

# Global Tropics Hazards And Benefits Outlook

10/6/2020

Anthony Artusa

## Outline

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

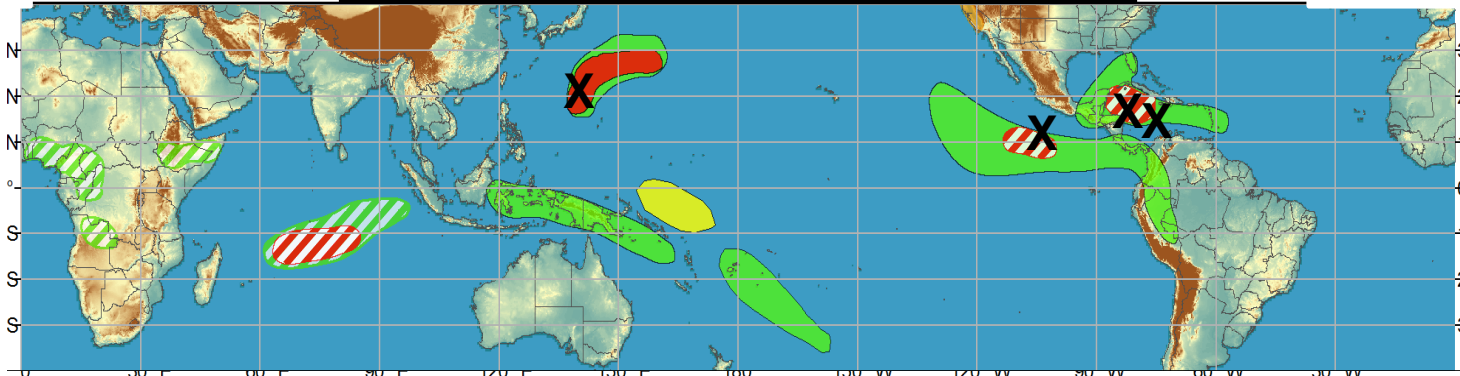
# Outlook Review

**Gamma &  
Delta**

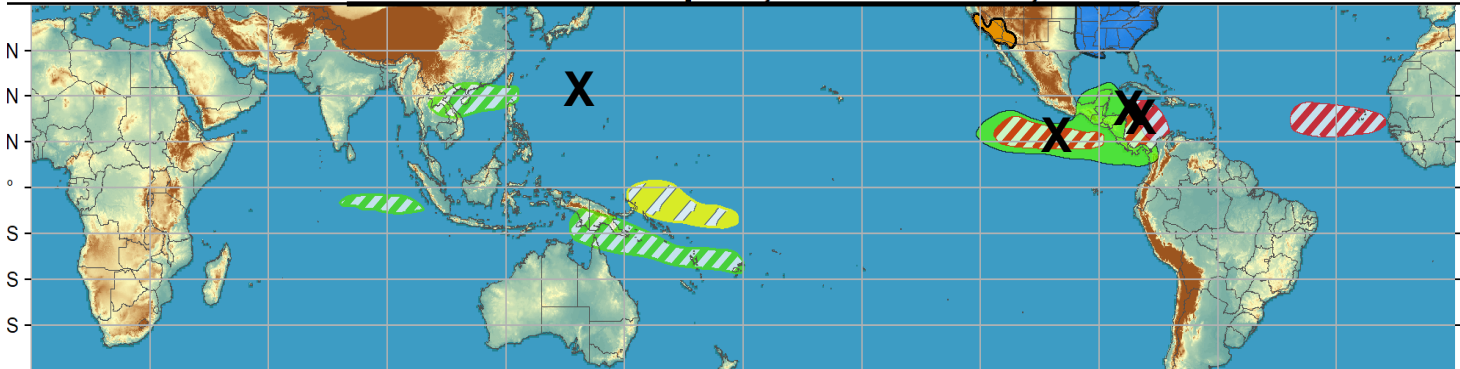
**Norbert**

**Chan-Hom**

**Week 1 - Valid: Sep 30, 2020 - Oct 06, 2020**

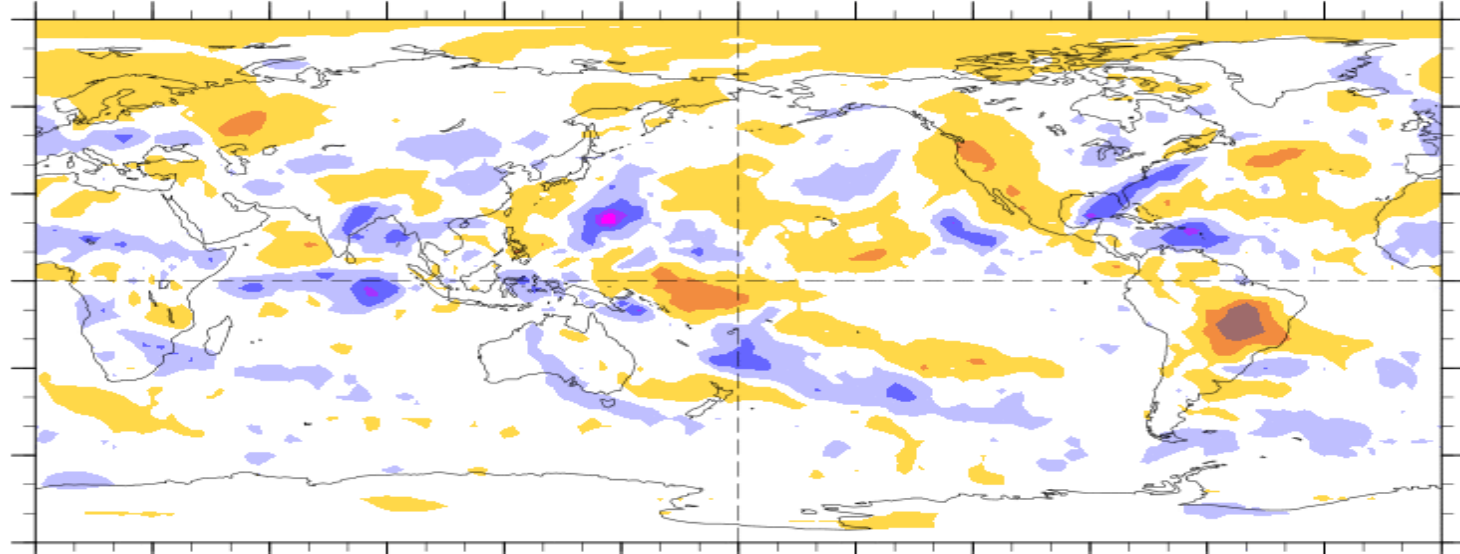


**Week 2 - Valid: Sep 30, 2020 - Oct 06, 2020**



**7-Day Average OLR Anomaly**

**2020/09/28 - 2020/10/04**



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

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

*next update on 8<sup>th</sup> of Oct.!*

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña conditions are present and are likely to continue through the Northern Hemisphere winter (~75% chance).

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

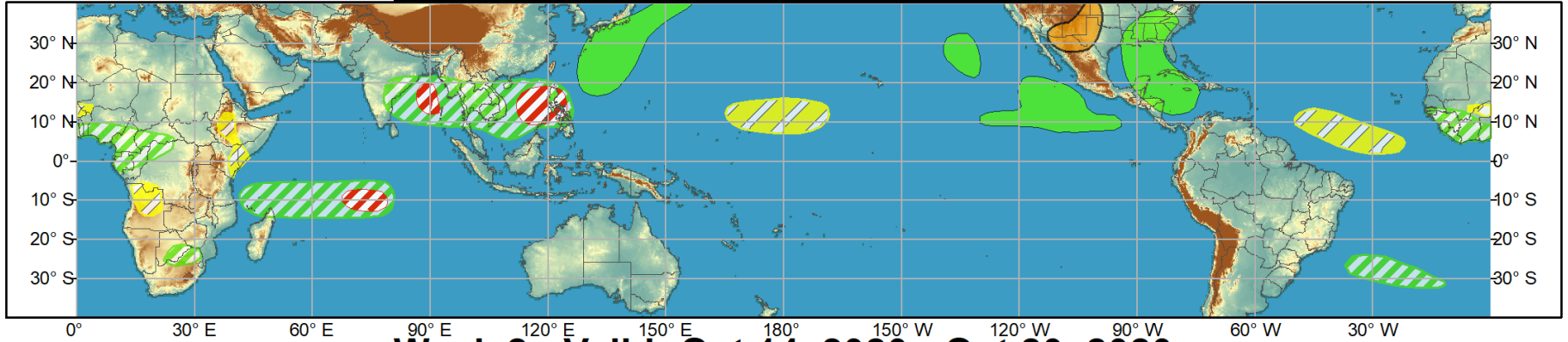
- The MJO remained weak during the past week ; nearly stationary over the Maritime Continent.
- Dynamical models are in reasonable agreement on subseasonal signal phase (RMM phase 5), but considerable disagreement on signal amplitude.
- Indian Ocean Dipole in negative phase
- Global tropics expected to be active next two weeks, especially Week-1.



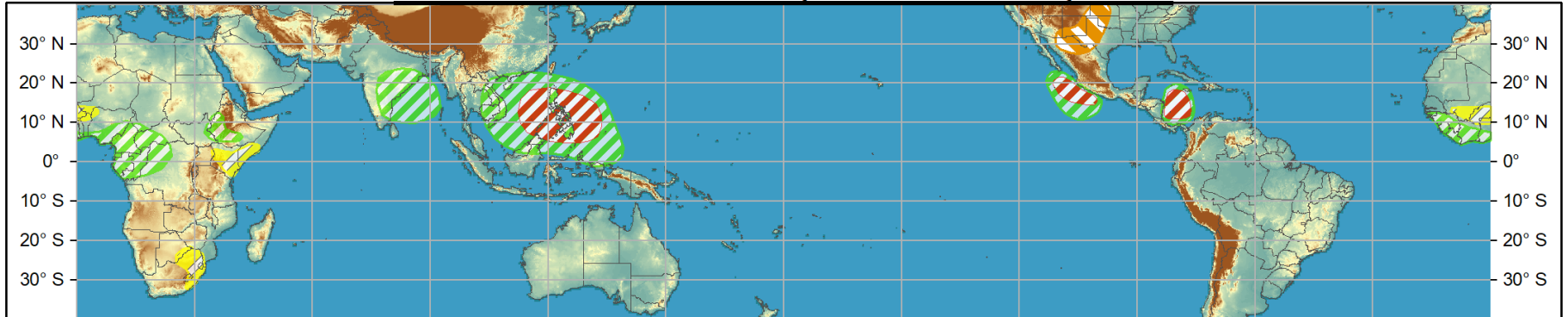
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Oct 07, 2020 - Oct 13, 2020



## Week 2 - Valid: Oct 14, 2020 - Oct 20, 2020



**Confidence**  
 High Moderate

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

Produced: 10/06/2020

Forecaster: Artusa

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.





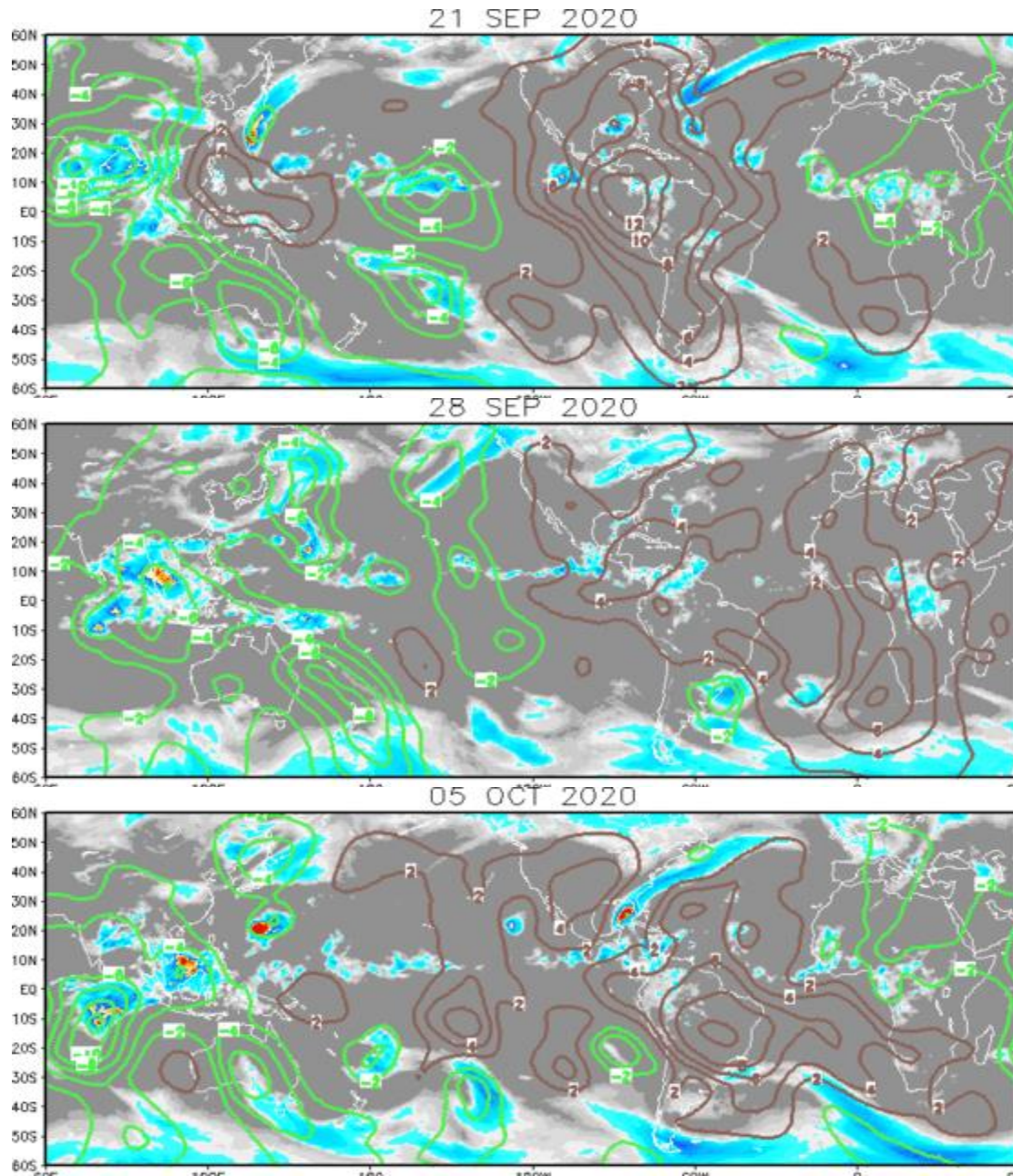
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence

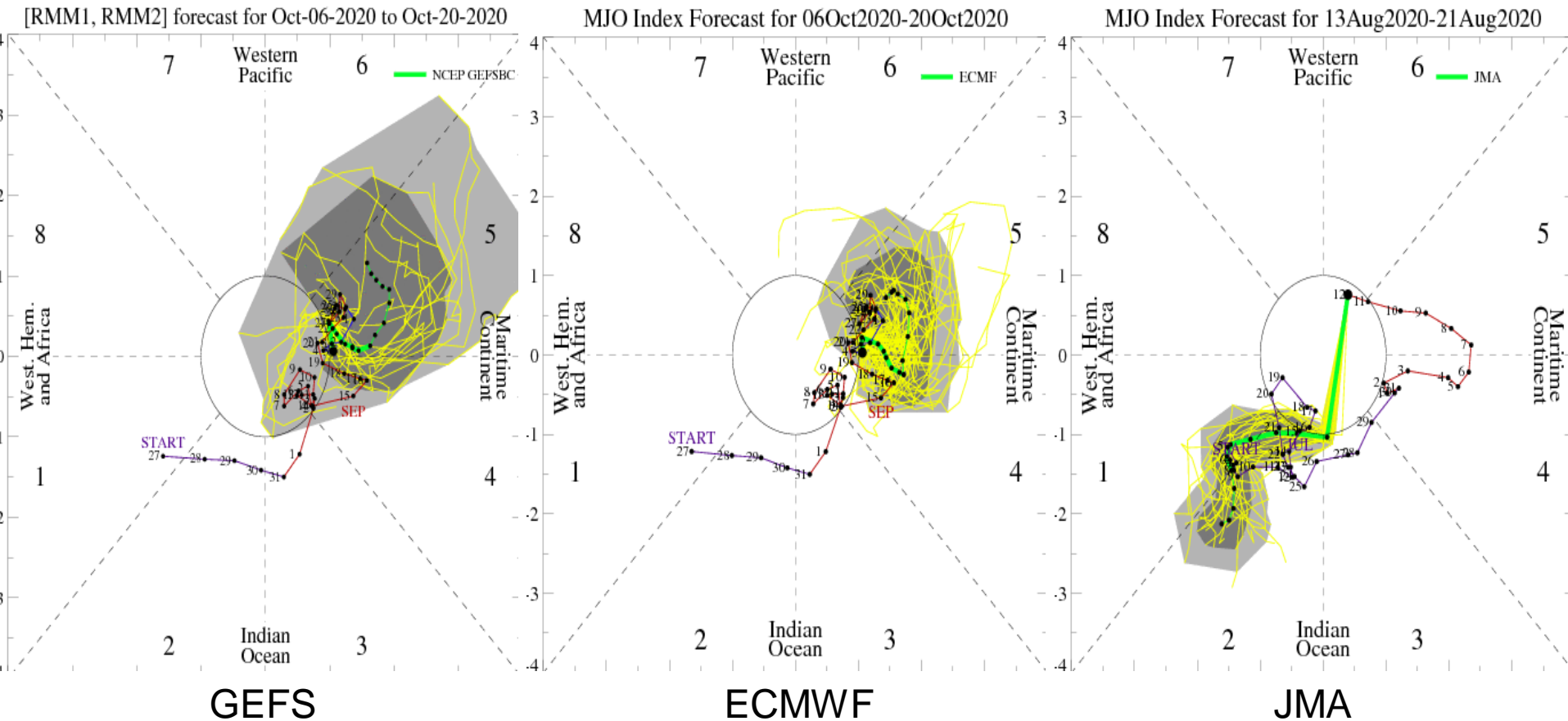
Brown: Enhanced Convergence

Most of the enhanced DIV aloft is located over the Eastern Hemisphere; especially the Indian Ocean, Maritime Continent, and Western Pacific through this period.

Most of the enhanced CON aloft is located over the Americas and the Atlantic Ocean.



# MJO Observation/Forecast

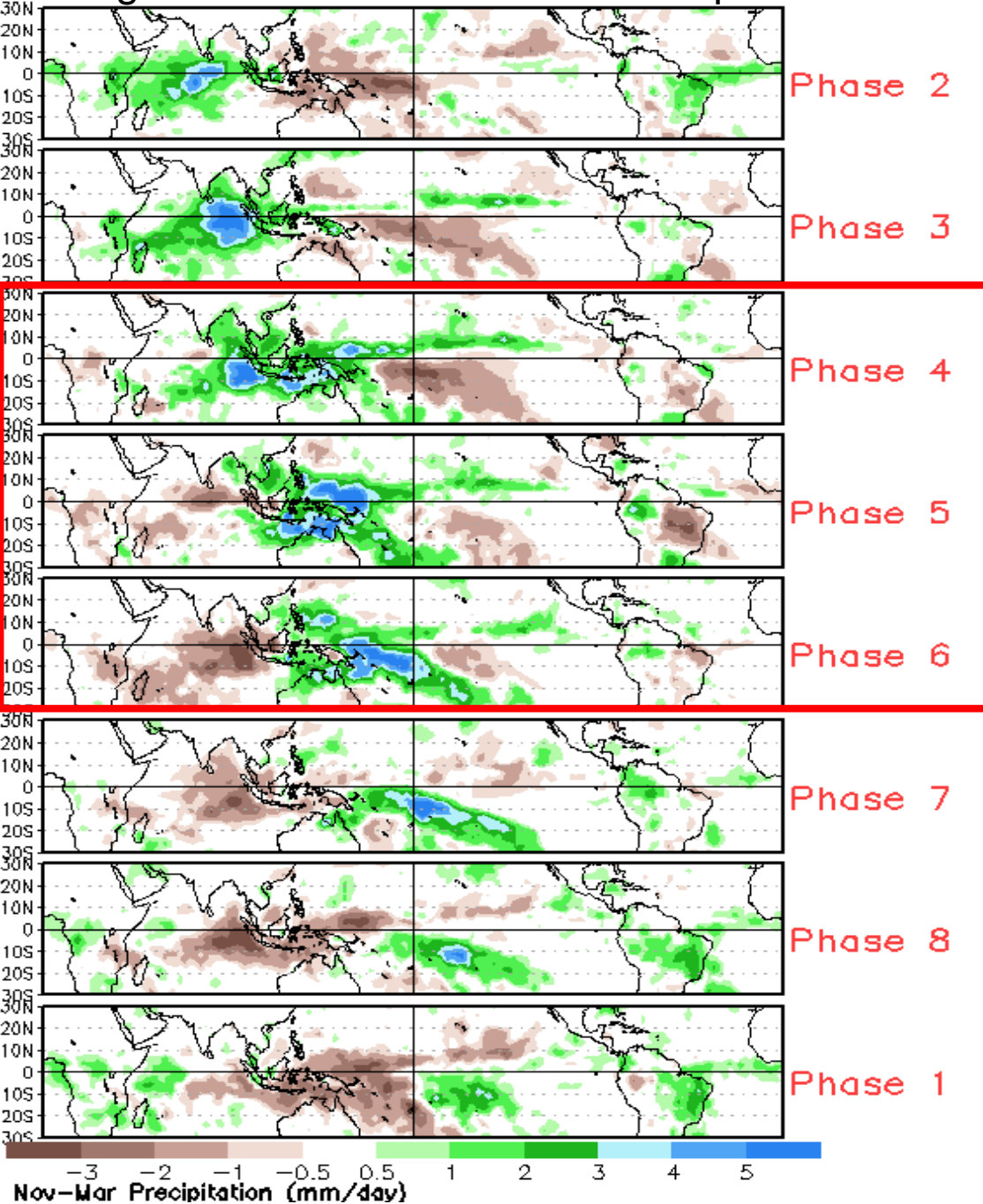


GEFS and ECWMF in good agreement support limited eastward propagation.

MJO expected to remain in the general vicinity of the Maritime Continent, probably in part due to the anomalously warm SSTs there..

Something is wrong with the JMA analysis.

# Average Conditions when the MJO is present



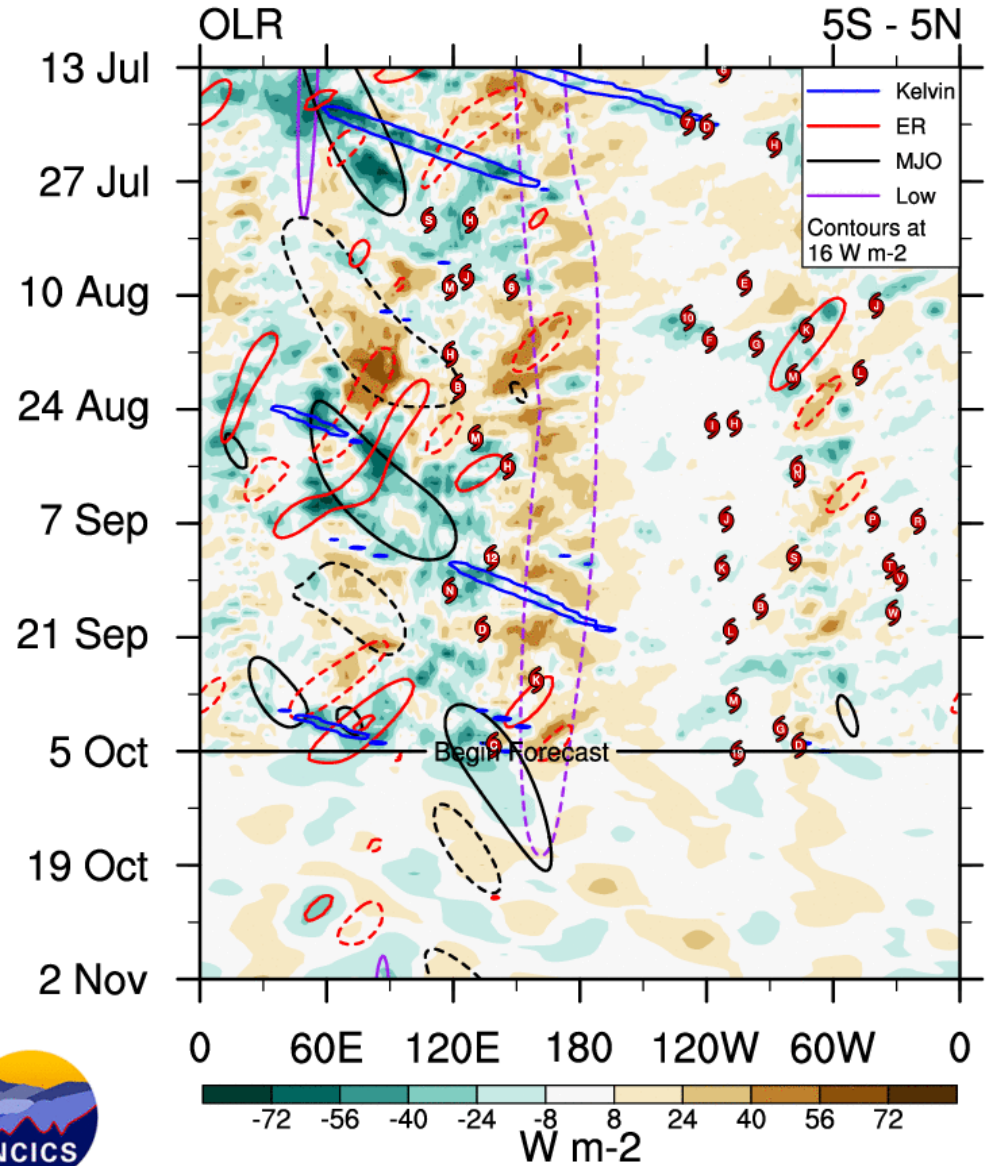
CAVEAT: These panels are representative of robust MJO events.



**MJO** activity is coming through the filtering near the Equator in the OLR field.

Limited **Kelvin wave** activity over Eastern Hemisphere

**Low frequency** signal features enhanced convection over Maritime Continent & suppressed convection over e/c-Pac, in decent agreement with La Nina.

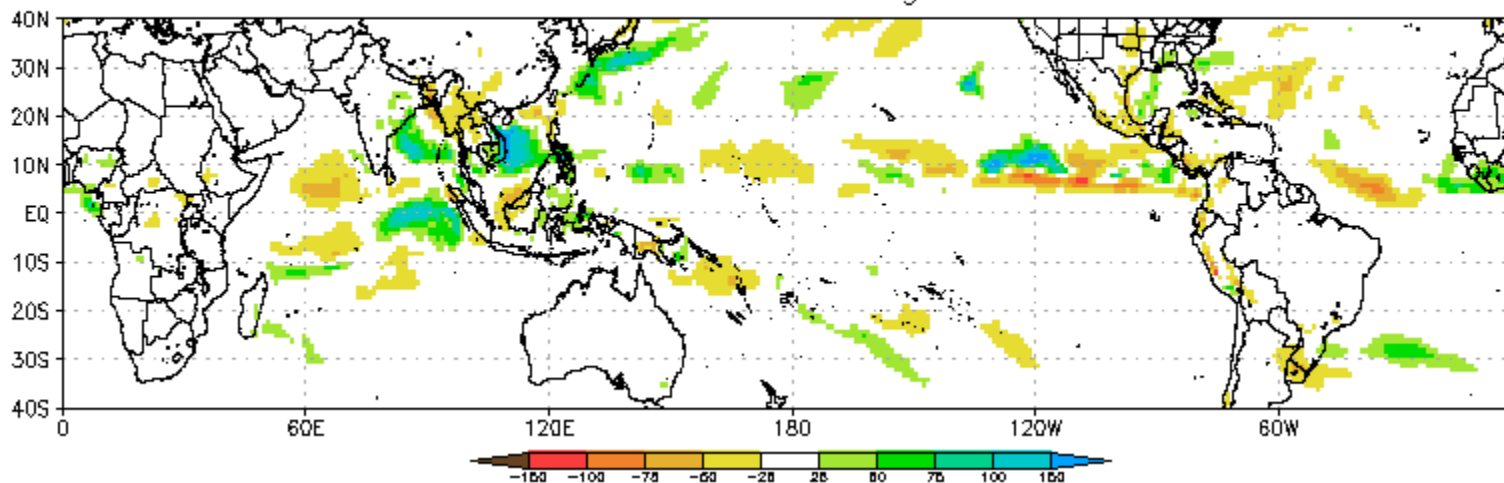


Tue 2020-10-06 1511 UTC

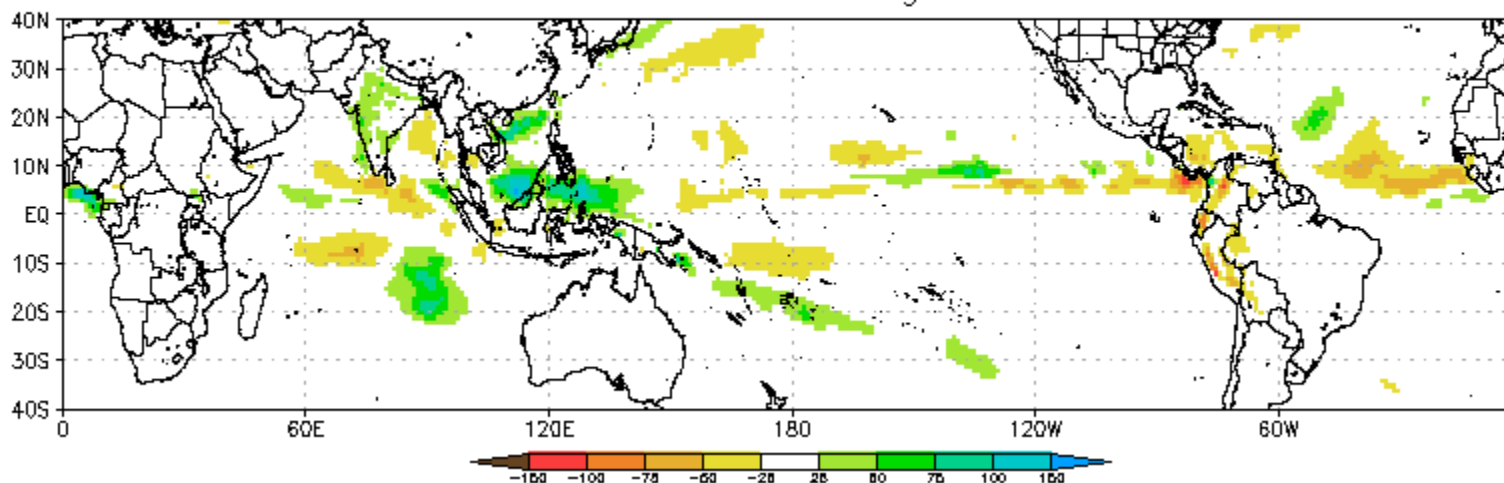
Carl Schreck  
carl\_schreck@ncsu.edu



CFS Precipitation Anomalies (mm) Issued 05Oct2020  
Week-1 Forecast Ending 13Oct2020

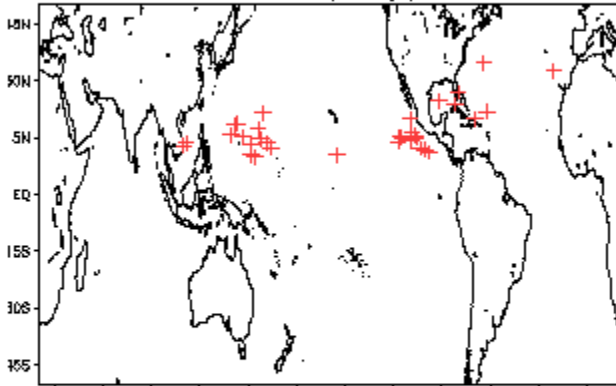


CFS Precipitation Anomalies (mm) Issued 05Oct2020  
Week-2 Forecast Ending 20Oct2020

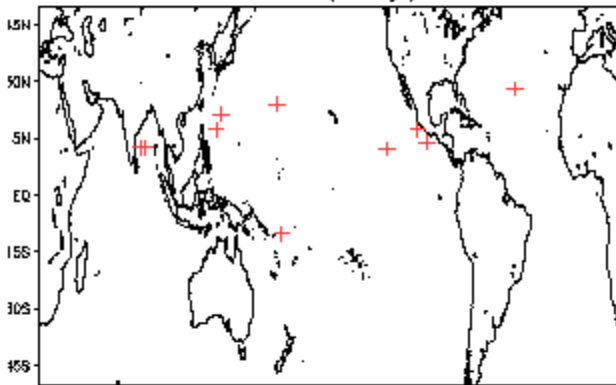


# October Tropical Storm Formation by MJO phase

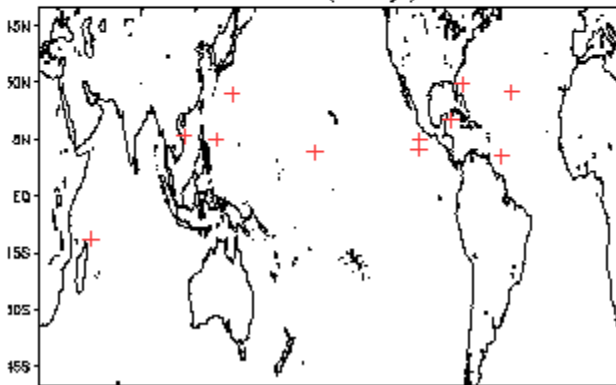
Phase 1 (94 days) 34 storms



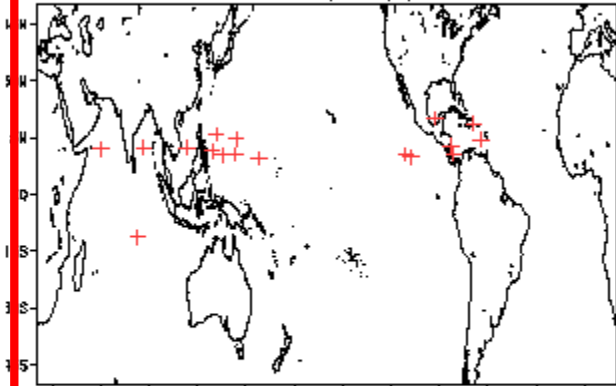
Phase 2 (75 days) 11 storms



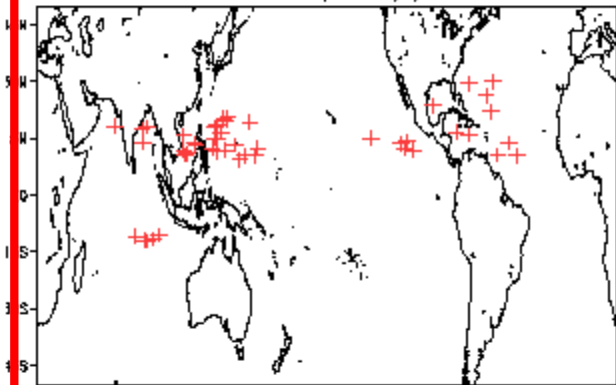
Phase 3 (41 days) 12 storms



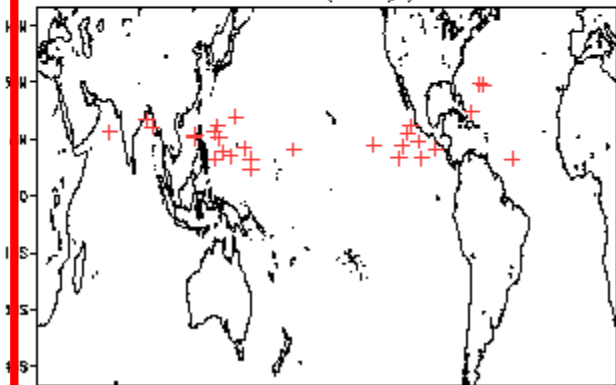
Phase 4 (85 days) 18 storms



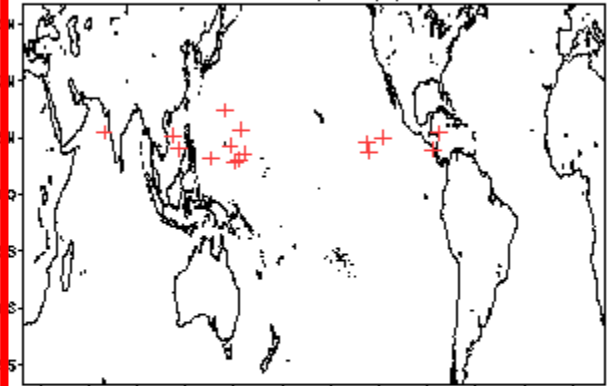
Phase 5 (133 days) 48 storms



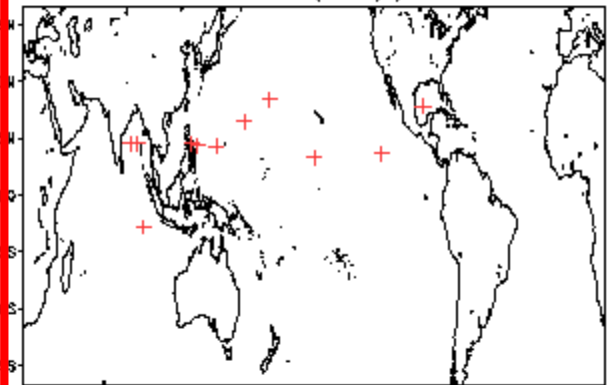
Phase 6 (78 days) 30 storms



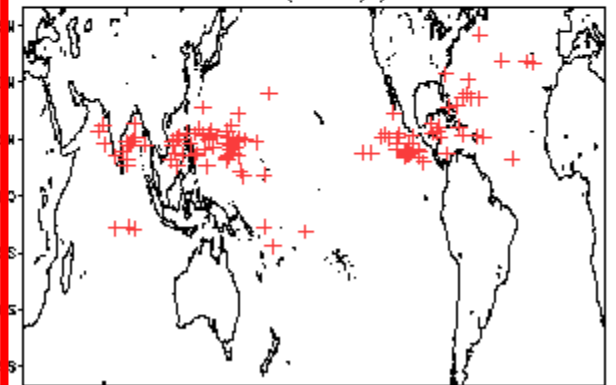
Phase 7 (48 days) 16 storms



Phase 8 (66 days) 12 storms



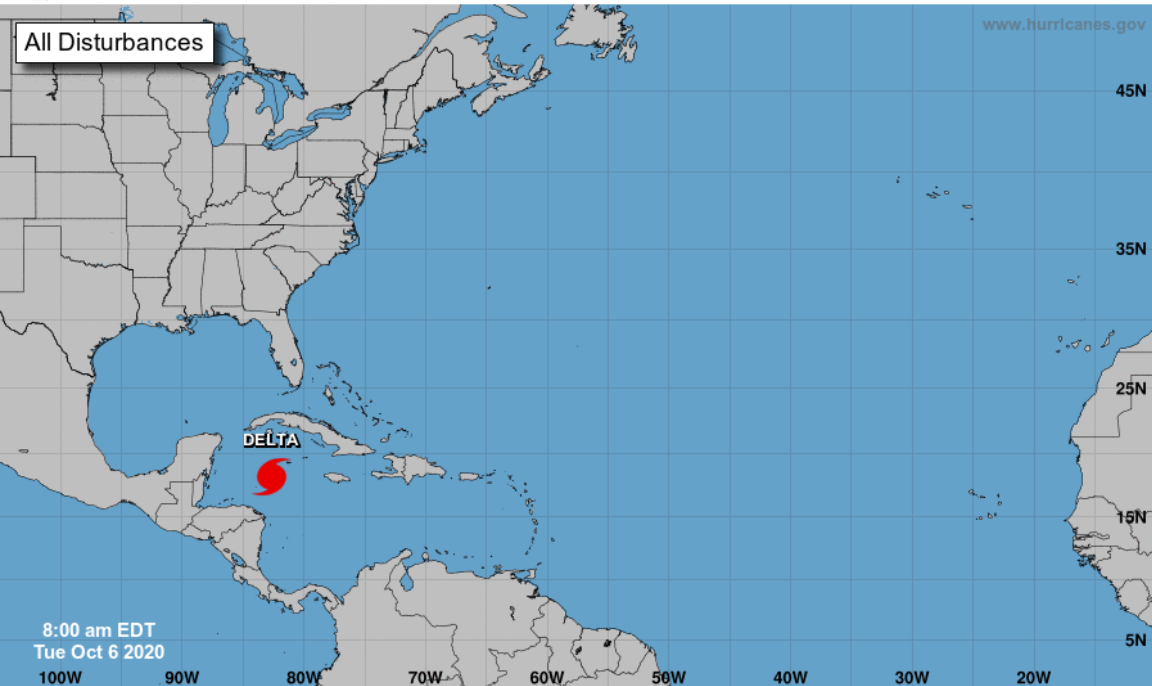
Null (422 days) 119 storms





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



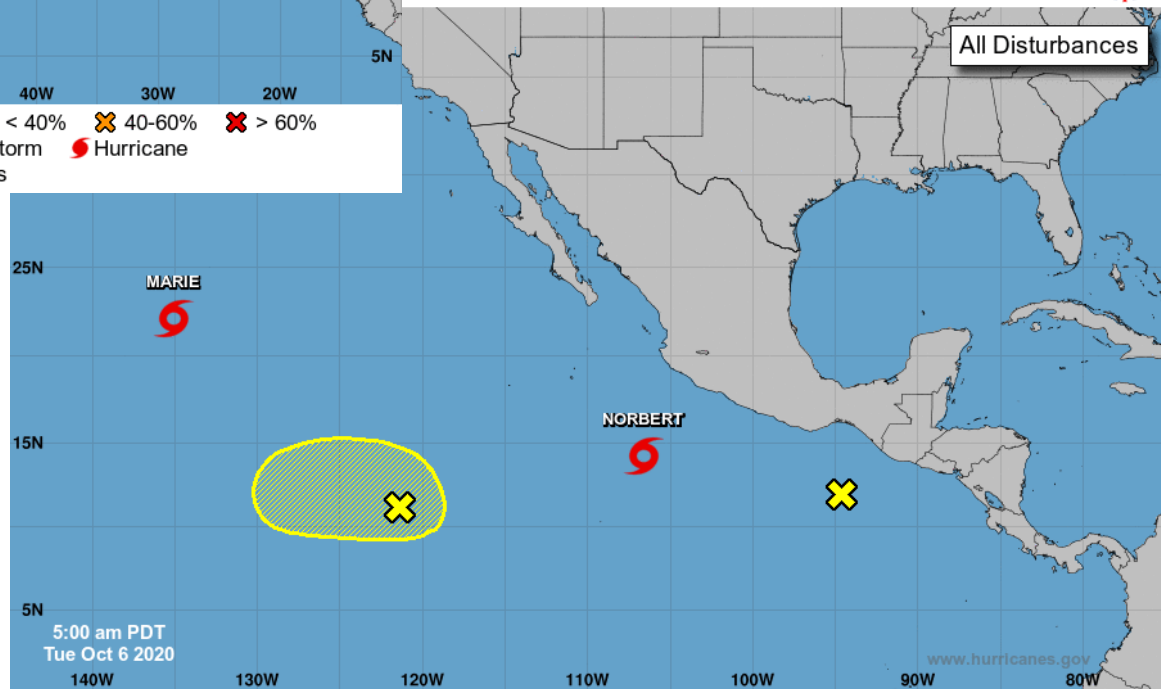
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

## Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



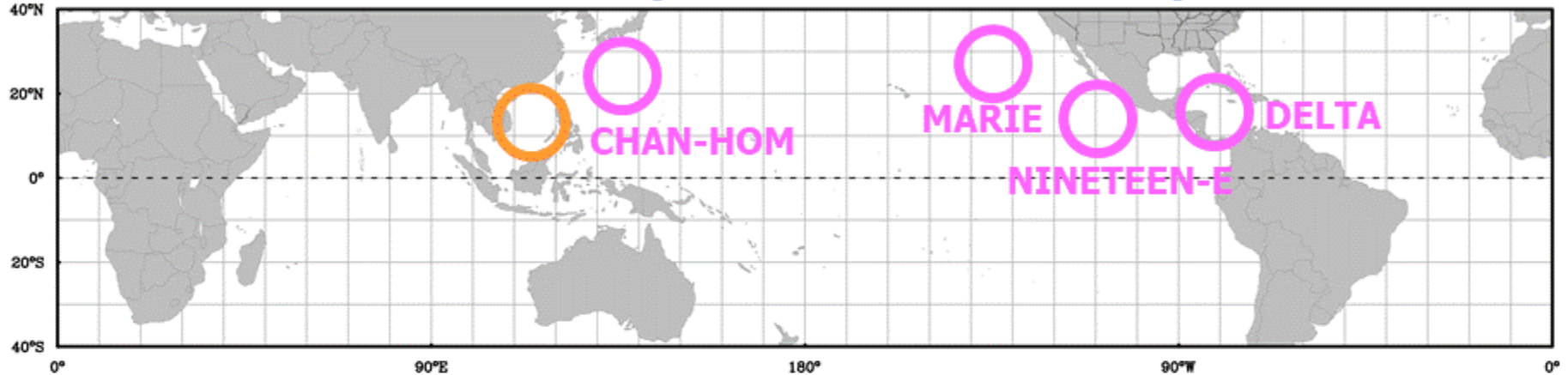
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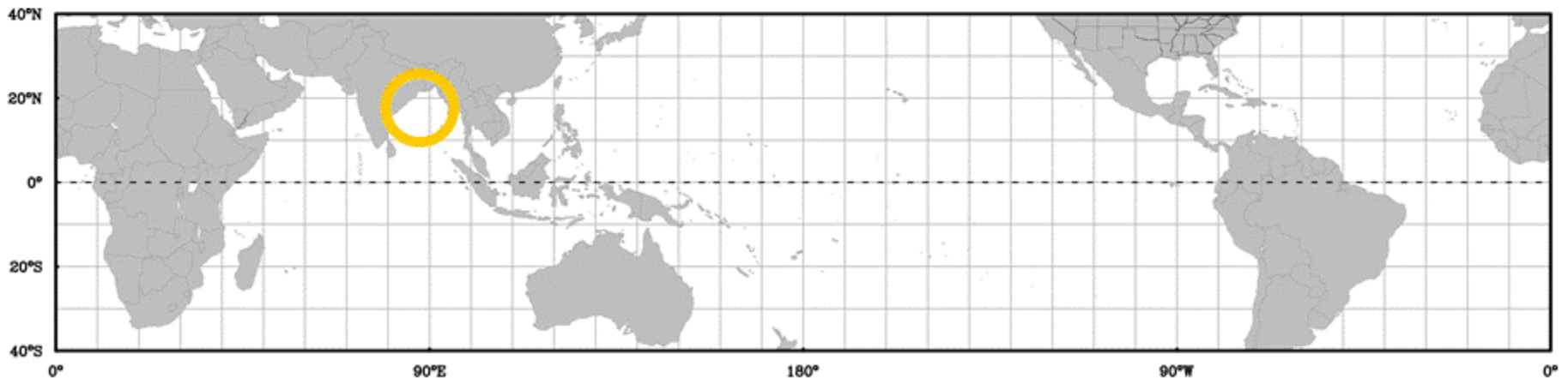
Post-Tropical Cyclone or Remnants

# TC Formation Outlook Based on the NCEP GEFS

WEEK 1 (Oct. 7 ~ Oct. 13 2020)



WEEK 2 (Oct. 14 ~ Oct. 20 2020)

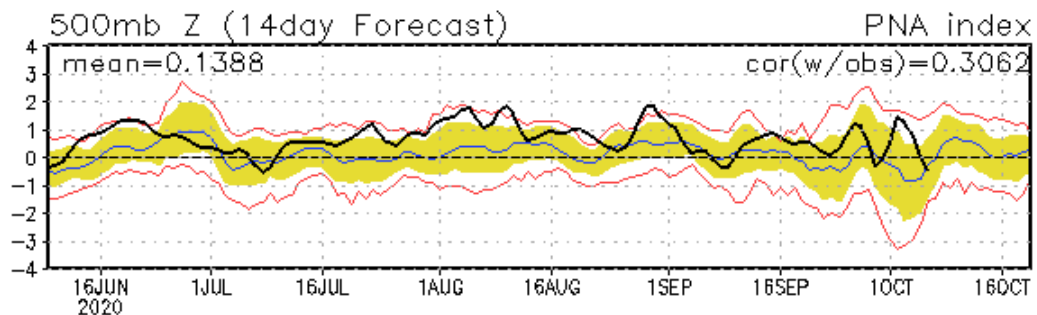
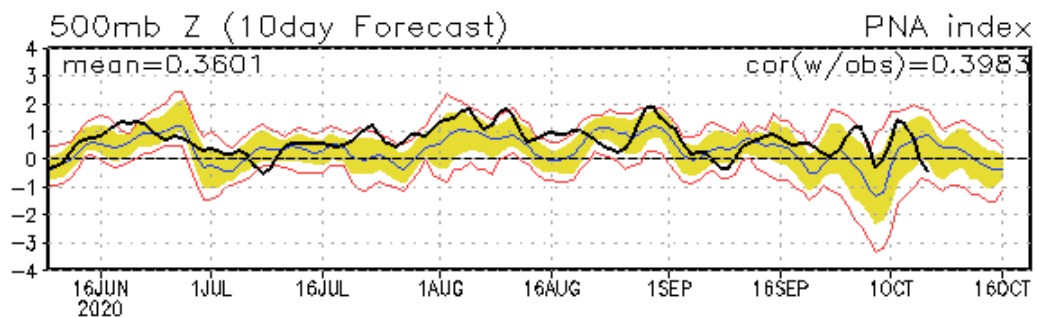
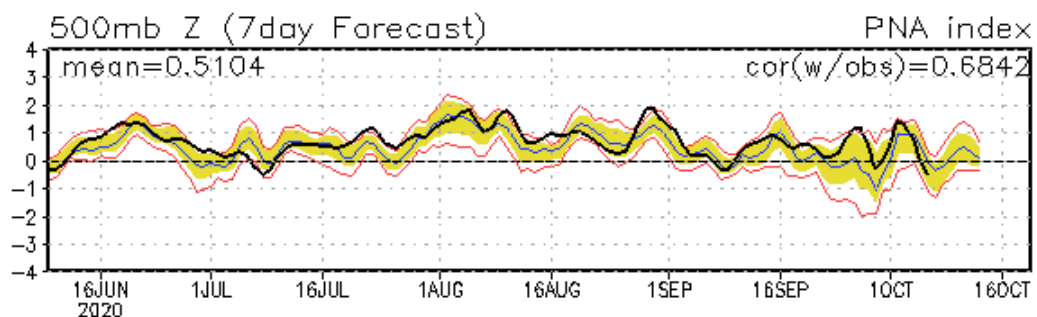
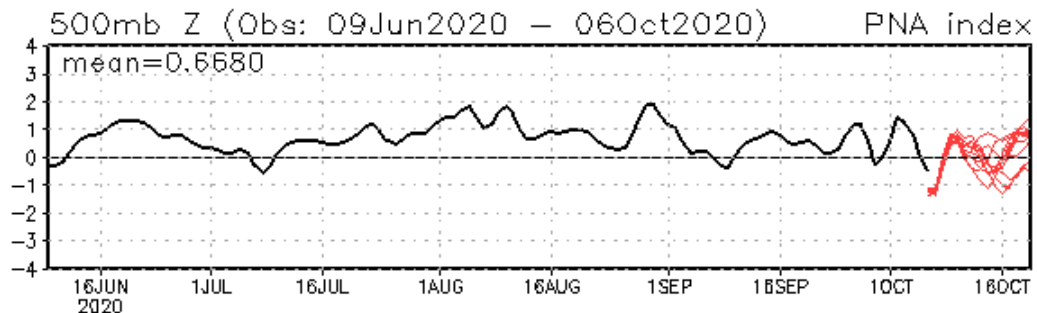


 strong  moderate  weak  active TC

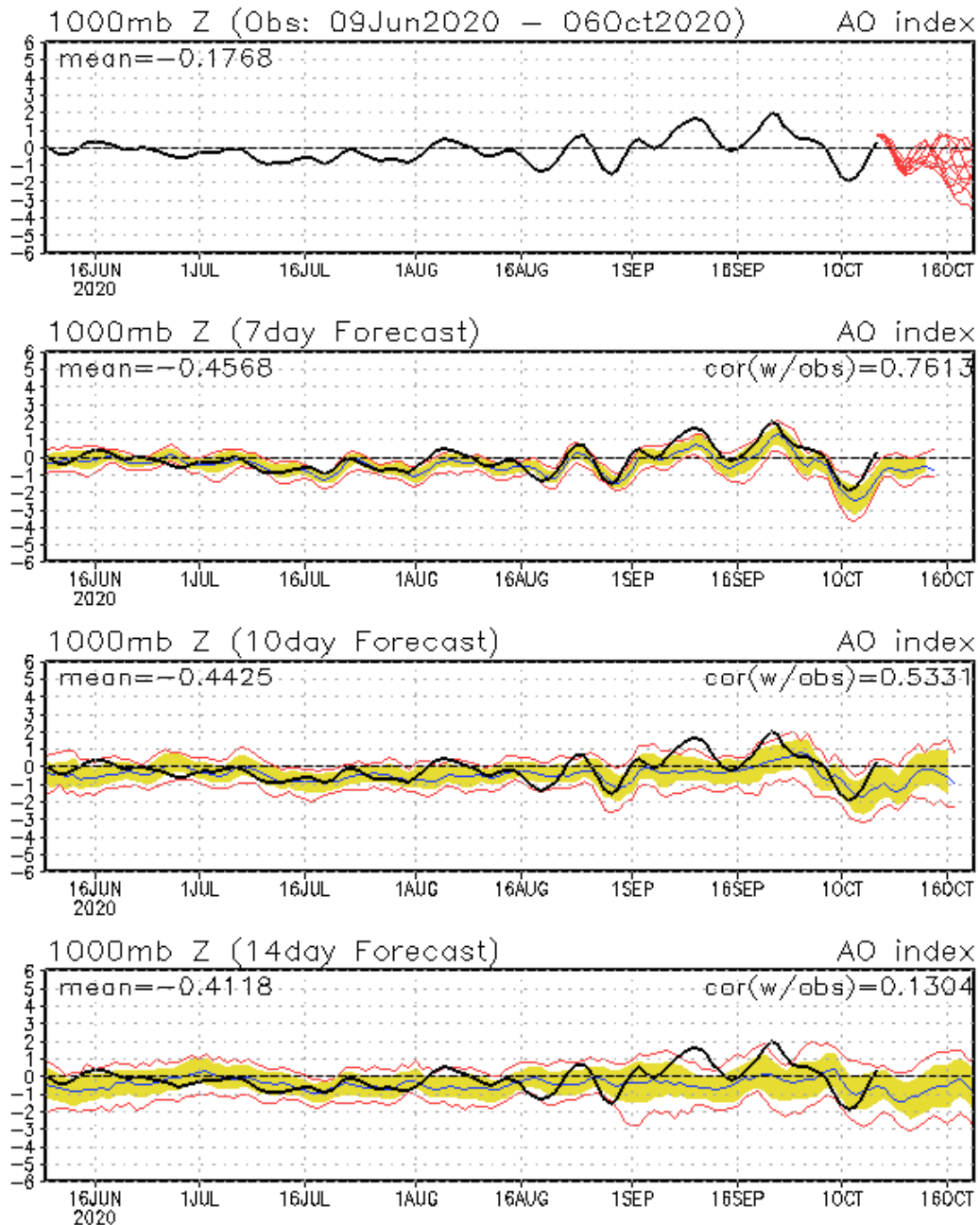


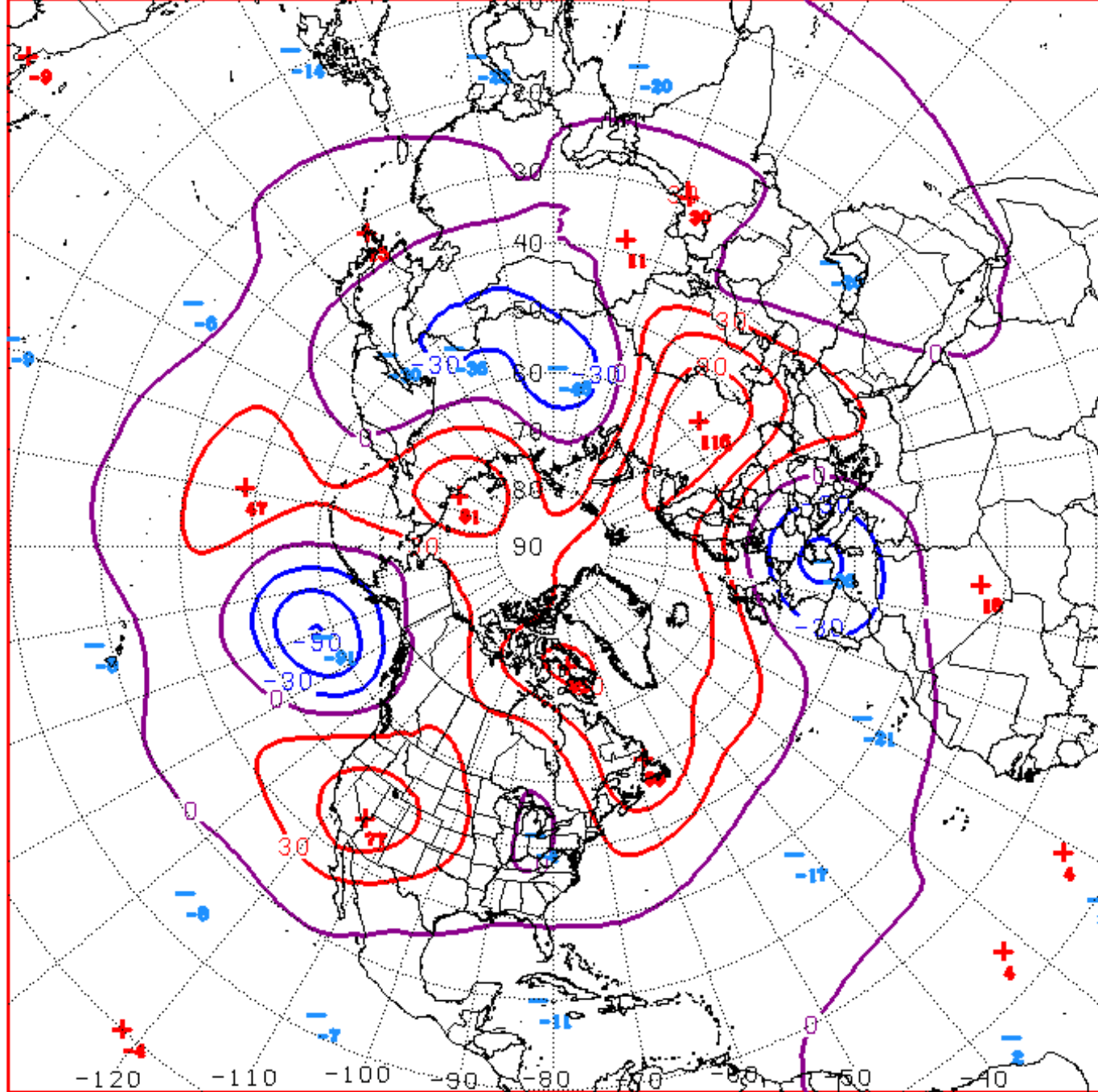
# Connections to U.S. Impacts

## PNA: Observed & ENSM forecasts



## AO: Observed & ENSM forecasts

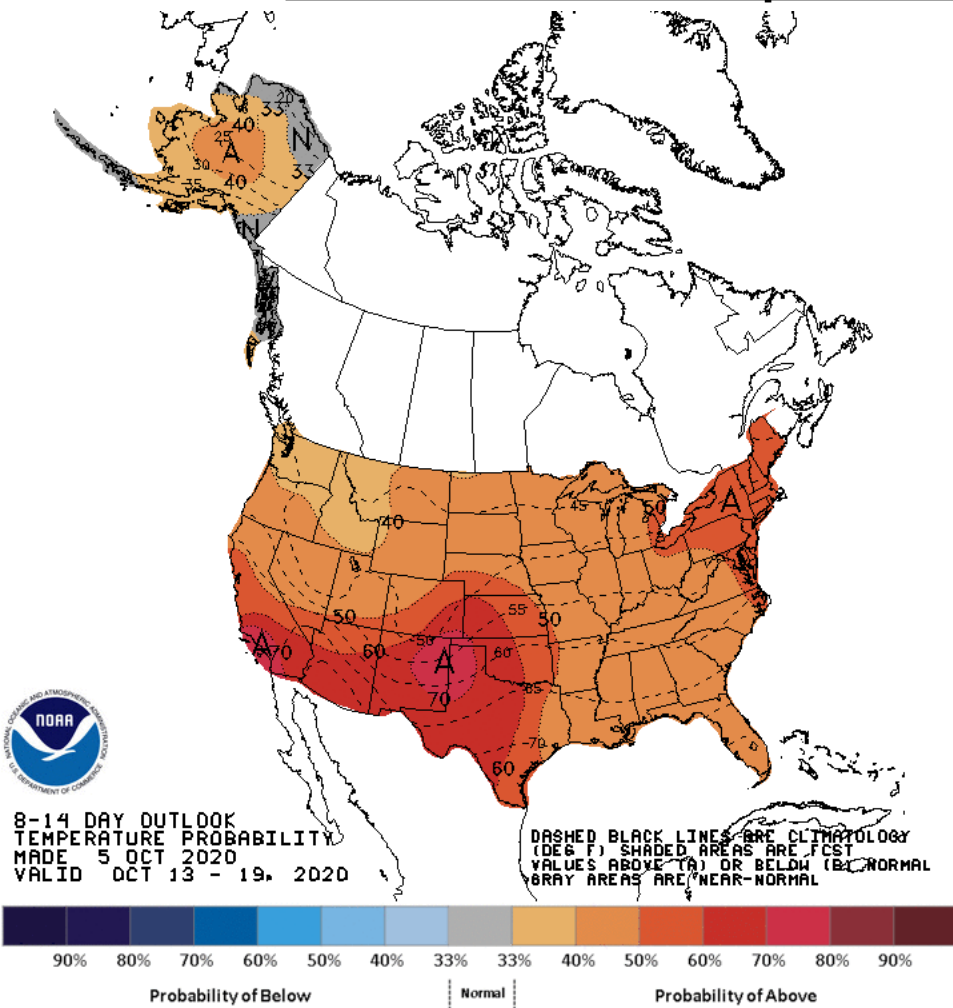




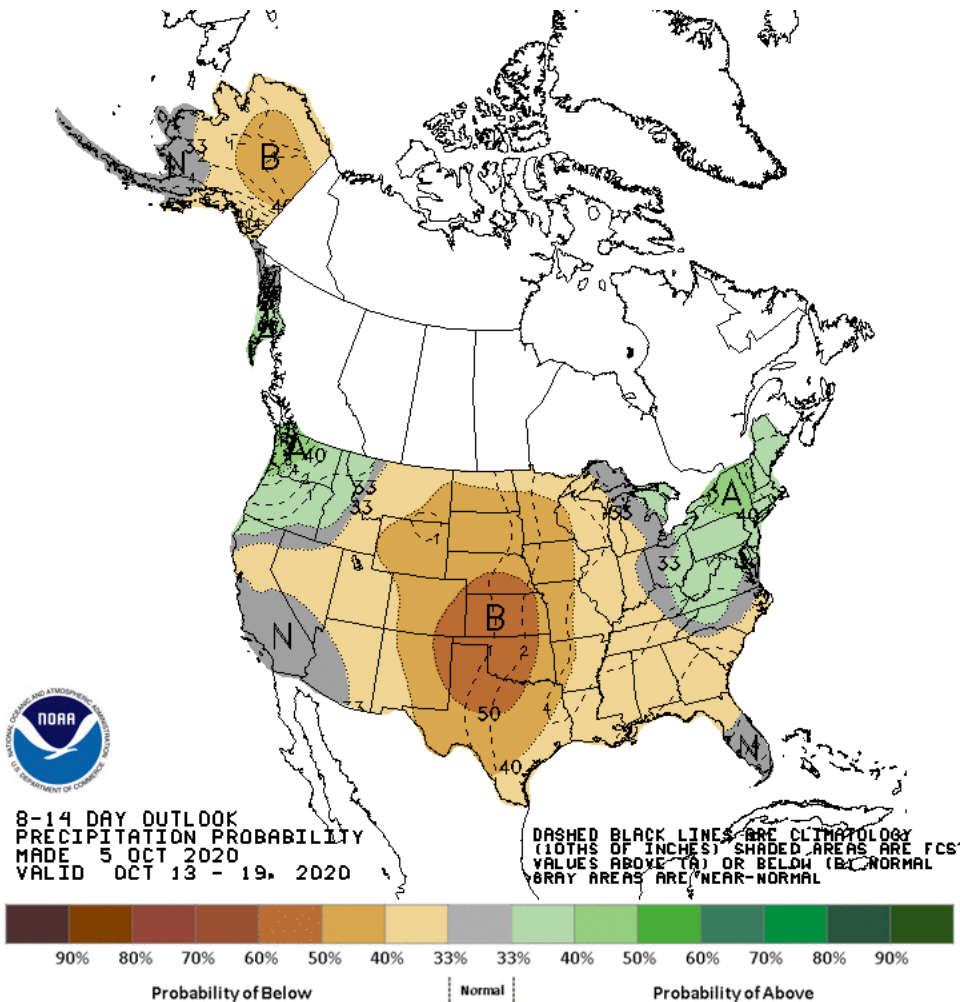
D+11 500 MB ANOMALIES FROM ALZ ENSM  
CPC MAP MADE OCT 06 2020 1447 UTC CNTD OCT 17 2020



# Week 2 – Temperature and Precipitation



Relatively warm and dry for most of CONUS and Alaska.  
Wet for Pac NW & Northeast

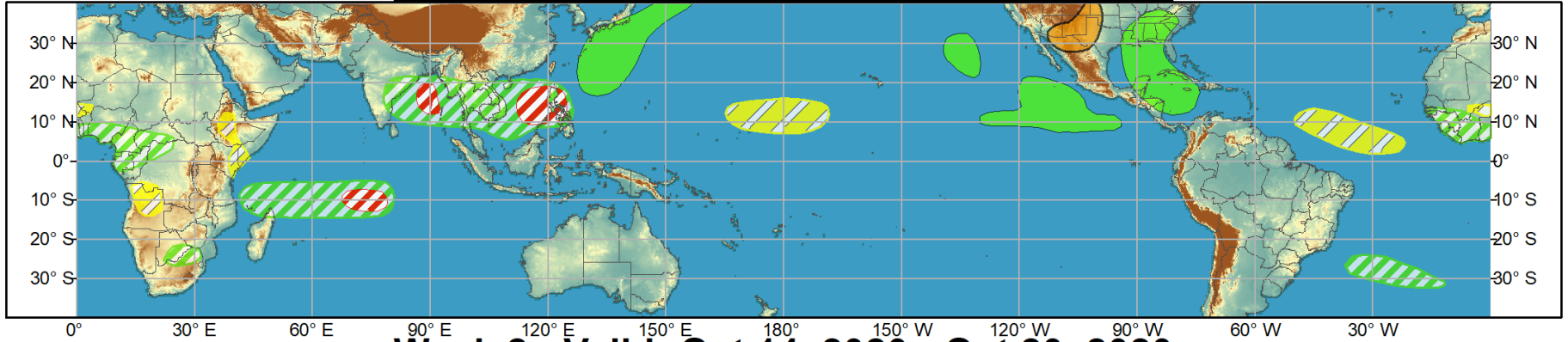




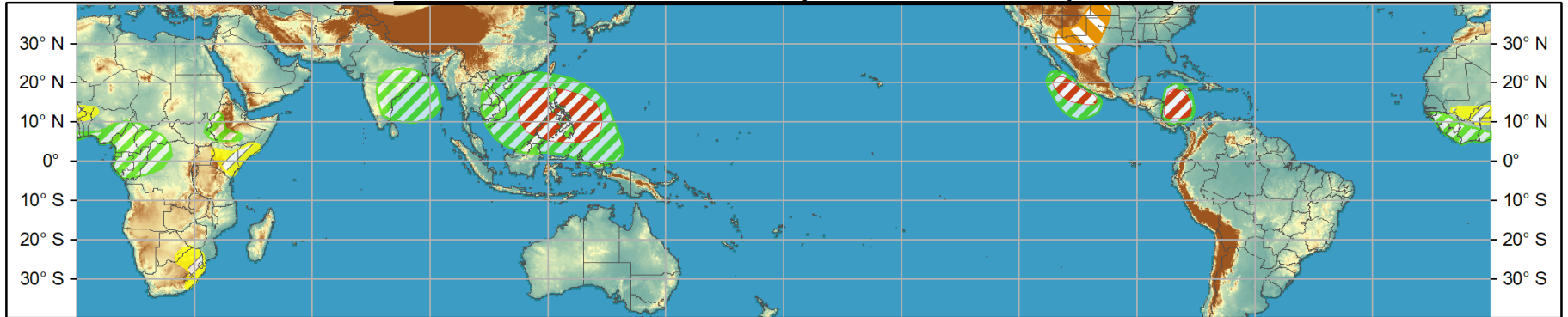
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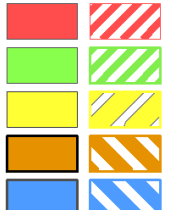


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