Global Tropics Hazards And Benefits Outlook
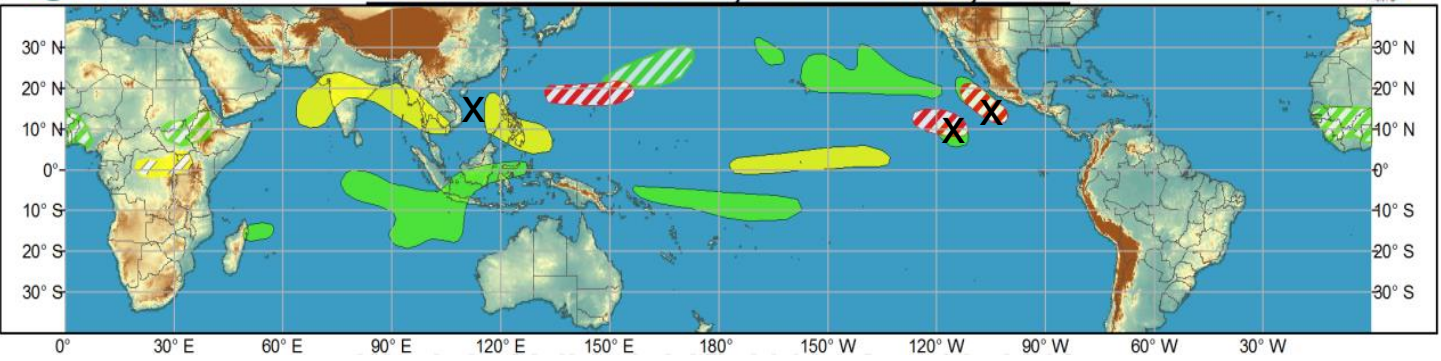## July 26, 2016

Stephen Baxter

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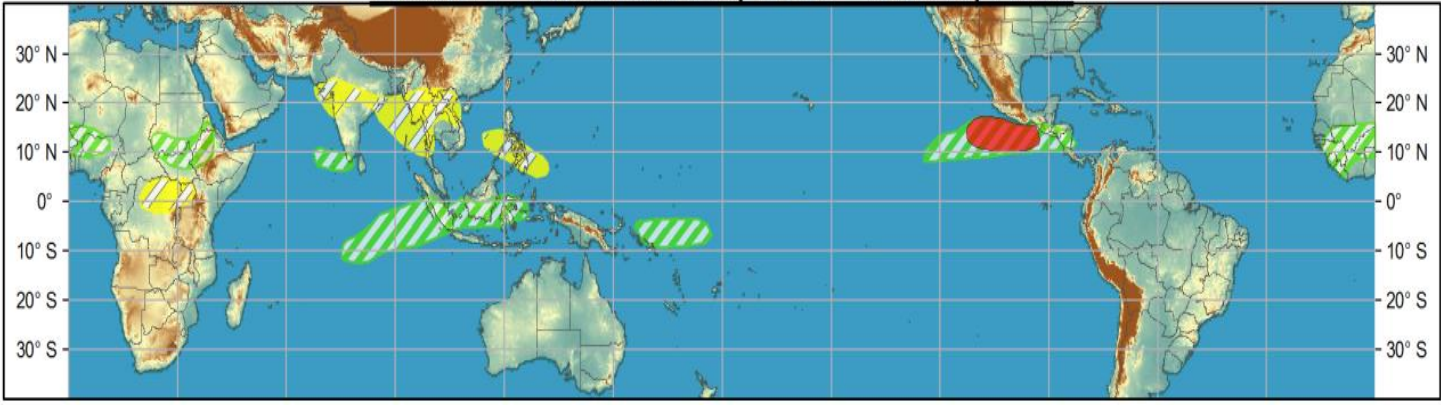
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

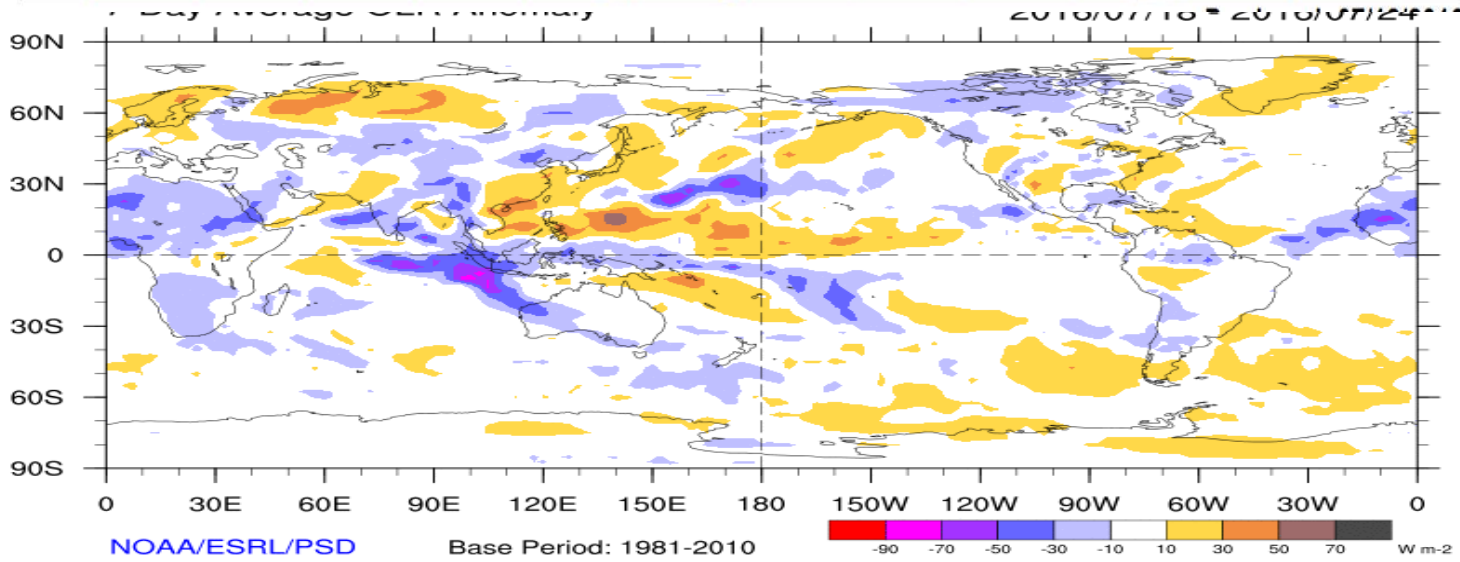

Week 1 - Valid: Jul 20, 2016 - Jul 26, 2016
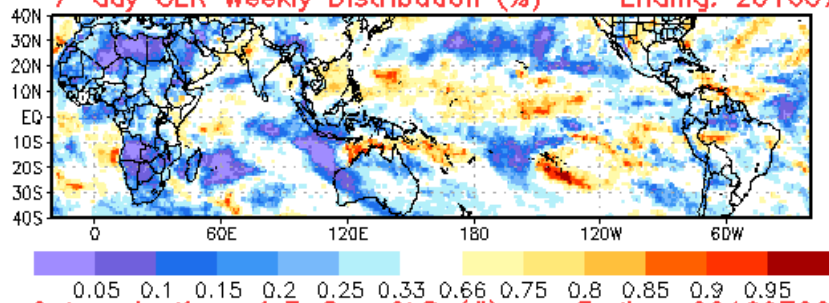
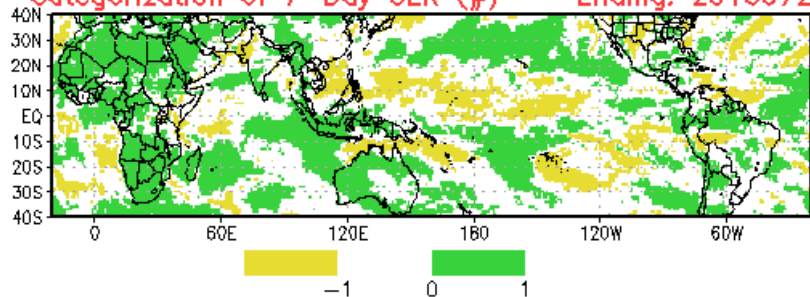**Week 2 - Valid: Jul 20, 2016 - Jul 26, 2016**

Cool shading
More clouds/rain

Warm shading
Less clouds/rain

NOAA/ESRL/PSD   Base Period: 1981-2010

7-day OLR Weekly Distribution (%) -- Ending: 20160726

7-day OLR Weekly Distribution (%) -- Ending: 20160726

0.05 0.1 0.15 0.2 0.25 0.33 0.66 0.75 0.8 0.85 0.9 0.95

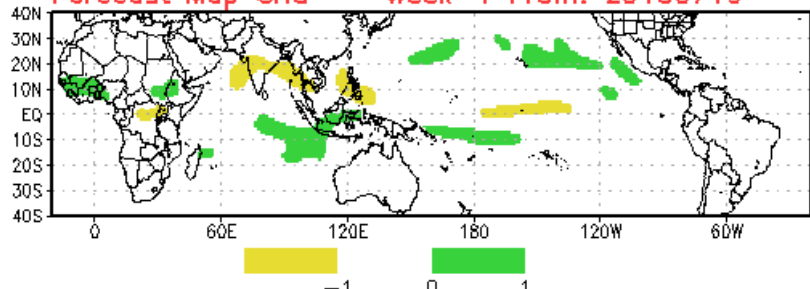Categorization of 7-Day OLR (#) -- Ending: 20160726

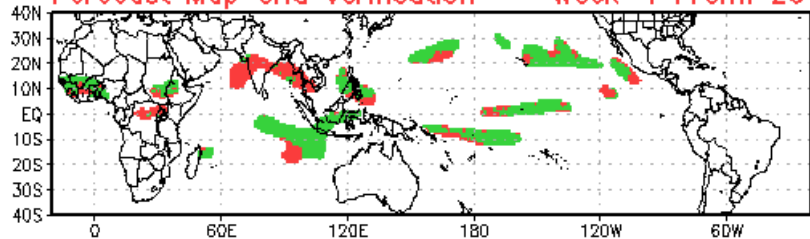Categorization of 7-Day OLR (#) -- Ending: 20160726

−1   0   1

Forecast Map Grid -- Week−1 From: 20160719

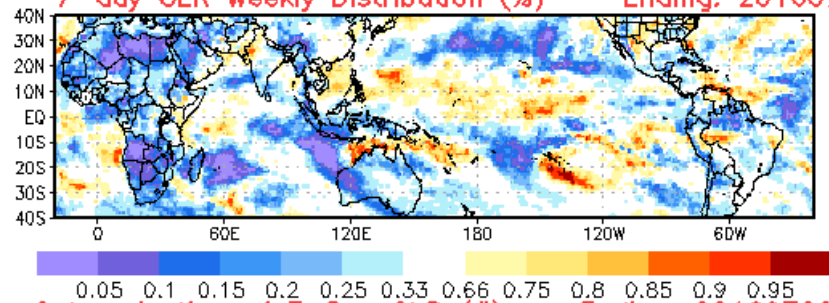Forecast Map Grid -- Week−2 From: 20160712
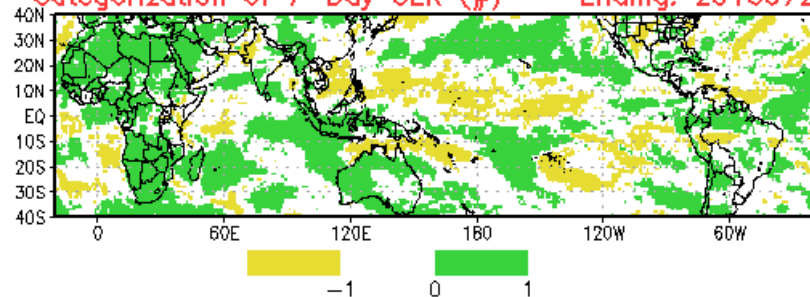
−1   0   1

Forecast Map Grid Verification -- Week−1 From: 20160

Forecast Map Grid Verification -- Week−2 From: 20160712

Hit: Green ,Miss: Red
Heidke Skill Score: 49.1823

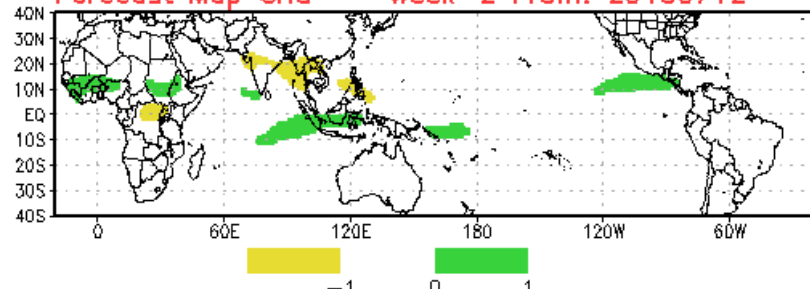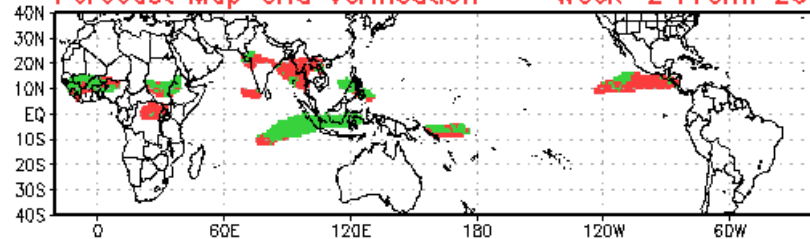Hit: Green ,Miss: Red
Heidke Skill Score: 26.1829

Synopsis of Climate Modes

ENSO:

• **La Niña Watch**

La Niña is favored to develop during August - October 2016, with about a 55-60% chance of La Niña during the fall and winter 2016-17.

MJO and other subseasonal tropical variability:

• MJO over Indian Ocean/Maritime Continent. Kelvin wave activity propagating eastward ahead of MJO signal.

• Dynamical models indicate some eastward propagation of a weakening signal .

• Low-frequency variability also prominent in model forecasts.
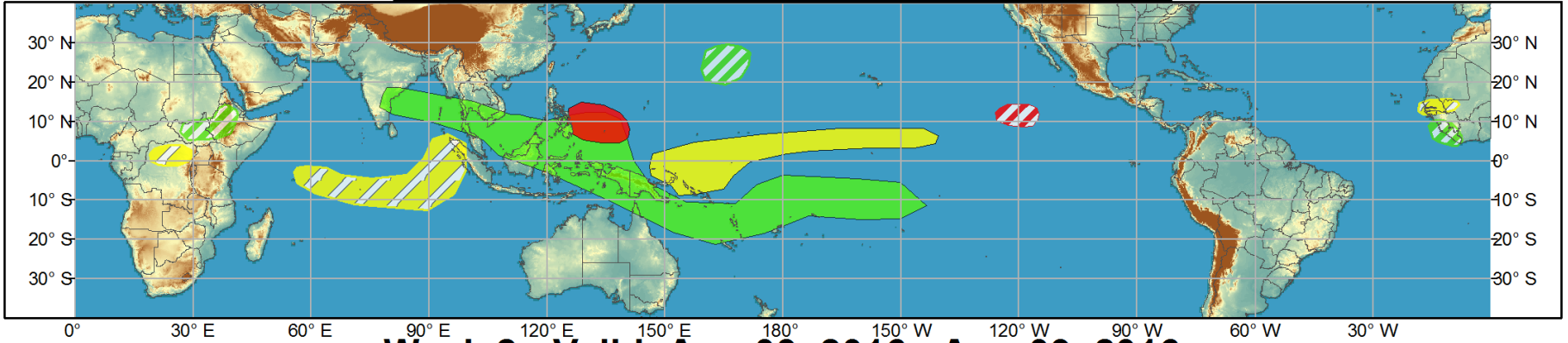
Extratropics:

• The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by the MJO.
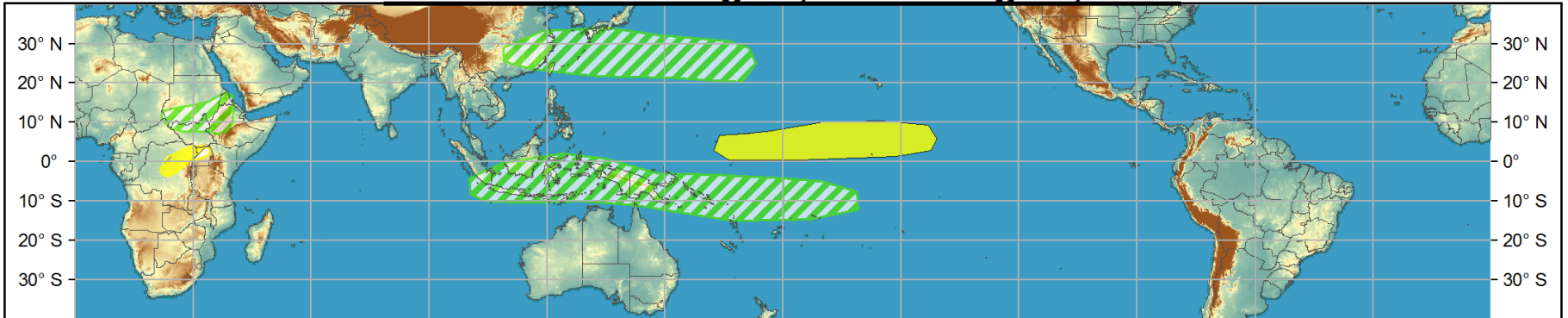
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jul 27, 2016 - Aug 02, 2016

Week 2 - Valid: Aug 03, 2016 - Aug 09, 2016

Produced: 07/26/2016
Forecaster: Baxter

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.

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.
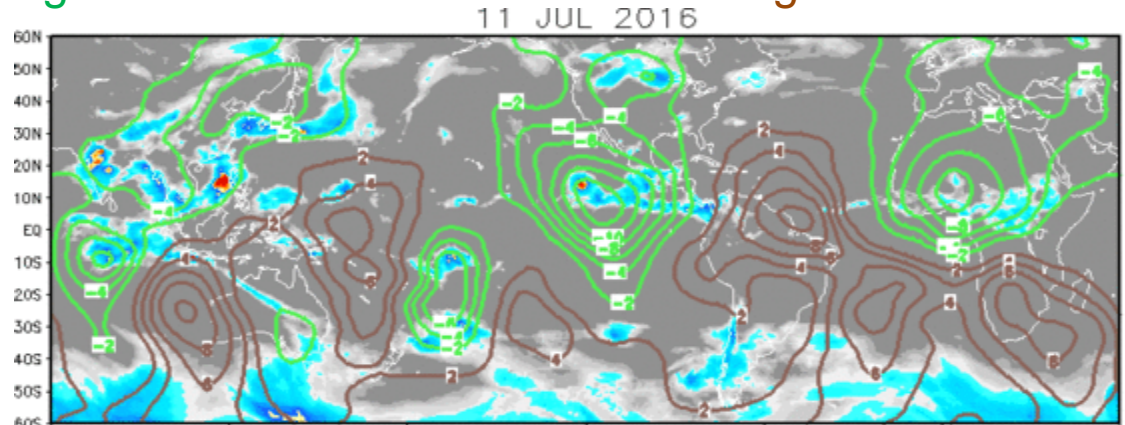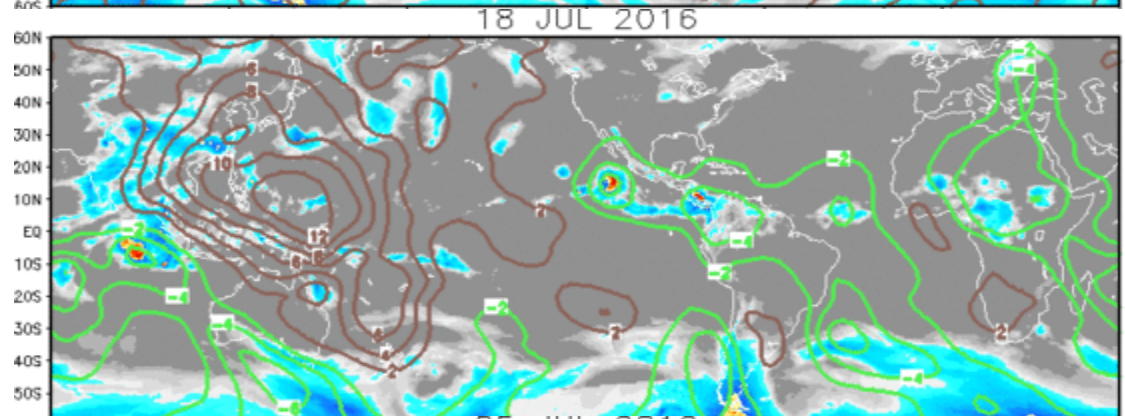
IR Satellite & 200-hpa Velocity Potential Anomalies

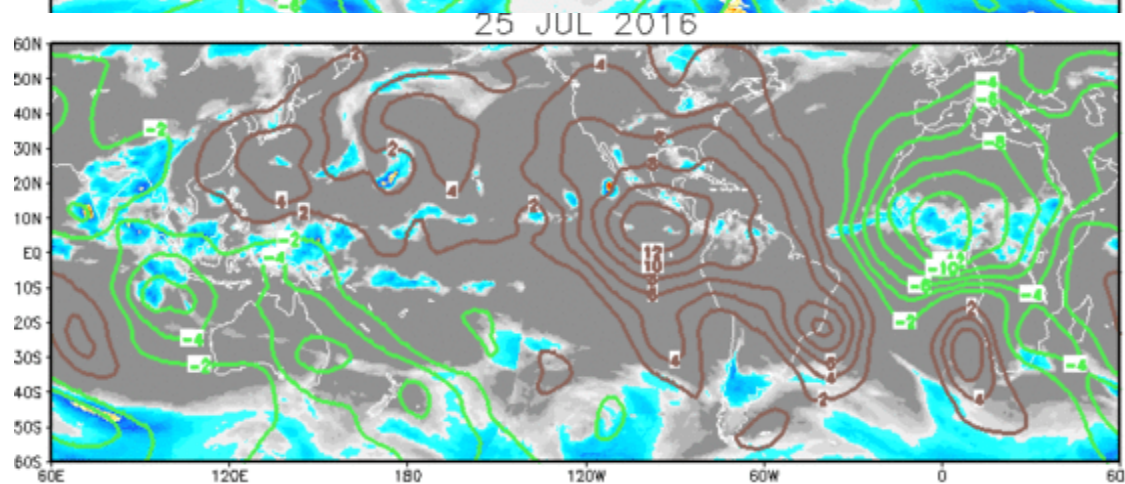**Green: Enhanced Divergence**   **Brown: Enhanced Convergence**

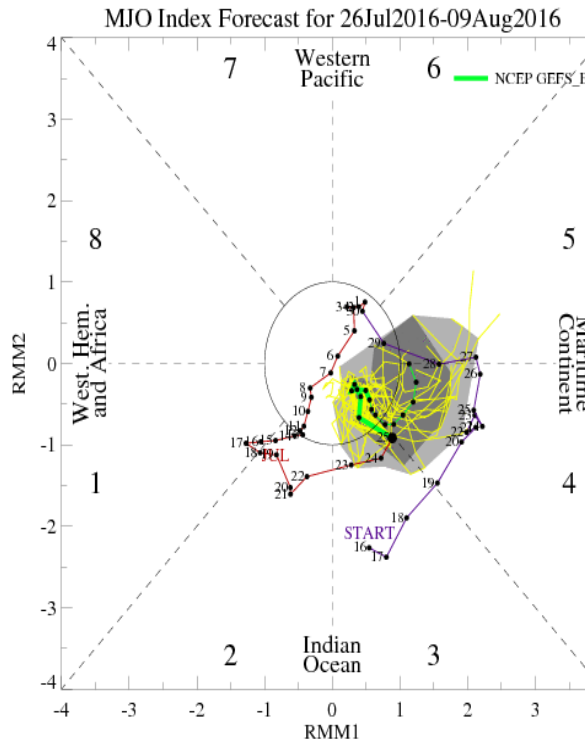Pattern appears generally incoherent, due in part to TC activity.

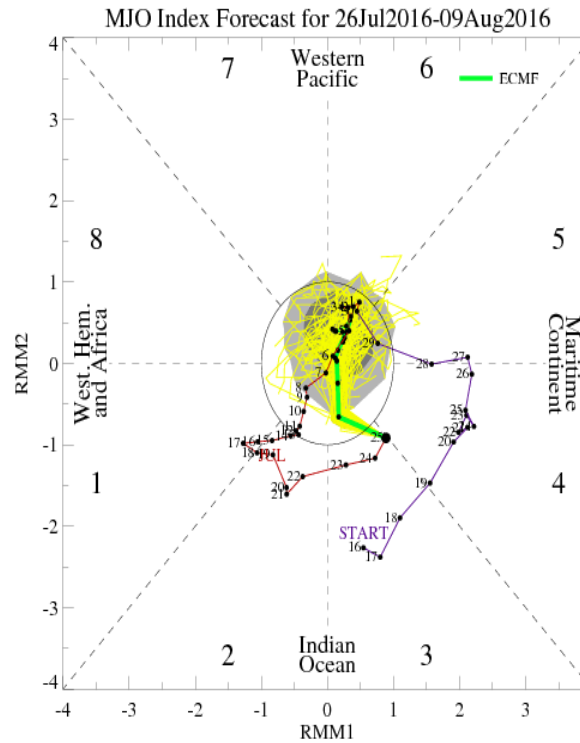Pattern appears more organized and approaches a Wave-1 pattern.

Coherent eastward propagation of large-scale pattern. Kelvin wave activity is also apparent.
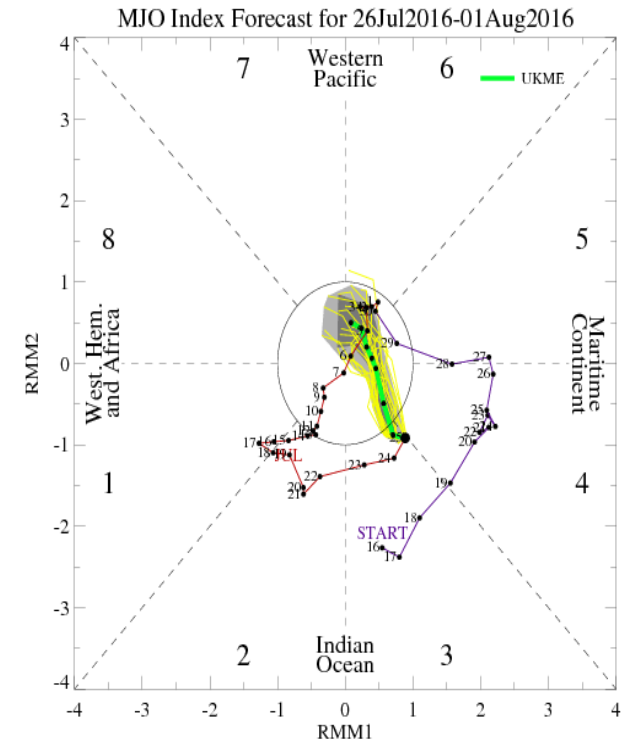
MJO Observation/Forecast
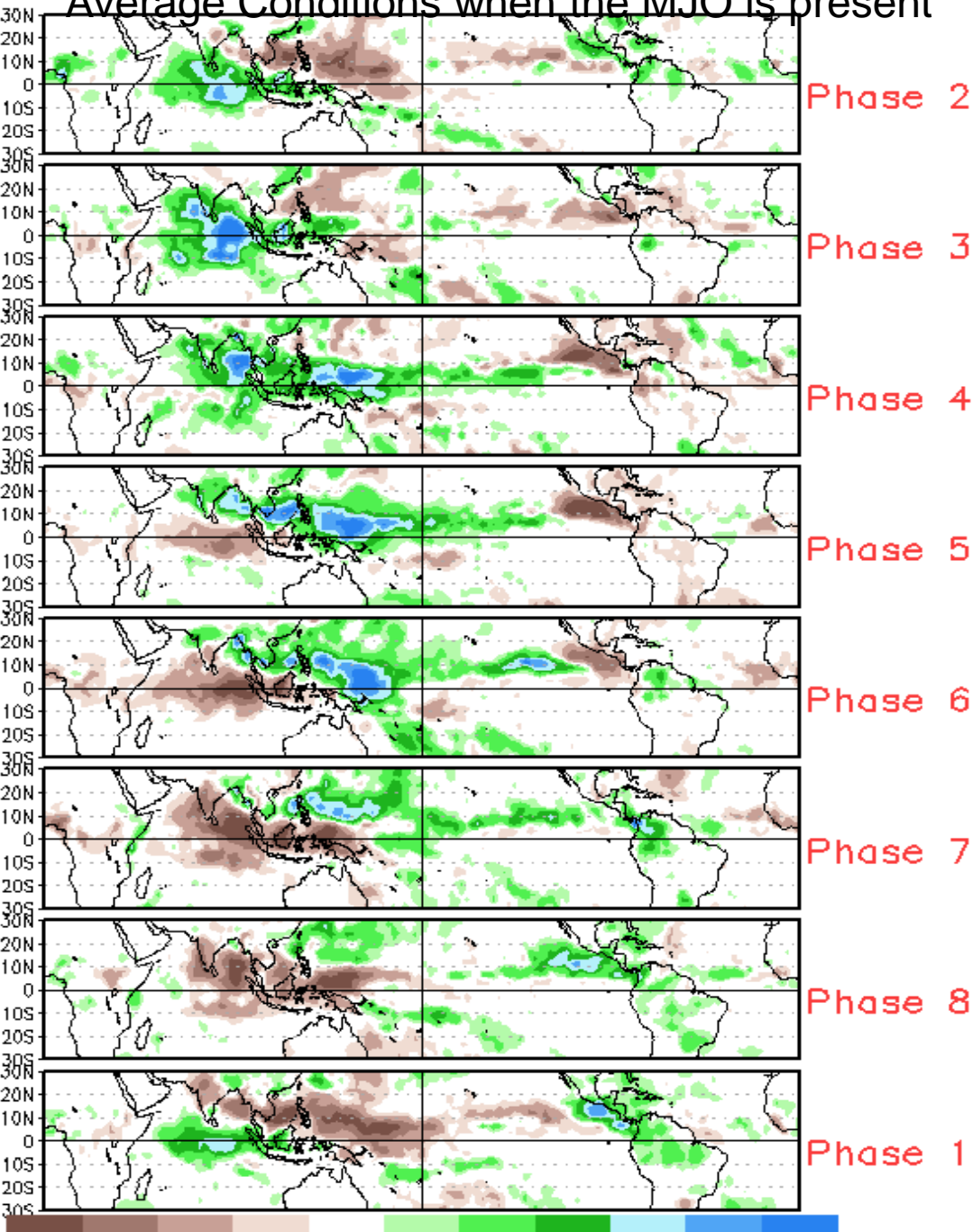

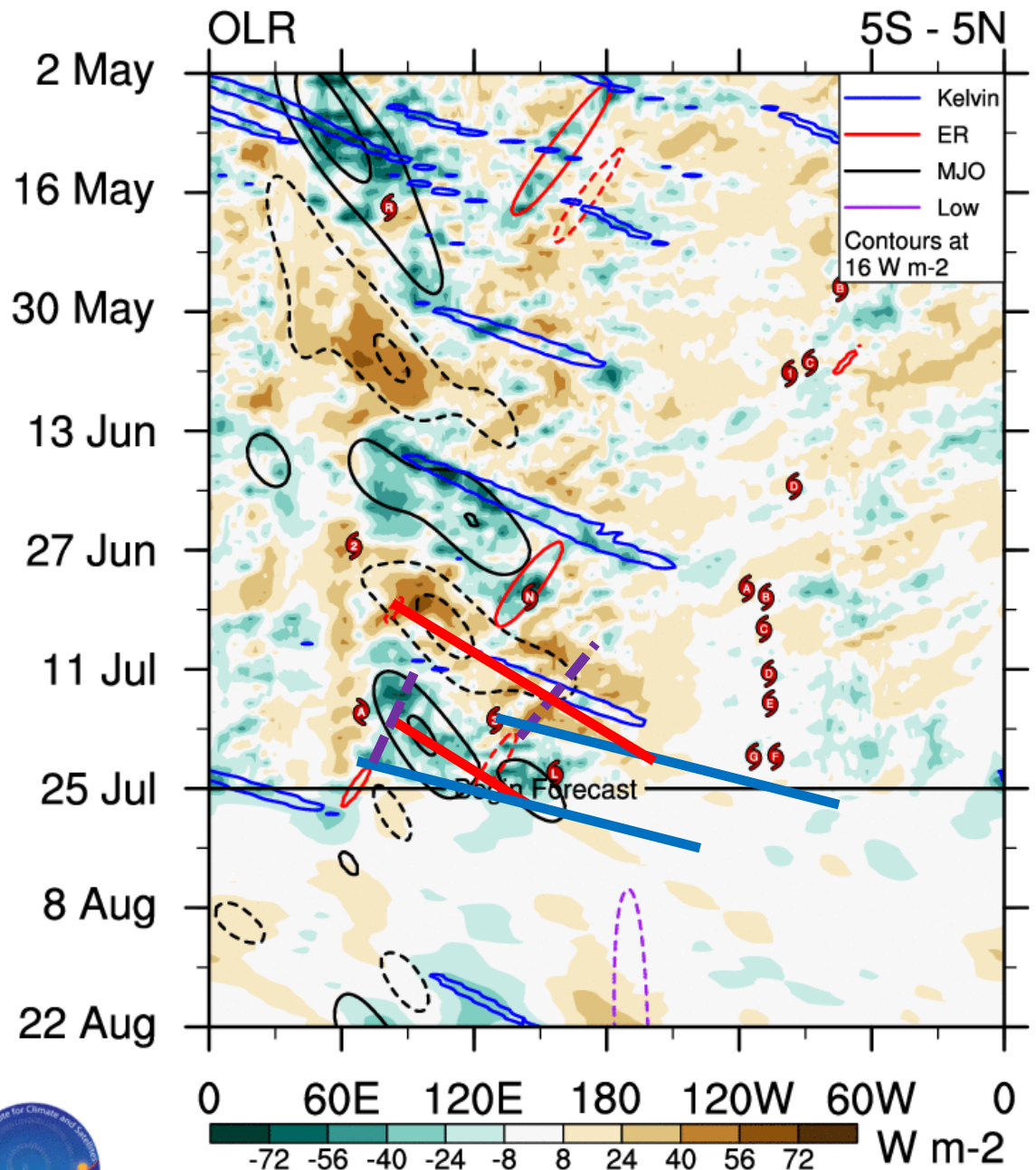GEFS   ECMWF   UKMET

Wheeler-Hendon based analyses of model forecasts indicate a weakening signal with some eastward propagation.

Average Conditions when the MJO is present

Phase 2

Phase 3

Phase 4

Phase 5
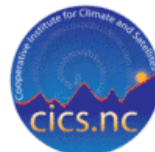
Phase 6

Phase 7

Phase 8

Phase 1

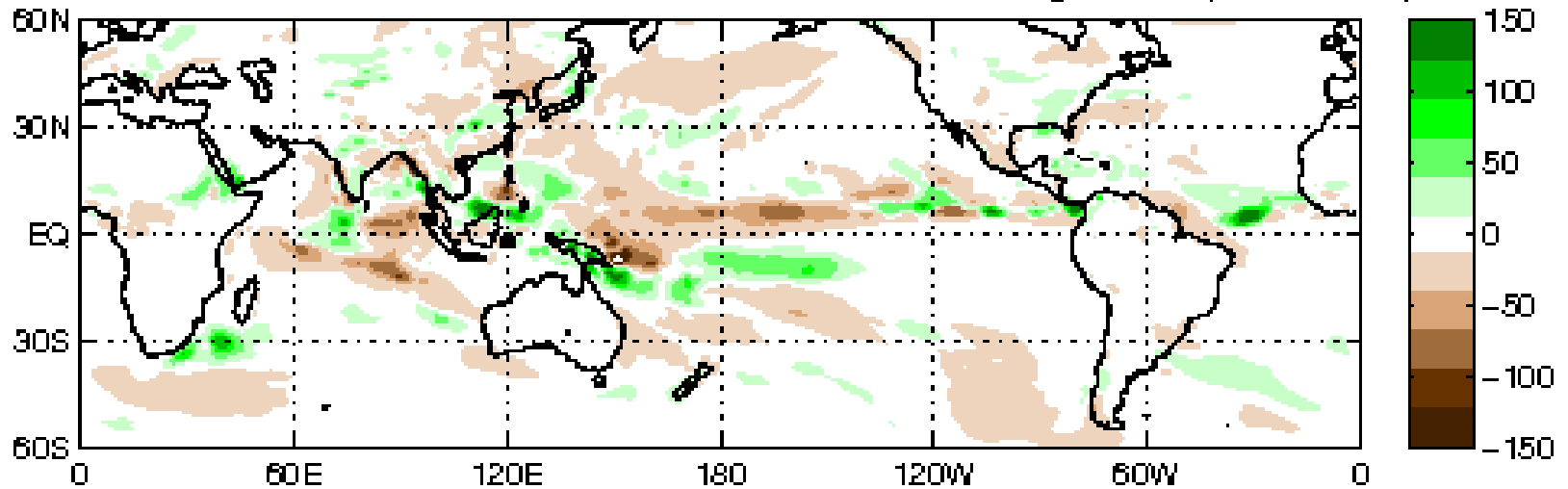CAVEAT: These panels are representative of robust MJO events.

Complicated pattern with **MJO** and **Kelvin waves** as the major influences.
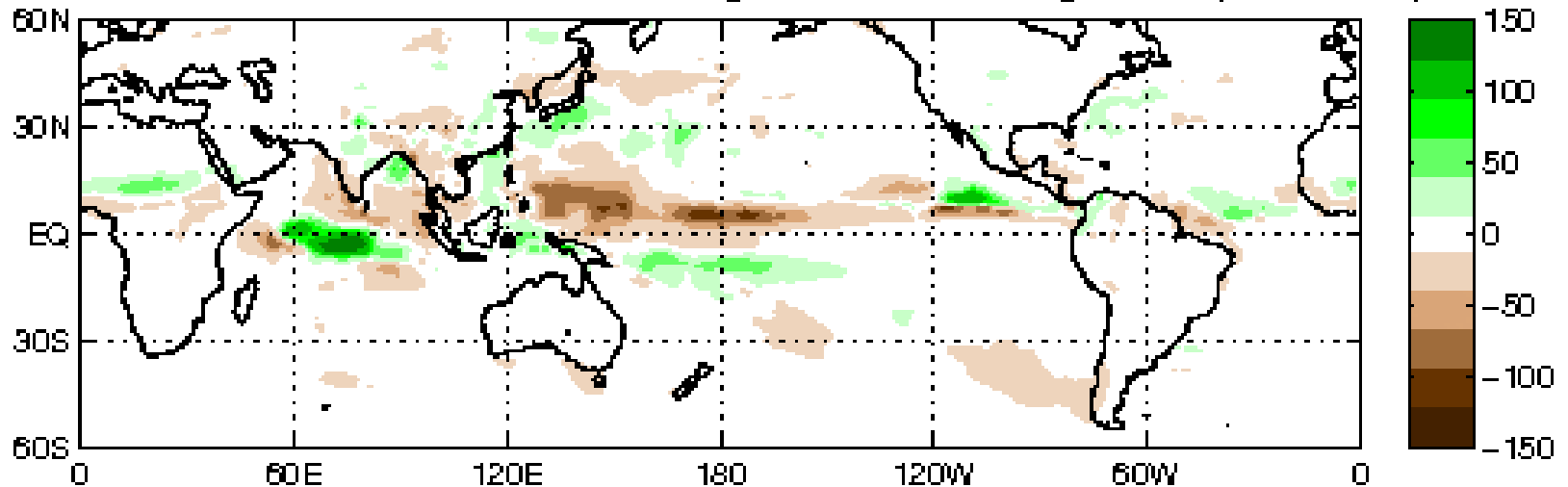
Smaller influence from Rossby wave.

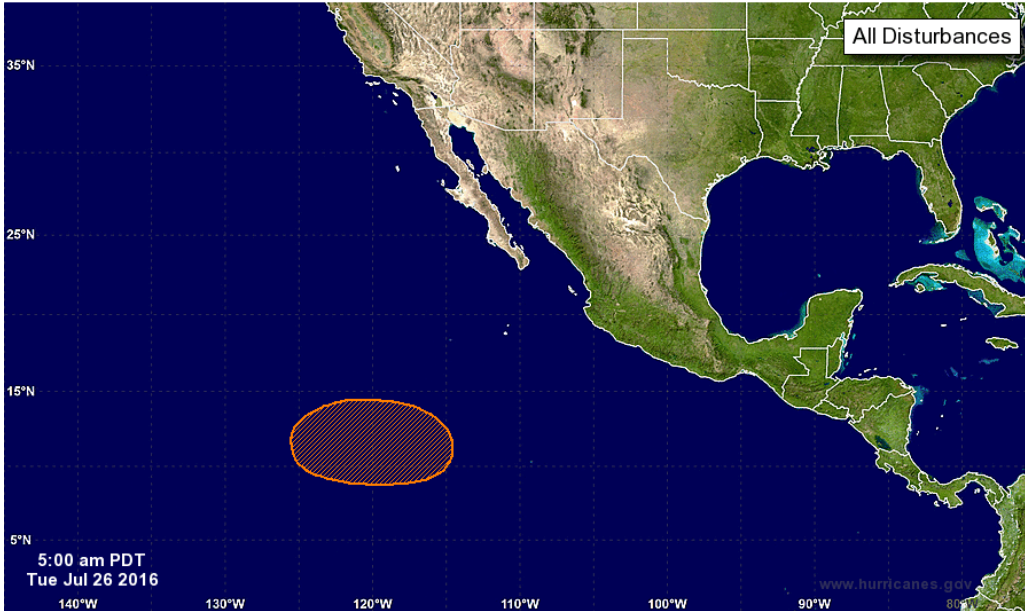CFS: Anom. PREC Week: 1: 27-Jul-2016 to 02-Aug-2016 (mm/week)

CFS: Anom. PREC Week: 2: 03-Aug-2016 to 09-Aug-2016 (mm/week)

Graphical Tropical Weather Outlooks

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

All Disturbances

35°N
25°N
15°N
5°N

5:00 am PDT
Tue Jul 26 2016

www.hurricanes.gov

140°W   130°W   120°W   110°W   100°W   90°W   80°W
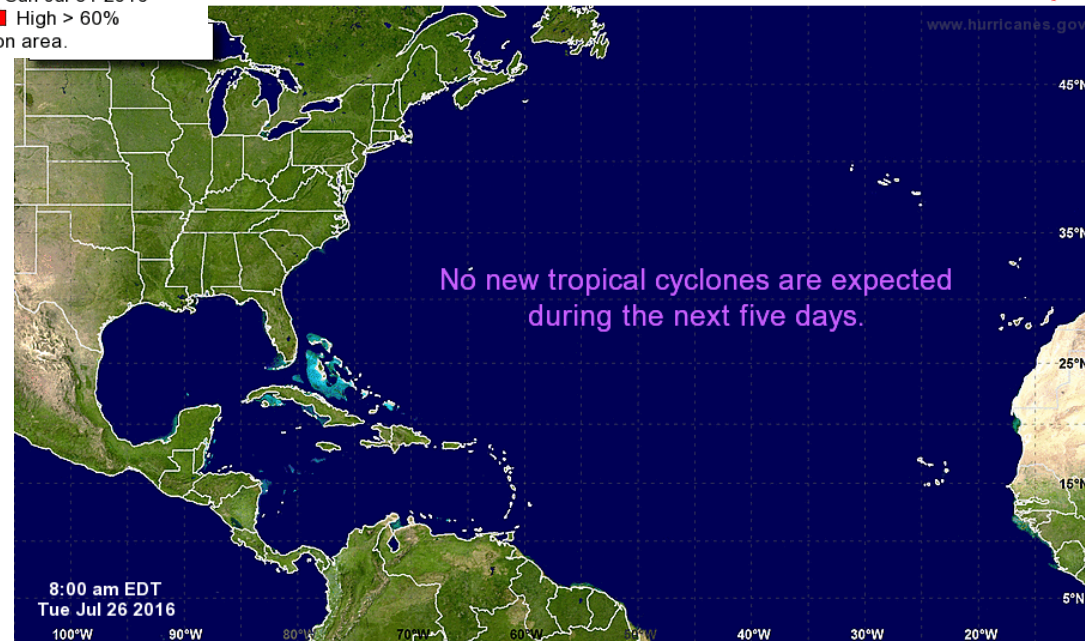
Tropical Cyclone Formation Potential for the Five-Day Period Ending at 5:00 am PDT Sun Jul 31 2016
Chance of Cyclone Formation in Five Days: ☐ Low < 40% ☐ Medium 40-60% ☐ High > 60%
X indicates current disturbance location; shading indicates potential formation area.

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

www.hurricanes.gov

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

45°N
35°N
25°N
15°N
5°N

8:00 am EDT
Tue Jul 26 2016

100°W   90°W   80°W   70°W   60°W   50°W   40°W   30°W   20°W
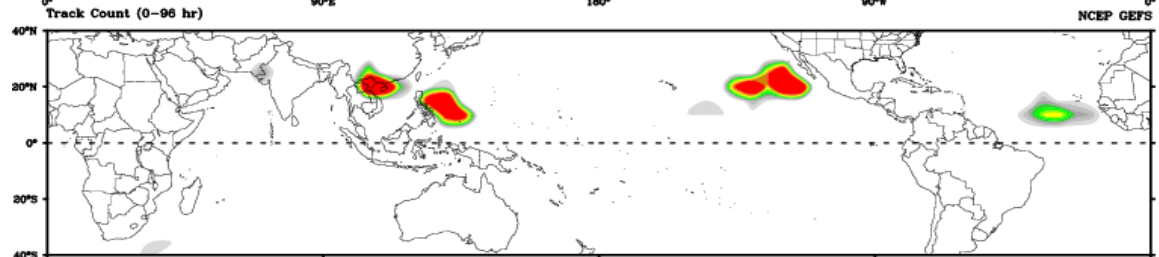
Tropical Cyclone Formation Potential for the Five-Day Period Ending at 8:00 am EDT Sun Jul 31 2016
Chance of Cyclone Formation in Five Days: ☐ Low < 40% ☐ Medium 40-60% ☐ High > 60%
X indicates current disturbance location; shading indicates potential formation area.
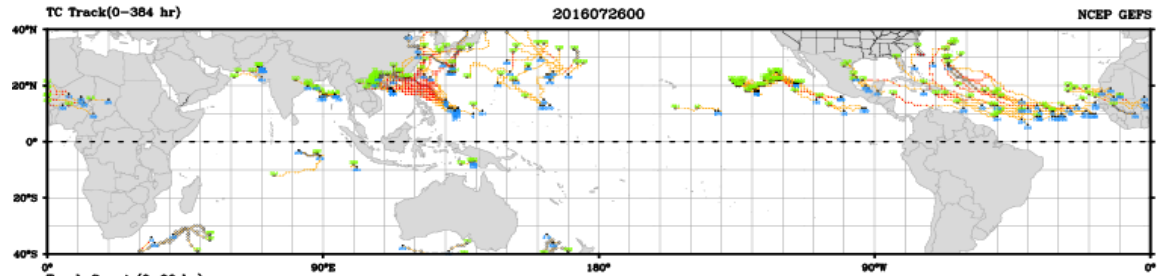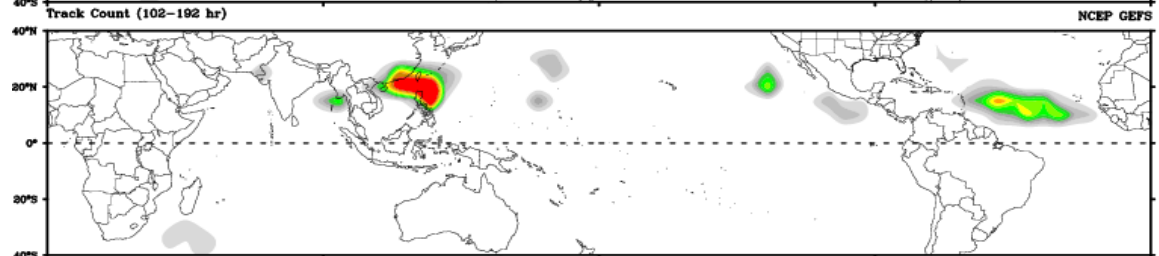
Days 1-4

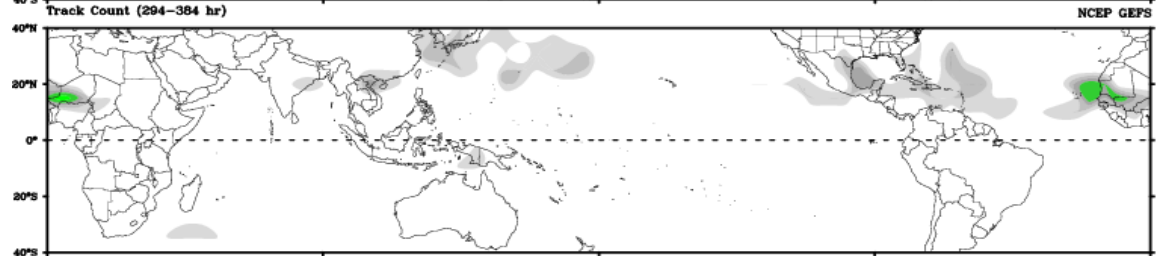Day 5-8

Day 9-12
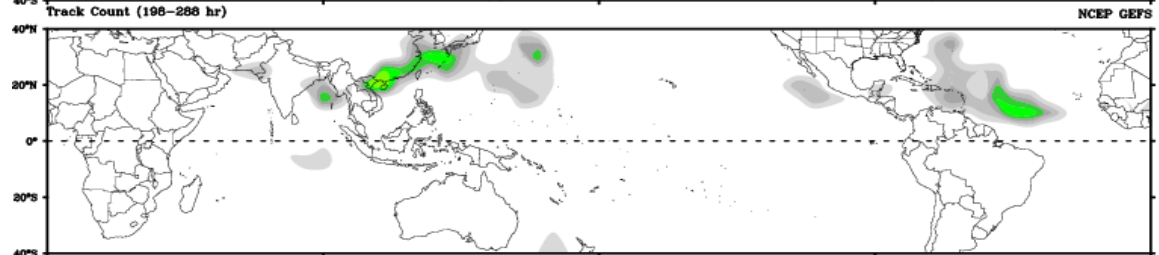
Day 13-15
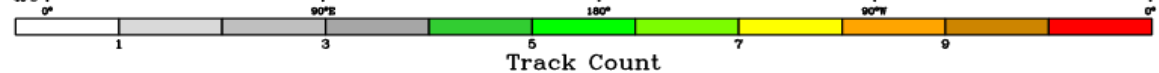
Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF
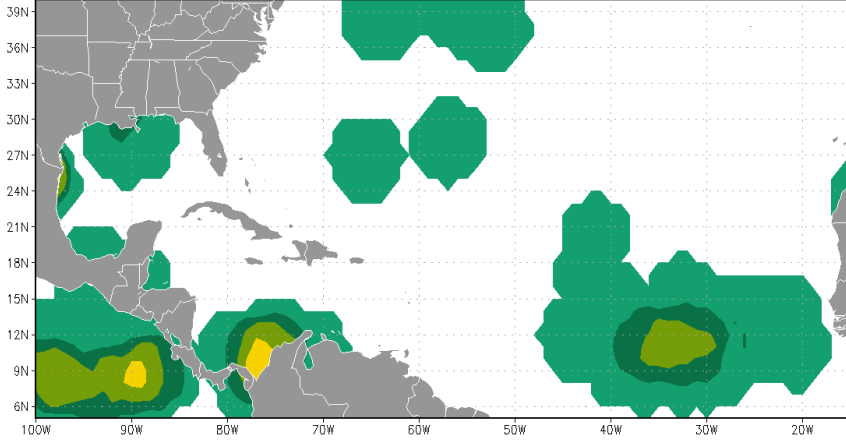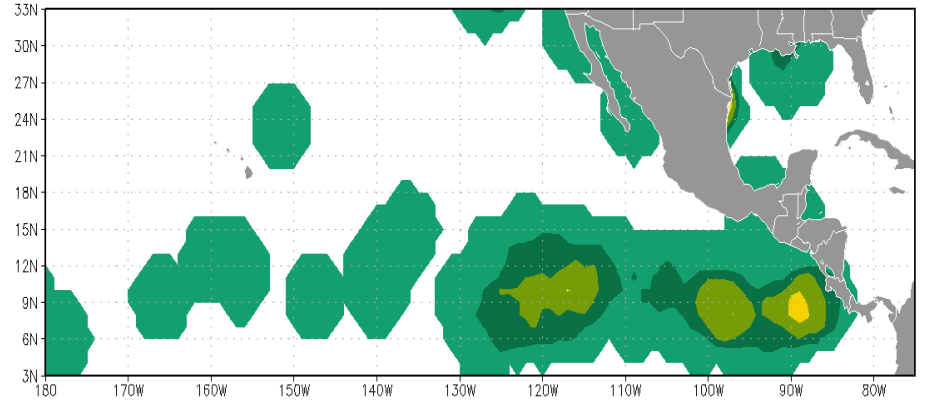For forecasts during the 00-120h period from initial time = 2016072600
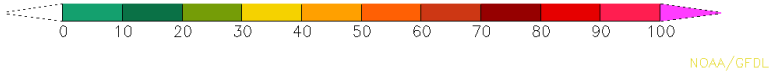
Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF
For forecasts during the 00-120h period from initial time = 2016072600
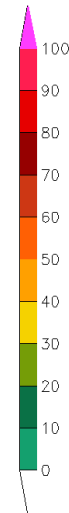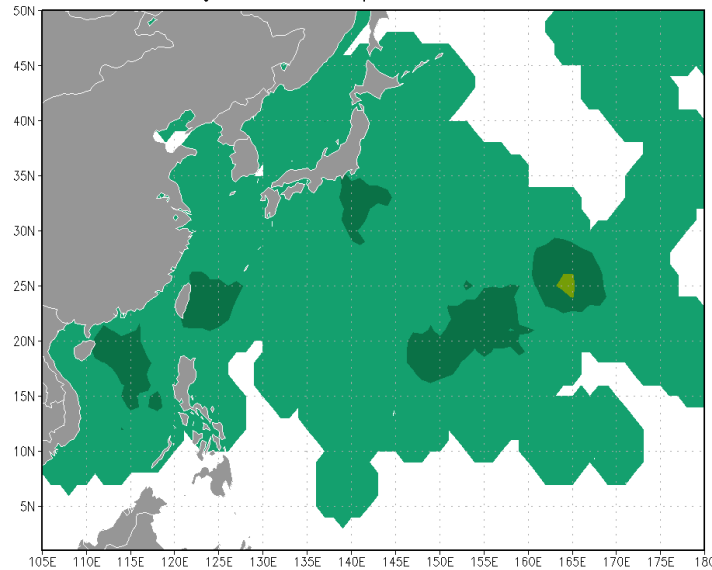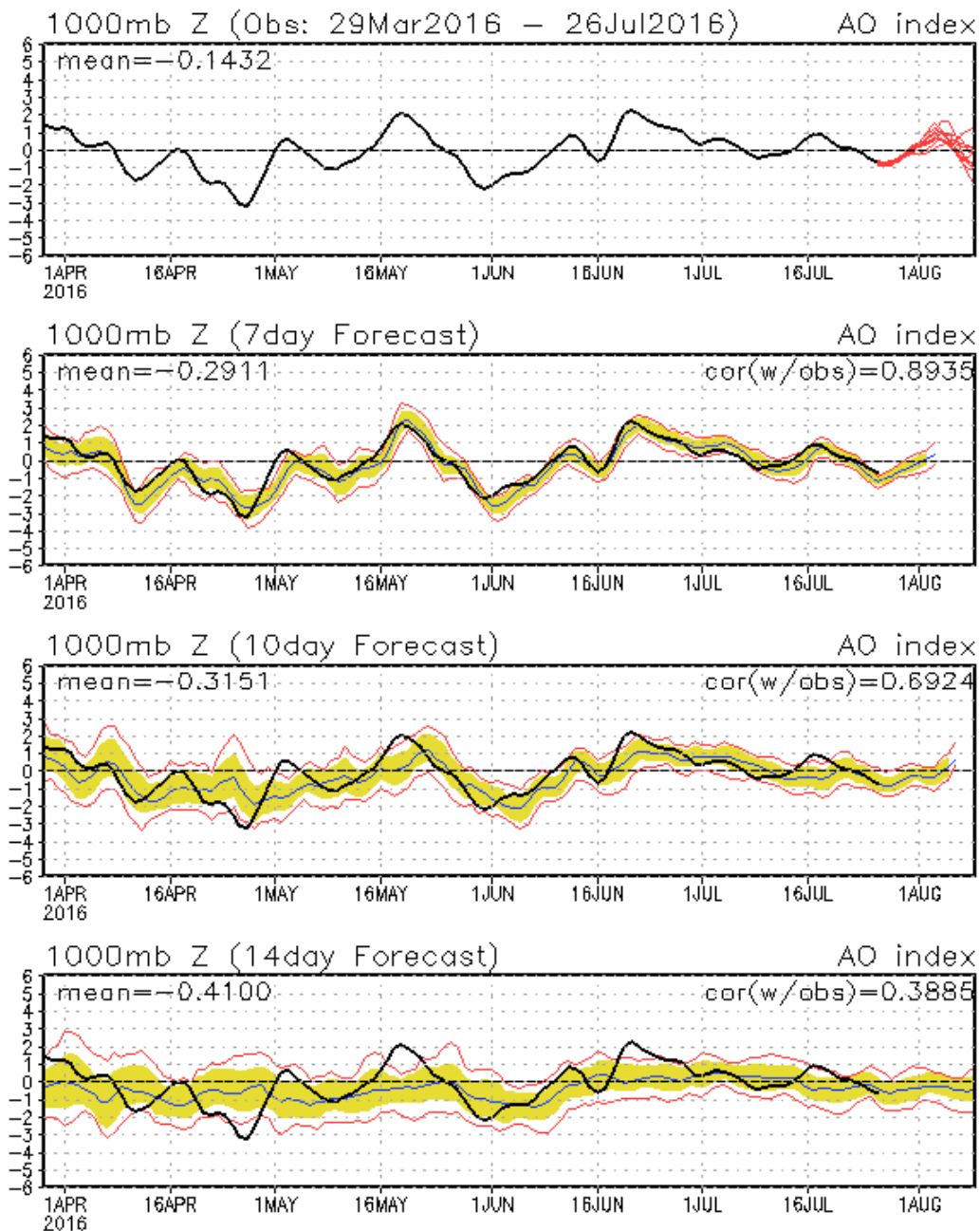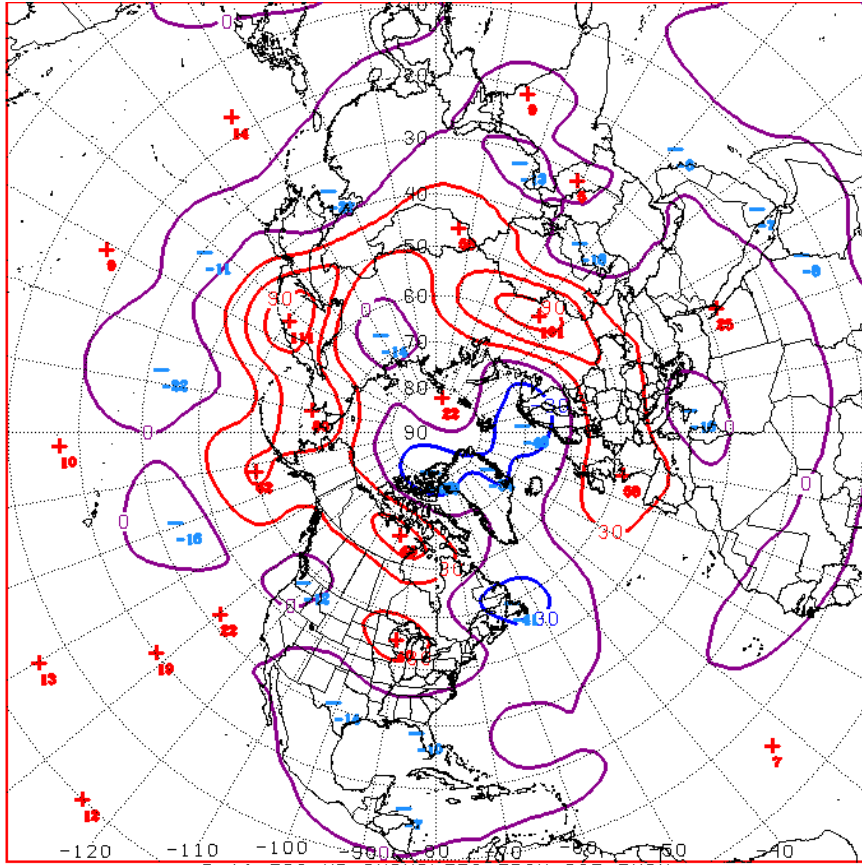
Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF
For forecasts during the 120-240h period from initial time = 2016072600

NOAA/GFDL

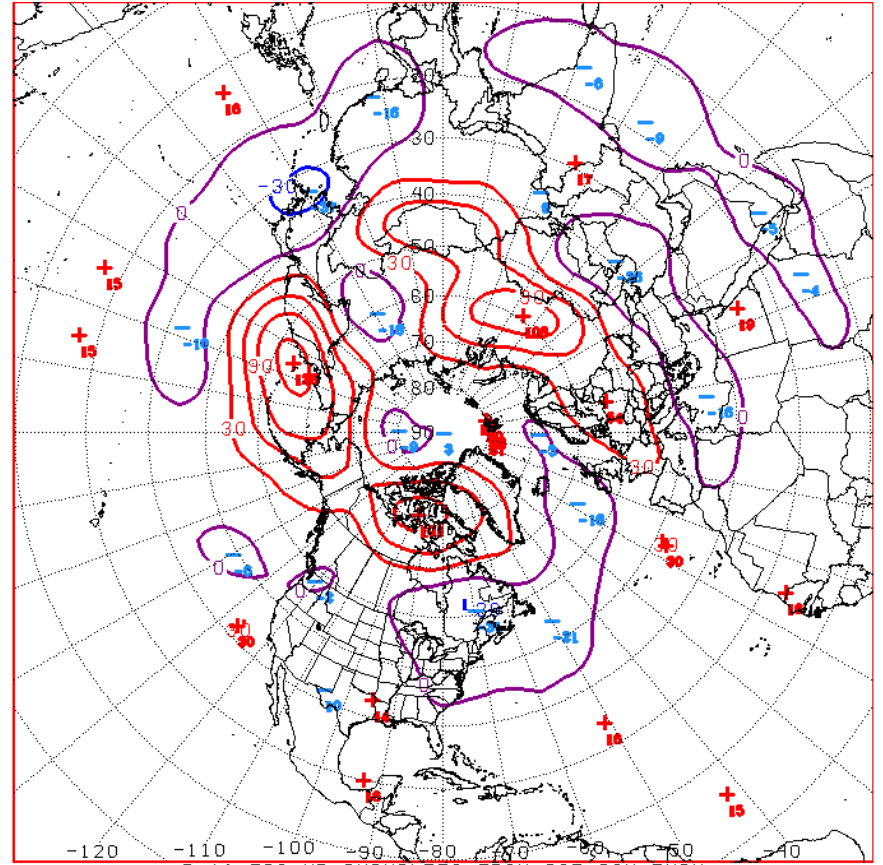# Connections to U.S. Impacts

AO: Observed & ENSM forecasts

1000mb Z (Obs: 29Mar2016 – 26Jul2016)   AO index
mean=−0.1432

1000mb Z (7day Forecast)   AO index
mean=−0.2911   cor(w/obs)=0.8935

1000mb Z (10day Forecast)   AO index
mean=−0.3151   cor(w/obs)=0.6924

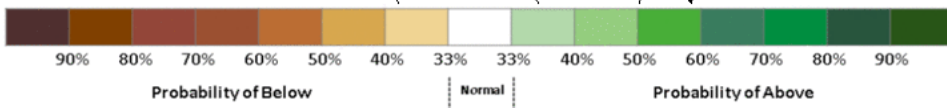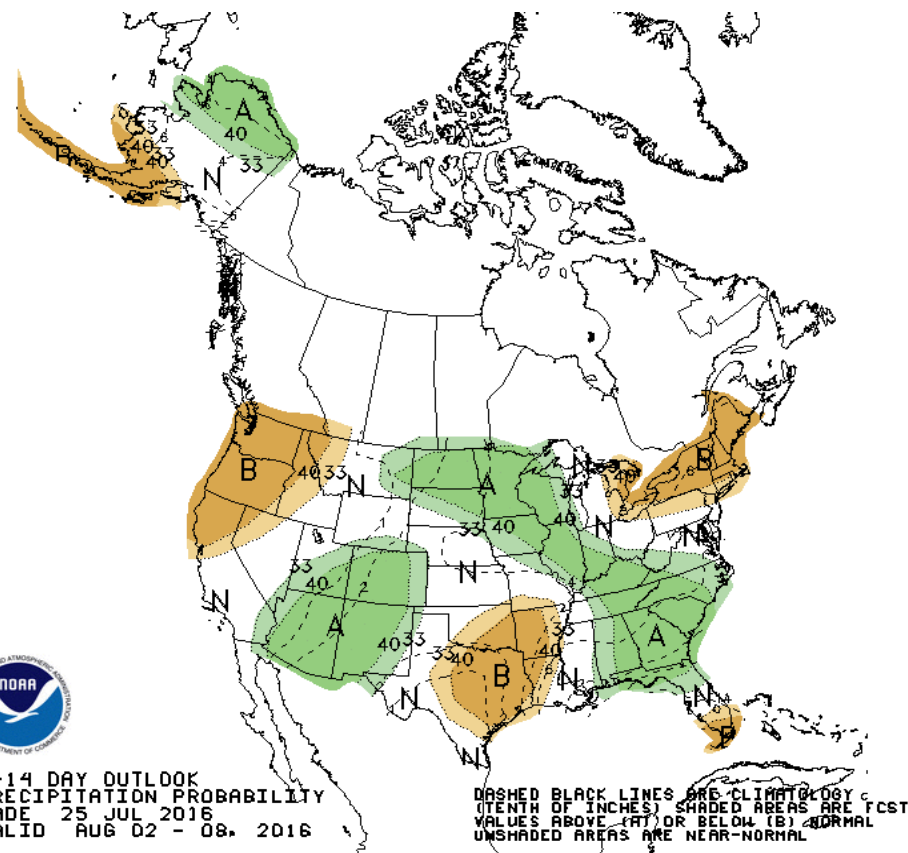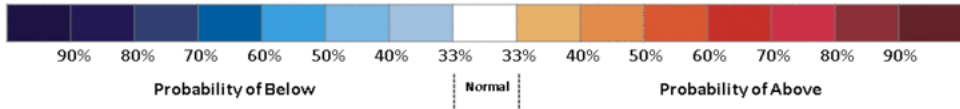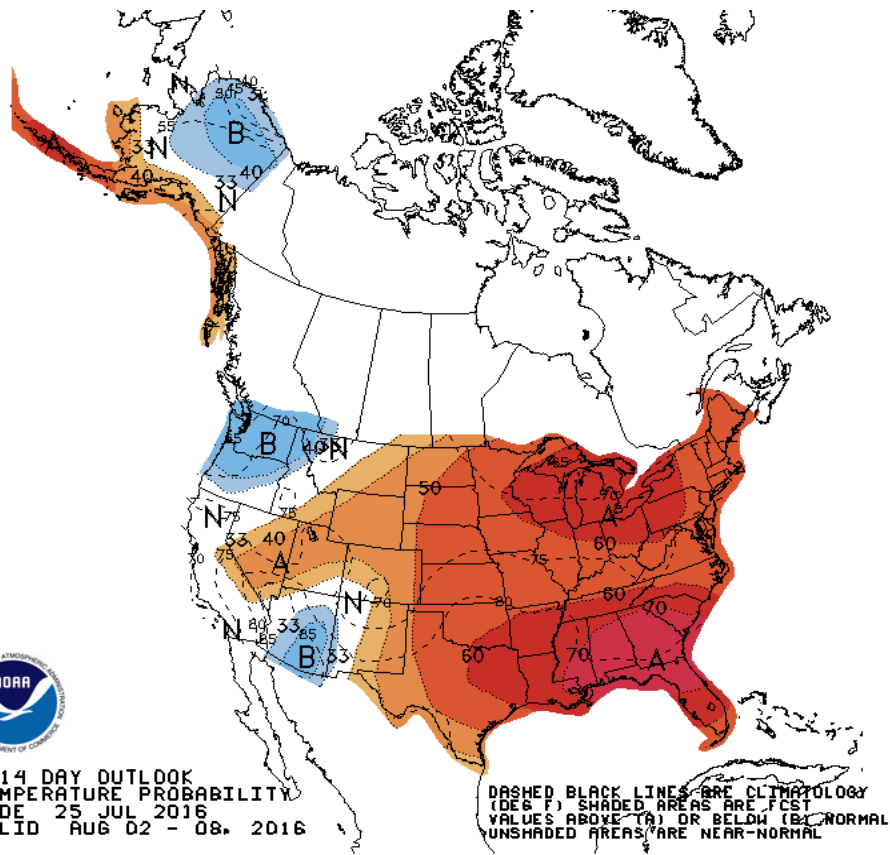1000mb Z (14day Forecast)   AO index
mean=−0.4100   cor(w/obs)=0.3885

D+11 500 MB ANOMALIES FROM 06Z ENSM
CPC MAP MADE JUL 26 2016 1226 UTC CNTD AUG 06 2016

D+11 500 MB ANOMALIES FROM 00Z CAN ENSM
CPC MAP MADE JUL 26 2016 0628 UTC CNTD AUG 06 2016

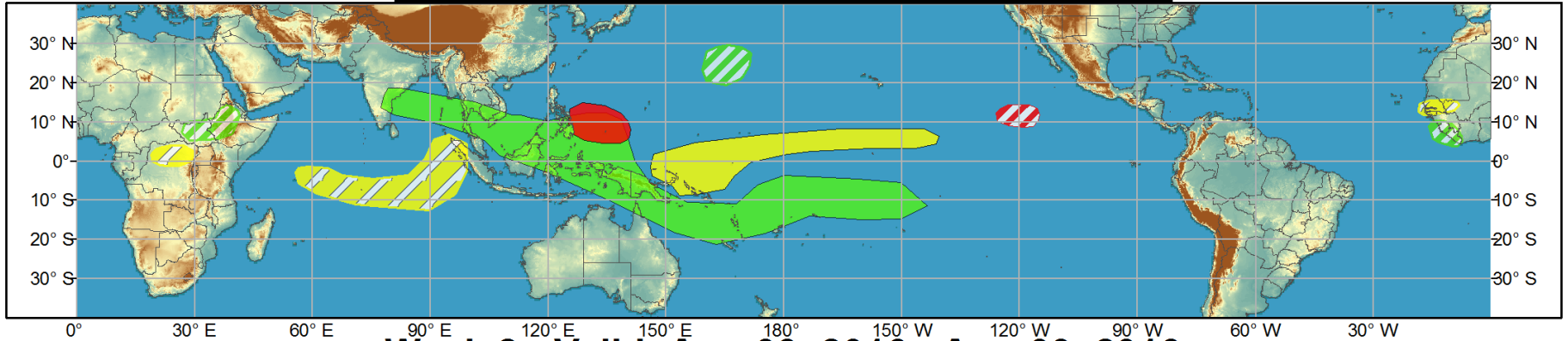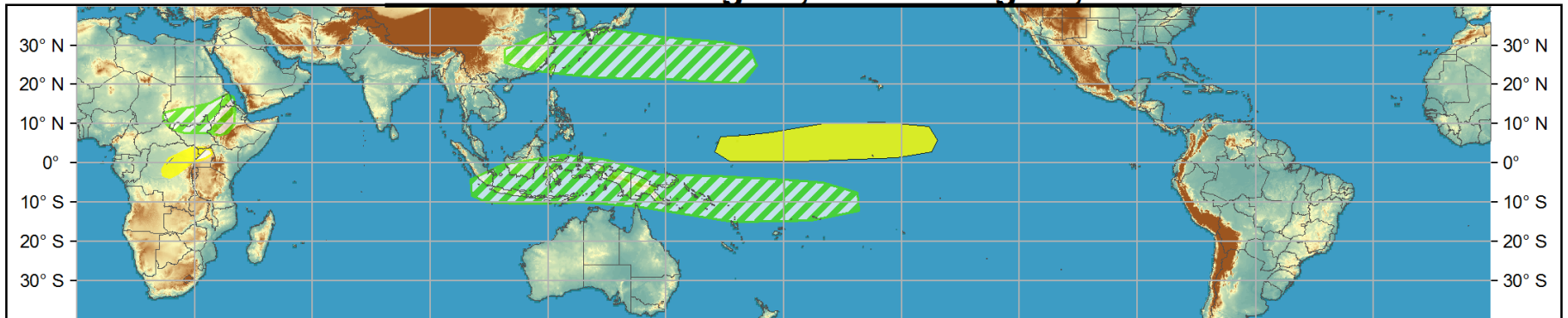# Week 2 – Temperature and Precipitation

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jul 27, 2016 - Aug 02, 2016

Week 2 - Valid: Aug 03, 2016 - Aug 09, 2016

Produced: 07/26/2016

Forecaster: Baxter

Confidence

	High	Moderate	
Tropical Cyclone Formation	(red)	(red hatched)	Development of a tropical cyclone (tropical depression - TD, or greater strength).
Above-average rainfall	(green)	(green hatched)	Weekly total rainfall in the upper third of the historical range.
Below-average rainfall	(yellow)	(yellow hatched)	Weekly total rainfall in the lower third of the historical range.
Above-normal temperatures	(orange)	(orange hatched)	7-day mean temperatures in the upper third of the historical range.
Below-normal temperatures	(blue)	(blue hatched)	7-day mean temperatures in the lower third of the historical range.

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