

Global Tropics Hazards And Benefits Outlook

January 5, 2016

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

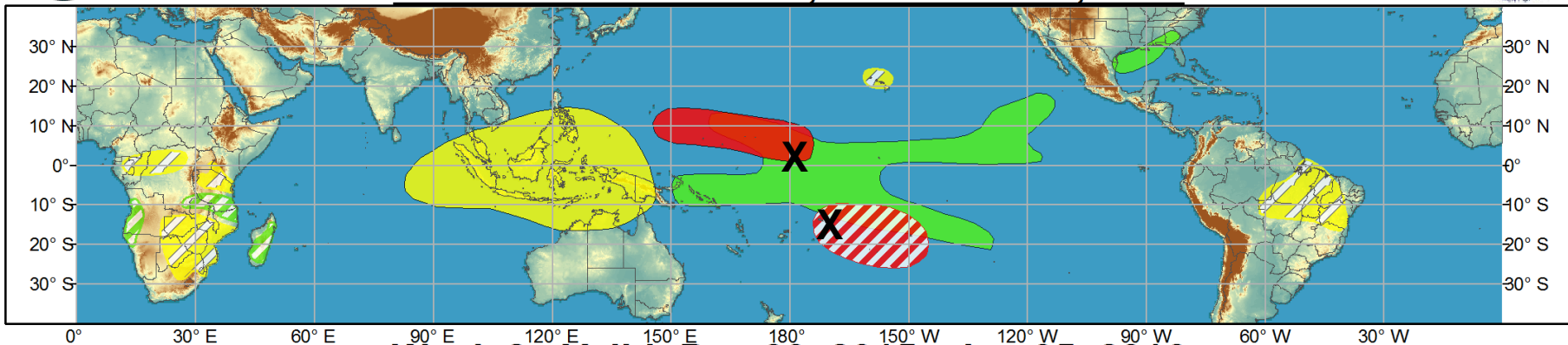
Tropical Cyclone Formations



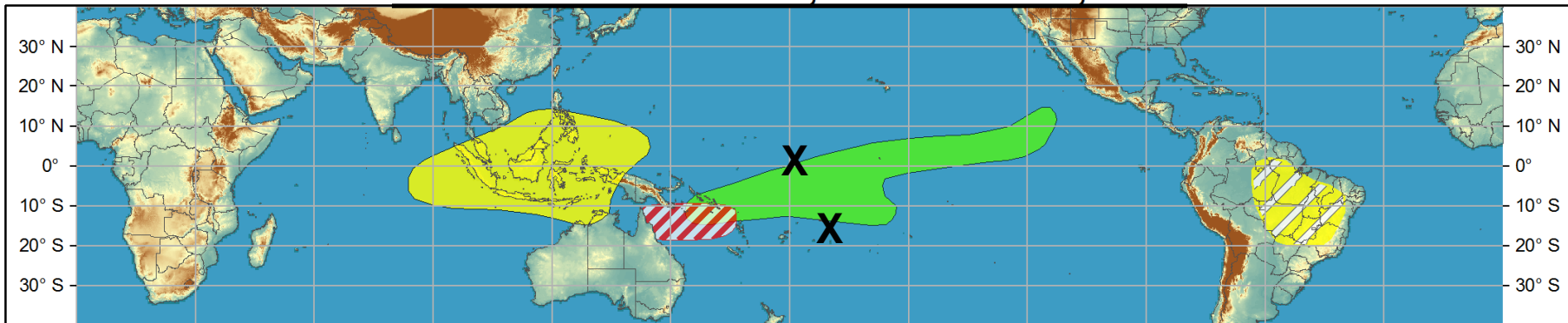
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



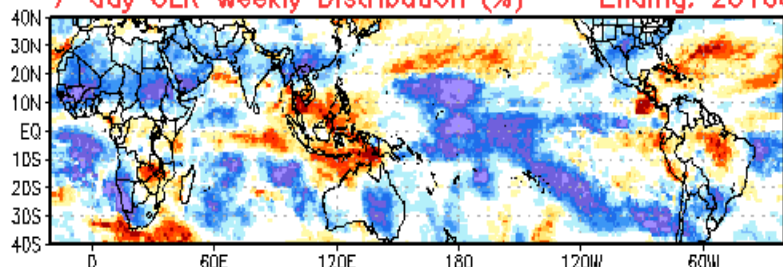
Week 1 - Valid: Dec 30, 2015 - Jan 05, 2016



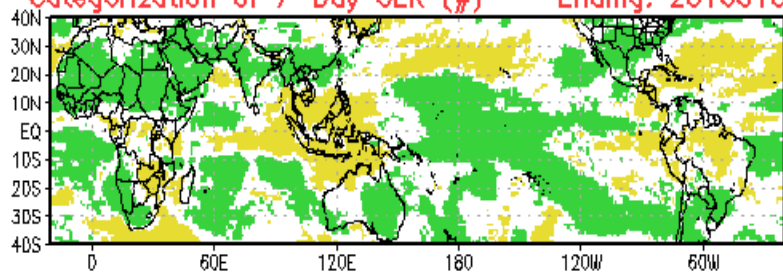
Week 2 - Valid: Dec 30, 2015 - Jan 05, 2016



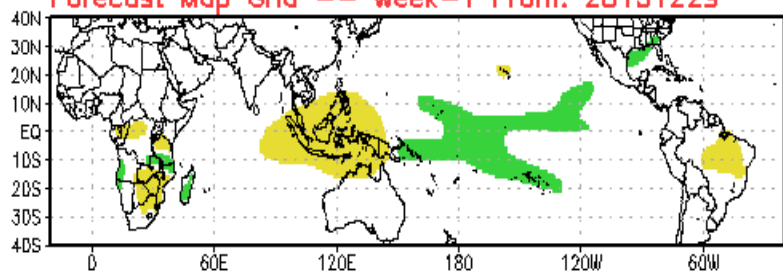
7-day OLR Weekly Distribution (%) -- Ending: 20160105



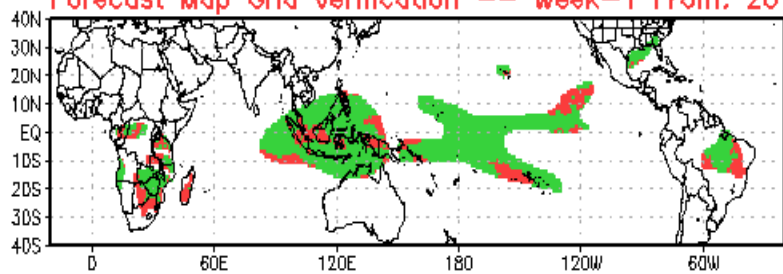
Categorization of 7-Day OLR (#) -- Ending: 20160105



Forecast Map Grid -- Week-1 From: 20151229

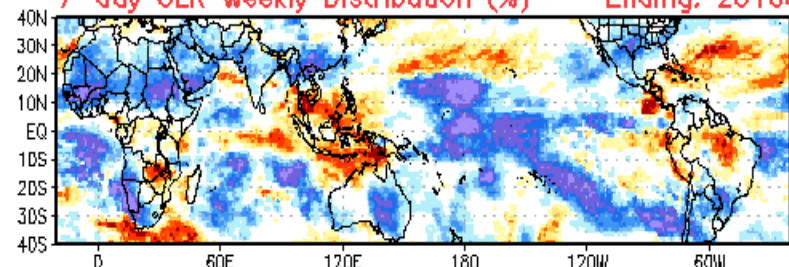


Forecast Map Grid Verification -- Week-1 From: 20151229

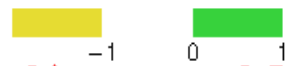
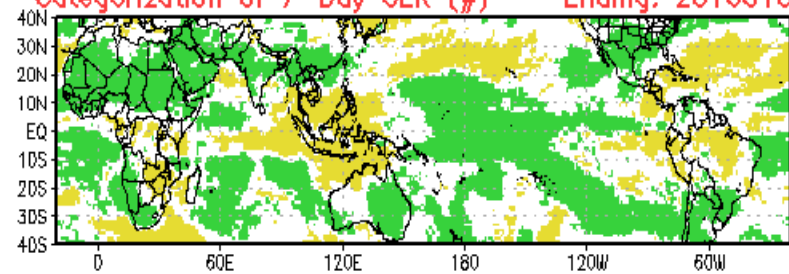


Hit: Green, Miss: Red
Heidke Skill Score: 64.8269

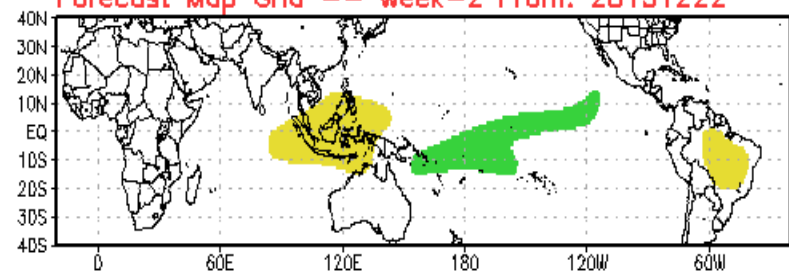
7-day OLR Weekly Distribution (%) -- Ending: 20160105



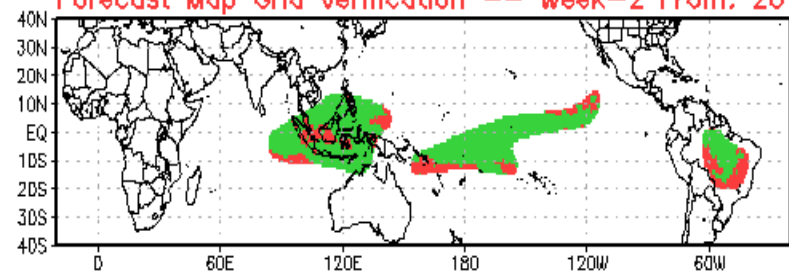
Categorization of 7-Day OLR (#) -- Ending: 20160105



Forecast Map Grid -- Week-2 From: 20151222



Forecast Map Grid Verification -- Week-2 From: 20151222



Hit: Green, Miss: Red
Heidke Skill Score: 64.2839

Synopsis of Climate Modes

ENSO:

- Current: [El Niño Advisory](#)
- El Niño is expected to remain strong through the Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during late spring or early summer 2016.

MJO and other subseasonal tropical variability:

- The MJO remains active, and is currently propagating over the Pacific (constructively interfering with the El Niño).
- A consensus of dynamical model MJO index forecasts supports continued eastward propagation of the MJO over the Western Hemisphere during Week-1. During Week-2, the ECMWF brings the MJO index over the Indian Ocean, while the GFS depicts a westward adjustment back to the Pacific.

Extratropics:

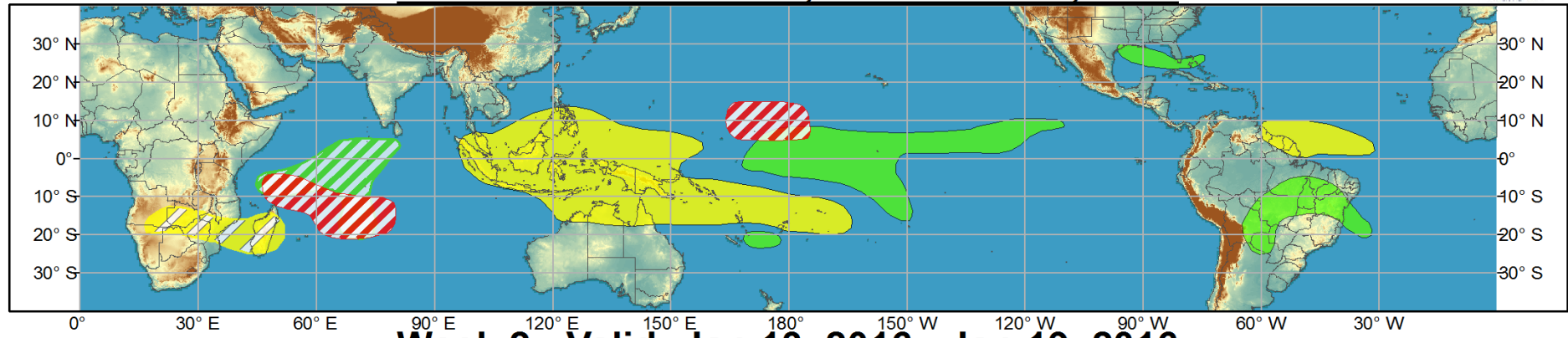
- The MJO contributed to a large pattern change over the Northern Hemisphere, including a transition to a negative AO pattern. There is uncertainty regarding how much of an impact the MJO will continue to have on the extratropical pattern, due to increased divergence among the model guidance as well as uncertainty regarding the extent of Indian Ocean convection if the upper-level MJO structure holds together.



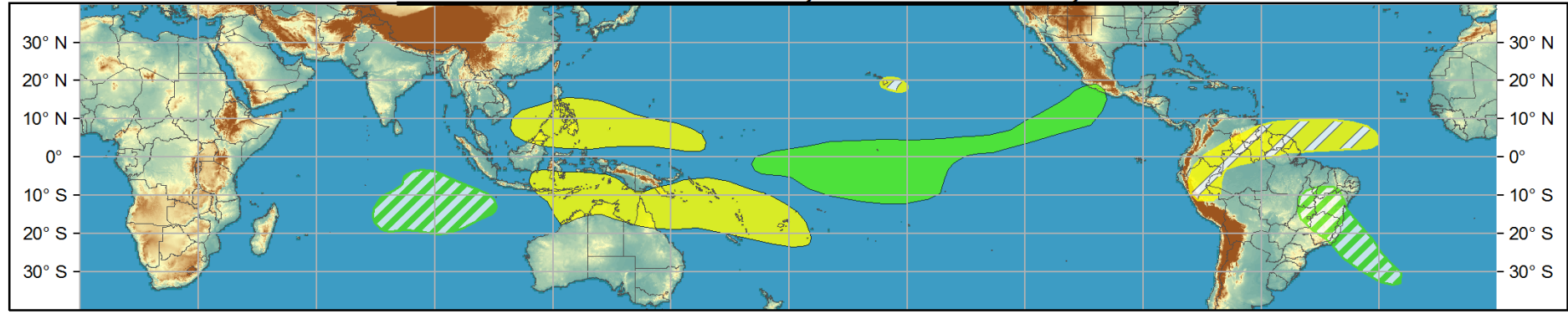
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jan 06, 2016 - Jan 12, 2016



Week 2 - Valid: Jan 13, 2016 - Jan 19, 2016



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: 01/05/2016
Forecaster: Allgood

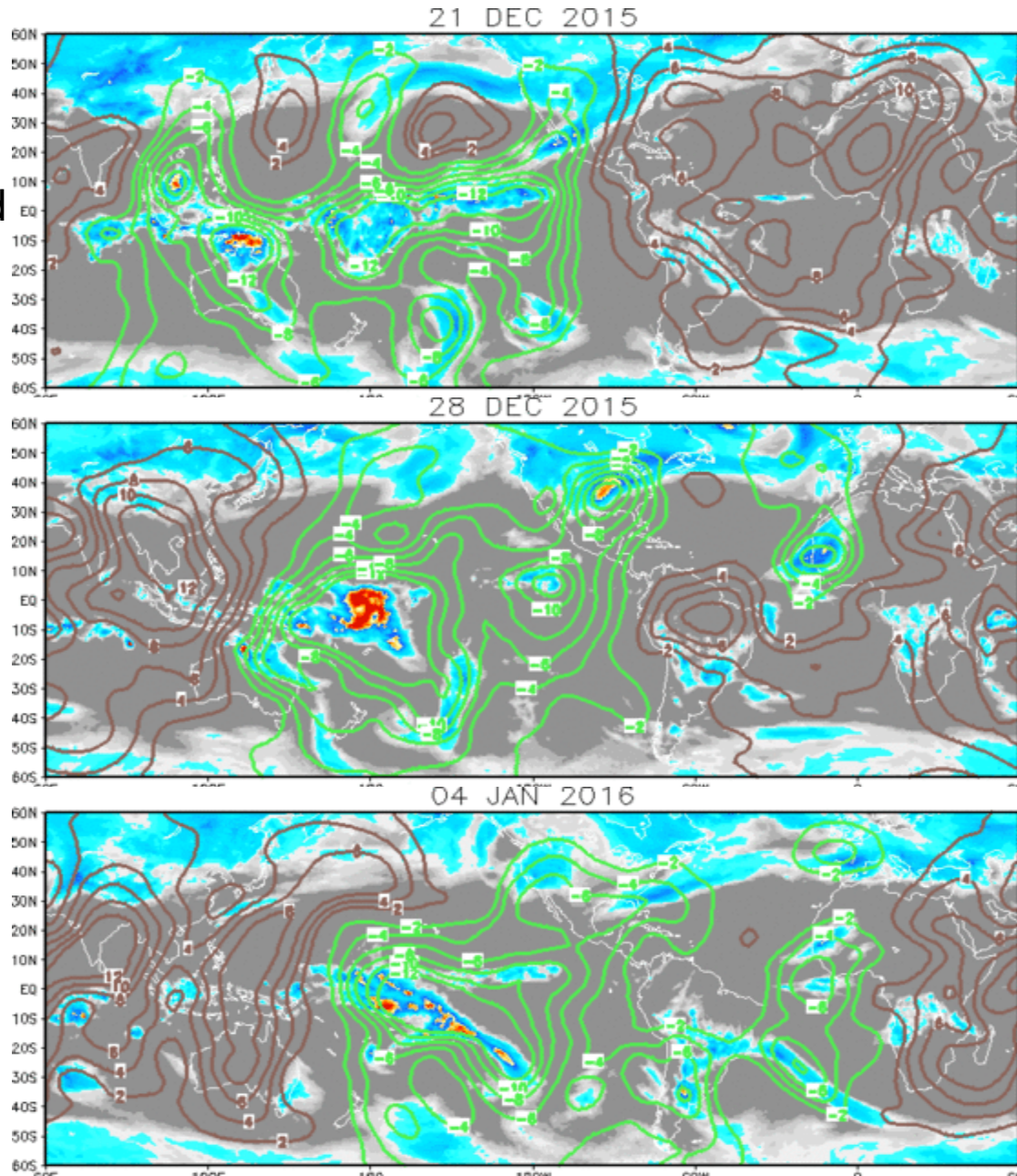
Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



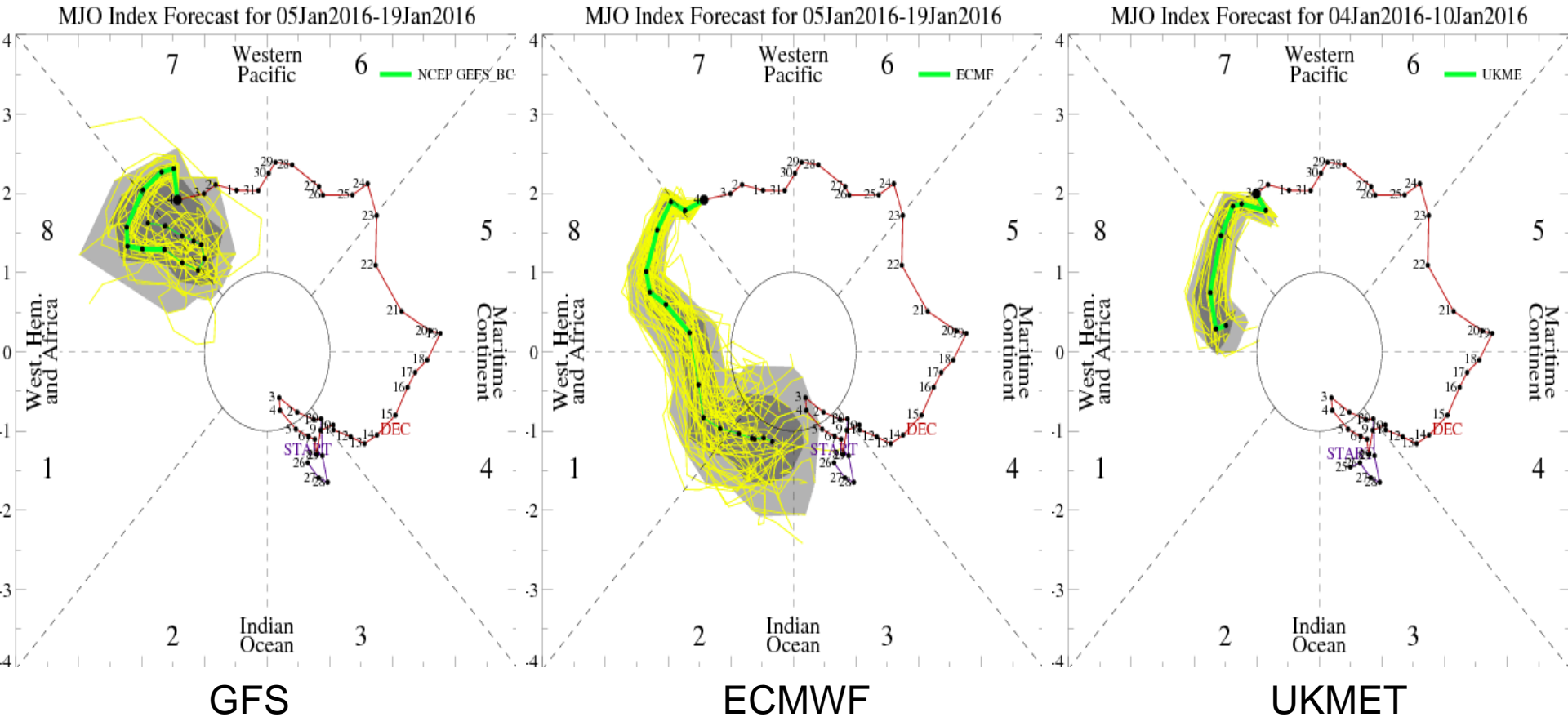
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

Robust eastward propagation of the MJO is evident in the upper-level pattern.



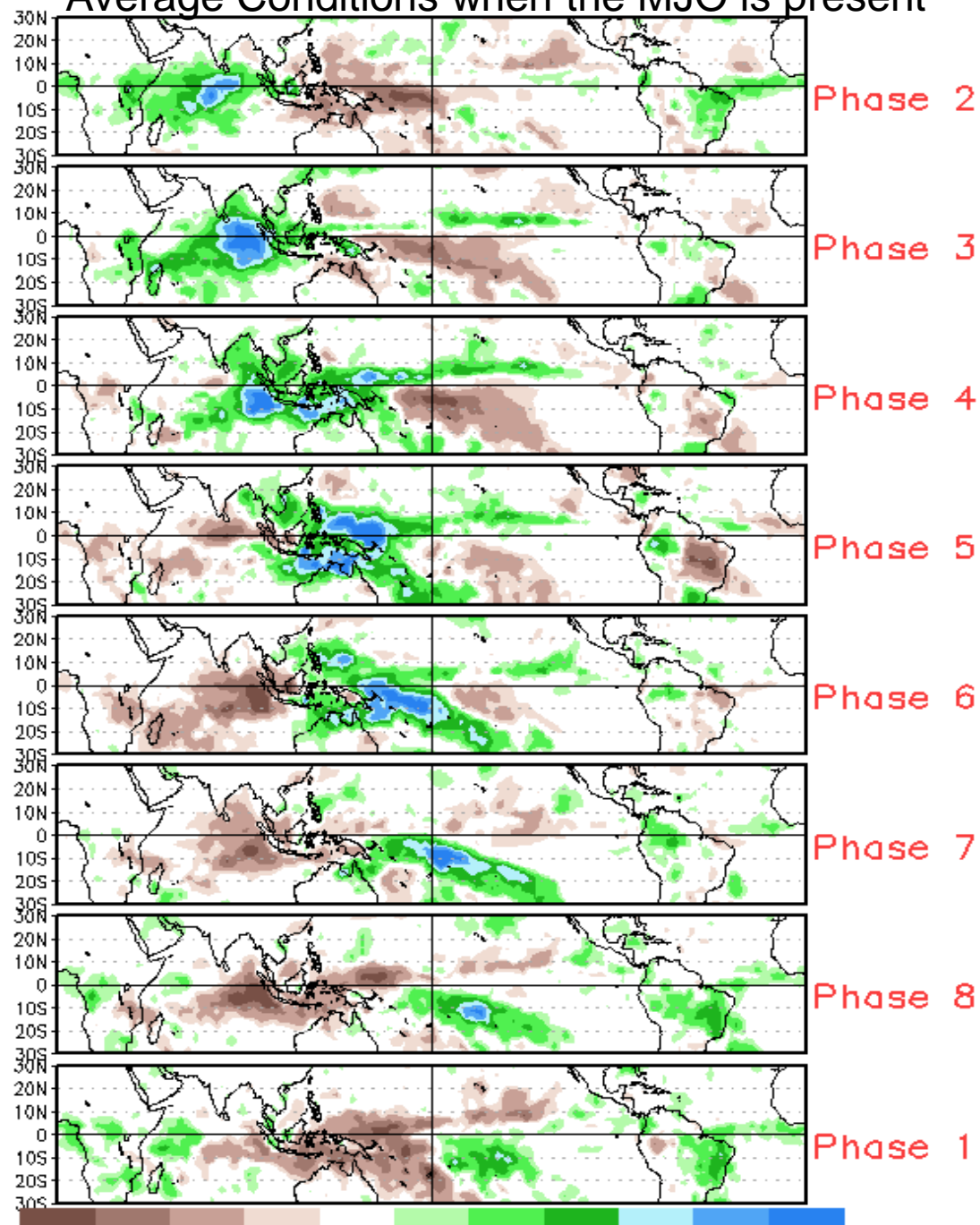
MJO Observation/Forecast



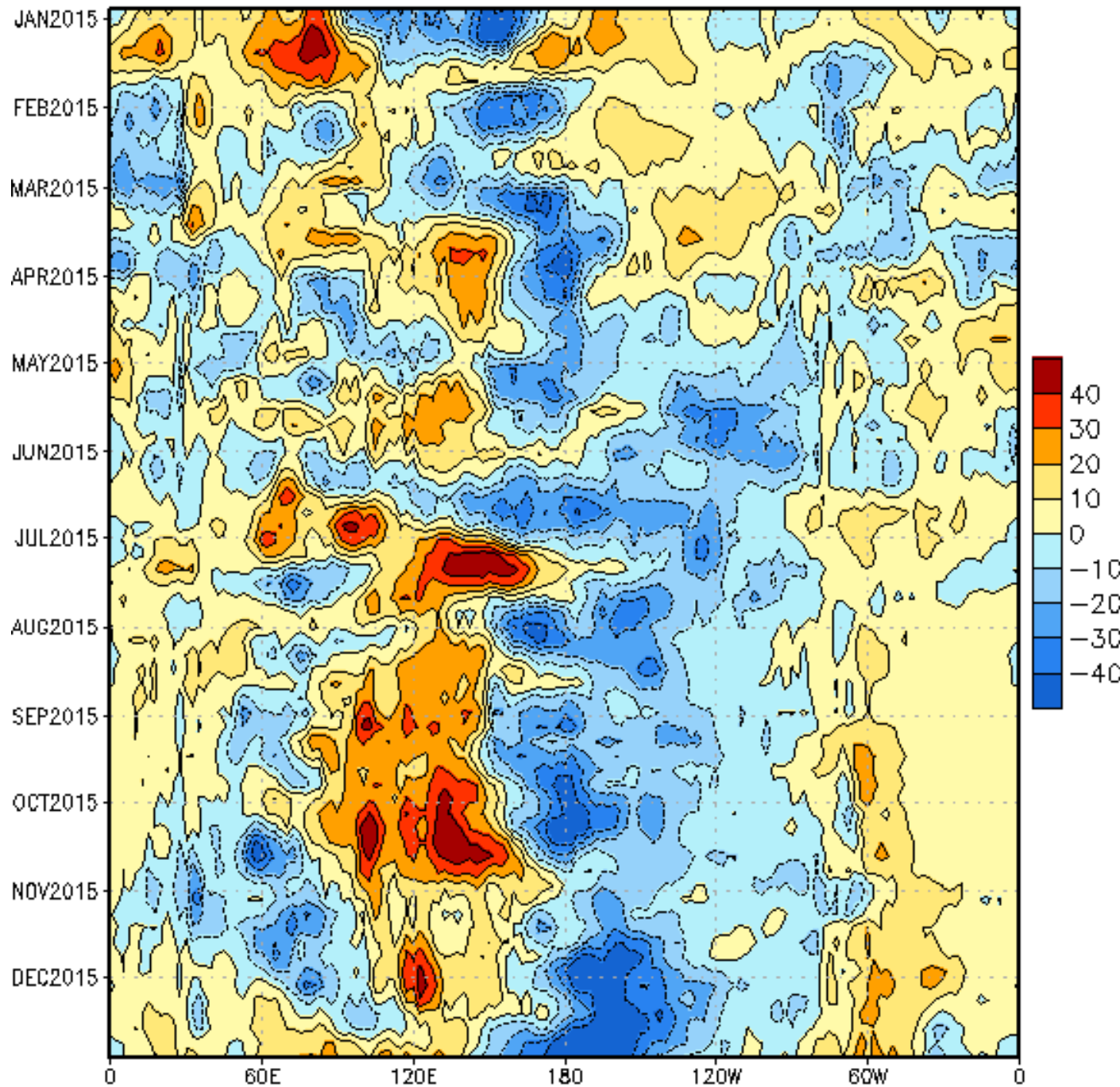
The GFS (left) brings the RMM Index back to the central Pacific, due in part to forecasts for a large low-level westerly wind burst.

The ECMWF (center) maintains a robust MJO signal across the Western Hemisphere to the Indian Ocean by the end of Week-2.

Average Conditions when the MJO is present



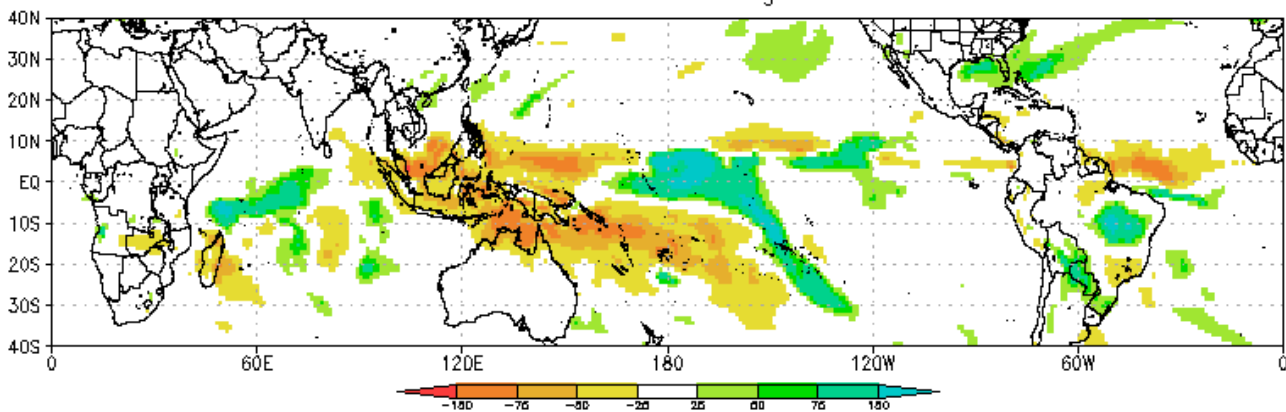
OLR Anomalies 5N-5S



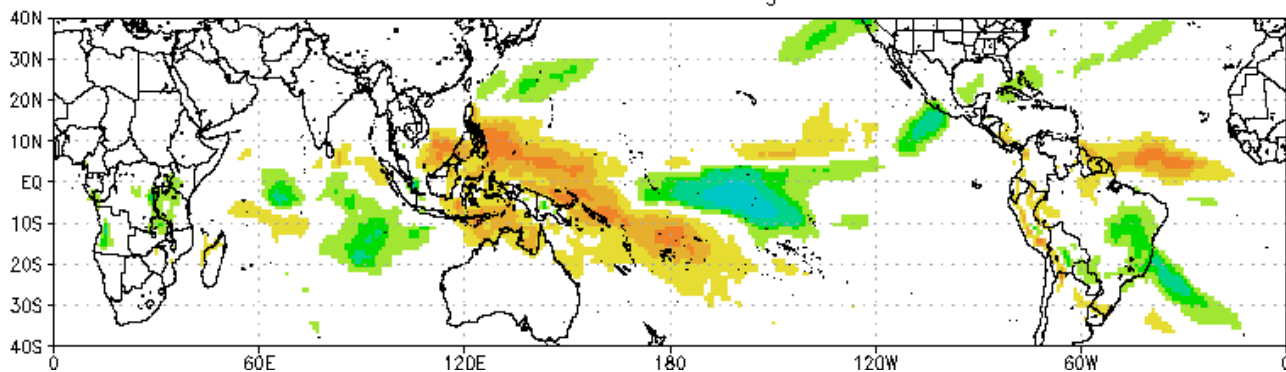
MJO activity is evident in the OLR field during December.

Note the westward moving feature near the Date Line at the end of the month.

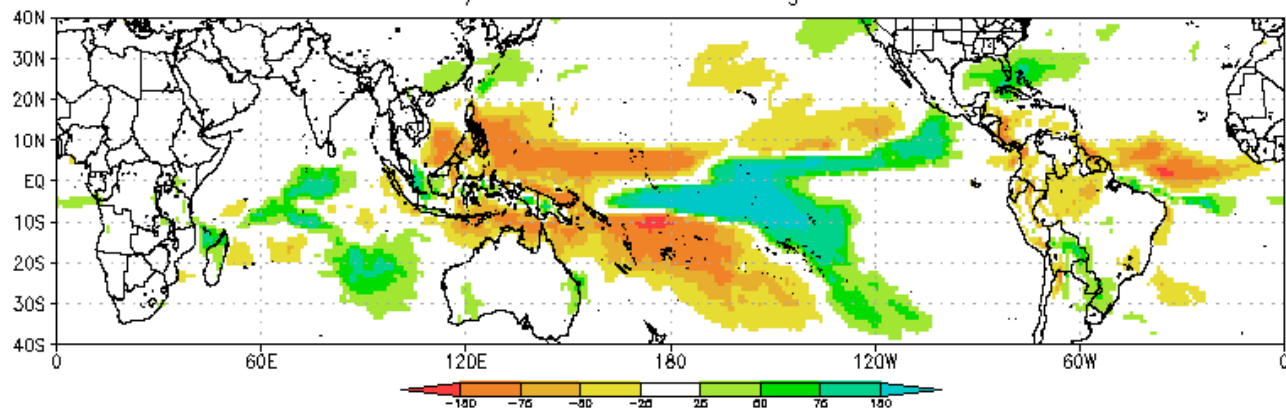
CFSv2 Precip Anomalies (mm) Issued 04Jan2016
Week-1 Forecast Ending 12Jan2016



CFSv2 Precip Anomalies (mm) Issued 04Jan2016
Week-2 Forecast Ending 19Jan2016

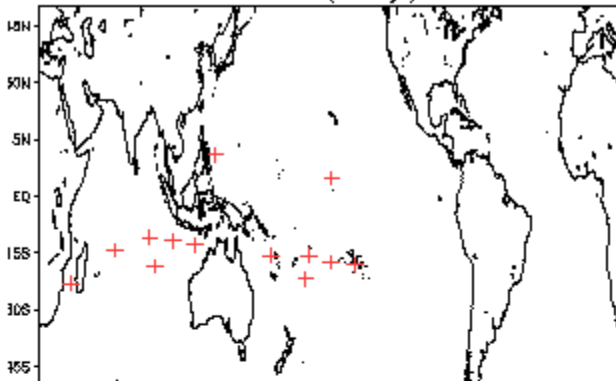


CFSv2 Precip Anomalies (mm) Issued 04Jan2016
Week-3/4 Forecast Ending 02Feb2016

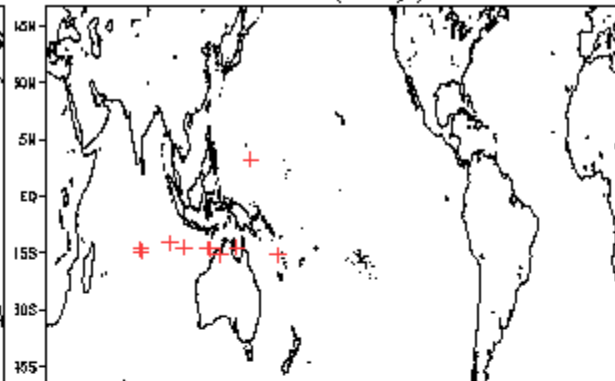


January Tropical Storm Formation by MJO phase

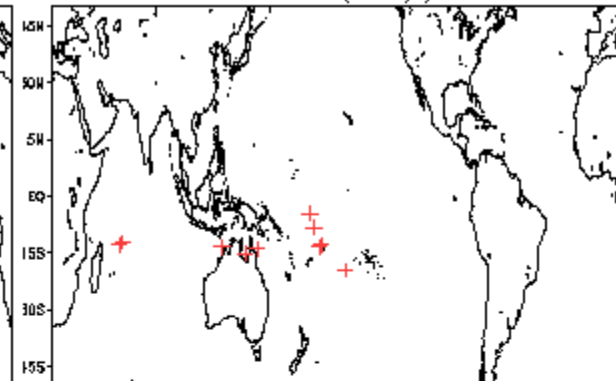
Phase 1 (67 days) 14 storms



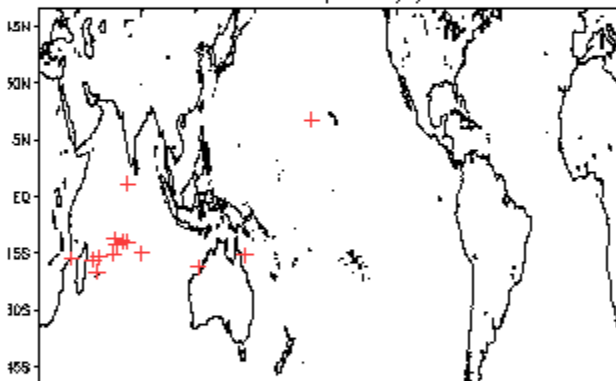
Phase 4 (69 days) 11 storms



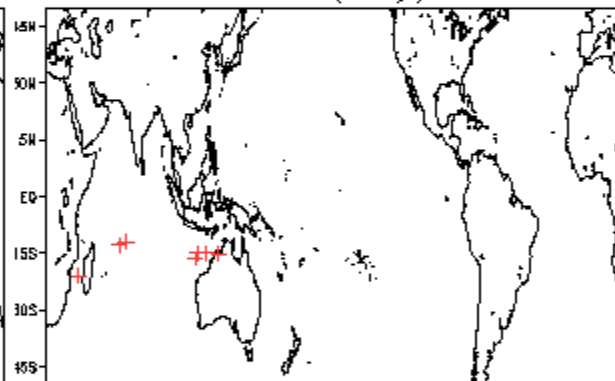
Phase 7 (81 days) 11 storms



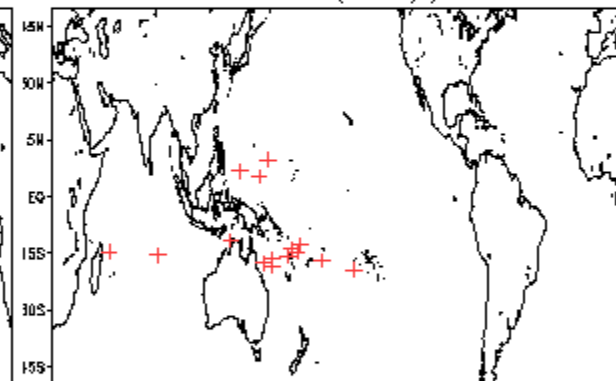
Phase 2 (101 days) 15 storms



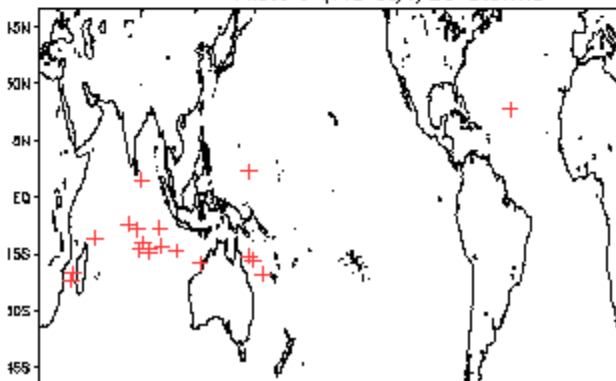
Phase 5 (67 days) 8 storms



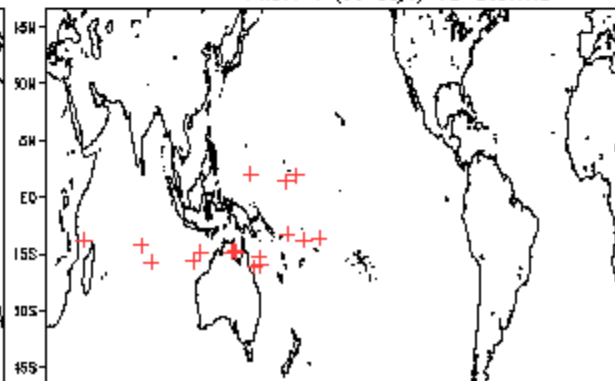
Phase 8 (105 days) 16 storms



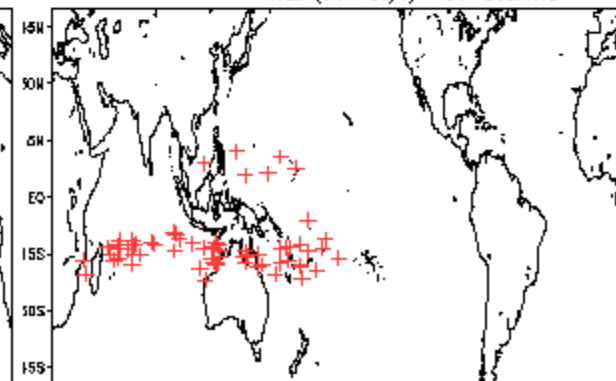
Phase 3 (112 days) 20 storms



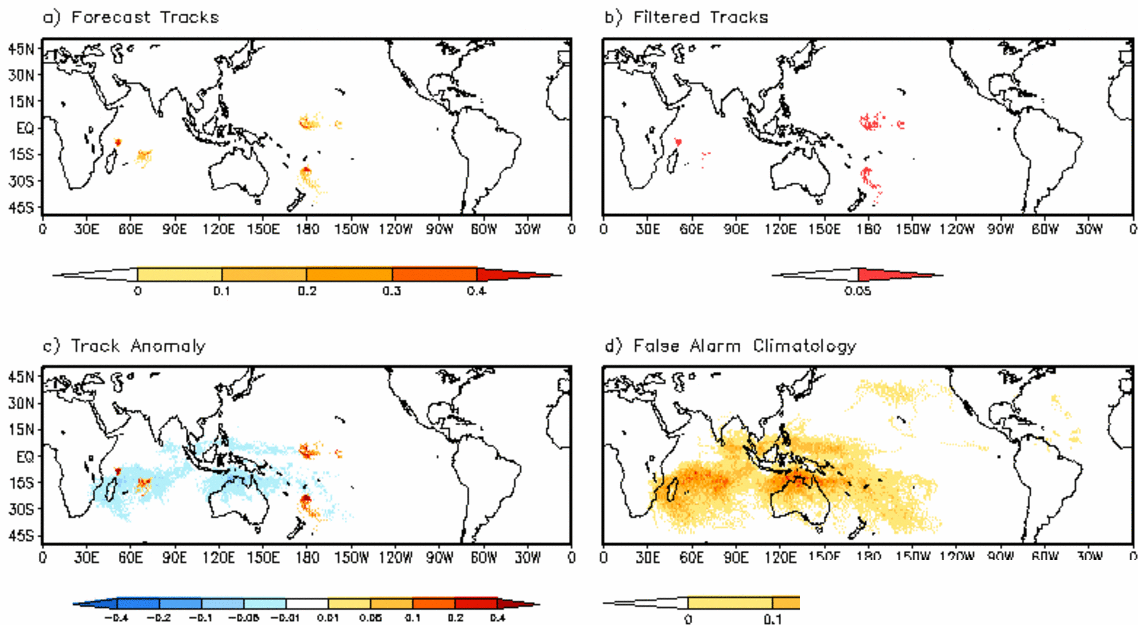
Phase 6 (88 days) 18 storms



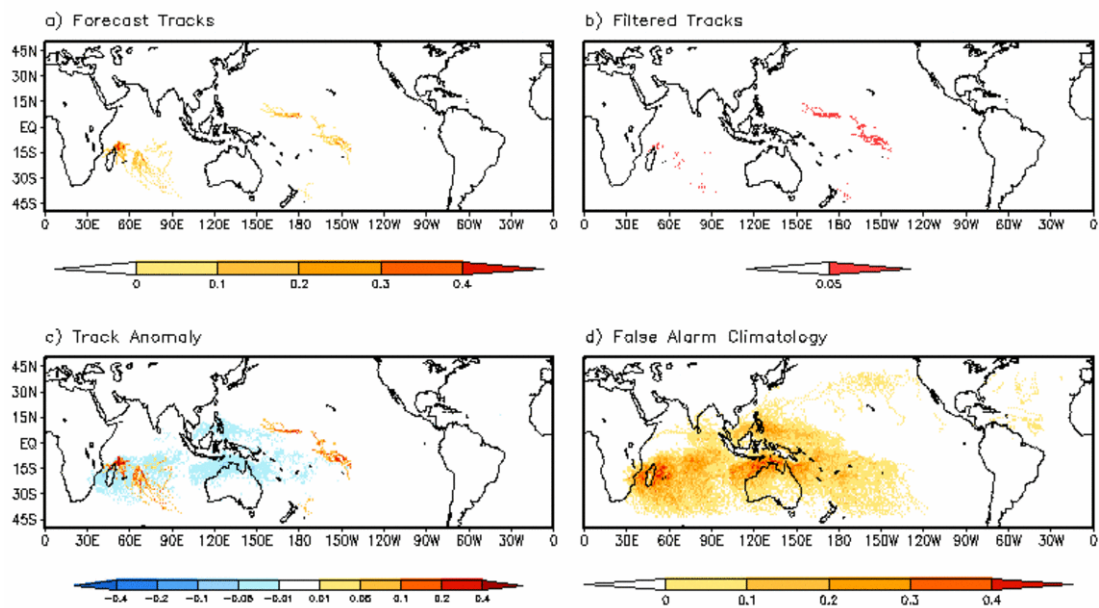
Null (364 days) 67 storms



CFSv2 45-Day Forecasts
Week 1: 0104-0110

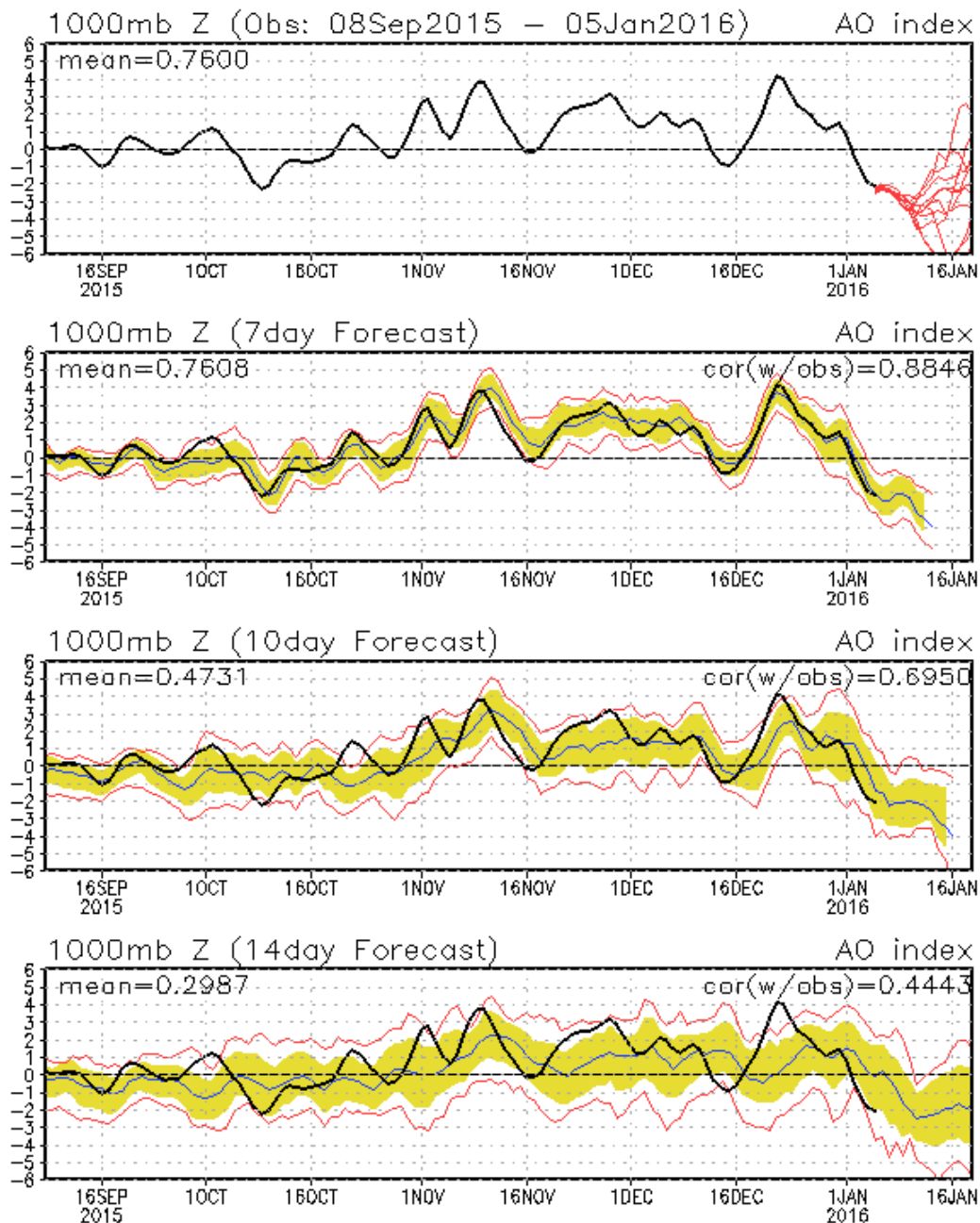


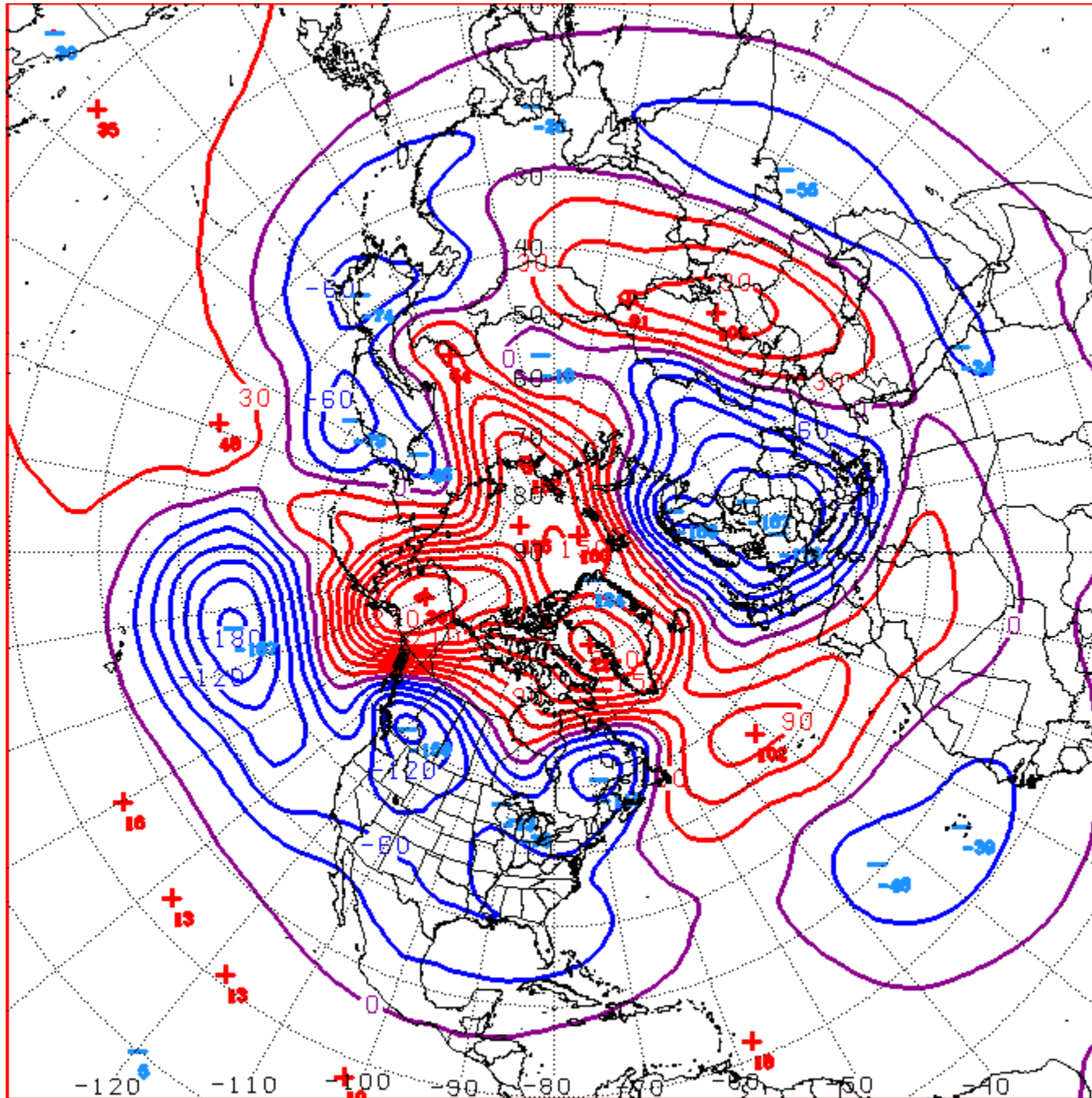
CFSv2 45-Day Forecasts
Week 2: 0111-0117



Connections to U.S. Impacts

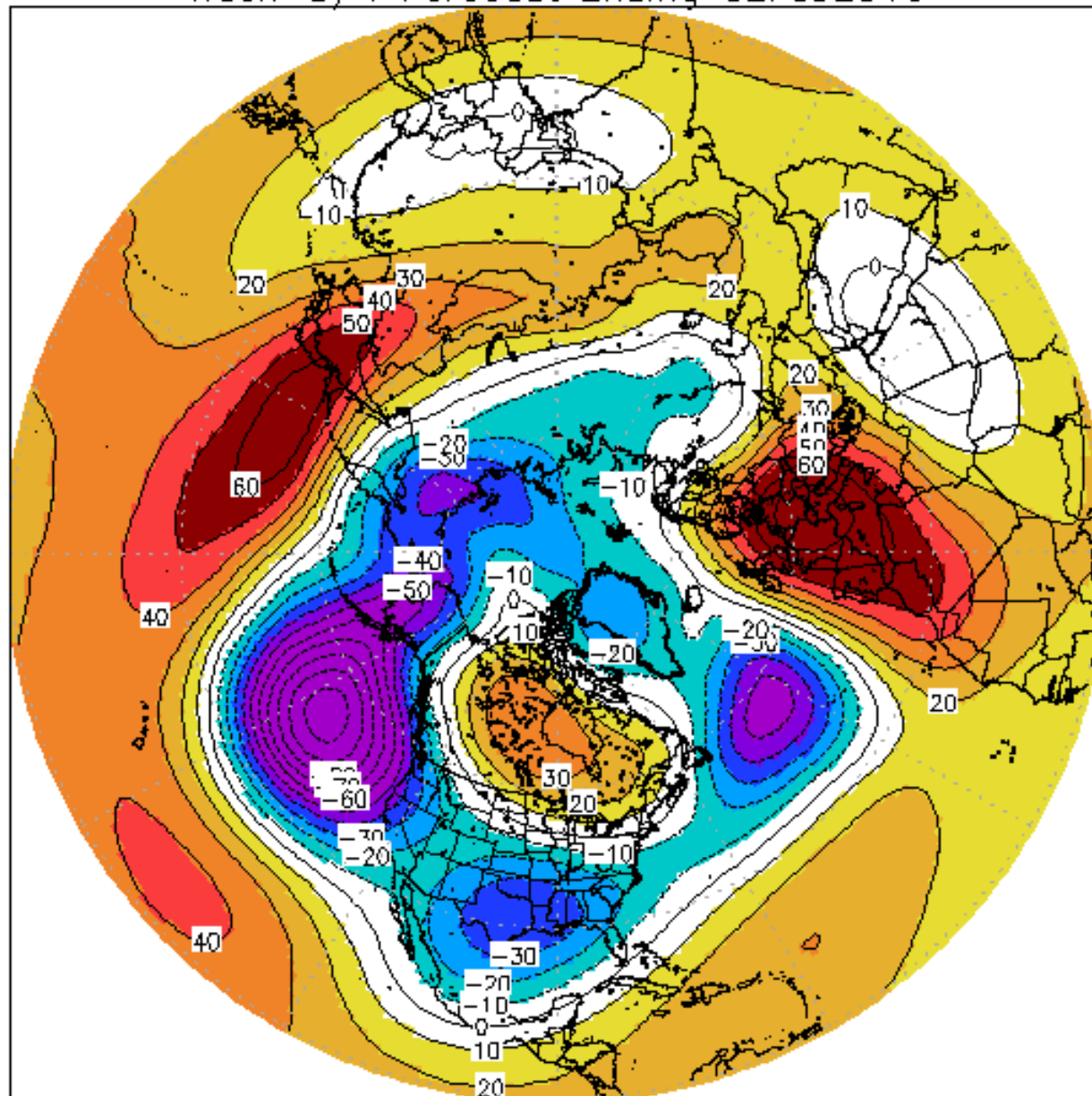
AO: Observed & ENSM forecasts



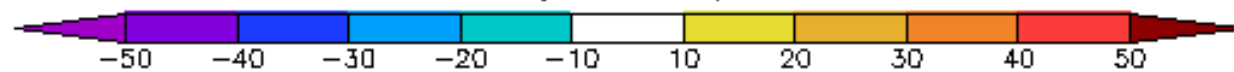


D+11 500 MB ANOMALIES FROM 12Z GFS
CPC MAP MADE JAN 05 2016 1704 UTC CNTD JAN 16 2016

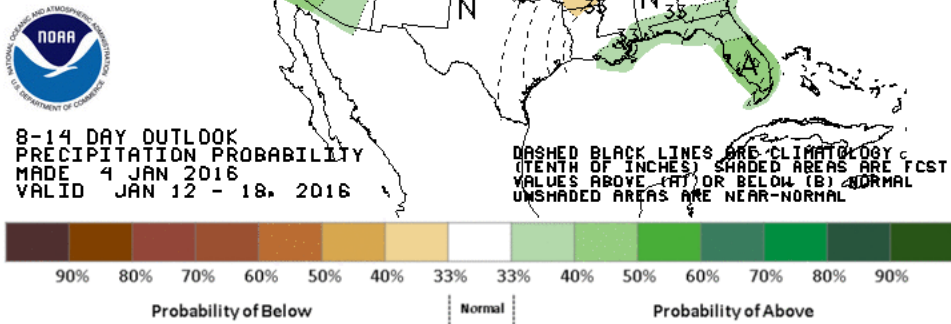
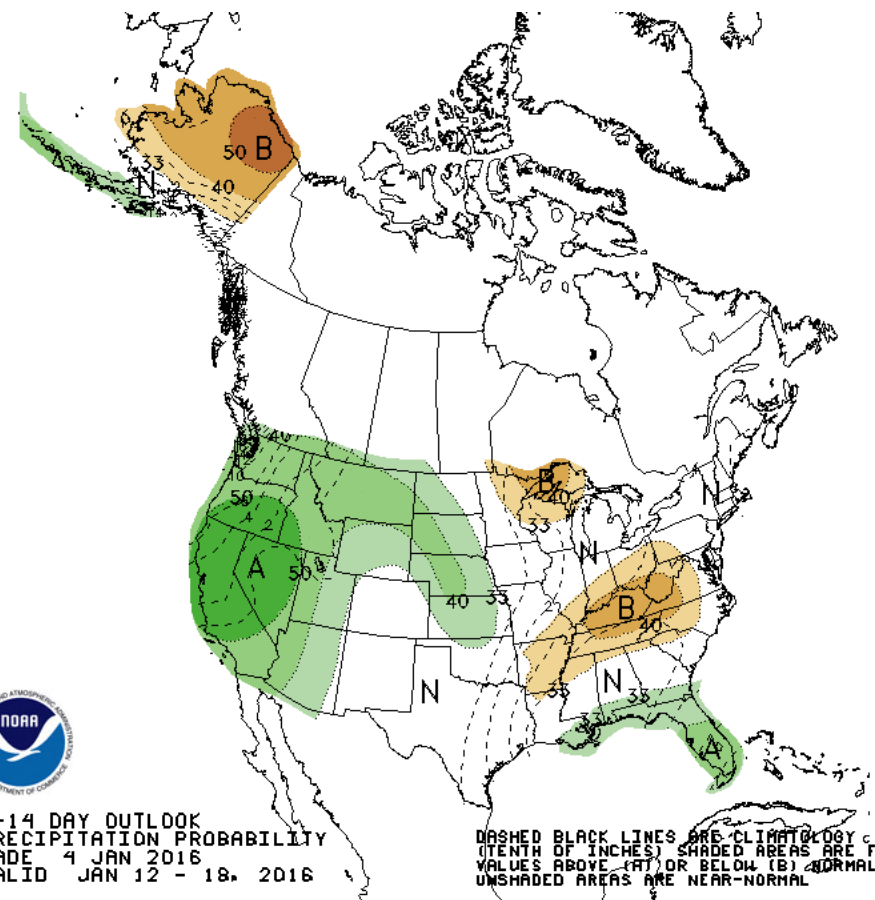
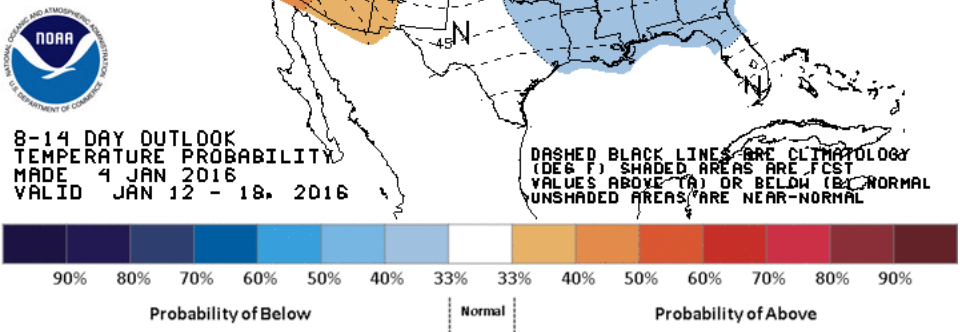
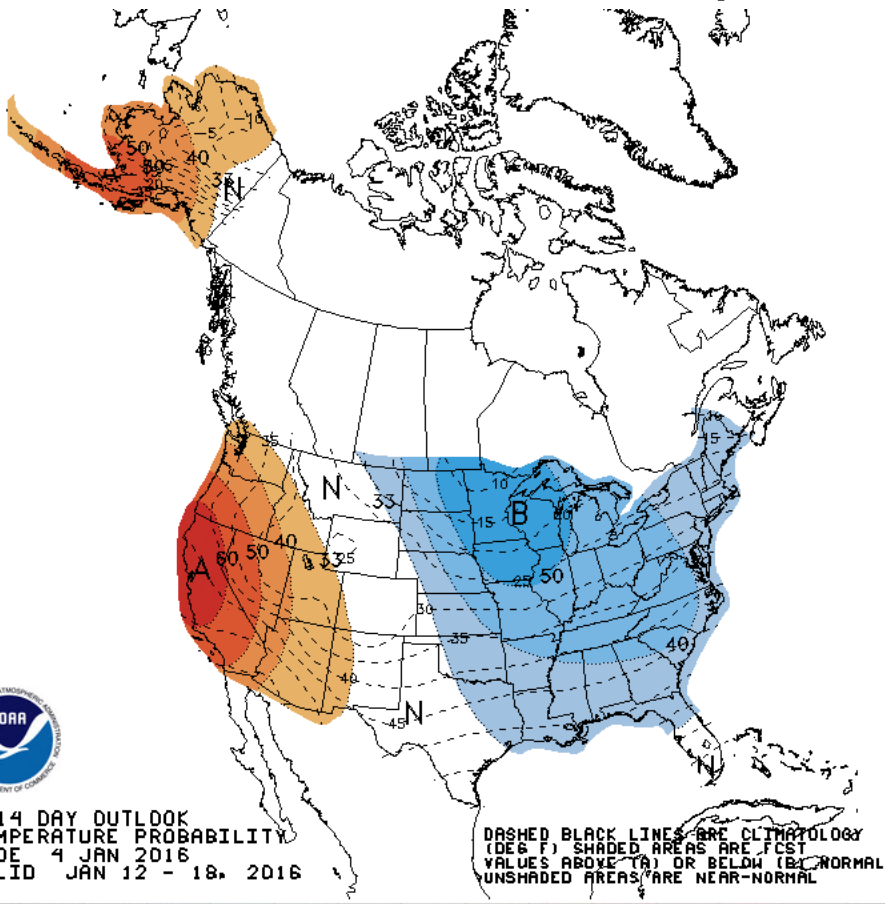
CFS 500hPa Height Anomalies Issued 04Jan2016
Week-3/4 Forecast Ending 02Feb2016



(meters)



Week 2 – Temperature and Precipitation

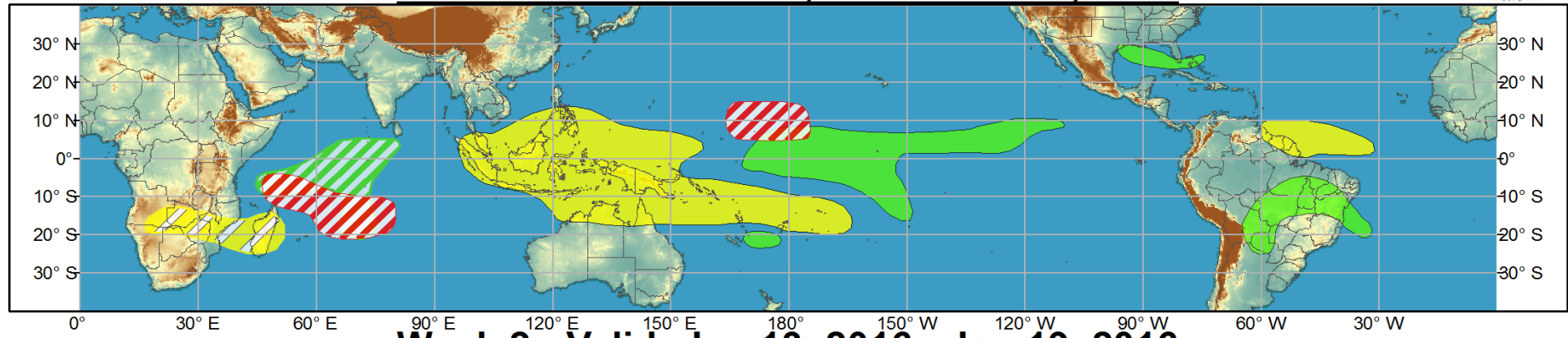




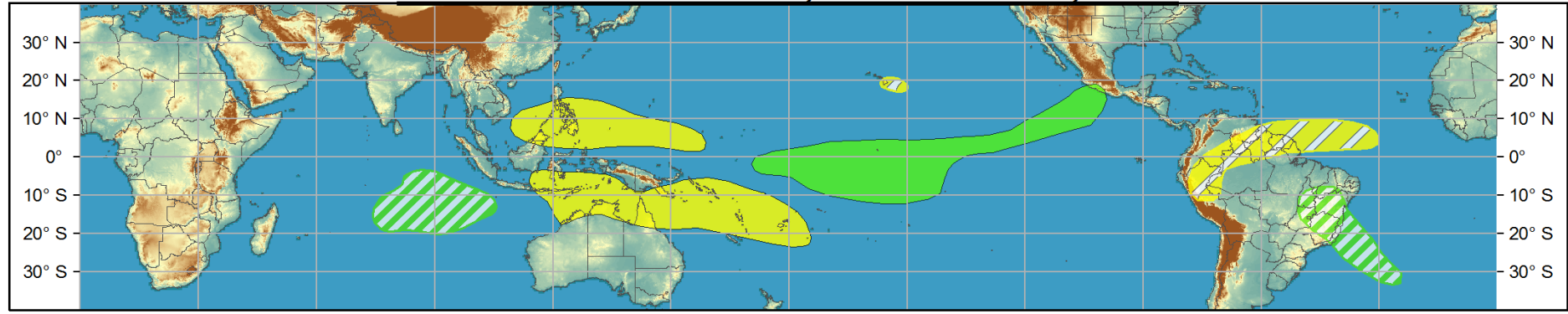
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