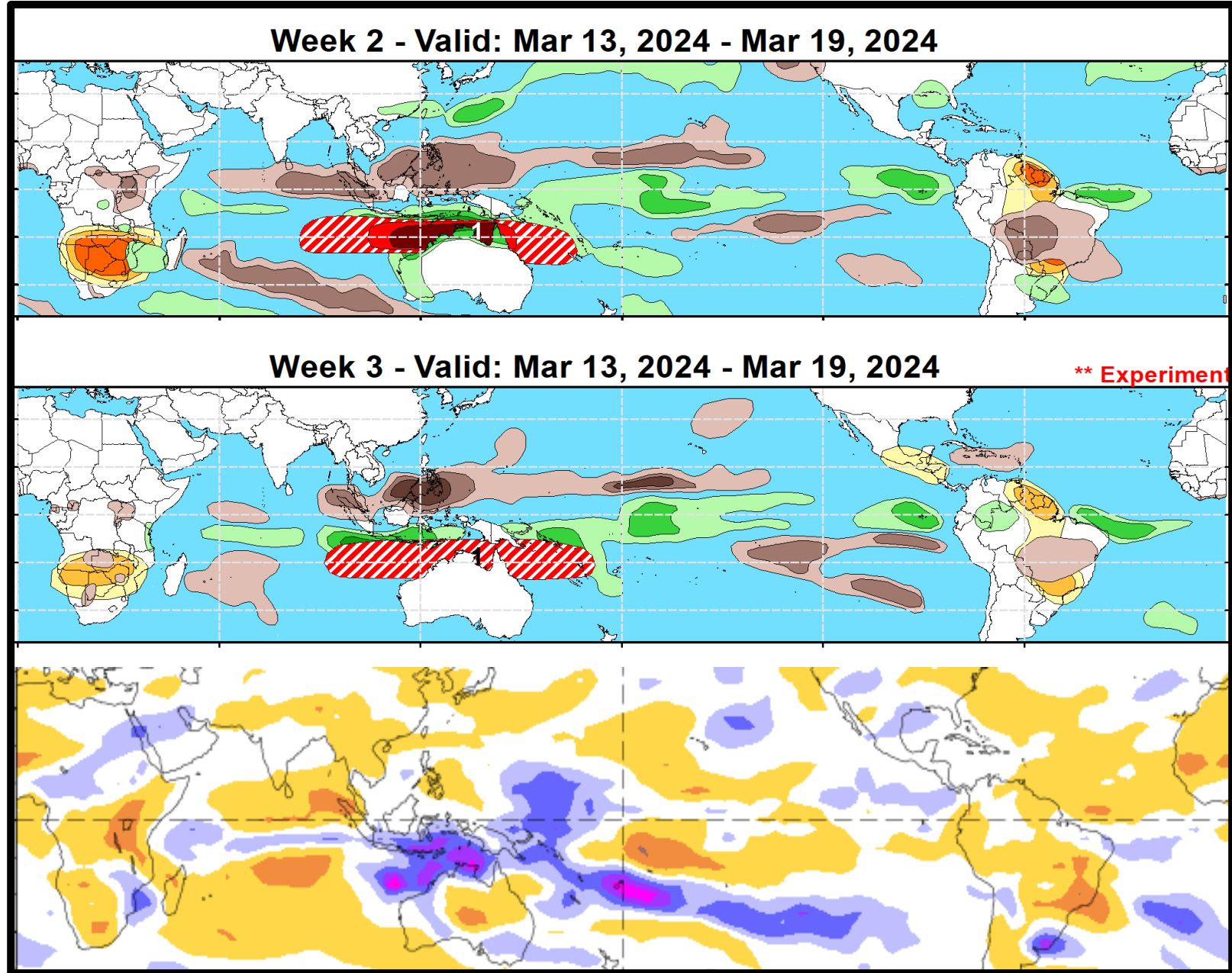# Weeks 2-3 Global Tropics Hazards Outlook
3/19/2024

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

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

- 1: TC Megan

Week 2 - Valid: Mar 13, 2024 - Mar 19, 2024

Week 3 - Valid: Mar 13, 2024 - Mar 19, 2024

** Experiment

Synopsis of Climate Modes:

ENSO: (Mar 14, 2024 Update)   *next update on Thursday, Apr 11ᵗʰ*

- ENSO Alert System Status: <u>El Niño Advisory</u> / <u>La Niñ</u>

- A transition from El Niño to ENSO-neutral is likely by April-June 2024 (83% chance), with the odds of La Niña developing by June-August 2024 (62% chance).

MJO and other subseasonal tropical variability:

• A robust MJO event continues, with the enhanced convective phase now crossing the Western Pacific.

• Widespread enhanced convection overspread the eastern Indian Ocean and western Maritime Continent, which is a departure from the weakening ENSO base state.

• Dynamical models are in good agreement with tight ensemble clustering that strong MJO activity continues to propagate eastward from the Western Pacific and into Western Hemisphere over the next two weeks. The forecasted phase speed is faster than recent observations.

• The suppressed phase of the MJO is moving into the Maritime Continent. This tends to suppress tropical cyclone (TC) activity in the Australia and South Pacific regions, which have been active recently.
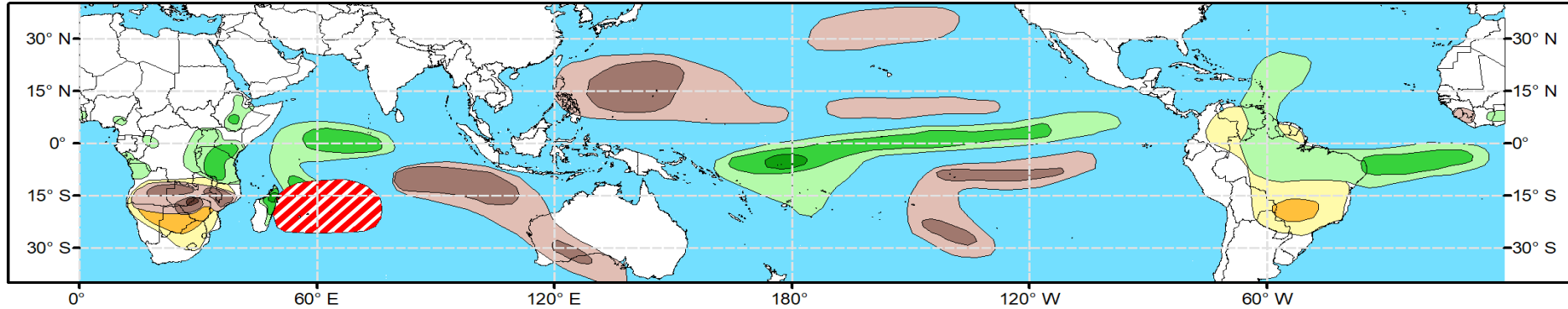
GTH Outlook:

Global Tropics Hazards Outlook
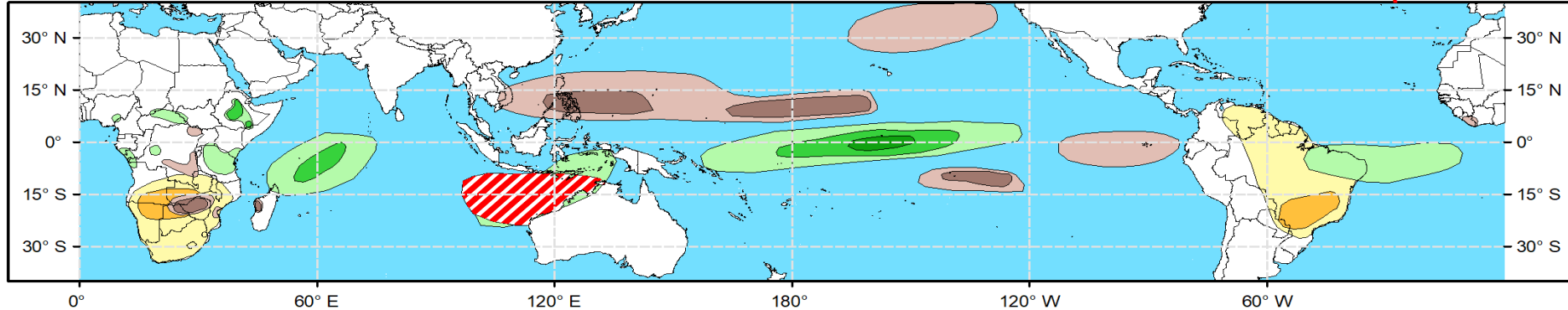### Climate Prediction Center

Week 2 - Valid: Mar 27, 2024 - Apr 02, 2024

Week 3 - Valid: Apr 03, 2024 - Apr 09, 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

>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: 03/19/2024

Forecaster: Barandiaran

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:

- Wave-1 symmetry is very clear in recent velocity potential anomaly maps, with the enhanced phase of the MJO moving east past the Date Line and into the Eastern Pacific.

- MJO activity is favored to continue for the next several weeks, although model solutions favoring weakening enhanced/suppressed convective features over time, and a breakdown of the wave-1 symmetry late in the forecast period.
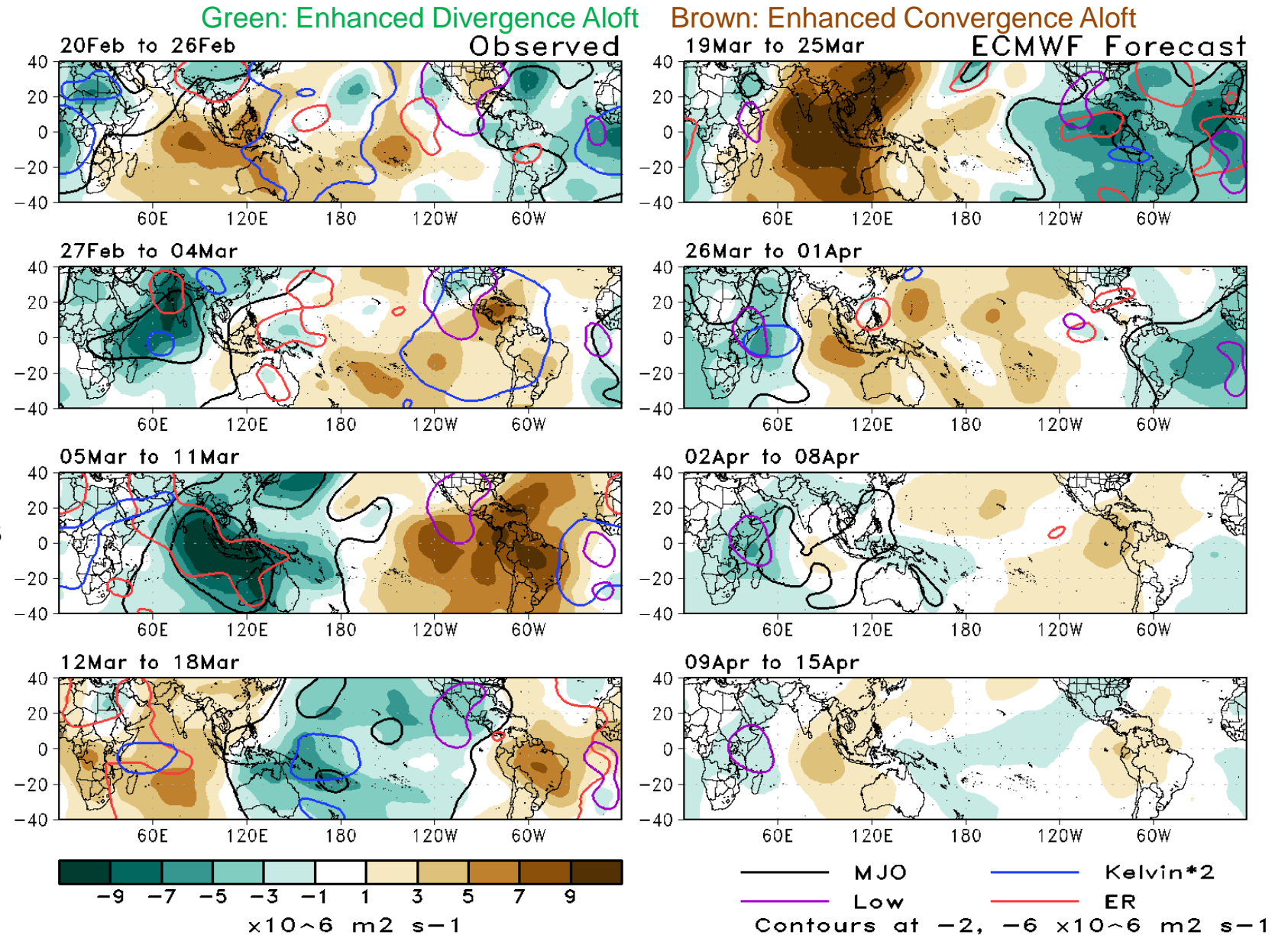
RMM Index Observations & Forecasts:
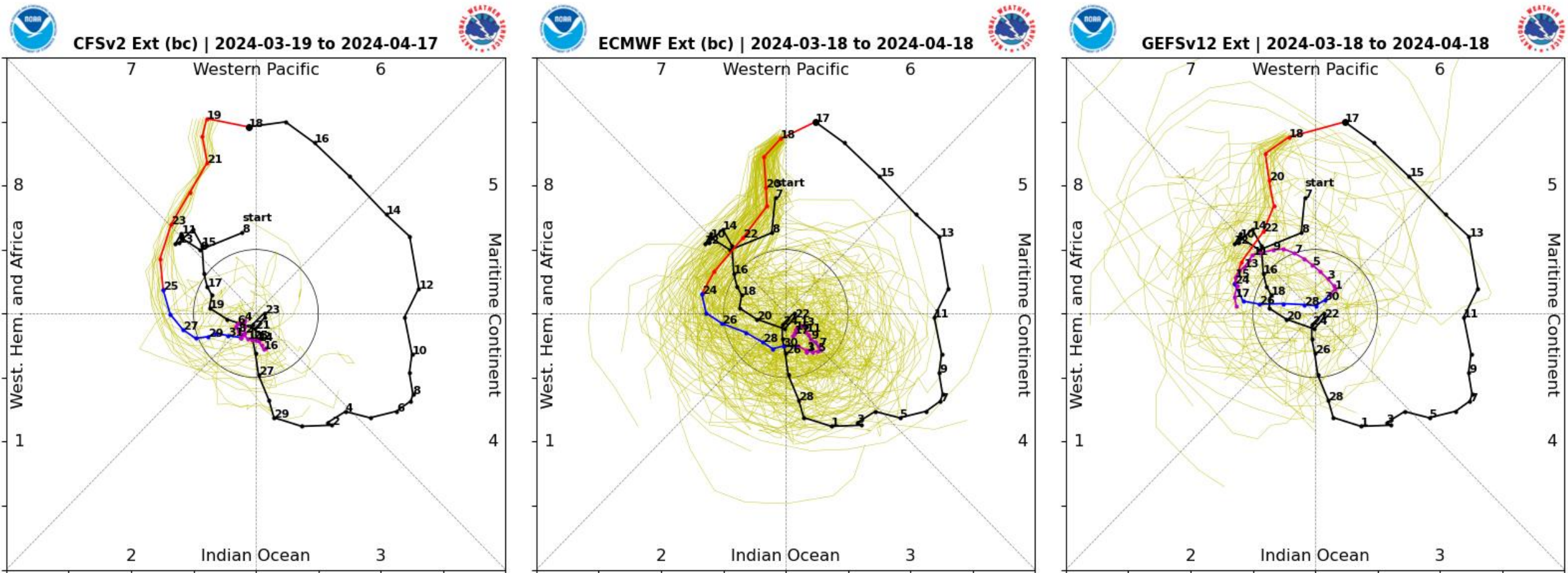
- Model ensembles are in very good agreement, both among their respective ensemble members and with respect to each other, depicting a continued eastward propagation of the RMM signal.
- MJO propagation is faster in week-1, then slows as the RMM index moves into phases 1 and 2.
- The RMM signal weakens over time, but whether this is due to and actual weakening of the MJO or due to the 120-day mean confounding the RMM calculation is difficult to determine.

Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:
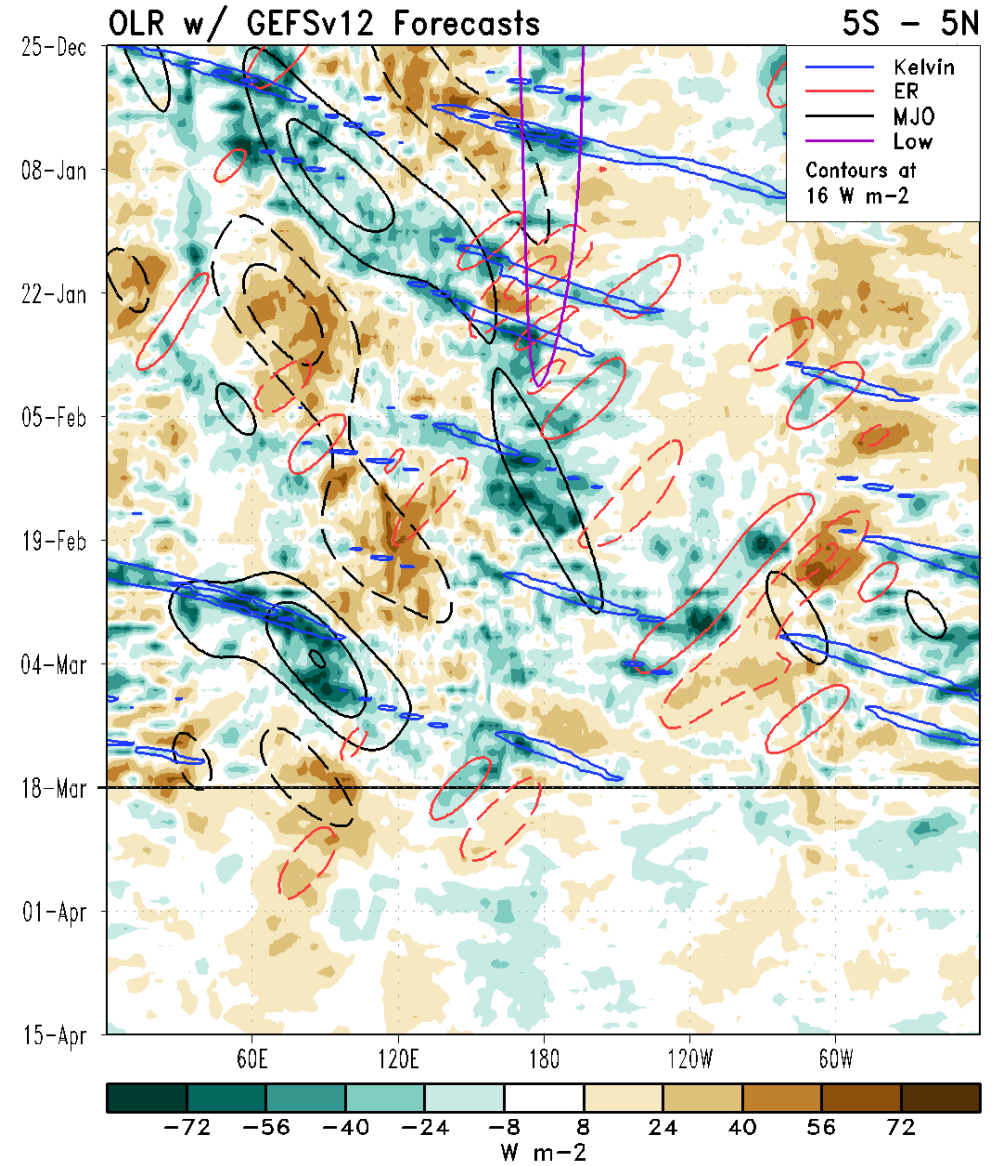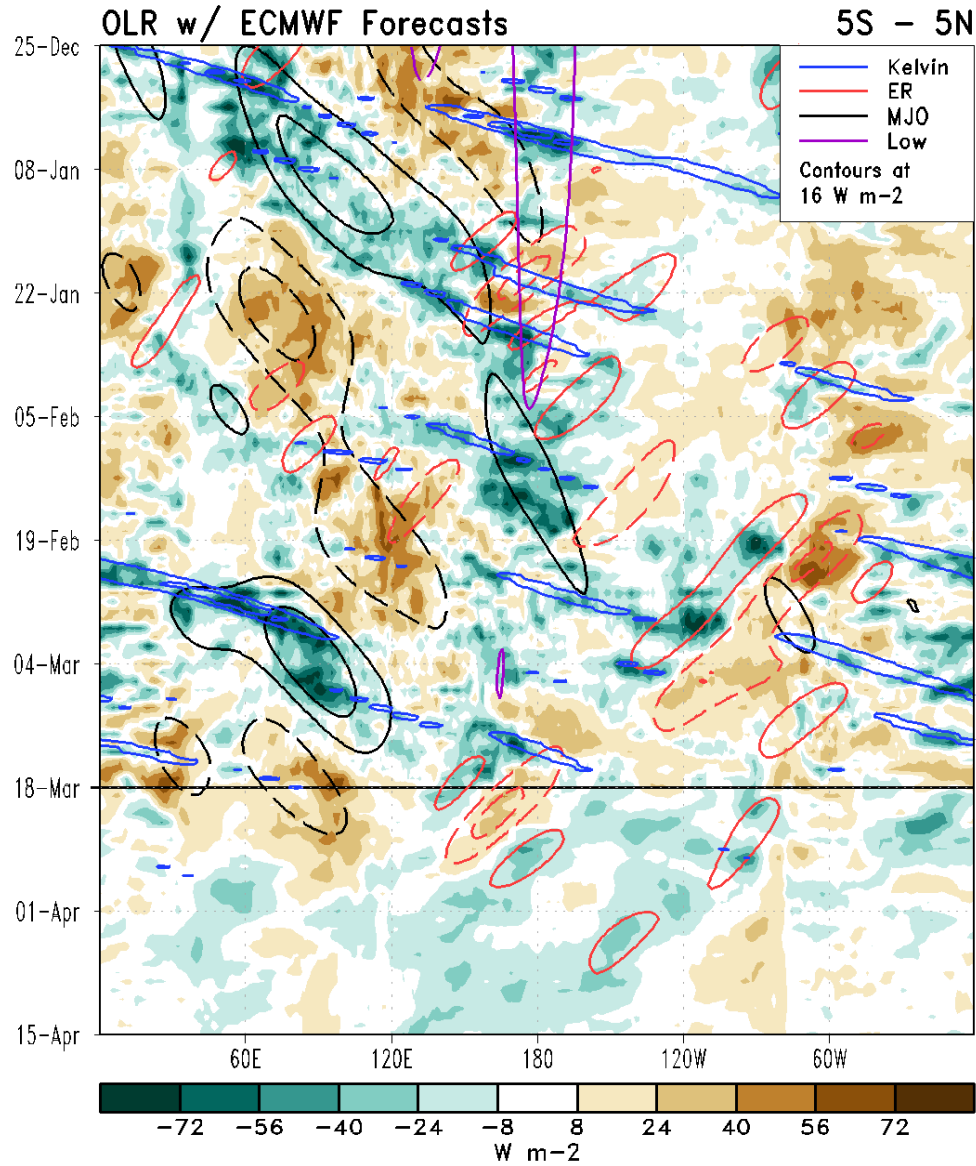
Consolidated Probabilistic Precipitation: Weeks 2 & 3

CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)
Valid: 27Mar2024−02Apr2024
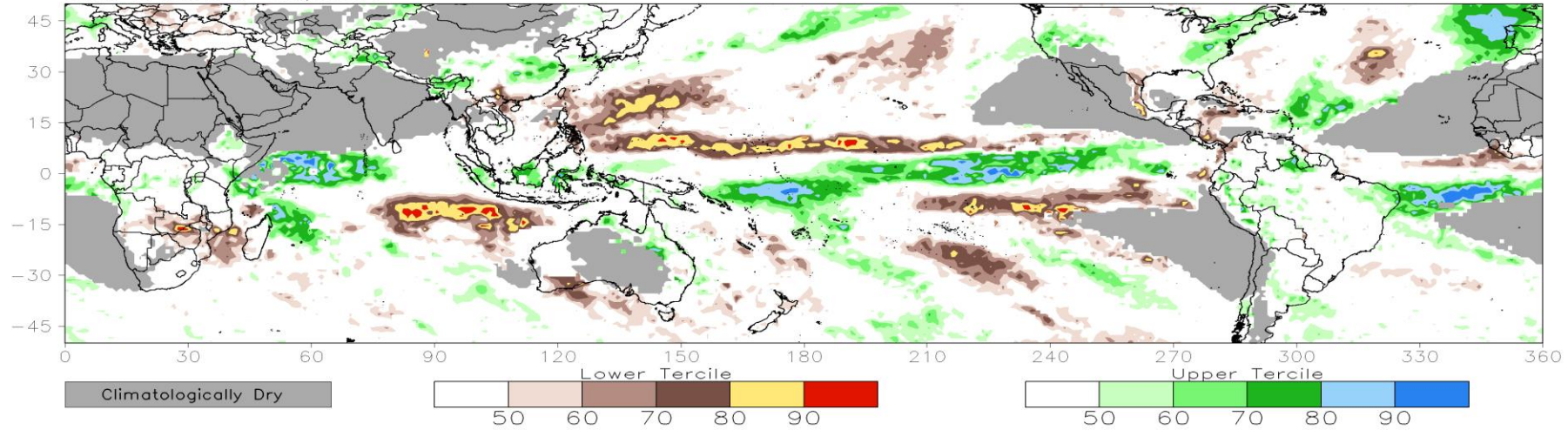
CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)
Valid: 03Apr2024−09Apr2024
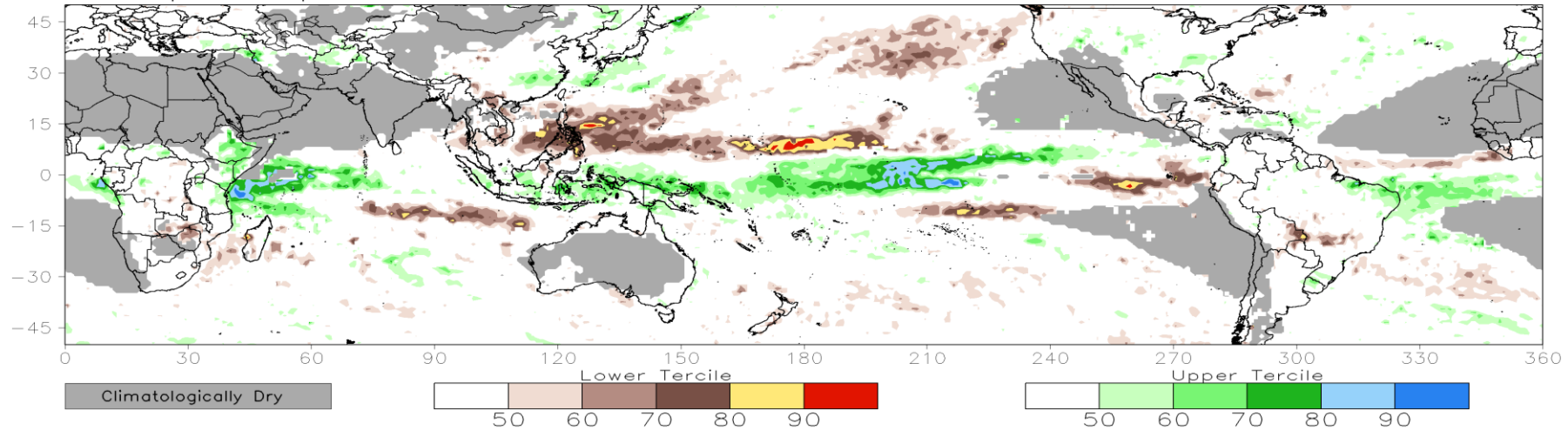
Historical Precipitation Anomalies By MJO Phase:
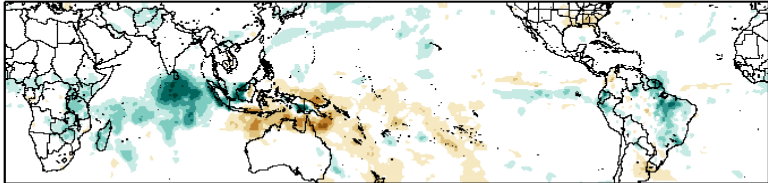

FMA MJO Composite: GPCP1DD (mm/day)
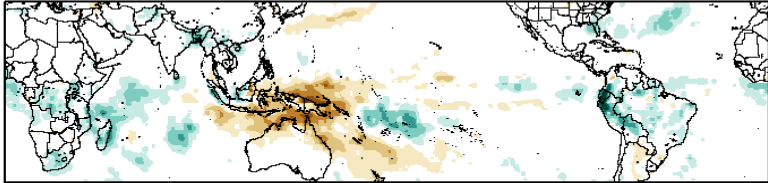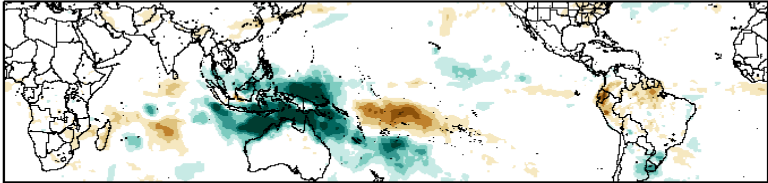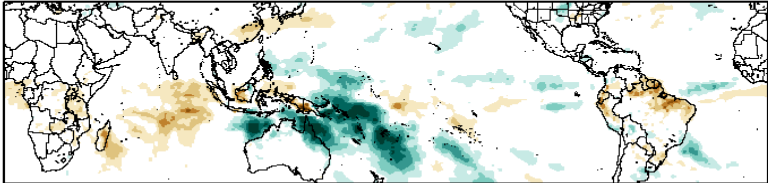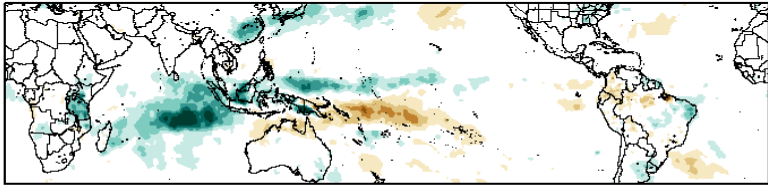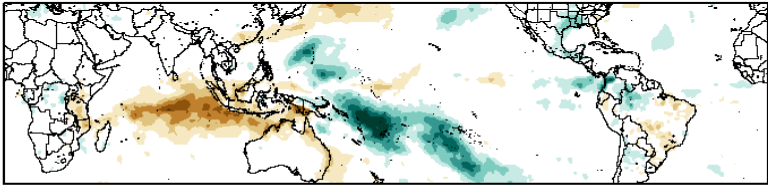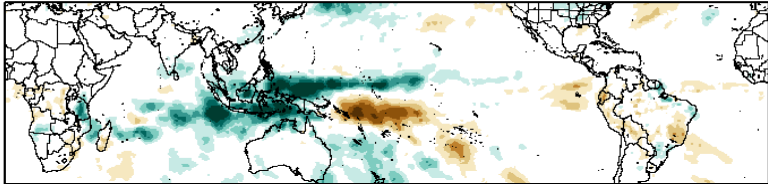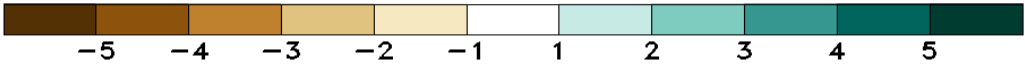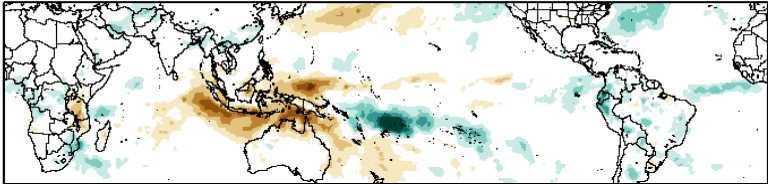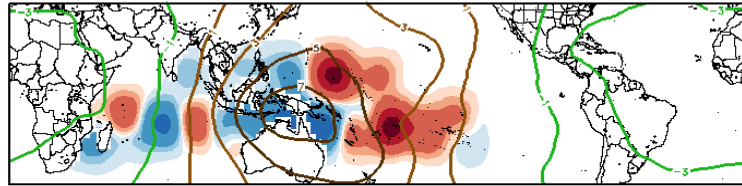
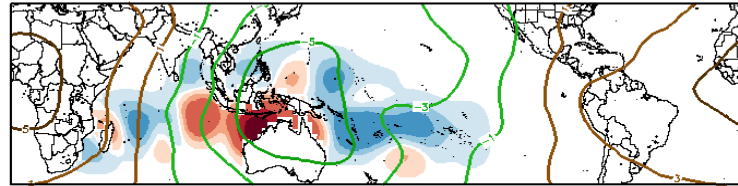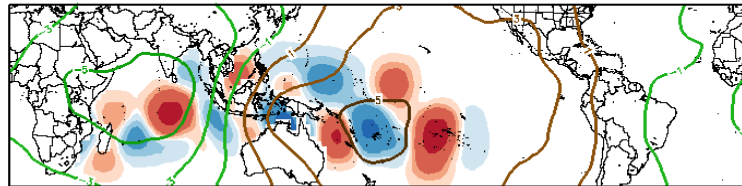# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

FMA MJO Composite: Mean TC Origin Density Anomaly (#TCs/277km^2*100)
w/ FMA CHI200 (x10^6 m^2 s^−1) / Contours every 2x10^6 m^2*s^−1
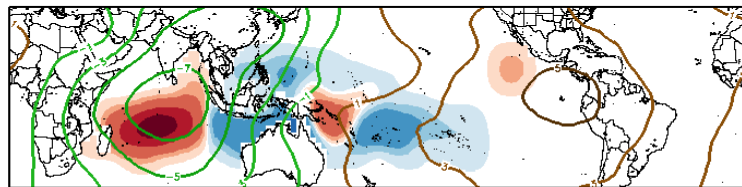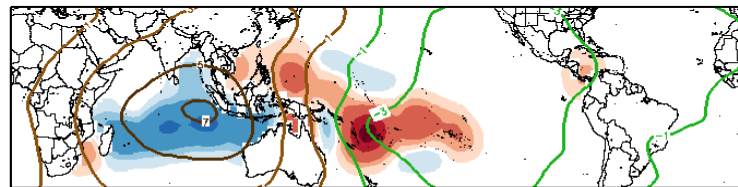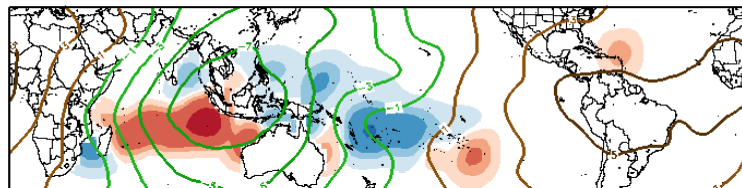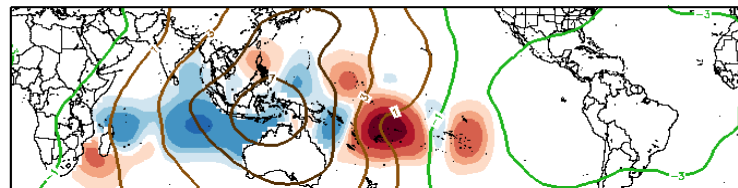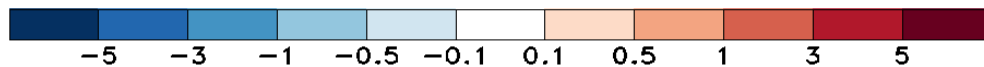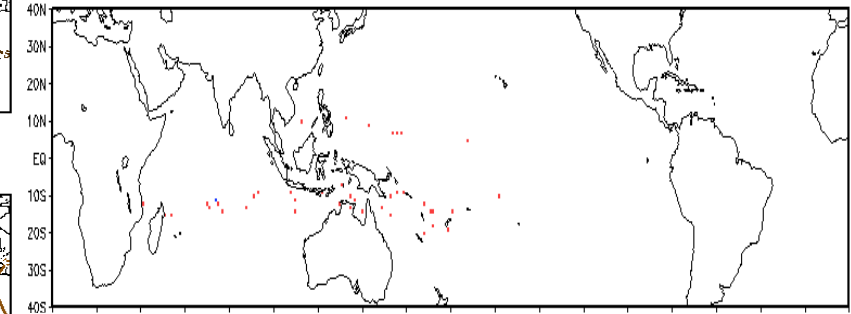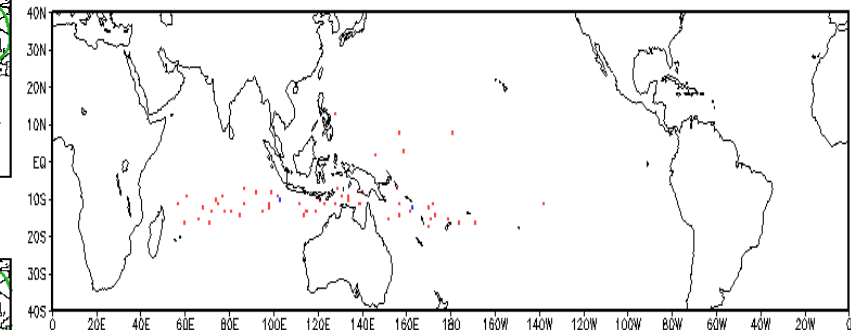
Experimental

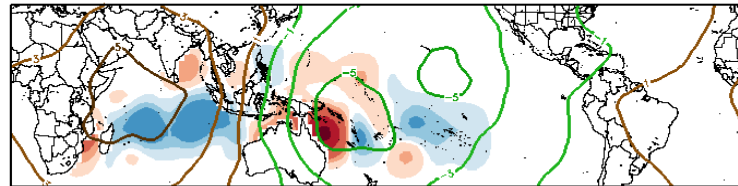# Tropical Cyclone Monitoring/Forecast: NHC / CPHC

Seven-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida

No Disturbances

No new tropical cyclones are expected
during the next seven days.

7:00 pm EST
Thu Nov 30 2023

100W 90W 80W 70W 60W 50W 40W 30W 20W

45N
35N
25N
15N
5N

Current Disturbances and Seven-Day Cyclone Formation Chance: ✖ < 40% ✖ 40-60% ✖ > 60%
Tropical or Sub-Tropical Cyclone: ◯ Depression ⟳ Storm ⟳ Hurricane
⊗ Post-Tropical Cyclone or Remnants

Seven-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida

← Central Pacific

No Disturbances

No new tropical cyclones are expected
during the next seven days.

10:00 pm PST
Thu Nov 30 2023

140W 130W 120W 110W 100W 90W 80W

35N
25N
15N
5N

Current Disturbances and Seven-Day Cyclone Formation Chance: ✖ < 40% ✖ 40-60% ✖ > 60%
Tropical or Sub-Tropical Cyclone: ◯ Depression ⟳ Storm ⟳ Hurricane
⊗ Post-Tropical Cyclone or Remnants

Seven-Day Graphical Tropical Weather Outlook
Central Pacific Hurricane Center Honolulu, Hawaii

All Disturbances

Eastern Pacific →

8:00 pm HST
Thu Nov 30 2023

175E 175W 165W 155W 145W 135W 125W

35N
25N
15N
5N

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Tropical or Sub-Tropical Cyclone: ◯ Depression ⟳ Storm ⟳ Hurricane
⊗ Post-Tropical Cyclone or Remnants

Tropical Cyclone Monitoring/Forecast: JTWC

JOINT TYPHOON WARNING CENTER

ABIO

ABPW

Please refer to CPHC
(https://www.cphc.noaa.gov/cphc)

Naval Research Laboratory
Marine Meteorology Division
Cloud Layer Product
Valid: 2024-03-19 04:00:20.338127

RMNTS
TC 18S

TC 19P
"MEGAN"

ISSUE TIME: 19/0600Z
(PRODUCT OF JTWC/SATOPS)
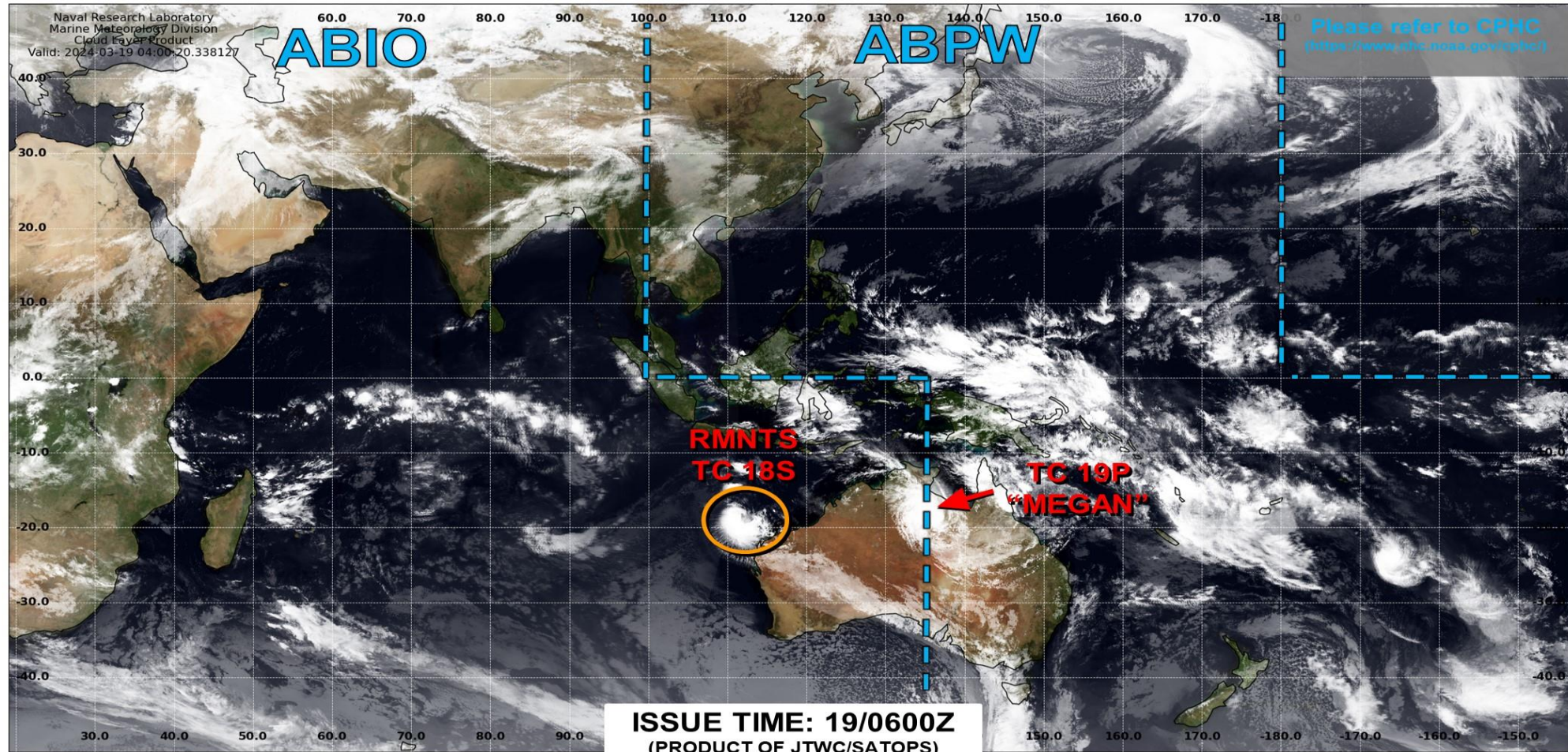
| LOW | TC development unlikely within 24 hours | MEDIUM | TC development likely, but expected to occur beyond 24 hours | HIGH | TC development likely within 24 hours (Reference TCFA) | SUB TROPICAL | Monitoring for potential transition to TC. Invest label color denotes tropical transition probability | Tropical Cyclone (Reference Warning) |

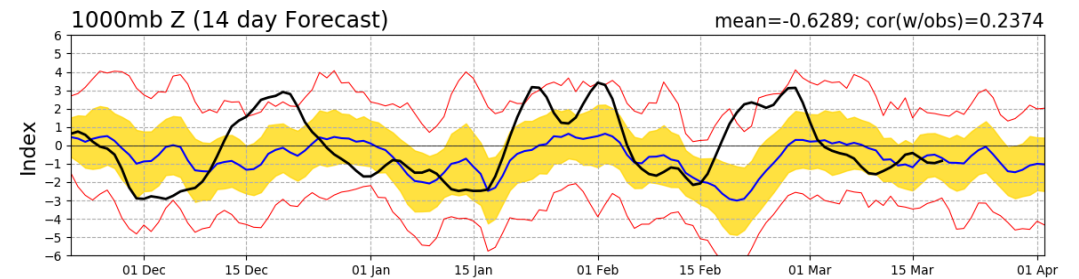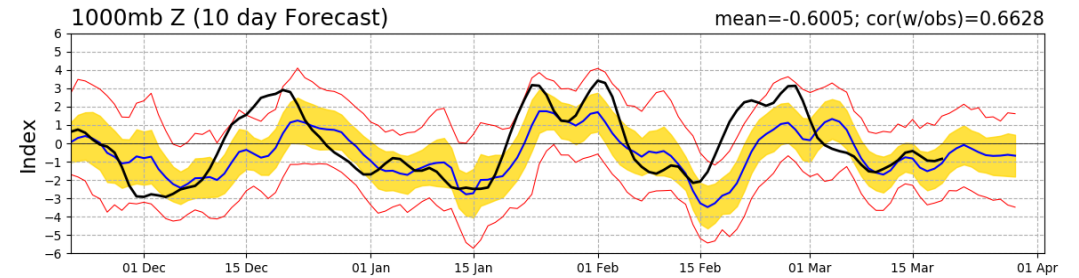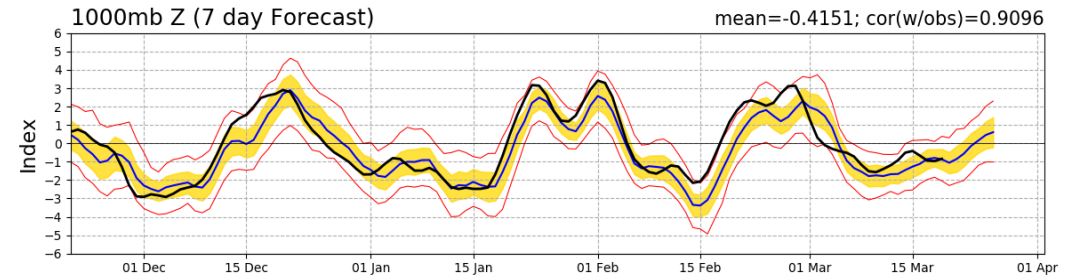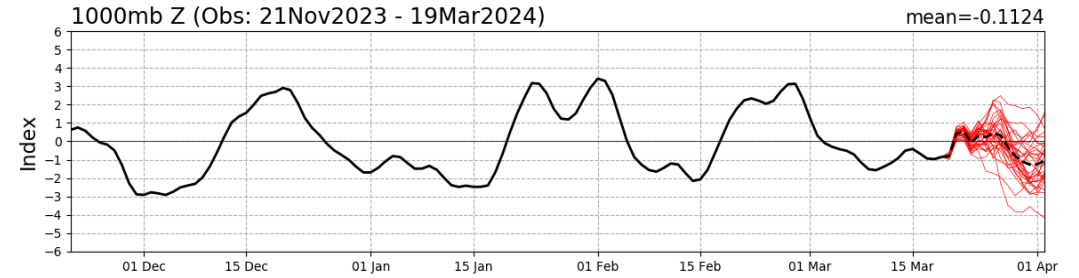# Multi-Model TC Track Densities: Weeks 2+3
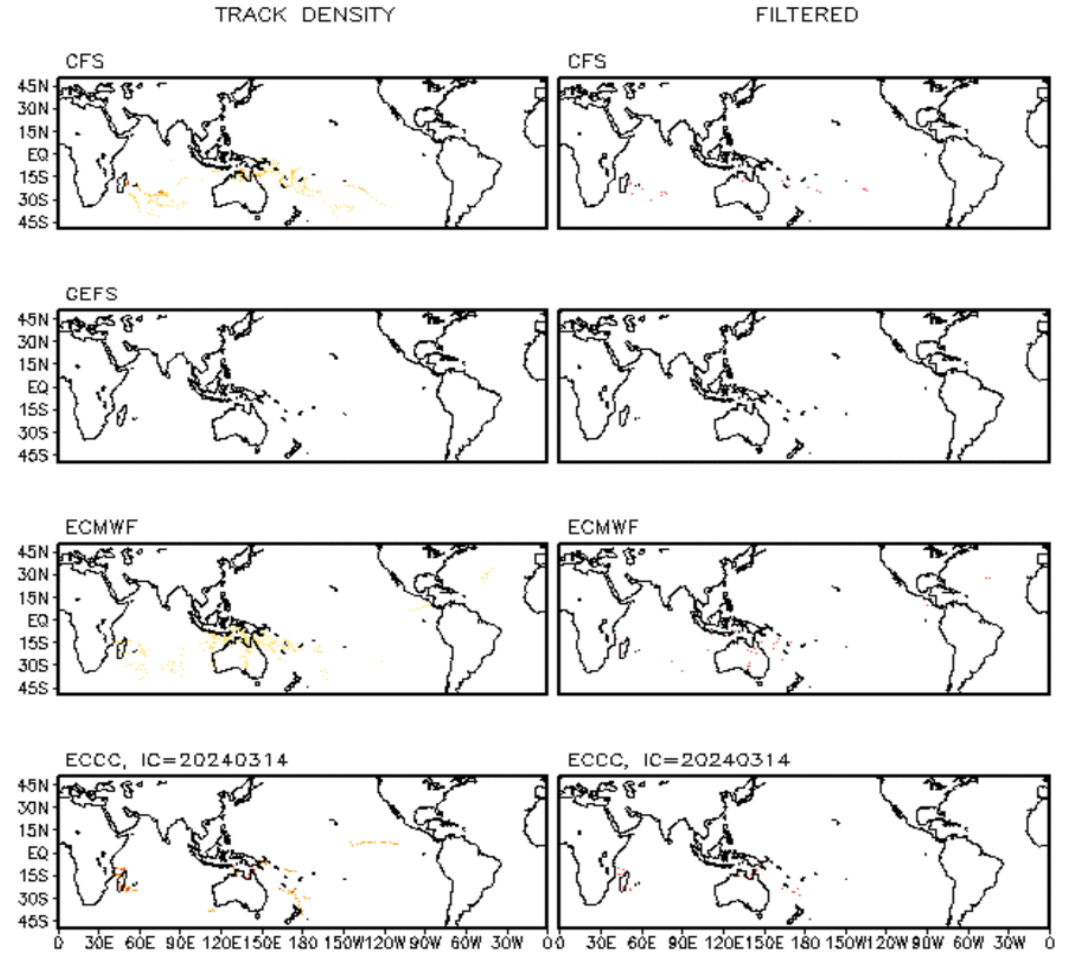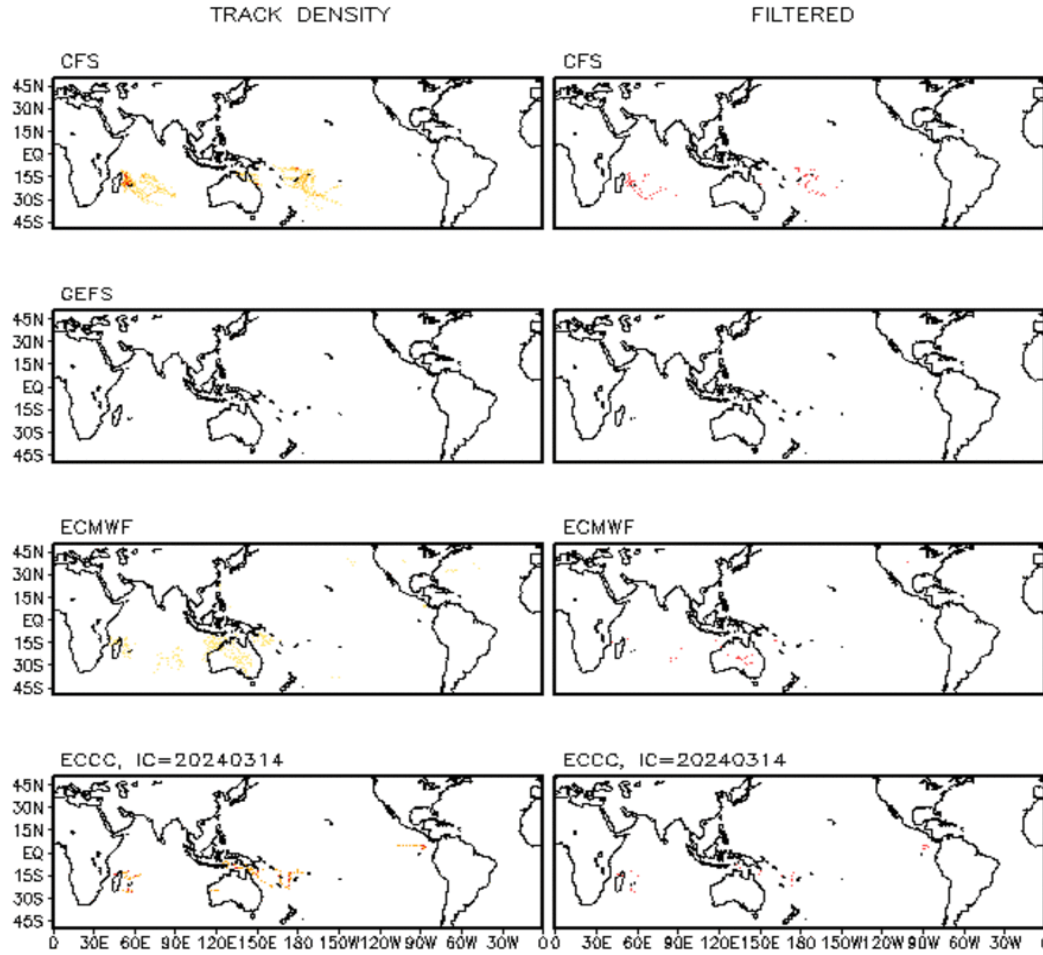
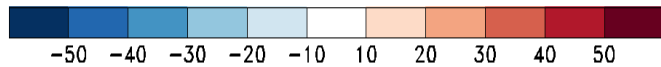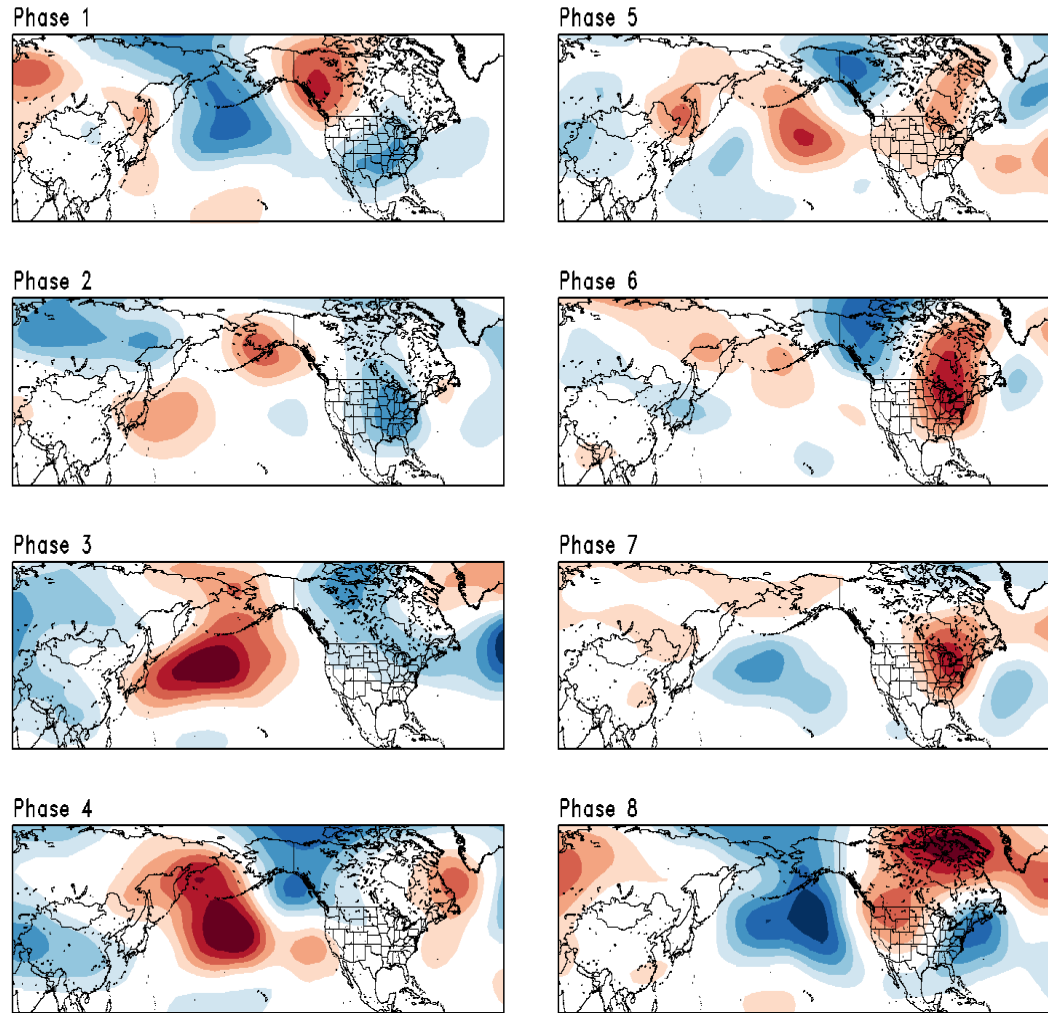# Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

AO Index: Observed & GEFS Forecasts

500mb Z (Obs: 21Nov2023 - 19Mar2024)   mean=0.3015

1000mb Z (Obs: 21Nov2023 - 19Mar2024)   mean=-0.1124

500mb Z (7 day Forecast)   mean=0.2248; cor(w/obs)=0.9567

1000mb Z (7 day Forecast)   mean=-0.4151; cor(w/obs)=0.9096

500mb Z (10 day Forecast)   mean=0.1742; cor(w/obs)=0.8739

1000mb Z (10 day Forecast)   mean=-0.6005; cor(w/obs)=0.6628

500mb Z (14 day Forecast)   mean=0.2505; cor(w/obs)=0.7851

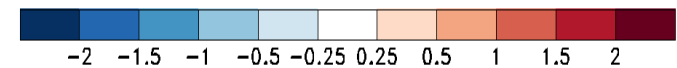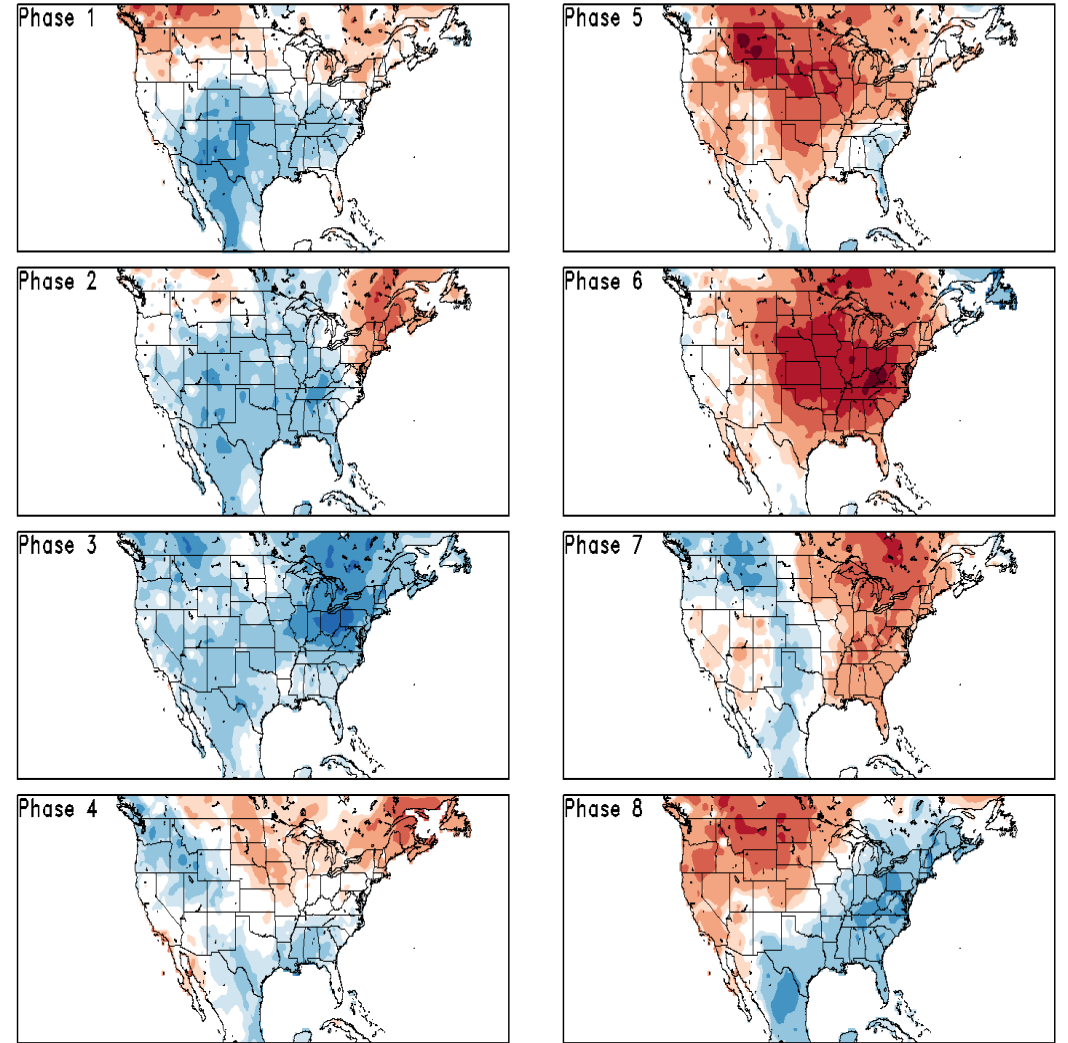1000mb Z (14 day Forecast)   mean=-0.6289; cor(w/obs)=0.2374
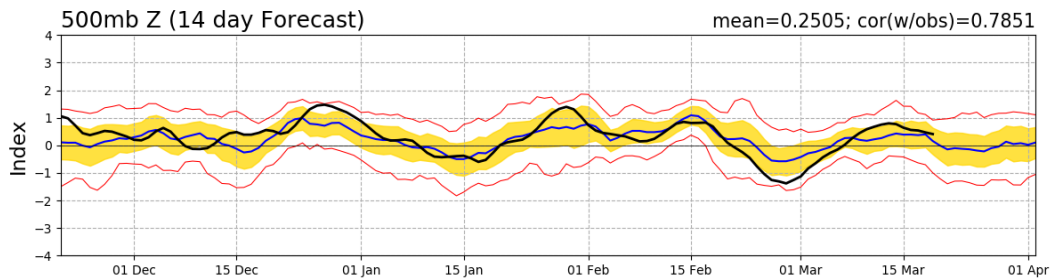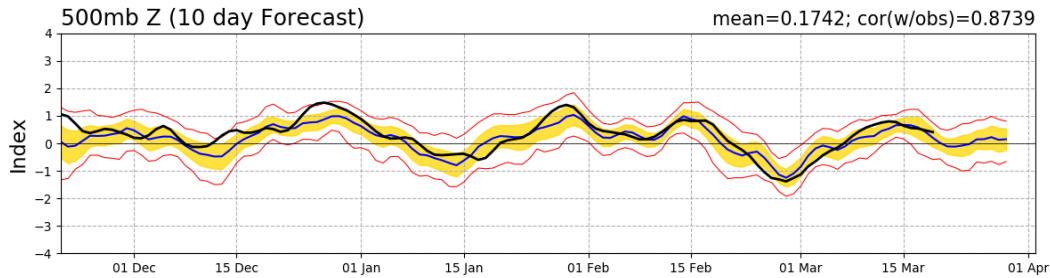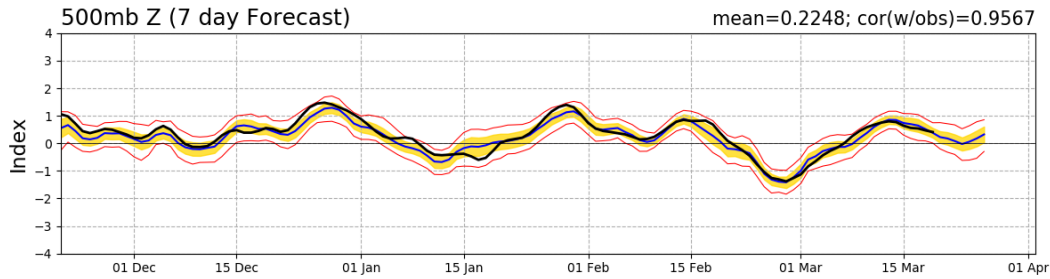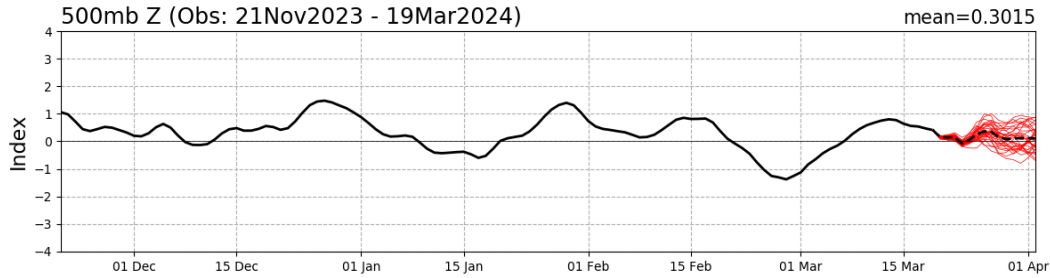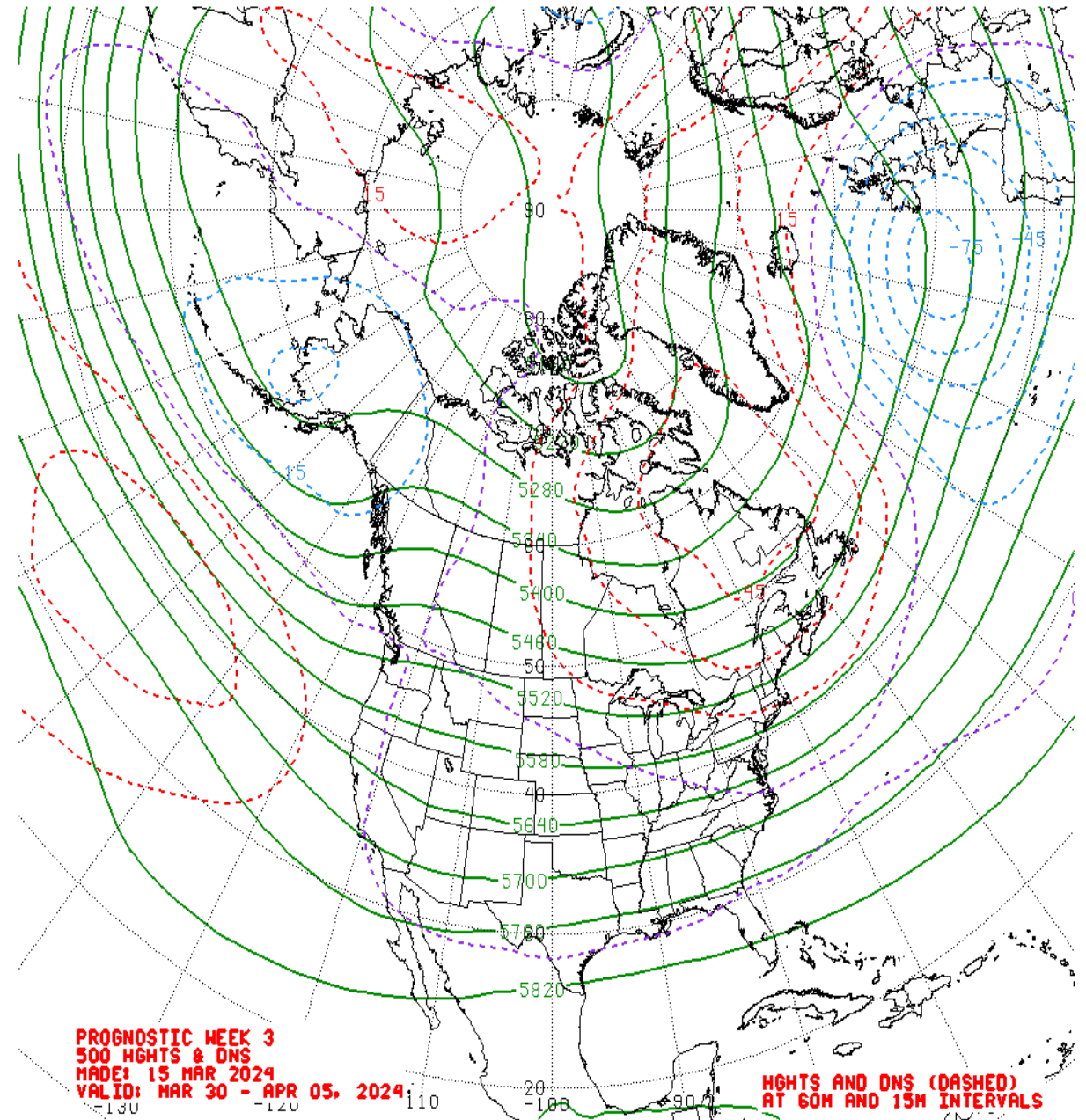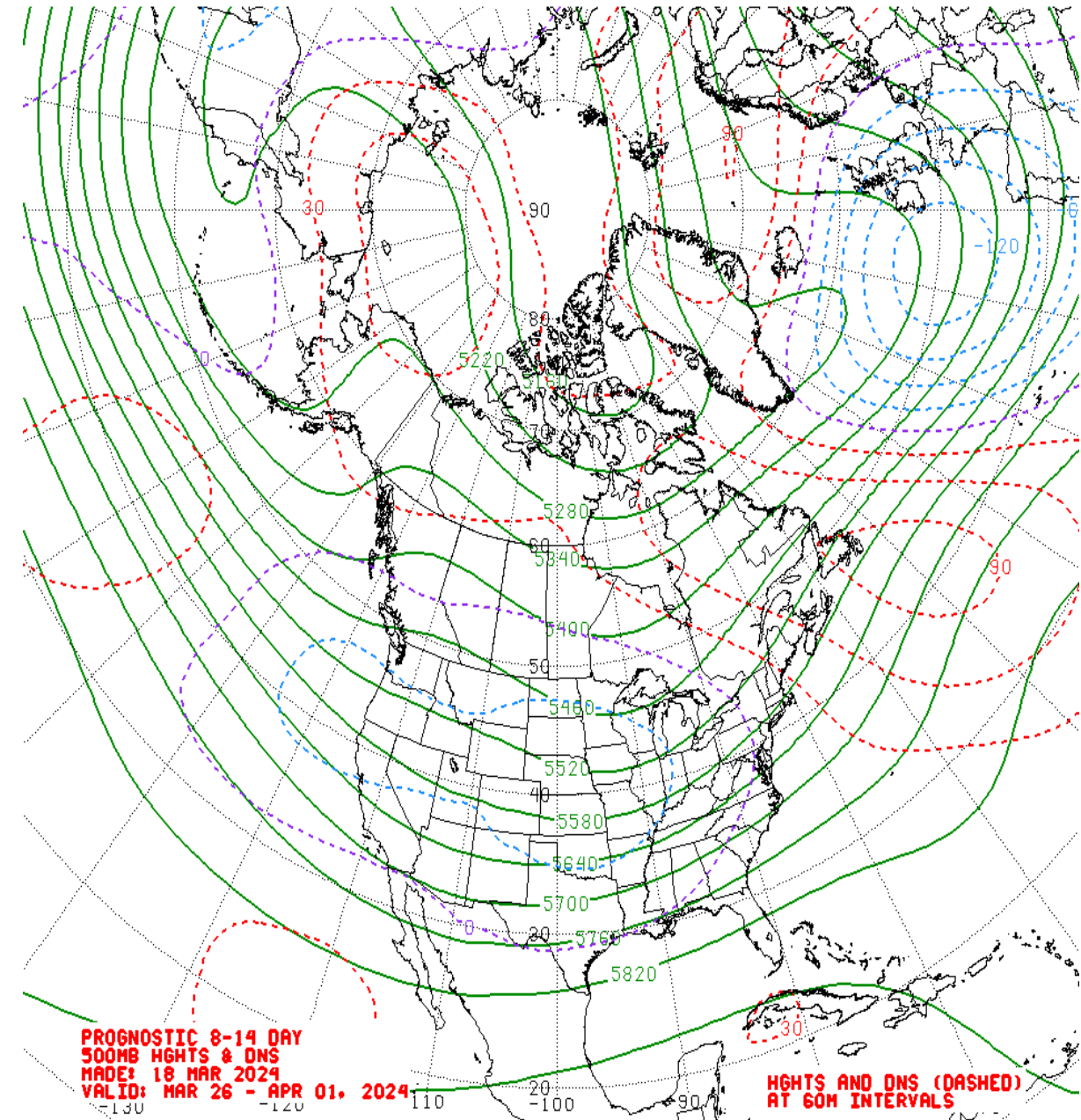
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:
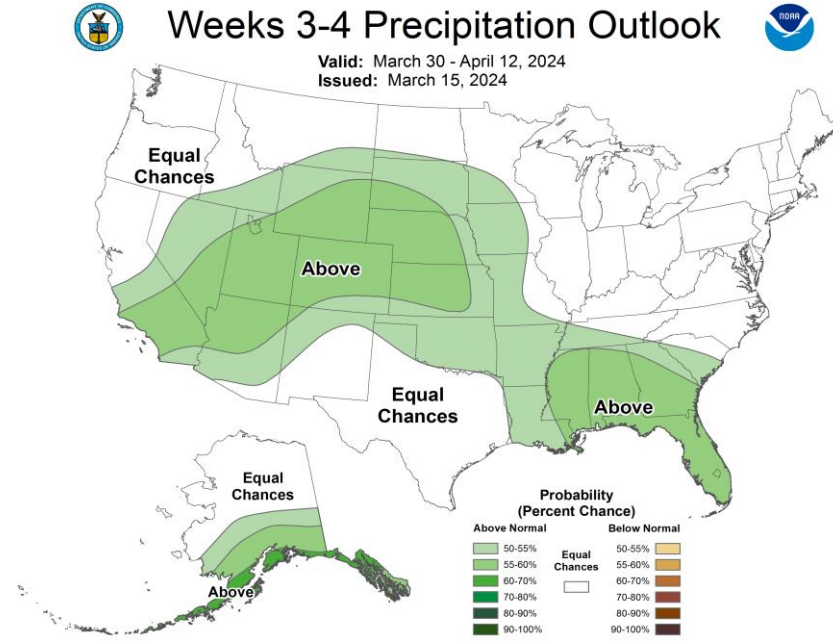

FMA MJO Composite: CDAS 500-hPa Height (m)

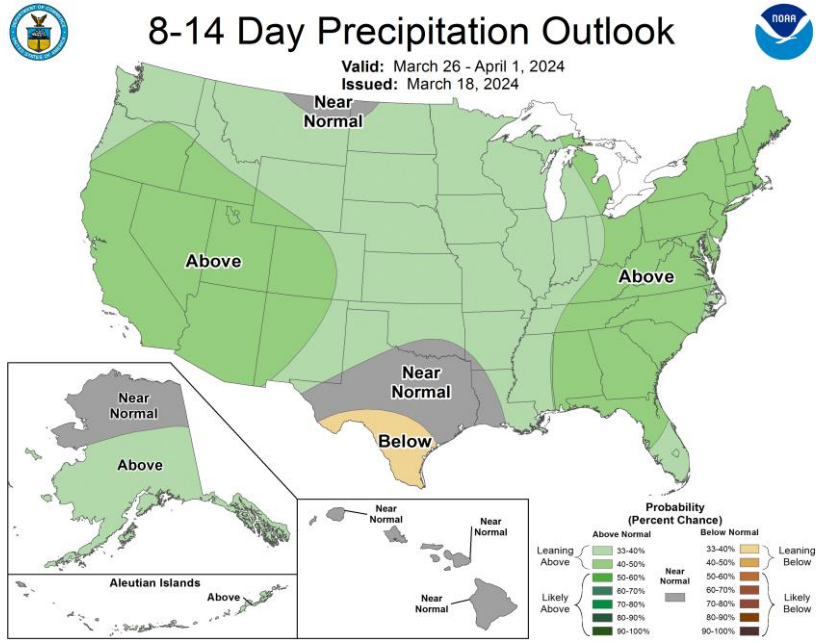FMA MJO Composite: GLBT (degC)

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

PROGNOSTIC 8-14 DAY
500MB HGHTS & DNS
MADE: 18 MAR 2024
VALID: MAR 26 - APR 01, 2024

HGHTS AND DNS (DASHED)
AT 60M INTERVALS

PROGNOSTIC WEEK 3
500 HGHTS & DNS
MADE: 15 MAR 2024
VALID: MAR 30 - APR 05, 2024

HGHTS AND DNS (DASHED)
AT 60M AND 15M INTERVALS

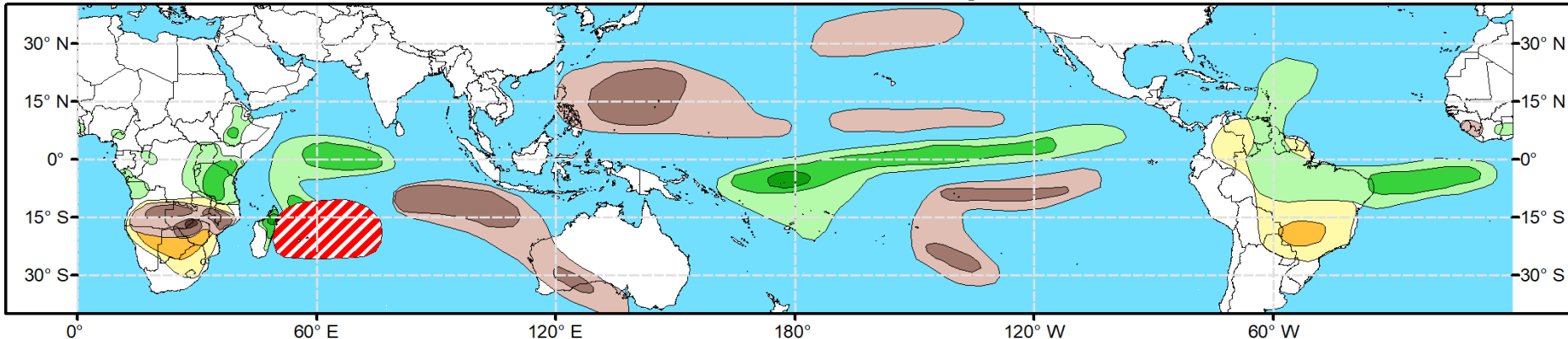# Official Temperature & Precipitation Forecasts:

Global Tropics Hazards Outlook
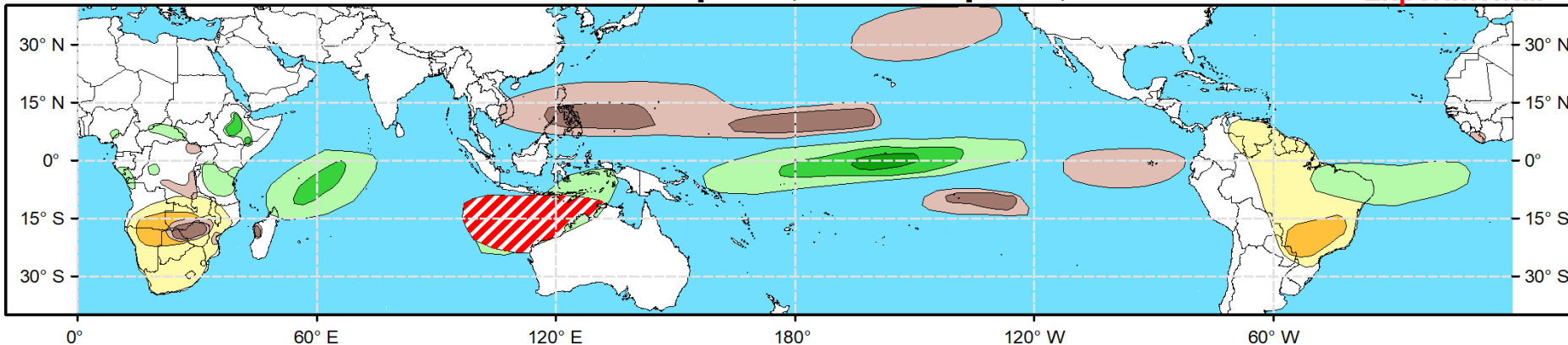## Climate Prediction Center
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