



Weeks 2-3 Global Tropics Hazards Outlook

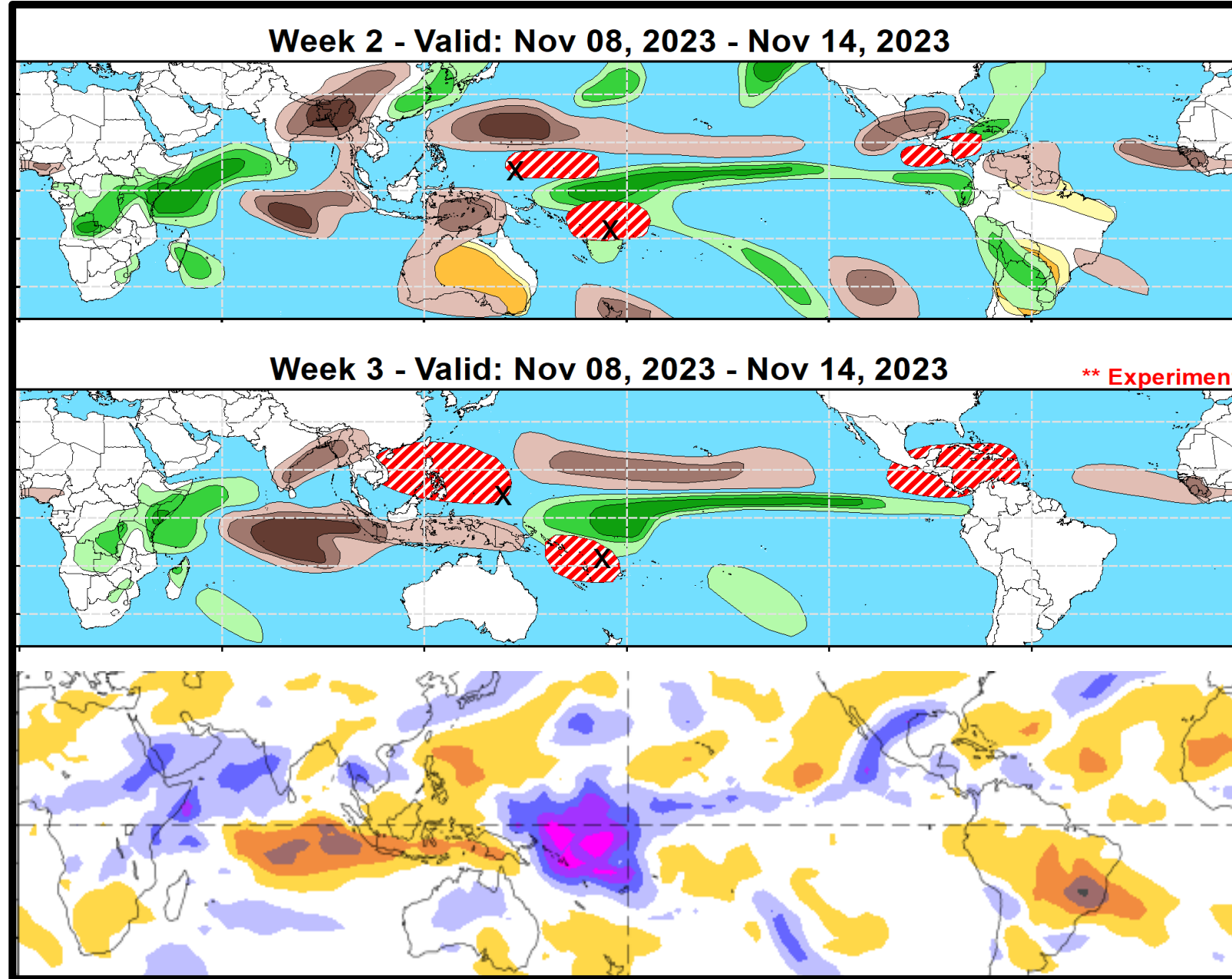
11/14/2023

Brad Pugh

NWS / NCEP / Climate Prediction Center

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

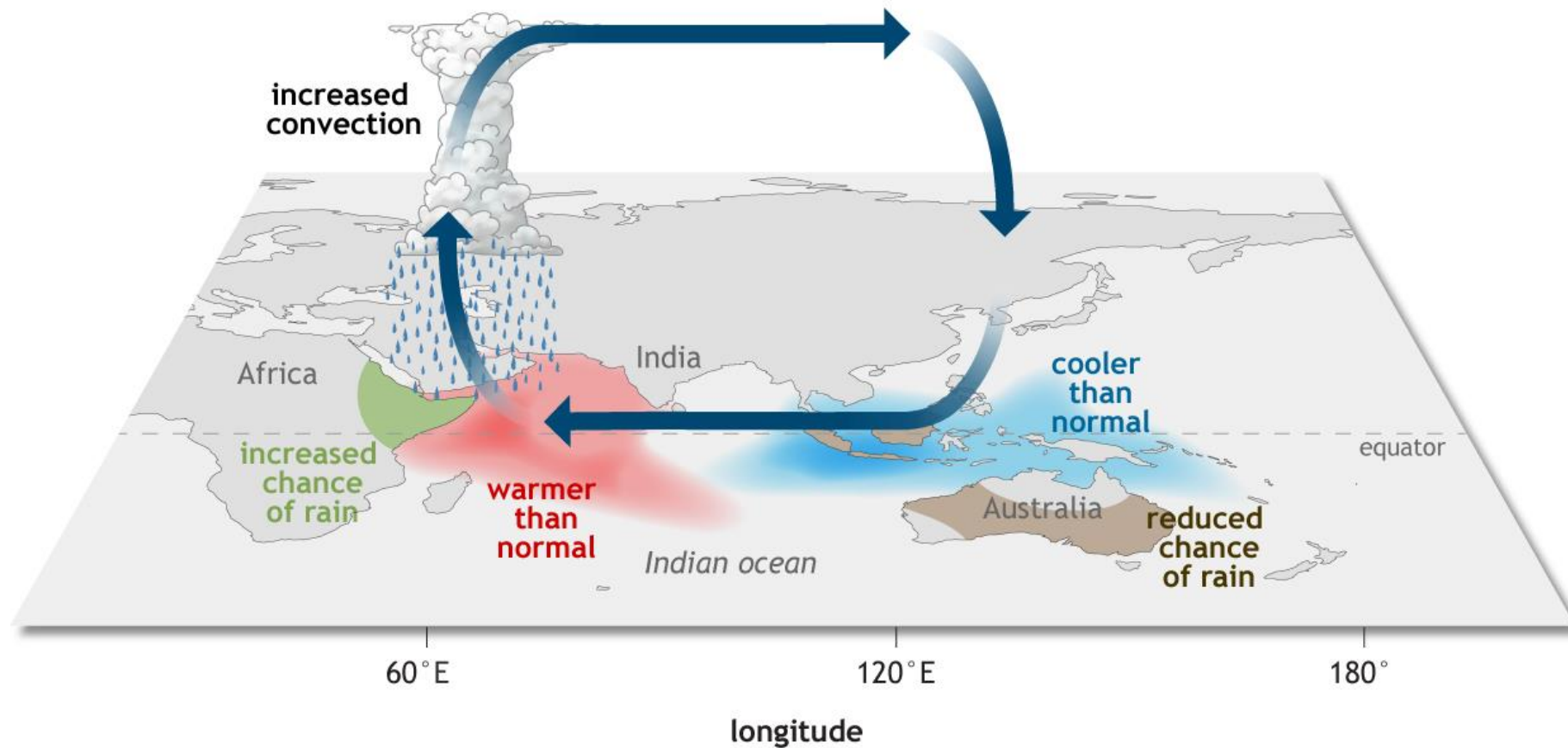
- Tropical Cyclone Mal (near Fiji): Nov 13th
- Weak and short-lived TC (West Pacific): Nov 13th
- 70 percent chance of TC development in Caribbean this next week
- Tropical rainfall: El Nino + Positive Indian Ocean Dipole



Positive Phase of the Indian Ocean Dipole

INDIAN OCEAN DIPOLE

Positive phase



Synopsis of Climate Modes:

ENSO: (Nov 9, 2023 Update) *next update on Thursday, Dec 14th*

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño is anticipated to continue through the Northern Hemisphere spring with a greater than 55% chance of a strong El Niño ($\geq 1.5\text{C}$ in Niño 3.4 for a seasonal average) persisting through Jan-Mar 2024.

MJO and other subseasonal tropical variability:

- A strengthening MJO is constructively interfering with El Niño; resulting in strongly enhanced rainfall across the west-central Pacific.
- The positive phase of the Indian Ocean Dipole (+IOD) continues to enhance (suppress) rainfall across the Horn of Africa and western Indian Ocean (eastern Indian Ocean).
- The MJO is forecast to propagate eastward over the Western Hemisphere to the Indian Ocean from late November to the beginning of December.

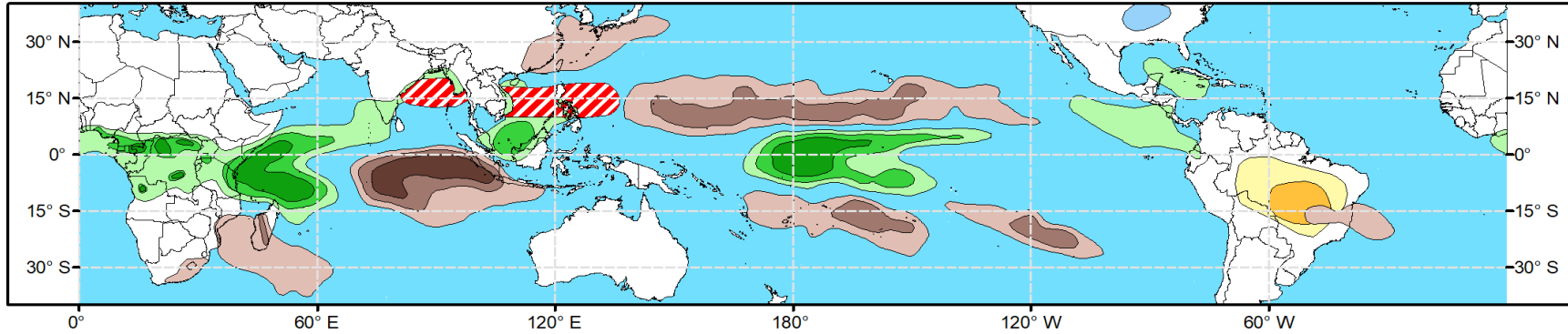
GTH Outlook:



Global Tropics Hazards Outlook Climate Prediction Center

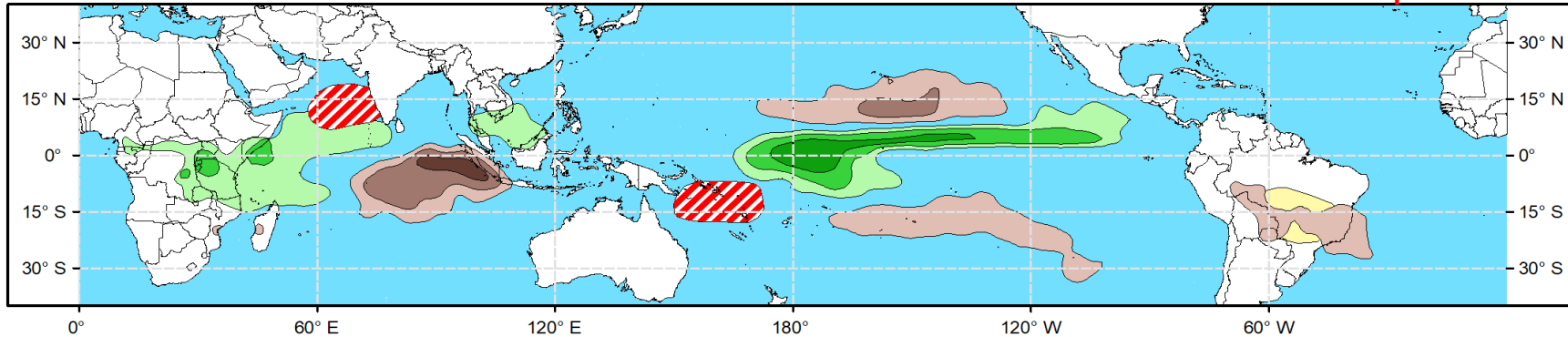


Week 2 - Valid: Nov 22, 2023 - Nov 28, 2023



Week 3 - Valid: Nov 29, 2023 - Dec 05, 2023

**** Experimental ****



**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*

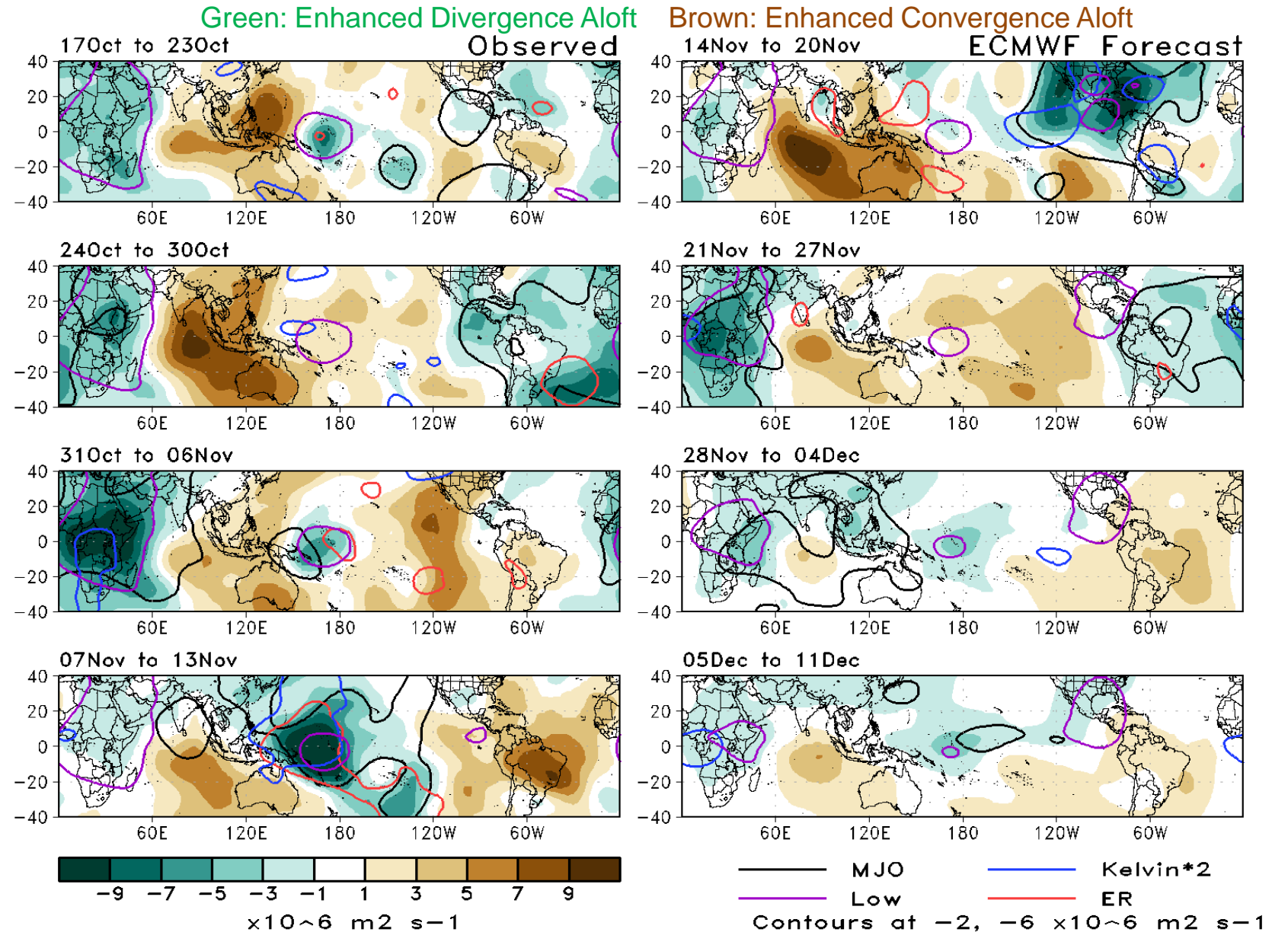
Issued: 11/14/2023

Forecaster: Pugh

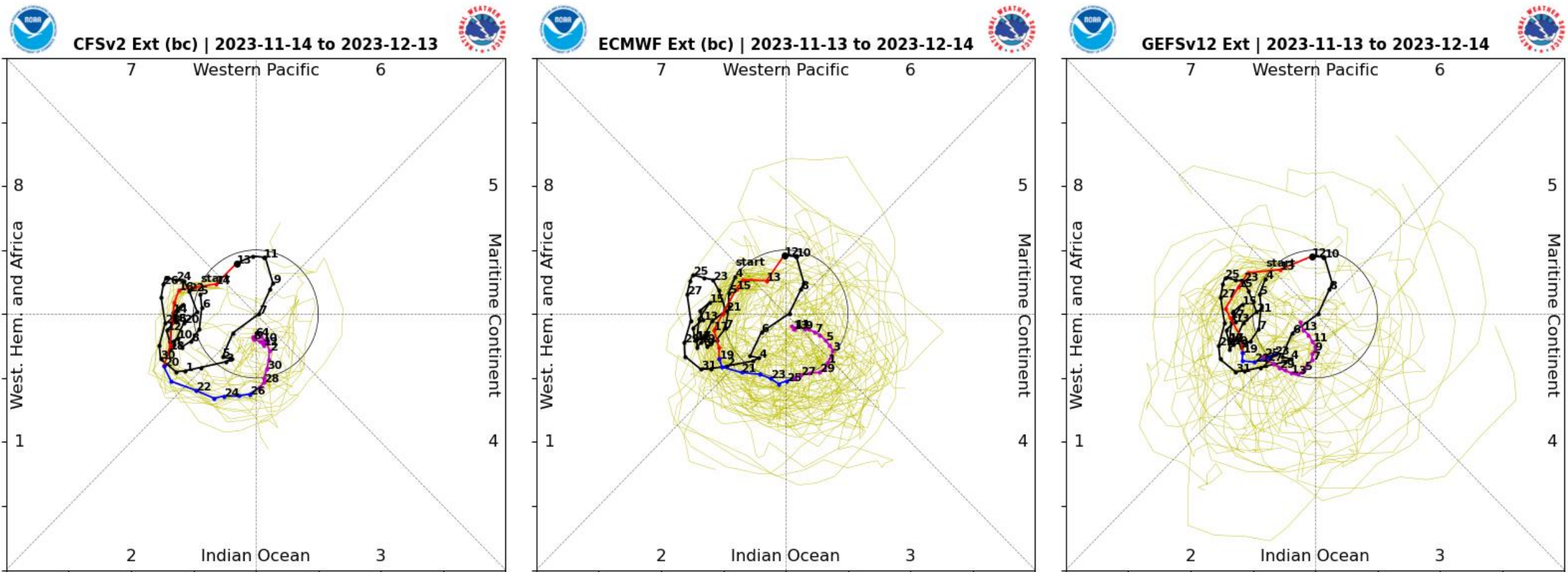
**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only.
Consult your local responsible forecast agency.**

200-hPa Velocity Potential Anomaly Maps:

- Anomalous upper-level divergence (green shading) increased from Nov 7 to 13 as the MJO interacted with El Nino.
- From Nov 14 to Dec 4, the envelope of anomalous upper-level divergence shifts east to Africa and the Indian Ocean.
- +IOD may disrupt the MJO as it shifts to the Indian Ocean.



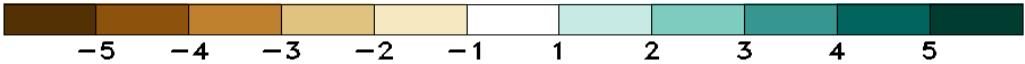
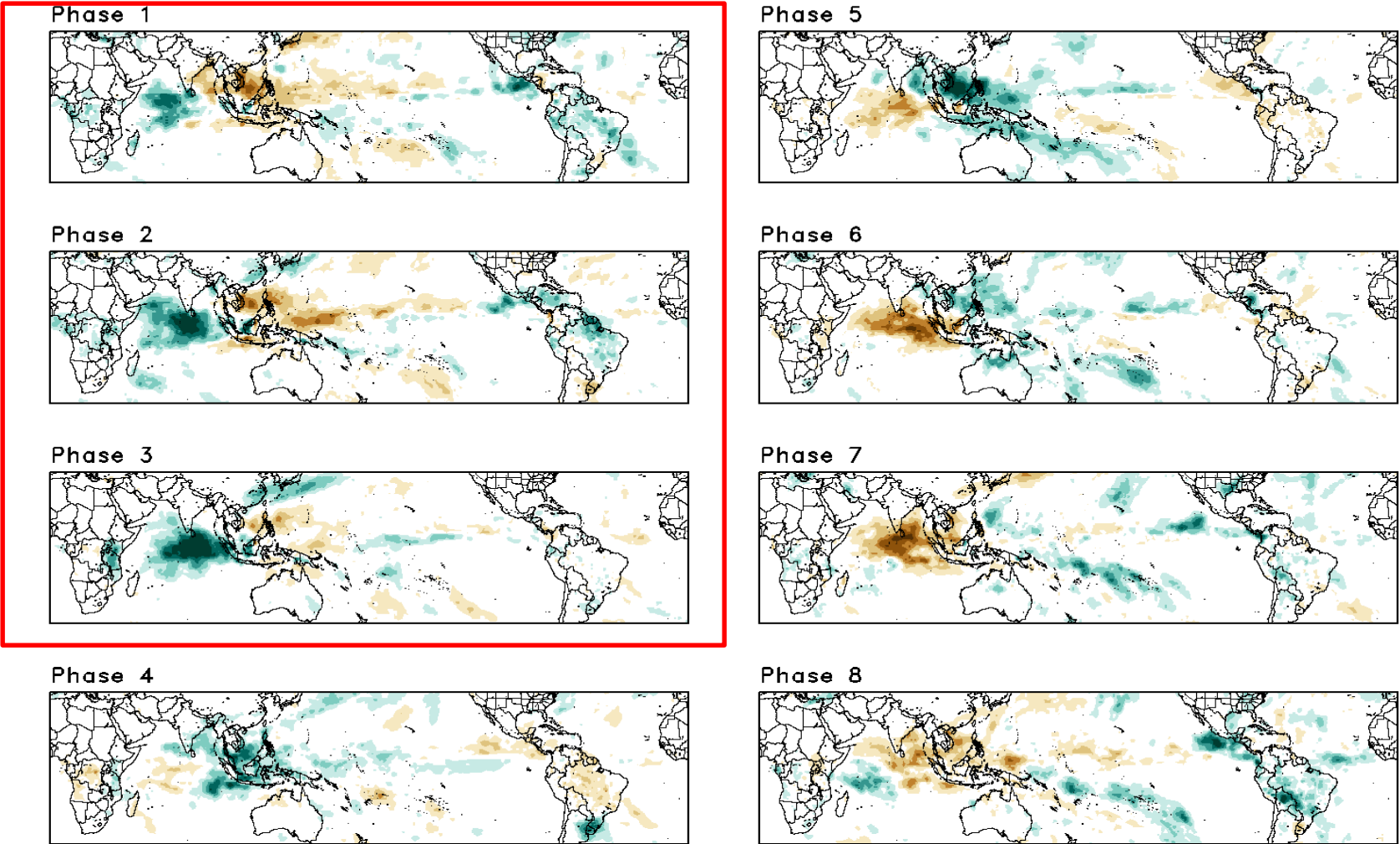
RMM Index Observations & Forecasts:



- Good model agreement for an eastward propagating MJO (phase 7 to phase 3).
- Ensemble spread increases on its amplitude by the beginning of December as the MJO shifts east to the Indian Ocean.

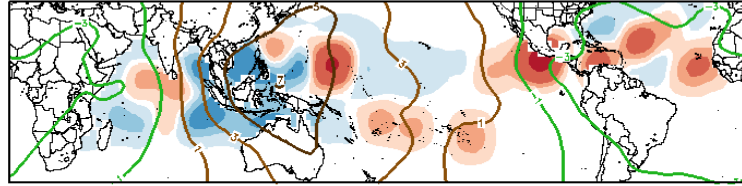
Historical Precipitation Anomalies By MJO Phase:

OND MJO Composite: GPCP1DD (mm/day)

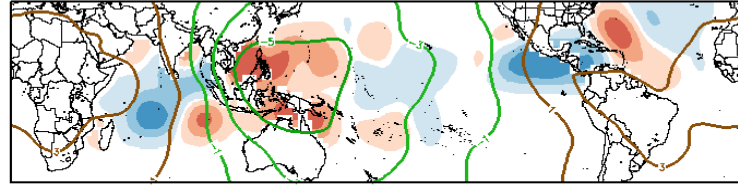


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

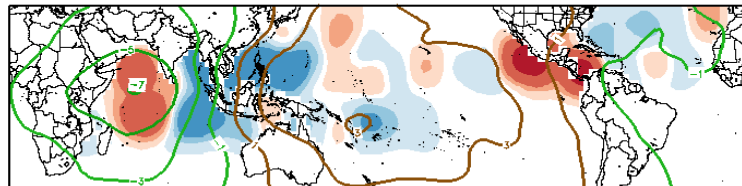
OND MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ OND CHI200 ($\times 10^{-6} m^{-2} s^{-1}$) / Contours every $2 \times 10^{-6} m^{-2} s^{-1}$



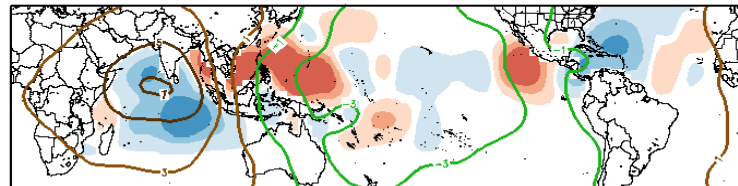
Phase 1



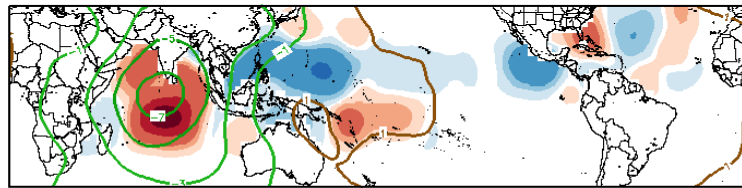
Phase 5



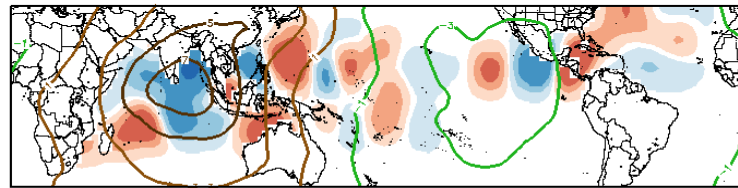
Phase 2



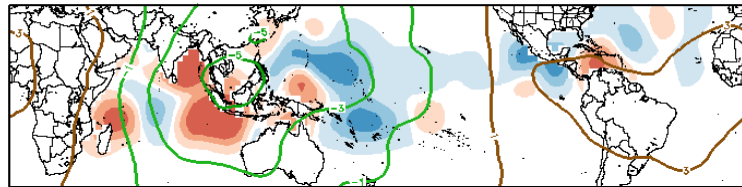
Phase 6



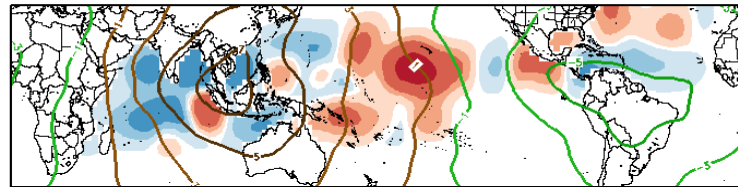
Phase 3



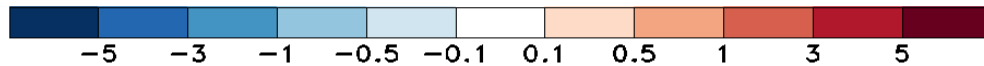
Phase 7



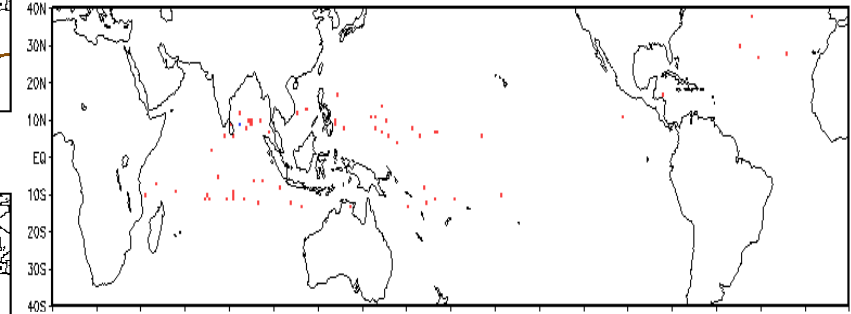
Phase 4



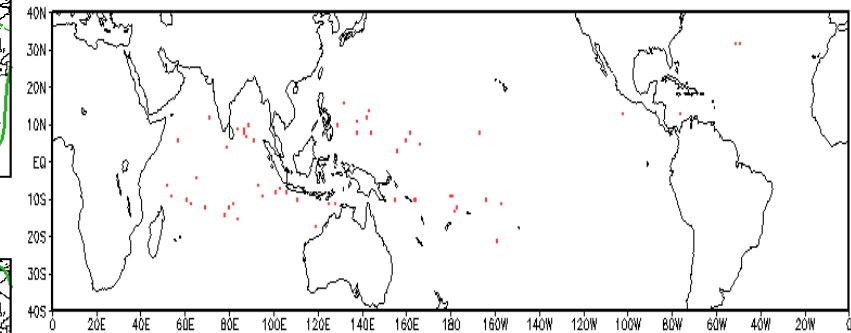
Phase 8



Observed TC Genesis, 1979–2021
7-day Period 1122 to 1128

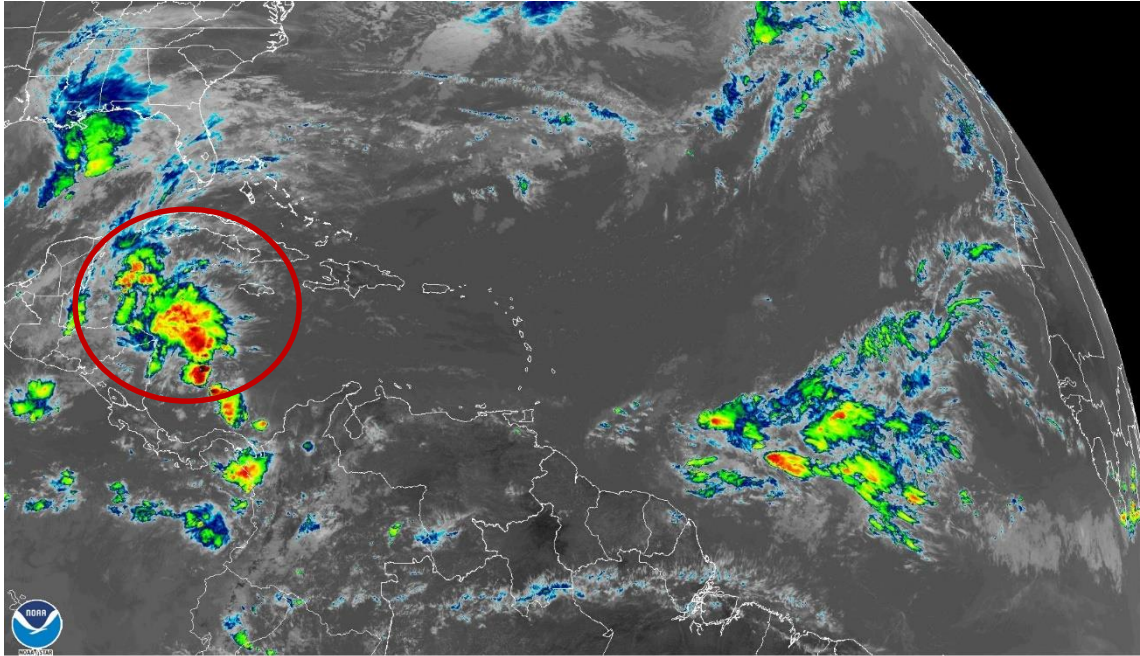


Observed TC Genesis, 1979–2021
7-day Period 1129 to 1205

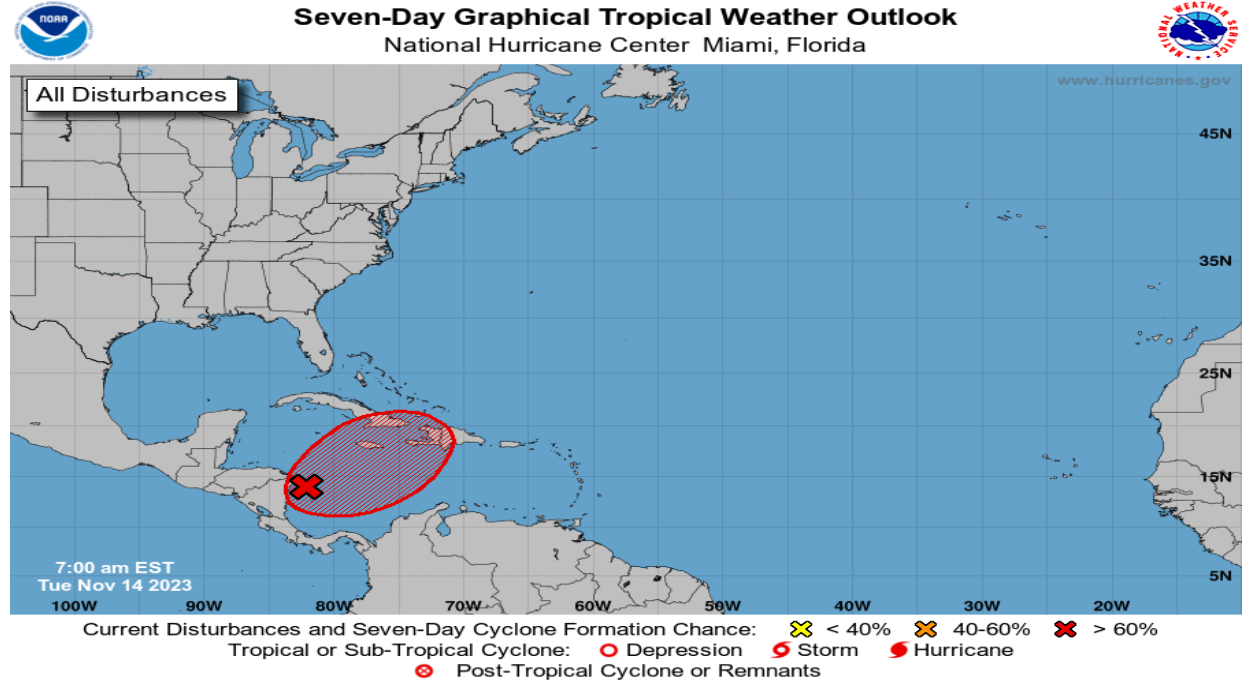


Experimental

Tropical Cyclone Monitoring/Forecast: NHC / CPHC



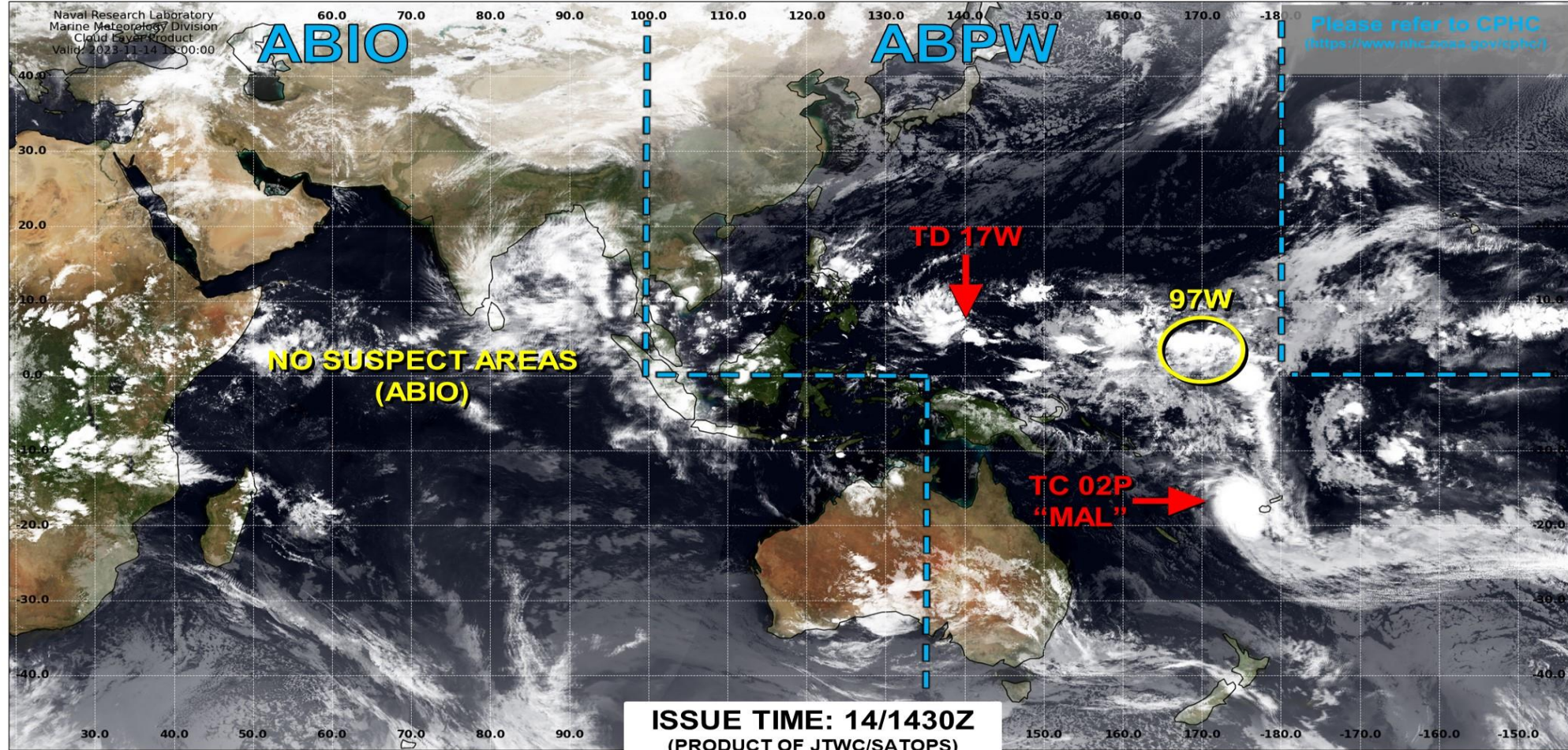
14 Nov 2023 17:00Z - NOAA/NESDIS/STAR - GOES-East - Band 13 - TAW



Tropical Cyclone Monitoring/Forecast: JTWC



JOINT TYPHOON WARNING CENTER



ISSUE TIME: 14/1430Z
(PRODUCT OF JTWC/SATOPS)



TC development unlikely
within 24 hours



TC development likely, but
expected to occur beyond
24 hours



TC development likely within
24 hours
(Reference TCFA)

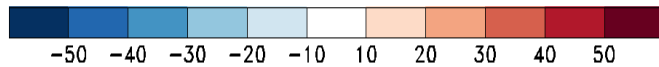
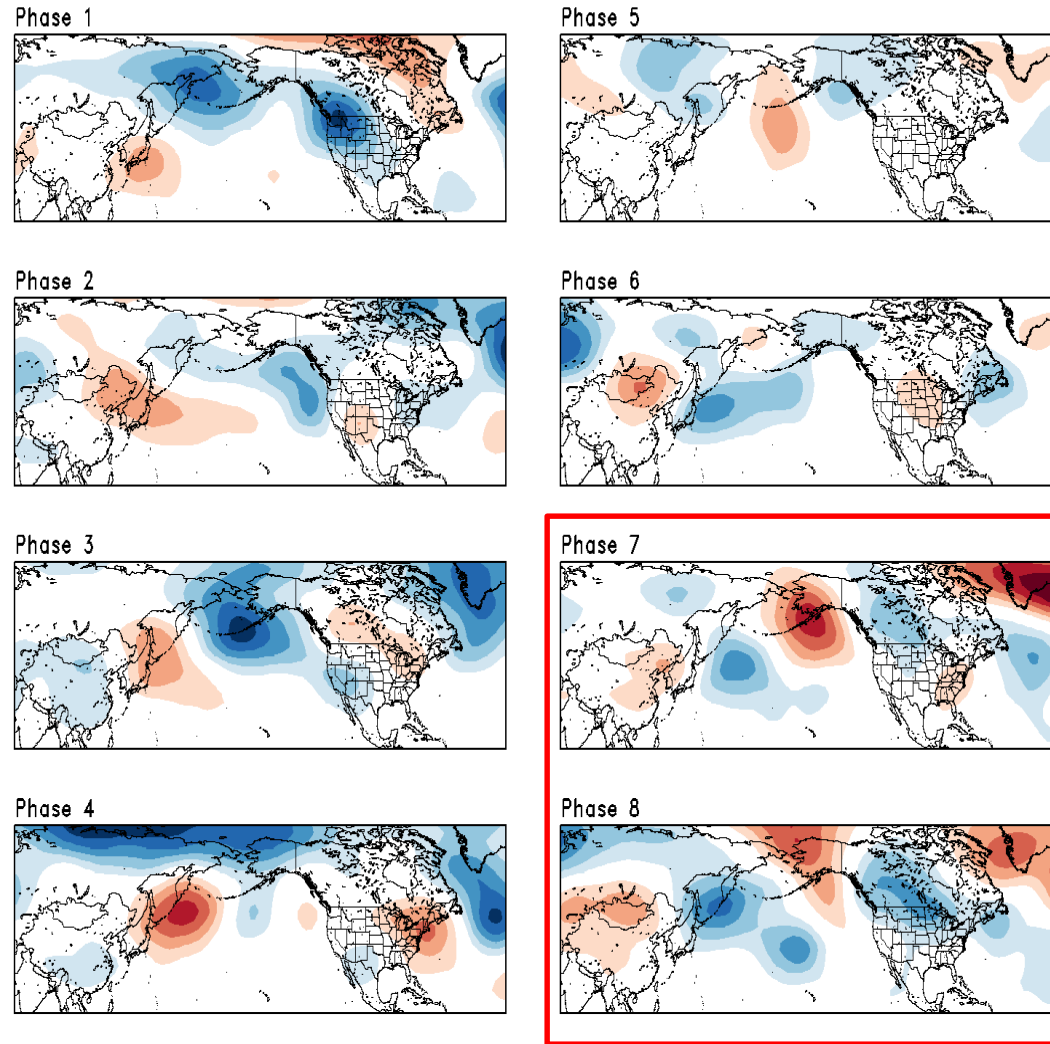


Monitoring for
potential transition to TC.
Invest label color denotes
tropical transition probability

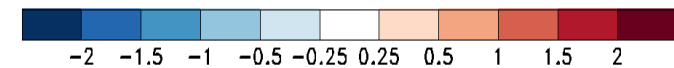
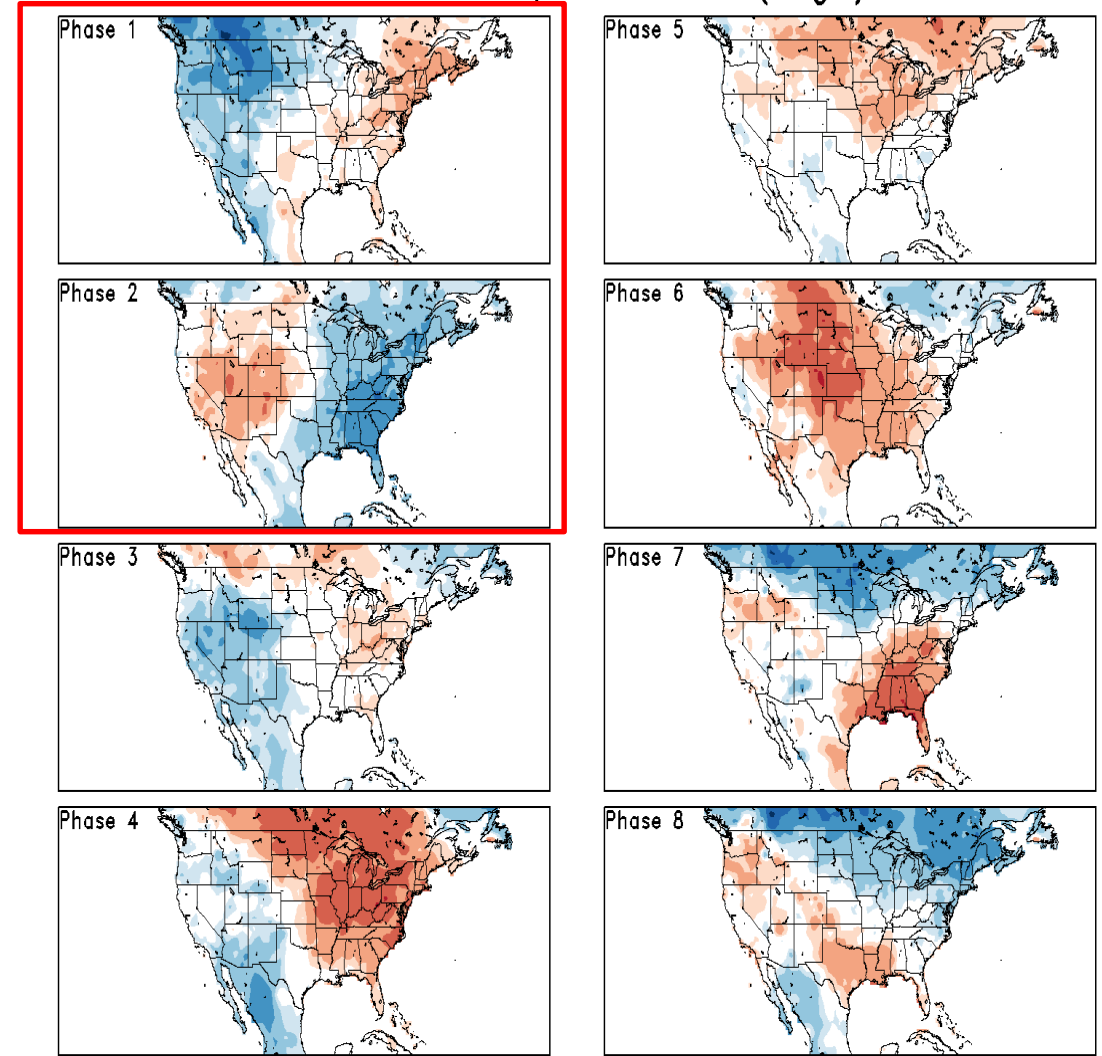
 Tropical Cyclone
(Reference Warning)

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

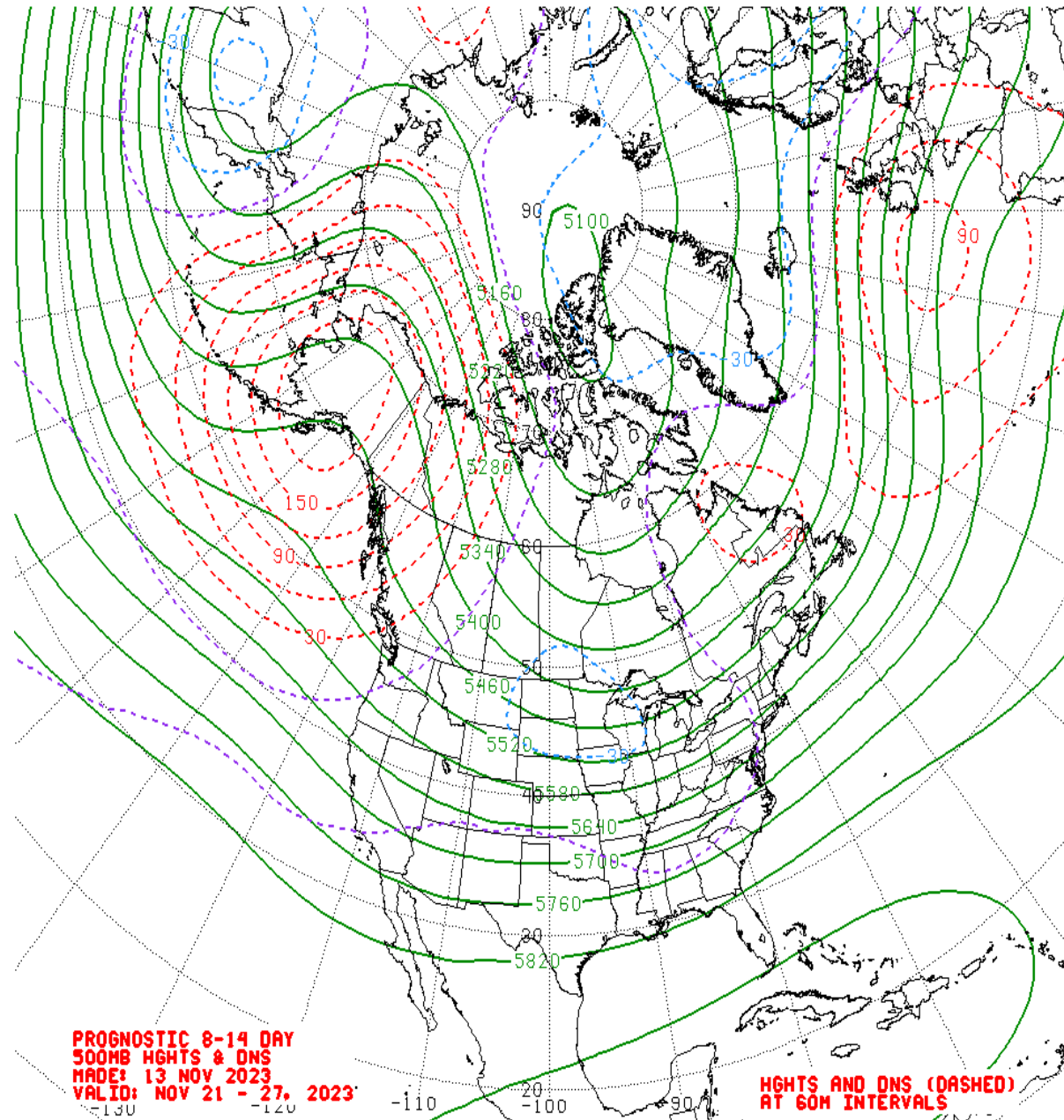
OND MJO Composite: CDAS 500-hPa Height (m)



OND MJO Composite: GLBT (degC)



Mean 500-hPa Height Anomaly Forecasts: Week-2



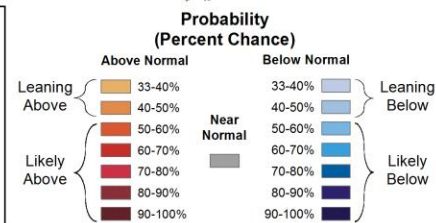
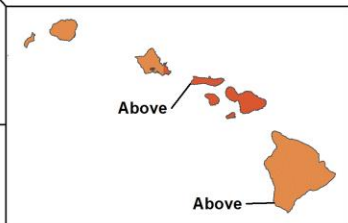
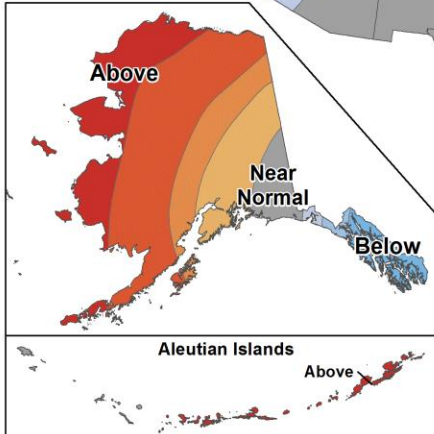
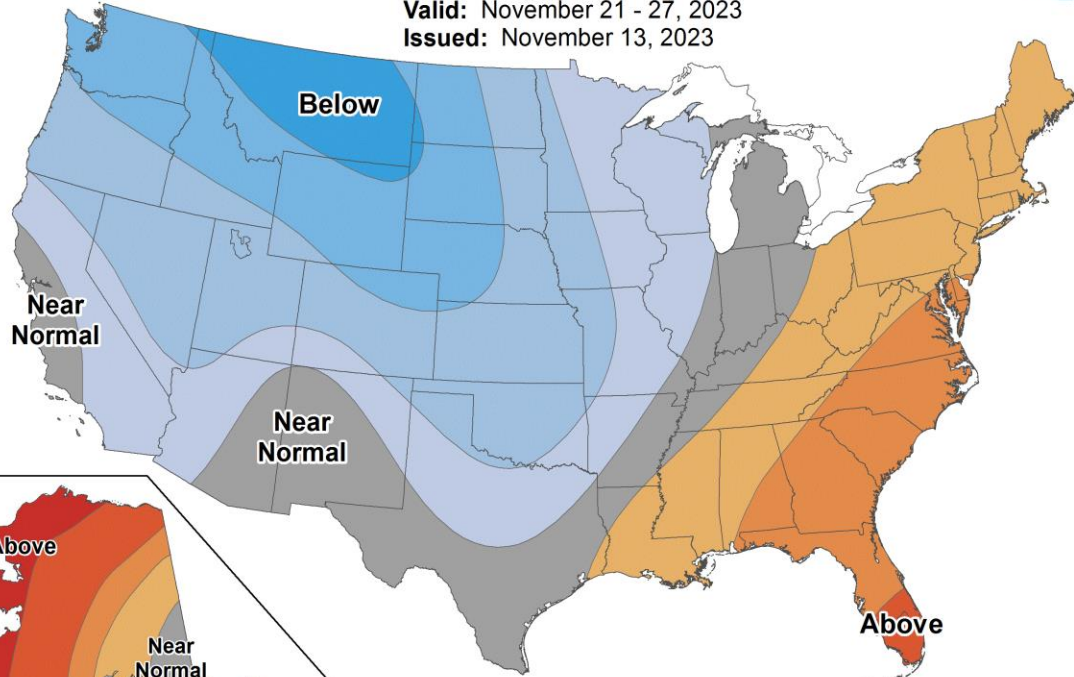
Official Week-2 Temperature & Precipitation Forecasts:



8-14 Day Temperature Outlook



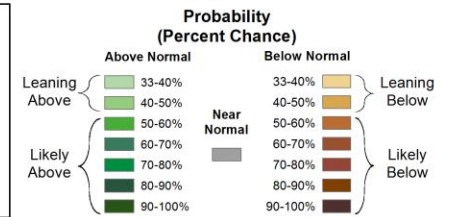
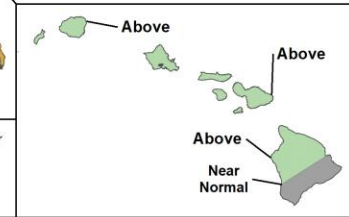
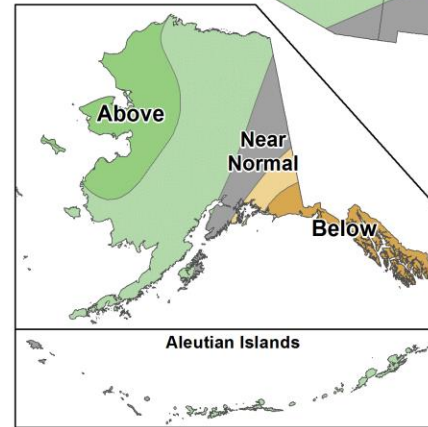
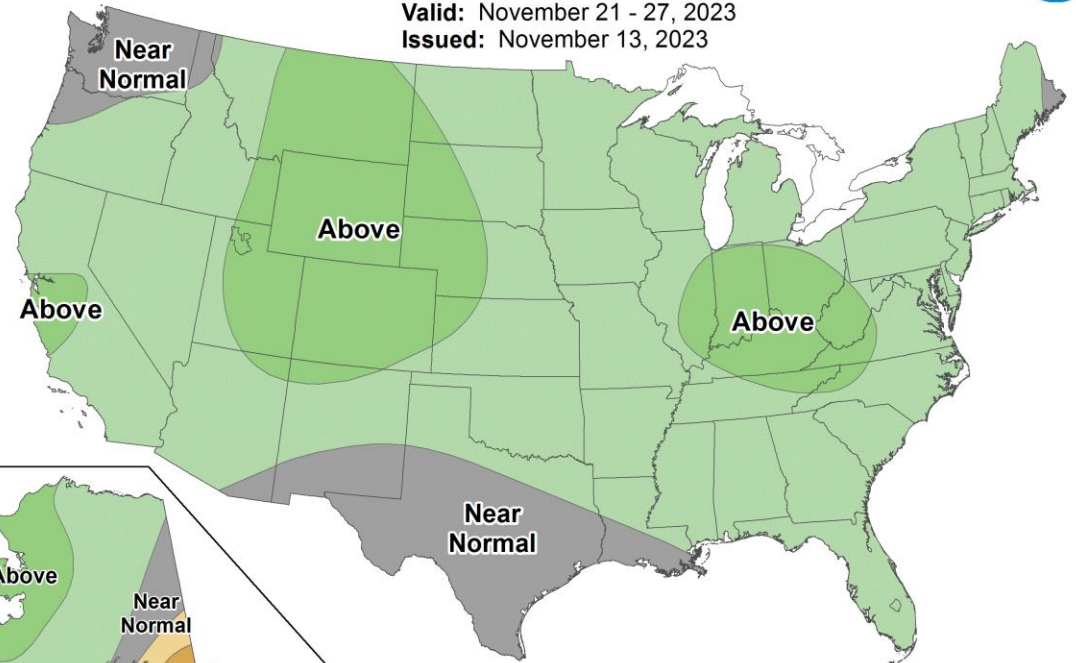
Valid: November 21 - 27, 2023
 Issued: November 13, 2023



8-14 Day Precipitation Outlook



Valid: November 21 - 27, 2023
 Issued: November 13, 2023



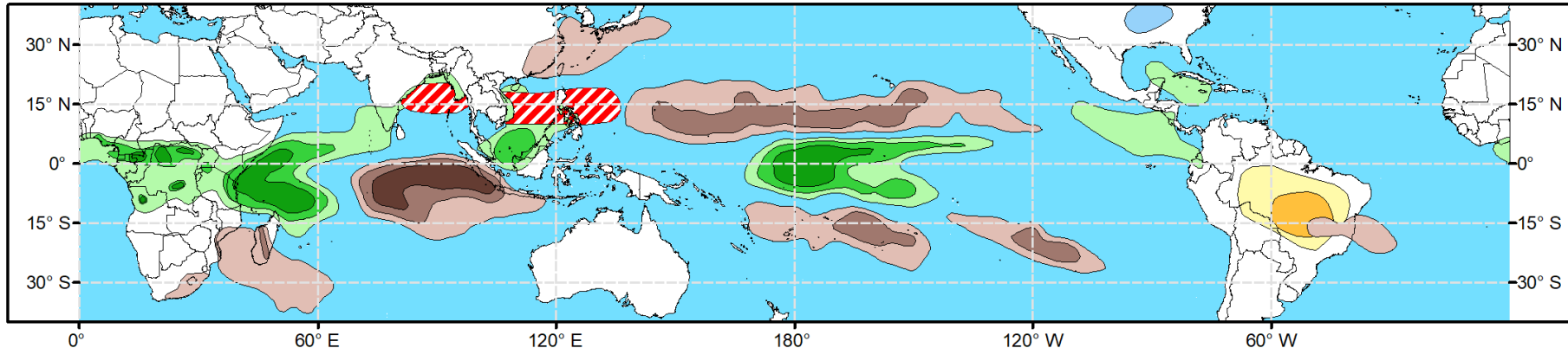


Global Tropics Hazards Outlook

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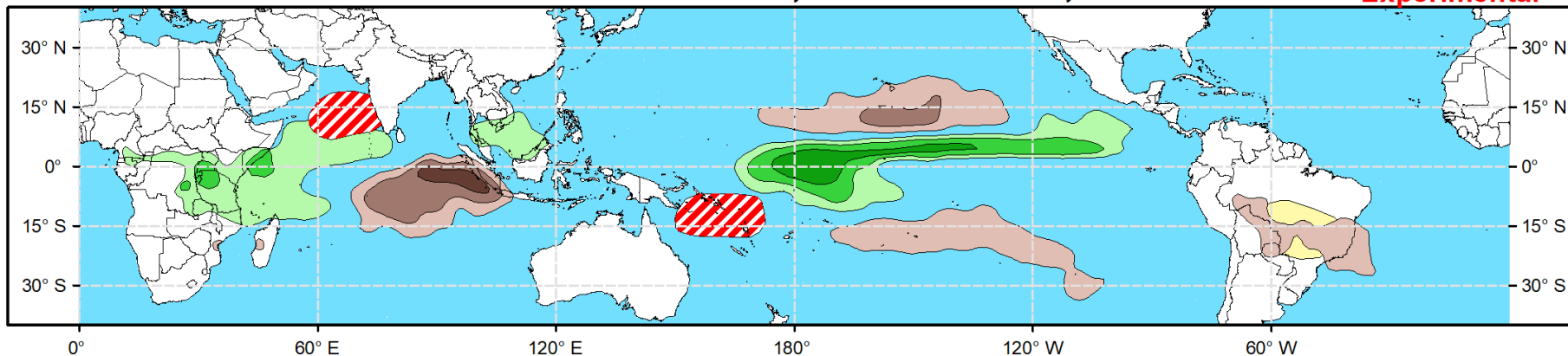


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