Global Tropics Hazards And Benefits Outlook

5/31/2022

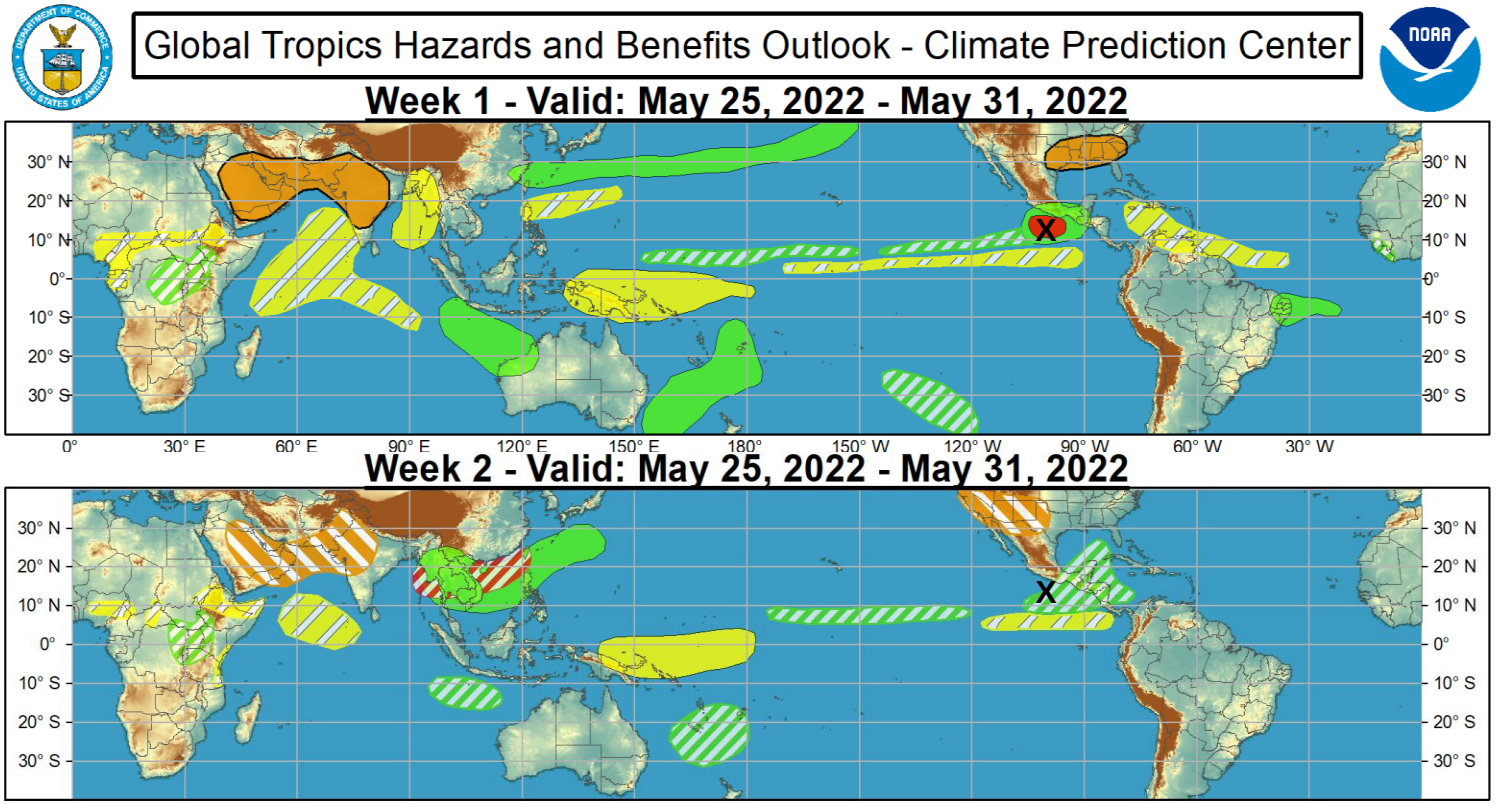
Adam Allgood

Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

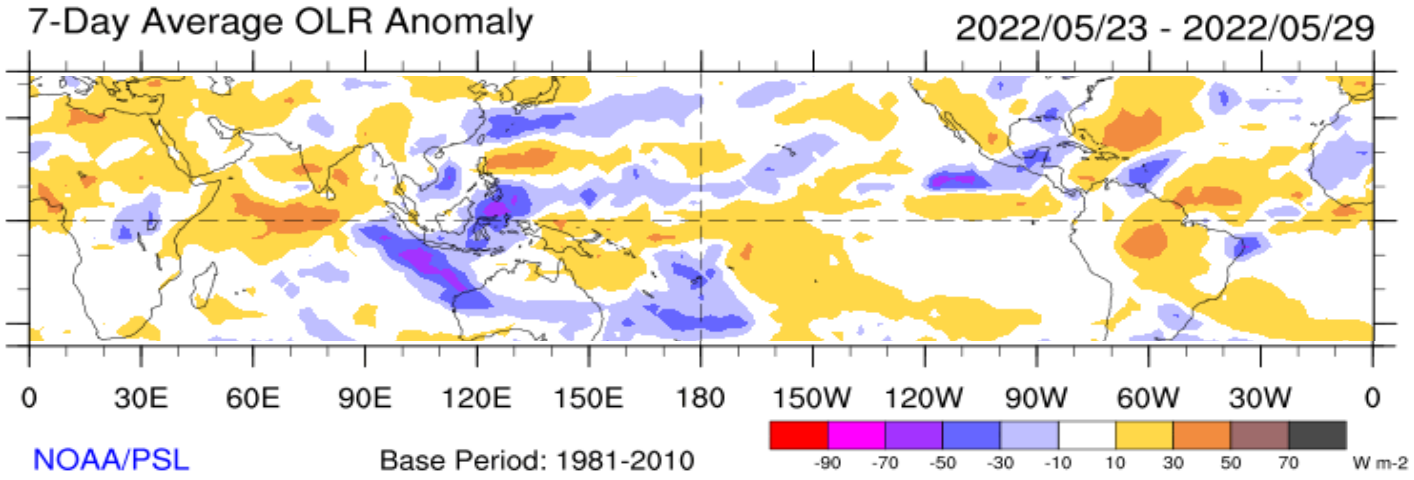
Outlook Review

X= Hurricane Agatha (5/28)



Cool shading
More clouds/rain

Warm shading
Less clouds/rain



Synopsis of Climate Modes

ENSO: (May 12, 2022 Update) ***next update on Thursday, June 9th***

- ENSO Alert System Status: La Niña Advisory

- Though La Niña is favored to continue, the odds for La Niña decrease into the late Northern Hemisphere summer (58% chance in August-October 2022) before slightly increasing through the Northern Hemisphere fall and early winter 2022 (61% chance)

MJO and other subseasonal tropical variability:

- High amplitude on both the upper-level VP (CPC) MJO index and the RMM-based index, suggesting a West Pacific MJO event.

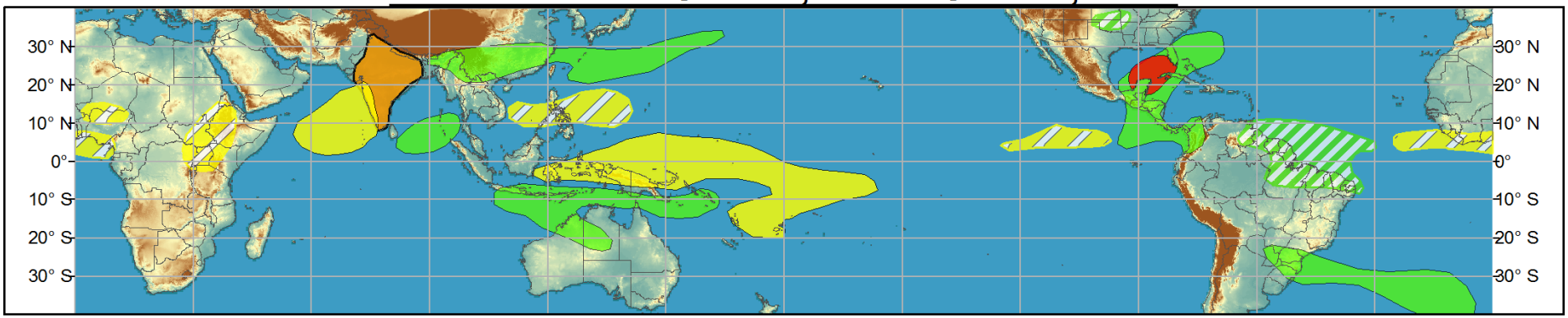
- Recent observations show that much of the activity projecting onto the MJO indices is due to robust Kelvin waves.

- A strong Kelvin wave that crossed the Pacific in mid-May and helped spark the development of Hurricane Agatha has returned to the Pacific.

- Other climate modes are affecting the pattern, including an enhanced Central American Gyre (CAG) event, and a well-defined Meiyu Front over eastern Asia and the northwestern Pacific.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jun 01, 2022 - Jun 07, 2022



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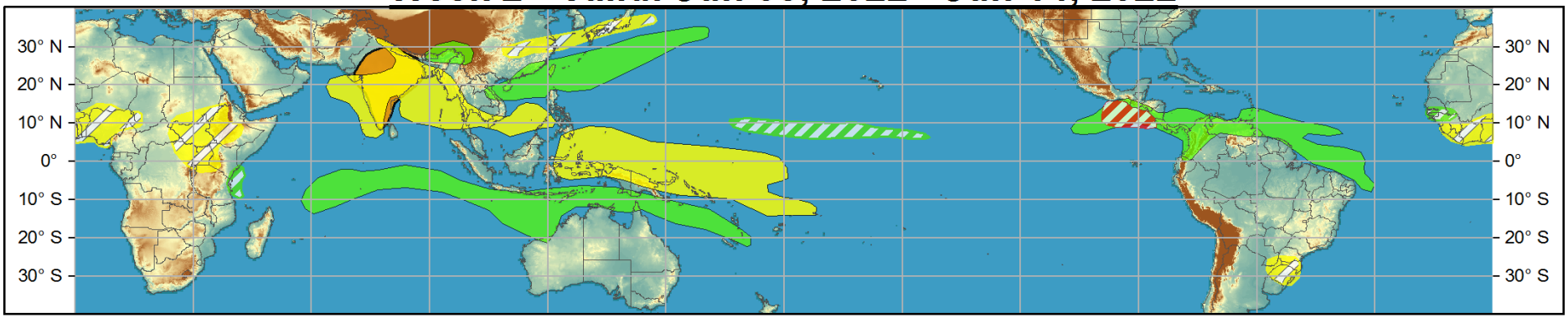

Produced: 05/31/2022

Forecaster: Allgood

	Confidence: High	Confidence: Moderate	
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Australian Government Bureau of Meteorology

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NPS PRAESTANTIA PER SCIENTIAM

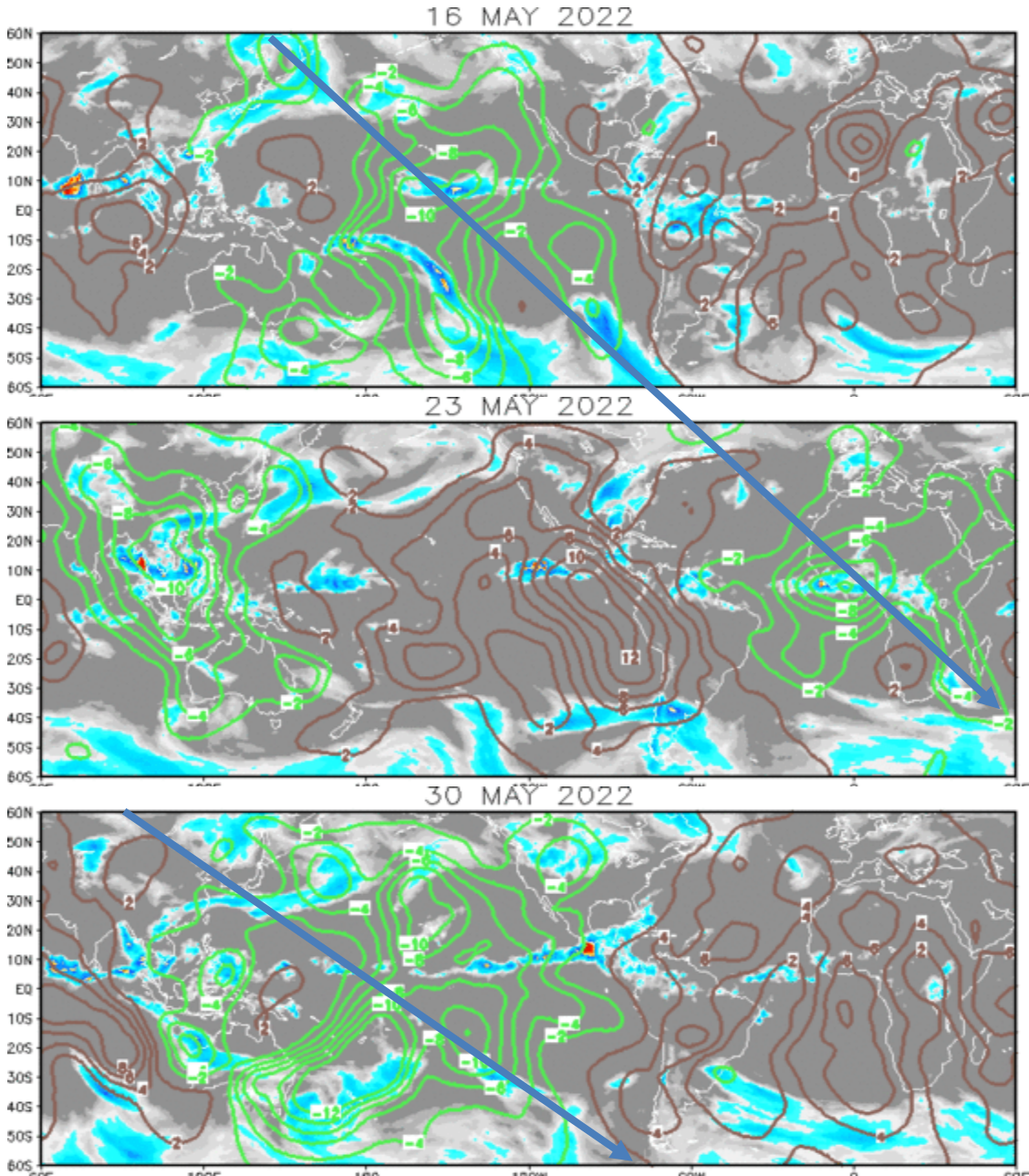
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

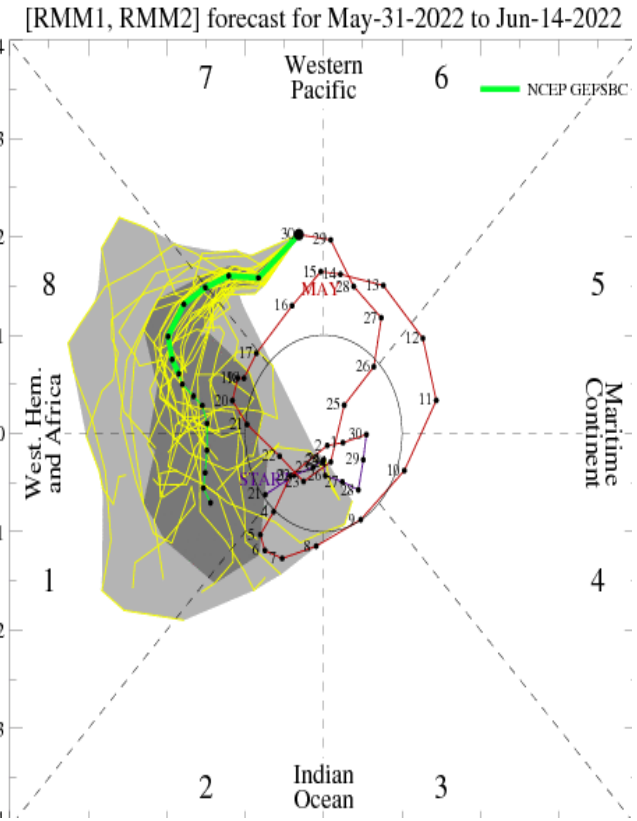
Robust, convectively coupled KW crossed the Pacific during mid-May.

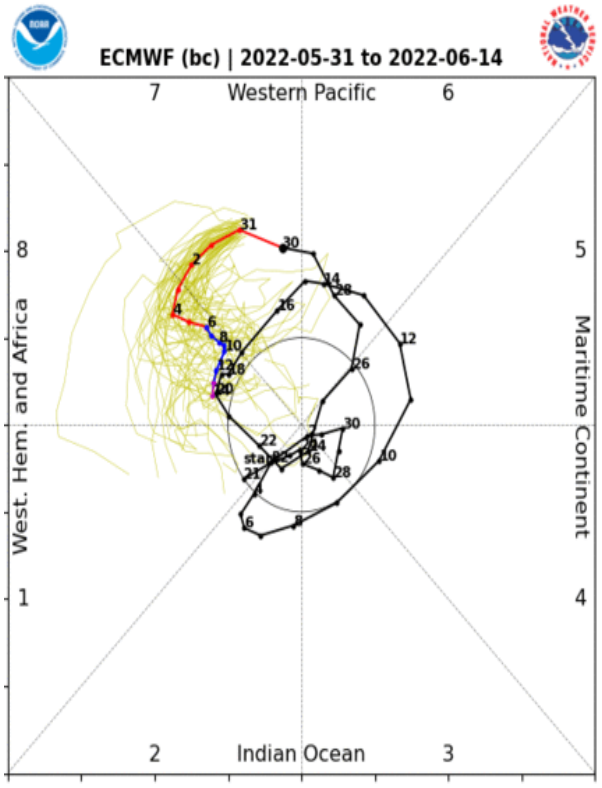
Just a week later, the KW enhanced phase had reached Africa. Wave-2 pattern with lower frequency enhancement over the Maritime Continent.

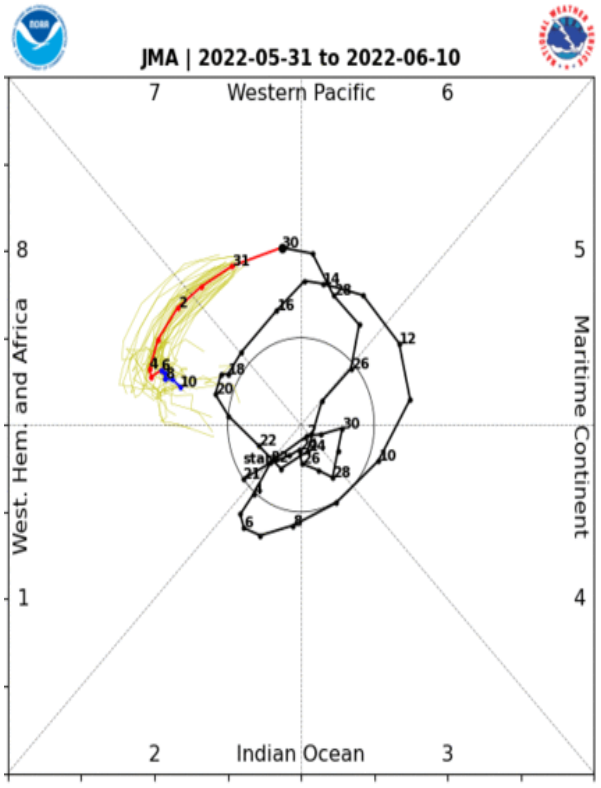
By the end of May, the KW had traversed the globe and returned to the Pacific.



MJO Observation/Forecast





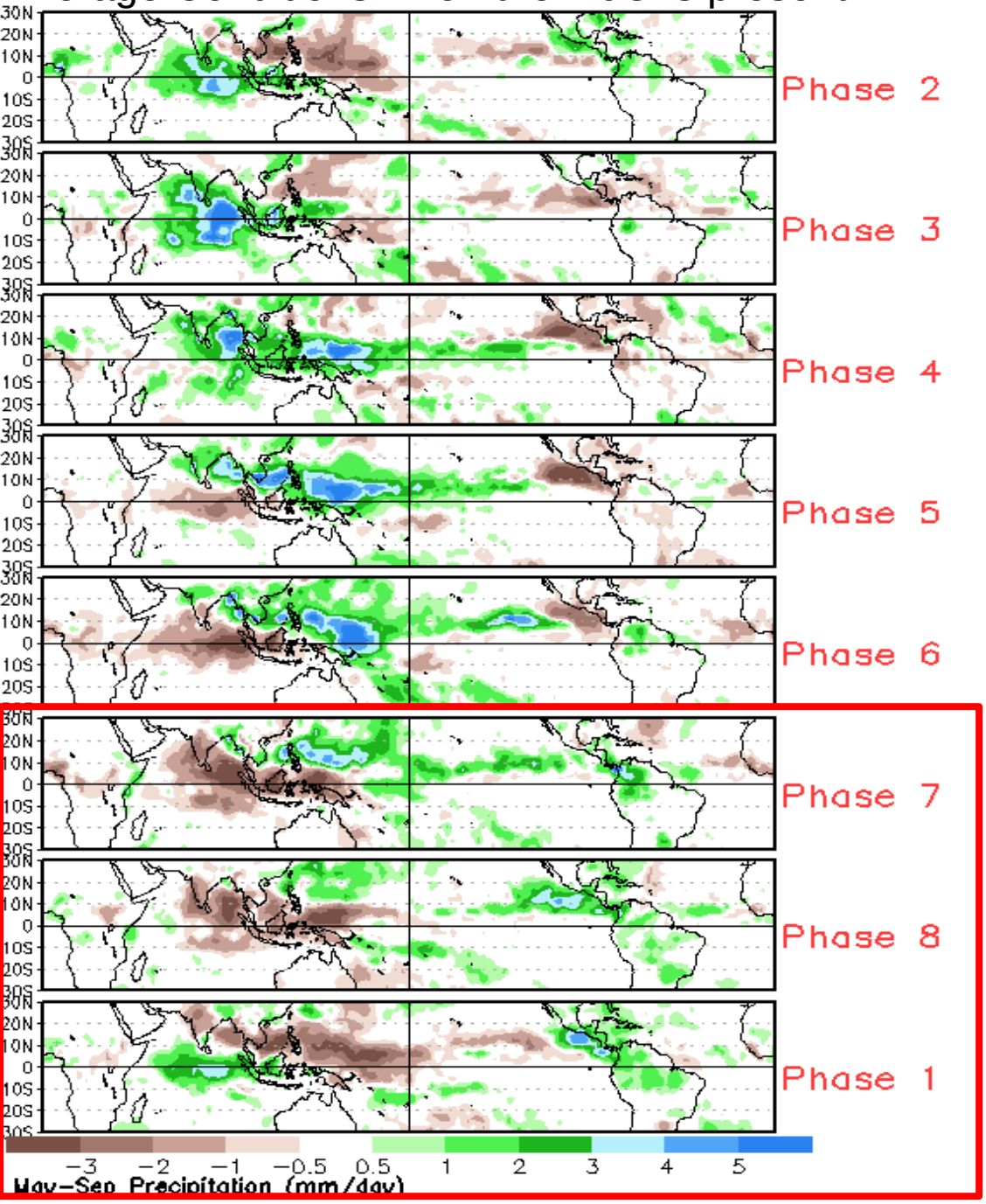


GEFS ECMWF JMA

Following an increase in amplitude in phase 2 during the last week, models favor continued eastward propagation of the MJO across the Indian Ocean (Maritime Continent) during week-1 (week-2). Of note, several members of the GEFS and ECMWF showing a potentially high amplitude event.

ECWMF is more on the fast end relative to other models, but phase speed appears to fall more in-line with MJO than Kelvin wave activity in RMM space .

Average Conditions when the MJO is present

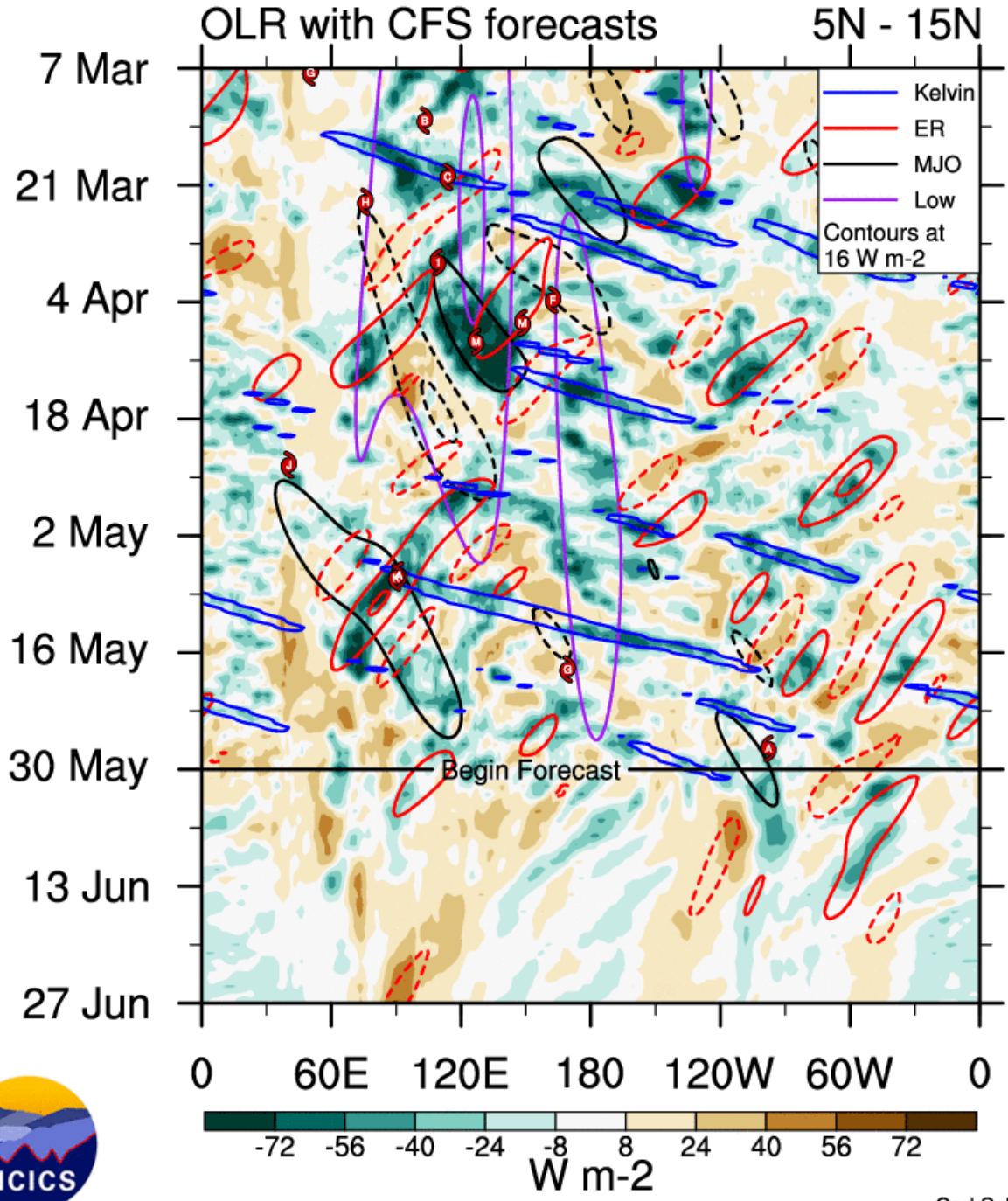


CAVEAT: These panels are representative of robust MJO events.

MJO activity is coming through the filtering over the Indian Ocean and Maritime Continent, but may be aliasing from KW and Rossby wave activity.

Robust convectively coupled **Kelvin wave** activity is the dominant mode of activity during May.

The **Low frequency** La Niña response is a bit less apparent due to KW interference.



NCICS

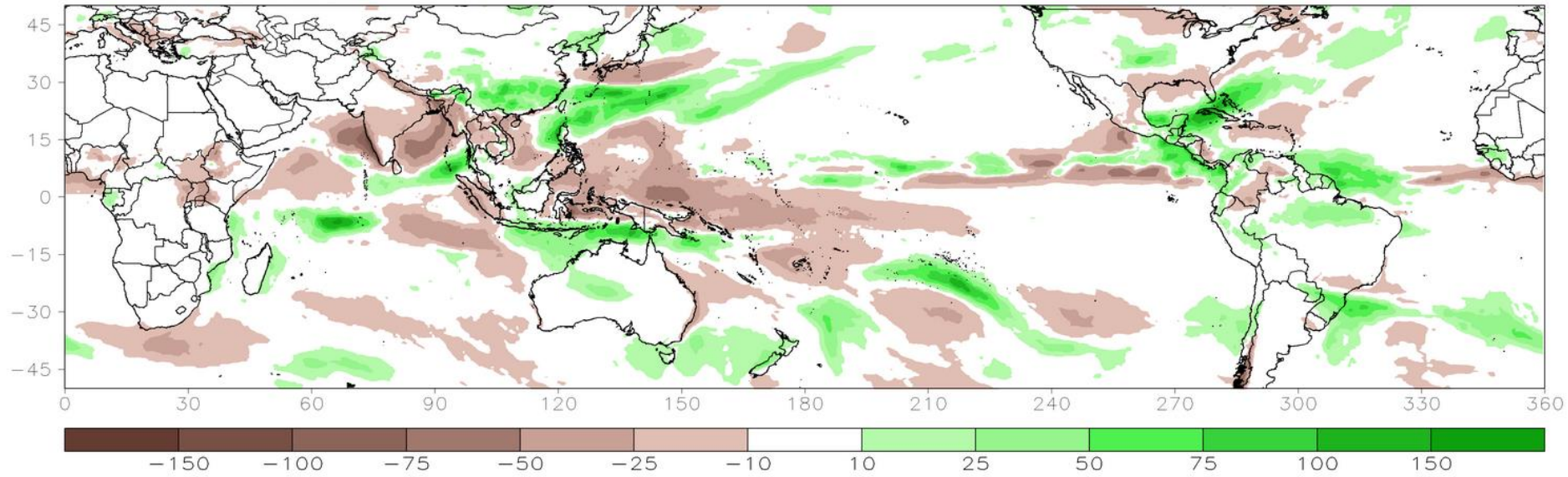
ncics.org/mjo

Tue 2022-05-31 1511 UTC

Carl Schreck
carl_schreck@ncsu.edu

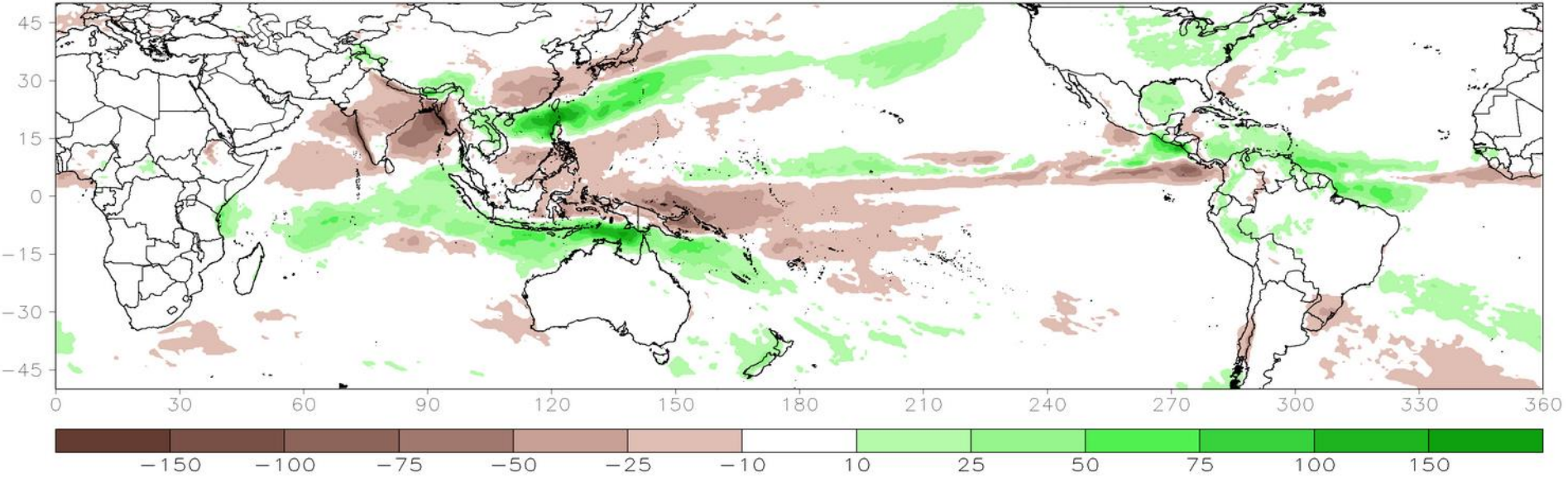
GEFSv12 00z Ensemble Mean: Week1 Total Rainfall Anomaly (mm)

Valid: 01Jun2022–07Jun2022

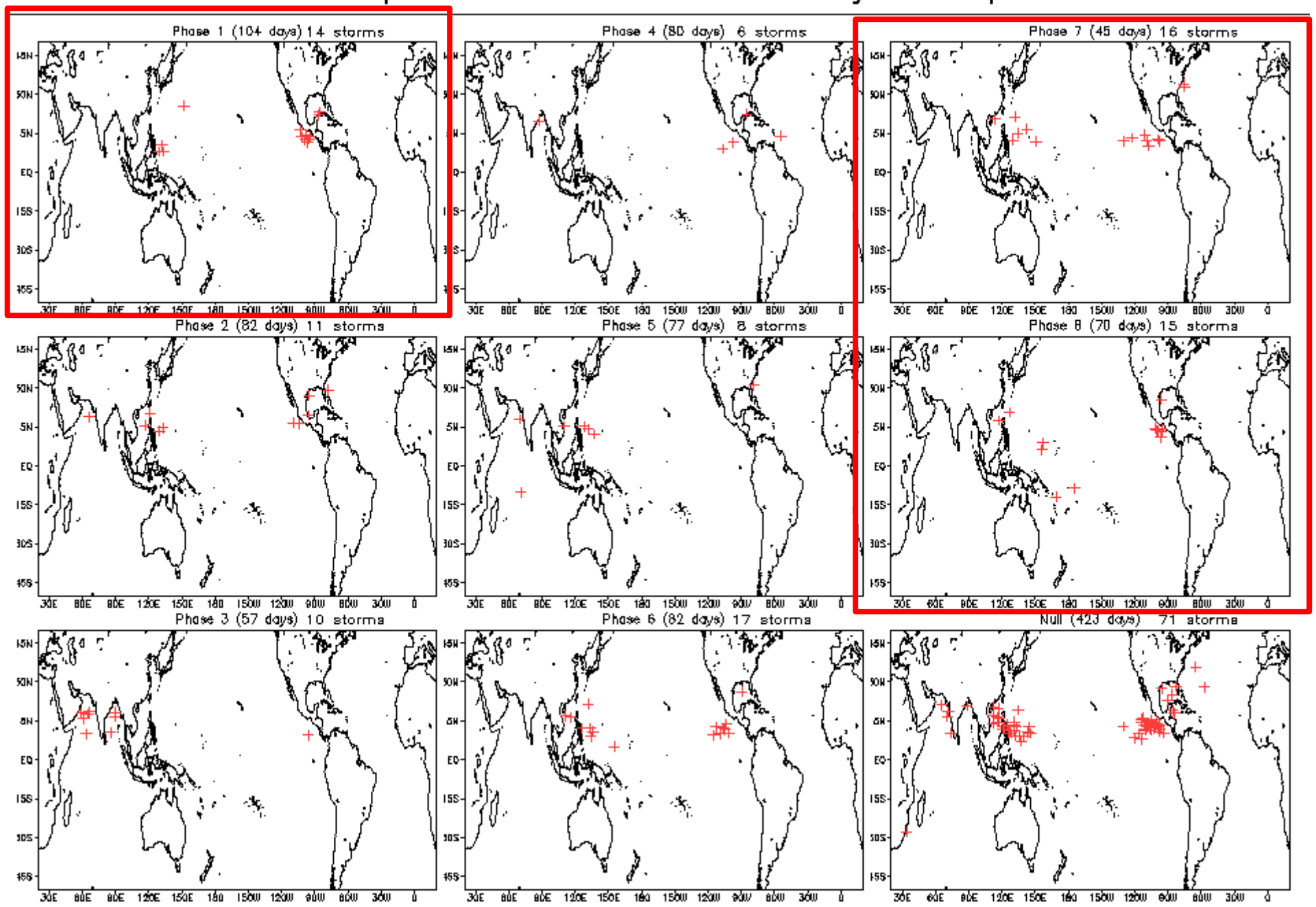


GEFSv12 00z Ensemble Mean: Week2 Total Rainfall Anomaly (mm)

Valid: 08Jun2022–14Jun2022

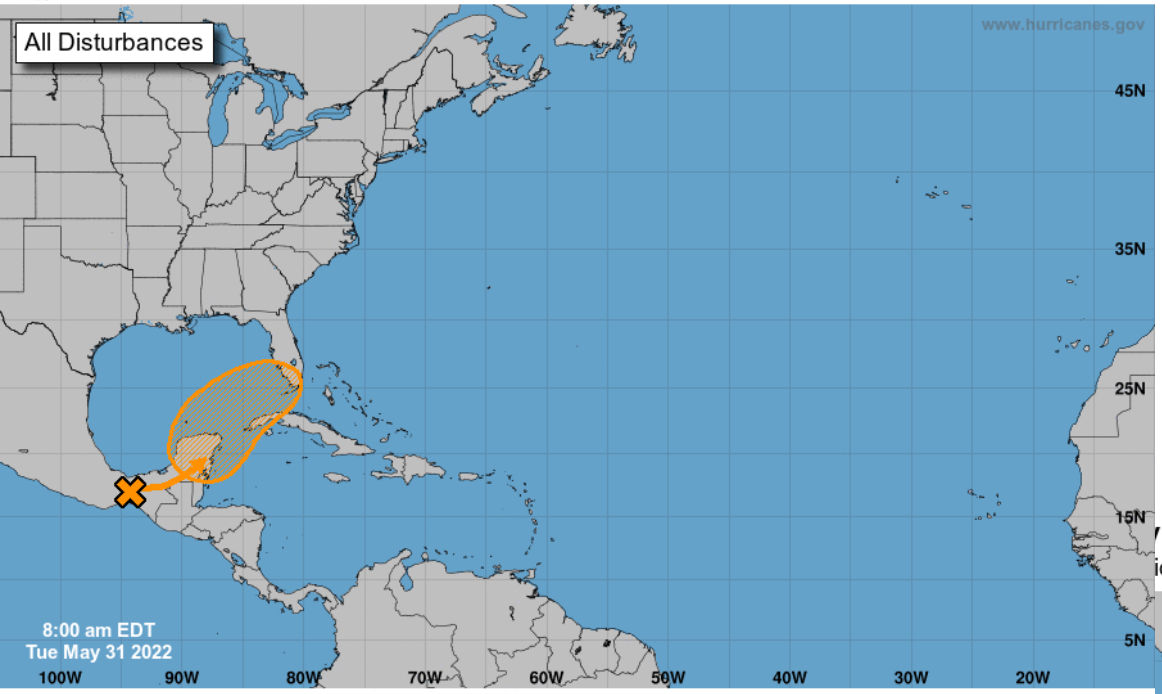


June Tropical Storm Formation by MJO phase



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



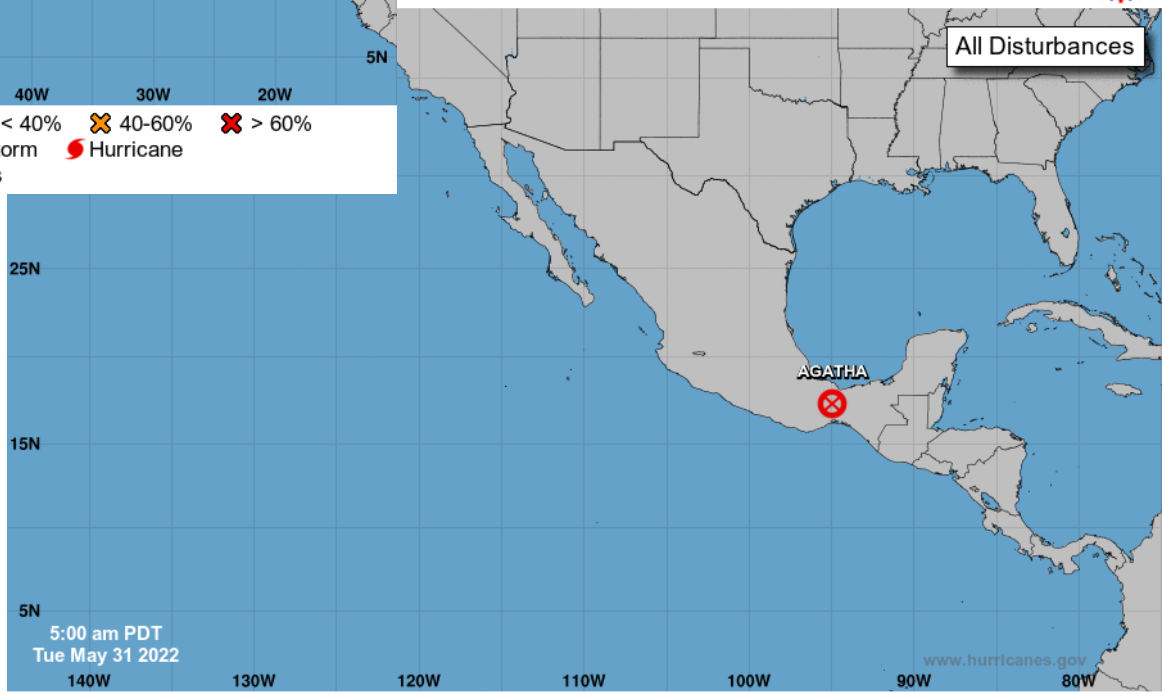
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

ional Hurricane Center Miami, Florida



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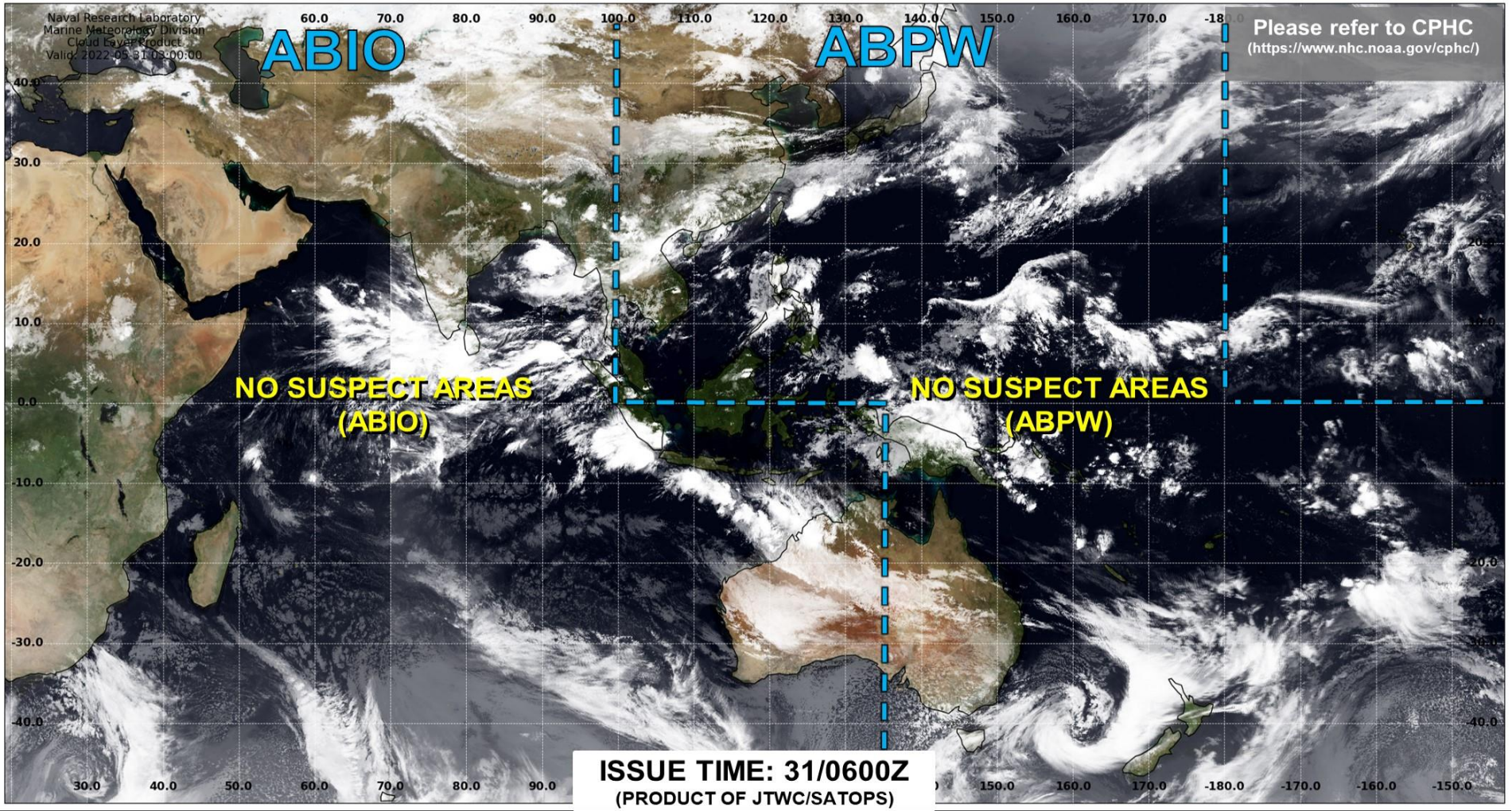
JOINT TYPHOON WARNING CENTER



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)

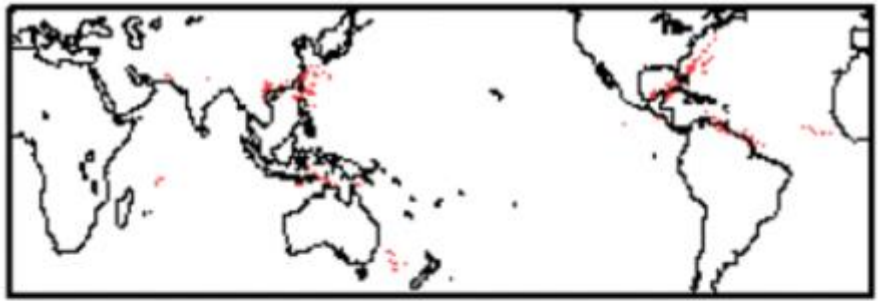
SUB TROPICAL — Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

Tropical Cyclone (Reference Warning)

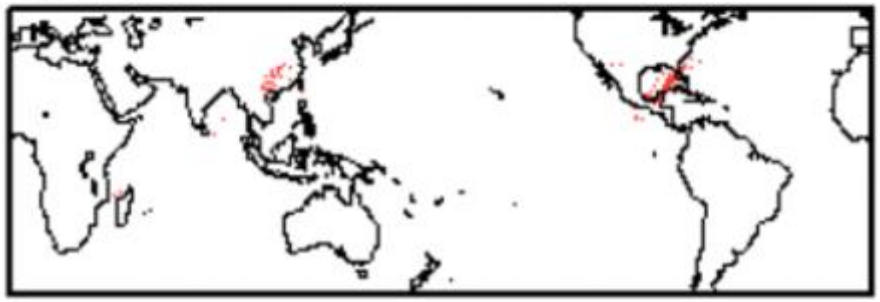
Tropical Cyclone Filtered Tracks

Week-1

GEFS

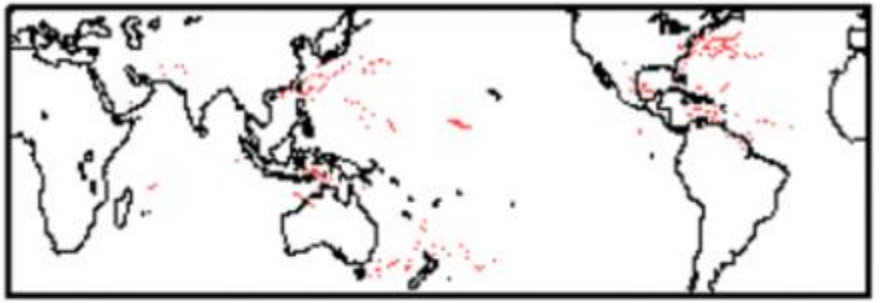


ECMWF

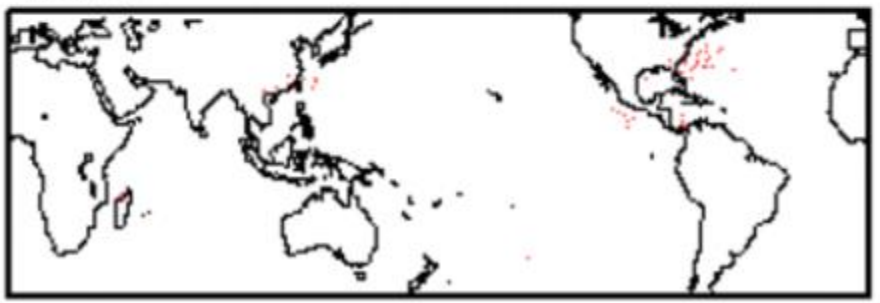


Week-2

GEFS

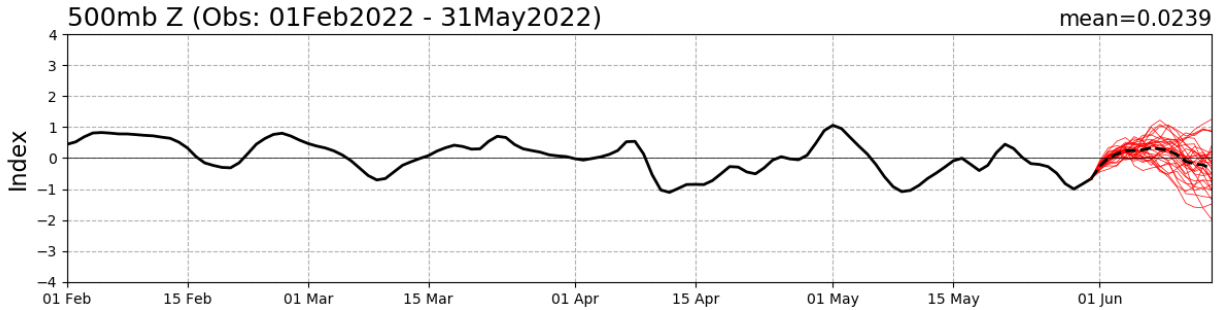


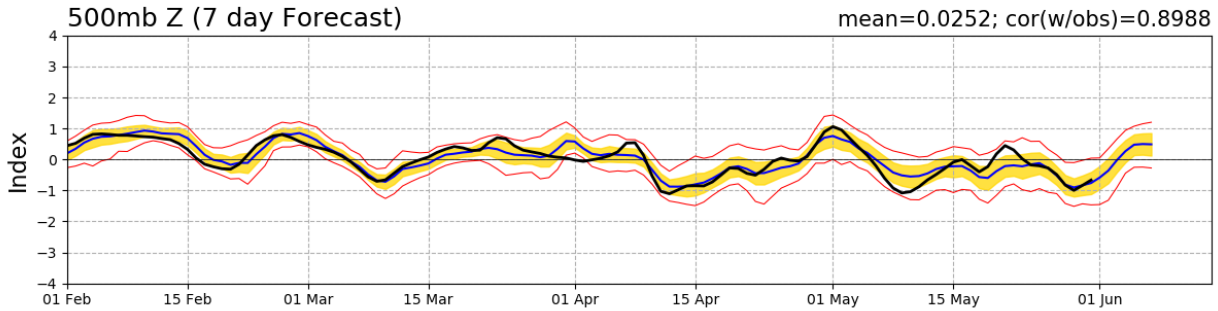
ECMWF

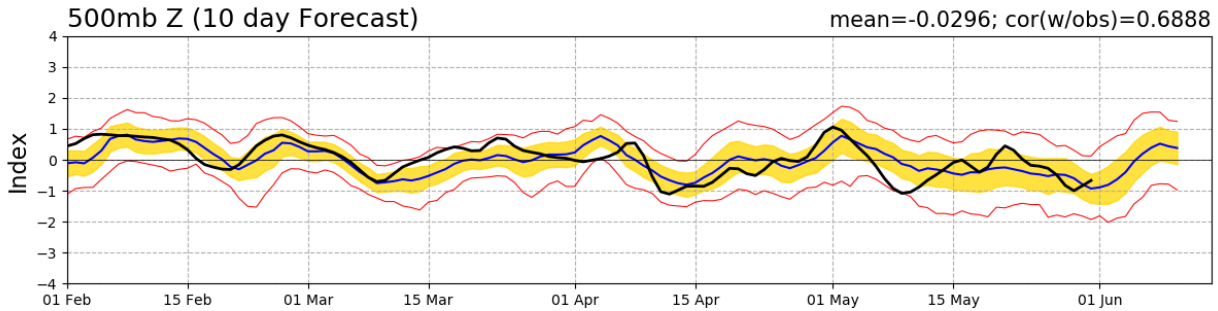


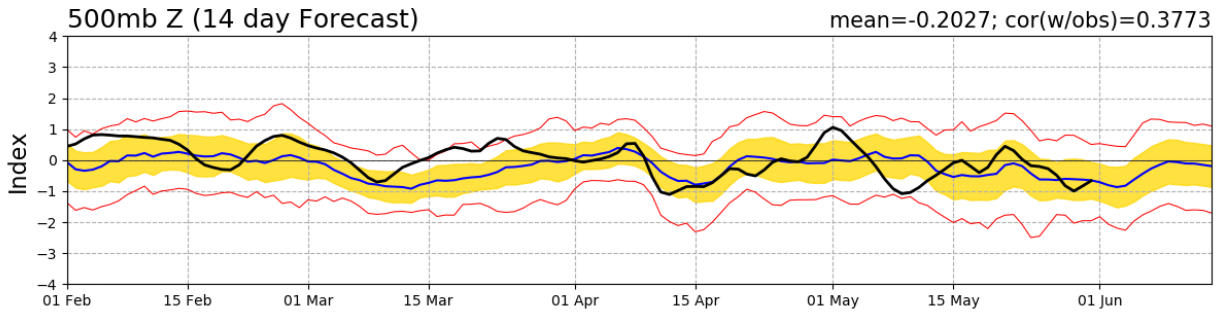
Connections to U.S. Impacts

PNA Index: Observed & GEFS Forecasts

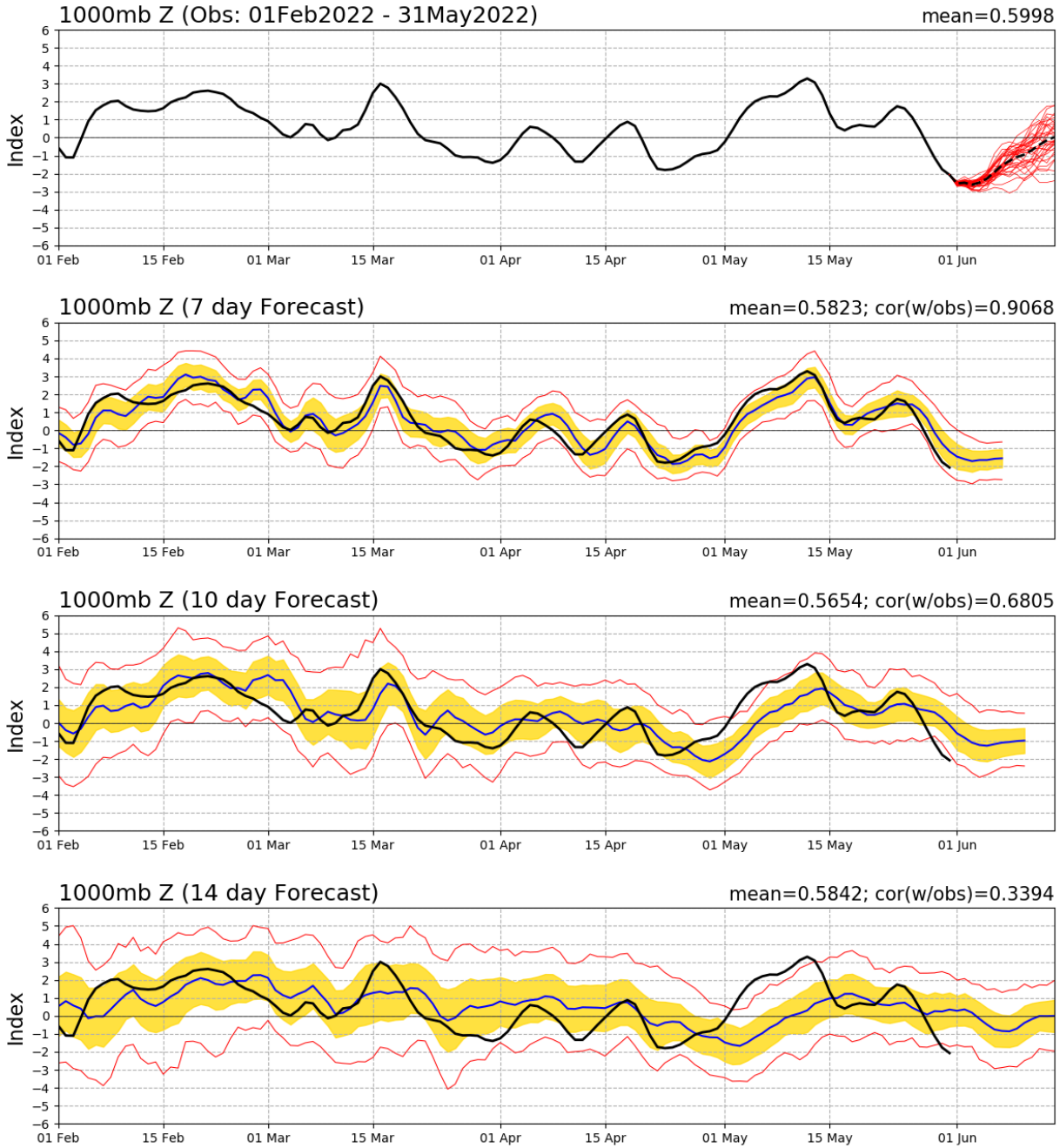


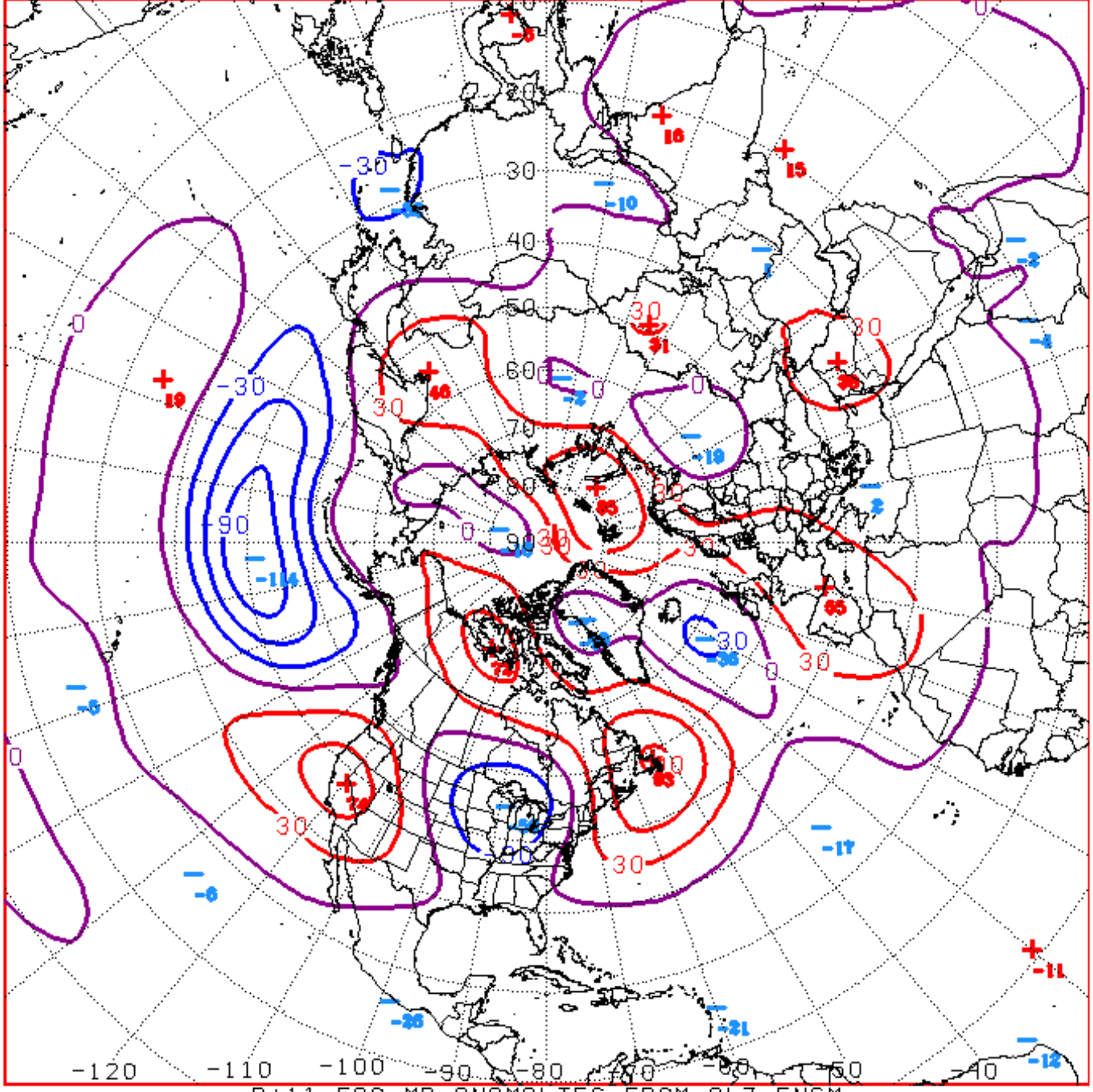






AO Index: Observed & GEFS Forecasts




-120
-110
-100
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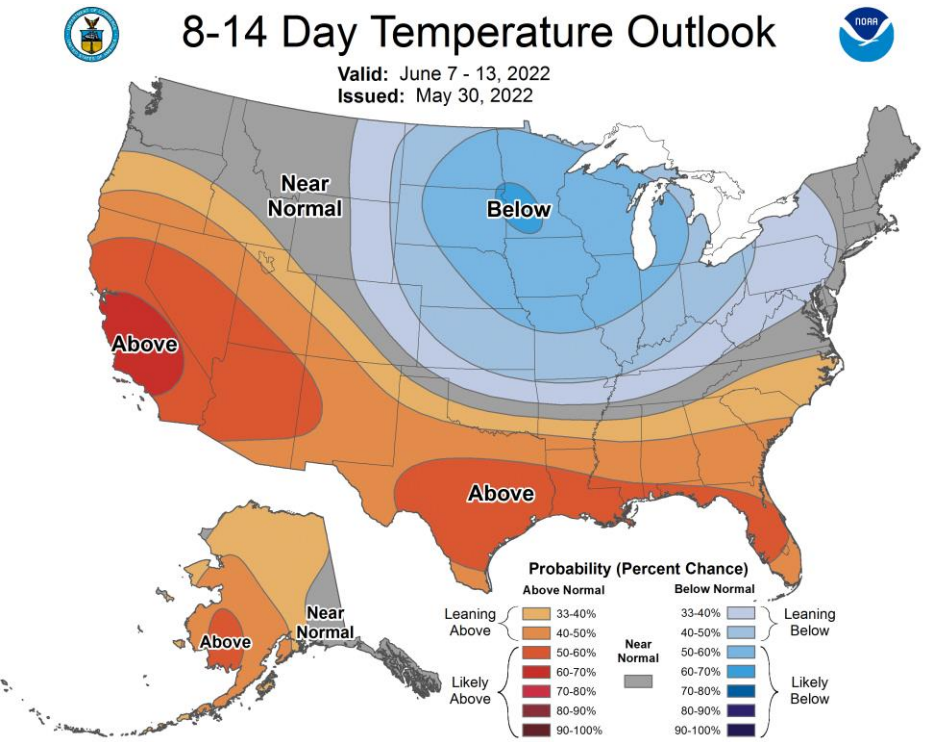
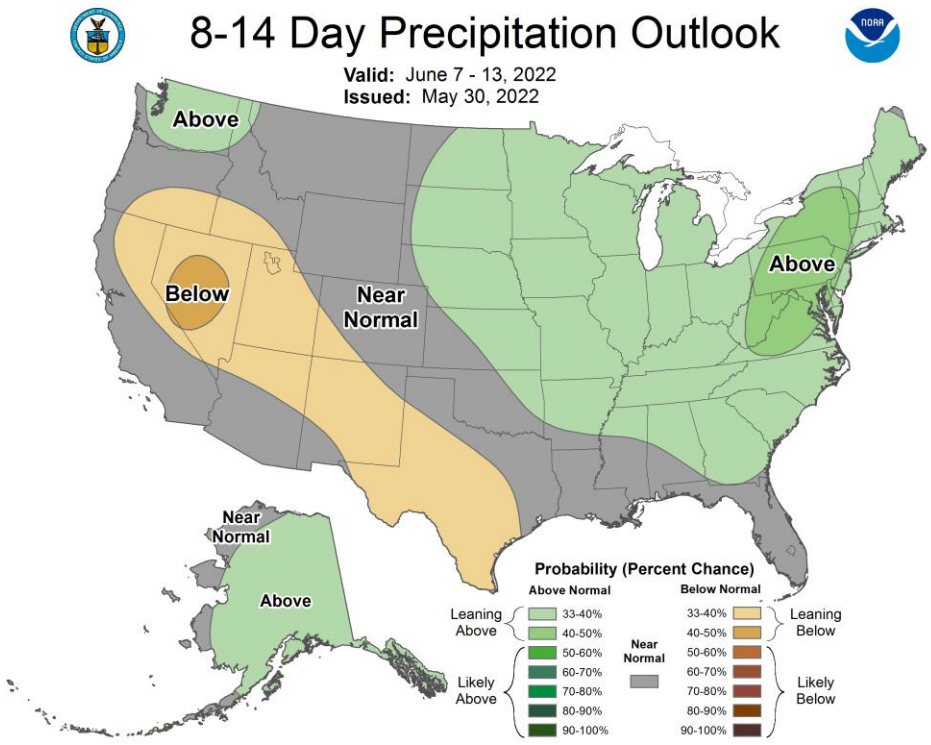
80
90
0
-30
-90
30
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE MAY 31 2022 1357 UTC CNTD JUN 11 2022

Week 2 – Temperature and Precipitation





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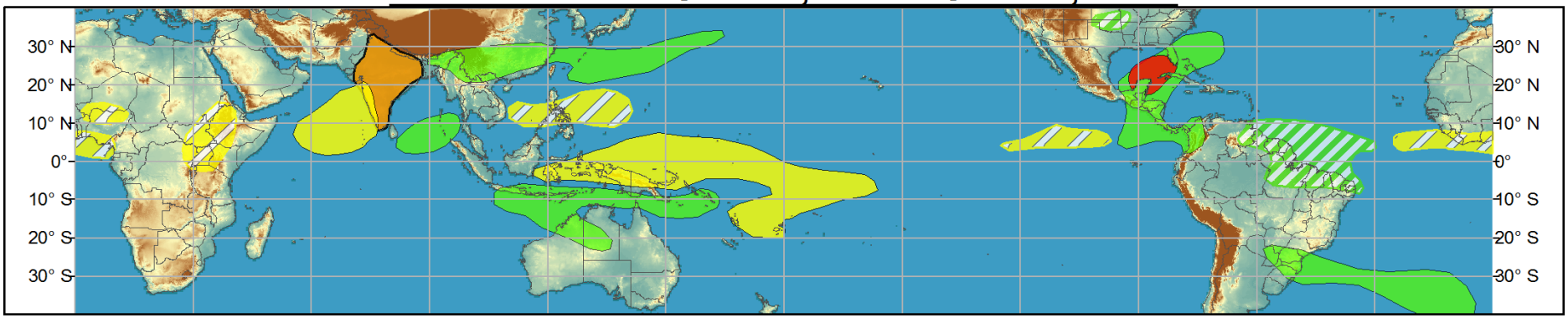

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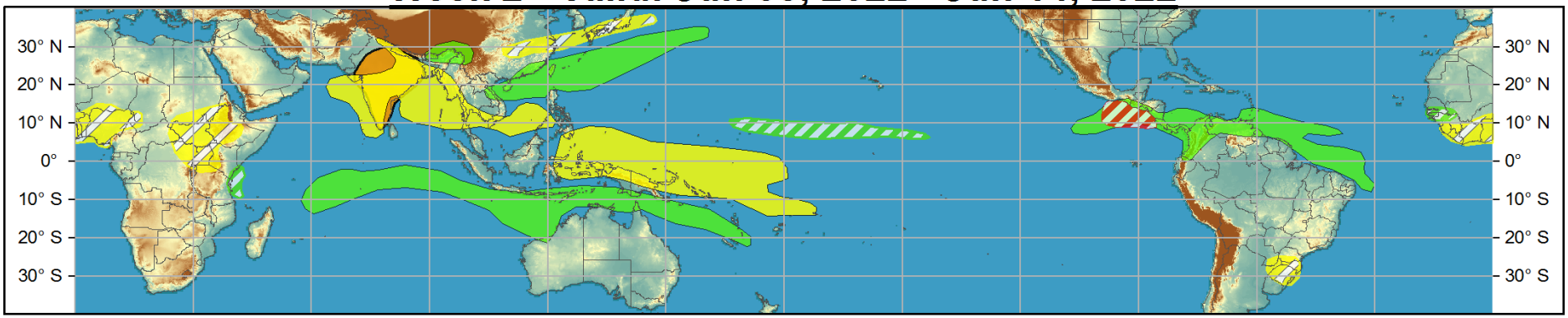

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