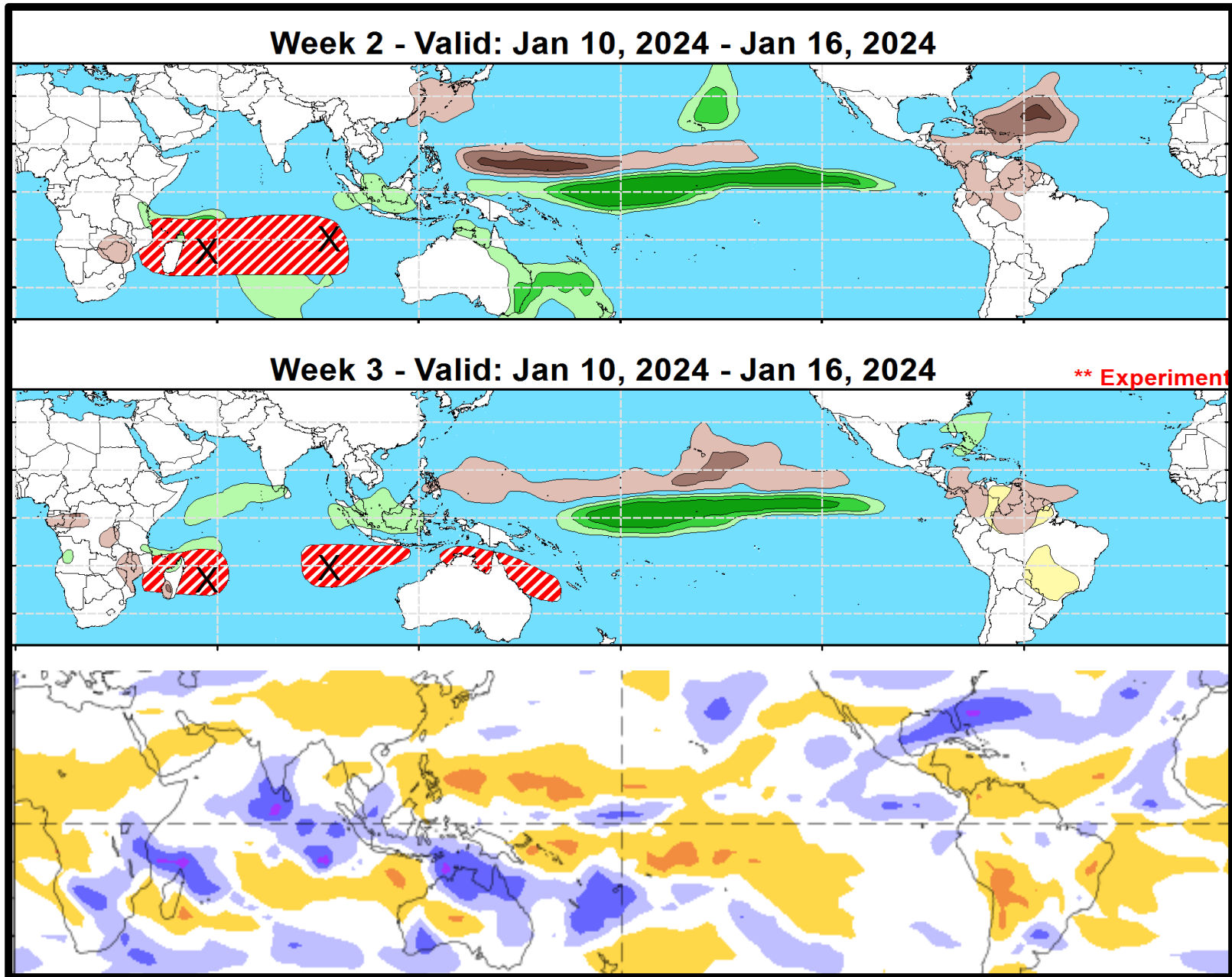
Weeks 2-3 Global Tropics Hazards Outlook

1/16/2024

Nick Novella
NWS / NCEP / Climate Prediction Center

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

- SIO: Belal (1/12)
- SIO: Anggrek (1/15)



Synopsis of Climate Modes:

ENSO: (Jan 11, 2024 Update) ***next update on Thursday, Feb 8th***

- ENSO Alert System Status: El Niño Advisory

- El Niño is expected to continue for the next several seasons, with ENSO-neutral favored during April-June, 20224 (73% chance).

MJO and other subseasonal tropical variability:

- Earlier this month, the MJO briefly weakened over the Indian Ocean but has since become more organized while propagating eastward into the Maritime Continent.

- RMM forecasts are in very good agreement favoring a high amplitude Maritime Continent and Western Pacific MJO event unfolding during the next several weeks.

- The large-scale environment is expected to be favorable for additional tropical cyclogenesis across parts of the southern Indian Ocean and West Pacific on both sides of the equator.

- In the extratropics, there is both model and MJO composite support for the development of warmer than normal temperatures over central and eastern CONUS later in January, followed by the potential return for anomalous cold affecting parts of the U.S. heading into February.

GTH Outlook:

Global Tropics Hazards Outlook

Climate Prediction Center

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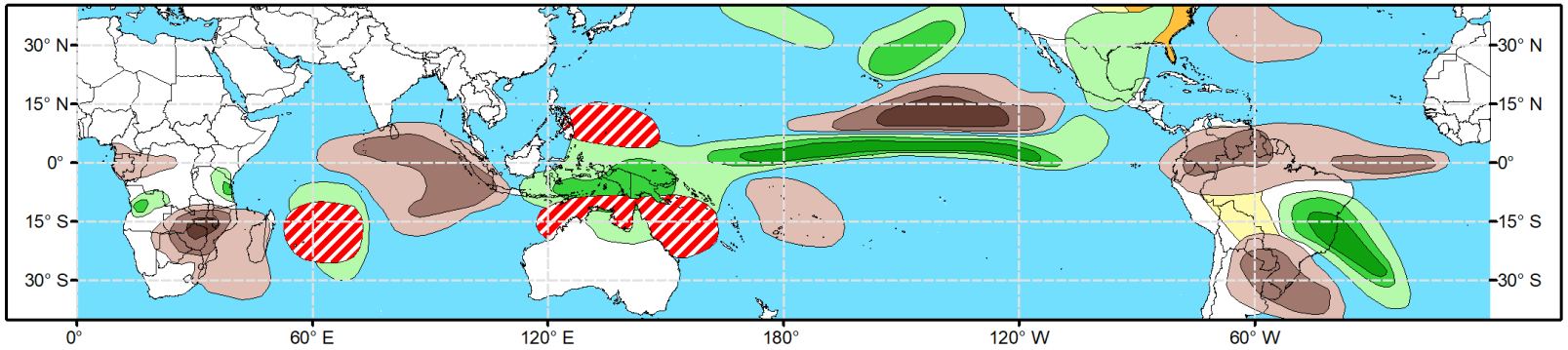

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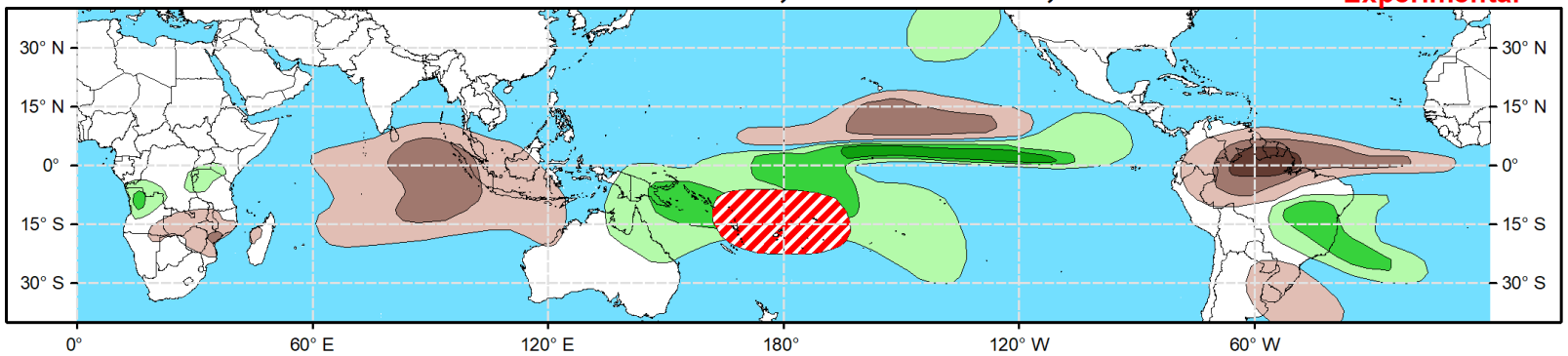
** Experimental **



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

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

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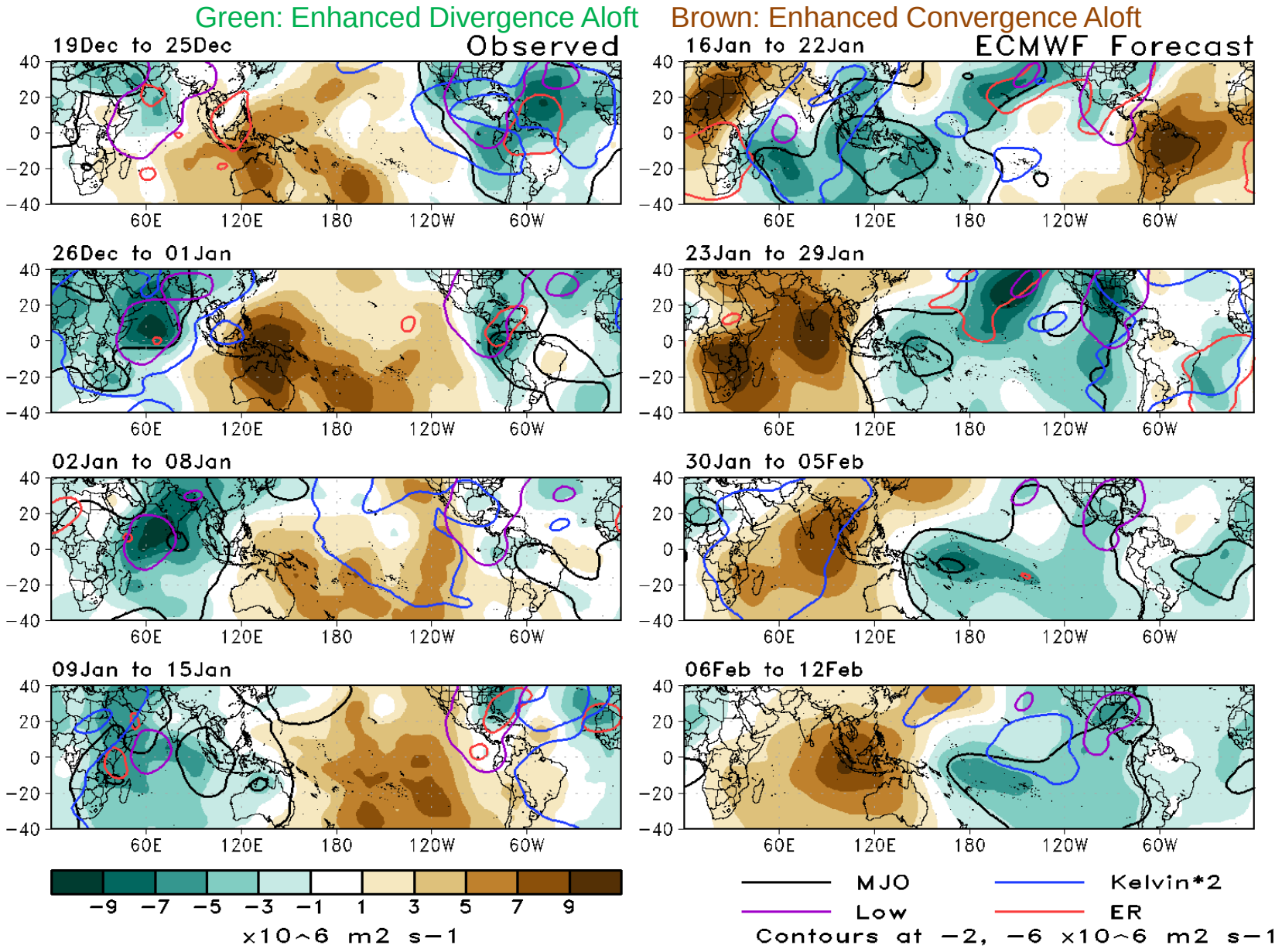
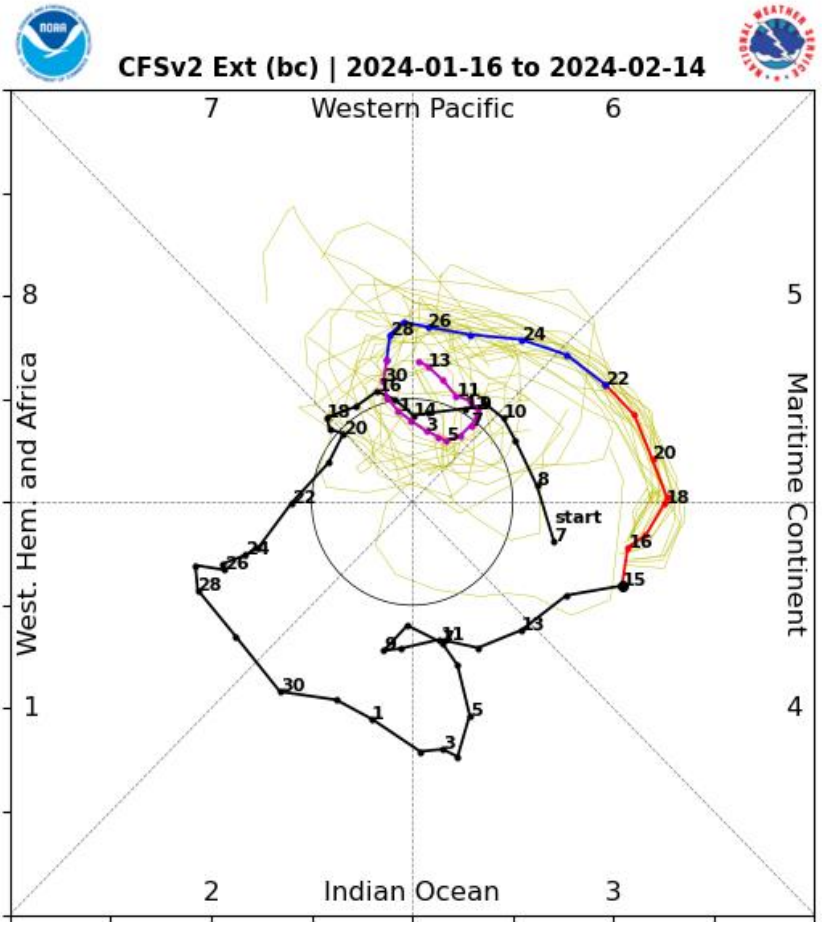
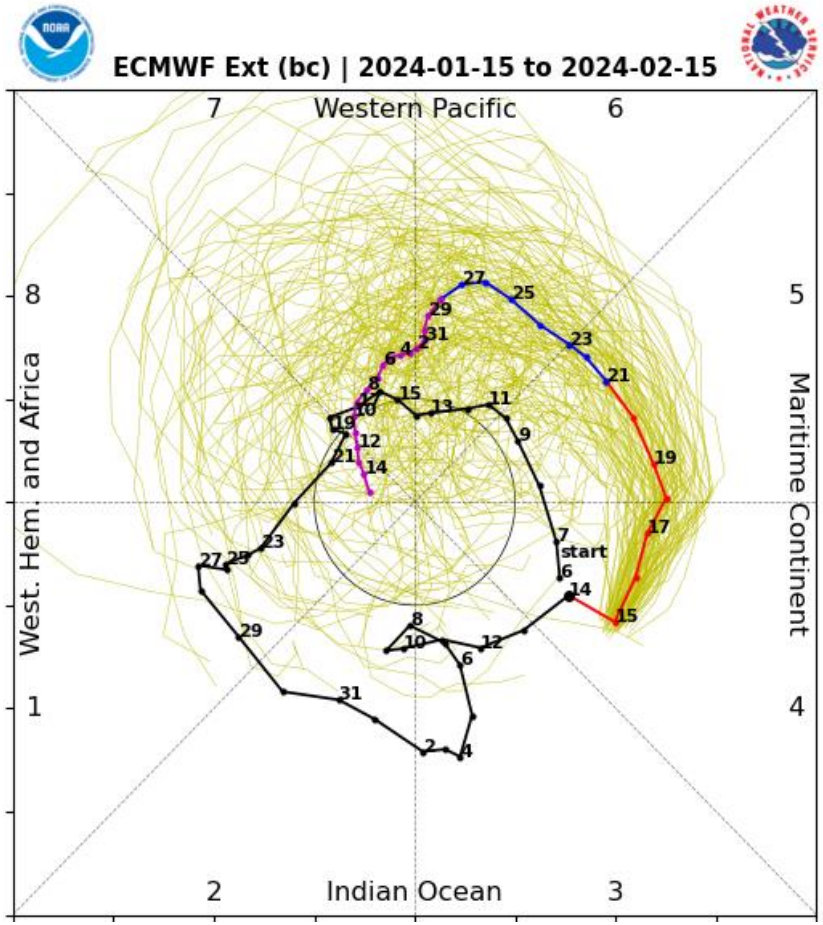
200-hPa Velocity Potential Anomaly Maps:

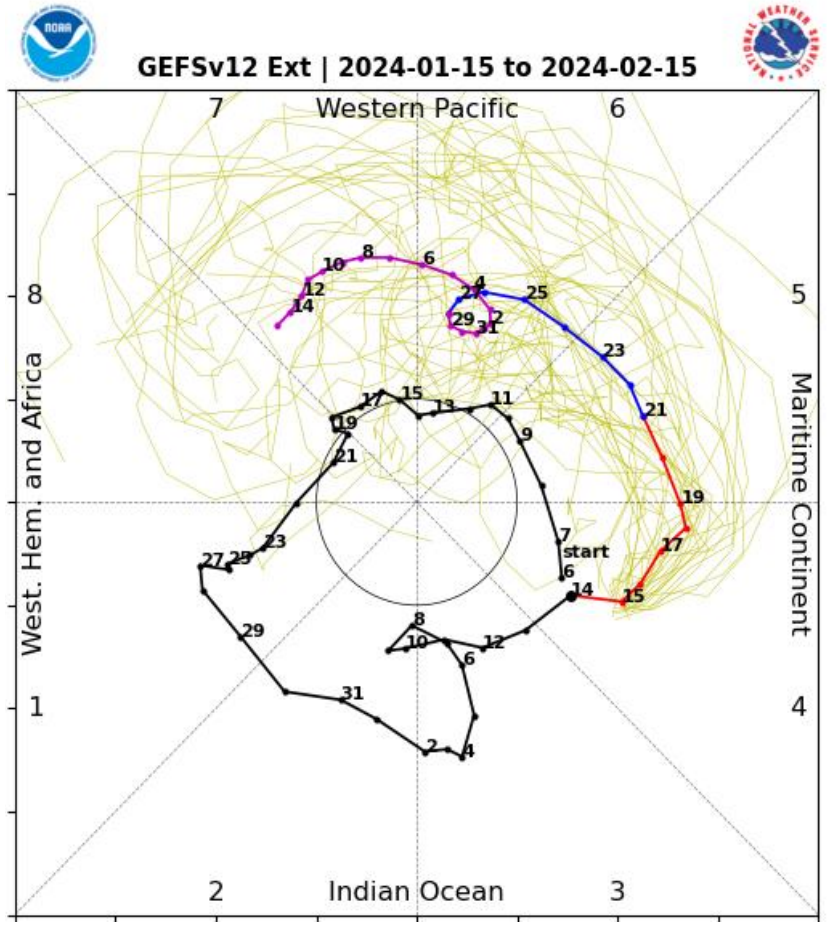
- MJO activity is coming through the filtering over the Indian Ocean and shifting eastward into the Maritime Continent in the observations.
- Strong Kelvin wave activity is favored to be in phase with the enhanced convective envelope of the MJO. This is likely to further enhance convection over the Maritime Continent which has been largely suppressed due to El Nino.
- As the Kelvin wave activity moves ahead, the slower MJO continues to propagate into the western Pacific where it looks to again constructively interfere with El Nino.



RMM Index Observations & Forecasts:

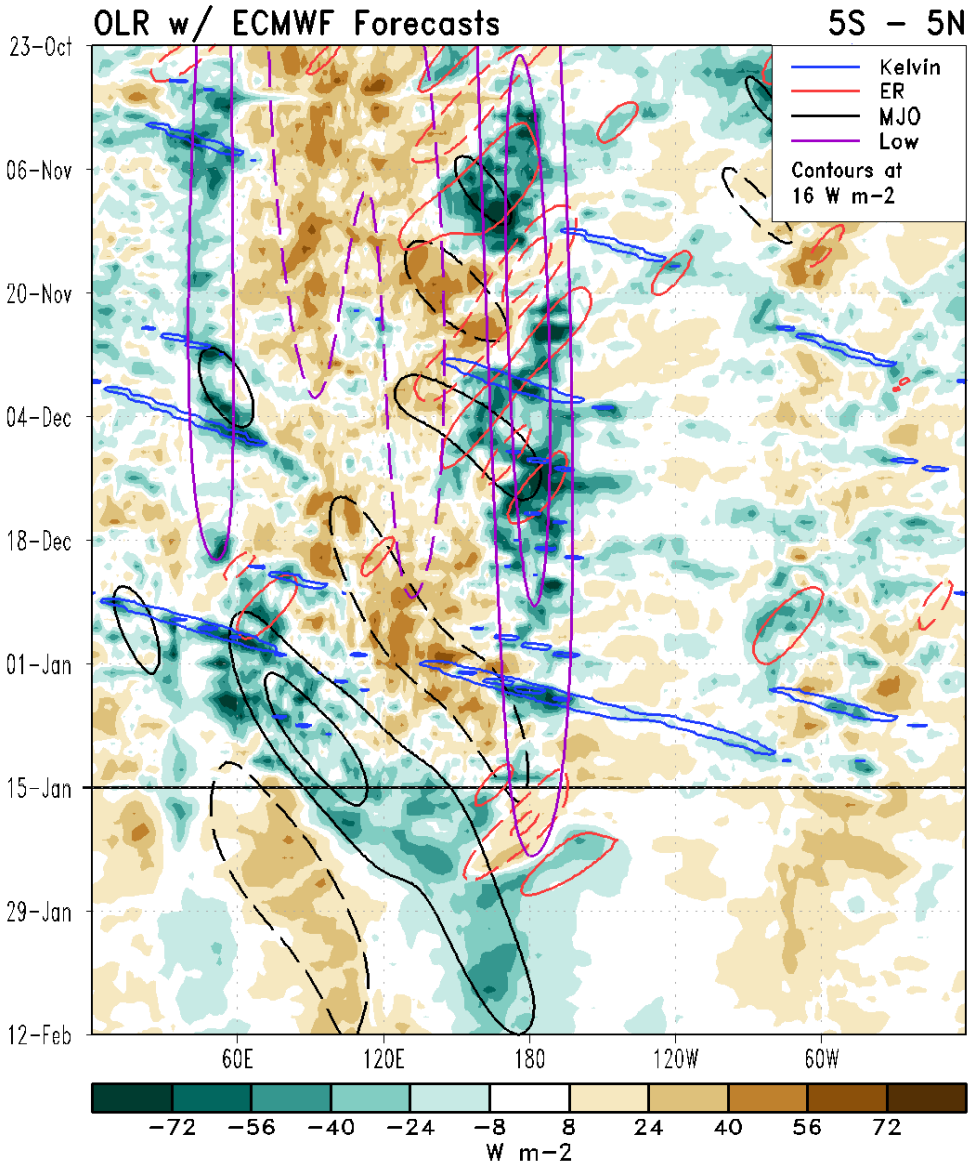


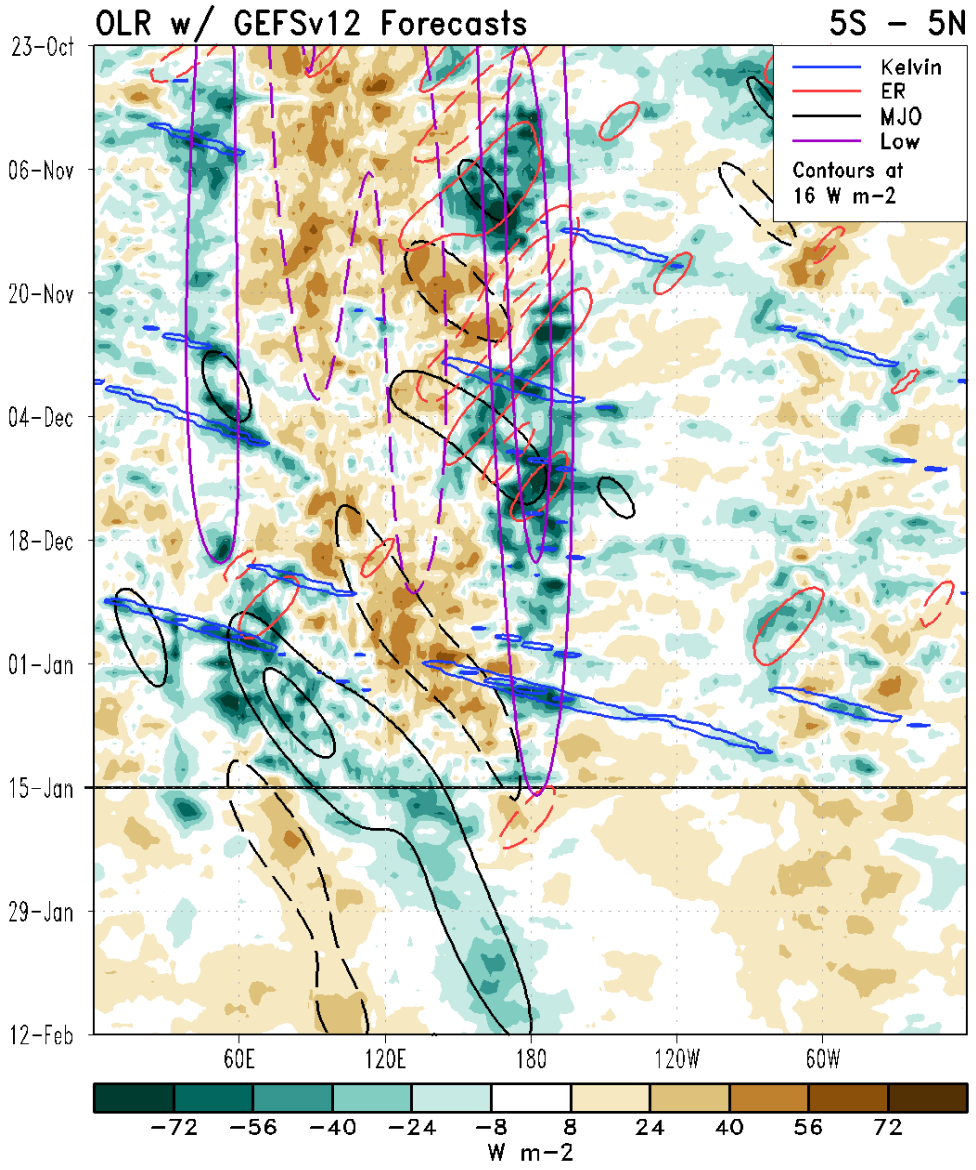




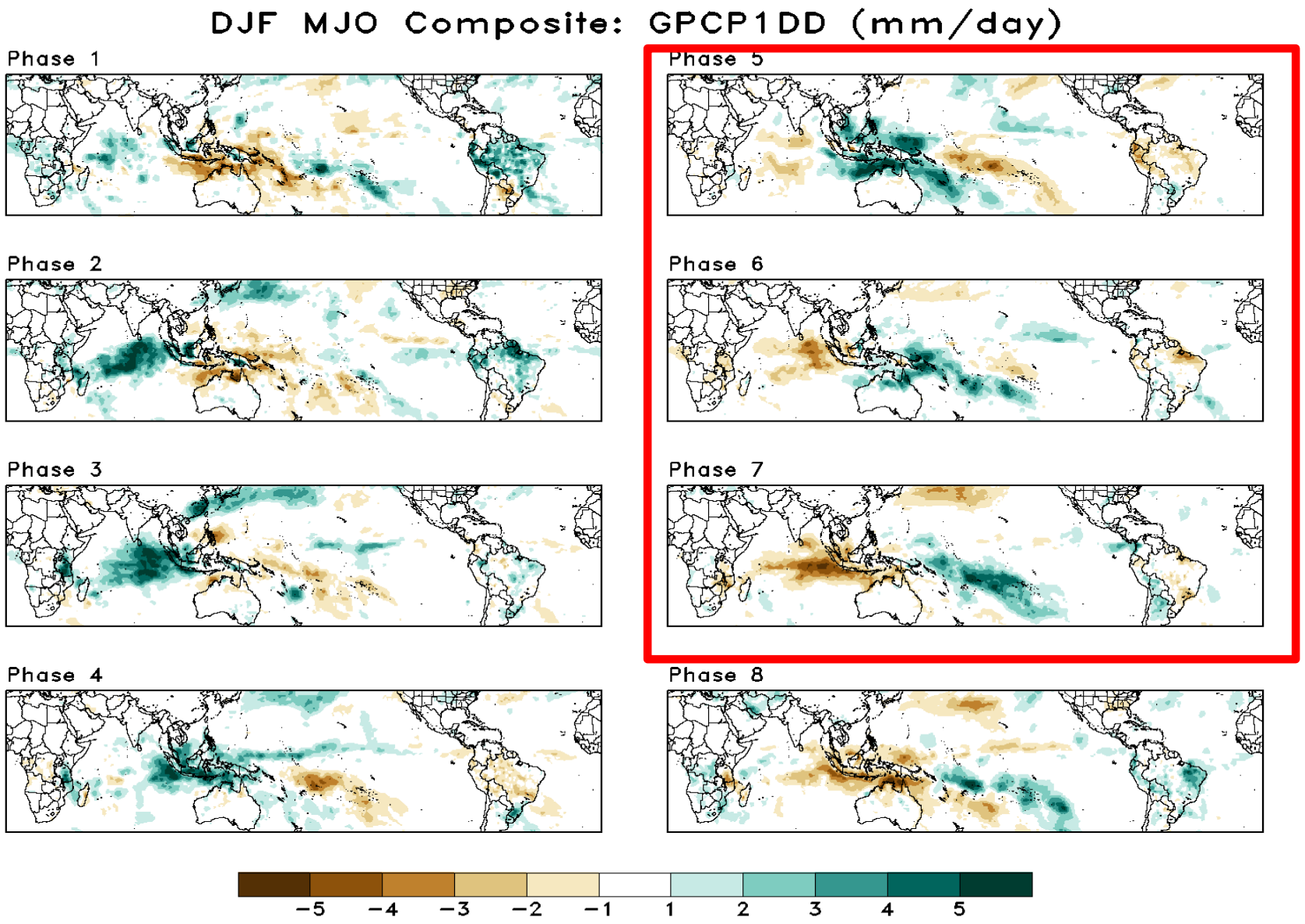
- Very good agreement exists in the RMM forecasts favoring a high amplitude MJO event that propagates from the Maritime Continent into the Western Pacific during the next two weeks
- Ensemble spread increases in the extended range, but several members maintain a high amplitude event heading into February.

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

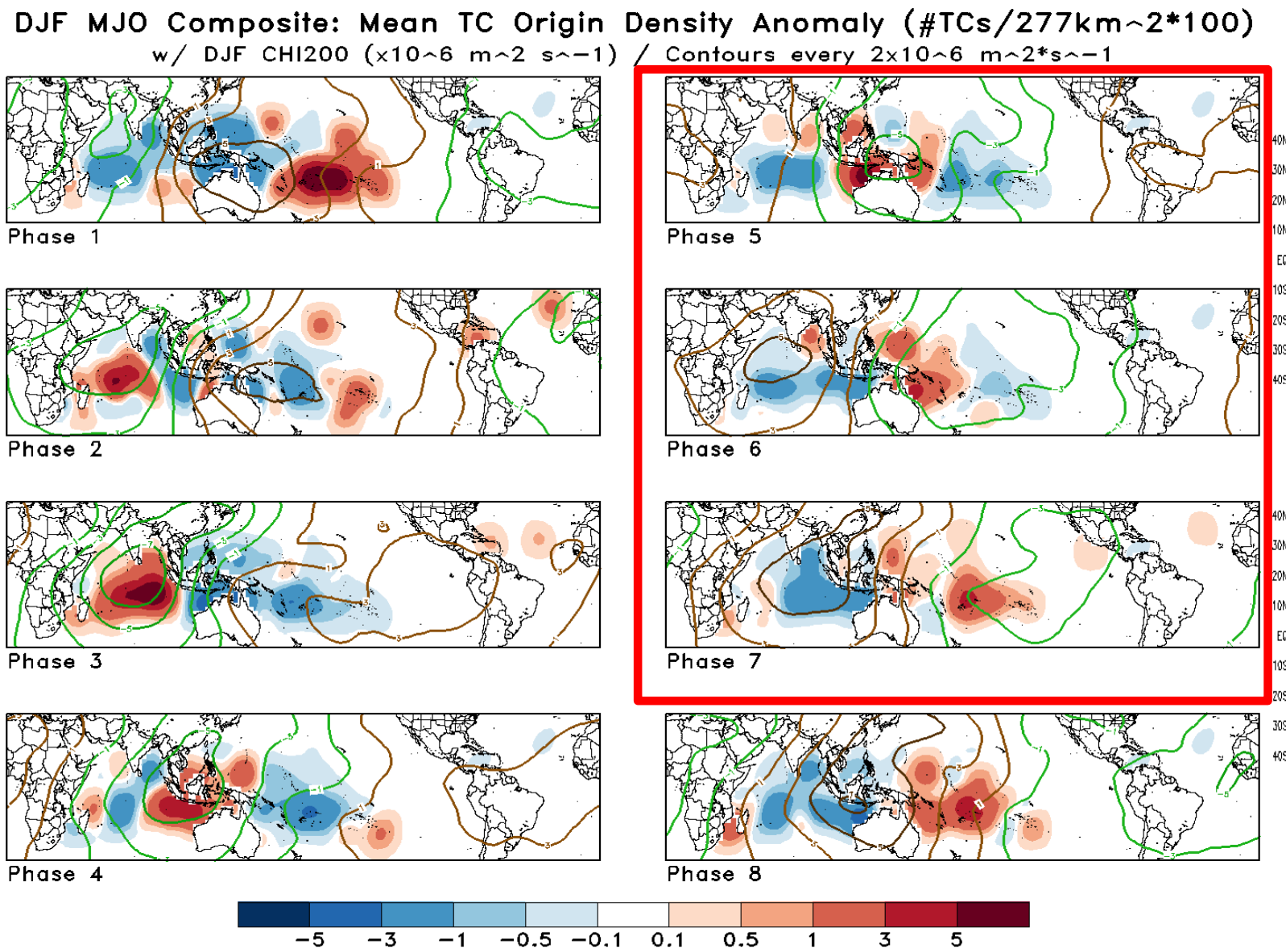


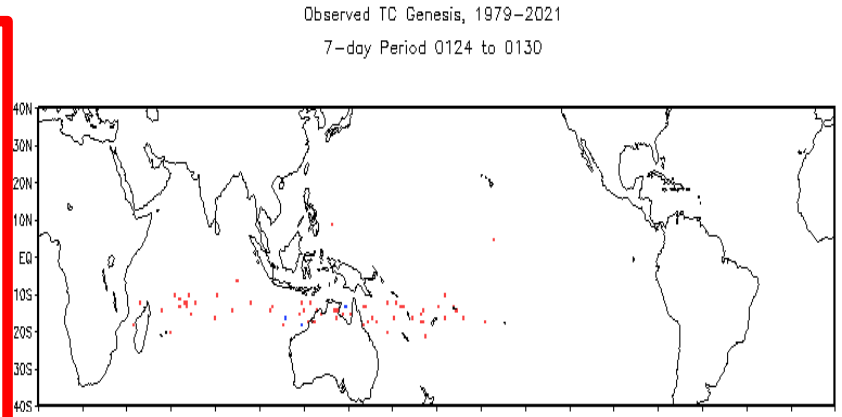


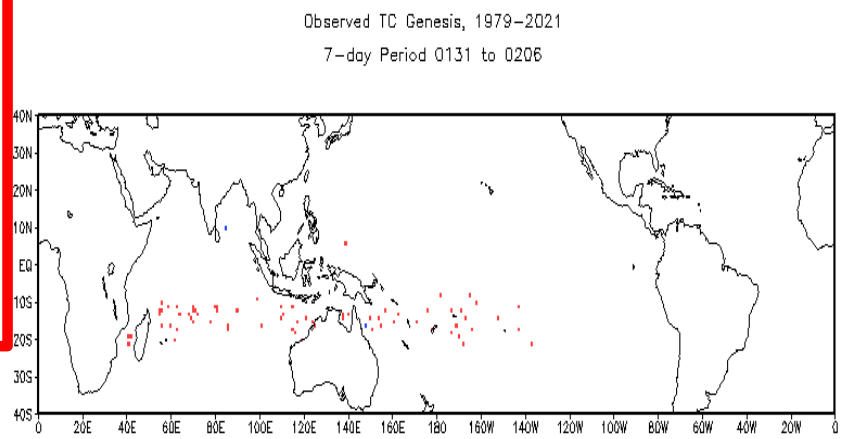
Historical Precipitation Anomalies By MJO Phase:



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

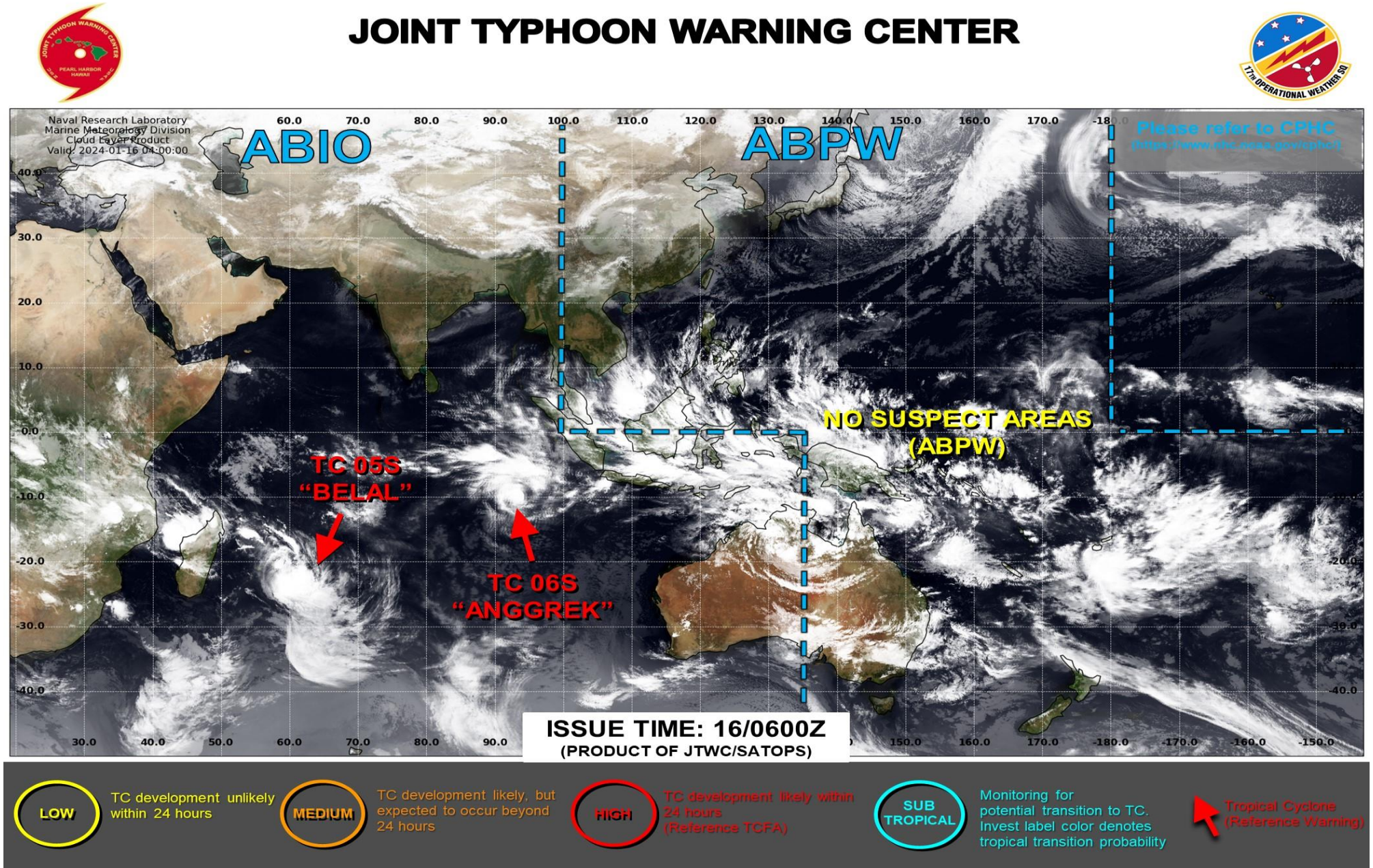


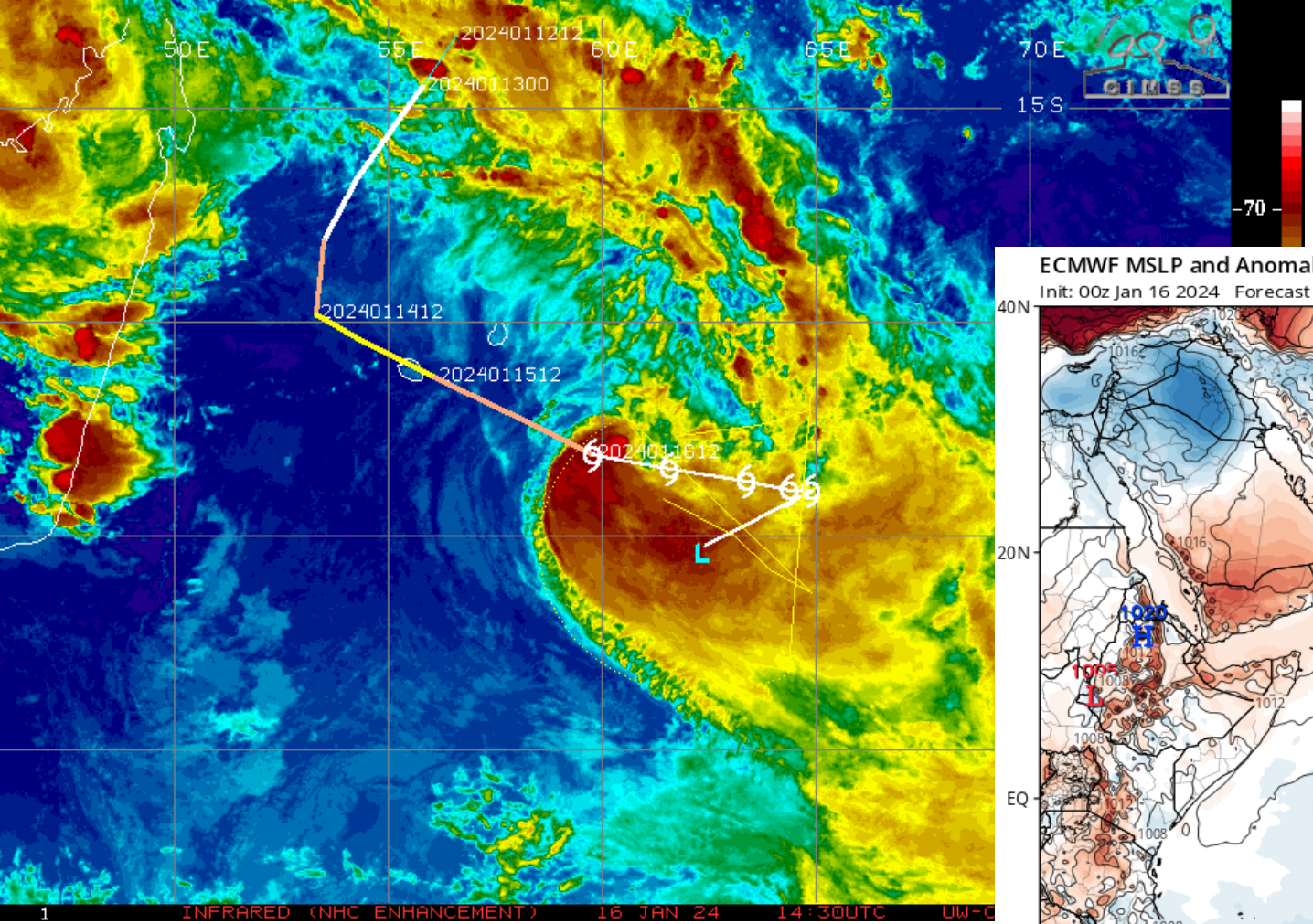




Experimental

Tropical Cyclone Monitoring/Forecast: JTWC




50E
55E
60E
65E
70E
15S
2024011212
2024011300
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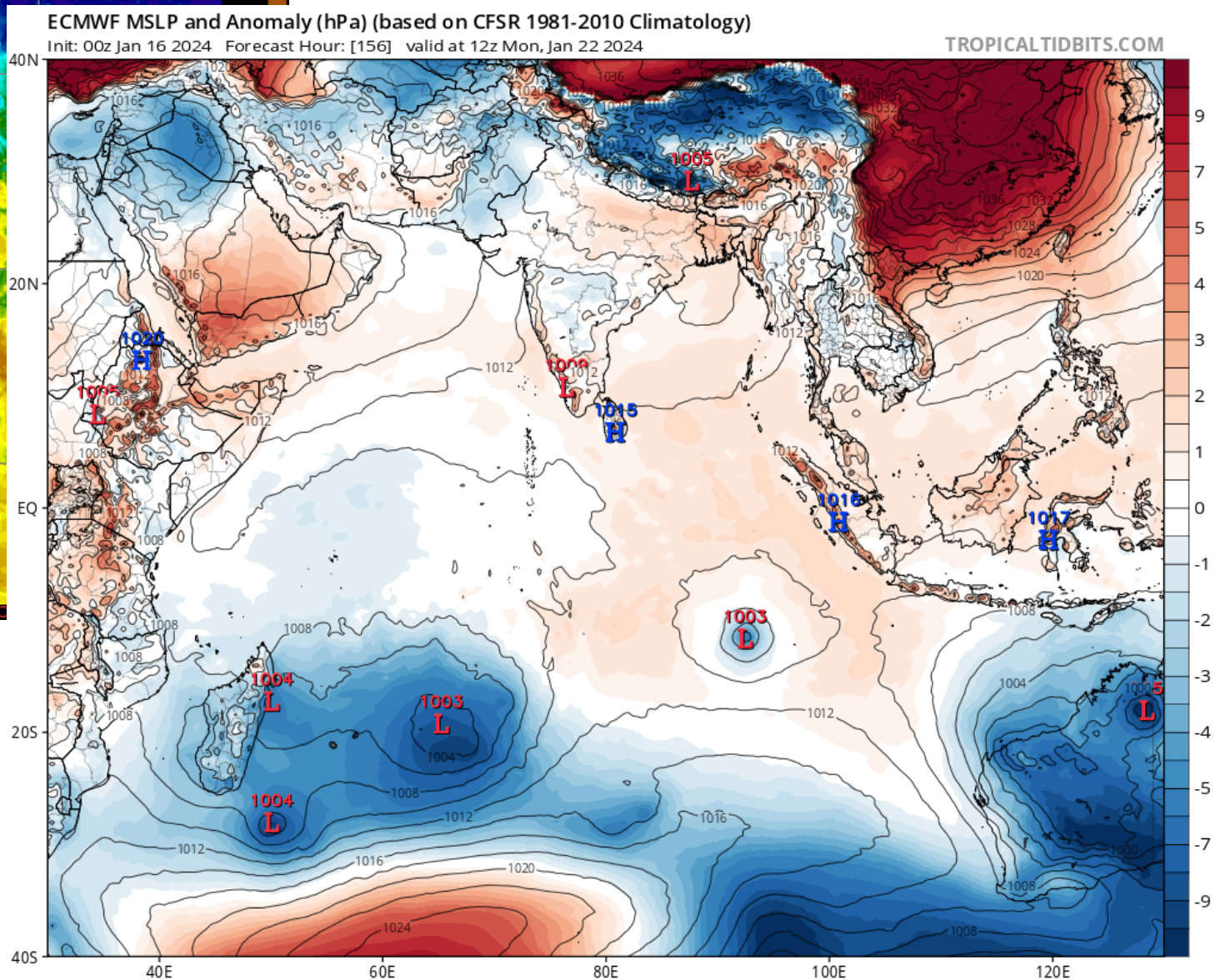
L
-70
1
INFRARED (NHC ENHANCEMENT)
16 JAN 24
14:30UTC


ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)
Init: 00z Jan 16 2024 Forecast Hour: [156] valid at 12z Mon, Jan 22 2024
TROPICALTIDBITS.COM
40N
20N
EQ
20S
40S
40E
60E
80E
100E
120E
1005 L
1020 H
1009 L
1015 H
1016 H
1017 H
1003 L
1004 L
1003 L
1004 L
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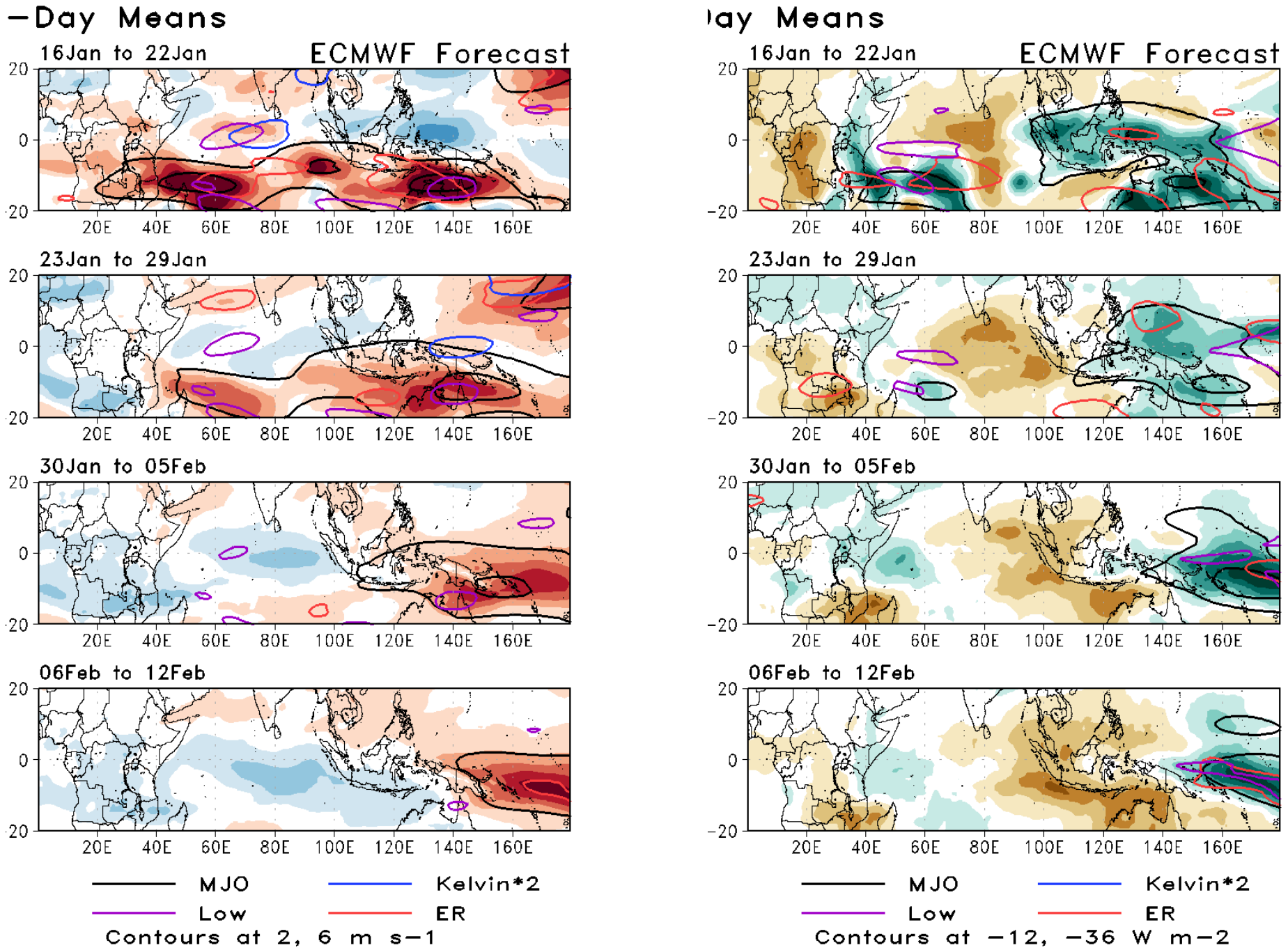
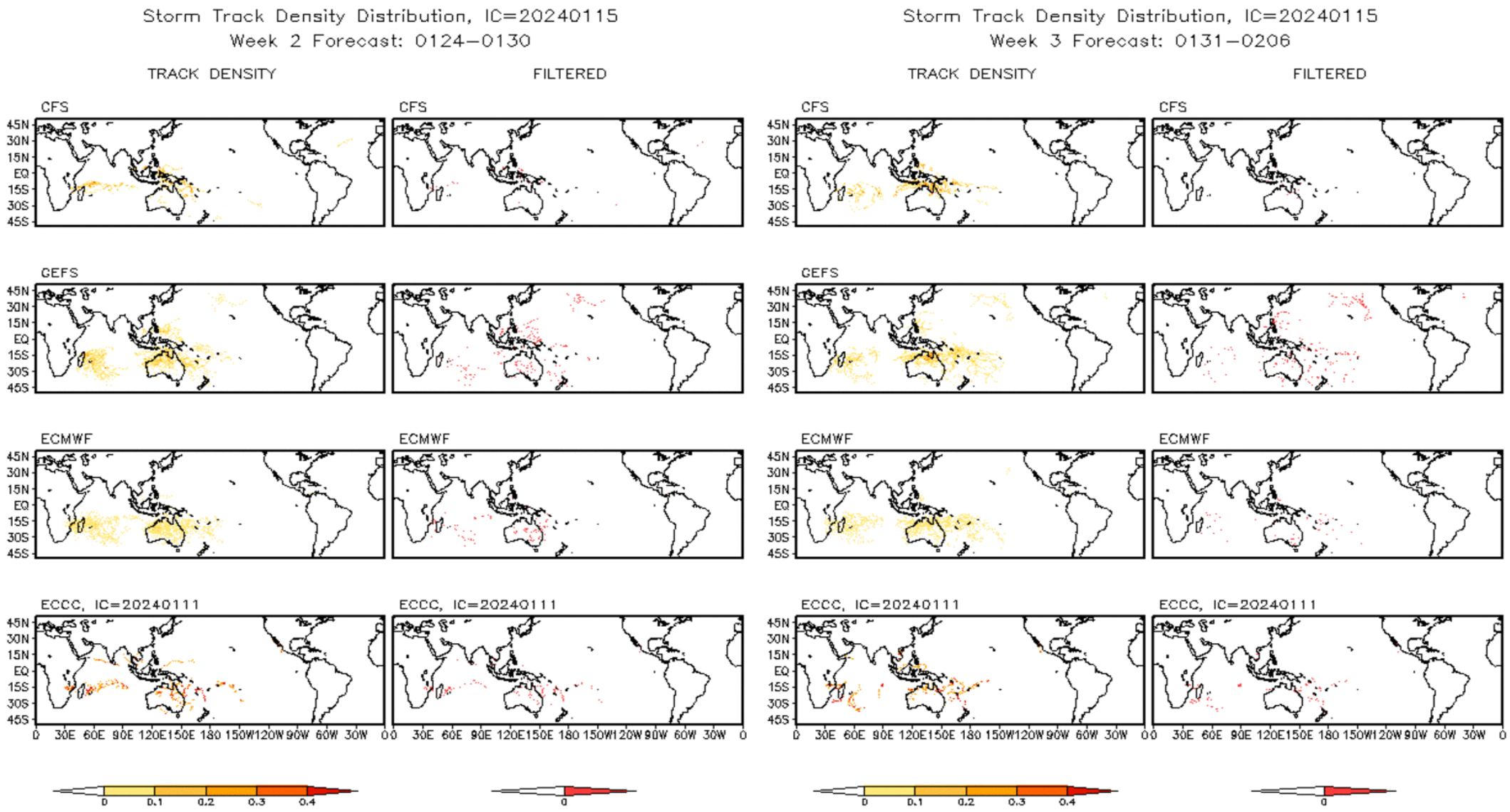
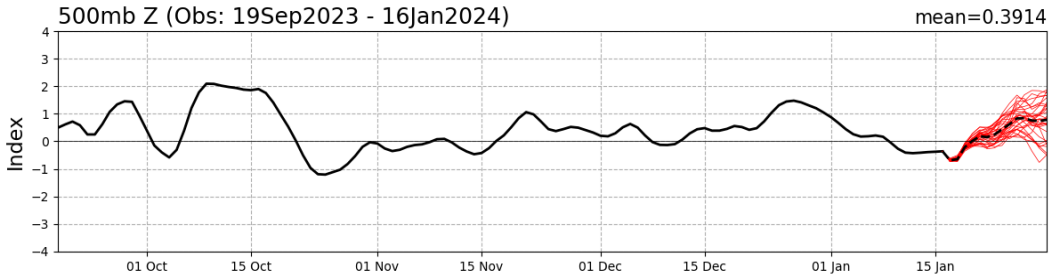

−Day Means
ay Means
16Jan to 22Jan
ECMWF Forecast
23Jan to 29Jan
30Jan to 05Feb
06Feb to 12Feb
20
0
−20
20E 40E 60E 80E 100E 120E 140E 160E
MJO
Kelvin*2
Low
ER
Contours at 2, 6 m s−1
Contours at −12, −36 W m−2

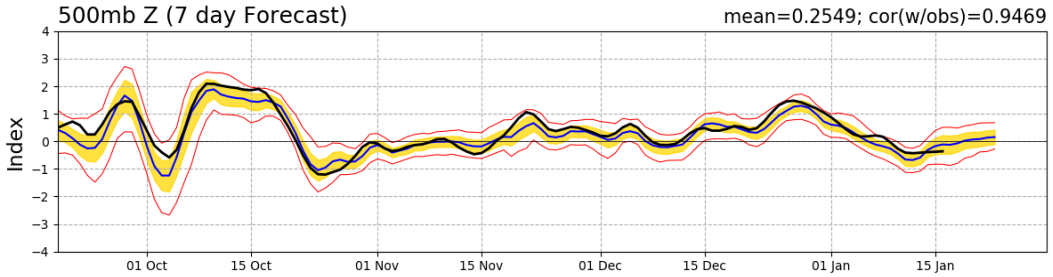
Multi-Model TC Track Densities: Weeks 2+3

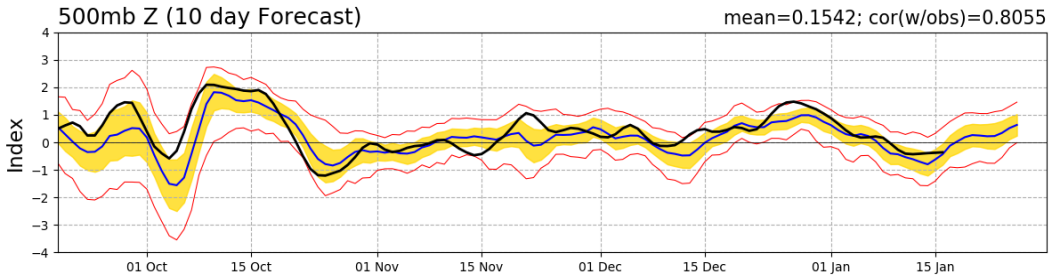


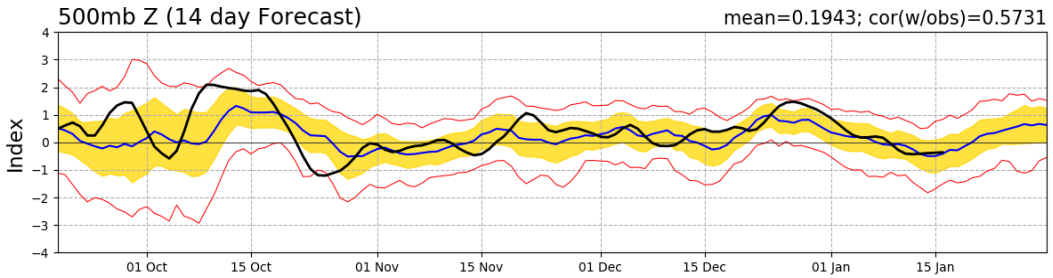
Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

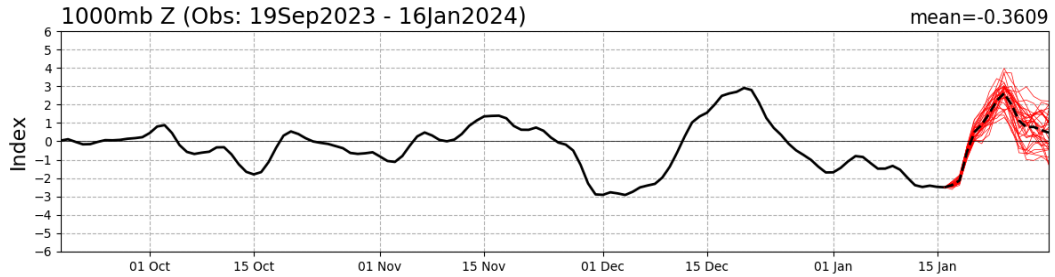


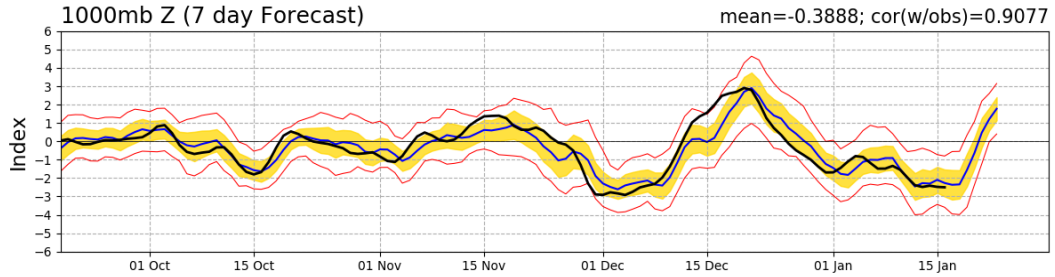


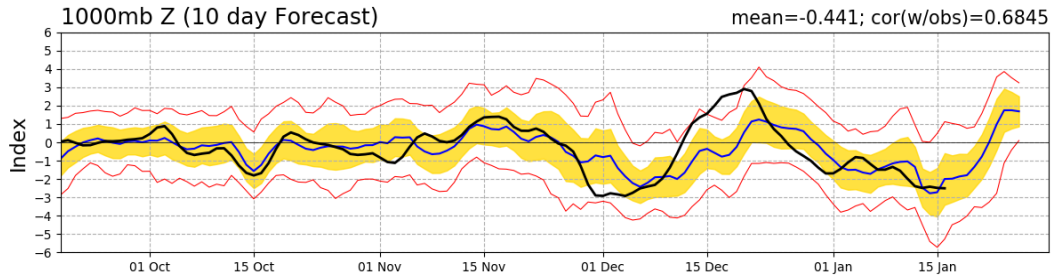


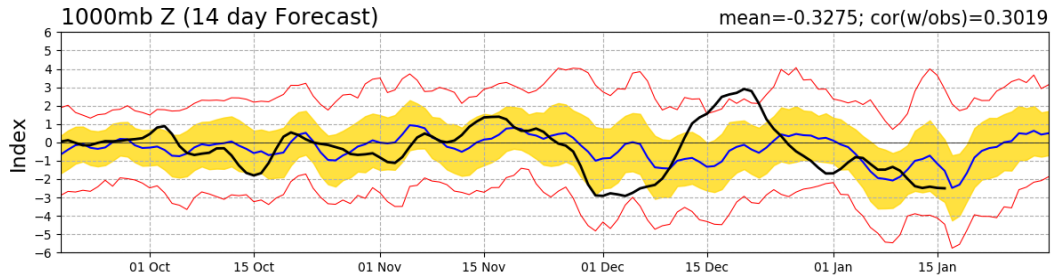


AO Index: Observed & GEFS Forecasts

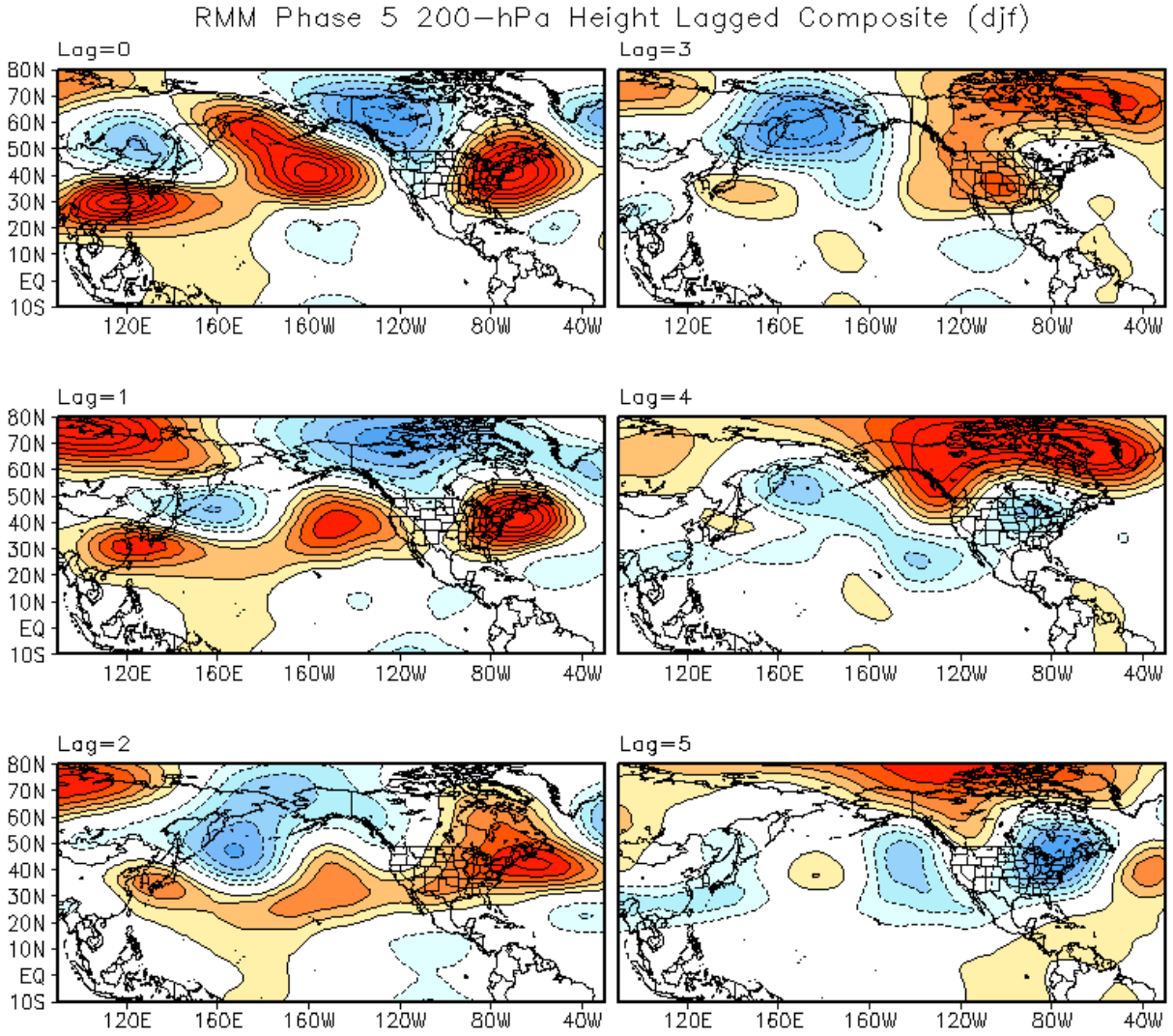


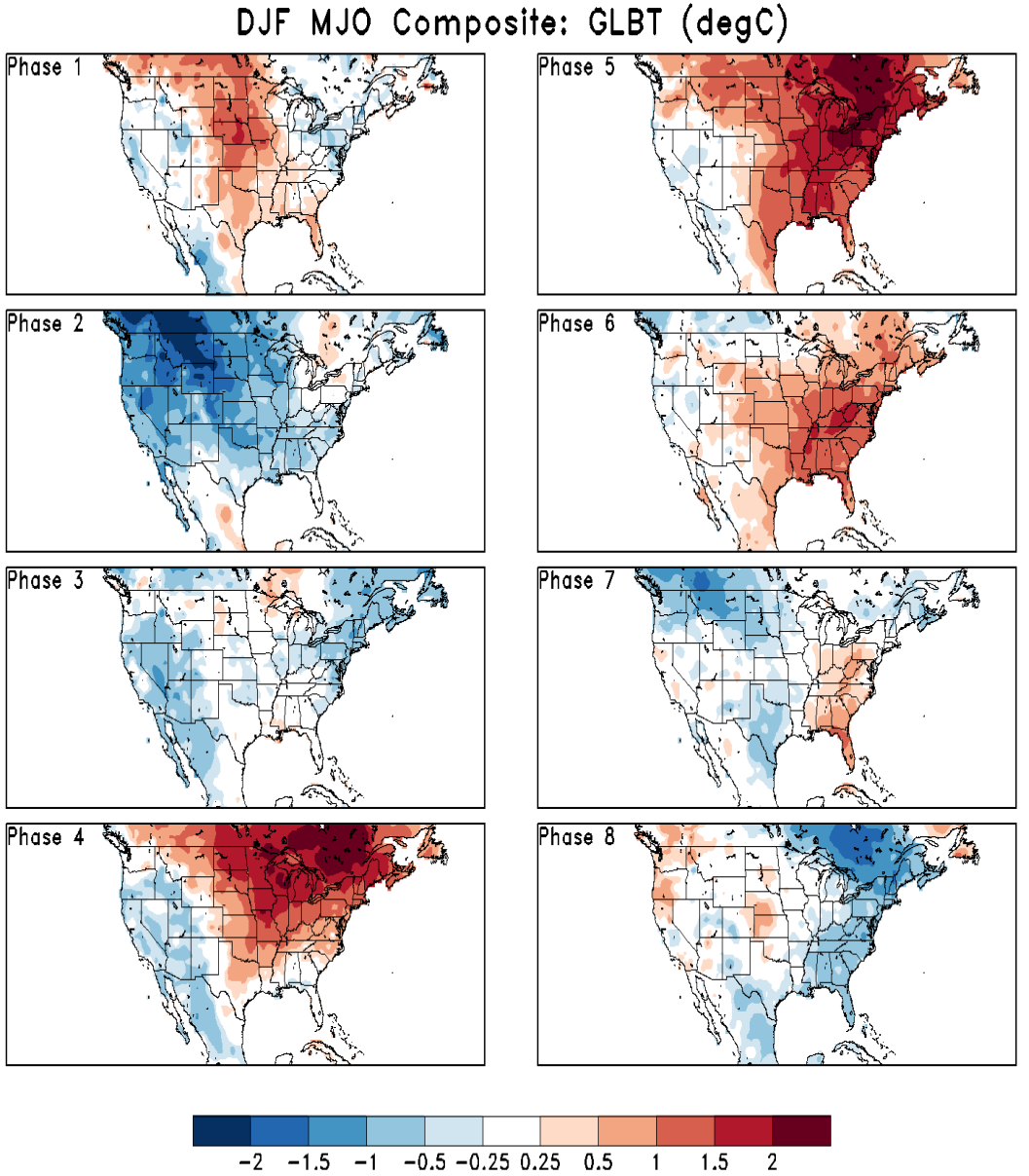




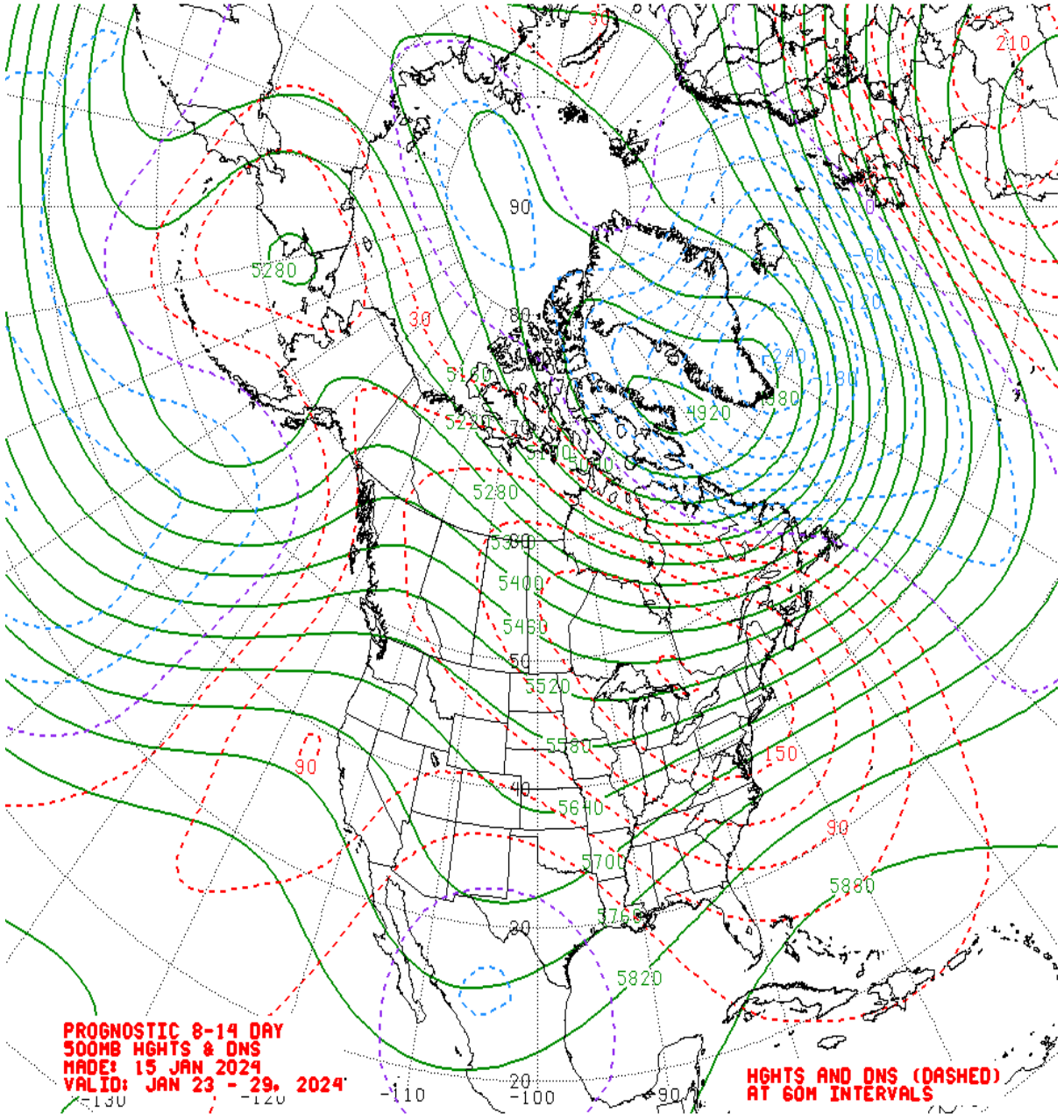


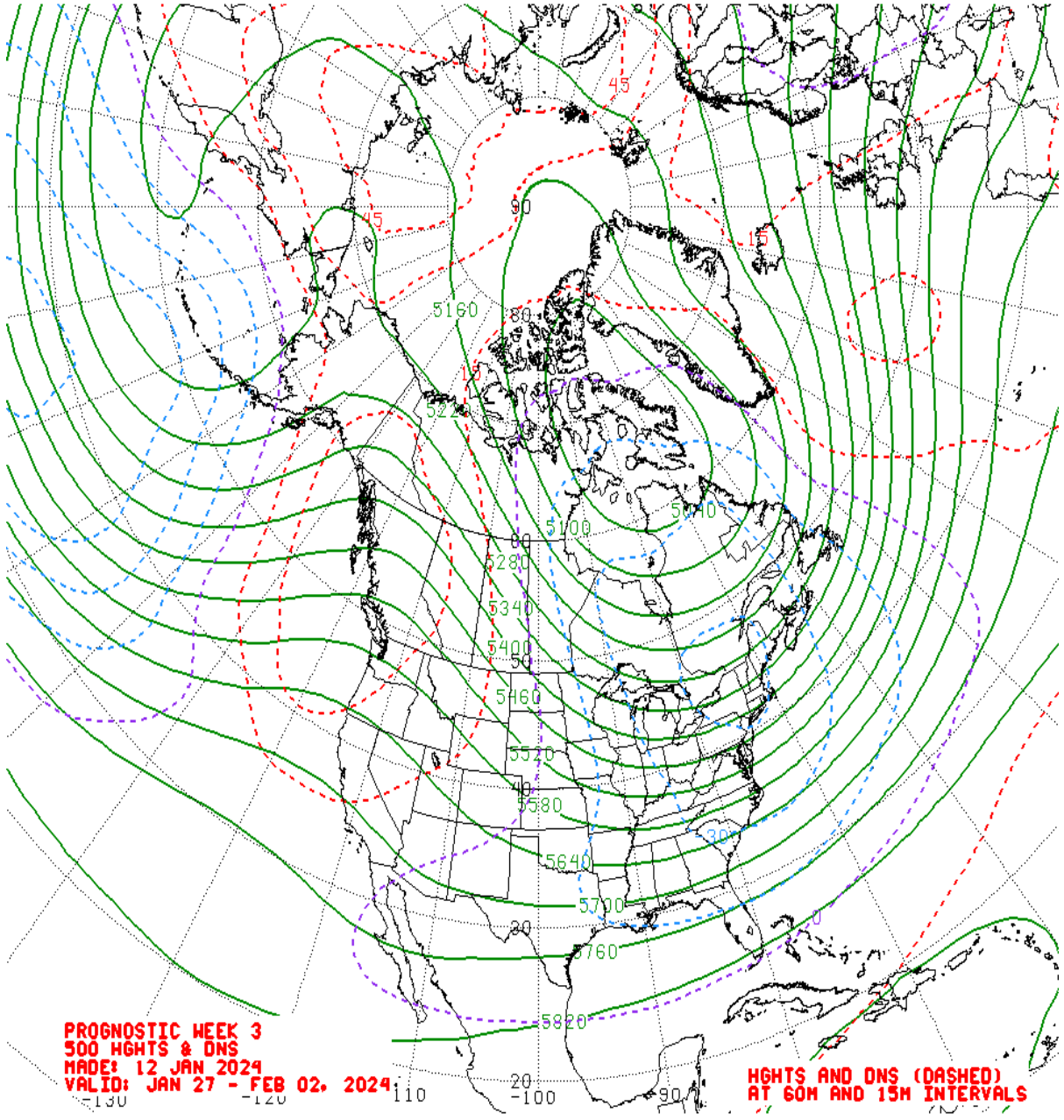
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:



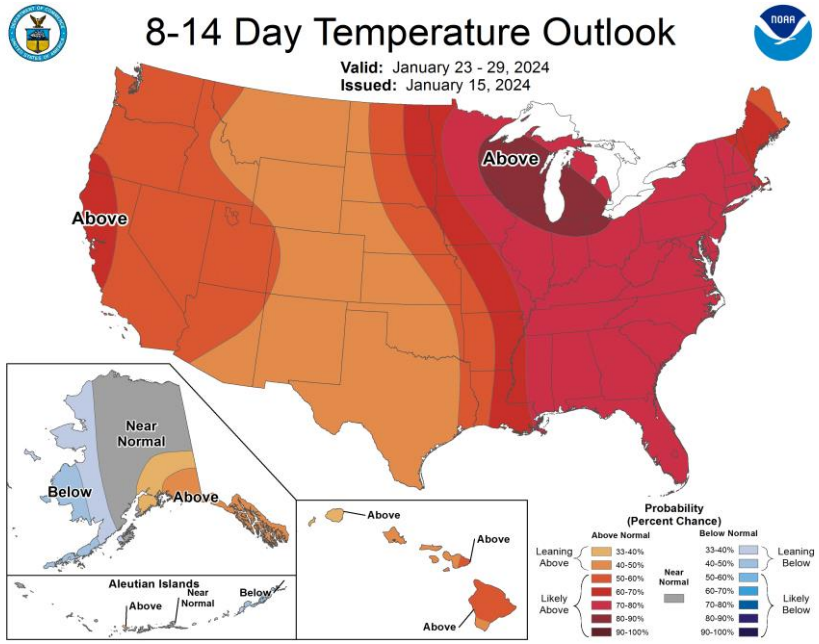


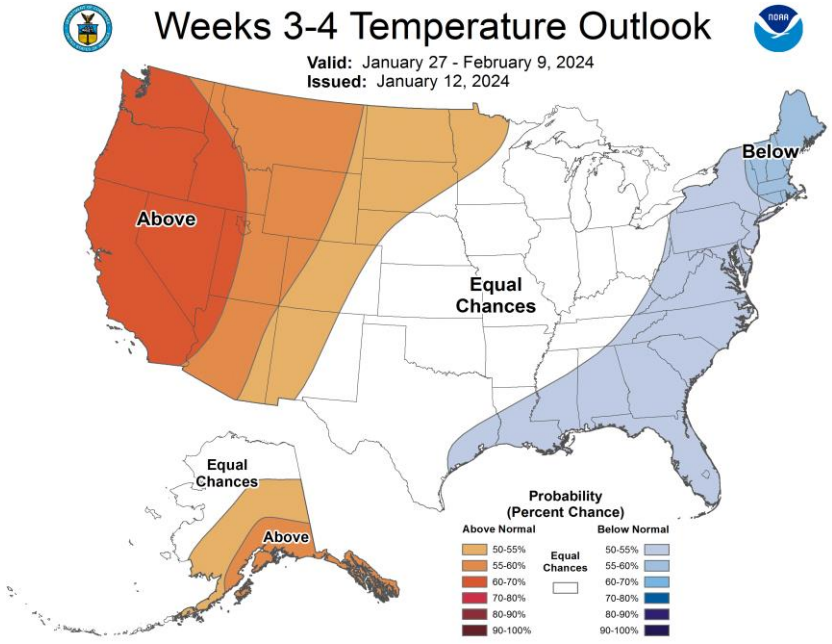
Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3

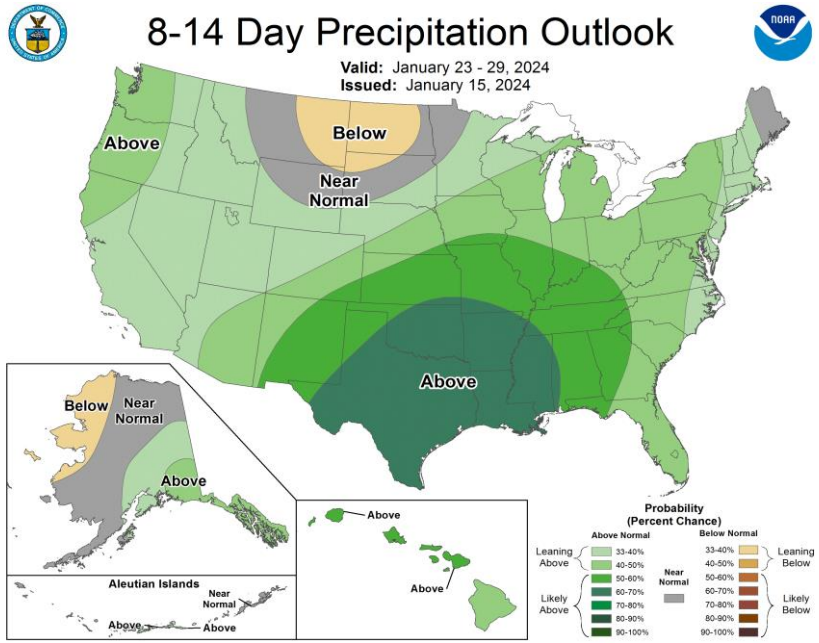


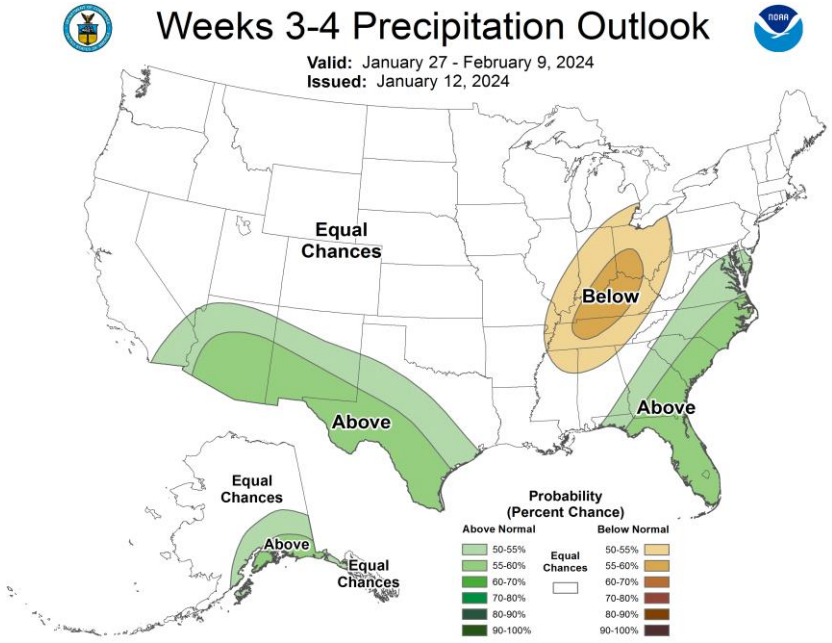


Official Temperature & Precipitation Forecasts:









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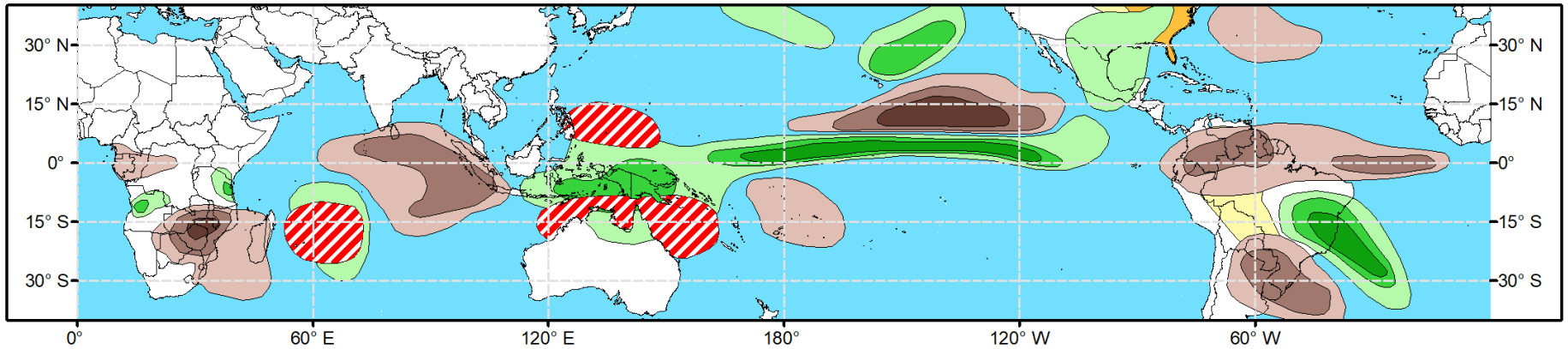

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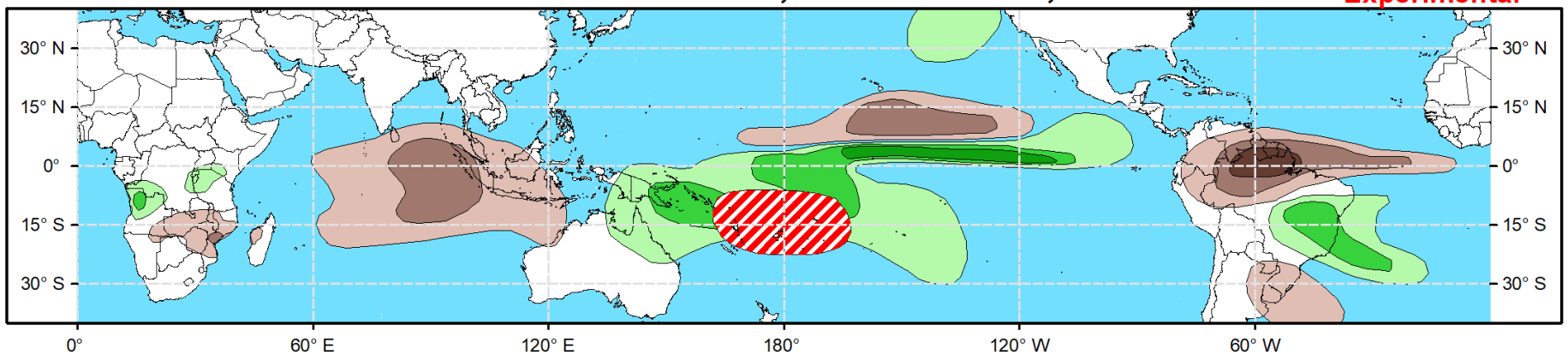

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