Global Tropics Hazards And Benefits Outlook

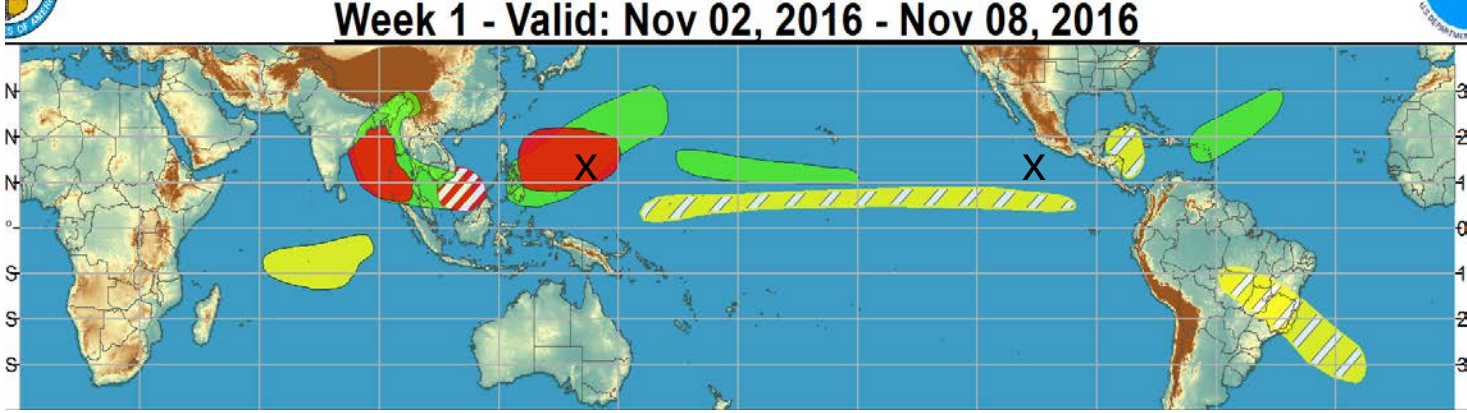
November 8, 2016

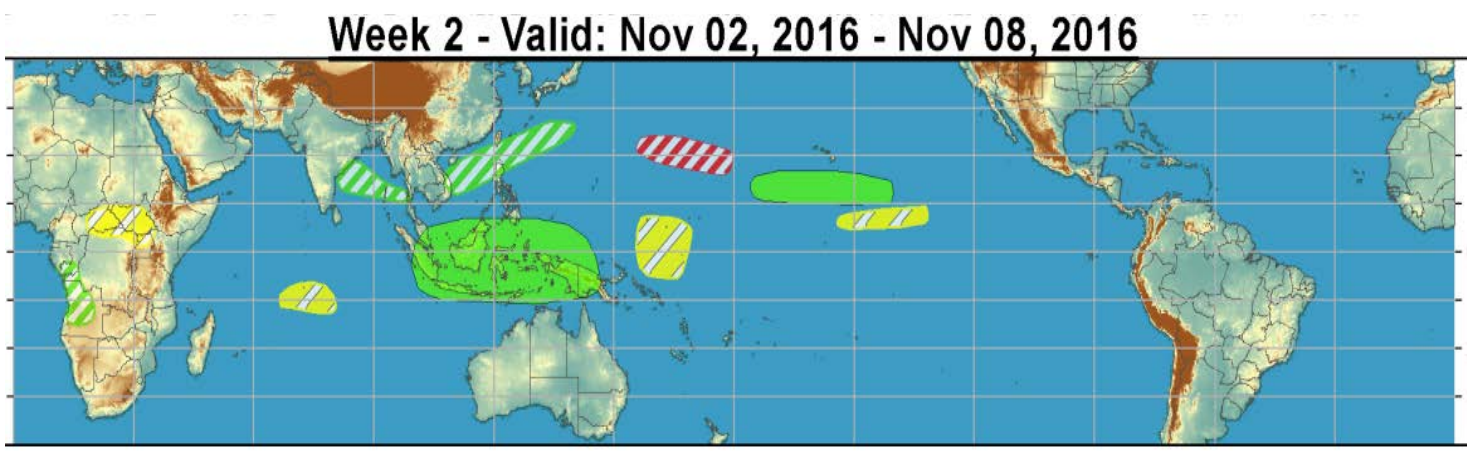
Stephen Baxter

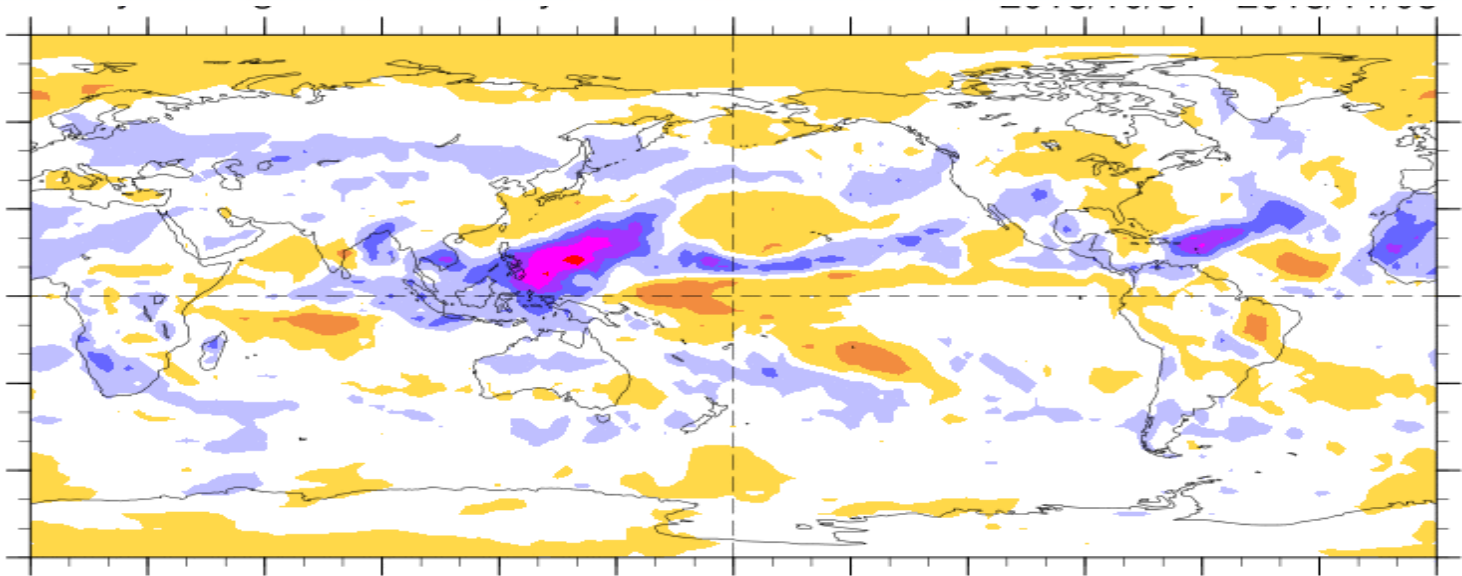
Outline

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

Outlook Review



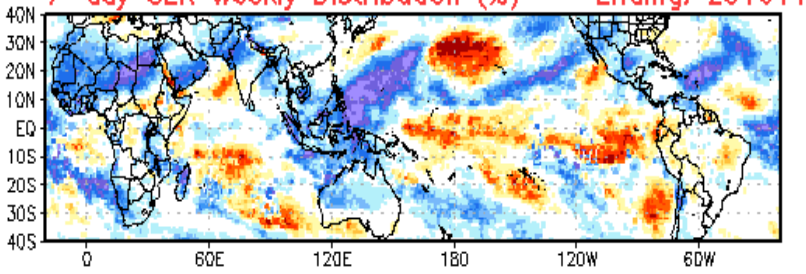




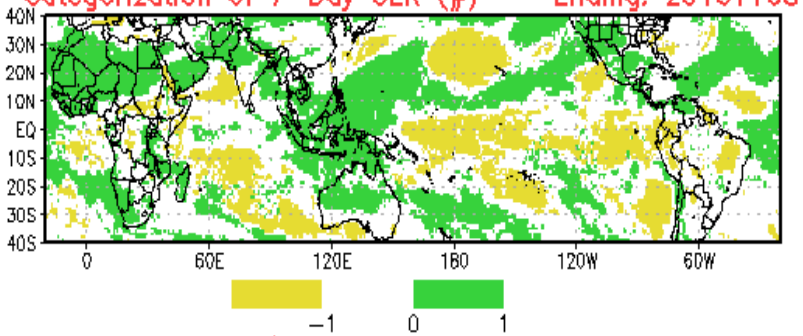
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

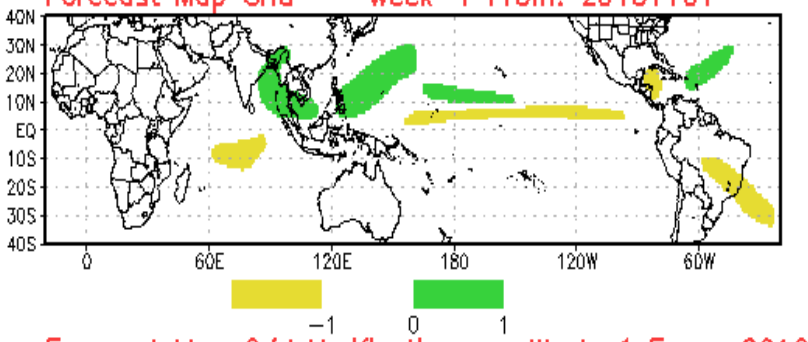
7-day OLR Weekly Distribution (%) -- Ending: 20161108



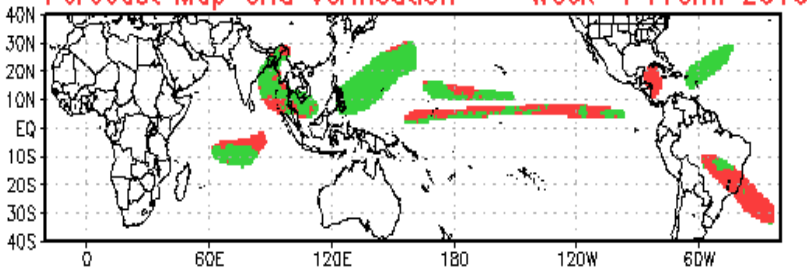
Categorization of 7-Day OLR (#) -- Ending: 20161108



Forecast Map Grid -- Week-1 From: 20161101

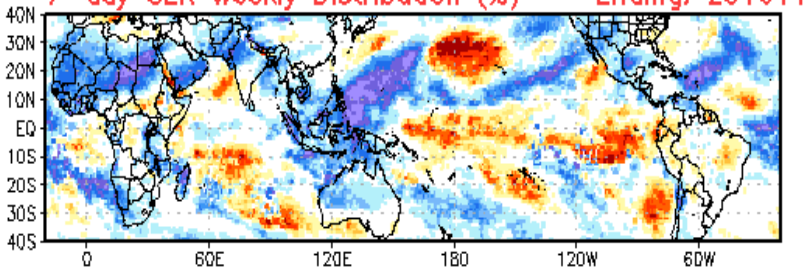


Forecast Map Grid Verification -- Week-1 From: 20161101



Hit: Green, Miss: Red
Heidke Skill Score: 42.1443

7-day OLR Weekly Distribution (%) -- Ending: 20161108



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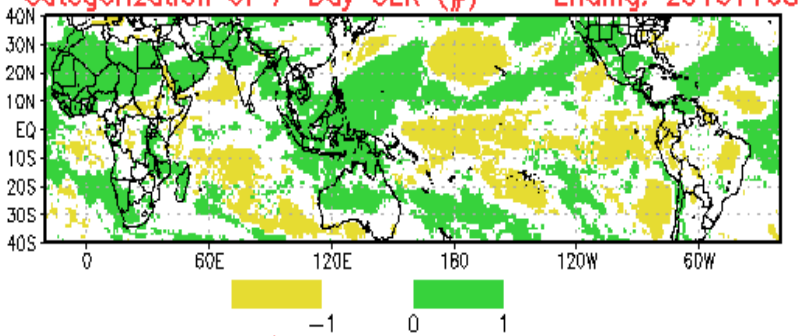
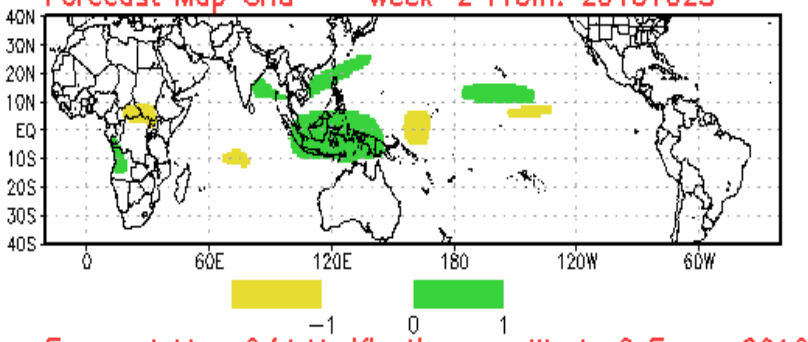
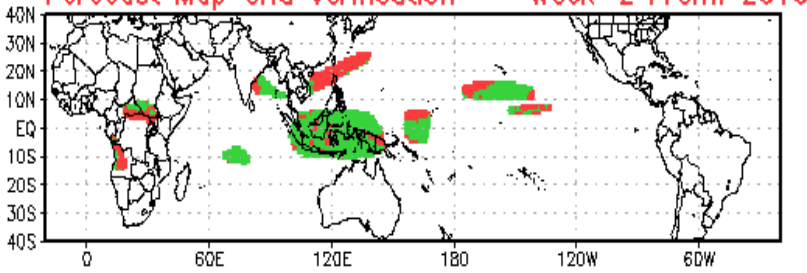


Forecast Map Grid -- Week-2 From: 20161025



Forecast Map Grid Verification -- Week-2 From: 20161025



Hit: Green, Miss: Red
Heidke Skill Score: 50.7835

Synopsis of Climate Modes

ENSO:

• ENSO Alert System Status: La Niña Watch

• La Niña is favored to develop (~70% chance) during the Northern Hemisphere fall 2016 and slightly favored to persist (~55% chance) during winter 2016-17.

MJO and other subseasonal tropical variability:

• The MJO have become more organized over the past week, with the enhanced phase over the Pacific.

• Dynamical models are remarkably consistent in continue eastward propagation of a robust MJO.

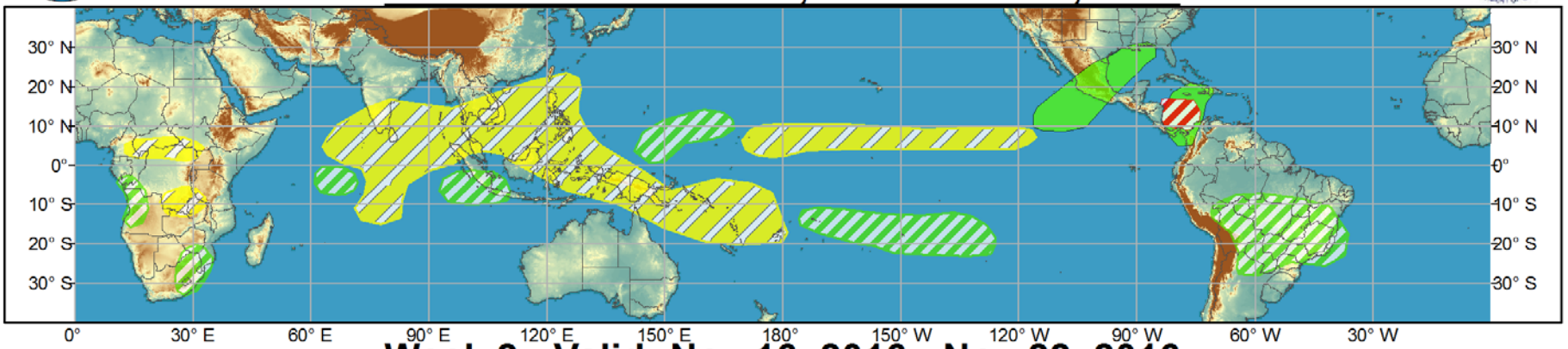
• The low frequency state (developing La Niña conditions) continues to be a major driver in the tropics, and will potentially destructively interfere with any developing Pacific MJO event.

Extratropics:

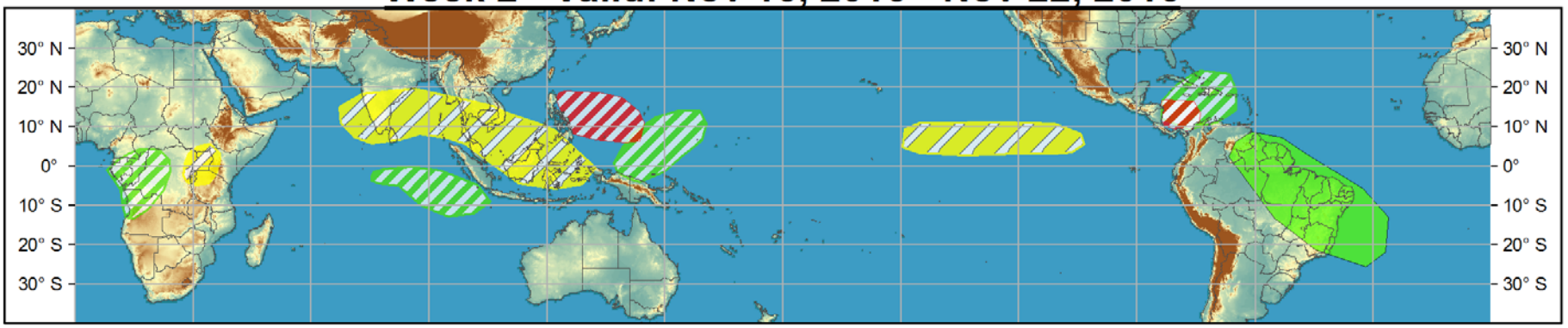
• The observed and forecast MJO evolution would support the development of a colder-than-normal pattern over much of central/eastern North America during the days 10-25 period. However, large-scale anomalously cold air masses are not forecast over North America by the dynamical ensemble guidance over the next one to two weeks.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Nov 09, 2016 - Nov 15, 2016



Week 2 - Valid: Nov 16, 2016 - Nov 22, 2016



Produced: 11/08/2016

Forecaster: Baxter

	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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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

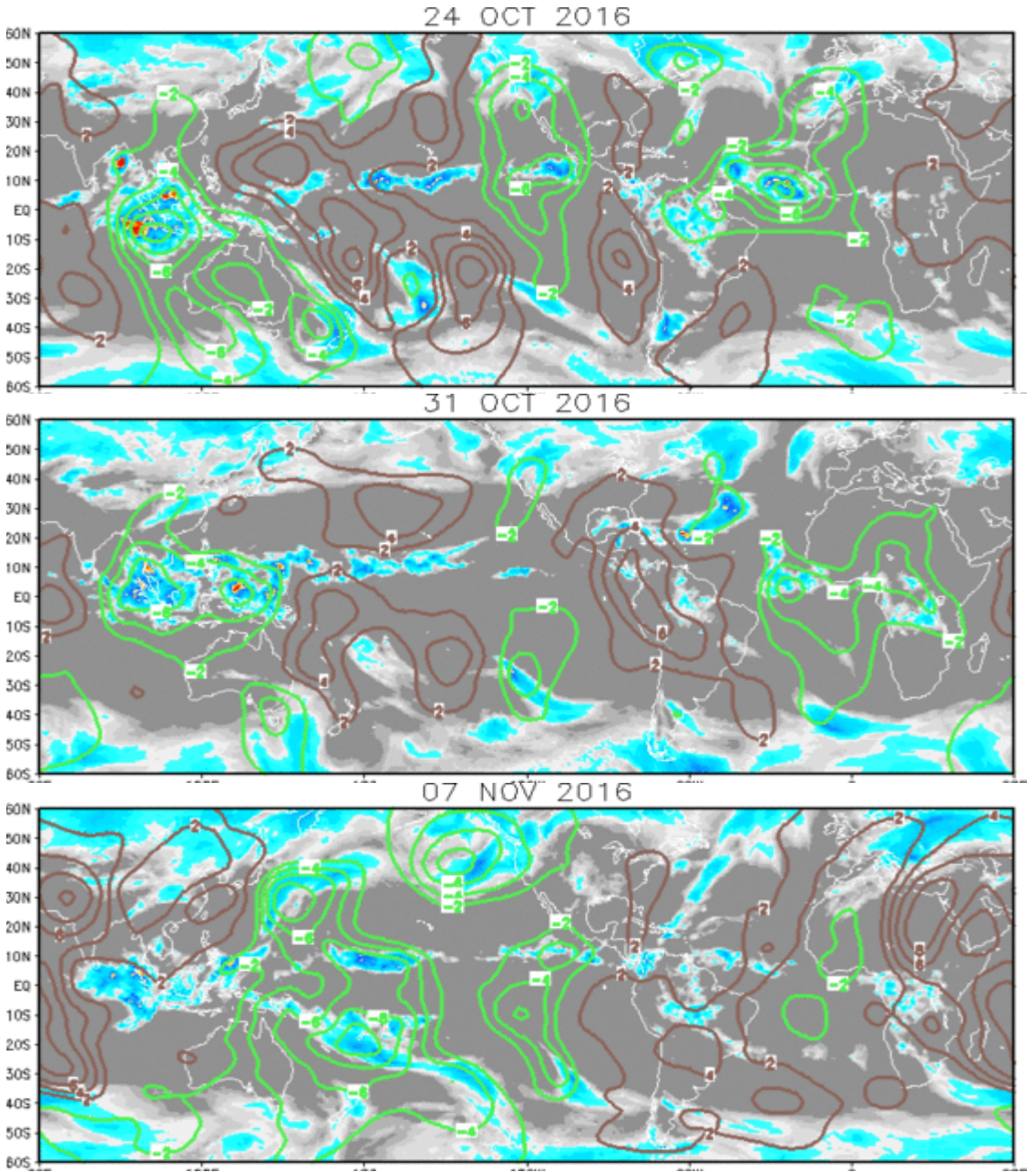
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

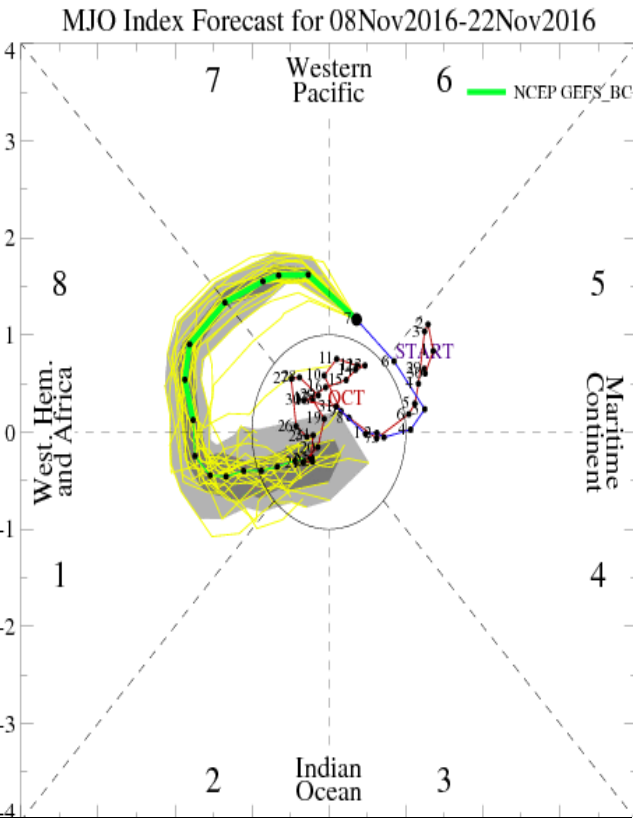
Largely incoherent pattern, though low-frequency state is evident.

Low-frequency pattern is still evident, with little coherent signal elsewhere.

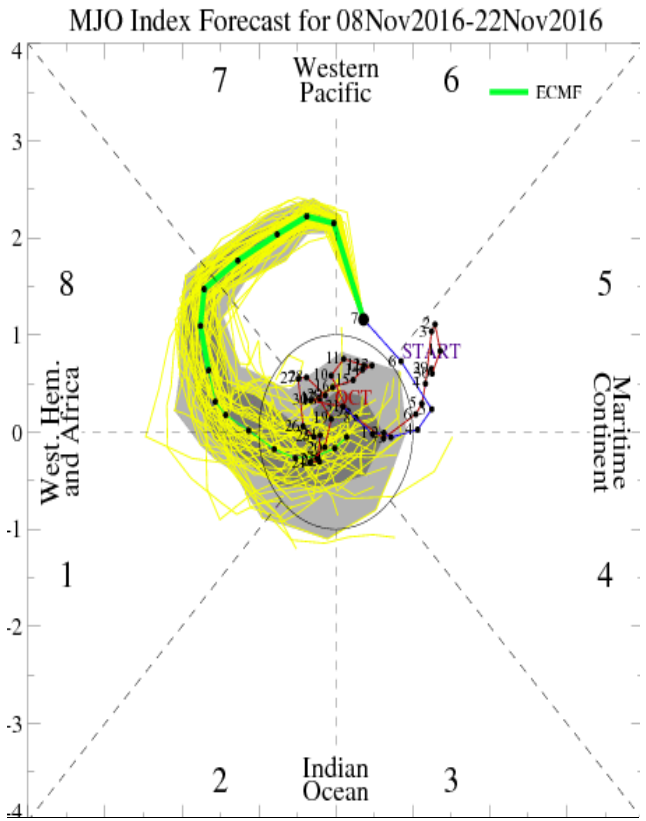
Recently, a Wave-1 pattern has emerged, consistent with an amplifying MJO signal.



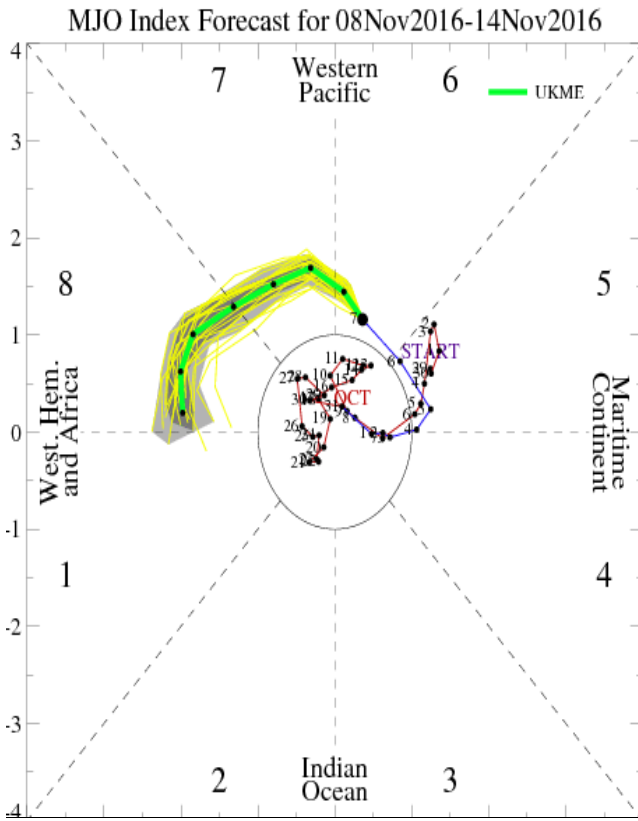
MJO Observation/Forecast



GEFS



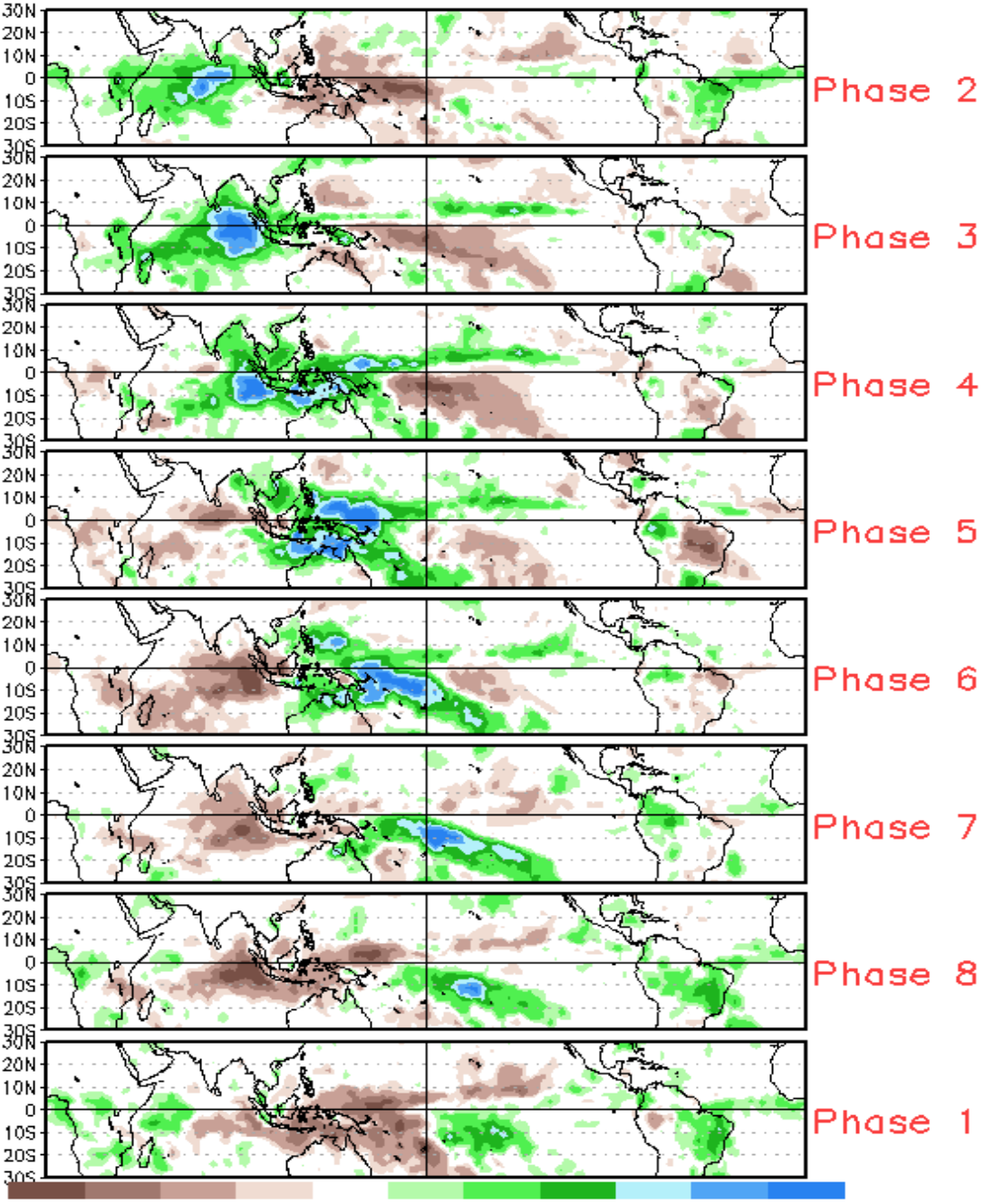
ECMWF



UKMET

Wheeler-Hendon based analyses of model forecasts indicate eastward propagation of a coherent signal over the next 7-10 days, before weakening late in Week-2.

Average Conditions when the MJO is present



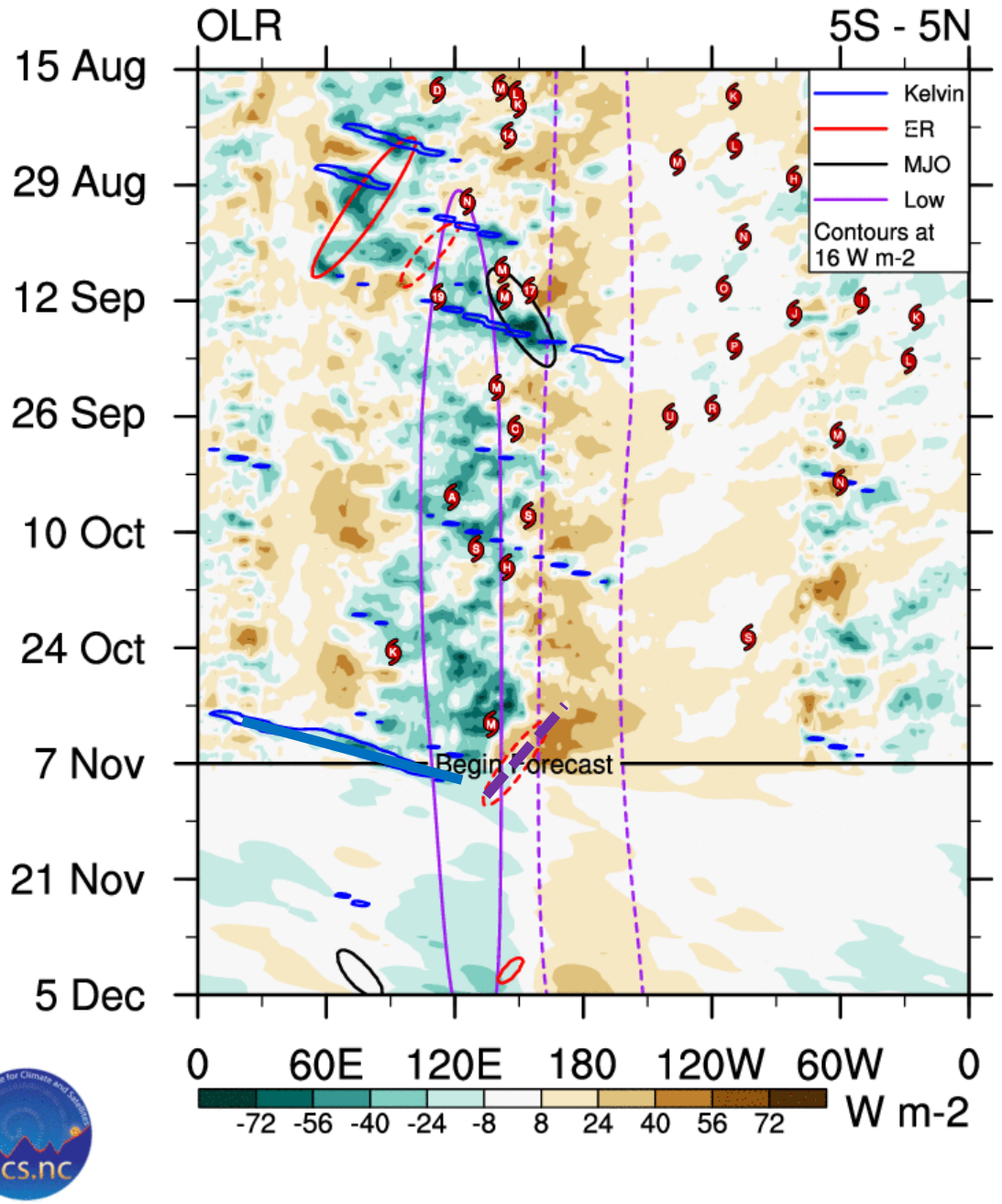
Phases 8/1 align with dynamical model guidance indicating enhanced rainfall over South America.

Phases 7/8 support dry signal over Maritime Continent interfering with the low-frequency wet signal.

CAVEAT: These panels are representative of robust MJO events.

The OLR pattern has been dominated by the low-frequency variability.

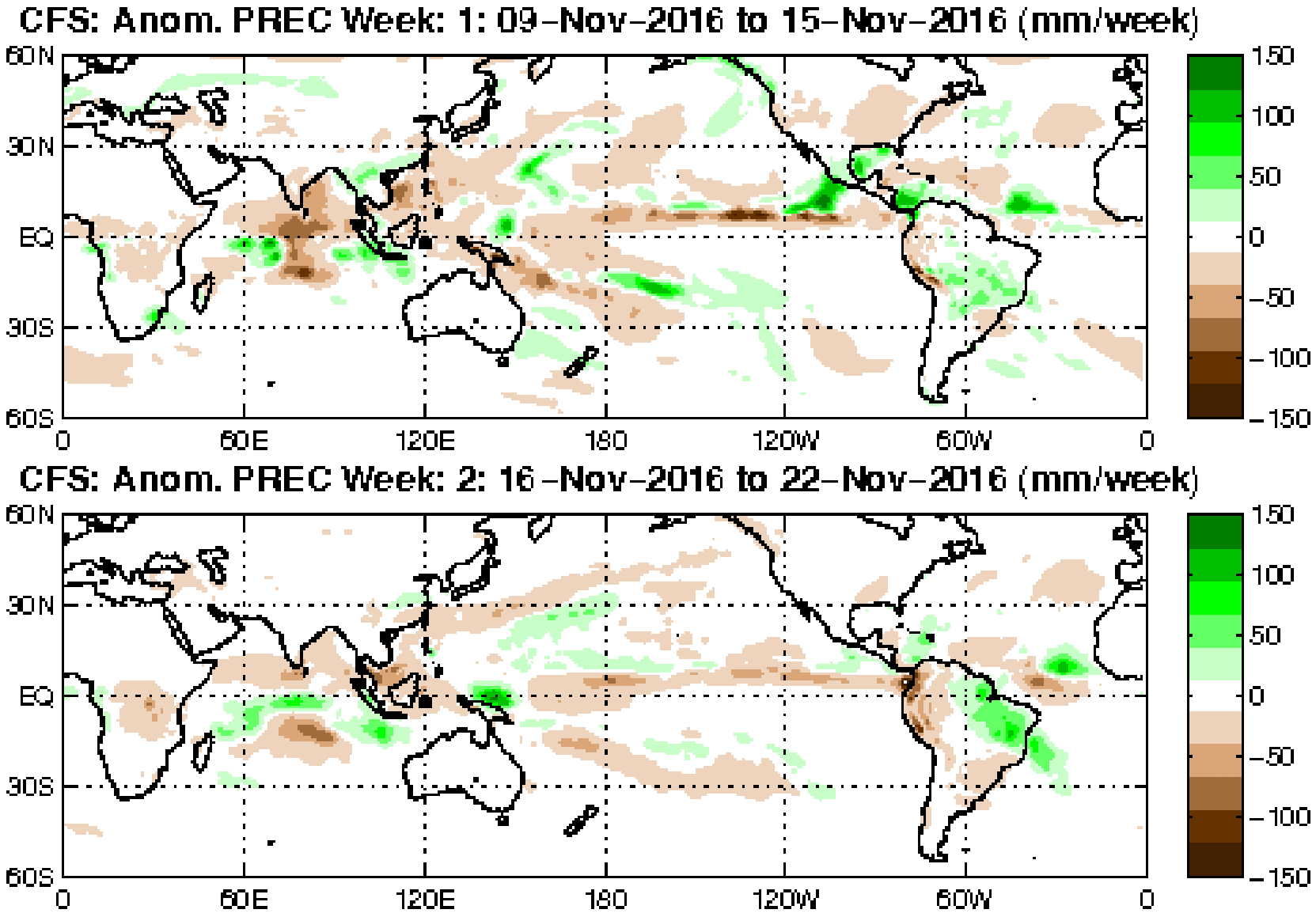
Some recent influence from Rossby wave and a Kelvin wave.



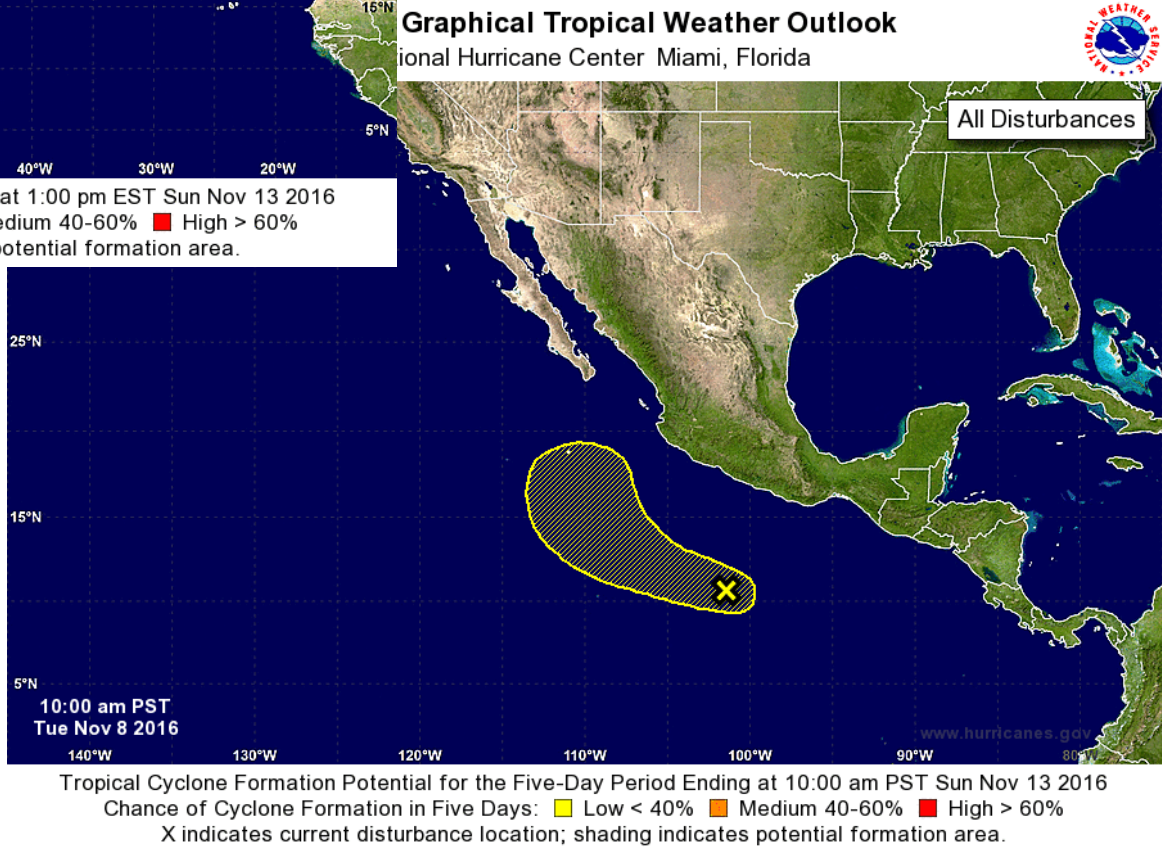
ncics.org/mjo

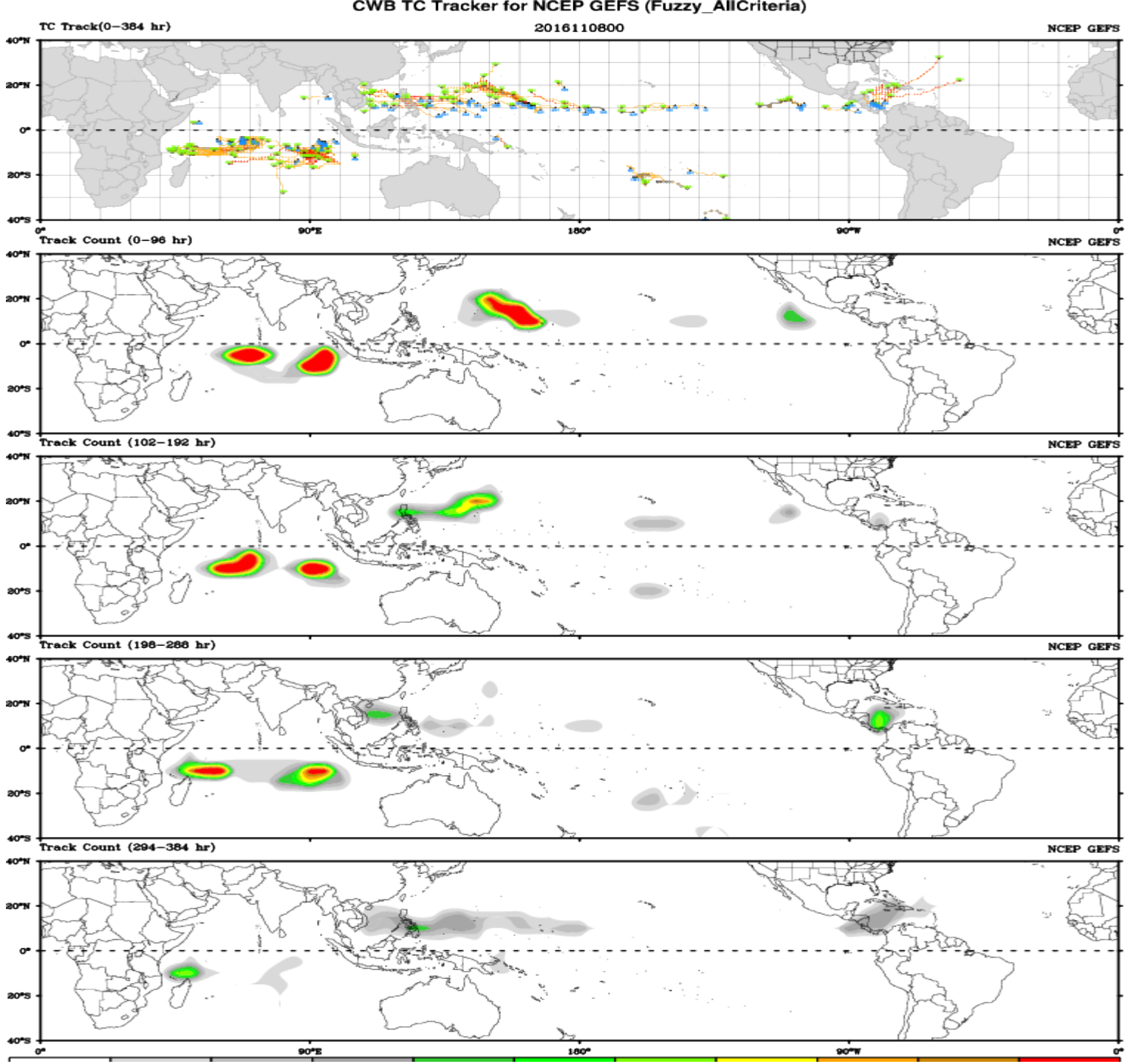
Tue 2016-11-08 1614 UTC

Carl Schreck (cjschrec@ncsu.edu)


CFS: Anom. PREC Week: 1: 09-Nov-2016 to 15-Nov-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: 16-Nov-2016 to 22-Nov-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





Days 1-4

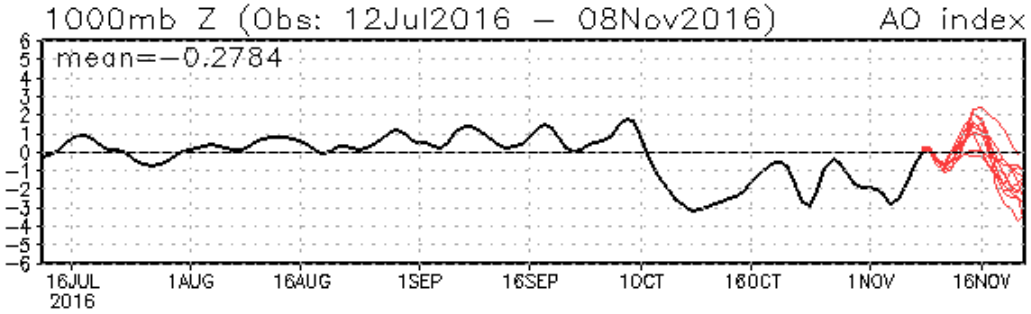
Day 5-8

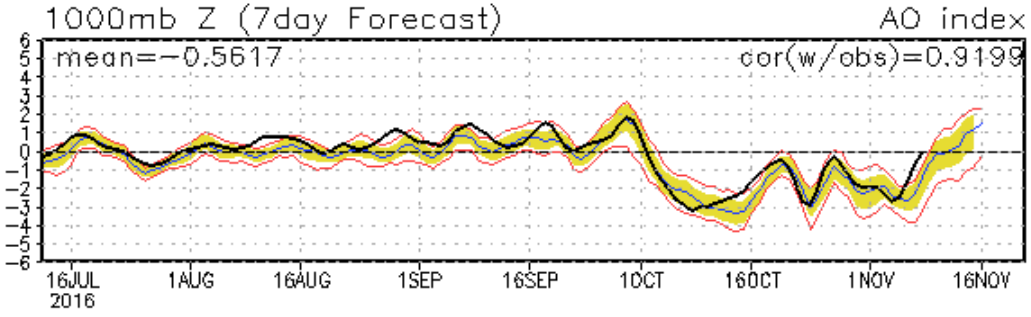
Day 9-12

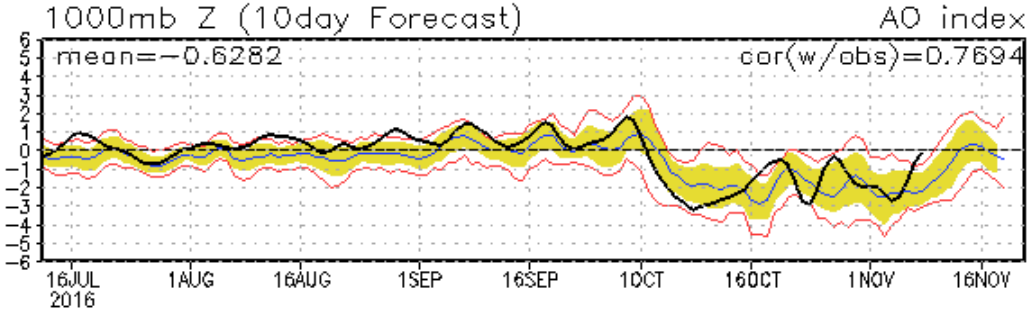
Day 13-15

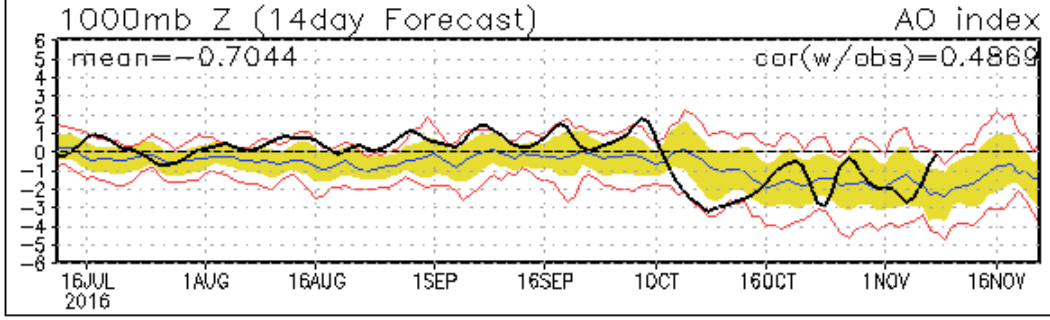
Connections to U.S. Impacts

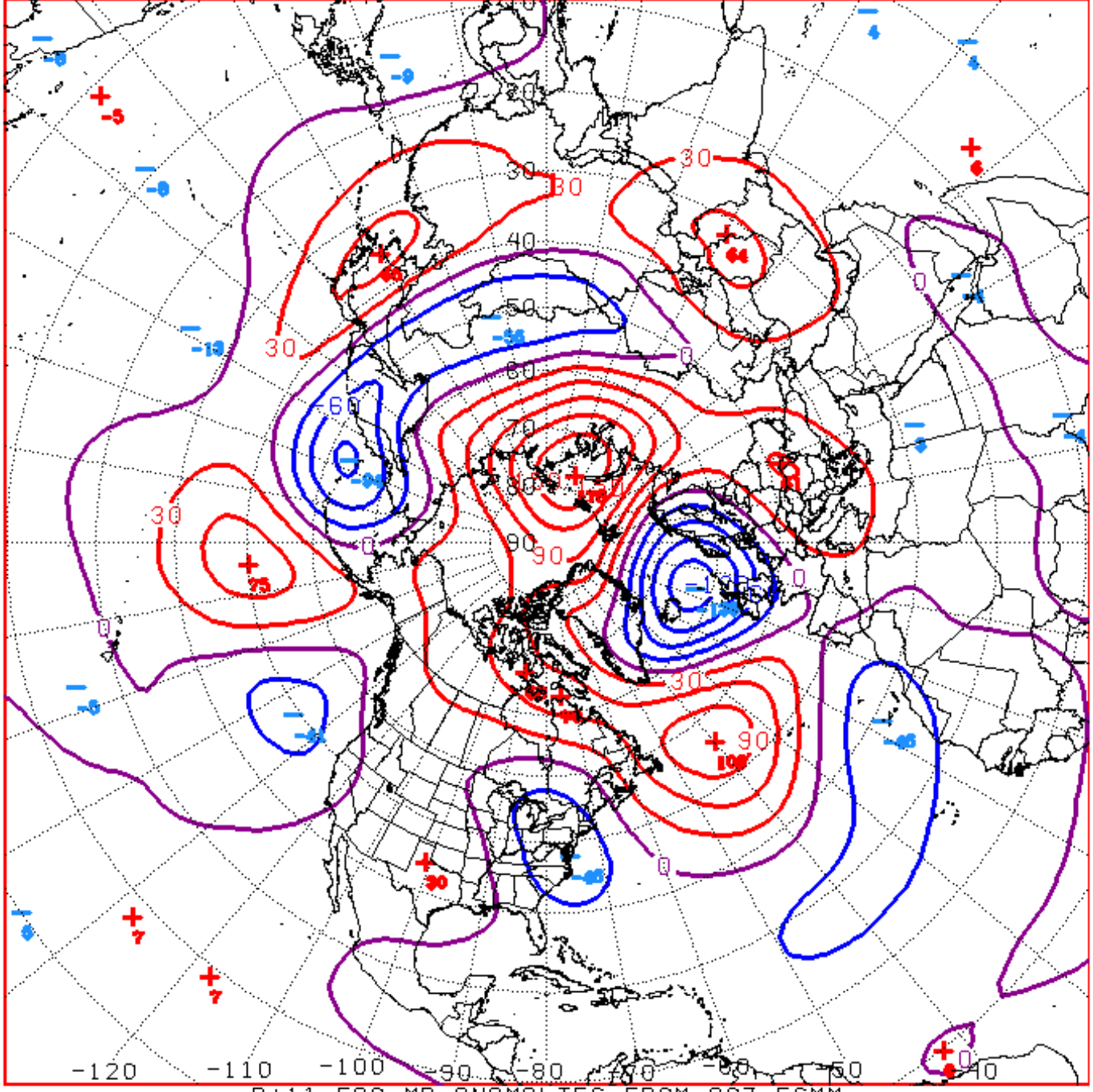
AO: Observed & ENSM forecasts





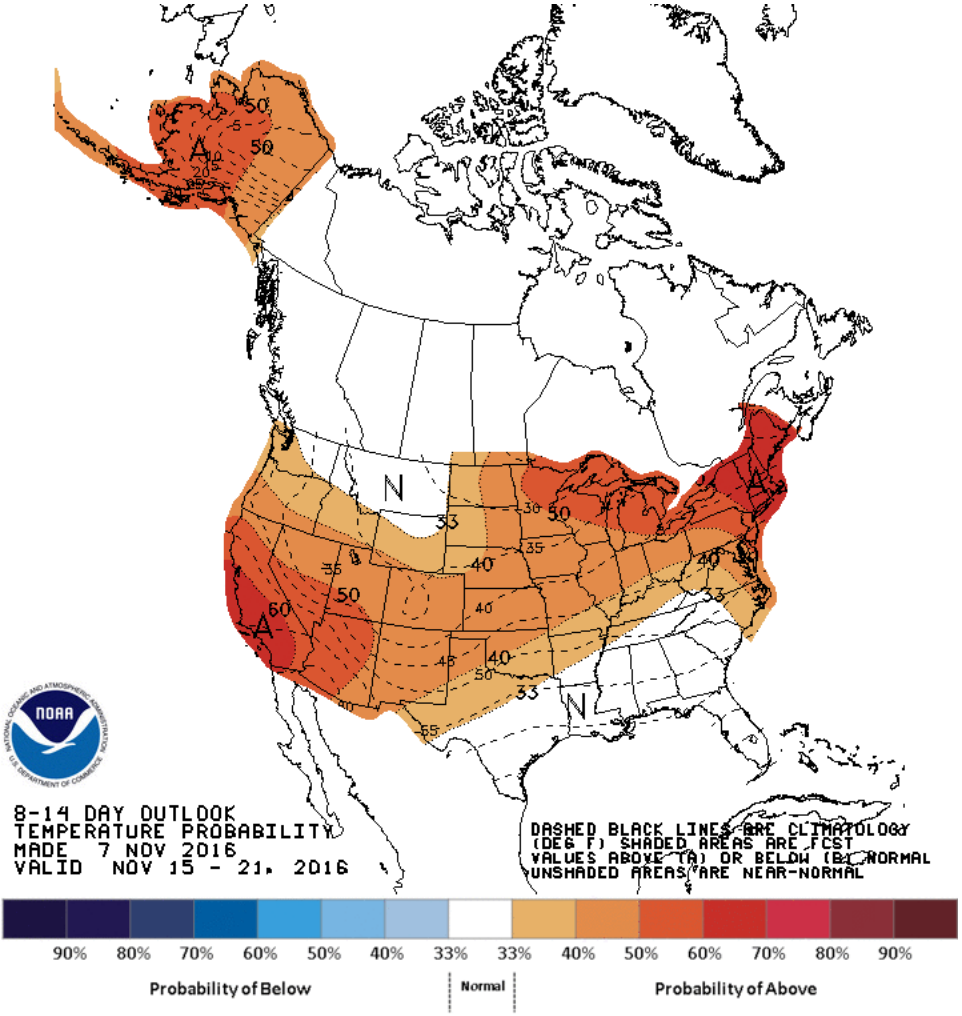


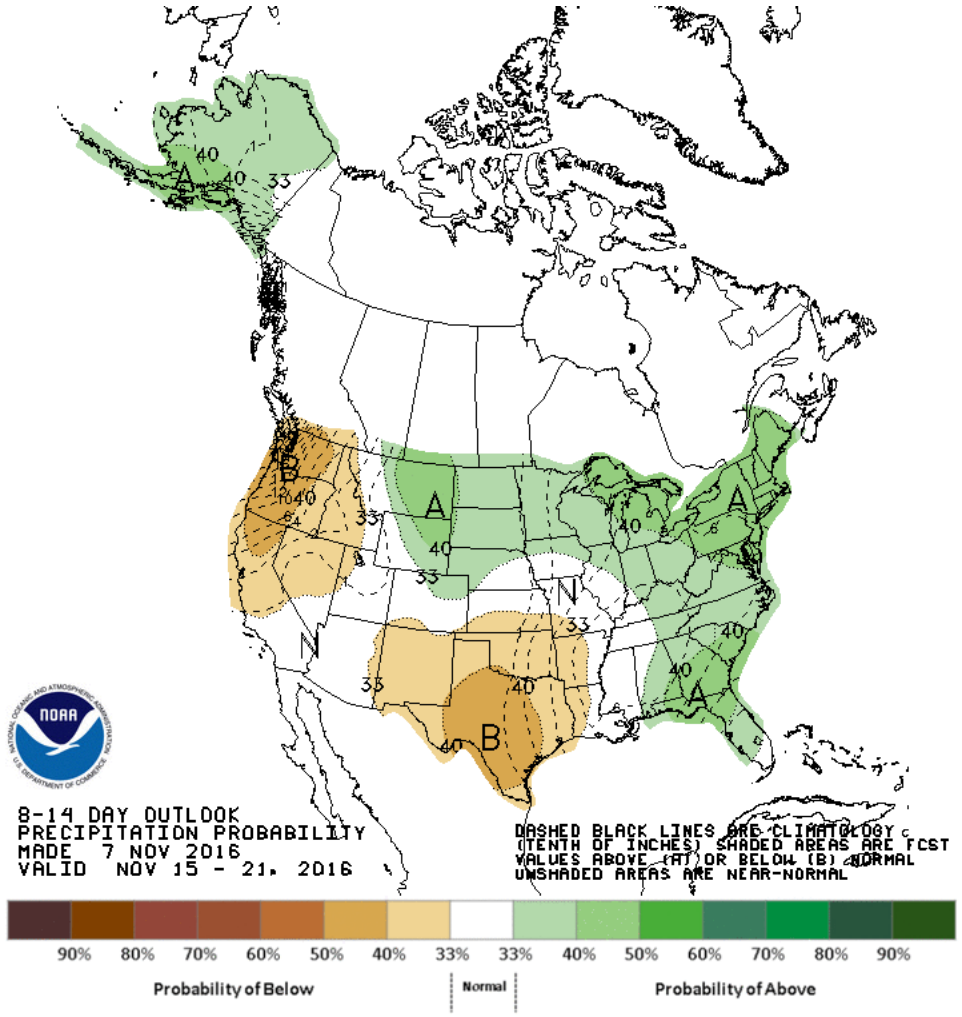




D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE NOV 08 2016 1039 UTC CNTD NOV 19 2016

Week 2 – Temperature and Precipitation





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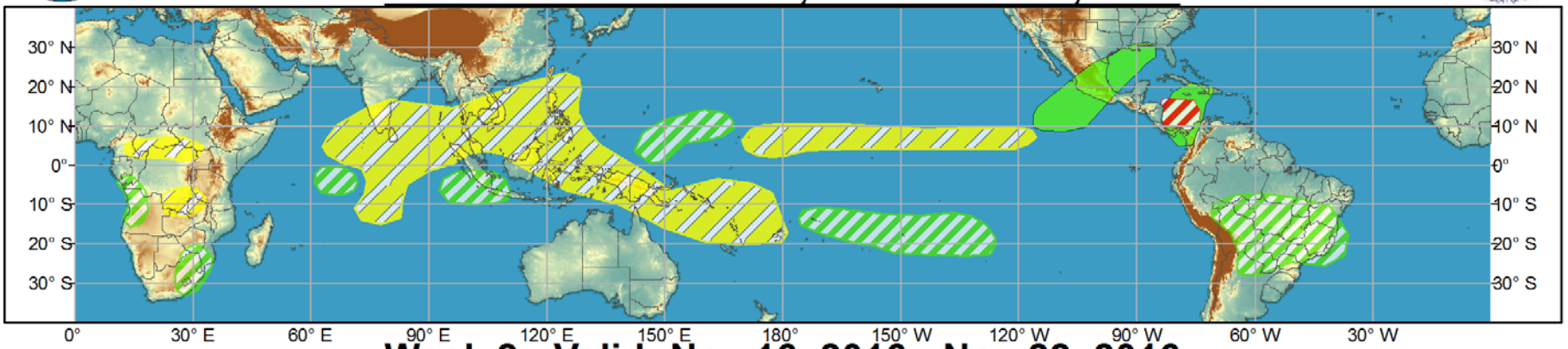

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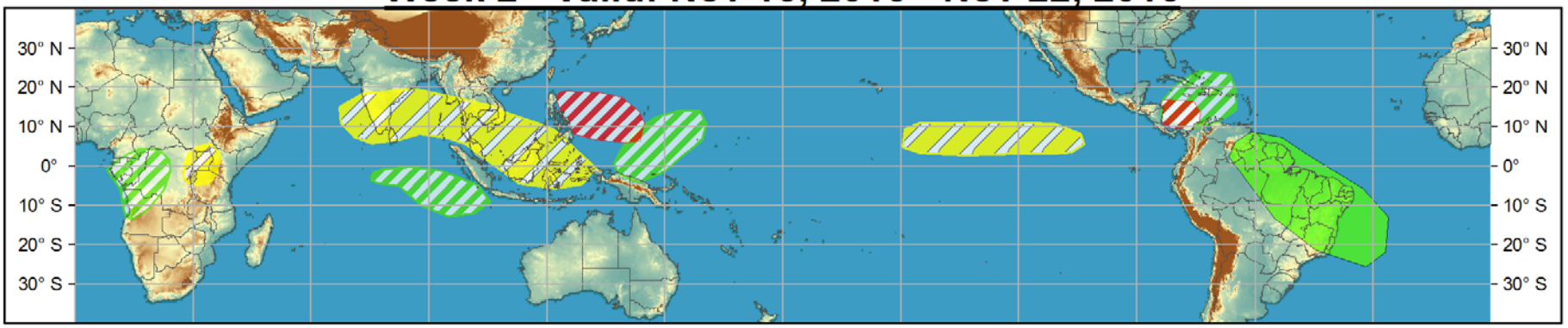

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NPS PRAESTANTIA PER SCIENTIAM