

# Global Tropics Hazards And Benefits Outlook

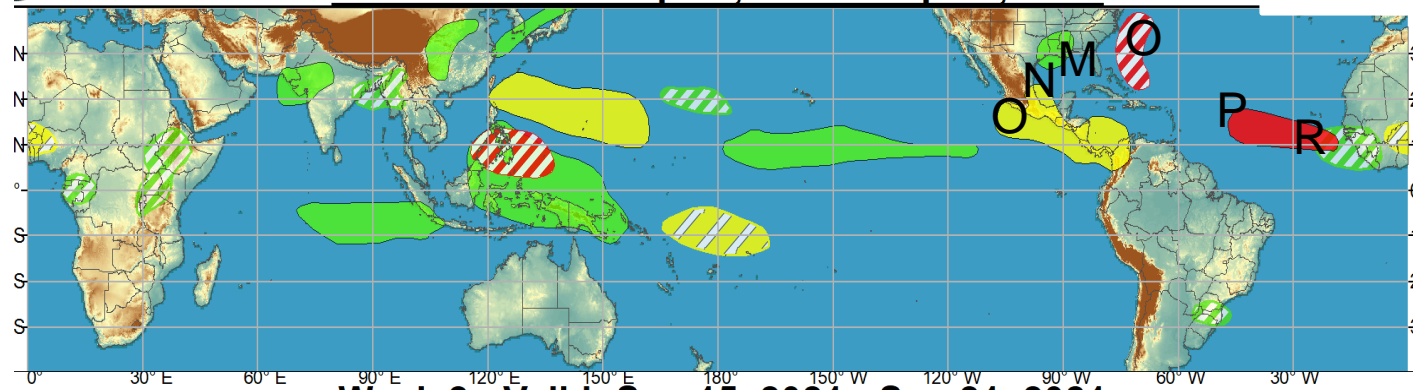
9/21/2021

Tom Collow

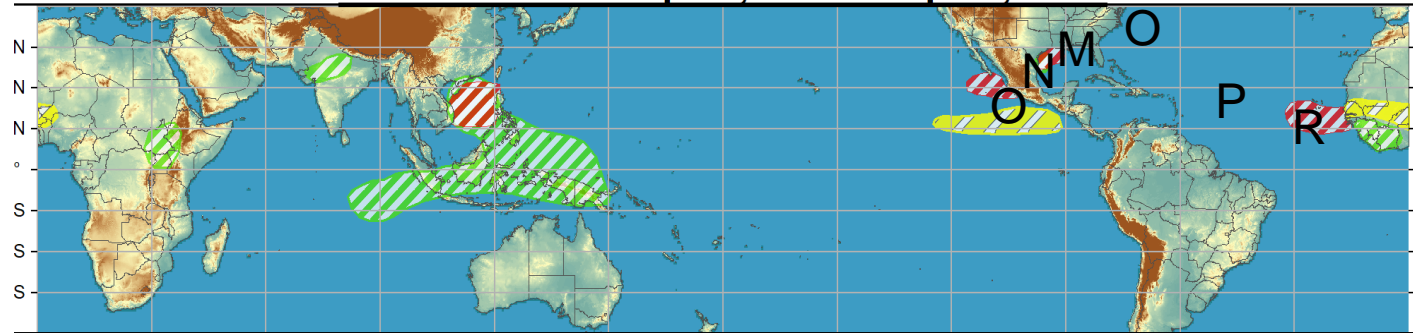
## Outline

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

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



Week 2 - Valid: Sep 15, 2021 - Sep 21, 2021



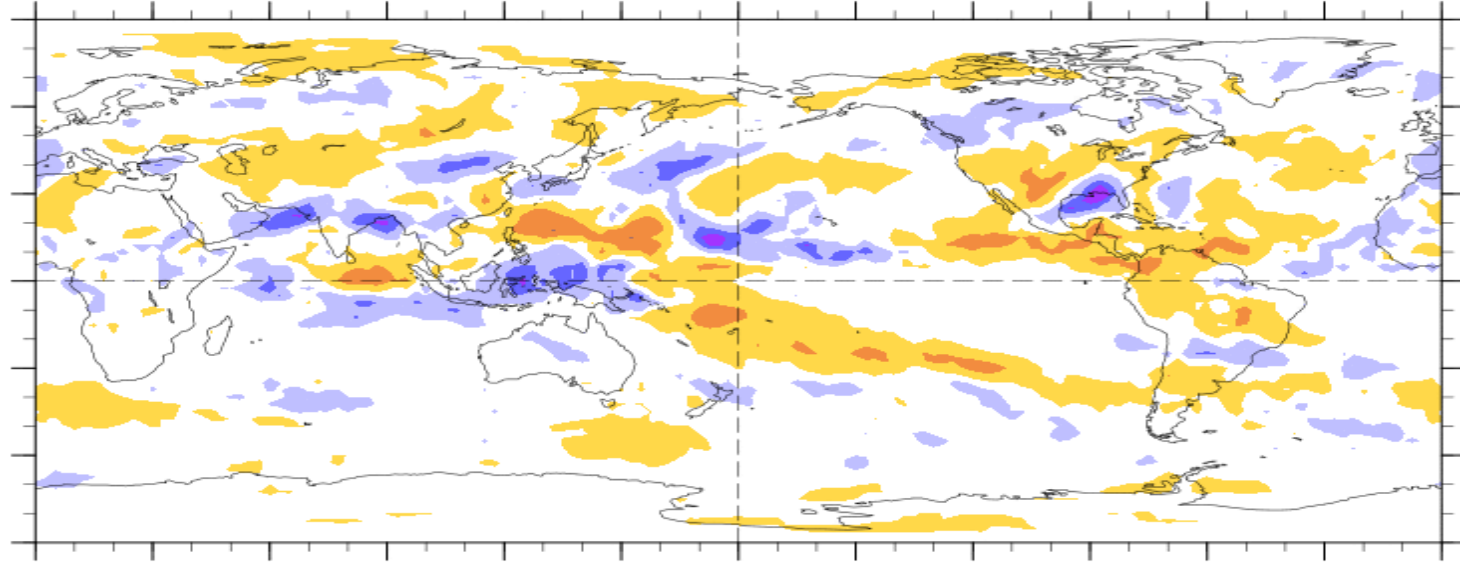
# Outlook Review

TCs formed since 9/8

- Mindy (9/8)
- Olaf (9/8)
- Nicholas (9/12)
- Odette (9/17)
- Peter (9/18)
- Rose (9/18)

7-Day Average OLR Anomaly

2021/09/13 - 2021/09/19



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

## **ENSO: (September 9, 2021 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.

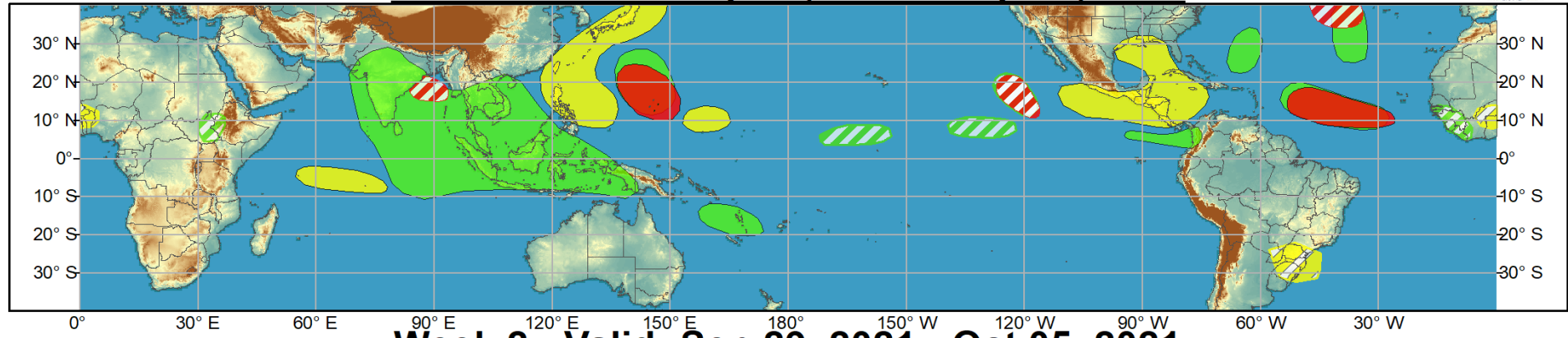
## **MJO and other subseasonal tropical variability:**

- Enhanced convection remains across the Indian Ocean and Maritime Continent, consistent with an active, but stationary MJO.
- Dynamical models agree in terms of a slight eastward progression of the intraseasonal signal, but with the amplitude remaining low.
- Increasing trades over the equatorial Pacific and a trend toward La Niña conditions continue to destructively interfere with the propagation of the MJO.
- Suppressed convection has been observed across much of the Western Hemisphere, although tropical activity remains modestly active across the Atlantic MDR coinciding with the peak of hurricane season.

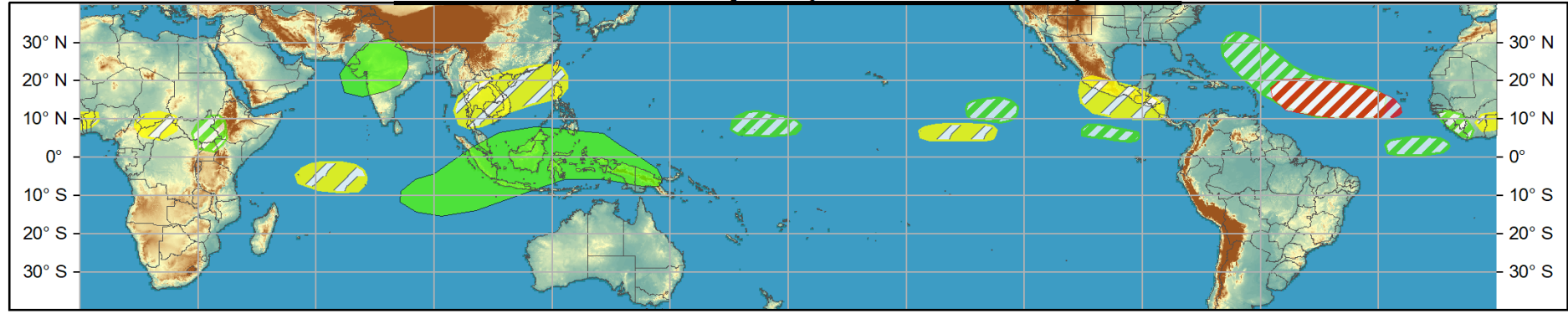


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Sep 22, 2021 - Sep 28, 2021



## Week 2 - Valid: Sep 29, 2021 - Oct 05, 2021

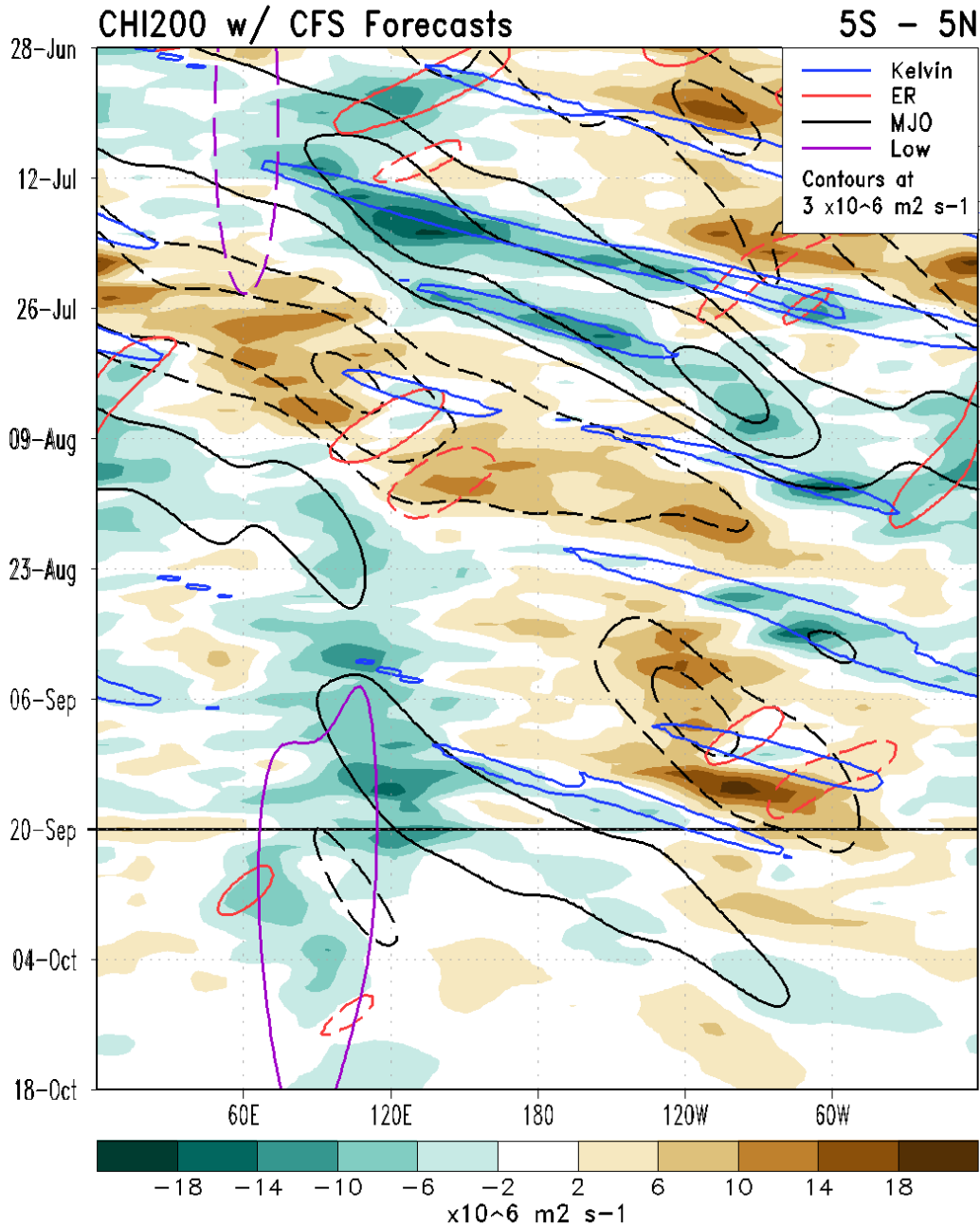


Produced: 09/21/2021  
Forecaster: Collow

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.





Increasing low frequency signal (purple)

CFS indicates continued MJO propagation but likely just increased Kelvin wave activity over the Pacific.



# IR Satellite & 200-hpa Velocity Potential Anomalies

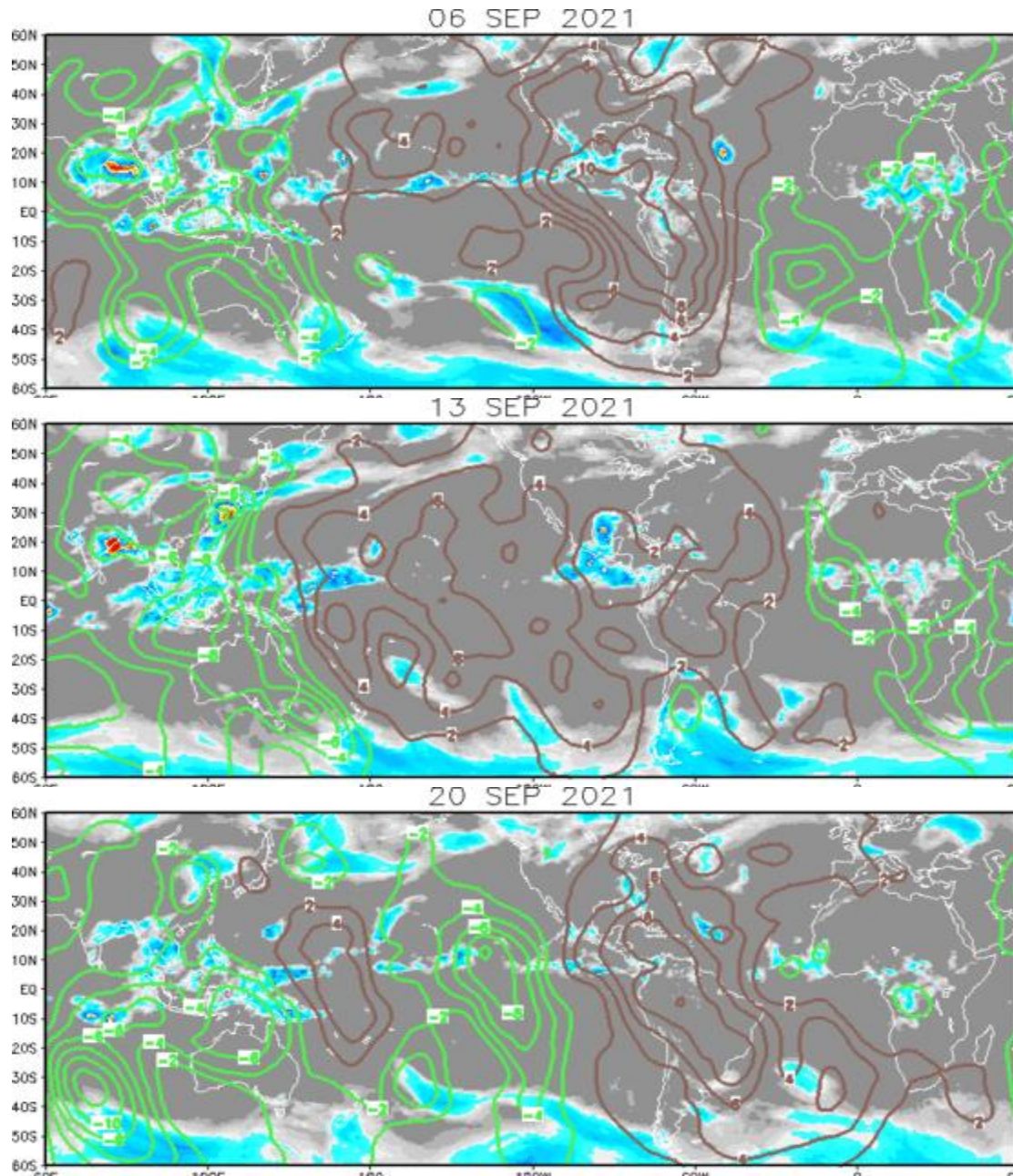
Green: Enhanced Divergence

Brown: Enhanced Convergence

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

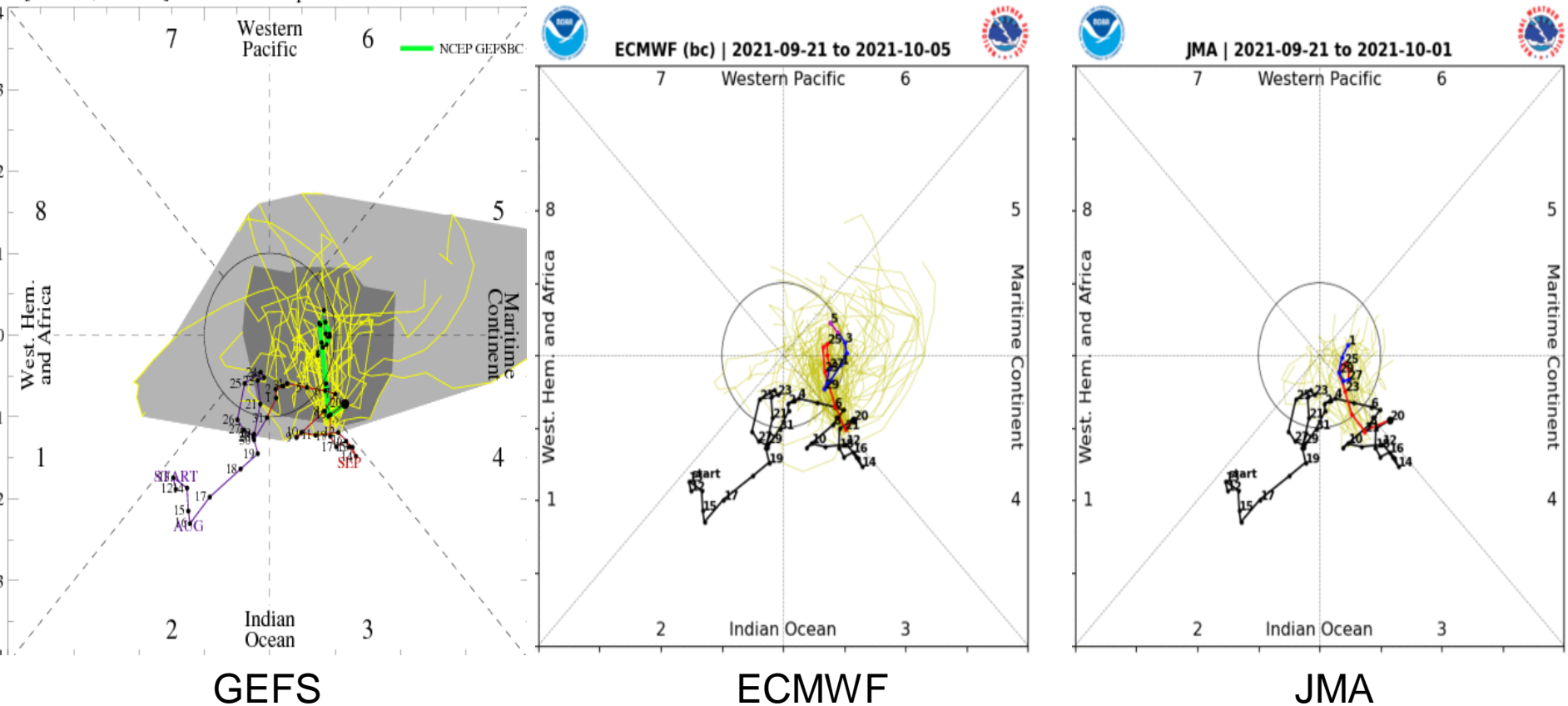
The broad-scale pattern remained largely unchanged during the past week.

Low frequency signal remains fairly stable, with a Kelvin wave seen across the central Pacific.



# MJO Observation/Forecast

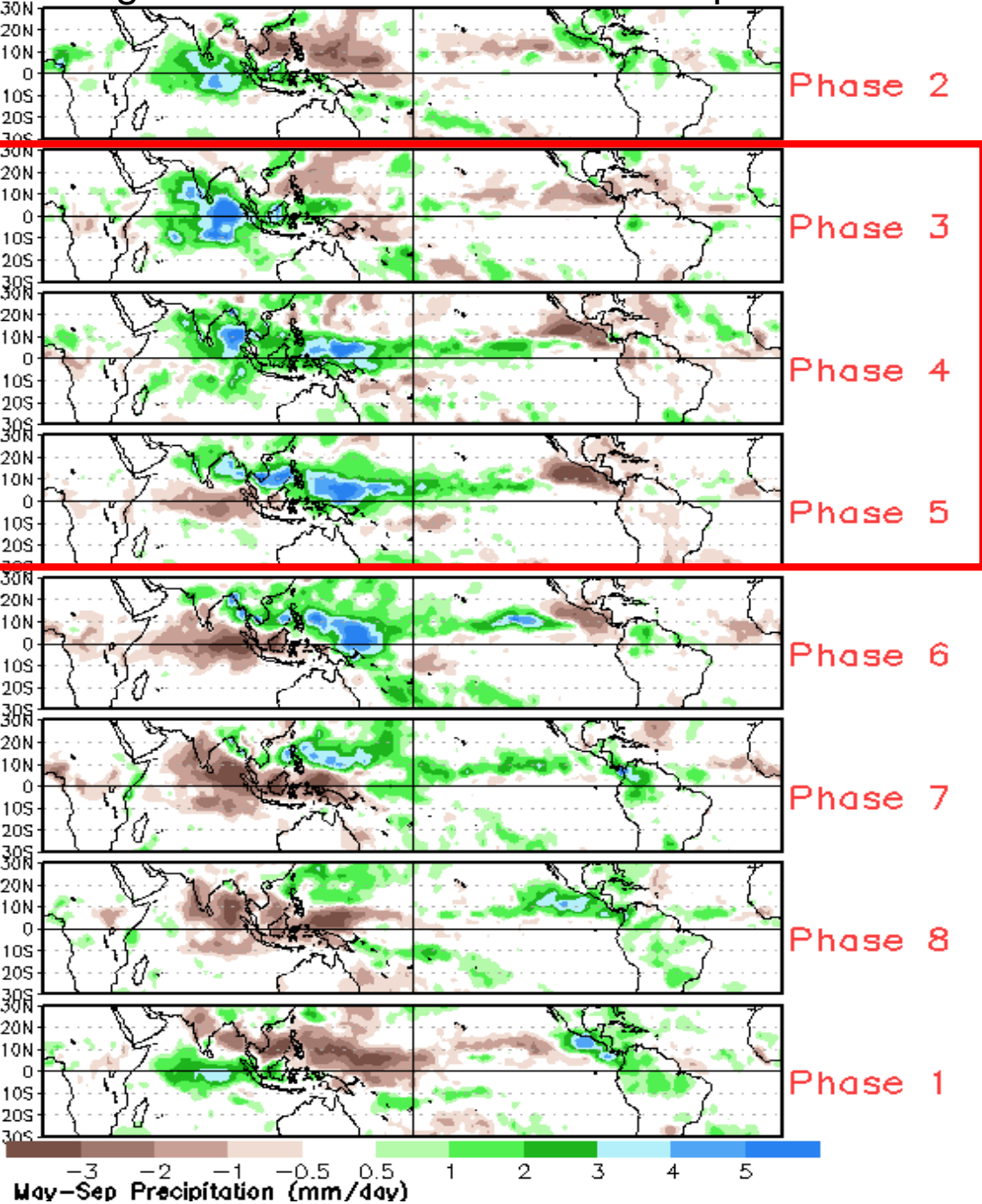
[RMM1, RMM2] forecast for Sep-21-2021 to Oct-05-2021



Dynamical models favor slight eastward propagation during the next 2 weeks over the Maritime Continent.

Amplitude remains weak, with some more robust ensemble members noted. Although this is likely related to enhanced Kelvin wave activity rather than a true MJP propagation.

# Average Conditions when the MJO is present

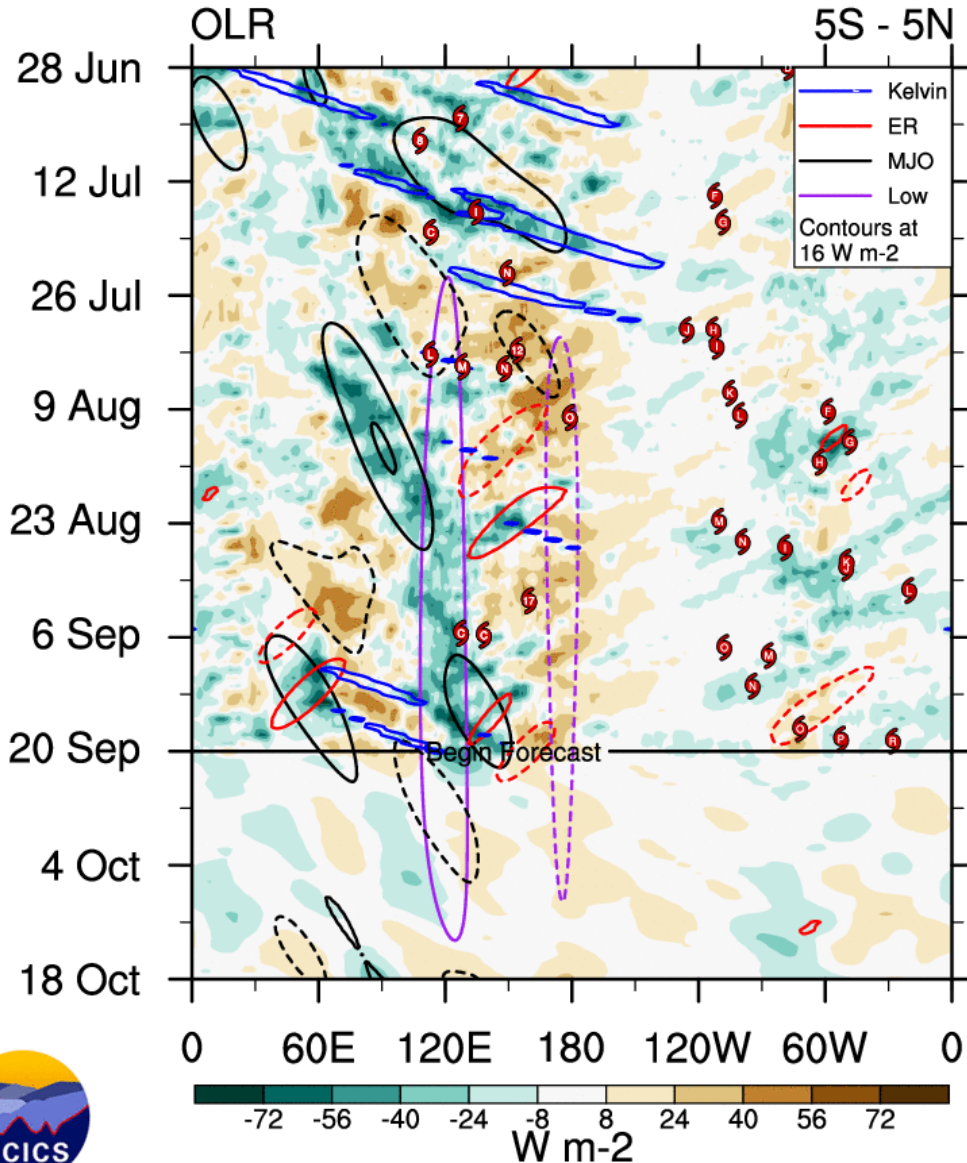


CAVEAT: These panels are representative of robust MJO events.



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

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



[ncics.org/mjo](http://ncics.org/mjo)

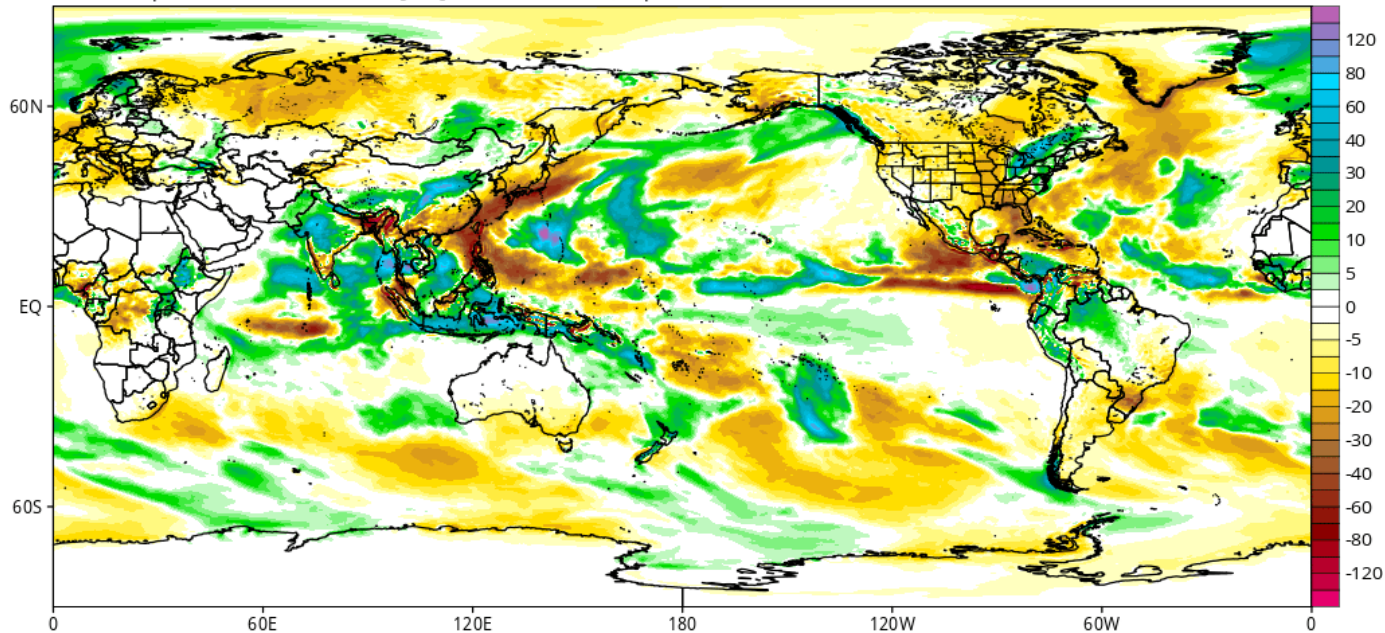
Tue 2021-09-21 15:12 UTC

Carl Schreck  
[carl\\_schreck@ncsu.edu](mailto:carl_schreck@ncsu.edu)

GEFS Accumulated Precip. Anomaly (mm) from 00z22Sep2021 to 00z29Sep2021 (Days 2-8)

Init: 00z Sep 21 2021 Forecast Hour: [192] valid at 00z Wed, Sep 29 2021

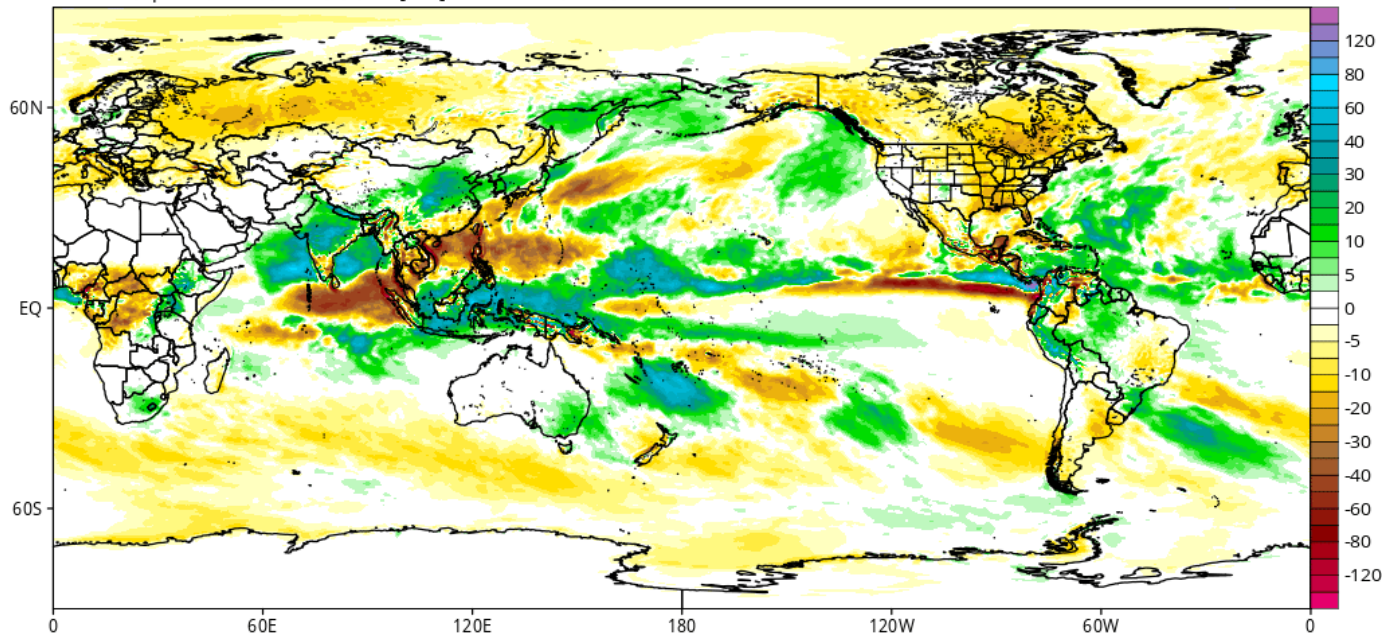
TROPICALTIDBITS.COM



GEFS Accumulated Precip. Anomaly (mm) from 00z29Sep2021 to 00z06Oct2021 (Days 9-15)

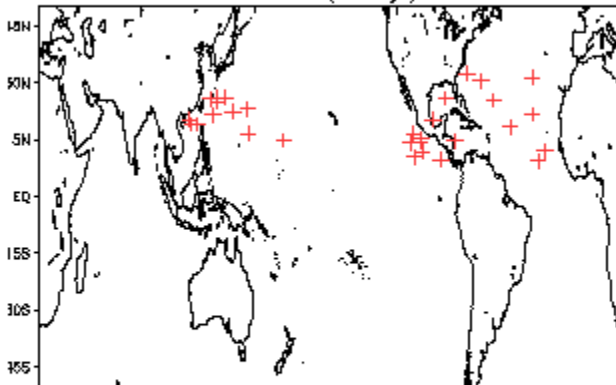
Init: 00z Sep 21 2021 Forecast Hour: [360] valid at 00z Wed, Oct 06 2021

TROPICALTIDBITS.COM

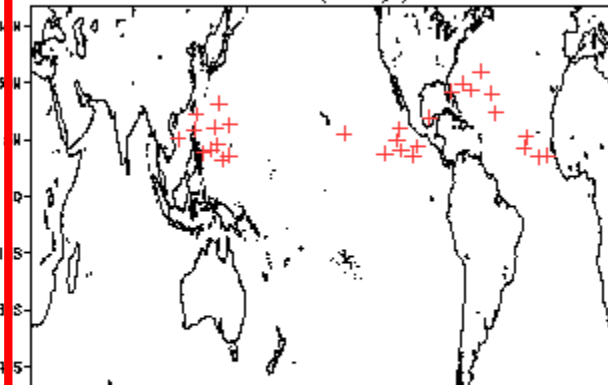


# September Tropical Storm Formation by MJO phase

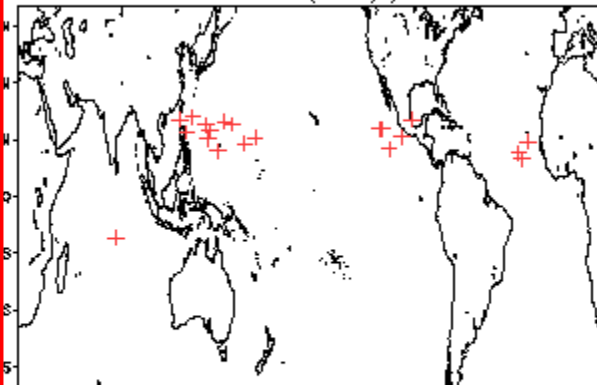
Phase 1 (81 days) 31 storms



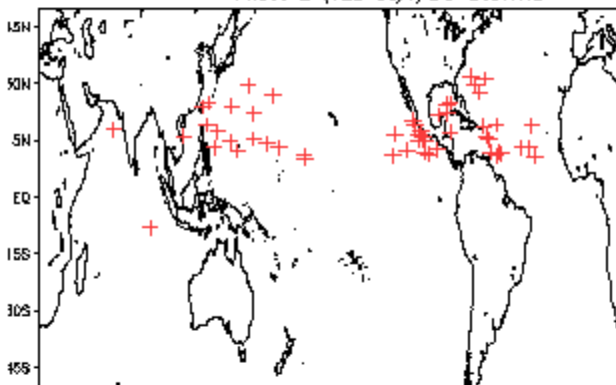
Phase 4 (70 days) 30 storms



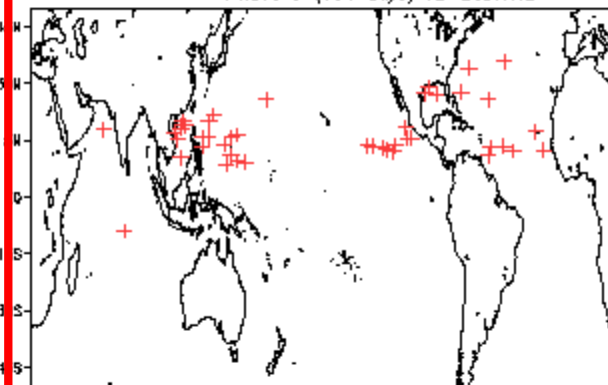
Phase 7 (38 days) 22 storms



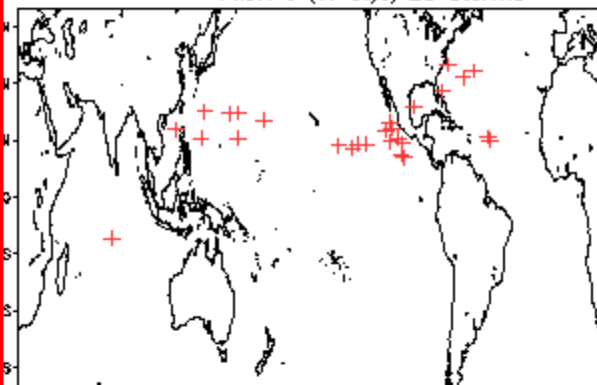
Phase 2 (122 days) 56 storms



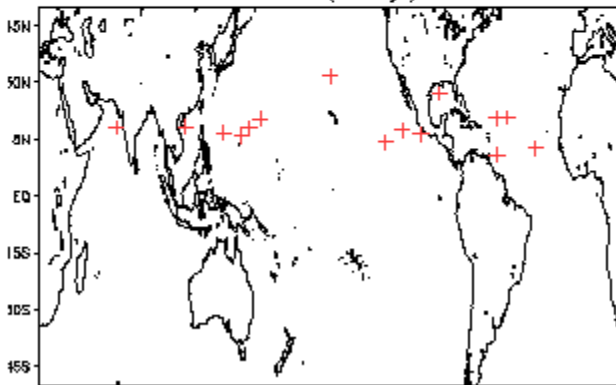
Phase 5 (106 days) 45 storms



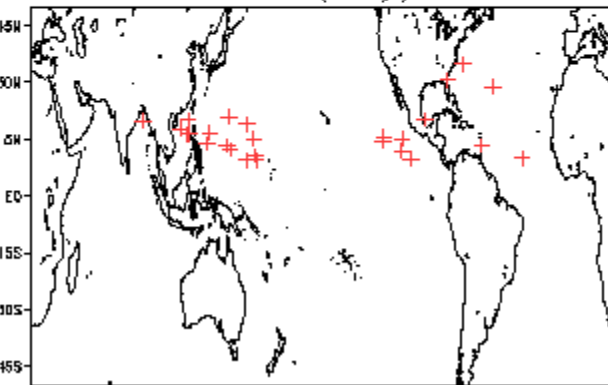
Phase 8 (67 days) 29 storms



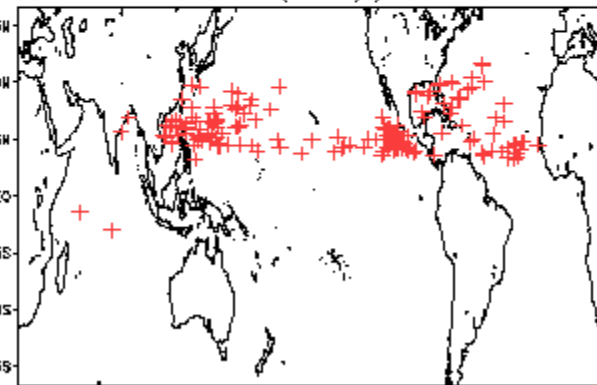
Phase 3 (51 days) 16 storms



Phase 6 (61 days) 27 storms



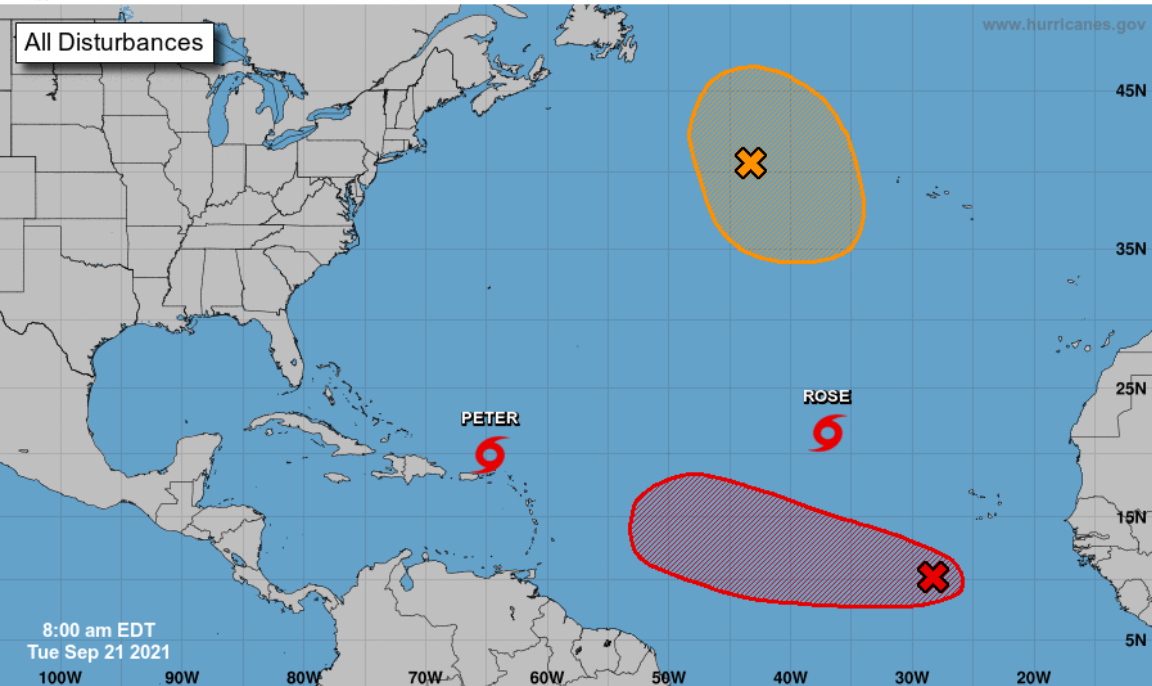
Null (393 days) 189 storms





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



All Disturbances

www.hurricanes.gov

8:00 am EDT  
Tue Sep 21 2021

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

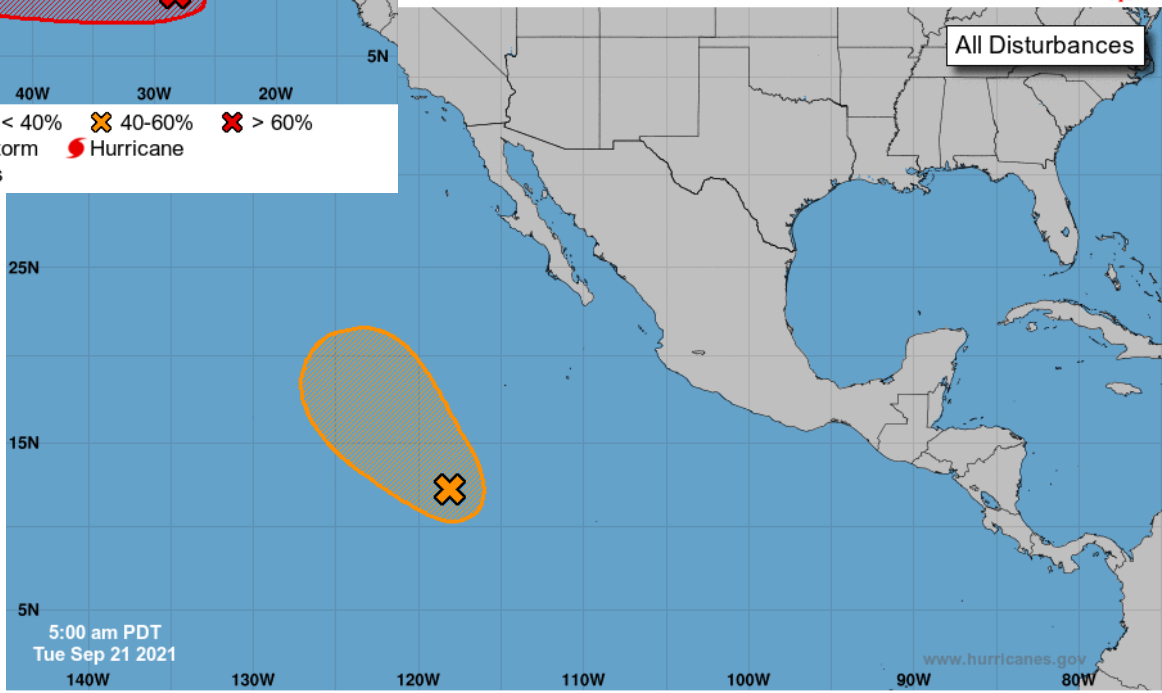
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

## Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



All Disturbances

www.hurricanes.gov

5:00 am PDT  
Tue Sep 21 2021

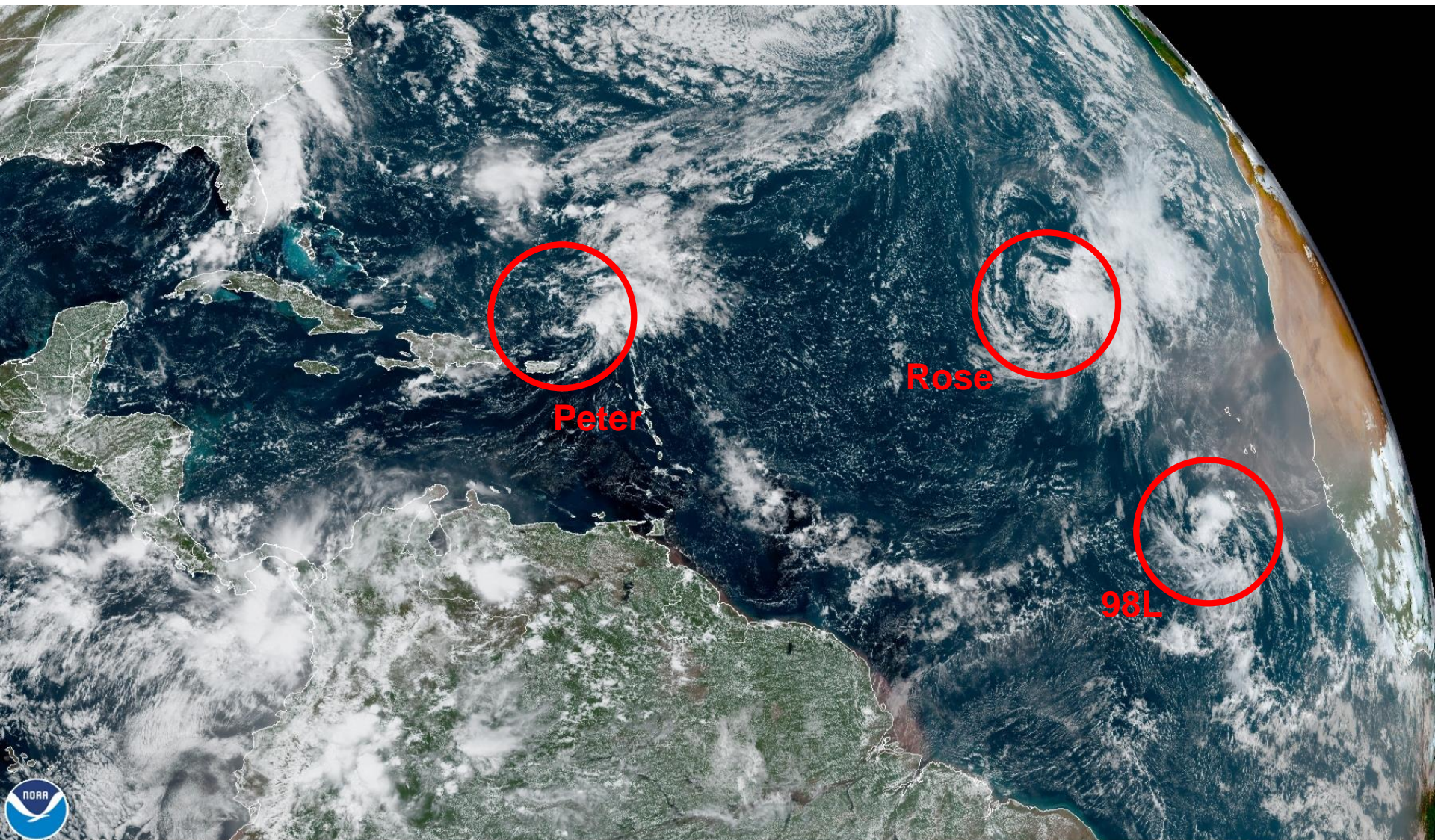
140W 130W 120W 110W 100W 90W 80W

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



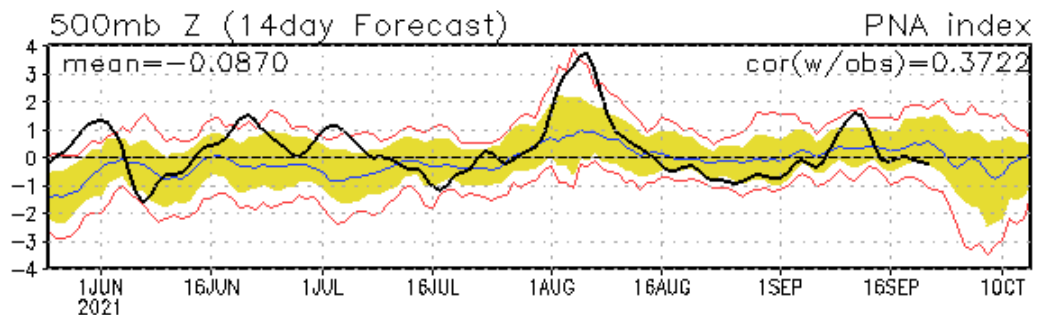
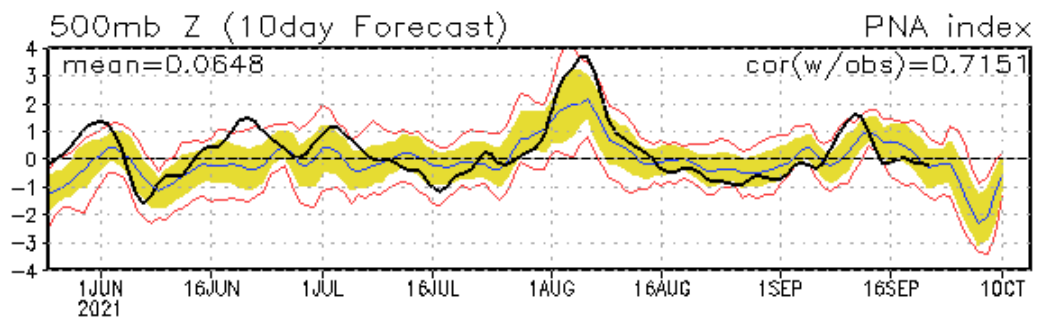
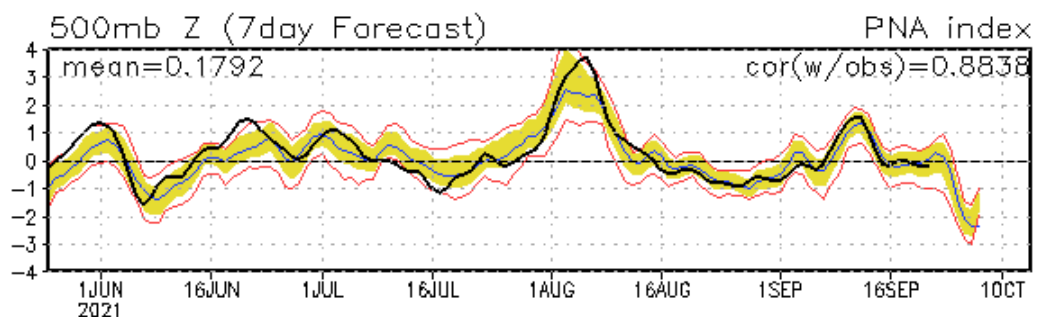
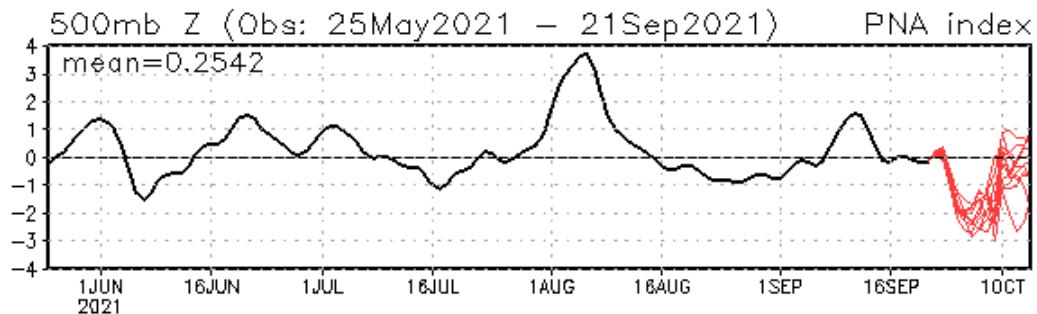


21 Sep 2021 17:00Z NOAA/NESDIS/STAR GOES-East GEOCOLOR

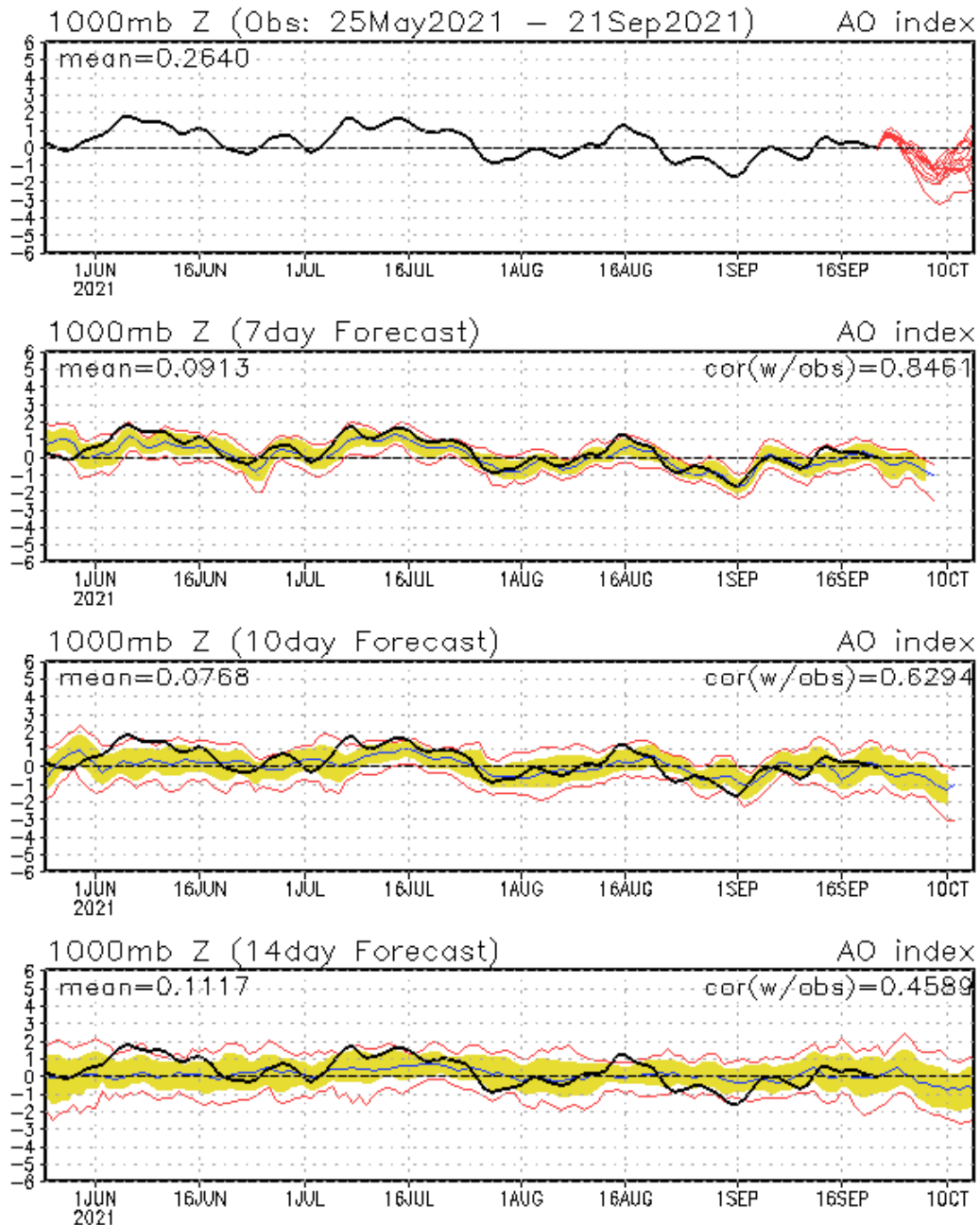
# Connections to U.S. Impacts



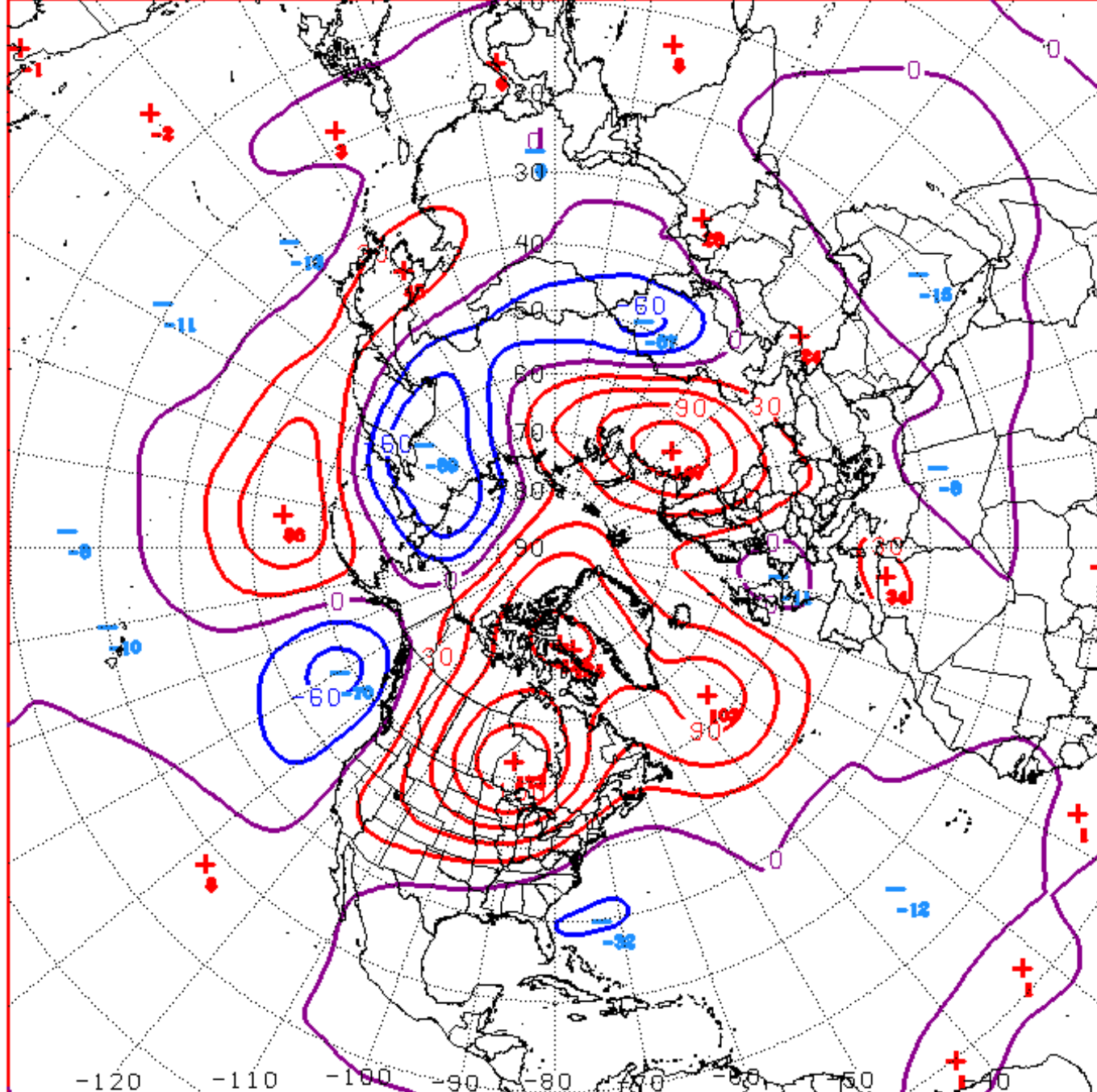
## PNA: Observed & ENSM forecasts



## AO: Observed & ENSM forecasts







-120 -110 -100 -90 -80 -70 -60 -50

D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE SEP 21 2021 1401 UTC CNTD OCT 02 2021

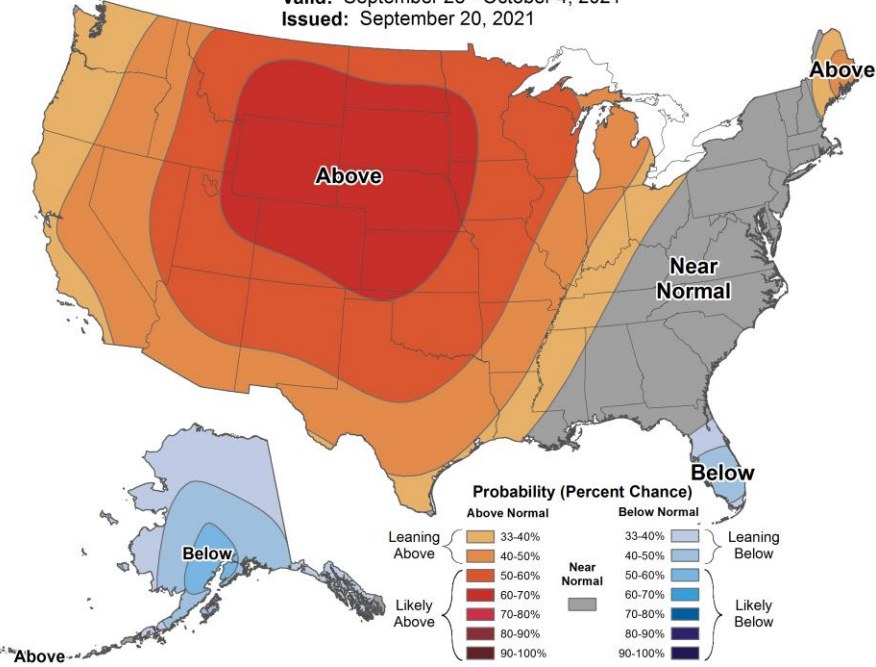
# Week 2 – Temperature and Precipitation



## 8-14 Day Temperature Outlook



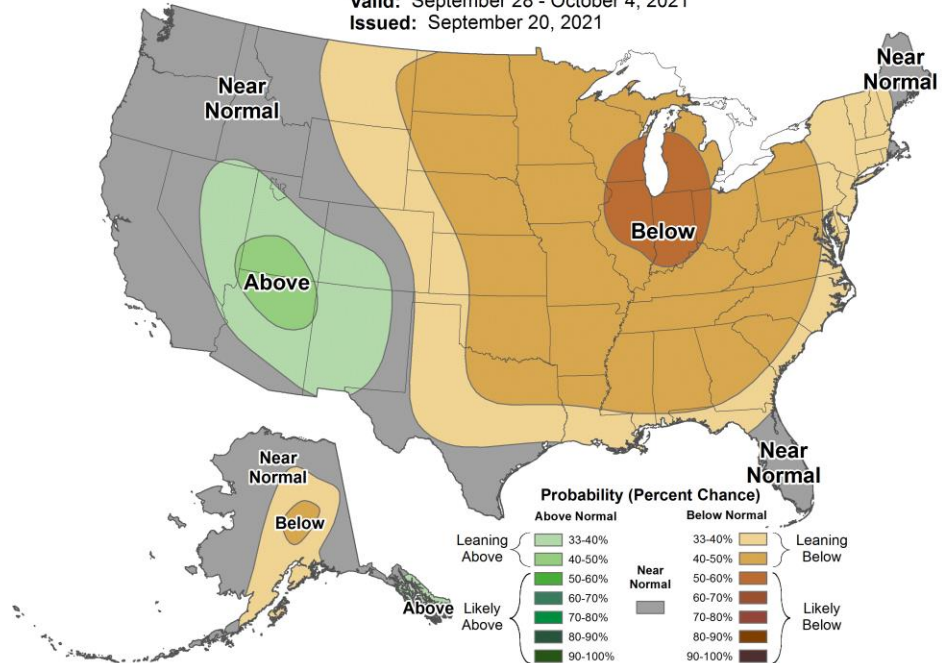
Valid: September 28 - October 4, 2021  
 Issued: September 20, 2021



## 8-14 Day Precipitation Outlook



Valid: September 28 - October 4, 2021  
 Issued: September 20, 2021

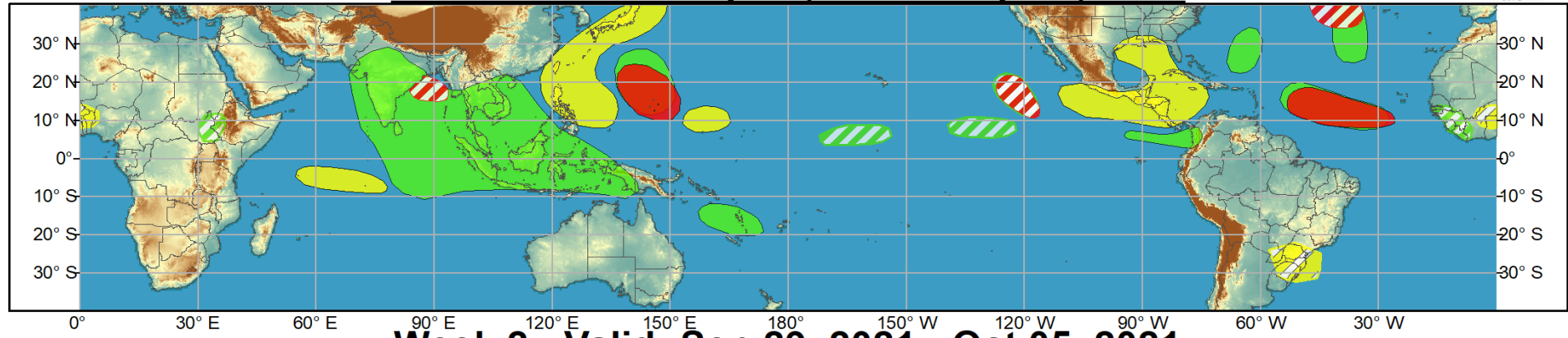


Since we are in an amplified, stable pattern today's outlooks are likely to be similar.

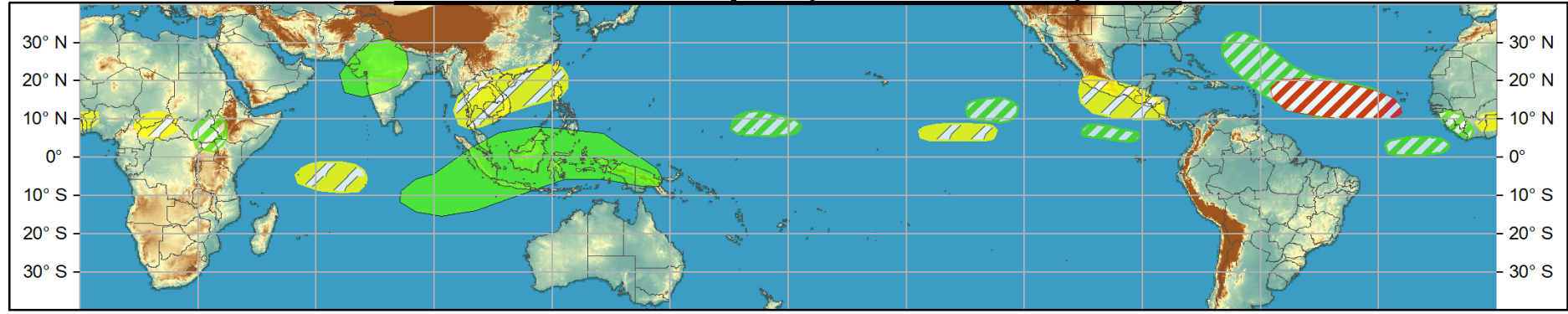


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Sep 22, 2021 - Sep 28, 2021



## Week 2 - Valid: Sep 29, 2021 - Oct 05, 2021



Produced: 09/21/2021  
Forecaster: Collow

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.

