

Global Tropics Hazards And Benefits Outlook

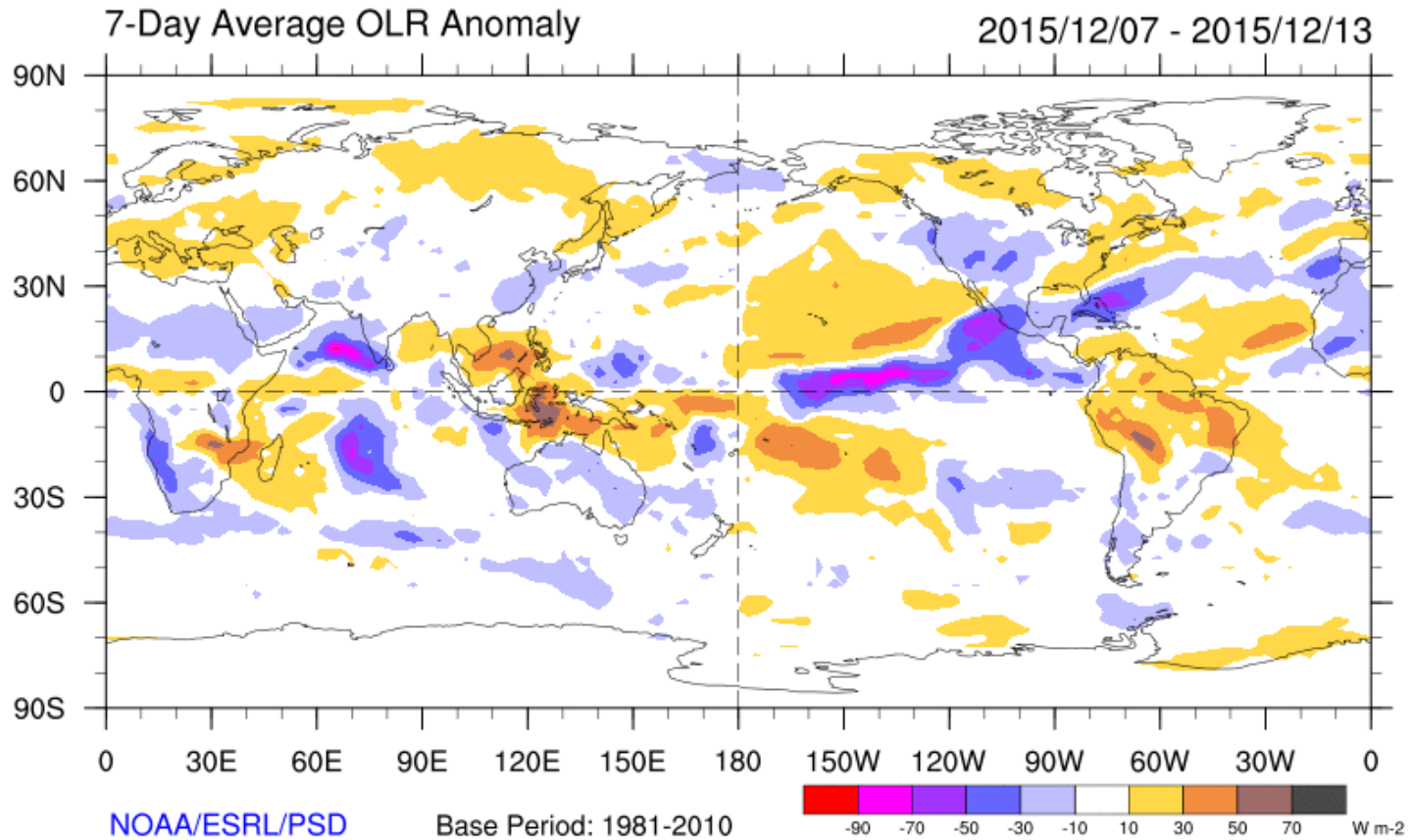
December 15, 2015

Jon Gottschalck

Outline

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

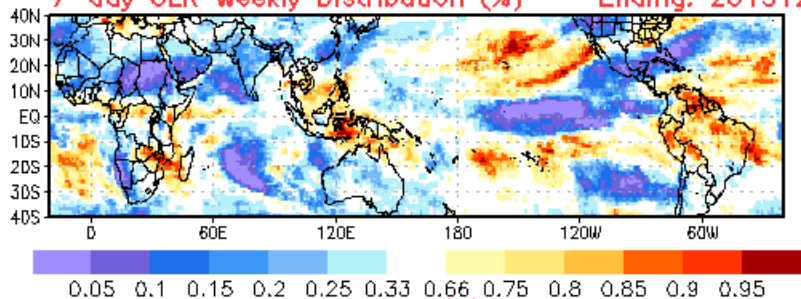
Weekly Tropical Convection Review



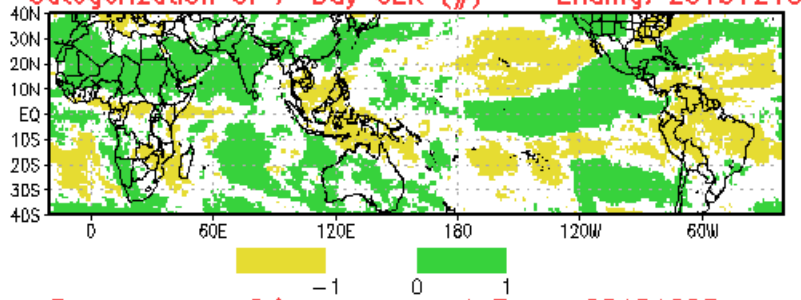
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

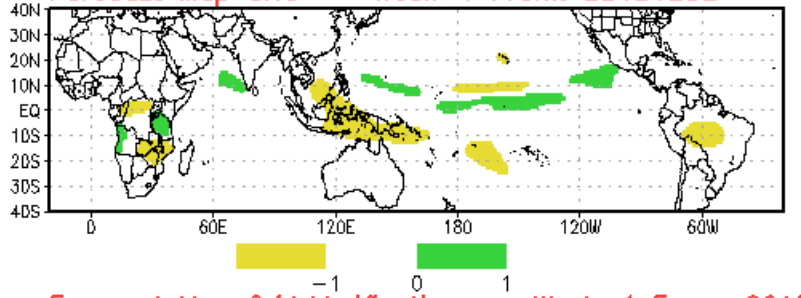
7-day OLR Weekly Distribution (%) -- Ending: 20151215



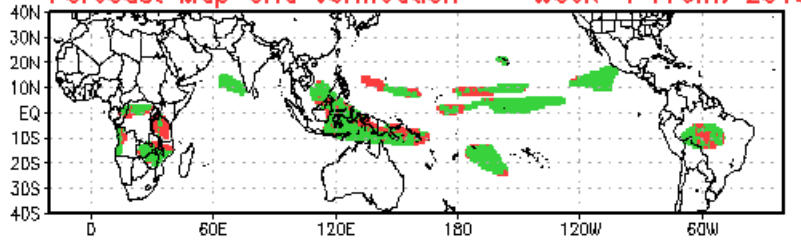
Categorization of 7-Day OLR (#) -- Ending: 20151215



Forecast Map Grid -- Week-1 From: 20151208

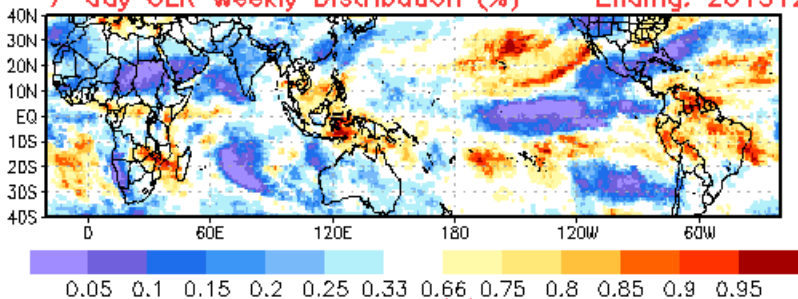


Forecast Map Grid Verification -- Week-1 From: 20151215

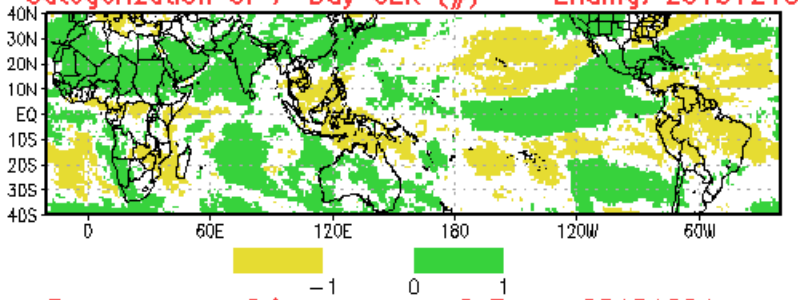


Hit: Green, Miss: Red
Heidke Skill Score: 64.9188

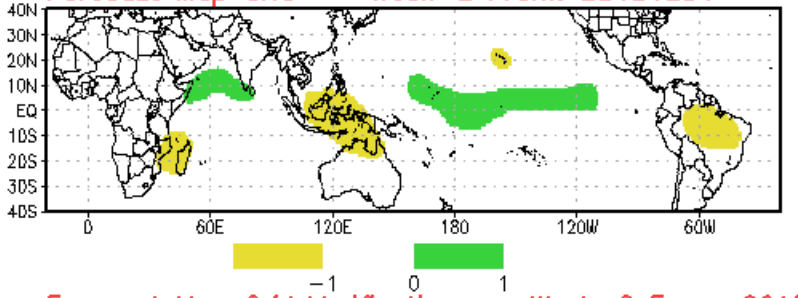
7-day OLR Weekly Distribution (%) -- Ending: 20151215



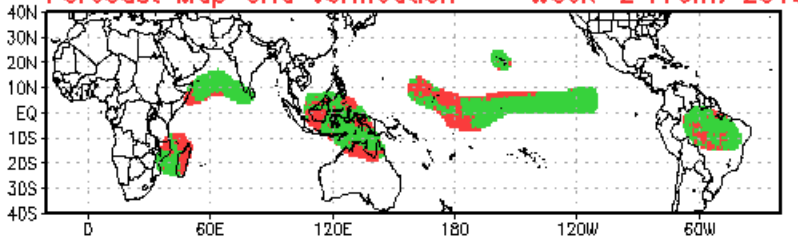
Categorization of 7-Day OLR (#) -- Ending: 20151215



Forecast Map Grid -- Week-2 From: 20151201



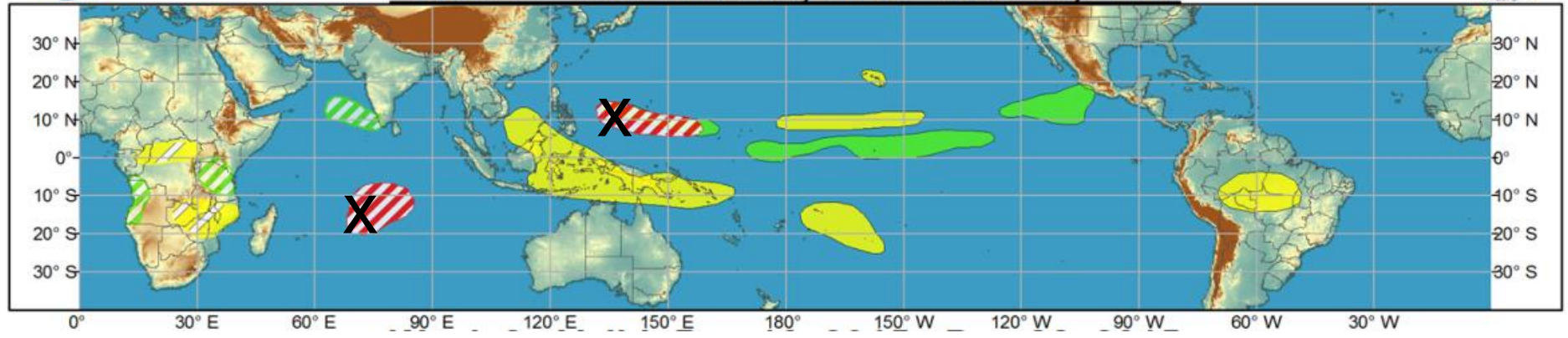
Forecast Map Grid Verification -- Week-2 From: 20151201



Hit: Green, Miss: Red
Heidke Skill Score: 56.1766



Week 1 - Valid: Dec 09, 2015 - Dec 15, 2015



Week 2 - Valid: Dec 09, 2015 - Dec 15, 2015



Tropical Cyclone Review

Synopsis of Climate Modes

ENSO:

- Current: [El Niño Advisory](#)
- Outlook: 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 remained generally incoherent over the past week
- But the MJO is showing some signs of becoming better organized in some observations
- Some dynamical forecasts of the MJO index show a strengthening and eastward propagating signal over the next two weeks. But considerable spread in model guidance.
- The MJO is favored to modulate the pattern of anomalous tropical convection over the next two weeks

Extratropics:

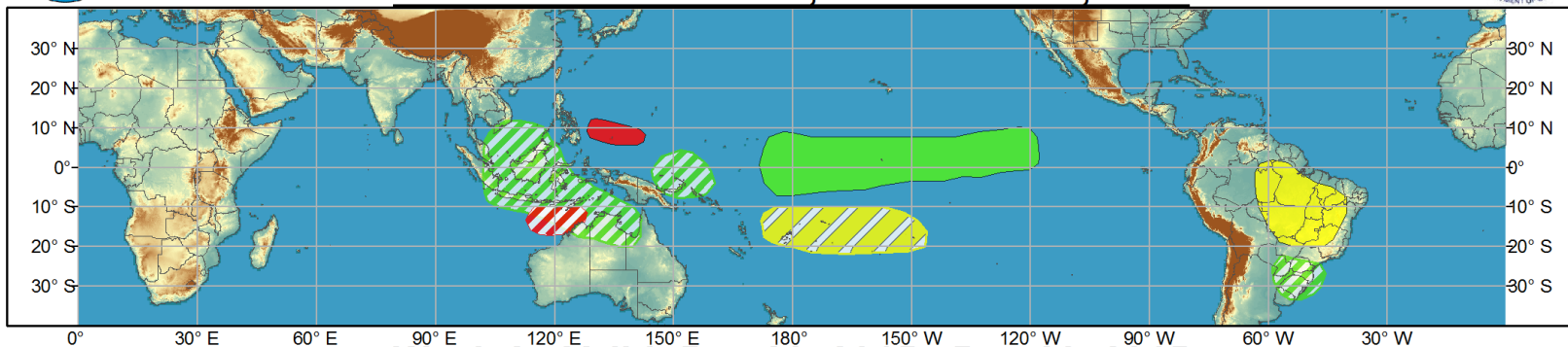
- The potential MJO development needs to be monitored quite closely over the next few weeks because if organized, robust, long lived it could modify the circulation across the PNA sector
- NAO and AO forecast to be strongly positive, PNA negative over the next two weeks



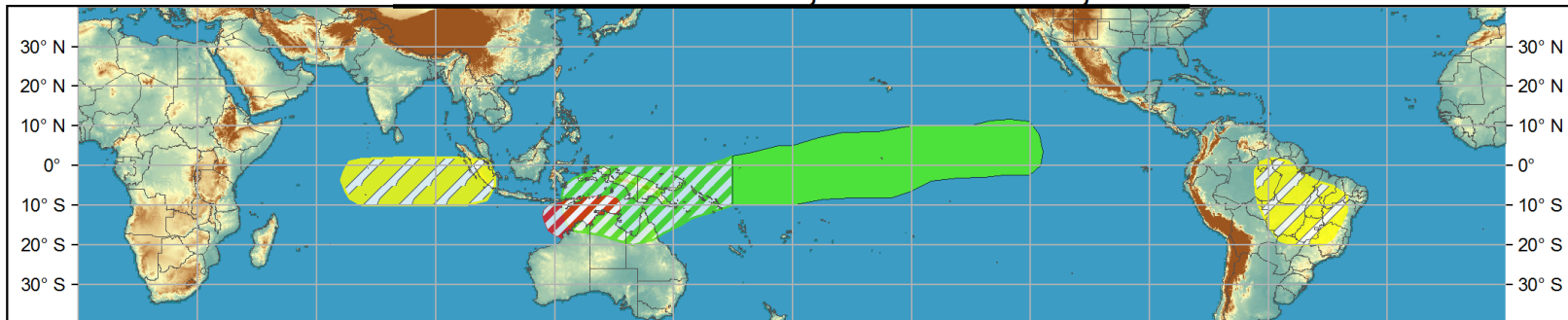
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 16, 2015 - Dec 22, 2015



Week 2 - Valid: Dec 23, 2015 - Dec 29, 2015



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: 12/15/2015

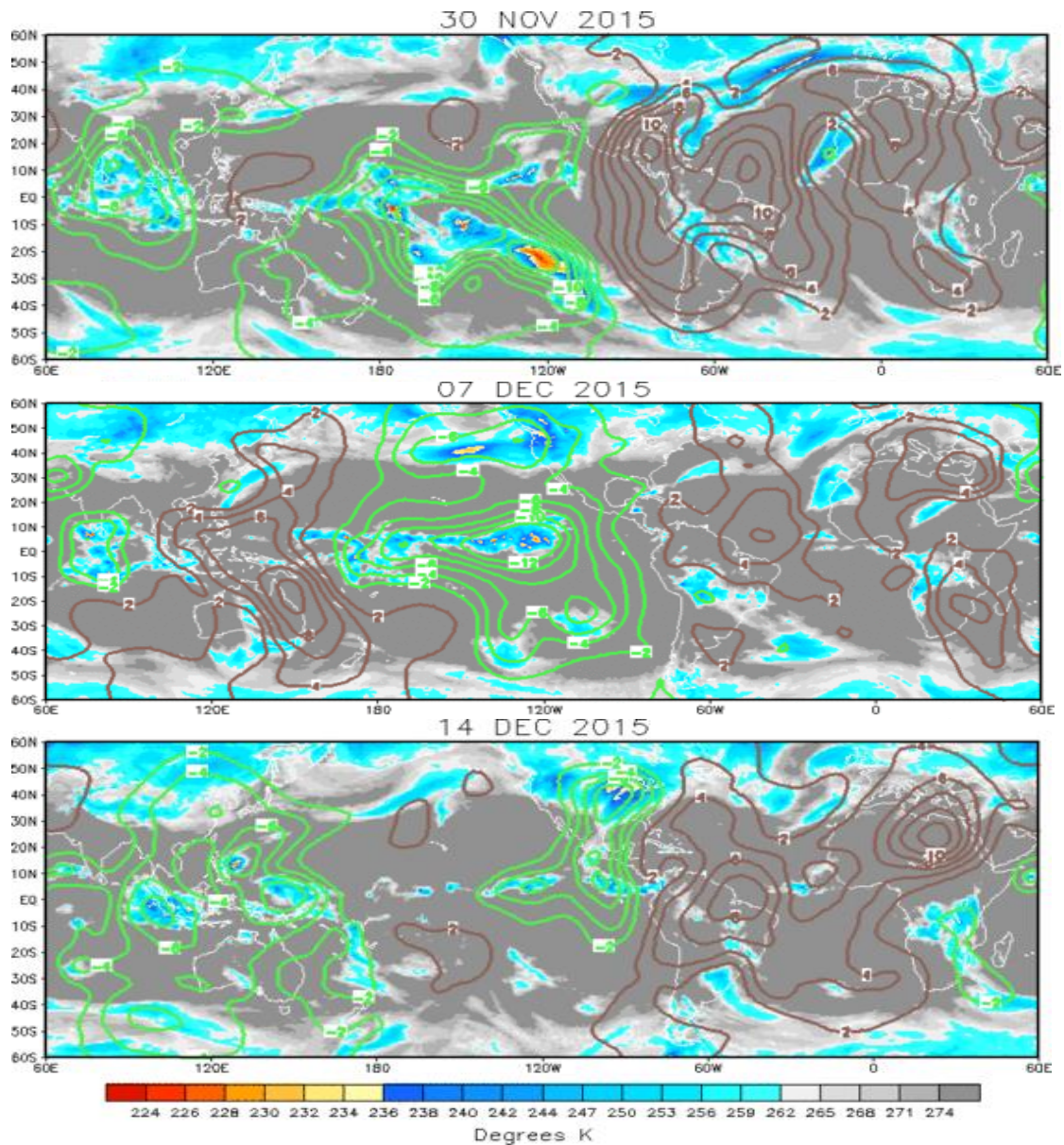
Forecaster: Gottschalck

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.

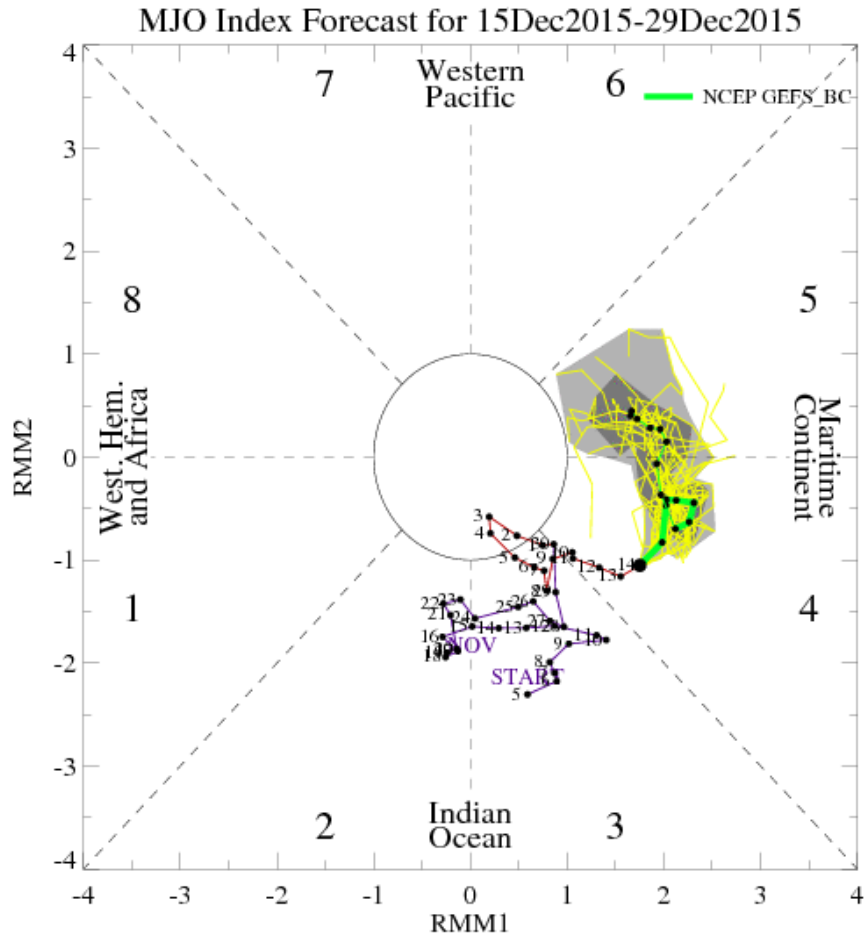


IR Satellite & 200-hpa Velocity Potential Anomalies

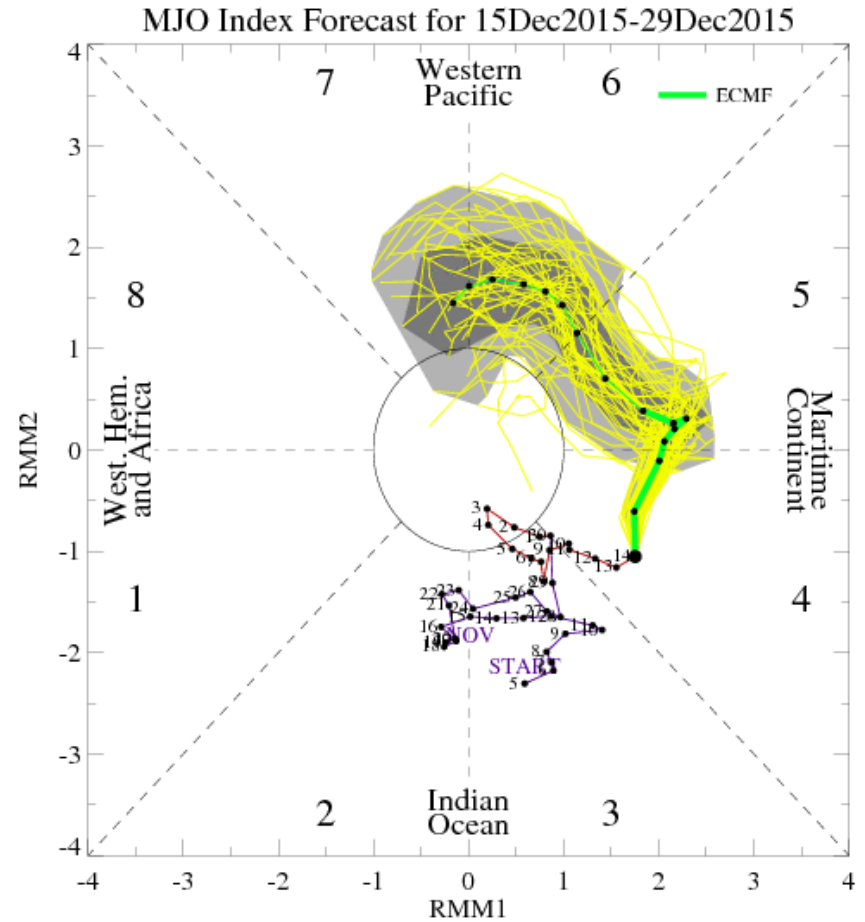
Green: Enhanced Divergence Brown: Enhanced Convergence



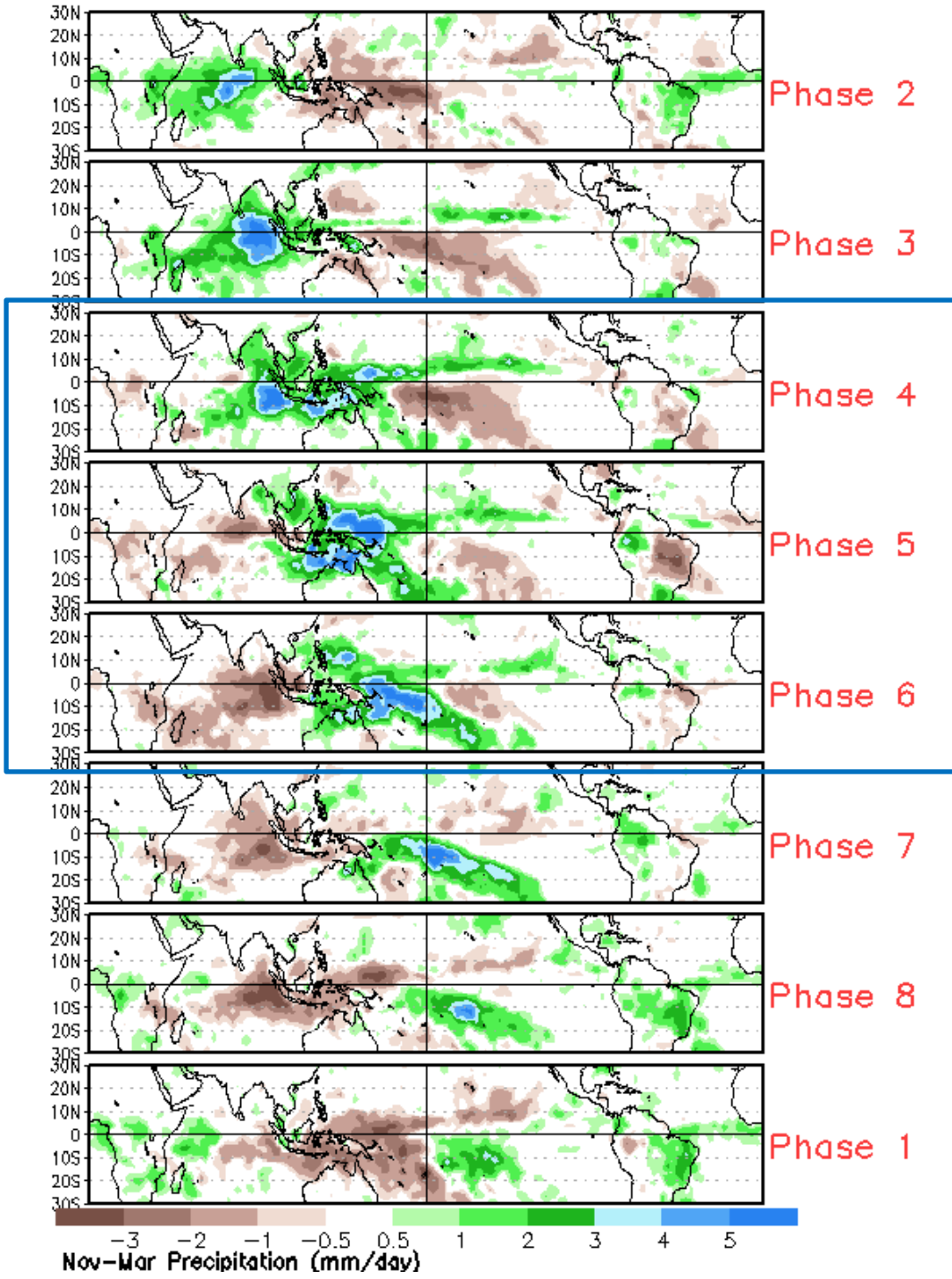
MJO Observation/Forecast



GFS



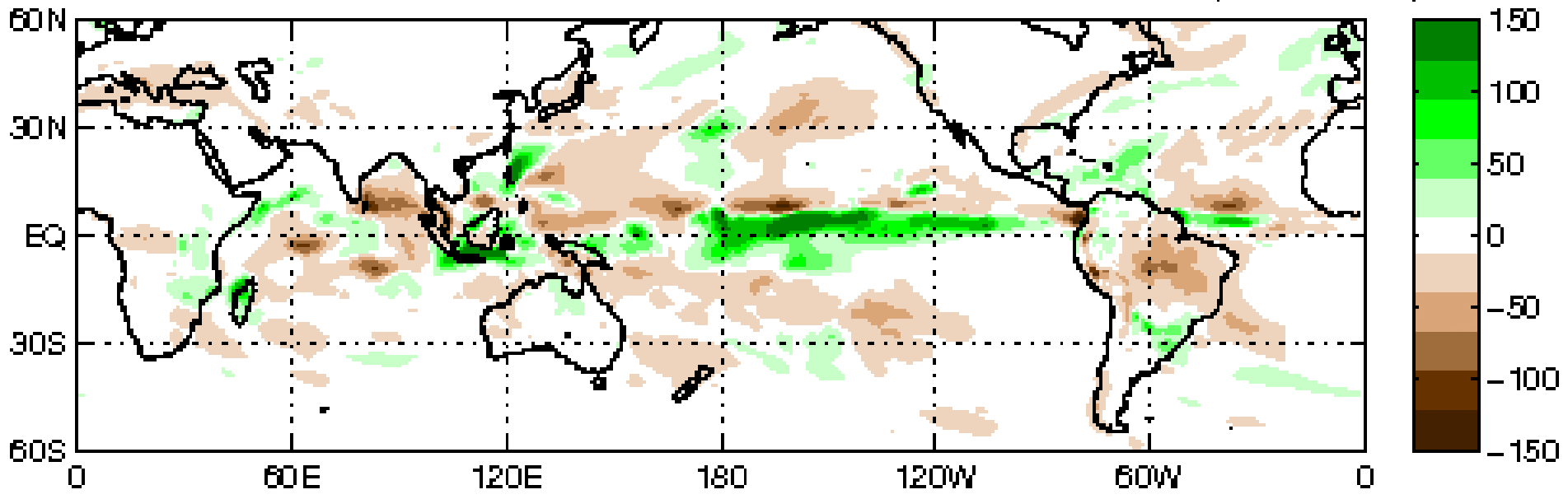
ECMWF



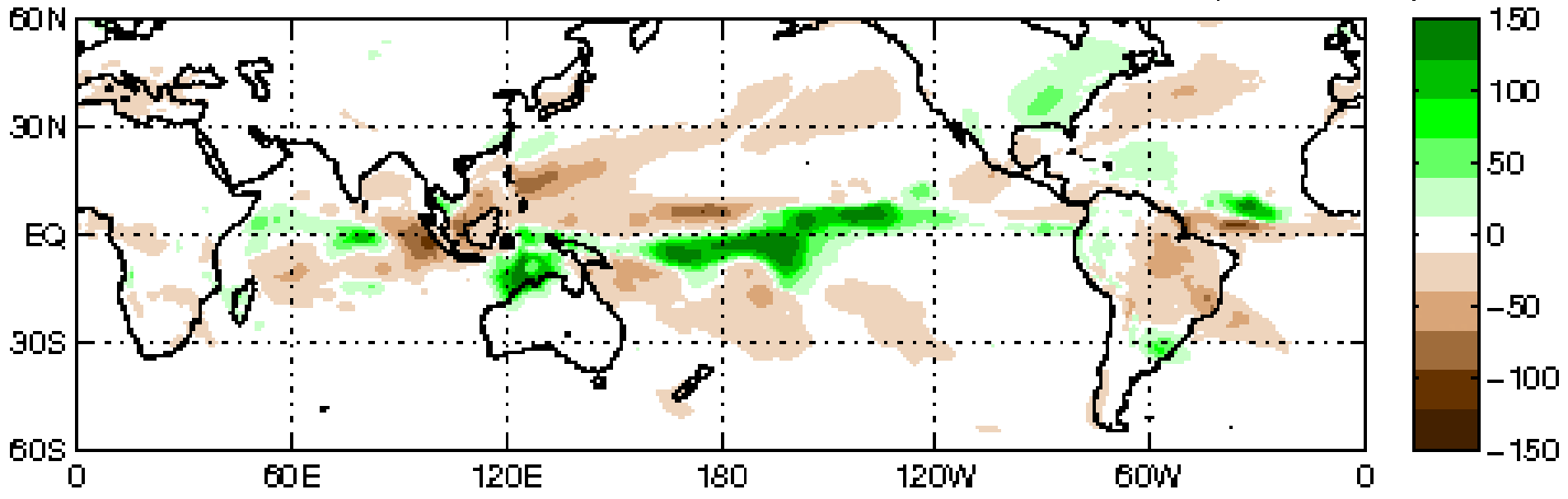
MJO Composites

-3 -2 -1 -0.5 0.5 1 2 3 4 5
Nov-Mar Precipitation (mm/day)

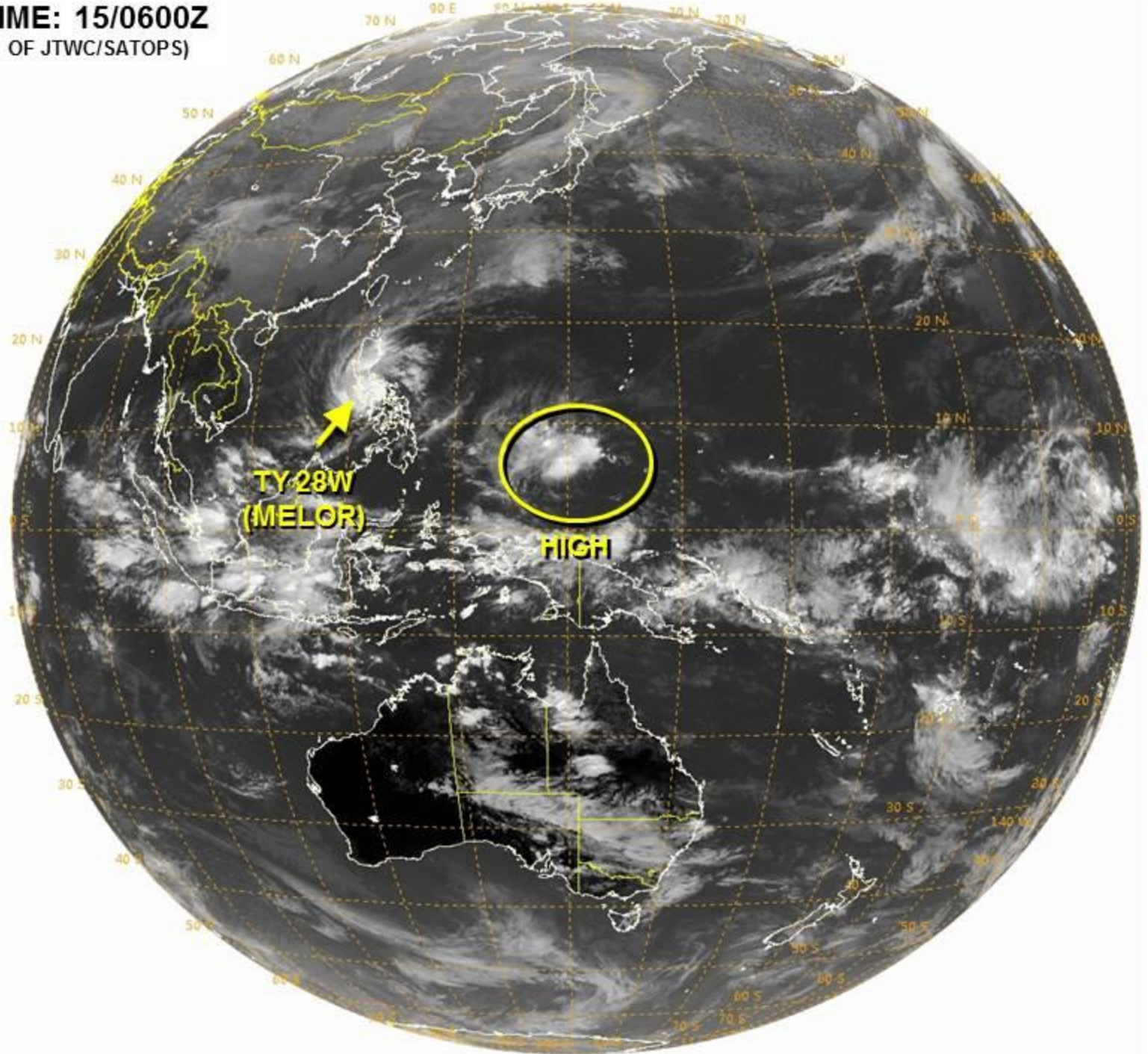
CFS: Anom. PREC Week: 1: 16-Dec-2015 to 22-Dec-2015 (mm/week)



CFS: Anom. PREC Week: 2: 23-Dec-2015 to 29-Dec-2015 (mm/week)

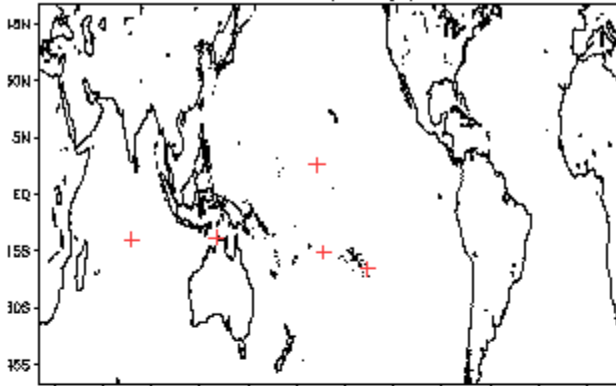


VALID TIME: 15/0600Z
(PRODUCT OF JTWC/SATOPS)

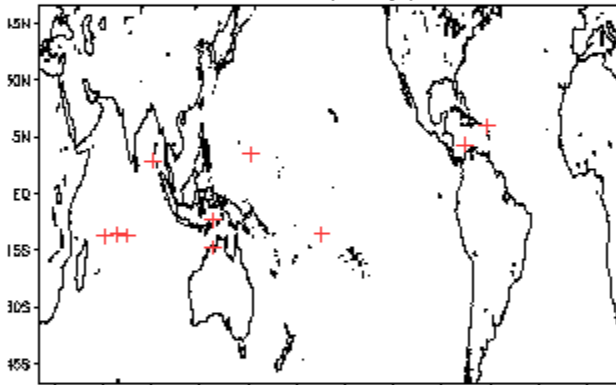


December Tropical Storm Formation by MJO phase

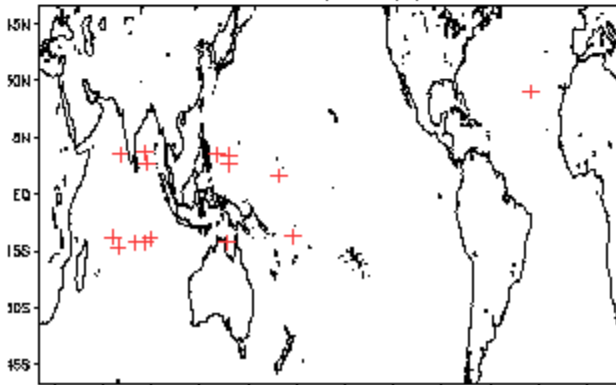
Phase 1 (48 days) 7 storms



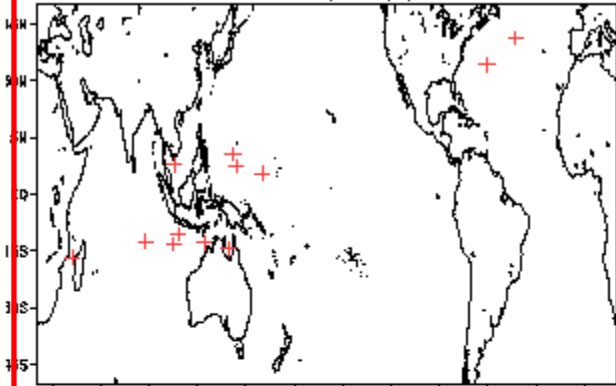
Phase 2 (67 days) 11 storms



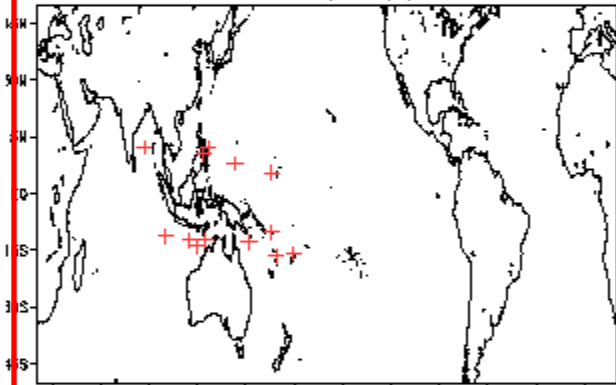
Phase 3 (101 days) 16 storms



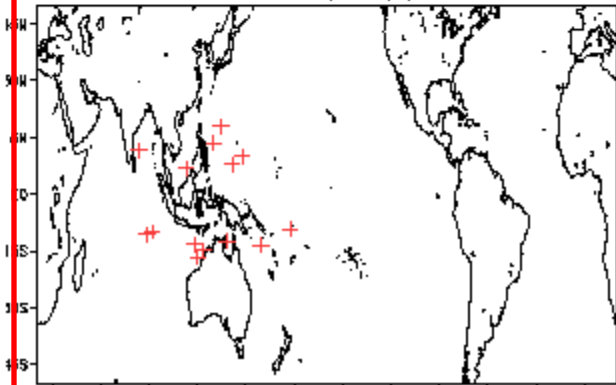
Phase 4 (72 days) 13 storms



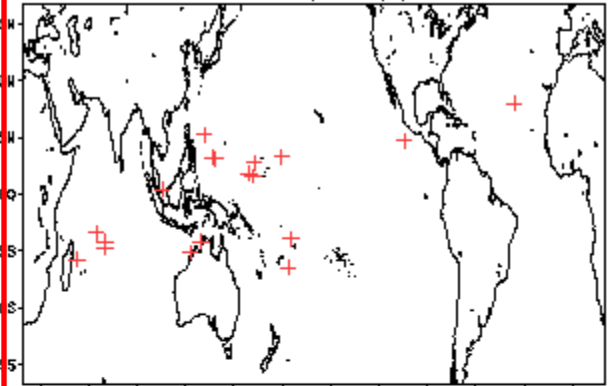
Phase 5 (73 days) 14 storms



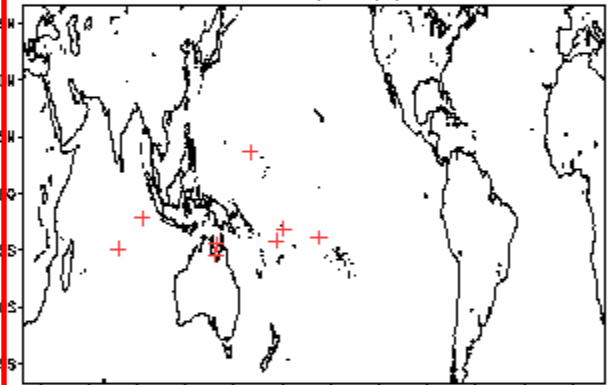
Phase 6 (69 days) 15 storms



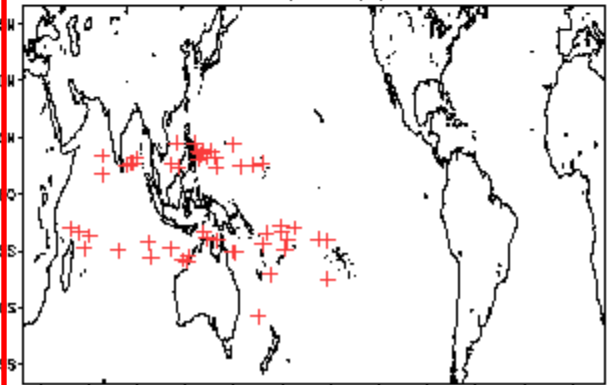
Phase 7 (103 days) 19 storms



Phase 8 (76 days) 9 storms



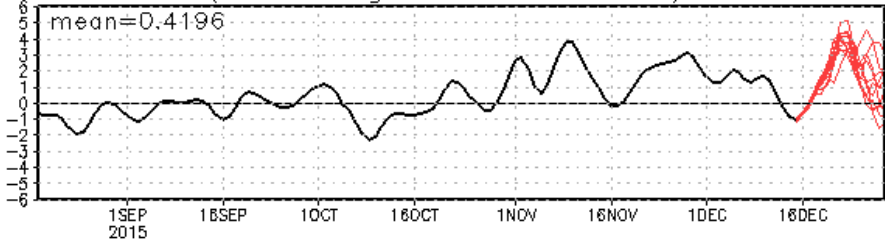
Null (416 days) 52 storms



Connections to U.S. Impacts

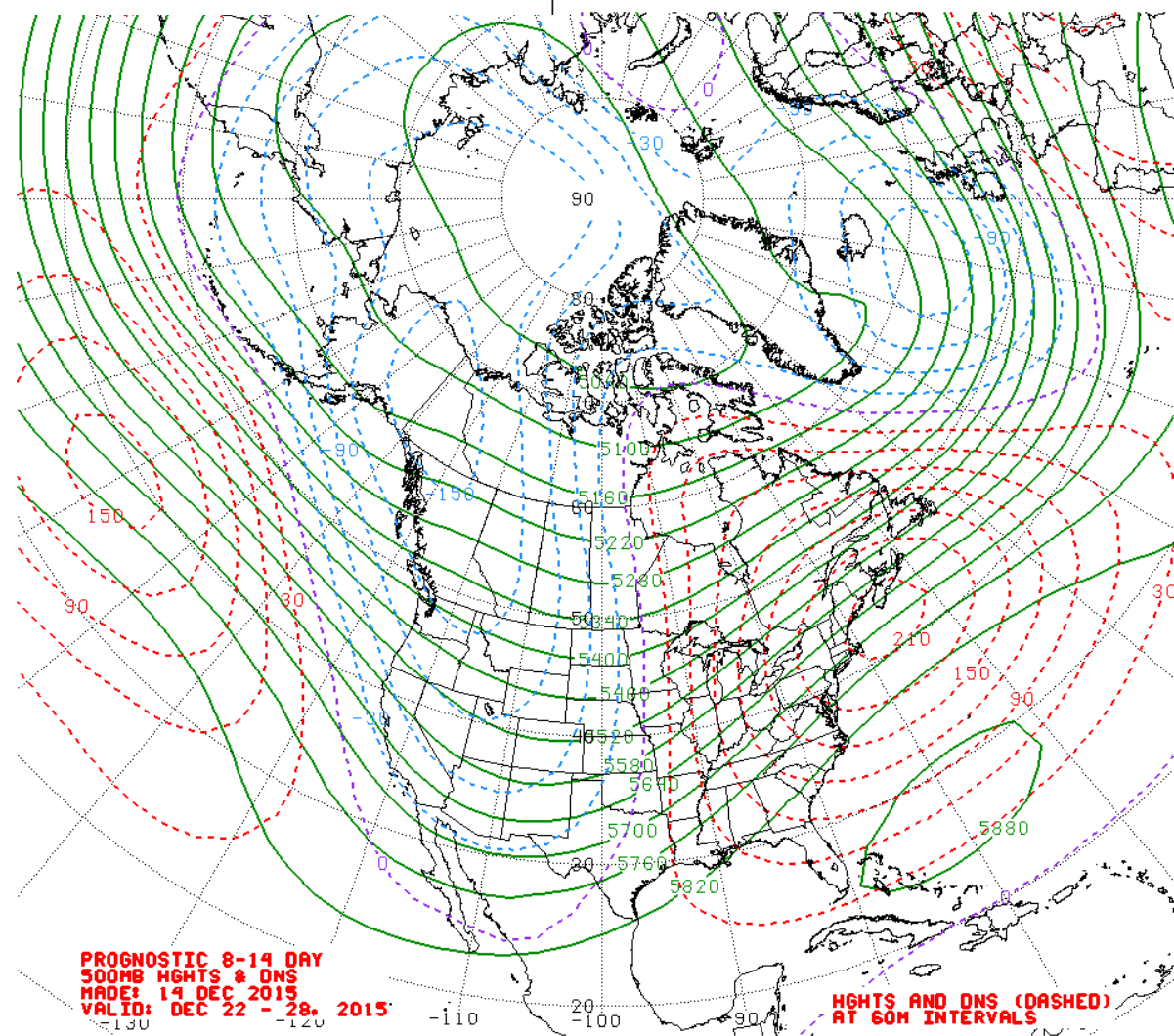
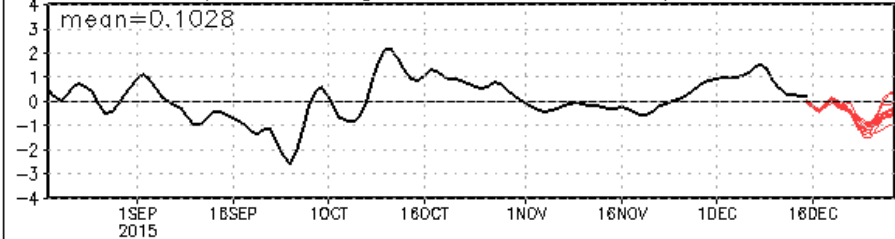
AO: Observed & ENSM forecasts

1000mb Z (Obs: 18Aug2015 - 15Dec2015) AO index



PNA: Observed & ENSM forecasts

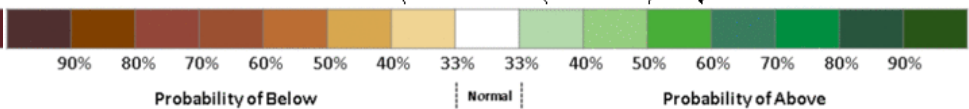
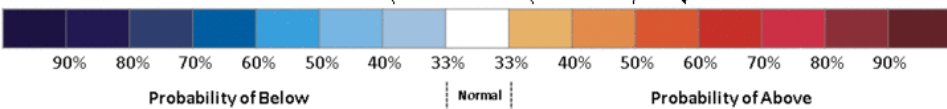
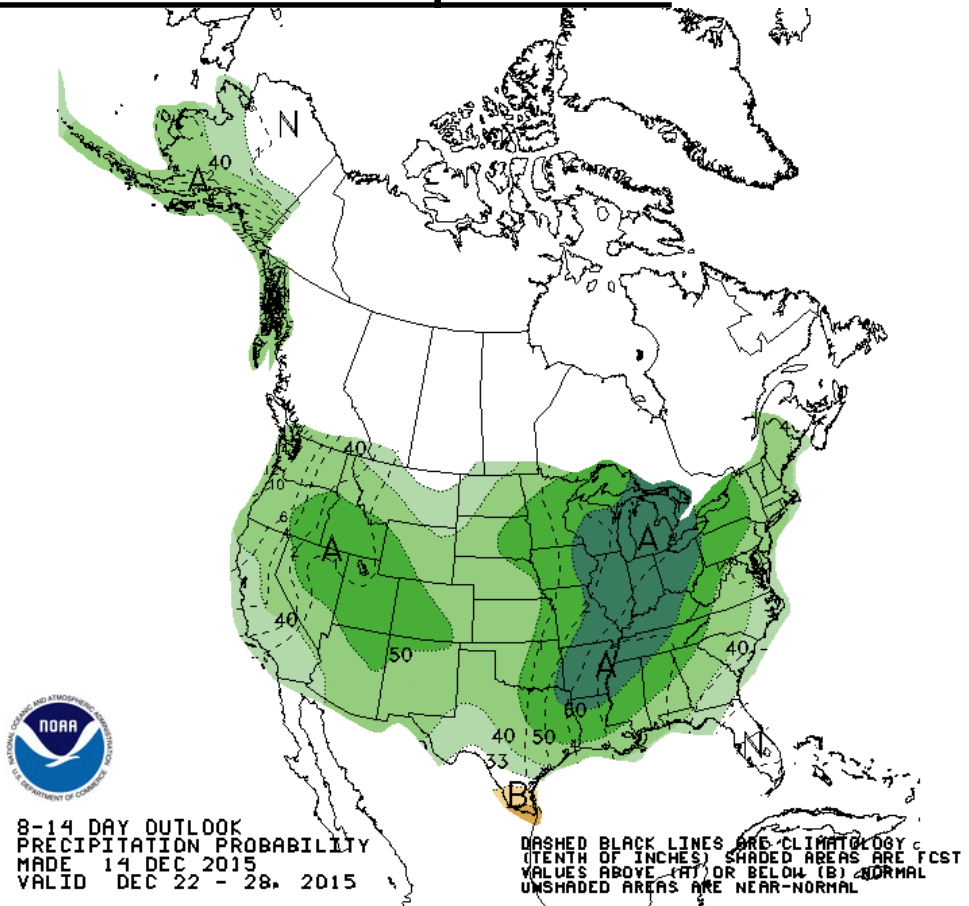
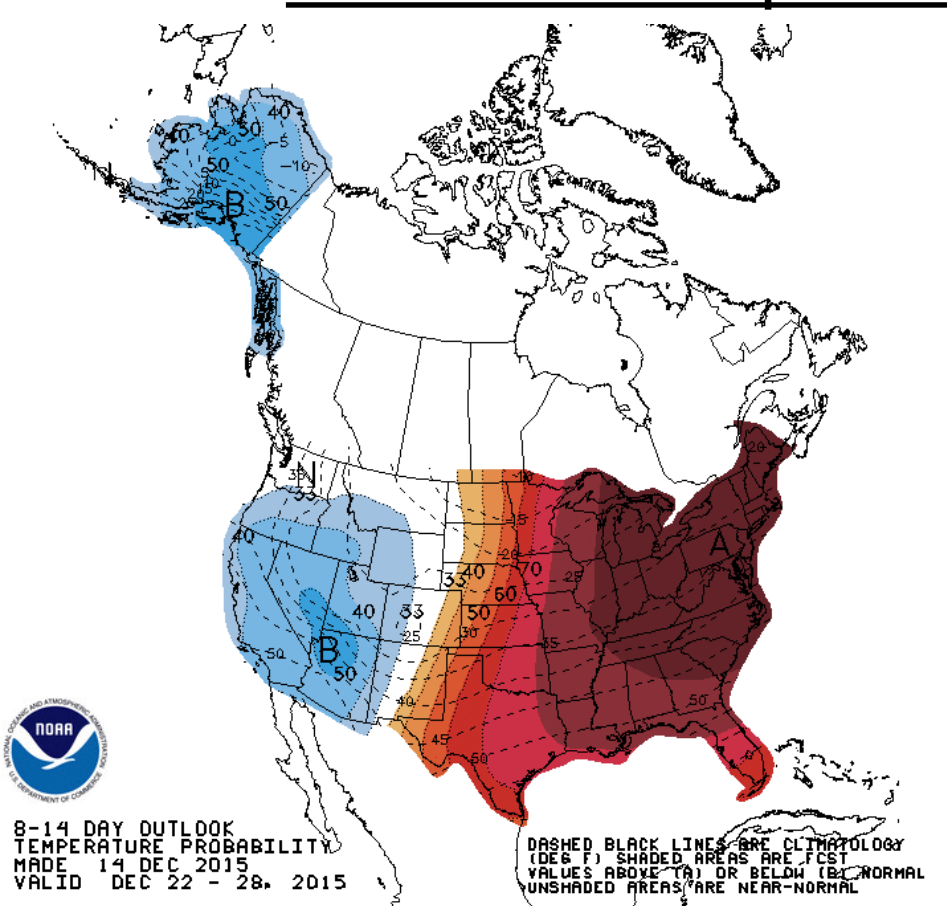
500mb Z (Obs: 18Aug2015 - 15Dec2015) PNA index



**PROGNOSTIC 8-14 DAY
500MB HGHTS & DNS
MADE: 14 DEC 2015
VALID: DEC 22 - 28, 2015**

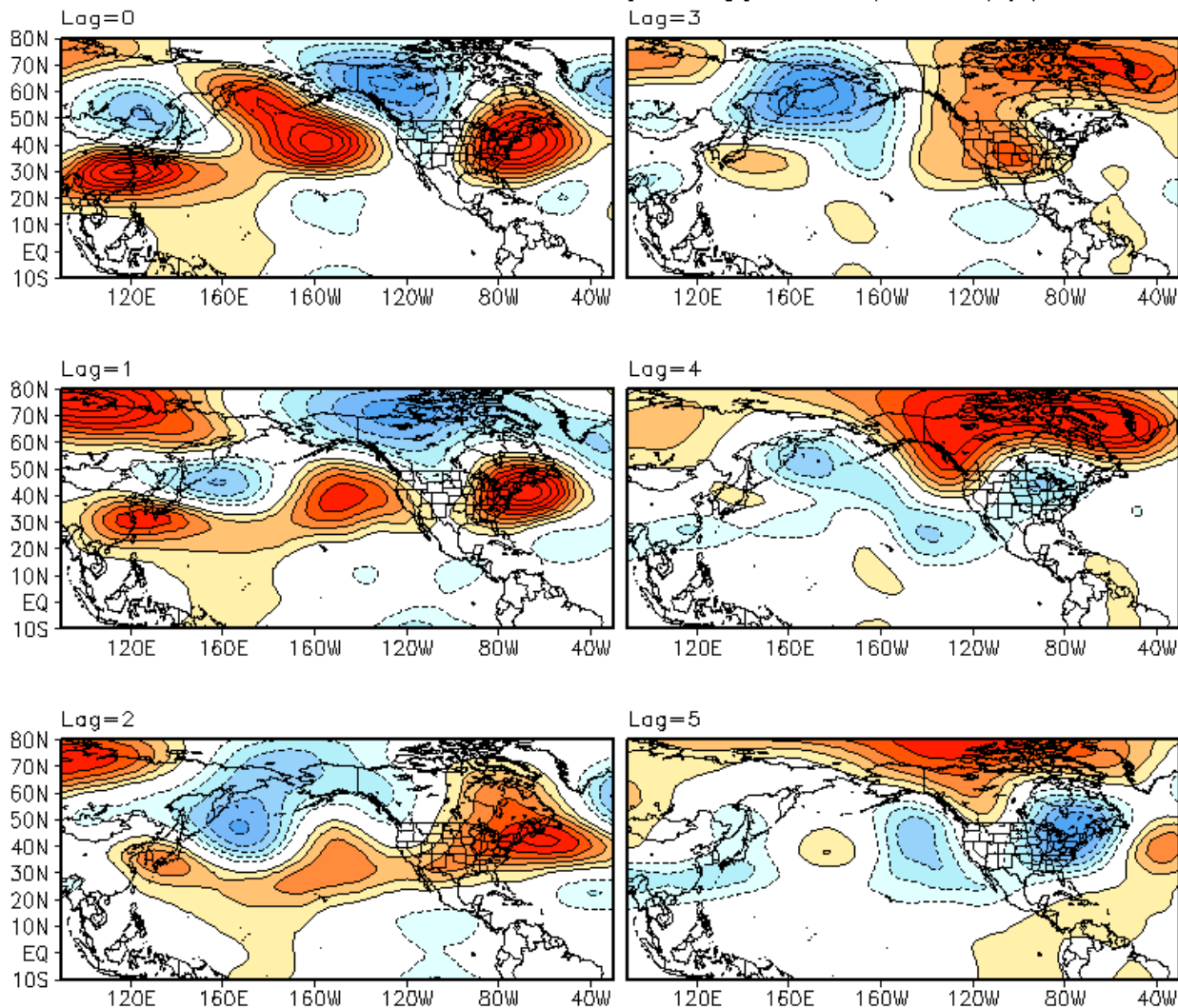
**HGHTS AND DNS (DASHED)
AT 60M INTERVALS**

Week 2 – Temperature and Precipitation



MJO Lagged Composites

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

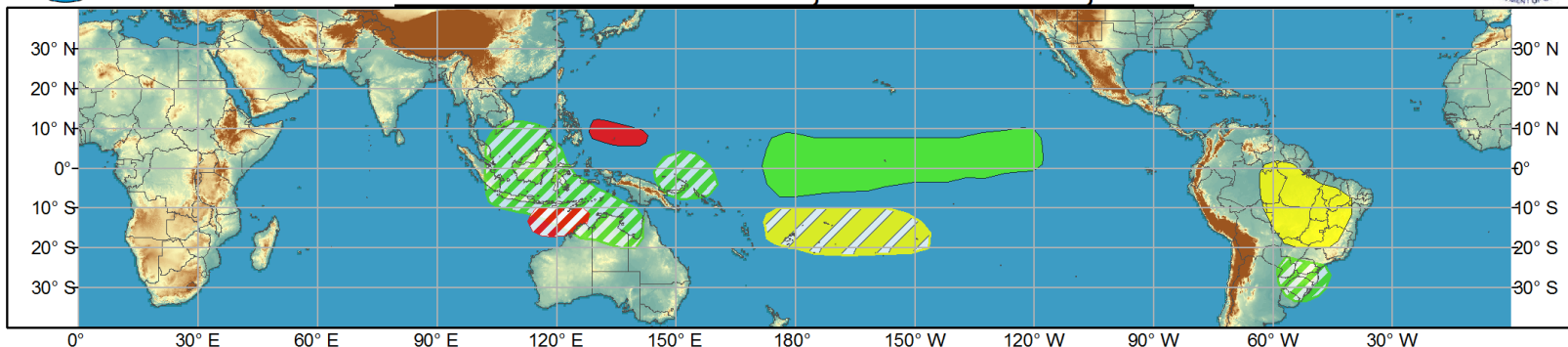




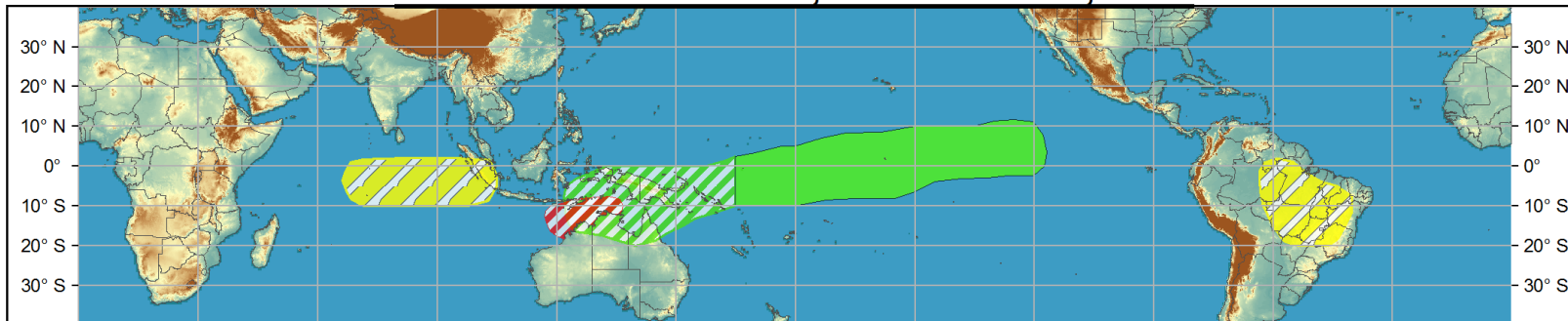
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Above-average rainfall



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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