

# Global Tropics Hazards And Benefits Outlook

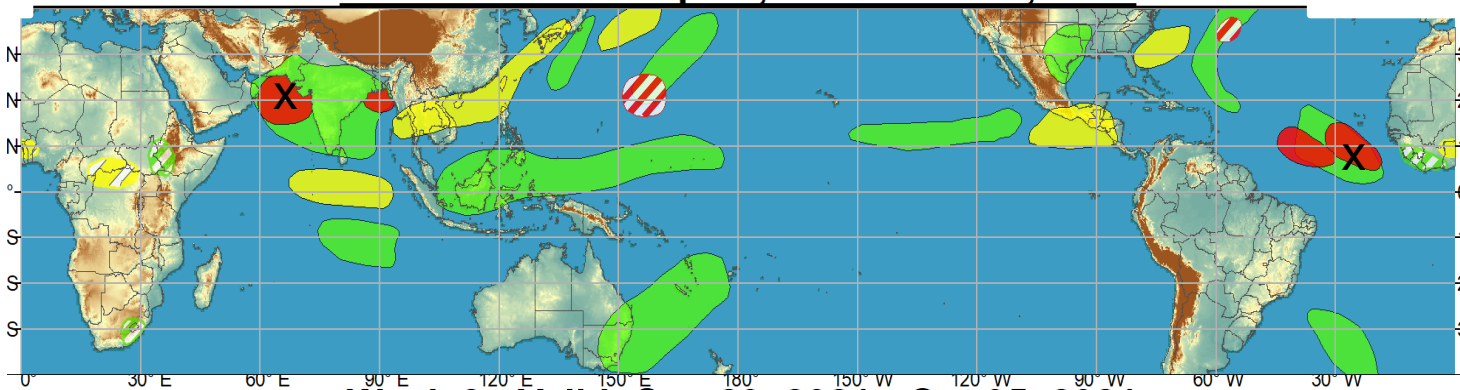
10/5/2021

Brad Pugh

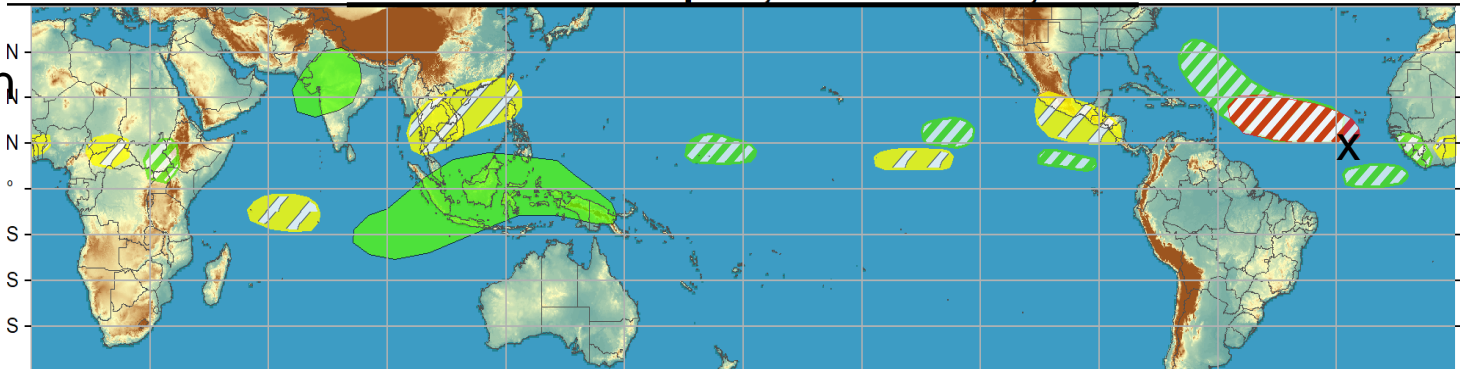
## Outline

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 29, 2021 - Oct 05, 2021

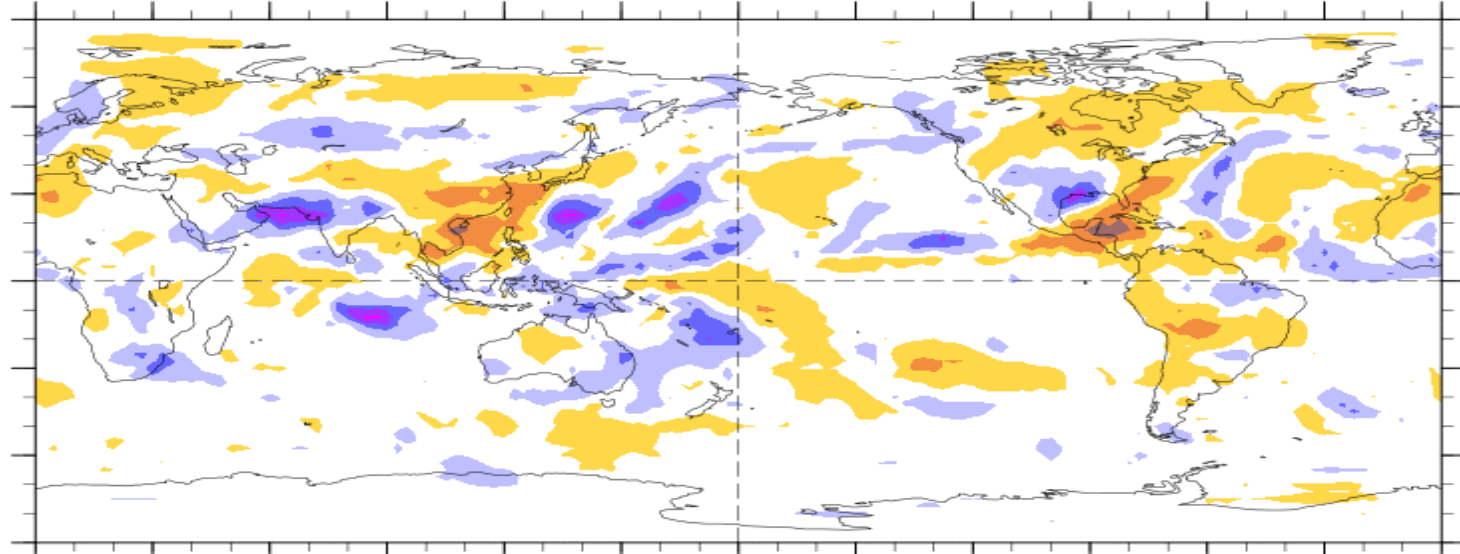


Week 2 - Valid: Sep 29, 2021 - Oct 05, 2021



7-Day Average OLR Anomaly

2021/09/27 - 2021/10/03



# Outlook Review

X = Tropical Storm  
Victor  
(Atlantic)

X = Cyclone Shaheen  
(Arabian Sea)

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.

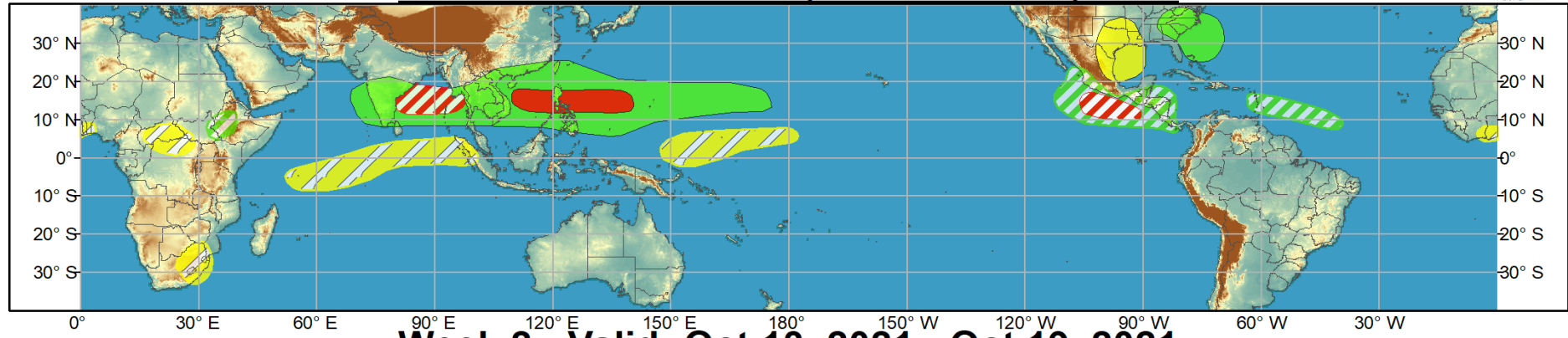
## **MJO and other subseasonal tropical variability:**

- The MJO showed signs of strengthening this past week as convection increased across the West Pacific and closer to the Date Line.
- Dynamical models are in good agreement that a MJO propagates eastward.
- Most likely areas for tropical cyclone development include the West Pacific, South China Sea, and Bay of Bengal during the next two weeks.
- No favored areas at this time over the Atlantic basin but the Caribbean is expected to become active later in October.

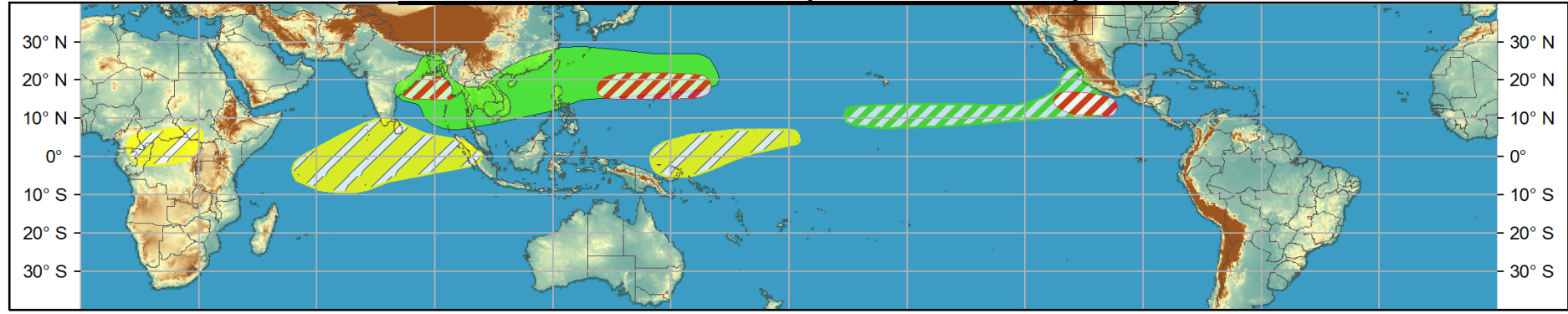


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Oct 06, 2021 - Oct 12, 2021



## Week 2 - Valid: Oct 13, 2021 - Oct 19, 2021



Produced: 10/05/2021  
Forecaster: Pugh

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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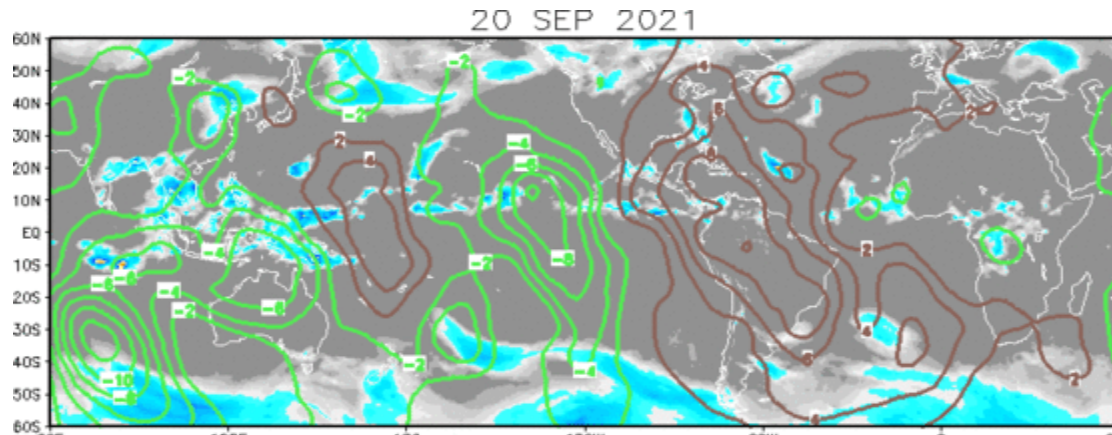


# IR Satellite & 200-hpa Velocity Potential Anomalies

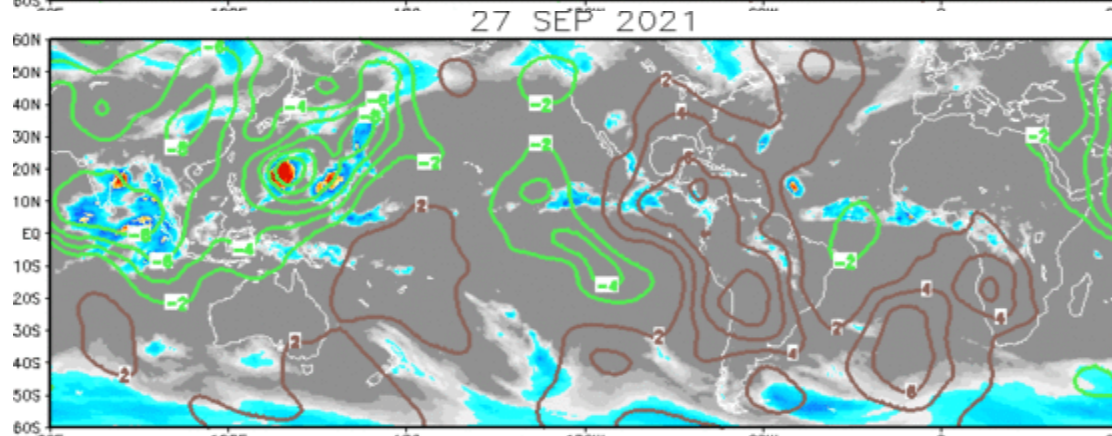
Green: Enhanced Divergence

Brown: Enhanced Convergence

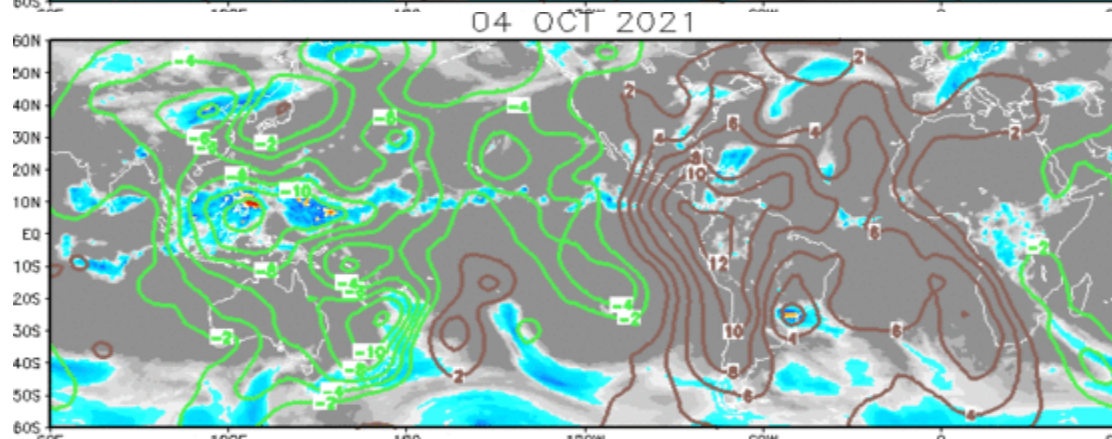
Pattern less coherent, with the low frequency signal remaining fairly stable, and a Kelvin wave seen across the central Pacific.



A poorly organized pattern, with another Kelvin wave approaching the eastern Pacific.



A more coherent wave-1 pattern becoming established.

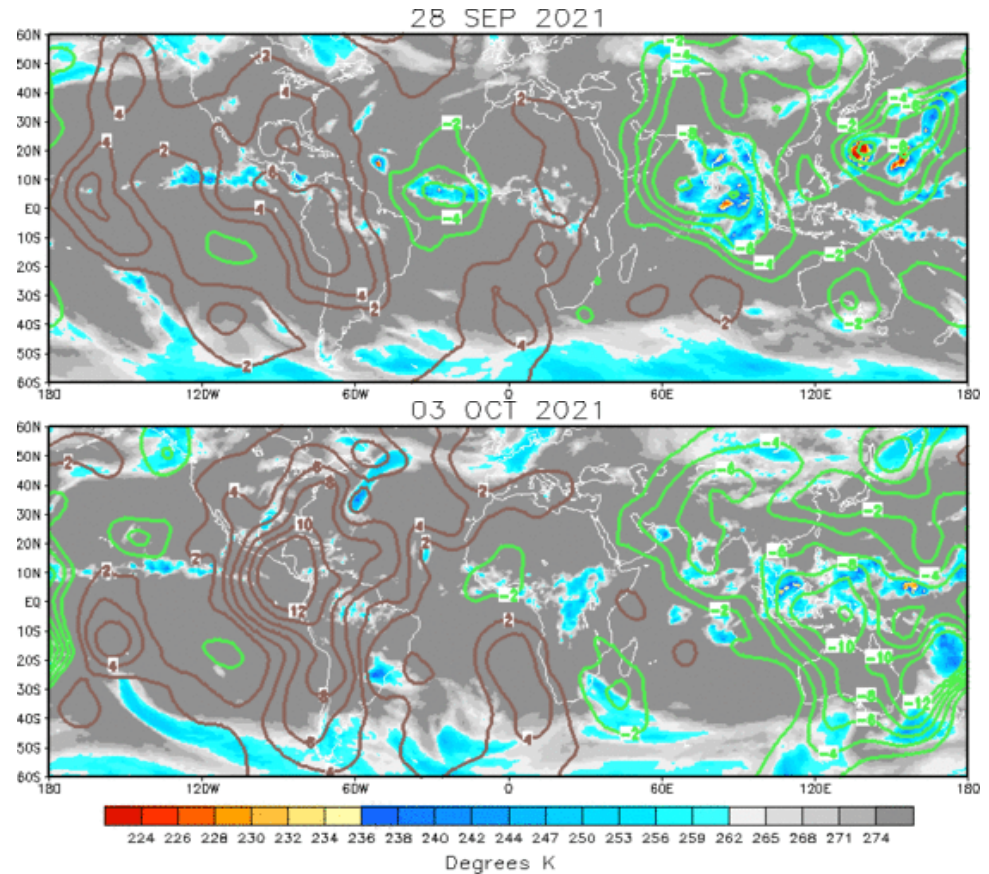
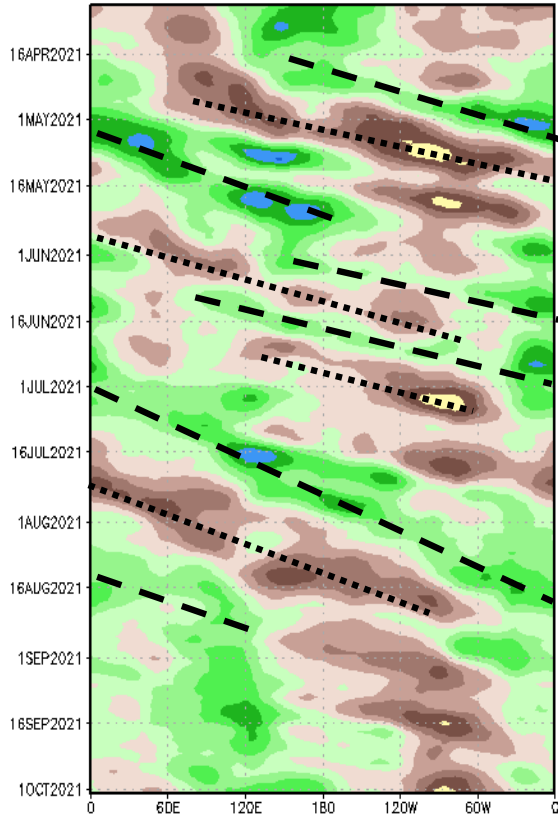


# 200-hPa Velocity Potential Anomalies

Green shades: Anomalous divergence (favorable for precipitation).

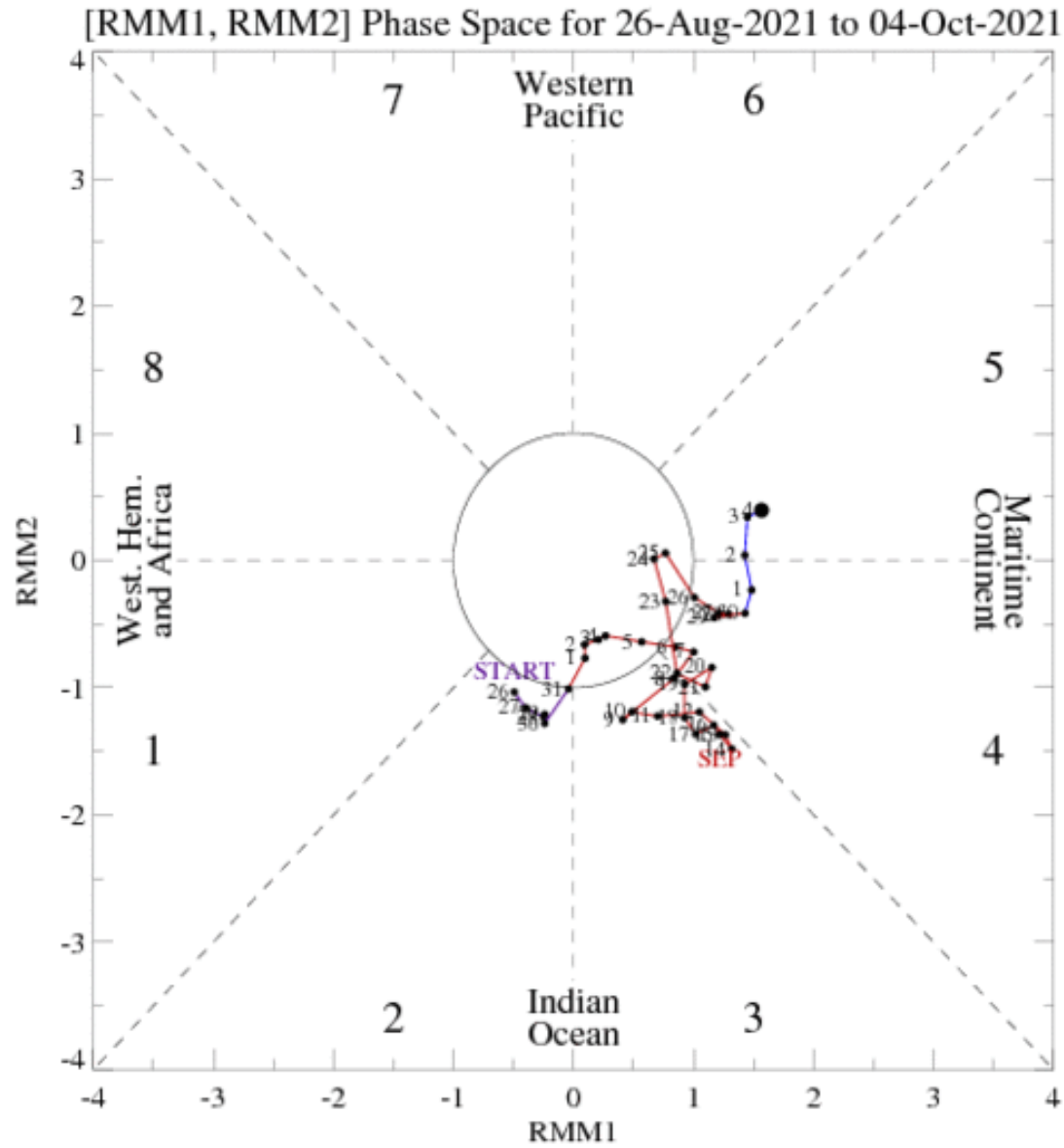
Brown shades: Anomalous convergence (unfavorable for precipitation).

200-hPa Velocity Potential Anomaly: 5N-5S  
5-day Running Mean

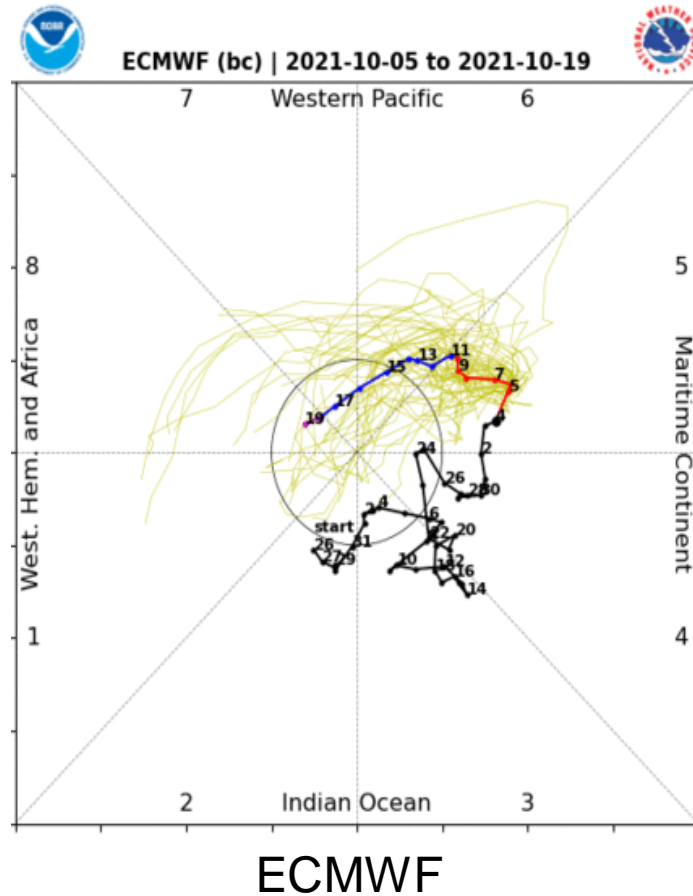
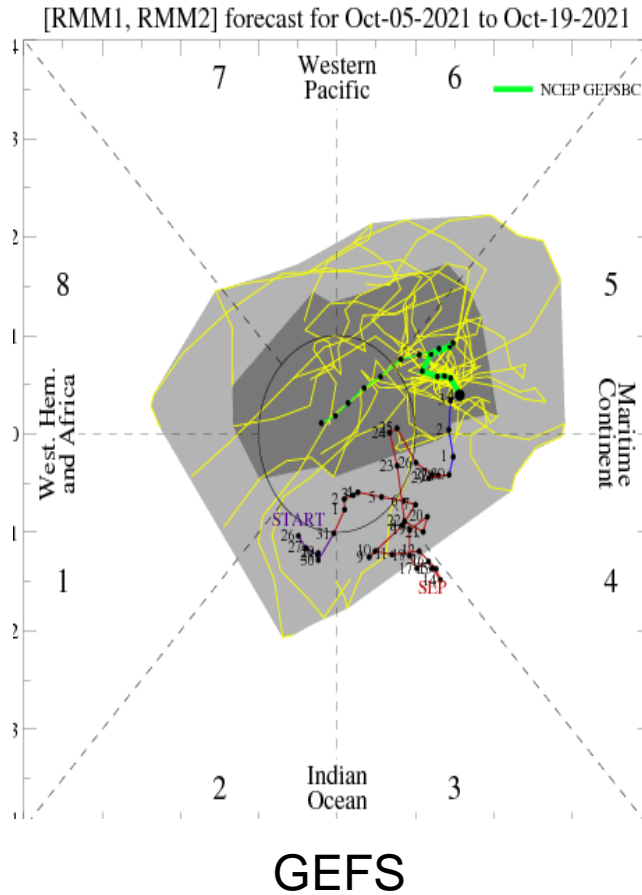


- Following an extended period of MJO activity during the late spring and summer, a stationary pattern has persisted since late August.
- A more coherent wave-1 pattern recently developed with anomalous upper-level divergence shifting east to the Date Line.

# MJO Observation



# MJO Observation/Forecast

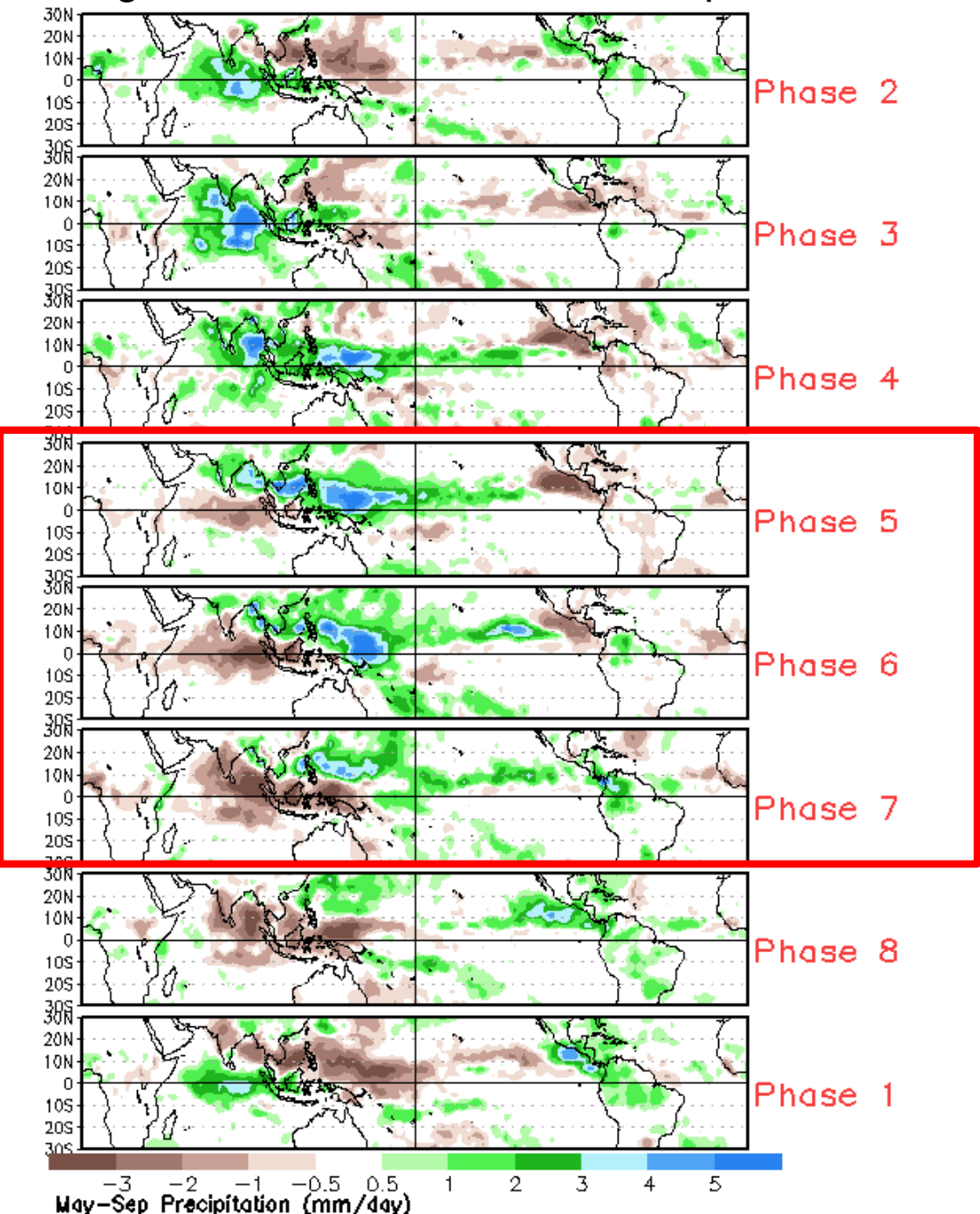


GEFS and ECWMF in good agreement for eastward propagation (phases 5, 6, and 7).

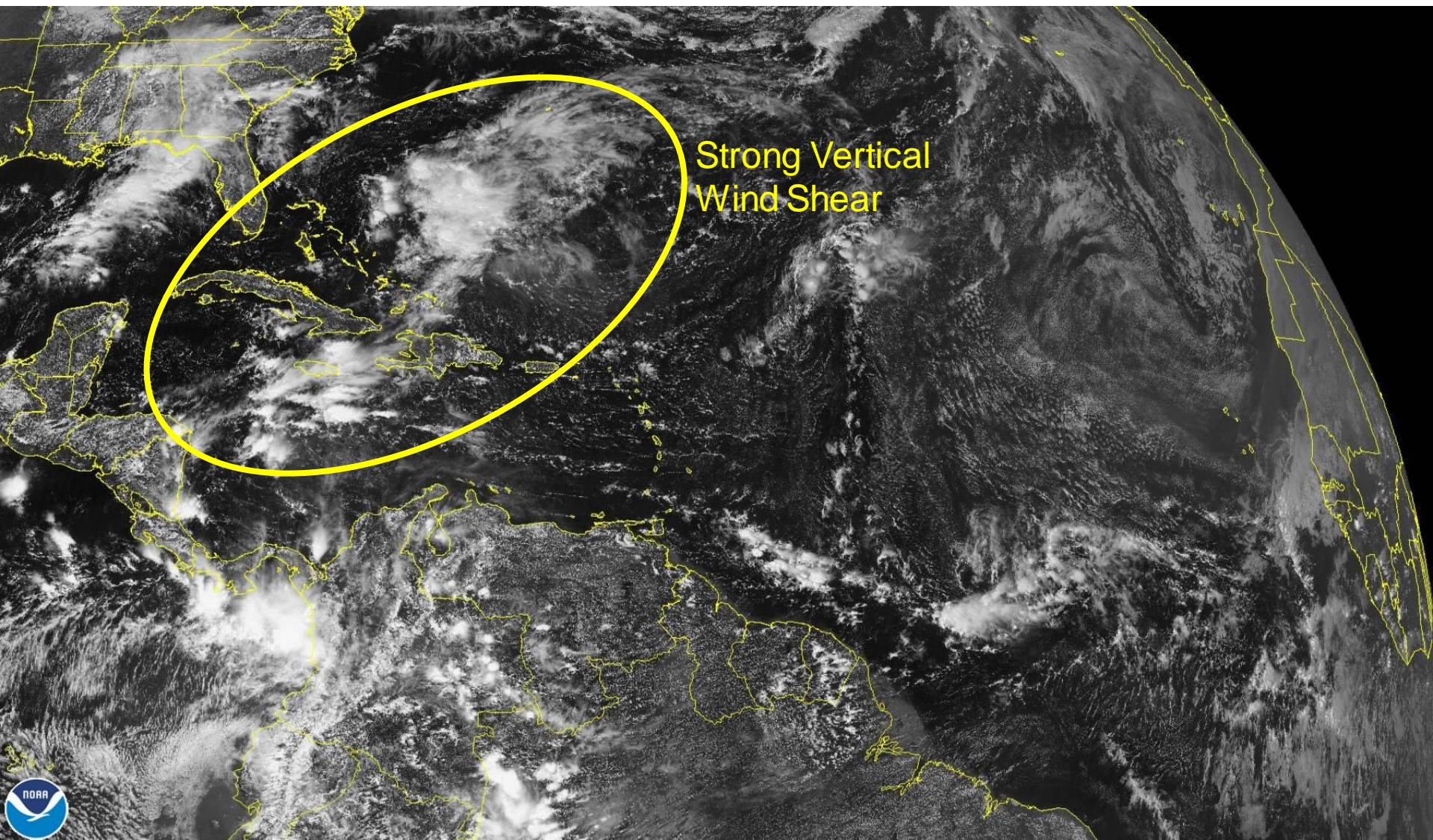
Large ensemble spread on its amplitude.



# Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.



Strong Vertical  
Wind Shear



05 Oct 2021 17:10Z NOAA/NESDIS/STAR GOES-East Band 02



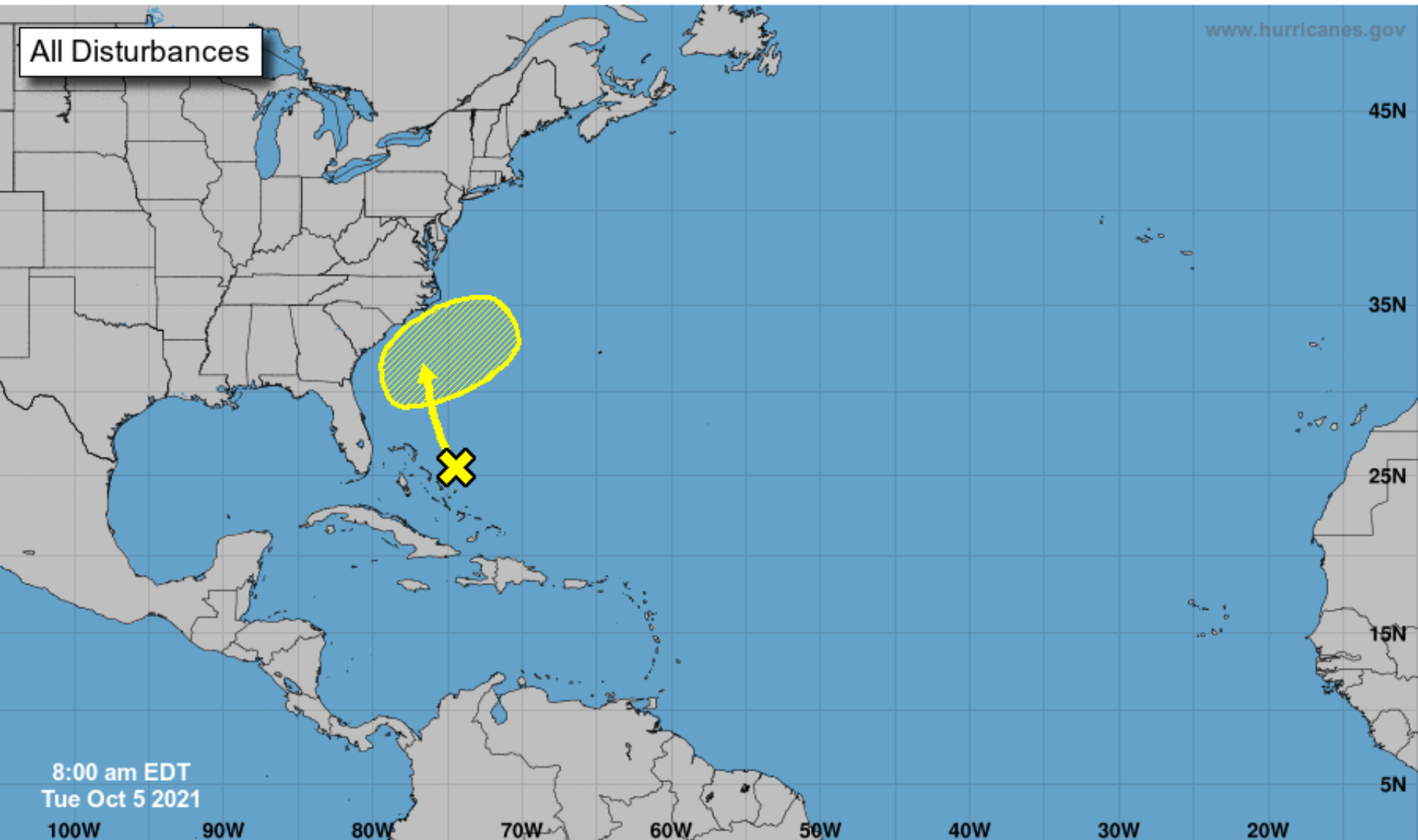
# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances



8:00 am EDT  
Tue Oct 5 2021

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



# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



← Central Pacific

All Disturbances

35N

25N

15N

5N

11:00 am PDT  
Tue Oct 5 2021

140W

130W

120W

110W

100W

90W

80W

[www.hurricanes.gov](http://www.hurricanes.gov)



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



Naval Research Laboratory  
Marine Meteorology Division  
Cloud Layer Product  
Valid: 2021-10-05 13:00:00

## ABIO

## ABPW

Please refer to CPHC  
(<https://www.nhc.noaa.gov/cphc/>)

92W

**NO SUSPECT AREAS  
(ABIO)**

**ISSUE TIME: 05/1500Z  
(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)

**SUB  
TROPICAL**

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

Tropical Cyclone  
(Reference Warning)

## Numerical Model Prediction

Support this site:

### GFS

RUN TIME: 06Z OCT 05

Global

Ensemble

Hurricane

Mesoscale

Climate



Run Time: 06z Oct 05

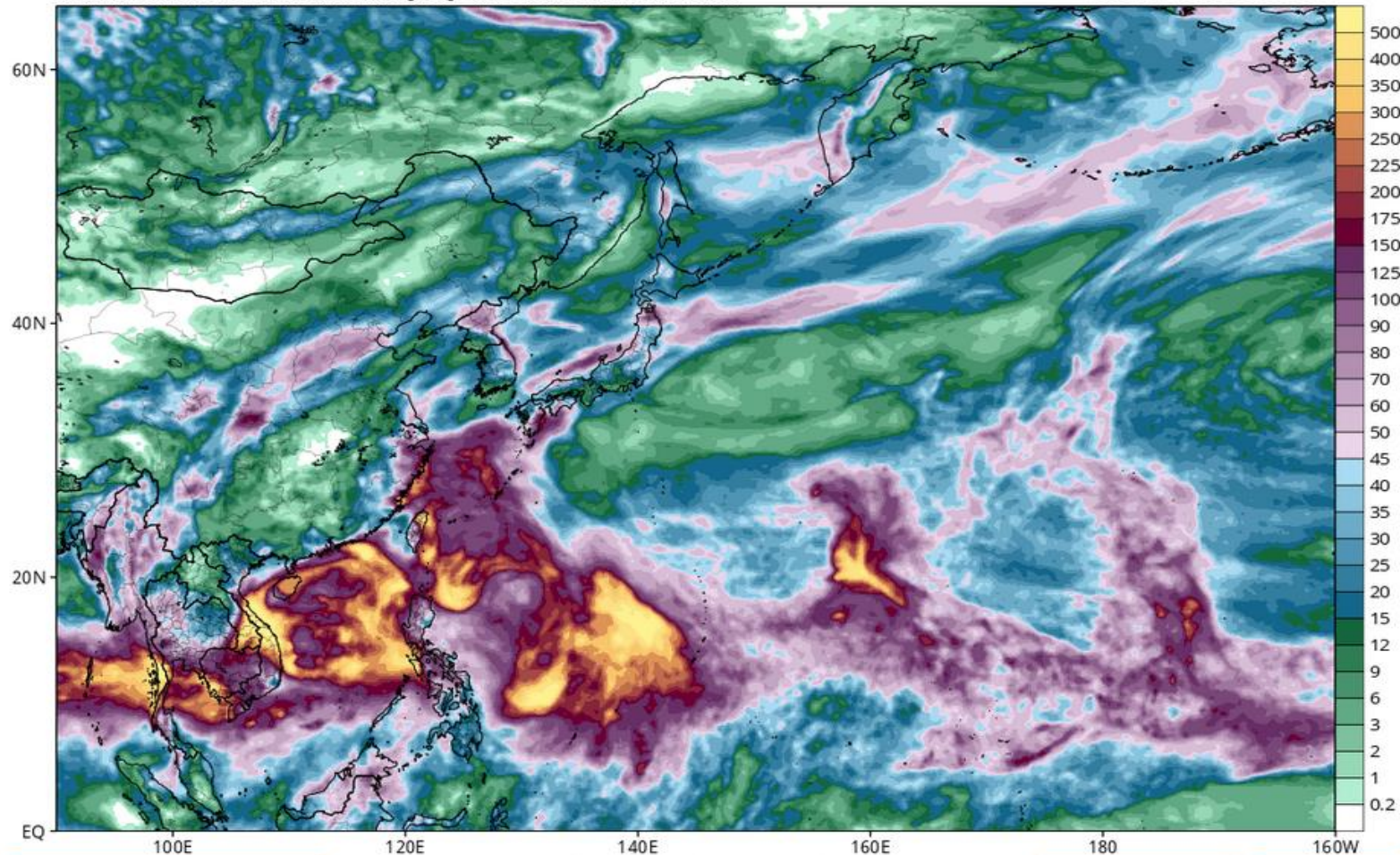
### GFS Total Accumulated Precipitation (mm) from 06z05Oct2021 to 12z13Oct2021

Init: 06z Oct 05 2021 Forecast Hour: [198] valid at 12z Wed, Oct 13 2021

TROPICALTIDBITS.COM

FORECAST TIME:

(+198 hr) 08:00AM Oct 13



006	012	018	024
030	036	042	048
054	060	066	072
078	084	090	096
102	108	114	120
126	132	138	144
150	156	162	168
174	180	186	192
198	204	210	216
222	228	234	240
246	252	258	264
270	276	282	288
294	300	306	312
318	324	330	336
342	348	354	360
366	372	378	384

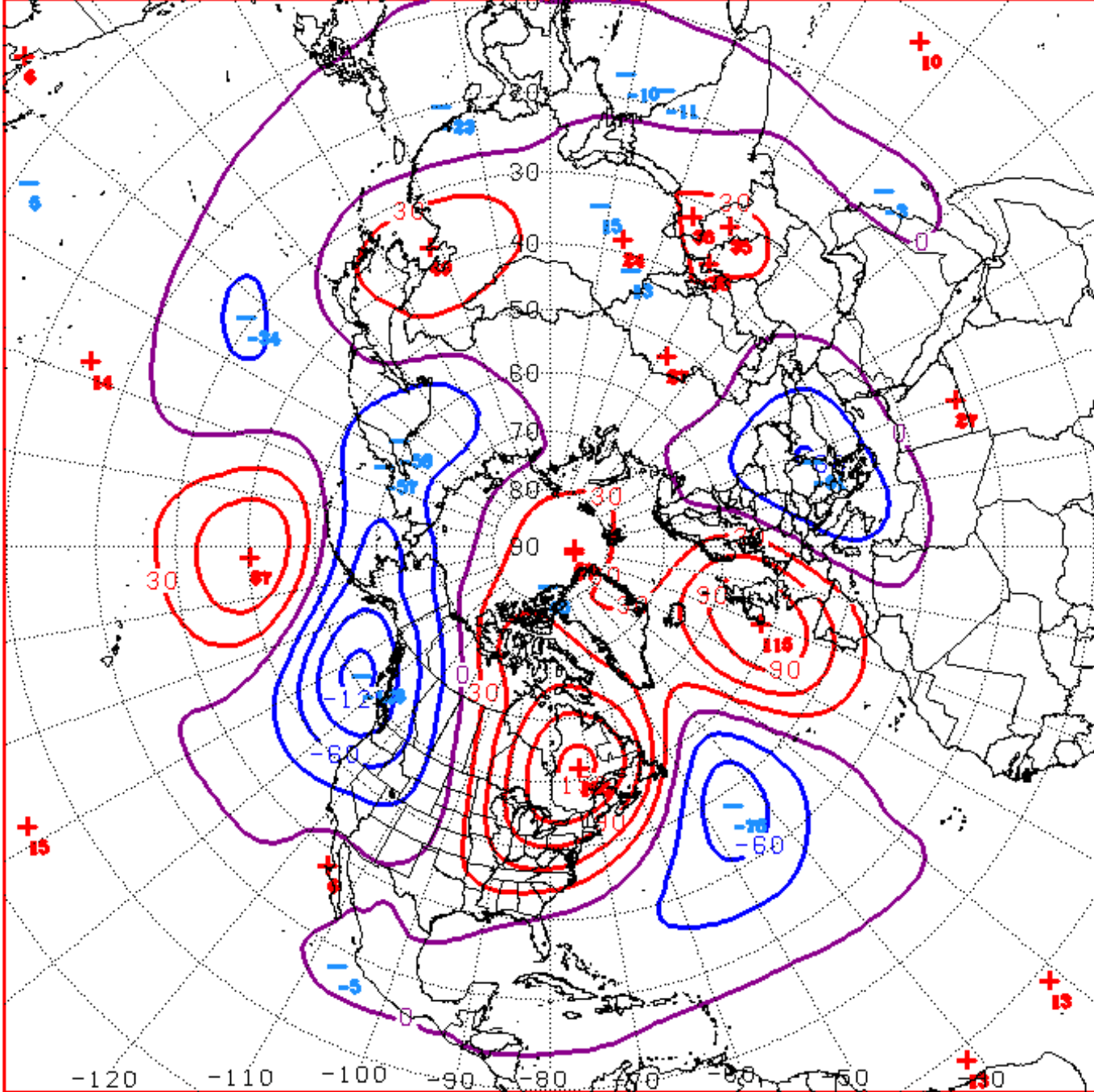
REGIONS

Prev. Run Next Run

FORECAST GIF

TREND GIF

# Connections to U.S. Impacts



D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE OCT 05 2021 1359 UTC CNTD OCT 16 2021

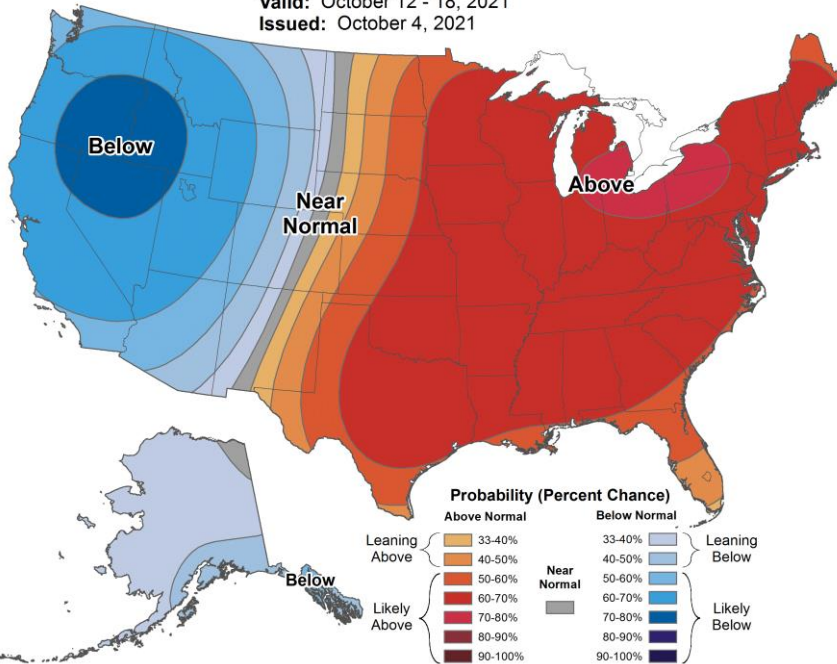


# Week 2 – Temperature and Precipitation



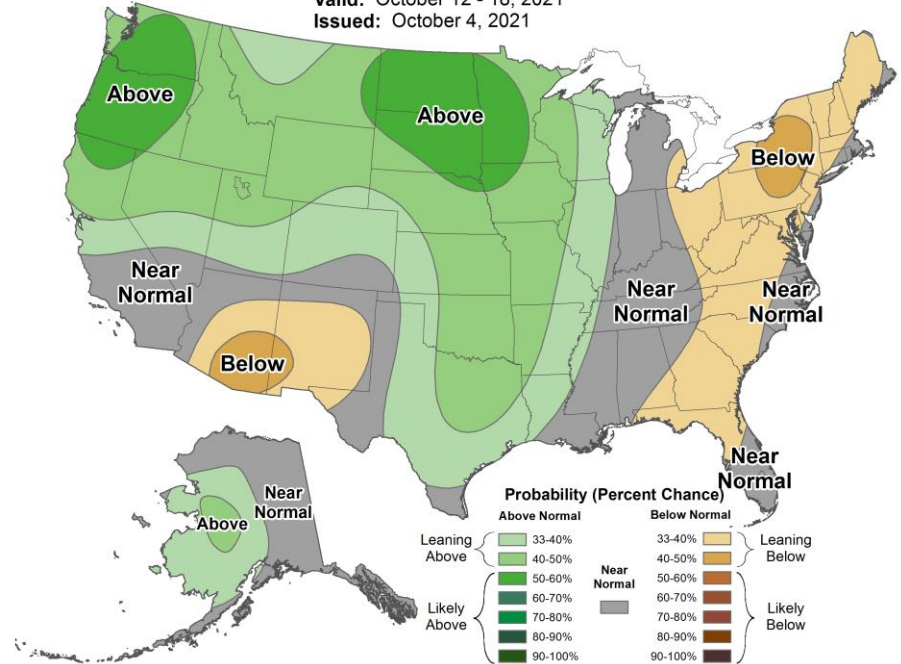
## 8-14 Day Temperature Outlook

Valid: October 12 - 18, 2021  
 Issued: October 4, 2021



## 8-14 Day Precipitation Outlook

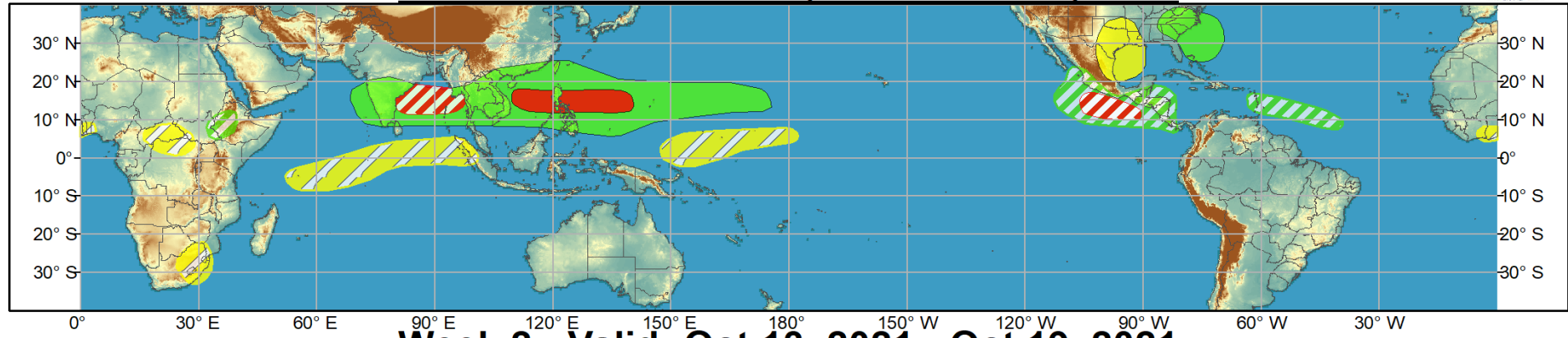
Valid: October 12 - 18, 2021  
 Issued: October 4, 2021



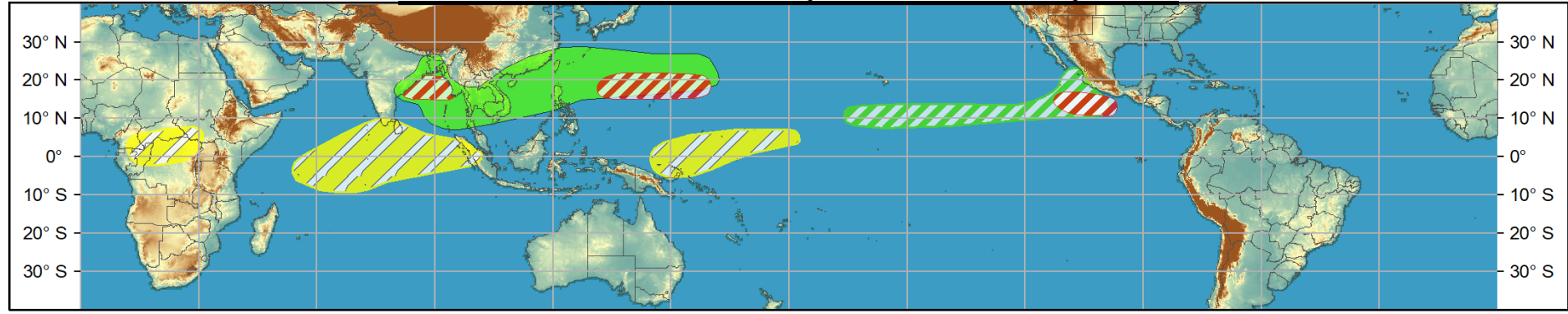


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