



Weeks 2-3 Global Tropics Hazards Outlook

2/25/2025

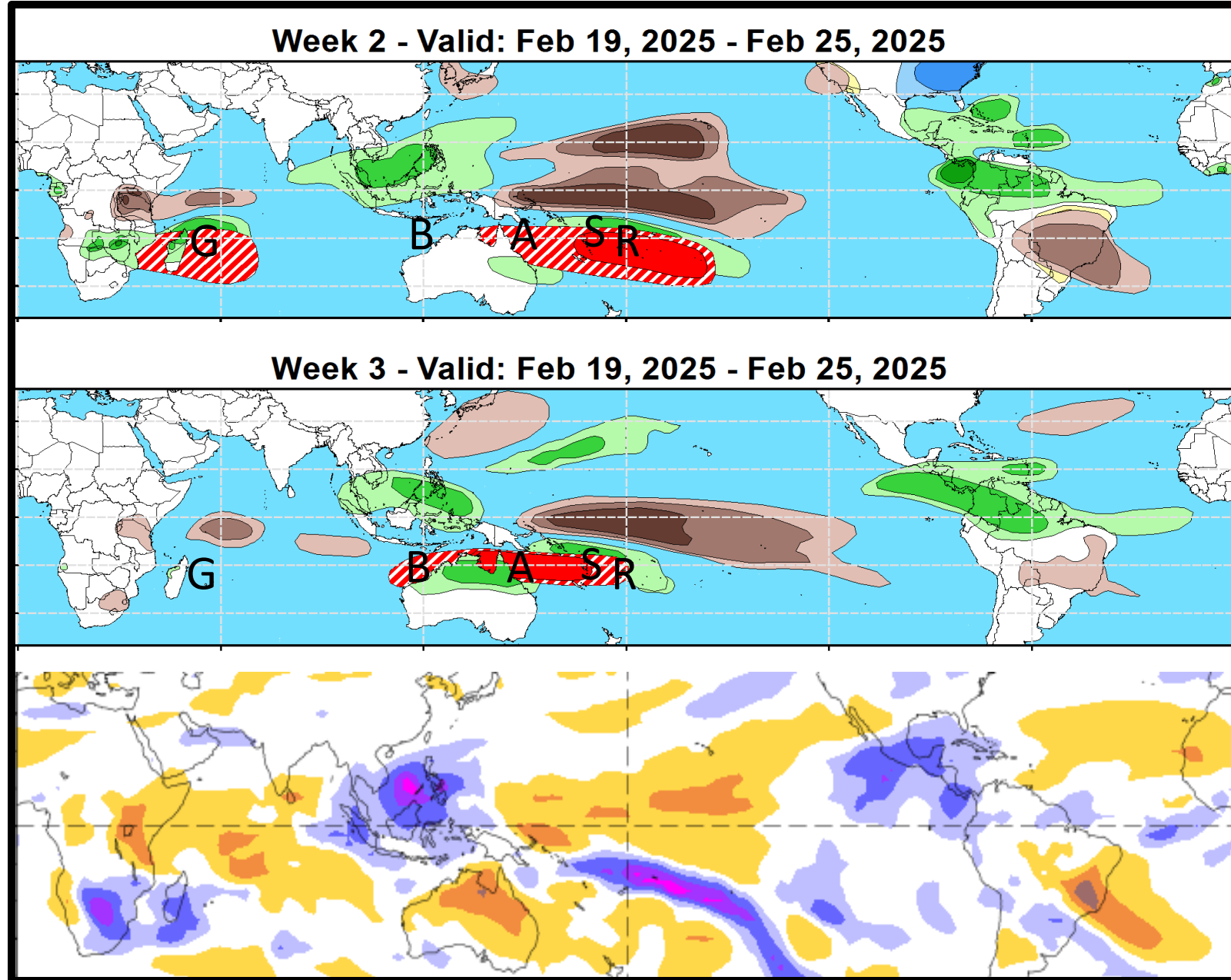
Lindsey Long

NWS / NCEP / Climate Prediction Center

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

South Indian:
Bianca, 2/20
Garance, 2/25

South Pacific:
Alfred, 2/20
Rae, 2/22
Seru, 2/23



Synopsis of Climate Modes:

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

- 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 coherent MJO activity seen in the RMM index observations over the past month has begun to both weaken and stall due to destructive interference with strong equatorial Rossby wave activity and the low-frequency base state.
- Over the past few days, the MJO signal has slowly begun propagating eastward again inside the unit circle.
- Favorable conditions for Tropical Cyclogenesis are expected over the Southern Indian Ocean from the east coast of Madagascar to about 80E during Week-2. By Week-3, the western Indian Ocean to the Gulf of Carpentaria becomes more favorable for tropical development.

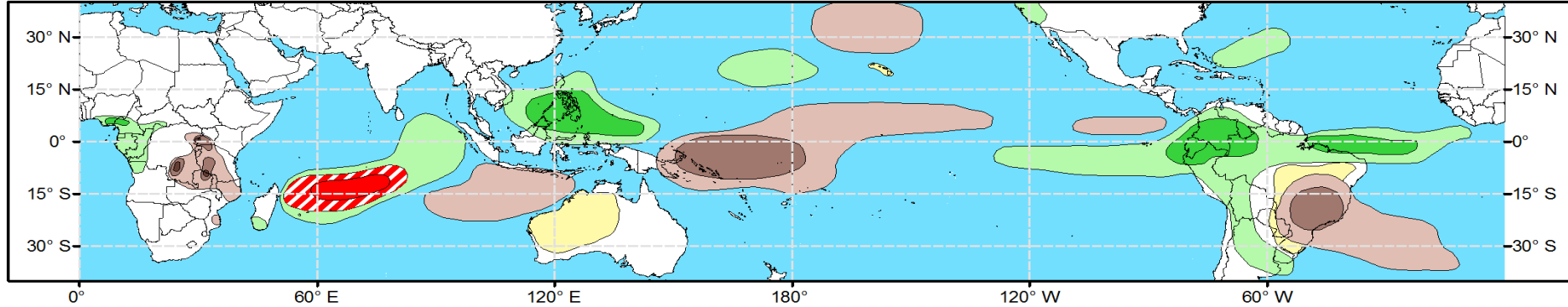
GTH Outlook:



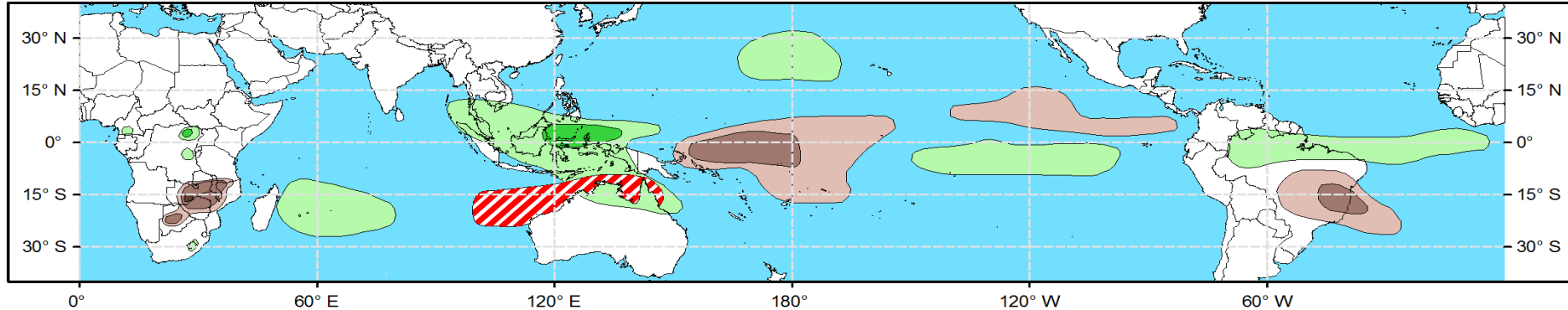
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Mar 05, 2025 - Mar 11, 2025



Week 3 - Valid: Mar 12, 2025 - Mar 18, 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
Upper third of the historical range*

**Below-Average
Temperatures Probability**



>50% >65% >80%

*7-day min temperatures in the
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Issued: 02/25/2025

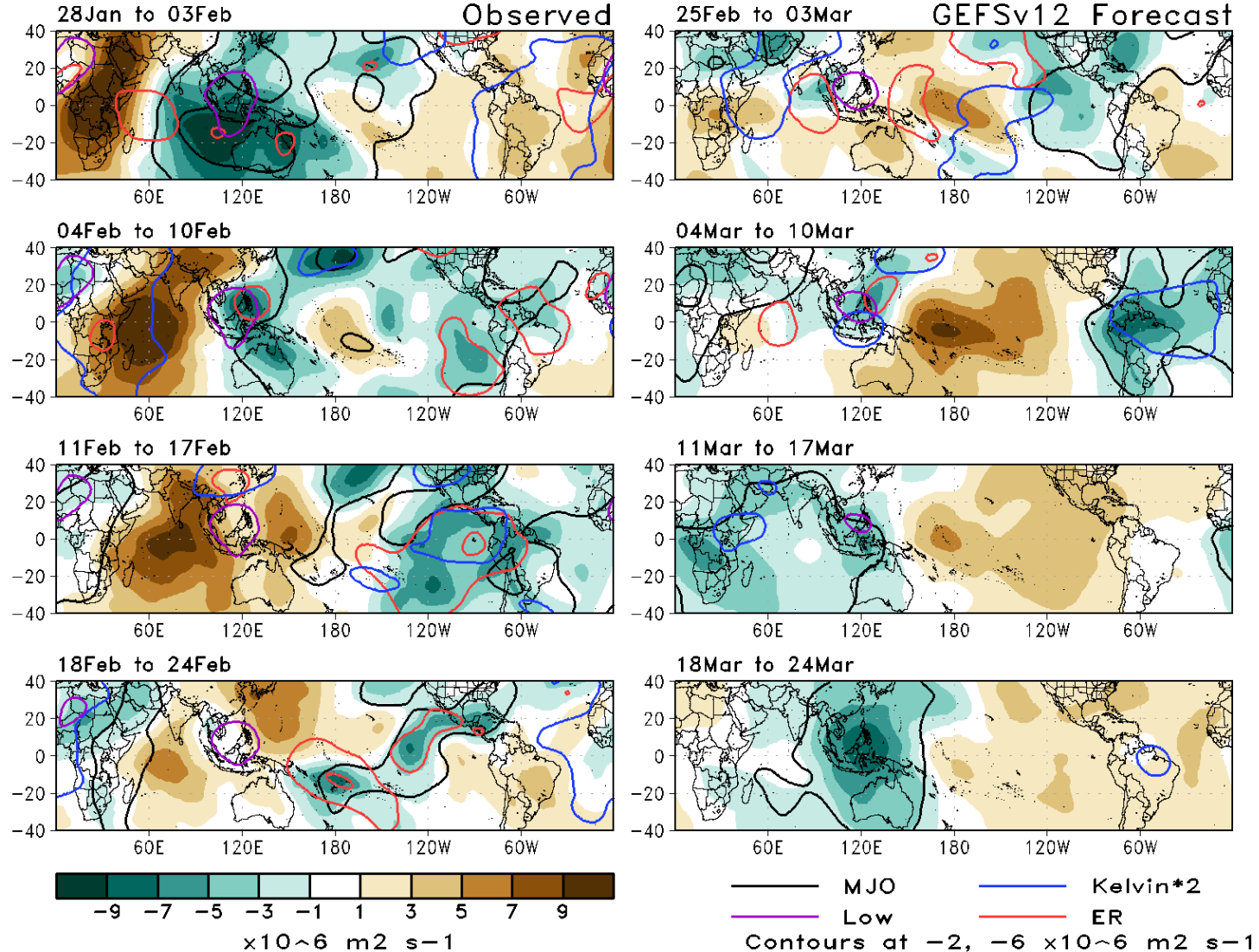
Forecaster: Long

**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only.
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200-hPa Velocity Potential Anomaly Maps:

Green: Enhanced Divergence Aloft Brown: Enhanced Convergence Aloft

CHI200 7-Day Means

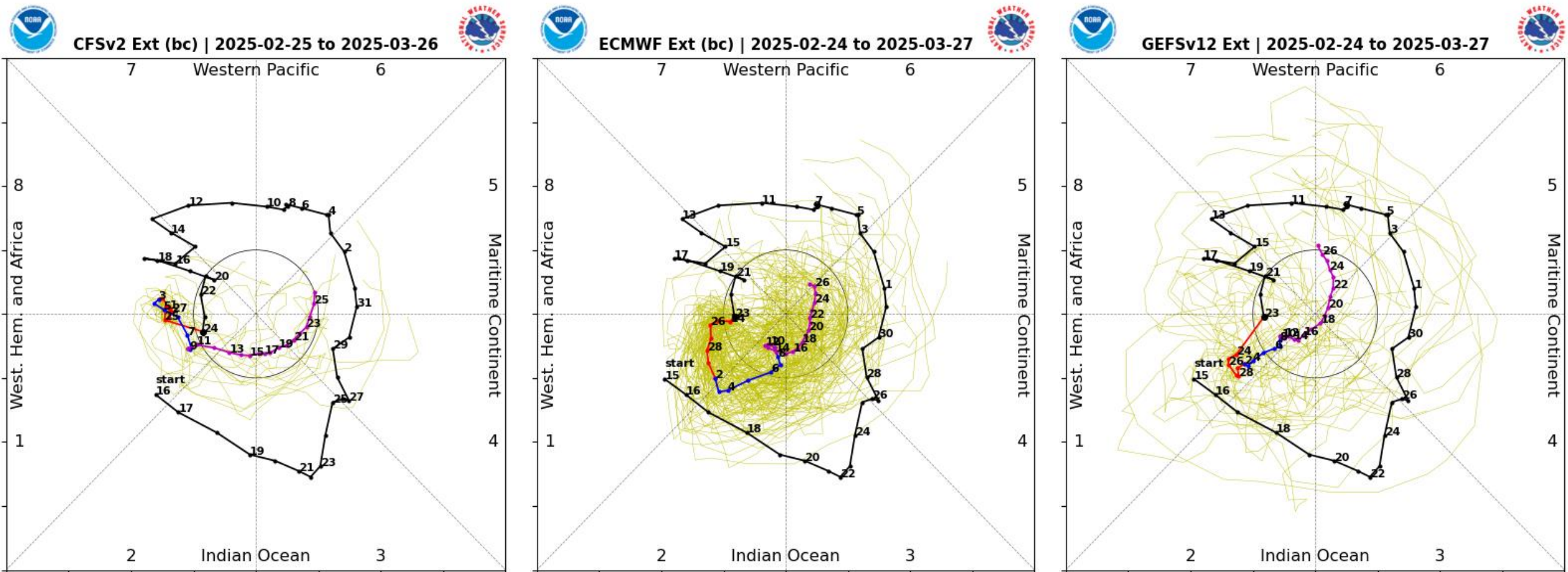


- The wave-1 pattern seen in previous weeks has eroded and become chaotic.

- This unorganized pattern will continue into Week-1.

- However, during Week-2, the signal becomes more organized, with a Wave-1 pattern reemerging at Week-3.

RMM Index Observations & Forecasts:

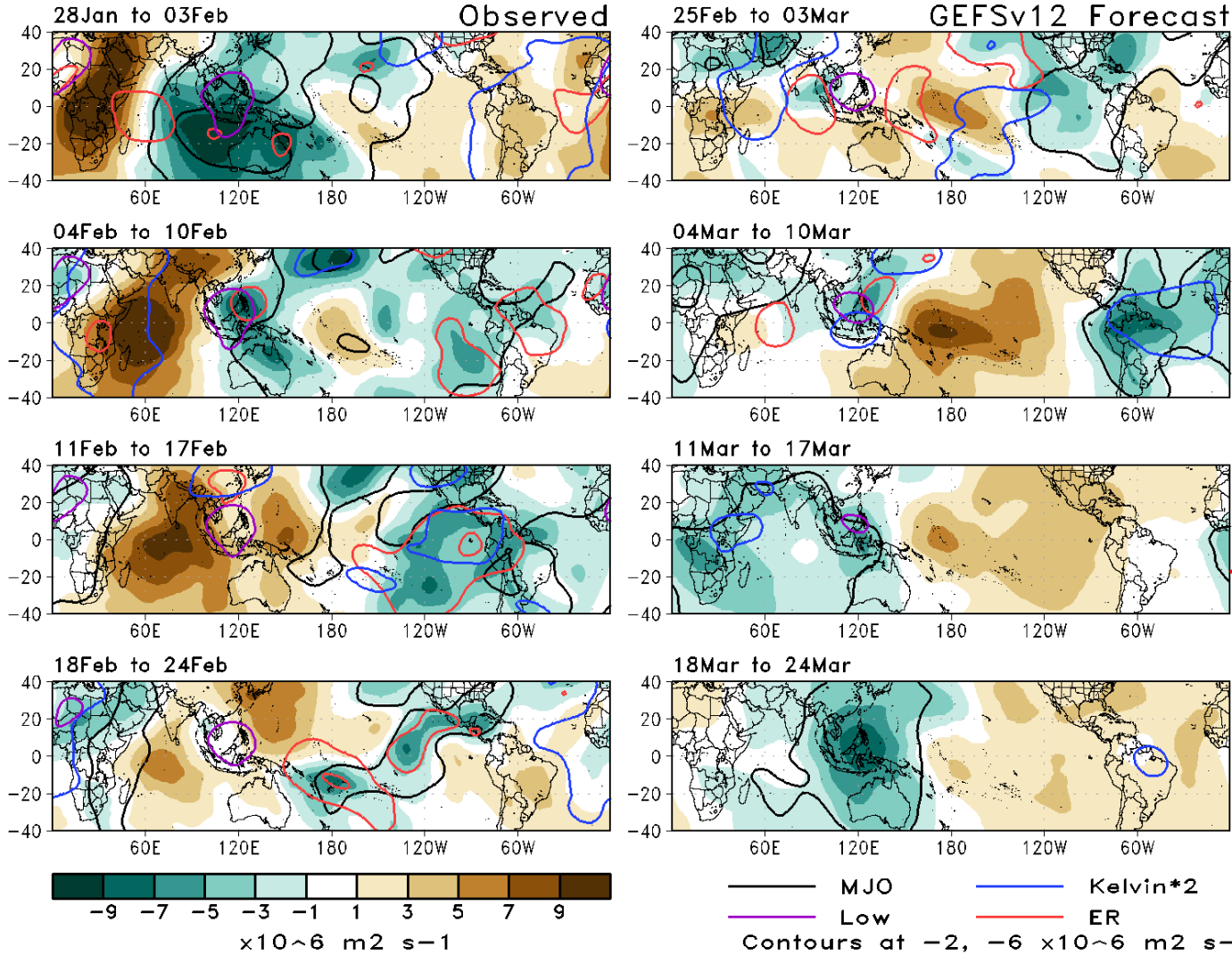


- The ECMWF and GFS both continue the eastward propagation of the MJO signal across Phase 1 during Week-1 and move the signal into Phase 2 during Week-2.
- The signal strengthens during Week-1, but then again moves inside the unit circle in Week-2 where it remains in Week-3.
- However, ensemble spread remains quite high among the dynamical models, with many members remaining outside the unit circle.

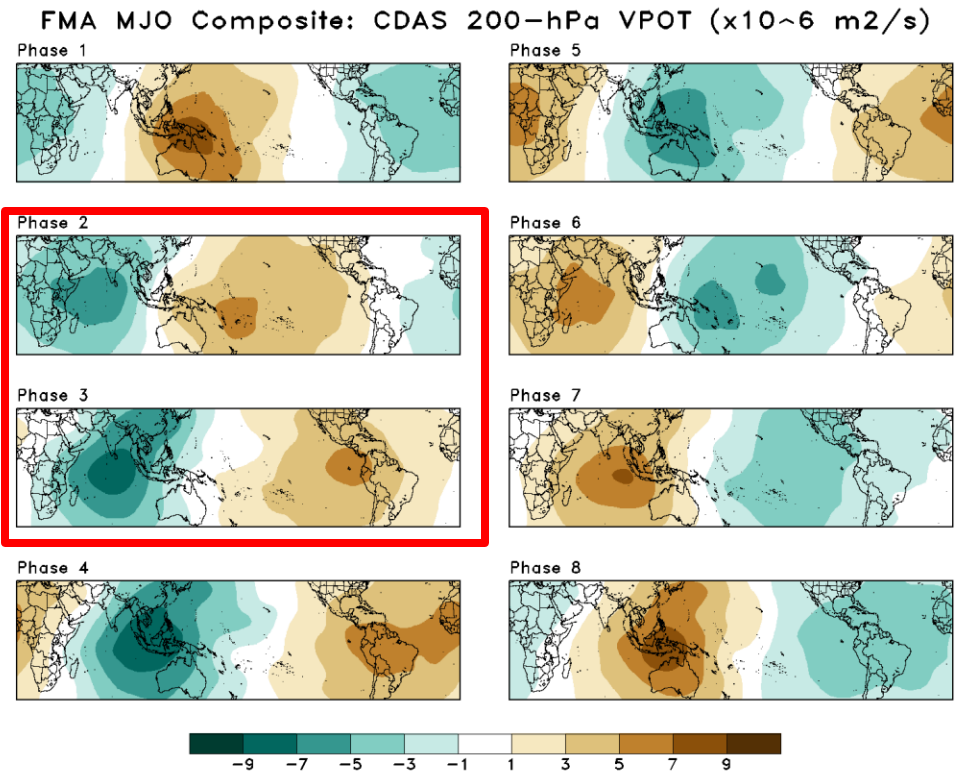
OBSERVED

GEFS

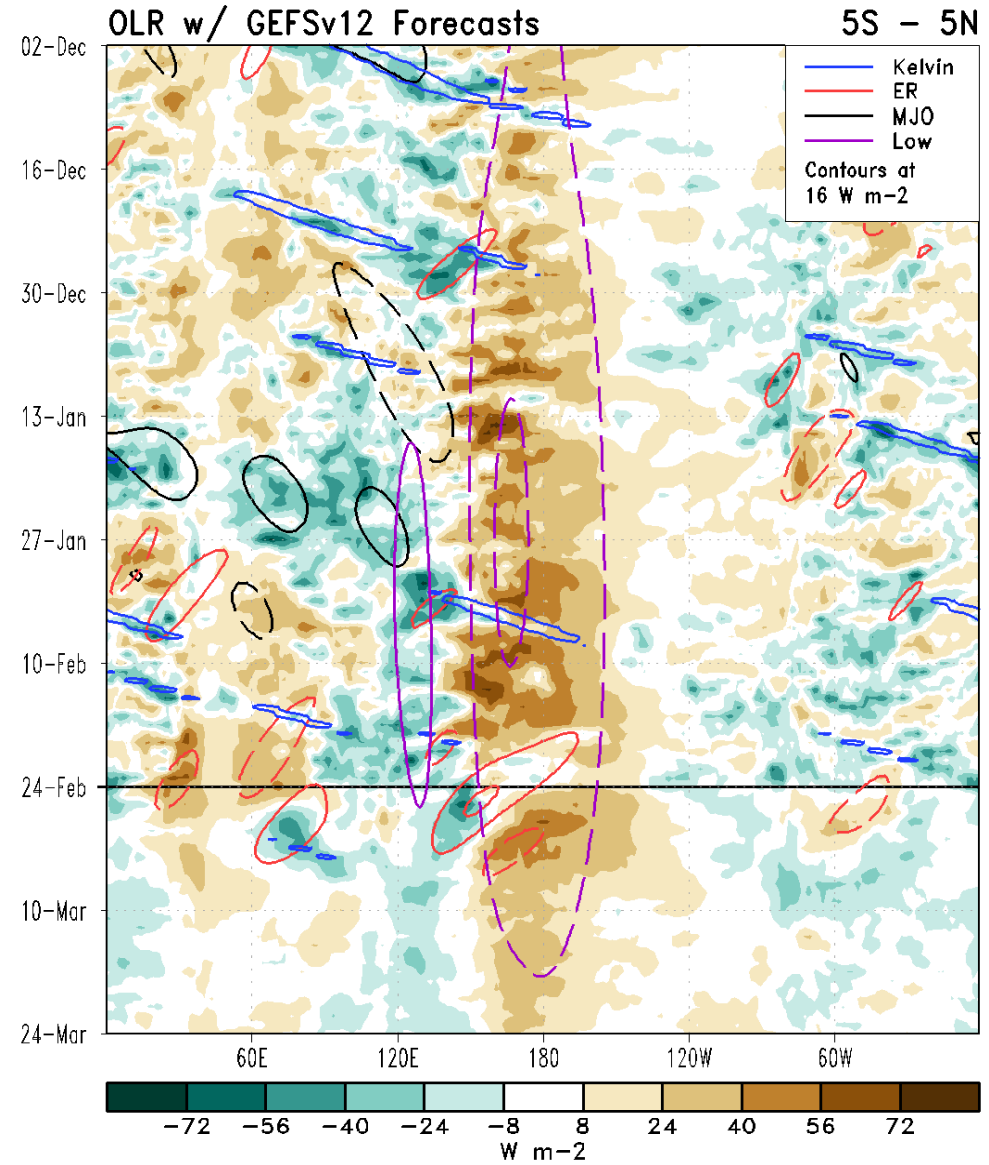
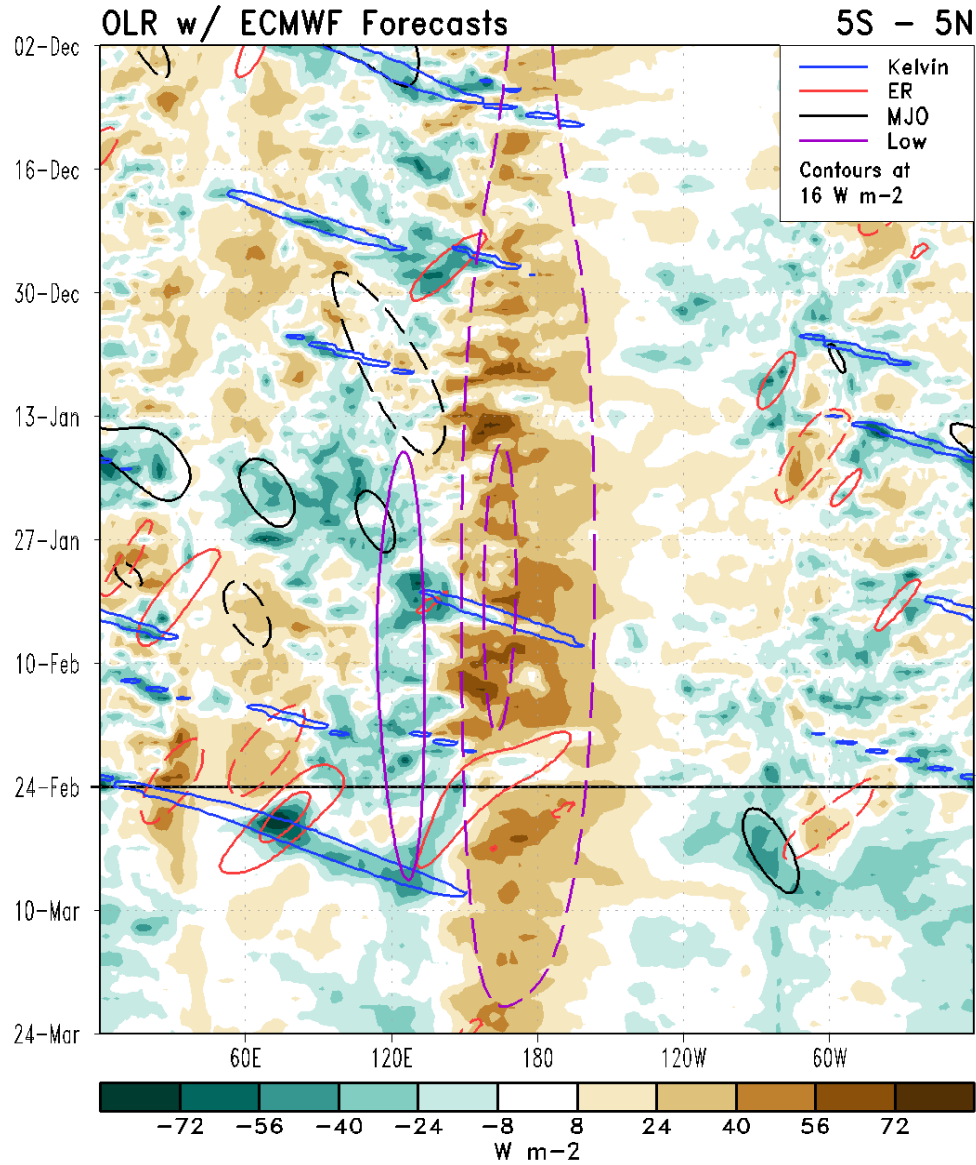
CHI200 7-Day Means



MJO Composites

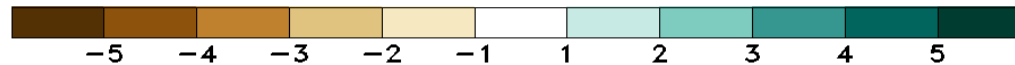
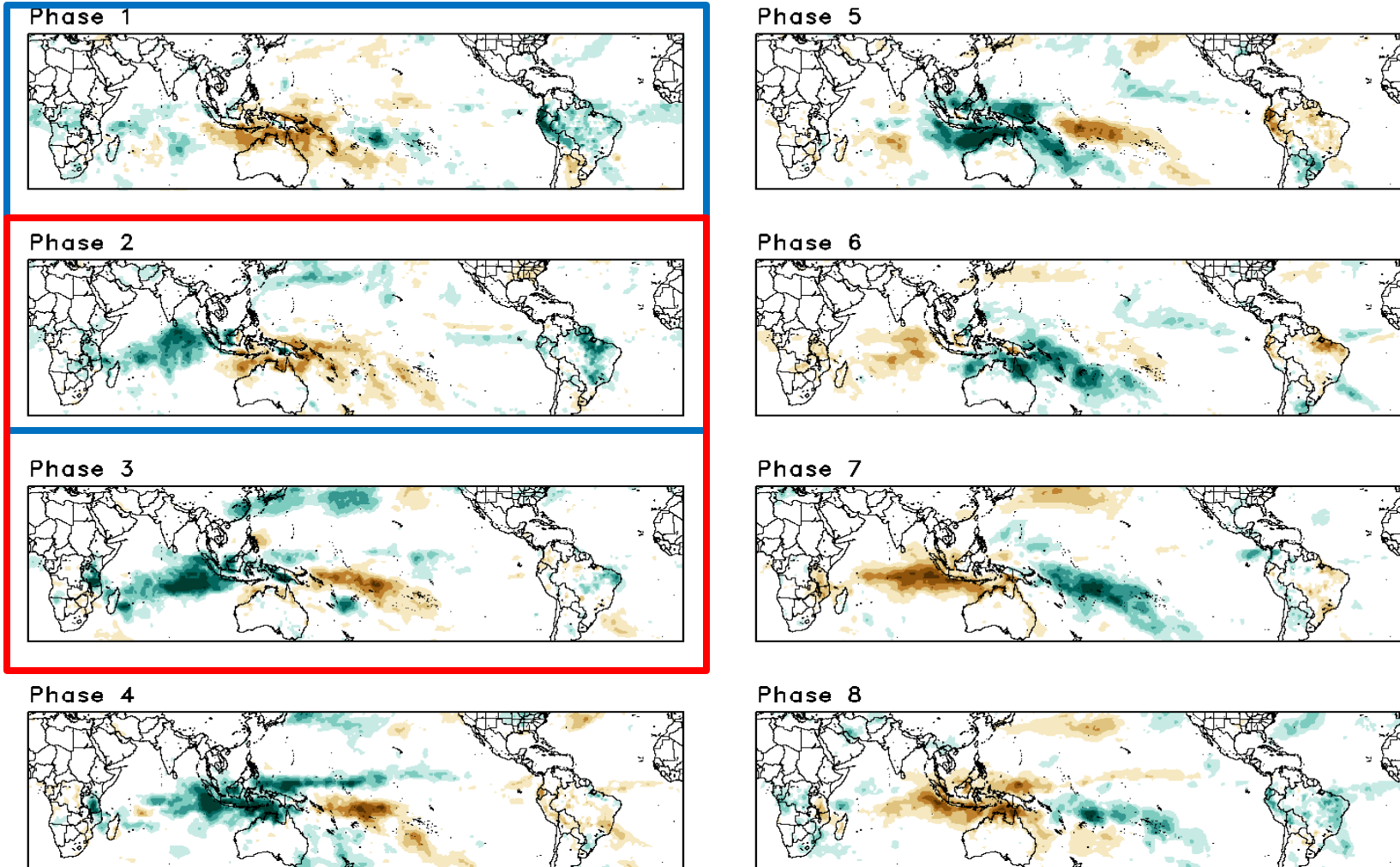


Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Historical Precipitation Anomalies By MJO Phase:

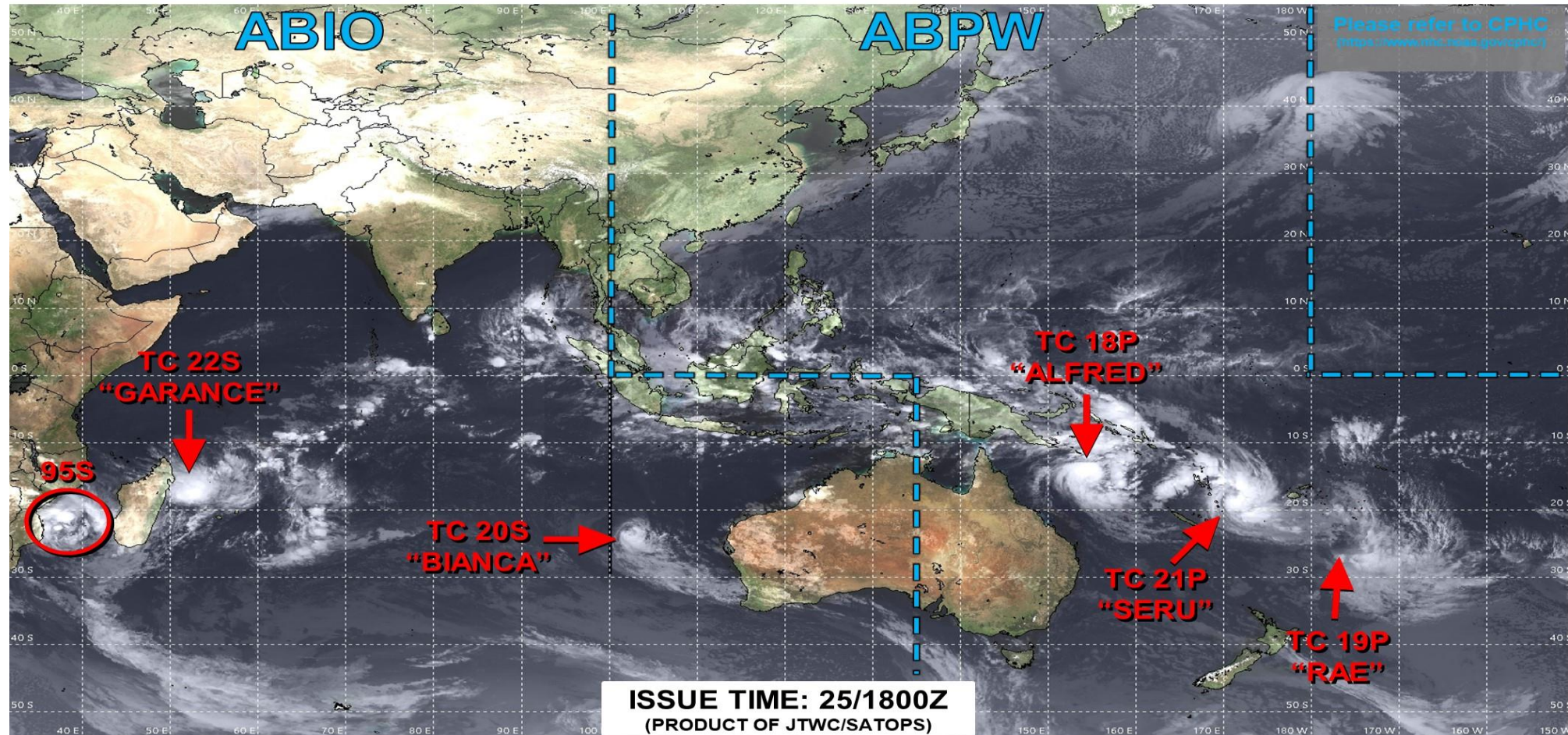
JFM MJO Composite: GPCP1DD (mm/day)



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

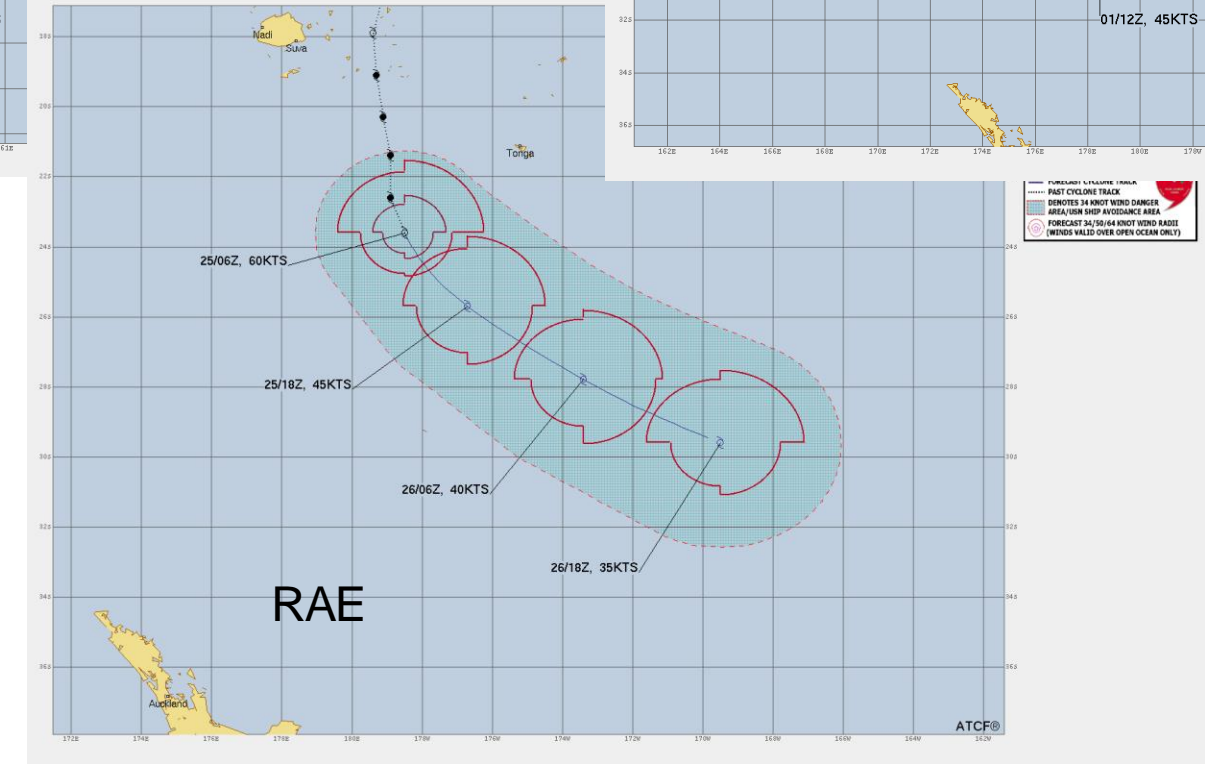
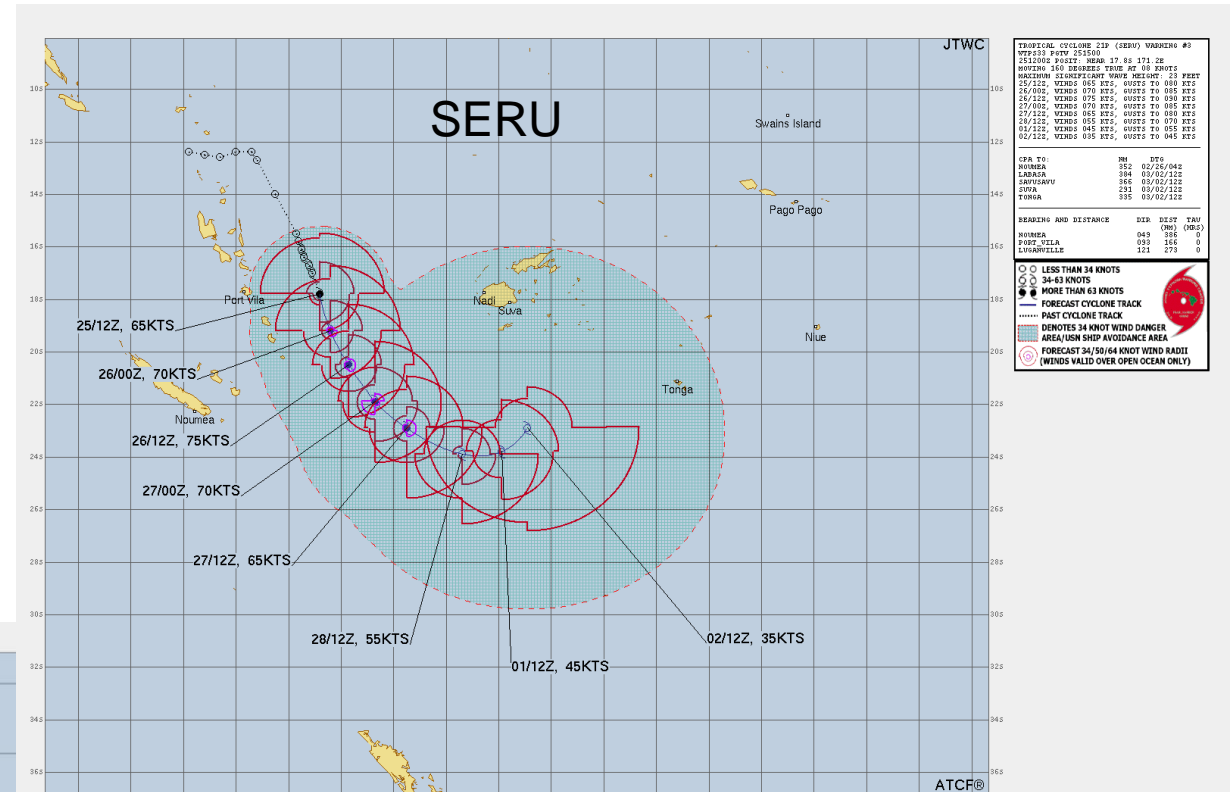
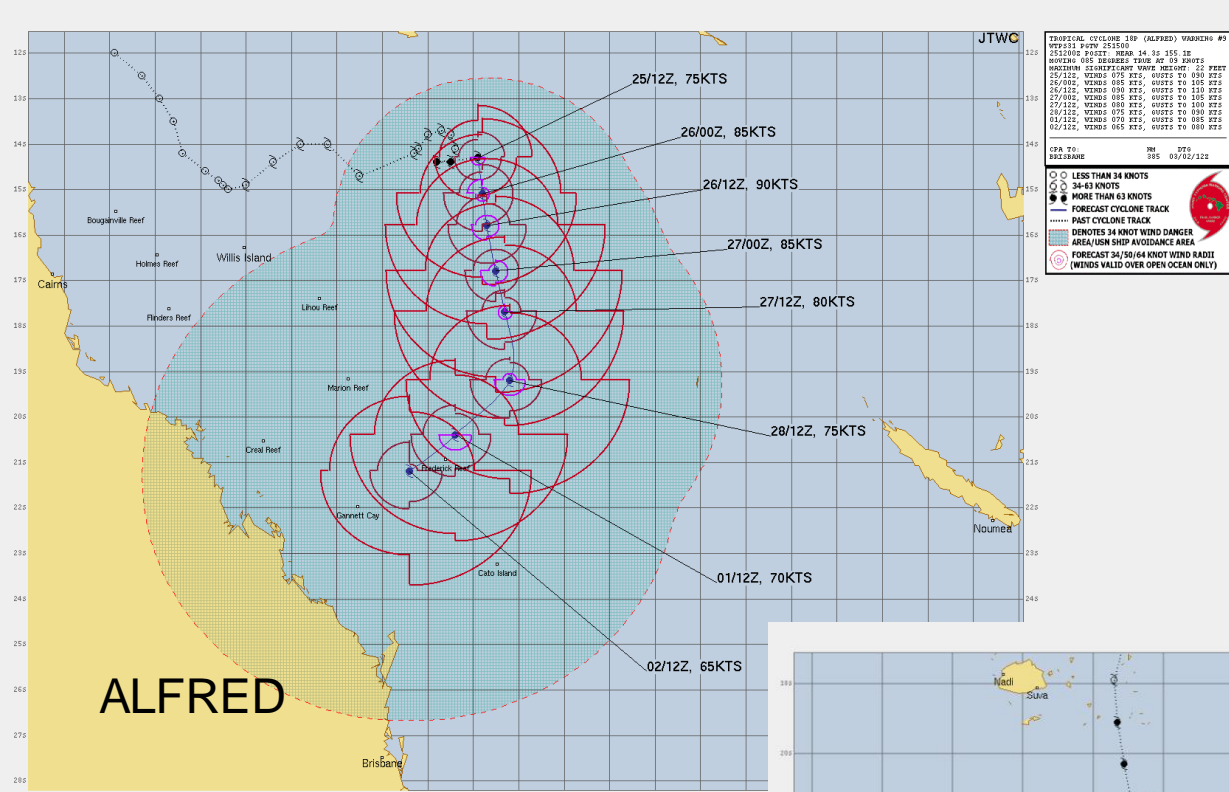


TC development likely within 24 hours (Reference TCFA)



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

 Tropical Cyclone (Reference Warning)

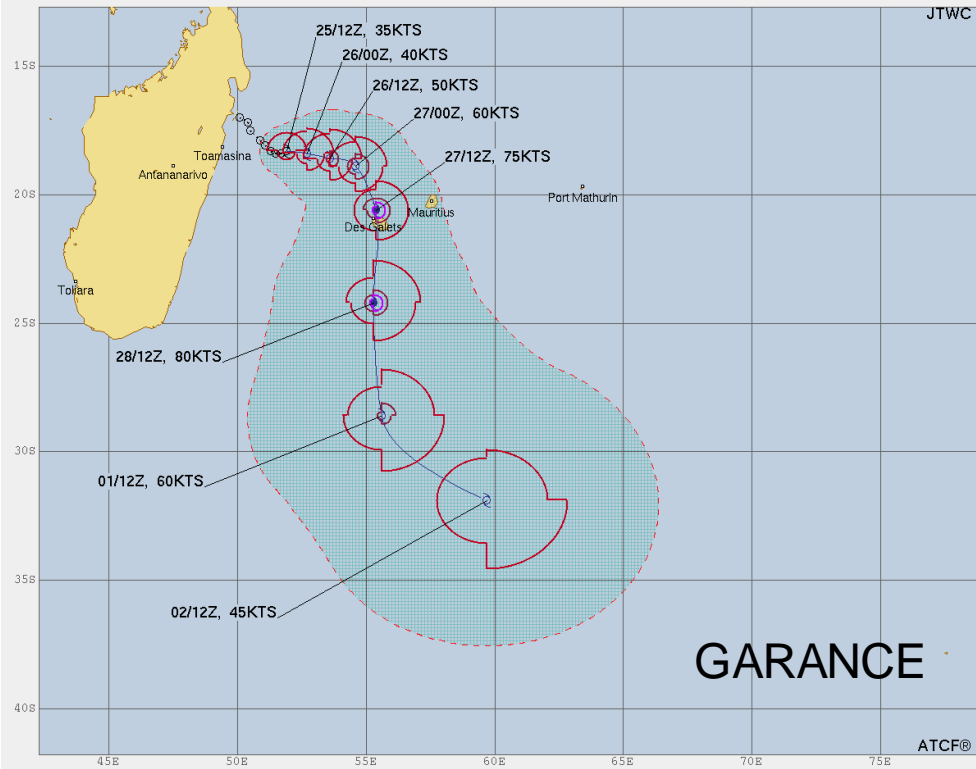


ALFRED

SERU

RAE

ATCF®

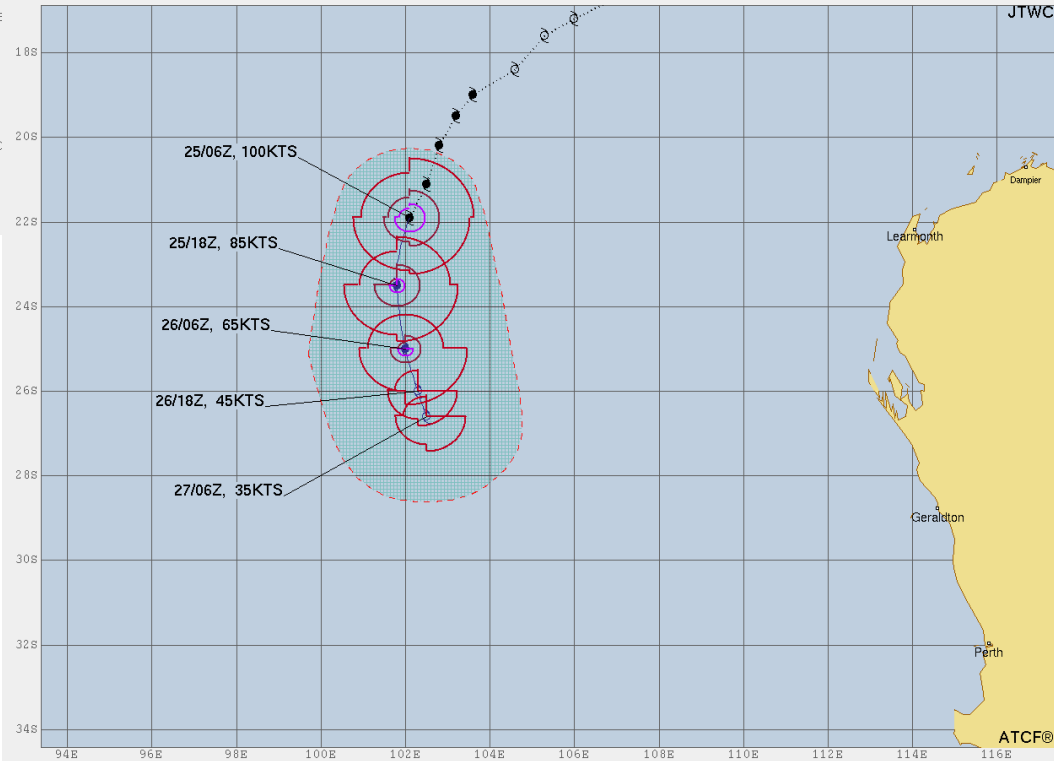


GARANCE

ATCF®

TROPICAL CYCLONE 208 (BIANCA) WARNING #5
 WTS31 POTW 250900
 250600Z POSIT: NEAR 21.98 102.1E
 MOVING 205 DEGREES TRUE AT 09 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 36 FEET
 25/06Z, WINDS 100 KTS, GUSTS TO 125 KTS
 25/18Z, WINDS 085 KTS, GUSTS TO 105 KTS
 26/06Z, WINDS 065 KTS, GUSTS TO 080 KTS
 26/18Z, WINDS 045 KTS, GUSTS TO 055 KTS
 27/06Z, WINDS 035 KTS, GUSTS TO 045 KTS

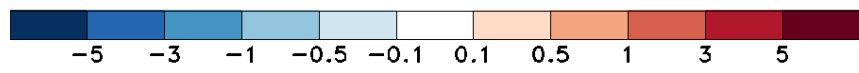
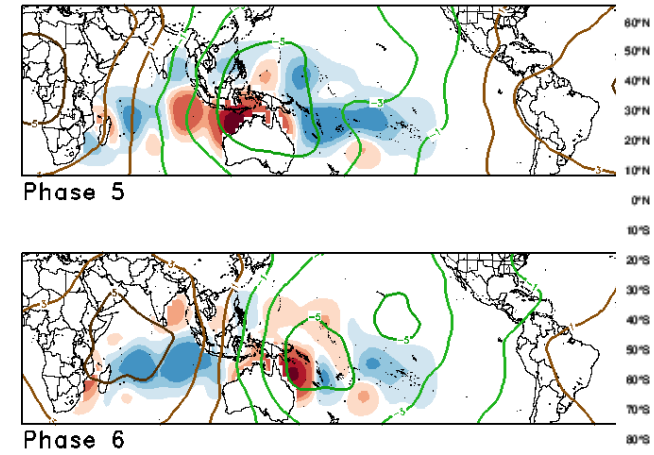
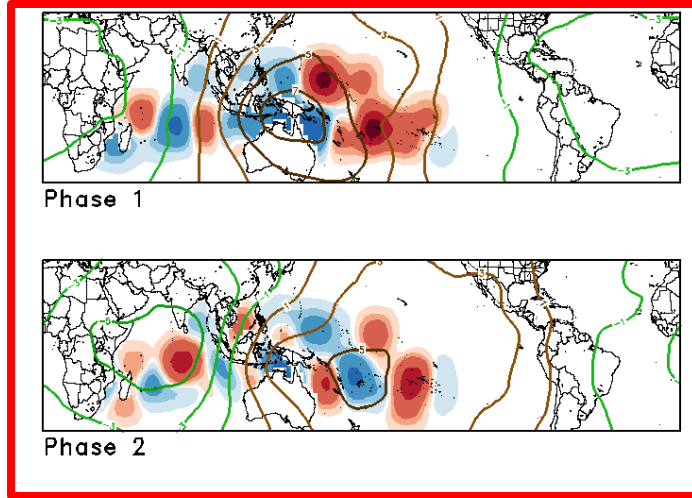
Legend:
 ○ LESS THAN 34 KNOTS
 ○ 34-63 KNOTS
 ○ MORE THAN 63 KNOTS
 — FORECAST CYCLONE TRACK
 - - - PAST CYCLONE TRACK
 ■ DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
 ○ FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)



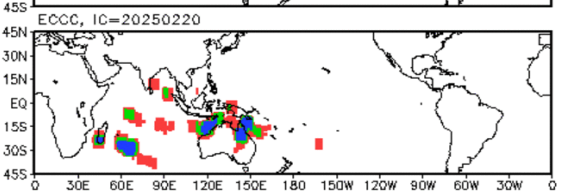
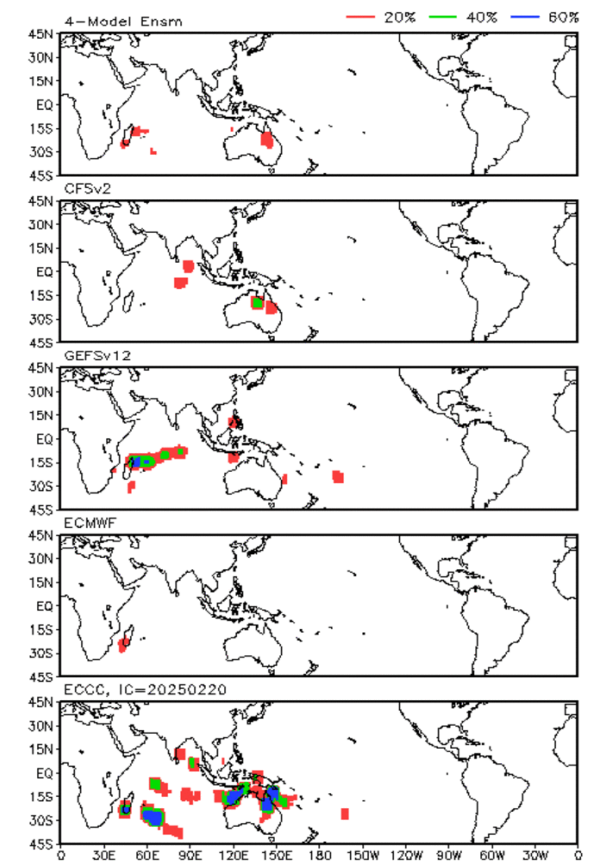
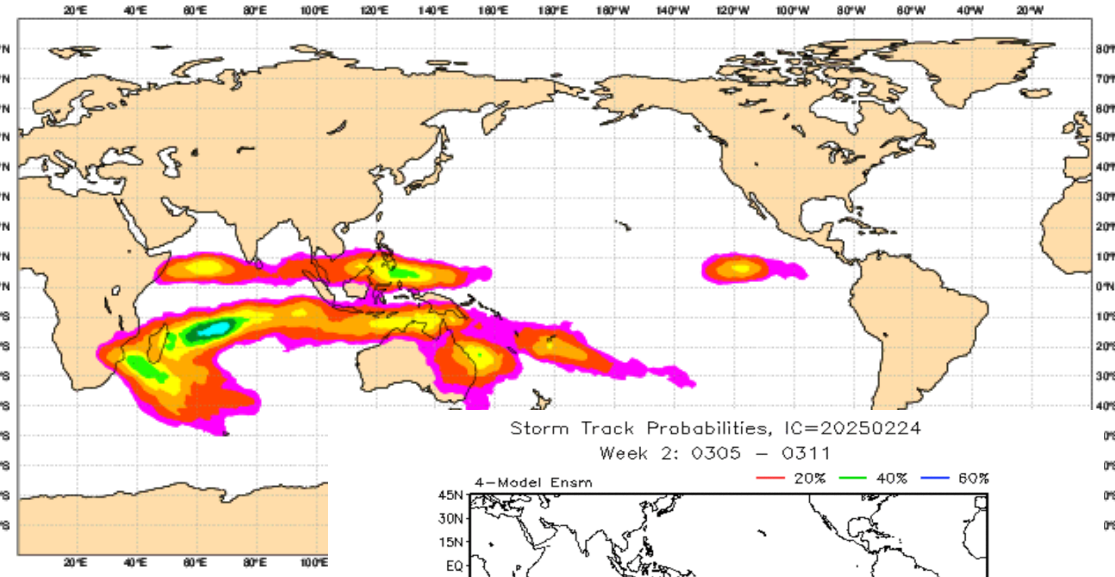
BIANCA

ATCF®

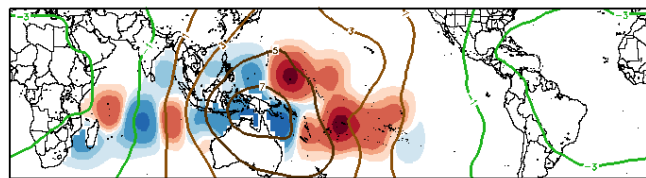
FMA MJO Composite: Mean TC Origin Density Anomaly (#TCs/277km²*10
 w/ FMA CHI200 (x10⁻⁶ m⁻² s⁻¹) / Contours every 2x10⁻⁶ m⁻²s⁻¹



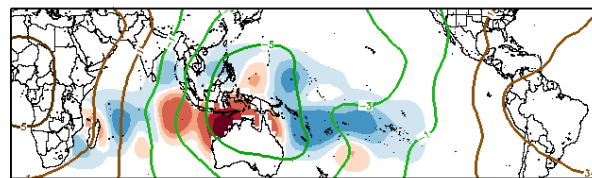
Experimental



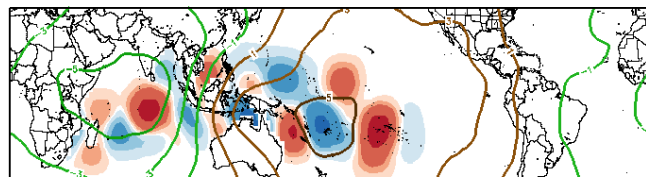
FMA MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2 \cdot 10^6$)
 w/ FMA CHI200 ($\times 10^{-6} m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



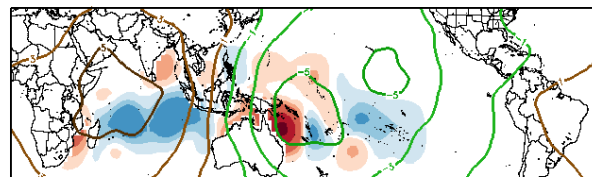
Phase 1



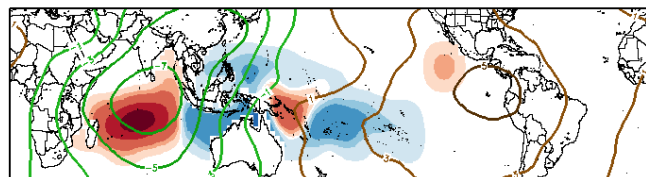
Phase 5



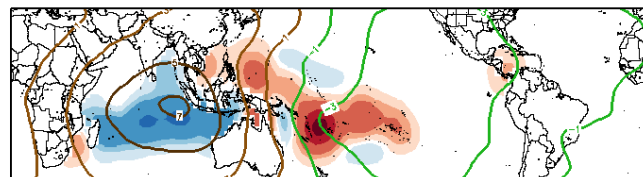
Phase 2



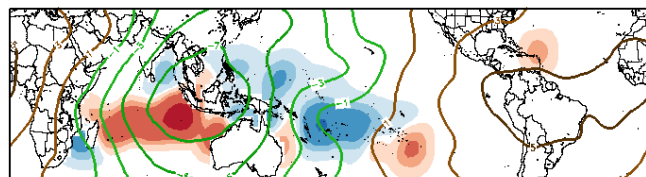
Phase 6



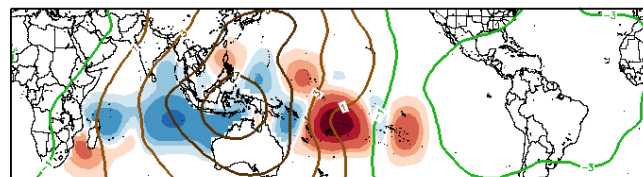
Phase 3



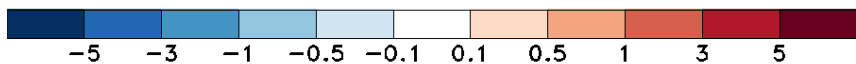
Phase 7



Phase 4

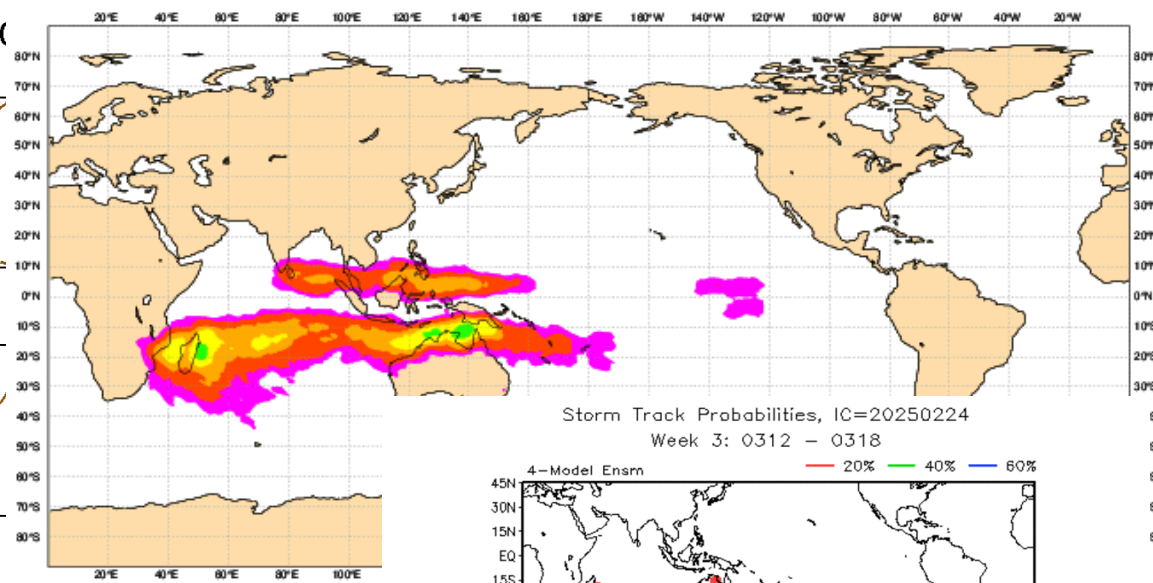


Phase 8



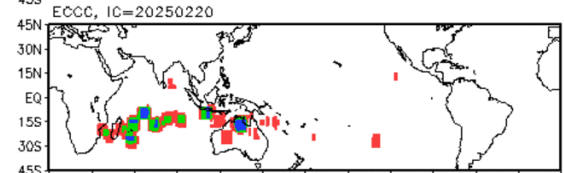
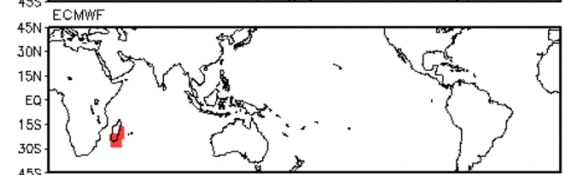
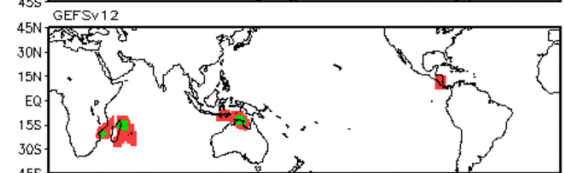
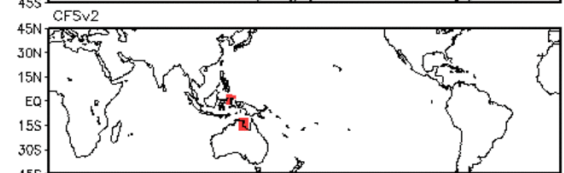
Experimental

Weekly Mean Tropical Cyclone Strike Probability. Date: 20250224 0 UTC t+(336-504)
 Probability of a TC passing within 300km radius



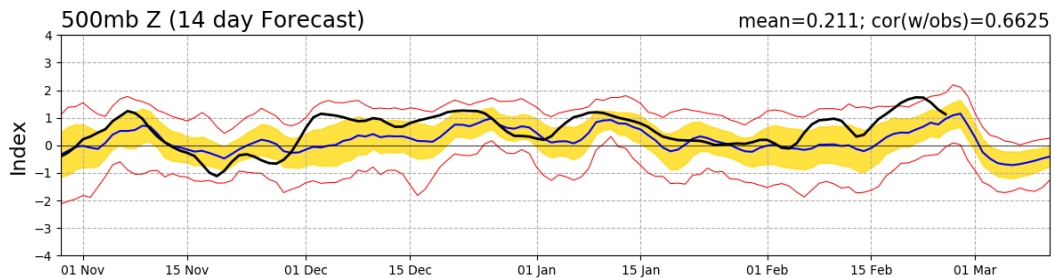
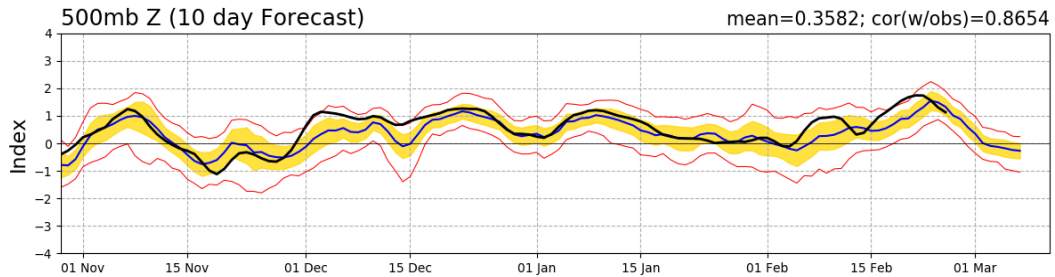
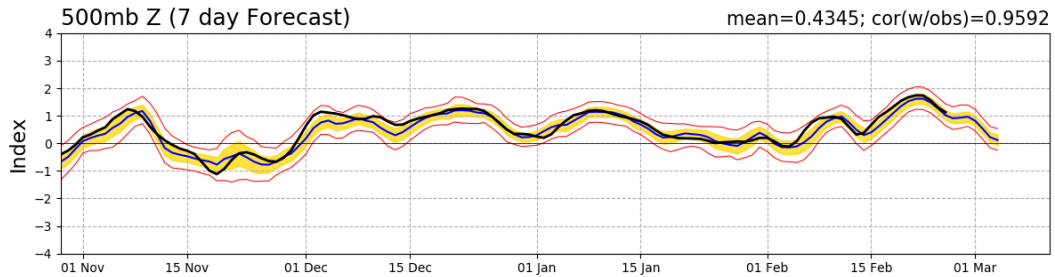
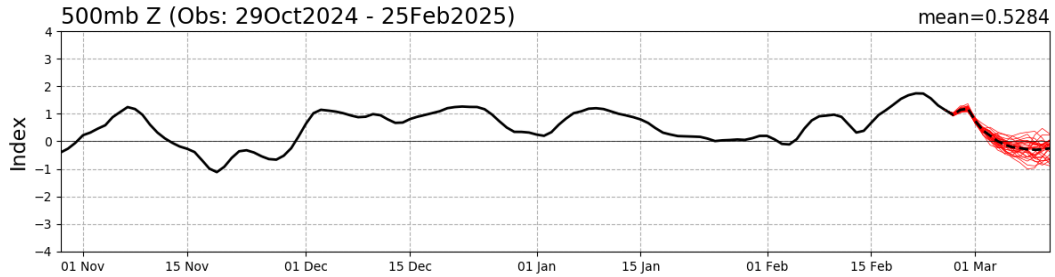
Storm Track Probabilities, IC=20250224
 Week 3: 0312 - 0318

4-Model Ensm 20% 40% 60%

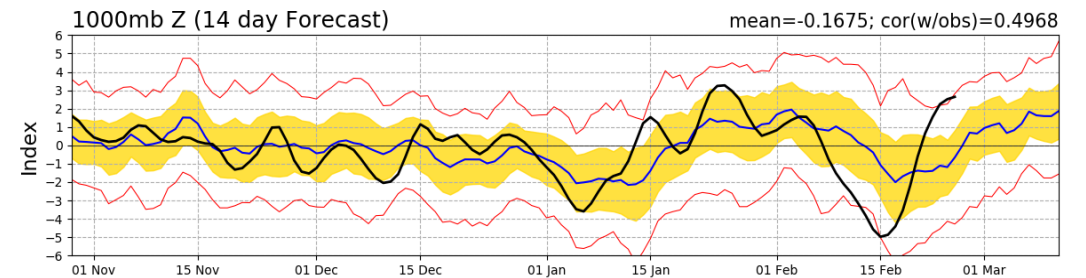
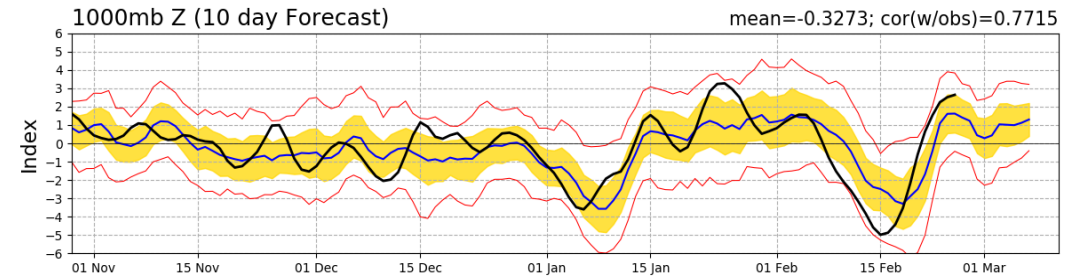
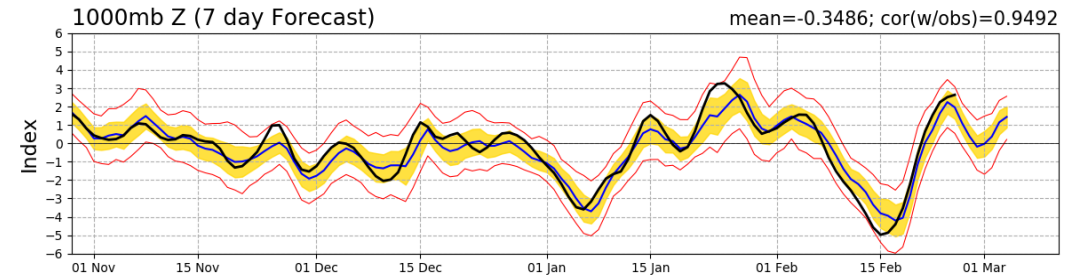
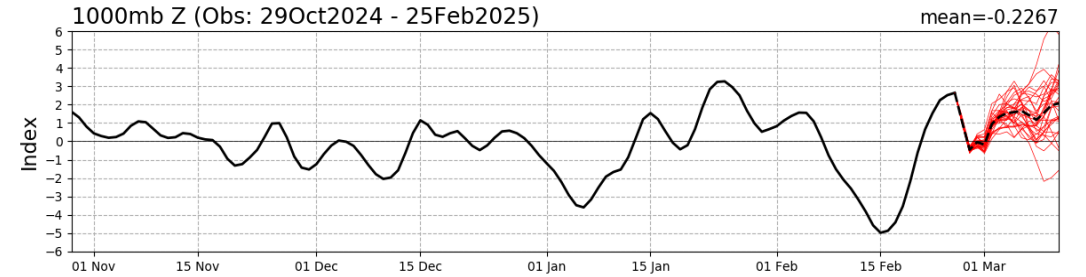


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts



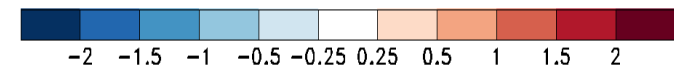
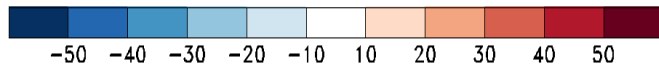
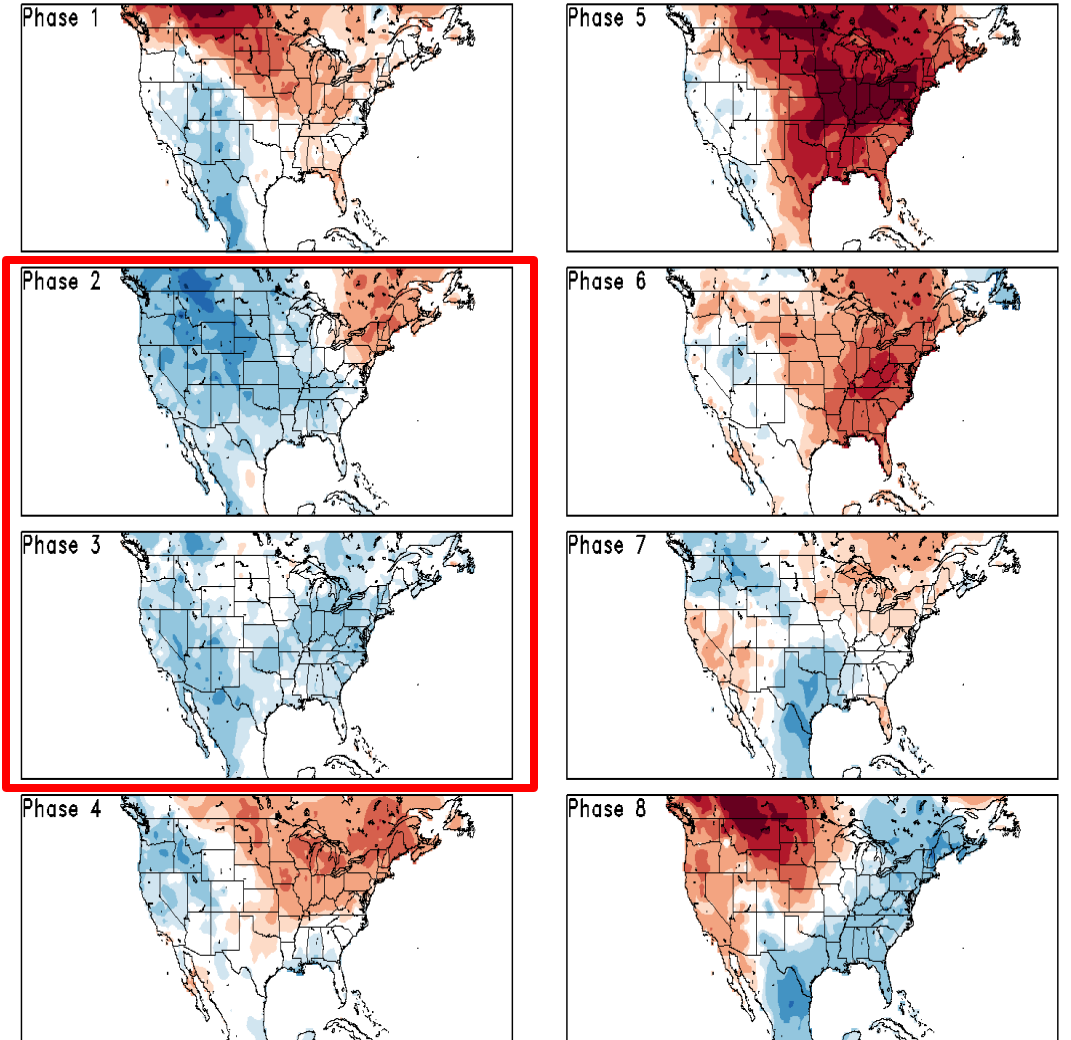
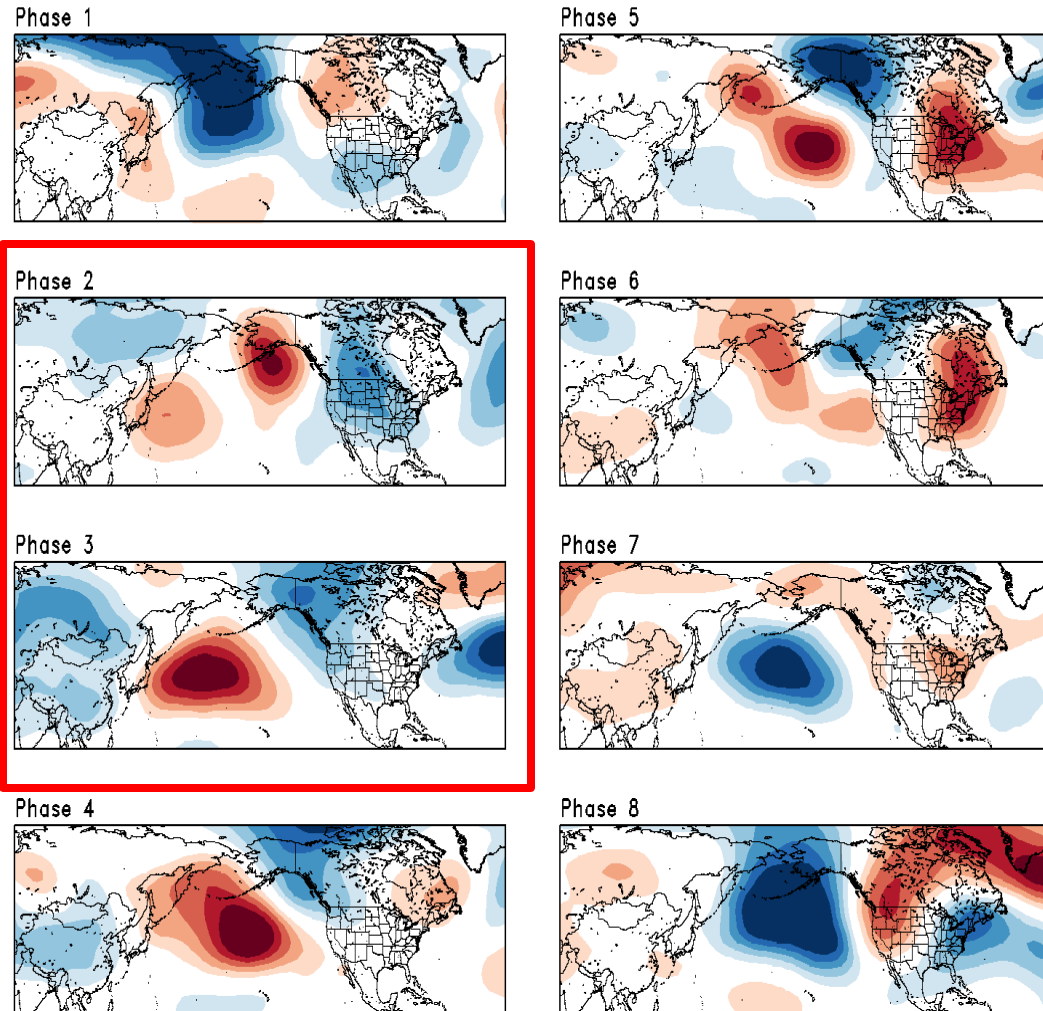
AO Index: Observed & GEFS Forecasts



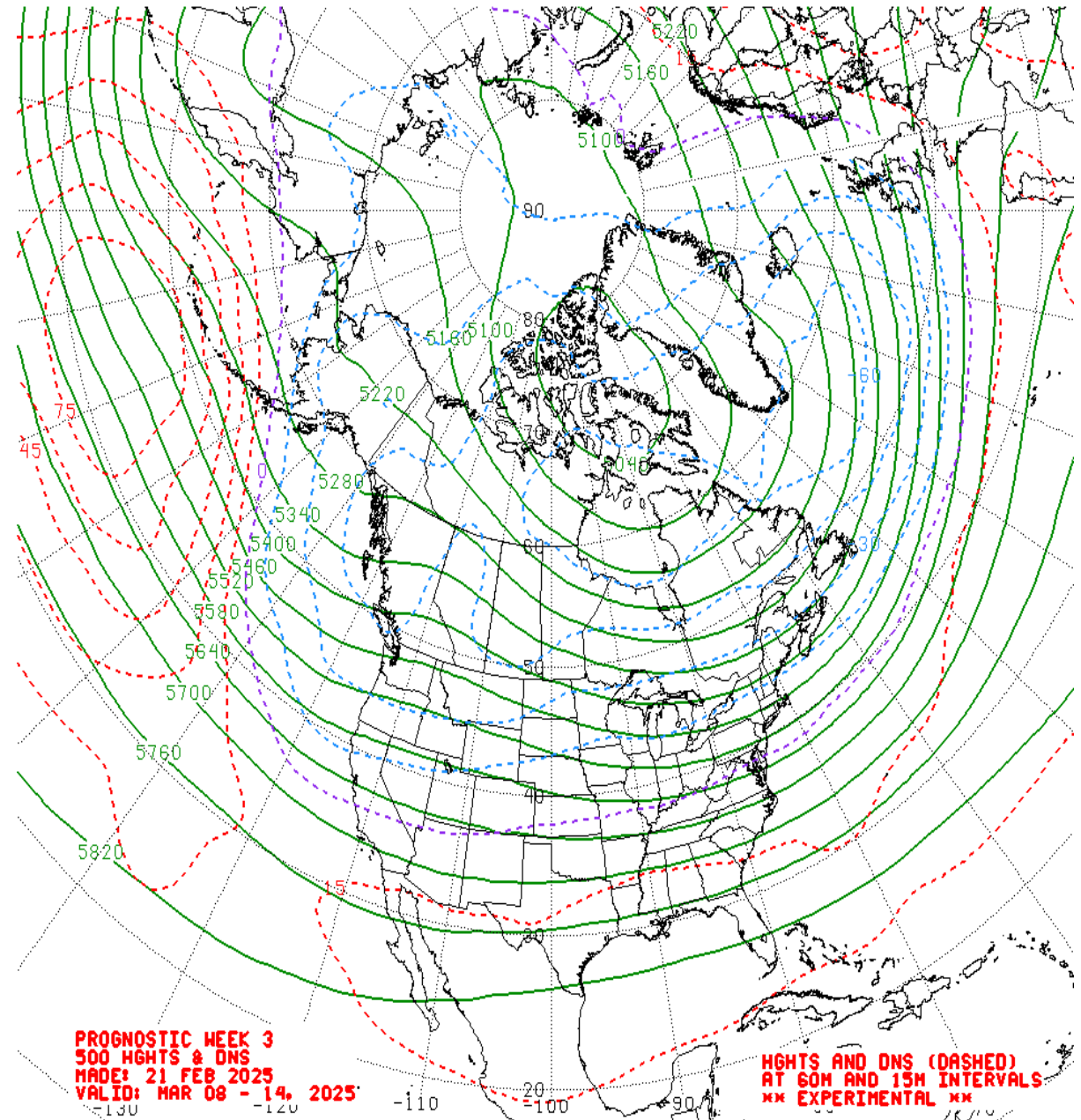
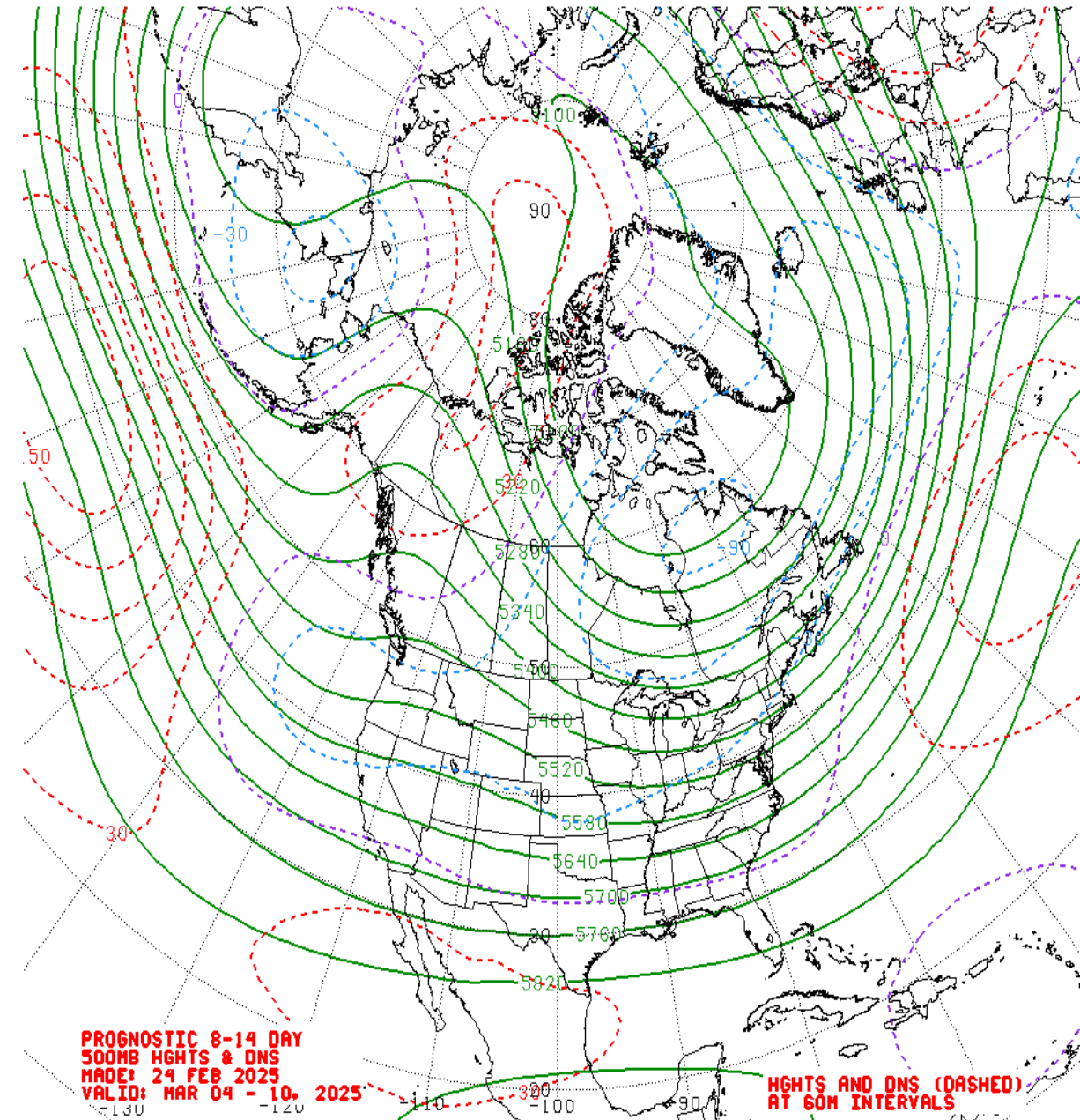
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

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

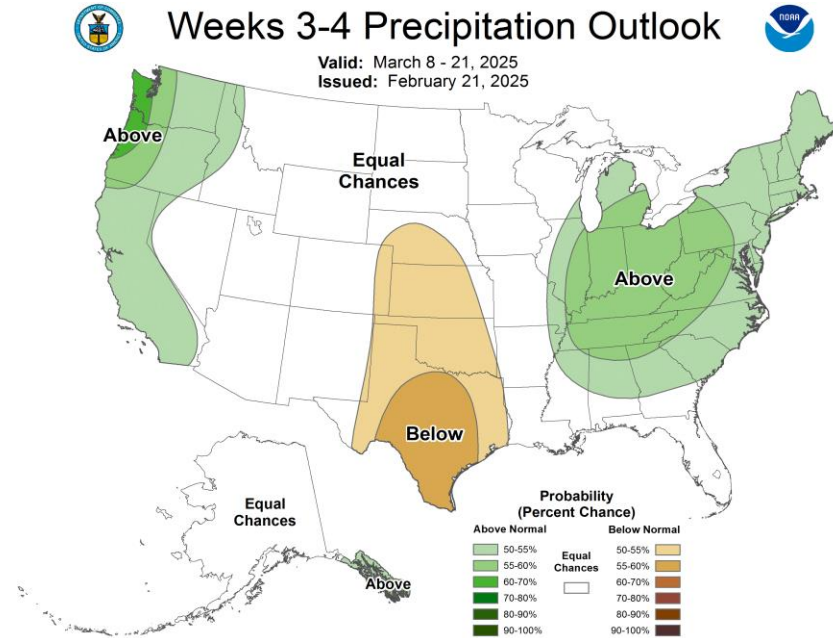
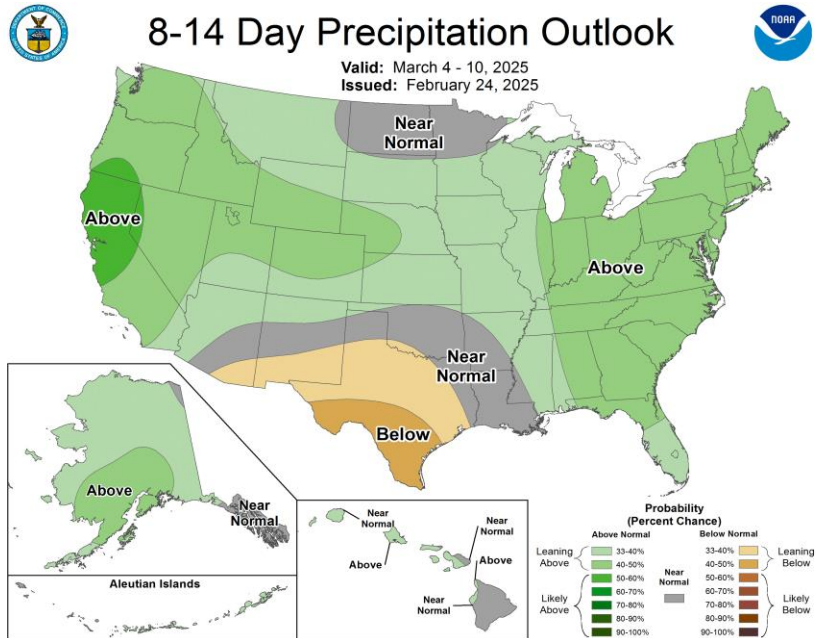
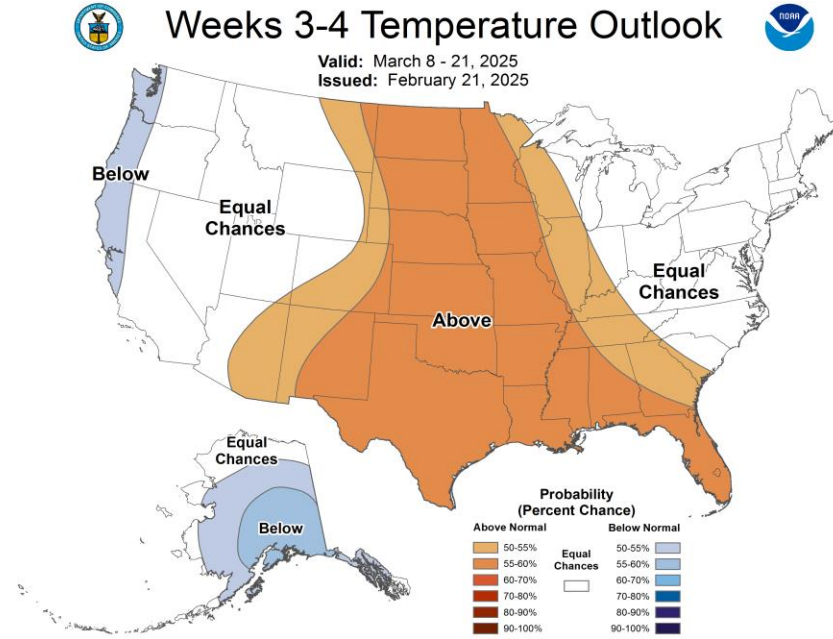
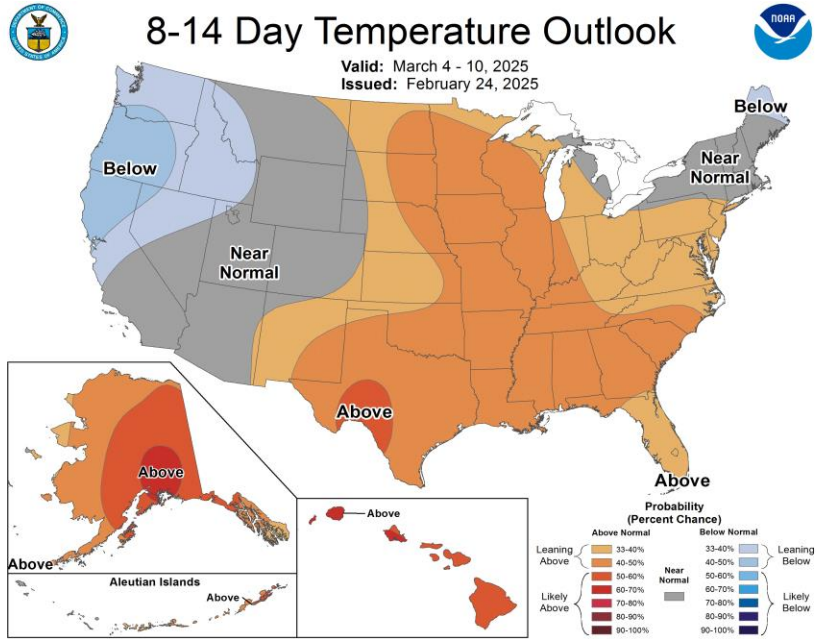
JFM MJO Composite: GLBT (degC)



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



Official Temperature & Precipitation Forecasts:



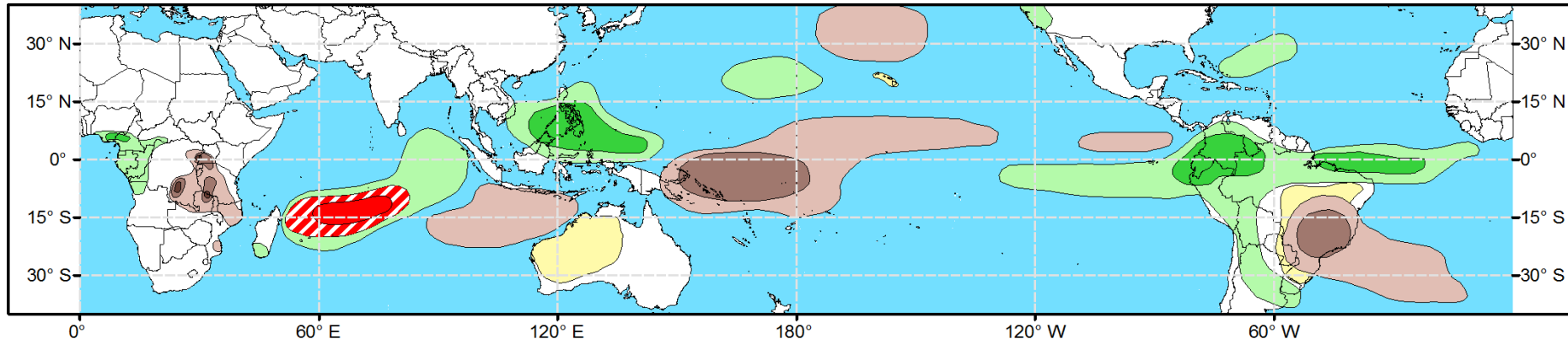


Global Tropics Hazards Outlook

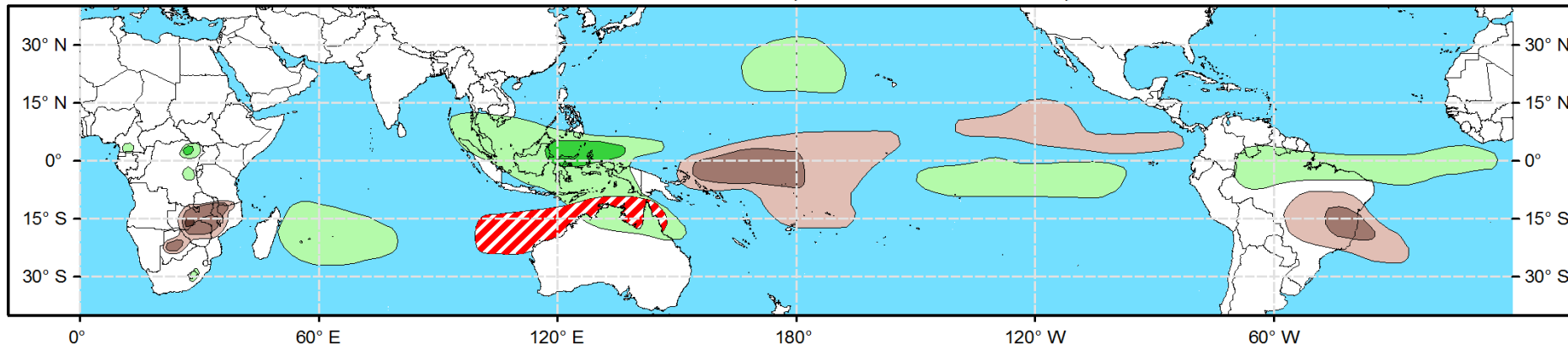
Climate Prediction Center



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Forecaster: Long

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