# Global Tropics Hazards And Benefits Outlook

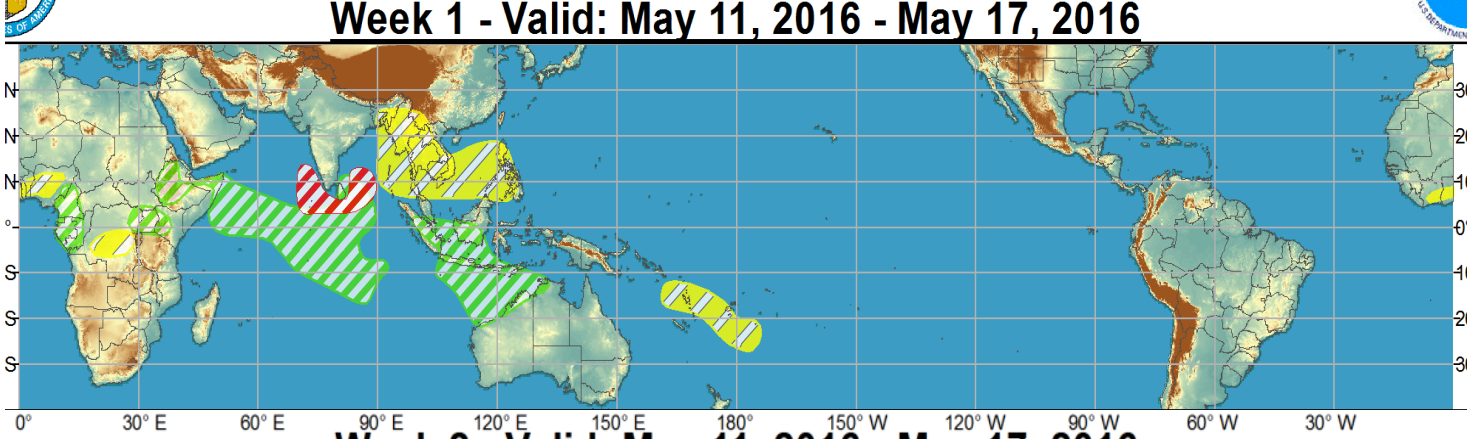
May 17, 2016

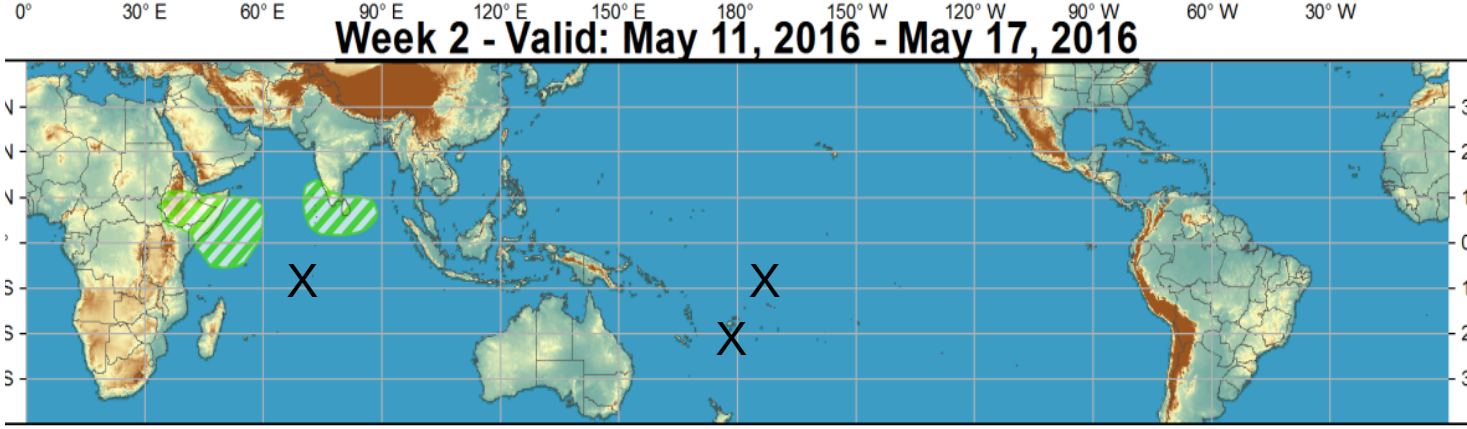
Matthew Rosencrans

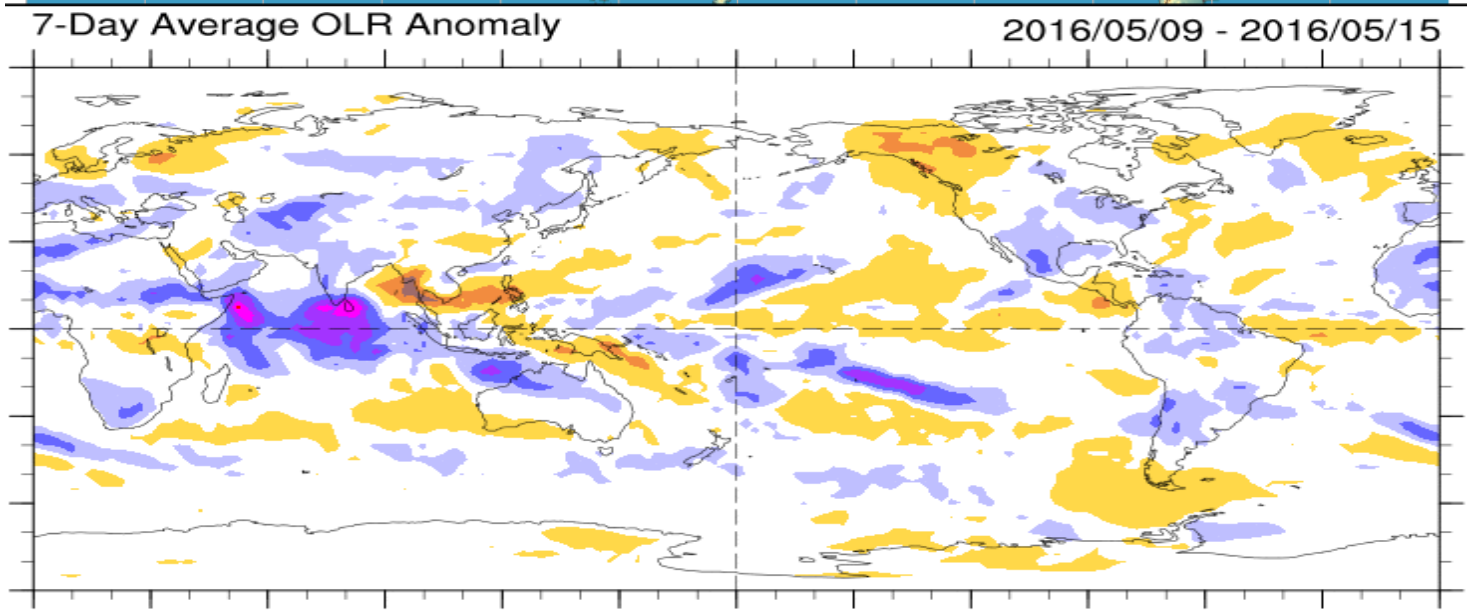
## Outline

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

# Outlook Review



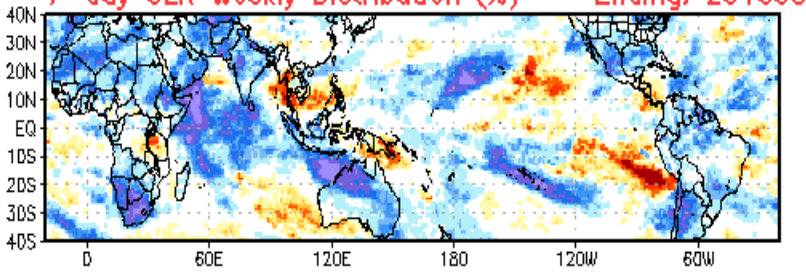




Cool shading
More clouds/rain

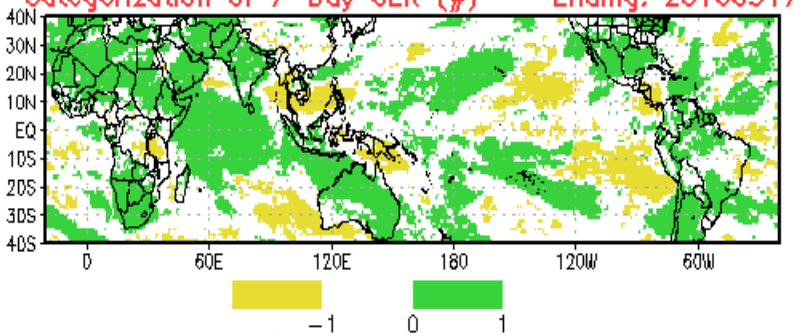
Warm shading
Less clouds/rain

7-day OLR Weekly Distribution (%) -- Ending: 20160517





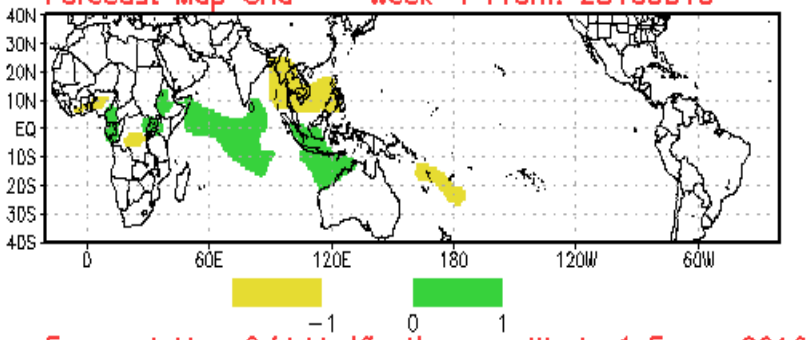
Categorization of 7-Day OLR (#) -- Ending: 20160517







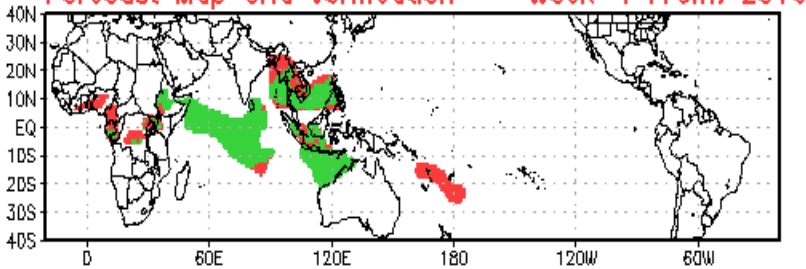
Forecast Map Grid -- Week-1 From: 20160510





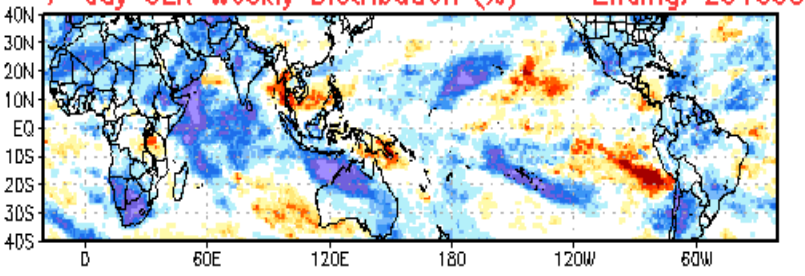


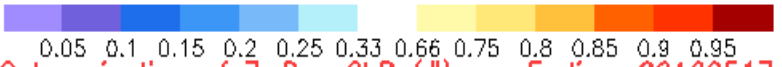
Forecast Map Grid Verification -- Week-1 From: 20160510




Hit: Green, Miss: Red
Heidke Skill Score: 52.1644

7-day OLR Weekly Distribution (%) -- Ending: 20160517

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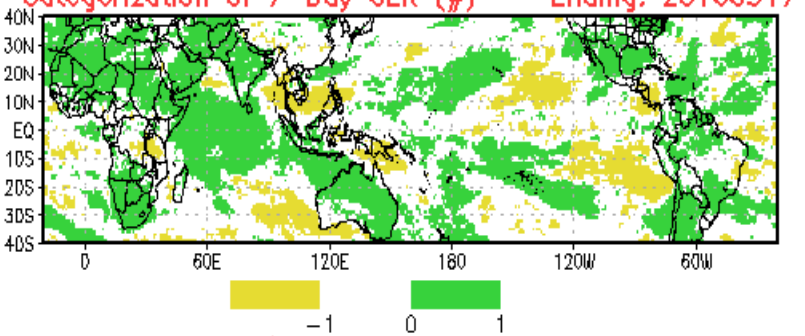
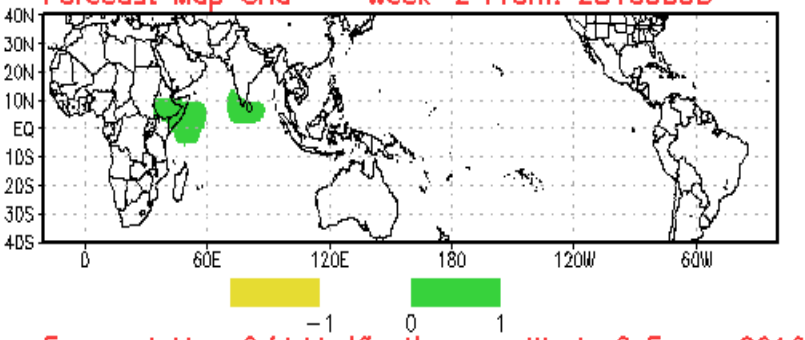






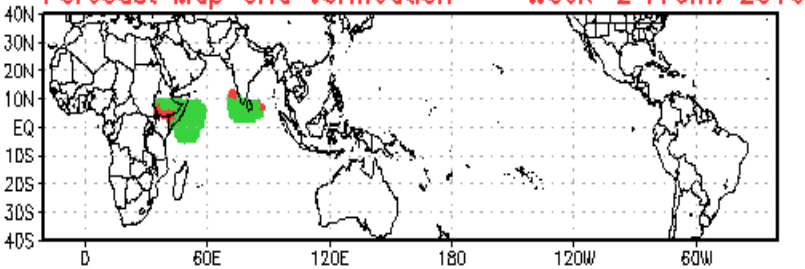
Forecast Map Grid -- Week-2 From: 20160503







Forecast Map Grid Verification -- Week-2 From: 20160503




Hit: Green, Miss: Red
Heidke Skill Score: 81.6676

# Synopsis of Climate Modes

**ENSO:**

•**El Niño Advisory / La Niña Watch**

La Niña is favored to develop during the Northern Hemisphere summer 2016, with about a 75% chance of La Nina during the fall and winter 2016-17.

**MJO and other subseasonal tropical variability:**

• MJO indices indicate a continued signal, of moderate strength, over the eastern Indian Ocean.

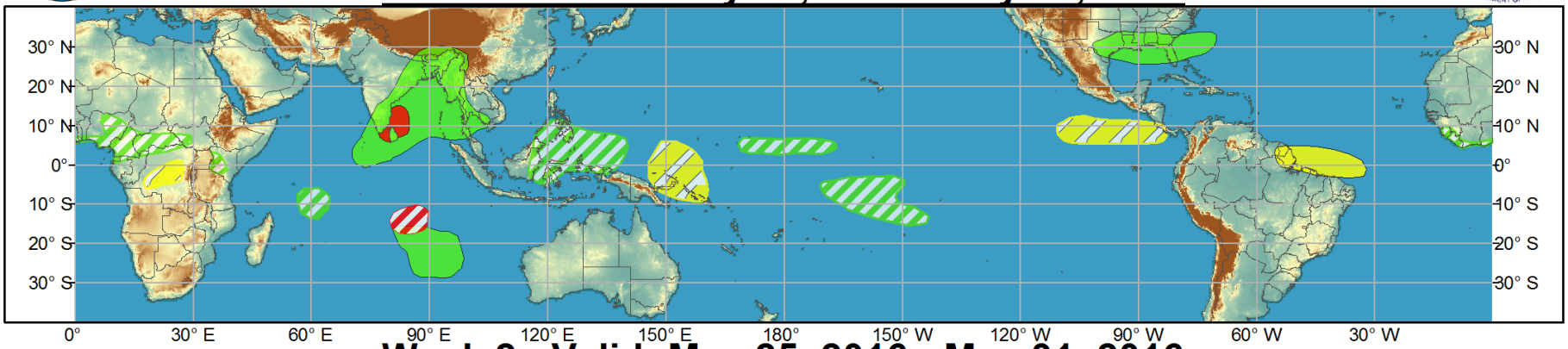
• Most dynamical model MJO index forecasts depict eastward propagation of the moderate strength signal over the Maritime Continent during the next week. Some models depict a weakening signal during Week-2, possibly associated with an equatorial Rossby wave.

**Extratropics:**

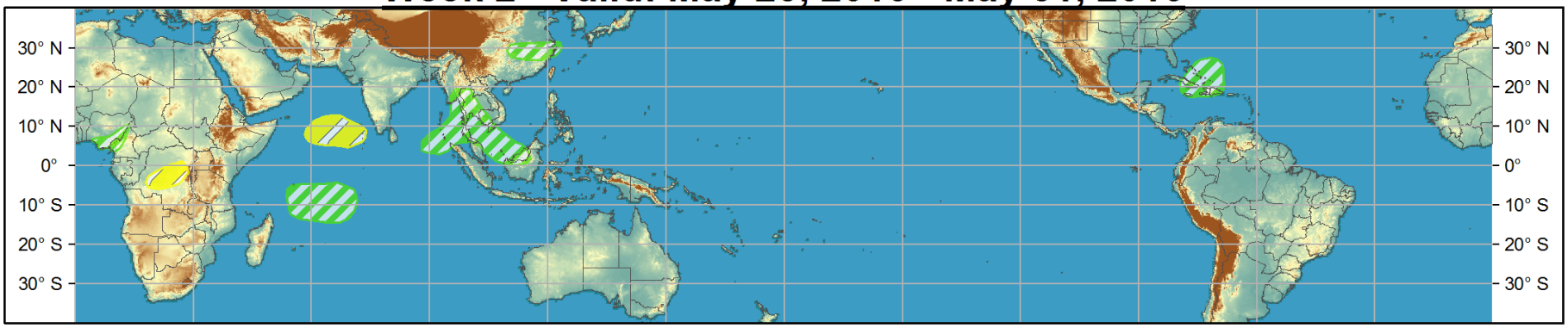
• The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by the MJO.

# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: May 18, 2016 - May 24, 2016




## Week 2 - Valid: May 25, 2016 - May 31, 2016




**Produced: 05/17/2016**

**Forecaster: Rosencrans**

| | Confidence: High | Confidence: 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. |
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**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.**

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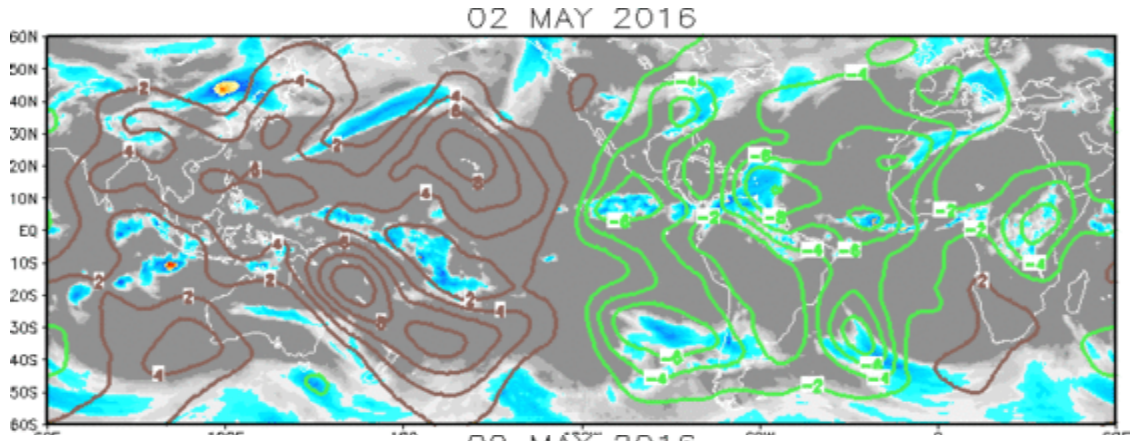
# IR Satellite & 200-hpa Velocity Potential Anomalies

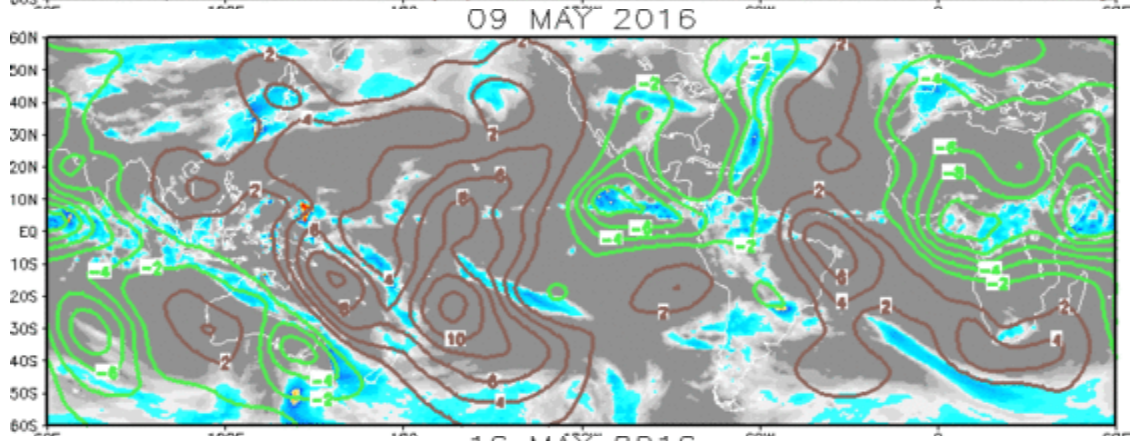
Green: Enhanced Divergence  Brown: Enhanced Convergence

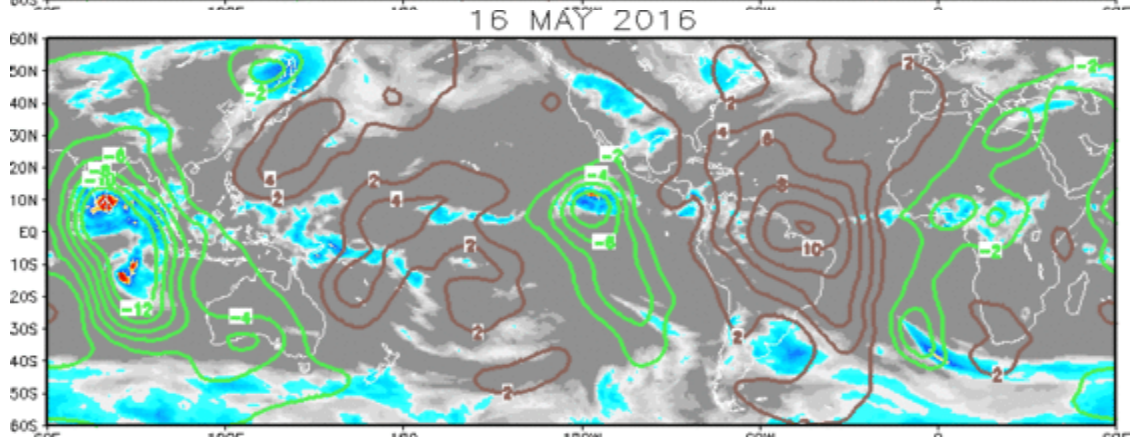
Early May featured a coherent, wave-1 pattern

The wave-1 pattern broke down somewhat during the first week of May.

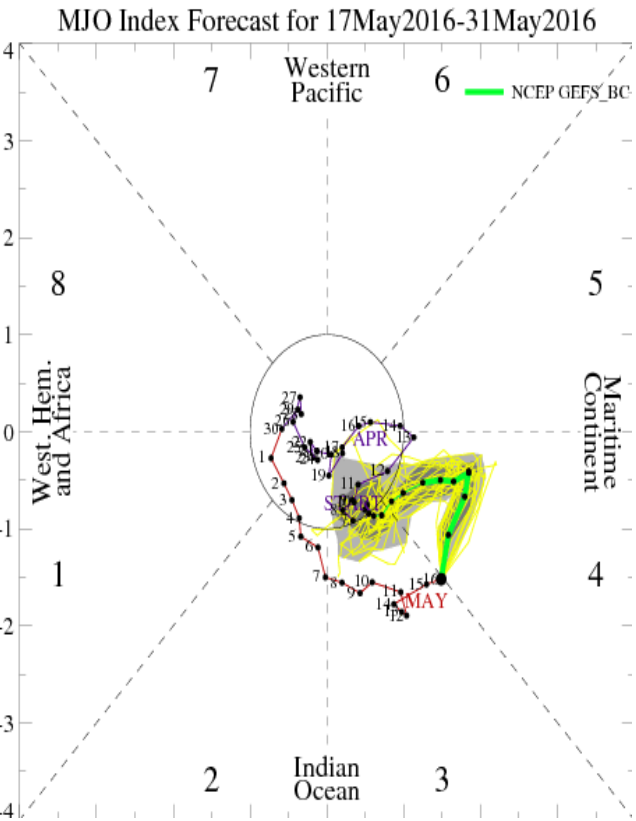
Recently, the pattern is more Wave-2, due to other modes influencing the pattern of tropical convection.



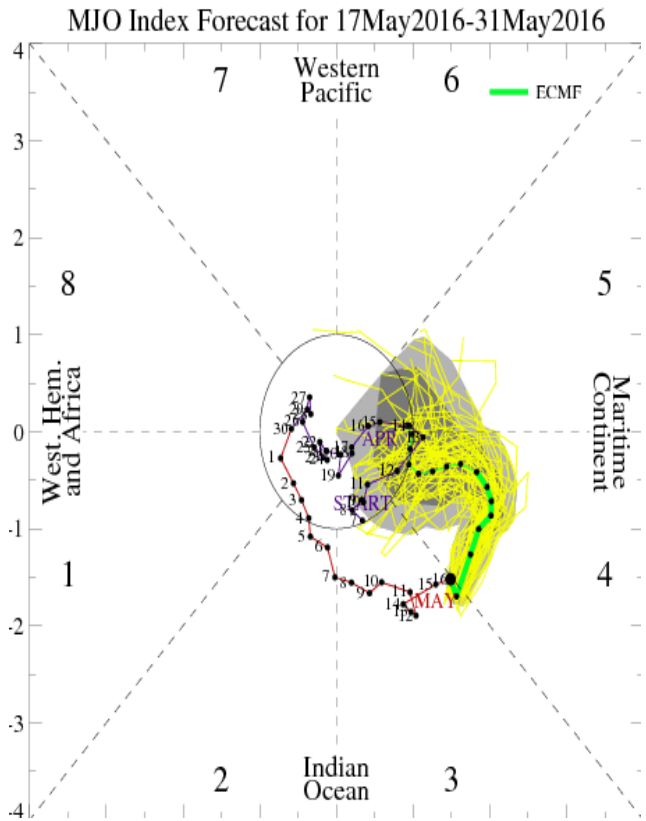



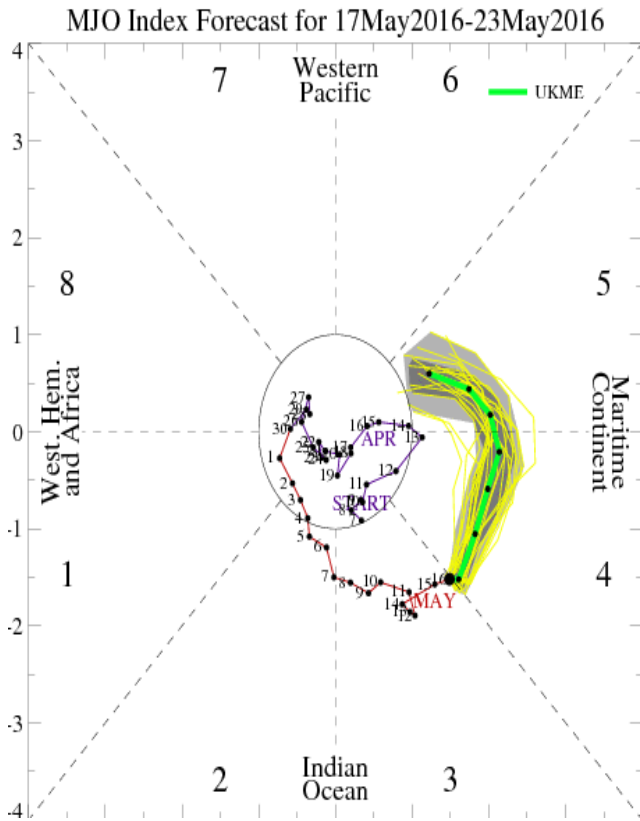
# MJO Observation/Forecast




GEFS



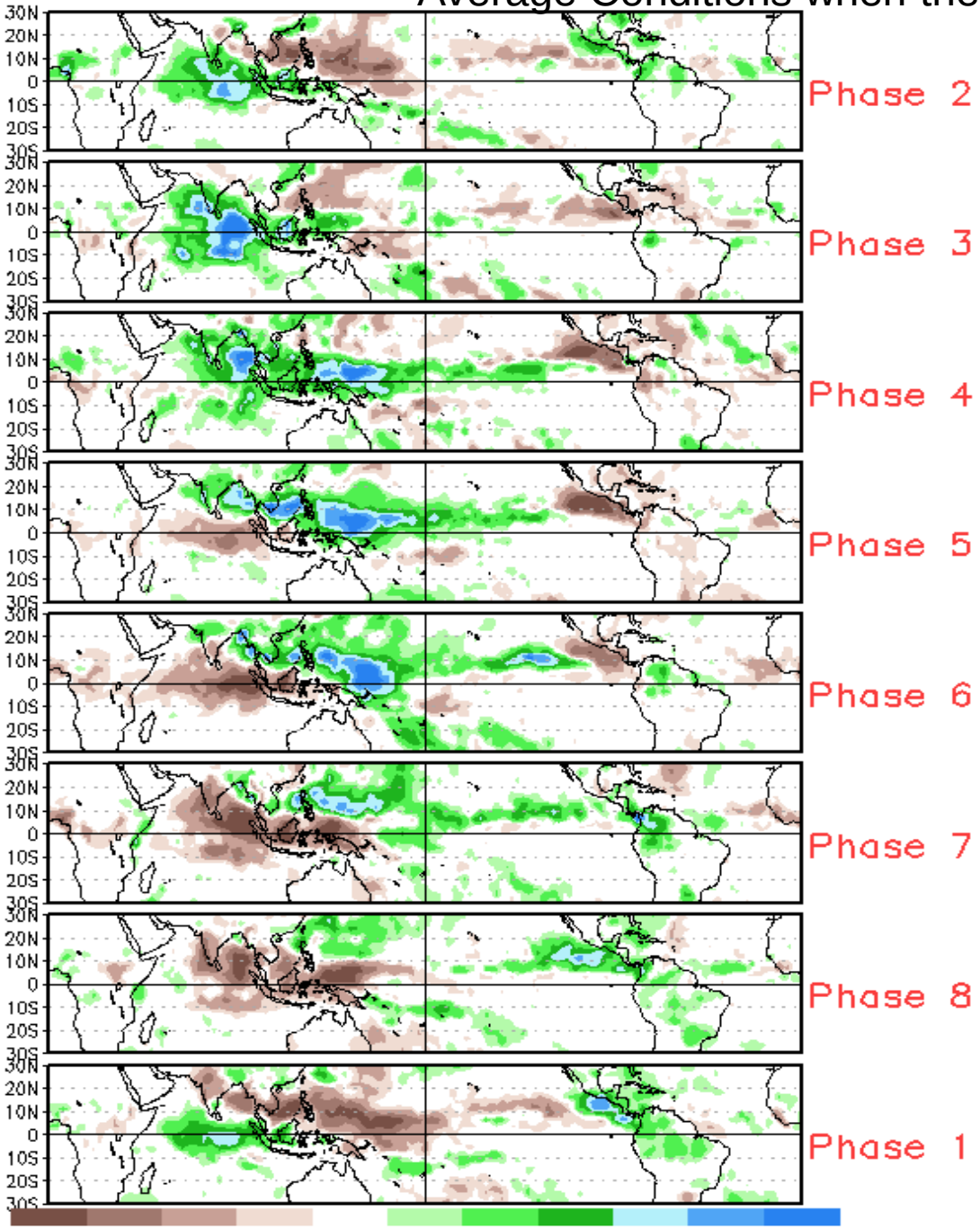

ECMWF




UKMET

GEFS and ECMWF models depict a weakening signal during Week-2.
The UKMET model depicts a stronger signal through Week-1.

# Average Conditions when the MJO is present



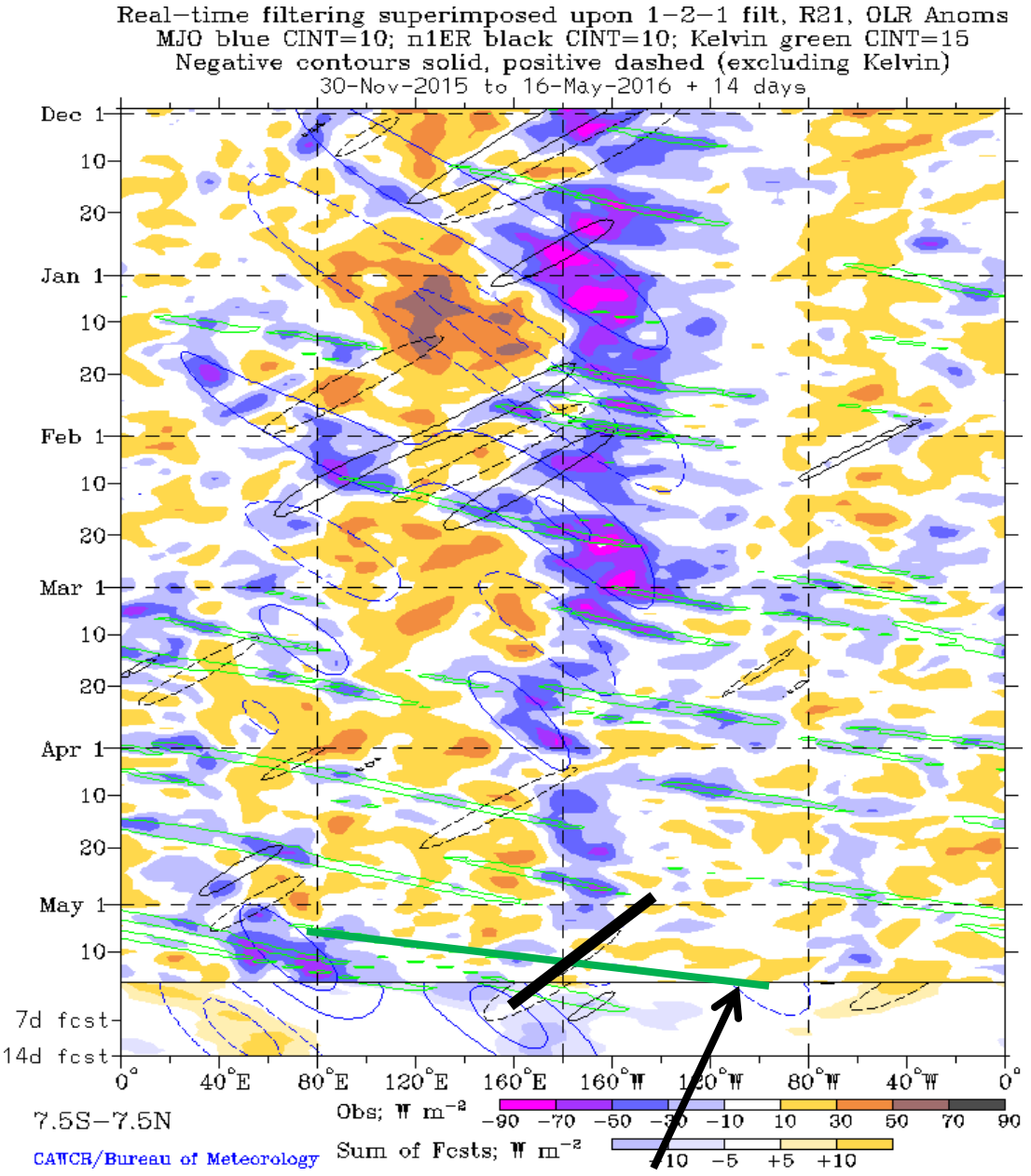

CAVEAT: These panels are representative of robust MJO events, with all phases of ENSO.

MJO predicted to be in Phase 4 by most models.

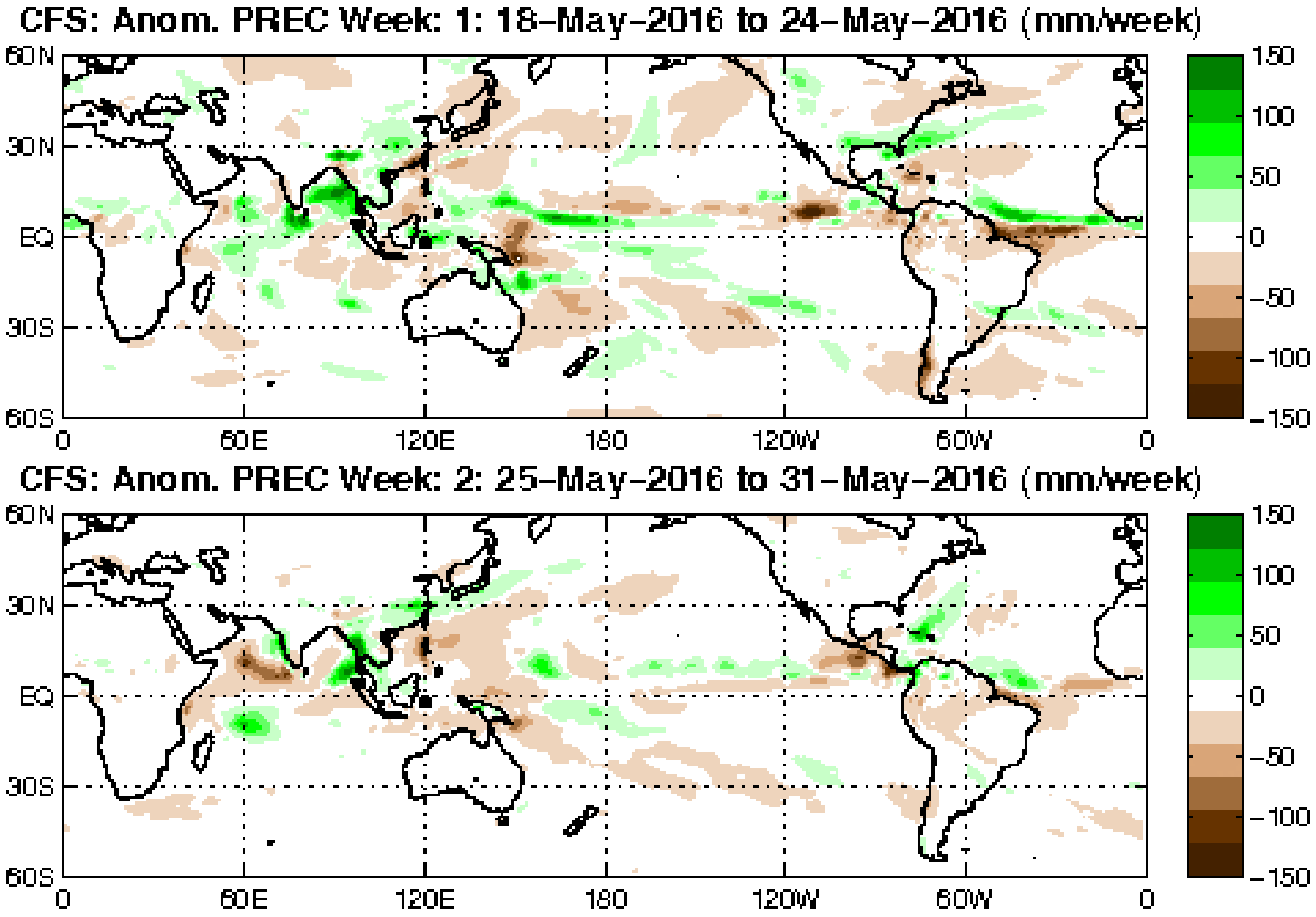
Influence of El Nino is waning.

Weak Rossby wave near the Date Line.

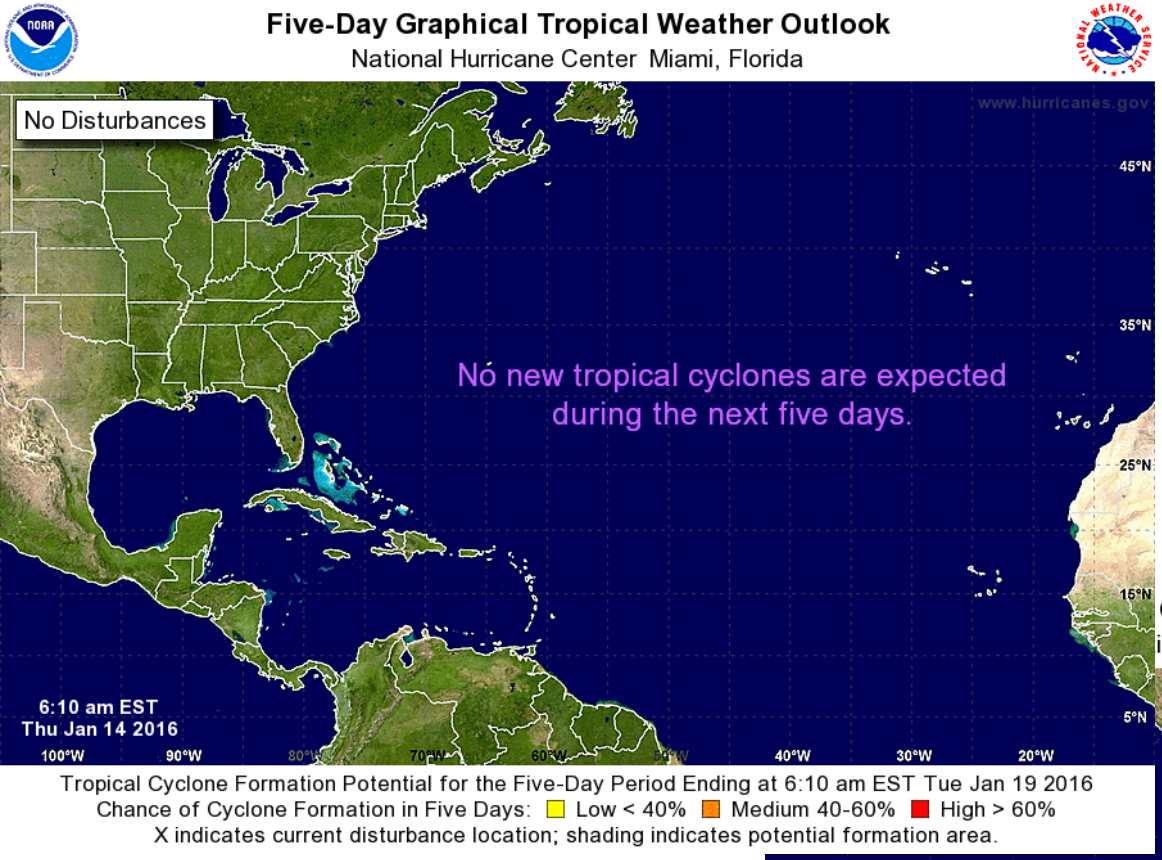
Kelvin waves influencing the pattern as well.



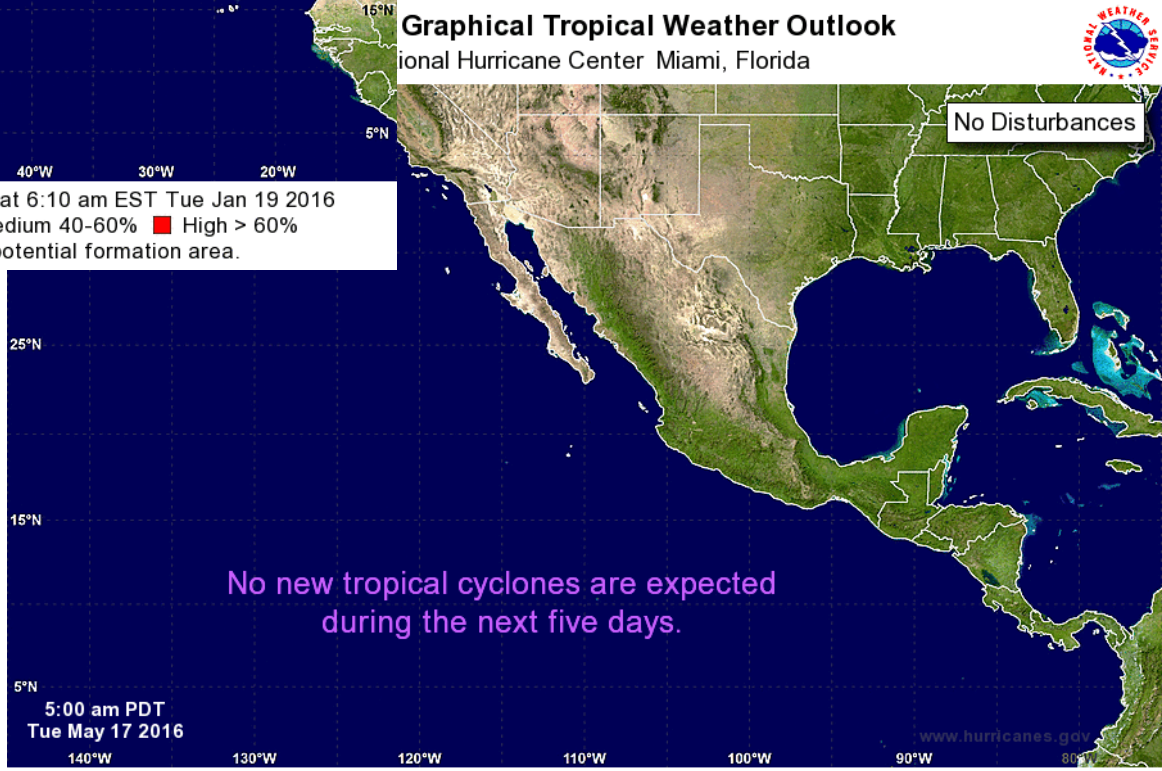

Kelvin wave over East Pacific


CFS: Anom. PREC Week: 1: 18-May-2016 to 24-May-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150
CFS: Anom. PREC Week: 2: 25-May-2016 to 31-May-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150

# Graphical Tropical Weather Outlooks

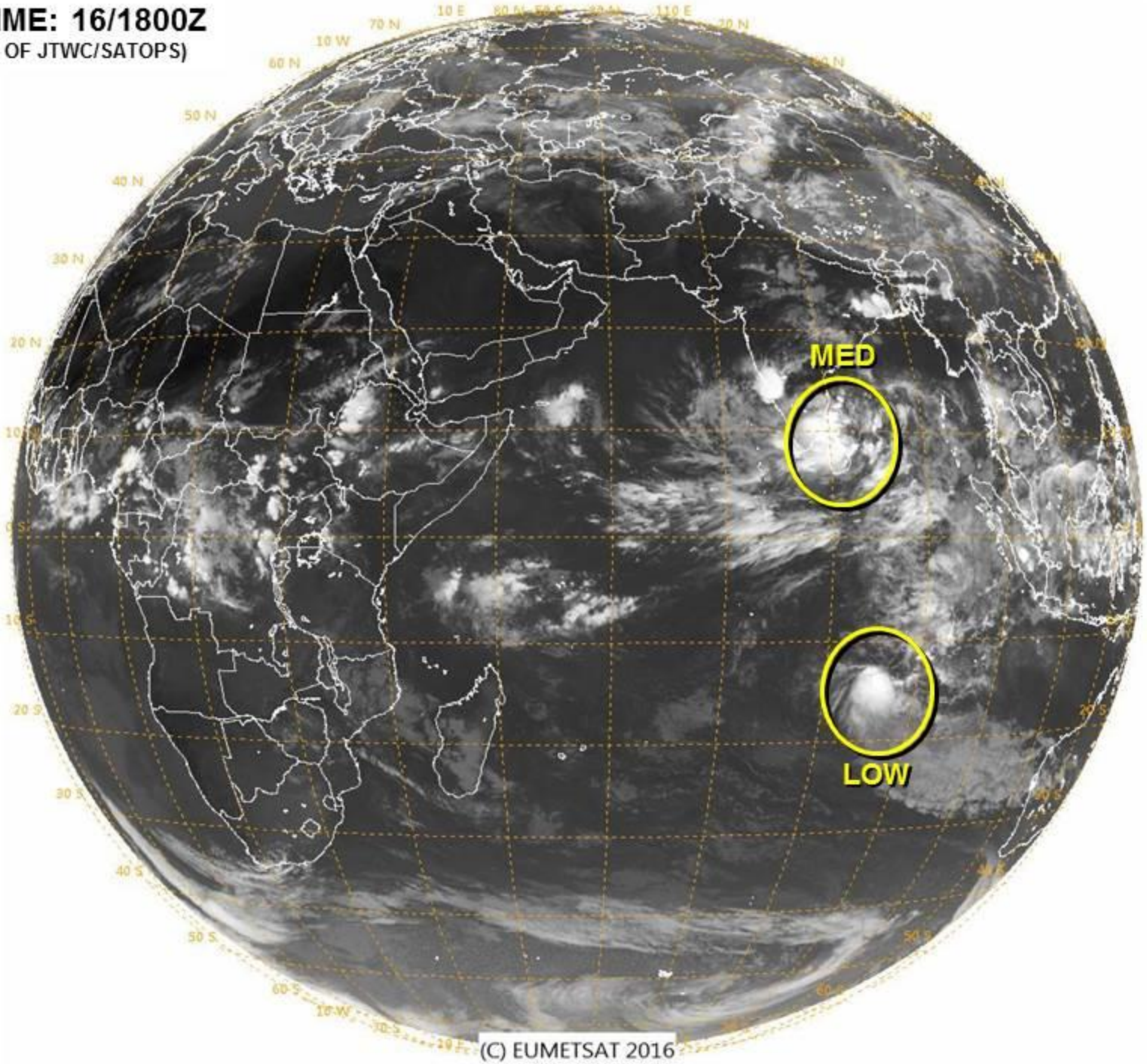


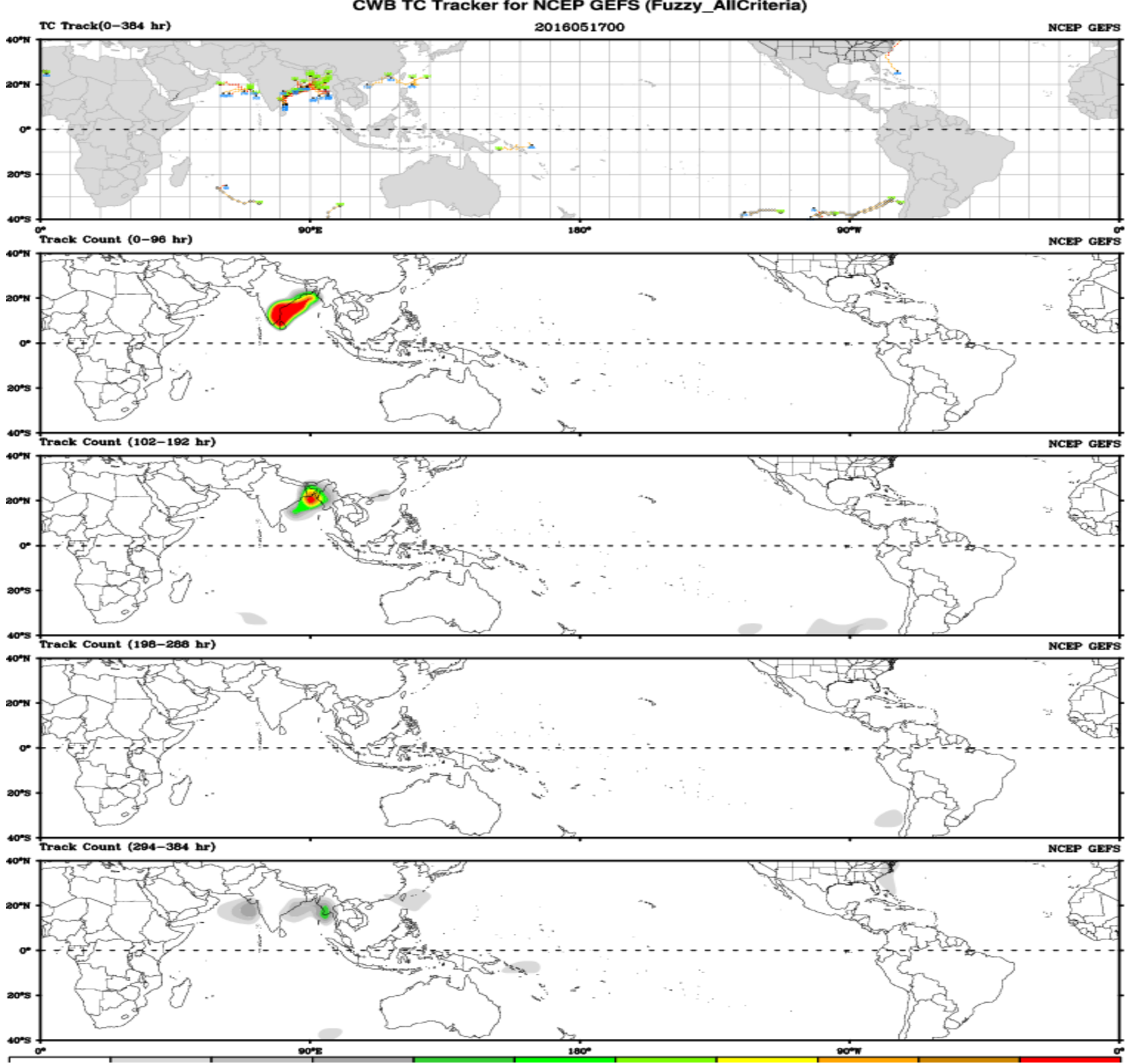

Tropical Cyclone Formation Potential for the Five-Day Period Ending at 6:10 am EST Tue Jan 19 2016
Chance of Cyclone Formation in Five Days: Low < 40% Medium 40-60% High > 60%
X indicates current disturbance location; shading indicates potential formation area.




Tropical Cyclone Formation Potential for the Five-Day Period Ending at 5:00 am PDT Sun May 22 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.

**VALID TIME: 16/1800Z**
(PRODUCT OF JTWC/SATOPS)






Days 1-4

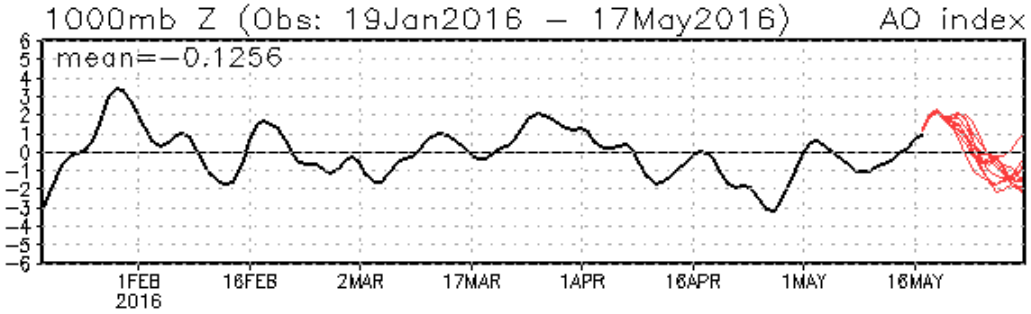
Day 5-8

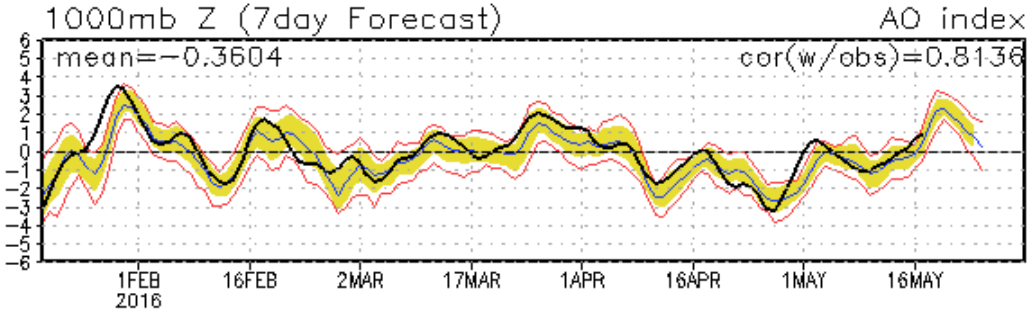
Day 9-12

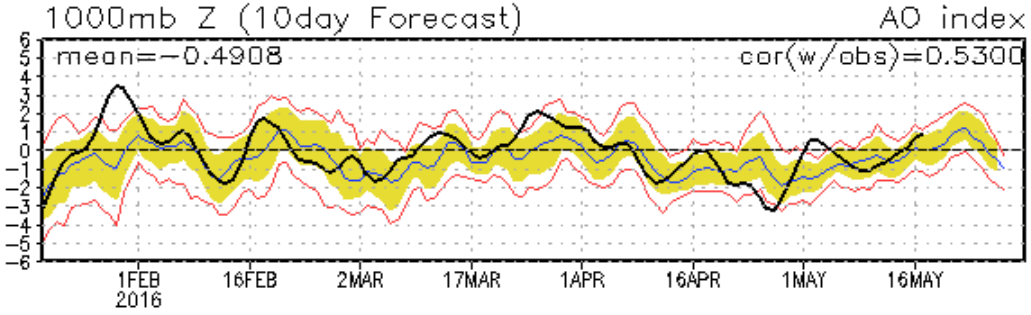
Day 13-15

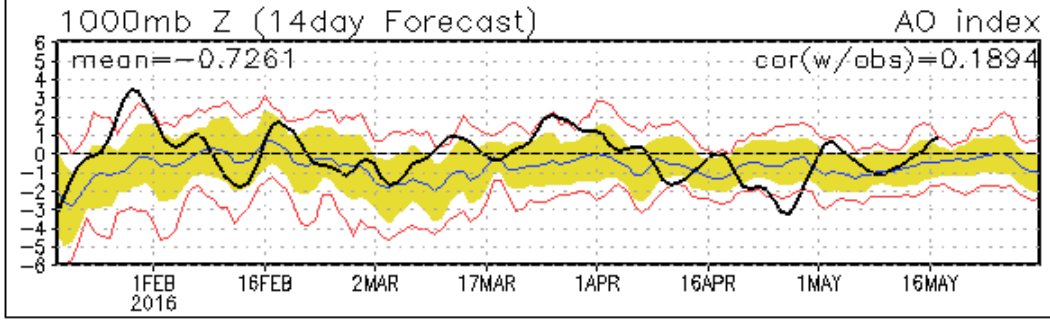
# Connections to U.S. Impacts

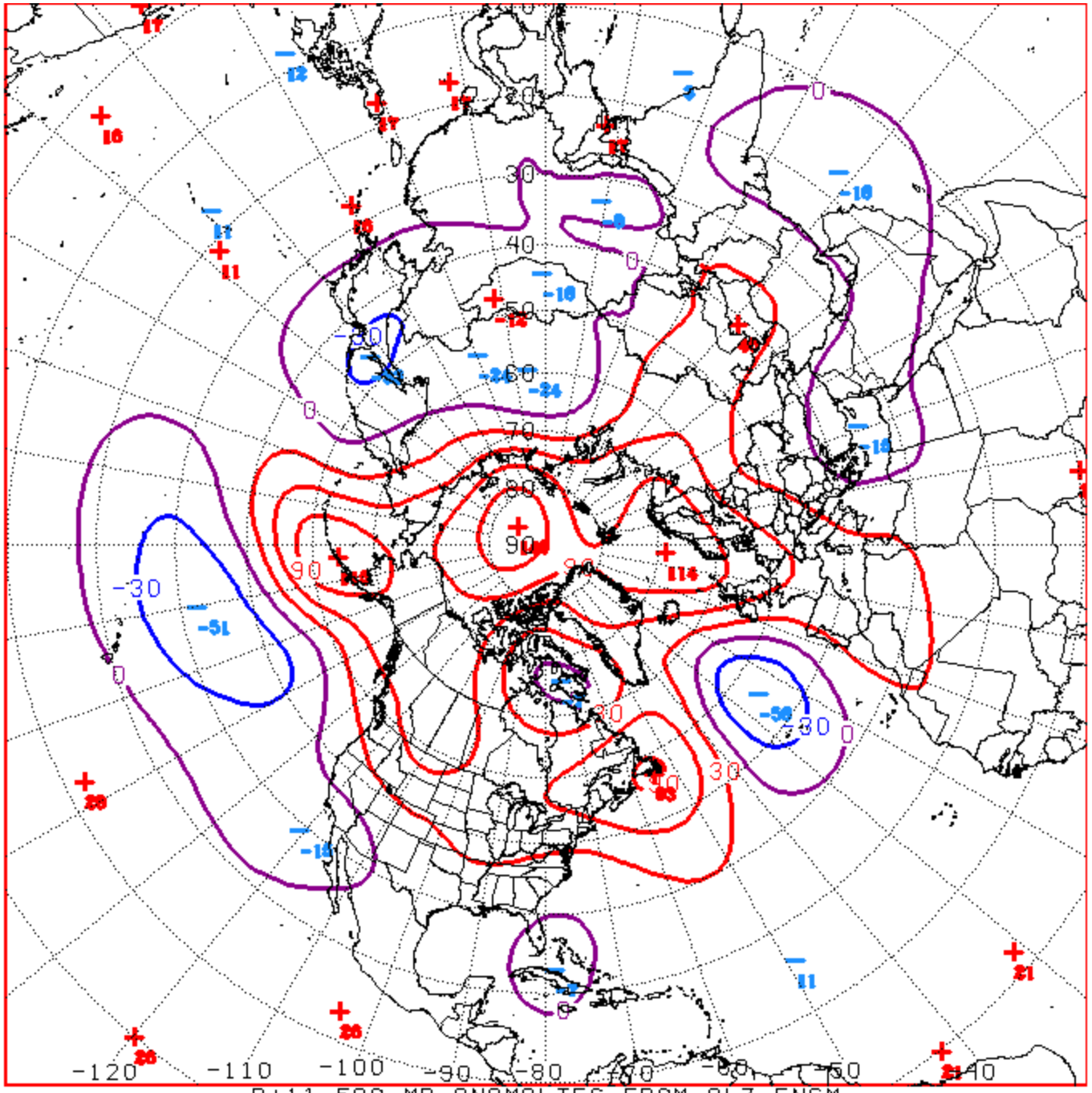
# AO: Observed & ENSM forecasts



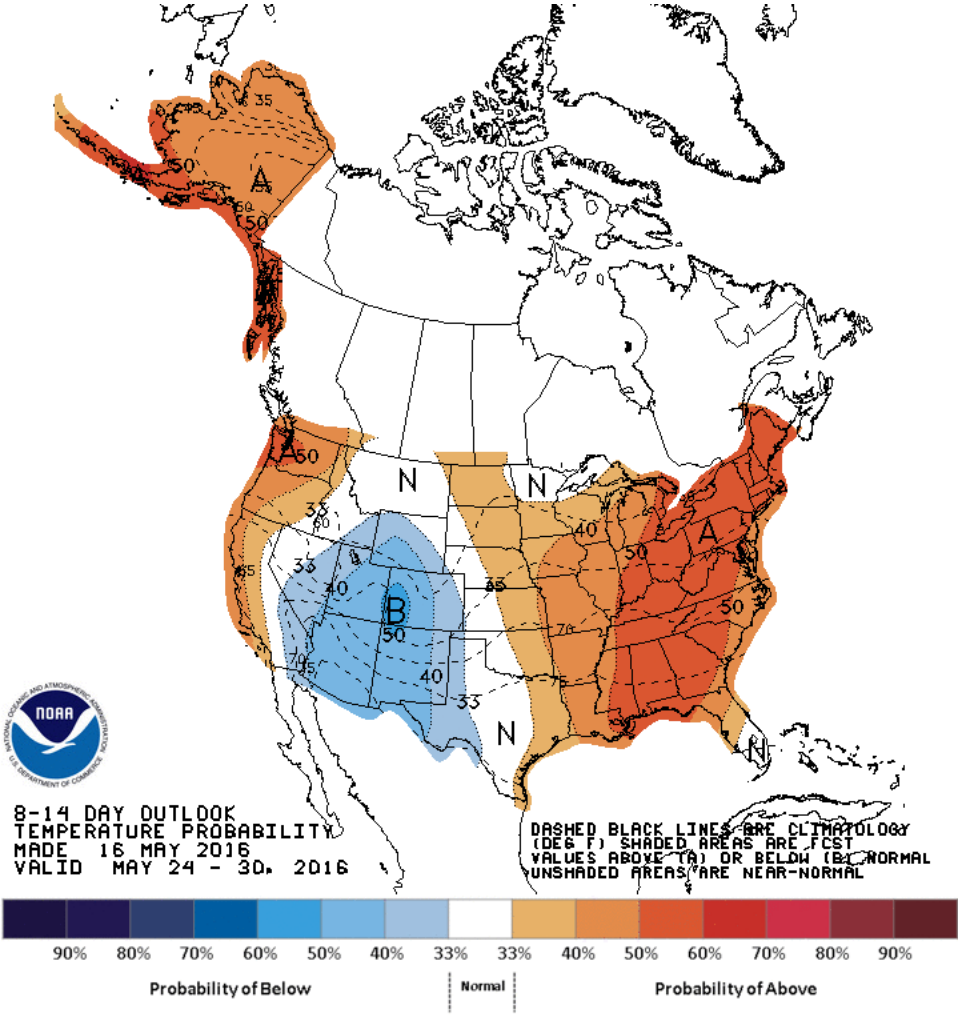



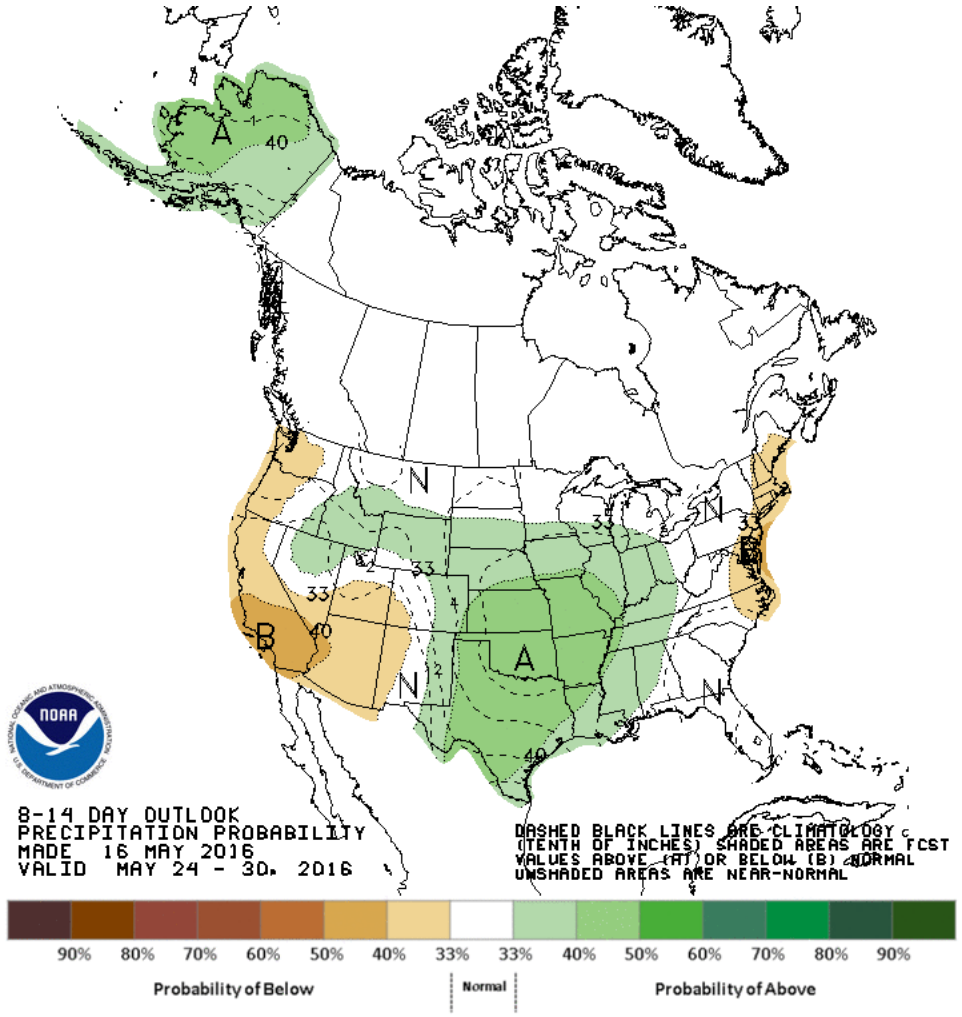






D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE MAY 17 2016 1328 UTC CNTD MAY 28 2016

# Week 2 – Temperature and Precipitation



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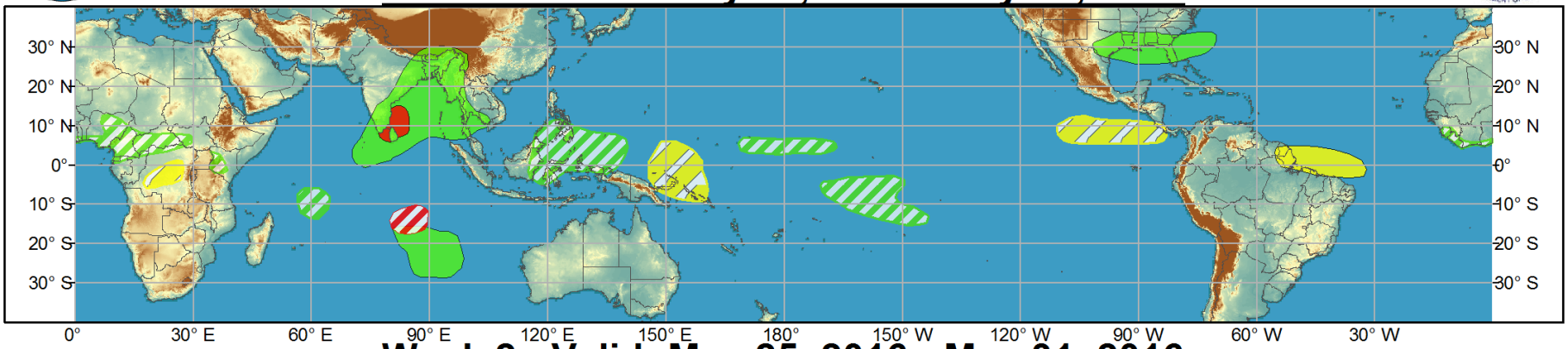


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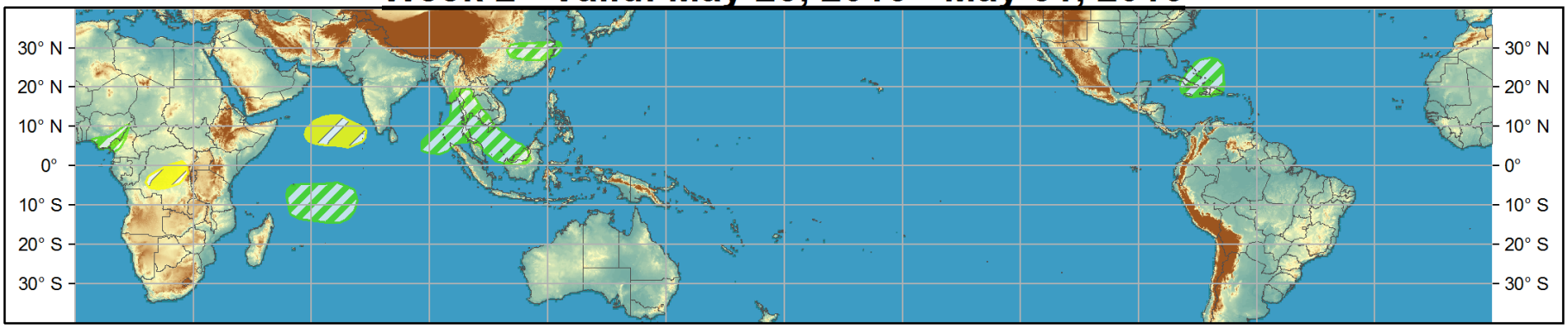


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