



# Weeks 2-3 Global Tropics Hazards Outlook

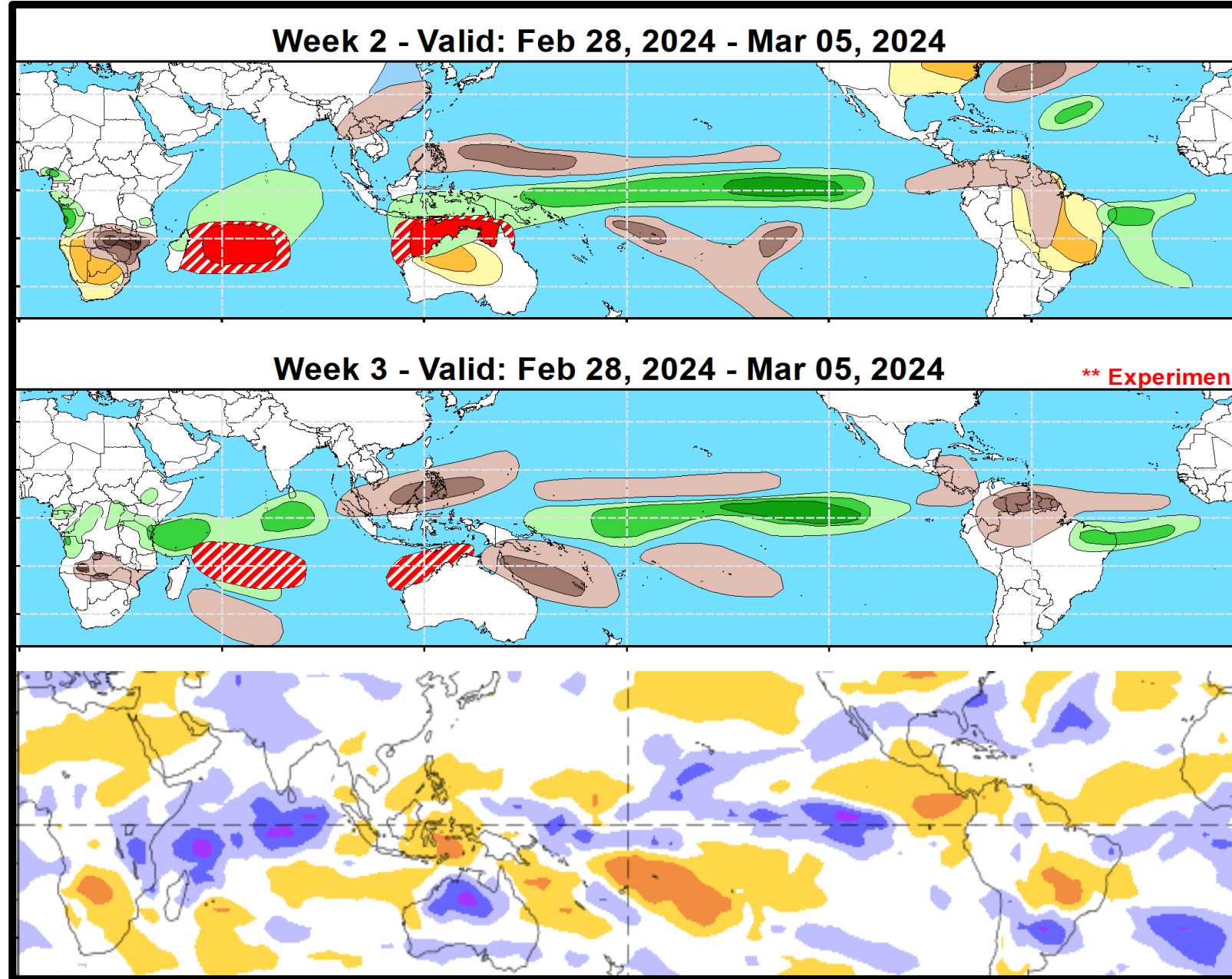
3/5/2024

Brad Pugh

NWS / NCEP / Climate Prediction Center

# Outlook Review: TC development & anomalous precipitation during the past week

No new tropical cyclones developed during the past week.



# Synopsis of Climate Modes:

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**ENSO:** (Feb 8, 2024 Update)      *next update on Thursday, Mar 14<sup>th</sup>*

- ENSO Alert System Status: [El Niño Advisory](#) / [La Niña Watch](#)
- A transition from El Niño to ENSO-neutral is likely by April-June 2024 (79% chance), with increasing odds of La Niña developing in June-August 2024 (55% chance).

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

- The MJO strengthened at the beginning of March with a more coherent wave-1 pattern.
- Dynamical models are consistent and in good agreement that the MJO propagates eastward from the Indian to the Pacific Ocean during mid to late March.
- This MJO evolution would favor tropical cyclone development surrounding northern Australia and the South Pacific.

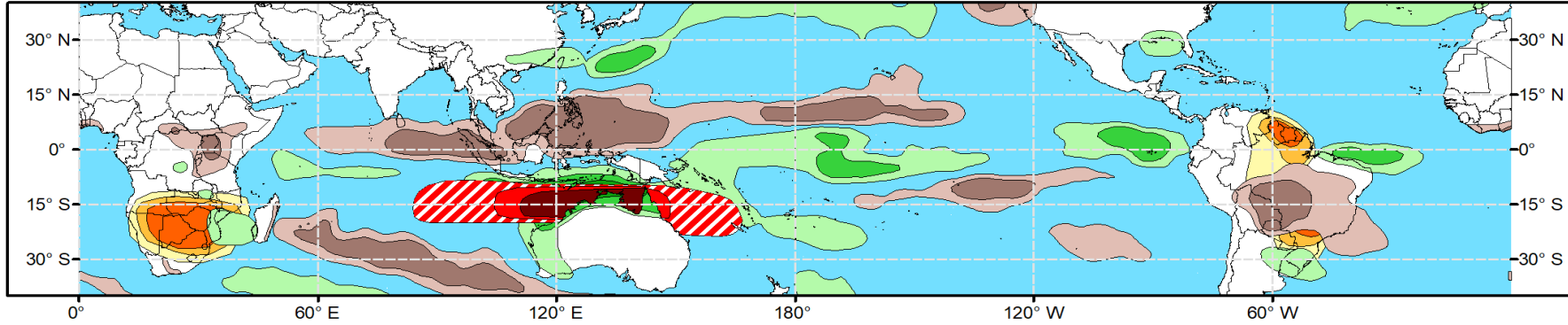
# GTH Outlook:



## Global Tropics Hazards Outlook Climate Prediction Center

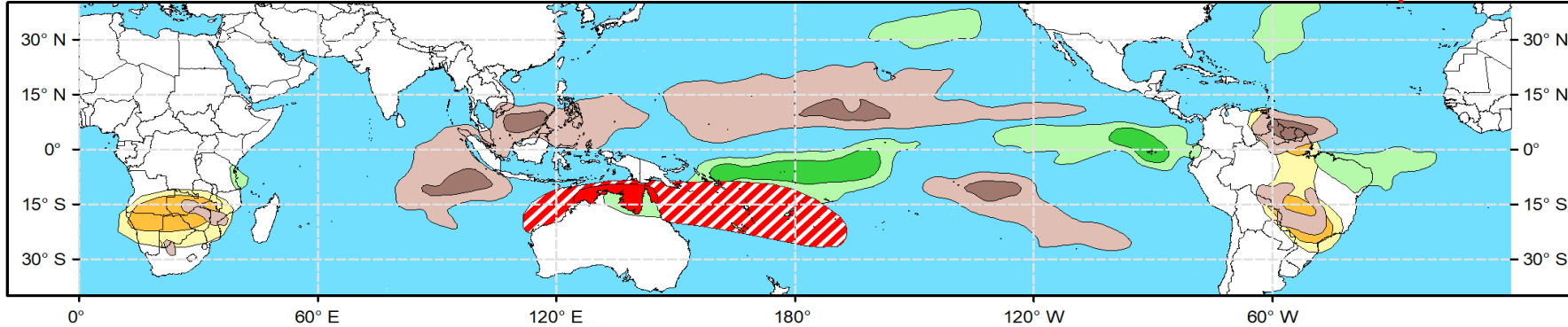


**Week 2 - Valid: Mar 13, 2024 - Mar 19, 2024**



**Week 3 - Valid: Mar 20, 2024 - Mar 26, 2024**

**\*\* Experimental \*\***



**Tropical Cyclone (TC)  
Formation Probability**



>20% >40% >60%

*Tropical Depression (TD)  
or greater strength*

**Above-Average  
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*Weekly total rainfall in the  
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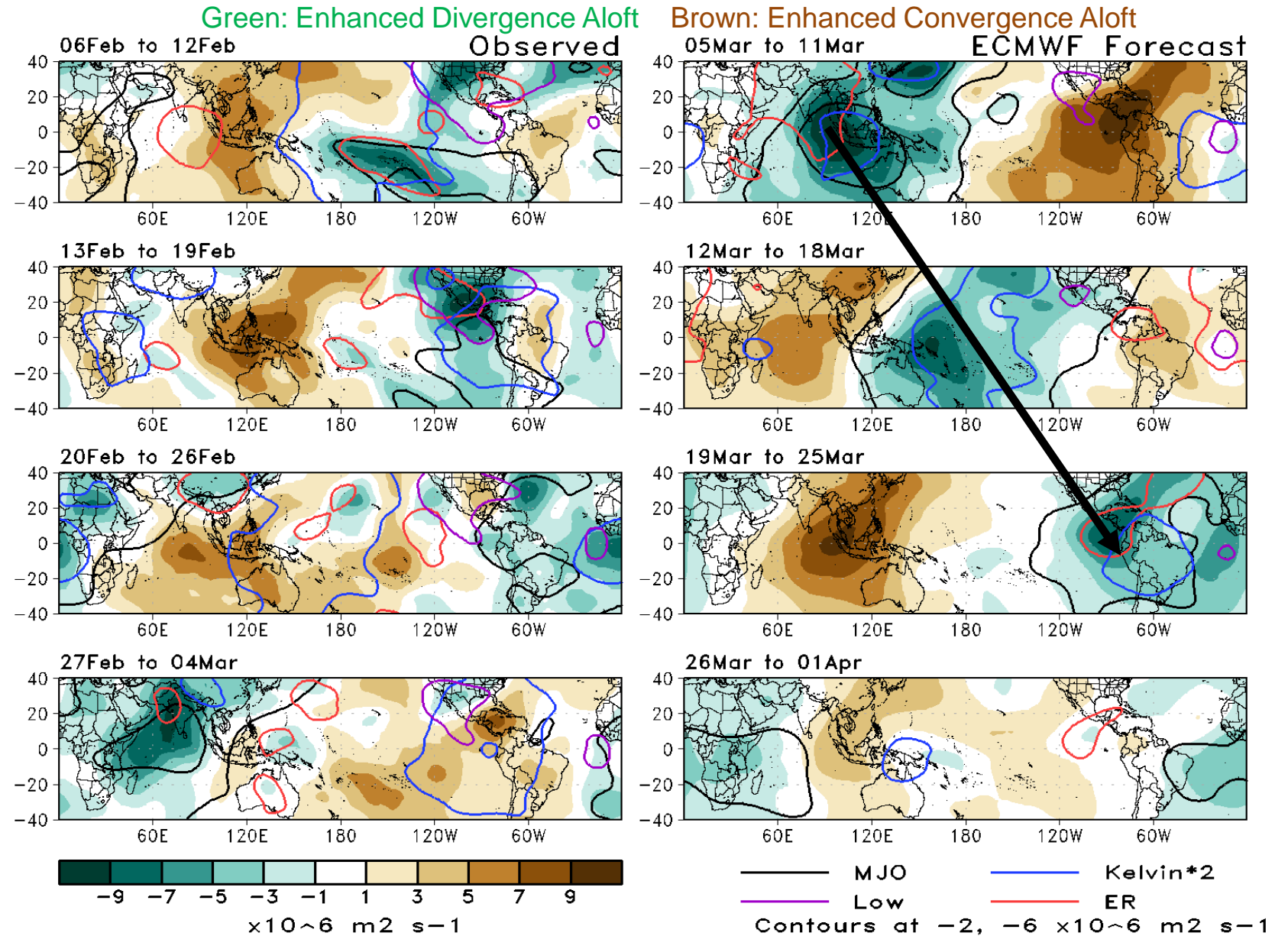
**Issued: 03/05/2024**

**Forecaster: Pugh**

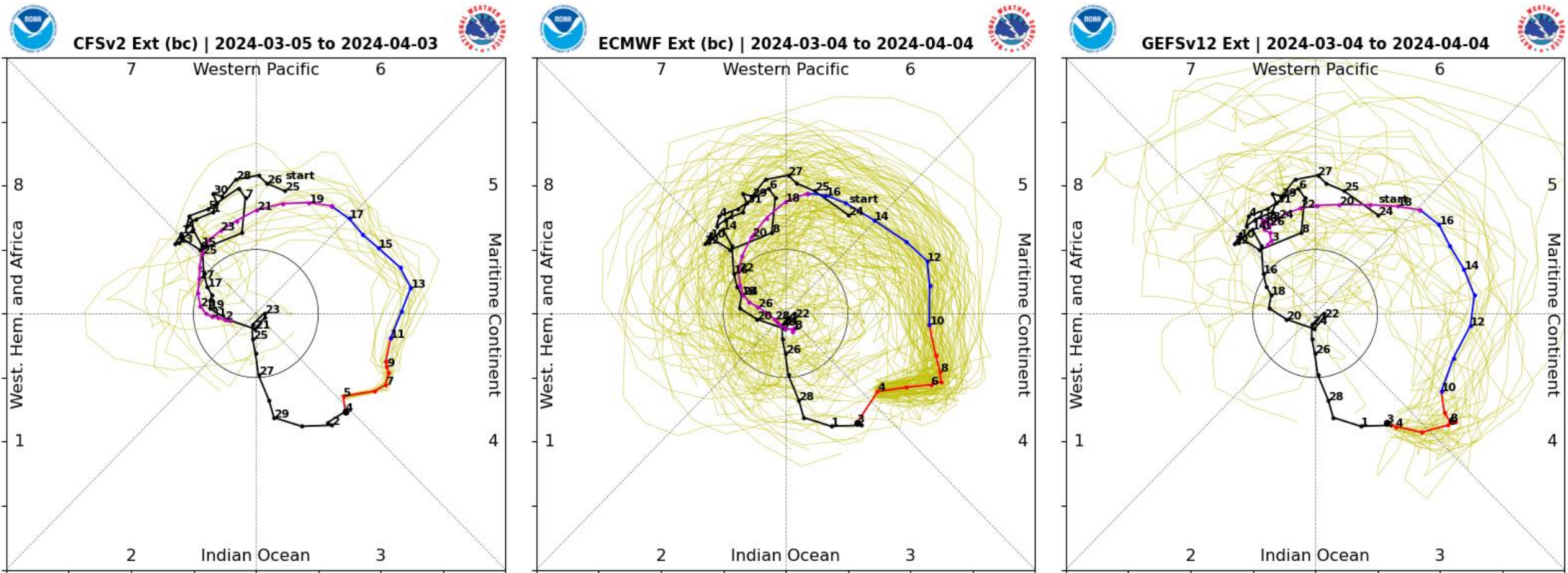
**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.**

# 200-hPa Velocity Potential Anomaly Maps:

- Global upper-level velocity potential pattern was less coherent during mid-February.
- From Feb 27 to Mar 4, a more coherent wave-1 pattern developed with strong upper-level divergence over the Indian Ocean.
- The ECMWF ensemble depicts eastward propagation of the MJO enhanced phase to the Pacific while the Indian Ocean becomes drier.



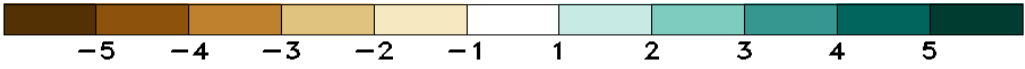
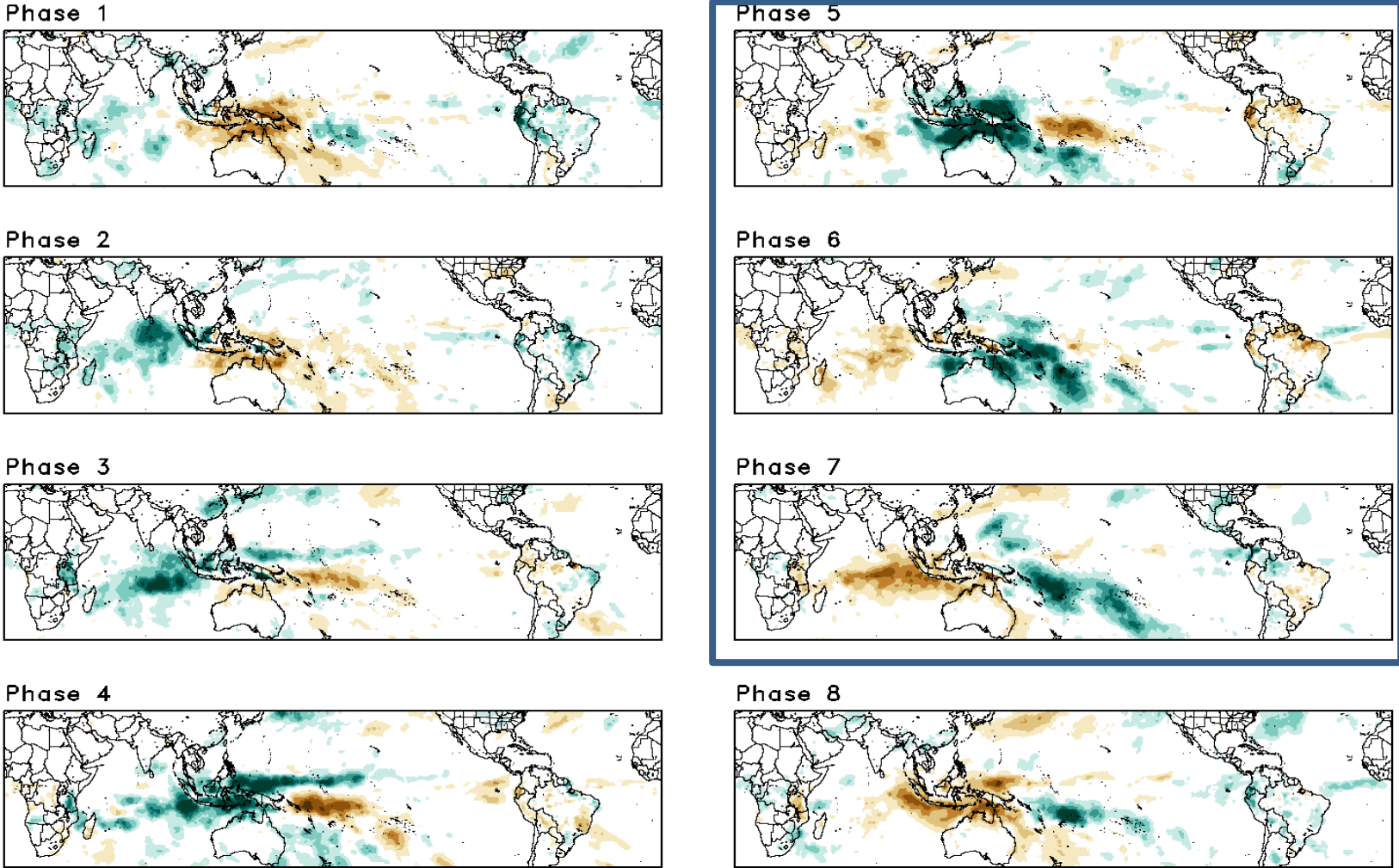
# RMM Index Observations & Forecasts:



- The CFSv2, GEFS, and ECMWF RMM-based forecasts indicate an eastward propagation of the MJO, with small ensemble spread through the next two weeks.
- Although ensemble spread increases on the amplitude and speed later in March, a MJO is expected to persist with the enhanced (suppressed) phase over the Western (Eastern) Hemisphere.

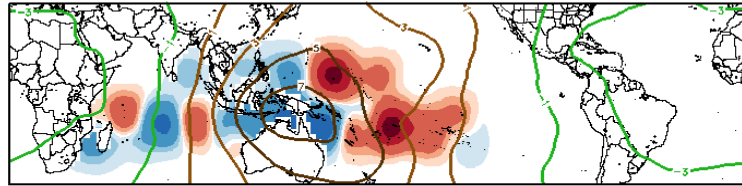
# Historical Precipitation Anomalies By MJO Phase:

FMA MJO Composite: GPCP1DD (mm/day)

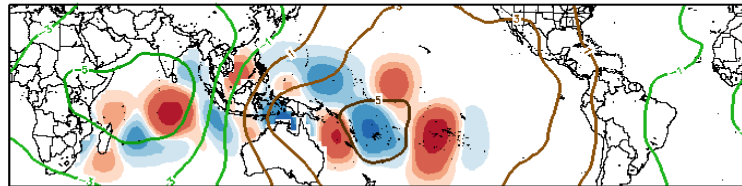


# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

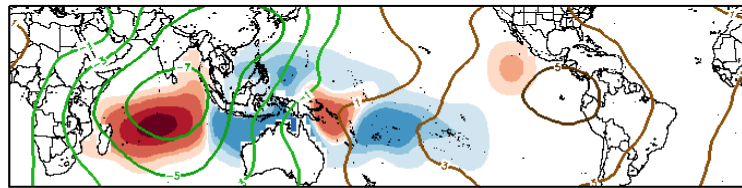
FMA MJO Composite: Mean TC Origin Density Anomaly ( $\#TCs/277km^2*100$ )  
w/ FMA CHI200 ( $\times 10^6 m^2 s^{-1}$ ) / Contours every  $2 \times 10^6 m^2 s^{-1}$



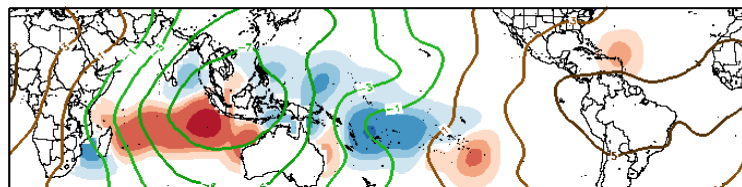
Phase 1



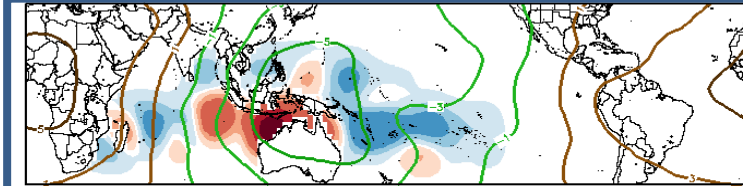
Phase 2



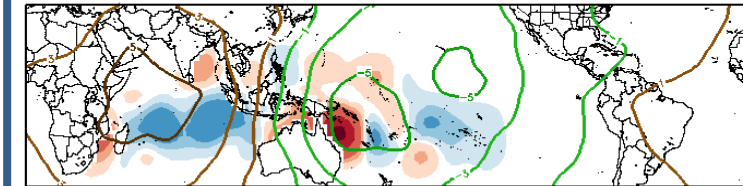
Phase 3



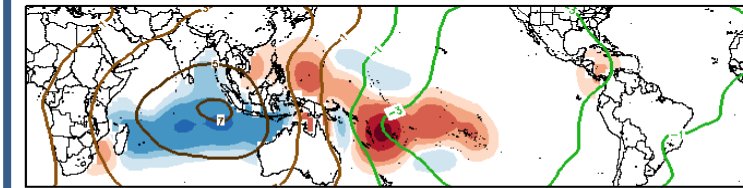
Phase 4



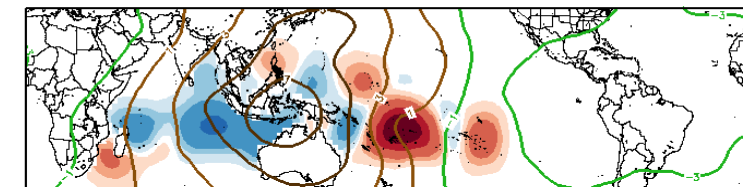
Phase 5



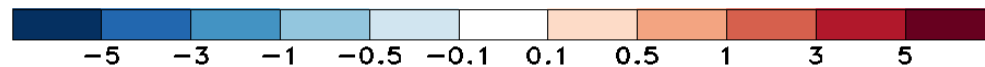
Phase 6



Phase 7



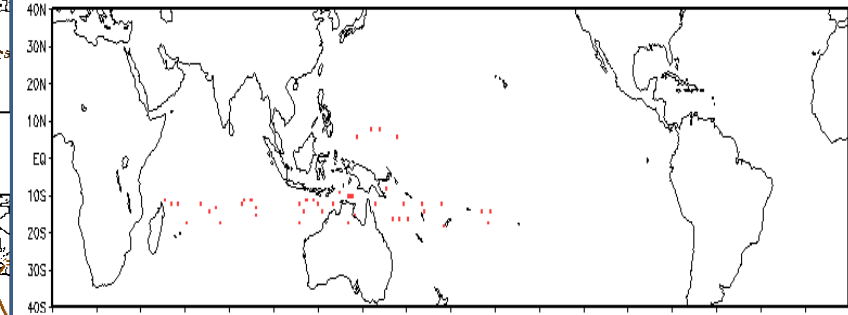
Phase 8



\*Experimental\*

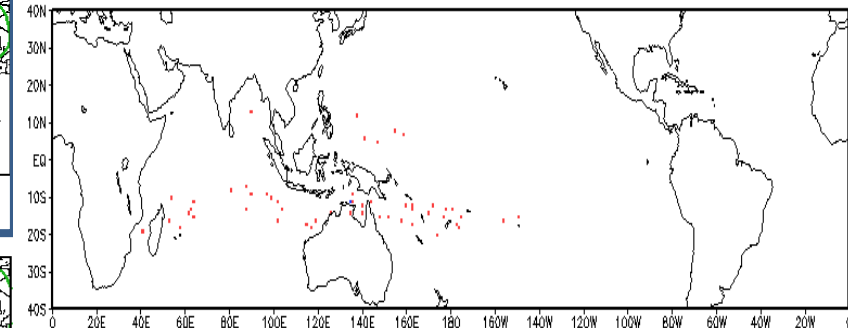
Observed TC Genesis, 1979–2021

7-day Period 0313 to 0319



Observed TC Genesis, 1979–2021

7-day Period 0320 to 0326

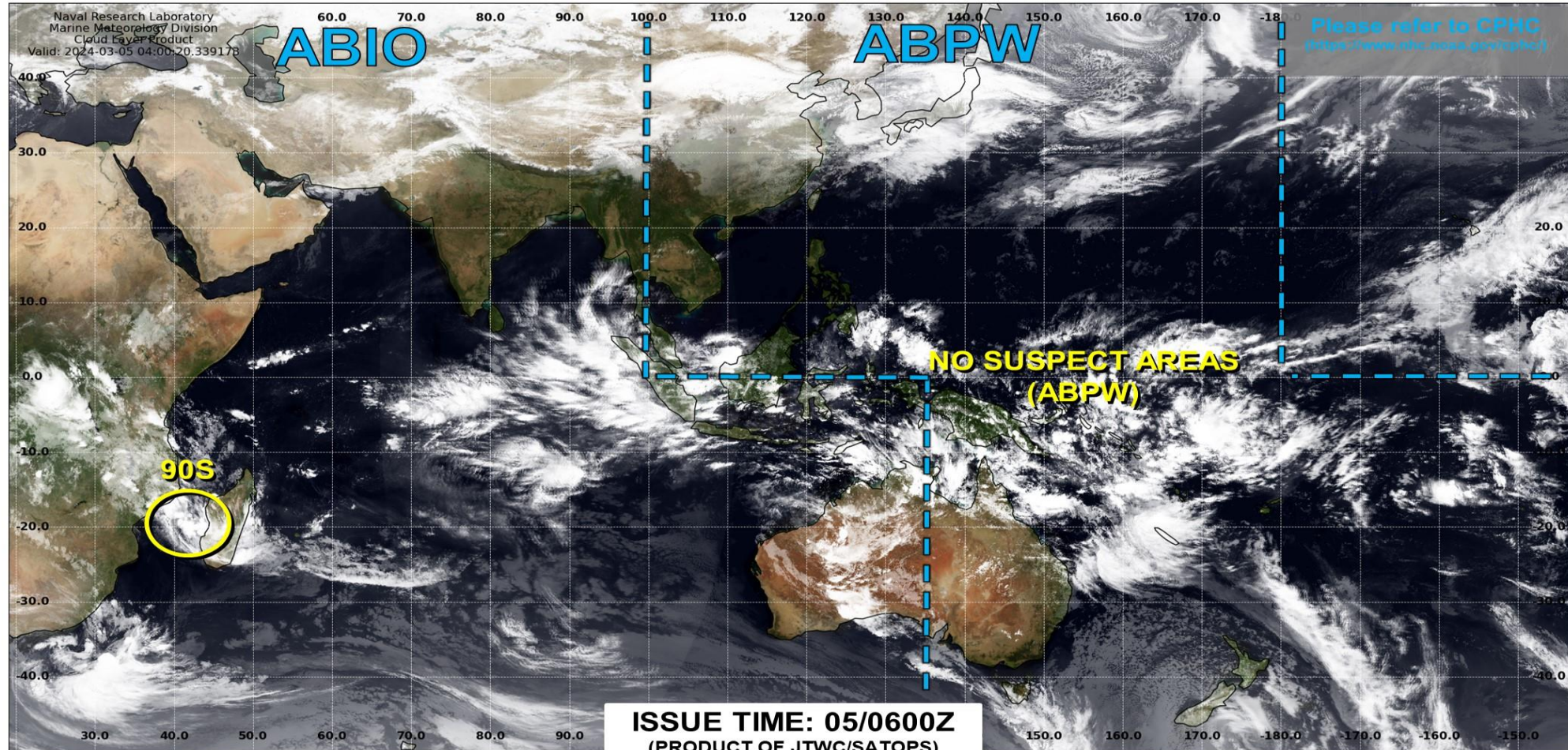




# Tropical Cyclone Monitoring/Forecast: JTWC



## JOINT TYPHOON WARNING CENTER



TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours



TC development likely within 24 hours (Reference TCFA)

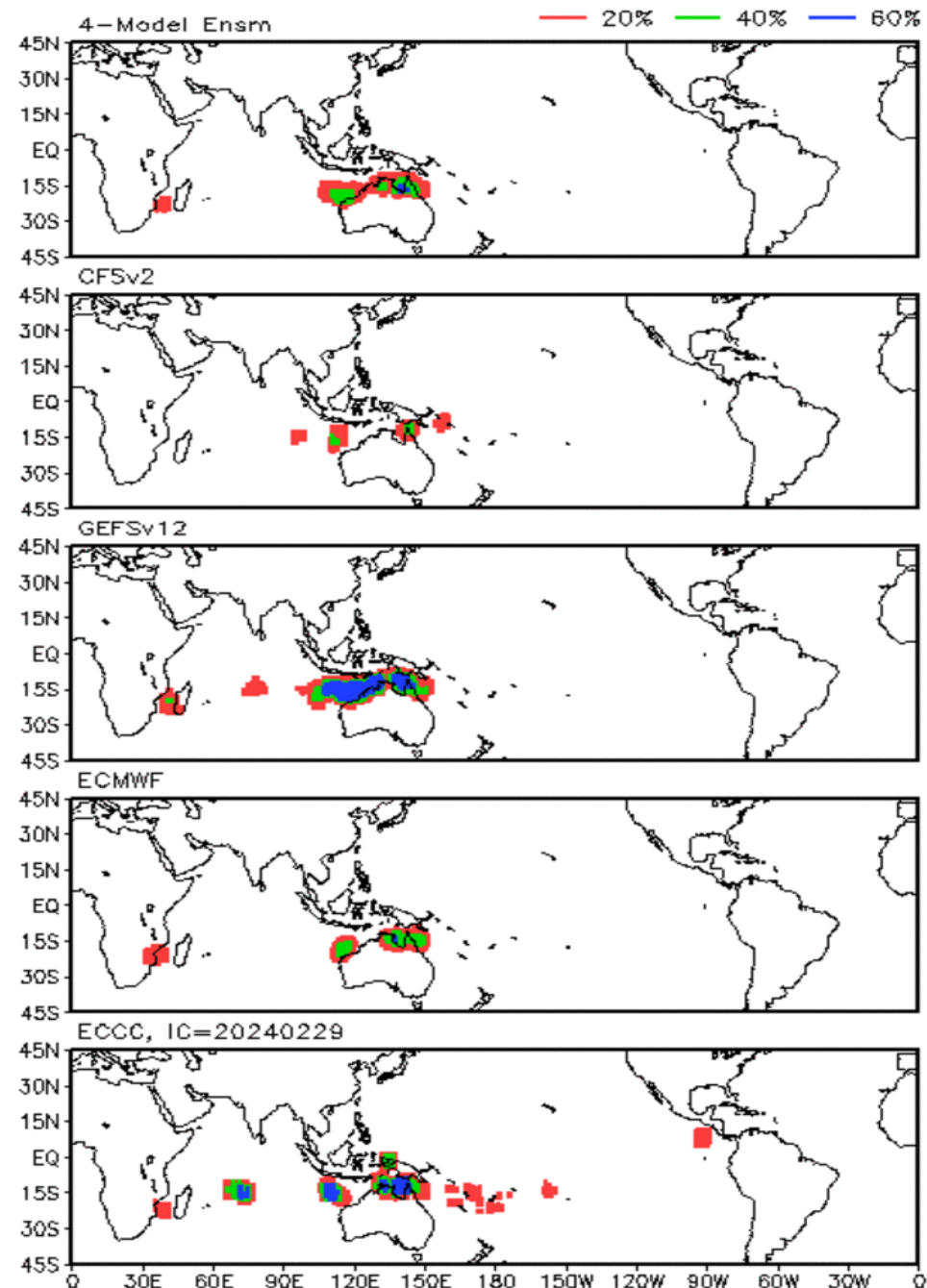


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



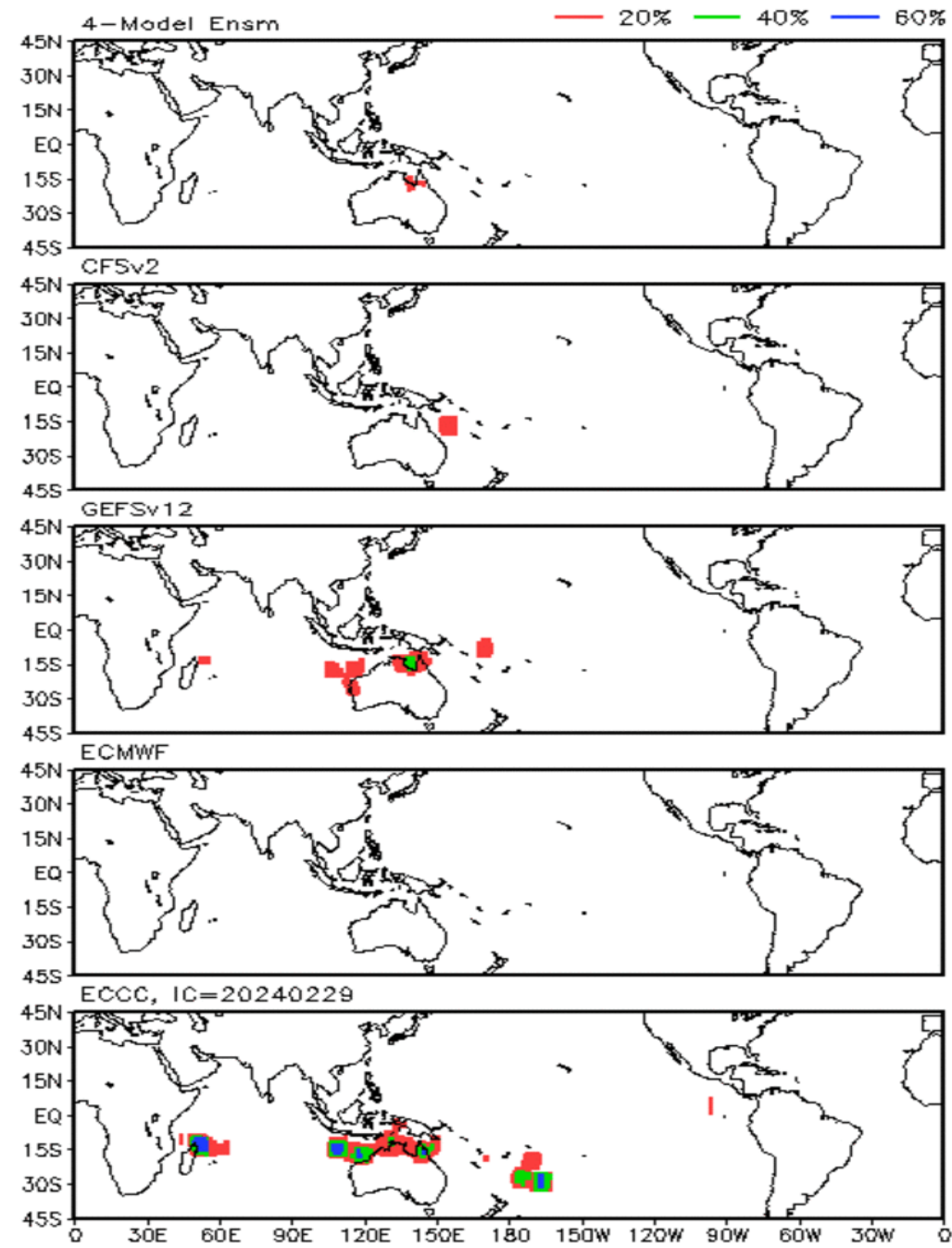
### Storm Track Probabilities, IC=20240304

Week 2: 0313 - 0319



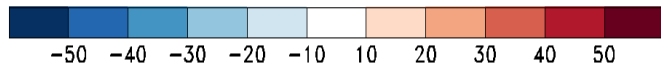
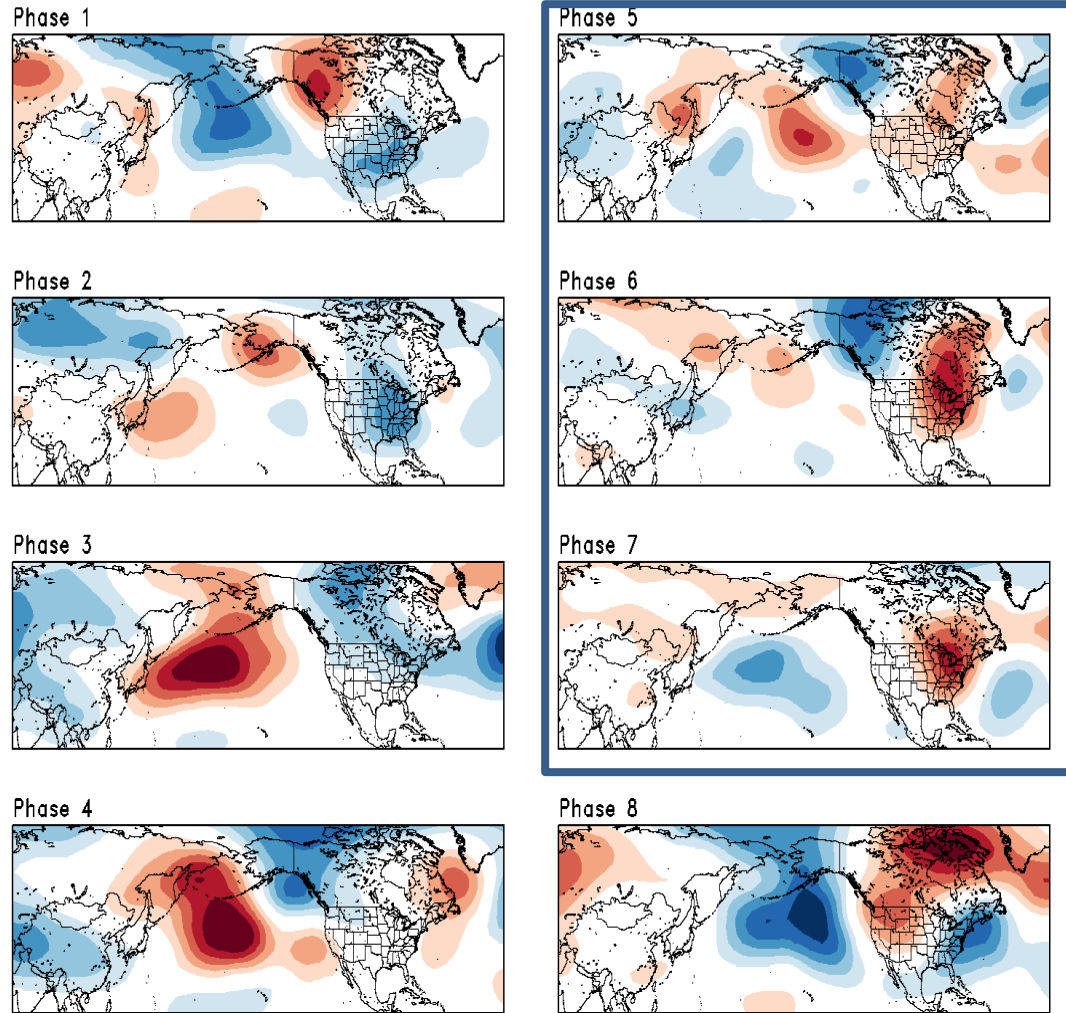
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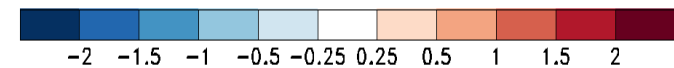
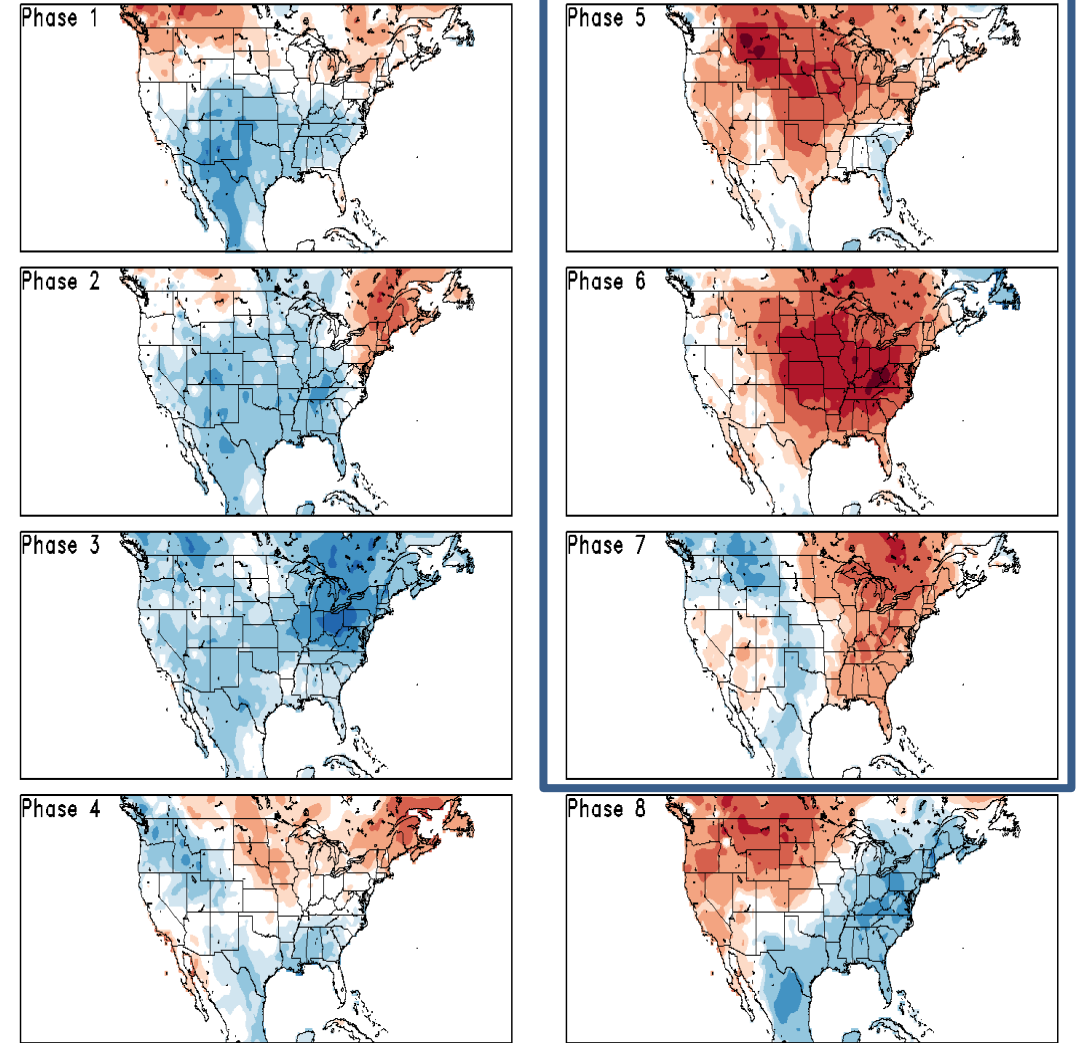


# Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

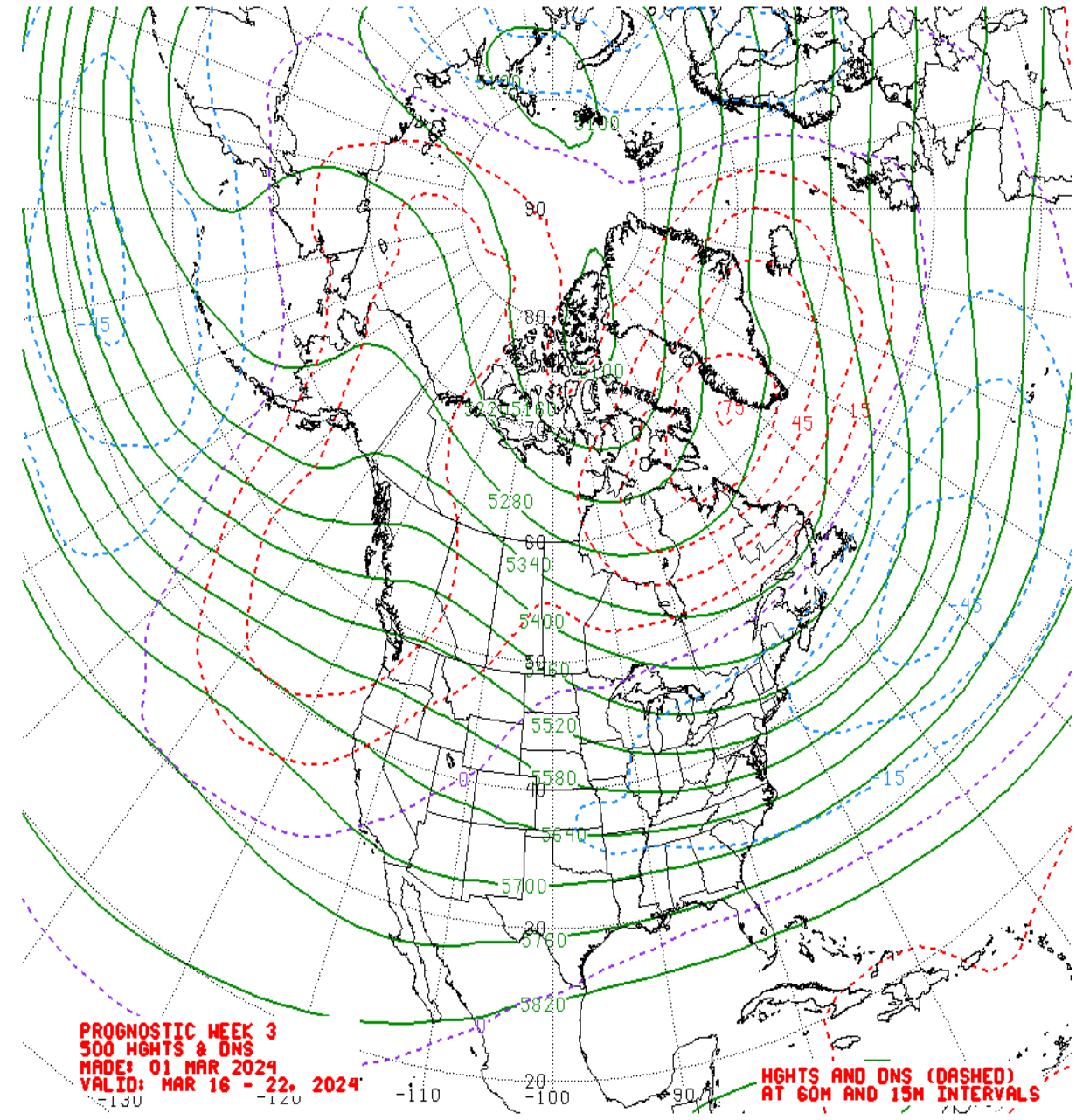
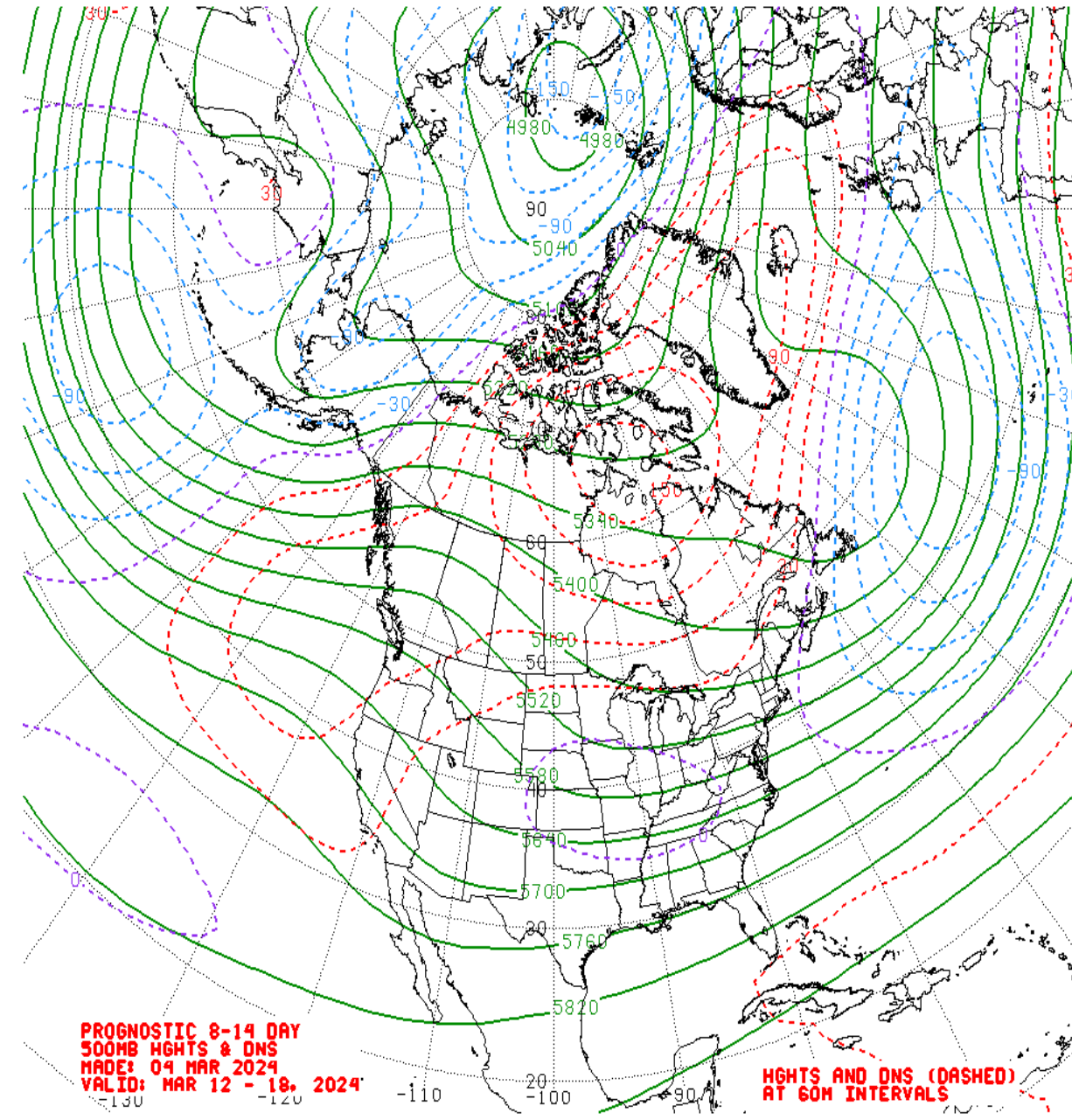
FMA MJO Composite: CDAS 500-hPa Height (m)



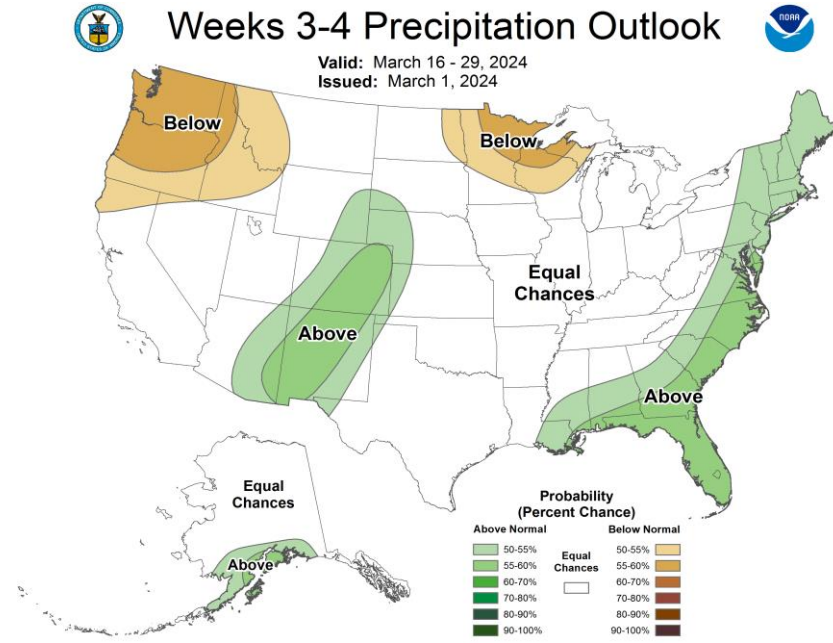
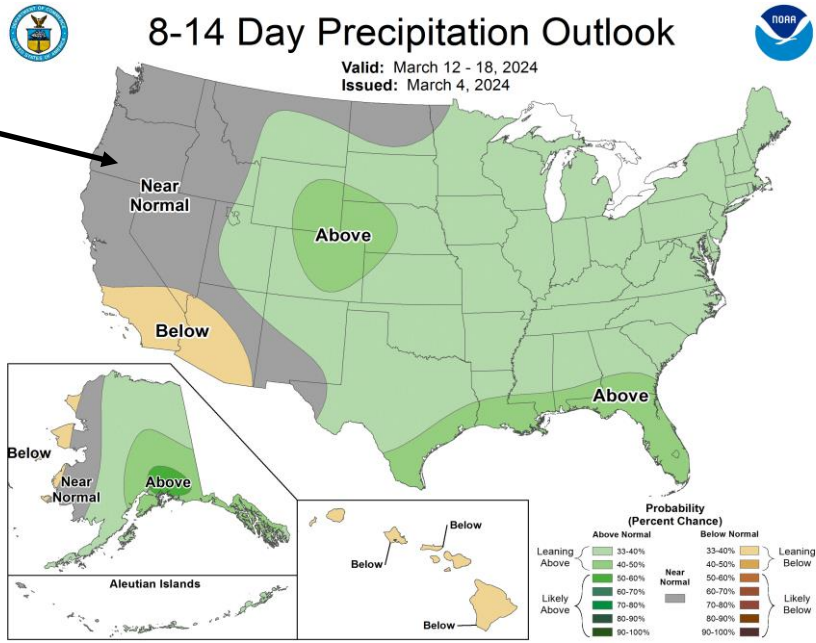
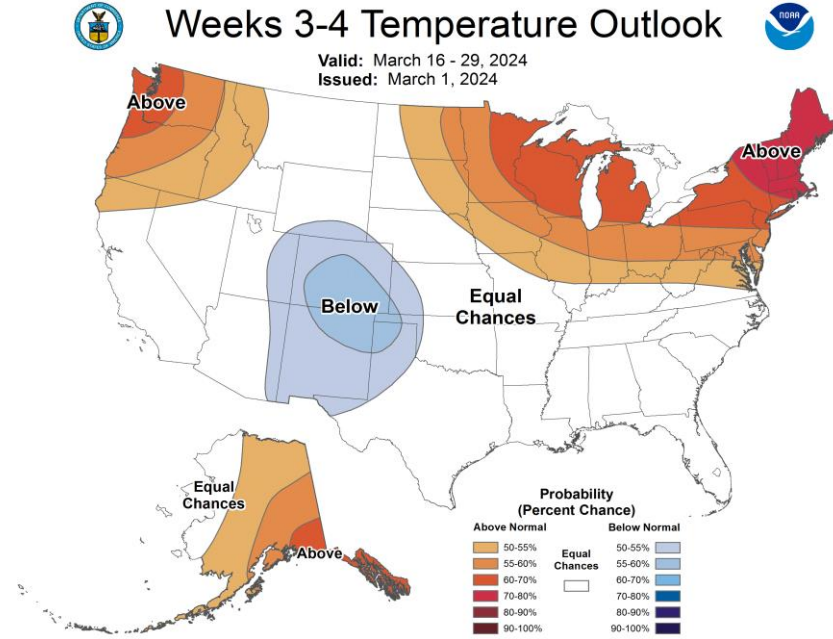
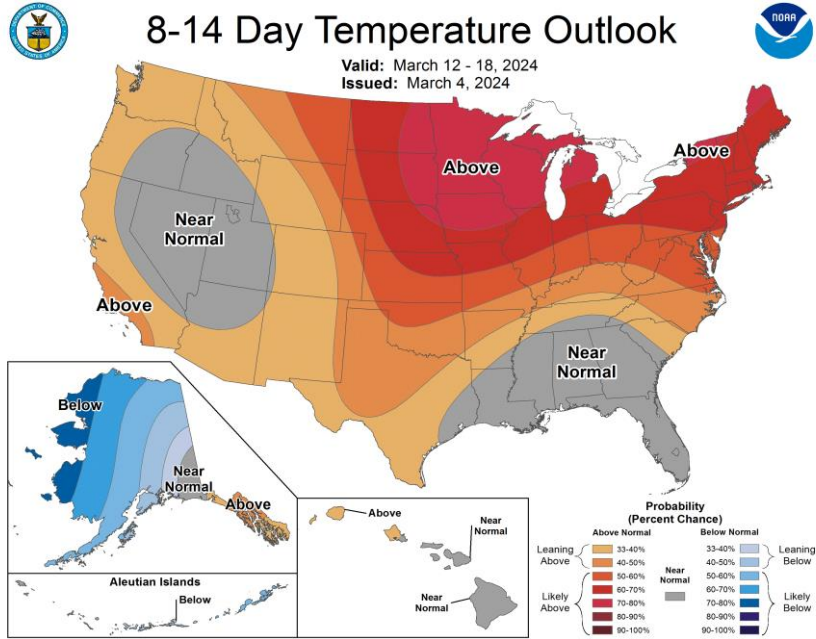
FMA MJO Composite: GLBT (degC)



# Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



# Official Temperature & Precipitation Forecasts:



Much drier today



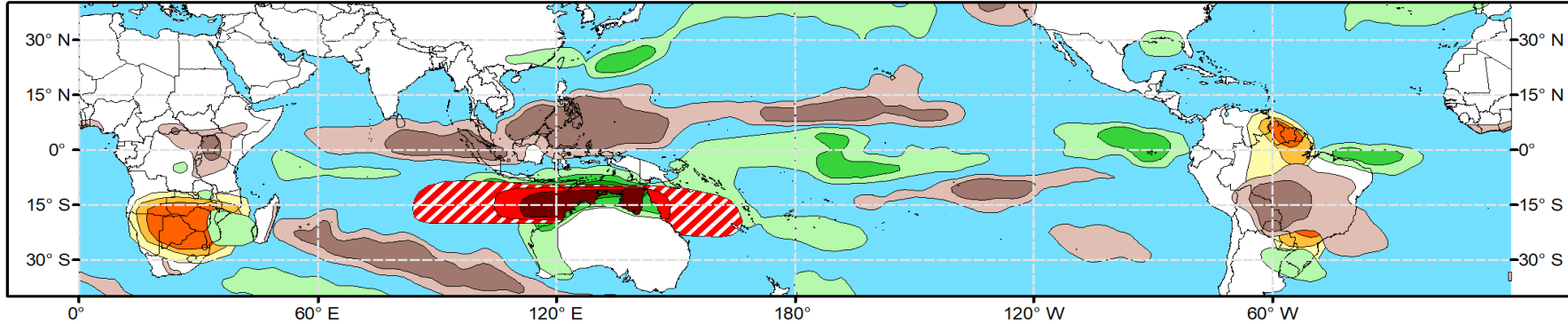
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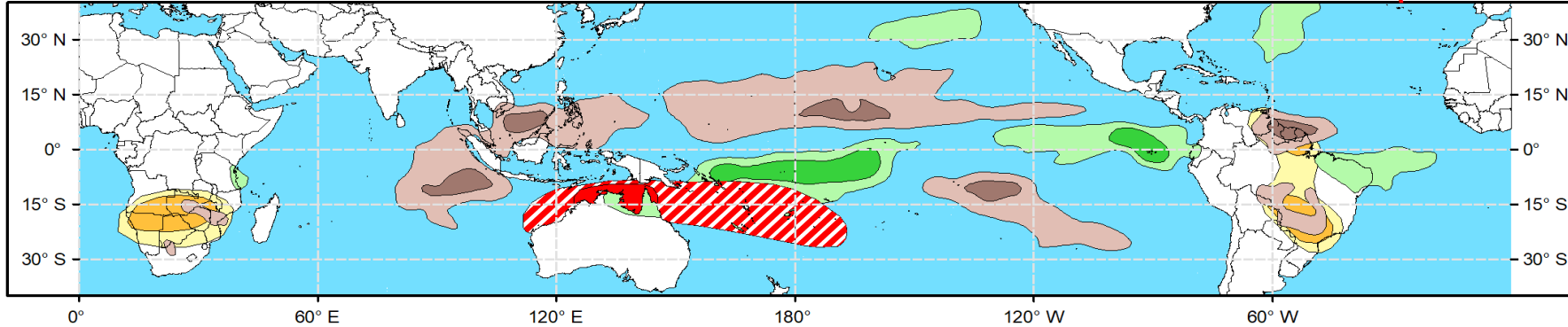


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