

# Global Tropics Hazards And Benefits Outlook

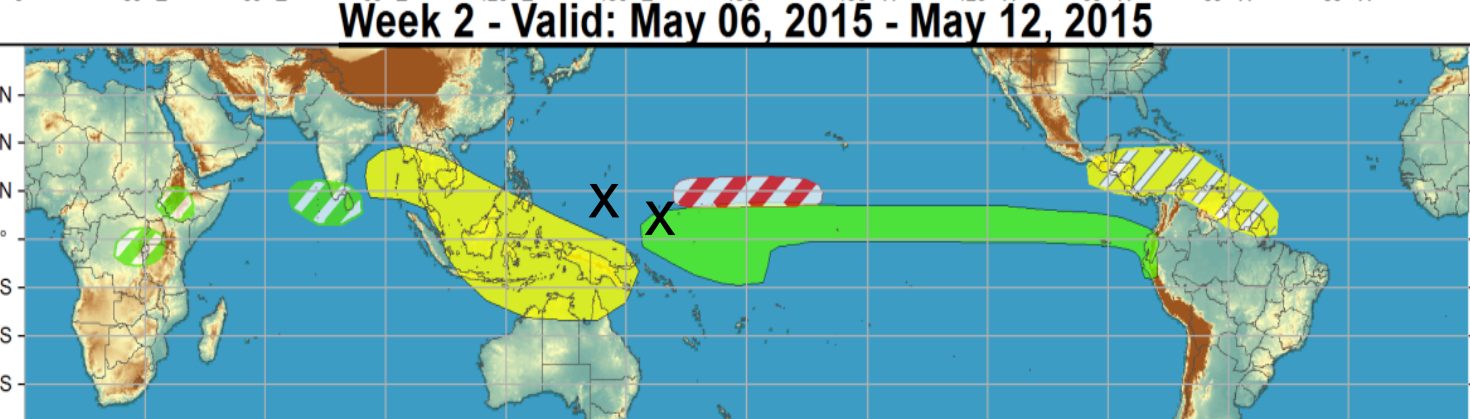
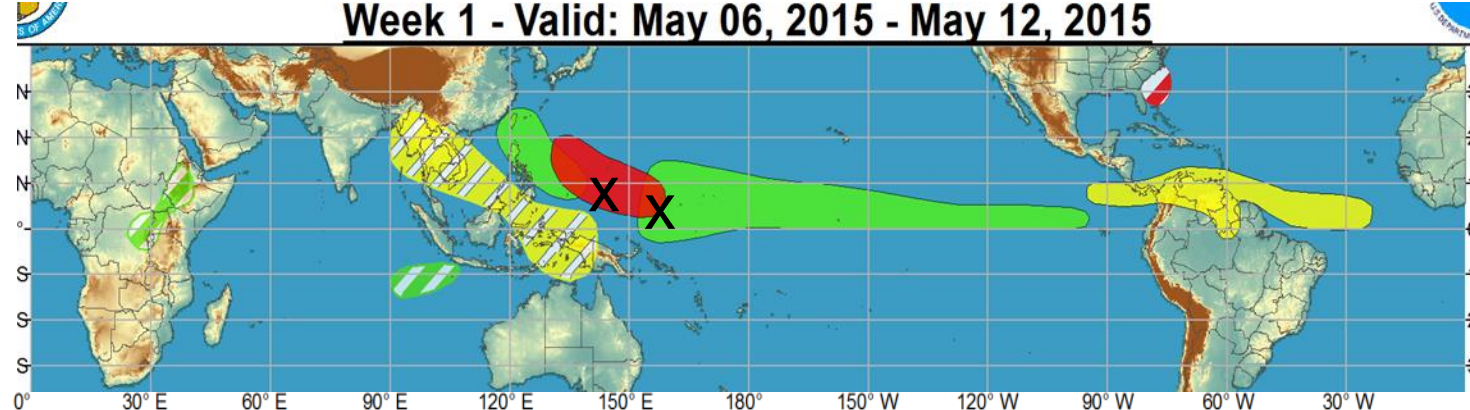
May 12, 2015

Matthew Rosencrans

## Outline

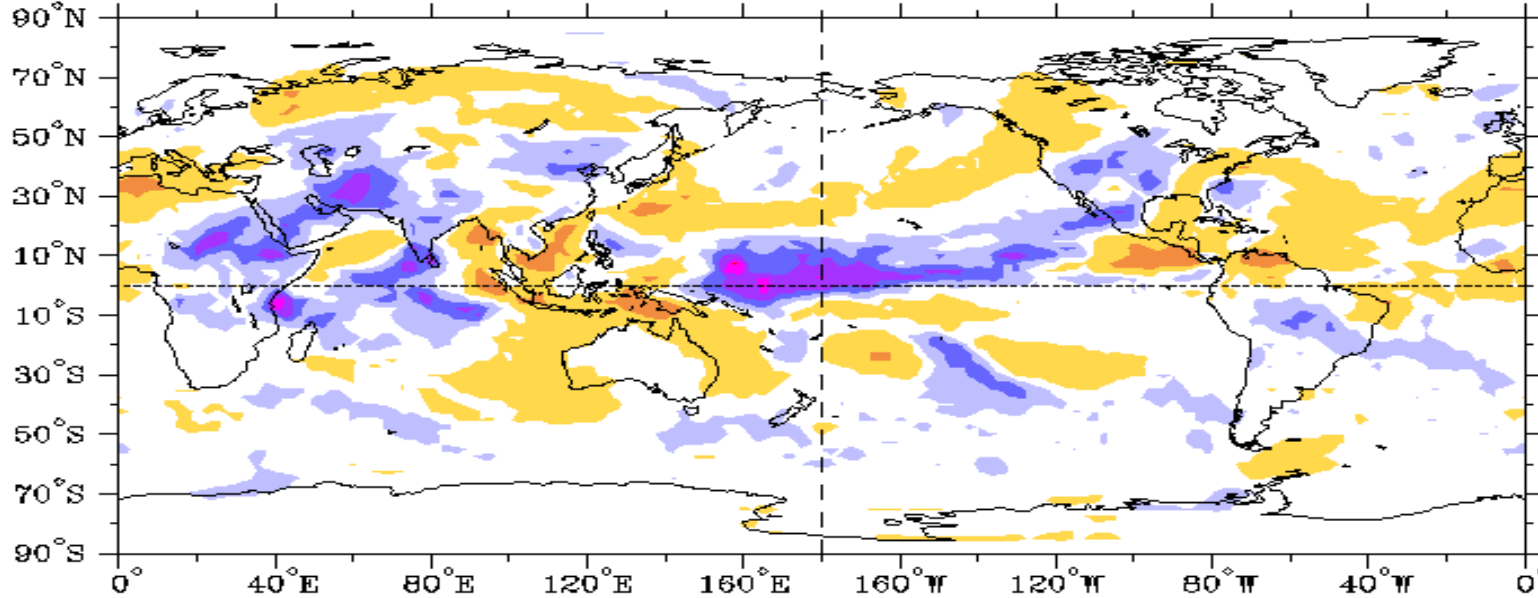
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review

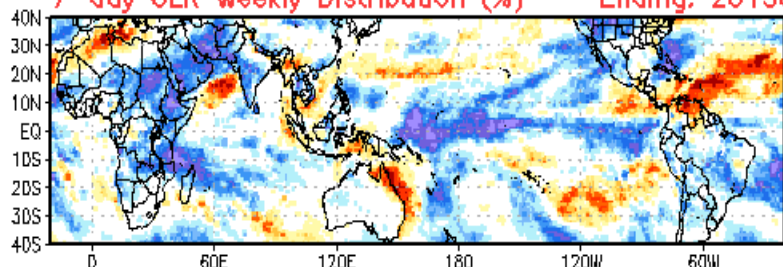


Cool shading  
More clouds/rain

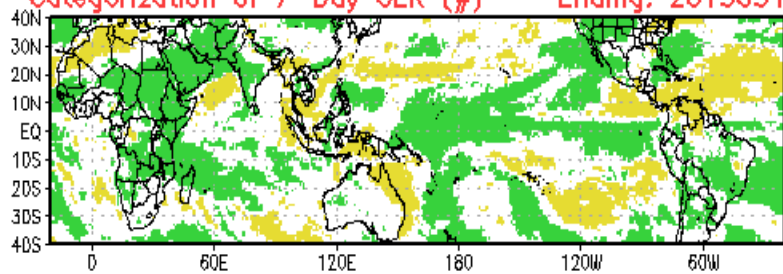
Warm shading  
Less clouds/rain



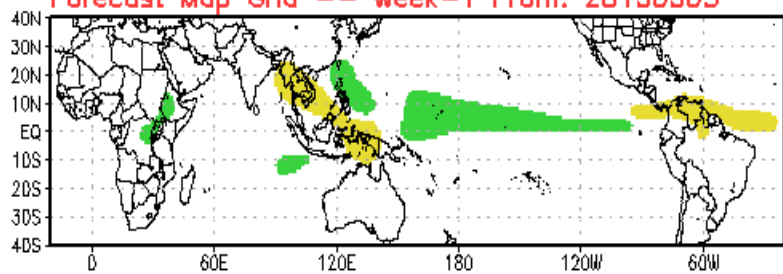
7-day OLR Weekly Distribution (%) -- Ending: 20150512



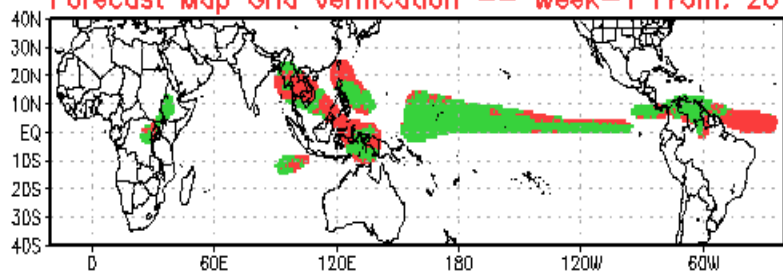
Categorization of 7-Day OLR (#) -- Ending: 20150512



Forecast Map Grid -- Week-1 From: 20150505

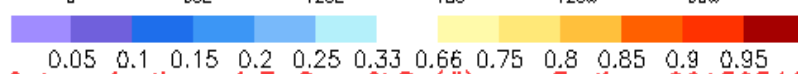
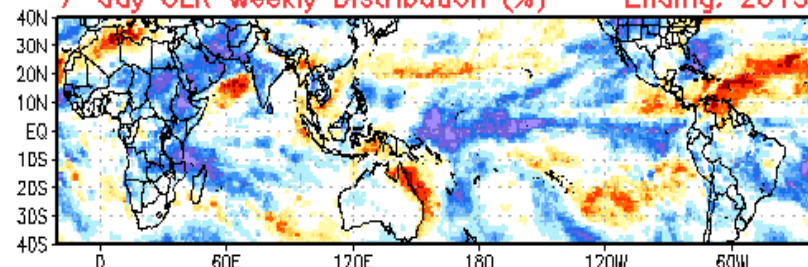


Forecast Map Grid Verification -- Week-1 From: 2015050

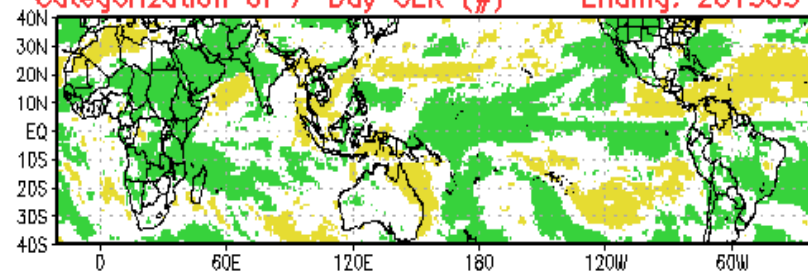


Hit: Green, Miss: Red  
Heidke Skill Score: 44.6641

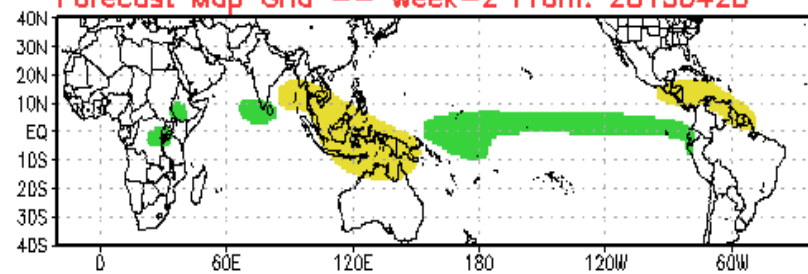
7-day OLR Weekly Distribution (%) -- Ending: 20150512



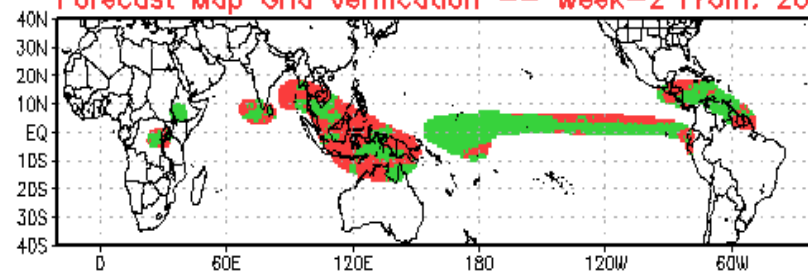
Categorization of 7-Day OLR (#) -- Ending: 20150512



Forecast Map Grid -- Week-2 From: 20150428



Forecast Map Grid Verification -- Week-2 From: 20150428



Hit: Green, Miss: Red  
Heidke Skill Score: 33.1228

# Synopsis of Climate Modes

## ENSO:

- Current: [El Niño Advisory](#)
- Outlook: There is an approximately 70% chance that El Niño will continue through Northern Hemisphere summer 2015, and a greater than 60% chance it will last through autumn.

## MJO and other subseasonal tropical variability:

- The MJO was weak during the past 7 days, with the residual convective phase over the Western Pacific. The low-frequency background state is likely to dominate the pattern of tropical convection during the next 14 days, with some influence of Kelvin Waves over the Maritime Continent and potentially the Indian Ocean during Week-2.
- Most dynamical model MJO index forecasts depict weak MJO signal during the next 2 weeks.

## Extratropics:

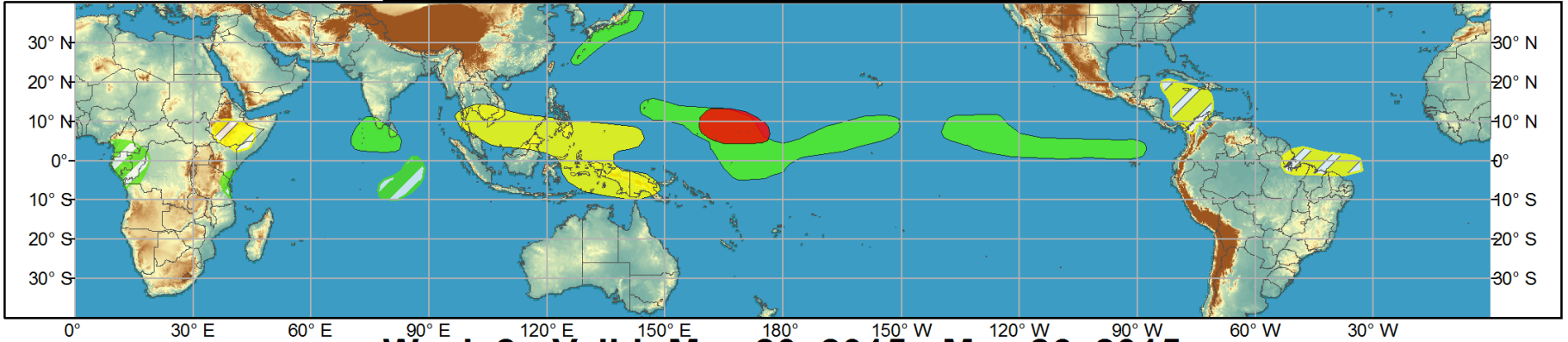
- The extended range forecast for the U.S. is not likely to be largely impacted directly by the MJO. Internal, mid-latitude variability is likely to drive much of the pattern of the CONUS through day 14.



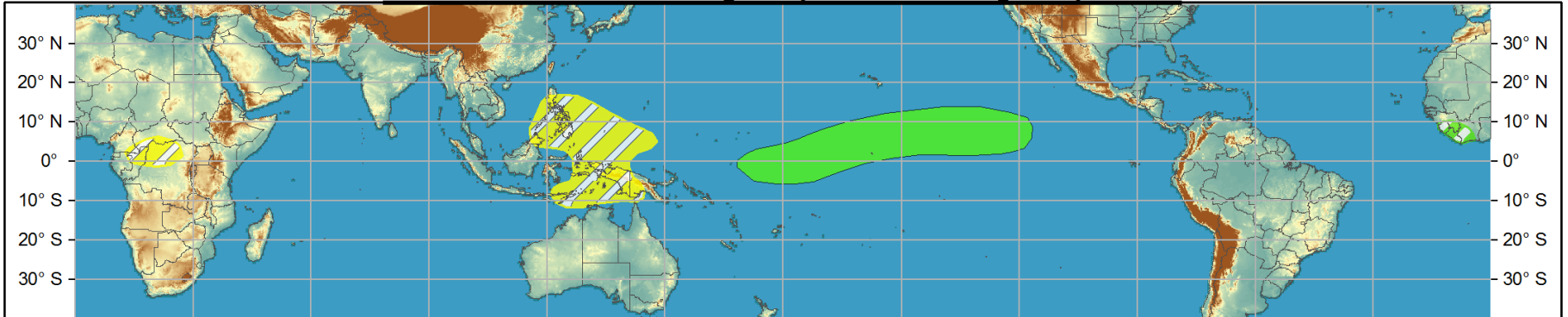
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: May 13, 2015 - May 19, 2015



## Week 2 - Valid: May 20, 2015 - May 26, 2015



**Confidence**  
High Moderate

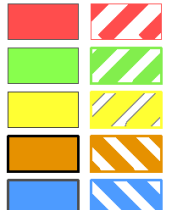
**Tropical Cyclone Formation**

**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.

7-day mean temperatures in the lower third of the historical range.

Produced: 05/12/2015

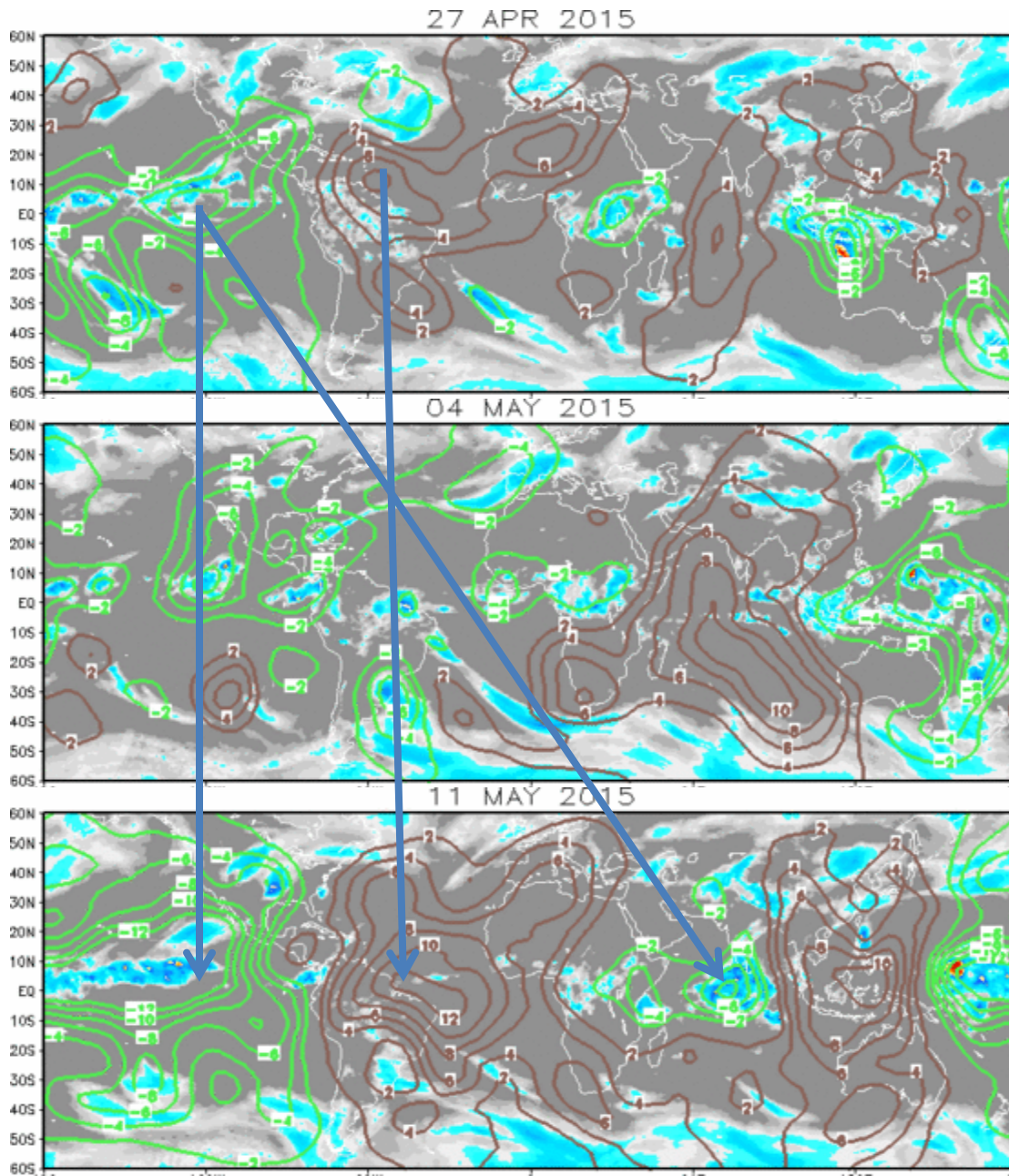
Forecaster: Rosencrans

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.



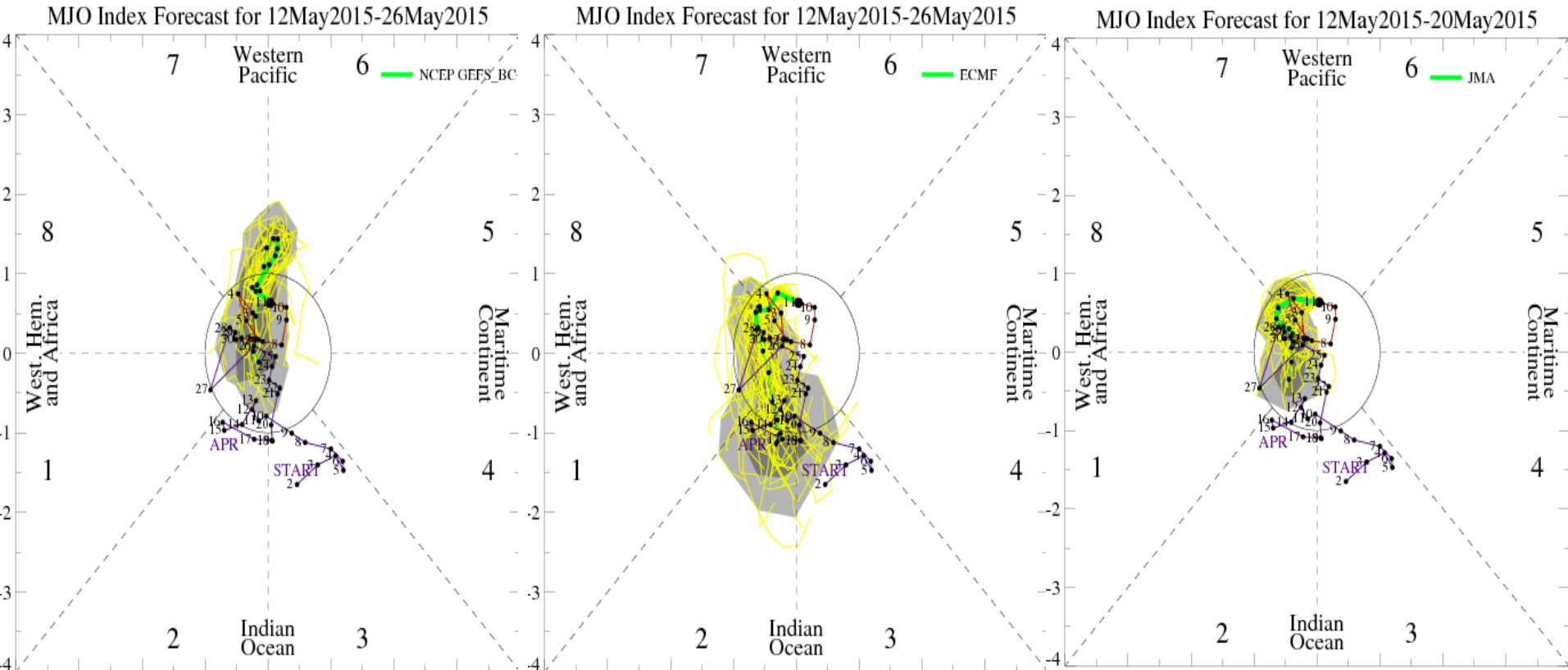
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence    Brown: Enhanced Convergence



Signal broken  
down in the  
last week.

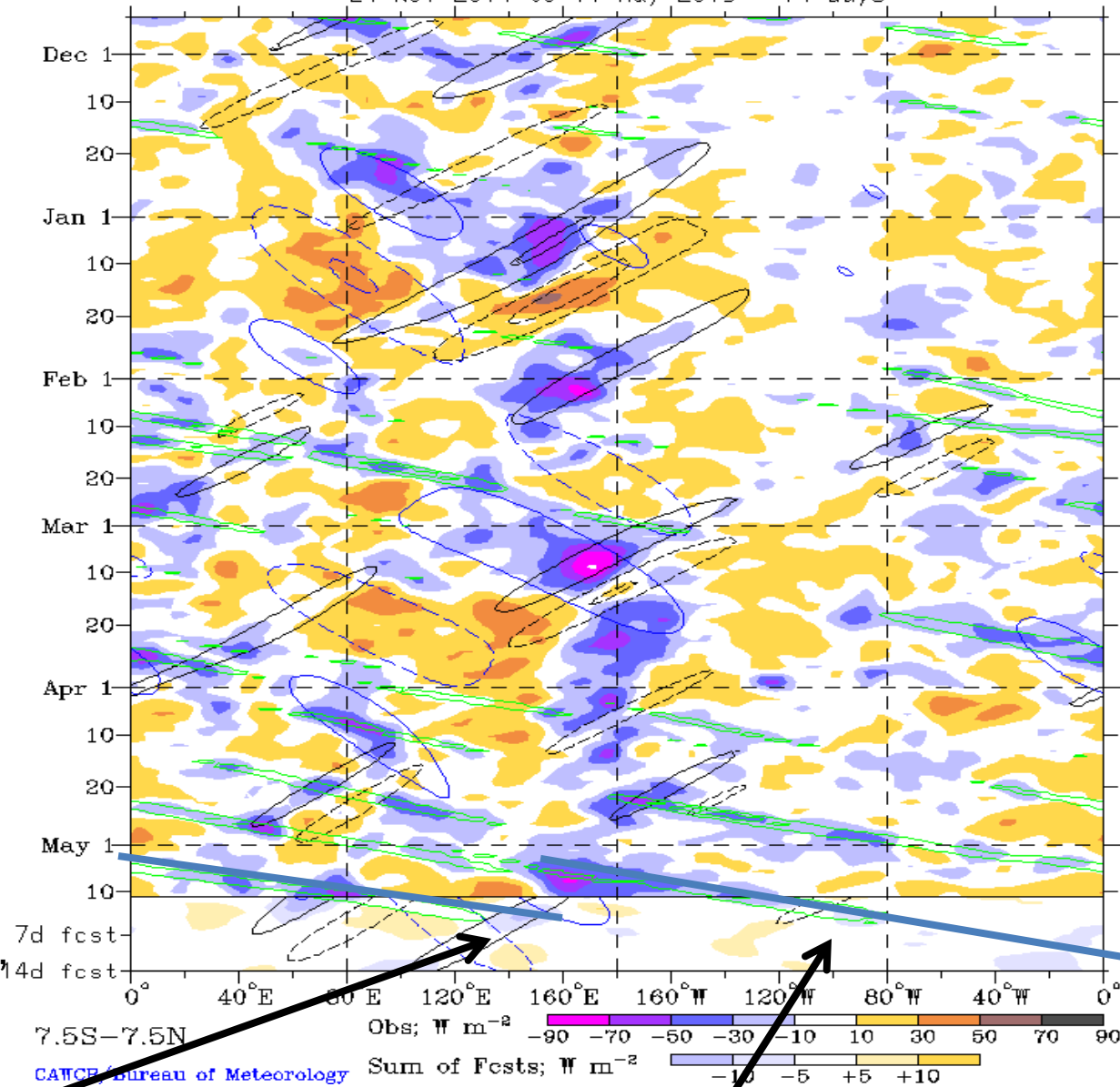
# MJO Observation/Forecast



Wheeler-Hendon based analyses of model forecasts indicate nothing consistent with MJO activity. Likely keying on tropical cyclone activity

Some monthly models indicate little to no MJO activity for 30 days.

Real-time filtering superimposed upon 1-2-1 filt, R21, OLR Anoms  
 MJO blue CINT=10; n1ER black CINT=10; Kelvin green CINT=15  
 Negative contours solid, positive dashed (excluding Kelvin)  
 24-Nov-2014 to 11-May-2015 + 14 days



Some westward moving convection with South Asian Monsoon.

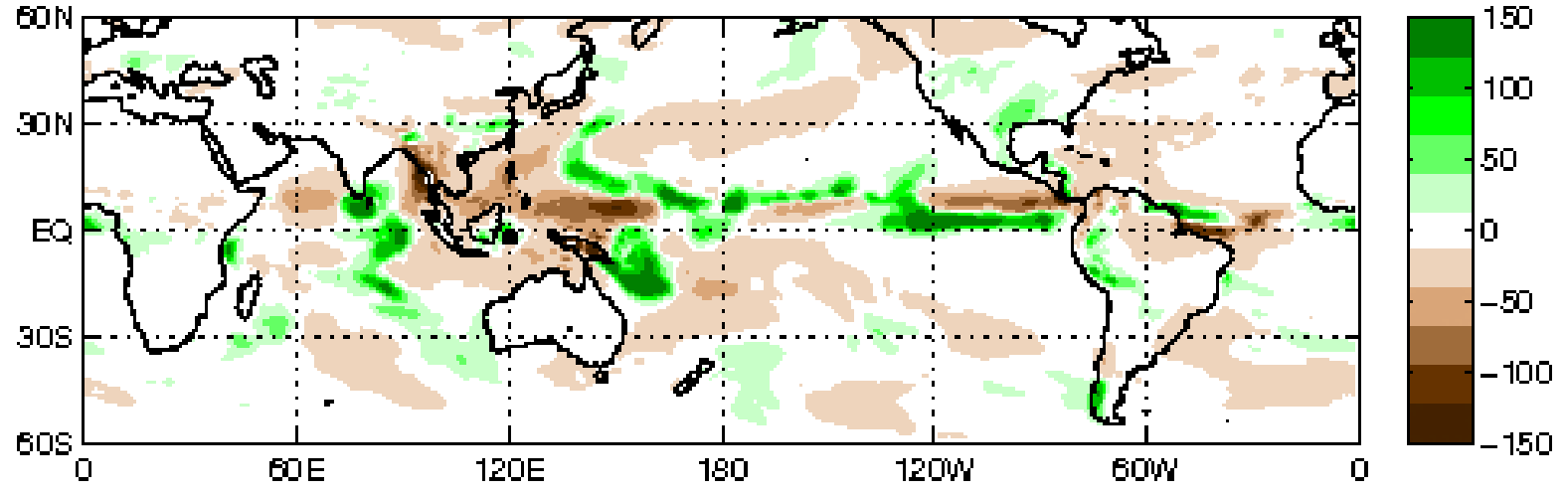
Low frequency is contributing, especially near Date Line.

KW and ENSO impacting.

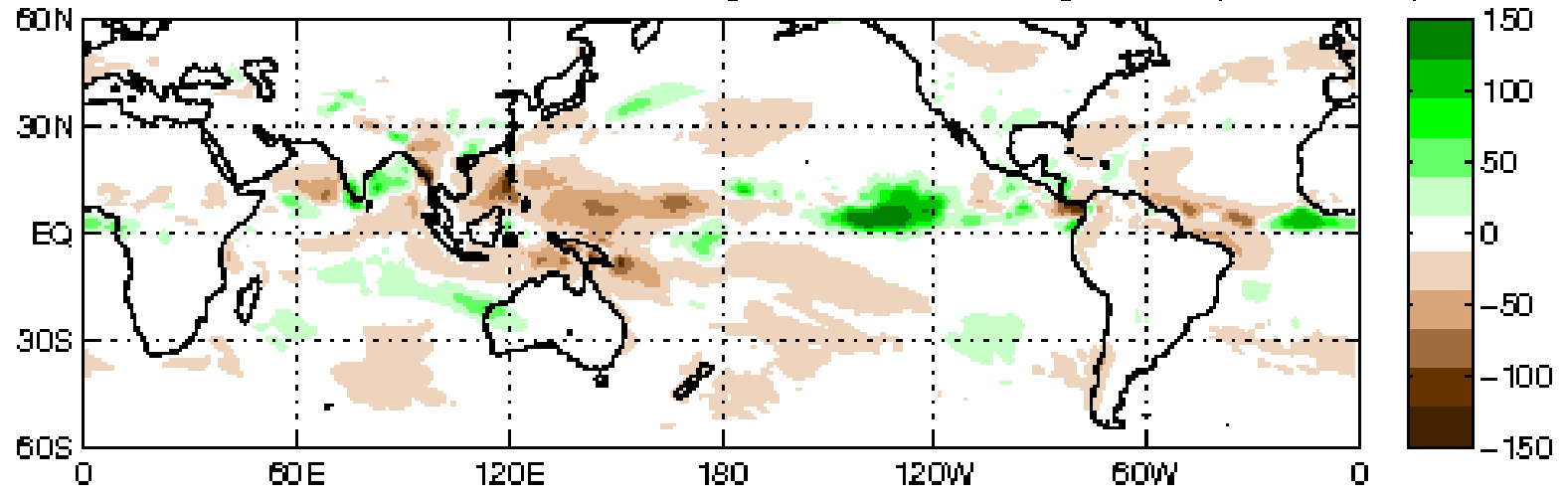
Kelvin Wave to impact ePAC.



**CFS: Anom. PREC Week: 1: 13-May-2015 to 19-May-2015 (mm/week)**

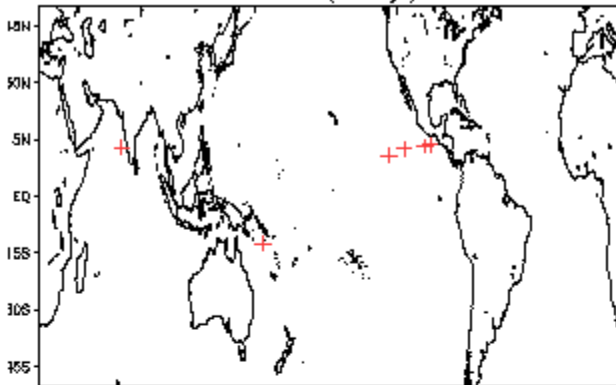


**CFS: Anom. PREC Week: 2: 20-May-2015 to 26-May-2015 (mm/week)**

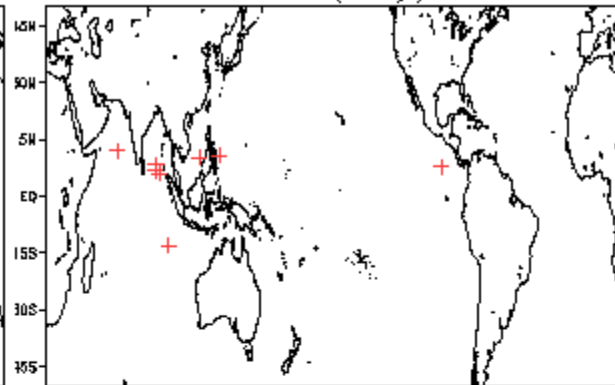


# May Tropical Storm Formation by MJO phase

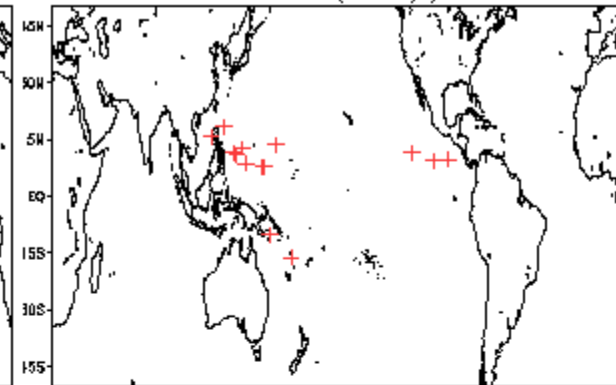
Phase 1 (85 days) 7 storms



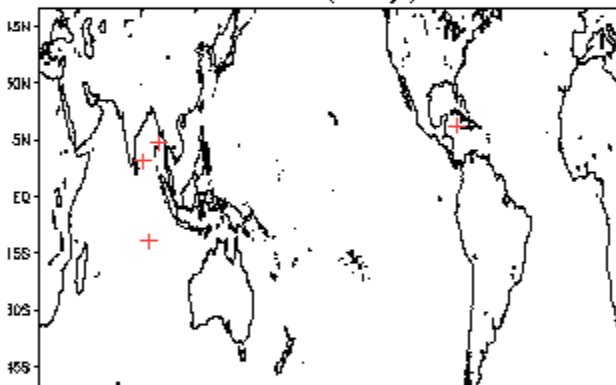
Phase 4 (85 days) 9 storms



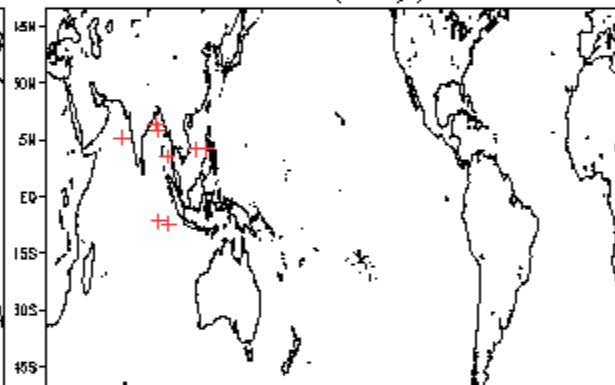
Phase 7 (111 days) 15 storms



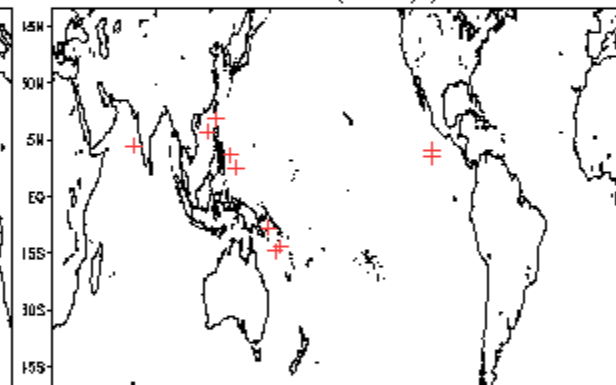
Phase 2 (76 days) 5 storms



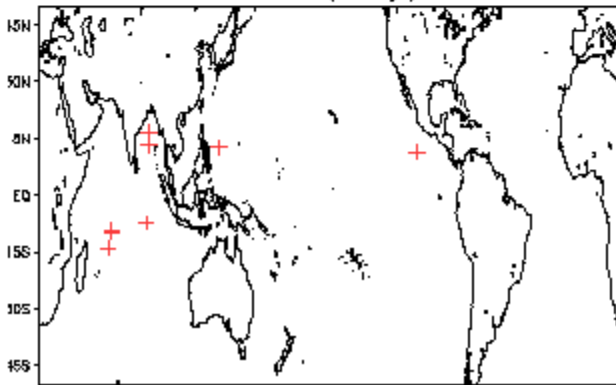
Phase 5 (66 days) 9 storms



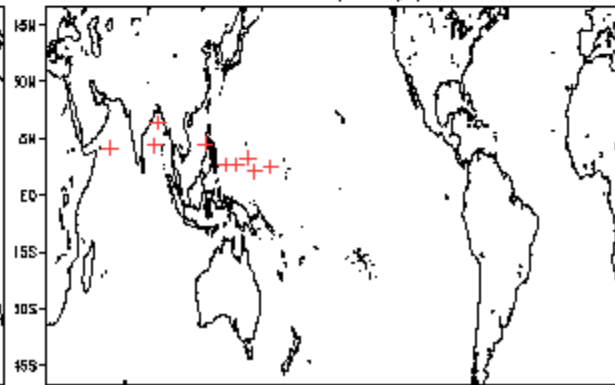
Phase 8 (111 days) 11 storms



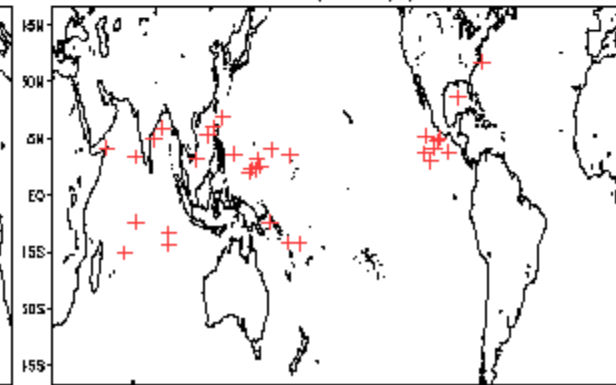
Phase 3 (73 days) 9 storms

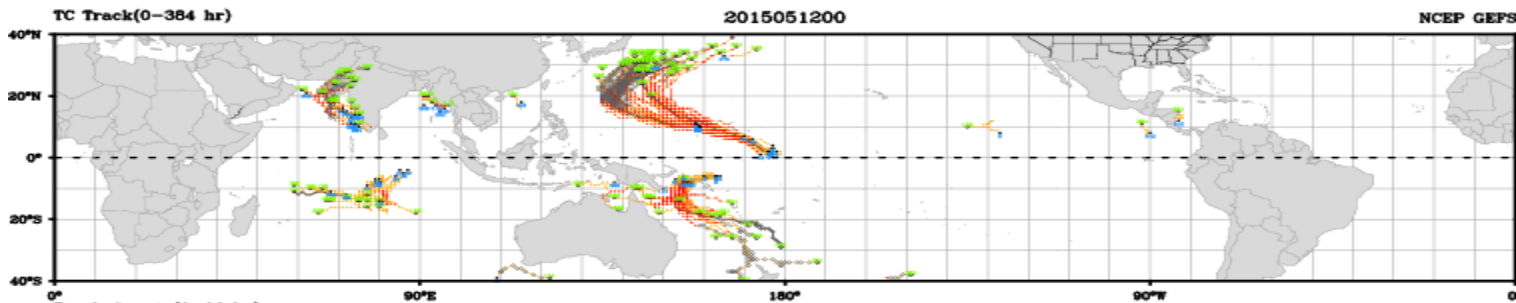


Phase 6 (87 days) 10 storms

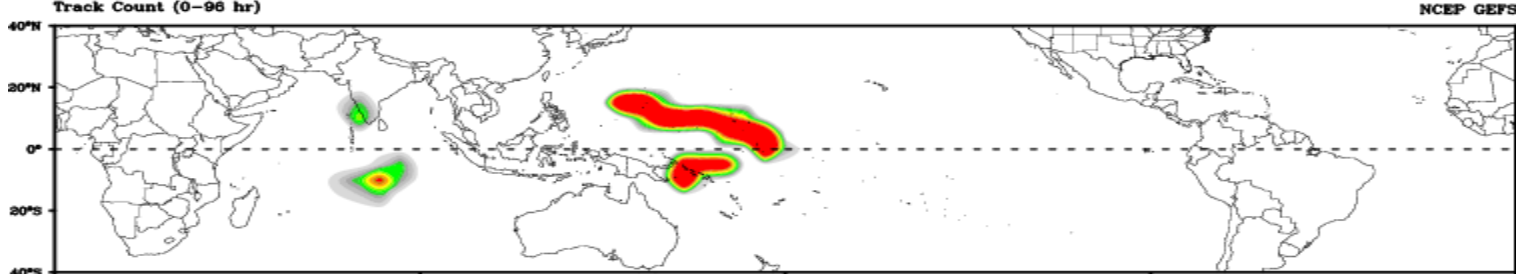


Null (349 days) 33 storms

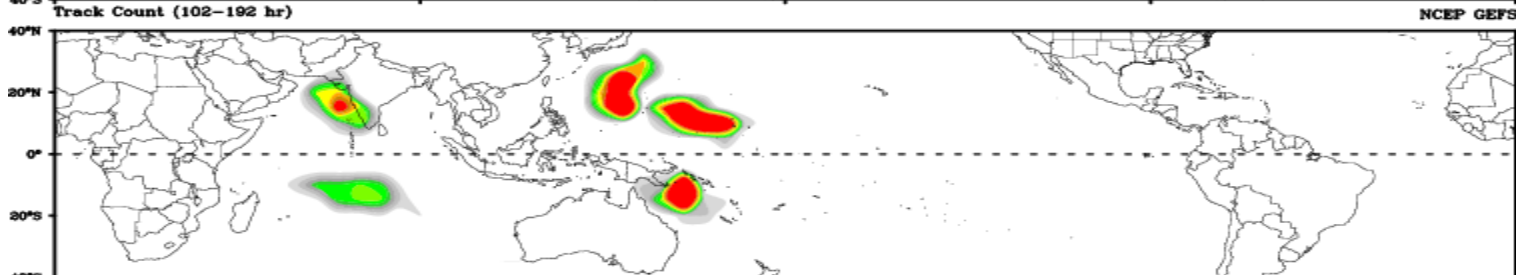




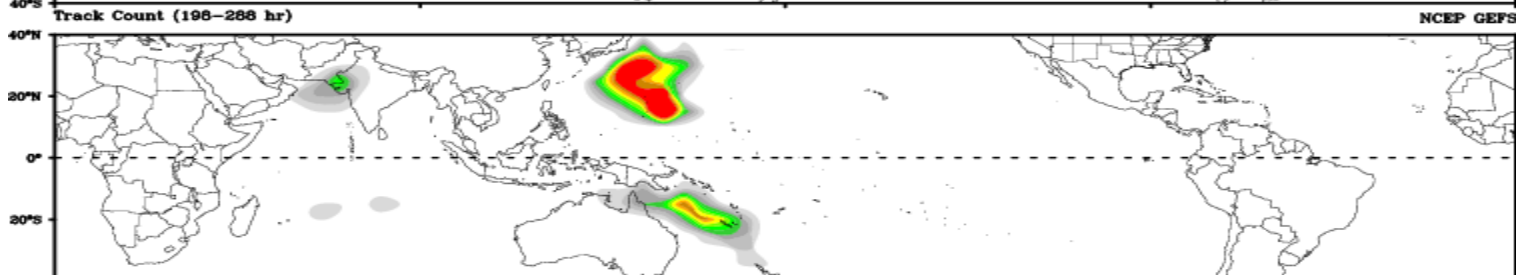
Days 1-4



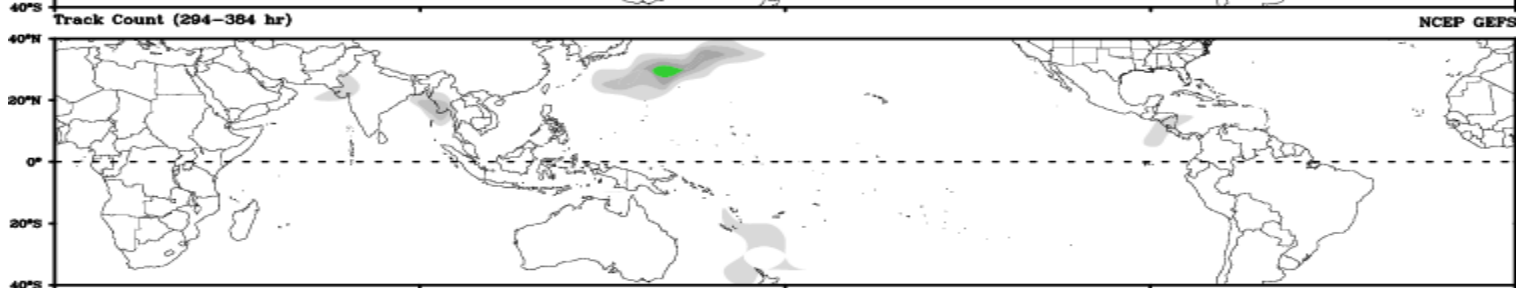
Day 5-8



Day 9-12



Day 13-15





## Five-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida



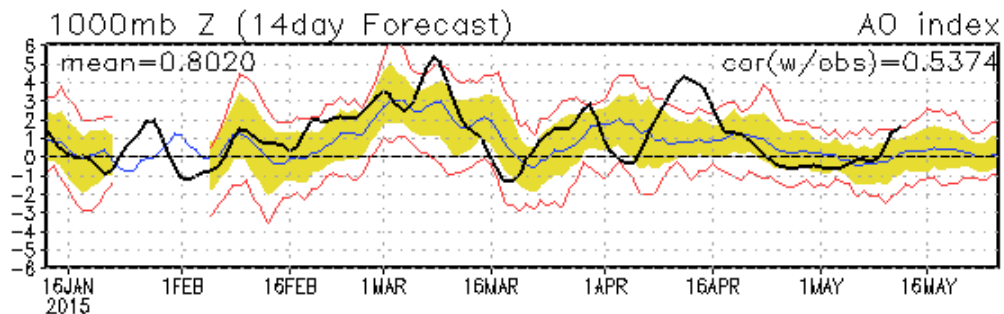
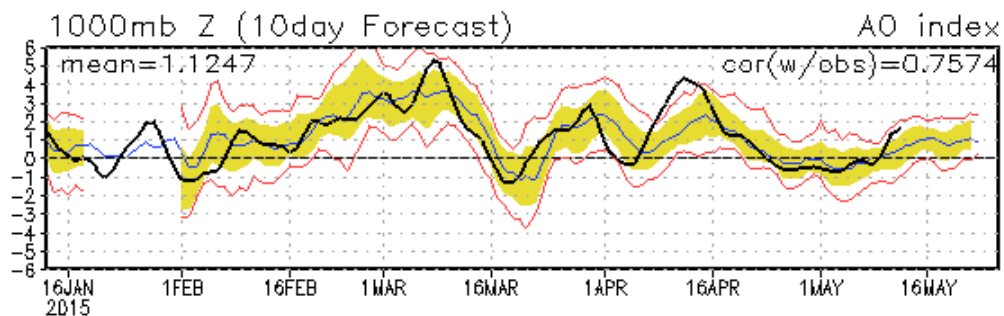
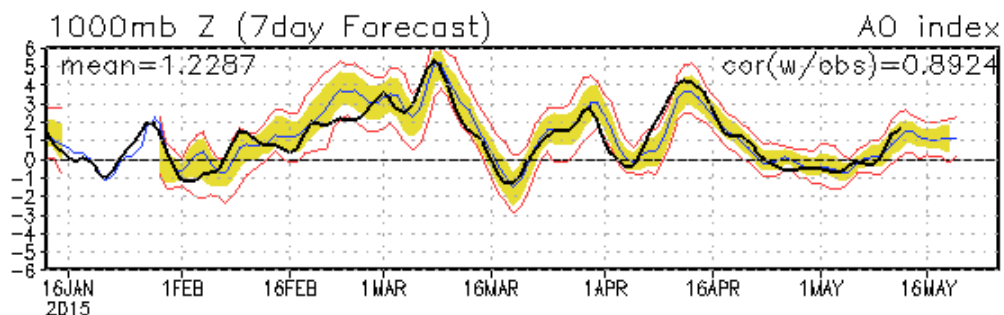
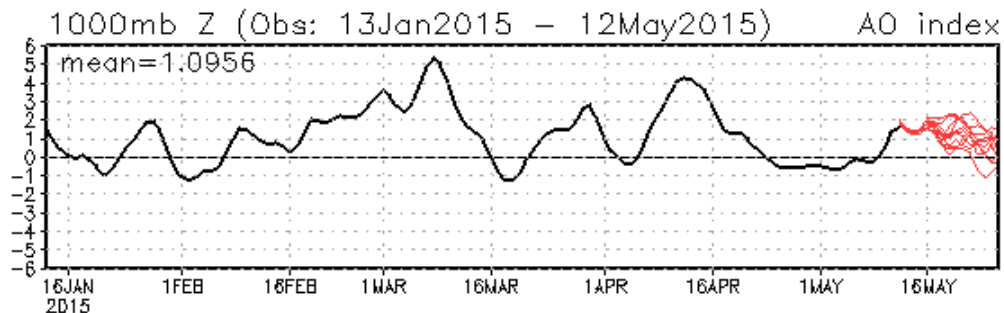
Tropical Cyclone Formation Potential for the 5-Day Period Ending 2:00 am EDT Wed May 13 2015

Chance of Cyclone Formation in 5 Days: ■ Low < 40% ■ Medium 40-60% ■ High > 60%

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

# Connections to U.S. Impacts

## AO: Observed & ENSM forecasts

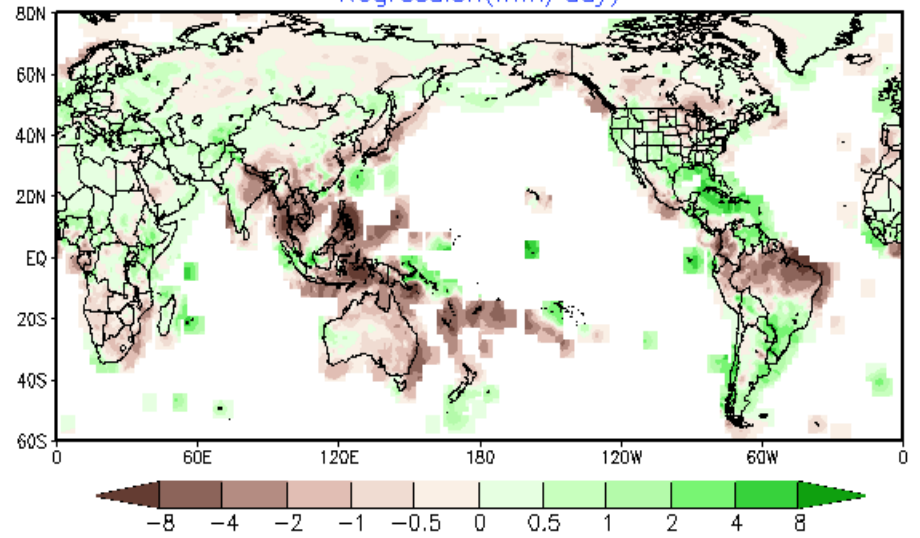
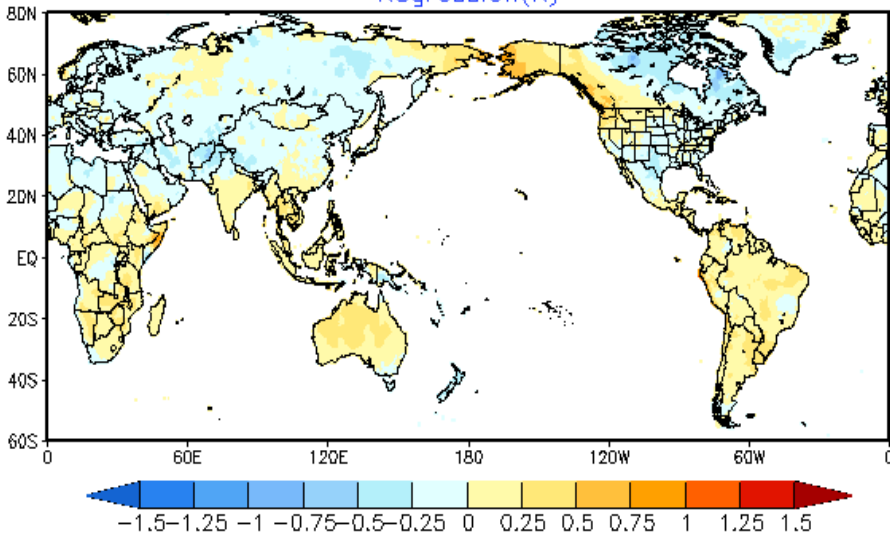


# ENSO Teleconnection: AMJ Temp

# ENSO Teleconnection: AMJ Precip

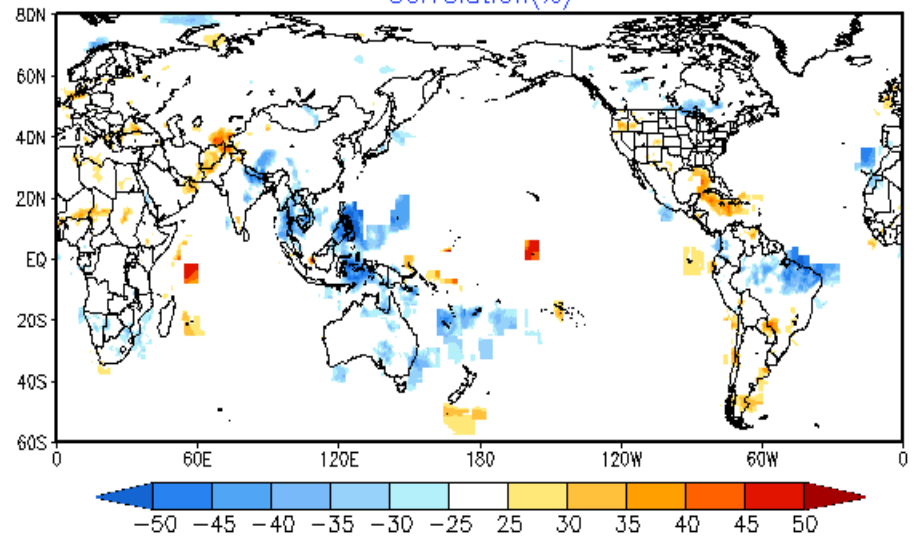
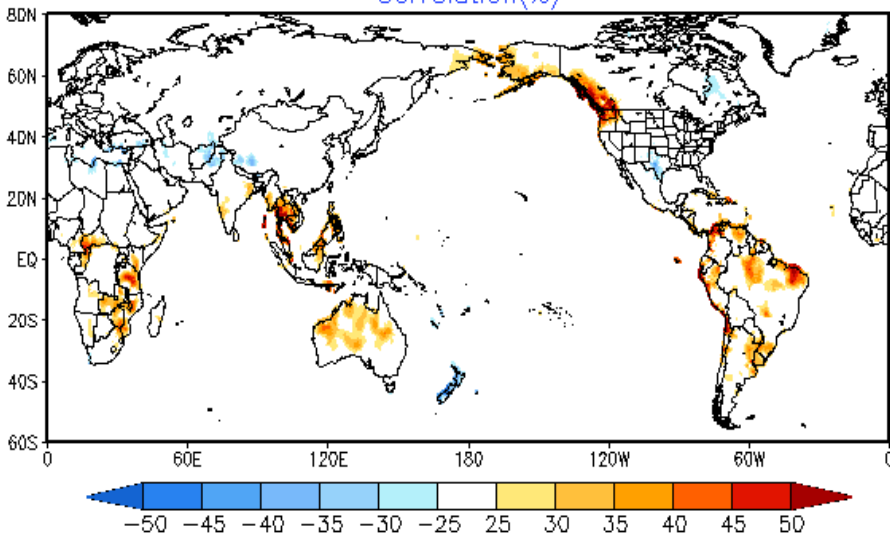
Regression(K)

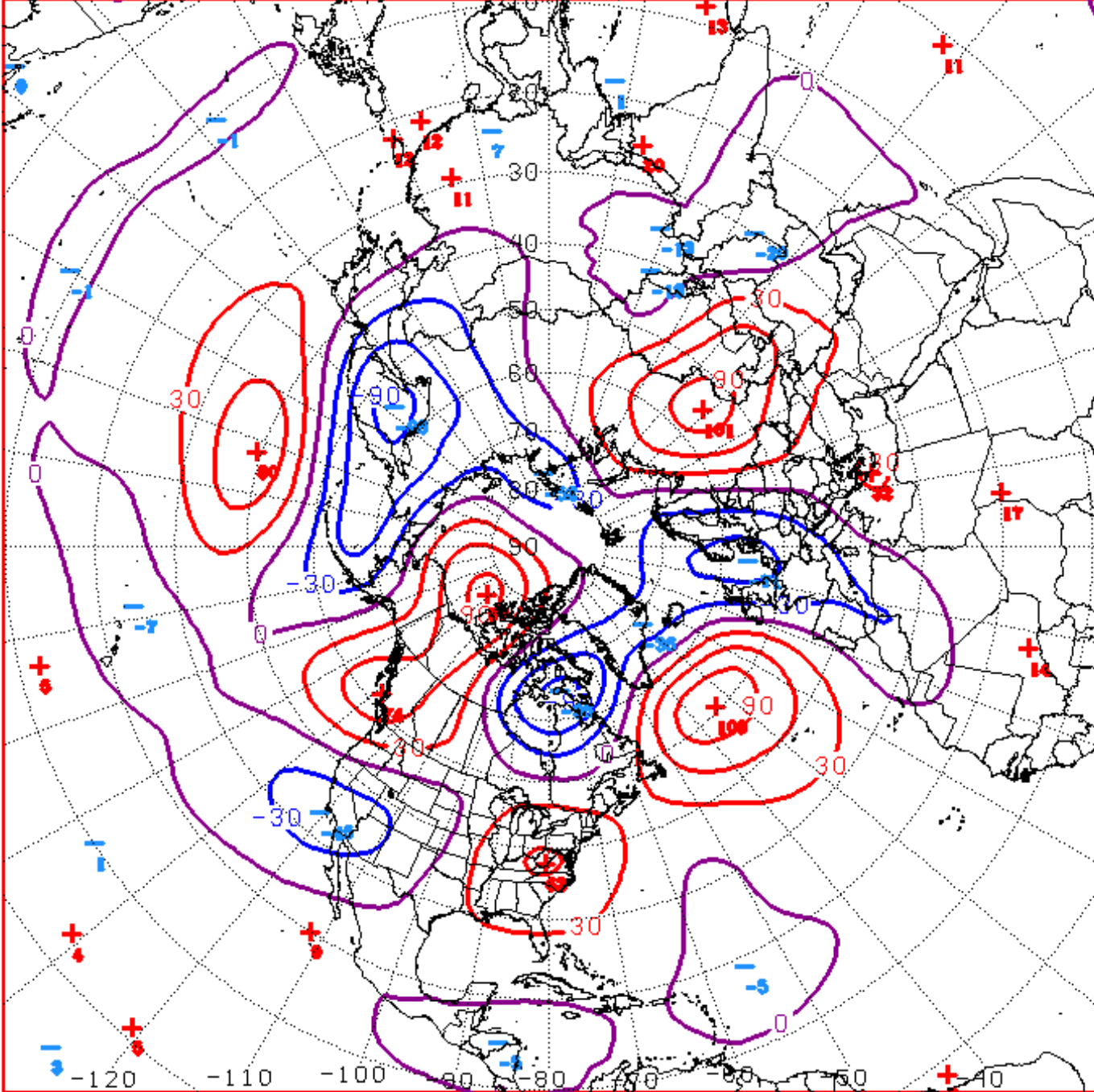
Regression(mm/day)



Correlation(%)

Correlation(%)

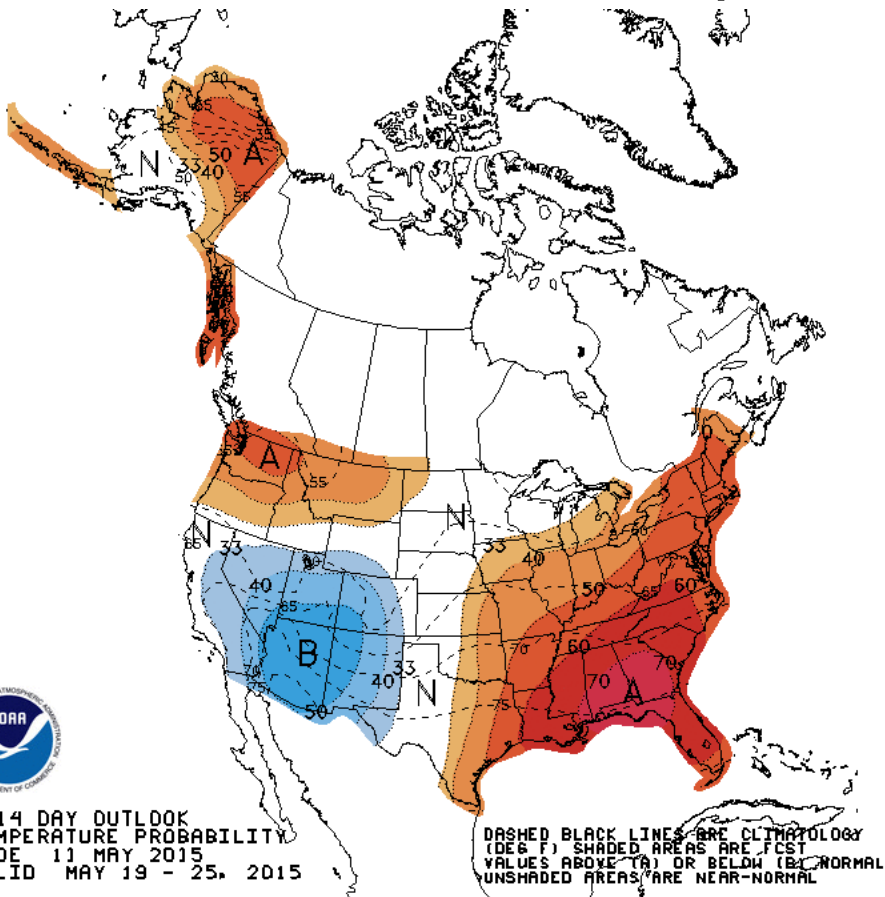




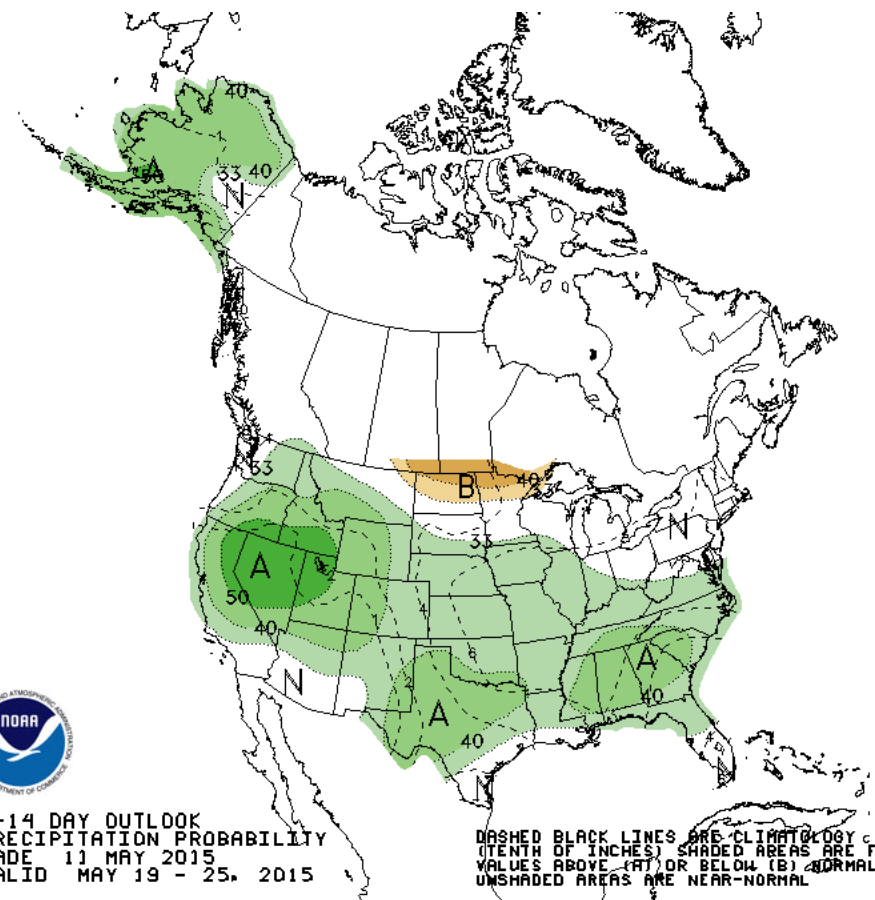
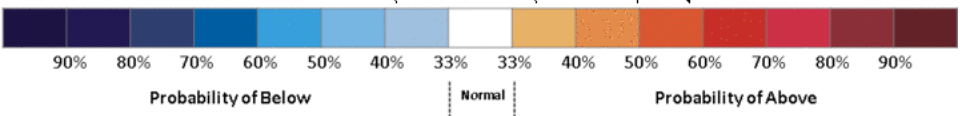
D+11 500 MB ANOMALIES FROM 00Z ECMM  
CPC MAP MADE MAY 12 2015 1019 UTC CNTD MAY 23 2015



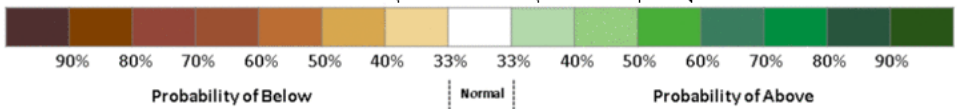
# Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 11 MAY 2015  
VALID MAY 19 - 25, 2015



8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 11 MAY 2015  
VALID MAY 19 - 25, 2015

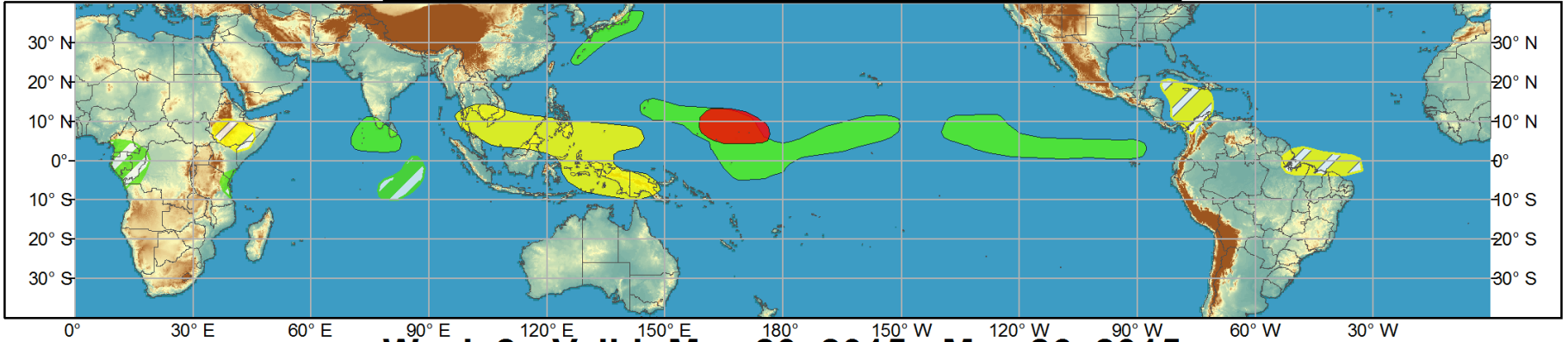




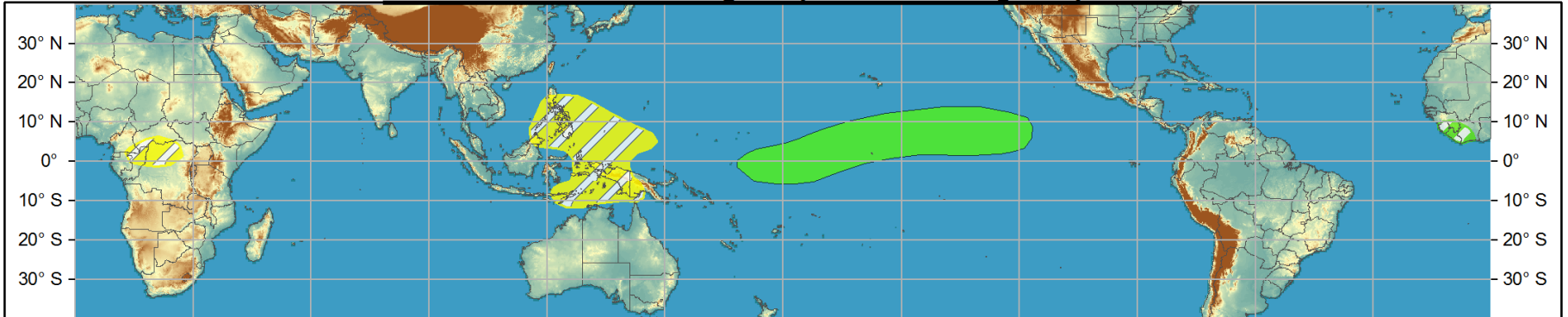
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- Above-average rainfall** Weekly total rainfall in the upper third of the historical range.
- Below-average rainfall** Weekly total rainfall in the lower third of the historical range.
- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
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