Global Tropics Hazards And Benefits Outlook

3/23/2021

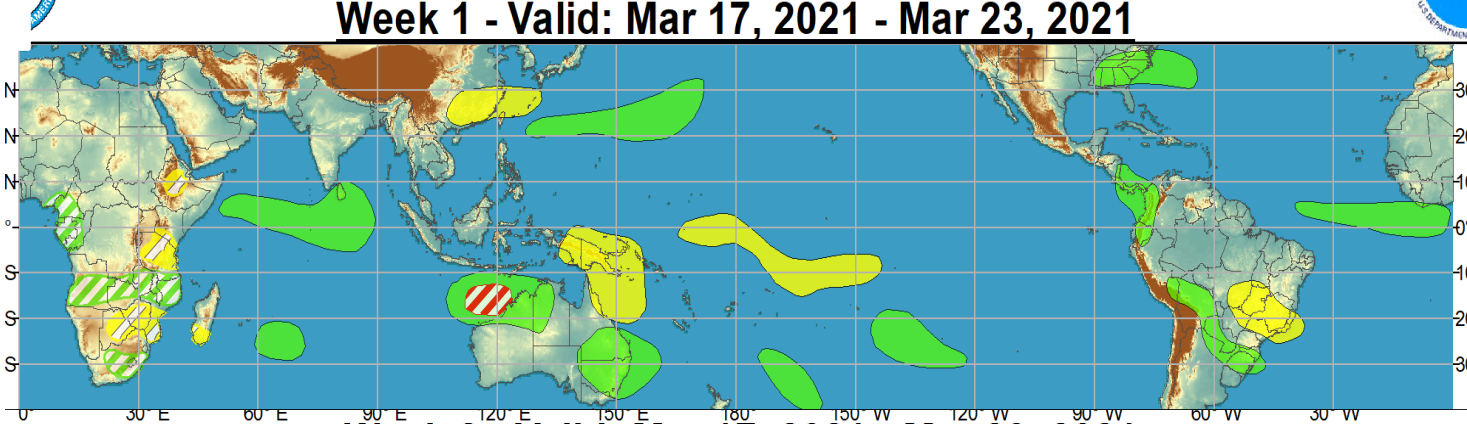
Dan Harnos

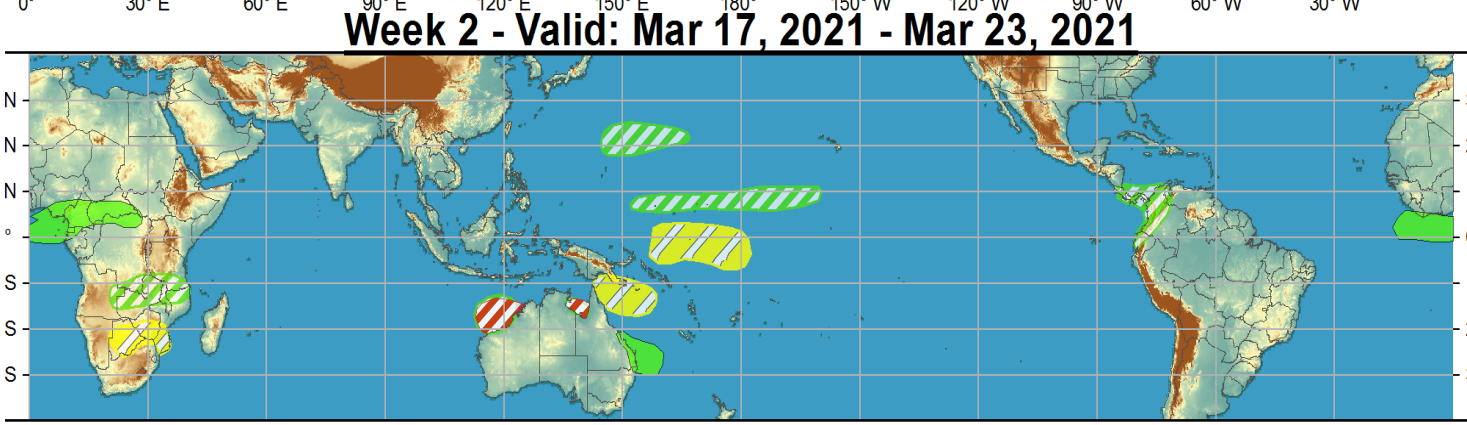
Outline

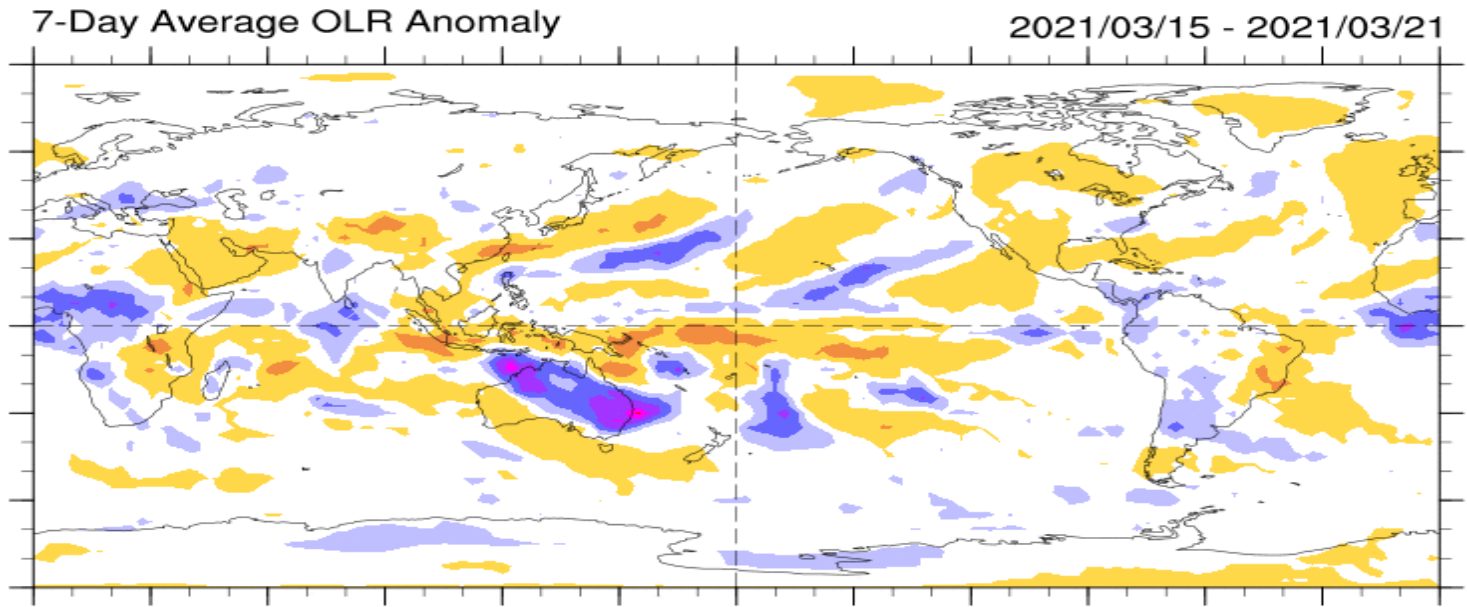
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

No tropical cyclones have formed since last Wednesday.







Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (11th of March Update) ***next update on the 8th of April***

- ENSO Alert System Status: La Niña Advisory

- There is a ~60% chance of a transition from La Niña to ENSO-Neutral during the Northern Hemisphere spring 2021 (April-June).

MJO and other subseasonal tropical variability:

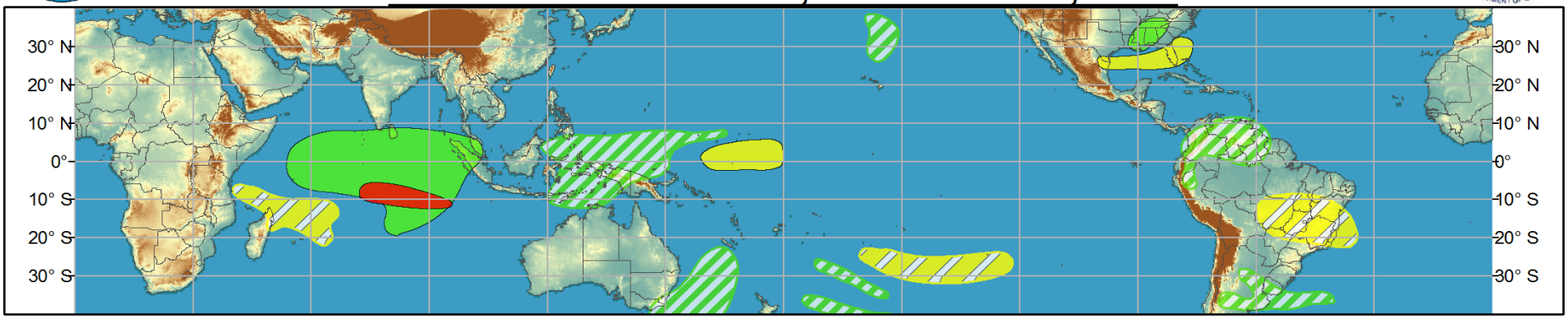
- The MJO is currently active over the Indian Ocean. Multiple equatorial Rossby waves are also analyzed over the Indian Ocean.

- Model guidance forecasts the MJO to continue propagating eastward, with the enhanced envelope reaching the West Pacific by late in Week-2.

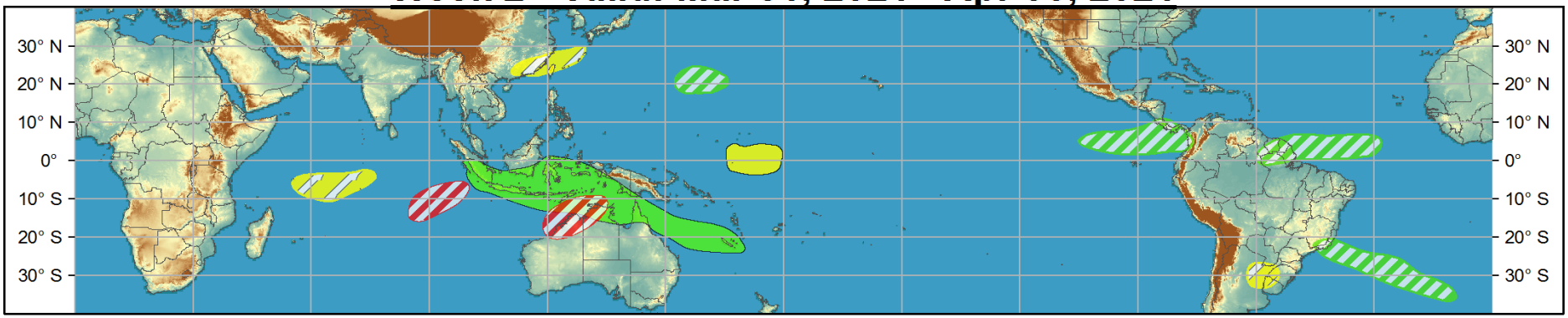
- Tropical cyclone activity is likely to be enhanced over the Indian Ocean and over Northern Australia tied to the MJO's progression.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 24, 2021 - Mar 30, 2021



Week 2 - Valid: Mar 31, 2021 - Apr 06, 2021



Produced: 03/23/2021

Forecaster: Harnos

	Confidence: High	Confidence: Moderate	
Tropical Cyclone Formation			Development of a tropical cyclone (tropical depression - TD, or greater strength).
Above-average rainfall			Weekly total rainfall in the upper third of the historical range.
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Above-normal temperatures			7-day mean temperatures in the upper third of the historical range.
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NPS PRAESTANTIA PER SCIENTIAM

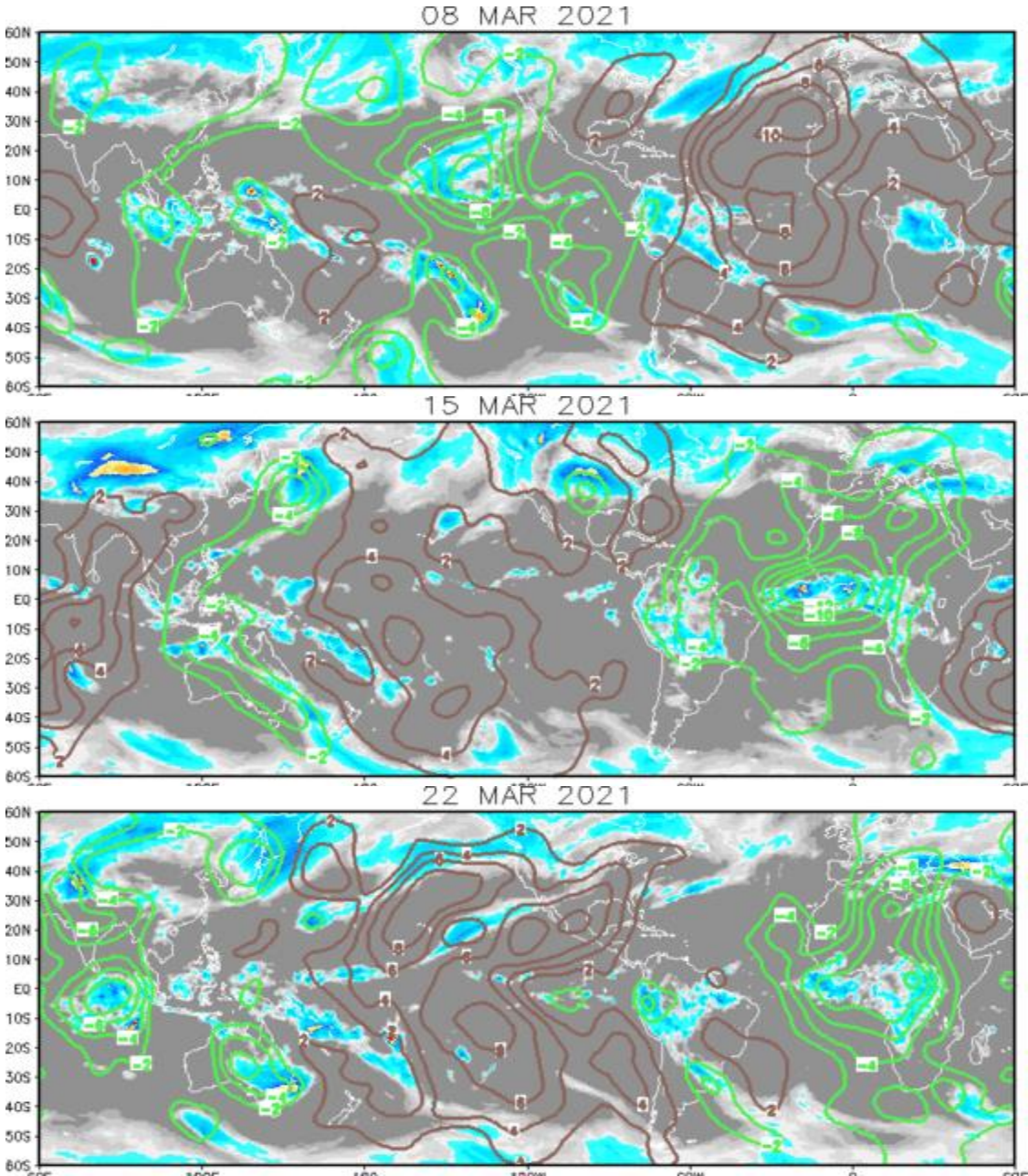
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

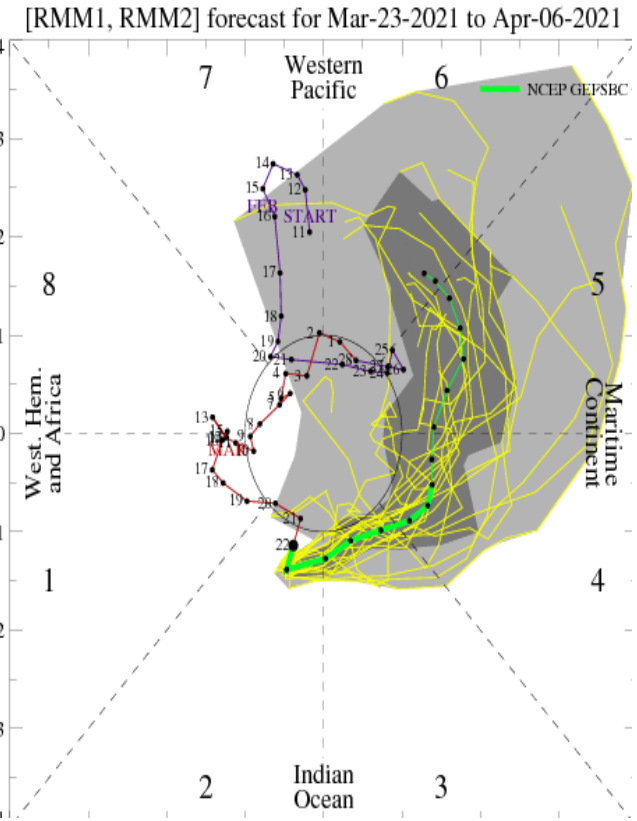
The enhanced MJO envelope extends across much of the Central and Eastern Pacific, with some lingering enhancement of convection by La Niña over the Maritime Continent.

The enhanced envelope continued to shift east with the signal concentrated along the equatorial Atlantic and Gulf of Guinea. Suppressed conditions returned to much of the Pacific.

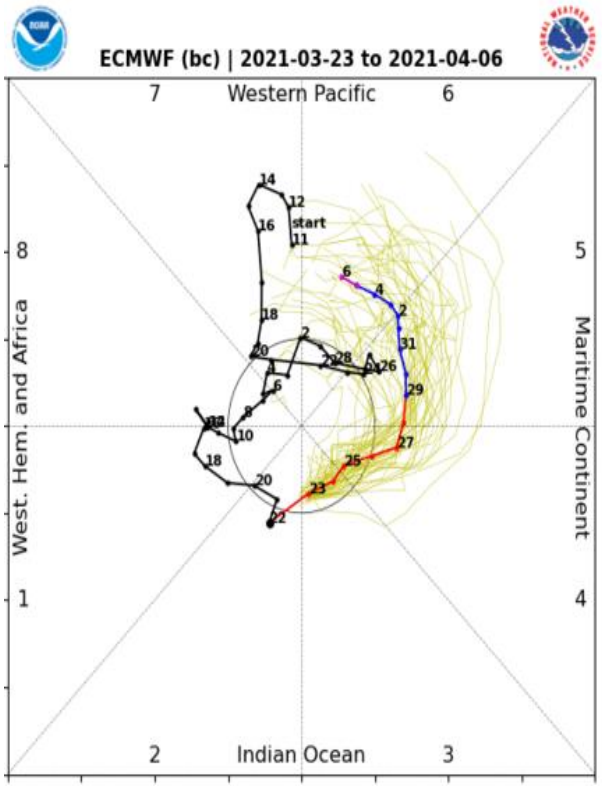
Enhanced convection continues its eastward progression, becoming focused across Africa and the Indian Ocean.



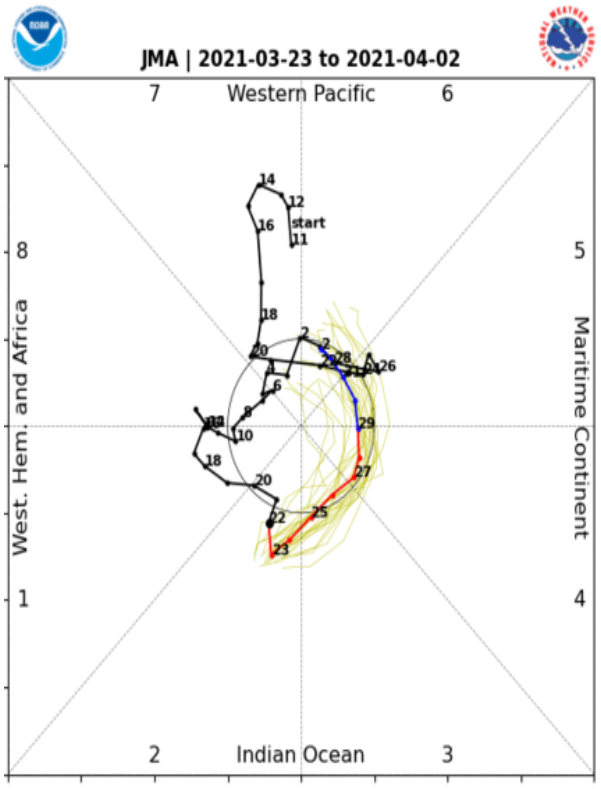
MJO Observation/Forecast



GEFS



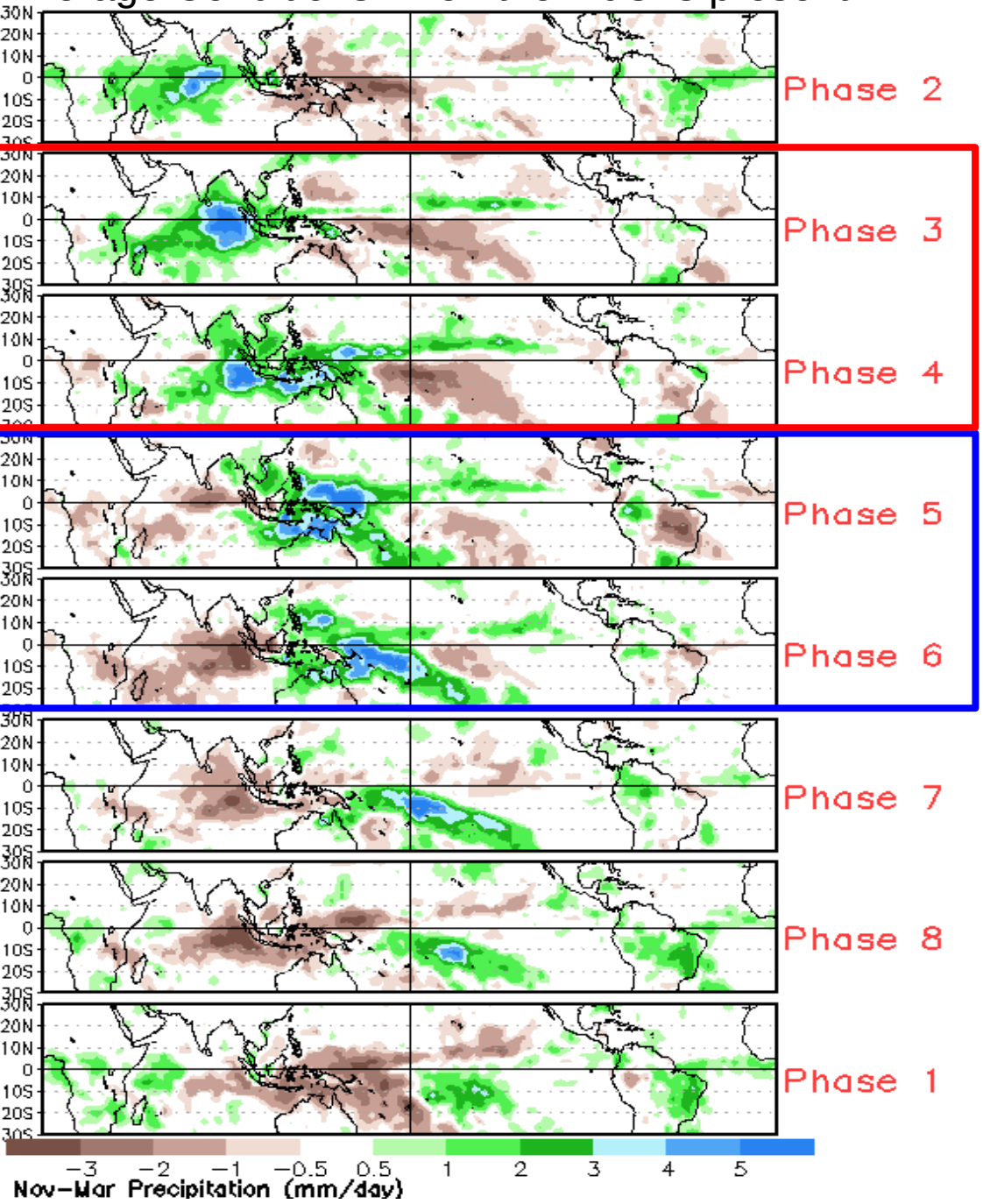
ECMWF



JMA

Models are consistent in showing the MJO signal propagating eastward the next two weeks, although the relative speed and intensity of the event varies.

Average Conditions when the MJO is present



Week-1: Phases 3, 4

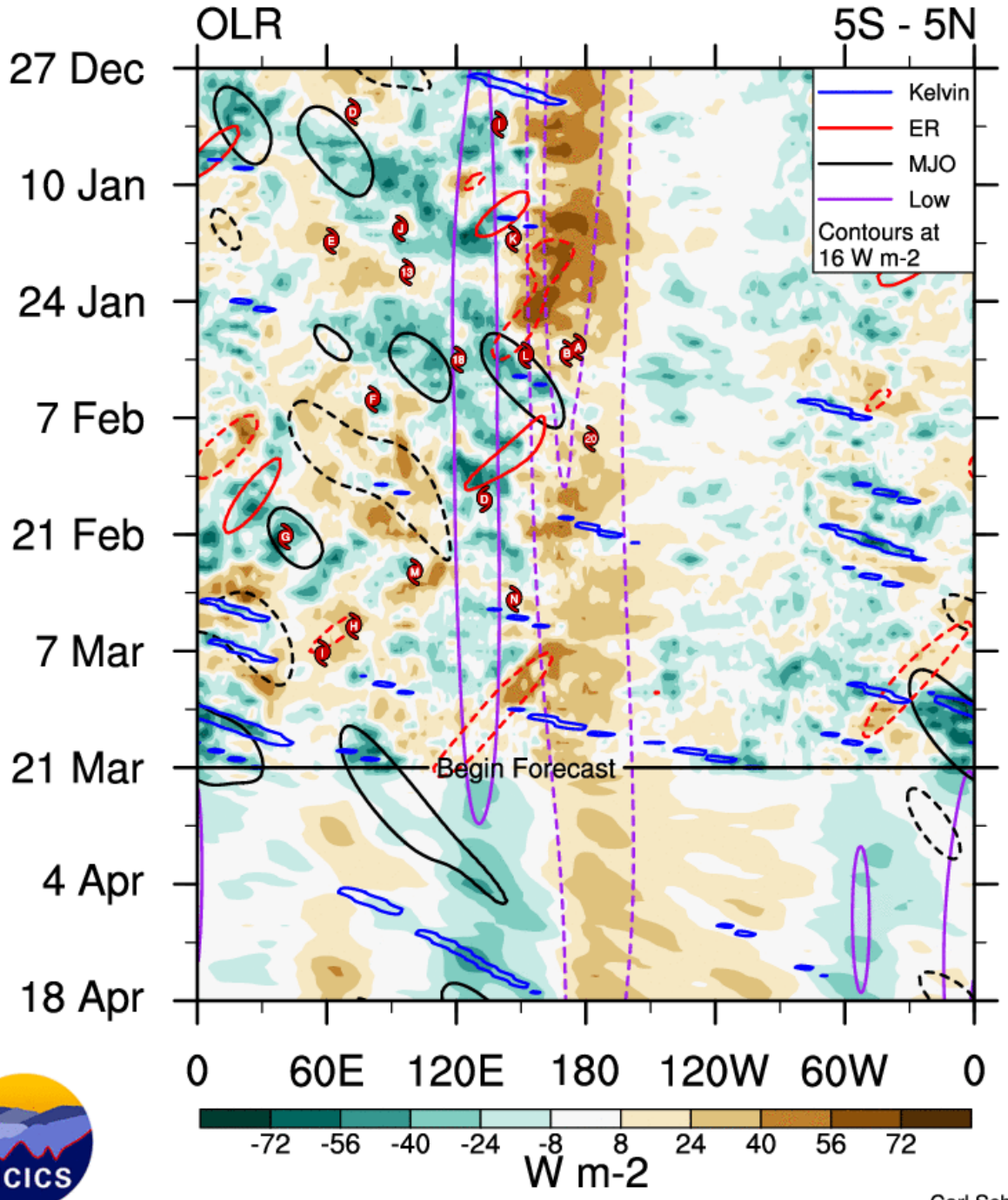
Week-2: Phases 5, 6

CAVEAT: These panels are representative of robust MJO events.

Two areas of **MJO** activity are analyzed, although the western one appears to be driven by a pair of **Kelvin waves.** The entire region is likely one larger intraseasonal envelope of enhanced convection.

Equatorial Rossby wave activity exists over the West Pacific and off the equator over the Indian Ocean (the latter is not apparent here).

La Niña continues to favor enhanced (suppressed) convection over the Maritime Continent (Date Line).



NCICS

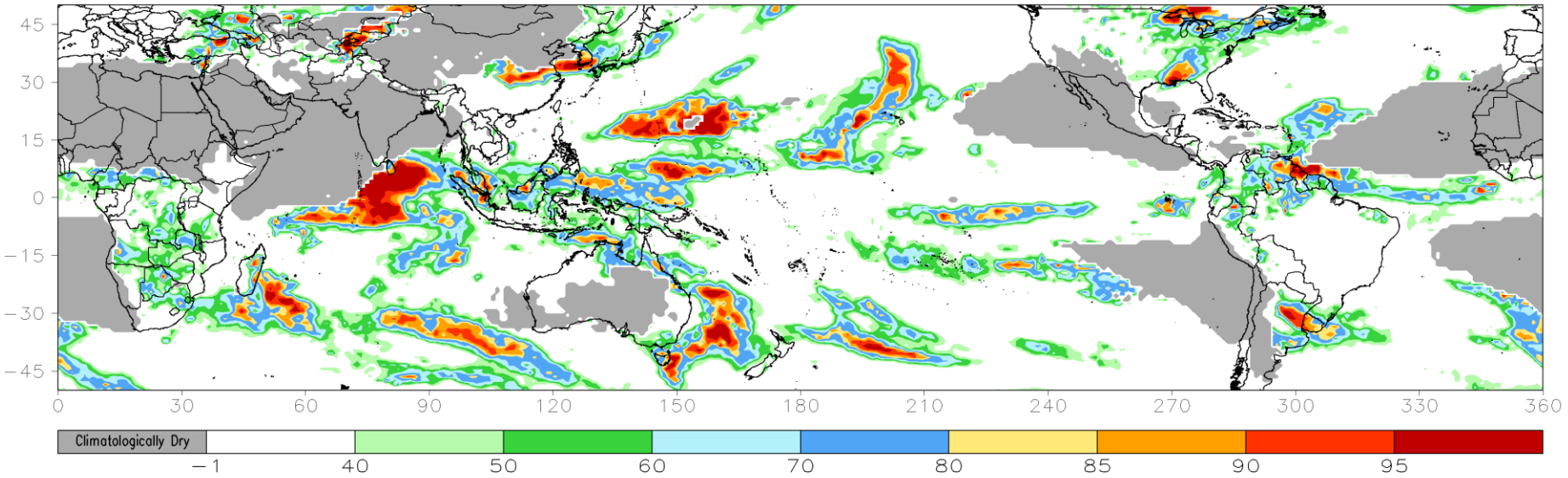
ncics.org/mjo

Mon 2021-03-22 1510 UTC

Carl Schreck
carl_schreck@ncsu.edu

CFS/ECMWF/ECCC Correlation Weighted 00z: Week1 Probability for Total Rainfall Above Upper Tercile (%)

Valid: 24Mar2021–30Mar2021



CFS/ECMWF/ECCC Correlation Weighted 00z: Week1 Probability for Total Rainfall Below Lower Tercile (%)

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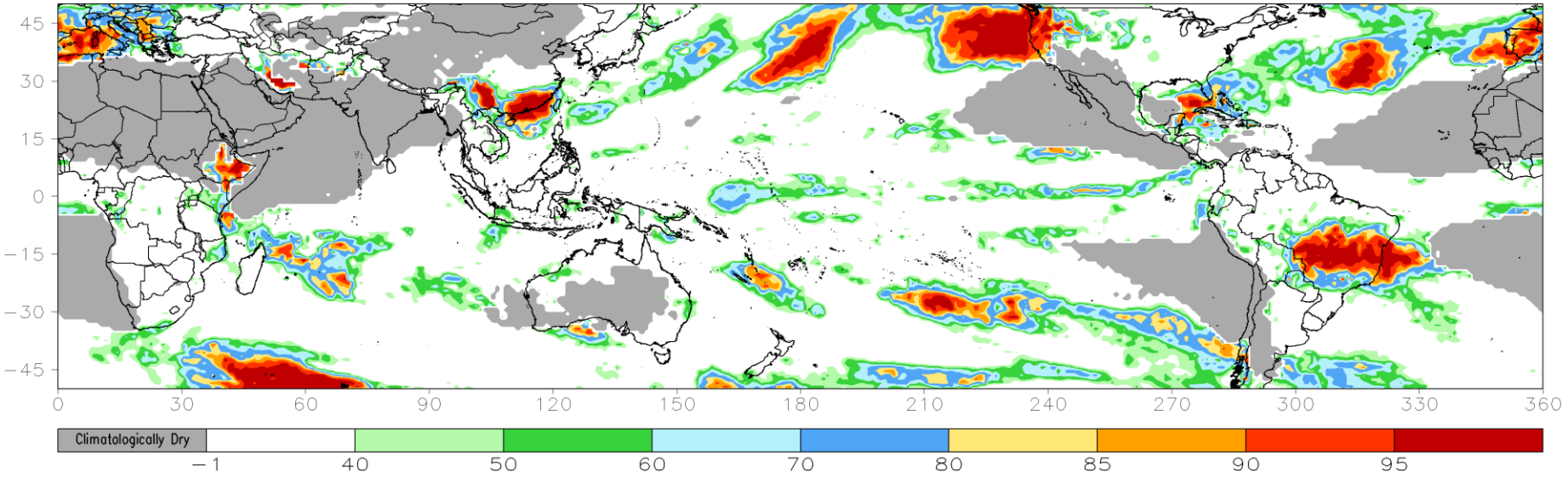
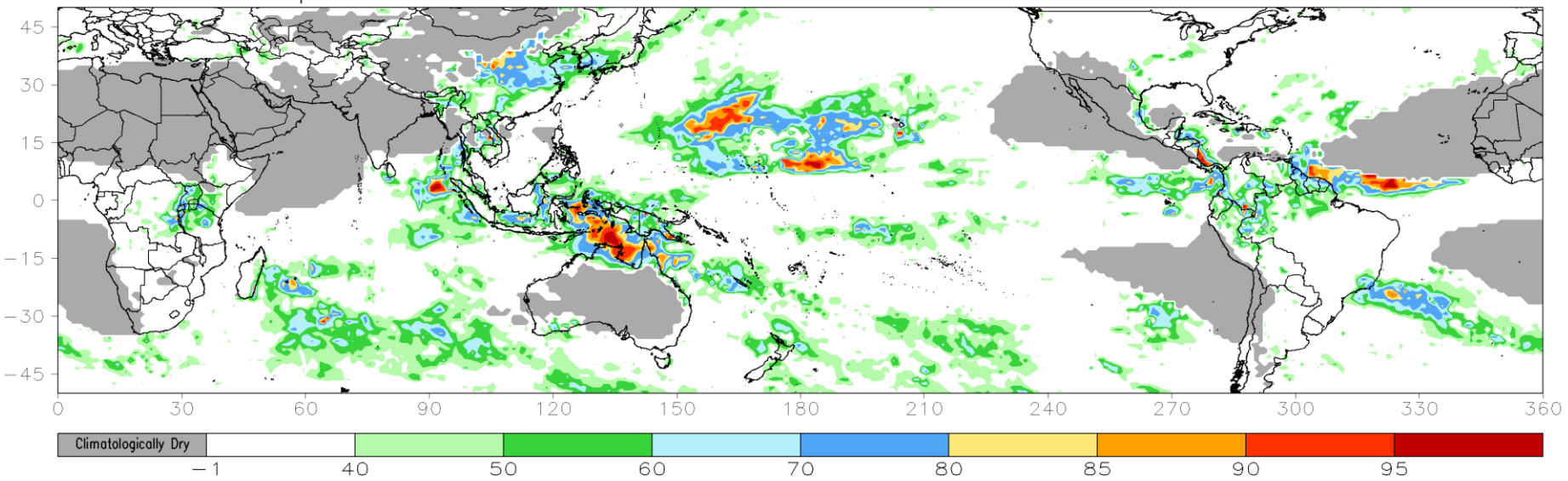


CFS/ECMWF/ECCC Correlation Weighted 00z: Week2 Probability for Total Rainfall Above Upper Tercile (%)

Valid: 31Mar2021–06Apr2021



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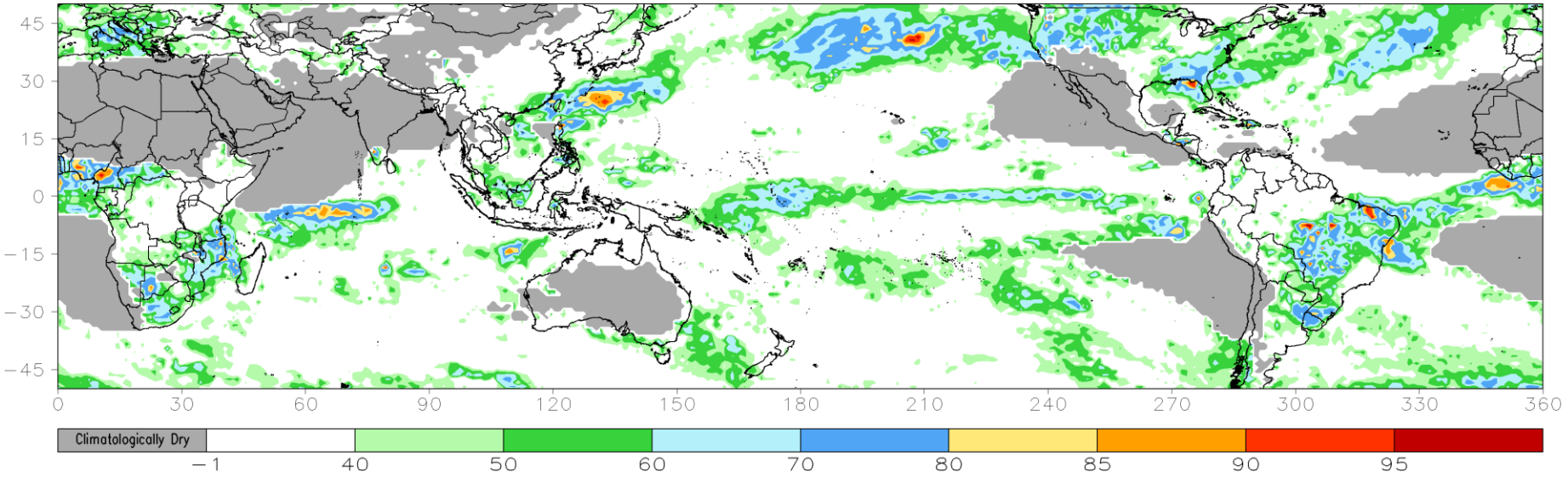
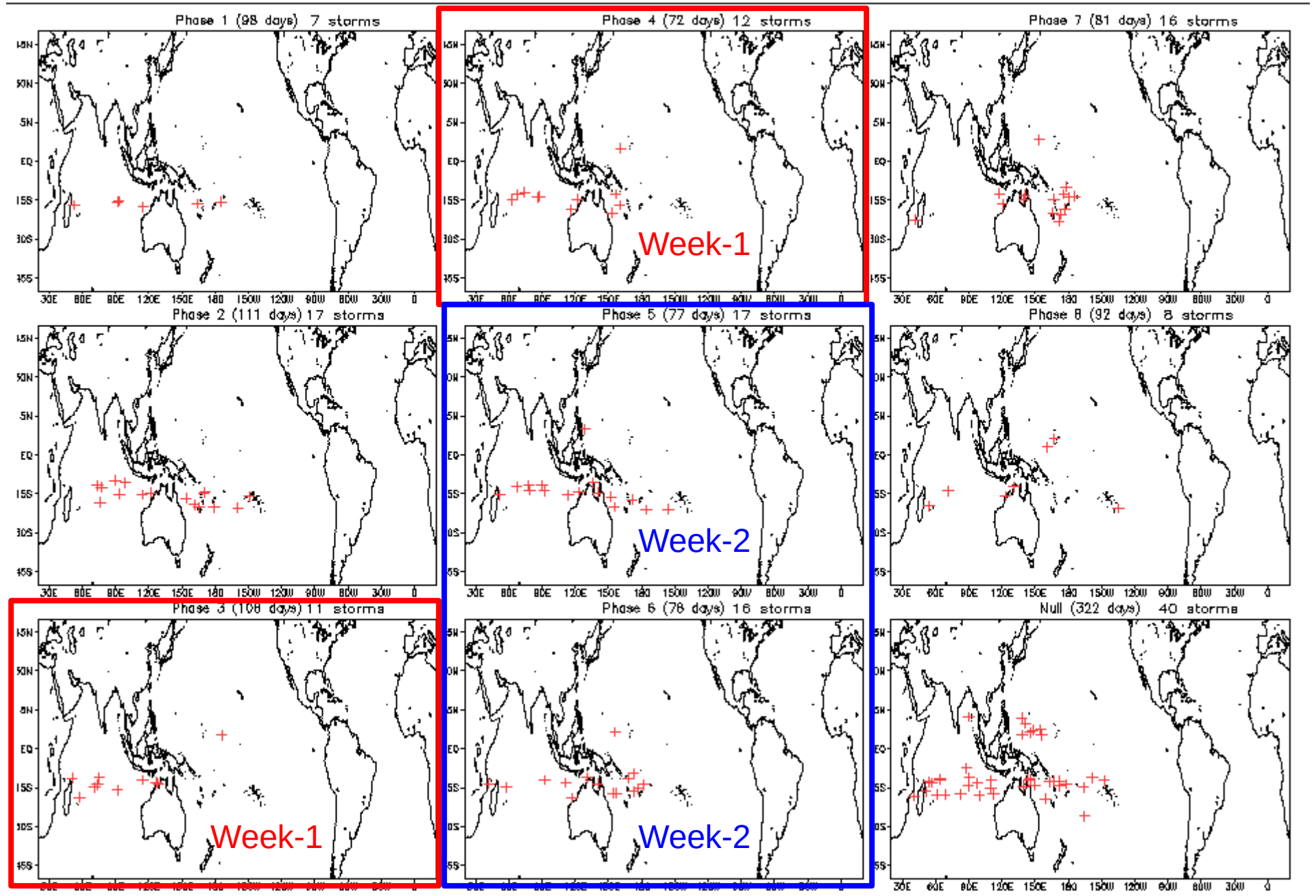
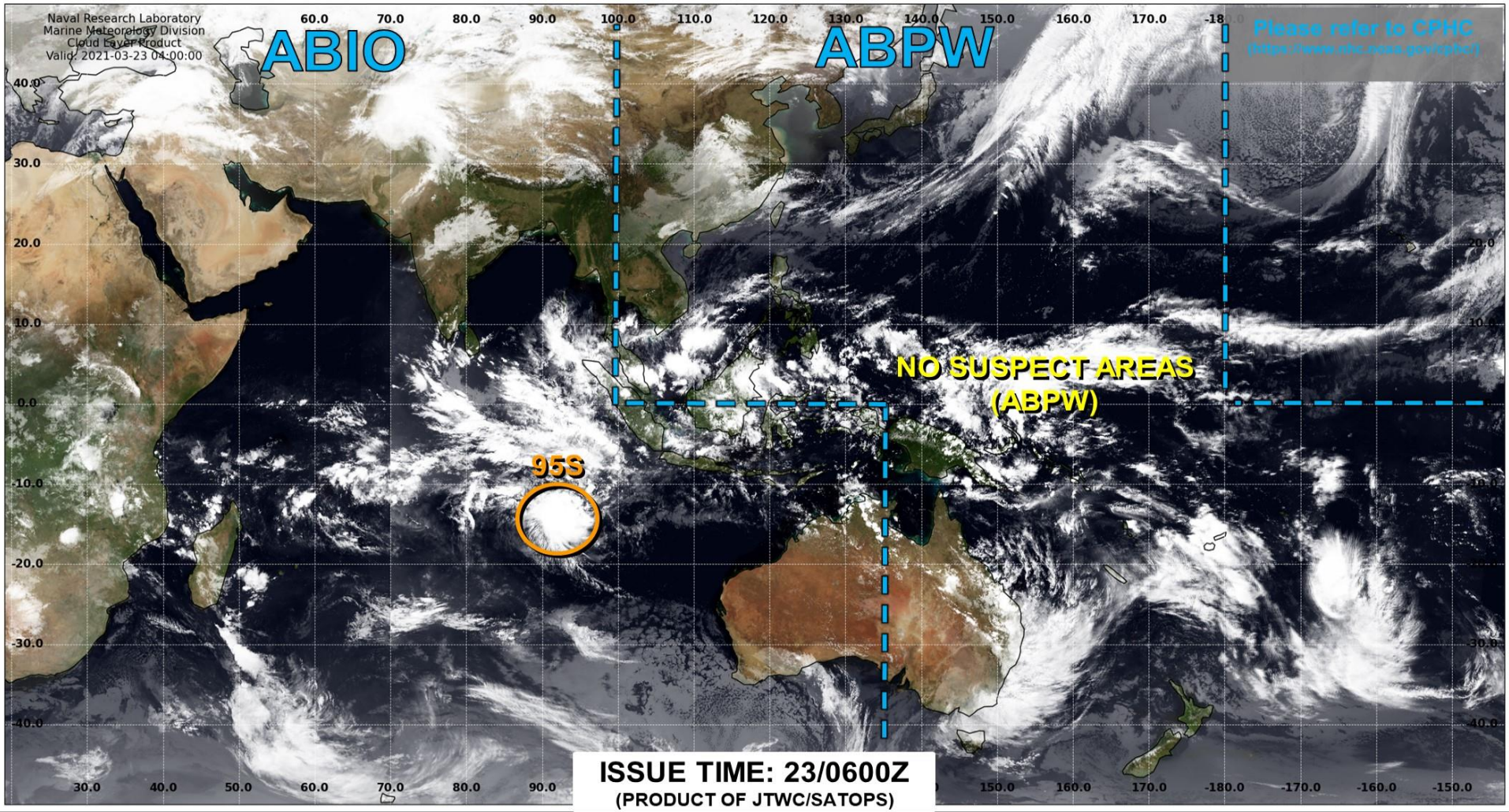


March Tropical Storm Formation by MJO phase



JOINT TYPHOON WARNING CENTER



LOW — TC development unlikely within 24 hours

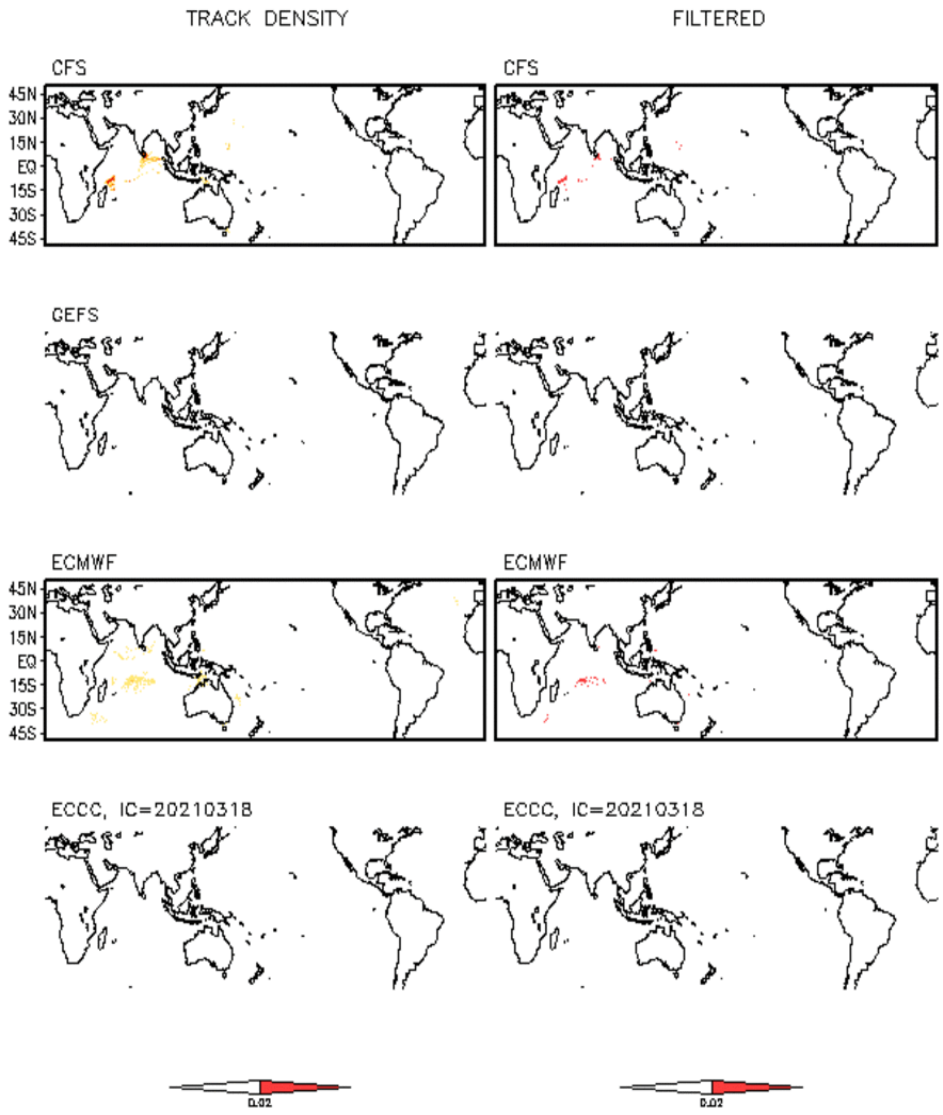
MEDIUM — TC development likely, but expected to occur beyond 24 hours

HIGH — TC development likely within 24 hours (Reference TCFA)

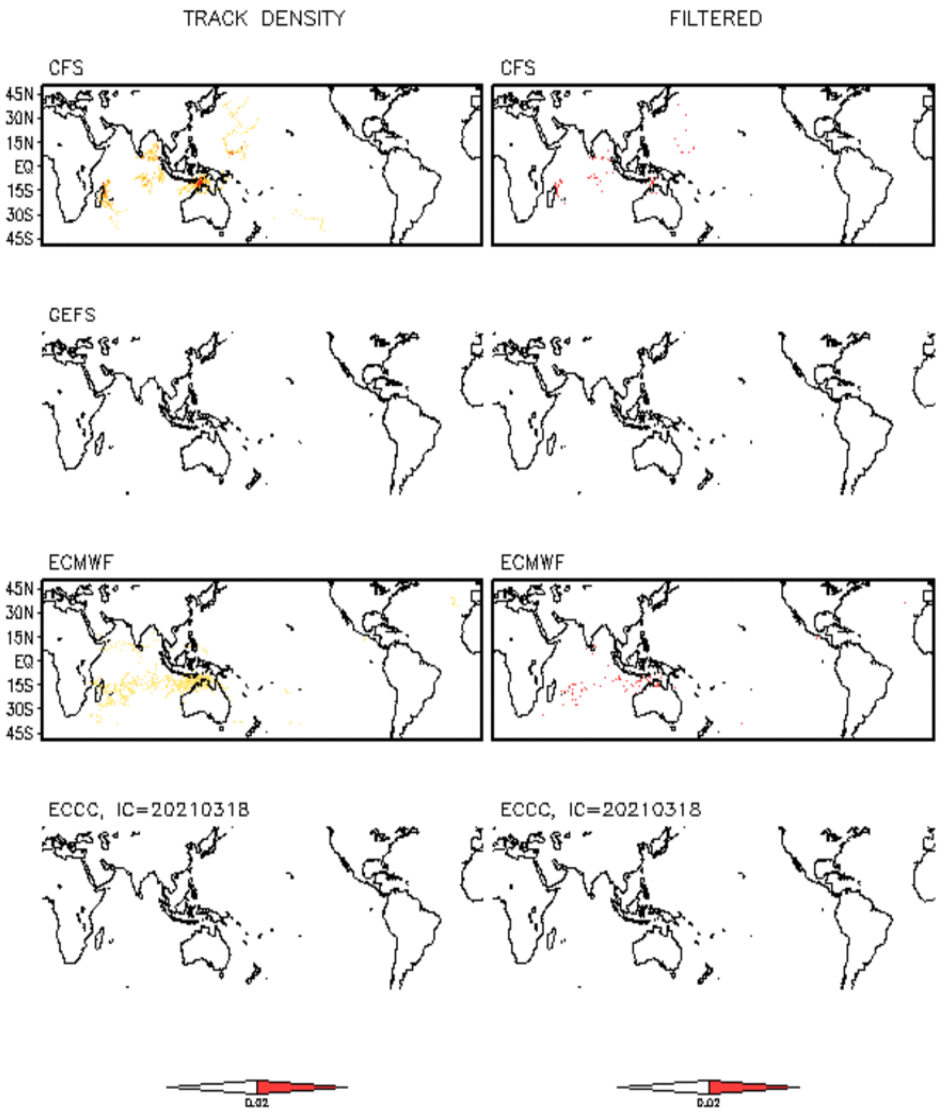
SUB TROPICAL — Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

Tropical Cyclone (Reference Warning)

Storm Track Density Distribution, IC=20210322
Week 1 Forecast: 0324–0330

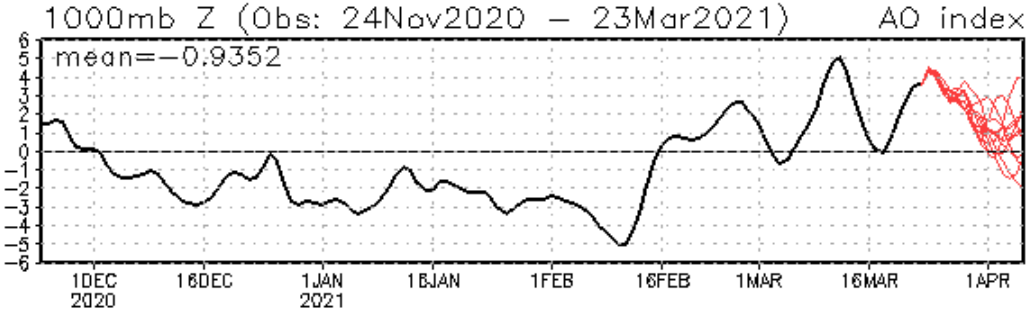


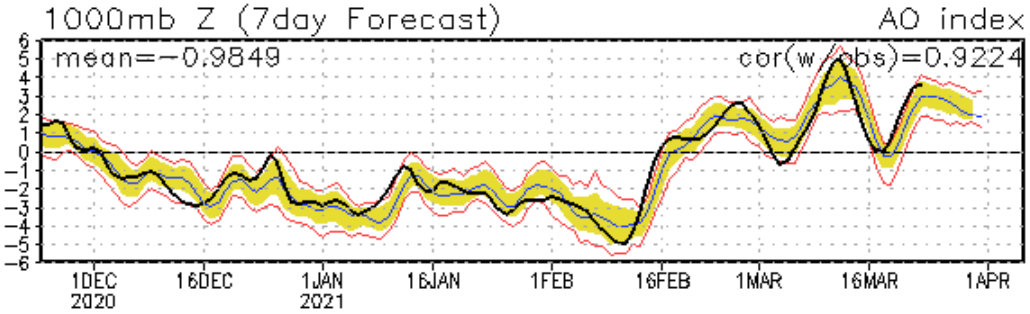
Storm Track Density Distribution, IC=20210322
Week 2 Forecast: 0331–0406

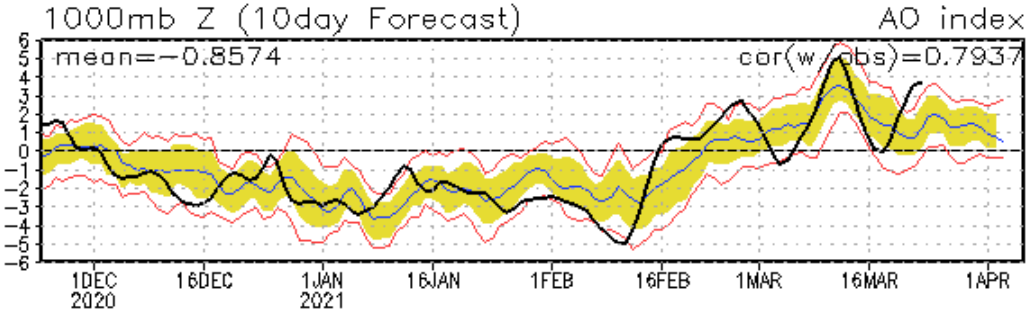


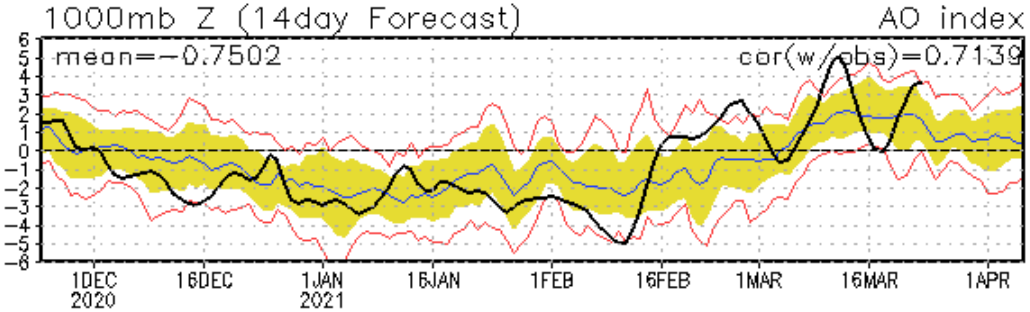
Connections to U.S. Impacts

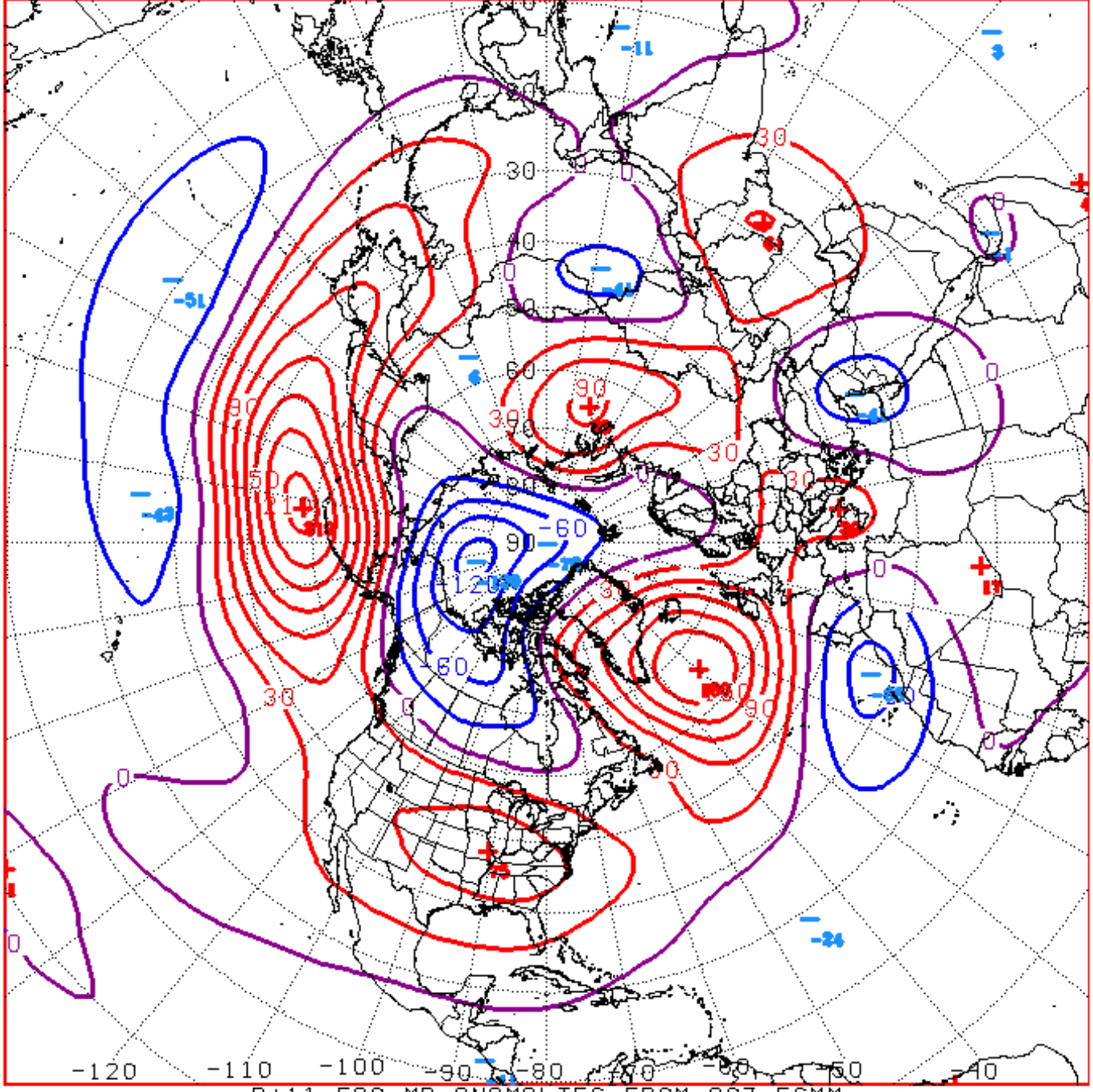
AO: Observed & ENSM forecasts





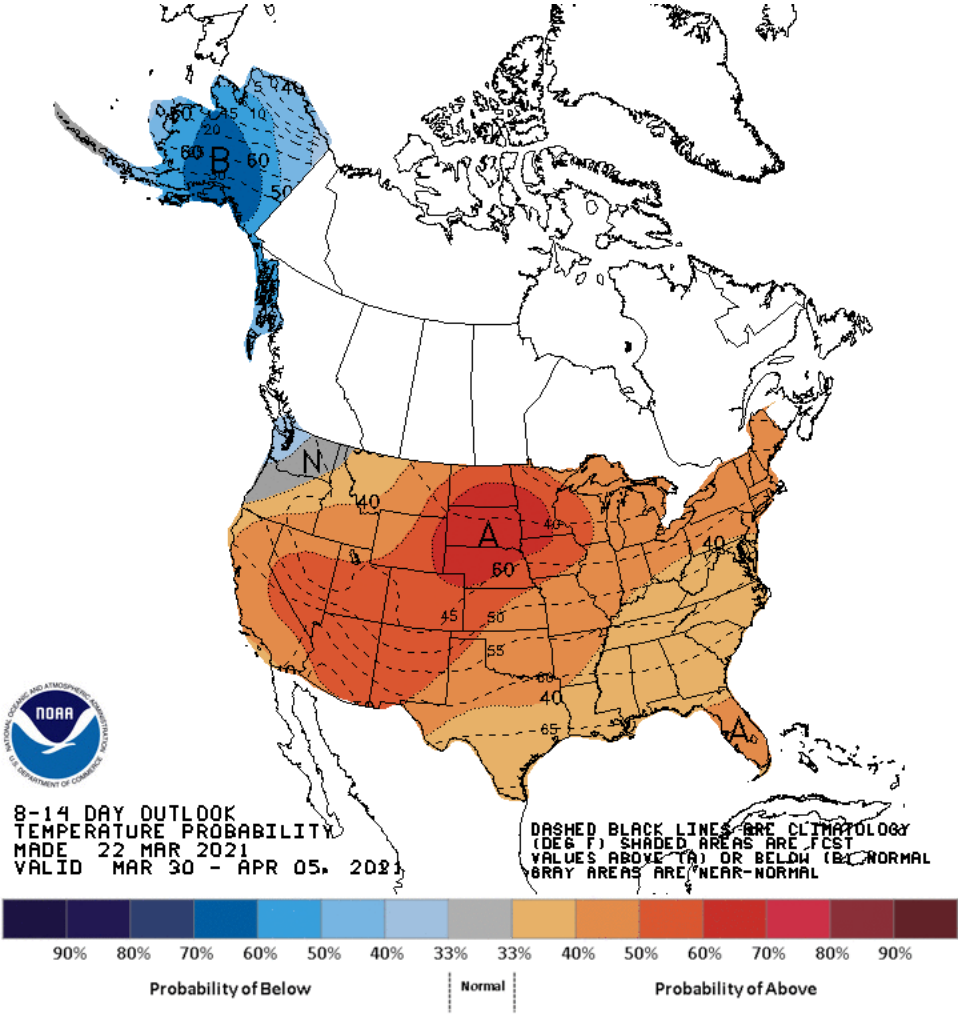


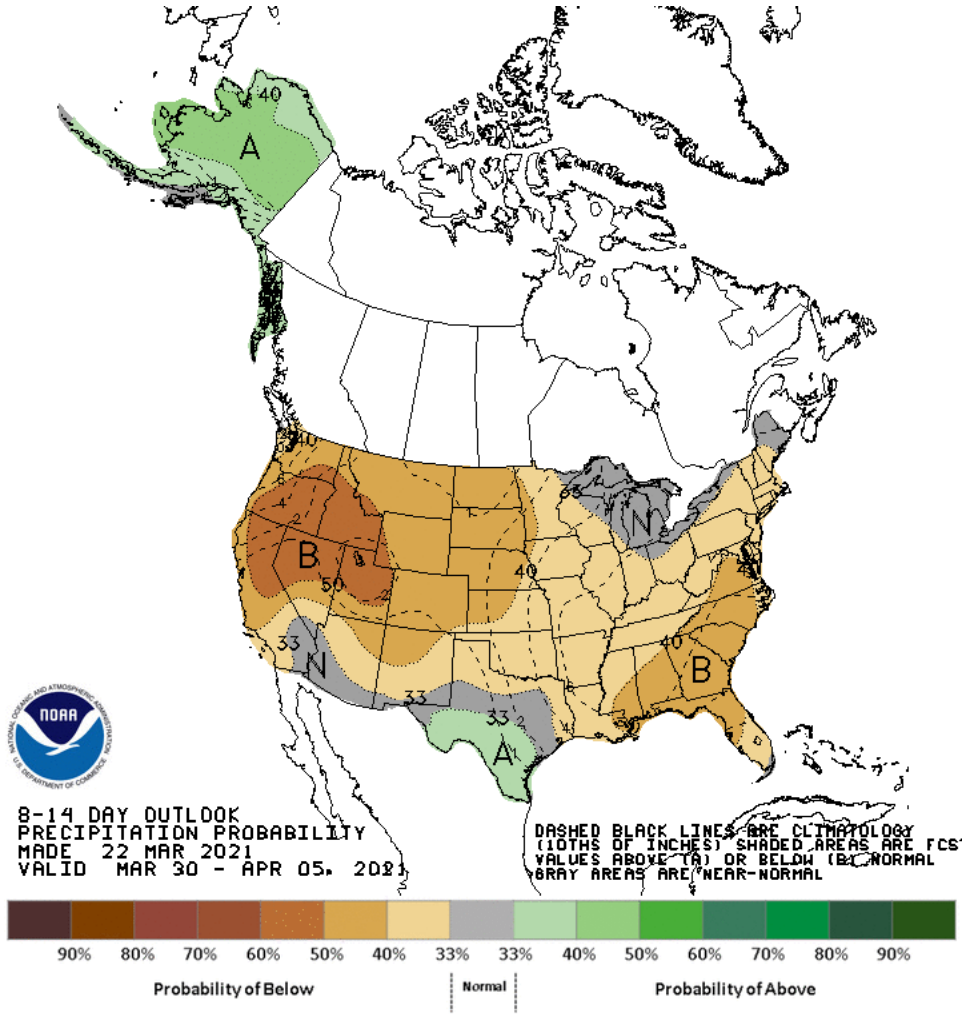




D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE MAR 23 2021 1017 UTC CNTD APR 03 2021

Week 2 – Temperature and Precipitation





Today's maps likely to be fairly similar.

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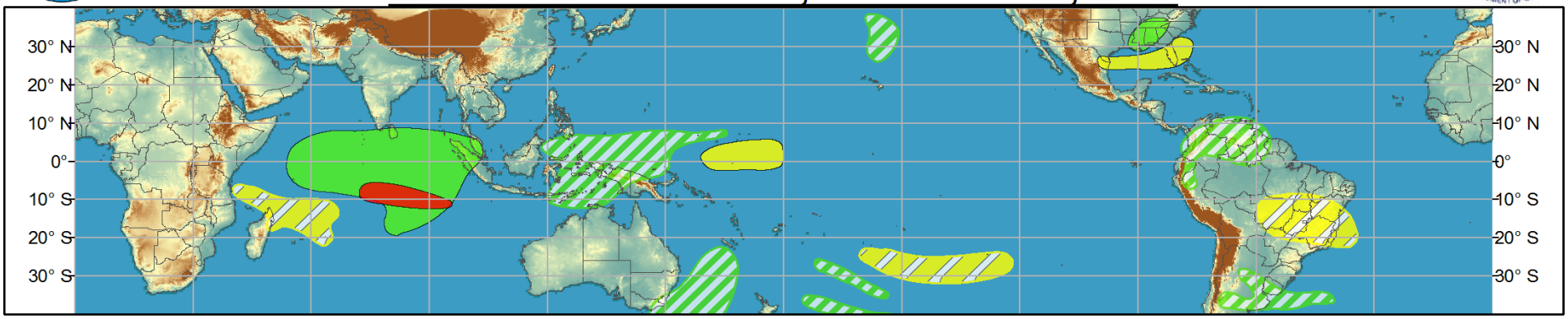

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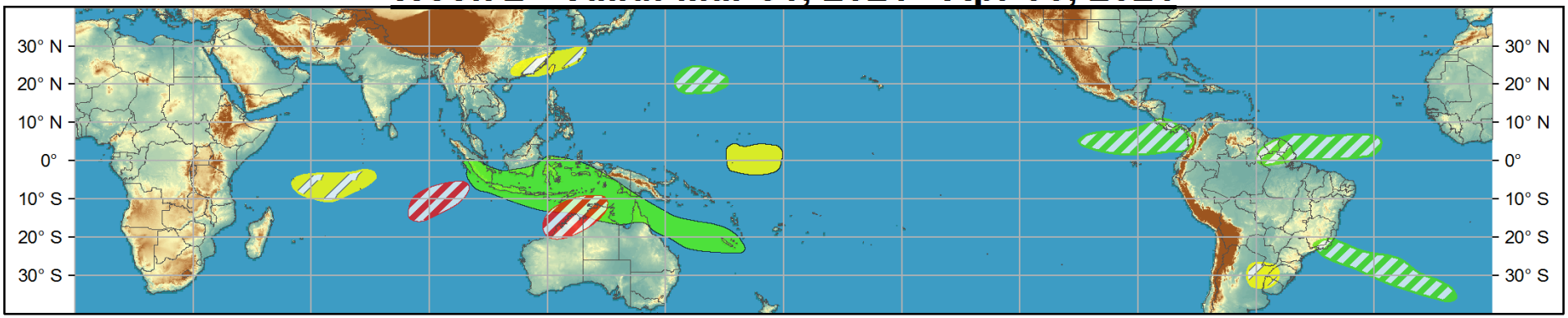

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