

# Global Tropics Hazards And Benefits Outlook

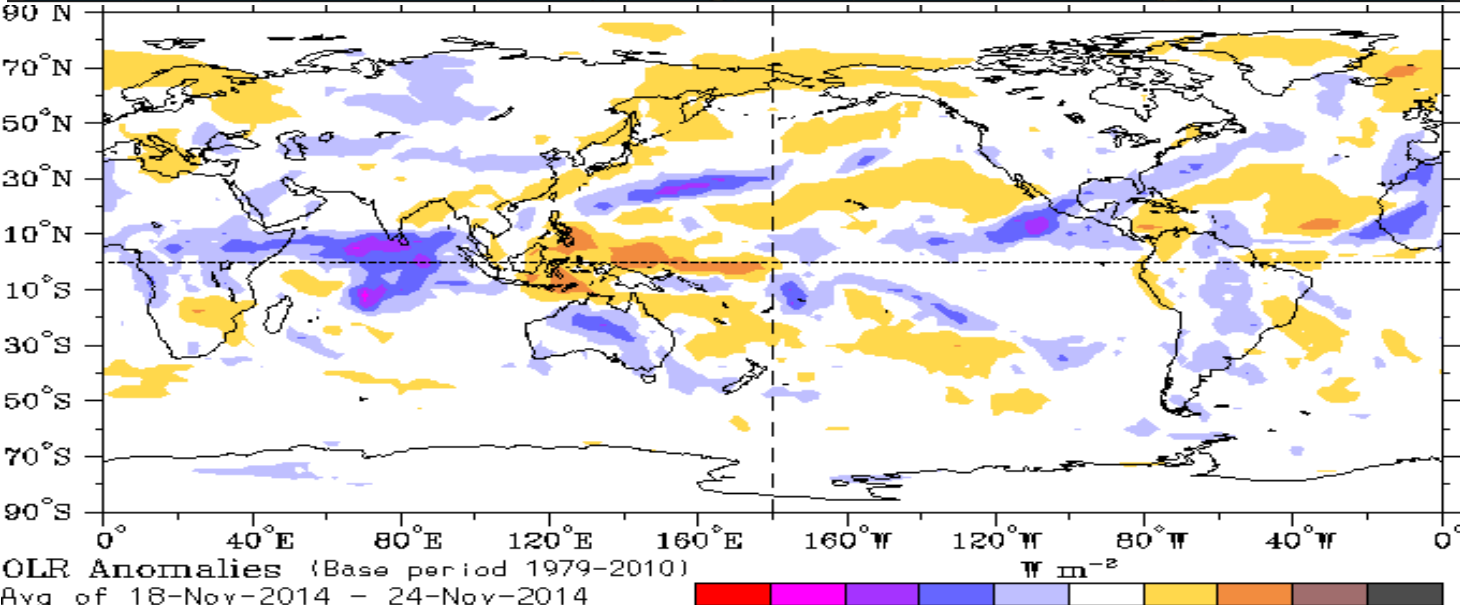
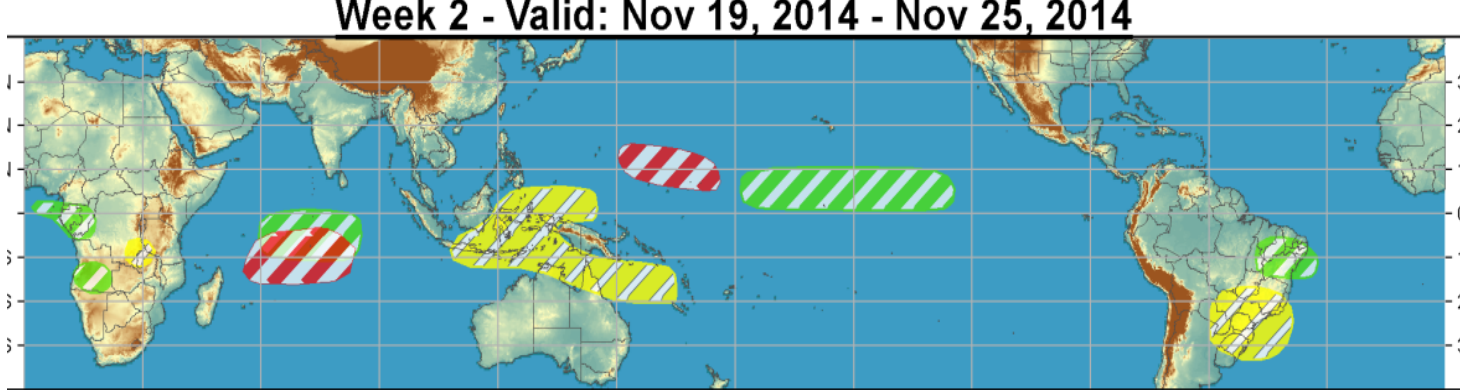
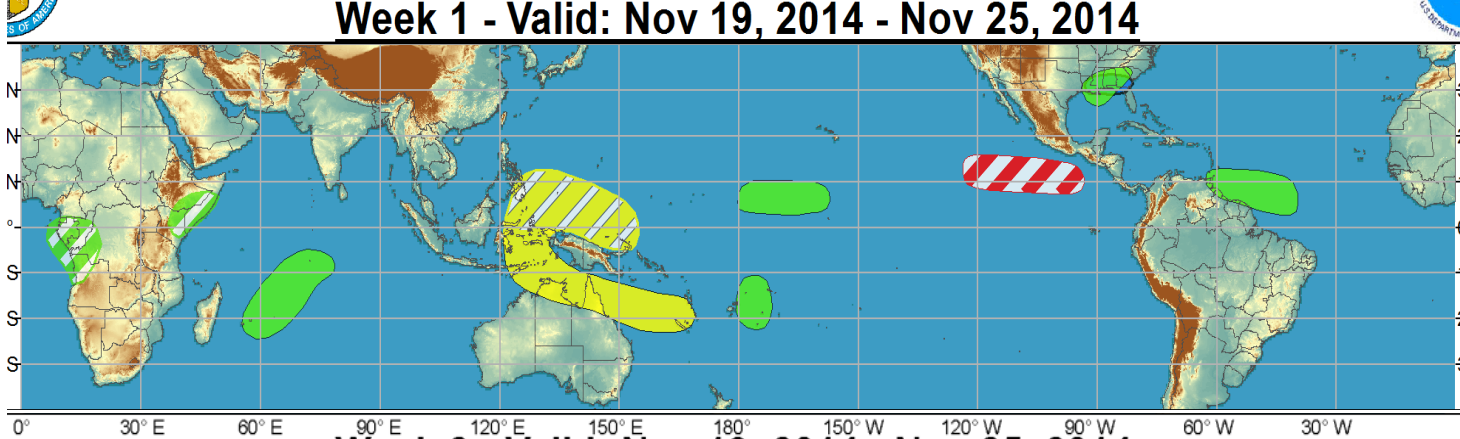
November 25, 2013

Matthew Rosencrans

## 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

# Synopsis of Climate Modes

## **ENSO:**

- Current: ENSO-neutral
- Outlook: 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 remained a significant part of the circulation strengthened during the past week. Kelvin and Equatorial Rossby waves are also contributing.
- Most dynamical model MJO index forecasts depict a continuation of the signal, with some statistical tools showing less of a robust signal.
- Model forecasts of precipitation are consistent during Week-1, but diverge more during Week-2.

## **Extratropics:**

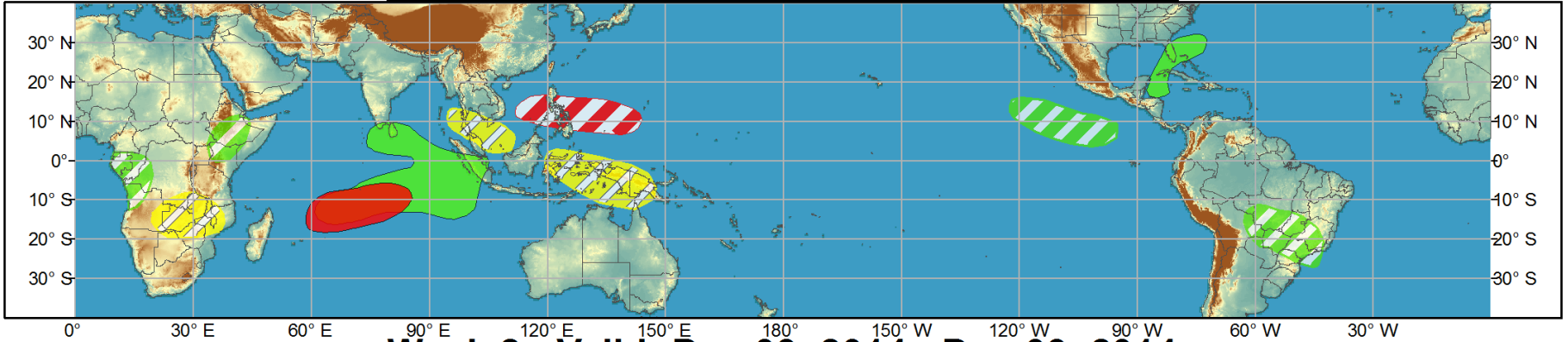
- The extended range forecast for the U.S. is not likely to be largely impacted directly by the MJO, but more of a chance for impact to the U.S. is likely later as convection over the Indian Ocean and West Pacific interact with the East Asian Jet.



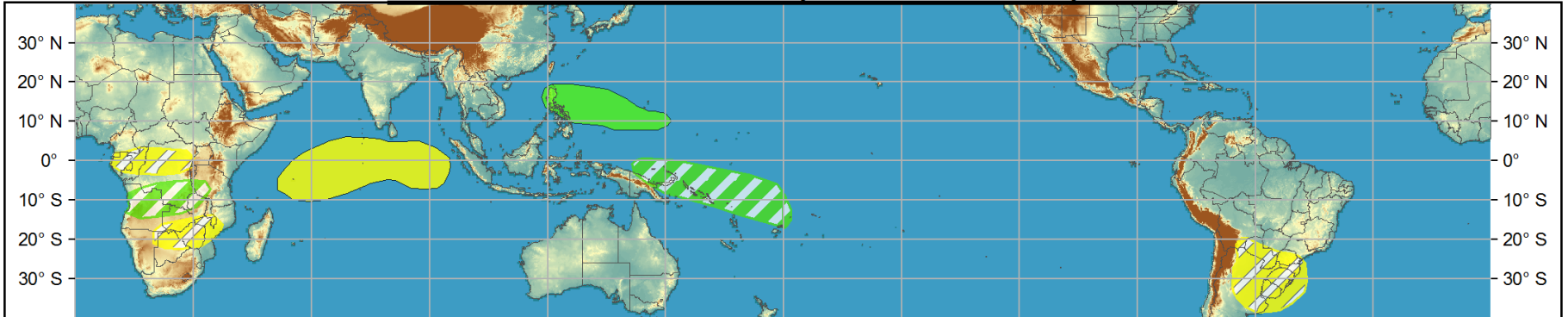
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Nov 26, 2014 - Dec 02, 2014

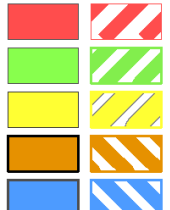


## Week 2 - Valid: Dec 03, 2014 - Dec 09, 2014



**Confidence**  
High Moderate

- Tropical Cyclone Formation**
- Above-average rainfall**
- Below-average rainfall**
- Above-normal temperatures**
- Below-normal temperatures**



- Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Weekly total rainfall in the upper third of the historical range.
- Weekly total rainfall in the lower third of the historical range.
- 7-day mean temperatures in the upper third of the historical range.
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Produced: 11/25/2014

Forecaster: Rosencrans

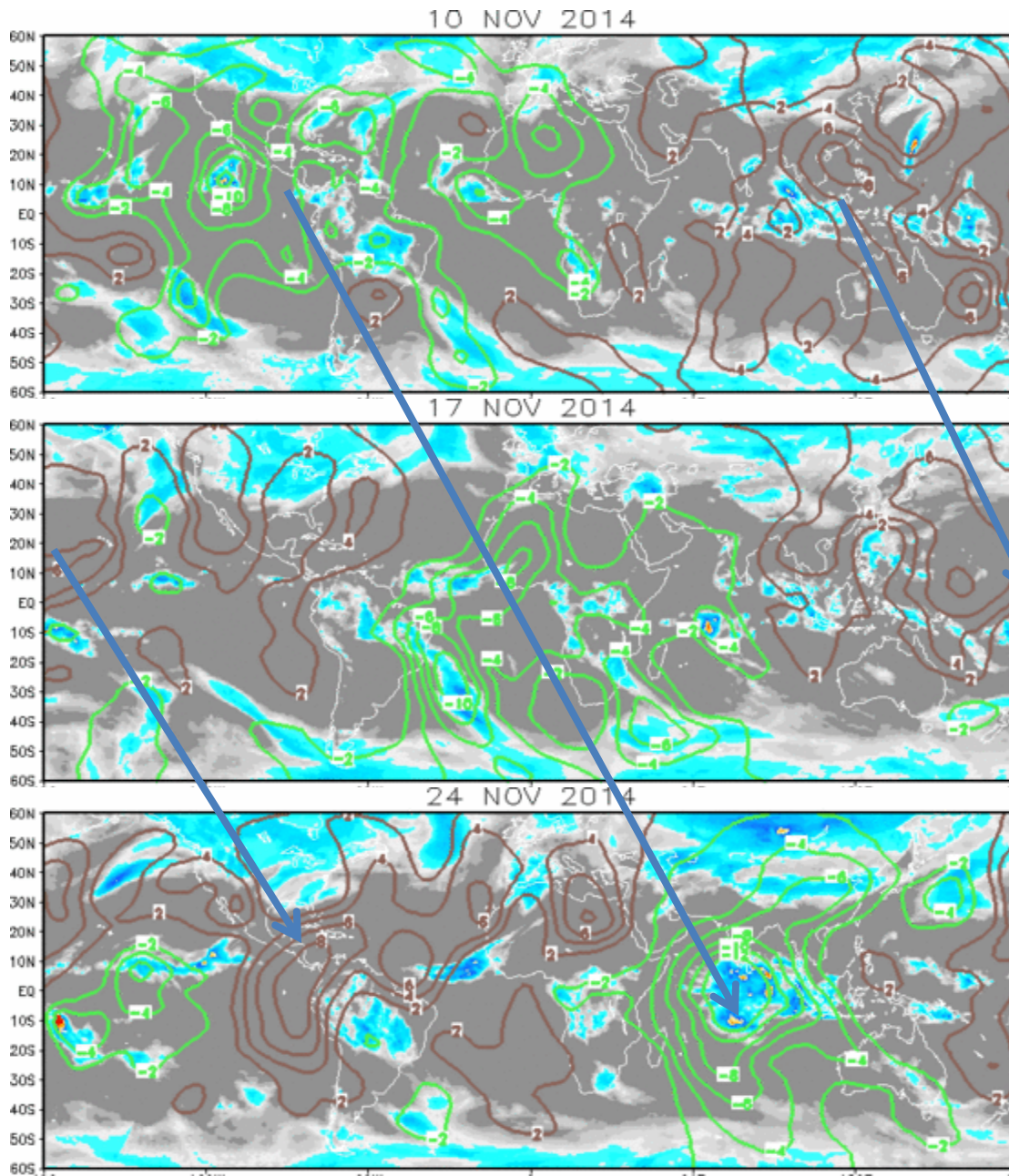
Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.





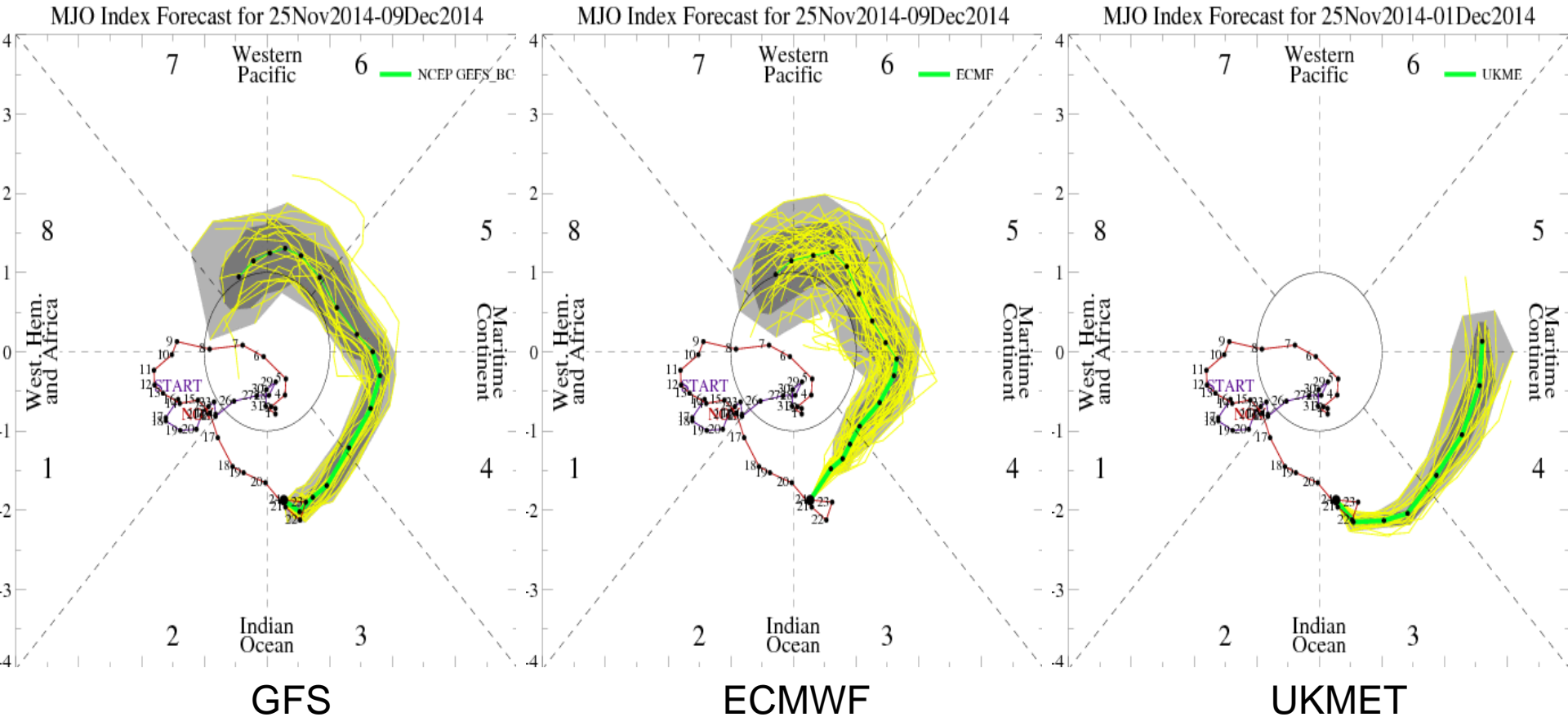
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence    Brown: Enhanced Convergence



Base state  
and transient  
features  
evident.

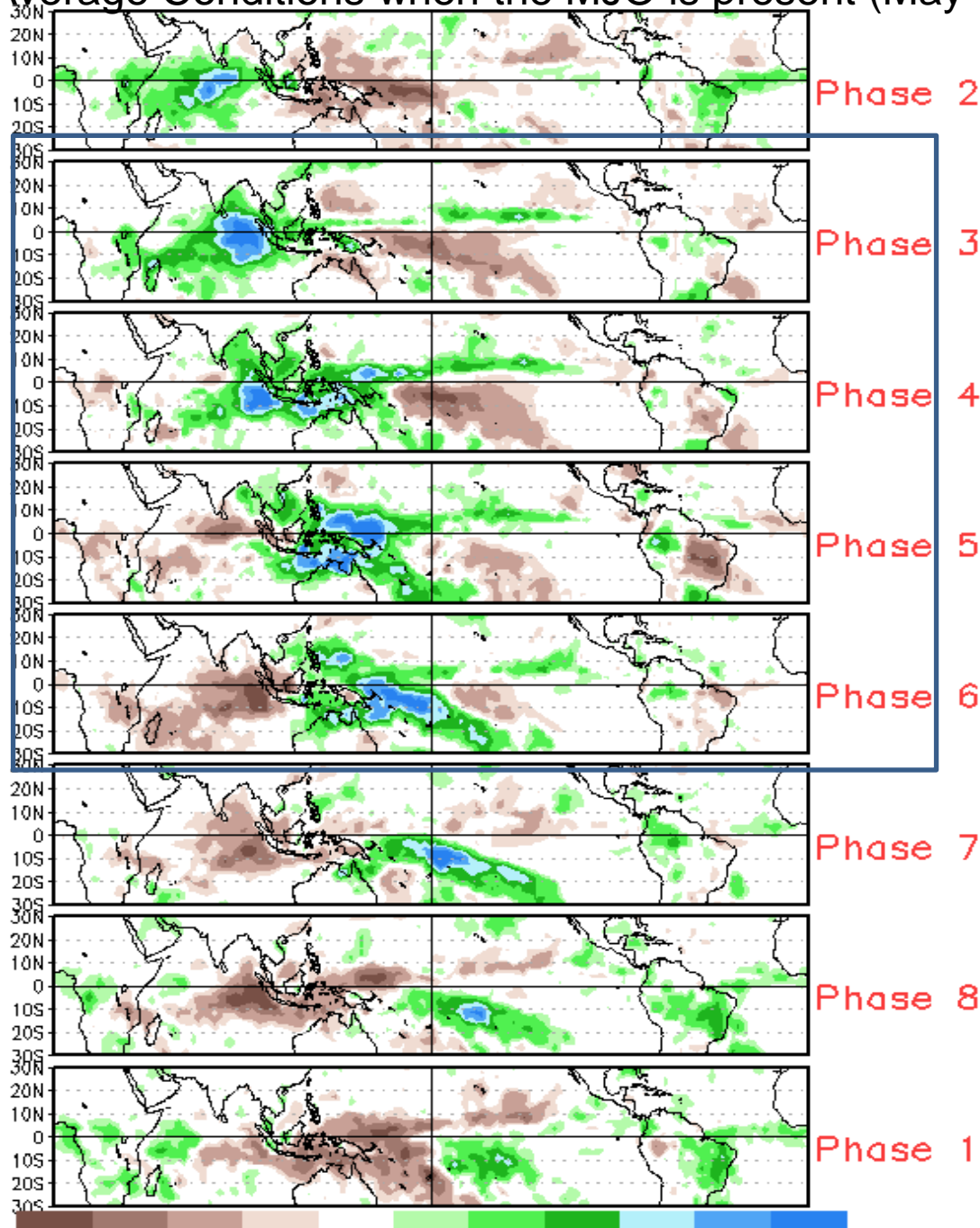
# MJO Observation/Forecast



Wheeler-Hendon based analyses of model forecasts indicate a strengthening MJO.

Models indicate convection aligns with Phase 3, forecast through Phase 6..

# Average Conditions when the MJO is present (May-Sep)



Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

Phase 7

Phase 8

Phase 1

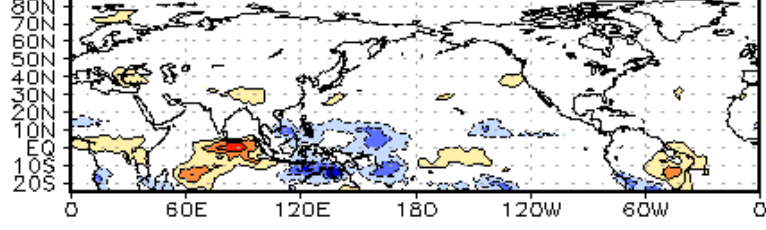
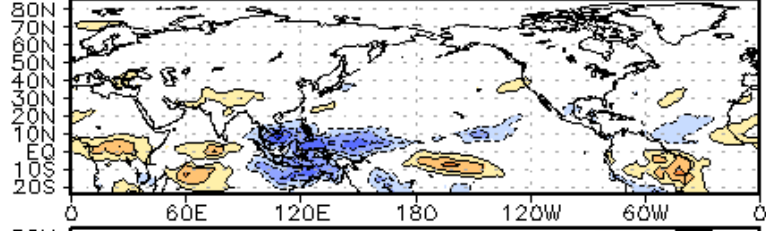
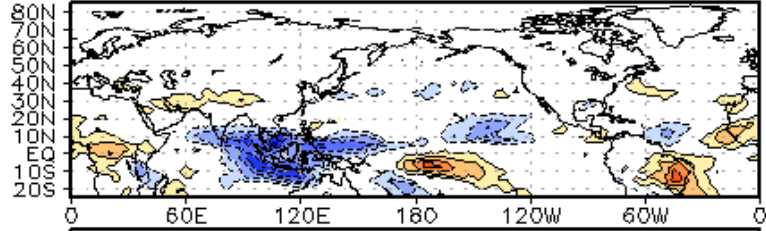
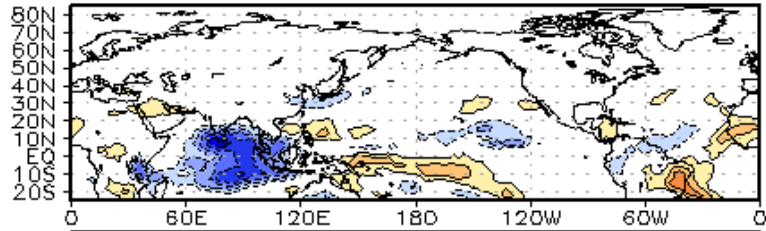
CAVEAT: These panels are representative of robust MJO events.



# Lagged composites from MJO

## 5-day intervals

WHMJO Phase 3 olr Lagged Composite (ndj)

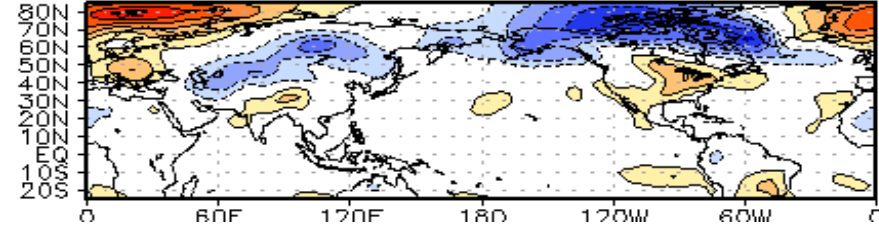
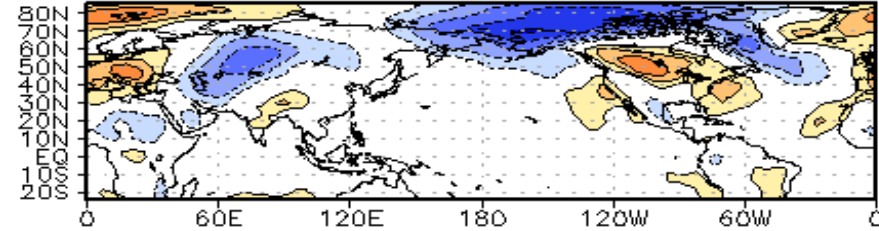
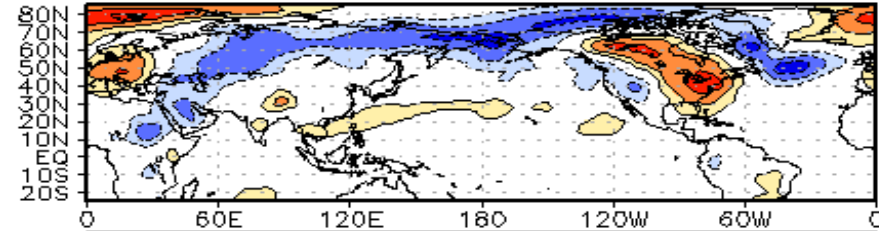
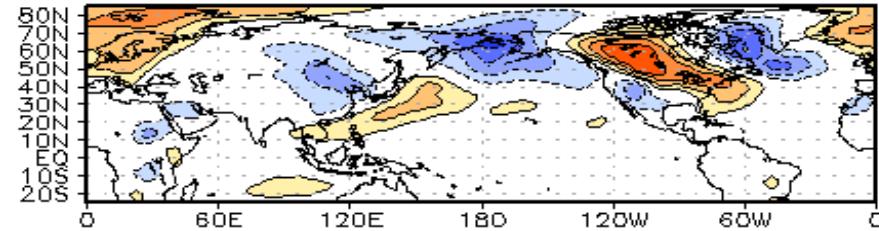


+5-day

+10-days

+15-days

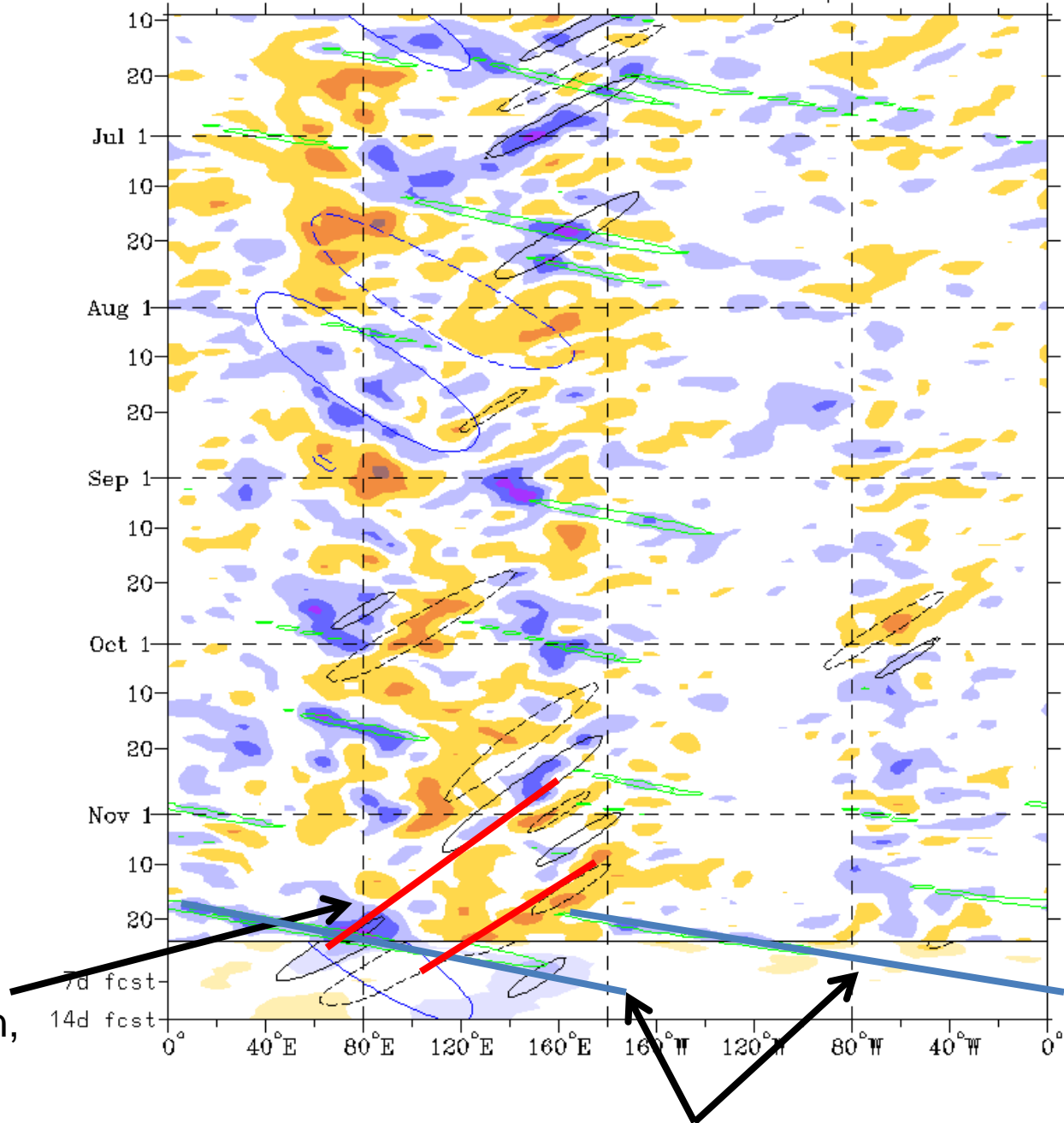
WHMJO Phase 3 t850 Lagged Composite (ndj)





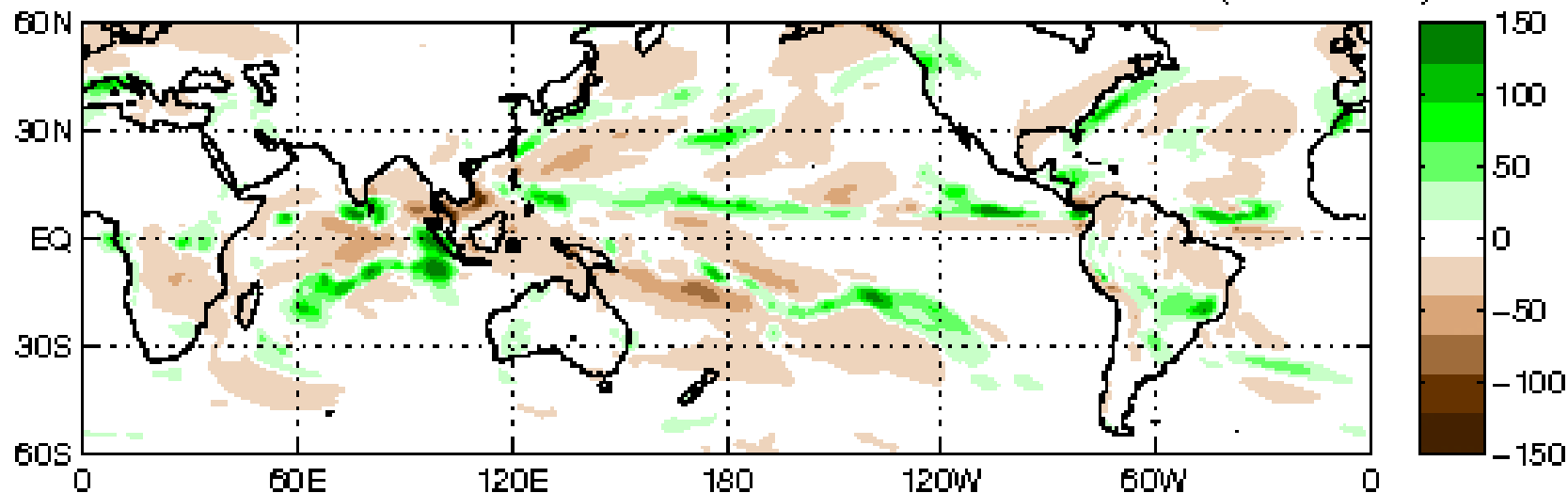
Evolving ENSO contributing.

Equatorial Rossby Waves to impact Africa, the Indian Ocean, and the East Pacific.

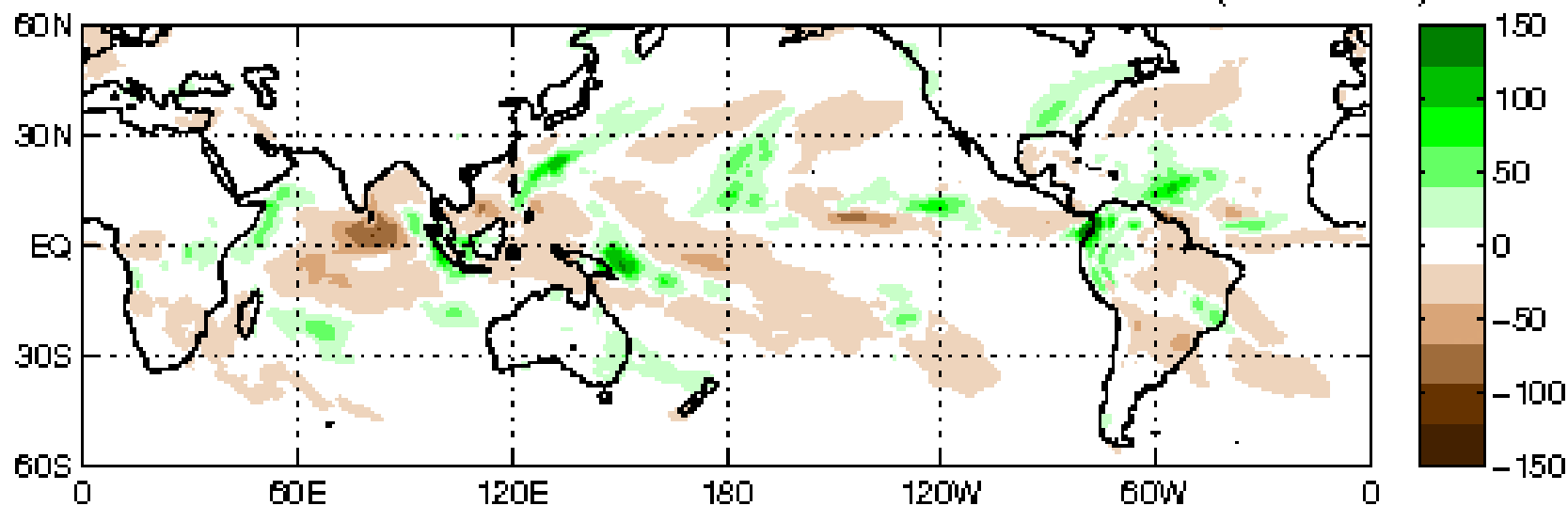


Kelvin Wave to impact ePAC and ATL.

**CFS: Anom. PREC Week: 1: 25-Nov-2014 to 01-Dec-2014 (mm/week)**

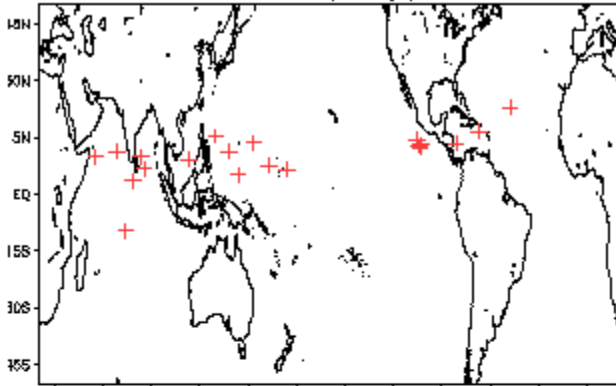


**CFS: Anom. PREC Week: 2: 02-Dec-2014 to 08-Dec-2014 (mm/week)**

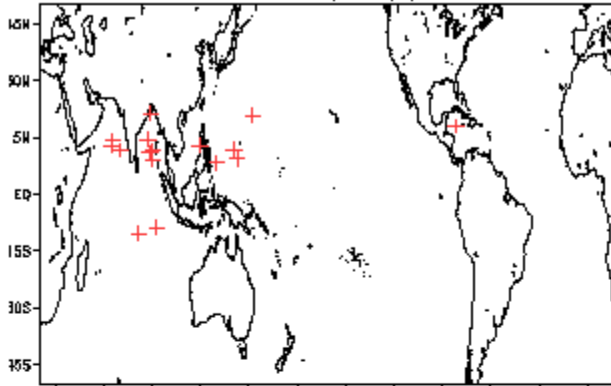


# November Tropical Storm Formation by MJO phase

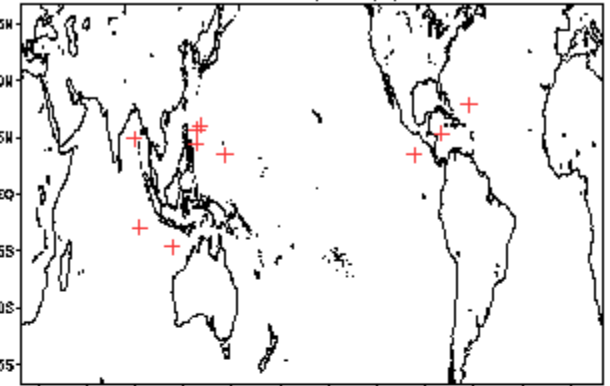
Phase 1 (65 days) 21 storms



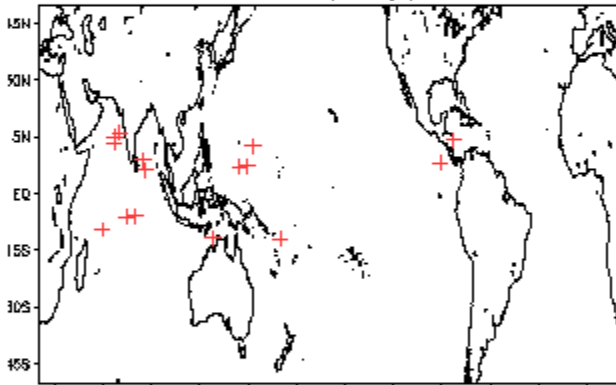
Phase 4 (77 days) 17 storms



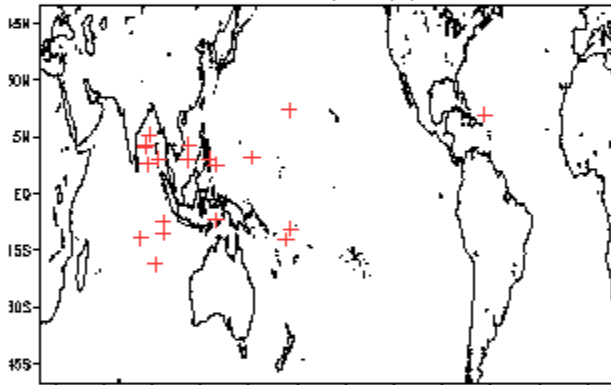
Phase 7 (68 days) 11 storms



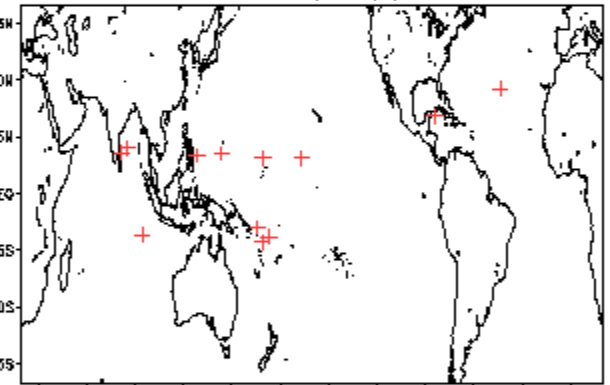
Phase 2 (88 days) 16 storms



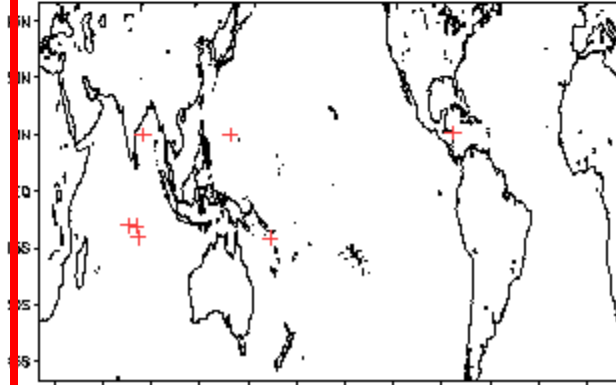
Phase 5 (72 days) 20 storms



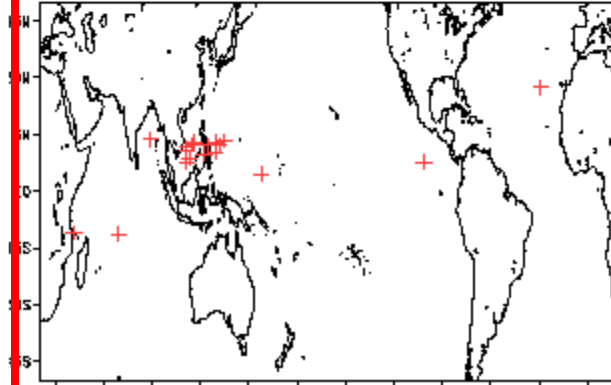
Phase 8 (60 days) 14 storms



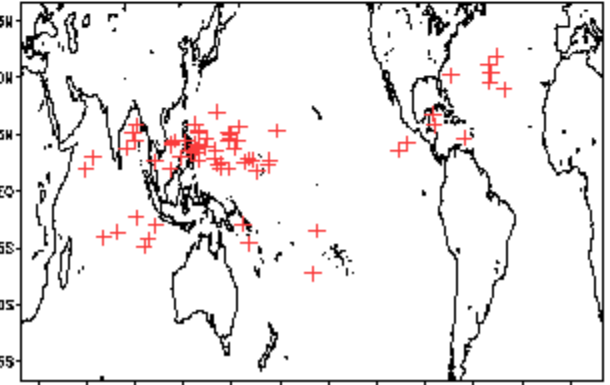
Phase 3 (65 days) 8 storms



Phase 6 (91 days) 19 storms



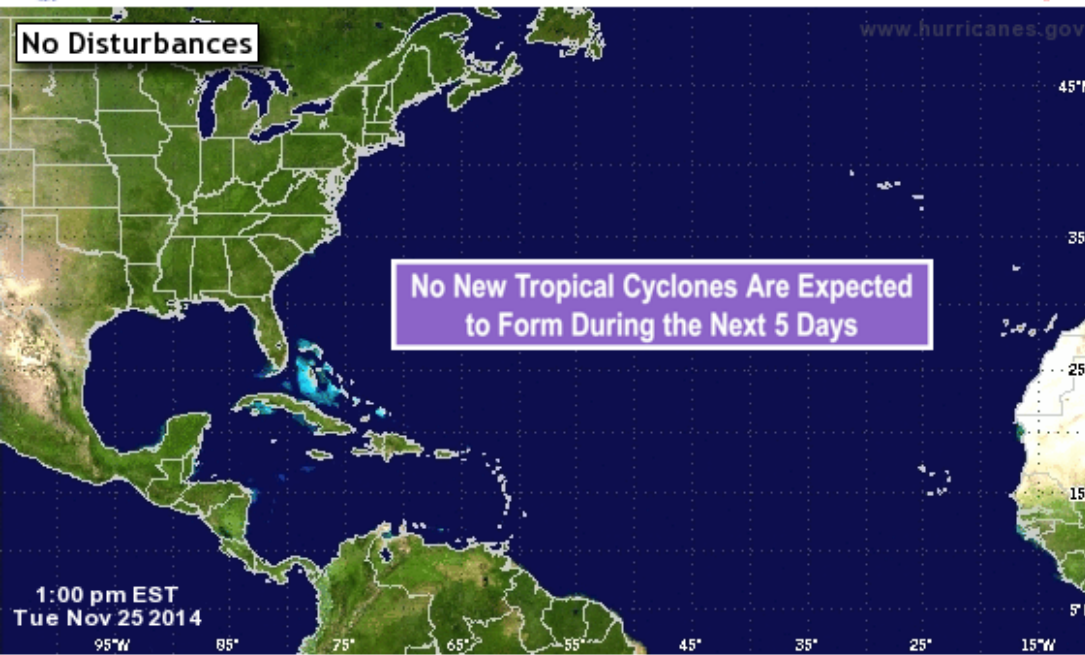
Null (380 days) 65 storms





# Experimental 5-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



1:00 pm EST  
Tue Nov 25 2014

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National Hurricane Center Miami, Florida



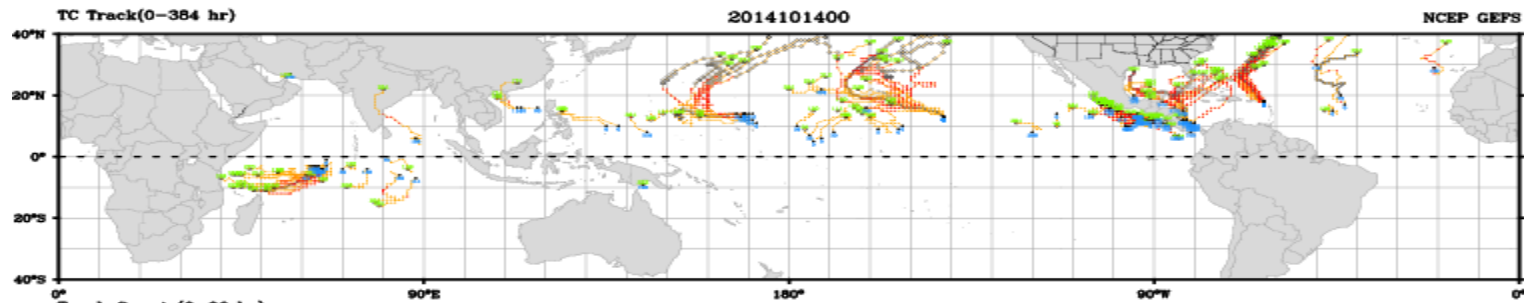
10:00 am PST  
Tue Nov 25 2014

Tropical Cyclone Formation Potential for the 5-Day Period Ending 10:00 am PST Sun Nov 30 2014

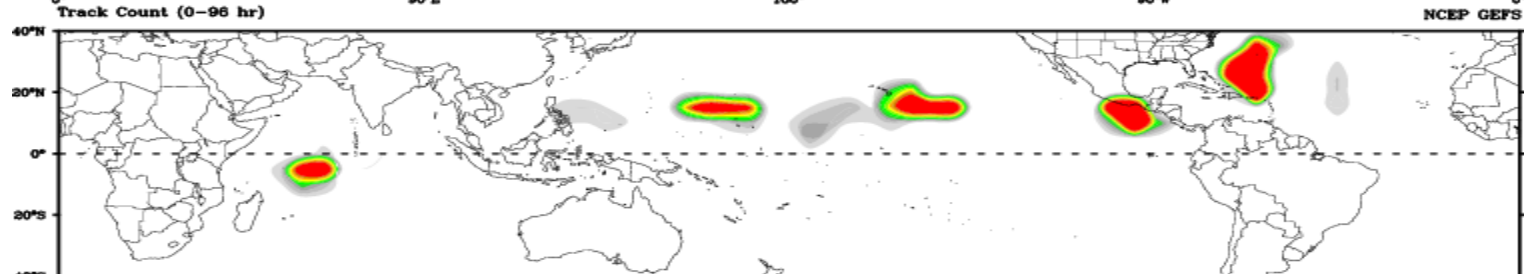
Chance of Cyclone Formation in 5 Days: ■ Low < 30% ■ Medium 30-50% ■ High > 50%

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

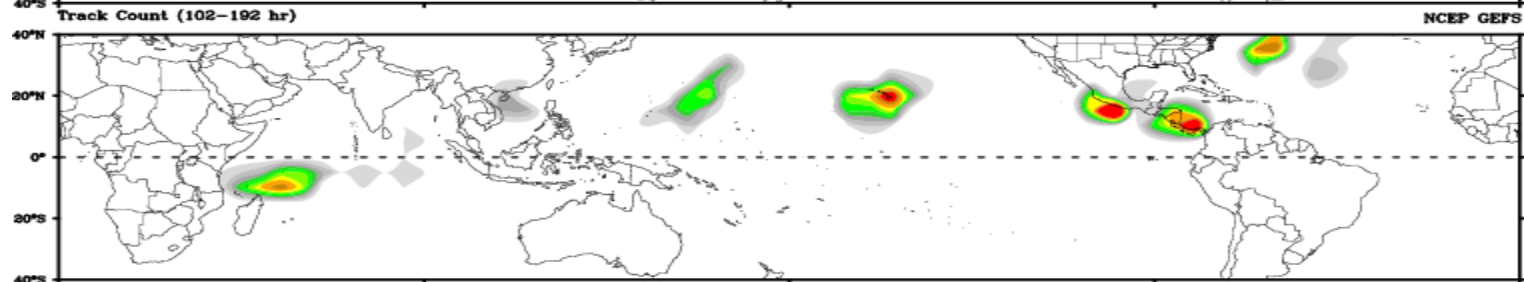




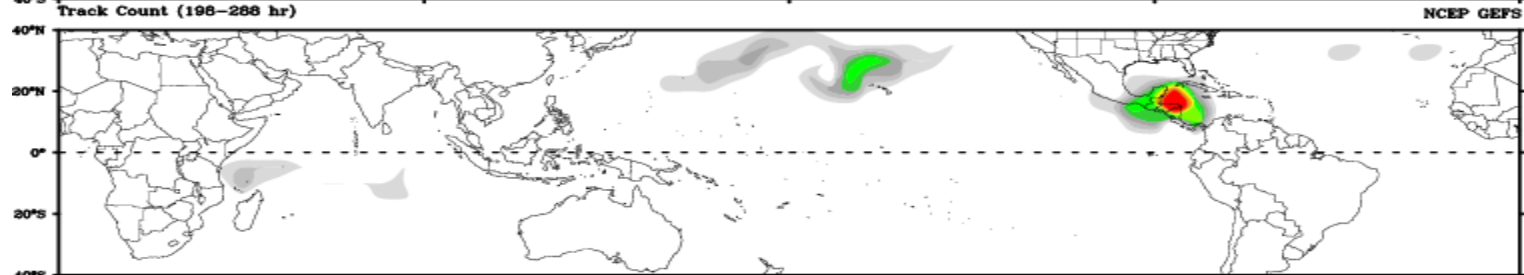
Days 1-4



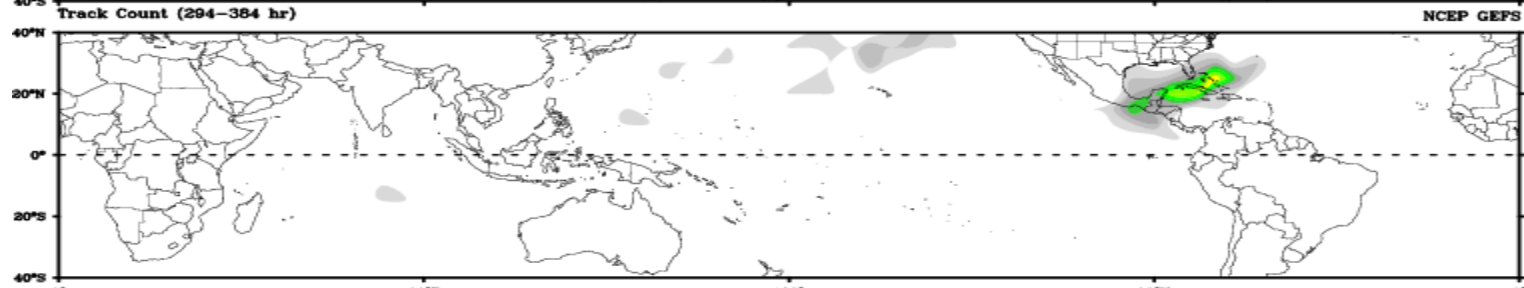
Day 5-8



Day 9-12

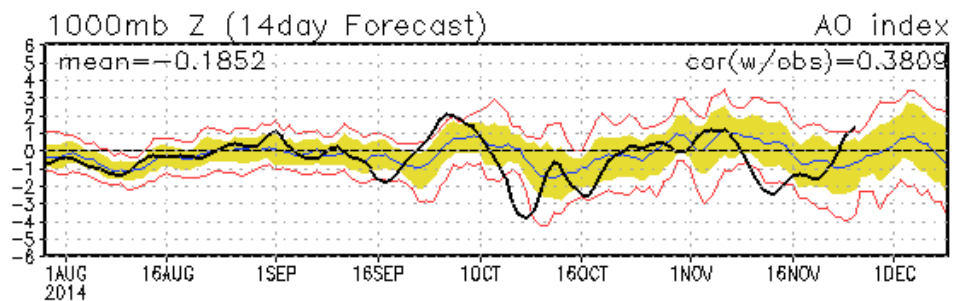
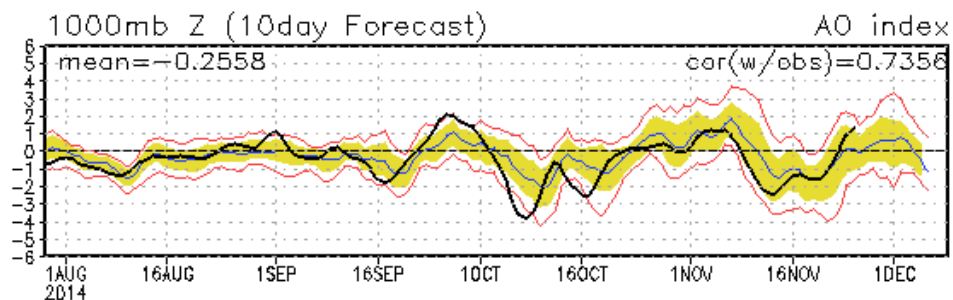
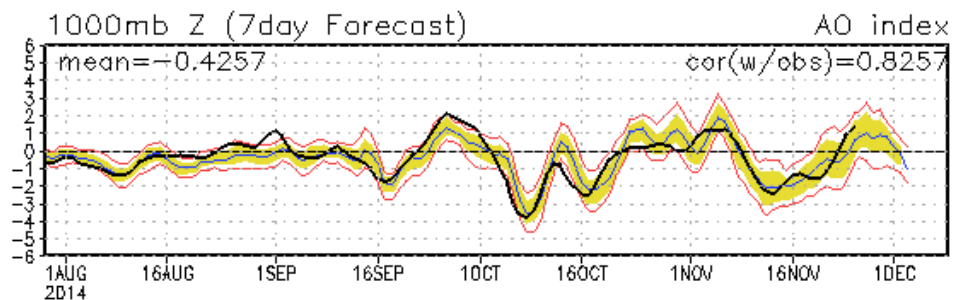
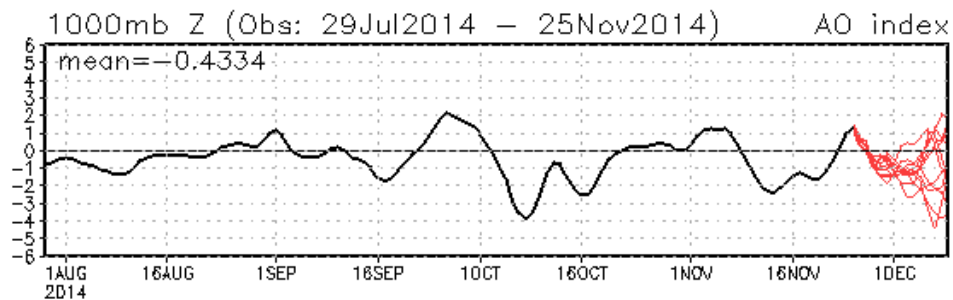


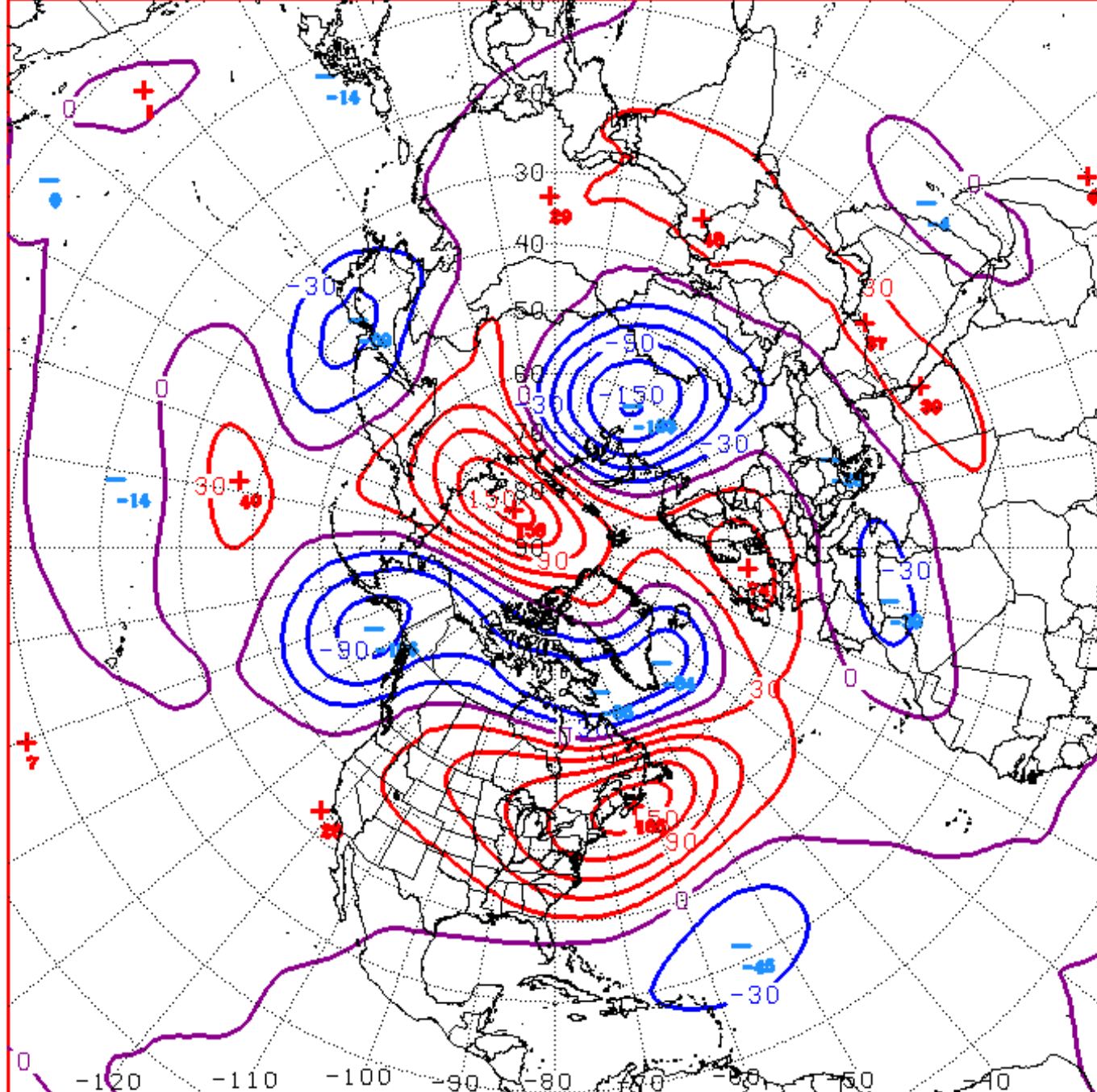
Day 13-15



# Connections to U.S. Impacts

## AO: Observed & ENSM forecasts

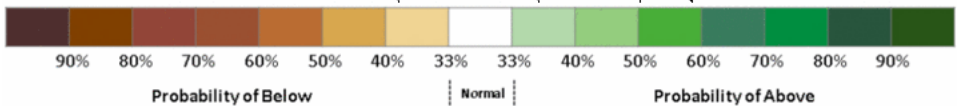
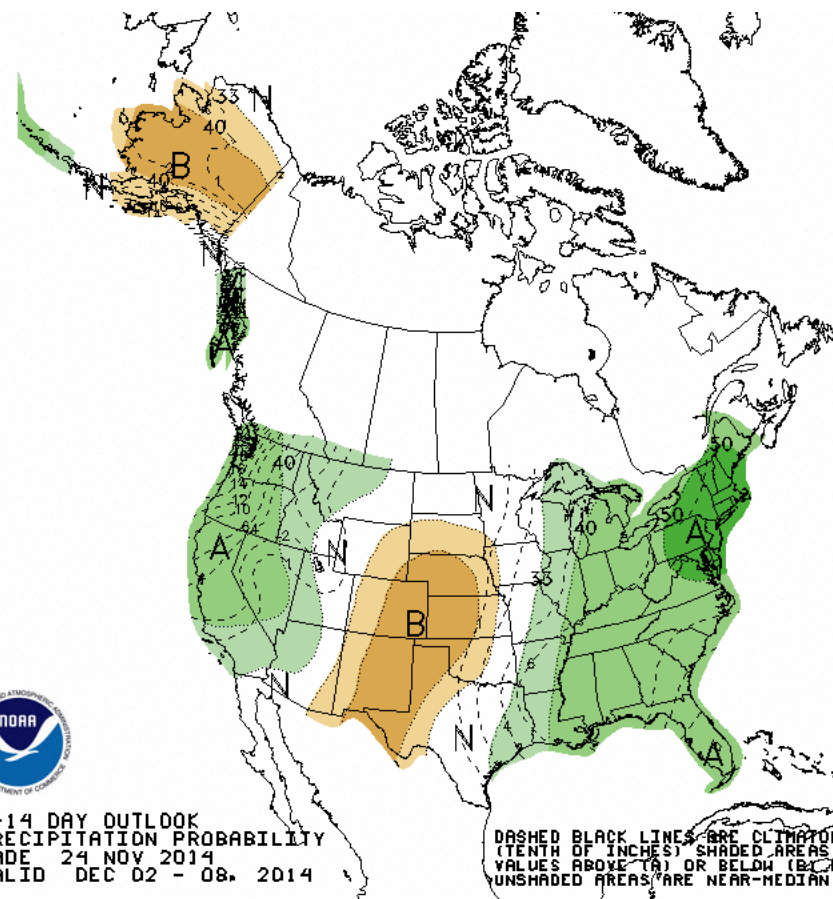
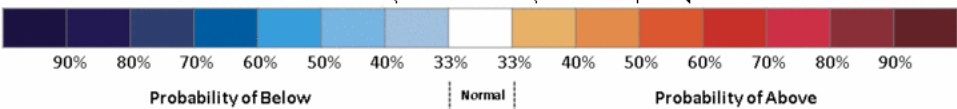
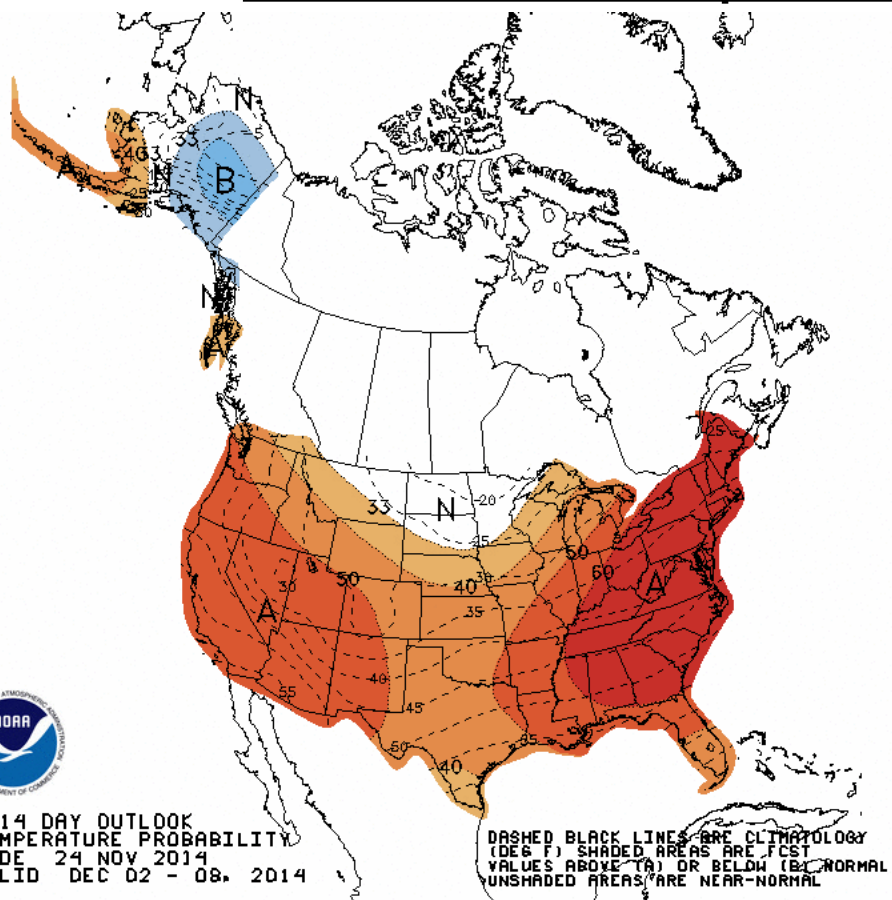




D+11 500 MB ANOMALIES FROM 00Z ECMM  
CPC MAP MADE NOV 25 2014 1024 UTC CNTD DEC 06 2014



# Week 2 – Temperature and Precipitation

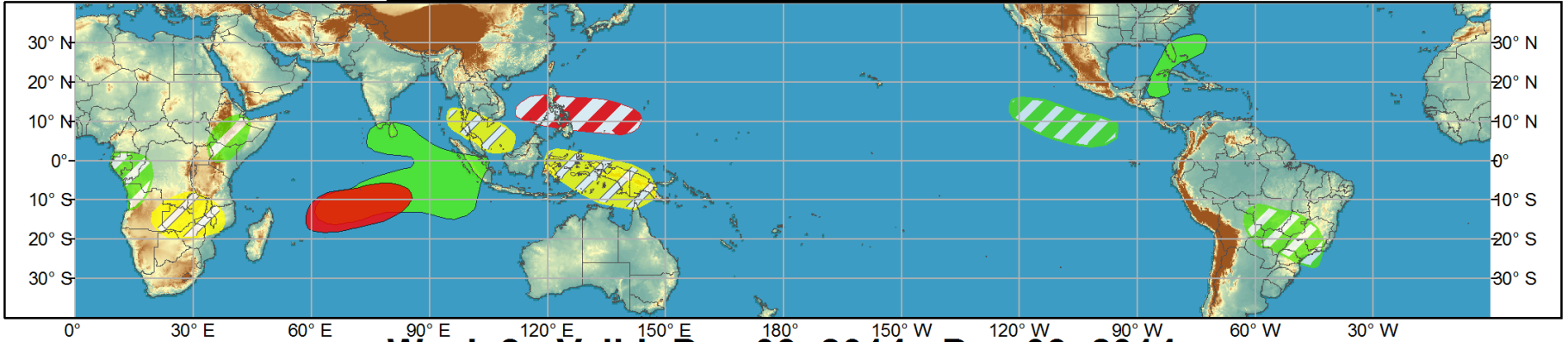




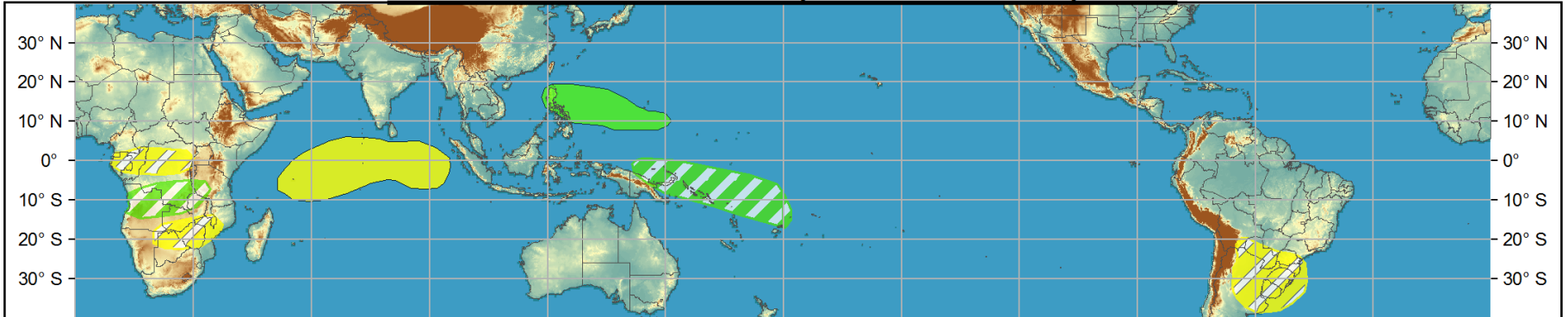
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