



# Weeks 2-3 Global Tropics Hazards Outlook

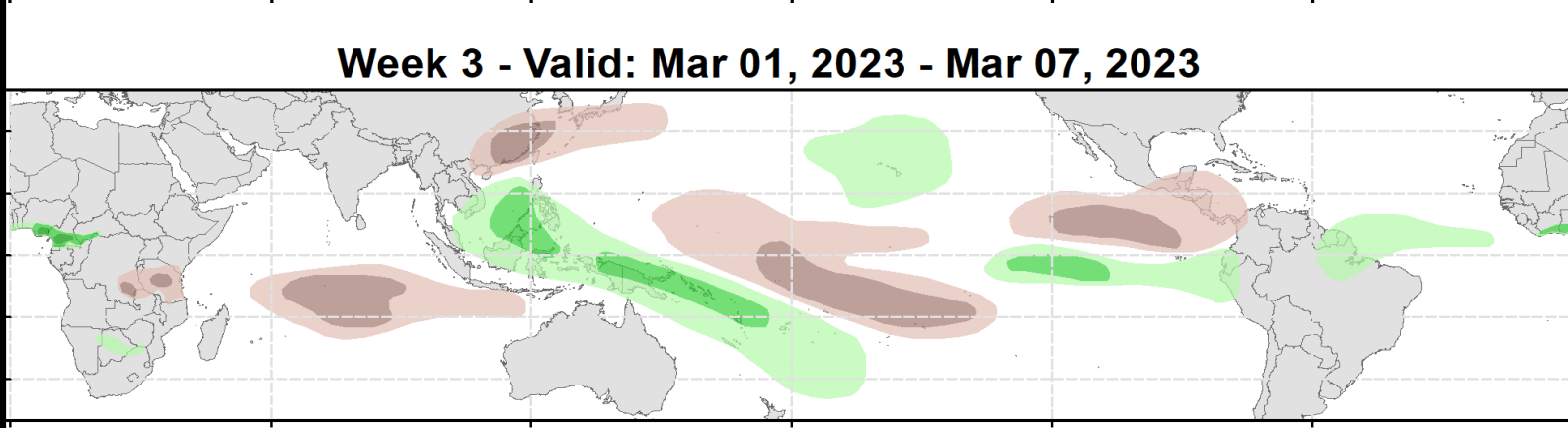
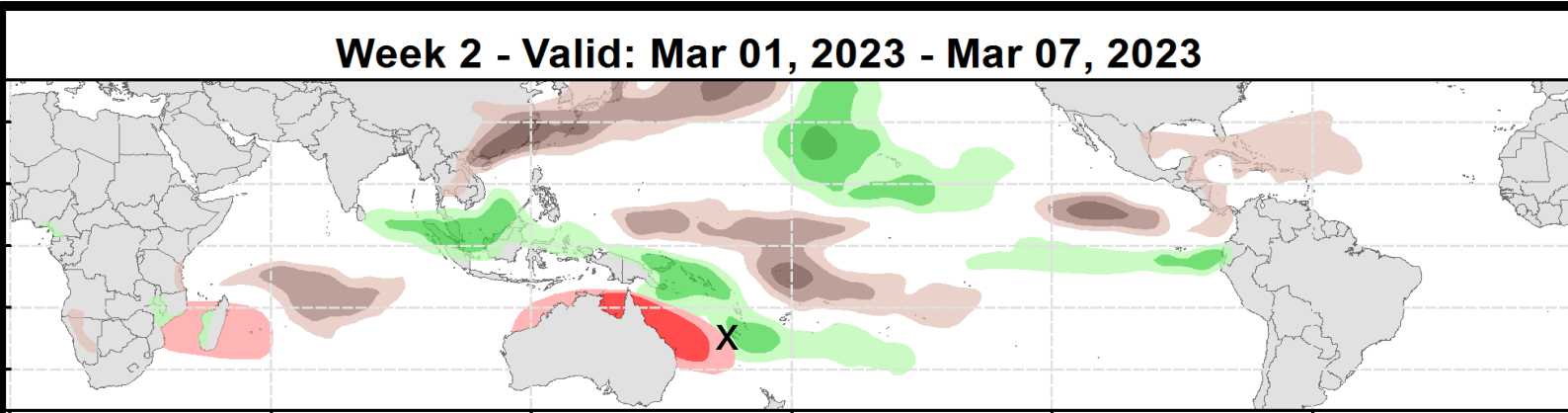
3/7/2023

Brad Pugh

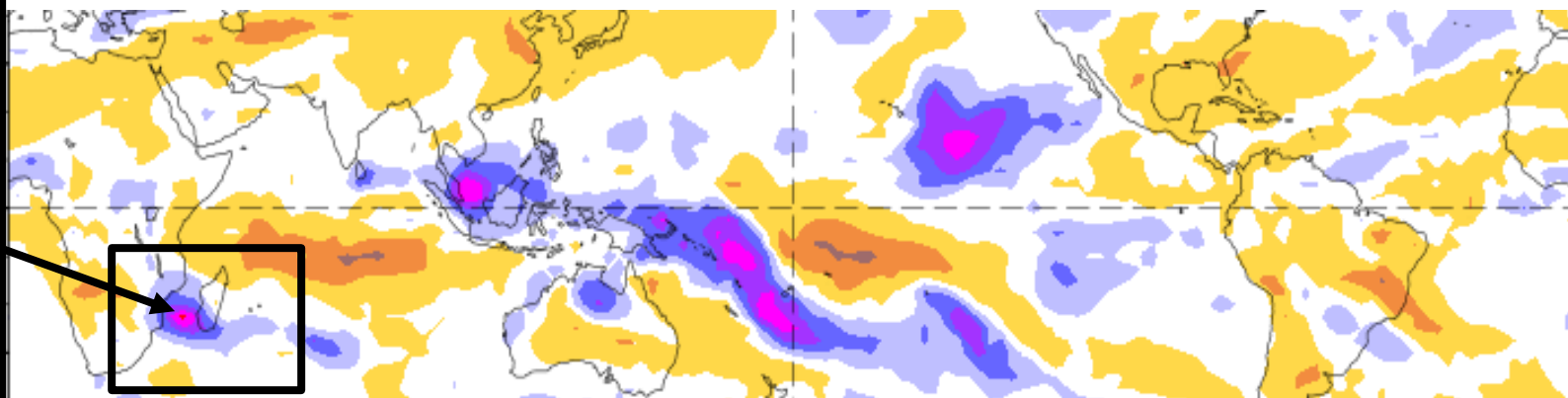
NWS / NCEP / Climate Prediction Center

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

x Kevin (March 1)



Freddy



# Synopsis of Climate Modes:

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**ENSO:** (February 9, 2023 Update)

*next update on Thursday, Mar 9<sup>th</sup>*

- ENSO Alert System Status: [La Niña Advisory](#)
- ENSO-neutral conditions are expected to begin within the next couple of months, and persist through the Northern Hemisphere spring and early summer.

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

- The MJO strengthened since the beginning of March.
- Dynamical model MJO index forecasts depict a strong MJO propagating eastward over the Western Hemisphere during the next two weeks. By week-3, the MJO is expected to shift to Africa and the Indian Ocean.
- The MJO is likely to enhance subtropical moisture into the western U.S. through mid-March.

# GTH Outlook:

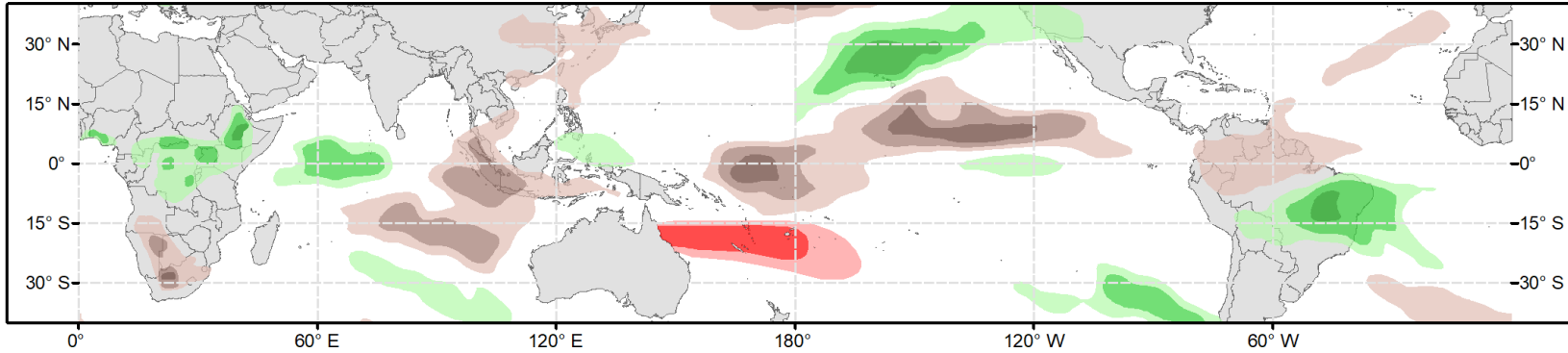


## Global Tropics Hazards Outlook

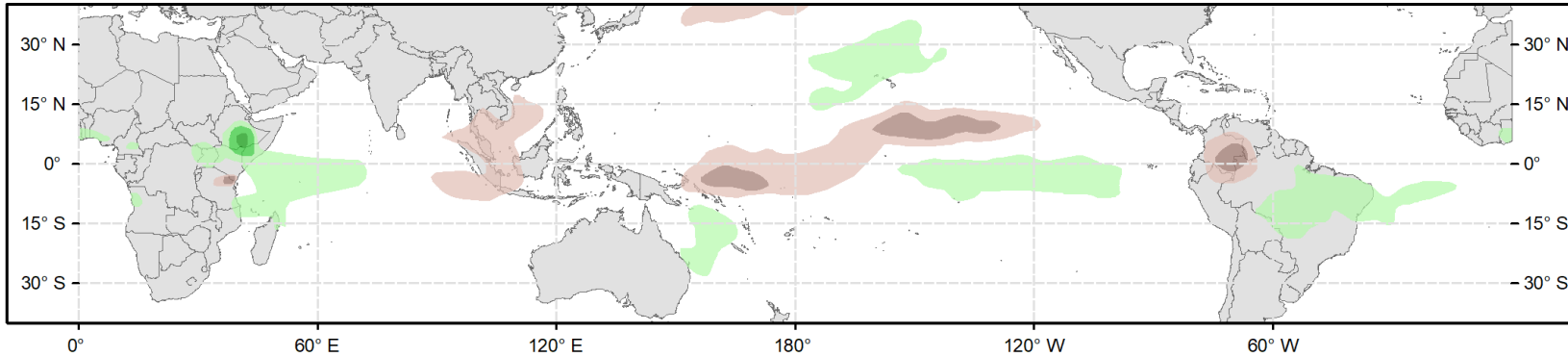
Climate Prediction Center



**Week 2 - Valid: Mar 15, 2023 - Mar 21, 2023**



**Week 3 - Valid: Mar 22, 2023 - Mar 28, 2023**



**Week-2 Only**

**Tropical Cyclone (TC) Formation Probability**

>20% >40% >60%

*Tropical Depression (TD) or greater strength*

**Above-Average Rainfall Probability**

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

**Below-Average Rainfall Probability**

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**Above-Average Temperatures Probability**

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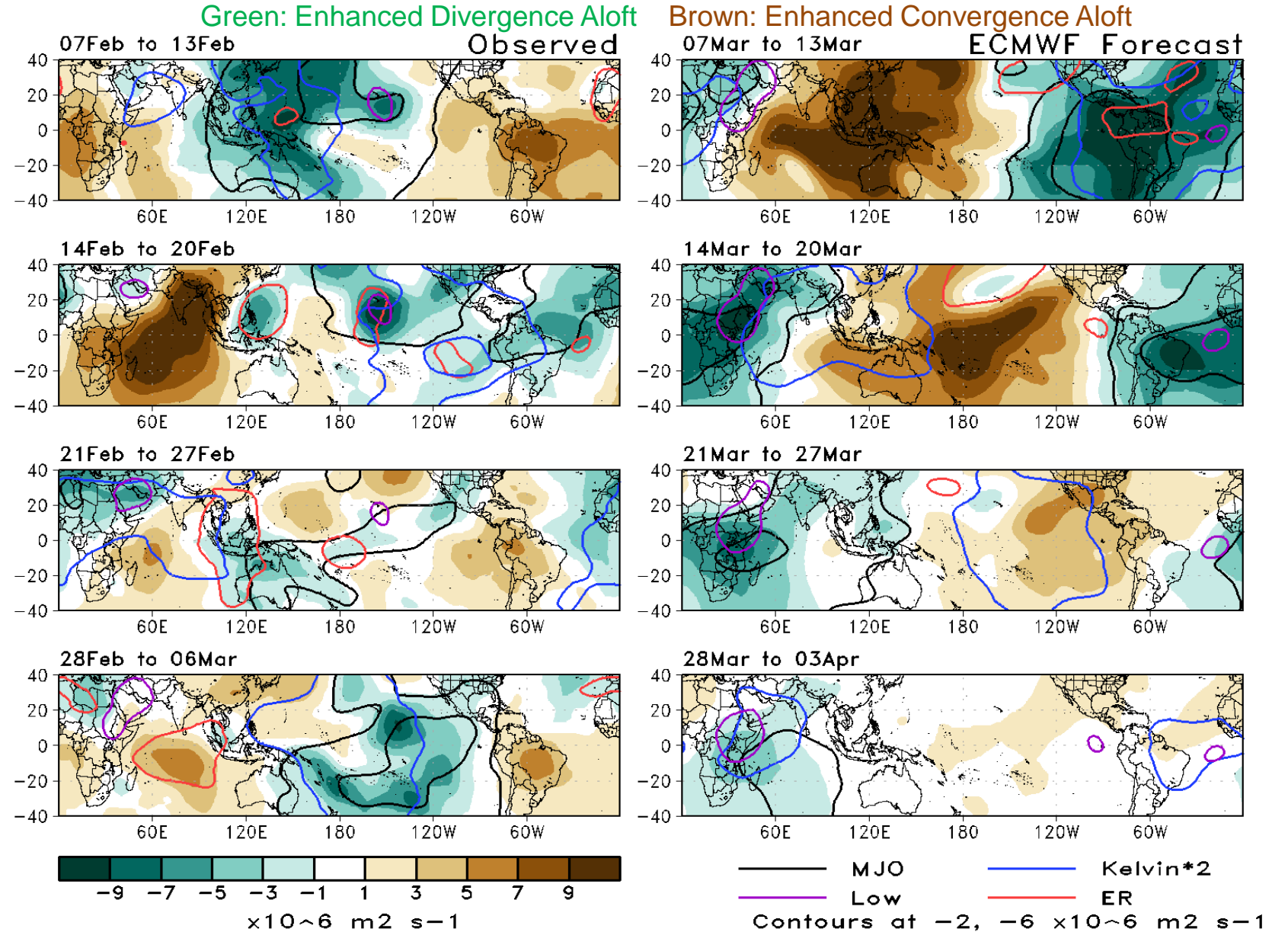
Issued: 03/07/2023

Forecaster: Pugh

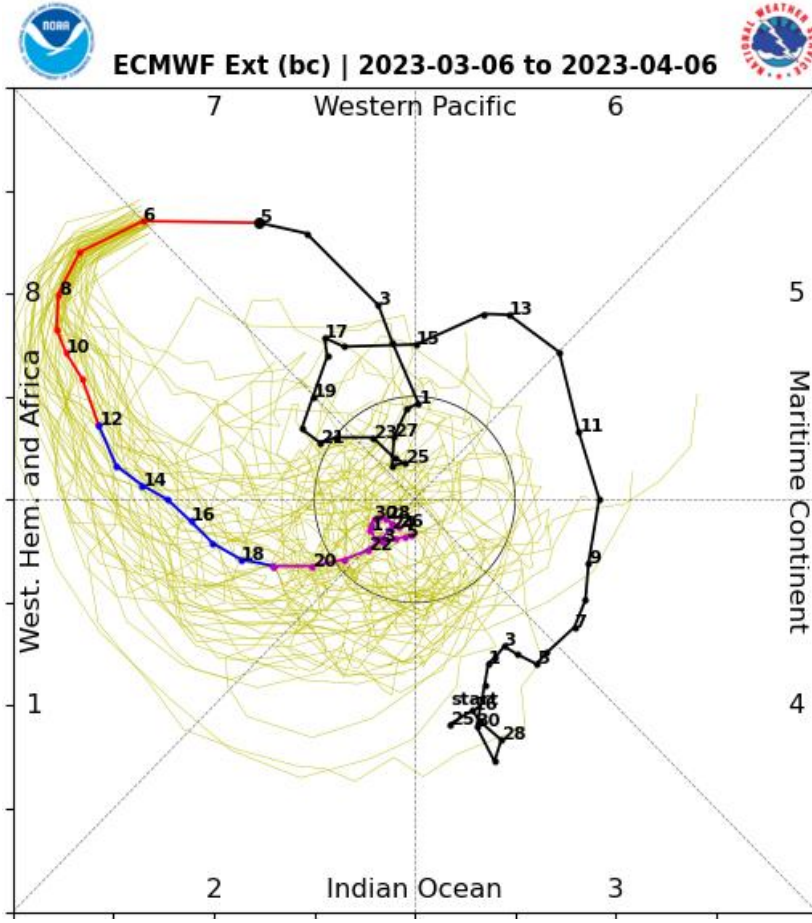
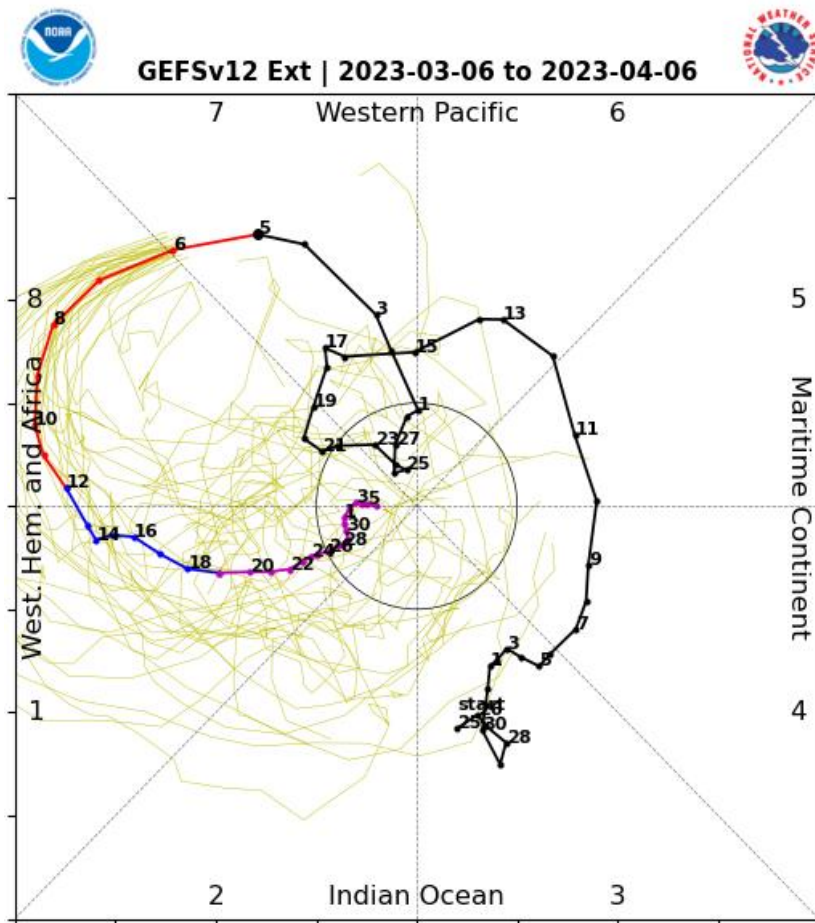
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# 200-hPa Velocity Potential Anomaly Maps:

- During the next two weeks, very large anomalies are forecast with eastward propagation.
- By week-3 (Mar 21-27), the eastward propagation continues with smaller anomalies which is typical at that time range.



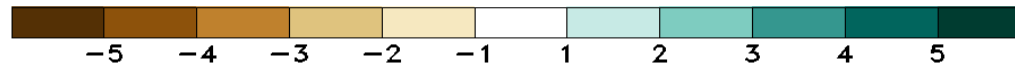
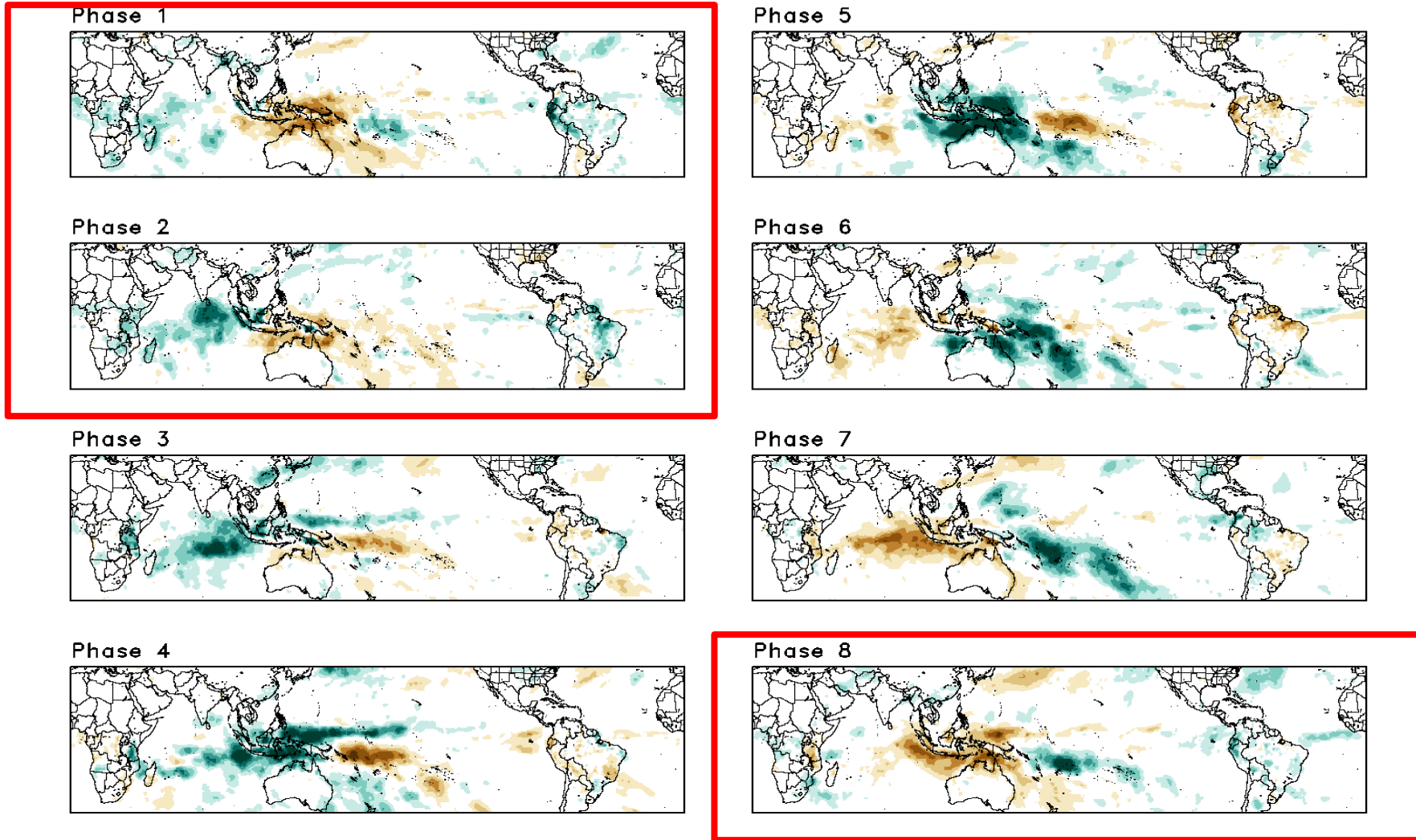
# RMM Index Observations & Forecasts:



- Dynamical model MJO index forecasts depict a high amplitude MJO through mid-March.
- Ensemble spread increases later in the month but many members show the MJO entering the Indian Ocean.

# Historical Precipitation Anomalies By MJO Phase:

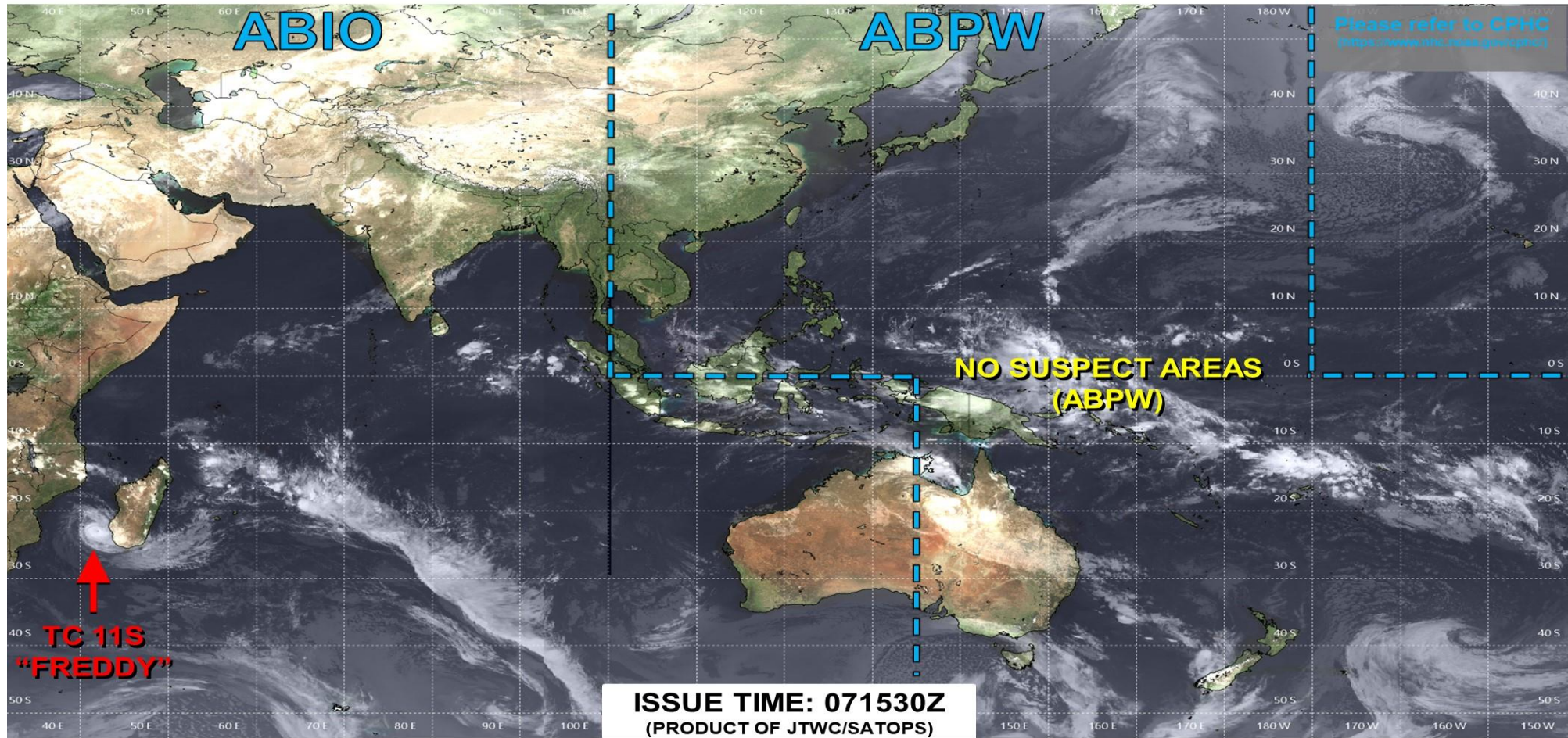
FMA MJO Composite: GPCP1DD (mm/day)



# 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)

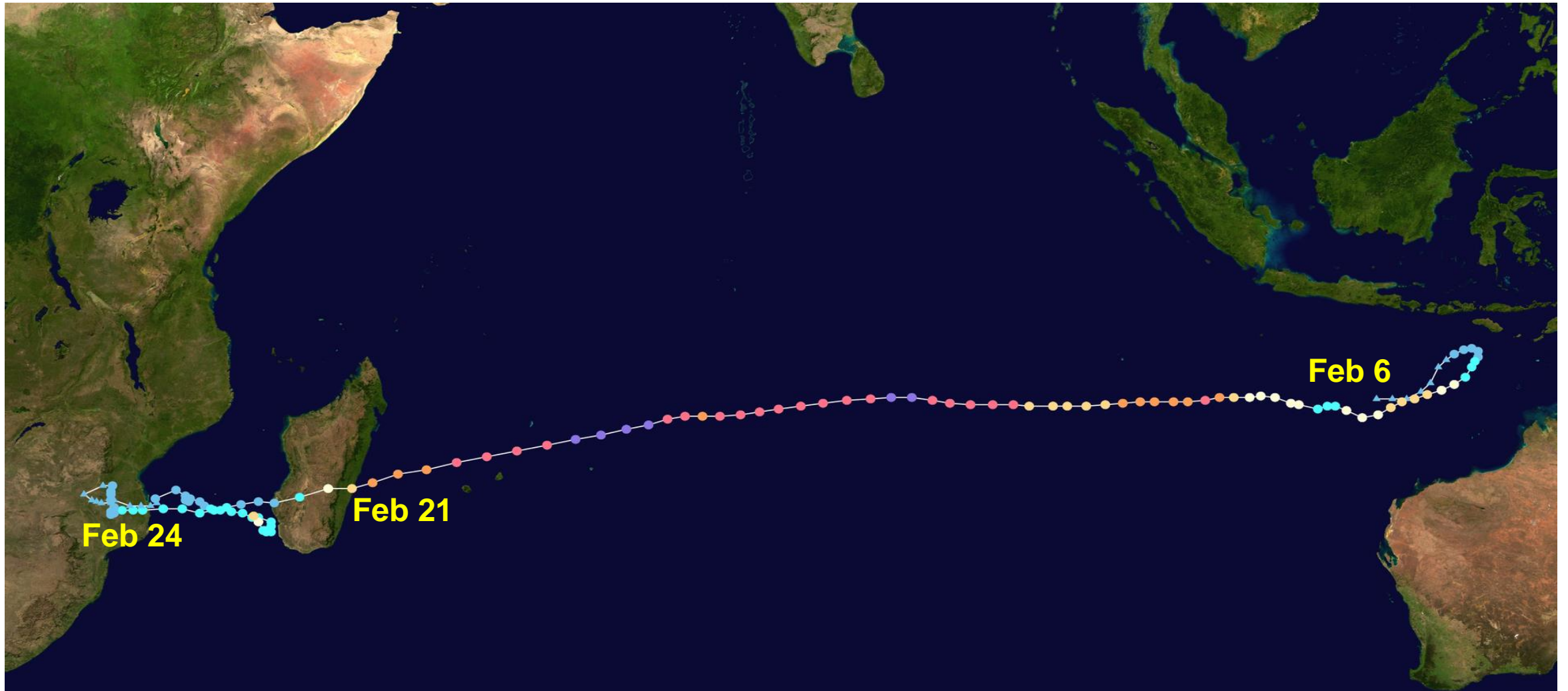


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

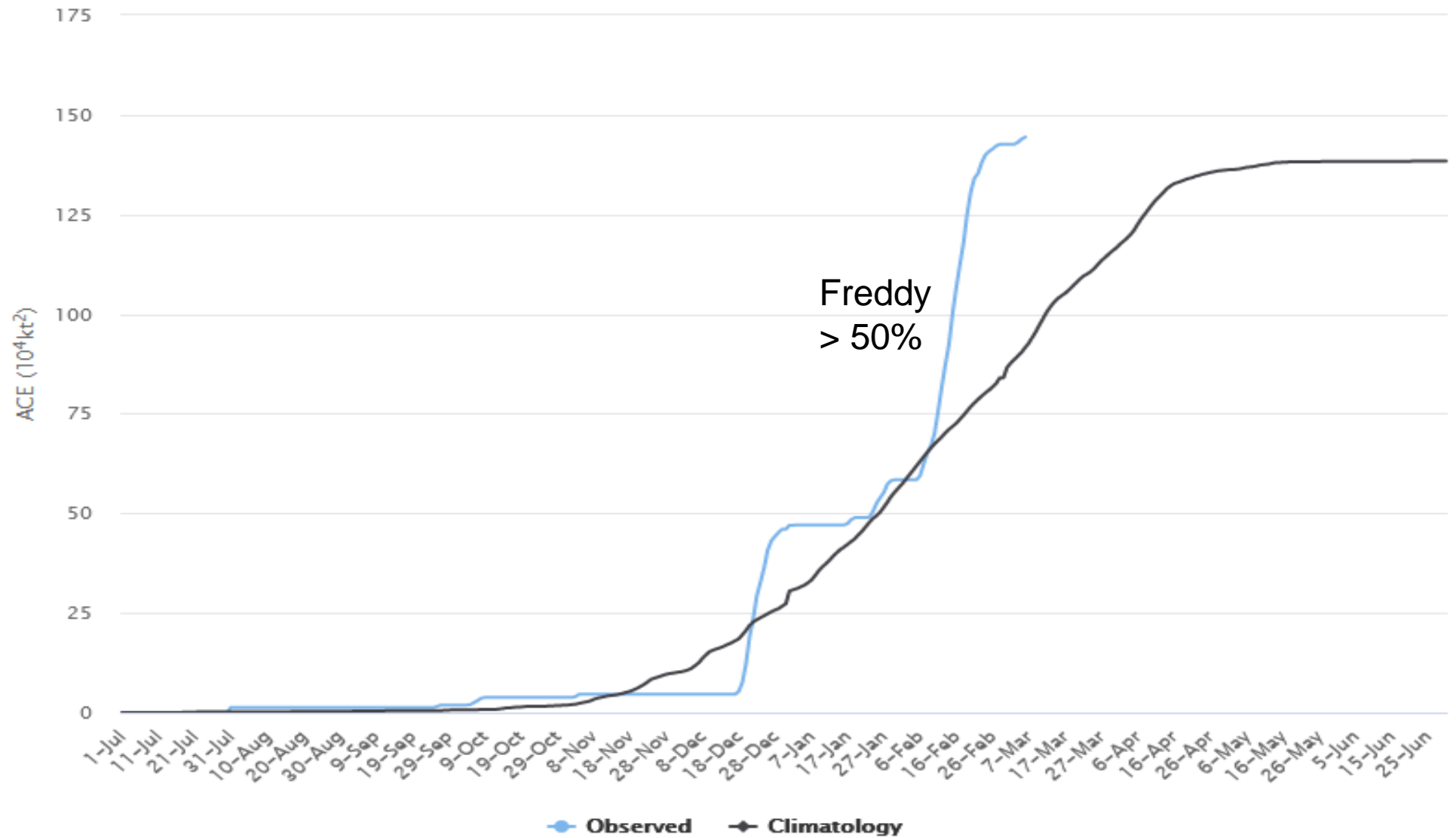
 Tropical Cyclone (Reference Warning)



# Long-lived Tropical Cyclone Freddy



## Current Season South Indian Ocean ACE (1991–2020 Climatology)

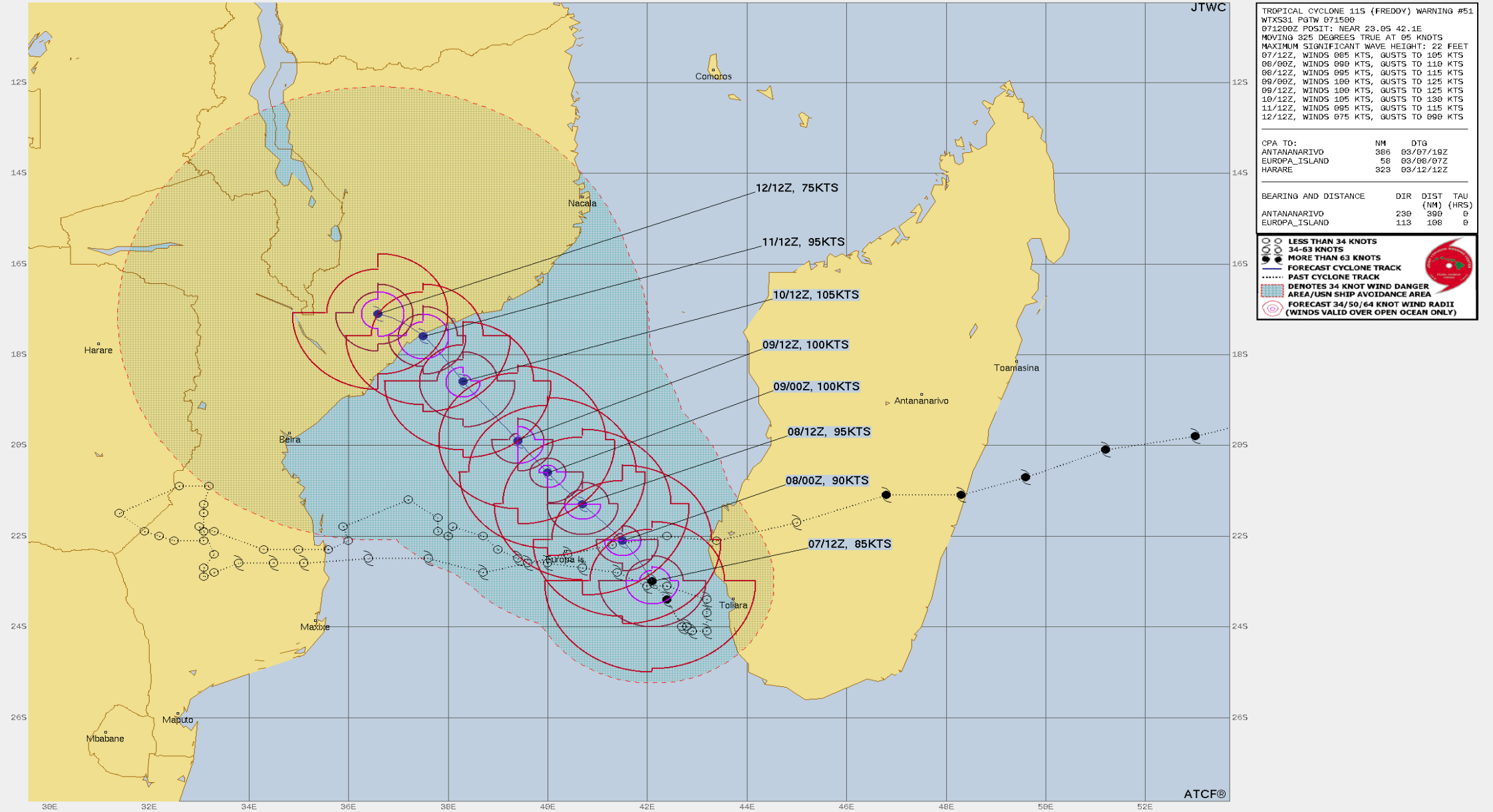


Highcharts.com

South Indian Ocean storm statistics were last modified: March 07 2023 09:00 MT

Statistics calculated from operational best tracks of the Joint Typhoon Warning Center. Available online [here](#):

# Joint Typhoon Warning Center



## Numerical Model Prediction

### GFS

RUN TIME: 12Z MAR 07

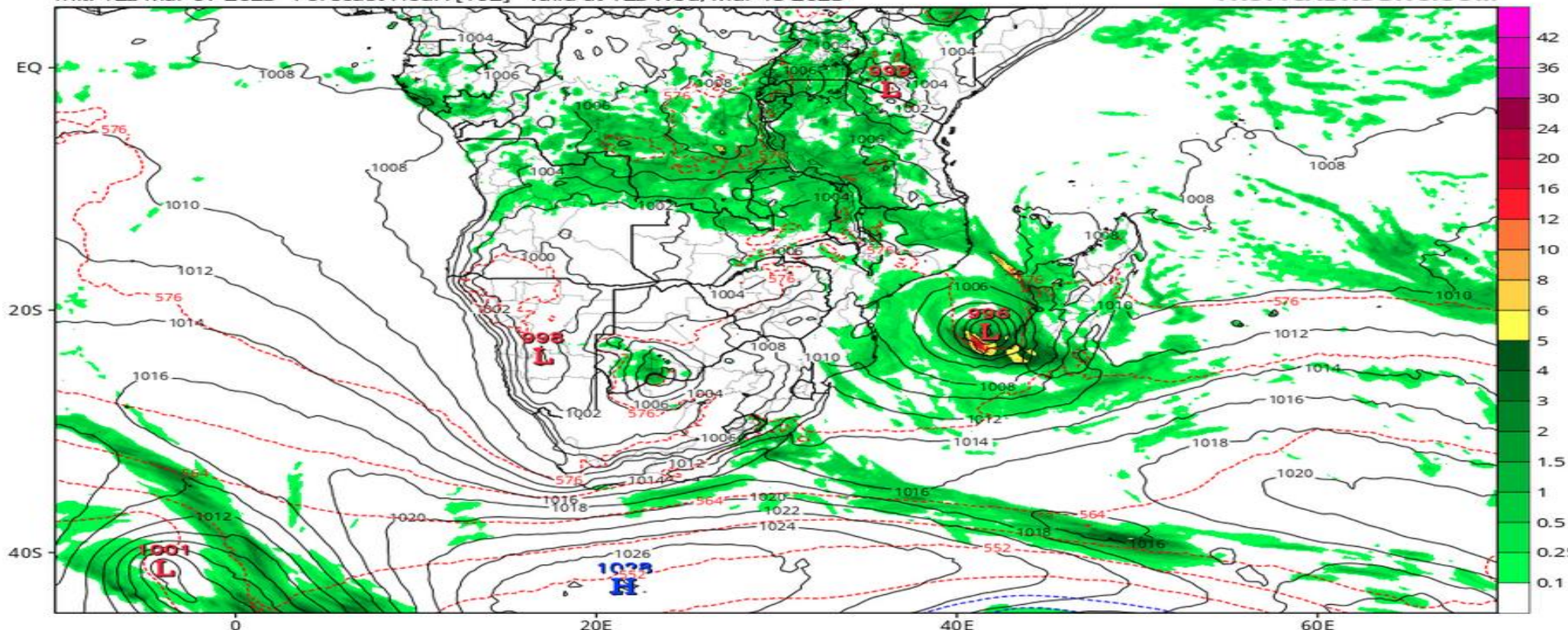
[Global](#)[Ensemble](#)[Hurricane](#)[Mesoscale](#)

Navigation controls: back, forward, zoom in (+), zoom out (-), settings (gear), and keyboard shortcuts (grid).

### GFS 6-hour Averaged Precip Rate (mm/hr), MSLP (hPa) & 1000-500mb Thickness (dam)

Init: 12z Mar 07 2023 Forecast Hour: [192] valid at 12z Wed, Mar 15 2023

TROPICALTIDBITS.COM

[REGIONS](#)

Prev. Run ← Next Run →

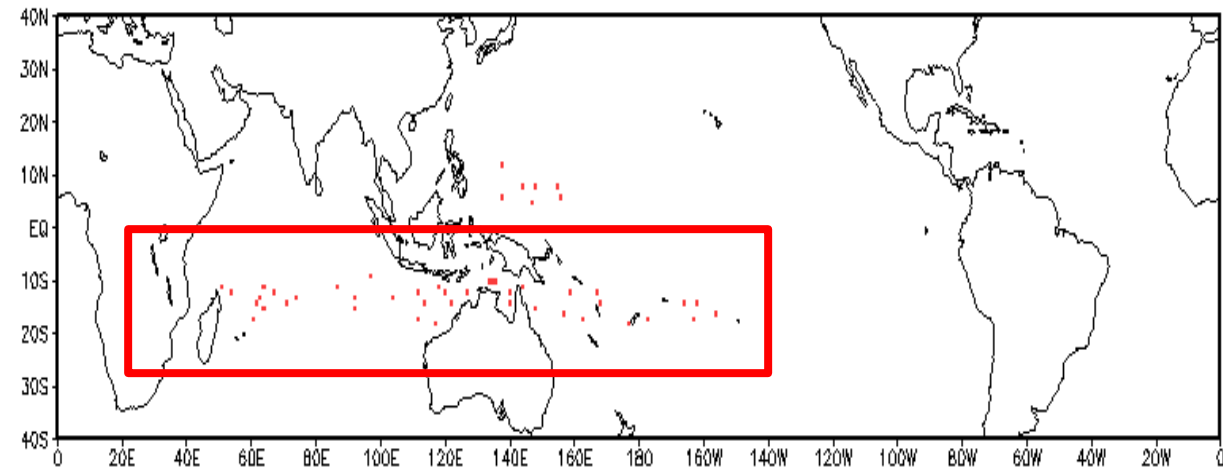
[FORECAST GIF](#)[TREND GIF](#)

After 2<sup>nd</sup> landfall in Mozambique, Freddy may reemerge over the Mozambique Channel  
Potential life span: 5+ weeks

# TC Climatological Genesis: Weeks 2 & 3

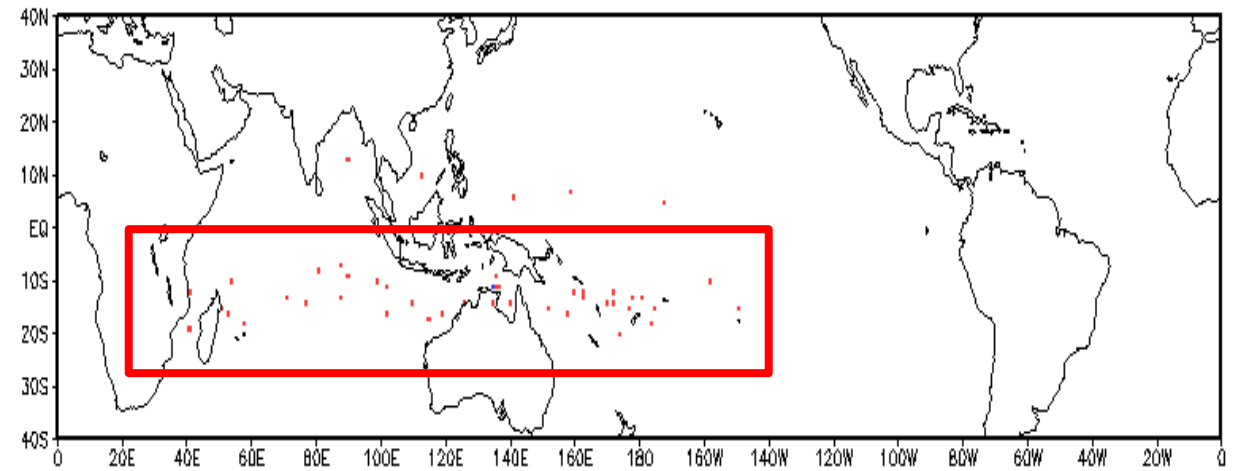
Observed TC Genesis, 1979–2021

7-day Period 0315 to 0321



Observed TC Genesis, 1979–2021

7-day Period 0322 to 0328



MJO: more favorable (Coral Sea and South Pacific)  
less favorable (south Indian Ocean)



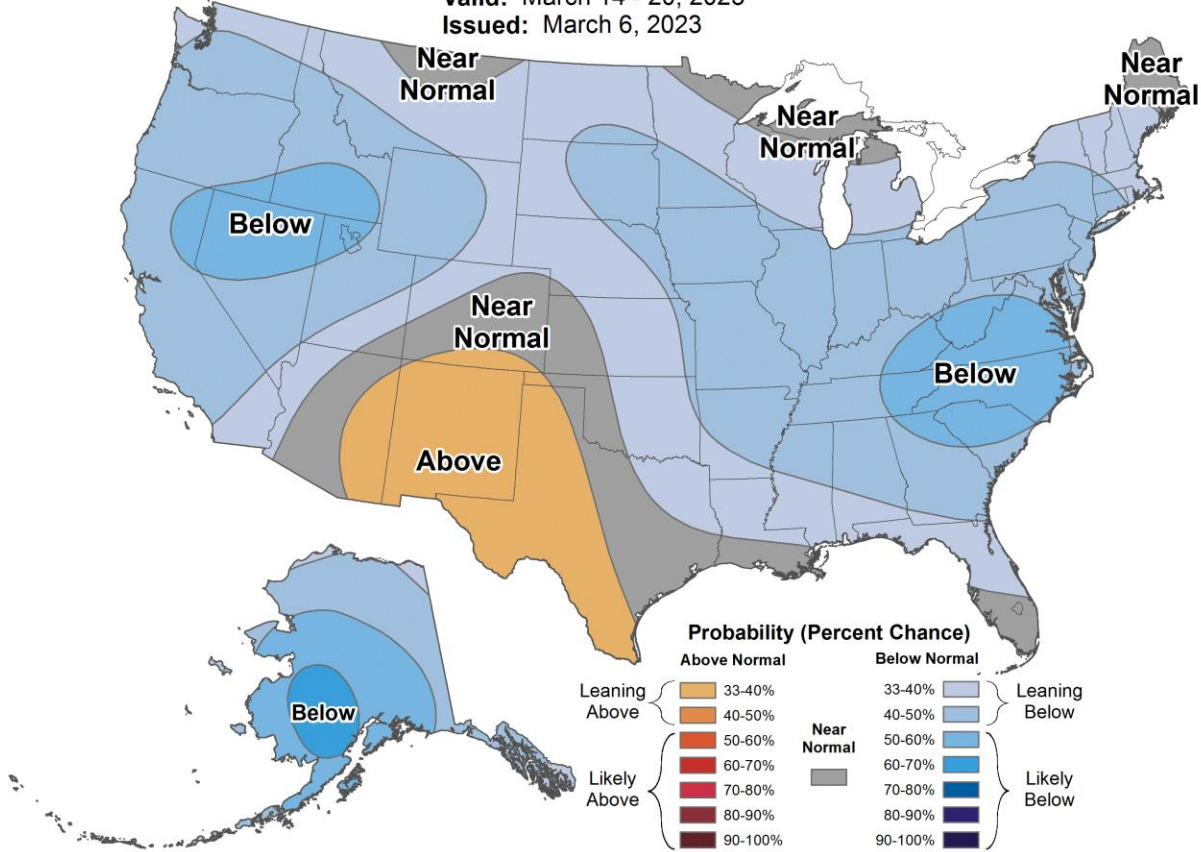
# Official Temperature & Precipitation Forecasts:



## 8-14 Day Temperature Outlook



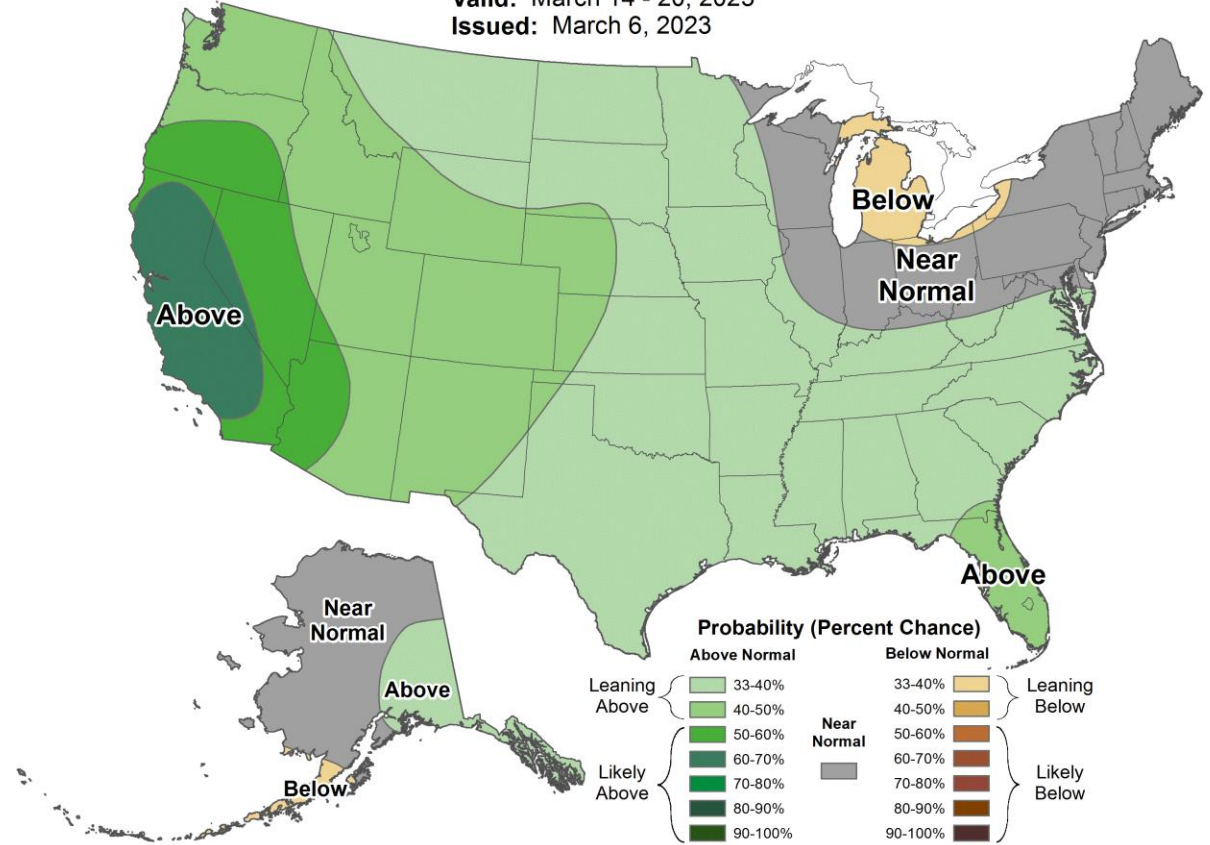
Valid: March 14 - 20, 2023  
 Issued: March 6, 2023



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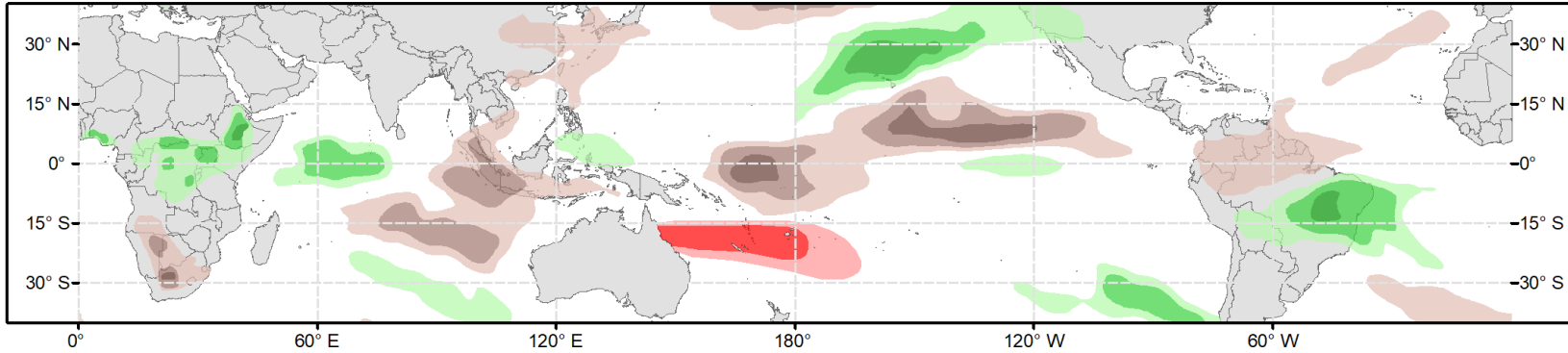


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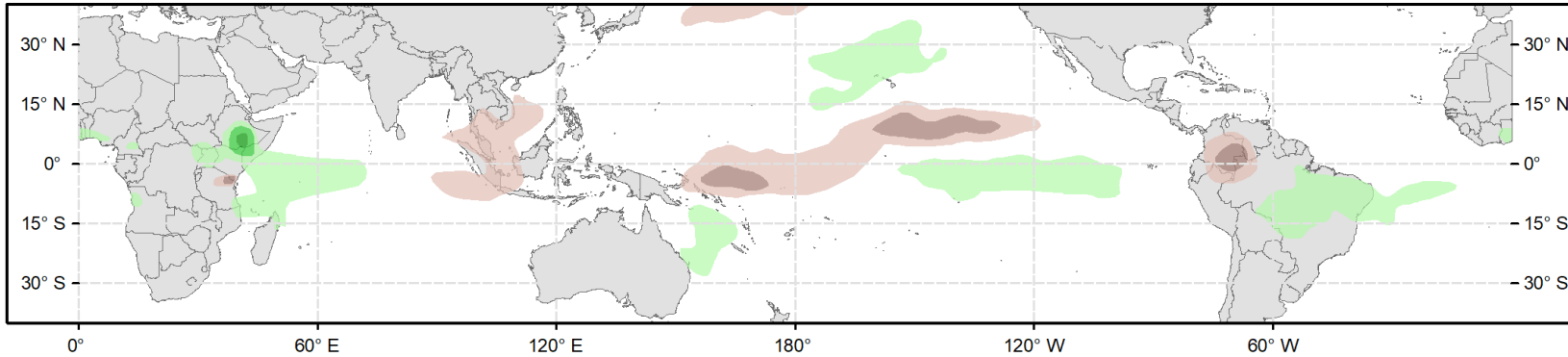
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