Global Tropics Hazards And Benefits Outlook

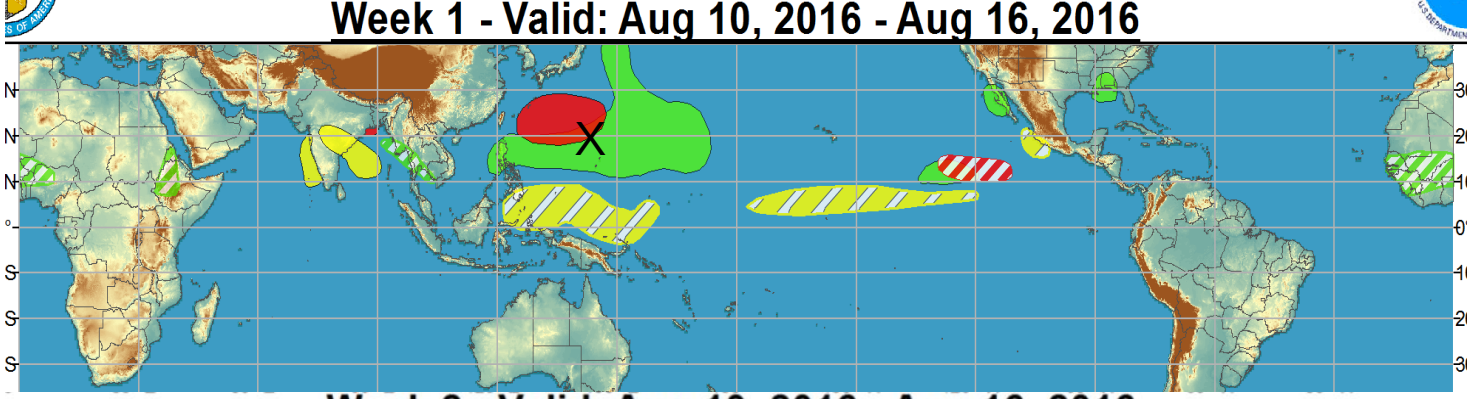
August 16, 2016

Dan Harnos

Outline

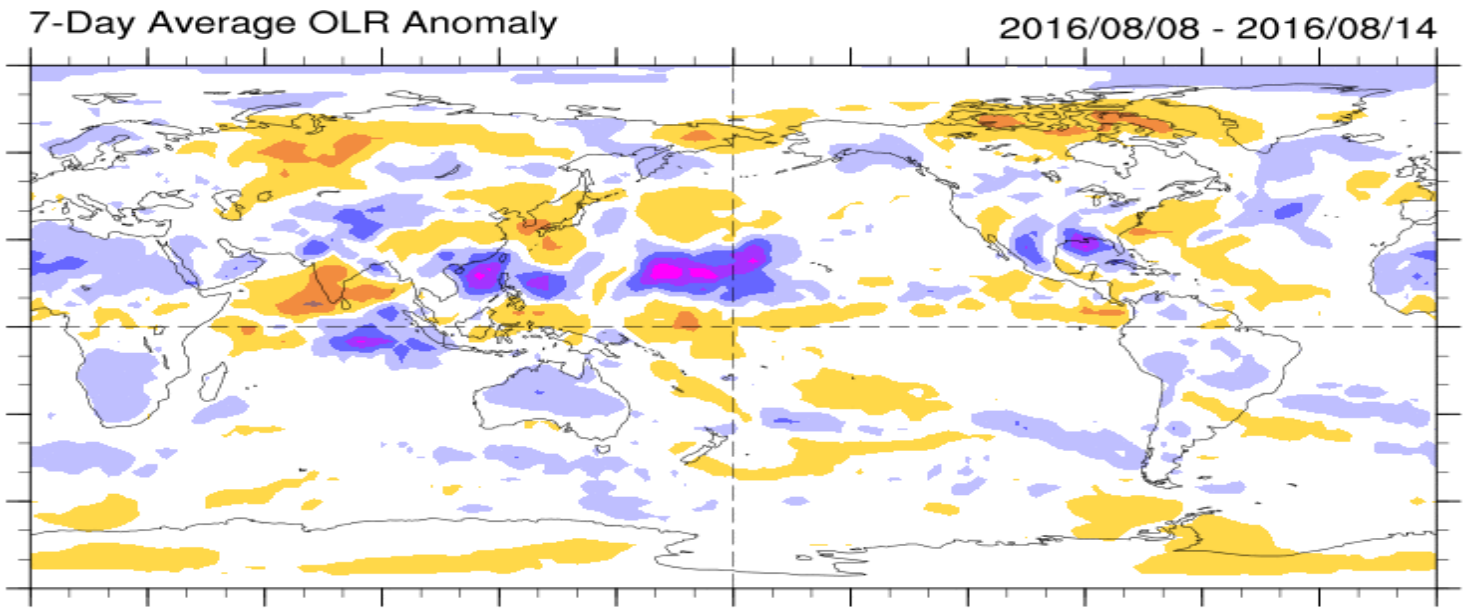
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

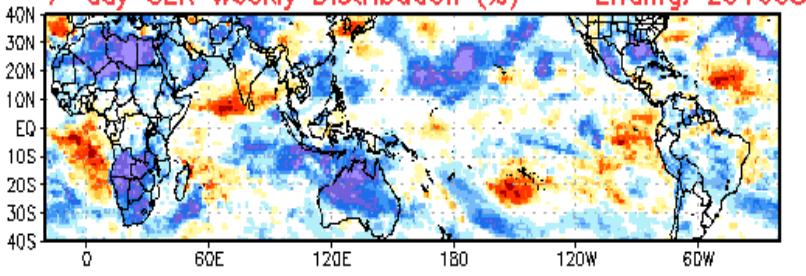


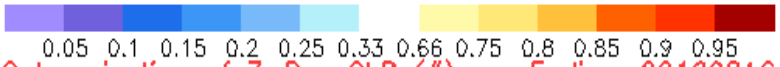
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

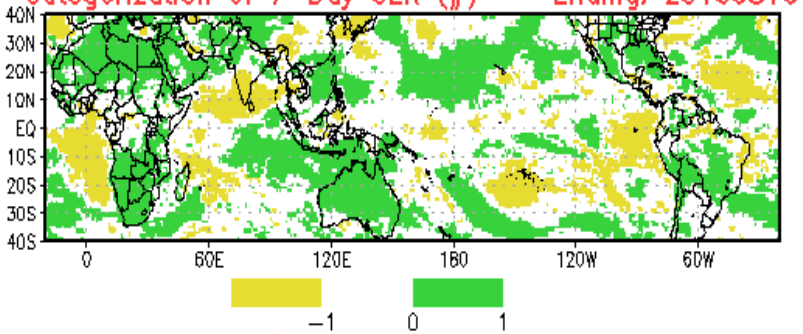


7-day OLR Weekly Distribution (%) -- Ending: 20160816

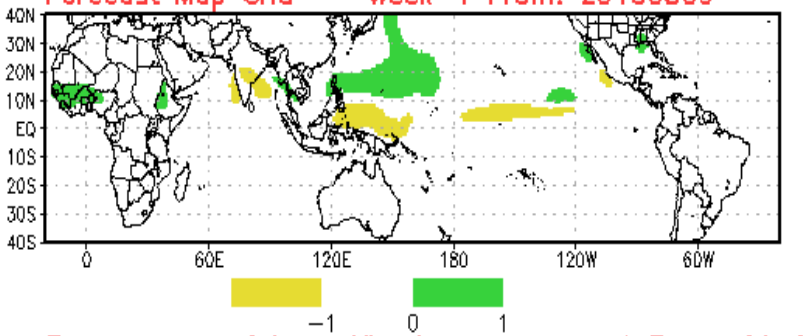




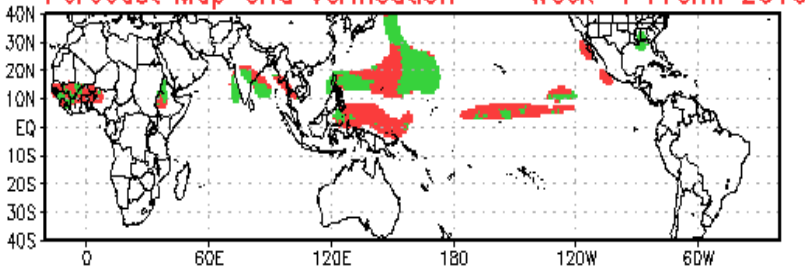
Categorization of 7-Day OLR (#) -- Ending: 20160816



Forecast Map Grid -- Week-1 From: 20160809

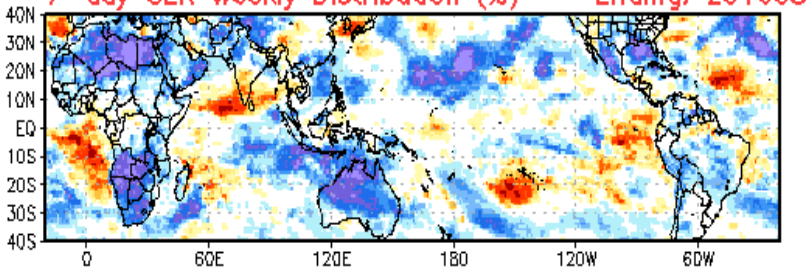


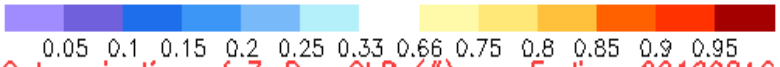
Forecast Map Grid Verification -- Week-1 From: 20160809



Hit: Green, Miss: Red
Heidke Skill Score: 14.0389

7-day OLR Weekly Distribution (%) -- Ending: 20160816





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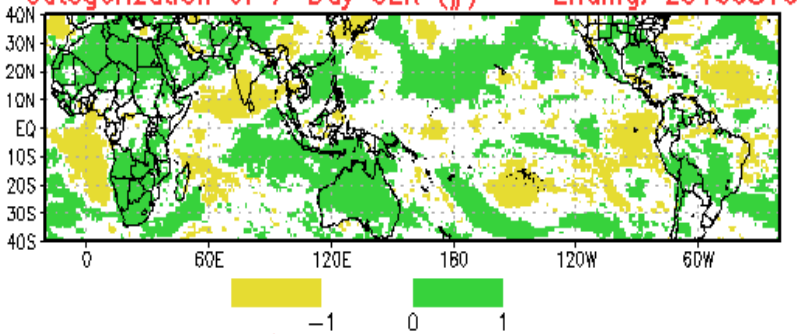
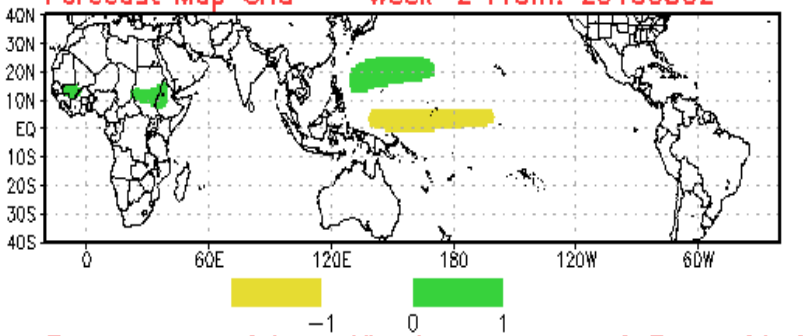
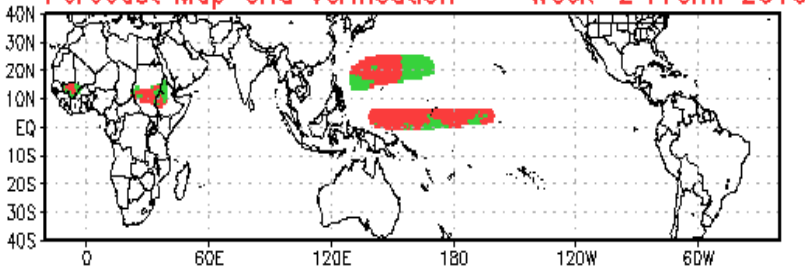


Forecast Map Grid -- Week-2 From: 20160802



Forecast Map Grid Verification -- Week-2 From: 20160802



Hit: Green, Miss: Red
Heidke Skill Score: −0.4616

Synopsis of Climate Modes

ENSO:

- **La Niña Watch**

La Niña is favored to develop during August - October 2016, with about a 55-60% chance of La Niña during the fall and winter 2016-17.

MJO and other subseasonal tropical variability:

- Moderate MJO present over Western Pacific as per Wheeler-Hendon RMM Index.

- Dynamical models favor a tendency to uncharacteristically shift the MJO pattern westward over the forecast period, with some bringing the signal back over the Maritime Continent. This behavior is apparently tied to interactions of the MJO with the monsoon trough, and may also be influenced by tropical cyclone activity.

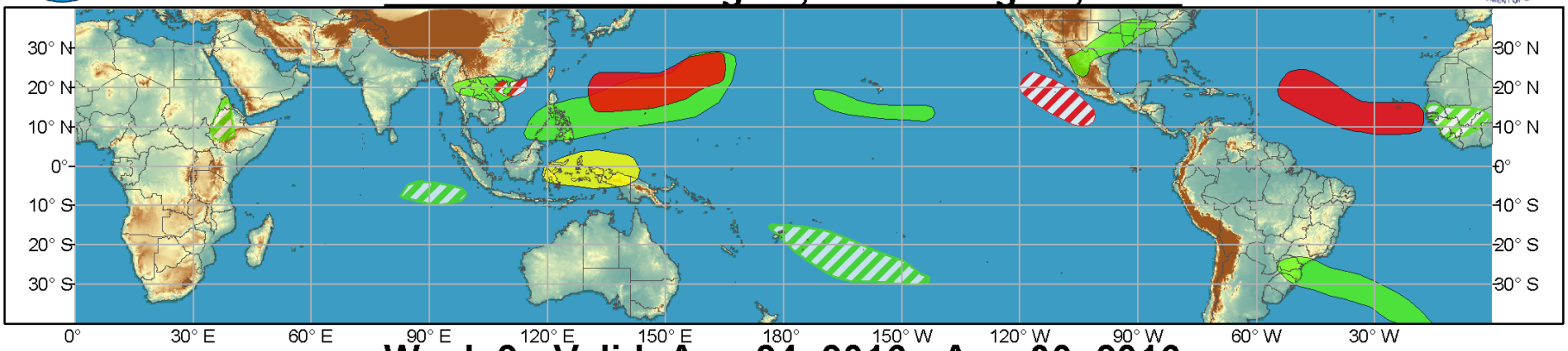
- Direct MJO impacts were downplayed in the forecast due to uncertainty about the progression and whether diagnostic indices are properly capturing the MJO signature. Additionally, Pacific precipitation and East Pacific and Atlantic tropical cyclone activity expectations fail to match those typical of the observed MJO conditions.

Extratropics:

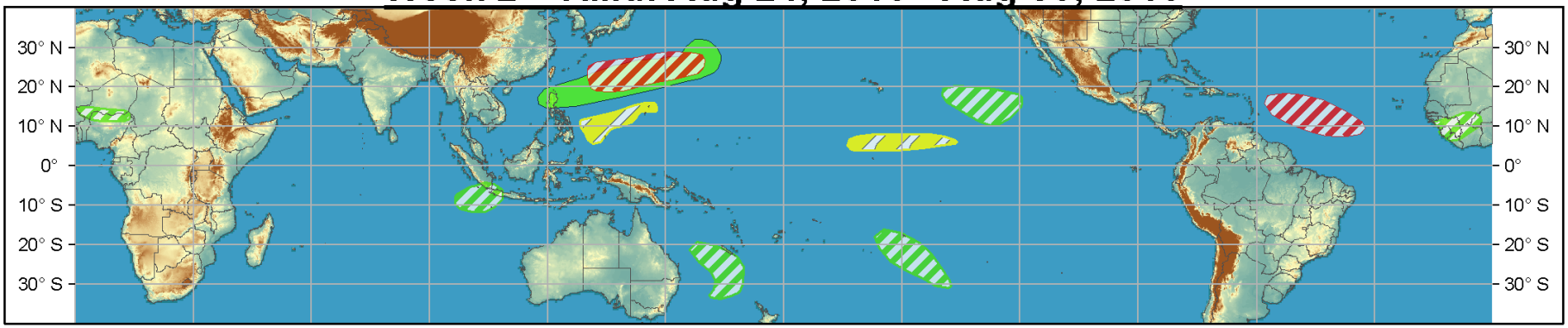
- Positive heights over the NW Pacific may be tied to MJO and tropical convective activity. Recurving Tropical Storm Chanthu may also have downstream influences on the U.S. pattern.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Aug 17, 2016 - Aug 23, 2016



Week 2 - Valid: Aug 24, 2016 - Aug 30, 2016



Produced: 08/16/2016

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.
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EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

cics.nc

NPS PRAESTANTIA PER SCIENTIAM

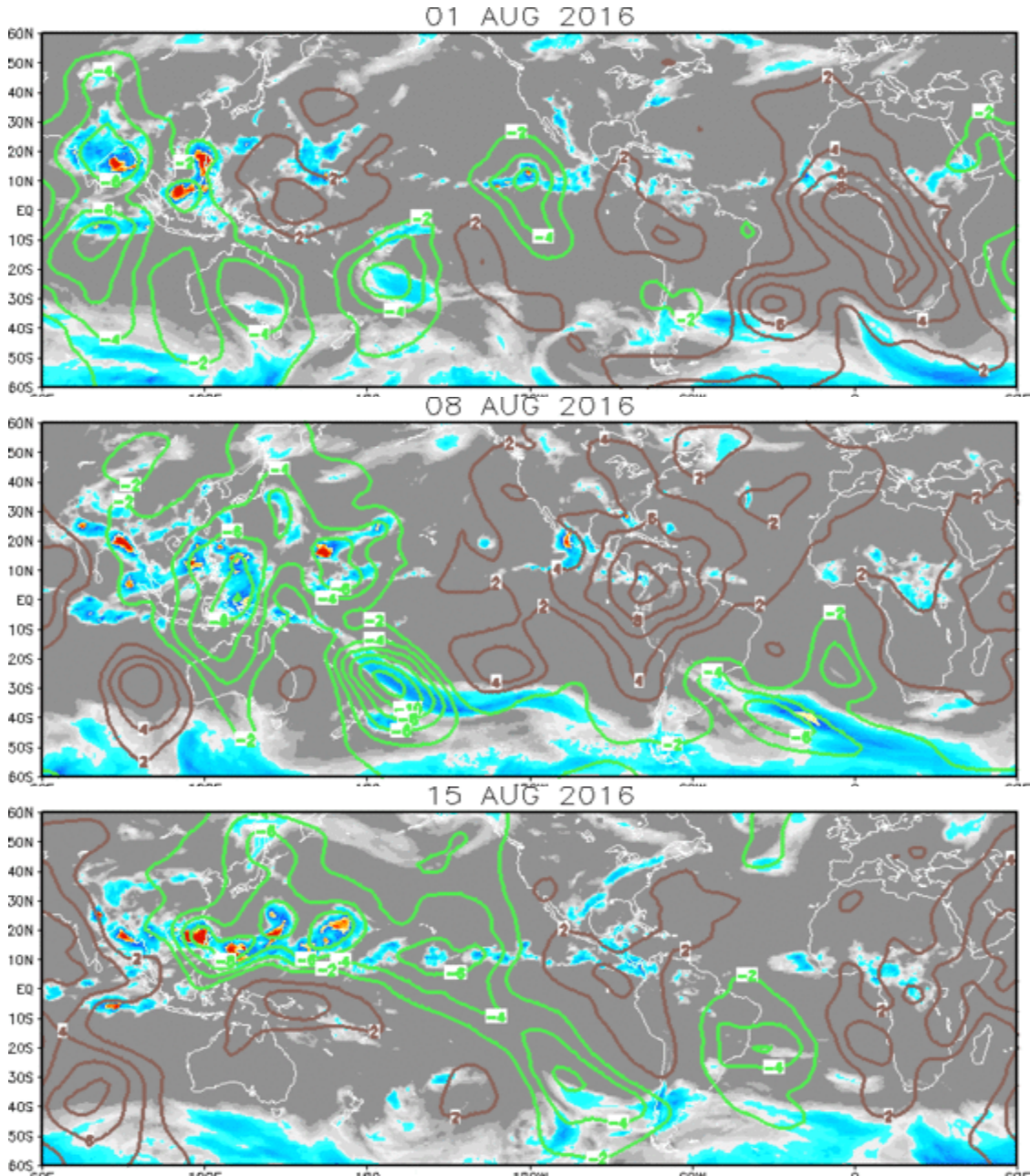
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

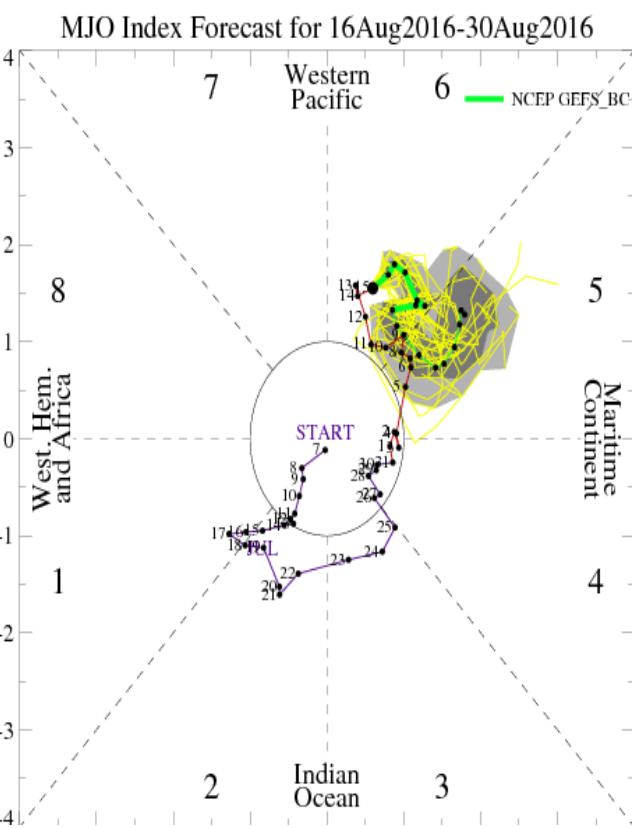
Wave-2 pattern, convective enhancement over Indian Ocean and eastern Pacific.

Wave-1 pattern, convective enhancement over the eastern Indian Ocean and western Pacific.

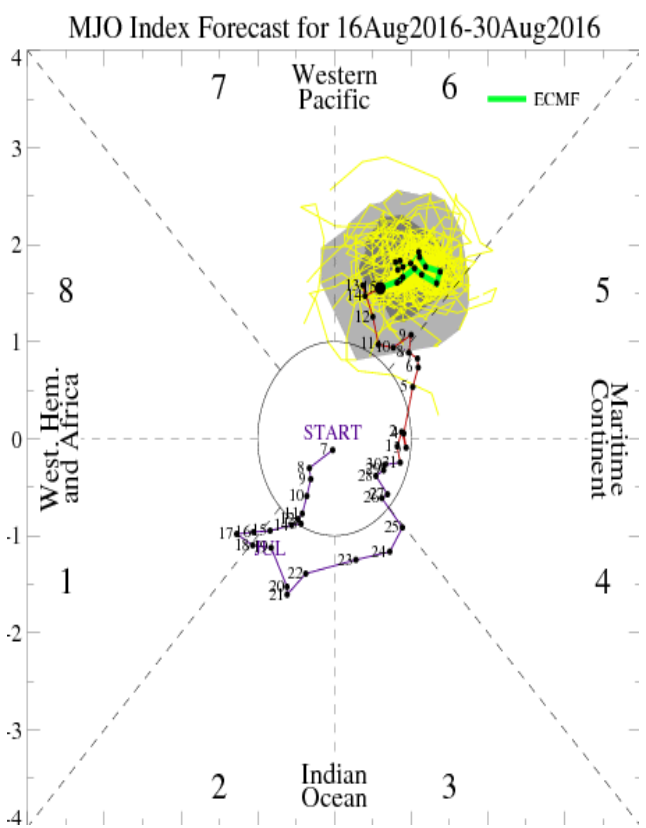
Still generally wave-1 pattern, with enhancement across western and central Pacific. Some weakness in convective suppression over the Atlantic.



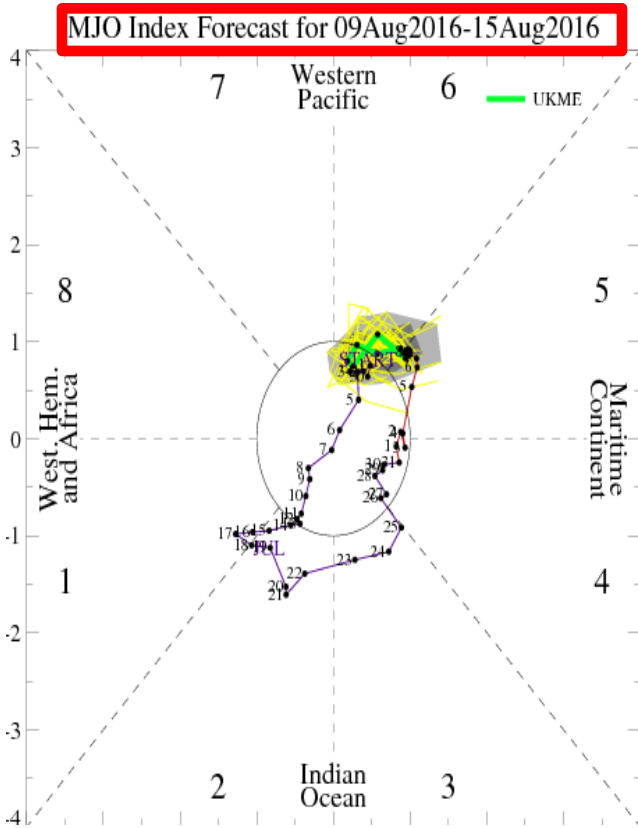
MJO Observation/Forecast



GEFS



ECMWF

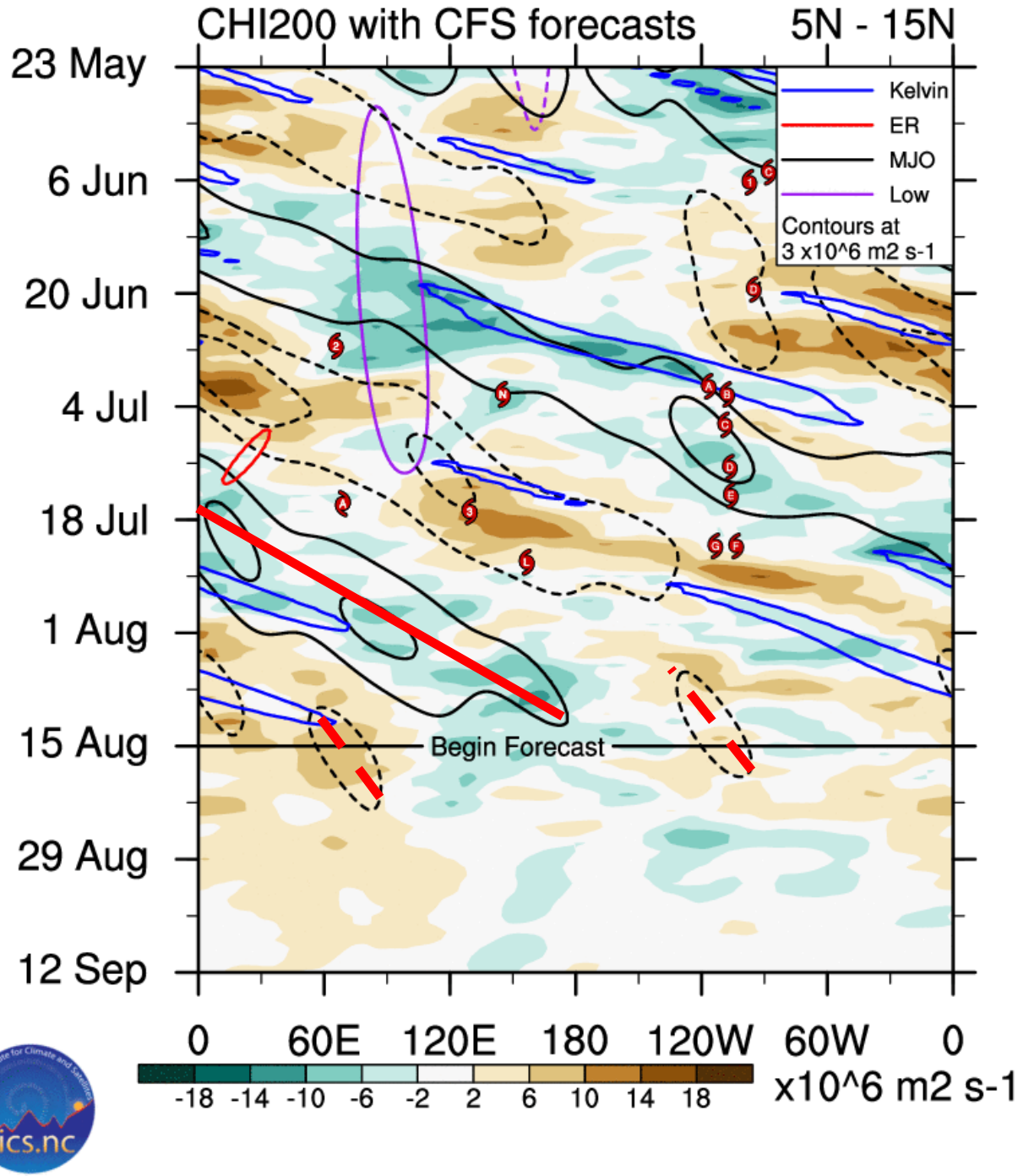


UKMET

Wheeler-Hendon based analyses of model forecasts indicate a westward shift of the MJO signal, with the GEFS bringing the MJO back over the Maritime Continent while the European maintains the signal over the Western Pacific.

This analysis suggests the enhanced convective signal with the **MJO** broke down in the past week. Suppressed convective signals remain.

Overall tropical convective mode activity forecast to be weak to non-existent.

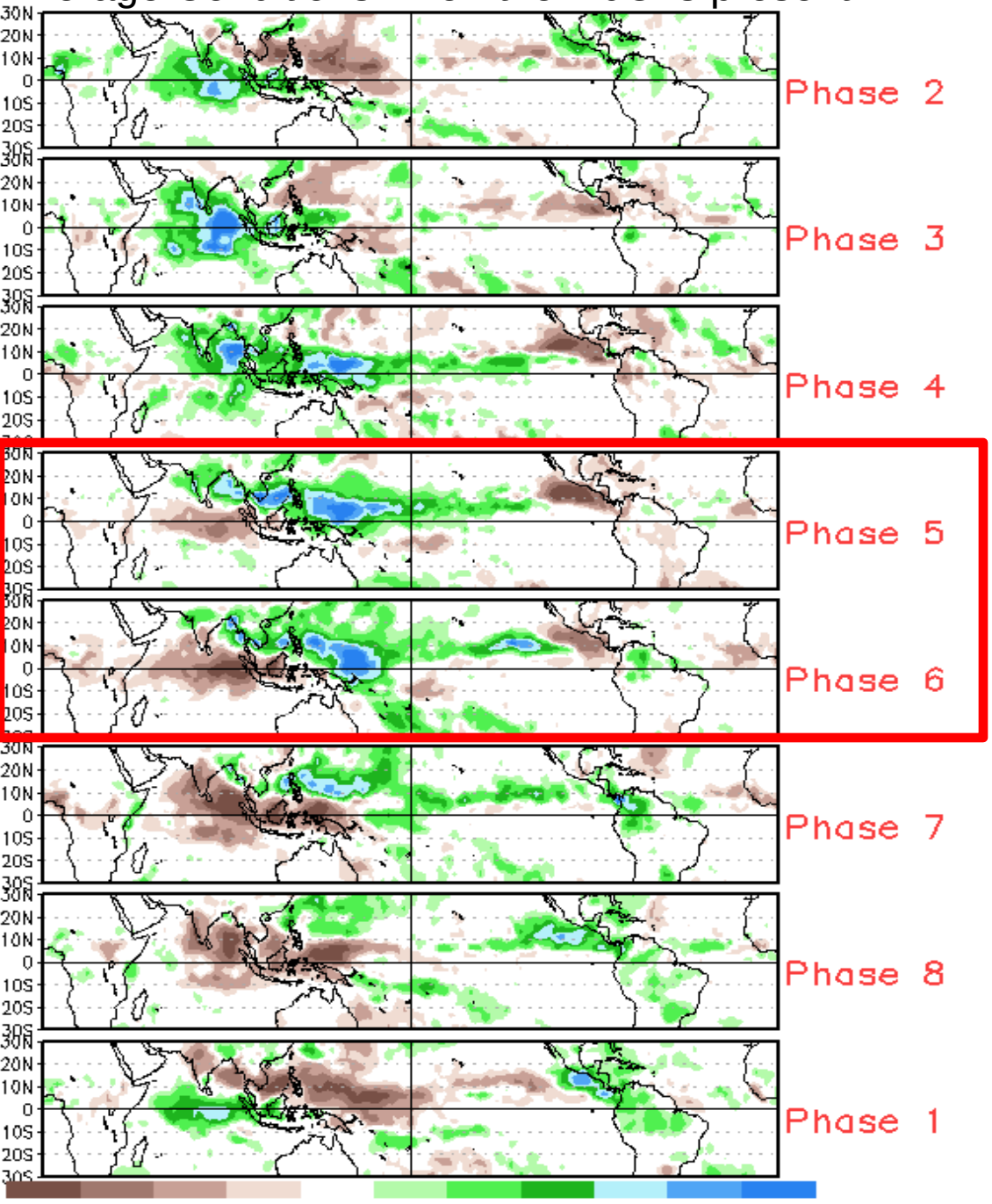


monitor.cicsnc.org/mjo

Tue 2016-08-16 1010 UTC

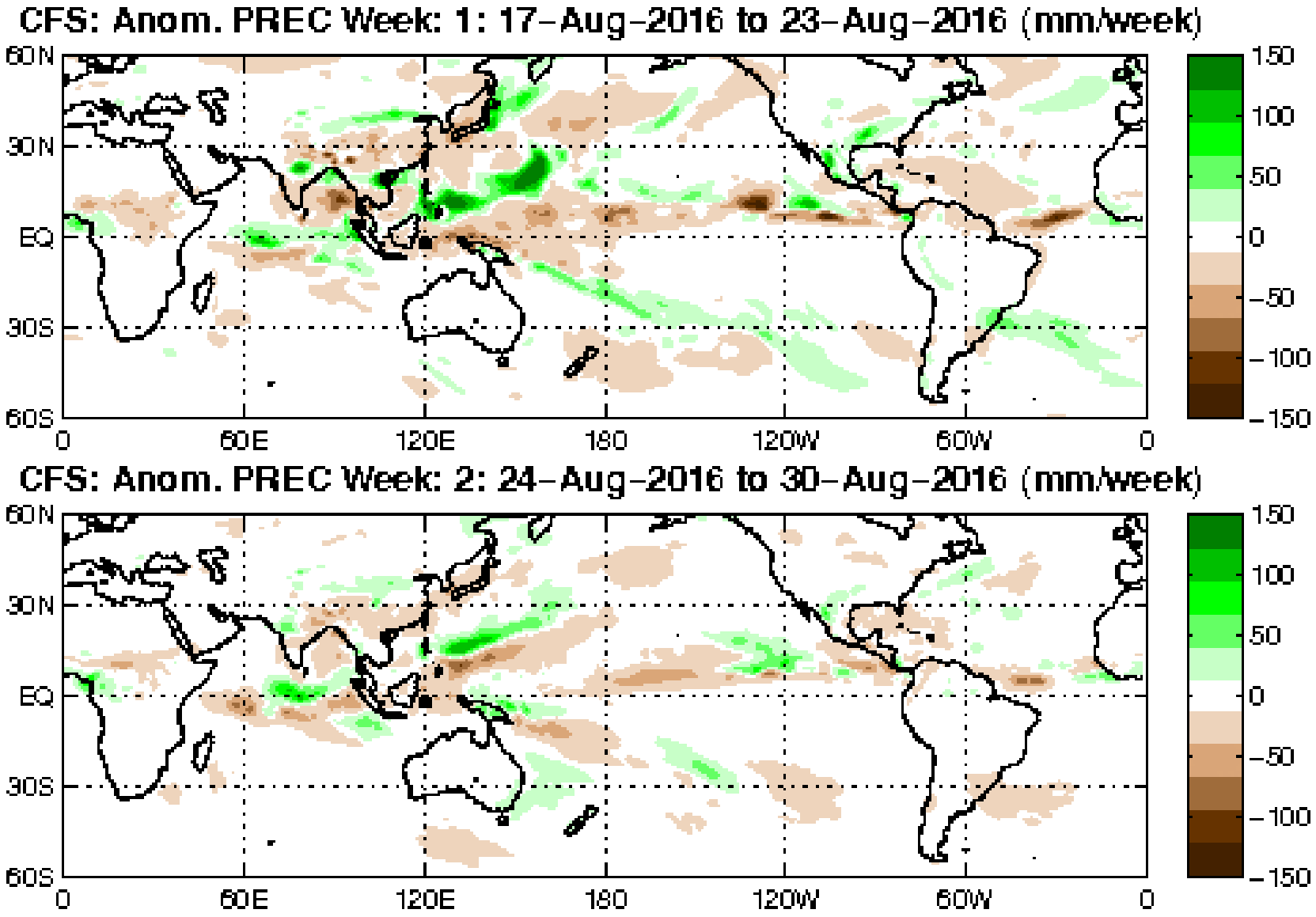
Carl Schreck (cjschrec@ncsu.edu)

Average Conditions when the MJO is present

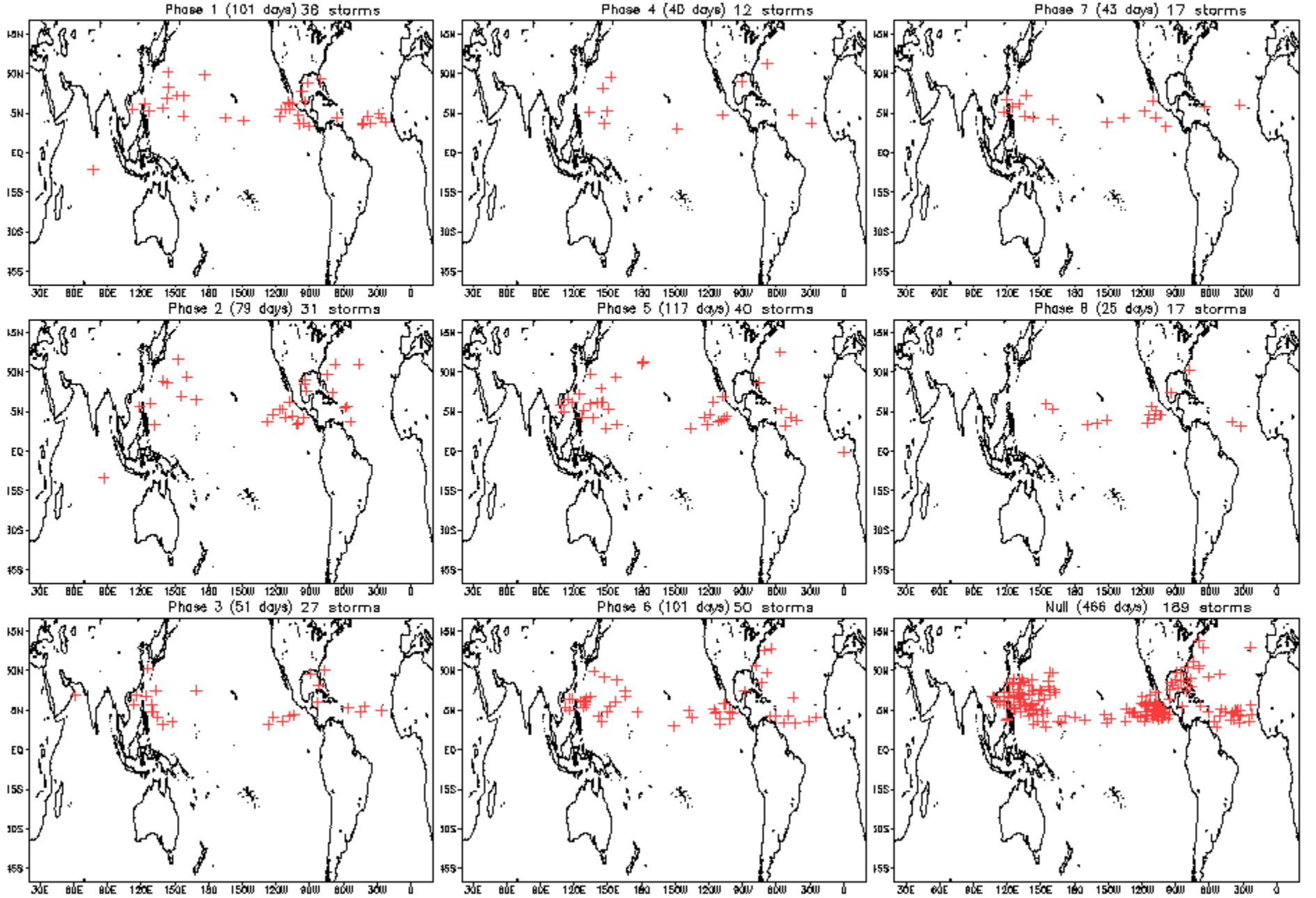


Phase 5 and 6 generally support suppressed convection in the eastern Pacific and Atlantic. Enhanced convection is favored across the western and central Pacific.

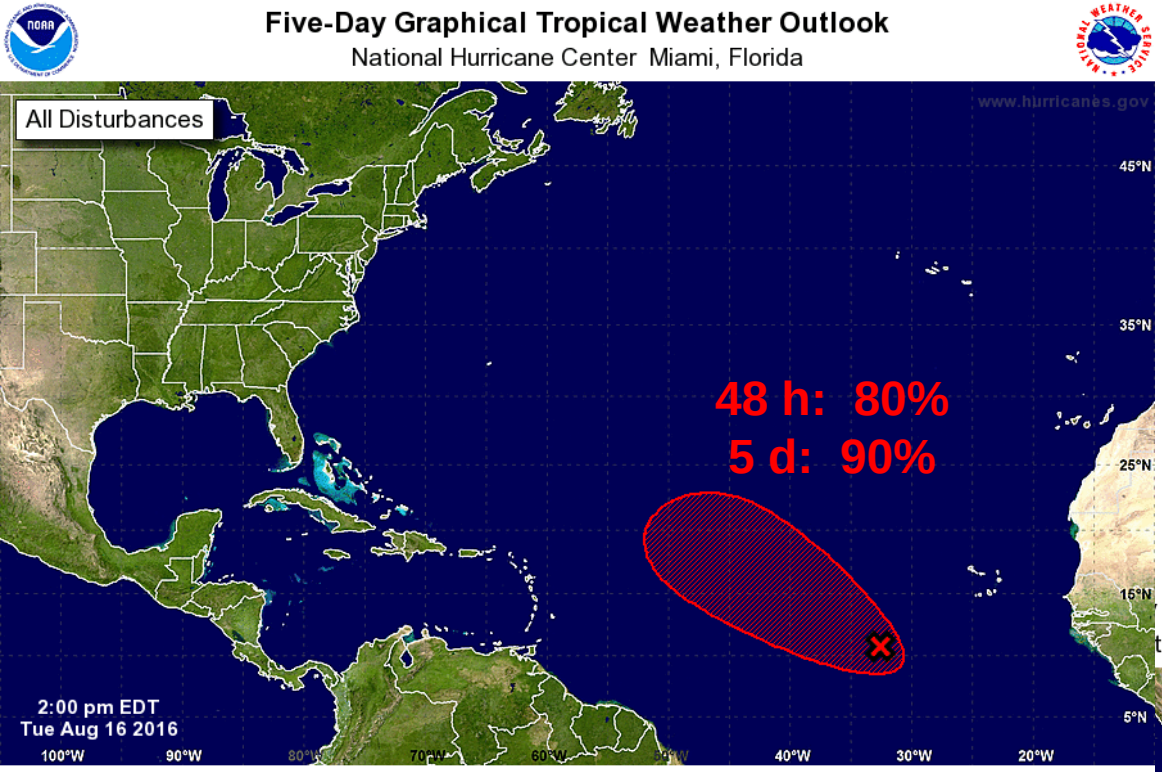
CAVEAT: These panels are representative of robust MJO events.


CFS: Anom. PREC Week: 1: 17-Aug-2016 to 23-Aug-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: 24-Aug-2016 to 30-Aug-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150

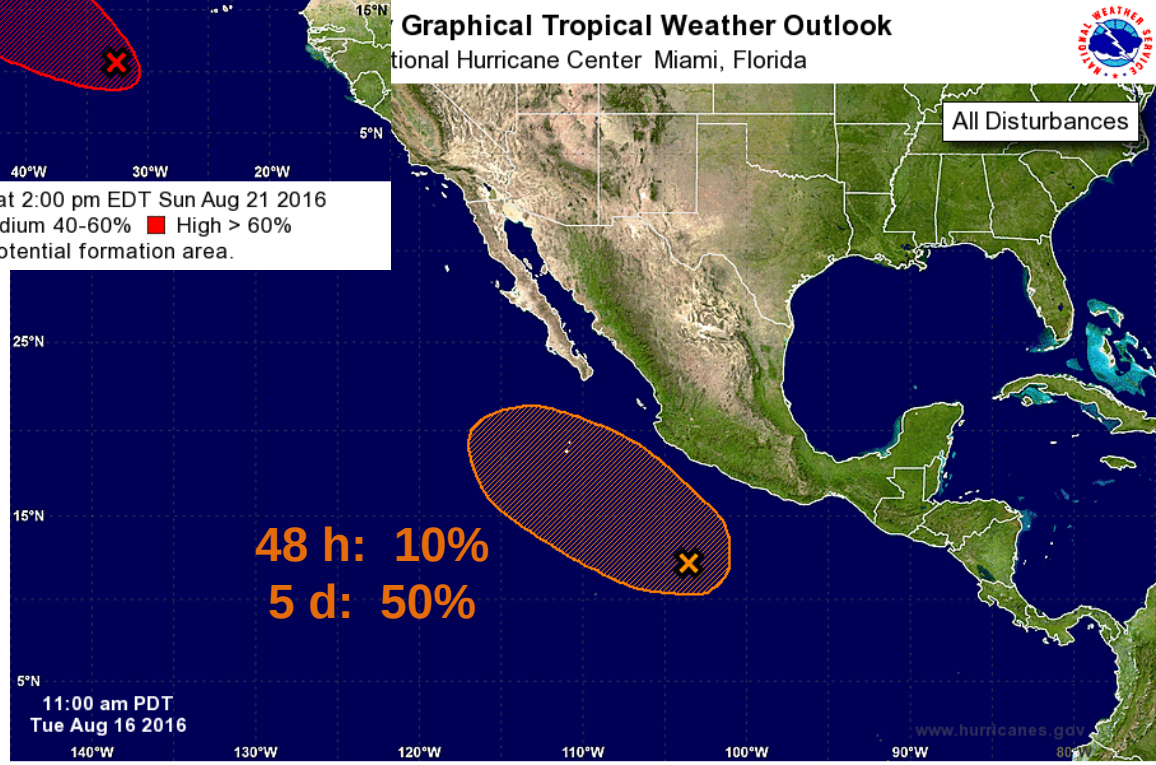
August Tropical Storm Formation by MJO phase



Graphical Tropical Weather Outlooks

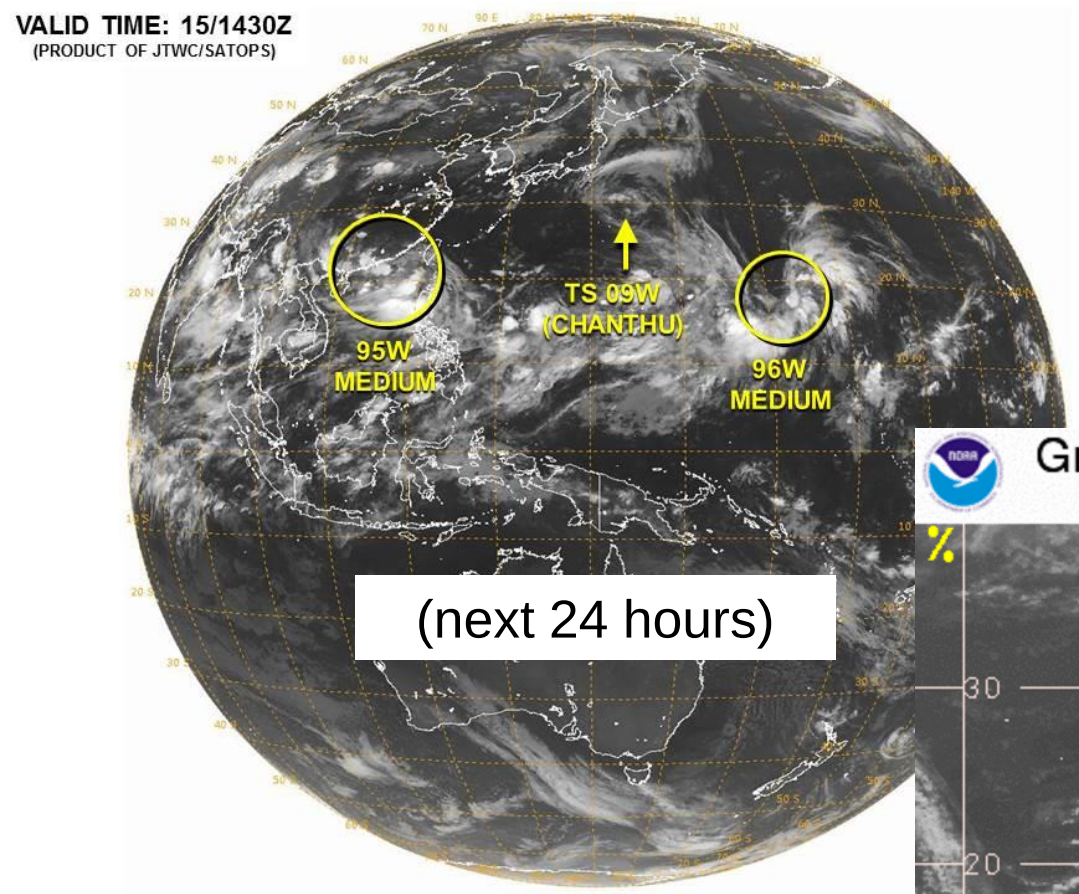


Tropical Cyclone Formation Potential for the Five-Day Period Ending at 2:00 pm EDT Sun Aug 21 2016
Chance of Cyclone Formation in Five Days: Low < 40% Medium 40-60% High > 60%
X indicates current disturbance location; shading indicates potential formation area.

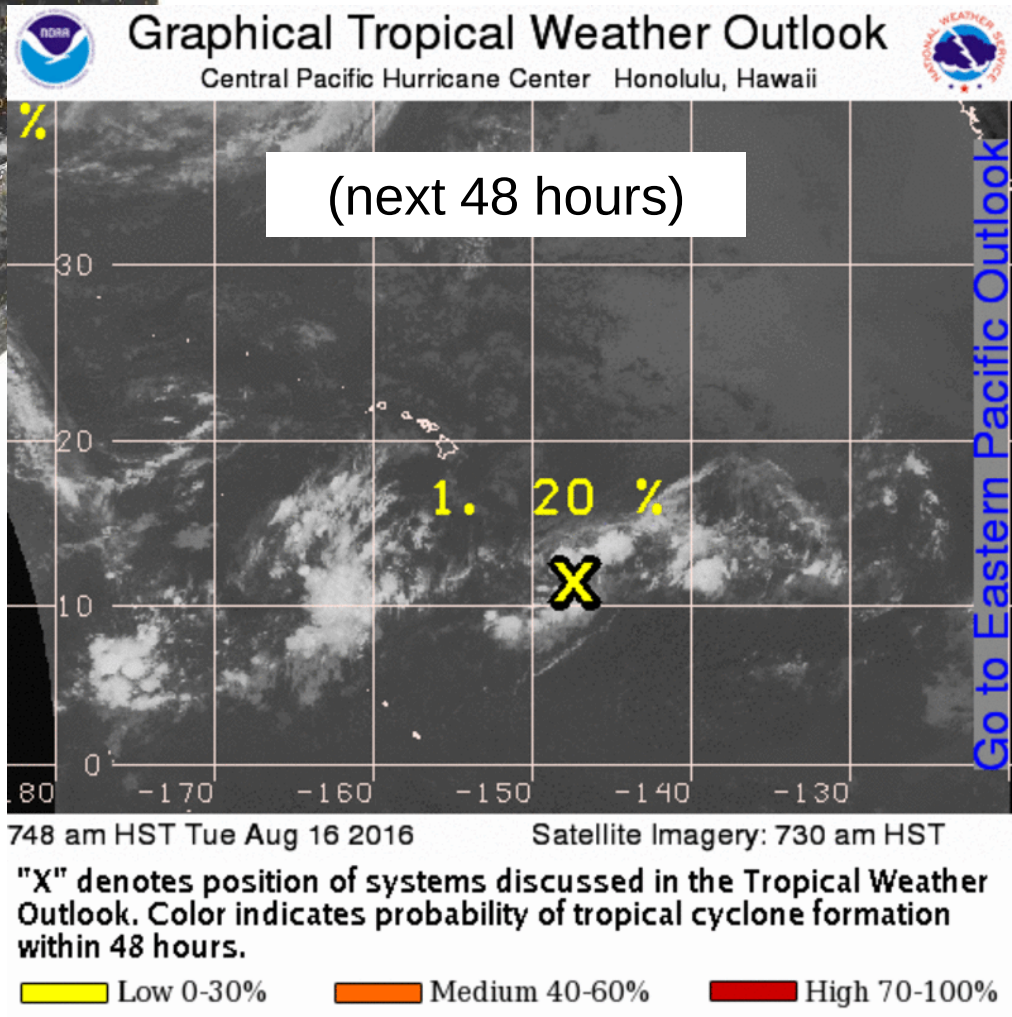


Tropical Cyclone Formation Potential for the Five-Day Period Ending at 11:00 am PDT Sun Aug 21 2016
Chance of Cyclone Formation in Five Days: Low < 40% Medium 40-60% High > 60%
X indicates current disturbance location; shading indicates potential formation area.

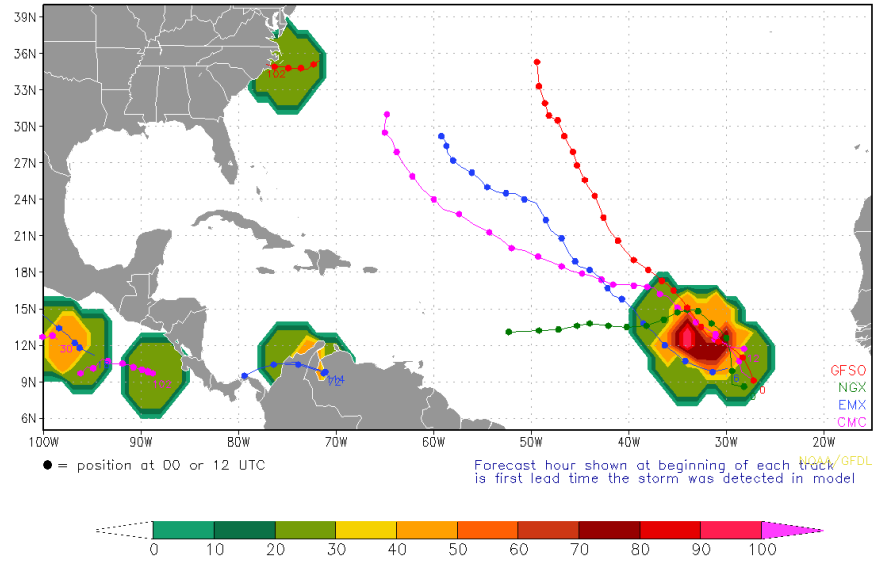
Graphical Tropical Weather Outlooks



Chanthu: 35 kt



Consensus-based Probability (%) of TC genesis
using deterministic models: GFS, NAVGEM, CMC, ECMWF
For forecasts during the 00-120h period from initial time = 2016081600



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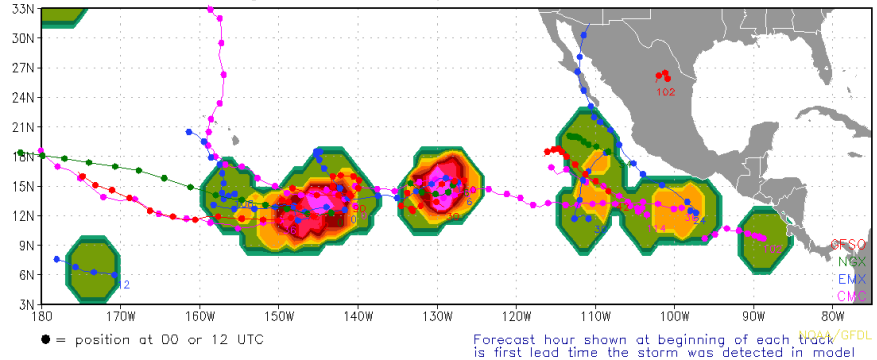

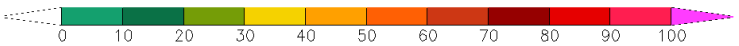

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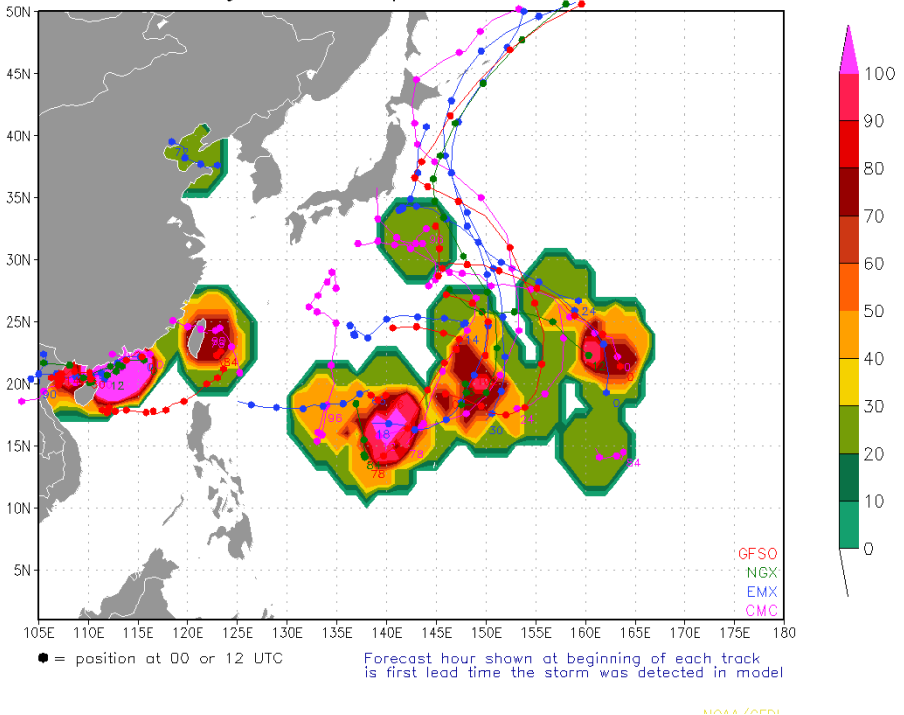
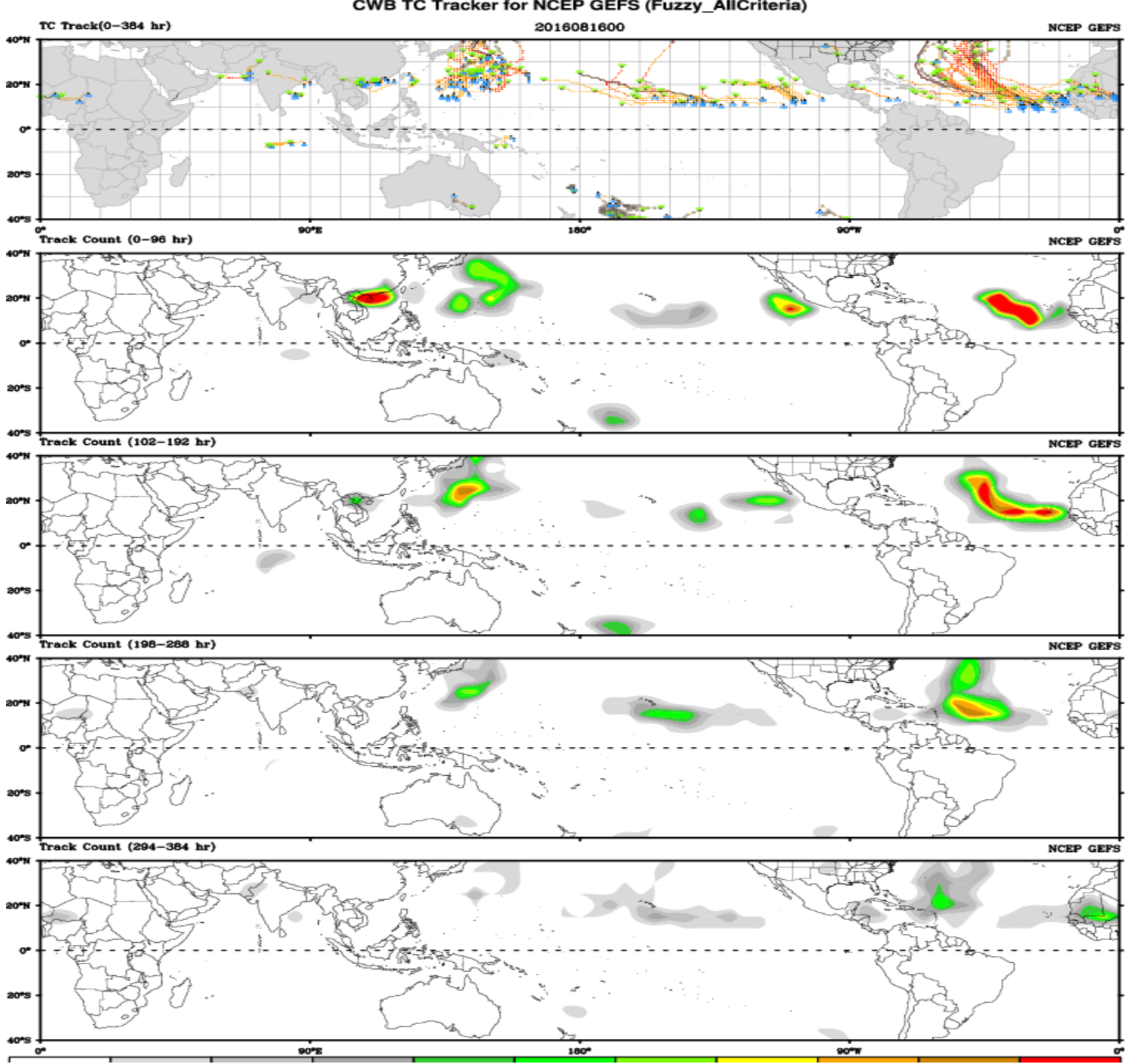




Days 1-4

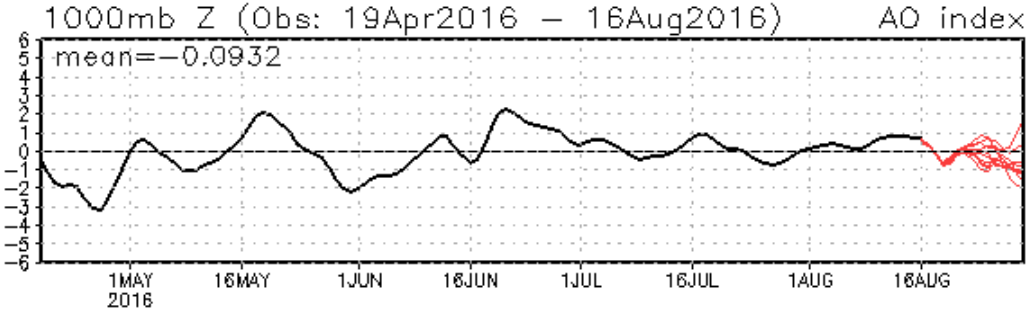
Day 5-8

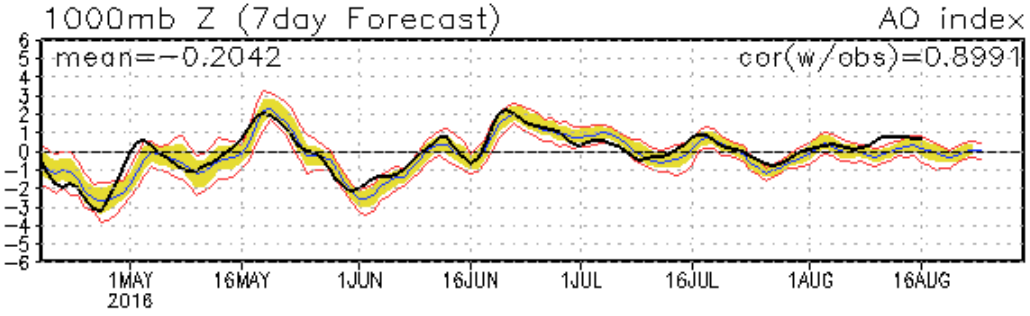
Day 9-12

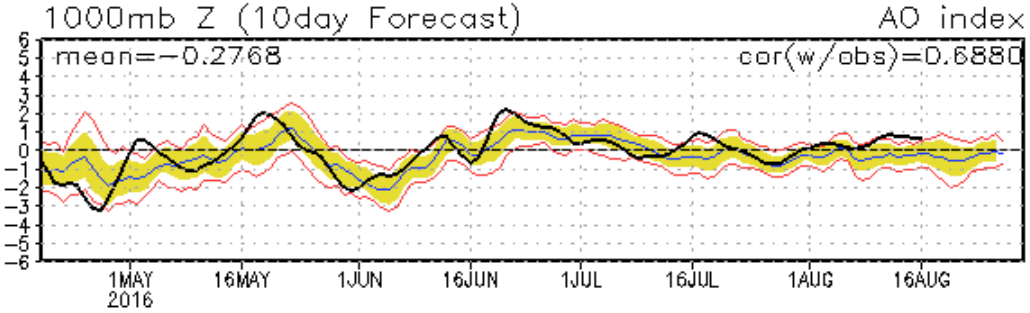
Day 13-15

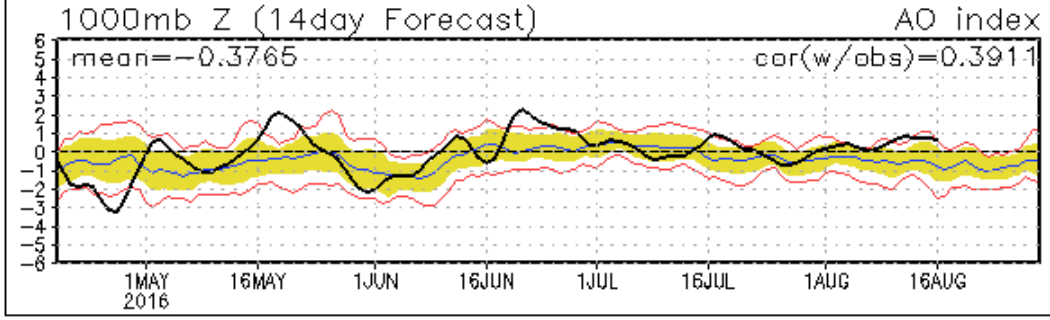
Connections to U.S. Impacts

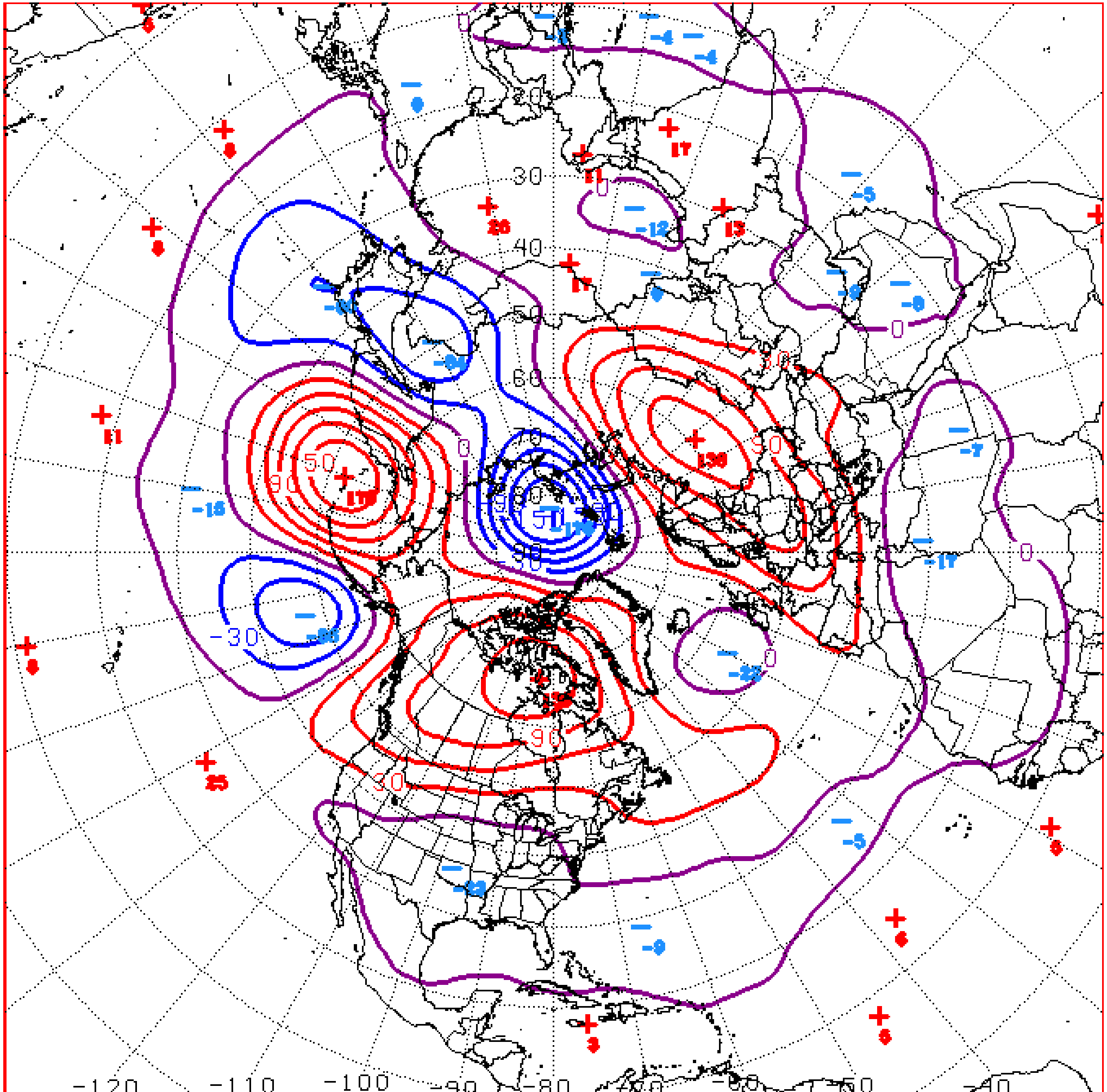
AO: Observed & ENSM forecasts



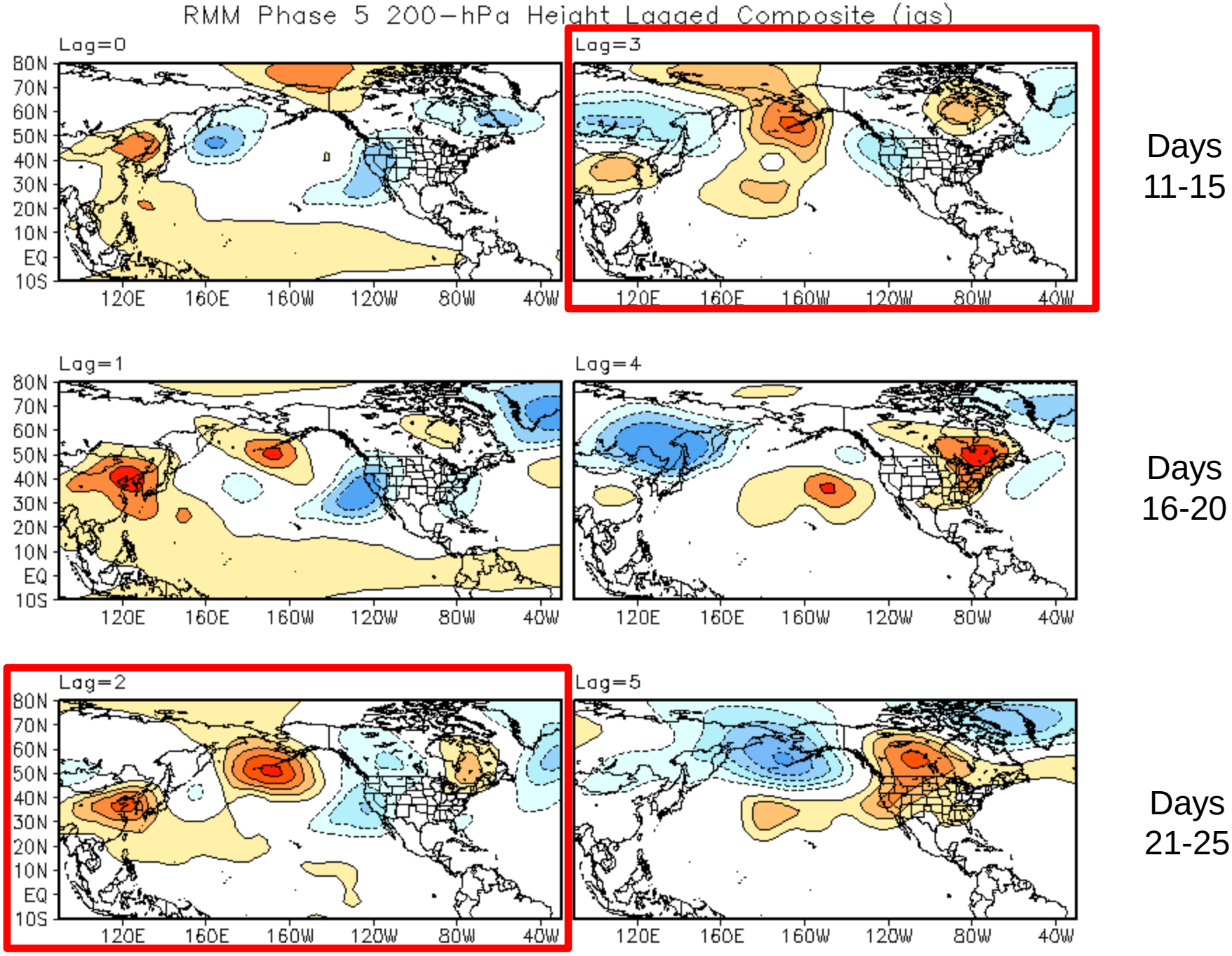




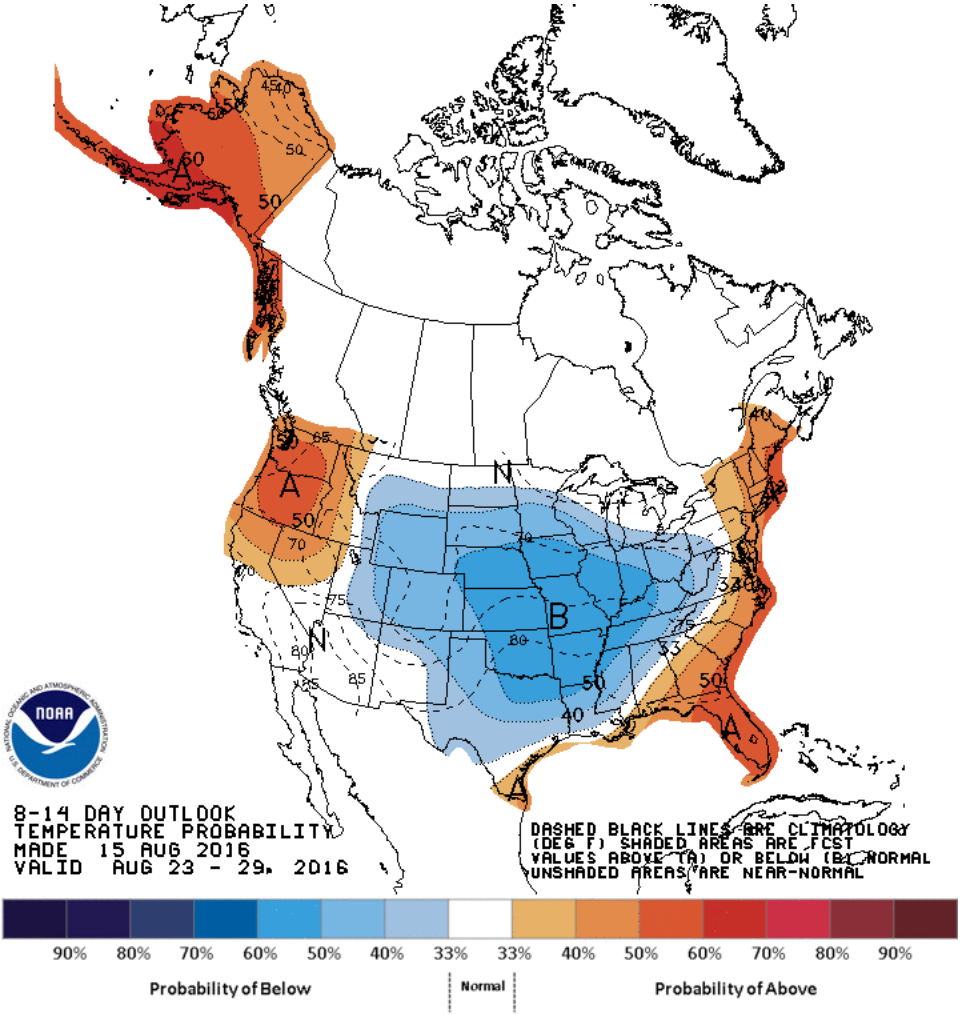


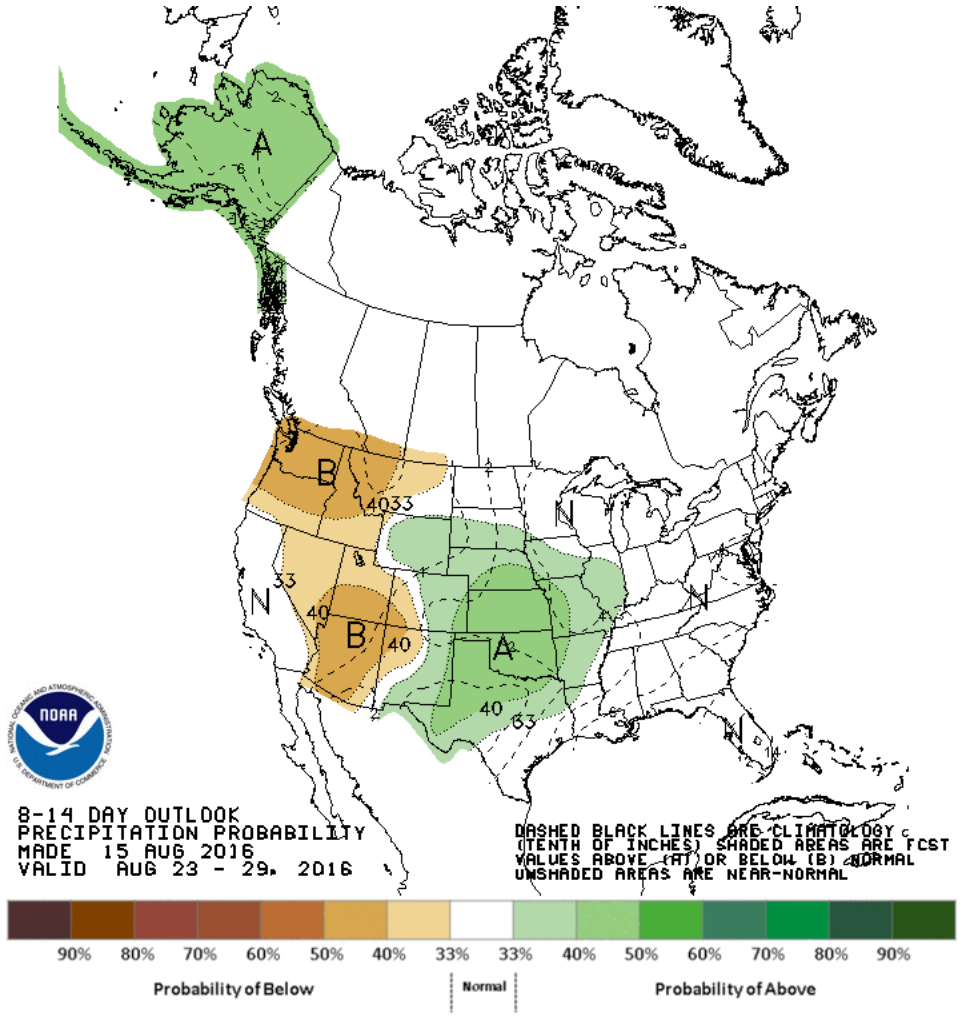


D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE AUG 16 2016 1331 UTC CNTD AUG 27 2016


RMM Phase 5 200-hPa Height Lagged Composite (jas)
Lag=0
Lag=3
Lag=1
Lag=4
Lag=2
Lag=5
80N
70N
60N
50N
40N
30N
20N
10N
EQ
10S
120E
160E
160W
120W
80W
40W
Days 1-5
Days 6-10
Days 11-15
Days 16-20
Days 21-25

Week 2 – Temperature and Precipitation





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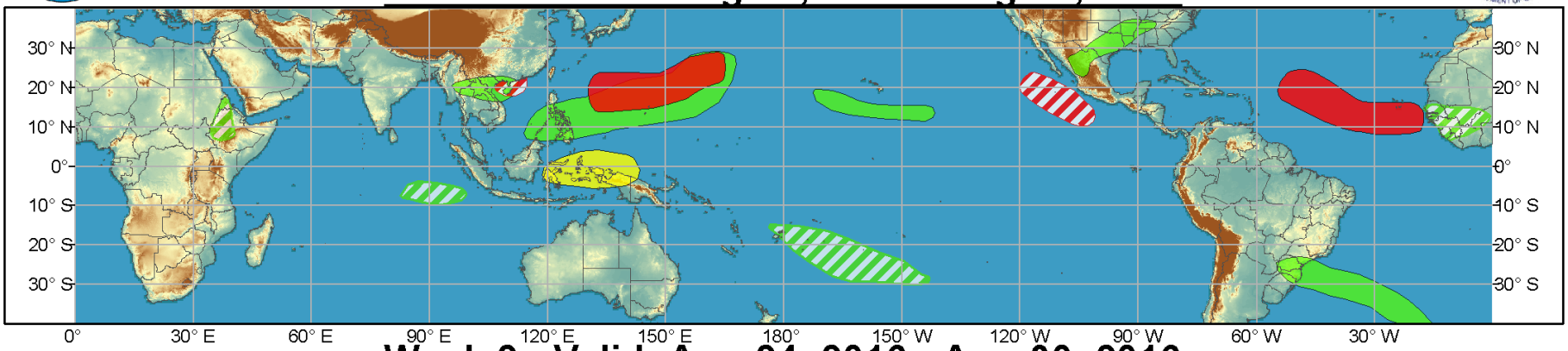

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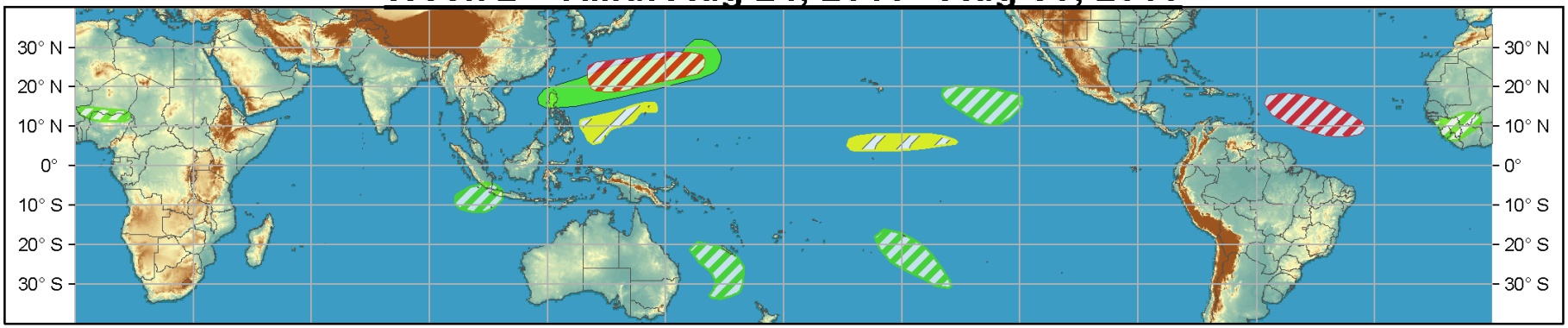

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Forecaster: D.Harnos

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