

Global Tropics Hazards And Benefits Outlook

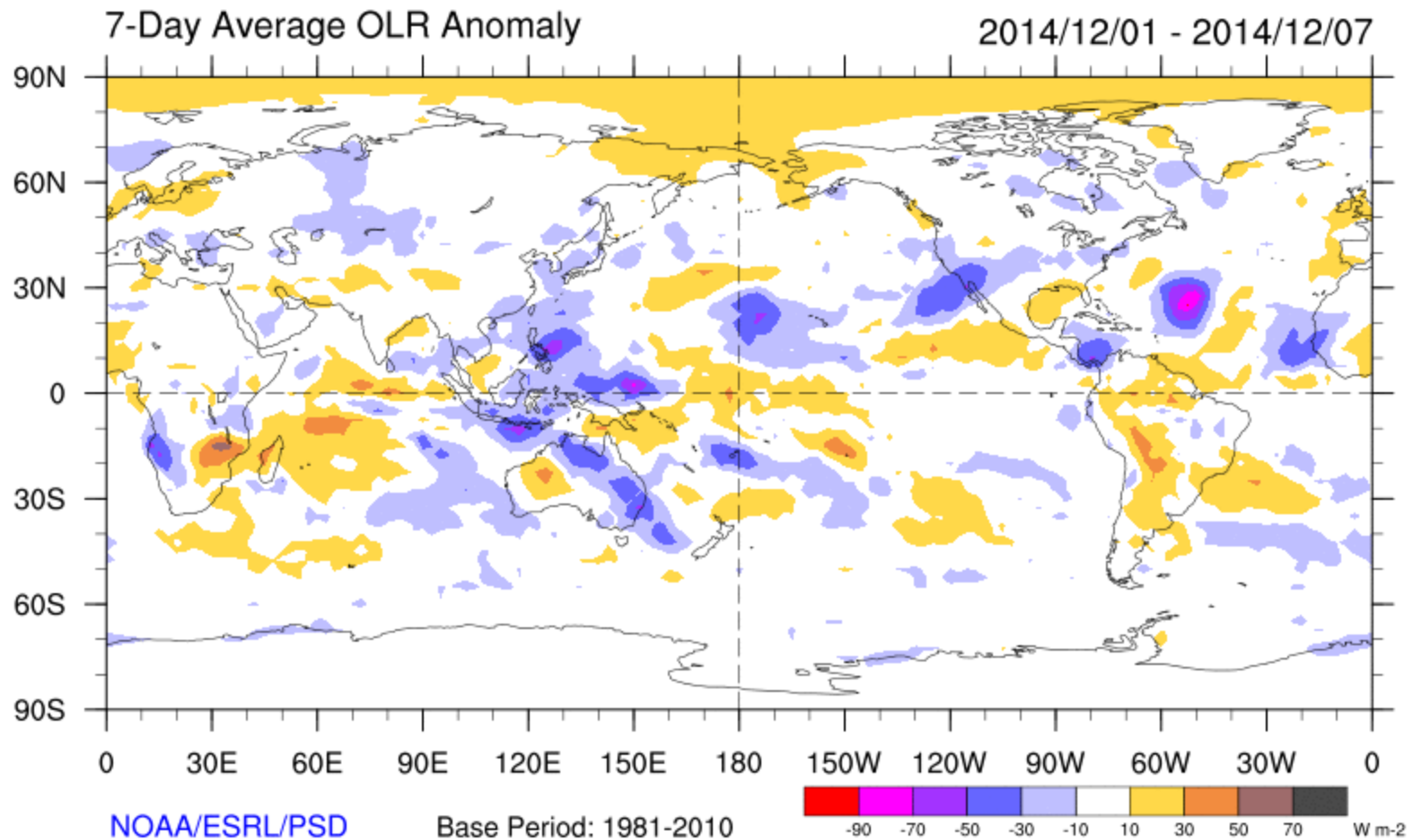
December 9, 2014

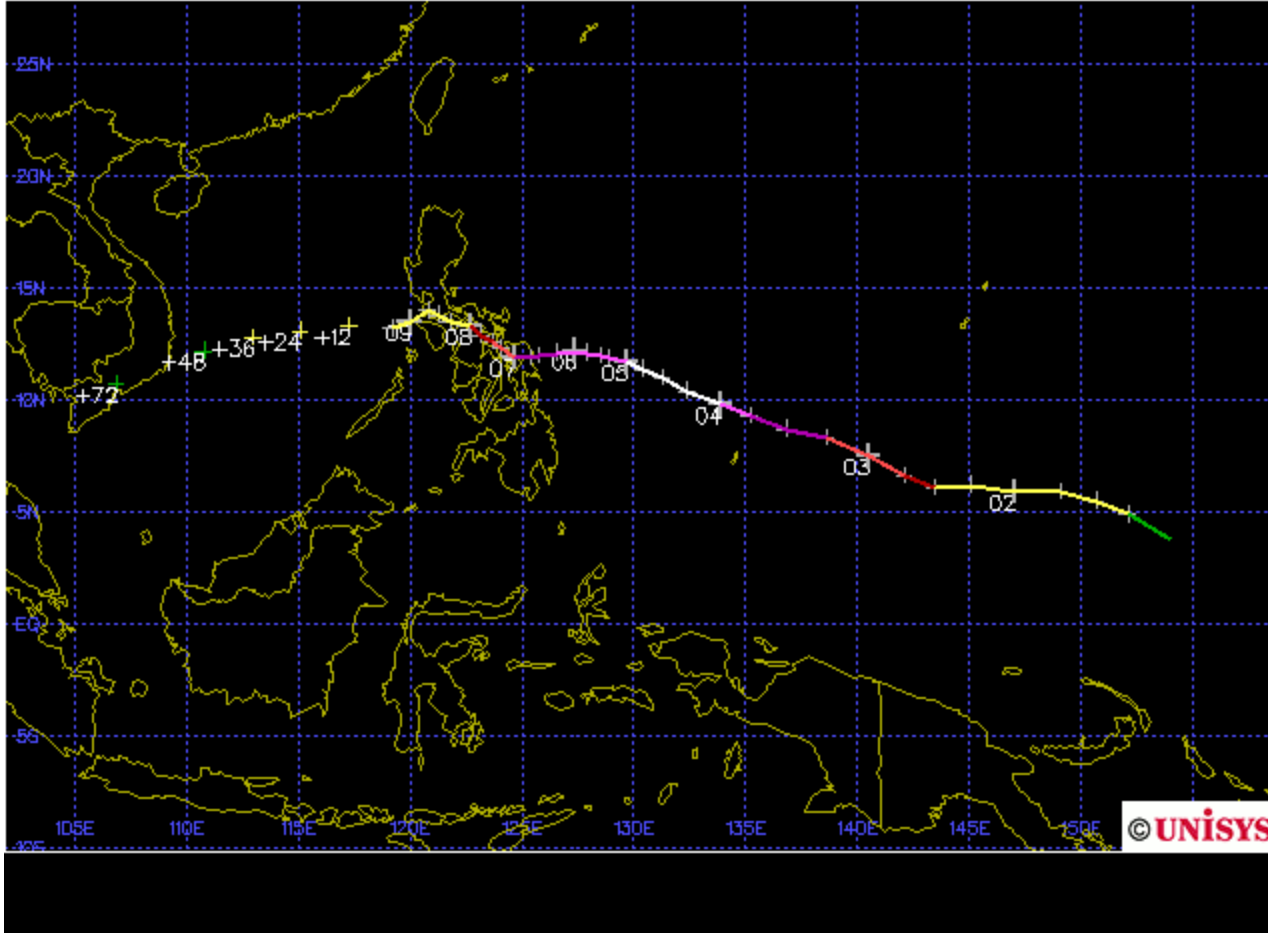
Brad Pugh

Outline

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

Review of anomalous convection



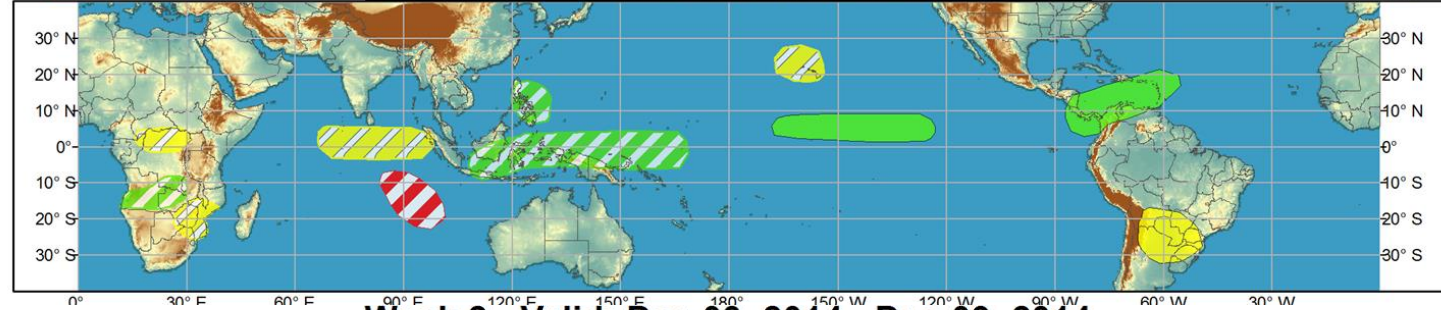


No new tropical cyclone development during the past week

Outlook Review



Week 1 - Valid: Dec 03, 2014 - Dec 09, 2014



Week 2 - Valid: Dec 03, 2014 - Dec 09, 2014

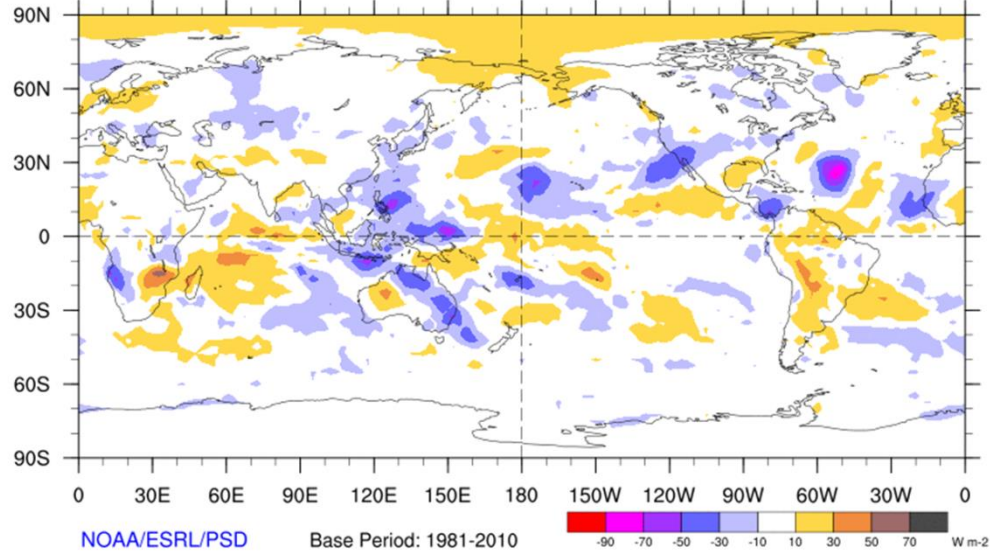


Cool shading
More clouds/rain

Warm shading
Less clouds/rain

7-Day Average OLR Anomaly

2014/12/01 - 2014/12/07



NOAA/ESRL/PSD

Base Period: 1981-2010

-90 -70 -50 -30 -10 10 30 50 70 Wm-2

Synopsis of Climate Modes

ENSO:

- ENSO-neutral conditions currently remain in place. There is a 65% chance that El Niño conditions will be present during the Northern Hemisphere winter and last into spring 2015.

MJO and other subseasonal tropical variability:

- The MJO remained active during the past week.
- Most dynamical model MJO index forecasts depict a weakening MJO amplitude during Week-1 with continued eastward propagation. The MJO signal becomes more incoherent in Week-2. Some statistical tools continue the MJO event over the period.
- Model forecasts of precipitation remain in poor agreement and not particularly consistent with MJO composites.
- Equatorial Rossby wave in western Pacific will play a role in outlook.

Extratropics:

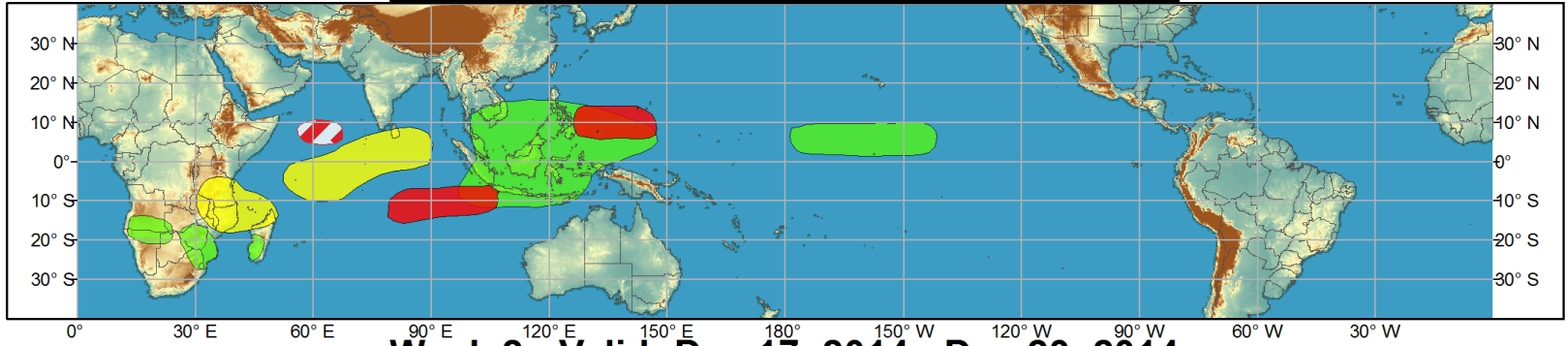
- The uncertainty in the strength and location of MJO convection in Week-2 makes assessing impacts to the U.S. quite difficult. MJO propagation into the Pacific would favor pattern adjustments for more ridging/troughing across the western/eastern CONUS beyond Week-2.
- +NAO and El Niño like response seem to be dominating the current and forecast extratropical circulation anomalies.



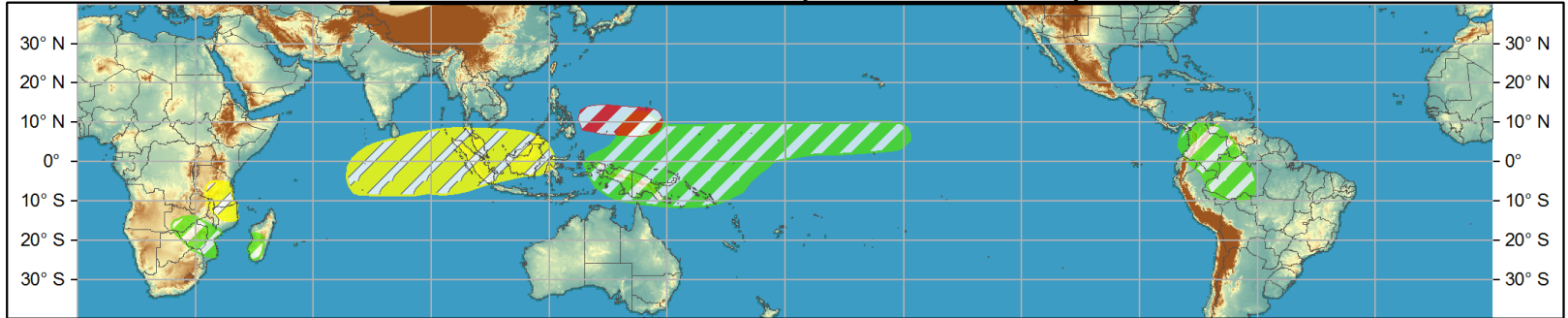
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 10, 2014 - Dec 16, 2014



Week 2 - Valid: Dec 17, 2014 - Dec 23, 2014



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: 12/09/2014

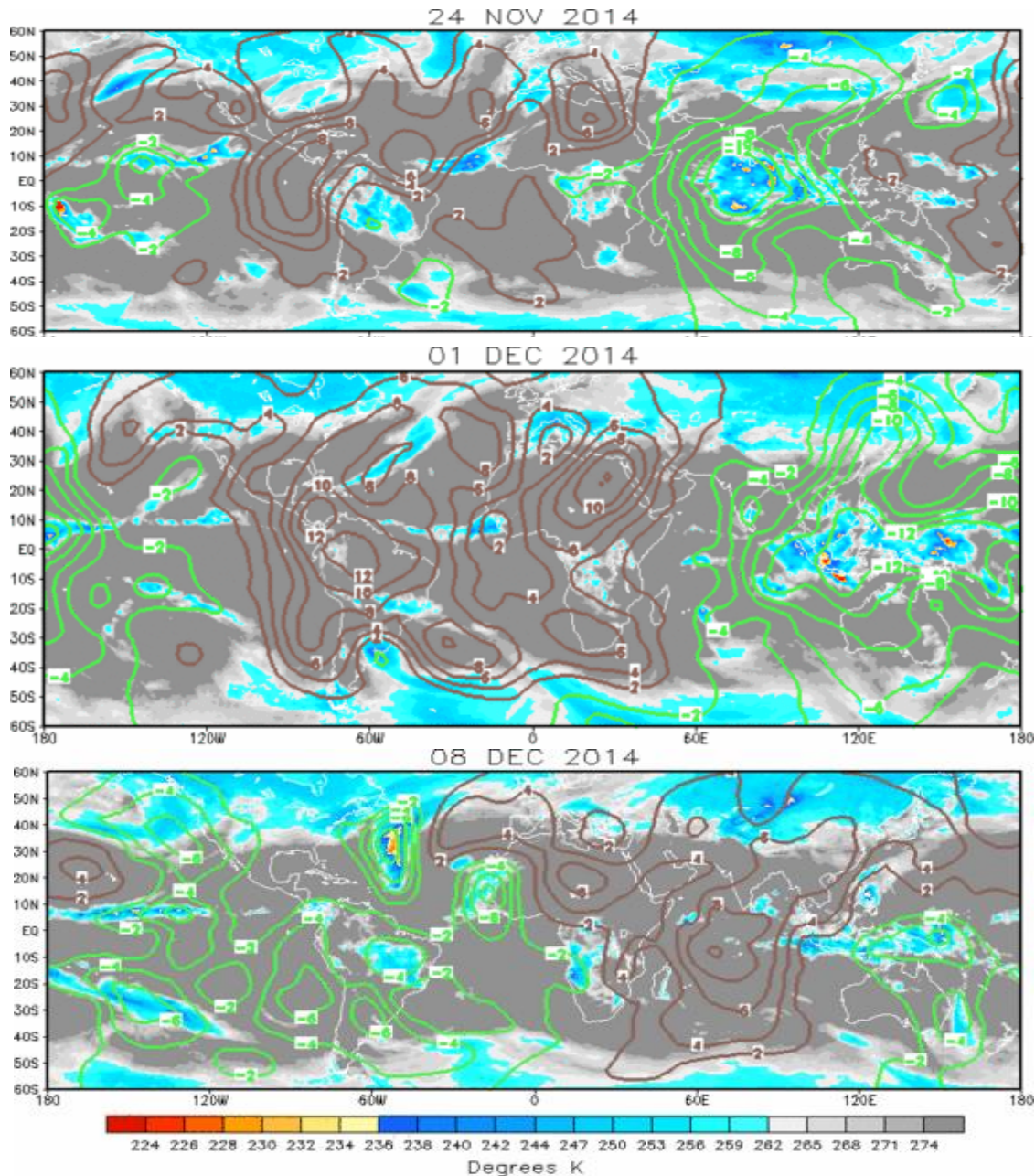
Forecaster: Gottschalck

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.

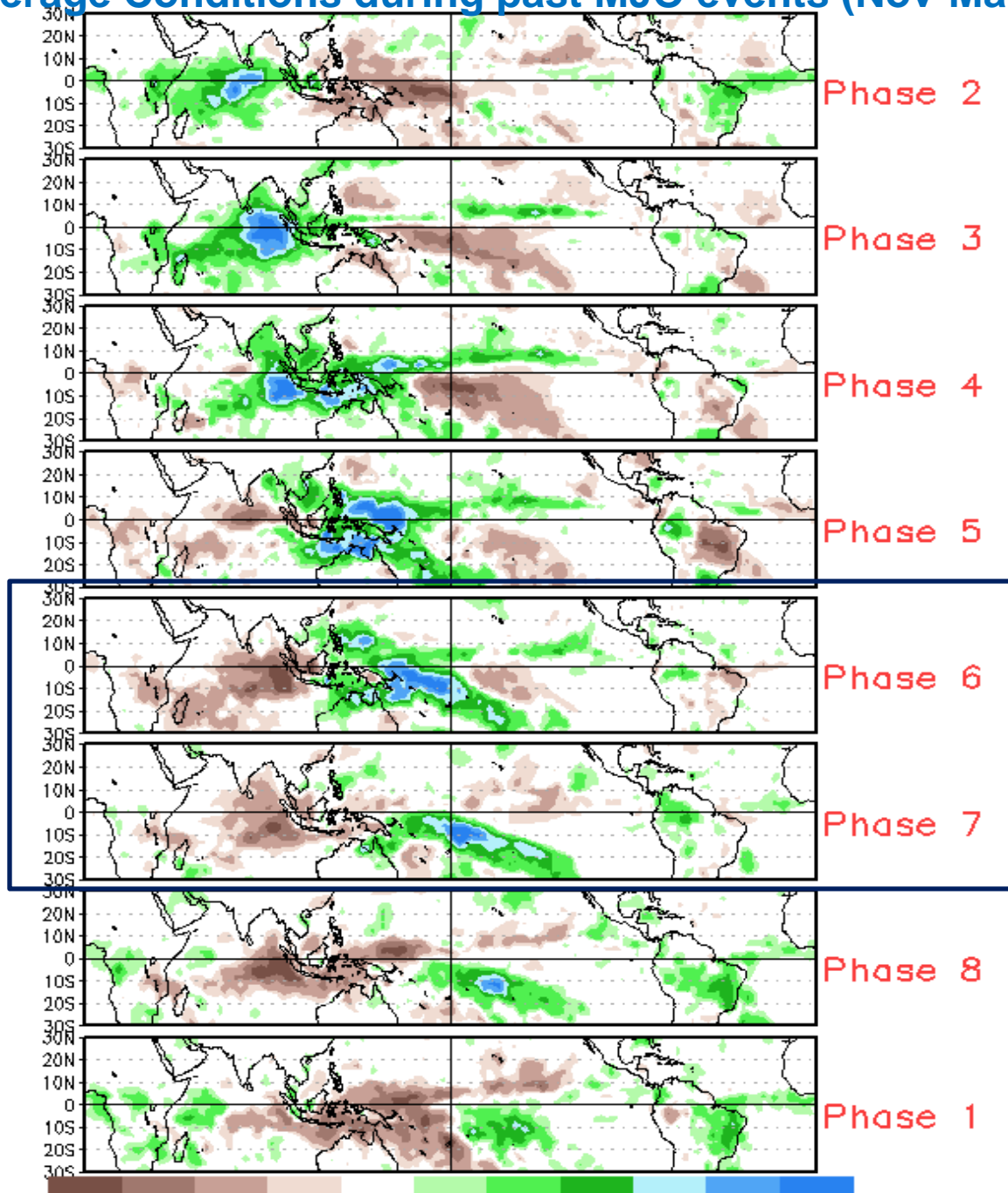


IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

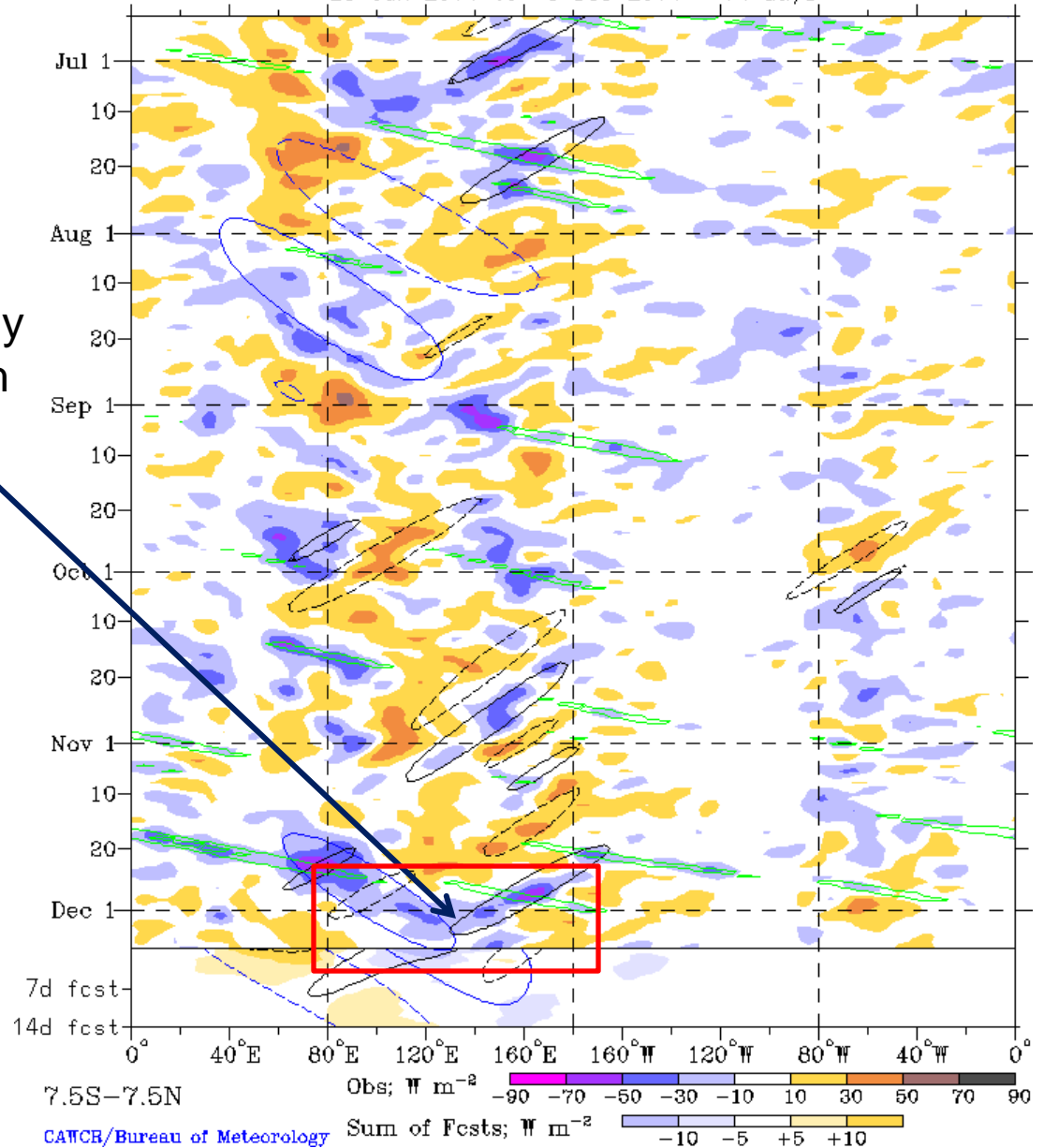


Average Conditions during past MJO events (Nov-Mar)



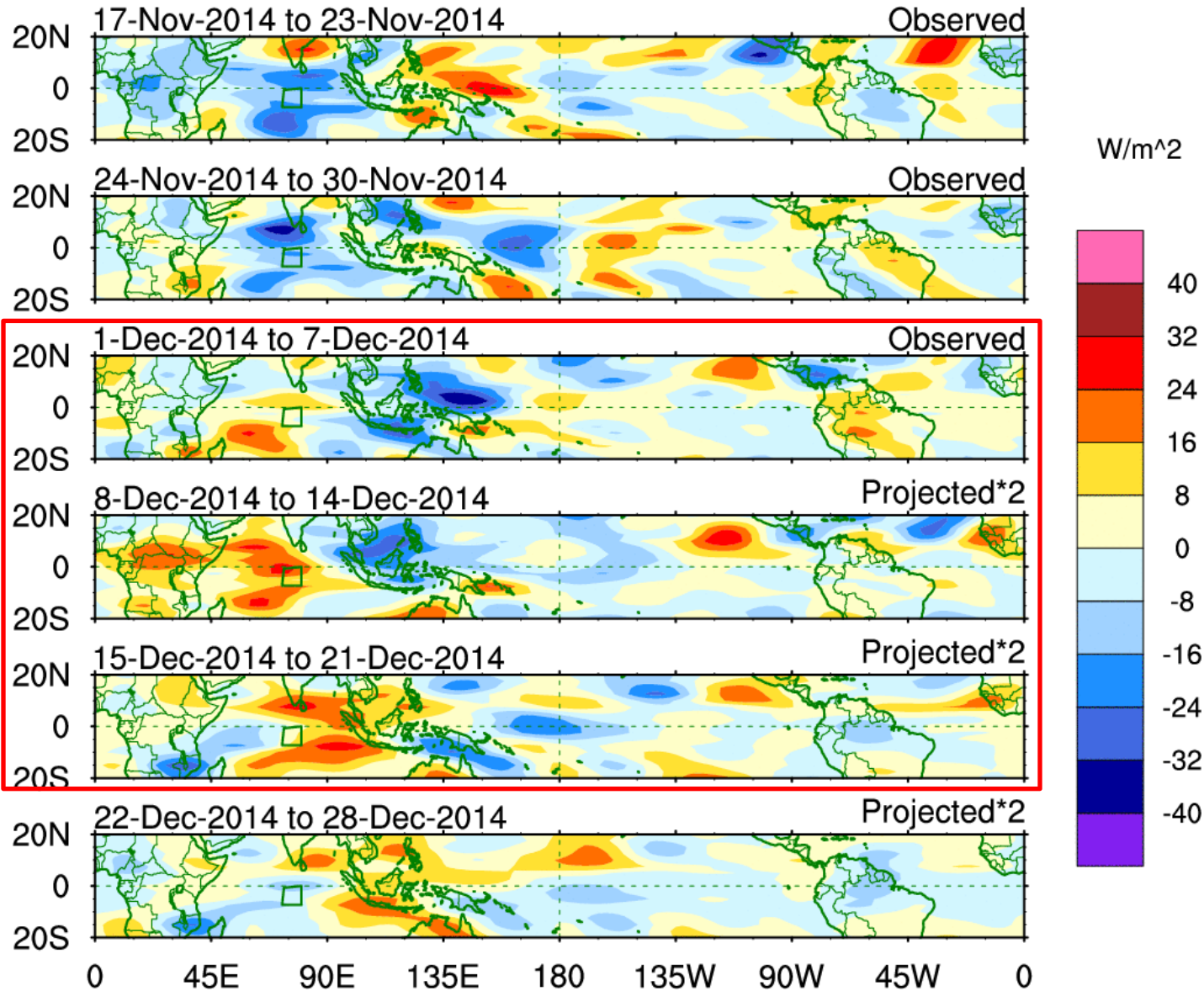
Real-time filtering superimposed upon 1-2-1 filt, R21, OLR Anoms
MJO blue CINT=10; n1ER black CINT=10; Kelvin green CINT=15
Negative contours solid, positive dashed (excluding Kelvin)
23-Jun-2014 to 8-Dec-2014 + 14 days

Equatorial Rossby Wave
(black contour) shifting
westward has and is currently
constructively interfering with
MJO near 120E.

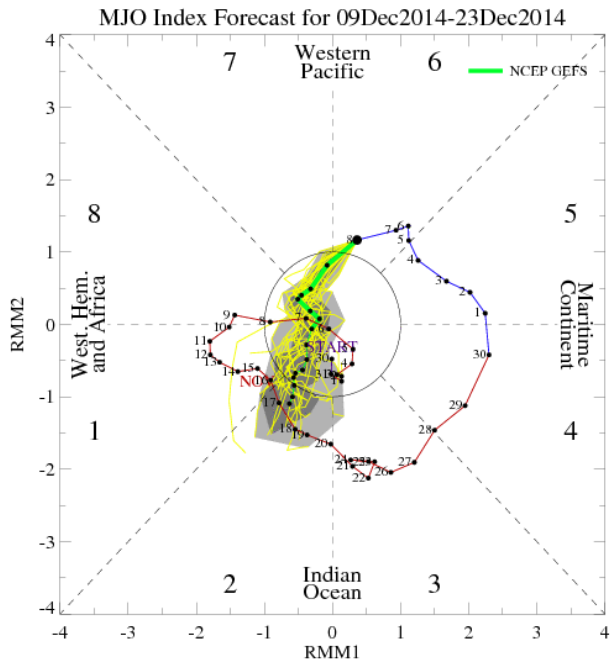


Statistical Forecast (Combined MJO/ER/KW)

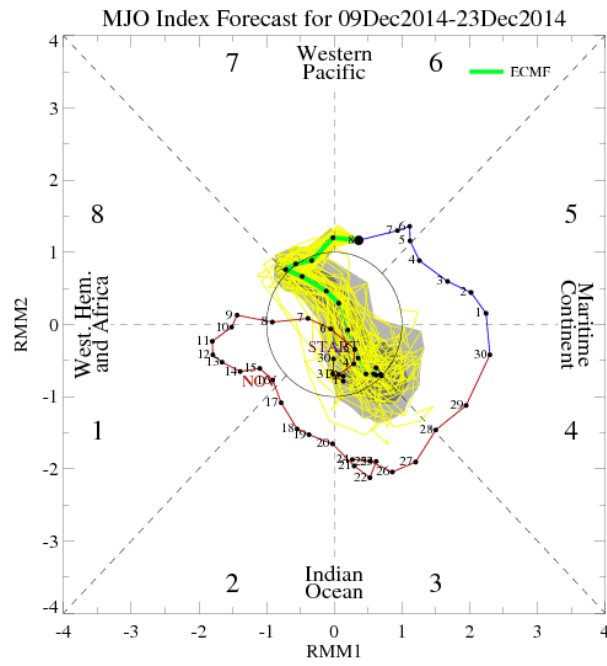
Sum of MJO, Kelvin, ER



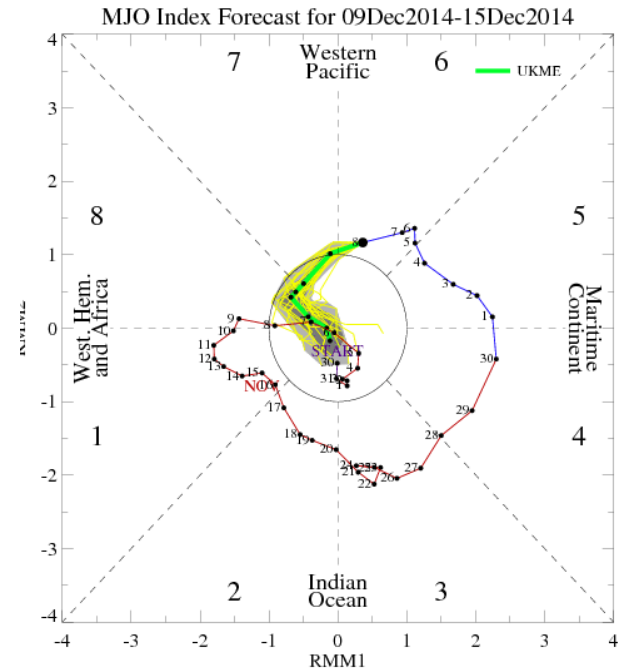
MJO Observation/Forecast



GFS

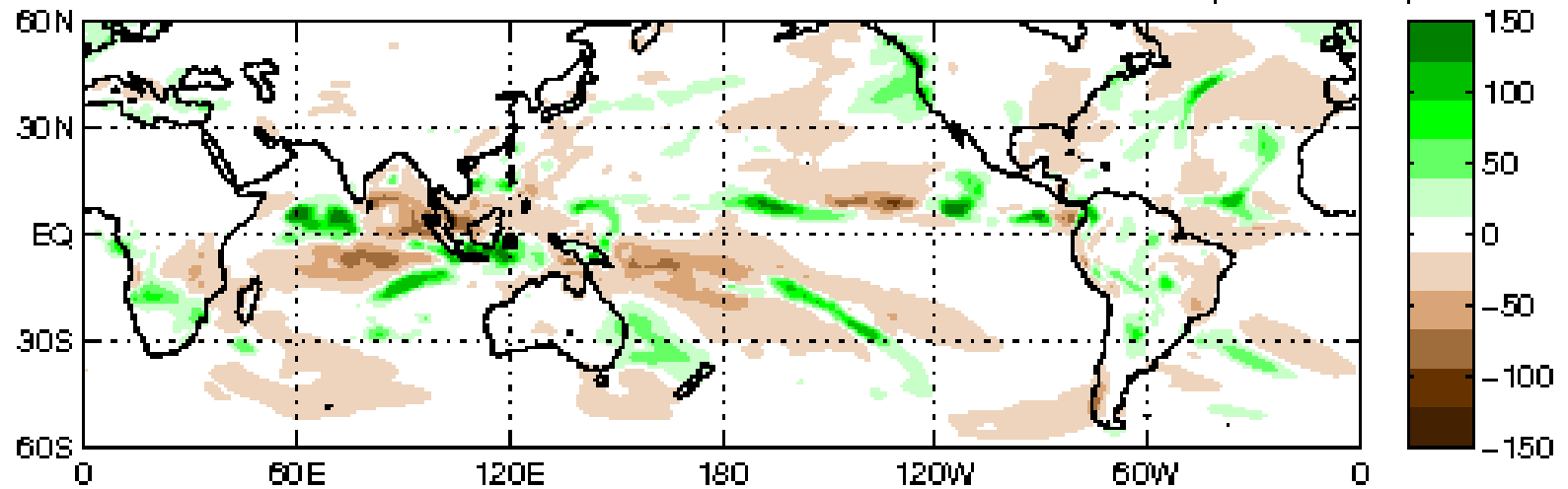


ECMWF

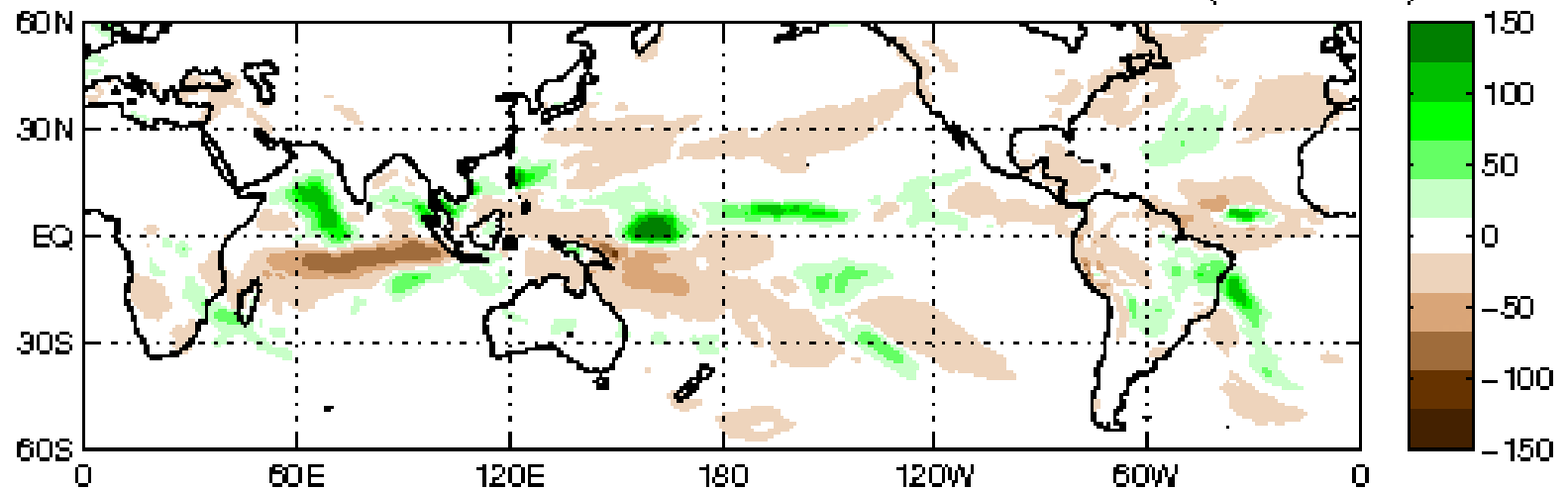


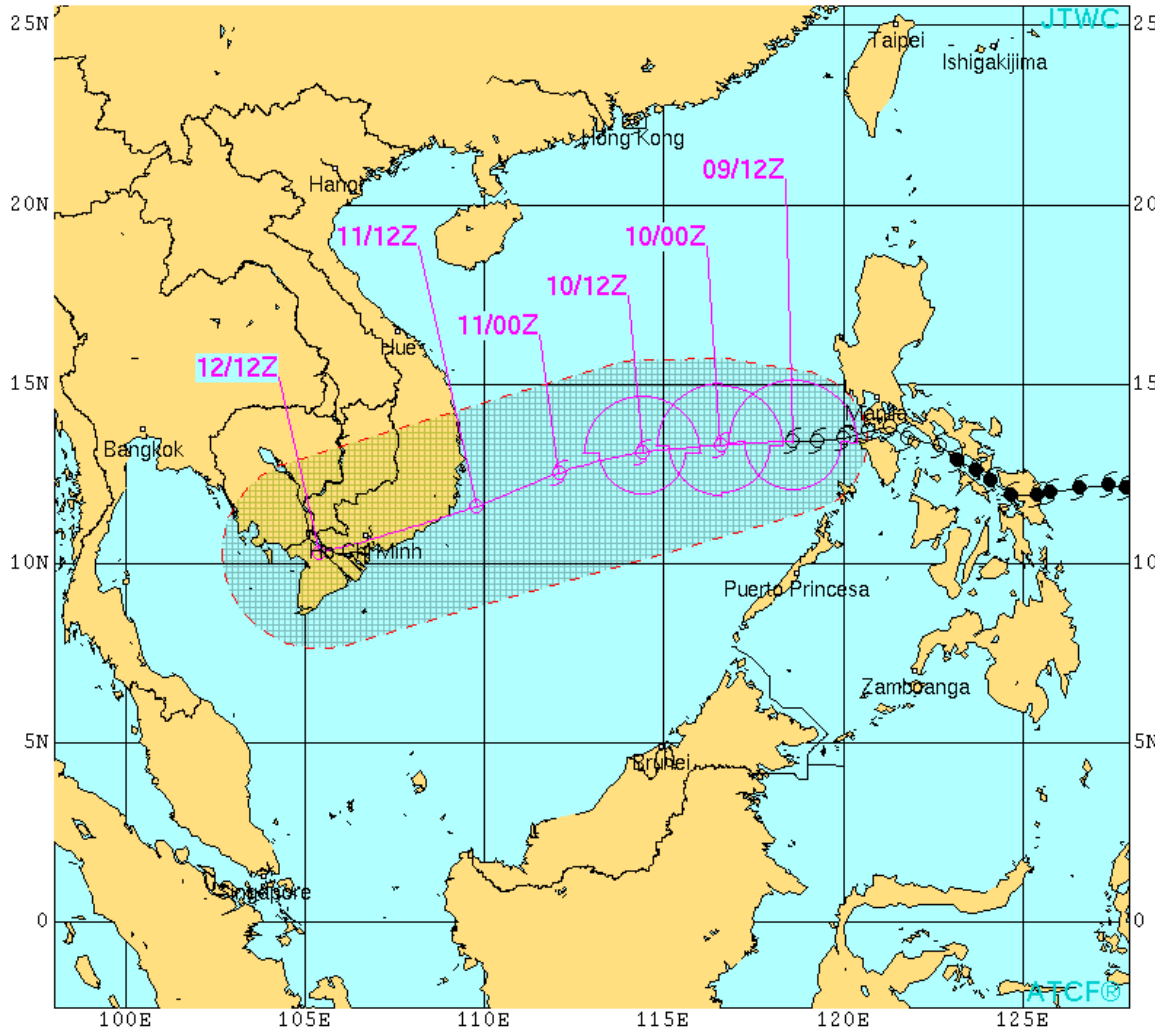
UKMET

CFS: Anom. PREC Week: 1: 09-Dec-2014 to 15-Dec-2014 (mm/week)



CFS: Anom. PREC Week: 2: 16-Dec-2014 to 22-Dec-2014 (mm/week)





TROPICAL STORM 22W (HAGUPIT) WARNING #35
 WTPN31 PGTW 091500
 091200Z POSIT: NEAR 13.4N 118.6E
 MOVING 270 DEGREES TRUE AT 07 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 12 FEET
 09/12Z, WINDS 040 KTS, GUSTS TO 050 KTS
 10/00Z, WINDS 045 KTS, GUSTS TO 055 KTS
 10/12Z, WINDS 040 KTS, GUSTS TO 050 KTS
 11/00Z, WINDS 035 KTS, GUSTS TO 045 KTS
 11/12Z, WINDS 030 KTS, GUSTS TO 040 KTS
 12/12Z, WINDS 020 KTS, GUSTS TO 030 KTS

CPA TO:	NM	DTG
DA_NANG	277	11/11Z
HO_CHI MINH_CITY	10	12/05Z

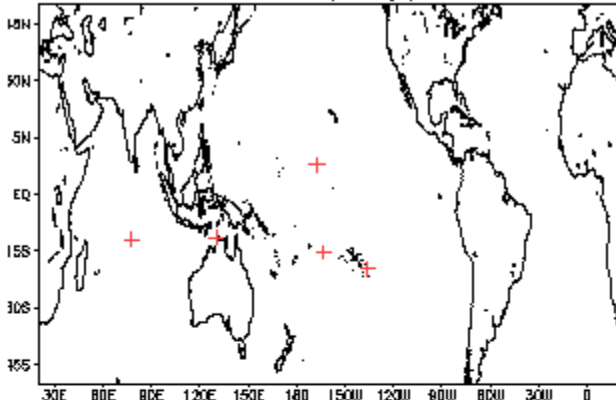
BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
CLARK AB		252	382 24
DA_NANG		115	395 24
MANILA		258	395 24
SUBIC BAY		254	353 24
PUERTO_PRINCESA		309	325 24

○ LESS THAN 34 KNOTS
 ⊖ 34-63 KNOTS
 ● MORE THAN 63 KNOTS
 PAST 6 HOURLY CYCLONE POSITS IN BLACK
 FORECAST CYCLONE POSITS IN COLOR

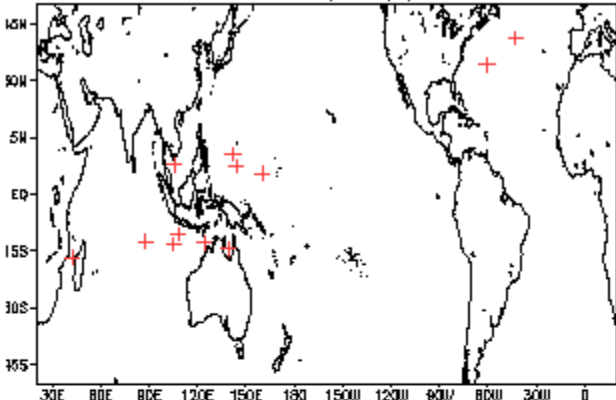


December Tropical Storm Formation by MJO phase

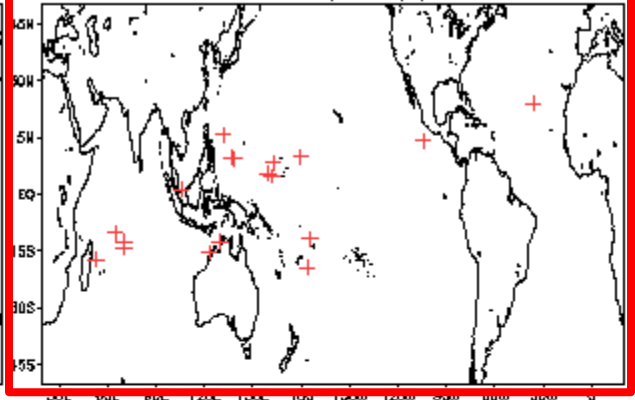
Phase 1 (48 days) 7 storms



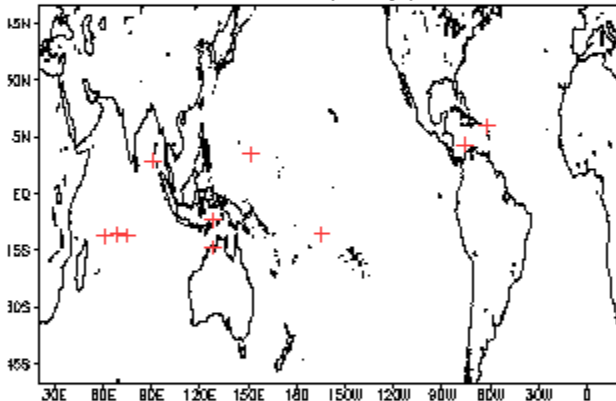
Phase 4 (72 days) 13 storms



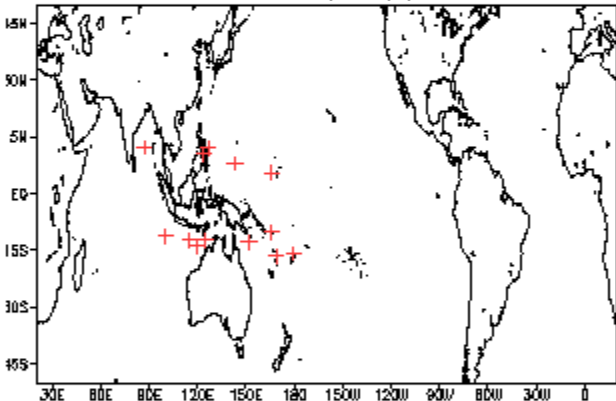
Phase 7 (103 days) 19 storms



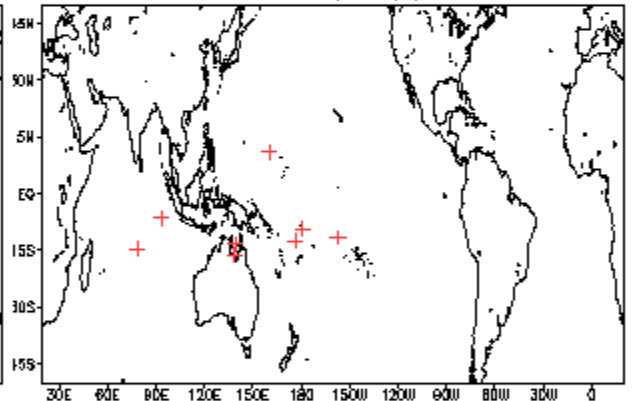
Phase 2 (67 days) 11 storms



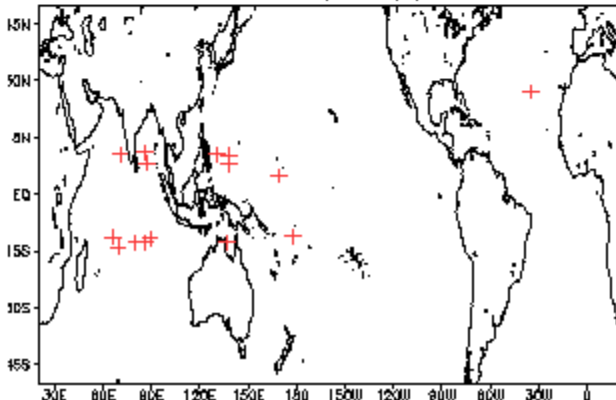
Phase 5 (73 days) 14 storms



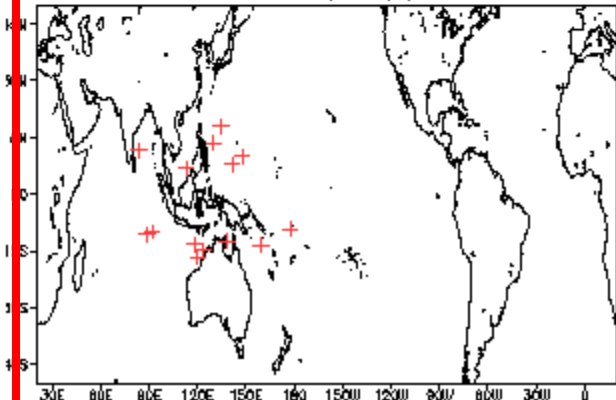
Phase 8 (76 days) 9 storms



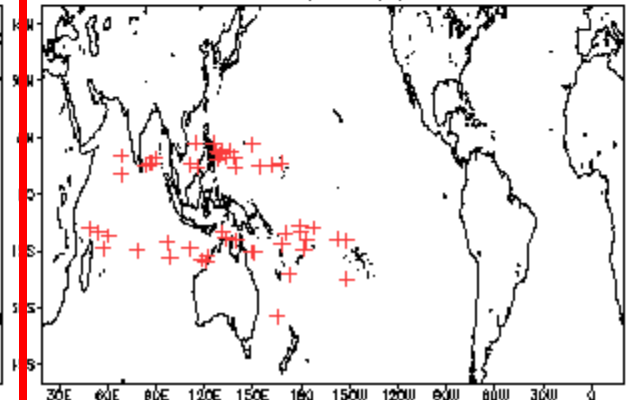
Phase 3 (101 days) 16 storms



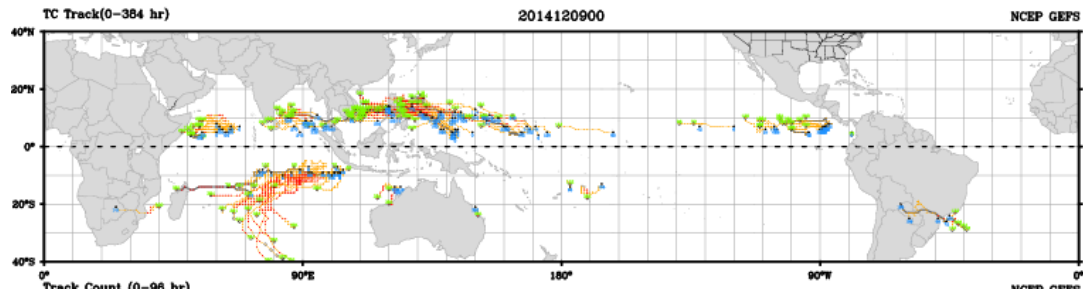
Phase 6 (69 days) 15 storms



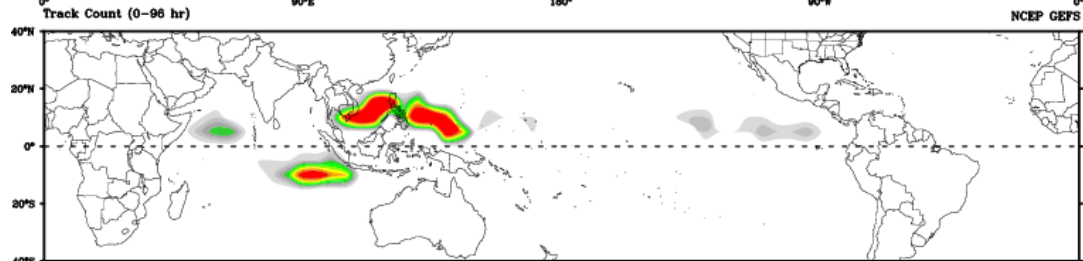
Null (416 days) 52 storms



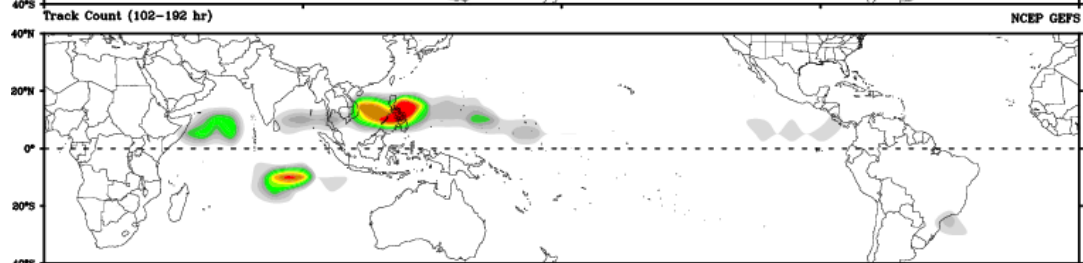
CWB TC Tracker for NCEP GEFS (Fuzzy_AllCriteria)



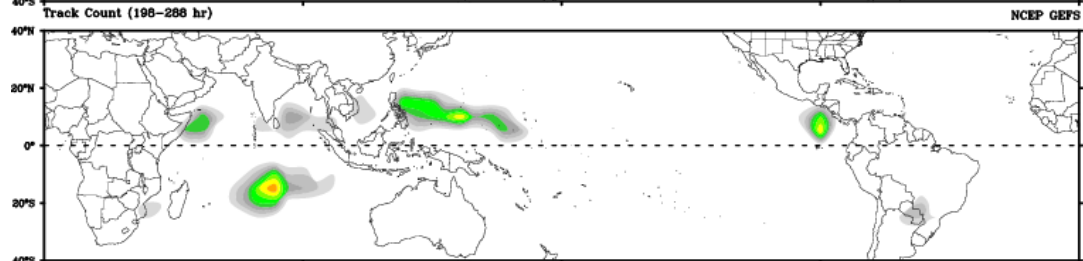
Days 1-4



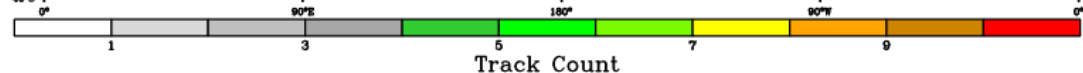
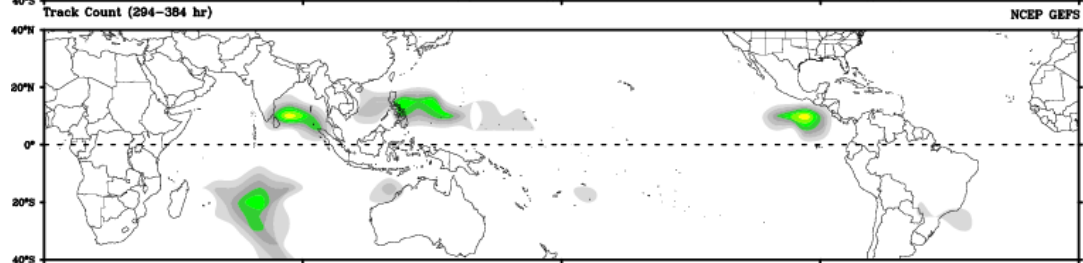
Day 5-8



Day 9-12



Day 13-16



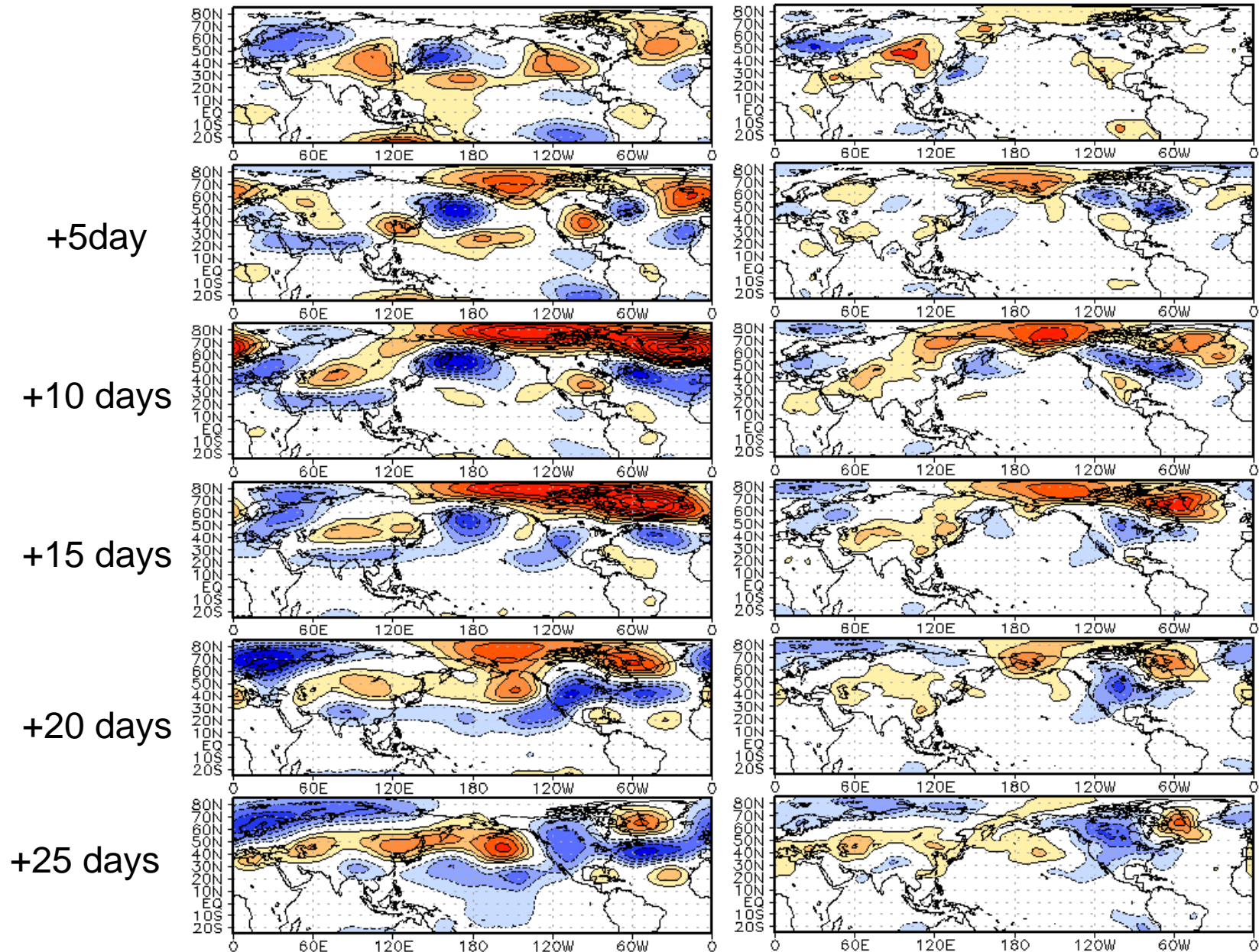
Connections to U.S. Impacts

Lagged composites from MJO

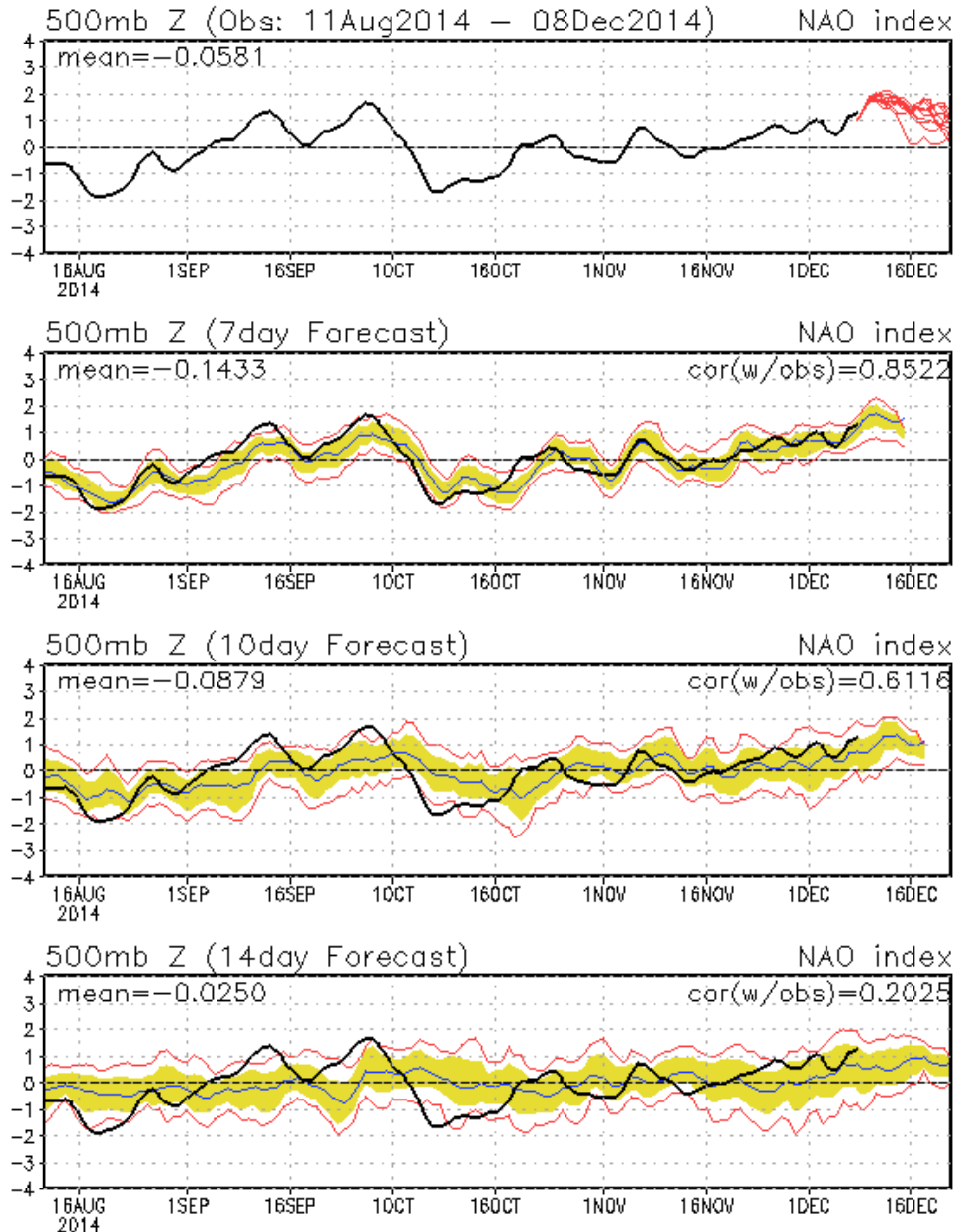
5-day intervals

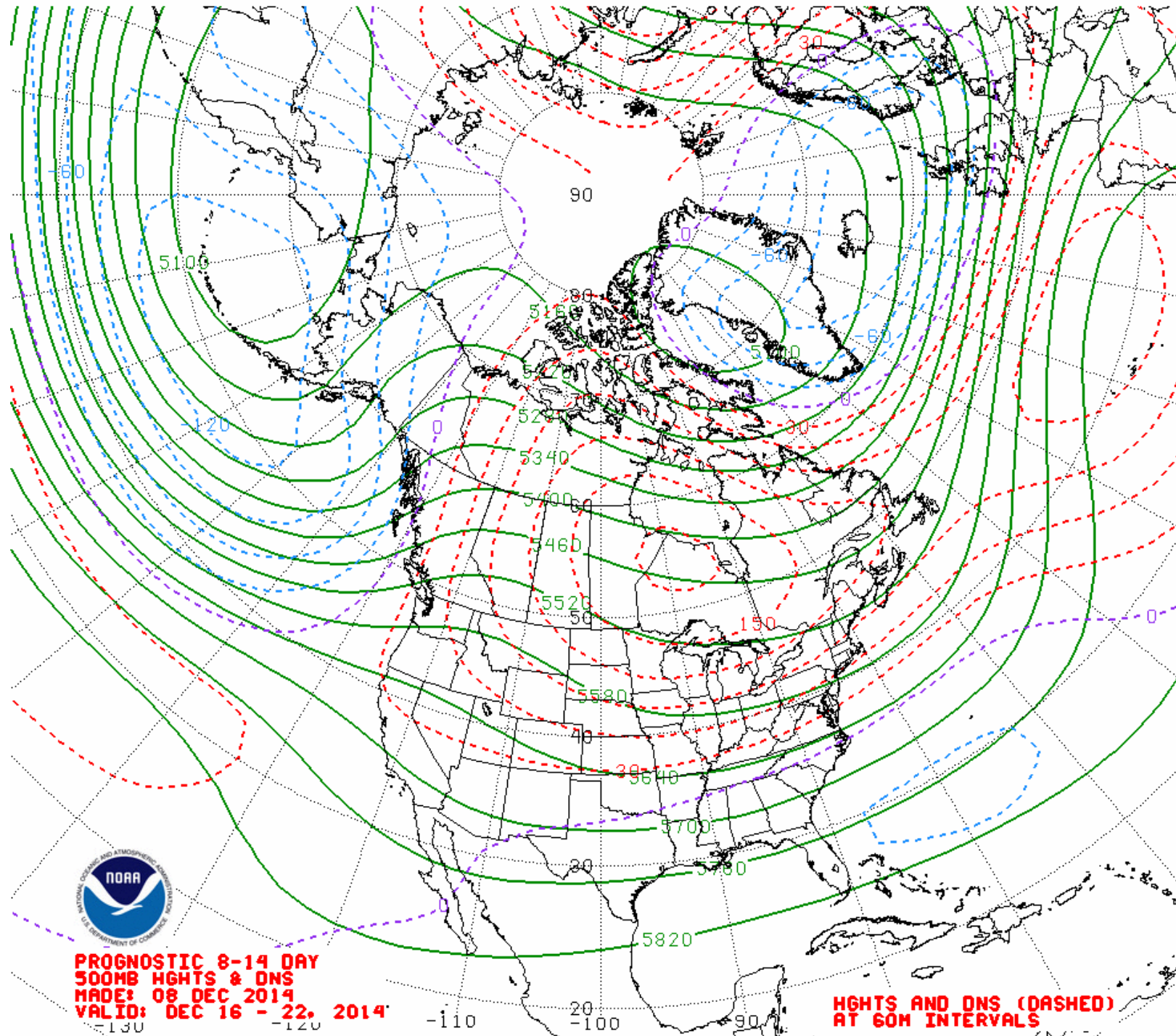
WHMJO Phase 6 z200 Lagged Composite (ndj)

WHMJO Phase 6 t850 Lagged Composite (ndj)



NAO: Observed & ENSM forecasts

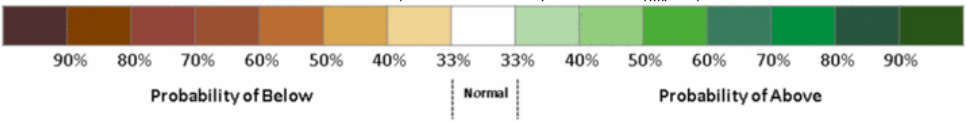
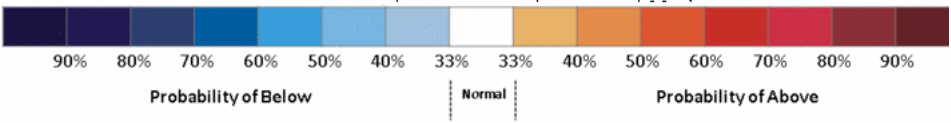
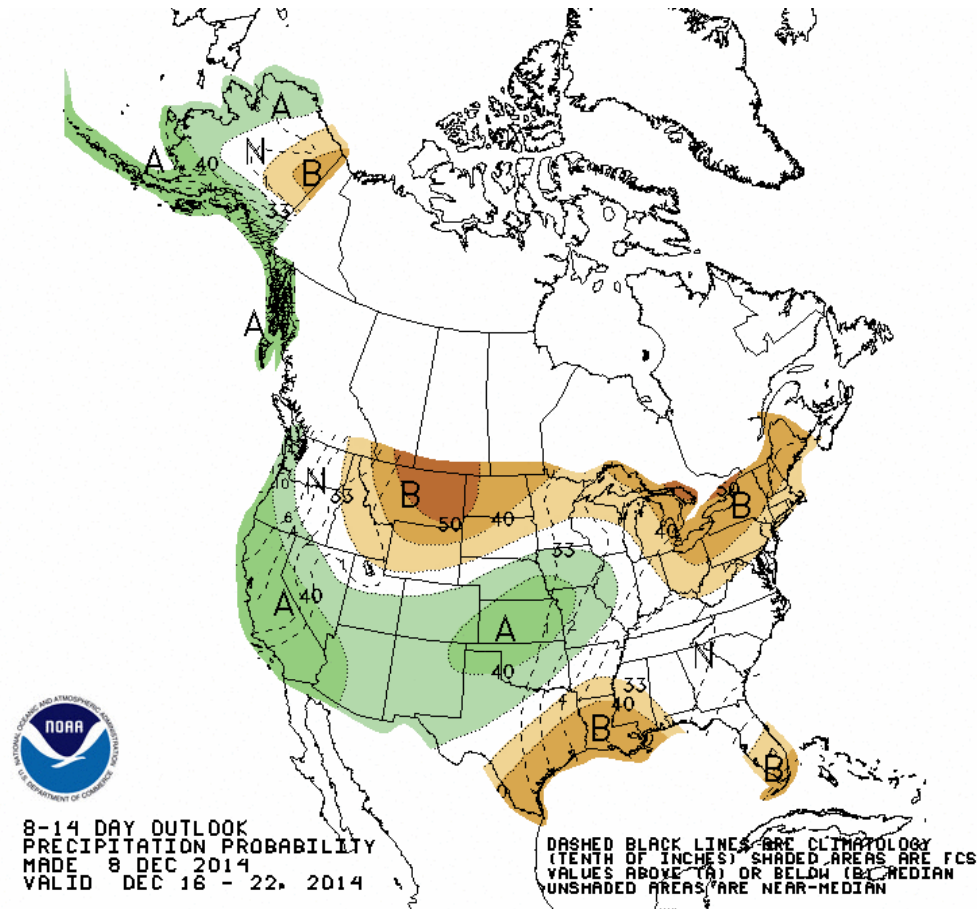
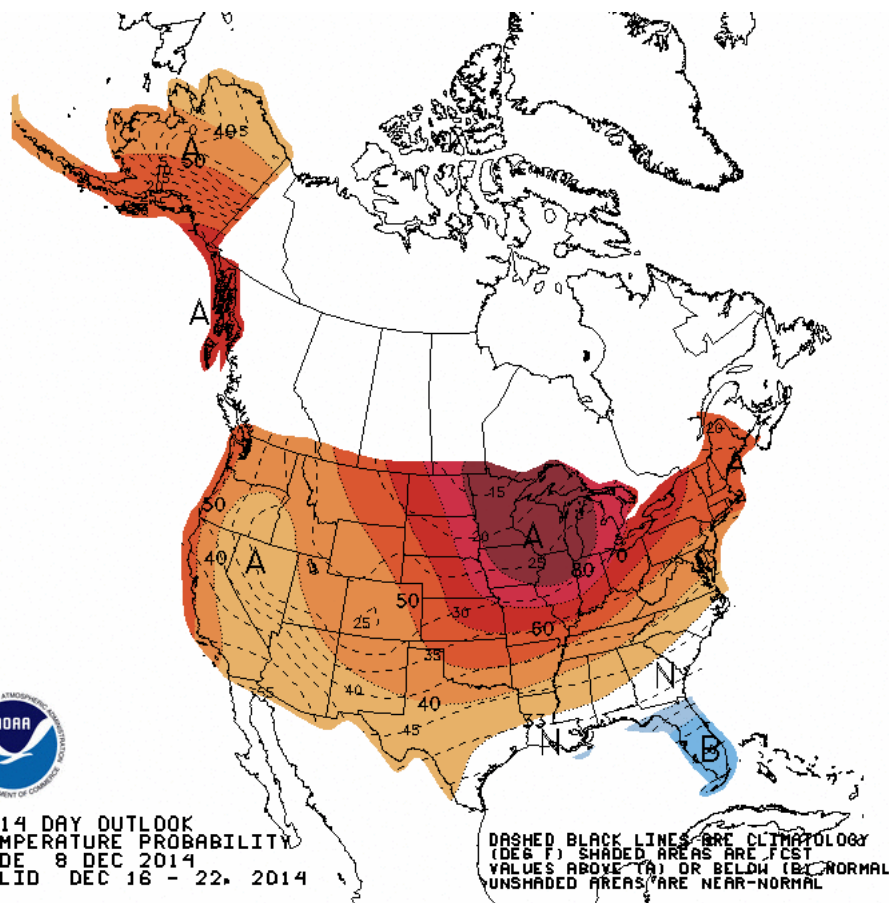




**PROGNOSTIC 8-14 DAY
500MB HGHTS & DNS
MADE: 08 DEC 2014
VALID: DEC 16 - 22, 2014**

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

Week 2 – Temperature and Precipitation

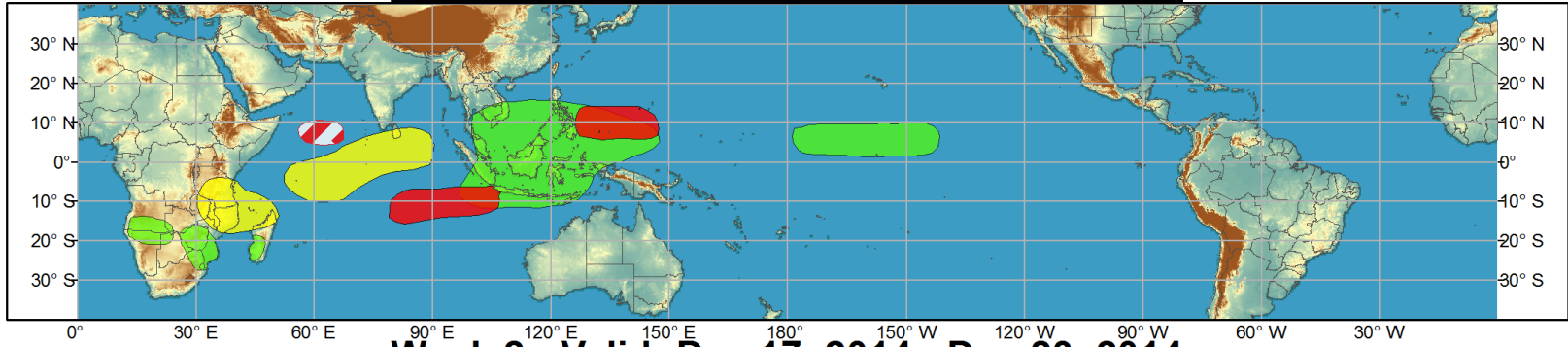




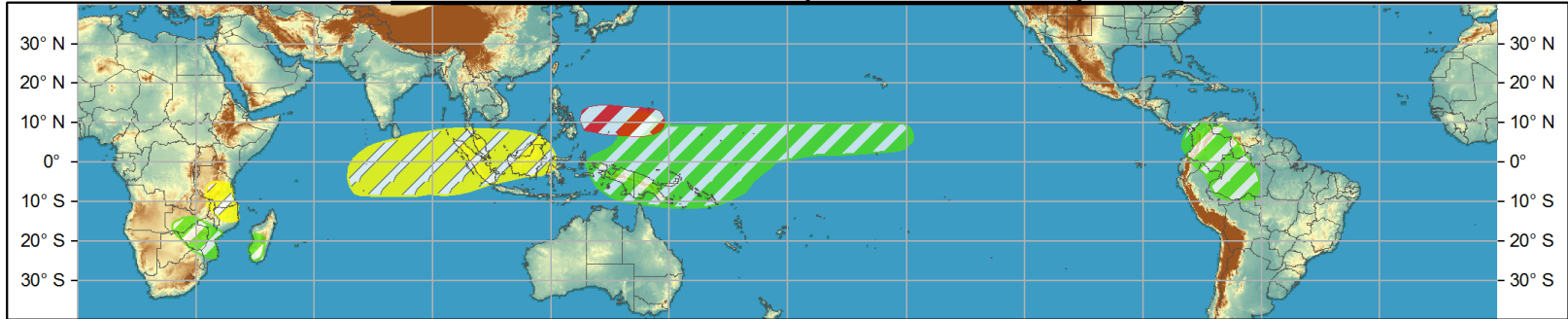
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