

# Global Tropics Hazards And Benefits Outlook

March 1, 2016

Anthony Artusa

## Outline

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

Tropical Storm YALO

25-26 FEB 2016

# T.S. YALO

15 S

15S

Tahiti

20 S

20S

25 S

25S

20

160W

155W

150W

145

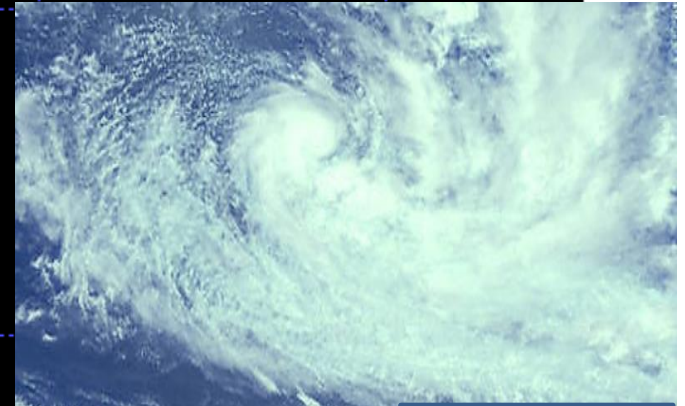
160 W

155 W

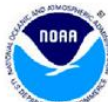
150 W

NASA/JPL

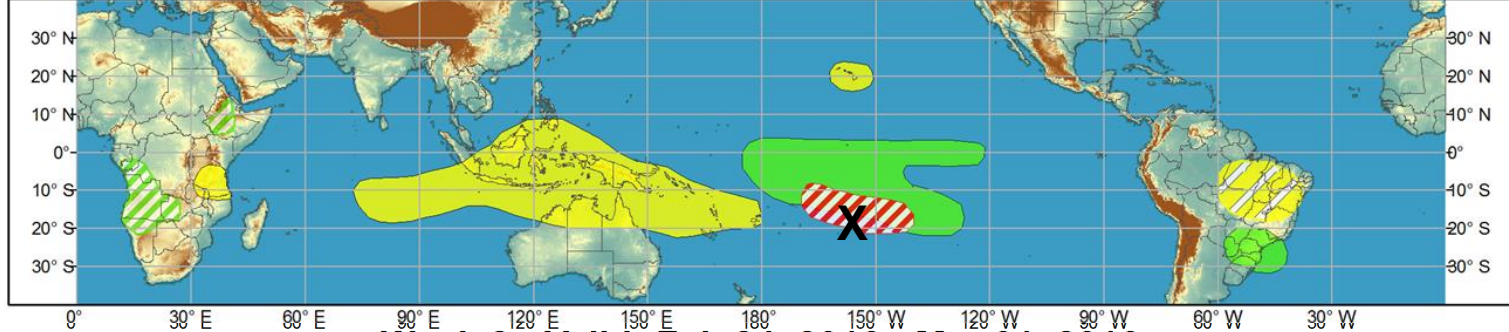
© UNISYS



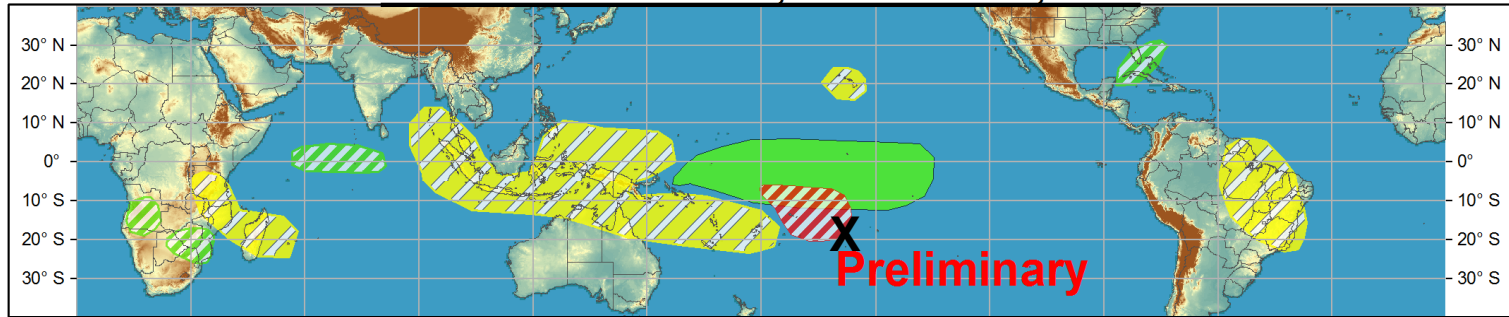
# Outlook Review



Week 1 - Valid: Feb 24, 2016 - Mar 01, 2016

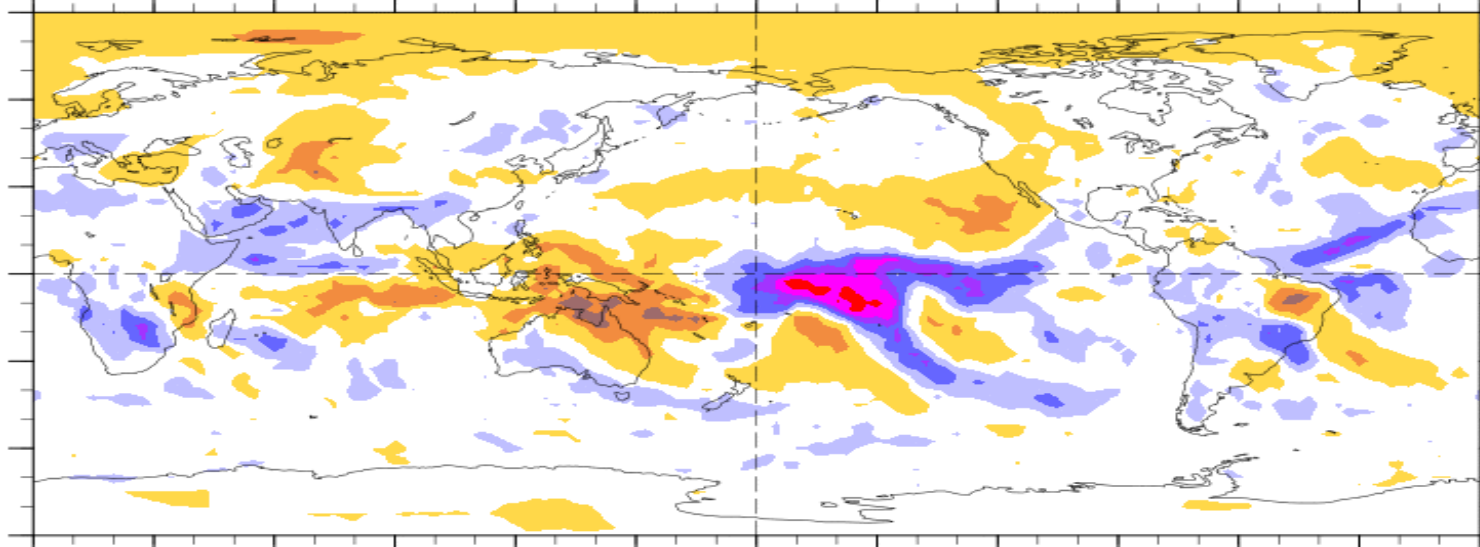


Week 2 - Valid: Feb 24, 2016 - Mar 01, 2016



7-Day Average OLR Anomaly

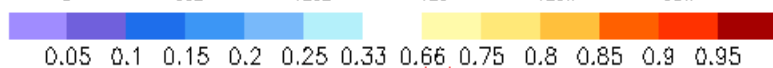
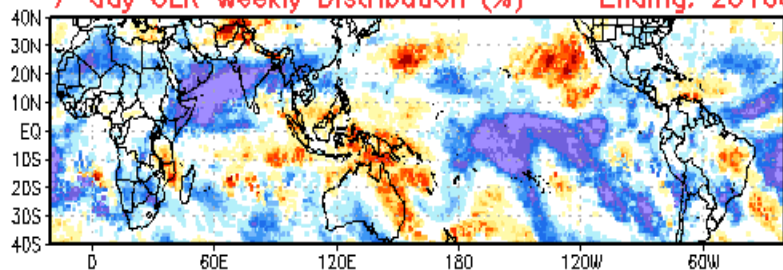
2016/02/22 - 2016/02/28



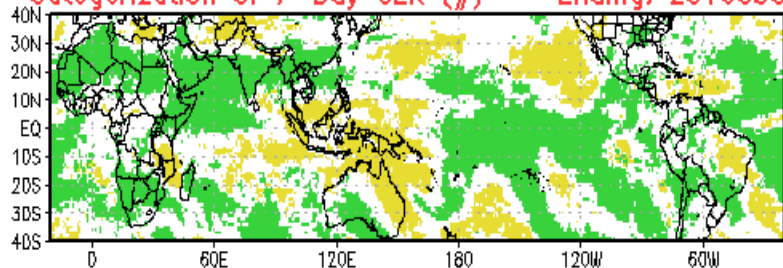
Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

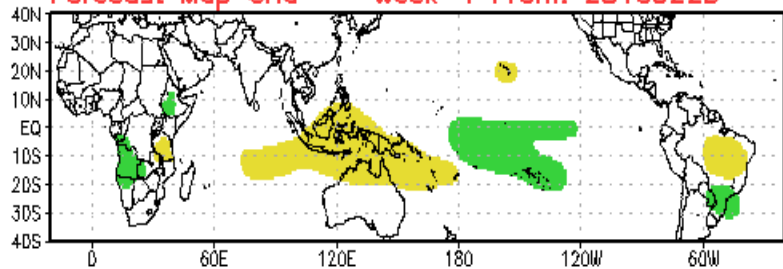
7-day OLR Weekly Distribution (%) -- Ending: 20160301



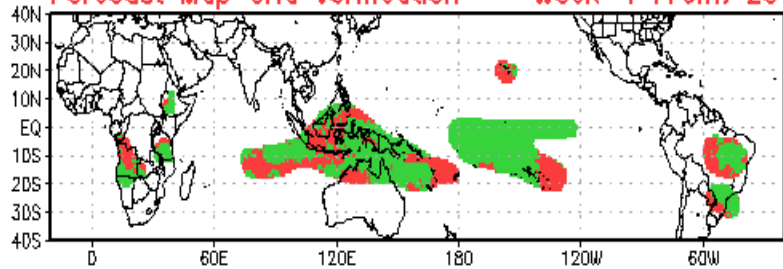
Categorization of 7-Day OLR (#) -- Ending: 20160301



Forecast Map Grid -- Week-1 From: 20160223

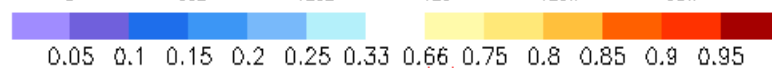
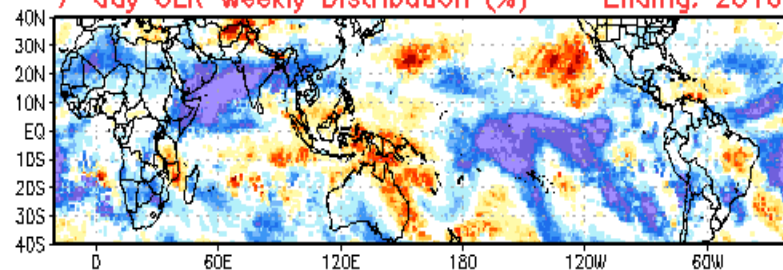


Forecast Map Grid Verification -- Week-1 From: 20160223

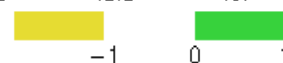
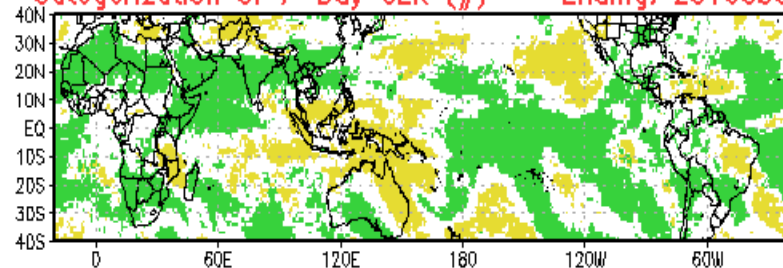


Hit: Green, Miss: Red  
Heidke Skill Score: 49.9085

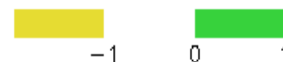
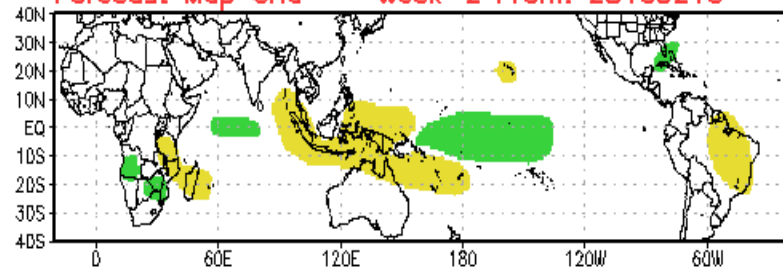
7-day OLR Weekly Distribution (%) -- Ending: 20160301



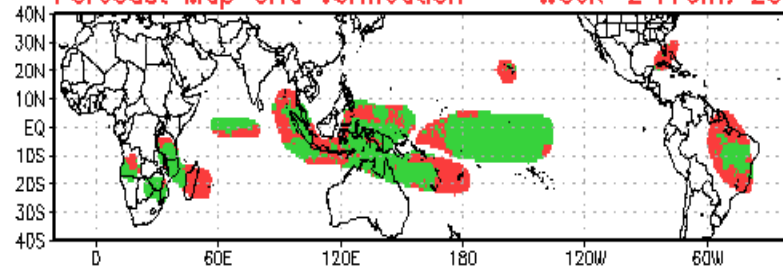
Categorization of 7-Day OLR (#) -- Ending: 20160301



Forecast Map Grid -- Week-2 From: 20160216



Forecast Map Grid Verification -- Week-2 From: 20160216



Hit: Green, Miss: Red  
Heidke Skill Score: 40.3882

# Synopsis of Climate Modes

## ENSO:

- Current: [El Niño Advisory](#)
- Nino 3.4 – 2.6C - Slight tick down.
- Outlook: There is an approximately 90% chance that El Niño will continue through Northern Hemisphere spring 2016 (MAM); declining rapidly to 70% by AMJ.

## MJO and other subseasonal tropical variability:

- Currently robust MJO signal, with enhanced phase over central and eastern Pacific, and suppressed phase over Indian Ocean and Maritime Continent.
- Most dynamical model MJO index forecasts depict some eastward movement and a weakening signal through Week-2.

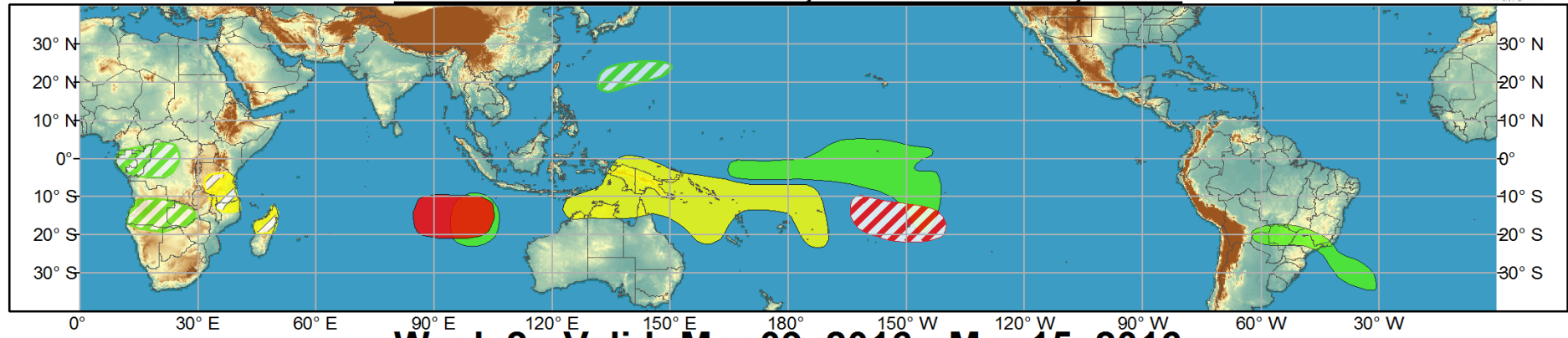
## Extratropics:

- The extended range precipitation forecast for the U.S. is expected to be influenced by an enhanced subtropical jet stream across the southwestern contiguous U.S., favoring above-median precipitation across much of California and the desert Southwest in early March. Temperature response is not clear cut.

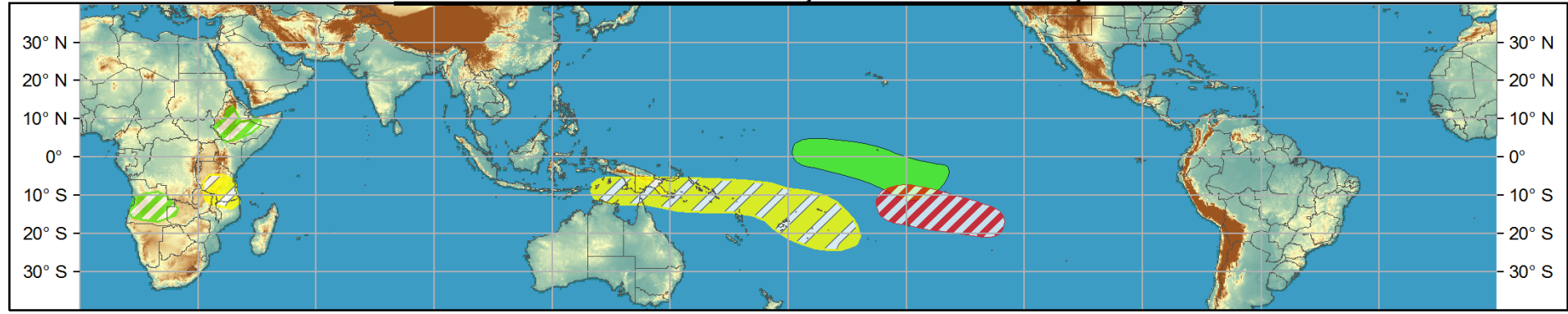


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Mar 02, 2016 - Mar 08, 2016



## Week 2 - Valid: Mar 09, 2016 - Mar 15, 2016



**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: 03/01/2016**  
**Forecaster: Artusa**

**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.**



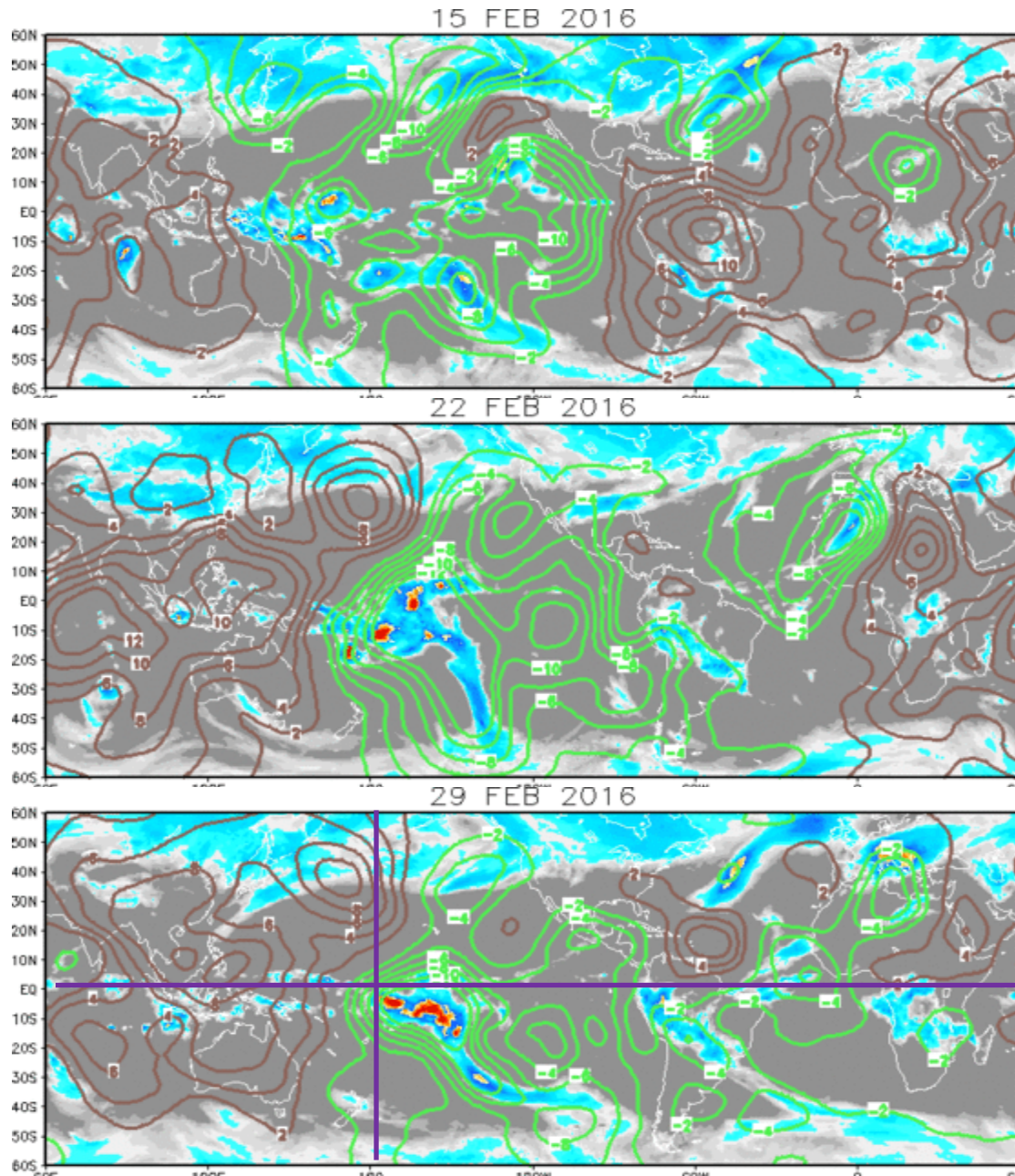
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence    Brown: Enhanced Convergence

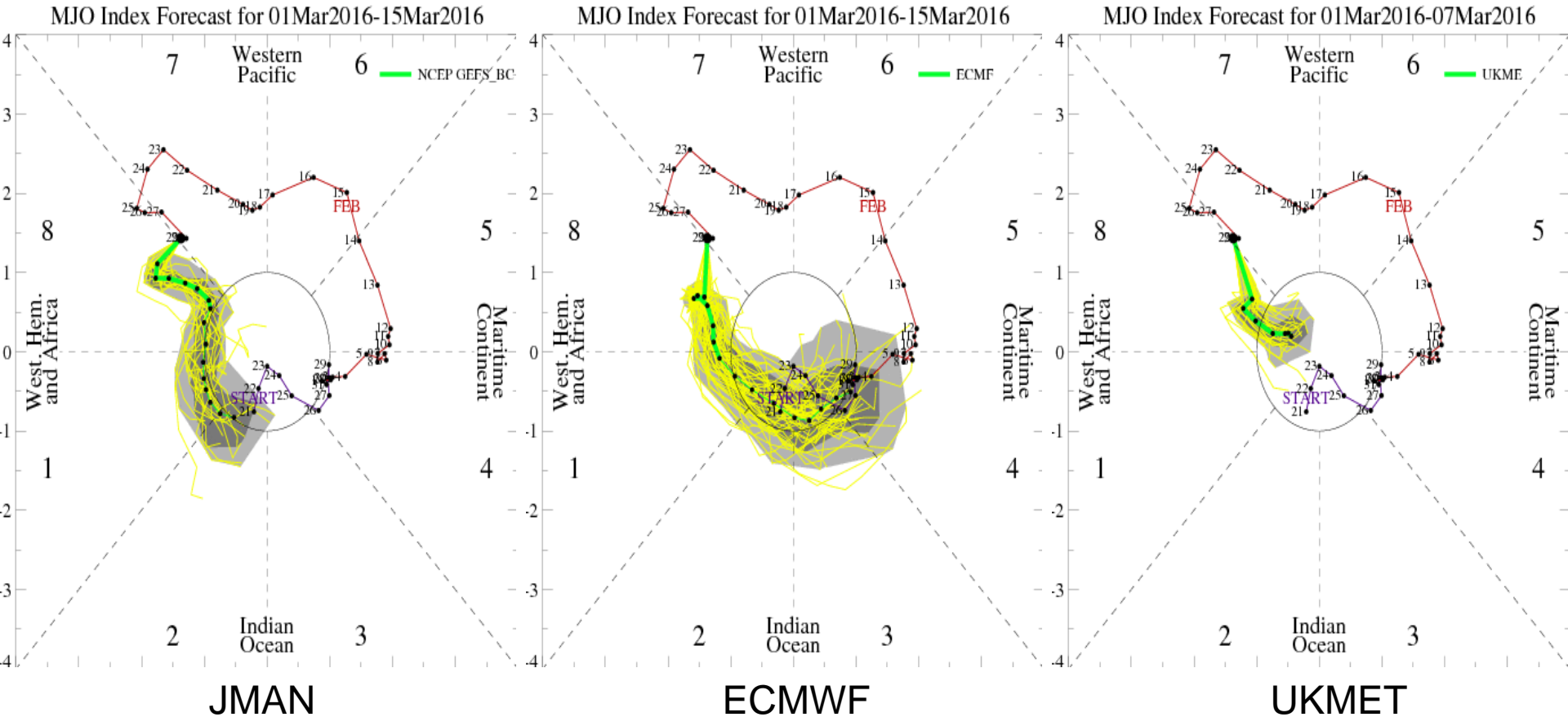
Base state  
emerged again.

Other modes  
constructively  
interfering now.

MJO & El Nino  
base state  
clearly showing  
constructive  
interference in  
last map.



# MJO Observation/Forecast

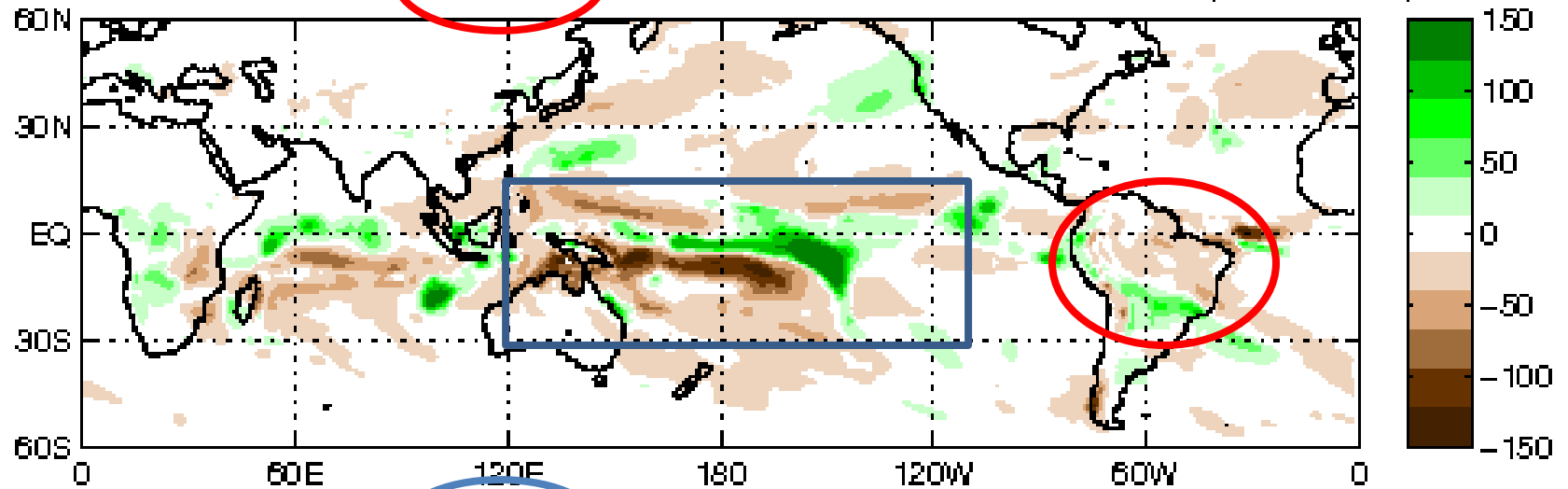


Wheeler-Hendon based analyses of model forecasts indicate large differences in eastward propagation speed

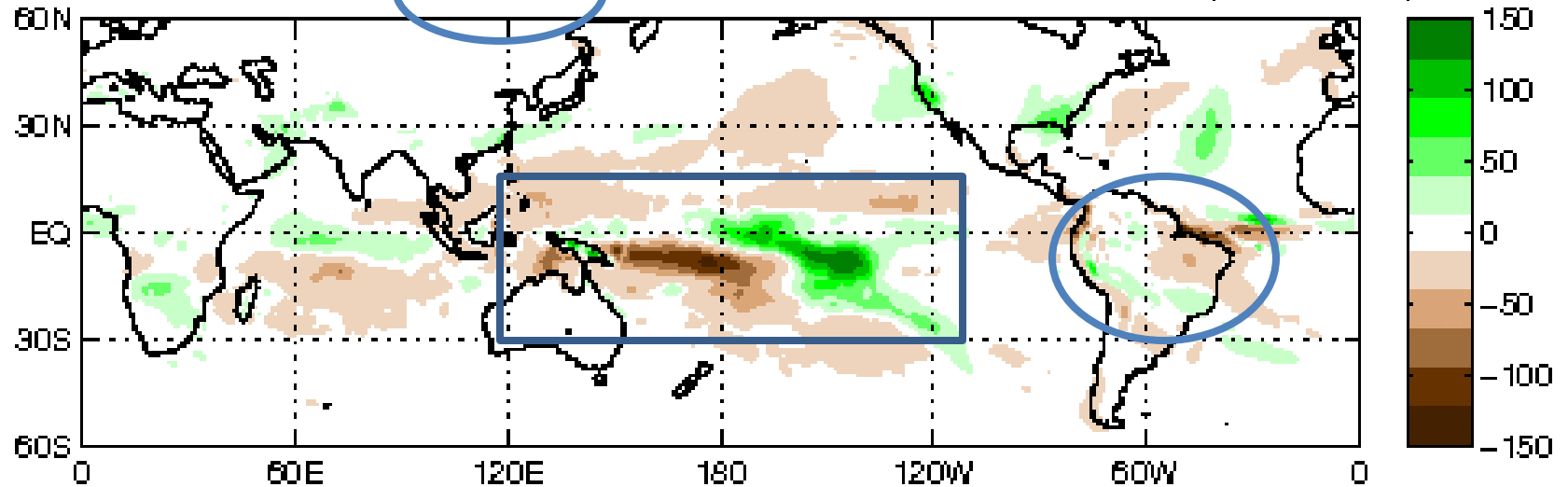
Most models depict weakening



CFS: Anom. PREC Week: 1: 02-Mar-2016 to 08-Mar-2016 (mm/week)

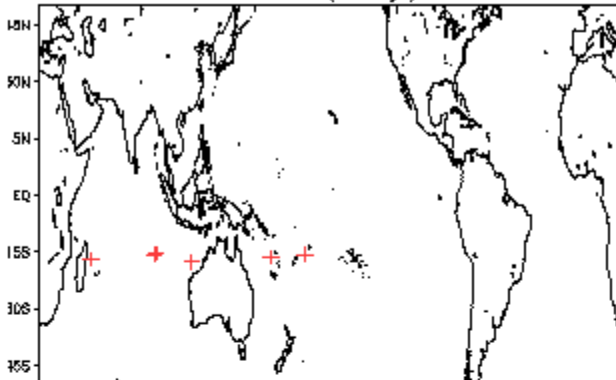


CFS: Anom. PREC Week: 2: 09-Mar-2016 to 15-Mar-2016 (mm/week)

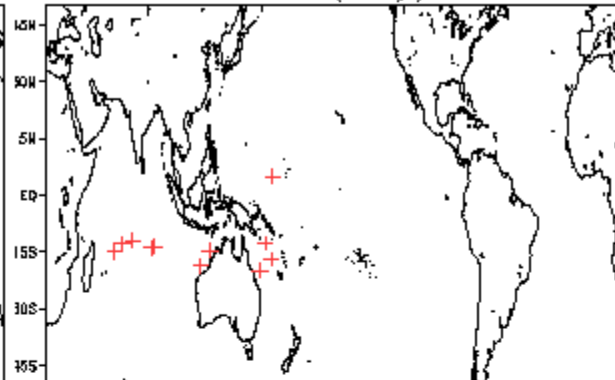


# March Tropical Storm Formation by MJO phase

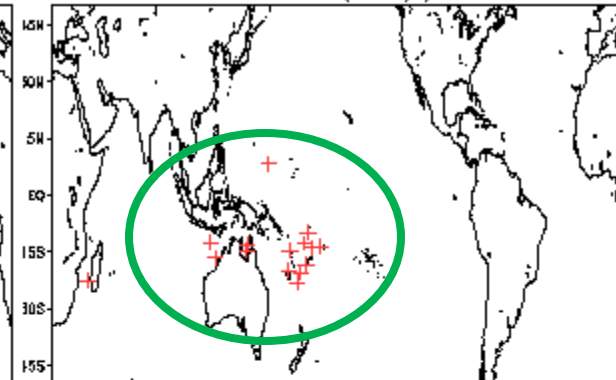
Phase 1 (98 days) 7 storms



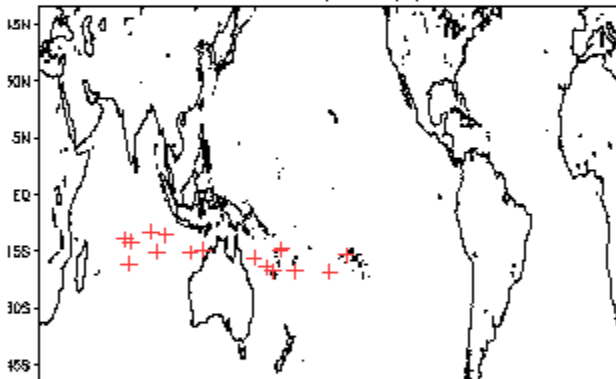
Phase 4 (72 days) 12 storms



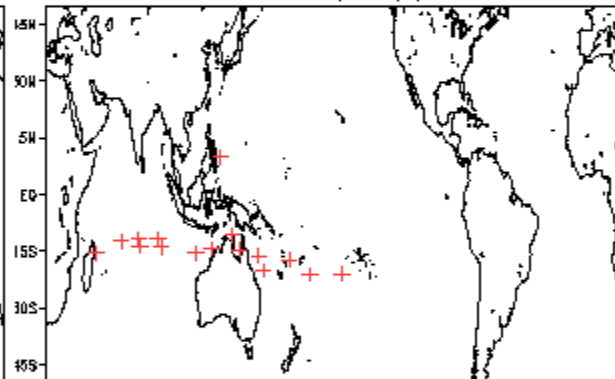
Phase 7 (81 days) 16 storms



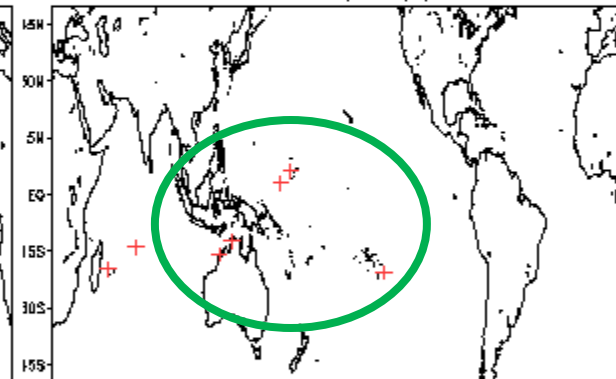
Phase 2 (111 days) 17 storms



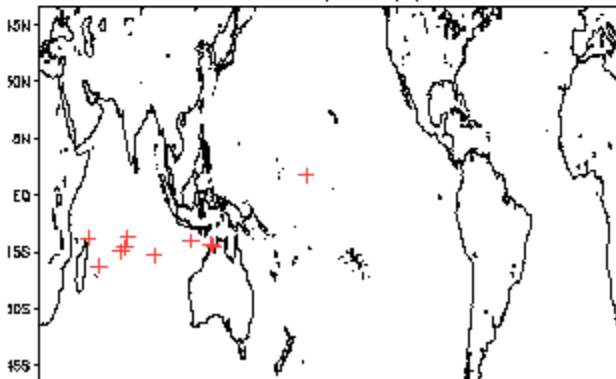
Phase 5 (77 days) 17 storms



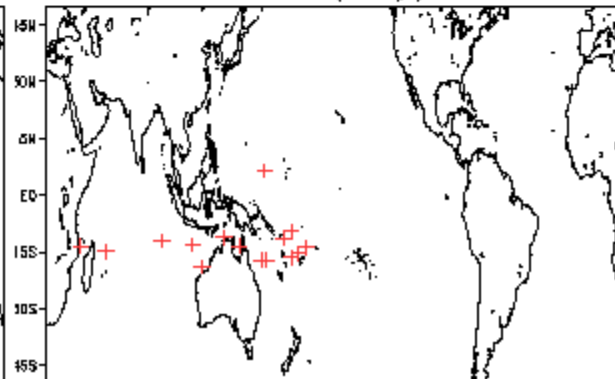
Phase 8 (92 days) 8 storms



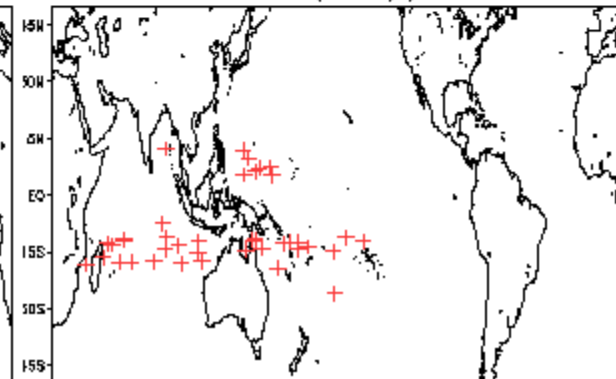
Phase 3 (108 days) 11 storms



Phase 6 (78 days) 16 storms

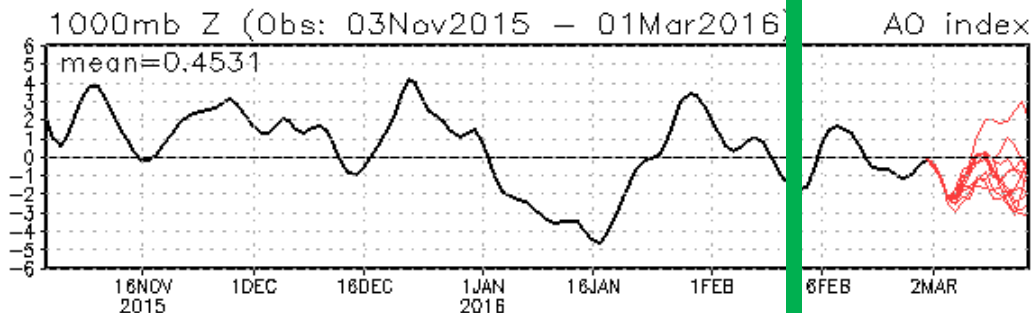


Null (322 days) 40 storms

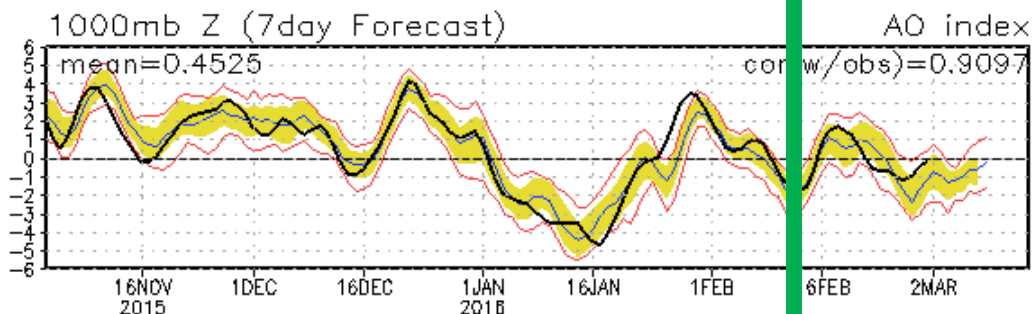


# Connections to U.S. Impacts

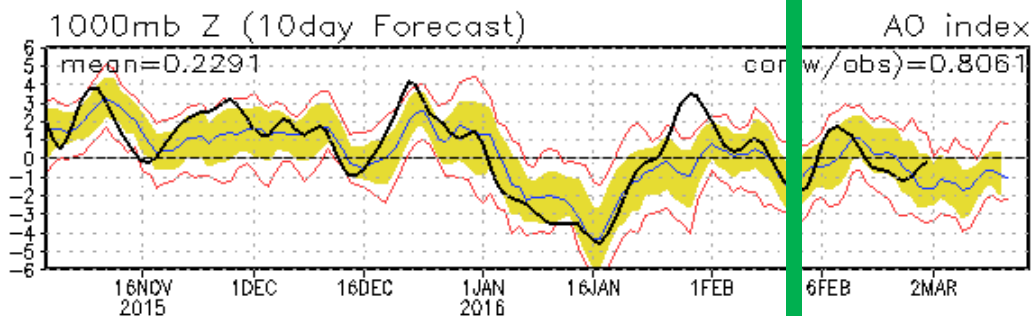
# AO: Observed & ENSM forecasts



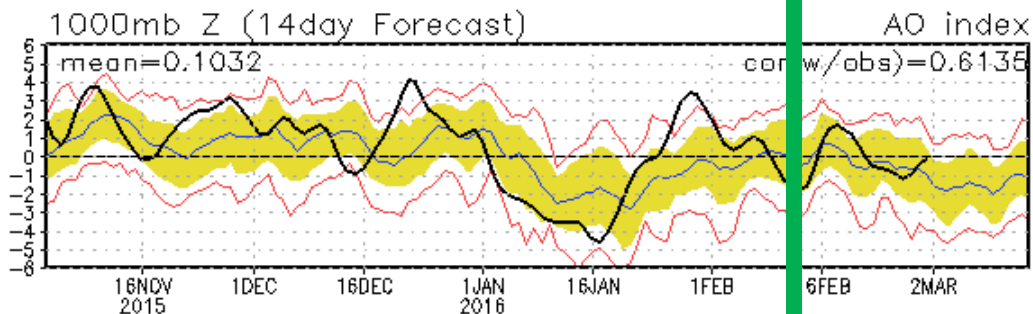
OBS



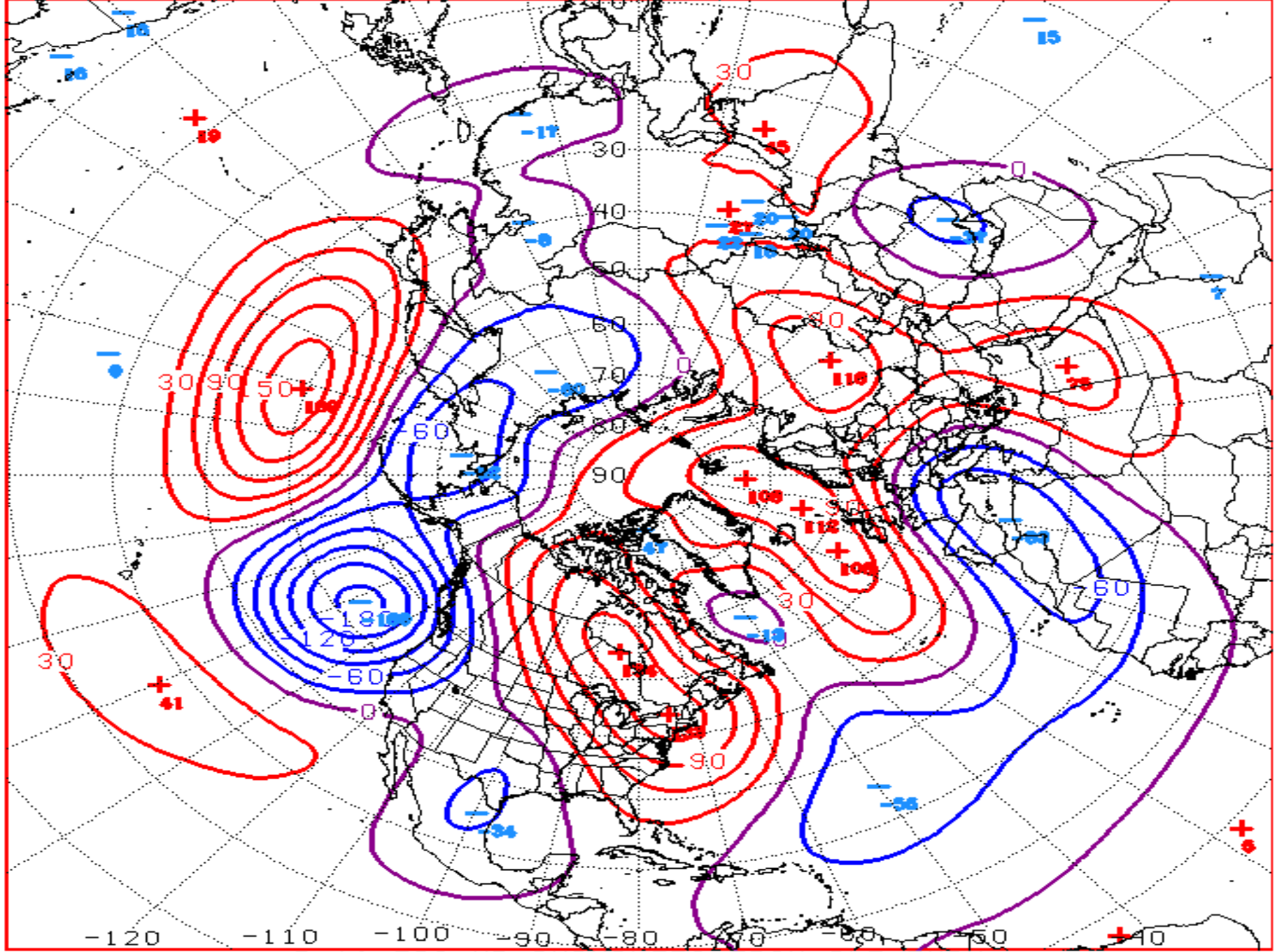
7-day



10-day

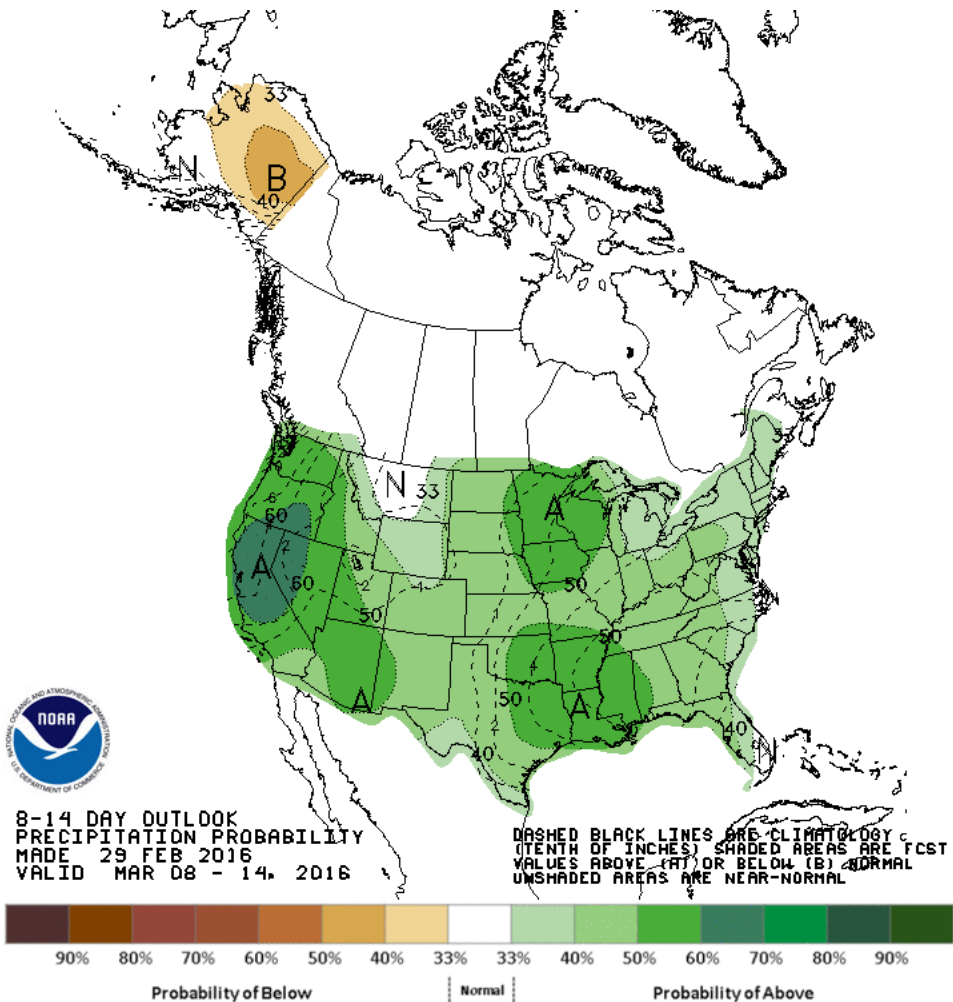
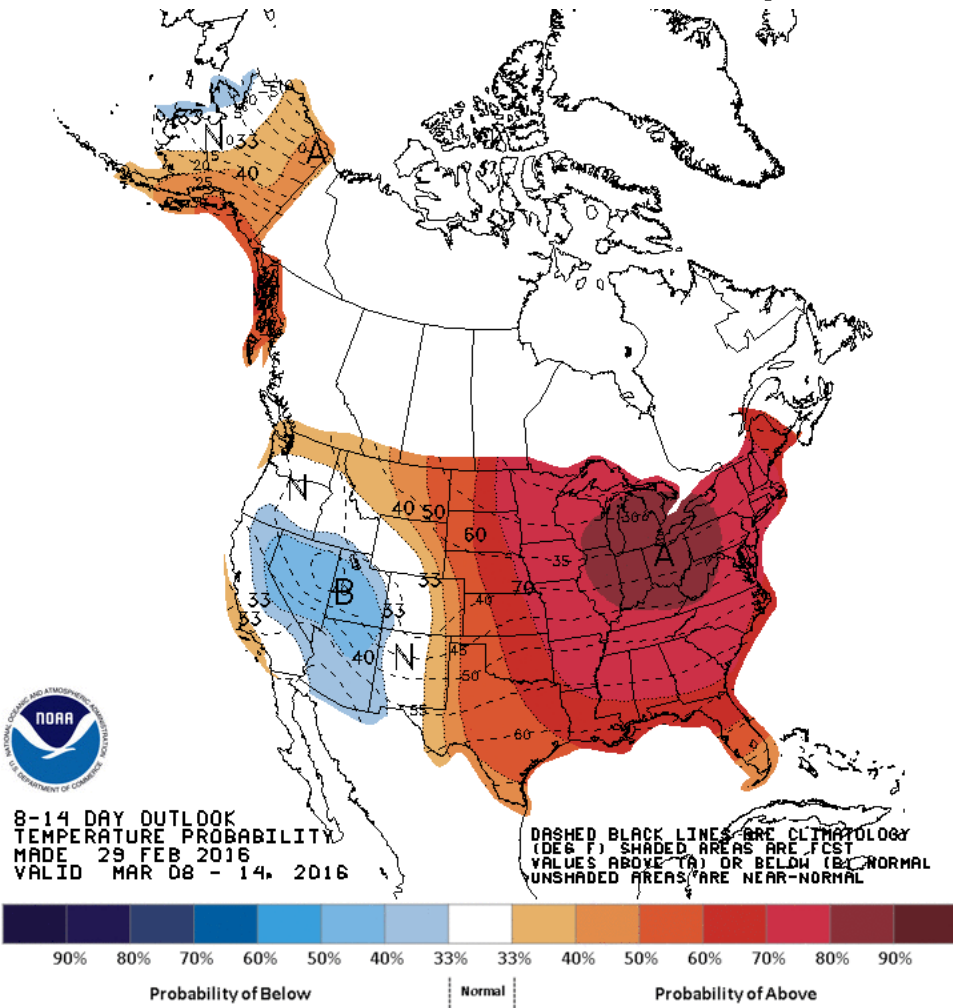


14-day



D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE MAR 01 2016 1254 UTC CNTD MAR 12 2016

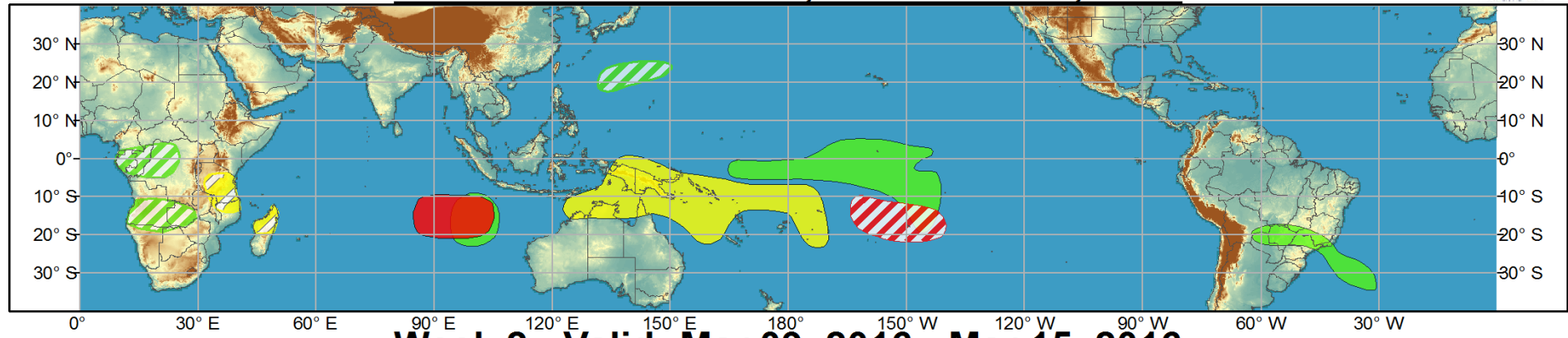
# Week 2 – Temperature and Precipitation



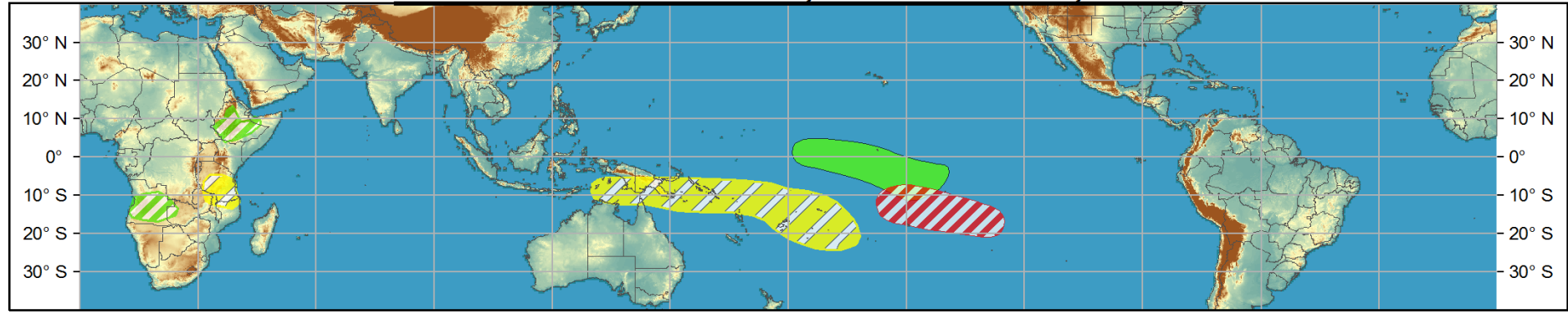


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