



Weeks 2-3 Global Tropics Hazards Outlook

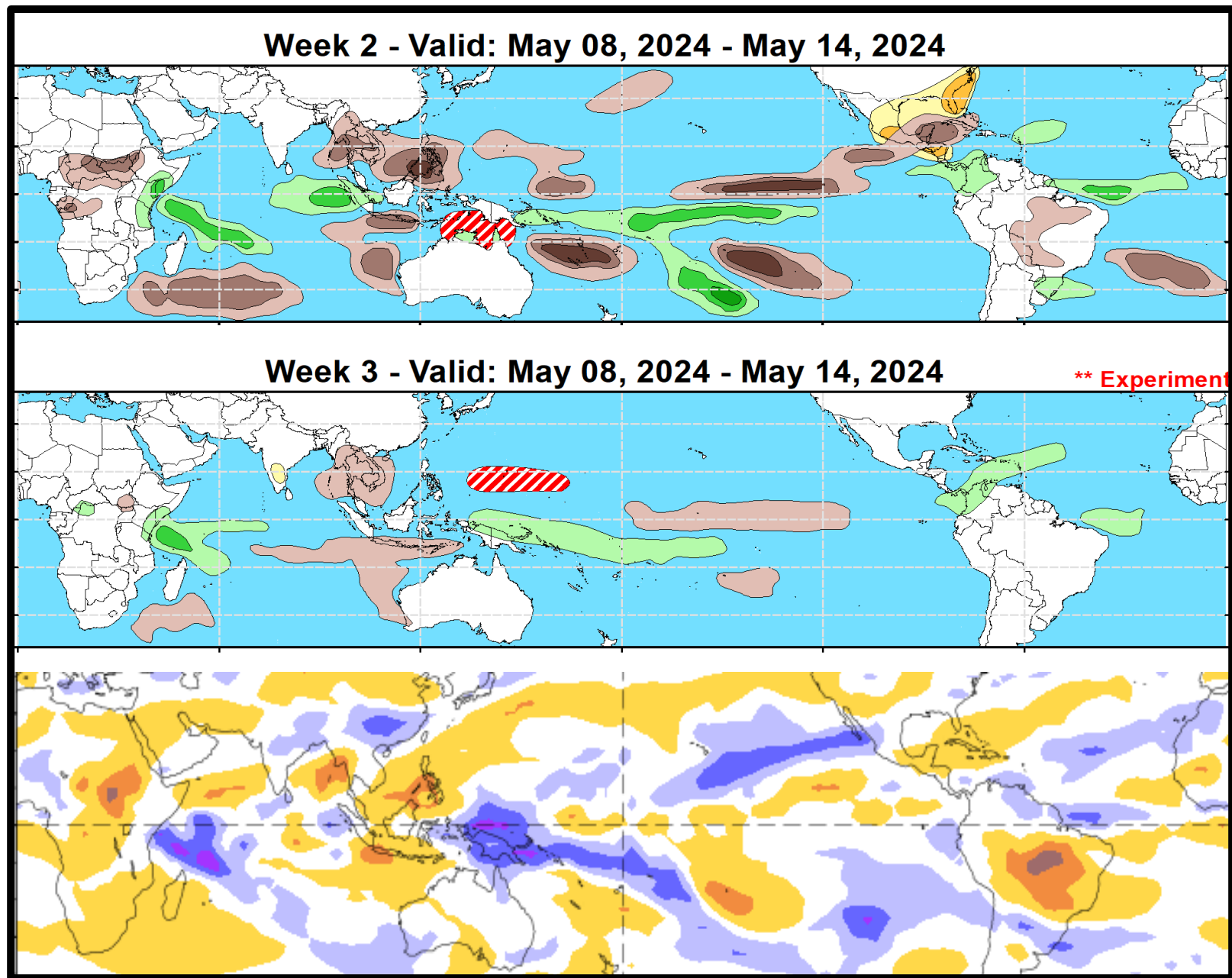
5/14/2024

Nick Novella

NWS / NCEP / Climate Prediction Center

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

- No TCs formed in last week
- Invest 92S



Synopsis of Climate Modes:

ENSO: (May 9, 2024 Update) *next update on Thursday, Jun 13th*

- ENSO Alert System Status: [El Niño Advisory](#) / [La Niña Watch](#)
- A transition from El Niño to ENSO-neutral is likely in the next month. La Niña may develop in June-August (49% chance) for July-September (69% chance)

MJO and other subseasonal tropical variability:

- The MJO became increasingly disorganized during the past week, with other modes of tropical variability playing more of a role throughout the global tropics.
- There is growing support in the dynamical models for renewed MJO activity over the Indian Ocean, with the enhanced phase propagating eastward across the Maritime Continent through the end of May. There remains questions in regards to other modes of variability superceding the MJO, as well as phase speed.
- The large-scale environment, as well as climatology, favors increased chances for tropical cyclone development in the northern Indian Ocean and western Pacific. Conversely, more unfavorable conditions are anticipated over the tropical Americas at least through the start of June.

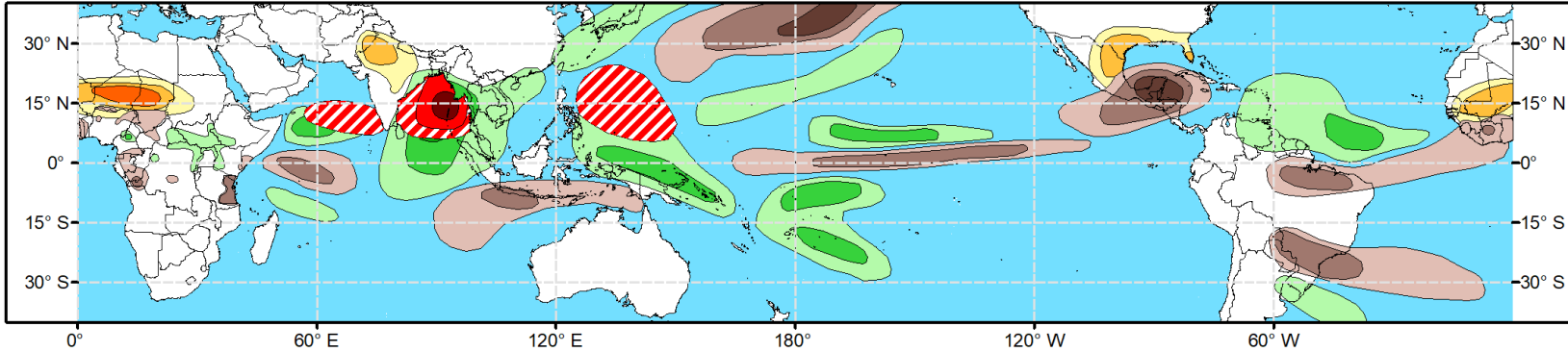
GTH Outlook:



Global Tropics Hazards Outlook Climate Prediction Center

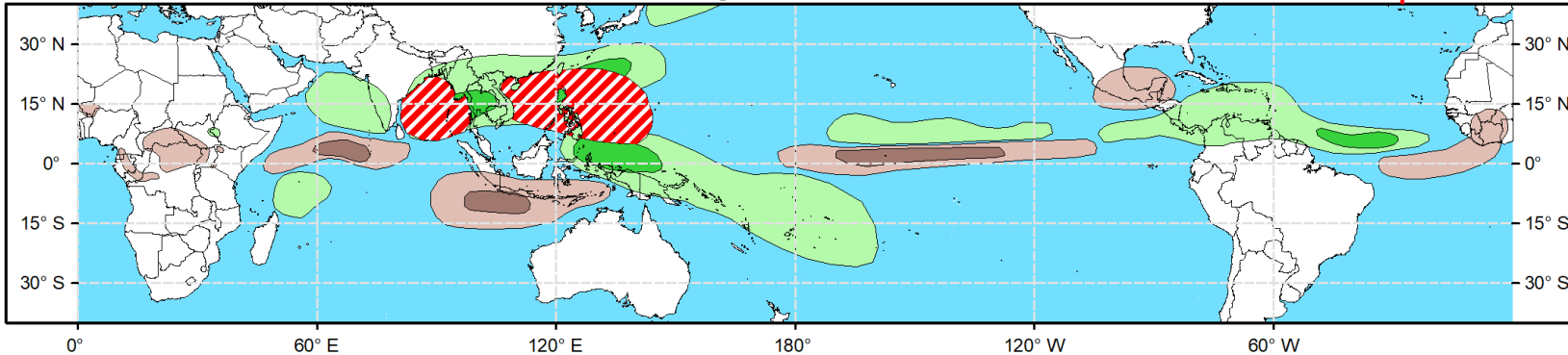


Week 2 - Valid: May 22, 2024 - May 28, 2024

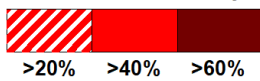


Week 3 - Valid: May 29, 2024 - Jun 04, 2024

**** Experimental ****

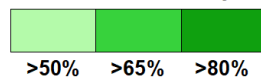


**Tropical Cyclone (TC)
Formation Probability**



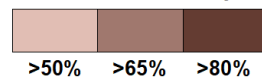
Tropical Depression (TD)
or greater strength

**Above-Average
Rainfall Probability**



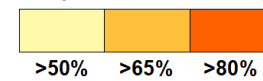
Weekly total rainfall in the
Upper third of the historical range

**Below-Average
Rainfall Probability**



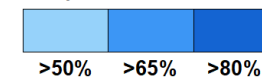
Weekly total rainfall in the
Lower third of the historical range

**Above-Average
Temperatures Probability**



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

**Below-Average
Temperatures Probability**



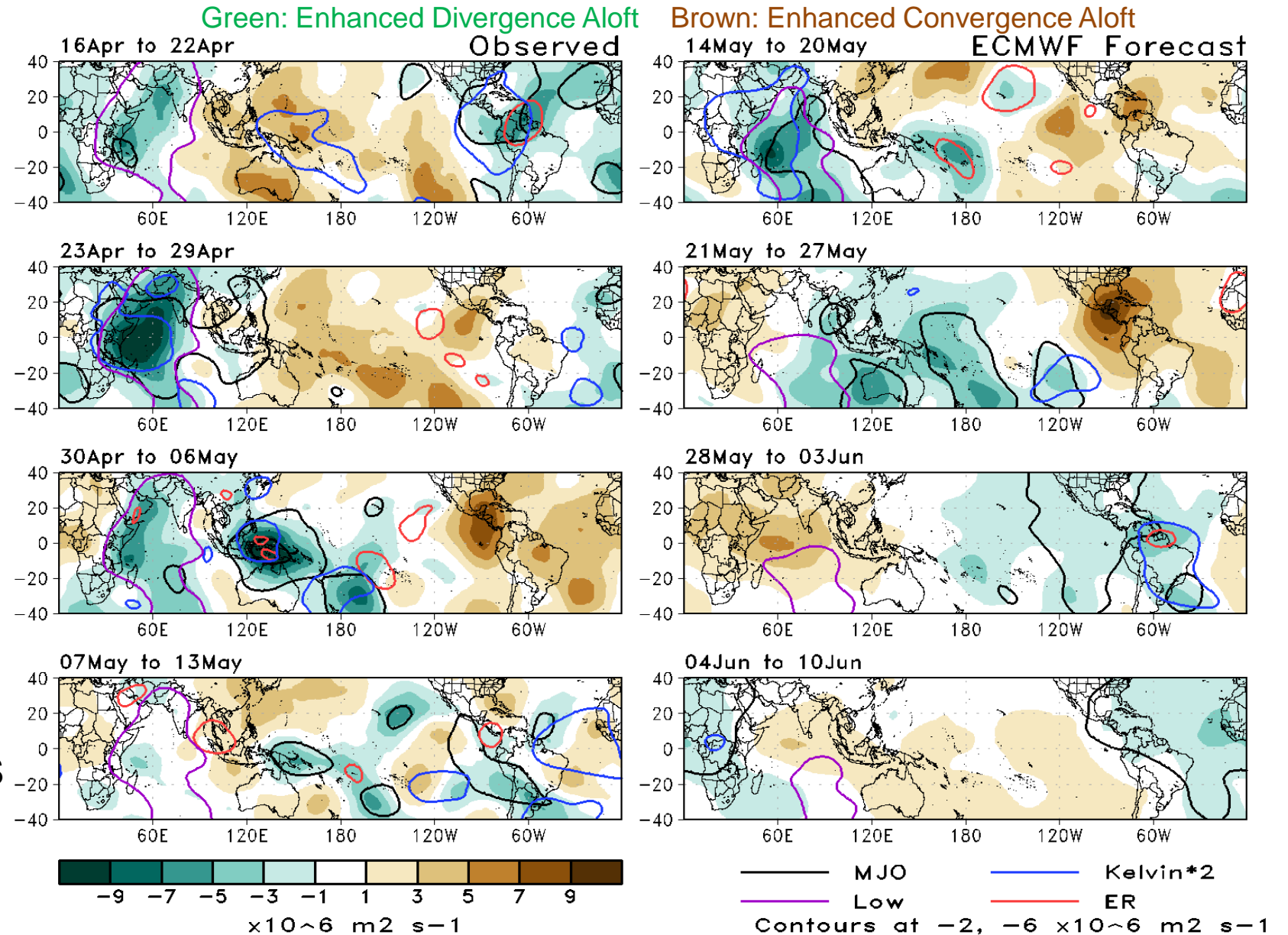
7-day min temperatures in the
Lower third of the historical range

**Issued: 05/14/2024
Forecaster: Novella**

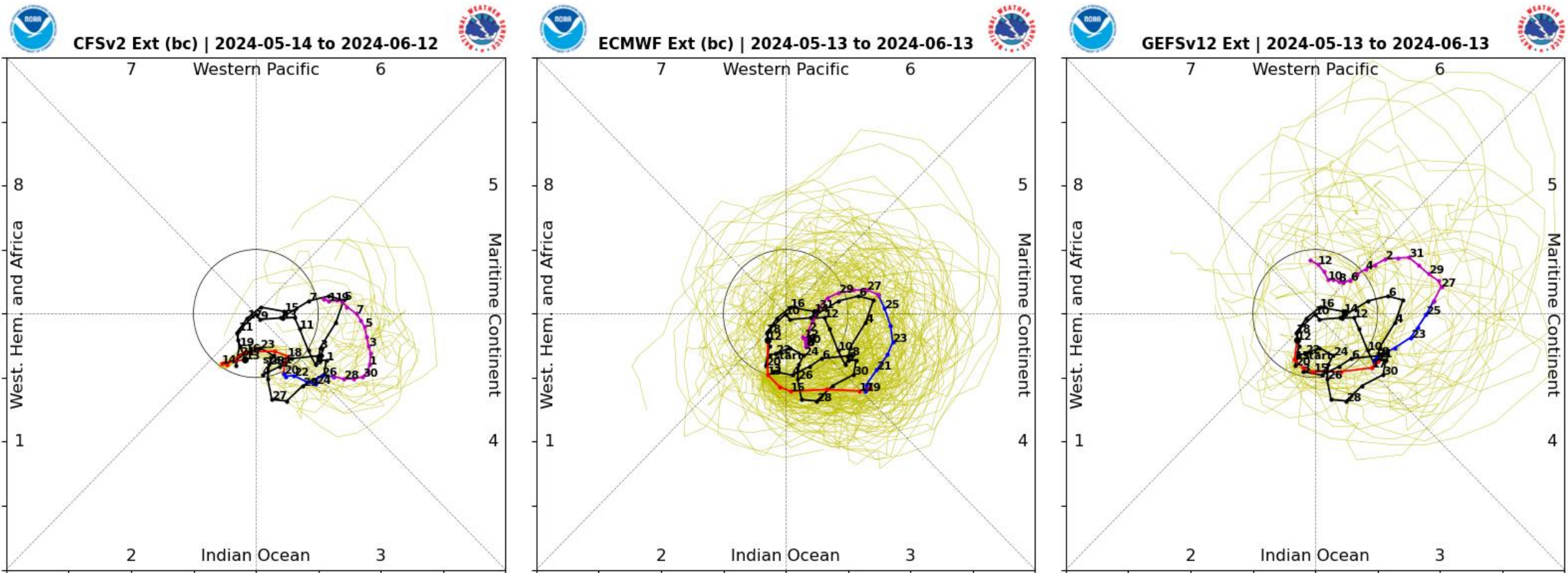
**This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only.
Consult your local responsible forecast agency.**

200-hPa Velocity Potential Anomaly Maps:

- The upper-level pattern became more incoherent, evolving into three centers of enhanced divergence aloft in latest weekly mean.
- As **Kelvin wave** activity crosses the Prime Meridian, it looks to constructively interfere with **Low frequency** variability in the Indian Ocean, with renewed **MJO** activity coming through the filtering.
- Low frequency** signals look to shift eastward, where a wave-1 pattern takes shape through early June. ****NOTE**** The GEFS is considerably slower than the ECWFMF in regards to MJO phase speed.

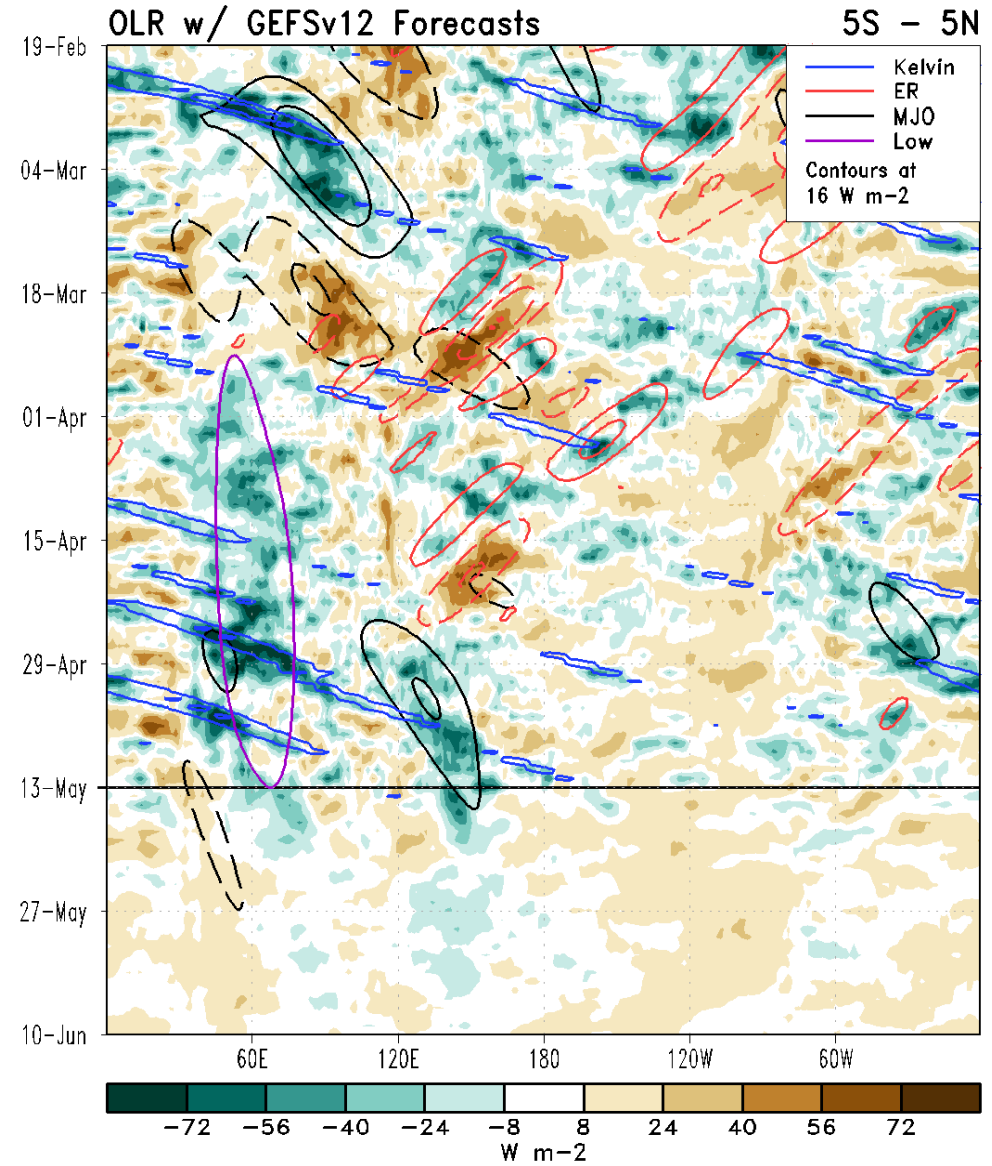
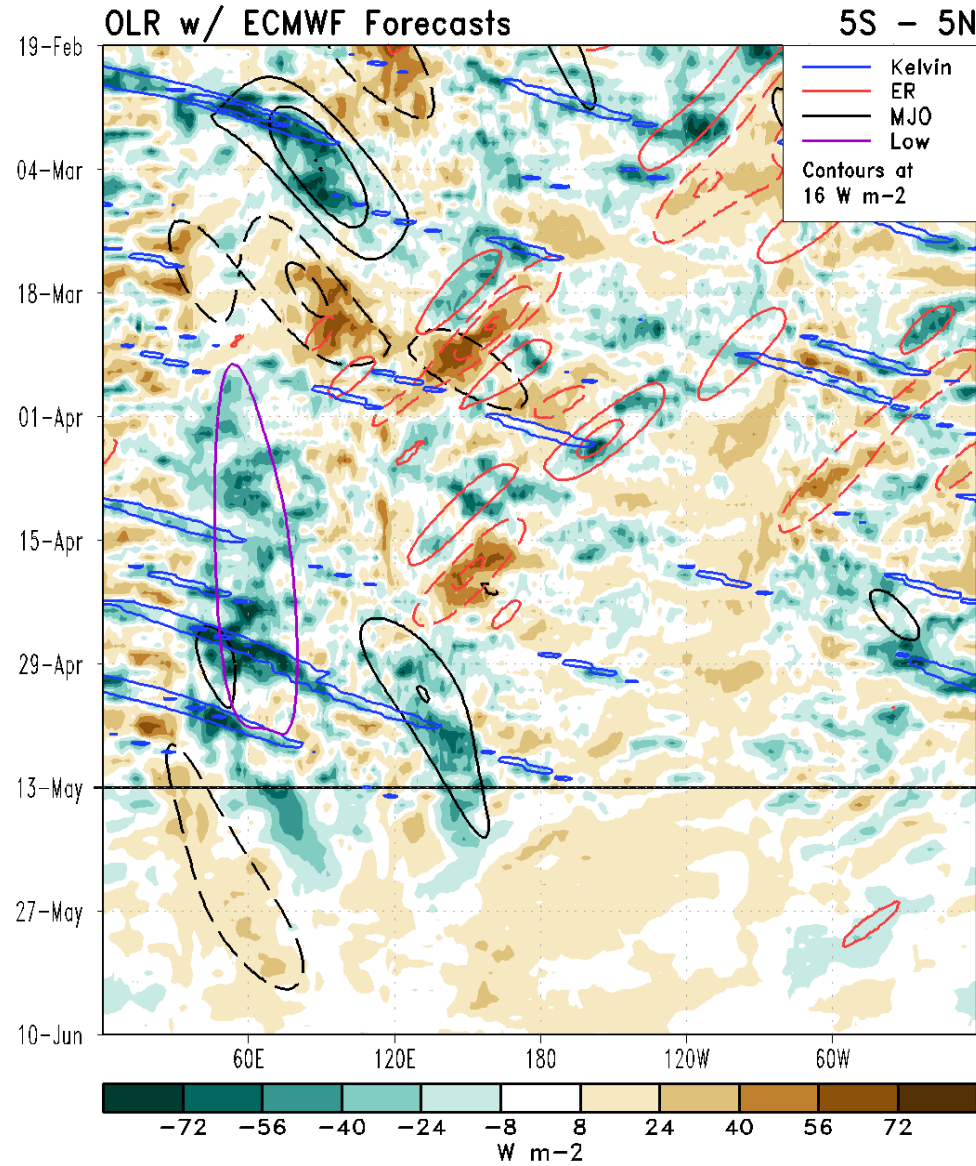


RMM Index Observations & Forecasts:



- While ensembles averages are generally low in amplitude, all models feature continued eastward propagation, with many members favoring a higher amplitude event unfolding over the Maritime Continent.
- Caution should be exercised in the interpretation of the RMM forecasts due to shifting background state.

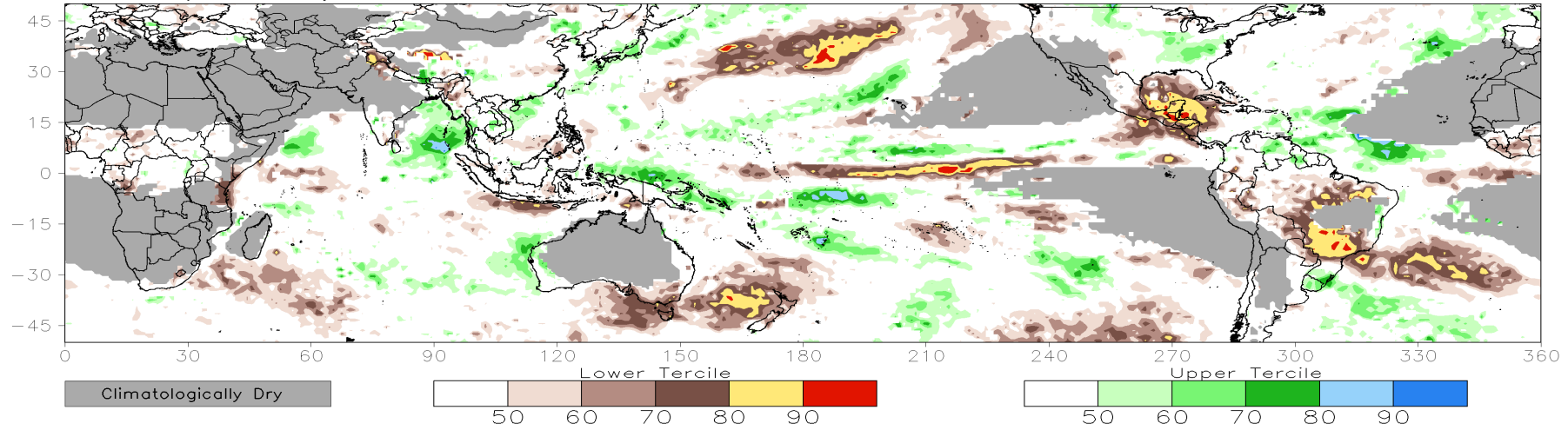
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

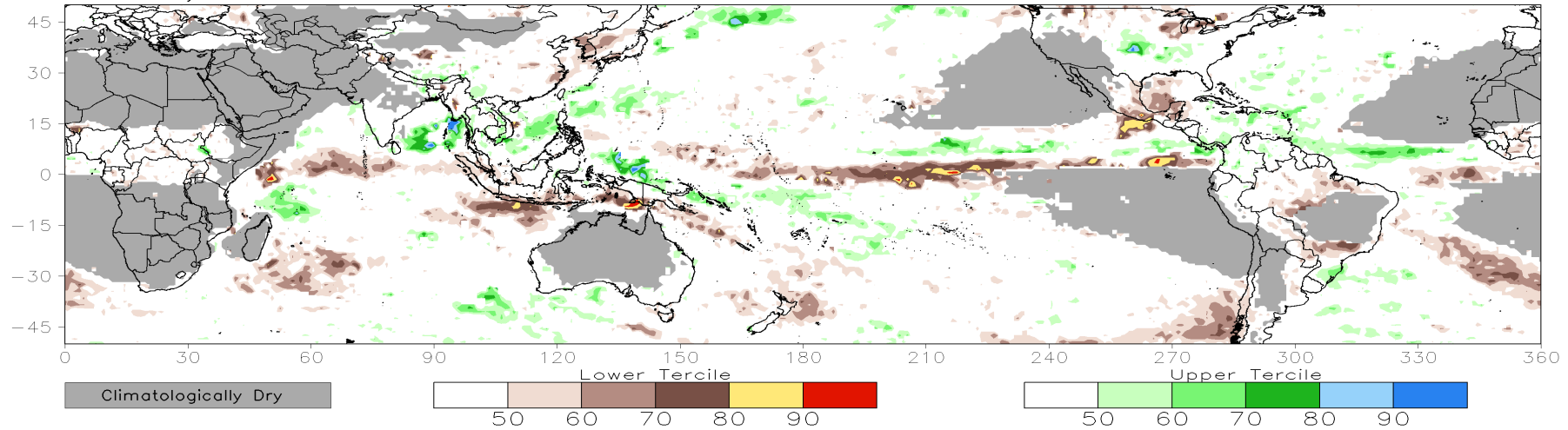
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 22May2024–28May2024



CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

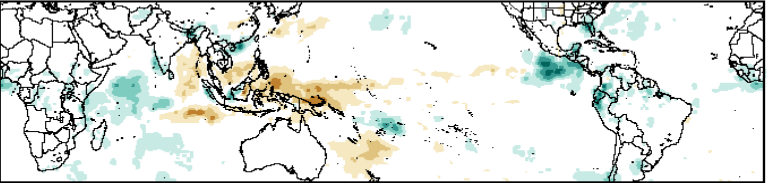
Valid: 29May2024–04Jun2024



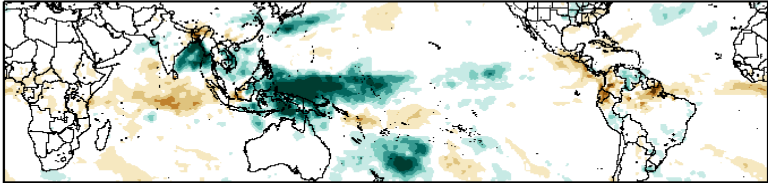
Historical Precipitation Anomalies By MJO Phase:

AMJ MJO Composite: GPCP1DD (mm/day)

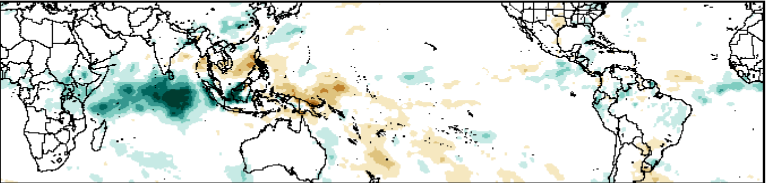
Phase 1



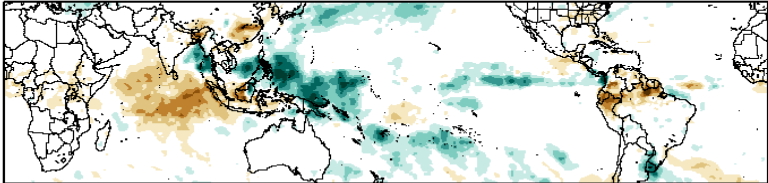
Phase 5



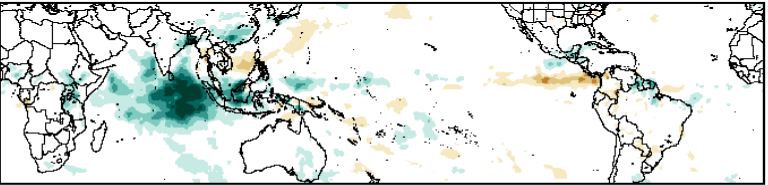
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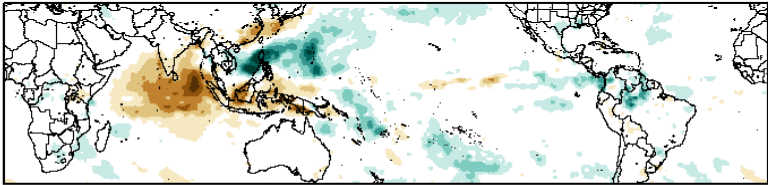
Phase 6



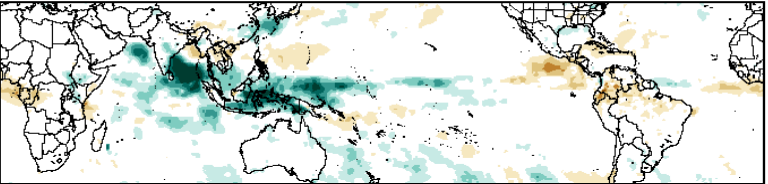
Phase 3



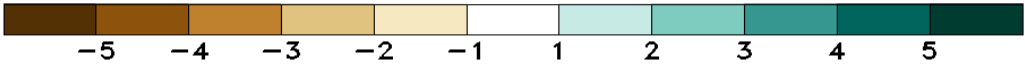
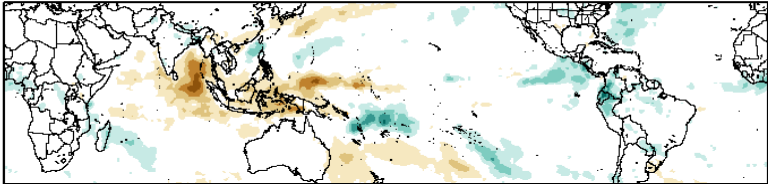
Phase 7



Phase 4

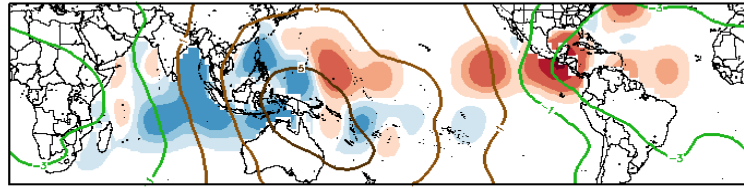


Phase 8

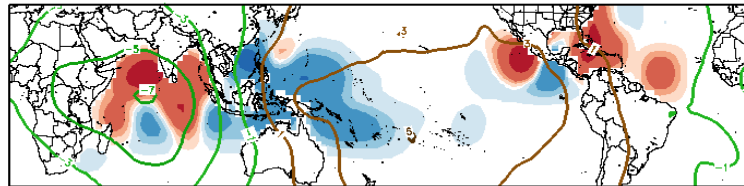


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

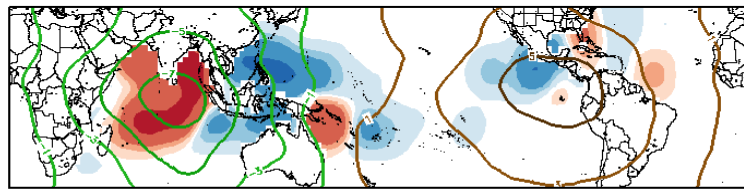
AMJ MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
 w/ AMJ CHI200 ($\times 10^6 m^2 s^{-1}$)



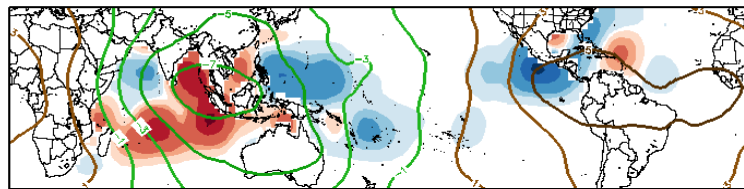
Phase 1



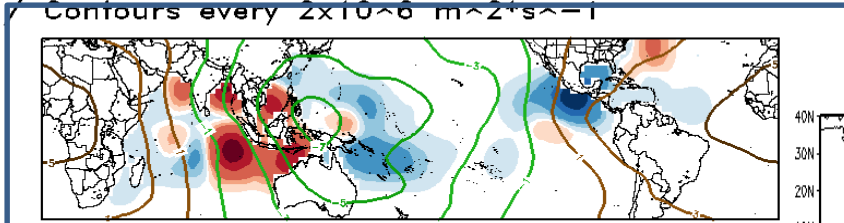
Phase 2



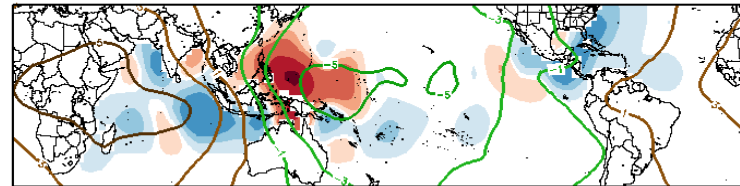
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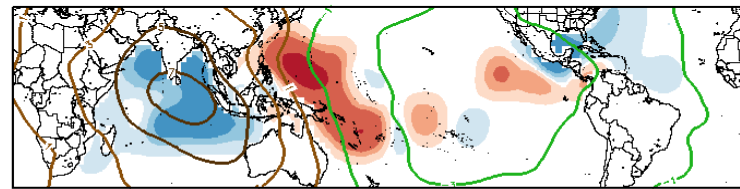
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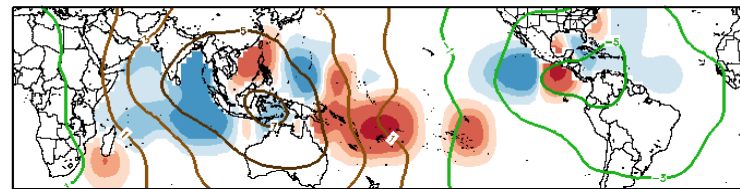
Phase 5



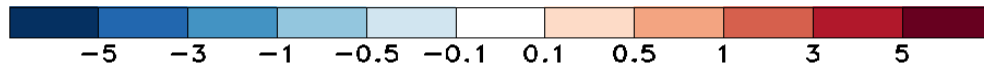
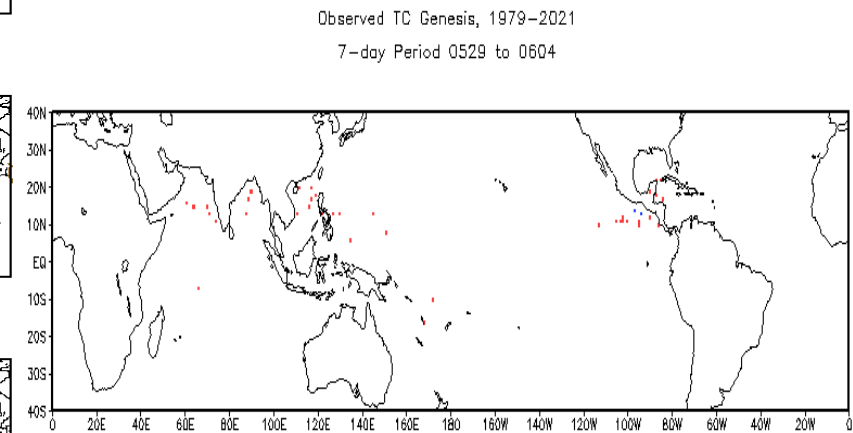
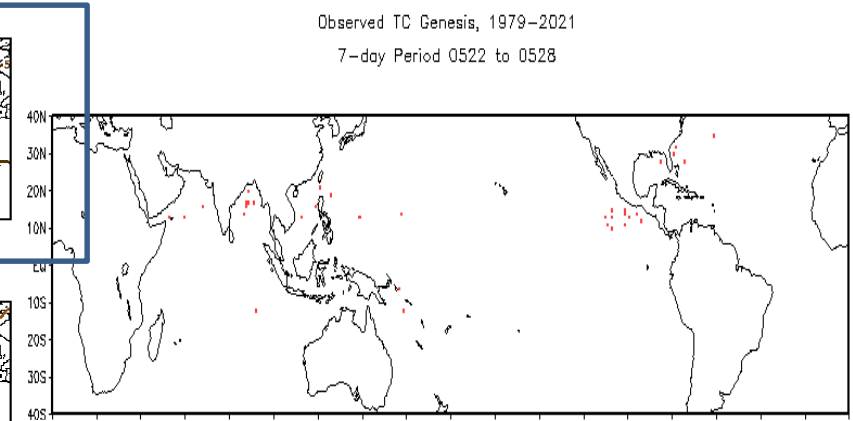
Phase 6



Phase 7



Phase 8

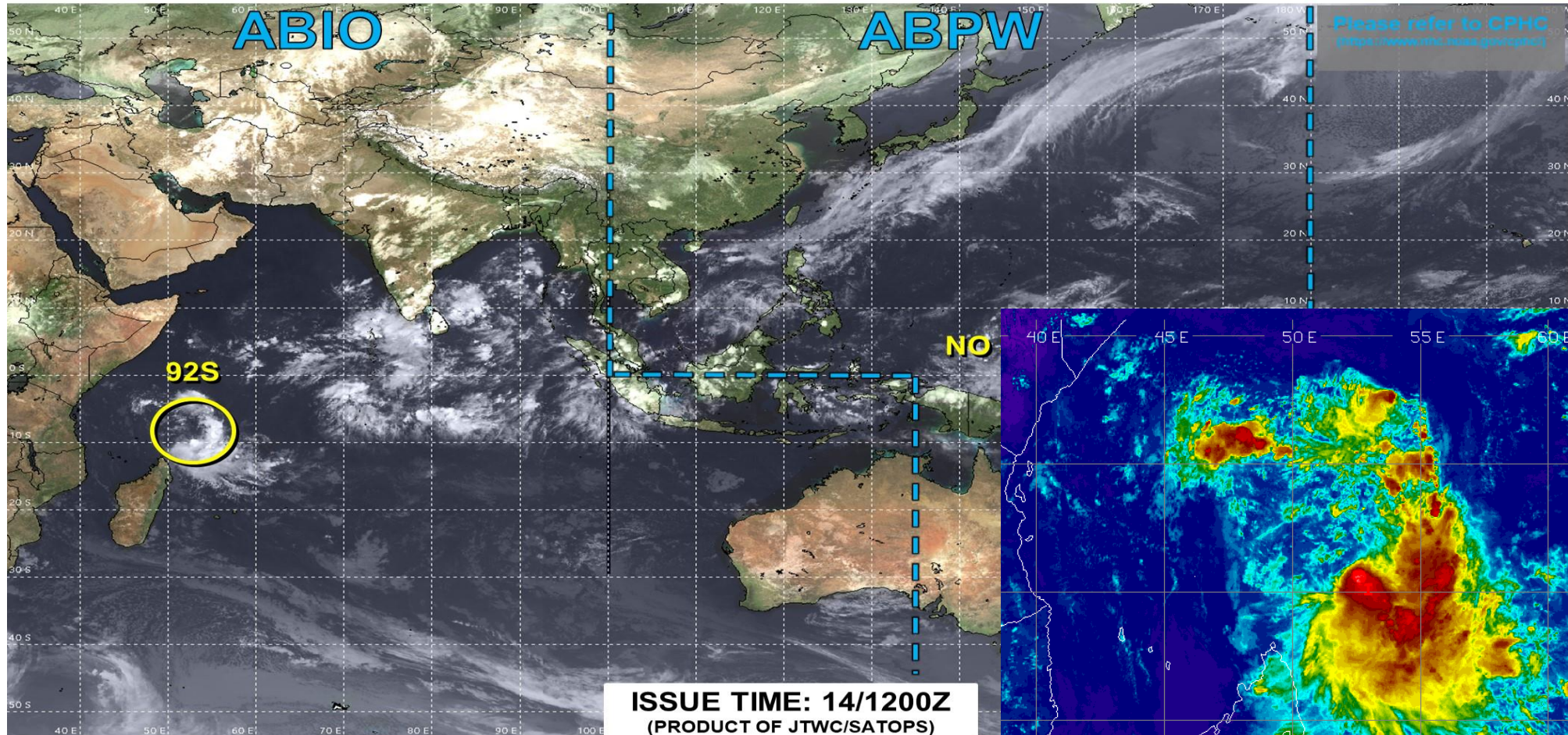


Experimental

Tropical Cyclone Monitoring/Forecast: JTWC



JOINT TYPHOON WARNING CENTER



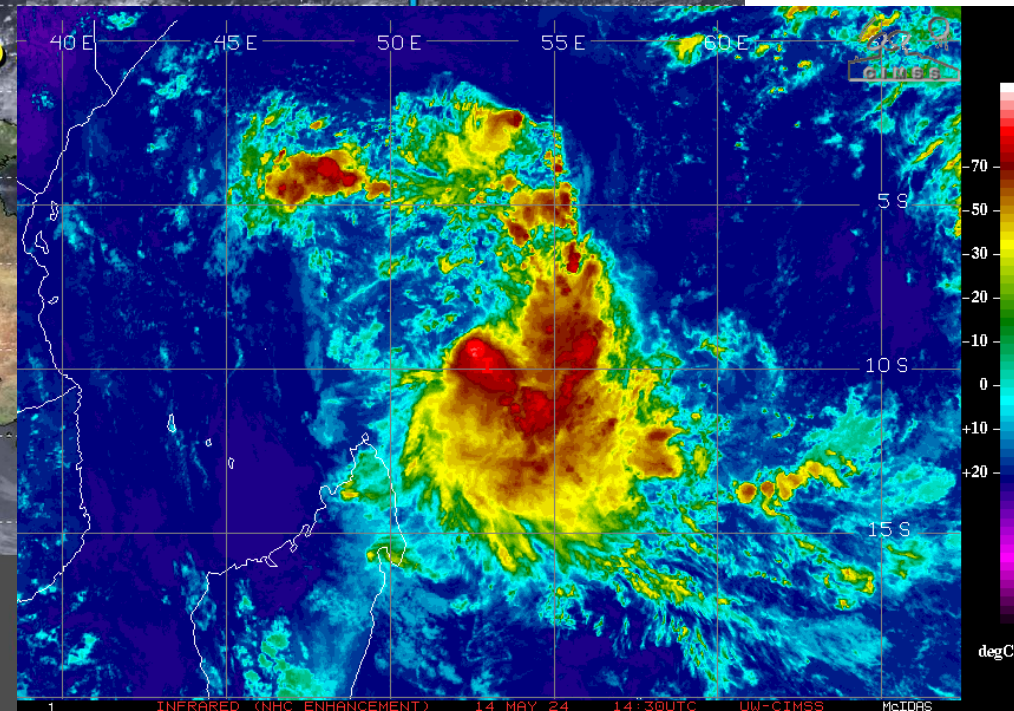
TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours

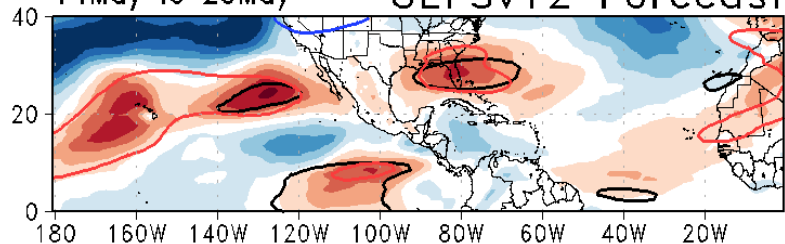


TC development likely within 24 hours (Reference TCFA)

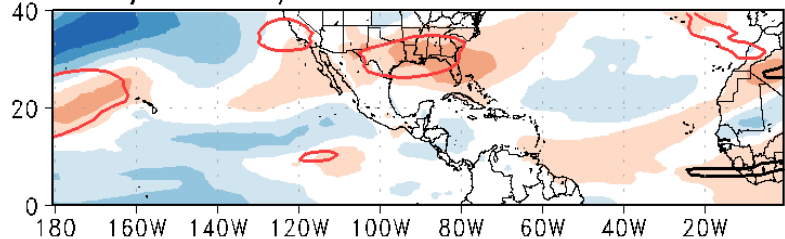


7-Day Means

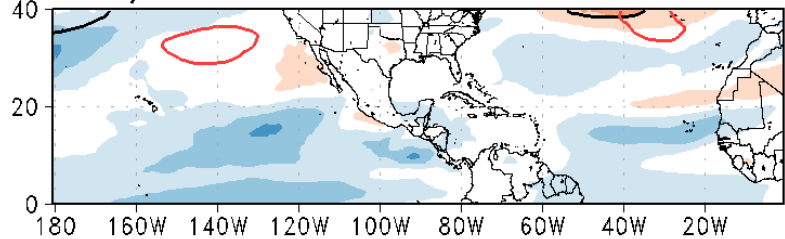
14May to 20May GFSv12 Forecast



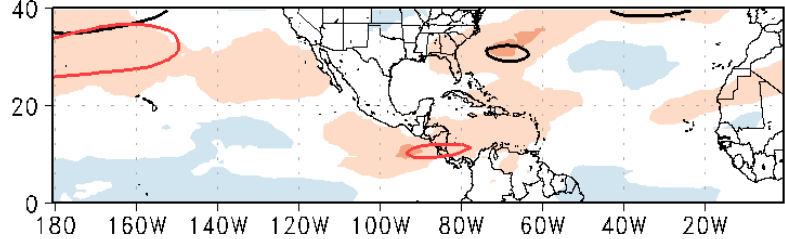
21May to 27May



28May to 03Jun



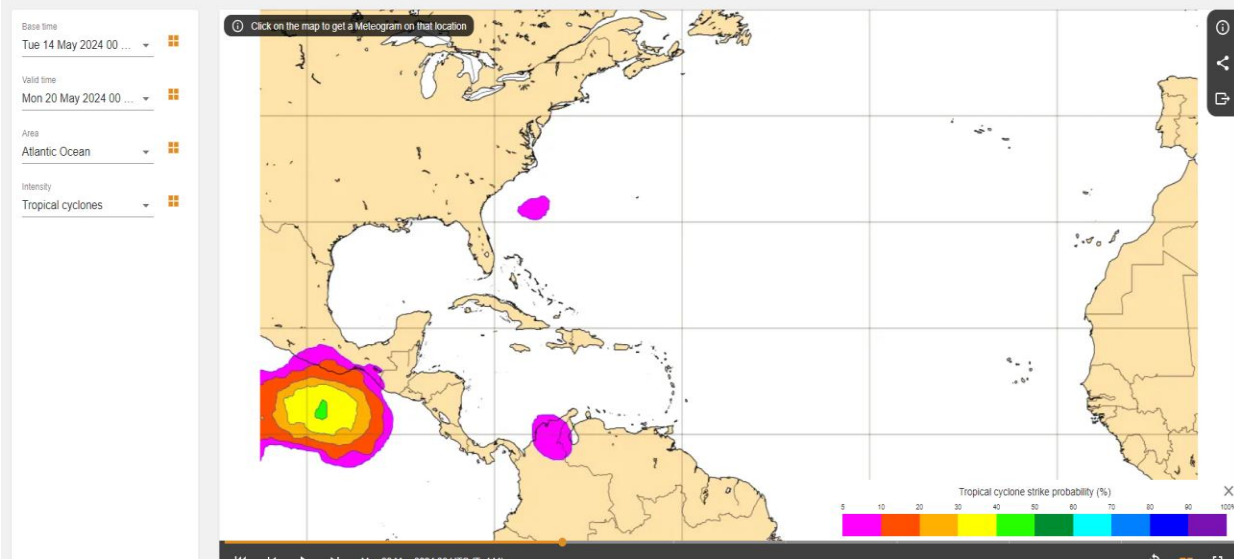
04Jun to 10Jun



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

Tropical cyclone activity (Including genesis)

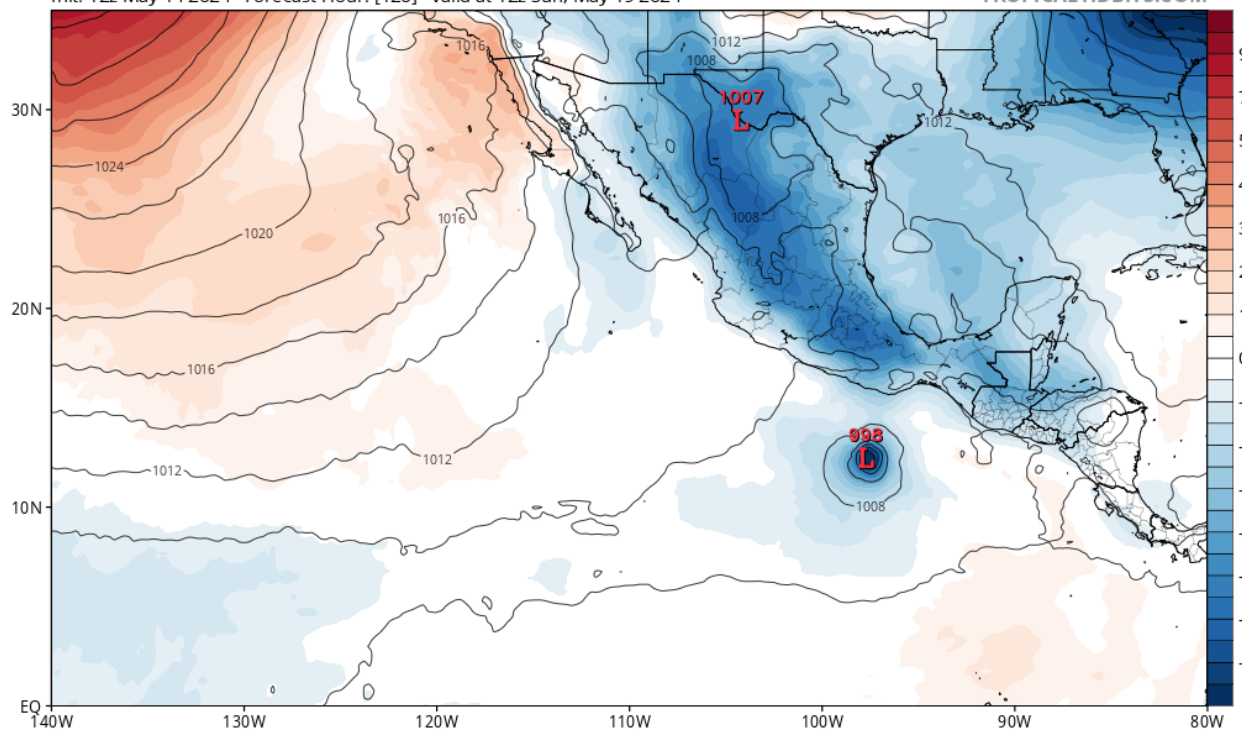
Tropical cyclone activity (including genesis)



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

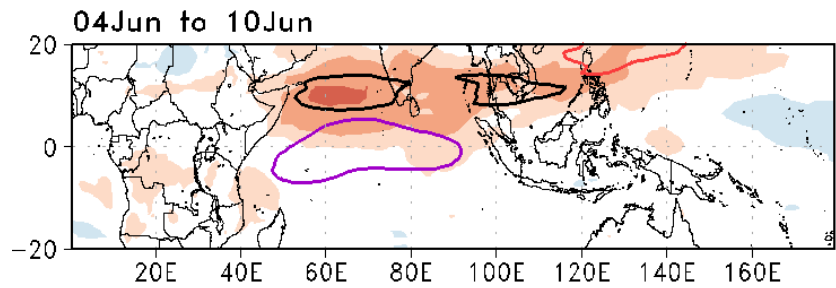
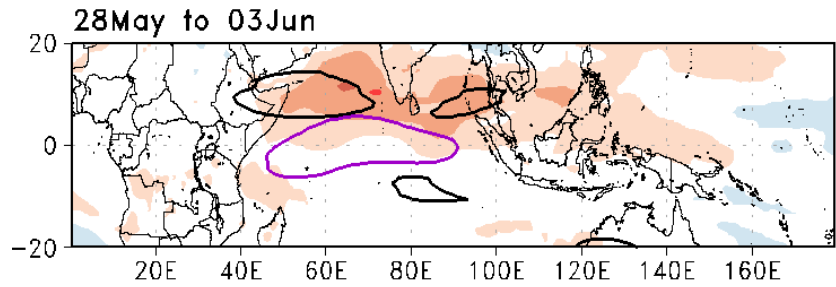
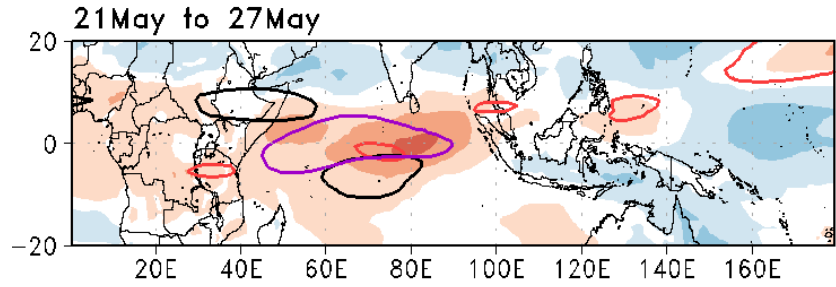
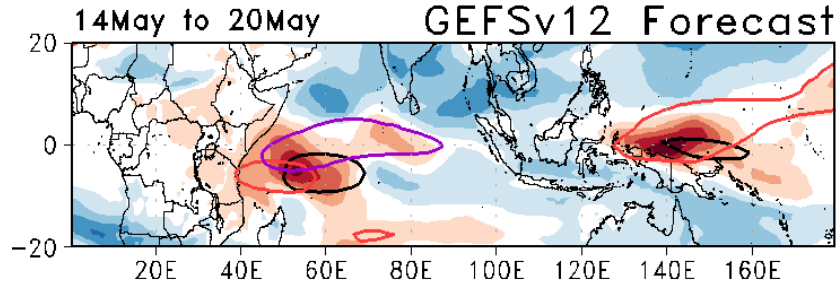
Init: 12z May 14 2024 Forecast Hour: [120] valid at 12z Sun, May 19 2024

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7-Day Means

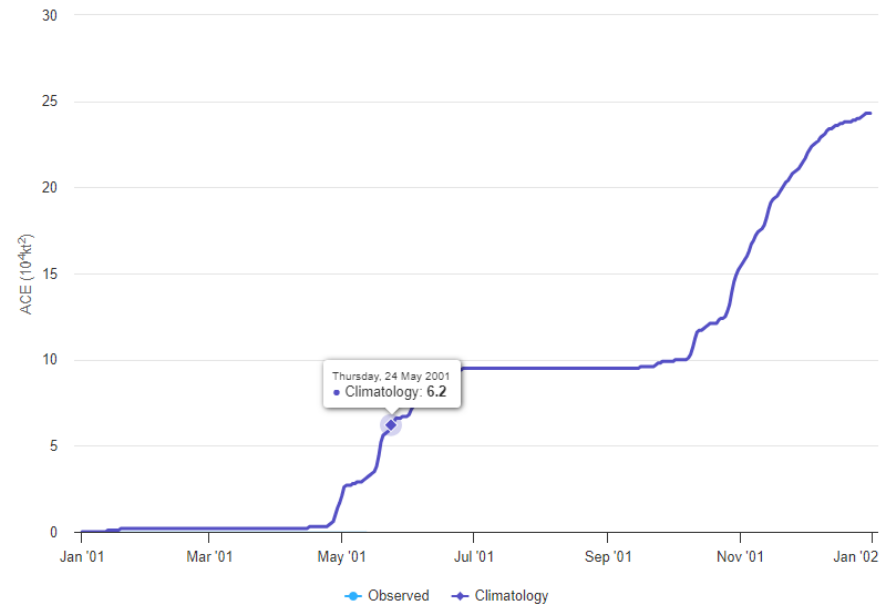
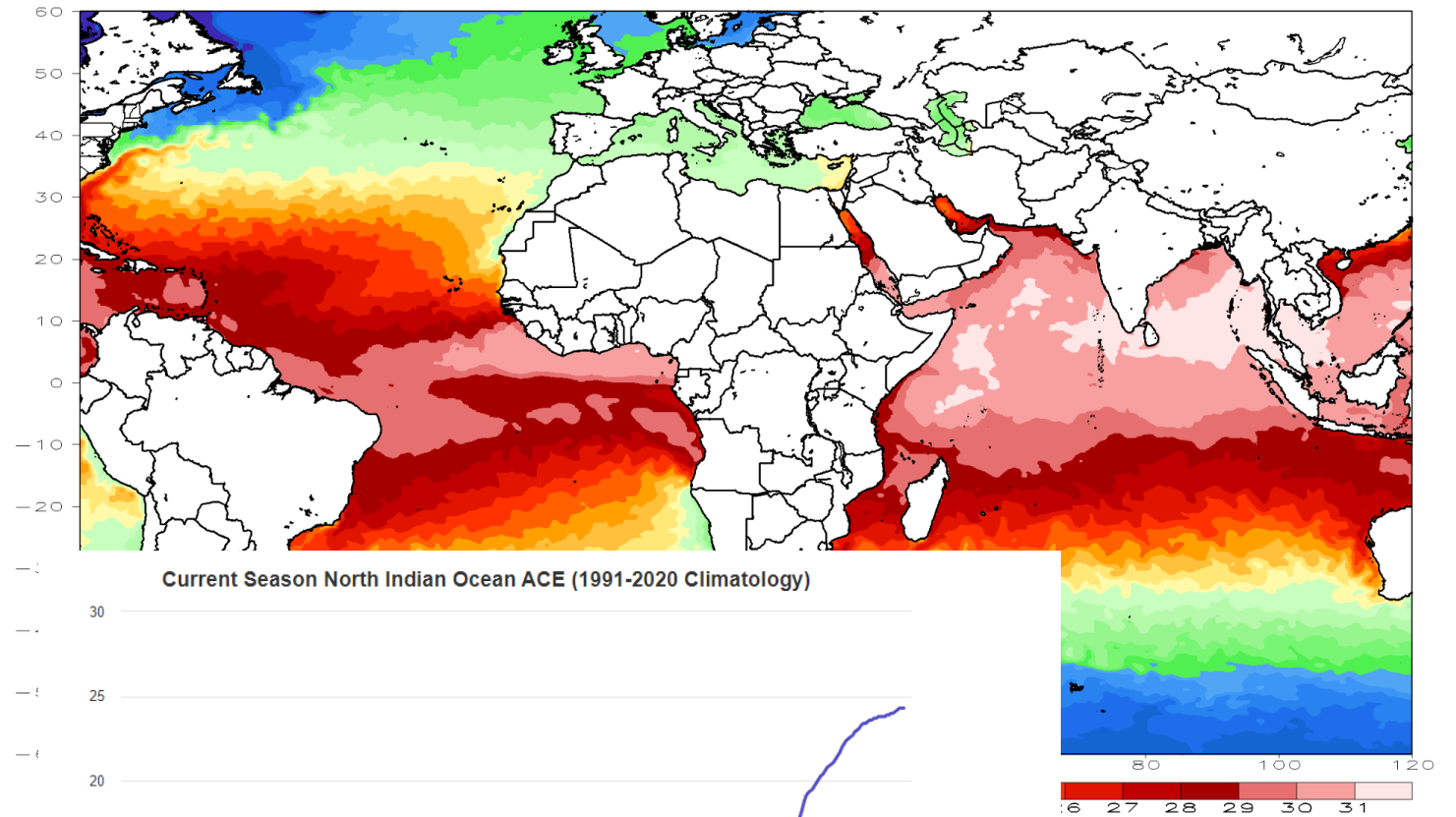
GEFSv12 Forecast



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

OI SST (v2) 7-Day Average (C)

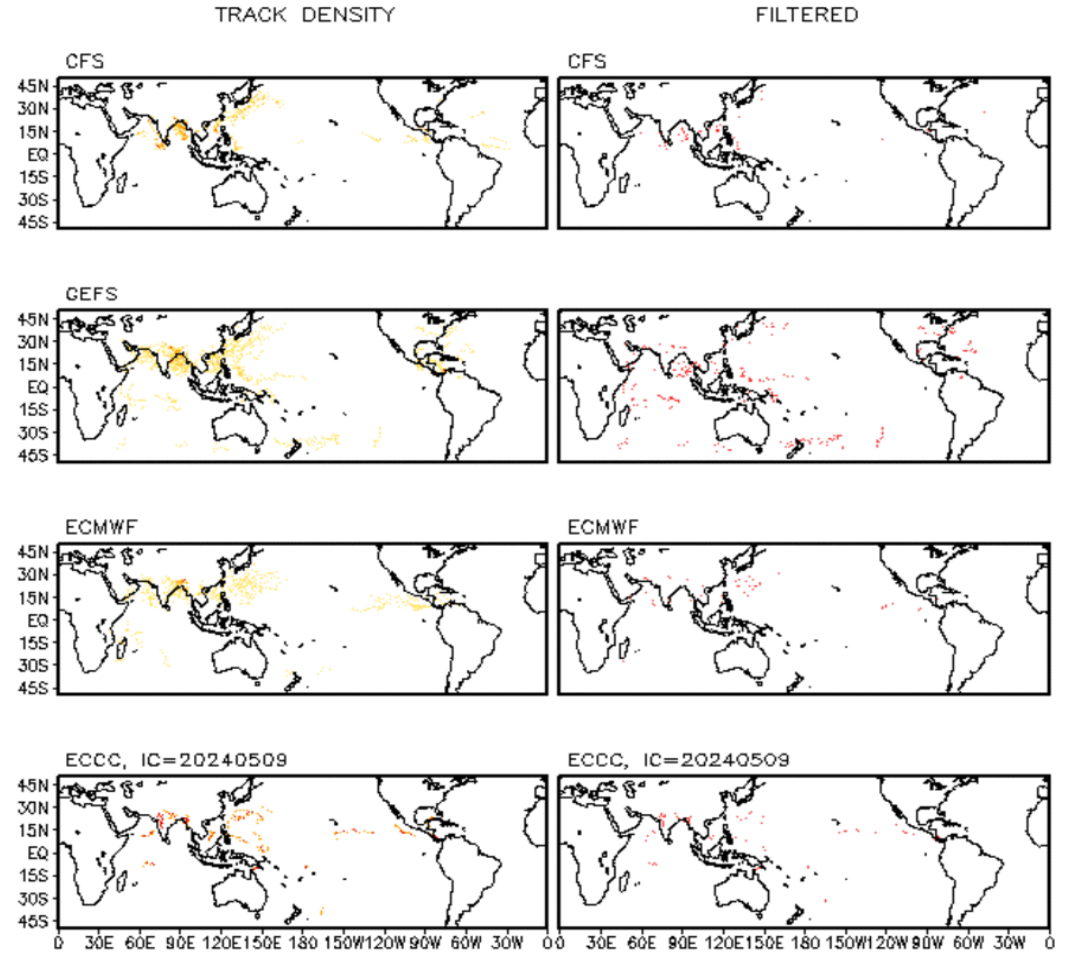
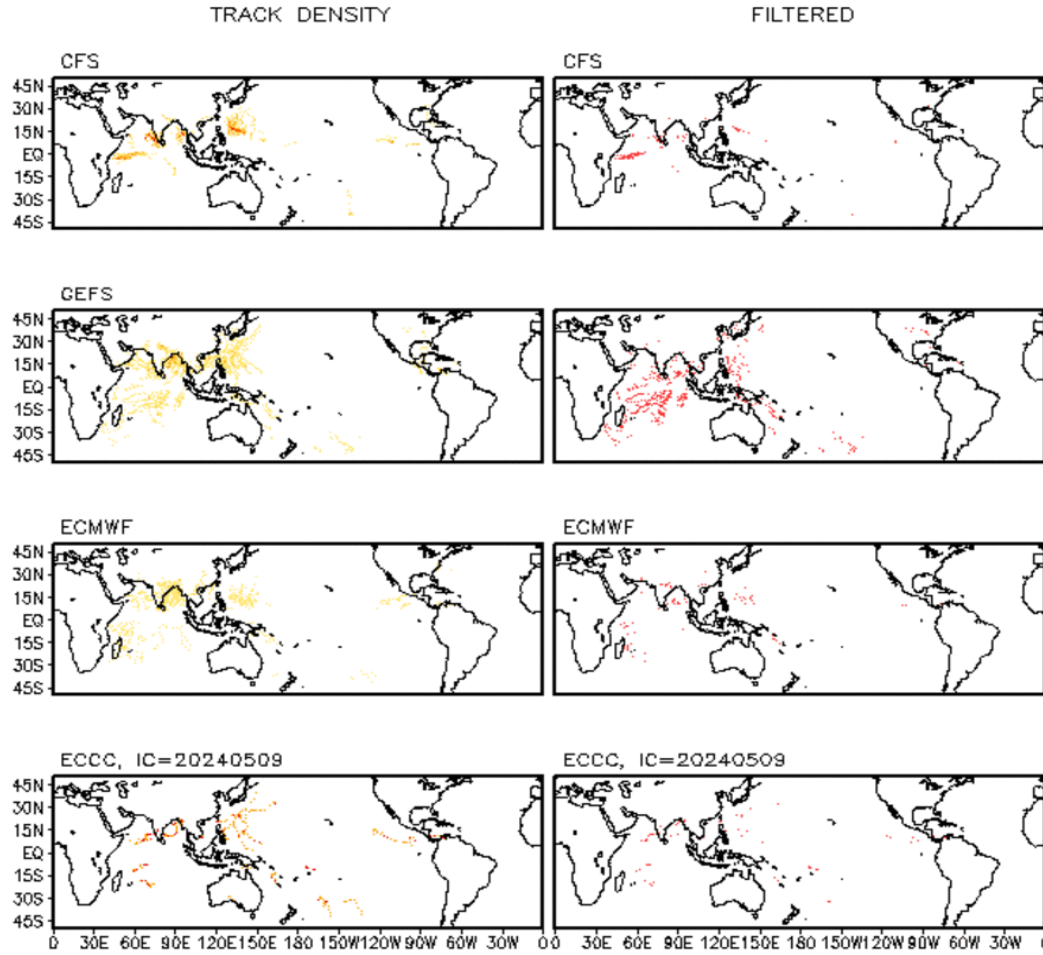
Period: 05May2024 - 11May2024



Multi-Model TC Track Densities: Weeks 2+3

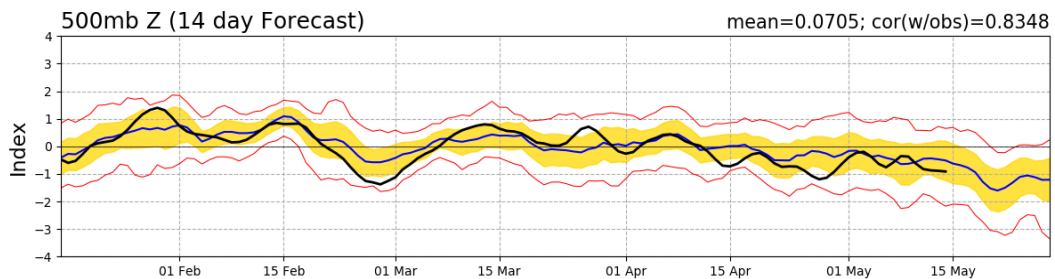
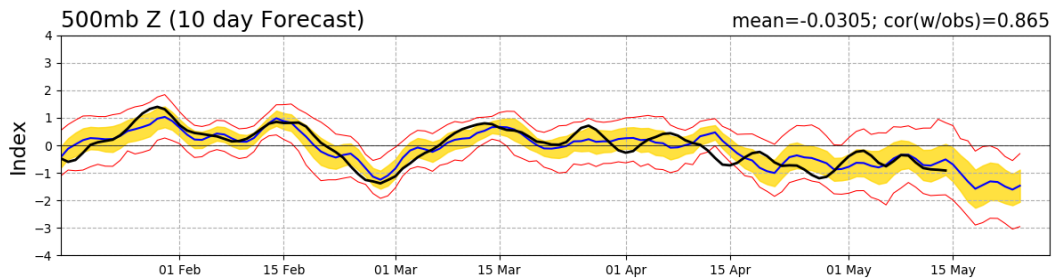
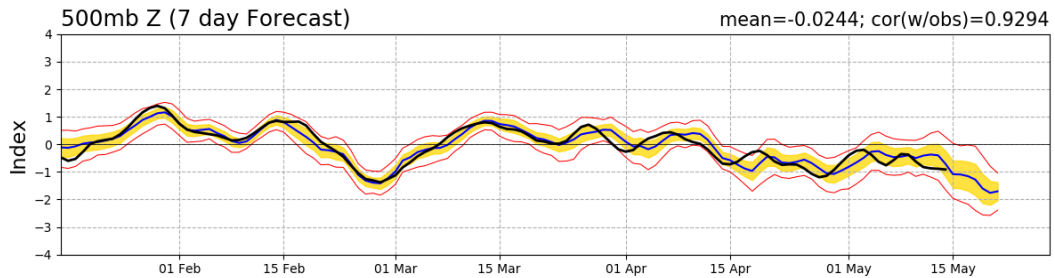
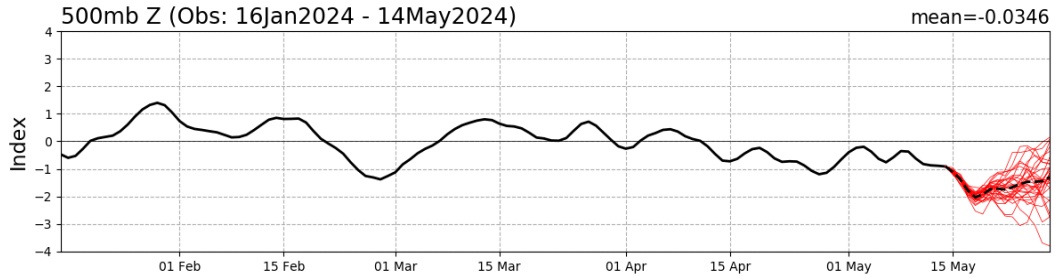
Storm Track Density Distribution, IC=20240513
Week 2 Forecast: 0522-0528

Storm Track Density Distribution, IC=20240513
Week 3 Forecast: 0529-0604

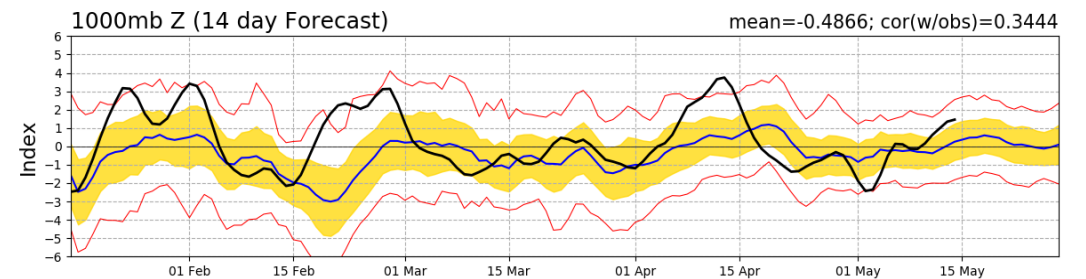
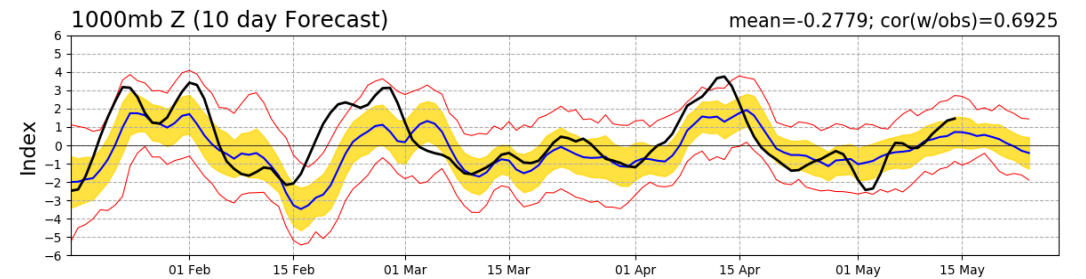
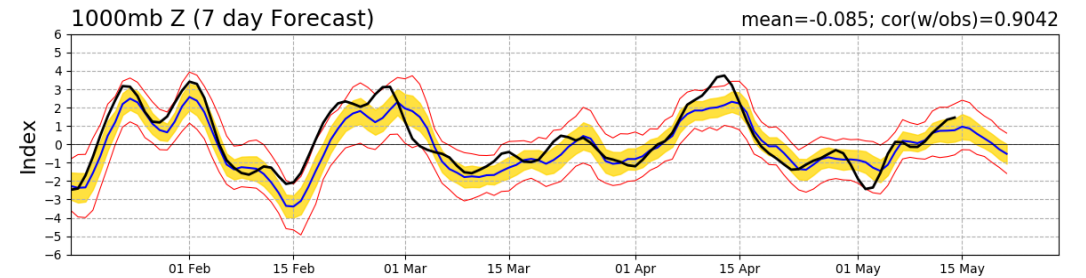
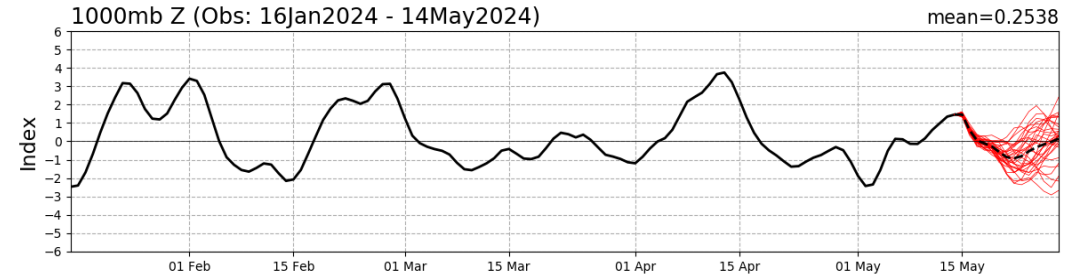


Teleconnection Indices: PNA / AO:

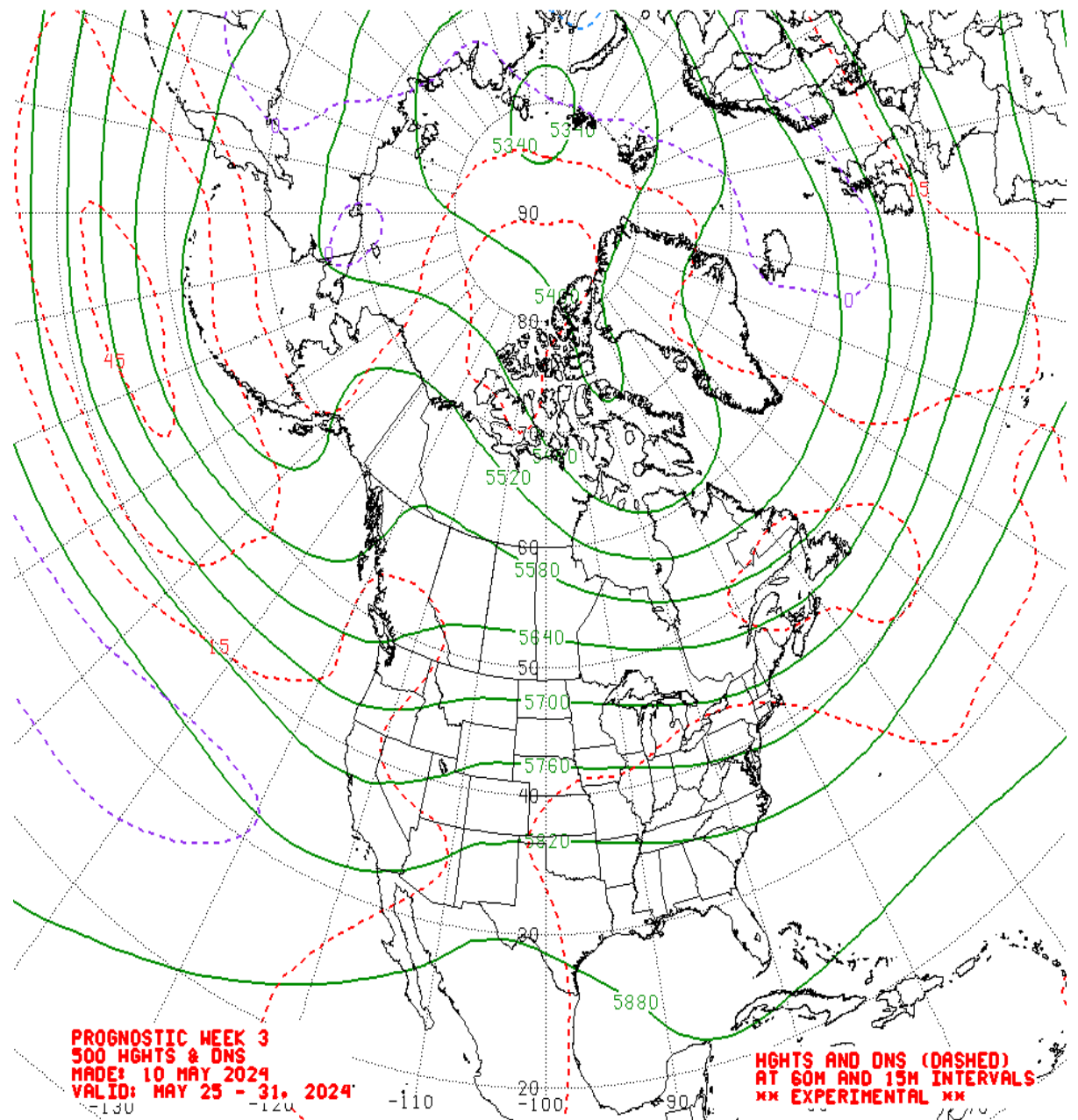
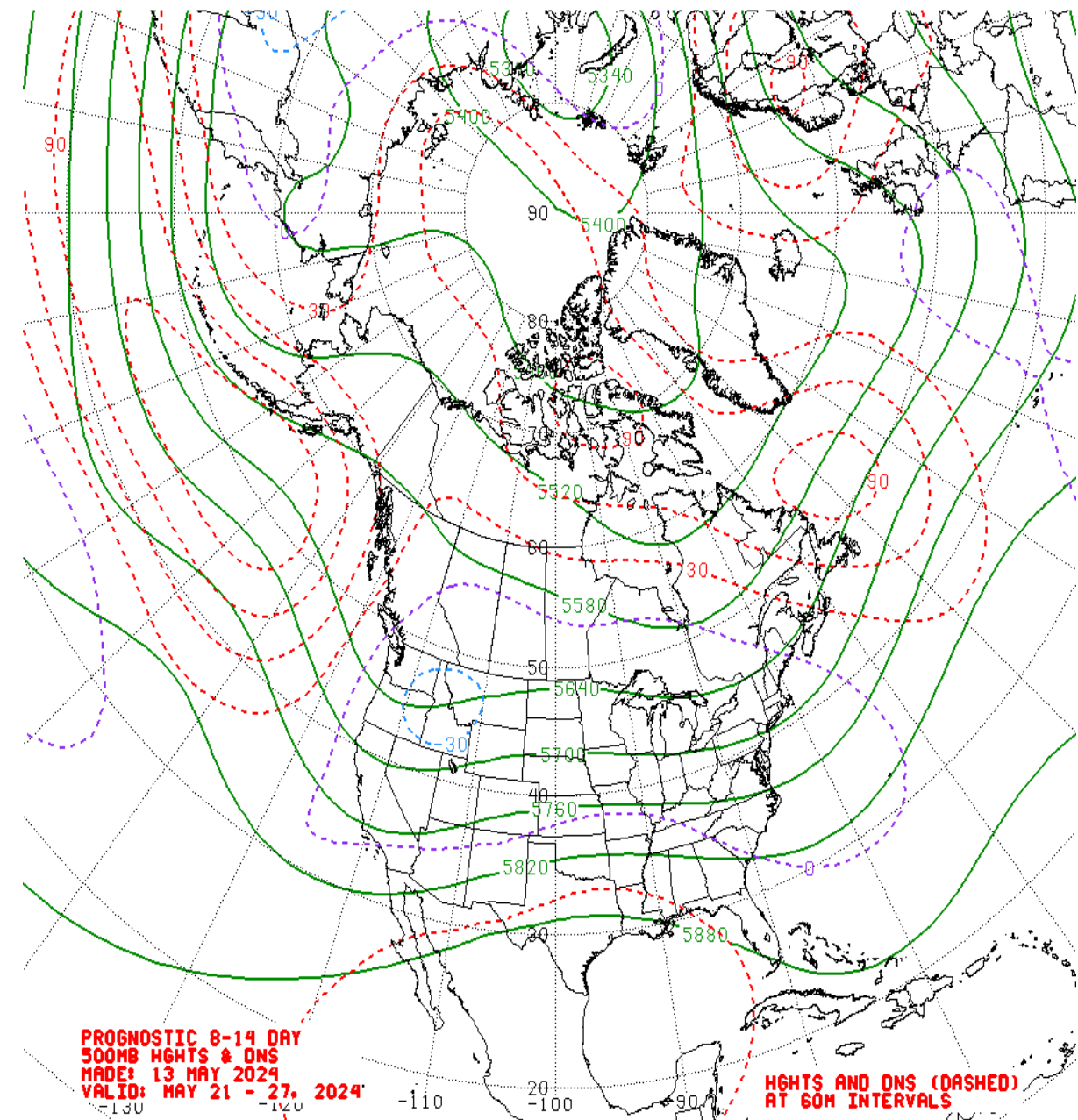
PNA Index: Observed & GEFS Forecasts



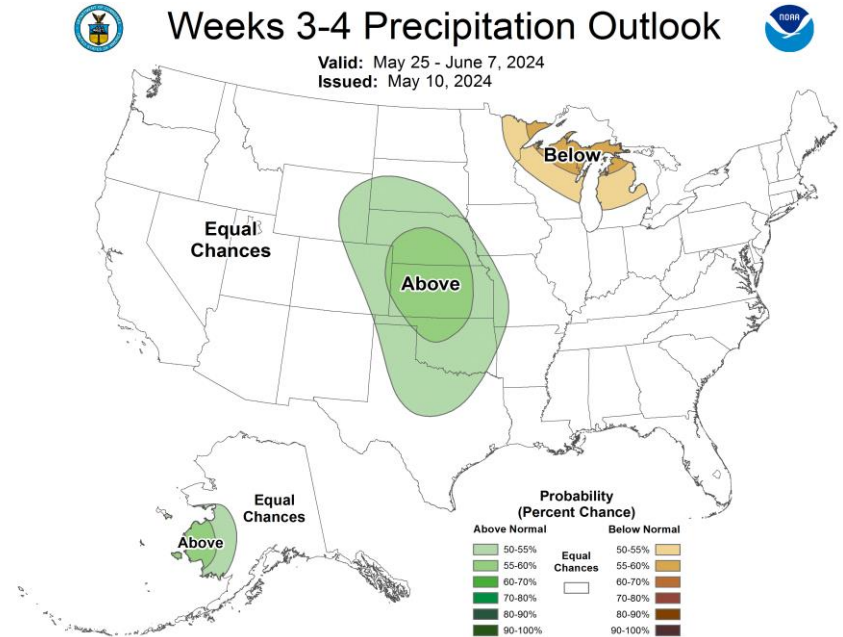
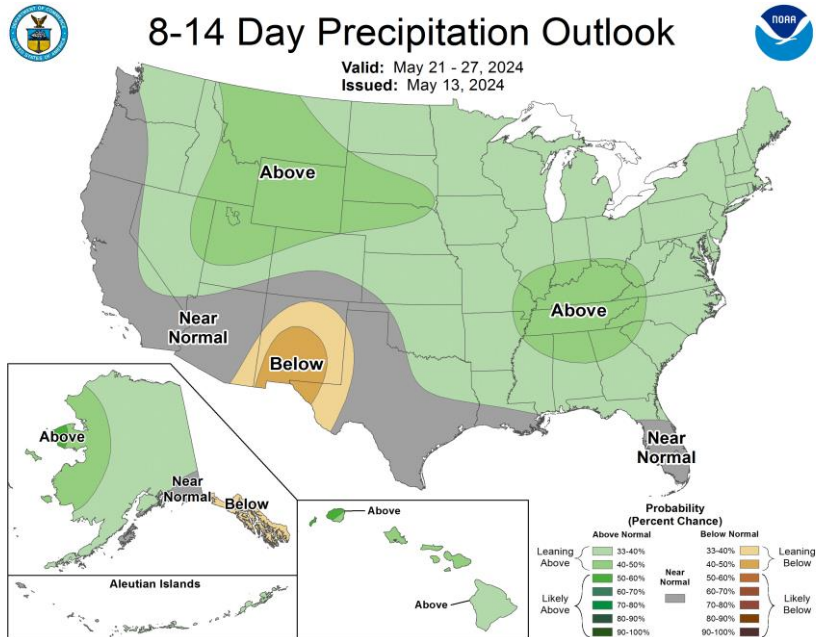
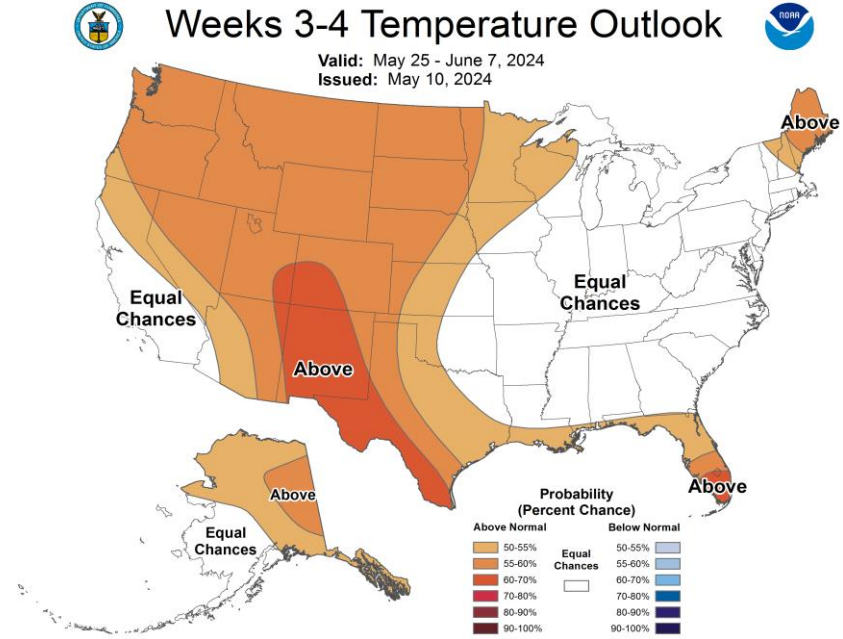
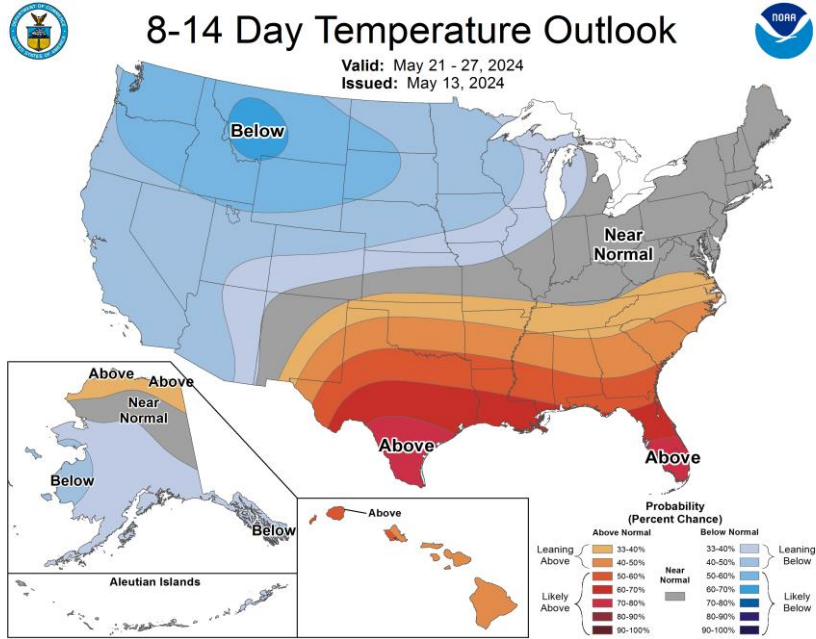
AO Index: Observed & GEFS Forecasts



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



Official Temperature & Precipitation Forecasts:



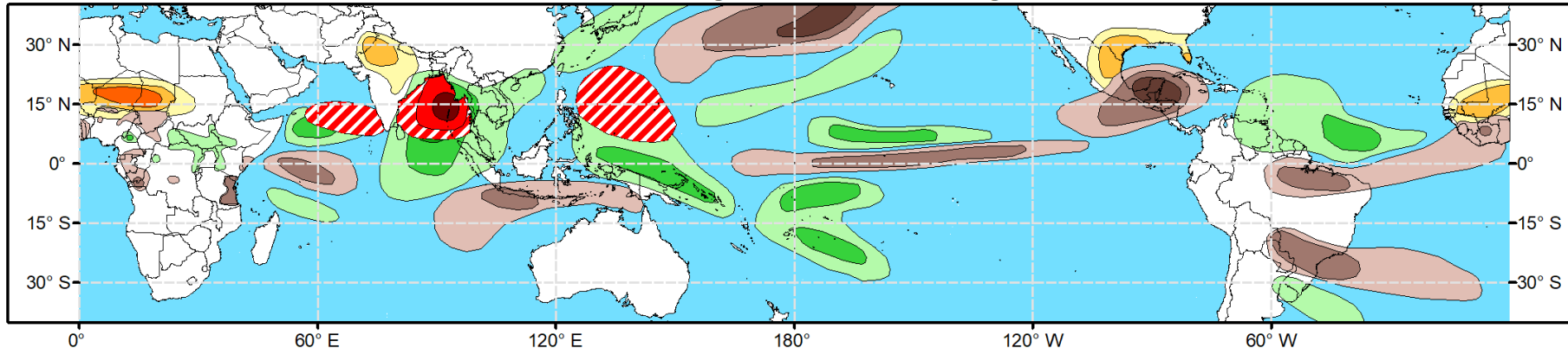


Global Tropics Hazards Outlook

Climate Prediction Center

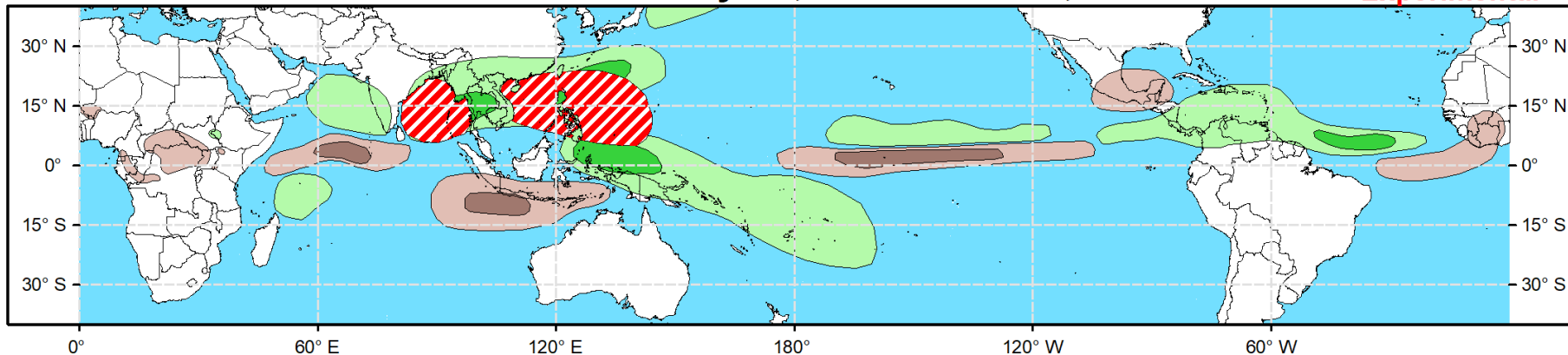


Week 2 - Valid: May 22, 2024 - May 28, 2024



Week 3 - Valid: May 29, 2024 - Jun 04, 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*

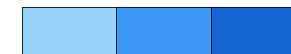
**Above-Average
Temperatures Probability**



>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*

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