

Global Tropics Hazards And Benefits Outlook

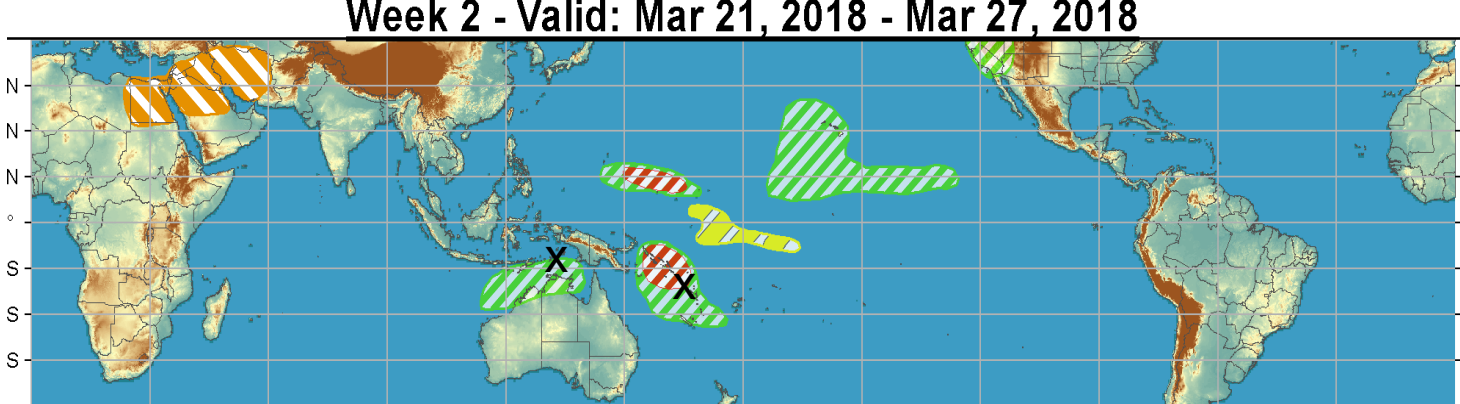
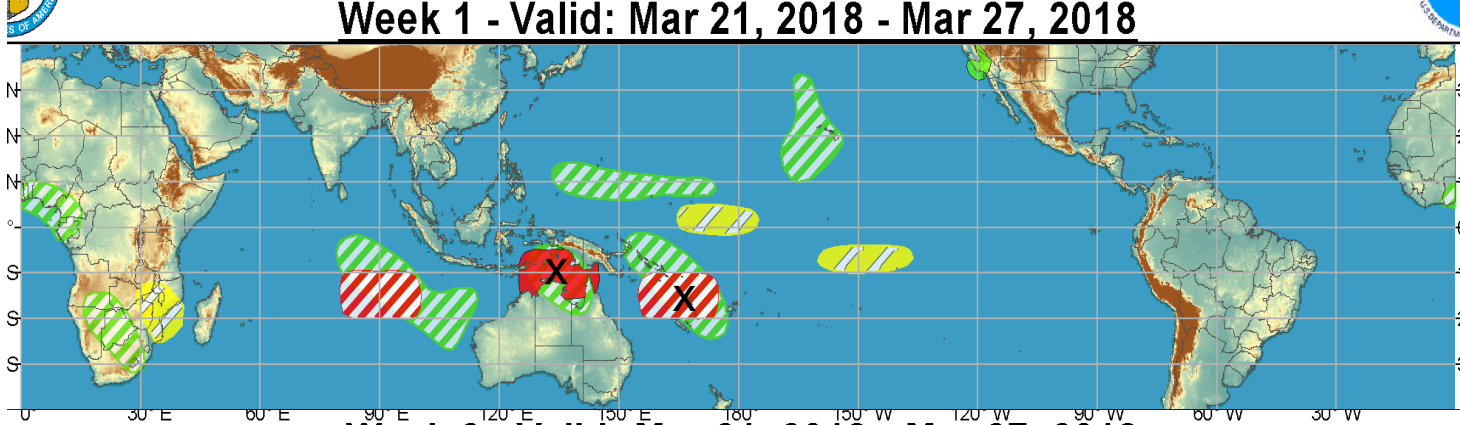
3/27/2018

Kyle MacRitchie

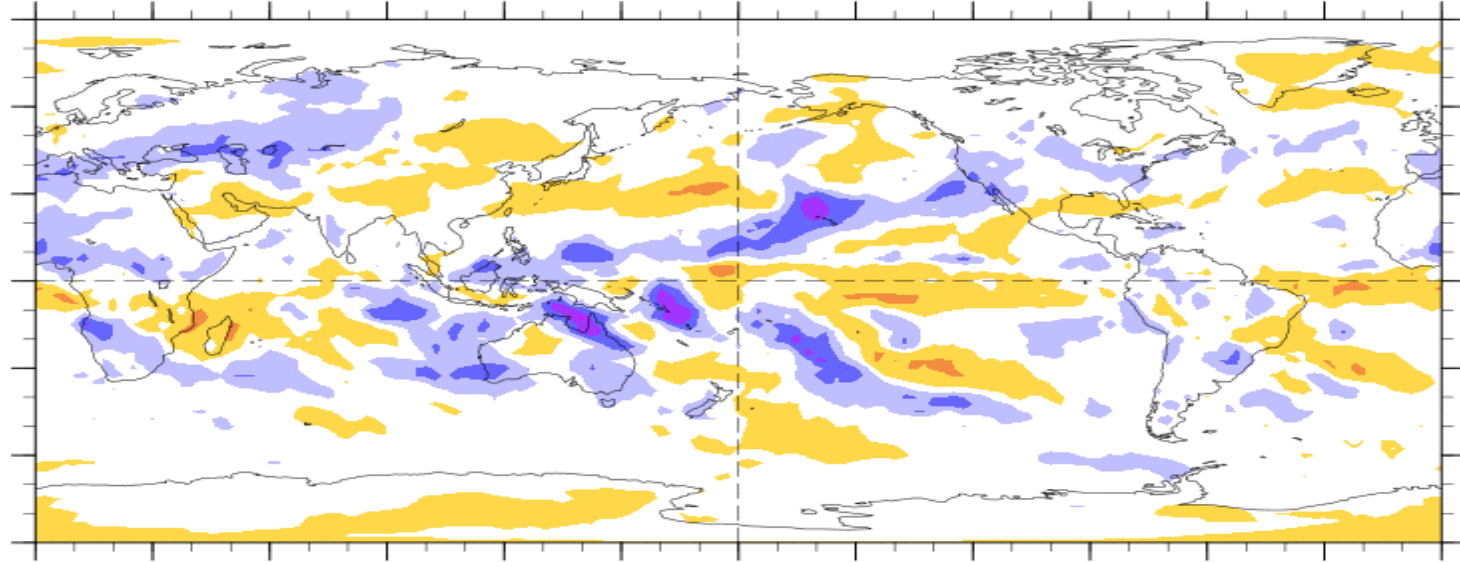
Outline

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

Outlook Review



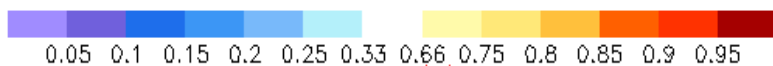
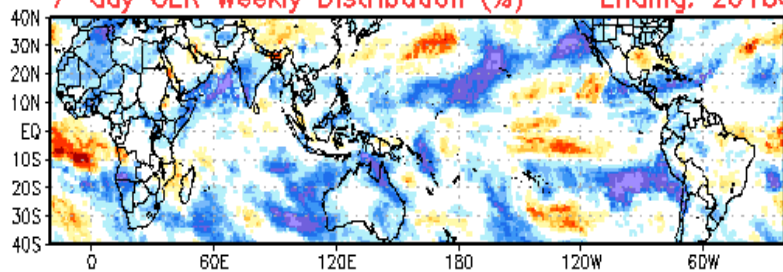
7-Day Average OLR Anomaly 2018/03/19 - 2018/03/25



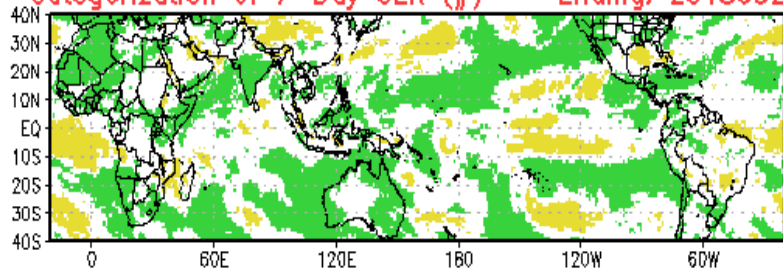
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

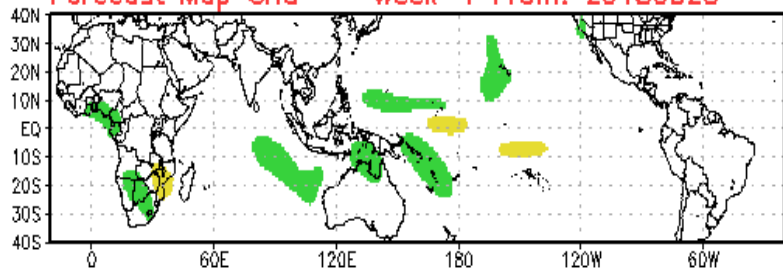
7-day OLR Weekly Distribution (%) -- Ending: 20180327



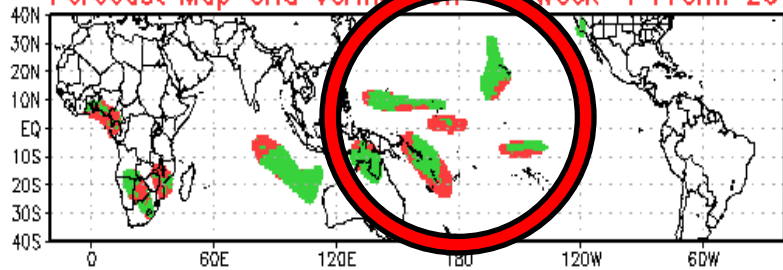
Categorization of 7-Day OLR (#) -- Ending: 20180327



Forecast Map Grid -- Week-1 From: 20180320

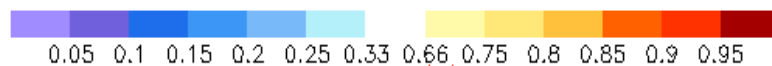
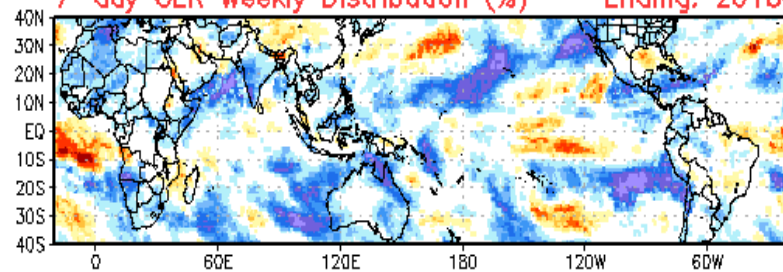


Forecast Map Grid Verification -- Week-1 From: 20180320

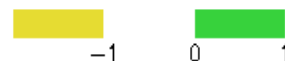
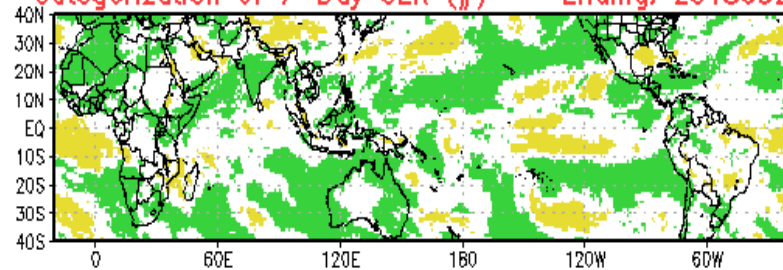


Hit: Green, Miss: Red
Heidke Skill Score: 45.4098

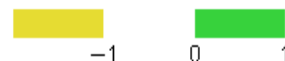
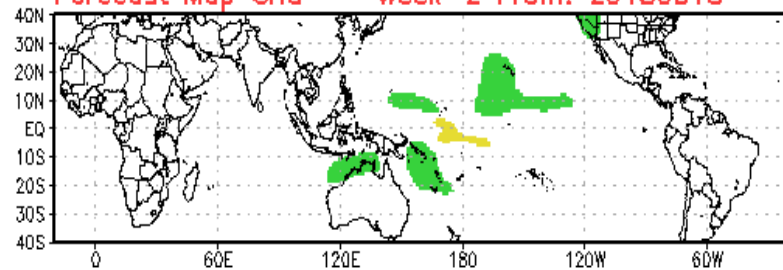
7-day OLR Weekly Distribution (%) -- Ending: 20180327



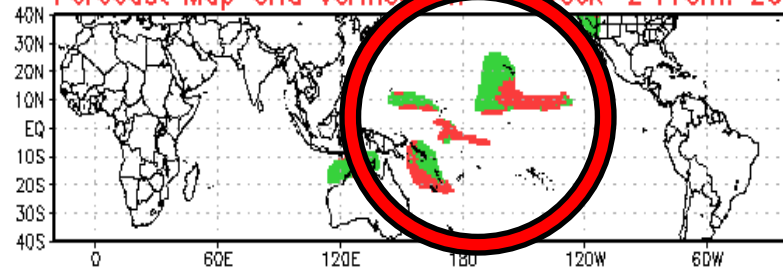
Categorization of 7-Day OLR (#) -- Ending: 20180327



Forecast Map Grid -- Week-2 From: 20180313



Forecast Map Grid Verification -- Week-2 From: 20180313



Hit: Green, Miss: Red
Heidke Skill Score: 38.5764

Synopsis of Climate Modes

ENSO:

- A transition from La Nina to ENSO-neutral is most likely (~55% chance) during the March-May season, with neutral conditions likely to continue into the second half of the year (ENSO Diagnostic Discussion, March 8, 2018)

MJO and other subseasonal tropical variability:

- The active region of the weak MJO moved over the Maritime Continent during the past week.
- Constructive interference between active regions of the MJO, Kelvin, and equatorial Rossby waves created an environment conducive to tropical cyclone development over the past week.
- Dynamical models forecast the MJO to strengthen during the forecast period as it propagates across the open Pacific.

Extratropics:

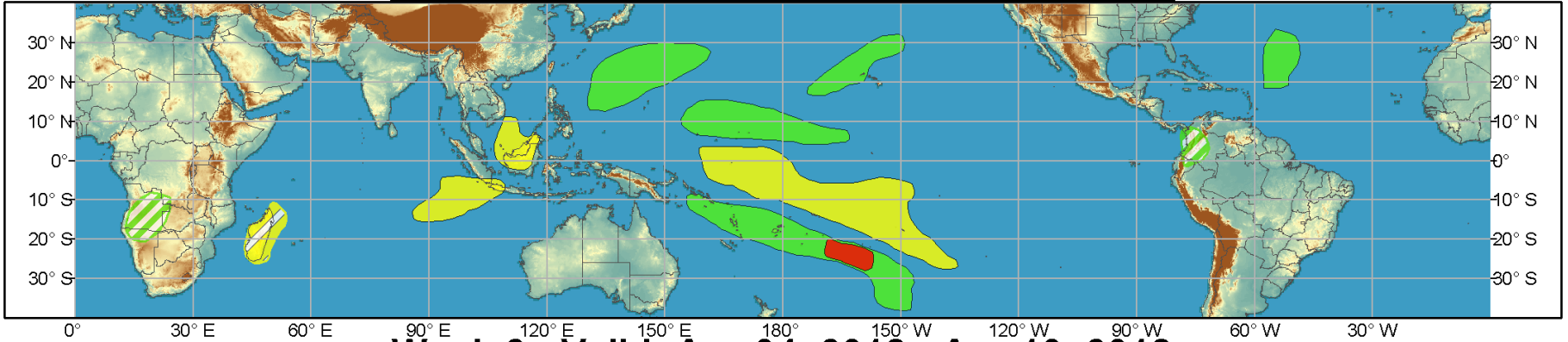
- The extended range temperature forecast for the U.S. is not heavily impacted by the MJO.



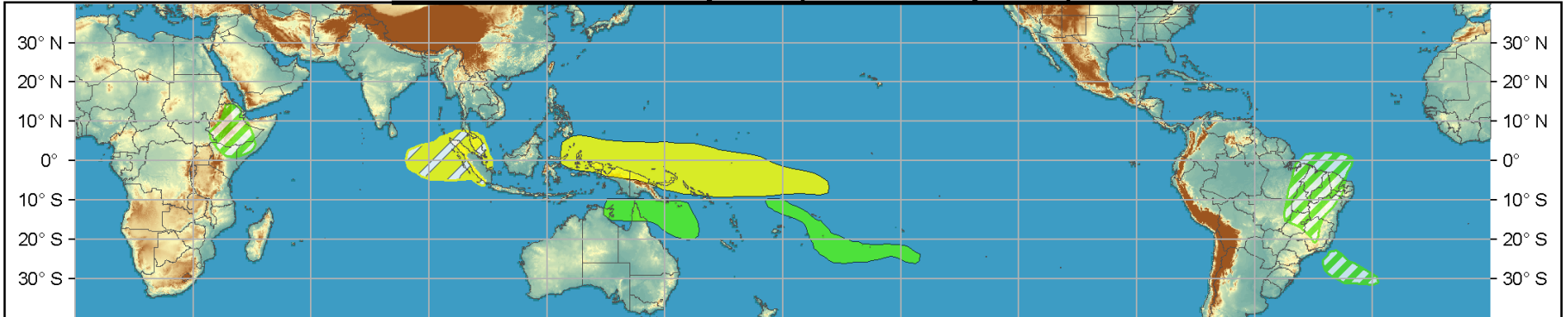
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Mar 28, 2018 - Apr 03, 2018



Week 2 - Valid: Apr 04, 2018 - Apr 10, 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: 03/27/2018

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

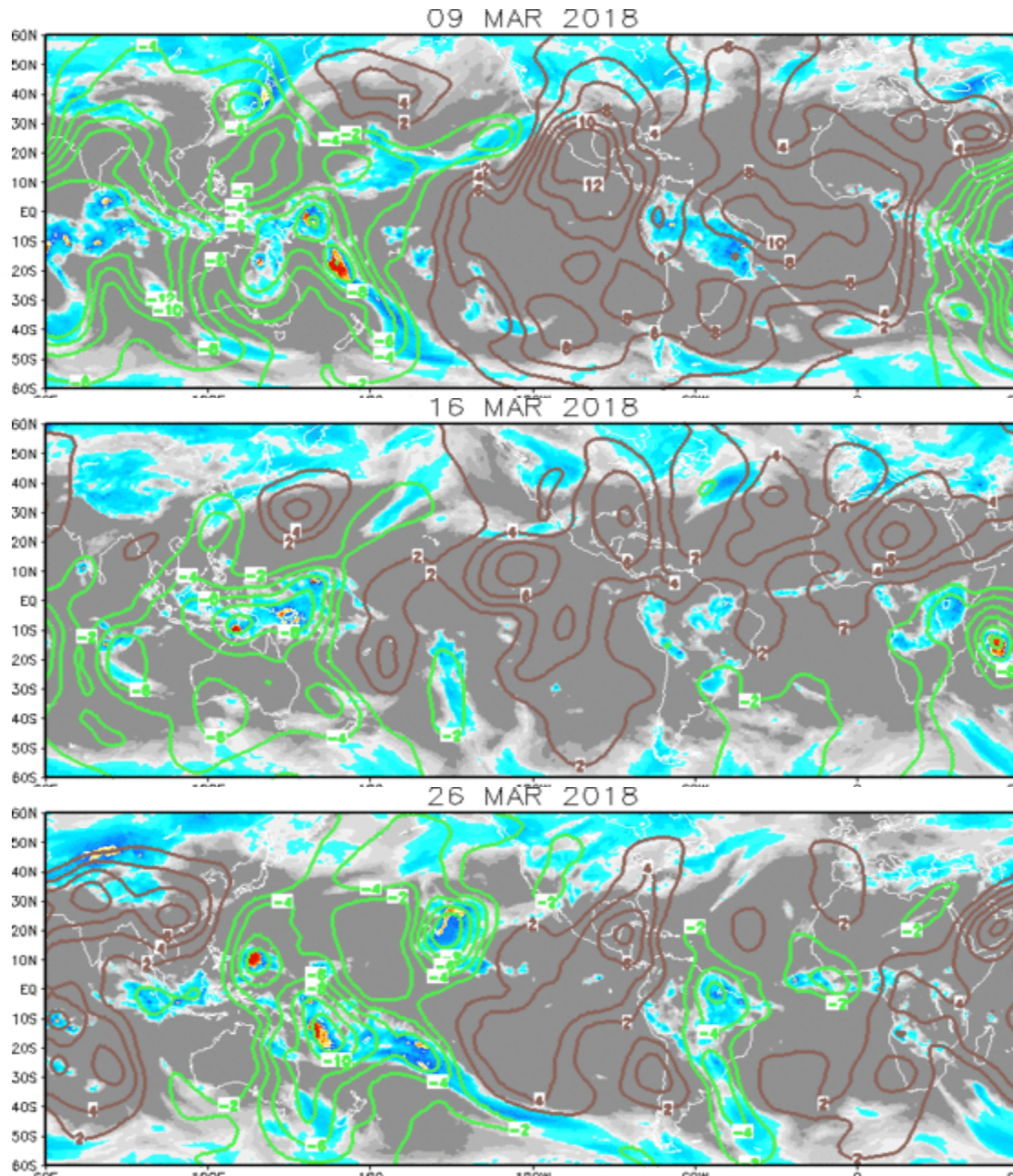
Green: Enhanced Divergence

Brown: Enhanced Convergence

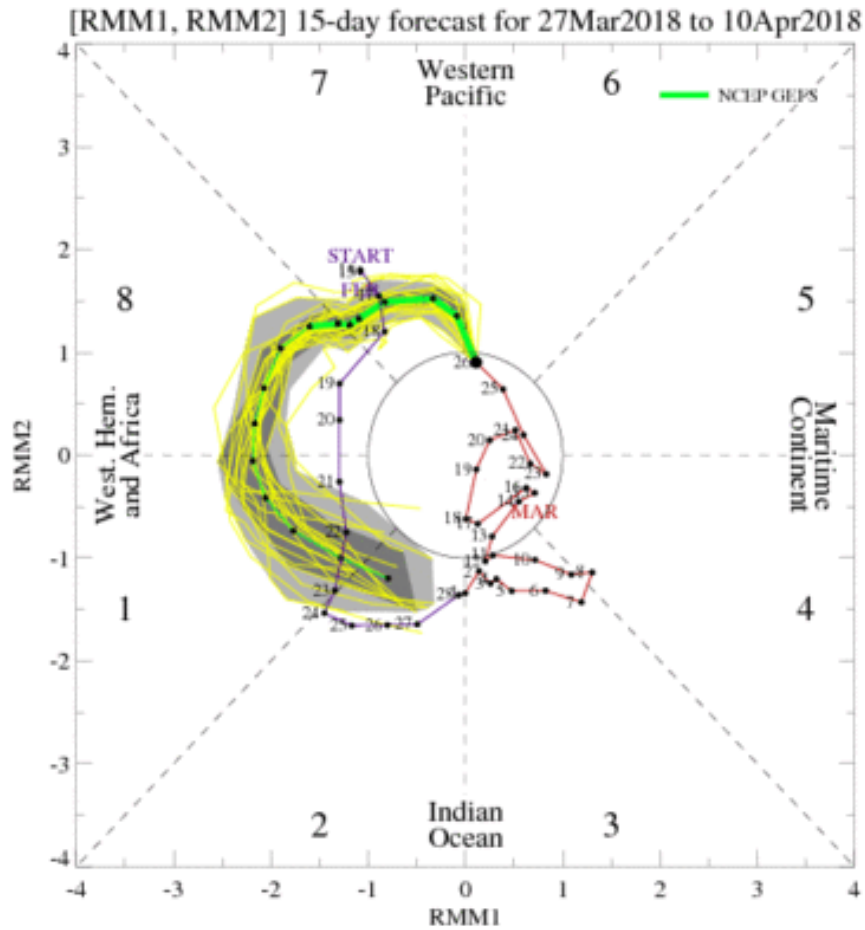
Wave-1 pattern largely due to MJO forcing.

Enhanced convection over the Maritime Continent can be attributed to MJO, Kelvin, and equatorial Rossby waves.

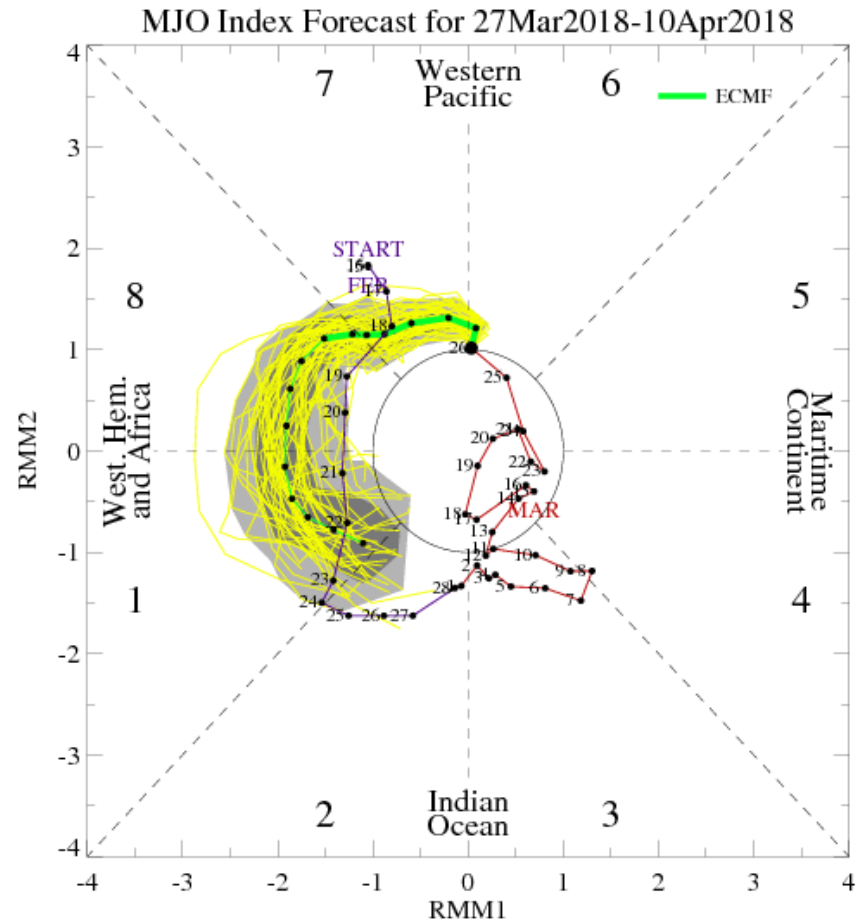
As the equatorial waves move eastward so does the area of broad-scale convection.



MJO Observation/Forecast



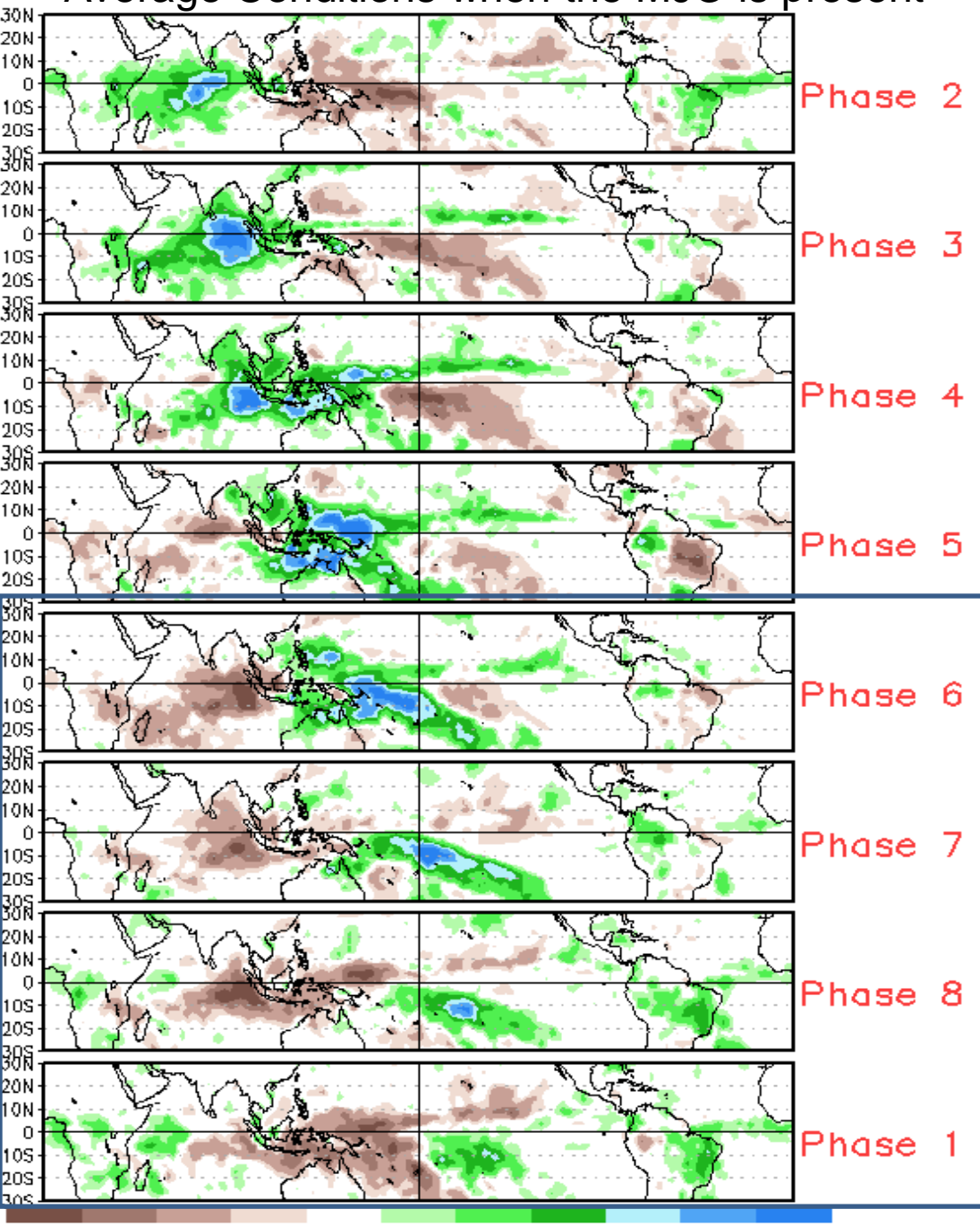
GEFS



ECMWF

Dynamical guidance forecasts the MJO to strengthen during the Week-1 forecast period.

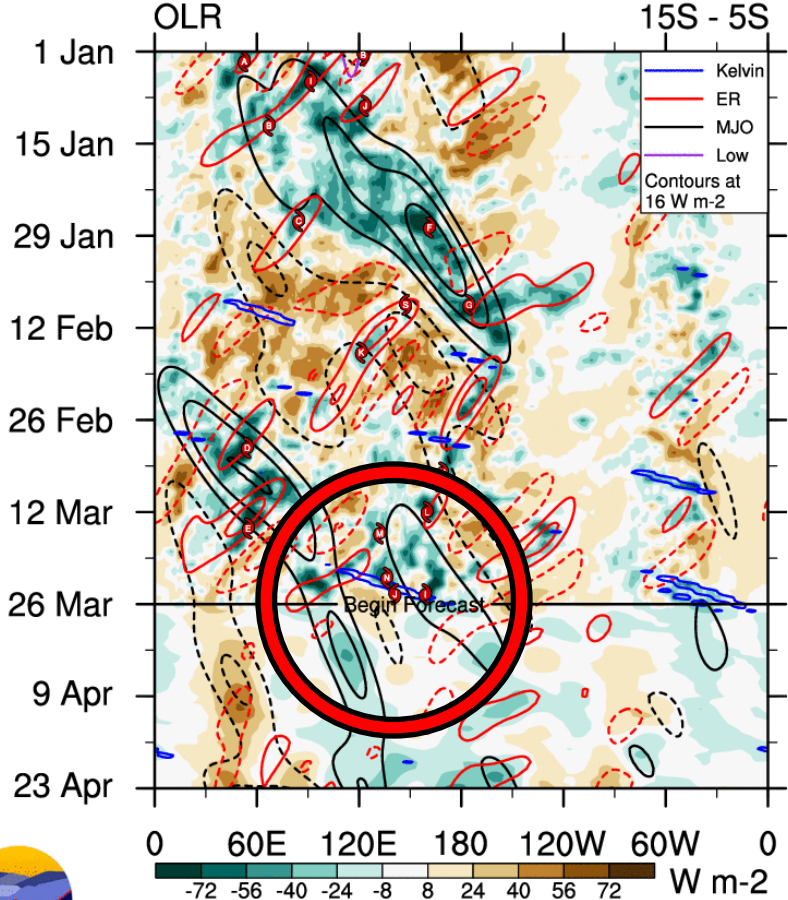
Average Conditions when the MJO is present



Week-1: Phases 6-8

Week-2: Phases 8-1

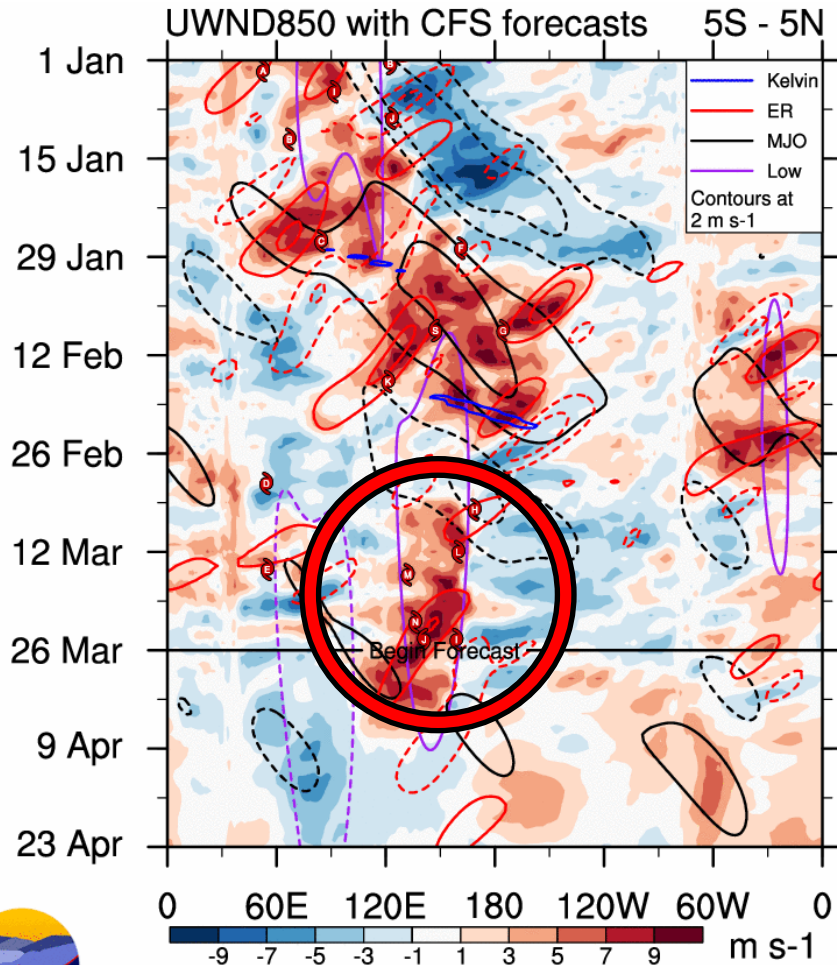
CAVEAT: These panels are representative of robust MJO events.



ncics.org/mjo

Tue 2018-03-27 1511 UTC

Carl Schreck (cjschrec@ncsu.edu)

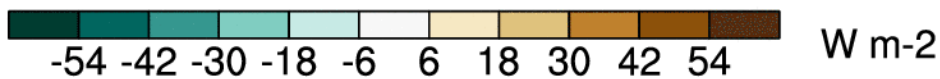
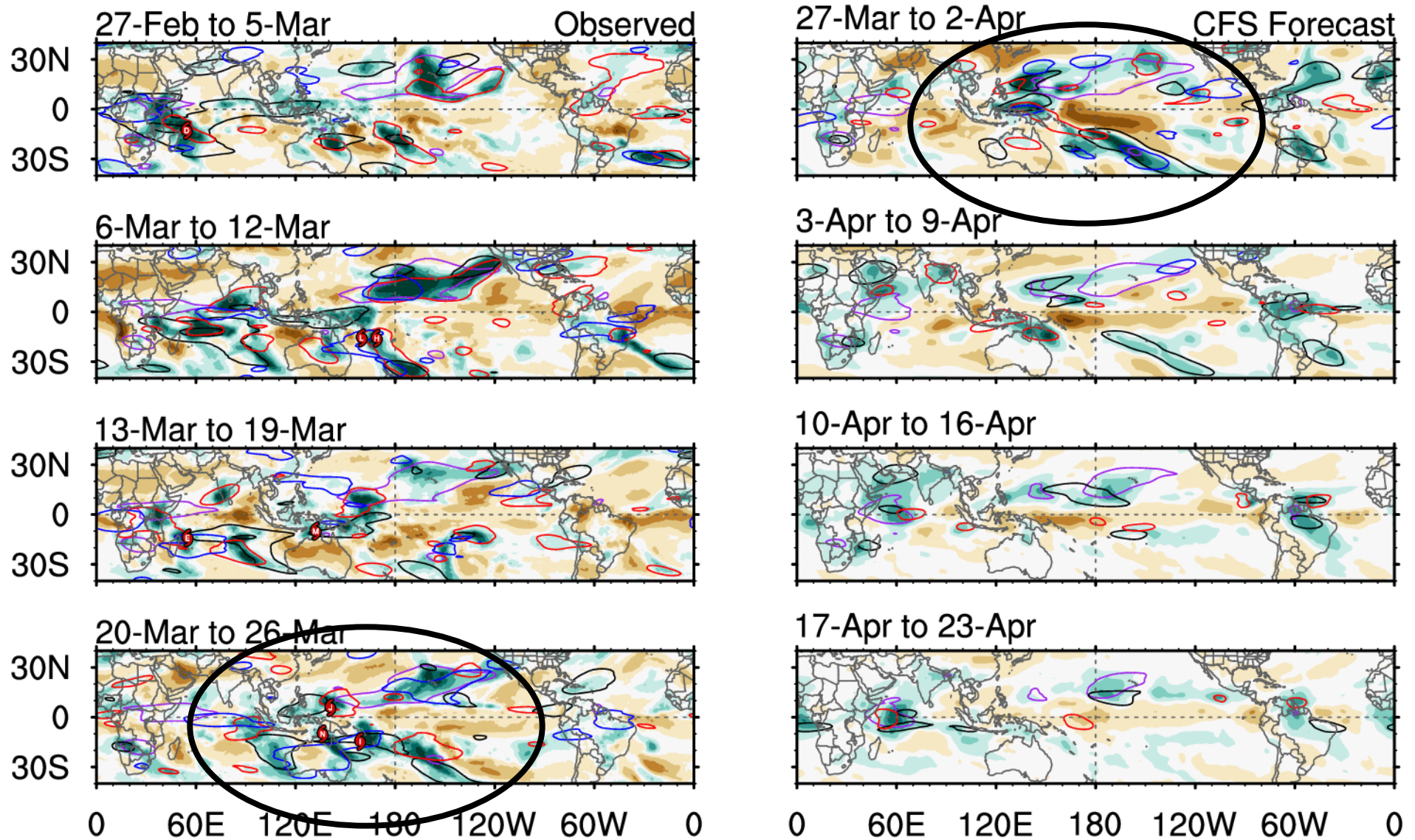


ncics.org/mjo

Tue 2018-03-27 1016 UTC

Carl Schreck (cjschrec@ncsu.edu)

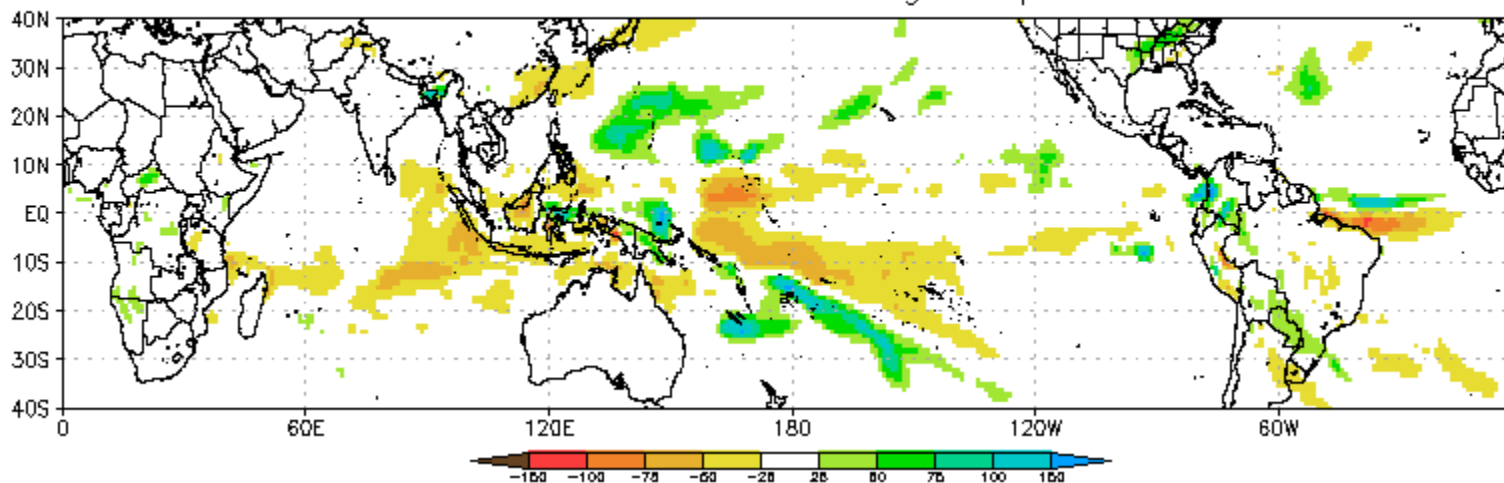
The area of tropical cyclone activity around the Maritime Continent occurs at the intersection of an active **MJO**, **Rossby wave**, and **Kelvin wave**.



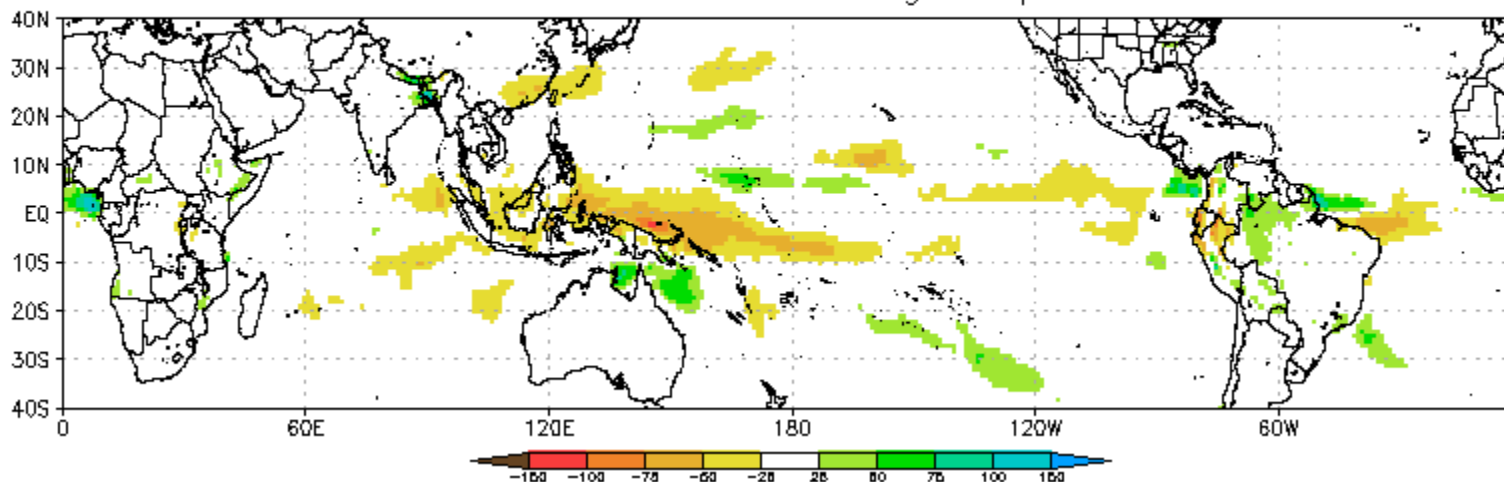
- MJO
 - Kelvin x2
 - Low
 - ER
- Contours at -12, -36 W m-2

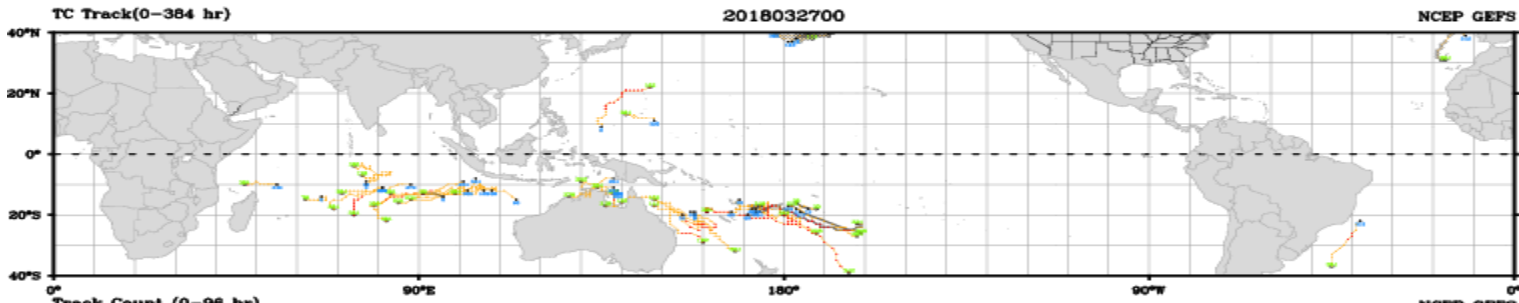
7-day OLR with CFS forecasts

CFS Precipitation Anomalies (mm) Issued 26Mar2018
Week-1 Forecast Ending 03Apr2018



CFS Precipitation Anomalies (mm) Issued 26Mar2018
Week-2 Forecast Ending 10Apr2018



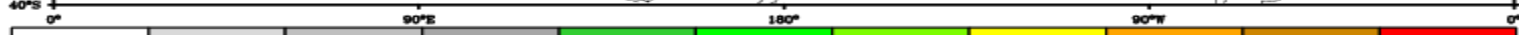
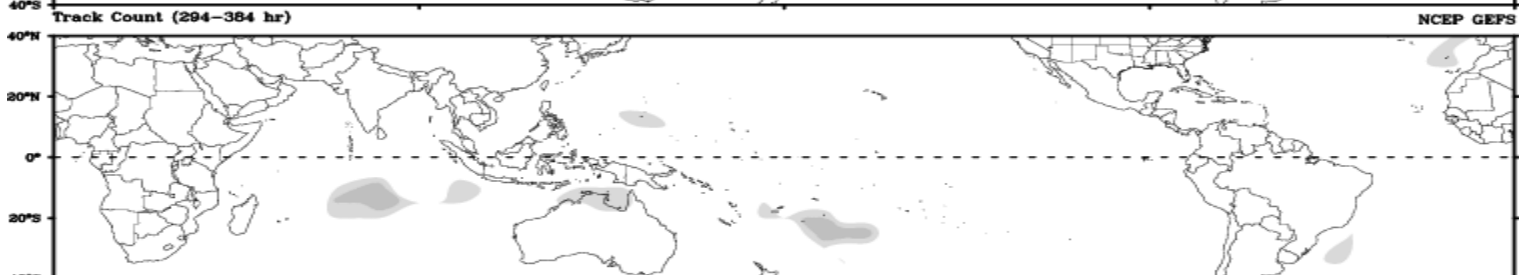
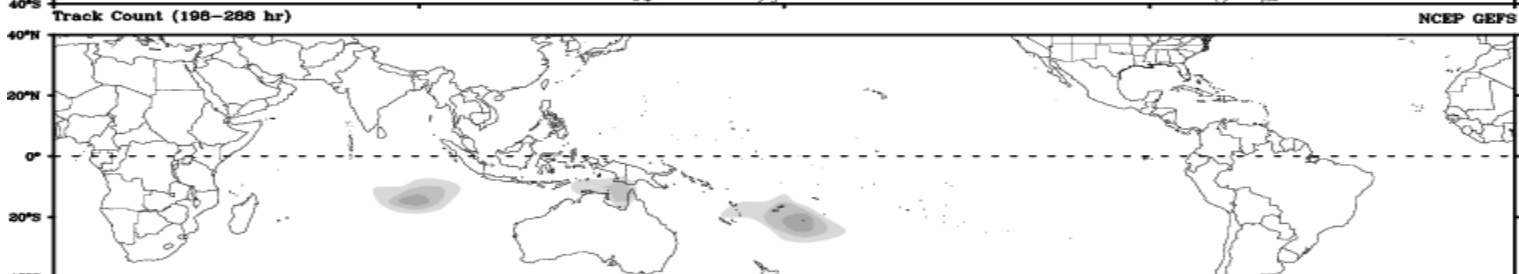
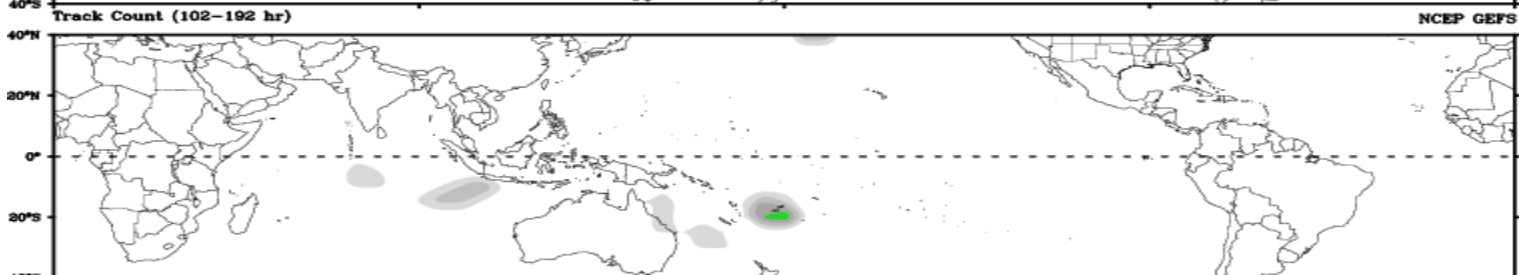
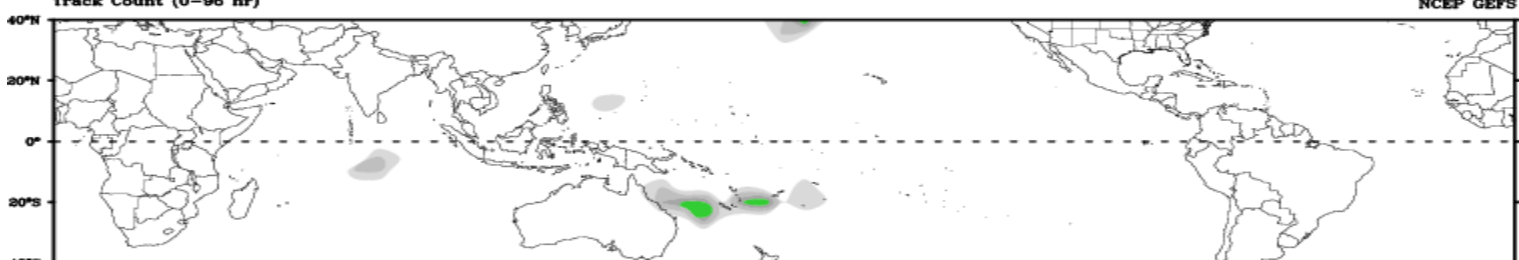


Days 1-4

Day 5-8

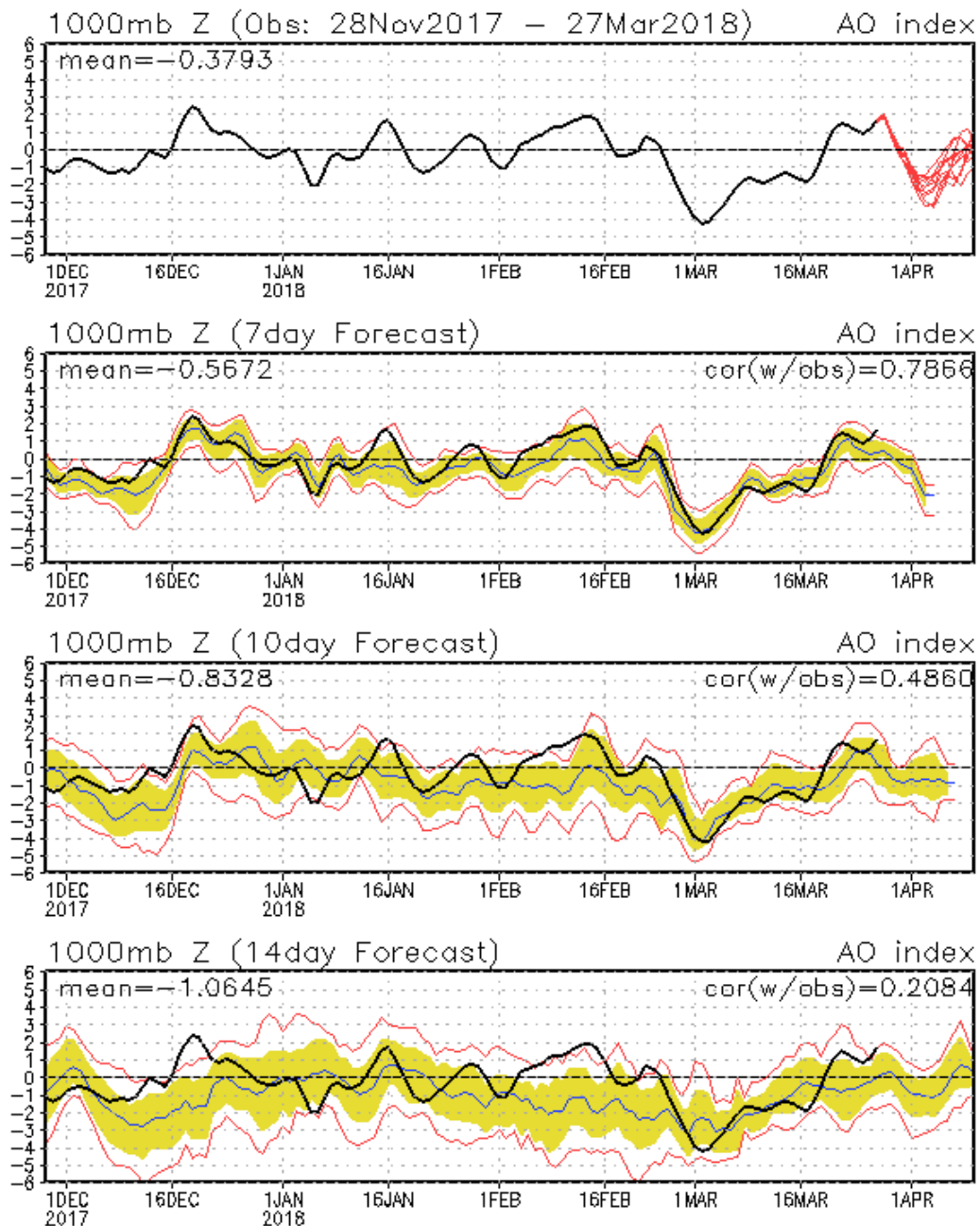
Day 9-12

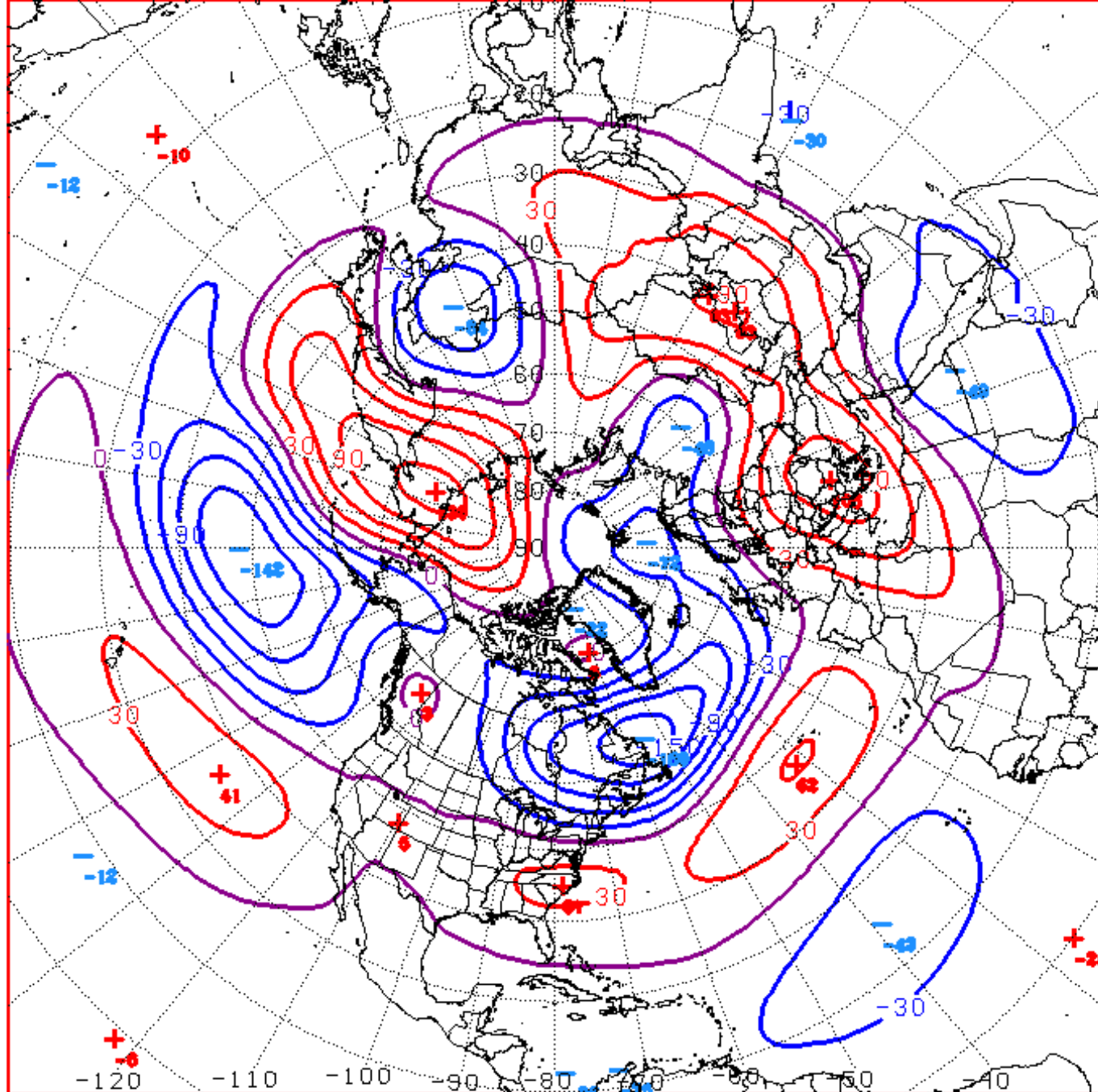
Day 13-15



Connections to U.S. Impacts

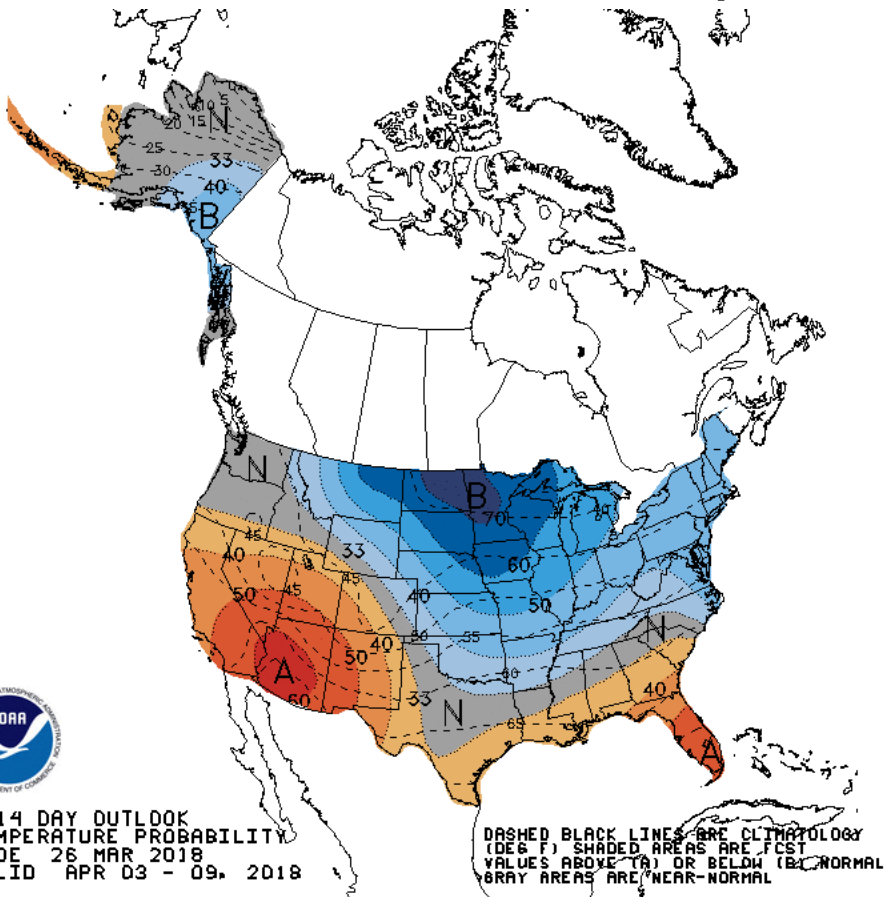
AO: Observed & ENSM forecasts





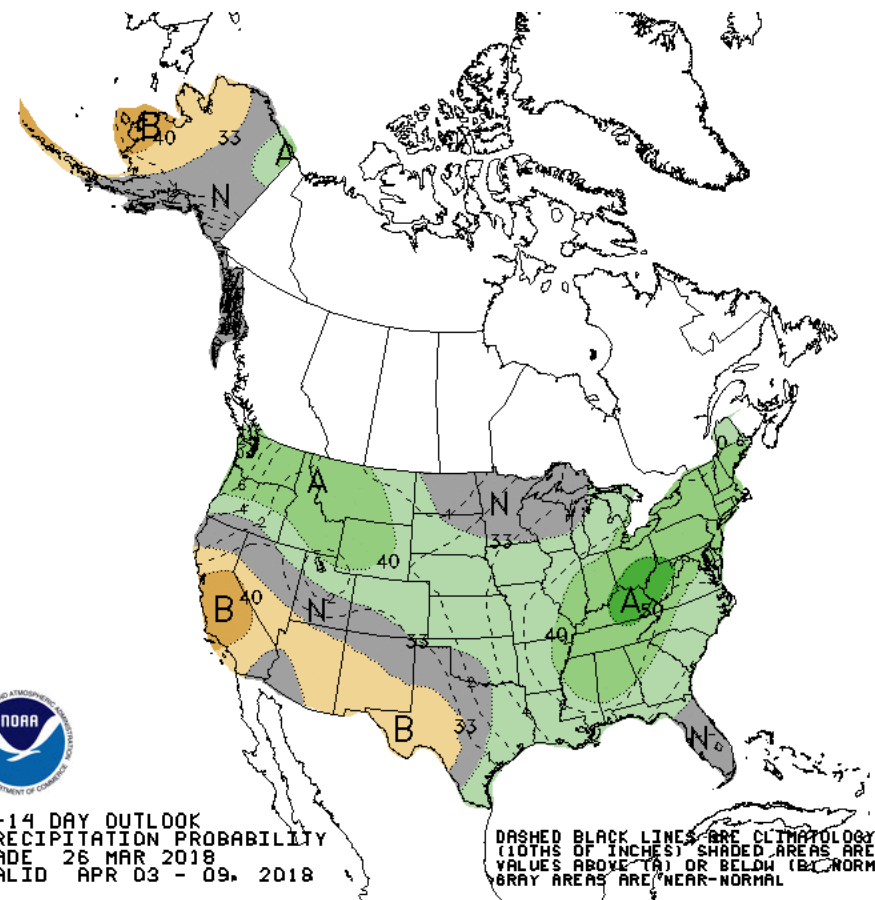
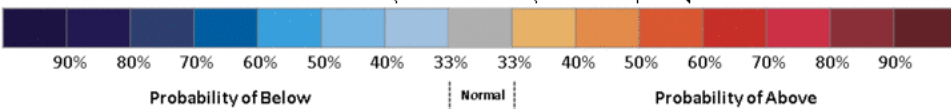
D+11 500 MB ANOMALIES FROM 06Z ENSM
CPC MAP MADE MAR 27 2018 1227 UTC CNTD APR 07 2018

Week 2 – Temperature and Precipitation



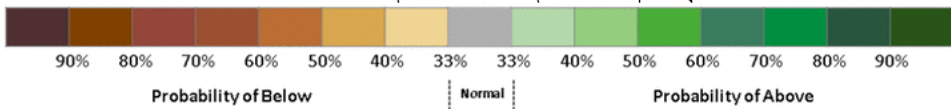
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 26 MAR 2018
VALID APR 03 - 09, 2018

DASHED BLACK LINES ARE CLIMATOLOGY (DEG F). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 26 MAR 2018
VALID APR 03 - 09, 2018

DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.

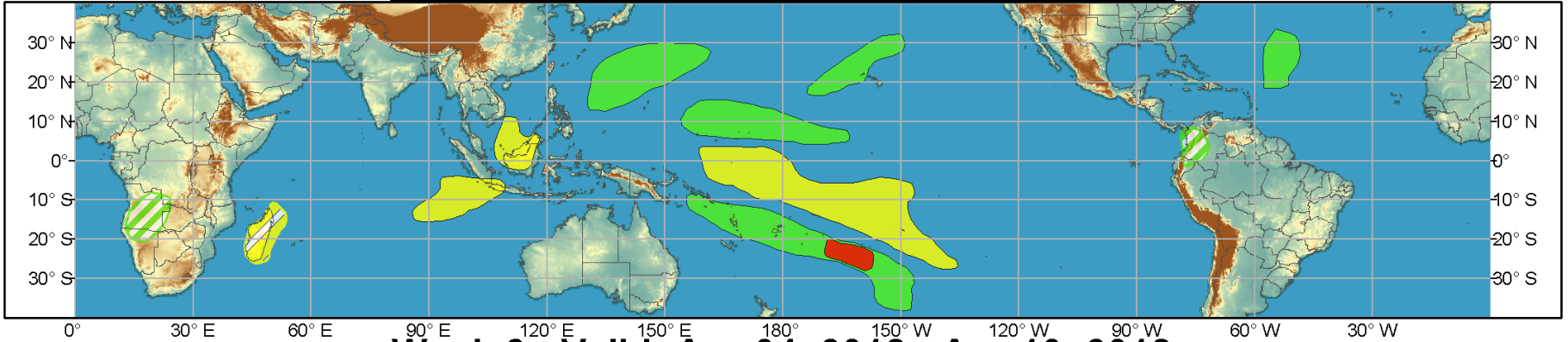




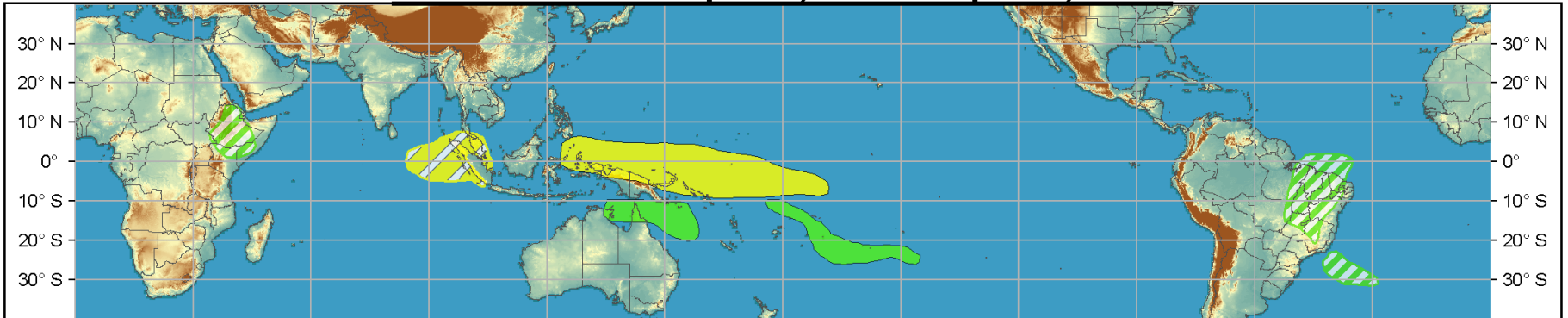
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