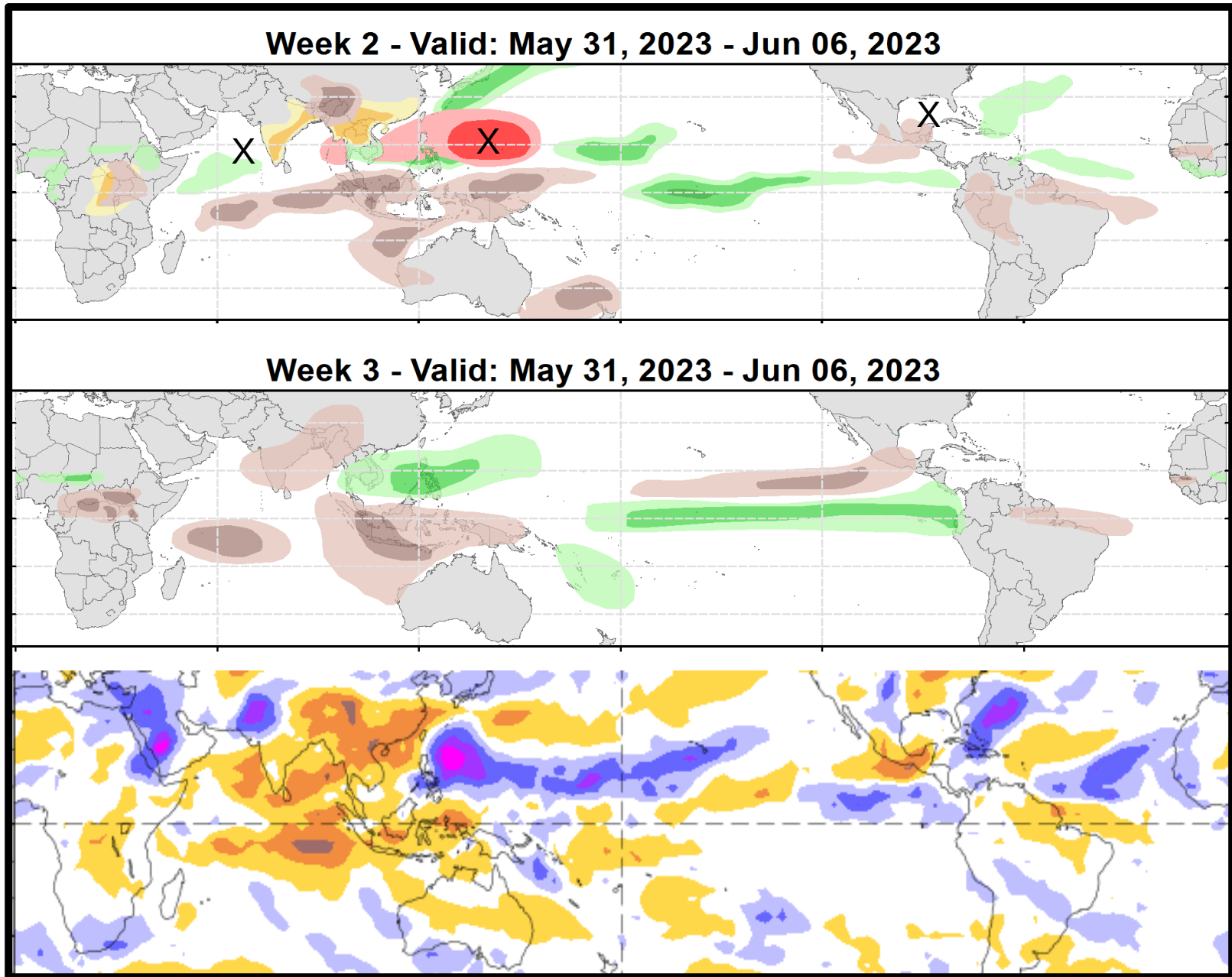
Weeks 2-3 Global Tropics Hazards Outlook

6/6/2023

Nick Novella
NWS / NCEP / Climate Prediction Center

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

- ATL: TC Arlene (6/1)
- WPAC: TS03W (6/6)
- NIO: TC02A (6/6)



Synopsis of Climate Modes:

ENSO: (May 11, 2023 Update) ***next update on Thursday, June 8th***

- ENSO Alert System Status: El Niño Watch

- A transition from ENSO-neutral is expected in the next couple of months, with a greater than 90% chance of El Niño persisting into the Northern Hemisphere winter.

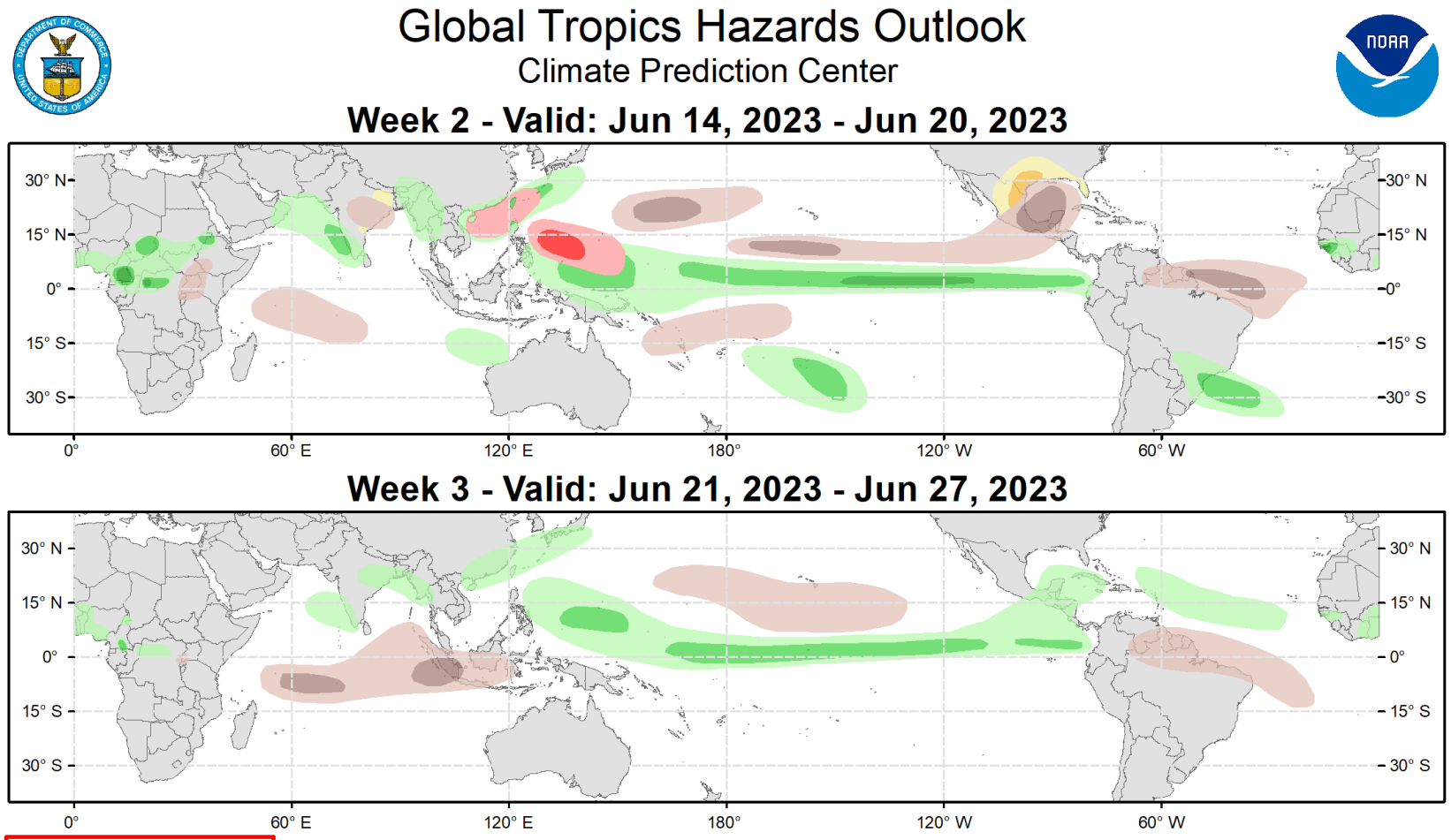
MJO and other subseasonal tropical variability:

- The enhanced phase of the MJO continued to propagate eastward over the Western Hemisphere where it has decreased in amplitude based on RMM and upper-level velocity potential indices.

- Good agreement exists in the RMM forecasts favoring continued eastward propagation of the MJO over the Indian Ocean during week-1, and Maritime Continent during week-2, as these forecasts have trended towards a more coherent intraseaonal signal since last week. This is supported in the upper-level velocity potential anomaly forecasts which reveal a potentially robust MJO event over the western Pacific later in June.

- Given these conditions, the large-scale environment is expected to be favorable for additional tropical cyclogenesis across the western Pacific, with decreased chances over the eastern Pacific and Atlantic basins.

GTH Outlook:


Global Tropics Hazards Outlook
Climate Prediction Center
Week 2 - Valid: Jun 14, 2023 - Jun 20, 2023
30° N
15° N
0°
15° S
30° S
0°
60° E
120° E
180°
120° W
60° W
Week 3 - Valid: Jun 21, 2023 - Jun 27, 2023
Week-2 Only
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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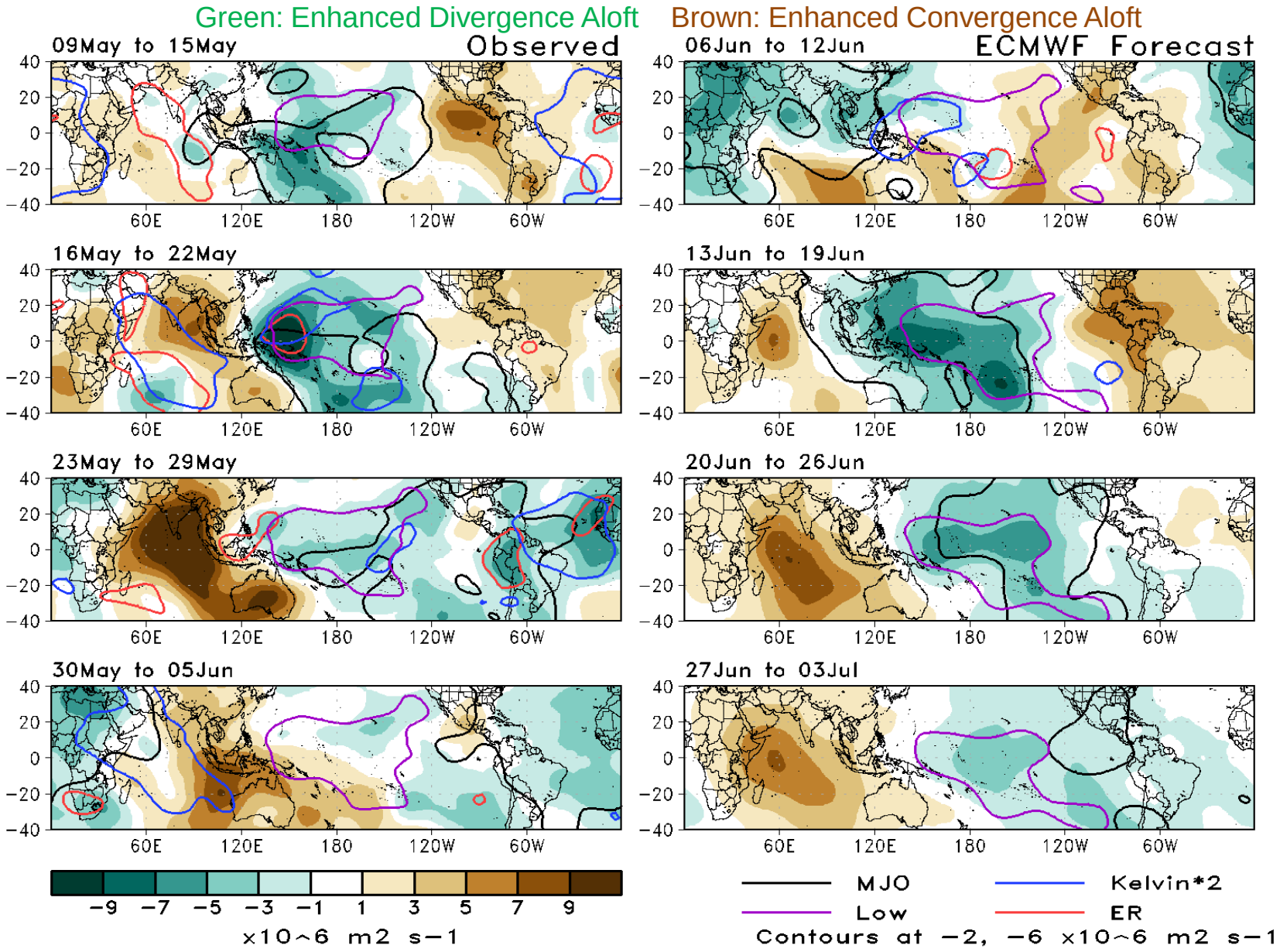
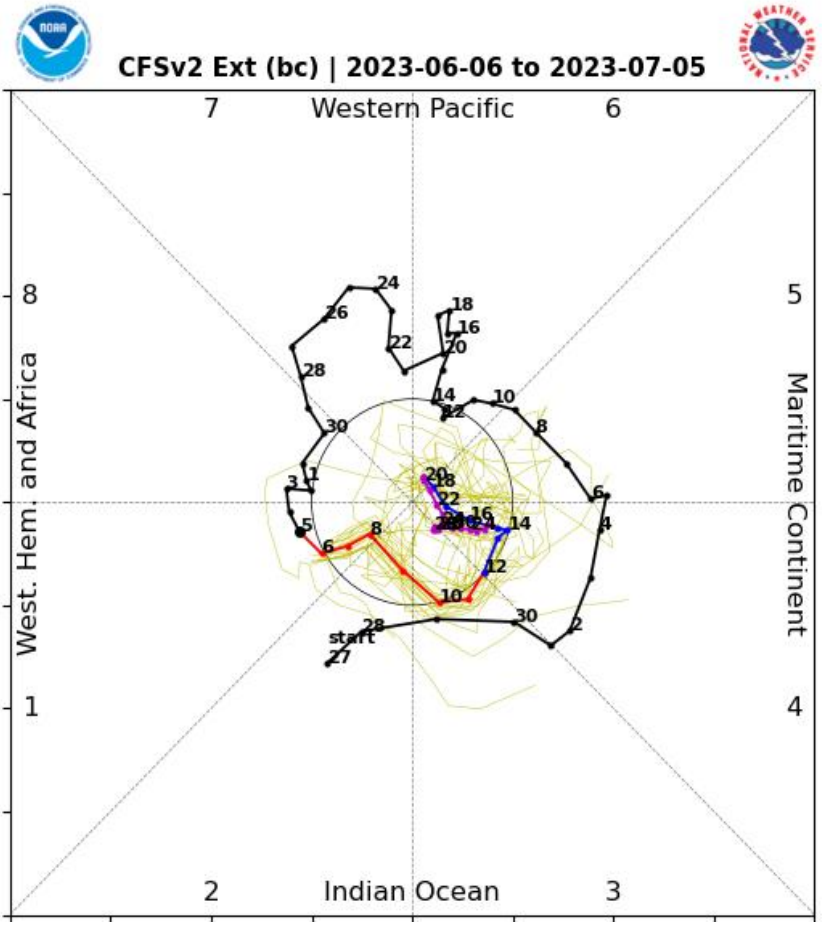
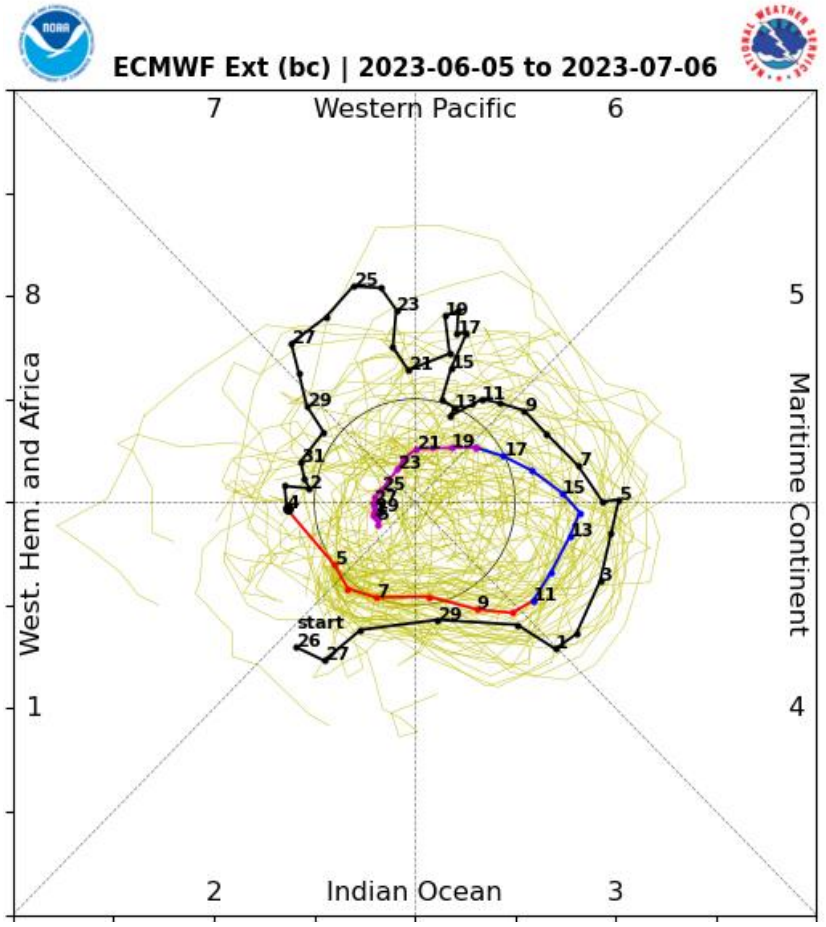
200-hPa Velocity Potential Anomaly Maps:

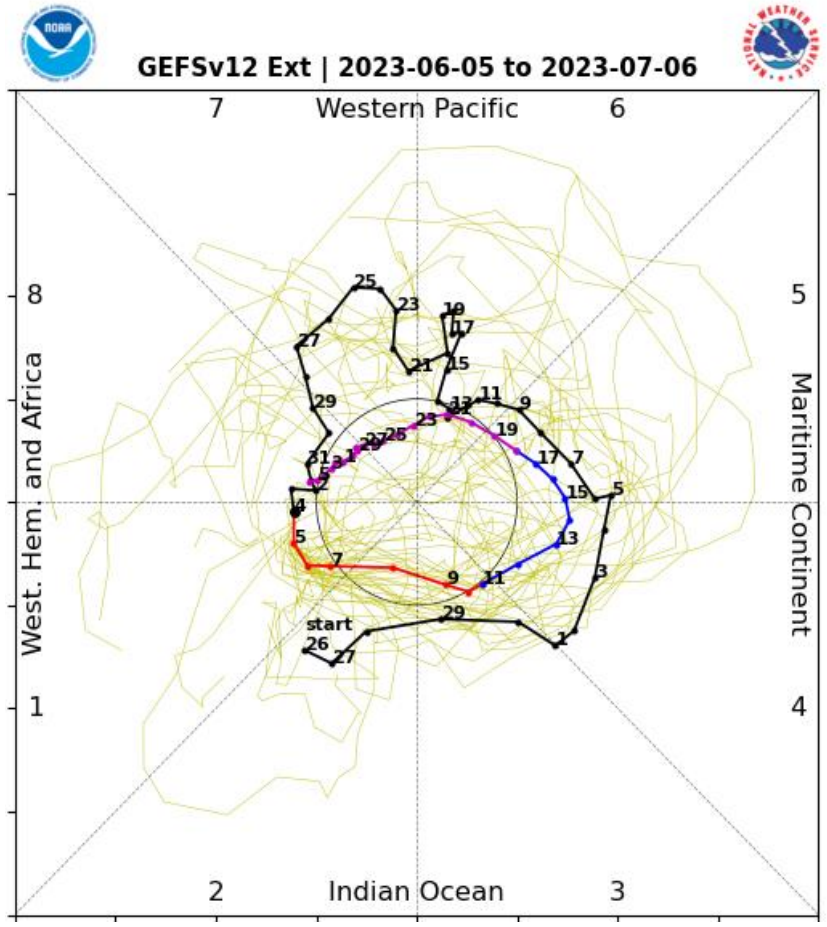
- Following a brief period of weakening likely tied to competing modes of variability, the MJO is favored to regain a well-defined wave-1 structure and reach the western Pacific through late June.



RMM Index Observations & Forecasts:

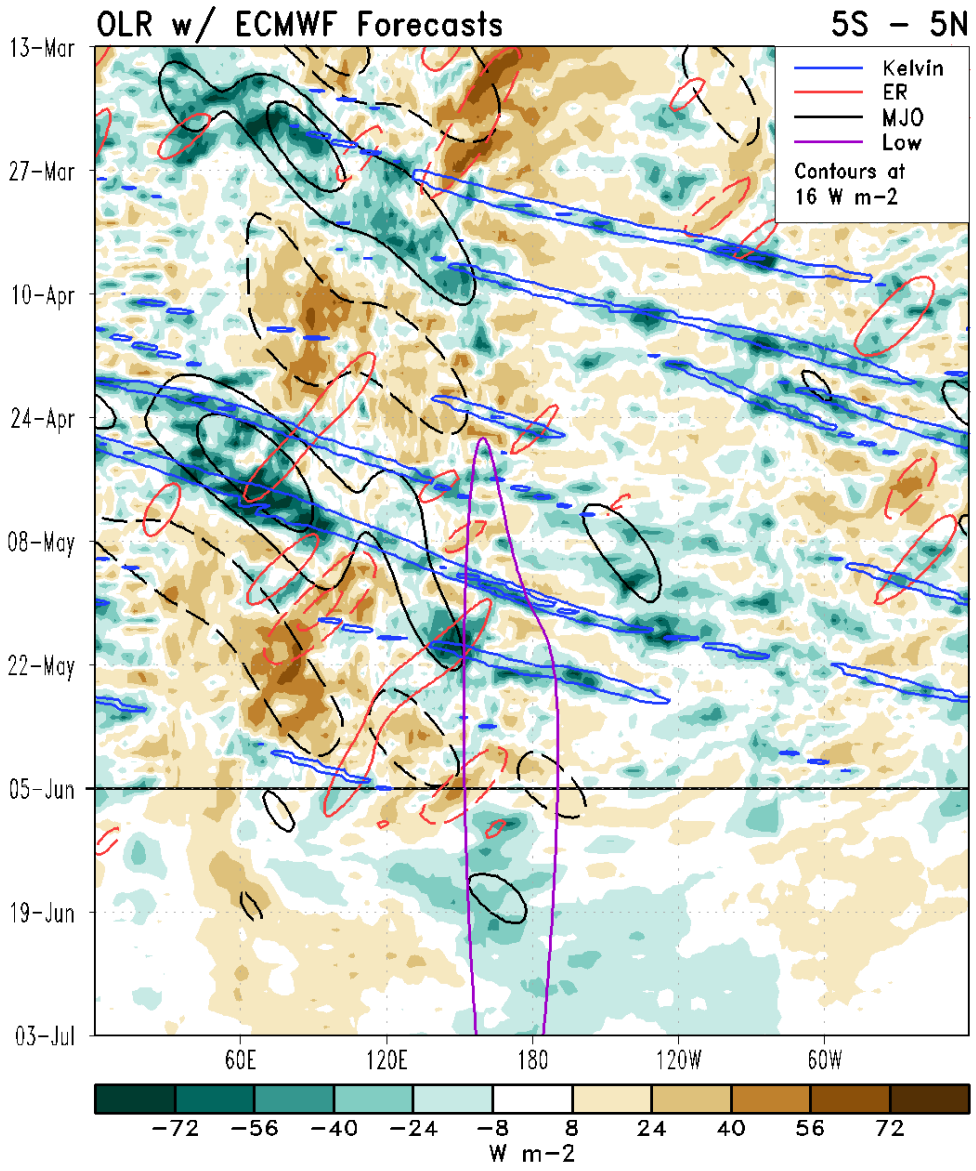


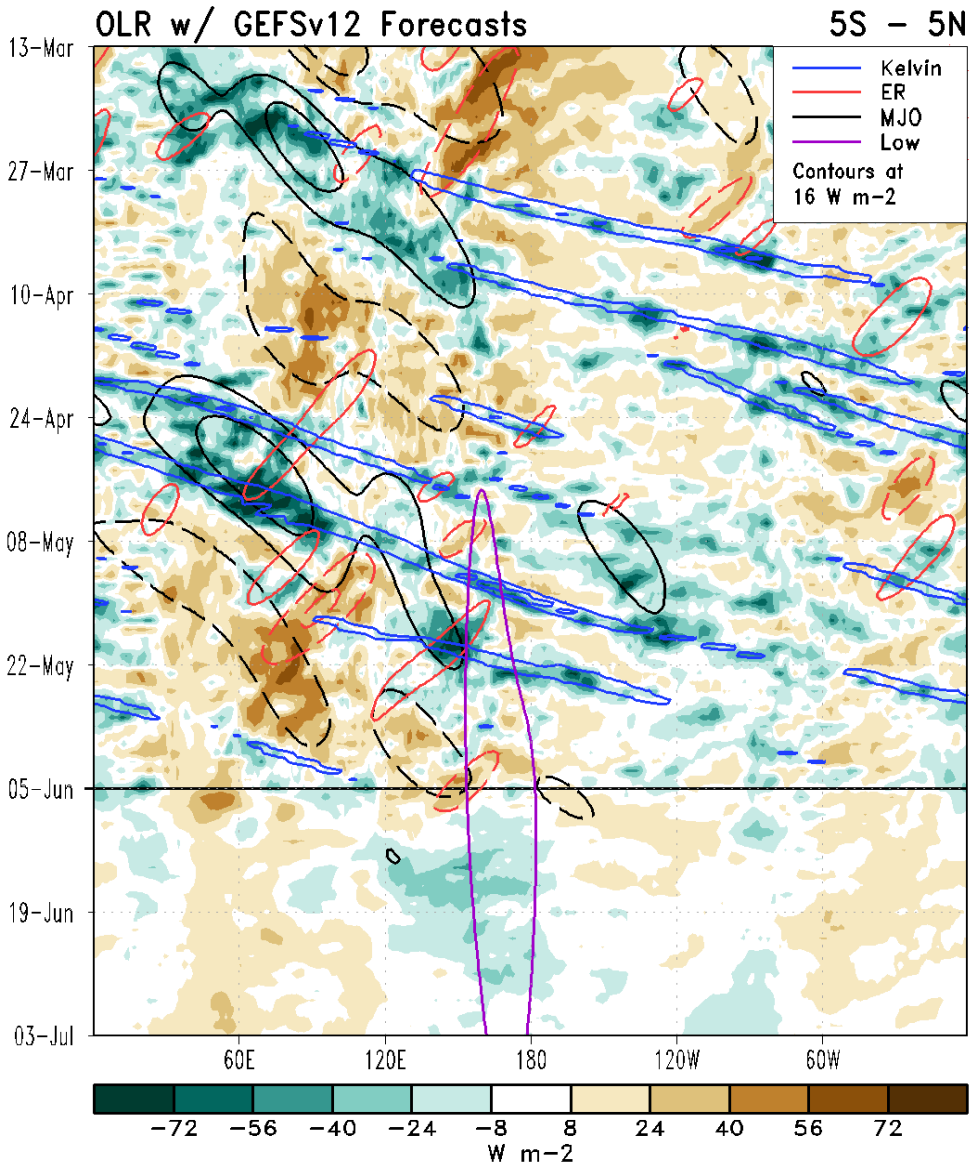




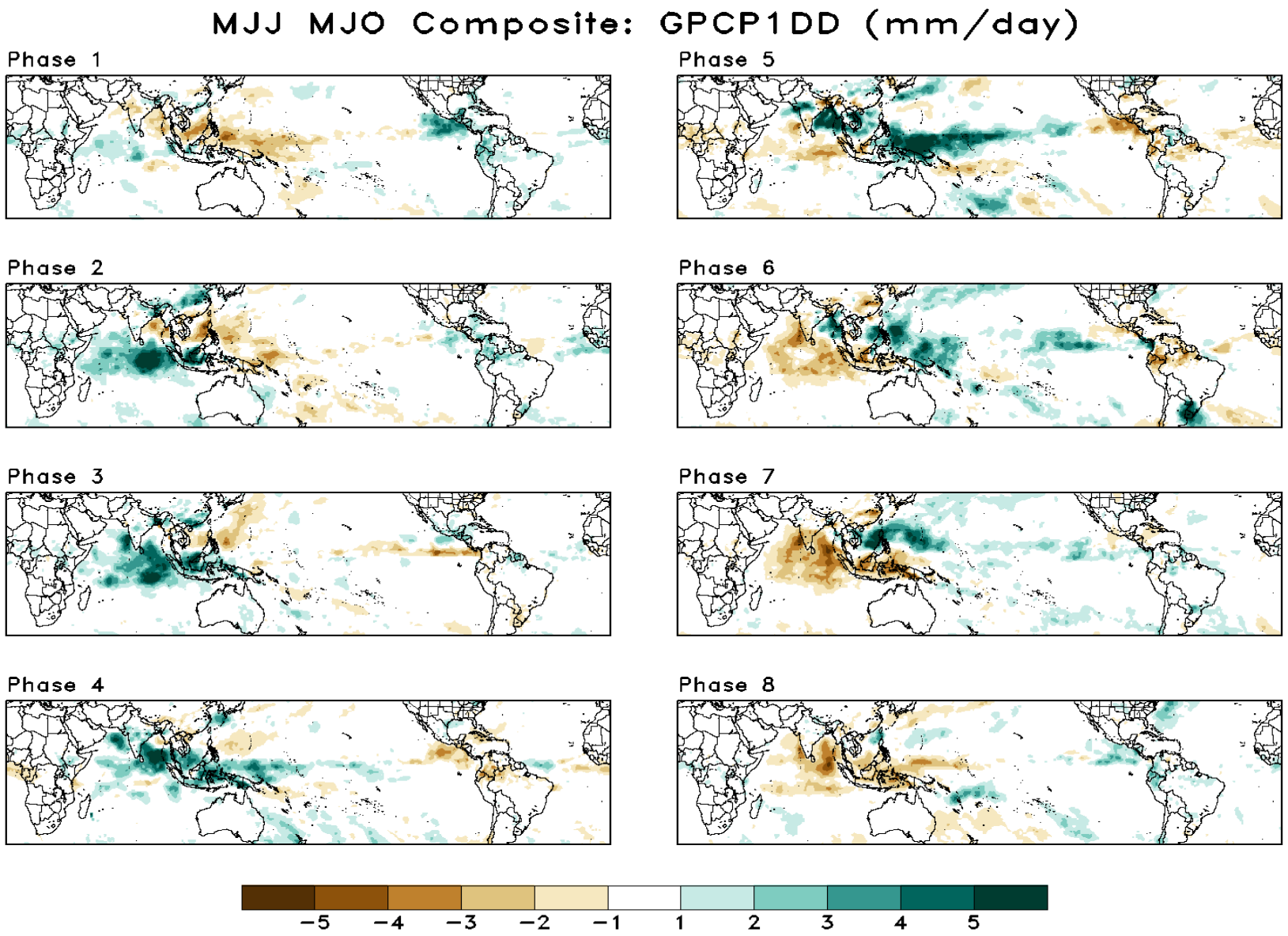
- RMM forecasts offer a weaker outlook perspective, but maintain continued eastward propagation of the MJO over the Indian Ocean and Maritime Continent during the next two weeks.
- Ensemble spread greatly increases by mid-June, however many ensemble members now point to a coherent MJO over the western Pacific during week-3, consistent with velocity potential forecasts.

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

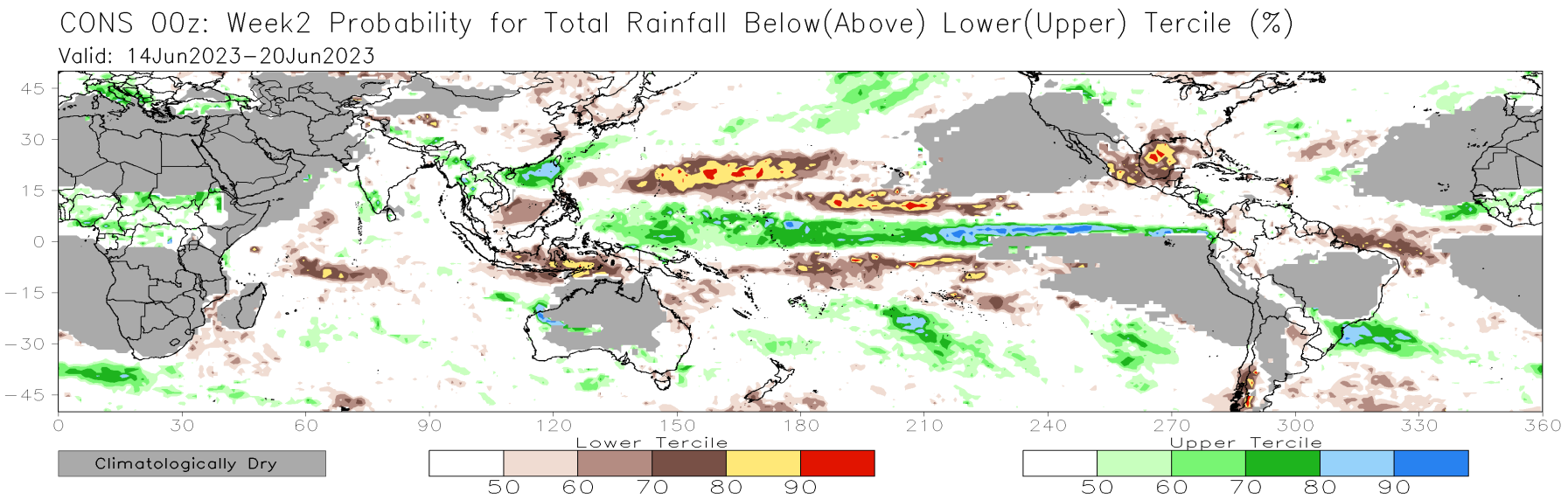


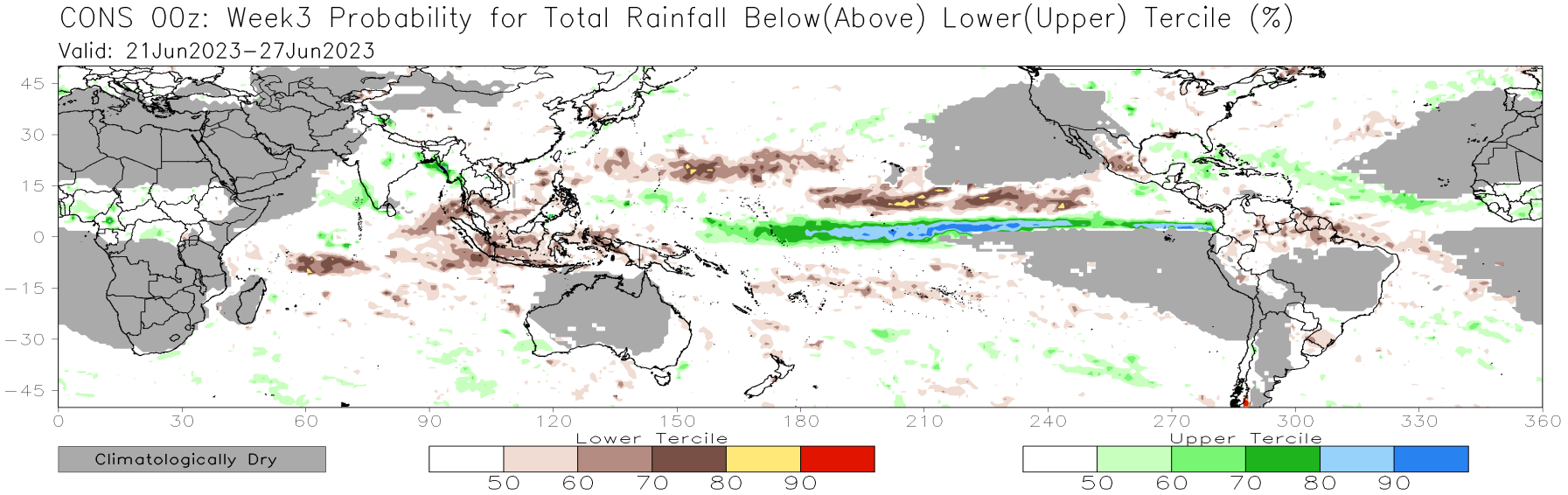


Historical Precipitation Anomalies By MJO Phase:

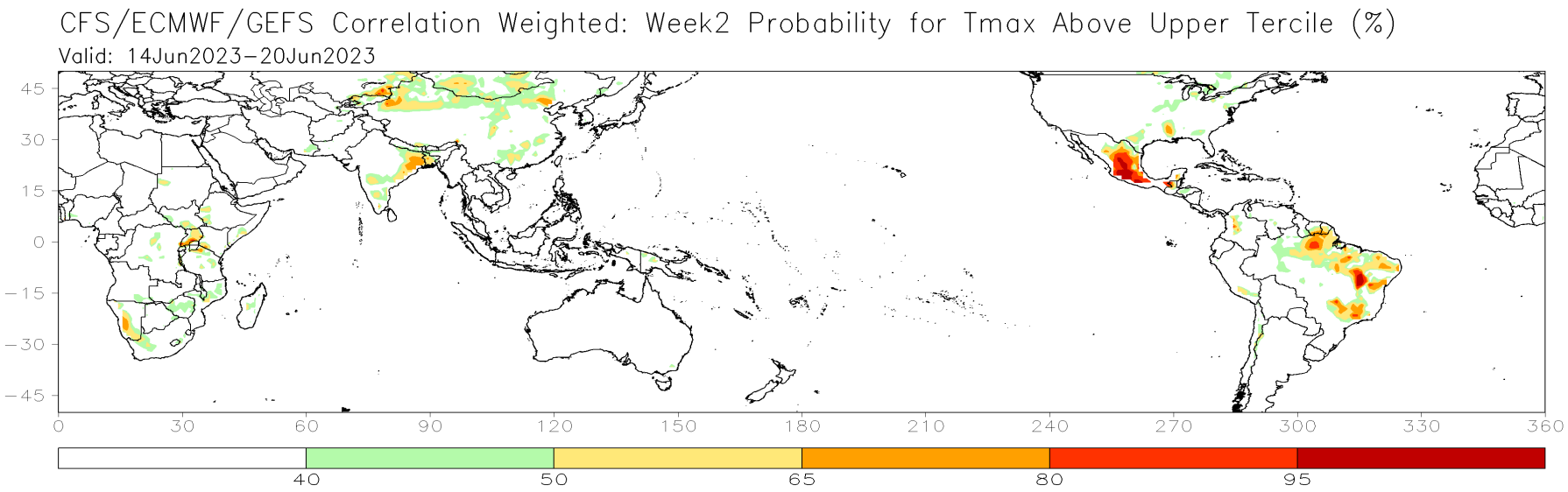


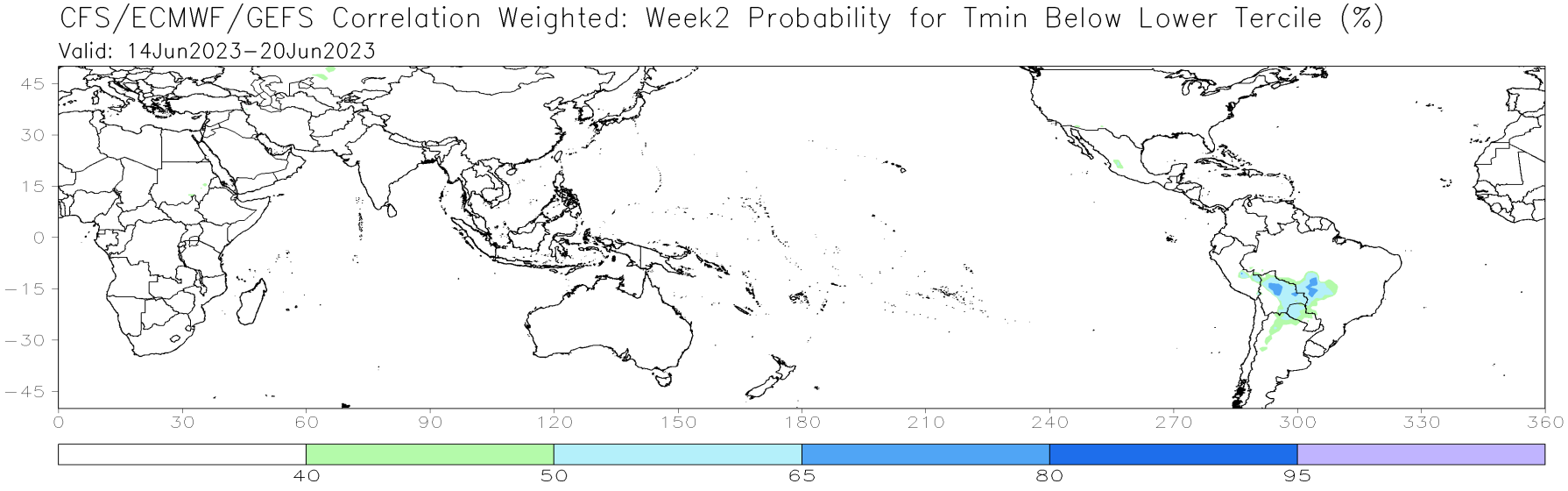
Consolidated Probabilistic Precipitation: Weeks 2 & 3



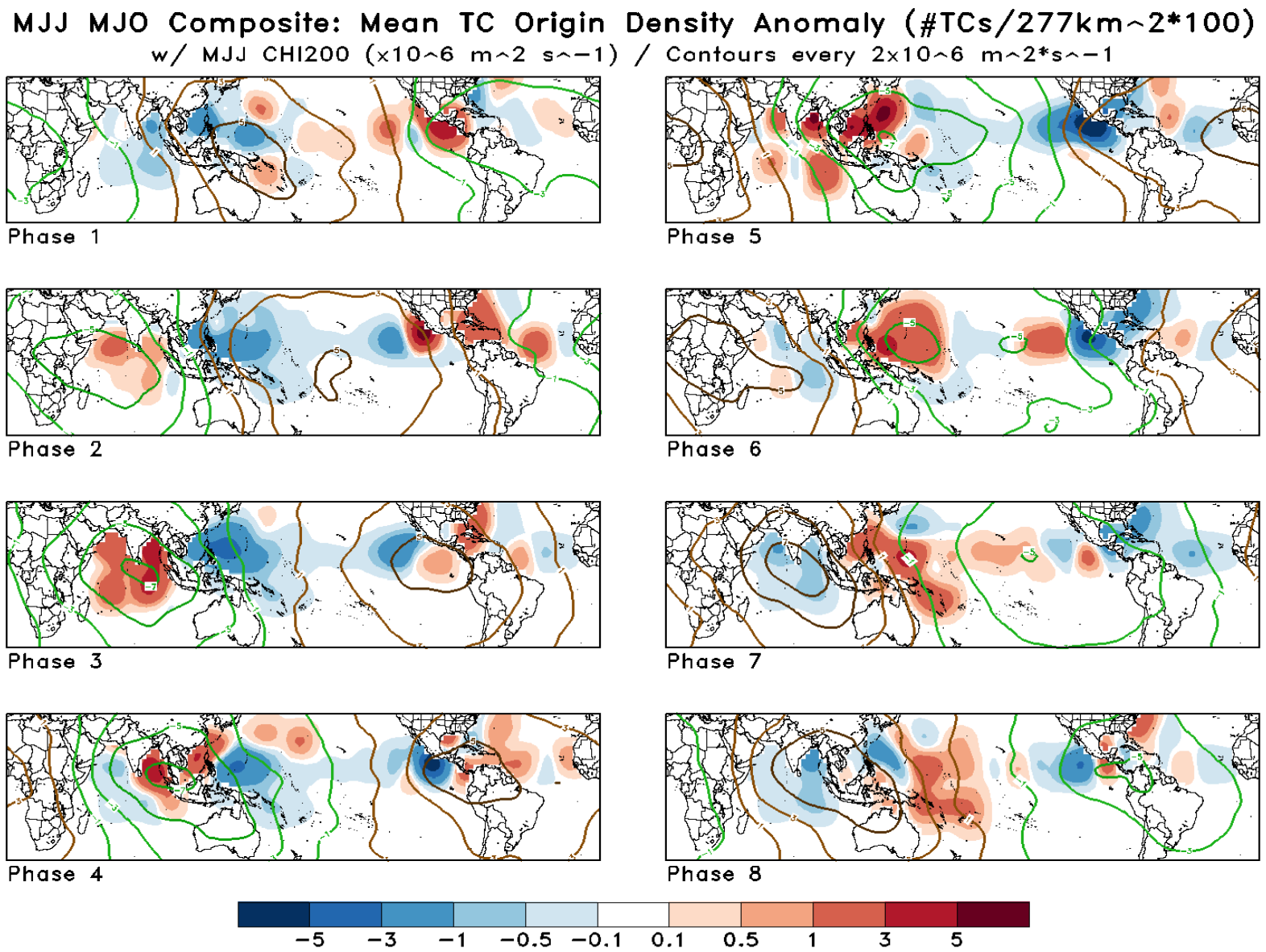


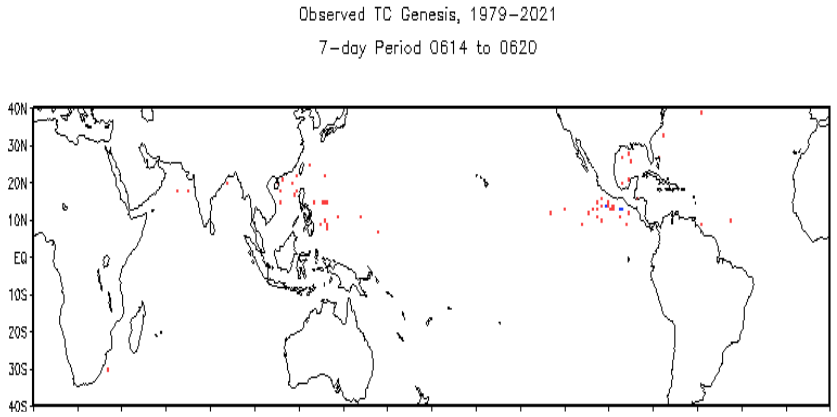
Consolidated Probabilistic Temperatures: Week-2

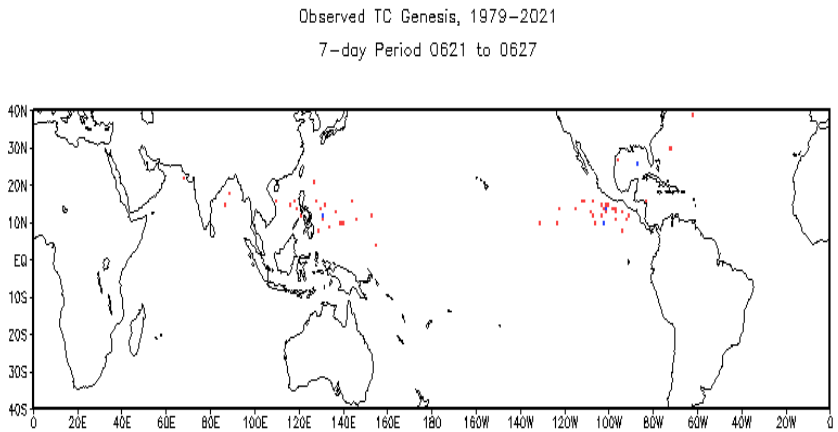




Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

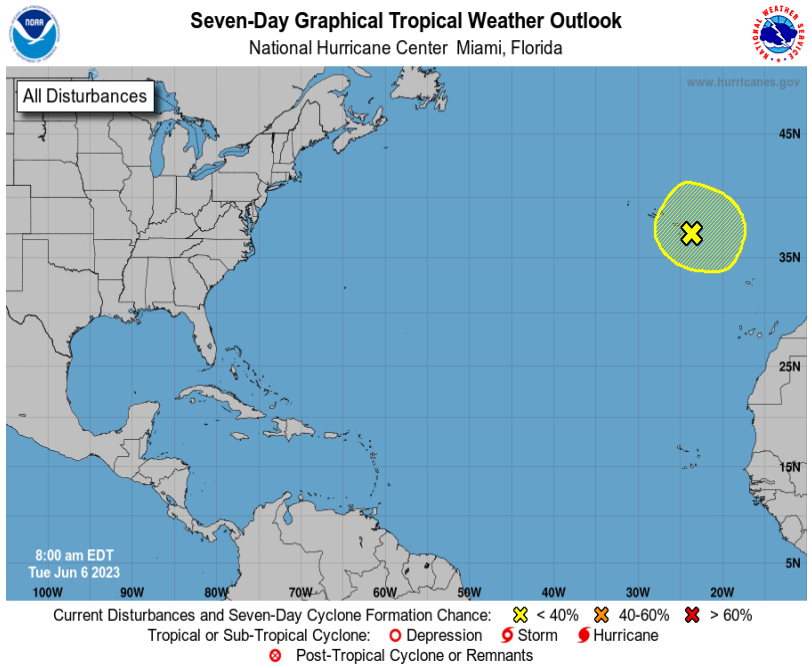


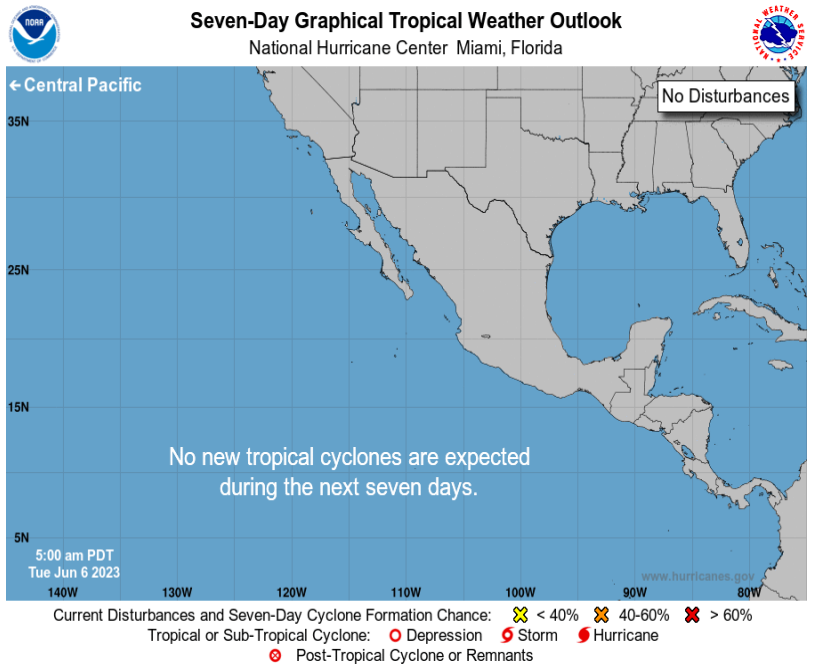


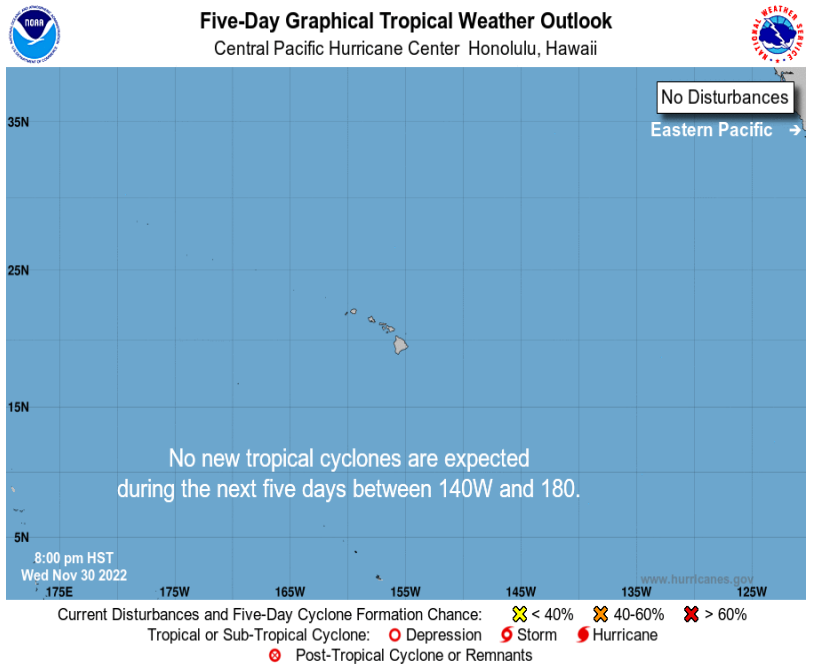


Experimental

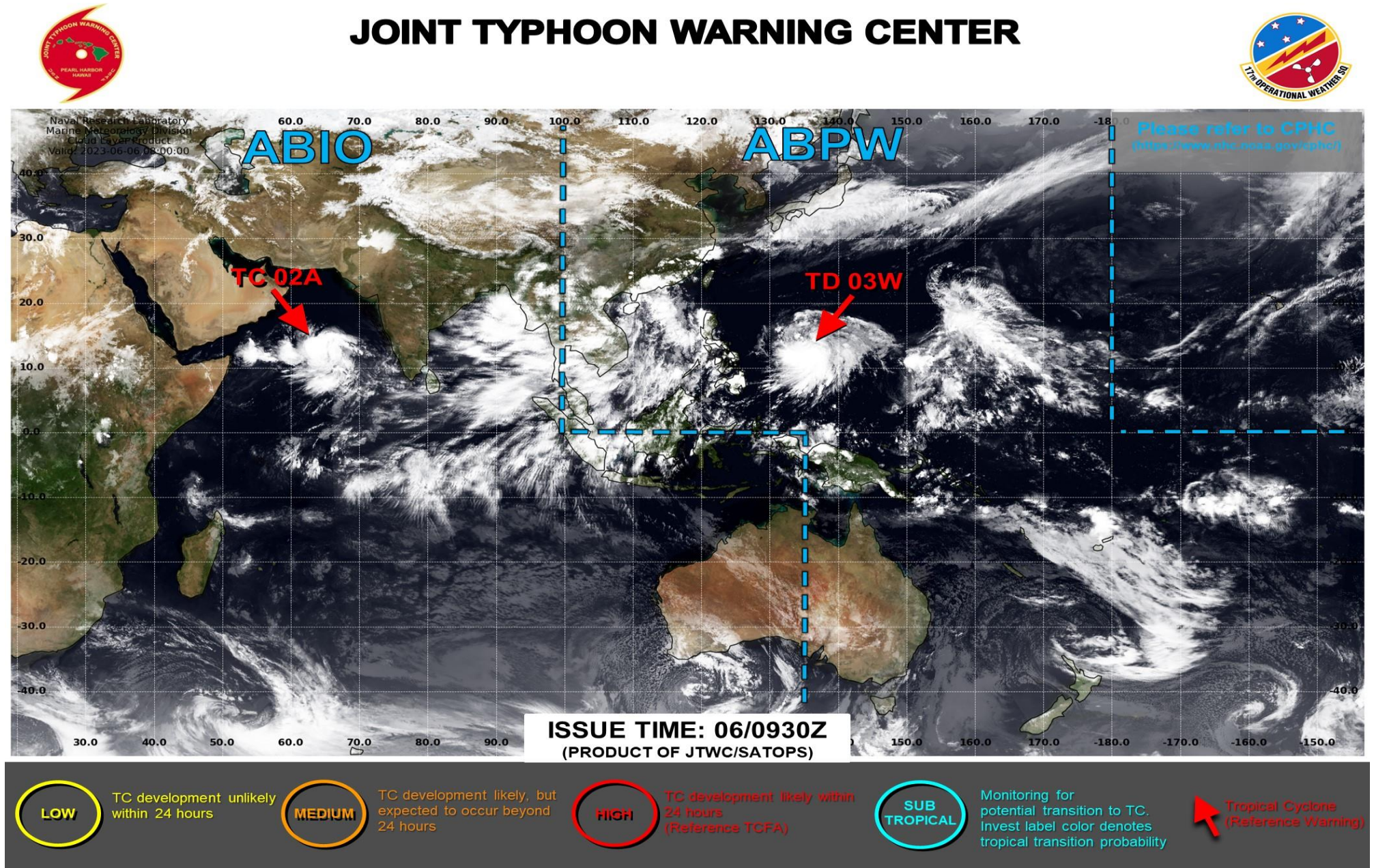
Tropical Cyclone Monitoring/Forecast: NHC



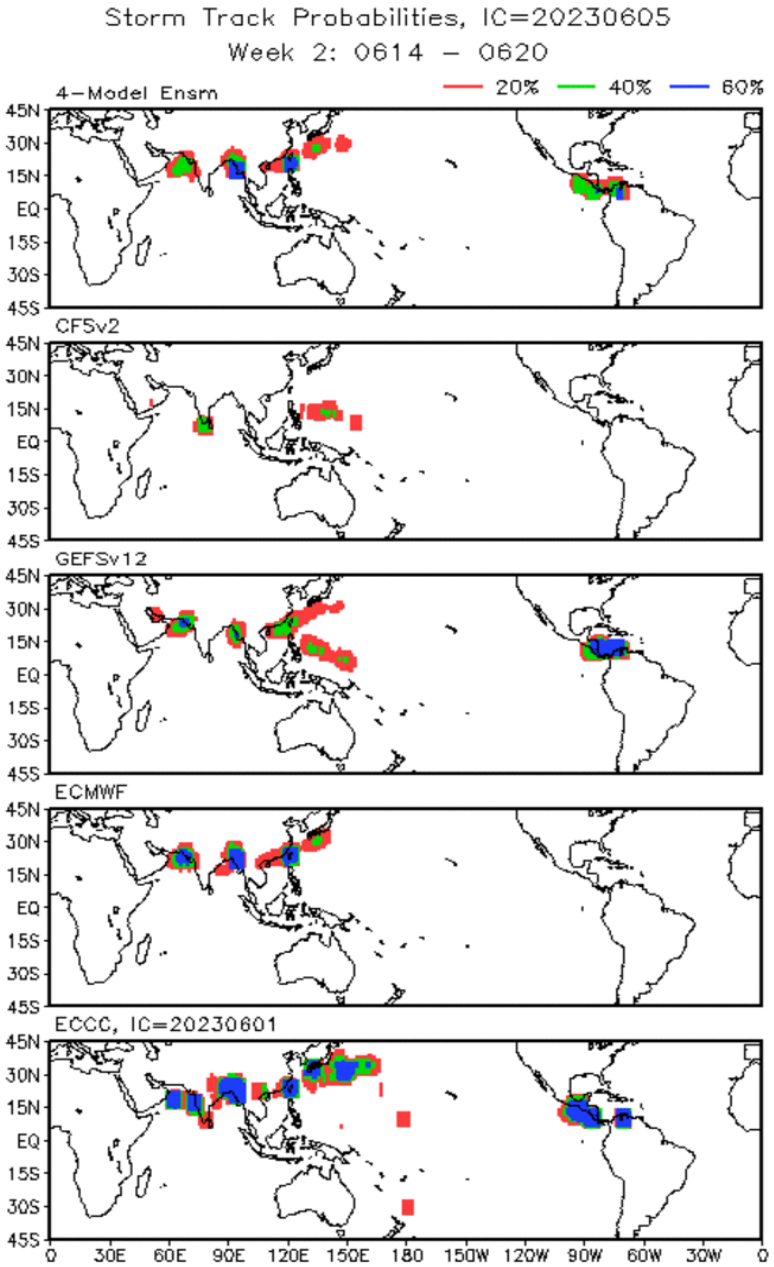


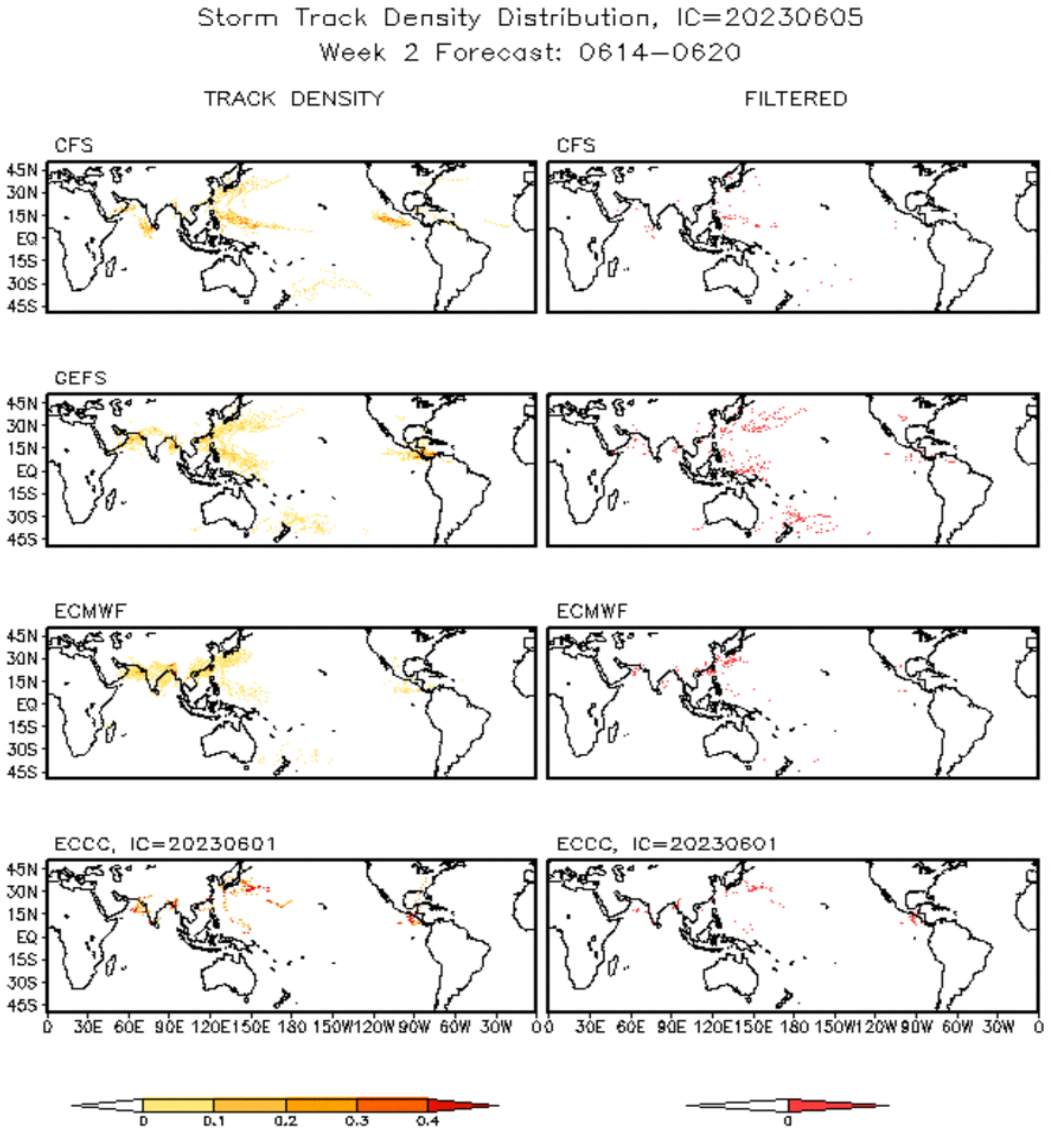


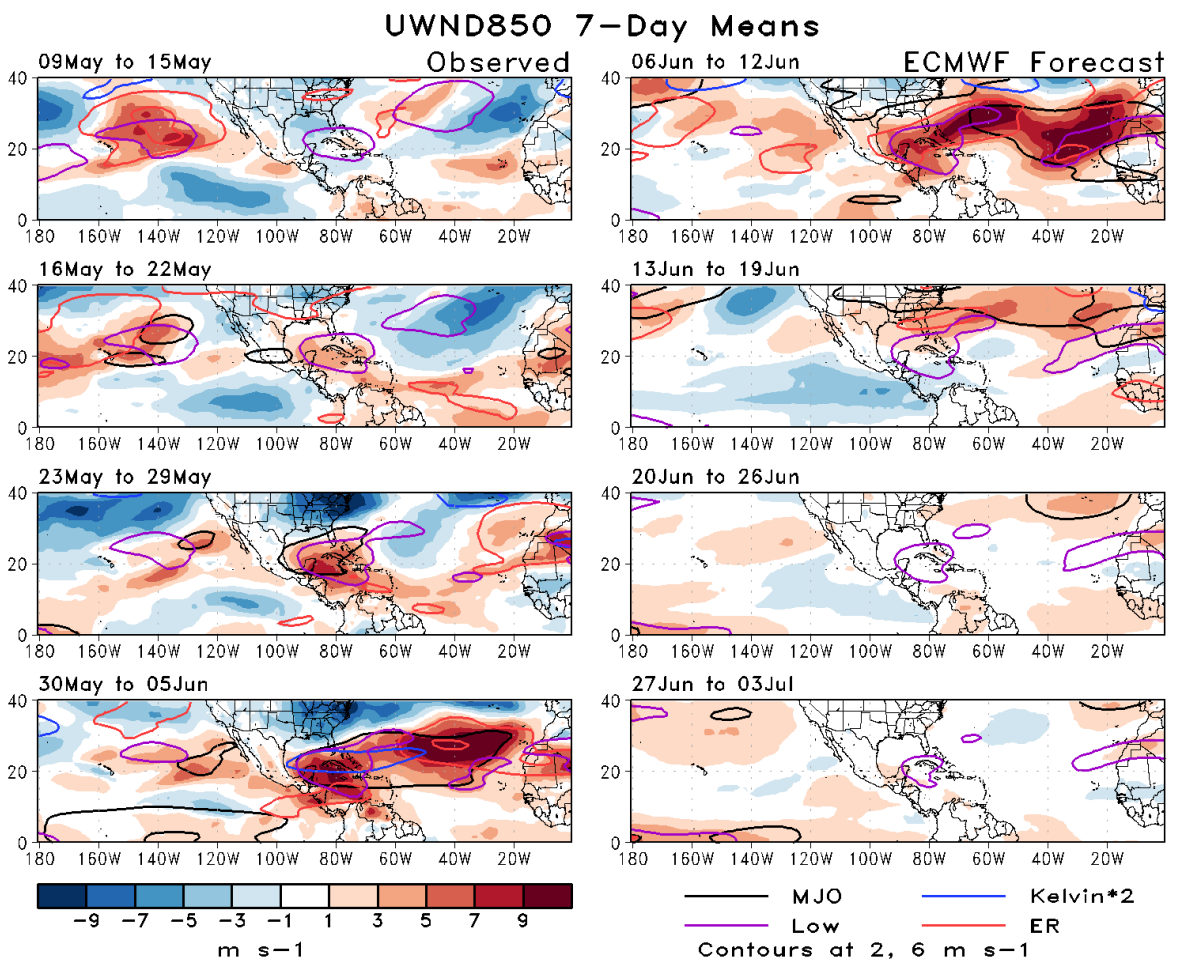
Tropical Cyclone Monitoring/Forecast: JTWC

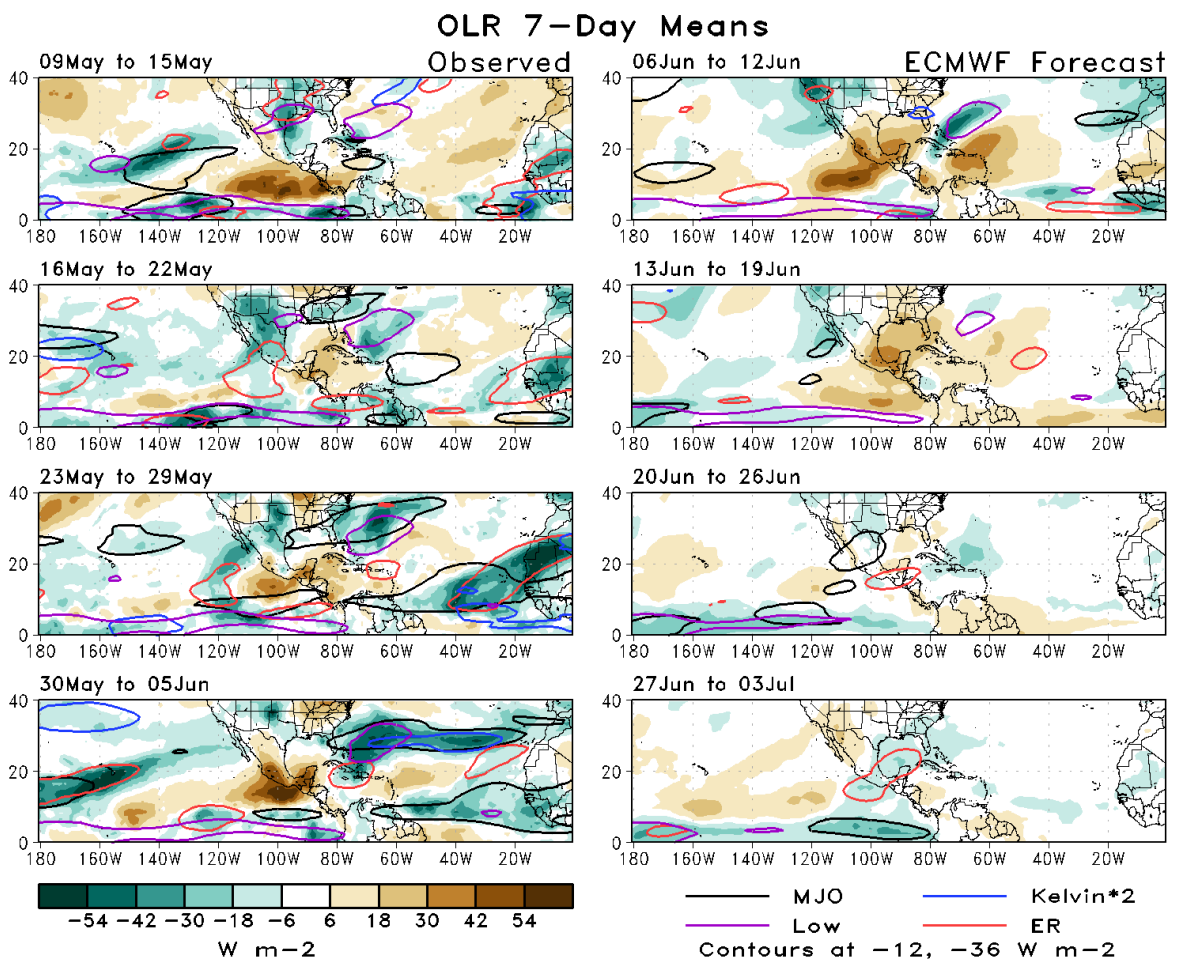


Multi-Model TC Track Probabilities/Densities: Week-2






UWND850 7-Day Means
09May to 15May
Observed
06Jun to 12Jun
ECMWF Forecast
16May to 22May
13Jun to 19Jun
23May to 29May
20Jun to 26Jun
30May to 05Jun
27Jun to 03Jul
-9 -7 -5 -3 -1 1 3 5 7 9
m s-1
MJO
Kelvin*2
Low
ER
Contours at 2, 6 m s-1


OLR 7-Day Means
09May to 15May
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06Jun to 12Jun
ECMWF Forecast
16May to 22May
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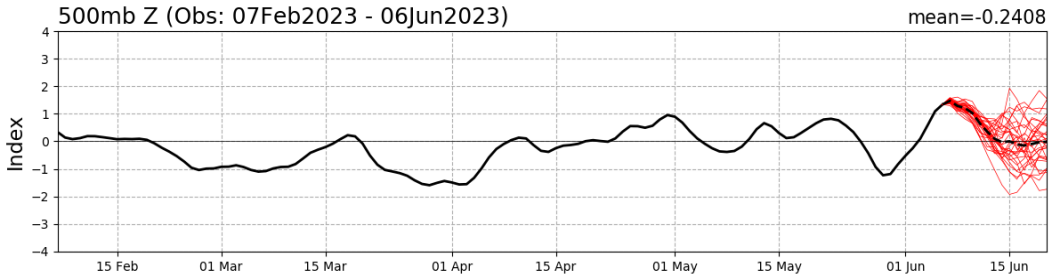
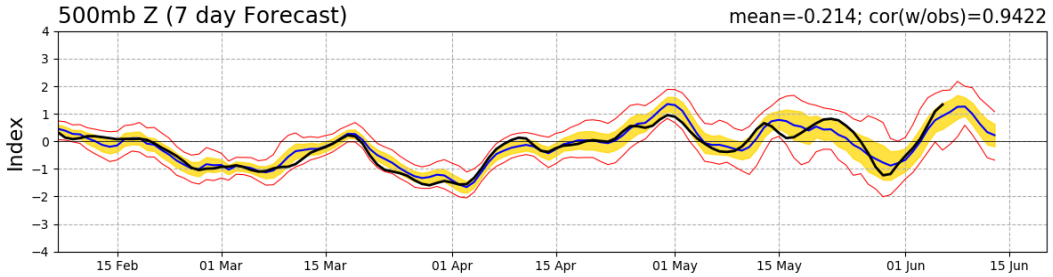
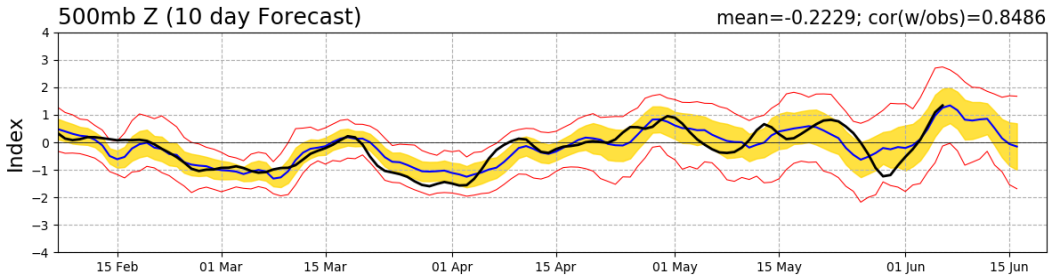
30May to 05Jun
27Jun to 03Jul
-54 -42 -30 -18 -6 6 18 30 42 54
W m-2
MJO
Kelvin*2
Low
ER
Contours at -12, -36 W m-2

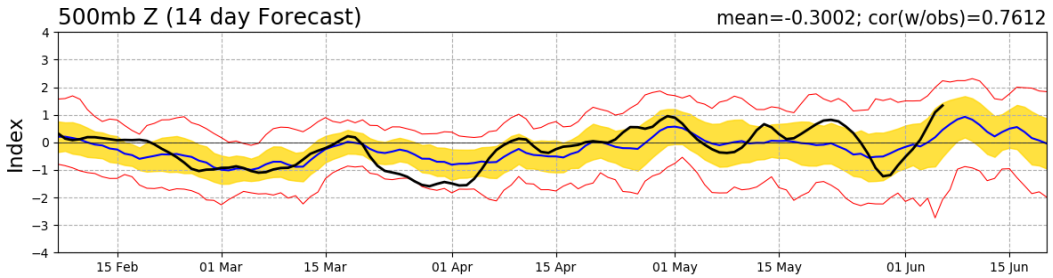
Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts

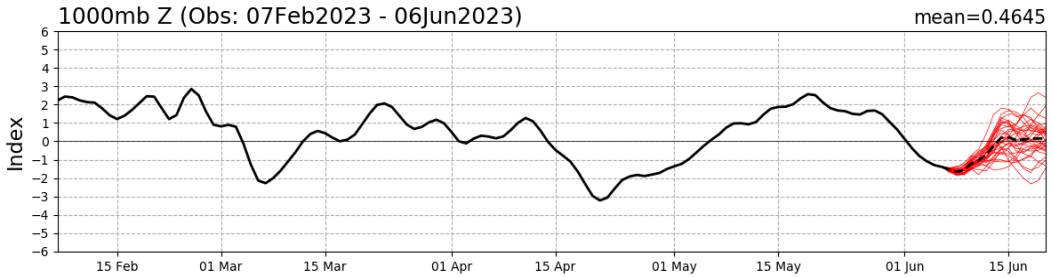


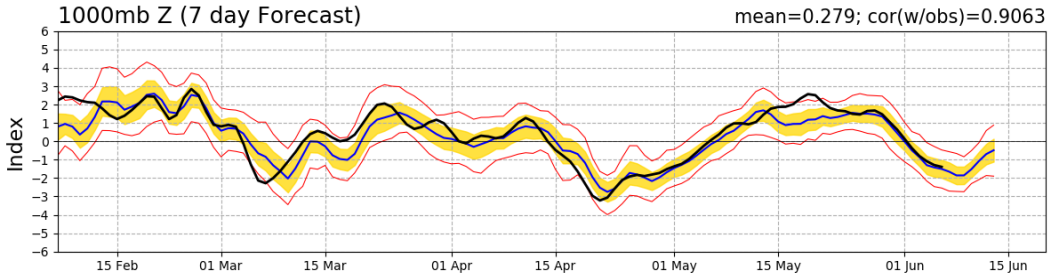


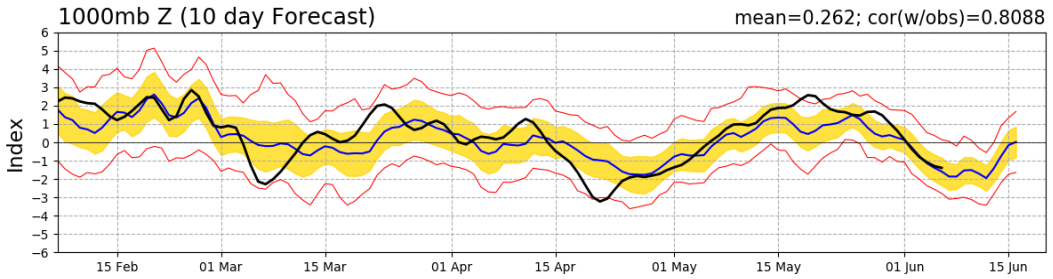


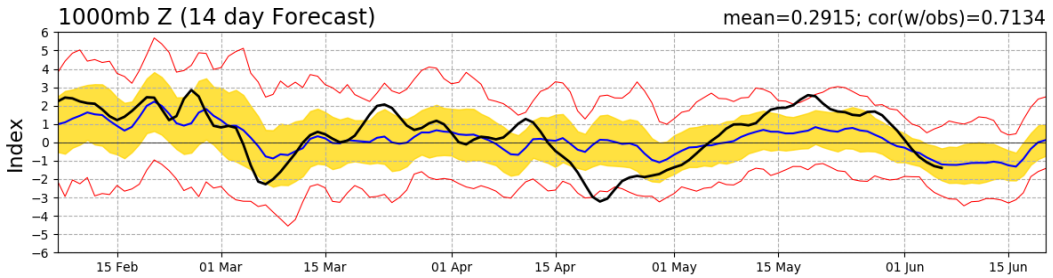


AO Index: Observed & GEFS Forecasts

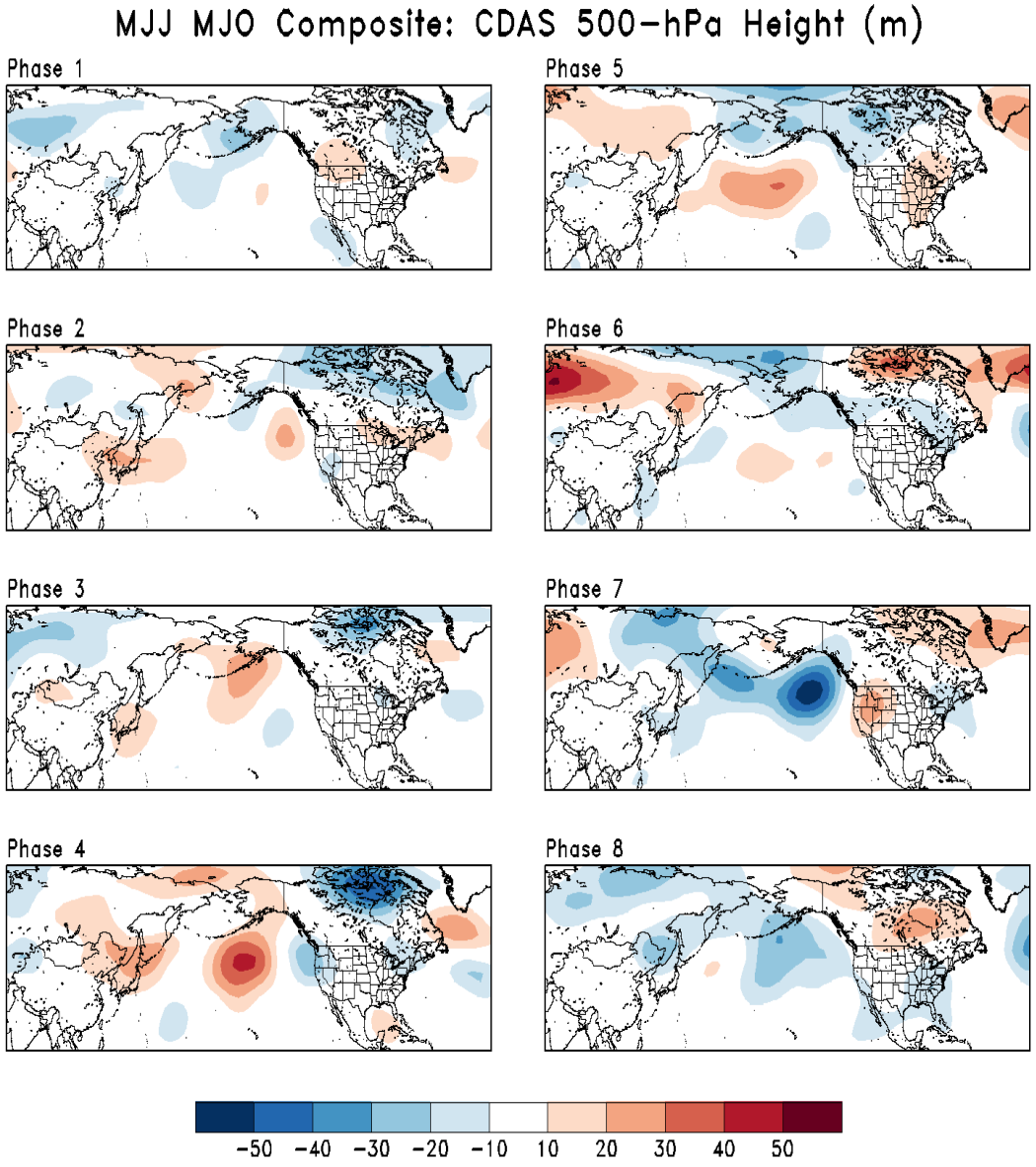


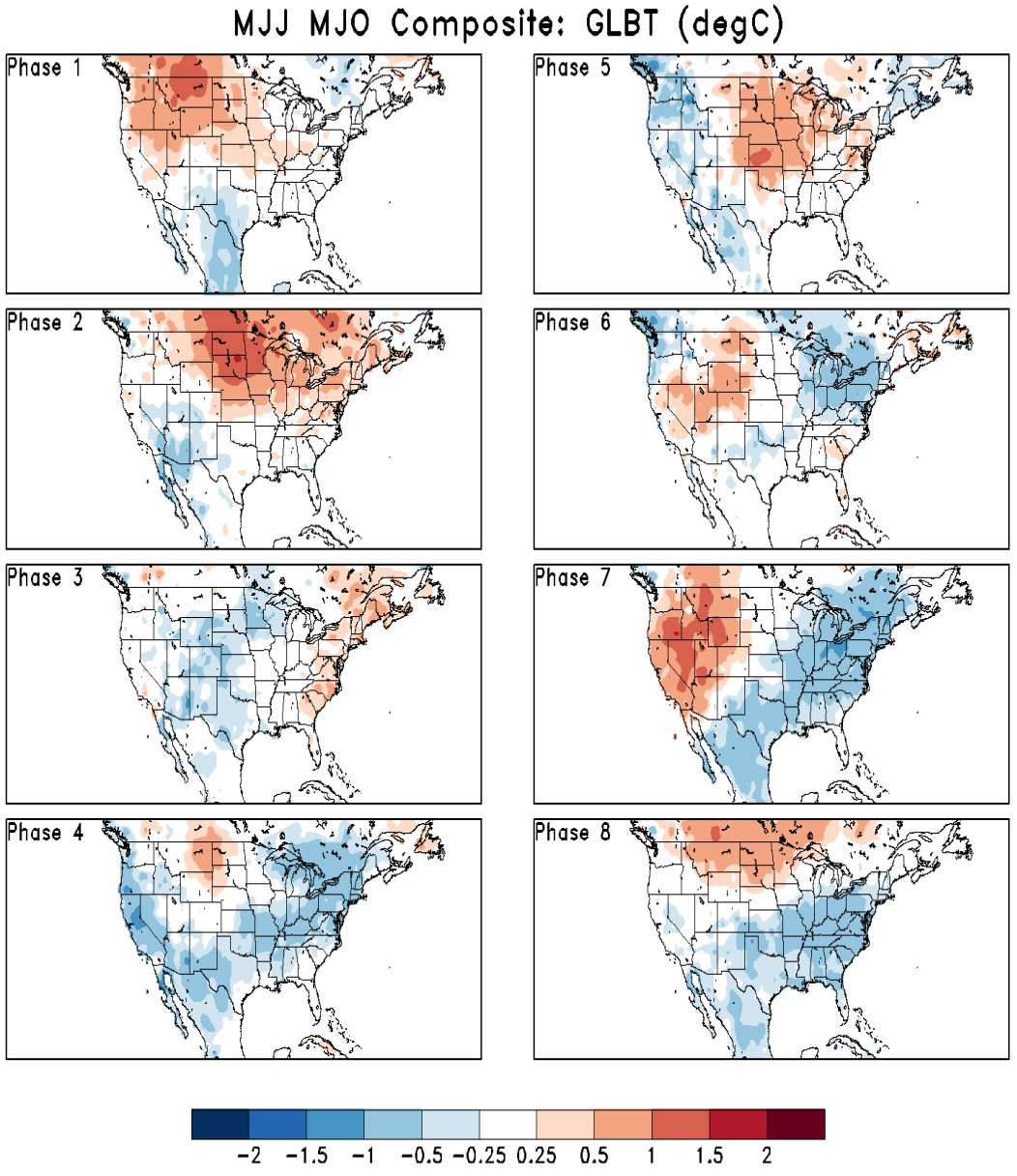




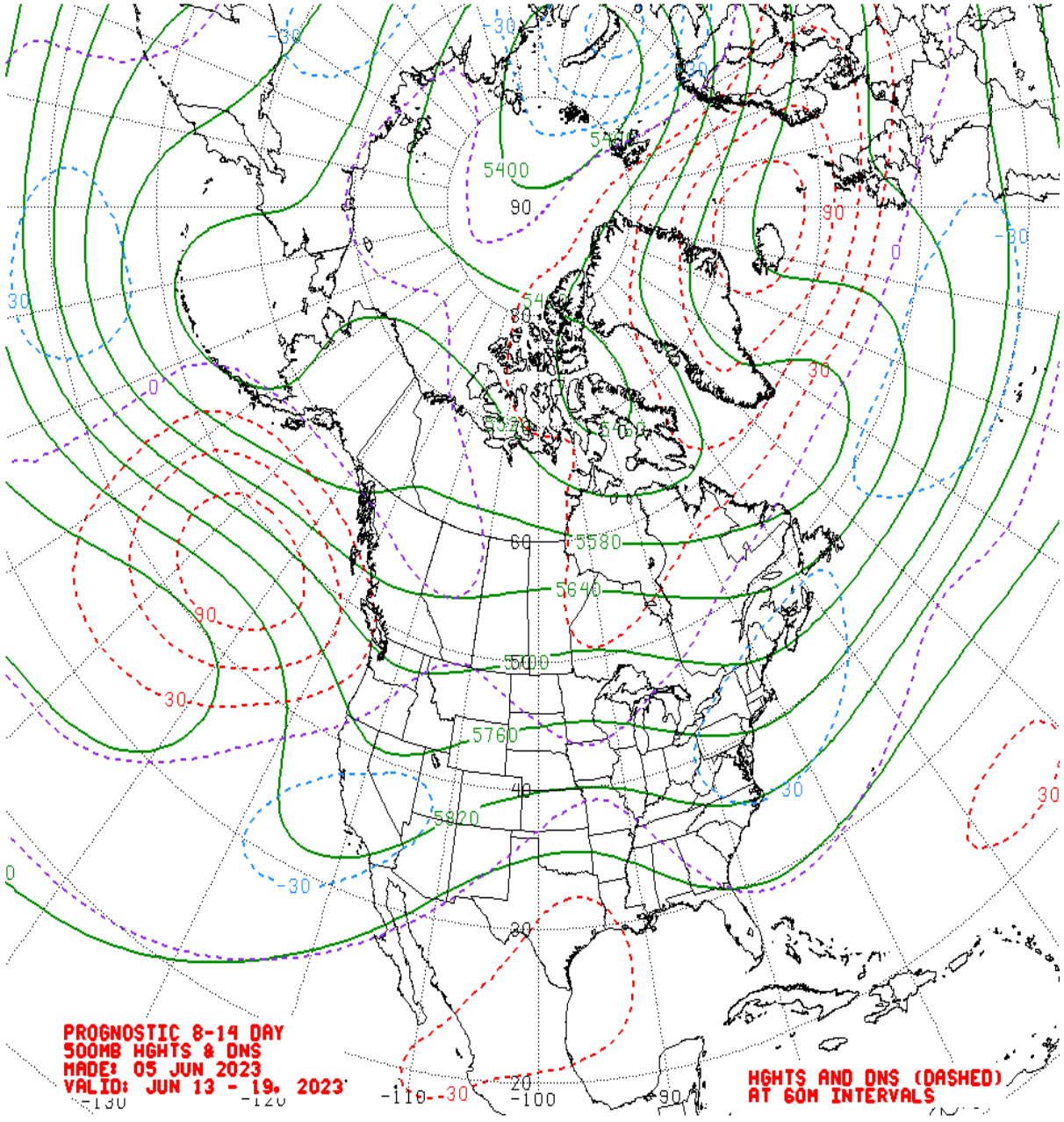


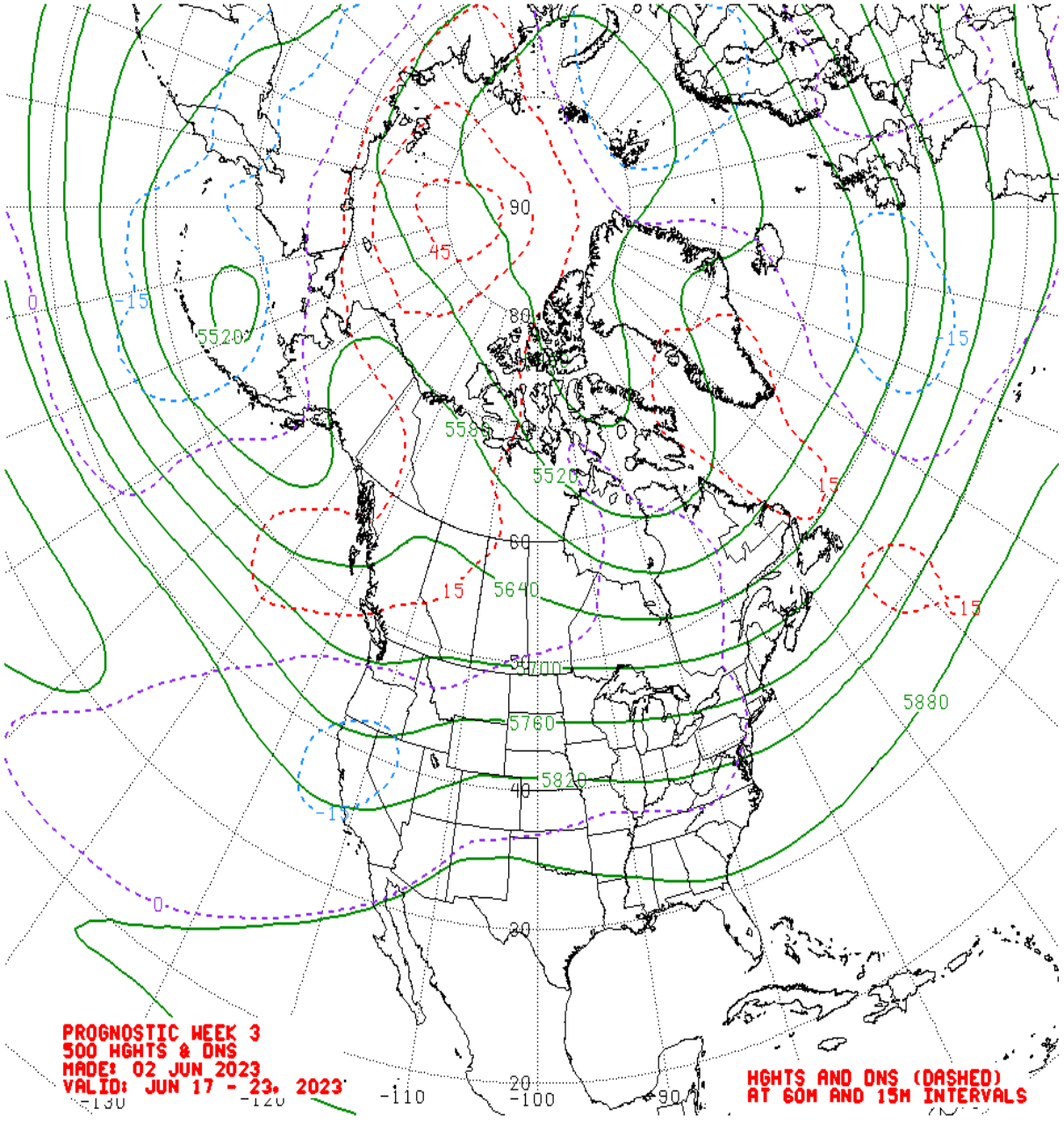
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:



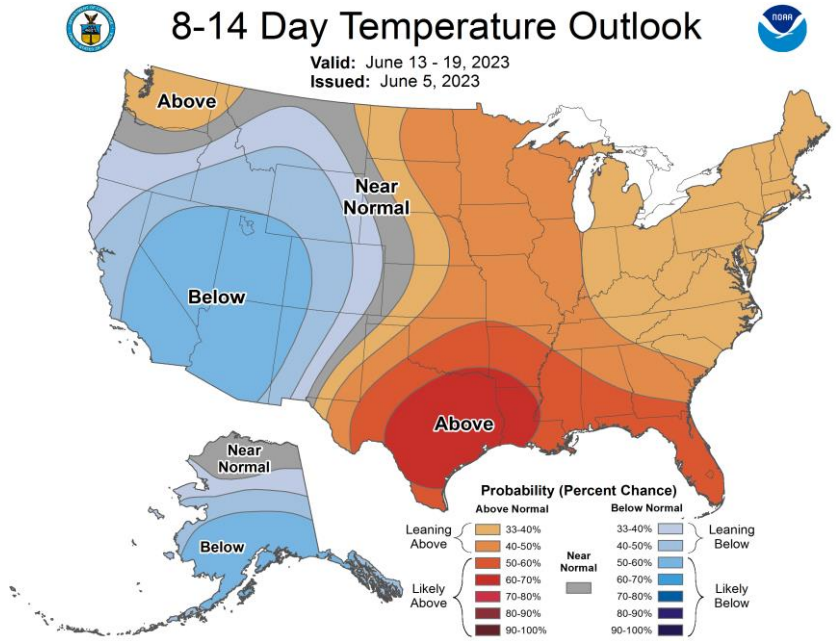


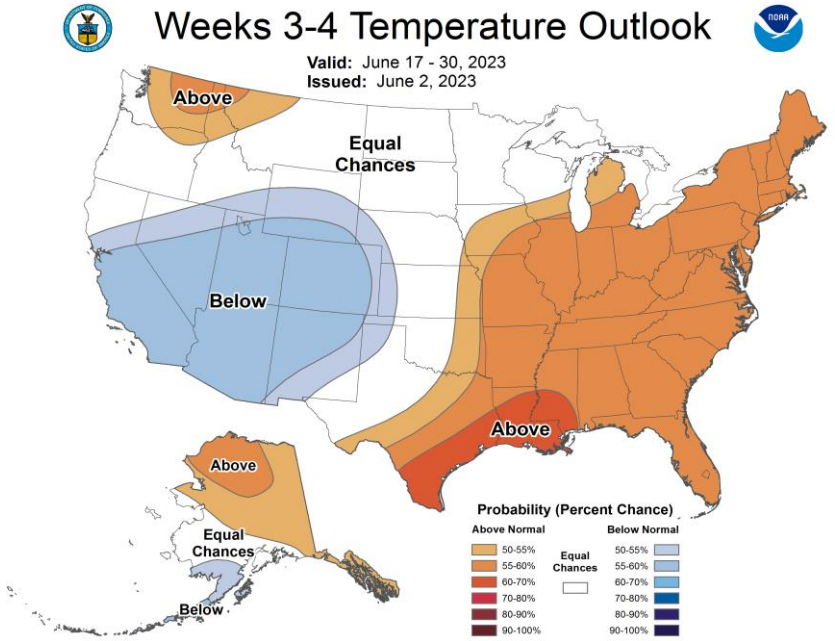
Mean 500-hPa Height Anomaly Forecasts:

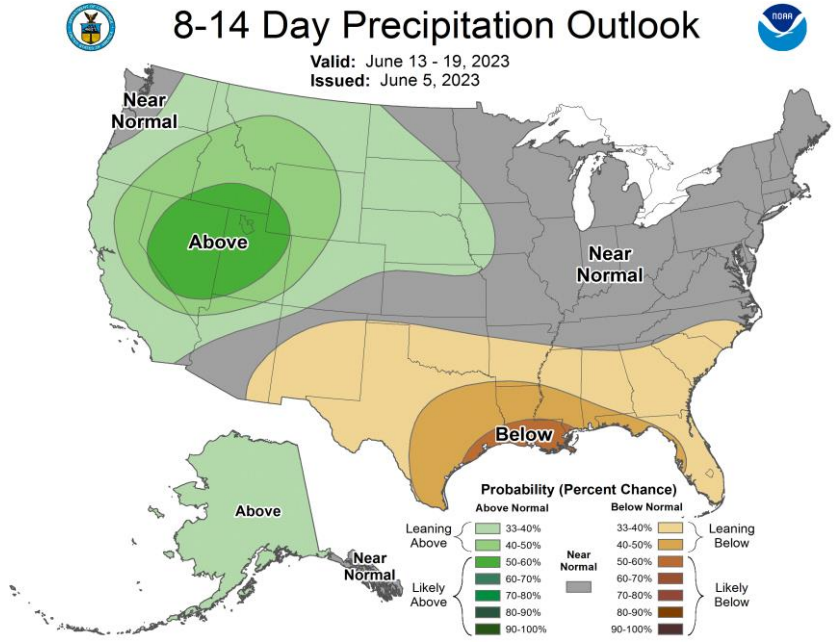


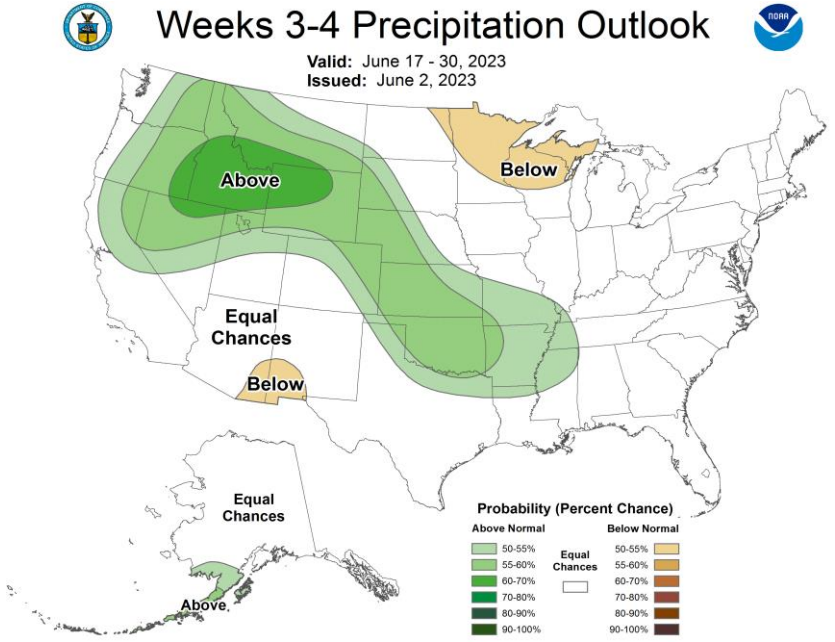


Official Temperature & Precipitation Forecasts:









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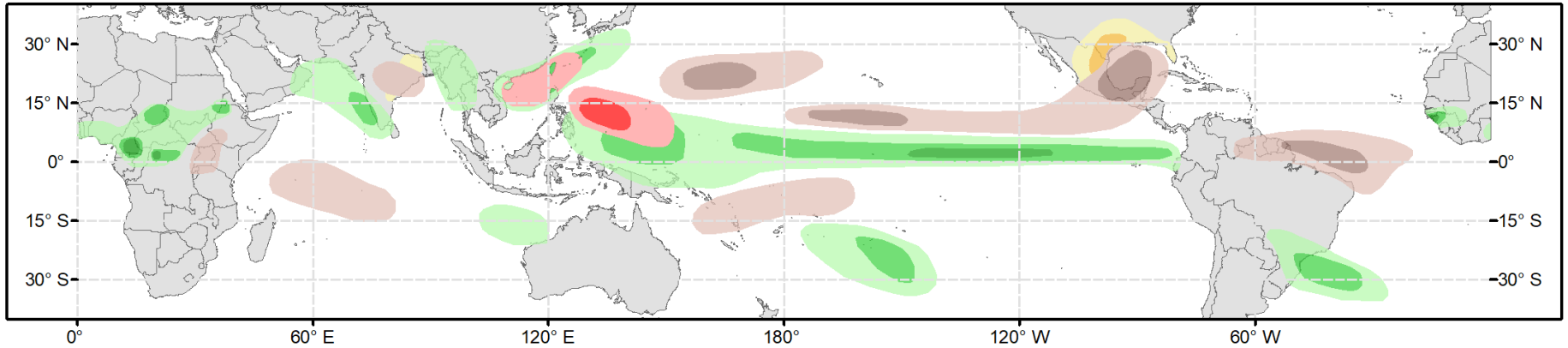

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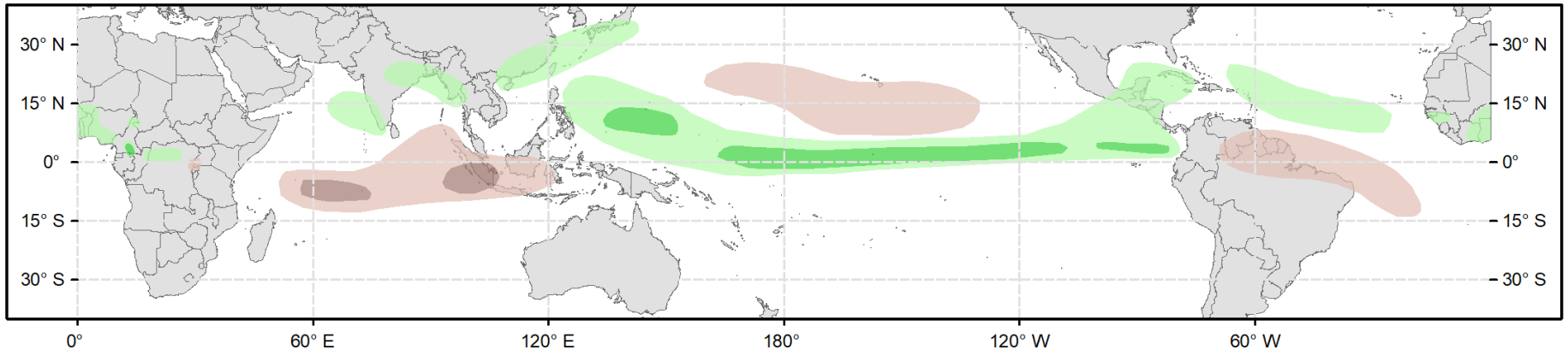

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