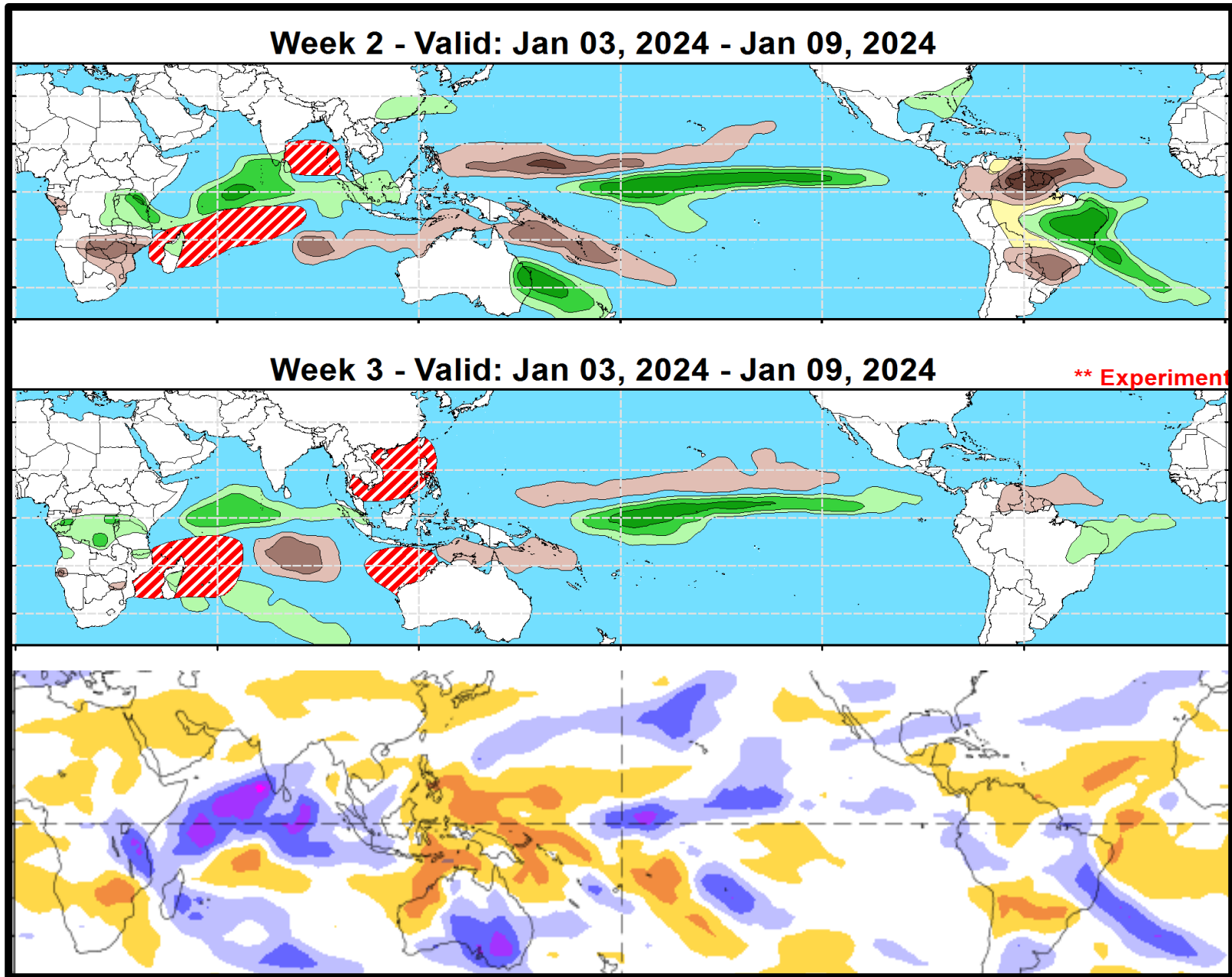
Weeks 2-3 Global Tropics Hazards Outlook

1/9/2024

Brad Pugh
NWS / NCEP / Climate Prediction Center

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

- No tropical cyclones formed this past week.
- Increase in convection over eastern Africa and the Indian Ocean was well predicted.



Synopsis of Climate Modes:

ENSO: (Dec 14, 2023 Update) ***next update on Thursday, Jan 11th***

- ENSO Alert System Status: El Niño Advisory

- El Niño is expected to continue through the Northern Hemisphere winter, with a transition to ENSO-neutral favored during April-June 2024 (60% chance).

MJO and other subseasonal tropical variability:

- A long duration MJO remains active, with the enhanced phase over the Indian Ocean.
- The MJO amplitude decreased and its eastward propagation slowed recently due to destructive interference with a lingering positive phase of the Indian Ocean Dipole. Eastward propagation to the Maritime Continent and West Pacific is forecast through late January.
- During the next two to three weeks, the MJO is expected to favor tropical cyclone development over the South Indian Ocean and near northern Australia.
- Following the upcoming Arctic air outbreak affecting the United States, MJO composites would favor a moderation in temperatures by the final week of January. *Forecast uncertainty beyond week-2 is high.*

Global Tropics Hazards Outlook

Climate Prediction Center

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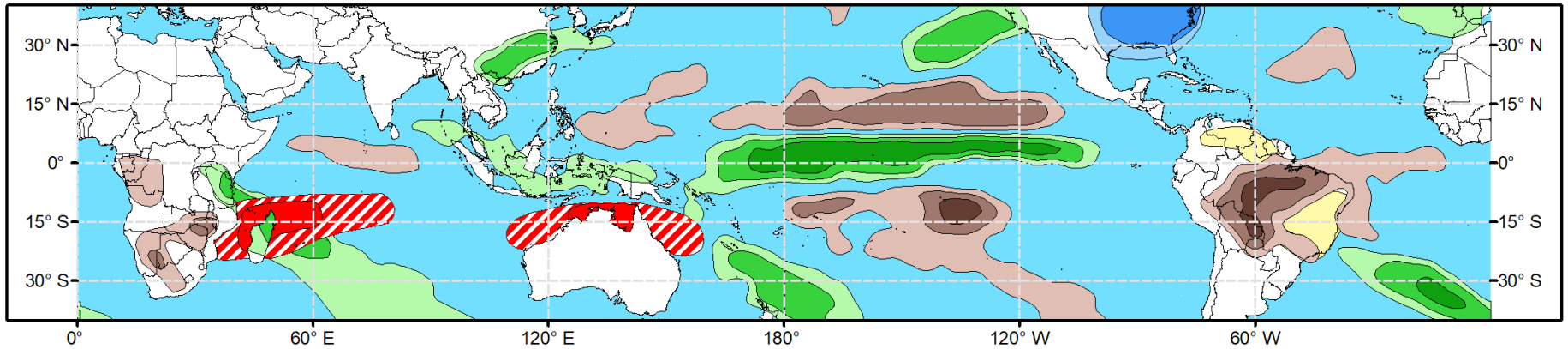
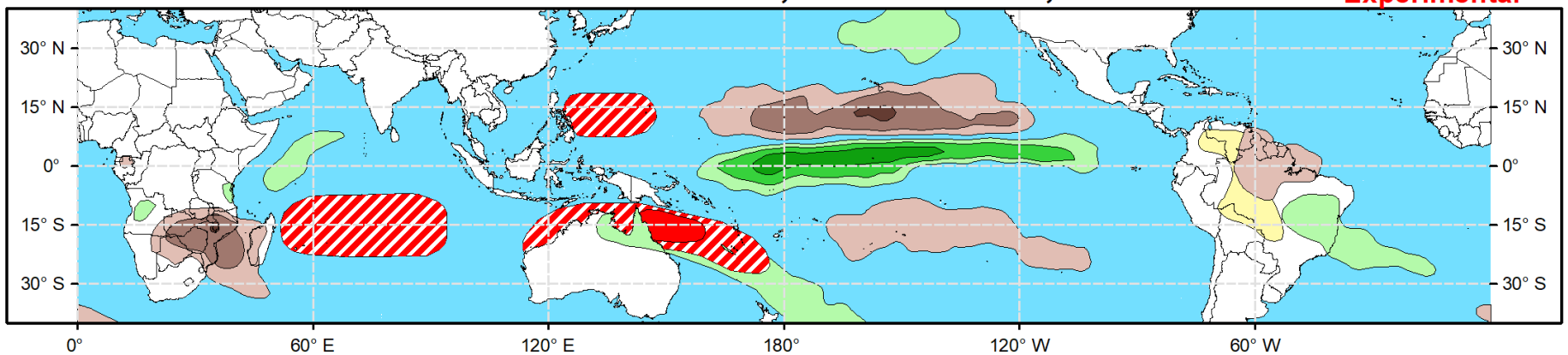


Week 3 - Valid: Jan 24, 2024 - Jan 30, 2024

** 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

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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

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

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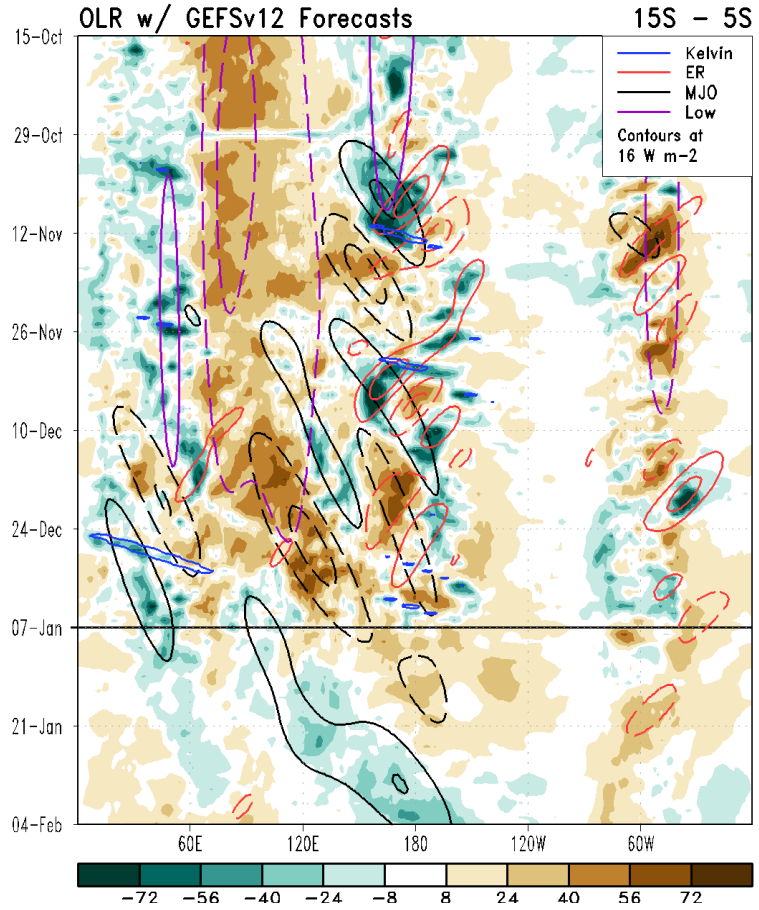
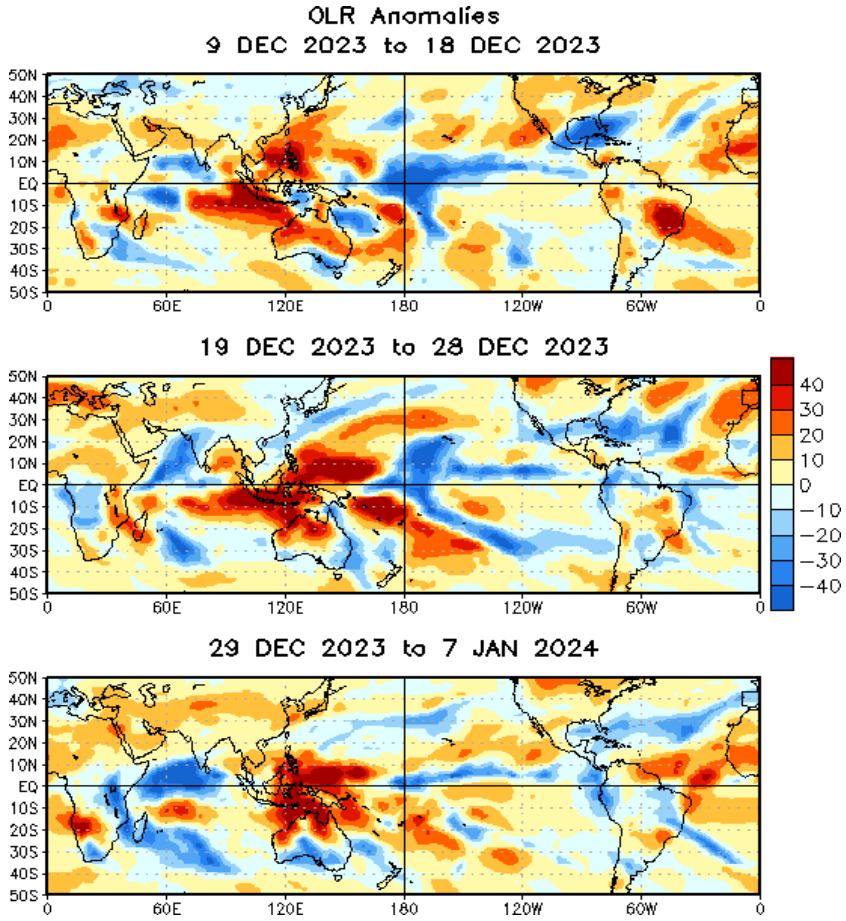
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only.
Consult your local responsible forecast agency.

Outgoing Longwave Radiation (OLR) Anomalies

Green shades: Anomalous convection (wetness)
Brown shades: Anomalous subsidence (dryness)



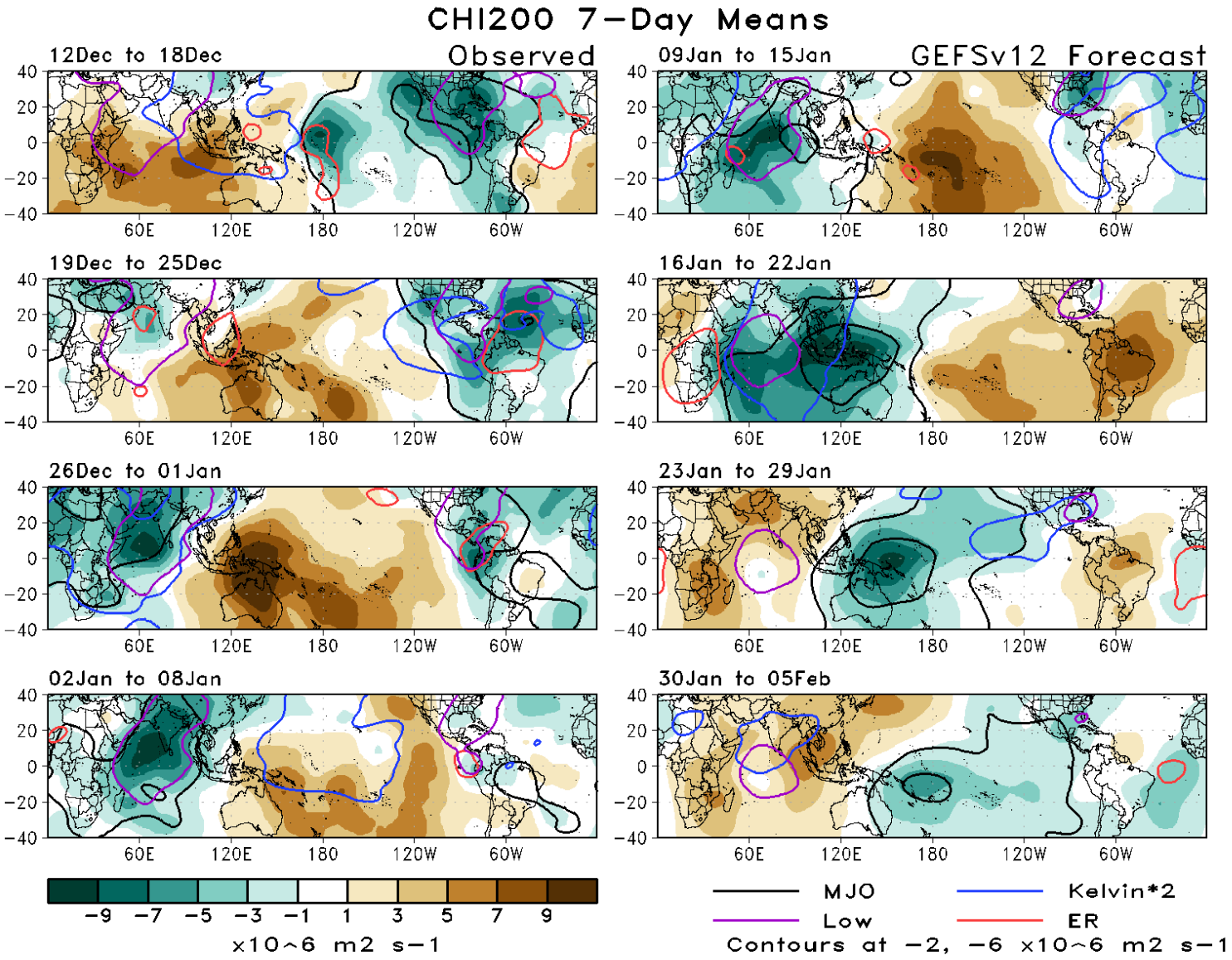


- El Niño and +IOD were the primary drivers of global tropical convective anomalies through late December, with enhanced (suppressed) convection across the central and eastern Pacific (Maritime Continent and eastern Indian Ocean).
- More recently, the MJO weakened the +IOD and caused an increase in convection across the eastern Indian Ocean. Also of note is the weakening of El Nino convection at the Date Line.

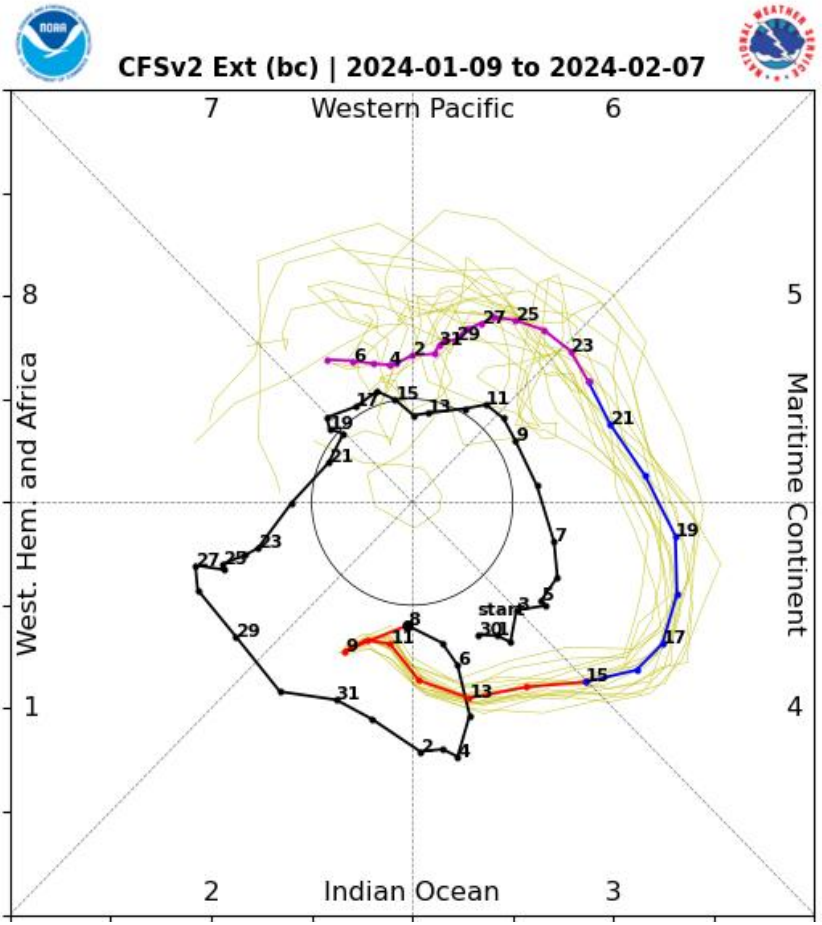
200-hPa Velocity Potential Anomaly Maps:

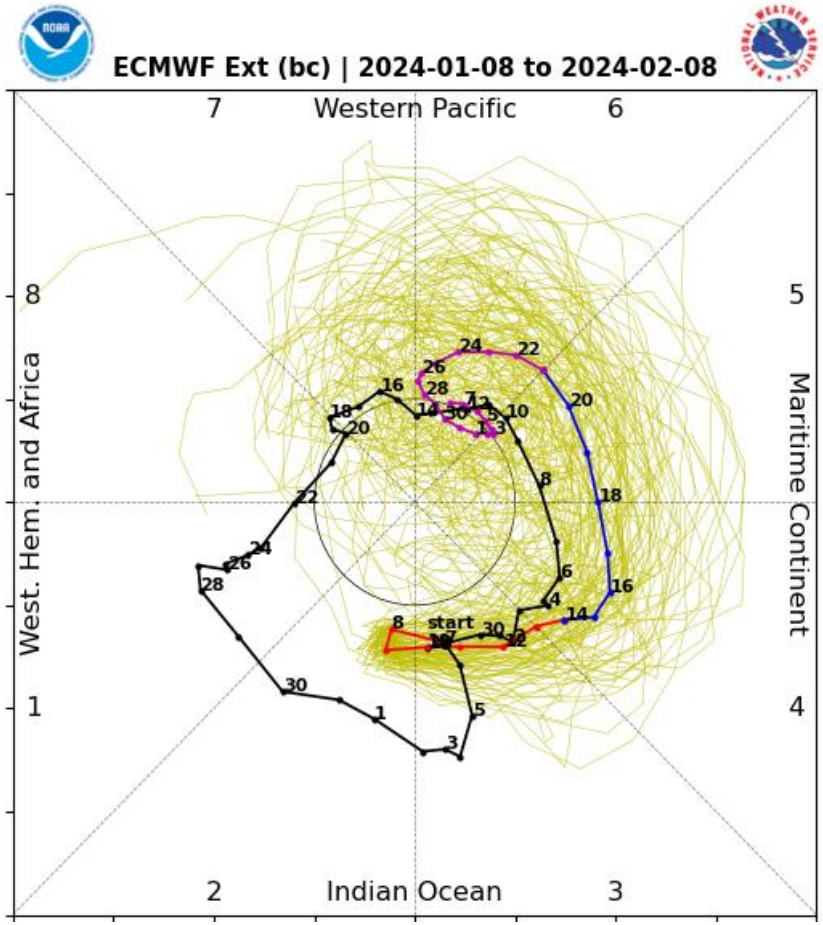
- Robust MJO activity is apparent in the upper-level velocity potential field.
- The GEFS depicts the MJO constructively interfering with a Kelvin wave over the Indian Ocean and Maritime Continent from Jan 16 to 22.
- By the end of January, a more typical El Nino pattern returns.

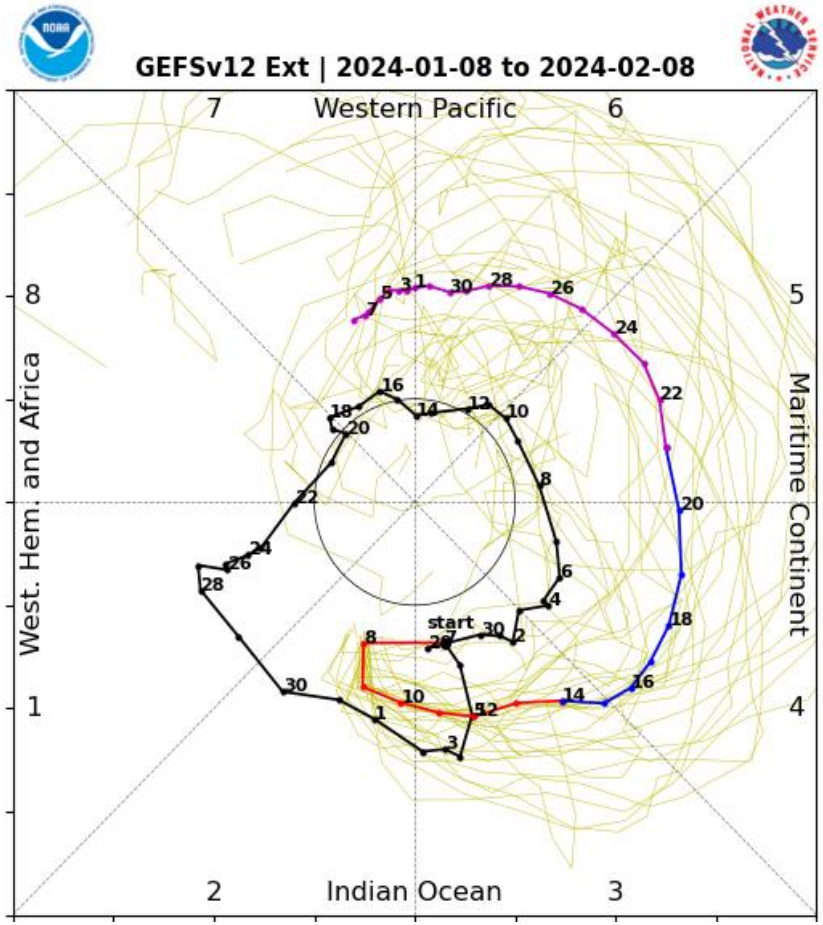
Green: Enhanced Divergence Aloft Brown: Enhanced Convergence Aloft



RMM Index Observations & Forecasts:

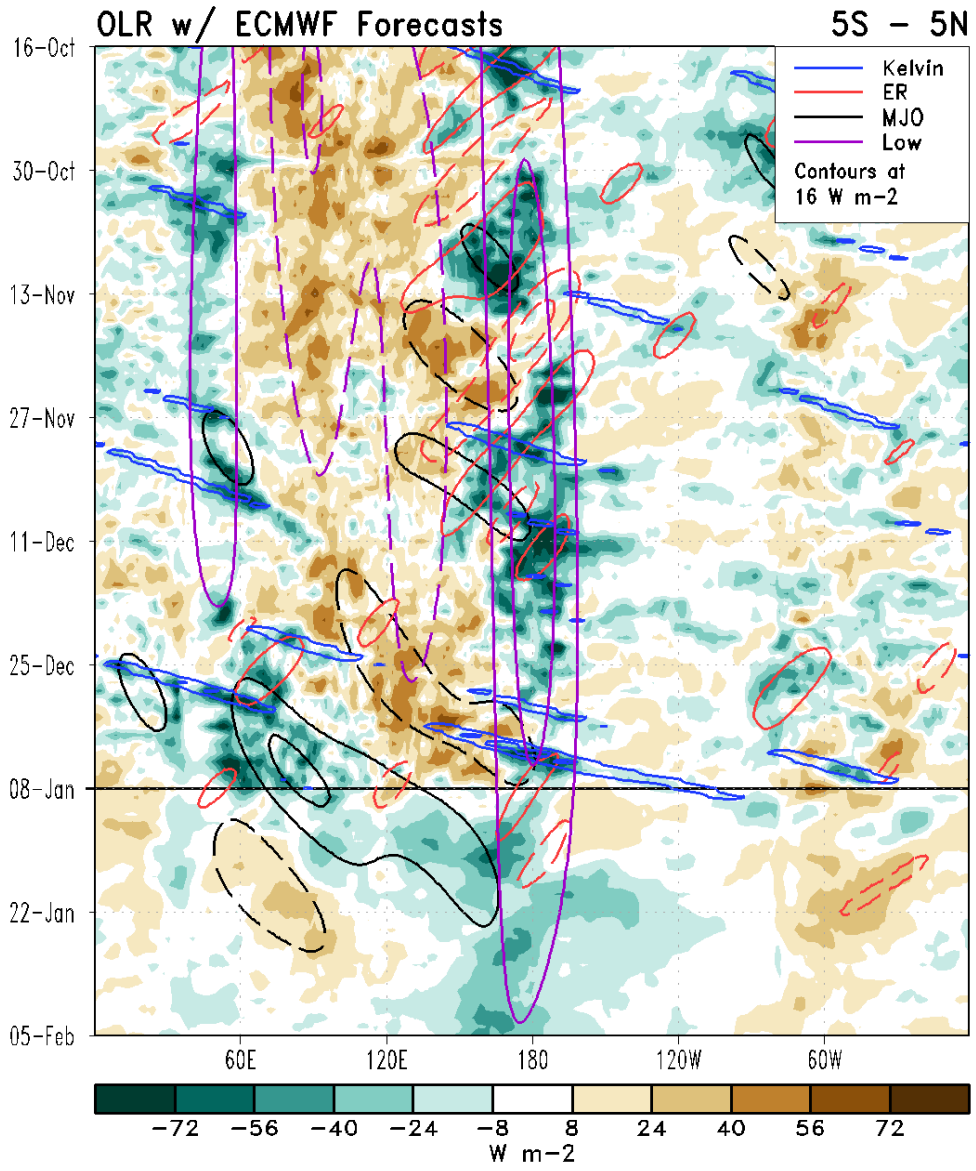


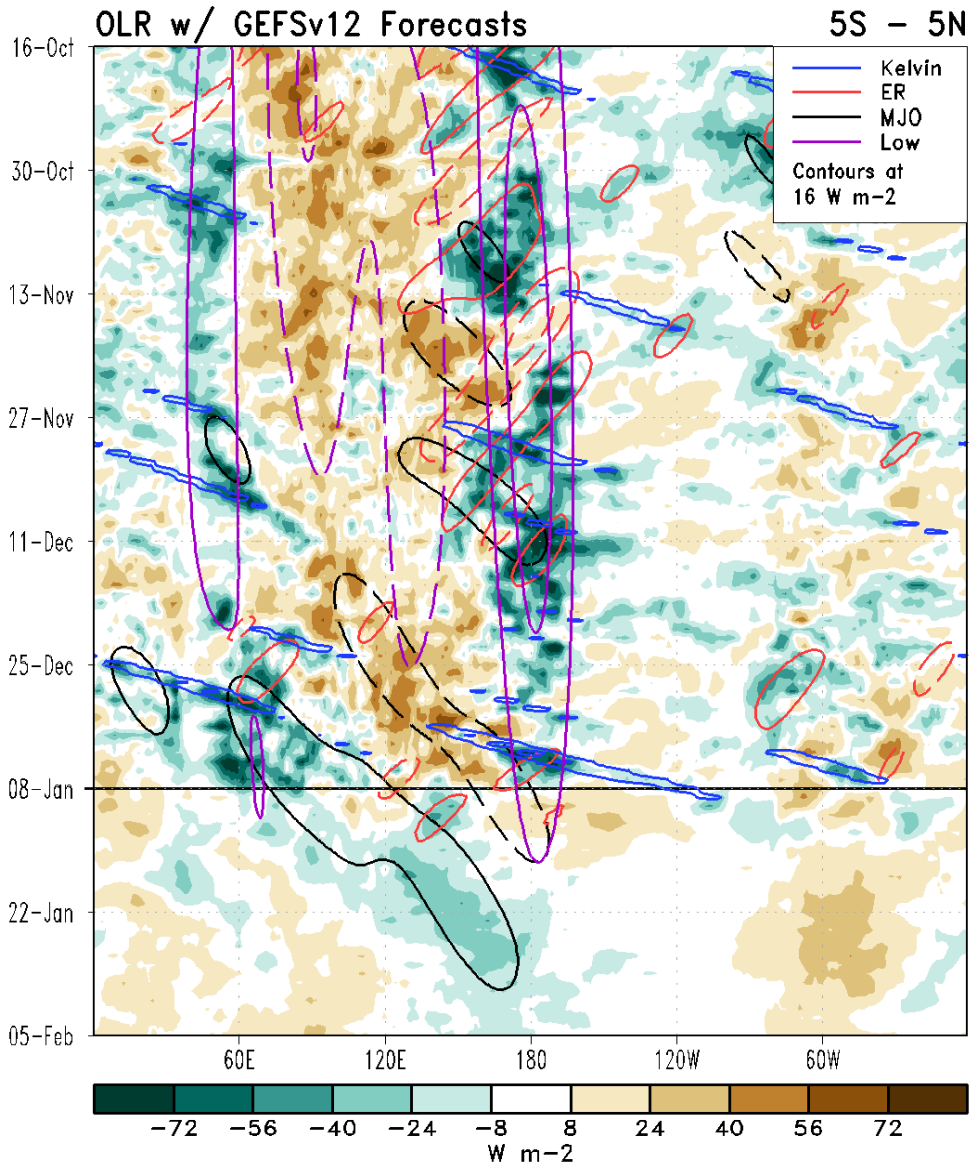




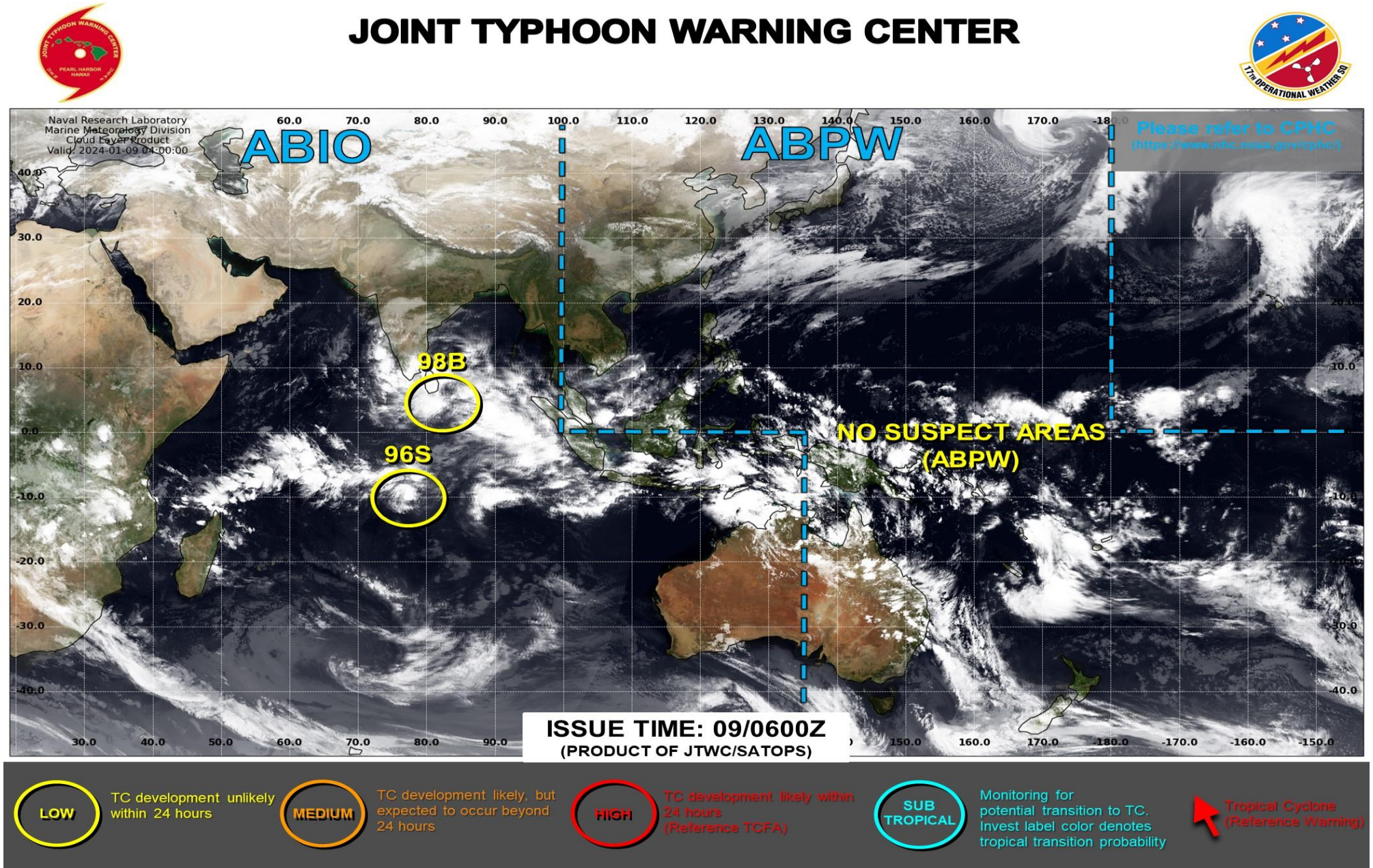
- Dynamical model forecasts depict continued MJO activity over the next few weeks.
- The GEFS favors a stronger and slower MJO than the ECMWF.

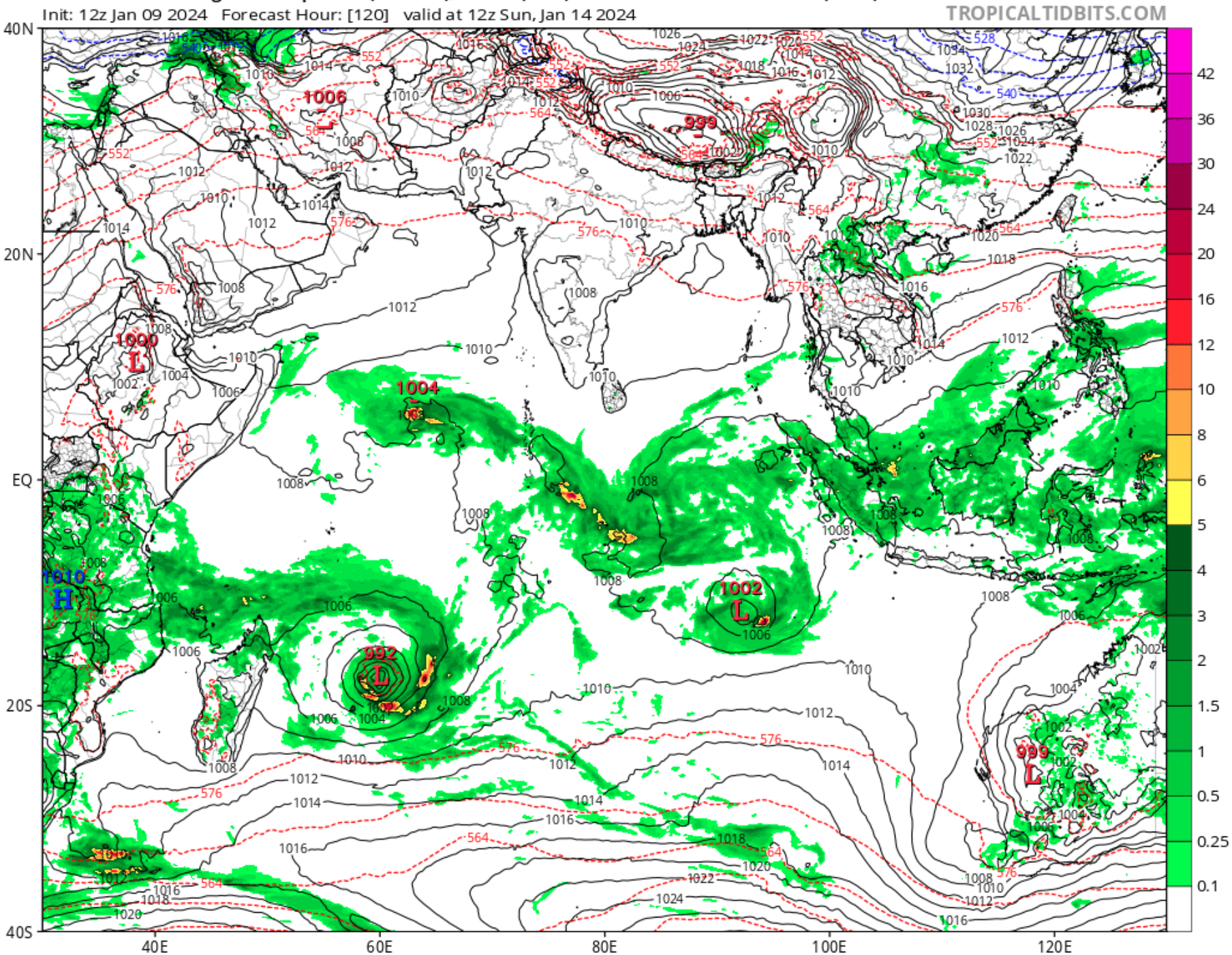
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



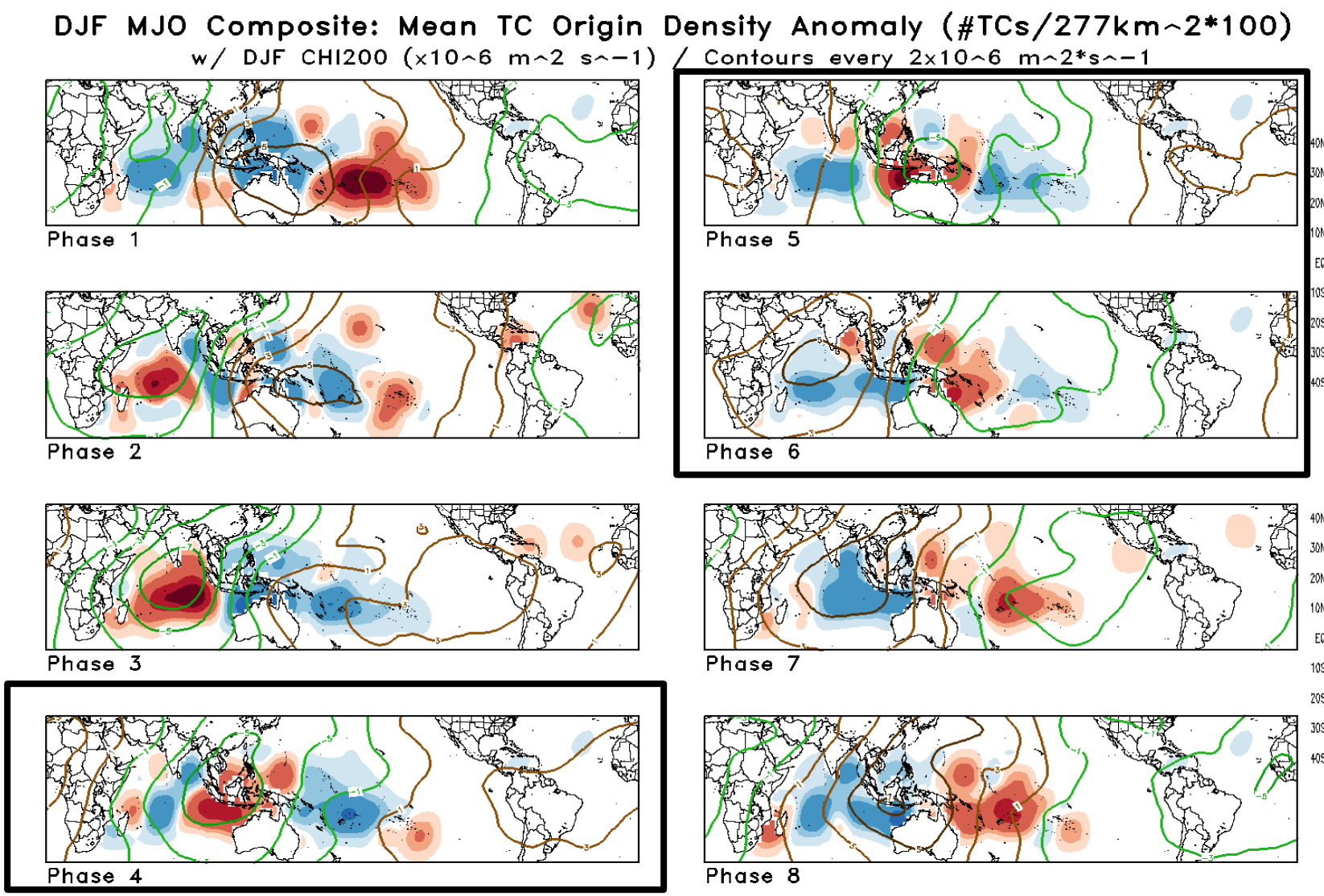


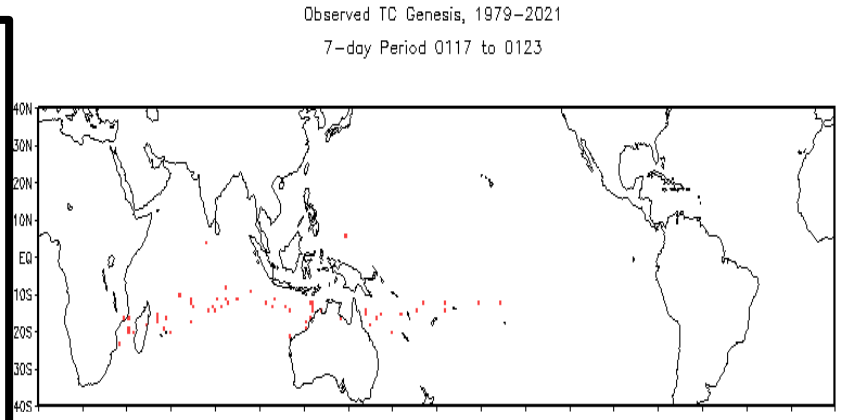
Tropical Cyclone Monitoring/Forecast: JTWC

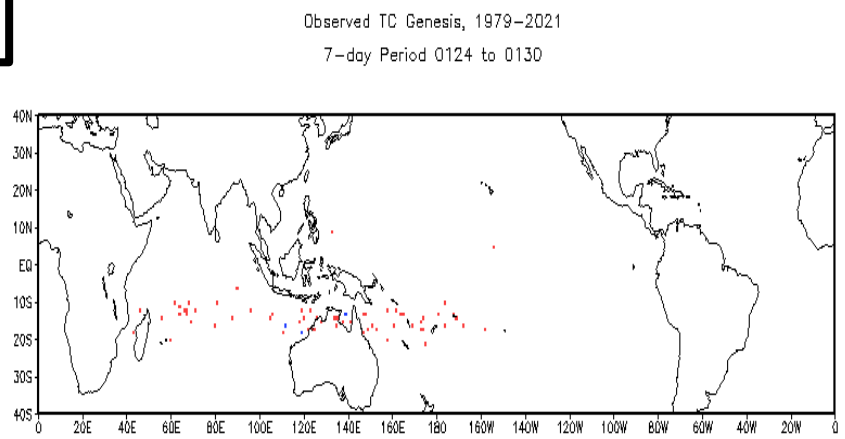



GFS 6-hour Averaged Precip Rate (mm/hr), MSLP (hPa) & 1000-500mb Thickness (dam)
Init: 12z Jan 09 2024 Forecast Hour: [120] valid at 12z Sun, Jan 14 2024
TROPICALTIDBITS.COM
40N
20N
EQ
20S
40S
40E
60E
80E
100E
120E
42
36
30
24
20
16
12
10
8
6
5
4
3
2
1.5
1
0.5
0.25
0.1

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

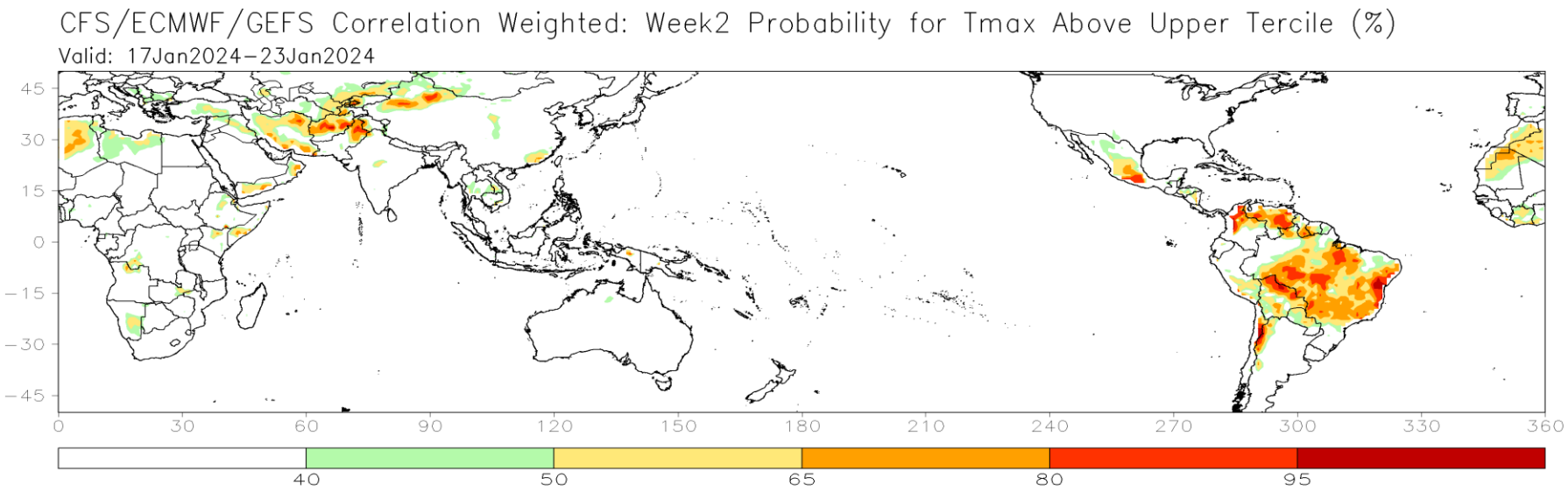


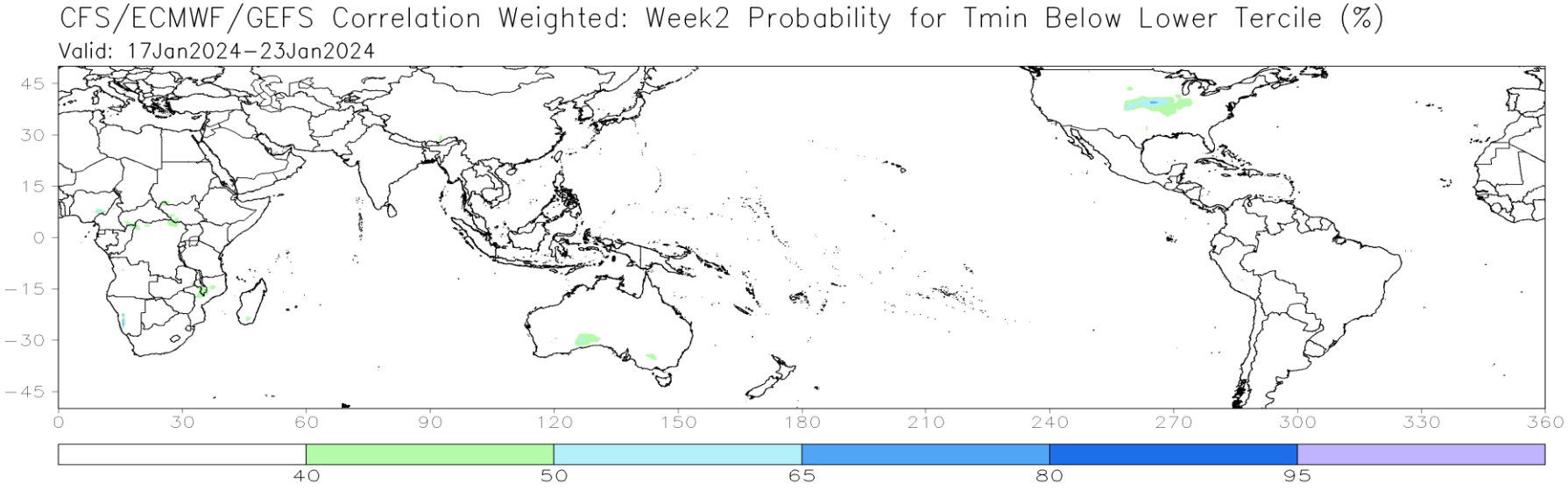




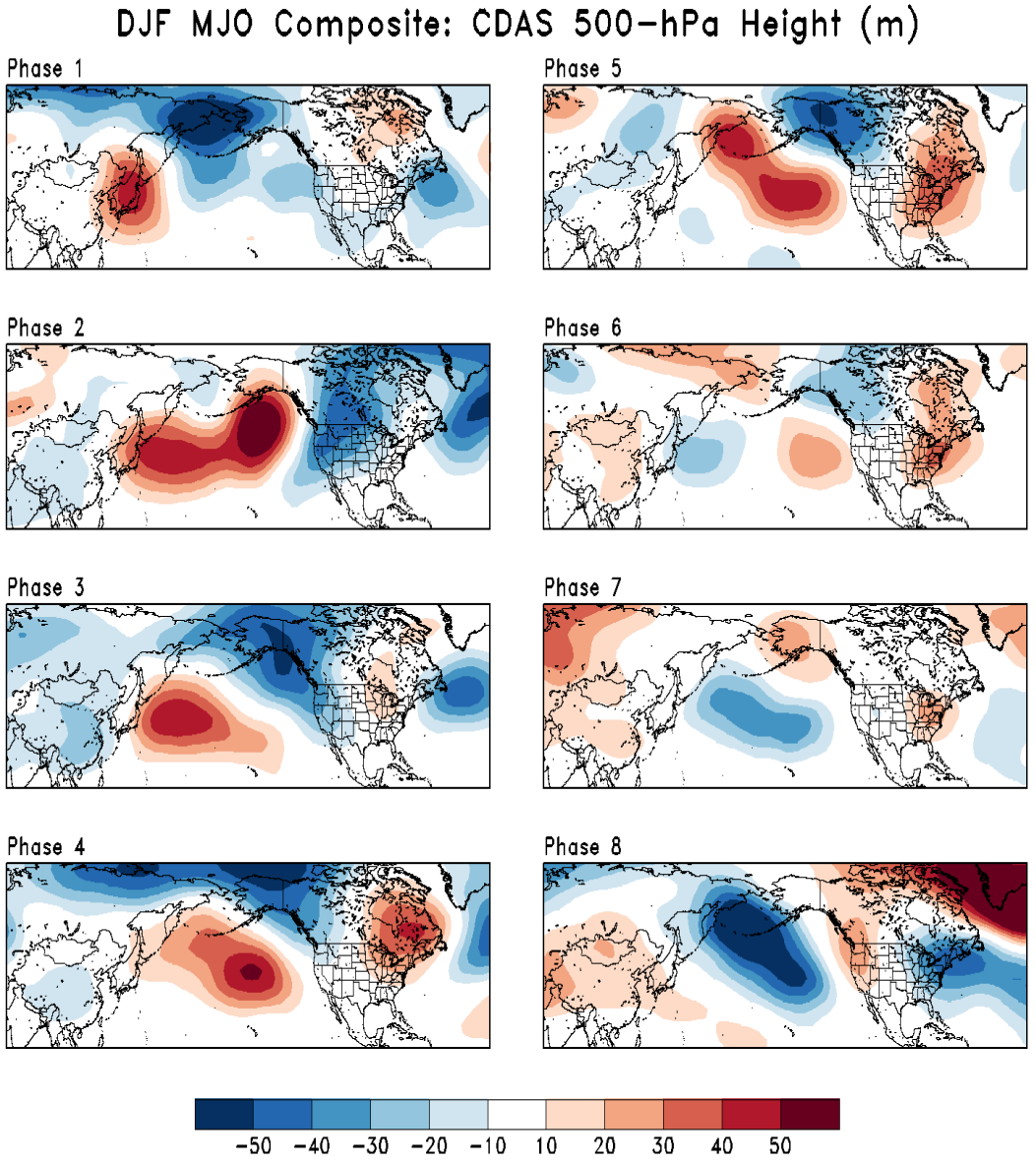
Experimental

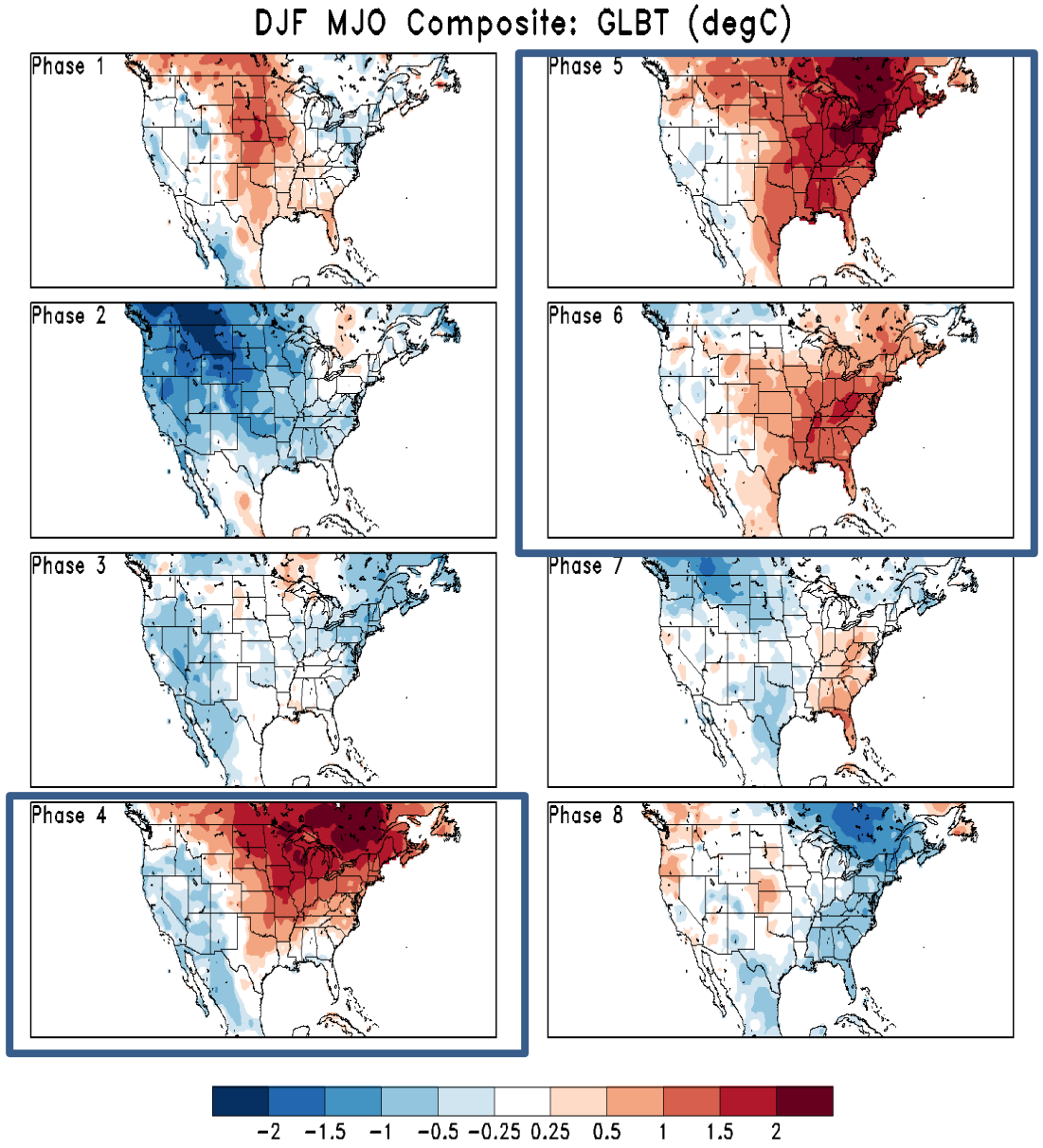
Consolidated Probabilistic Temperatures: Week-2





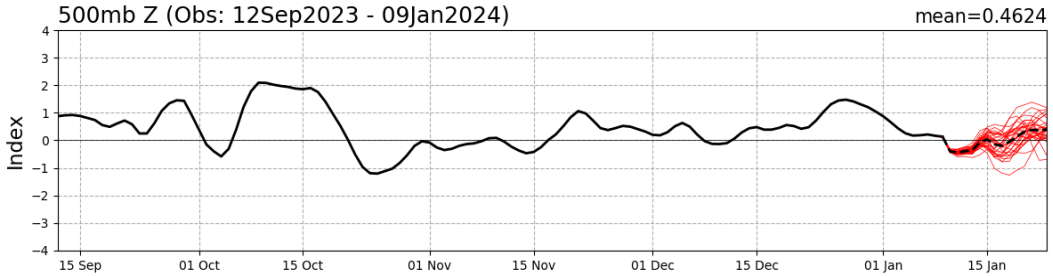
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

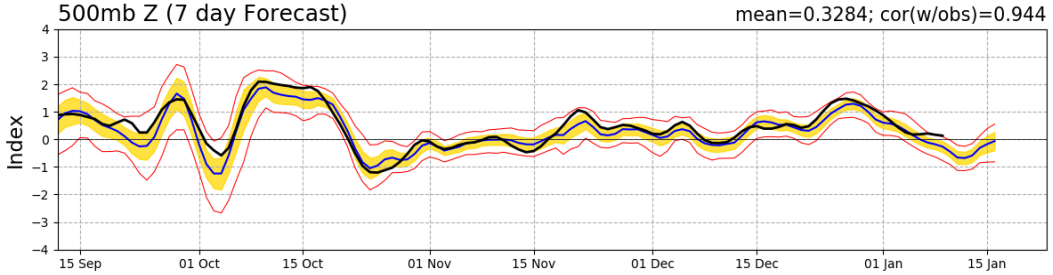


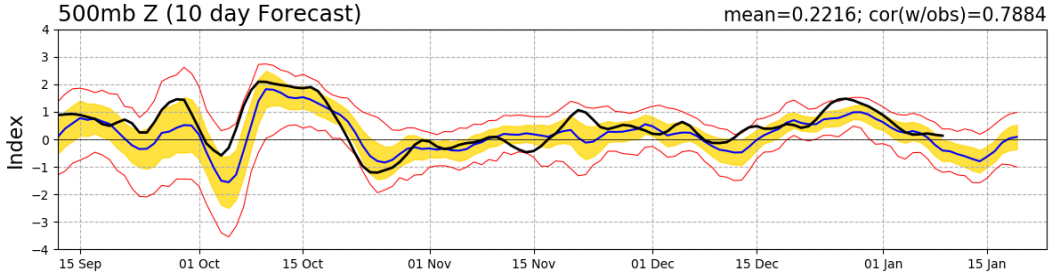


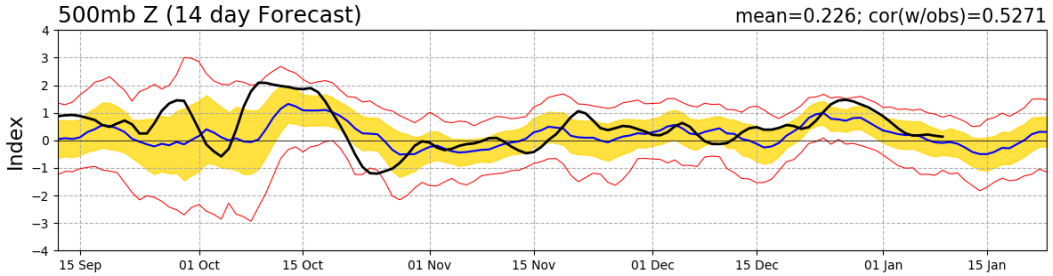
Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

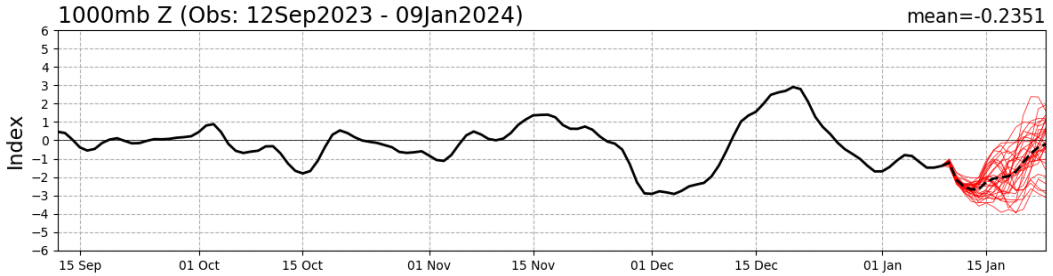


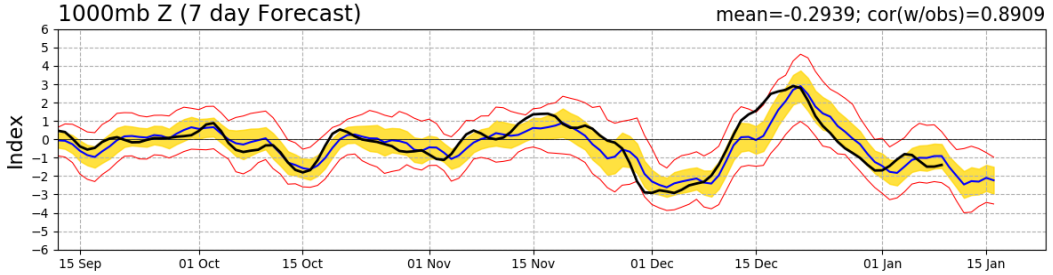


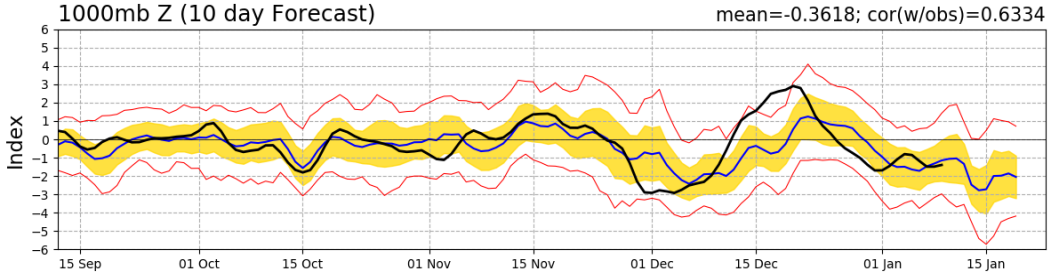


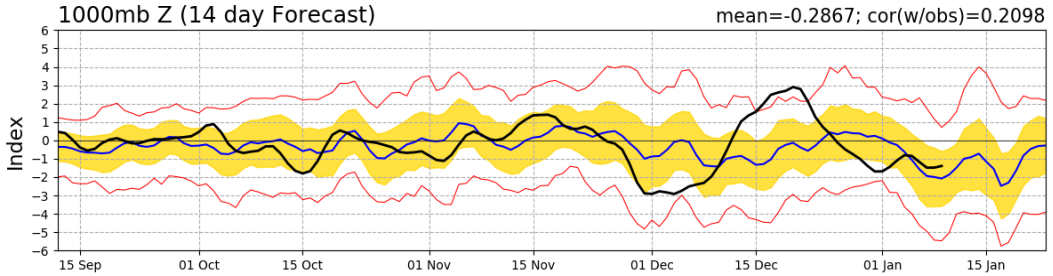


AO Index: Observed & GEFS Forecasts

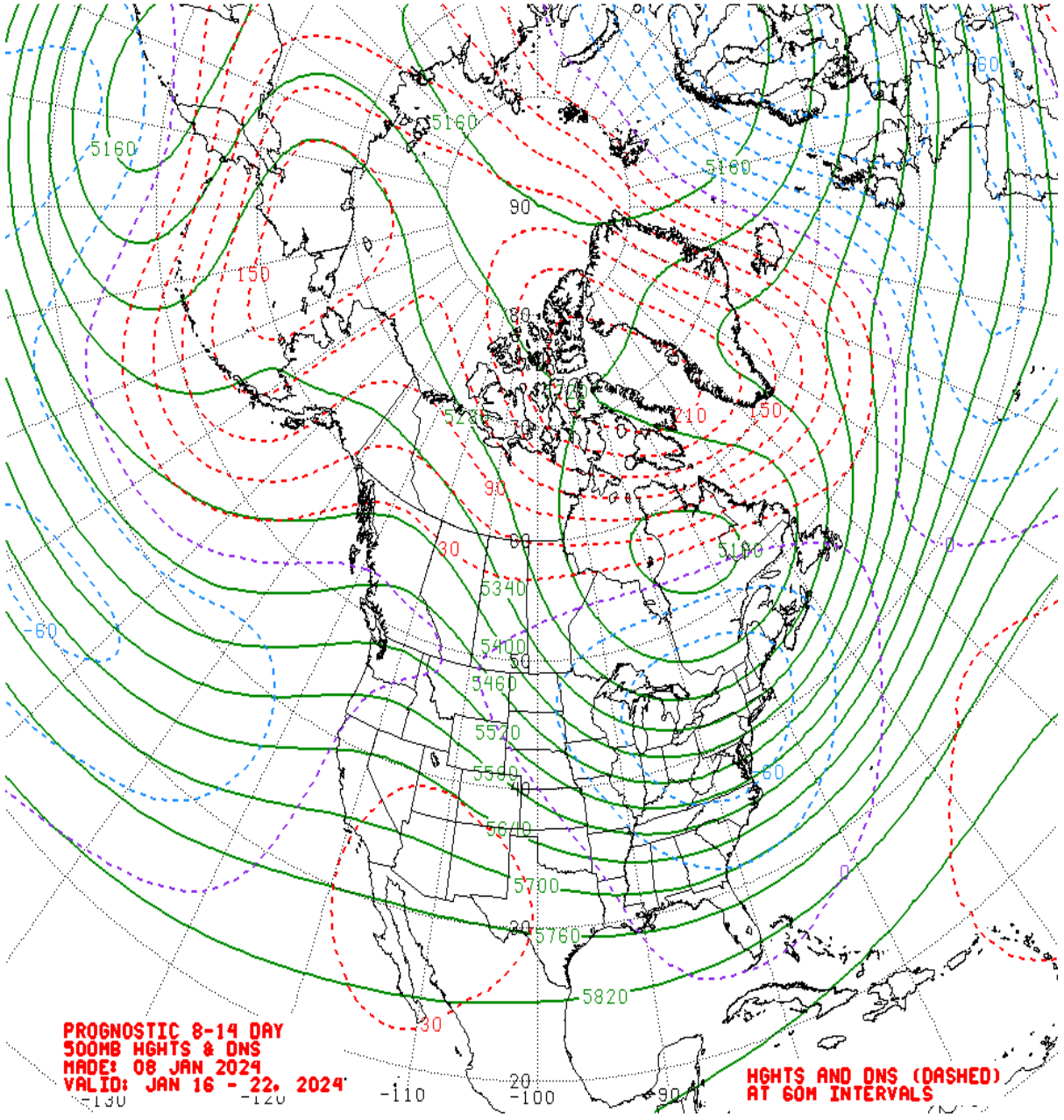


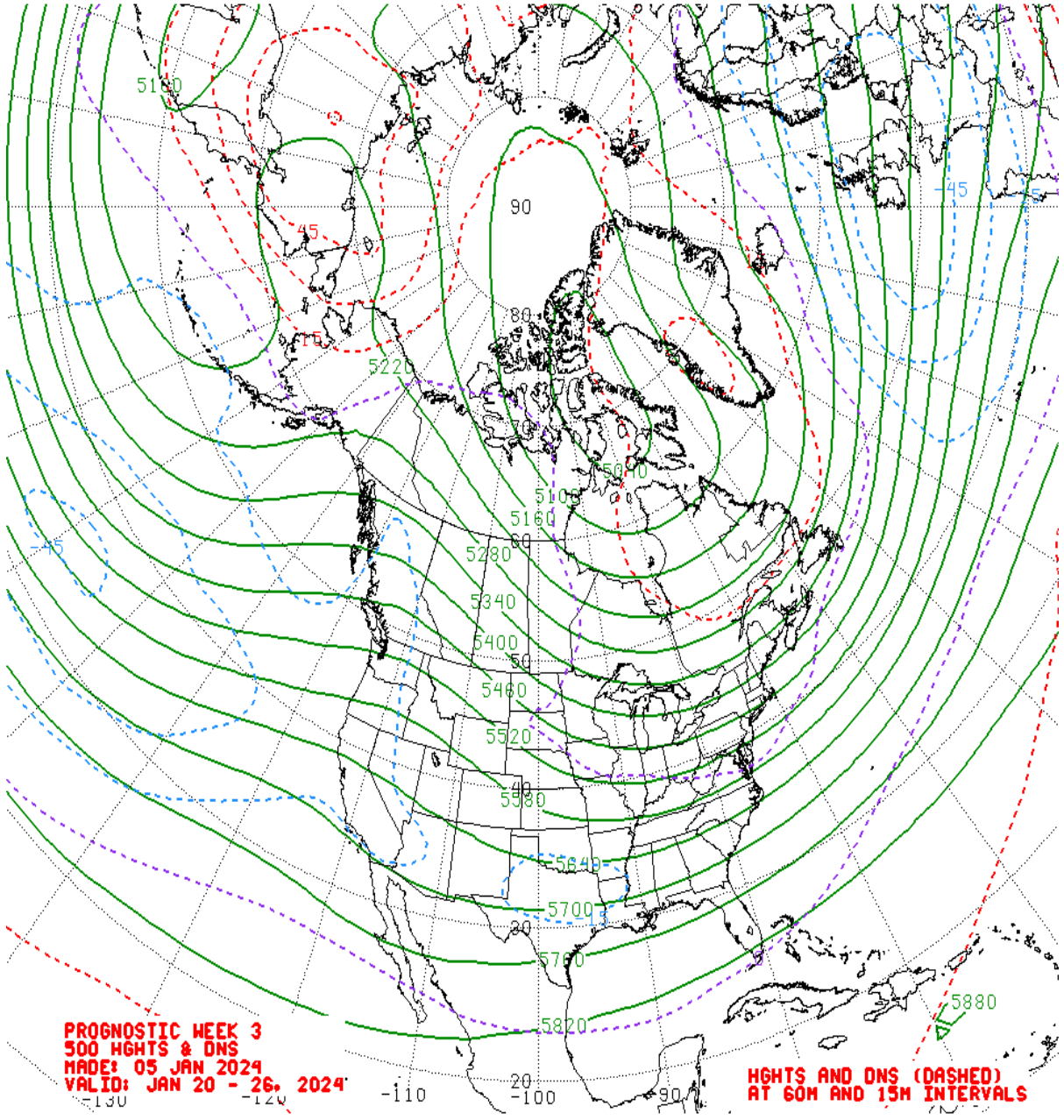




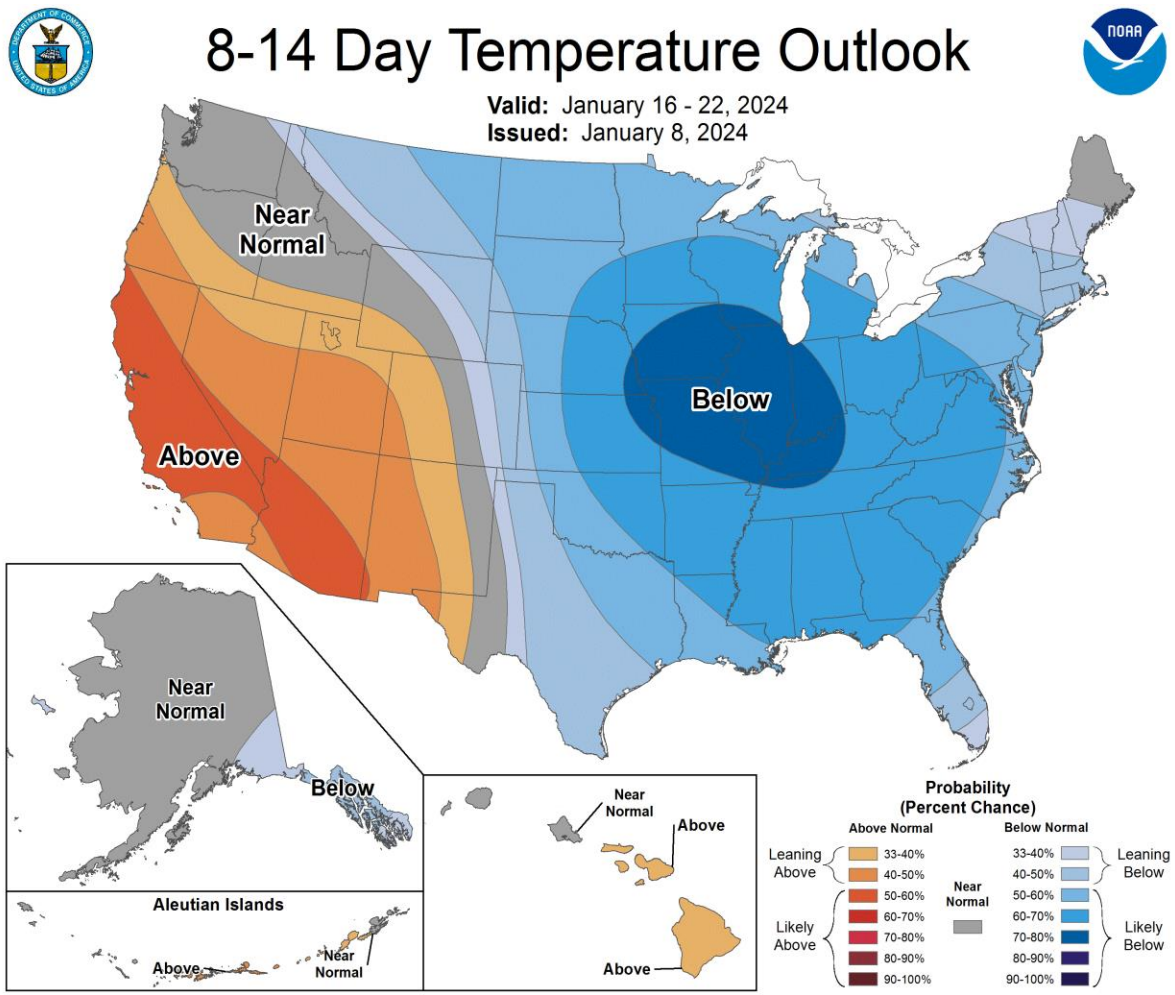


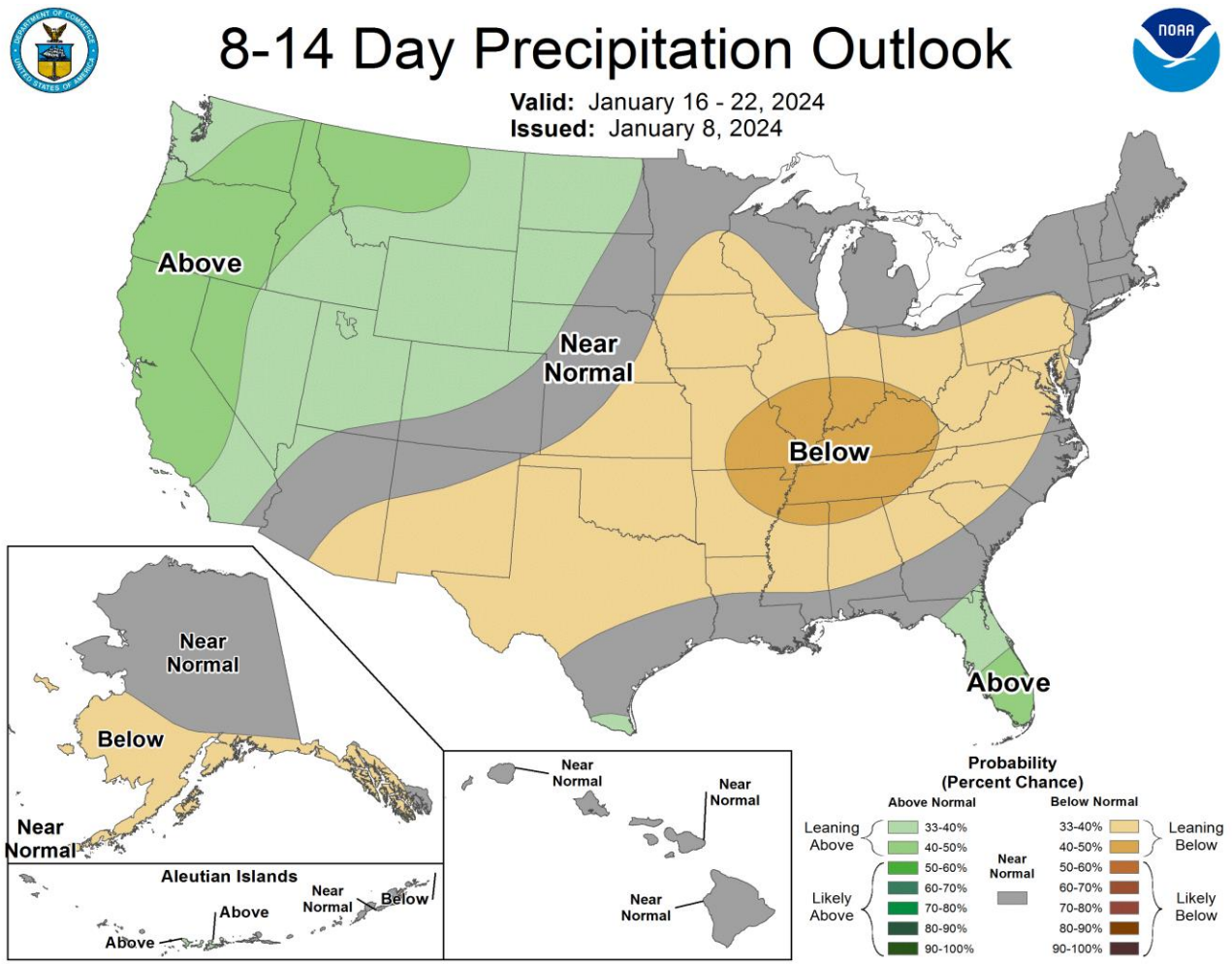
Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3





Official Temperature & Precipitation Forecasts:





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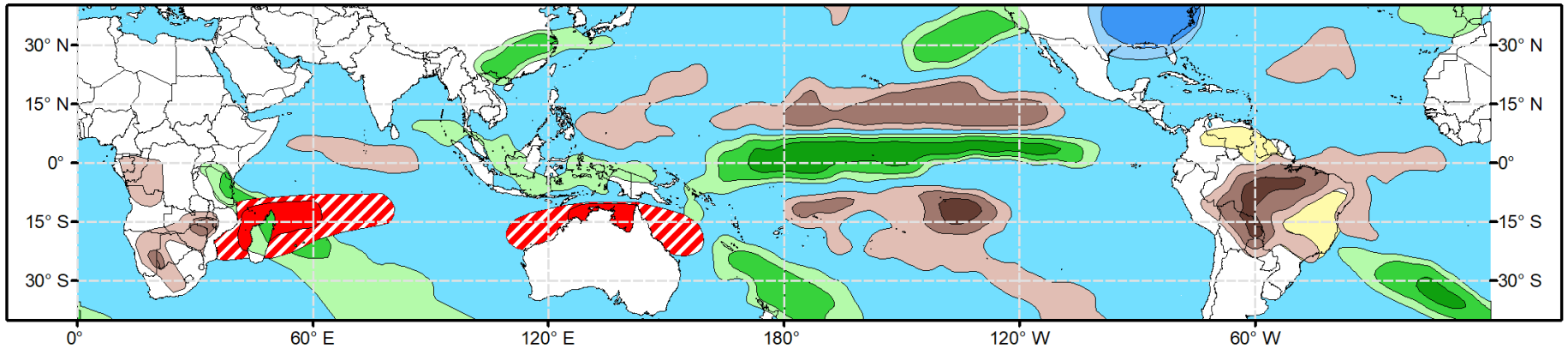

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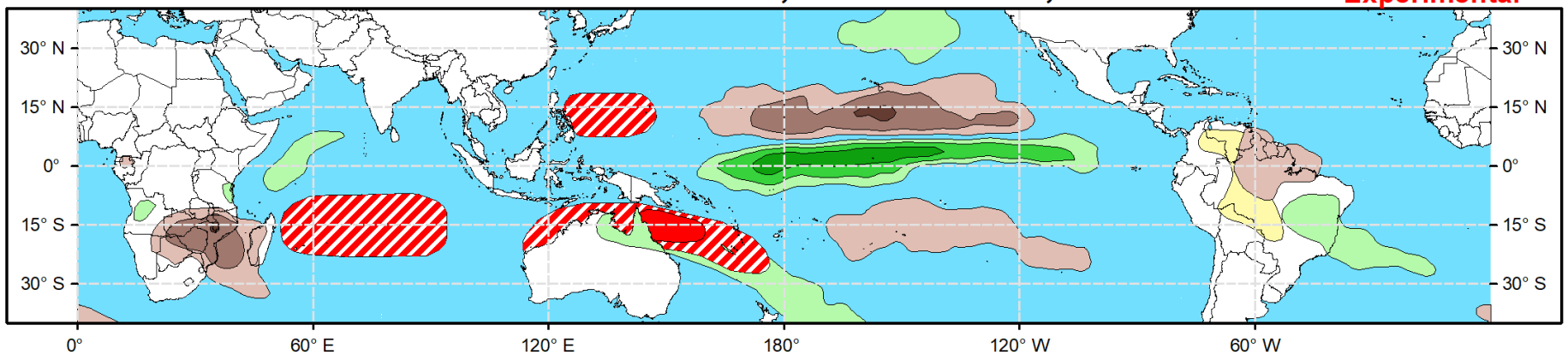

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