Global Tropics Hazards And Benefits Outlook

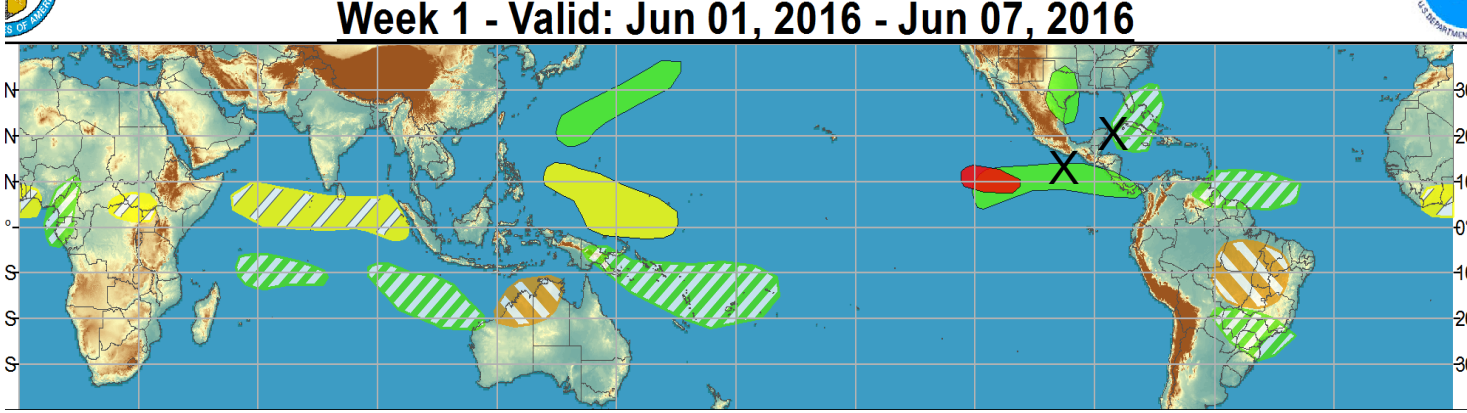
June 7, 2016

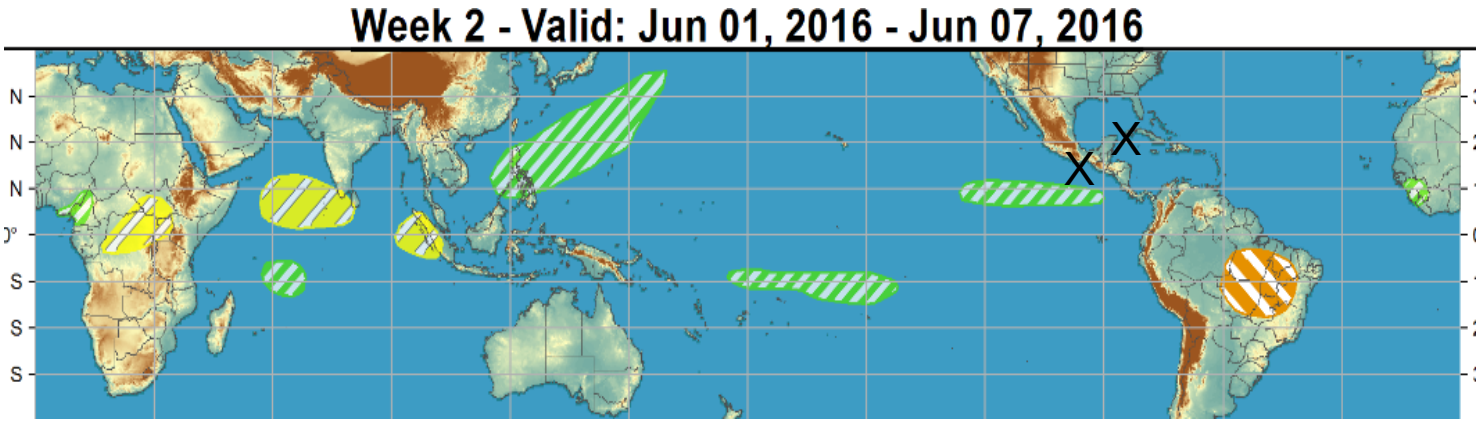
Anthony Artusa

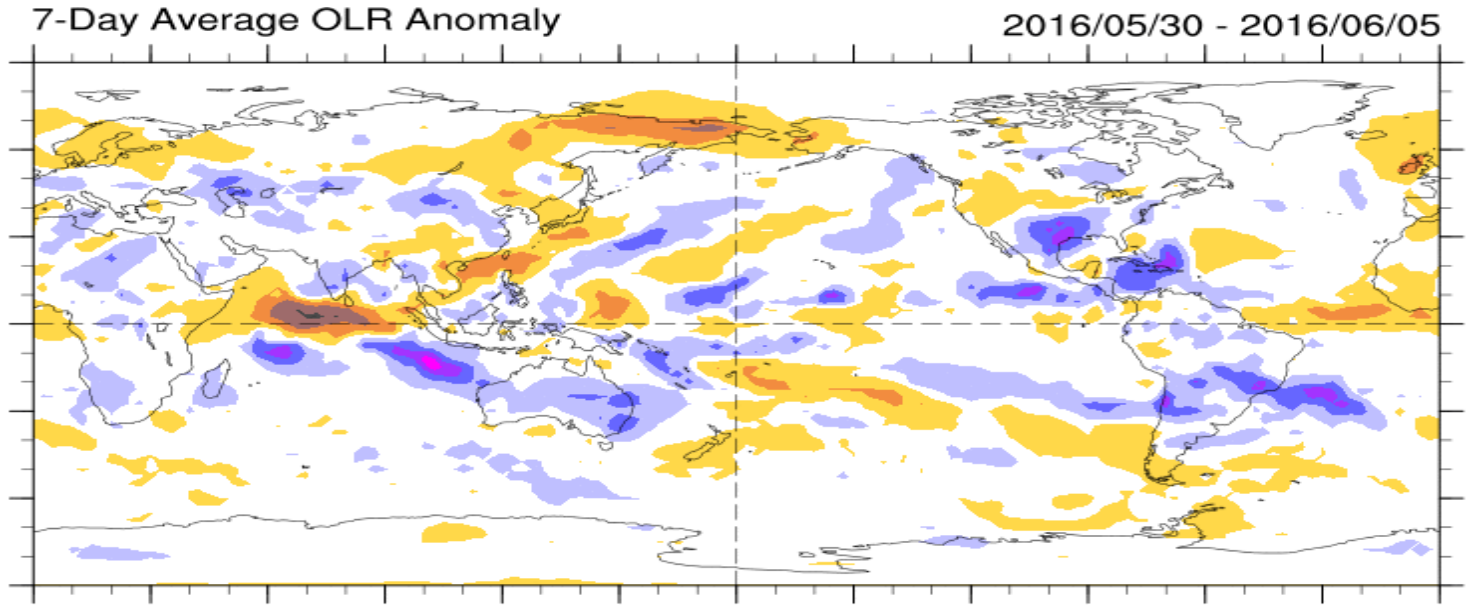
Outline

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

Outlook Review

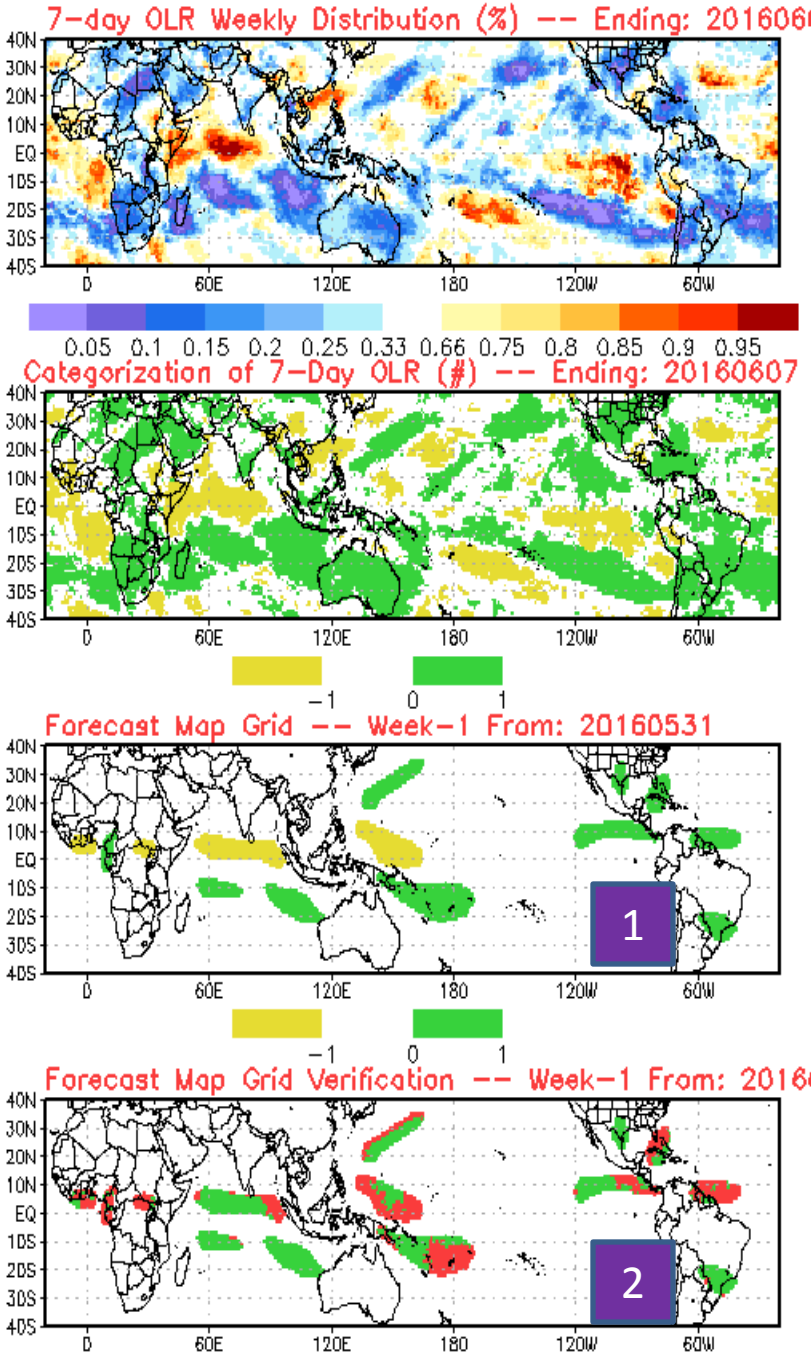


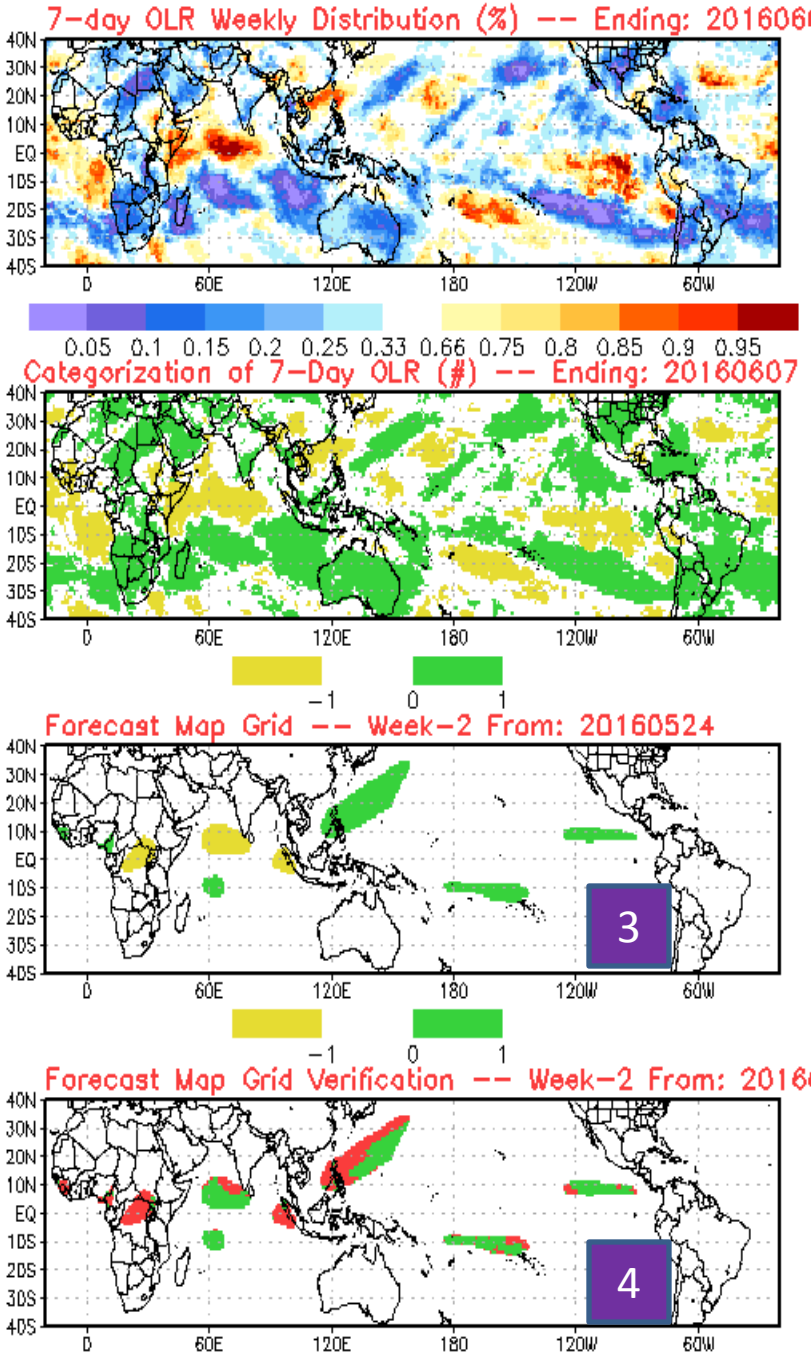




Cool shading
More clouds/rain

Warm shading
Less clouds/rain


7-day OLR Weekly Distribution (%) -- Ending: 20160607
0.05 0.1 0.15 0.2 0.25 0.33 0.66 0.75 0.8 0.85 0.9 0.95
Categorization of 7-Day OLR (#) -- Ending: 20160607
-1 0 1
Forecast Map Grid -- Week-1 From: 20160531
1
-1 0 1
Forecast Map Grid Verification -- Week-1 From: 20160531
2
Hit: Green, Miss: Red
Heidke Skill Score: 35.6540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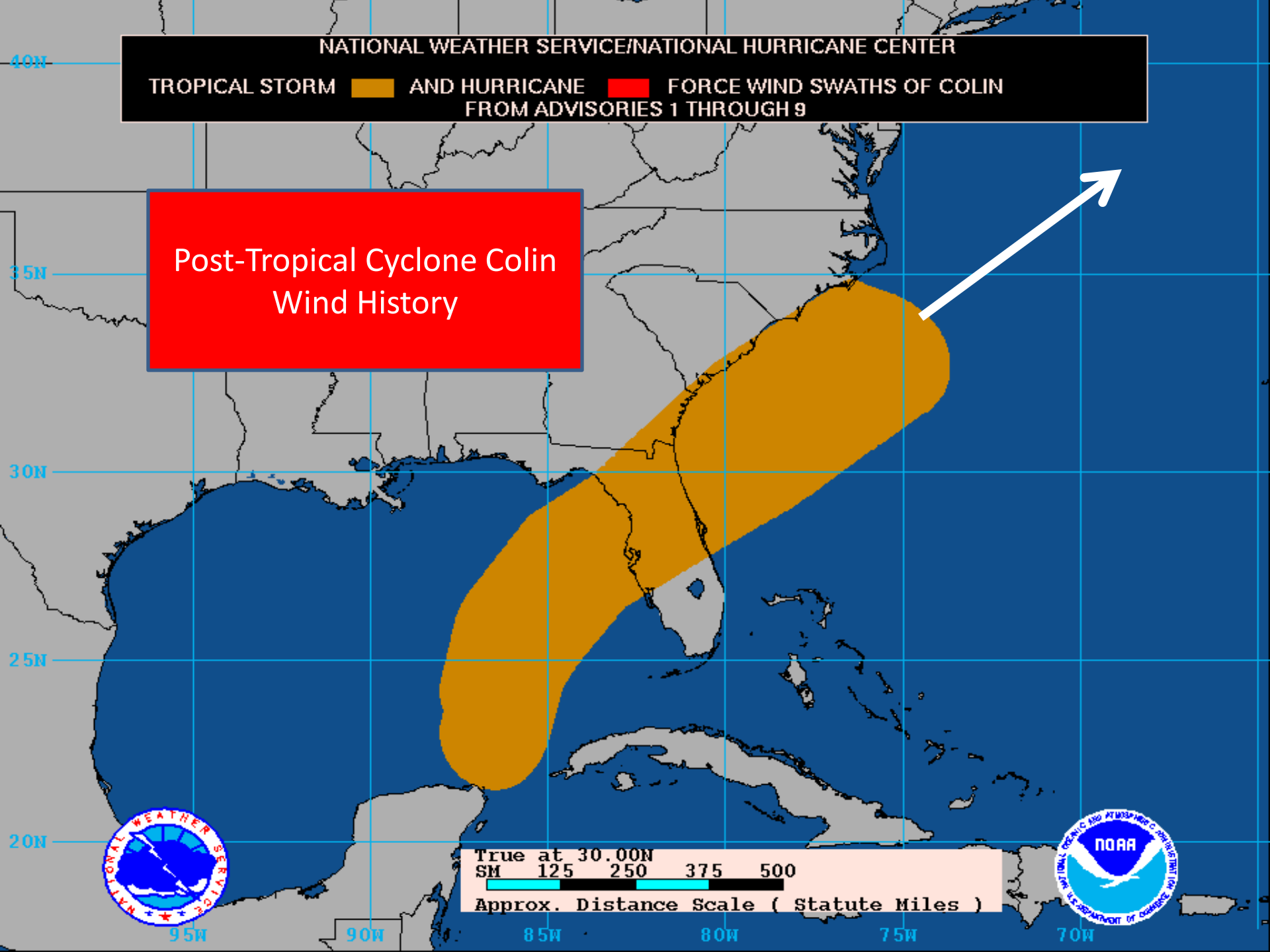
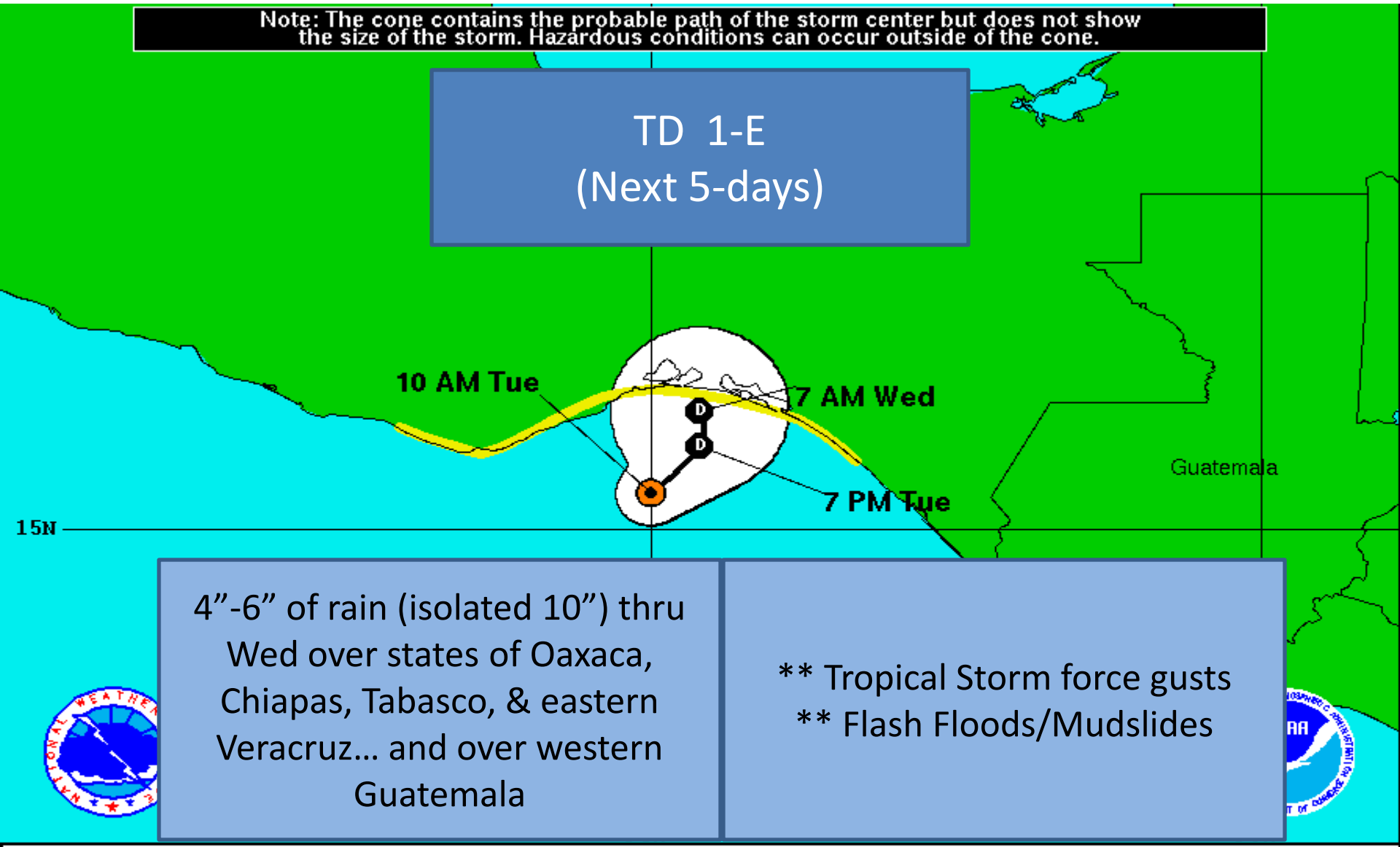
0.05 0.1 0.15 0.2 0.25 0.33 0.66 0.75 0.8 0.85 0.9 0.95
Categorization of 7-Day OLR (#) -- Ending: 20160607
-1 0 1
Forecast Map Grid -- Week-2 From: 20160524
3
-1 0 1
Forecast Map Grid Verification -- Week-2 From: 20160524
4
Hit: Green, Miss: Red
Heidke Skill Score: 28.7636


NATIONAL WEATHER SERVICE/NATIONAL HURRICANE CENTER
TROPICAL STORM AND HURRICANE FORCE WIND SWATHS OF COLIN
FROM ADVISORIES 1 THROUGH 9
Post-Tropical Cyclone Colin
Wind History
40N
35N
30N
25N
20N
95W
90W
85W
80W
75W
70W
True at 30.00N
SM 125 250 375 500
Approx. Distance Scale (Statute Miles)
NOAA



Tropical Depression One-E
Tuesday June 7, 2016
10 AM CDT Advisory 4
NWS National Hurricane Center

Current Information:
Center Location 15.3 N 95.0 W
Max Sustained Wind 35 mph
Movement ENE at 7 mph

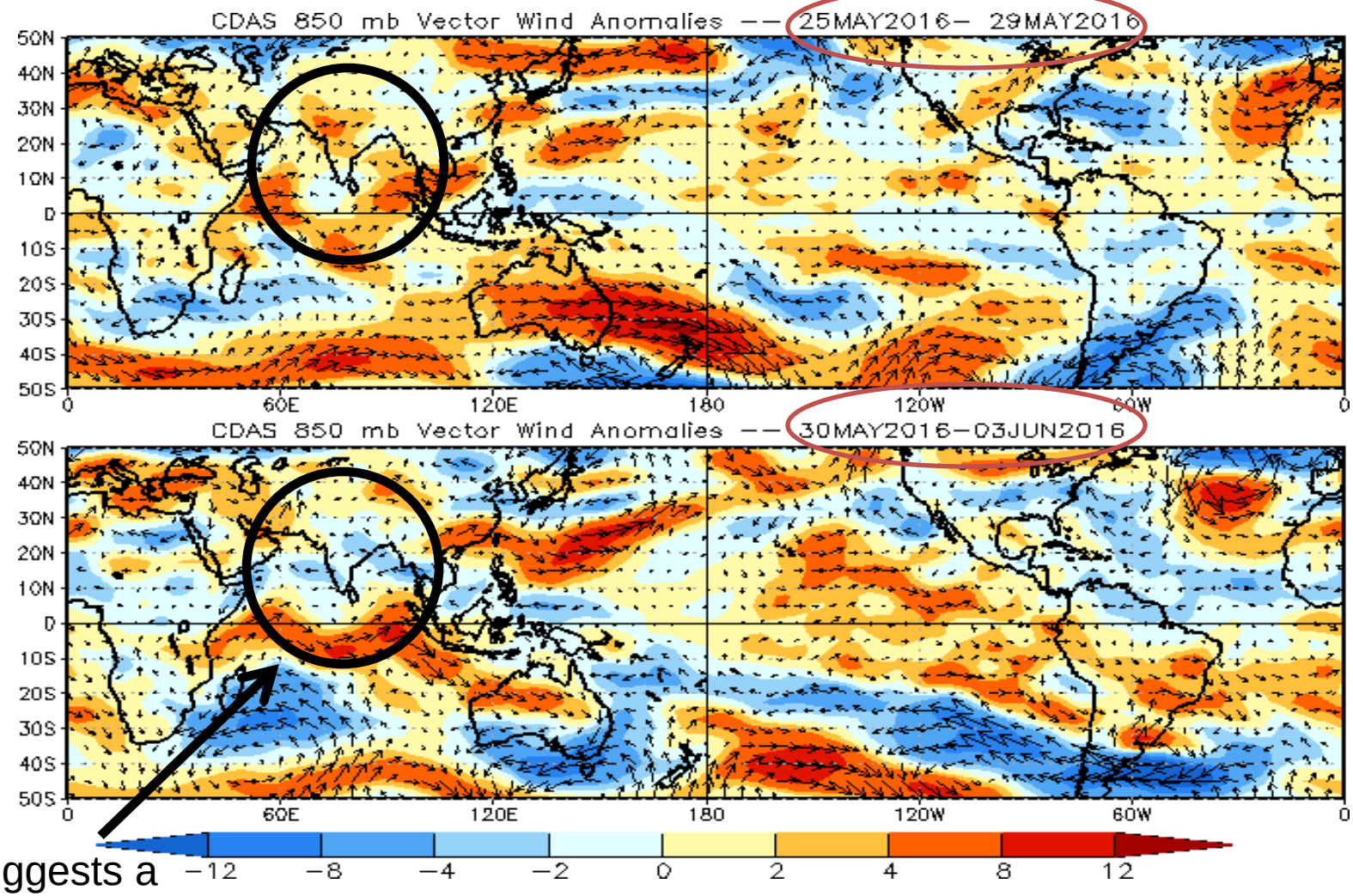
Forecast Positions:
Tropical Cyclone Post-Tropical
Sustained Winds: D < 39 mph
S 39-73 mph H 74-110 mph M > 110mph

Potential Track Area:
Day 1-3 Day 4-5

Watches:
Hurricane Trop.Storm

Warnings:
Hurricane Trop.Storm

850-mb Wind Anomalies



Suggests a delay/false start in Indian Monsoon

Synopsis of Climate Modes

ENSO:

•La Nina Watch in effect as of 12 May 2016

La Nina favored to develop during NH Summer; ~75% chance of La Nina during the Fall and Winter 2016/17.

MJO and other subseasonal tropical variability:

• MJO in phase 7/8 (Western Hemisphere) last week. Residual convection over eastern Indian Ocean/western Pacific interfering with Wave-1 structure.

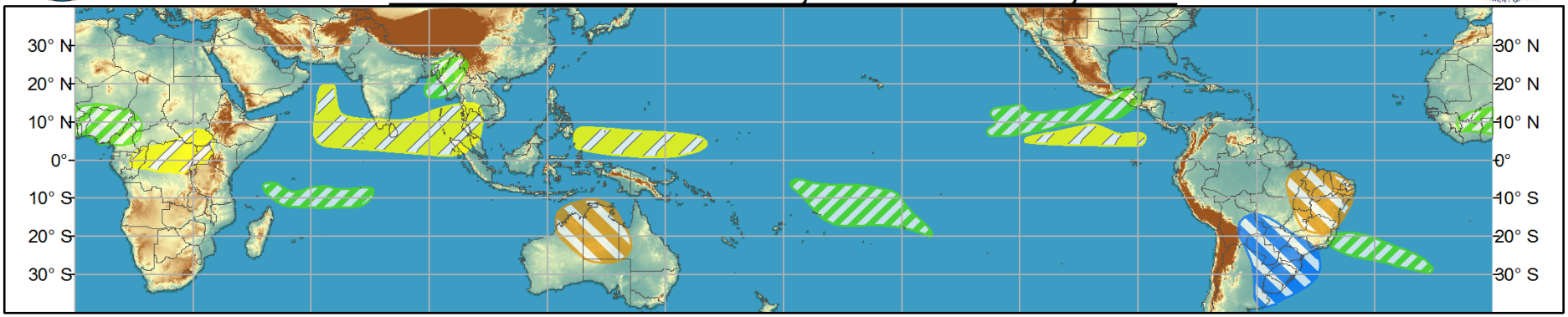
• Most dynamical model MJO index forecasts depict the MJO signal to remain weak over the coming week, but an increase in amplitude is generally expected over the Indian Ocean (GEFS) during Week-2. ECMWF/Canadian propagate signal even farther east to Maritime Continent. Significant uncertainty remains.

Extratropics:

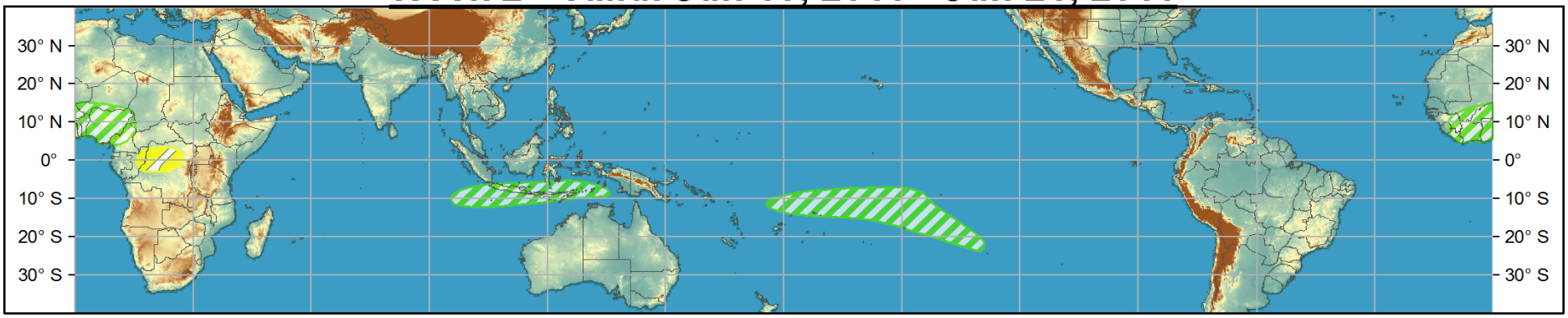
• The extended range temperature and precipitation forecasts for the U.S. may be affected by potential tropical development in the Caribbean/Gulf of Mexico/Florida/Bahamas region.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jun 08, 2016 - Jun 14, 2016



Week 2 - Valid: Jun 15, 2016 - Jun 21, 2016



Produced: 06/07/2016

Forecaster: Artusa

	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.
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EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

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NPS PRAESTANTIA PER SCIENTIAM

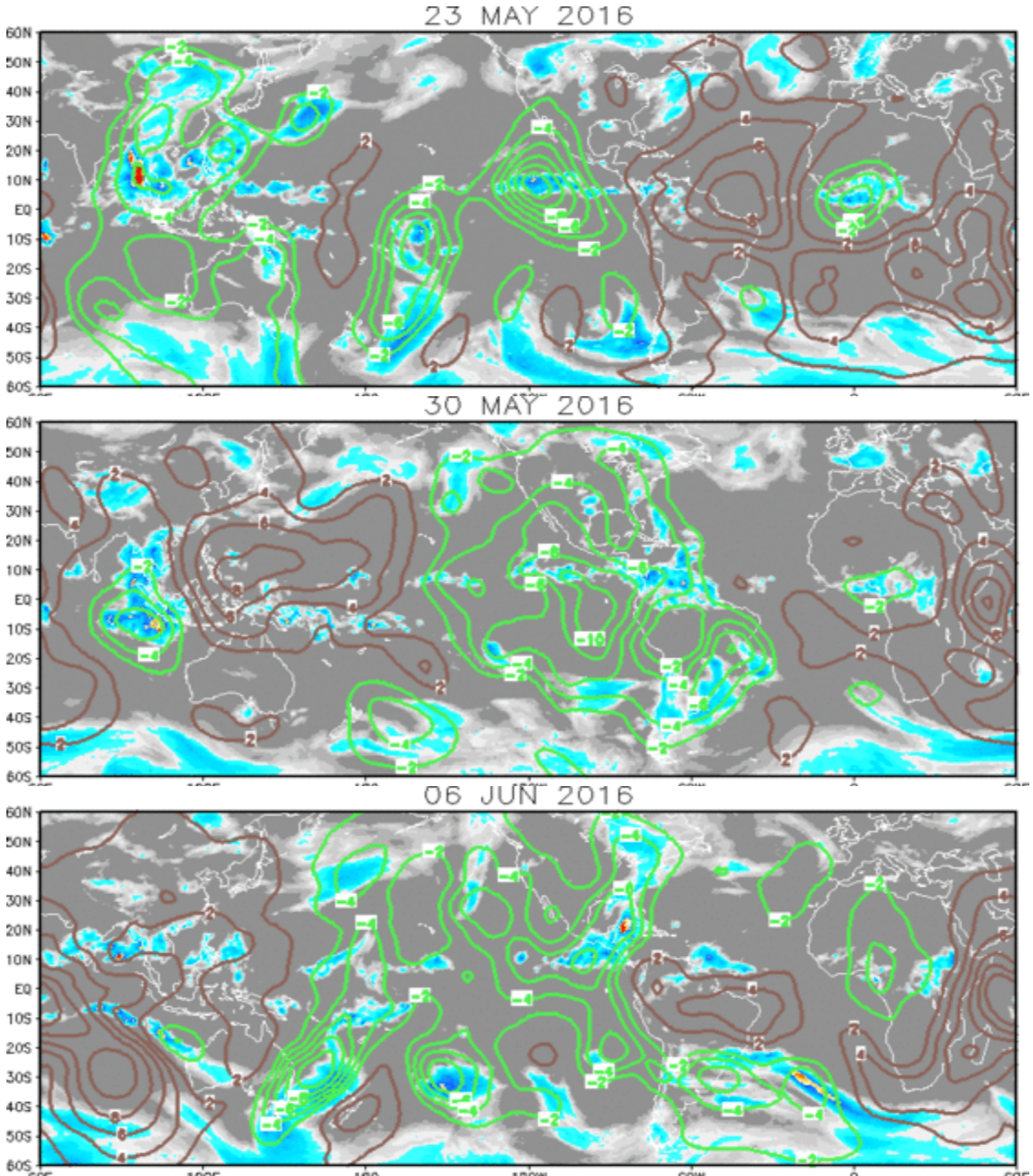
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

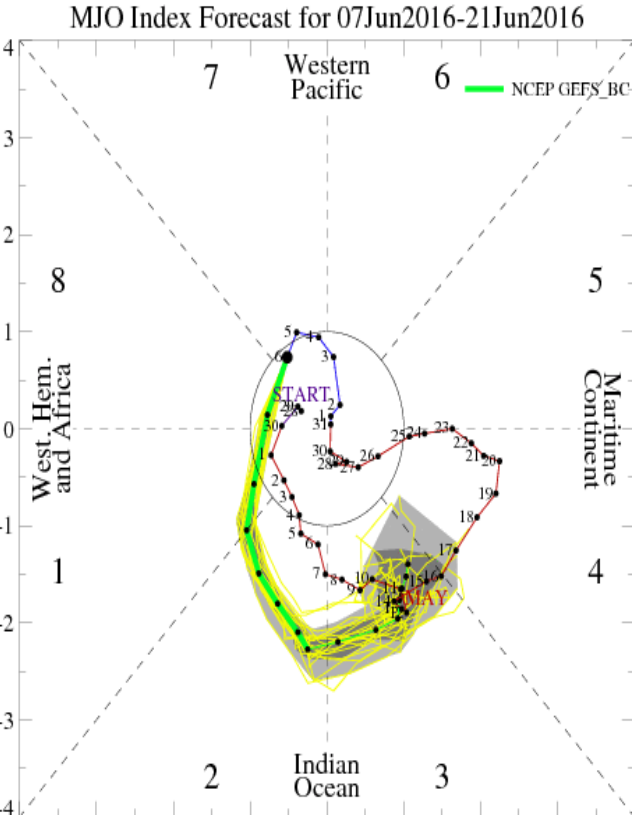
Wave-2 pattern with 200-hPa divergence over Asia, Australia, & central/eastern Pacific.

200-hPa divergence over the eastern Pacific/Americas & eastern IO

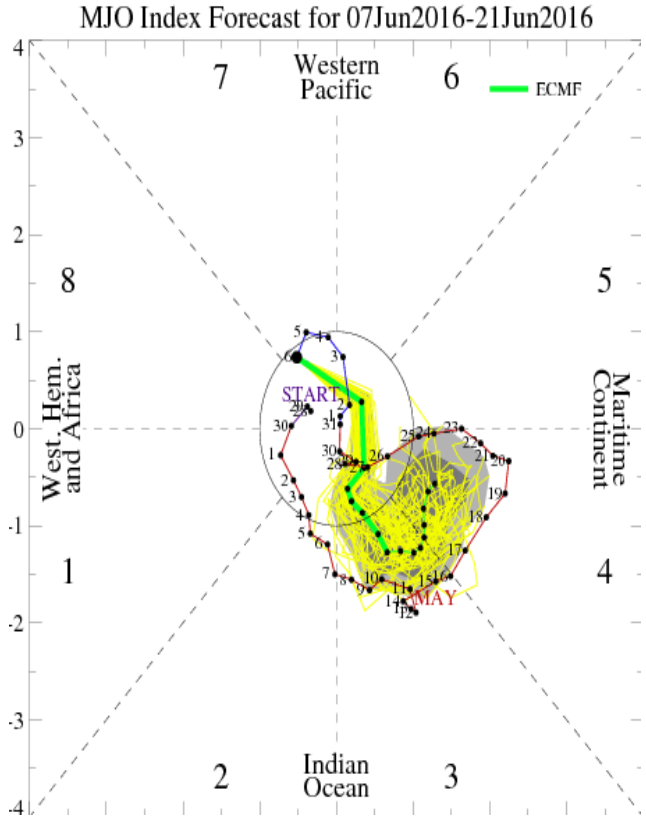
Upper-level divergence remains over eastern IO, most of Pacific/Africa.



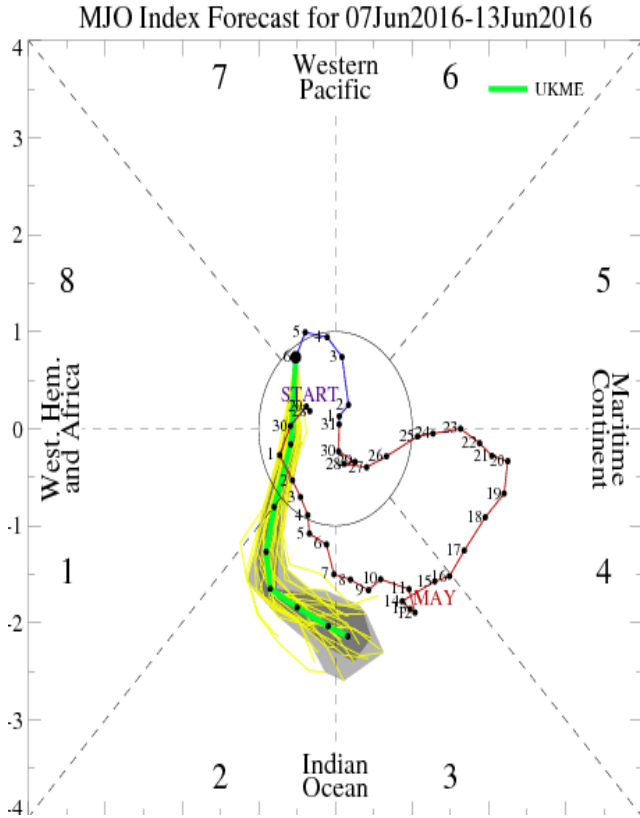
MJO Observation/Forecast



GEFS

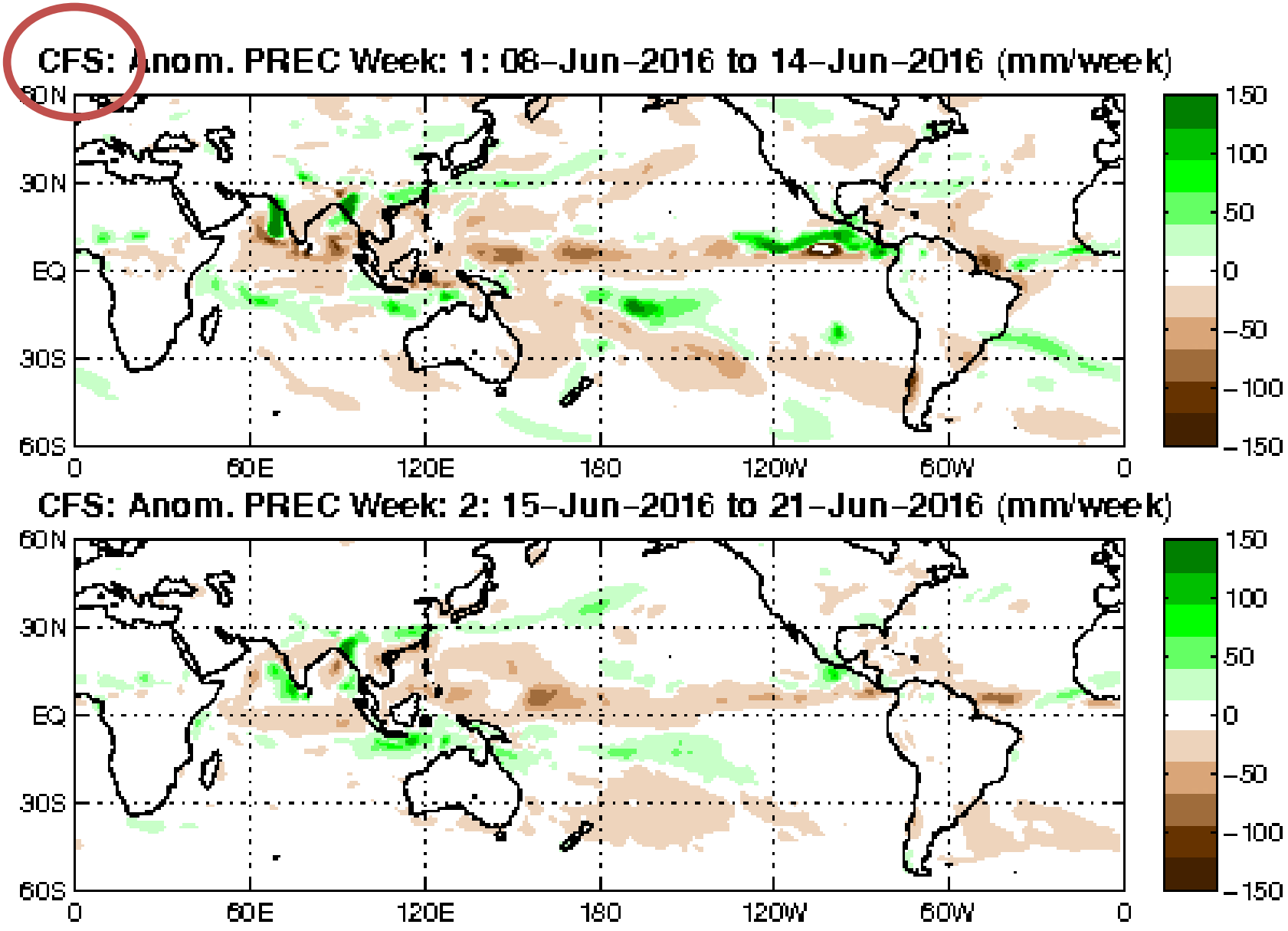


ECMWF



UKMET

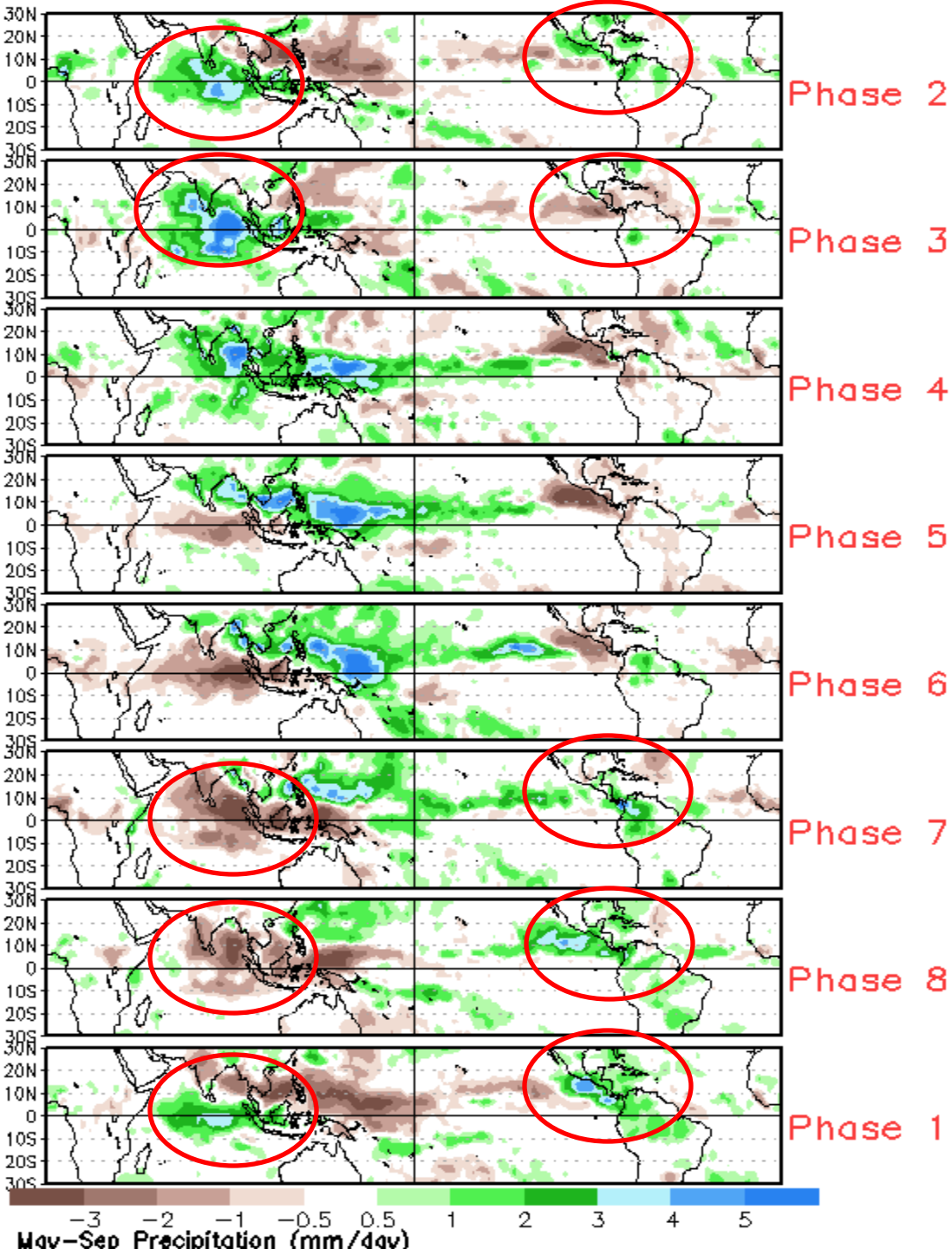
Wheeler-Hendon based analyses of model forecasts indicate a weak signal during week-1, with an expected increase in amplitude & rapid propagation of Intraseasonal signal into the Indian Ocean/Maritime Continent during Week-2.


CFS: Anom. PREC Week: 1: 08-Jun-2016 to 14-Jun-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: 15-Jun-2016 to 21-Jun-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150

Week 2

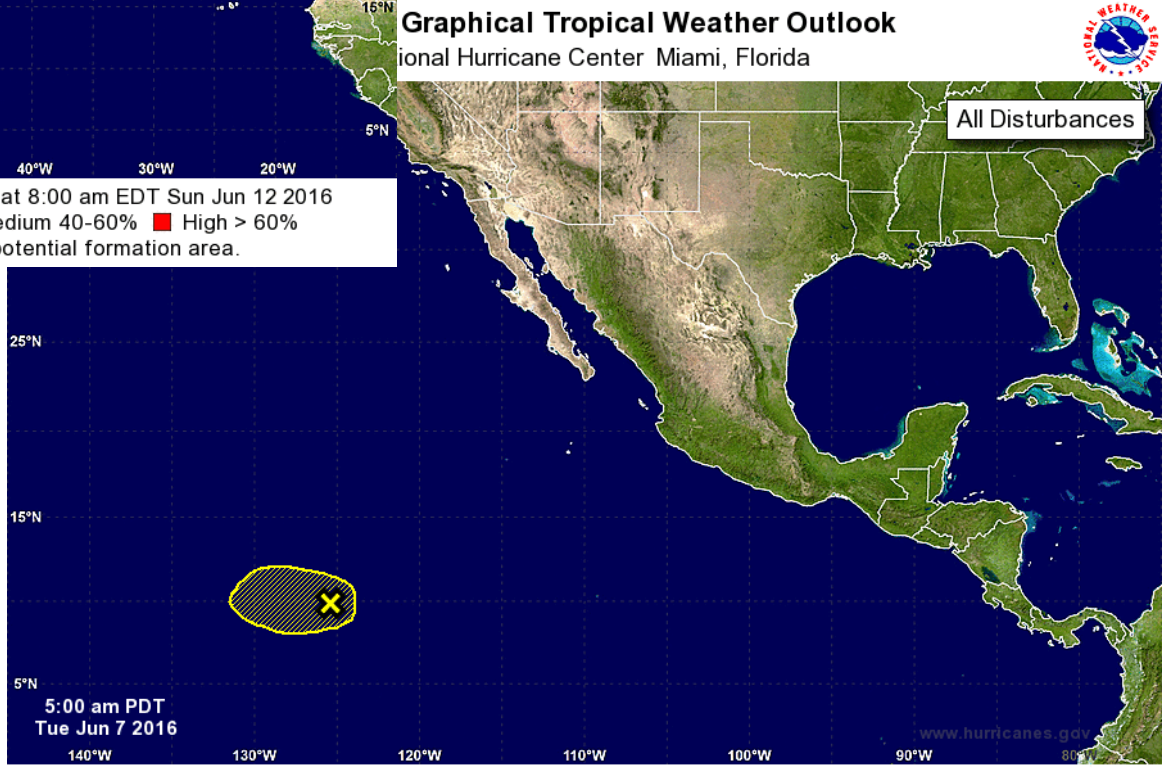
Rainfall Composites (May-Sep)

Week 1



Graphical Tropical Weather Outlooks

Tropical Cyclone Formation Potential for the Five-Day Period Ending at 8:00 am EDT Sun Jun 12 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 Jun 12 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.

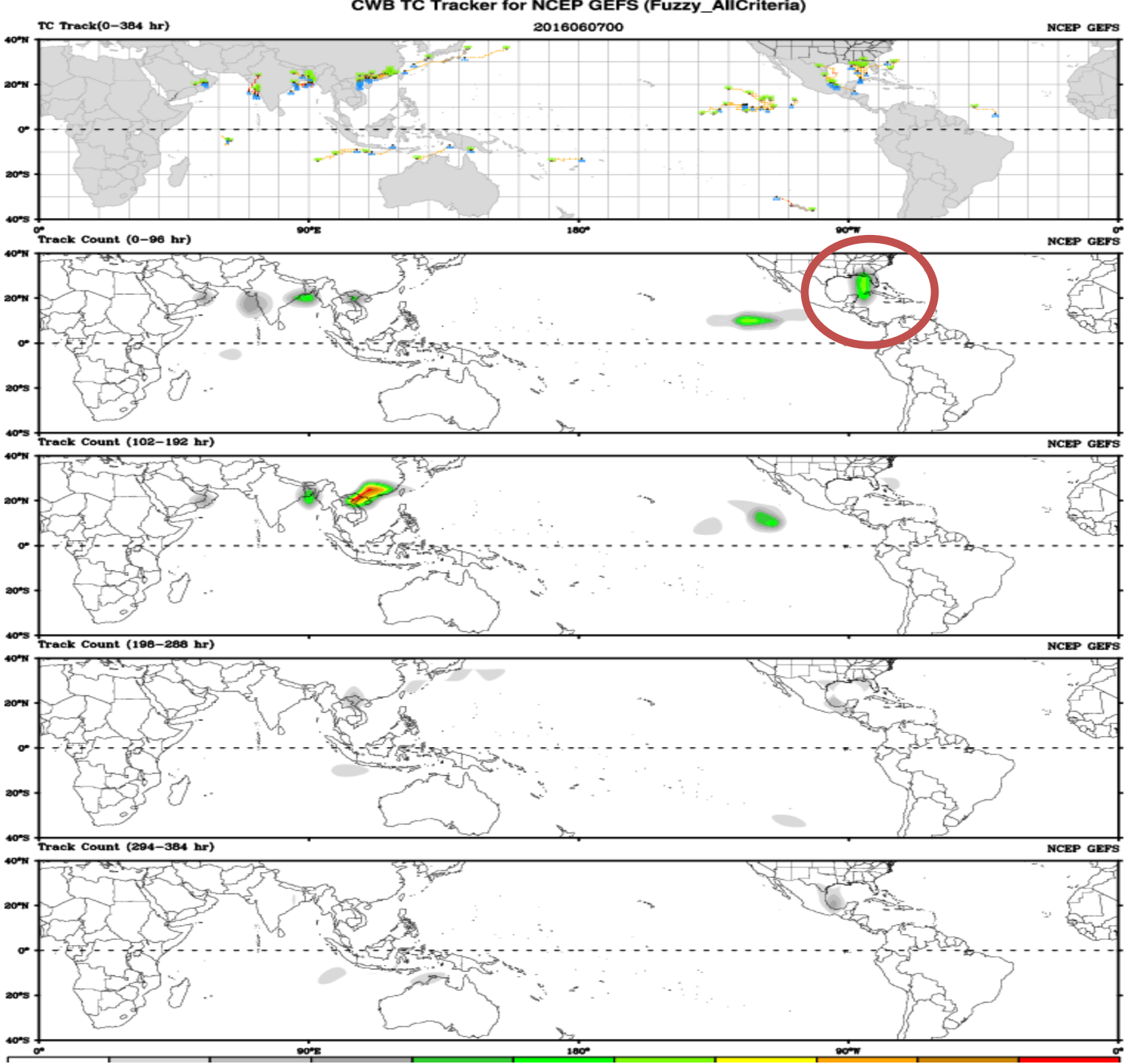
Taiwan's TC Tracker

Days 1-4

Day 5-8

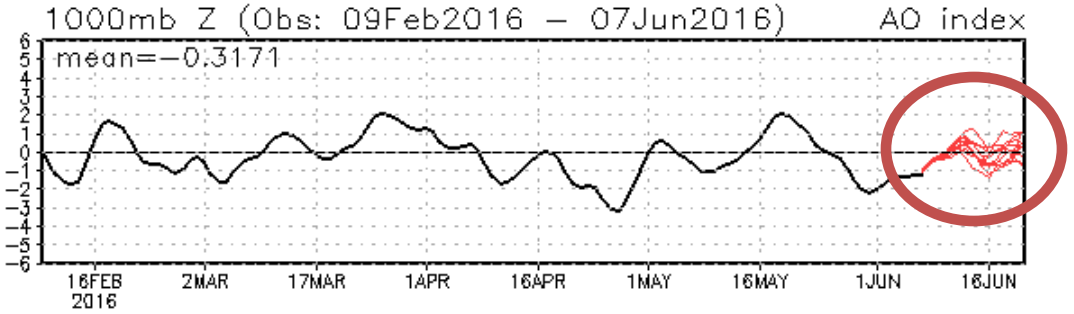
Day 9-12

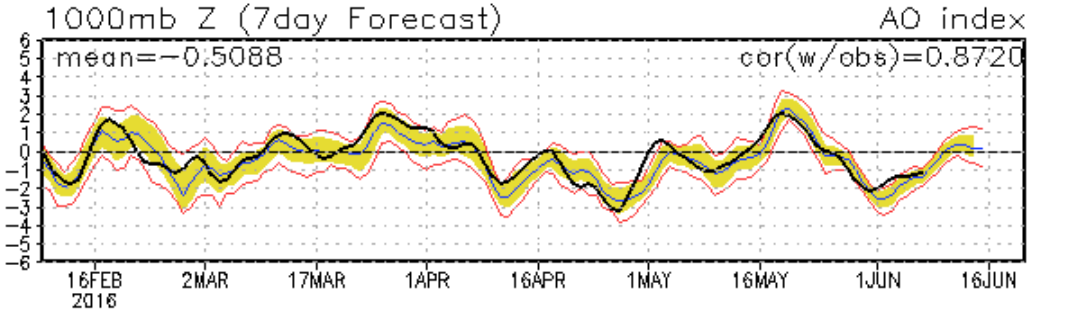
Day 13-15

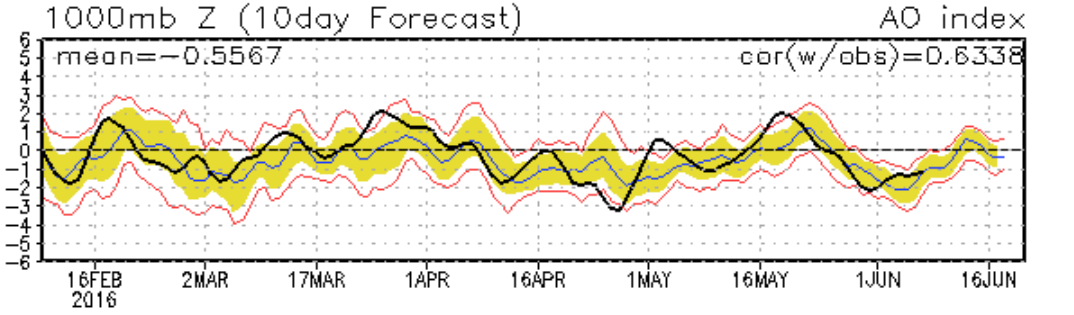


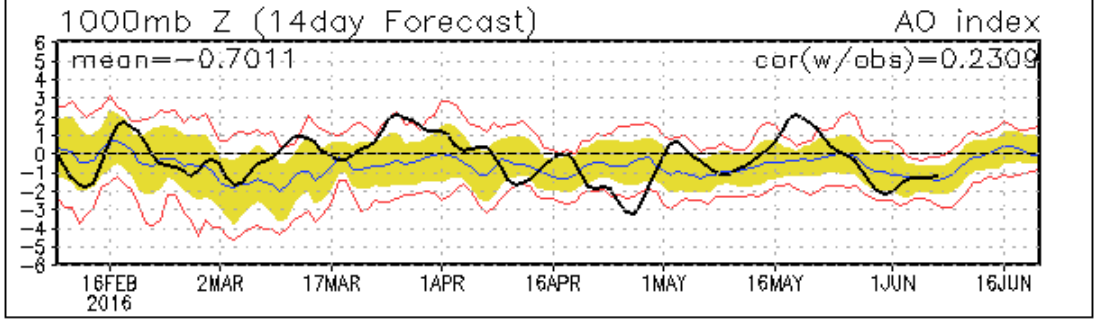
Connections to U.S. Impacts

AO: Observed & ENSM forecasts



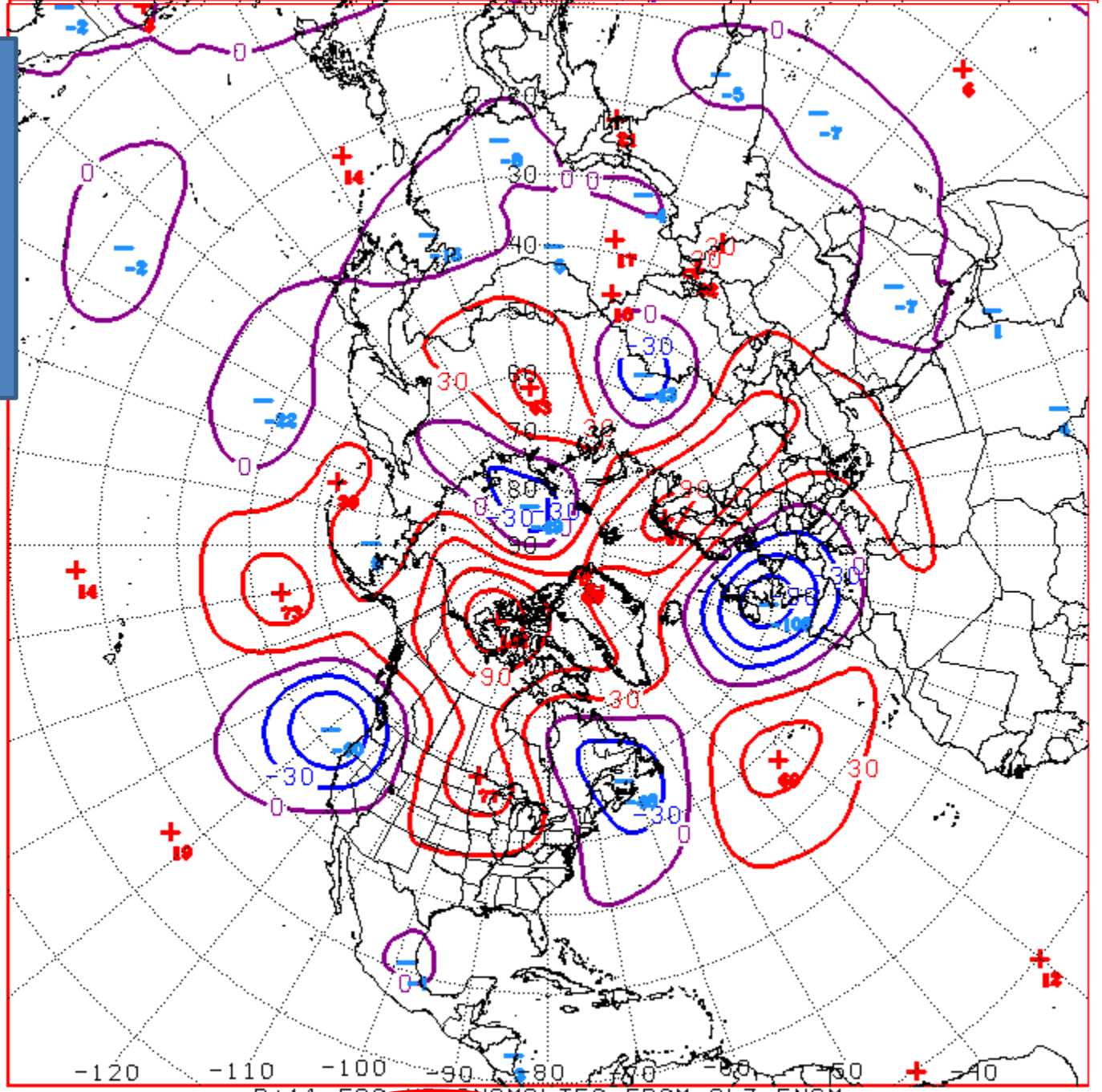




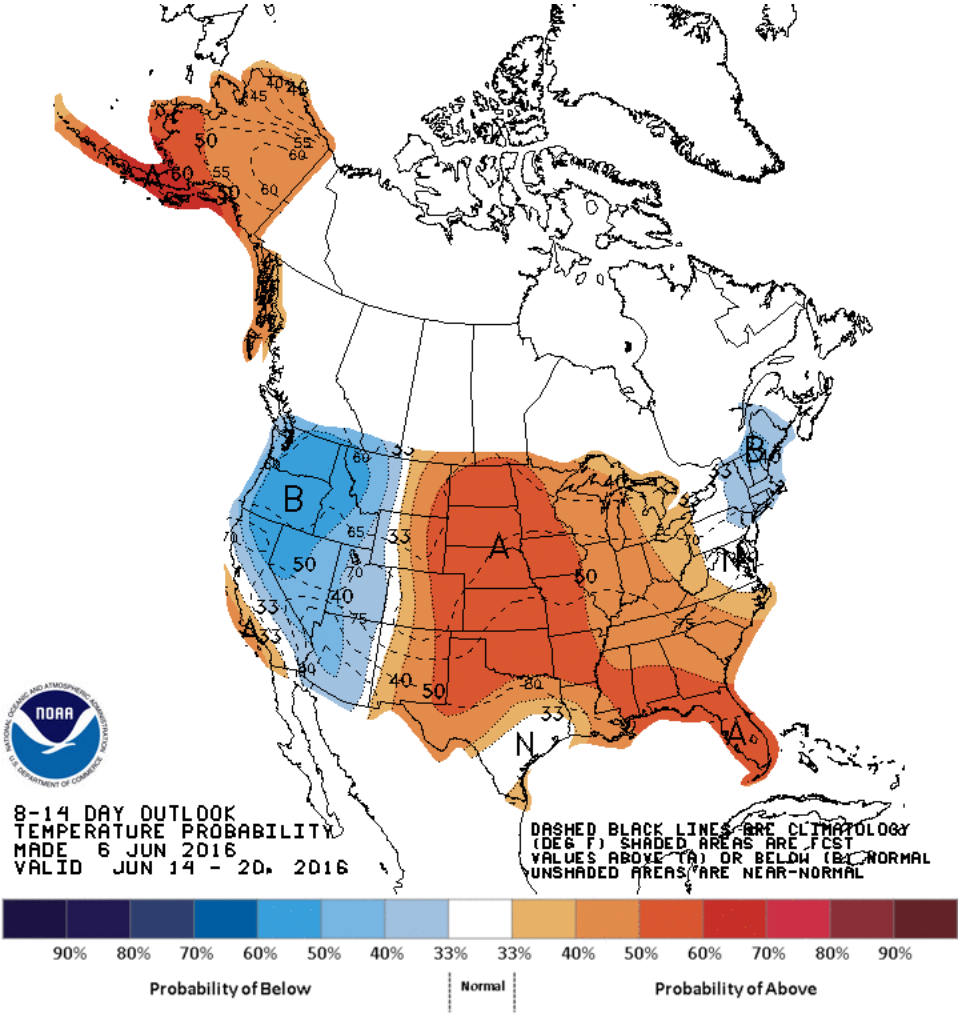


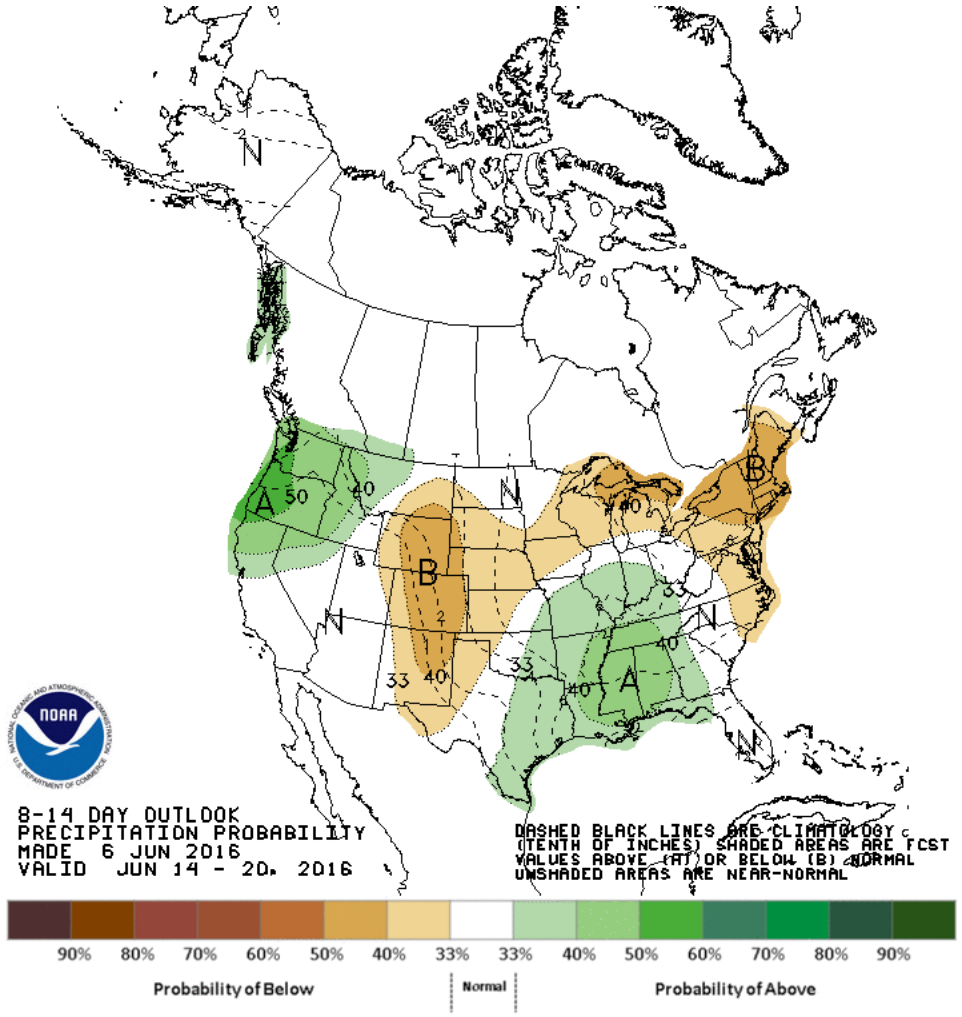
Week-2 Height Anomalies

(GFS Super-ensemble mean)



Week 2 – Temperature and Precipitation





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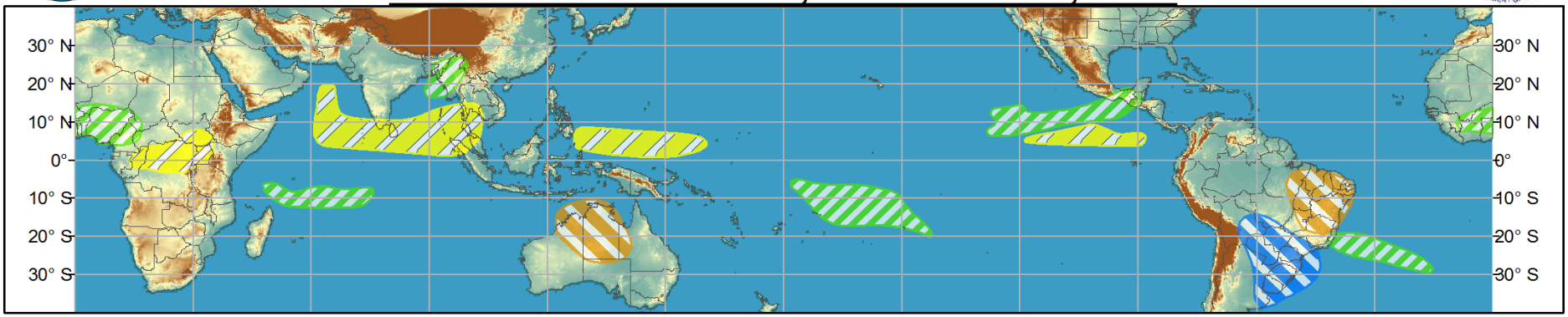

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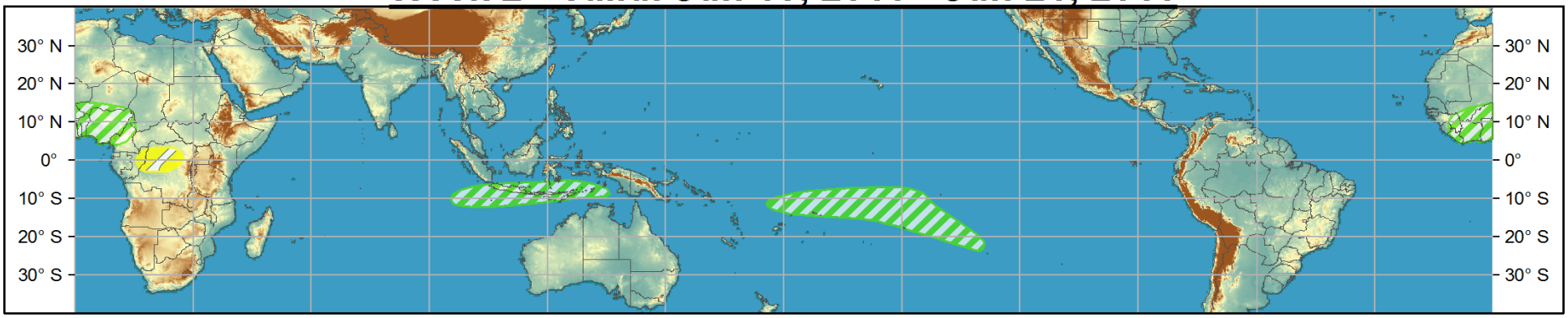

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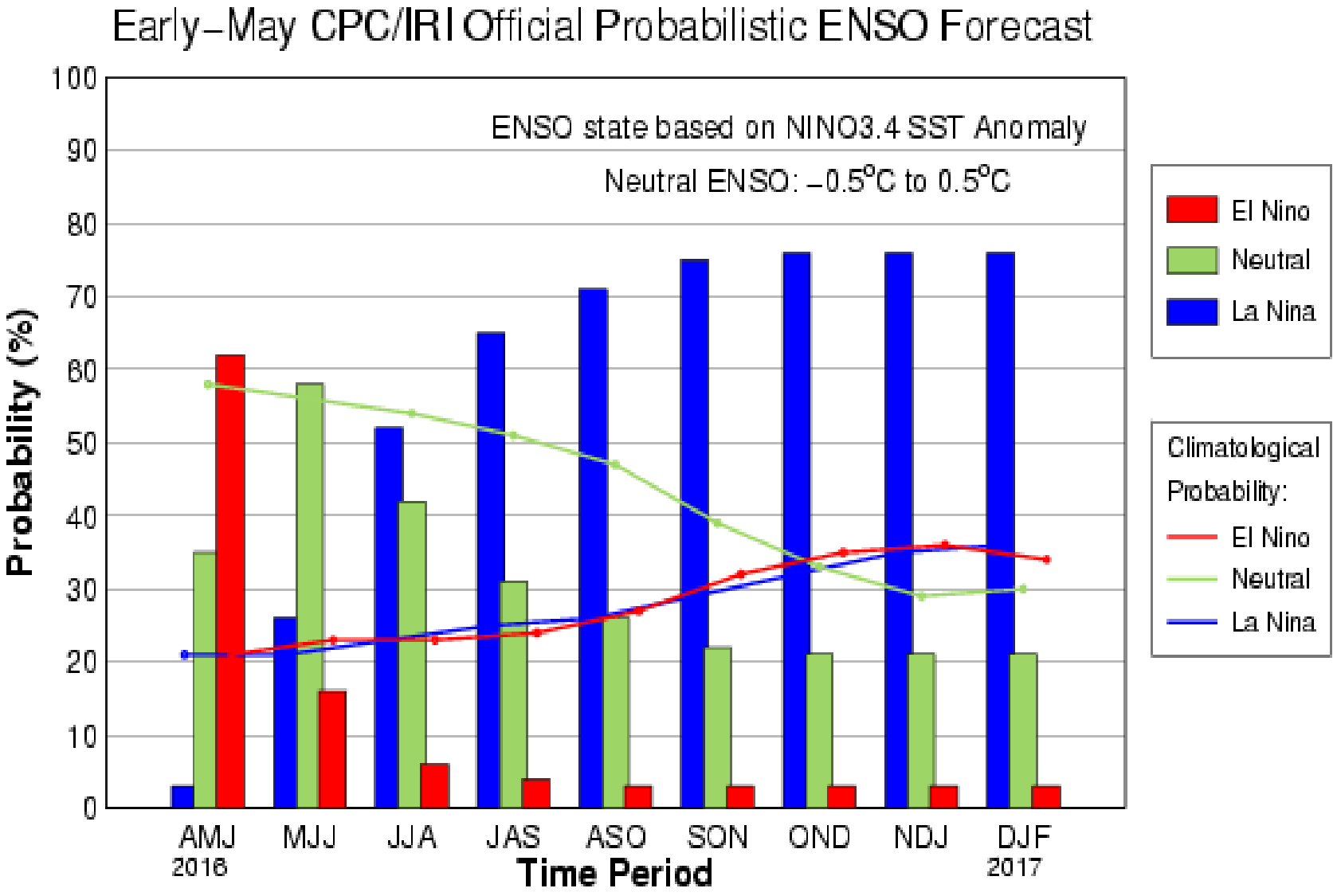
Early–May CPC/IRI Official Probabilistic ENSO Forecast
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: –0.5°C to 0.5°C
Probability (%)
100
90
80
70
60
50
40
30
20
10
0
AMJ
2016
MJJ
JJA
JAS
ASO
SON
OND
NDJ
DJF
2017
Time Period
El Nino
Neutral
La Nina
Climatological Probability:
El Nino
Neutral
La Nina