Global Tropics Hazards And Benefits Outlook

November 1, 2016

Adam Allgood

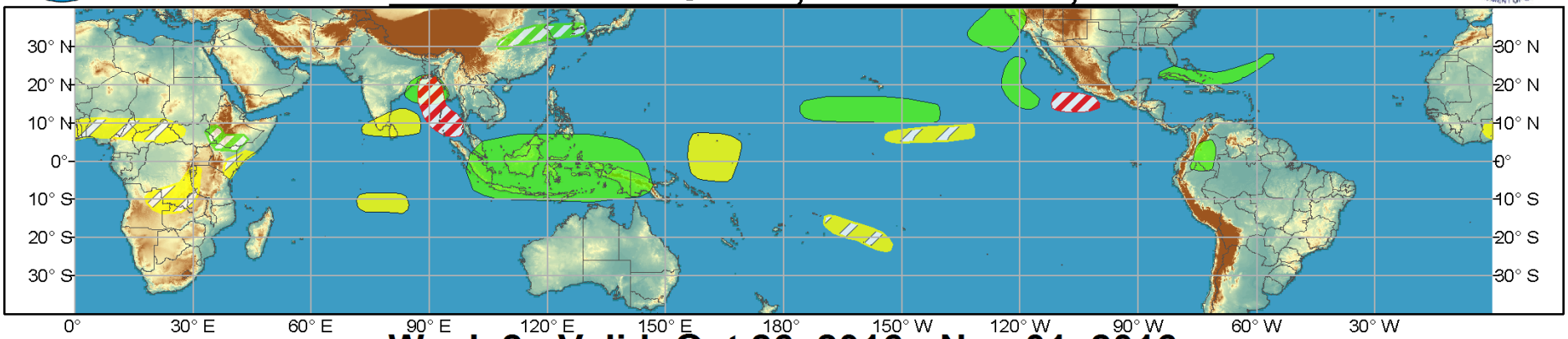
Outline

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

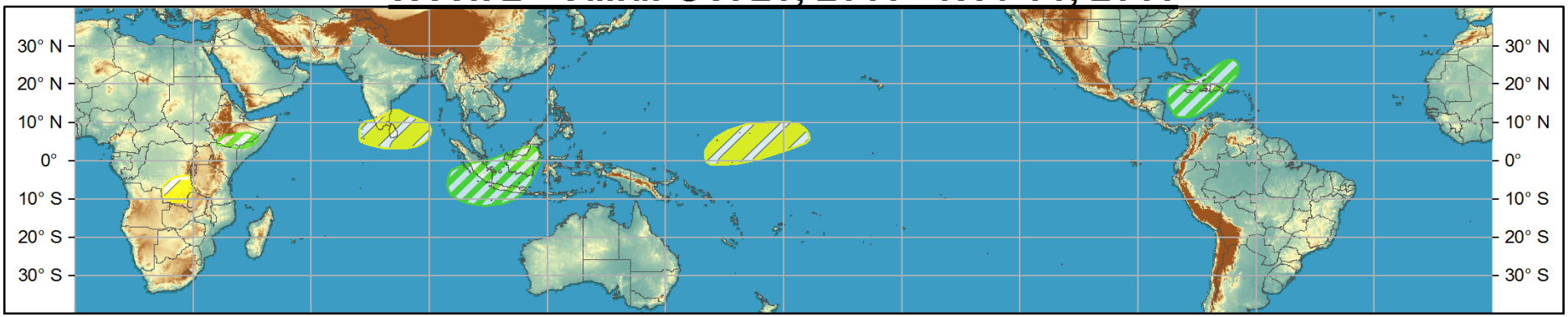
Outlook Review – Tropical Cyclone Formations

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

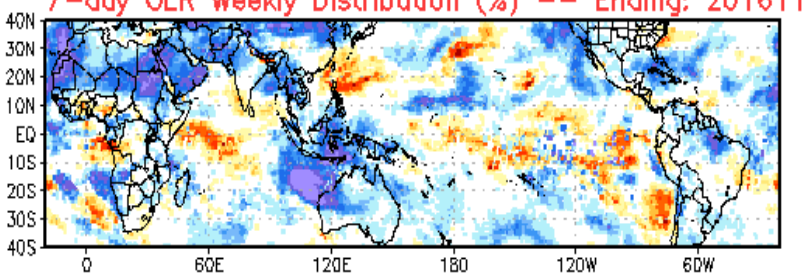
Week 1 - Valid: Oct 26, 2016 - Nov 01, 2016

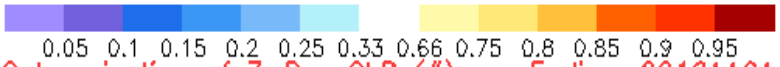


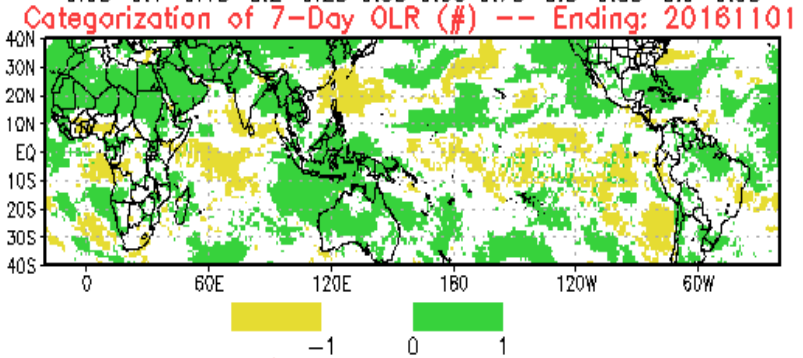
Week 2 - Valid: Oct 26, 2016 - Nov 01, 2016

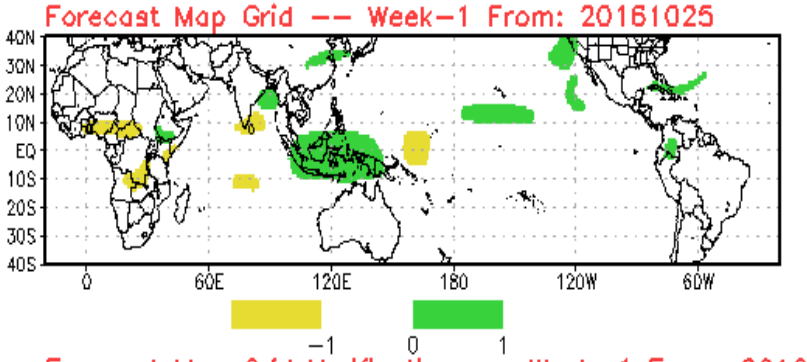


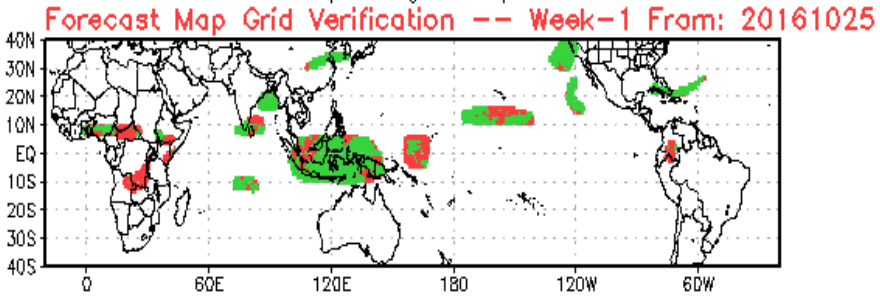
No tropical cyclones formed during the previous outlook period



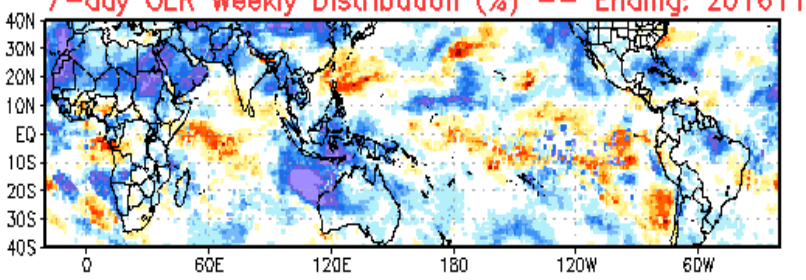


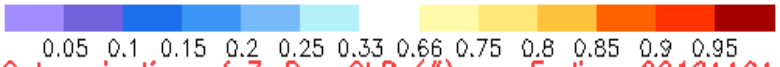


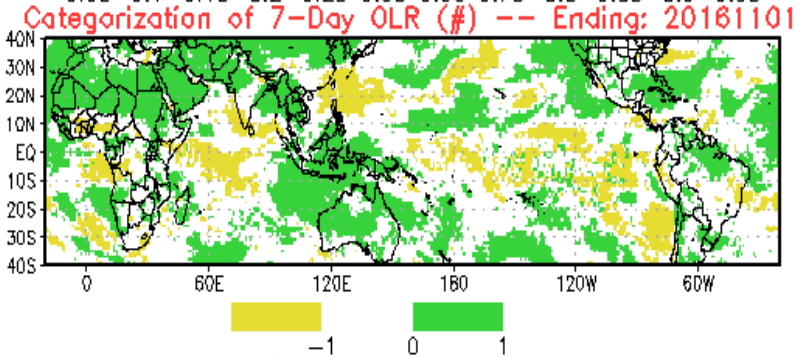


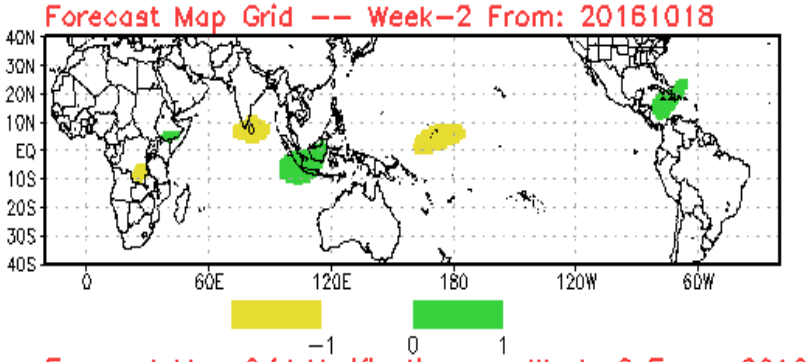


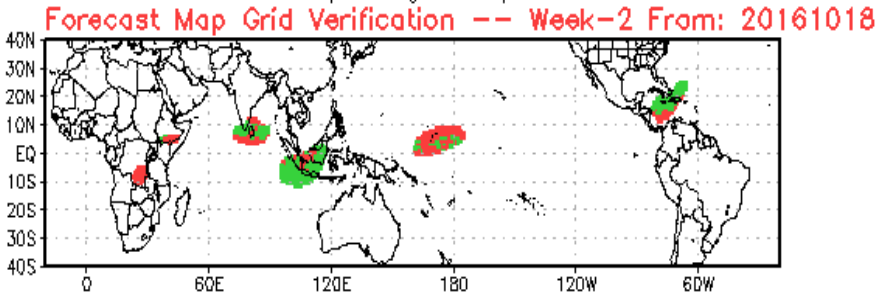
Hit: Green, Miss: Red
Heidke Skill Score: 52.6680











Hit: Green, Miss: Red
Heidke Skill Score: 31.9074

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:

• No MJO signal is currently apparent, although there is a robust Kelvin wave evident in the OLR field over the Maritime Continent

• Dynamical models are remarkably consistent in developing a robust MJO event by Week-2. Differences in how fast the intraseasonal signal develops and where it strengthens.

• The low frequency state (negative IOD and 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:

• Should a robust MJO enhanced phase develop over the Pacific, there is a potential for substantial pattern changes across North America – particularly given the low frequency negative AO phase. Given model guidance, uncertain how robust the convective anomalies will be.

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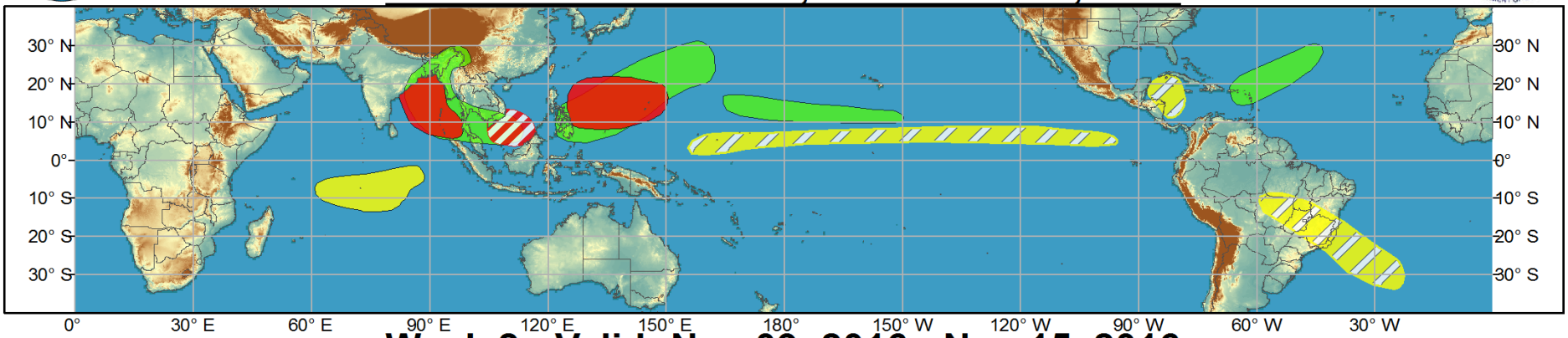
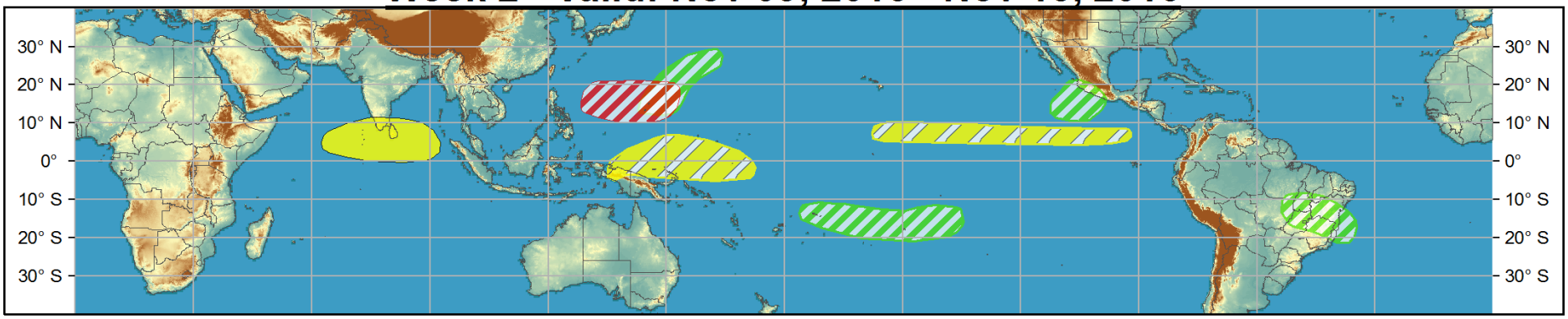
Week 1 - Valid: Nov 02, 2016 - Nov 08, 2016



Week 2 - Valid: Nov 09, 2016 - Nov 15, 2016



Produced: 11/01/2016

Forecaster: Allgood

	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.

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EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

cics.nc

NPS PRAESTANTIA PER SCIENTIAM

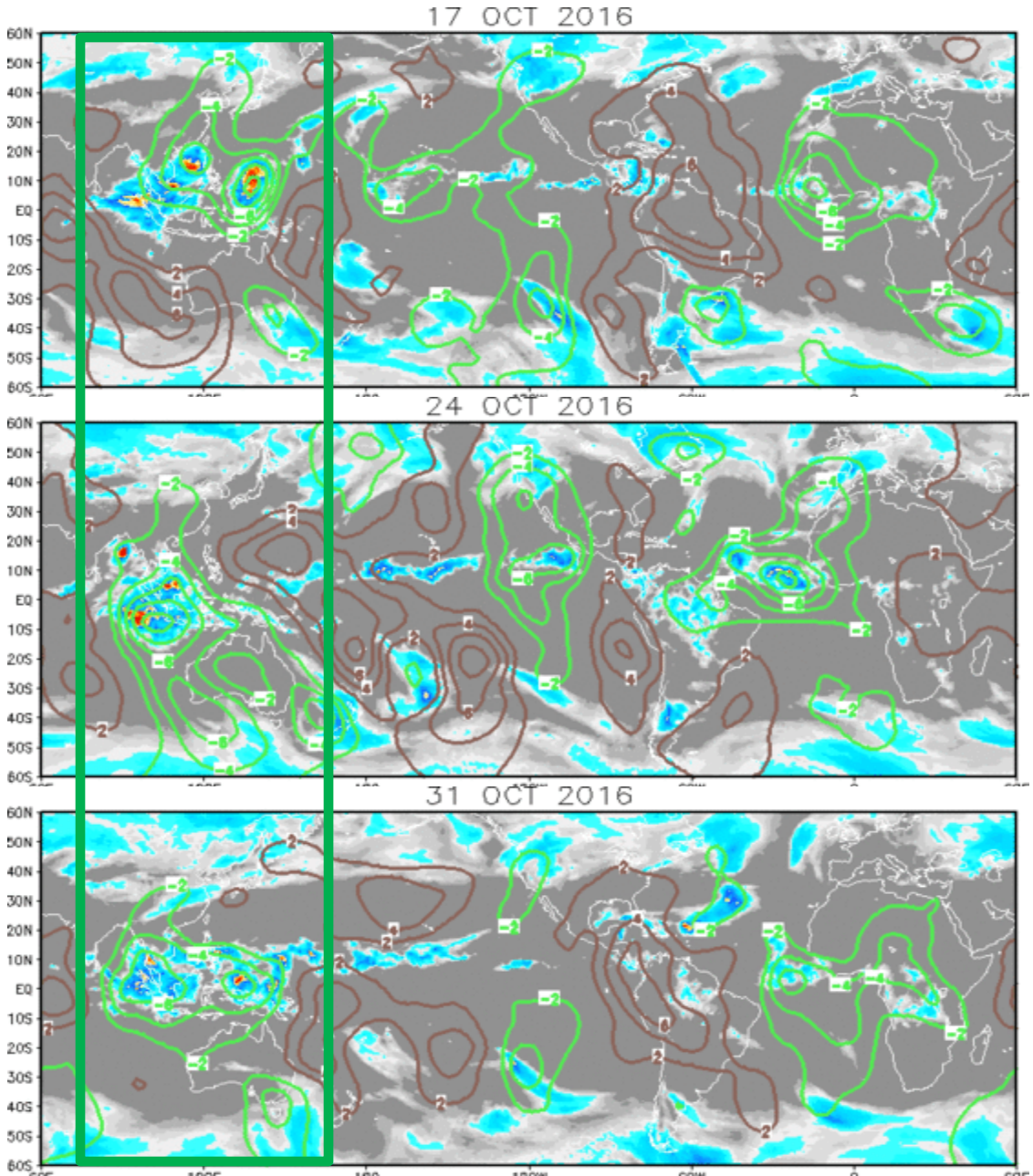
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

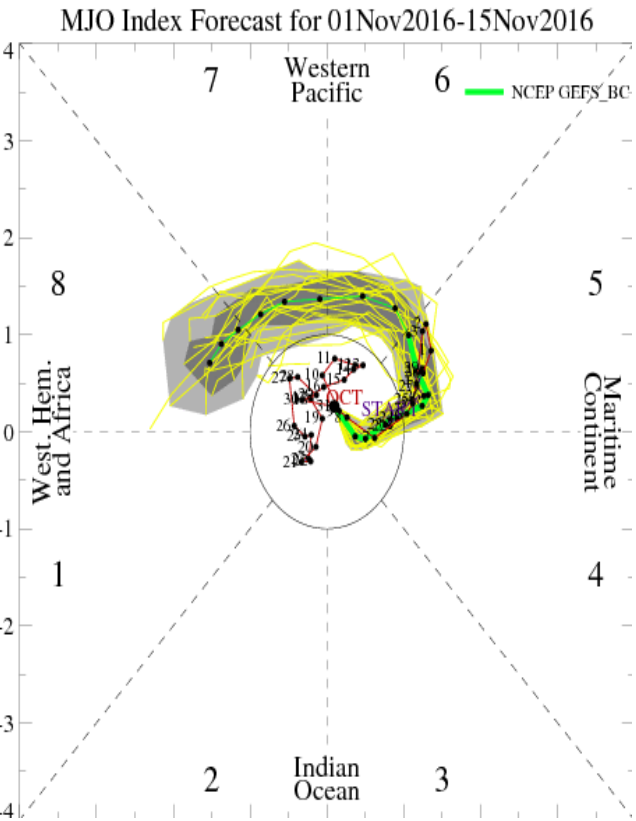
Low frequency signal is evident over the Maritime Continent (Green Box)

No robust intraseasonal signal (e.g., eastward propagating Wave-1 pattern)

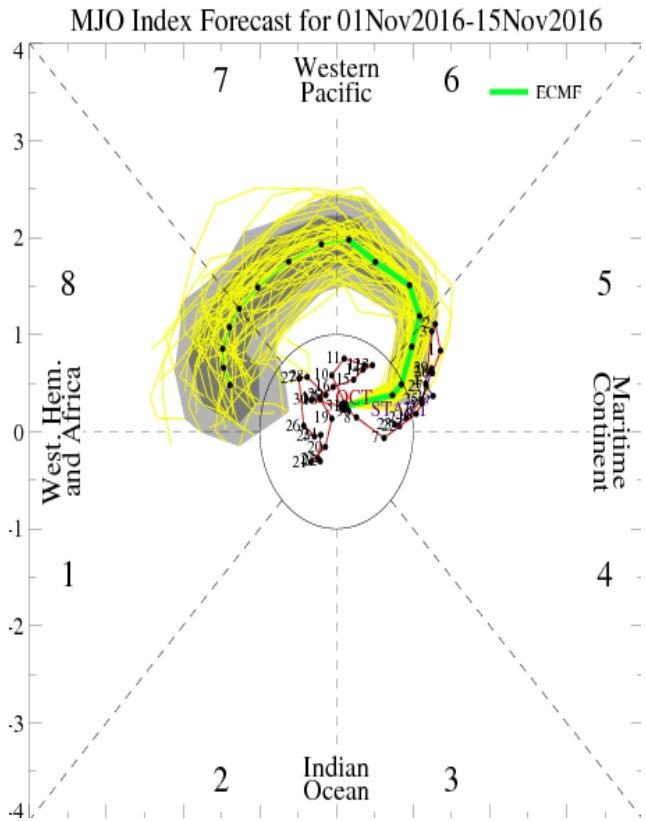
The overall anomaly pattern is rather weak



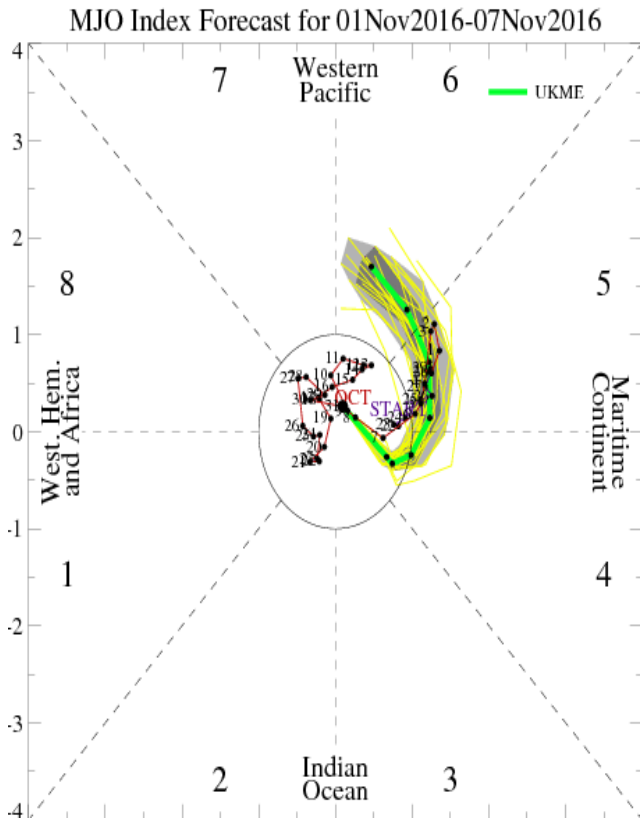
MJO Observation/Forecast



GEFS



ECMWF



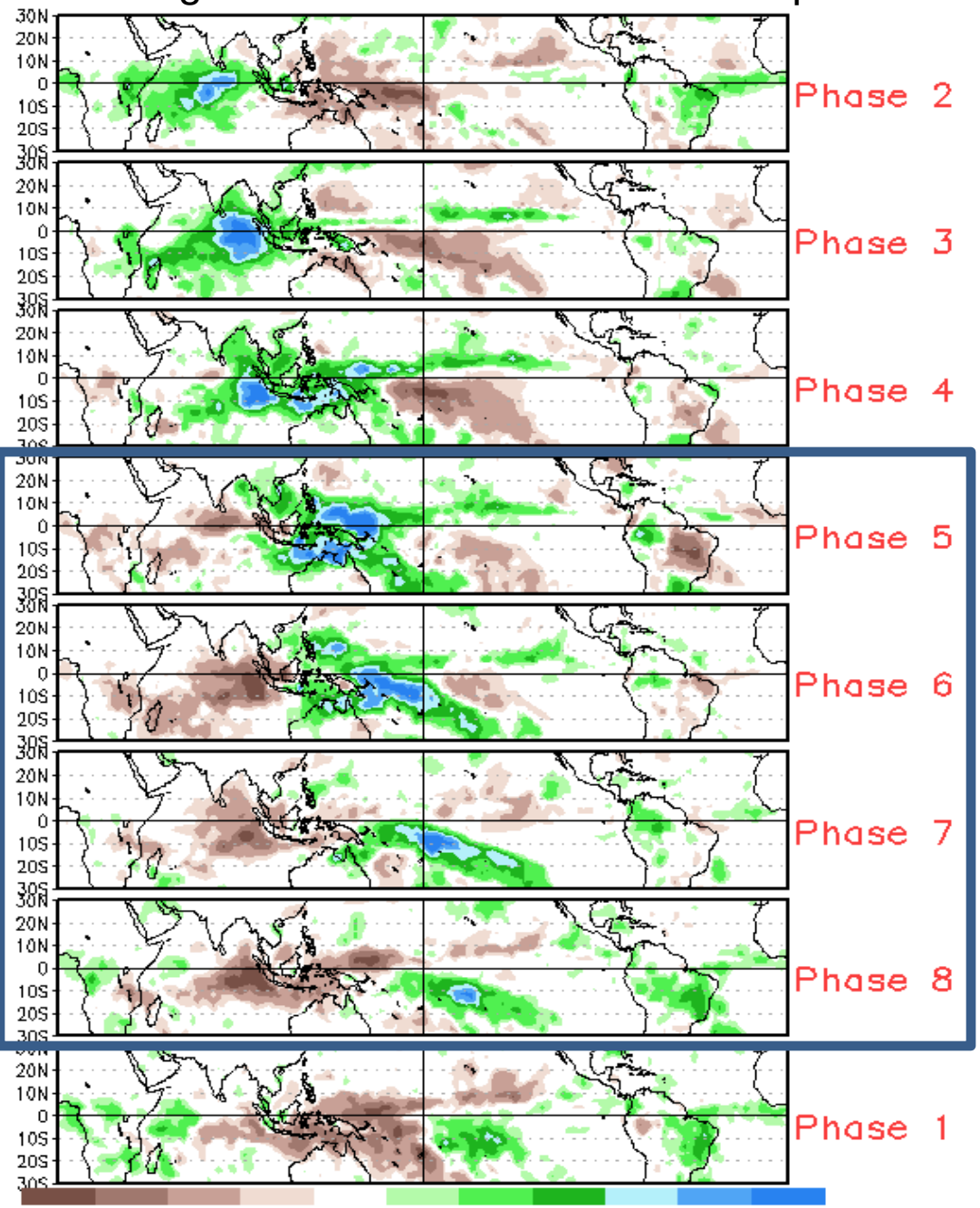
UKMET

GEFS: Late Week-1 signal emerging over the eastern Maritime Continent (slow, given current Kelvin wave over Maritime Continent)

ECMWF: Evolves in the West Pacific

UKMET: Quick evolution over Maritime Continent, fast propagation – possibly catching on to the Kelvin wave

Average Conditions when the MJO is present

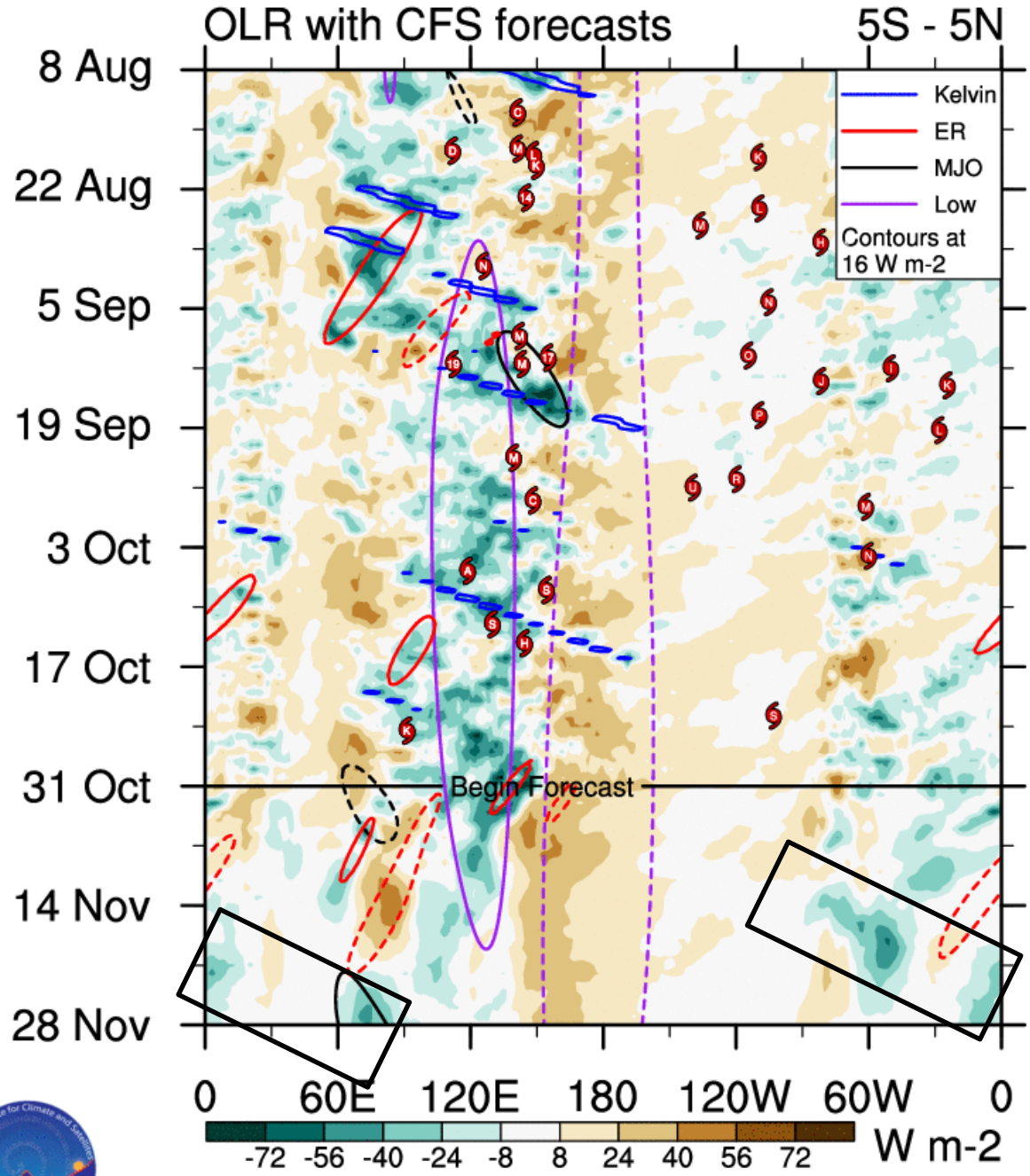


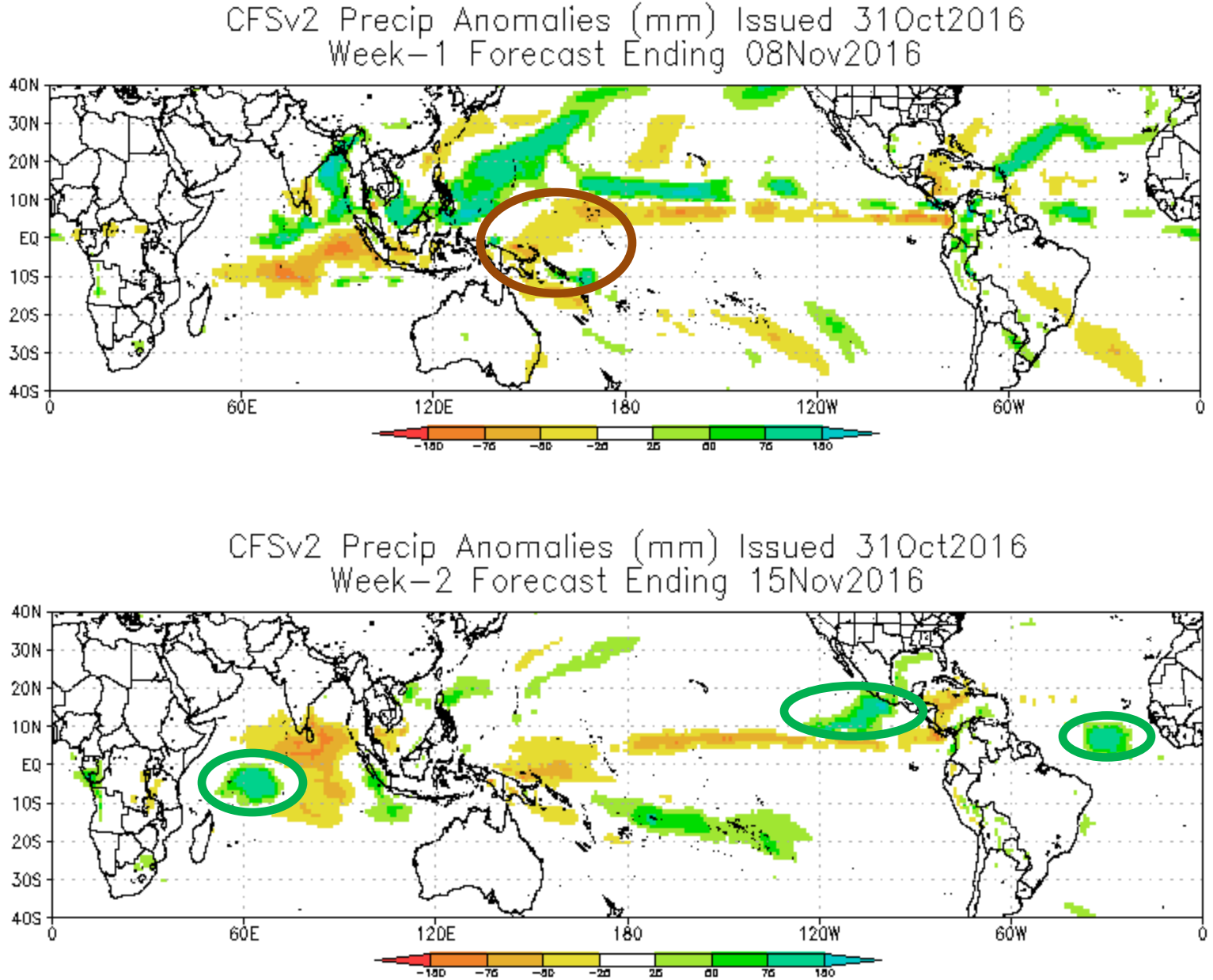
CAVEAT: These panels are representative of robust MJO events.

Low frequency state very evident in the OLR field (purple ovals)

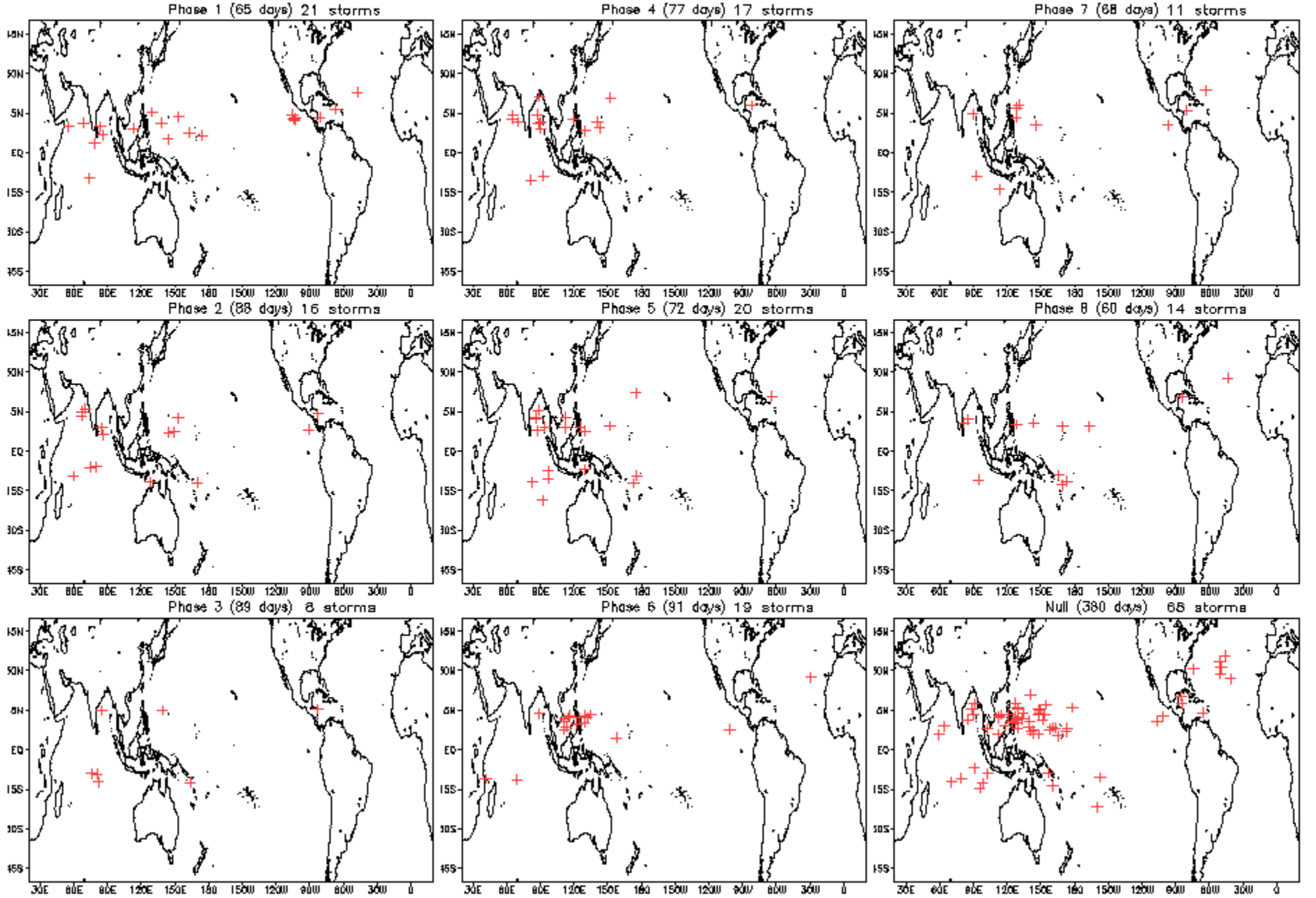
KW over the Maritime Continent, close to entering WPac

Note that the CFS does NOT depict any WPac MJO event, but suggests increased intraseasonal signal activity over the Western Hemisphere (black boxes)

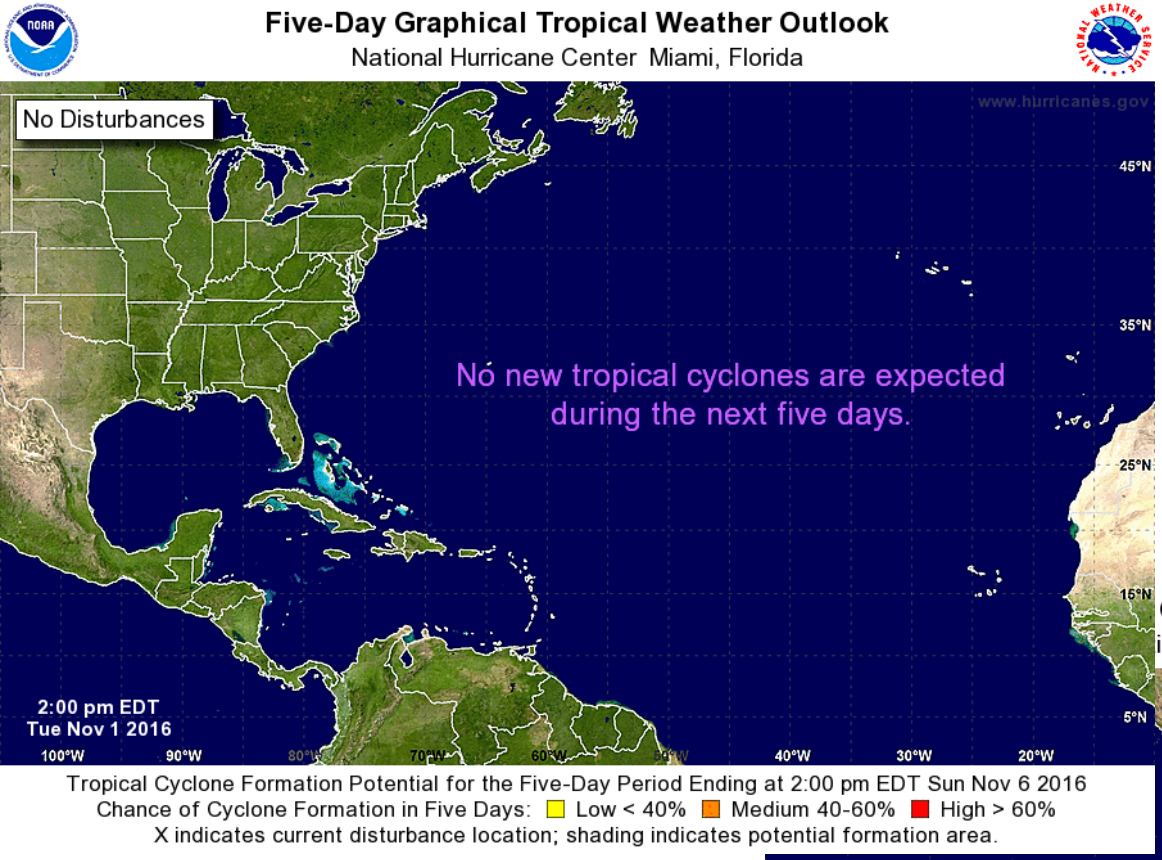


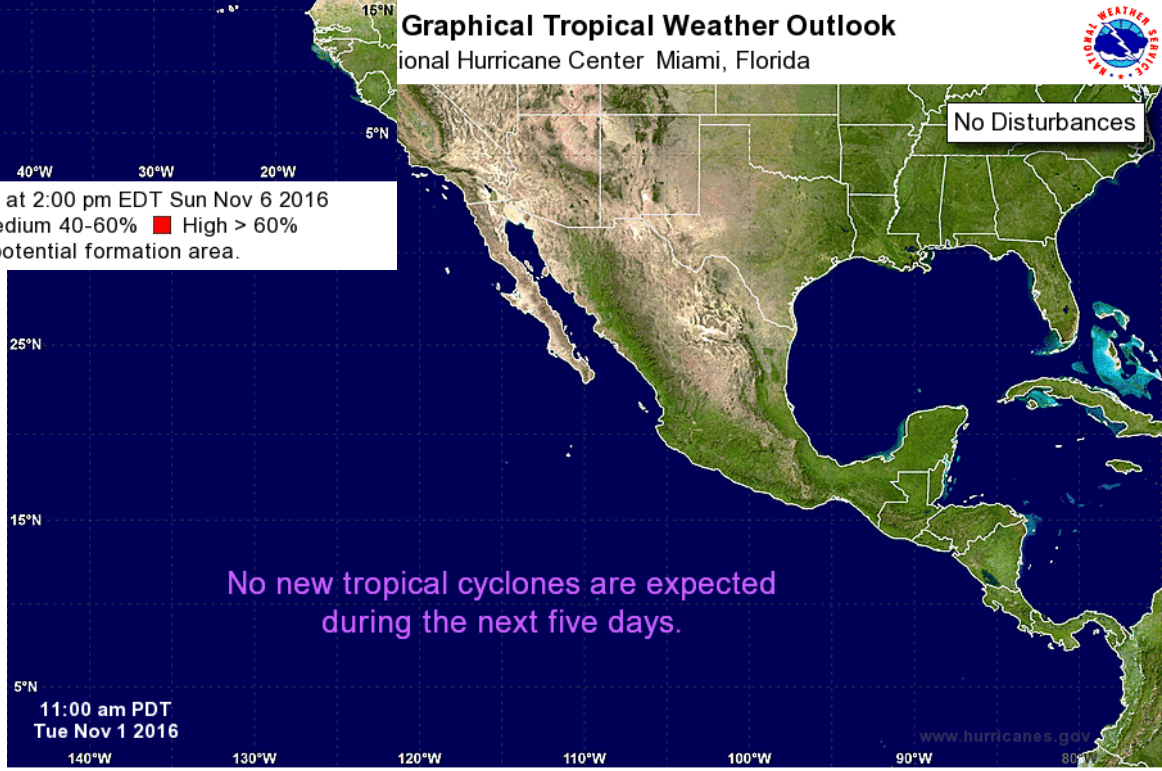

CFSv2 Precip Anomalies (mm) Issued 31Oct2016
Week-1 Forecast Ending 08Nov2016
40N
30N
20N
10N
EQ
10S
20S
30S
40S
0
60E
120E
180
120W
60W
0
-150
-75
-50
-25
25
50
75
150
CFSv2 Precip Anomalies (mm) Issued 31Oct2016
Week-2 Forecast Ending 15Nov2016
40N
30N
20N
10N
EQ
10S
20S
30S
40S
0
60E
120E
180
120W
60W
0
-150
-75
-50
-25
25
50
75
150

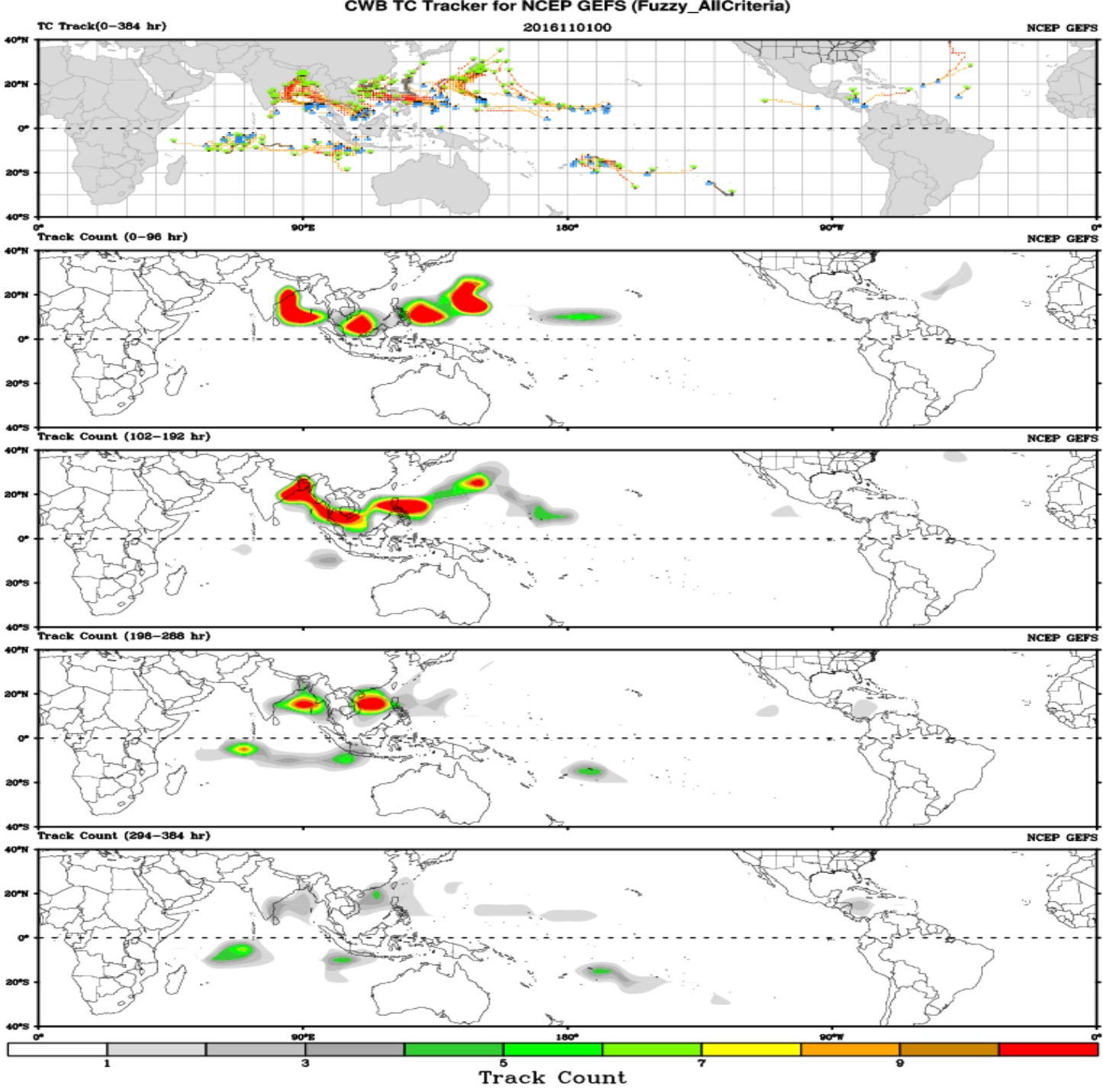
November Tropical Storm Formation by MJO phase



Graphical Tropical Weather Outlooks







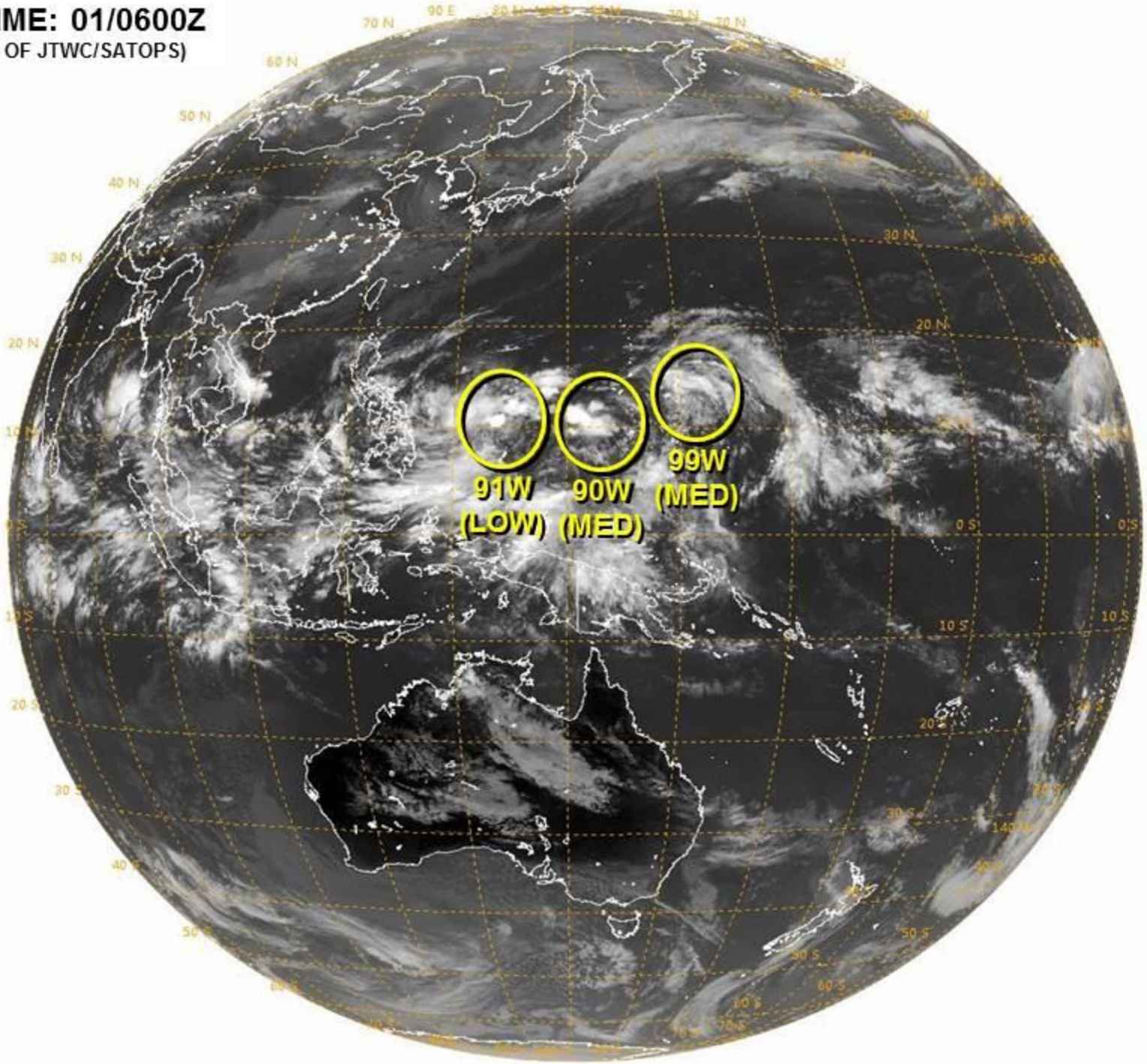
Days 1-4

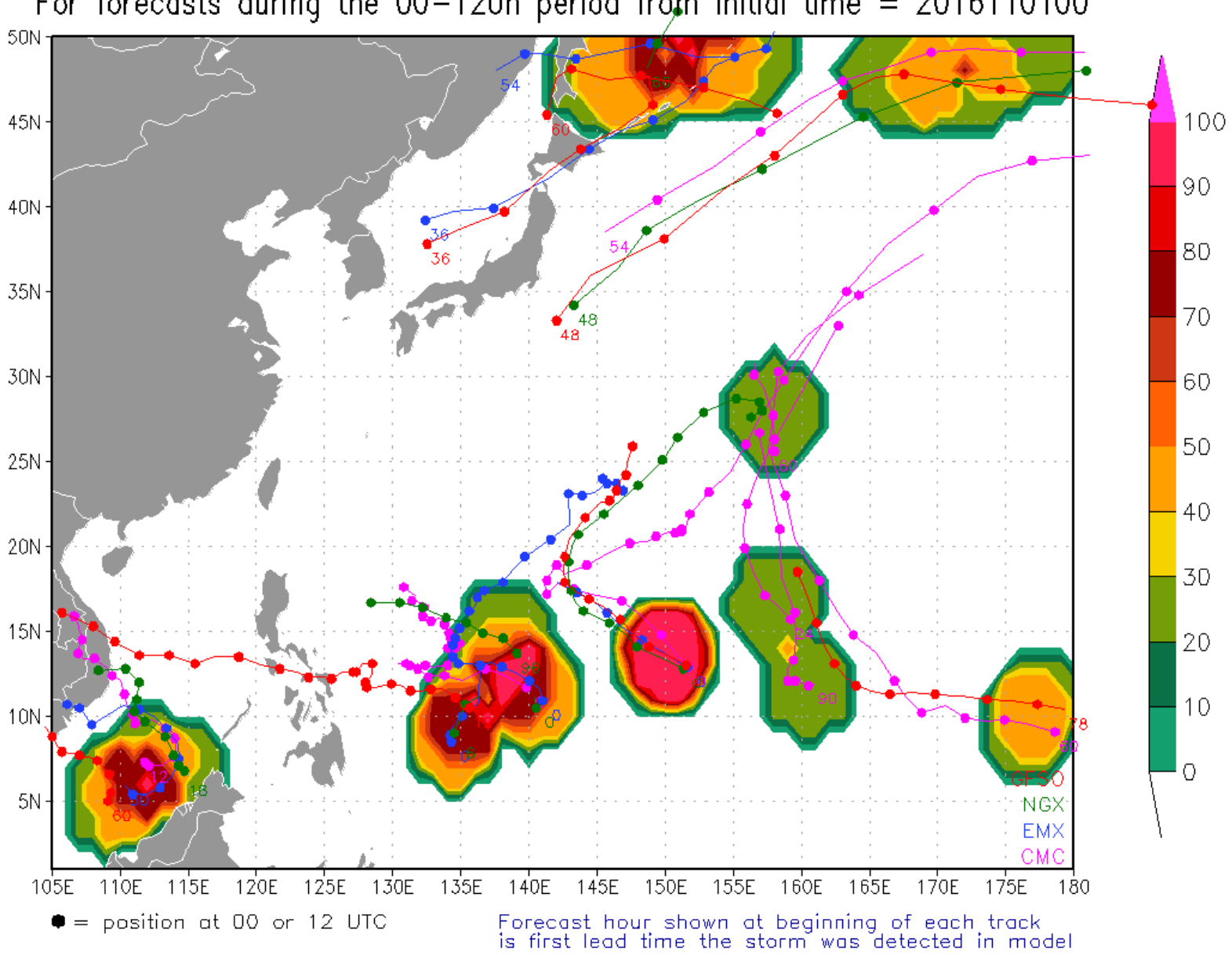
Day 5-8

Day 9-12

Day 13-15

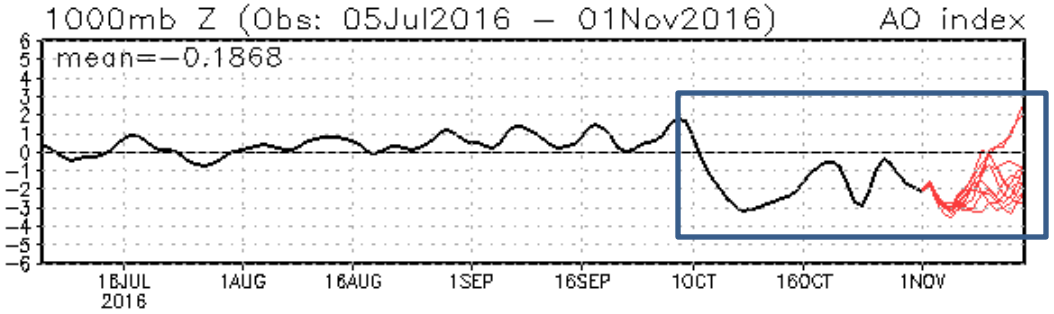
VALID TIME: 01/0600Z
(PRODUCT OF JTWC/SATOPS)

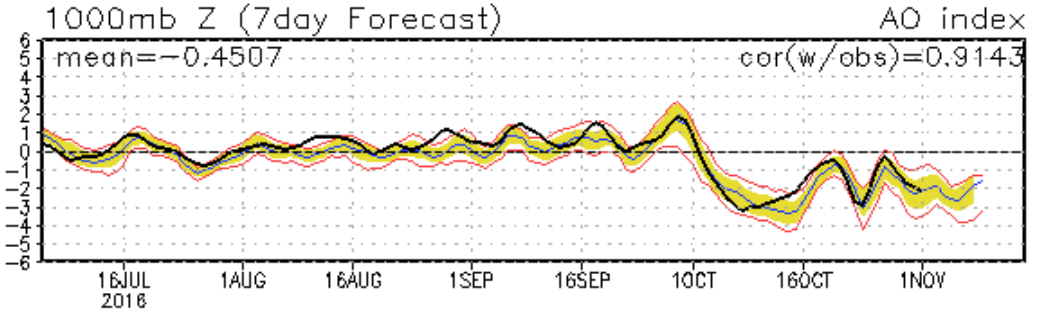


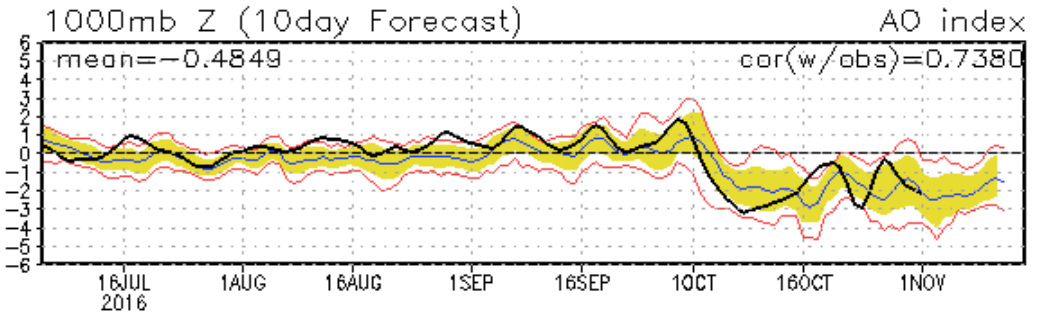

Consensus-based Probability (%) of TC genesis
using deterministic models: GFS, NAVGEM, CMC, ECMWF
For forecasts during the 00-120h period from initial time = 2016110100
50N
45N
40N
35N
30N
25N
20N
15N
10N
5N
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
100
90
80
70
60
50
40
30
20
10
0
GFSO
NGX
EMX
CMC
● = position at 00 or 12 UTC
Forecast hour shown at beginning of each track
is first lead time the storm was detected in model

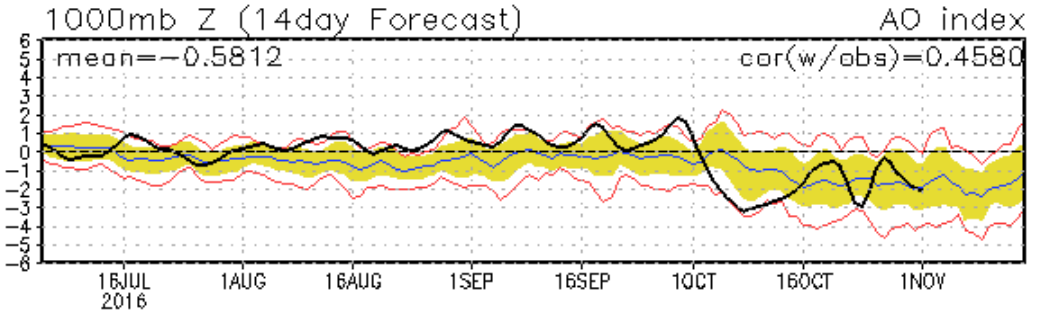
Connections to U.S. Impacts

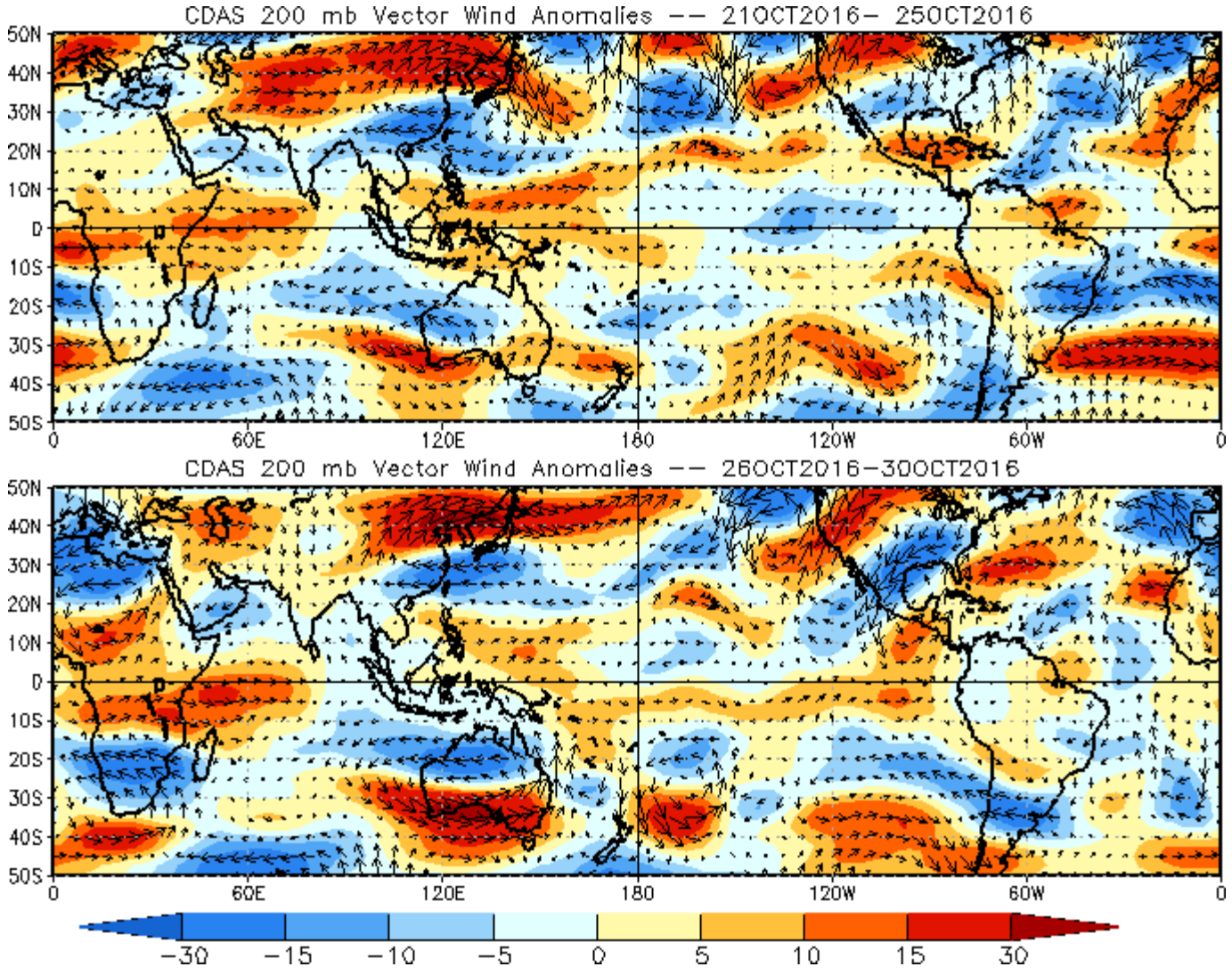
AO: Observed & ENSM forecasts

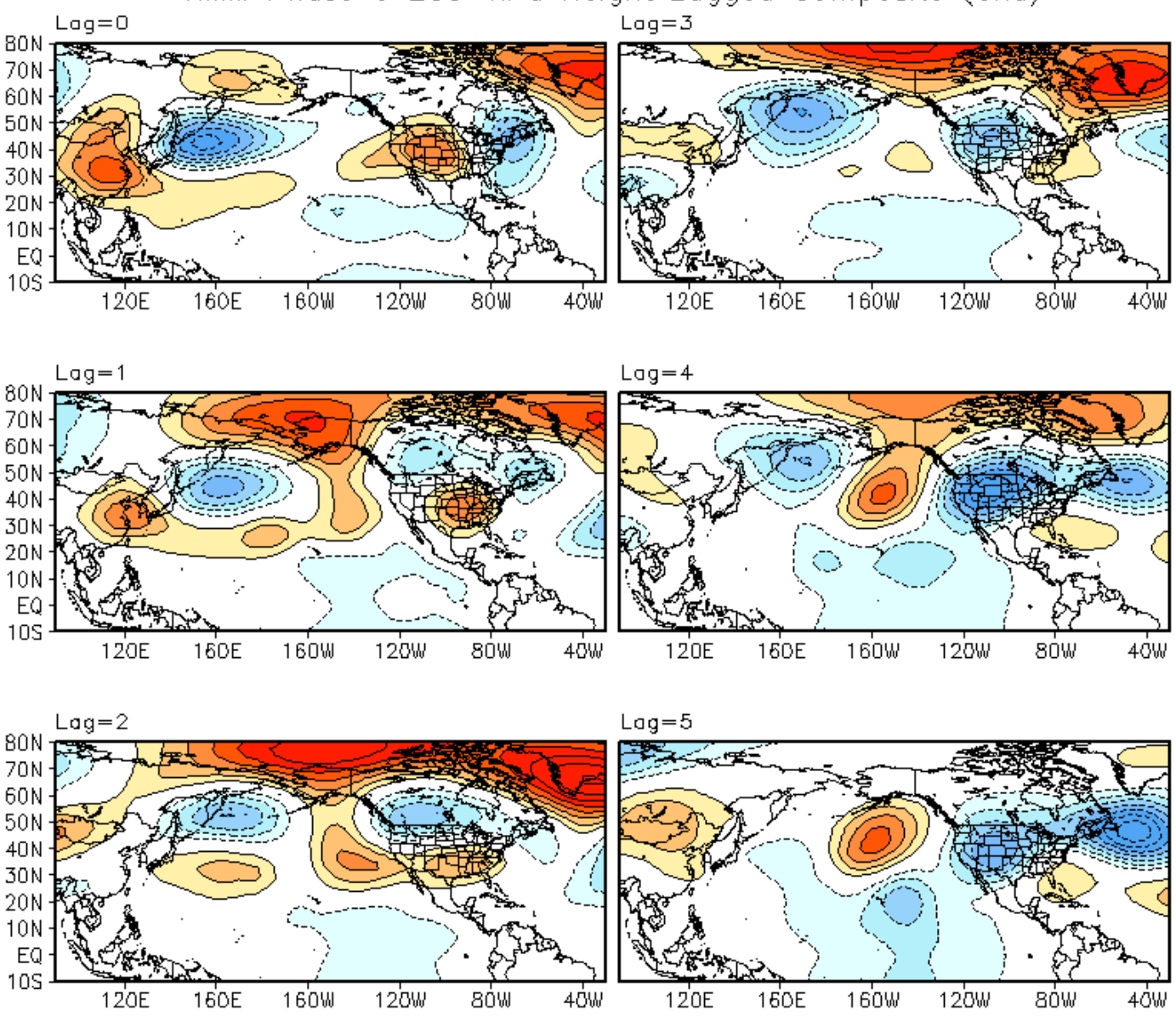


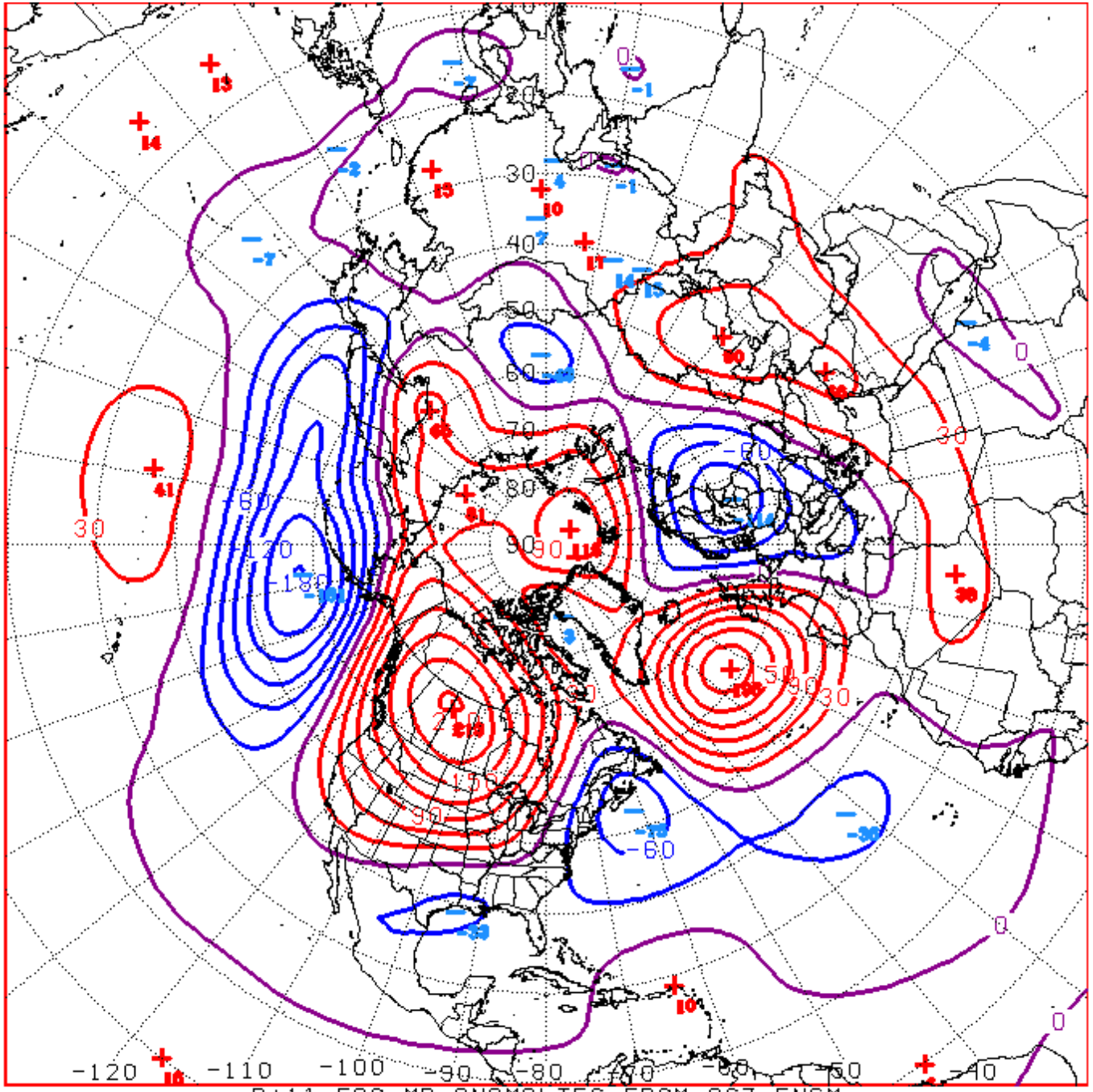






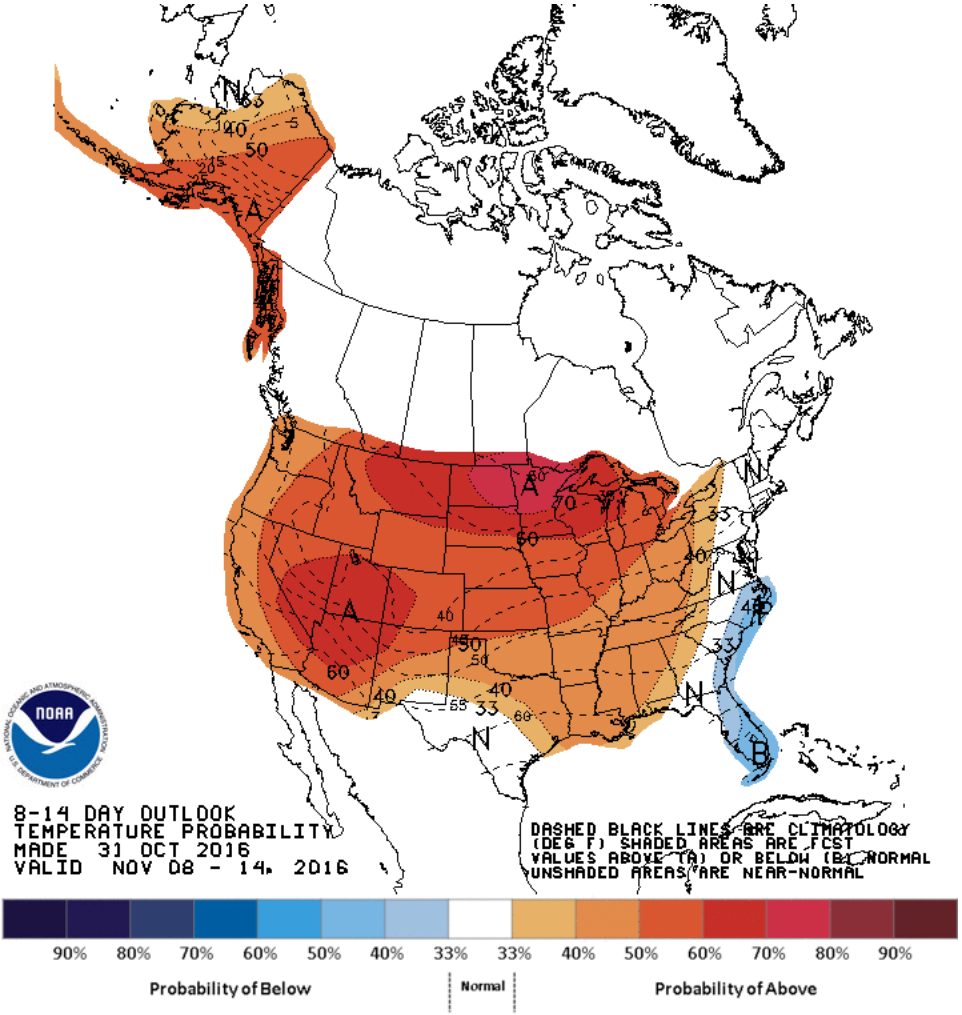

CDAS 200 mb Vector Wind Anomalies -- 21OCT2016- 25OCT2016
CDAS 200 mb Vector Wind Anomalies -- 26OCT2016-30OCT2016
50N
40N
30N
20N
10N
0
10S
20S
30S
40S
50S
0
60E
120E
180
120W
60W
0
-30
-15
-10
-5
0
5
10
15
30

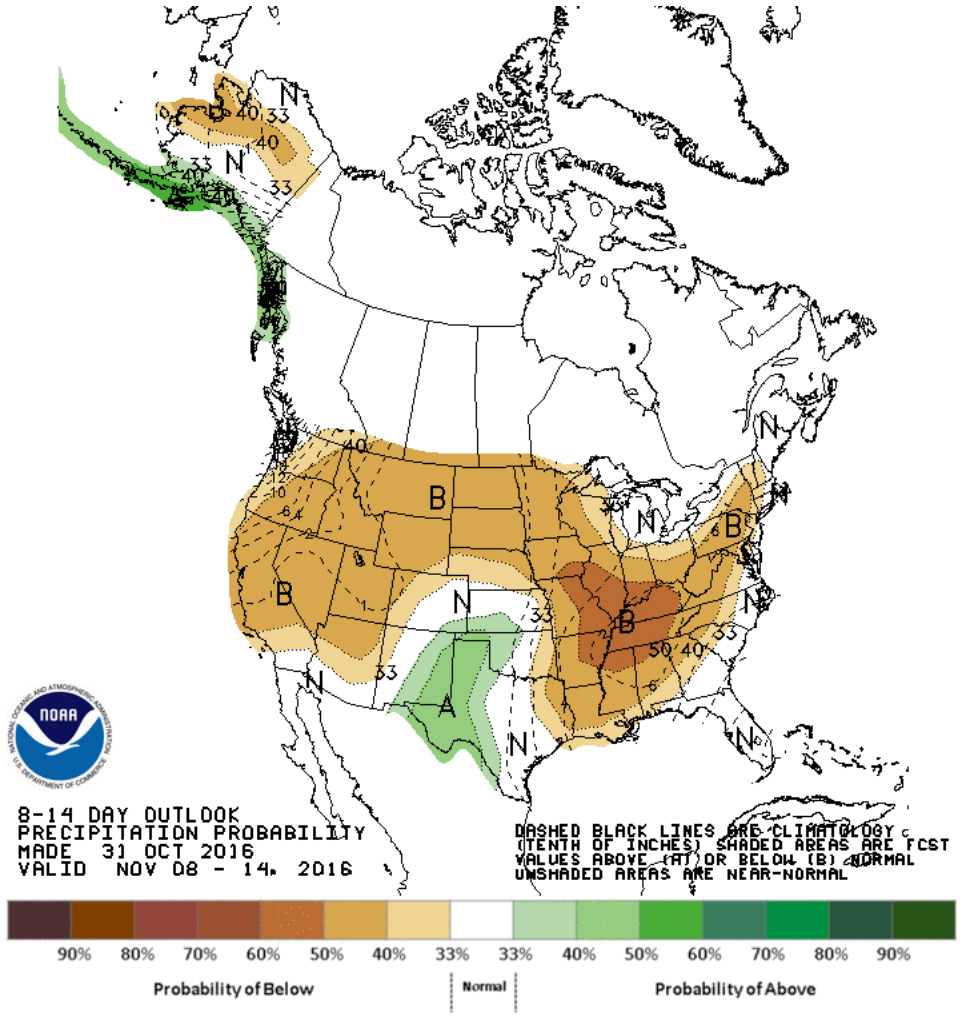

RMM Phase 6 200-hPa Height Lagged Composite (ond)
Lag=0
Lag=3
Lag=1
Lag=4
Lag=2
Lag=5
80N
70N
60N
50N
40N
30N
20N
10N
EQ
10S
120E
160E
160W
120W
80W
40W



D+11 500 MB ANOMALIES FROM 06Z ENSM
CPC MAP MADE NOV 01 2016 1239 UTC CNTD NOV 12 2016

Week 2 – Temperature and Precipitation





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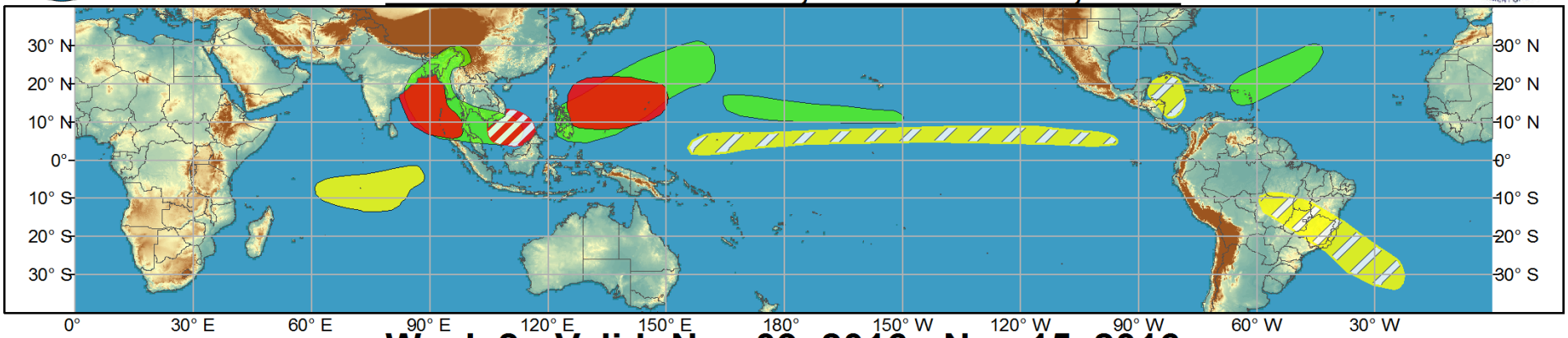

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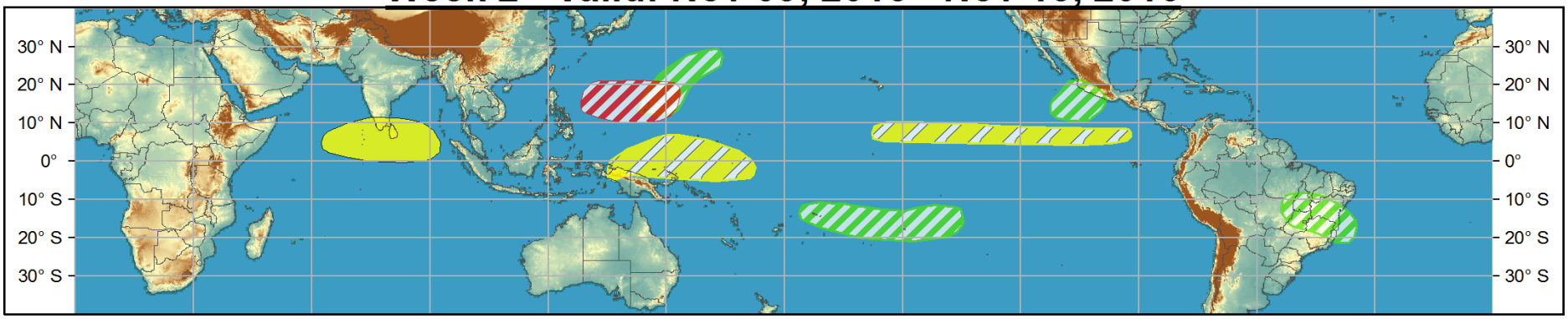

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