



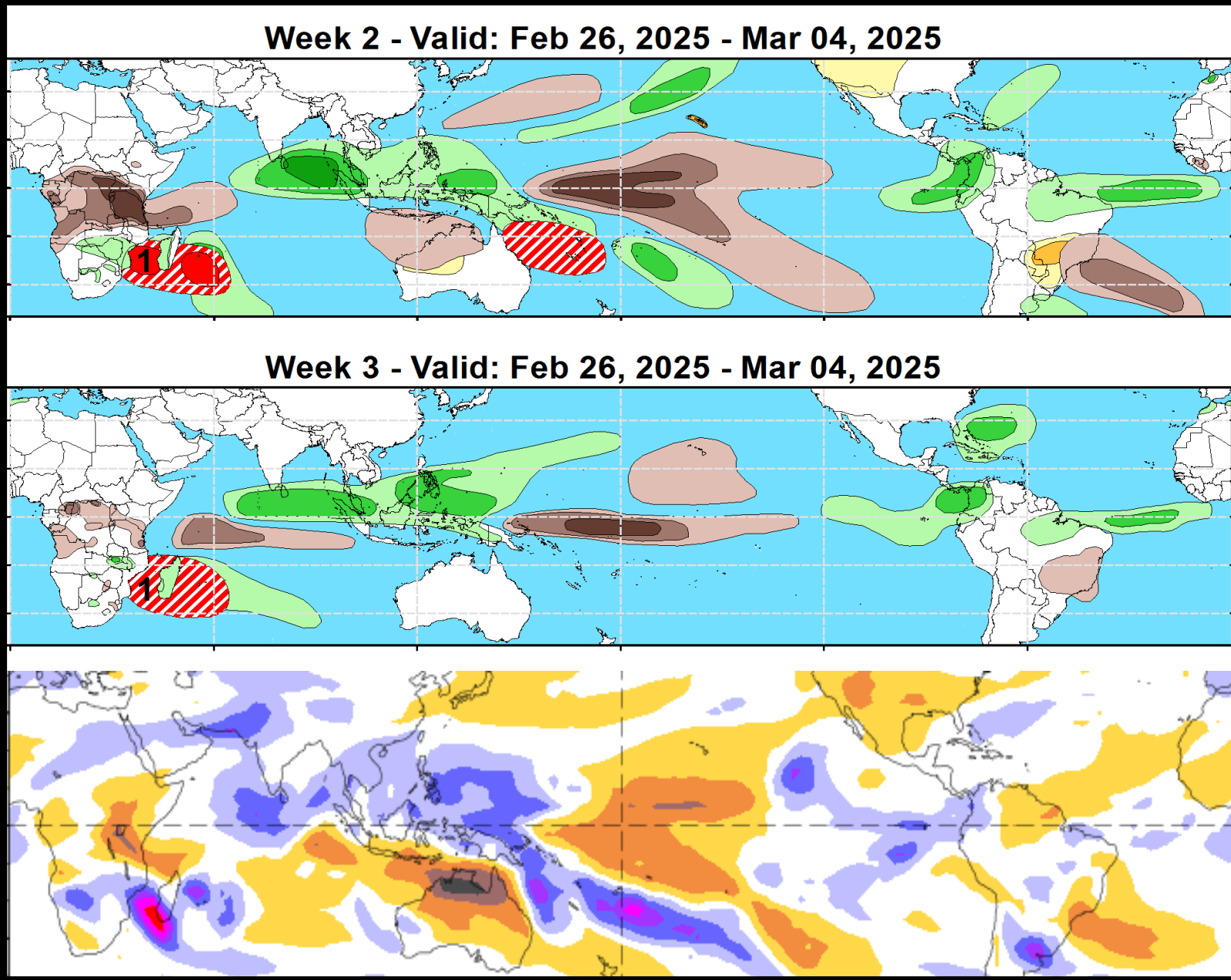
# Weeks 2-3 Global Tropics Hazards Outlook

3/4/2025

Danny Barandiaran  
NWS / NCEP / Climate Prediction Center

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

- 2/25: TC Honde



# Synopsis of Climate Modes:

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**ENSO:** (Feb 13, 2025 Update) *next update on Thursday, Mar 13<sup>th</sup>*

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña conditions are expected to persist in the near-term, with a transition to ENSO-neutral likely during Mar-May (66% chance).

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

- The global tropical circulation has been a little chaotic lately as multiple modes of variability have interfered with each other. However, a wave-2 structure has begun to emerge in recent days.
- Dynamical model RMM forecasts favor the return of eastward propagation of the MJO signal into Phase 2 during Week-1 and approaching the Maritime Continent later in March.
- Given the MJO evolution, tropical cyclone (TC) development is favored in the western Indian Ocean (IO) during week-2 and shifting to the eastern IO in week-3. Model guidance also indicates an enhanced potential for TC formation north of Australia and westward into the South Indian during week-3.

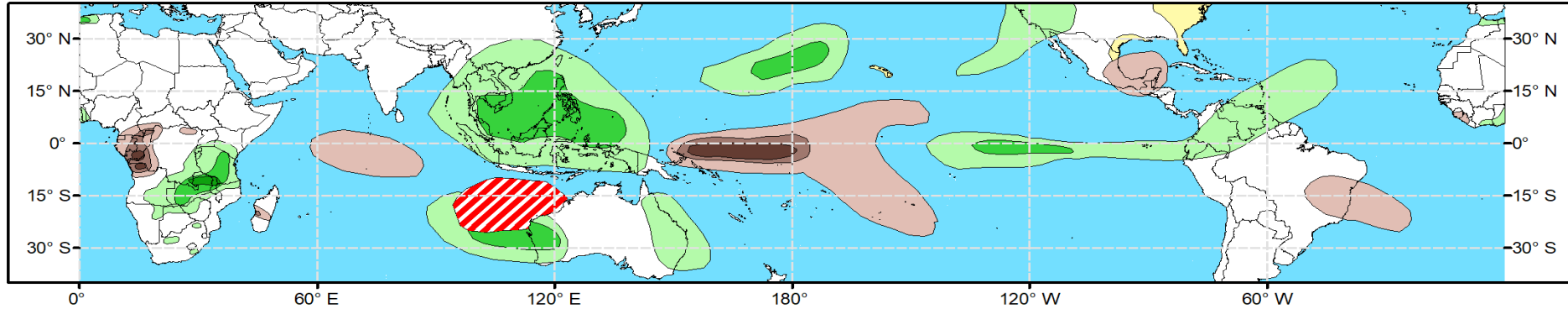
# GTH Outlook:



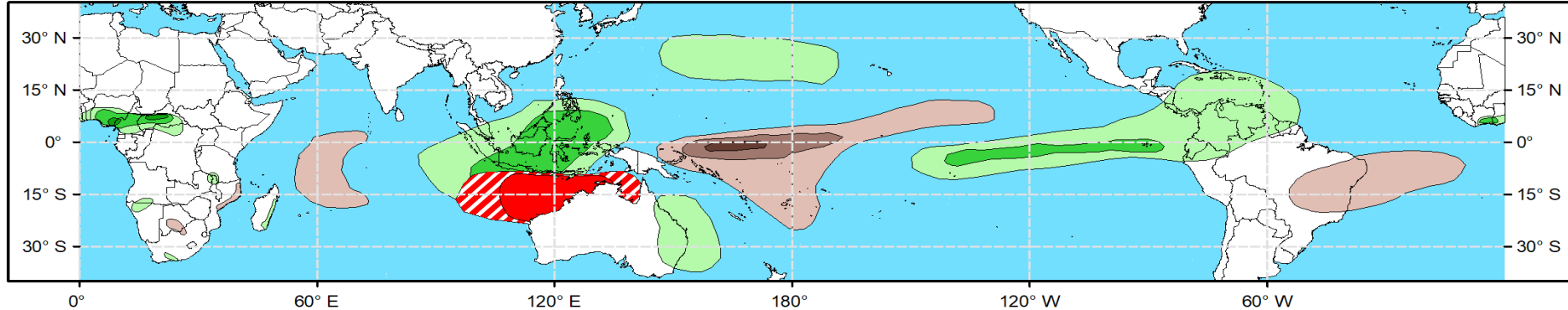
## Global Tropics Hazards Outlook Climate Prediction Center



**Week 2 - Valid: Mar 12, 2025 - Mar 18, 2025**



**Week 3 - Valid: Mar 19, 2025 - Mar 25, 2025**



**Tropical Cyclone (TC)  
Formation Probability**



>20% >40% >60%

*Tropical Depression (TD)  
or greater strength*

**Above-Average  
Rainfall Probability**



>50% >65% >80%

*Weekly total rainfall in the  
Upper third of the historical range*

**Below-Average  
Rainfall Probability**



>50% >65% >80%

*Weekly total rainfall in the  
Lower third of the historical range*

**Above-Average  
Temperatures Probability**



>50% >65% >80%

*7-day max temperatures in the  
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*7-day min temperatures in the  
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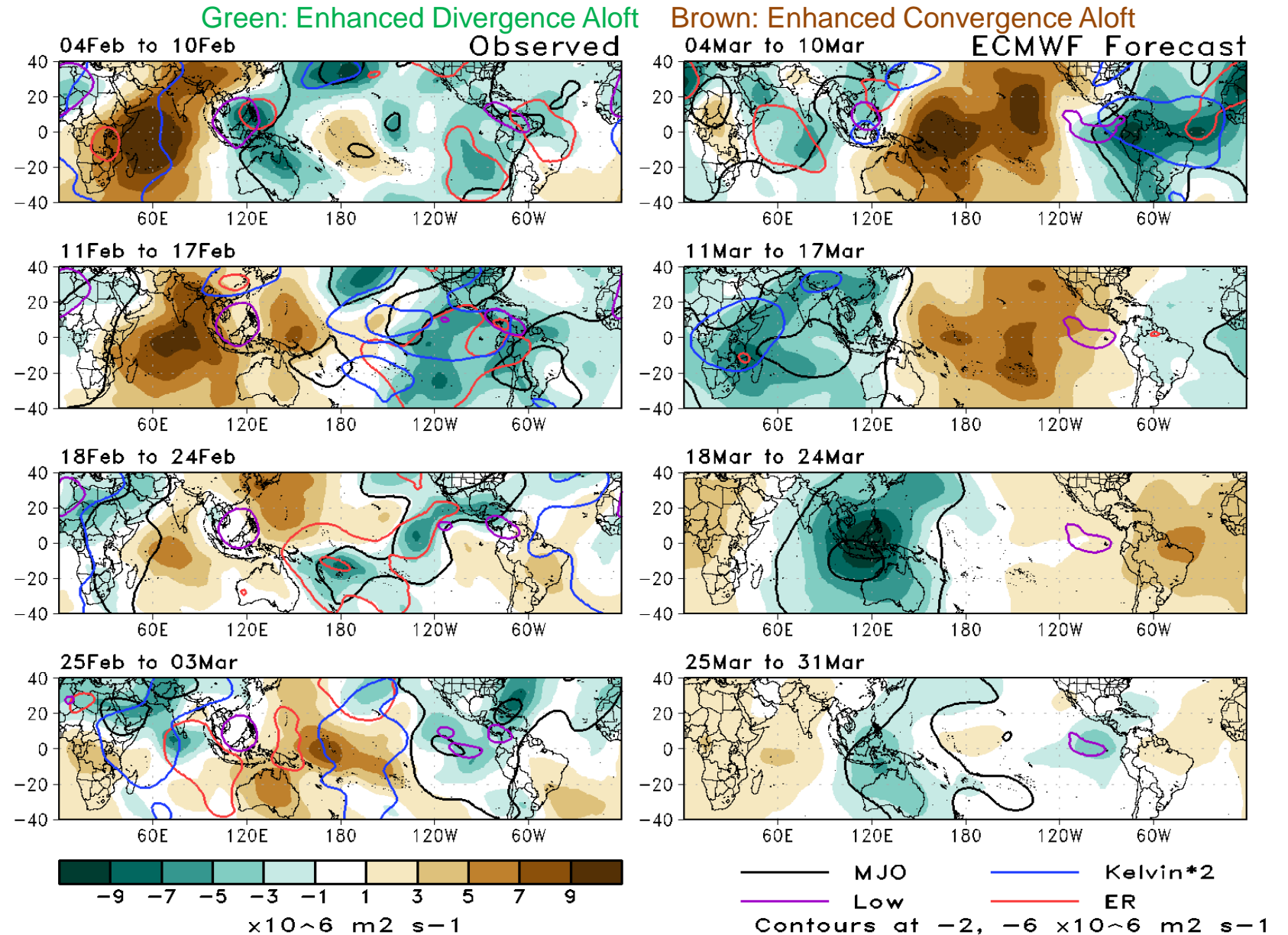
**Issued: 03/04/2025**

**Forecaster: Barandiaran**

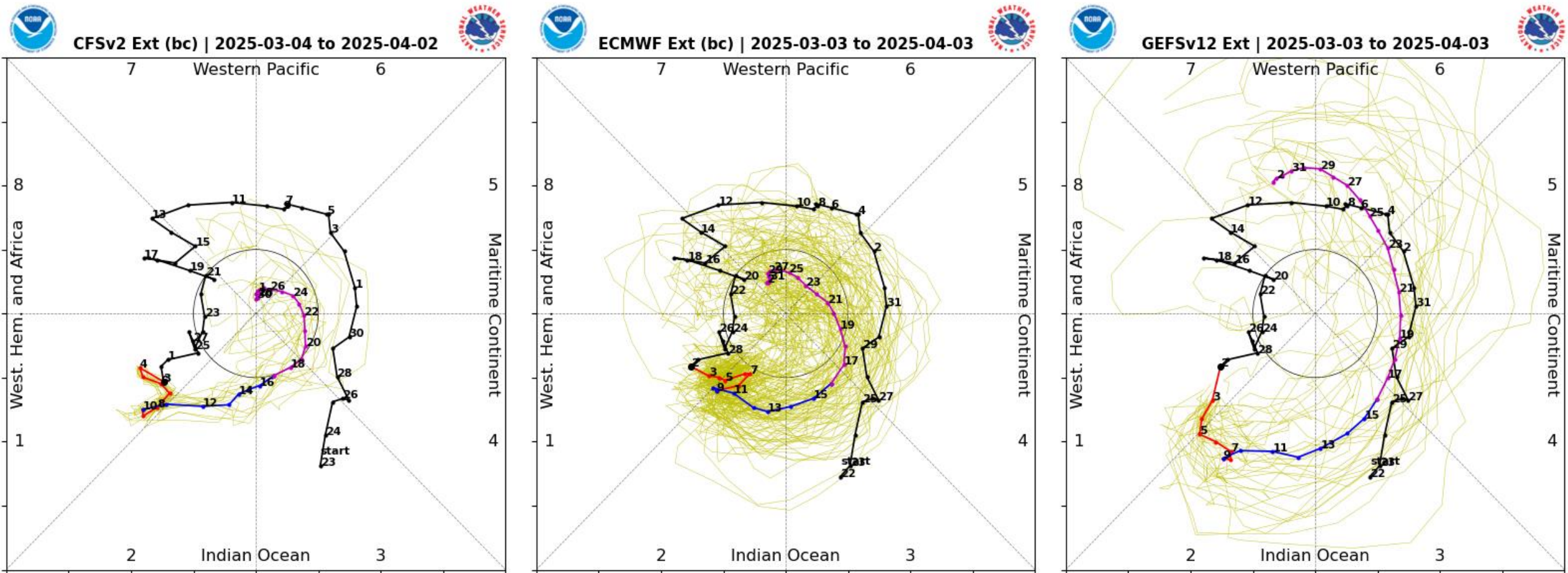
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# 200-hPa Velocity Potential Anomaly Maps:

- After a very robust MJO signal beginning in early January, the associated wave-1 asymmetry broke down in mid-February, yielding to a rather chaotic pattern as depicted in 200-hPa velocity potential anomaly plots.
- Most recently, a wave-2 pattern has begun to emerge, with anomalous divergence (convergence) over the Indian Ocean and Eastern Pacific (Africa and Western Pacific)

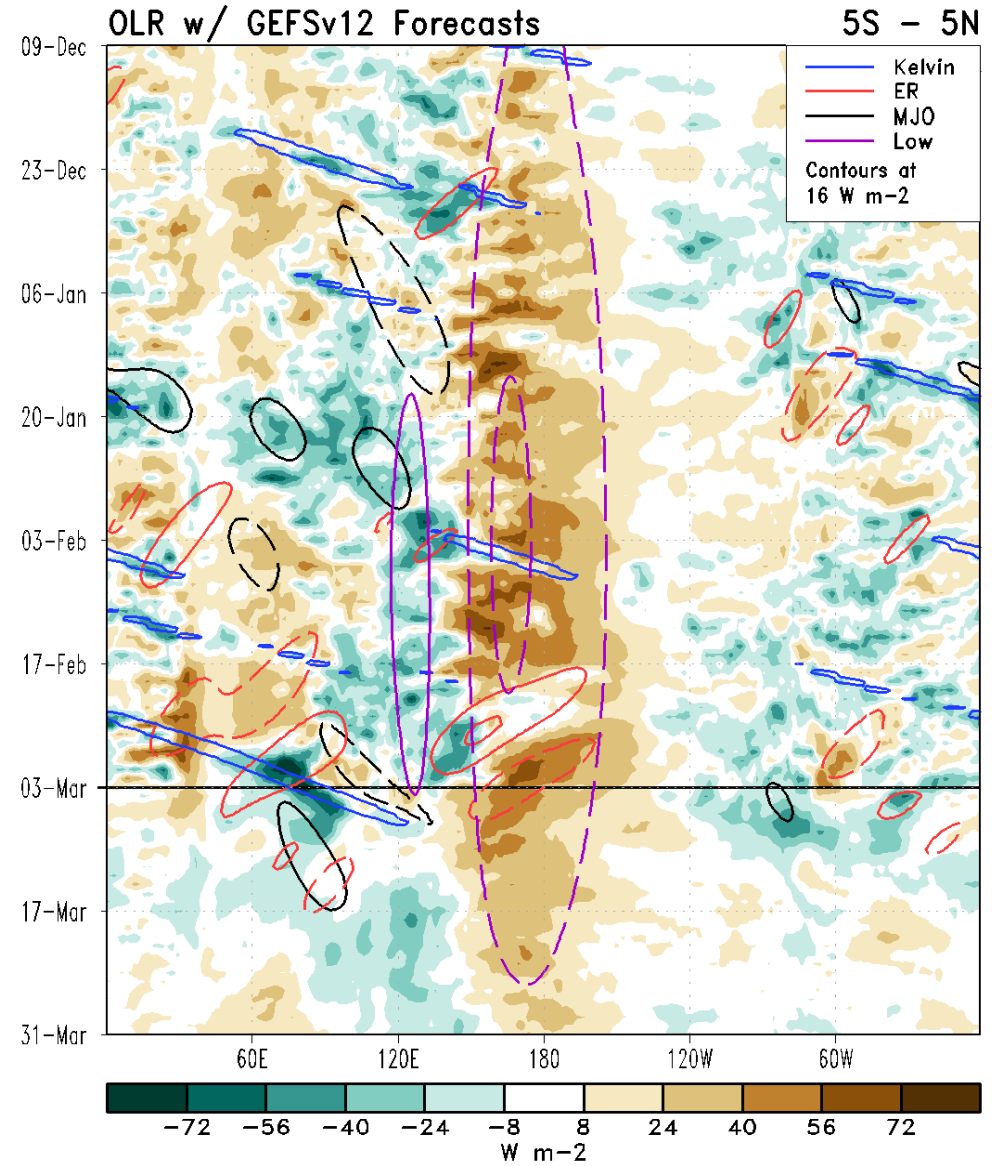
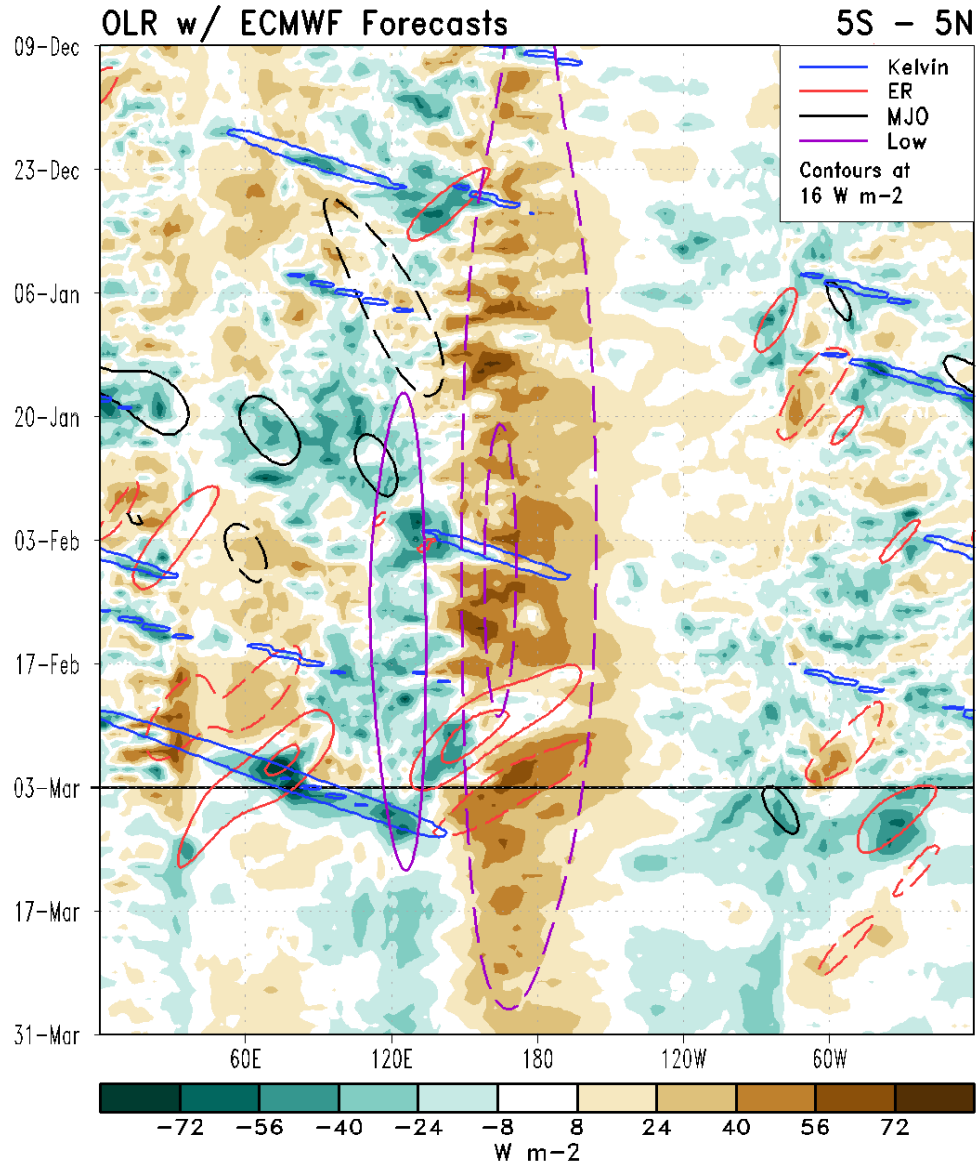


# RMM Index Observations & Forecasts:



- The CFS, GEFS and ECMWF ensembles stall the MJO signal in phase 1 or 2 in week 1, but renew its eastward propagation into Phase 3 by the end of Week-2.
- The ECMWF and GEFS increase the signal strength during Weeks 1-2, with the GEFS favoring a strong MJO signal by week-2, as well as a faster propagation speed than the ECMWF.

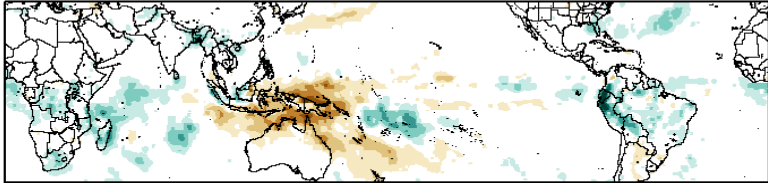
# Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



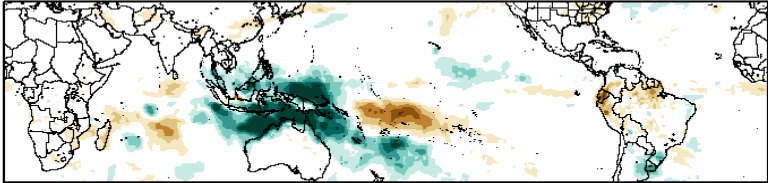
# Historical Precipitation Anomalies By MJO Phase:

FMA MJO Composite: GPCP1DD (mm/day)

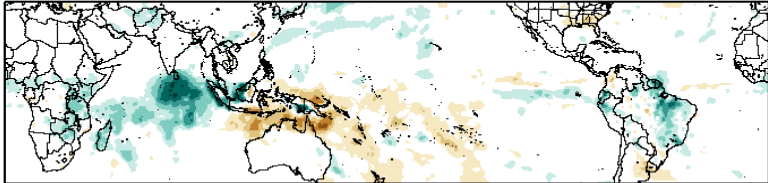
Phase 1



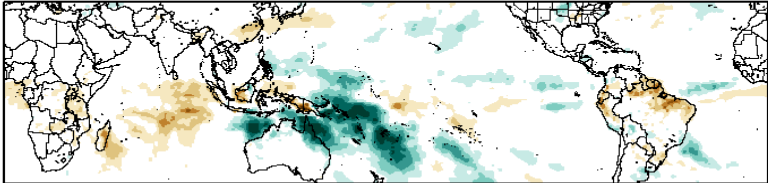
Phase 5



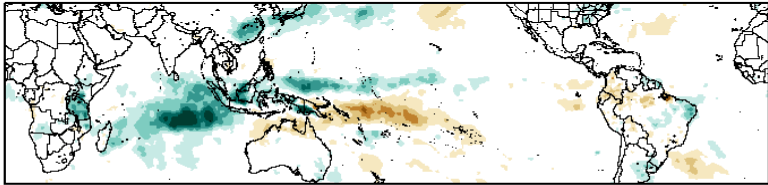
Phase 2



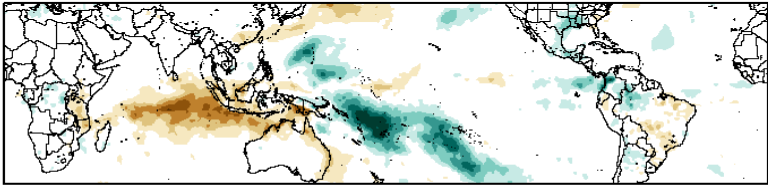
Phase 6



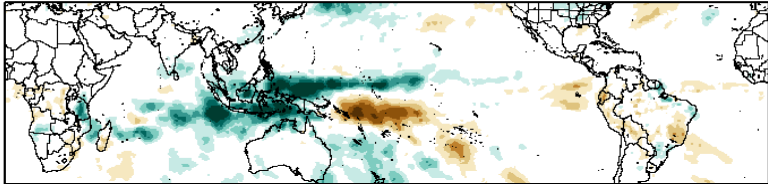
Phase 3



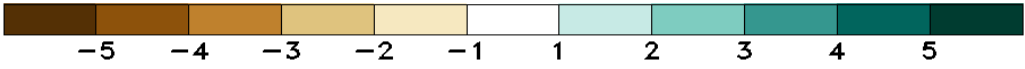
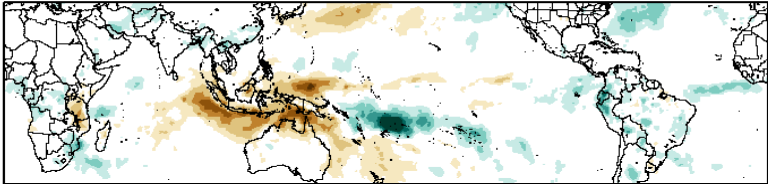
Phase 7



Phase 4



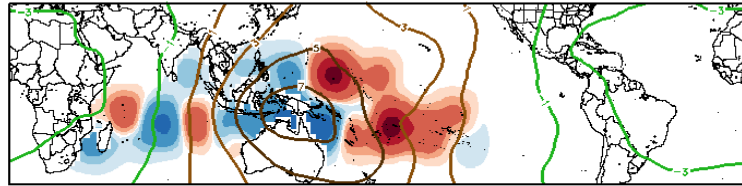
Phase 8



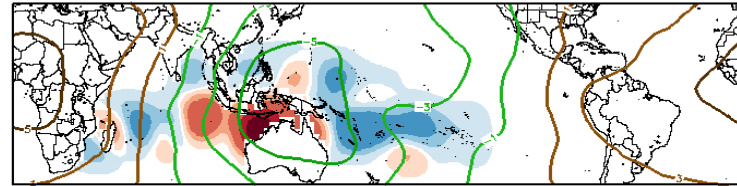


# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

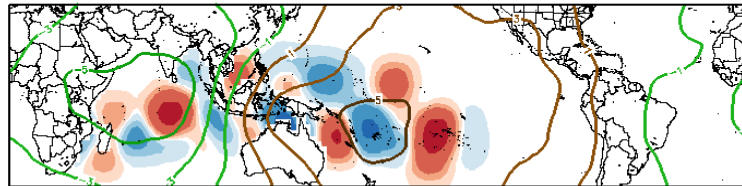
FMA MJO Composite: Mean TC Origin Density Anomaly ( $\#TCs/277km^2*100$ )  
w/ FMA CHI200 ( $\times 10^6 m^{-2} s^{-1}$ ) / Contours every  $2 \times 10^6 m^{-2} s^{-1}$



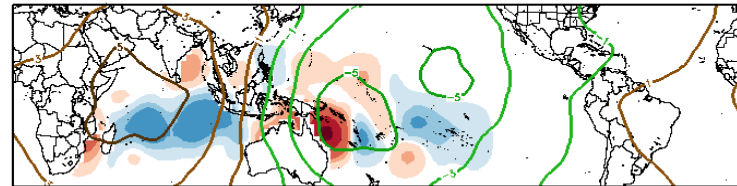
Phase 1



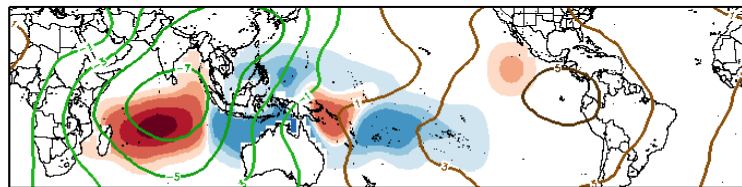
Phase 5



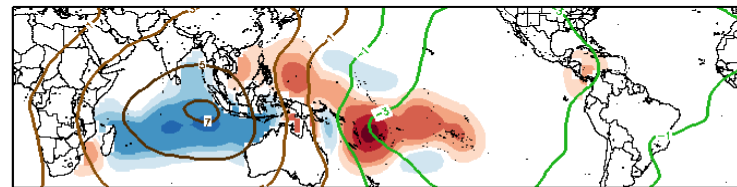
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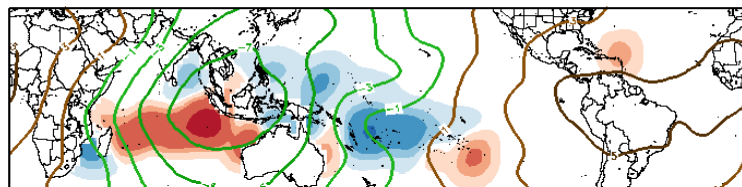
Phase 6



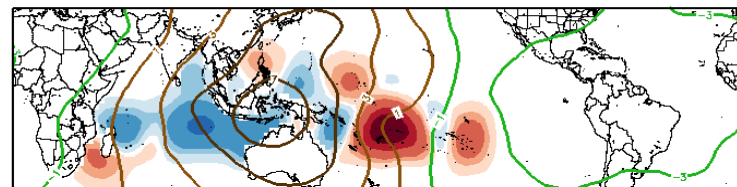
Phase 3



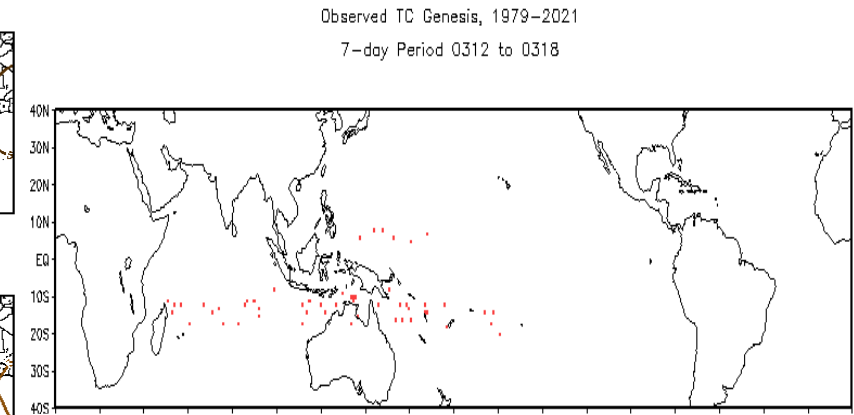
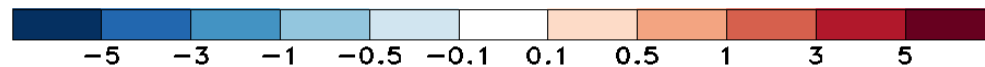
Phase 7



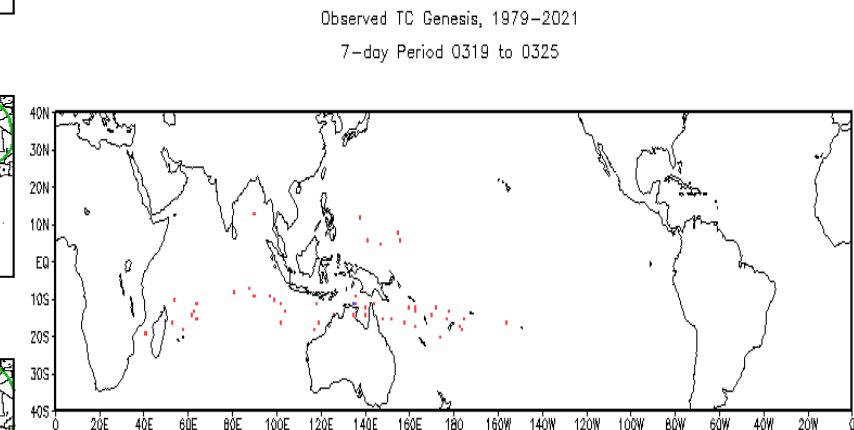
Phase 4



Phase 8



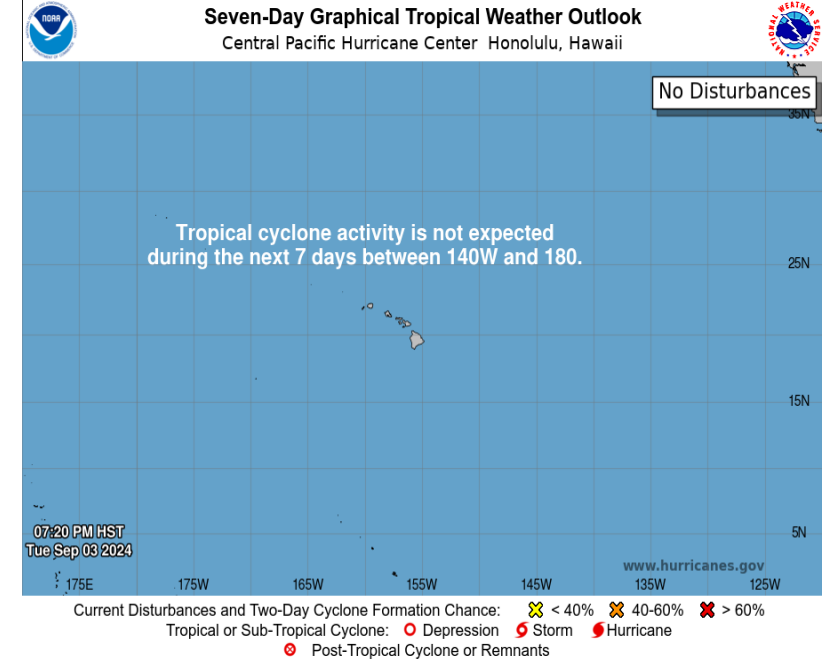
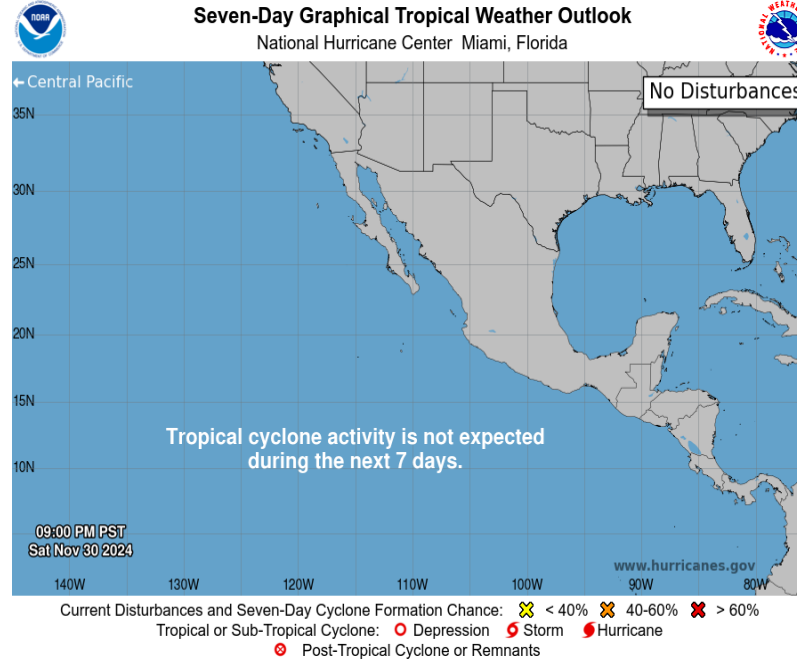
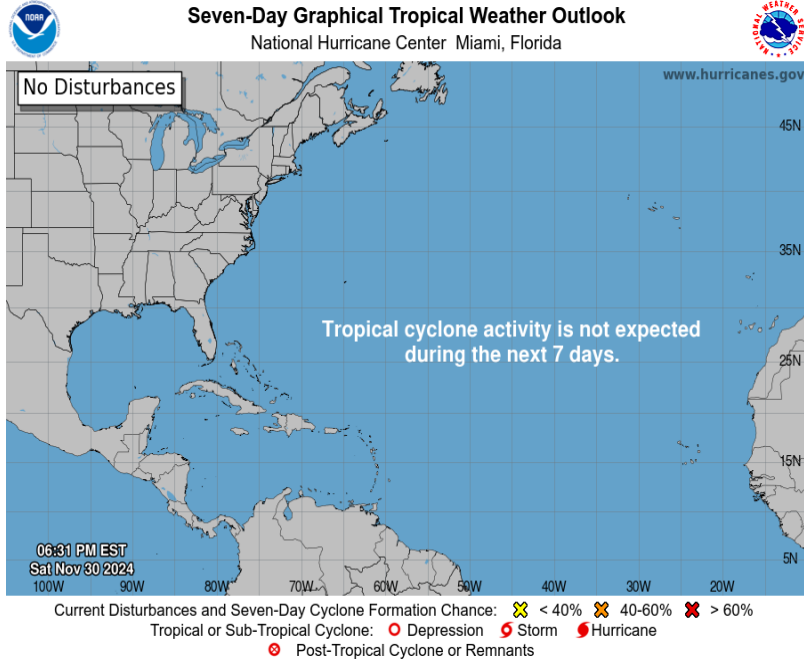
Observed TC Genesis, 1979-2021  
7-day Period 0312 to 0318



Observed TC Genesis, 1979-2021  
7-day Period 0319 to 0325

\*Experimental\*

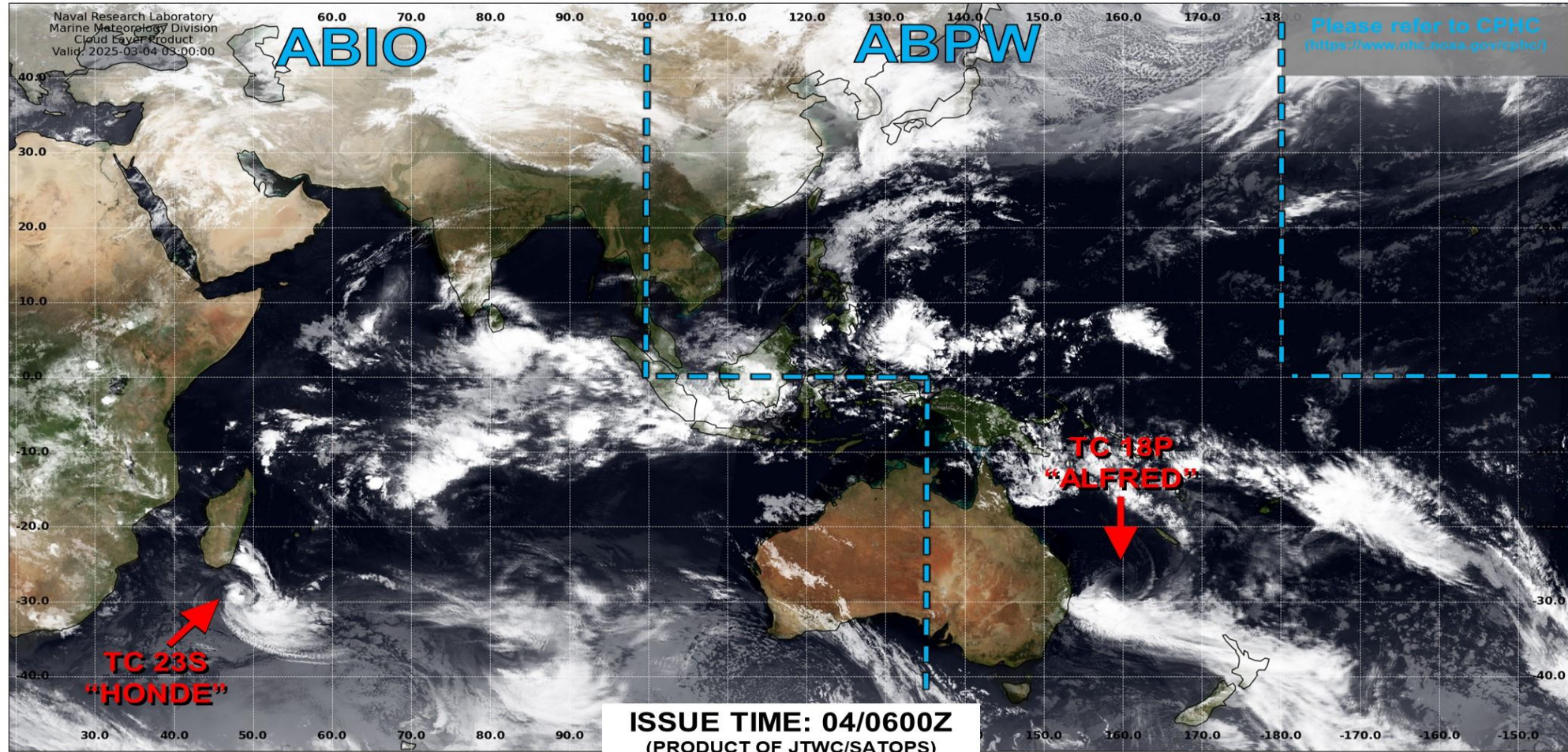
# Tropical Cyclone Monitoring/Forecast: NHC / CPHC



# 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

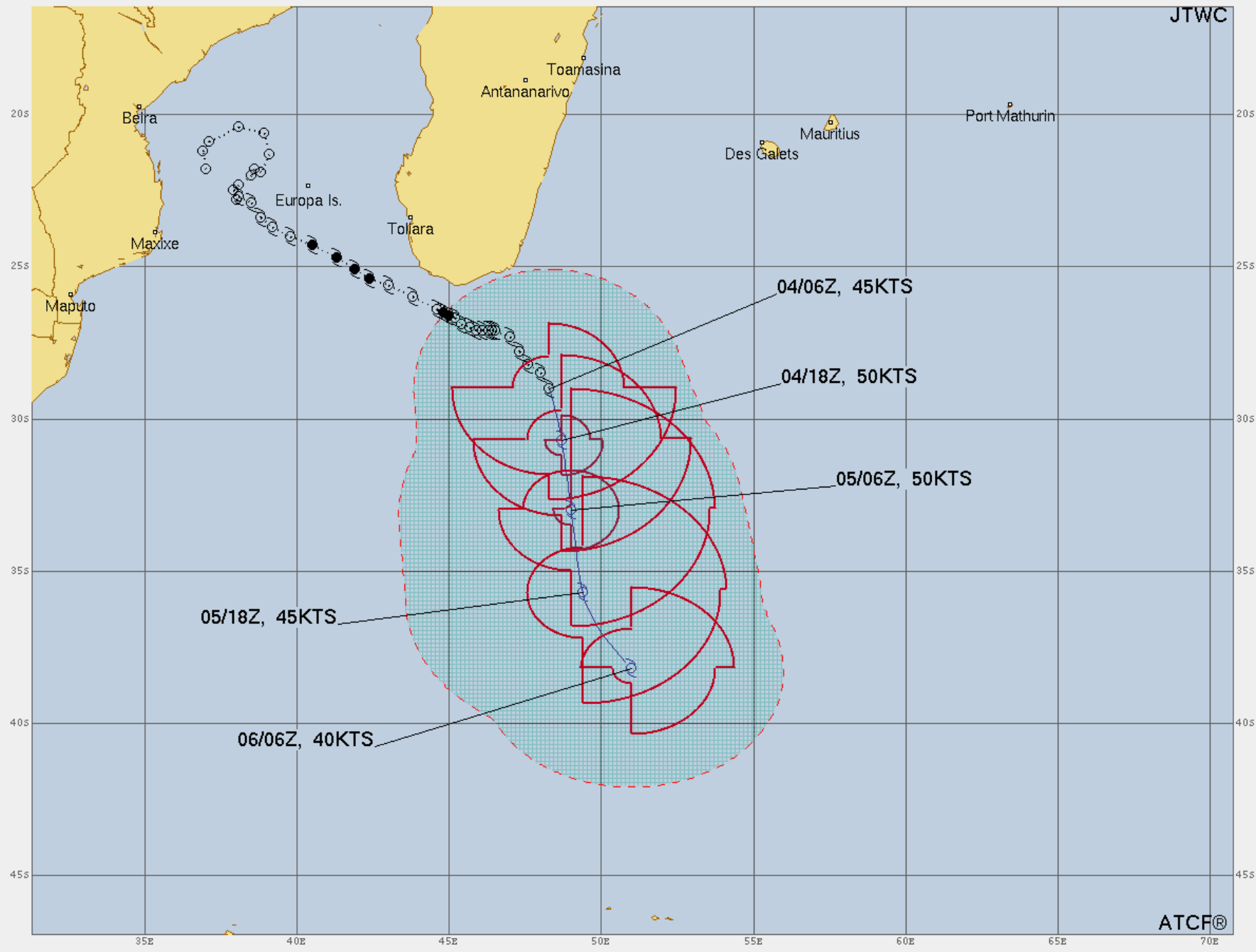
 Tropical Cyclone (Reference Warning)

JTWC

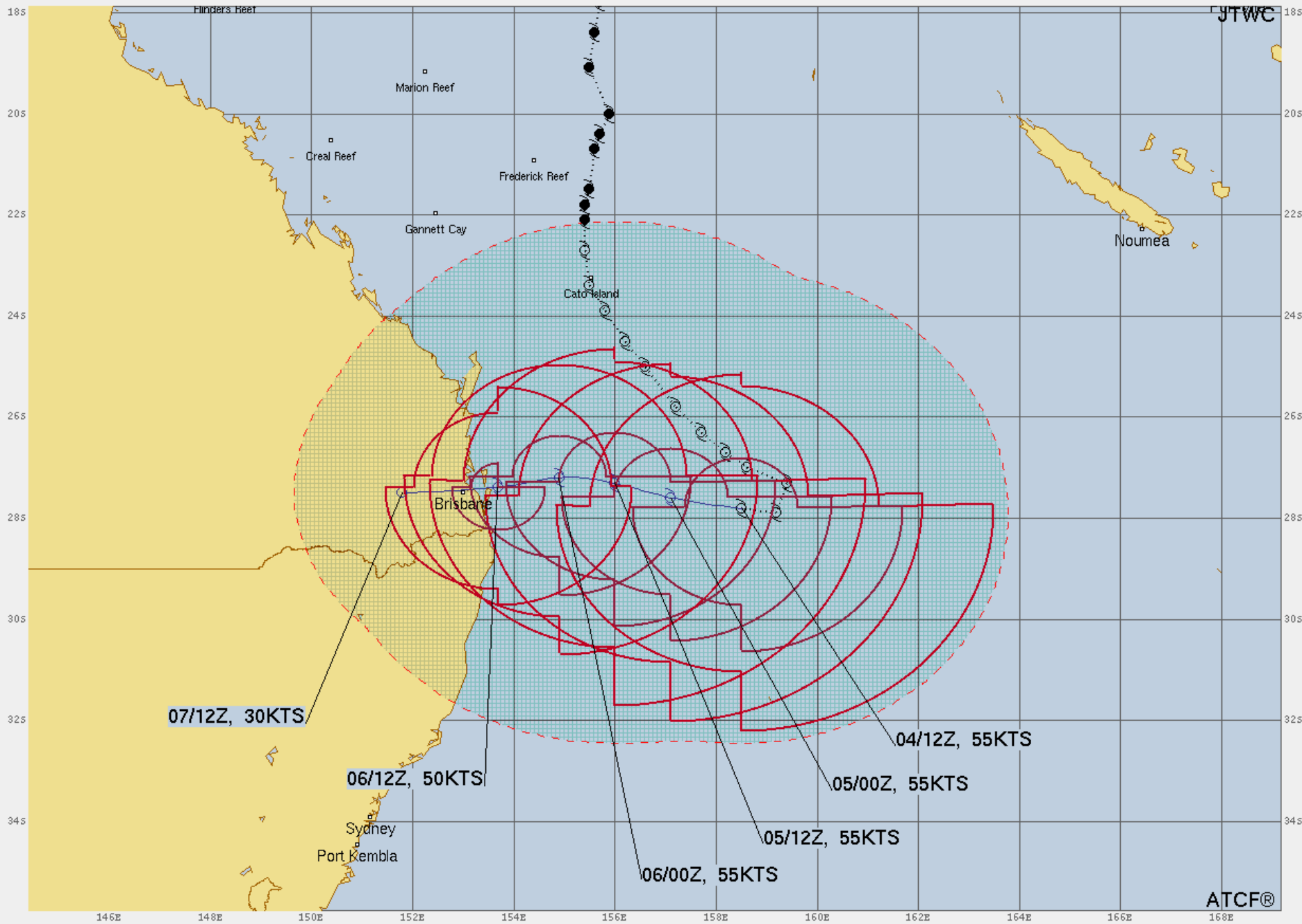
TROPICAL CYCLONE 23S (HONDE) WARNING #14  
 WTXS33 PGTW 040900  
 040600Z POSIT: NEAR 29.0S 48.3E  
 MOVING 150 DEGREES TRUE AT 06 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 18 FEET  
 04/06Z, WINDS 045 KTS, GUSTS TO 055 KTS  
 04/18Z, WINDS 050 KTS, GUSTS TO 065 KTS  
 05/06Z, WINDS 050 KTS, GUSTS TO 065 KTS  
 05/18Z, WINDS 045 KTS, GUSTS TO 055 KTS  
 06/06Z, WINDS 040 KTS, GUSTS TO 050 KTS



- LESS THAN 34 KNOTS
- 34-63 KNOTS
- MORE THAN 63 KNOTS
- FORECAST CYCLONE TRACK
- ⋯ PAST CYCLONE TRACK
- DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
- ⊙ FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)



ATCF®




**TROPICAL CYCLONE 18P (ALFRED) WARNING #23**  
 WTPS31 PGTW 041500  
 041200Z POSIT: NEAR 27.8S 158.5E  
 MOVING 280 DEGREES TRUE AT 06 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 30 FEET  
 04/12Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 05/00Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 05/12Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 06/00Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 06/12Z, WINDS 050 KTS, GUSTS TO 065 KTS  
 07/12Z, WINDS 030 KTS, GUSTS TO 040 KTS

CPA TO:	NM	DTG
BRISBANE	8	03/06/202
SYDNEY	385	03/07/12Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
BRISBANE	094	292	0

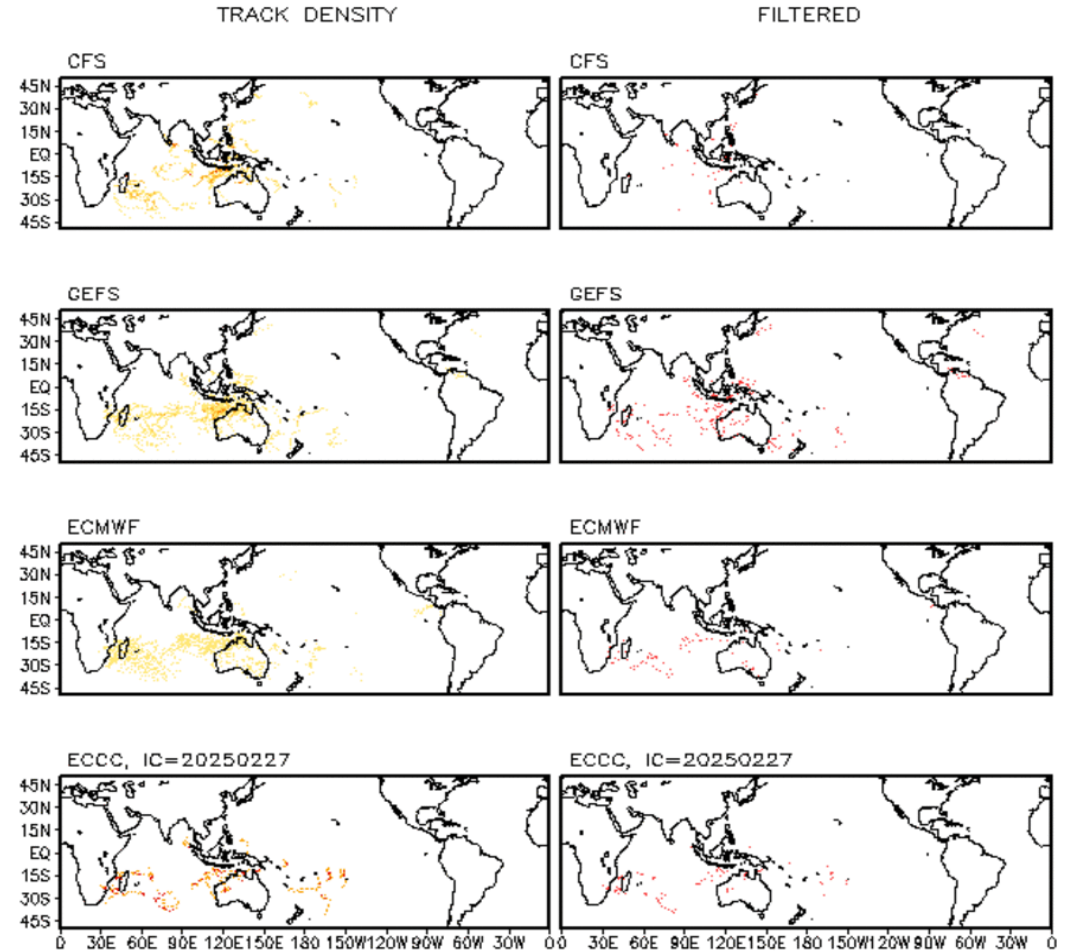
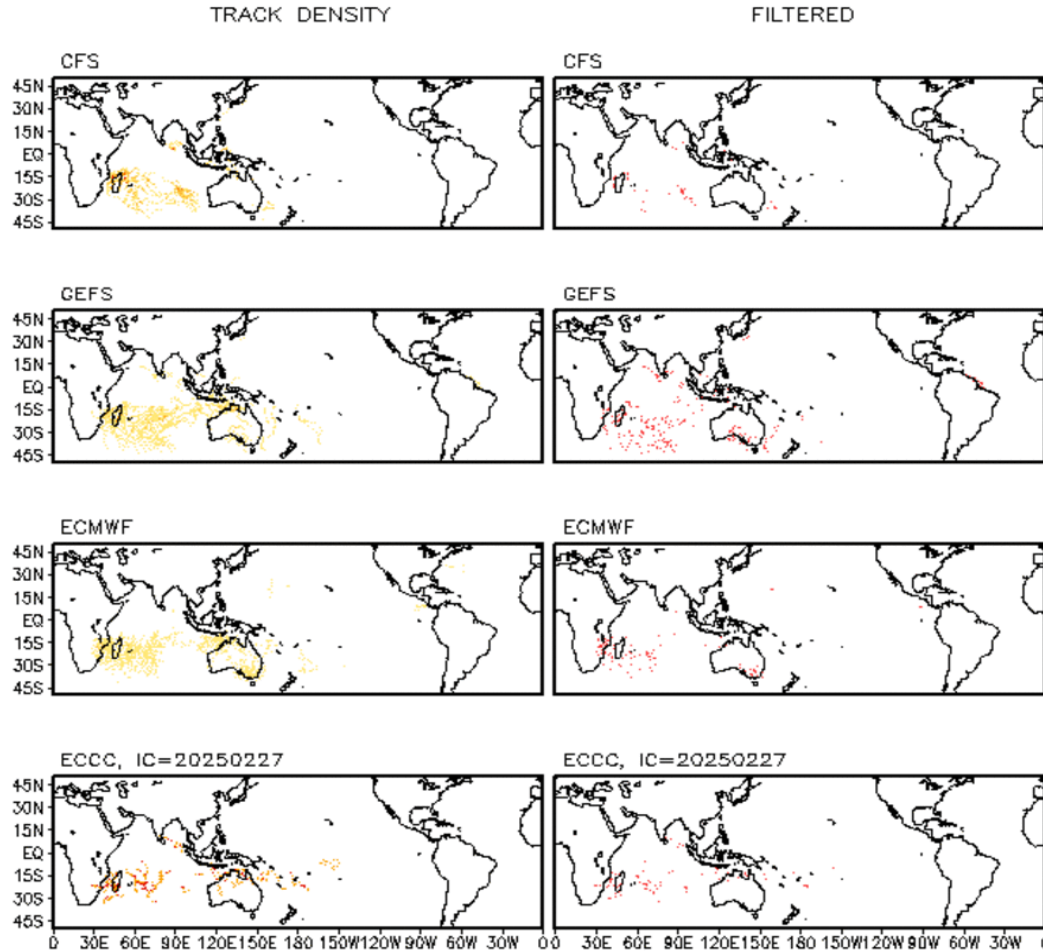
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# Multi-Model TC Track Densities: Weeks 2+3

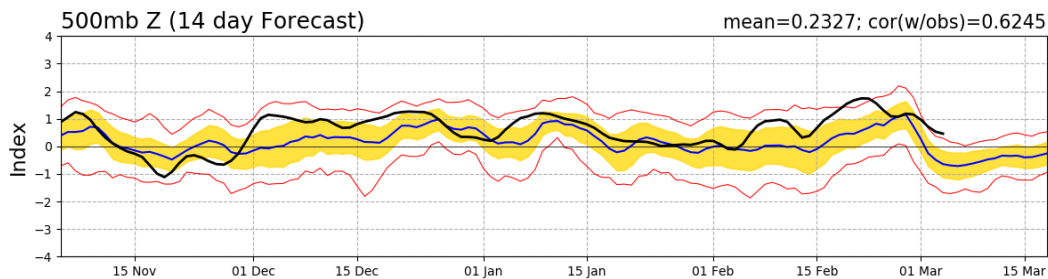
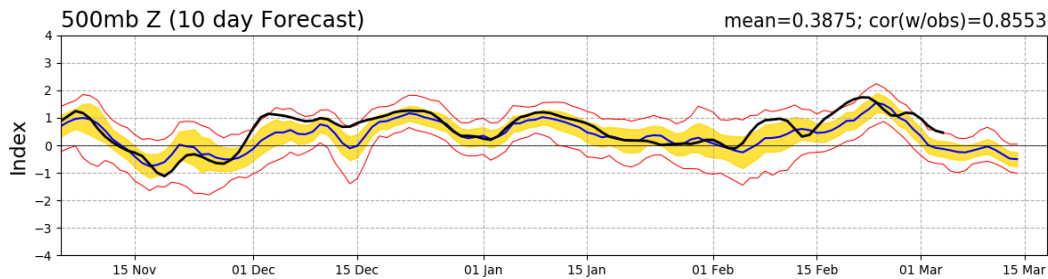
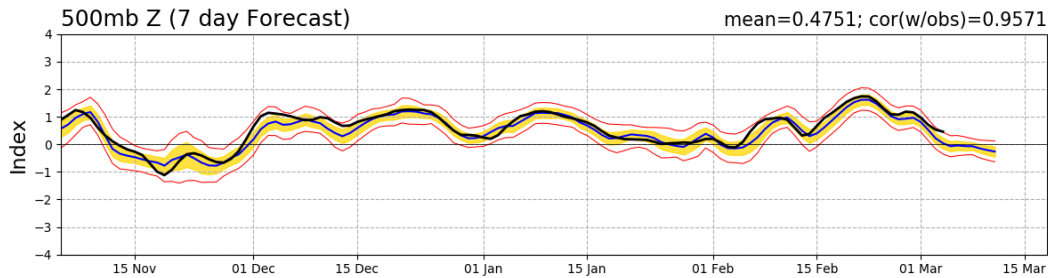
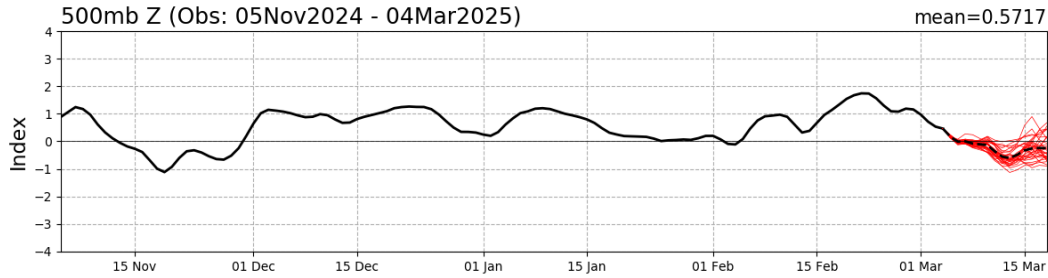
Storm Track Density Distribution, IC=20250303  
Week 2 Forecast: 0312-0318

Storm Track Density Distribution, IC=20250303  
Week 3 Forecast: 0319-0325

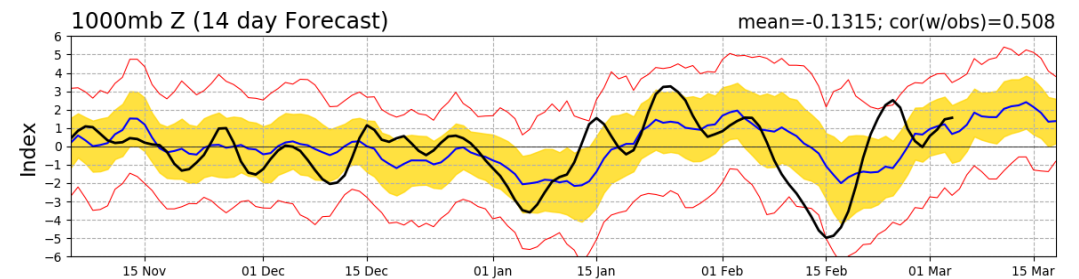
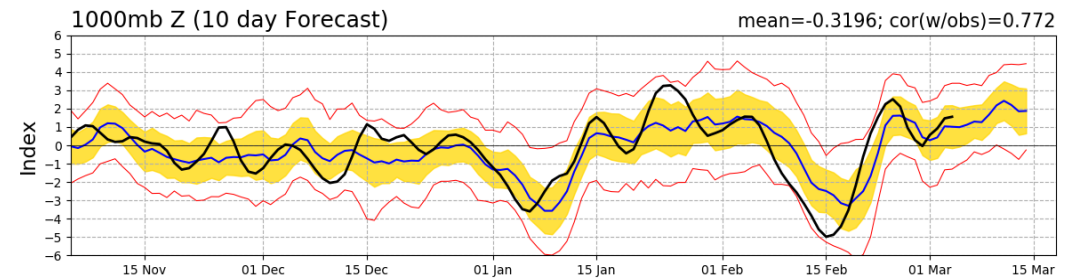
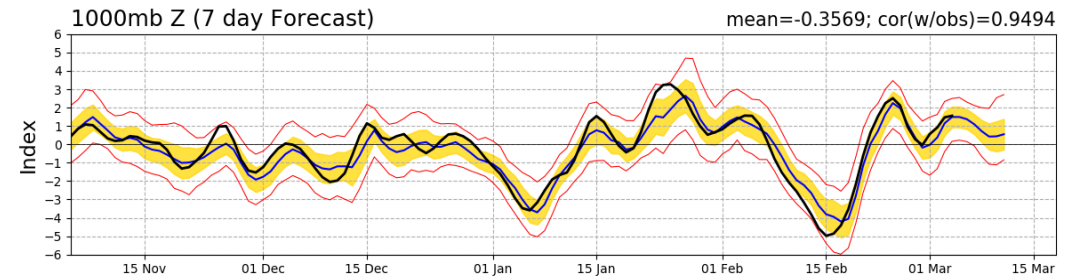
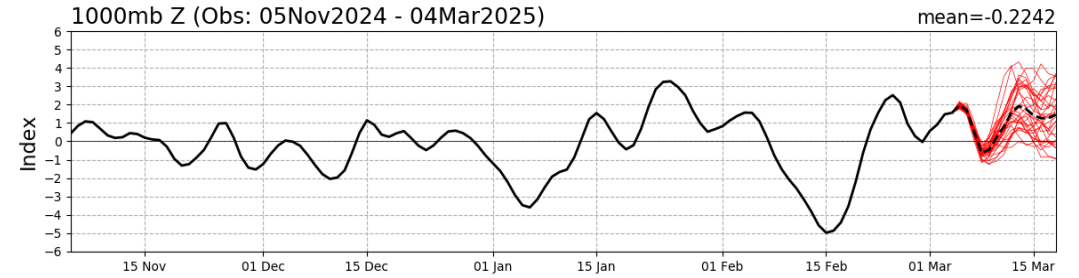


# Teleconnection Indices: PNA / AO:

## PNA Index: Observed & GEFS Forecasts

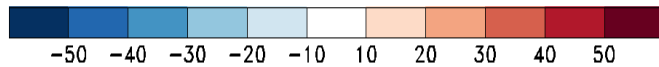
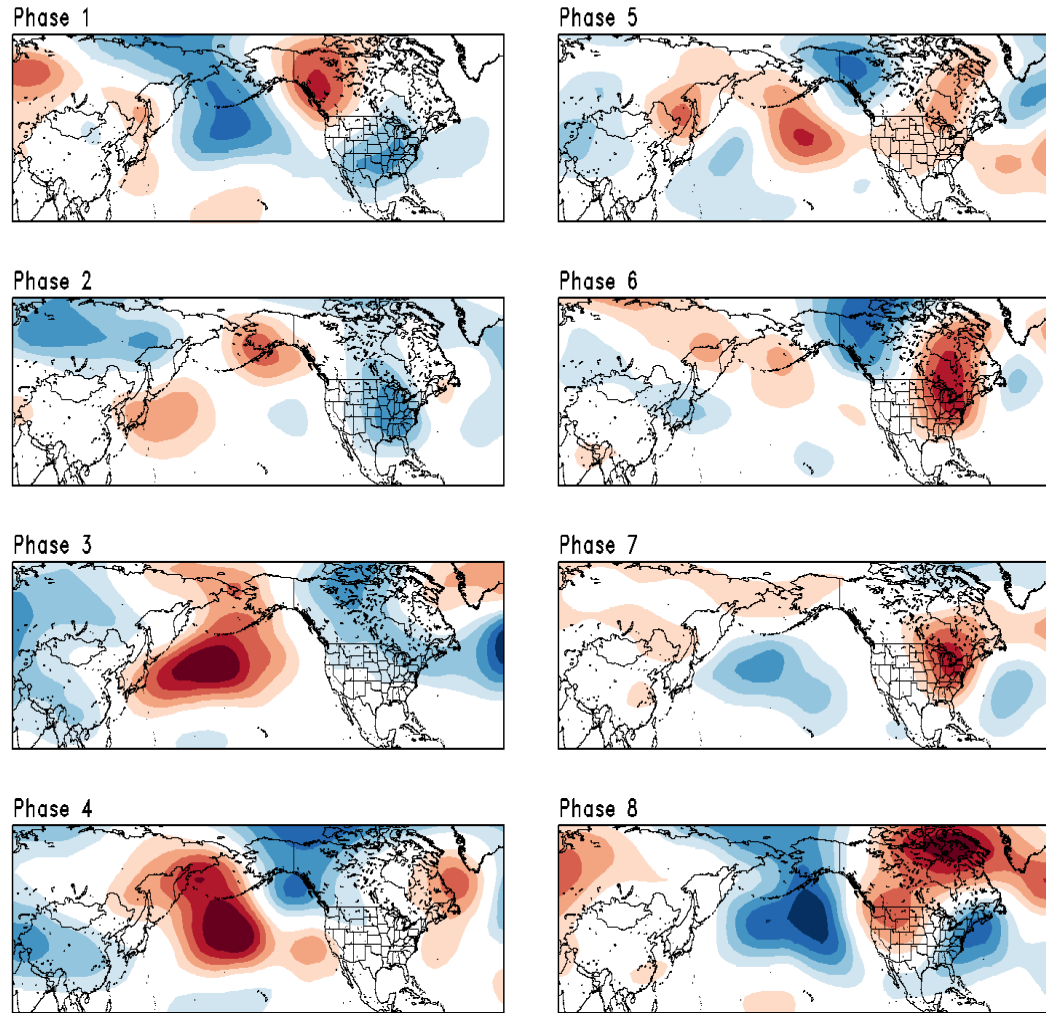


## AO Index: Observed & GEFS Forecasts

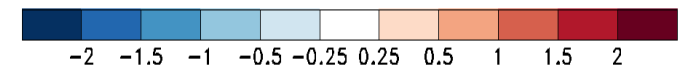
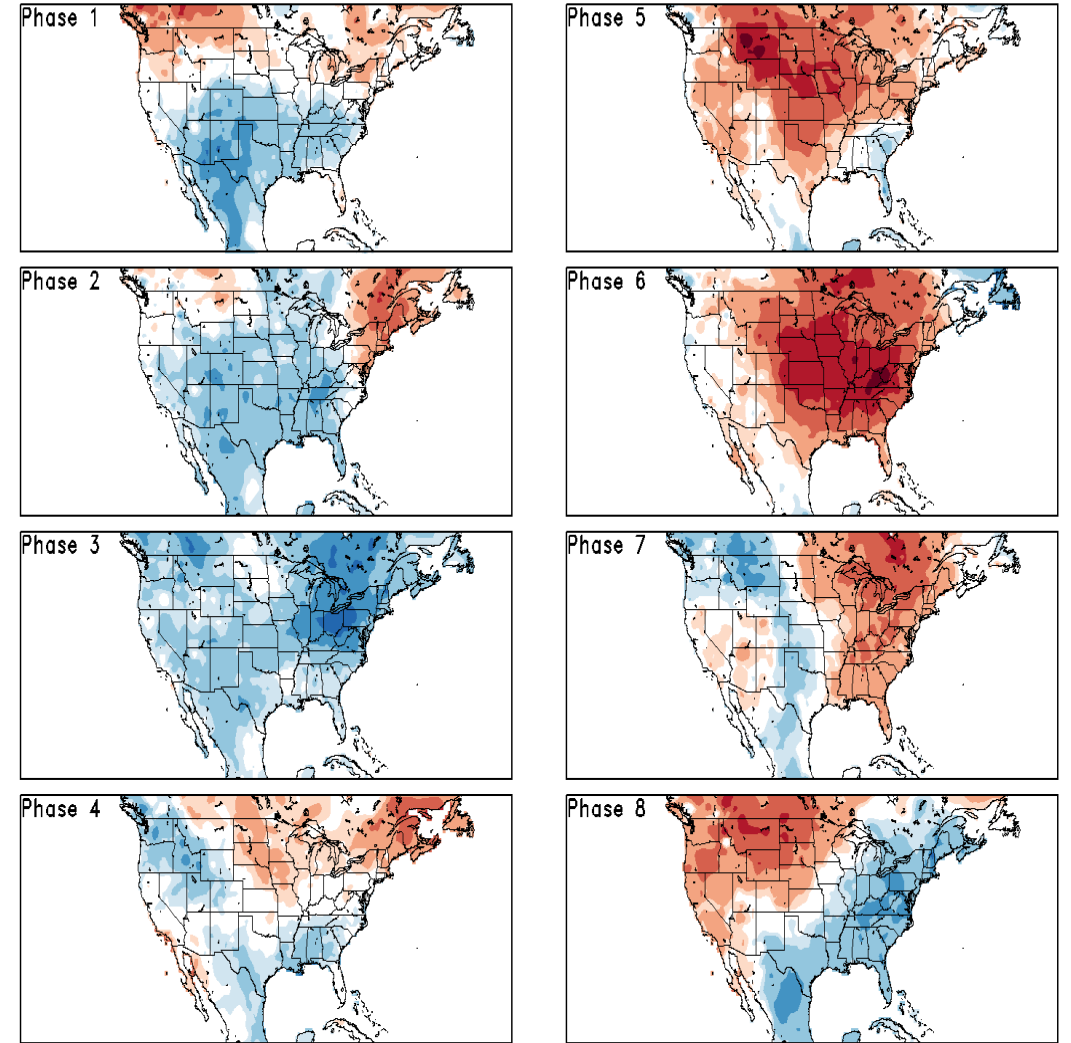


# Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

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

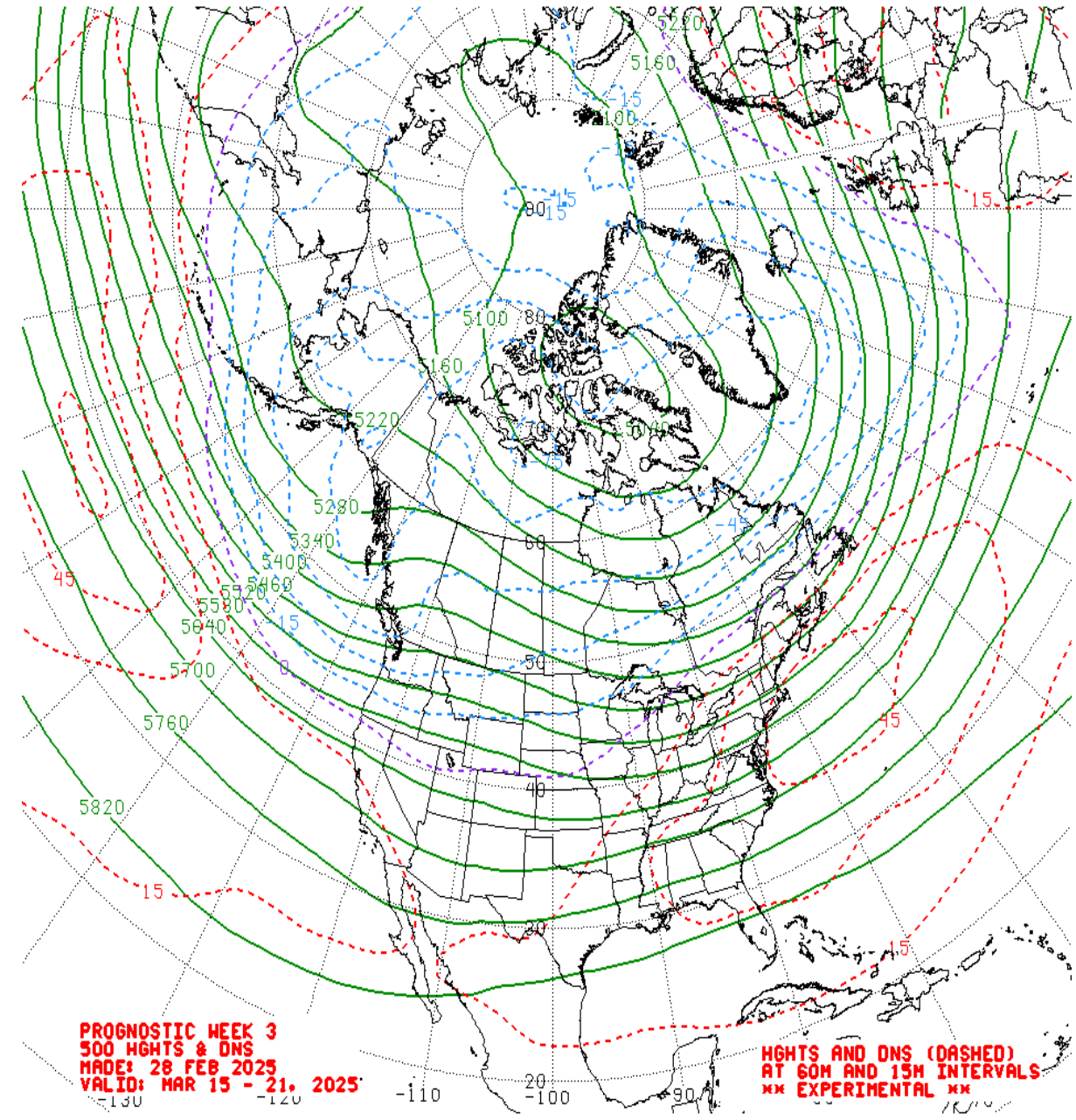
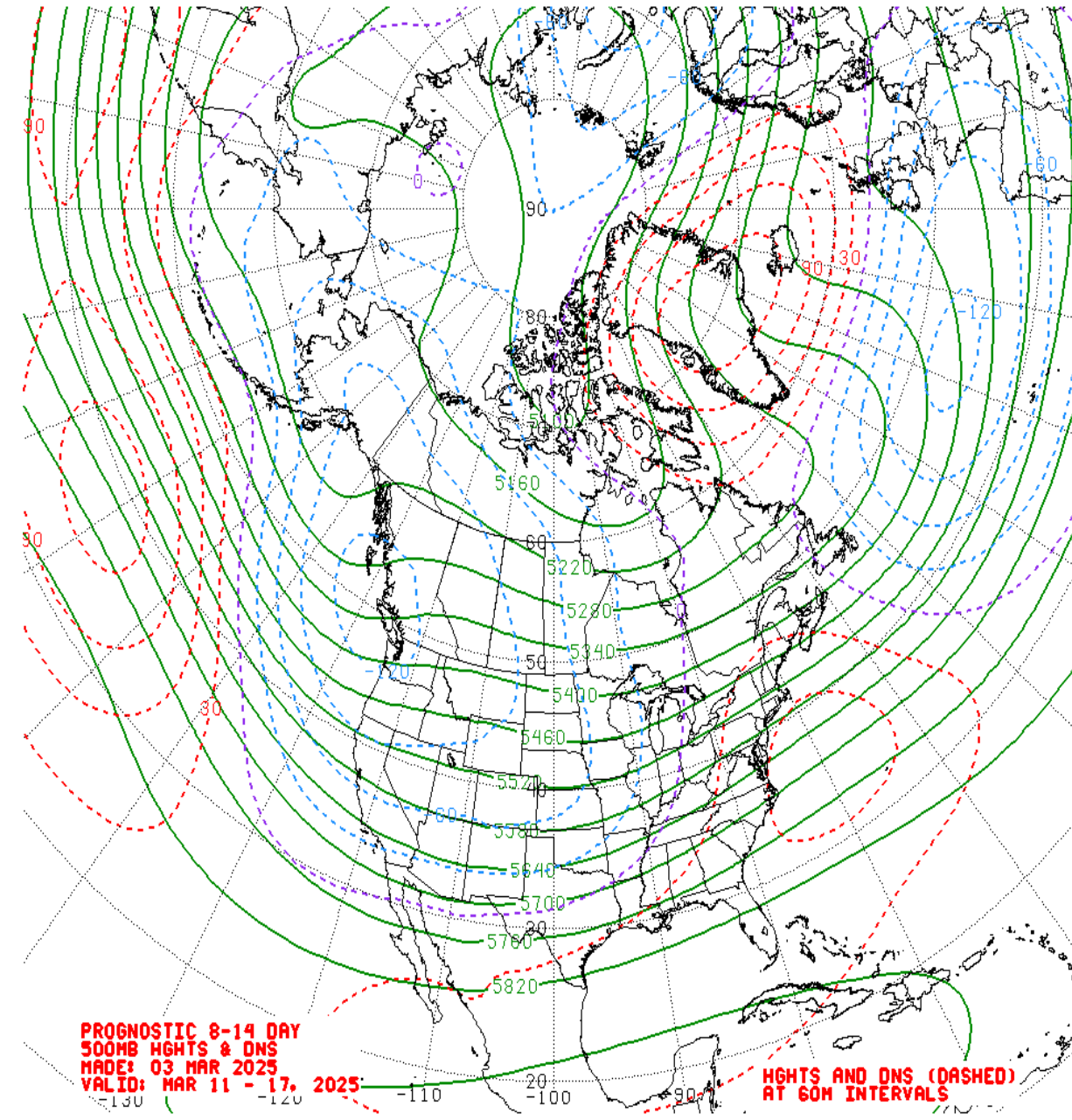


FMA MJO Composite: GLBT (degC)

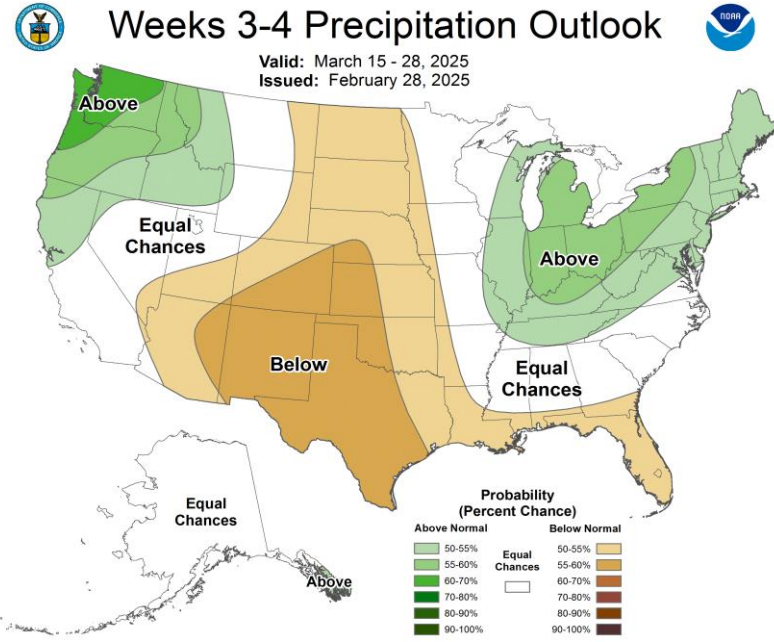
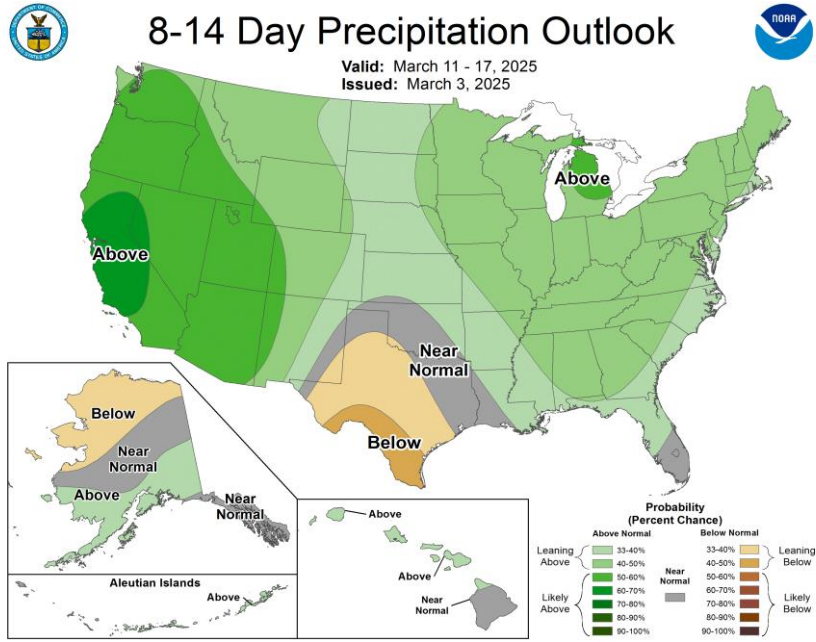
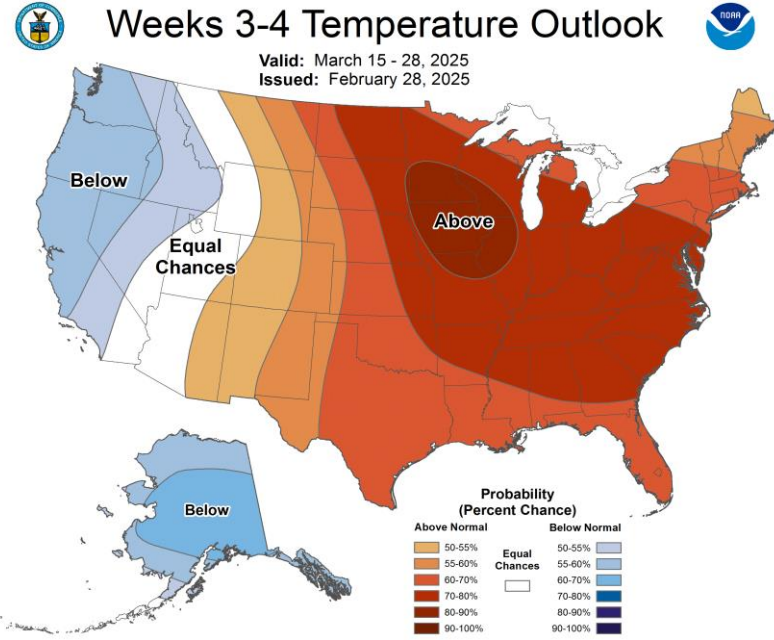
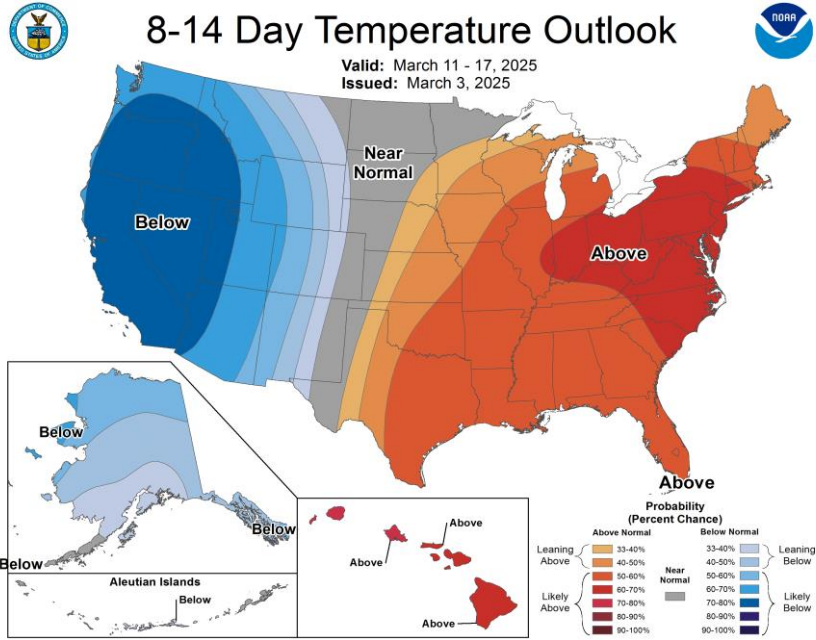




# Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



# Official Temperature & Precipitation Forecasts:



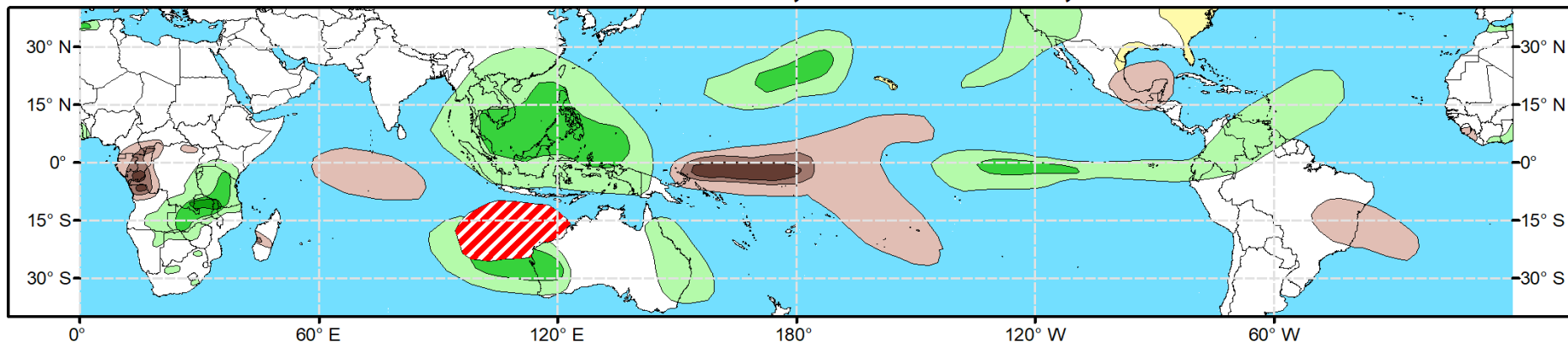


# Global Tropics Hazards Outlook

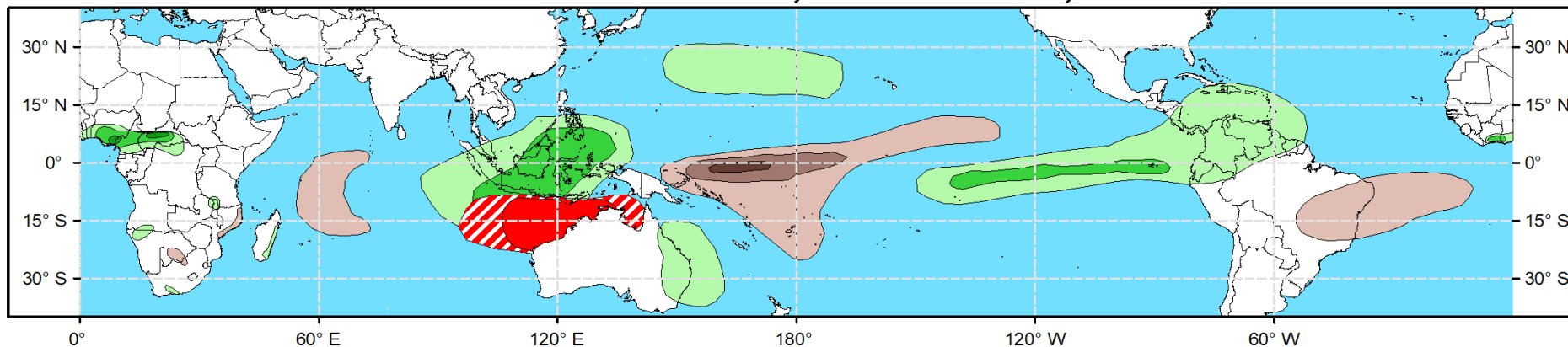
Climate Prediction Center



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**Above-Average  
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>50% >65% >80%

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**Issued: 03/04/2025**

**Forecaster: Barandiaran**

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