Global Tropics Hazards And Benefits Outlook

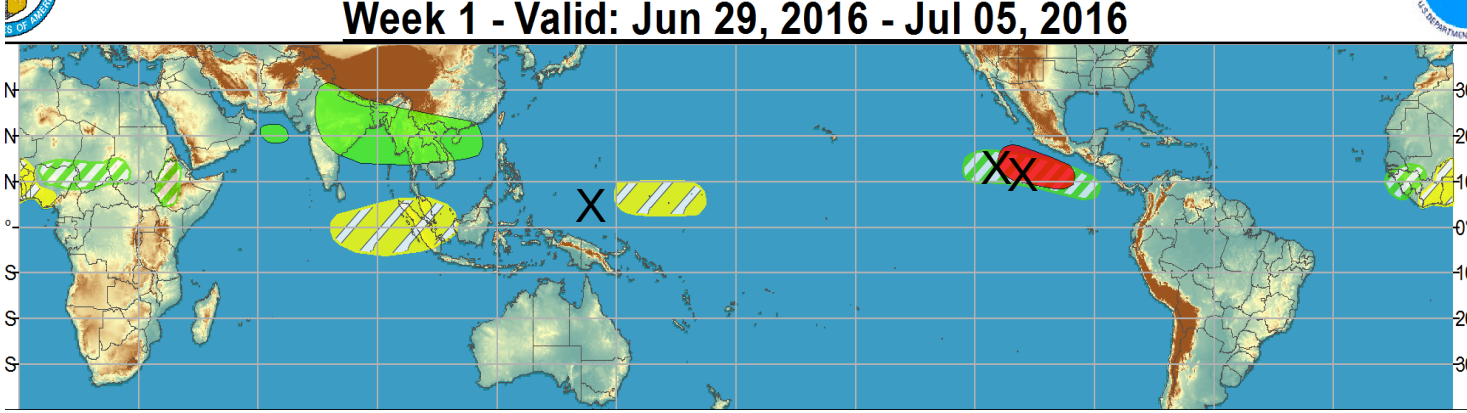
July 5, 2016

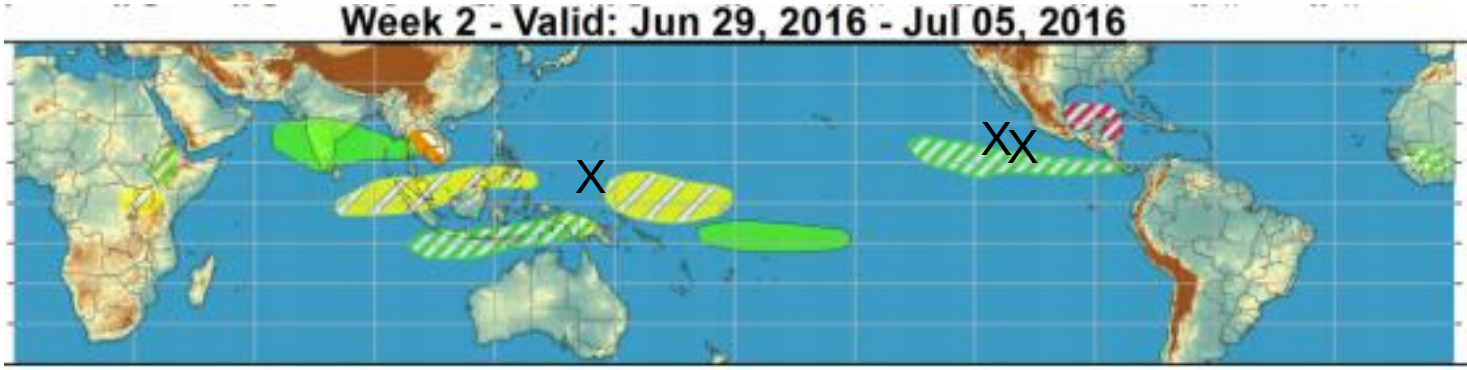
Dan Harnos

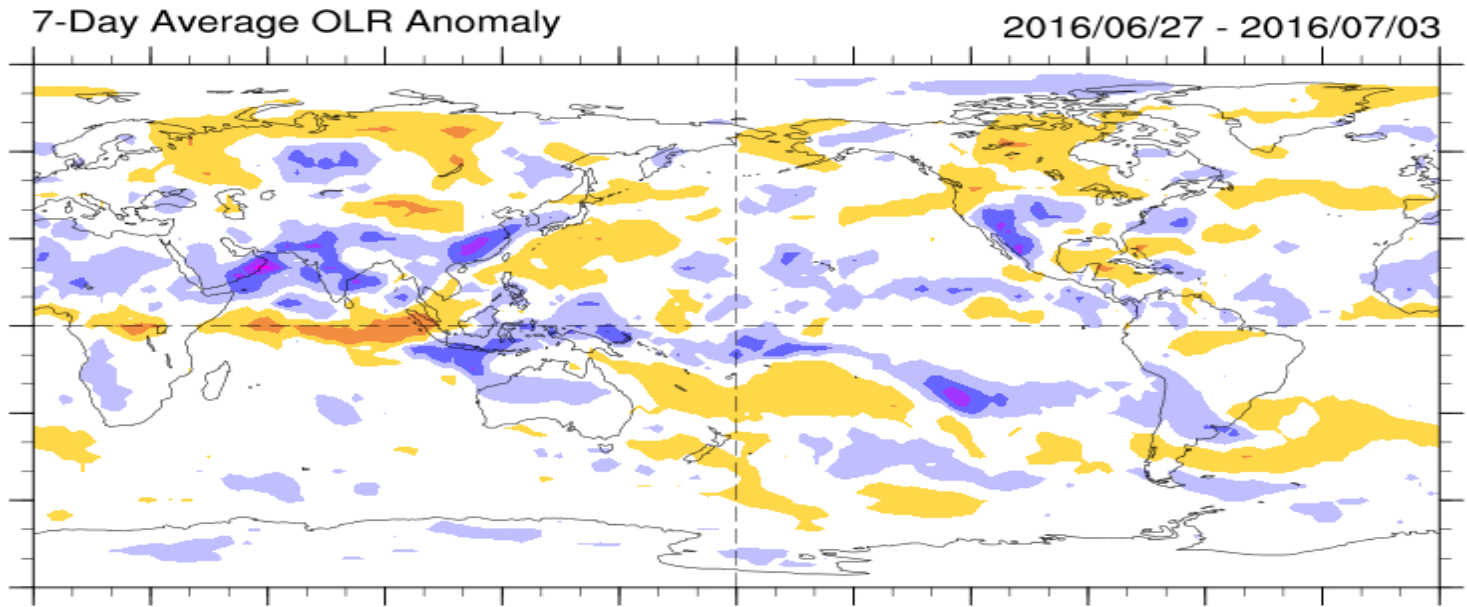
Outline

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

Outlook Review



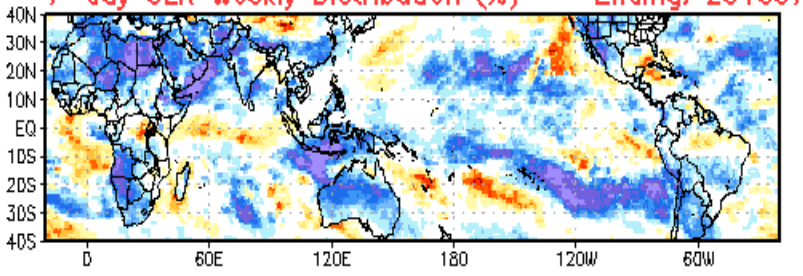




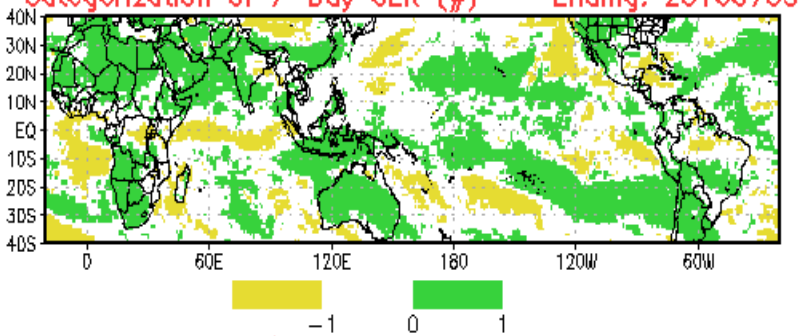
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

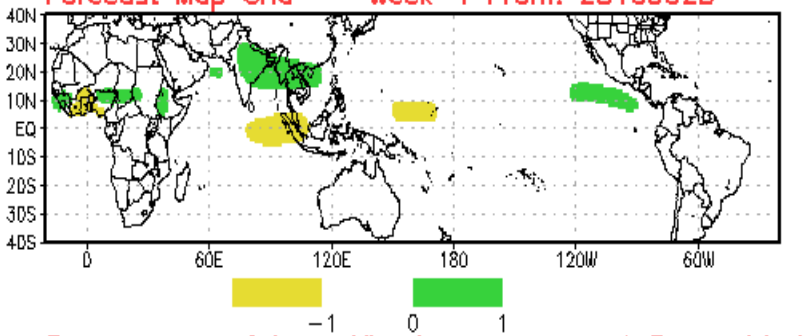
7-day OLR Weekly Distribution (%) -- Ending: 20160705



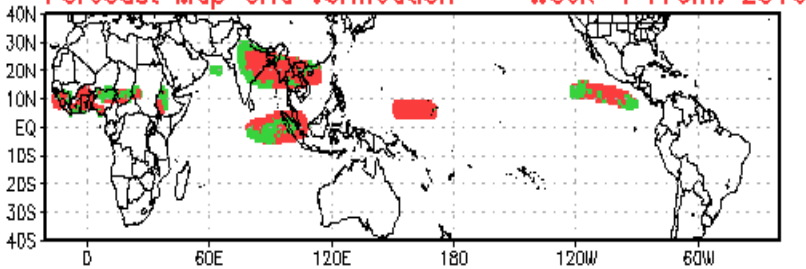
Categorization of 7-Day OLR (#) -- Ending: 20160705



Forecast Map Grid -- Week-1 From: 20160628

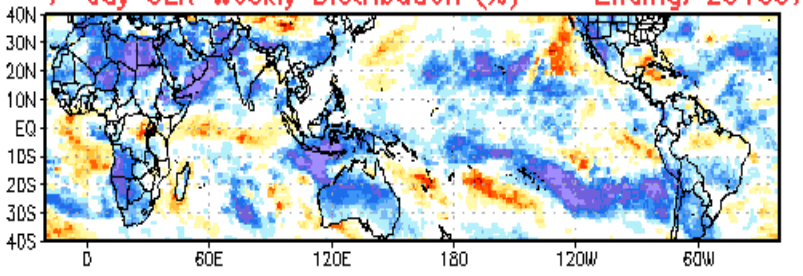


Forecast Map Grid Verification -- Week-1 From: 20160628



Hit: Green, Miss: Red
Heidke Skill Score: 4.0690

7-day OLR Weekly Distribution (%) -- Ending: 20160705



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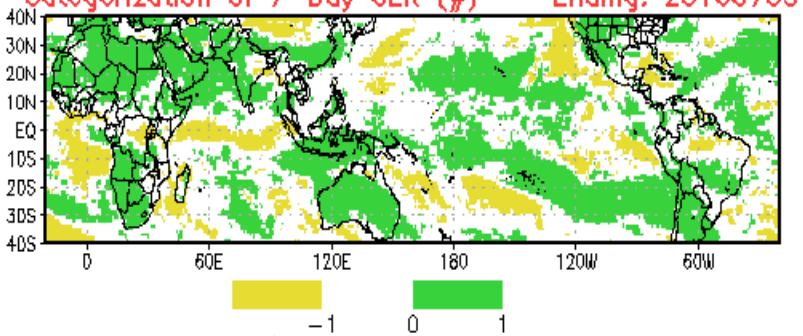
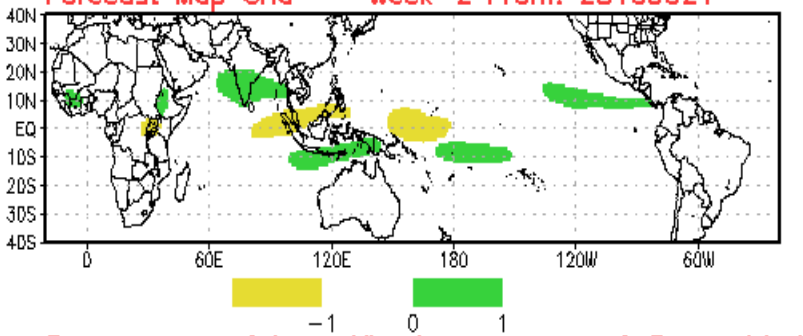
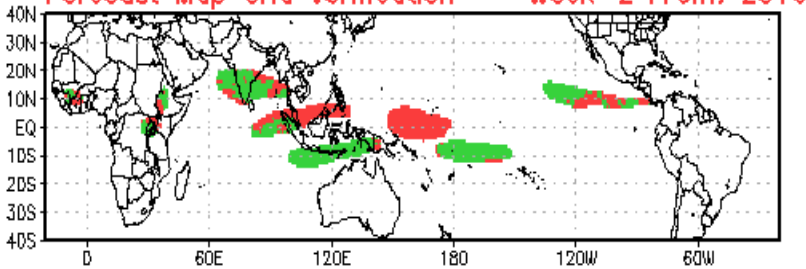


Forecast Map Grid -- Week-2 From: 20160621



Forecast Map Grid Verification -- Week-2 From: 20160621



Hit: Green, Miss: Red
Heidke Skill Score: 33.8604

Synopsis of Climate Modes

ENSO:

• La Niña Watch in effect as of 14 April 2016.

• ENSO-neutral conditions are present and La Niña is favored to develop during the Northern Hemisphere summer 2016, with about a 75% chance of La Niña during the fall and winter 2016-17.

MJO and other subseasonal tropical variability:

• Weak MJO indicated by RMM index, OLR, and low-level wind fields. Robust MJO over East Pacific indicated by upper-level velocity potential. Kelvin wave also analyzed across East Pacific in upper-level velocity potential fields.

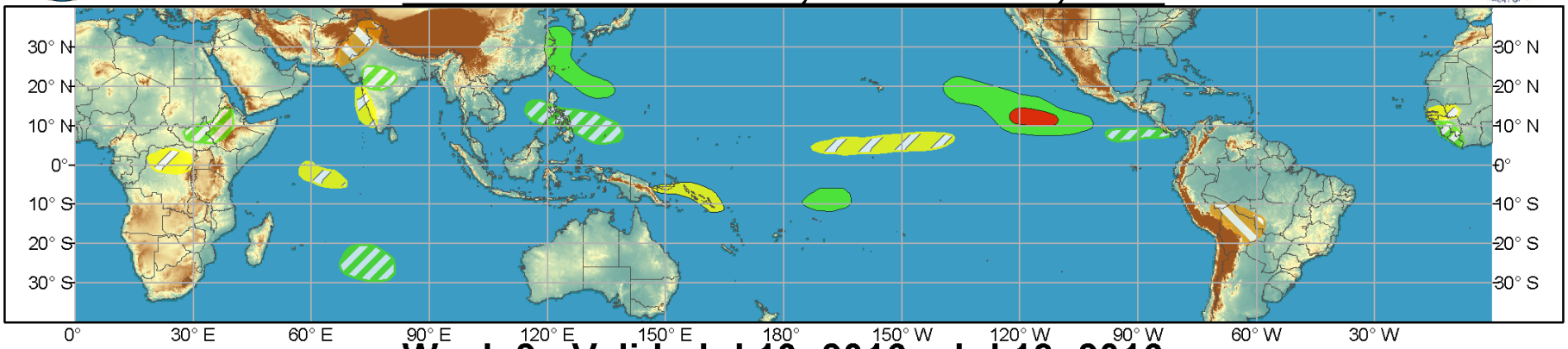
• Dynamical models indicate continued weakness in MJO index values for next two weeks, but indicated a similar pattern with May's MJO event where velocity potential showed continuation of the MJO signal before MJO re-emergence over Indian Ocean 1-2 weeks later.

Extratropics:

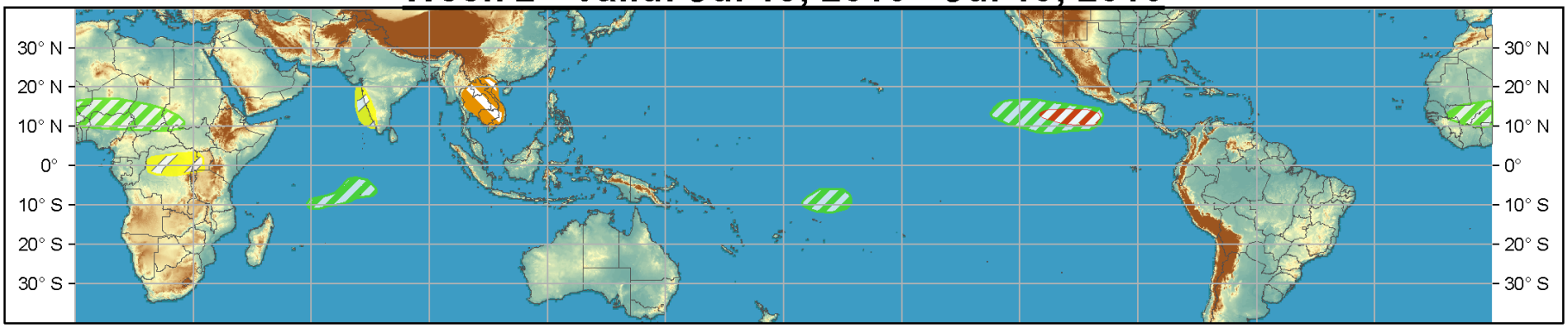
• Teleconnection impacts are expected to be limited to tropical cyclone influences. Of particular concern is potential for recurvature of Cat. 4 Typhoon Nepartak in West Pacific.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jul 06, 2016 - Jul 12, 2016



Week 2 - Valid: Jul 13, 2016 - Jul 19, 2016



Produced: 07/05/2016

Forecaster: D.Harnos

	Confidence: High	Confidence: 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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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.

中央氣象局 Central Weather Bureau

UNIVERSITY AT ALBANY State University of New York

EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

cics.nc

NPS PRAESTANTIA PER SCIENTIAM

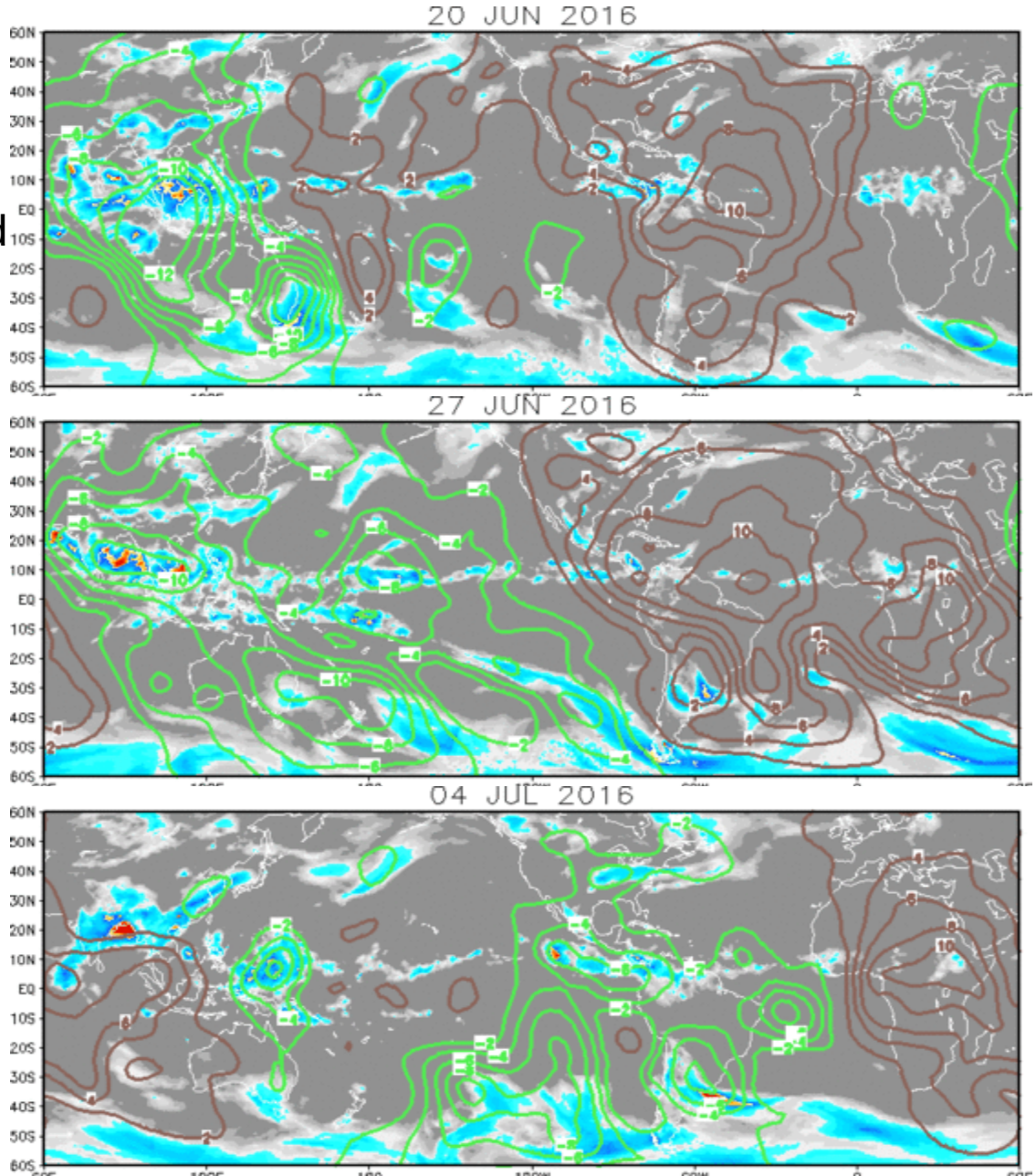
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

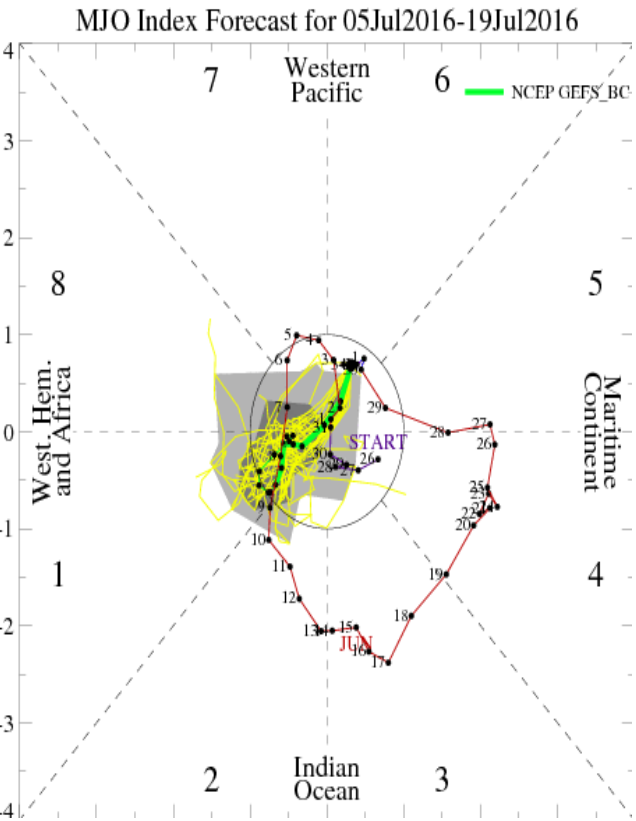
Wave-1 pattern with upper-level divergence over Indian Ocean and Maritime Continent.

Eastward propagation of pattern from prior week.

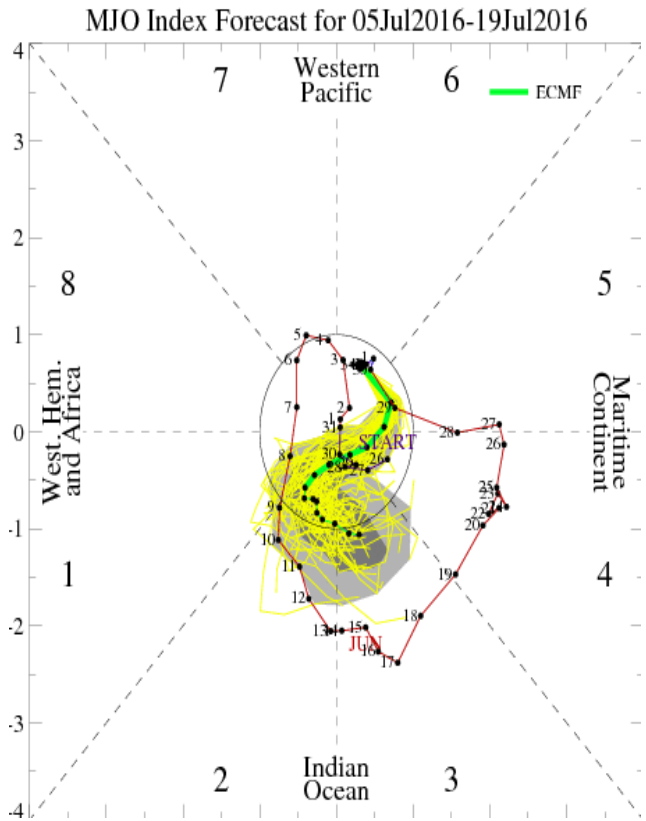
Continued propagation with upper-level divergence over Americas.



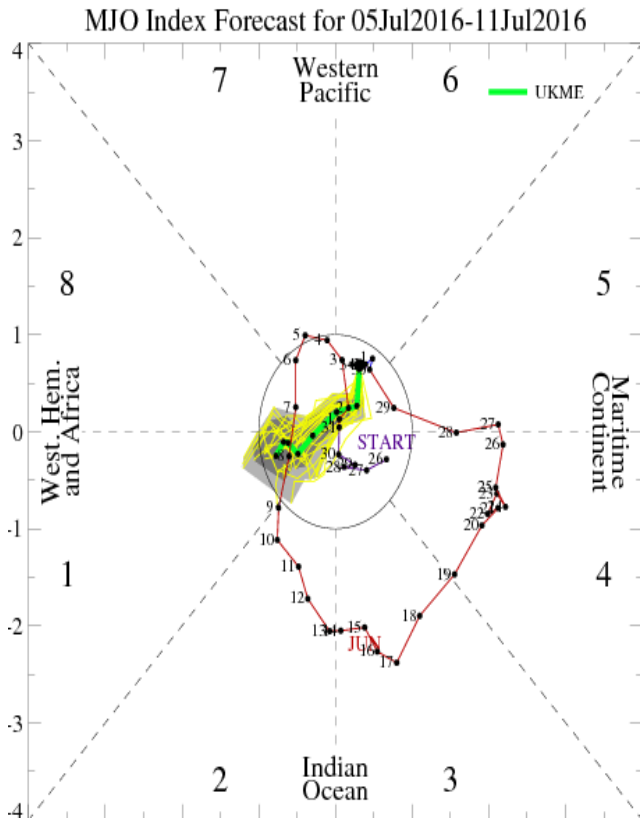
MJO Observation/Forecast



GEFS



ECMWF

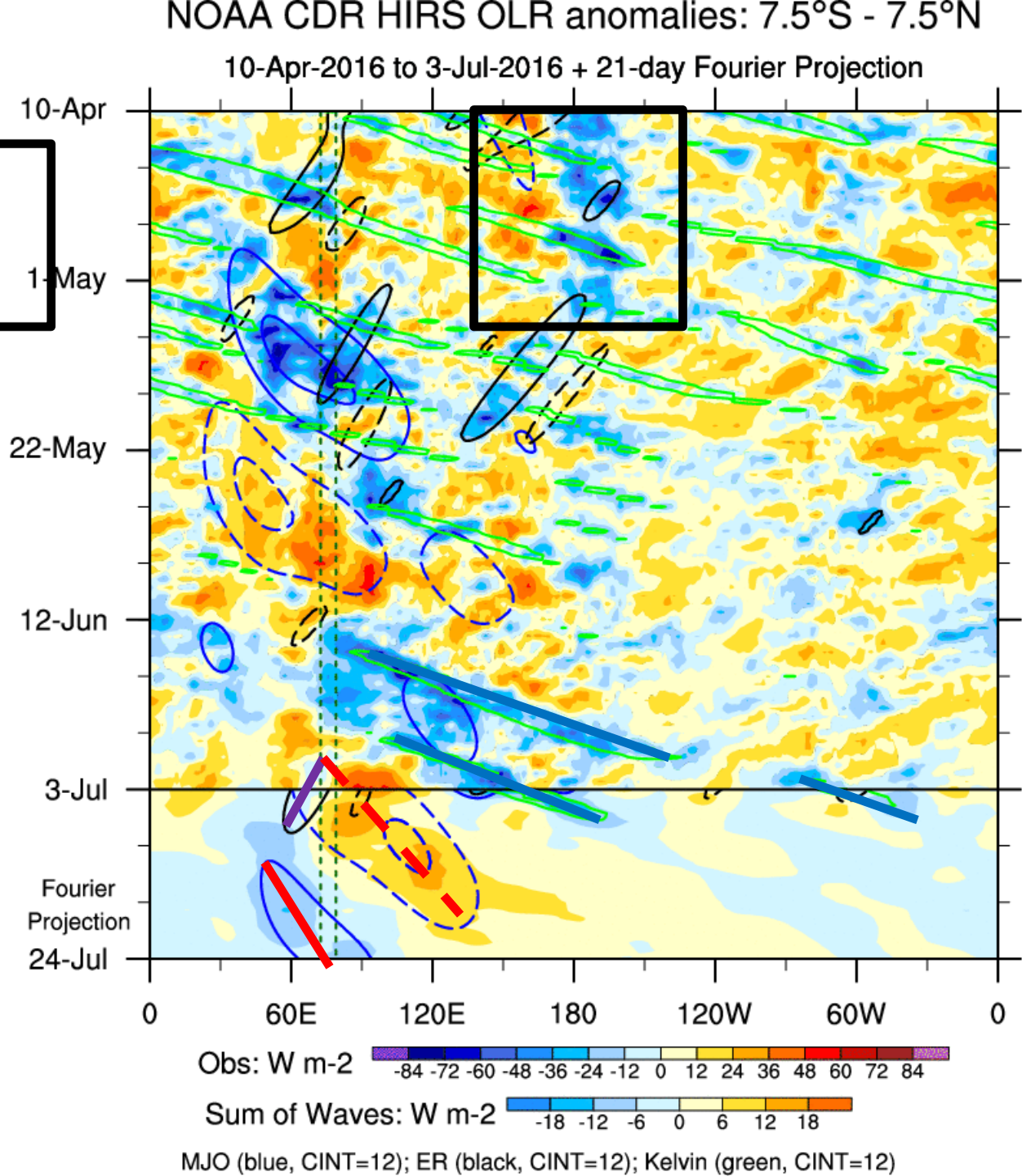


UKMET

Wheeler-Hendon based analyses of model forecasts indicate a continued weakness of the MJO signal through week-1, and possible re-emergence in week-2 over Africa or the Indian Ocean.

El Niño appearance suppressed relative to earlier this year.

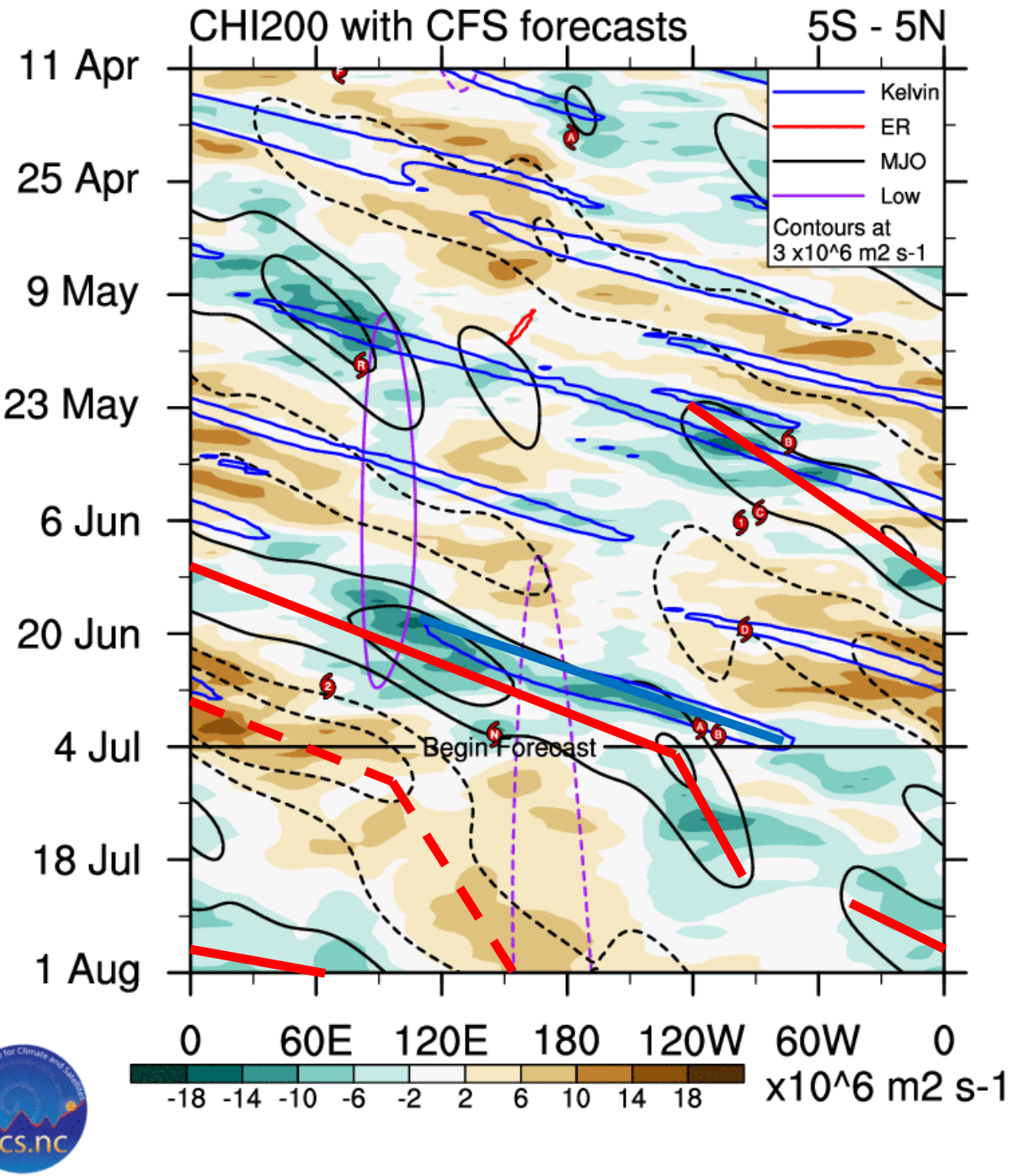
Complex pattern with suppressed phase of **MJO** evident along with **equatorial Rossby waves** and **Kelvin waves.**



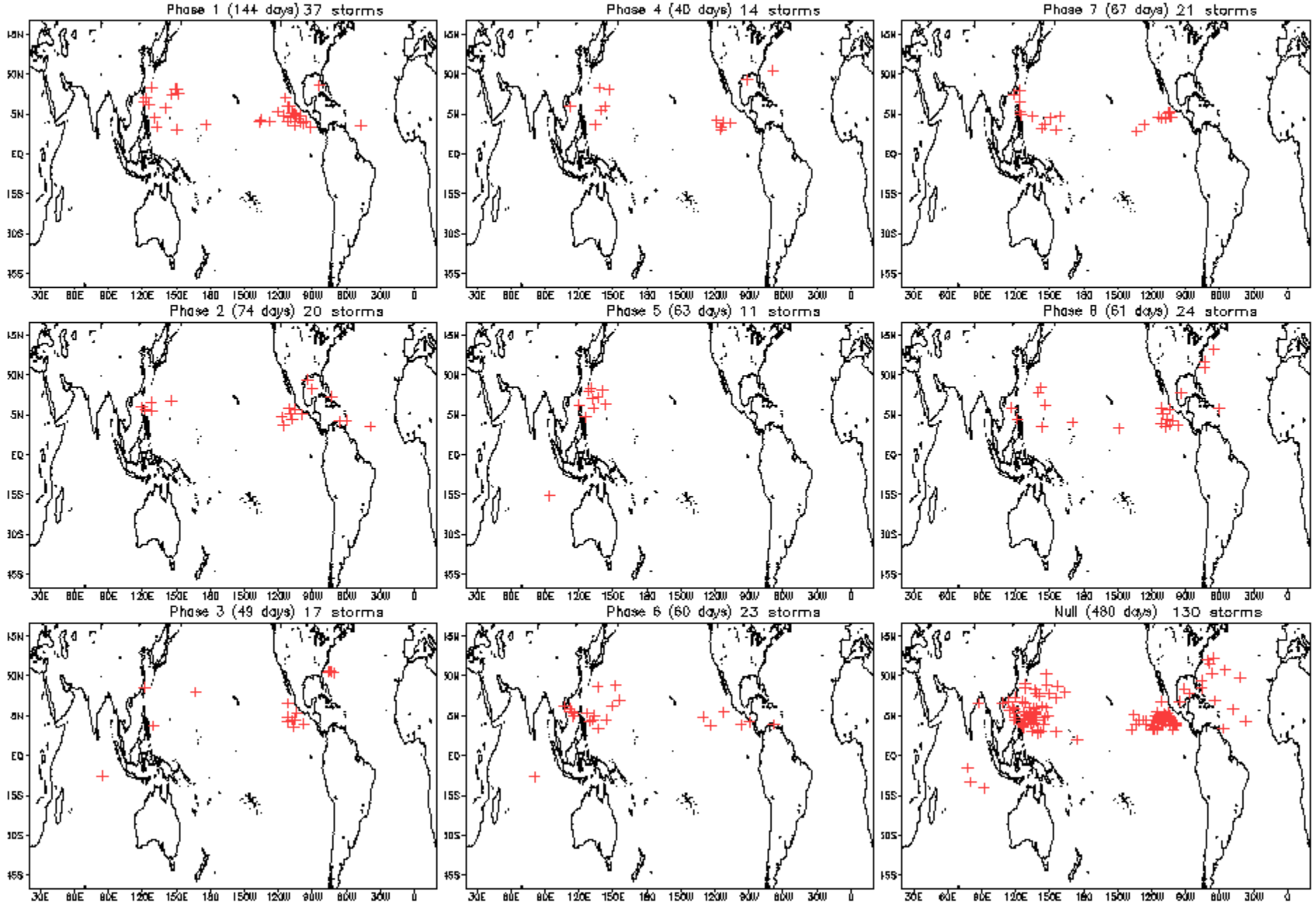
Upper-level velocity potential tells a much different story!

Supports continuation of **MJO** signal through Western Hemisphere over the next couple weeks, with re-emergence over Africa late this month.

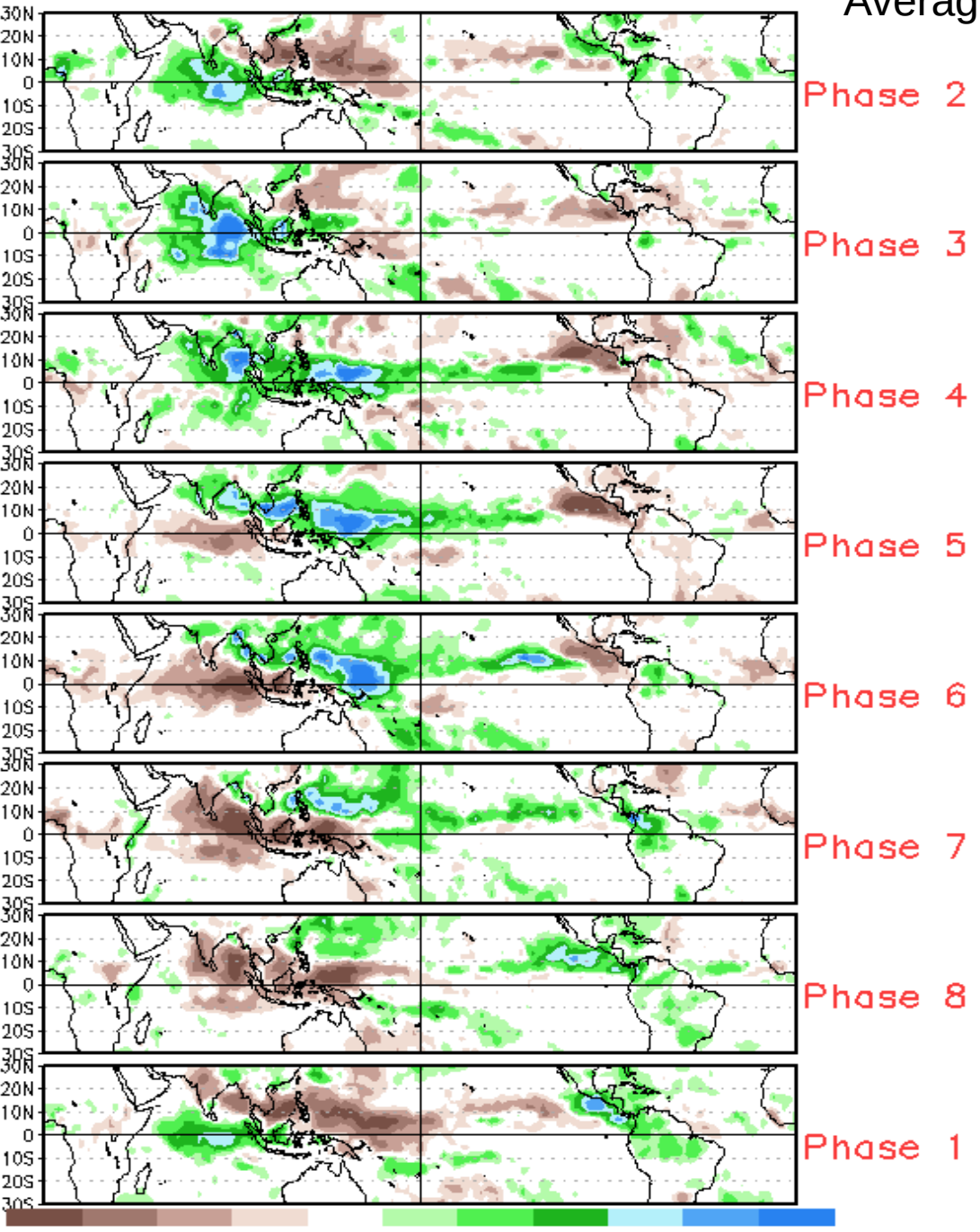
Similar pattern occurred in May with the velocity potential signal continuing while the OLR and Wheeler-Hendon Index reverted to a weak MJO.



July Tropical Storm Formation by MJO phase

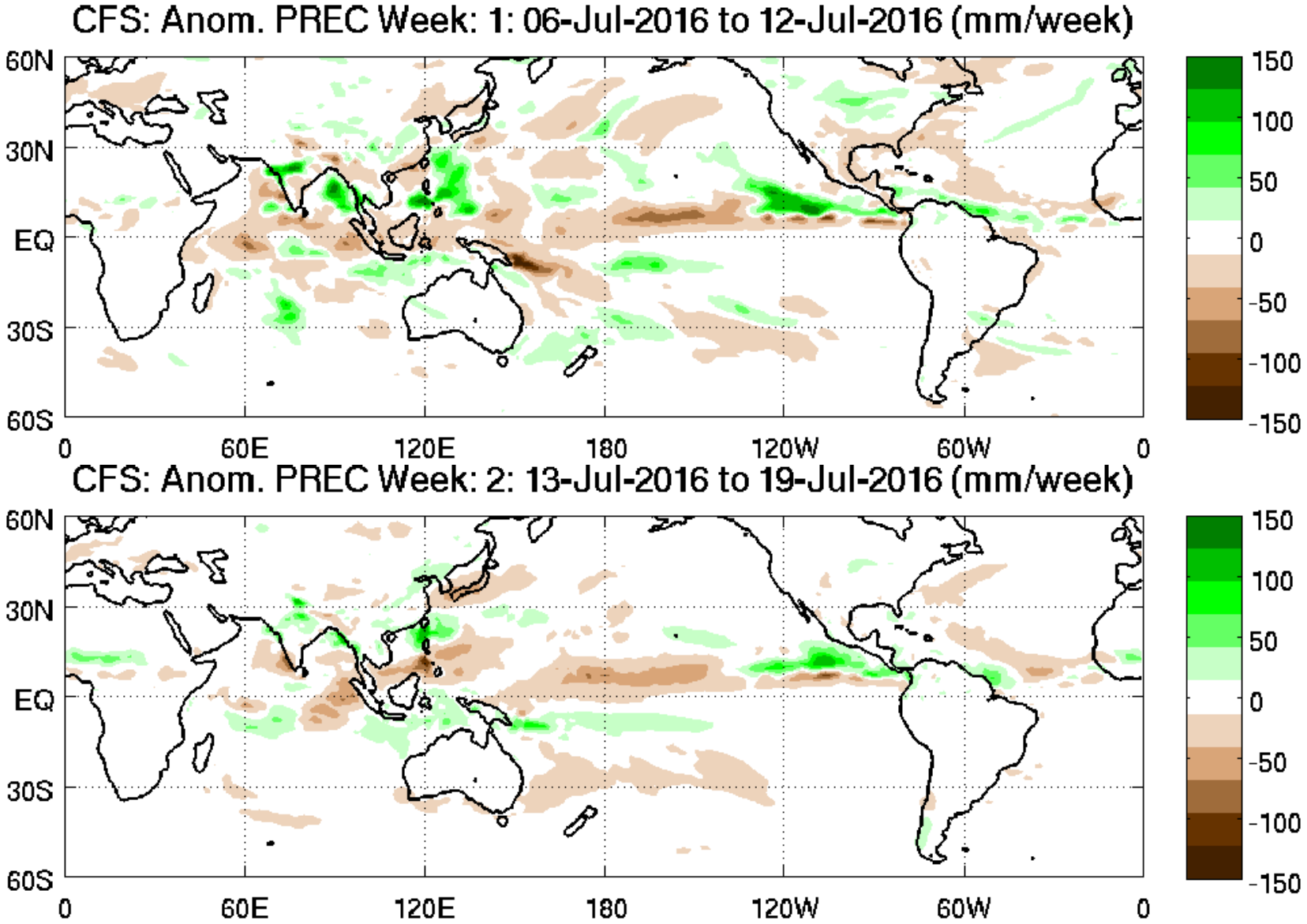


Average Conditions when the MJO is present

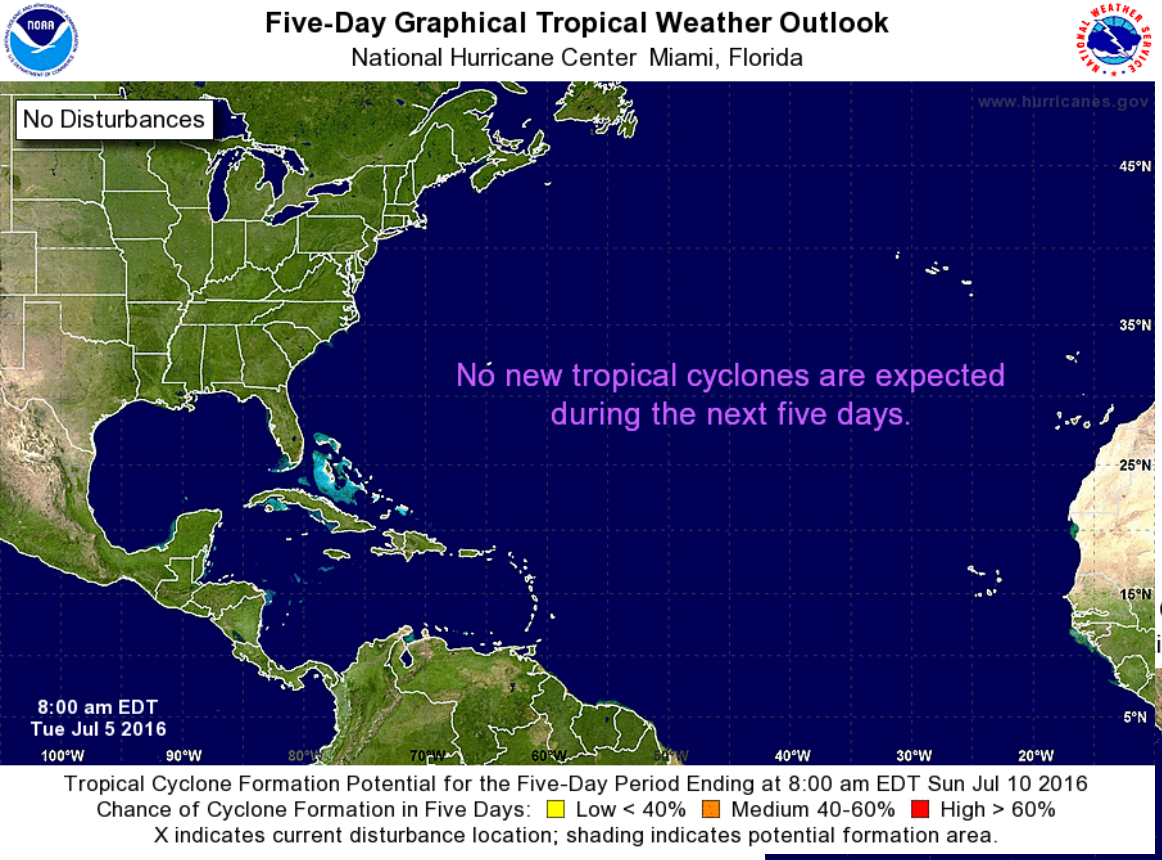


Phases 7 and 8 support enhanced rainfall for the East Pacific, and also increased tropical cyclogenesis here.

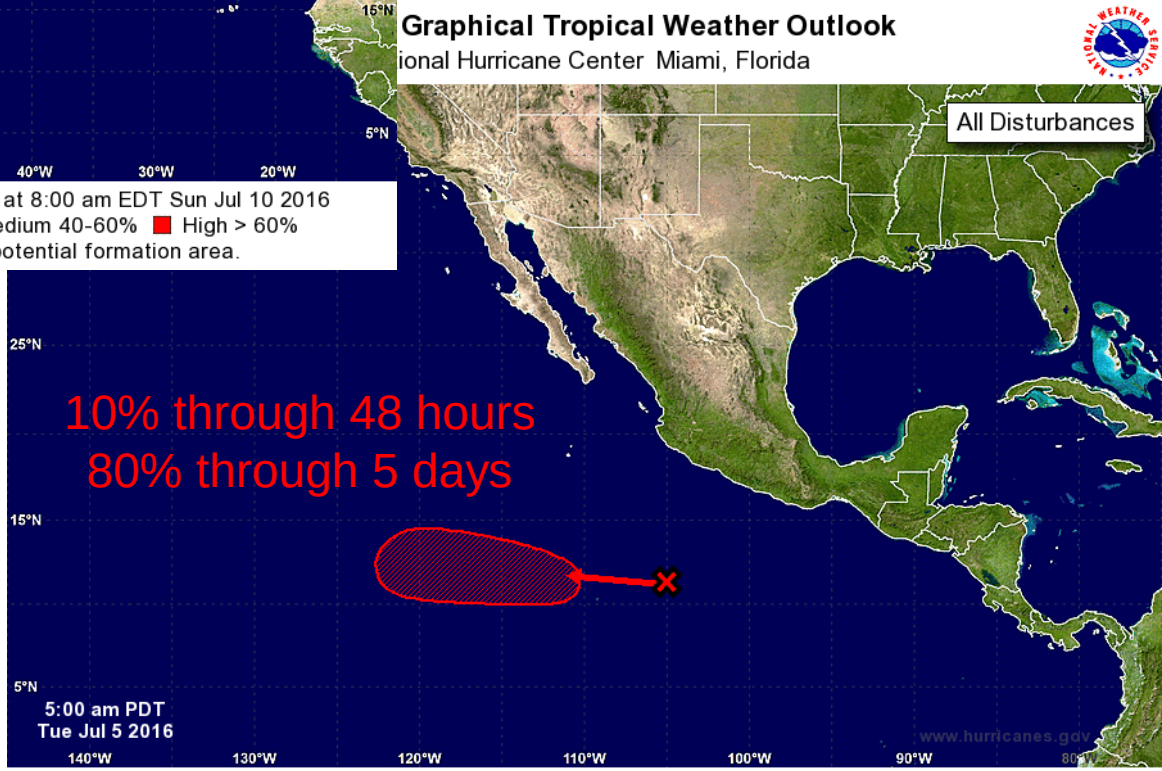
CAVEAT: These panels are representative of robust MJO events.


CFS: Anom. PREC Week: 1: 06-Jul-2016 to 12-Jul-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150
CFS: Anom. PREC Week: 2: 13-Jul-2016 to 19-Jul-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150

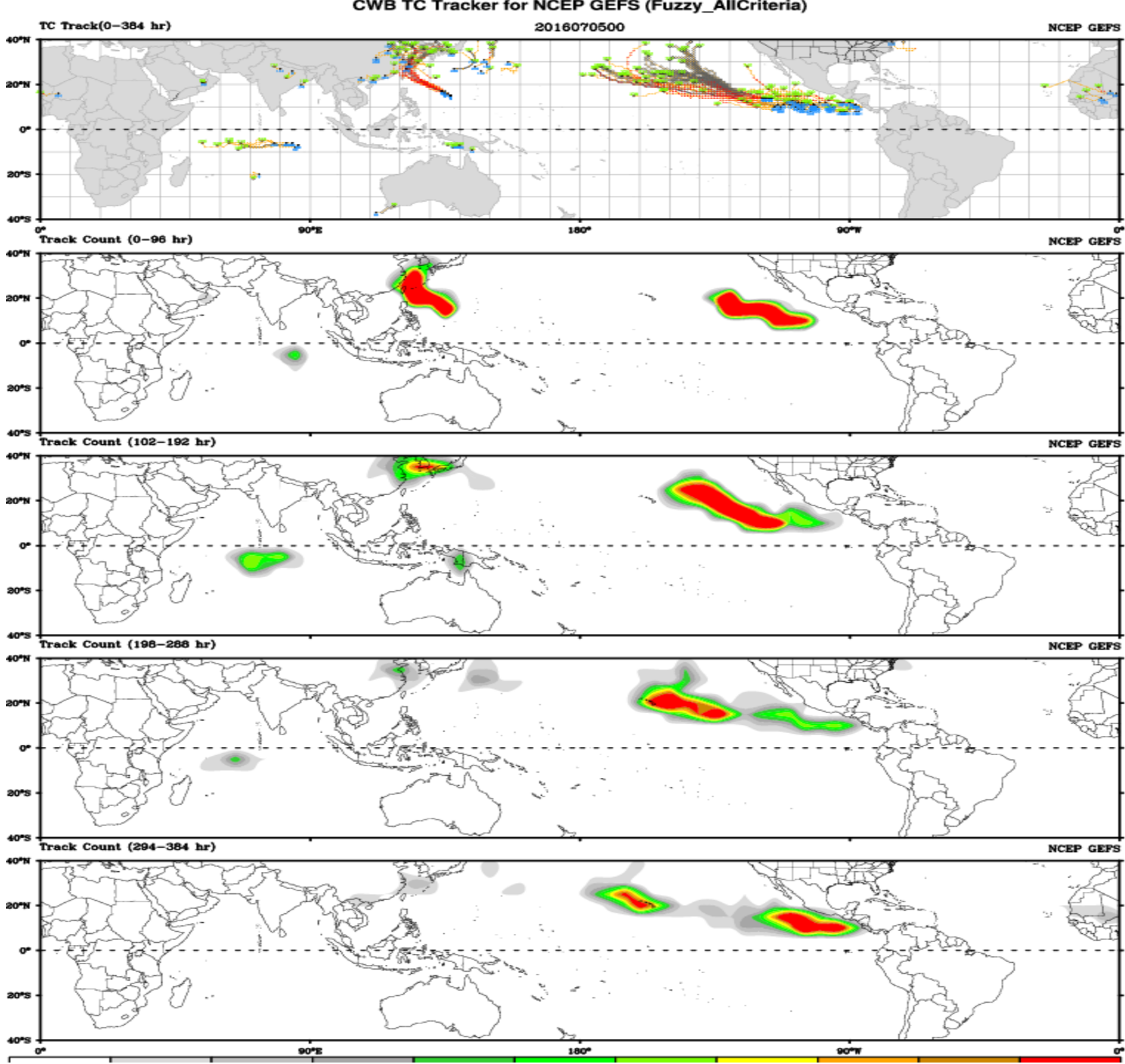
Graphical Tropical Weather Outlooks



Tropical Cyclone Formation Potential for the Five-Day Period Ending at 8:00 am EDT Sun Jul 10 2016
Chance of Cyclone Formation in Five Days: Low < 40% Medium 40-60% High > 60%
X indicates current disturbance location; shading indicates potential formation area.

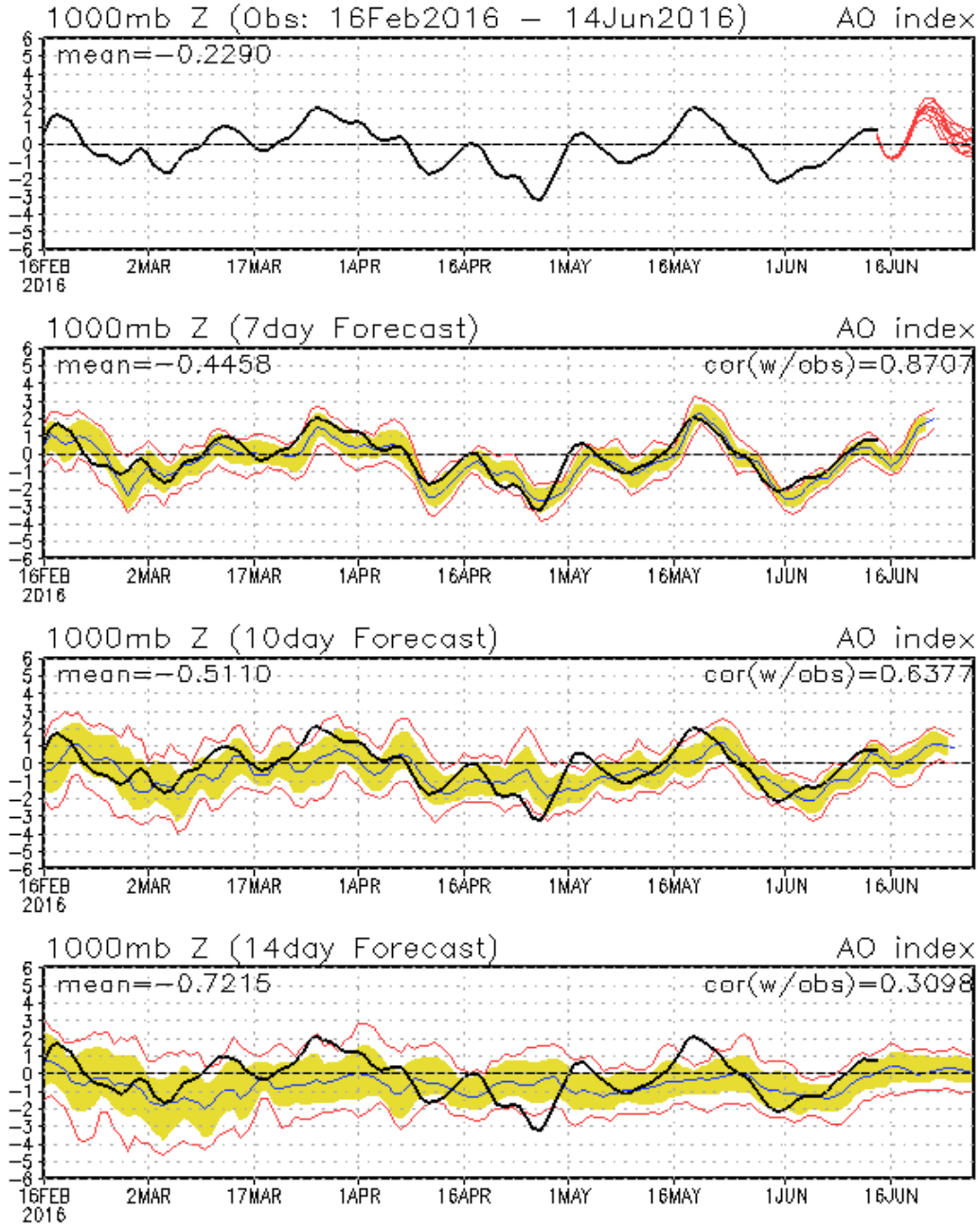


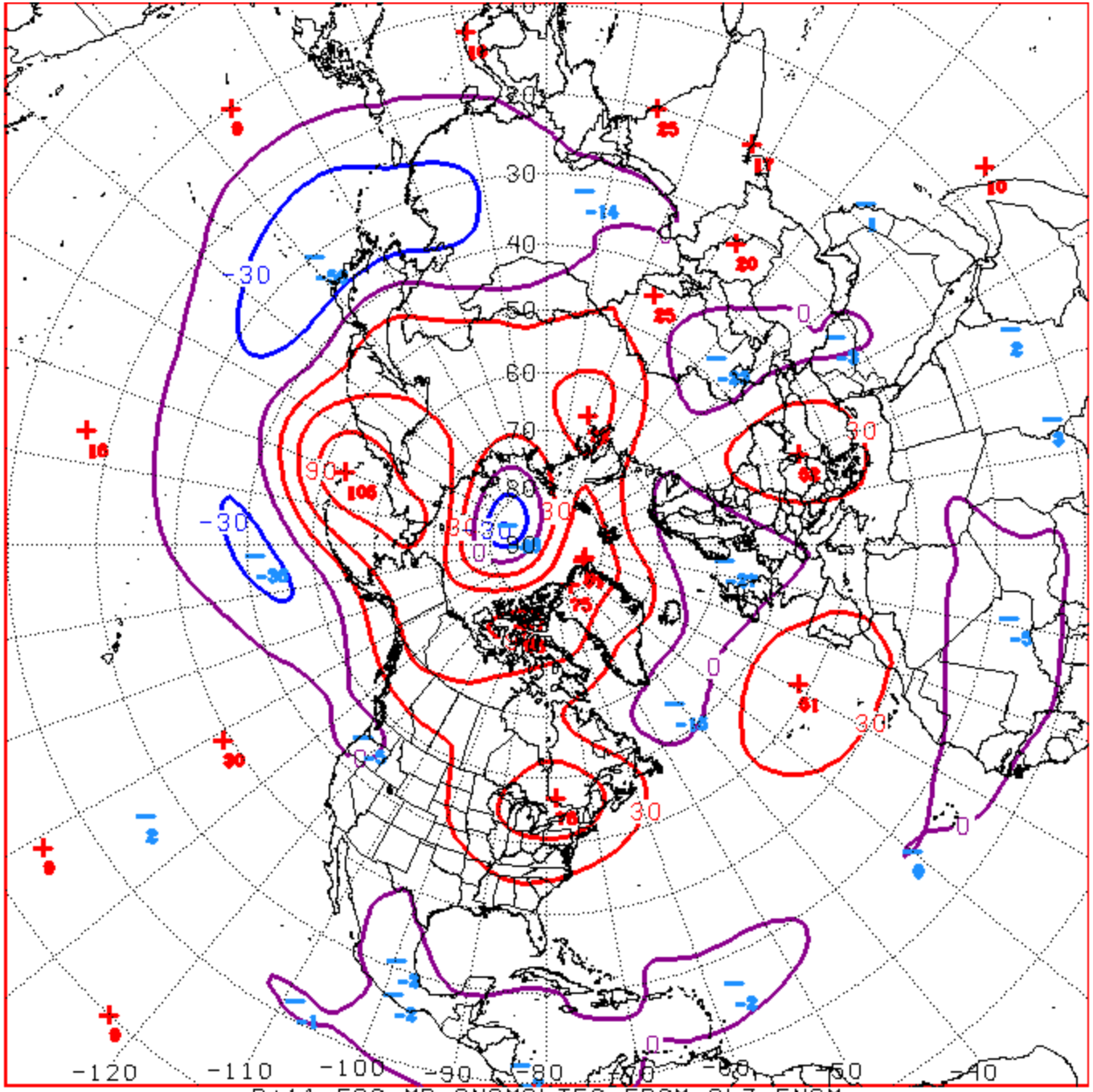
Tropical Cyclone Formation Potential for the Five-Day Period Ending at 5:00 am PDT Sun Jul 10 2016
Chance of Cyclone Formation in Five Days: Low < 40% Medium 40-60% High > 60%
X indicates current disturbance location; shading indicates potential formation area.


CWB TC Tracker for NCEP GEFS (Fuzzy_AllCriteria)
TC Track(0-384 hr)
2016070500
NCEP GEFS
Track Count (0-96 hr)
Track Count (102-192 hr)
Track Count (198-288 hr)
Track Count (294-384 hr)
40°N
20°N
0°
20°S
40°S
0°
90°E
180°
90°W

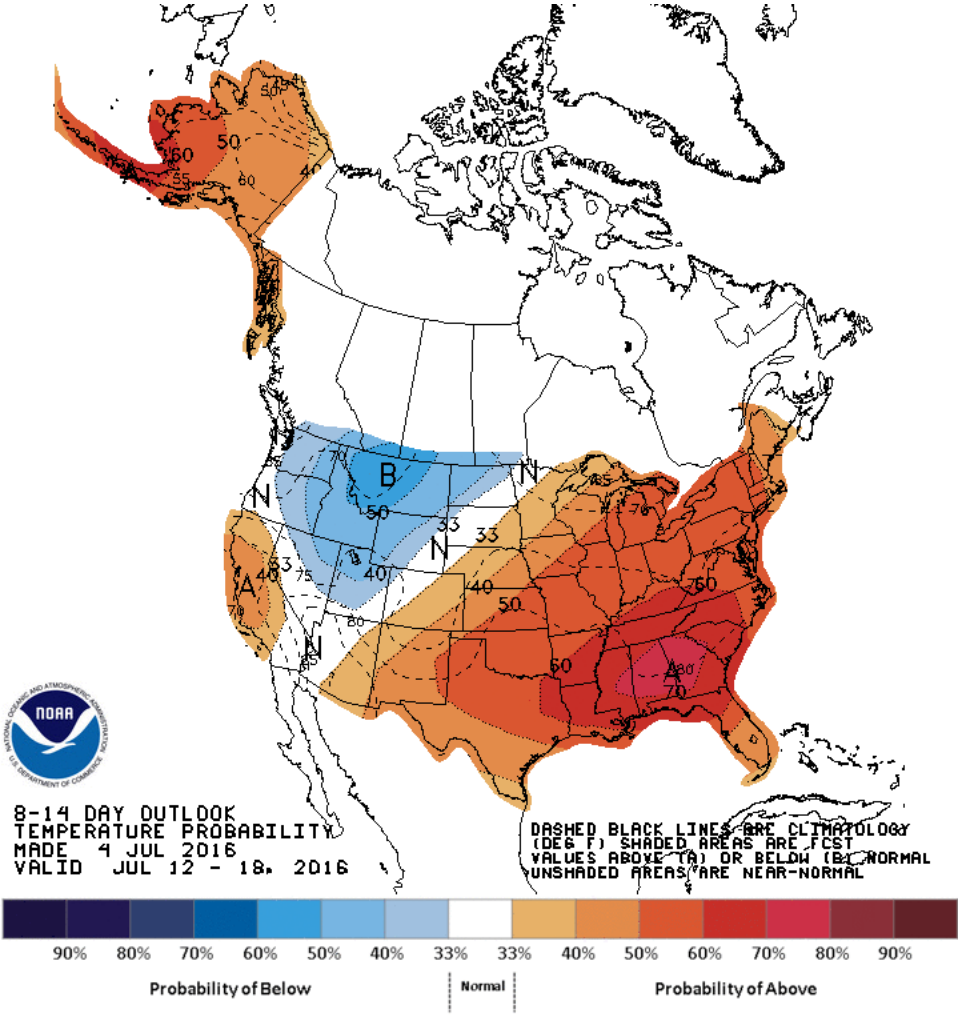
Connections to U.S. Impacts

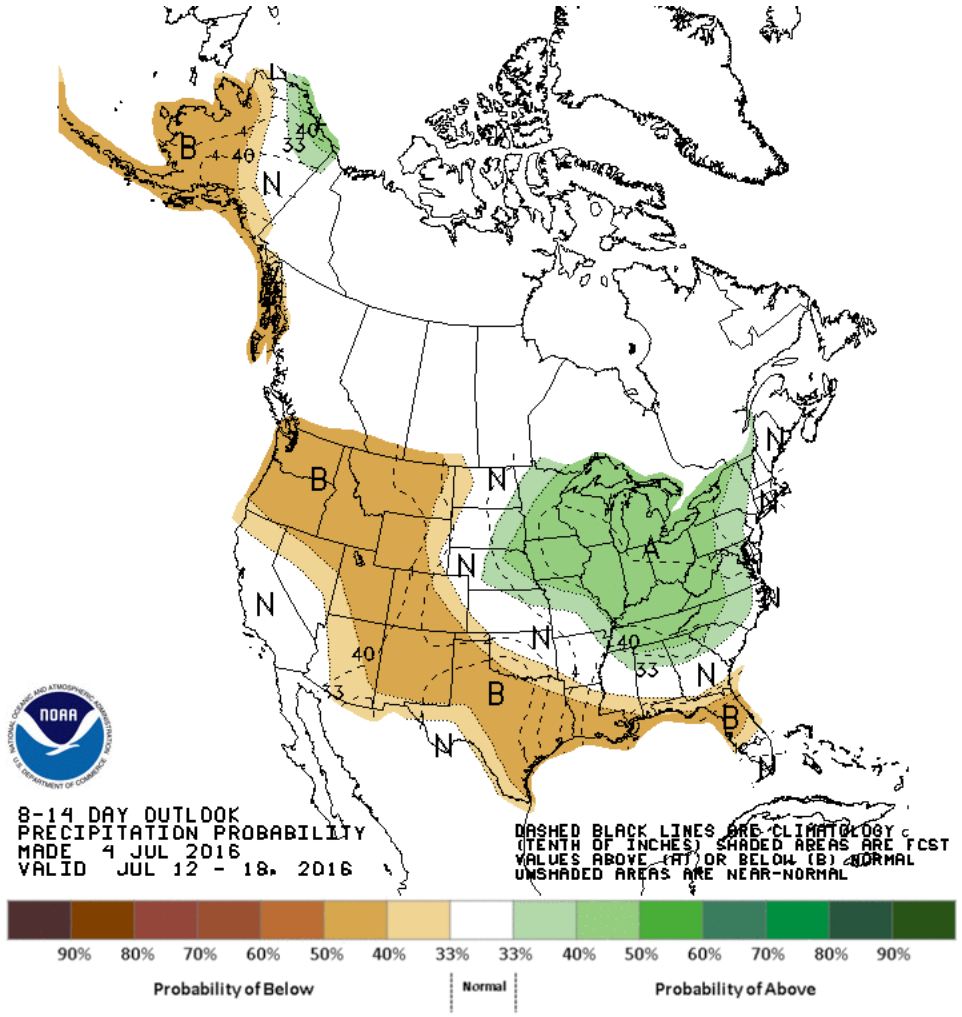
AO: Observed & ENSM forecasts




-120
-110
-100
-90
-80
-70
-60
-50
-40
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE JUL 05 2016 1337 UTC CNTD JUL 16 2016

Week 2 – Temperature and Precipitation





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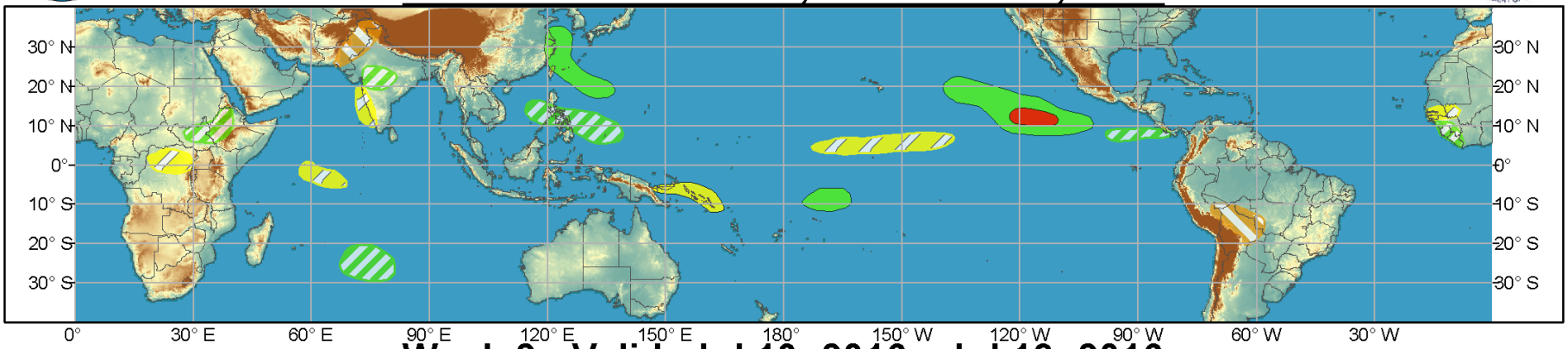

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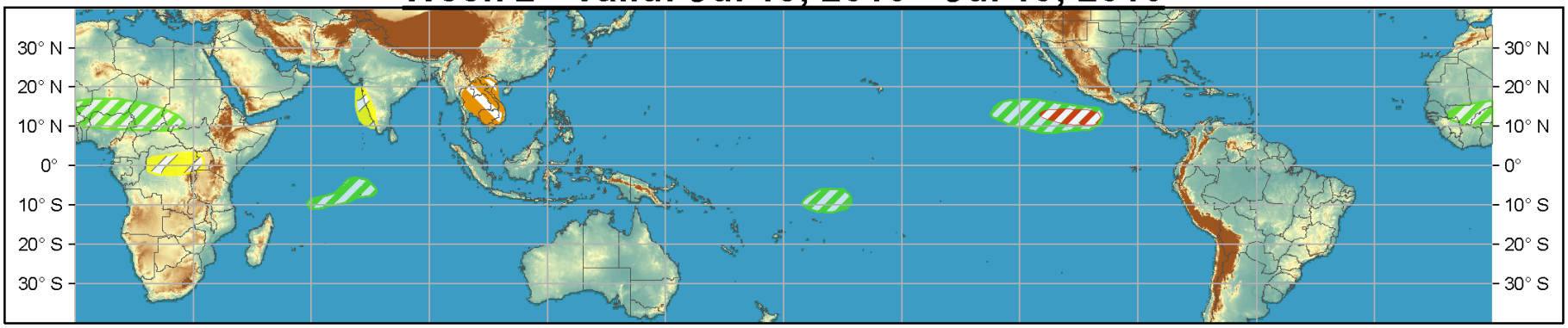

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