

Global Tropics Hazards And Benefits Outlook

2/23/2021

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

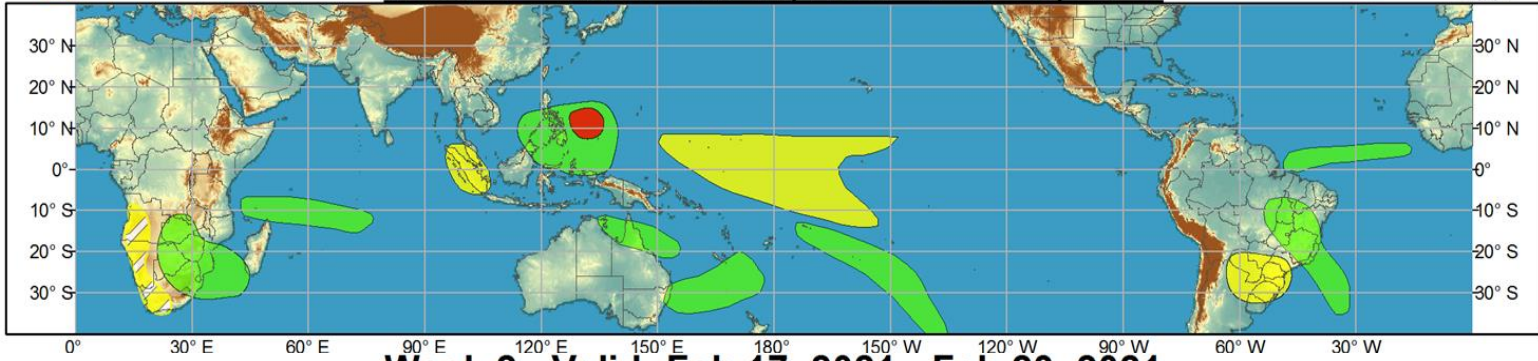
Outlook Review



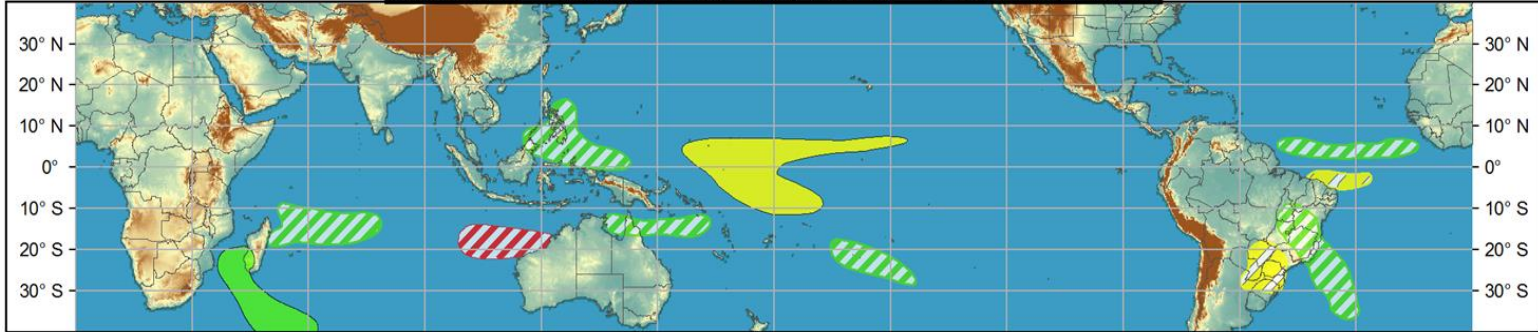
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



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



Week 2 - Valid: Feb 17, 2021 - Feb 23, 2021

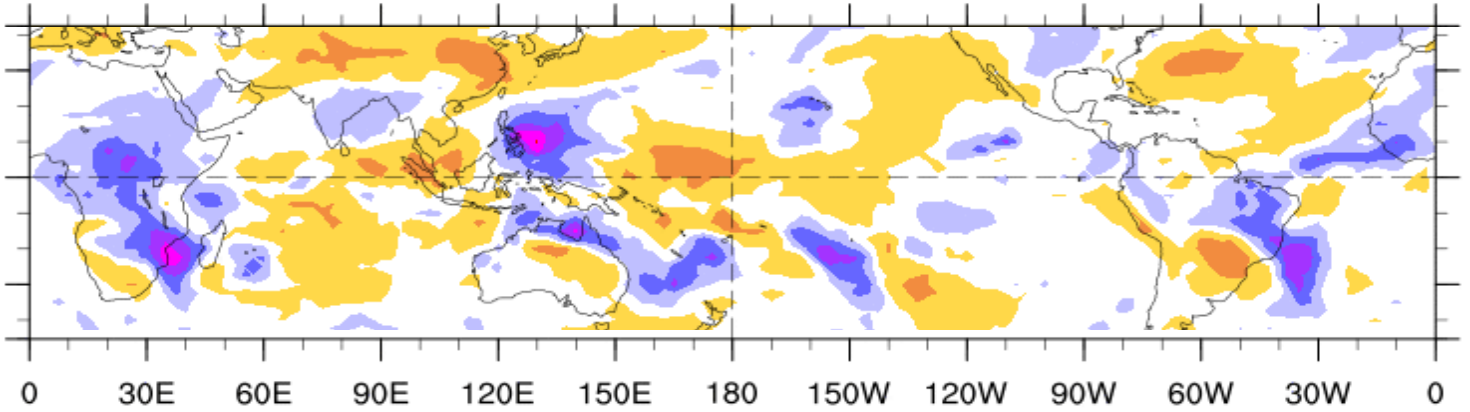


7-Day Average OLR Anomaly

2021/02/15 - 2021/02/21

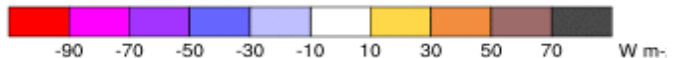
Cool shading
More clouds/rain

Warm shading
Less clouds/rain



NOAA/PSL

Base Period: 1981-2010



Synopsis of Climate Modes

ENSO: (February 11, 2021 Update)

next update on 11th of Mar.!

- 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).

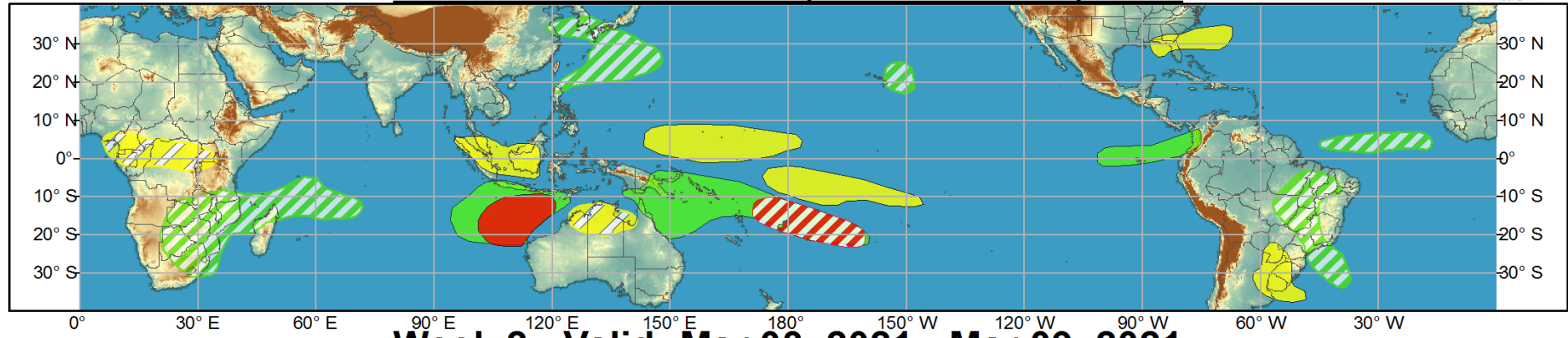
MJO and other subseasonal tropical variability:

- The MJO remains weak. Recent strong projections of the RMM index over the West Pacific were due to a strong Rossby wave.
- The Rossby wave is currently over the Maritime Continent, and may help generate tropical cyclone activity north of Australia's Kimberley Coast.
- A Kelvin wave crossing the Indian Ocean may initiate renewed West Pacific convection during the outlook period.
- Westerly low-level winds associated with the Rossby wave may have helped generate a downwelling oceanic Kelvin wave.

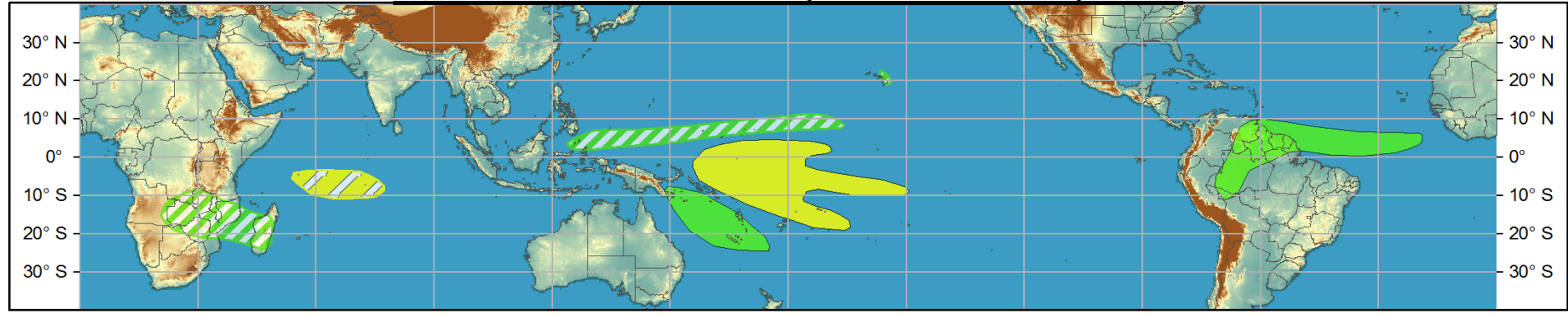


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Feb 24, 2021 - Mar 02, 2021



Week 2 - Valid: Mar 03, 2021 - Mar 09, 2021



Produced: 02/23/2021
Forecaster: Allgood

- | 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. |
| | | Below-average rainfall Weekly total rainfall in the lower third of the historical range. |
| | | Above-normal temperatures 7-day mean temperatures in the upper third of the historical range. |
| | | Below-normal temperatures 7-day mean temperatures in the lower third of the historical range. |

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



IR Satellite & 200-hpa Velocity Potential Anomalies

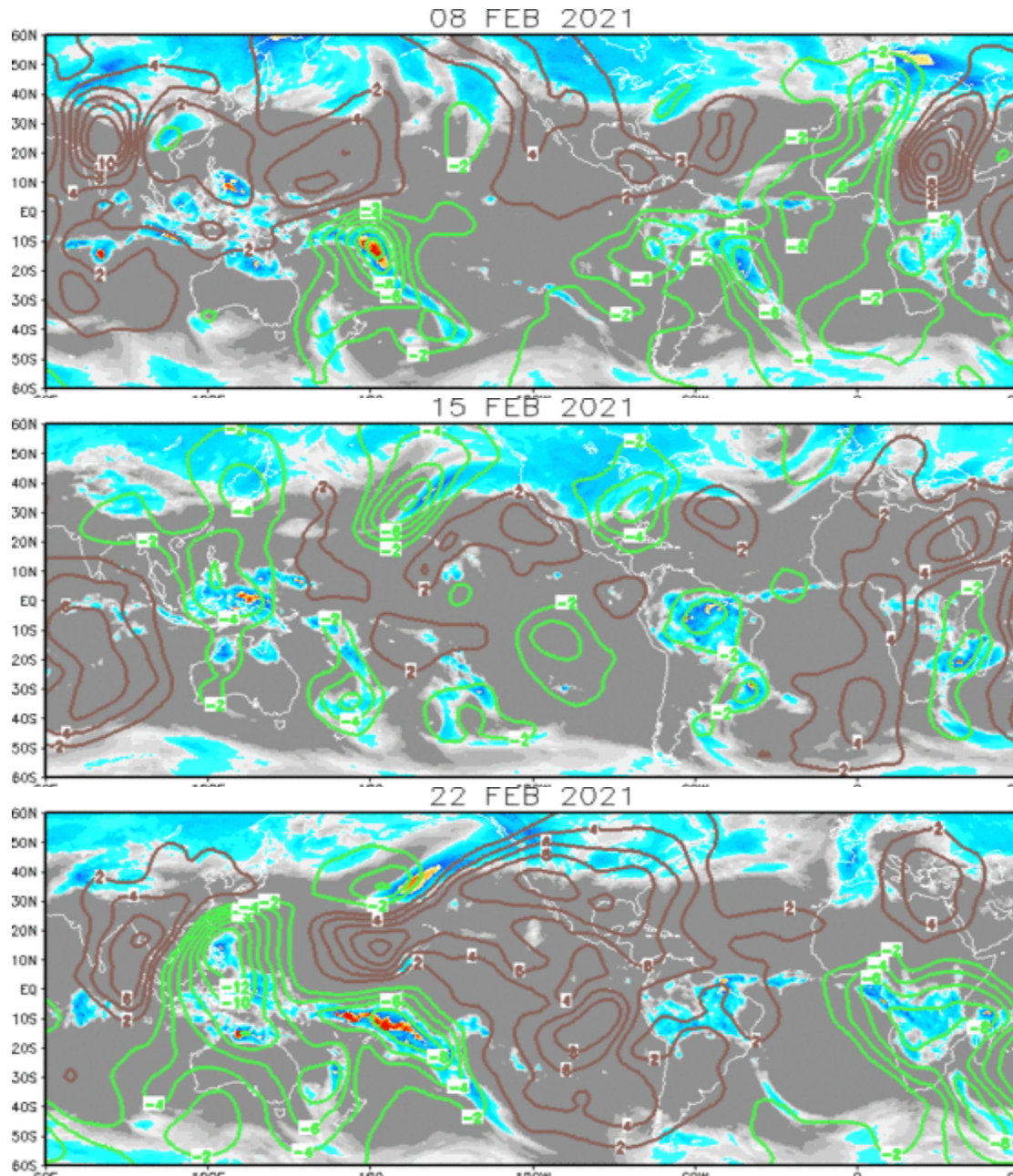
Green: Enhanced Divergence

Brown: Enhanced Convergence

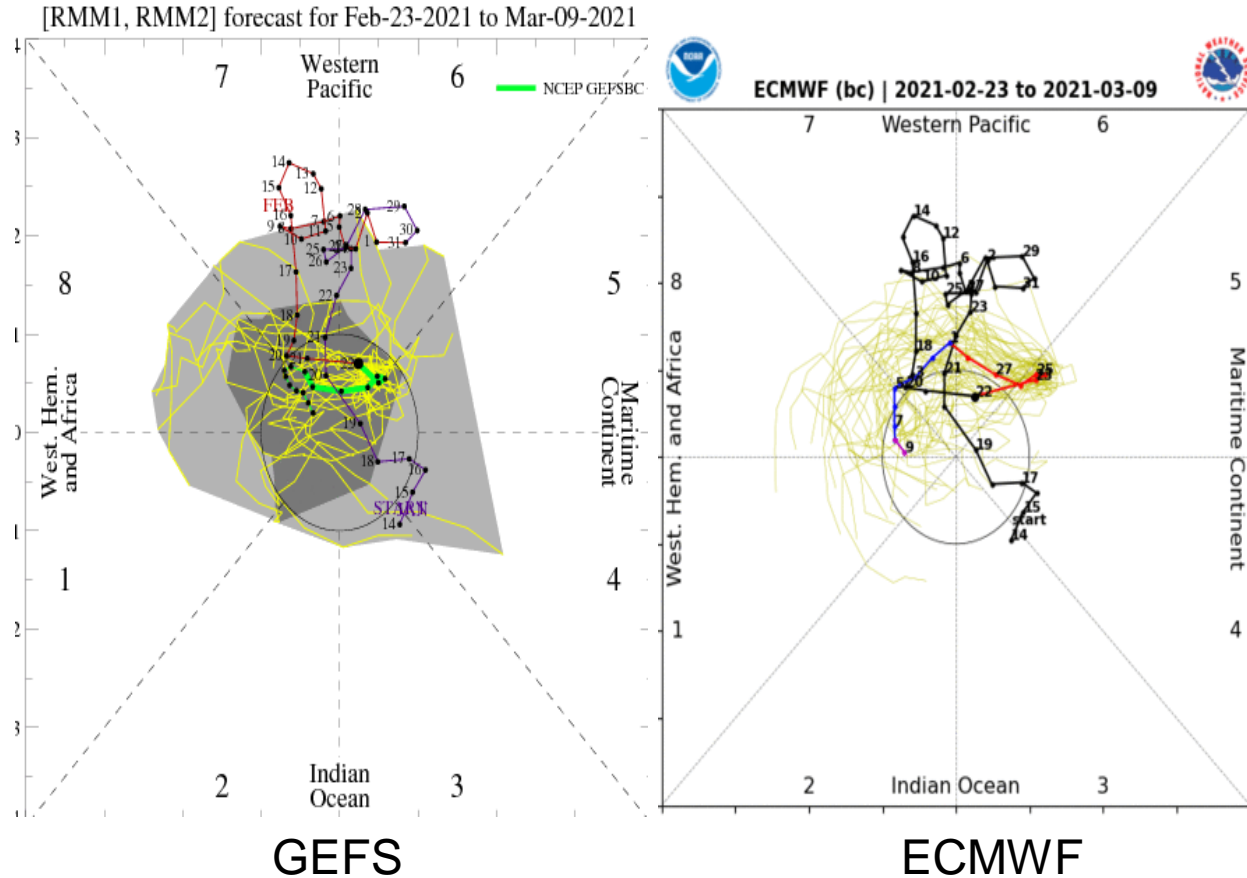
Enhanced West Pacific convection tied mostly to the SPCZ region.

By mid-February, the tropical convective pattern became disorganized.

Rossby wave now over the Maritime Continent; SPCZ remains active. Note enhancement over Africa/western IO (Kelvin wave).



MJO Observation/Forecast

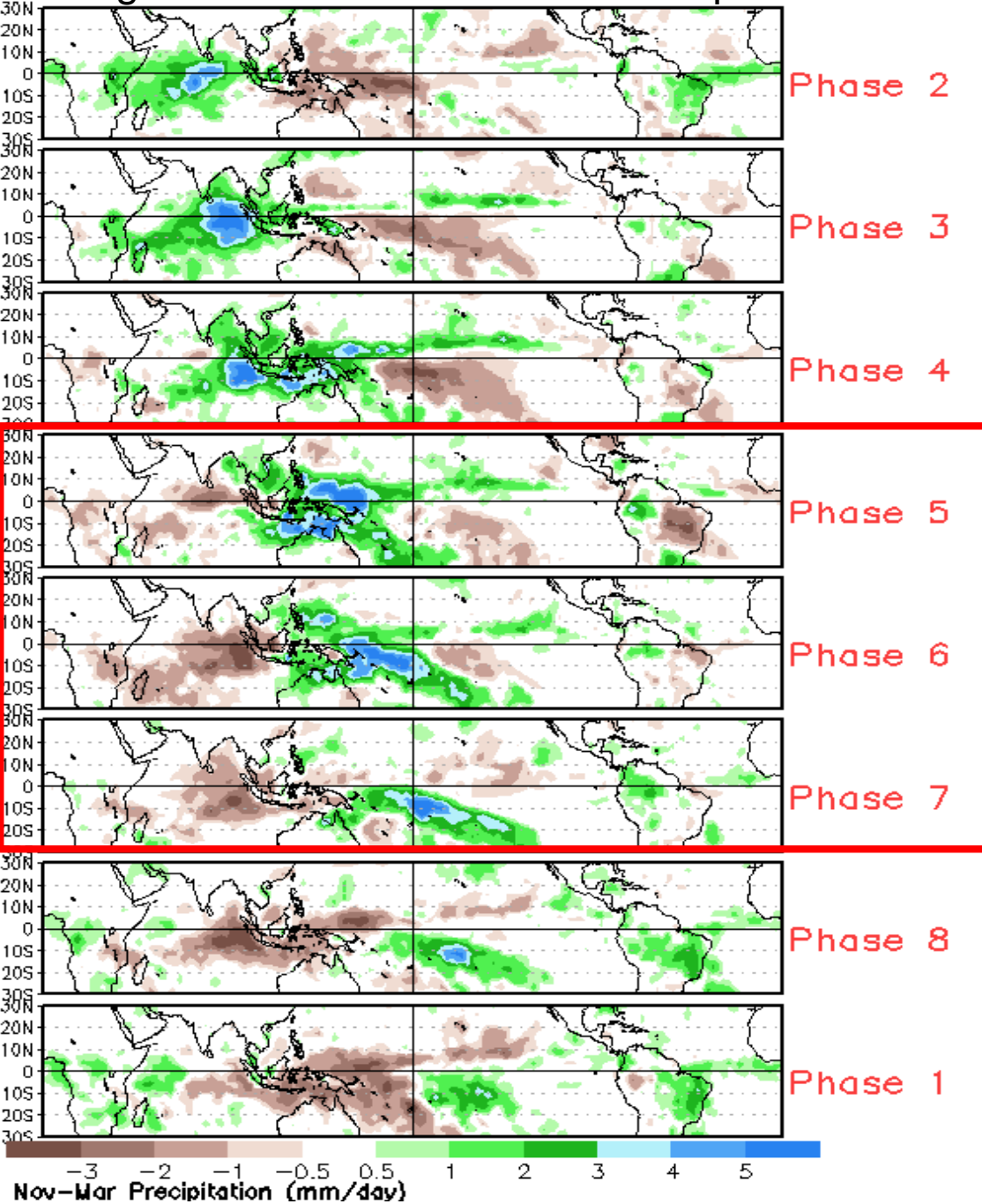


Sharp left turns in the RMM index are indicative of Rossby wave interference.

The GEFS features ensemble members in all eight phases over the next two weeks.

ECMWF favors rapid eastward propagation of a signal from the Maritime Continent to the Western Hemisphere – possibly keying in on the Kelvin wave.

Average Conditions when the MJO is present

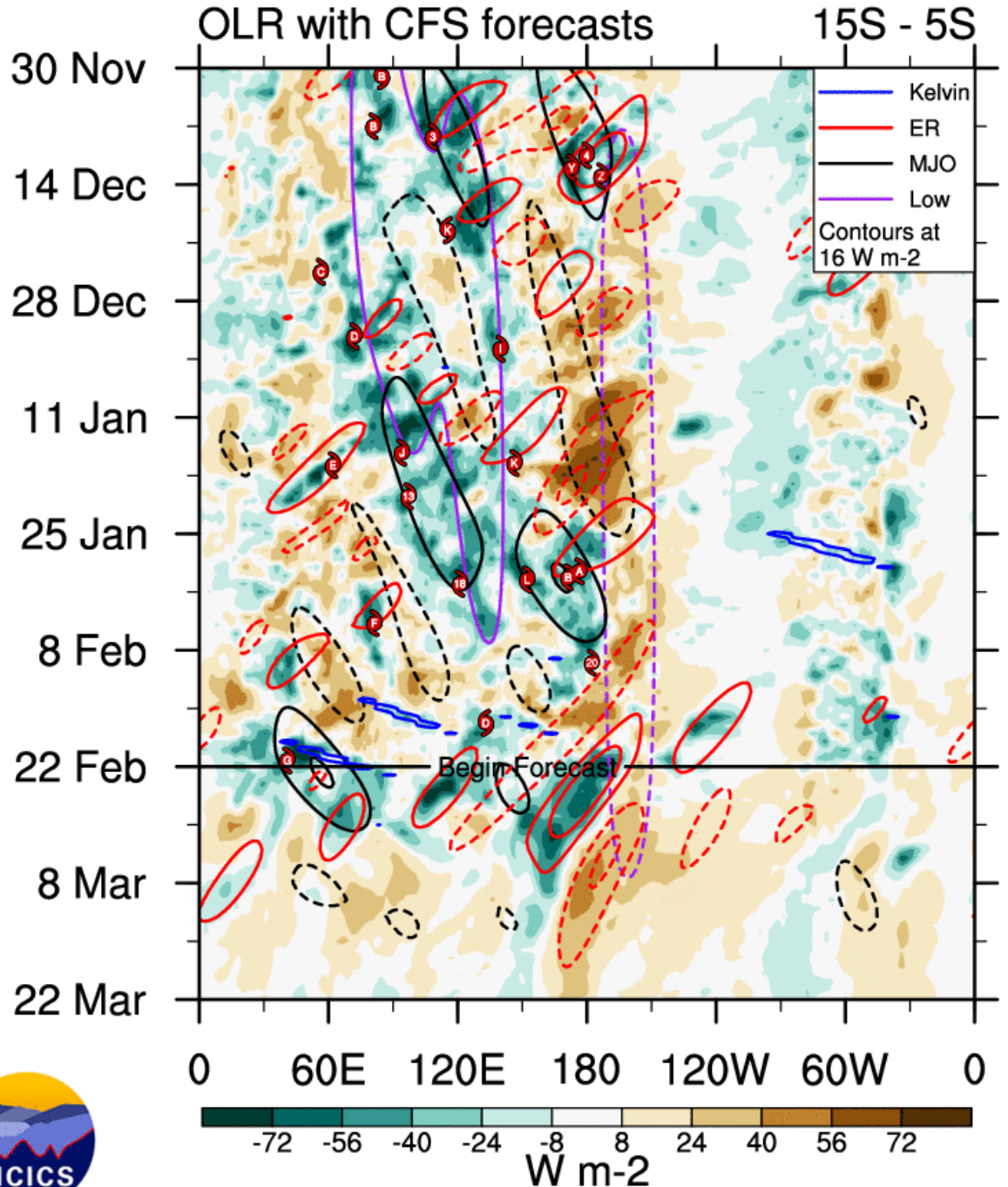


CAVEAT: These panels are representative of robust MJO events.

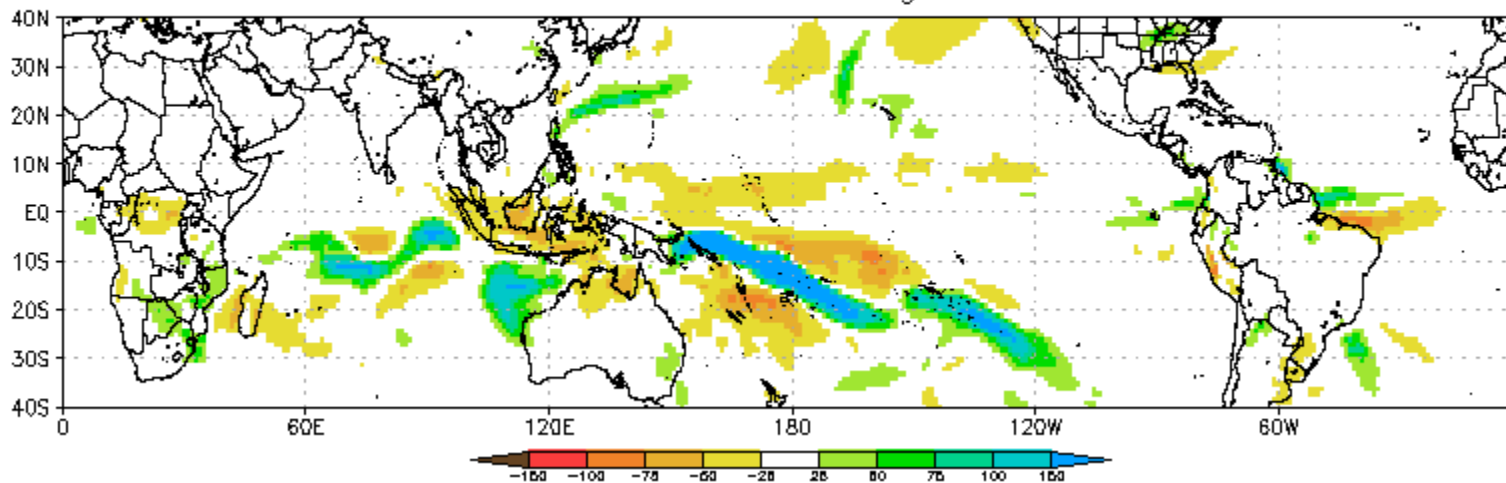
Kelvin wave activity over Africa and the western IO is projecting onto the **MJO** band in this analysis.

Low frequency contours depict ENSO cold conditions.

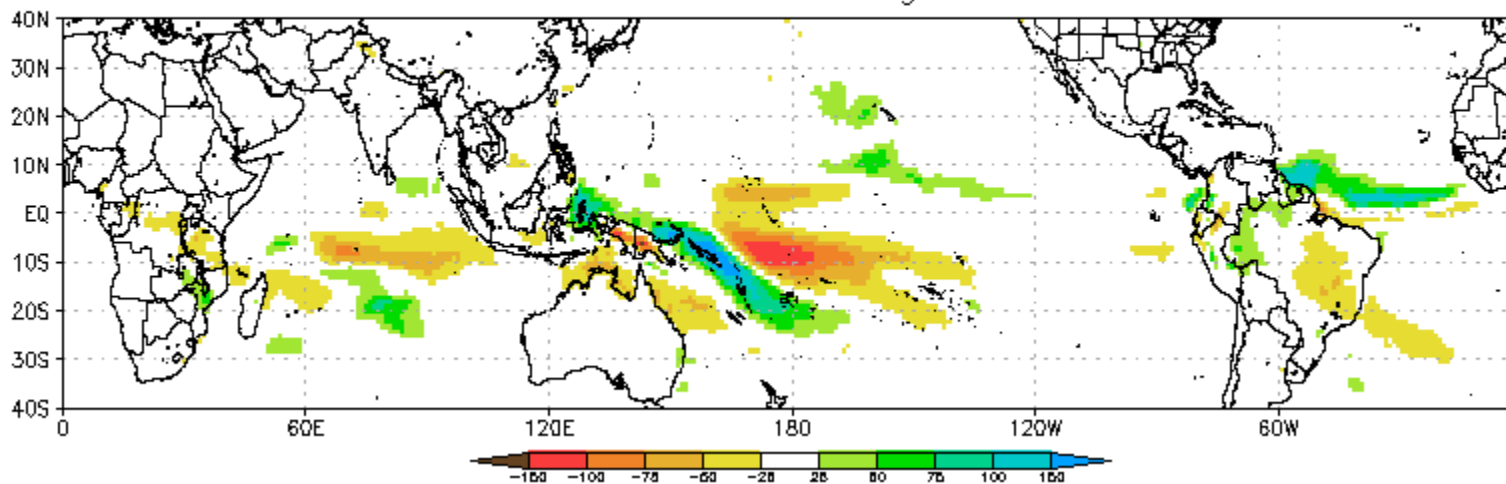
Rossby wave activity over the Pacific was very strong.



CFS Precipitation Anomalies (mm) Issued 22Feb2021
Week-1 Forecast Ending 02Mar2021

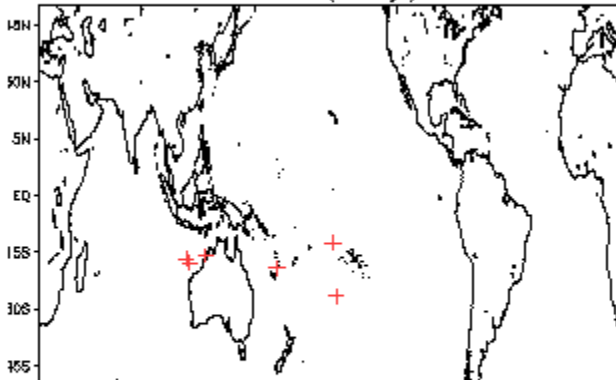


CFS Precipitation Anomalies (mm) Issued 22Feb2021
Week-2 Forecast Ending 09Mar2021

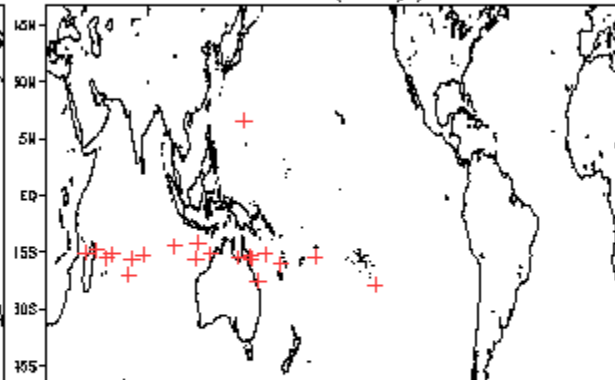


February Tropical Storm Formation by MJO phase

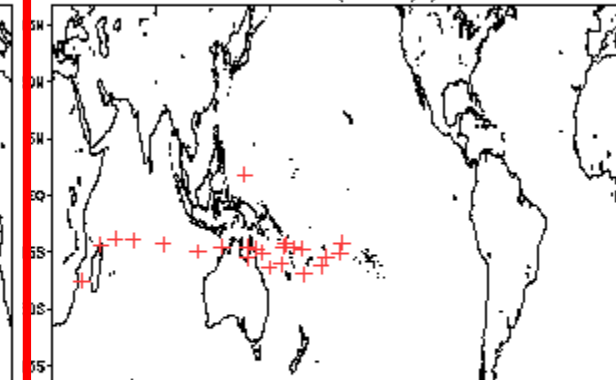
Phase 1 (41 days) 7 storms



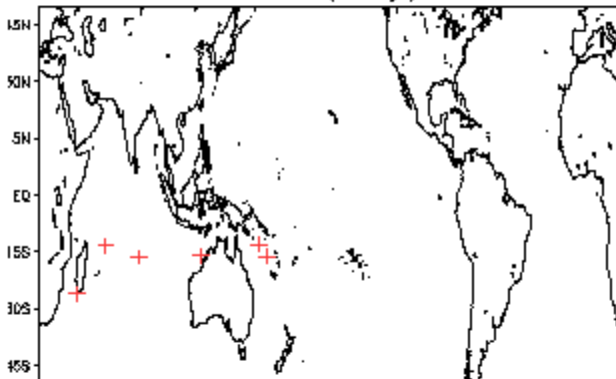
Phase 4 (92 days) 21 storms



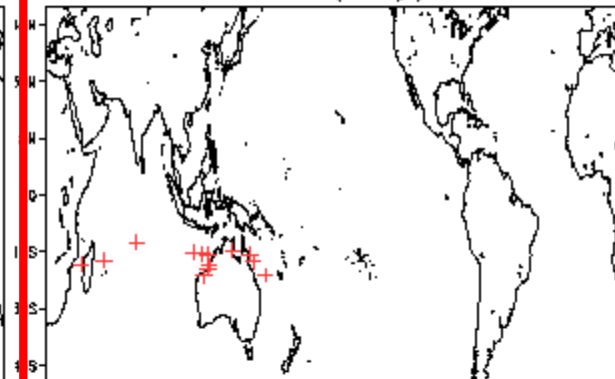
Phase 7 (125 days) 24 storms



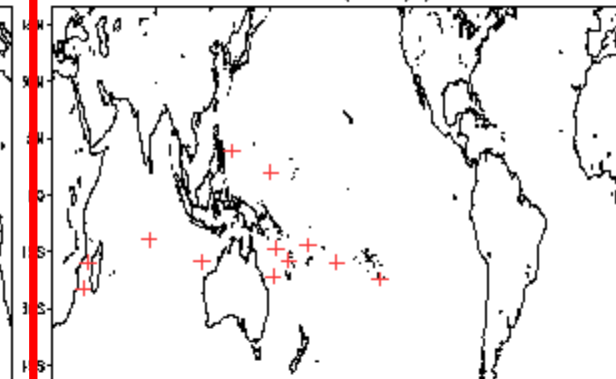
Phase 2 (51 days) 7 storms



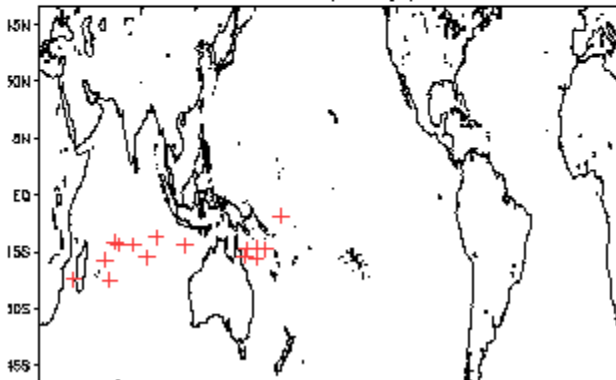
Phase 5 (70 days) 14 storms



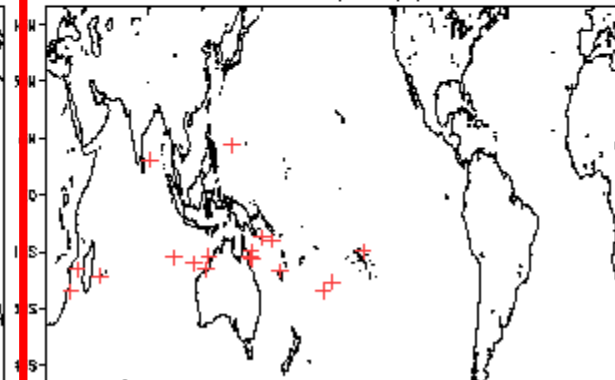
Phase 8 (84 days) 13 storms



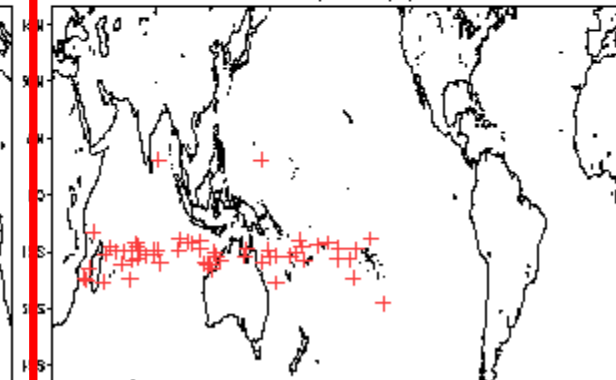
Phase 3 (89 days) 16 storms



Phase 6 (92 days) 19 storms

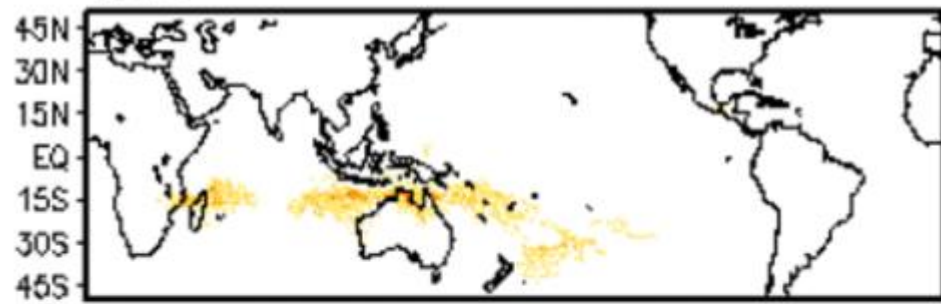


Null (308 days) 60 storms



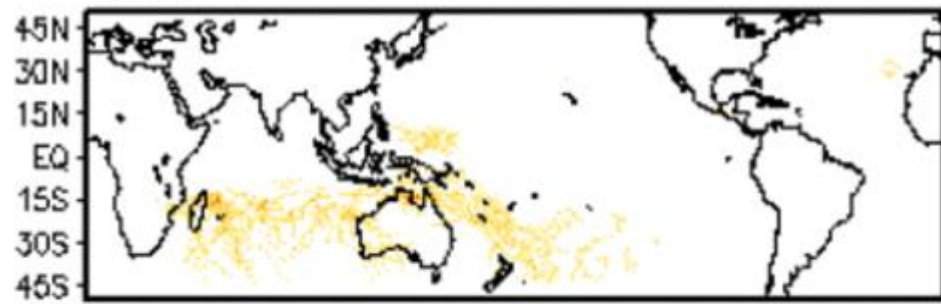
Week-1

GEFS

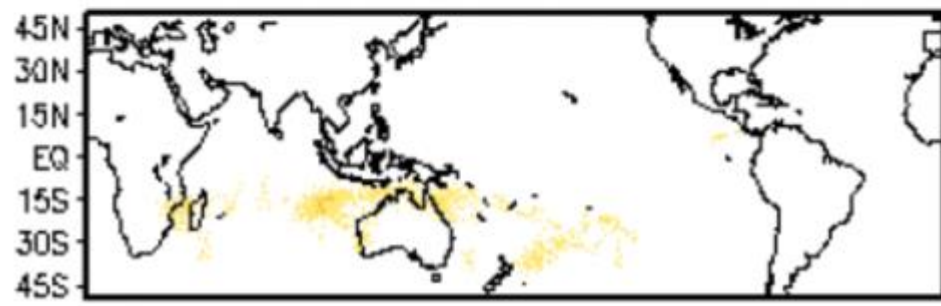


Week-2

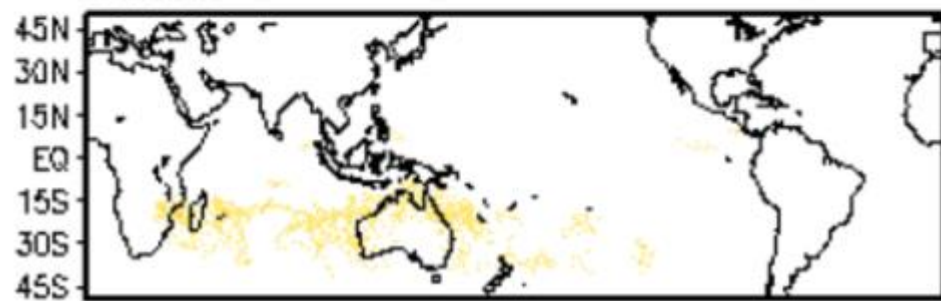
GEFS



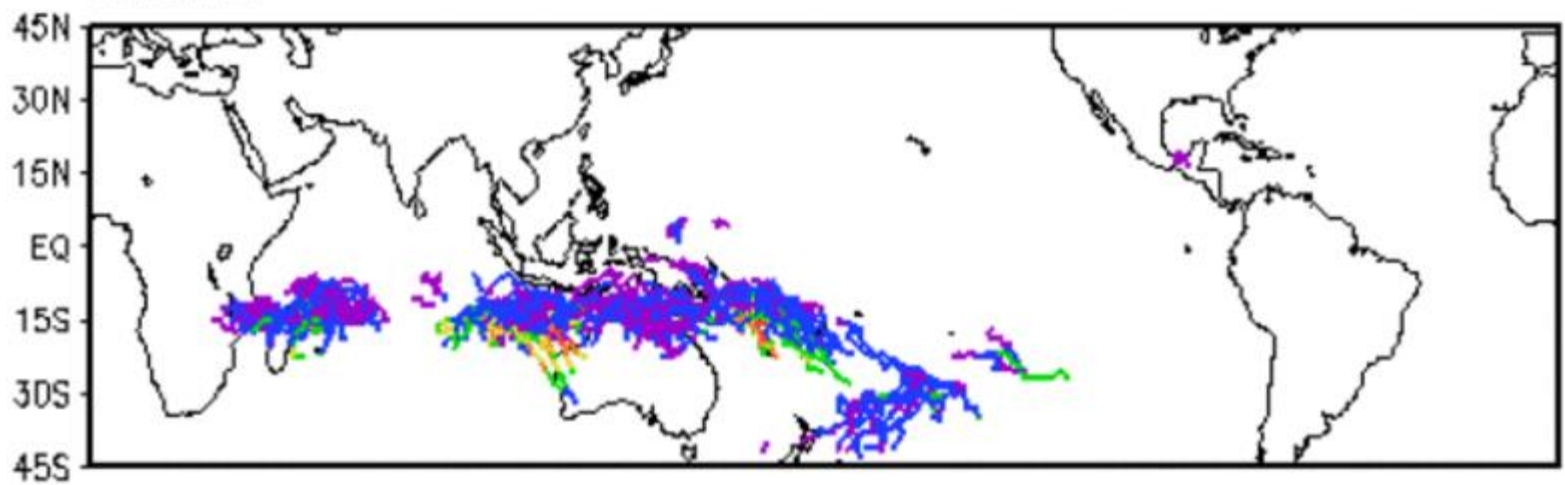
ECMWF



ECMWF

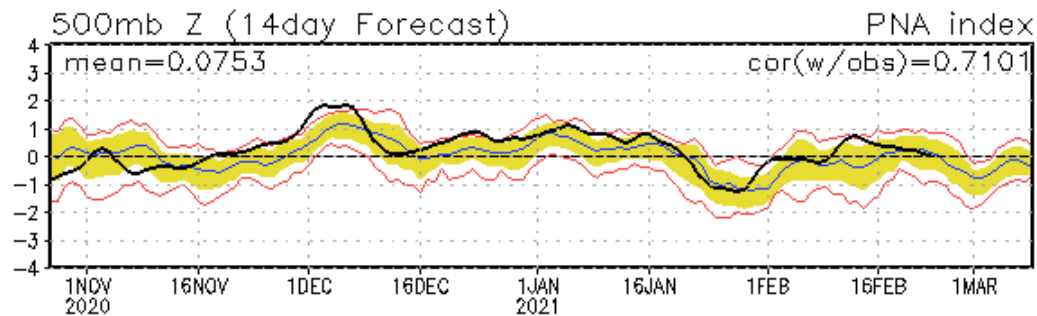
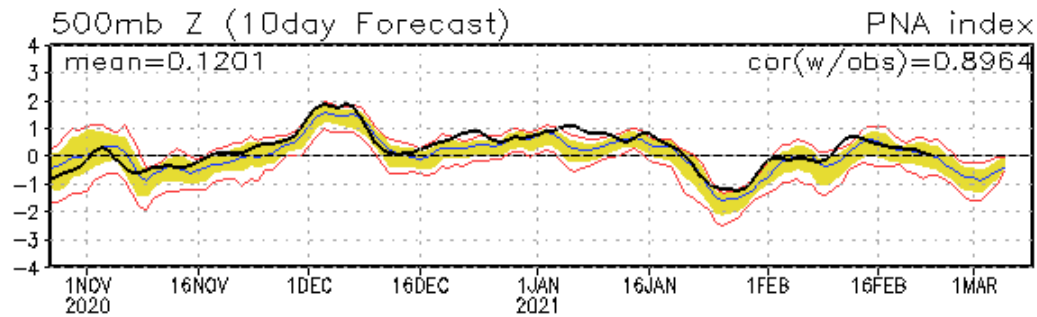
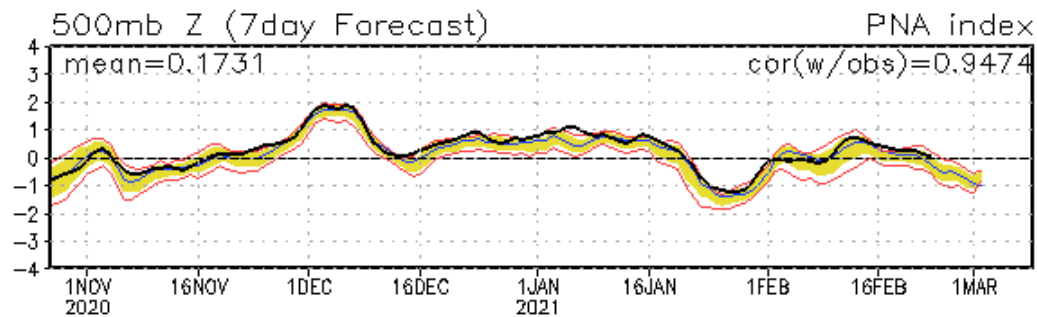
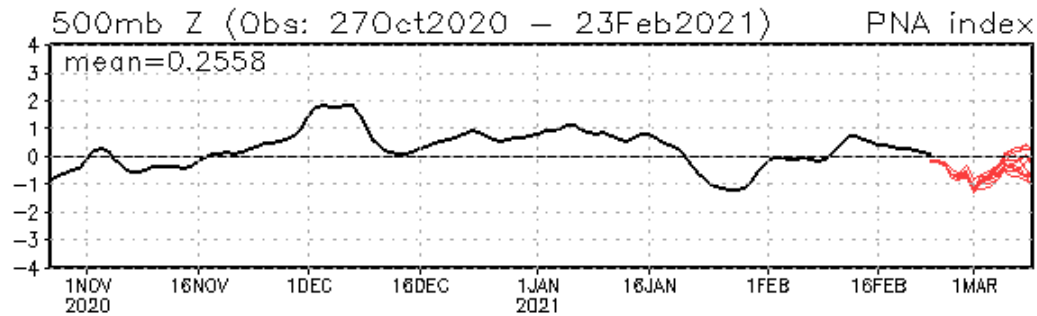


GEFSv12

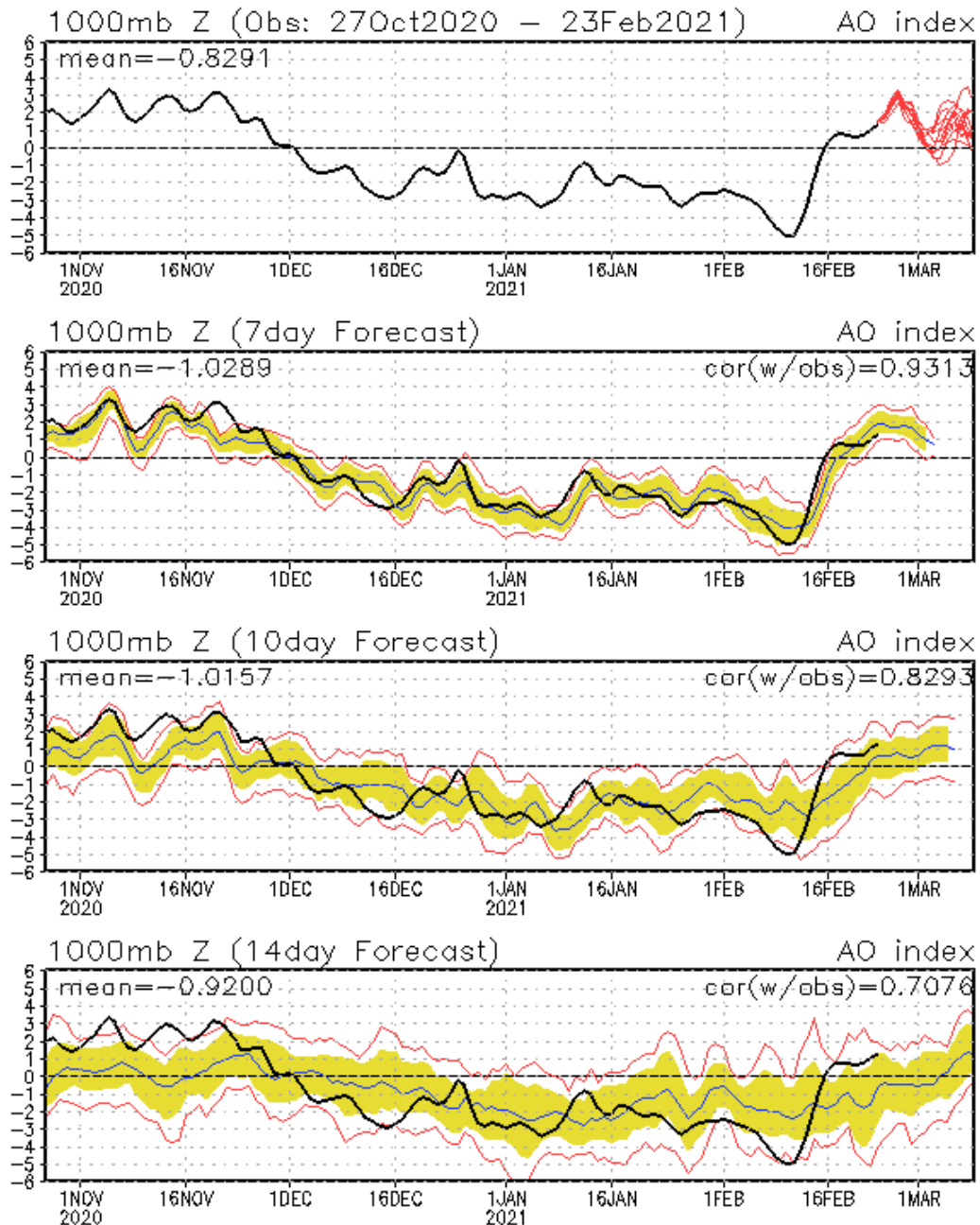


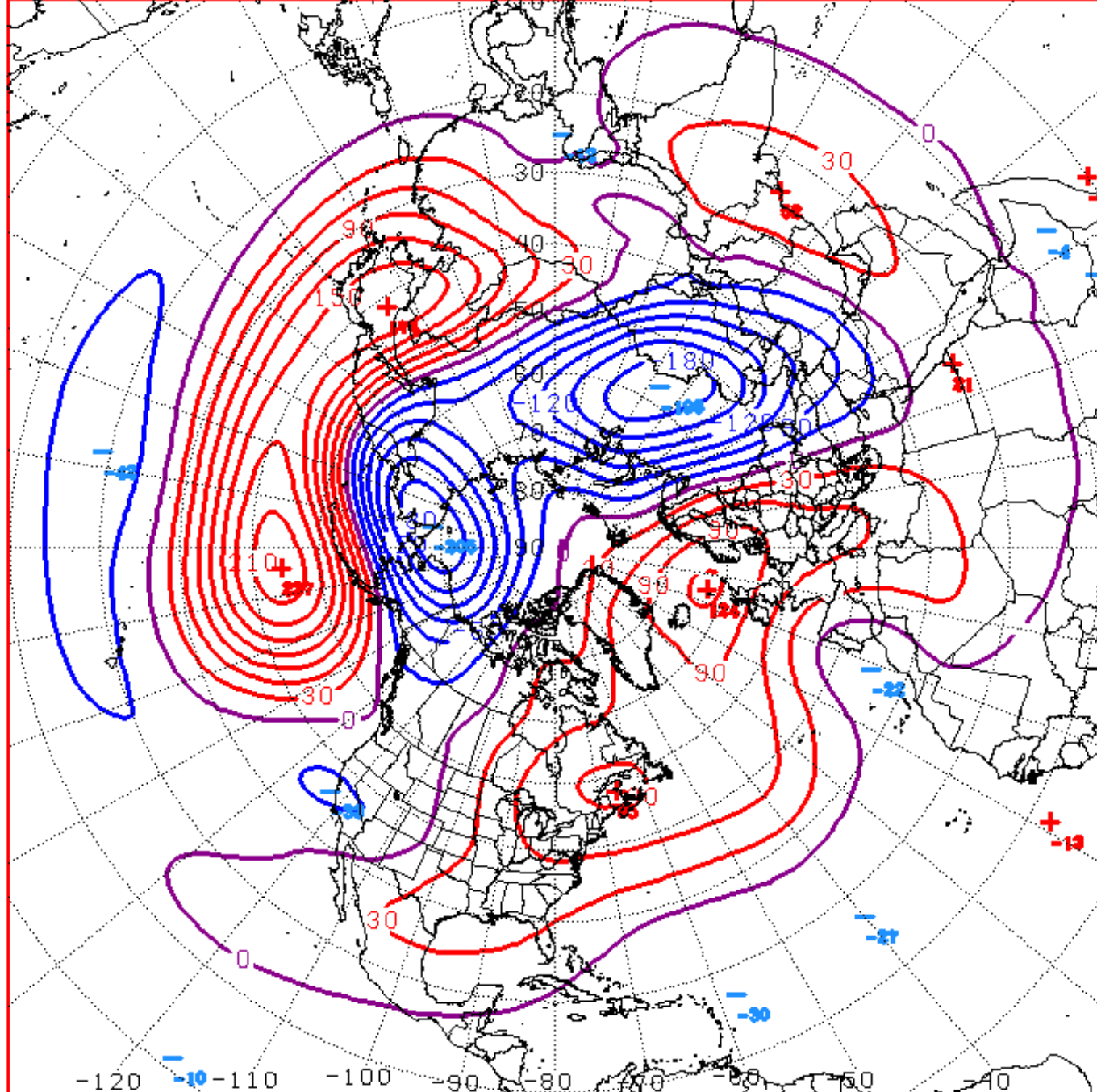
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts



AO: Observed & ENSM forecasts

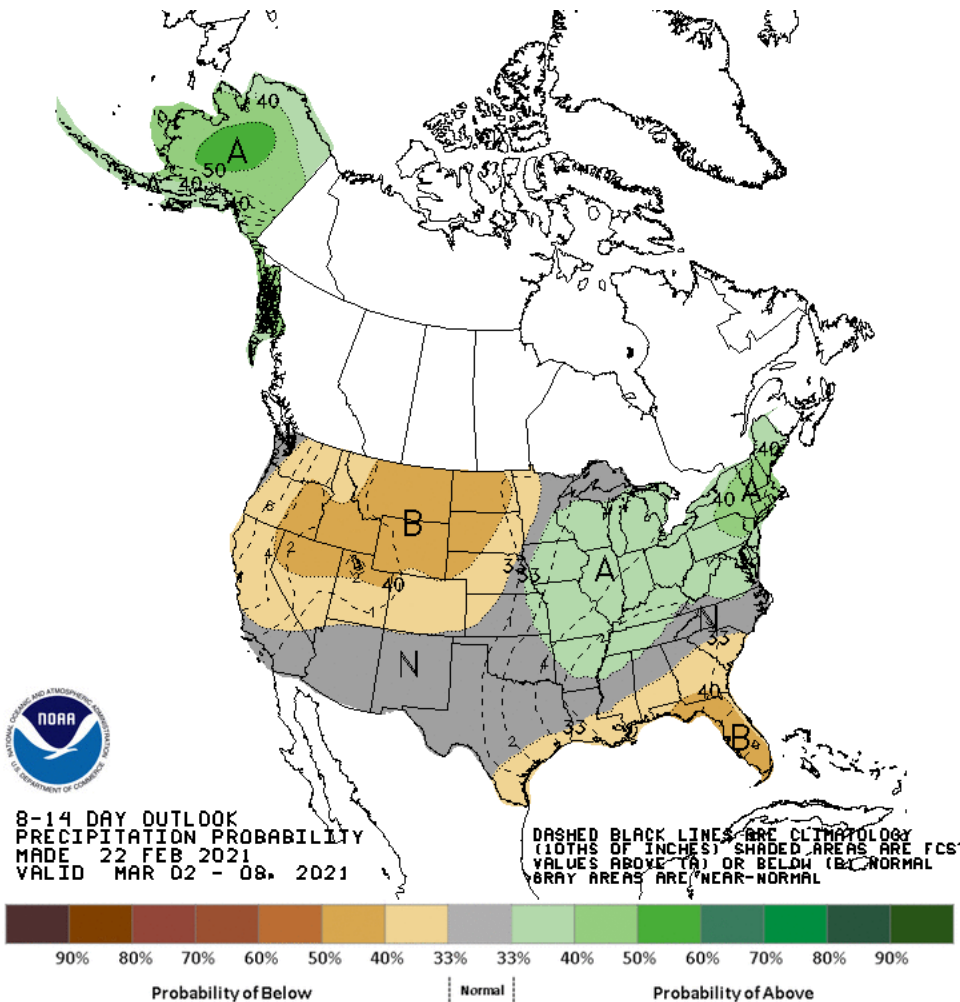
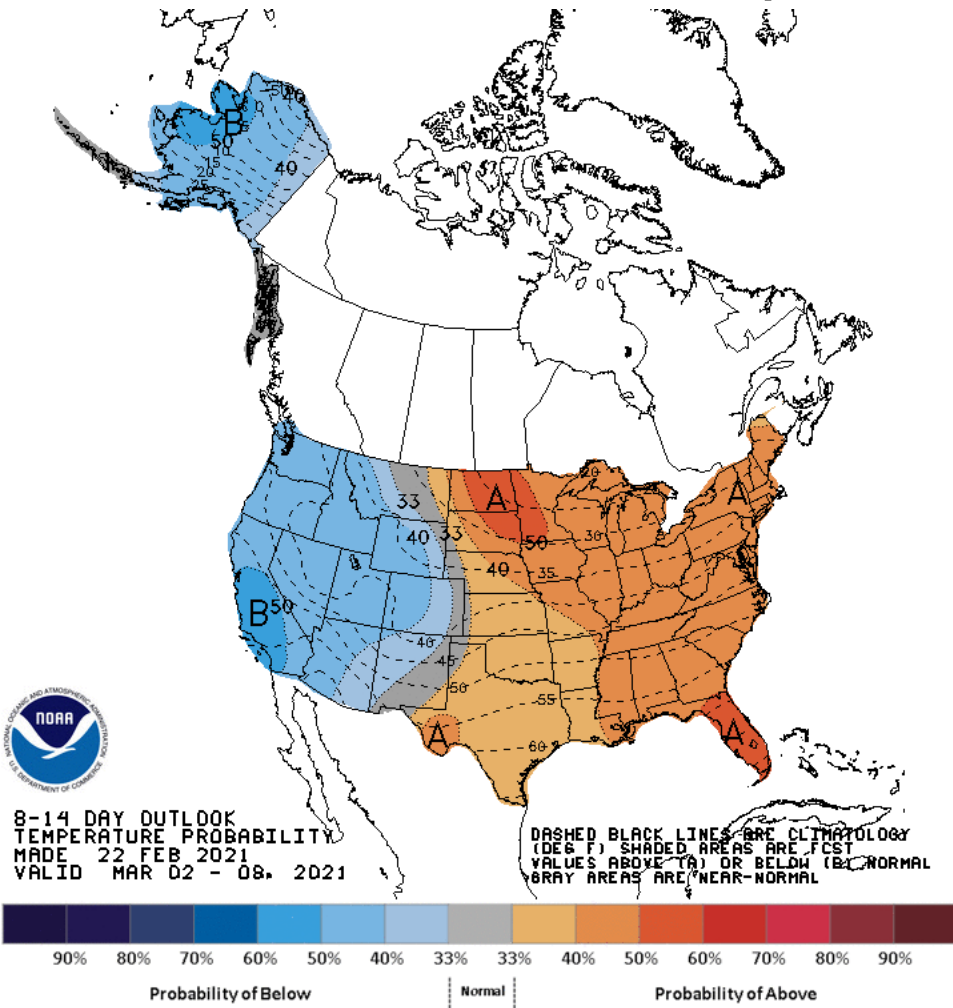




-120 -110 -100 -90 -80 -70 -60 -50

D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE FEB 23 2021 1404 UTC CNTD MAR 06 2021

Week 2 – Temperature and Precipitation

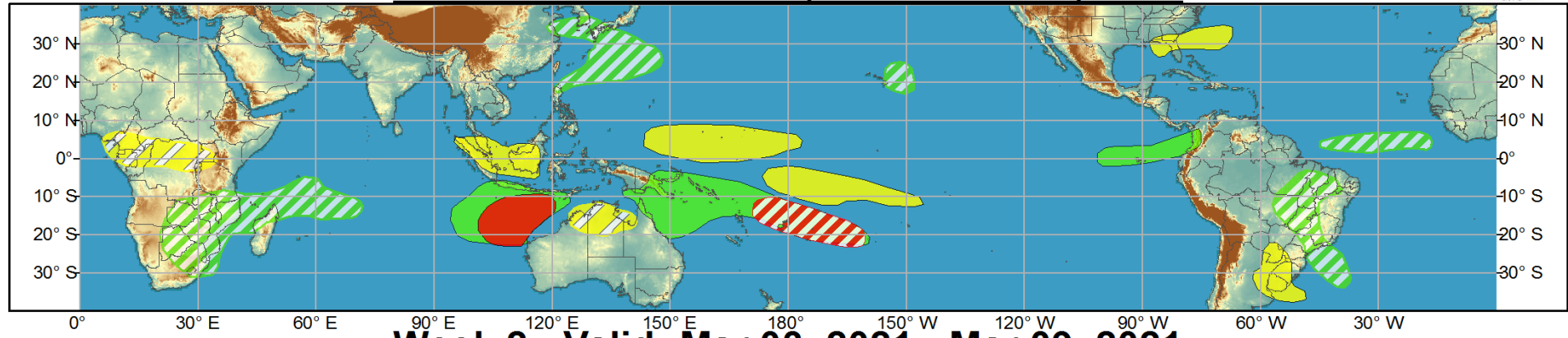


Since we are in an amplified, stable pattern today's outlooks are likely to be similar.

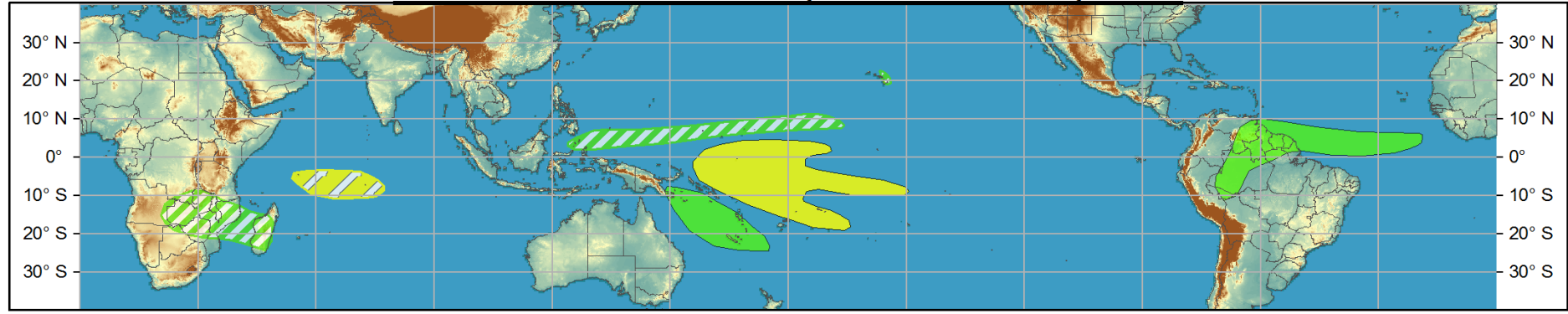


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