

Global Tropics Hazards and Benefits Outlook Briefing

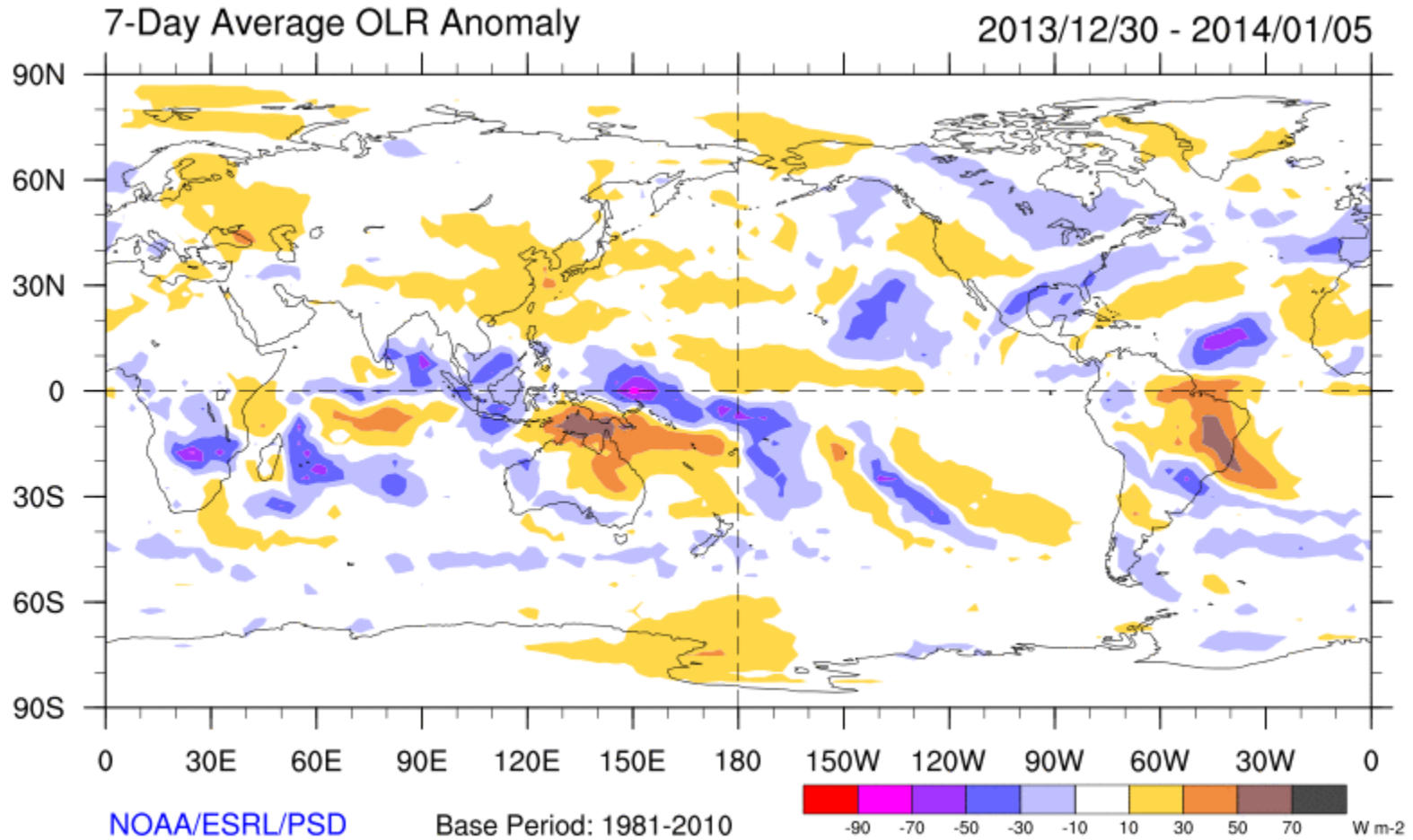
January 7, 2014

Jon Gottschalck
NOAA / Climate Prediction Center

Outline

- Review of recent tropical conditions
- Synopsis of Climate Variability
- GTH Outlook and Forecast Discussion
- Connections to U.S. Impacts

Tropical Convection – Weekly Departures from Normal



Cool shading
More clouds/rain

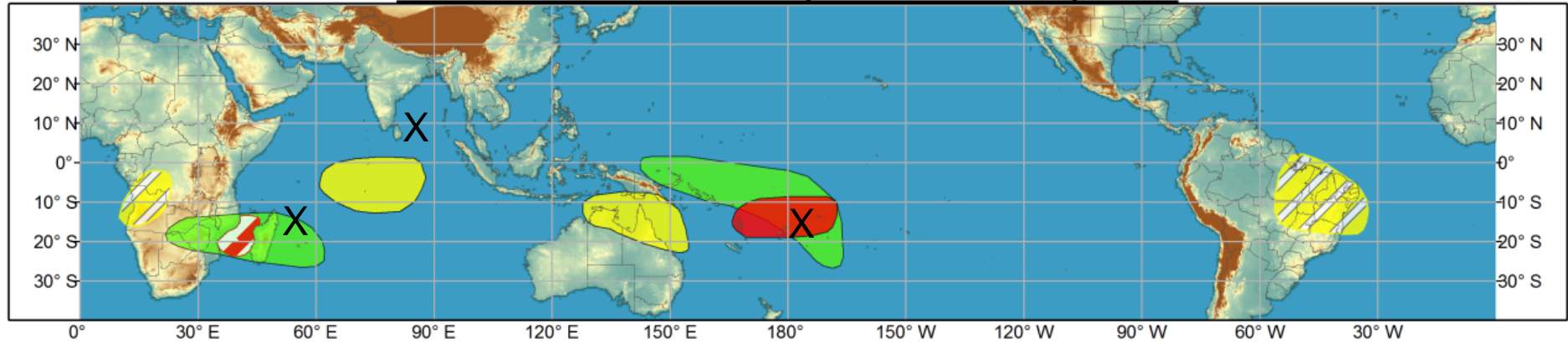
Warm shading
Less clouds/rain



Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



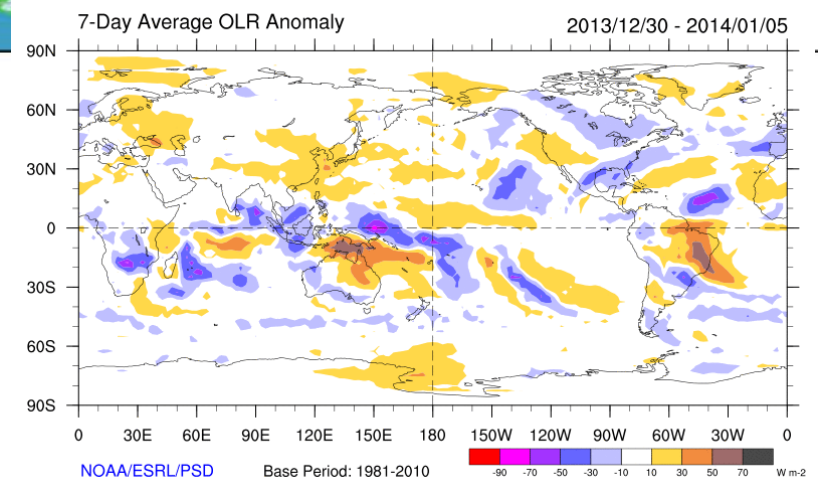
Week 1 - Valid: Jan 01, 2014 - Jan 07, 2014



Week 2 - Valid: Jan 01, 2014 - Jan 07, 2014

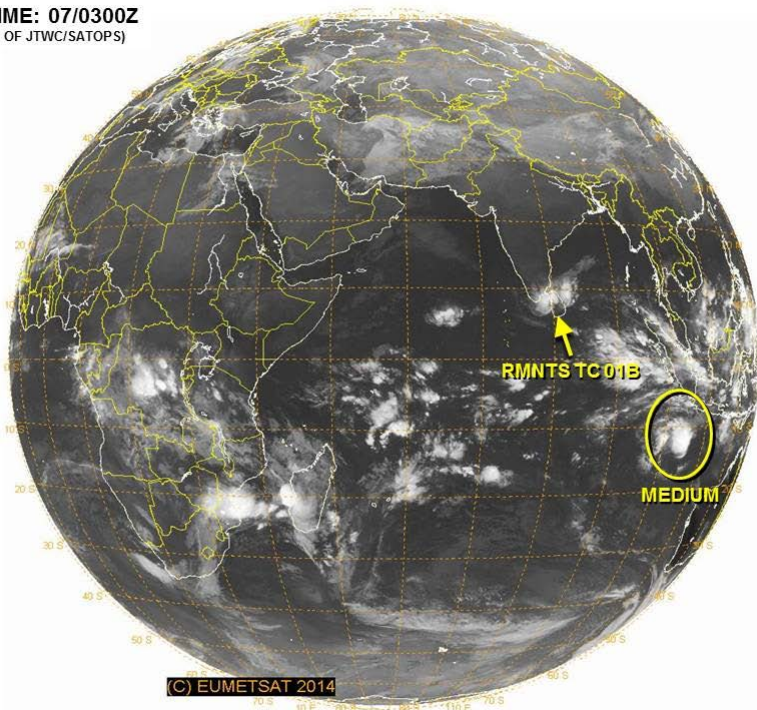


X → Tropical cyclone formed during the period



JTWC – Indian Ocean Basin

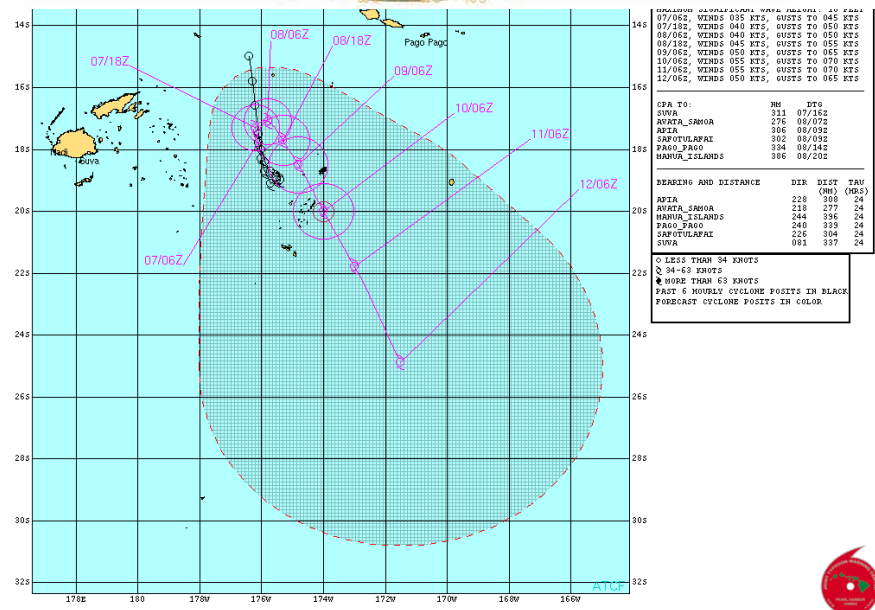
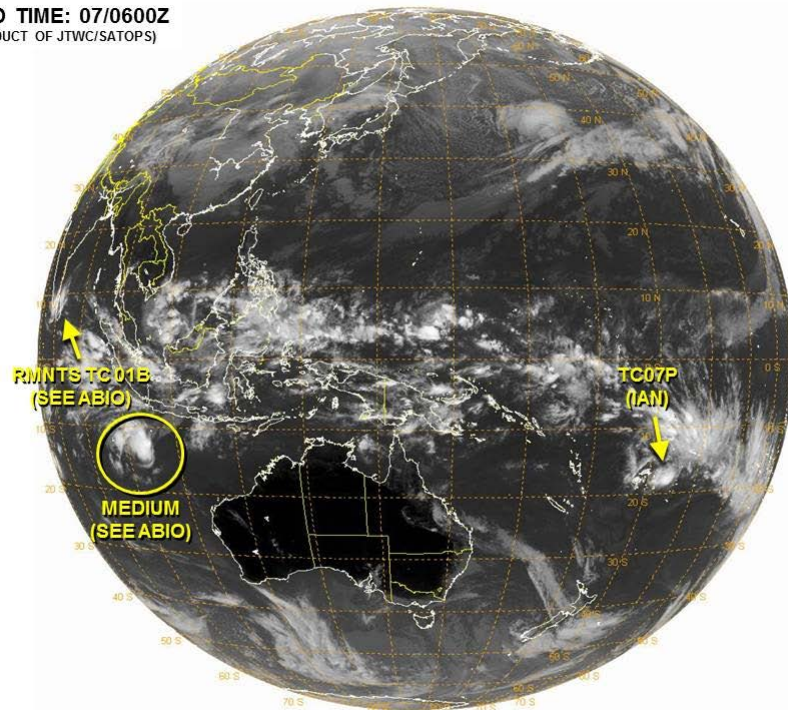
VALID TIME: 07/0300Z
(PRODUCT OF JTWC/SATOPS)



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JTWC – Western Pacific Basin

VALID TIME: 07/0600Z
(PRODUCT OF JTWC/SATOPS)



Synopsis of Climate Variability

ENSO:

- ENSO-neutral is expected to continue into the Northern Hemisphere summer 2014.

MJO:

- The MJO remained weak and not well defined by some of the commonly used diagnostic tools. Any enhanced convective phase is currently centered across the western Pacific.
- MJO index model forecasts do not indicate strengthening of the MJO during the next two weeks
- Based on the latest observations and model forecasts, the MJO is forecast to remain weak but may, in part, contribute to enhanced convection across parts of the western South Pacific and suppressed convection across parts of Brazil.

Other types of subseasonal tropical variability:

- Atmospheric Kelvin wave activity remains ongoing but large scale persistent impacts are difficult to assess.

Extratropics:

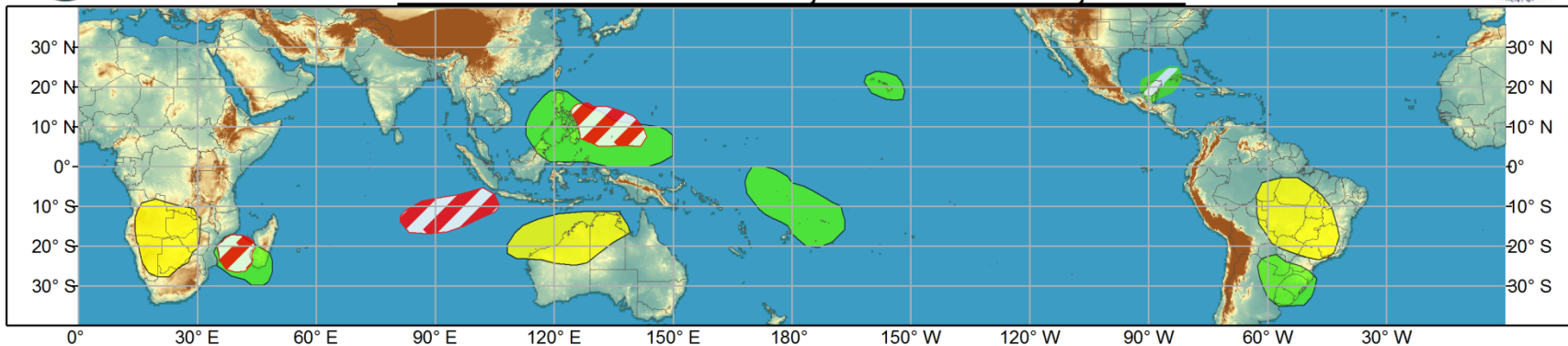
- AO and NAO favored to tend back to neutral over next week, PNA towards positive
- Multiple areas of enhanced tropical convection make it difficult to confidently assess mid-latitude linkages.



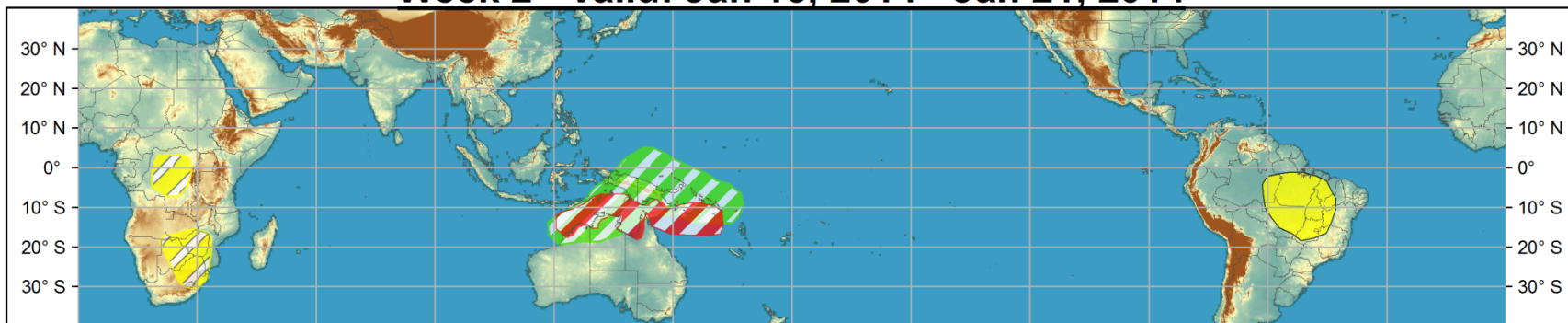
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jan 08, 2014 - Jan 14, 2014



Week 2 - Valid: Jan 15, 2014 - Jan 21, 2014



Confidence
High Moderate

Tropical Cyclone Formation



Development of a tropical cyclone that eventually reaches tropical storm/cyclone 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: 01/07/2014

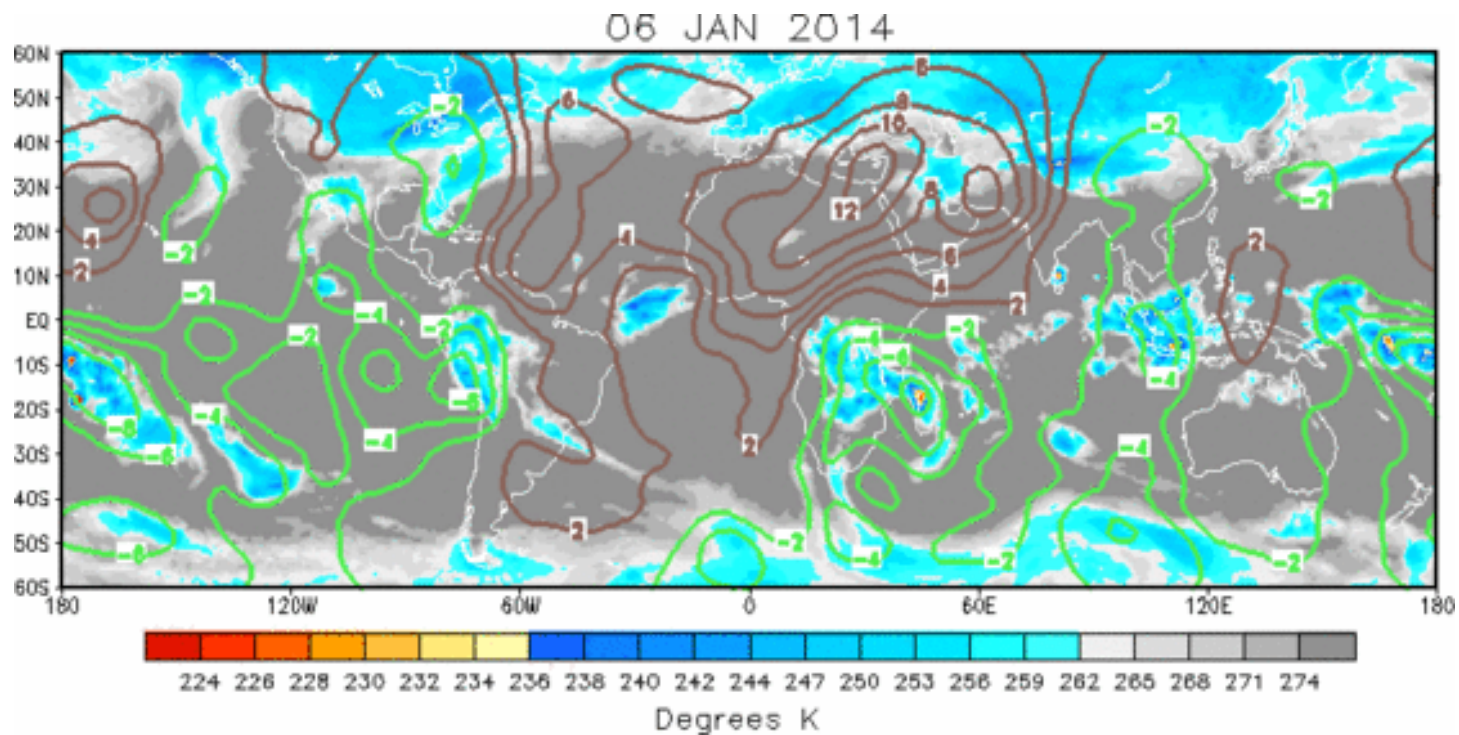
Forecaster: Gottschalck

Product is updated once per week. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

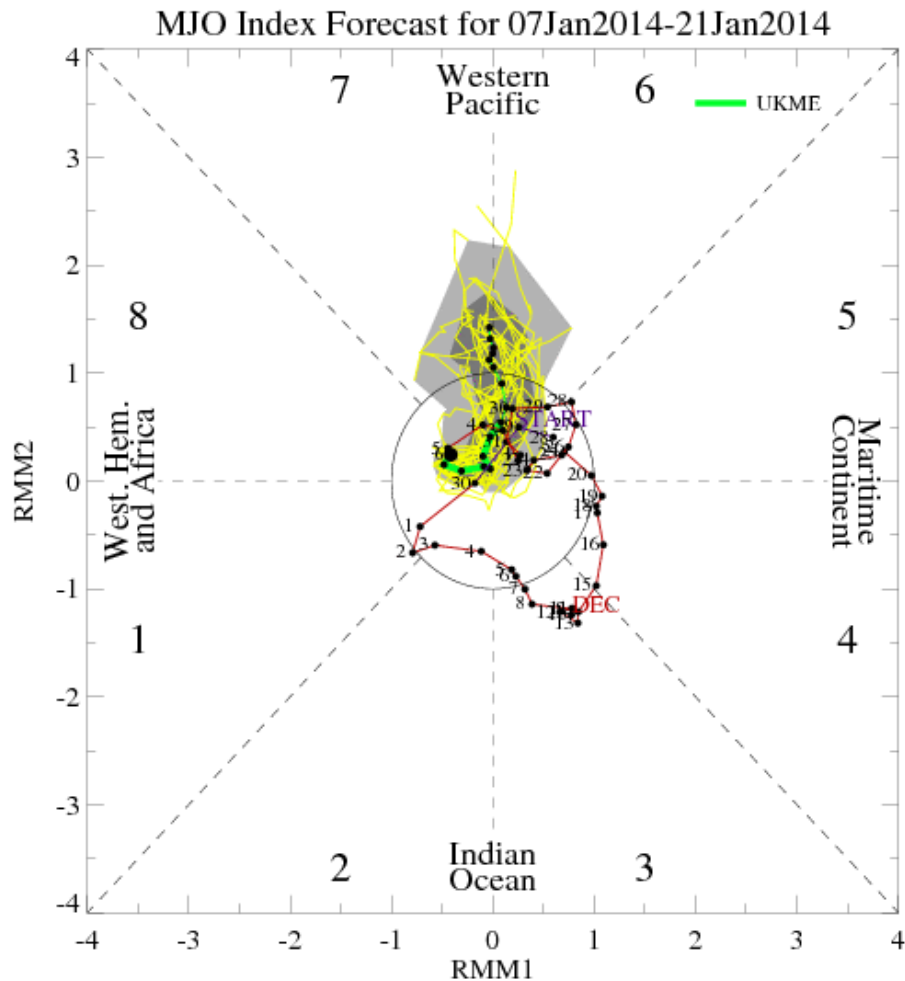


IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence



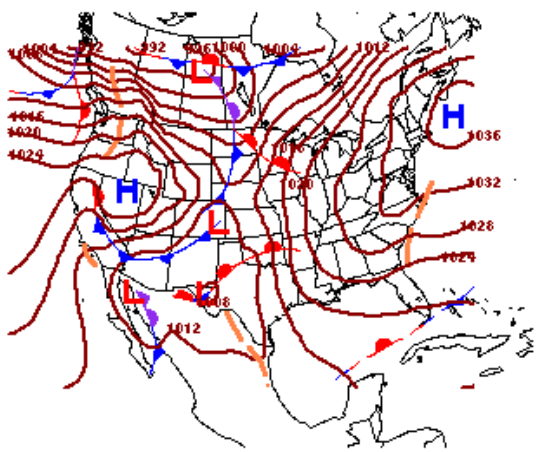
MJO Index Model Forecasts



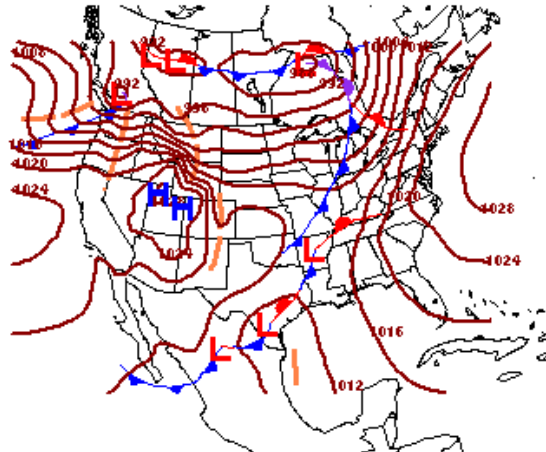
- The triangular areas indicate the location of the MJO enhanced convective phase
- Counter-clockwise motion is indicative of eastward propagation. Large dot most recent day.
- Distance from center proportional to strength
- Line colors distinguish different months
- Forecast is the green (mean) and yellow lines

UK Metoffice global ensemble forecast

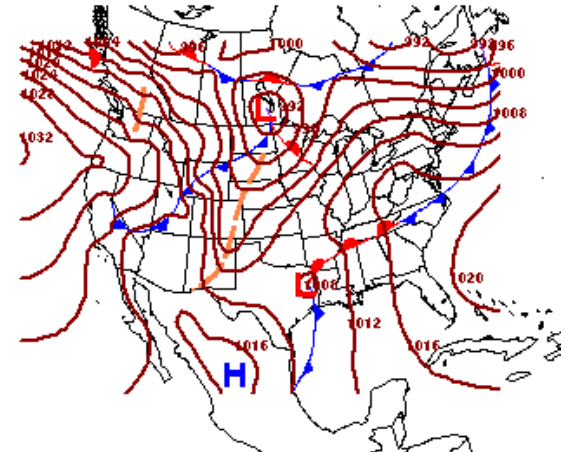
Weather Prediction Center Surface Analysis Days 3-7



WPC DAY 3 SFC PROG
ISSUED: 1437Z TUE JAN 07 2014
VALID: 12Z FRI JAN 10 2014
FCSTR: RAUSCH
DOC/NOAA/NWS/NCEP/WPC



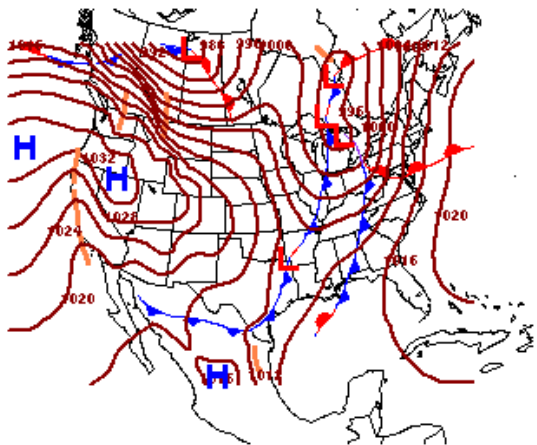
WPC DAY 4 SFC PROG
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VALID: 12Z SAT JAN 11 2014
FCSTR: RAUSCH
DOC/NOAA/NWS/NCEP/WPC



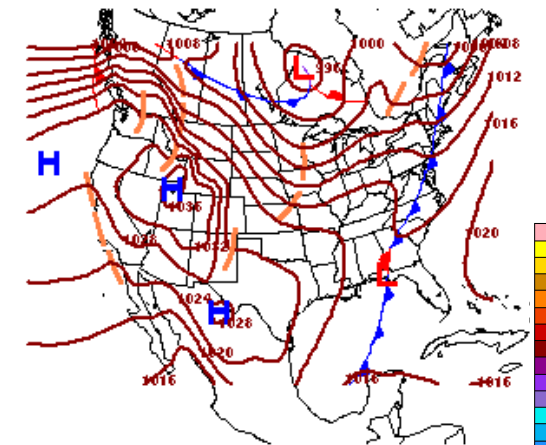
WPC DAY 5 SFC PROG
ISSUED: 1437Z TUE JAN 07 2014
VALID: 12Z SUN JAN 12 2014
FCSTR: RAUSCH
DOC/NOAA/NWS/NCEP/WPC



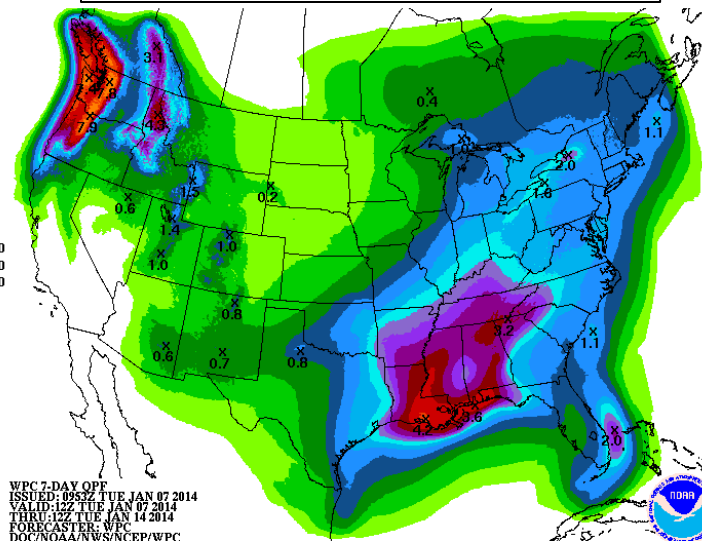
7-day Precipitation Totals



WPC DAY 6 SFC PROG
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VALID: 12Z MON JAN 13 2014
FCSTR: RAUSCH
DOC/NOAA/NWS/NCEP/WPC

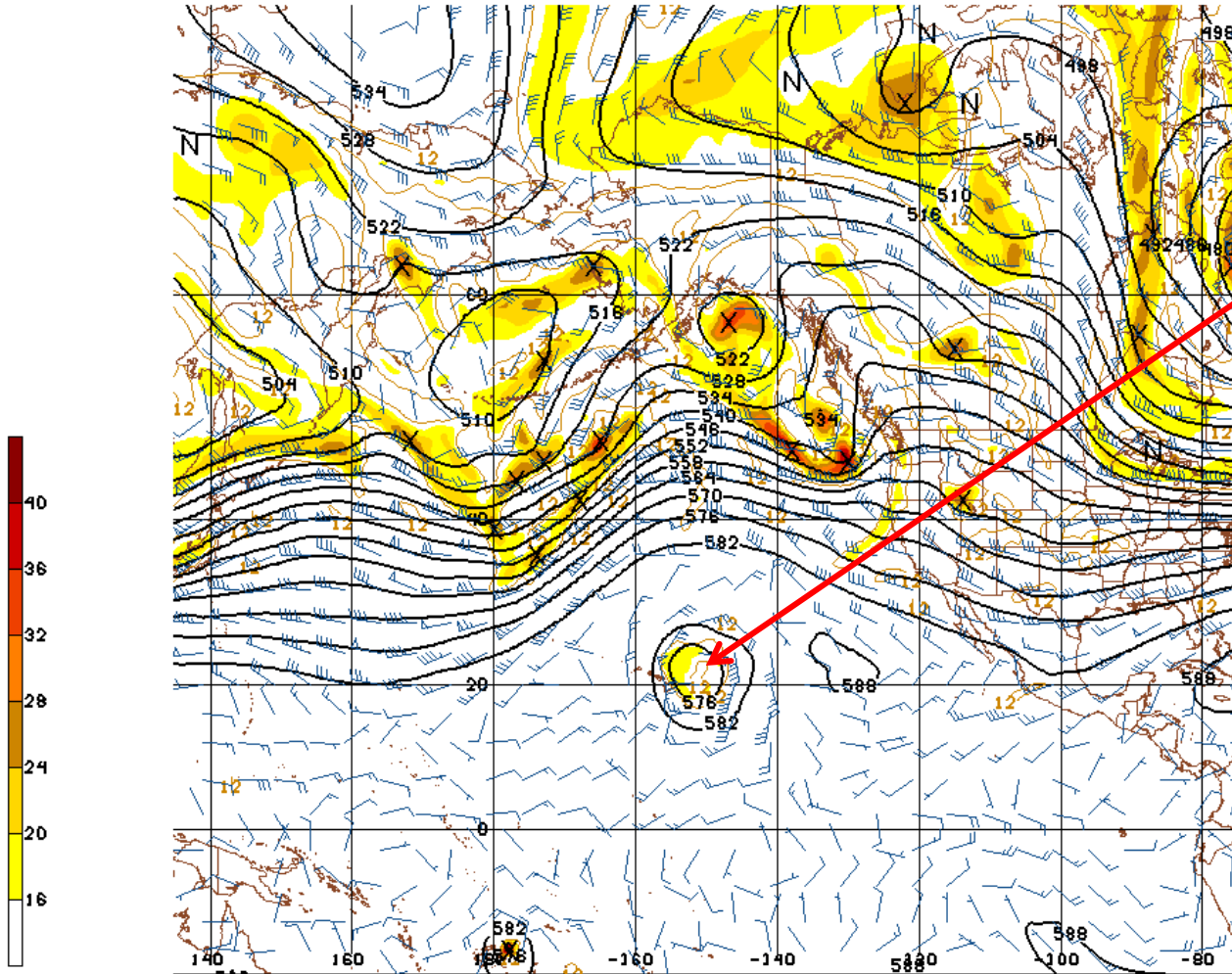


WPC DAY 7 SFC PROG
ISSUED: 1437Z TUE JAN 07 2014
VALID: 12Z TUE JAN 14 2014
FCSTR: RAUSCH
DOC/NOAA/NWS/NCEP/WPC



WPC 7-DAY OPT
ISSUED: 0952Z TUE JAN 07 2014
VALID: 12Z TUE JAN 07 2014
THRU: 12Z TUE JAN 14 2014
FORECASTER: WPC
DOC/NOAA/NWS/NCEP/WPC

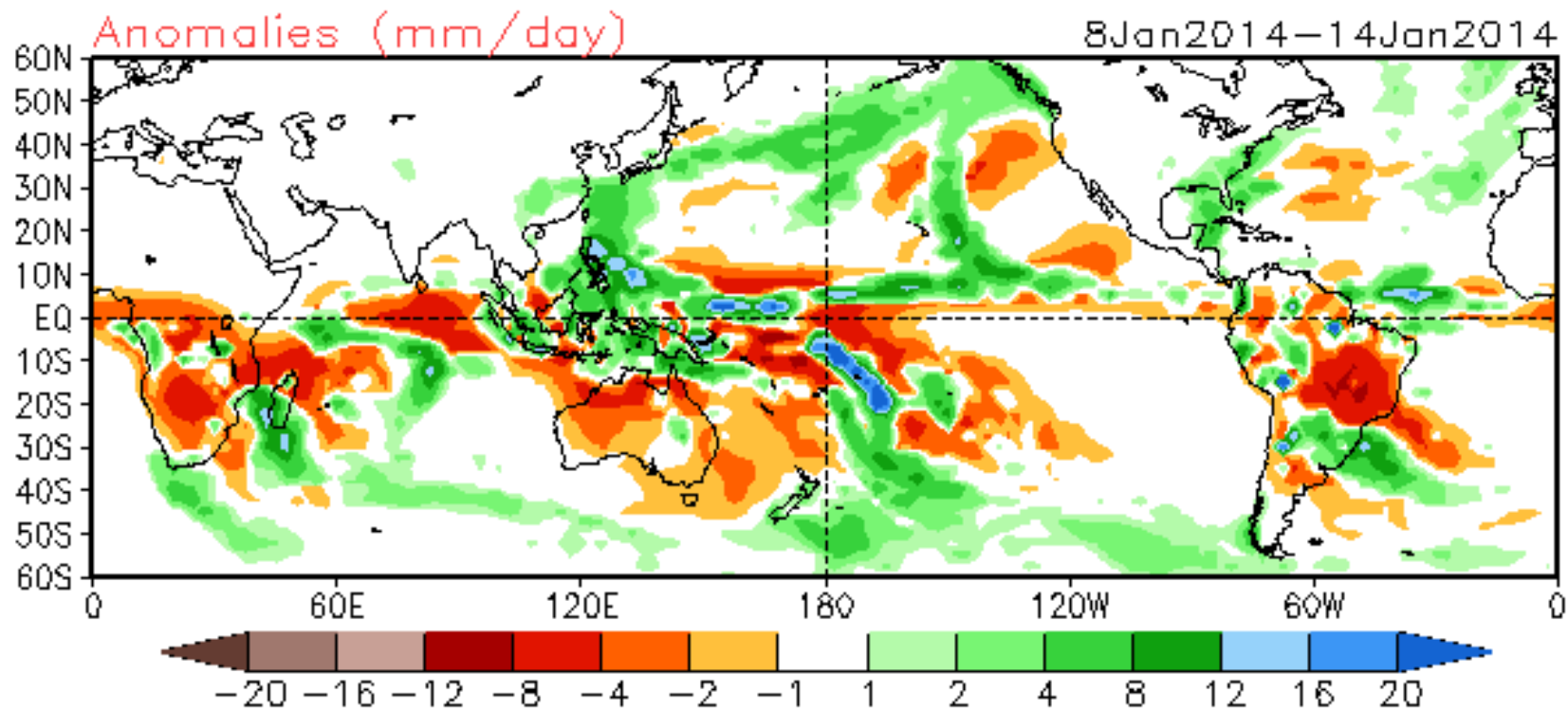
01/07/14 06UTC 036HR FCST VALID WED 01/08/14 18UTC NCEP/NWS/NOAA



Upper-level
lows near
Hawaii

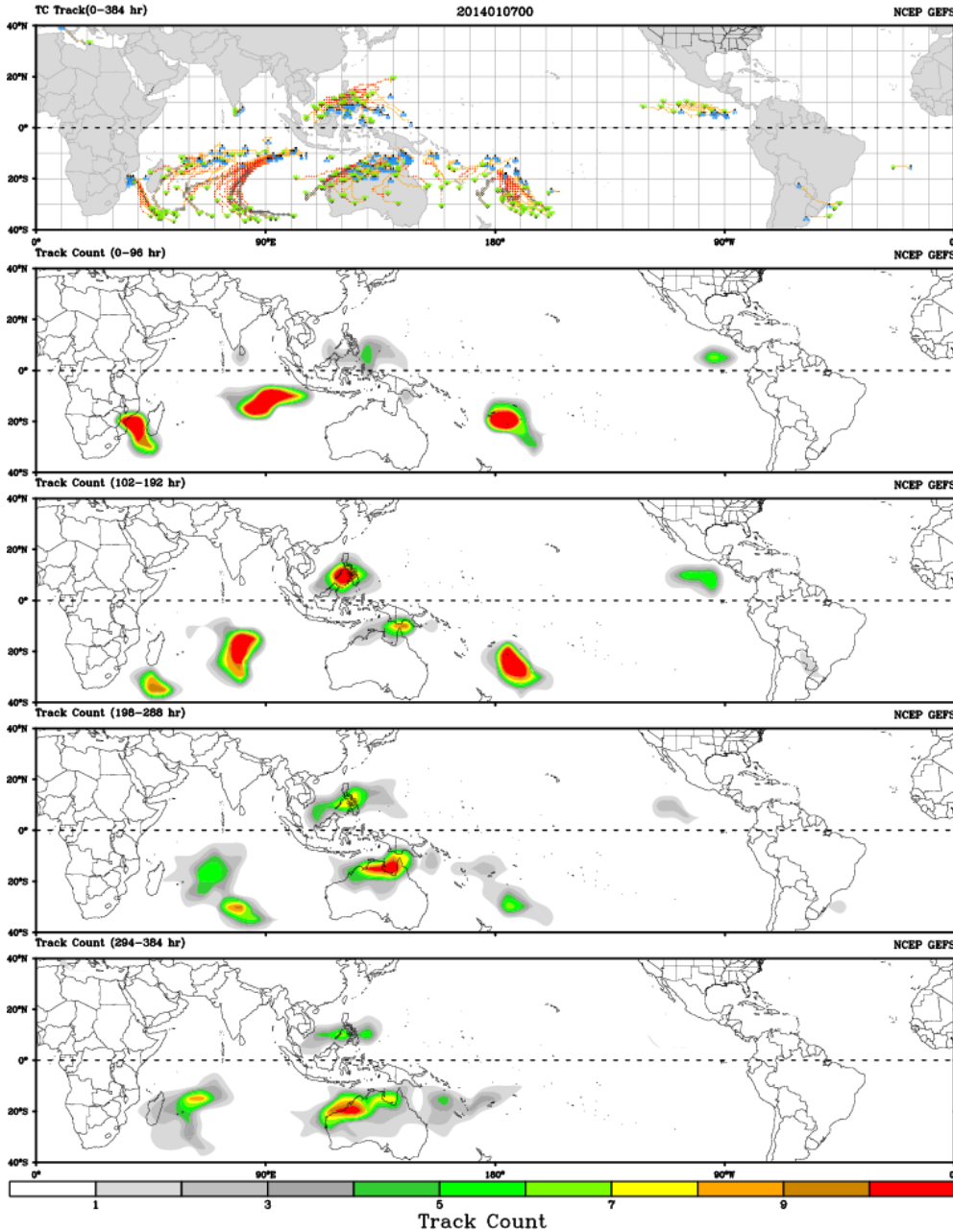
140108/1800V036 GFS 500MB HGT AND GEO ABSOLUTE VORTICITY

NCEP Global Forecast System – Week-1 Precipitation Anomalies

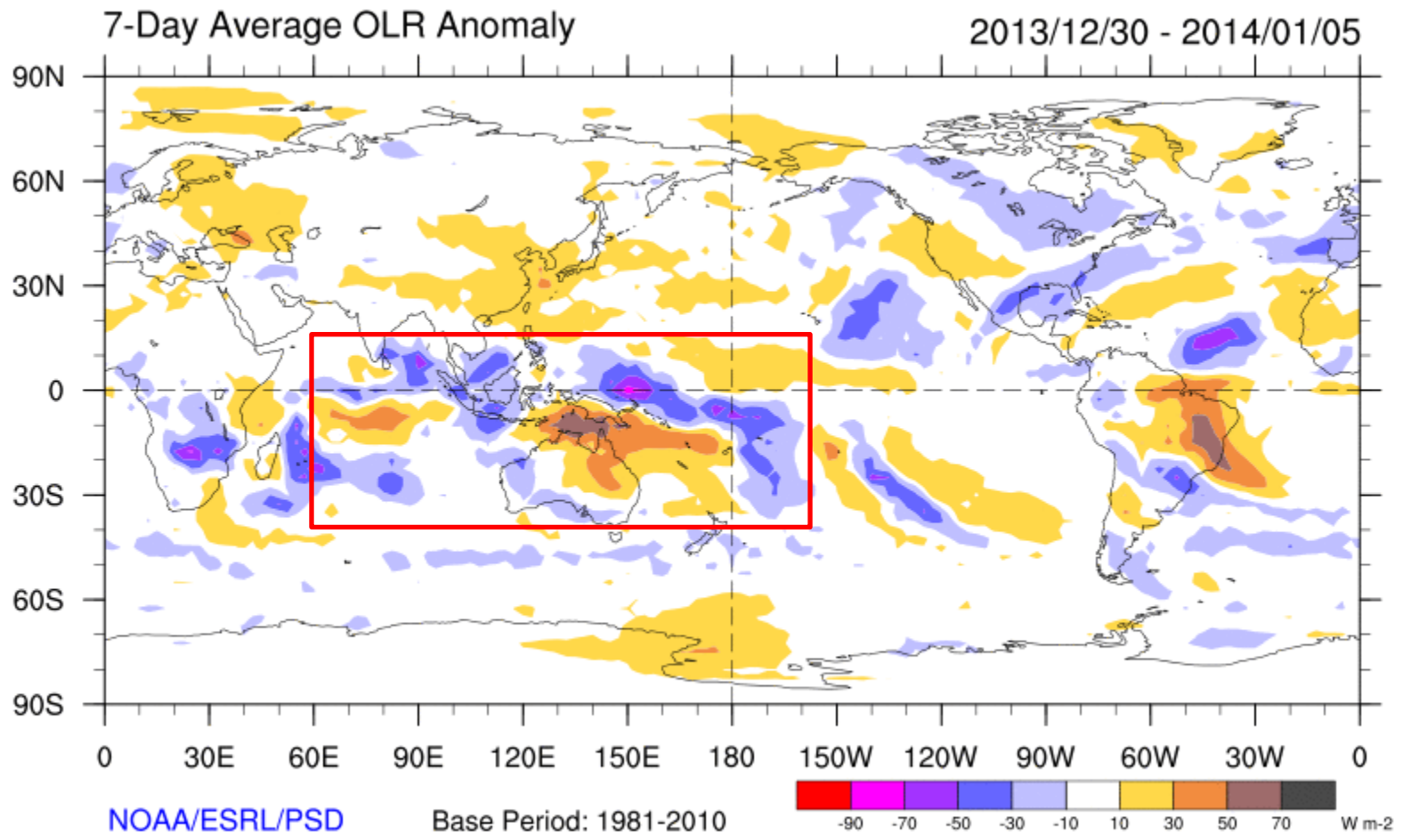


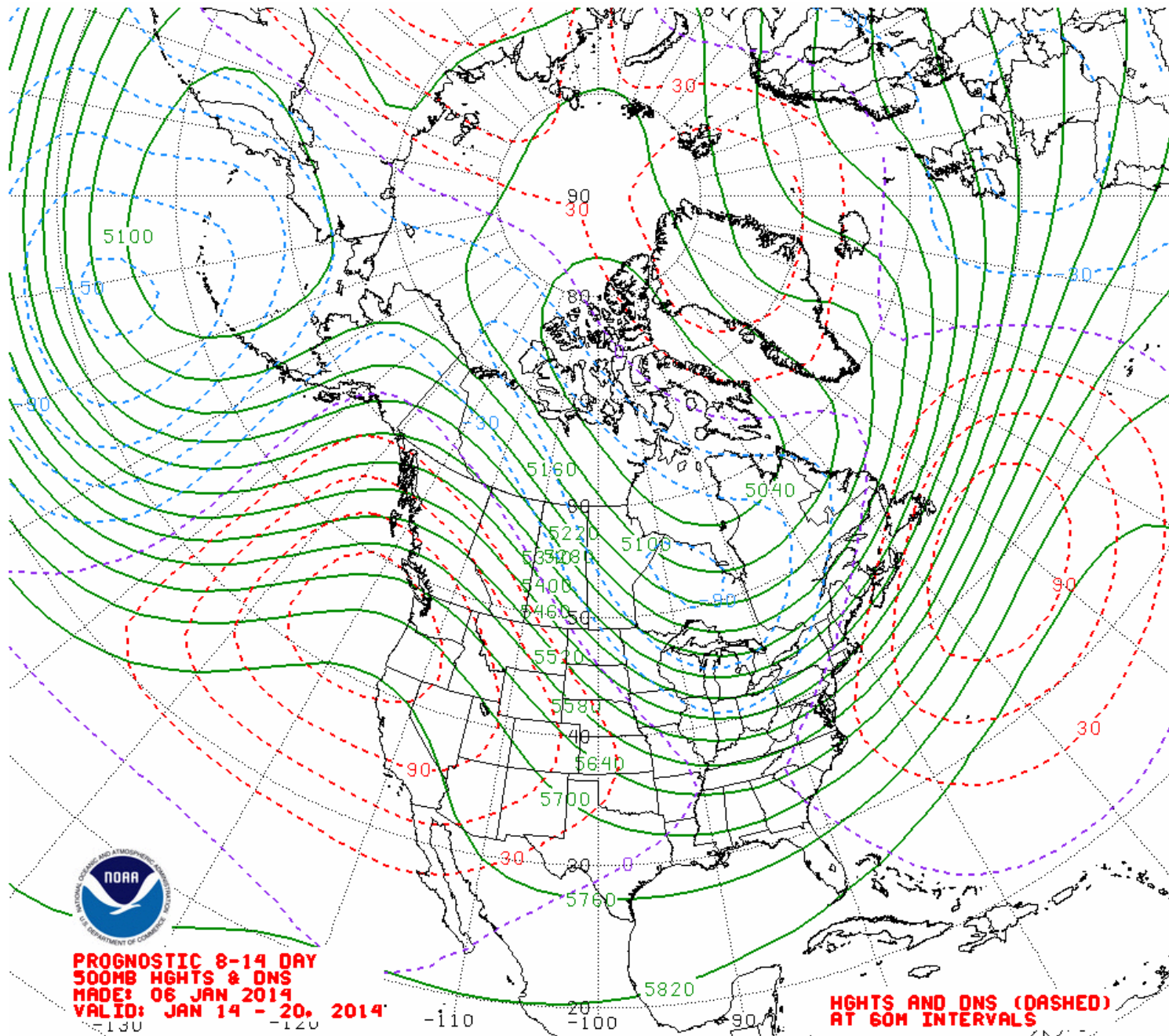
Ensemble GFS – Tropical Cyclone Guidance

CWB TC Tracker for NCEP GEFS (Fuzzy_AllCriteria)



Challenges for Tropical – Extratropical Connections

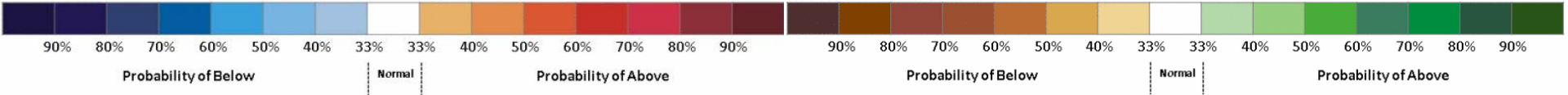
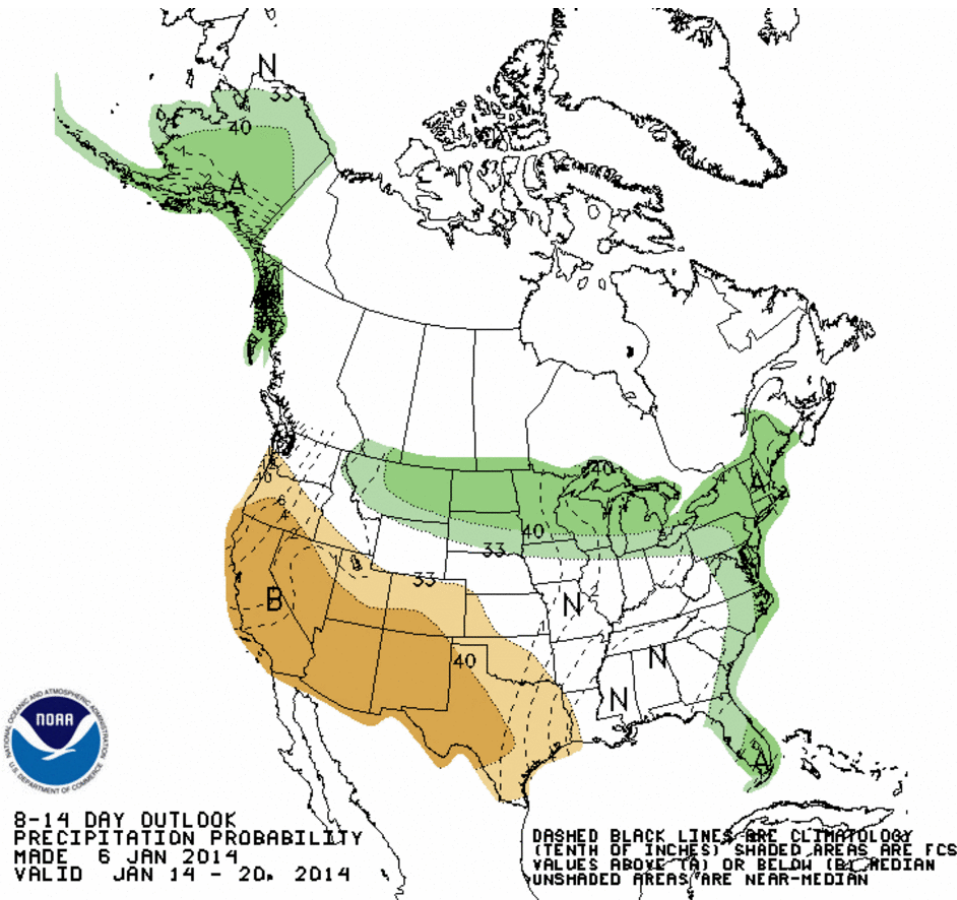
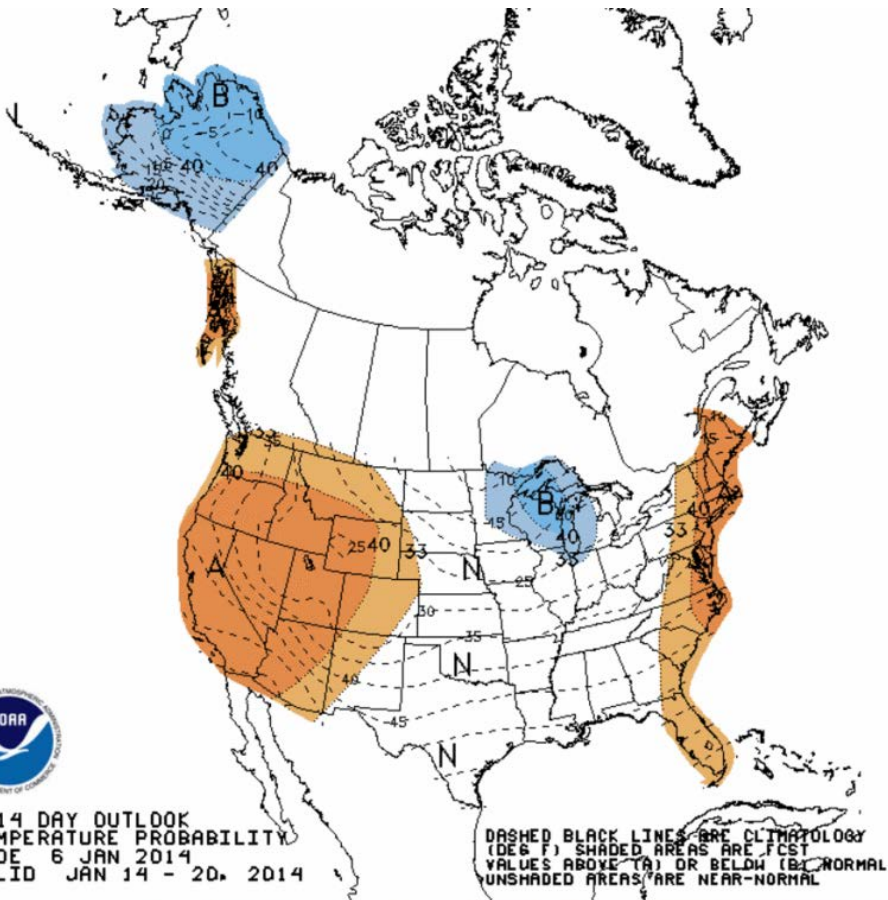




**PROGNOSTIC 8-14 DAY
500MB HGHTS & DNS
MADE: 06 JAN 2014
VALID: JAN 14 - 20, 2014**

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

Days 8-14 Temperature and Precipitation Outlooks

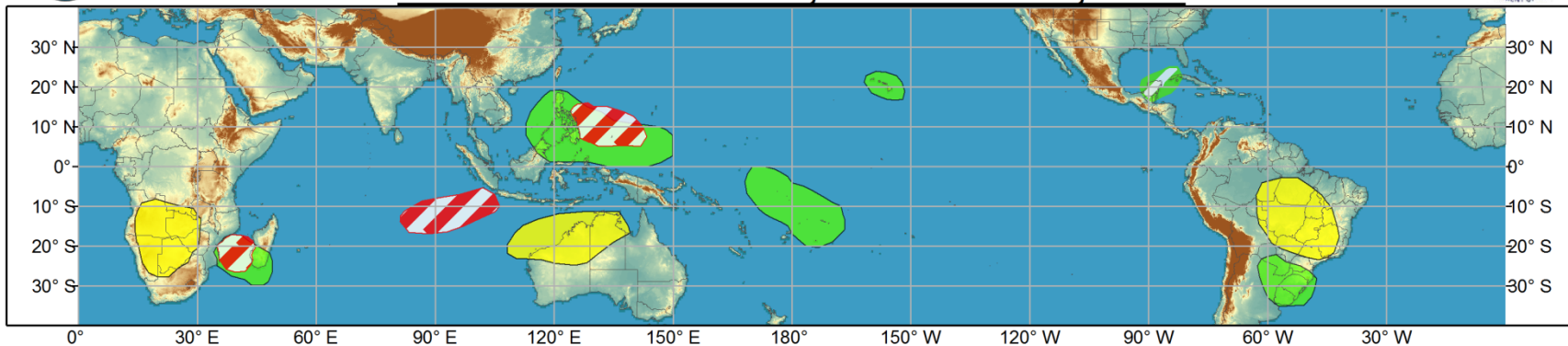




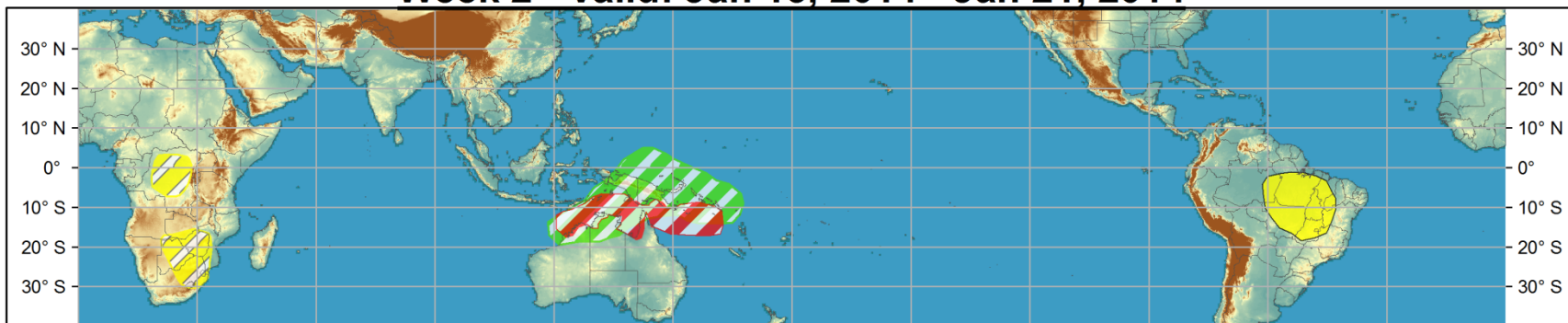
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Produced: 01/07/2014

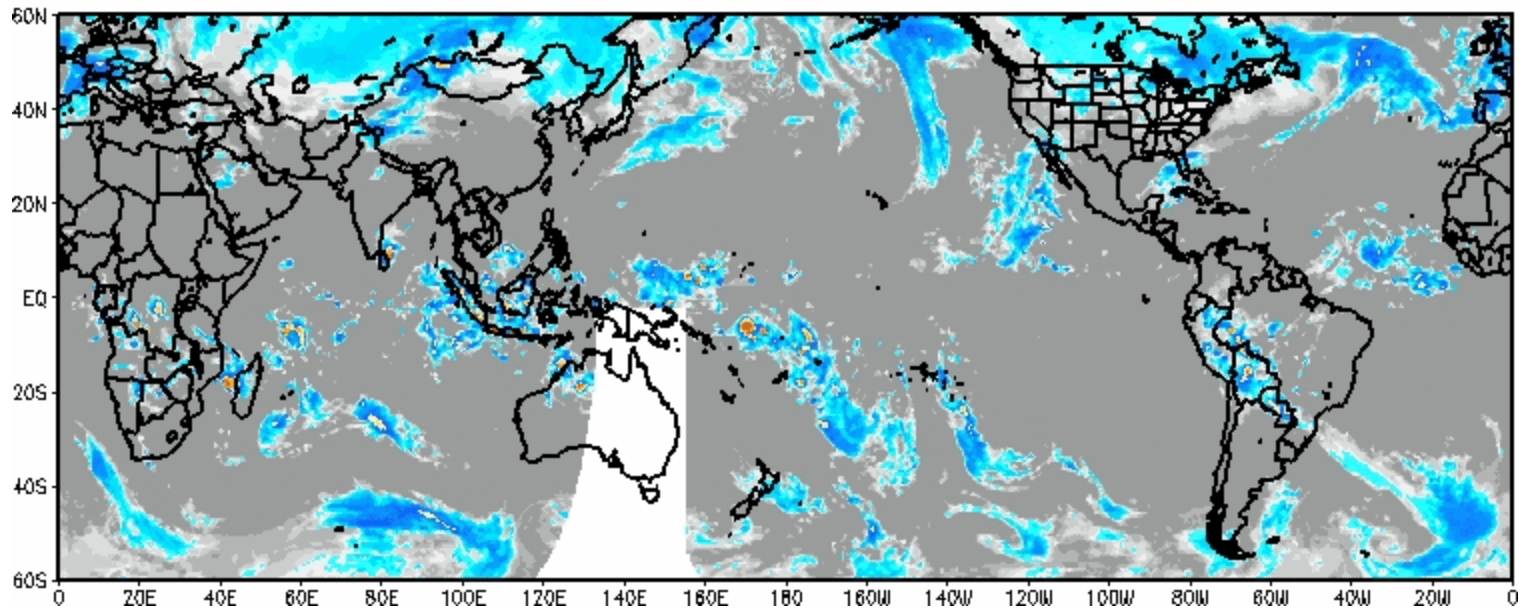
Forecaster: Gottschalck

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Satellite Review

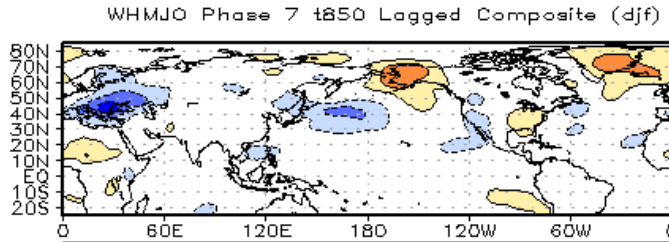
IR Temperatures
0900 UTC 04 JAN 2014



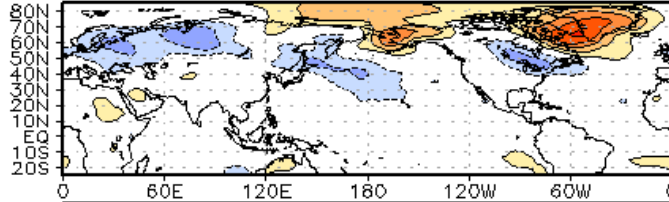
Lagged 850-hPa Temperature Composite

Phase 4

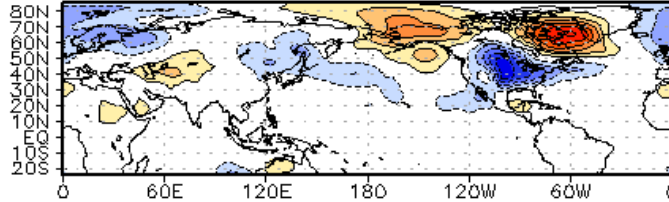
T = 0



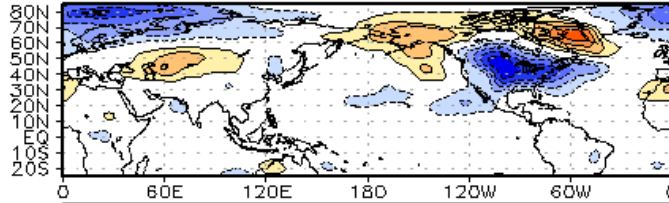
T + 5



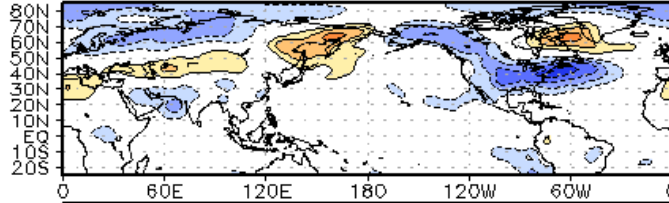
T + 10



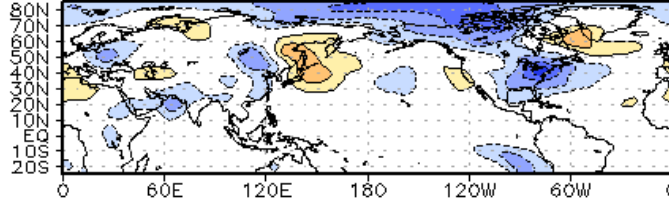
T + 15



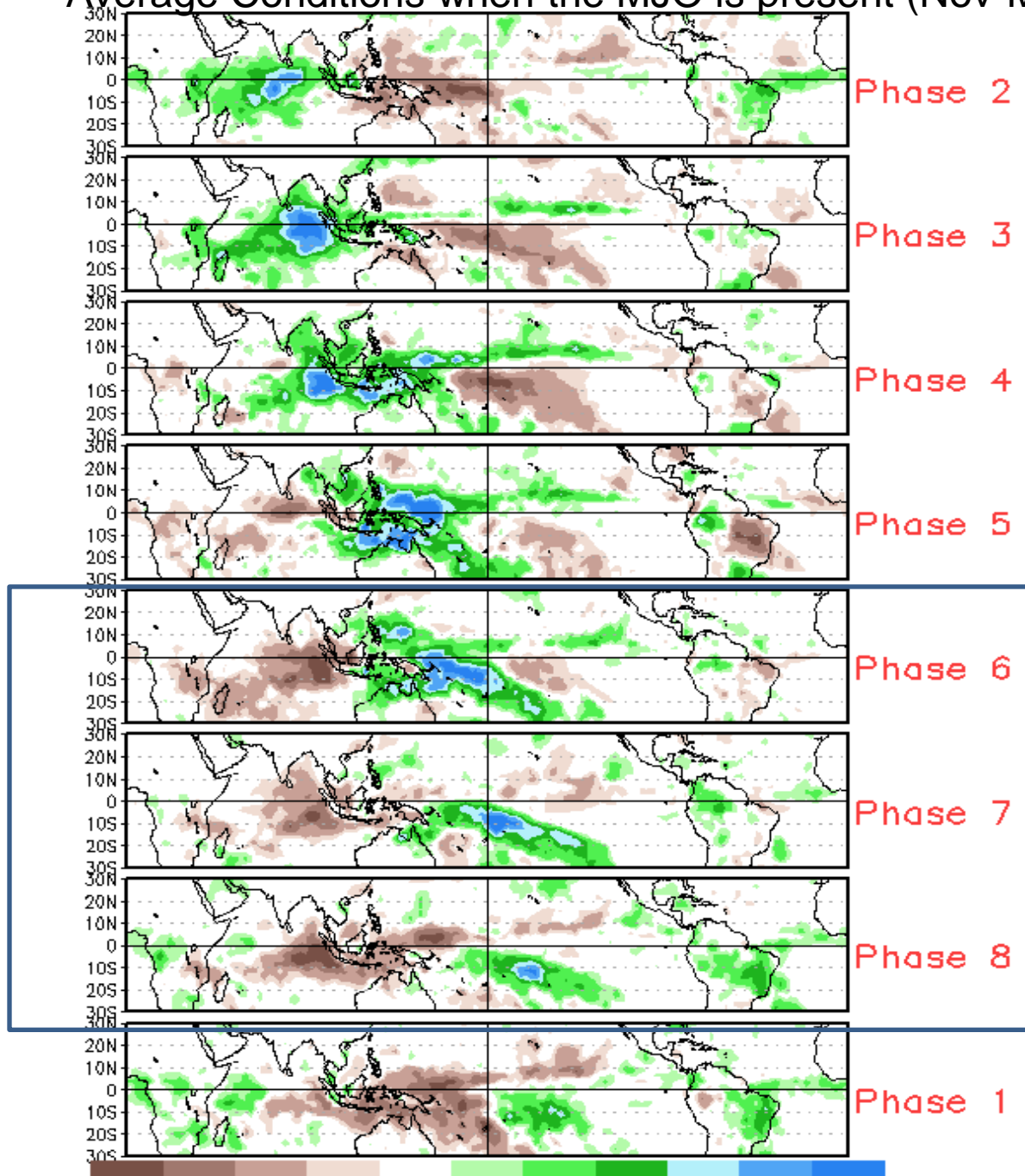
T + 20



T + 25



Average Conditions when the MJO is present (Nov-Mar)



T composites (DJF)

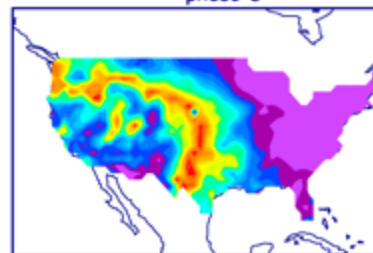
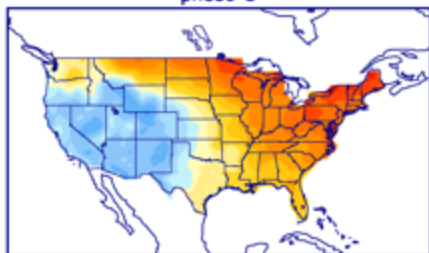
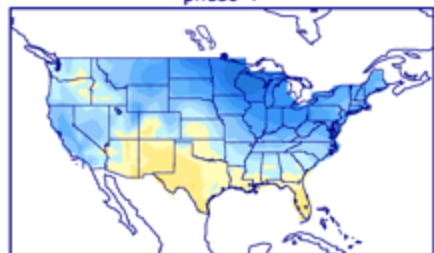
Significance (%) (DJF)

phase 1

phase 5

phase 1

phase 5

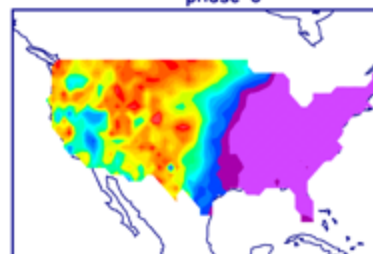
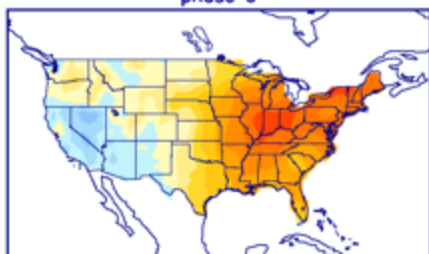
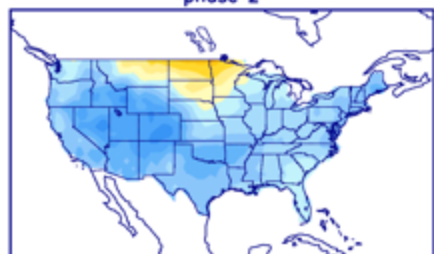


phase 2

phase 6

phase 2

phase 6

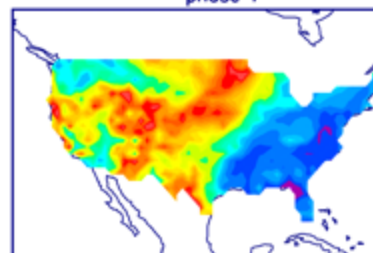
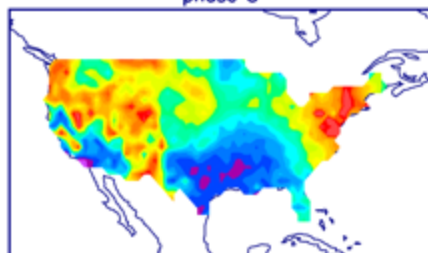
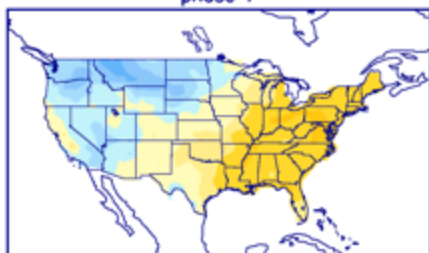
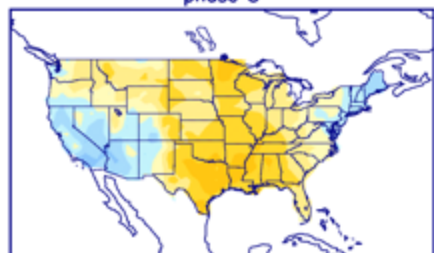


phase 3

phase 7

phase 3

phase 7

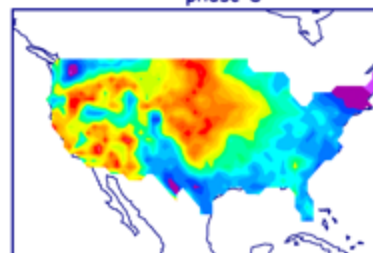
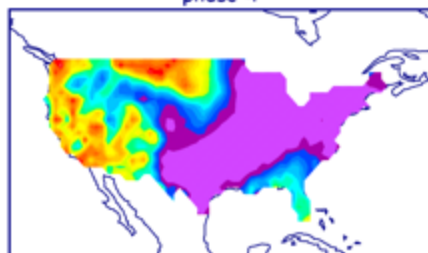
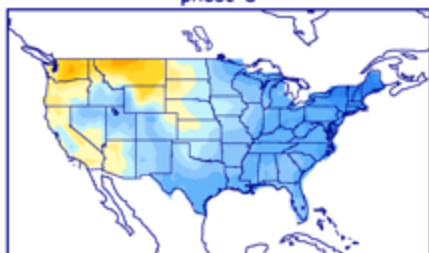
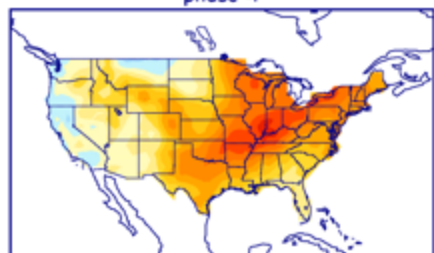


phase 4

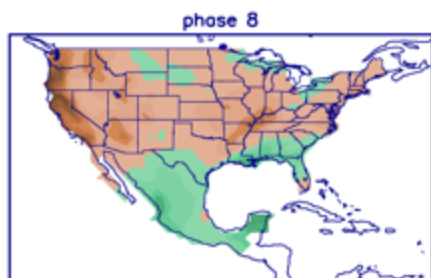
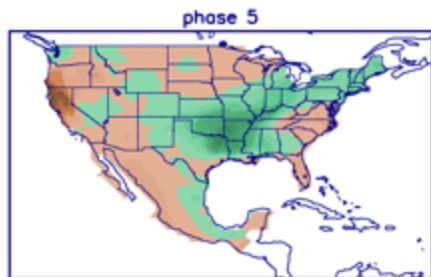
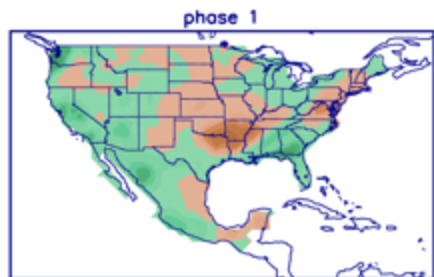
phase 8

phase 4

phase 8



P composites (DJF)



Significance (%) (DJF)

