

Global Tropics Hazards And Benefits Outlook

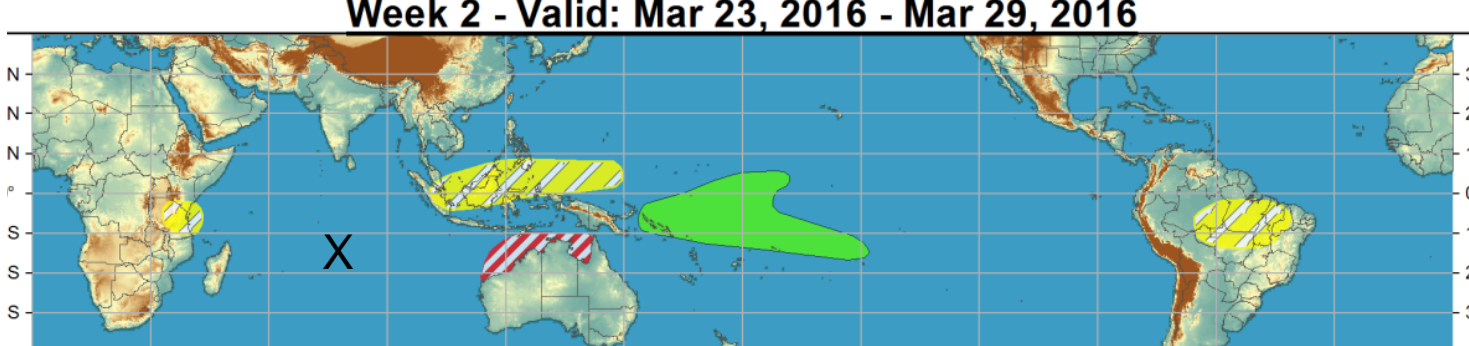
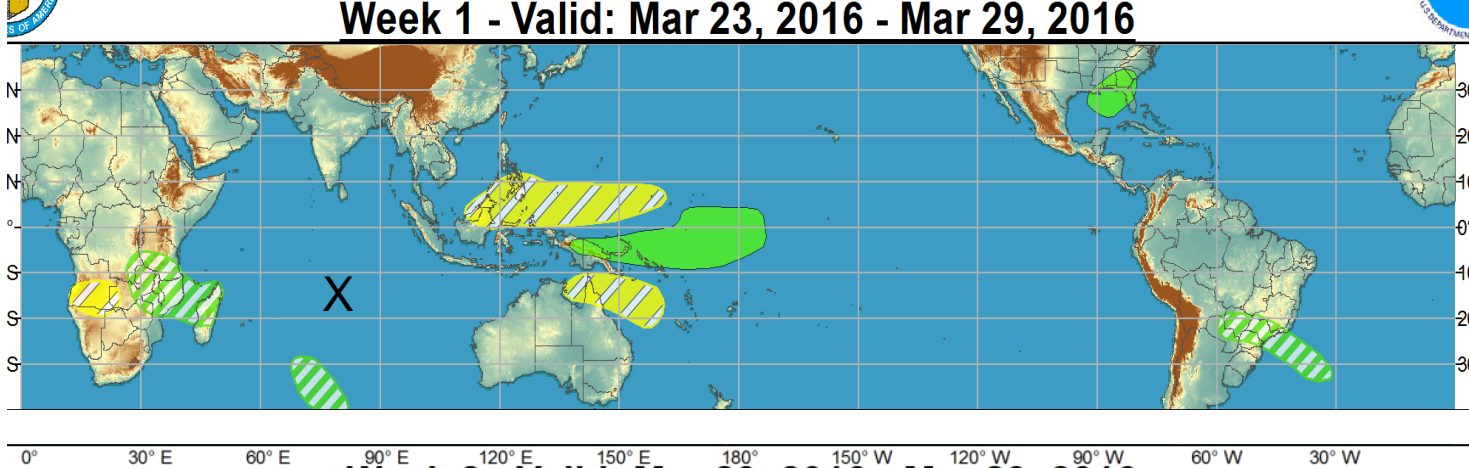
March 29, 2015

Matthew Rosencrans

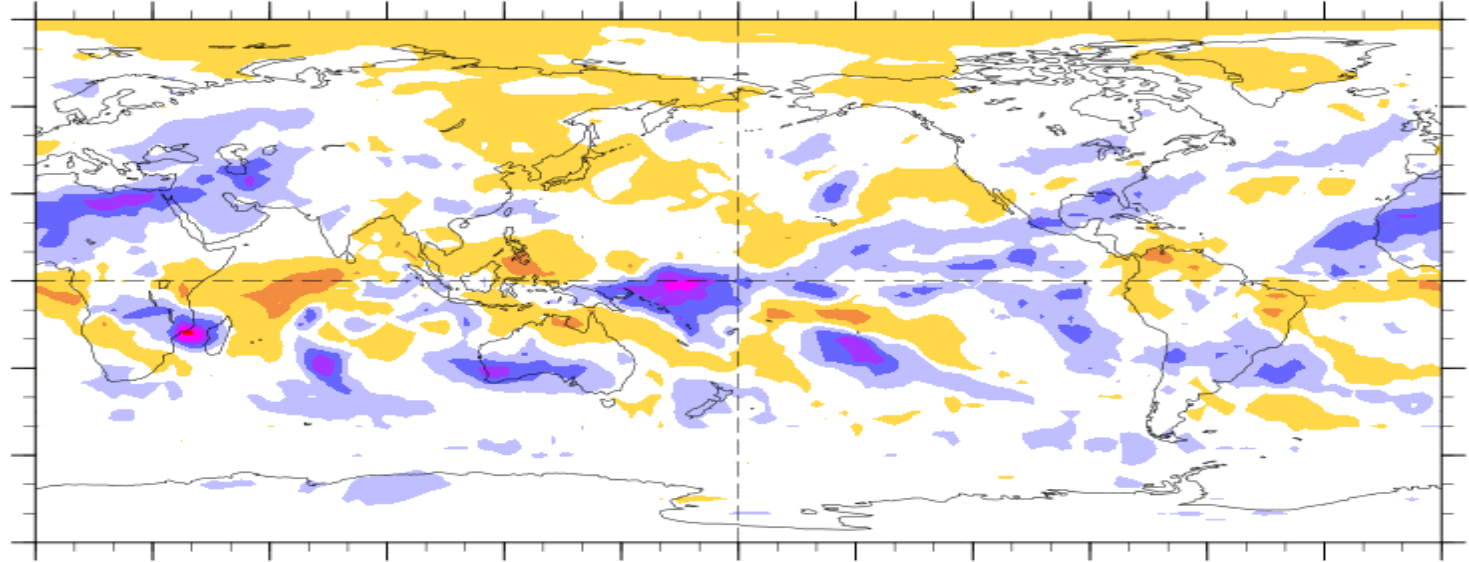
Outline

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

Outlook Review



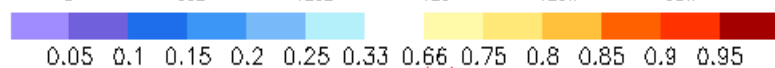
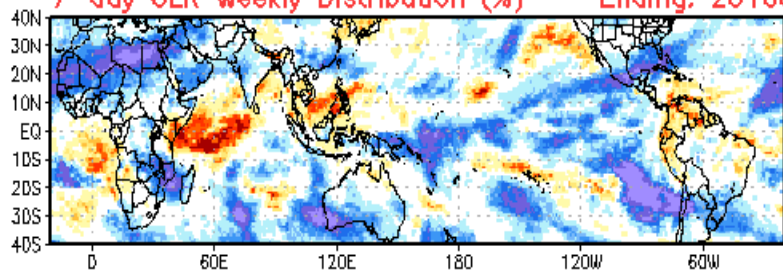
7-Day Average OLR Anomaly 2016/03/21 - 2016/03/27



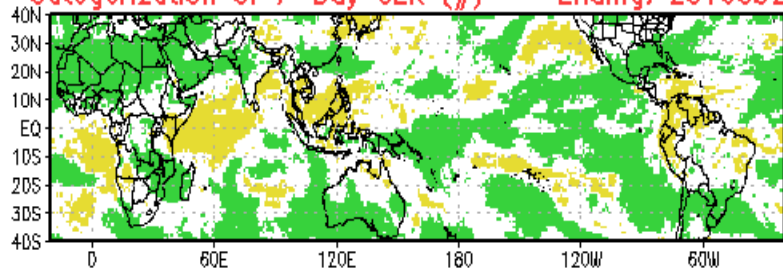
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

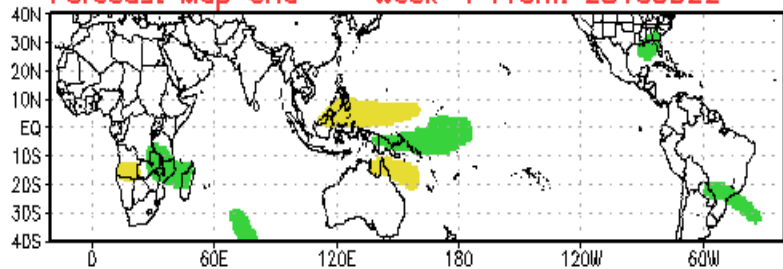
7-day OLR Weekly Distribution (%) -- Ending: 20160329



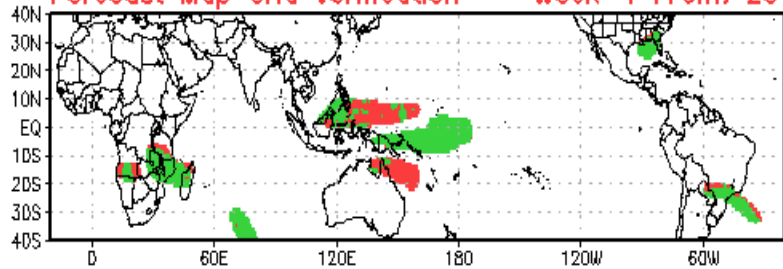
Categorization of 7-Day OLR (#) -- Ending: 20160329



Forecast Map Grid -- Week-1 From: 20160322

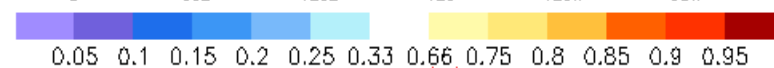
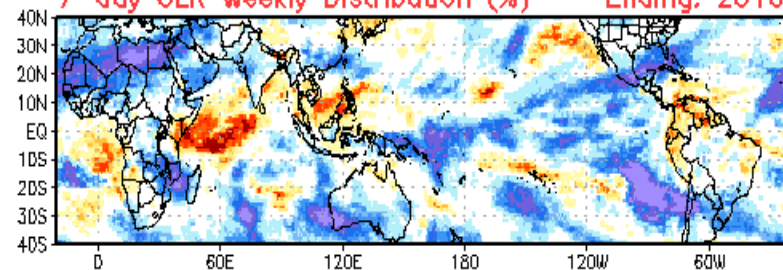


Forecast Map Grid Verification -- Week-1 From: 20160322

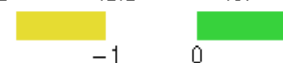
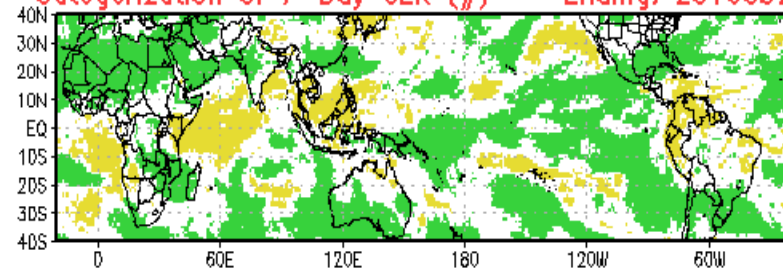


Hit: Green, Miss: Red
Heidke Skill Score: 54.0674

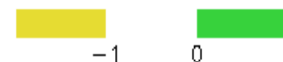
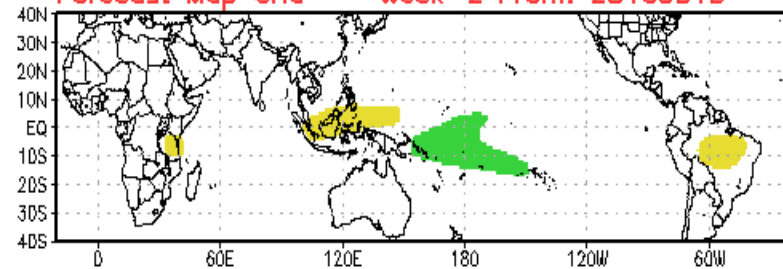
7-day OLR Weekly Distribution (%) -- Ending: 20160329



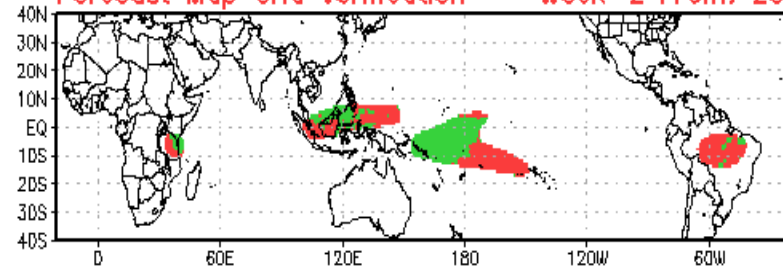
Categorization of 7-Day OLR (#) -- Ending: 20160329



Forecast Map Grid -- Week-2 From: 20160315



Forecast Map Grid Verification -- Week-2 From: 20160315



Hit: Green, Miss: Red
Heidke Skill Score: 17.8819

Synopsis of Climate Modes

ENSO:

- Current: [El Niño Advisory](#)
- Nino 3.4 – 1.5C - down from 1.7 last week. All Nino regions down.
- Outlook: A transition to ENSO-neutral is likely during late Northern Hemisphere spring or early summer 2016, with close to a 50 percent chance for La Niña conditions to develop by the fall.

MJO and other subseasonal tropical variability:

- CPC MJO index indicates a moderate signal over the central Pacific, the RMM based index indicates a signal in the same region, but much weaker.
- Some analysis tools are picking up on ERW near 180 and KW near 90W. Increases uncertainty near the Maritime Continent.

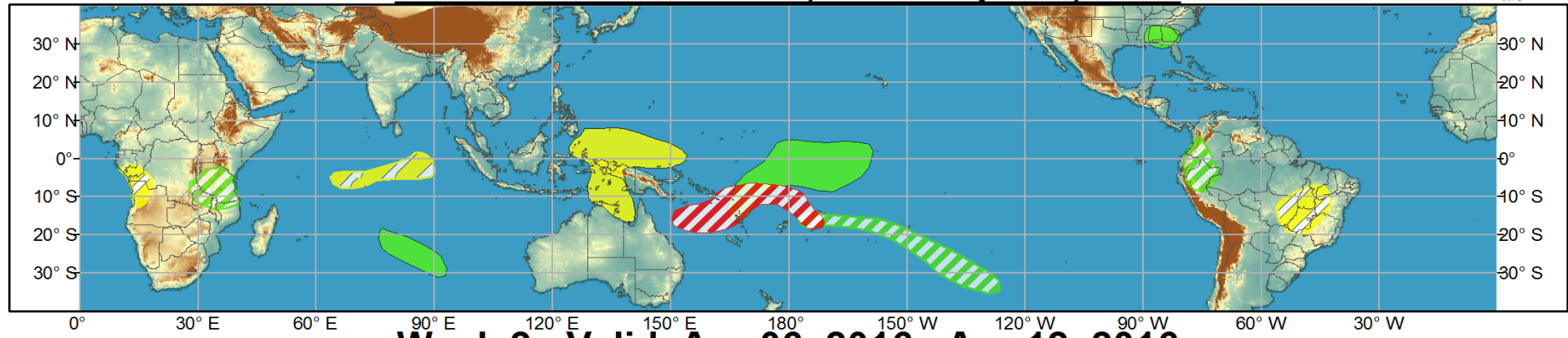
Extratropics:

- The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by the MJO, but more likely impacted by the ongoing El Niño and tropical cyclone activity.

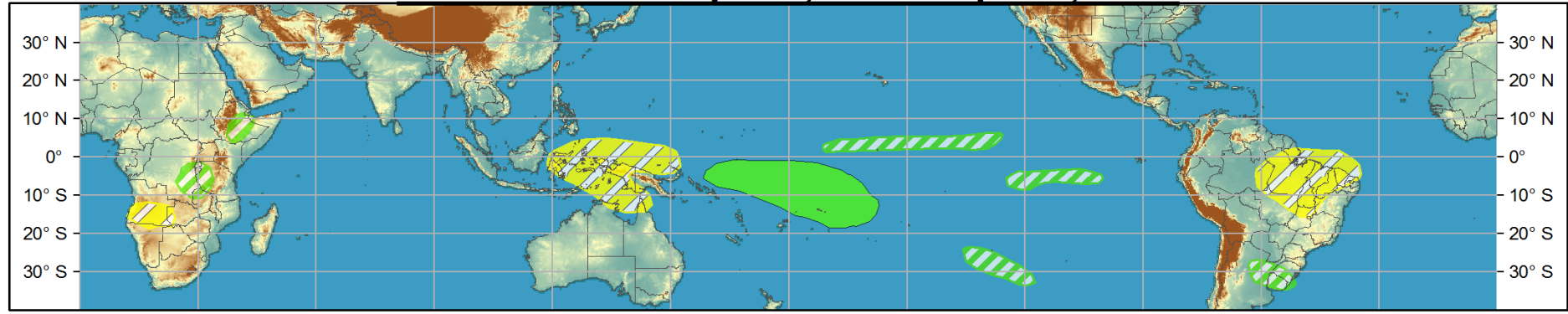


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 30, 2016 - Apr 05, 2016



Week 2 - Valid: Apr 06, 2016 - Apr 12, 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.
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Produced: 03/29/2016

Forecaster: Rosencrans

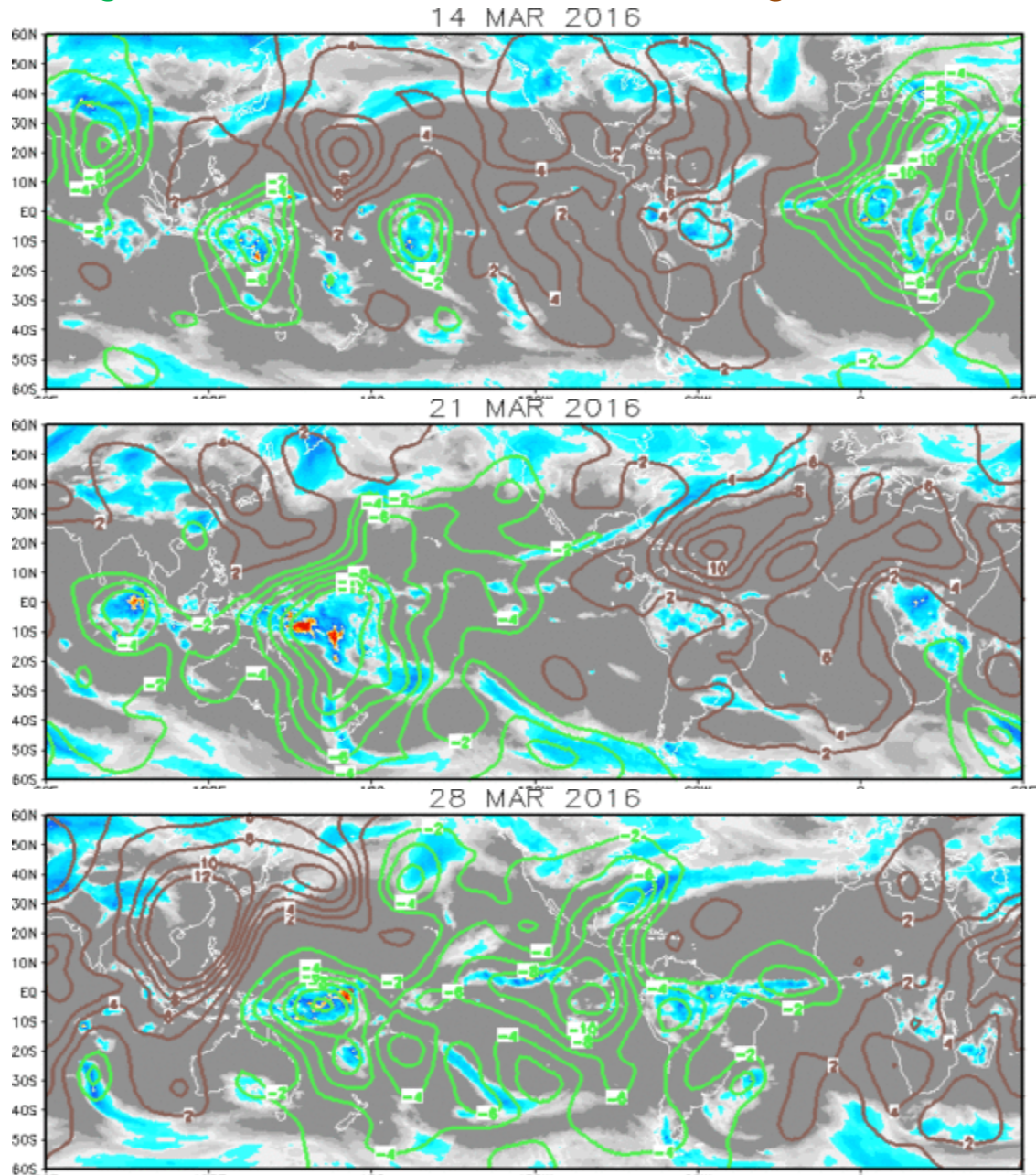
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IR Satellite & 200-hpa Velocity Potential Anomalies

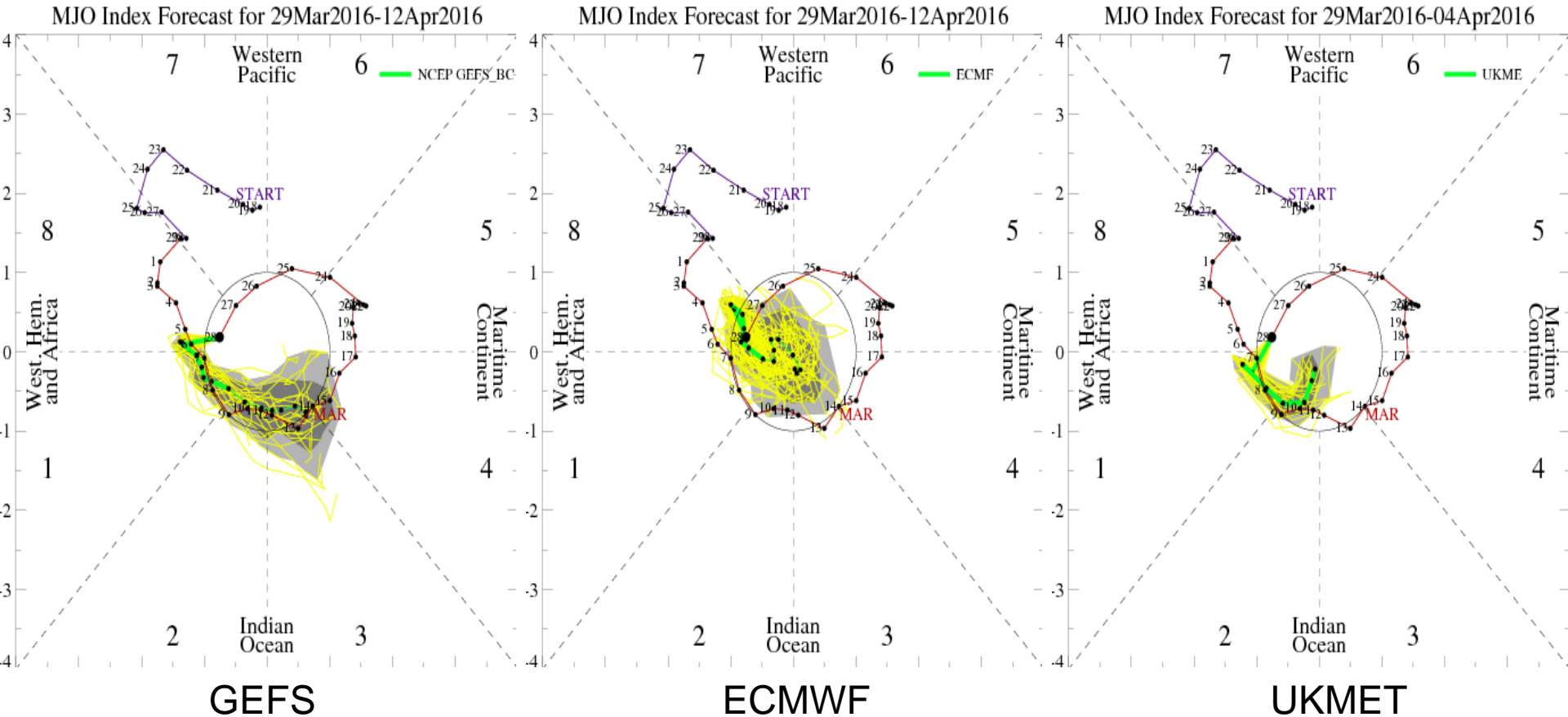
Green: Enhanced Divergence

Brown: Enhanced Convergence



Wave-1 structure emerged again late in Mar, but there is noise in the pattern.

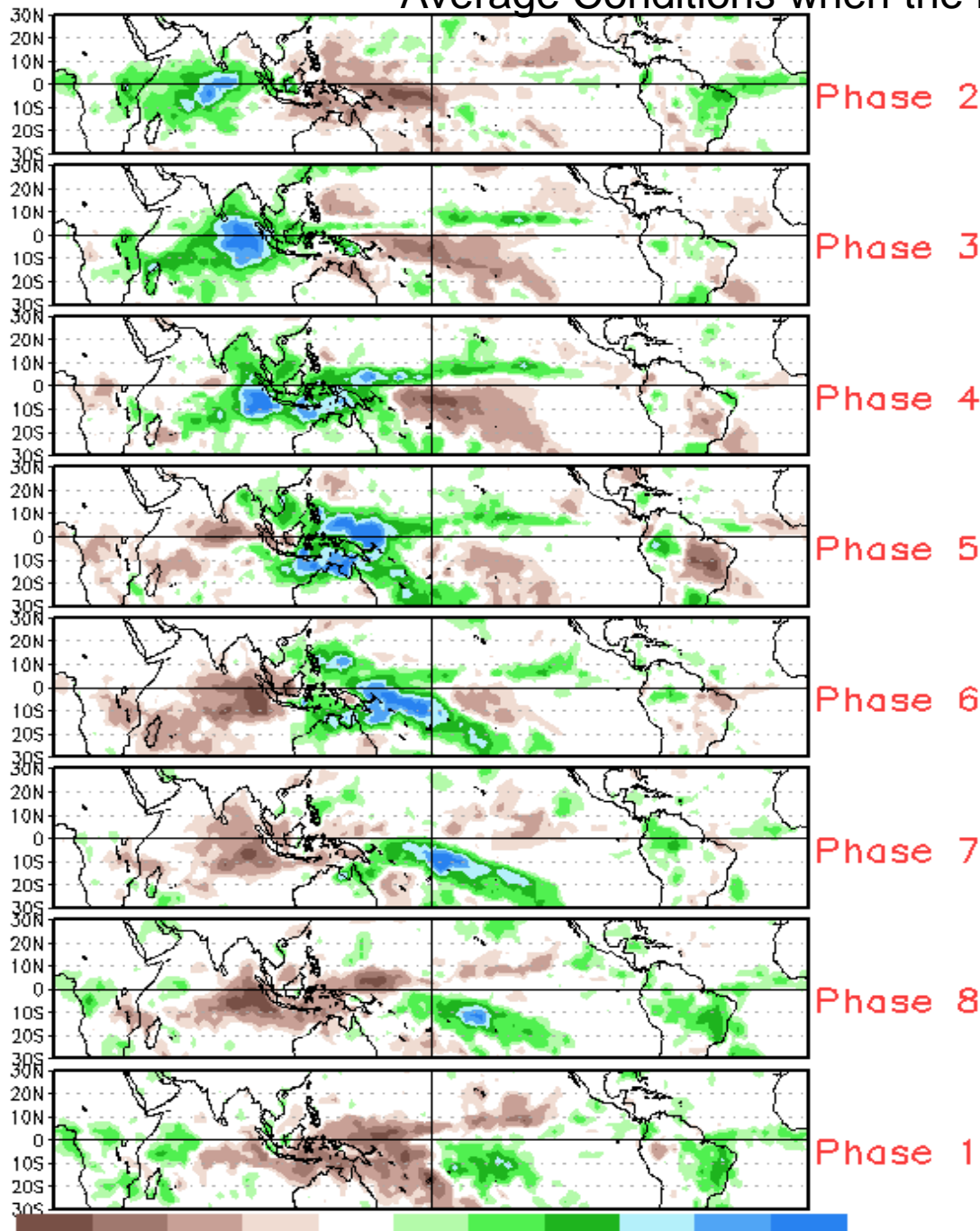
MJO Observation/Forecast



Wheeler-Hendon based analyses of model forecasts indicate some eastward propagation of a weak signal.

Weakness likely due to interference from other modes and removal of 120day mean (had strong MJO events).

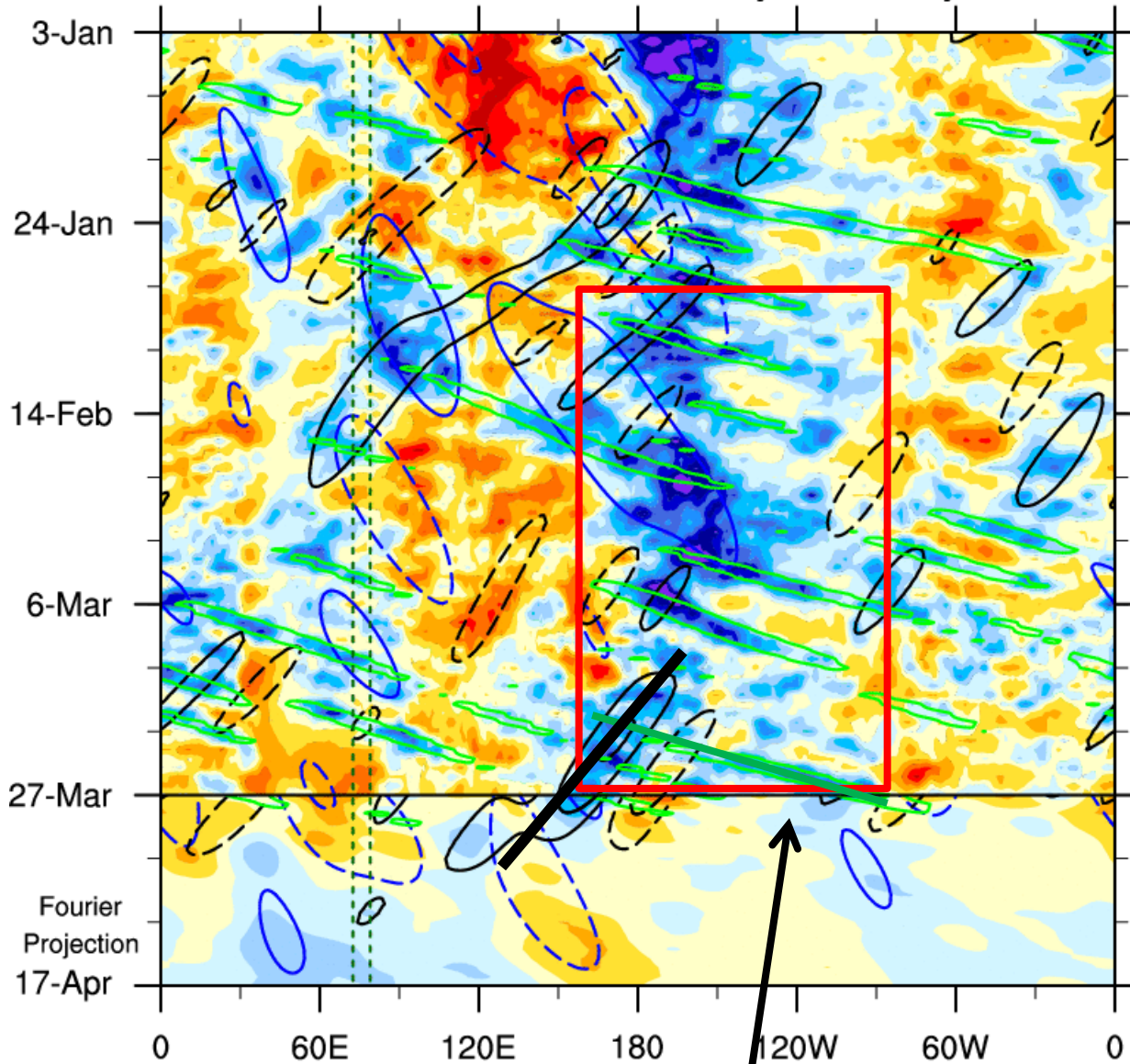
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events, with all phases of ENSO.

NOAA CDR HIRS OLR anomalies: 7.5°S - 7.5°N

3-Jan-2016 to 27-Mar-2016 + 21-day Fourier Projection

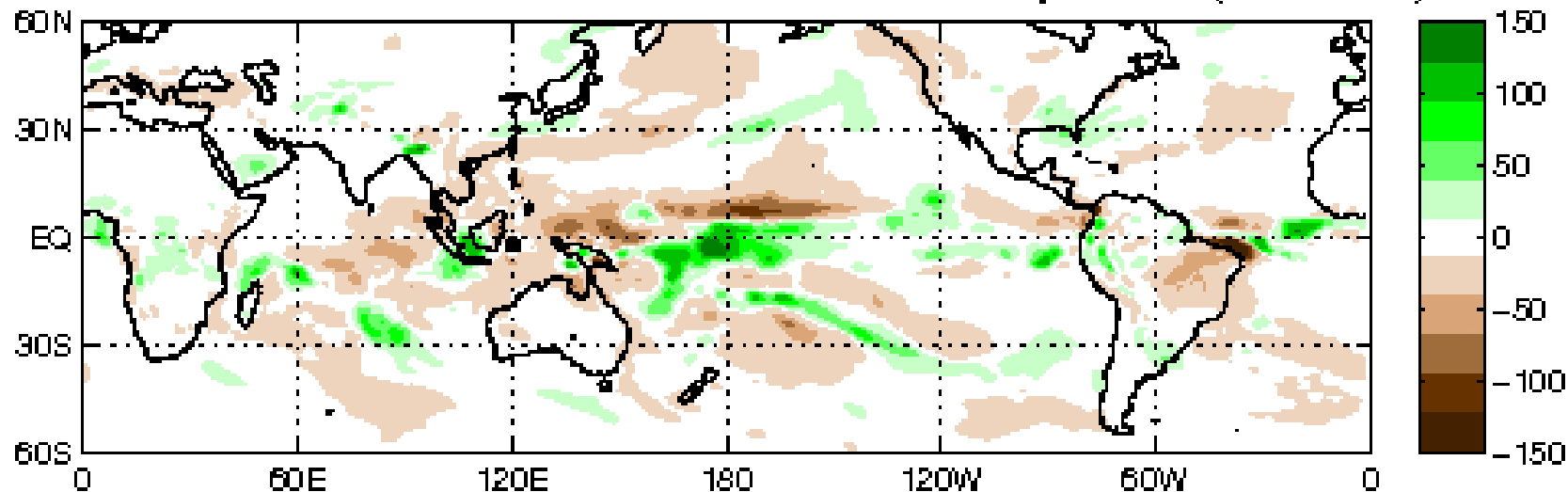


Rossby Wave near Date Line.

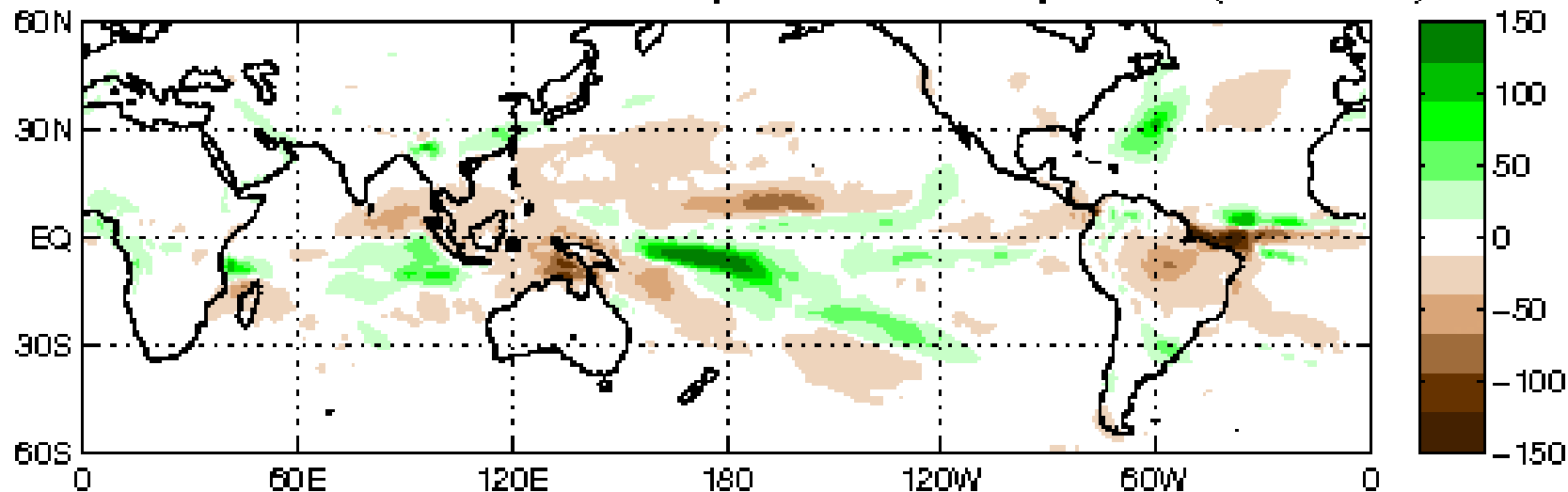
Weak projection of MJO near Date Line.

Kelvin wave over East Pacific

CFS: Anom. PREC Week: 1: 30-Mar-2016 to 05-Apr-2016 (mm/week)

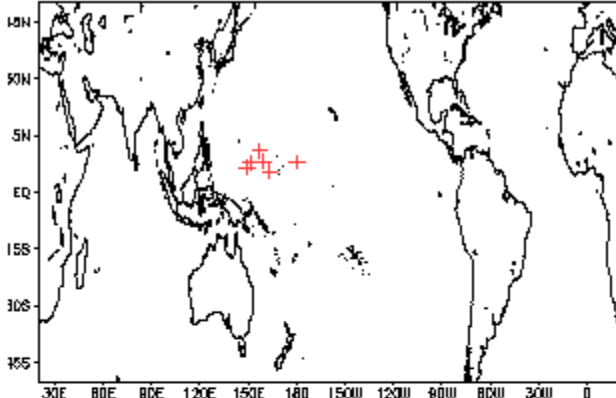


CFS: Anom. PREC Week: 2: 06-Apr-2016 to 12-Apr-2016 (mm/week)

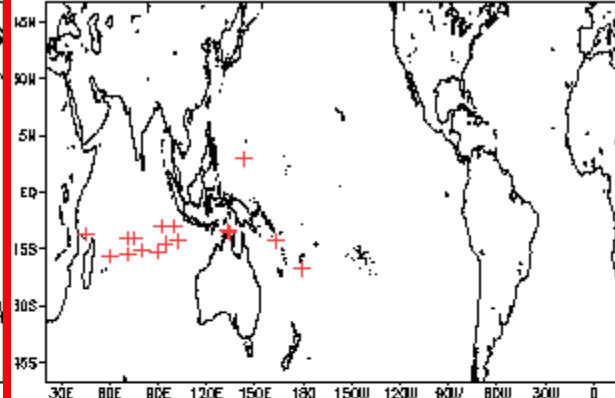


April Tropical Storm Formation by MJO phase

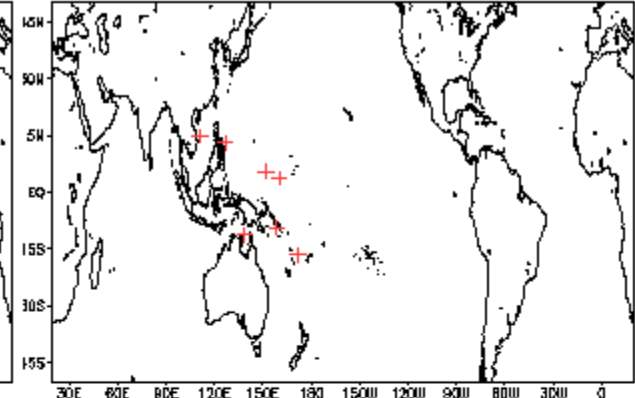
Phase 1 (70 days) 7 storms



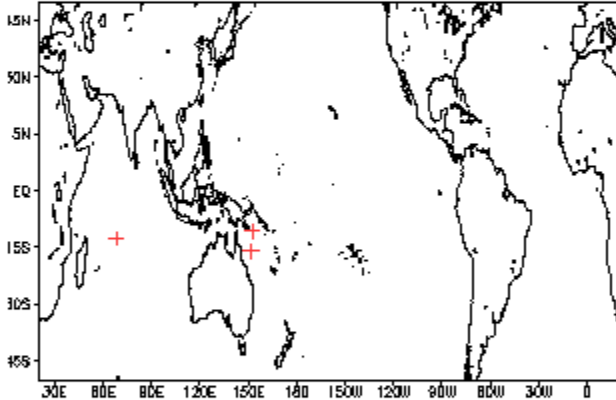
Phase 4 (95 days) 17 storms



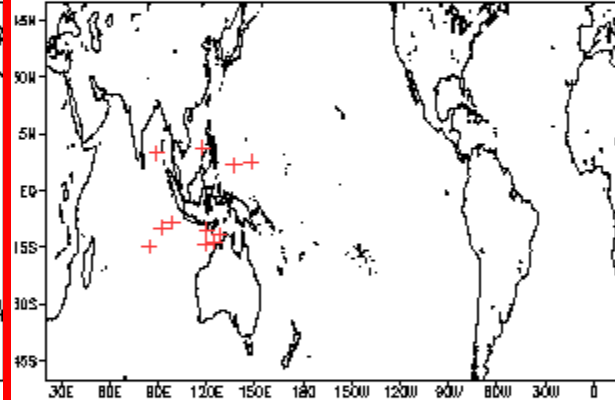
Phase 7 (87 days) 8 storms



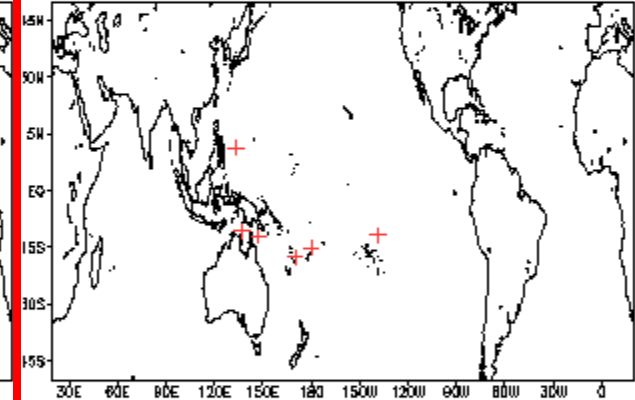
Phase 2 (65 days) 4 storms



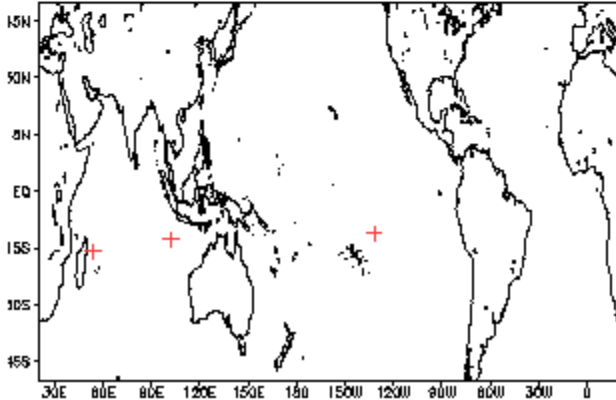
Phase 5 (77 days) 12 storms



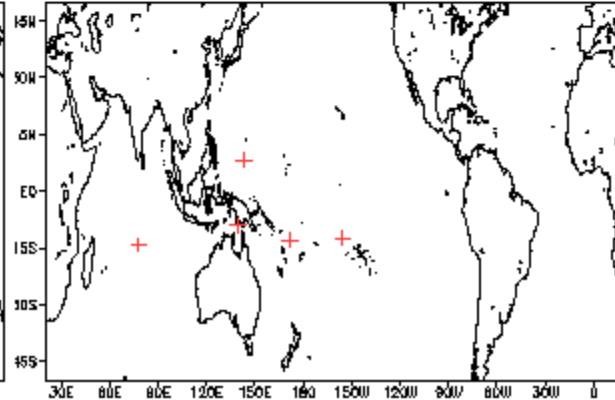
Phase 8 (75 days) 7 storms



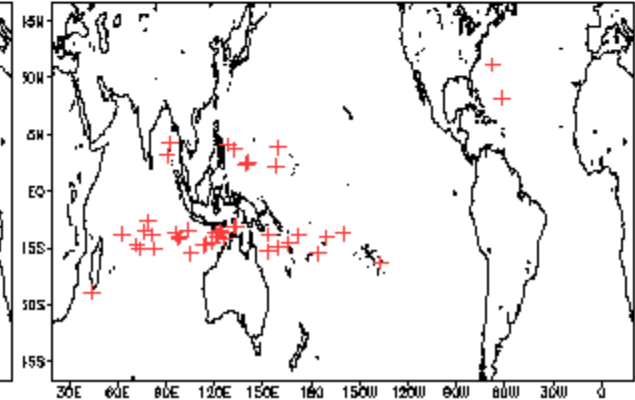
Phase 3 (68 days) 4 storms



Phase 6 (65 days) 8 storms

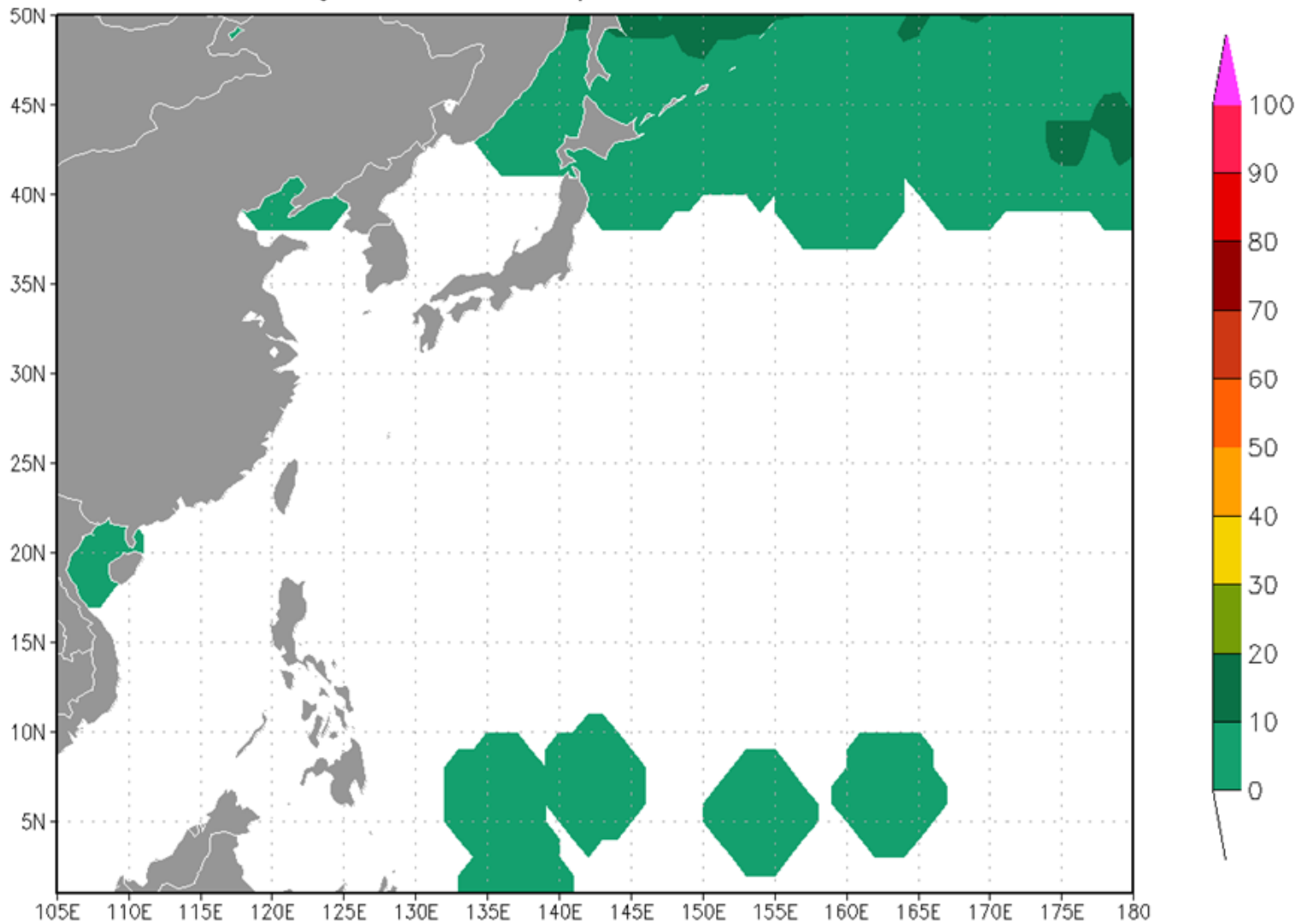


Null (388 days) 43 storms



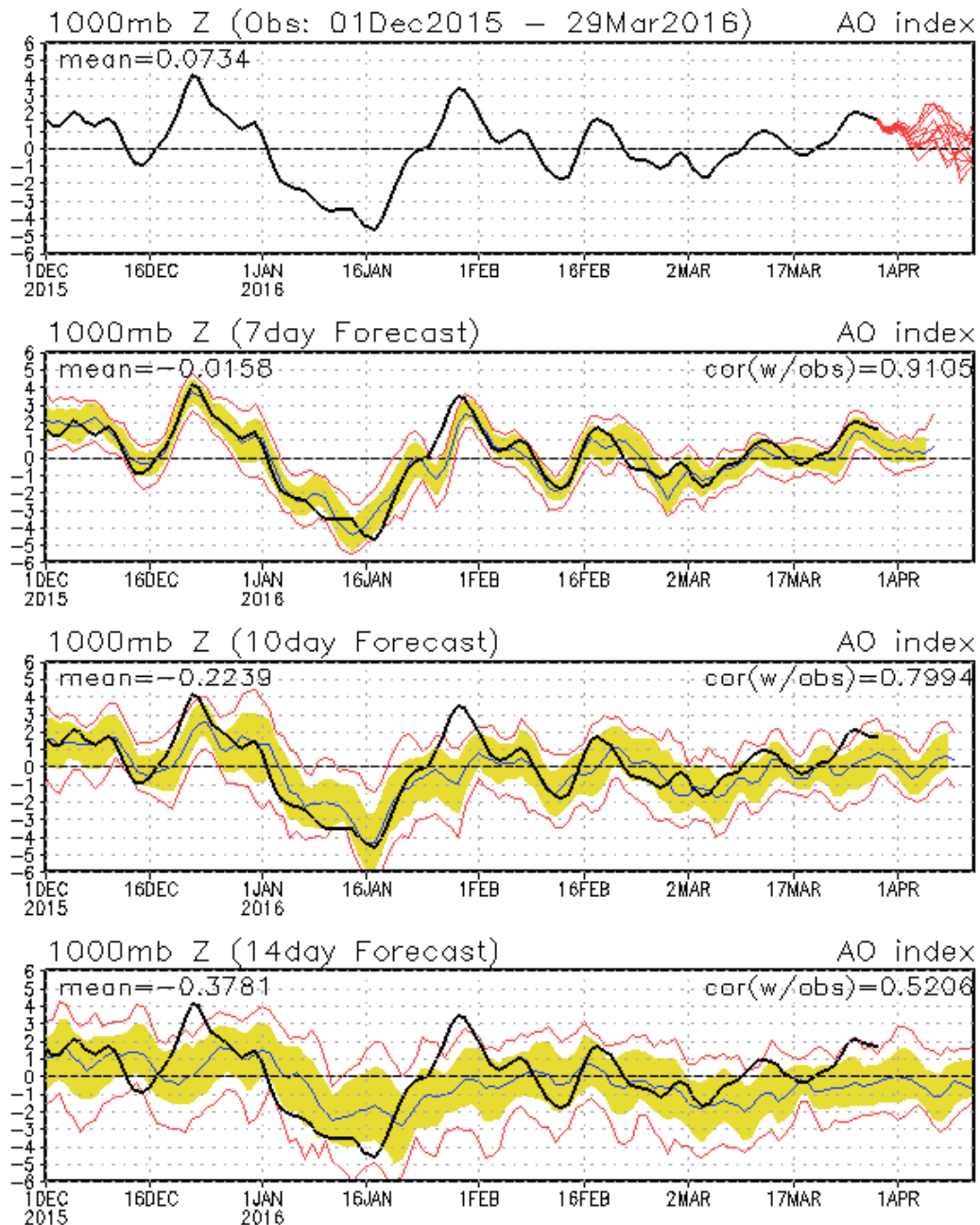
Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF

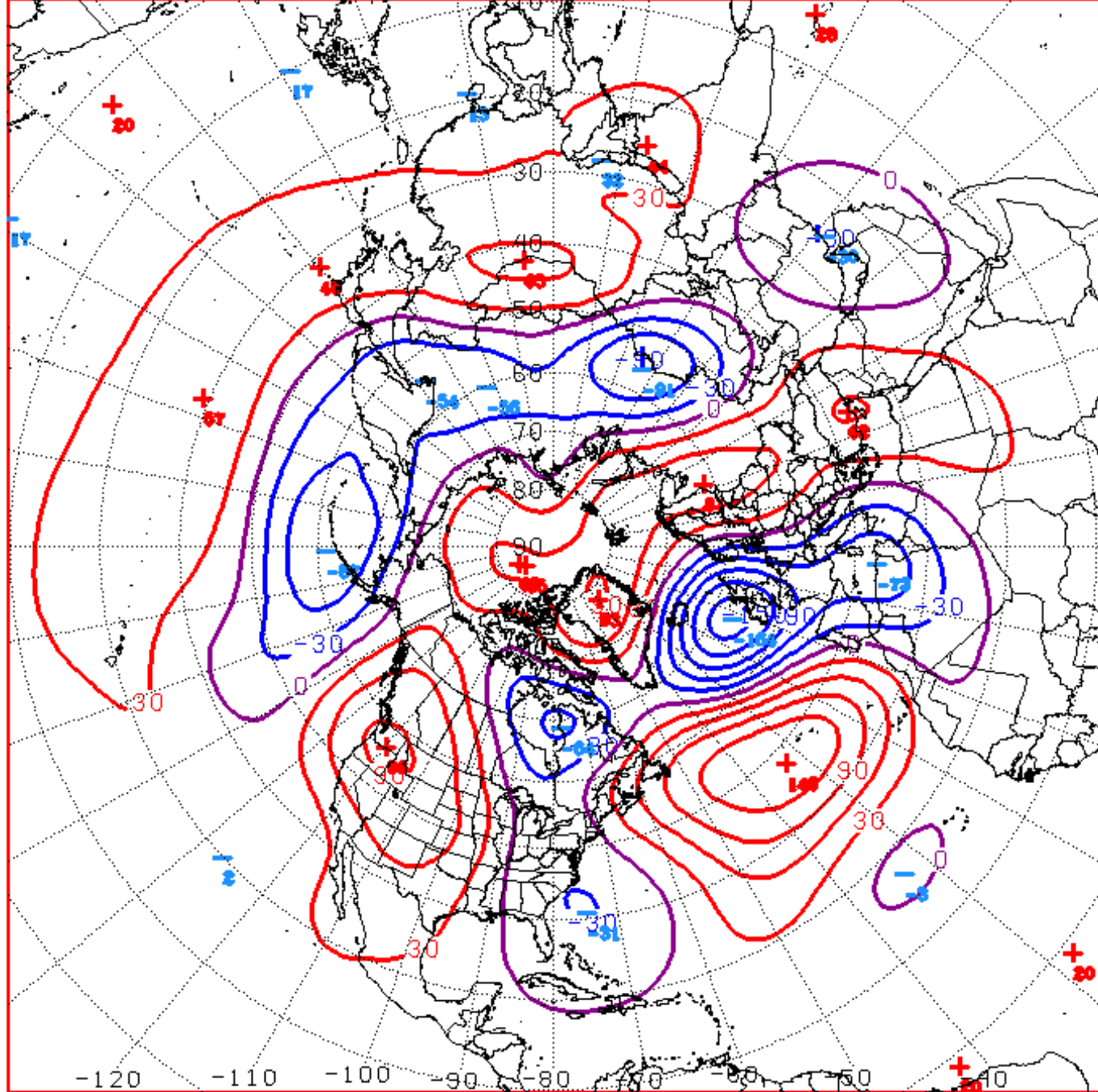
For forecasts during the 120–240h period from initial time = 2016032900



Connections to U.S. Impacts

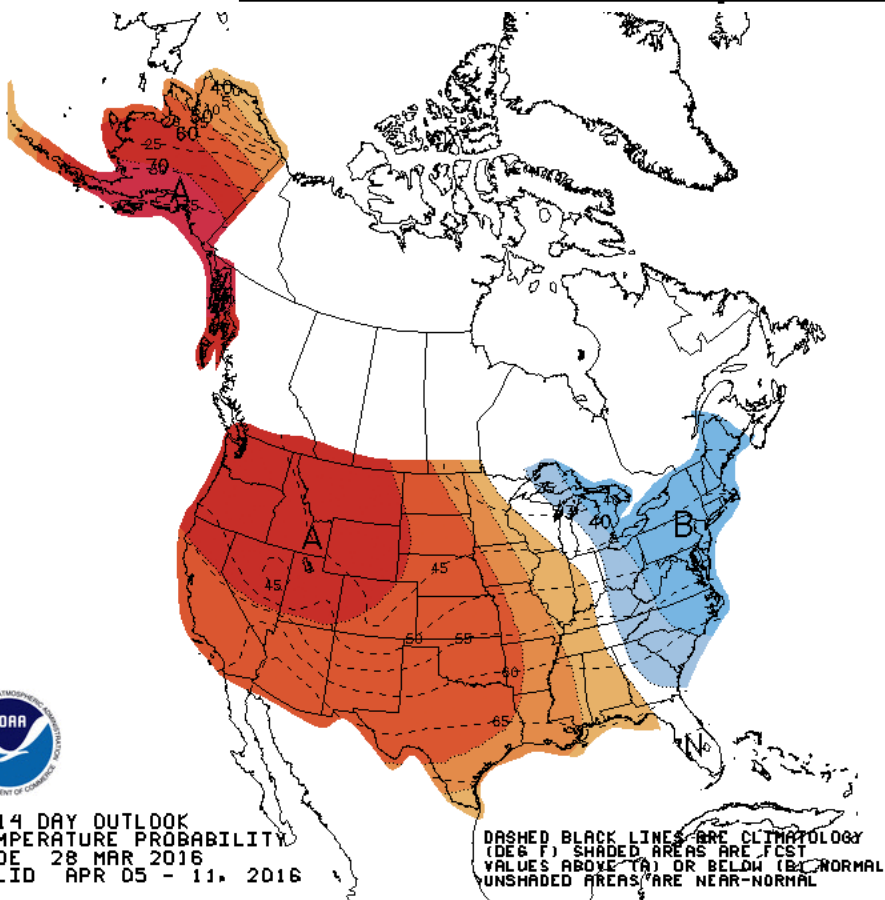
AO: Observed & ENSM forecasts



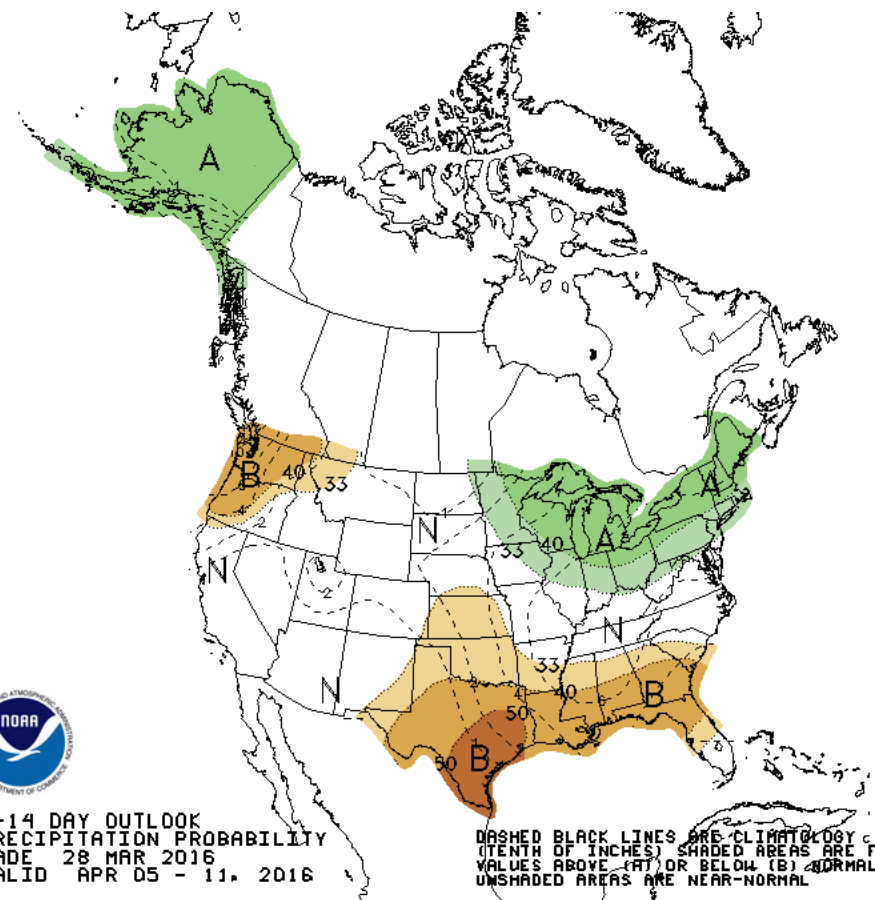
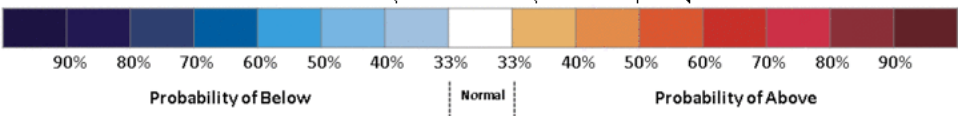


D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE MAR 29 2016 1004 UTC CNTD APR 09 2016

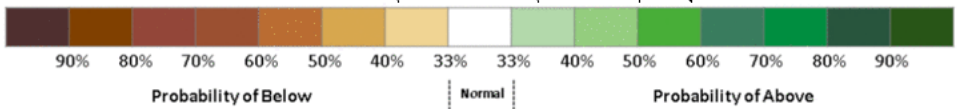
Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 28 MAR 2016
VALID APR 05 - 11, 2016



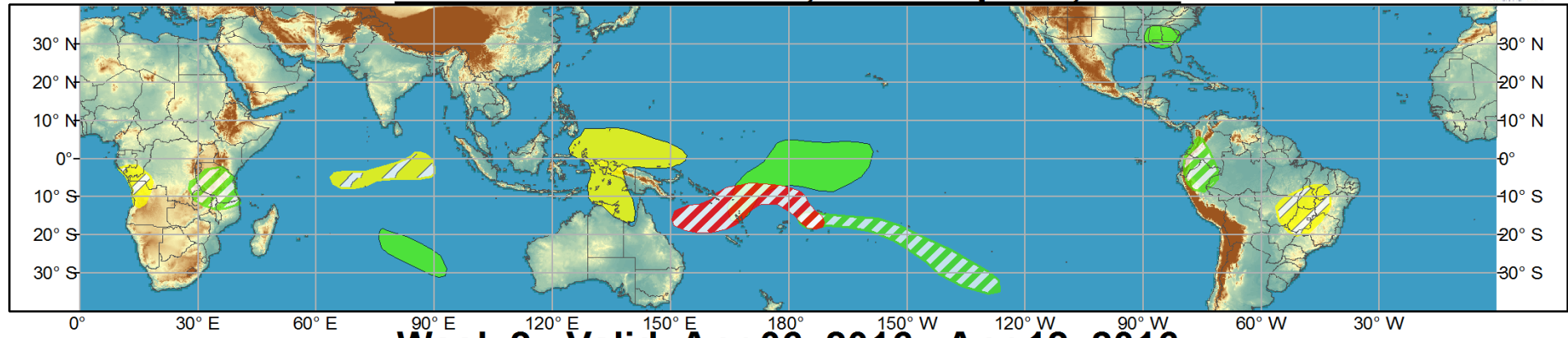
8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 28 MAR 2016
VALID APR 05 - 11, 2016



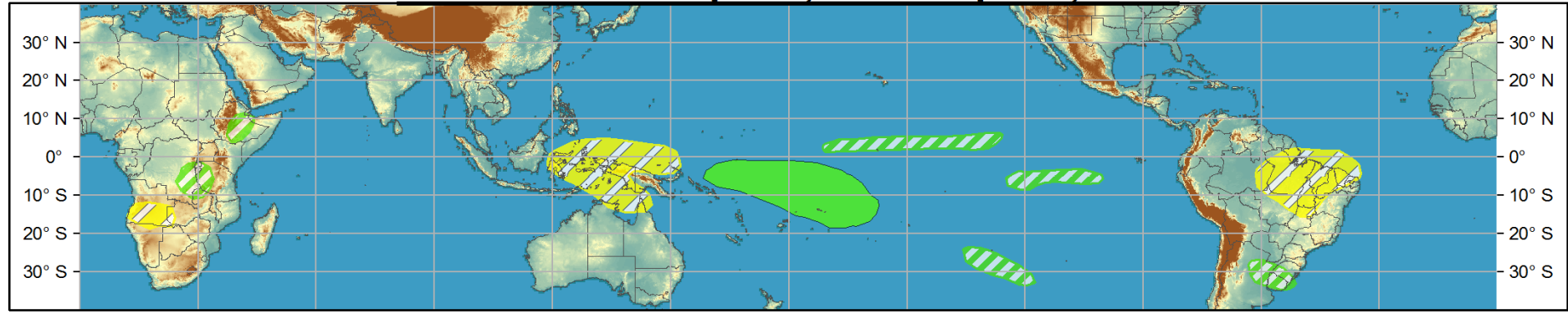


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