

# Global Tropics Hazards And Benefits Outlook

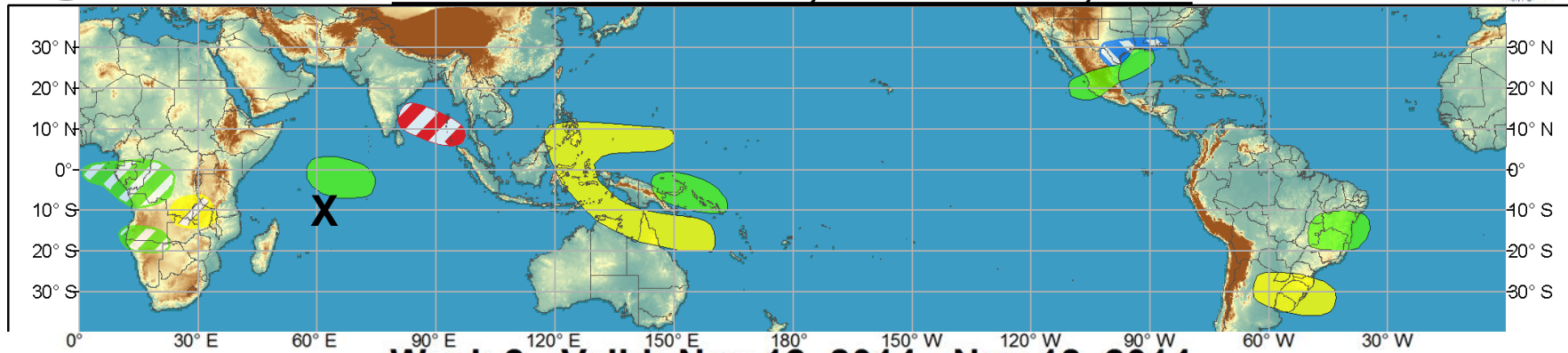
November 18, 2014

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

# Week 1 - Valid: Nov 12, 2014 - Nov 18, 2014

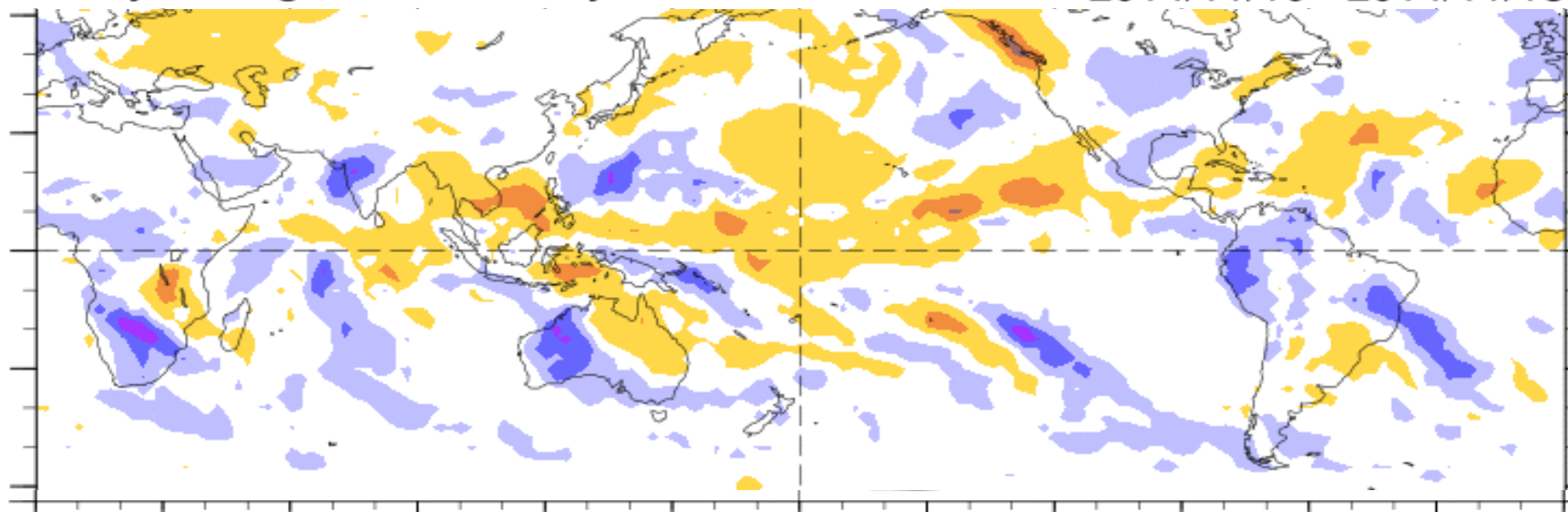


# Week 2 - Valid: Nov 12, 2014 - Nov 18, 2014



7-Day Average OLR Anomaly

2014/11/10 - 2014/11/16



# Synopsis of Climate Modes

## **ENSO:**

- There is a 58% chance of El Niño during the Northern Hemisphere winter, which is favored to last into the Northern Hemisphere spring 2015.

## **MJO and other subseasonal tropical variability:**

- The MJO was active during the previous week, with the enhanced phase propagating over the Western Hemisphere to the far western Indian Ocean. The signal is more coherent at the upper-levels. Canonical enhanced convection over the equatorial Indian Ocean has not been observed.
- Dynamical model MJO index forecasts generally support continued eastward propagation over the Indian Ocean during Week-1. Most models weaken the signal during Week-2.

## **Extratropics:**

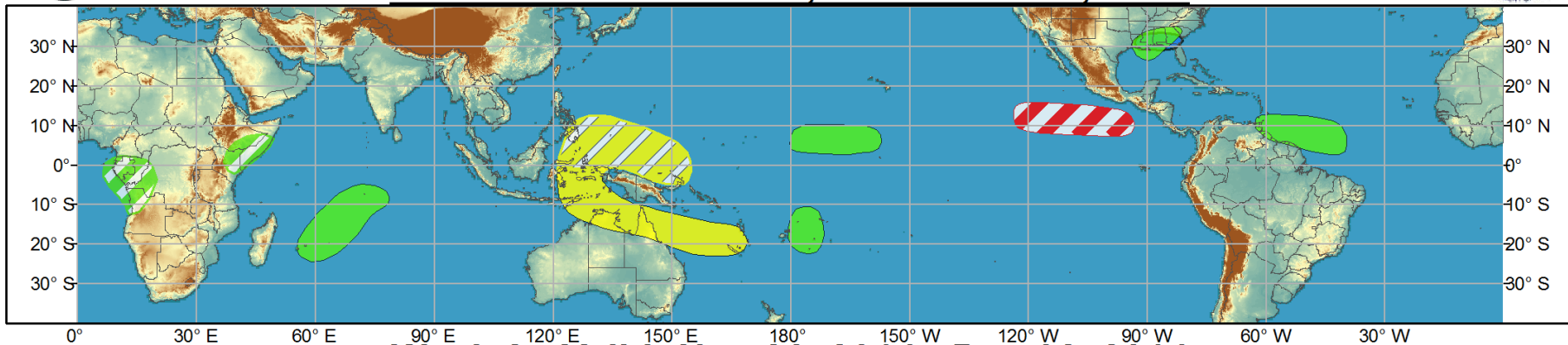
- Without widespread enhanced equatorial convection over the Indian Ocean, canonical lagged composite impacts from the MJO over the CONUS would be highly uncertain. Indian Ocean MJO events, however, are generally associated with a warming trend across the central and eastern CONUS.



# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Nov 19, 2014 - Nov 25, 2014



## Week 2 - Valid: Nov 26, 2014 - Dec 02, 2014



**Confidence**  
High 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.
- Below-normal temperatures** 7-day mean temperatures in the lower third of the historical range.

Produced: 11/18/2014

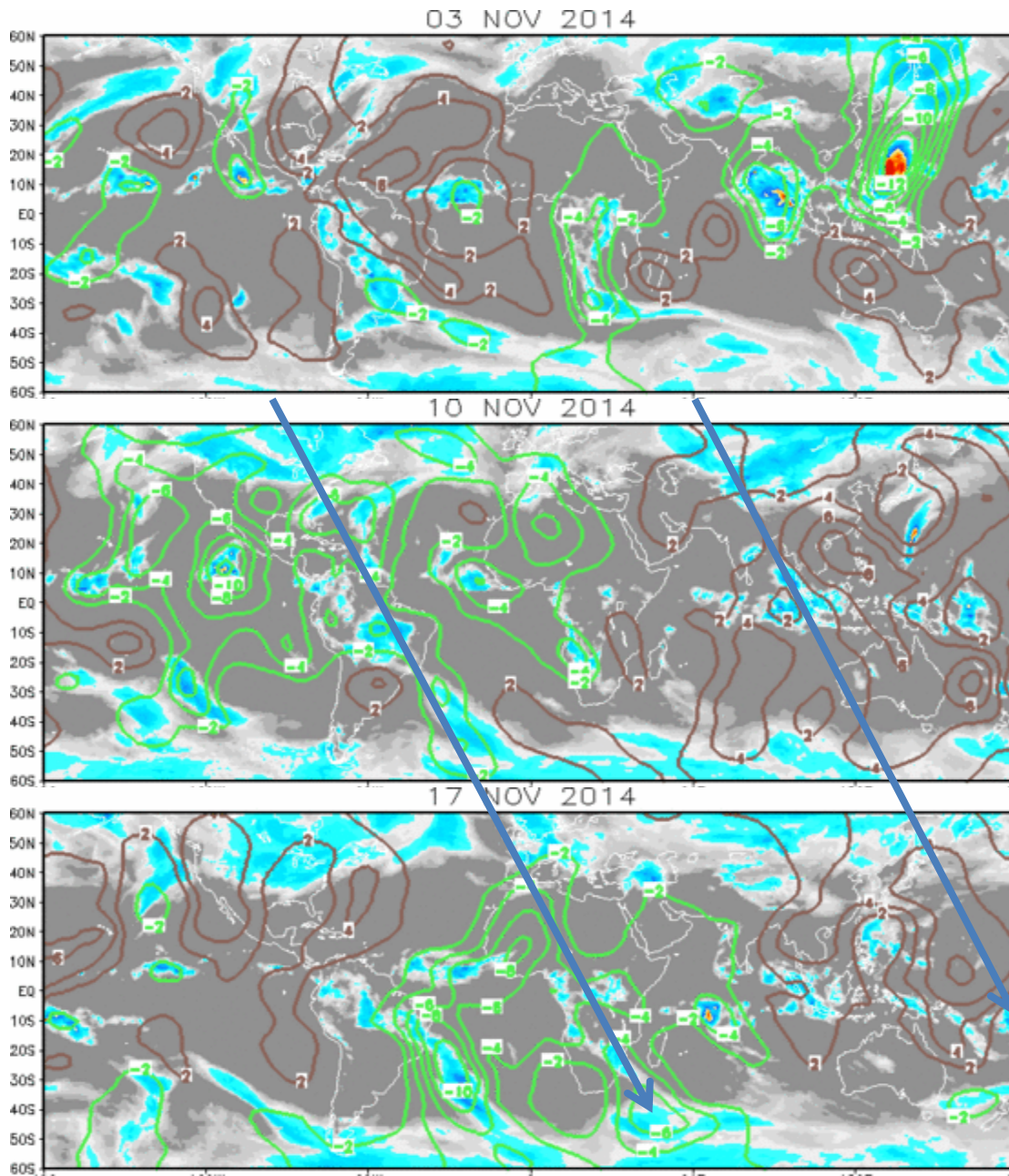
Forecaster: Allgood

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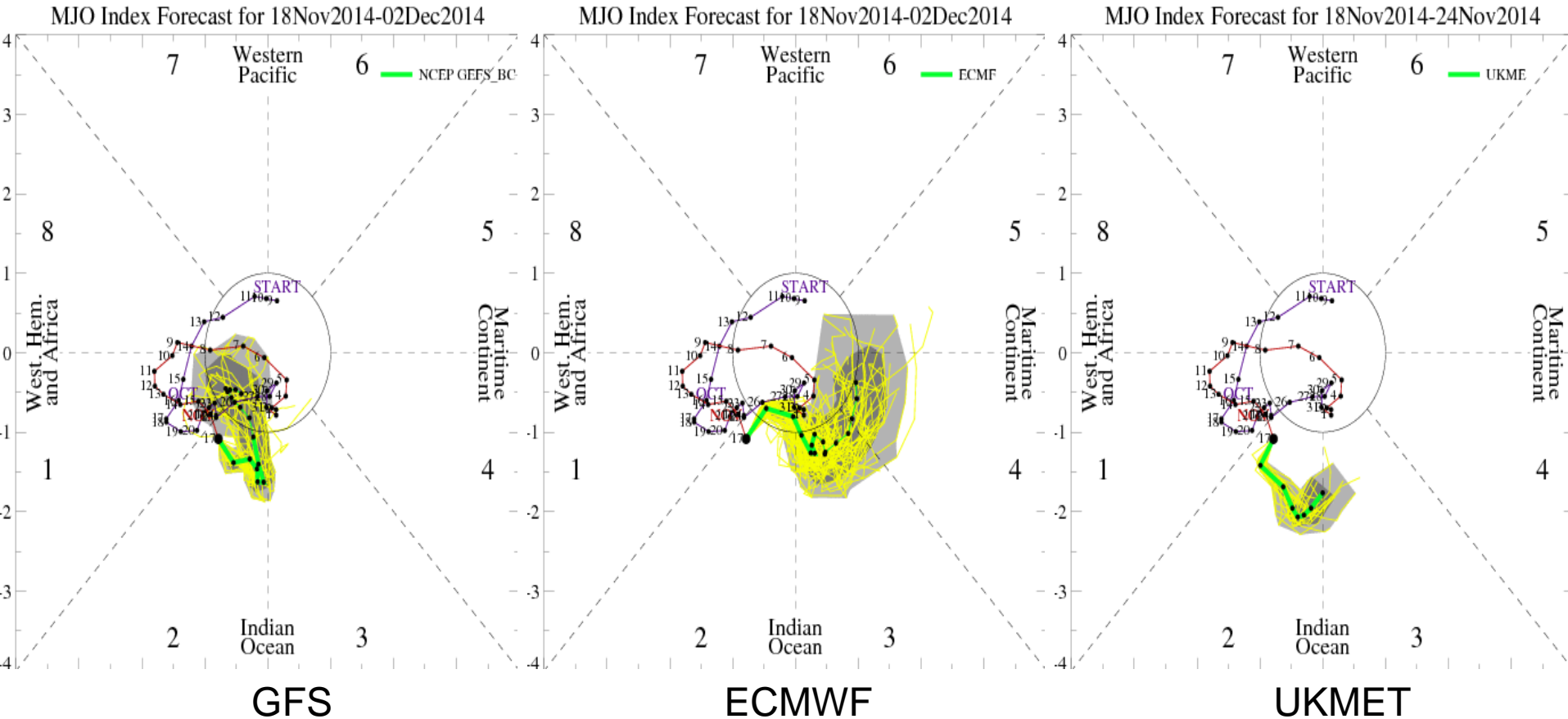


# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence    Brown: Enhanced Convergence



# MJO Observation/Forecast

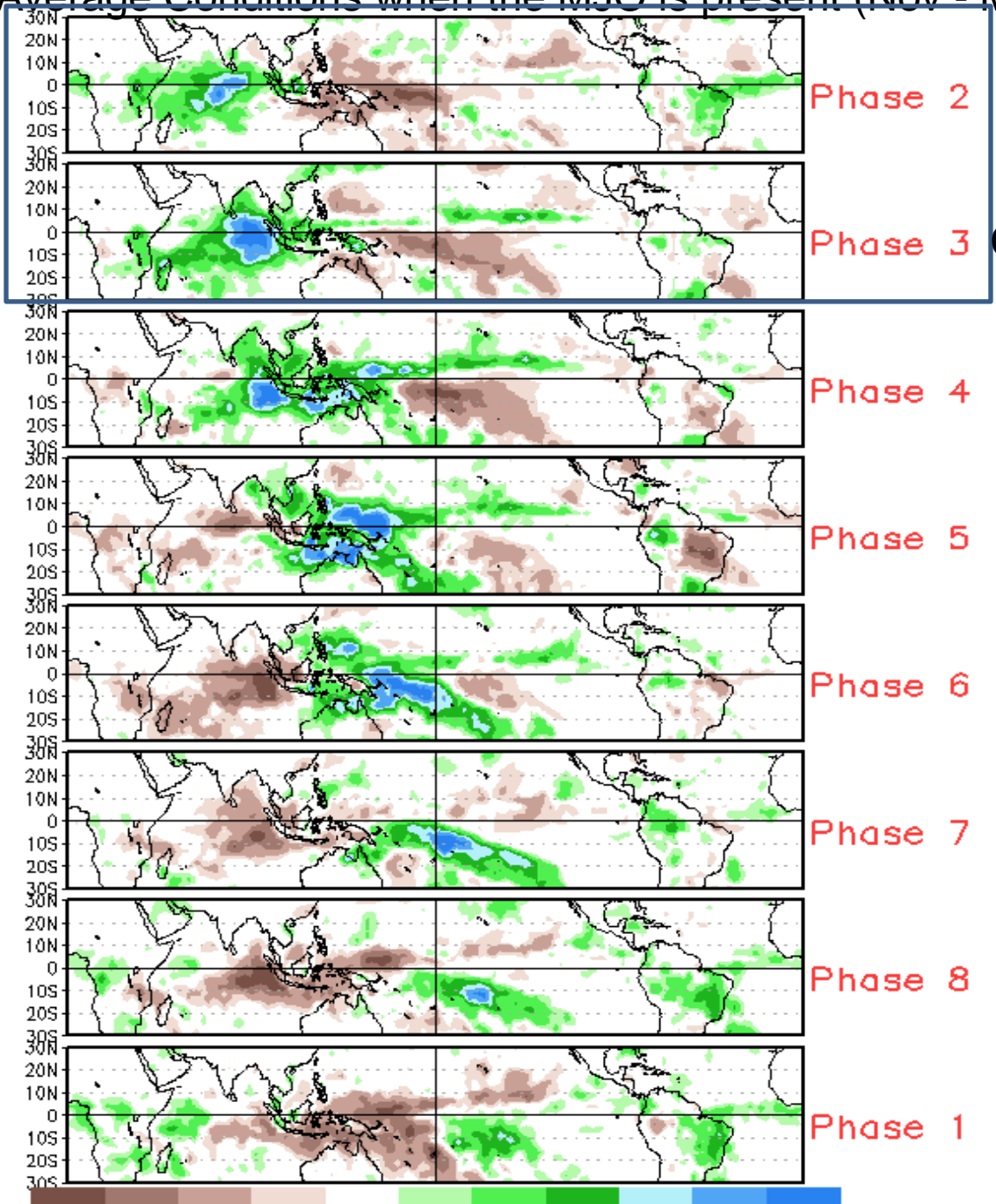


GFS was previously most “on board” with an MJO event – now weakens the signal.

ECMWF depicts continued eastward propagation, however, the forecast spatial convective fields are not indicative of canonical MJO activity, and the phase speed is fast (Kelvin Wave?).

UKMET depicts eastward propagation over the Indian Ocean.

# Average Conditions when the MJO is present (Nov - Mar)



Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

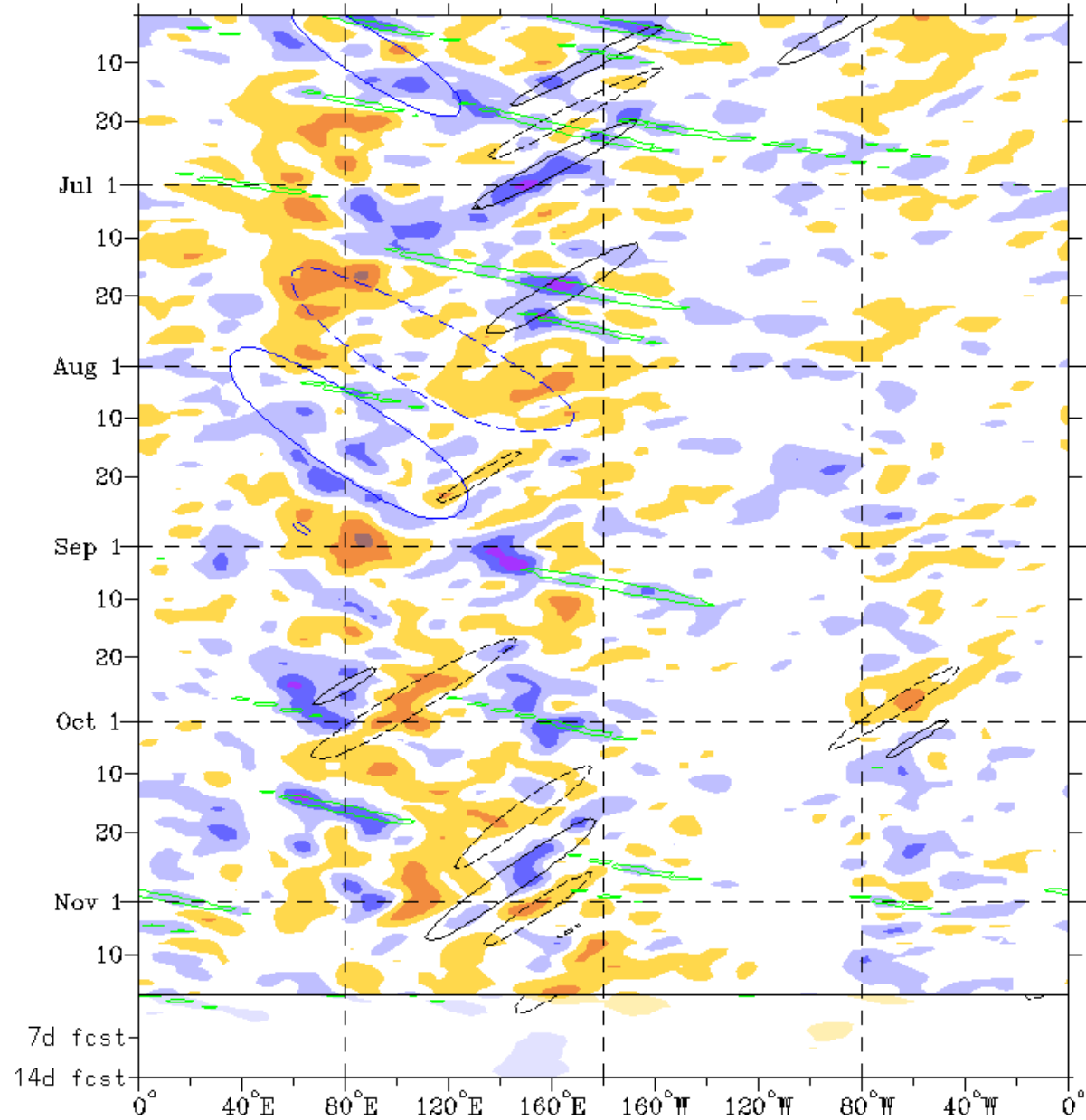
Phase 7

Phase 8

Phase 1

CAVEAT:



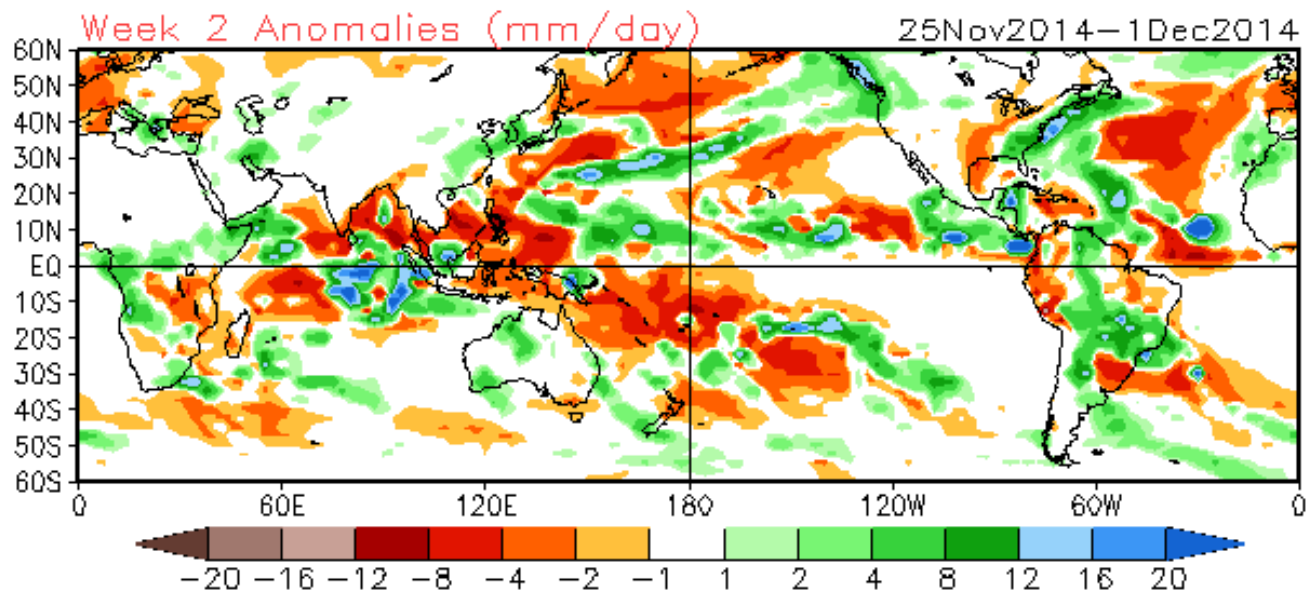
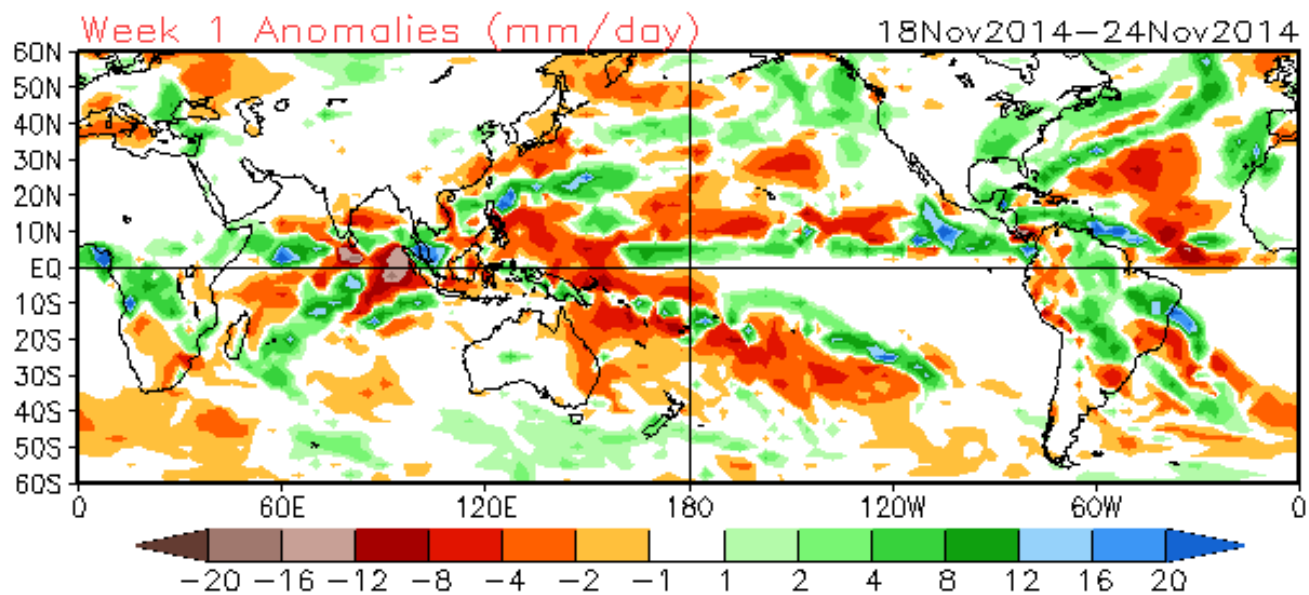


Eastward propagation of suppressed convection over the Wpac is evident, but...

Where's the enhanced phase??

Westward moving features evident near the Date Line.



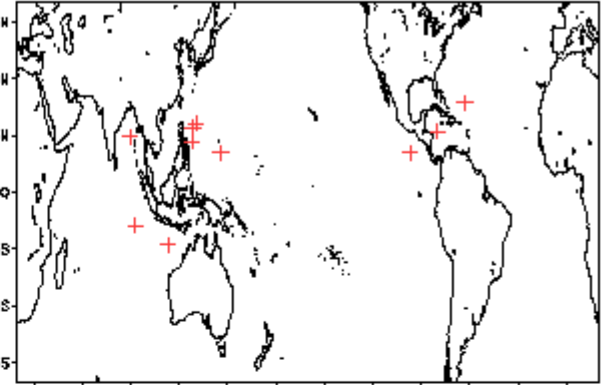
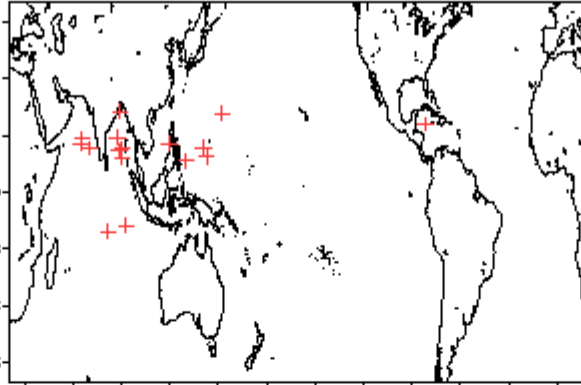
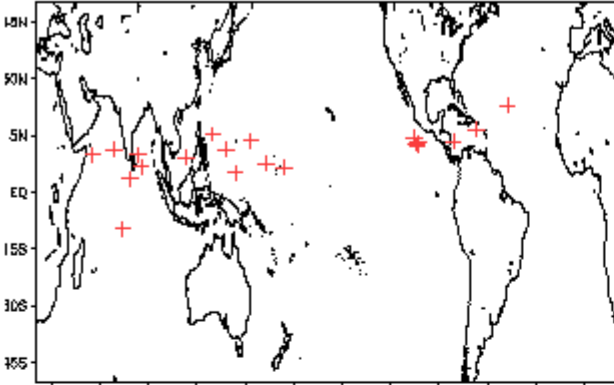


# November Tropical Storm Formation by MJO phase

Phase 1 (65 days) 21 storms

Phase 4 (77 days) 17 storms

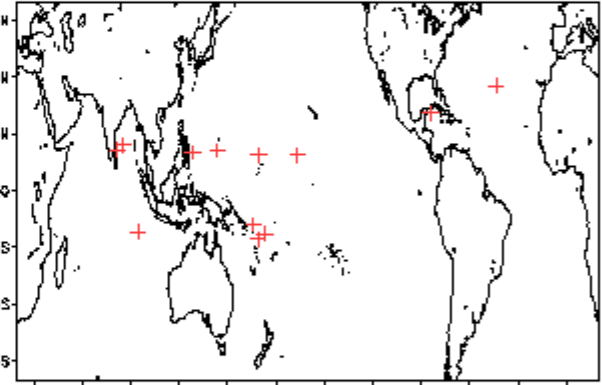
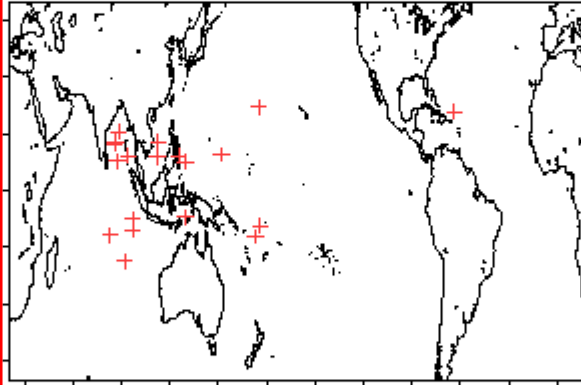
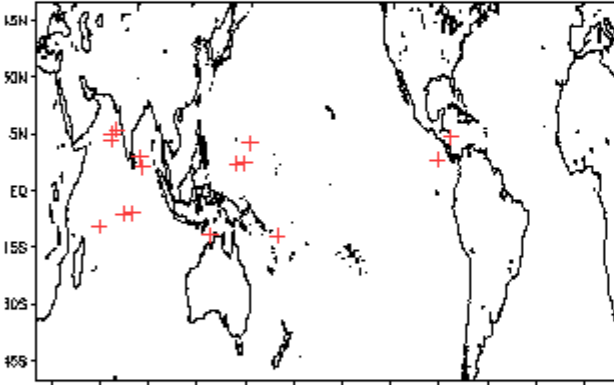
Phase 7 (68 days) 11 storms



Phase 2 (88 days) 16 storms

Phase 5 (72 days) 20 storms

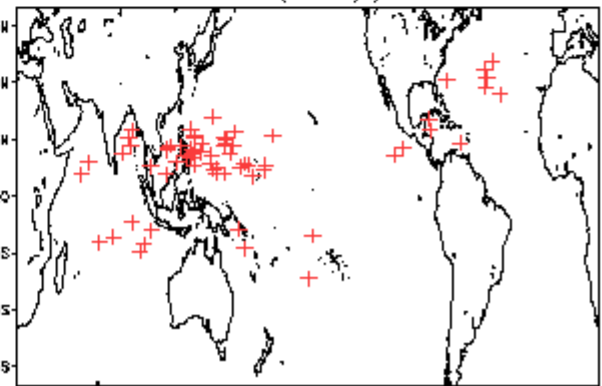
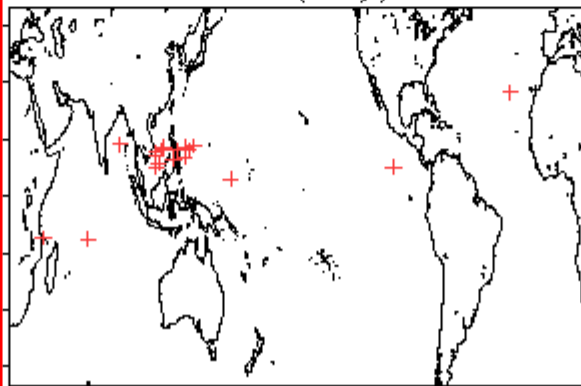
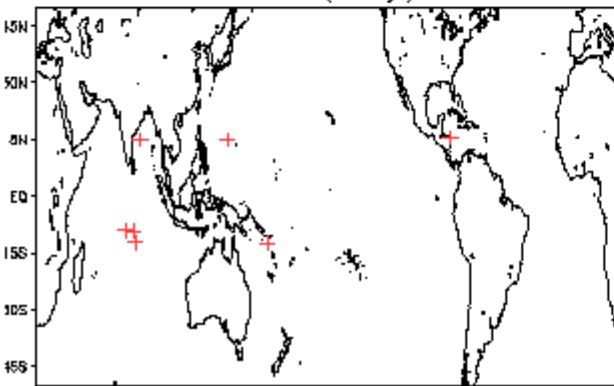
Phase 8 (60 days) 14 storms



Phase 3 (89 days) 8 storms

Phase 6 (91 days) 19 storms

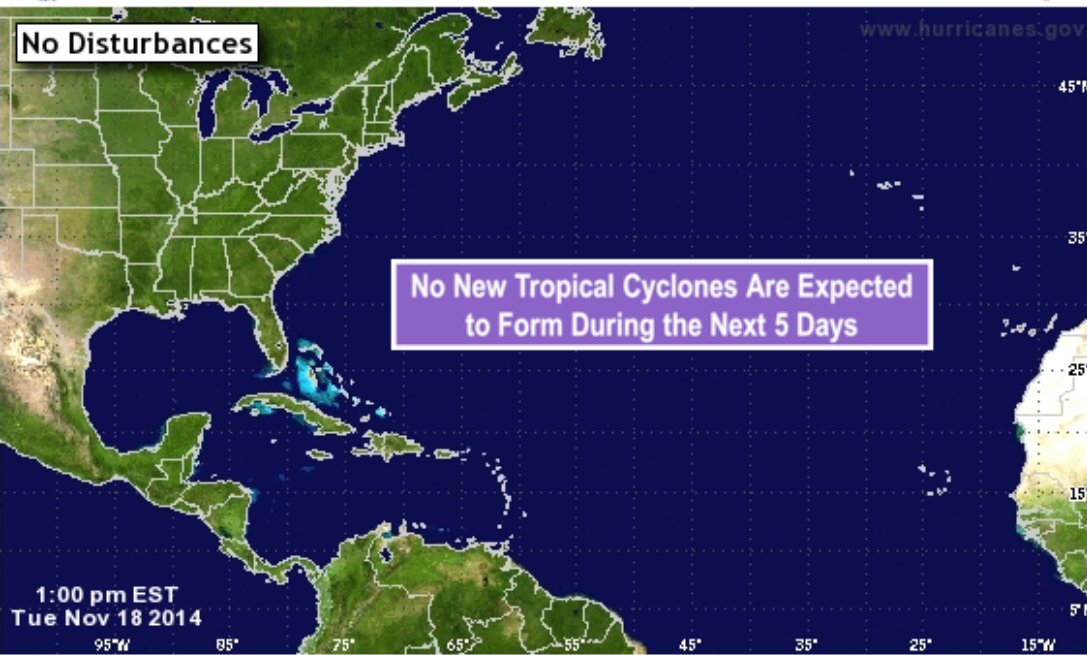
Null (380 days) 65 storms





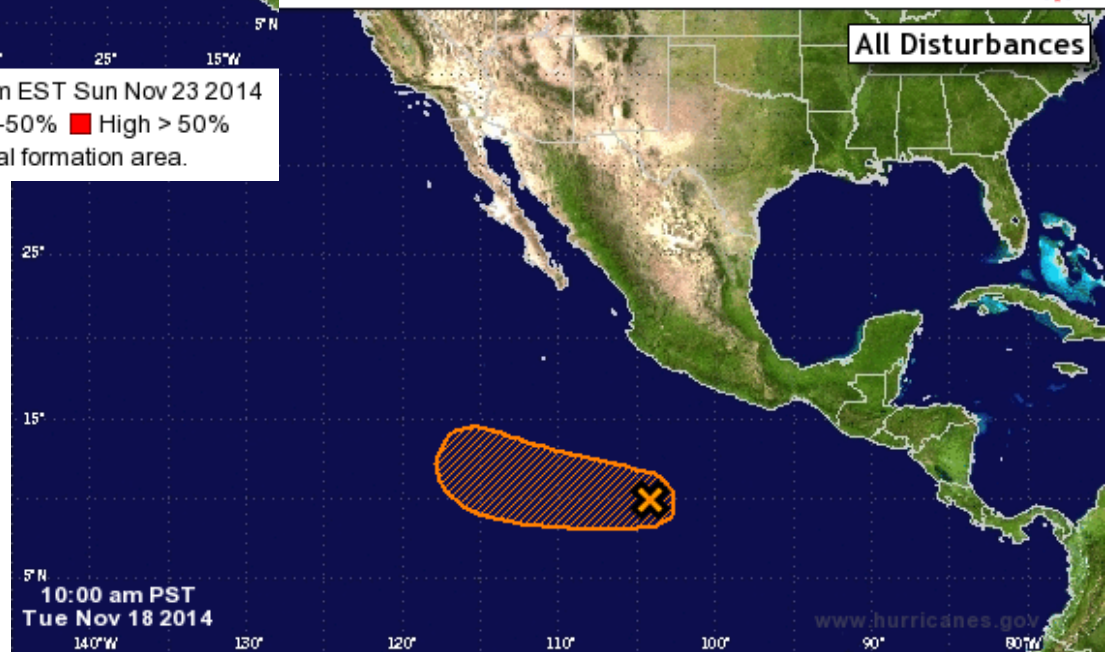
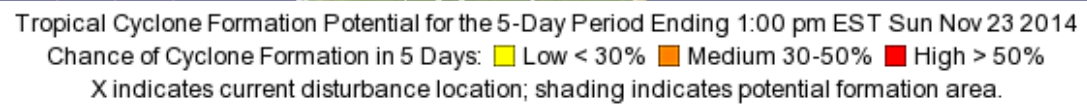
# Experimental 5-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



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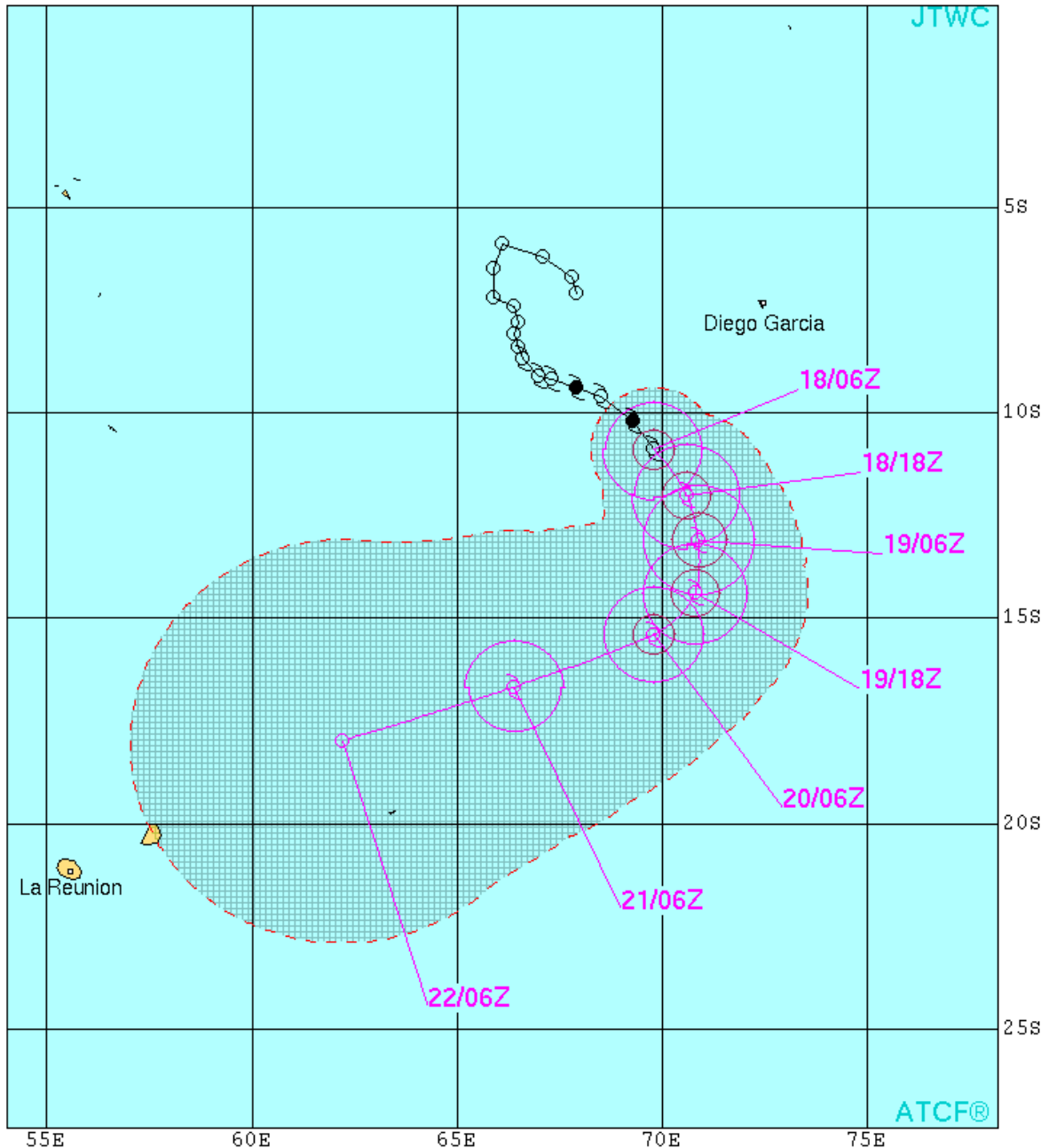
National Hurricane Center Miami, Florida



Tropical Cyclone Formation Potential for the 5-Day Period Ending 10:00 am PST Sun Nov 23 2014

Chance of Cyclone Formation in 5 Days: ■ Low < 30% ■ Medium 30-50% ■ High > 50%

X indicates current disturbance location; shading indicates potential formation area.



TROPICAL CYCLONE 01S (ADJALI) WARNING #4  
 WTXS31 PGTW 180900  
 180600Z POSIT: NEAR 10.9S 69.8E  
 MOVING 145 DEGREES TRUE AT 09 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 17 FEET  
 18/06Z, WINDS 060 KTS, GUSTS TO 075 KTS  
 18/18Z, WINDS 060 KTS, GUSTS TO 075 KTS  
 19/06Z, WINDS 060 KTS, GUSTS TO 075 KTS  
 19/18Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 20/06Z, WINDS 050 KTS, GUSTS TO 065 KTS  
 21/06Z, WINDS 040 KTS, GUSTS TO 050 KTS  
 22/06Z, WINDS 030 KTS, GUSTS TO 040 KTS

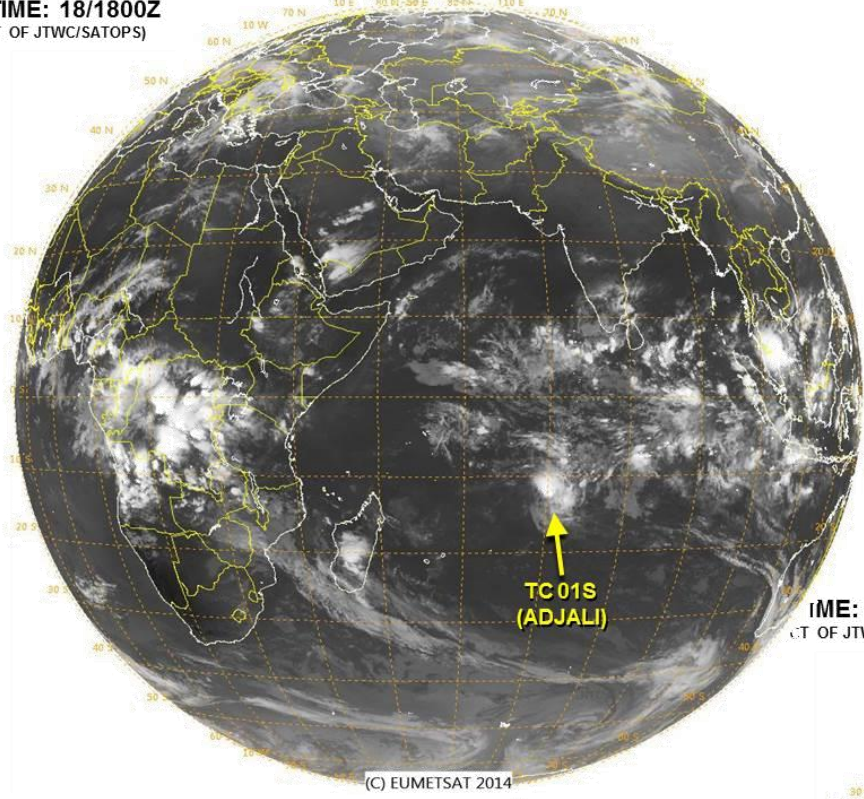
CPA TO: NM DTG  
 PORT\_LOUIS 305 22/06Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
DIEGO_GARCIA	195	372	24

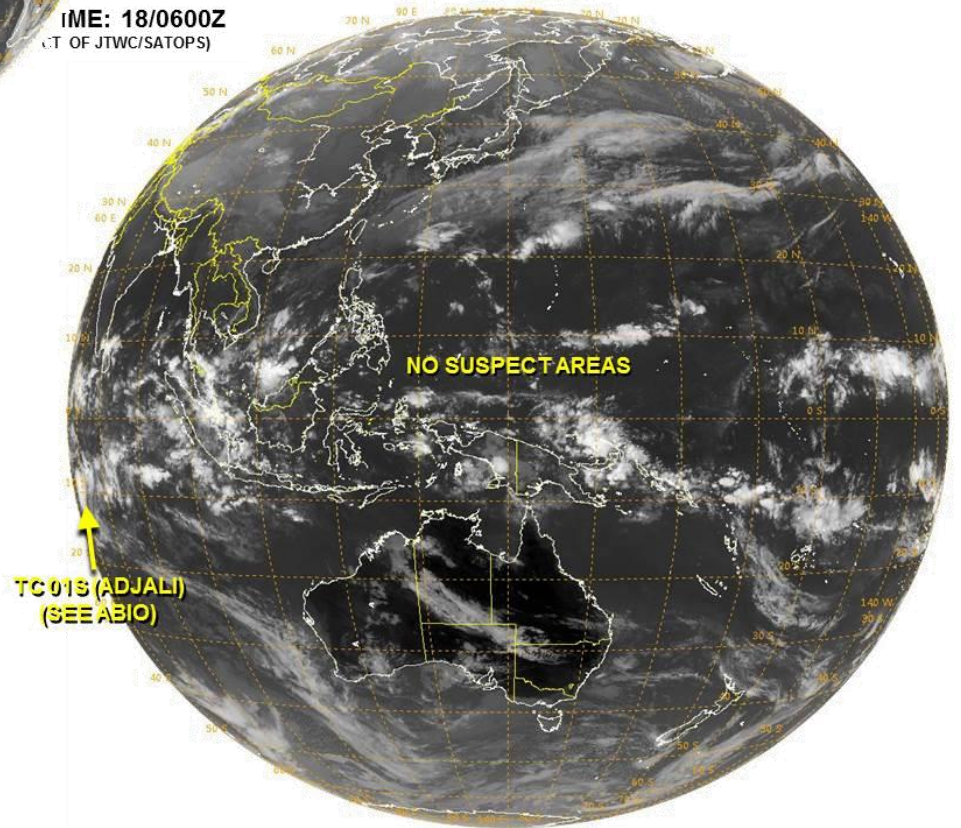
○ LESS THAN 34 KNOTS  
 ◐ 34-63 KNOTS  
 ● MORE THAN 63 KNOTS  
 PAST 6 HOURLY CYCLONE POSITS IN BLACK  
 FORECAST CYCLONE POSITS IN COLOR

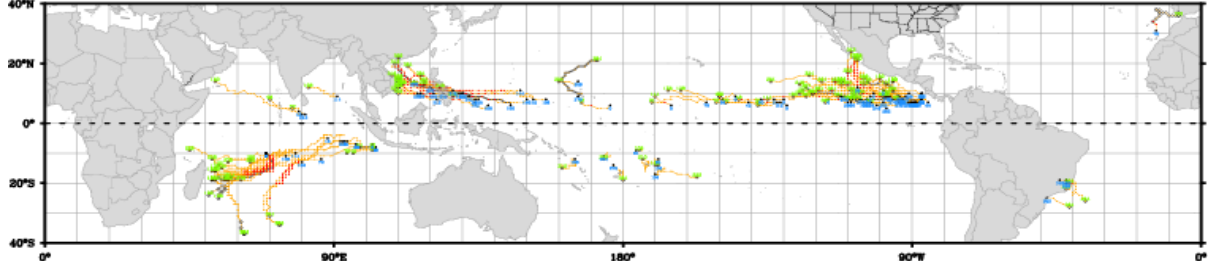


**VALID TIME: 18/1800Z**  
(PRODUCT OF JTWC/SATOPS)

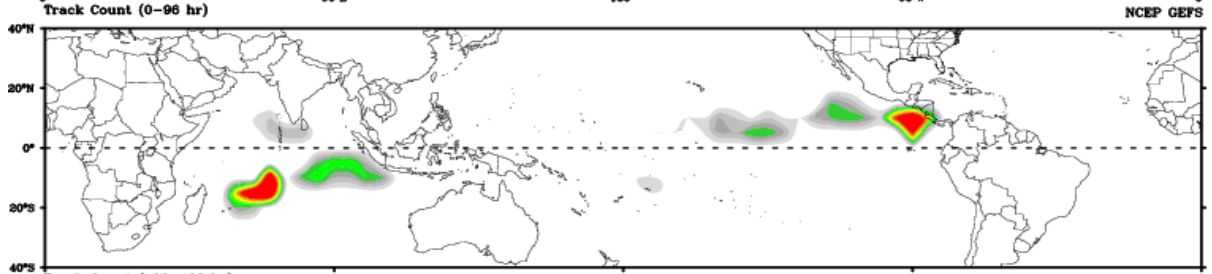


**TIME: 18/0600Z**  
(PRODUCT OF JTWC/SATOPS)

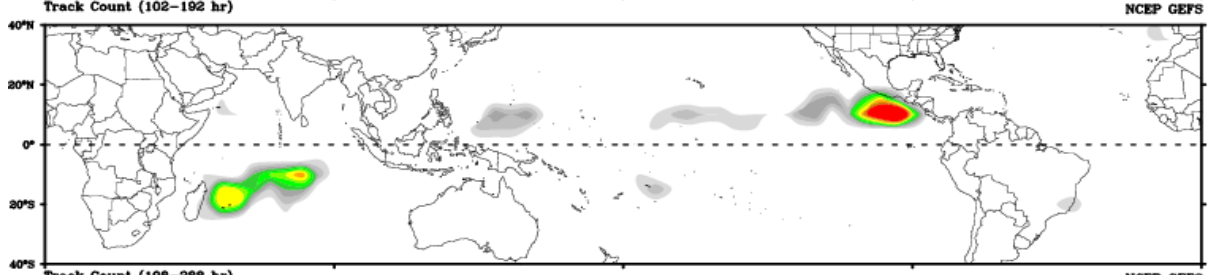




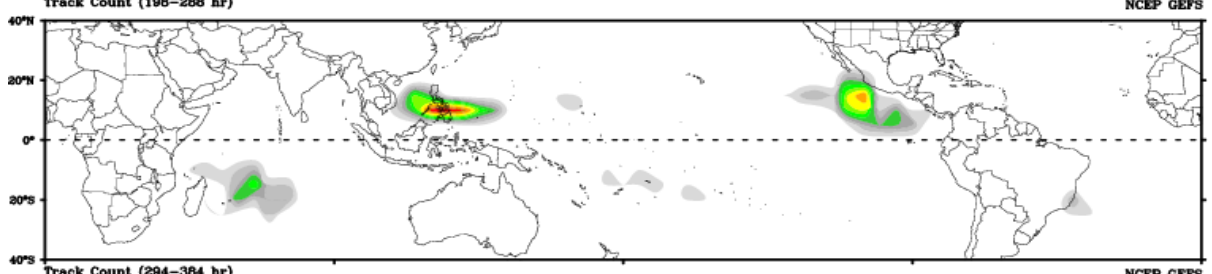
Days 1-4



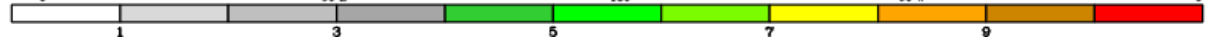
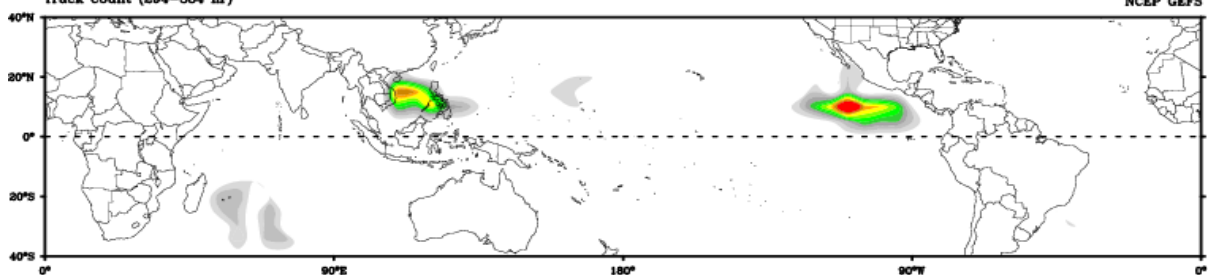
Day 5-8

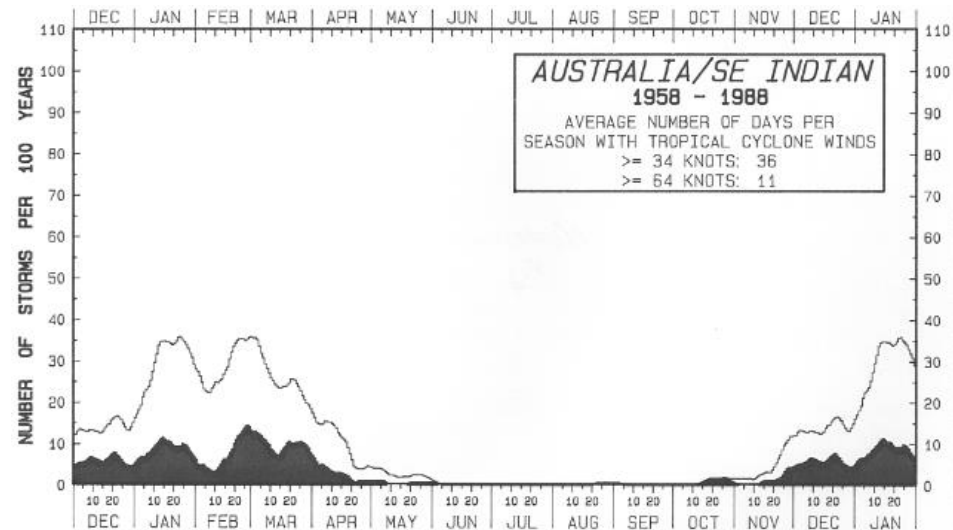
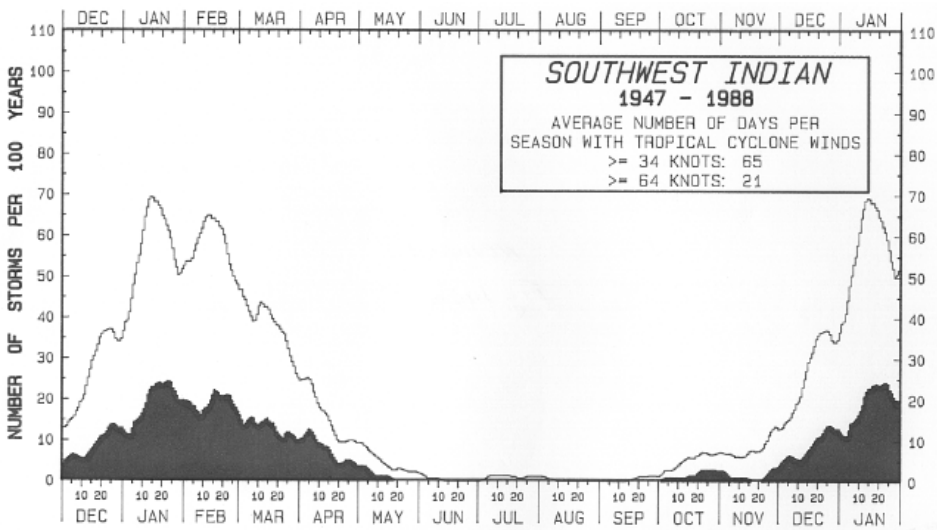
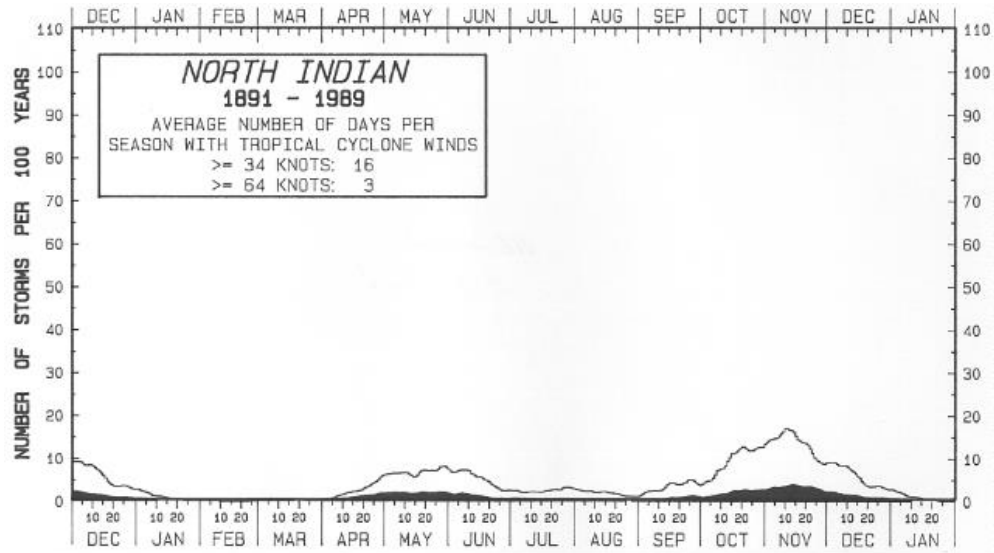


Day 9-12



Day 13-15

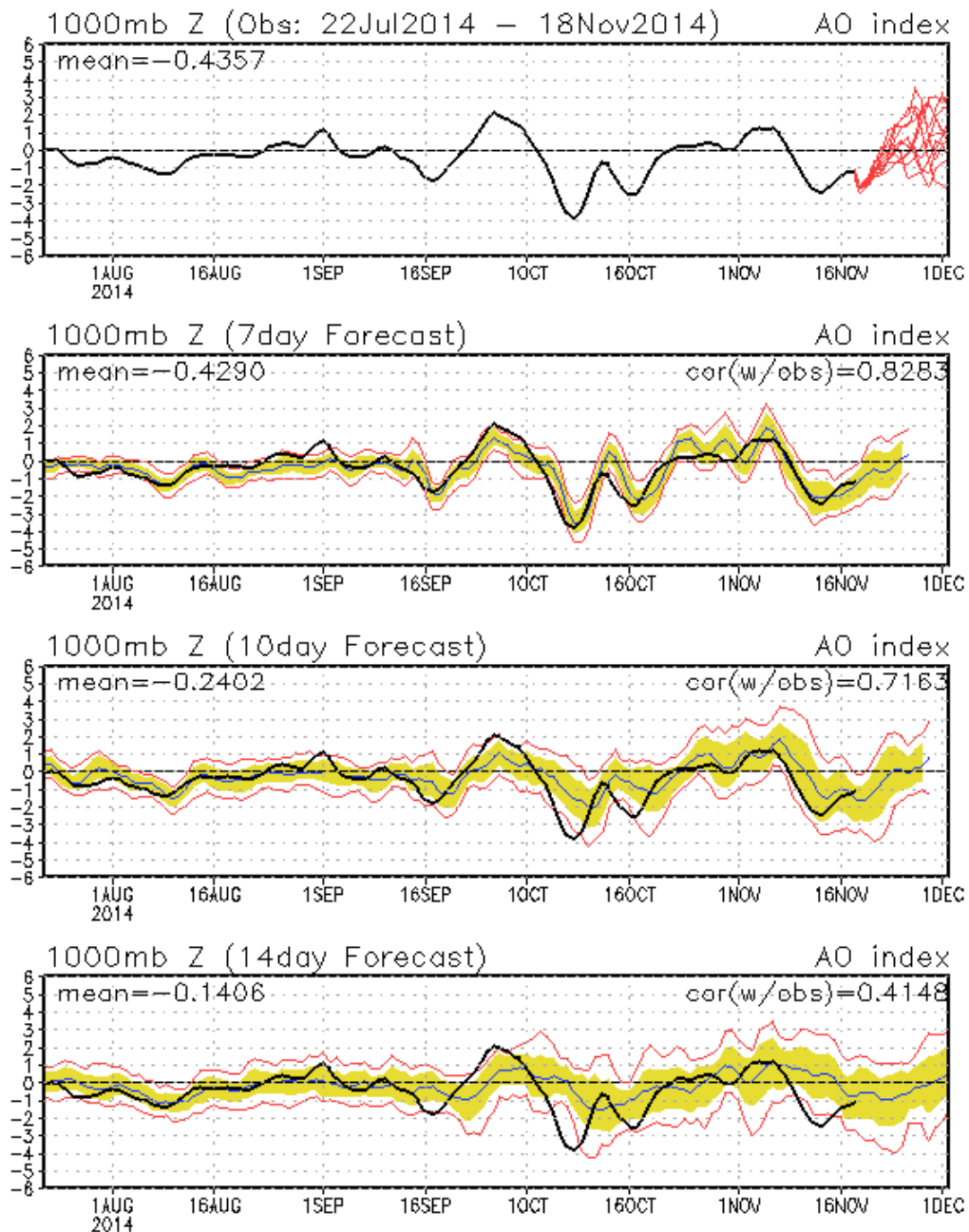




# Connections to U.S. Impacts

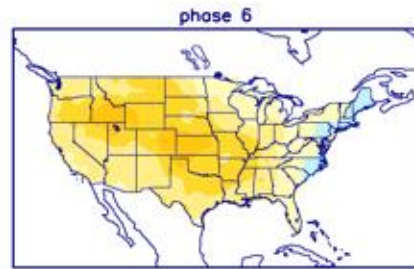
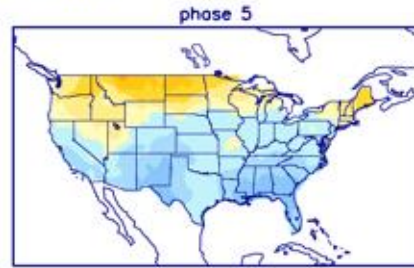
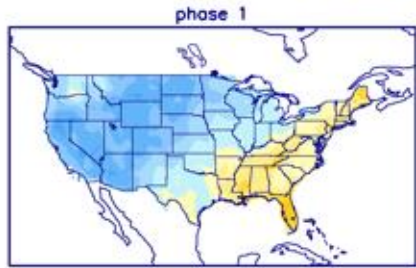


## AO: Observed & ENSM forecasts

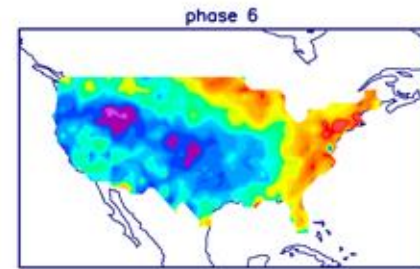
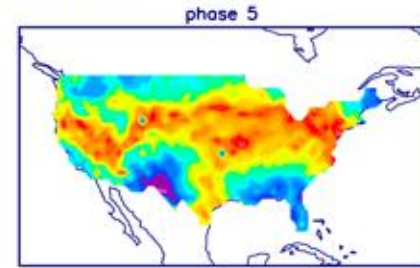
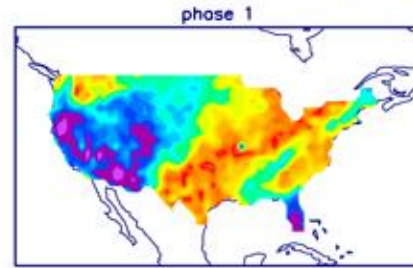


# US Composites based on MJO Phase

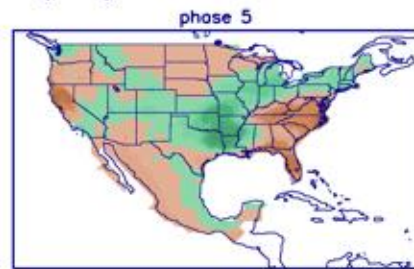
T composites (OND)



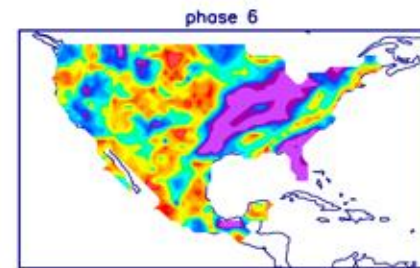
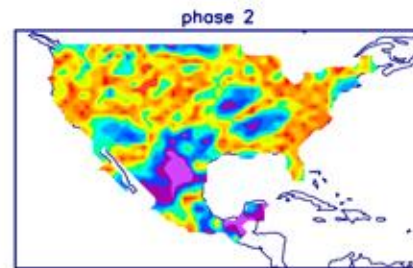
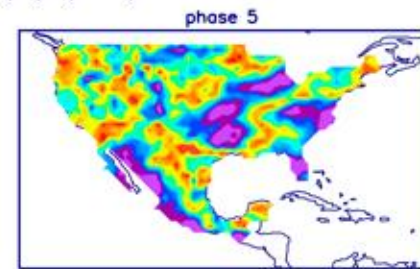
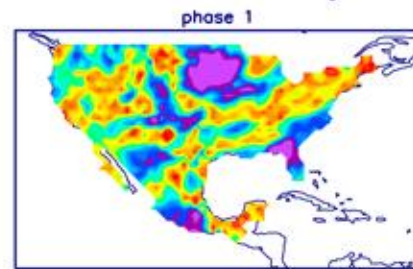
Significance (%) (OND)



P composites (JFM)

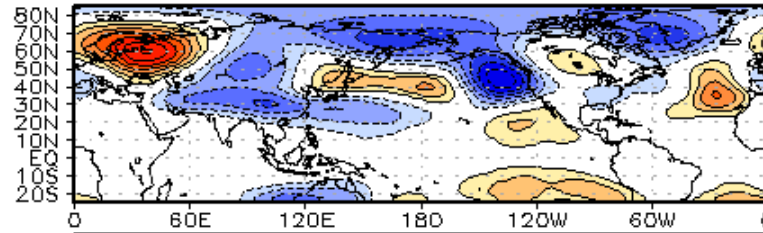


Significance (%) (JFM)

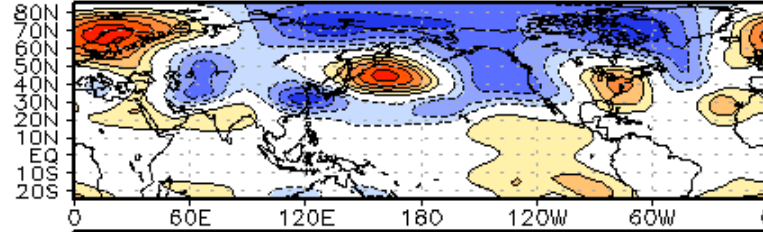


WHMJO Phase 2 z200 Lagged Composite (ond)

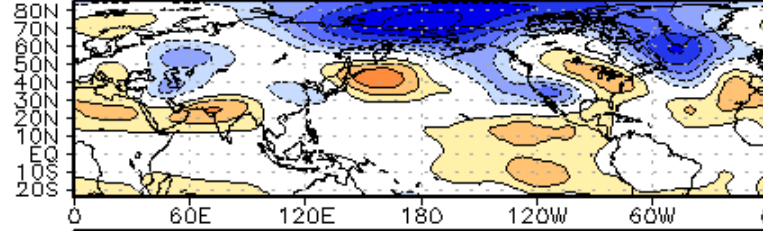
Days 0-5



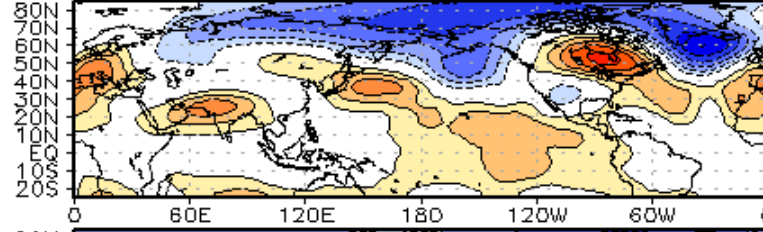
Days 6-10



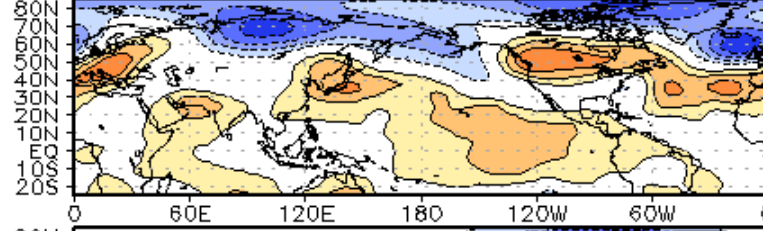
Days 11-15



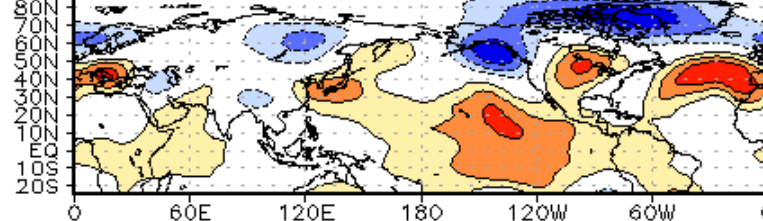
Days 16-20

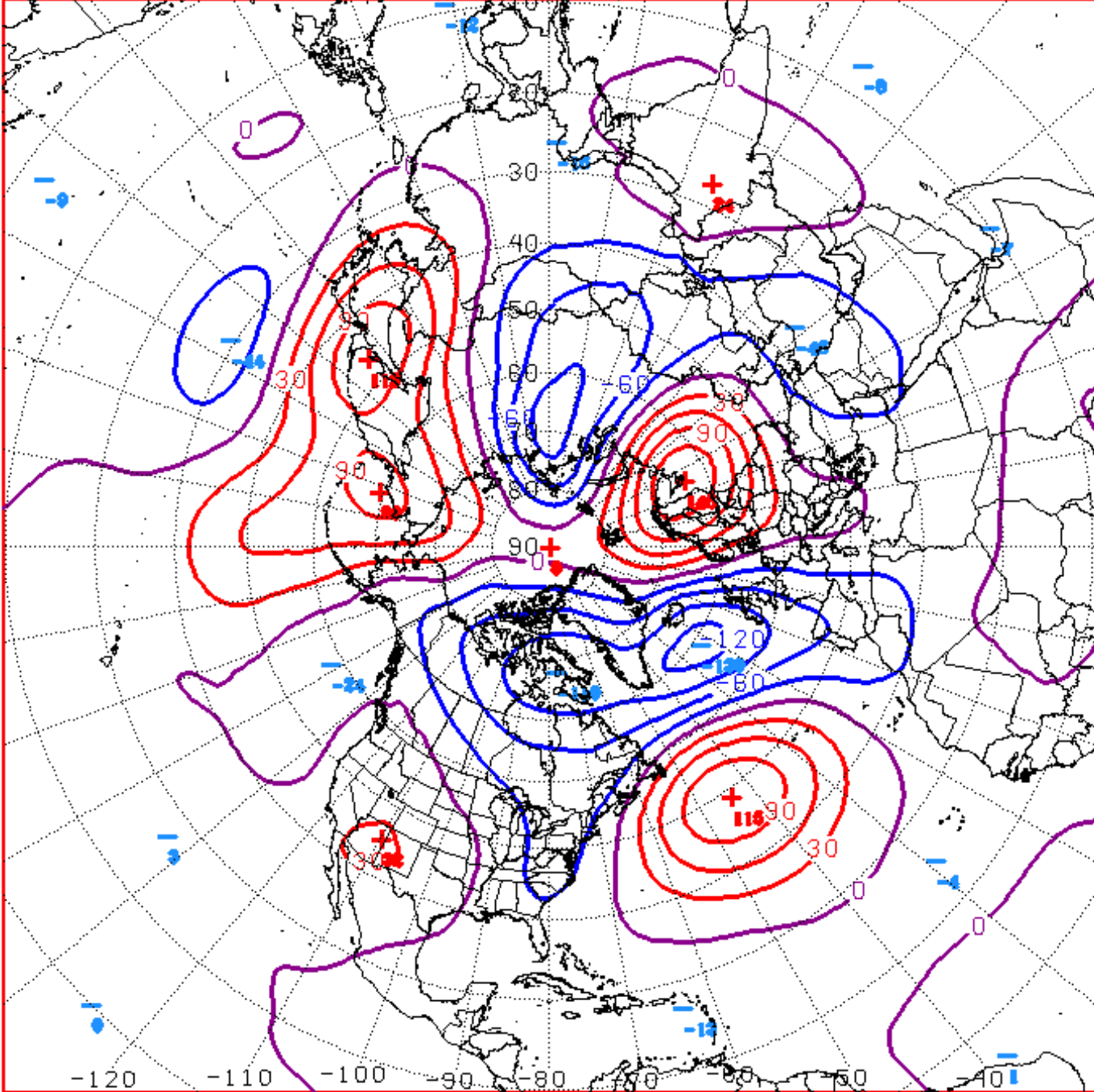


Days 21-25



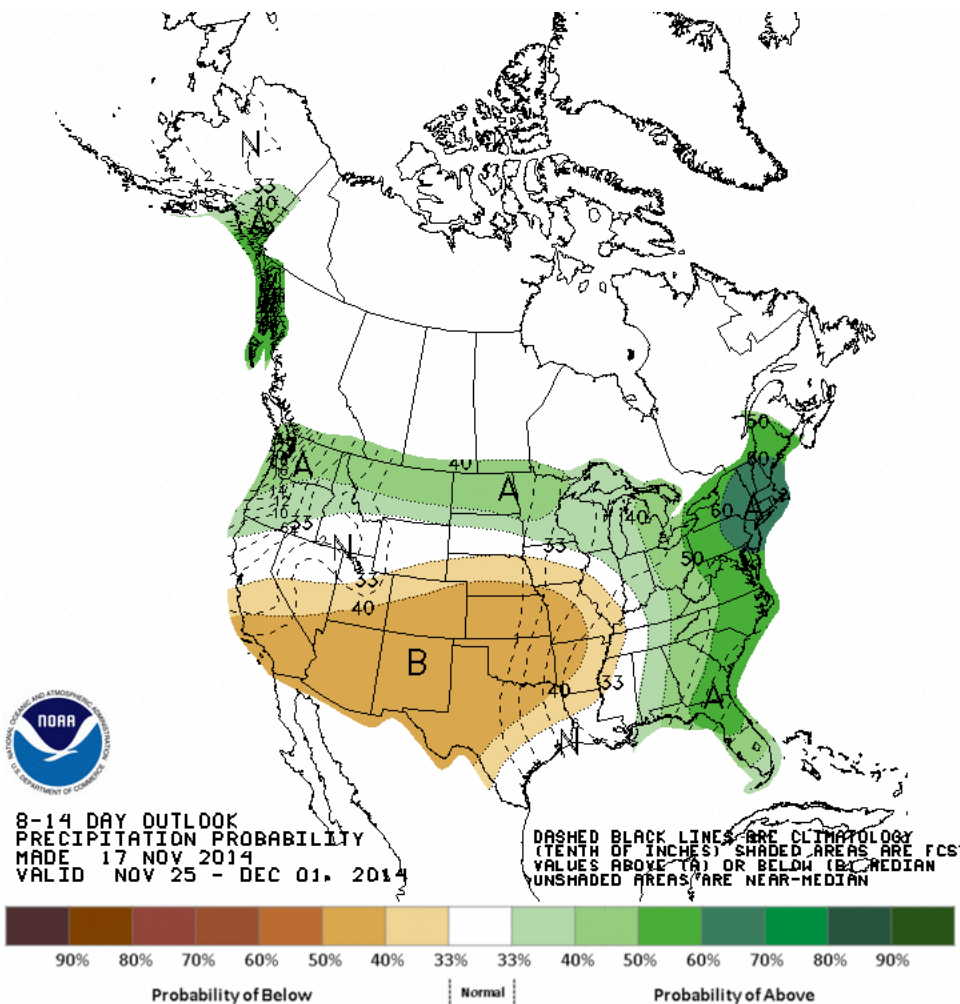
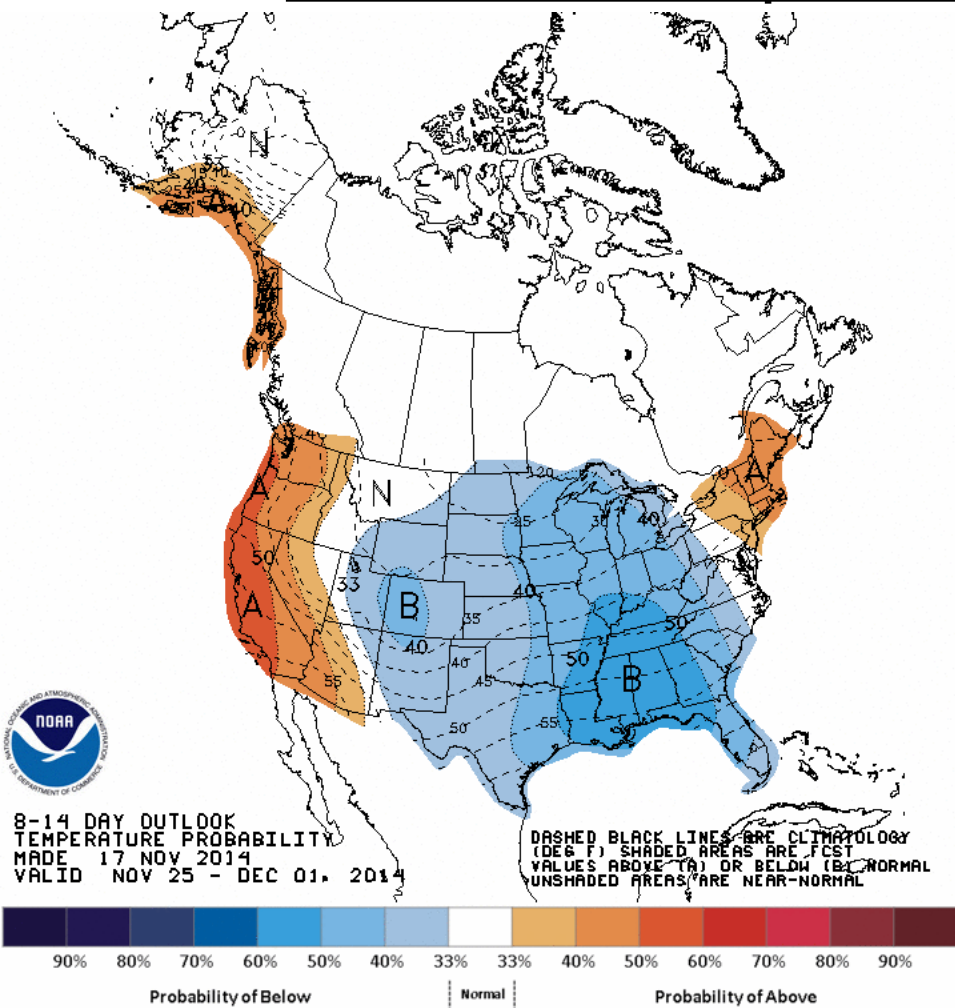
Days 26-30





D+11 500 MB ANOMALIES FROM 00Z ECMM  
CPC MAP MADE NOV 18 2014 1215 UTC CNTD NOV 29 2014

# Week 2 – Temperature and Precipitation

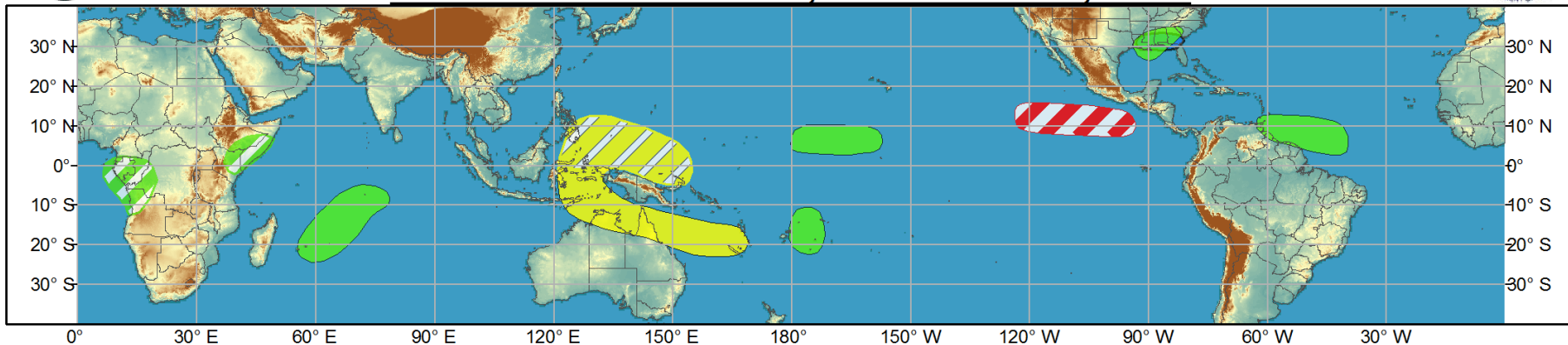




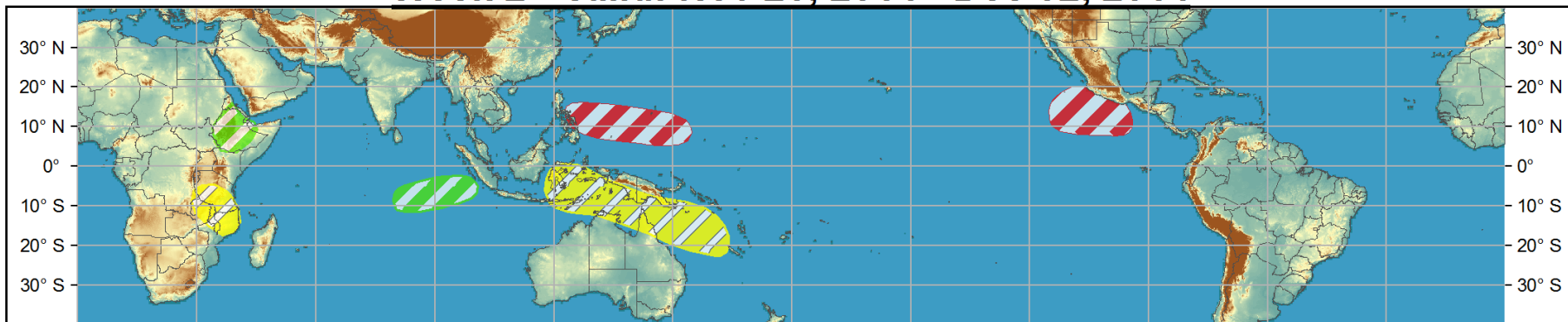
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