



Weeks 2-3 Global Tropics Hazards Outlook

2/7/2023

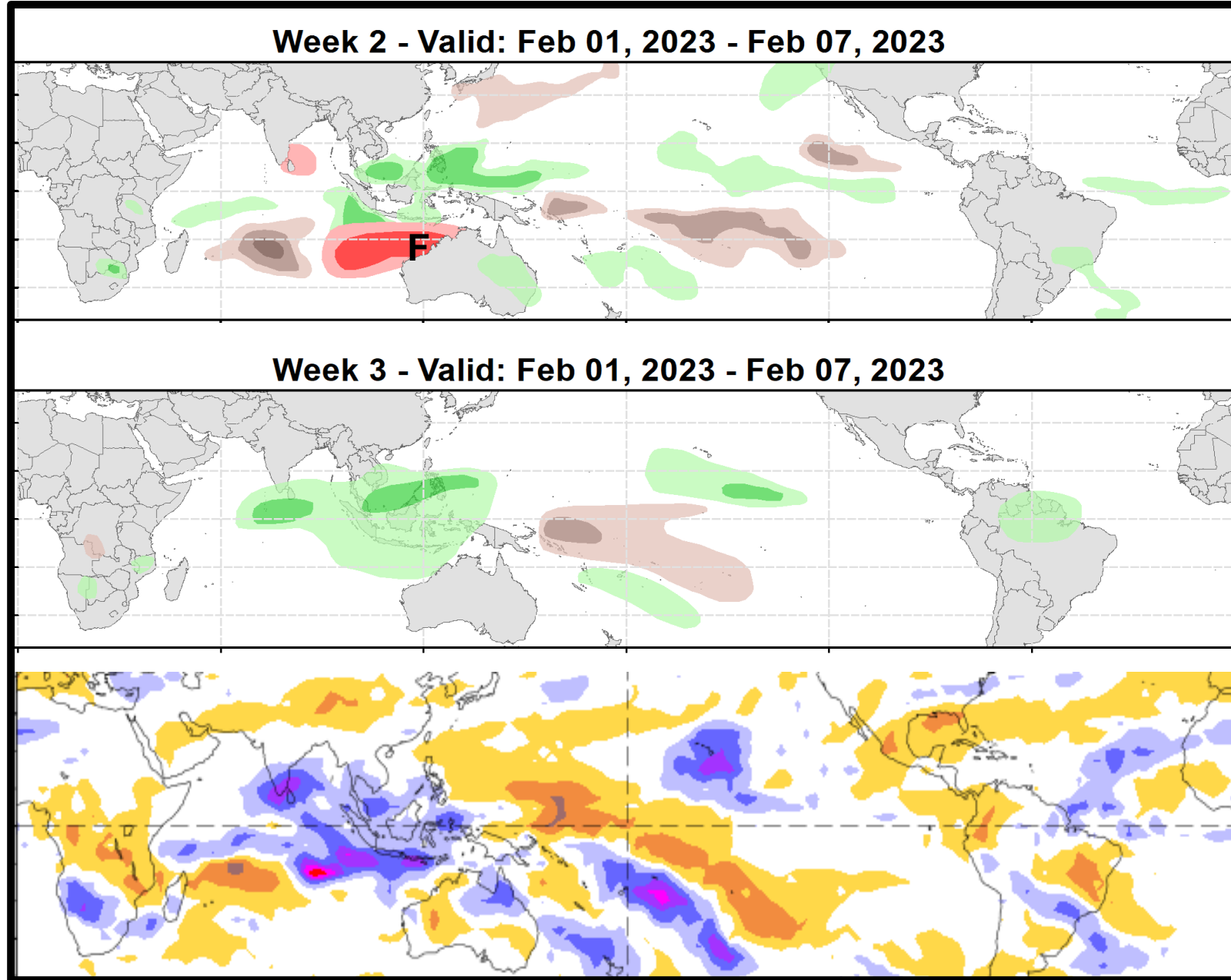
Thomas Collow

NWS / NCEP / Climate Prediction Center

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

TCs formed in the past week

Cyclone Freddy (2/6, Southeast Indian Ocean)



Synopsis of Climate Modes:

ENSO: (Jan 12, 2023 Update) *next update on Thursday, Feb 9th*

- ENSO Alert System Status: [La Niña Advisory](#)
- A transition from La Niña to ENSO-neutral is anticipated during the February-April 2023 season. By Northern Hemisphere spring (March-May 2023), the chance for ENSO-neutral is 82%.

MJO and other subseasonal tropical variability:

- The RMM-based MJO index has been meandering over the Indian Ocean during the past week due to interference with enhanced Rossby Wave activity.
- The MJO has been constructively interfering with La Niña, leading to a reemergence of a pattern typical of La Niña across the extratropics, most notably warmer weather across the eastern United States.
- Dynamical models indicate a quick resumption of an eastward propagating MJO into the Western Pacific by week-2.
- Based on this MJO evolution, tropical cyclone development is most favored near the Kimberley Coast of western Australia and extending through the Gulf of Carpentaria during week-2.

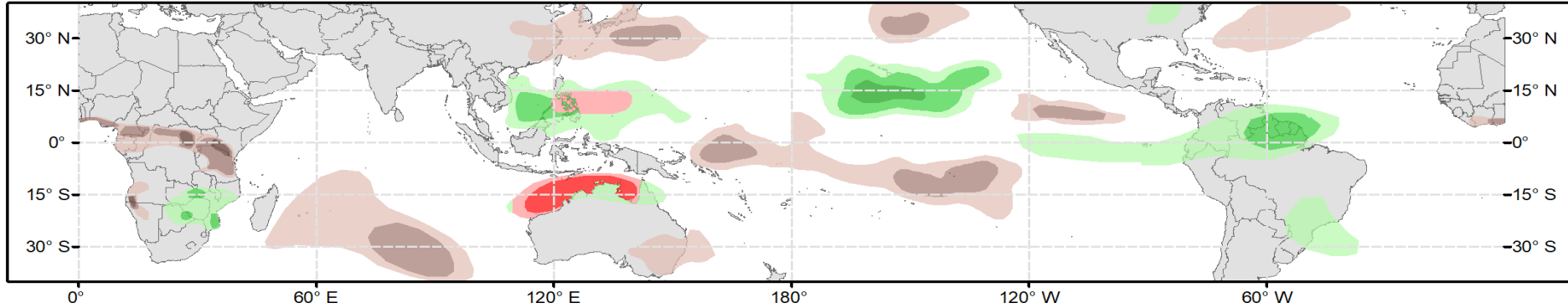
GTH Outlook:



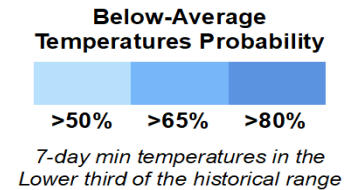
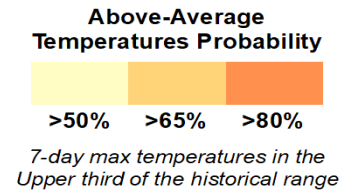
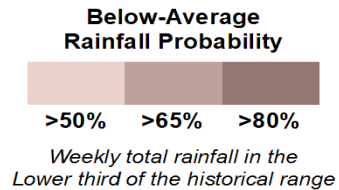
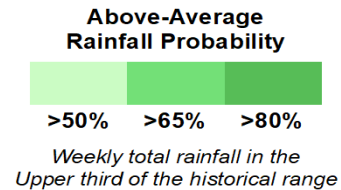
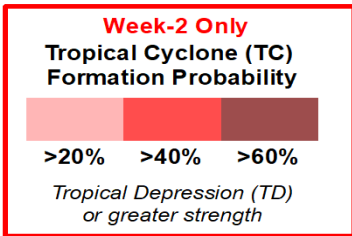
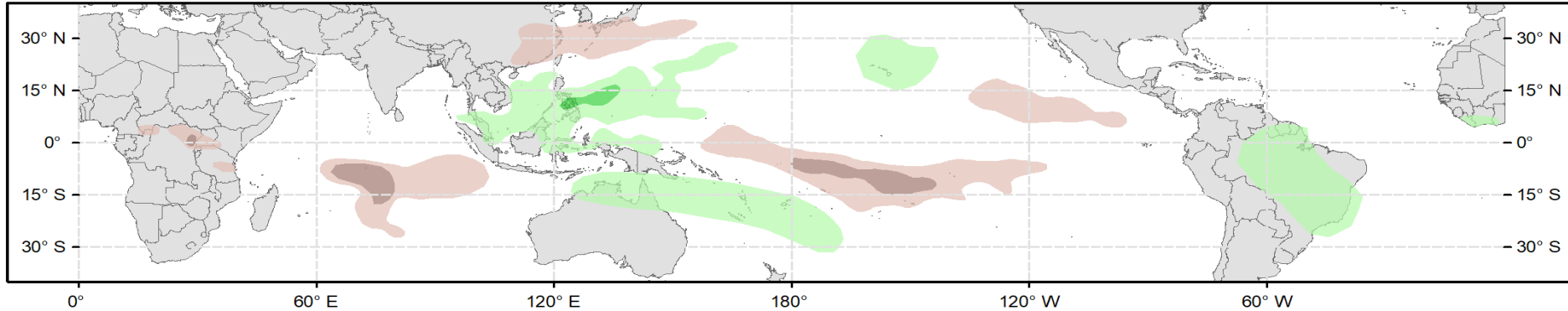
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Feb 15, 2023 - Feb 21, 2023



Week 3 - Valid: Feb 22, 2023 - Feb 28, 2023

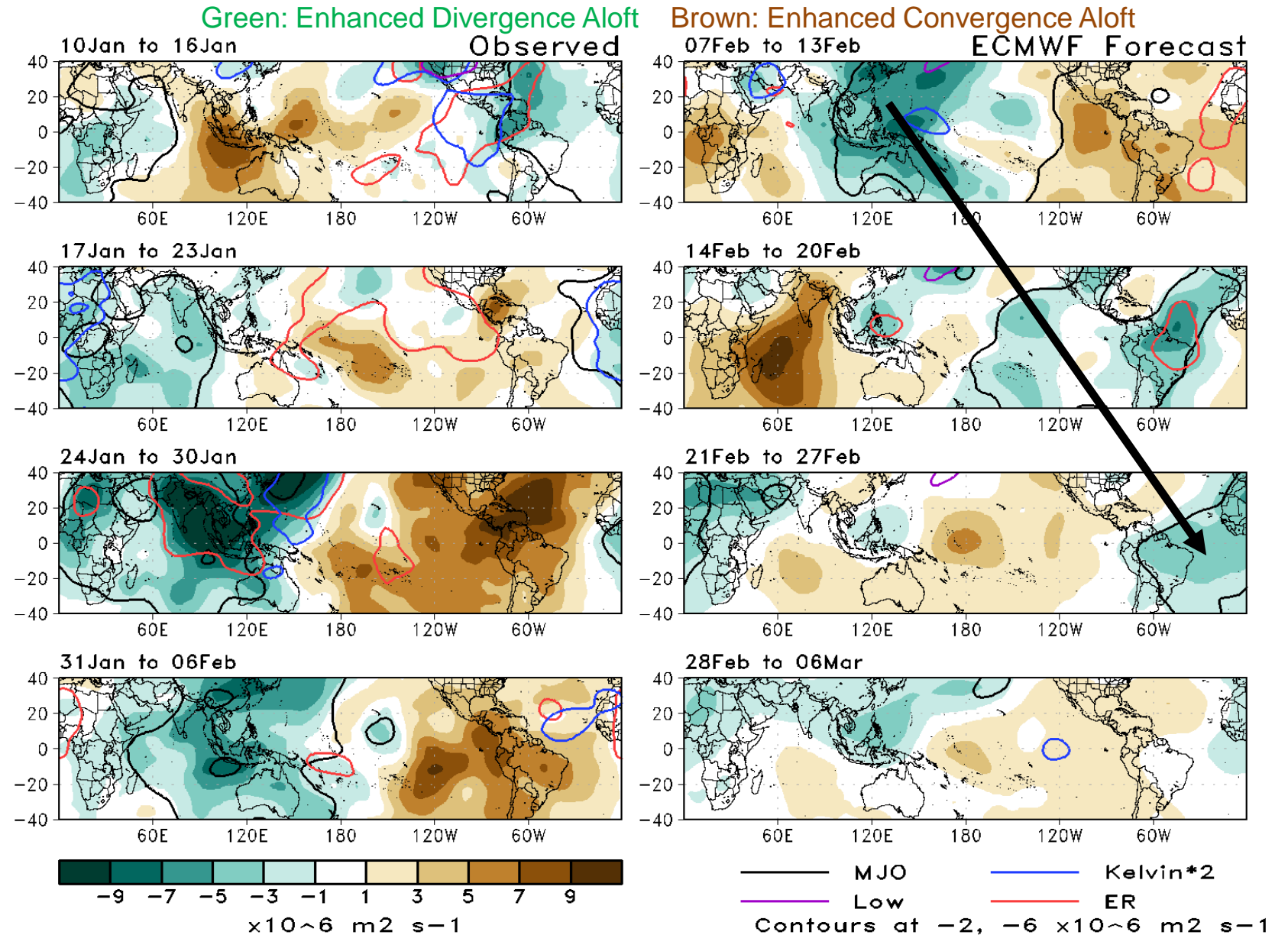


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Forecaster: Collow

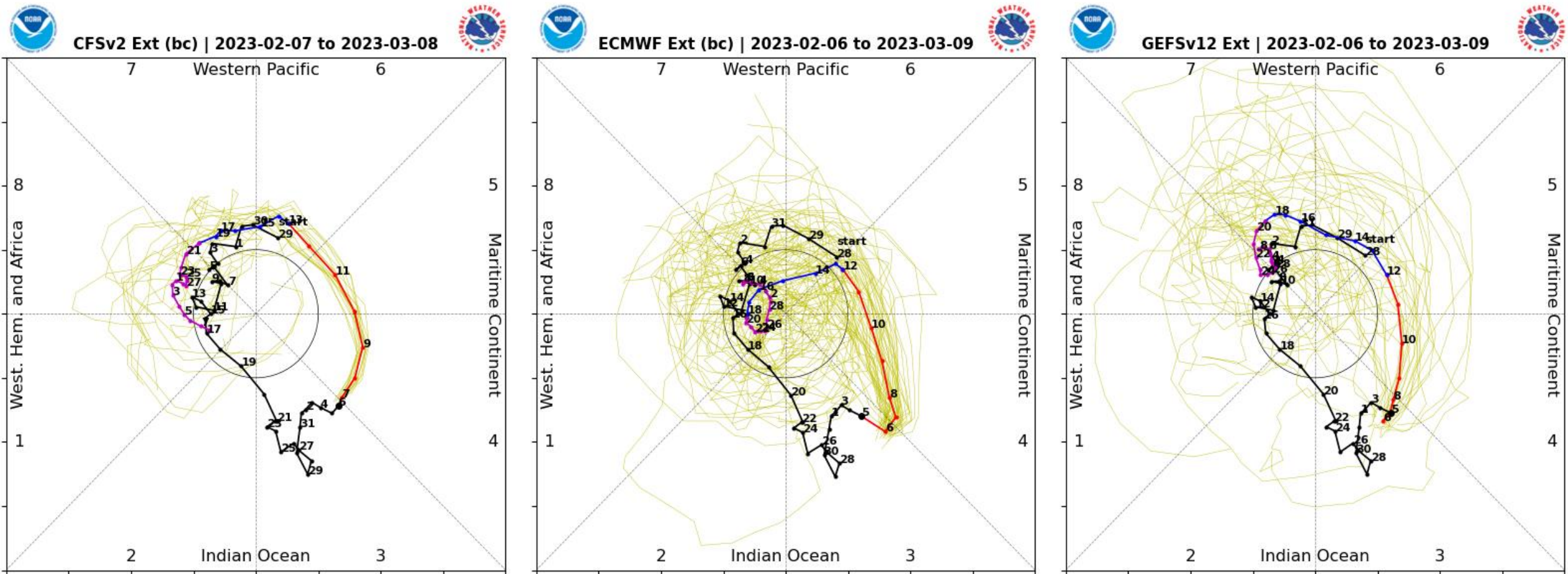
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

200-hPa Velocity Potential Anomaly Maps:

- Wave-1 asymmetry pattern in the upper-level velocity potential field from the previous week.
- Quick propagation of the MJO across the Pacific and into the Western Hemisphere predicted by week-3.
- Enhanced upper-level convergence predicted over the Indian Ocean during the next 2 weeks associated with the suppressed phase of the MJO.

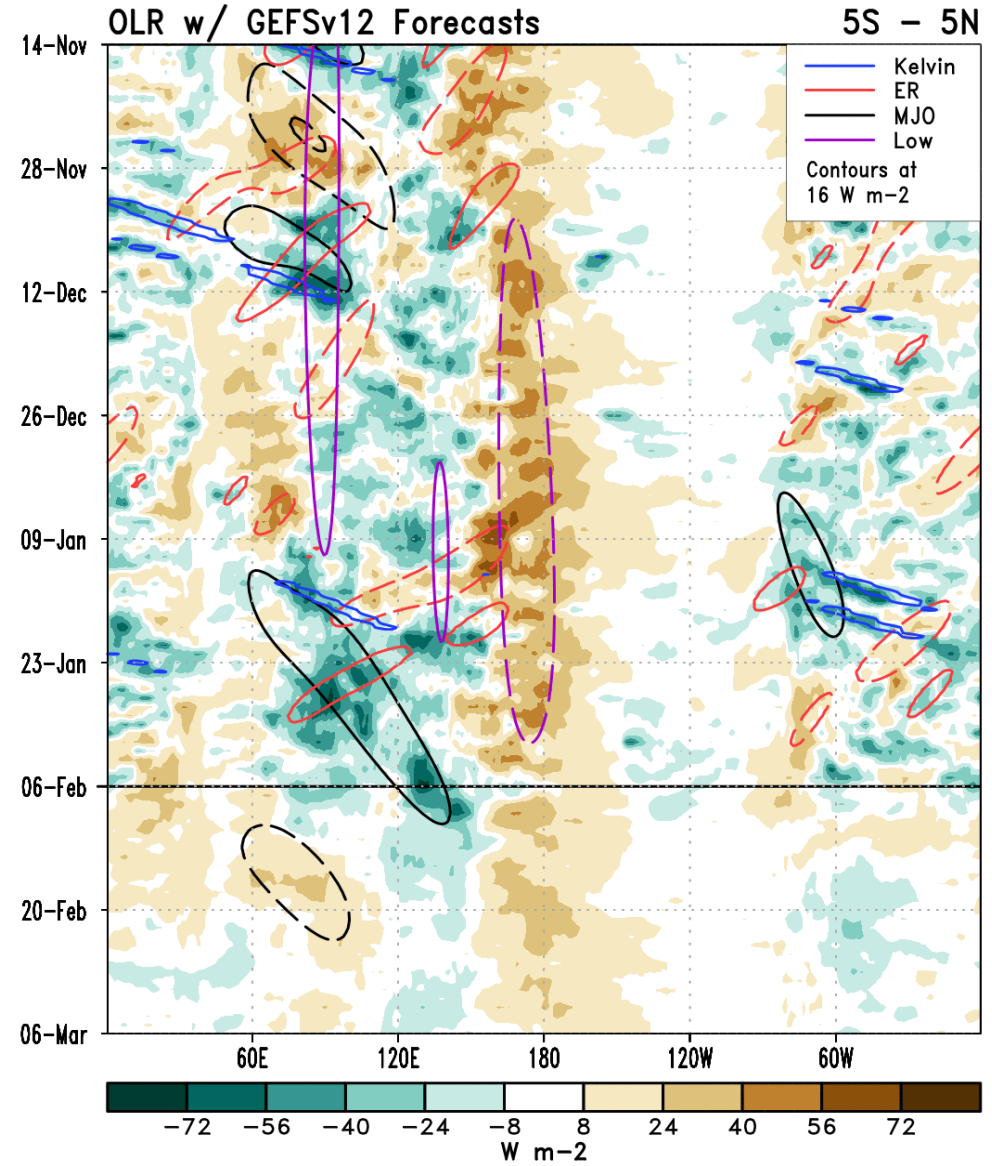
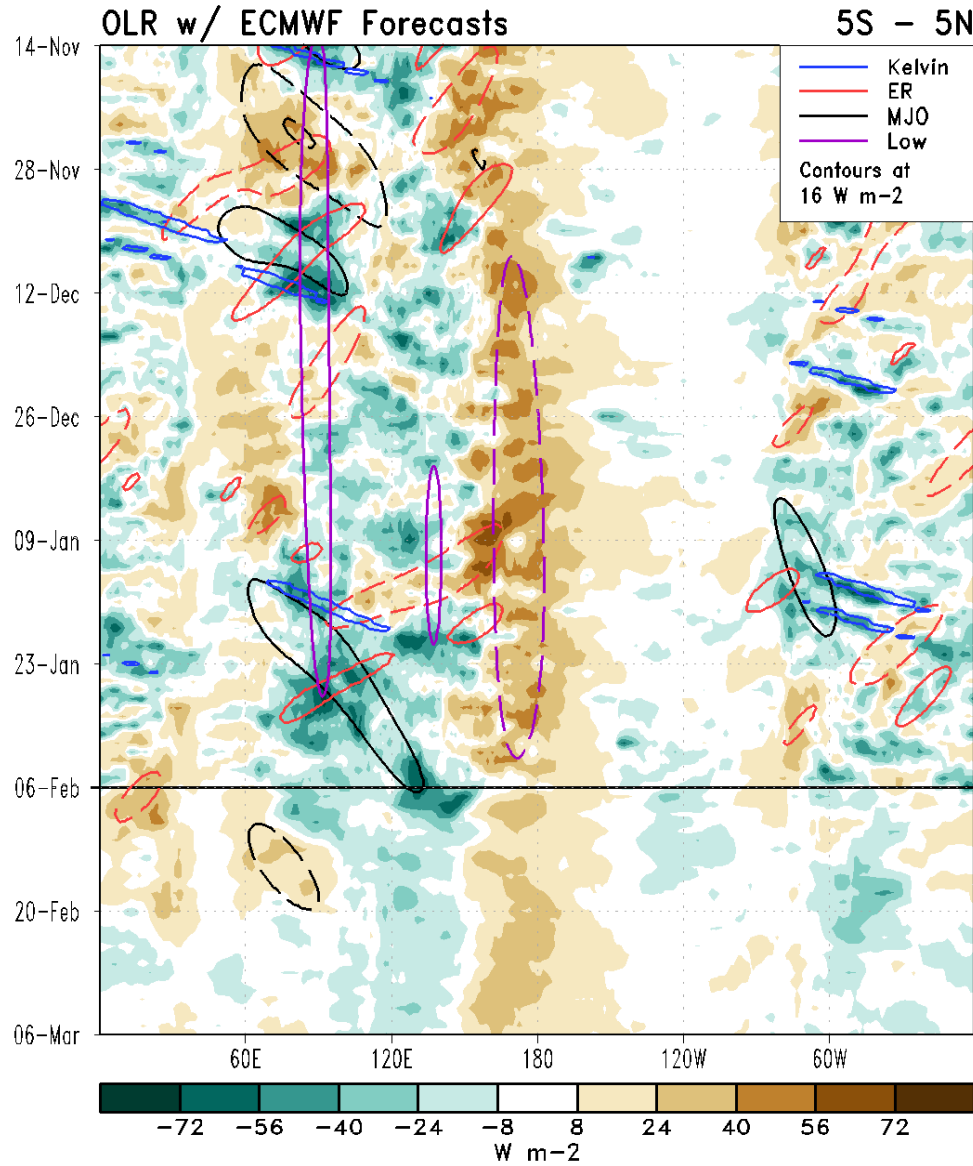


RMM Index Observations & Forecasts:



- Very good model agreement that the MJO resumes a quick eastward propagation and reaches the Western Pacific by week-2.
- Beyond, models indicate continued propagation into the Western Hemisphere.
- Although its amplitude is uncertain, an active MJO in phases 8 or 1 could drive a pattern change across the U.S. in late February or early March.

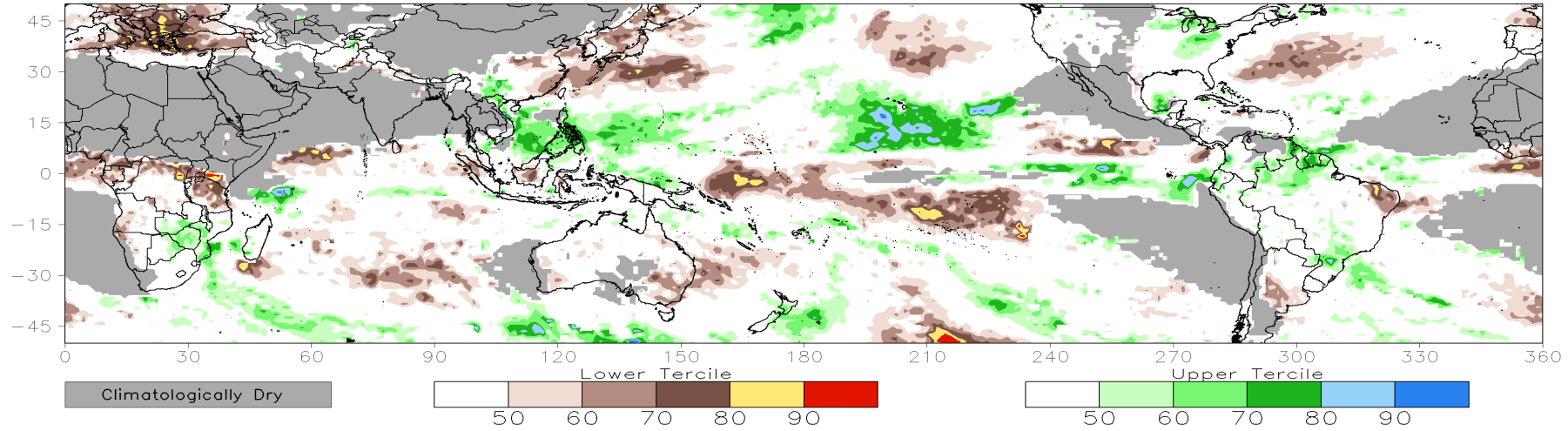
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

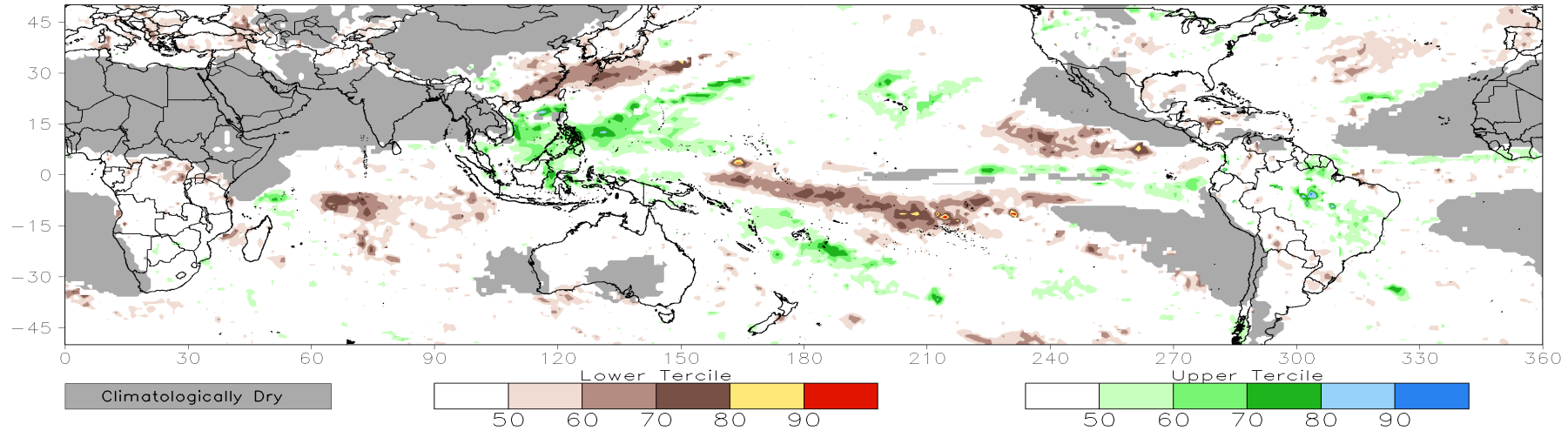
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 15Feb2023–21Feb2023



CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

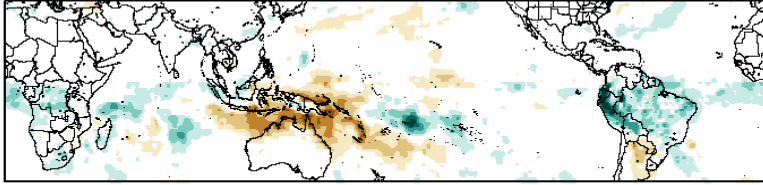
Valid: 22Feb2023–28Feb2023



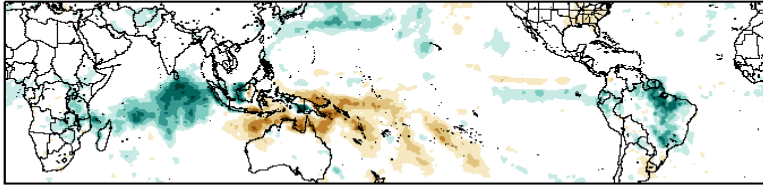
Historical Precipitation Anomalies By MJO Phase:

JFM MJO Composite: GPCP1DD (mm/day)

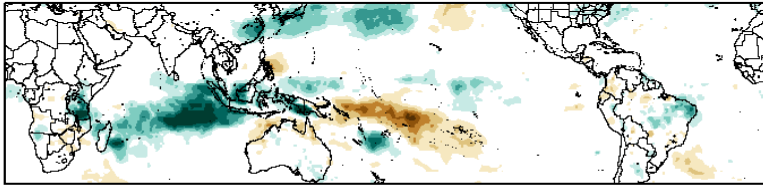
Phase 1



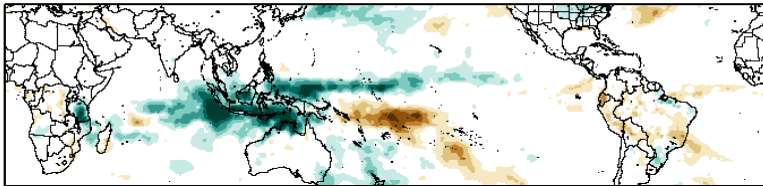
Phase 2



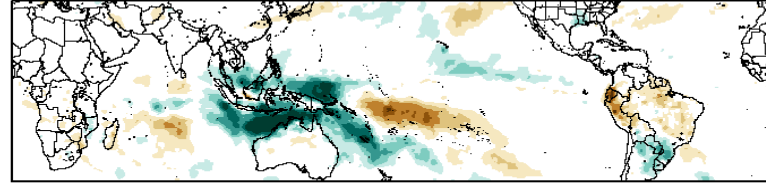
Phase 3



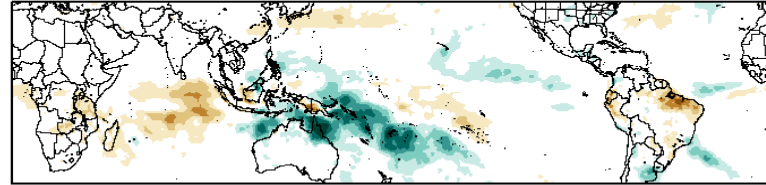
Phase 4



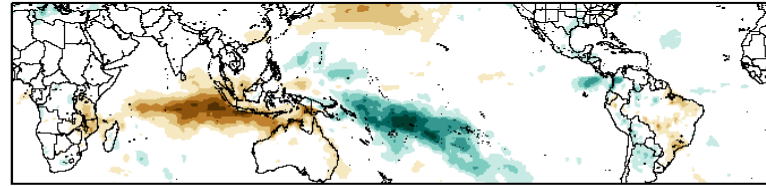
Phase 5



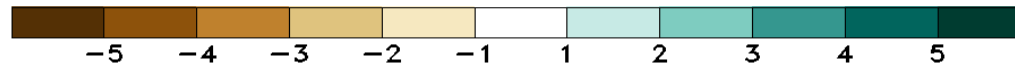
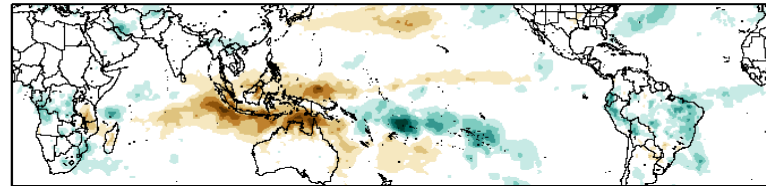
Phase 6



Phase 7

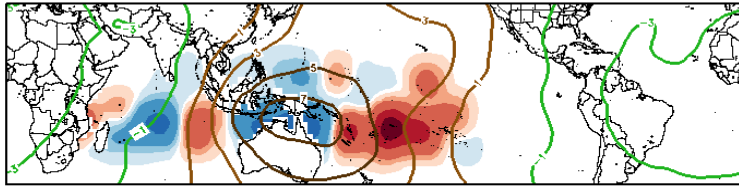


Phase 8

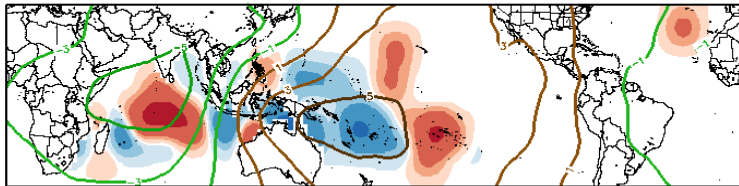


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

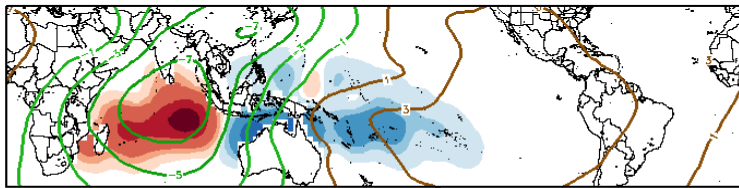
JFM MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ JFM CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



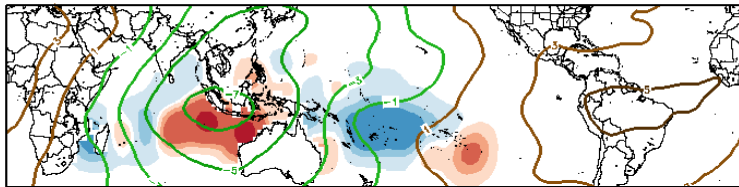
Phase 1



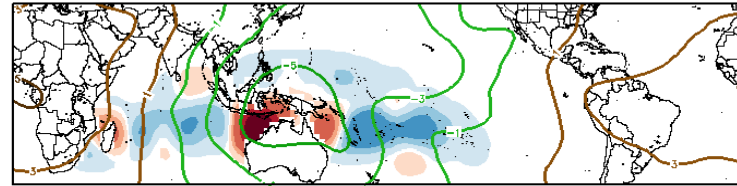
Phase 2



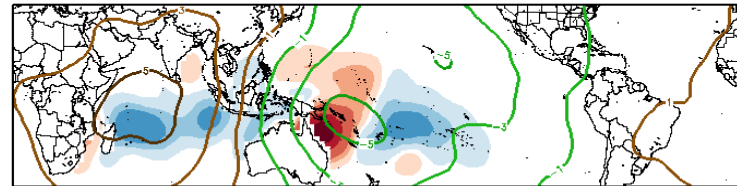
Phase 3



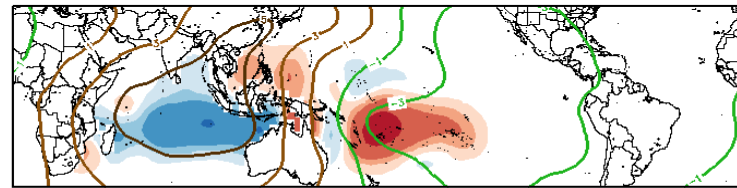
Phase 4



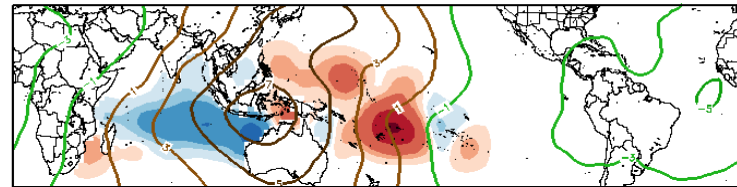
Phase 5



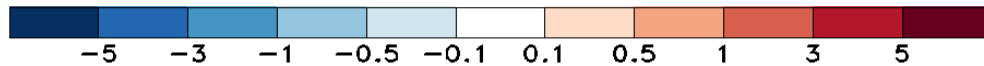
Phase 6



Phase 7

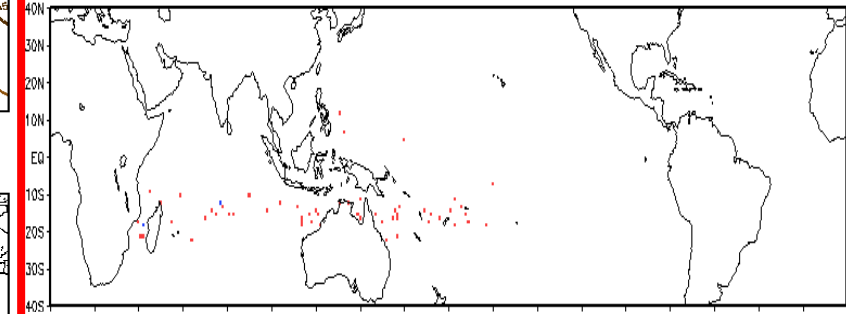


Phase 8

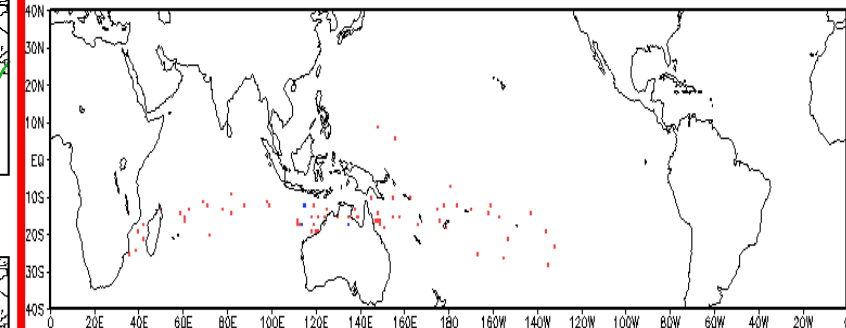


Experimental

Observed TC Genesis, 1979–2021
7-day Period 0215 to 0221



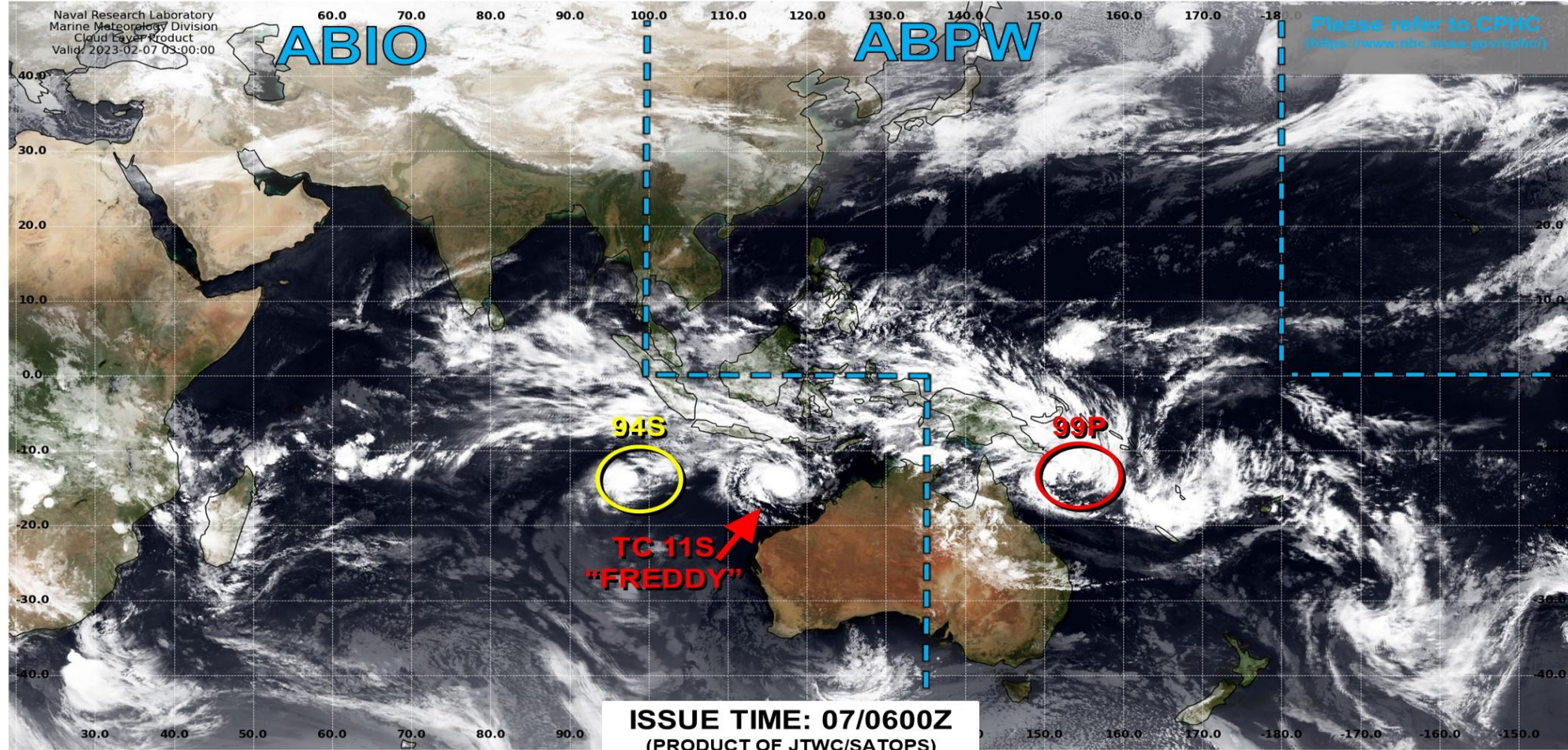
Observed TC Genesis, 1979–2021
7-day Period 0222 to 0228



Tropical Cyclone Monitoring/Forecast: JTWC



JOINT TYPHOON WARNING CENTER



LOW TC development unlikely within 24 hours



MEDIUM TC development likely, but expected to occur beyond 24 hours



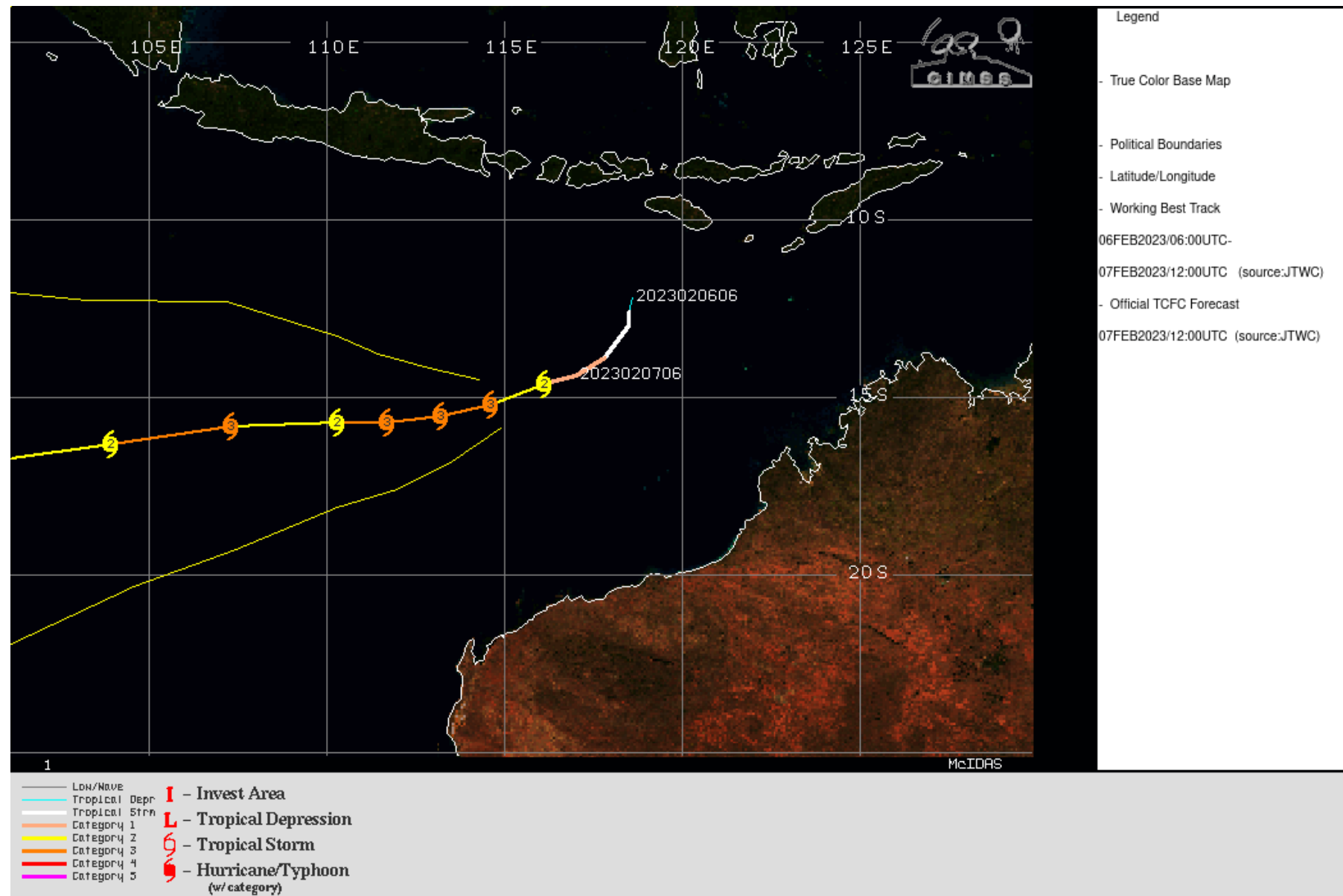
HIGH TC development likely within 24 hours (Reference TCFA)



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

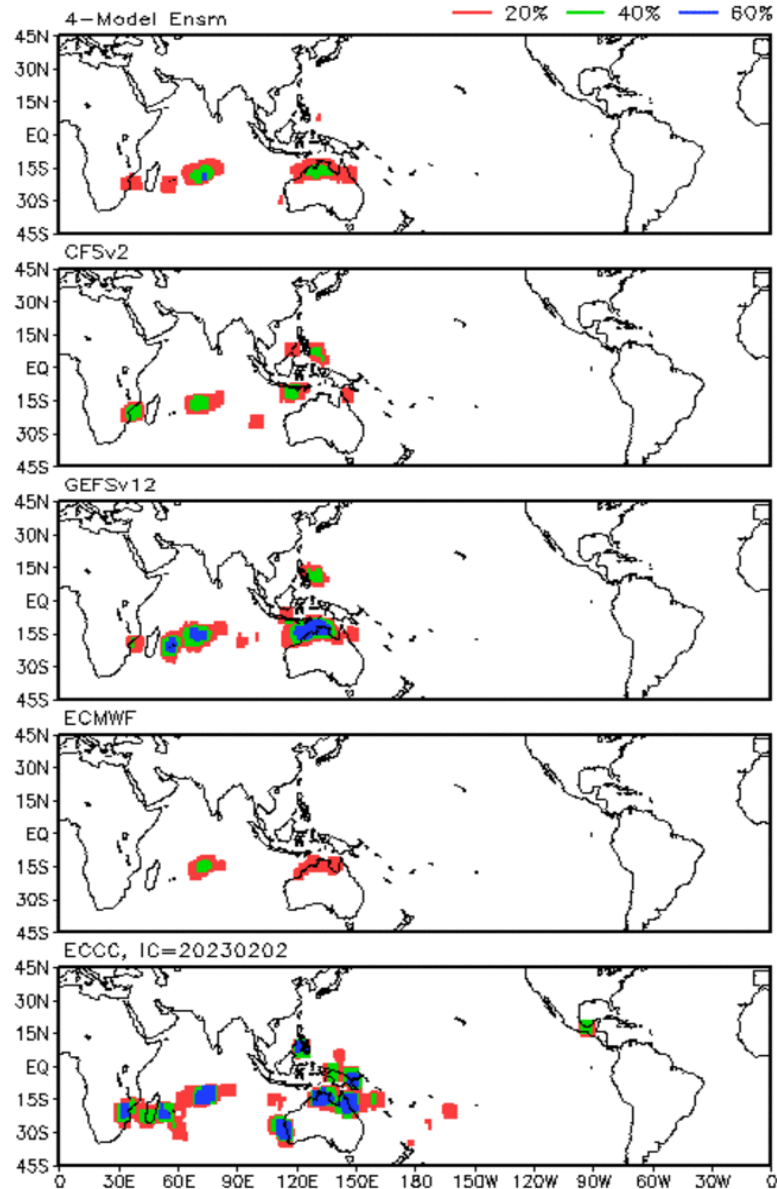
 Tropical Cyclone (Reference Warning)

Tropical Cyclone Freddy

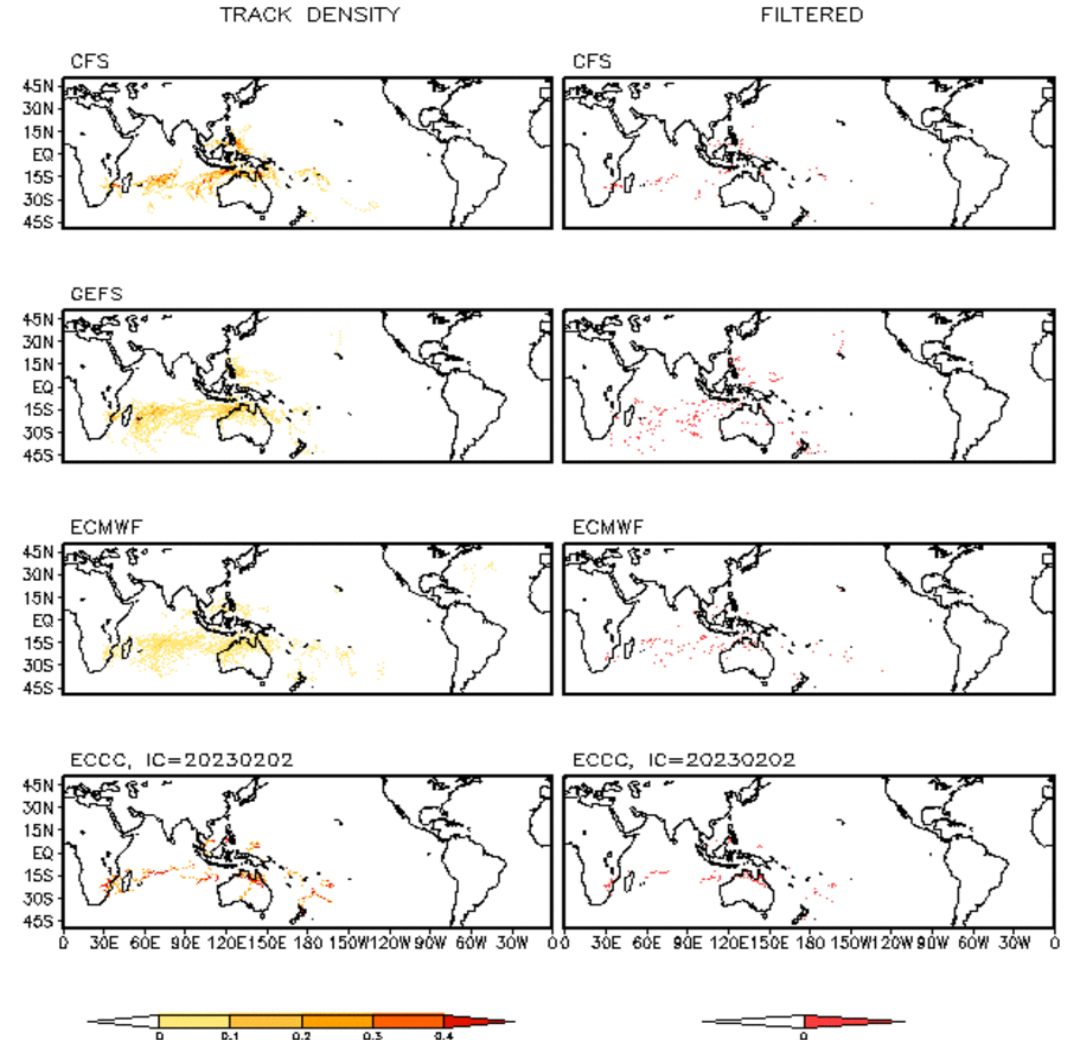


Multi-Model TC Track Probabilities/Densities: Week-2

Storm Track Probabilities, IC=20230206
Week 2: 0215 - 0221

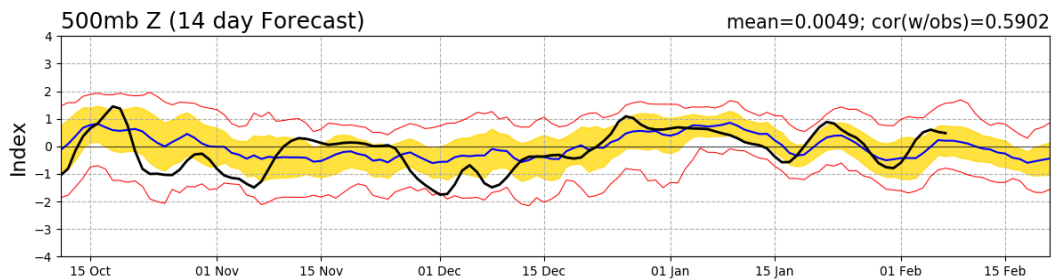
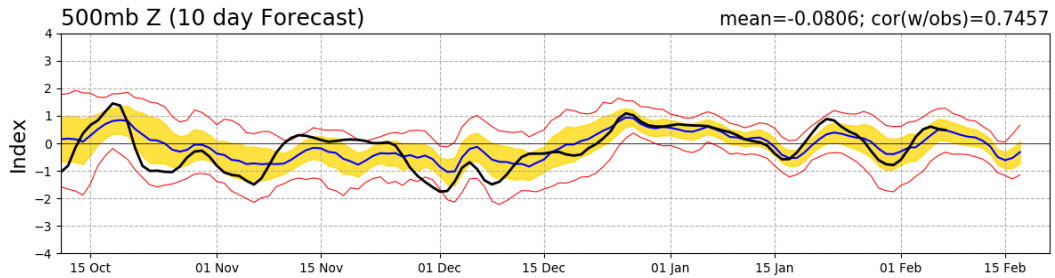
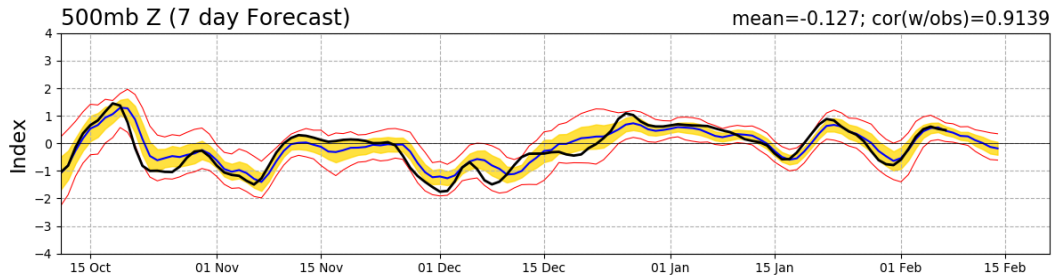
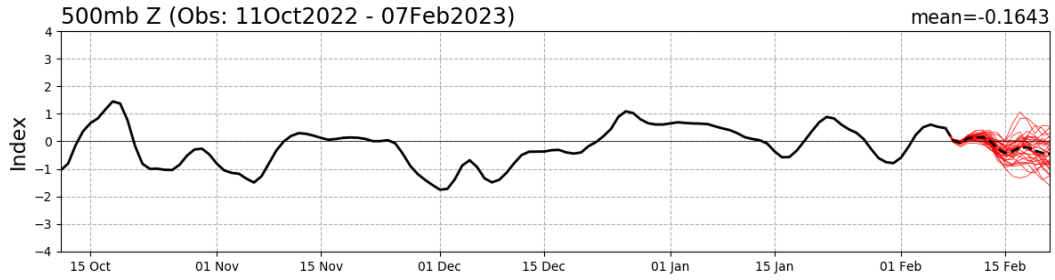


Storm Track Density Distribution, IC=20230206
Week 2 Forecast: 0215-0221

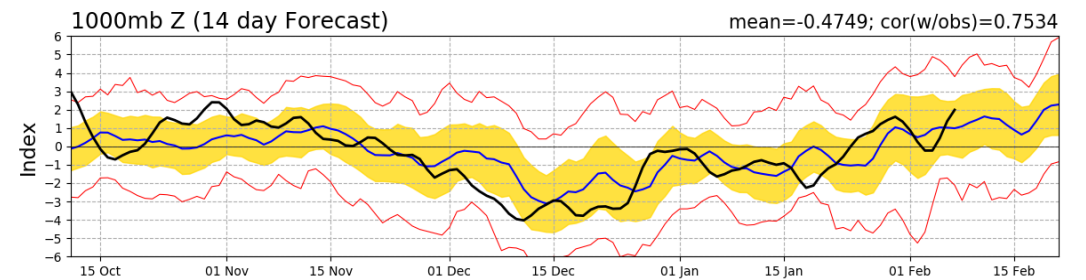
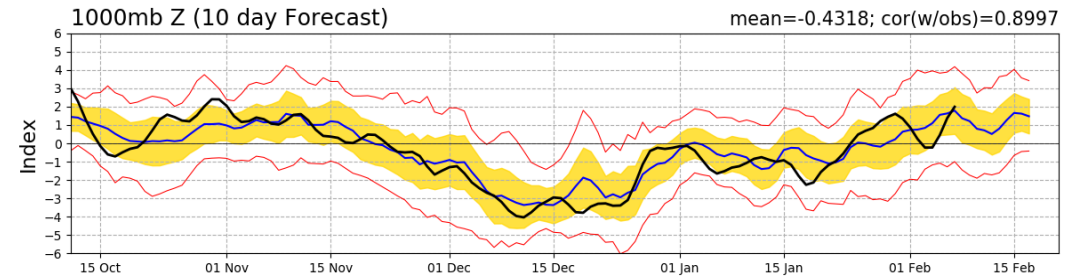
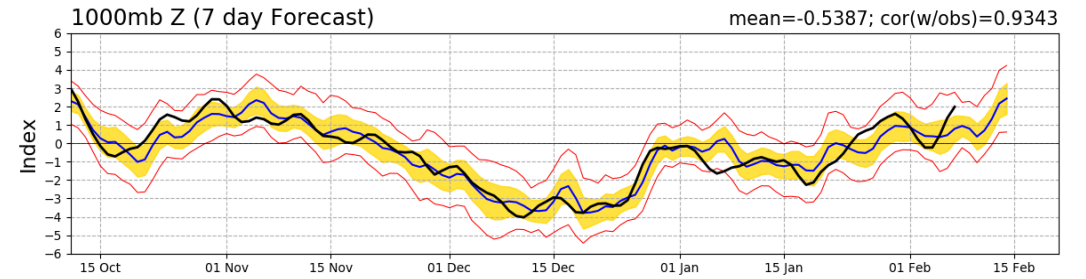
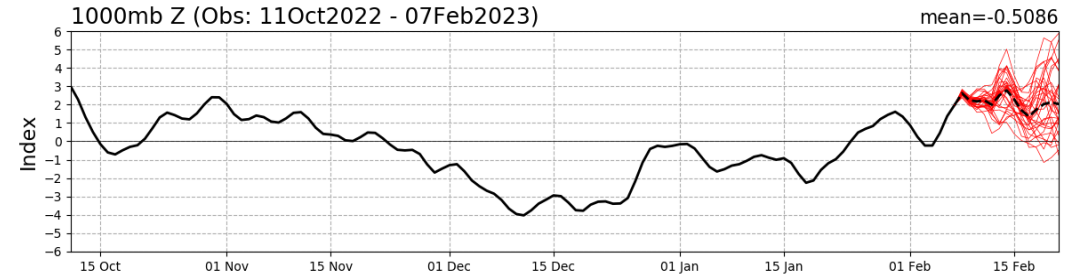


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

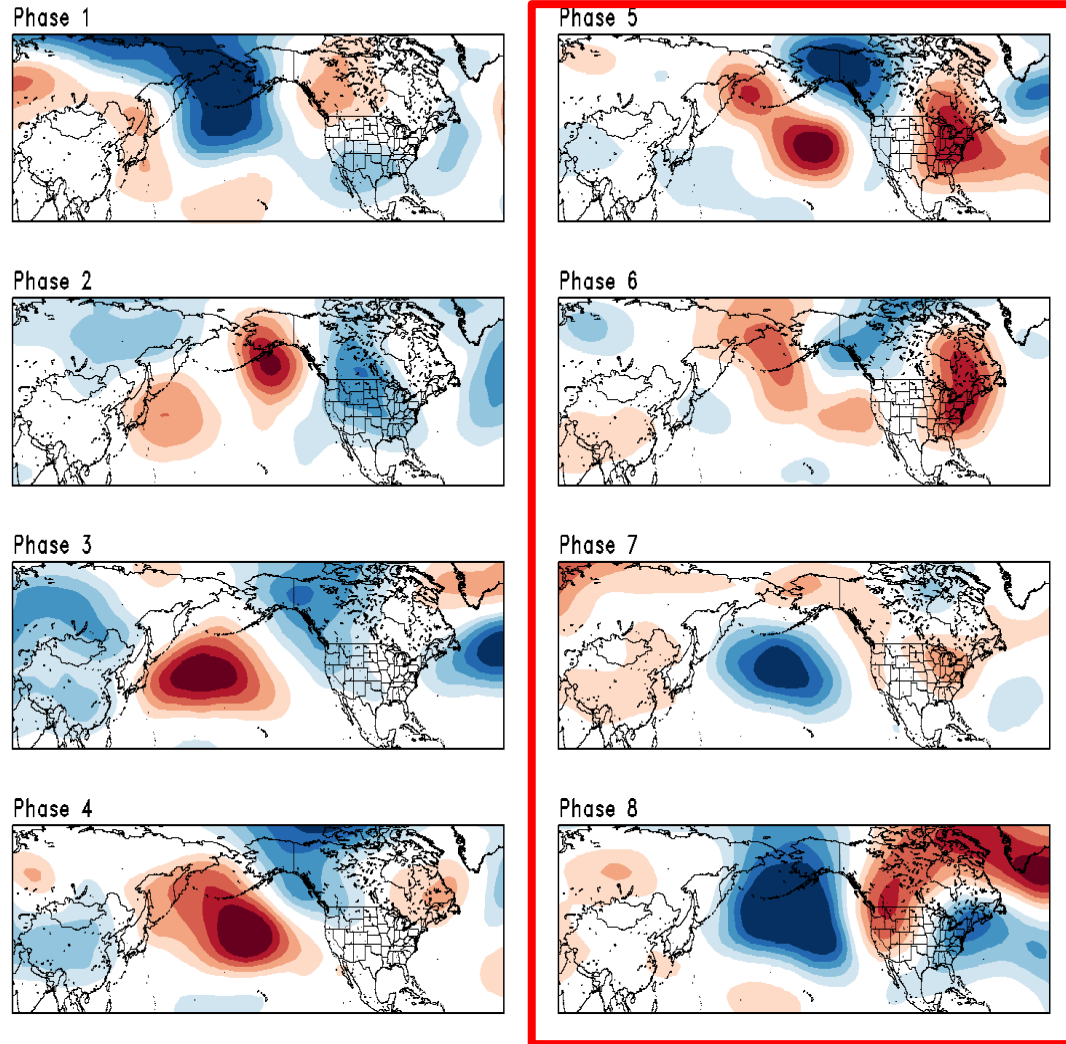


AO Index: Observed & GEFS Forecasts

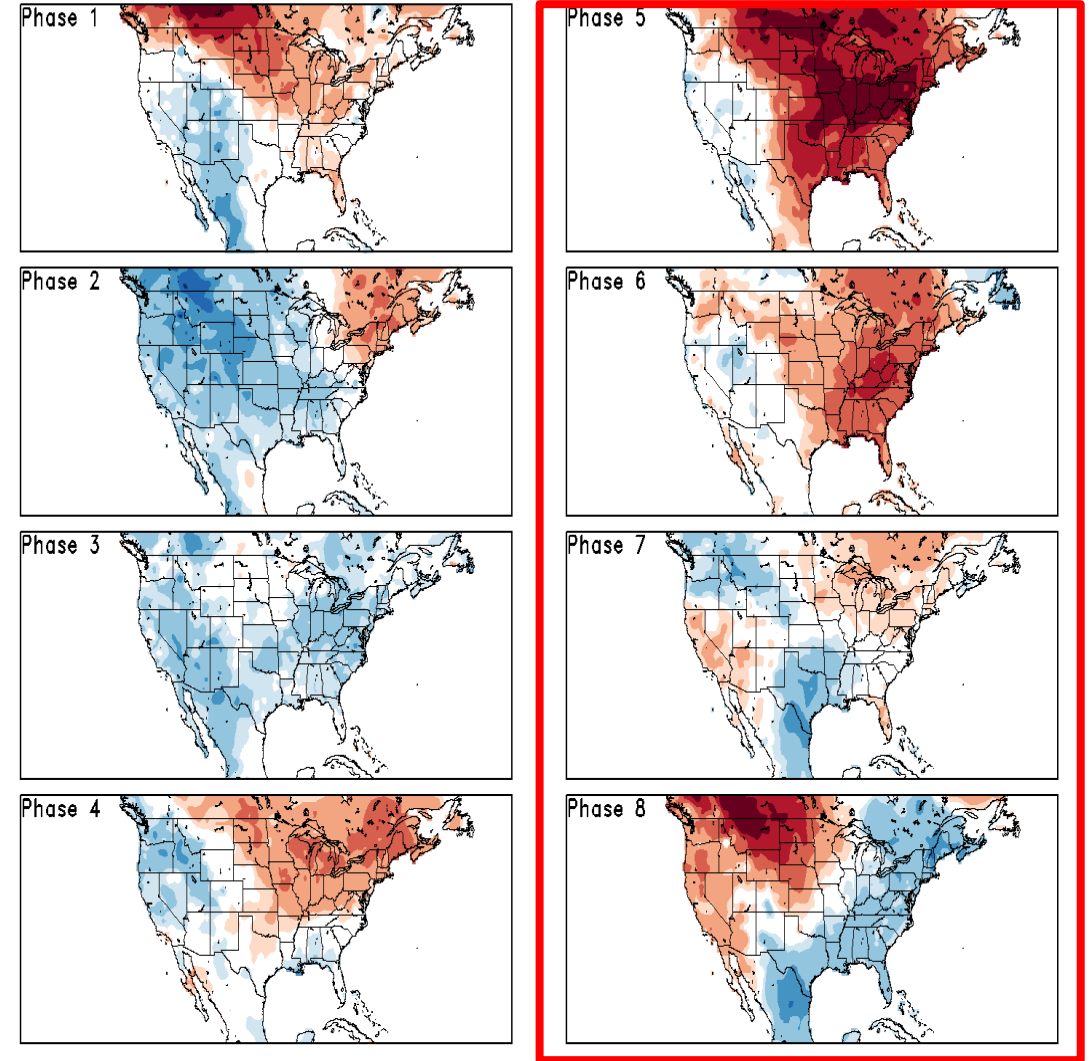


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

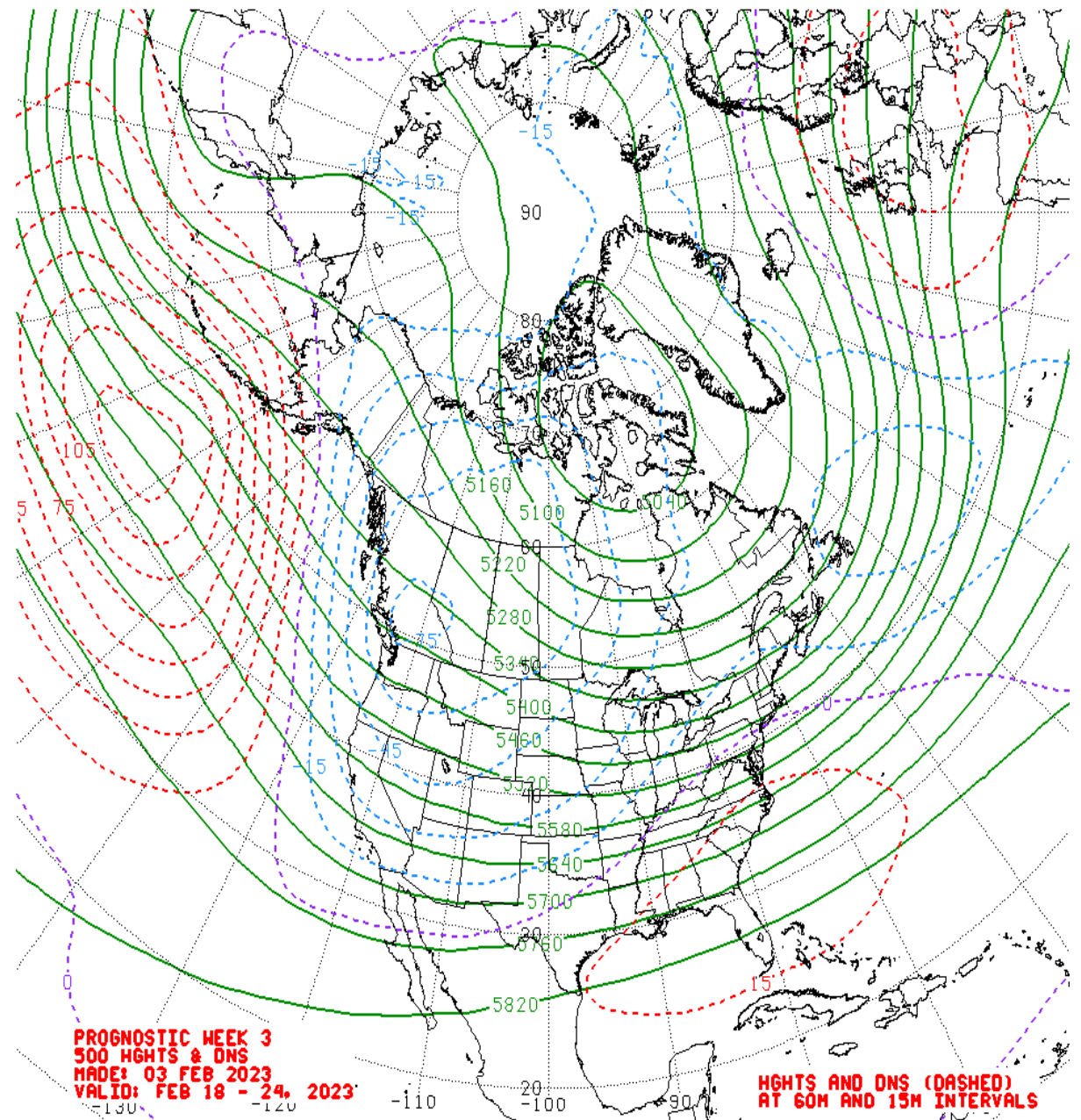
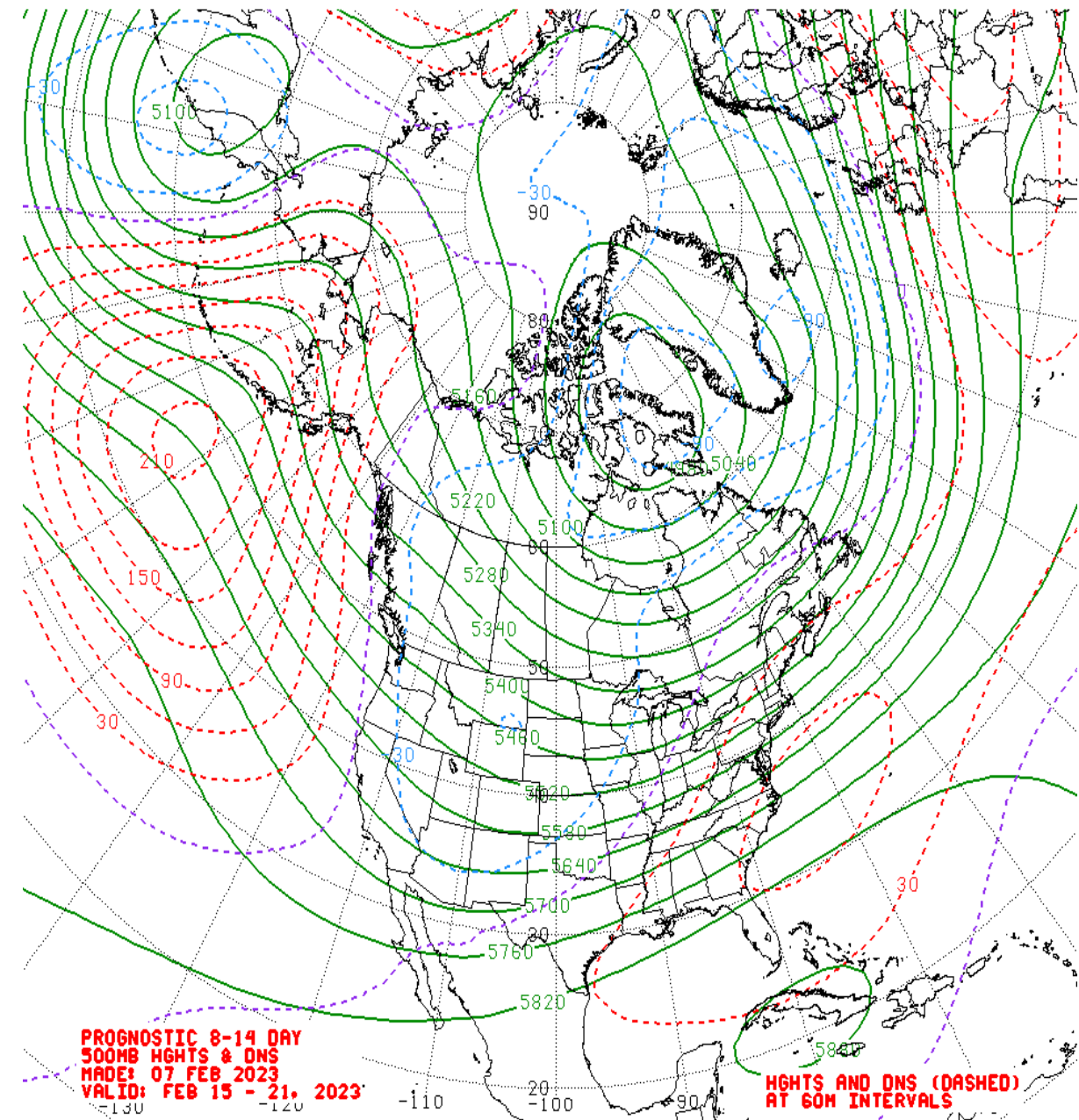
JFM MJO Composite: CDAS 500-hPa Height (m)



JFM MJO Composite: GLBT (degC)



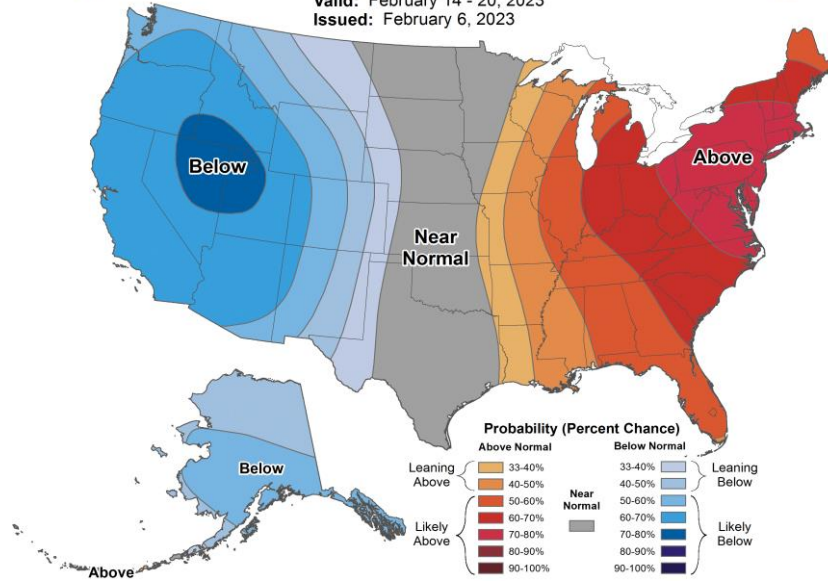
Mean 500-hPa Height Anomaly Forecasts:



Official Temperature & Precipitation Forecasts:

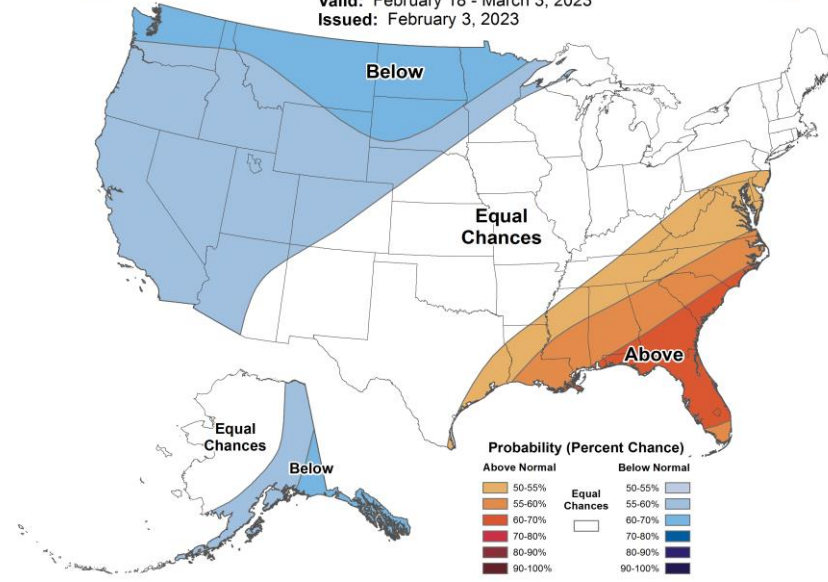
8-14 Day Temperature Outlook

Valid: February 14 - 20, 2023
 Issued: February 6, 2023



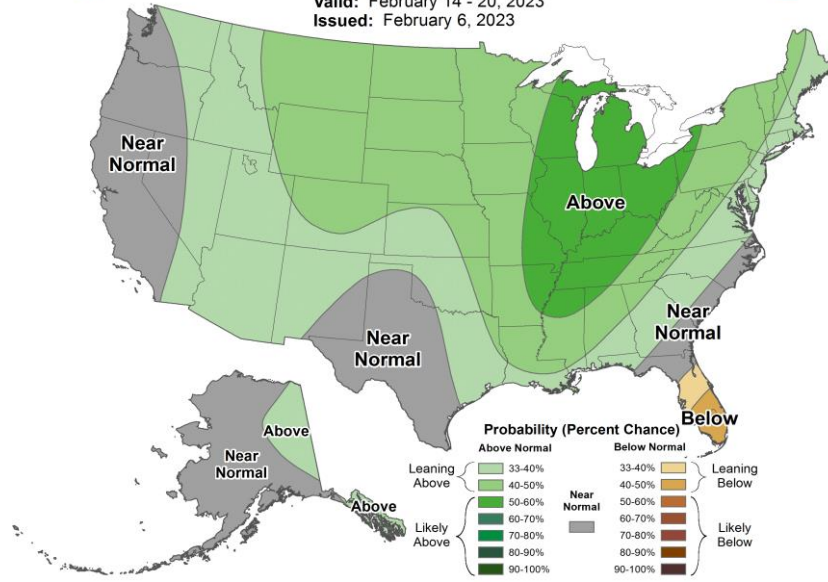
Weeks 3-4 Temperature Outlook

Valid: February 18 - March 3, 2023
 Issued: February 3, 2023



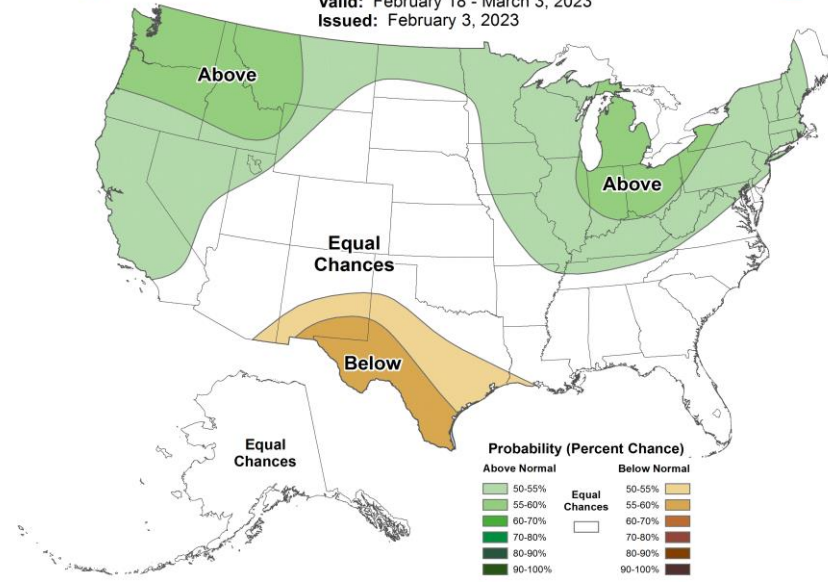
8-14 Day Precipitation Outlook

Valid: February 14 - 20, 2023
 Issued: February 6, 2023



Weeks 3-4 Precipitation Outlook

Valid: February 18 - March 3, 2023
 Issued: February 3, 2023



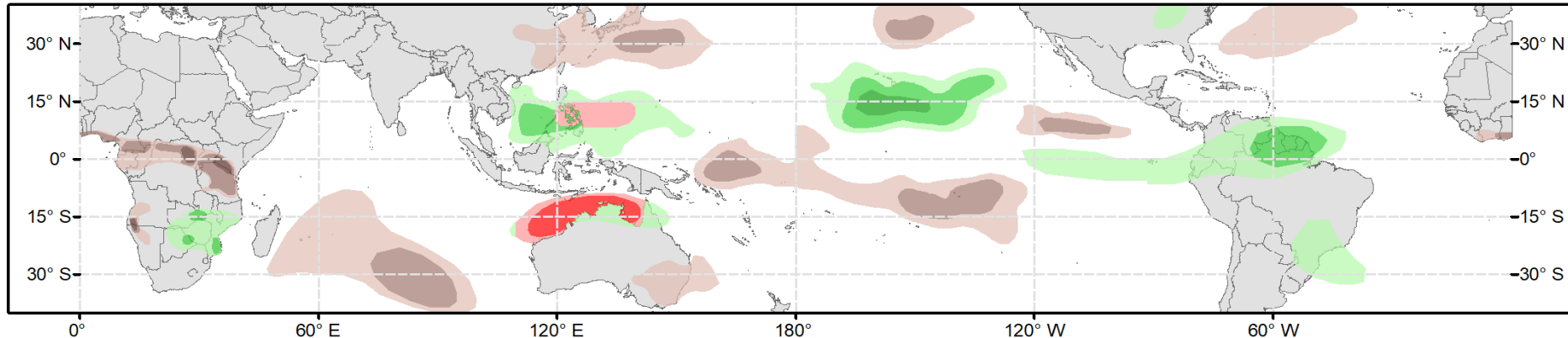


Global Tropics Hazards Outlook

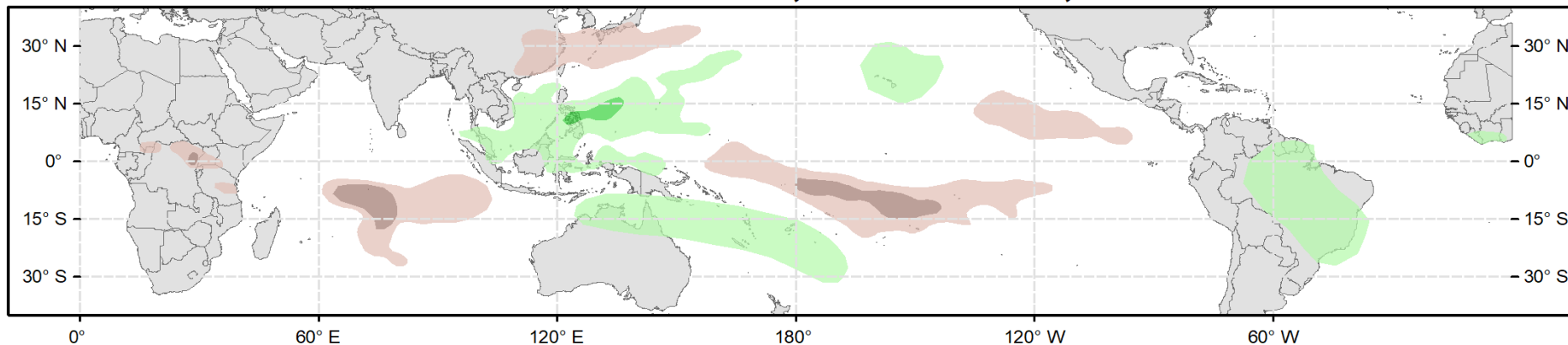
Climate Prediction Center



Week 2 - Valid: Feb 15, 2023 - Feb 21, 2023



Week 3 - Valid: Feb 22, 2023 - Feb 28, 2023



Week-2 Only

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 Lower third of the historical range

Issued: 02/07/2023
Forecaster: Collow

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.