

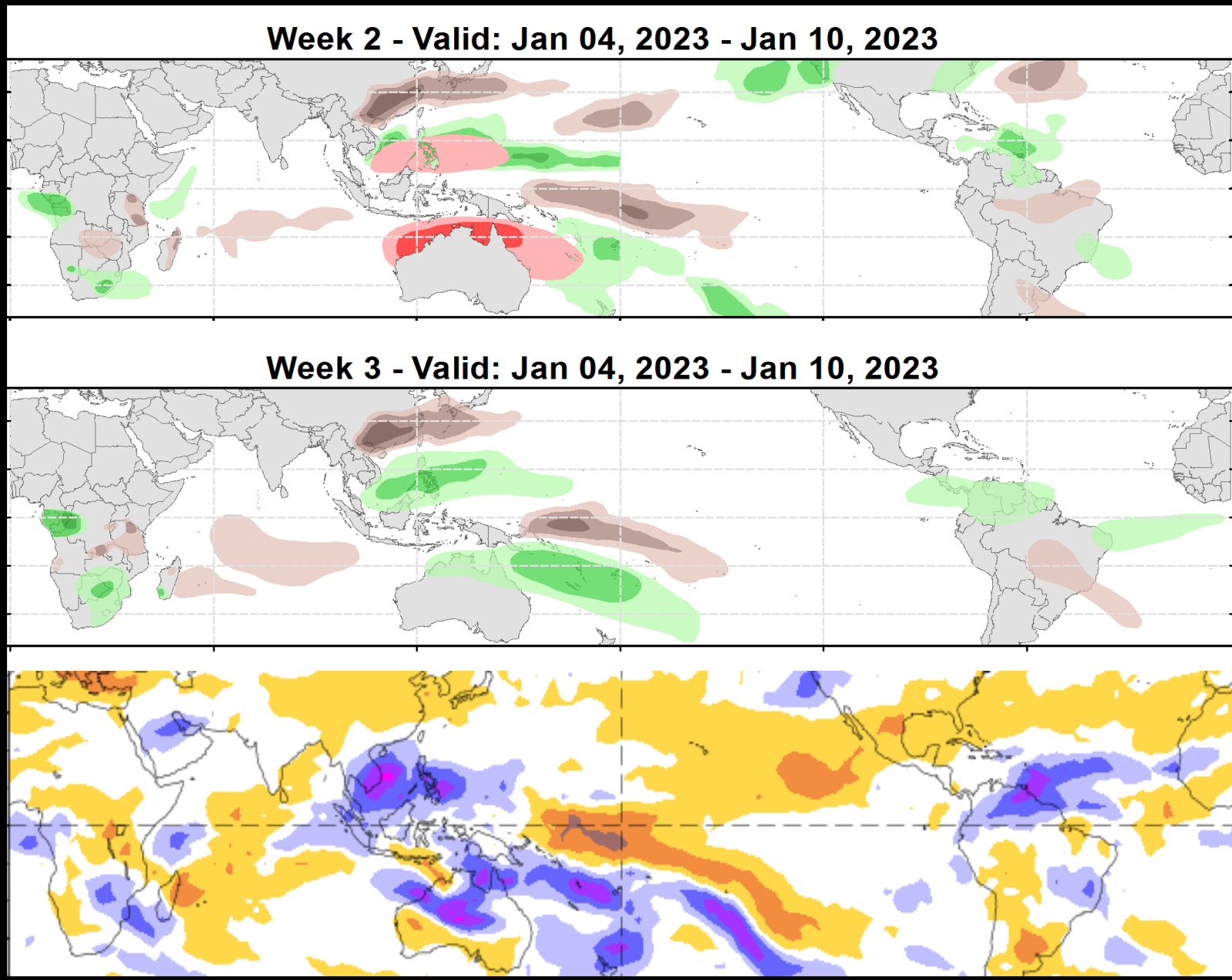


Weeks 2-3 Global Tropics Hazards Outlook

1/10/2023

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

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



Synopsis of Climate Modes:

ENSO: (Dec 8, 2022 Update) *next update on Thursday, Jan 12th*

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is expected to continue into the winter, with equal chances of La Niña and ENSO-neutral during January-March 2023. In February-April 2023, there is a 71% chance of ENSO-neutral.

MJO and other subseasonal tropical variability:

- An active MJO signal is noted across the Western Pacific.
- Despite enhanced Rossby Wave activity, the enhanced intraseasonal signal has continued to propagate eastward, and is beginning to destructively interfere with the La Niña base state.
- During the next week to 10 days, the MJO may enhance chances of tropical cyclone (TC) development across the southwestern Pacific, with some potential for TC development increasing later in week-2 across the western Indian Ocean as the convective envelope circumnavigates the globe.
- While MJO propagation into phases 8 and 1 may ultimately favor a relatively cooler pattern to develop across much of the continental U.S., the dynamical models continue to persist above normal temperatures across the country through at least mid-January.

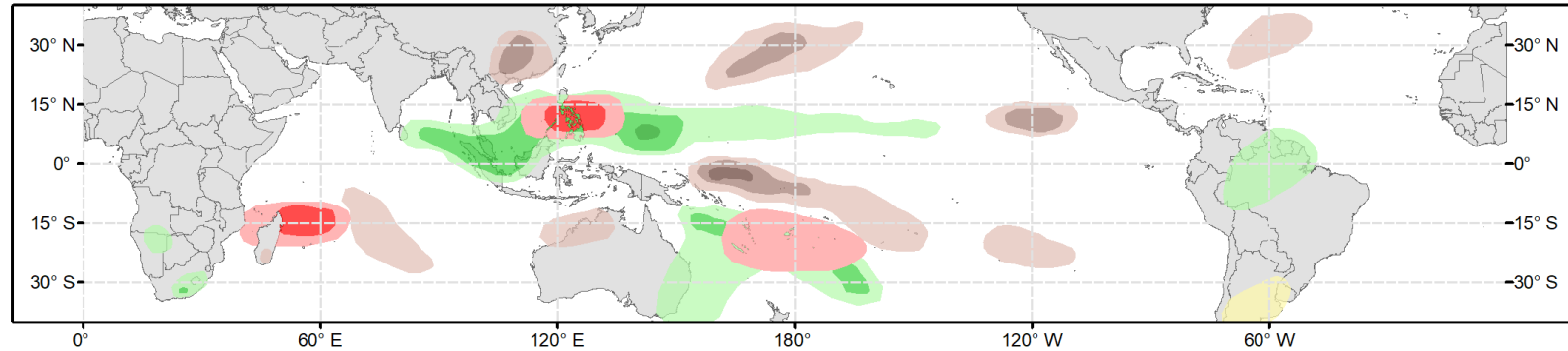
GTH Outlook:



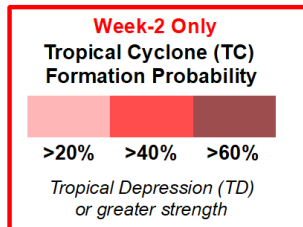
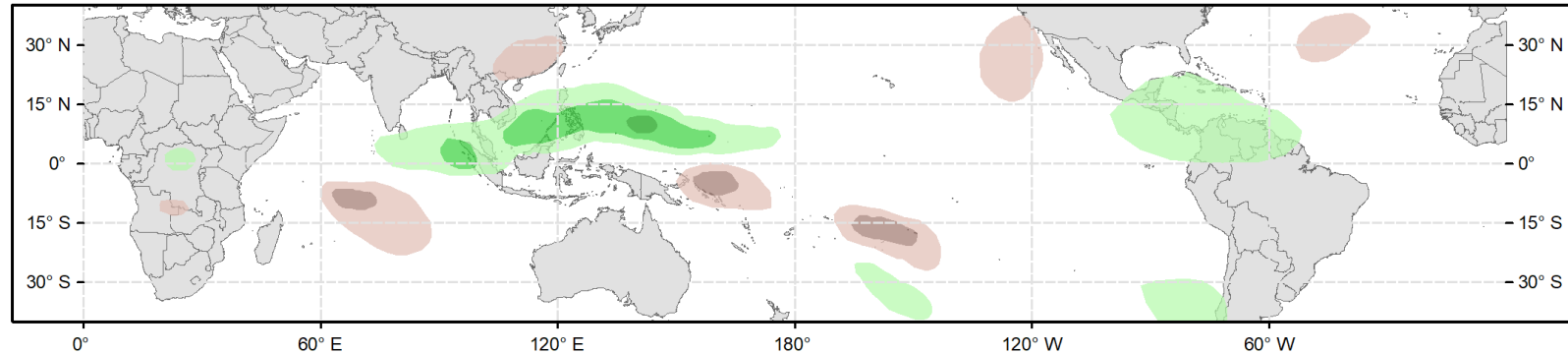
Global Tropics Hazards Outlook Climate Prediction Center



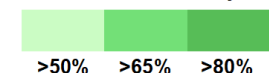
Week 2 - Valid: Jan 18, 2023 - Jan 24, 2023



Week 3 - Valid: Jan 25, 2023 - Jan 31, 2023

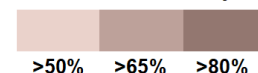


Above-Average Rainfall Probability



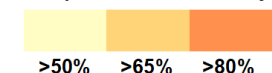
Weekly total rainfall in the Upper third of the historical range

Below-Average Rainfall Probability



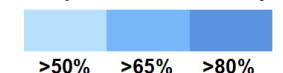
Weekly total rainfall in the Lower third of the historical range

Above-Average Temperatures Probability



7-day mean temperatures in the Upper third of the historical range

Below-Average Temperatures Probability



7-day mean temperatures in the Lower third of the historical range

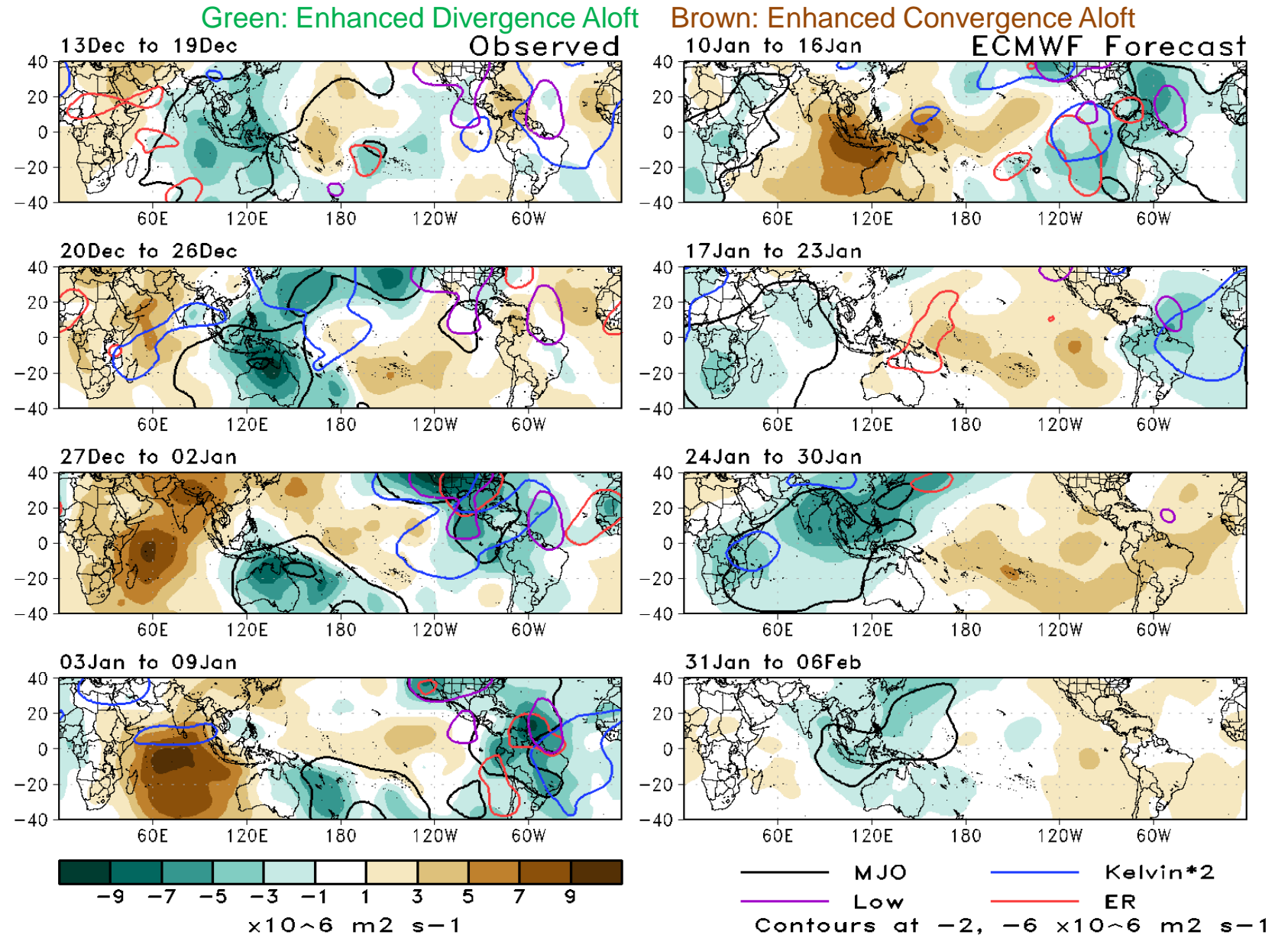
Issued: 01/10/2023

Forecaster: Barandiaran

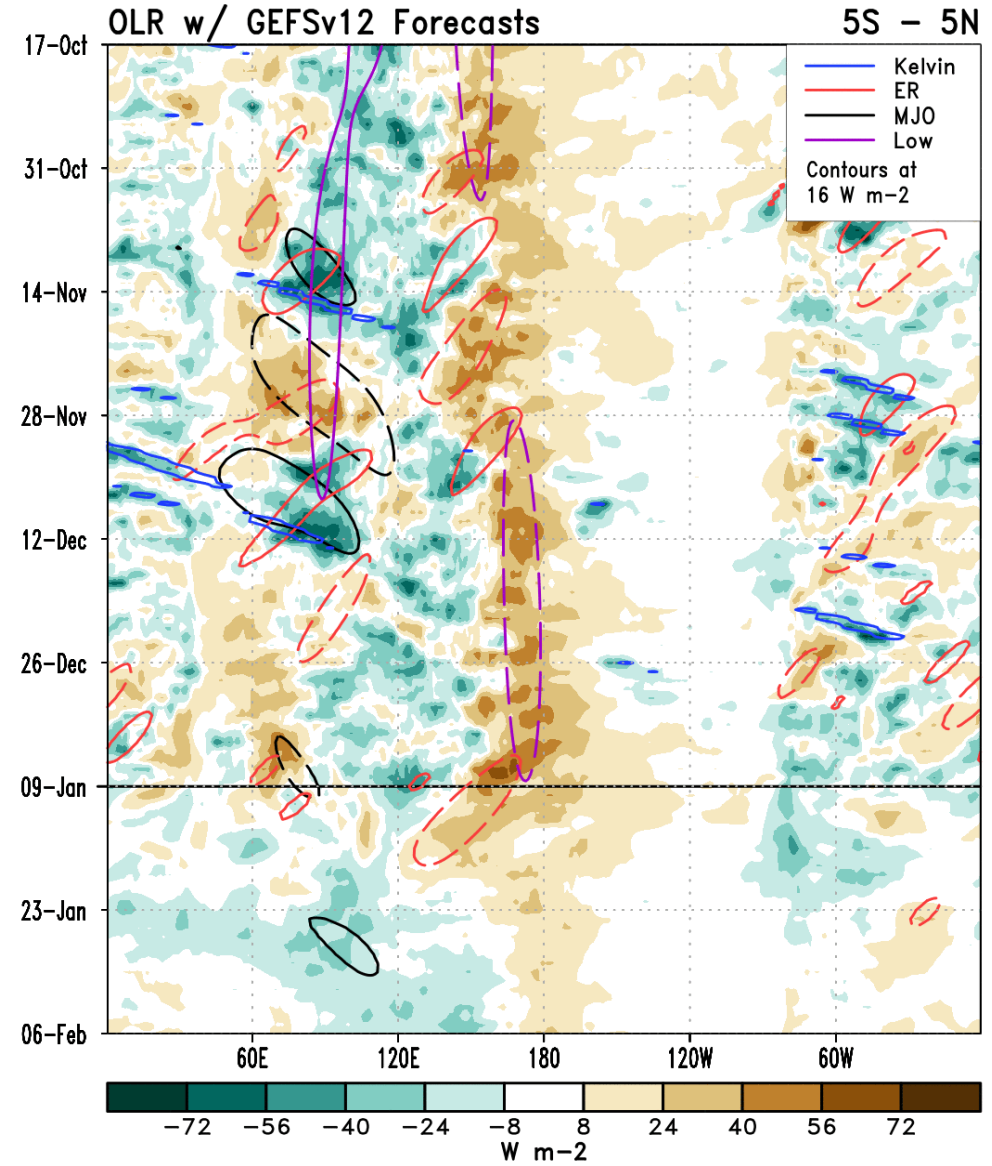
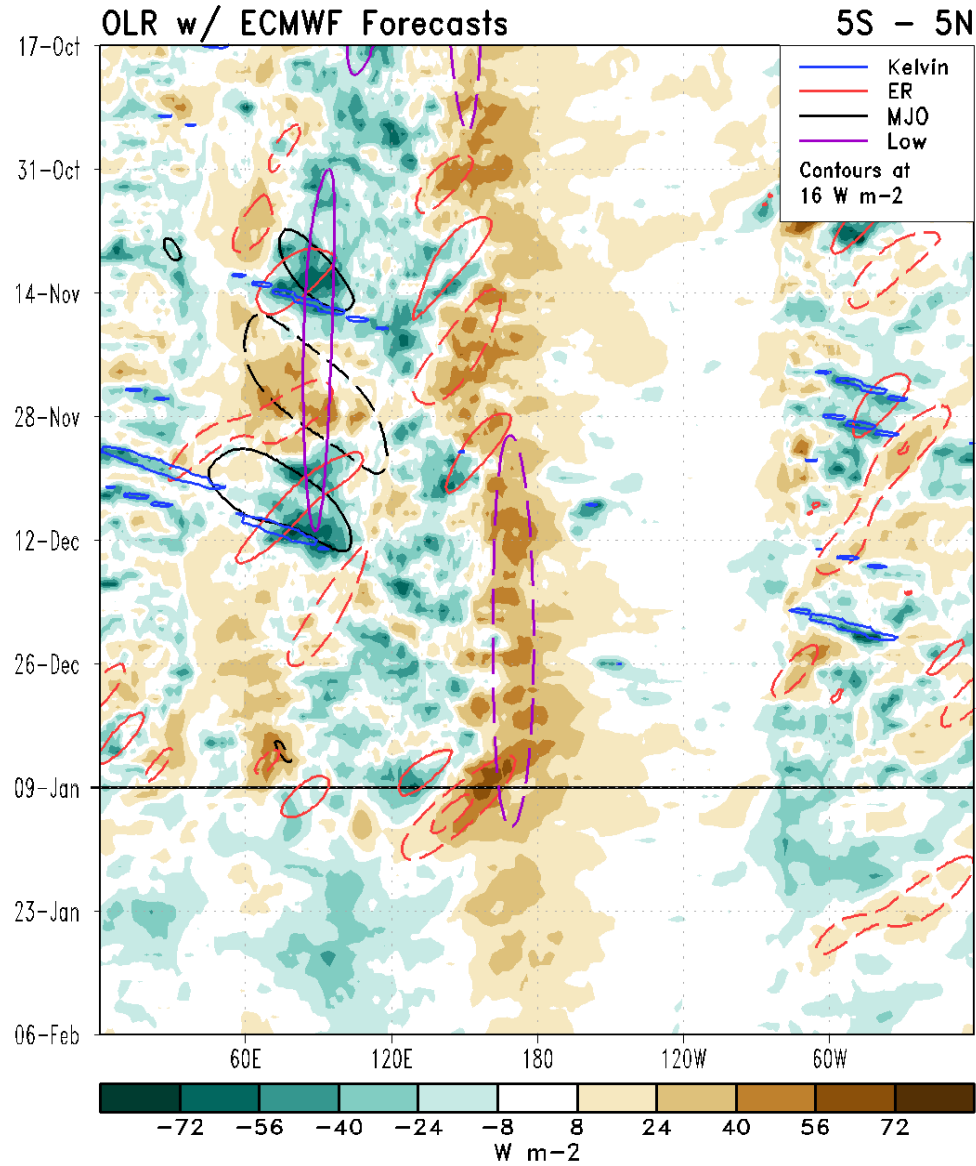
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

200-hPa Velocity Potential Anomaly Maps:

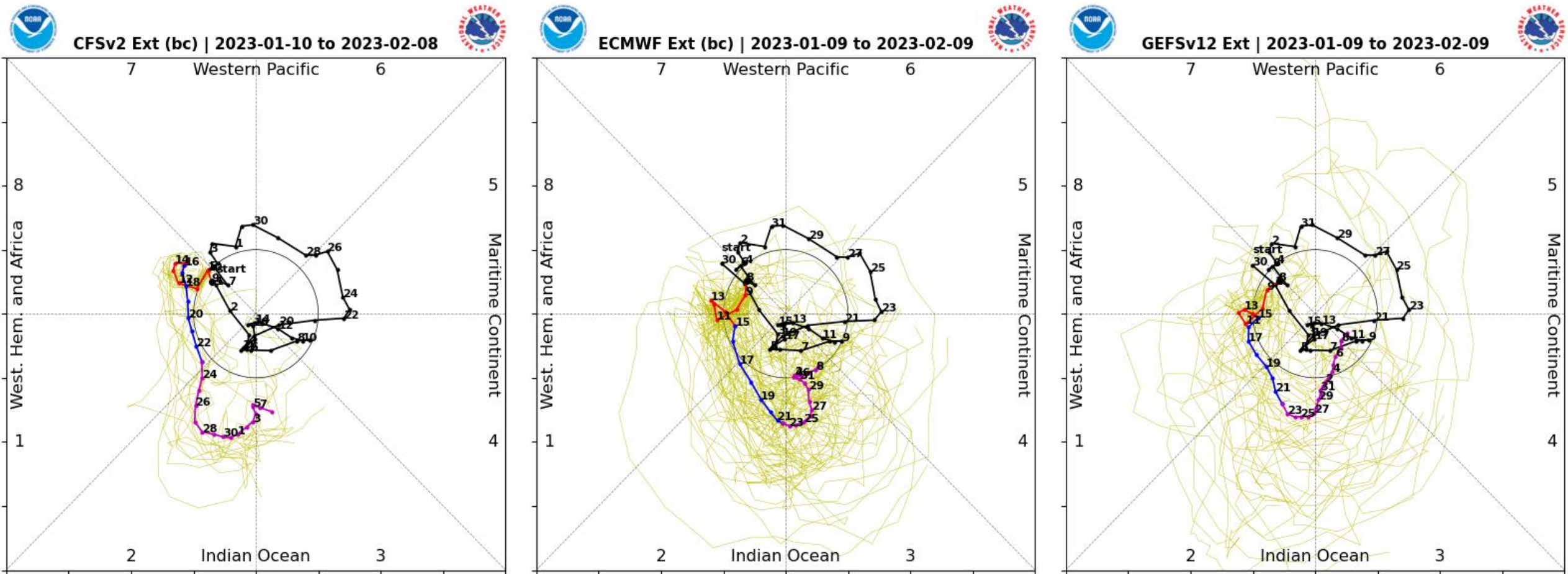
- Enhanced convective envelope moves from Americas into Africa during weeks 1-2, while suppressed convection moves off Maritime Continent and into tropical Pacific.
- By week-3, MJO signal increases as convective envelope moves into the Indian Ocean.



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



RMM Index Observations & Forecasts:

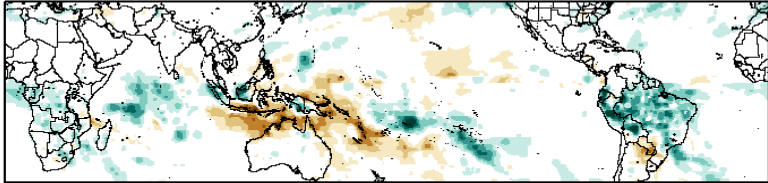


- Good agreement among various models indicating continued eastward propagation of MJO signal after a brief stall in phase 8 during week 1.
- As signal propagates into phases 1 and 2 RMM signal is favored to increase, before once again subsiding as index approaches phase 3.

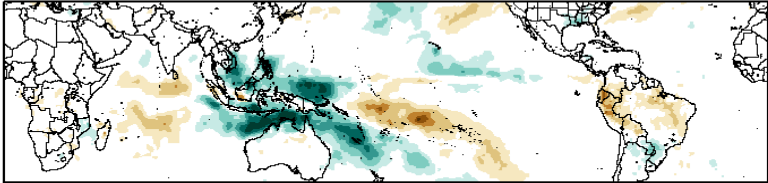
Historical Precipitation Anomalies By MJO Phase:

DJF MJO Composite: GPCP1DD (mm/day)

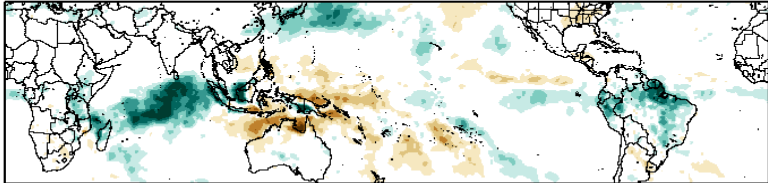
Phase 1



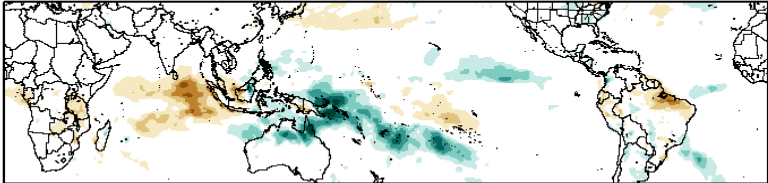
Phase 5



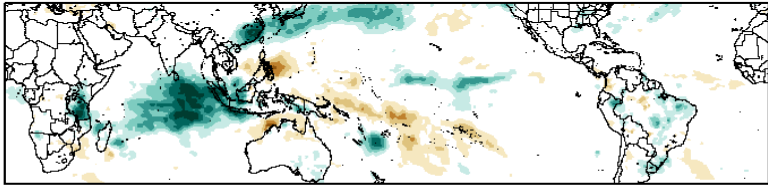
Phase 2



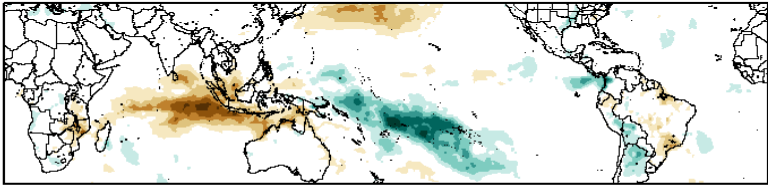
Phase 6



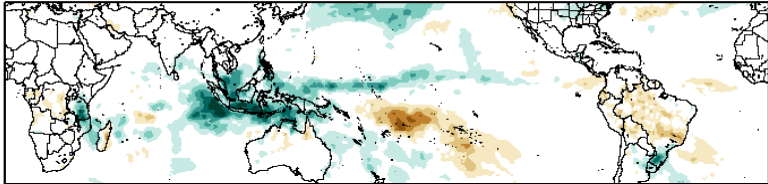
Phase 3



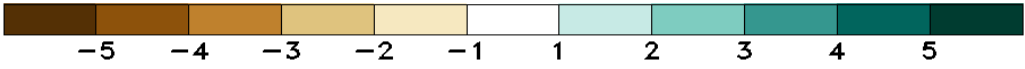
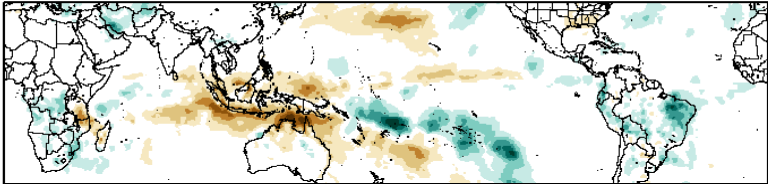
Phase 7



Phase 4



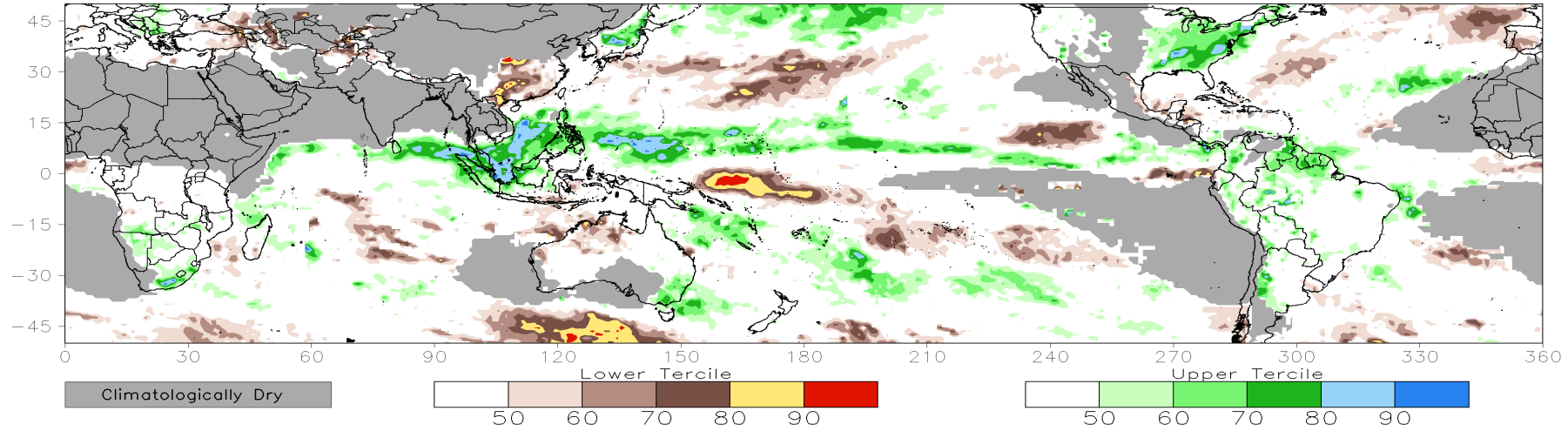
Phase 8



Consolidated Probabilistic Precipitation: Weeks 2 & 3

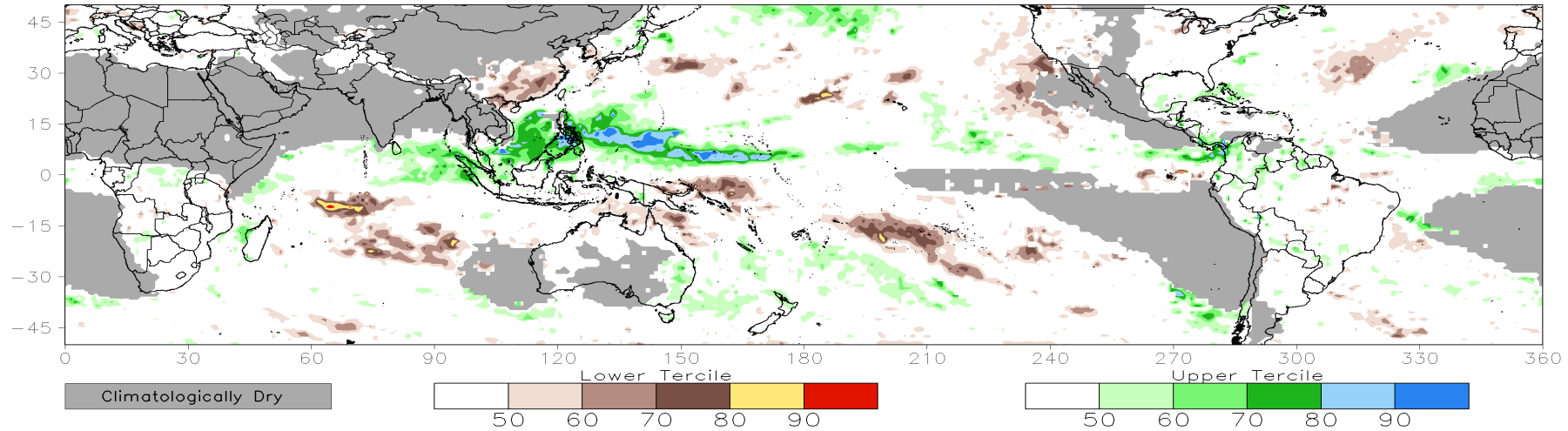
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 18Jan2023–24Jan2023

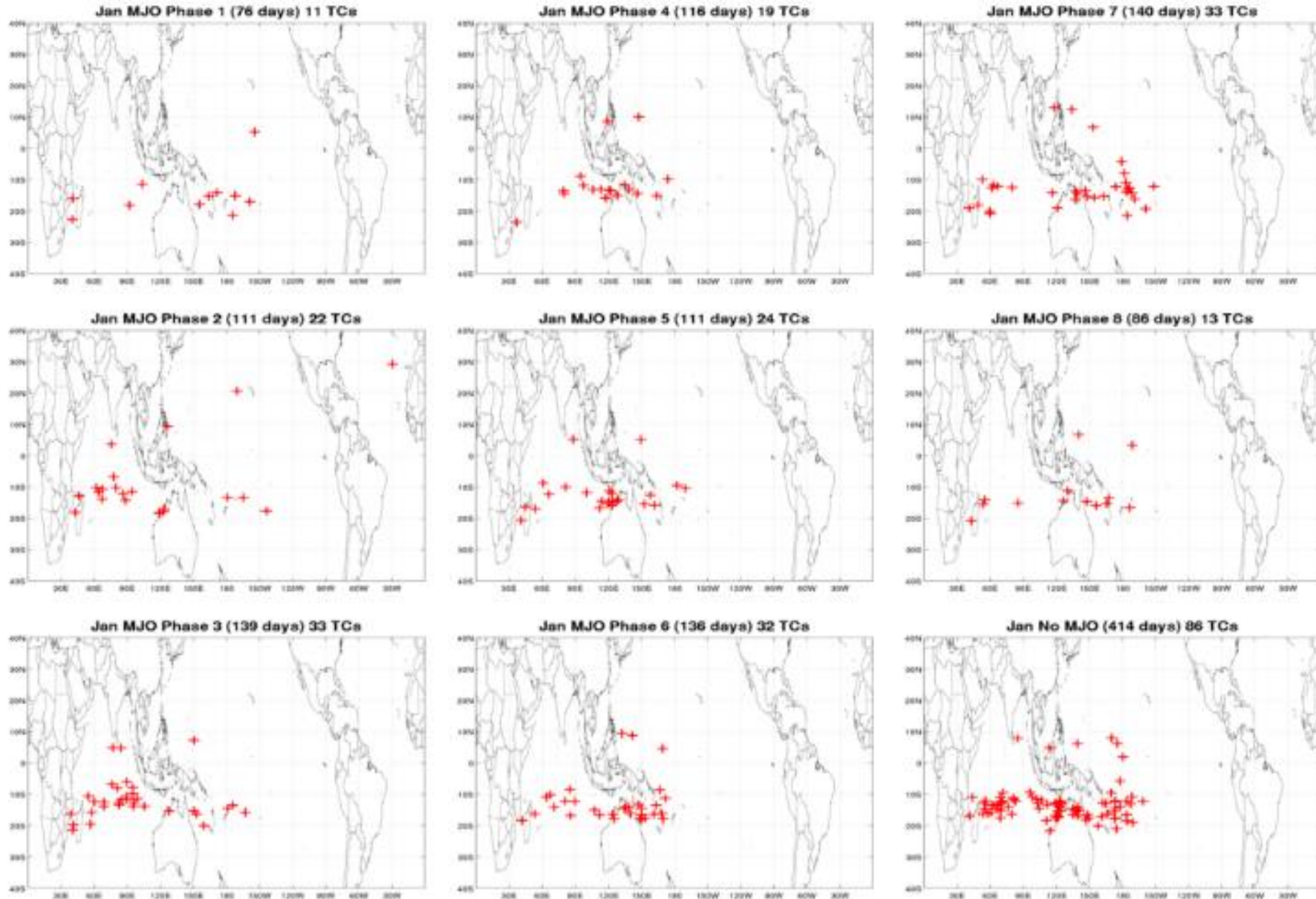


CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

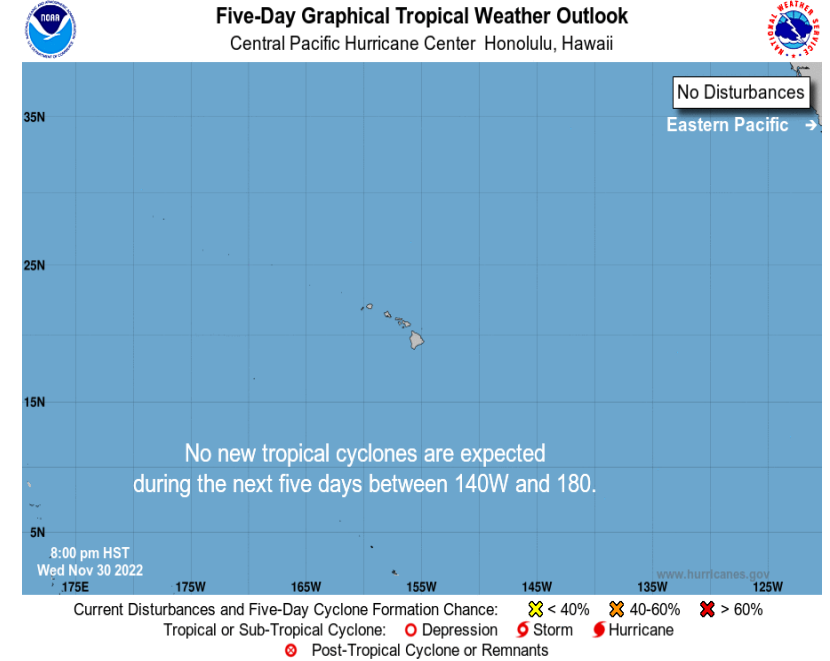
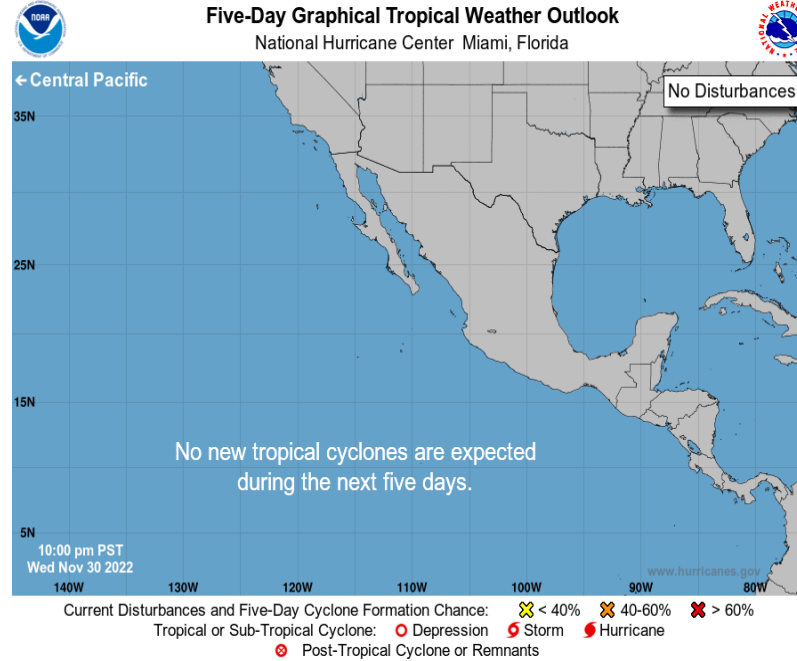
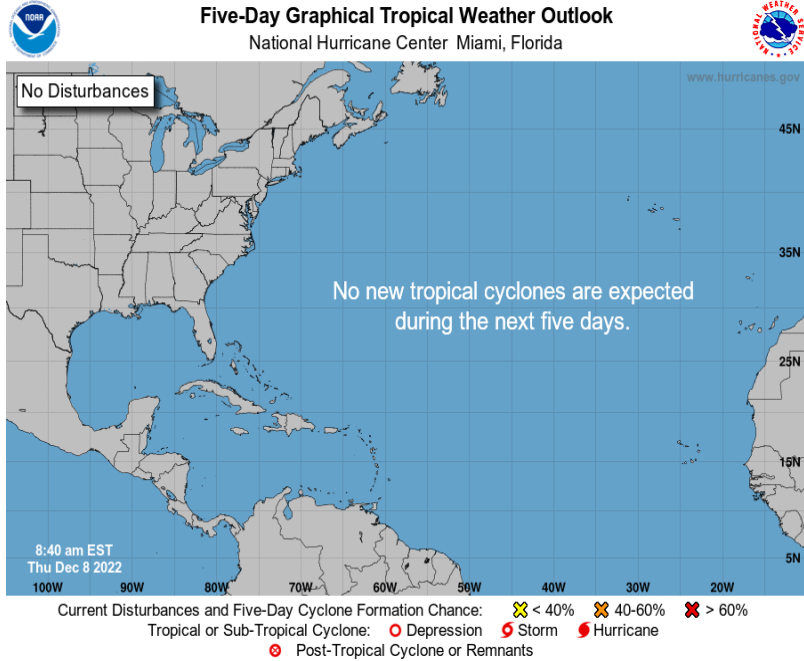
Valid: 25Jan2023–31Jan2023



Historical TC Genesis Origins By MJO Phase:



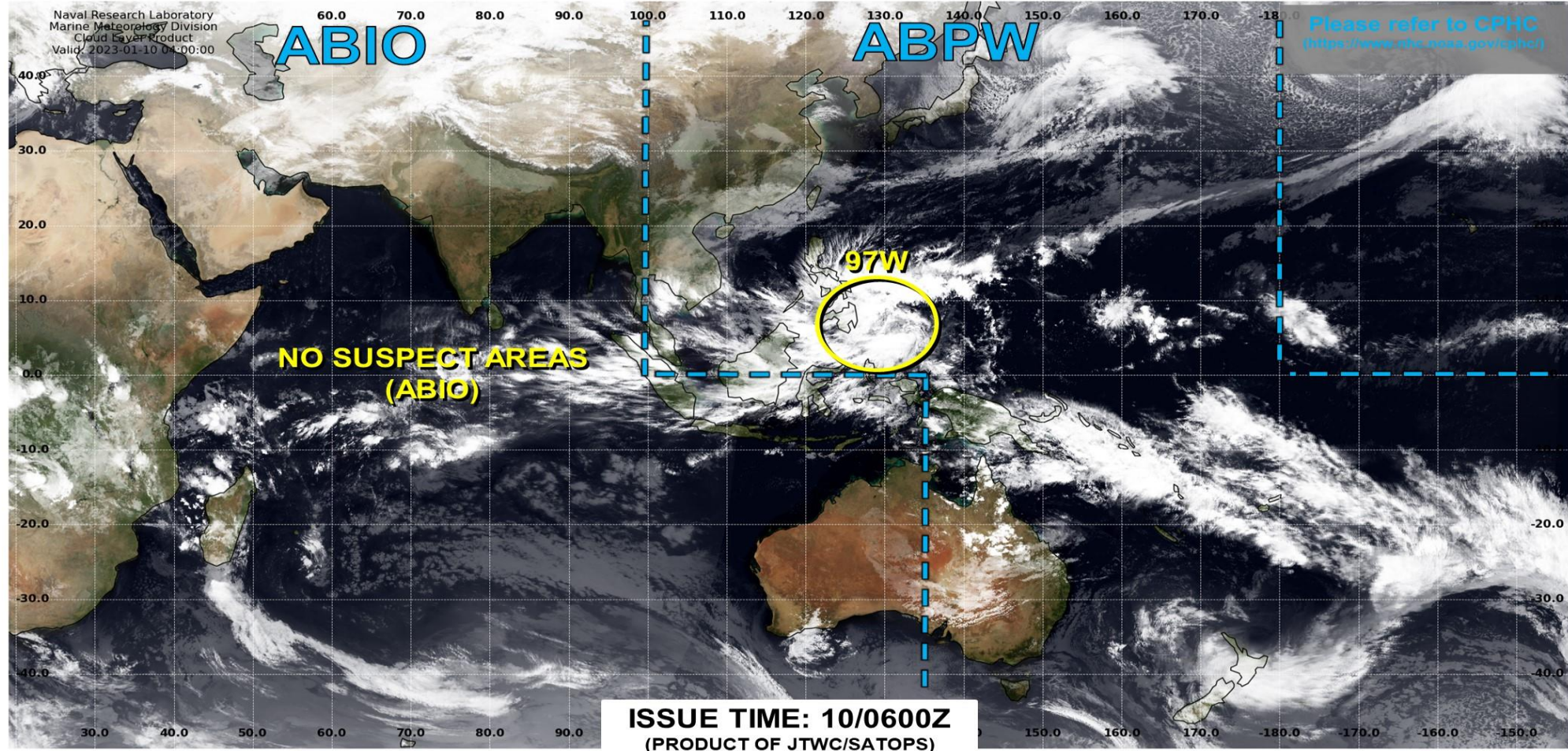
Tropical Cyclone Monitoring/Forecast: NHC



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)

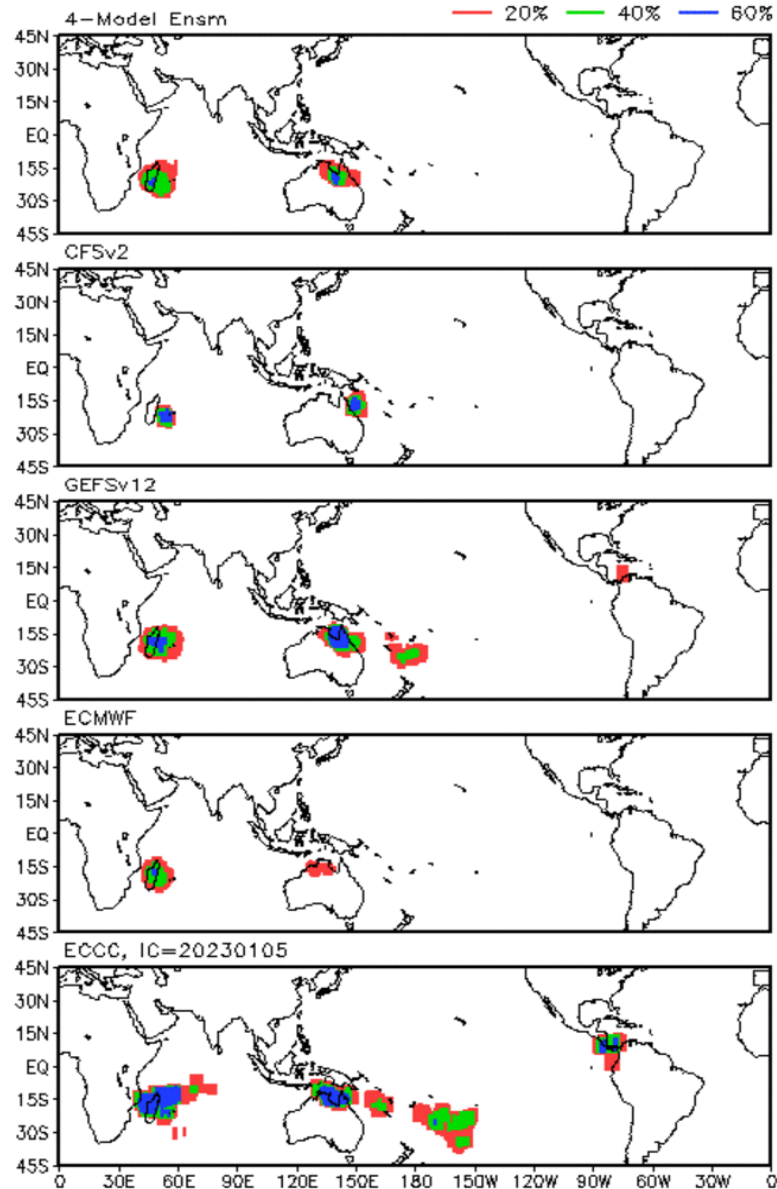


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

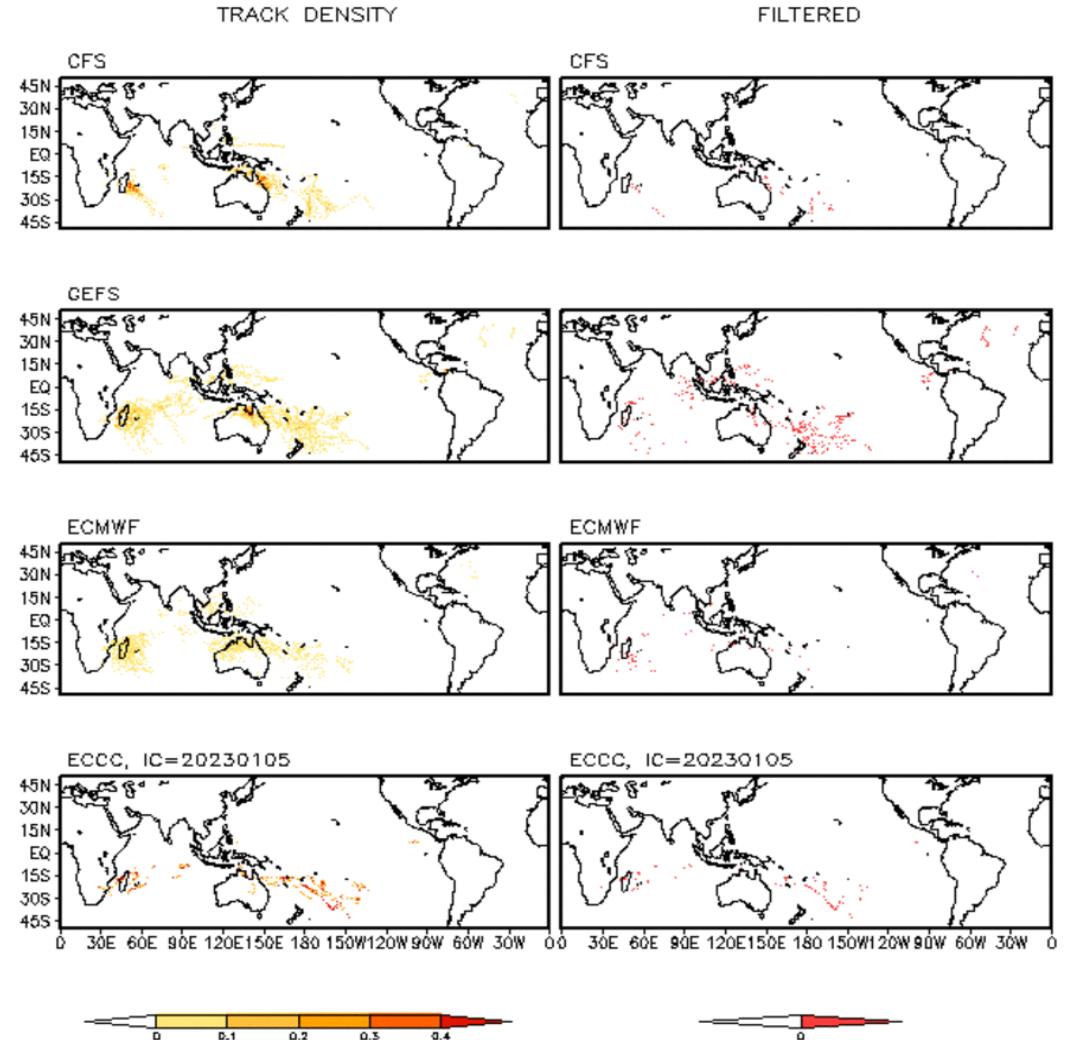
 Tropical Cyclone (Reference Warning)

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

Storm Track Probabilities, IC=20230109
Week 2: 0118 - 0124



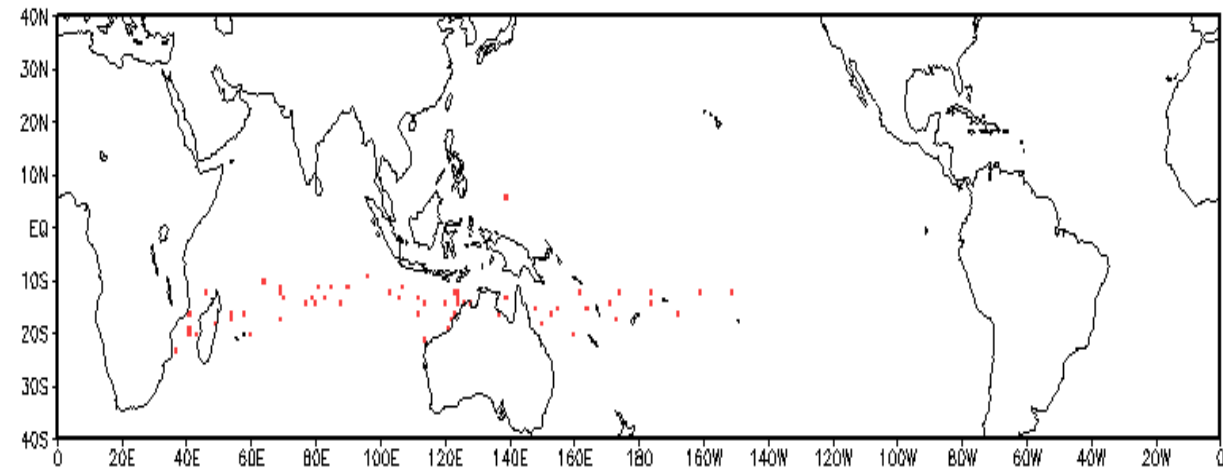
Storm Track Density Distribution, IC=20230109
Week 2 Forecast: 0118-0124



TC Climatological Genesis: Weeks 2 & 3

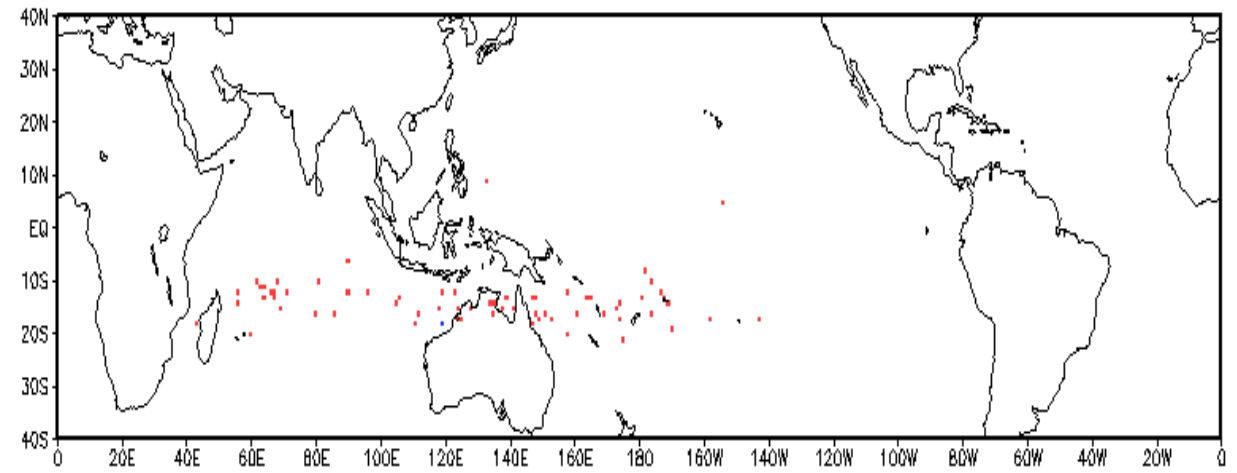
Observed TC Genesis, 1979–2021

7-day Period 0118 to 0124



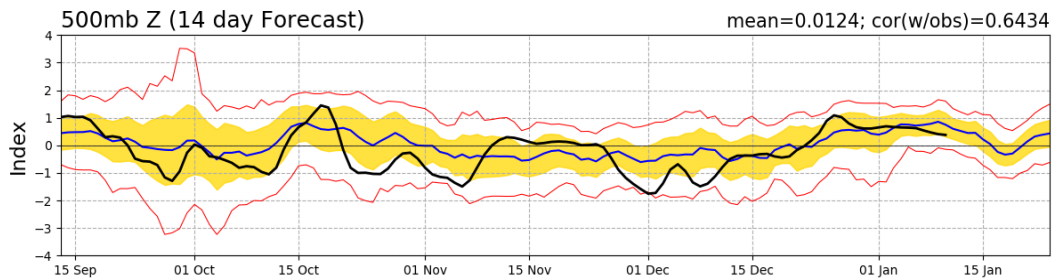
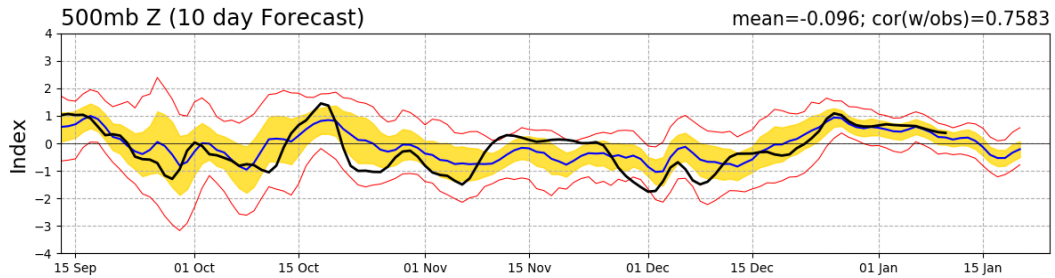
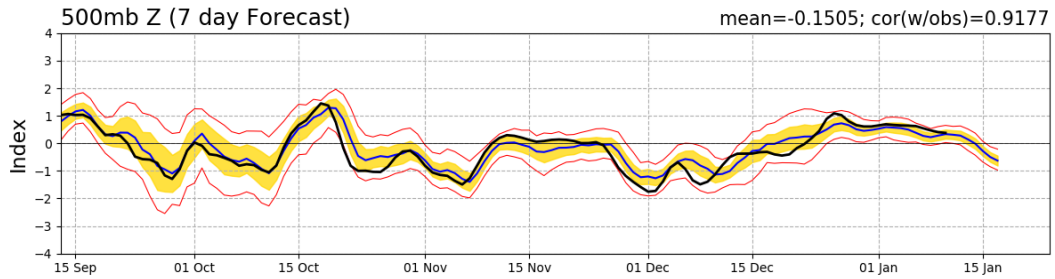
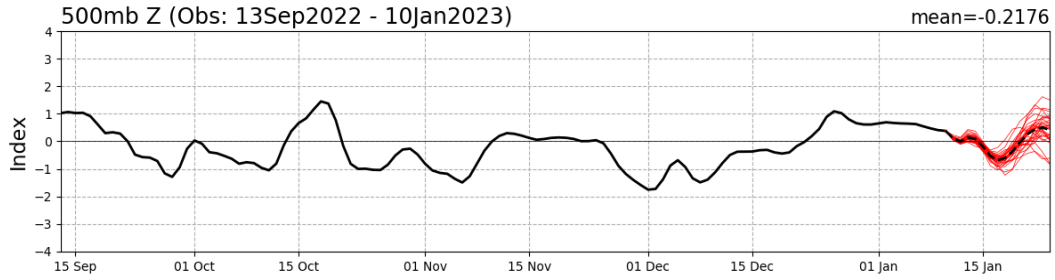
Observed TC Genesis, 1979–2021

7-day Period 0125 to 0131

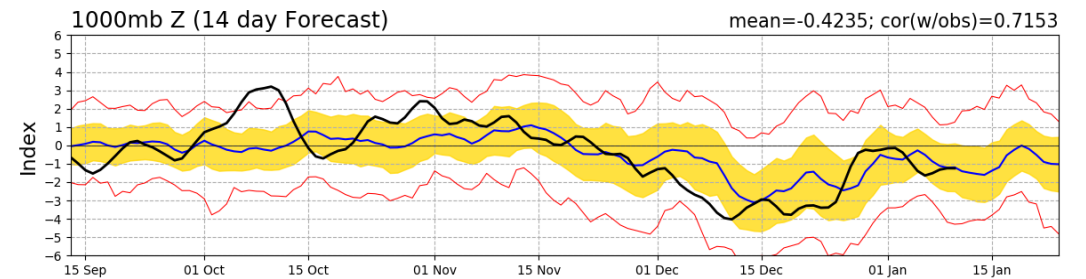
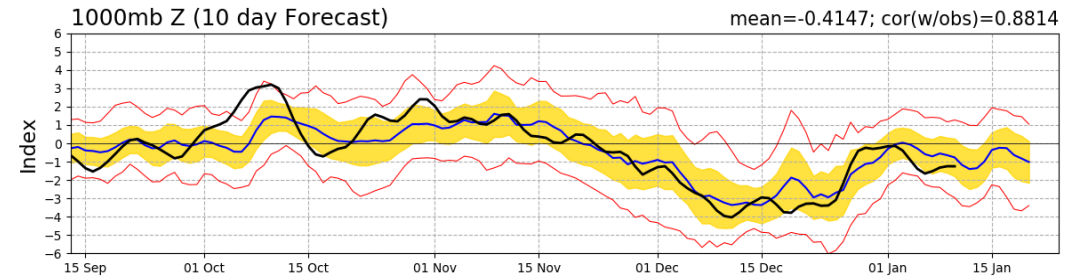
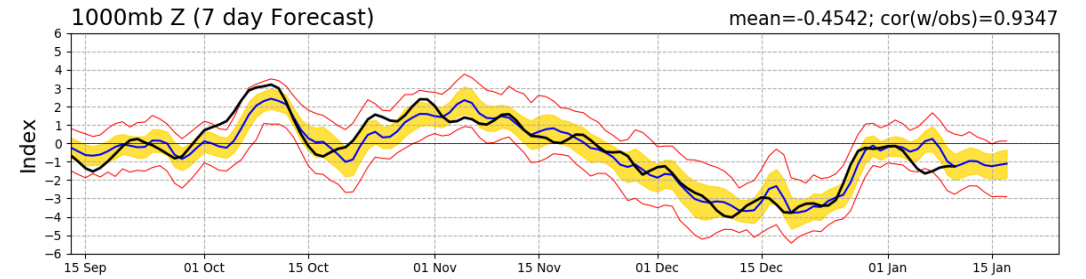
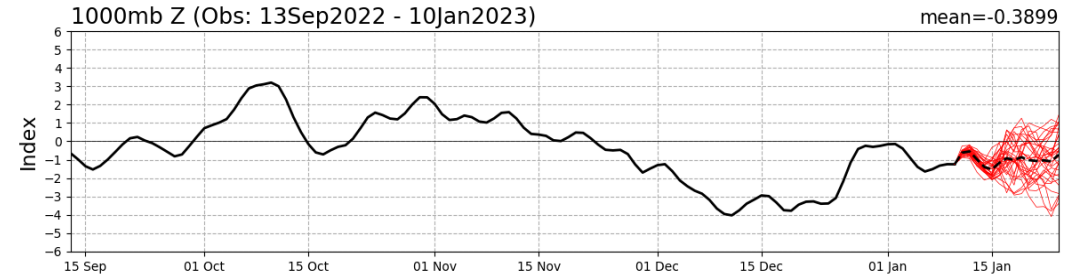


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

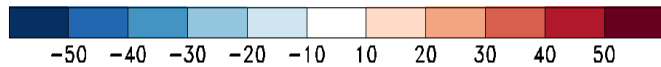
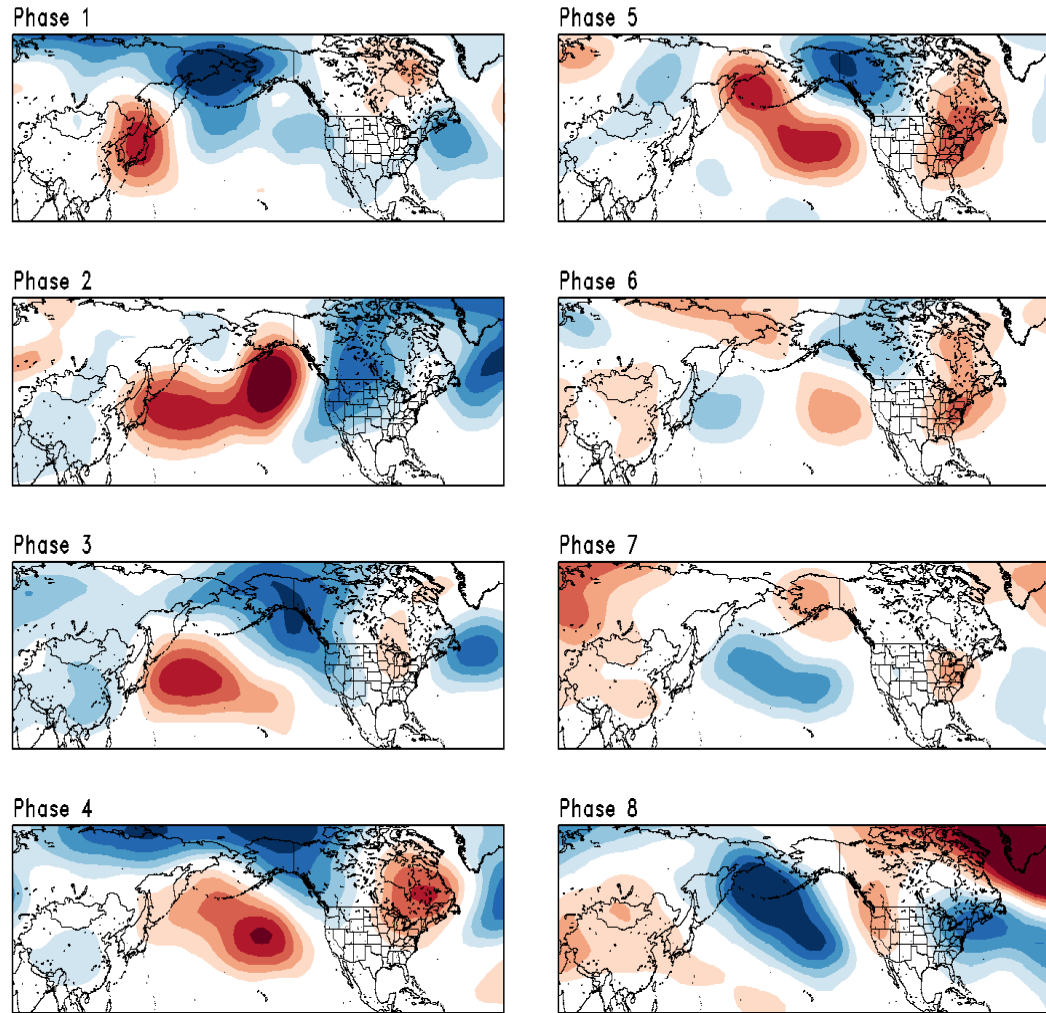


AO Index: Observed & GEFS Forecasts

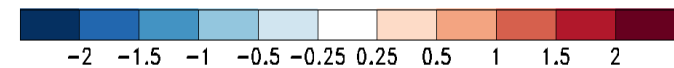
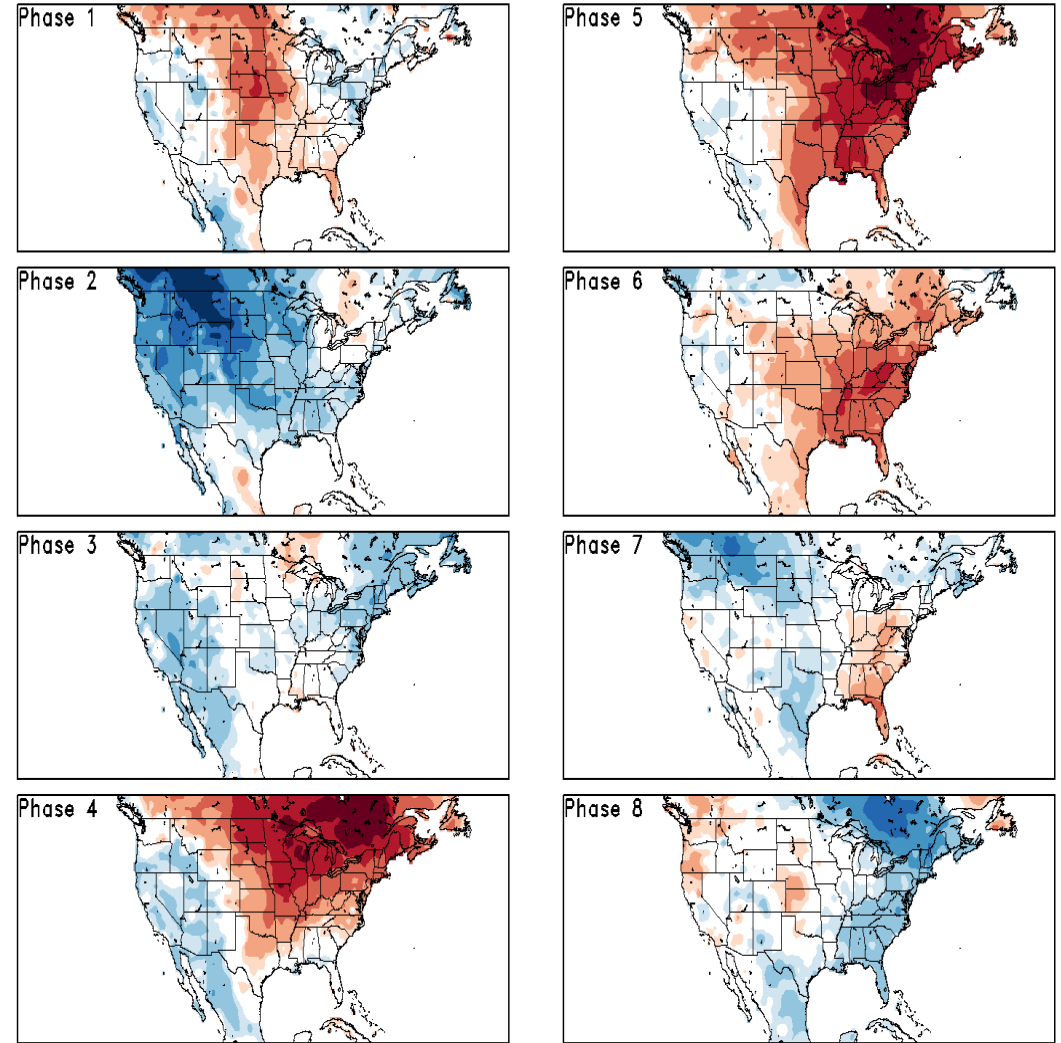


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

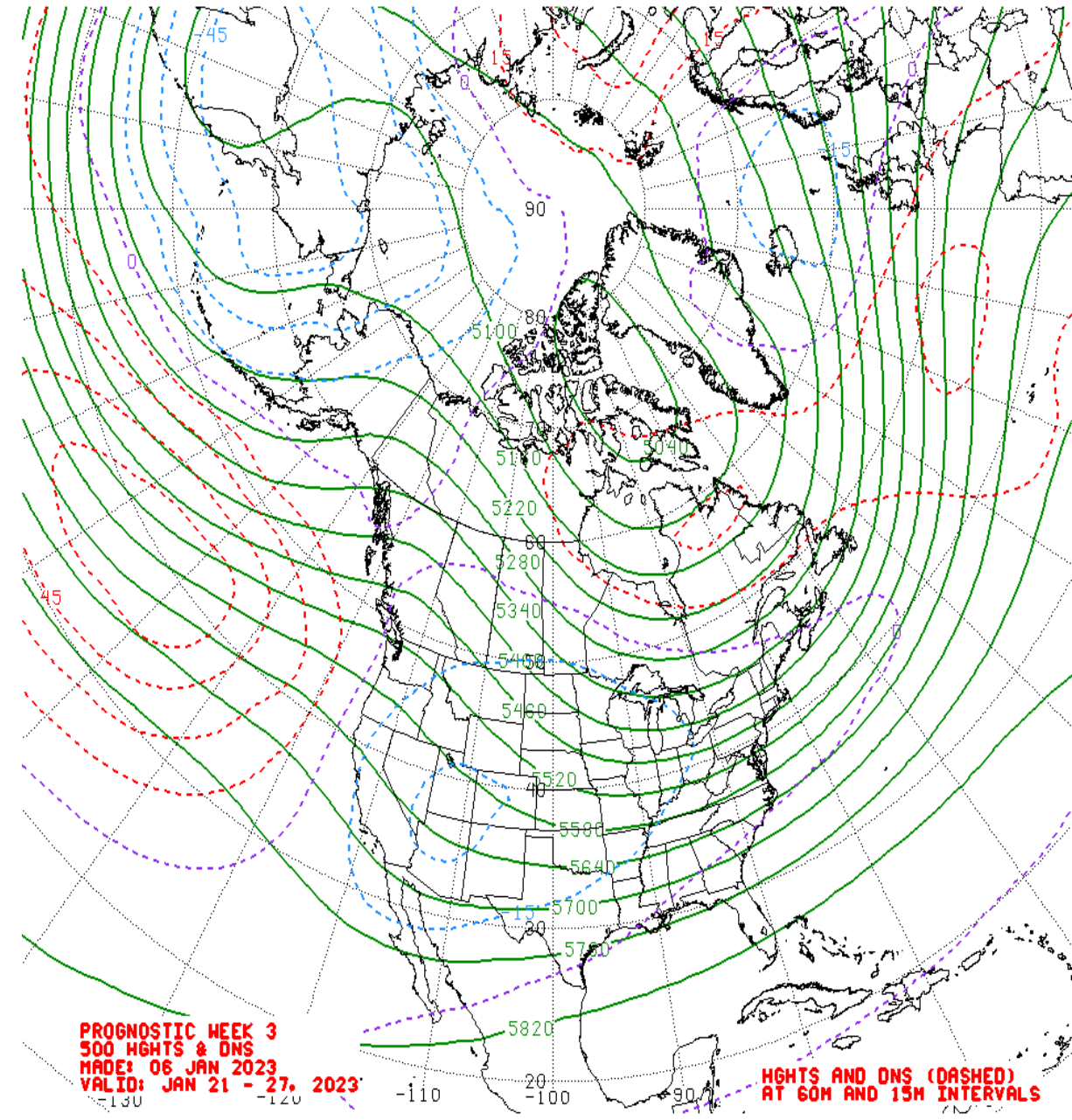
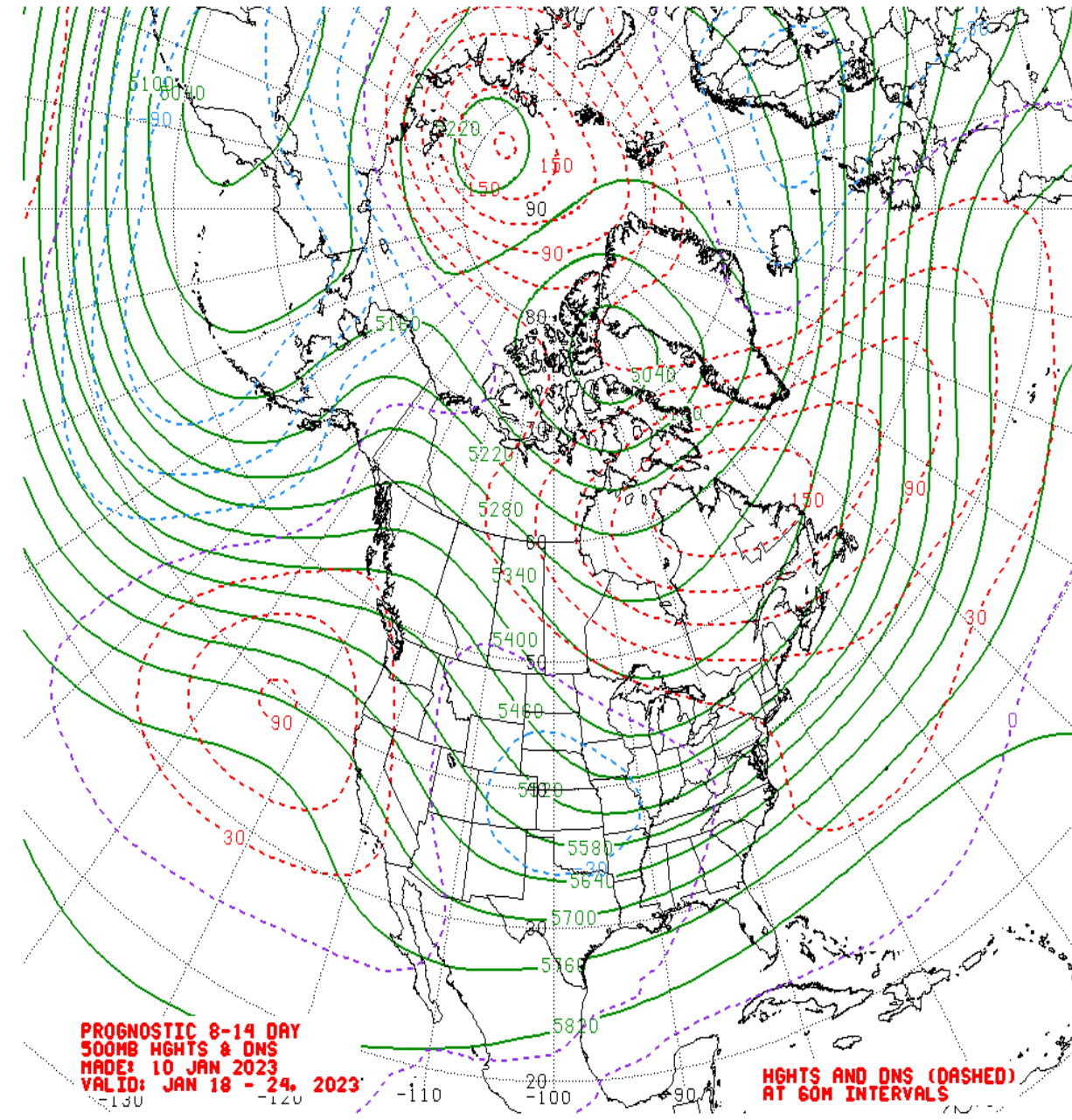
DJF MJO Composite: CDAS 500-hPa Height (m)



DJF MJO Composite: GLBT (degC)



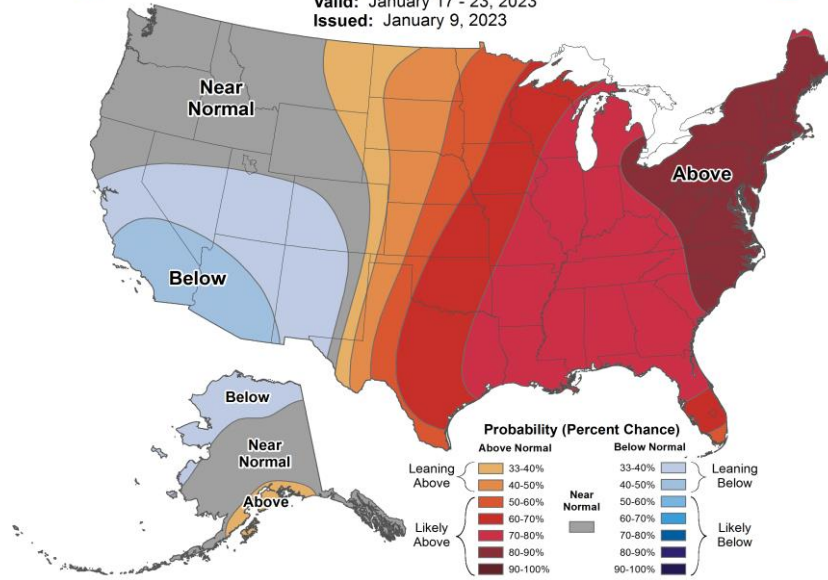
Mean 500-hPa Height Anomaly Forecasts:



Official Temperature & Precipitation Forecasts:

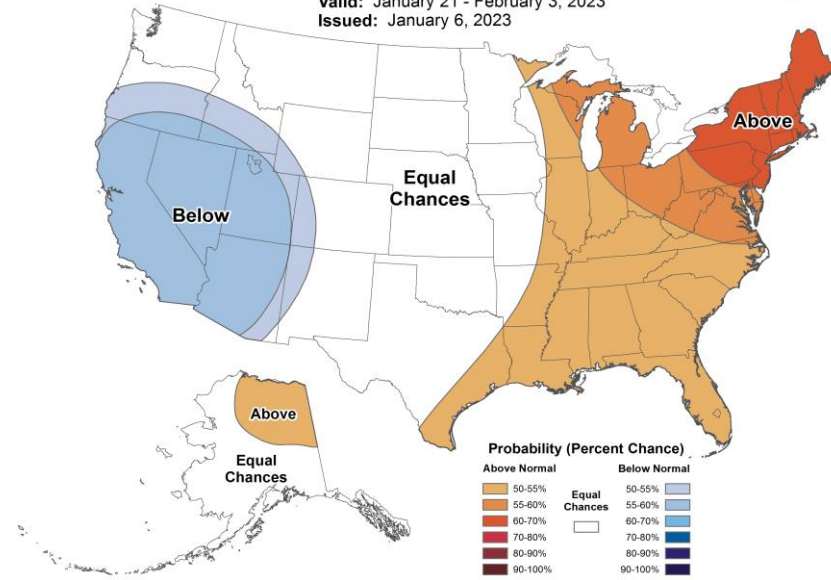
8-14 Day Temperature Outlook

Valid: January 17 - 23, 2023
Issued: January 9, 2023



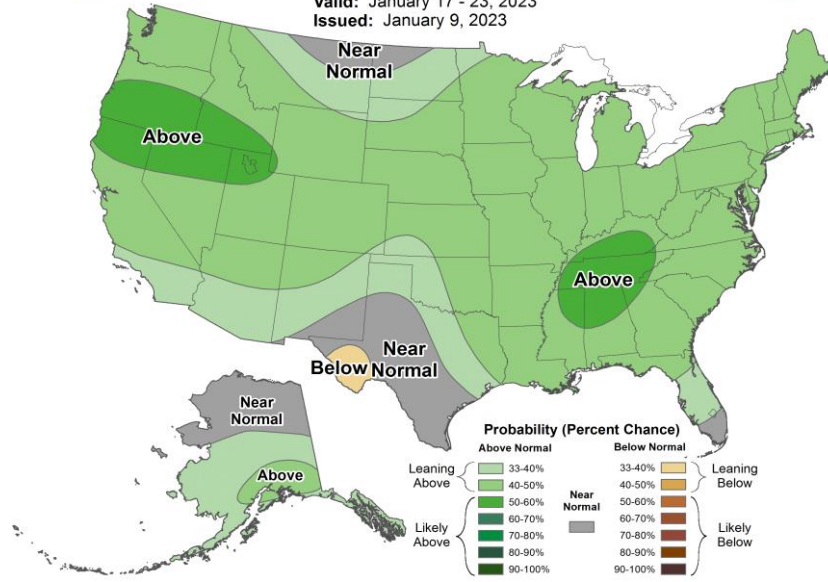
Weeks 3-4 Temperature Outlook

Valid: January 21 - February 3, 2023
Issued: January 6, 2023



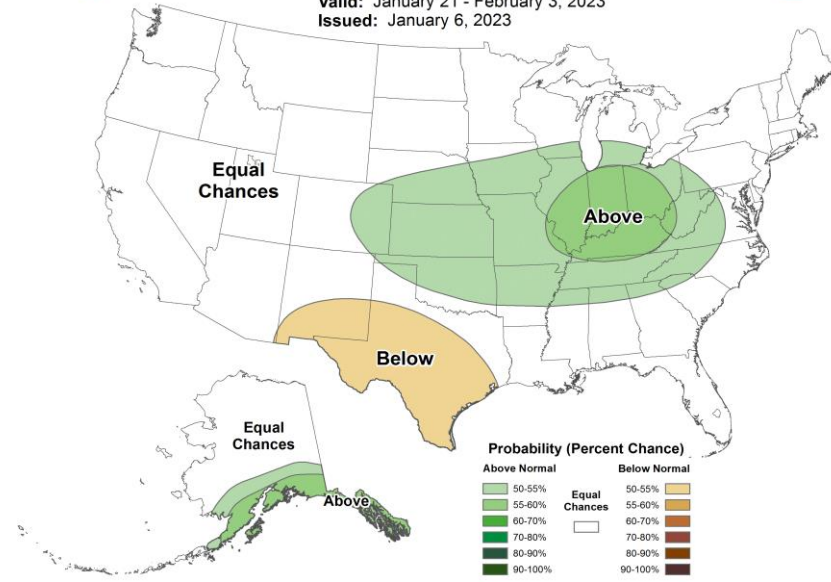
8-14 Day Precipitation Outlook

Valid: January 17 - 23, 2023
Issued: January 9, 2023



Weeks 3-4 Precipitation Outlook

Valid: January 21 - February 3, 2023
Issued: January 6, 2023



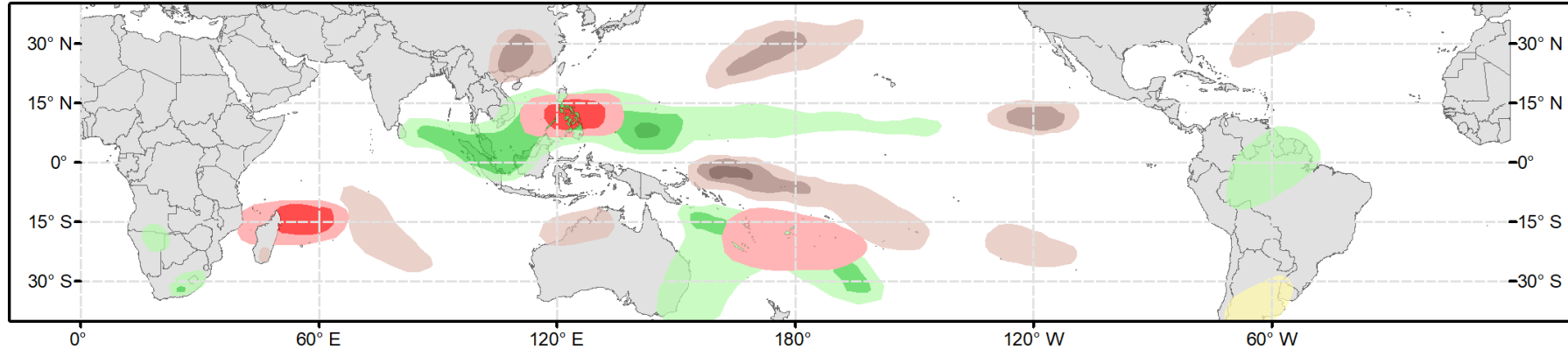


Global Tropics Hazards Outlook

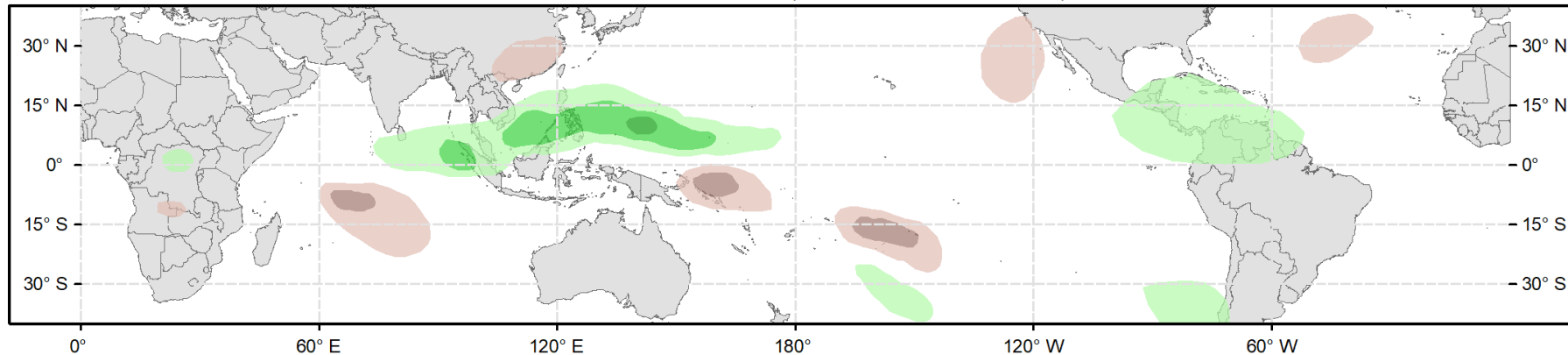
Climate Prediction Center



Week 2 - Valid: Jan 18, 2023 - Jan 24, 2023



Week 3 - Valid: Jan 25, 2023 - Jan 31, 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 mean temperatures in the Upper third of the historical range

Below-Average Temperatures Probability

>50% >65% >80%

7-day mean temperatures in the Lower third of the historical range

Issued: 01/10/2023

Forecaster: Barandiaran

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.