

# Global Tropics Hazards And Benefits Outlook

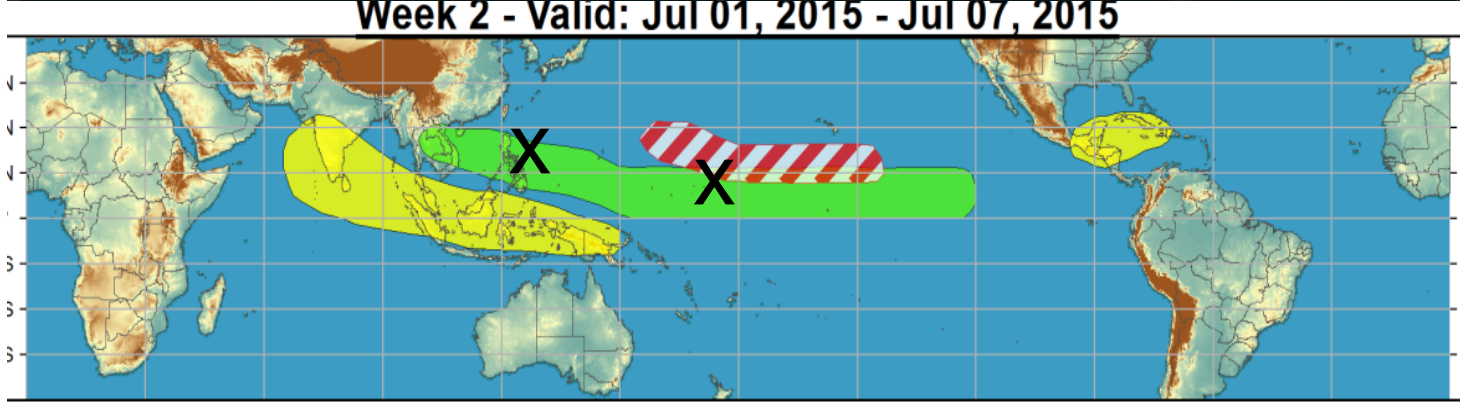
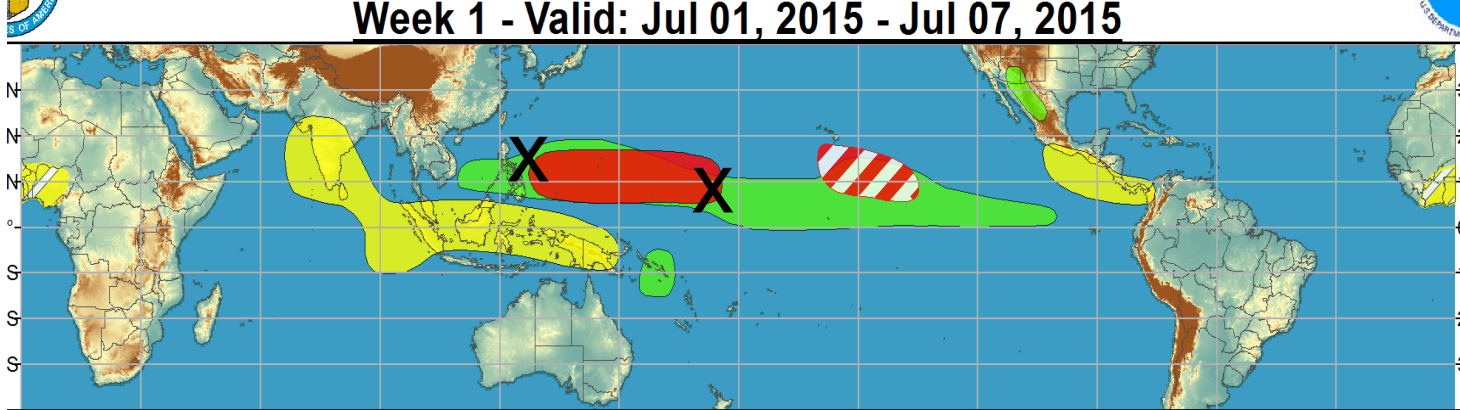
July 7, 2015

Matthew Rosencrans

## Outline

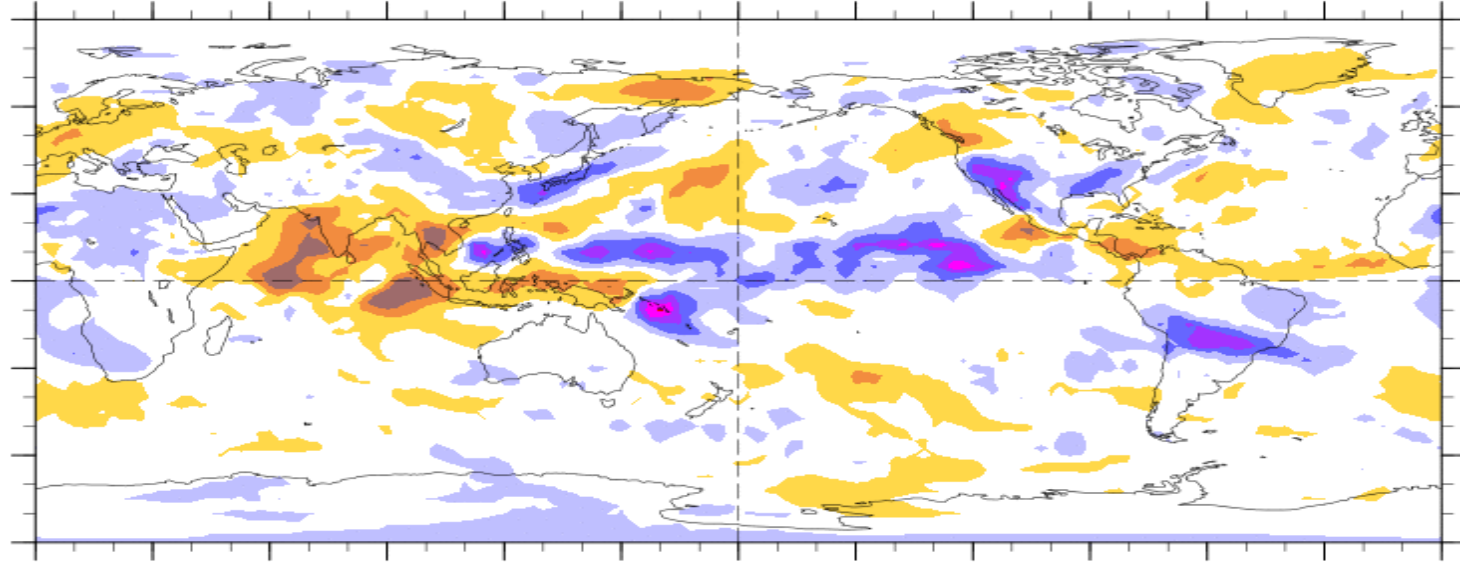
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review



7-Day Average OLR Anomaly

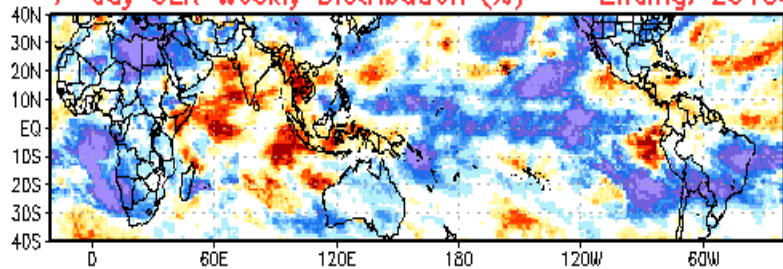
2015/06/29 - 2015/07/05



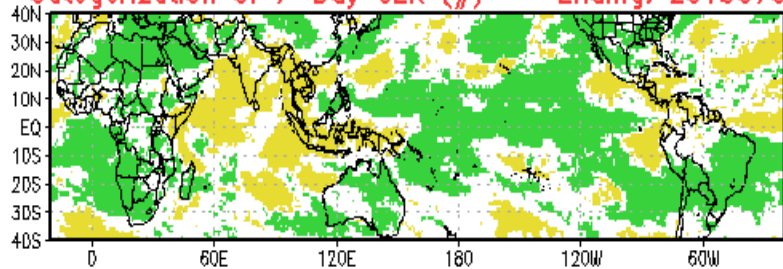
Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

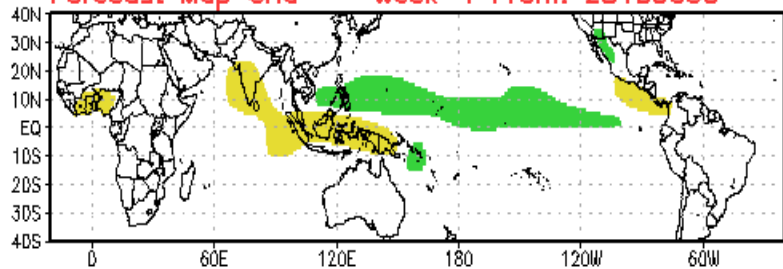
7-day OLR Weekly Distribution (%) -- Ending: 20150707



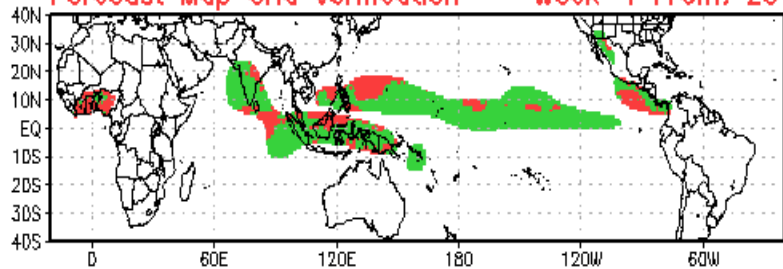
Categorization of 7-Day OLR (#) -- Ending: 20150707



Forecast Map Grid -- Week-1 From: 20150630

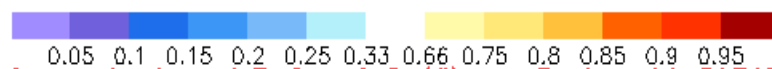
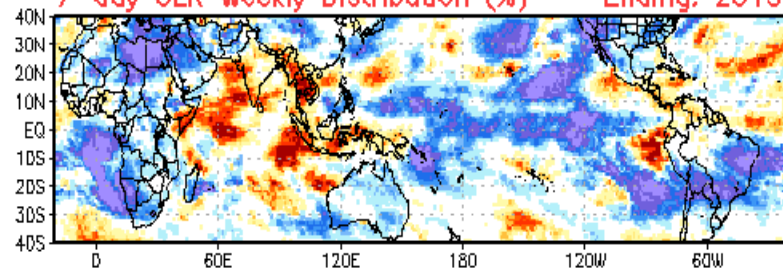


Forecast Map Grid Verification -- Week-1 From: 20150630

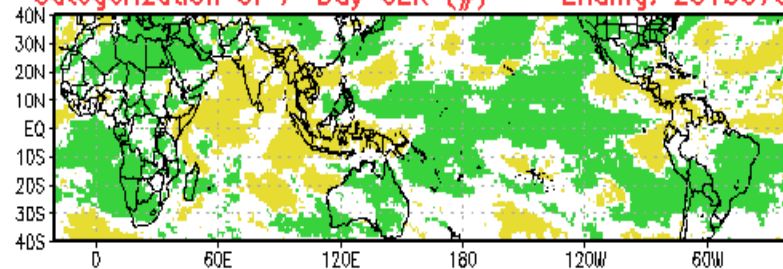


Hit: Green, Miss: Red  
Heidke Skill Score: 62.6866

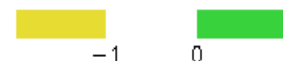
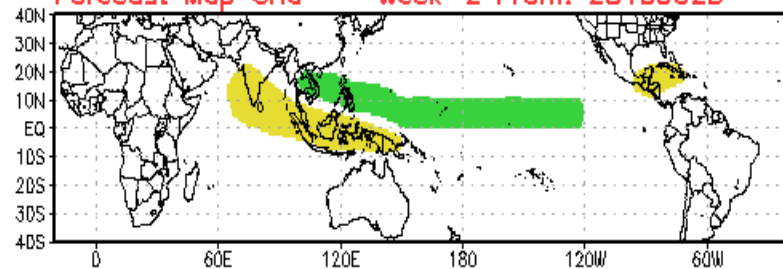
7-day OLR Weekly Distribution (%) -- Ending: 20150707



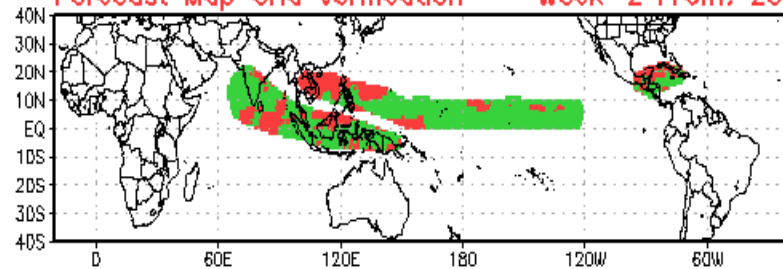
Categorization of 7-Day OLR (#) -- Ending: 20150707



Forecast Map Grid -- Week-2 From: 20150623



Forecast Map Grid Verification -- Week-2 From: 20150623



Hit: Green, Miss: Red  
Heidke Skill Score: 54.7048

# Synopsis of Climate Modes

## ENSO:

- Current: [El Niño Advisory](#)
- Outlook: There is a greater than 90% chance that El Niño will continue through Northern Hemisphere fall 2015, and around an 85% chance it will last through the 2015-16 winter.

## MJO and other subseasonal tropical variability:

- The MJO is at near record values for July, with some influence from tropical cyclone activity.
- Most dynamical model MJO index forecasts depict a rapidly weakening MJO signal over the central Pacific. This is likely due to the waning influence of tropical cyclones and the forecast spatial coincidence of the MJO and El Niño.

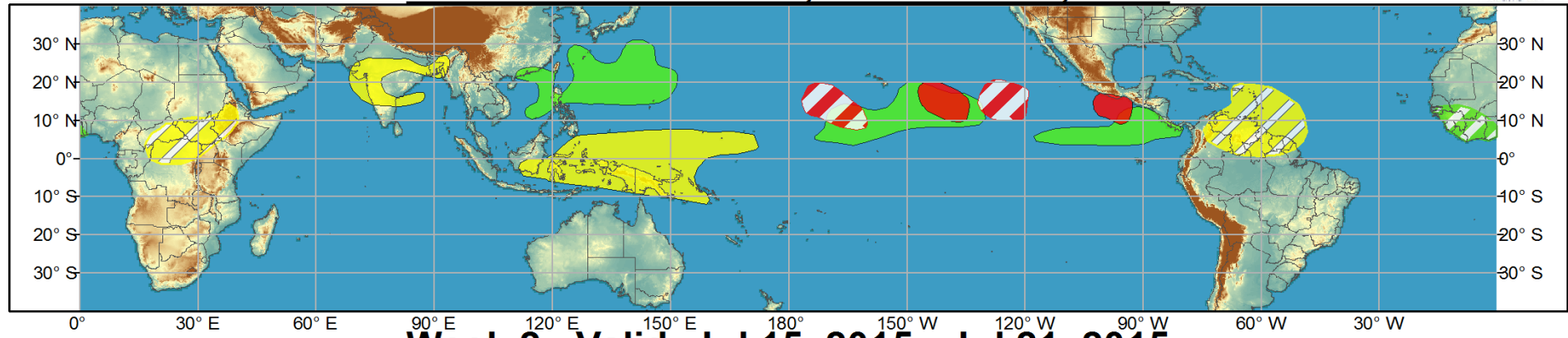
## Extratropics:

- The extended range temperature forecast for the U.S. appears to line up with the projections from lagged composites based on the MJO, but the convective pattern over the southern CONUS does not. Likely due to the impact of a strong MJO that is not likely to propagate the way a lagged composite would imply.
- Tools for the extended period indicate a lot of uncertainty over the CONUS.

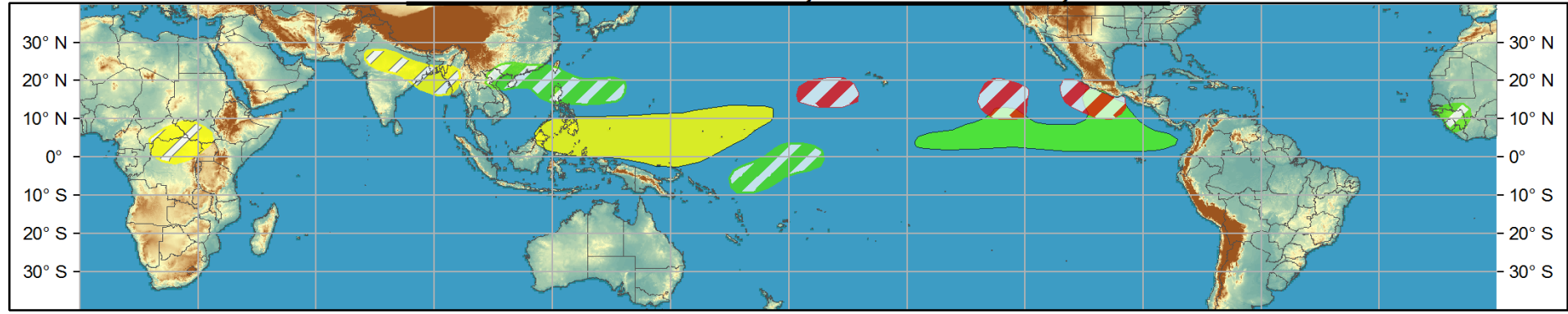


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Jul 08, 2015 - Jul 14, 2015



## Week 2 - Valid: Jul 15, 2015 - Jul 21, 2015



**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: 07/07/2015

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.



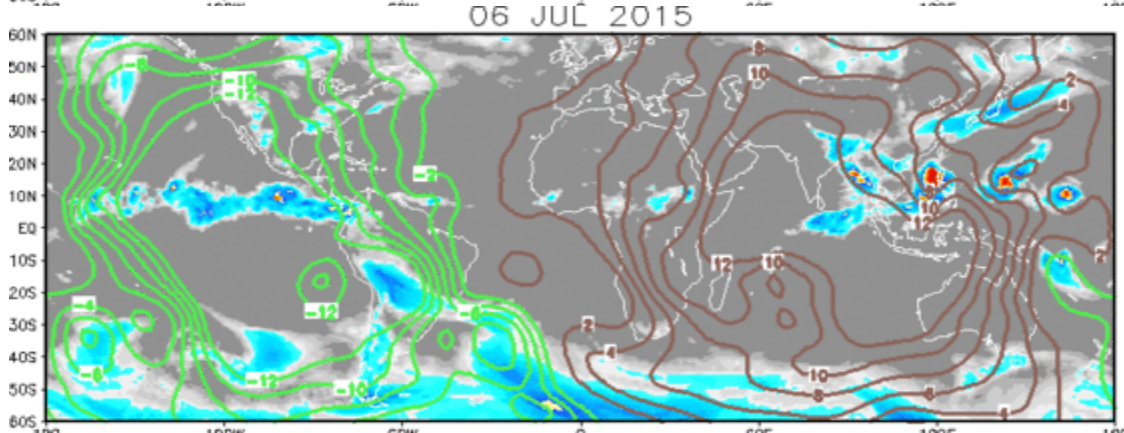
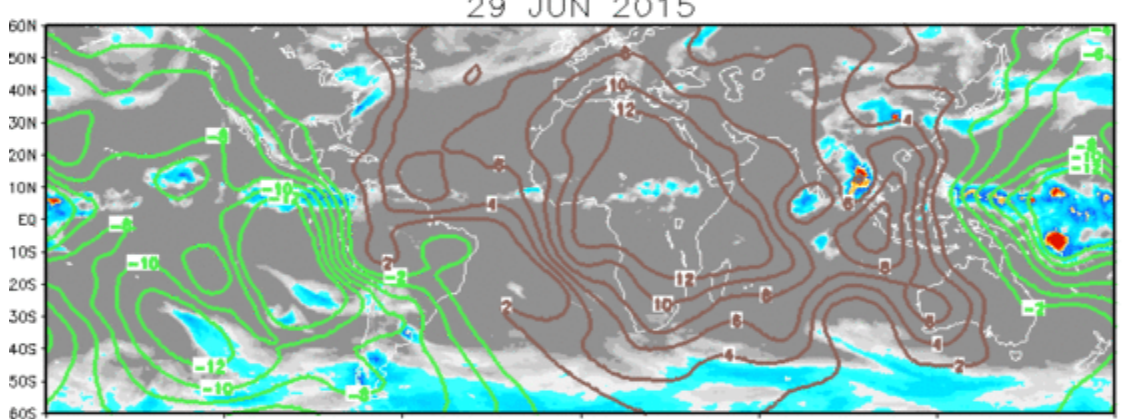
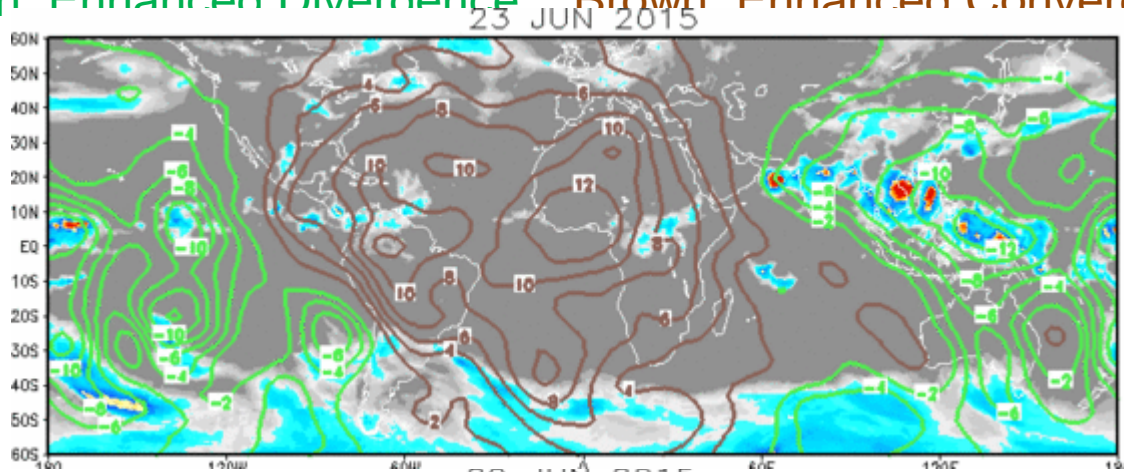
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence      Brown: Enhanced Convergence

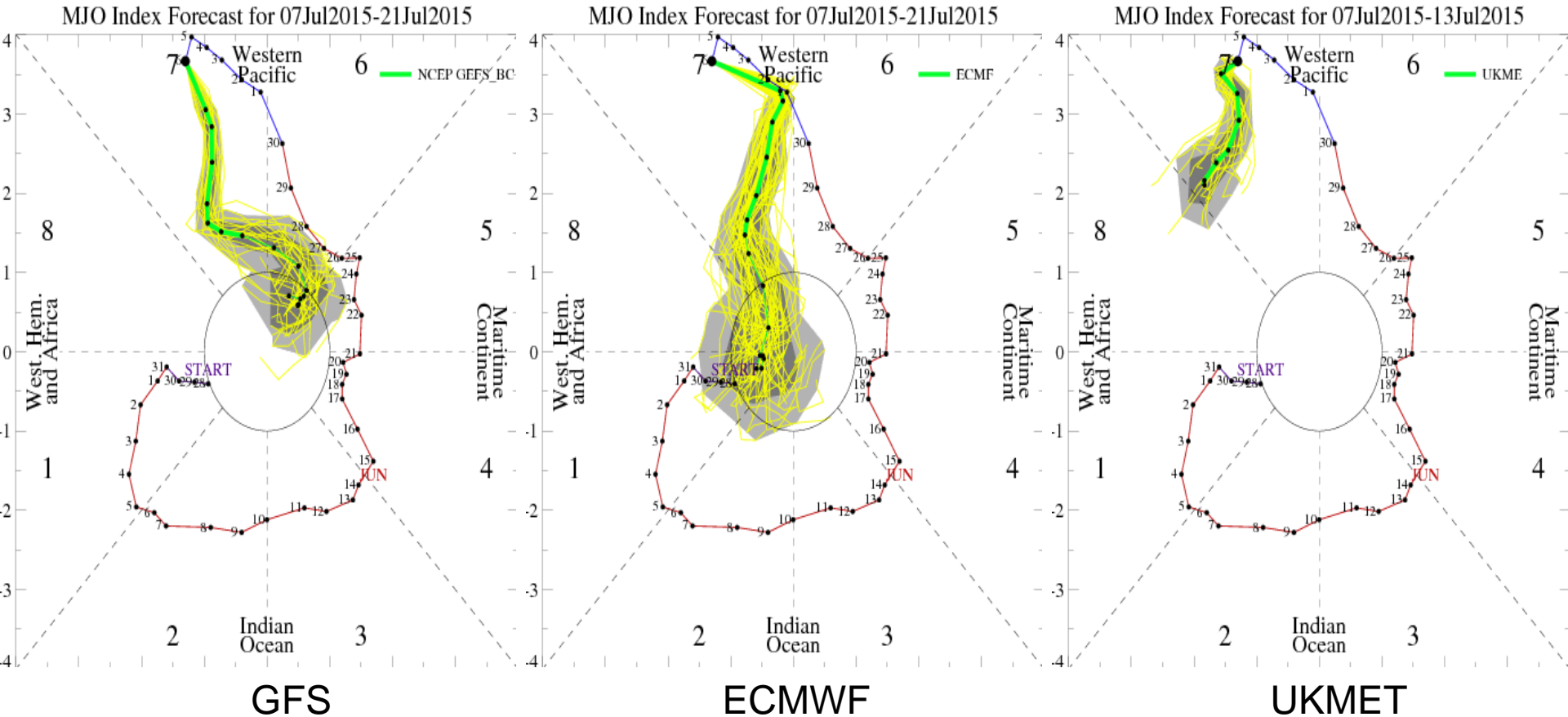
Base state  
and transient  
features  
evident.

Wave-1  
structure.

Slight  
eastward  
progression.

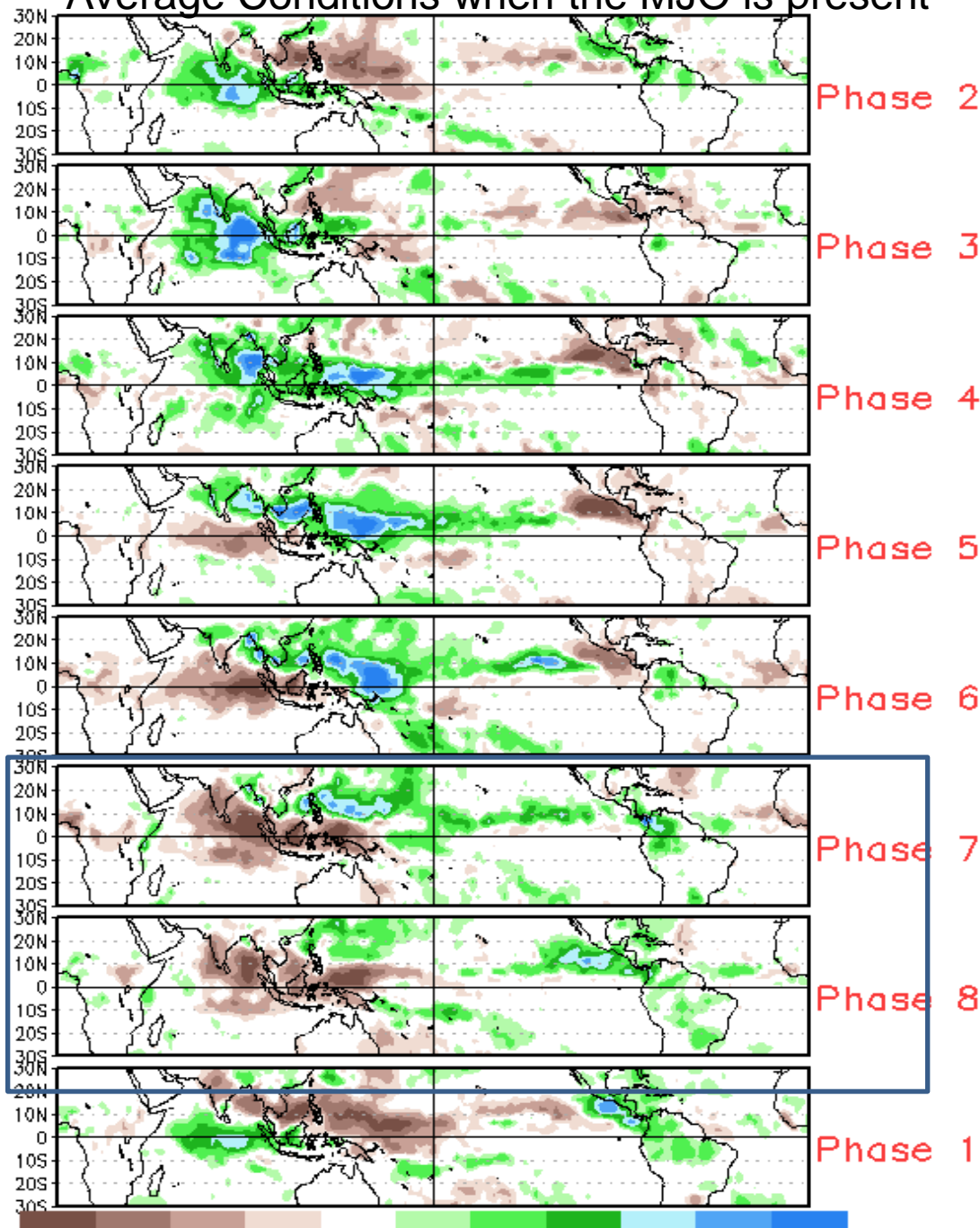


# MJO Observation/Forecast



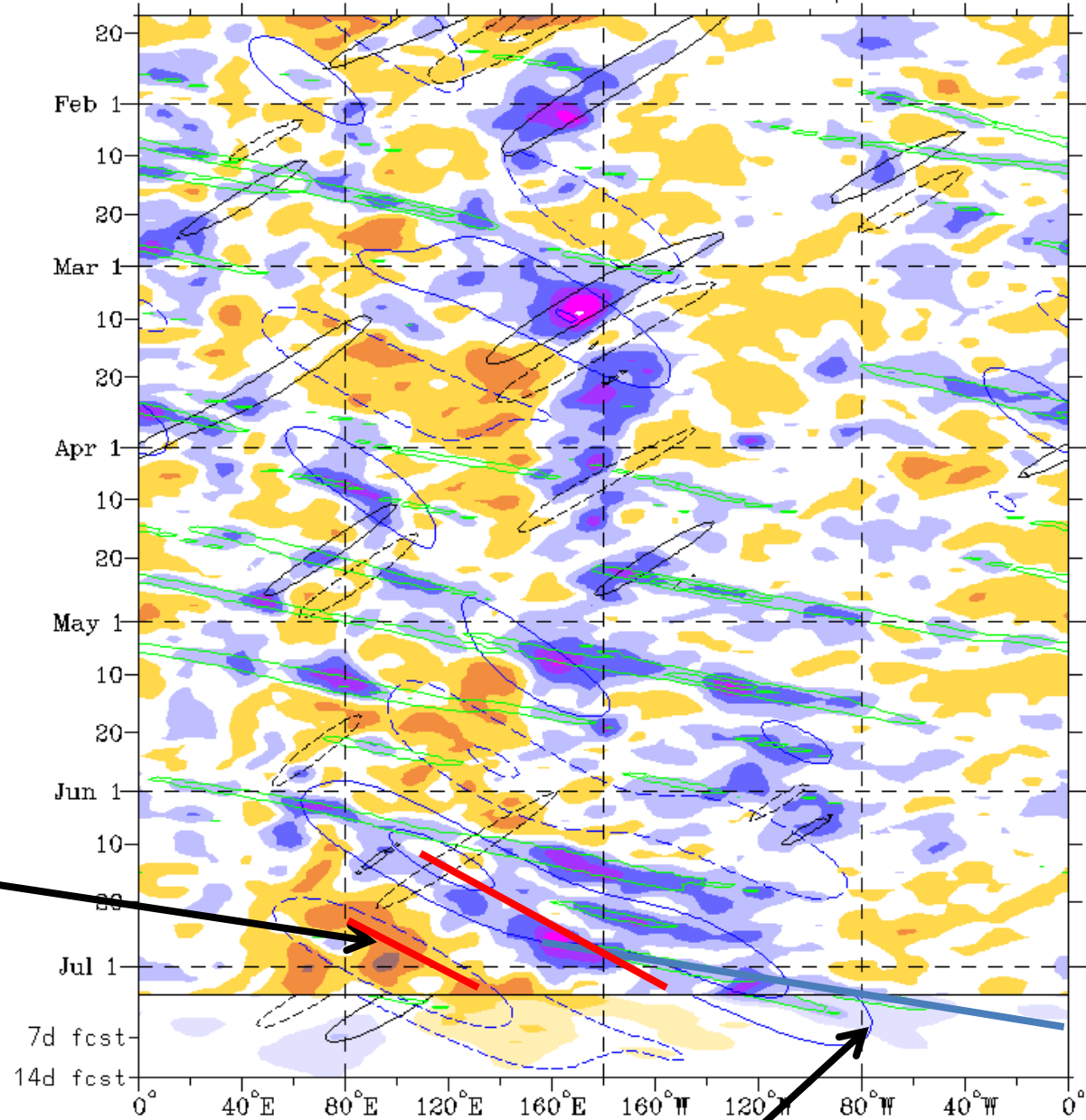
Wheeler-Hendon based analyses of model forecasts indicate weakening with eastward propagation (EC and UK), westward movement (GFS).

# Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.



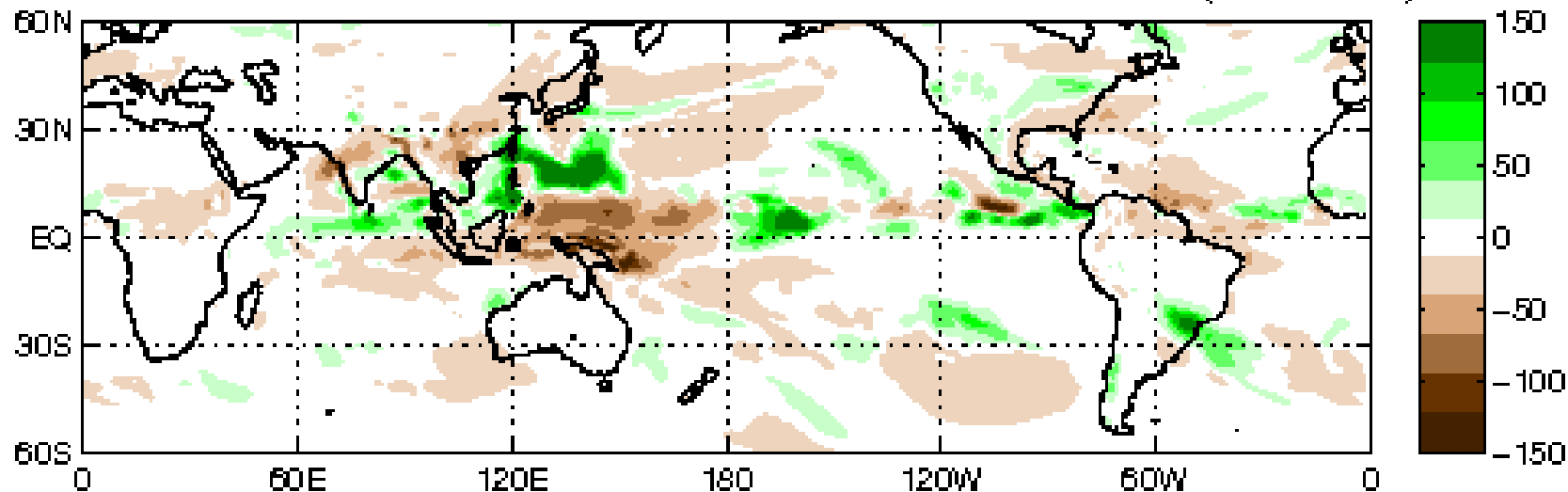


Low frequency is contributing from 180 to 80W

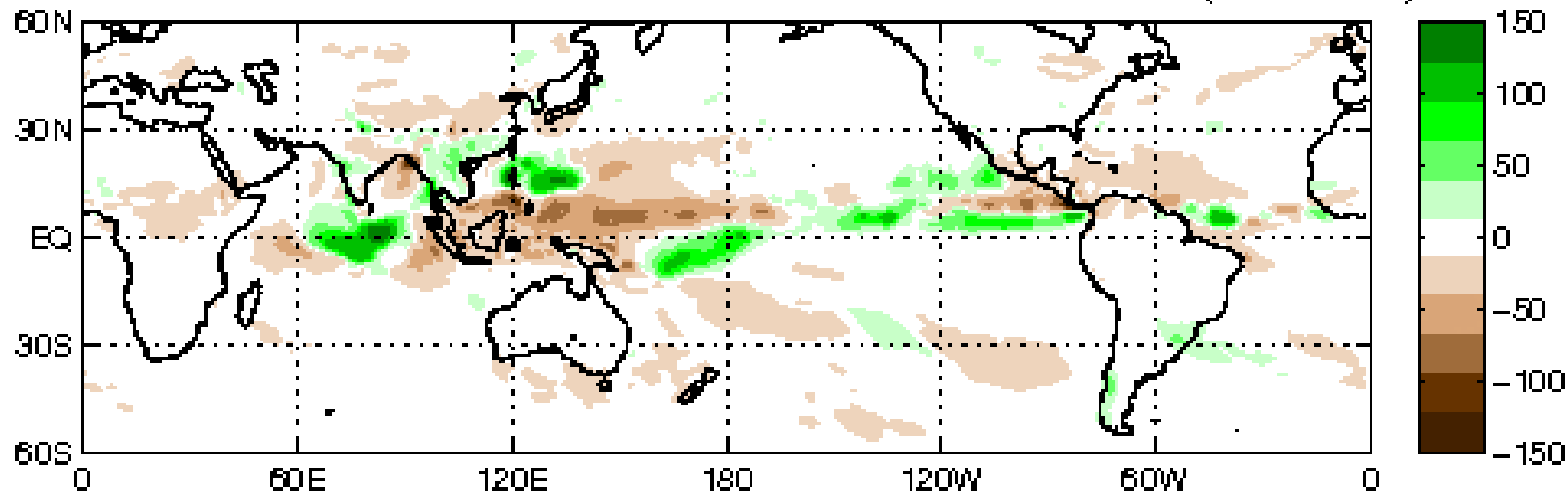
MJO indicated by red lines

Kelvin Wave to impact ePAC.

**CFS: Anom. PREC Week: 1: 08-Jul-2015 to 14-Jul-2015 (mm/week)**

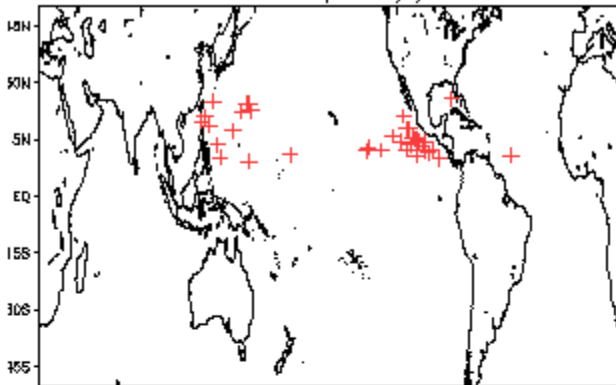


**CFS: Anom. PREC Week: 2: 15-Jul-2015 to 21-Jul-2015 (mm/week)**

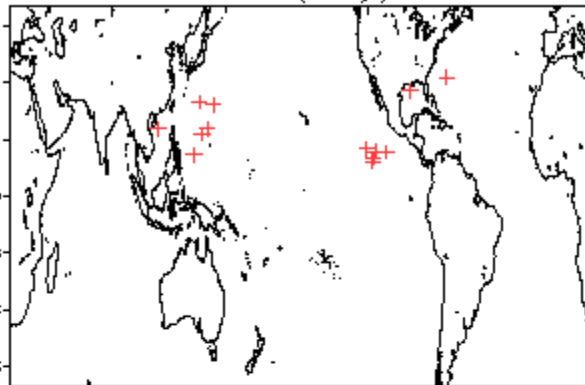


# July Tropical Storm Formation by MJO phase

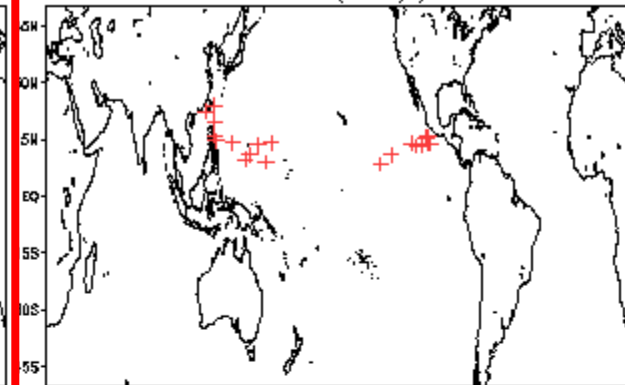
Phase 1 (144 days) 37 storms



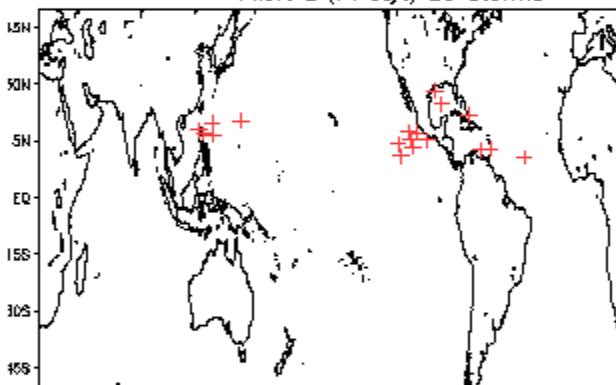
Phase 4 (40 days) 14 storms



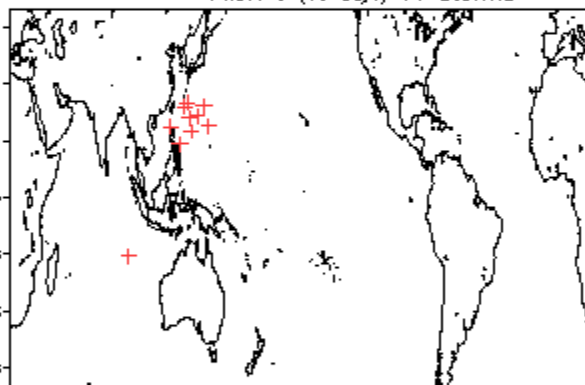
Phase 7 (87 days) 21 storms



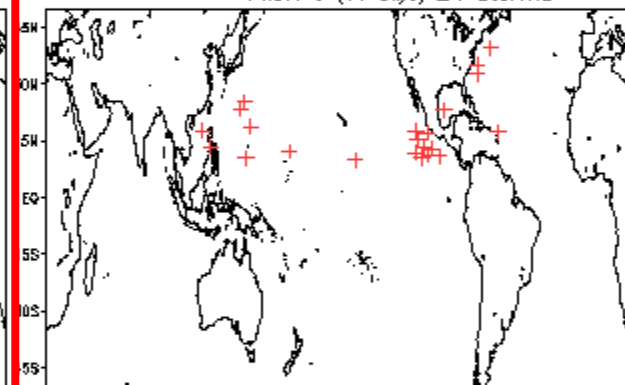
Phase 2 (74 days) 20 storms



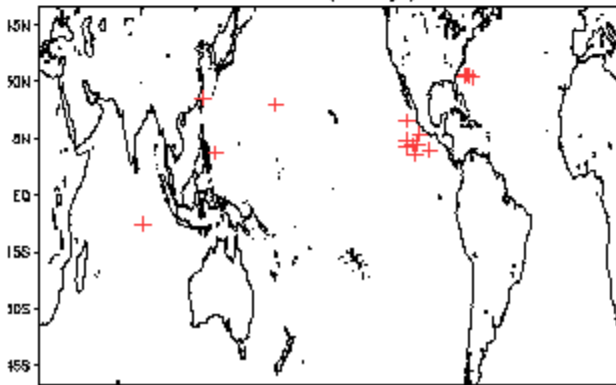
Phase 5 (63 days) 11 storms



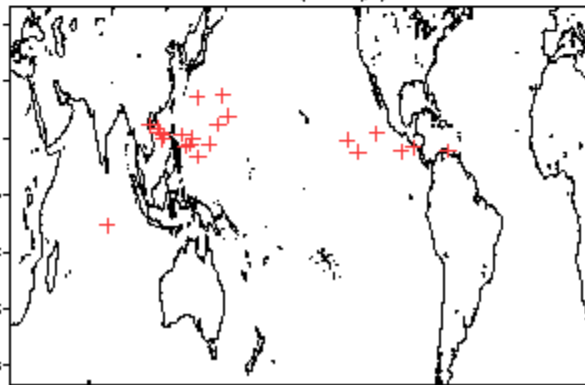
Phase 8 (61 days) 24 storms



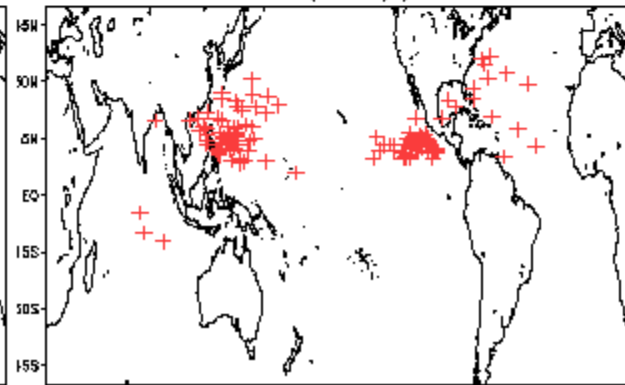
Phase 3 (49 days) 17 storms



Phase 6 (60 days) 23 storms



Null (480 days) 130 storms





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



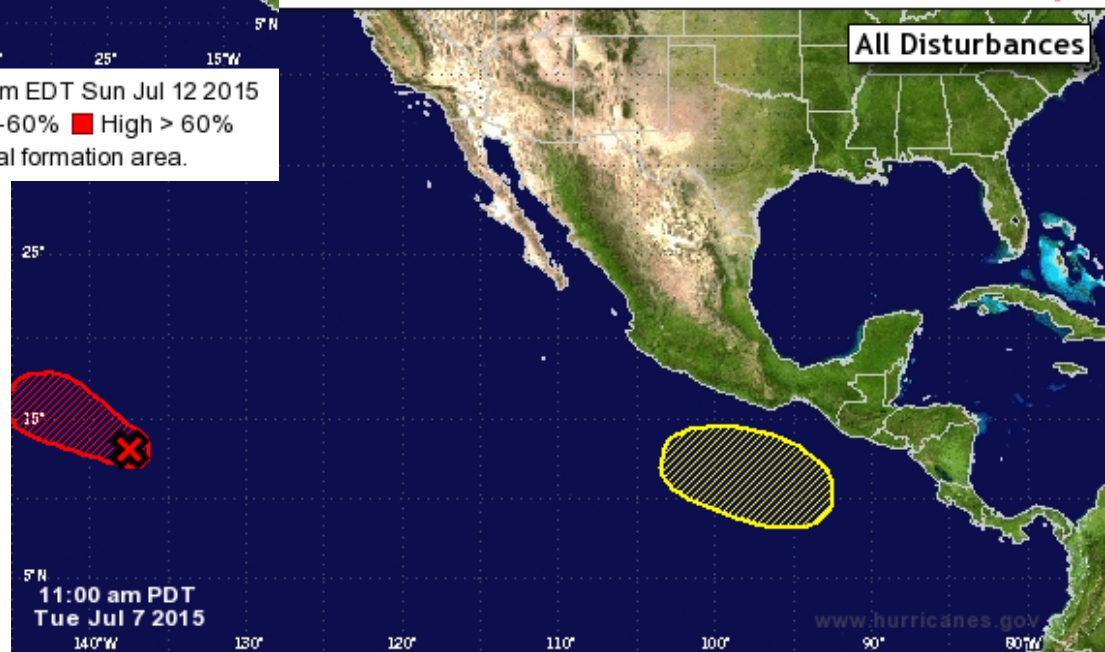
No new tropical cyclones are expected during the next five days.

# Five-Day Graphical Tropical Weather Outlook

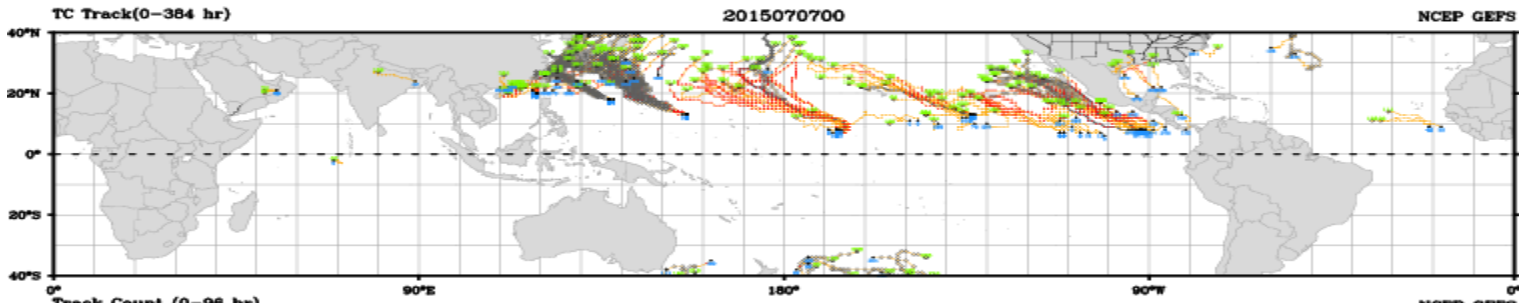
National Hurricane Center Miami, Florida



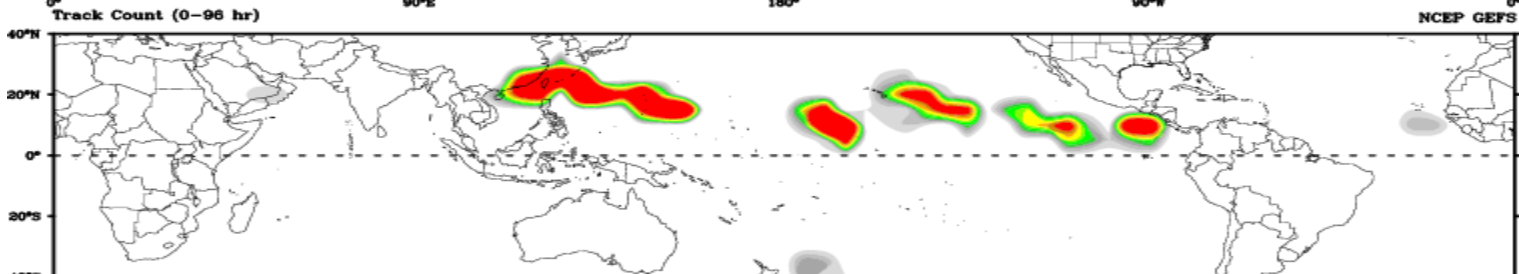
Tropical Cyclone Formation Potential for the 5-Day Period Ending 8:00 am EDT Sun Jul 12 2015  
 Chance of Cyclone Formation in 5 Days: ■ Low < 40% ■ Medium 40-60% ■ High > 60%  
 X indicates current disturbance location; shading indicates potential formation area.



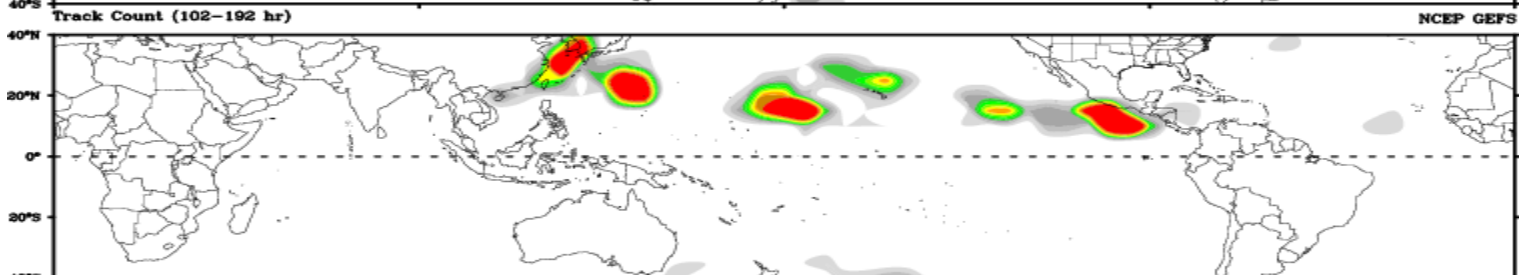
Tropical Cyclone Formation Potential for the 5-Day Period Ending 11:00 am PDT Sun Jul 12 2015  
 Chance of Cyclone Formation in 5 Days: ■ Low < 40% ■ Medium 40-60% ■ High > 60%  
 X indicates current disturbance location; shading indicates potential formation area.



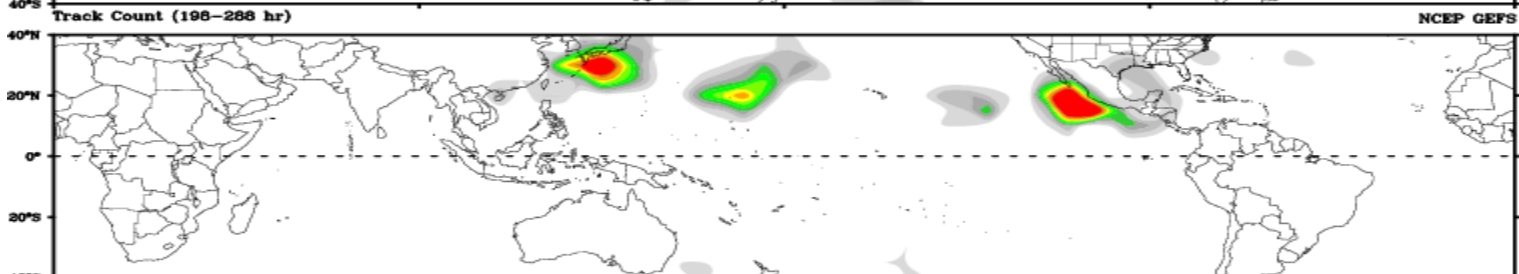
Days 1-4



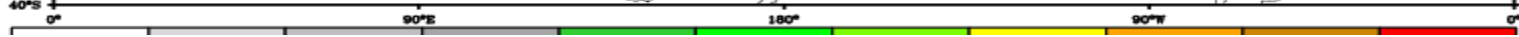
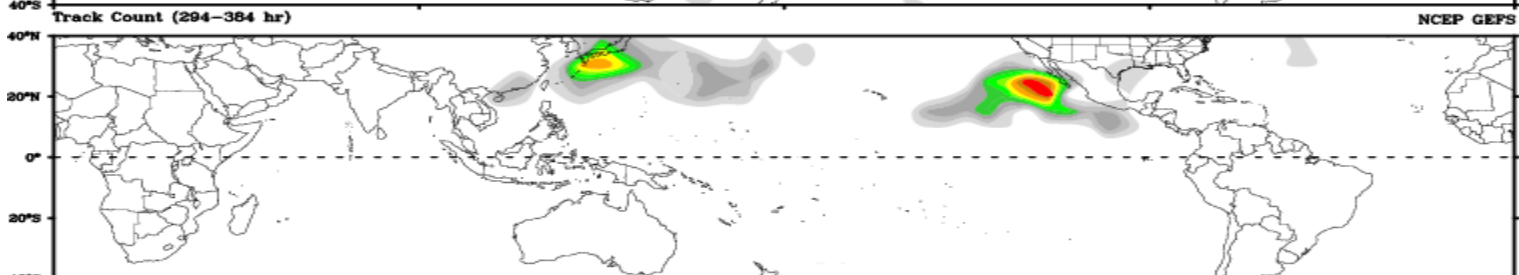
Day 5-8



Day 9-12



Day 13-15

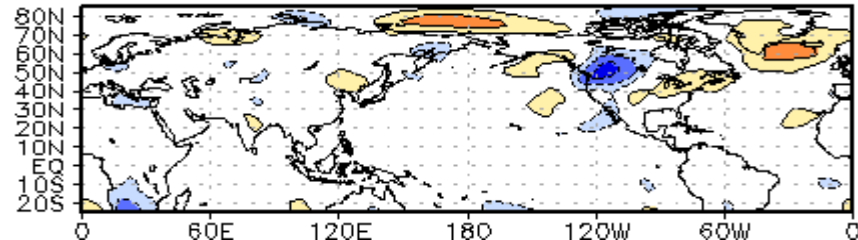
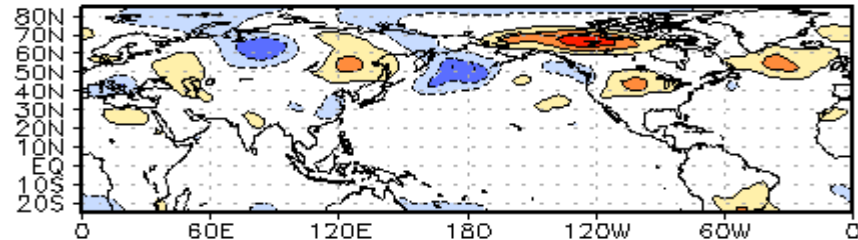
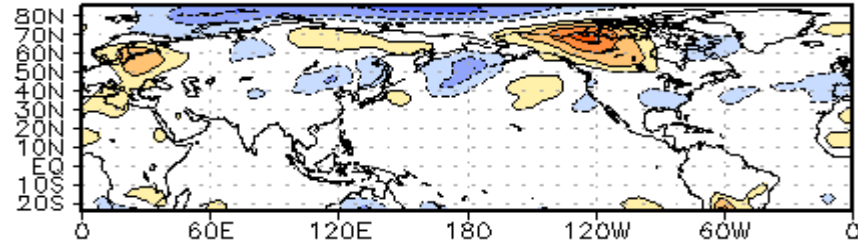
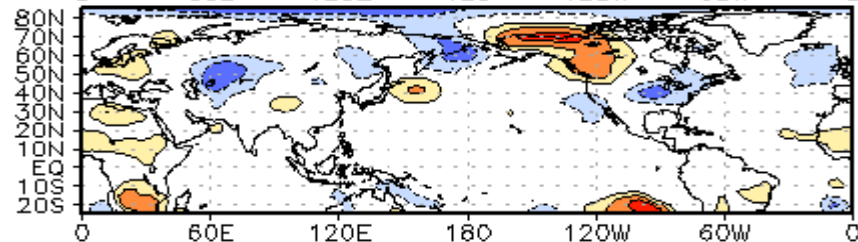
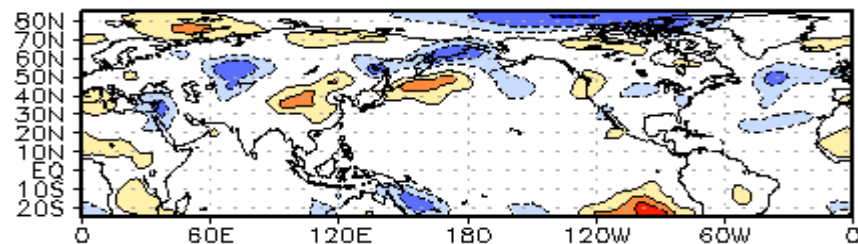


# Connections to U.S. Impacts

# Lagged composites from MJO

## 5-day intervals

WHMJO Phase 7 t850 Lagged Composite (jja)



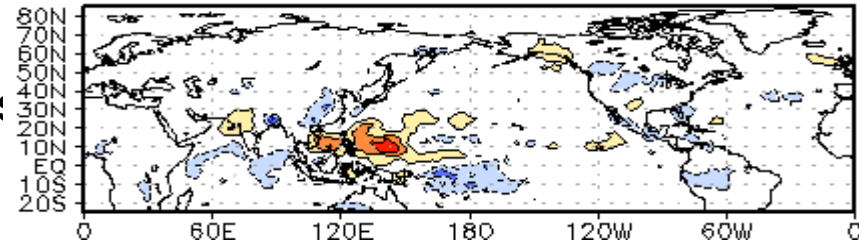
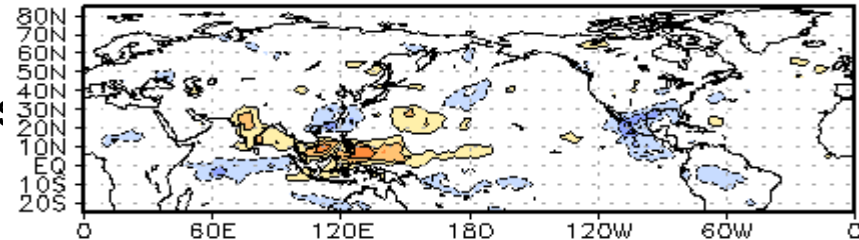
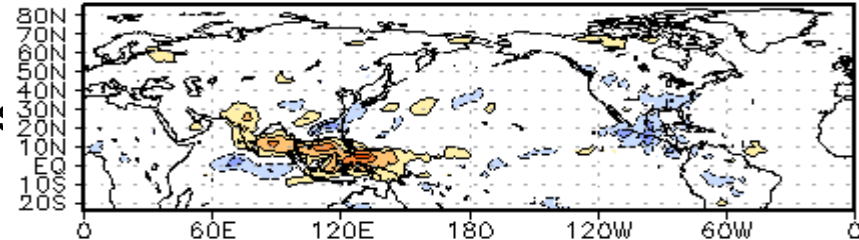
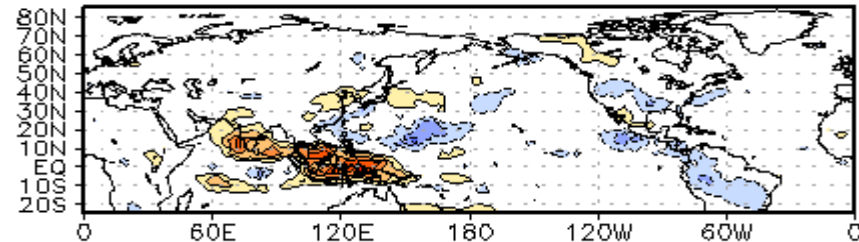
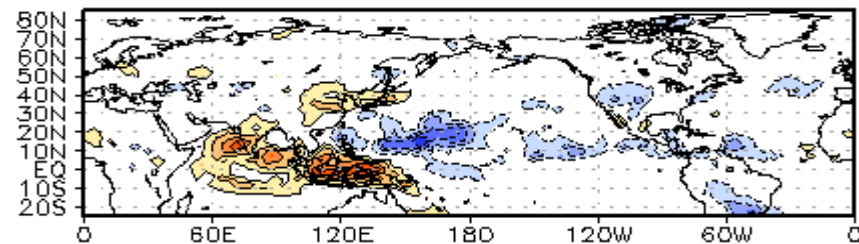
+5-day

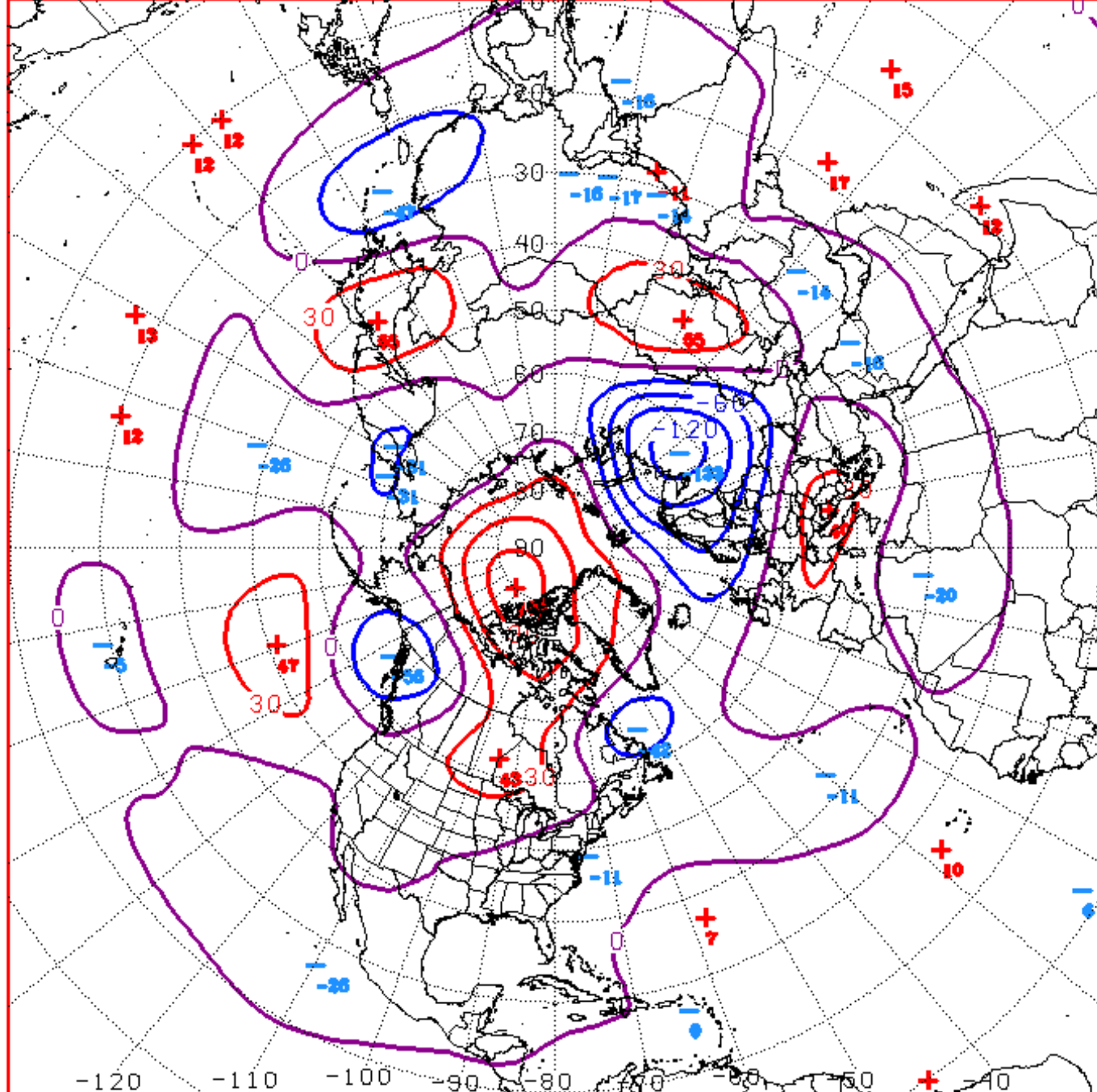
+10-day:

+15-day:

+20-day:

WHMJO Phase 7 air Lagged Composite (jja)

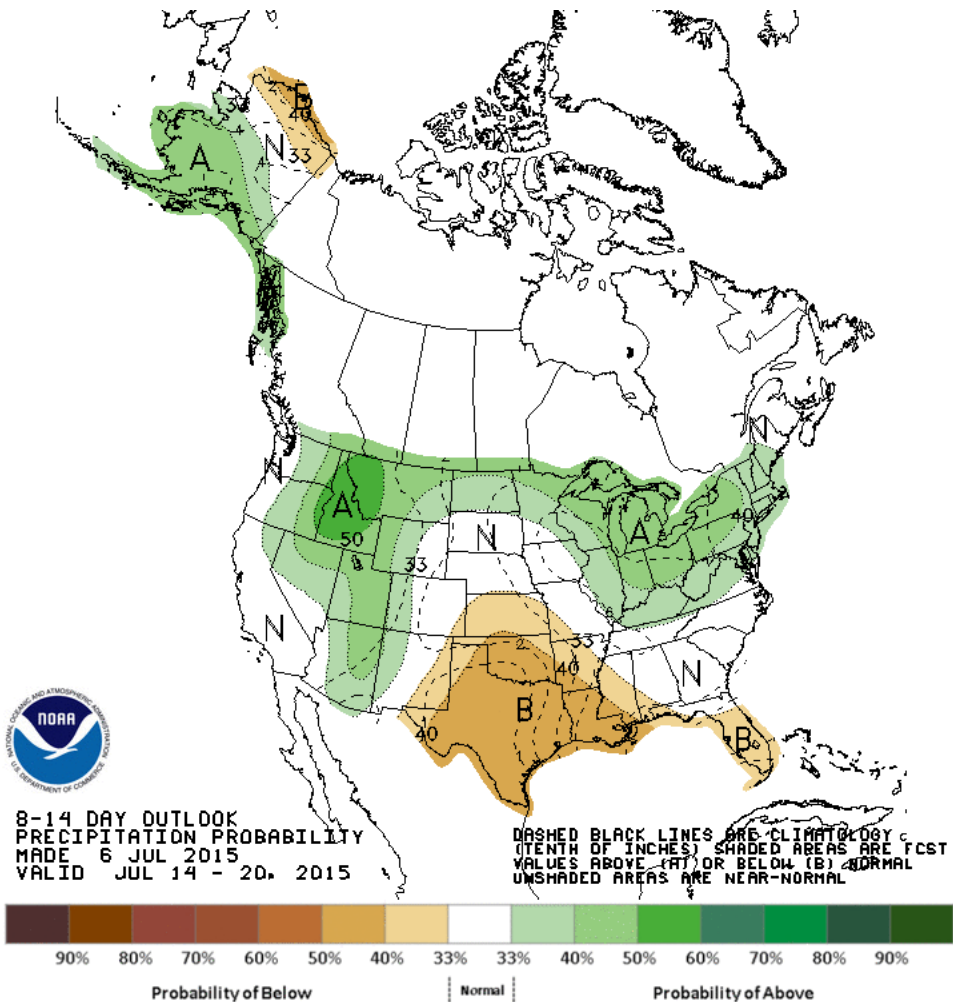
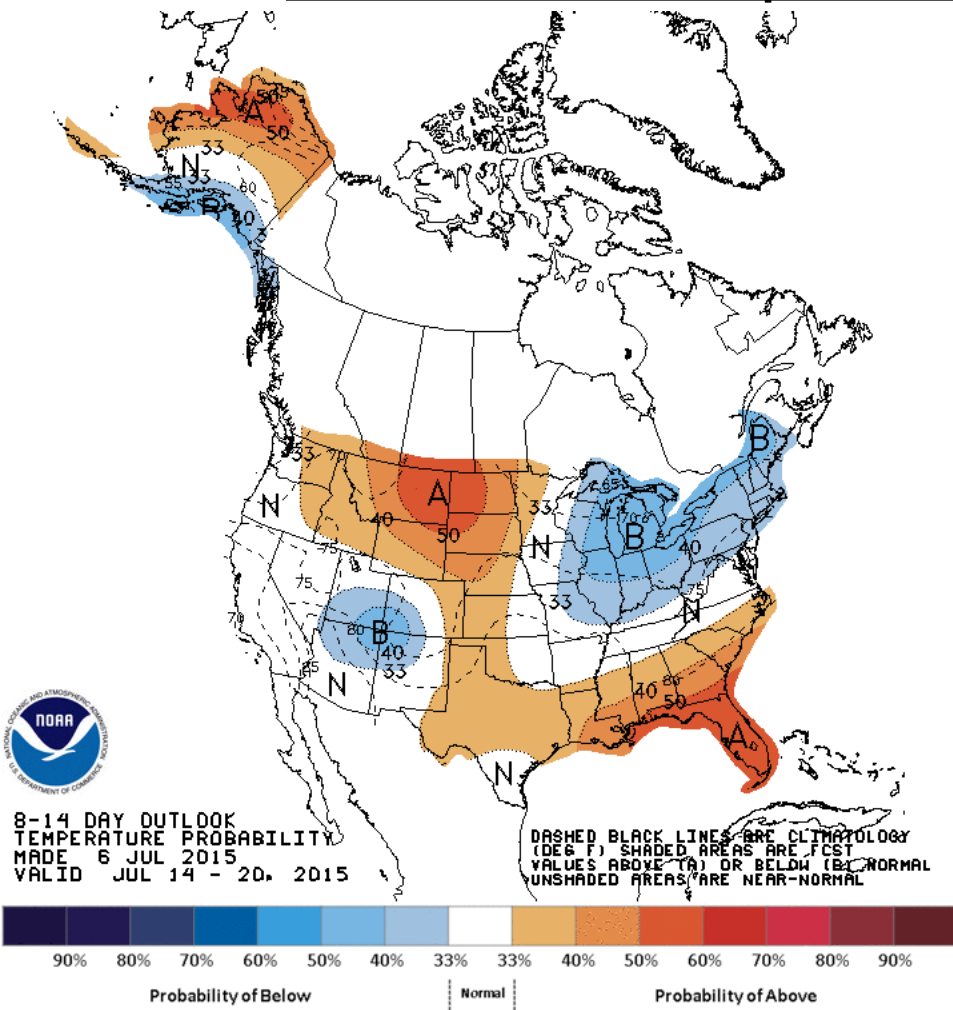




D+11 500 MB ANOMALIES FROM 00Z ECMM  
 CPC MAP MADE JUL 07 2015 1053 UTC CNTD JUL 18 2015



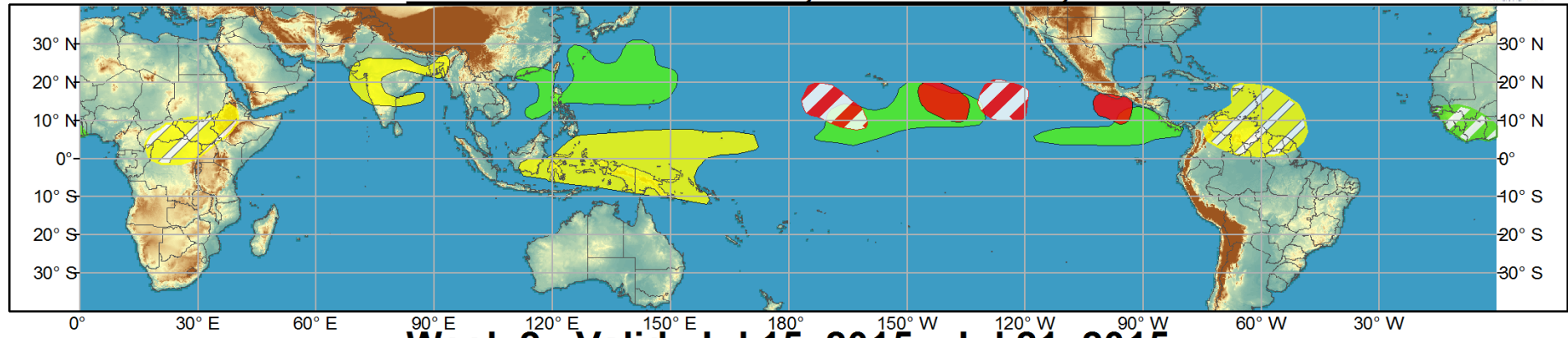
# Week 2 – Temperature and Precipitation



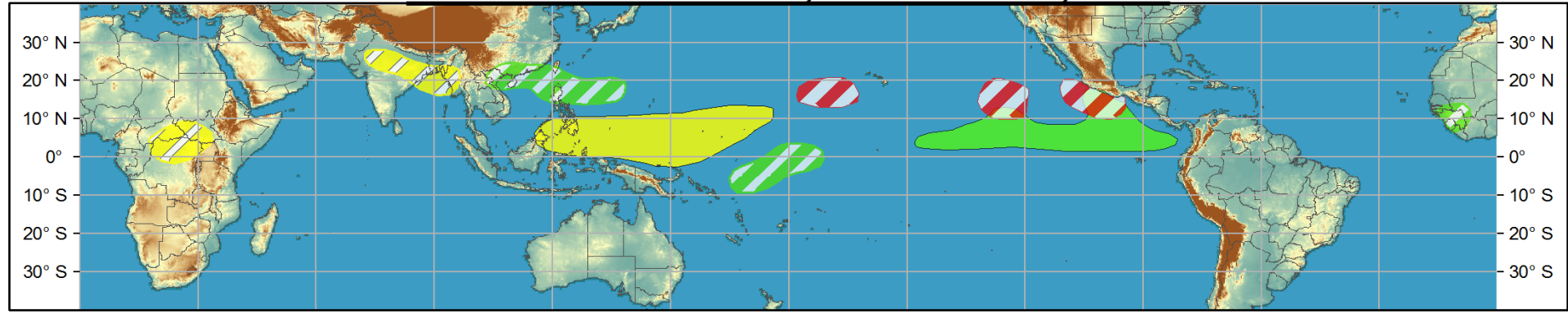


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Jul 08, 2015 - Jul 14, 2015



## Week 2 - Valid: Jul 15, 2015 - Jul 21, 2015



**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: 07/07/2015

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.

