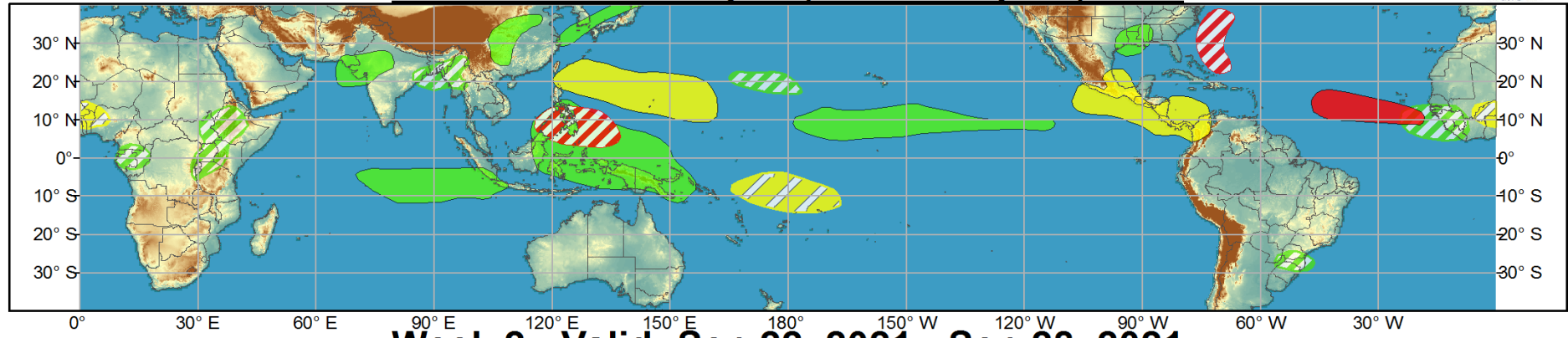
Since we are in an amplified, stable pattern today's outlooks are likely to be similar.



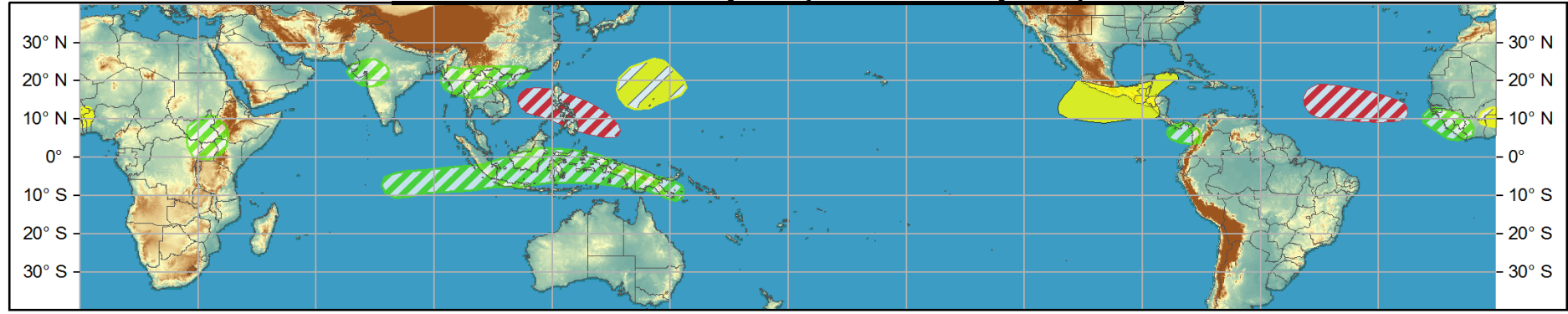


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