



Weeks 2-3 Global Tropics Hazards Outlook

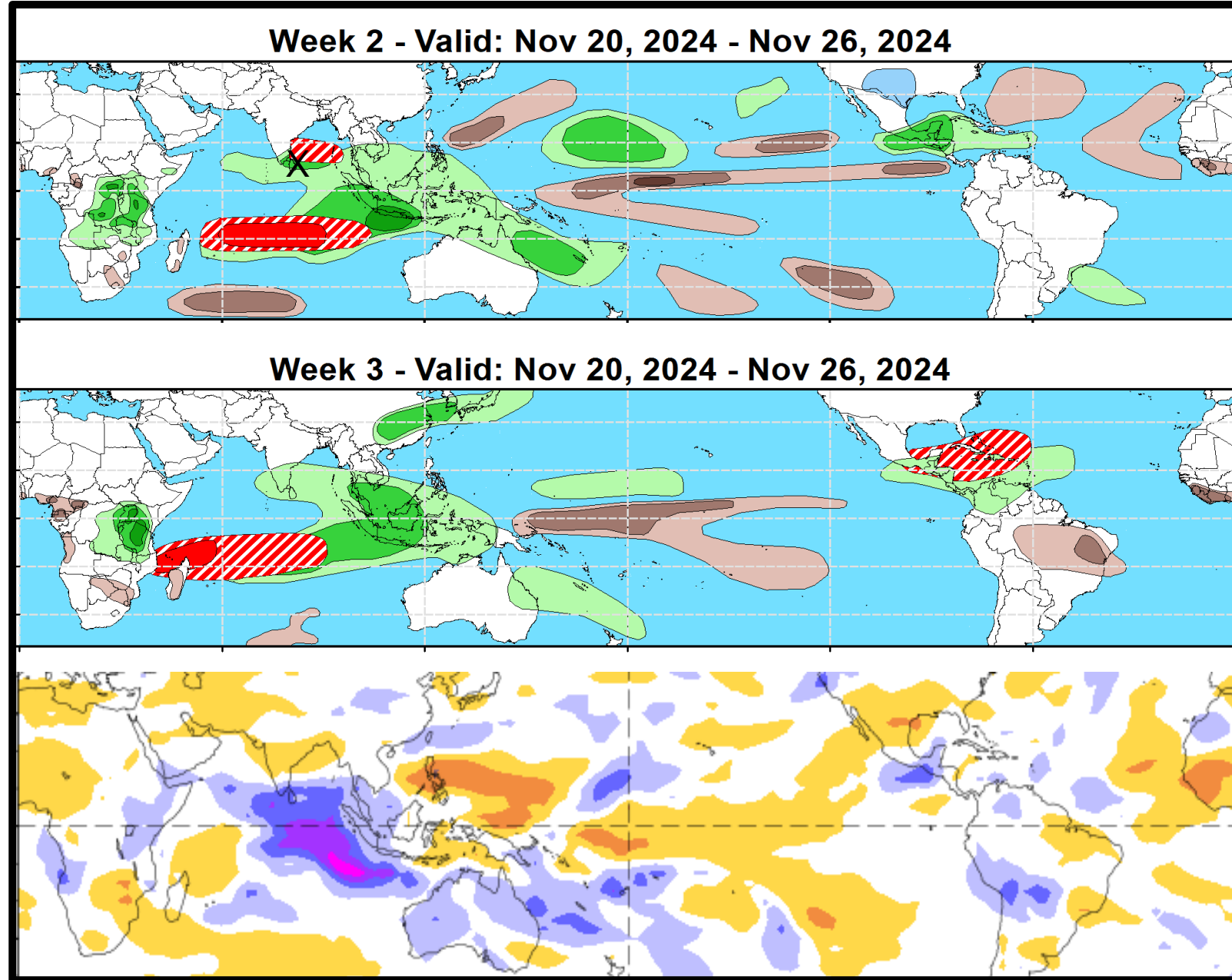
11/26/2024

Nick Novella

NWS / NCEP / Climate Prediction Center

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

- TCFA: 99B (Bay of Bengal)



Synopsis of Climate Modes:

ENSO: (Nov 14, 2022 Update) *next update on Thursday, Dec 12th*

- ENSO Alert System Status: [La Niña Watch](#)
- La Niña is most likely to emerge in October-December 2024 (57% chance) and is expected to persist through January-March 2025.

MJO and other subseasonal tropical variability:

- Since becoming briefly disorganized over the Western Hemisphere, observations show the MJO regaining amplitude while propagating eastward across the Indian Ocean.
- Some discrepancies exist in the guidance in regards to the strength and evolution of the MJO signal, notably the Maritime Continent Barrier Effect, though there is growing confidence that the MJO propagates across the Maritime Continent and into Western Pacific later in December.
- While there remains some question in regards to the eventual MJO amplitude, the large-scale environment is expected to be favorable for additional tropical cyclogenesis across Indian Ocean and western Pacific, with development possible over the South Pacific towards the middle of December.

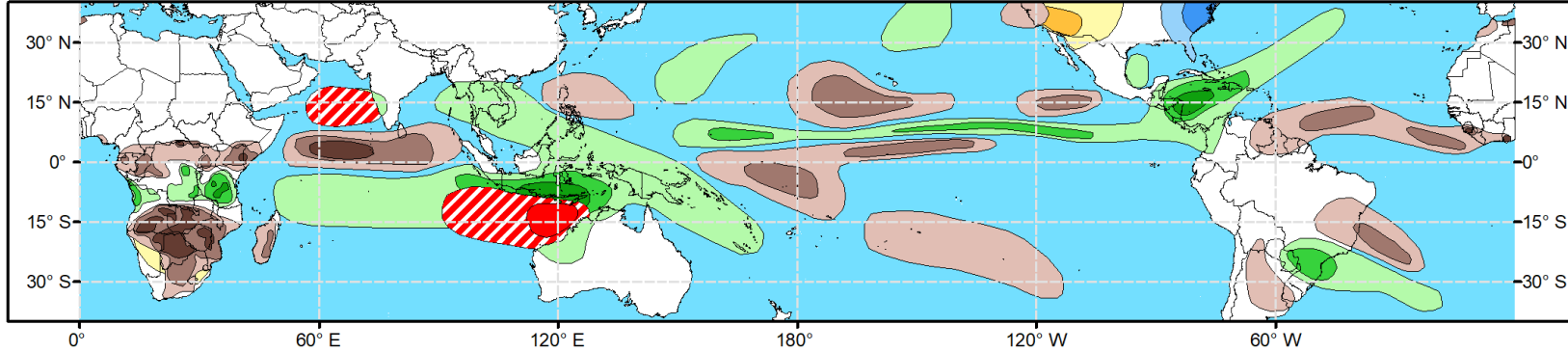
GTH Outlook:



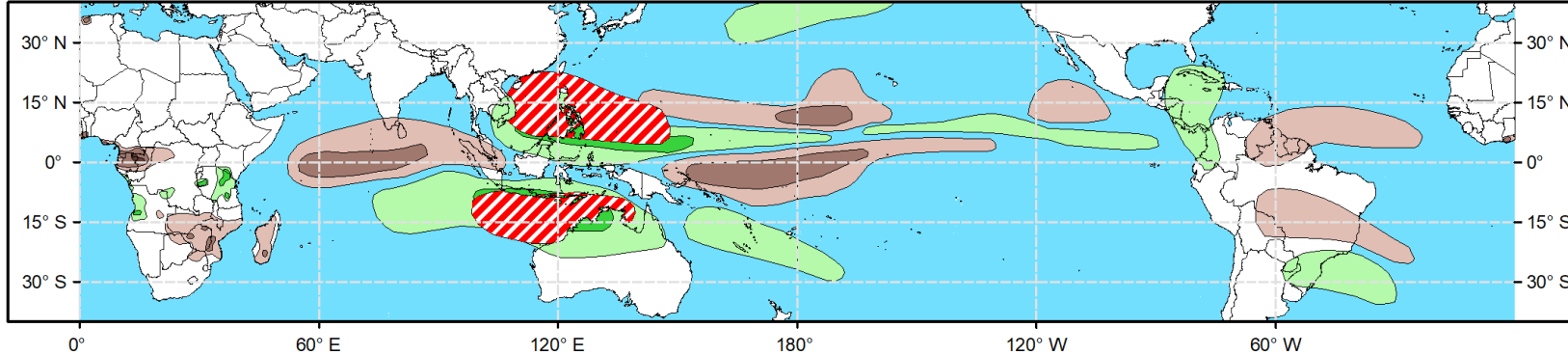
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Dec 04, 2024 - Dec 10, 2024



Week 3 - Valid: Dec 11, 2024 - Dec 17, 2024



**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**



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*7-day max temperatures in the
Upper third of the historical range*

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Temperatures Probability**



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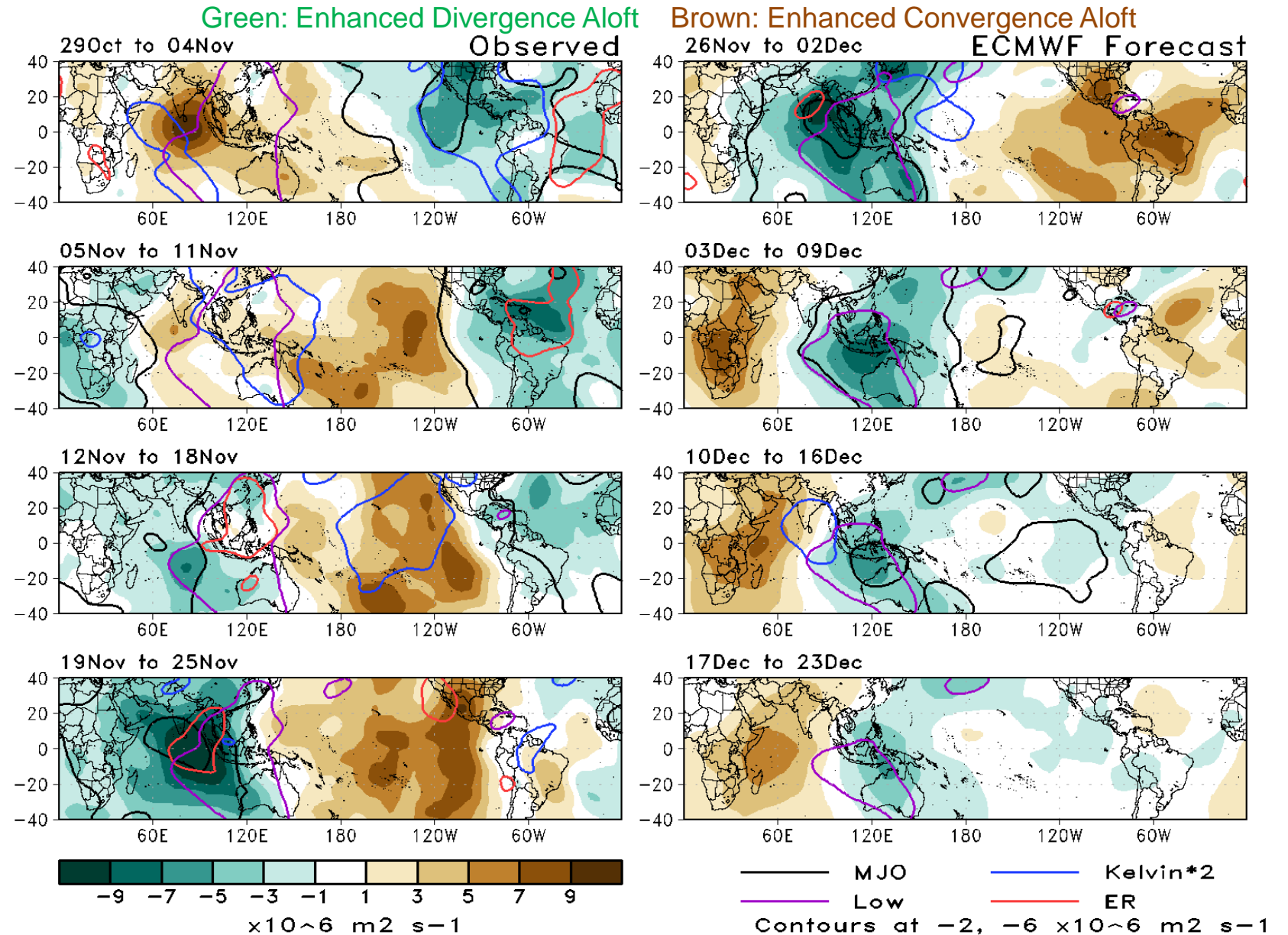
*7-day min temperatures in the
Lower third of the historical range*

**Issued: 11/26/2024
Forecaster: Novella**

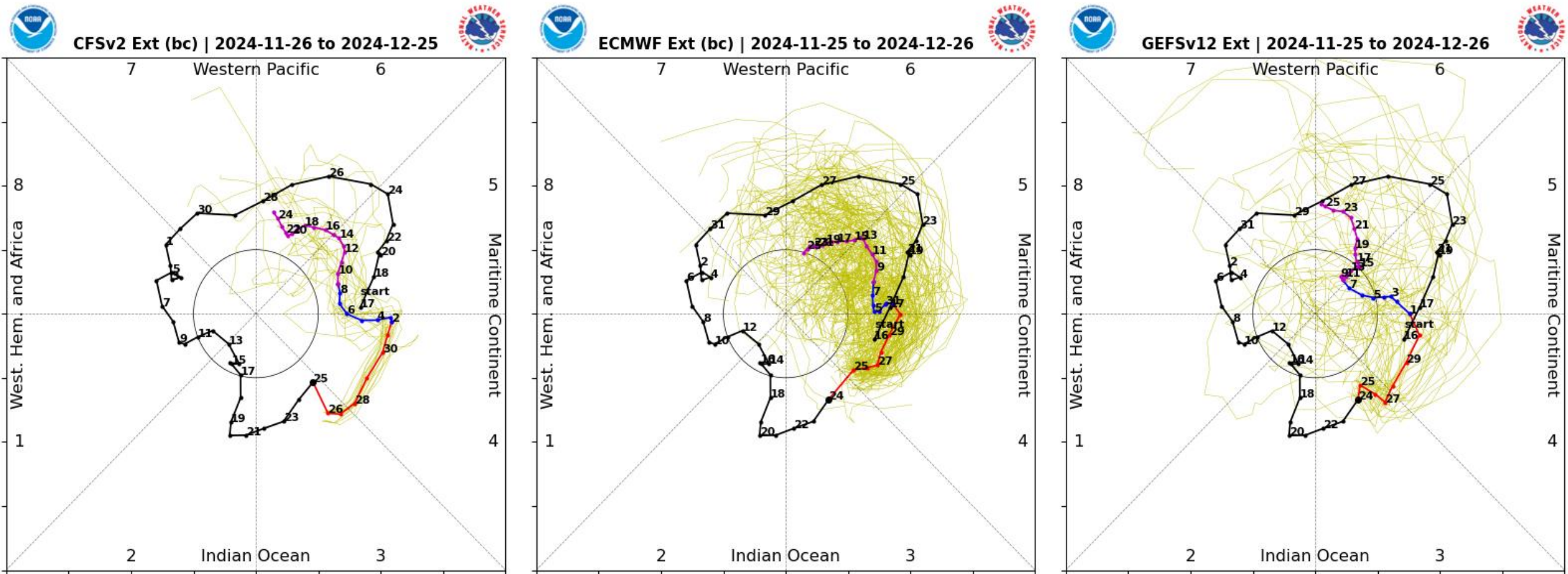
**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only.
Consult your local responsible forecast agency.**

200-hPa Velocity Potential Anomaly Maps:

- The strengthened MJO signal resulted in a better defined wave-1 pattern during the past week.
- This is favored to continue, until the pattern becomes disorganized as the enhanced MJO phase encroaches the Western Pacific.
- Low frequency variability over the Maritime Continent appears to become a dominant player.

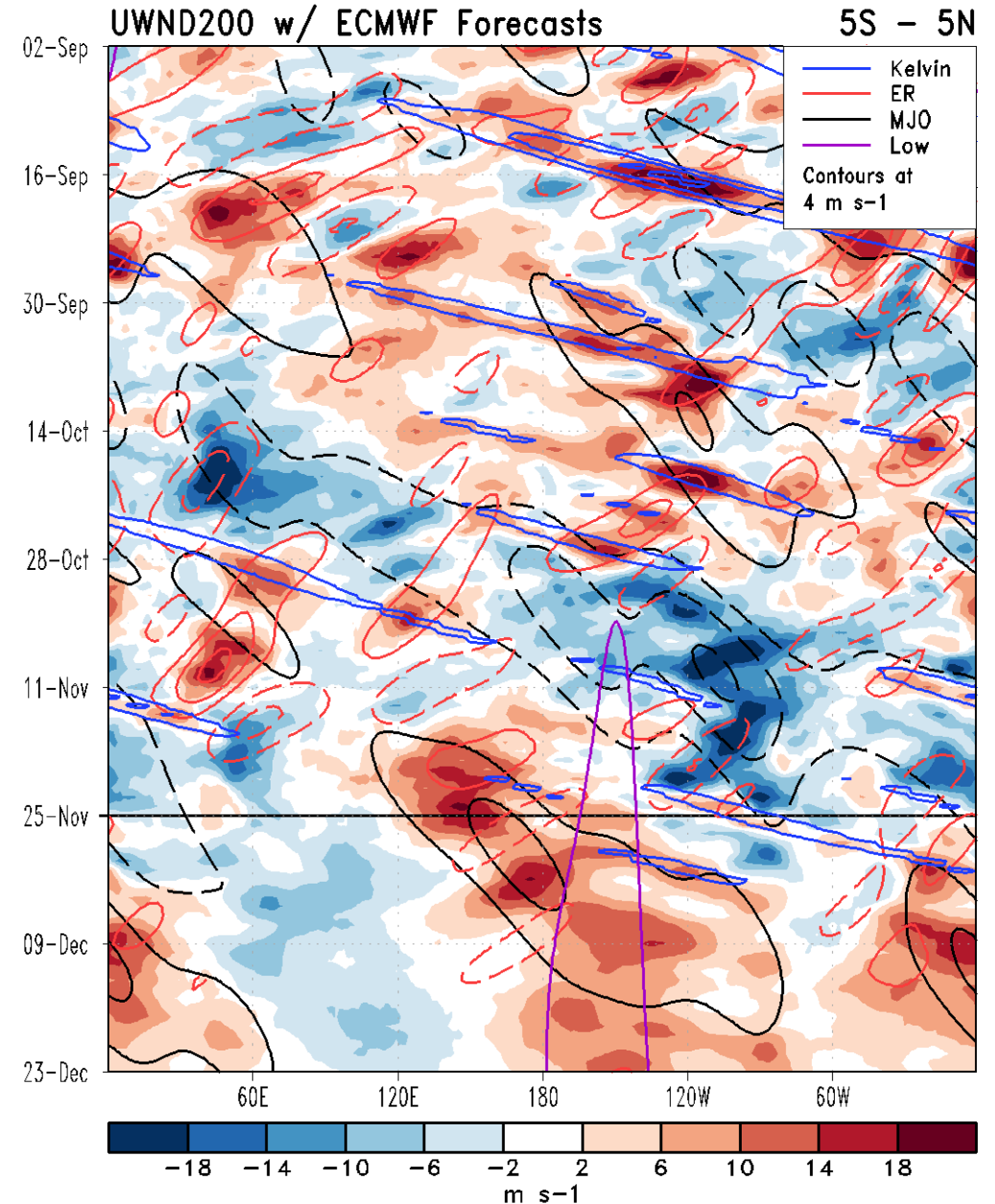
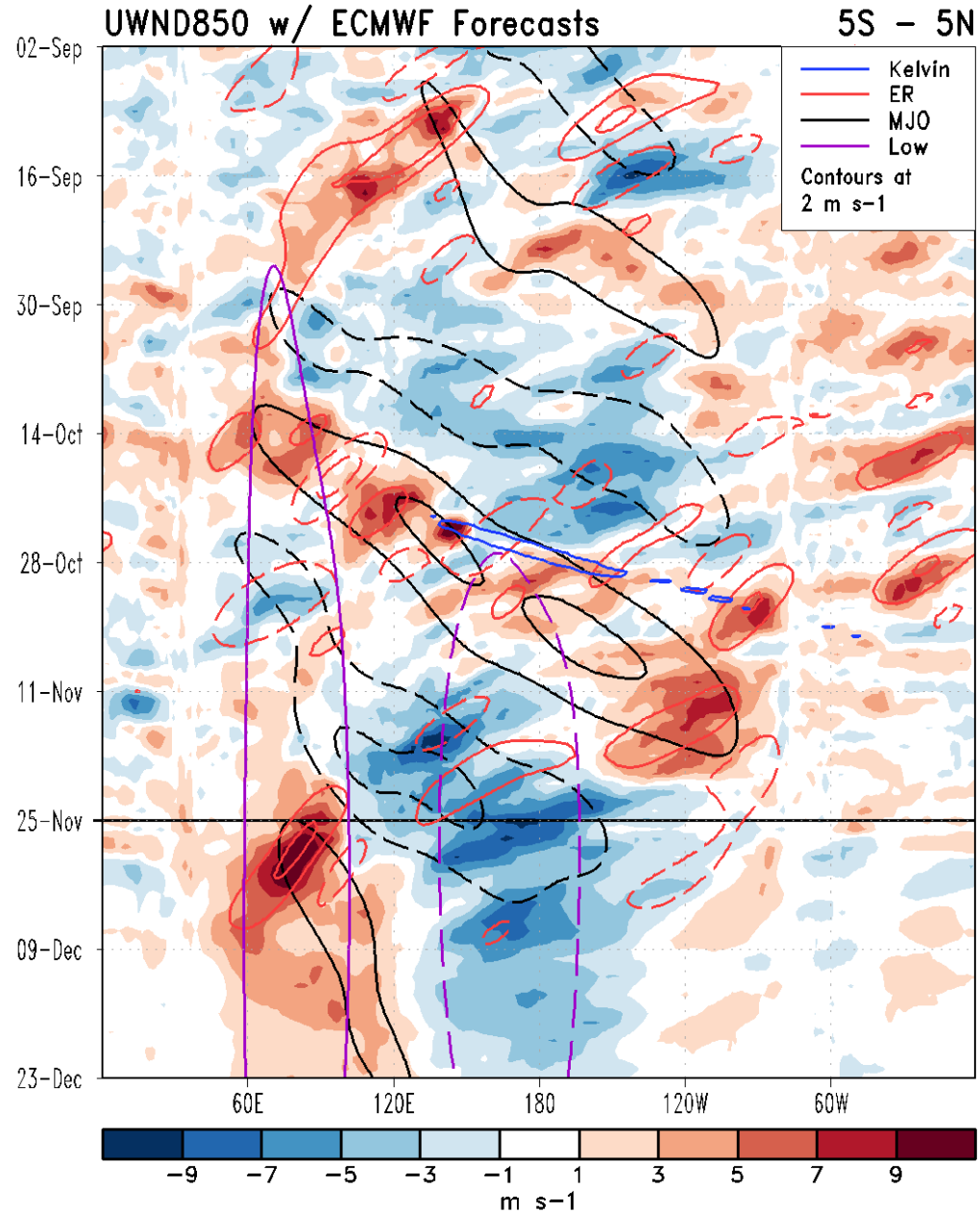


RMM Index Observations & Forecasts:



- Models are in good agreement with the MJO entering the Maritime Continent, but begin to waver in amplitude while continuing to propagate eastward into the Western Pacific towards mid-December.
- Several ensemble members from the GFS favor high amplitude event.

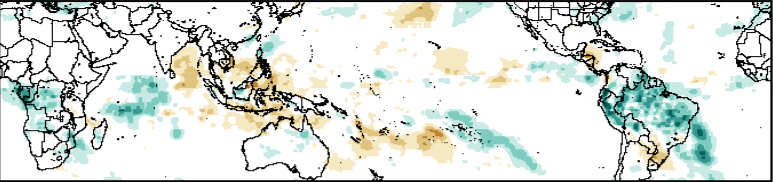
Zonal Wind Anomaly Time/Lon Plots:



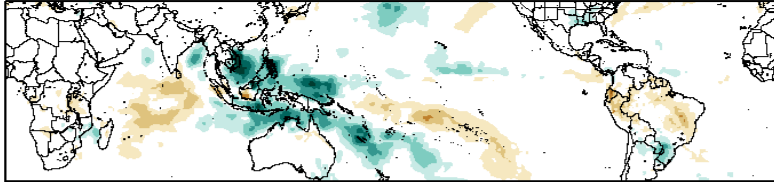
Historical Precipitation Anomalies By MJO Phase:

NDJ MJO Composite: GPCP1DD (mm/day)

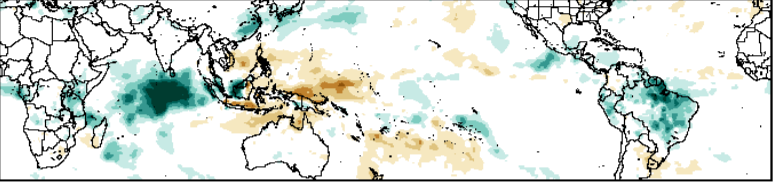
Phase 1



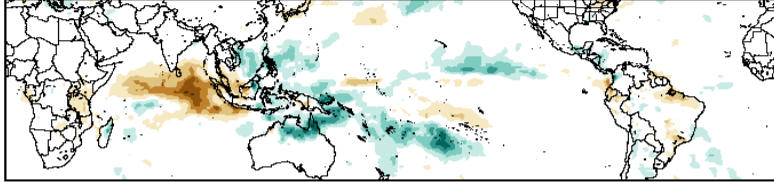
Phase 5



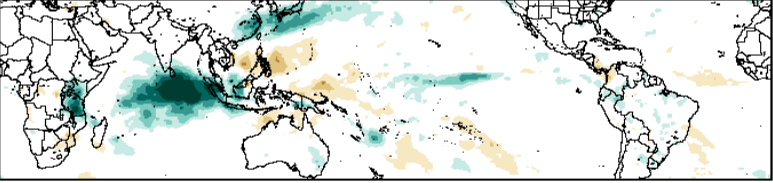
Phase 2



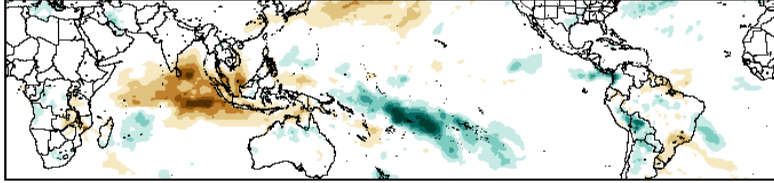
Phase 6



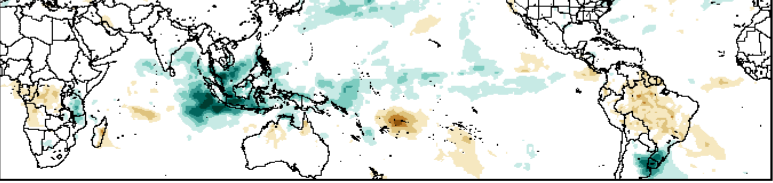
Phase 3



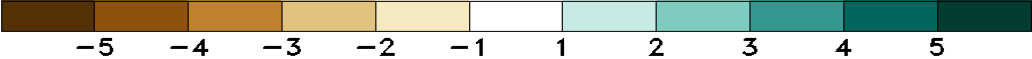
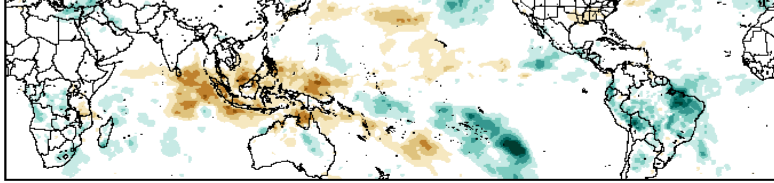
Phase 7



Phase 4

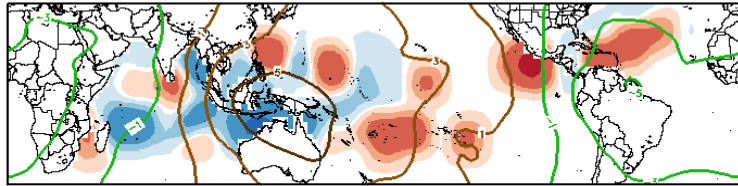


Phase 8

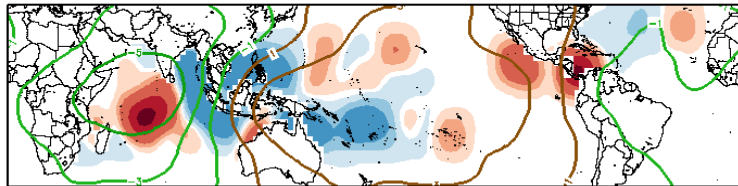


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

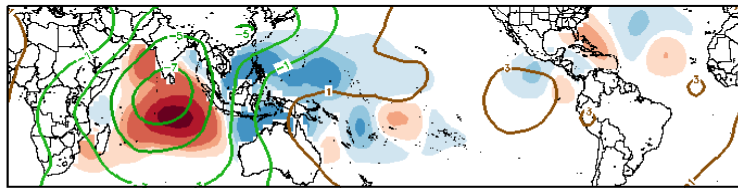
NDJ MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ NDJ CHI200 ($\times 10^{-6} m^{-2} s^{-1}$) / Contours every $2 \times 10^{-6} m^{-2} s^{-1}$



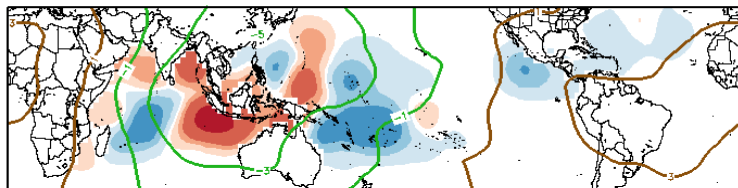
Phase 1



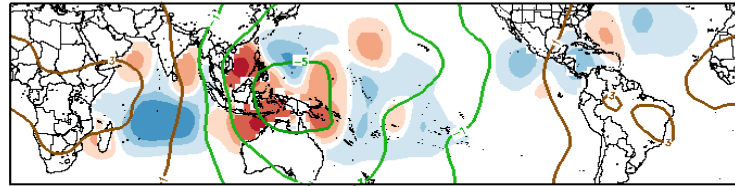
Phase 2



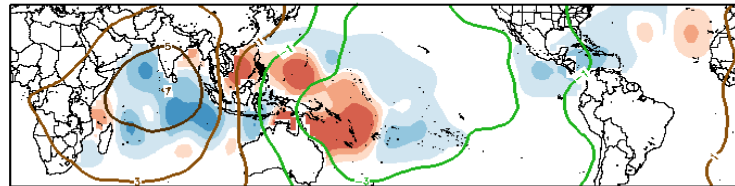
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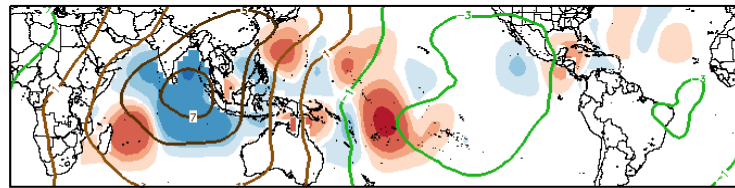
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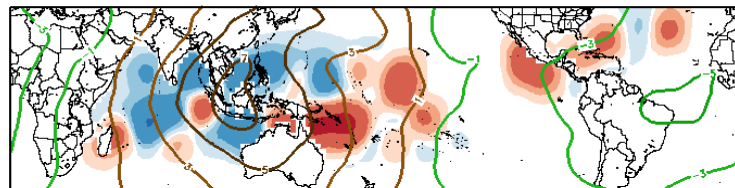
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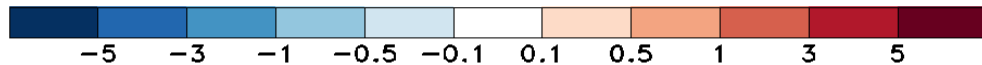
Phase 6



Phase 7



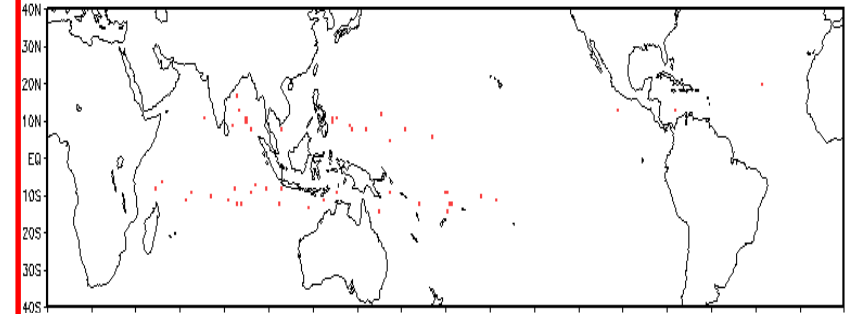
Phase 8



Experimental

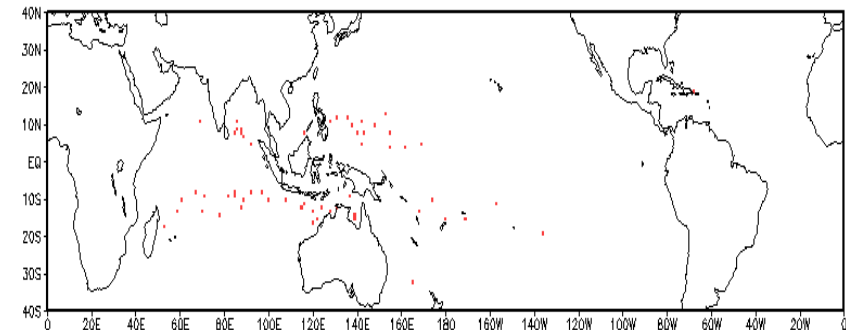
Observed TC Genesis, 1979-2021

7-day Period 1204 to 1210

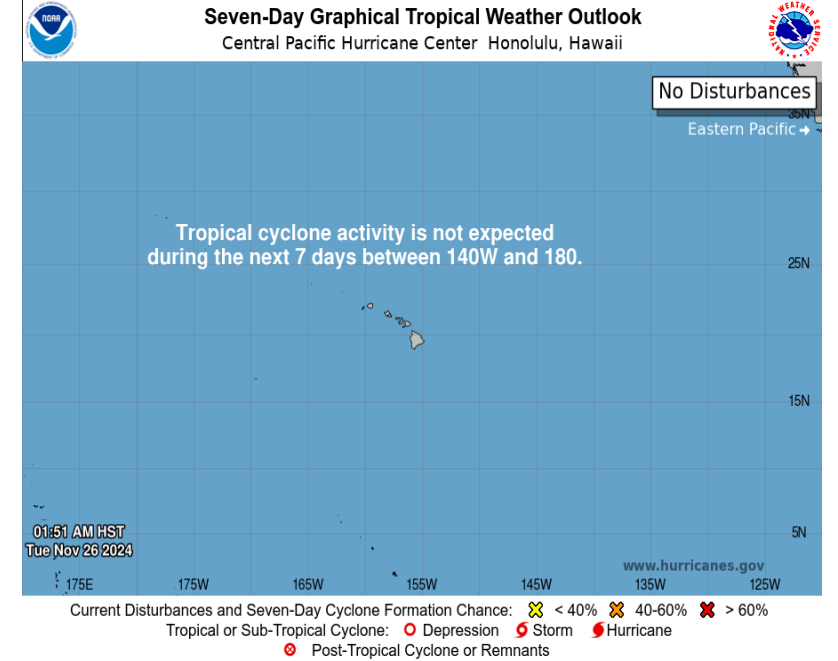
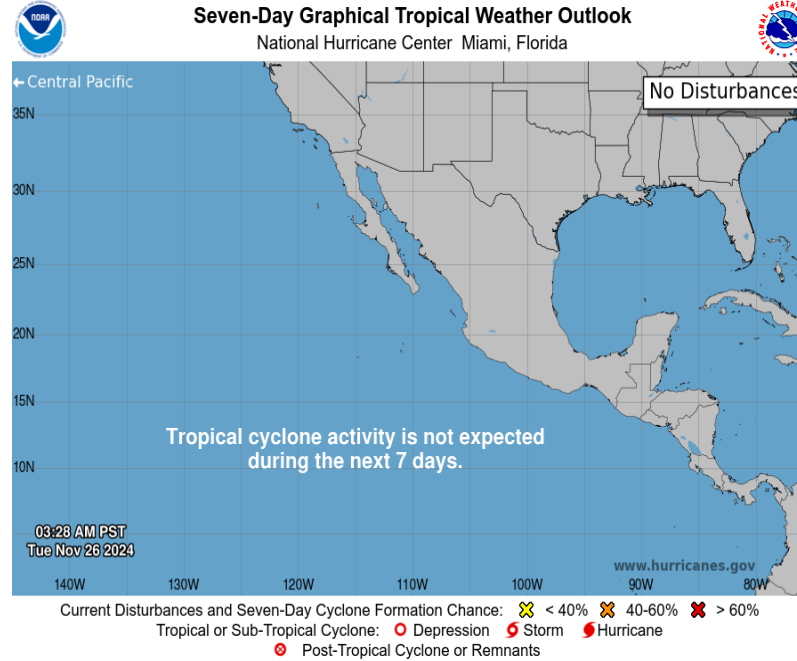
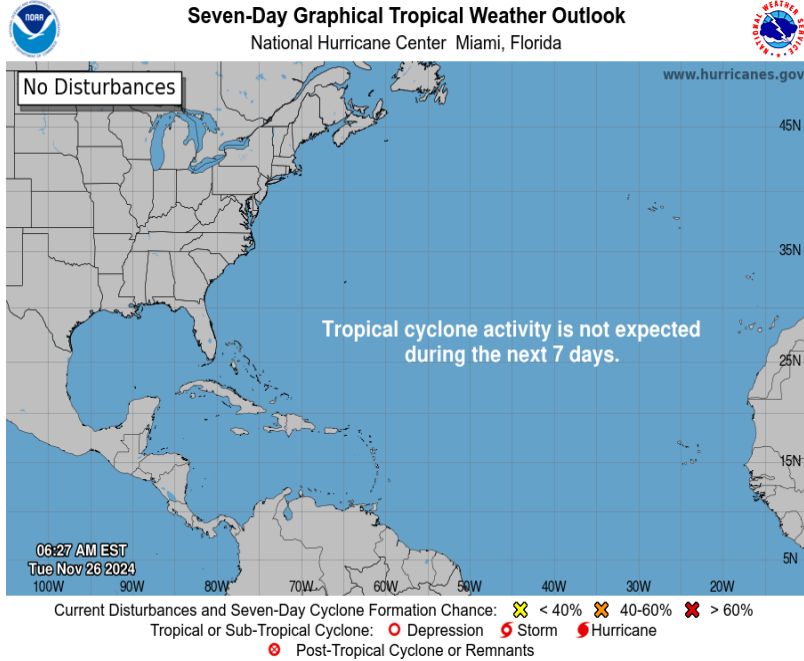


Observed TC Genesis, 1979-2021

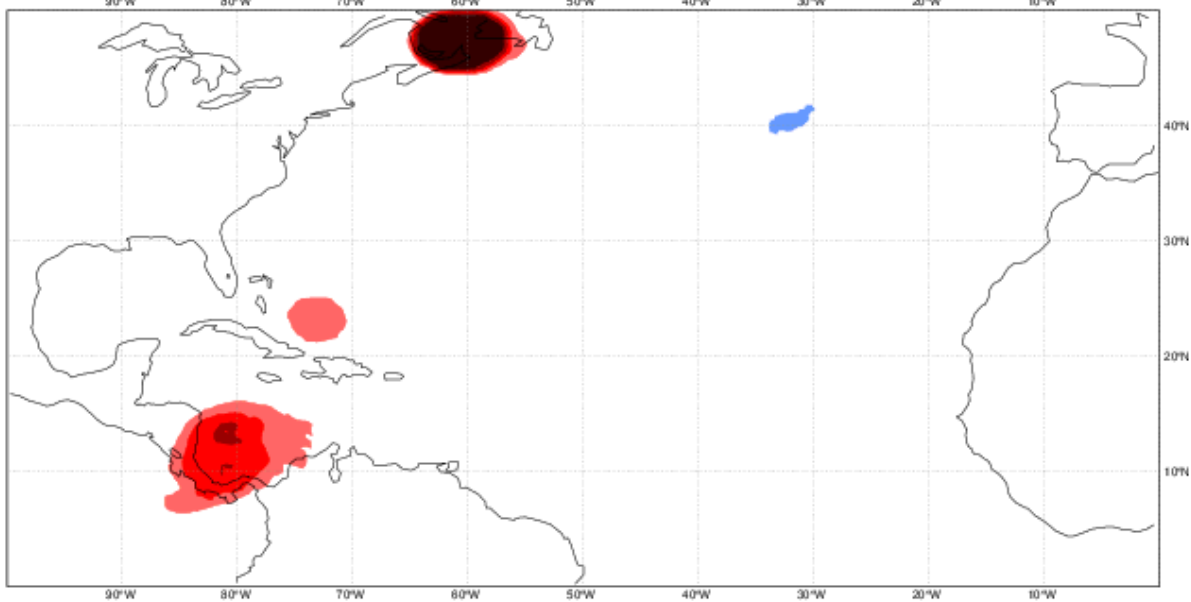
7-day Period 1211 to 1217



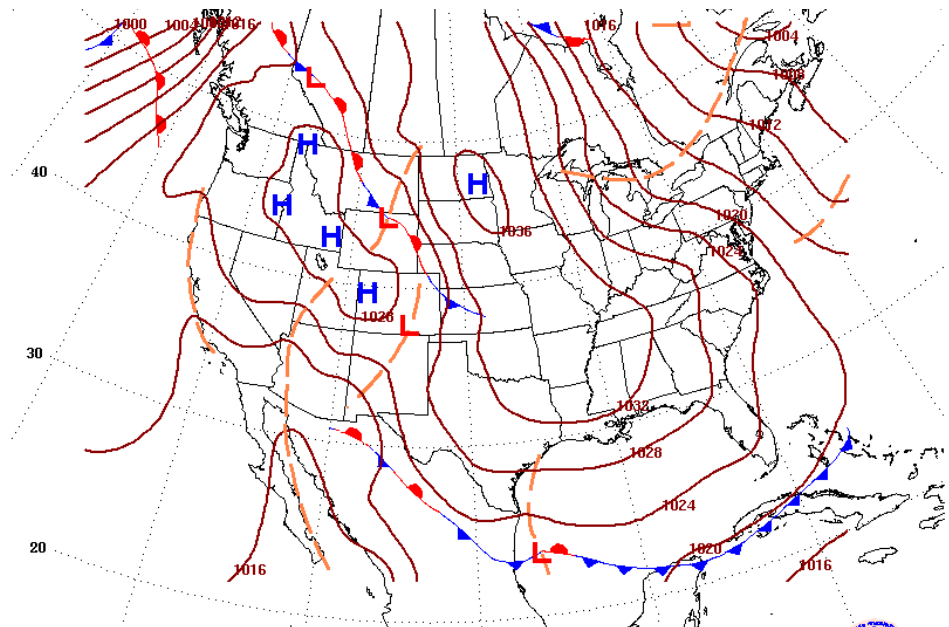
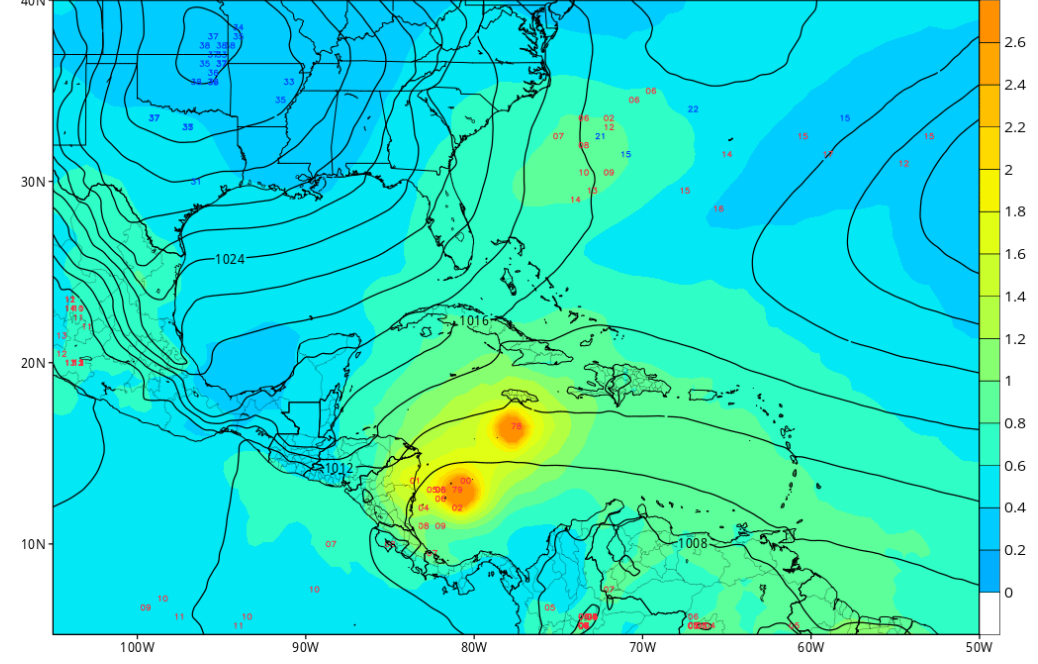
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



Weekly Mean Anomaly of Tropical Cyclone Strike Probability. Date: 20241125 0 UTC +/- (0-168)
Probability of a TC passing within 300km radius



GEFS Mean MSLP (mb), Ensemble Member Pressure Centers (Low: red | High: blue), & Normalized Spread (σ)
Init: 00z Nov 26 2024 Forecast Hour: [138] valid at 18z Sun, Dec 01 2024 TROPICALIDBITS.COM



WPC DAY 6 SFC PROG
ISSUED: 1521z TUE NOV 26 2024
VALID: 12z MON DEC 02 2024
FCSTR: TAYLOR
DOC/NOAA/NWS/NCEP/WPC

For tropical cyclone information, please see the latest advisories from the NHC.



Max Temp | Min Temp | **Precip** | SWE | Wind | [Click here for static images \(Week-2 ONLY\)](#)

Last Updated: 11/26

Choose Model: GEFS ECENS CMCE

Display Forecast and/or Climatology: Forecast Climatology Week-1 Flood Hazards

Choose Percentile or Threshold: Percentiles Values

Percentiles: >=67% >=85% >=90% >=95% >=98% >=99%

Smart Tools: All Models GEFS ECENS CMCE

20% Chance Precip >: 85th Pct 90th Pct 95th Pct

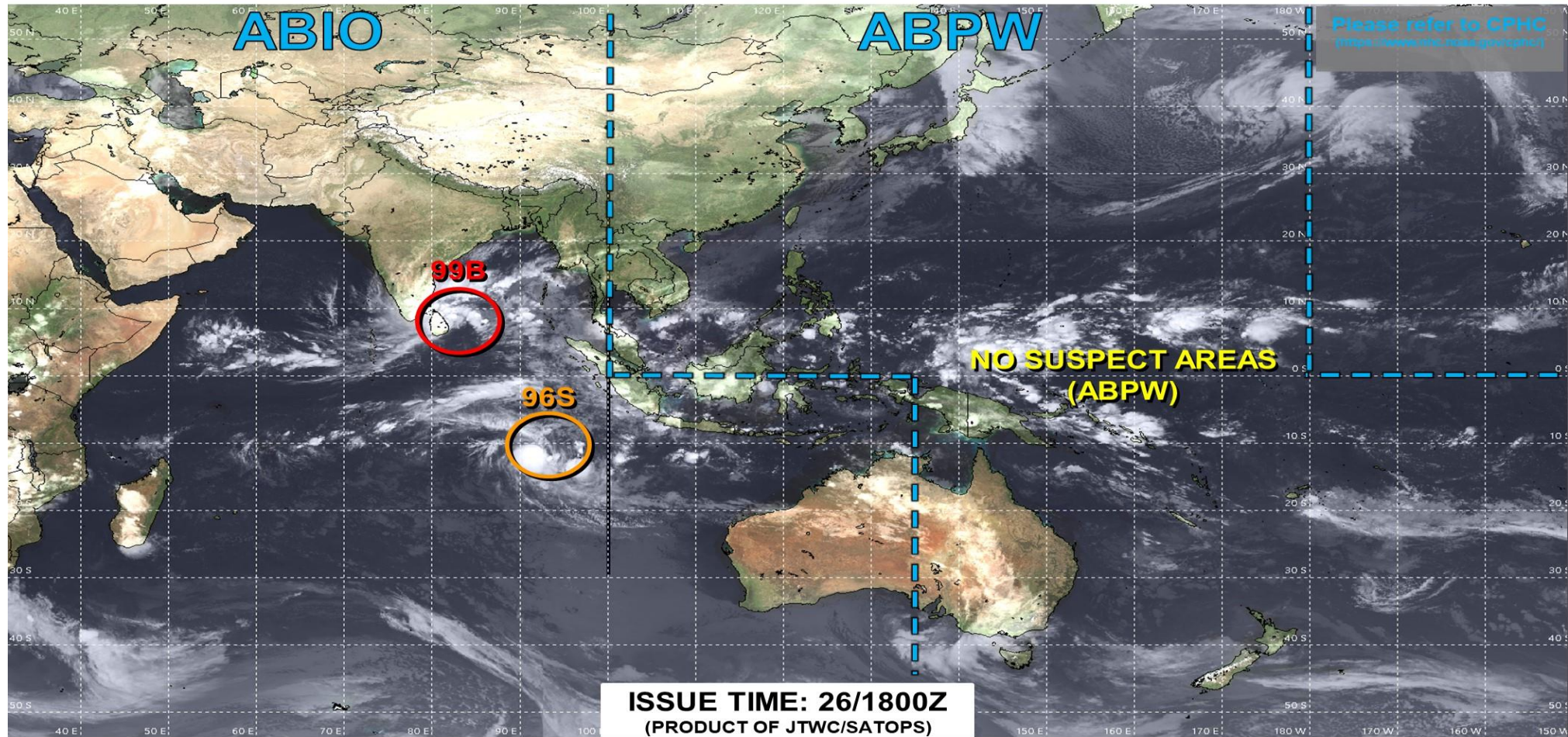
& Precip >: 0.5in 1in 2in 3in 4in

Week 1 | **Days 8-10 12/4-12/6** | Days 10-12 12/6-12/8 | Days 12-14 12/8-12/10 | Options

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

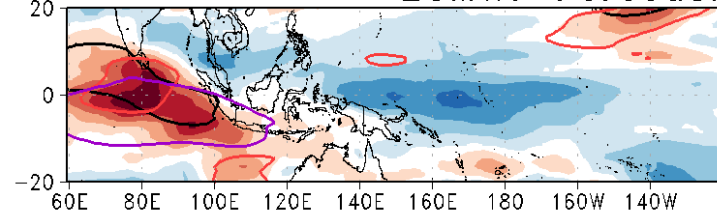


Tropical Cyclone (Reference Warning)

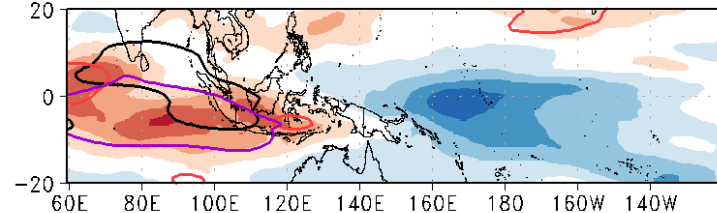
7-Day Means

26Nov to 02Dec

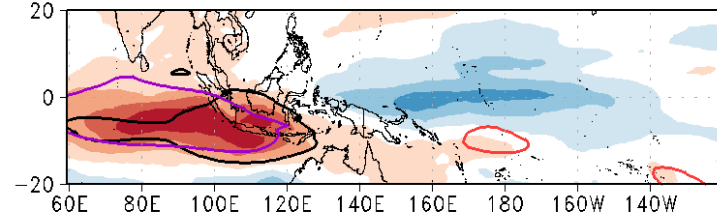
ECMWF Forecast



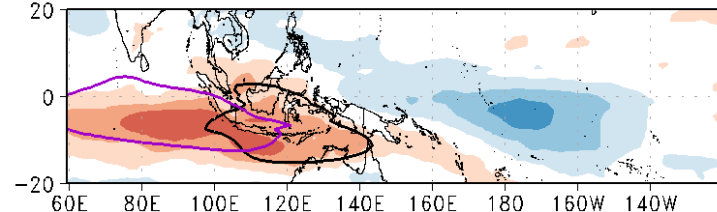
03Dec to 09Dec



10Dec to 16Dec



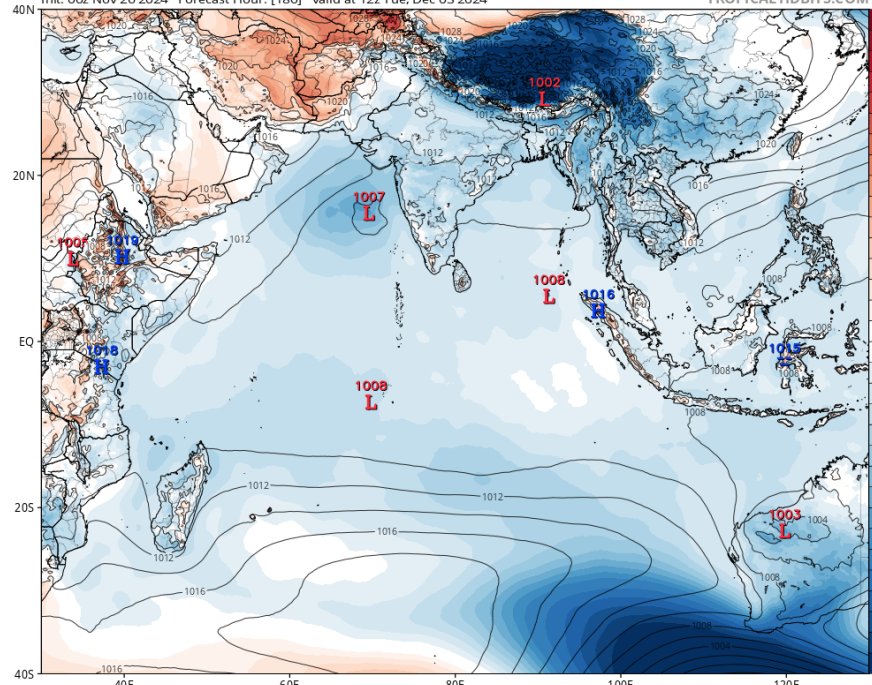
17Dec to 23Dec



— MJO — Kelvin*2
 — Low — ER
 Contours at 2, 6 m s⁻¹

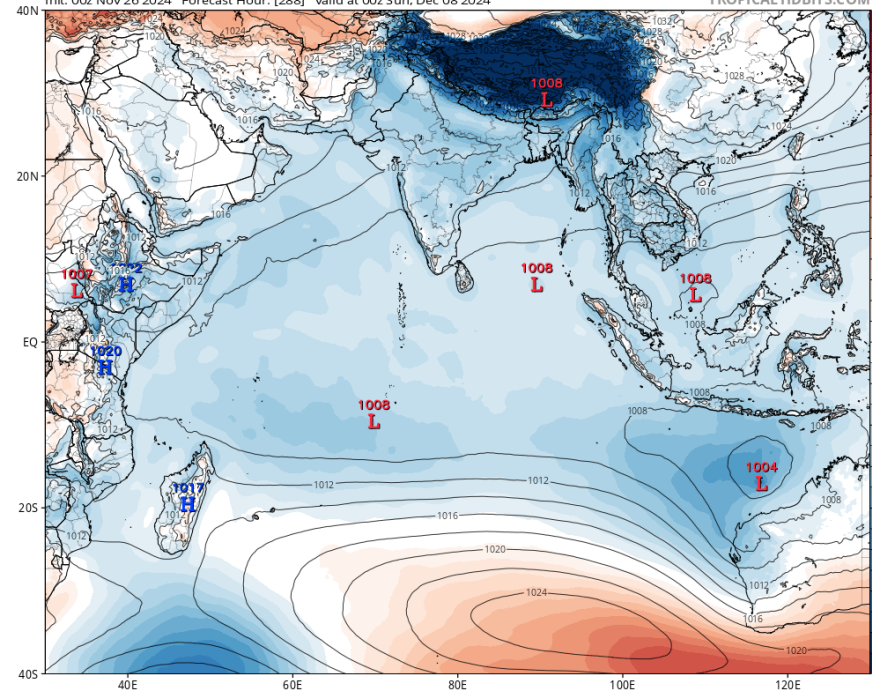
EPS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Nov 26 2024 Forecast Hour: [180] valid at 12z Tue, Dec 03 2024



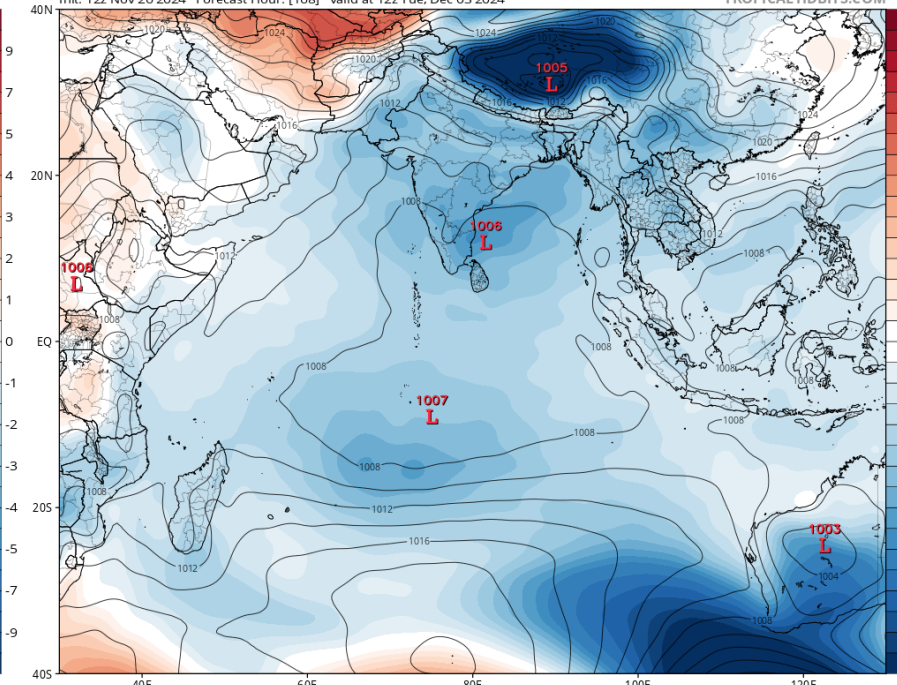
EPS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Nov 26 2024 Forecast Hour: [288] valid at 00z Sun, Dec 08 2024



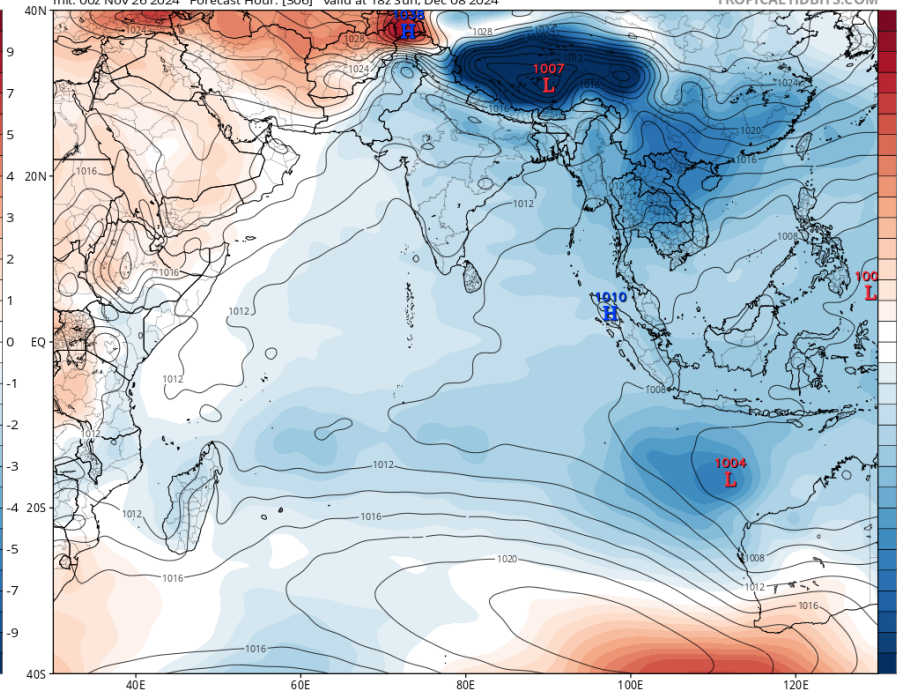
GEFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 12z Nov 26 2024 Forecast Hour: [168] valid at 12z Tue, Dec 03 2024



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

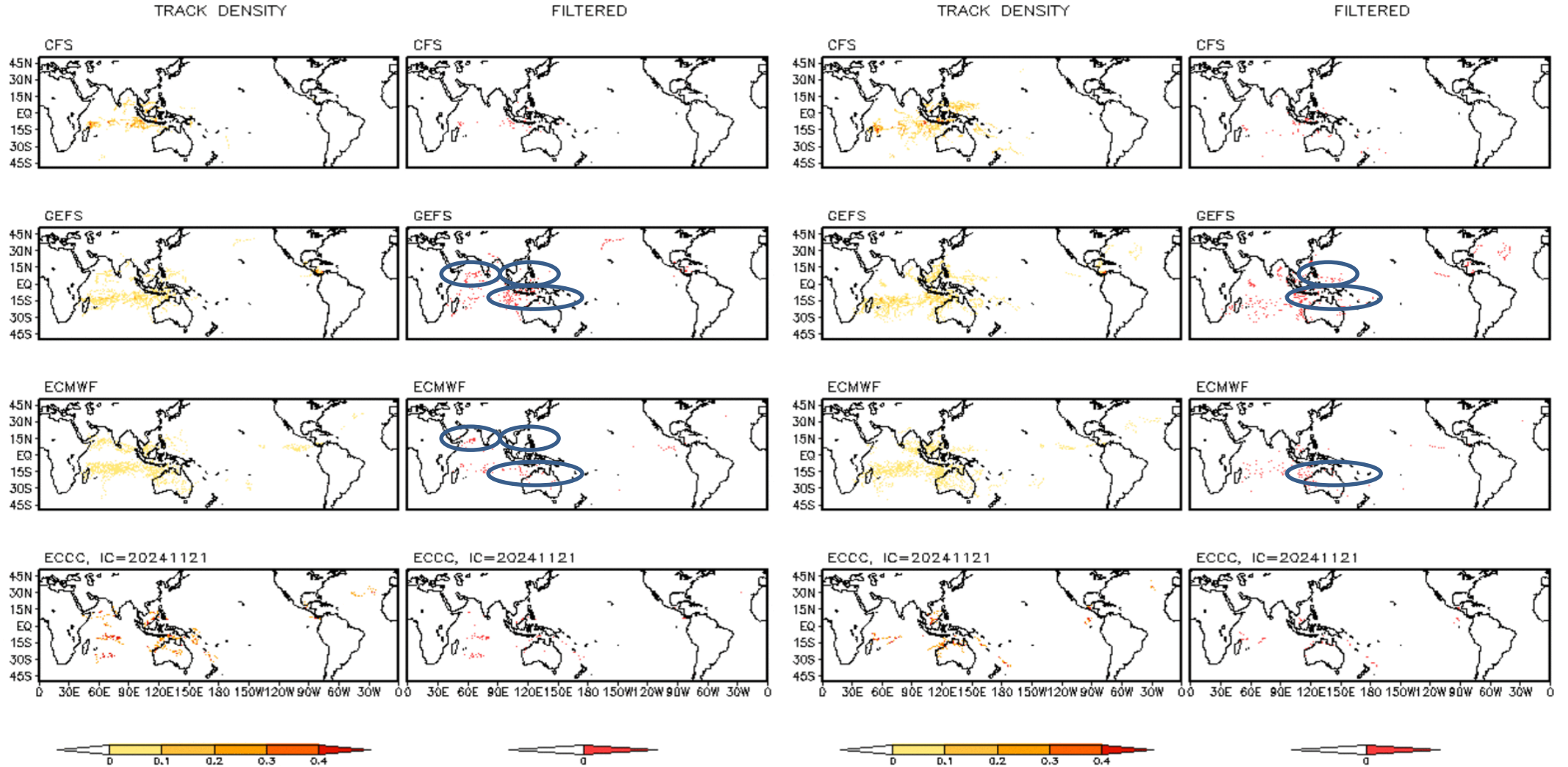
Init: 00z Nov 26 2024 Forecast Hour: [306] valid at 18z Sun, Dec 08 2024



Multi-Model TC Track Densities: Weeks 2+3

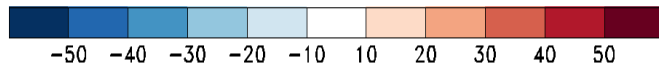
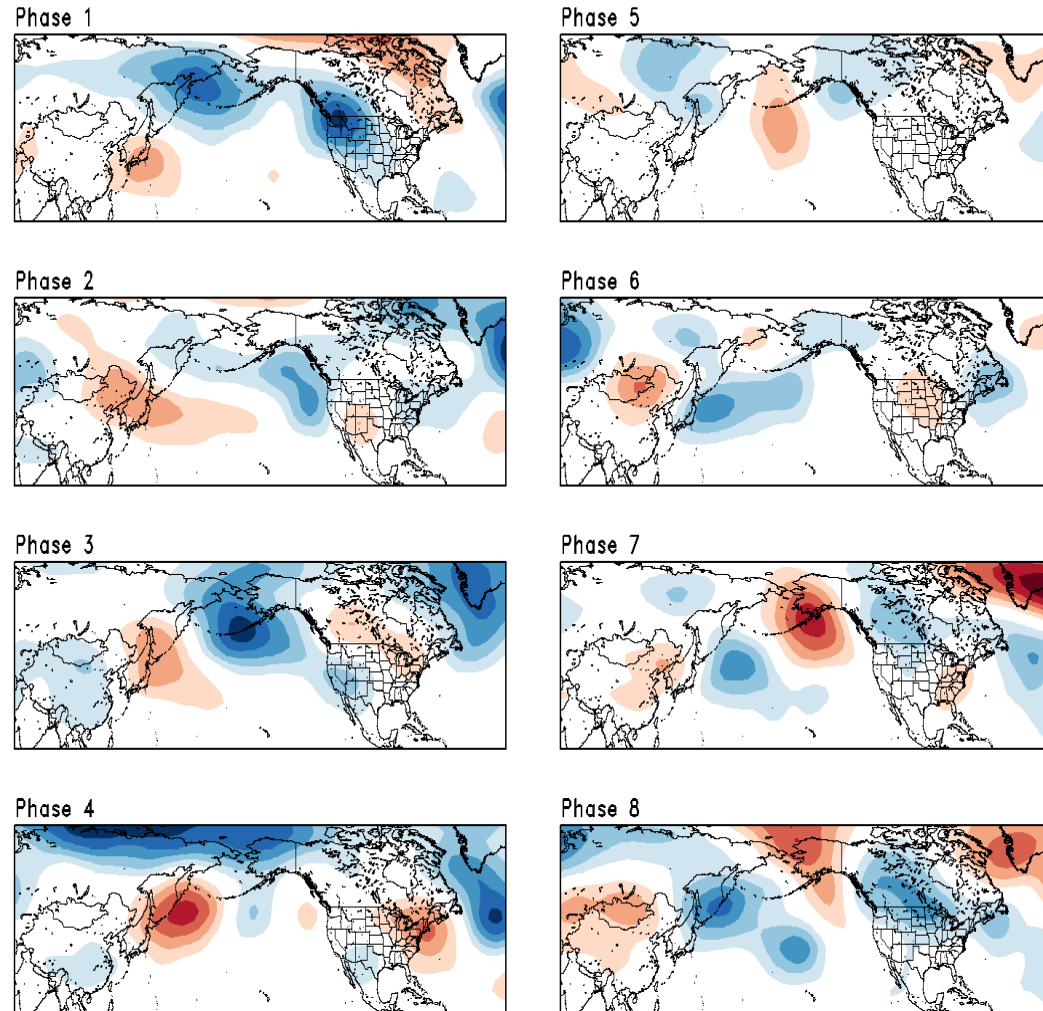
Storm Track Density Distribution, IC=20241125
Week 2 Forecast: 1204–1210

Storm Track Density Distribution, IC=20241125
Week 3 Forecast: 1211–1217

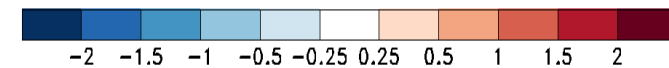
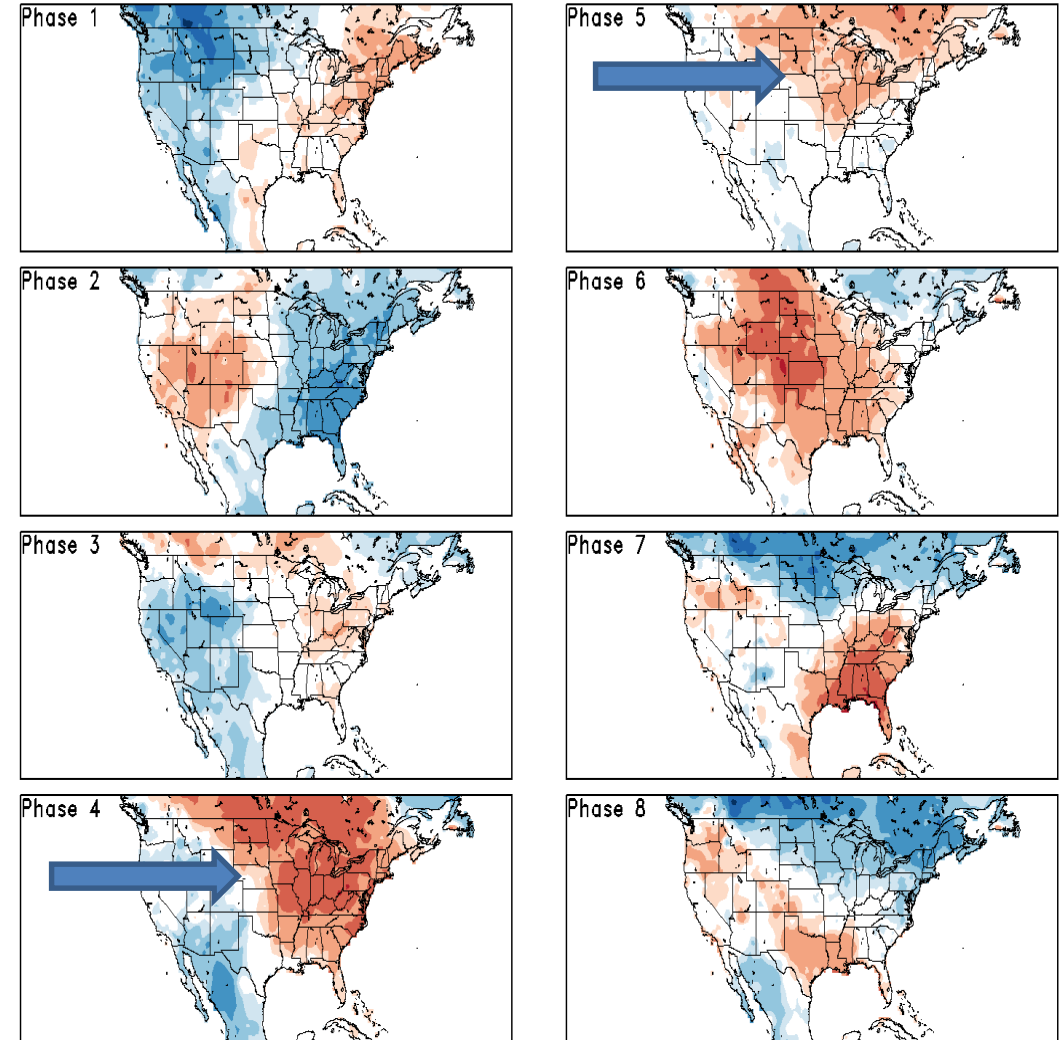


Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

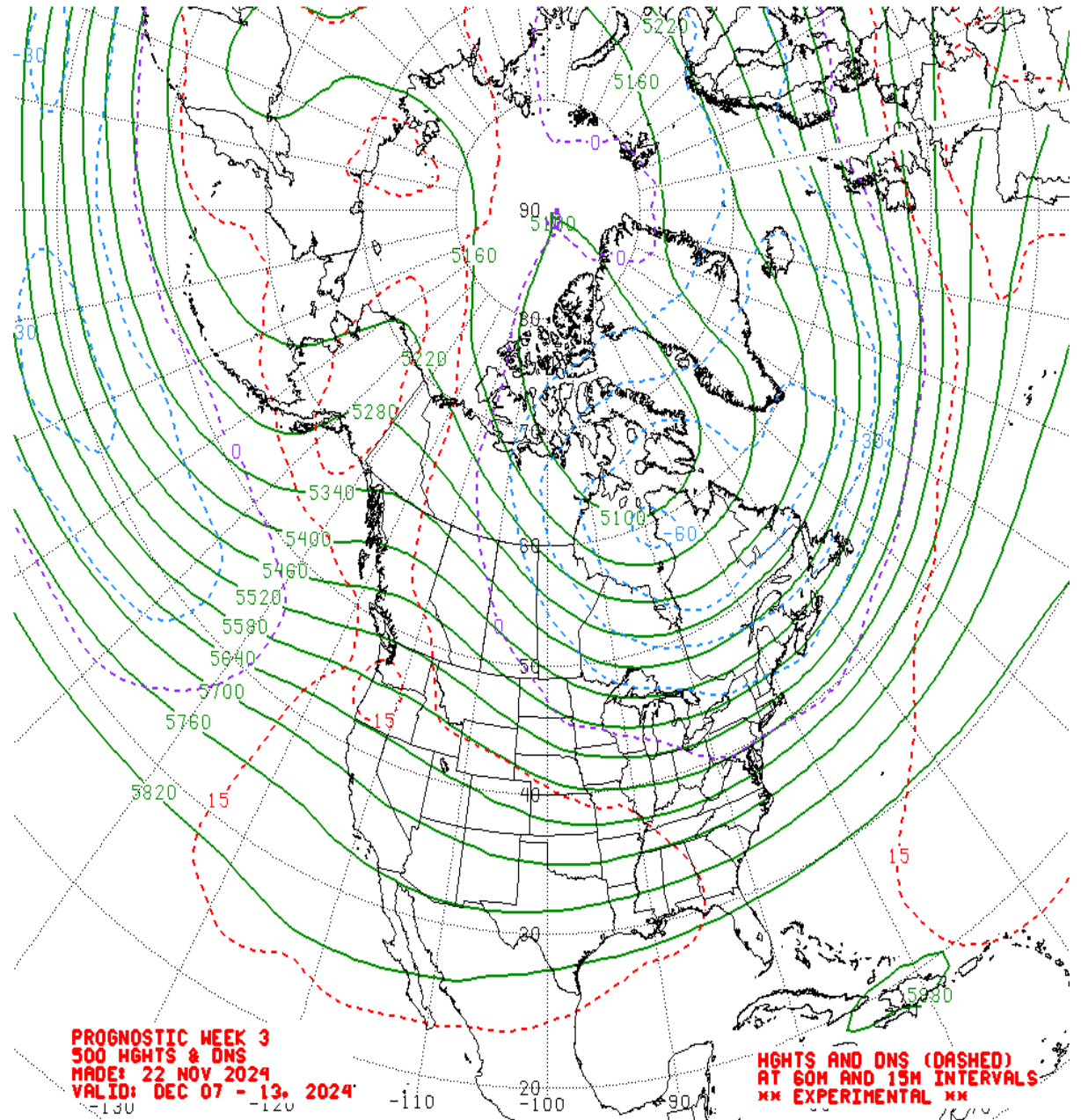
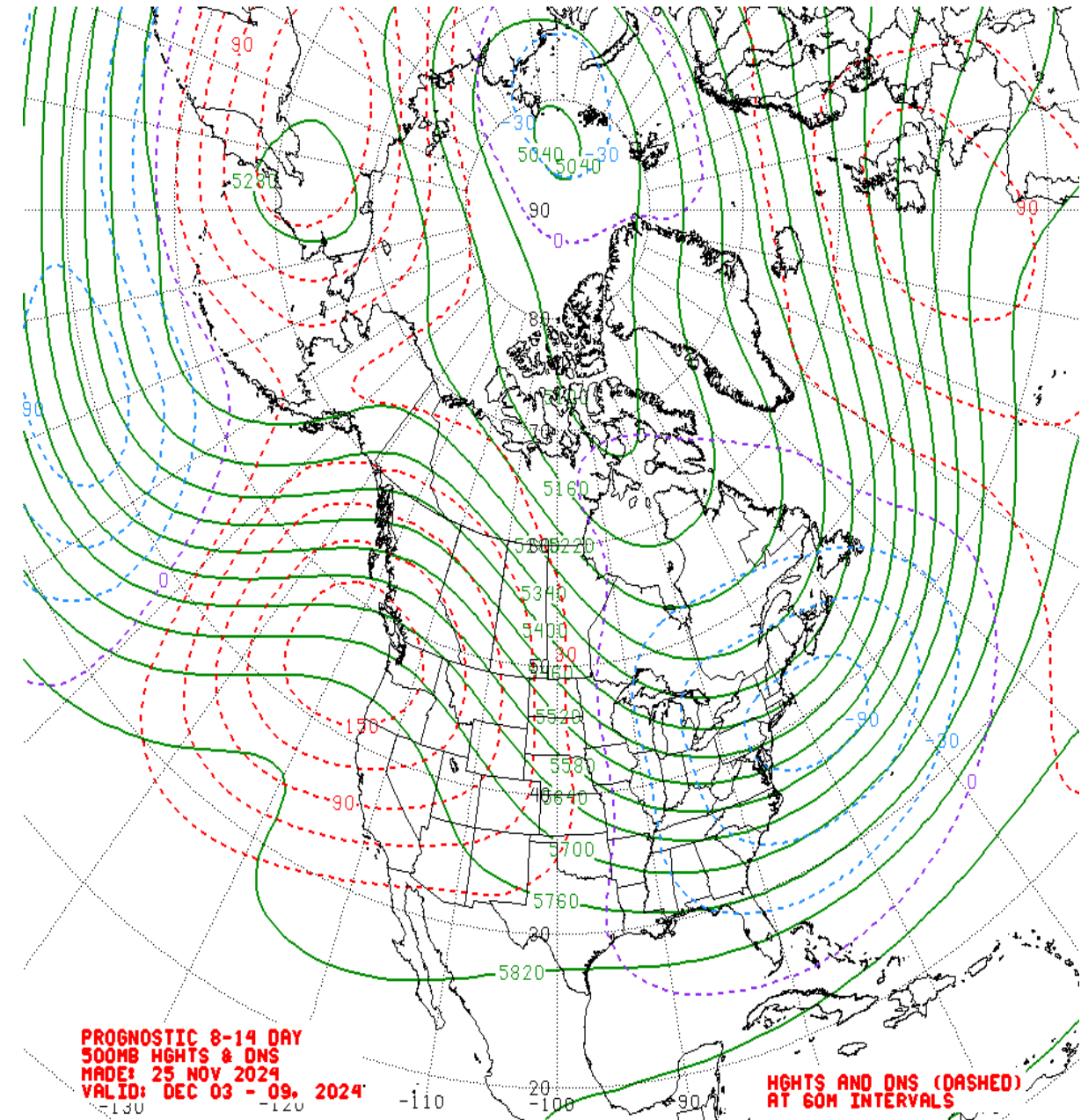
OND MJO Composite: CDAS 500-hPa Height (m)



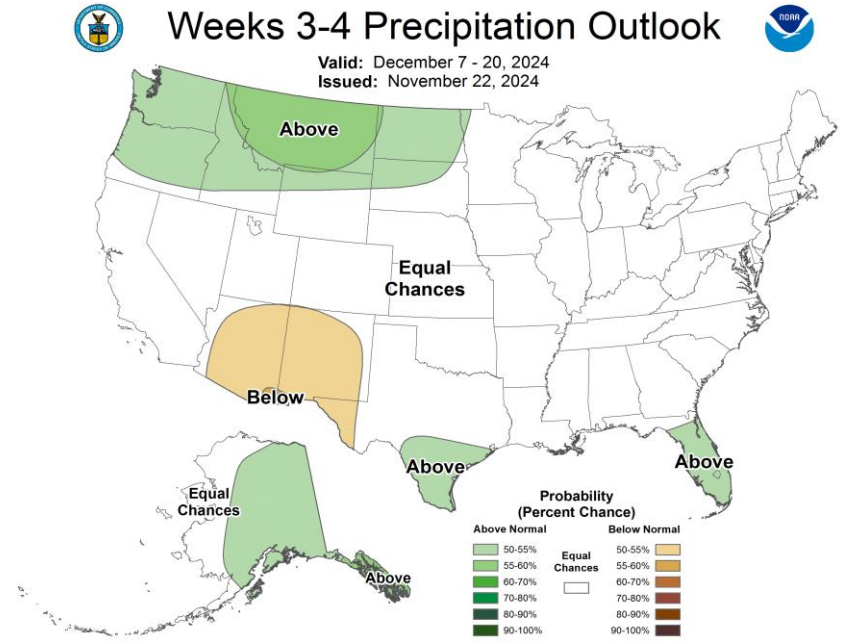
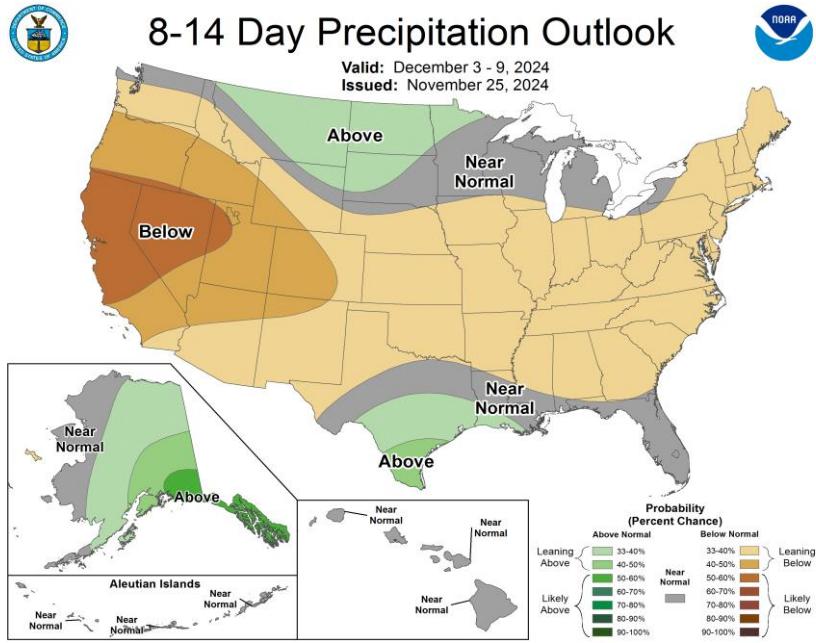
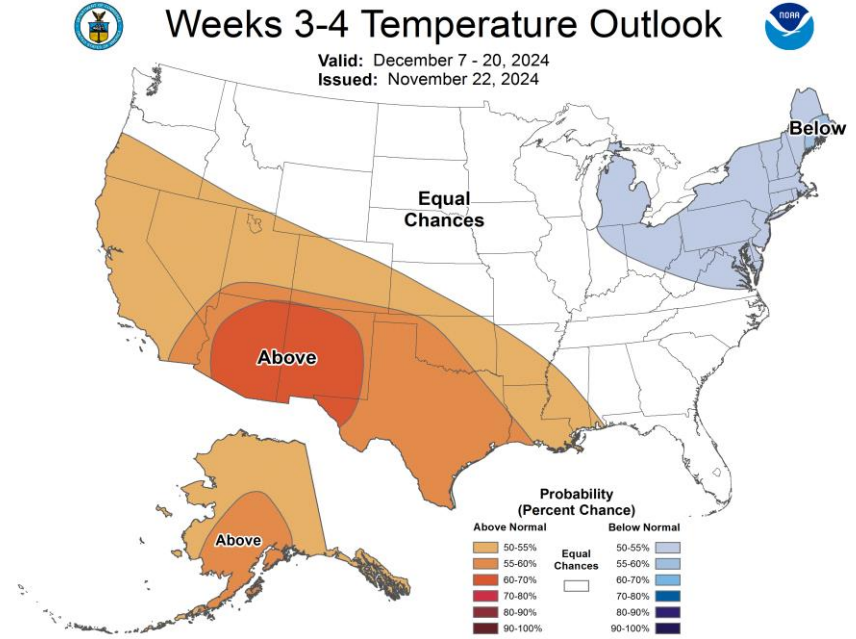
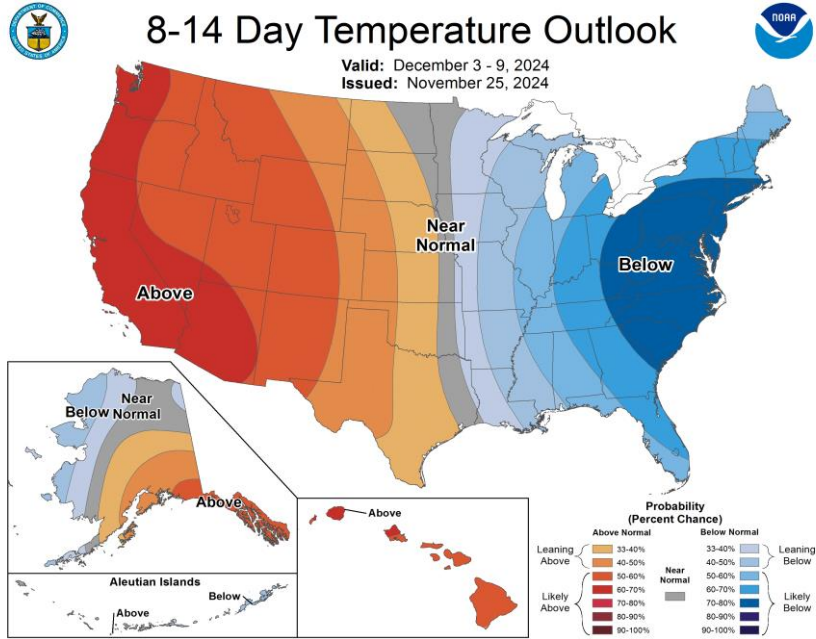
OND MJO Composite: GLBT (degC)



Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



Official Temperature & Precipitation Forecasts:



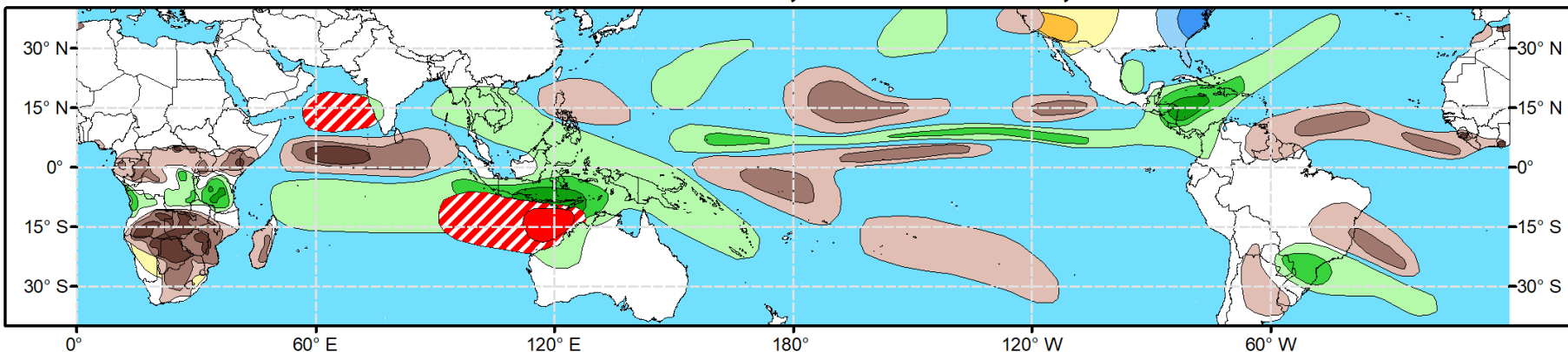


Global Tropics Hazards Outlook

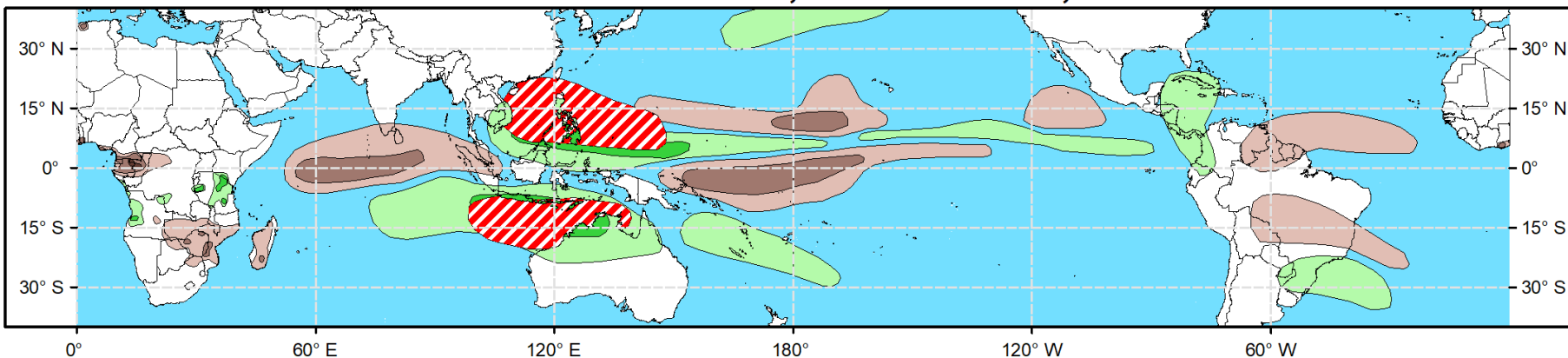
Climate Prediction Center



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