

# Global Tropics Hazards And Benefits Outlook

5/4/2021

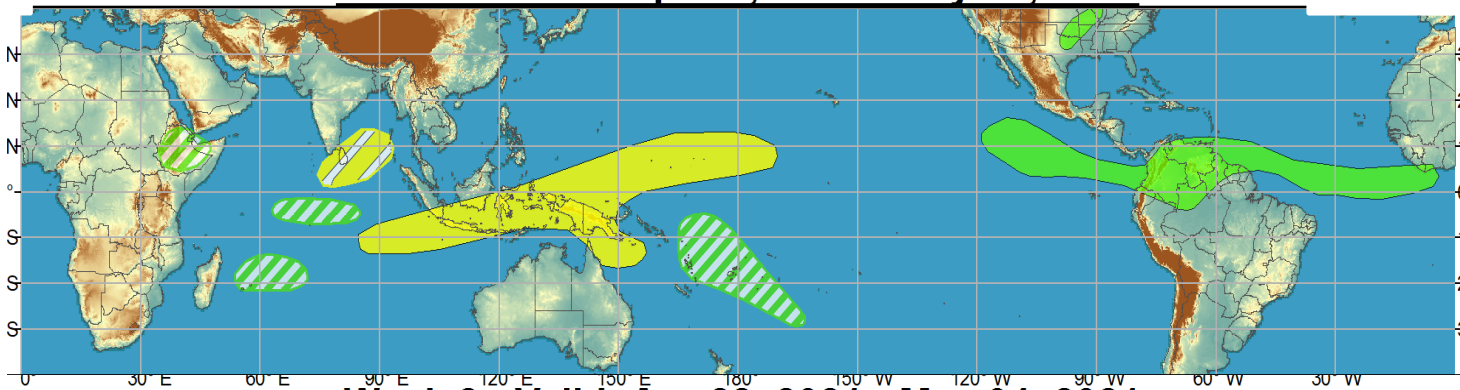
Kyle MacRitchie

## Outline

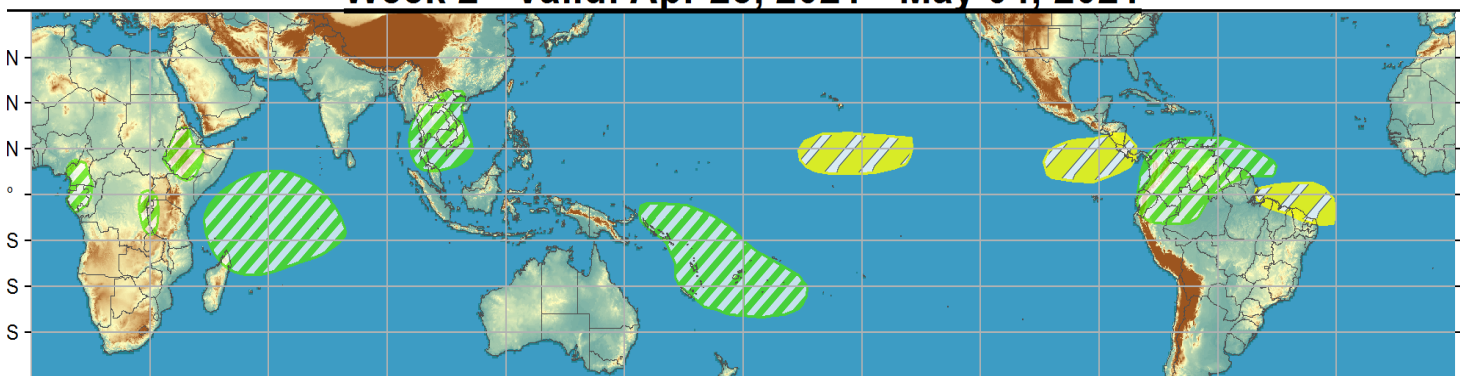
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review

**Week 1 - Valid: Apr 28, 2021 - May 04, 2021**

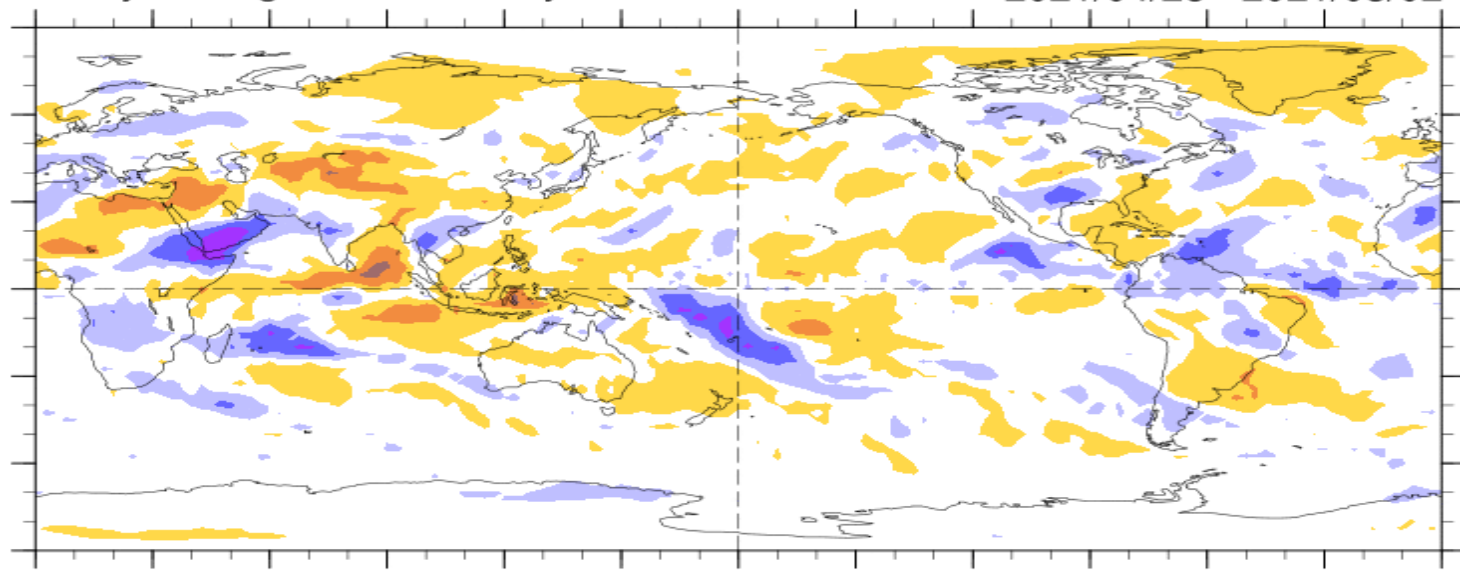


**Week 2 - Valid: Apr 28, 2021 - May 04, 2021**



7-Day Average OLR Anomaly

2021/04/26 - 2021/05/02



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

**ENSO:** (April 8, 2021 Update)

*next update on May 13, 2021*

- ENSO Alert System Status: [La Niña Advisory](#)
- A transition from La Niña to ENSO-Neutral is likely in the next month or so, with an 80% chance of ENSO-neutral during May-July 2021.

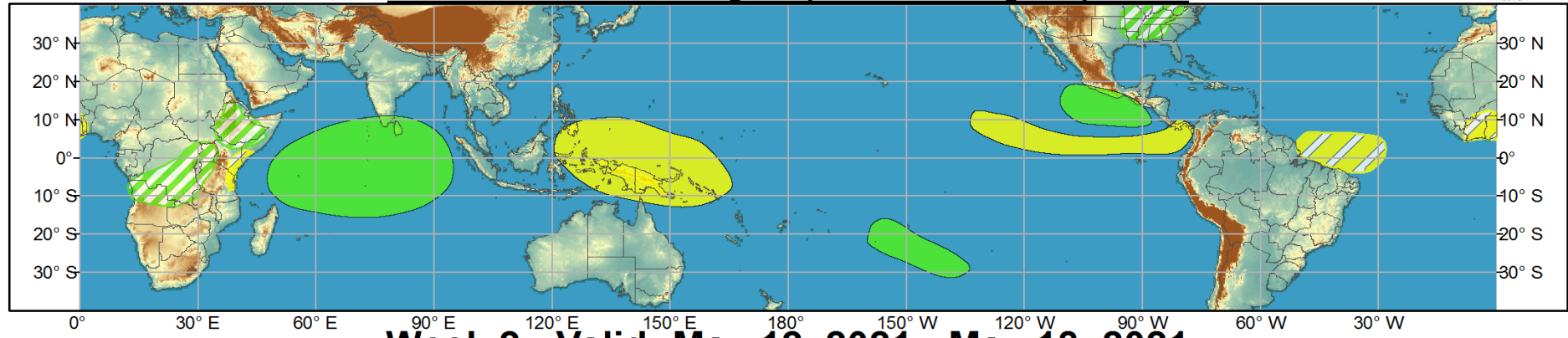
**MJO and other subseasonal tropical variability:**

- The MJO is especially strong; moving over the Indian Ocean.
- The MJO is expected to continue around the Equator during the next two weeks.
- Other tropical signals are particularly weak. ENSO conditions are near normal and there isn't much potential for tropical cyclone development during the next two weeks.

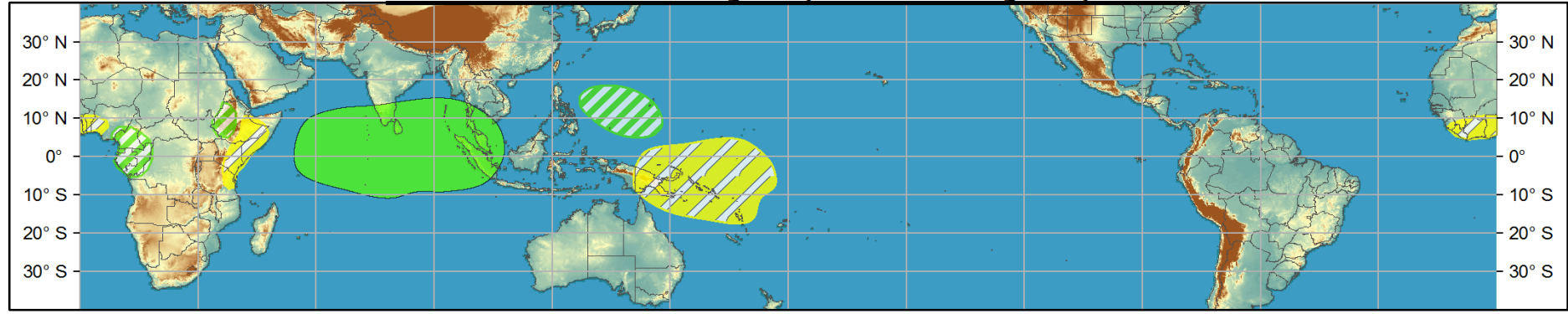


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: May 05, 2021 - May 11, 2021



## Week 2 - Valid: May 12, 2021 - May 18, 2021



**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.
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Produced: 05/04/2021

Forecaster: MacRitchie

**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.**

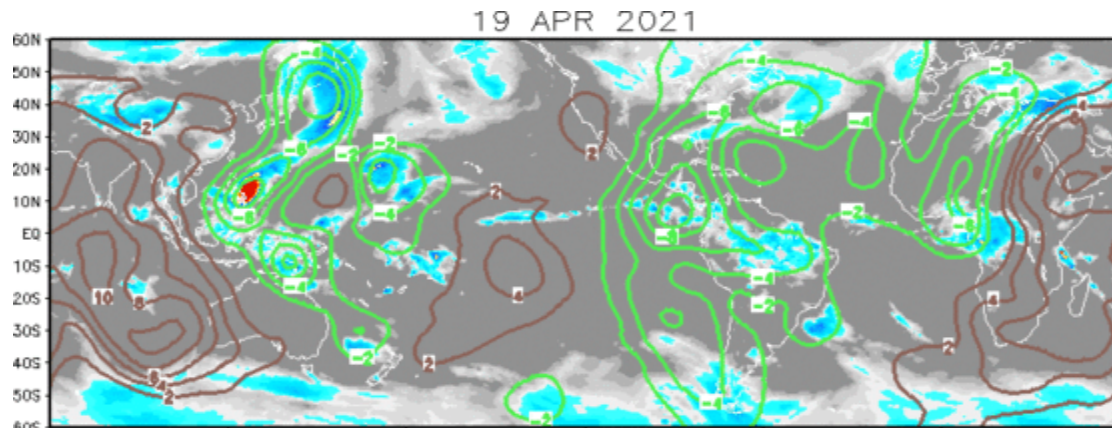


# IR Satellite & 200-hpa Velocity Potential Anomalies

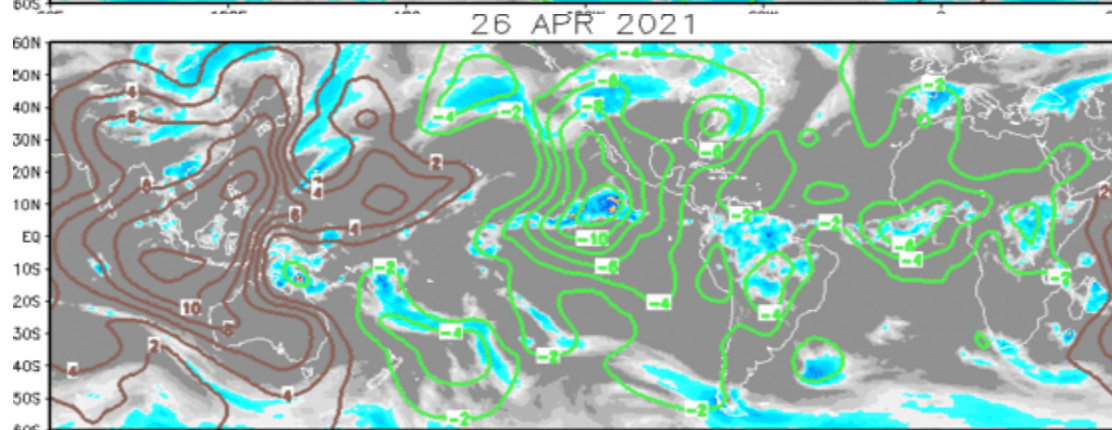
Green: Enhanced Divergence

Brown: Enhanced Convergence

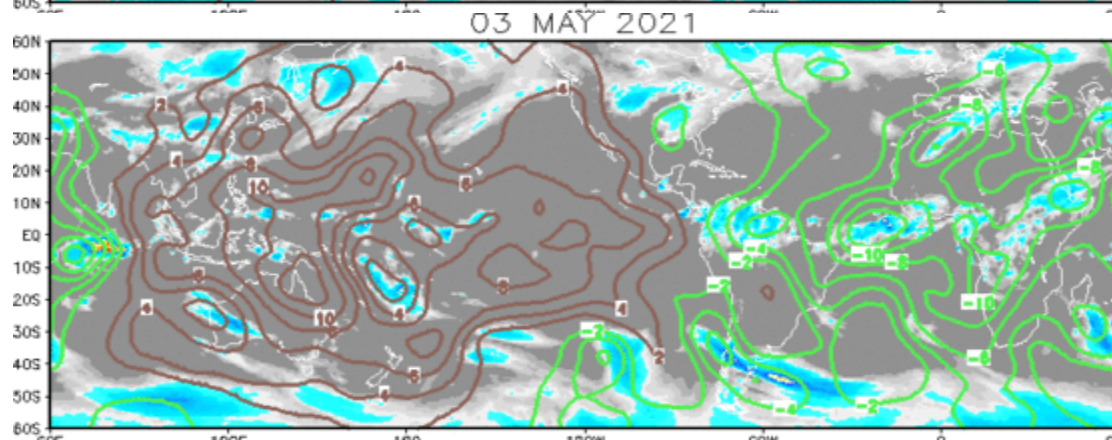
Significant asymmetry due to WPAC Typhoon activity.



Wave-1 pattern locks in as MJO strengthens.

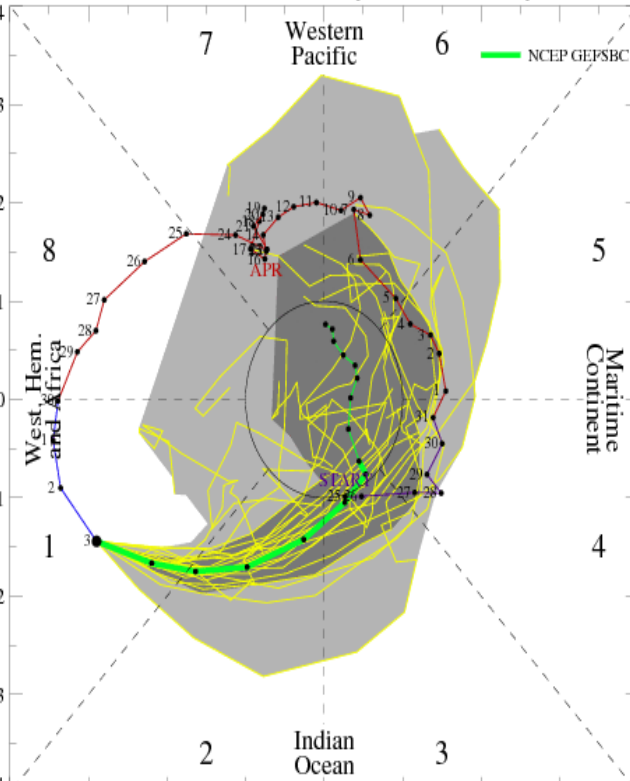


A strong Wave-1 pattern associated with a strong MJO moving into the Indian Ocean.

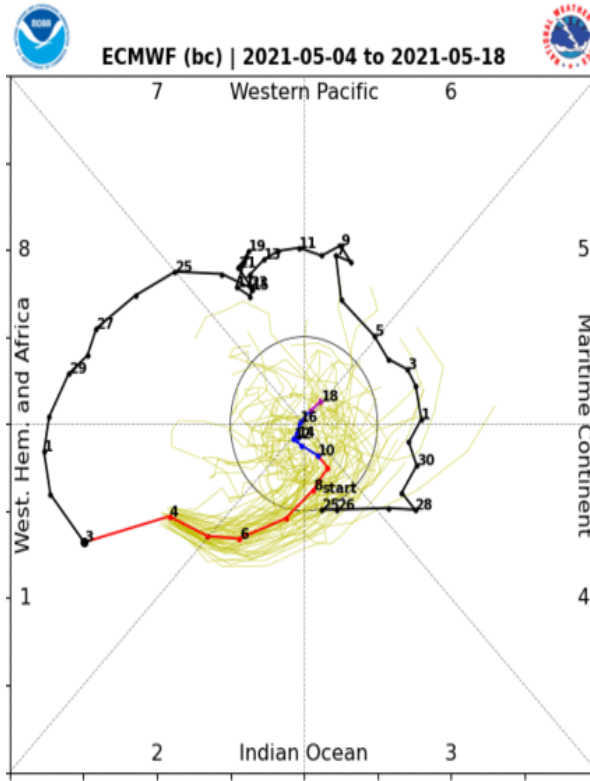


# MJO Observation/Forecast

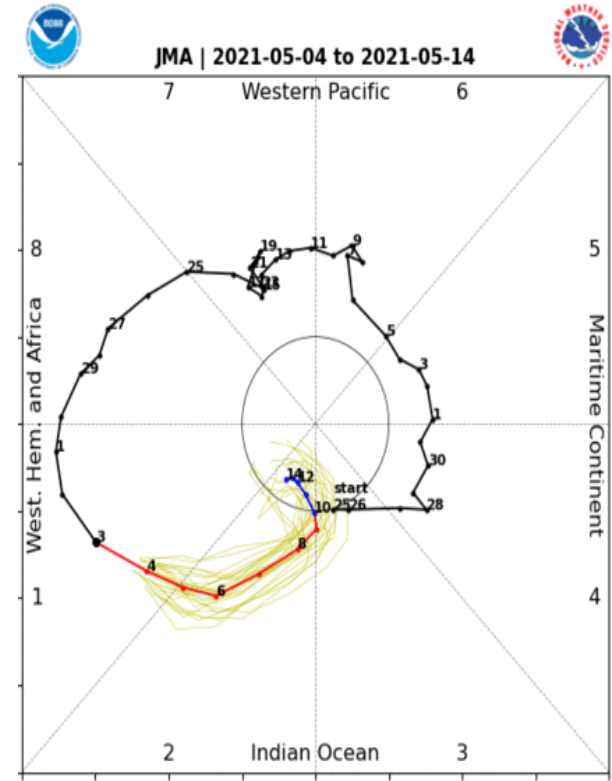
[RMM1, RMM2] forecast for May-04-2021 to May-18-2021



GEFS



ECMWF

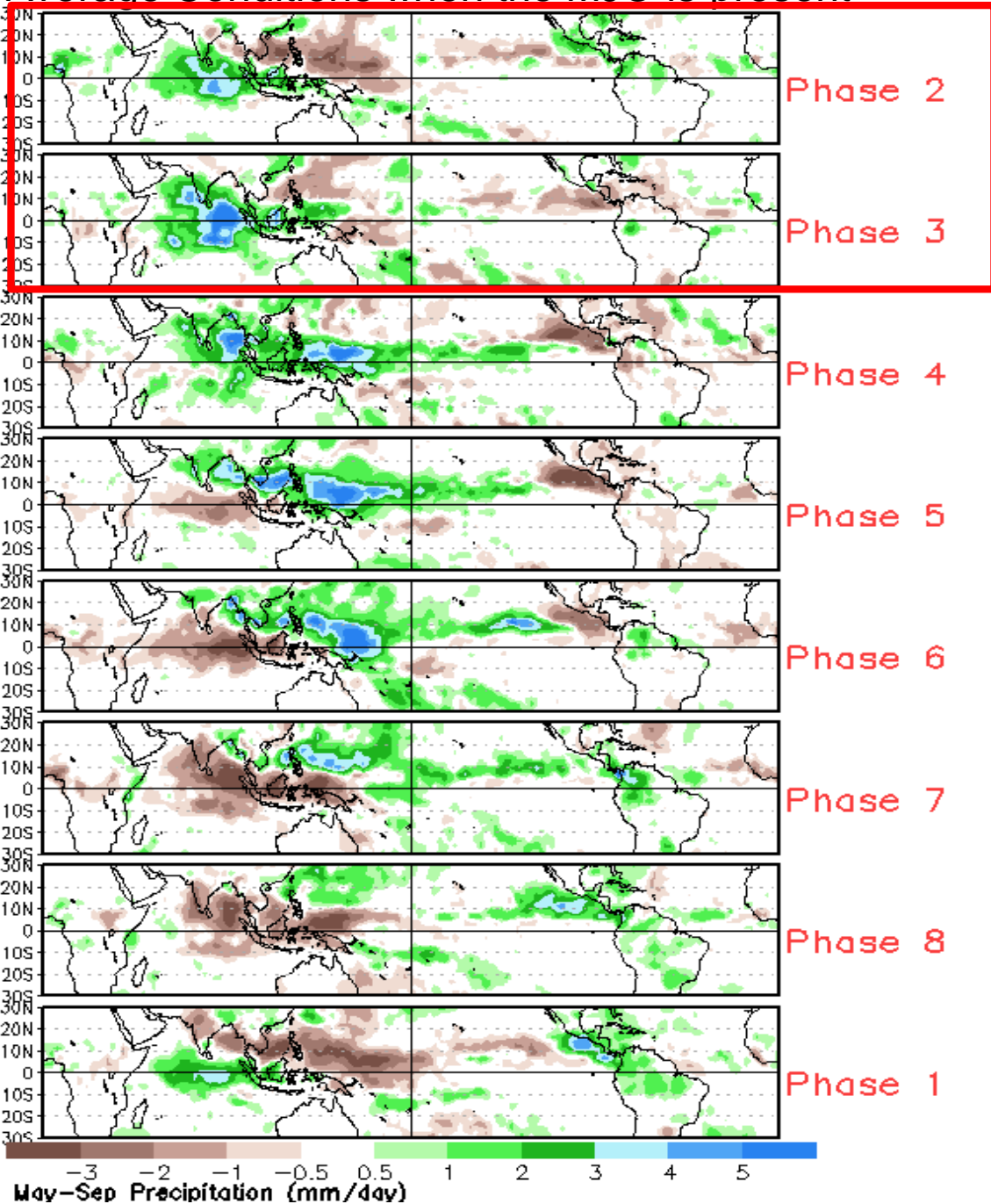


JMA

All models are in good agreement that MJO will continue propagating throughout the Tropics during the next two weeks.

The predicted weakness in Week-2 is most likely a result of changing ENSO conditions affecting the calculation of the RMM index and a forecasted equatorial Rossby wave.

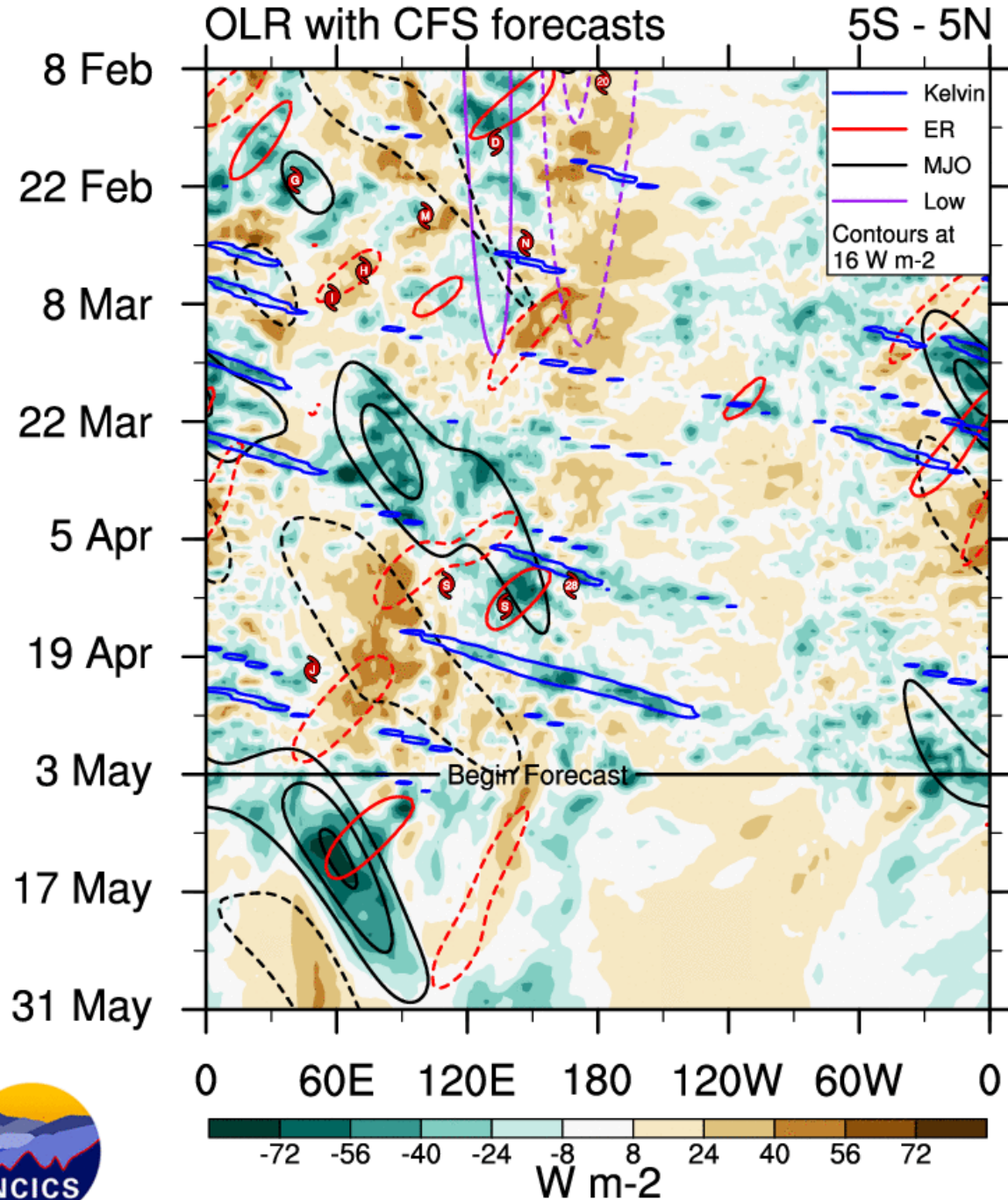
# Average Conditions when the MJO is present



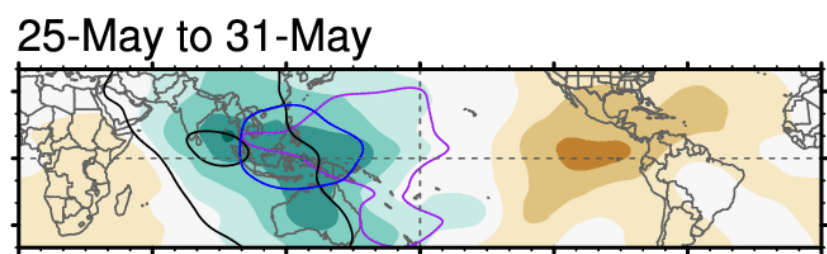
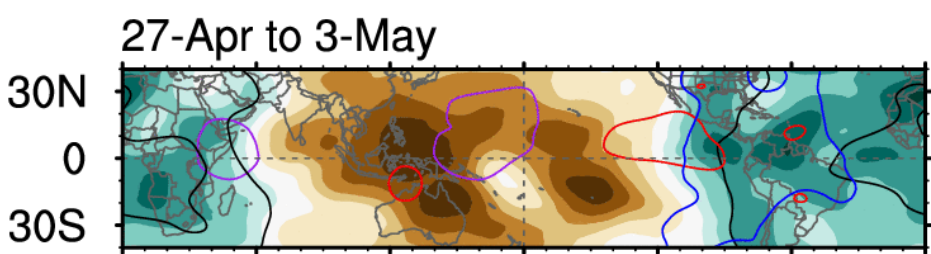
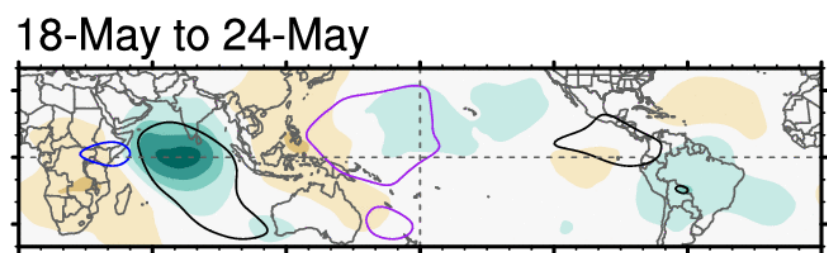
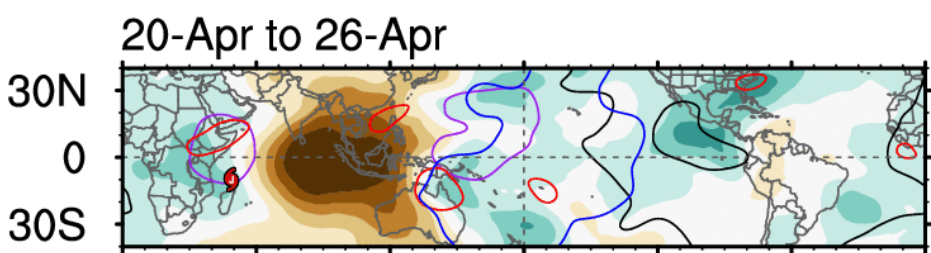
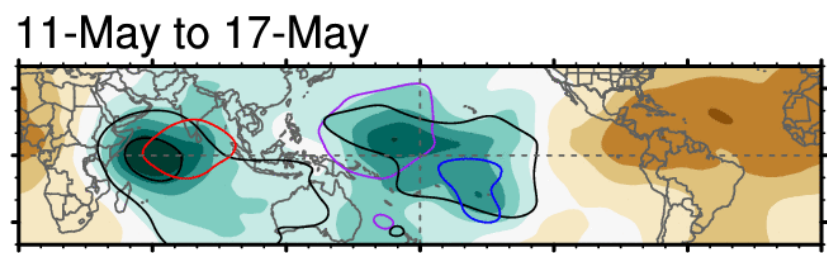
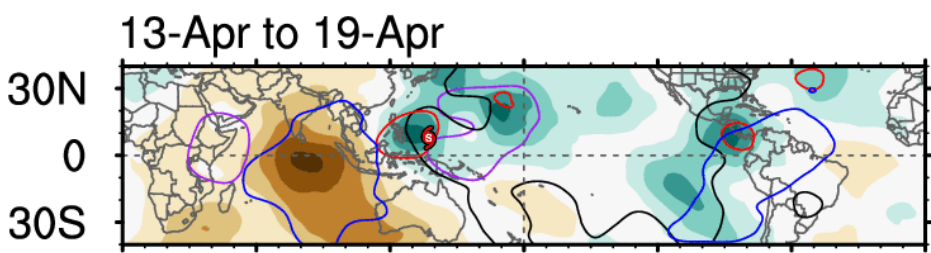
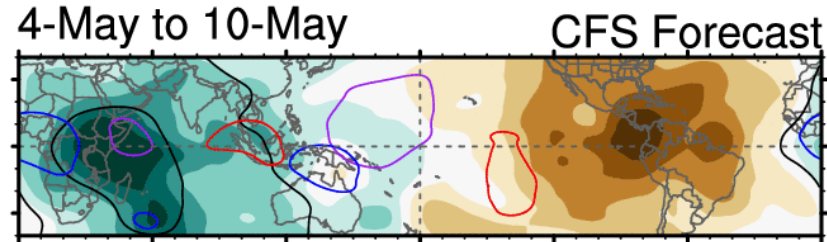
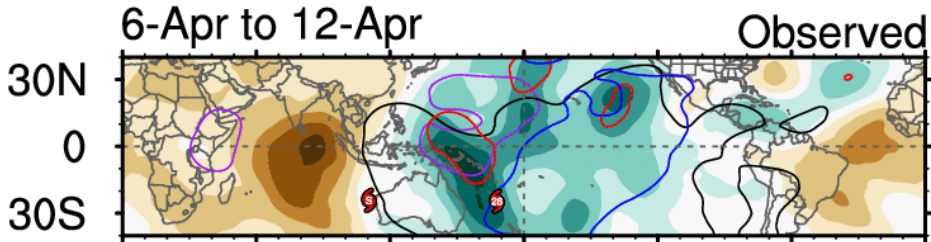
CAVEAT: These panels are representative of robust MJO events.

**MJO is strong,  
approaching the Indian  
Ocean.**

**Low frequency** La Nina  
signal has disappeared.

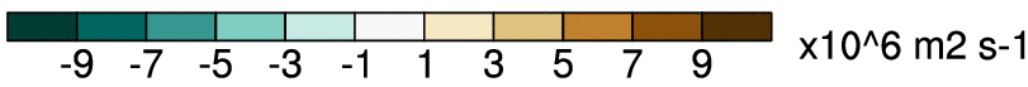






0 60E 120E 180 120W 60W 0

0 60E 120E 180 120W 60W 0

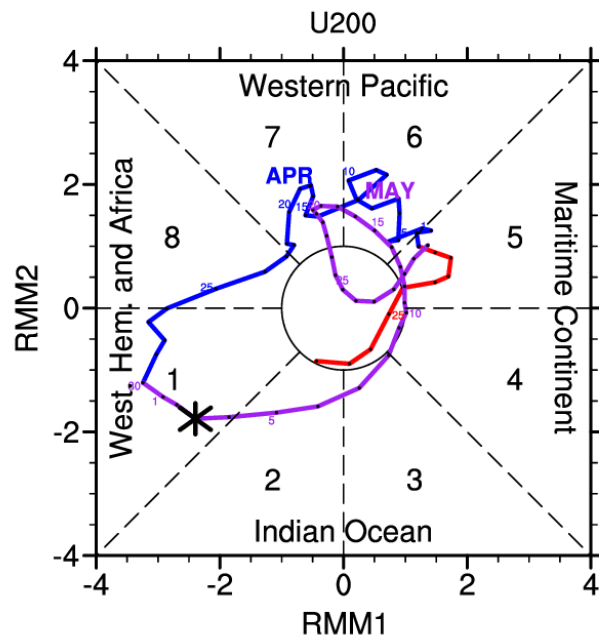
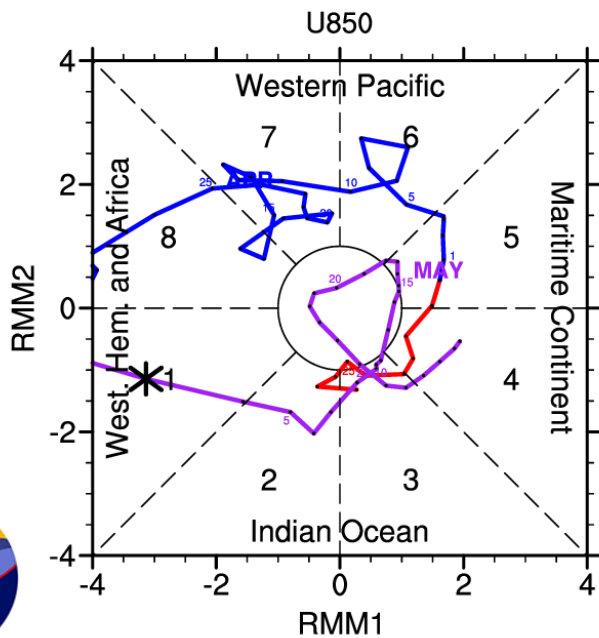
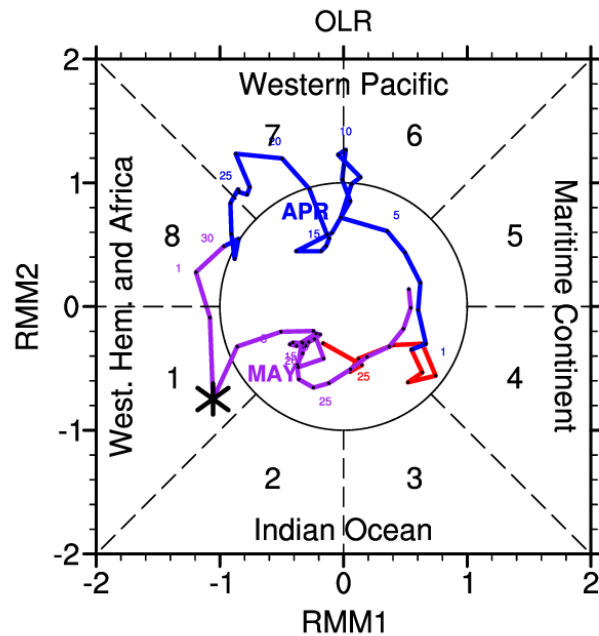
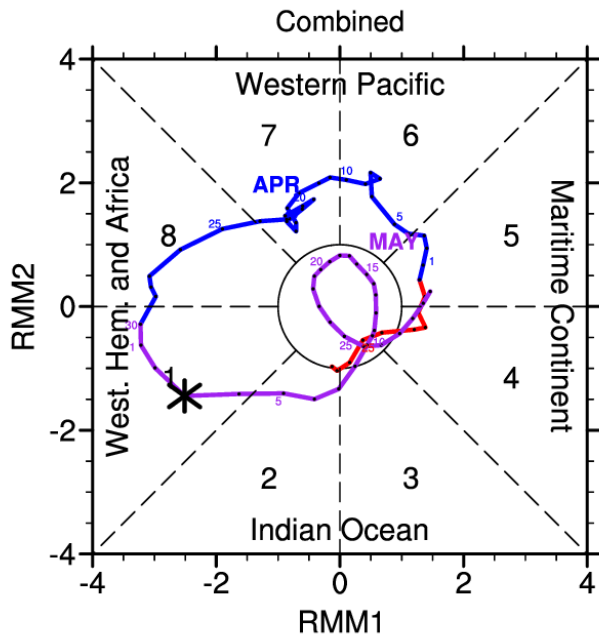


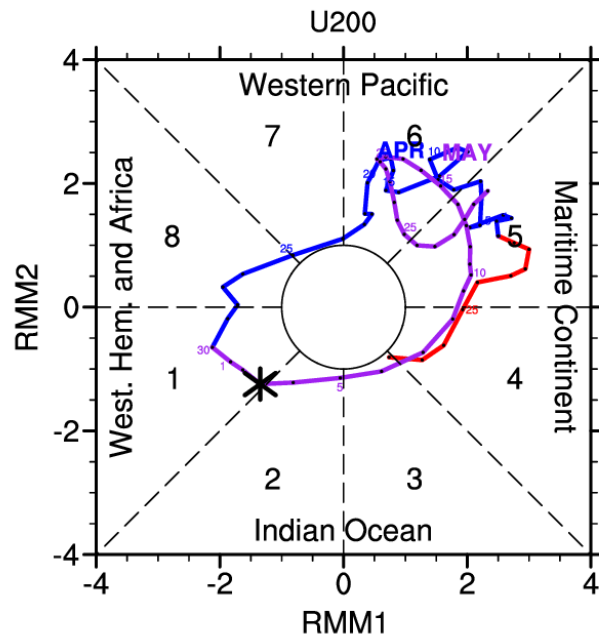
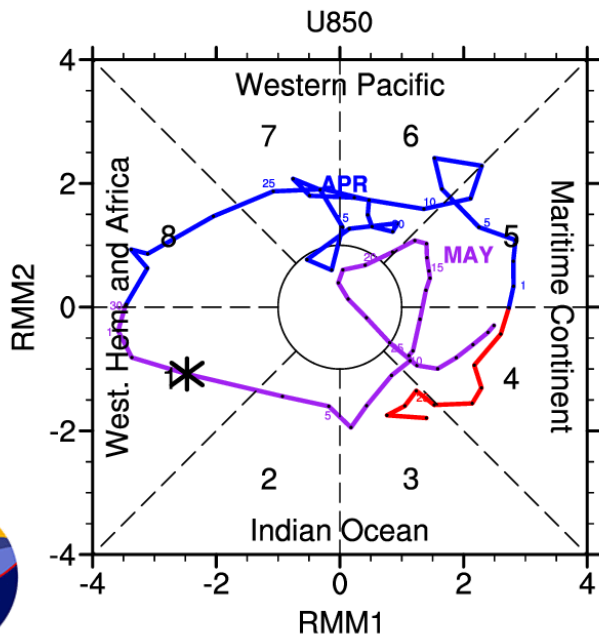
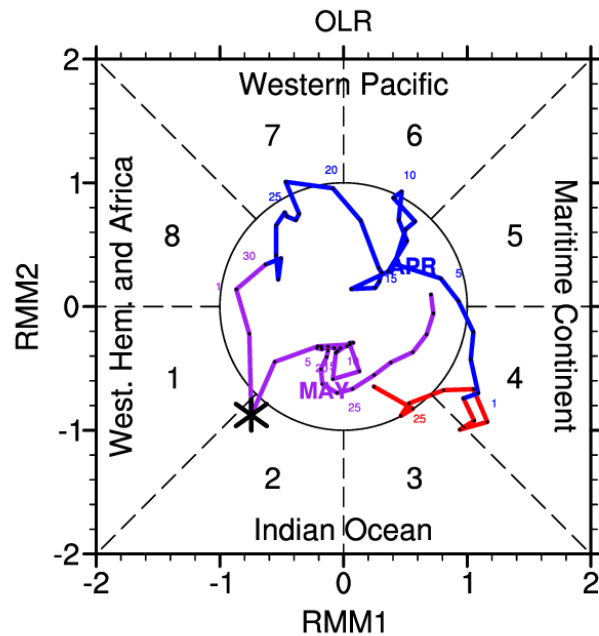
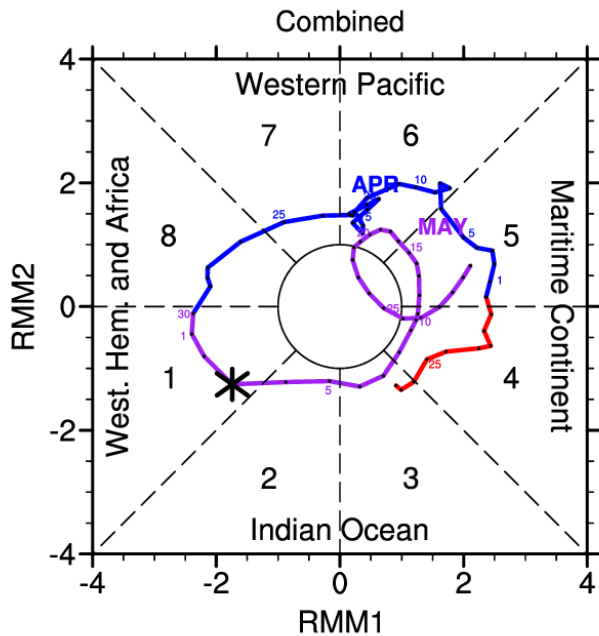
— MJO  
— Low  
— Kelvin x2  
— ER

Contours at  $-2, -6 \times 10^6 \text{ m}^2 \text{ s}^{-1}$

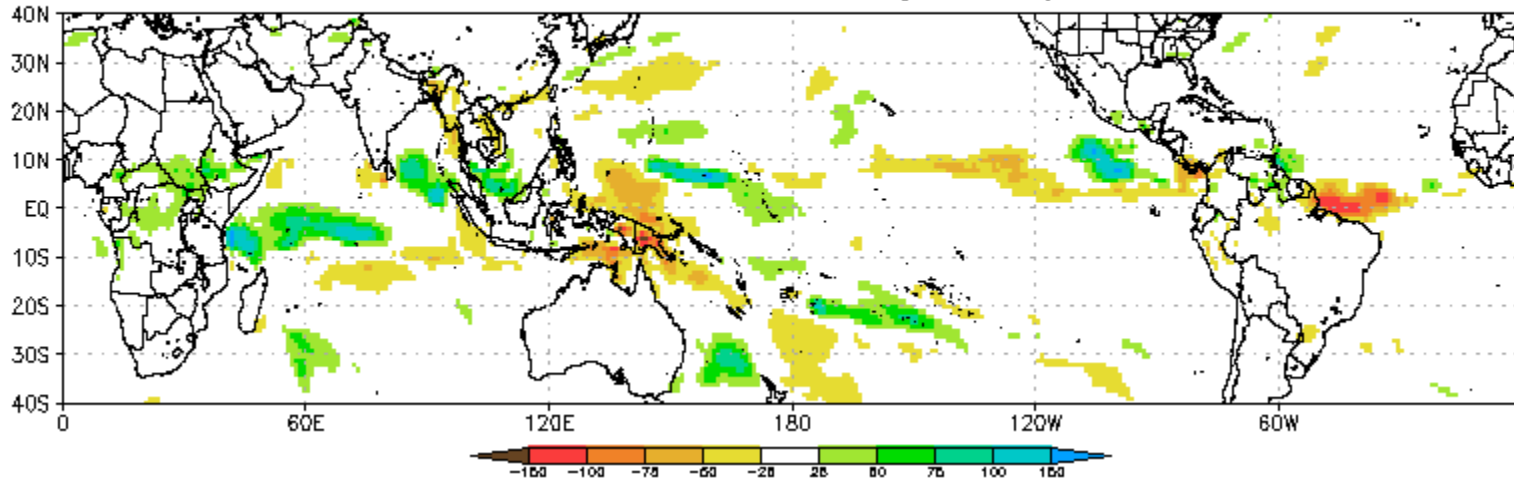
# 7-day CHI200 with CFS forecasts



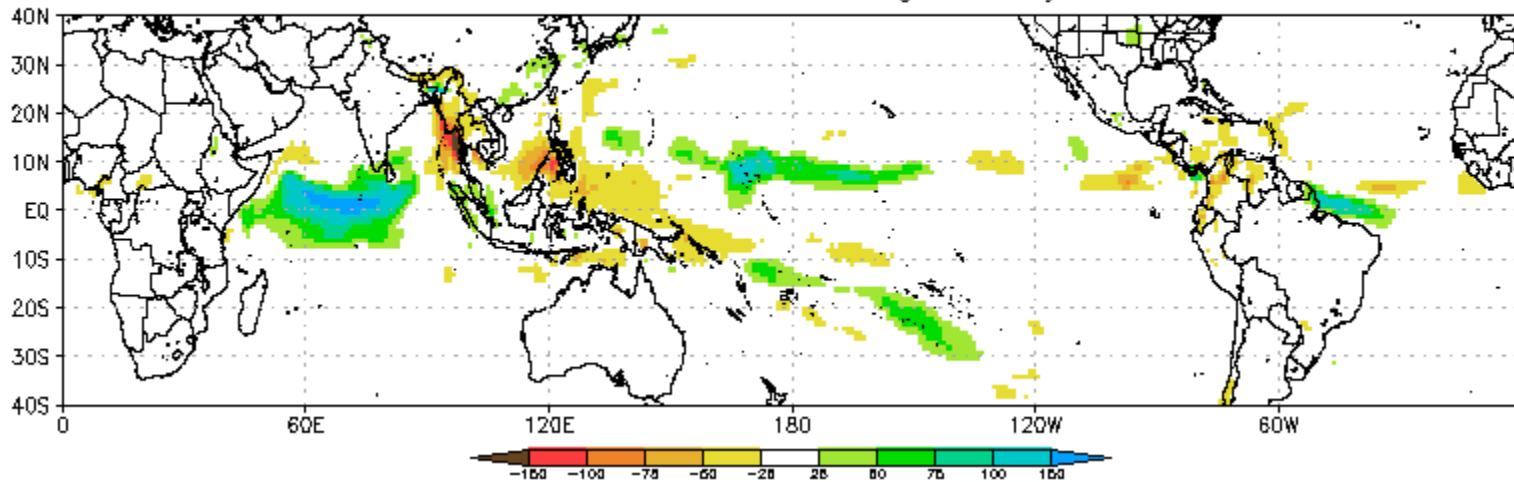




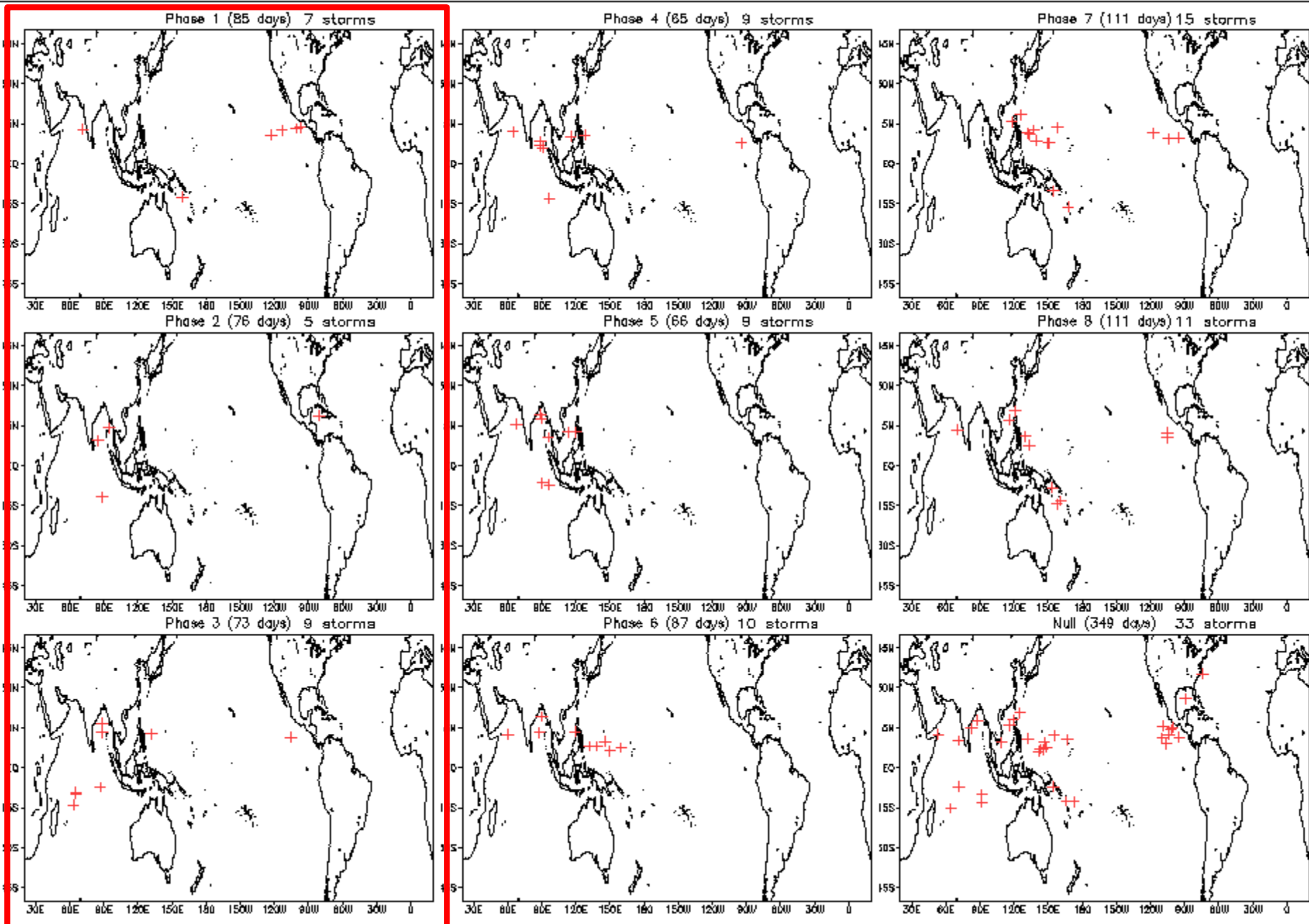
CFS Precipitation Anomalies (mm) Issued 03May2021  
Week-1 Forecast Ending 11May2021



CFS Precipitation Anomalies (mm) Issued 03May2021  
Week-2 Forecast Ending 18May2021

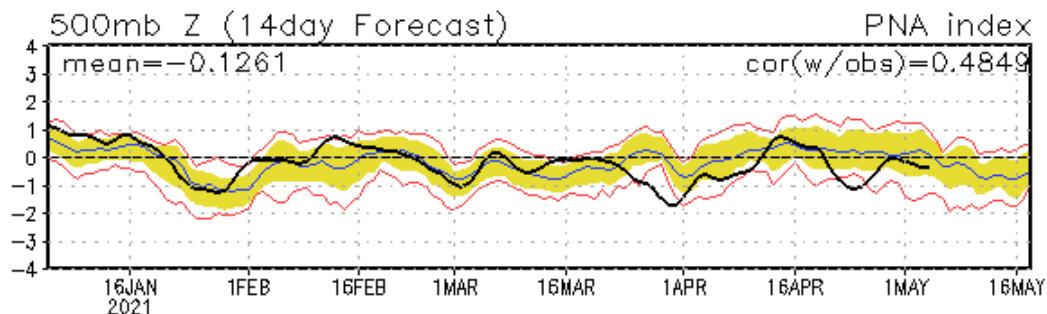
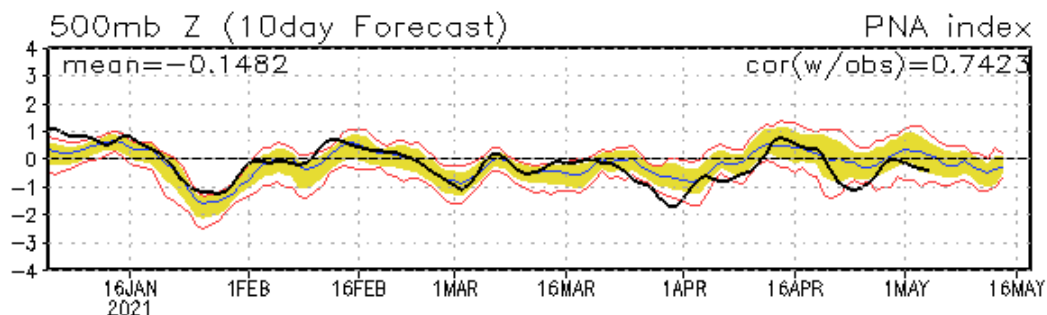
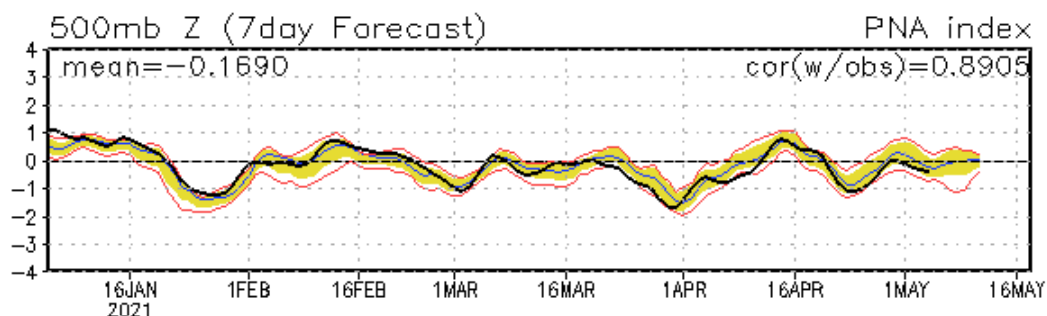
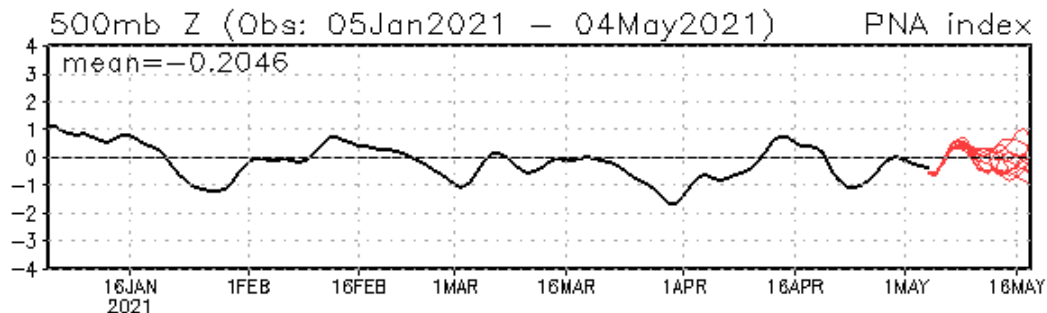


# May Tropical Storm Formation by MJO phase

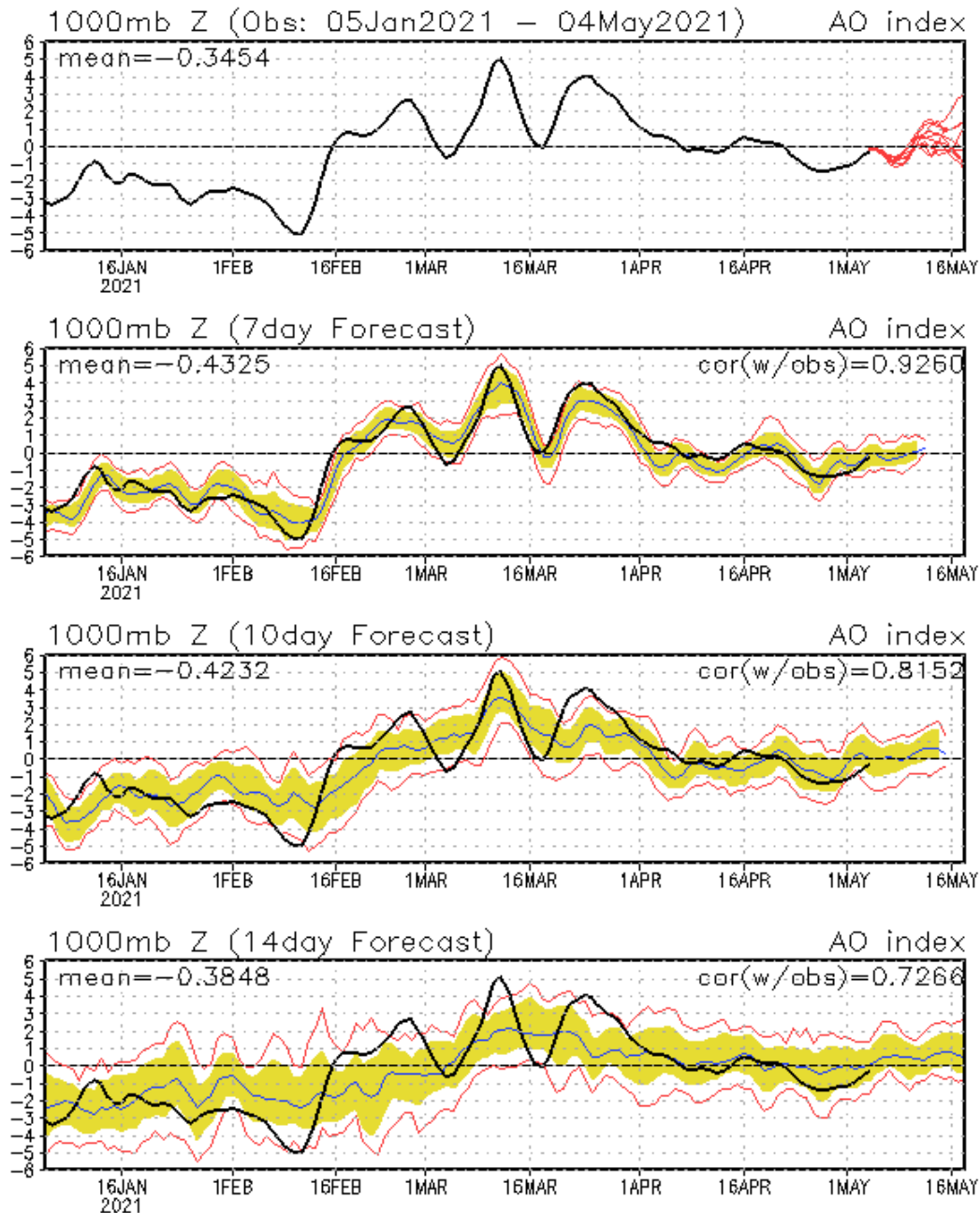


# Connections to U.S. Impacts

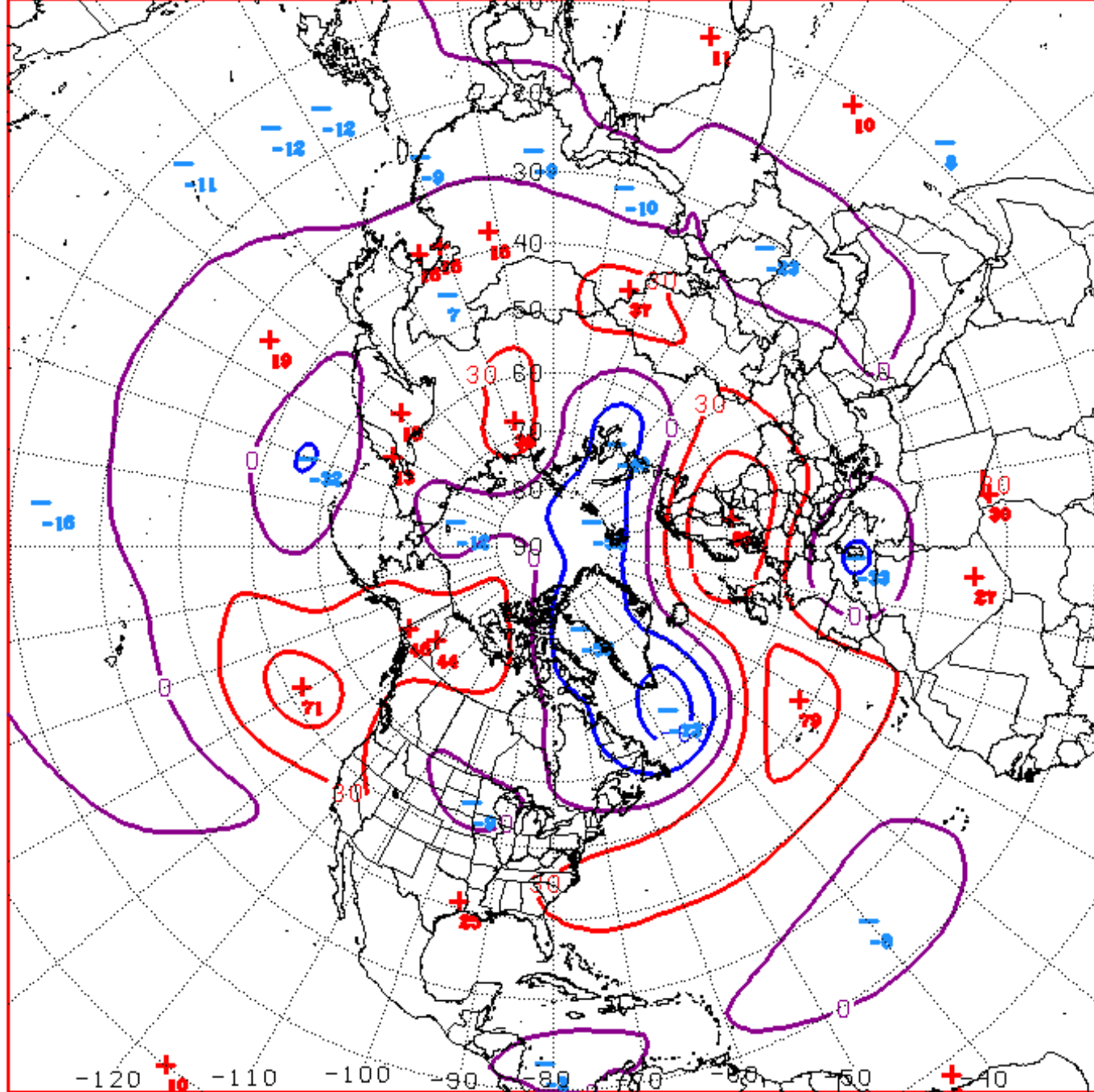
## PNA: Observed & ENSM forecasts



## AO: Observed & ENSM forecasts



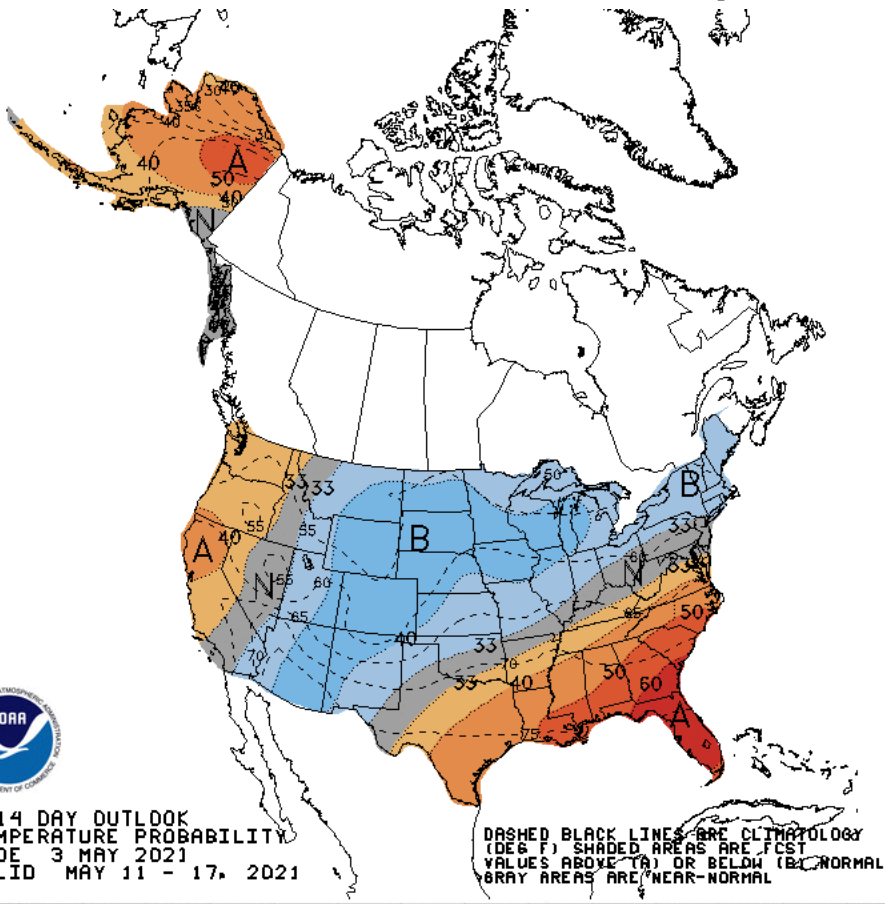




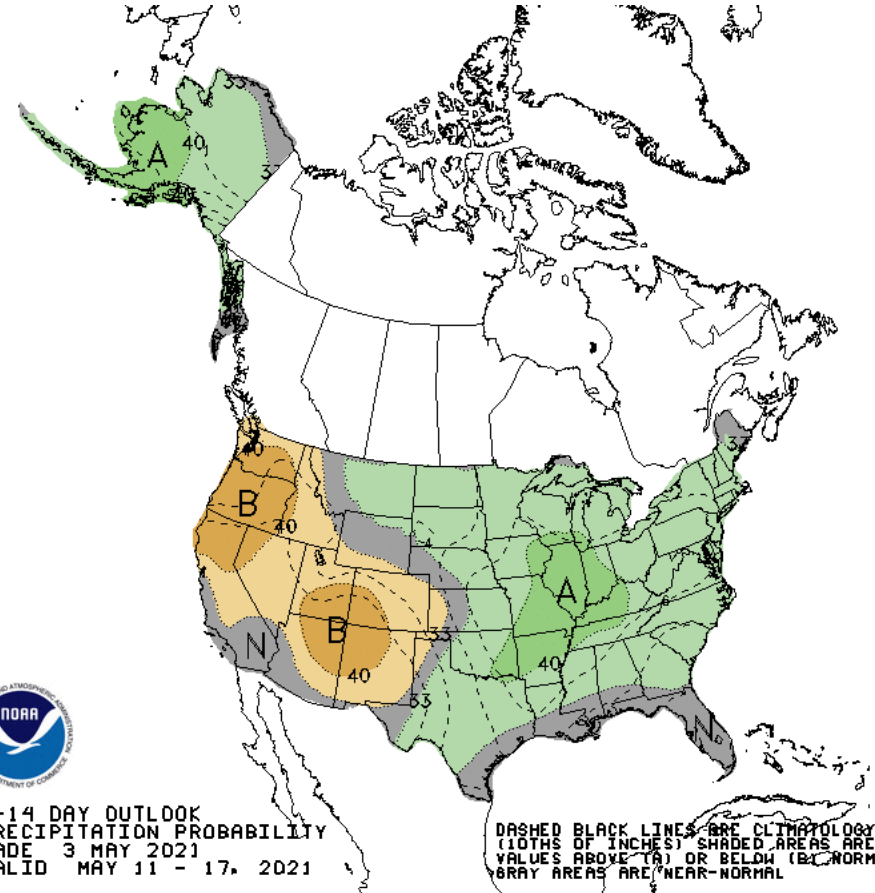
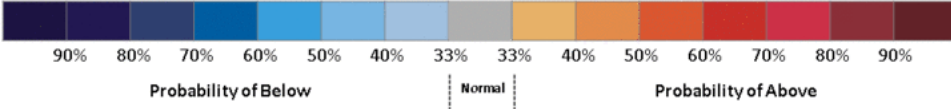
-120 +10 -110 -100 -90 -80 -70 -60 -50 +40

D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE MAY 04 2021 1422 UTC CNTD MAY 15 2021

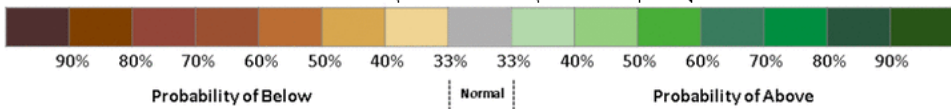
# Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 3 MAY 2021  
VALID MAY 11 - 17, 2021



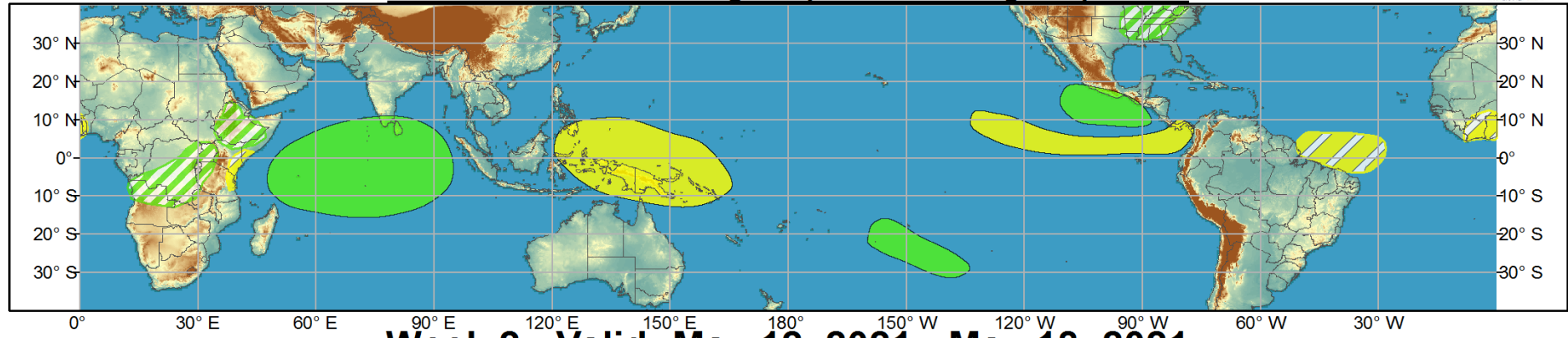
8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 3 MAY 2021  
VALID MAY 11 - 17, 2021



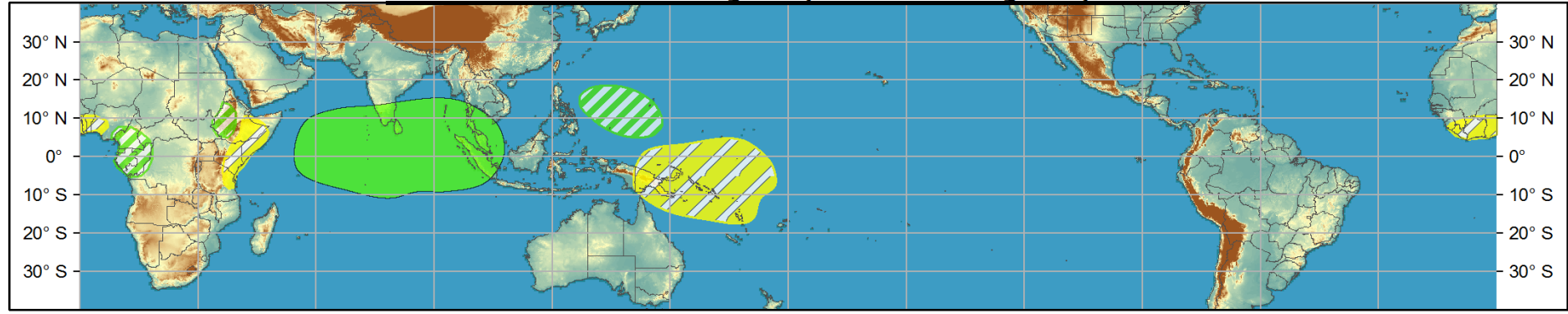


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