

Global Tropics Hazards And Benefits Outlook

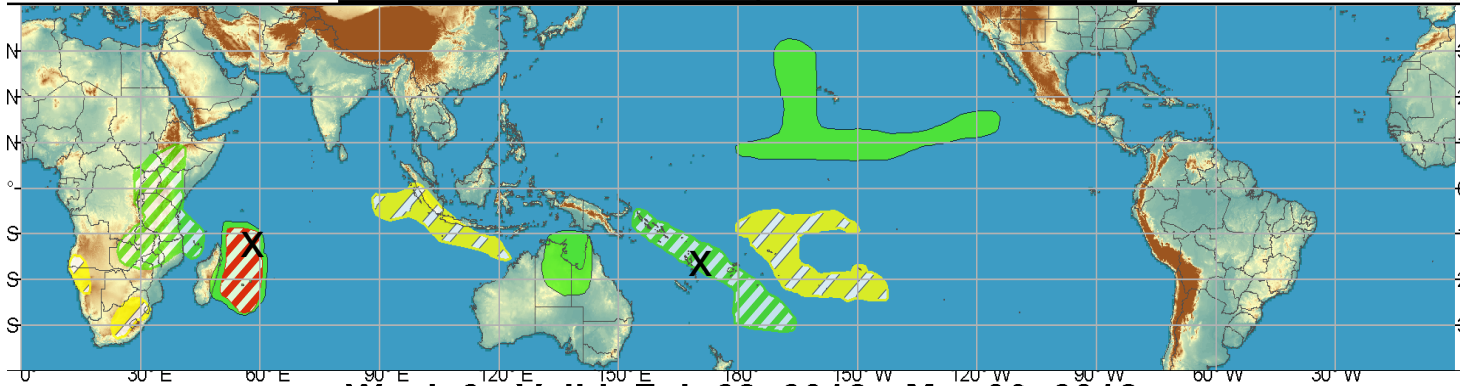
3/6/2018

Dan Harnos

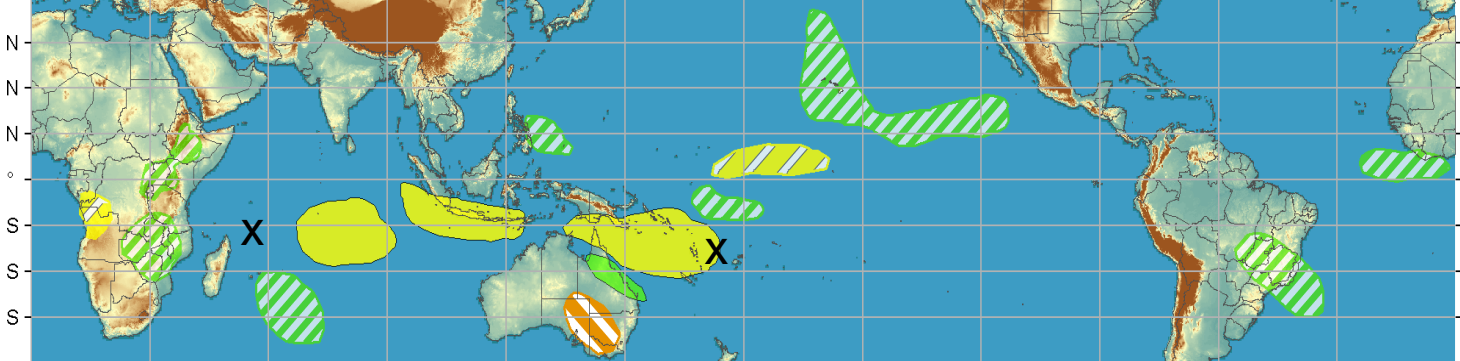
Outline

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

Week 1 - Valid: Feb 28, 2018 - Mar 06, 2018

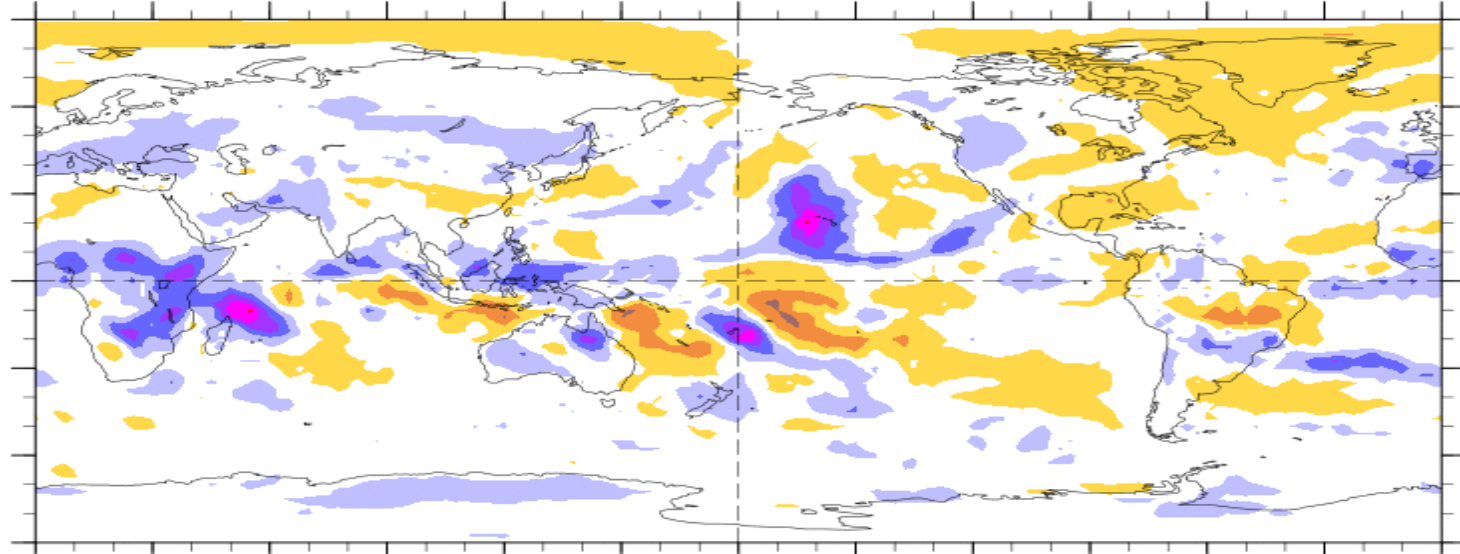


Week 2 - Valid: Feb 28, 2018 - Mar 06, 2018



7-Day Average OLR Anomaly

2018/02/26 - 2018/03/04



Outlook Review

Tropical Cyclone Dumazile (S. Ind)

- Peak wind: 105 kt (Category 3)
- Currently: 95 kt (Category 2)

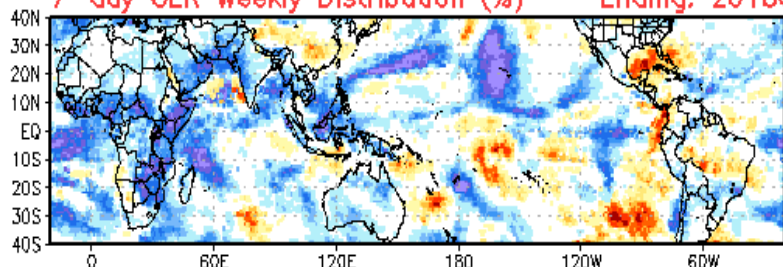
Tropical Cyclone Hola

- Formed earlier today, 35 kt winds.

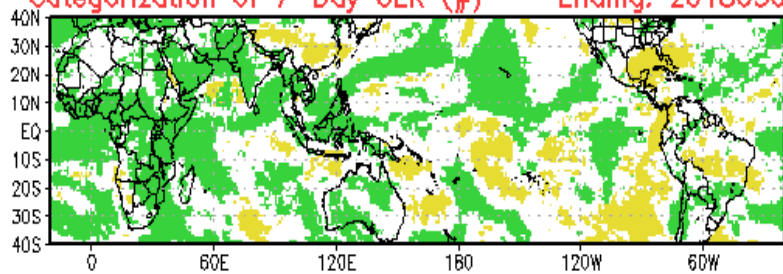
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

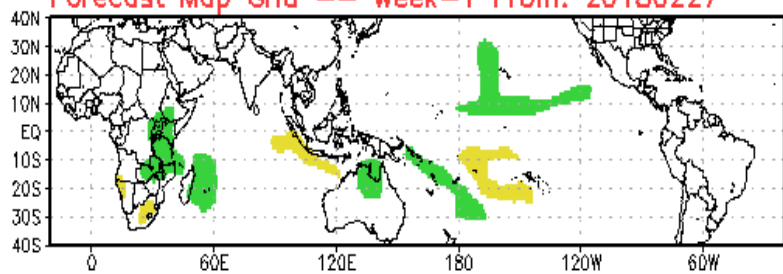
7-day OLR Weekly Distribution (%) -- Ending: 20180306



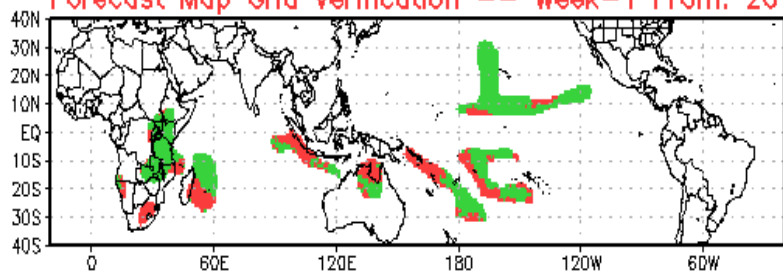
Categorization of 7-Day OLR (#) -- Ending: 20180306



Forecast Map Grid -- Week-1 From: 20180227

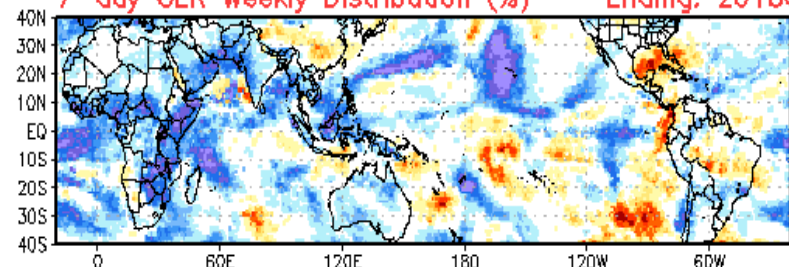


Forecast Map Grid Verification -- Week-1 From: 20180227

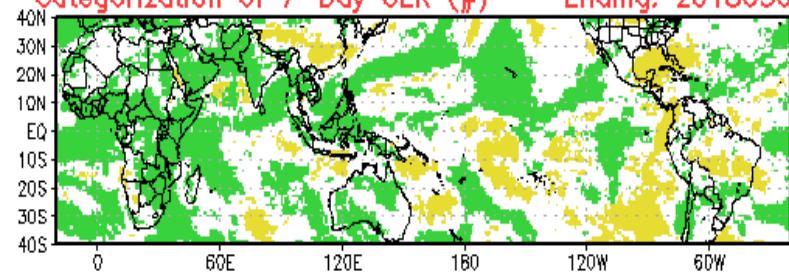


Hit: Green, Miss: Red
Heidke Skill Score: 47.5567

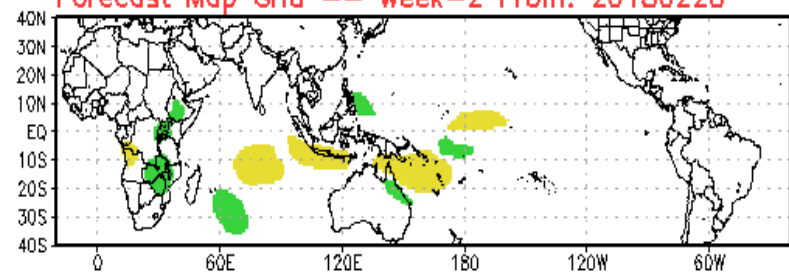
7-day OLR Weekly Distribution (%) -- Ending: 20180306



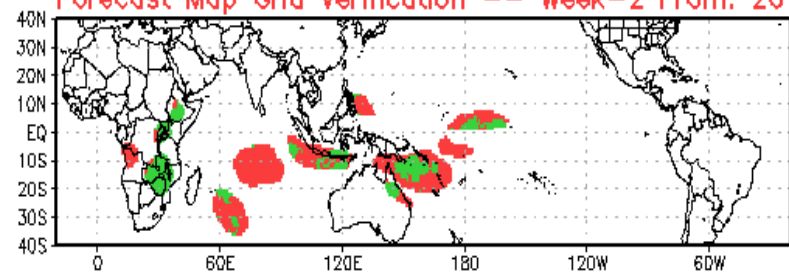
Categorization of 7-Day OLR (#) -- Ending: 20180306



Forecast Map Grid -- Week-2 From: 20180220



Forecast Map Grid Verification -- Week-2 From: 20180220



Hit: Green, Miss: Red
Heidke Skill Score: -0.8792

Synopsis of Climate Modes

ENSO:

- ENSO Alert System Status: [La Niña Advisory](#) (*Update coming Thursday, 3/8!*)
- February 8th Update: A transition from La Niña to ENSO-neutral is most likely during the Northern Hemisphere spring (~55% chance of ENSO-neutral during the March-May season).

MJO and other subseasonal tropical variability:

- The MJO has progressed across the Indian Ocean over the last week and is showing signs of decay.
- Dynamical and statistical models weaken the MJO by Week-2.
- Equatorial Rossby wave activity looks to continue to be likely in the southern Indian Ocean and South Pacific the next two weeks, with some of these potentially becoming tropical cyclones.

Extratropics:

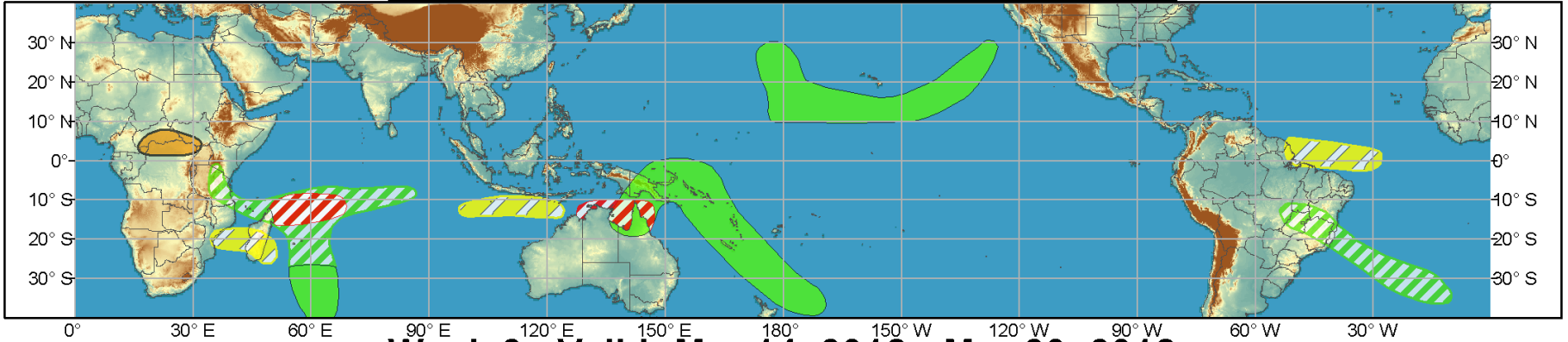
- The extratropical circulation pattern and its evolution is broadly inconsistent with the MJO. Over the Northern/Western Hemisphere the circulation is highly amplified and more consistent with driving mechanisms that are not tropical in nature.
- Given the anticipated decay of the MJO throughout the outlook period, extratropical influences appear likely to continue to dominate for North America over the next 2 weeks.



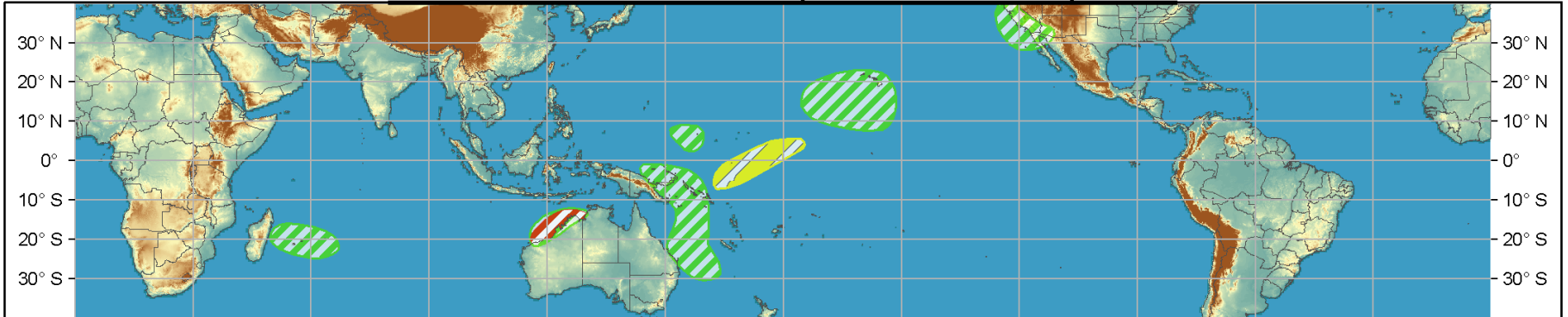
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Mar 07, 2018 - Mar 13, 2018



Week 2 - Valid: Mar 14, 2018 - Mar 20, 2018



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. |

Produced: 03/06/2018
Forecaster: D.Harnos

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

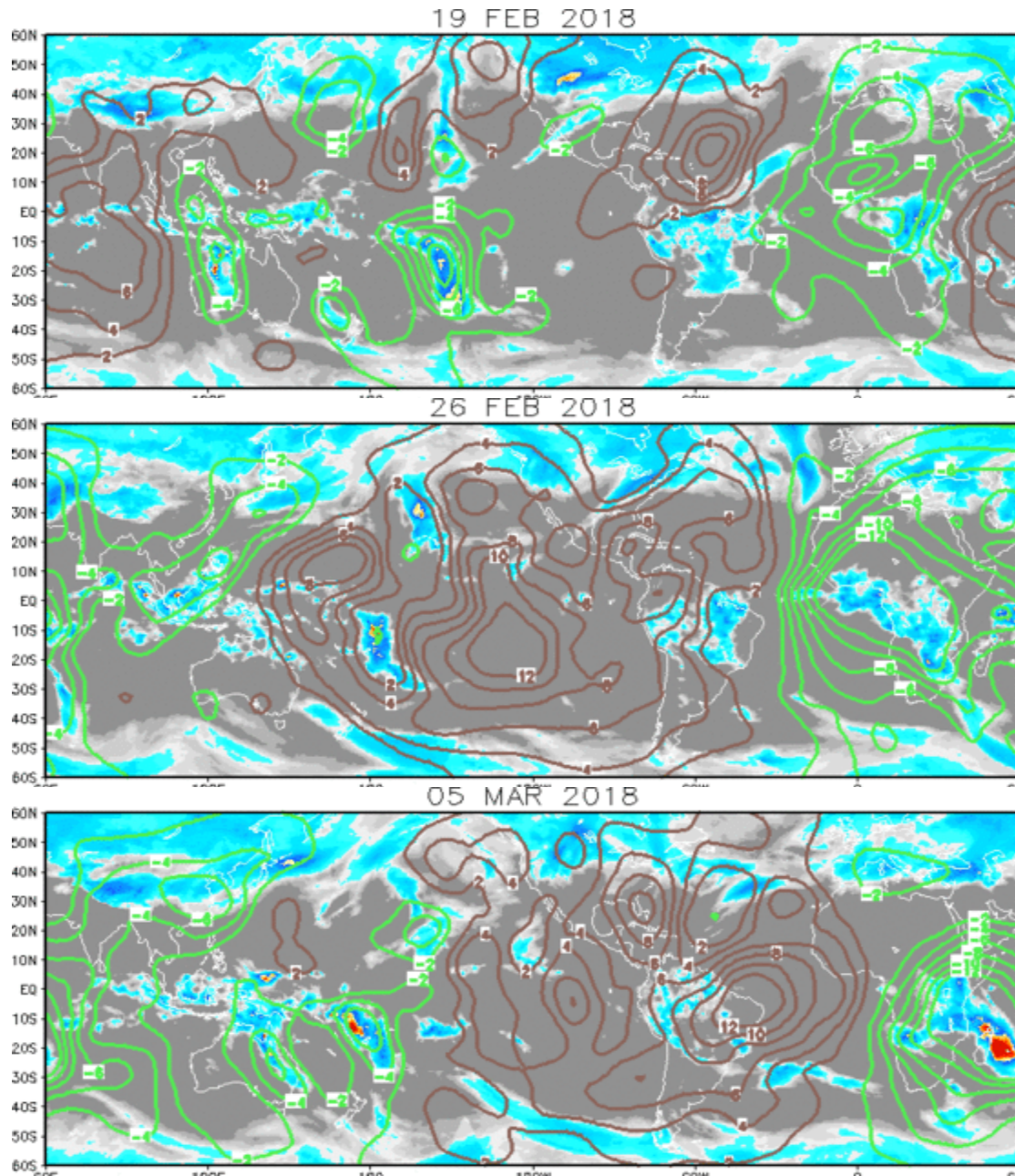
Green: Enhanced Divergence

Brown: Enhanced Convergence

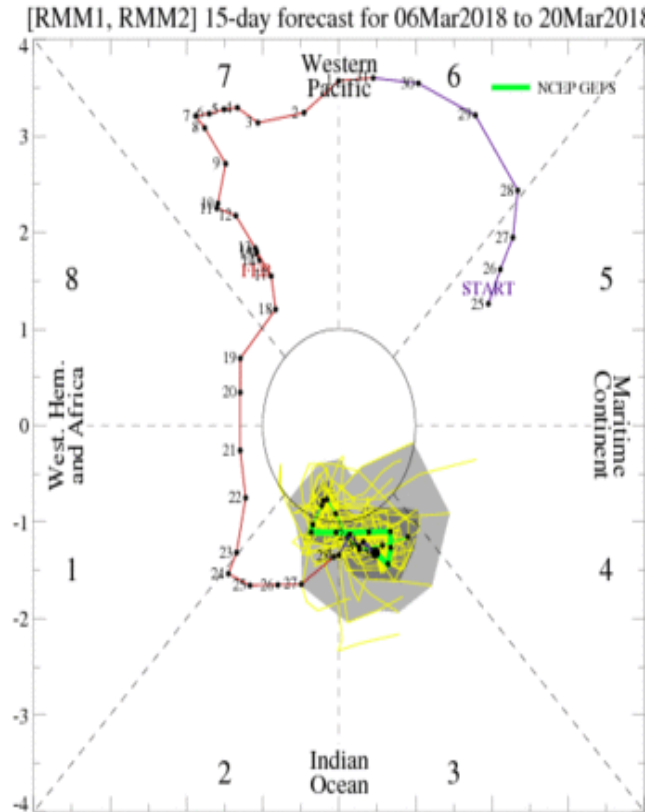
Weakening MJO causes large-scale circulation to weaken as it becomes dominated by other tropical and extra-tropical features.

Wave-1 pattern dominates as the MJO re-emerges over Africa.

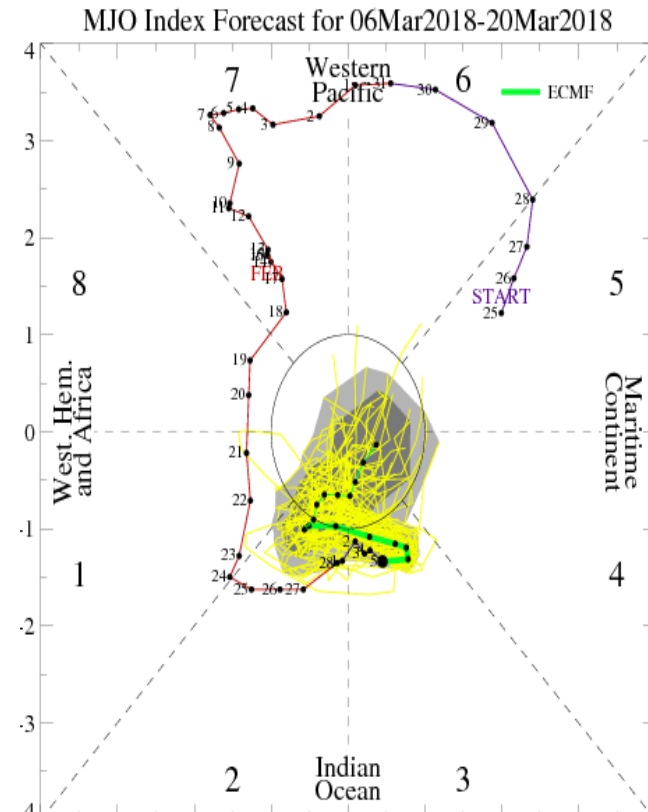
Wave-1 pattern shifts eastward with the divide across Eastern/Western Hemispheres. Indian Ocean divergence is further enhanced by Tropical Cyclone Dumazile.



MJO Observation/Forecast



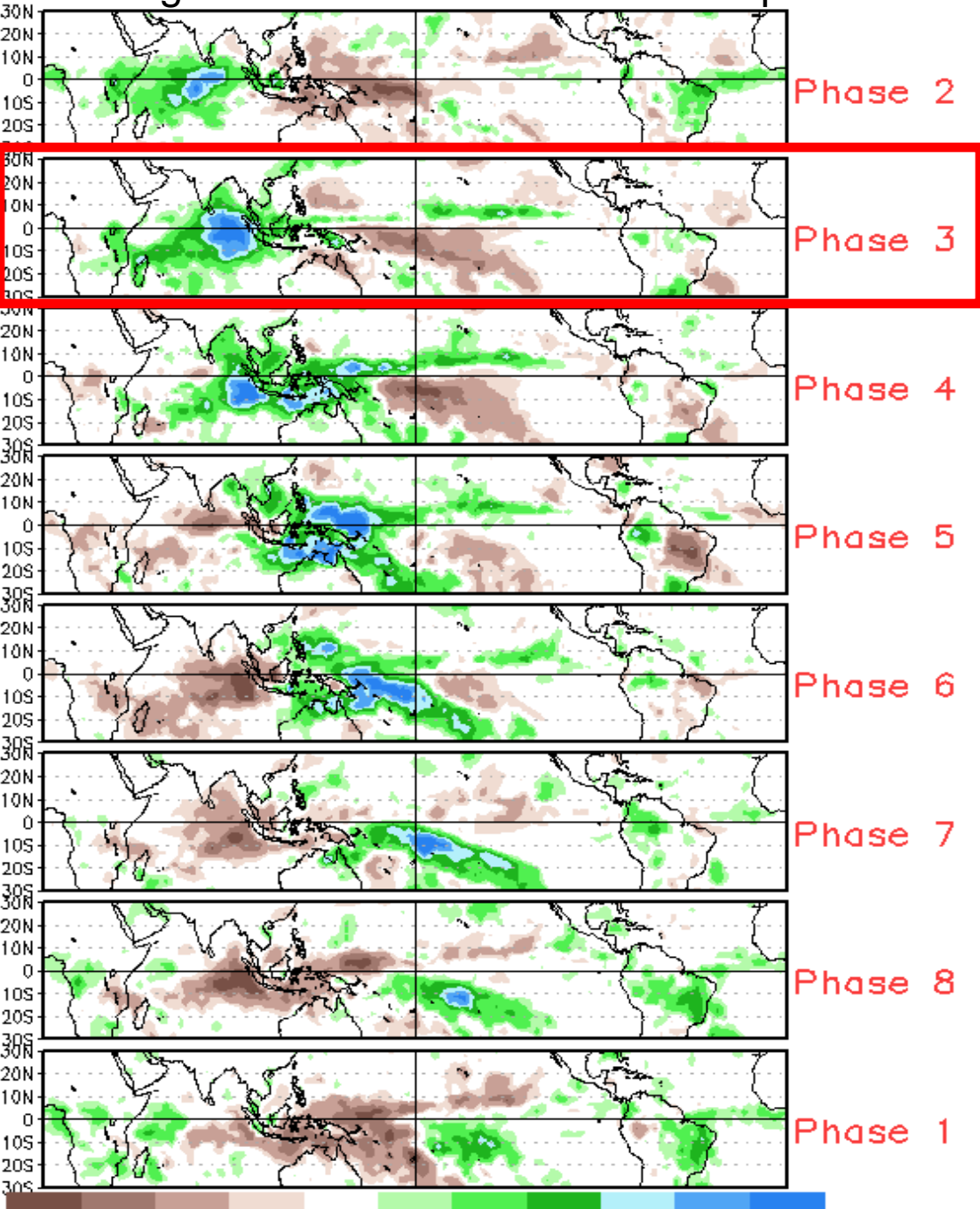
GEFS



ECMWF

Wheeler-Hendon based analyses of model forecasts indicate some eastward propagation prior to a shift westward, likely tied to equatorial Rossby wave (or tropical cyclone) activity, and gradual decay.

Average Conditions when the MJO is present



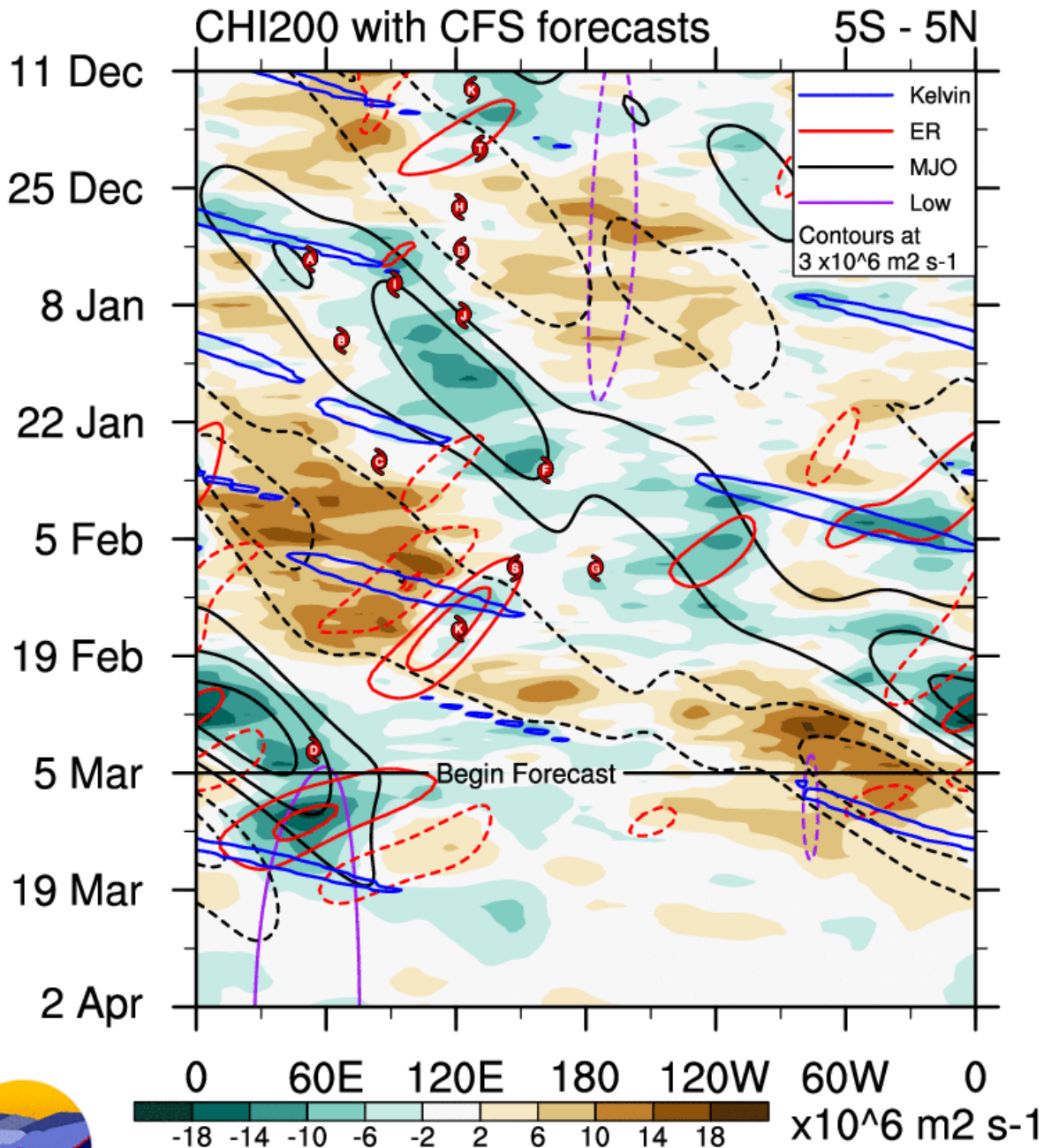
Week-1: Phase 3
Week-2: Weak

CAVEAT: These panels are representative of robust MJO events.

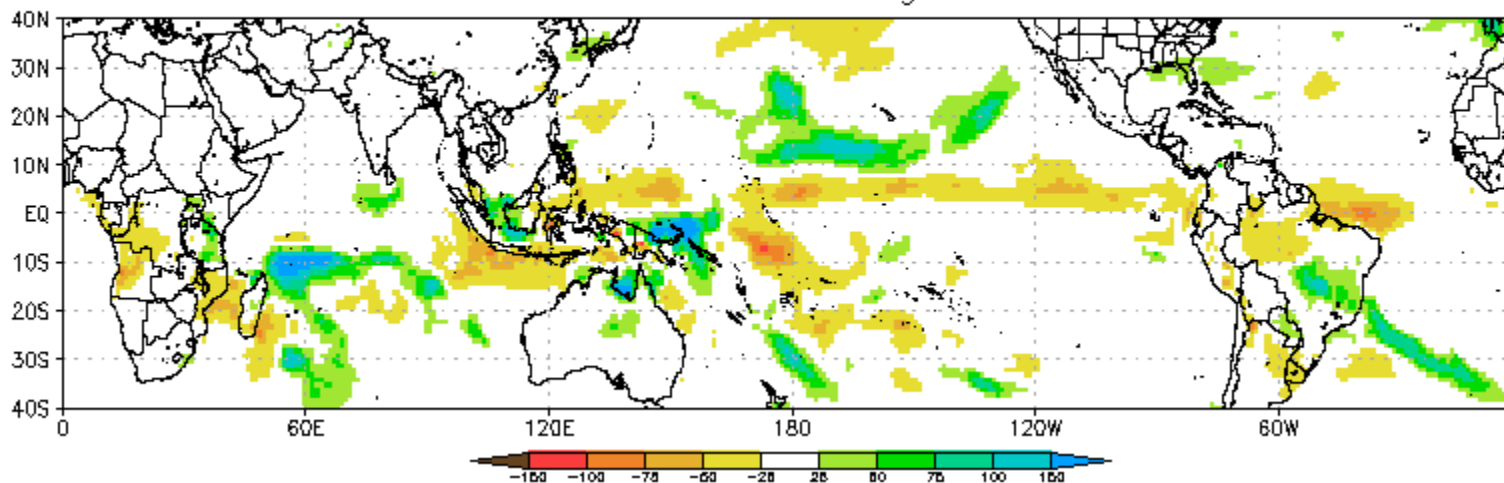
The **MJO**, **Rosby waves**, a **Kelvin wave**, and the **low frequency** state are all at play.

Rosby wave train across Africa and the Indian Ocean since mid-February is helping to interfere with the **MJO**.

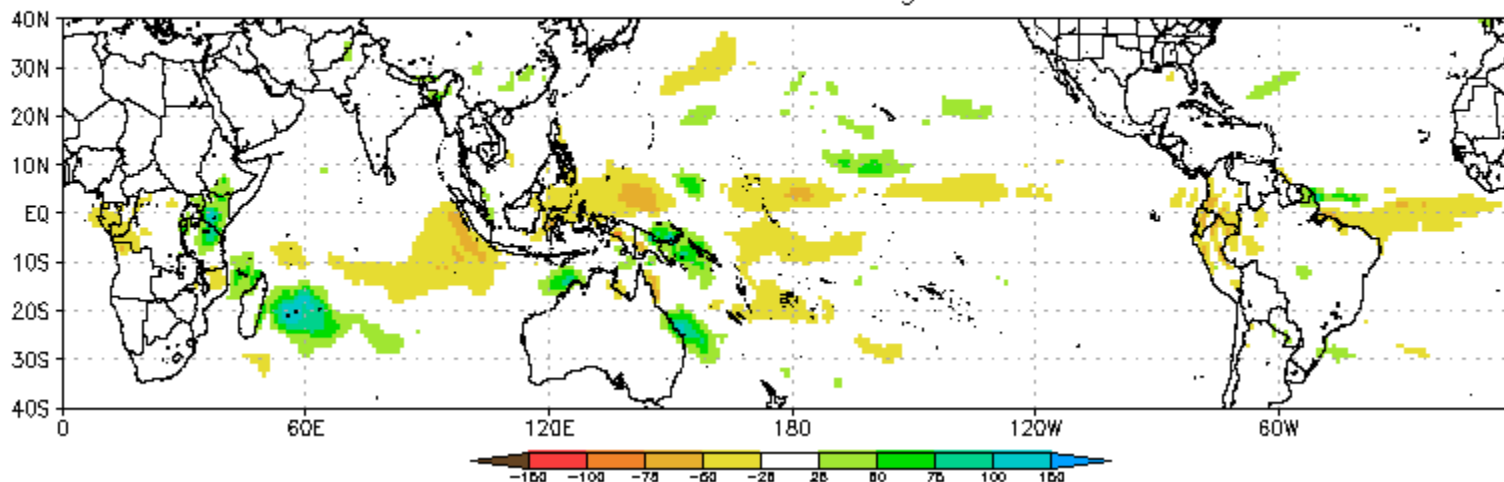
Little MJO signal in low-level zonal winds (not shown).

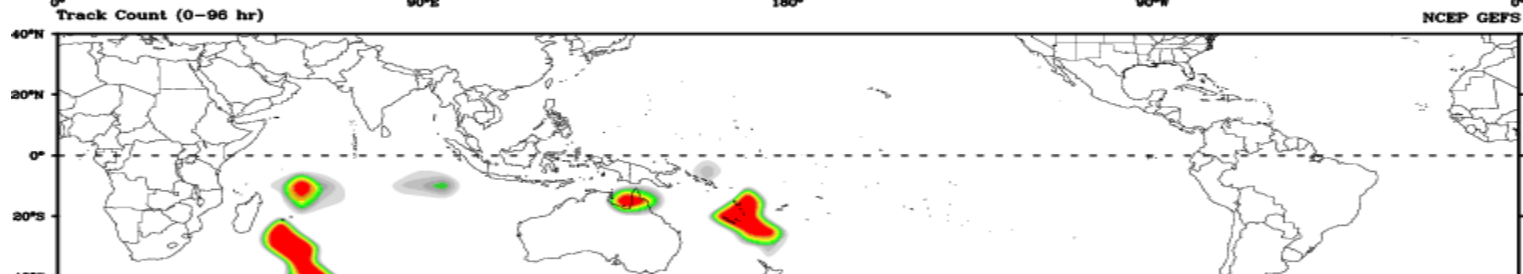
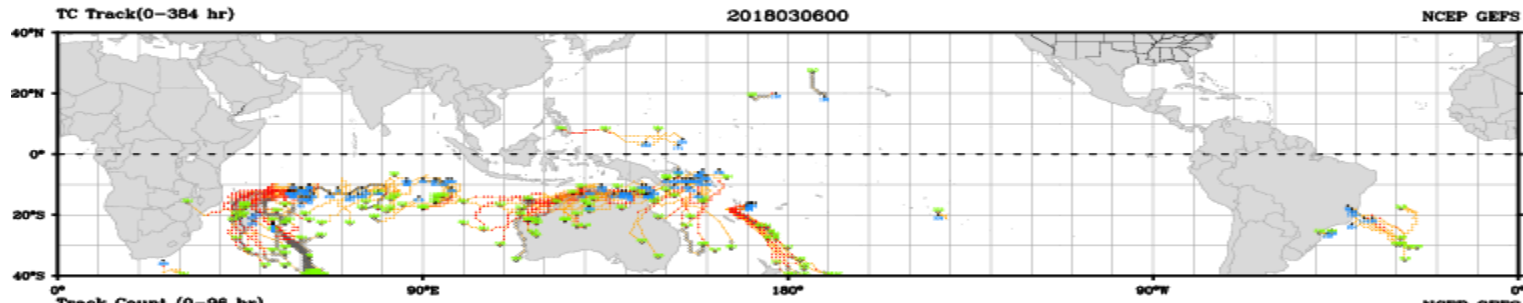


CFS Precipitation Anomalies (mm) Issued 05Mar2018
Week-1 Forecast Ending 13Mar2018

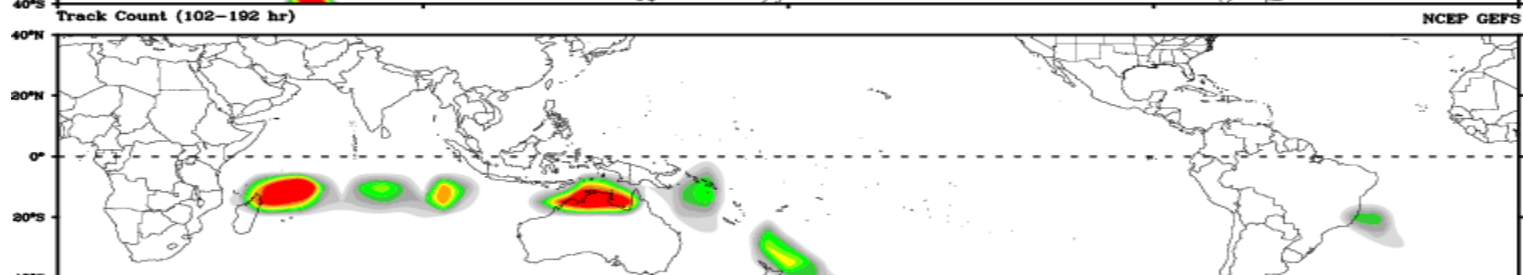


CFS Precipitation Anomalies (mm) Issued 05Mar2018
Week-2 Forecast Ending 20Mar2018

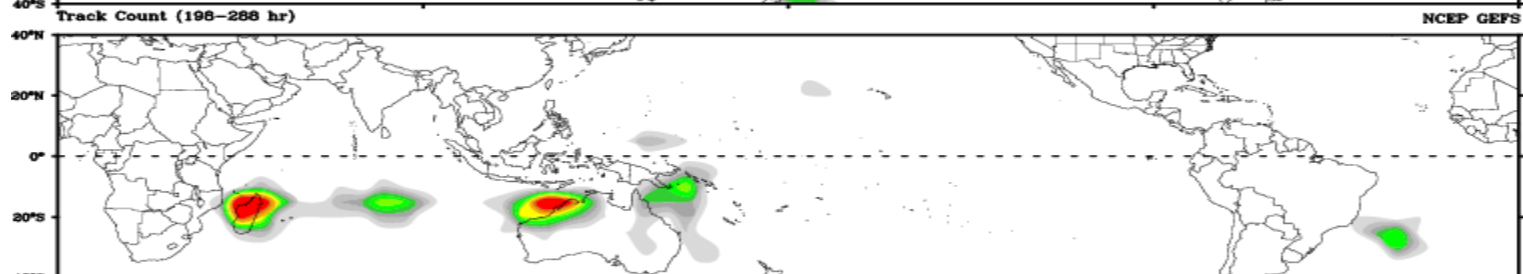




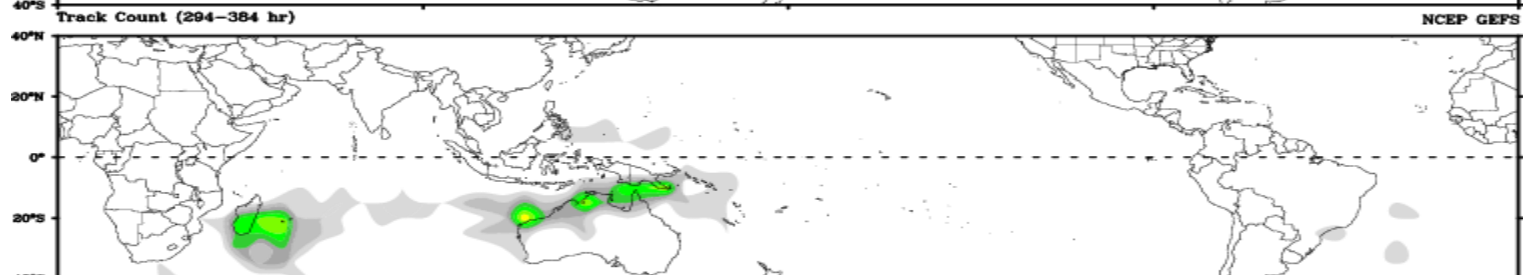
Days 1-4



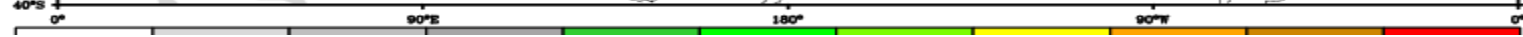
Day 5-8



Day 9-12

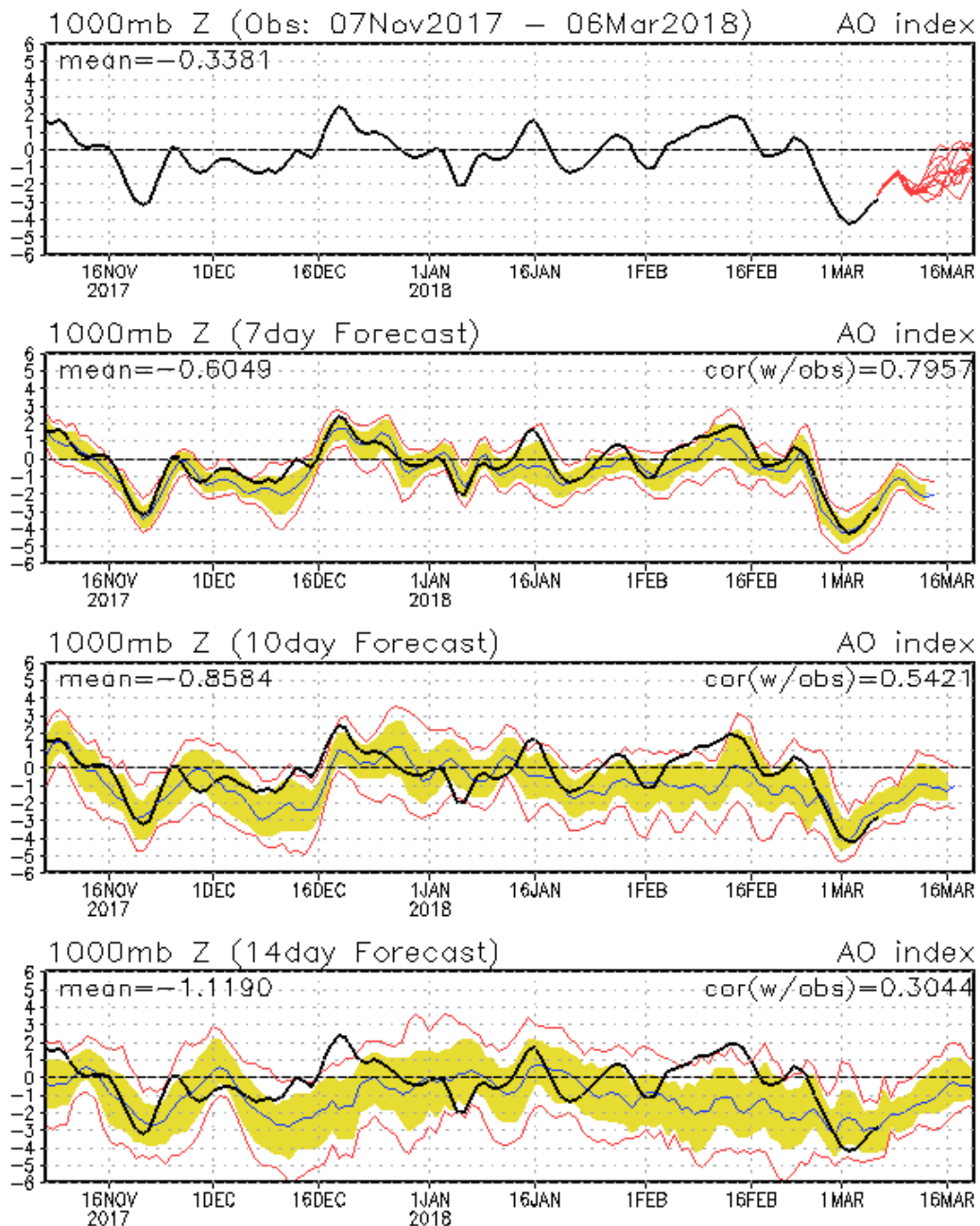


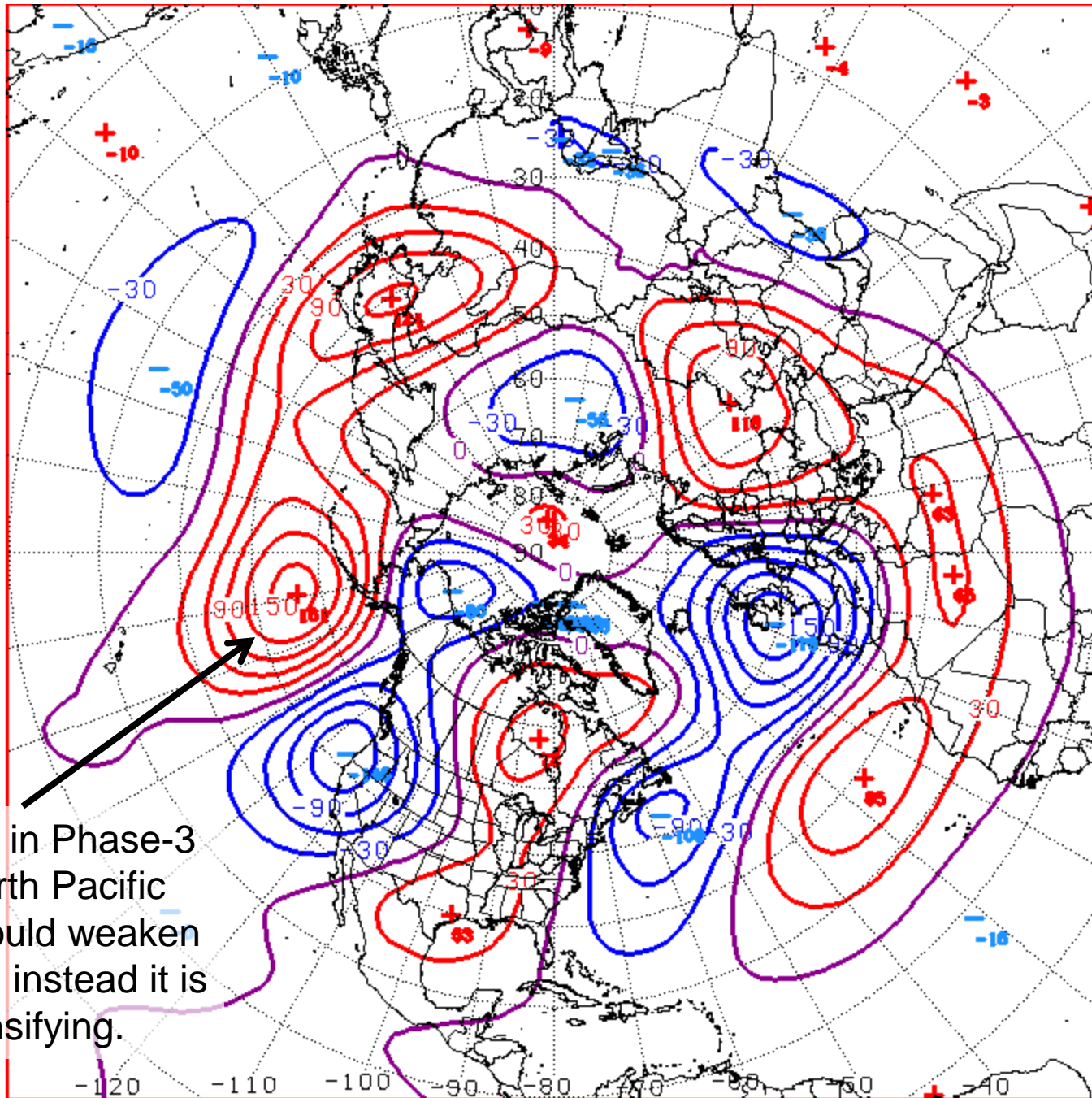
Day 13-15



Connections to U.S. Impacts

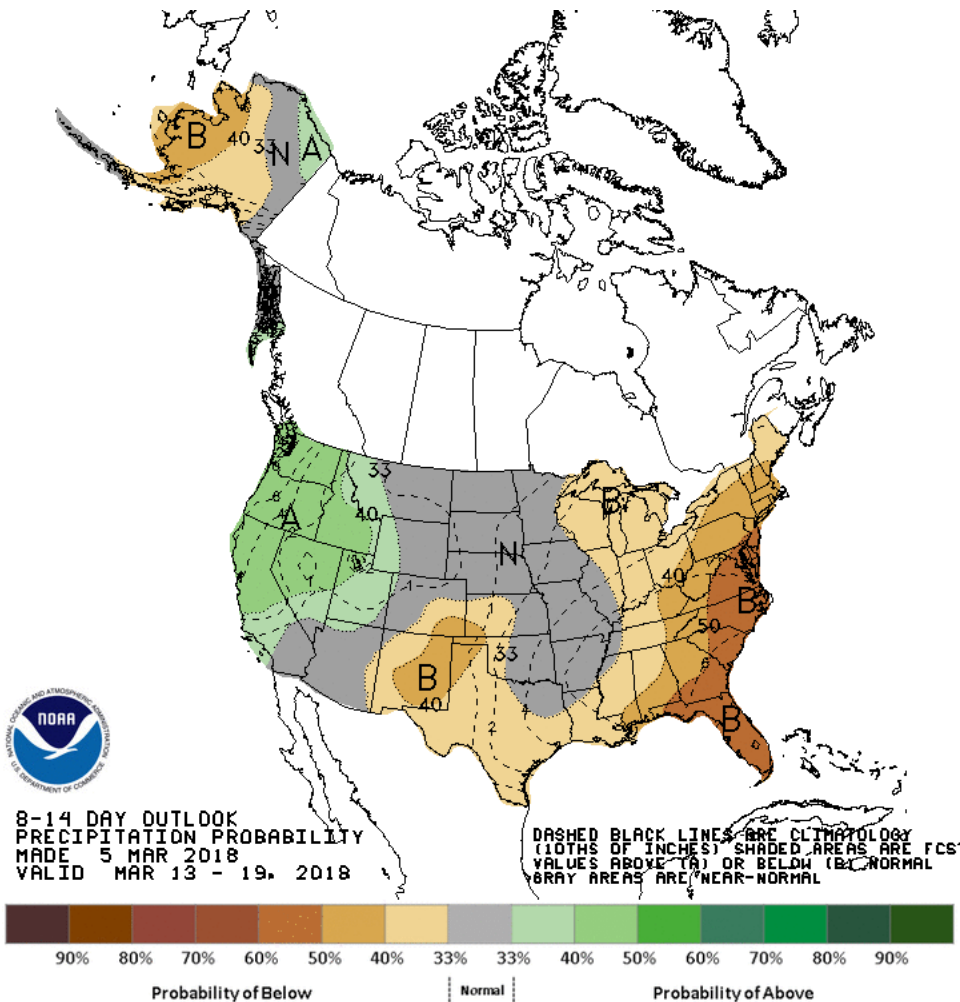
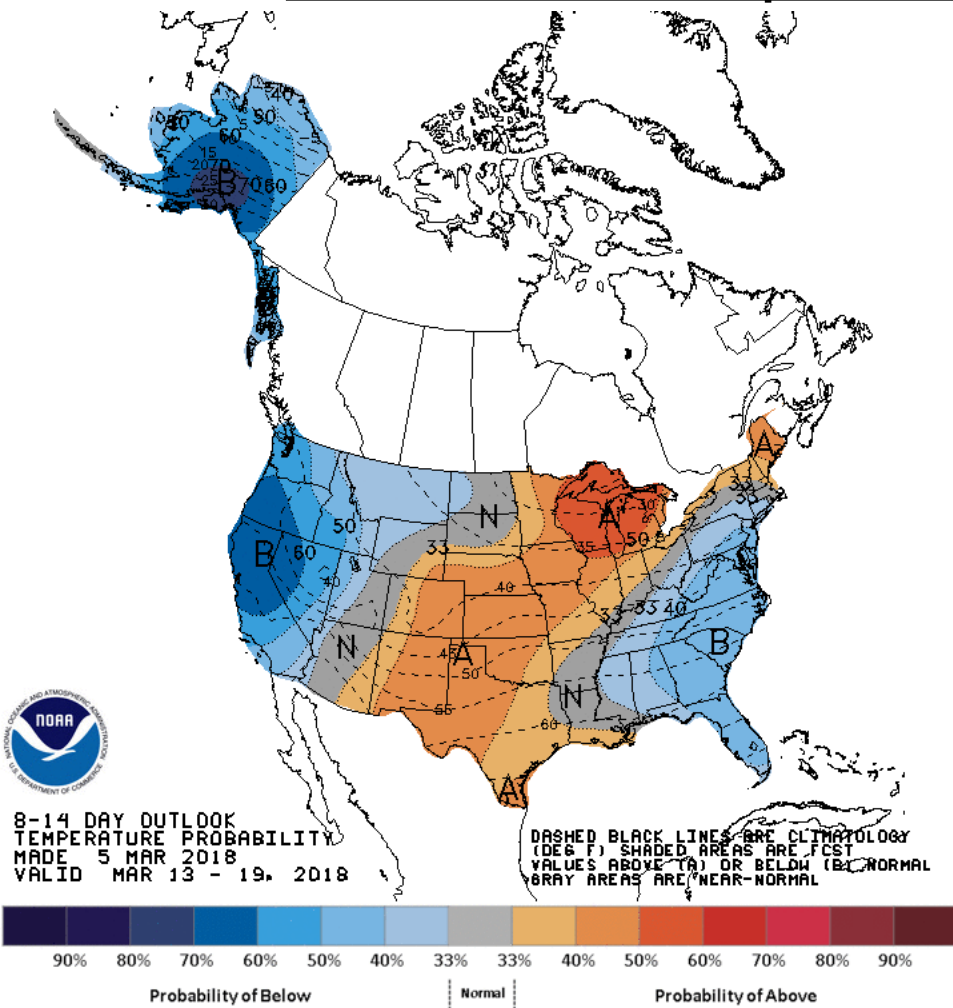
AO: Observed & ENSM forecasts





Typically in Phase-3
 the North Pacific
 ridge should weaken
 with time, instead it is
 intensifying.

Week 2 – Temperature and Precipitation



Today:

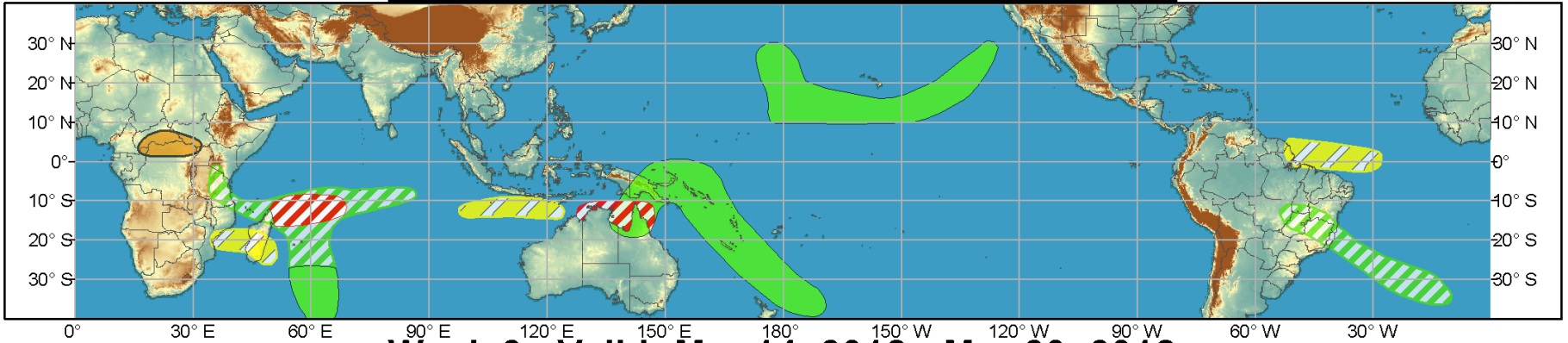
- Likely cooler across CA Great Basin; warmer across AK, Lower MS Valley, East.
- Likely wetter across CA, Southwest, Northern Plains, MS Valley, AK.



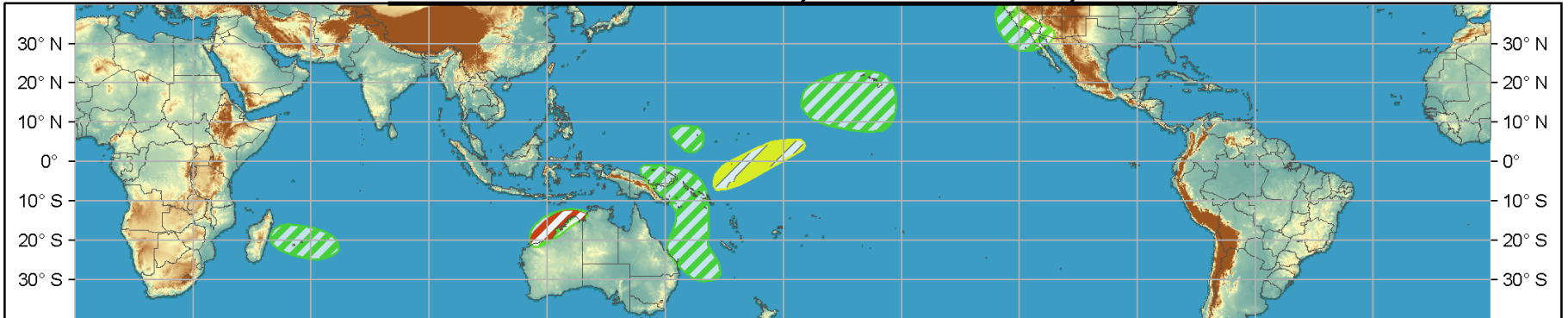
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