

Global Tropics Hazards And Benefits Outlook

March 24, 2015

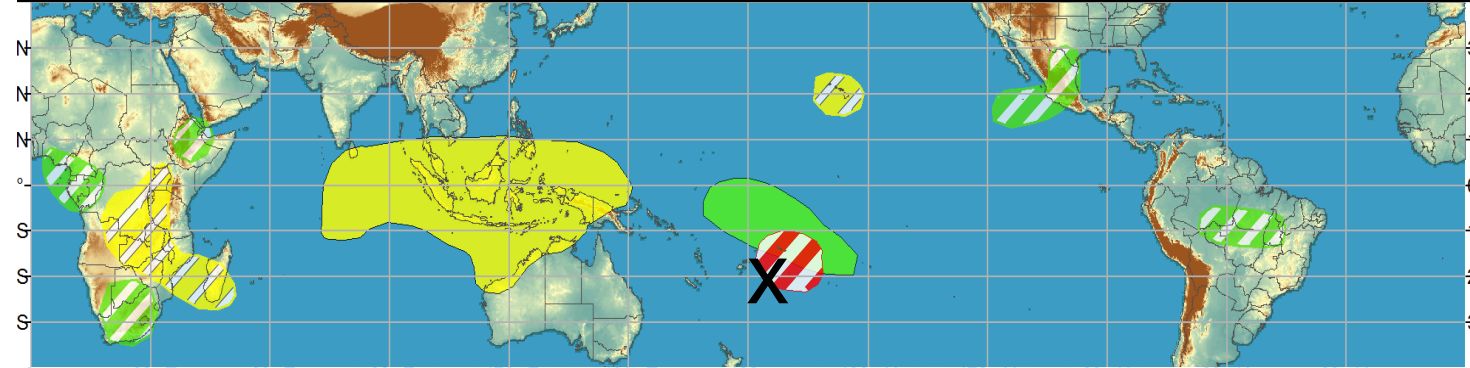
Matthew Rosencrans

Outline

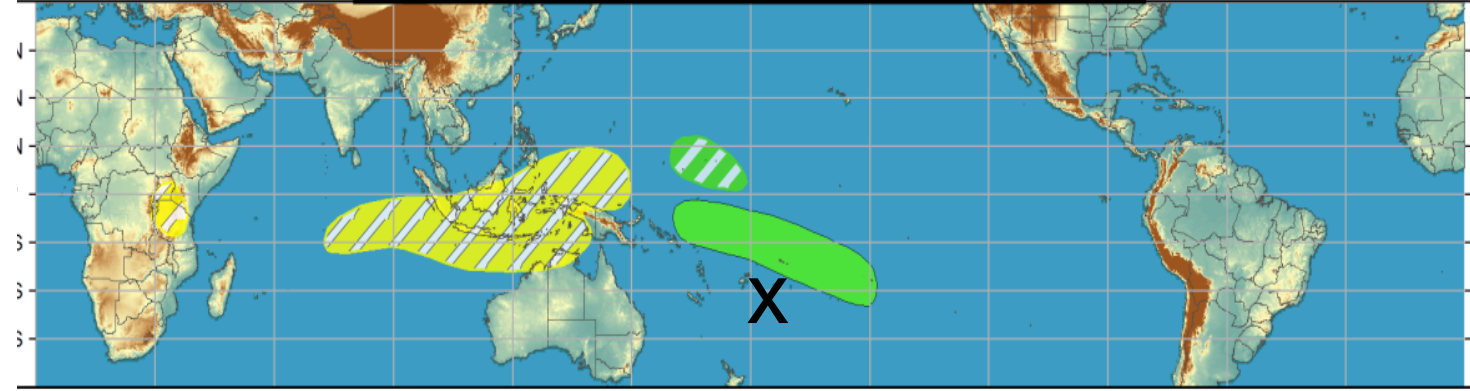
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

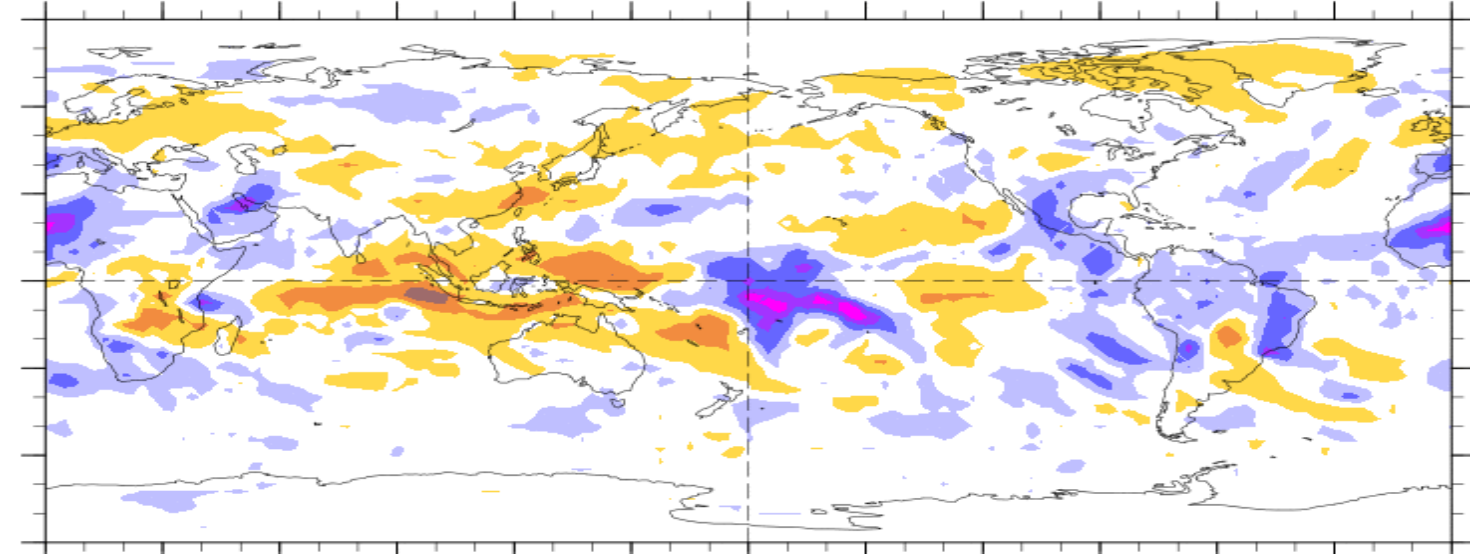
Week 1 - Valid: Mar 18, 2015 - Mar 24, 2015



Week 2 - Valid: Mar 18, 2015 - Mar 24, 2015



7-Day Average OLR Anomaly 2015/03/16 - 2015/03/22



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO:

- Current: [El Niño Advisory](#)
- Outlook: There is an approximately 50-60% chance that El Niño conditions will continue through Northern Hemisphere summer 2015.

MJO and other subseasonal tropical variability:

- The MJO was strong during the past week, with the enhanced convective phase over the East Pacific and Americas. Equatorial Rossby waves, Kelvin Waves, and the low-frequency background state are also contributing.
- Most dynamical model MJO index forecasts depict a weakening of the MJO signal during the next 2 weeks, with eastward propagation the Indian Ocean.

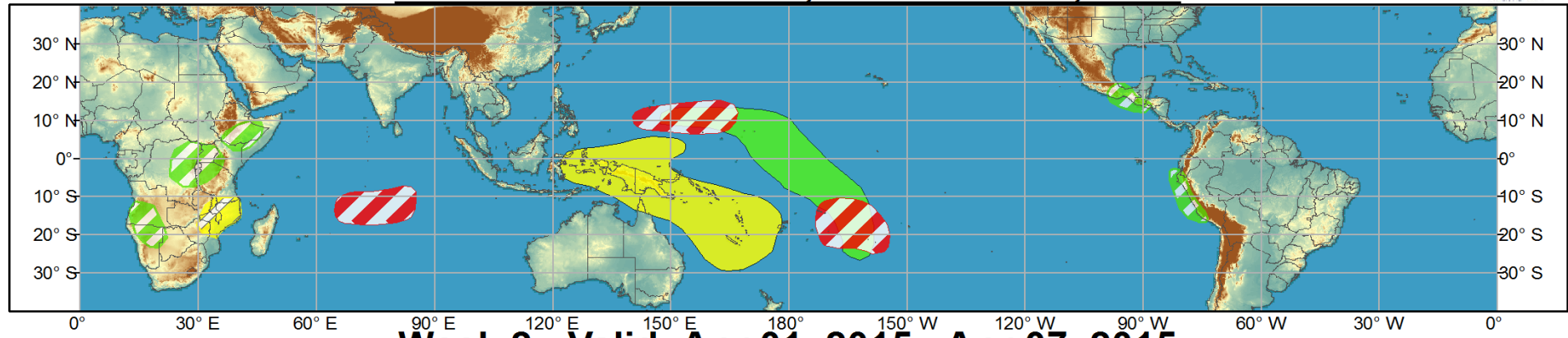
Extratropics:

- The extended range forecast for the U.S. is not likely to be largely impacted directly by the MJO. Internal, mid-latitude variability is likely to drive much of the pattern of the CONUS through day 14.

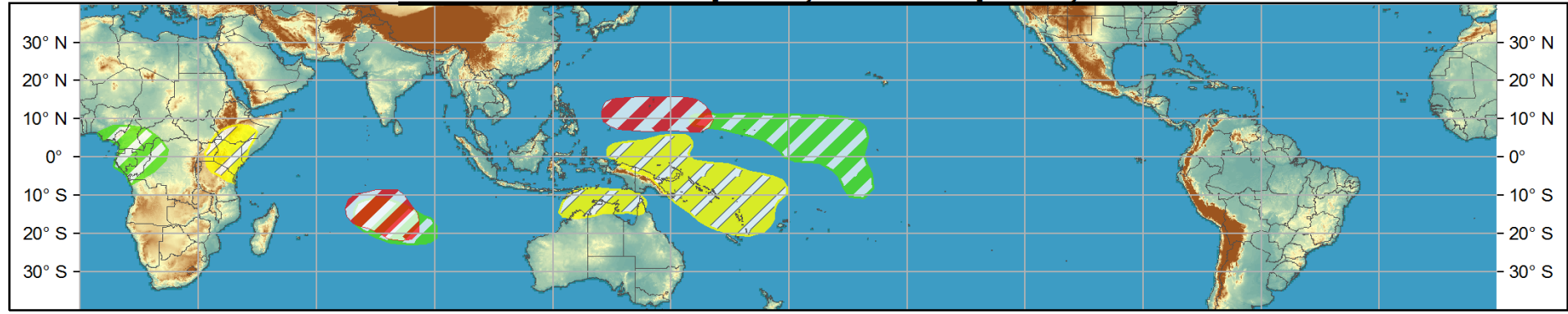


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 25, 2015 - Mar 31, 2015



Week 2 - Valid: Apr 01, 2015 - Apr 07, 2015



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: 03/24/2015

Forecaster: Rosencrans

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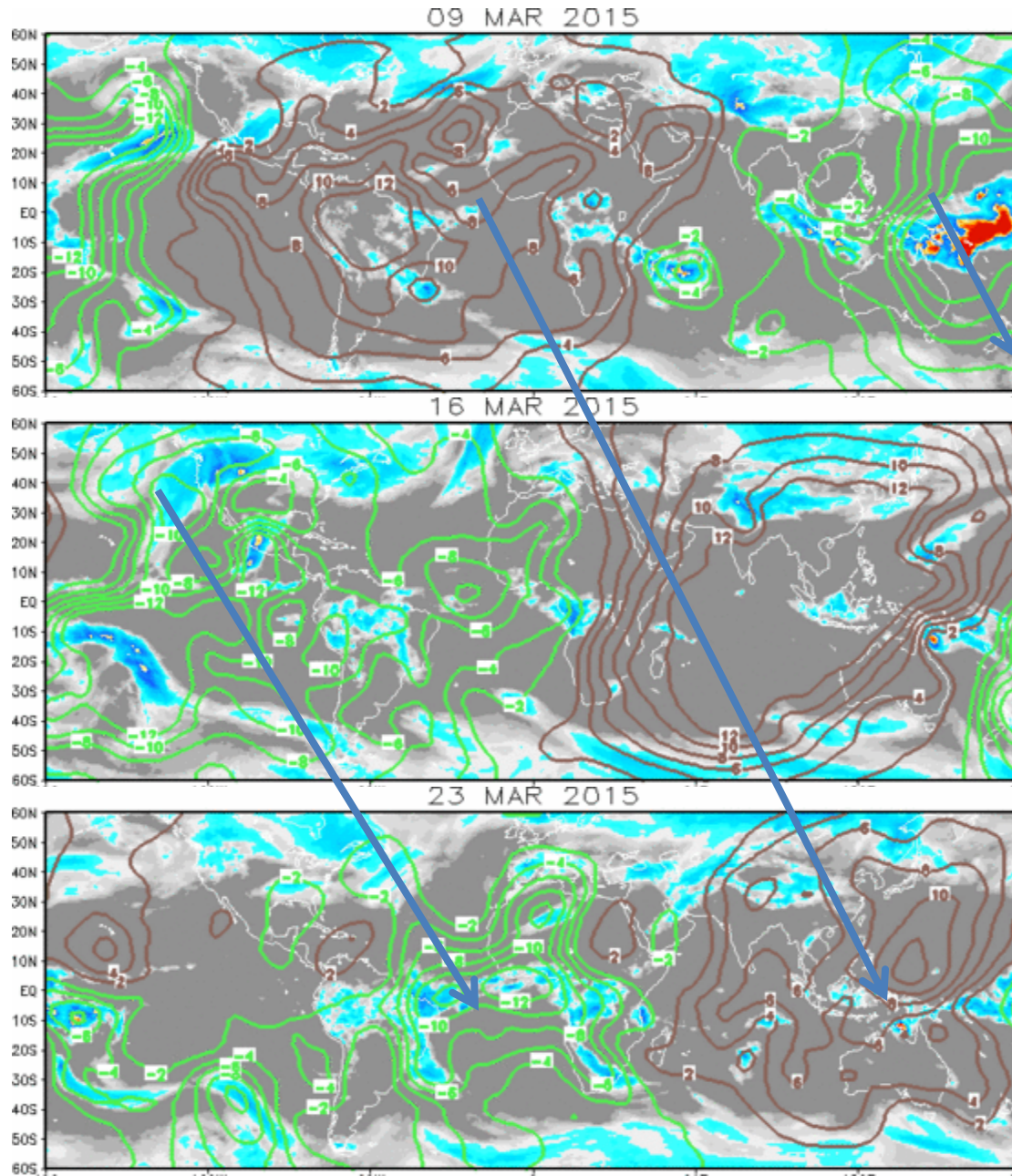
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

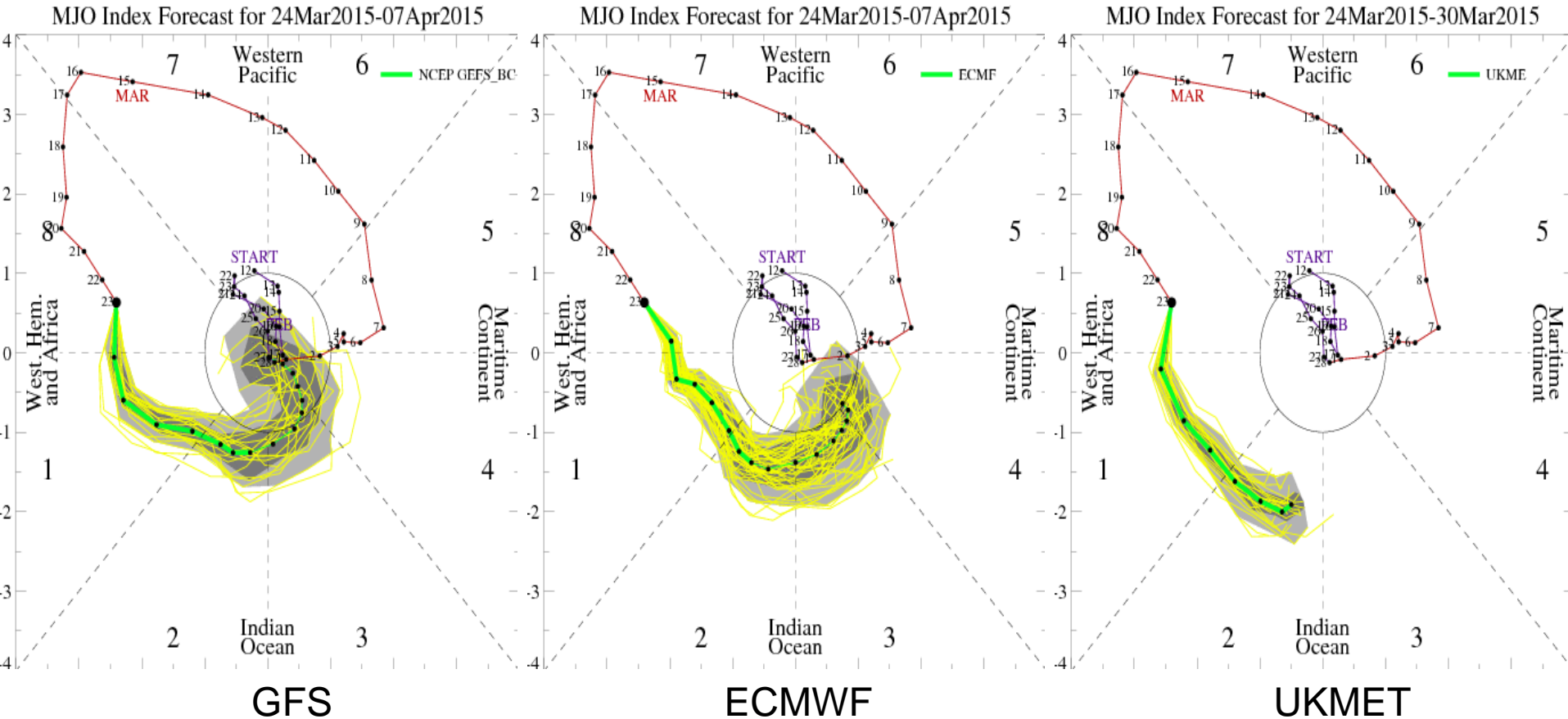
Wave-1
pattern.

Consistent
with MJO
activity.

Slightly
noisier in
most recent
panel.



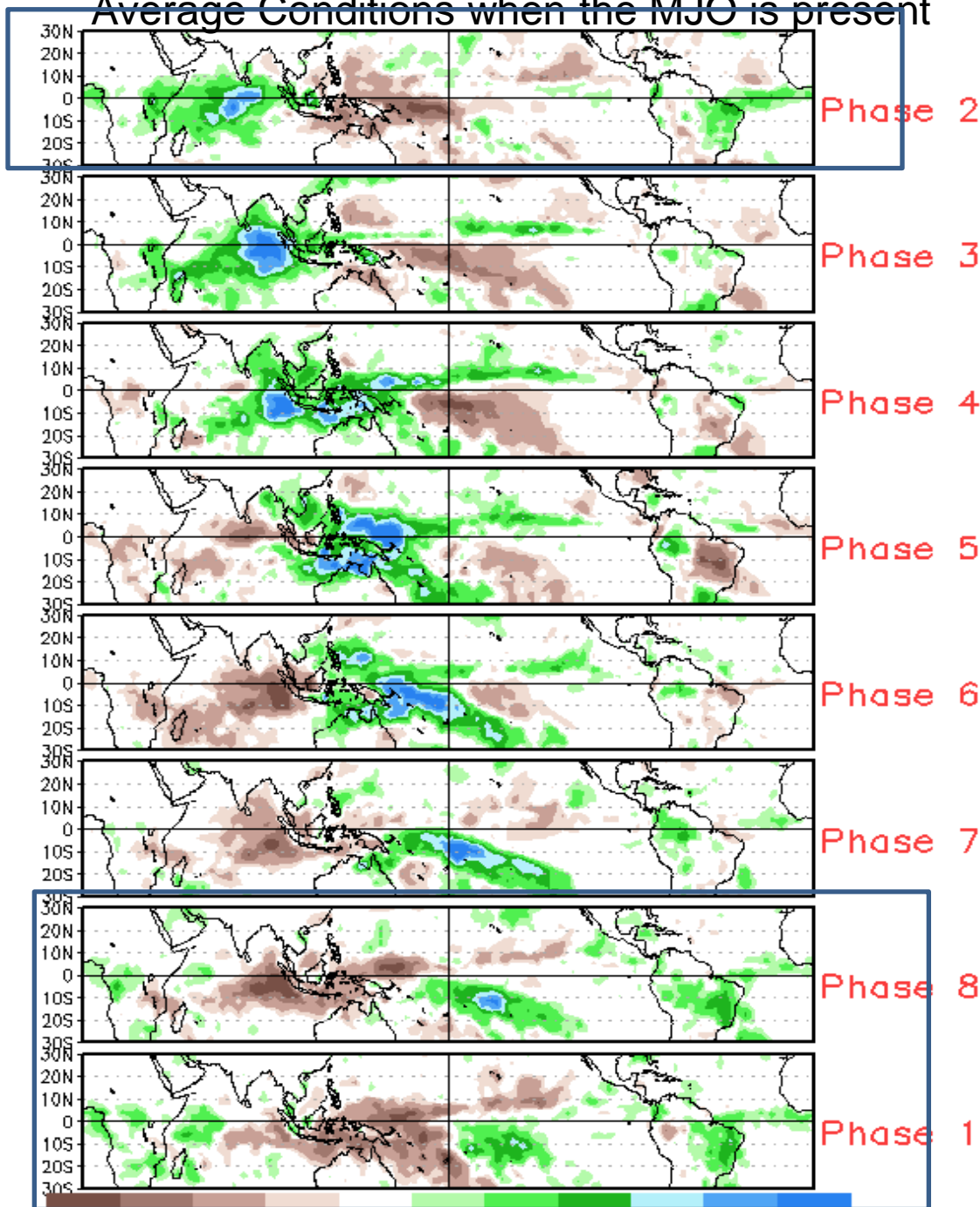
MJO Observation/Forecast



Wheeler-Hendon based analyses of model forecasts are consistent with robust MJO activity.

Models indicate convection moves to Africa and potentially the Indian Ocean. At faster end of MJO time scales.

Average Conditions when the MJO is present



Phase 2

Phase 3

Phase 4

Phase 5

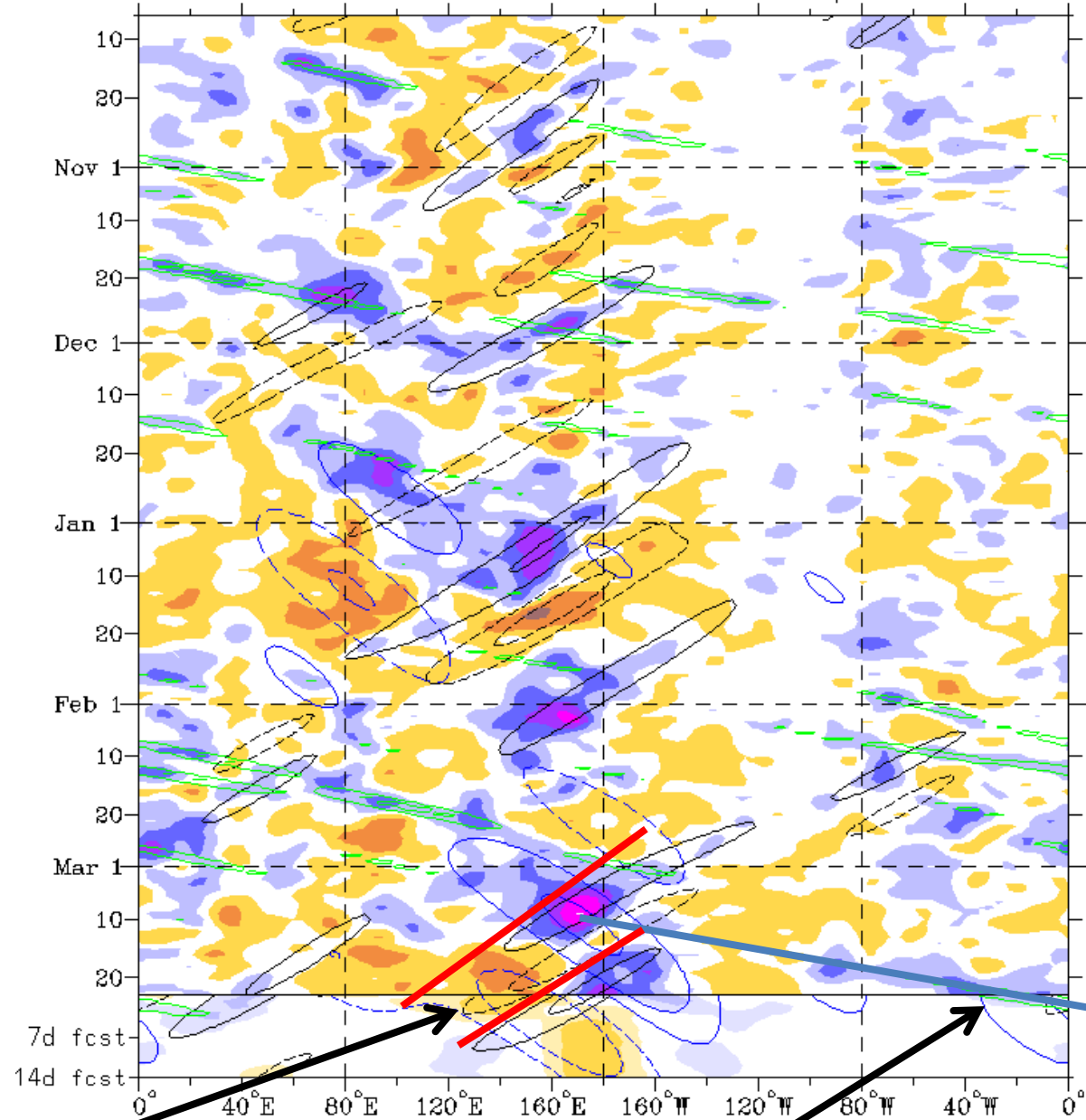
Phase 6

Phase 7

Phase 8

Phase 1

CAVEAT: These panels are representative of robust MJO events.

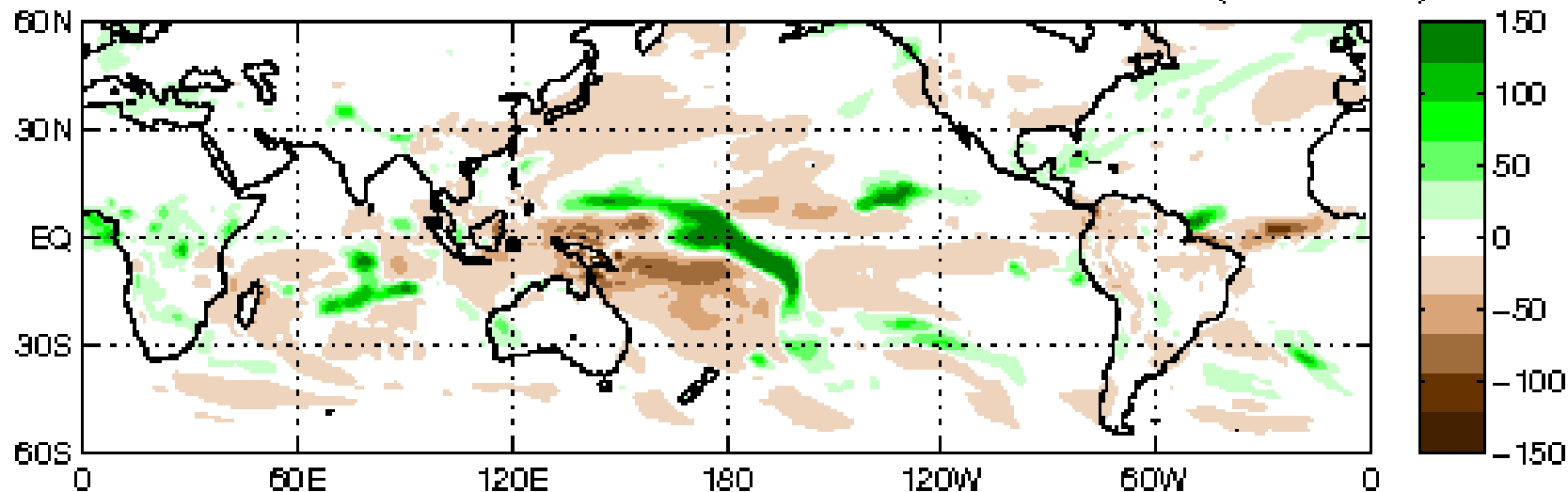


Low frequency is contributing, especially near 170E. MJO, KW, ERW, and ENSO all impacting.

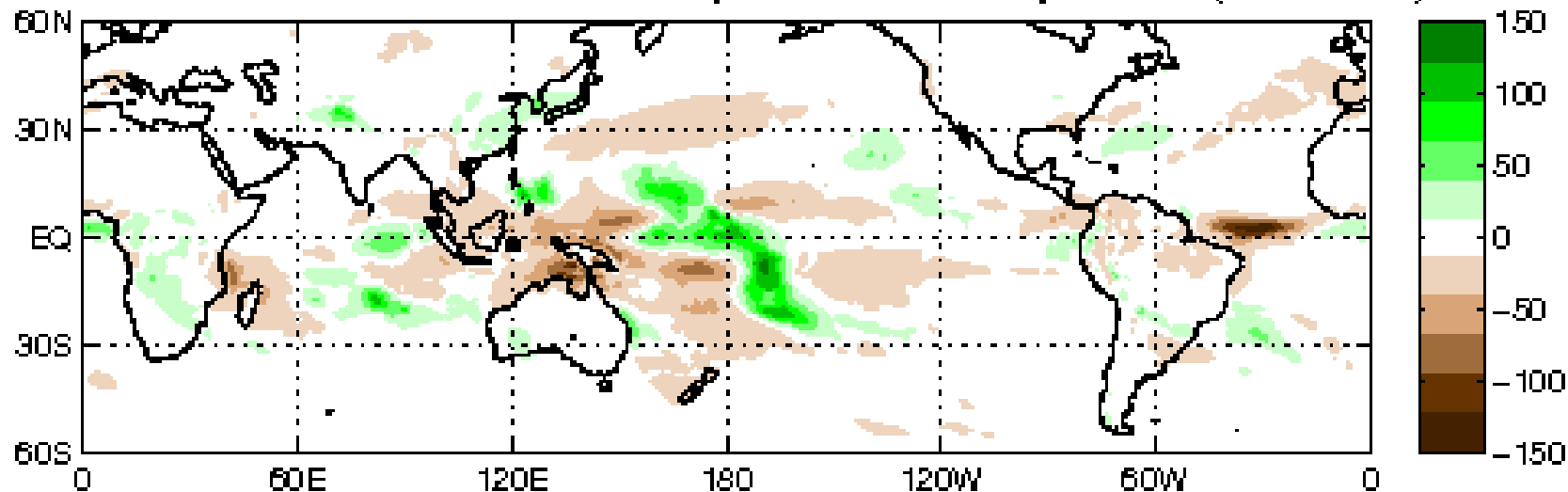
Equatorial Rossby Waves to impact the West Pacific and Maritime Continent.

Kelvin Wave to impact ePAC and eventually Indian Ocean.

CFS: Anom. PREC Week: 1: 25-Mar-2015 to 31-Mar-2015 (mm/week)

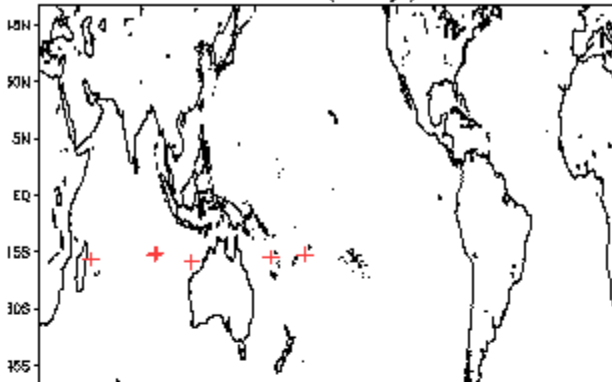


CFS: Anom. PREC Week: 2: 01-Apr-2015 to 07-Apr-2015 (mm/week)

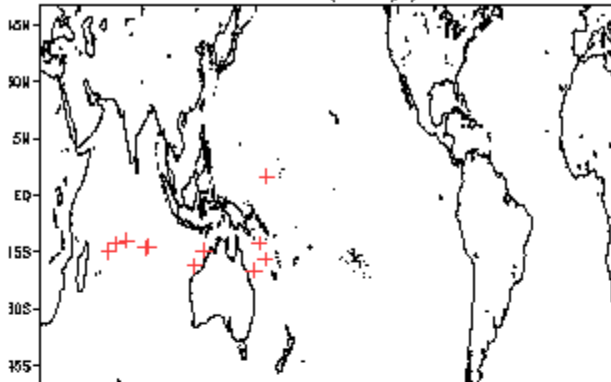


March Tropical Storm Formation by MJO phase

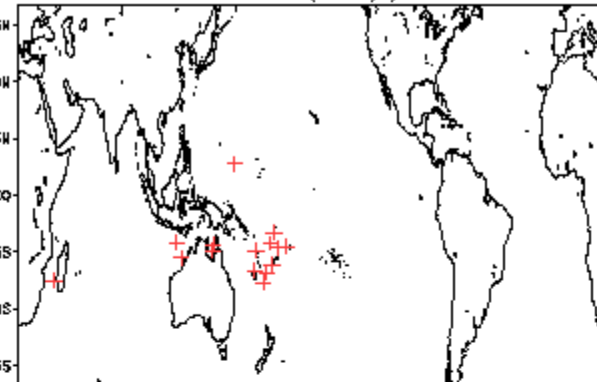
Phase 1 (98 days) 7 storms



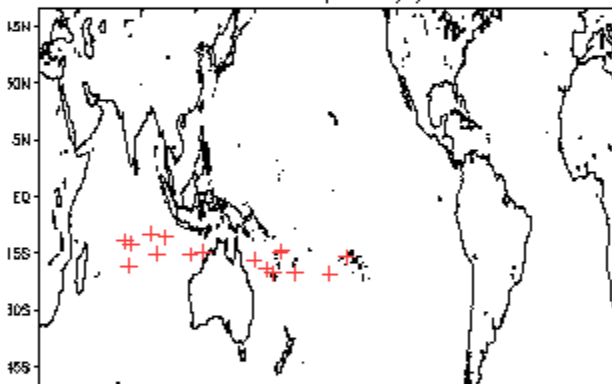
Phase 4 (72 days) 12 storms



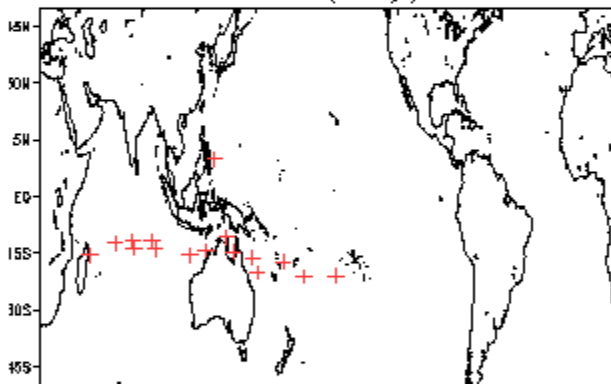
Phase 7 (81 days) 16 storms



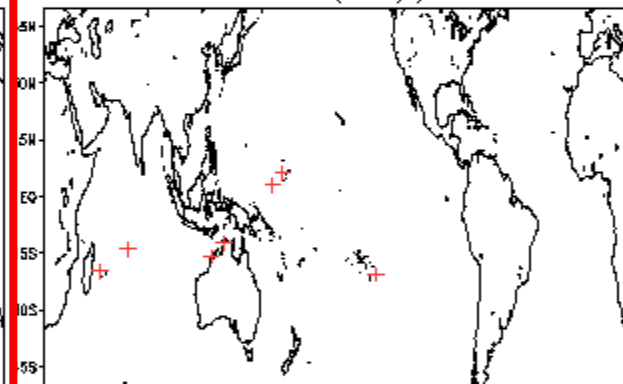
Phase 2 (111 days) 17 storms



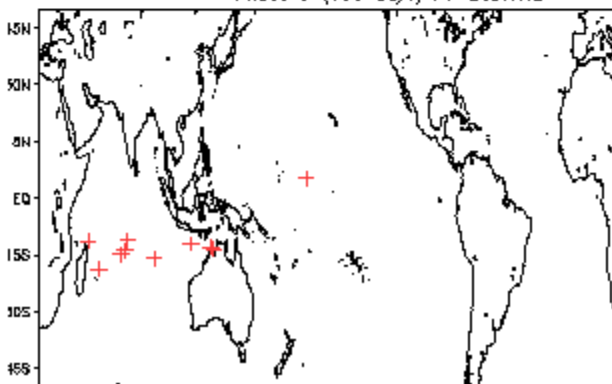
Phase 5 (77 days) 17 storms



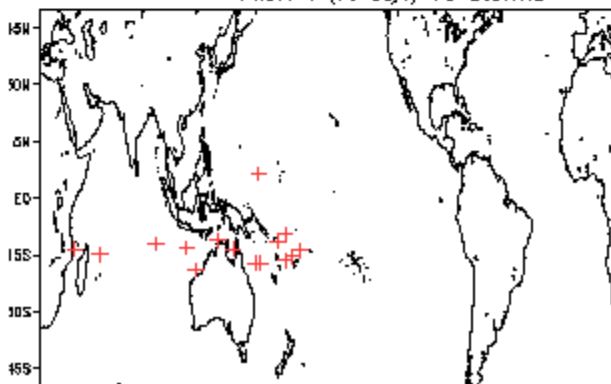
Phase 8 (92 days) 8 storms



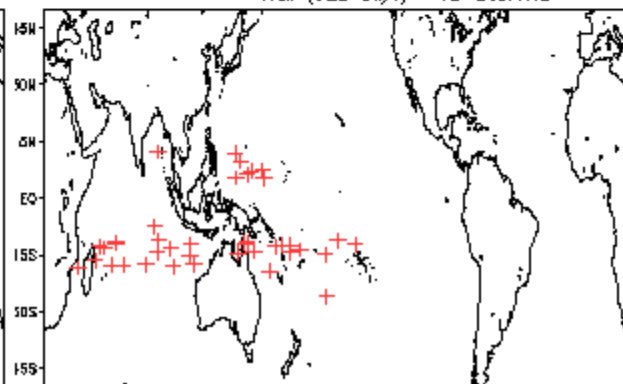
Phase 3 (108 days) 11 storms

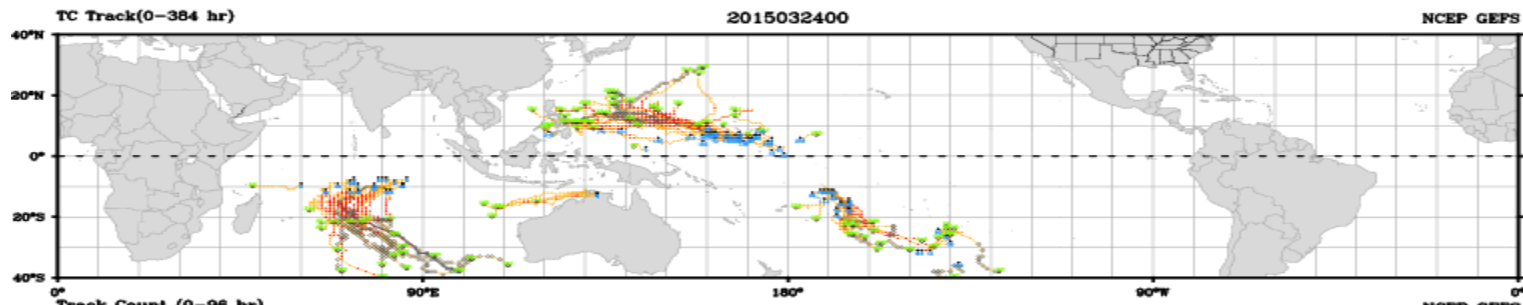


Phase 6 (78 days) 16 storms

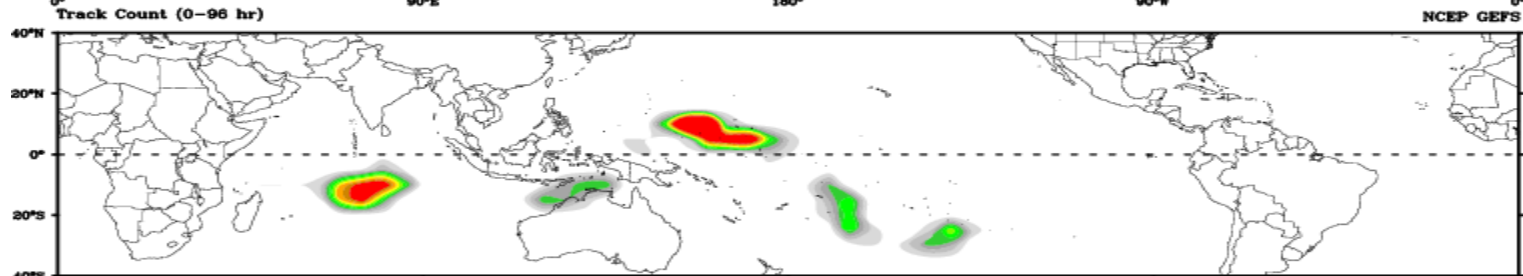


Null (322 days) 40 storms

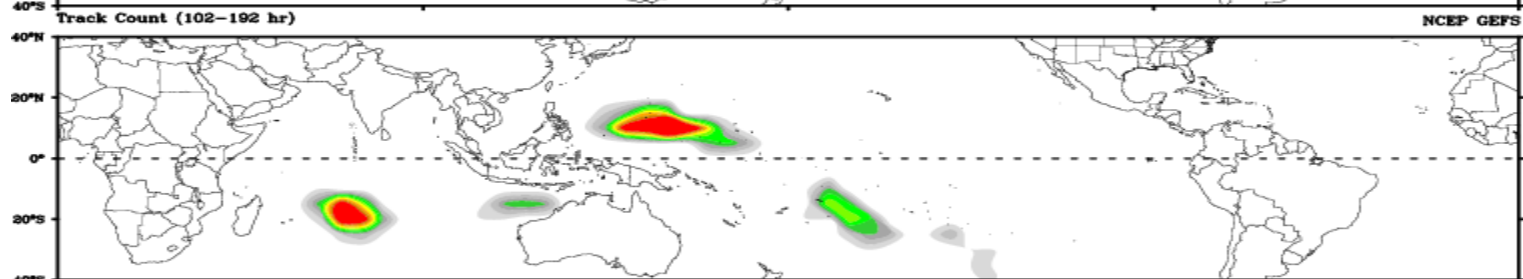




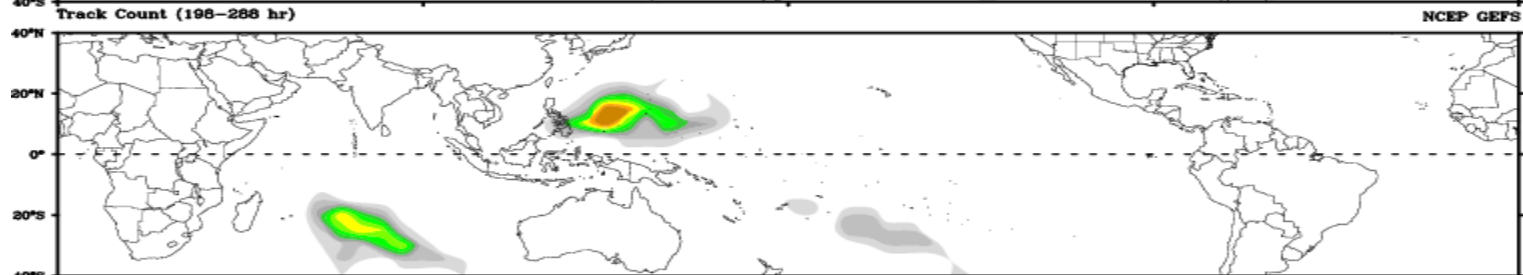
Days 1-4



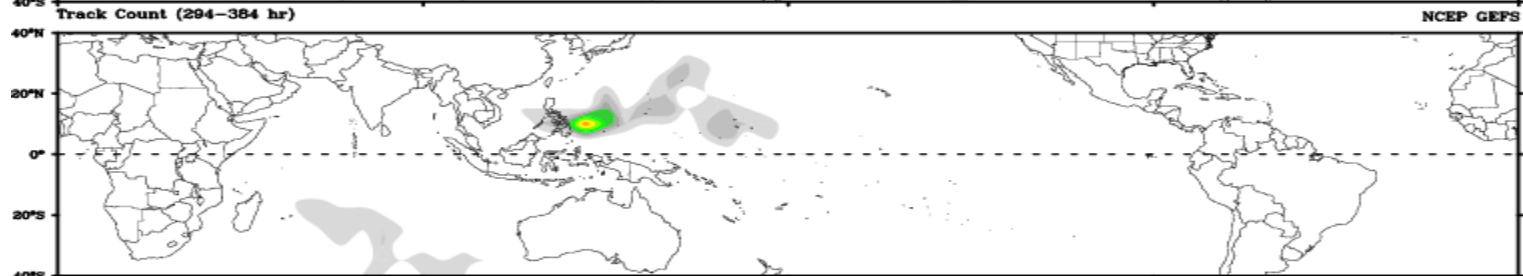
Day 5-8



Day 9-12

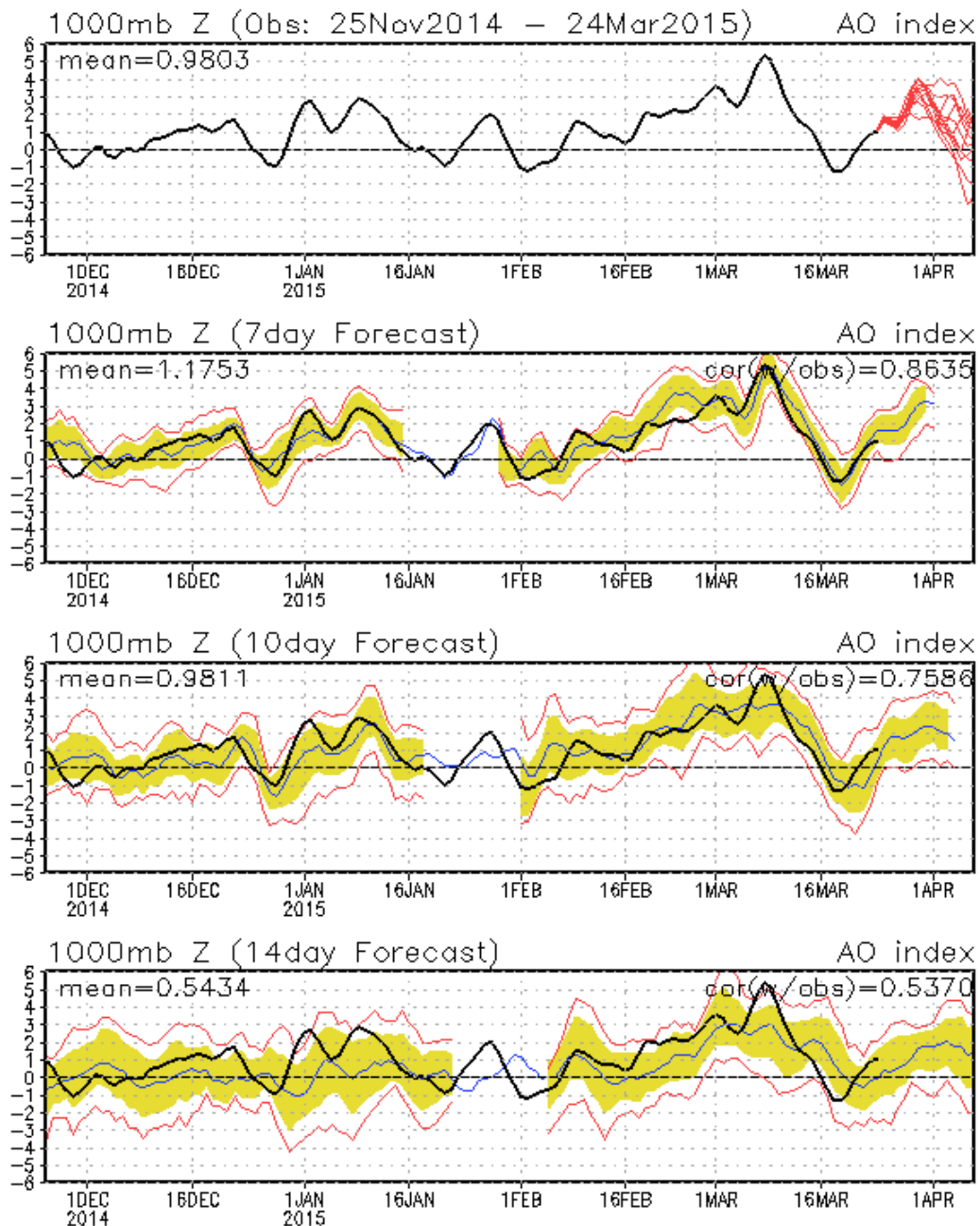


Day 13-15



Connections to U.S. Impacts

AO: Observed & ENSM forecasts

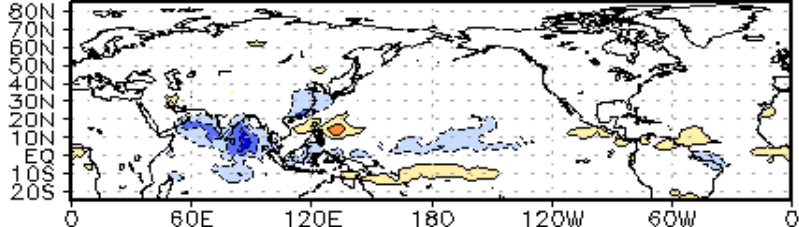
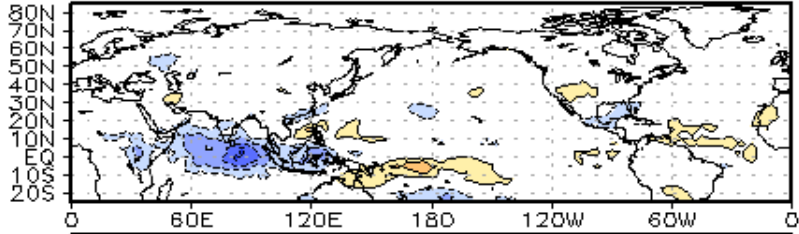
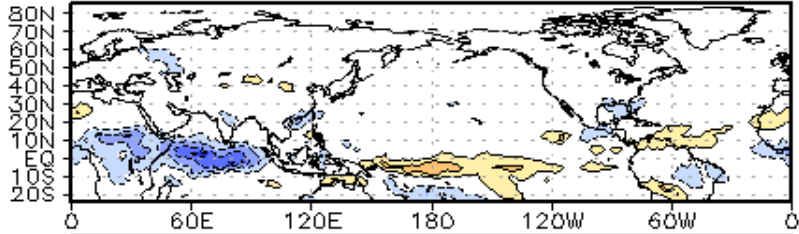
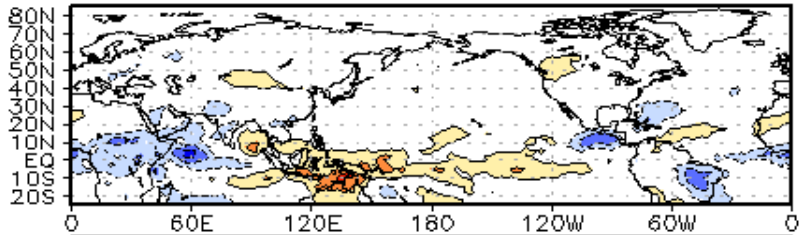
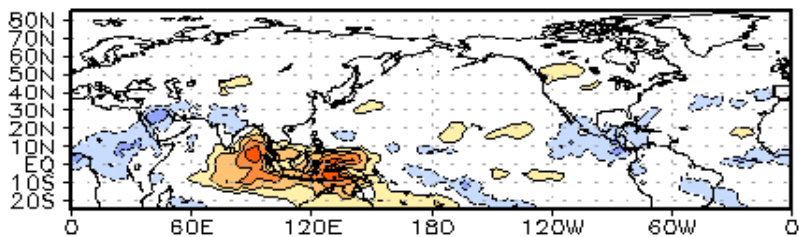


Lagged composites from MJO

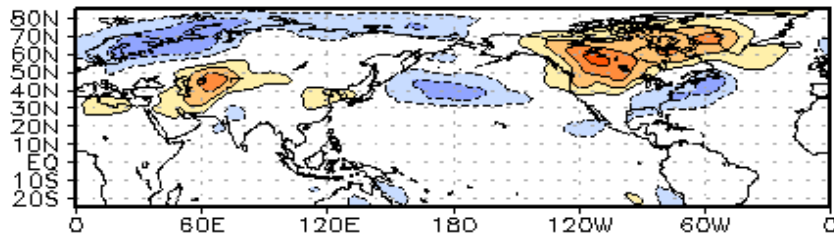
5-day intervals

Weakening response from MJO over North America 5-15 days.

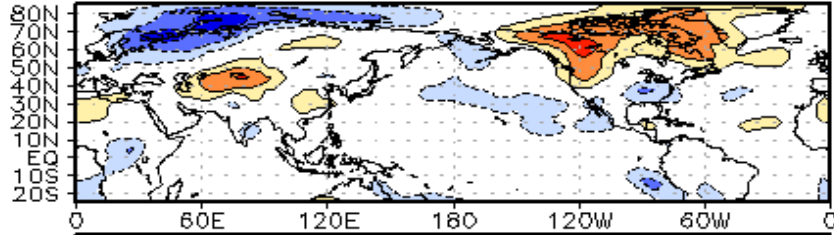
WHMJO Phase 8 α ir Lagged Composite (mam)



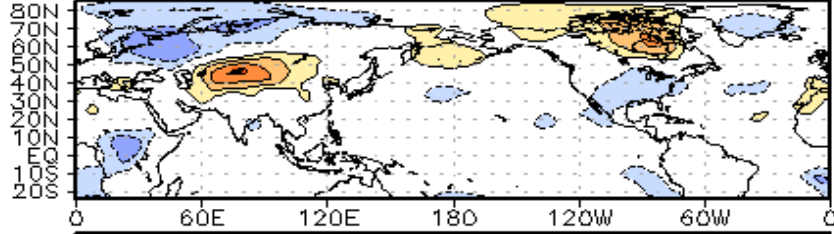
WHMJO Phase 8 $t850$ Lagged Composite (mam)



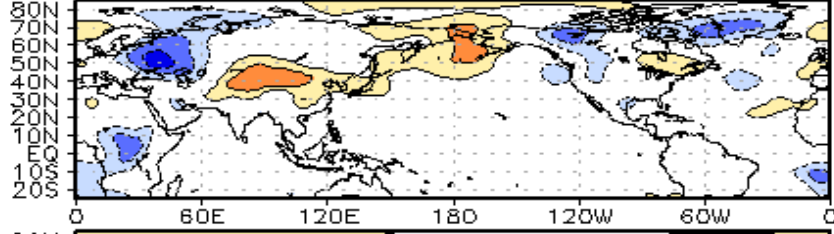
+5-day



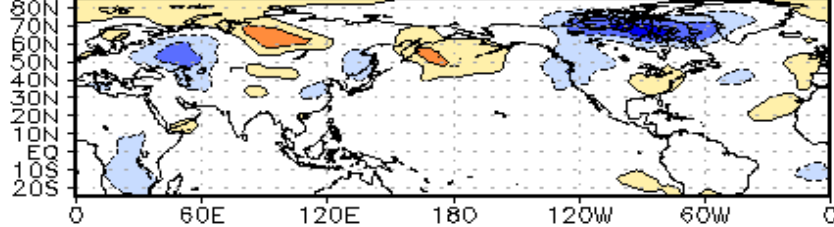
+10-days

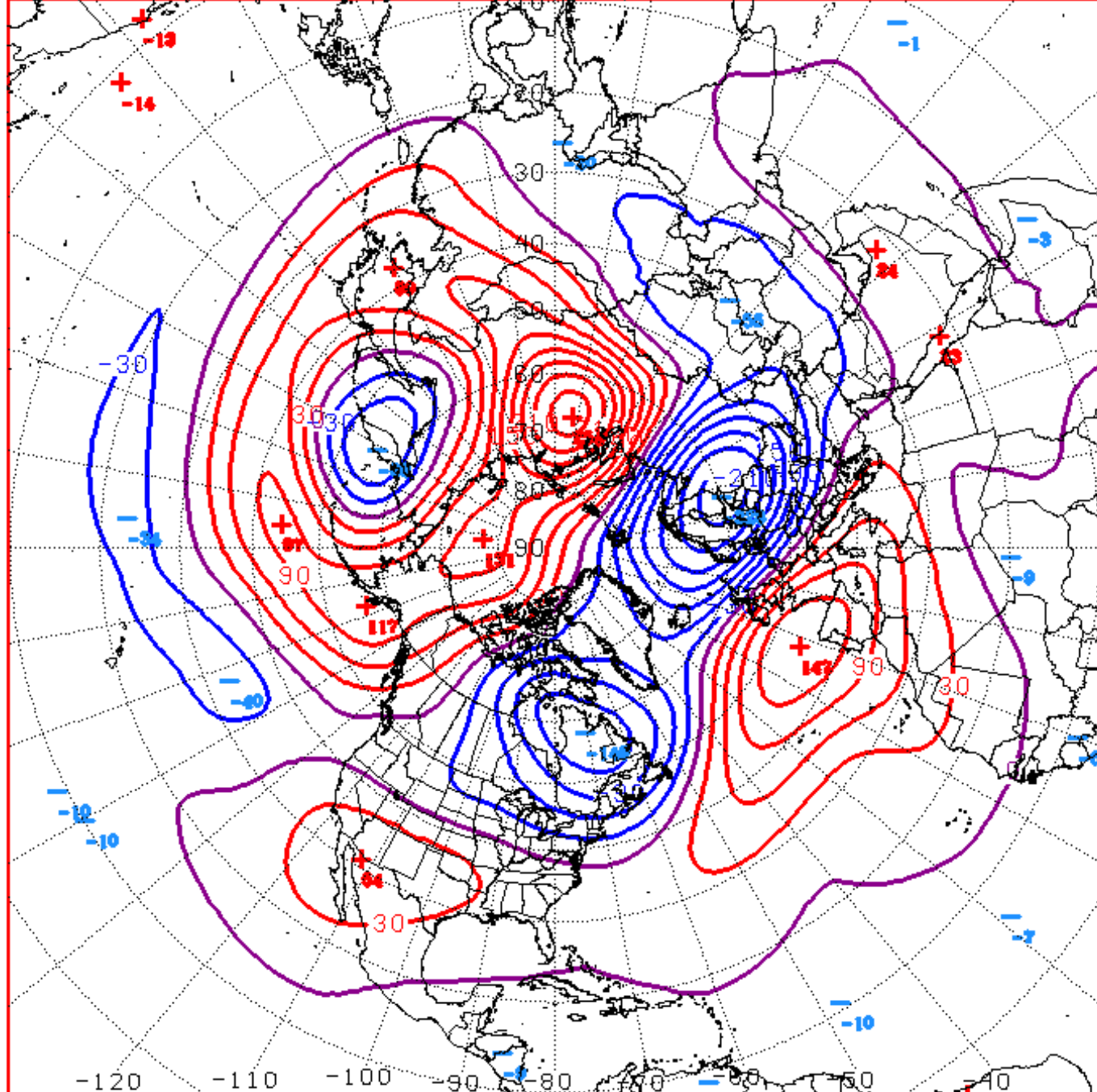


+15-days



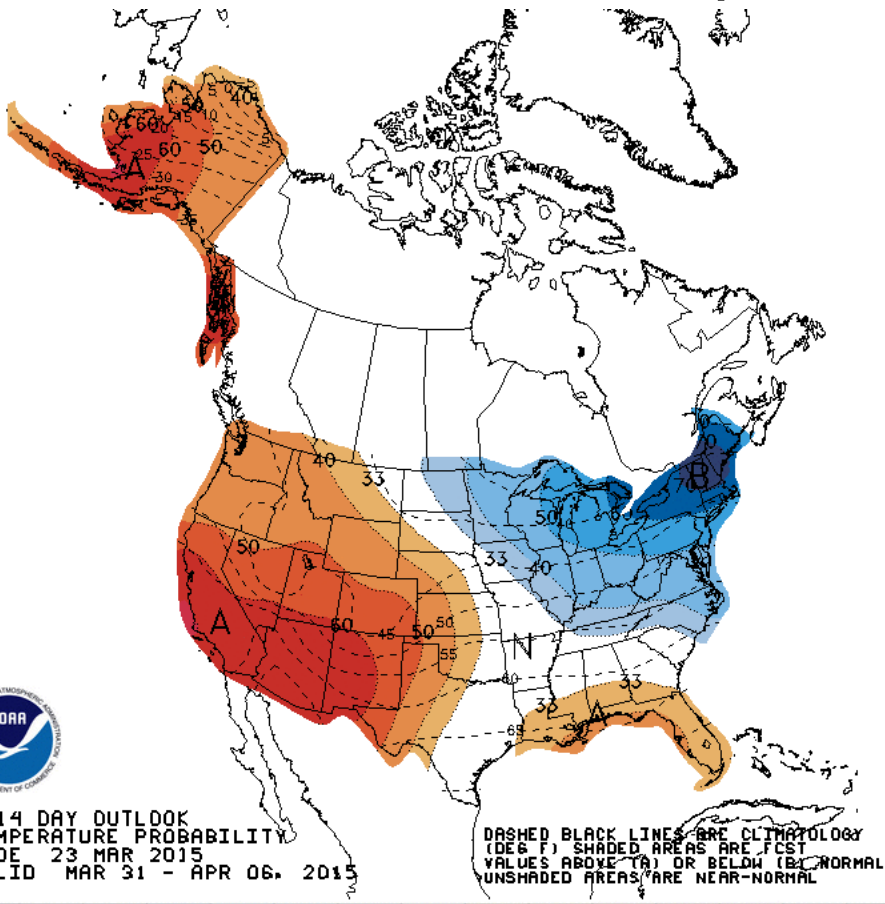
+20-days



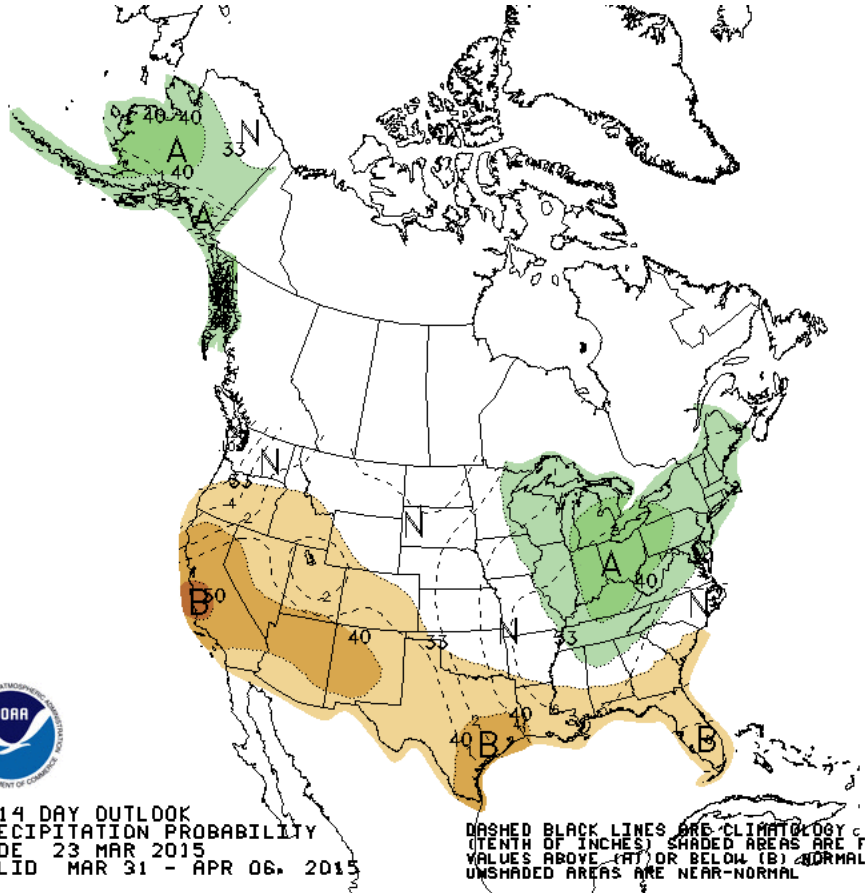
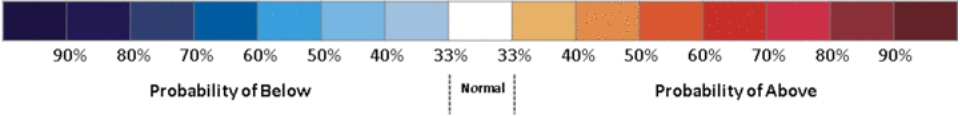


D+11 500 MB ANOMALIES FROM 00Z ECMM
 CPC MAP MADE MAR 24 2015 1033 UTC CNTD APR 04 2015

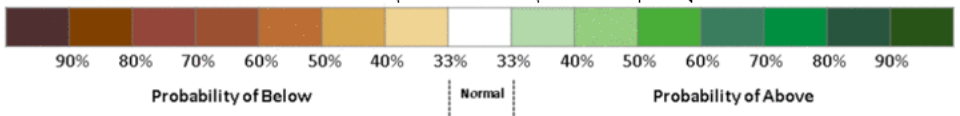
Week 2 – Temperature and Precipitation

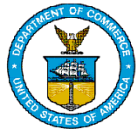


8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 23 MAR 2015
VALID MAR 31 - APR 06, 2015



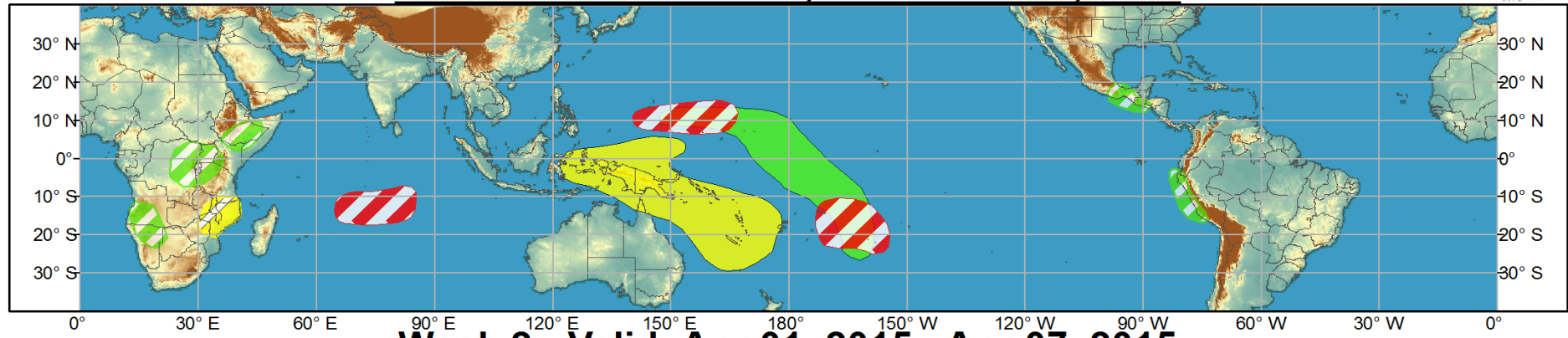
8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 23 MAR 2015
VALID MAR 31 - APR 06, 2015



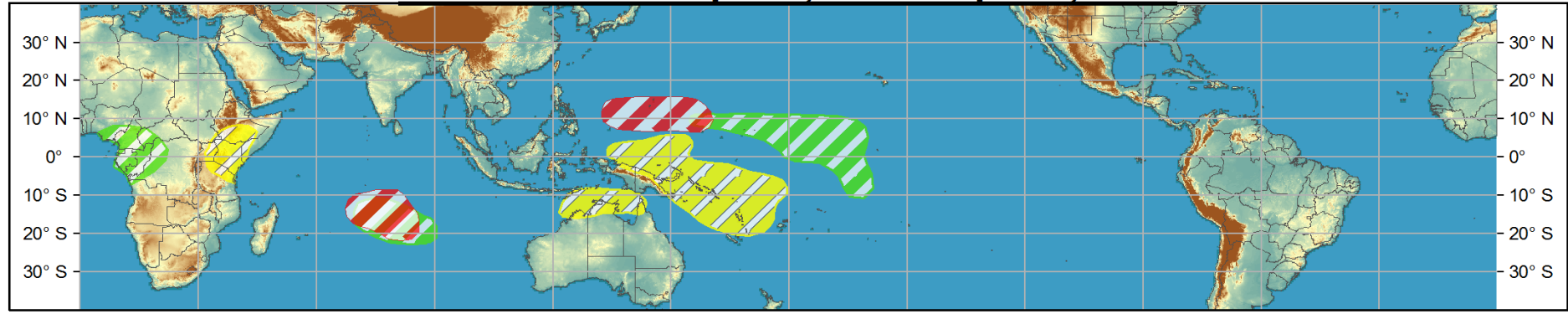


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