

Global Tropics Hazards And Benefits Outlook

3/5/2019

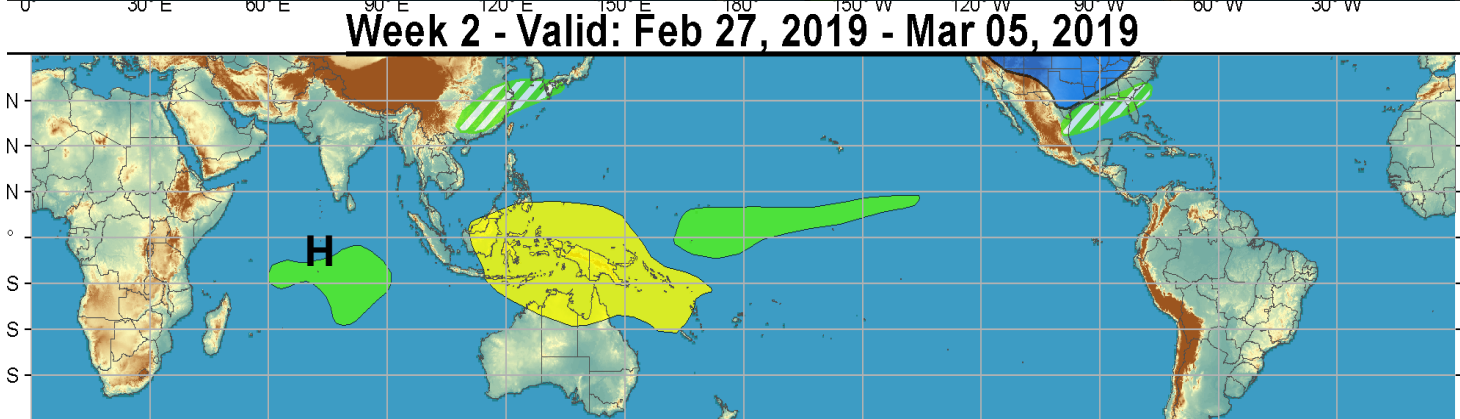
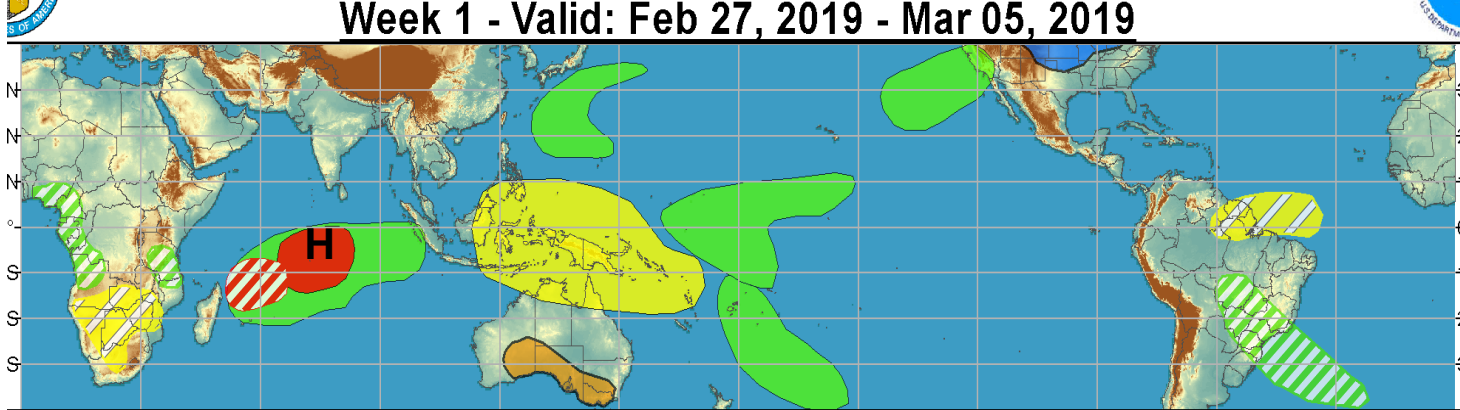
Kyle MacRitchie

Outline

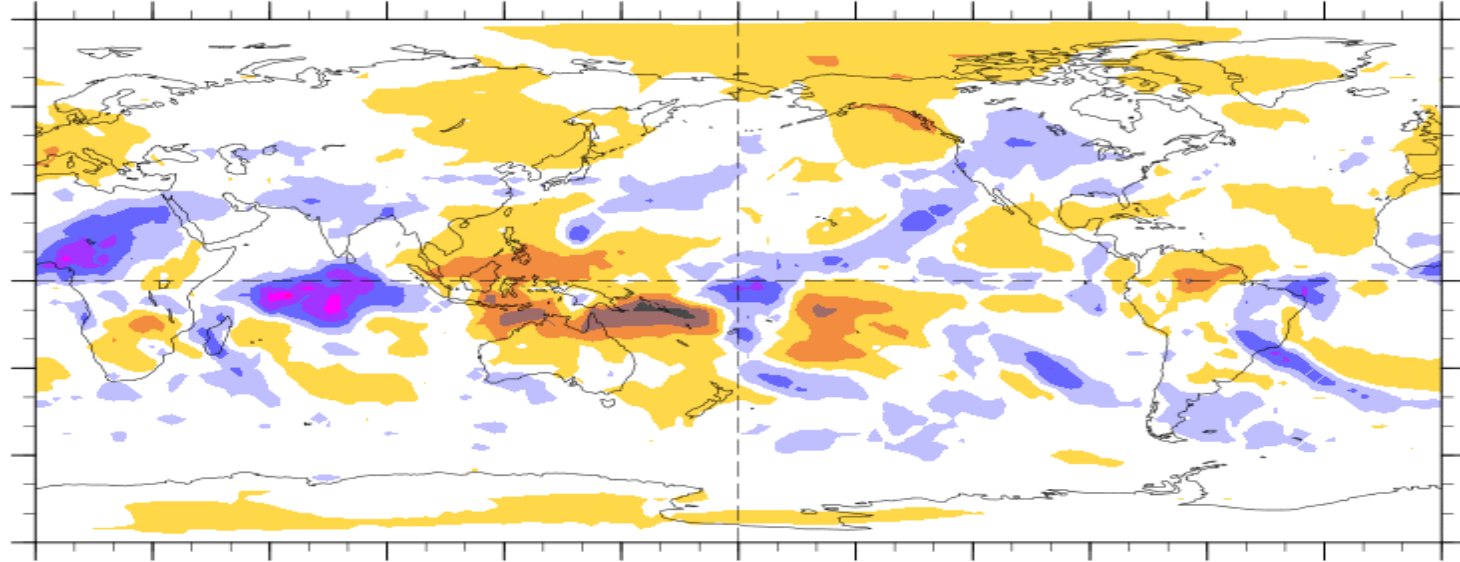
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

Typhoon Haleh
3/2 - Present



7-Day Average OLR Anomaly 2019/02/25 - 2019/03/03



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (February 14, 2019 Update)

- ENSO Alert System Status: [El Niño Advisory](#)
- Weak El Niño conditions are present and are expected to continue through the Northern Hemisphere spring 2019 (~ 55% chance).

MJO and other subseasonal tropical variability:

- The MJO continued to propagate through the Indian Ocean. It is currently in RMM Phase 3.
- Dynamical guidance suggests that the MJO will weaken as it traverses the Maritime Continent during Week-1.

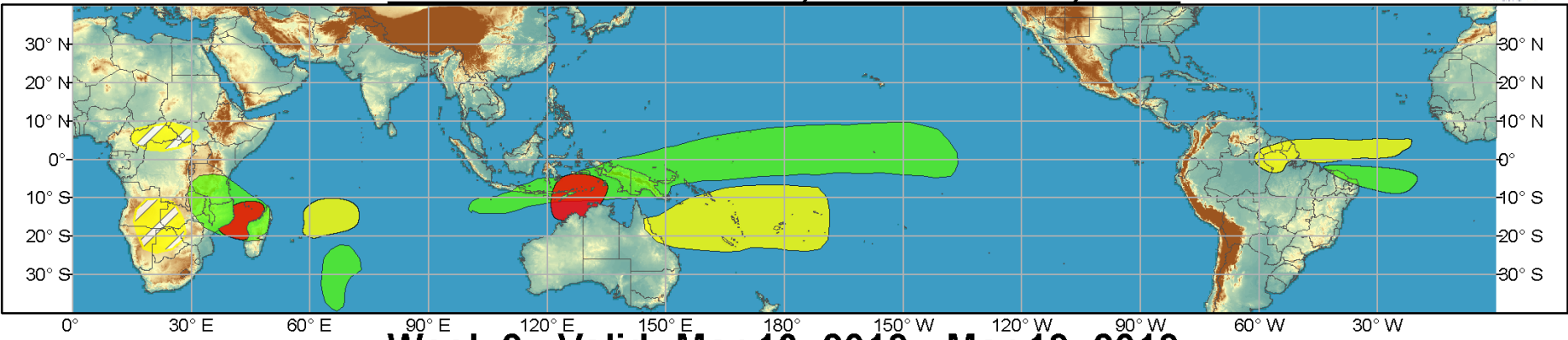
Extratropics:

- Few direct extratropical impacts are expected since the MJO is forecast to weaken during Week-1 and remain inactive for much of the GTH forecast period.

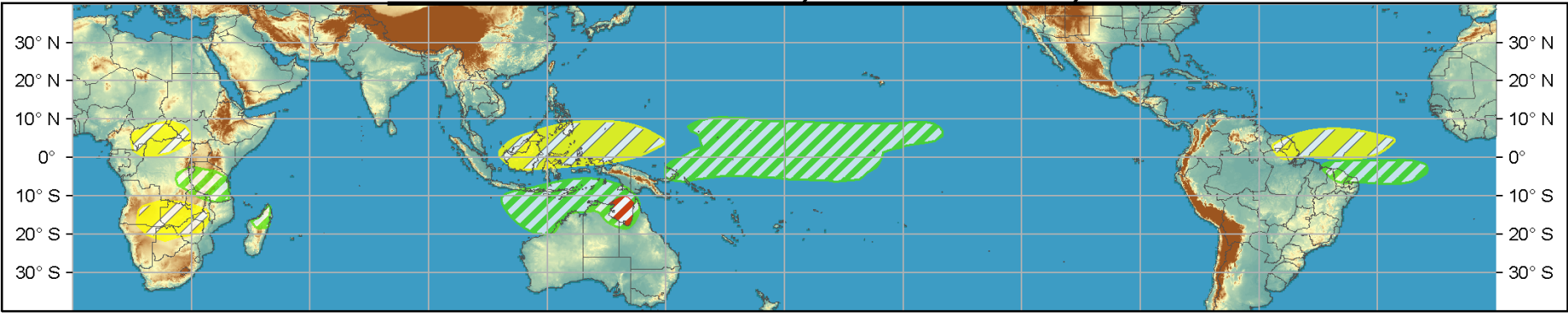


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 06, 2019 - Mar 12, 2019



Week 2 - Valid: Mar 13, 2019 - Mar 19, 2019



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.
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Produced: 03/05/2019

Forecaster: MacRitchie

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

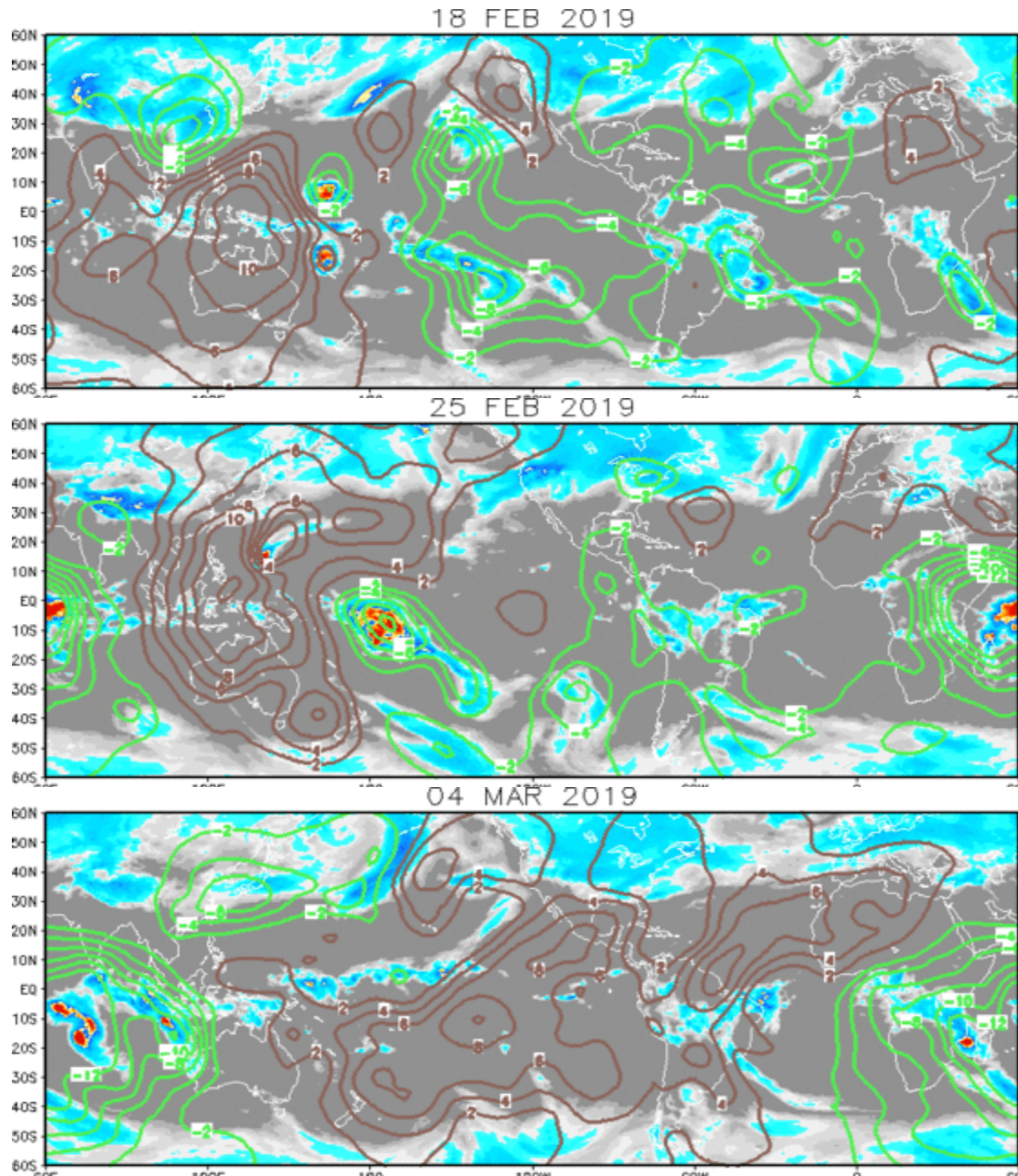
Green: Enhanced Divergence

Brown: Enhanced Convergence

Noisy Wave-1 pattern. MJO was too weak to anchor the pattern.

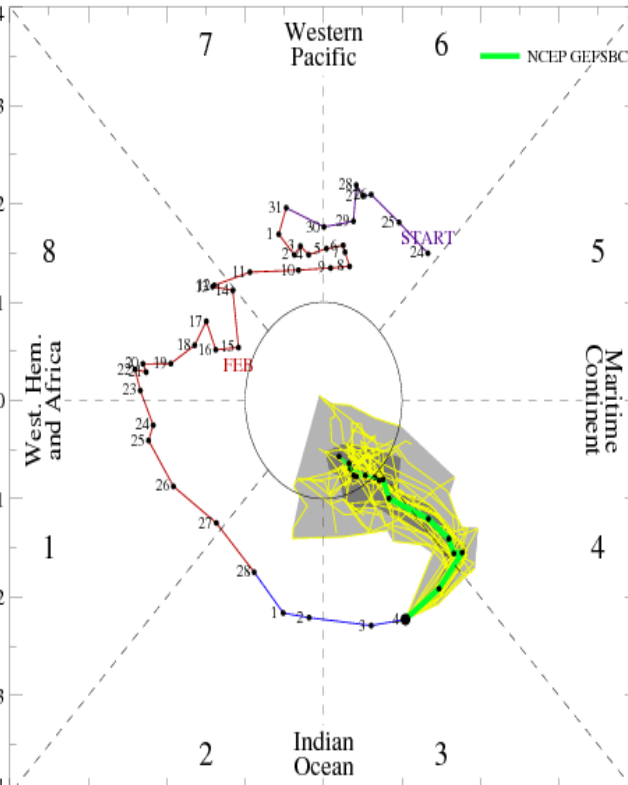
The Wave-1 pattern intensified as MJO-related convection off the east coast of Africa developed.

The upper-level VP field is partially anchored by MJO convection in the Indian Ocean.



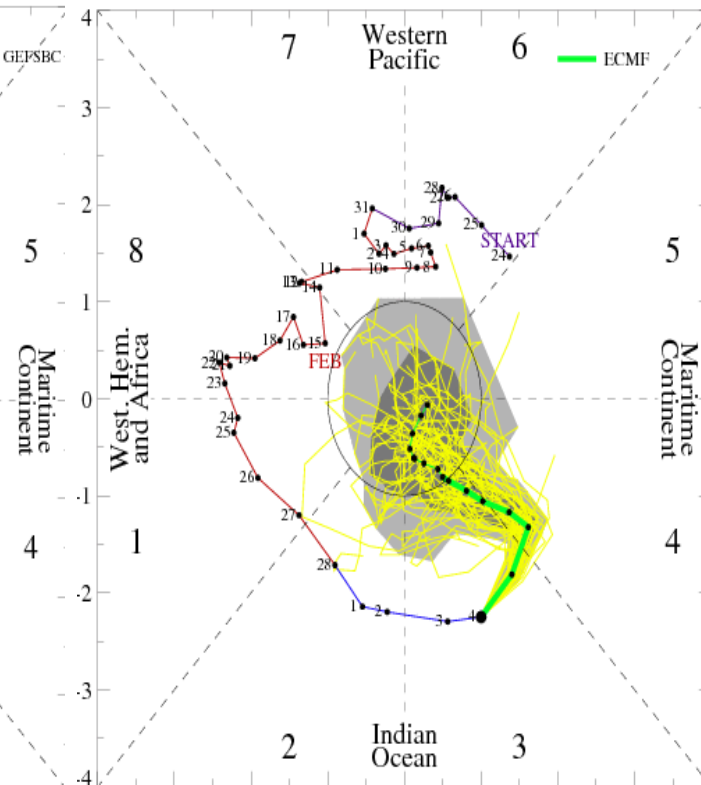
MJO Observation/Forecast

[RMM1, RMM2] forecast for Mar-05-2019 to Mar-19-2019



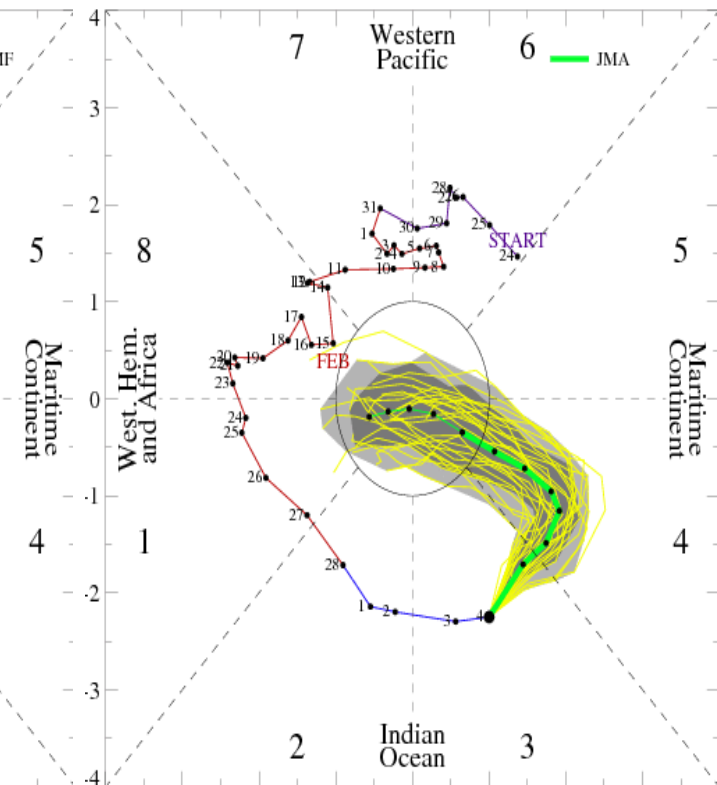
GEFS

MJO Index Forecast for 05Mar2019-19Mar2019



ECMWF

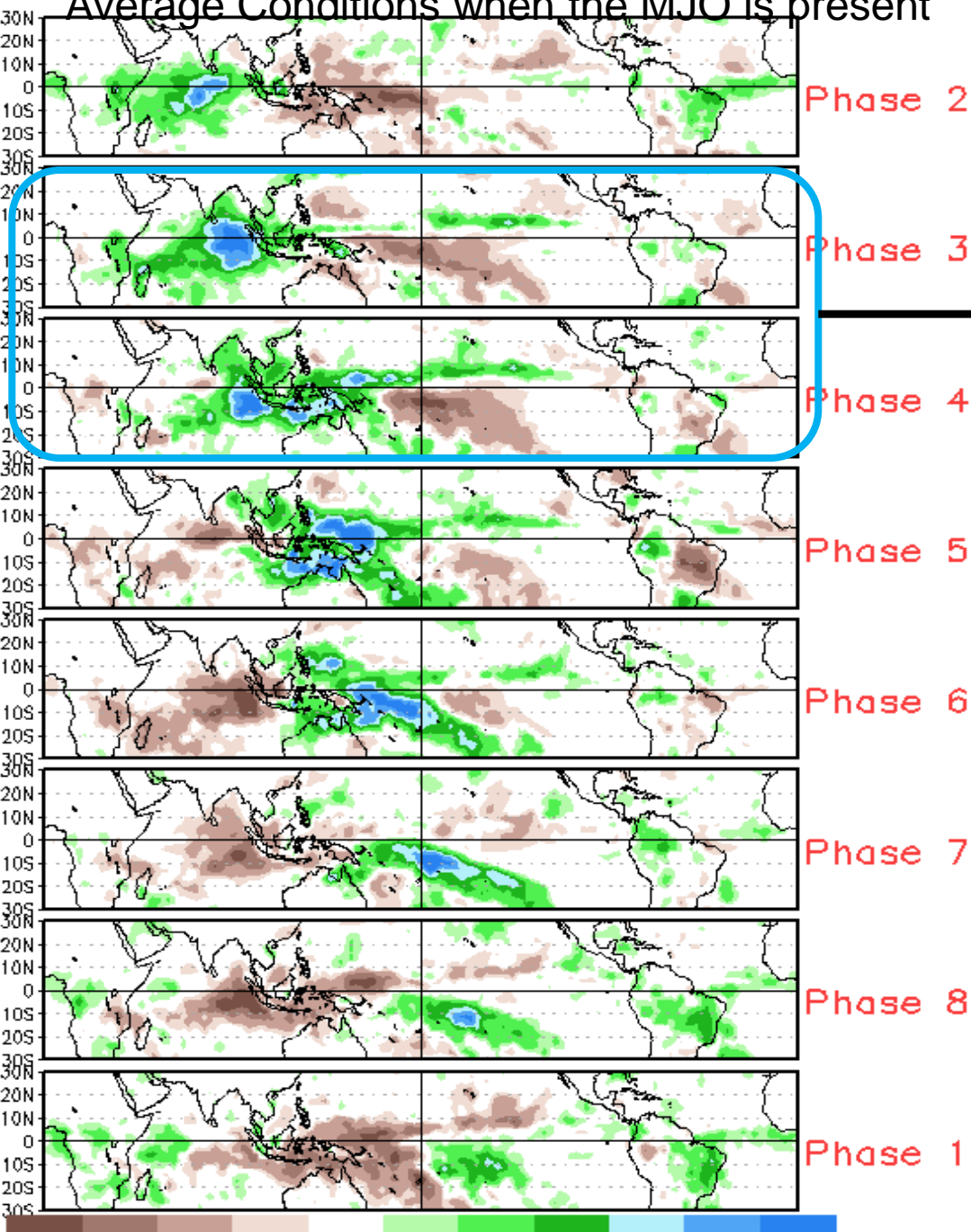
MJO Index Forecast for 05Mar2019-13Mar2019



CAN

These dynamical models agree that the MJO will weaken during Week-1 as it approaches the Maritime Continent.

Average Conditions when the MJO is present

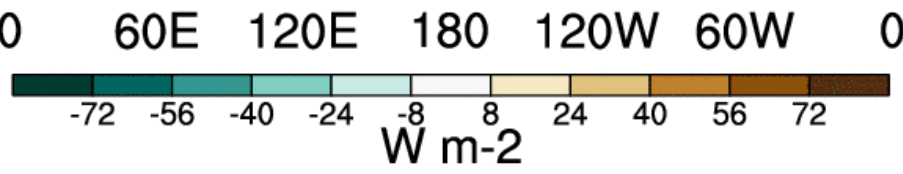
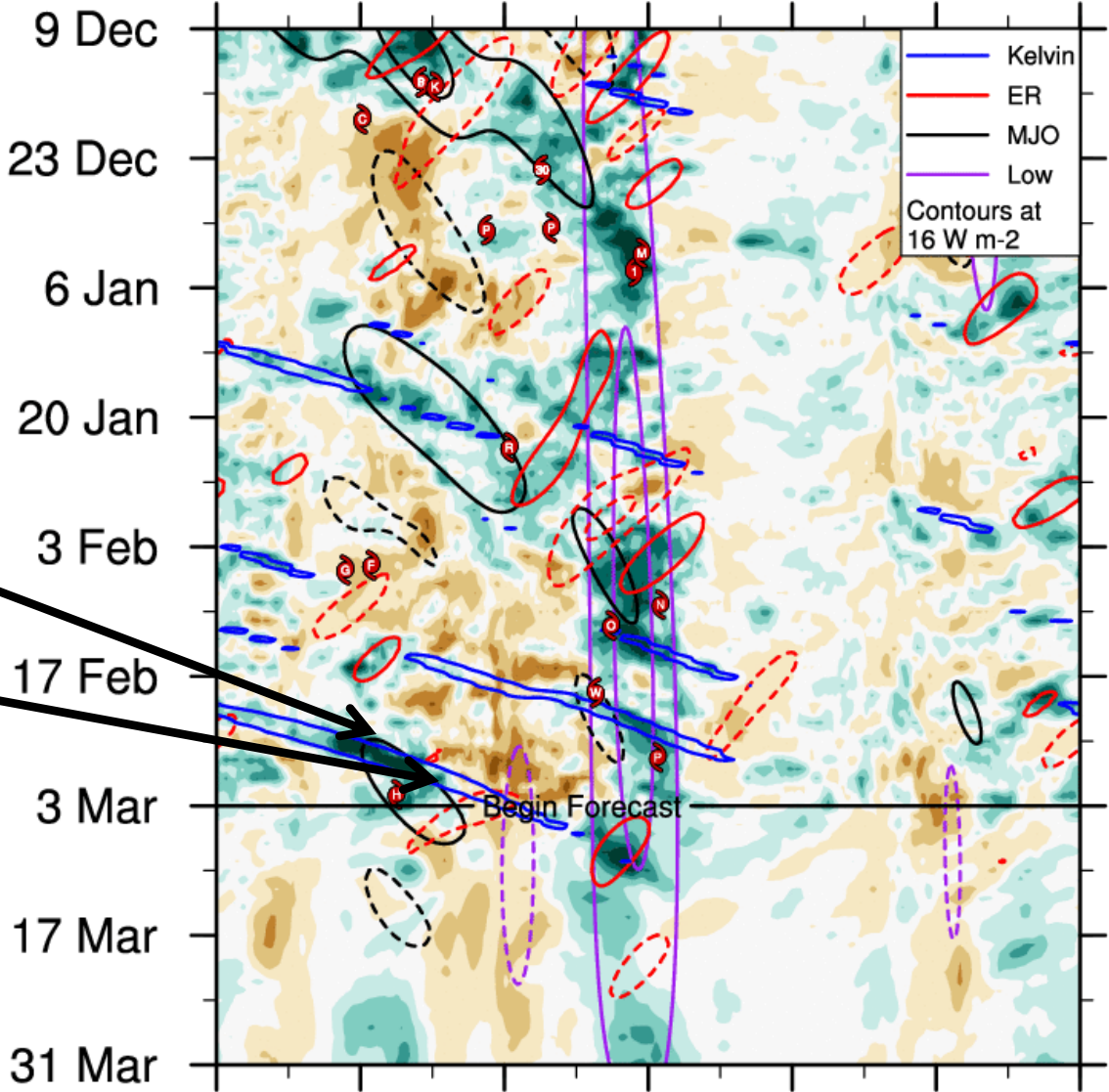


The MJO is forecast to be in Phases 3 and 4 during Week-1 before weakening.

CAVEAT: These panels are representative of robust MJO events.

OLR with CFS forecasts

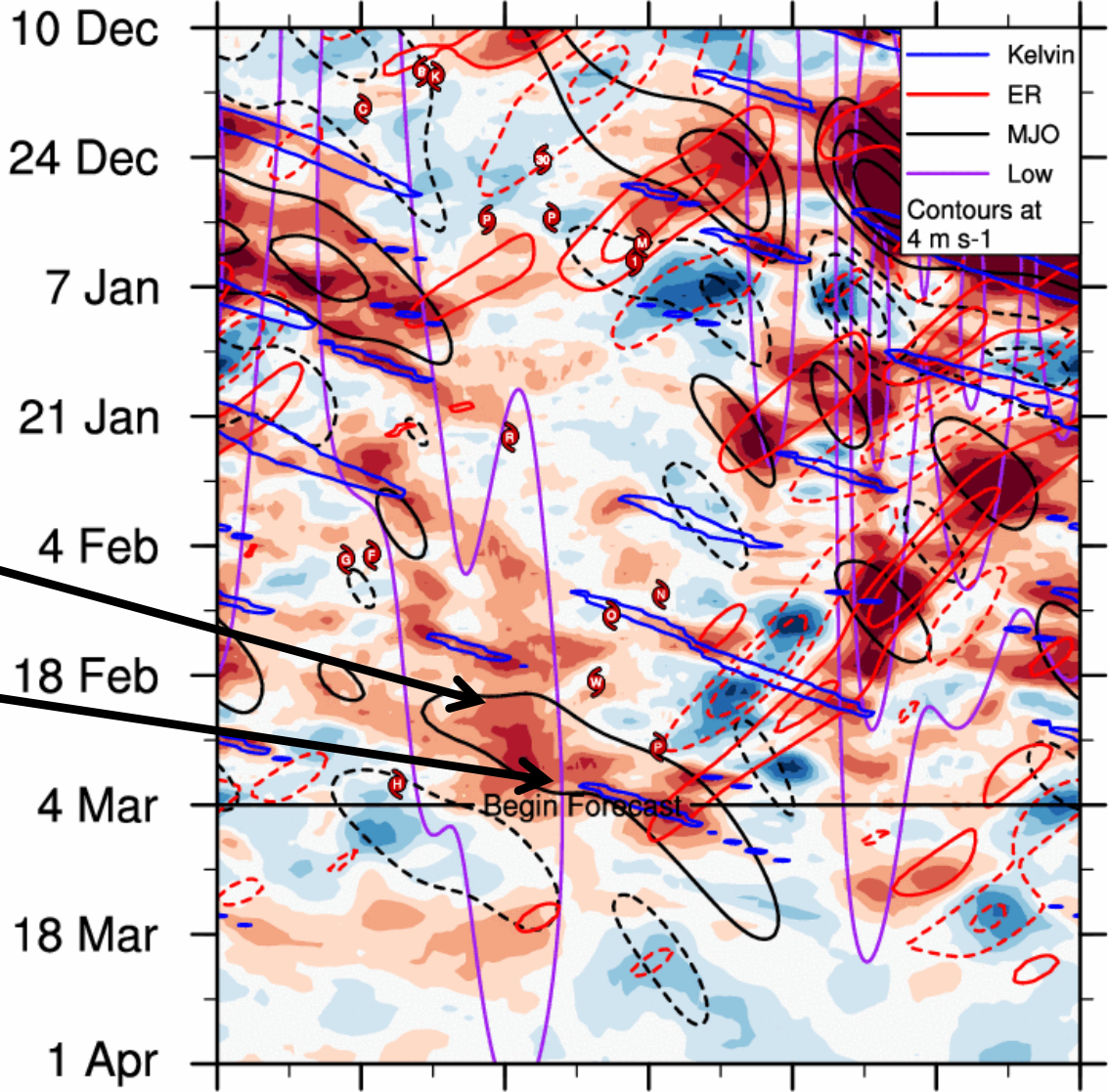
5S - 5N



Weak MJO signal over Indian Ocean.

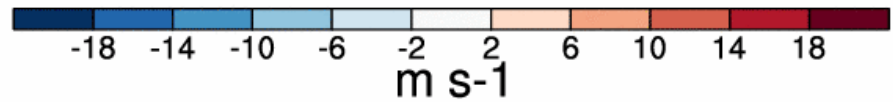
Atmospheric Kelvin wave

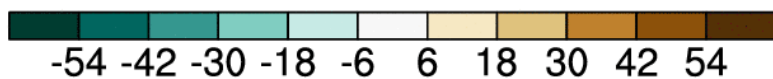
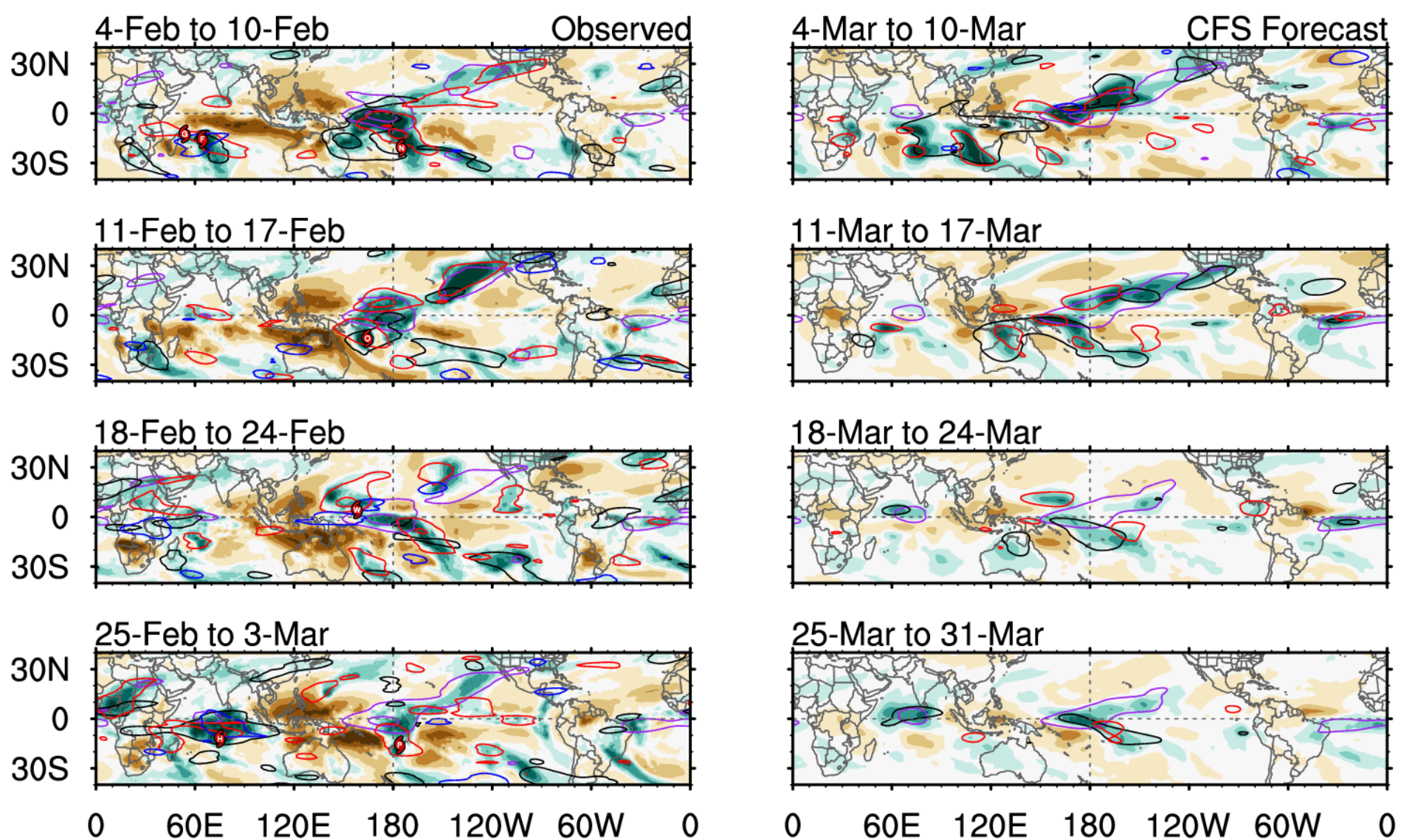




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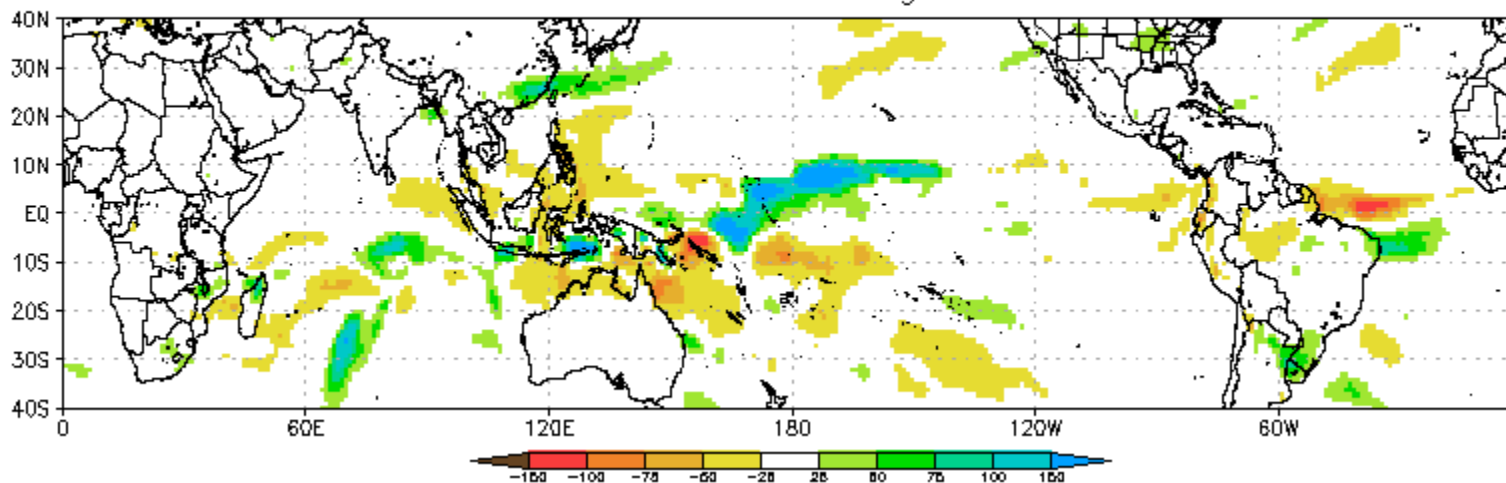


W m⁻²

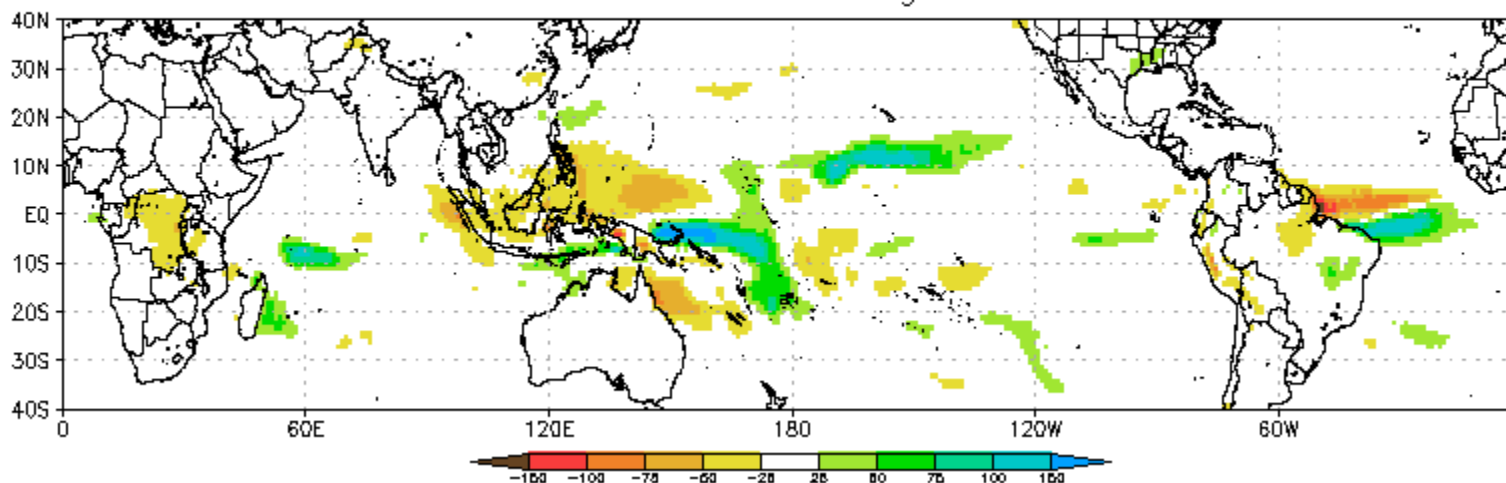
7-day OLR with CFS forecasts

— MJO — Kelvin x2
 — Low — ER
 Contours at -12, -36 W m⁻²

CFS Precipitation Anomalies (mm) Issued 04Mar2019
Week-1 Forecast Ending 12Mar2019

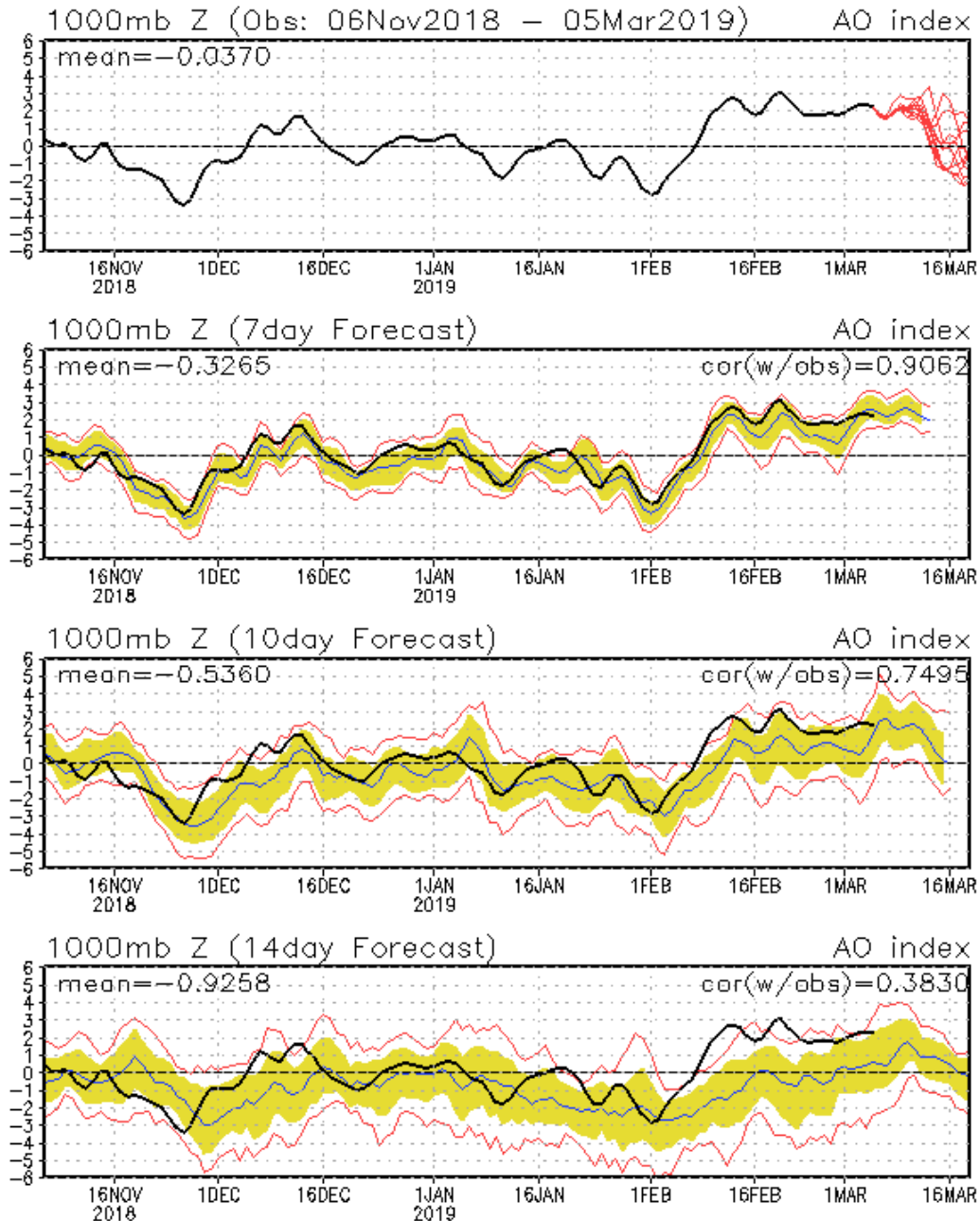


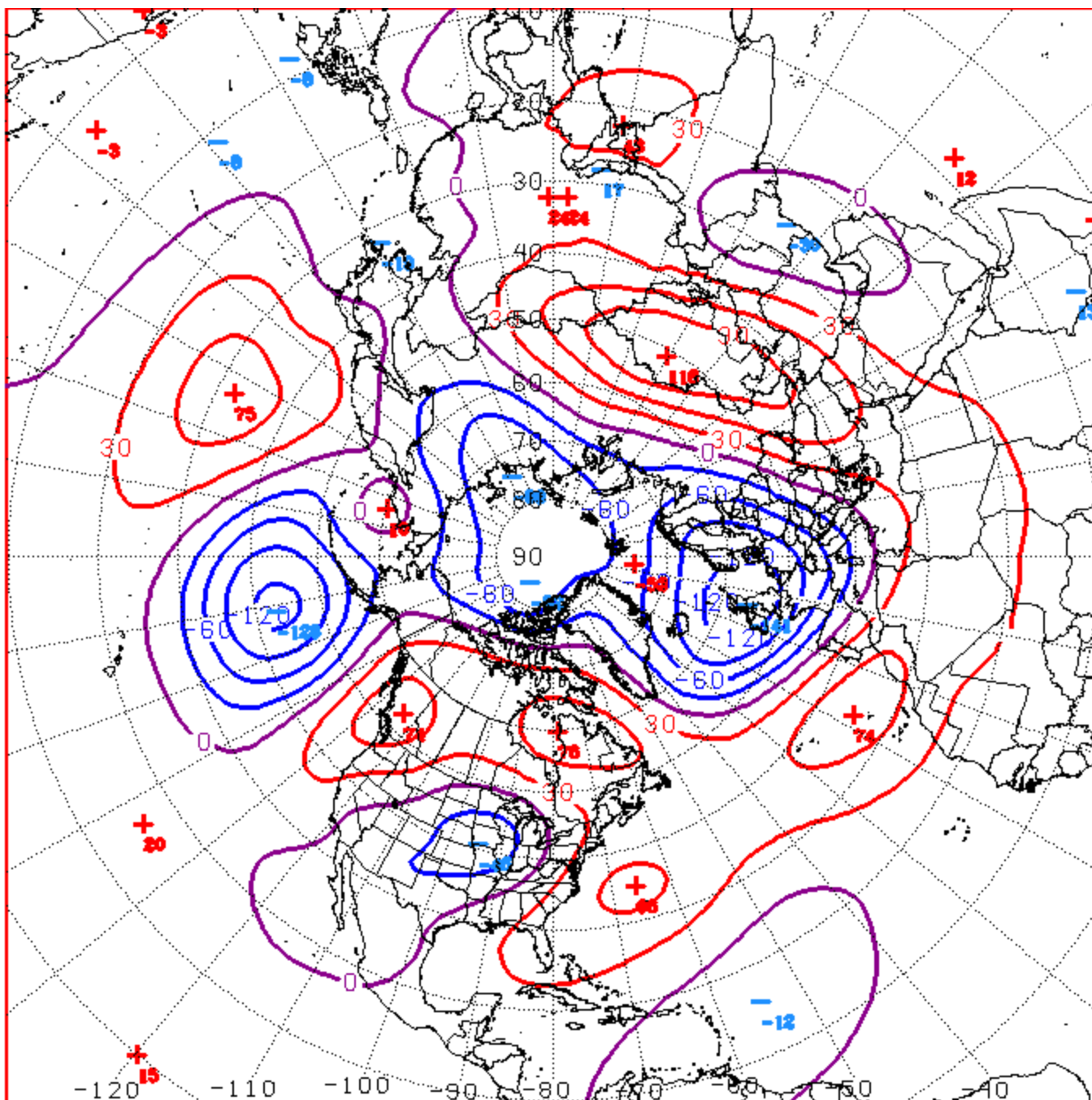
CFS Precipitation Anomalies (mm) Issued 04Mar2019
Week-2 Forecast Ending 19Mar2019



Connections to U.S. Impacts

AO: Observed & ENSM forecasts



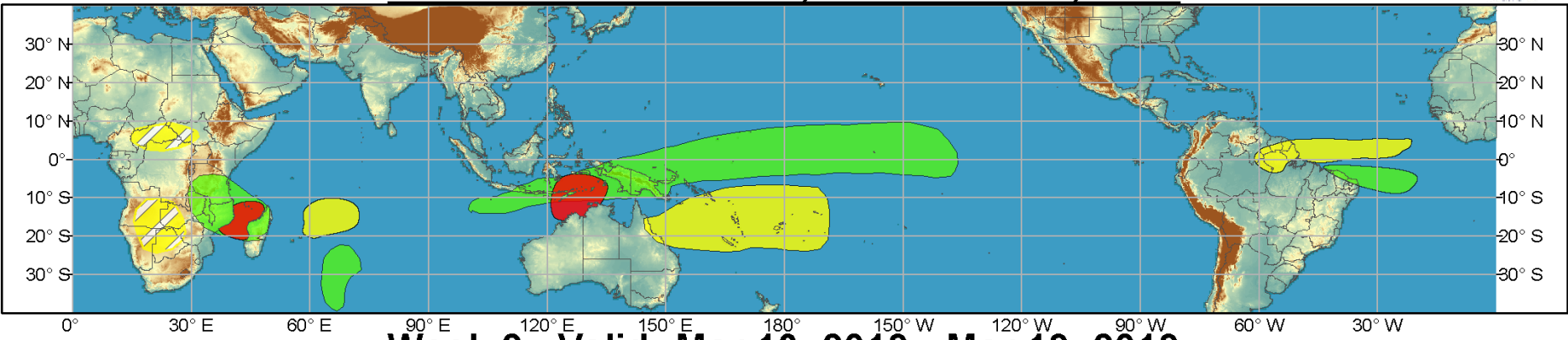


D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE MAR 05 2019 1332 UTC CNTD MAR 16 2019

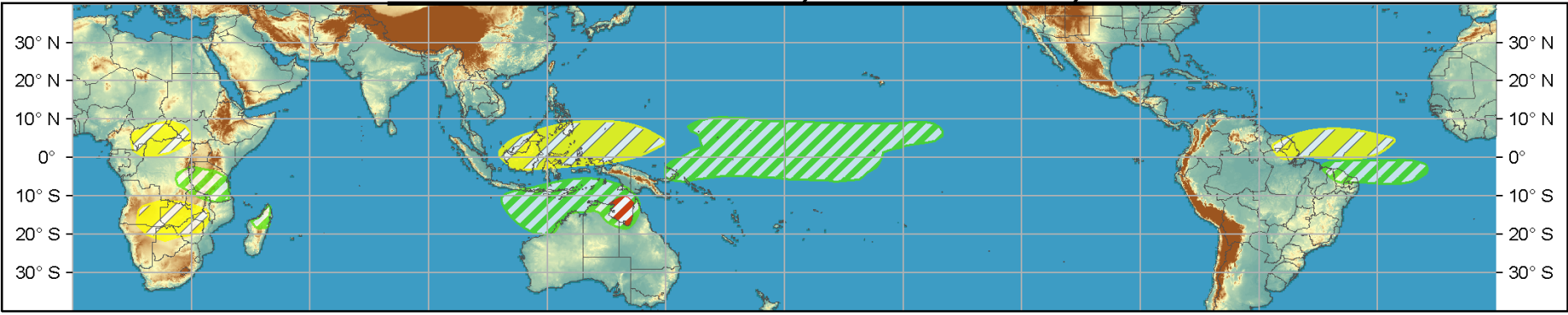


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