

Global Tropics Hazards And Benefits Outlook

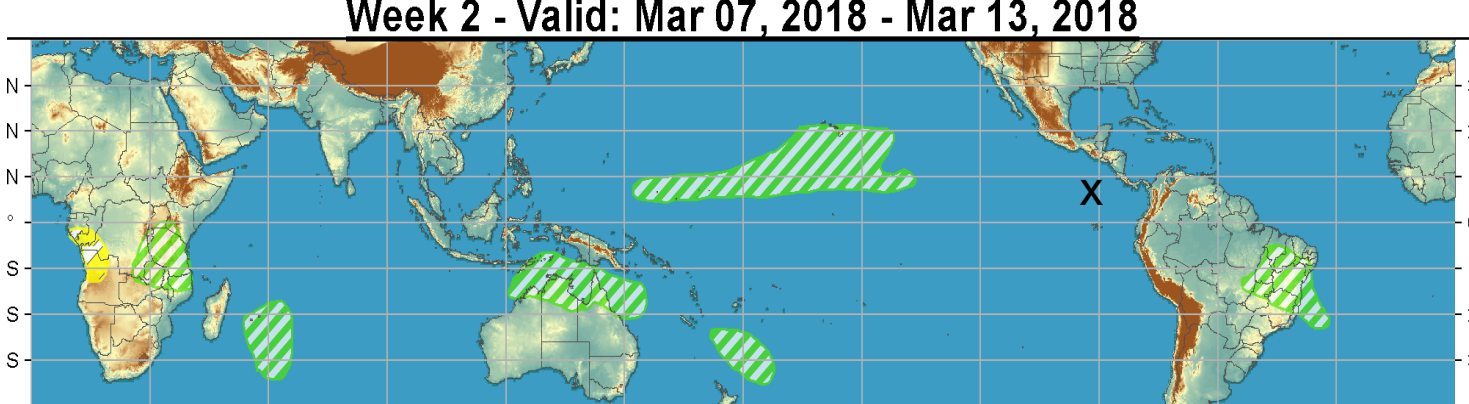
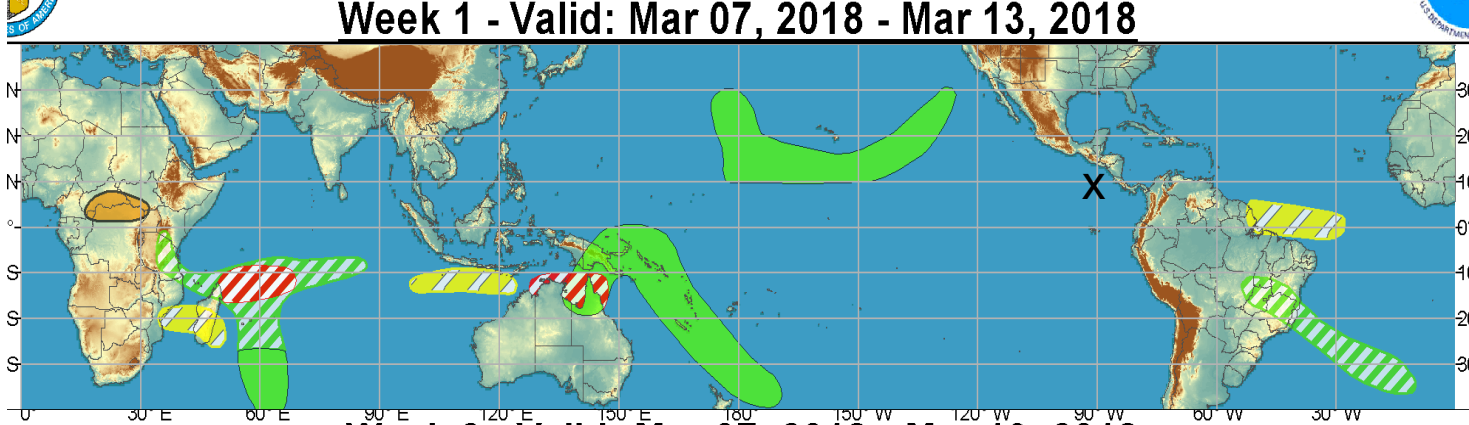
03/13/2018

Kyle MacRitchie

Outline

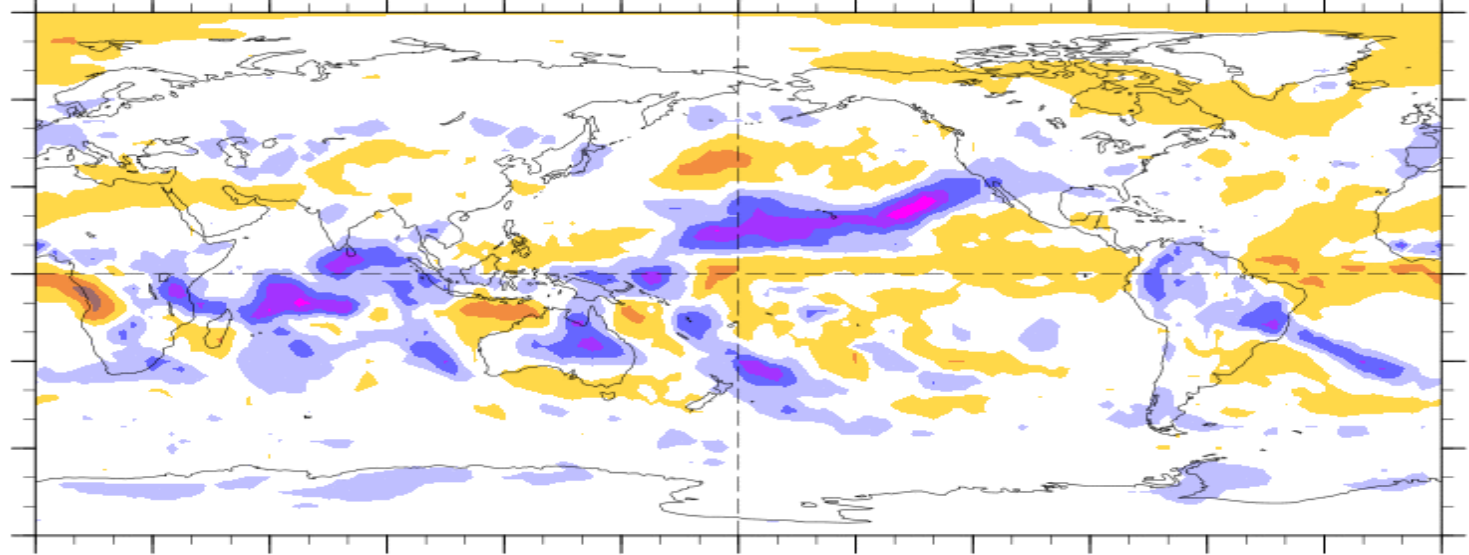
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review



7-Day Average OLR Anomaly

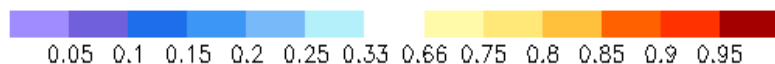
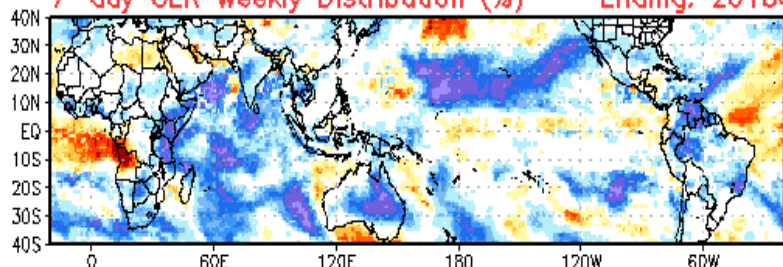
2018/03/05 - 2018/03/11



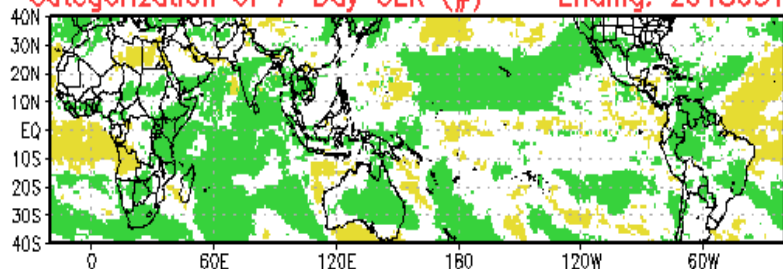
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

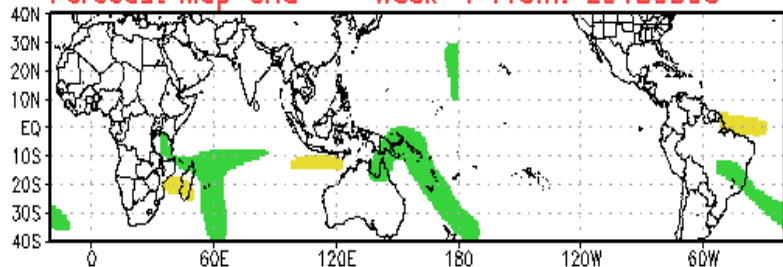
7-day OLR Weekly Distribution (%) -- Ending: 20180313



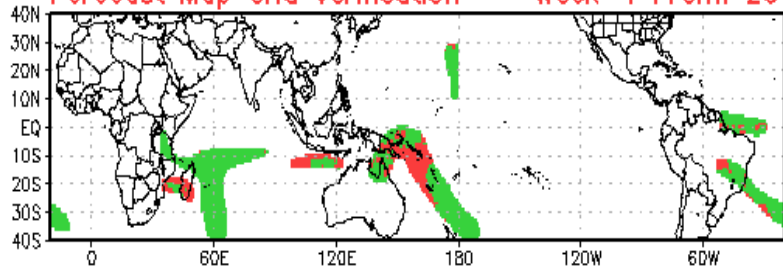
Categorization of 7-Day OLR (#) -- Ending: 20180313



Forecast Map Grid -- Week-1 From: 20180306

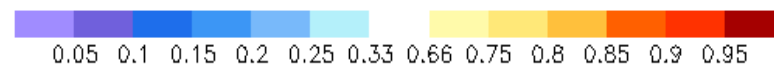
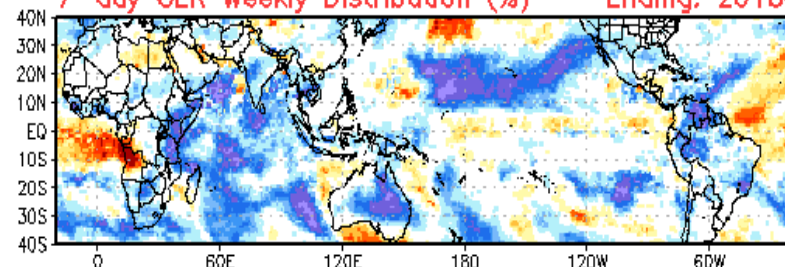


Forecast Map Grid Verification -- Week-1 From: 20180306

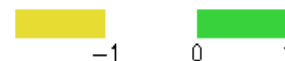
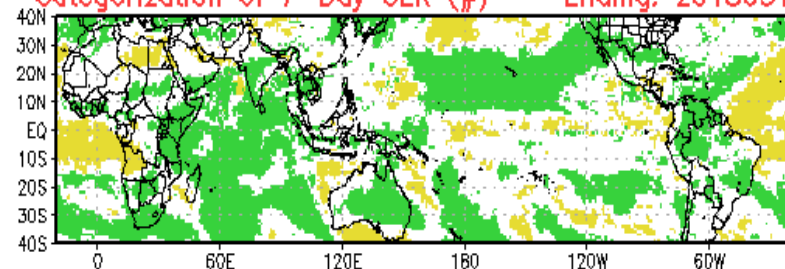


Hit: Green, Miss: Red
Heidke Skill Score: 65.1940

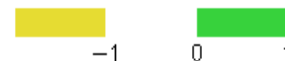
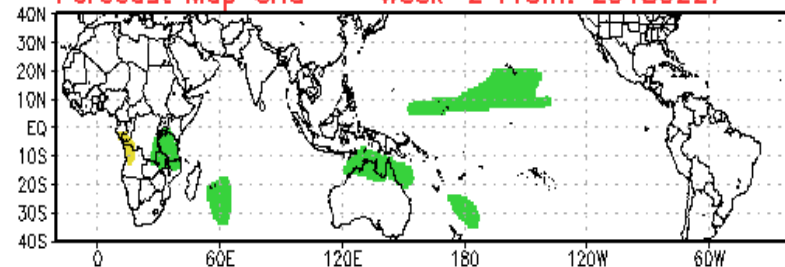
7-day OLR Weekly Distribution (%) -- Ending: 20180313



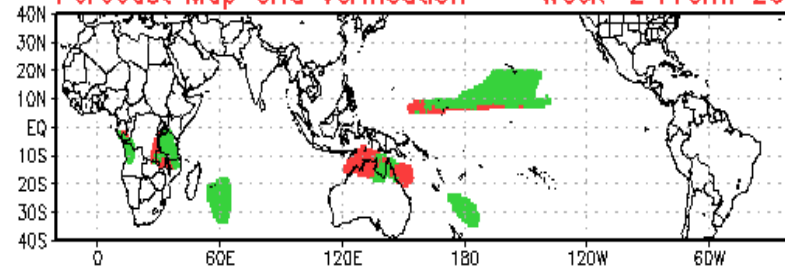
Categorization of 7-Day OLR (#) -- Ending: 20180313



Forecast Map Grid -- Week-2 From: 20180227



Forecast Map Grid Verification -- Week-2 From: 20180227



Hit: Green, Miss: Red
Heidke Skill Score: 61.4798

Synopsis of Climate Modes

ENSO:

- ENSO Alert System Status: [La Niña Advisory](#)
- March 8th Update: A transition from La Niña 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.

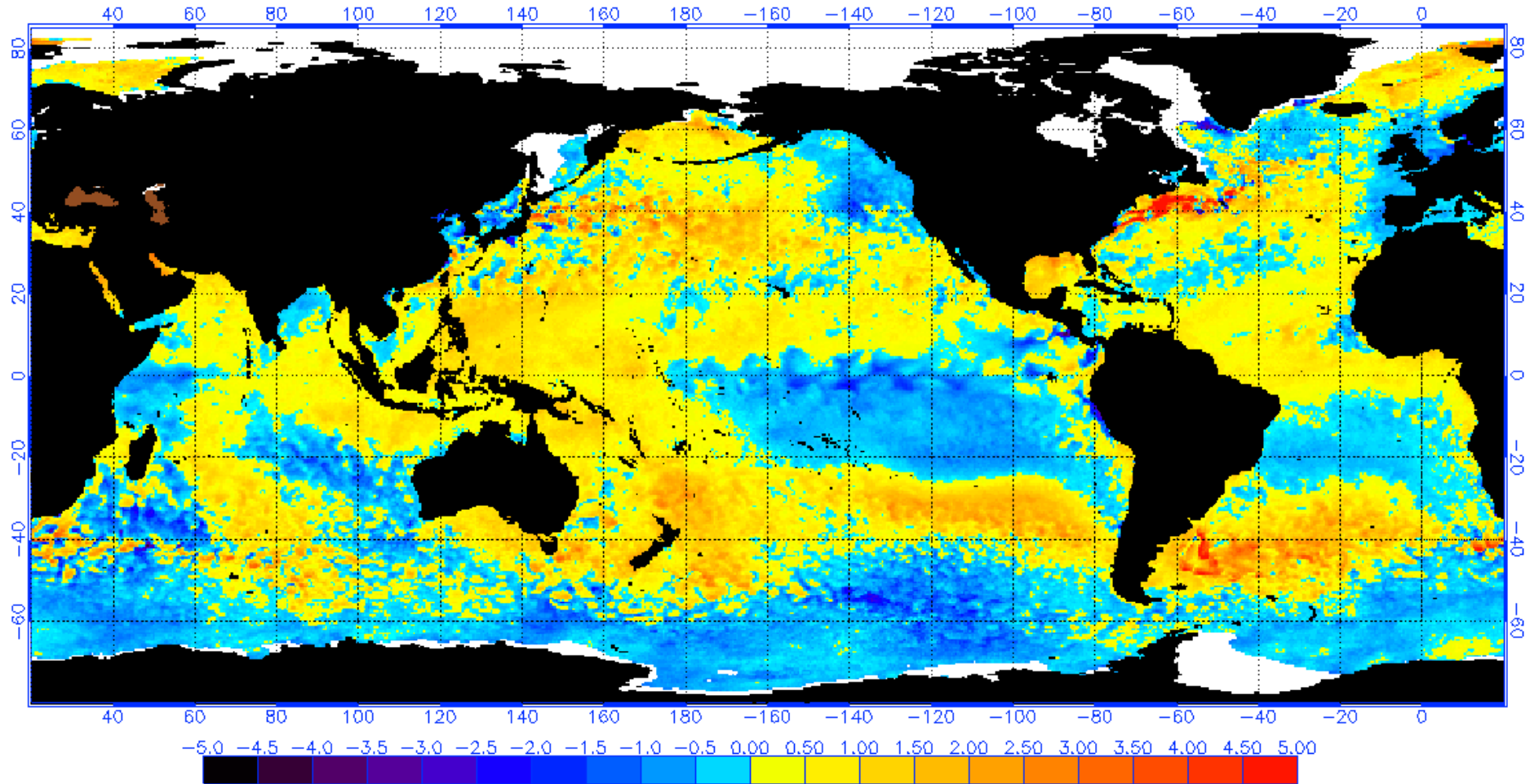
MJO and other subseasonal tropical variability:

- The MJO is over the Indian Ocean and has weakened to an RMM amplitude of ~1.
- Dynamical and statistical models continue to forecast a weakening MJO through the forecast period, but some models suggest it will re-emerge around the end of March.
- The MJO's OLR and wind fields remain stronger than the RMM index implies and contribute to the large-scale convection over the Indian Ocean.
- Equatorial Rossby wave activity over the Indian Ocean and Central Pacific is likely to continue. Some of the gyres associated with these waves may form into tropical cyclones.

Extratropics:

- The extratropical circulation is highly amplified and not driven primarily by the tropics. This is expected to continue as the MJO weakens.
- The NAO is near neutral and forecast to turn slightly negative over the forecast period. The AO is negative and forecast to stay negative but weaken.

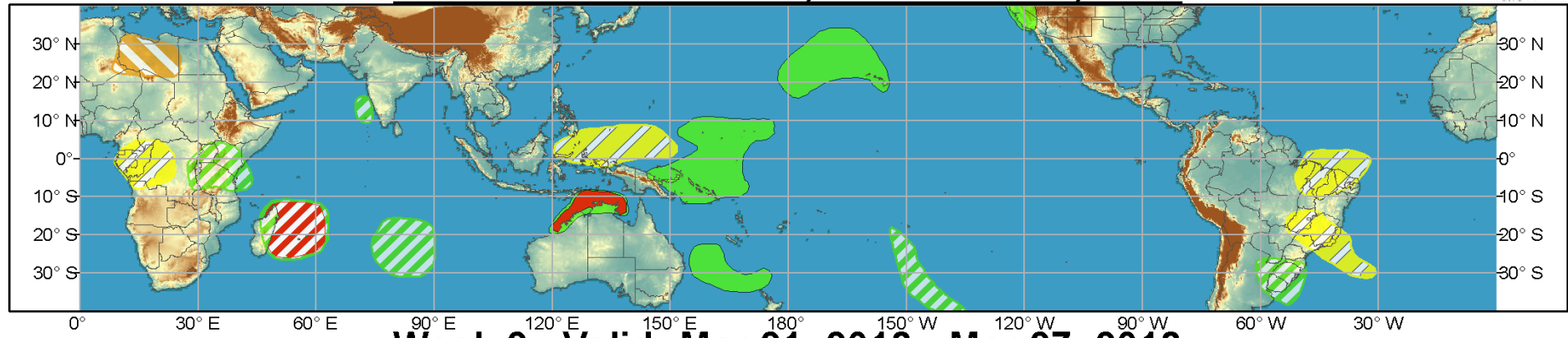
NOAA/NESDIS 50 KM GLOBAL ANALYSIS: SST Anomaly (degrees C), 3/12/2018
(white regions indicate sea-ice)



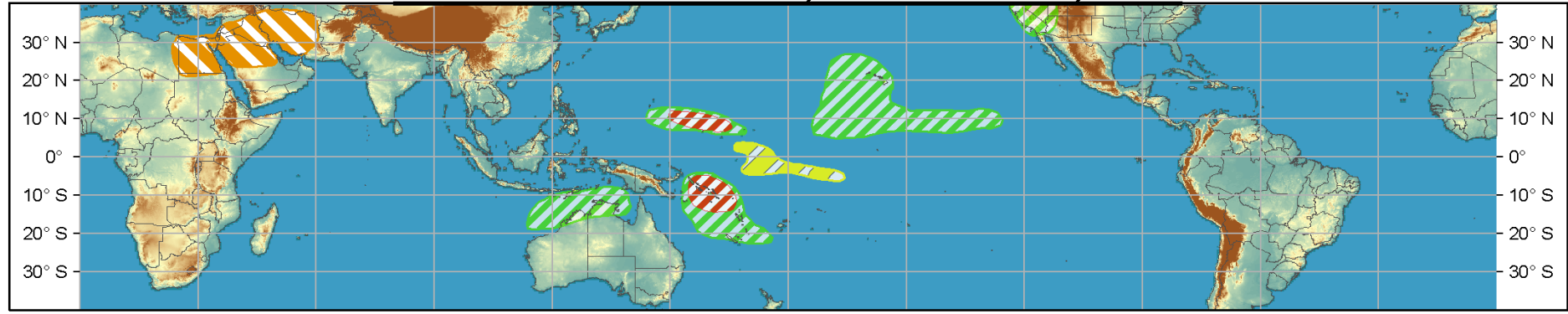


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 14, 2018 - Mar 20, 2018



Week 2 - Valid: Mar 21, 2018 - Mar 27, 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: 03/13/2018

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

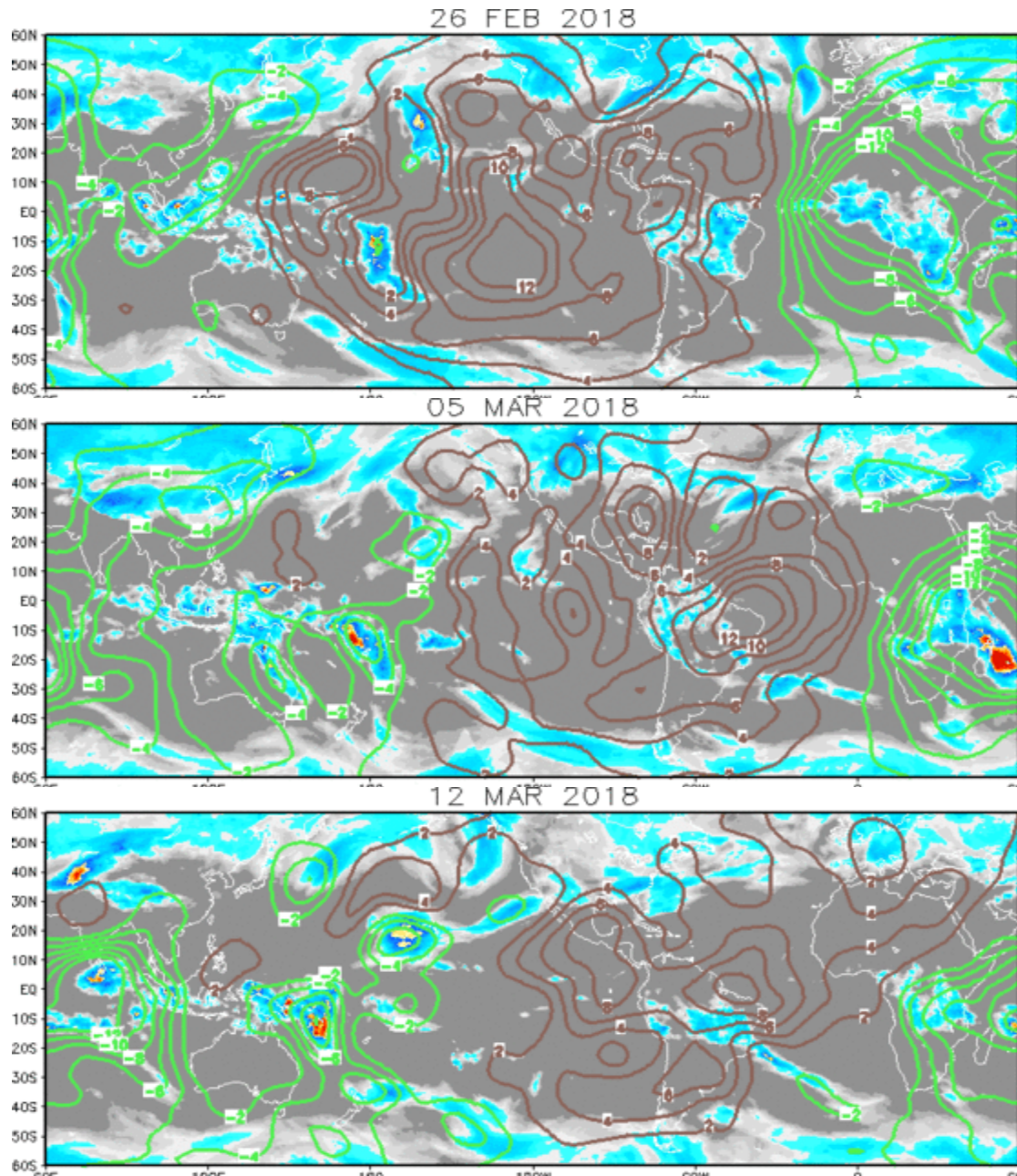
Green: Enhanced Divergence

Brown: Enhanced Convergence

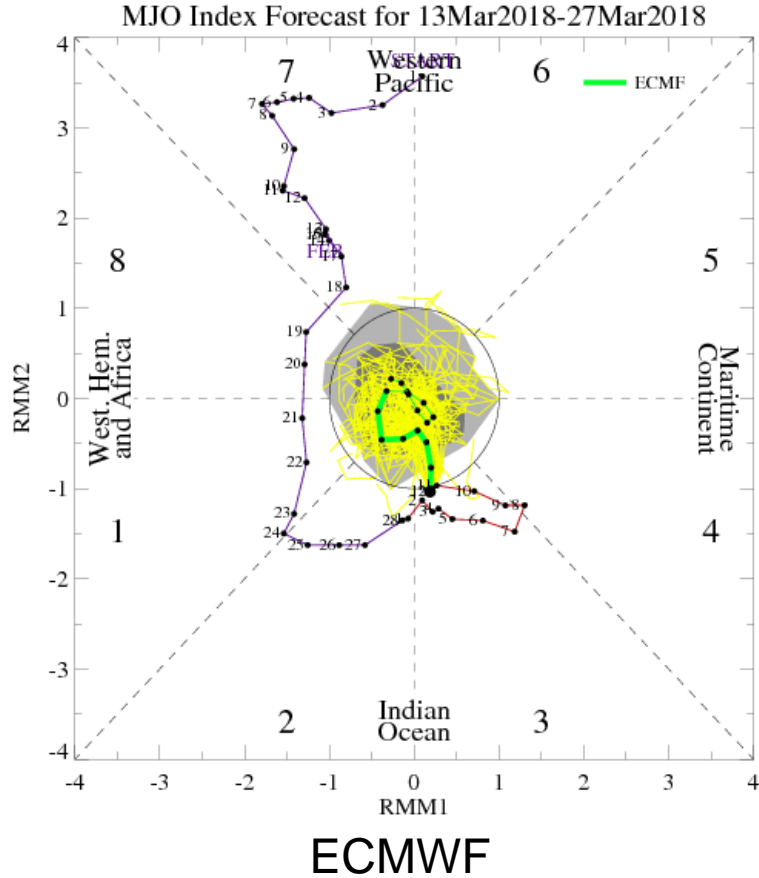
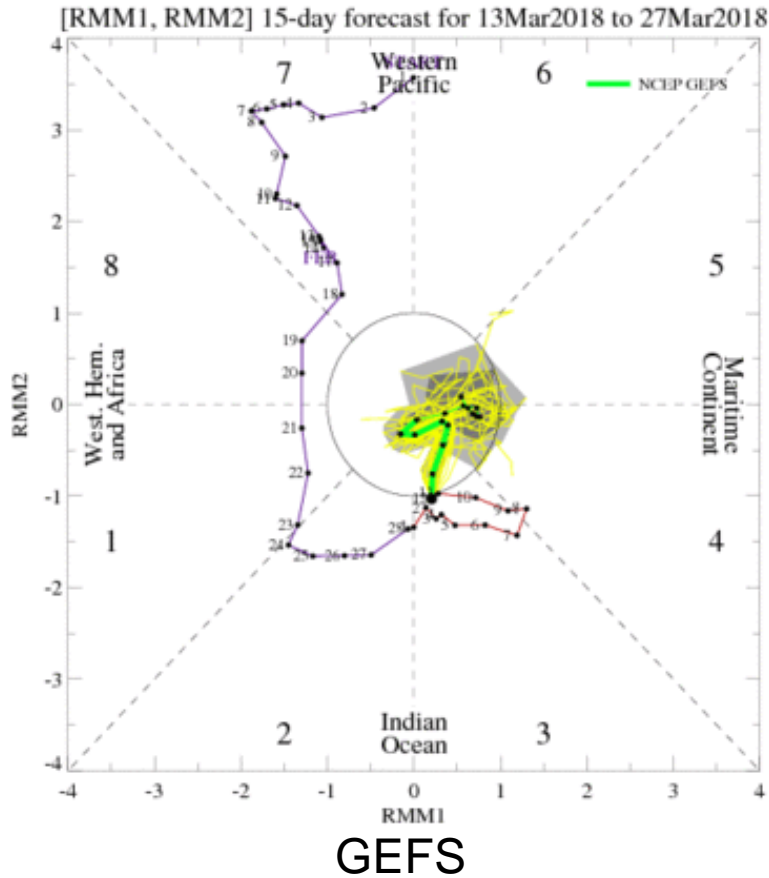
Generally suppressed convection over the Pacific and Americas; enhanced convection over Africa and the Indian Ocean.

Wave-1 pattern weakens along with the MJO but generally broad convection lingers over the Indian Ocean.

Wave-1 pattern continues to weaken. Large-scale convection over Indian Ocean and Maritime Continent driven by MJO and equatorial Rossby waves.

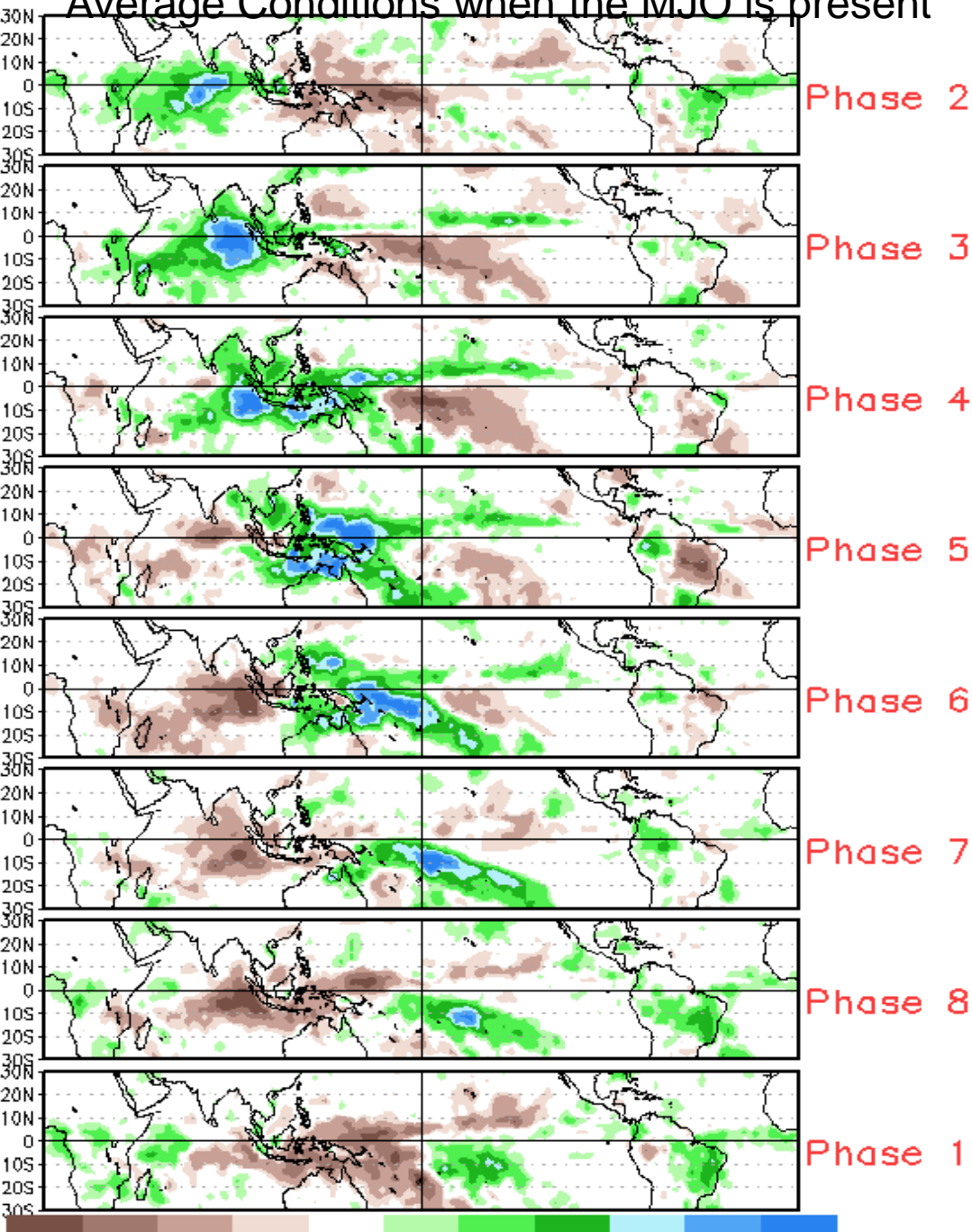


MJO Observation/Forecast

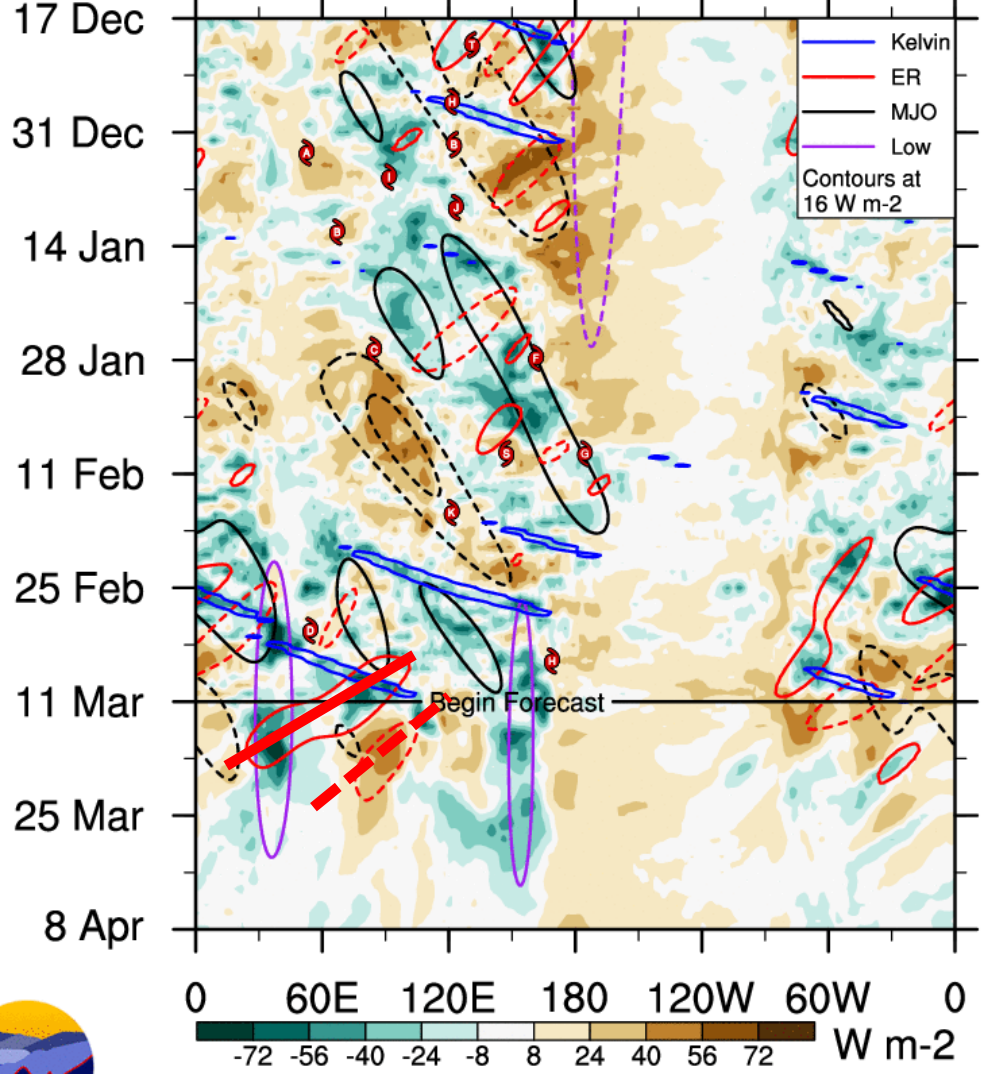


Wheeler-Hendon based analyses of model forecasts indicate a weakening MJO. GEFS suggests that it may strengthen again around the end of March.

Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.



— Kelvin
 — ER
 — MJO
 — Low
 Contours at
 16 W m⁻²

The **MJO** has weakened since early March.

Equatorial Rossby waves are over the Indian and Central Pacific oceans.

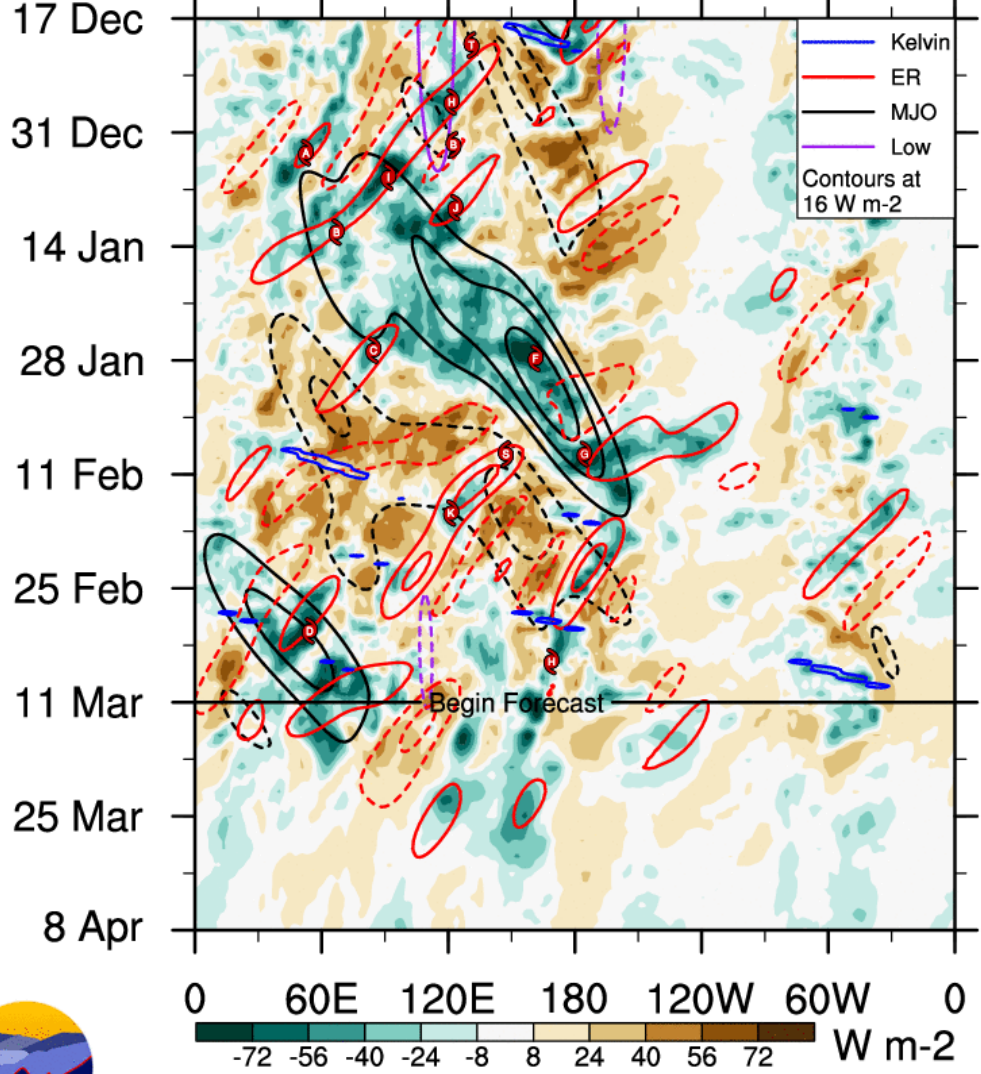
Low-frequency pattern is stationary.



ncics.org/mjo

Mon 2018-03-12 1547 UTC

Carl Schreck (cjschrec@ncsu.edu)



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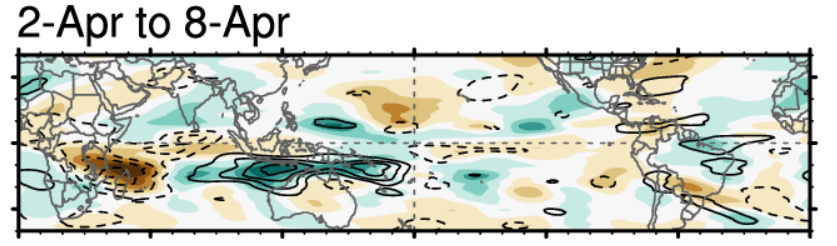
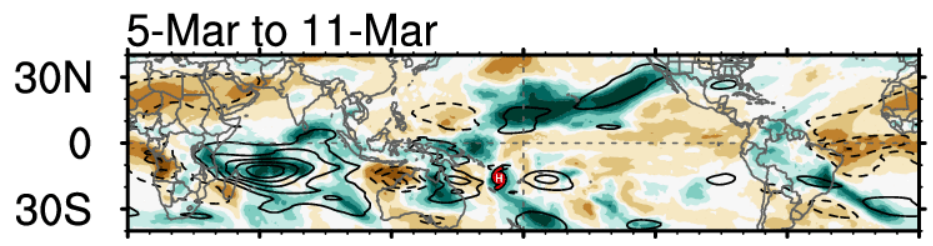
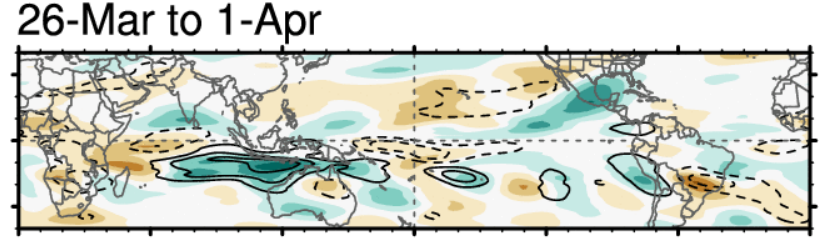
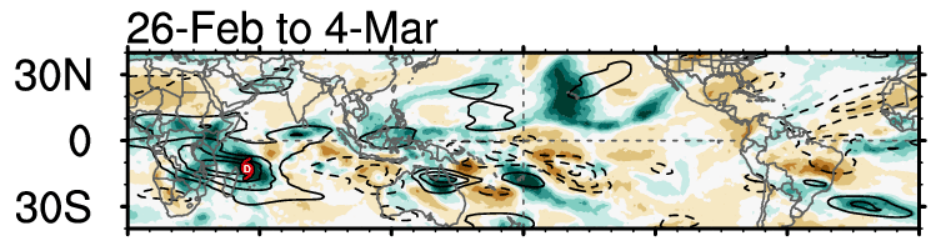
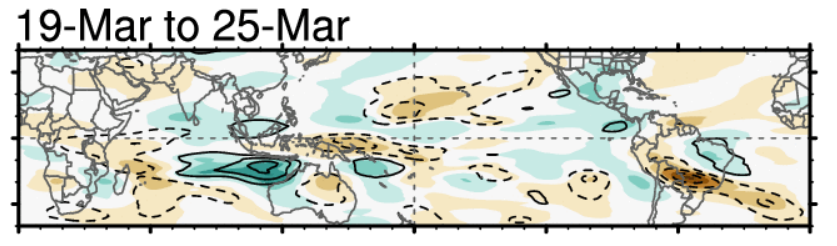
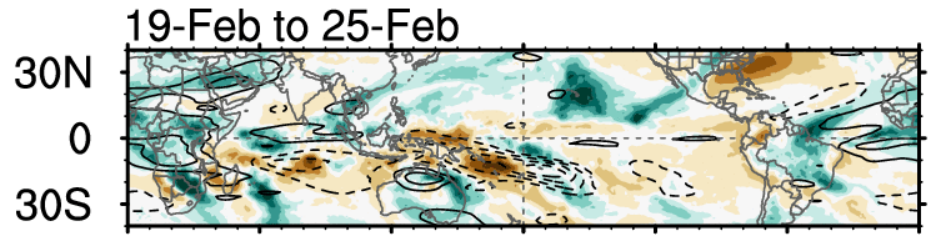
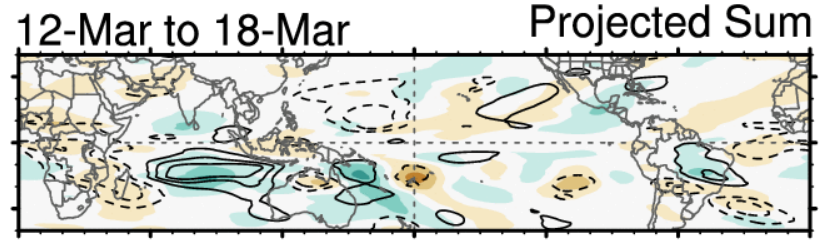
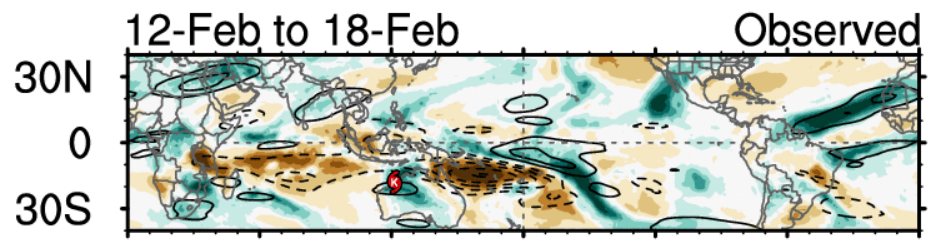
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ncics.org/mjo

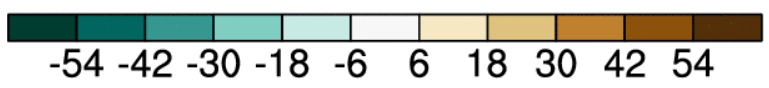
Mon 2018-03-12 1542 UTC

Carl Schreck (cjschrec@ncsu.edu)



0 60E 120E 180 120W 60W 0

0 60E 120E 180 120W 60W 0

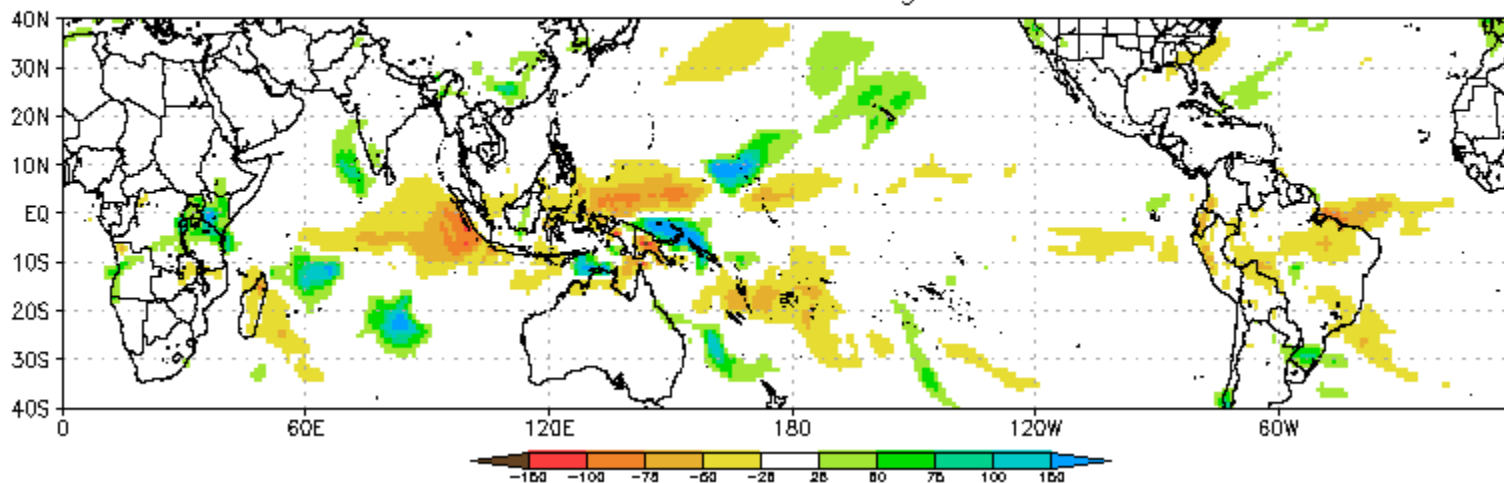


W m-2

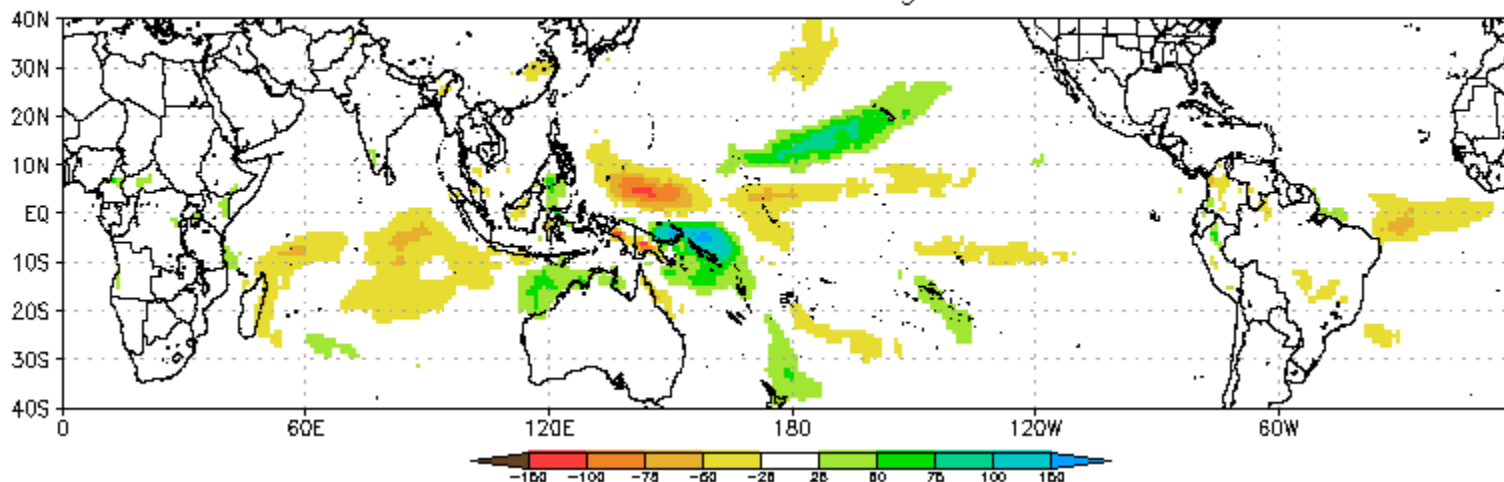
— MJO — Kelvin x2
 — Low — ER
 Contours every 12 W m-2

7-day OLR

CFS Precipitation Anomalies (mm) Issued 12Mar2018
Week-1 Forecast Ending 20Mar2018



CFS Precipitation Anomalies (mm) Issued 12Mar2018
Week-2 Forecast Ending 27Mar2018





JOINT TYPHOON WARNING CENTER



ABIO

ABPW

CPHC

(<http://www.prh.noaa.gov/cphc/>)

90B

99S

TC 13P
(LINDA)

IMAGE TIME: 13/1700Z
(PRODUCT OF JTWC/SATOPS)

LOW

TC formation unlikely within 24 hours

MEDIUM

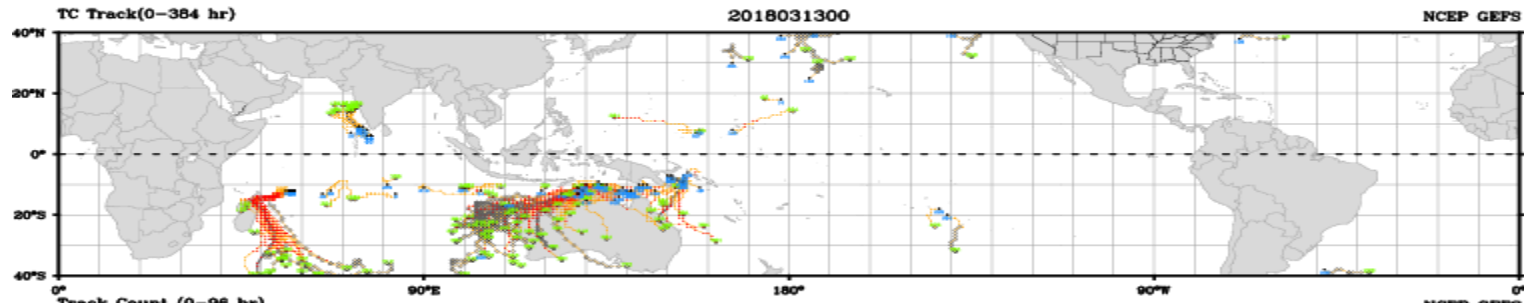
TC development likely, but expected to occur beyond 24 hours

HIGH

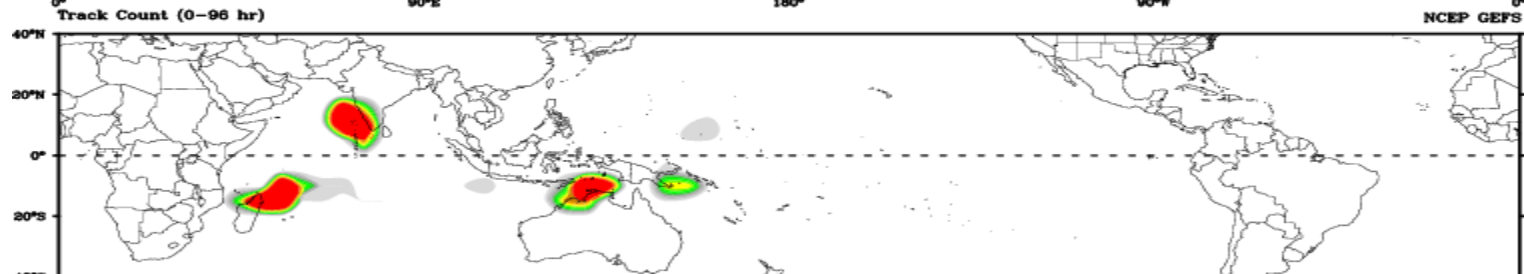
TC development likely within 24 hours (Reference TCFA)



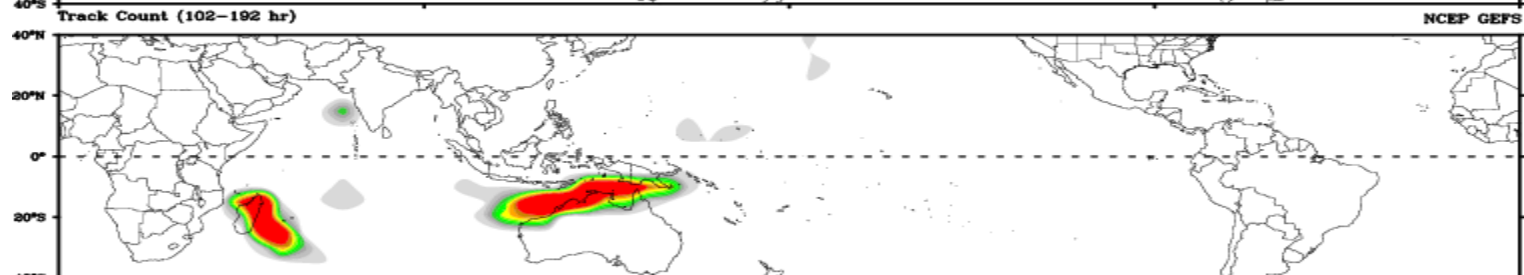
Tropical Cyclone (Reference Warning)



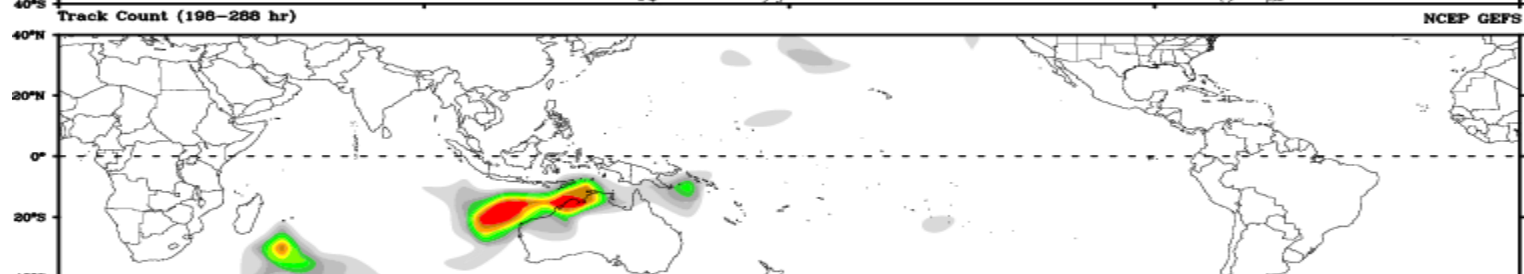
Days 1-4



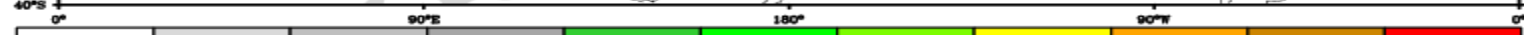
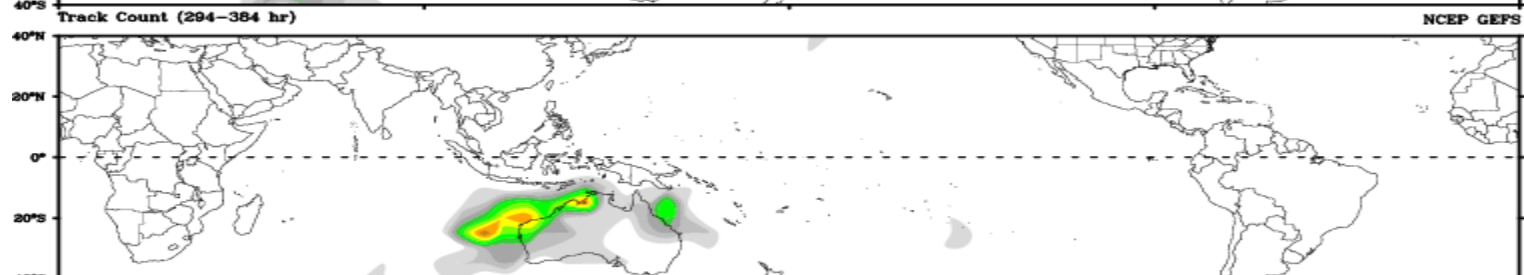
Day 5-8



Day 9-12

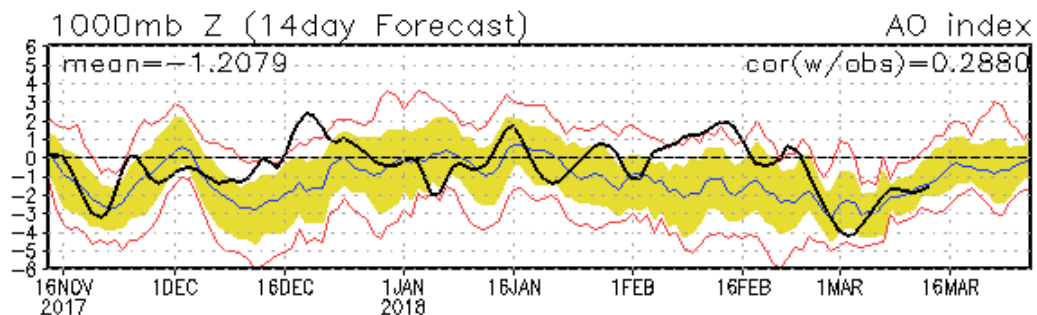
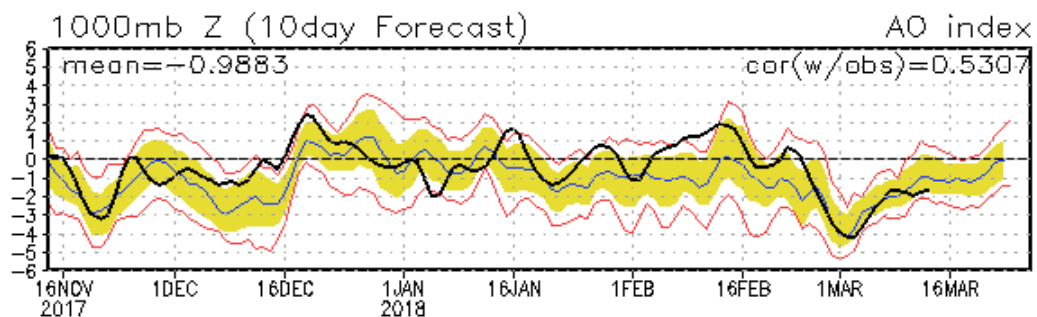
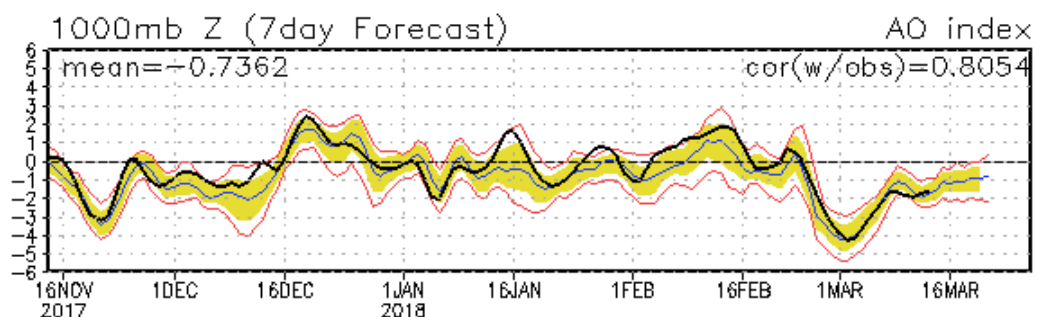
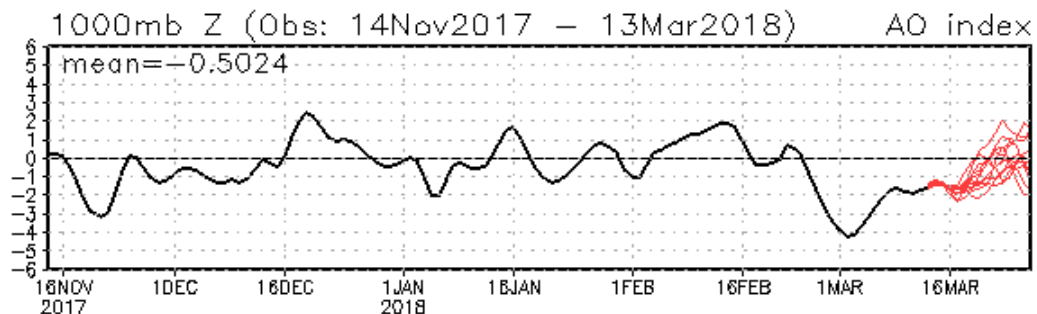


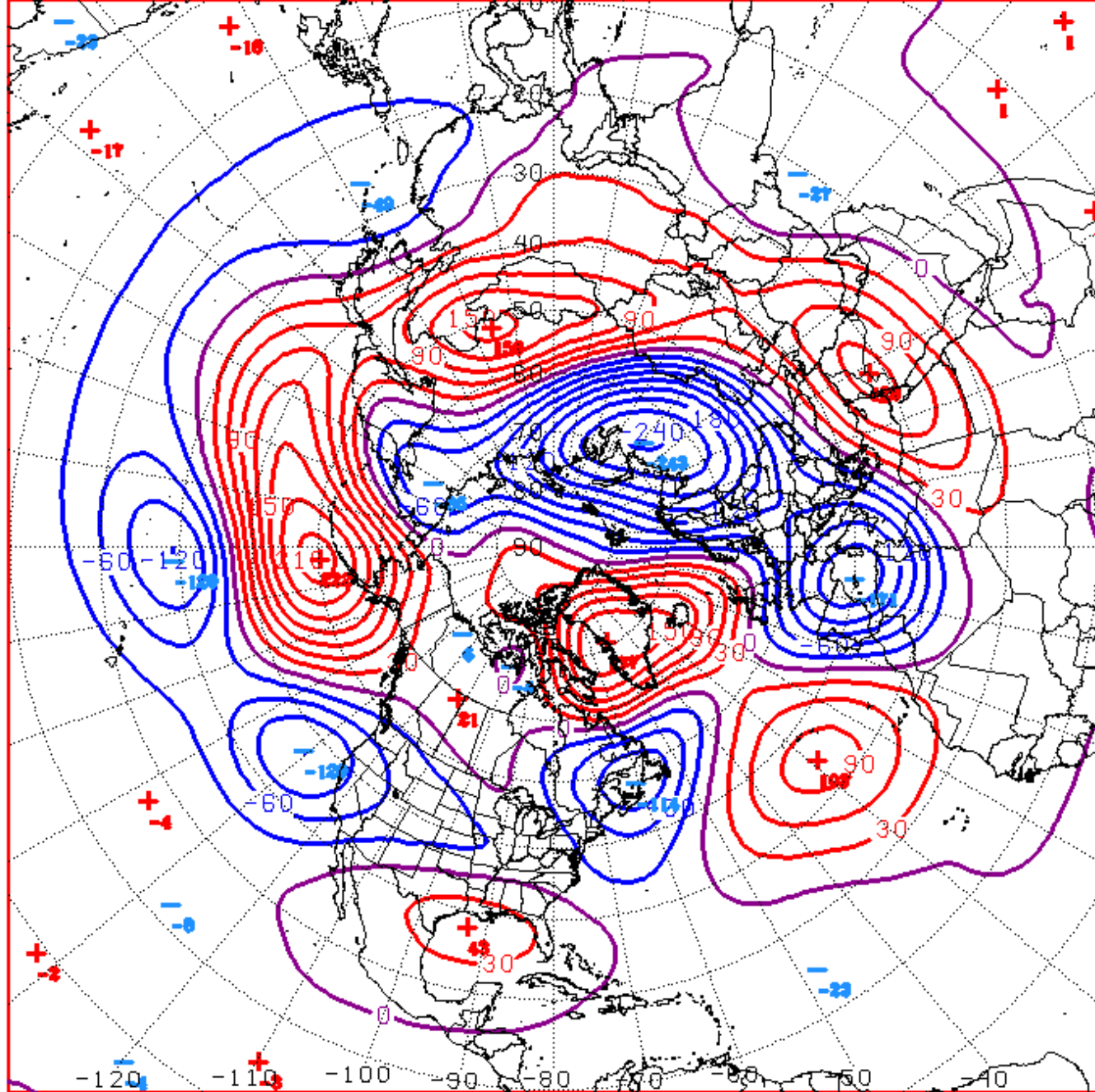
Day 13-15



Connections to U.S. Impacts

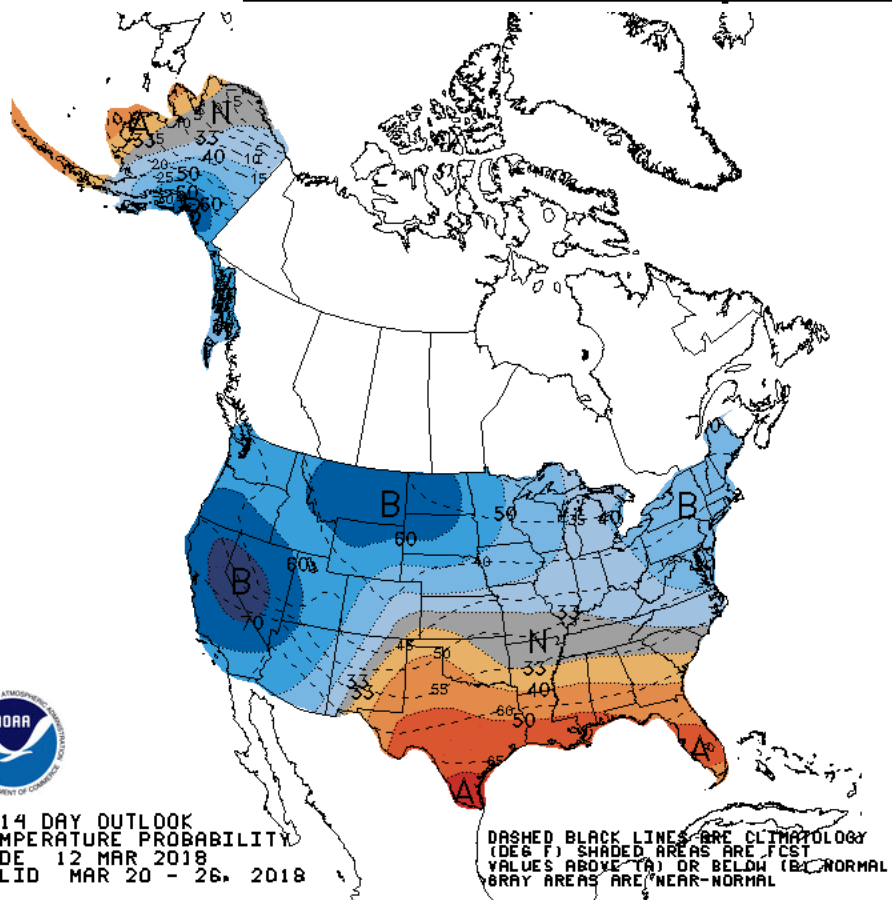
AO: Observed & ENSM forecasts





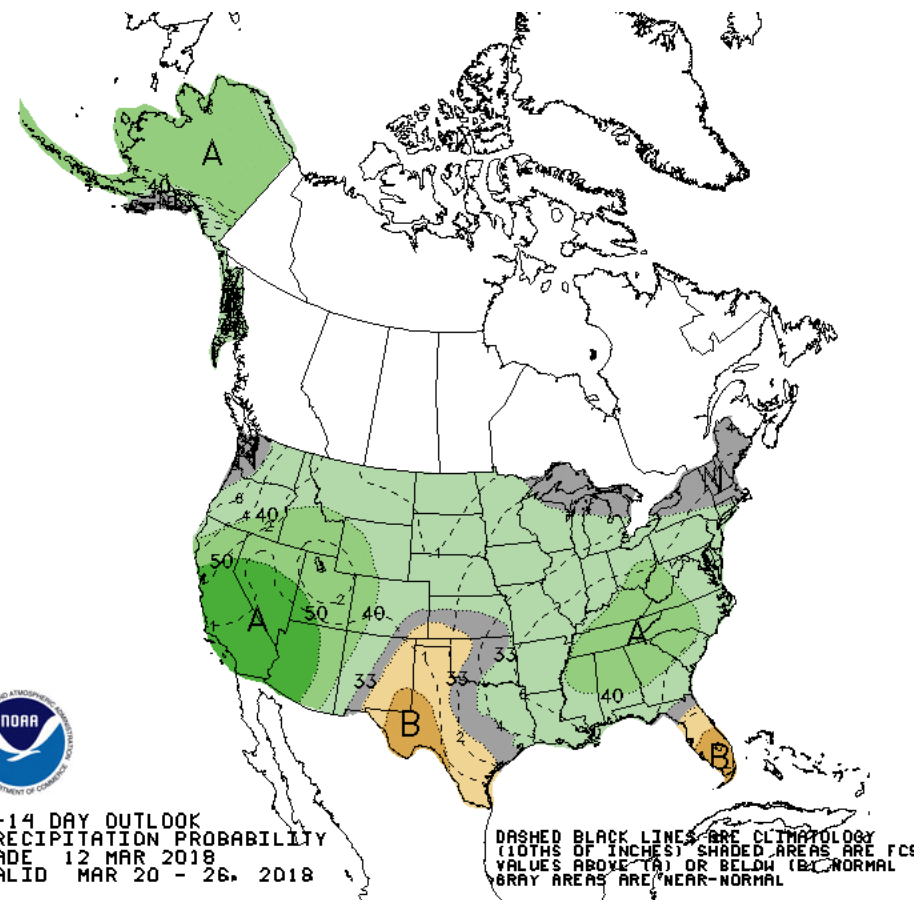
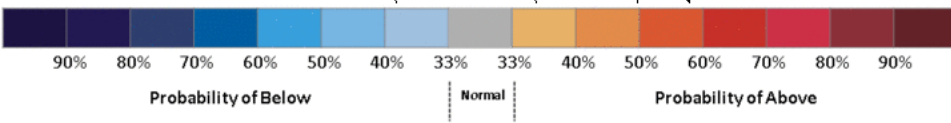
D+8 500 MB ANOMALIES FROM 06Z ENSM
 CPC MAP MADE MAR 13 2018 1153 UTC CNTD MAR 21 2018

Week 2 – Temperature and Precipitation



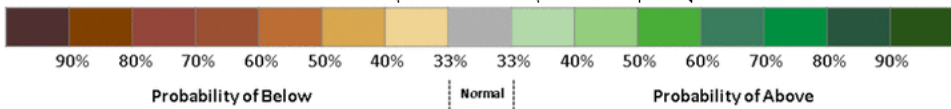
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 12 MAR 2018
VALID MAR 20 - 26, 2018

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 12 MAR 2018
VALID MAR 20 - 26, 2018

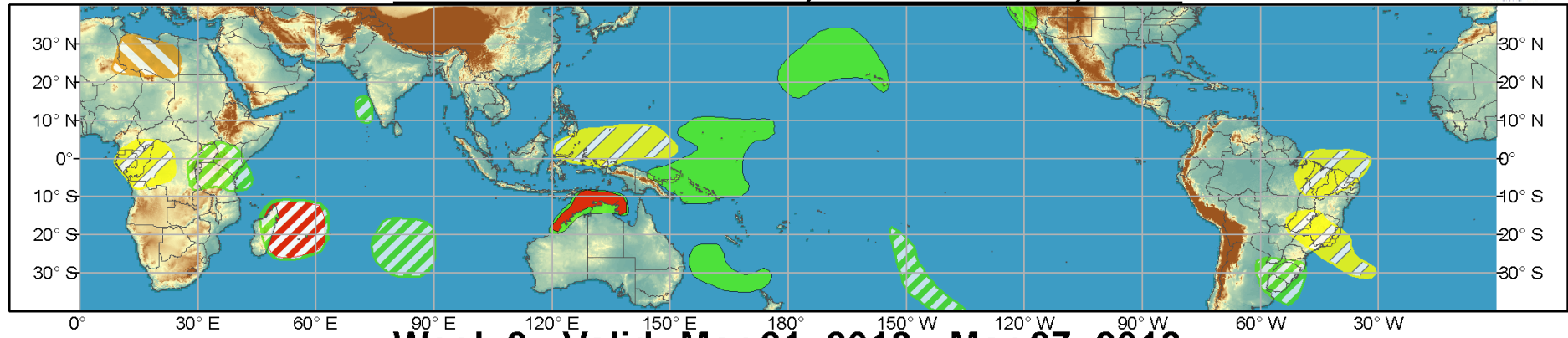
DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



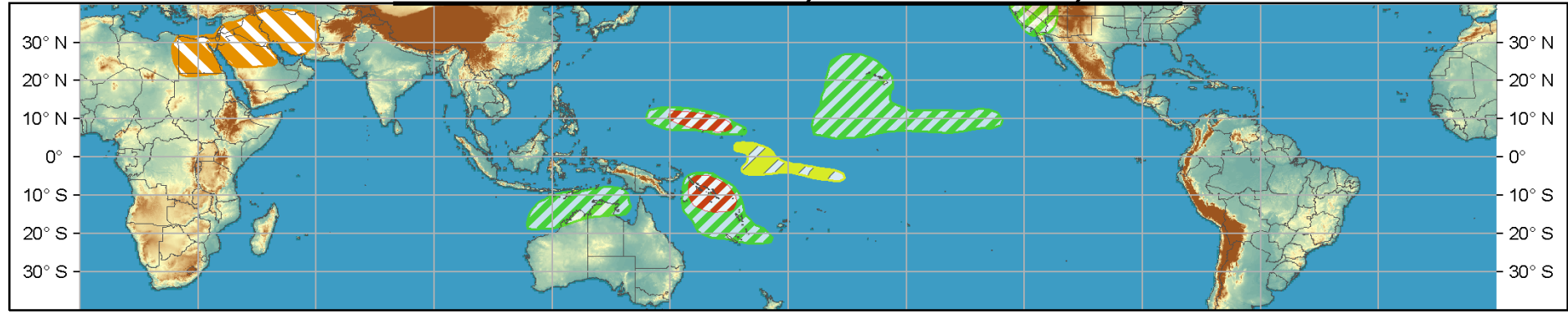


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