



# Weeks 2-3 Global Tropics Hazards Outlook

1/17/2023

Nick Novella

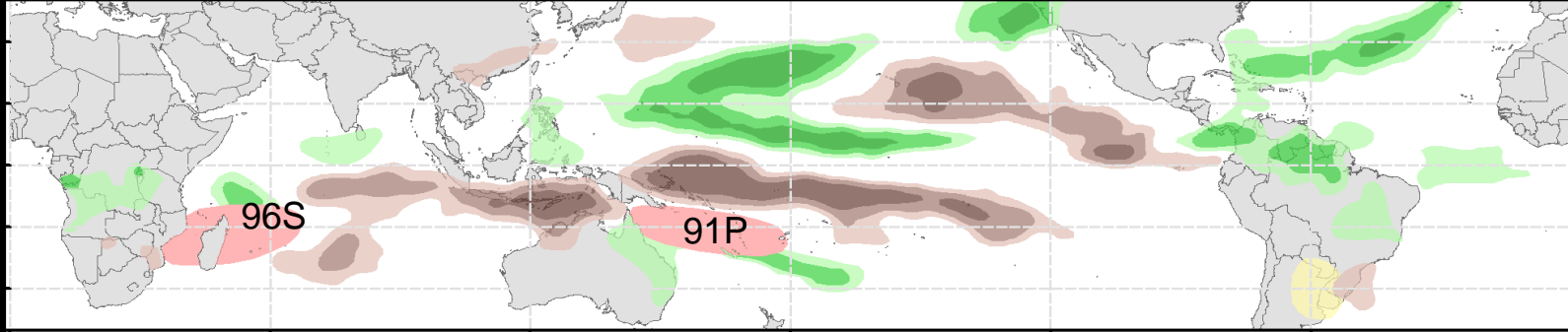
NWS / NCEP / Climate Prediction Center

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

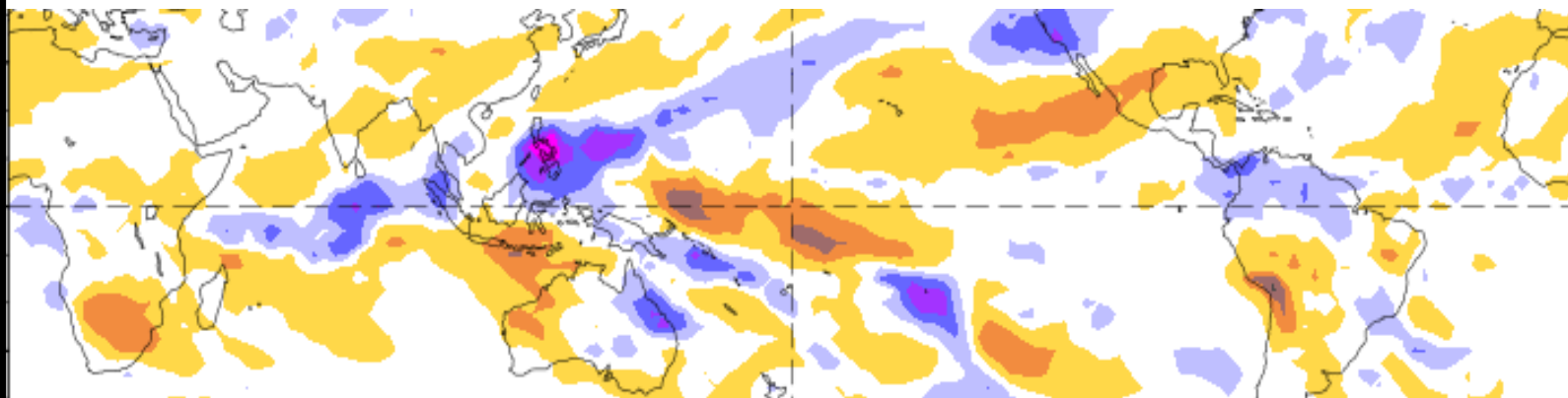
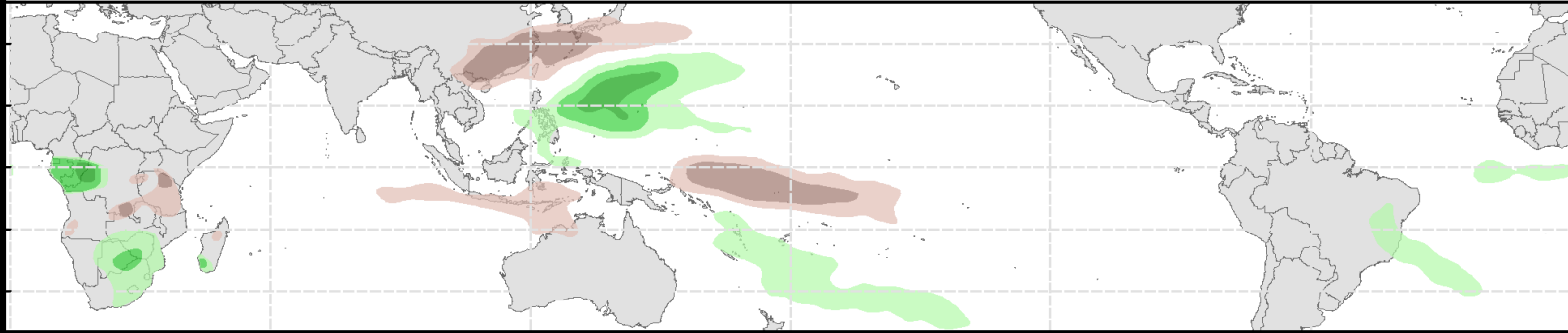
No TCs formed since Jan 11

However, JTWC has issued TCFAs on 96S and 91P with high chances of formation in next 24hrs.

**Week 2 - Valid: Jan 11, 2023 - Jan 17, 2023**



**Week 3 - Valid: Jan 11, 2023 - Jan 17, 2023**



# Synopsis of Climate Modes:

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

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

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

- The MJO remains active, however the RMM and upper-level velocity potential indices reveal both a slowed and weakened signal over the western Hemisphere during the past week.
- There is continued good agreement in the RMM forecasts favoring a more coherent, and potentially robust MJO event emerging over the Indian Ocean during the next two weeks. In the extended range, there is some question as to how well these forecasts handle the strength of the MJO as it crosses the Maritime Continent later in February.
- The large scale environment is expected to remain conducive for tropical cyclone development, mainly in the southwestern basin, with decreasing chances for genesis in the South Pacific.
- The potential for a constructively interfering MJO may reinforce the La Nina base state and its typical extratropical response over North America as models advertise more of a negative PNA pattern taking shape entering February.

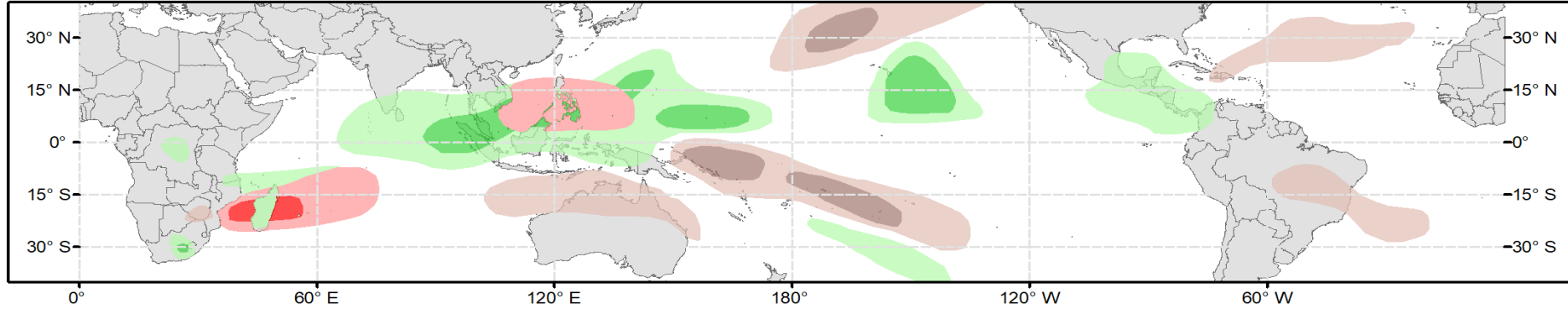
# GTH Outlook:



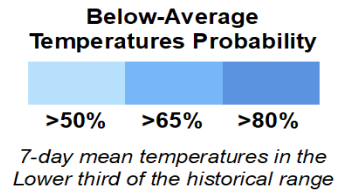
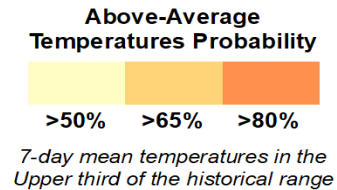
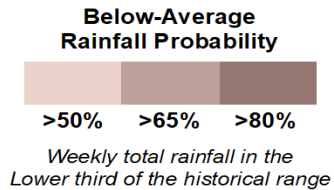
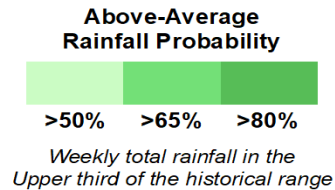
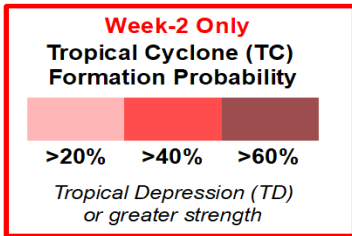
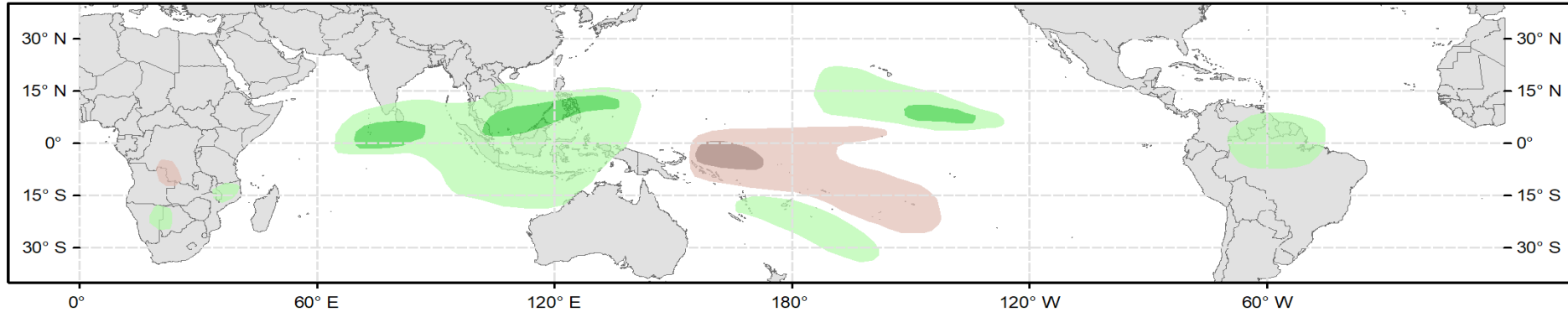
## Global Tropics Hazards Outlook Climate Prediction Center



**Week 2 - Valid: Jan 25, 2023 - Jan 31, 2023**



**Week 3 - Valid: Feb 01, 2023 - Feb 07, 2023**

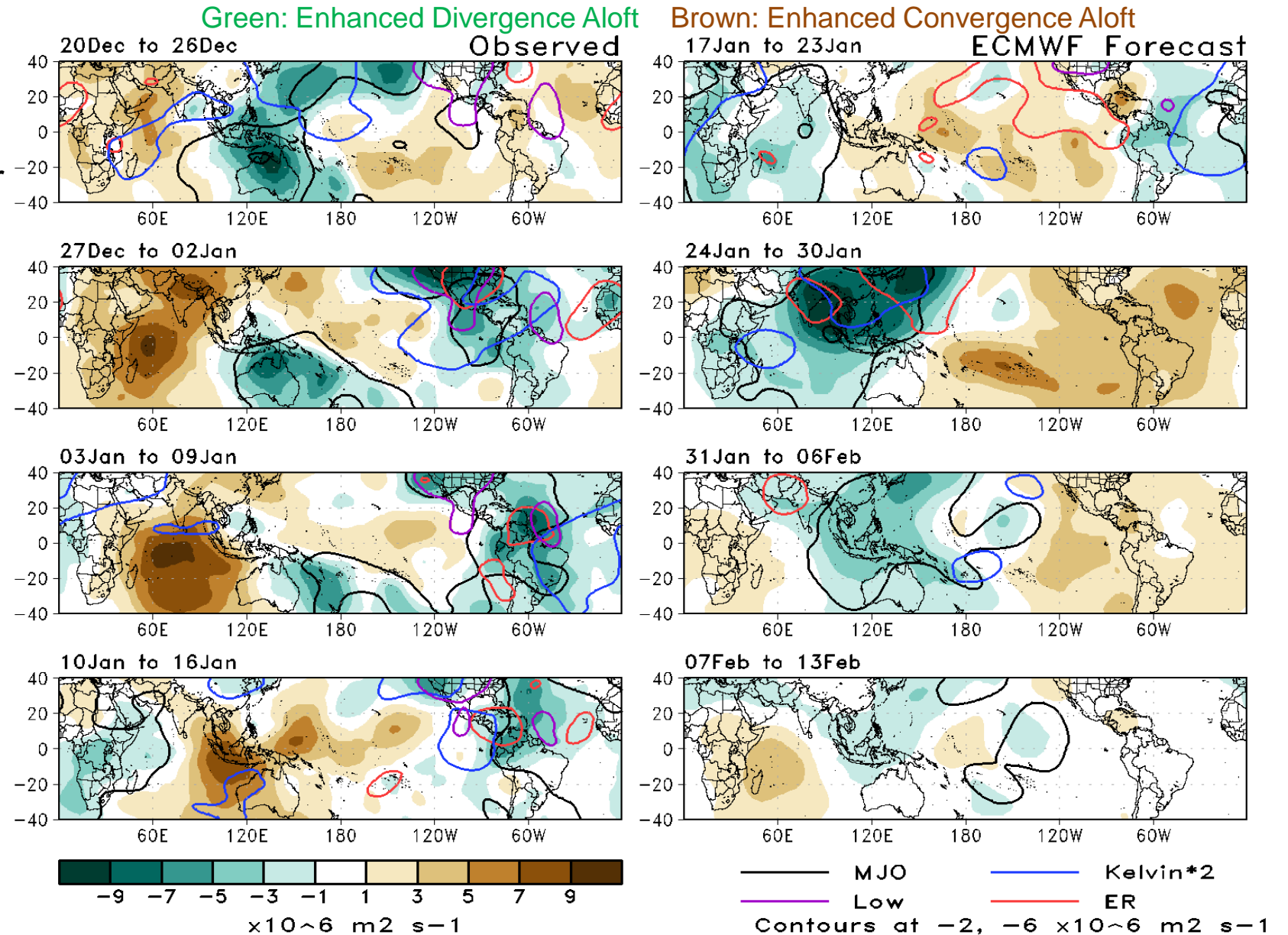


**Issued: 01/17/2023**  
**Forecaster: Novella**

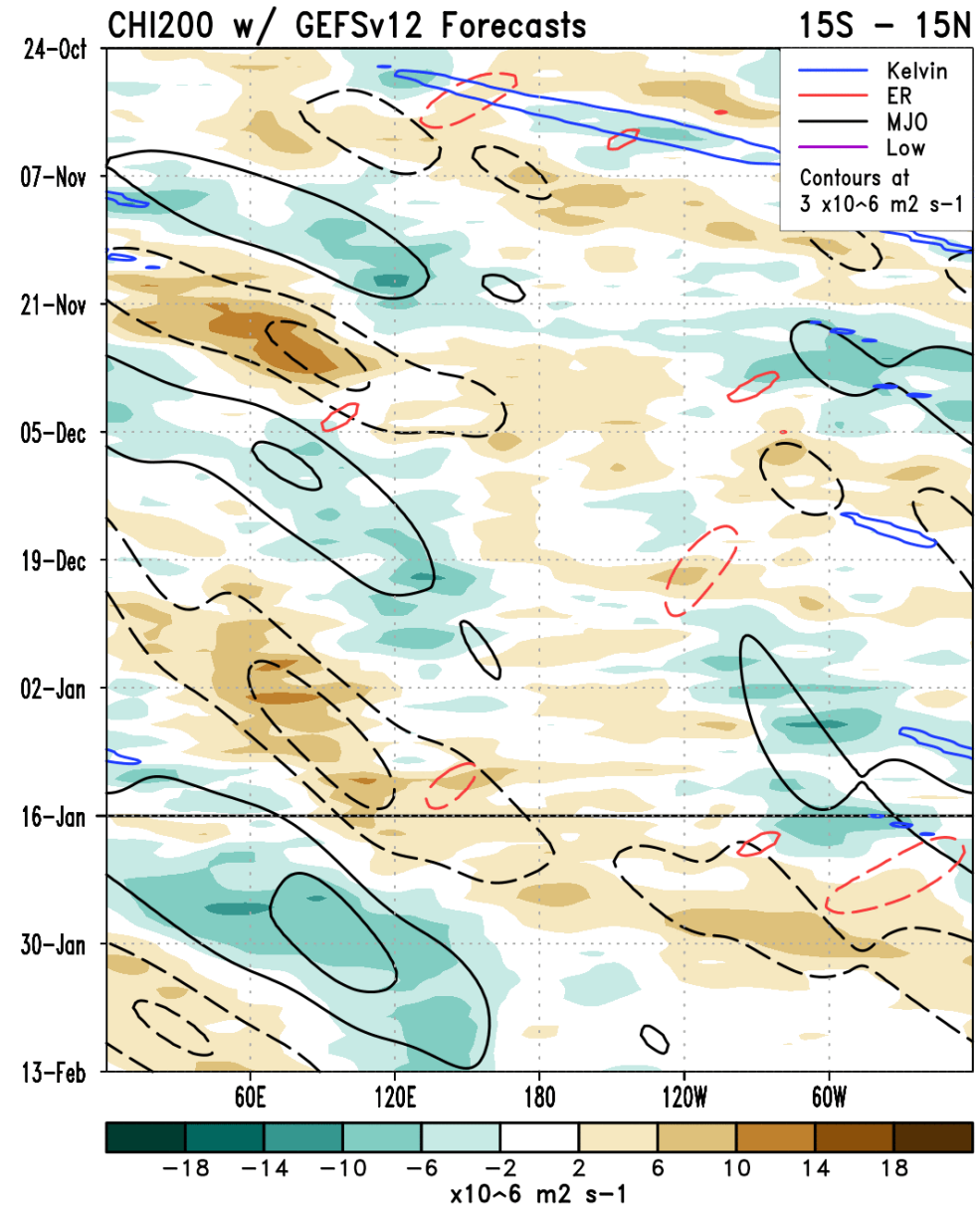
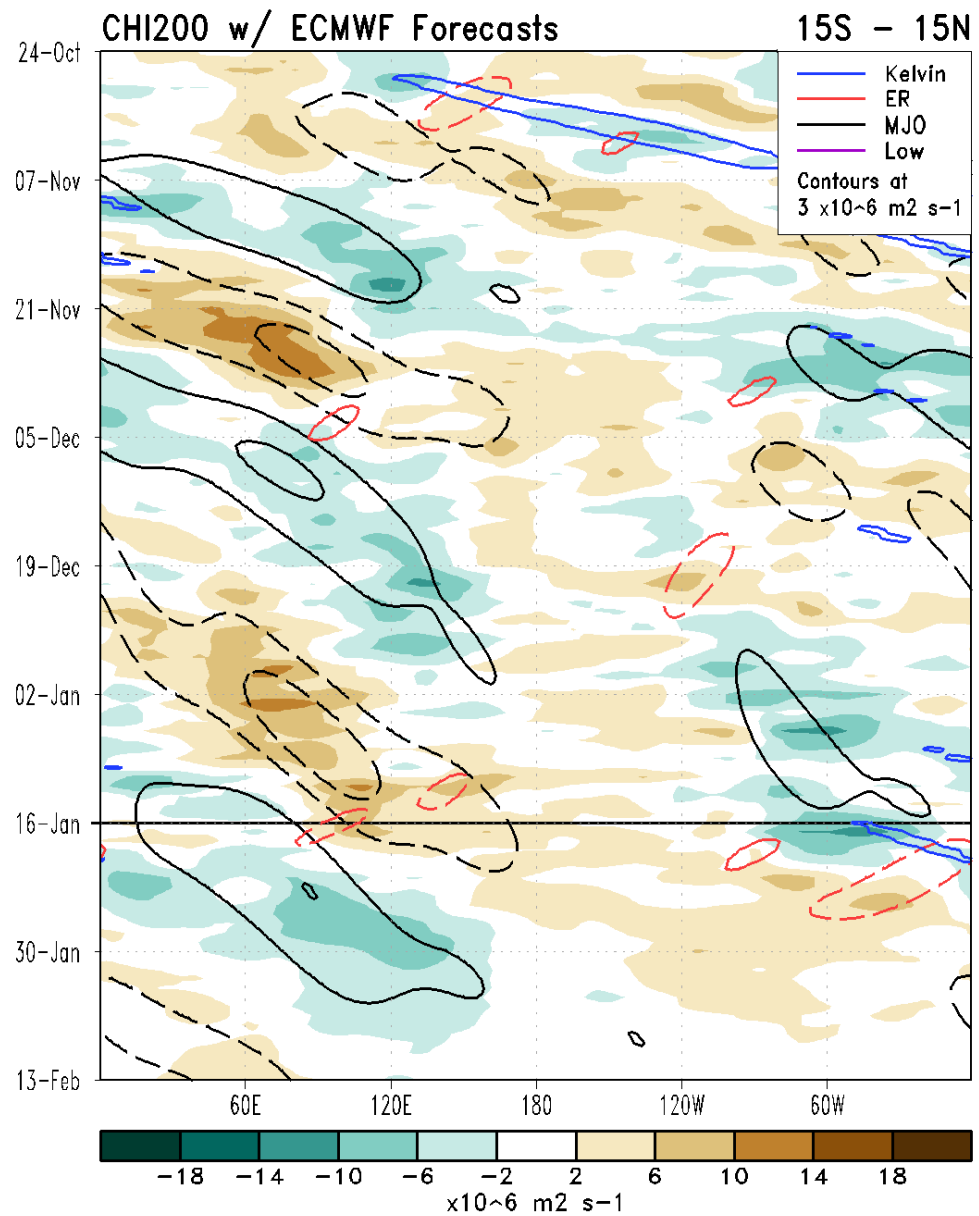
**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.**

# 200-hPa Velocity Potential Anomaly Maps:

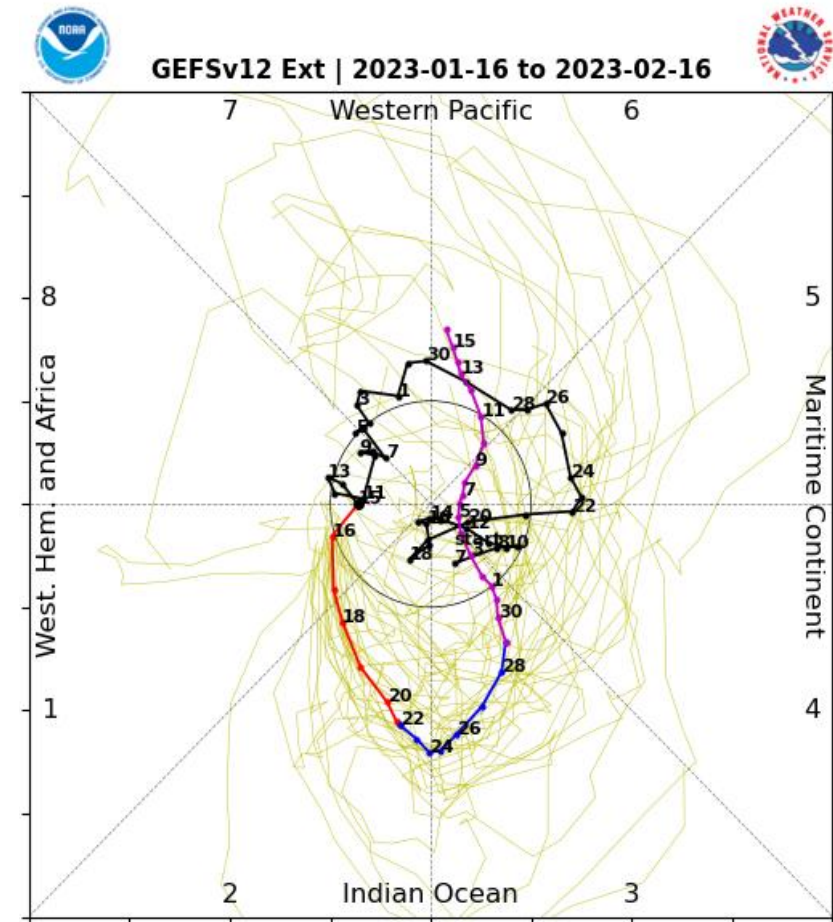
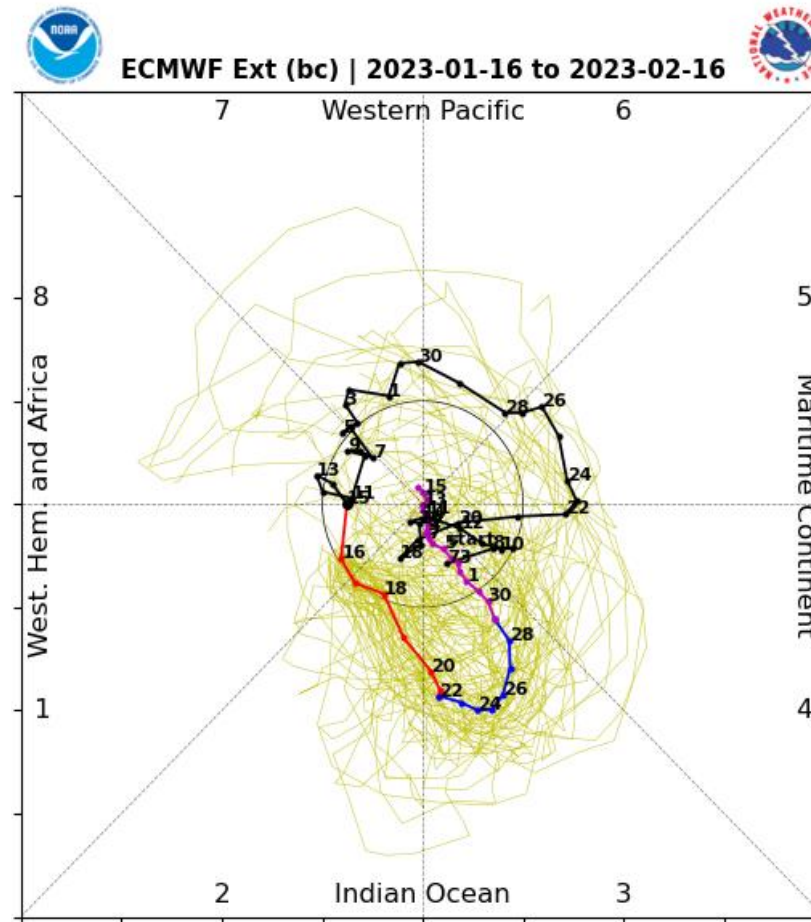
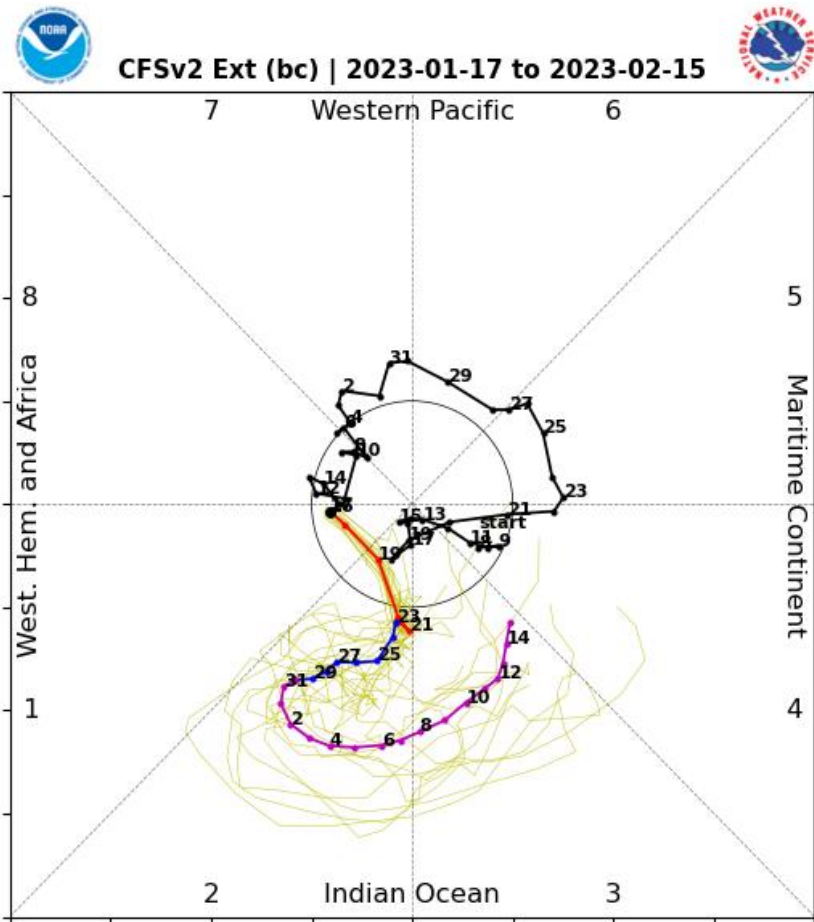
- Despite some weakening likely tied to Rossby wave activity over the Americas, the leading edge of the enhanced convective envelope continued to shift eastward over Africa and into the western Indian Ocean.
- During the the next 3 weeks, the development of more robust pattern is evident, while continuing to shift eastward across the Indian Ocean and Maritime Continent.



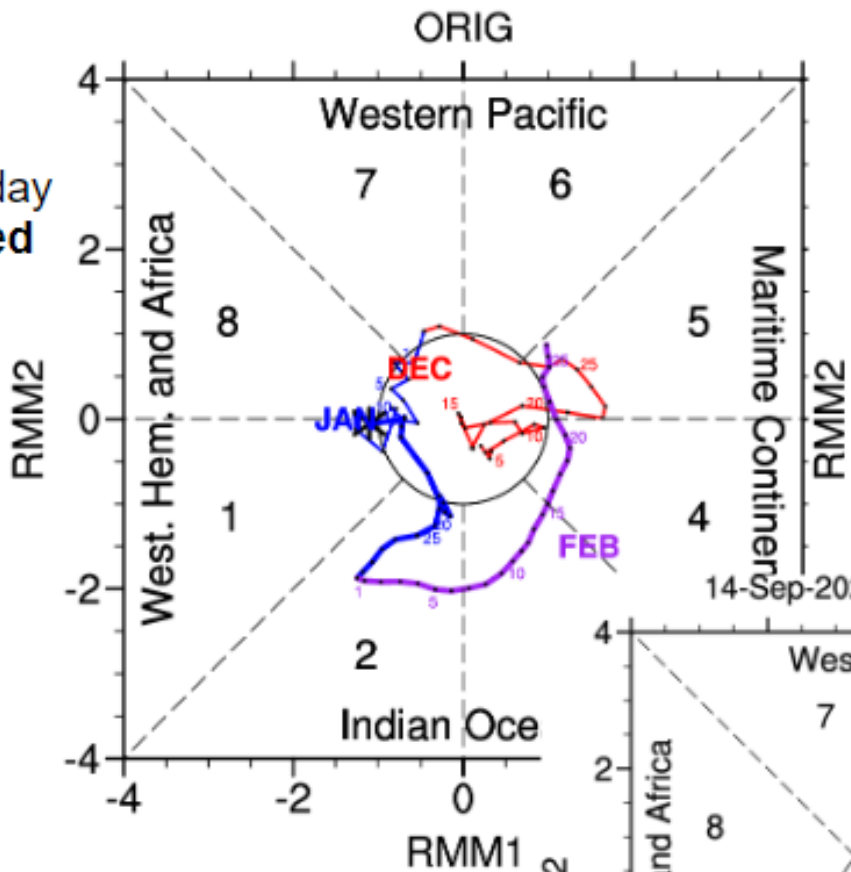
# 200-hPa Velocity Potential Anomaly Time/Lon Plots:



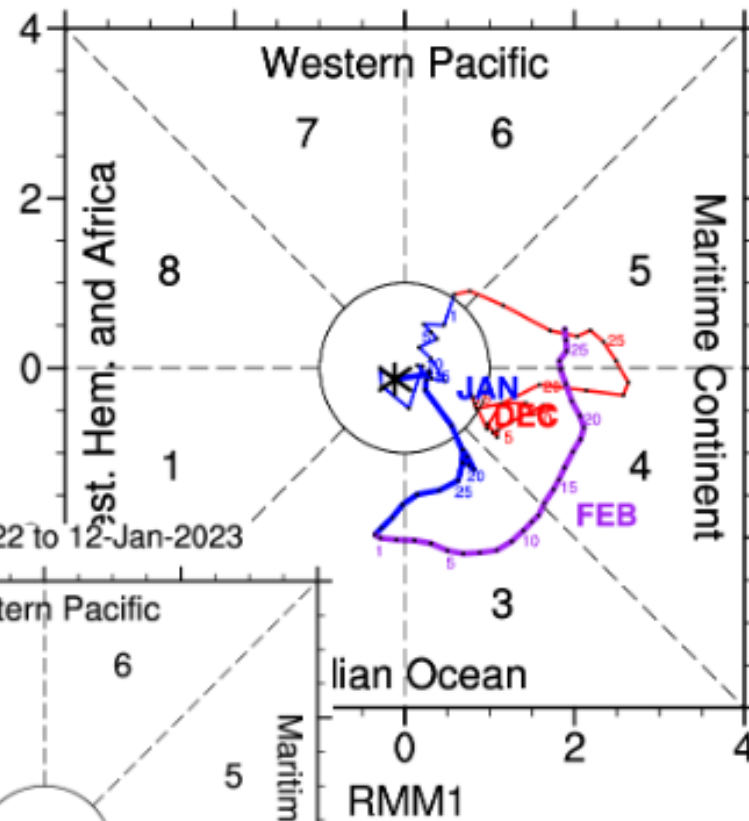
# RMM Index Observations & Forecasts:



RMM of 120-day Mean **removed**

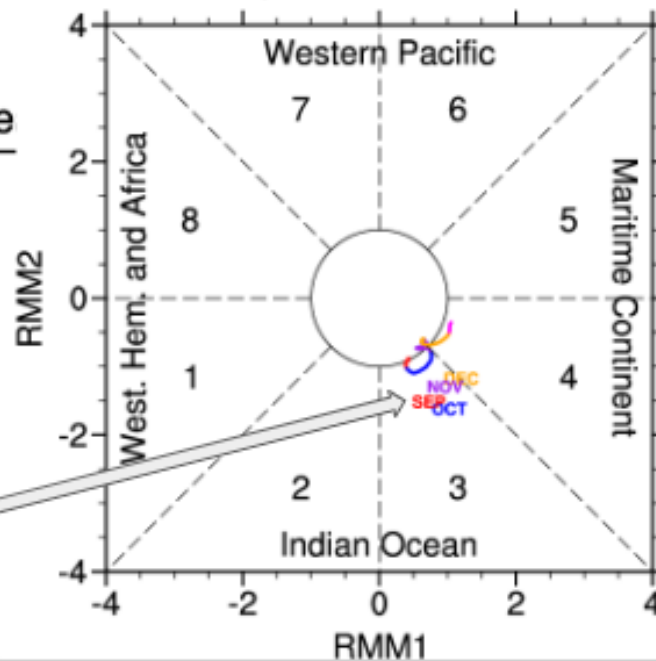


TOTAL



RMM of 120-day Mean **retained**

RMM of 120-day mean



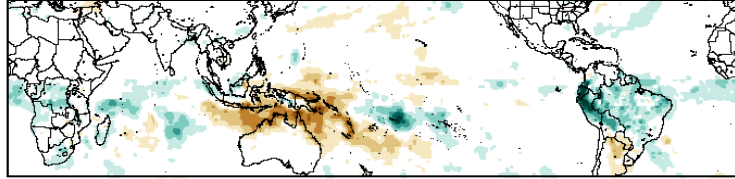
\*Many RMM forecasts fail to maintain a strong MJO beyond this point in RMM space



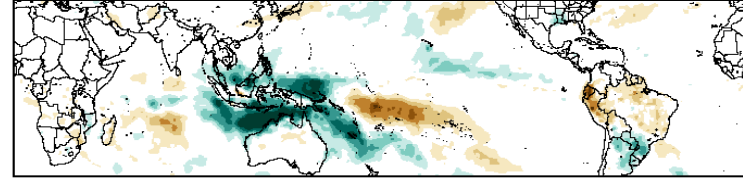
# Historical Precipitation Anomalies By MJO Phase:

JFM MJO Composite: GPCP1DD (mm/day)

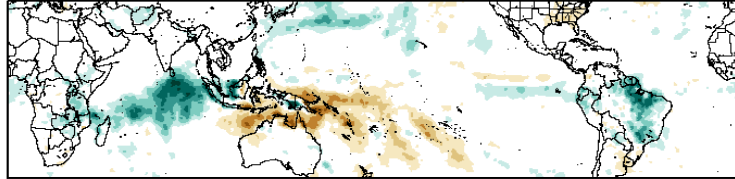
Phase 1



Phase 5

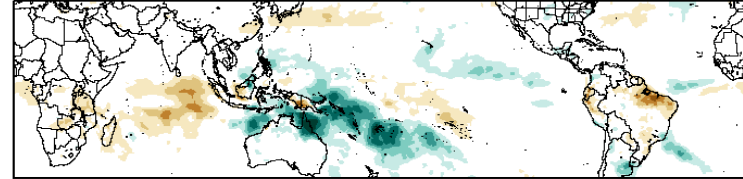


Phase 2

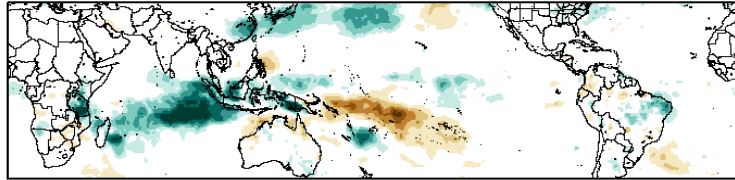


Week 2

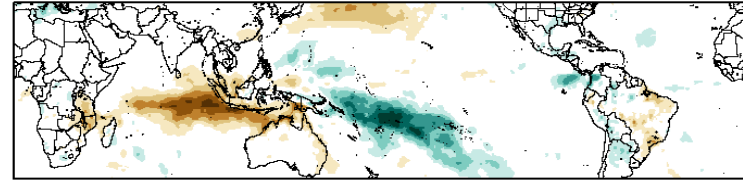
Phase 6



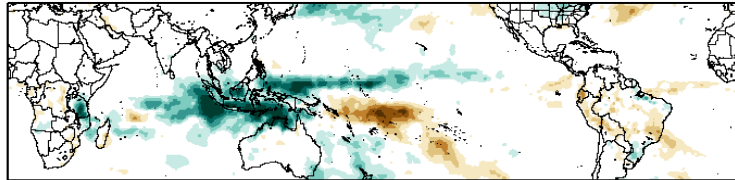
Phase 3



Phase 7

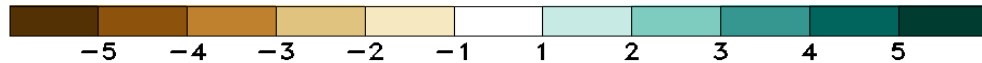
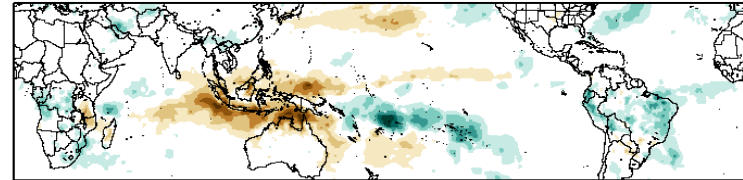


Phase 4



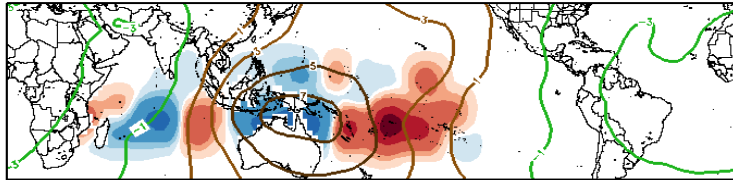
Week 3

Phase 8

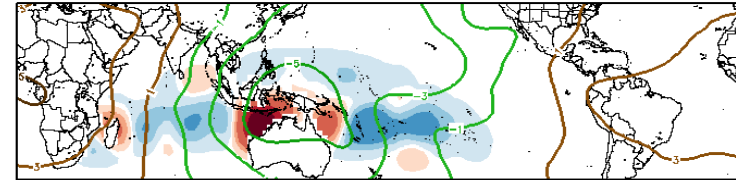


# Historical TC Genesis Origins By MJO Phase:

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

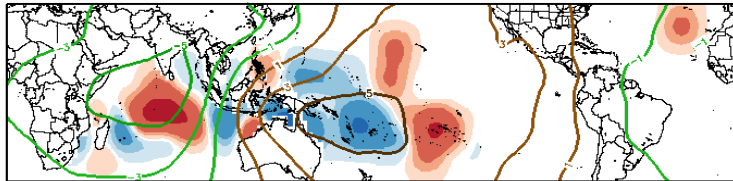


Phase 1

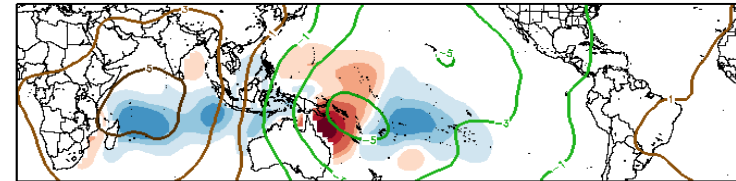


Phase 5

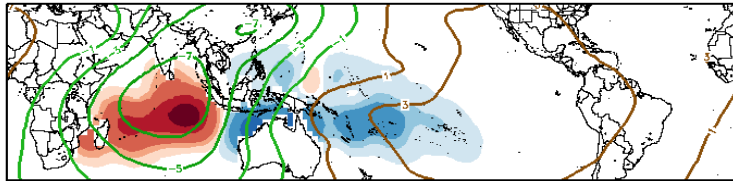
Week 2



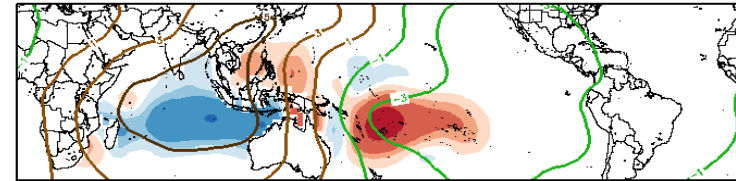
Phase 2



Phase 6

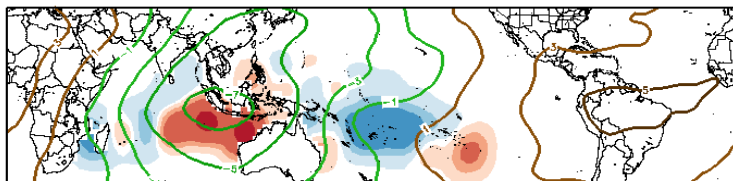


Phase 3

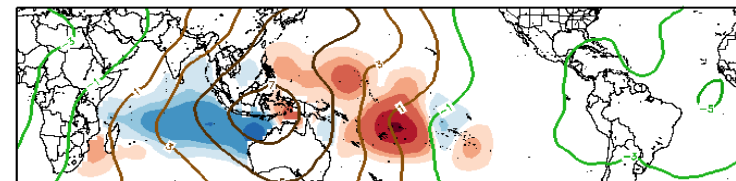


Phase 7

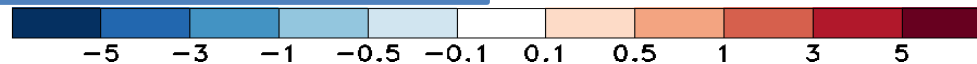
Week 3



Phase 4



Phase 8

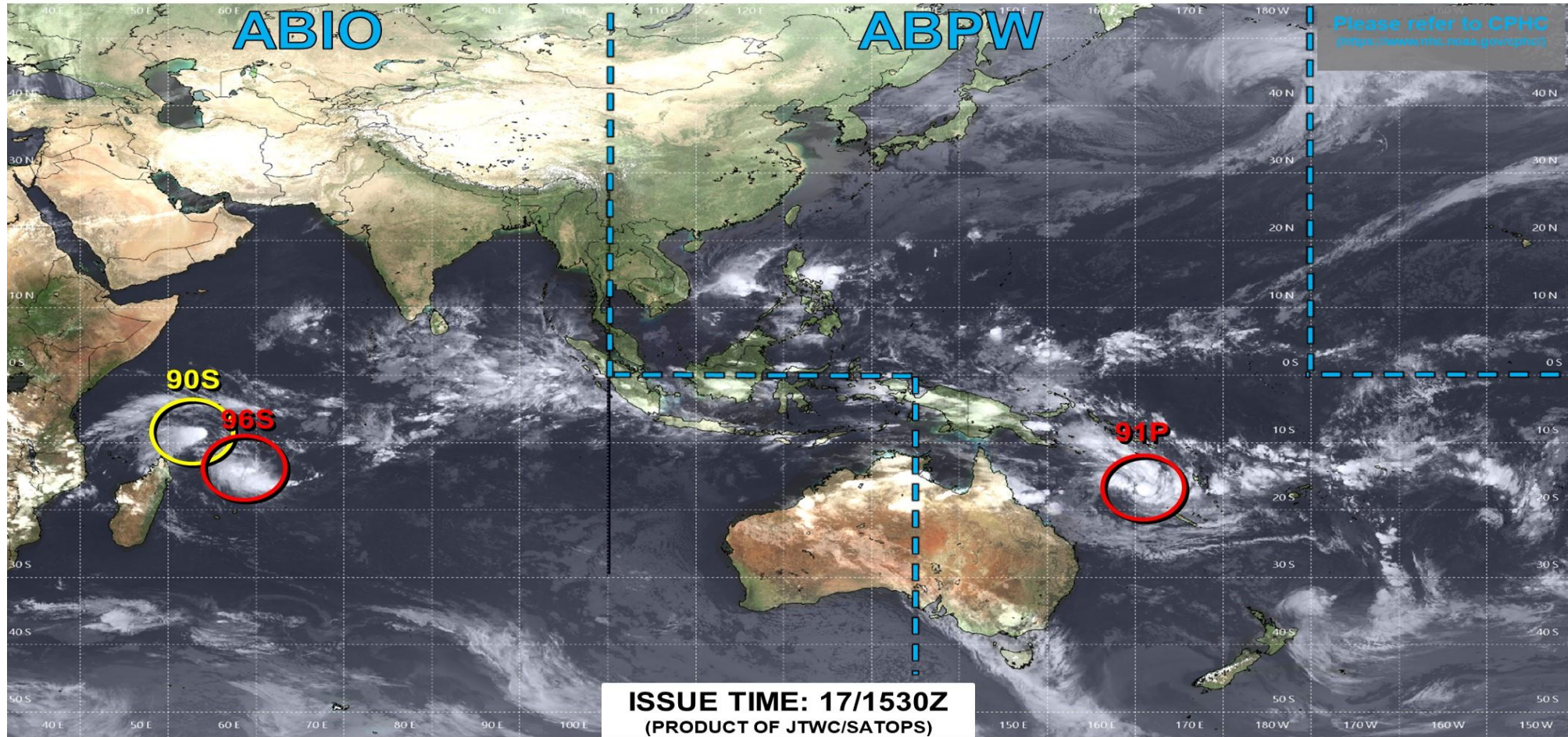


\*Experimental\*

# 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)



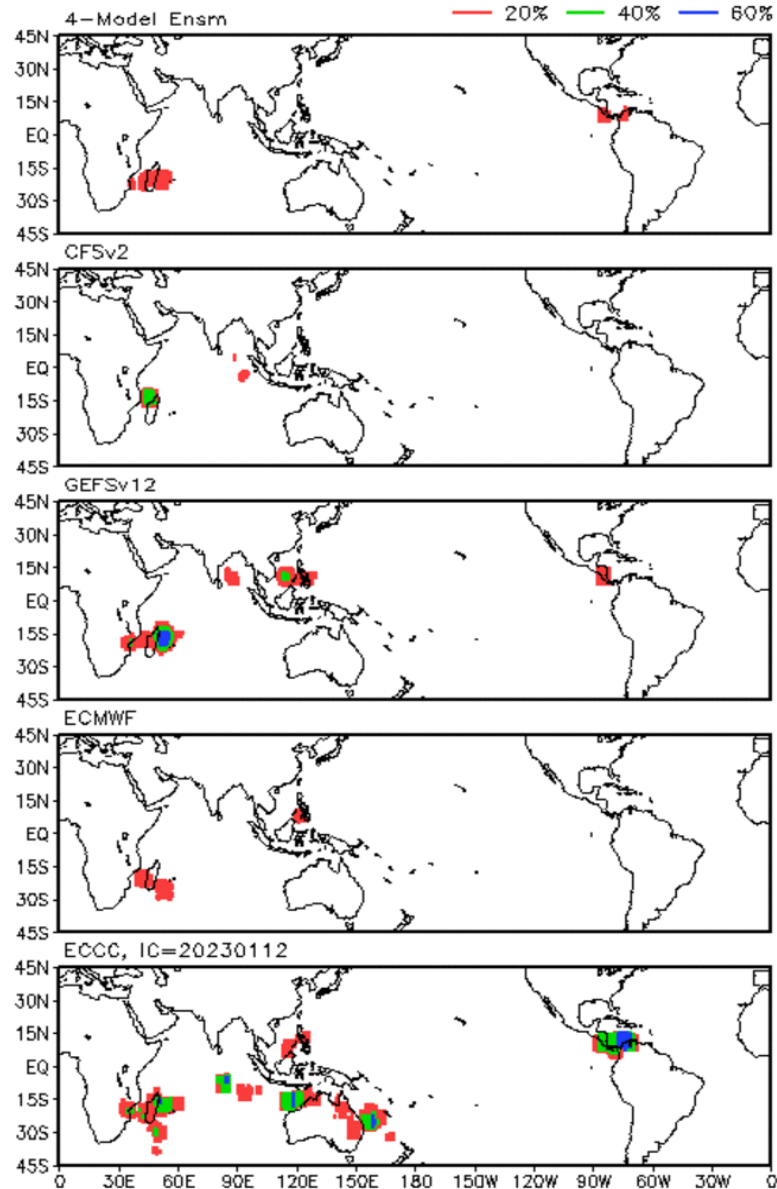
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



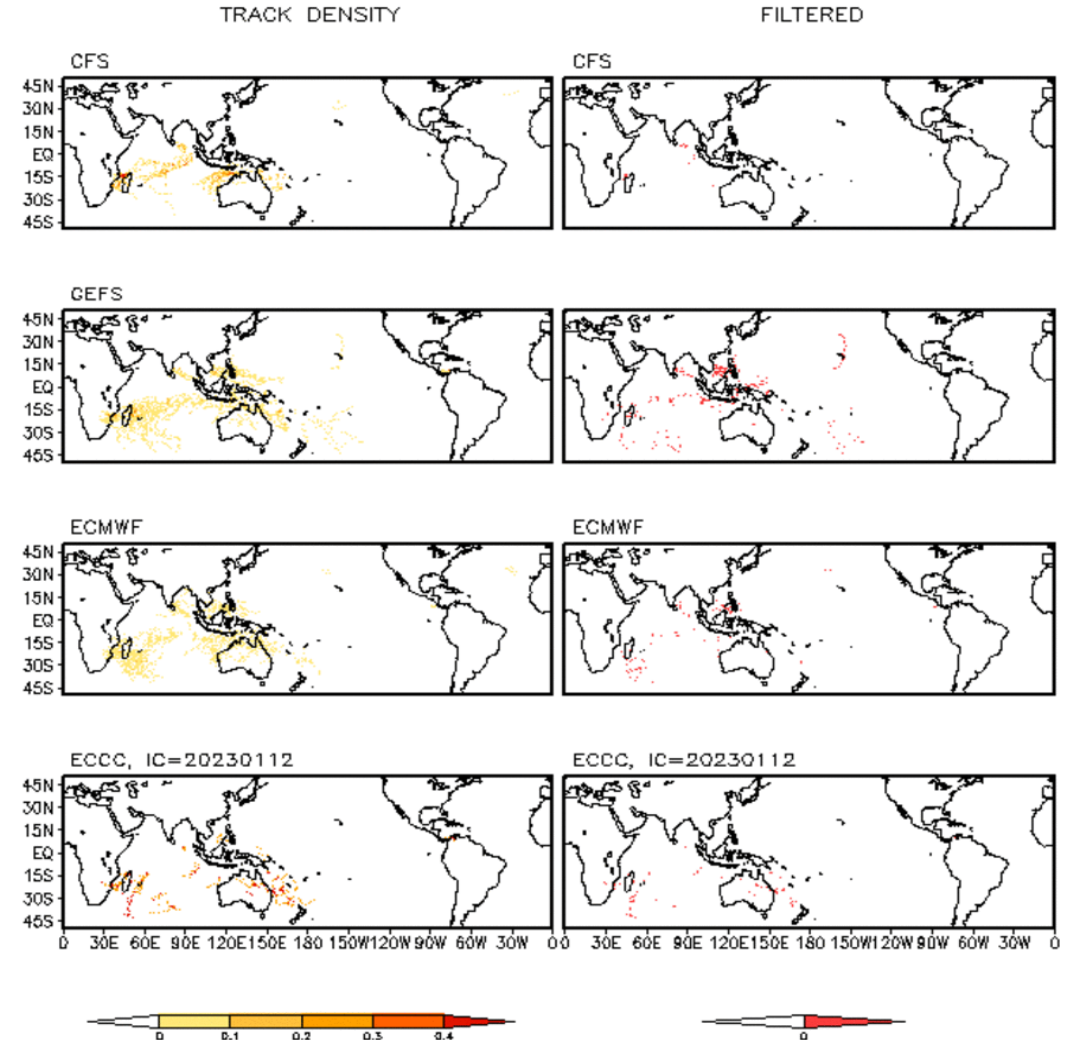
Tropical Cyclone (Reference Warning)

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

Storm Track Probabilities, IC=20230116  
Week 2: 0125 - 0131



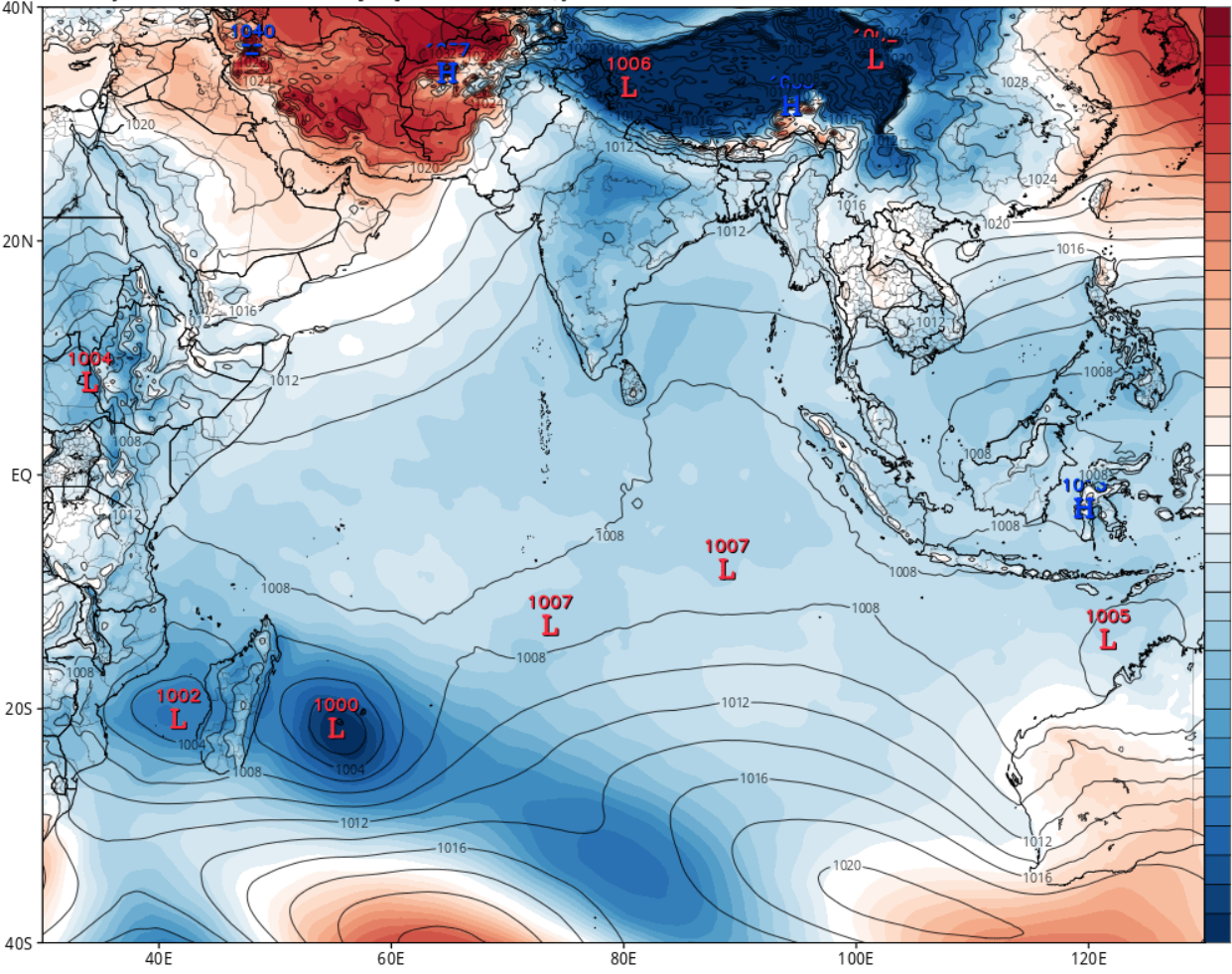
Storm Track Density Distribution, IC=20230116  
Week 2 Forecast: 0125-0131



EPS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jan 17 2023 Forecast Hour: [192] valid at 00z Wed, Jan 25 2023

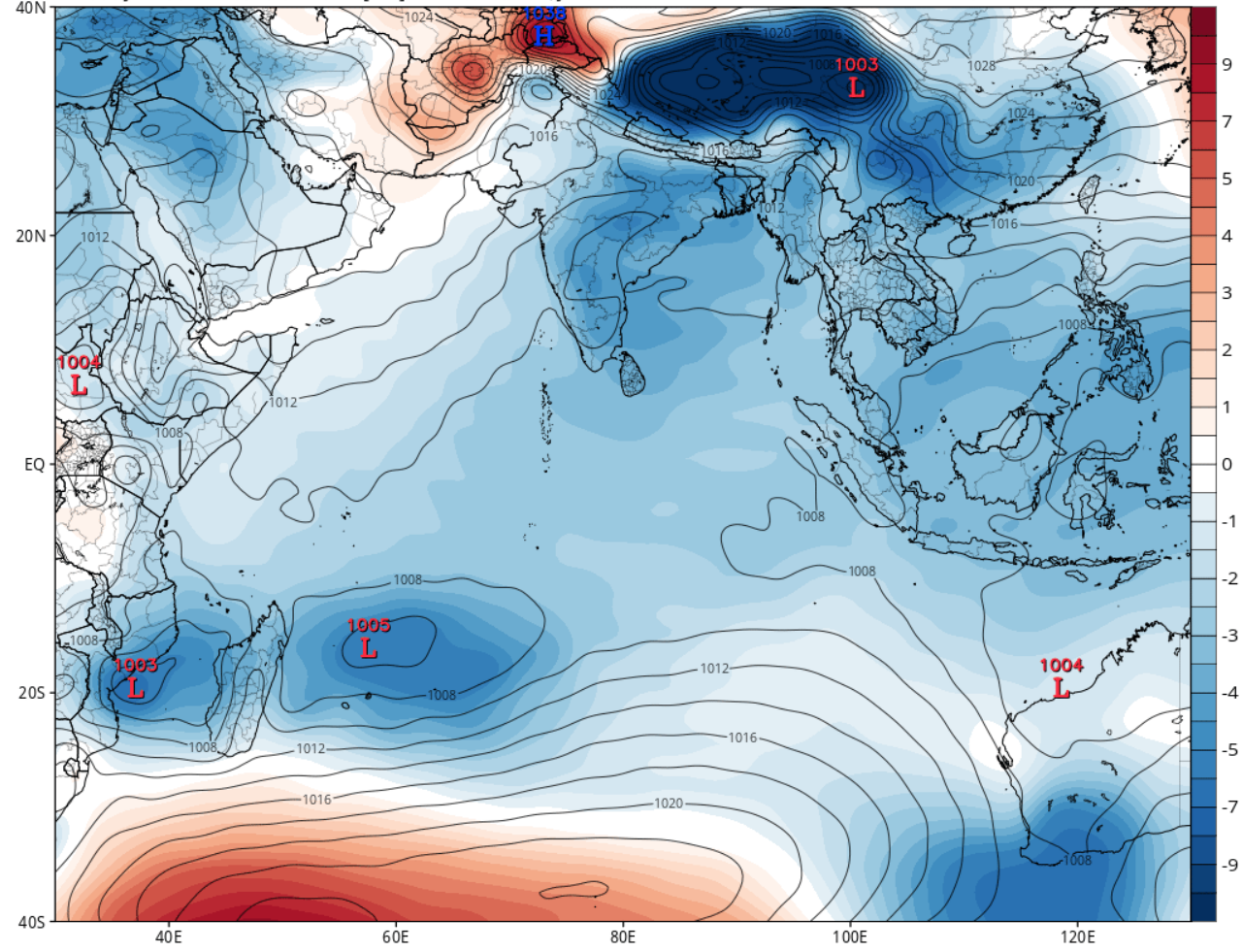
TROPICALTIDBITS.COM



GEFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

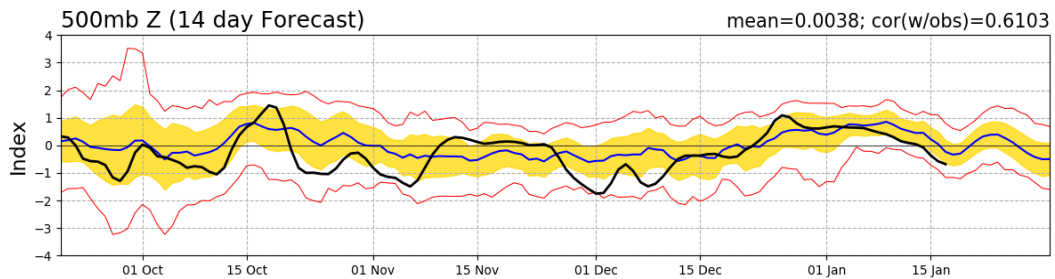
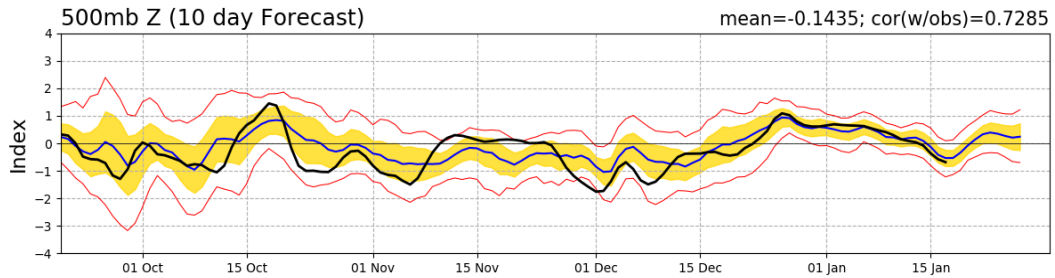
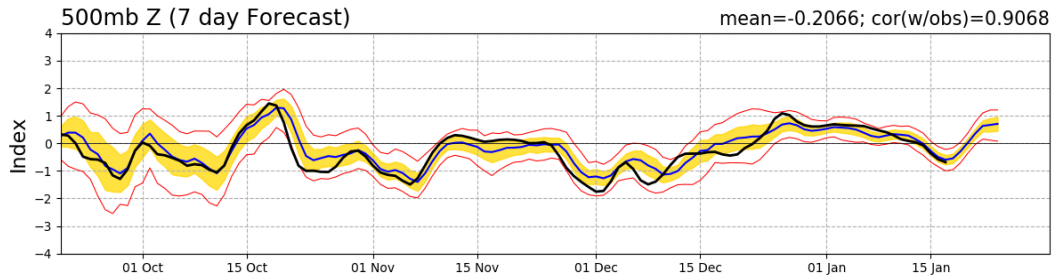
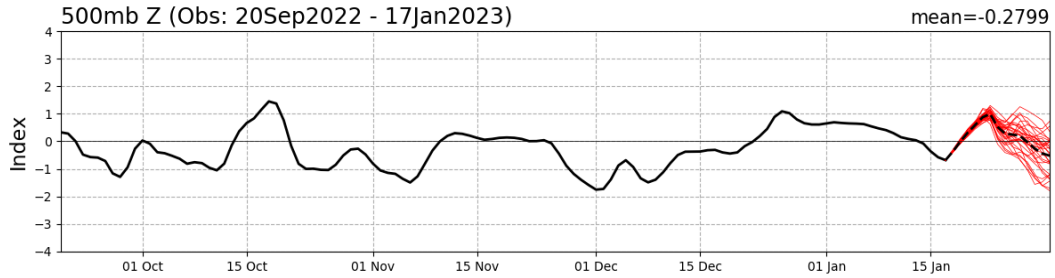
Init: 00z Jan 17 2023 Forecast Hour: [234] valid at 18z Thu, Jan 26 2023

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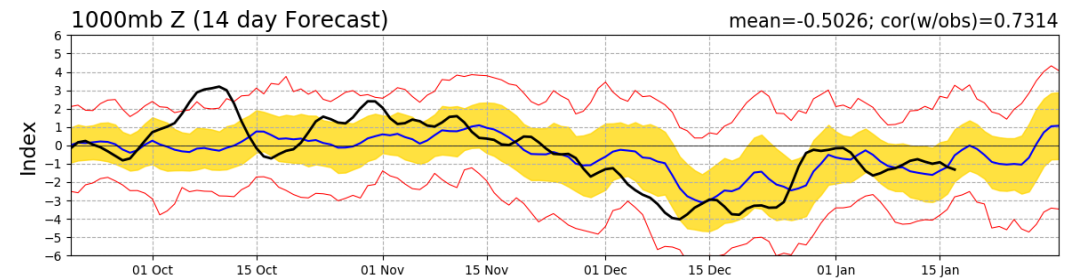
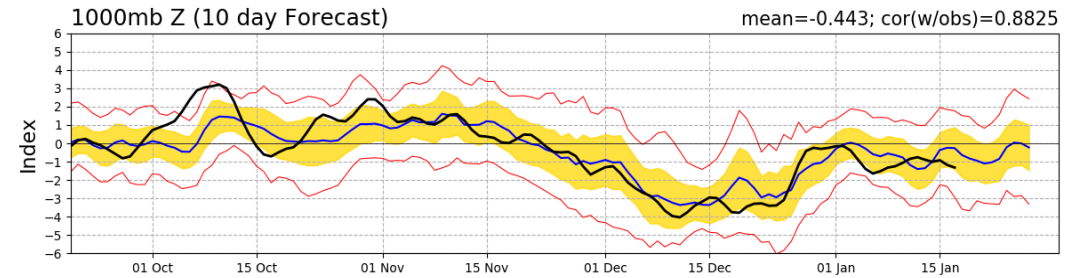
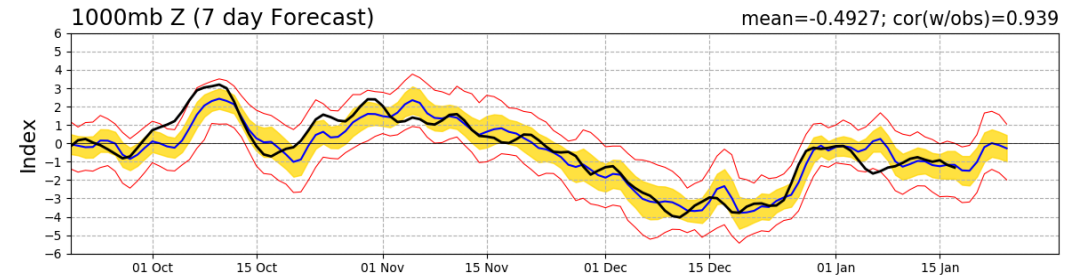
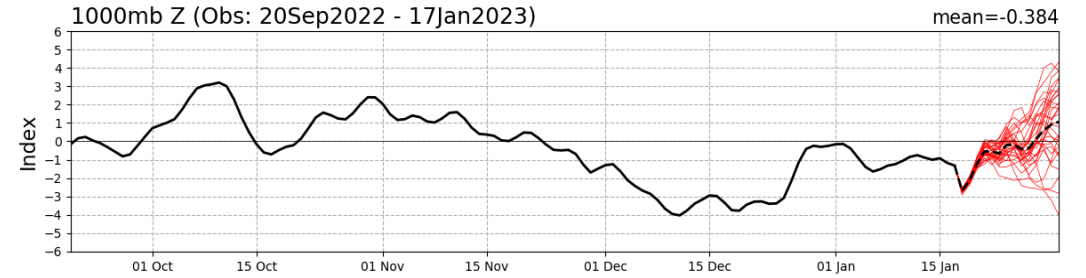


# Teleconnection Indices: PNA / AO:

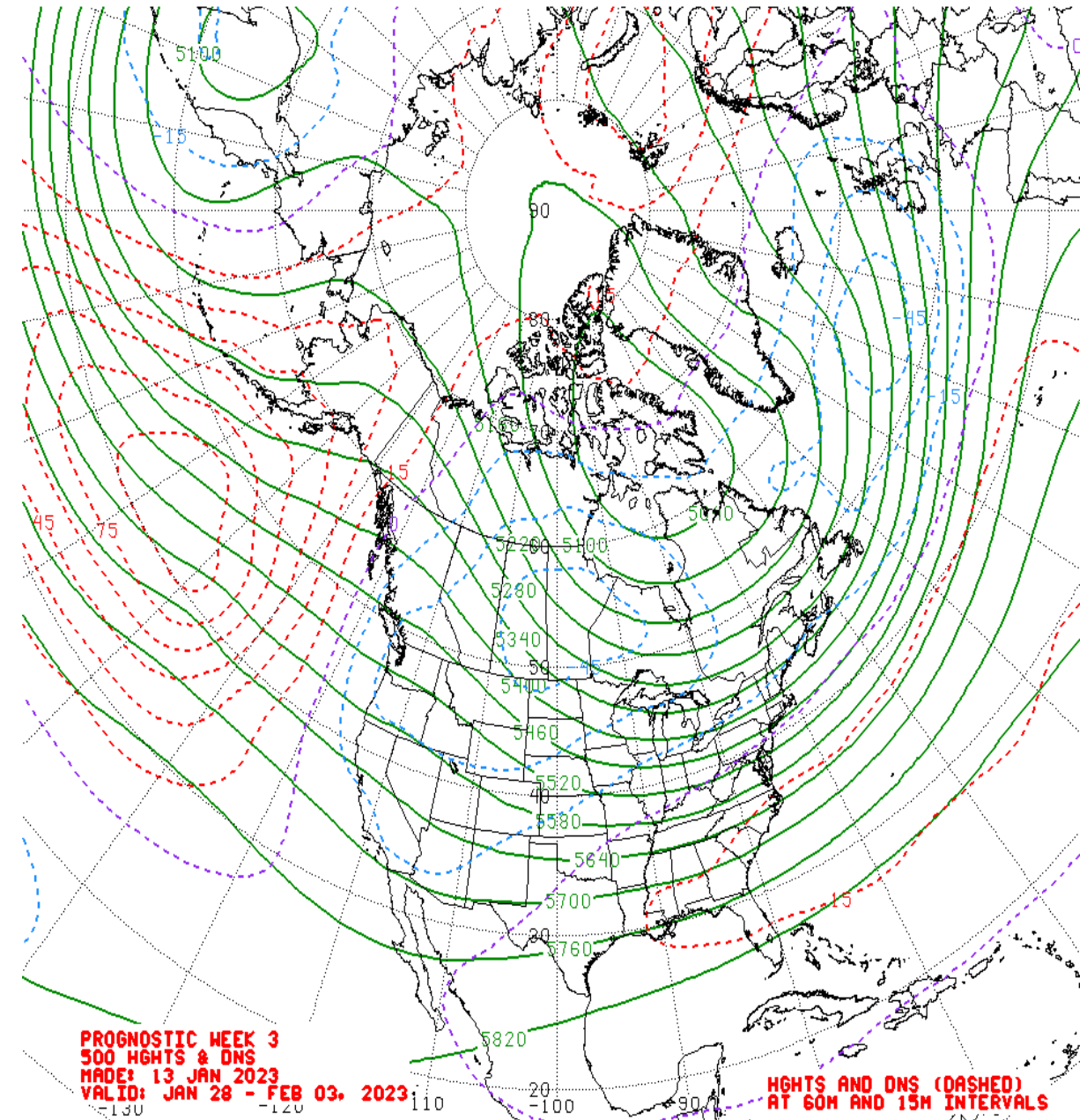
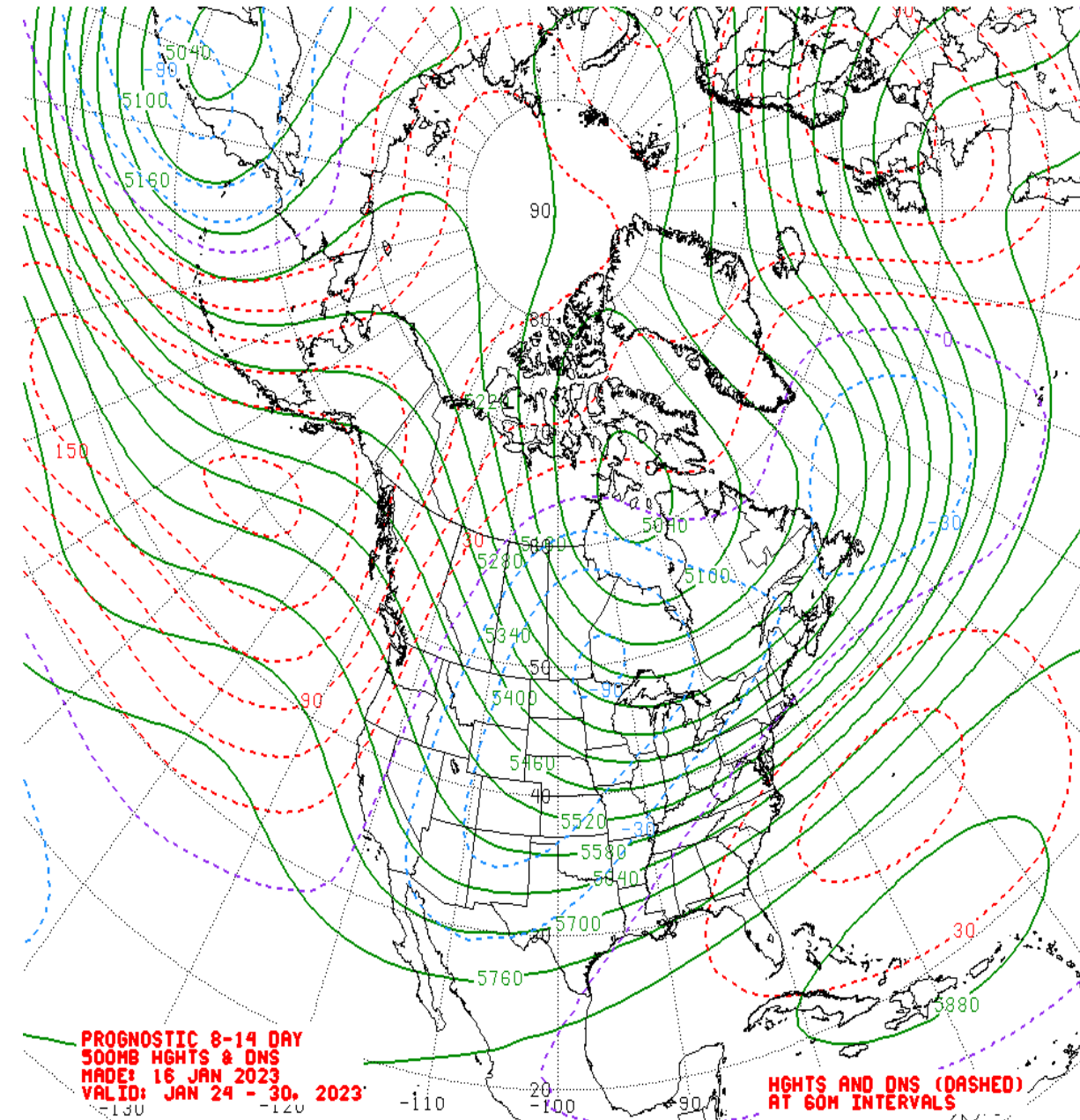
## PNA Index: Observed & GEFS Forecasts



## AO Index: Observed & GEFS Forecasts



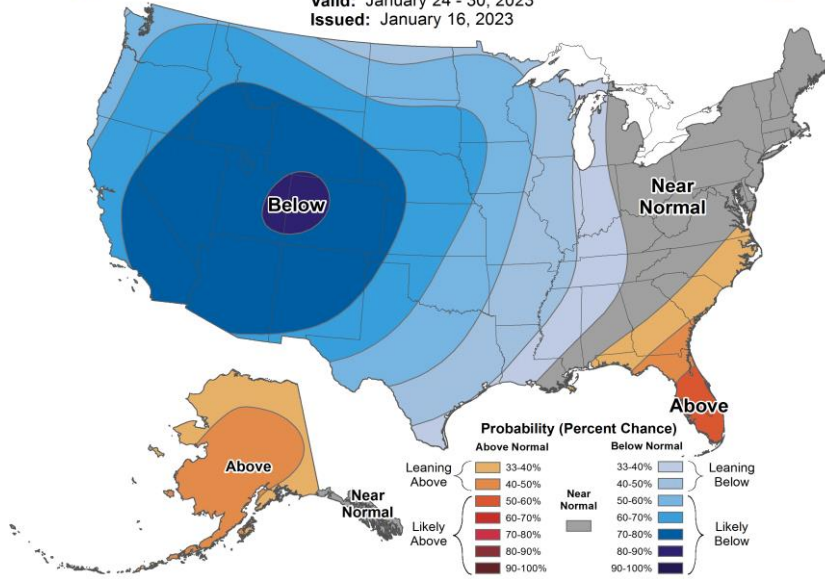
# Mean 500-hPa Height Anomaly Forecasts:



# Official Temperature & Precipitation Forecasts:

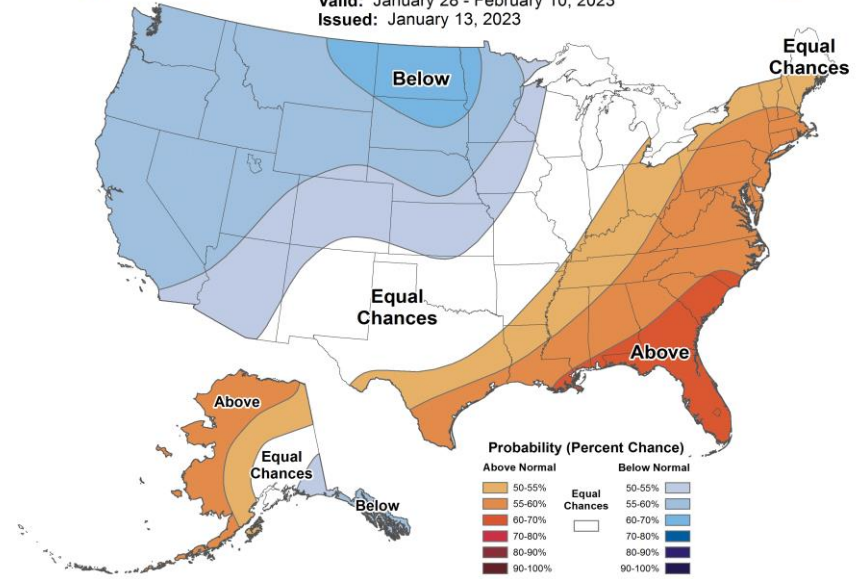
## 8-14 Day Temperature Outlook

Valid: January 24 - 30, 2023  
 Issued: January 16, 2023



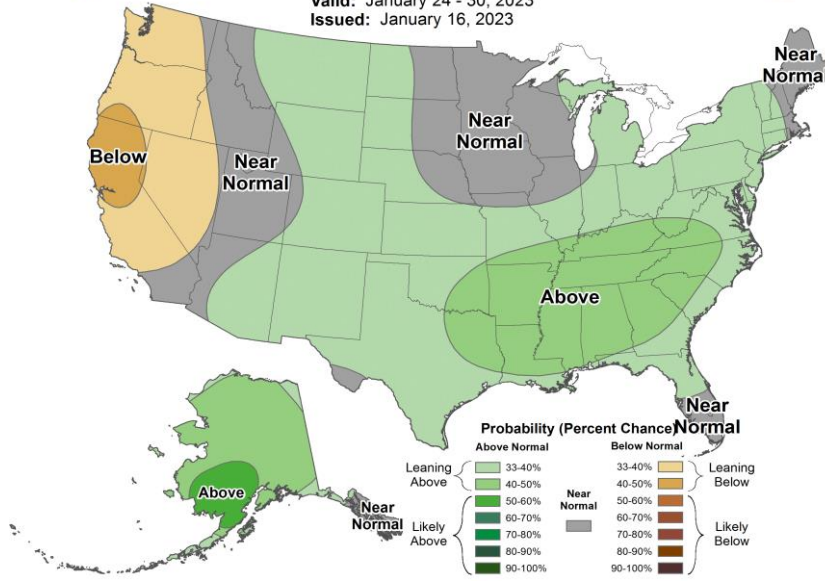
## Weeks 3-4 Temperature Outlook

Valid: January 28 - February 10, 2023  
 Issued: January 13, 2023



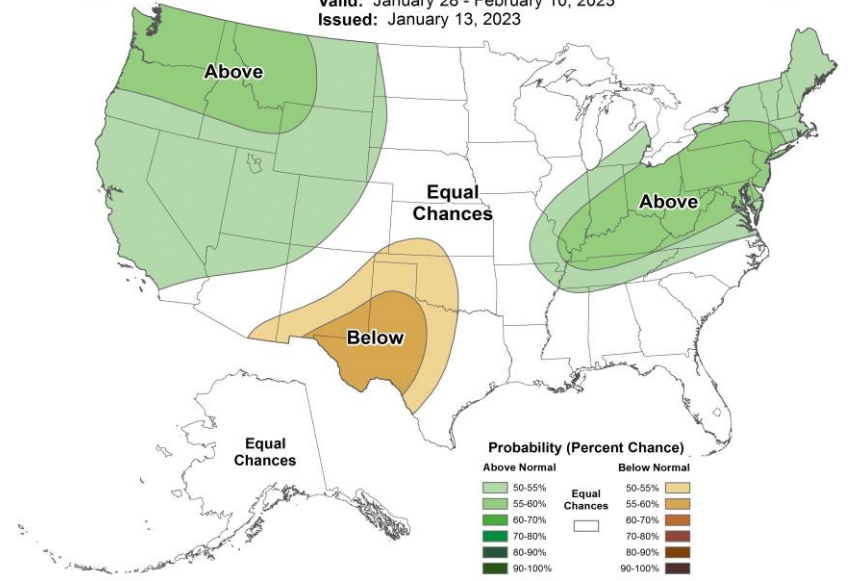
## 8-14 Day Precipitation Outlook

Valid: January 24 - 30, 2023  
 Issued: January 16, 2023



## Weeks 3-4 Precipitation Outlook

Valid: January 28 - February 10, 2023  
 Issued: January 13, 2023





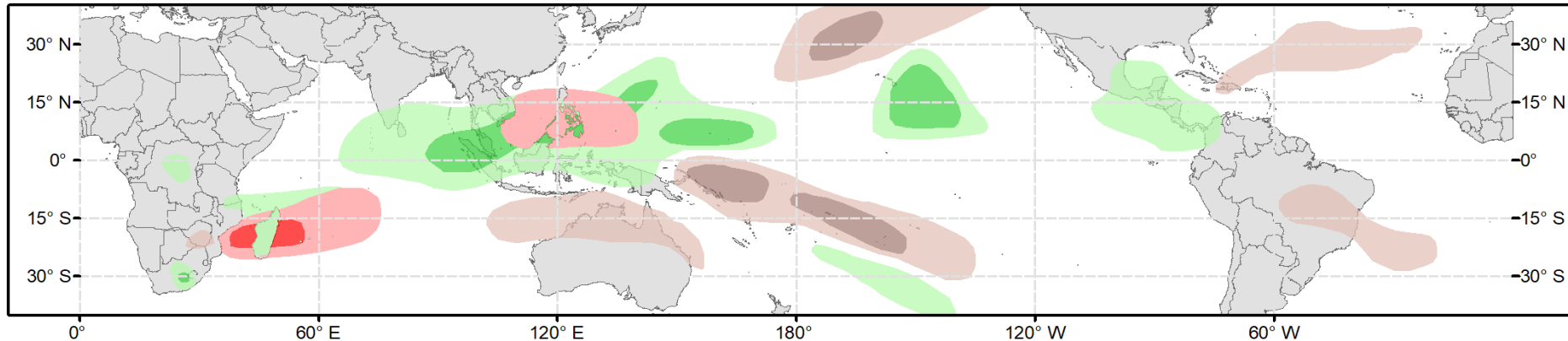


# Global Tropics Hazards Outlook

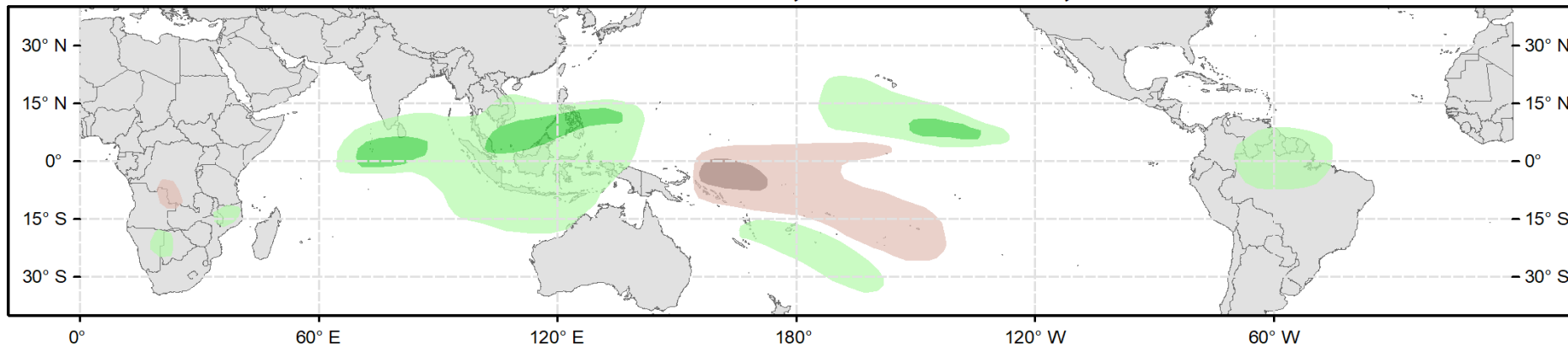
Climate Prediction Center



## Week 2 - Valid: Jan 25, 2023 - Jan 31, 2023



## Week 3 - Valid: Feb 01, 2023 - Feb 07, 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: 01/17/2023  
Forecaster: Novella

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