

# Global Tropics Hazards And Benefits Outlook

3/3/2020

Adam Allgood

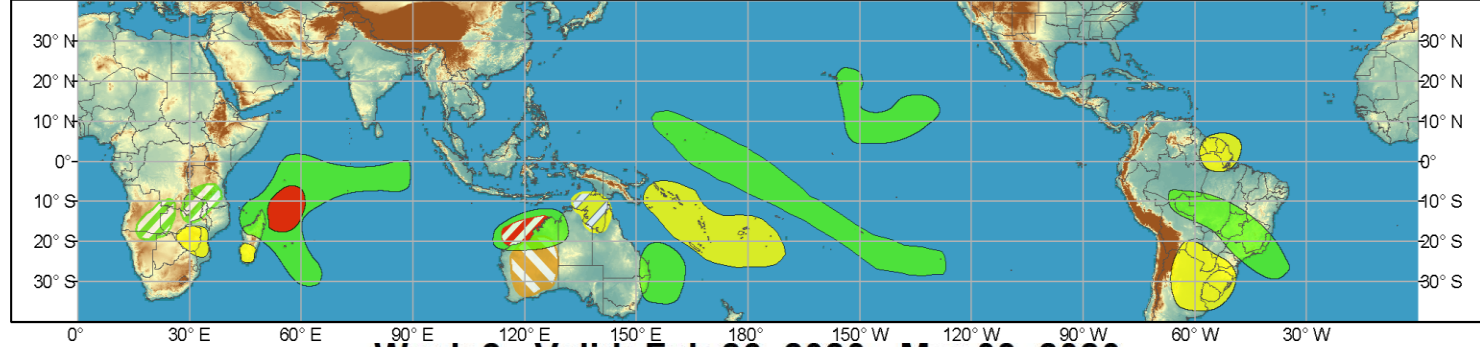
## Outline

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

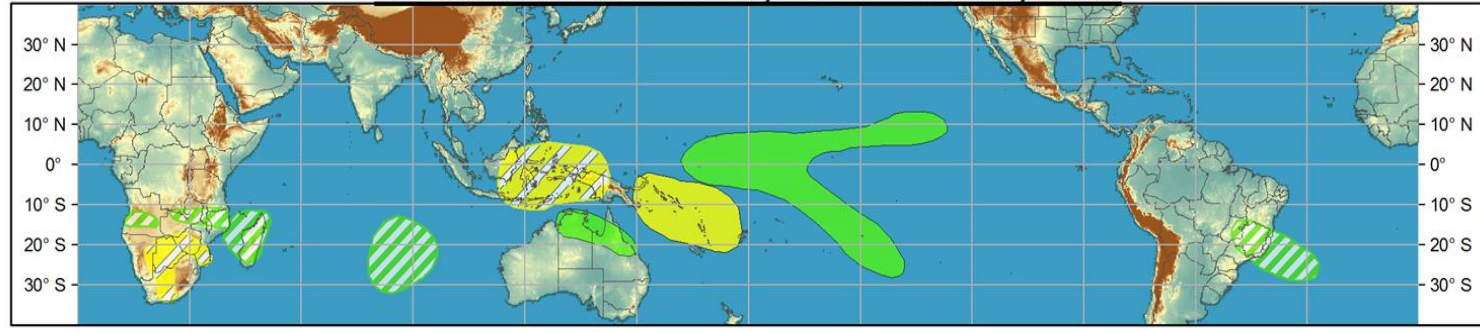
# Outlook Review



**Week 1 - Valid: Feb 26, 2020 - Mar 03, 2020**

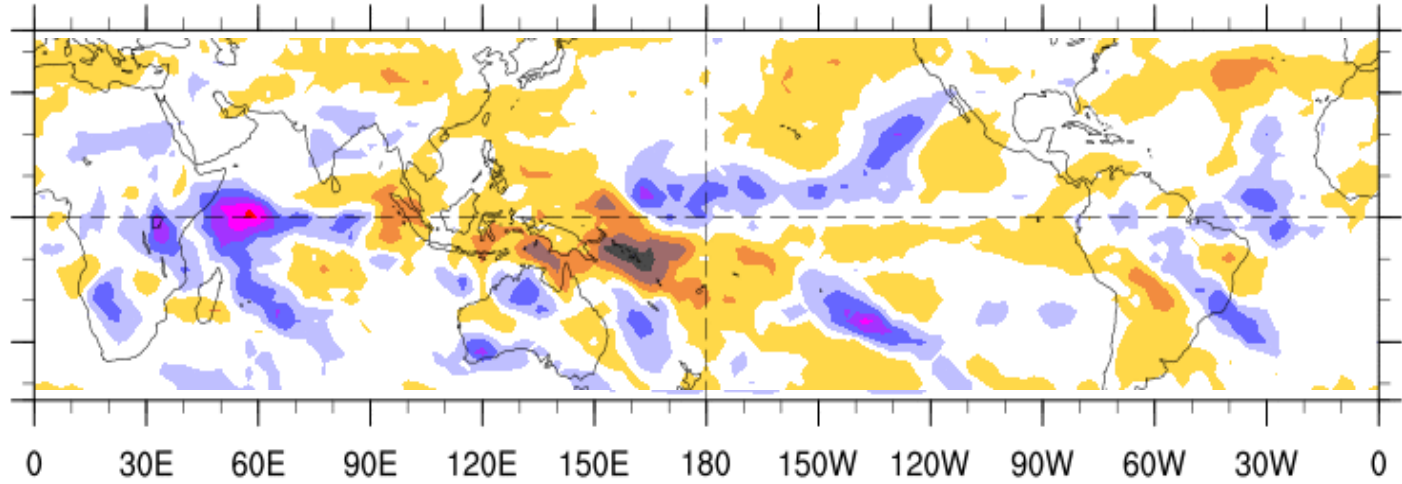


**Week 2 - Valid: Feb 26, 2020 - Mar 03, 2020**



7-Day Average OLR Anomaly

2020/02/24 - 2020/03/01



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

## **ENSO: (February 13, 2019 Update)**

*next update on 12<sup>th</sup> of March!*

- ENSO Alert System Status: Not Active
- ENSO-neutral is favored through Northern Hemisphere spring 2020 (~60% chance), continuing through summer 2020 (~50% chance).

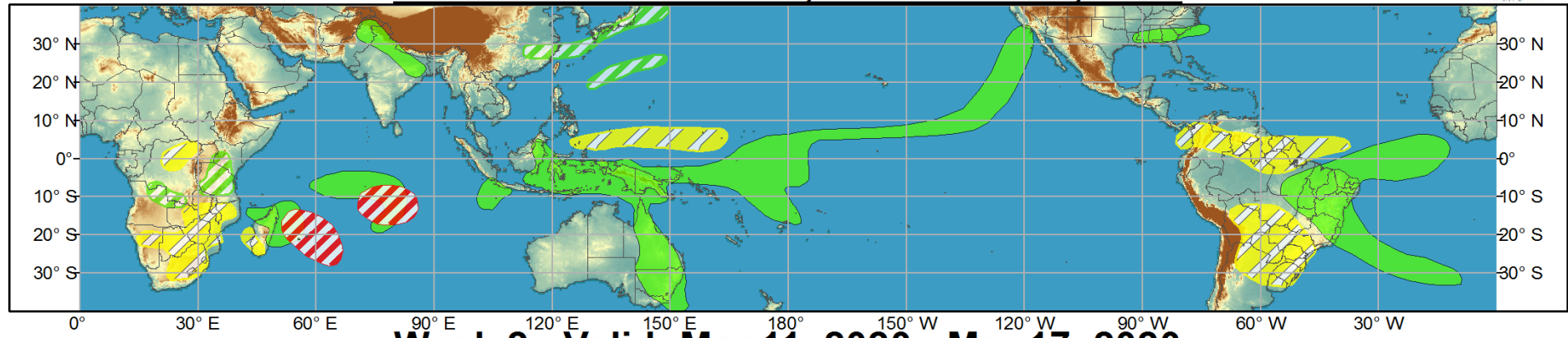
## **MJO and other subseasonal tropical variability:**

- The MJO has become more active, as Kelvin and Rossby wave activity resulted in widespread Indian Ocean convection with a consistent upper-level VP pattern.
- Dynamical models favor eastward propagation of the RMM-based MJO index over the next week. Signals become mixed during Week-2.
- The low-frequency base state continues to favor enhanced convection near the Date Line.
- The MJO may play a role in the evolution of the midlatitude pattern, although the tropical-extratropical teleconnection is not clear. The extended range outlook for the U.S. is generally consistent with lagged MJO composites.

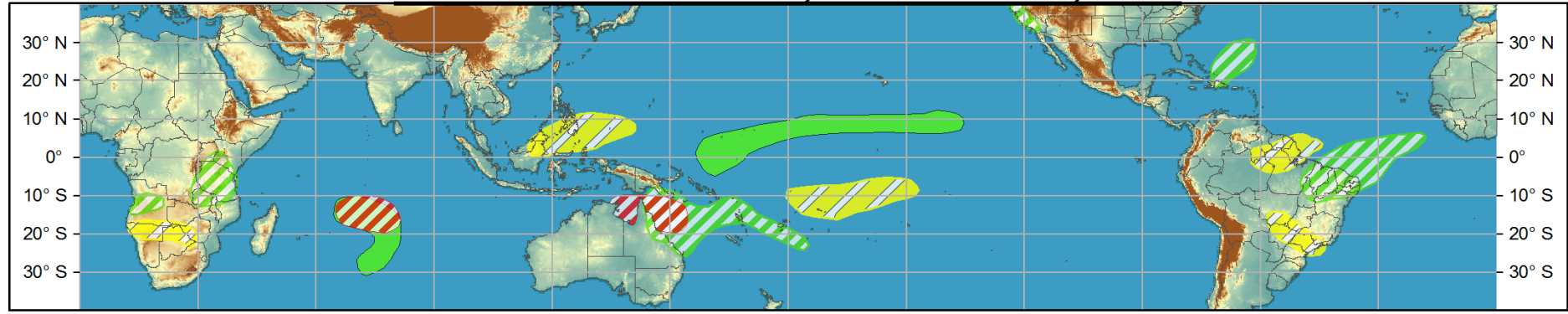


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Mar 04, 2020 - Mar 10, 2020



## Week 2 - Valid: Mar 11, 2020 - Mar 17, 2020



Produced: 03/03/2020  
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

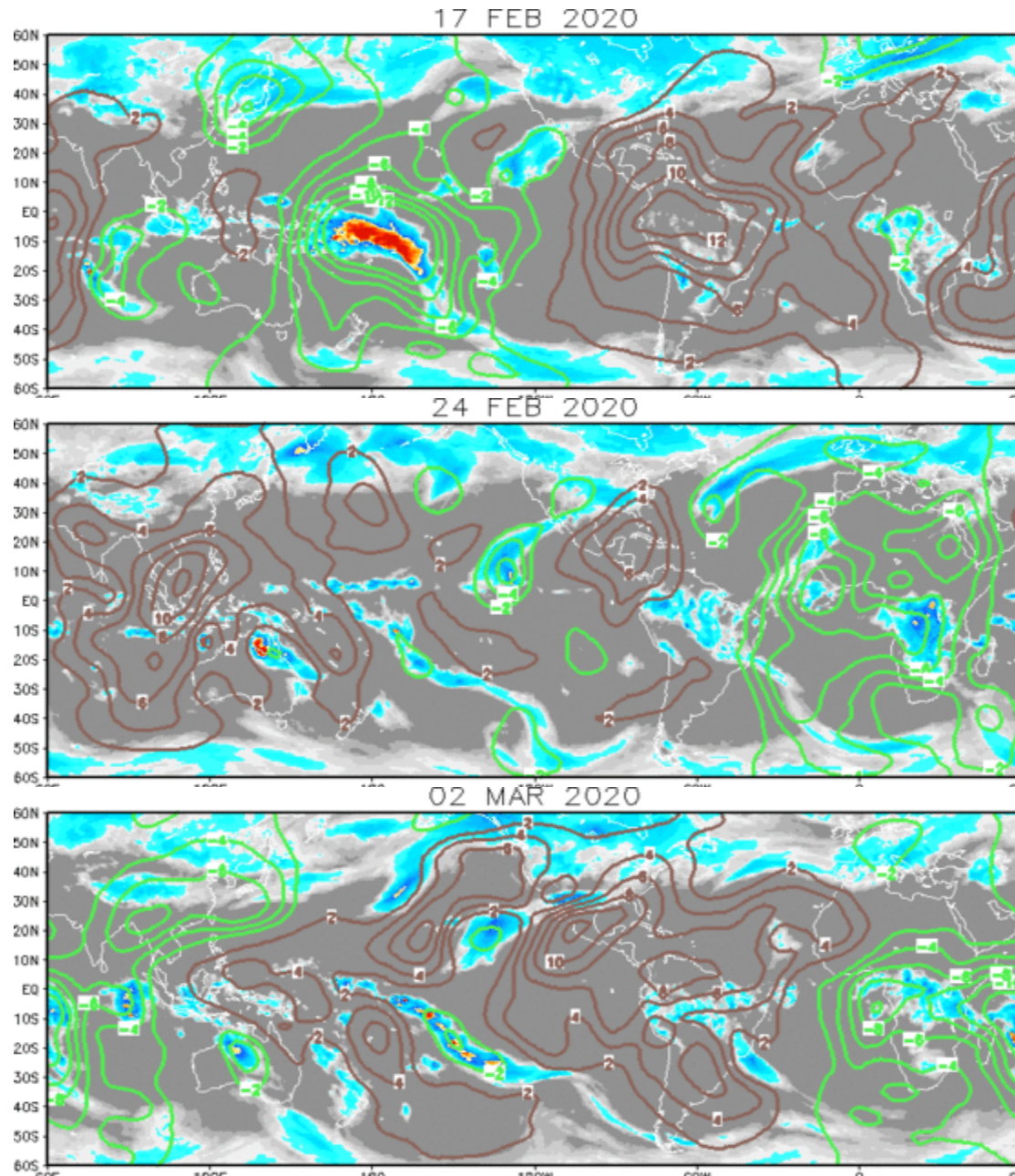
Green: Enhanced Divergence

Brown: Enhanced Convergence

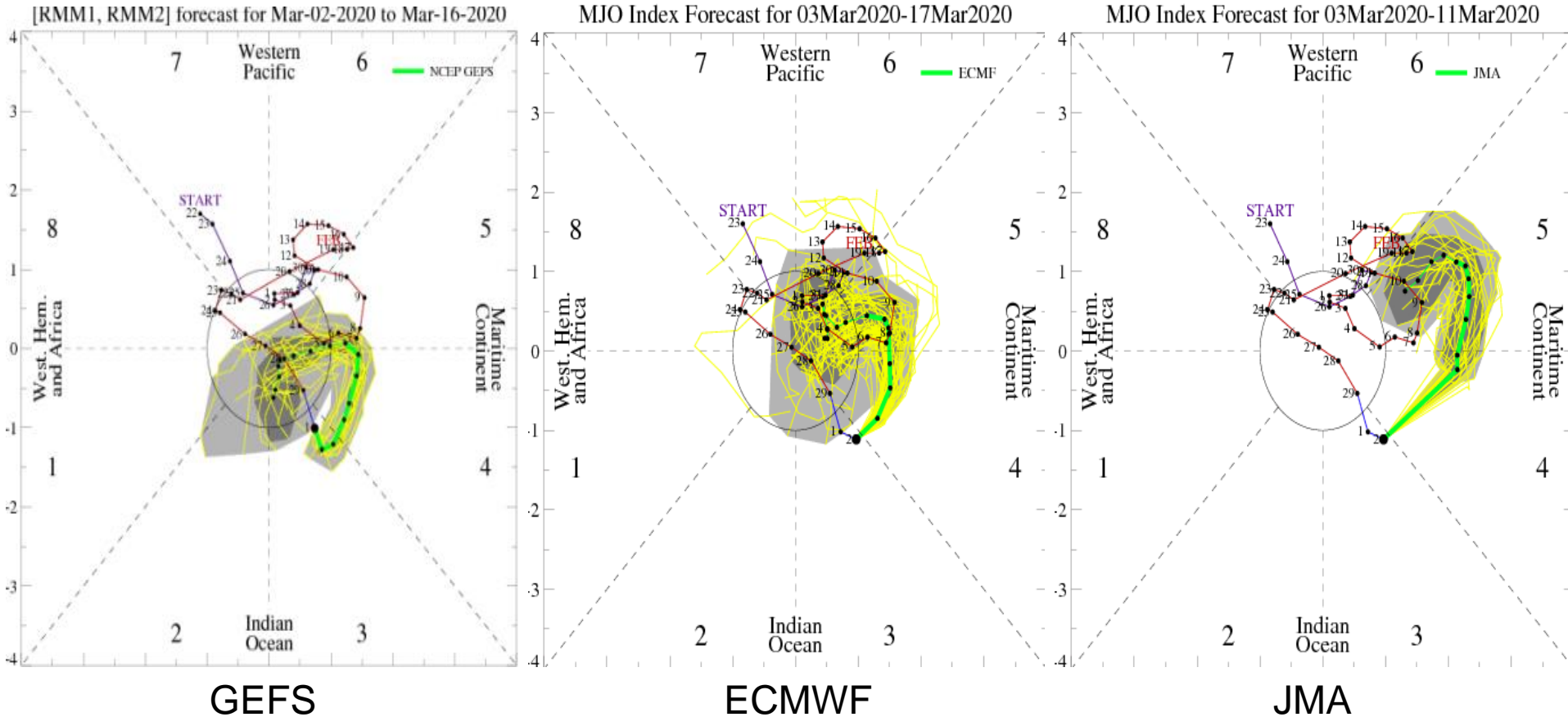
Constructive interference between the base state and a weak intraseasonal signal resulted in widespread Pacific convection

Suppressed convection overspread the Maritime Continent (other than TCs near Australia) while KW activity crossed Africa

Pattern more closely resembles Wave-1 mode, with continued active SPCZ.



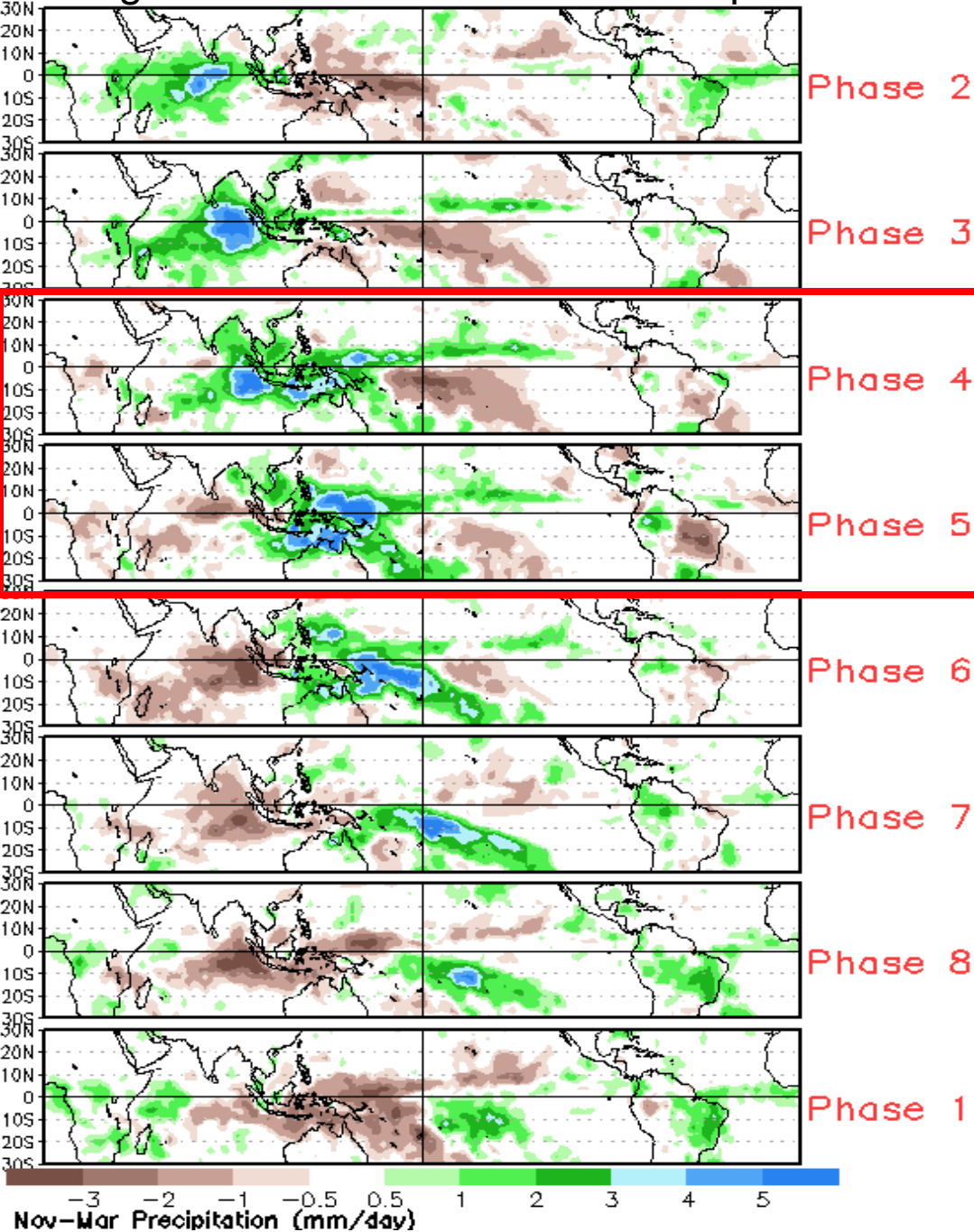
# MJO Observation/Forecast



Dynamical models favor eastward propagation of the MJO signal during Week-1.

The GEFS and ECMWF both depict a left turn in the index as enhanced convection moving to the Pacific competes with persistent convection (maybe TC related) over the southern Indian Ocean.

# Average Conditions when the MJO is present



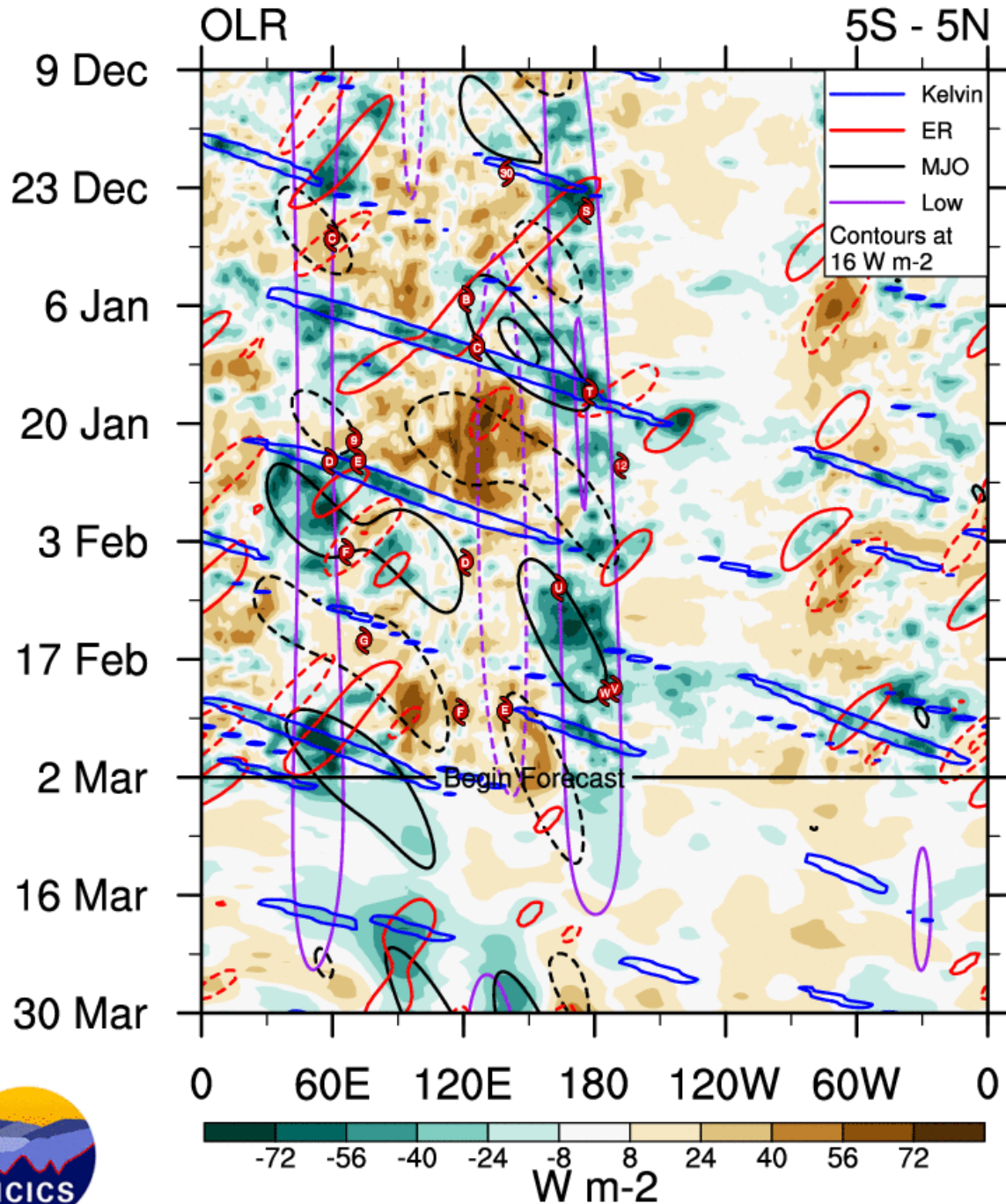
Week-1: Phases 4/6

Week-2: ?

CAVEAT: These panels are representative of robust MJO events.

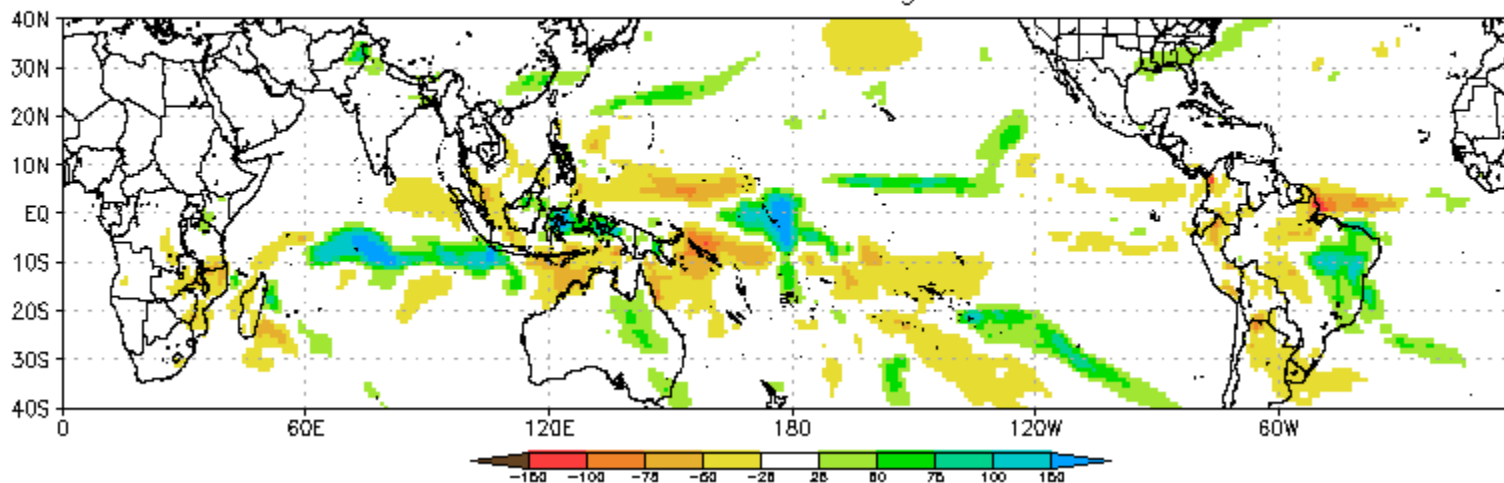
**MJO** signal near 60E has become more apparent in the OLR field.

**Low frequency** signal favoring enhanced (suppressed) convection near the Date Line (Maritime Continent) has been the most consistent feature during the Boreal winter months.

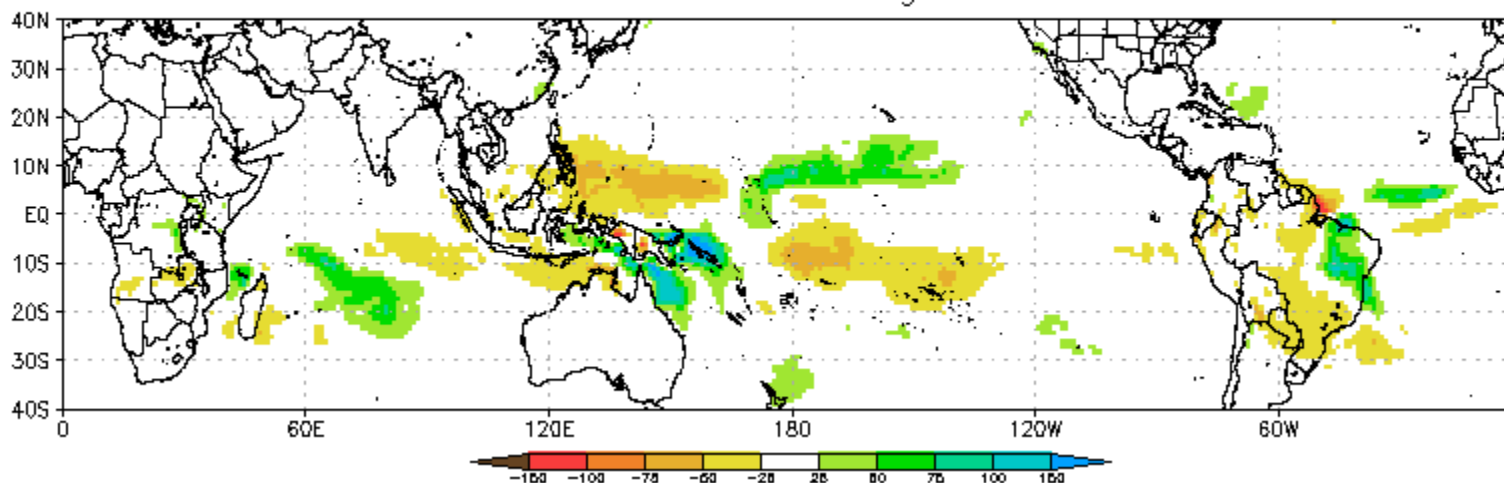




CFS Precipitation Anomalies (mm) Issued 02Mar2020  
Week-1 Forecast Ending 10Mar2020

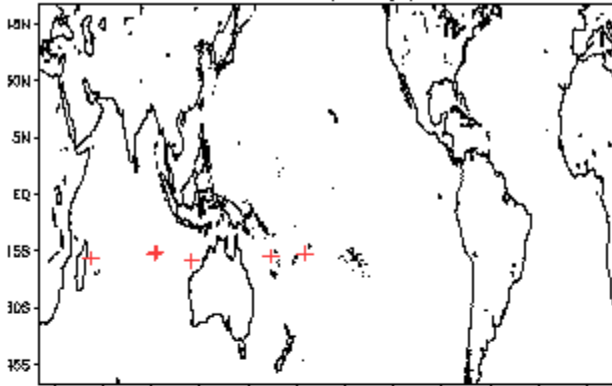


CFS Precipitation Anomalies (mm) Issued 02Mar2020  
Week-2 Forecast Ending 17Mar2020

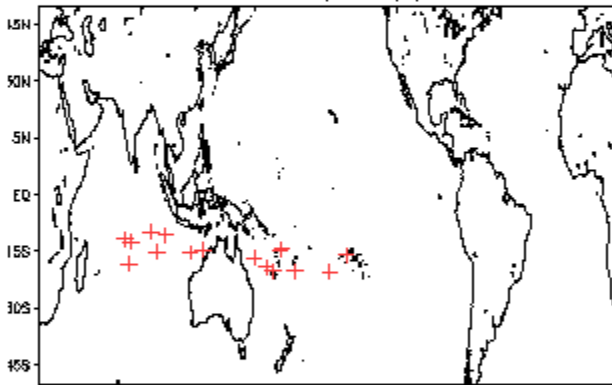


# March Tropical Storm Formation by MJO phase

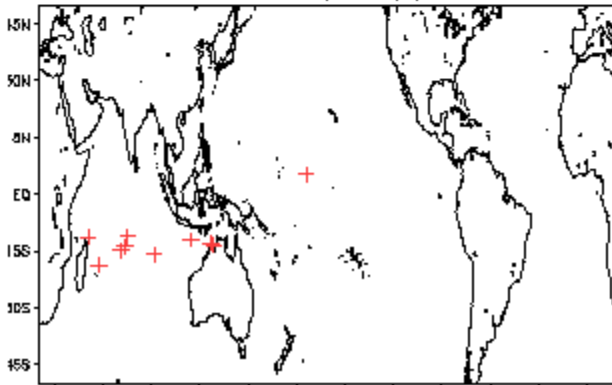
Phase 1 (98 days) 7 storms



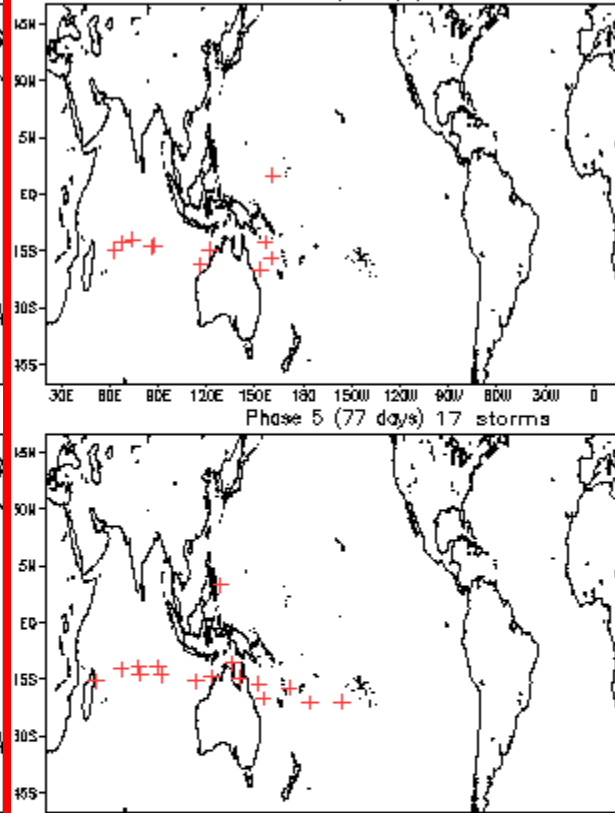
Phase 2 (111 days) 17 storms



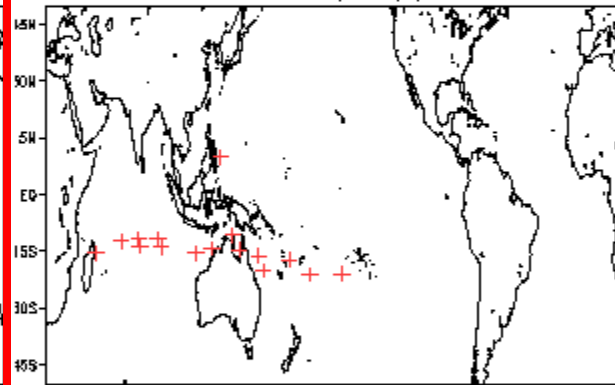
Phase 3 (108 days) 11 storms



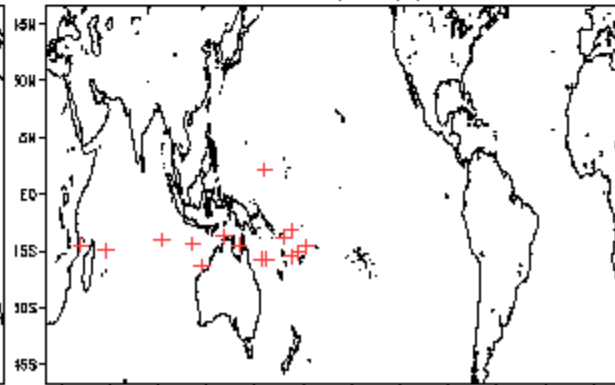
Phase 4 (72 days) 12 storms



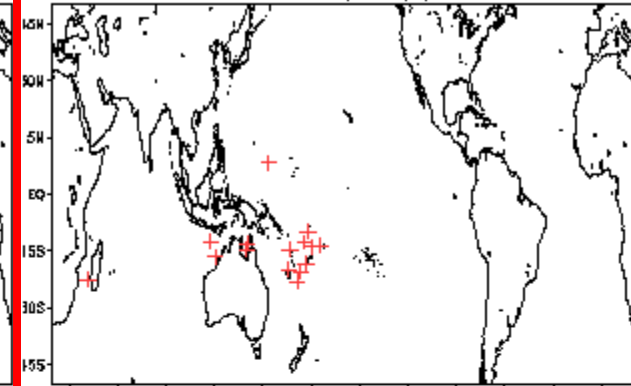
Phase 5 (77 days) 17 storms



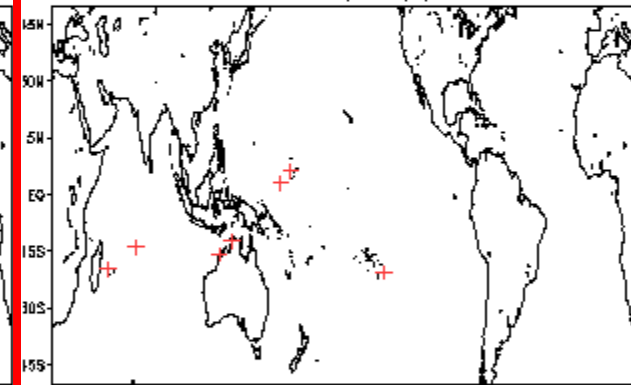
Phase 6 (78 days) 18 storms



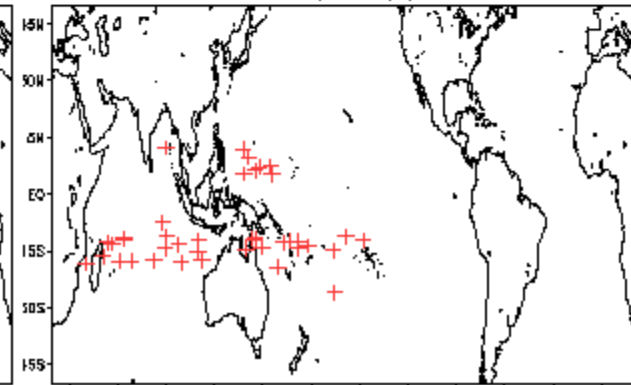
Phase 7 (81 days) 16 storms

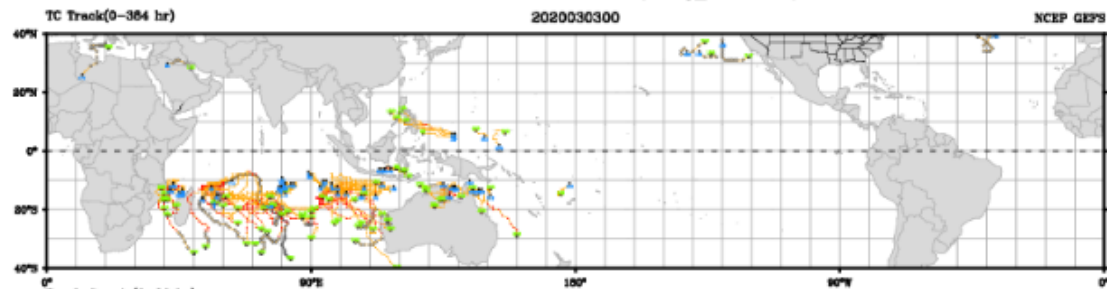


Phase 8 (92 days) 8 storms

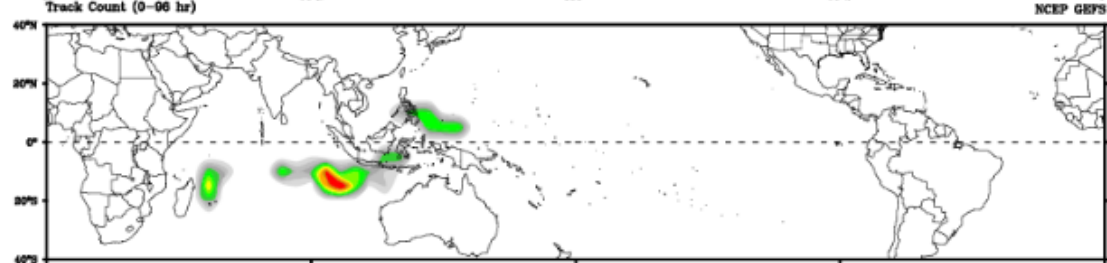


Null (322 days) 40 storms

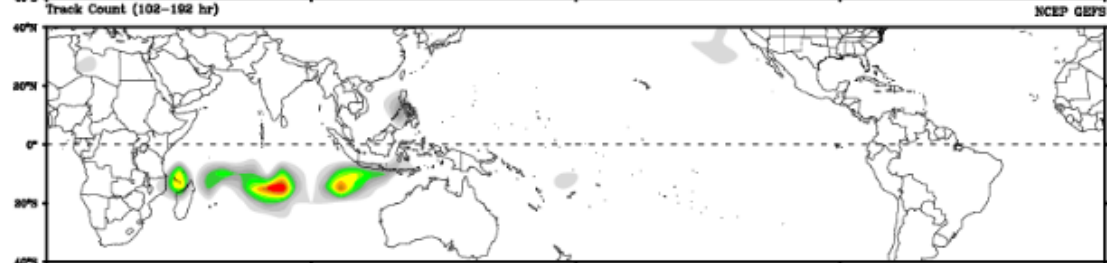




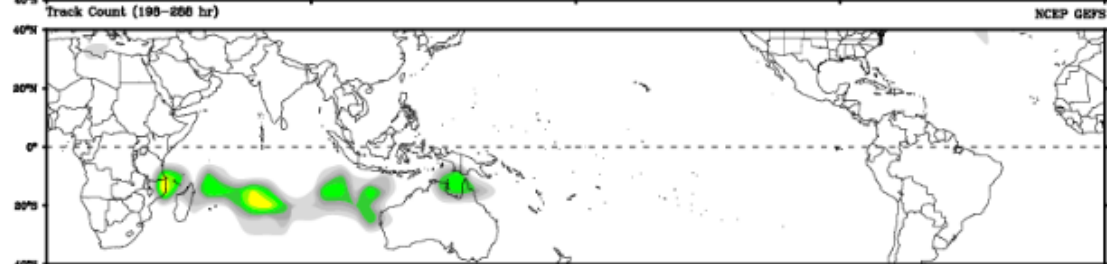
Days 1-4



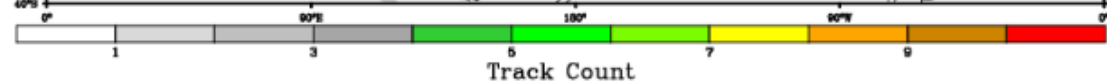
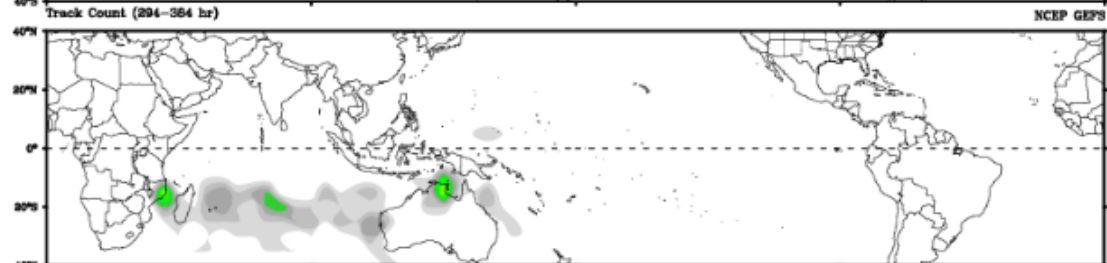
Day 5-8



Day 9-12

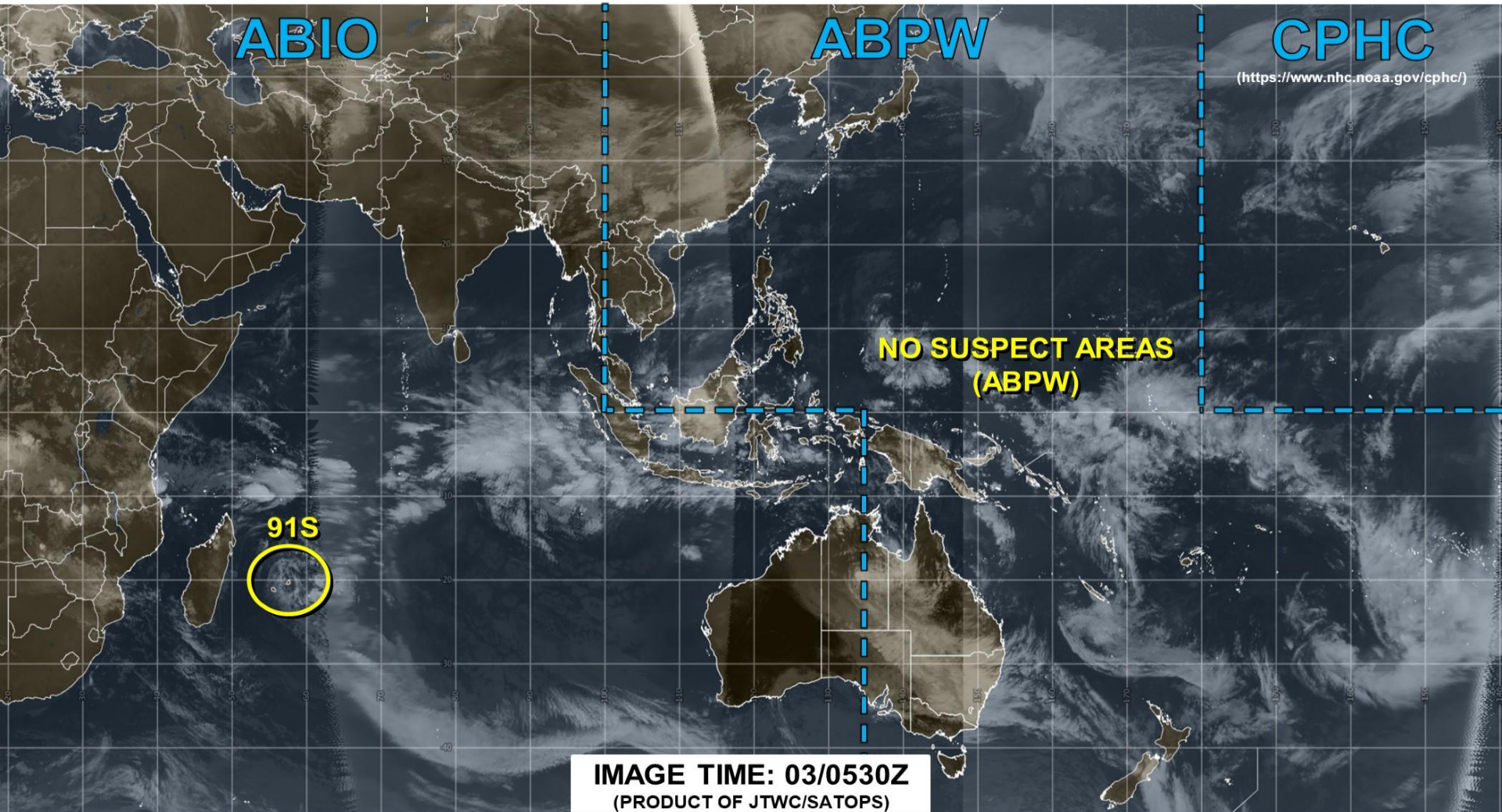


Day 13-15





# JOINT TYPHOON WARNING CENTER



**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)

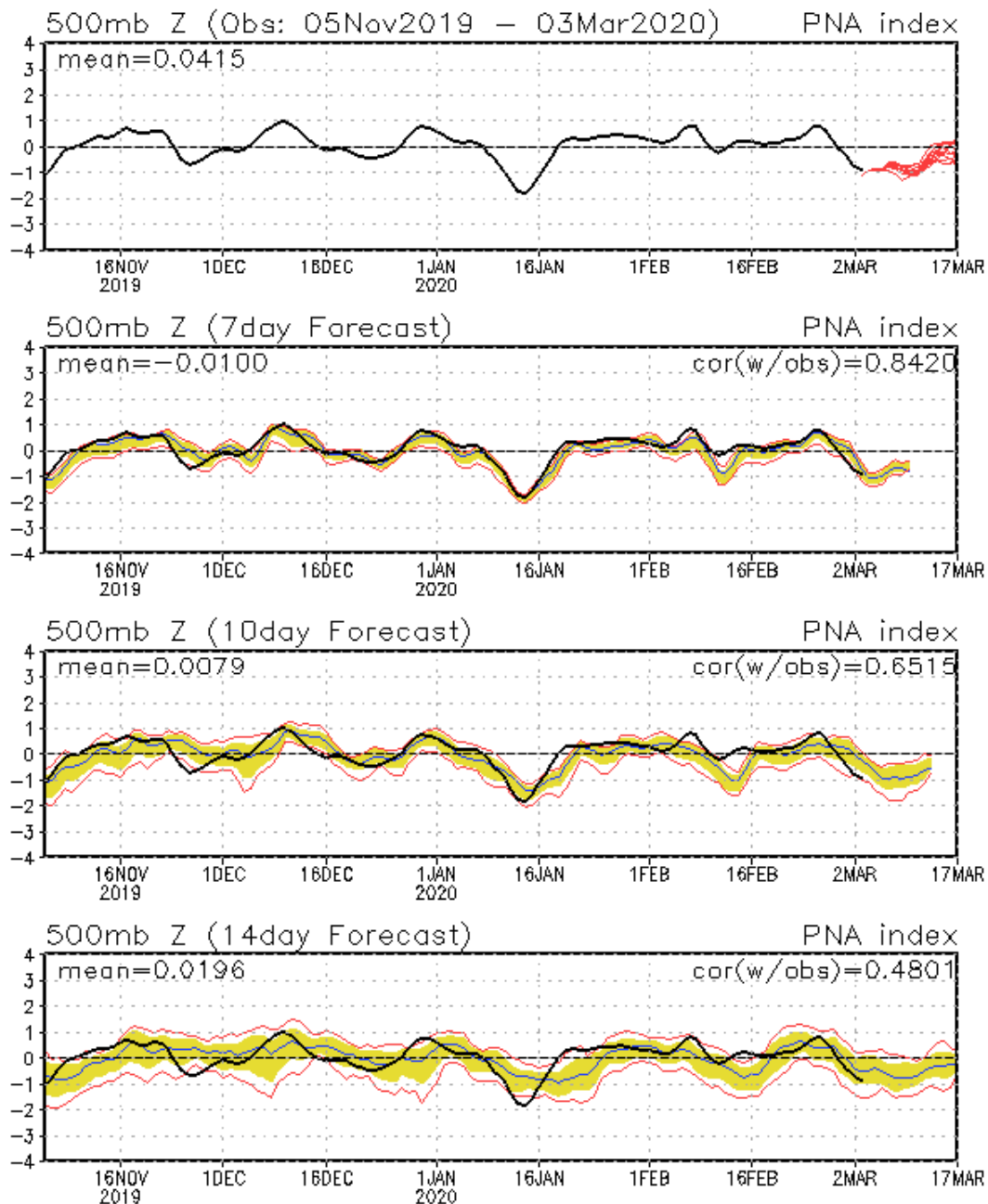
**SUB TROPICAL**

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

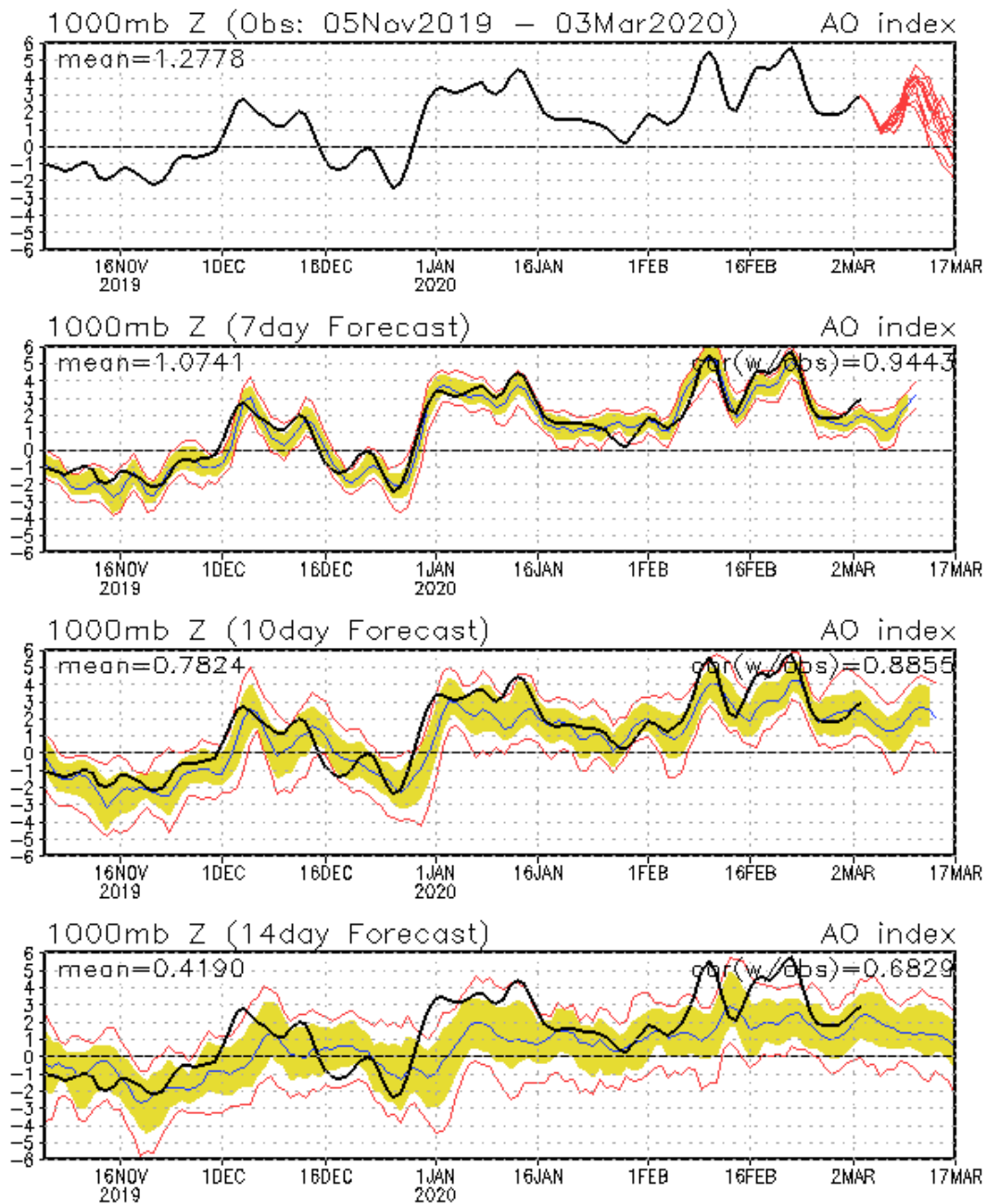
 Tropical Cyclone (Reference Warning)

# Connections to U.S. Impacts

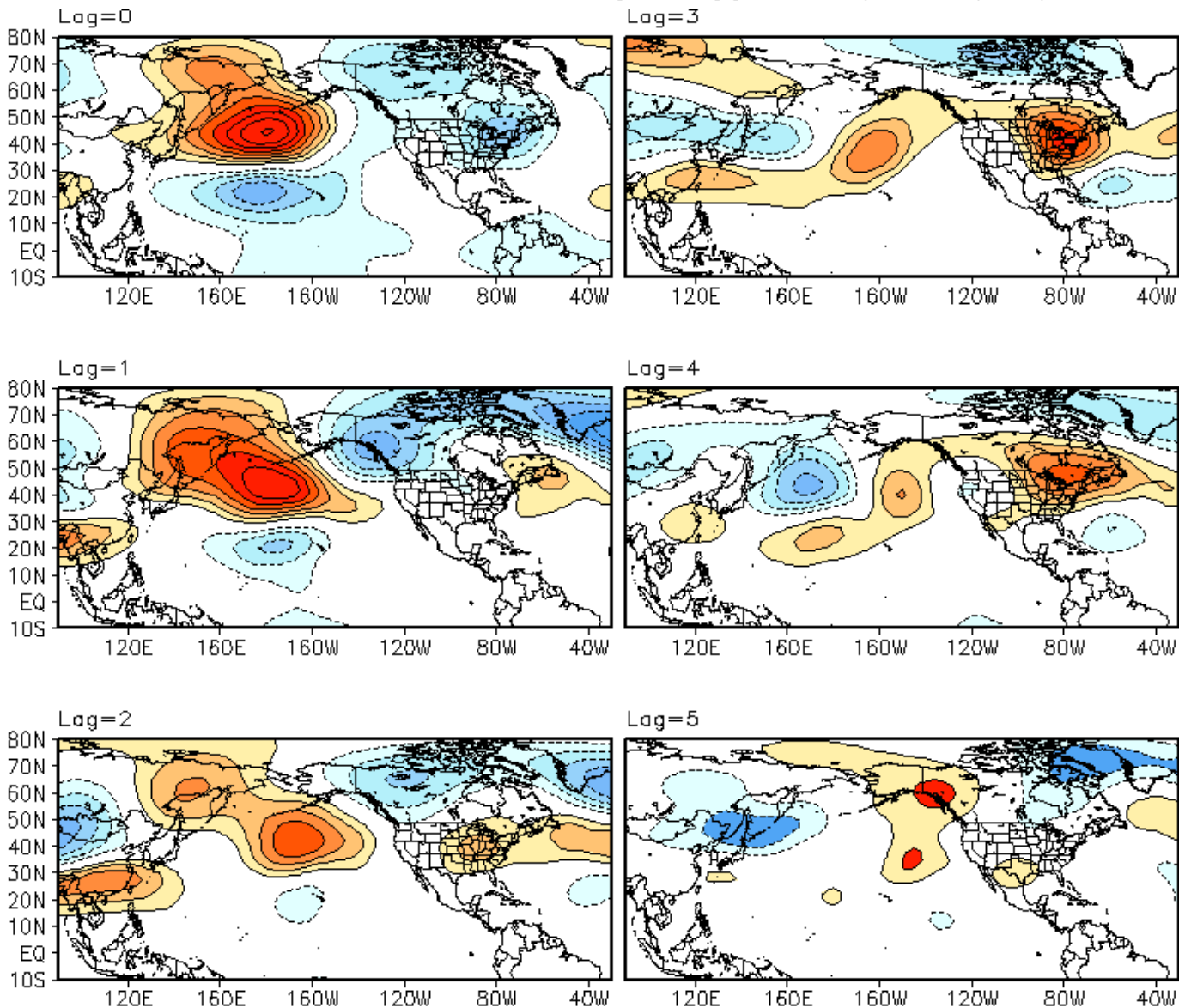
## PNA: Observed & ENSM forecasts



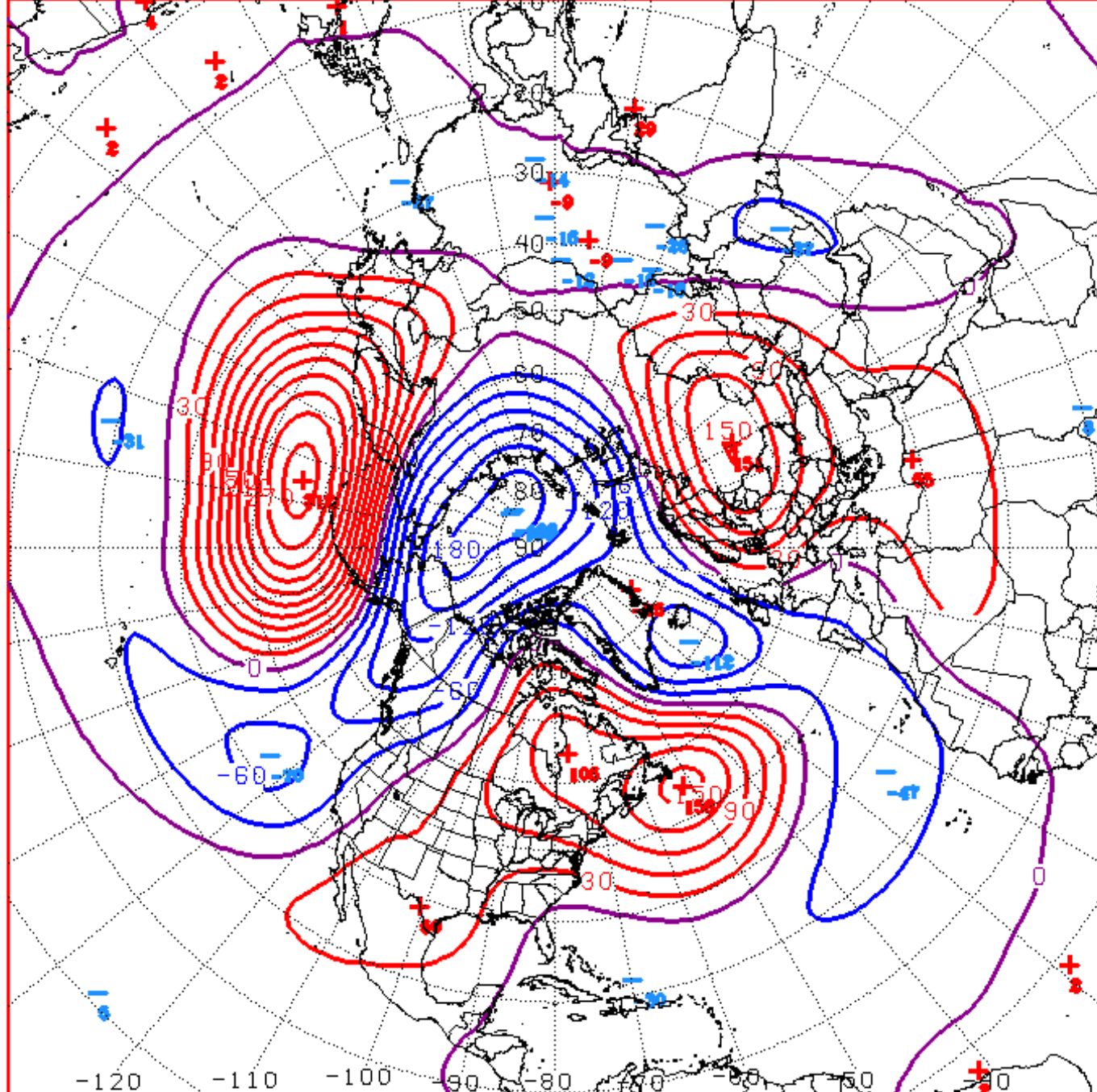
## AO: Observed & ENSM forecasts



# RMM Phase 3 200-hPa Height Lagged Composite (fma)

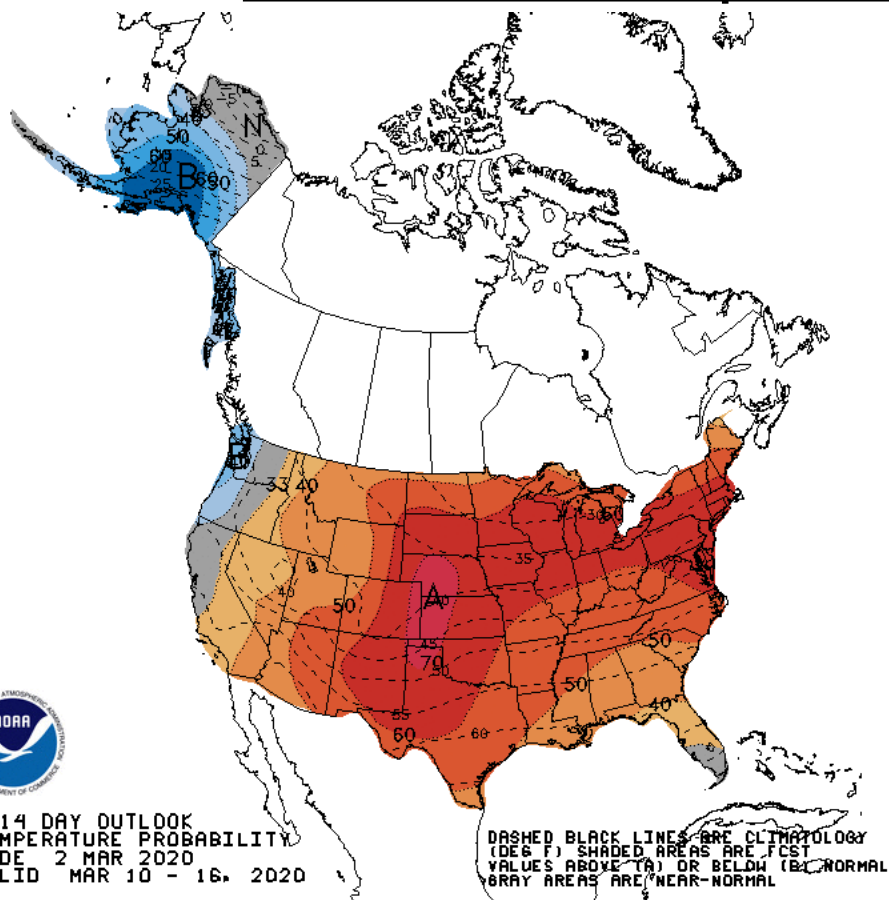




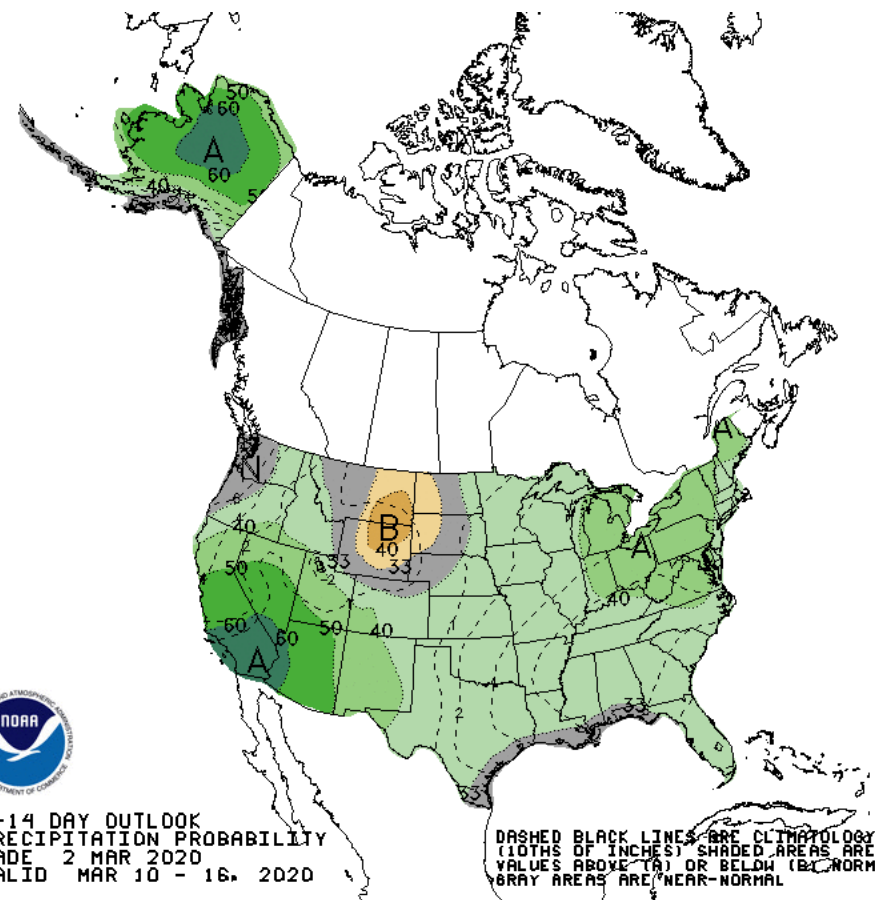
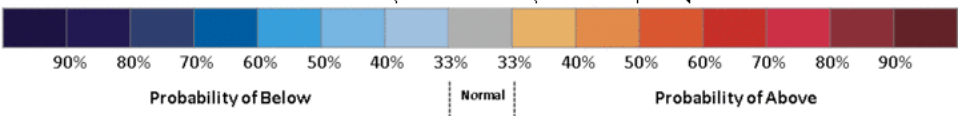


D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE MAR 03 2020 1336 UTC CNTD MAR 14 2020

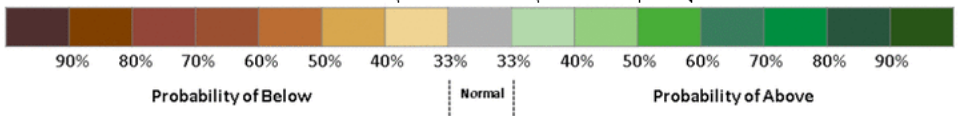
# Week 2 – Temperature and Precipitation

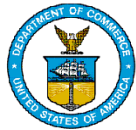


8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 2 MAR 2020  
VALID MAR 10 - 16, 2020



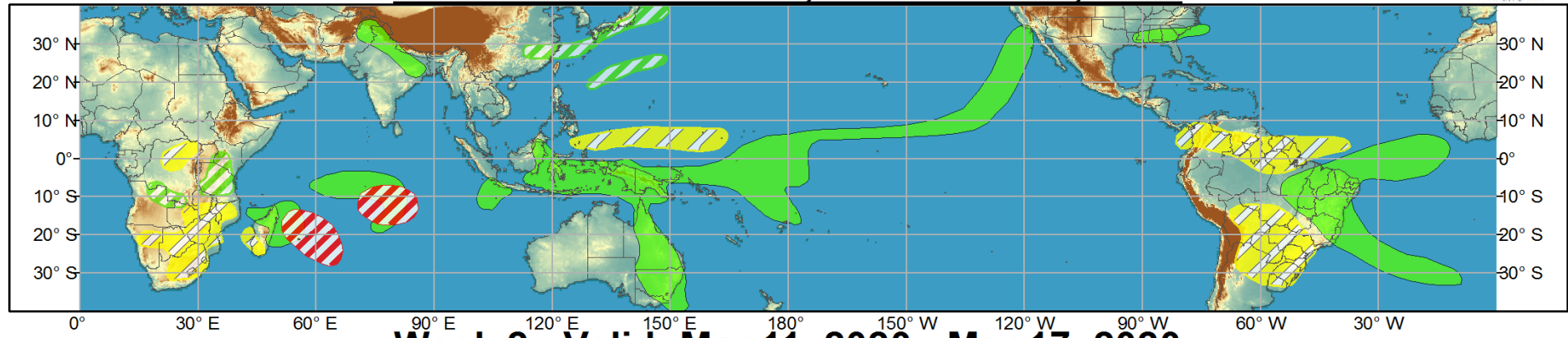
8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 2 MAR 2020  
VALID MAR 10 - 16, 2020



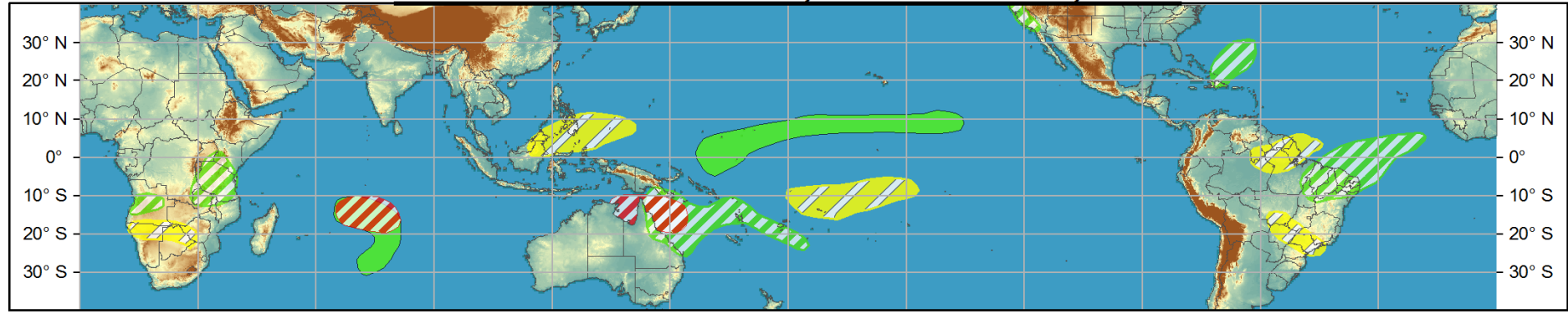


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