

Global Tropics Hazards And Benefits Outlook

3/16/2021

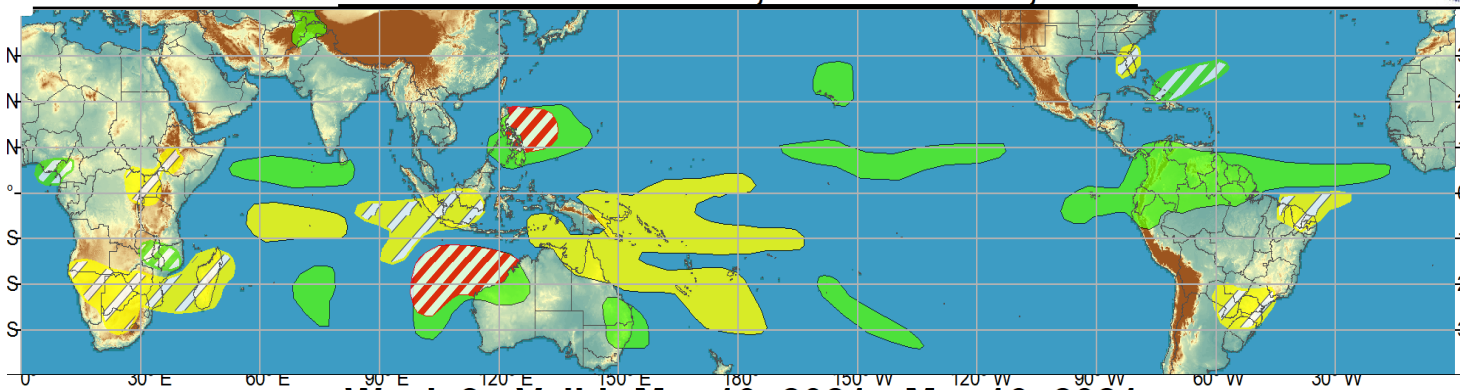
Nick Novella

Outline

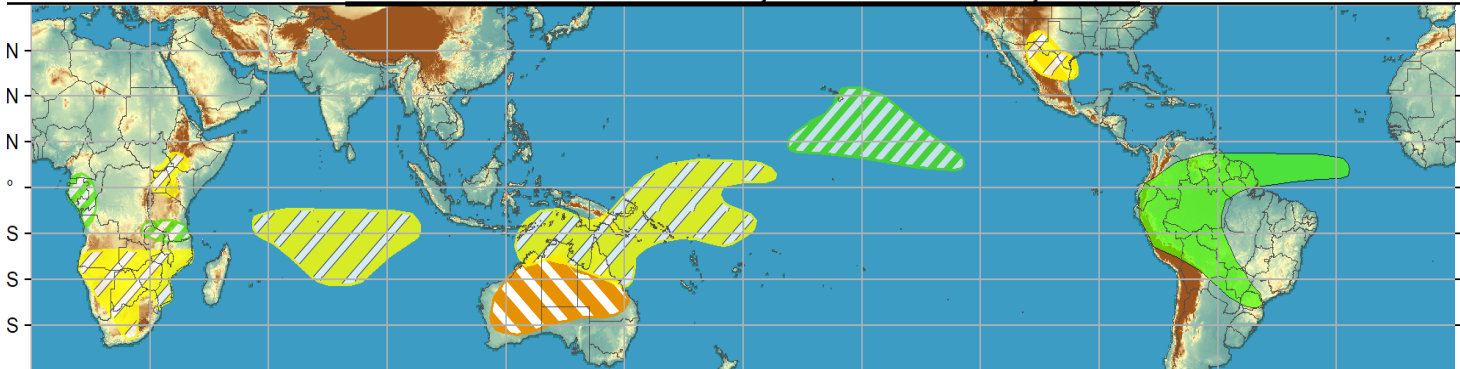
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

Week 1 - Valid: Mar 10, 2021 - Mar 16, 2021

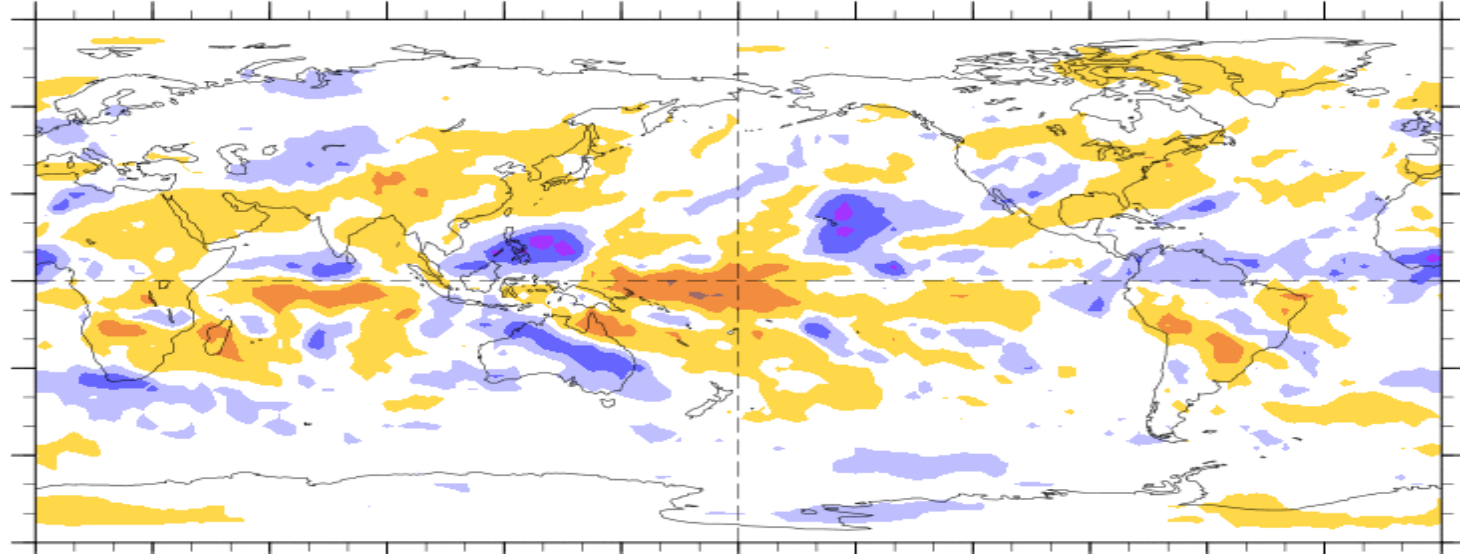


Week 2 - Valid: Mar 10, 2021 - Mar 16, 2021



7-Day Average OLR Anomaly

2021/03/08 - 2021/03/14



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (March 11, 2021 Update)

next update on 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).

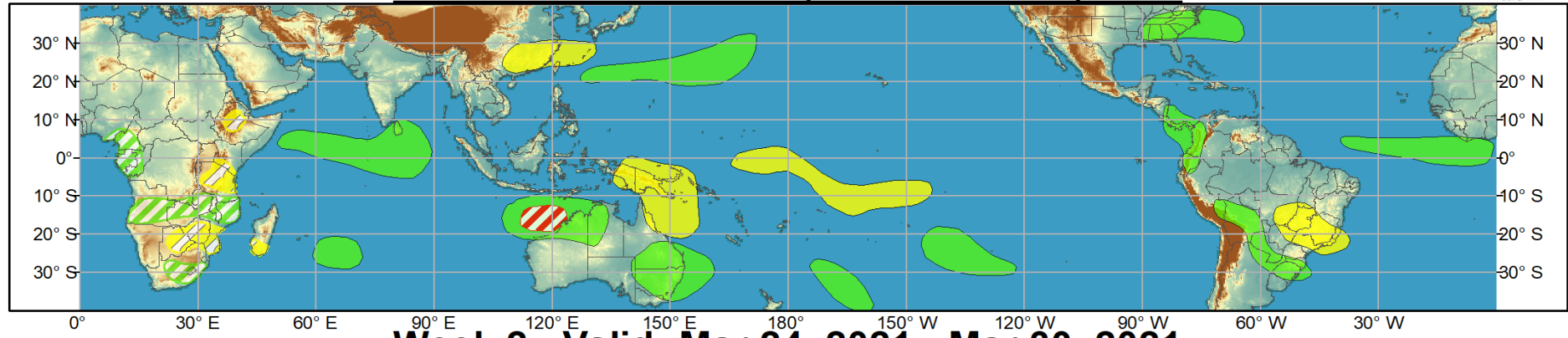
MJO and other subseasonal tropical variability:

- An MJO signal remains apparent in the upper-level velocity potential field, and has shown signs of better organization during the last week.
- Fair agreement among the dynamical models exists which forecast the continued eastward propagation of the MJO in phase 1 during week-1, but favor an overall decrease in amplitude during week-2.
- Enhanced precipitation is favored across portions of the Western hemisphere, with a potential for flooding impacts over parts of South America. While tropical activity looks relatively quiet during week-1, an uptick in TC activity would be expected over the Indian Ocean should the MJO remain robust towards the end of March.

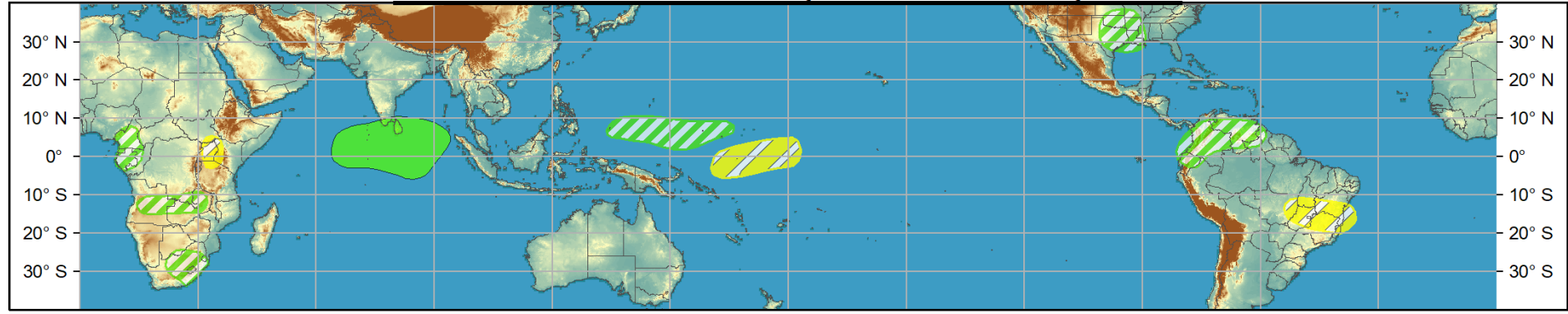


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 17, 2021 - Mar 23, 2021



Week 2 - Valid: Mar 24, 2021 - Mar 30, 2021



Confidence
High 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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Produced: 03/16/2021
Forecaster: Novella

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IR Satellite & 200-hpa Velocity Potential Anomalies

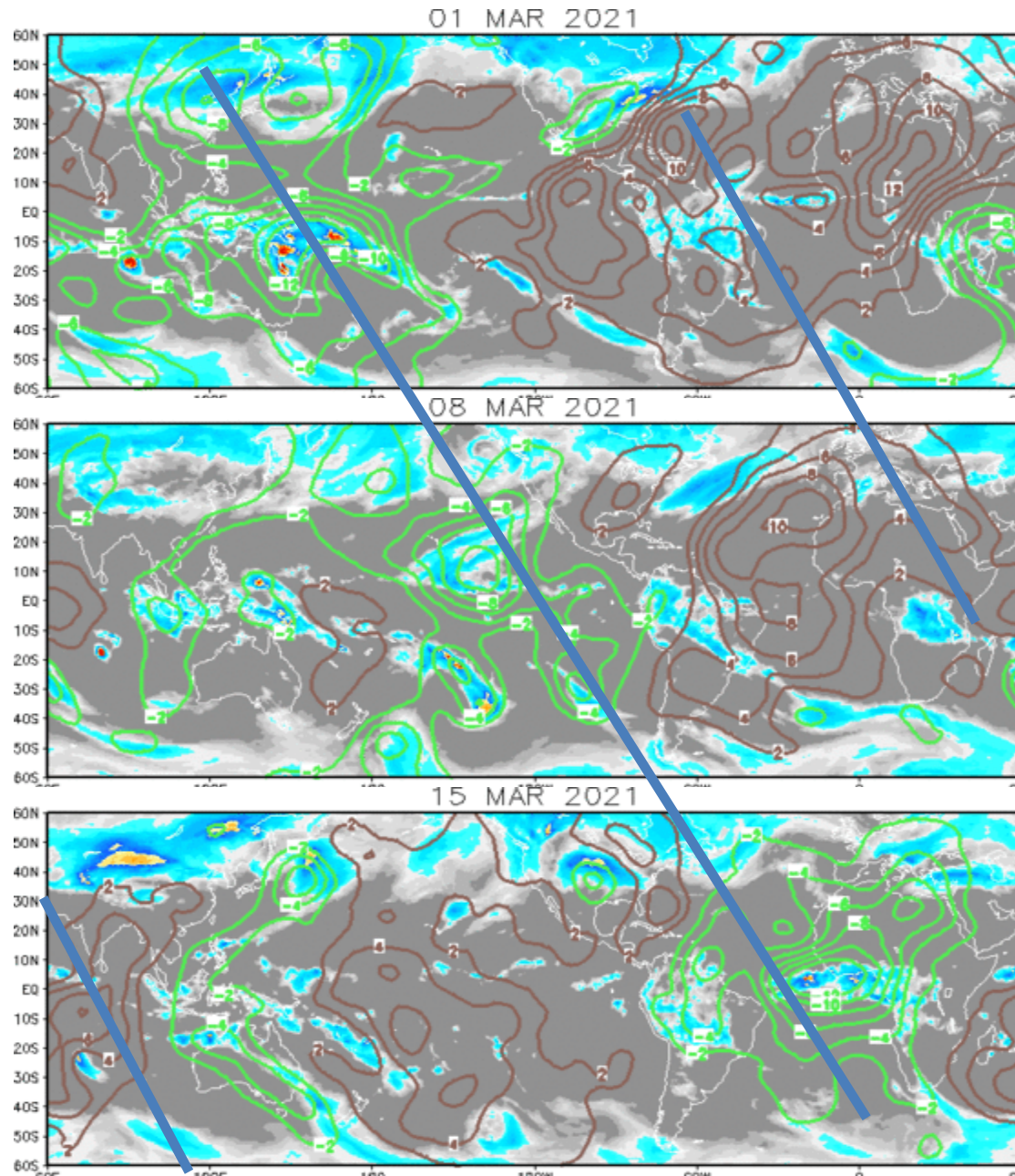
Green: Enhanced Divergence

Brown: Enhanced Convergence

Rossby/Kelvin wave interference helped generate a broader convective envelope over the Indian Ocean/ Maritime Continent.

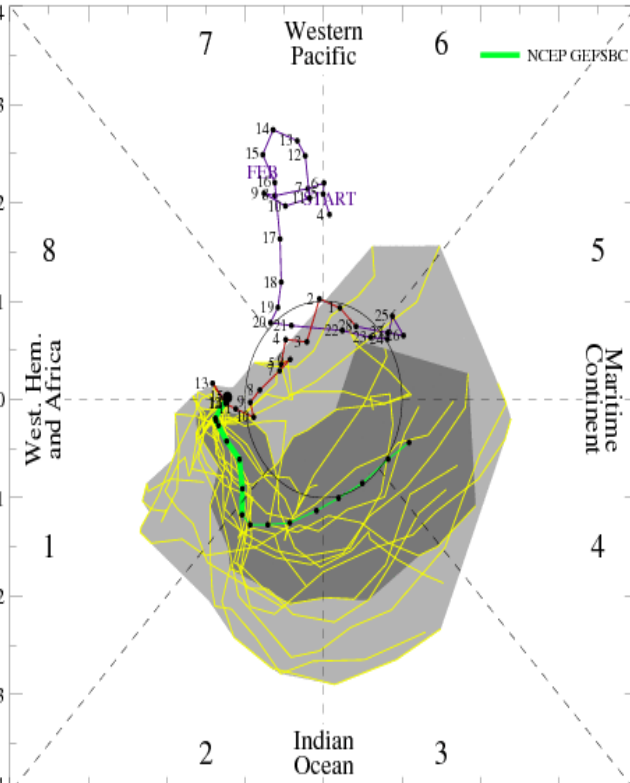
The enhanced envelope has propagated eastward across the Pacific, though most of the signal is off-Equator due to La Niña interference.

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.

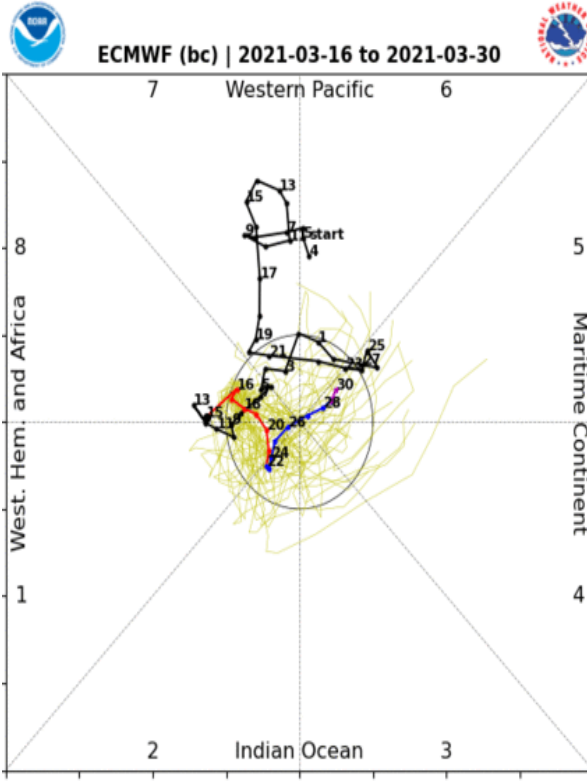


MJO Observation/Forecast

[RMM1, RMM2] forecast for Mar-16-2021 to Mar-30-2021

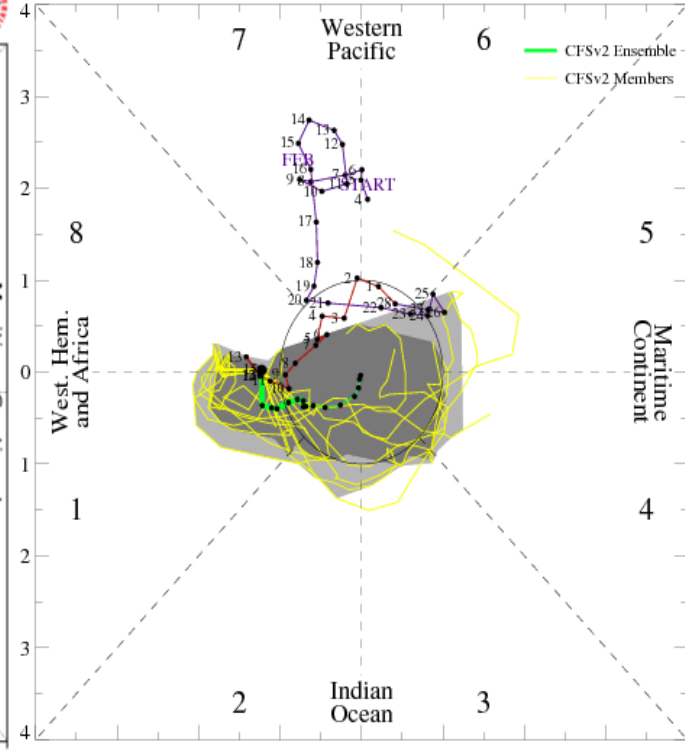


GEFS



ECMWF

[RMM1, RMM2] forecast for Mar-16-2021 to Mar-30-2021

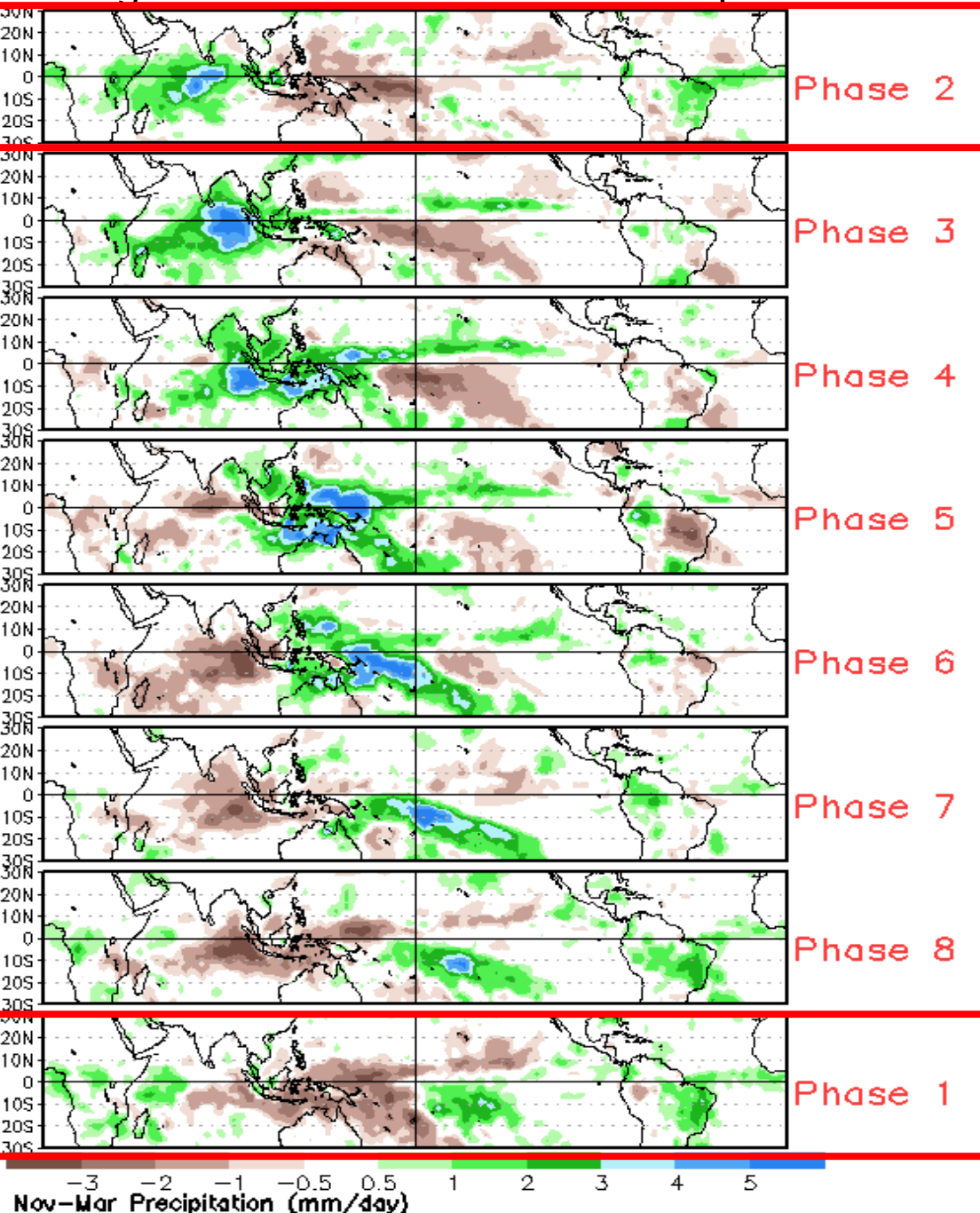


ECMWF

The GEFS forecast depicts a gradual increase in MJO amplitude while propagating eastward in phase 1 during week-1, before decreasing in amplitude during week-2. Several ensemble members continue to depict a strong event crossing the Indian Ocean and reaching the Maritime Continent by the end of March

Both the CFS and the ECWMF favor a weaker amplitude event, with the latter suggesting a faster phase speed (phase 5 by end of March)

Average Conditions when the MJO is present

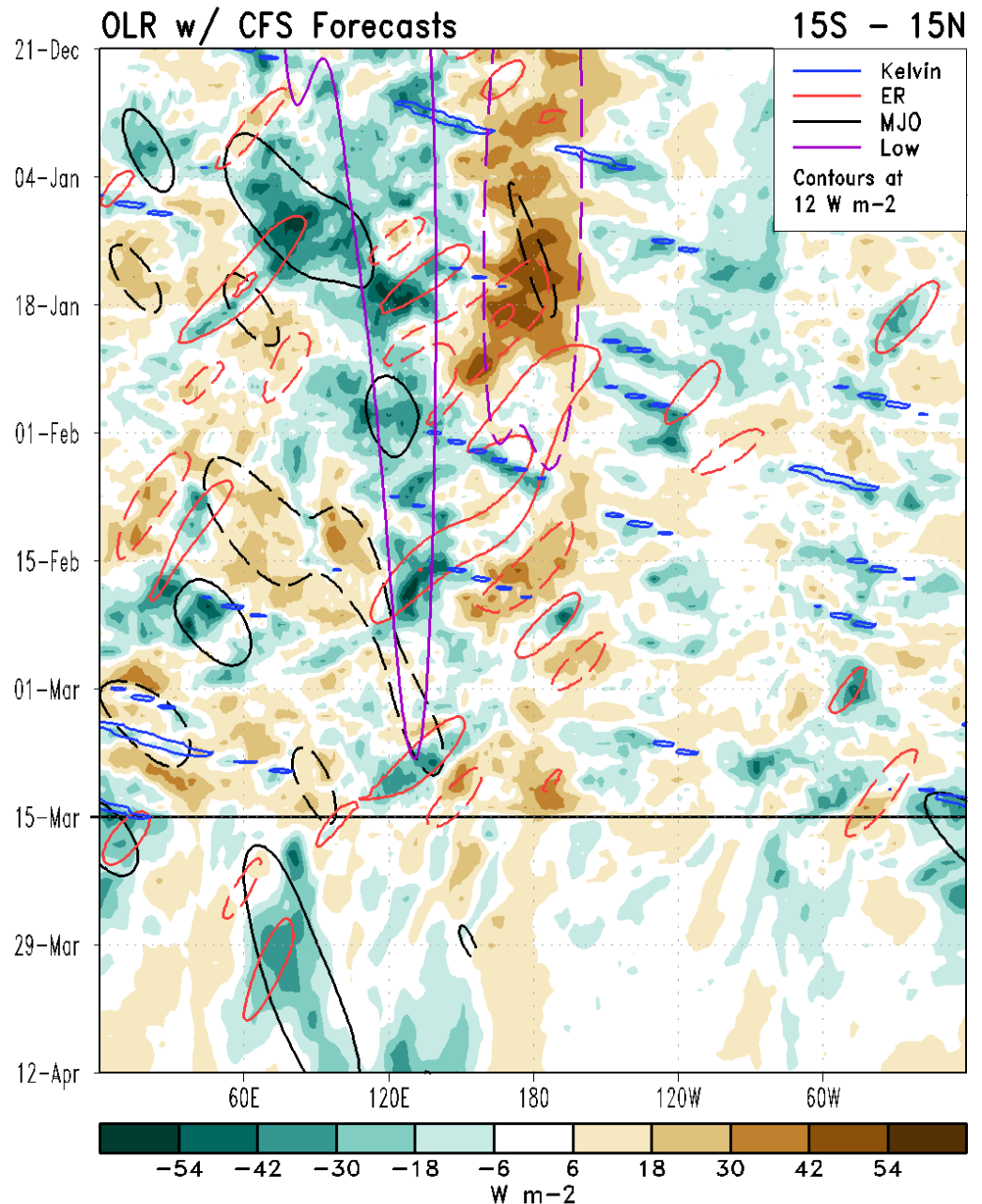


CAVEAT: These panels are representative of robust MJO events.

While not entirely analyzed, **MJO** activity is apparent in the OLR wide (15S-15N) field.

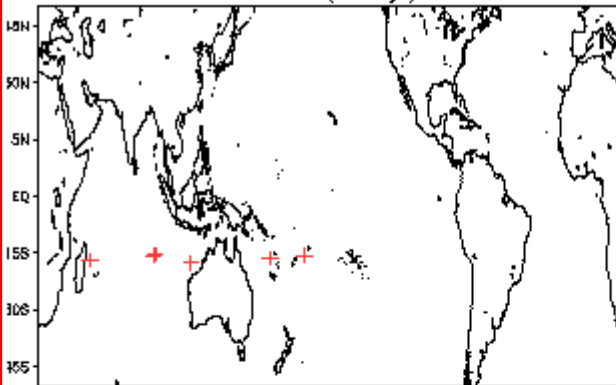
Low frequency contours depict ENSO cold conditions, which continue to drive suppressed convection along the Date Line. Signal appears weaker in the forecast.

Rosby Wave activity enhancing convection is observed near the Maritime Continent recently.

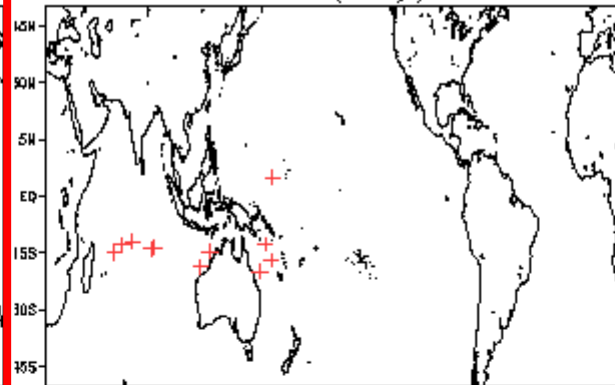


March Tropical Storm Formation by MJO phase

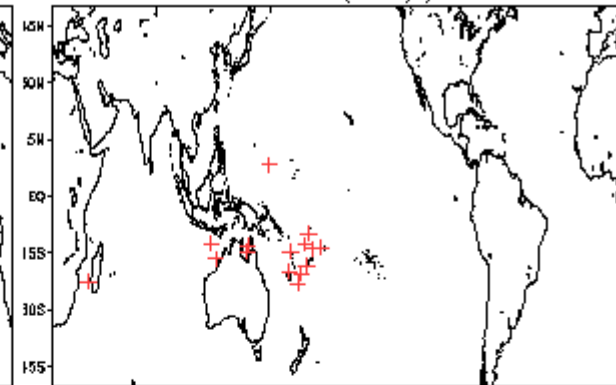
Phase 1 (98 days) 7 storms



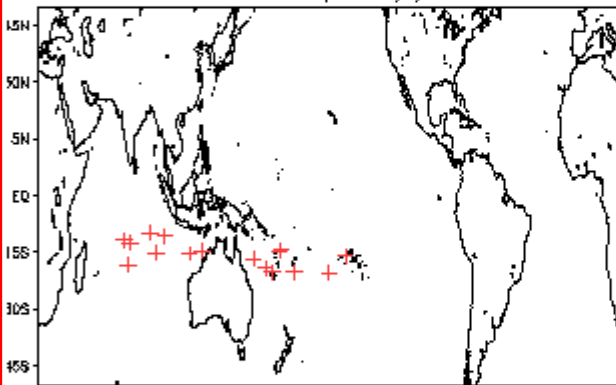
Phase 4 (72 days) 12 storms



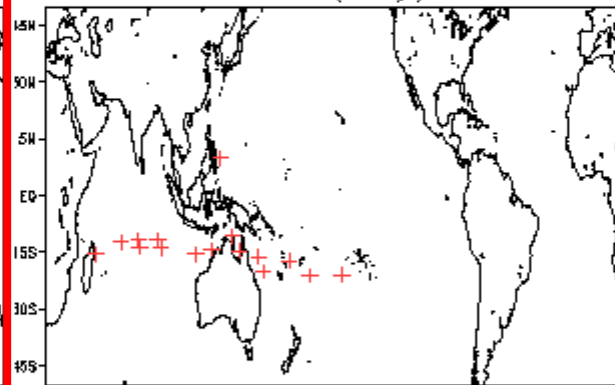
Phase 7 (81 days) 16 storms



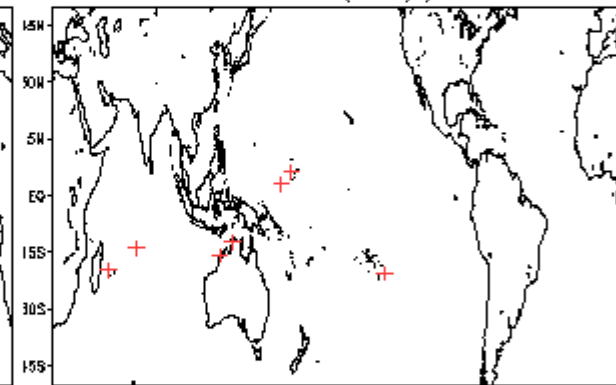
Phase 2 (111 days) 17 storms



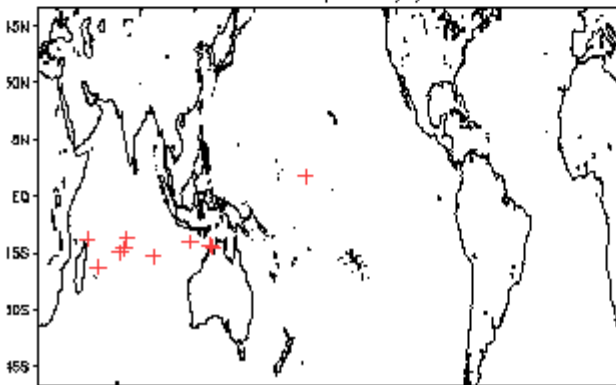
Phase 5 (77 days) 17 storms



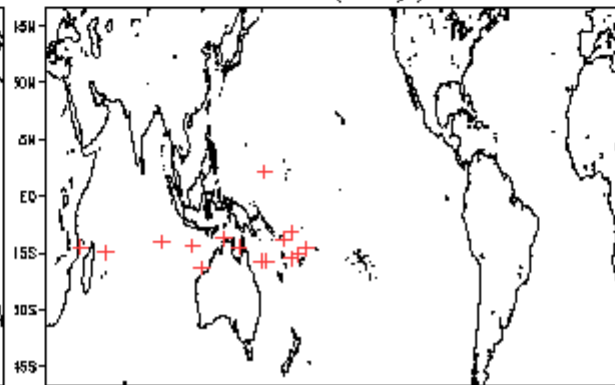
Phase 8 (92 days) 8 storms



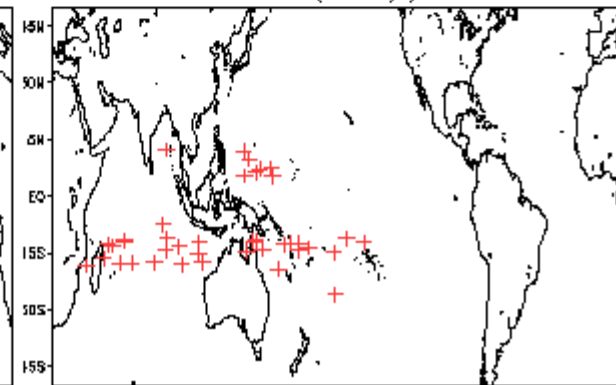
Phase 3 (108 days) 11 storms



Phase 6 (78 days) 16 storms



Null (322 days) 40 storms





JOINT TYPHOON WARNING CENTER



Naval Research Laboratory
Marine Meteorology Division
Cloud Layer Product
Valid: 2021-03-16 04:00:00

FABIO

ABPW

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

**NO SUSPECT AREAS
(ABPW)**

**RMNTS TC 24S
"HABANA"**



**ISSUE TIME: 16/0600Z
(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)

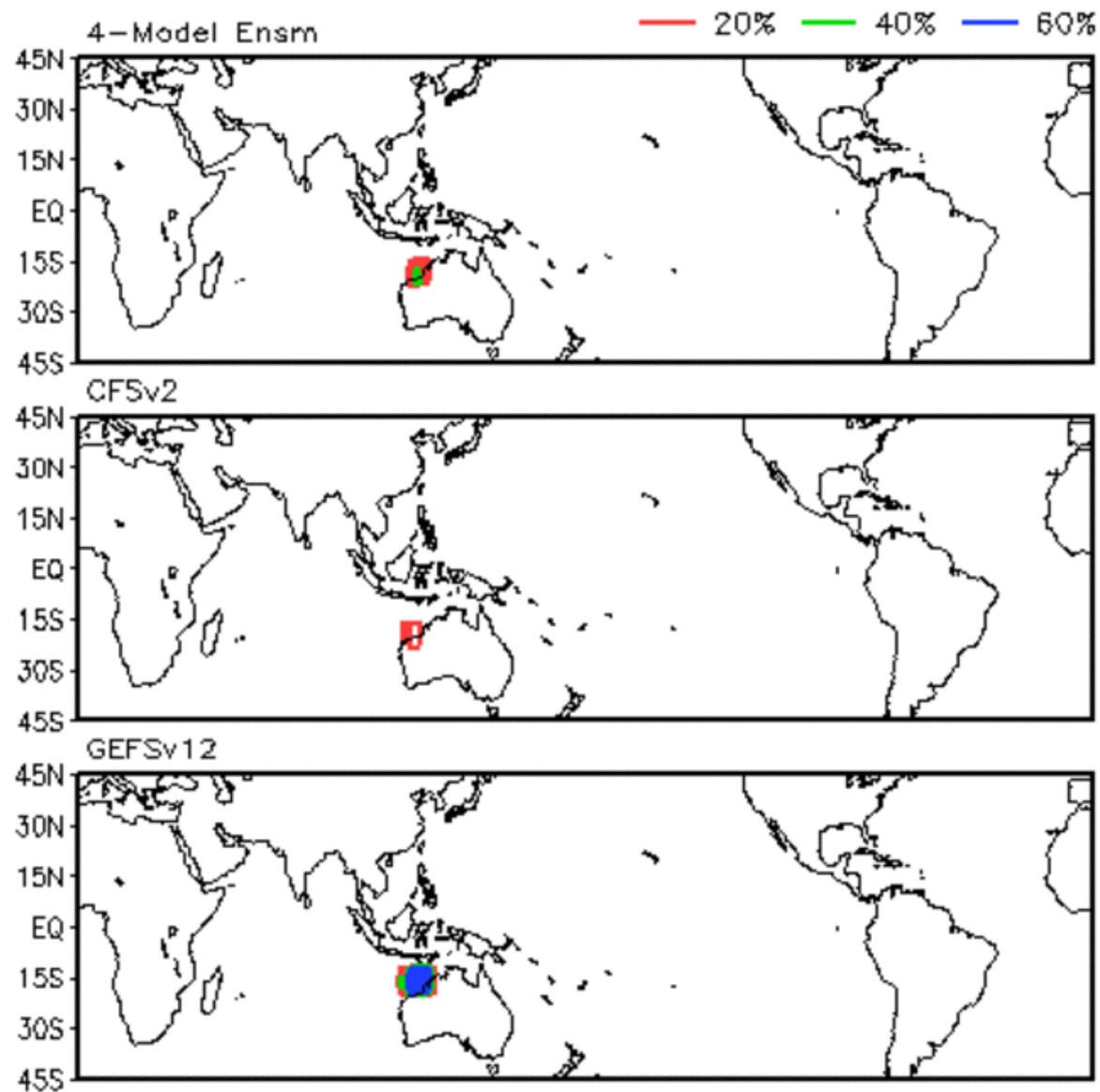
SUB TROPICAL

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

 Tropical Cyclone (Reference Warning)

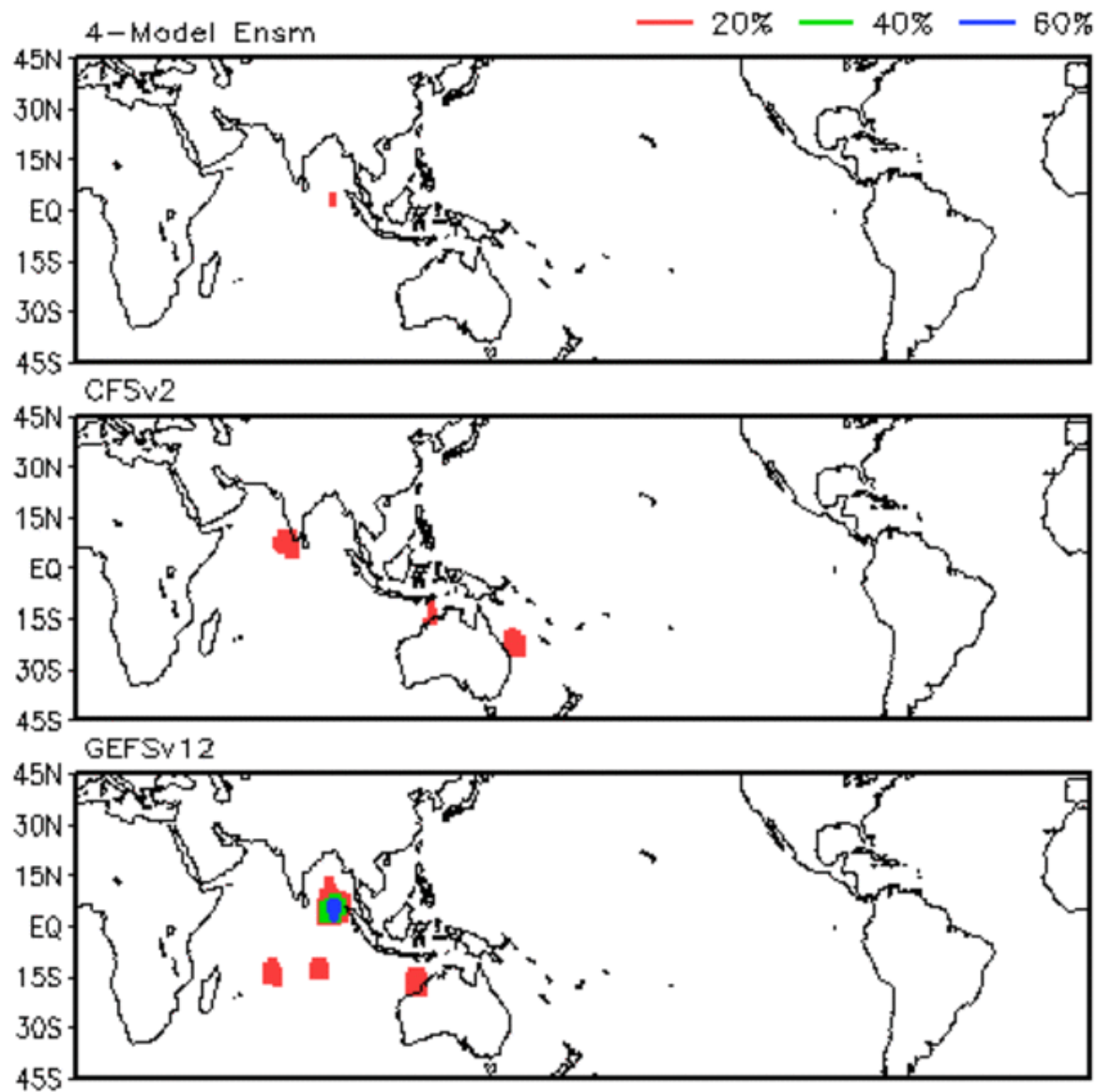
Storm Track Probabilities, IC=20210315

Week 1: 0317 - 0323



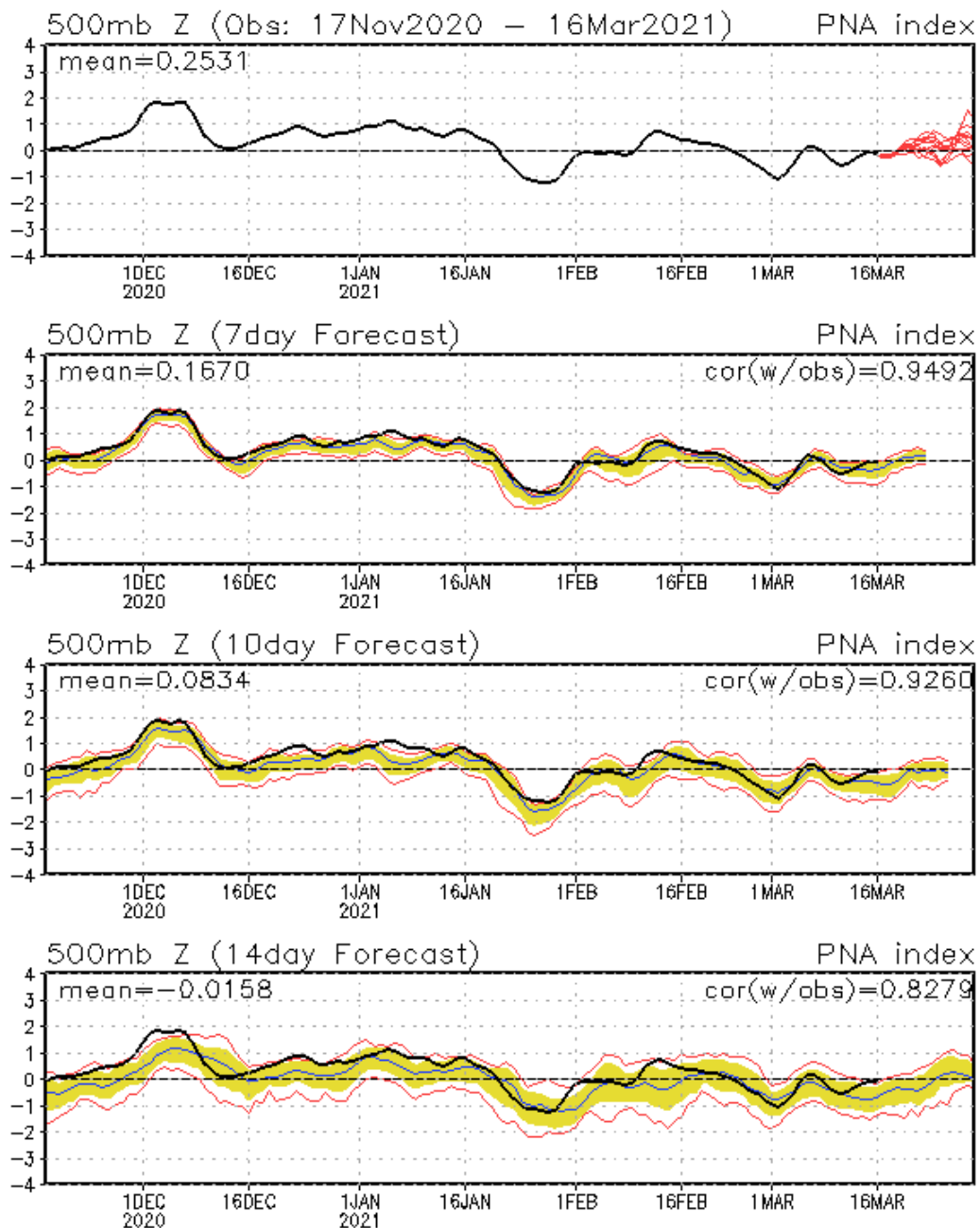
Storm Track Probabilities, IC=20210315

Week 2: 0324 - 0330

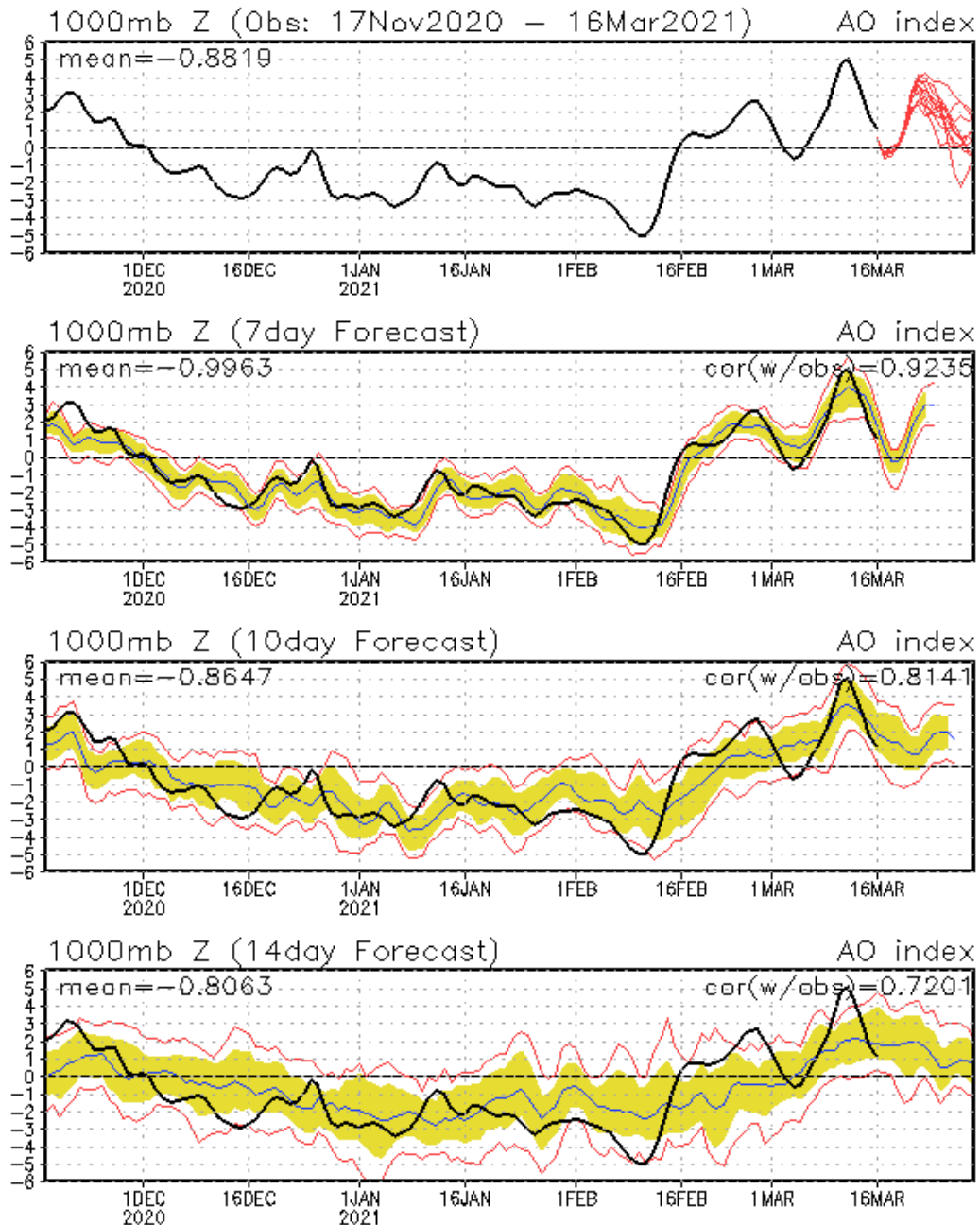


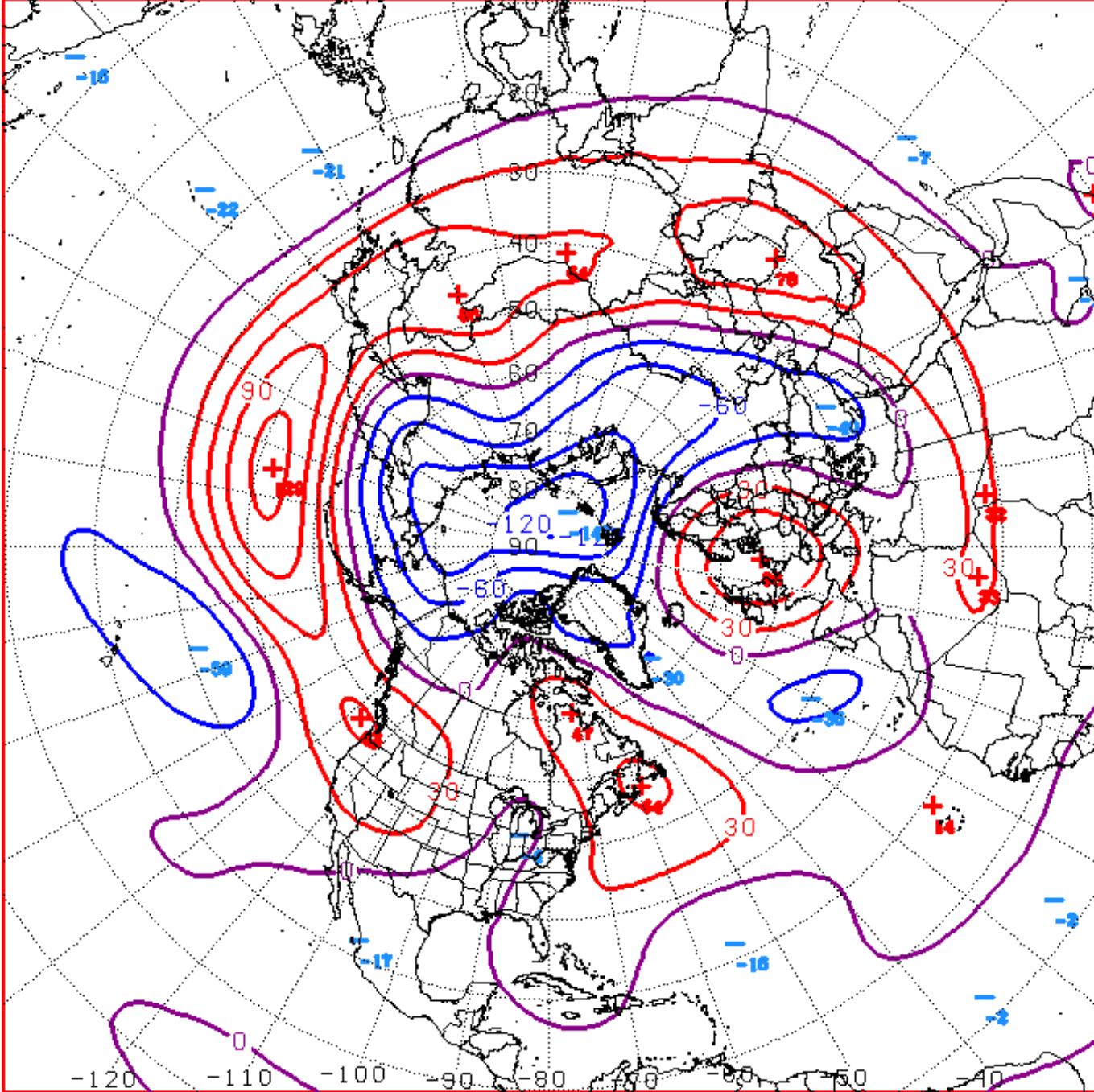
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts



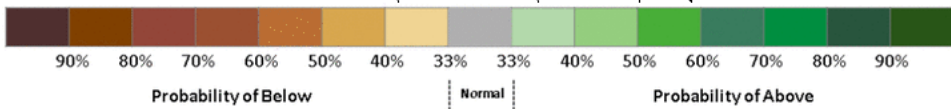
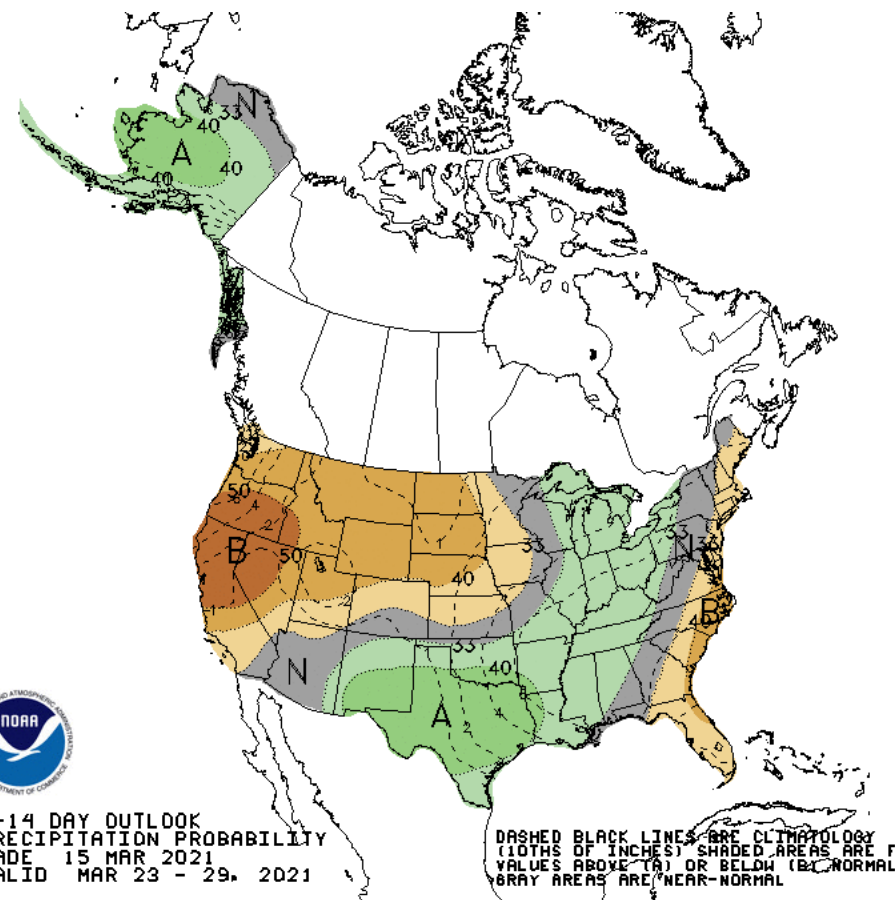
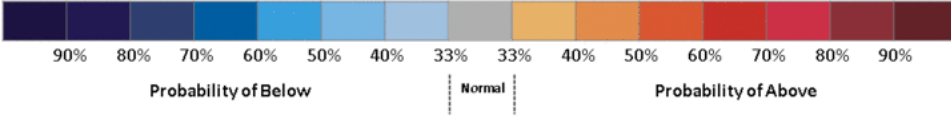
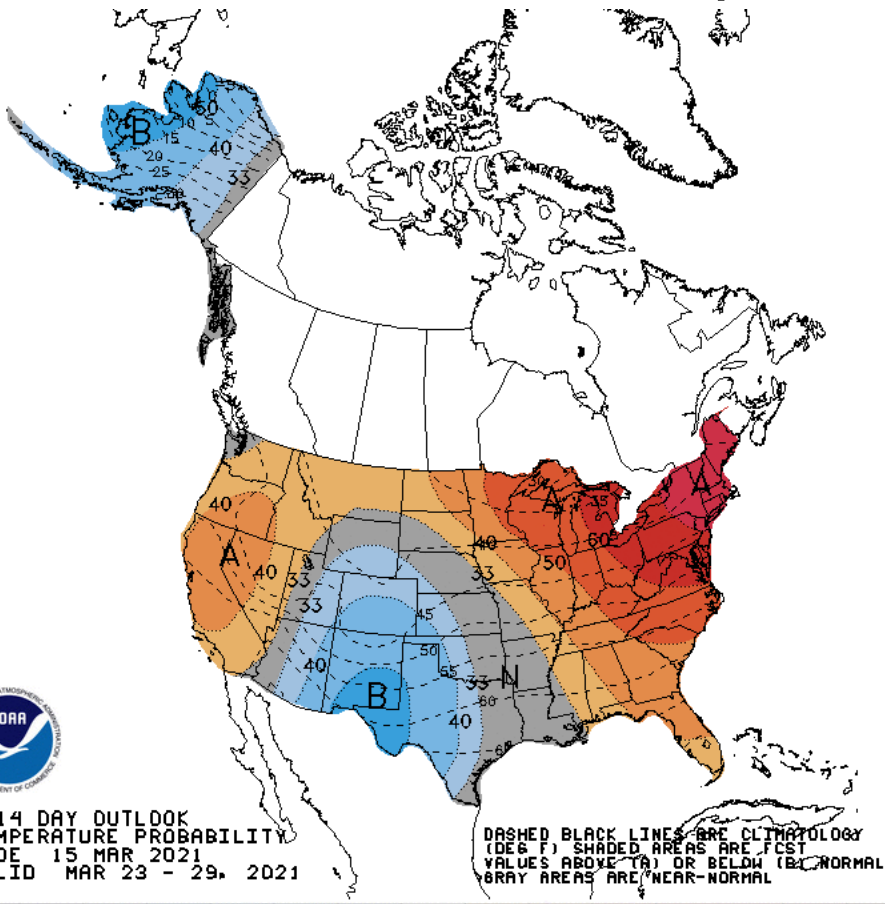
AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE MAR 16 2021 1422 UTC CNTD MAR 27 2021

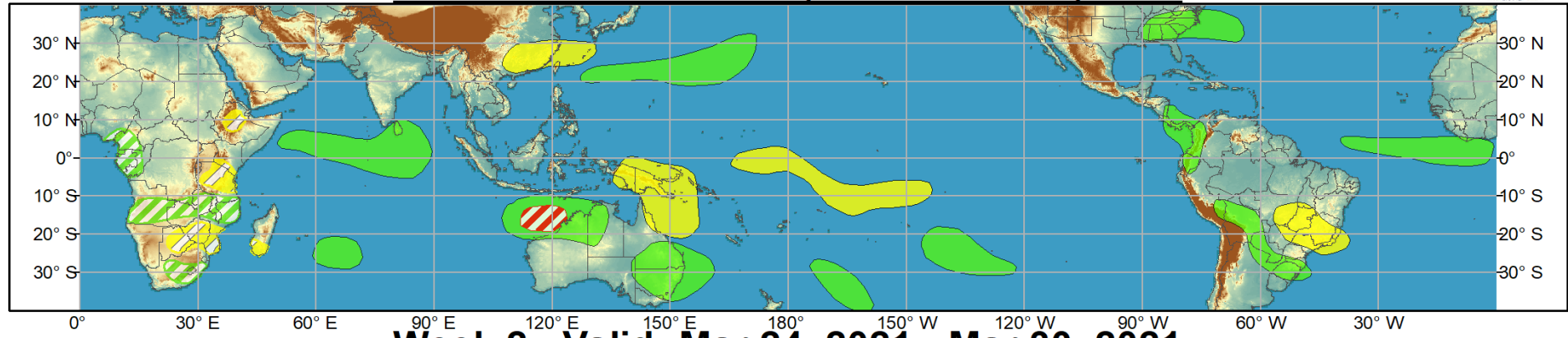
Week 2 – Temperature and Precipitation



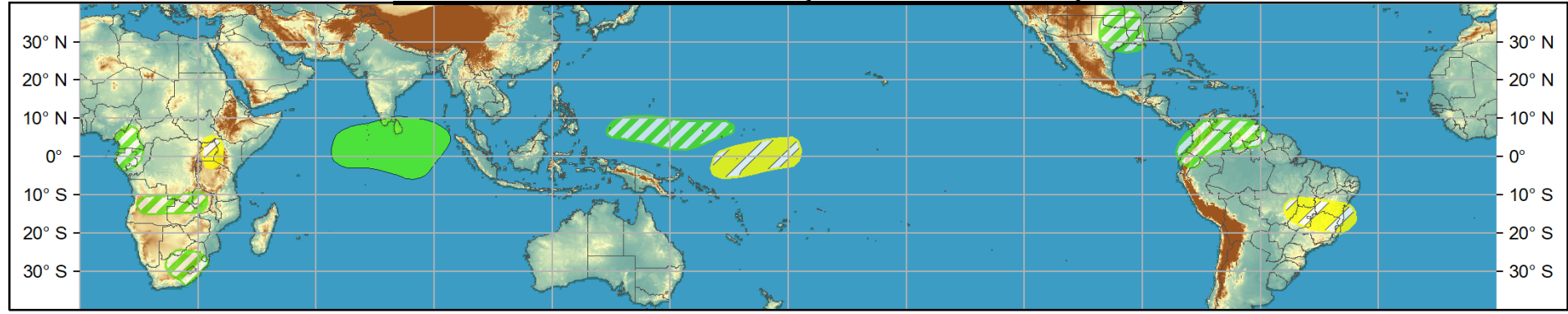


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