

# Global Tropics Hazards And Benefits Outlook

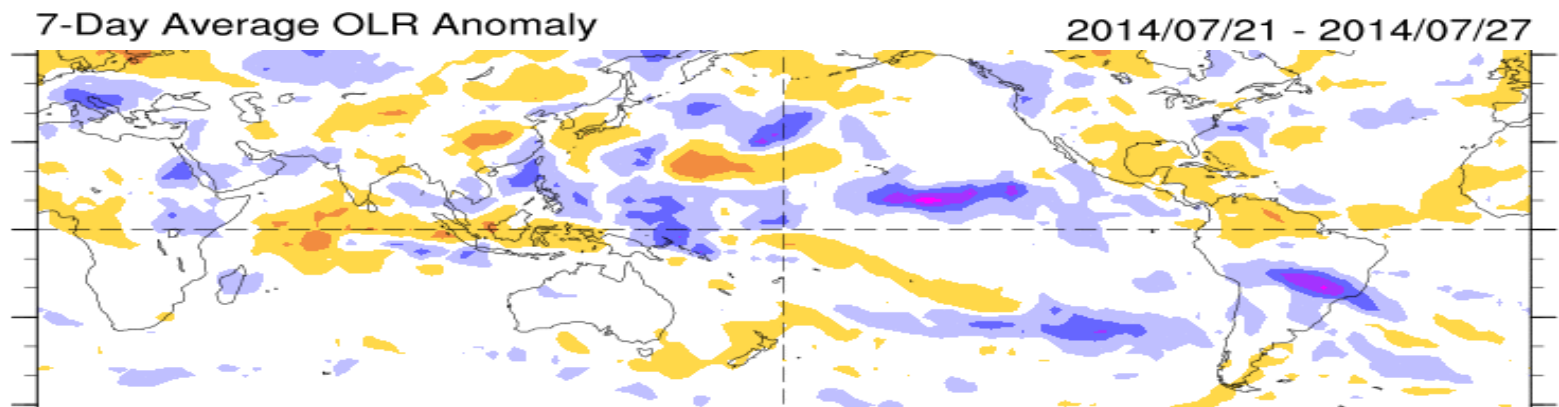
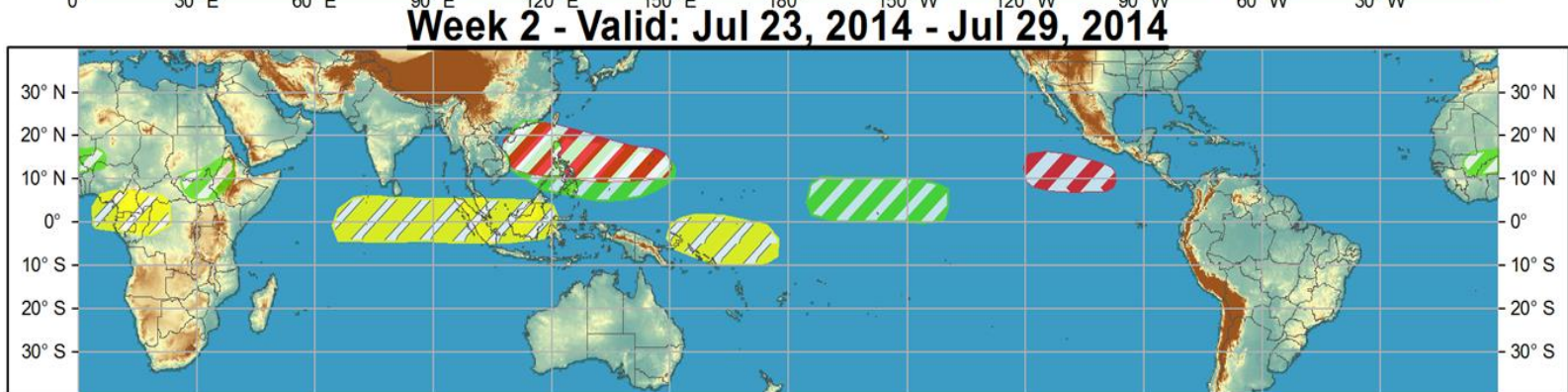
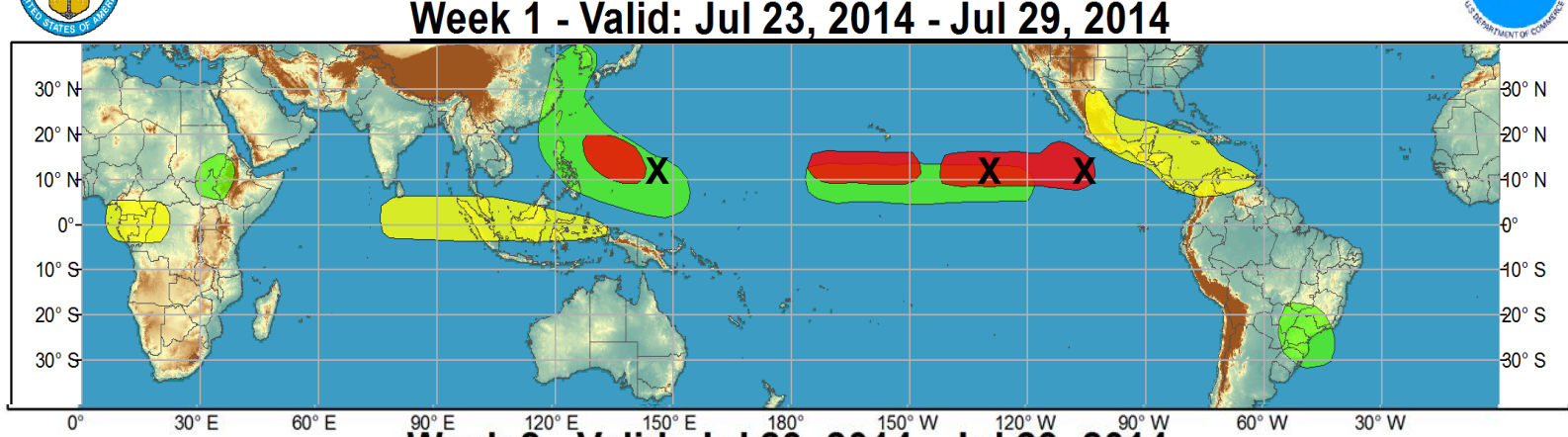
July 29, 2014

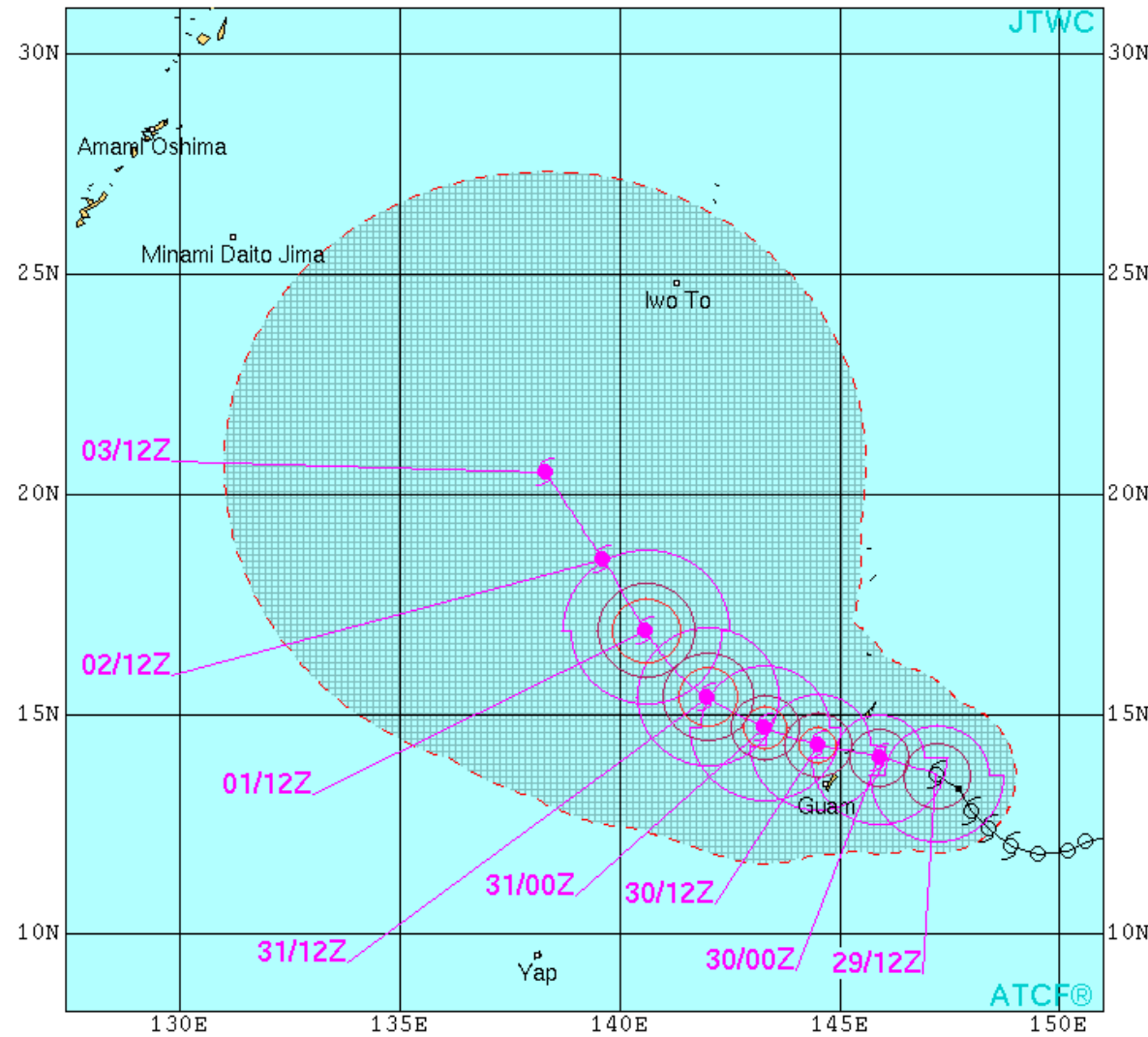
Adam Allgood

## Outline

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

# Outlook Review





TROPICAL STORM 11W (HALONG) WARNING #5  
 WTPN31 PGTW 291500  
 291200Z POSIT: NEAR 13.6N 147.2E  
 MOVING 315 DEGREES TRUE AT 11 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 18 FEET  
 29/12Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 30/00Z, WINDS 065 KTS, GUSTS TO 080 KTS  
 30/12Z, WINDS 080 KTS, GUSTS TO 100 KTS  
 31/00Z, WINDS 090 KTS, GUSTS TO 110 KTS  
 31/12Z, WINDS 100 KTS, GUSTS TO 125 KTS  
 01/12Z, WINDS 105 KTS, GUSTS TO 130 KTS  
 02/12Z, WINDS 095 KTS, GUSTS TO 115 KTS  
 03/12Z, WINDS 085 KTS, GUSTS TO 105 KTS

CPA TO:	NM	DTG
IWO TO	306	03/12Z
FARÅULEP	334	29/23Z
SAIPAN	68	30/03Z
TINIAN	54	30/04Z
ROTA	3	30/06Z
ANDERSEN_AFB	35	30/07Z
PAGAN	239	30/08Z
WFO GUAM	42	30/08Z
NAVSTA_GUAM	51	30/09Z
ULITHI	354	31/07Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
ANATAHAN	209	144	24
ANDERSEN_AFB	331	48	24
NAVSTA_GUAM	354	54	24
PAGAN	198	240	24
ROTA	287	42	24
SAIPAN	235	93	24
TINIAN	237	76	24
ULITHI	047	390	24
WFO_GUAM	340	51	24

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



# Synopsis of Climate Modes

## **ENSO:**

- The chance of El Niño is about 70% during the Northern Hemisphere summer and is close to 80% during the fall and early winter.

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

- The MJO remained generally incoherent during the past week, although a combination of higher frequency modes contributed to a strong projection of the RMM Index onto Phase-7 (west-central Pacific).

- Dynamical model MJO index forecasts indicate a rapid (faster than MJO) propagation over the Western Hemisphere and increasing amplitude over the Indian Ocean or Maritime Continent during Week-2. It is likely the models are capturing Kelvin Wave activity currently over the Atlantic.

## **Extratropics:**

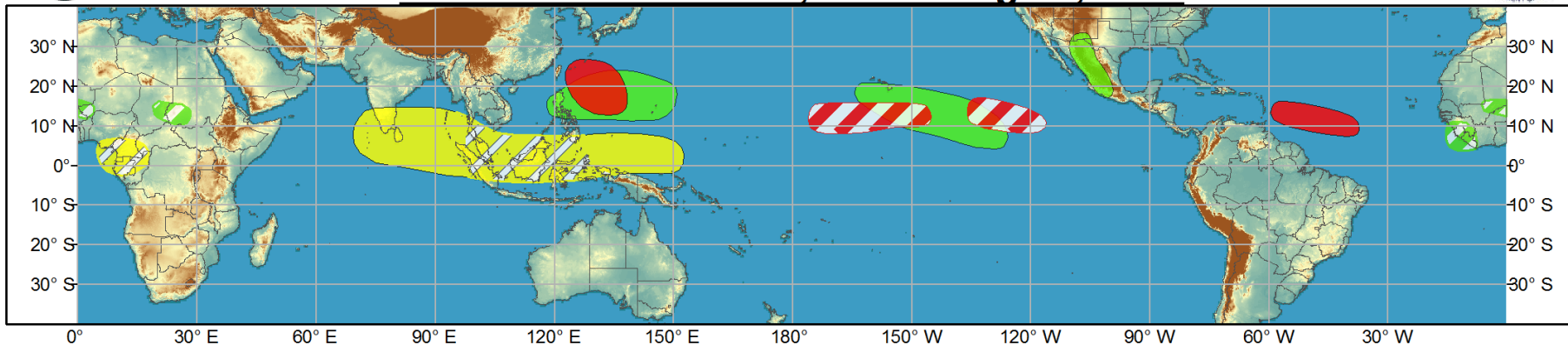
- With an incoherent MJO, it is difficult to ascribe extratropical impacts from the current tropical circulation. The CPC Week-2 outlook indicates a continuation of Pacific ridging and a trough over the central/eastern CONUS, although with decreasing amplitude. One or more recurving WPAC tropical cyclones are possible during the upcoming week.



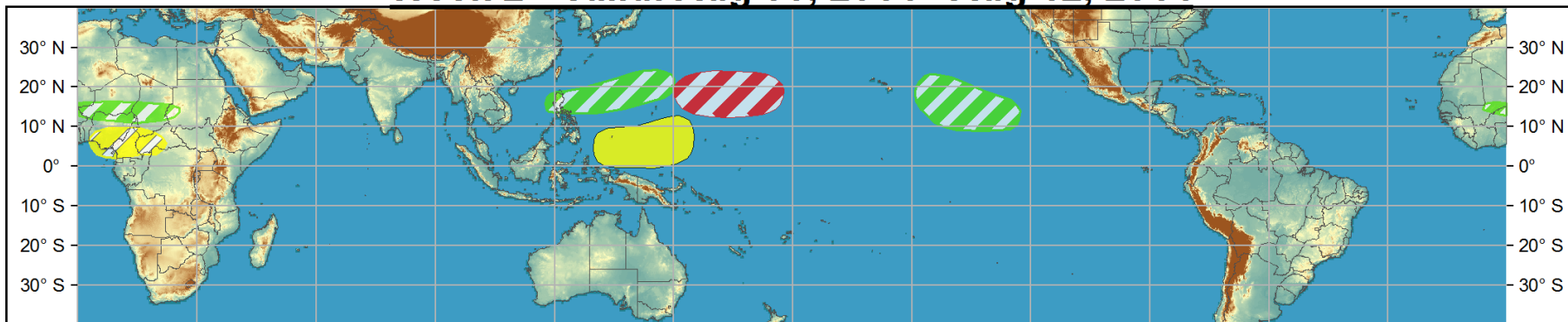
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Jul 30, 2014 - Aug 05, 2014



## Week 2 - Valid: Aug 06, 2014 - Aug 12, 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.

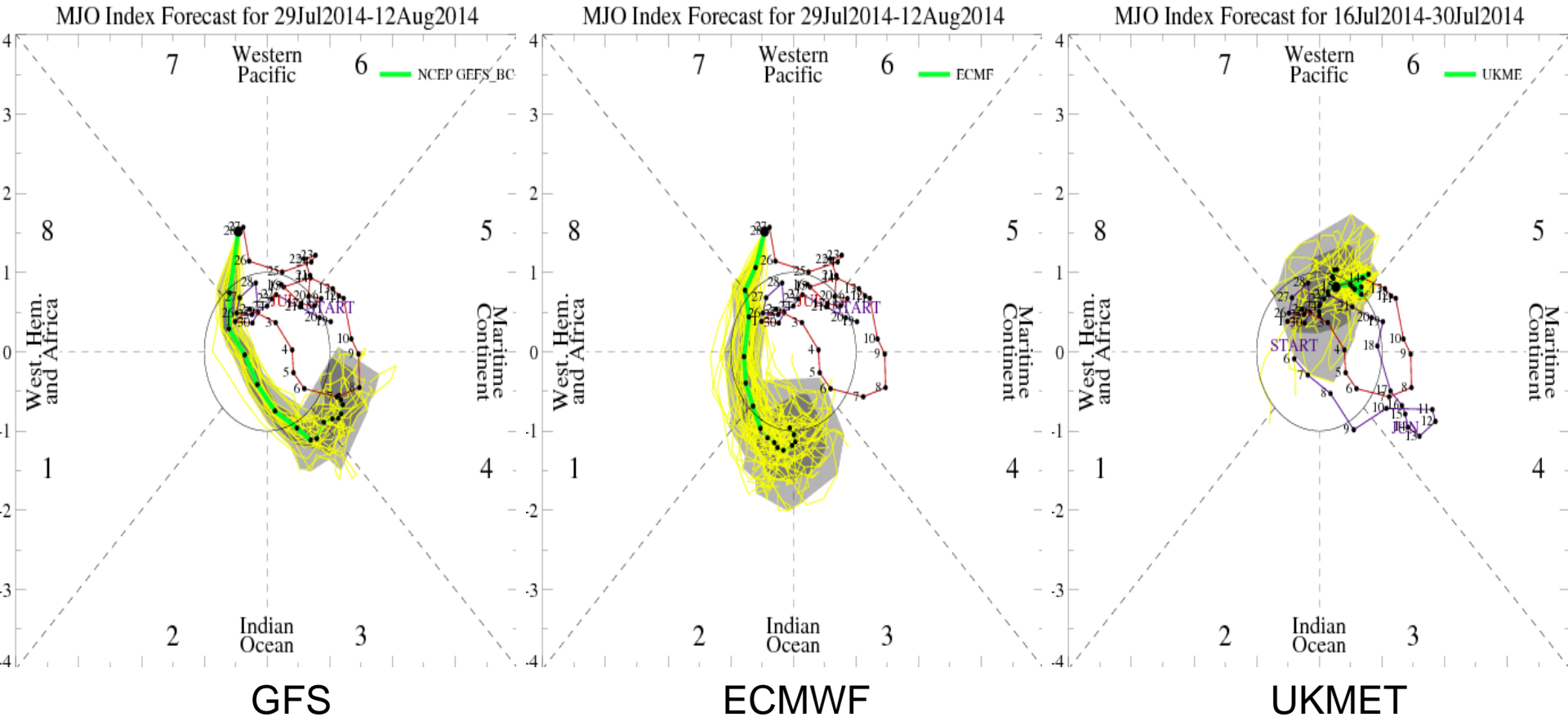
Produced: 07/29/2014

Forecaster: Allgood

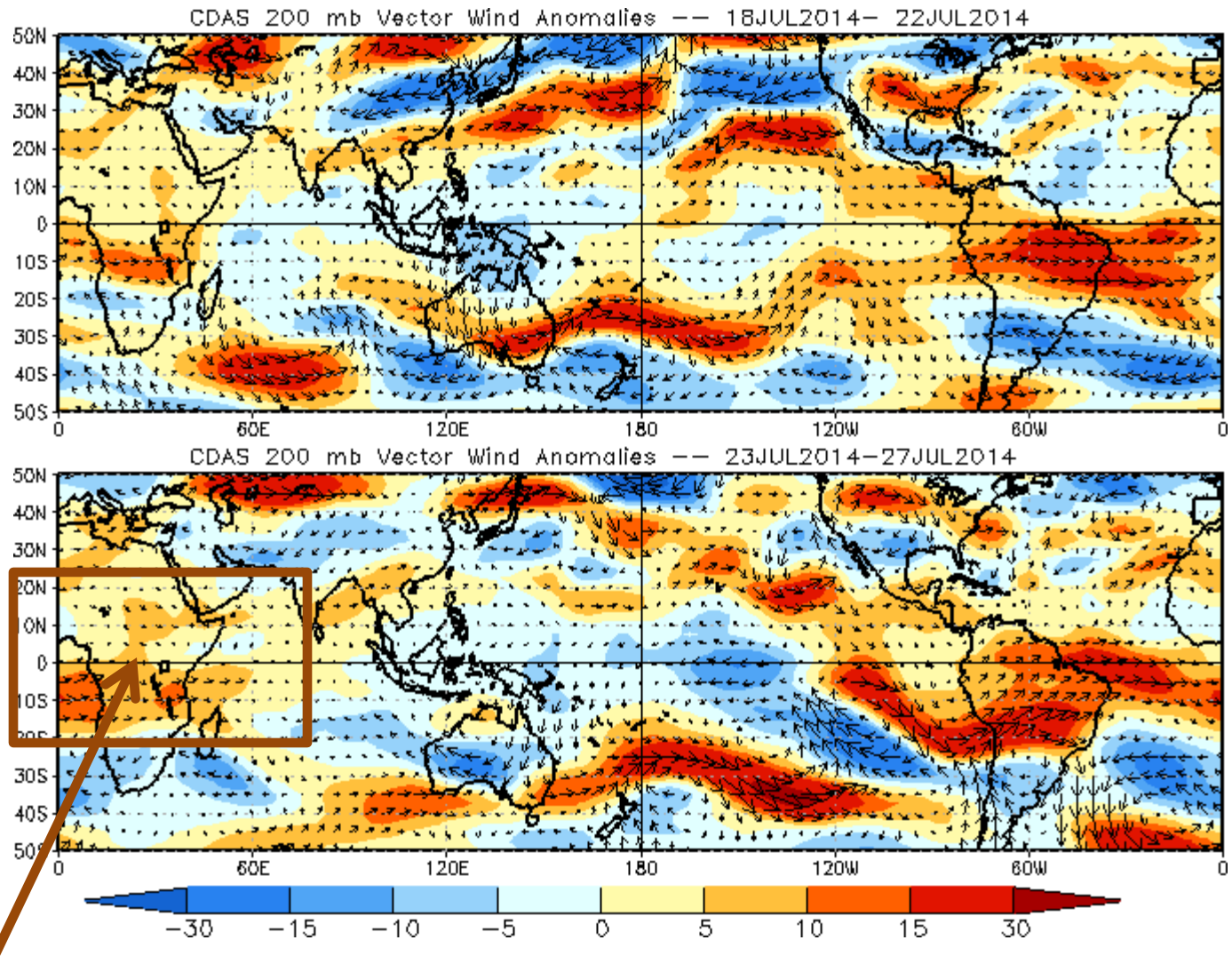
**Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.**



# MJO Observation/Forecast



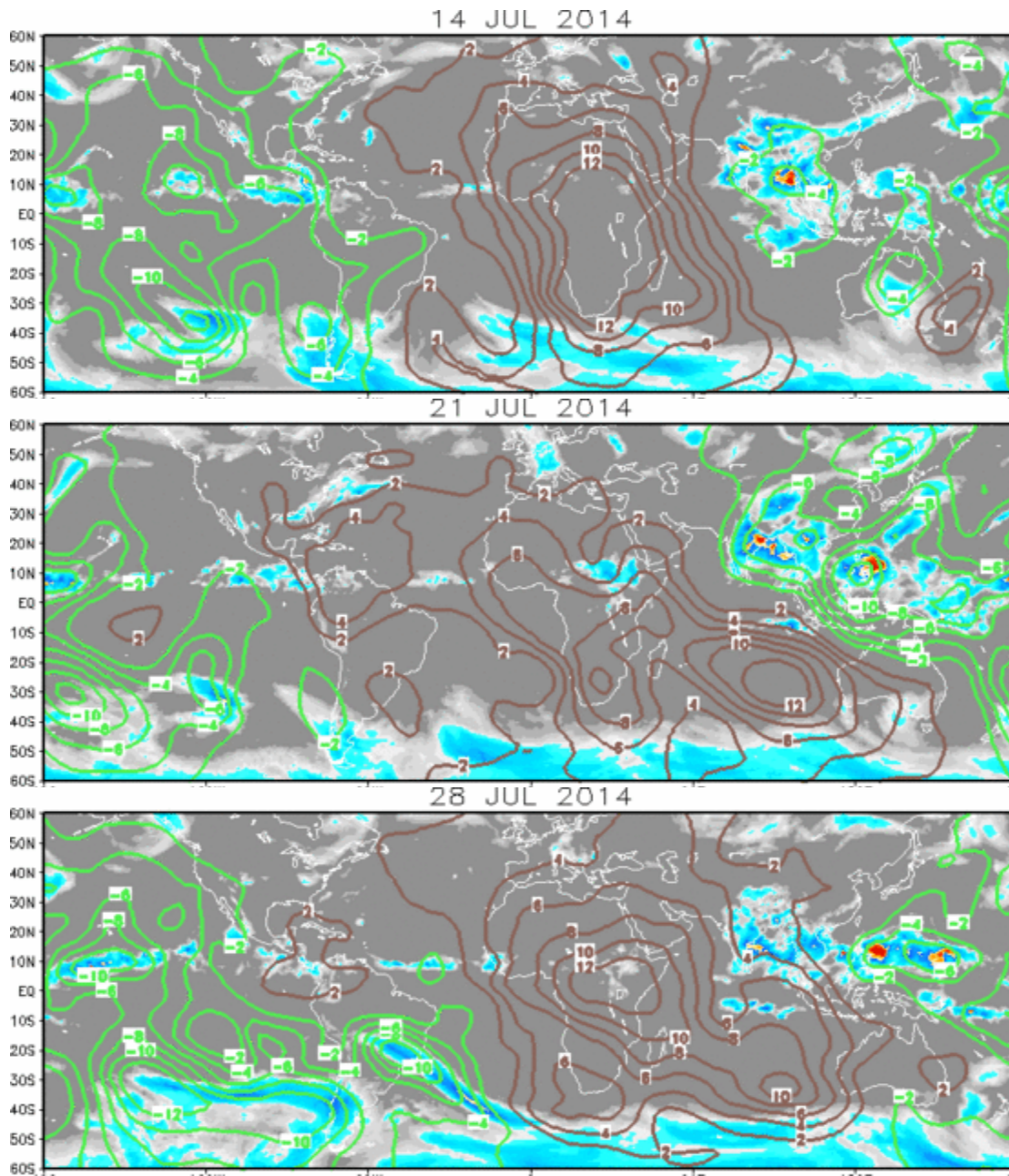
- Note the fast propagation over the Western Hemisphere (Kelvin Wave phase speed)
- GFS, ECMWF, Canadian, and Japanese models all indicate increasing MJO signal over the Indian Ocean or Maritime Continent during Week-2.



Upper-level westerly wind anomalies are not conducive for the development of a strong Indian Ocean MJO event, as they inhibit thunderstorm outflow.

# IR Satellite & 200-hpa Velocity Potential Anomalies

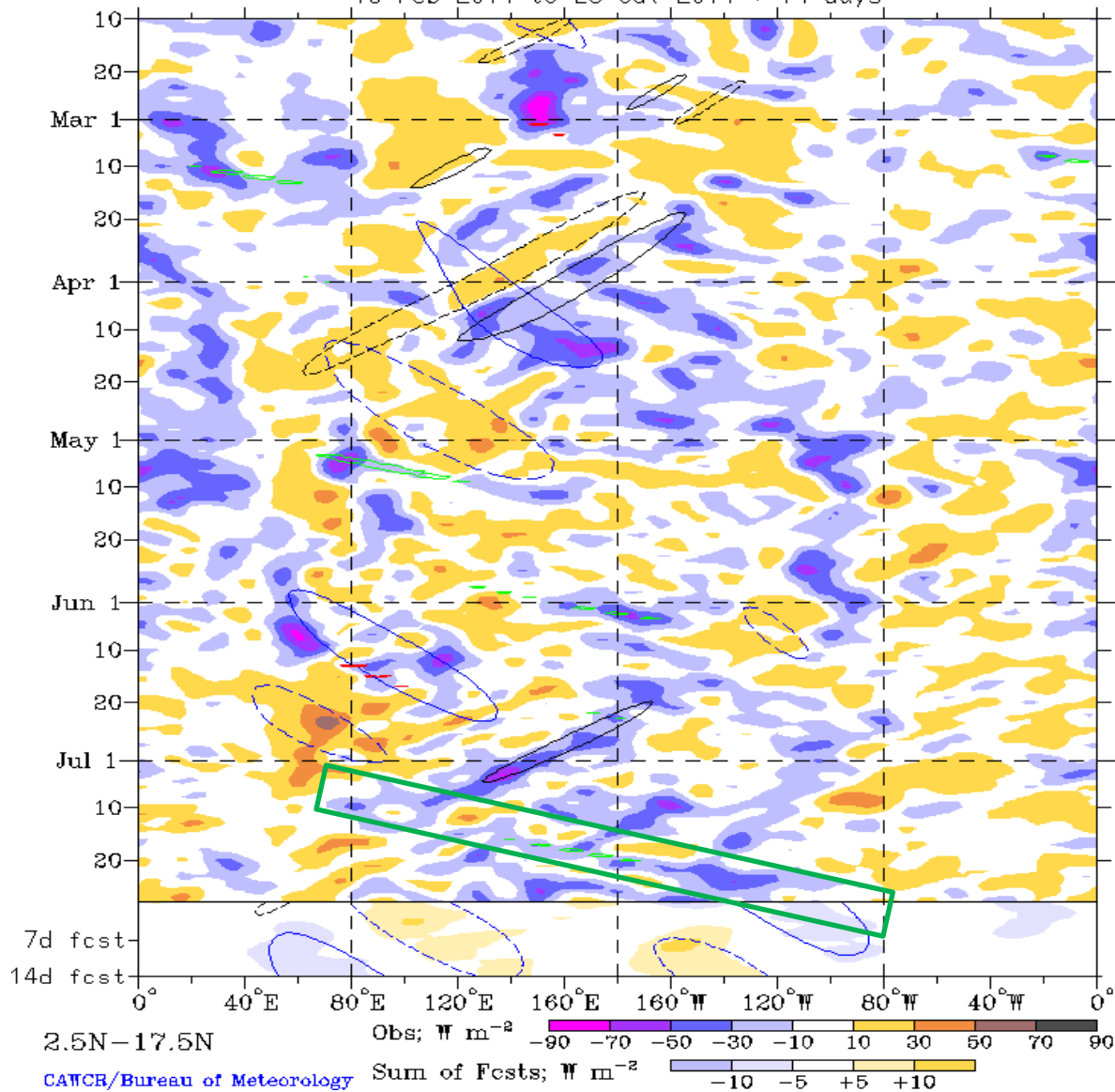
Green: Enhanced Divergence    Brown: Enhanced Convergence







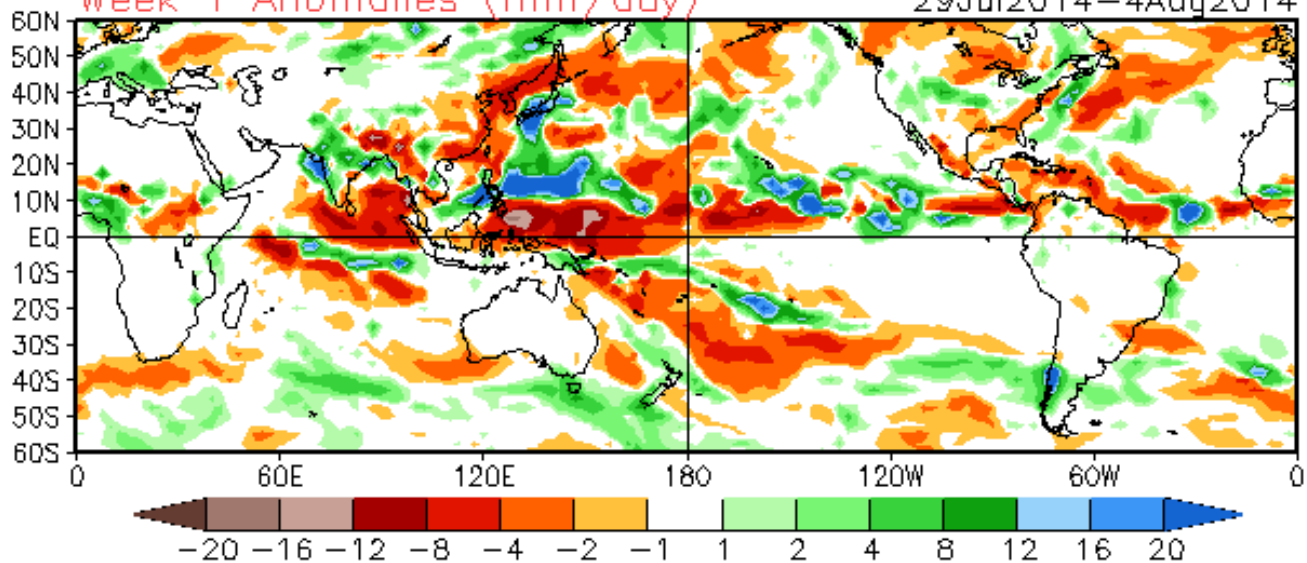
Real-time filtering superimposed upon 1-2-1 filt, R21, OLR Anoms  
 MJO blue CINT=10; n1ER black CINT=10; Kelvin green CINT=15  
 Negative contours solid, positive dashed (excluding Kelvin)  
 10-Feb-2014 to 28-Jul-2014 + 14 days



- Lots of higher frequency activity over the Pacific (Kelvin Waves, Rossby Waves/TCs) contributing to a larger envelope of enhanced convection
- Suppressed convection surrounding the Pacific basin (e.g., Indian Ocean, Maritime Continent)

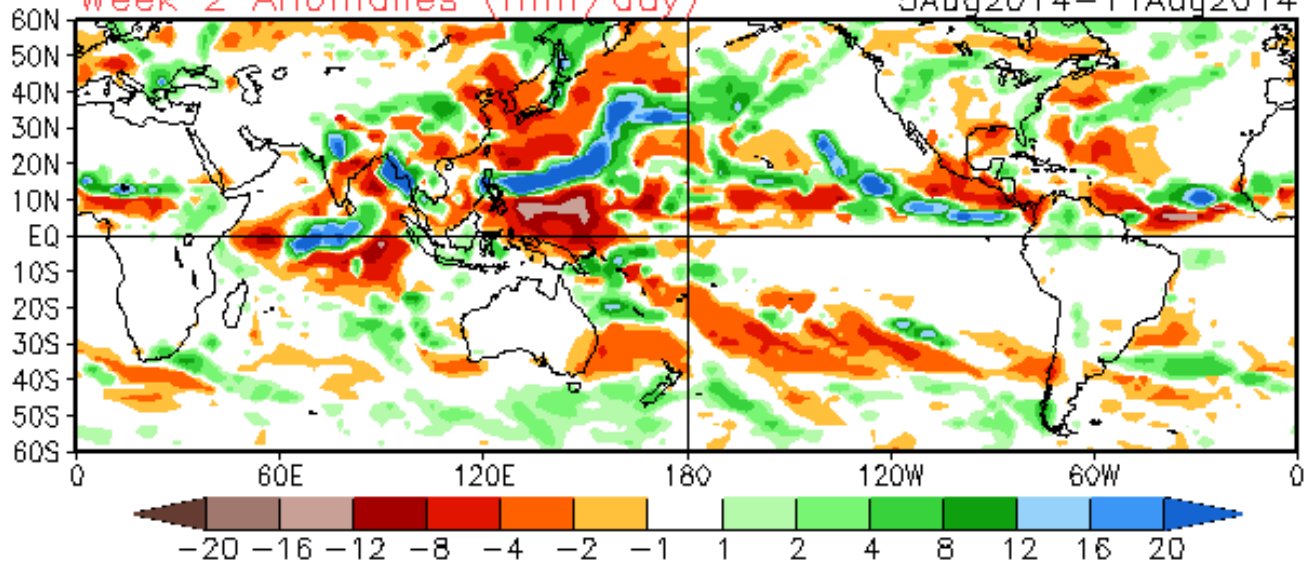
Week 1 Anomalies (mm/day)

29Jul2014-4Aug2014



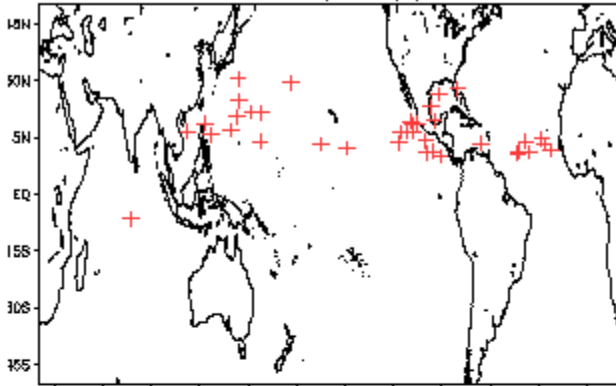
Week 2 Anomalies (mm/day)

5Aug2014-11Aug2014

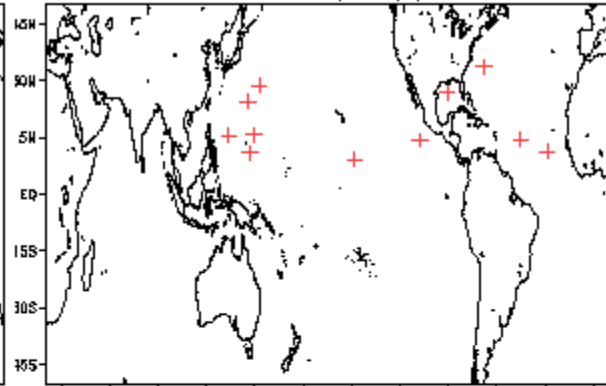


# August Tropical Storm Formation by MJO phase

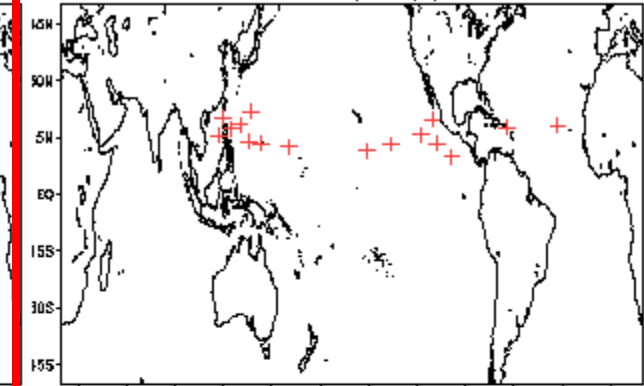
Phase 1 (101 days) 38 storms



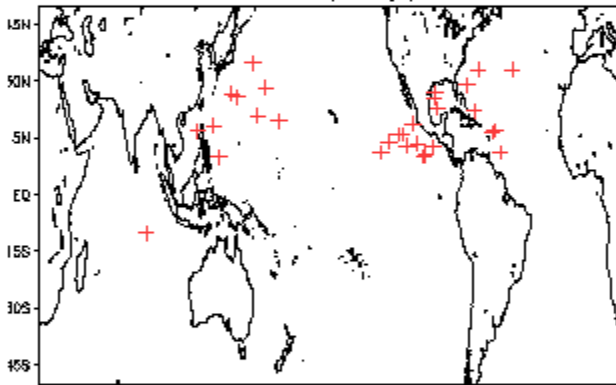
Phase 4 (40 days) 12 storms



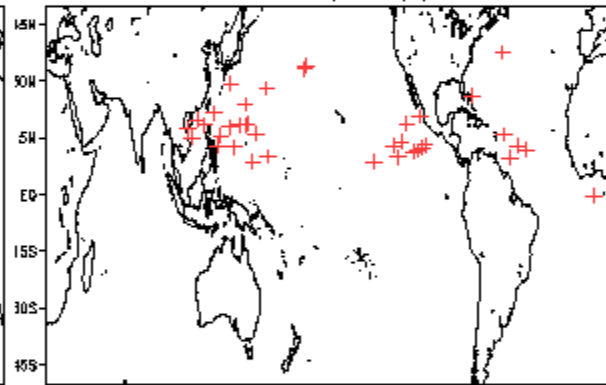
Phase 7 (43 days) 17 storms



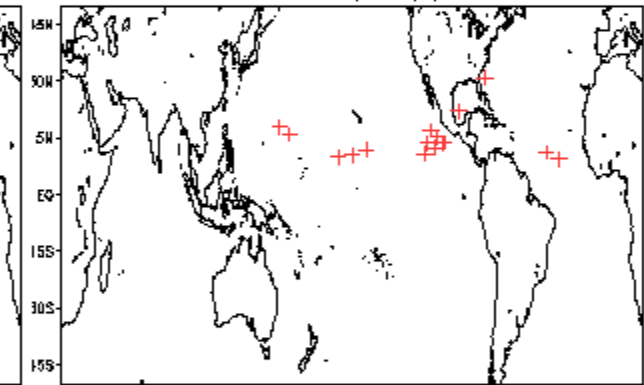
Phase 2 (79 days) 31 storms



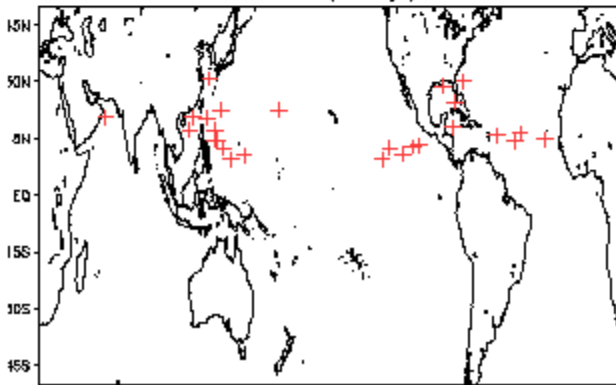
Phase 5 (117 days) 40 storms



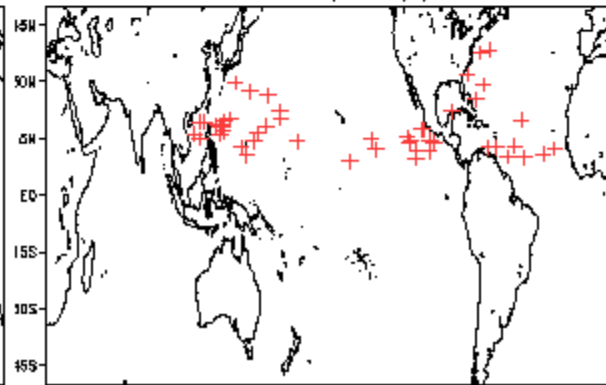
Phase 8 (95 days) 17 storms



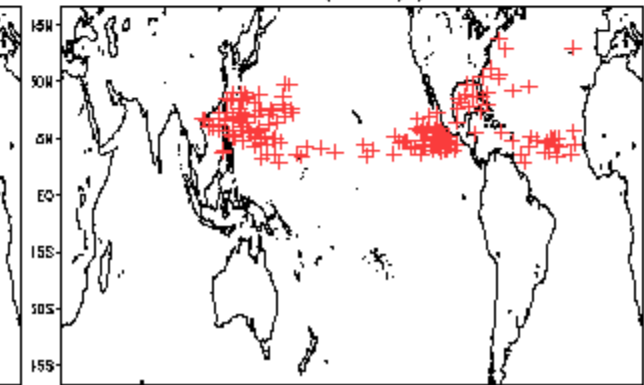
Phase 3 (51 days) 27 storms



Phase 6 (101 days) 50 storms



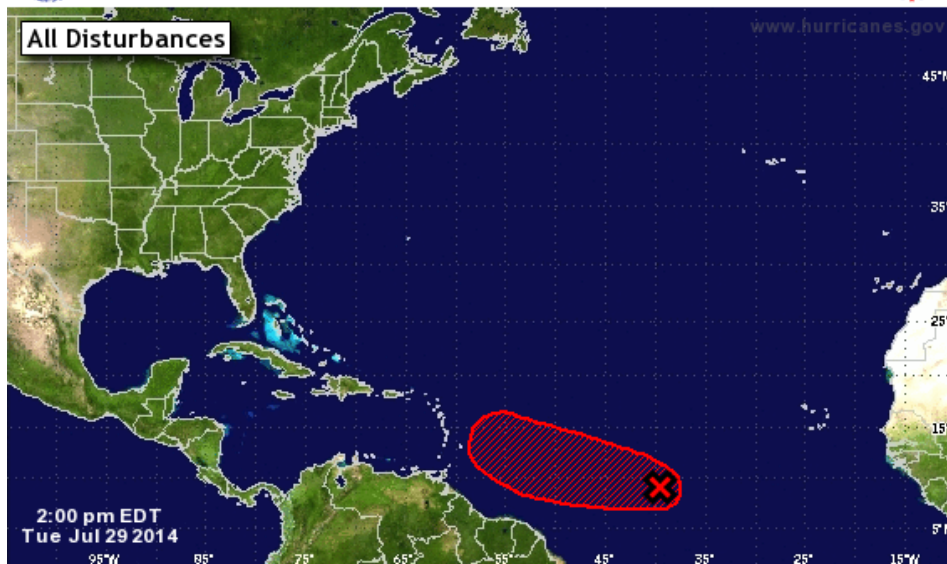
Null (466 days) 189 storms





# Experimental 5-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Tropical Cyclone Formation Potential for the 5-Day Period Ending 2:00 pm EDT Sun Aug 3 2014

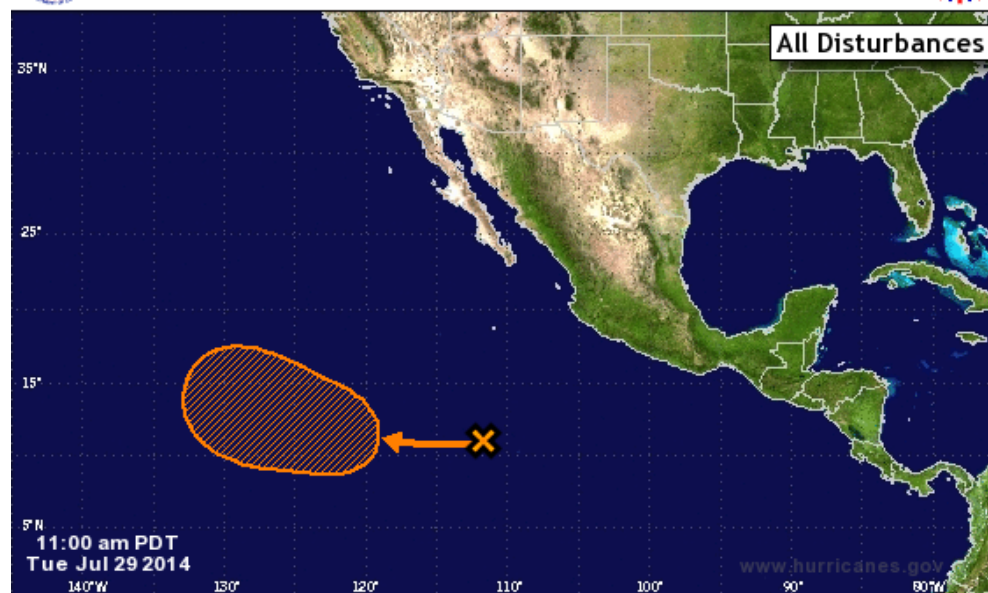
Chance of Cyclone Formation in 5 Days:   Low < 30%   Medium 30-50%   High > 50%

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



# Experimental 5-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

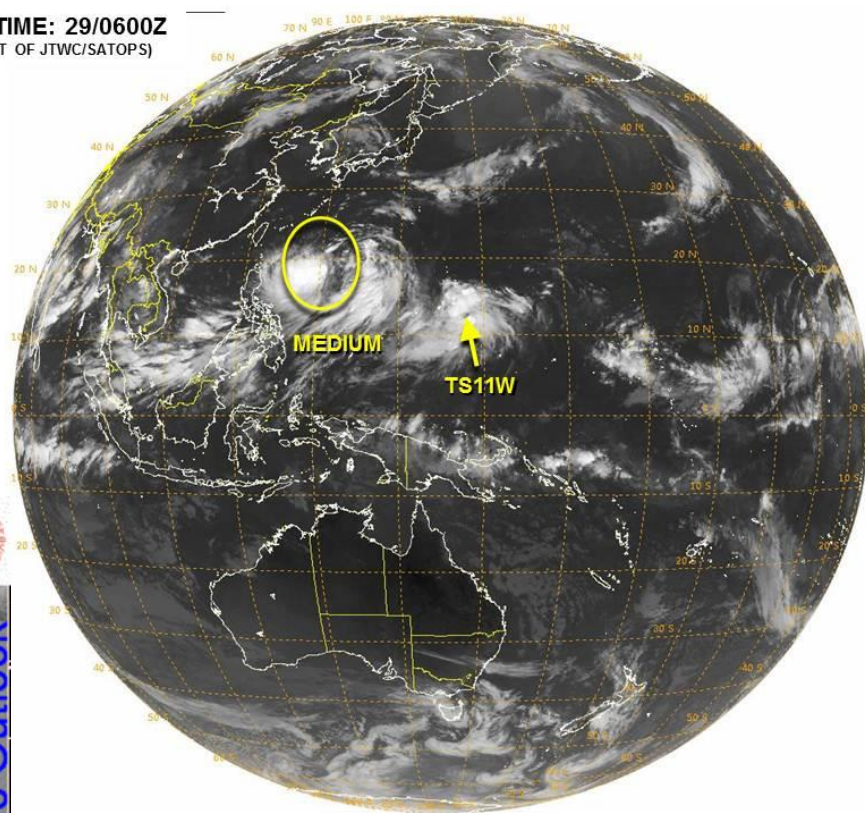


Tropical Cyclone Formation Potential for the 5-Day Period Ending 11:00 am PDT Sun Aug 3 2014

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

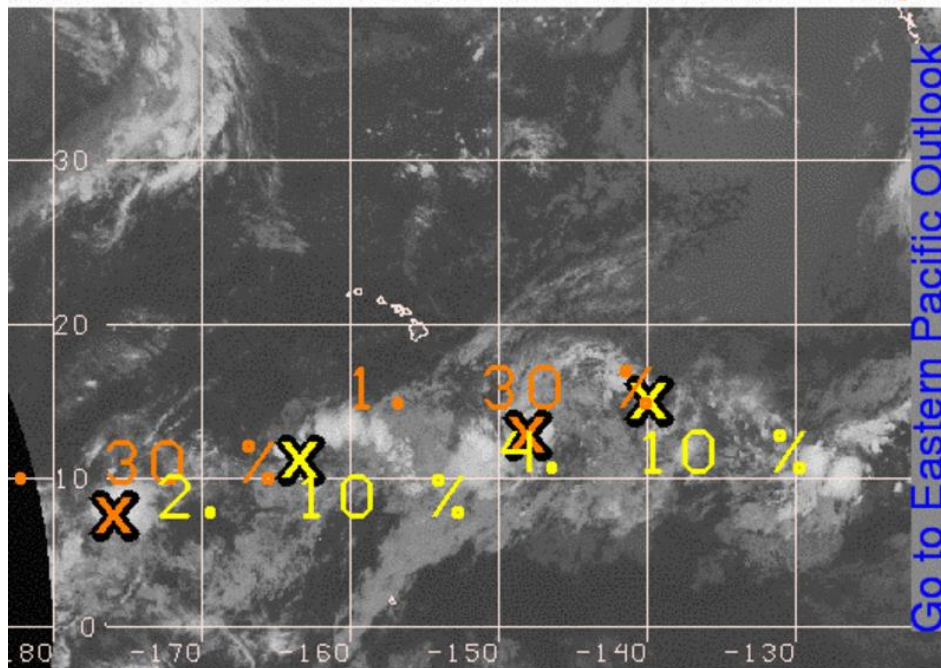
X indicates current disturbance location; shading indicates potential formation area.

VALID TIME: 29/0600Z  
(PRODUCT OF JTWC/SATOPS)



# Graphical Tropical Weather Outlook

Central Pacific Hurricane Center Honolulu, Hawaii



138 am HST Tue Jul 29 2014

Satellite Imagery: 100 am HST

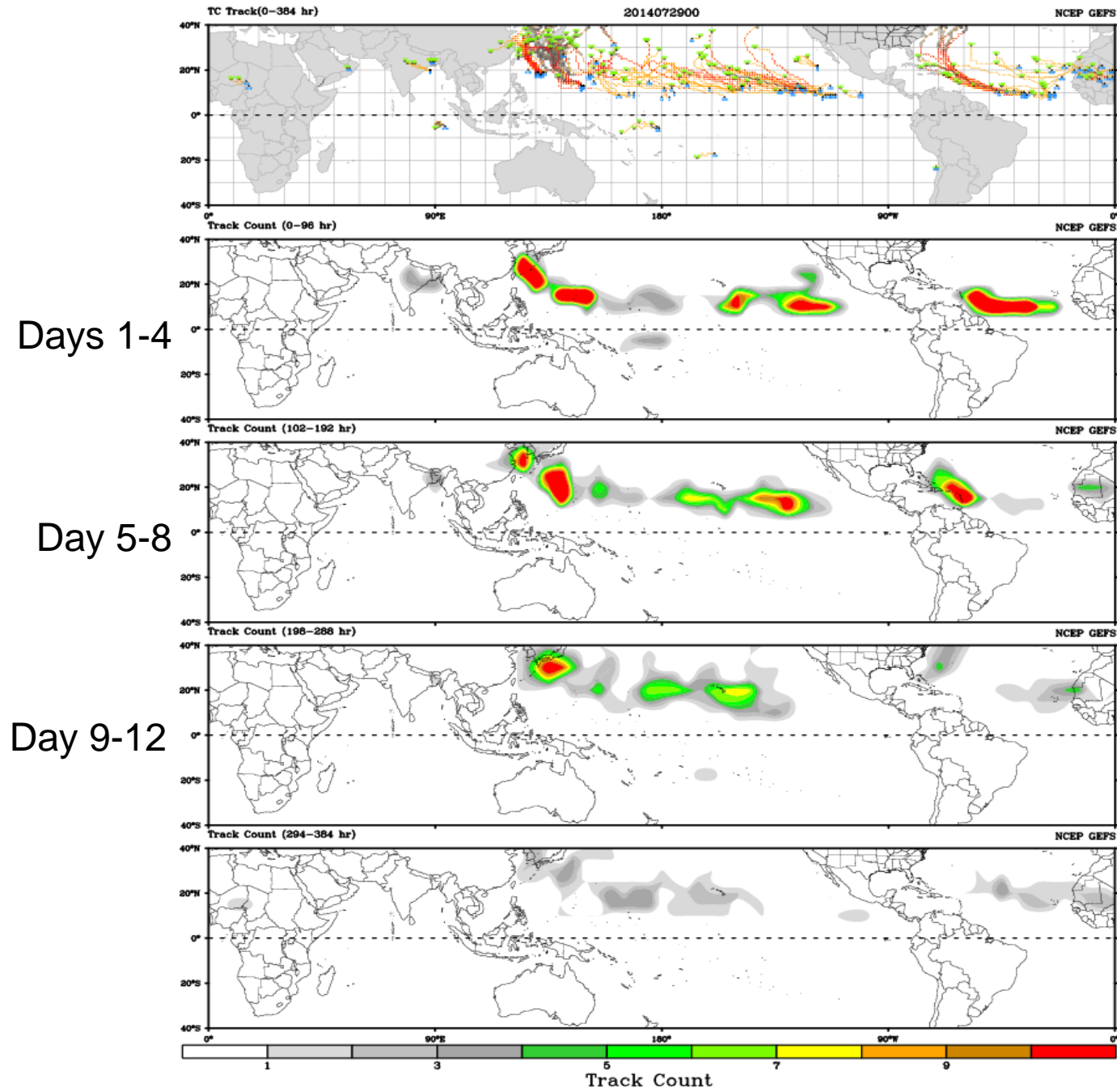
"X" denotes position of systems discussed in the Tropical Weather Outlook. Color indicates probability of tropical cyclone formation within 48 hours.

Low <30%

Medium 30-50%

High >50%

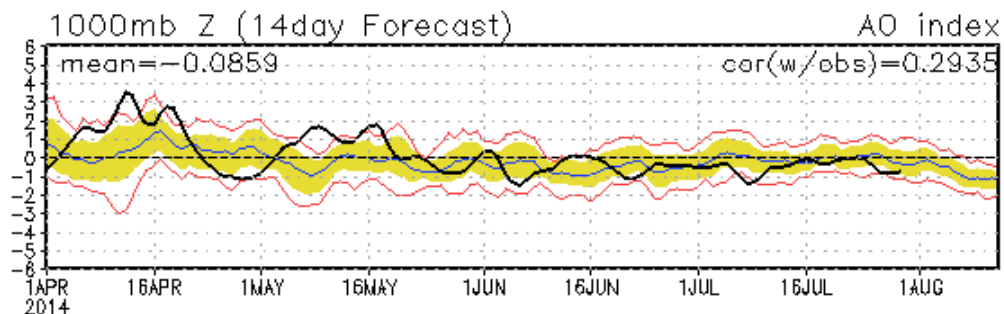
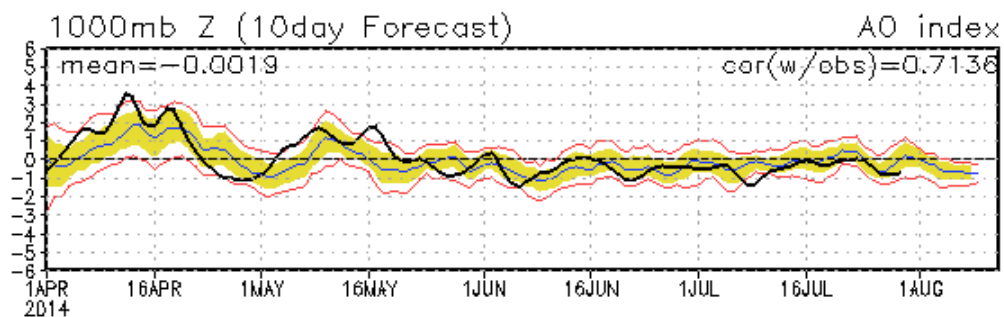
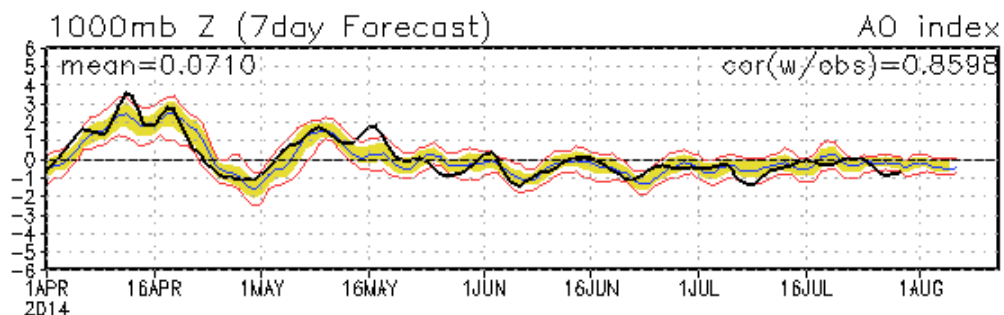
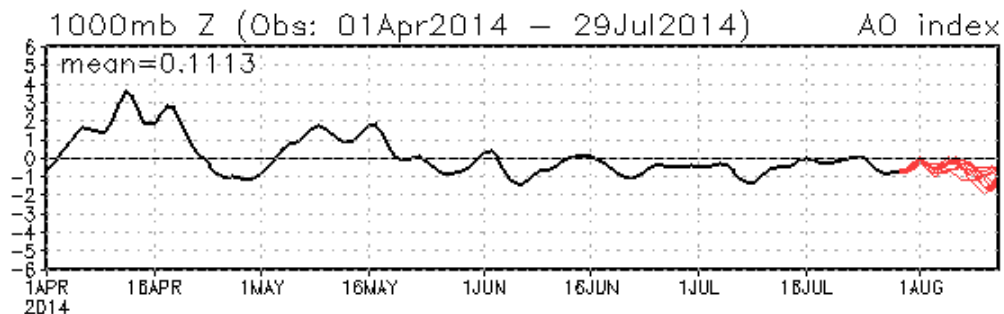
CWB TC Tracker for NCEP GEFS (Fuzzy\_AllCriteria)



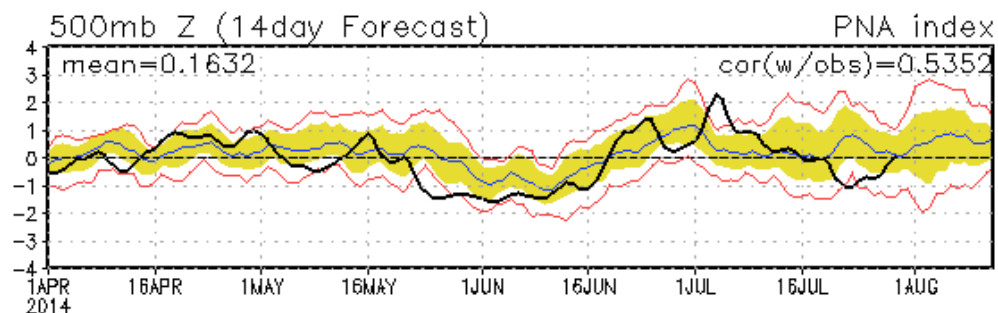
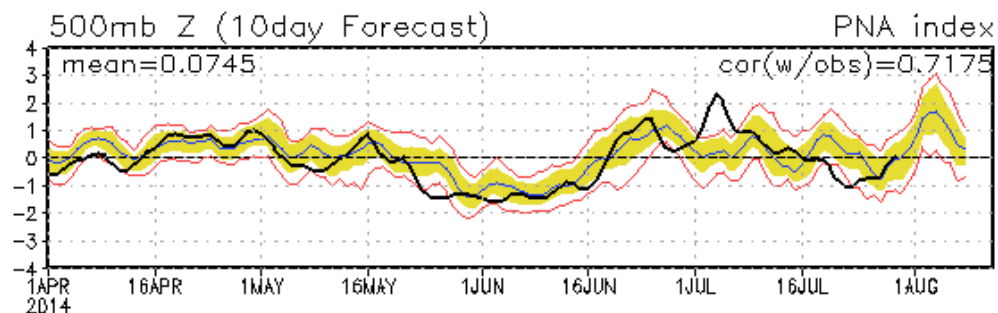
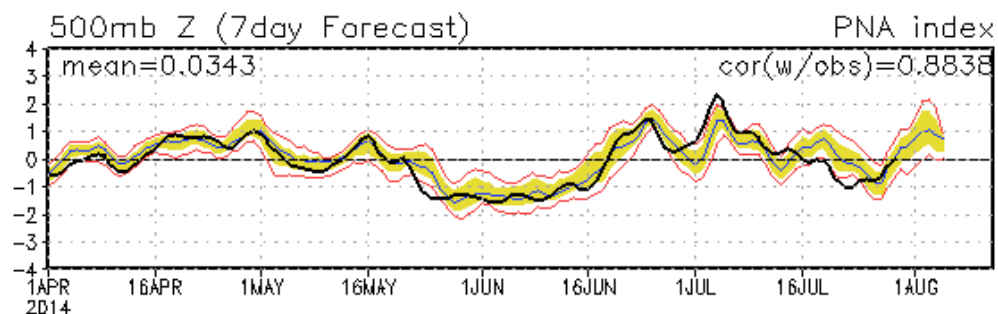
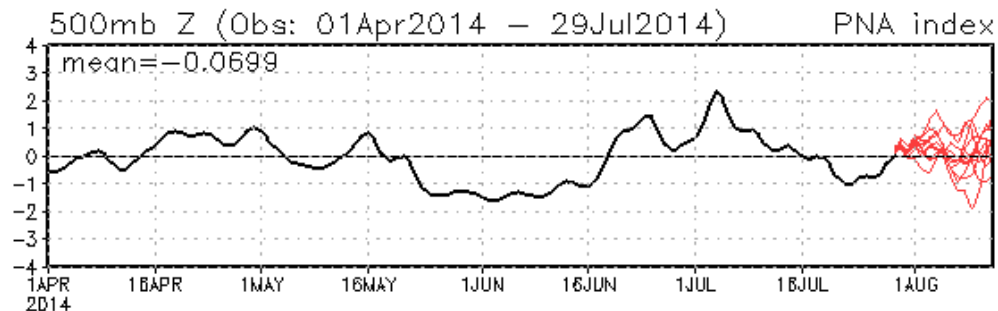
# Connections to U.S. Impacts

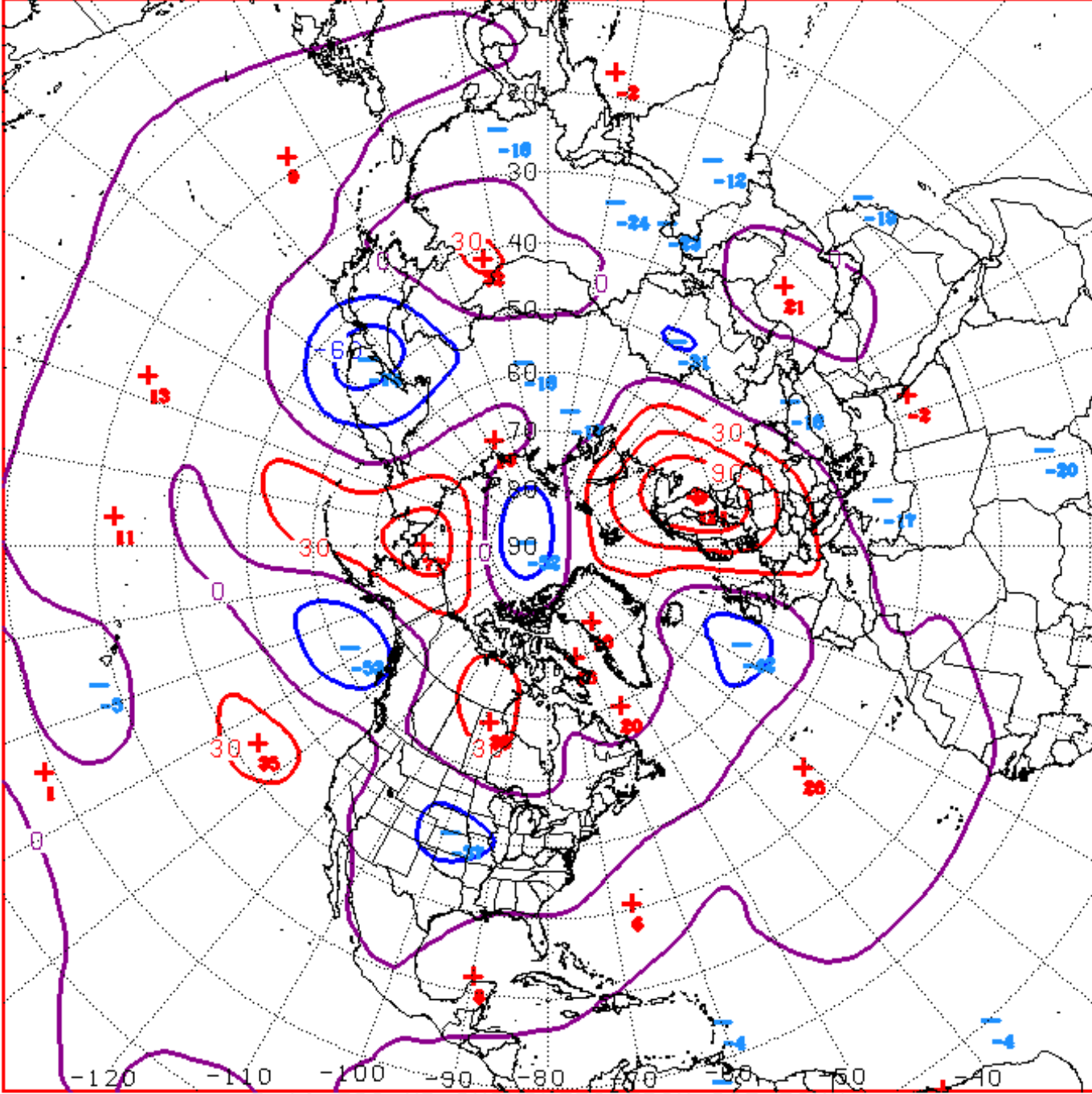


## AO: Observed & ENSM forecasts



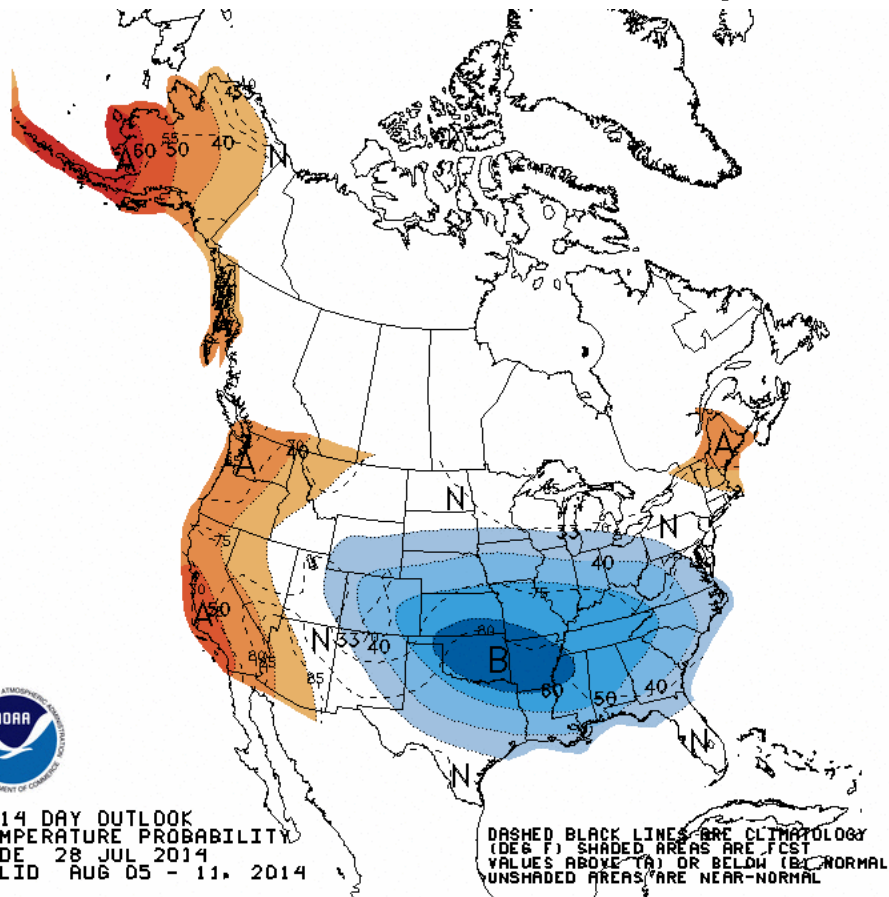
# PNA: Observed & ENSM forecasts





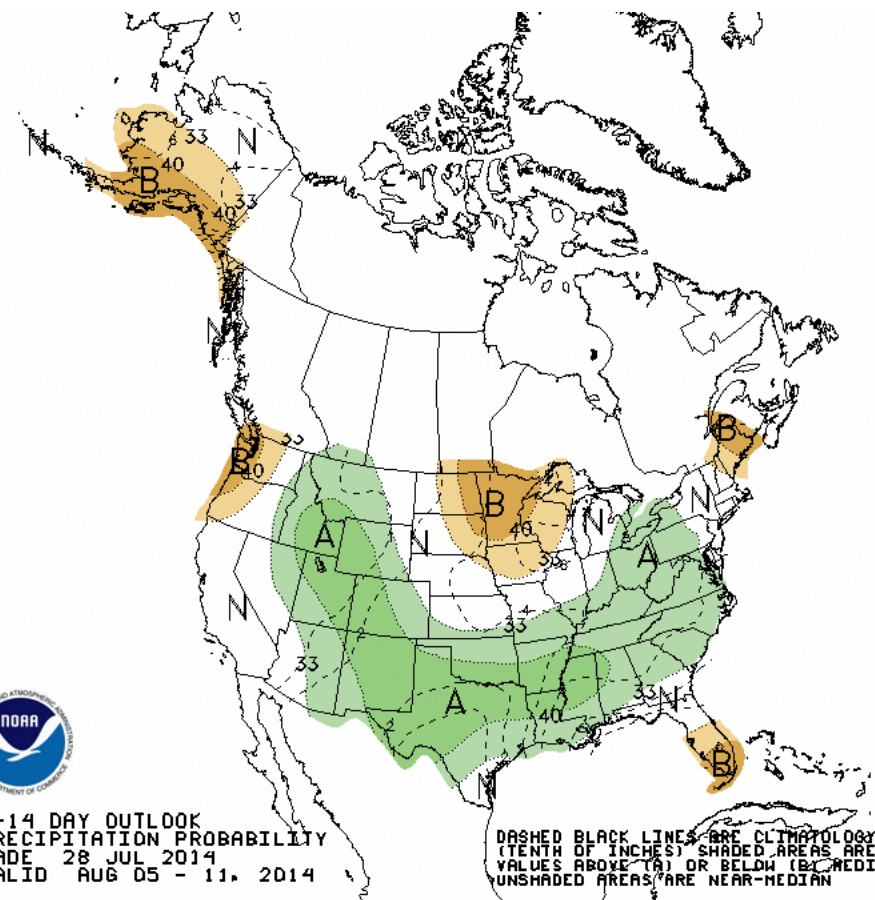
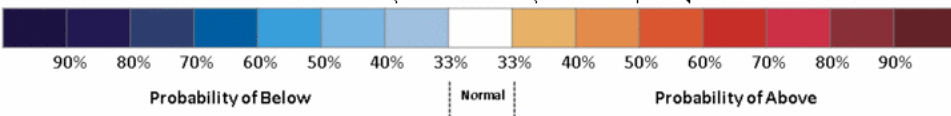
D+11 500 MB ANOMALIES FROM 00Z ECMM  
CPC MAP MADE JUL 29 2014 1056 UTC CNTD AUG 09 2014

# Week 2 – Temperature and Precipitation



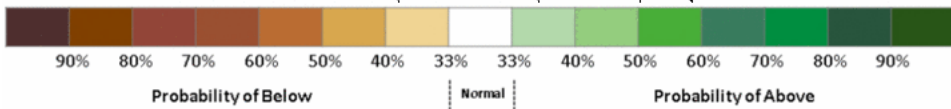
8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 28 JUL 2014  
VALID AUG 05 - 11, 2014

DASHED BLACK LINES ARE CLIMATOLOGY (DEG F). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. UNSHADED AREAS ARE NEAR-NORMAL.



8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 28 JUL 2014  
VALID AUG 05 - 11, 2014

DASHED BLACK LINES ARE CLIMATOLOGY (TENTH OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) MEDIAN. UNSHADED AREAS ARE NEAR-MEDIAN.

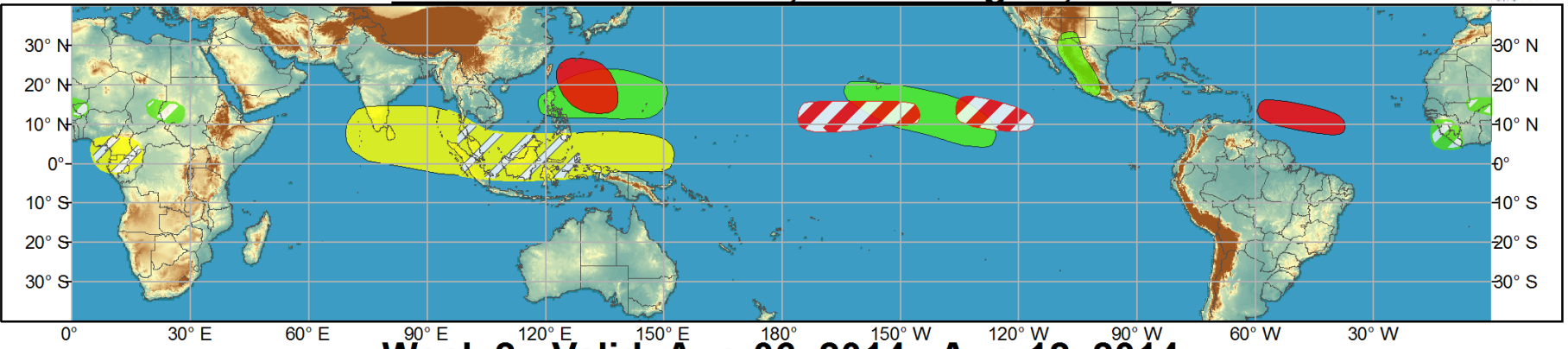




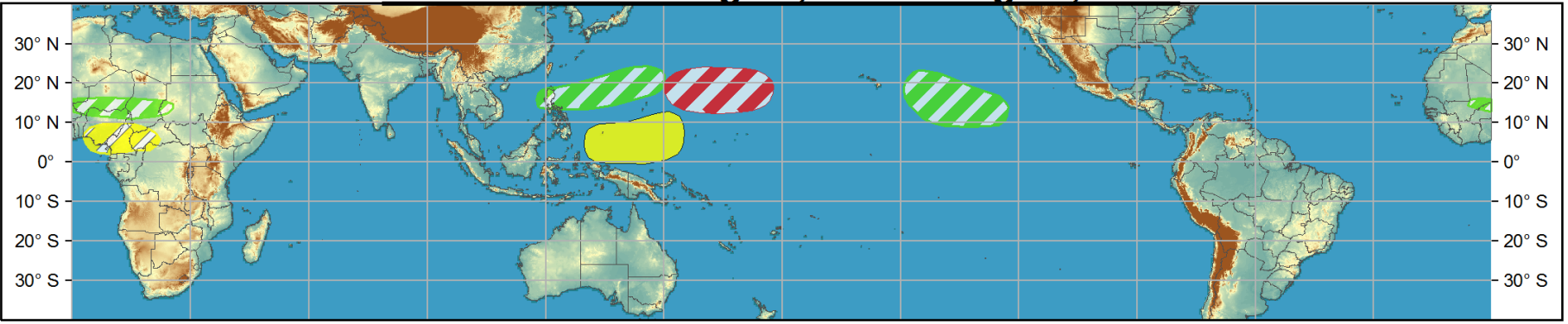
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## Week 1 - Valid: Jul 30, 2014 - Aug 05, 2014



## Week 2 - Valid: Aug 06, 2014 - Aug 12, 2014



Produced: 07/29/2014

Forecaster: Allgood

- | 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.                 |

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