

Global Tropics Hazards And Benefits Outlook

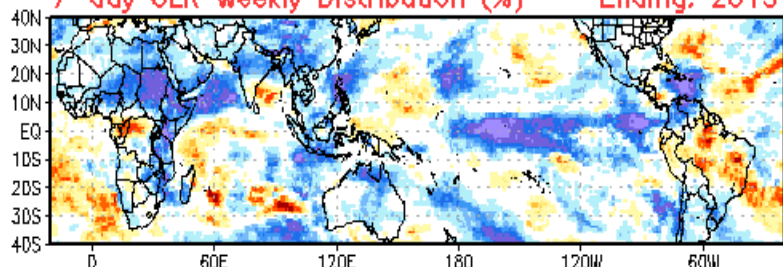
December 22, 2015

Brad Pugh

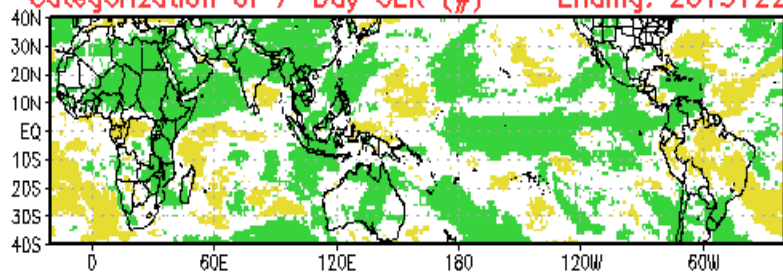
Outline

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

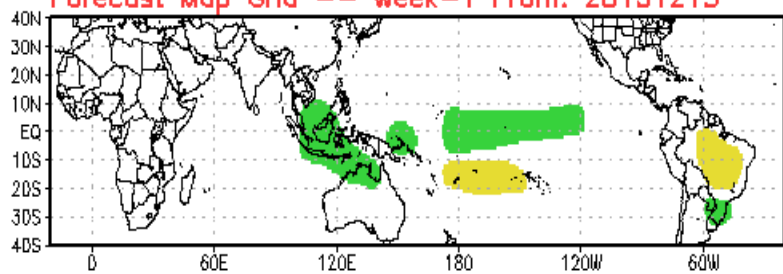
7-day OLR Weekly Distribution (%) -- Ending: 20151222



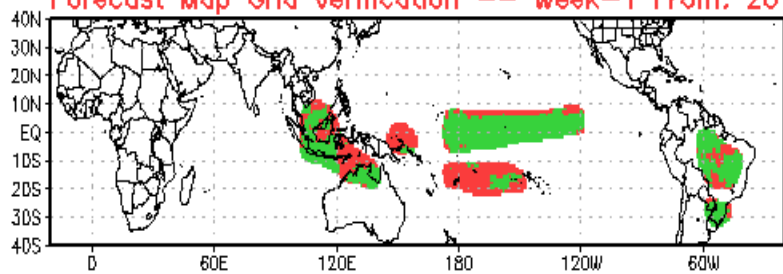
Categorization of 7-Day OLR (#) -- Ending: 20151222



Forecast Map Grid -- Week-1 From: 20151215

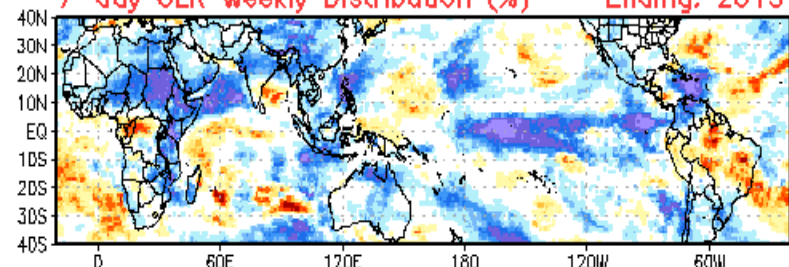


Forecast Map Grid Verification -- Week-1 From: 20151215

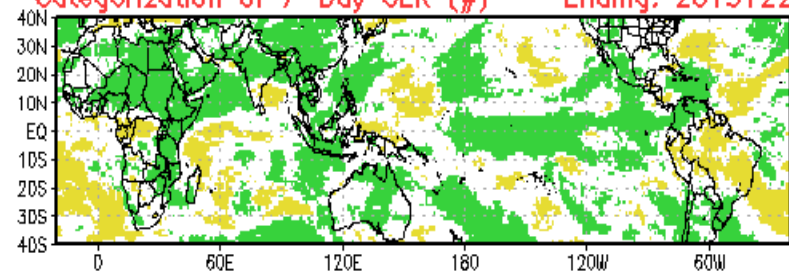


Hit: Green, Miss: Red
Heidke Skill Score: 39.7247

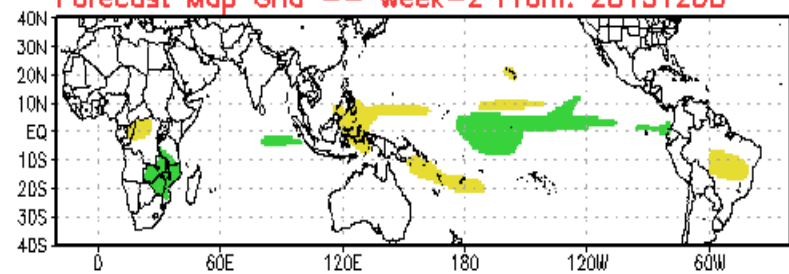
7-day OLR Weekly Distribution (%) -- Ending: 20151222



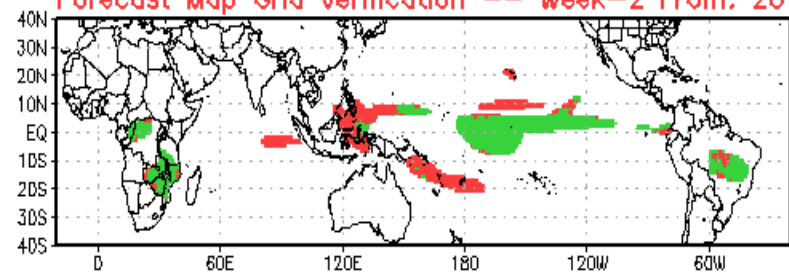
Categorization of 7-Day OLR (#) -- Ending: 20151222



Forecast Map Grid -- Week-2 From: 20151208



Forecast Map Grid Verification -- Week-2 From: 20151208



Hit: Green, Miss: Red
Heidke Skill Score: 37.4710

Synopsis of Climate Modes

ENSO:

- Current: [El Niño Advisory](#)
- Outlook: There is an approximately 95% chance that El Niño will continue through Northern Hemisphere winter 2015-16, gradually weakening through spring 2016.

MJO and other subseasonal tropical variability:

- MJO strengthened during the past week with its enhanced phase over the Maritime Continent.
- Robust MJO signal given the ongoing strong El Niño.
- Most dynamical model MJO index forecasts depict a continued signal propagating east across the Pacific.

Extratropics:

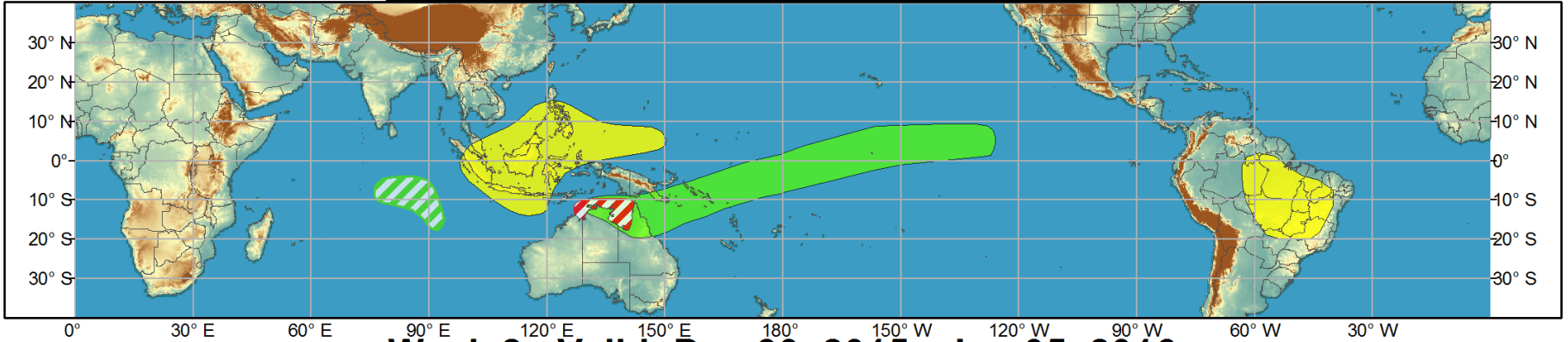
- The middle to higher latitudes of North America may be affected by this current MJO with more ridging over northwest North America and the AO index becoming neutral.



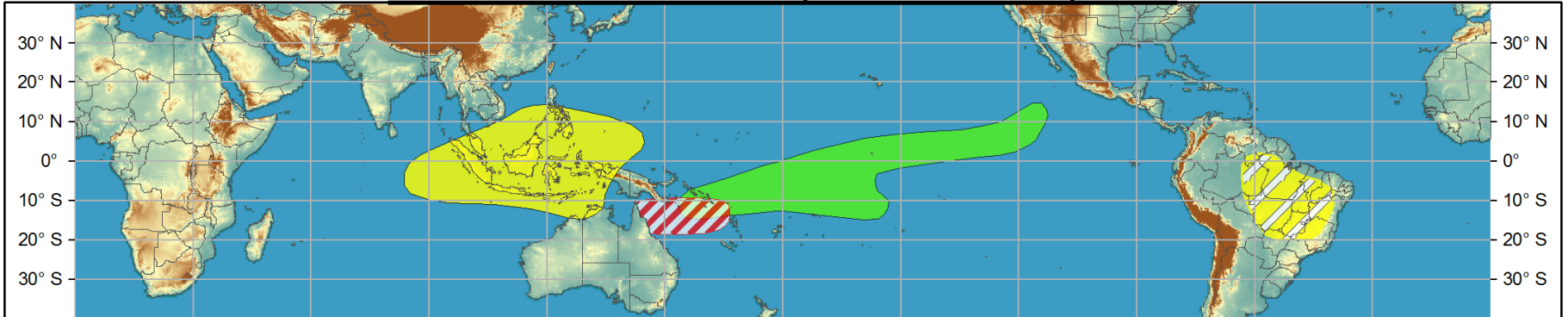
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 23, 2015 - Dec 29, 2015



Week 2 - Valid: Dec 30, 2015 - Jan 05, 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.
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Produced: 12/22/2015
Forecaster: Pugh

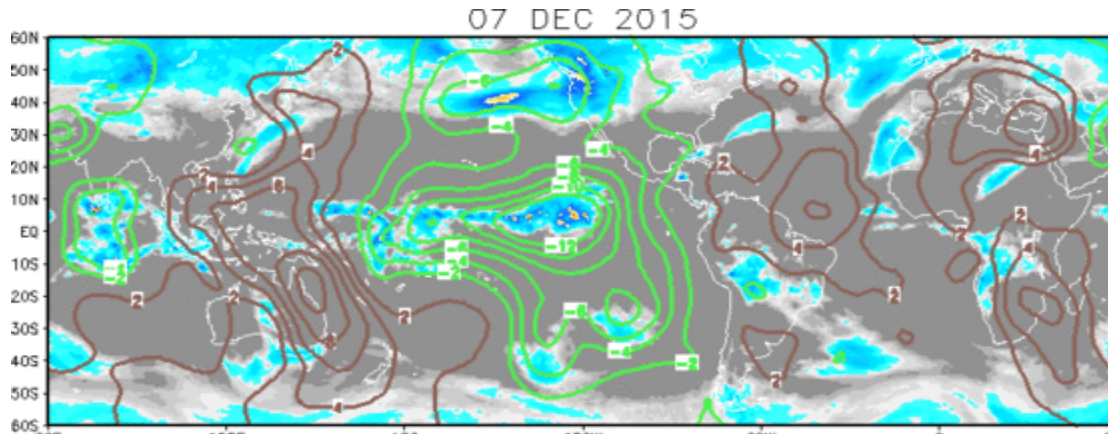
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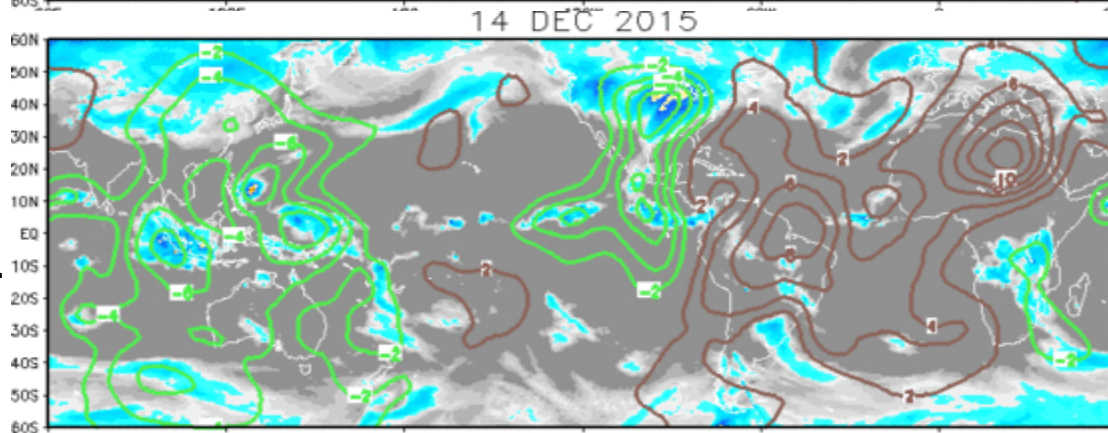
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

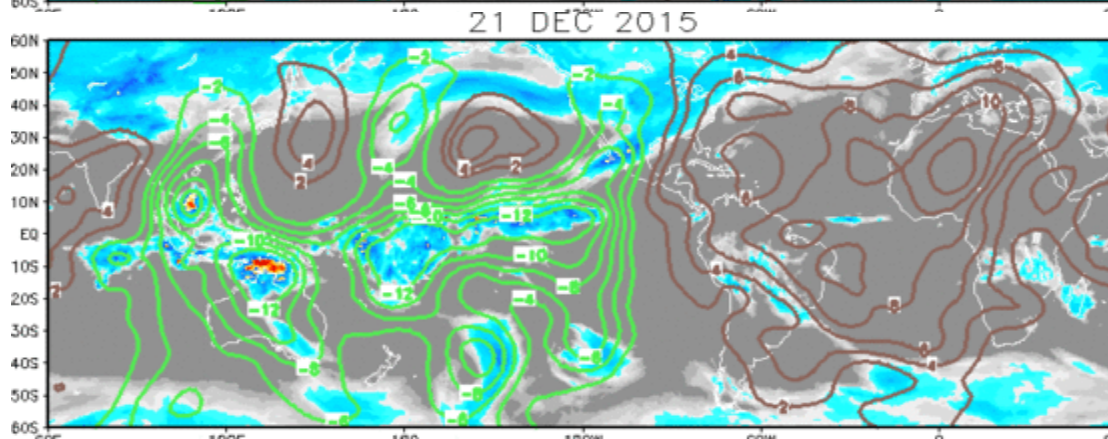
El Nino major player.



Destructive interference with developing MJO.

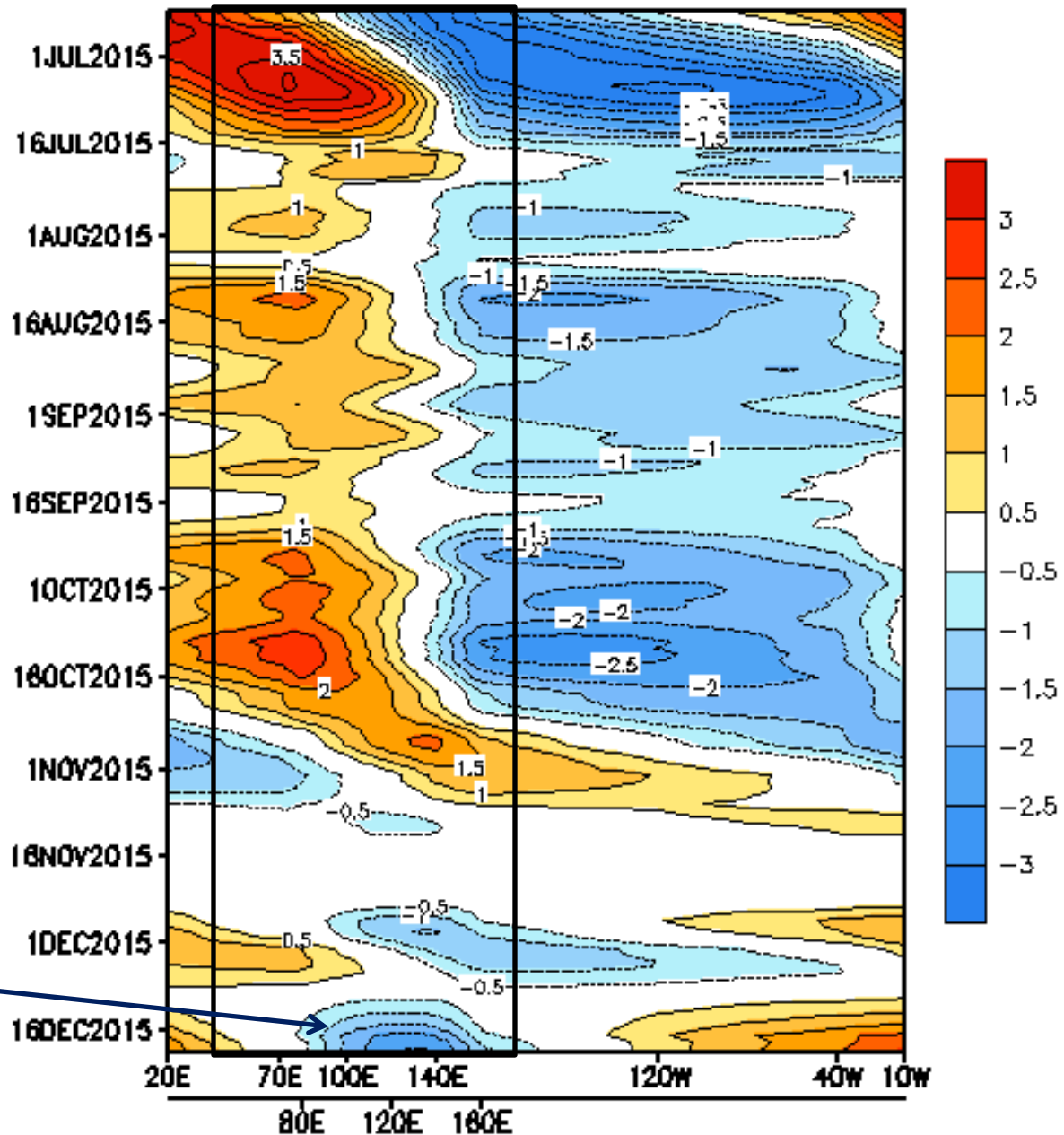


Wave-1 pattern with vigorous convection over Maritime Continent.



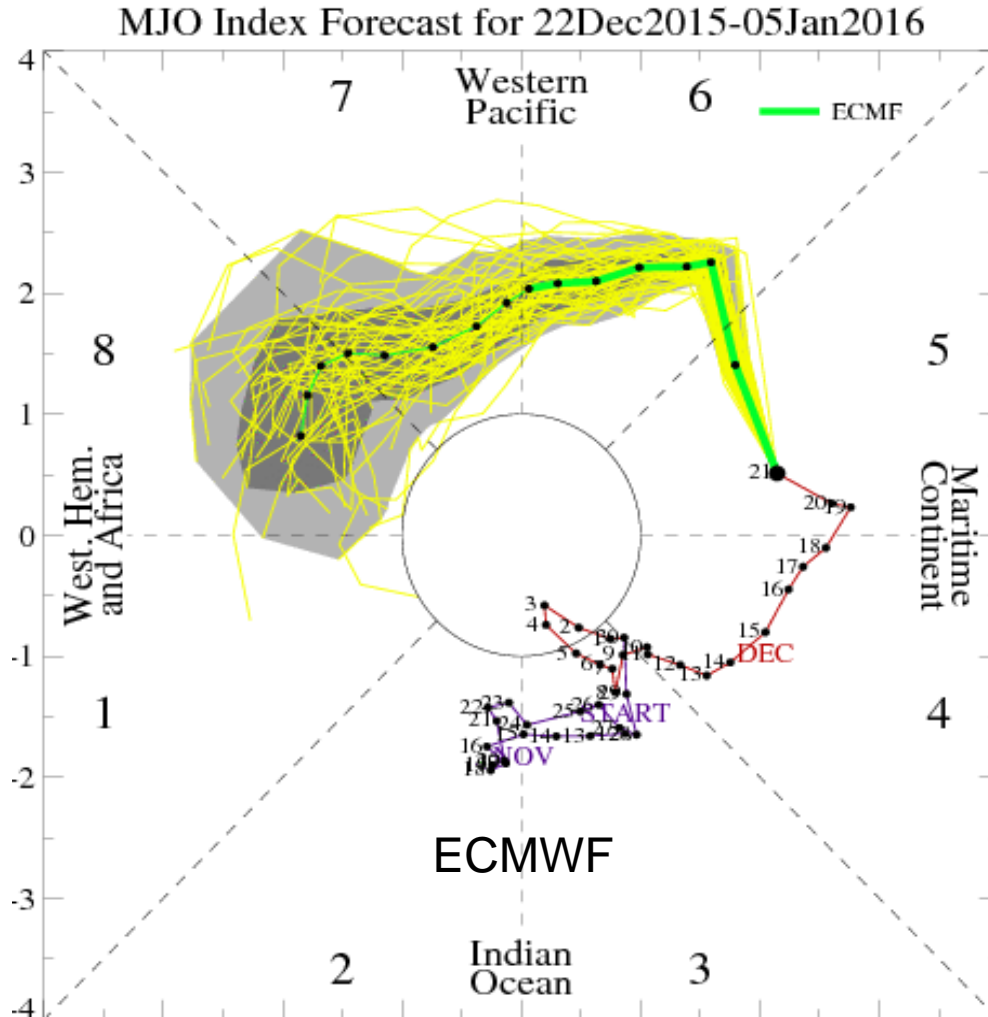
MJO index (based on 200-hpa VP)

5 -day Running Mean



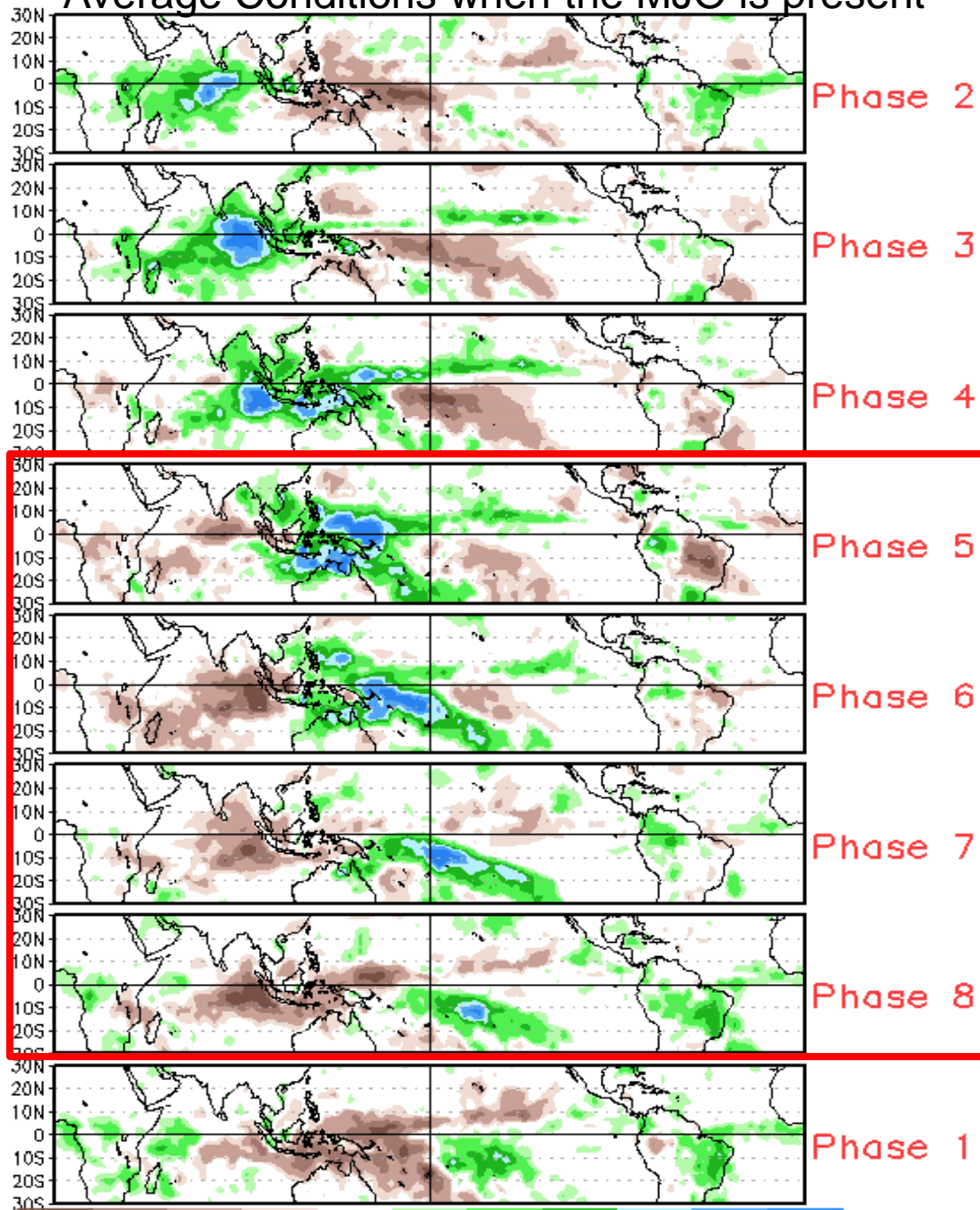
Strongest upper-level divergence over Maritime Continent since July

MJO Observation/Forecast



- Wheeler-Hendon based analyses of ECMWF model forecast indicates a continued MJO signal.
- Other dynamical models are consistent with this evolution.

Average Conditions when the MJO is present



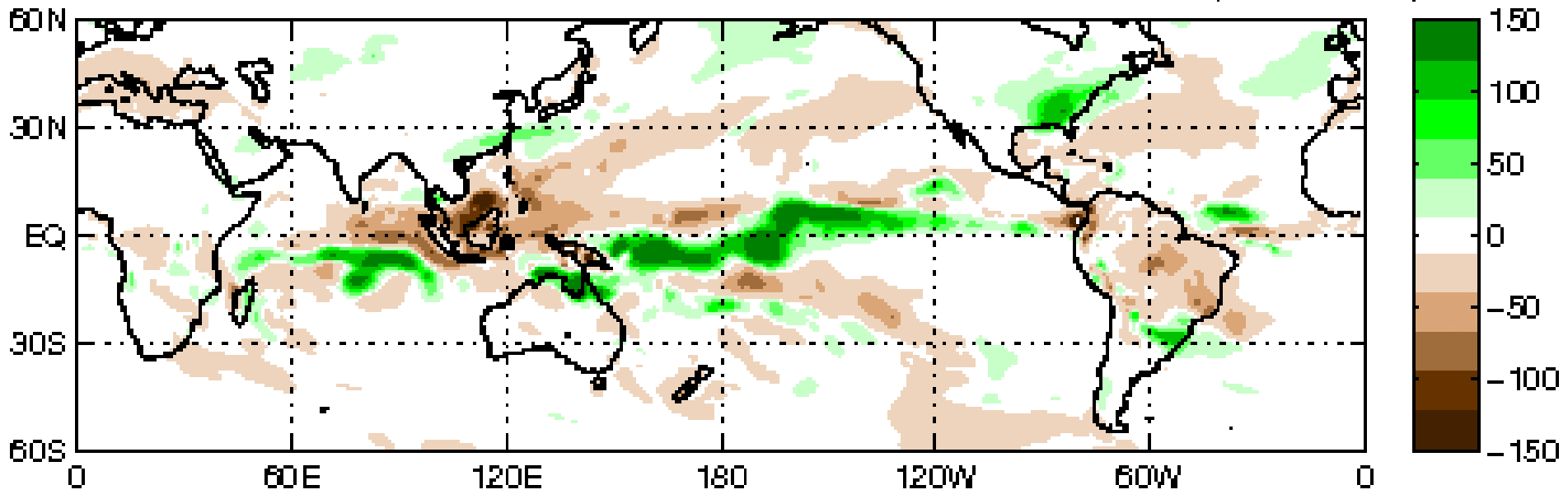
CAVEAT: These panels are representative of robust MJO events, with all phases of ENSO.

Initial

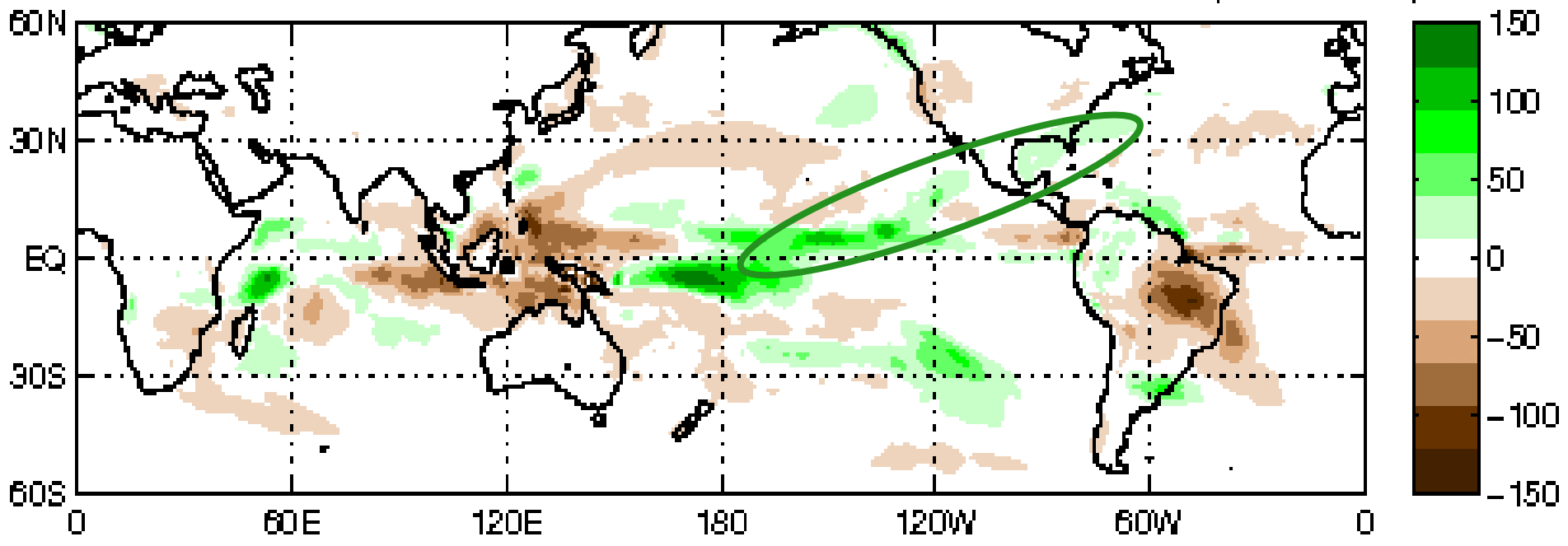
Week-1

Week-2

CFS: Anom. PREC Week: 1: 23-Dec-2015 to 29-Dec-2015 (mm/week)



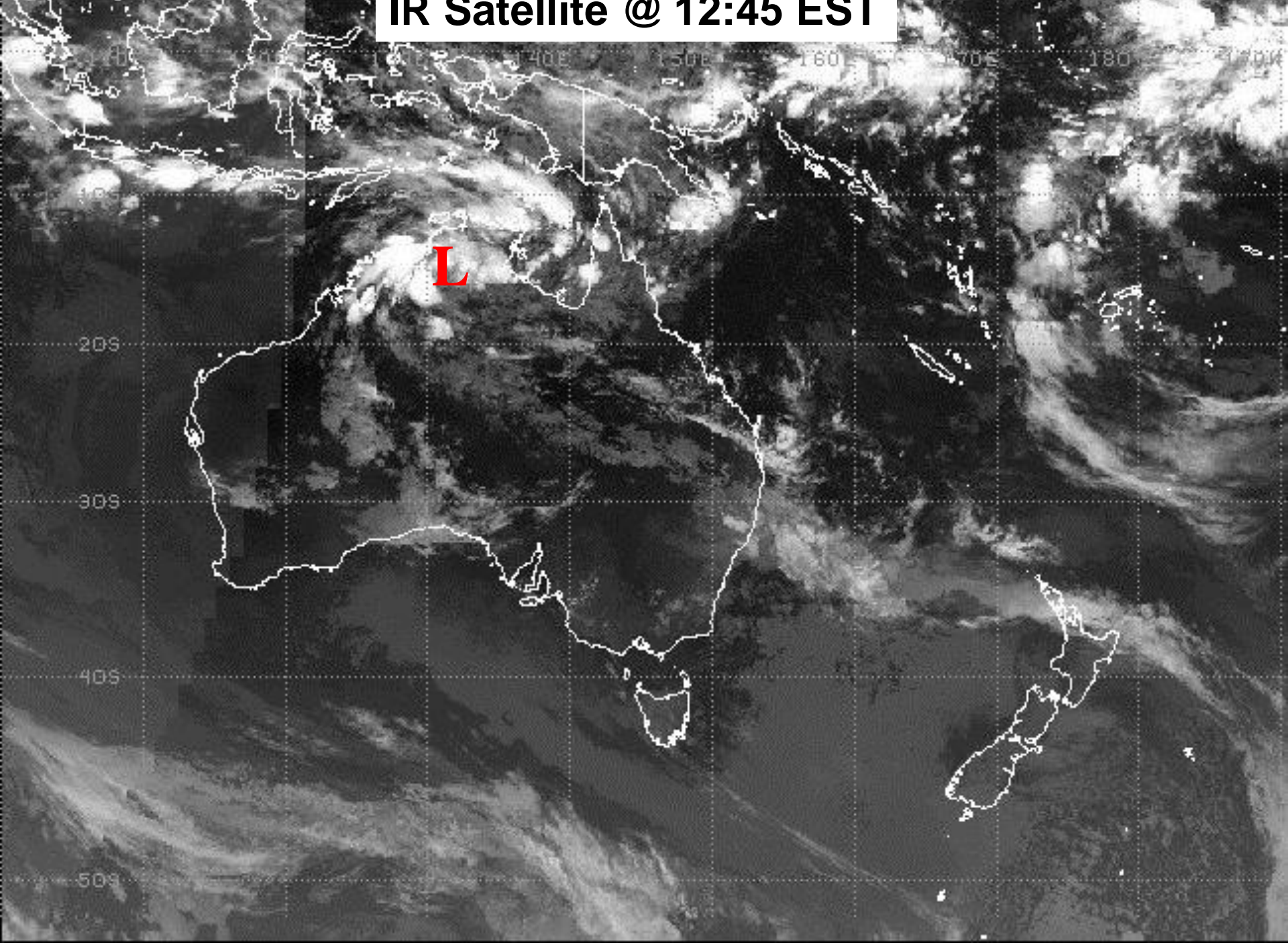
CFS: Anom. PREC Week: 2: 30-Dec-2015 to 05-Jan-2016 (mm/week)



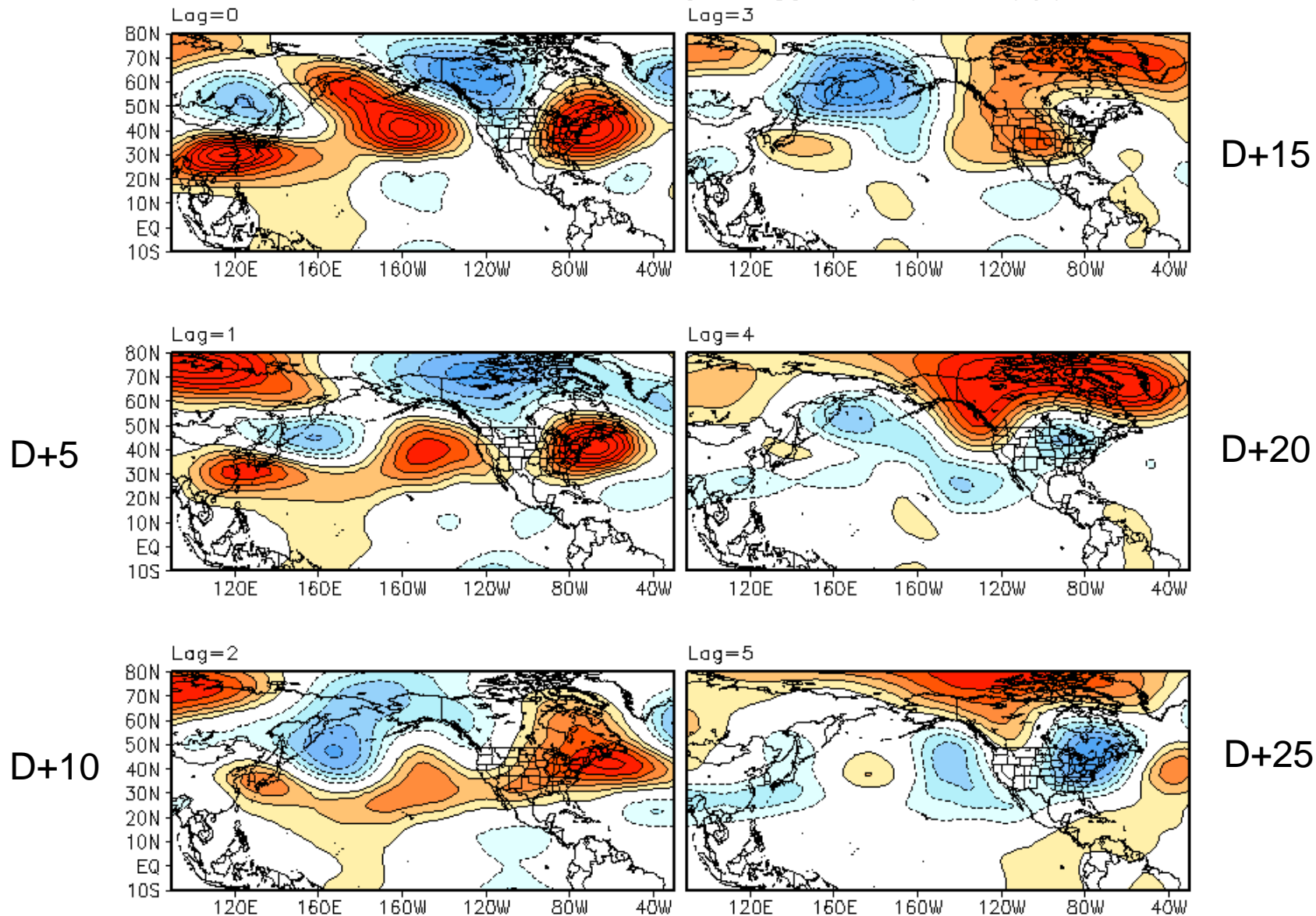
1645 UTC Tue 22 Dec 2015

IR Satellite @ 12:45 EST

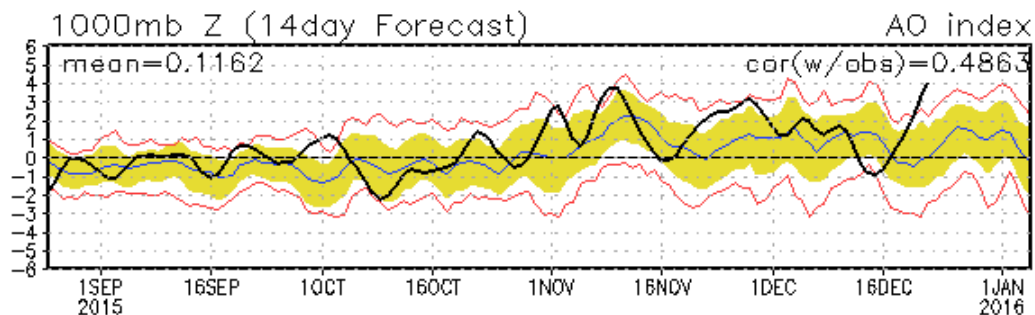
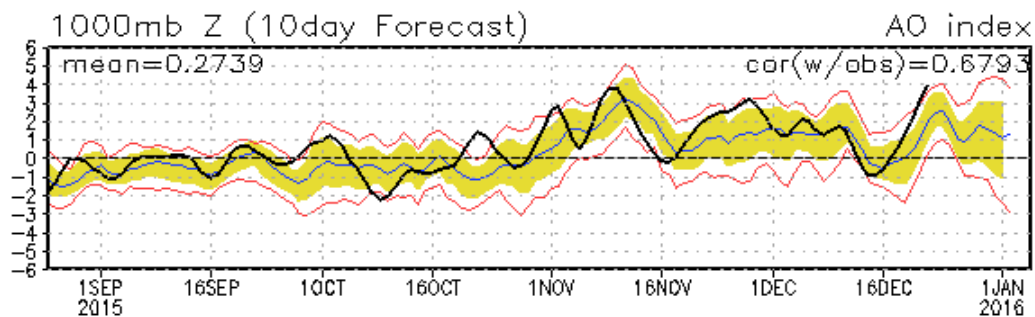
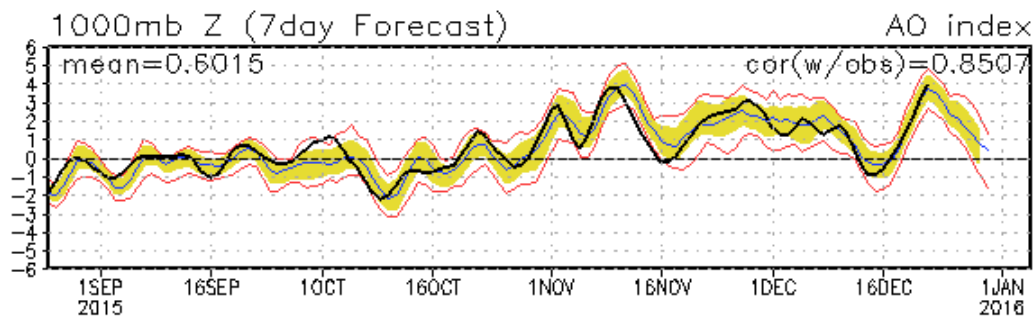
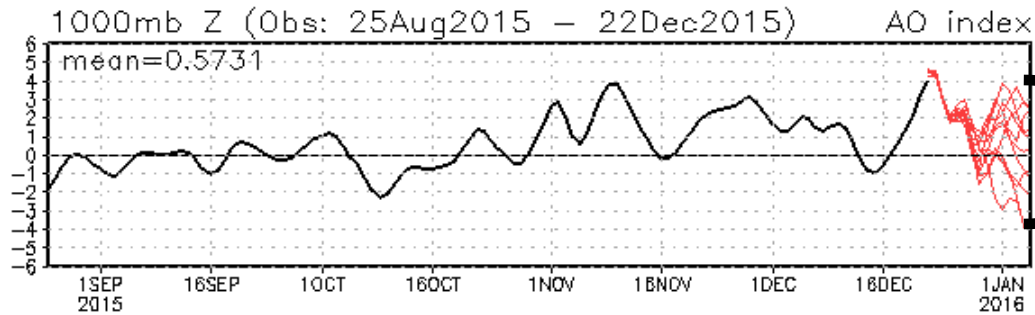
IR Satellite

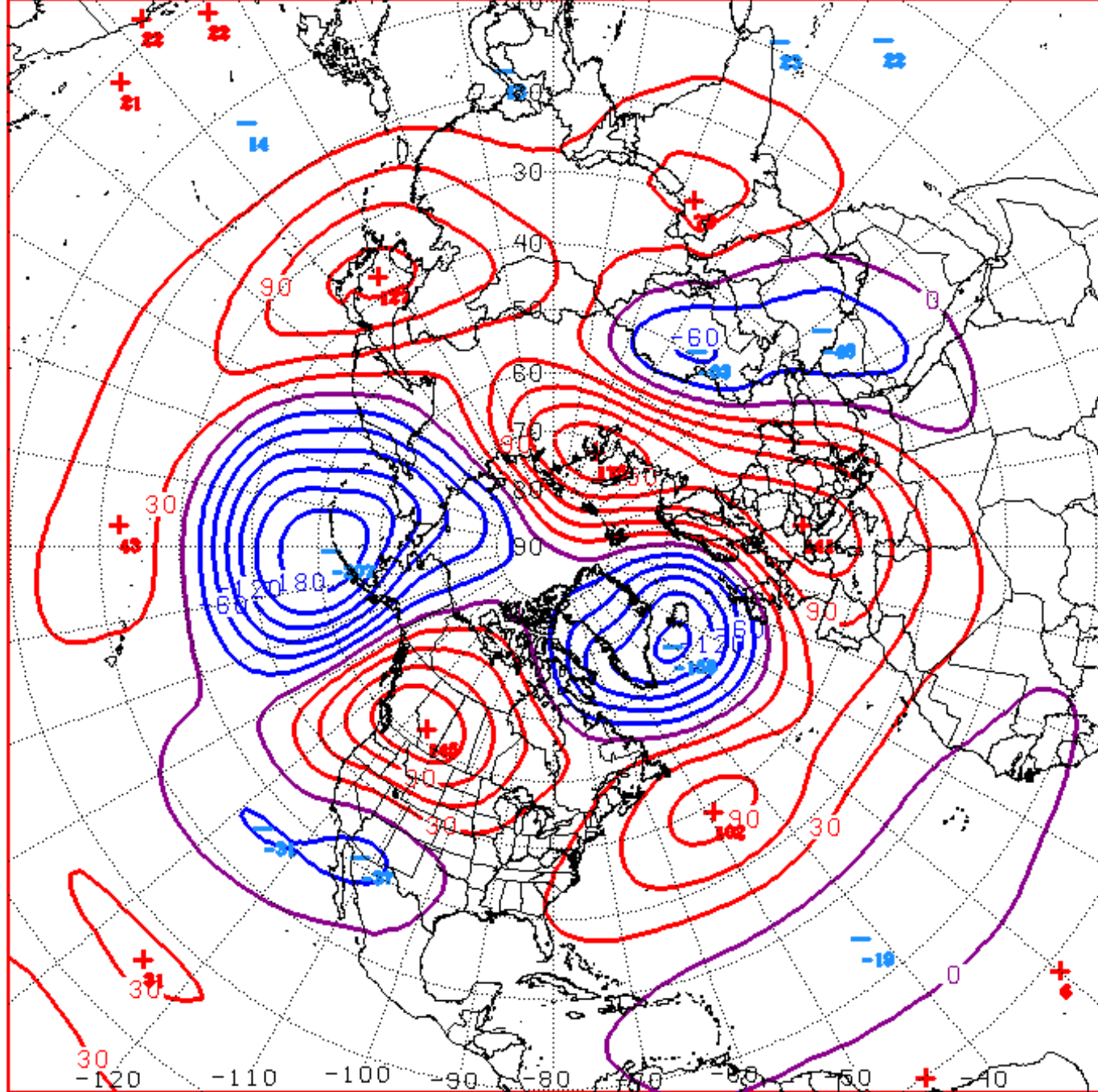


RMM Phase 5 200-hPa Height Lagged Composite (djf)

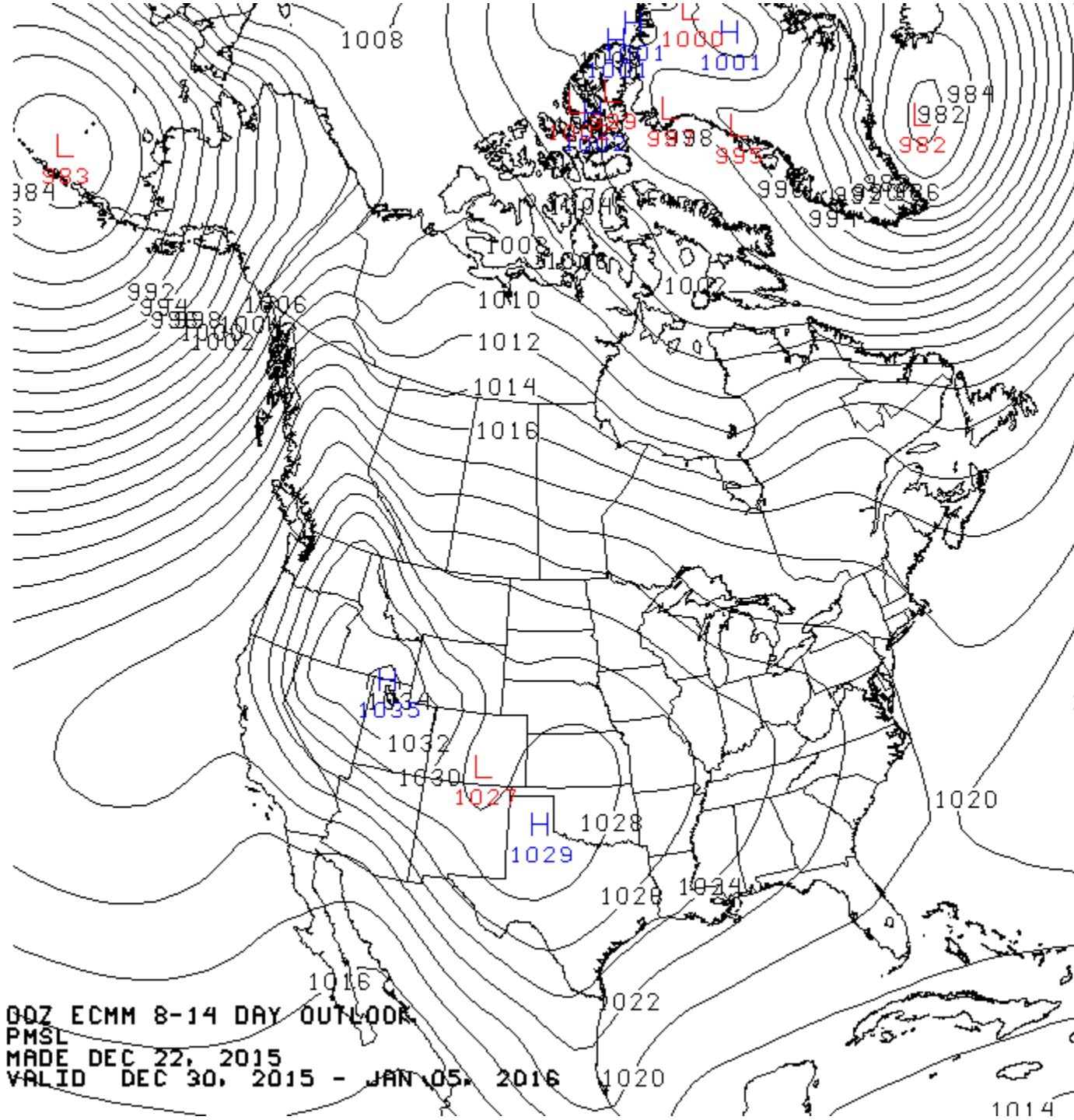


AO: Observed & ENSM forecasts



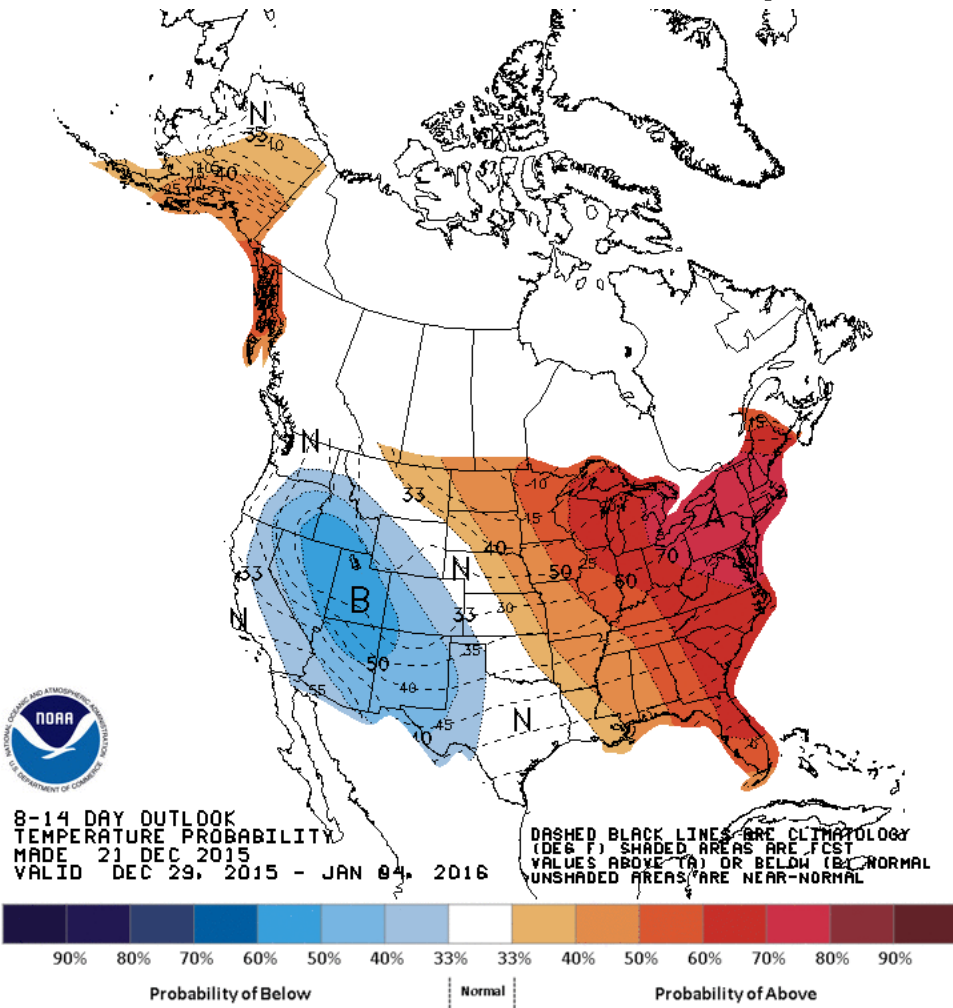


D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE DEC 22 2015 1008 UTC CNTD JAN 02 2016



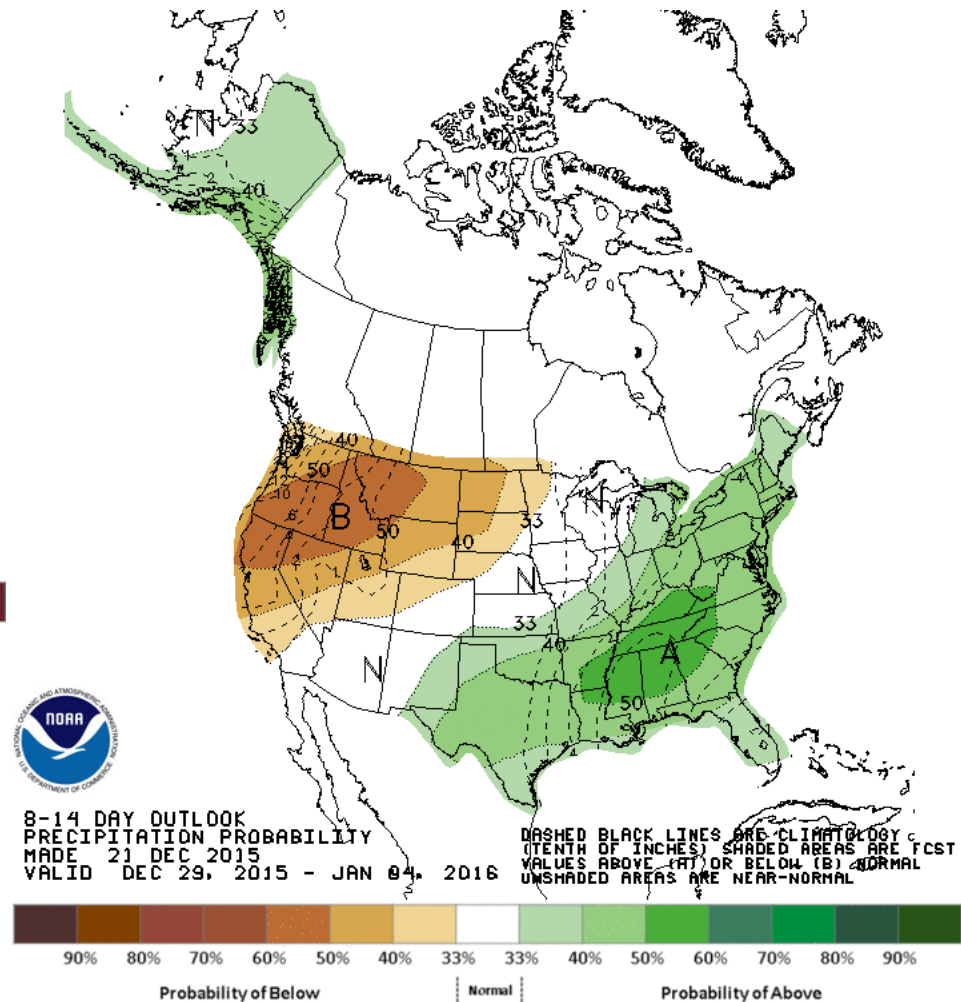
00Z ECMM 8-14 DAY OUTLOOK
PMSL
MADE DEC 22, 2015
VALID DEC 30, 2015 - JAN 05, 2016

Week 2 – Temperature and Precipitation



Yesterday's temperature outlook weighted heavily on anomalies early in Week-2

Much drier pattern by New Year

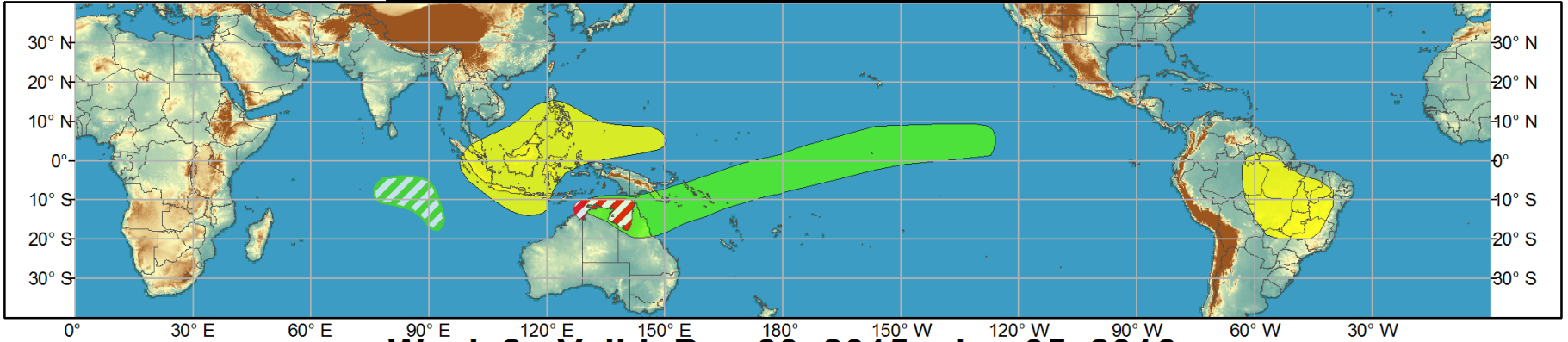




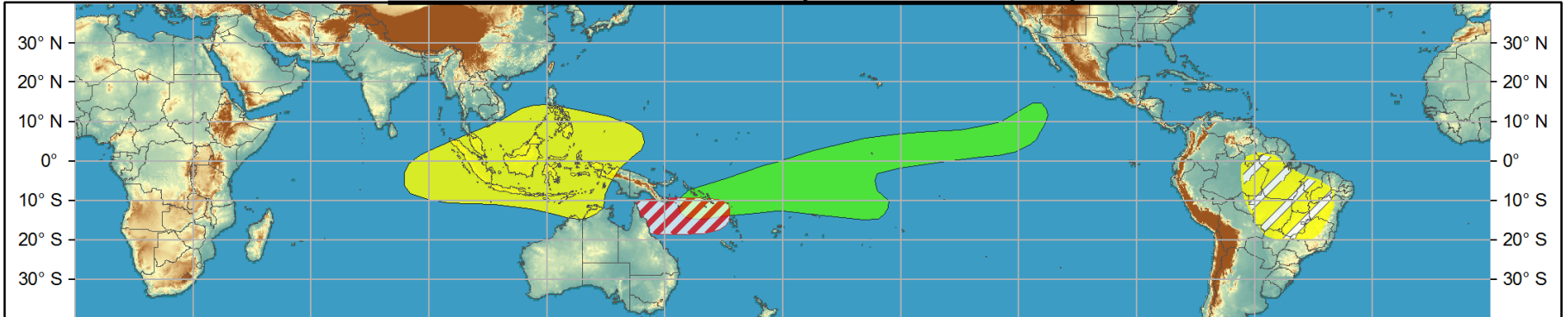
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