

Global Tropics Hazards And Benefits Outlook

January 6, 2015

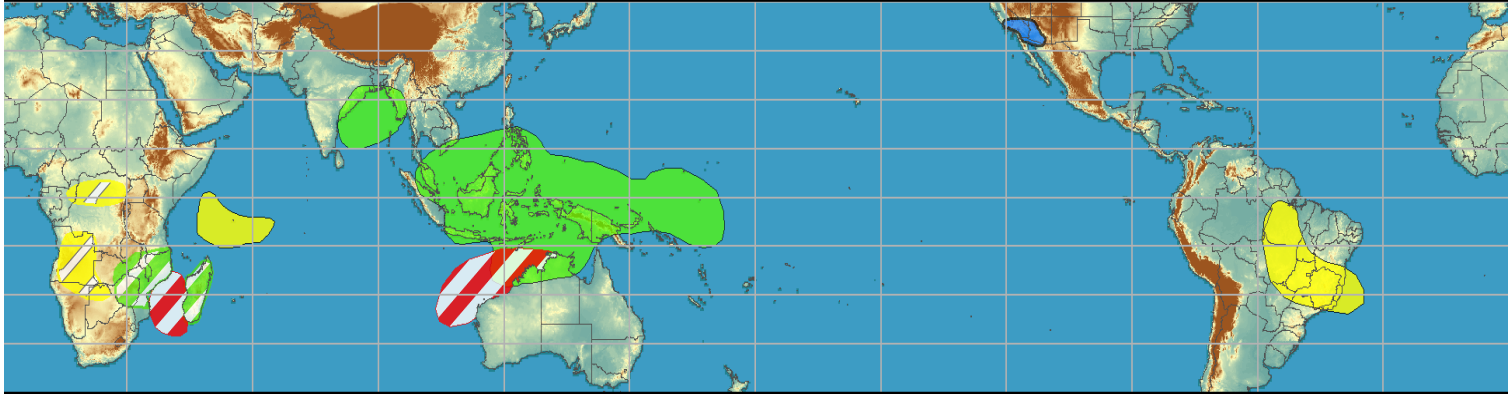
Brad Pugh

Outline

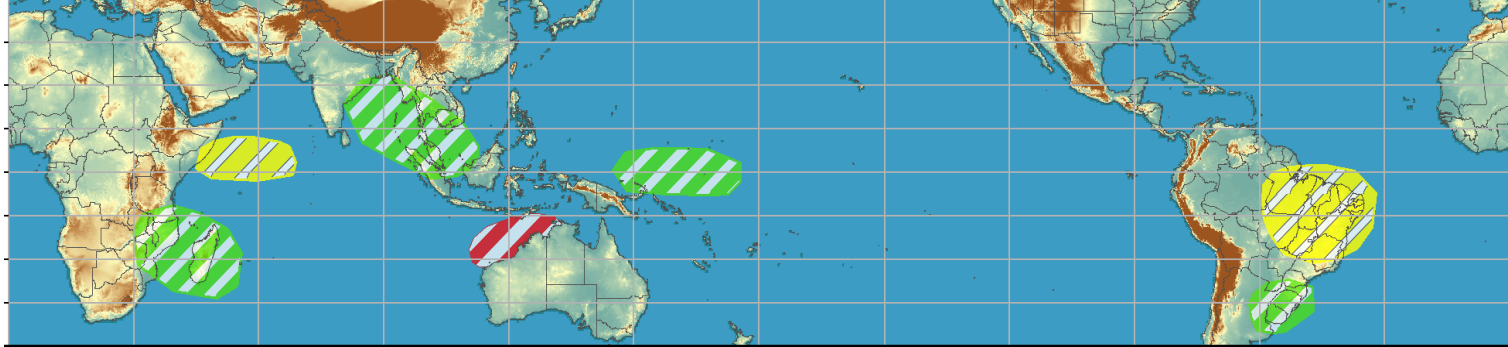
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

Week 1 - Valid: Dec 31, 2014 - Jan 06, 2015

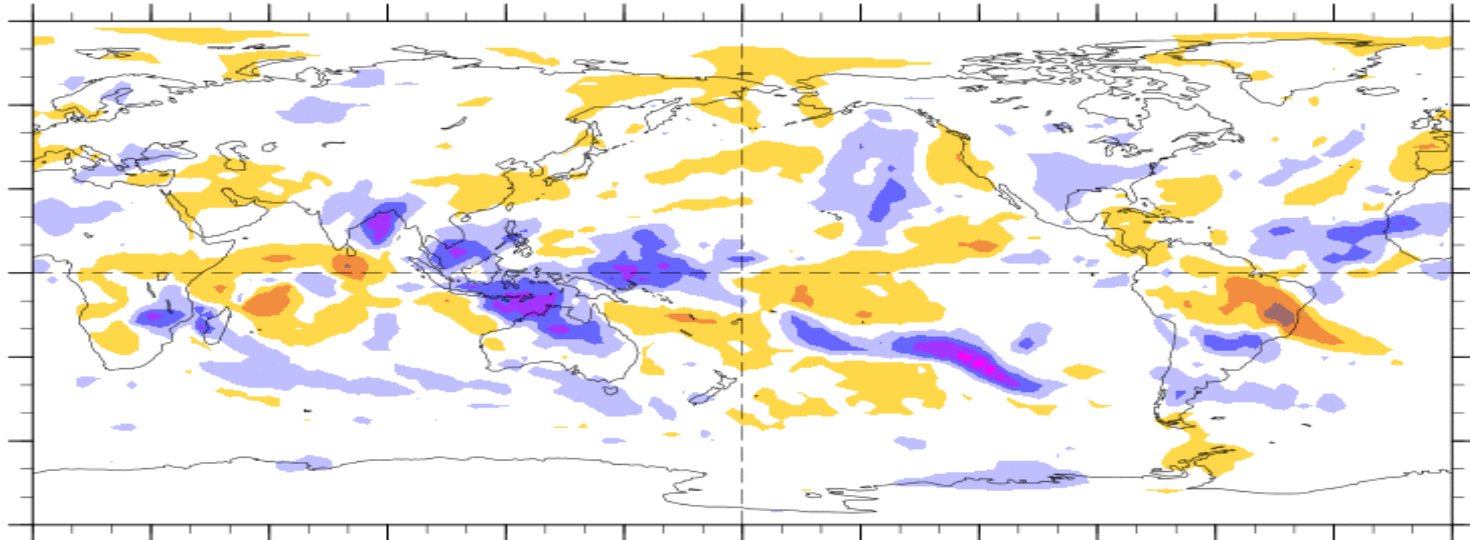


Week 2 - Valid: Dec 31, 2014 - Jan 06, 2015



7-Day Average OLR Anomaly

2014/12/29 - 2015/01/04



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO:

- Current: ENSO-neutral
- Outlook: There is an approximately 65% chance that El Niño conditions will be present during the Northern Hemisphere winter and last into the Northern Hemisphere spring 2015.
- Updated discussion released on Thursday, January 8

MJO and other subseasonal tropical variability:

- The MJO remains active with the enhanced convective phase over the eastern Maritime Continent and West Pacific.
- Most dynamical model MJO index forecasts and statistical tools depict a continuation of a MJO signal although some differences exist on the strength and speed of the signal.

Extratropics:

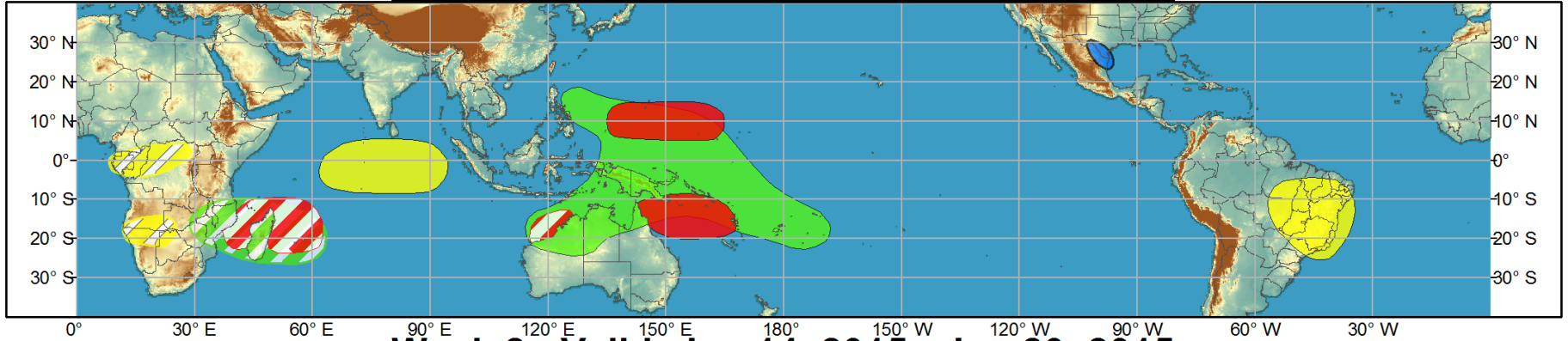
- The current phase of the MJO supports 500-hpa height falls across the North Pacific during the next 5 to 10 days which is consistent with model guidance.
- Increasingly wet pattern for the West Coast during Week-2.
- Temperature outlook is more uncertain.



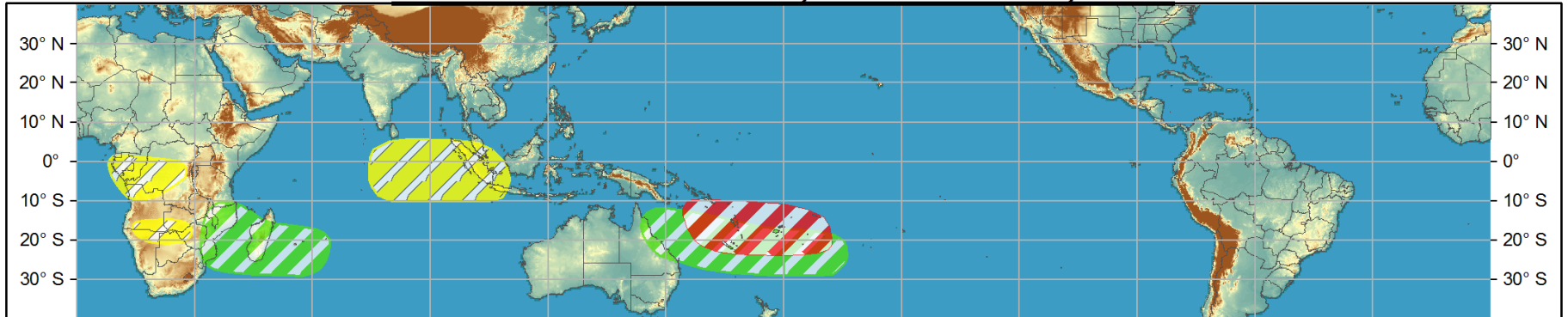
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jan 07, 2015 - Jan 13, 2015



Week 2 - Valid: Jan 14, 2015 - Jan 20, 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: 01/06/2015

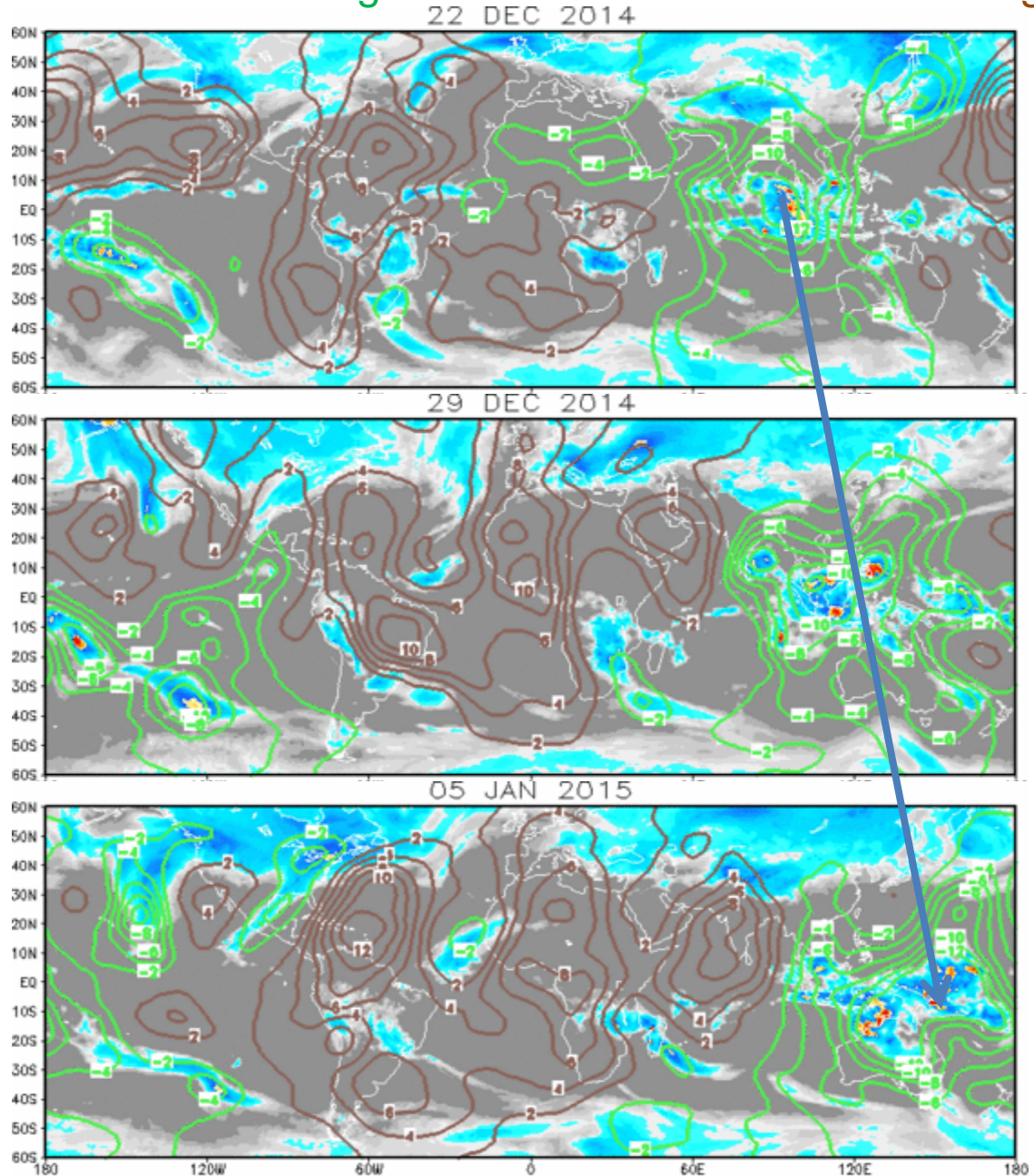
Forecaster: Pugh

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.

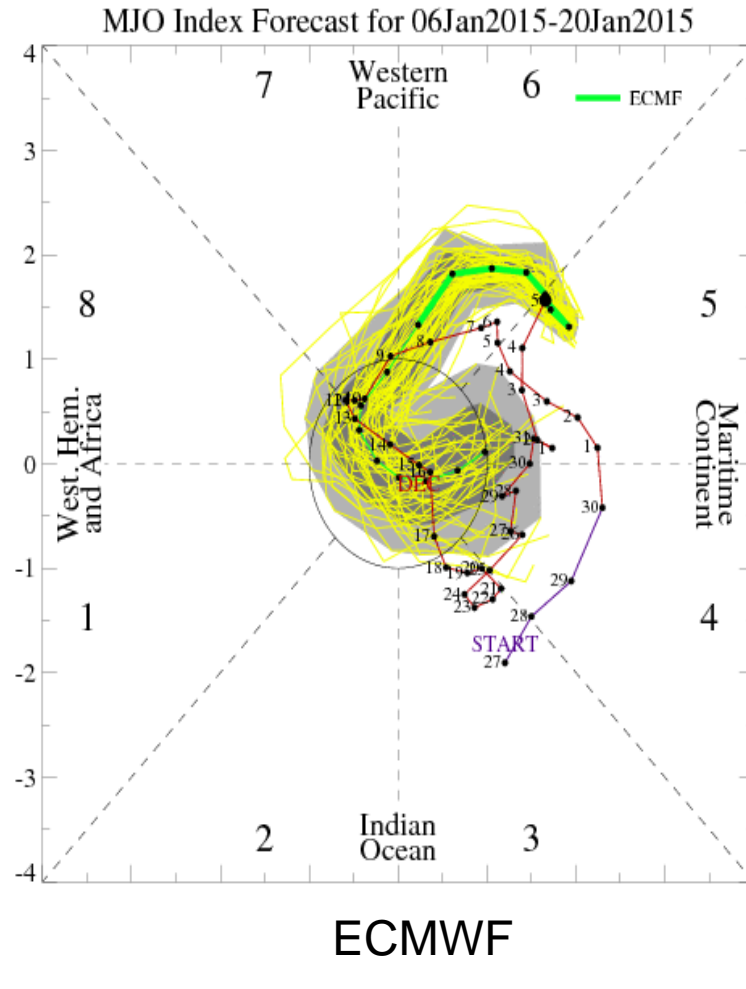
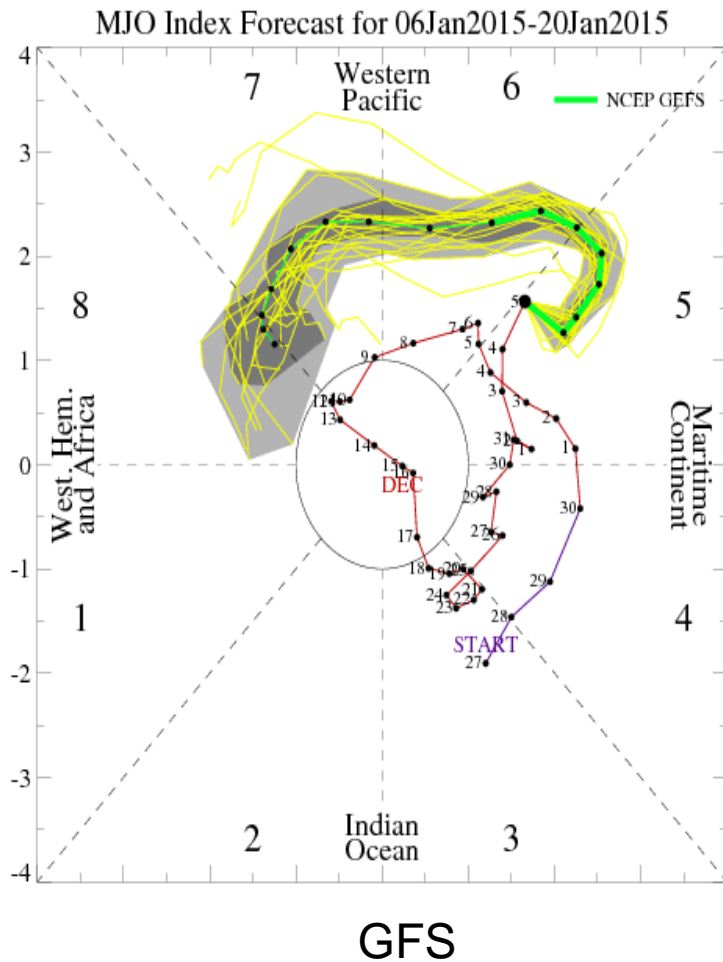


IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

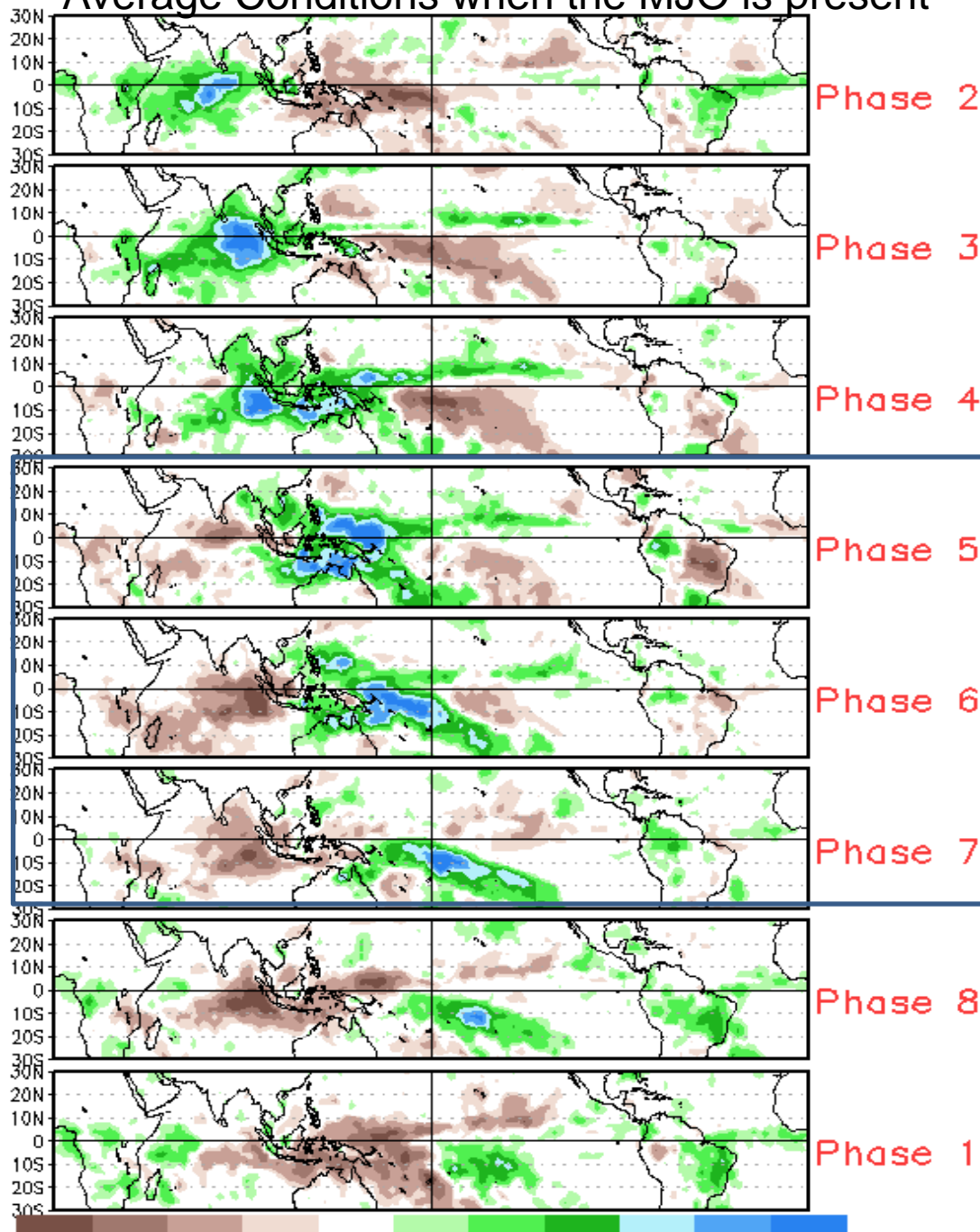


MJO Observation/Forecast



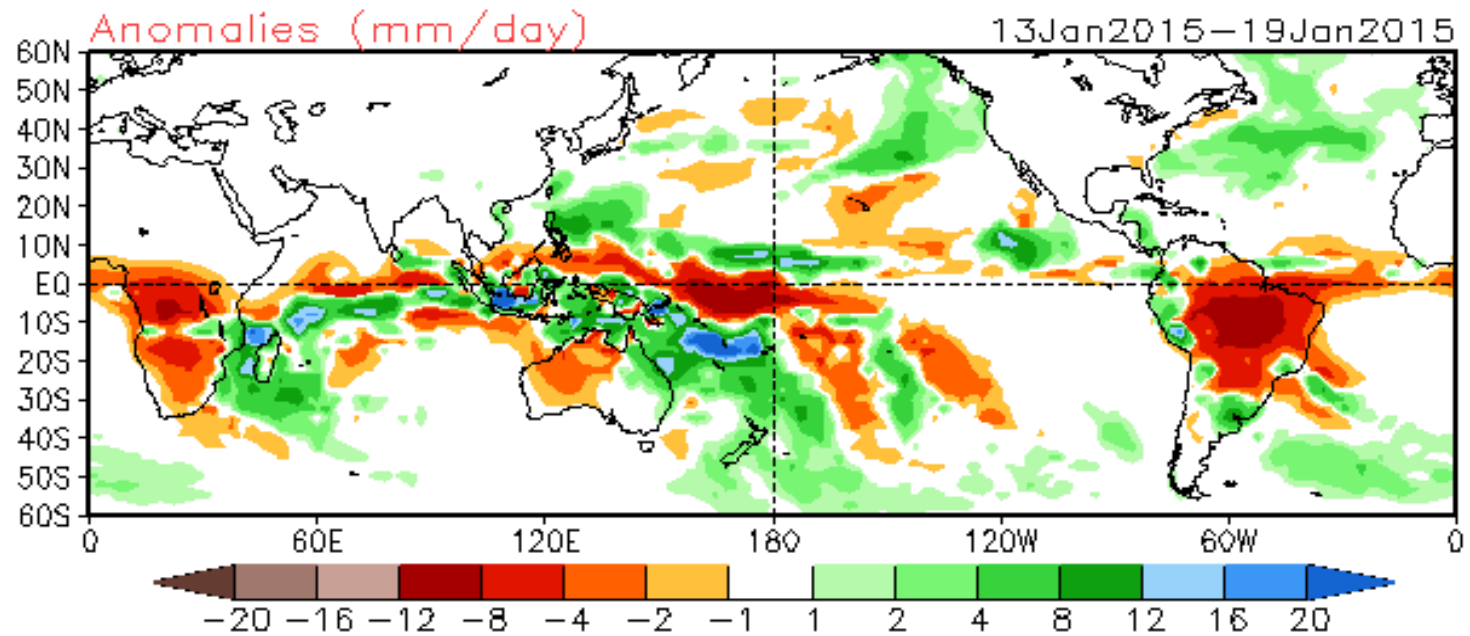
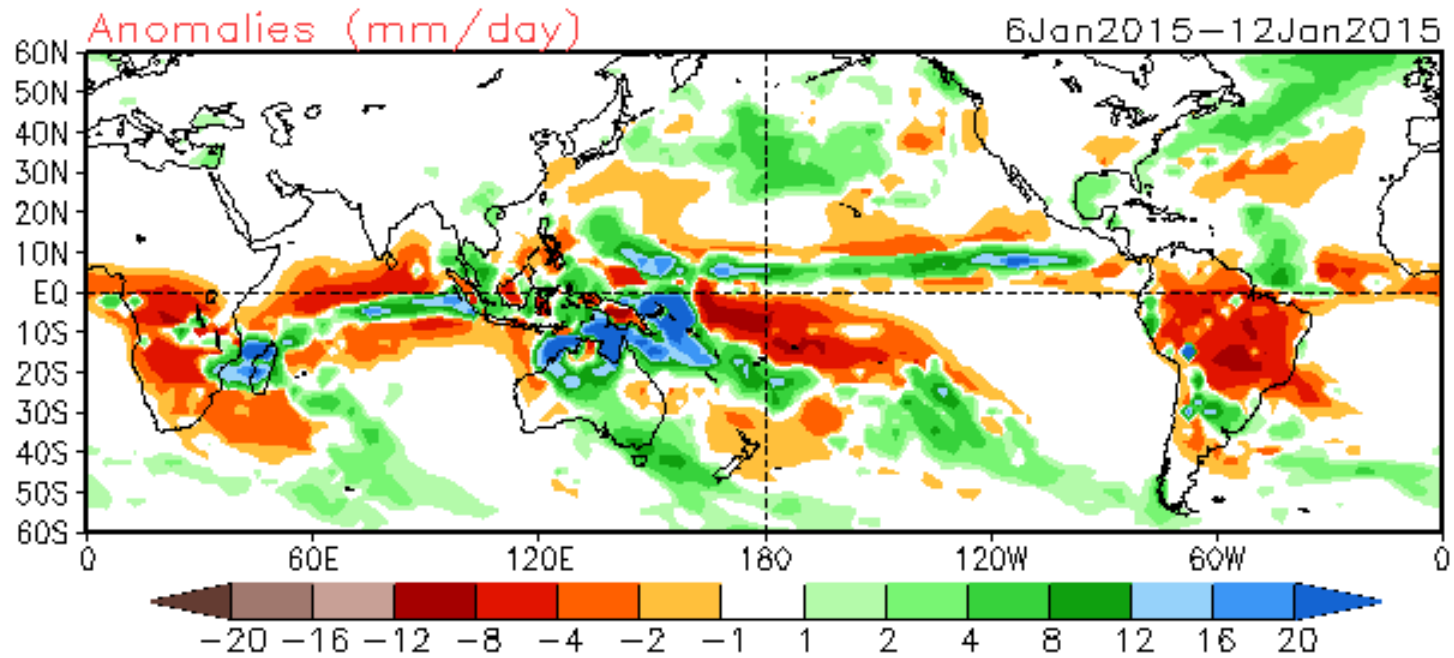
Wheeler-Hendon based analyses of GFS model forecast indicates a persistent MJO.

Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

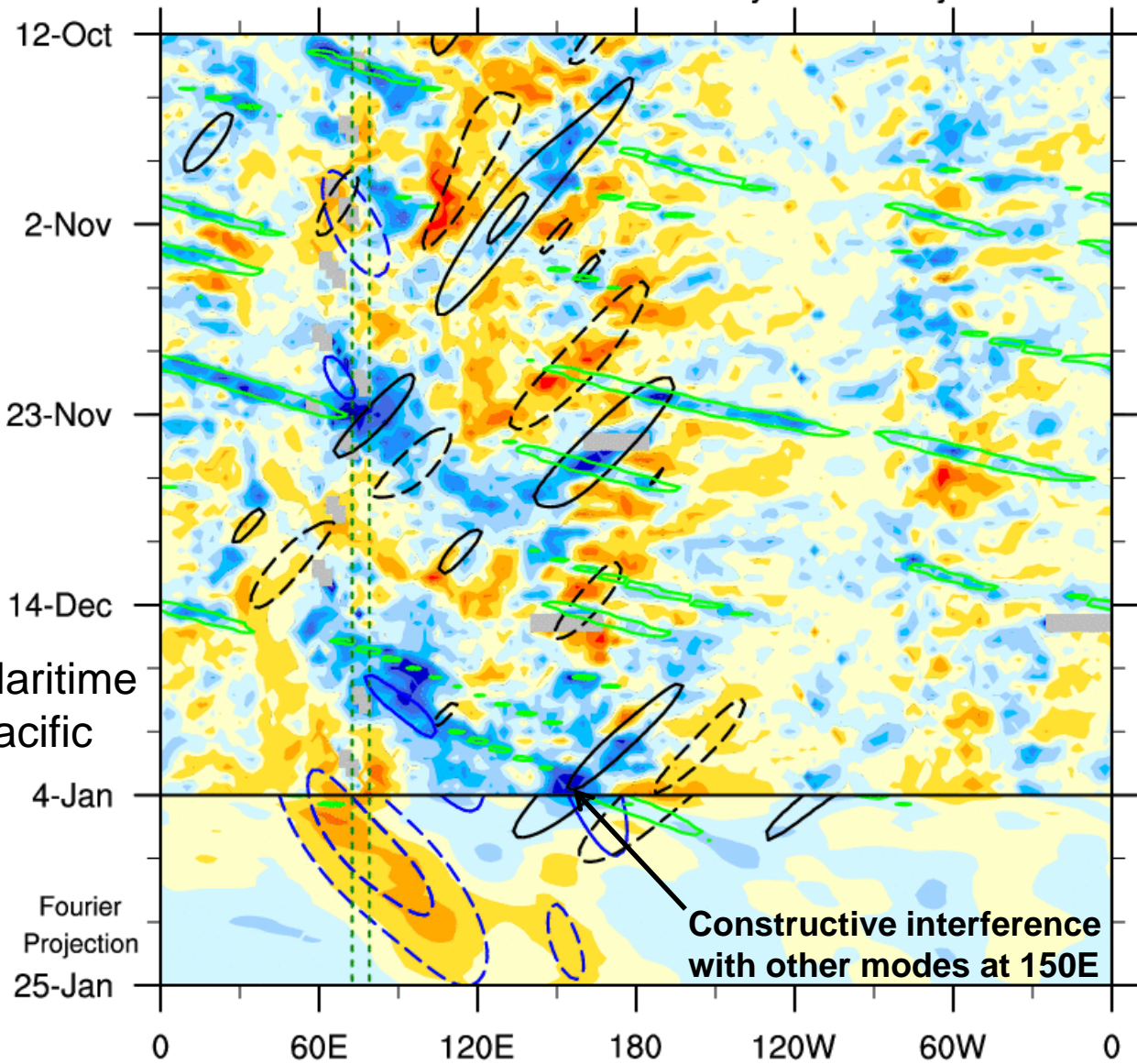
GFS Precipitation Forecasts



OLR anomalies: 7.5°S - 7.5°N

12-Oct-2014 to 4-Jan-2015 + 21-day Fourier Projection

MJO active over the Maritime Continent and West Pacific



Constructive interference with other modes at 150E

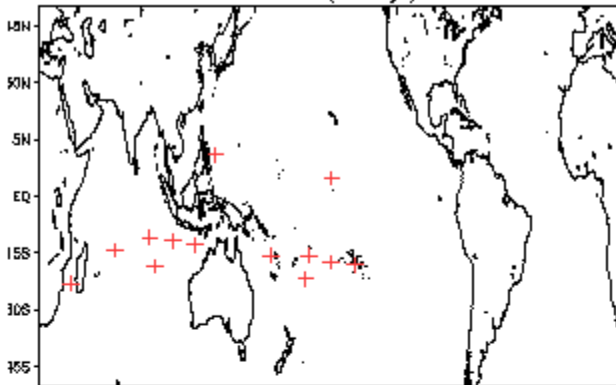
Obs: W/m² -84 -72 -60 -48 -36 -24 -12 0 12 24 36 48 60 72 84

Sum of Waves: W/m² -18 -12 -6 0 6 12 18

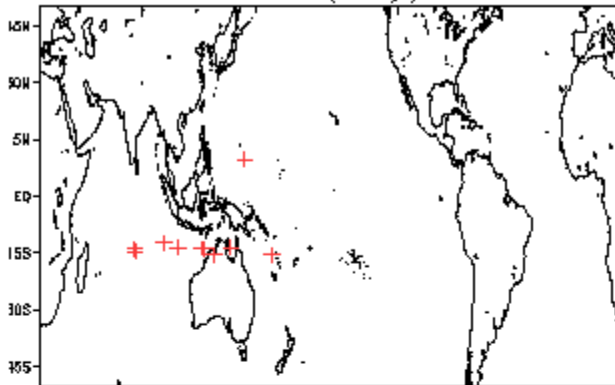
MJO (blue, CINT=12); ER (black, CINT=12); Kelvin (green, CINT=12)

January Tropical Storm Formation by MJO phase

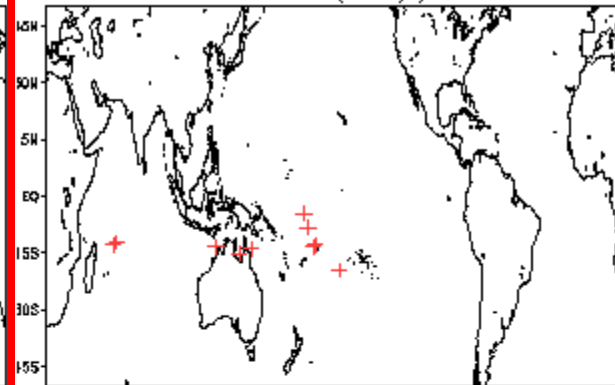
Phase 1 (67 days) 14 storms



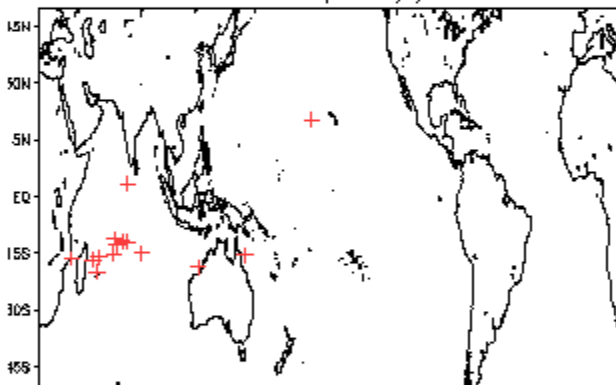
Phase 4 (68 days) 11 storms



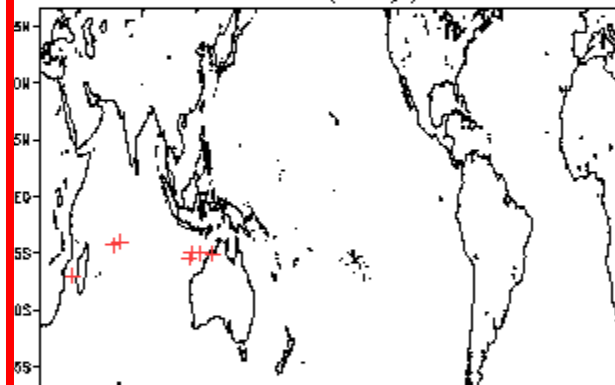
Phase 7 (81 days) 11 storms



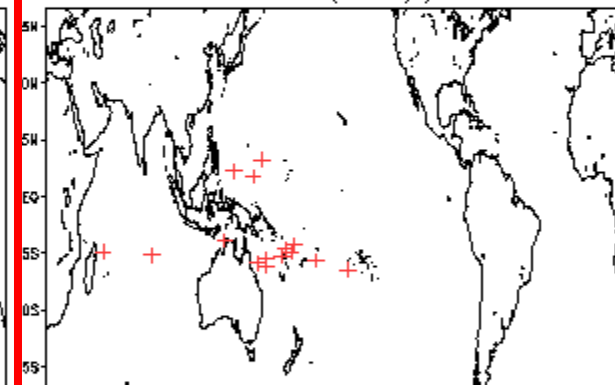
Phase 2 (101 days) 15 storms



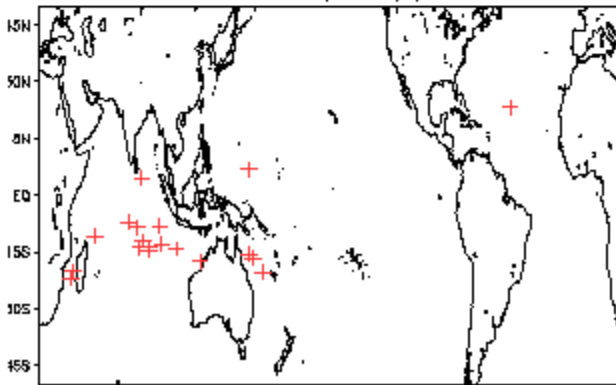
Phase 5 (67 days) 8 storms



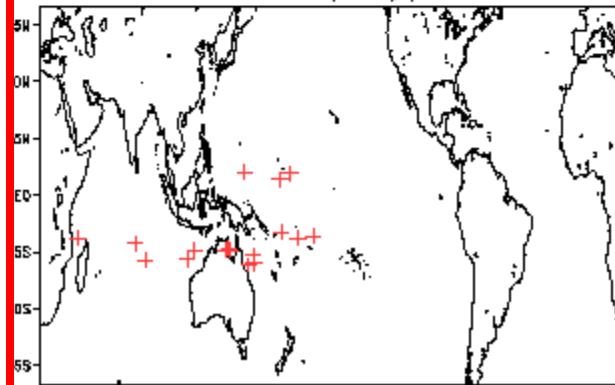
Phase 8 (105 days) 16 storms



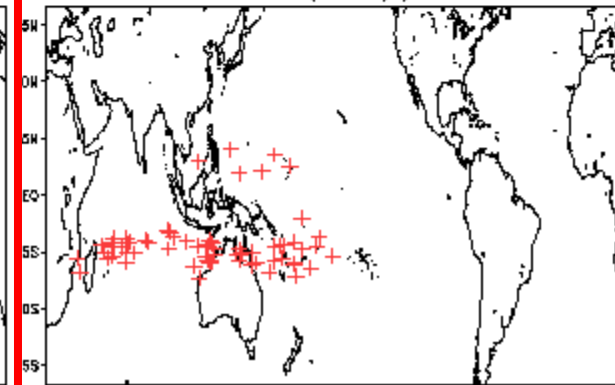
Phase 3 (112 days) 20 storms



Phase 6 (88 days) 18 storms

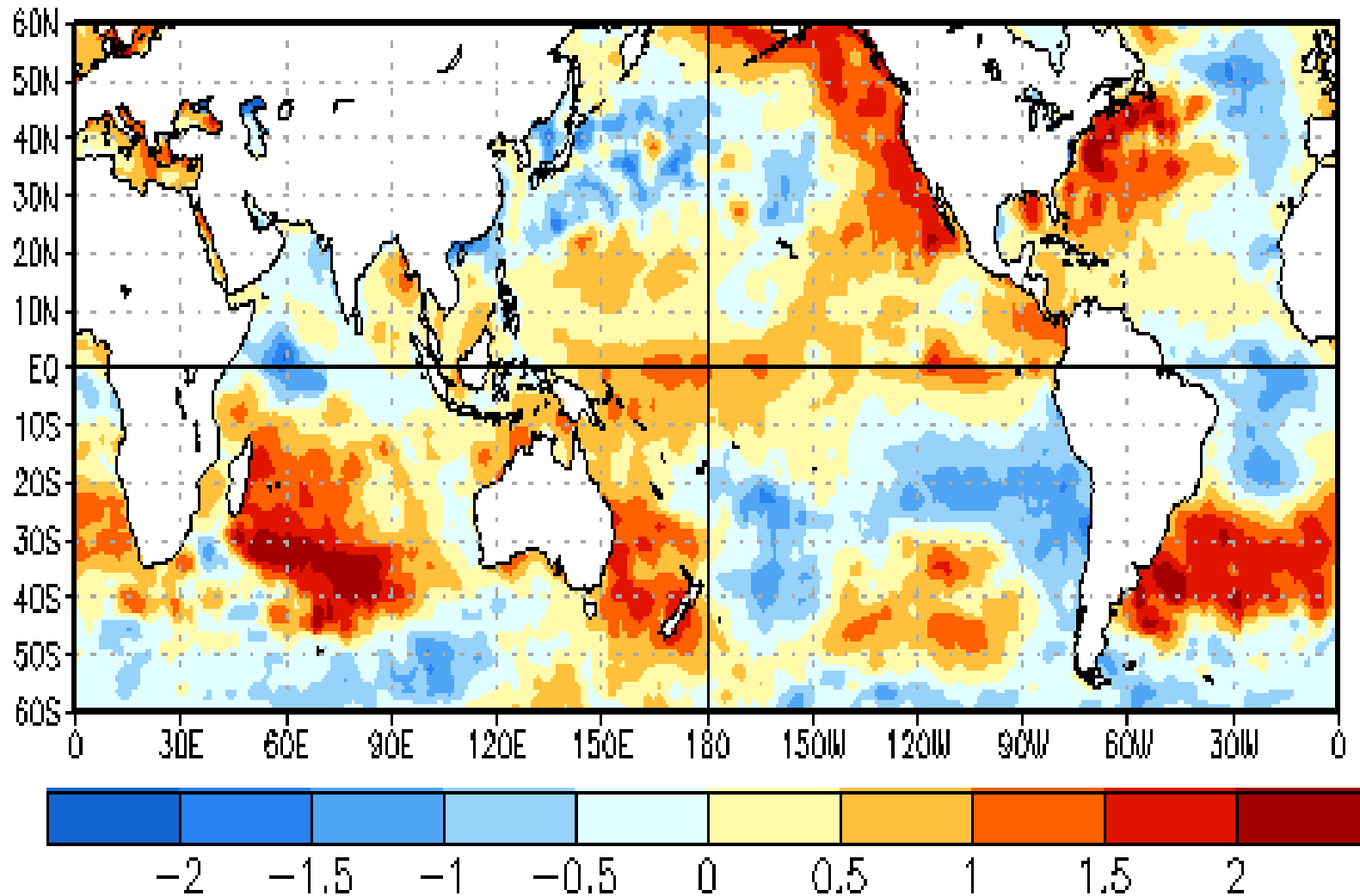


Null (364 days) 67 storms



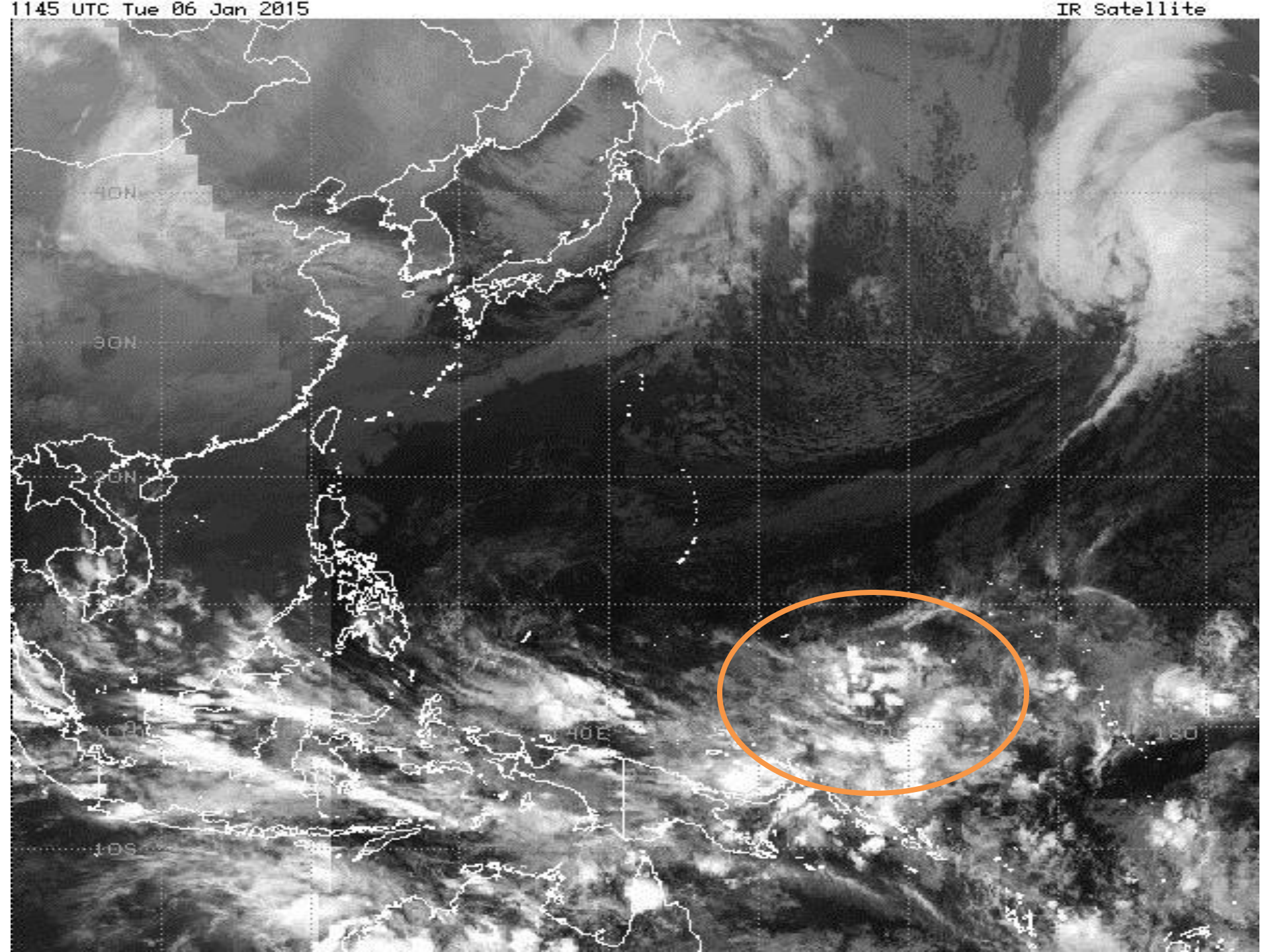
SST Anomalies (°C)

31 DEC 2014



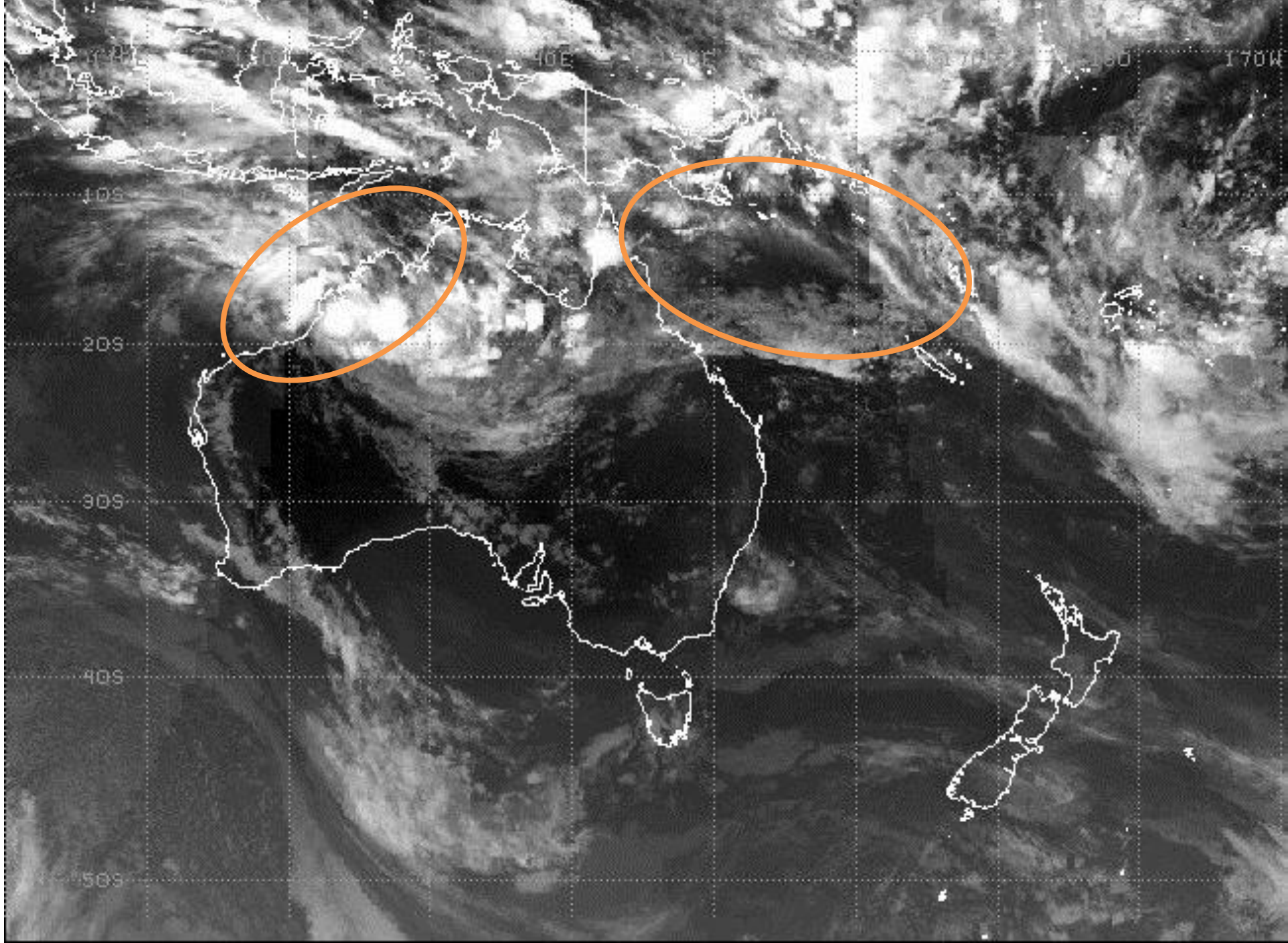
1145 UTC Tue 06 Jan 2015

IR Satellite



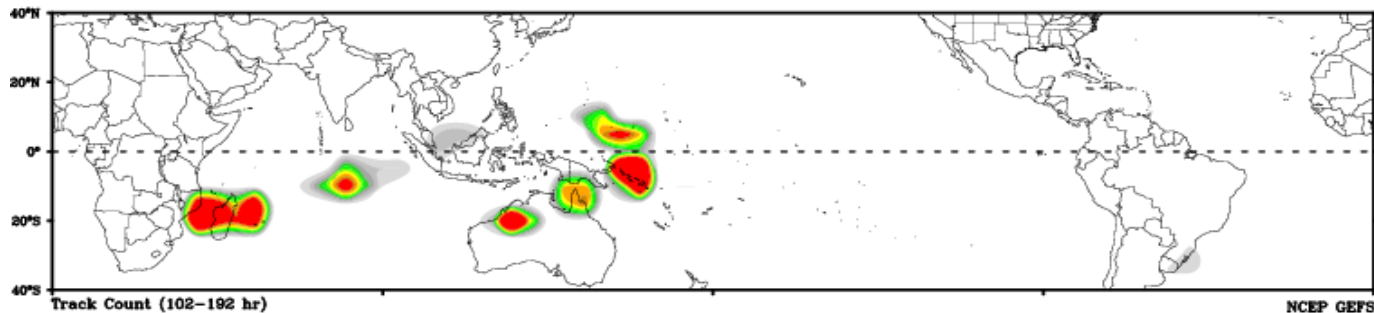
1245 UTC Tue 06 Jan 2015

IR Satellite

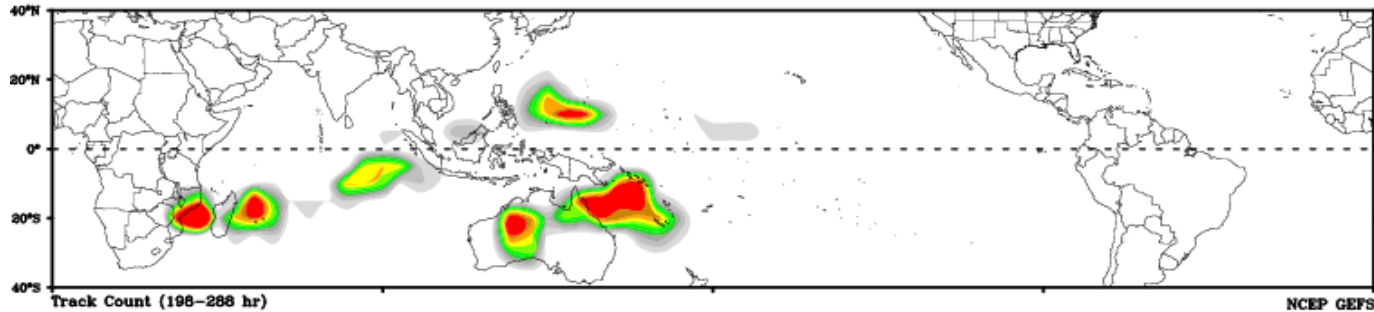


Favored Areas for TC Development: NCEP GEFS

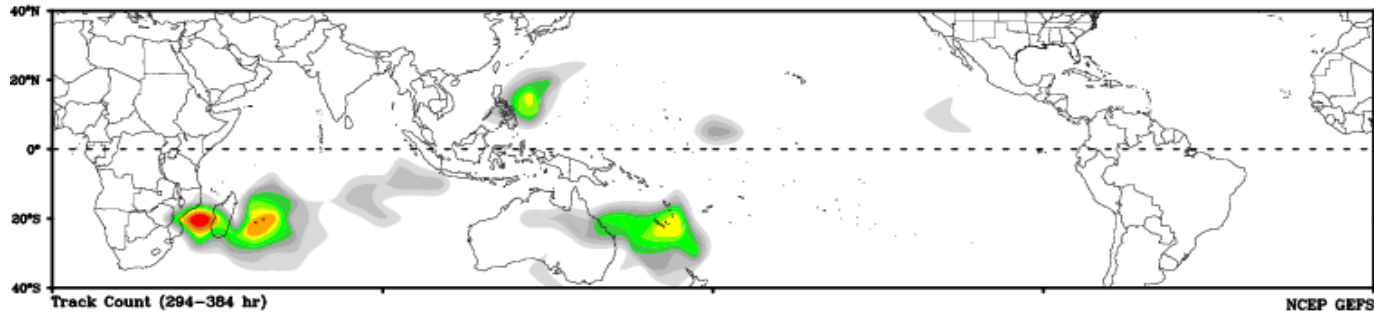
Days 1-4



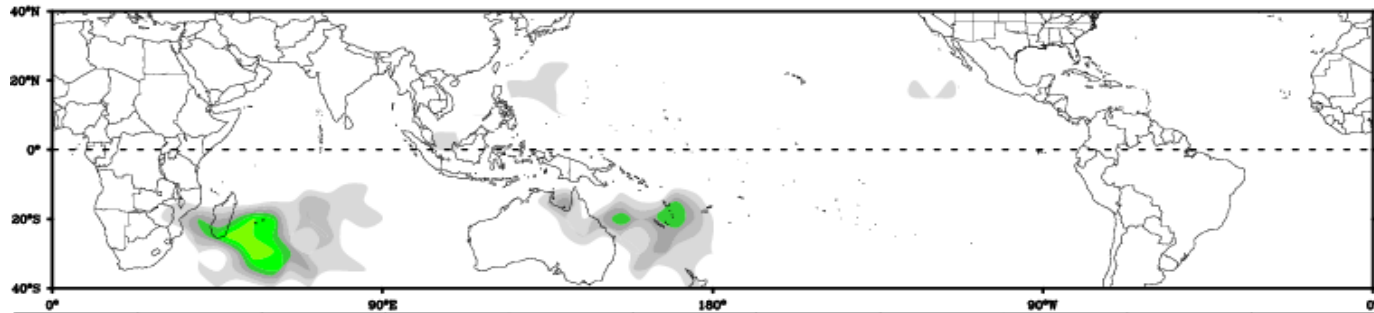
Day 5-8



Day 9-12



Day 13-15

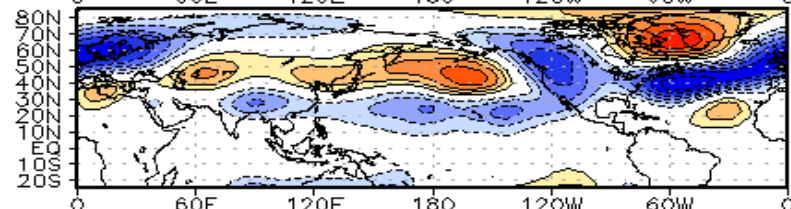
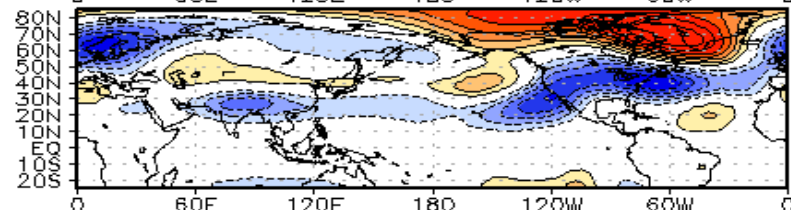
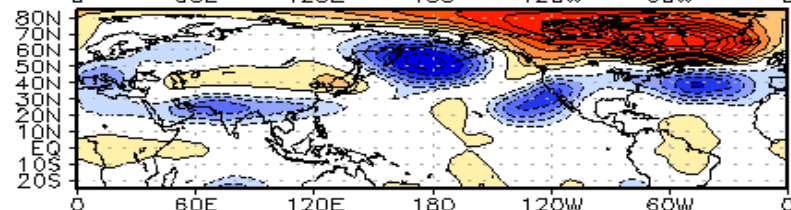
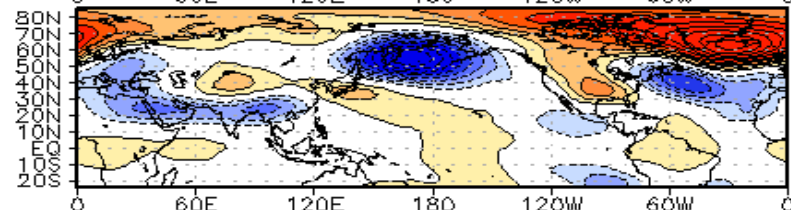
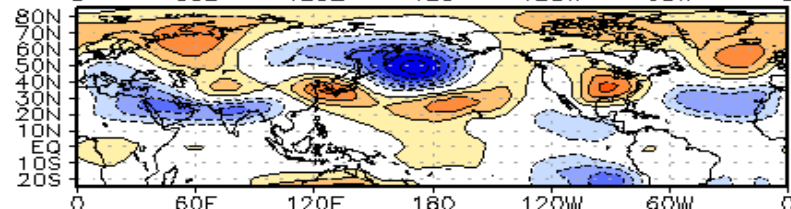
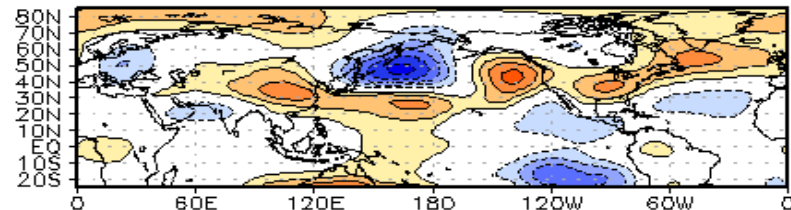


Connections to U.S. Impacts

Lagged composites from MJO

5-day intervals

WHMJO Phase 6 z200 Lagged Composite (djf)



+5-days

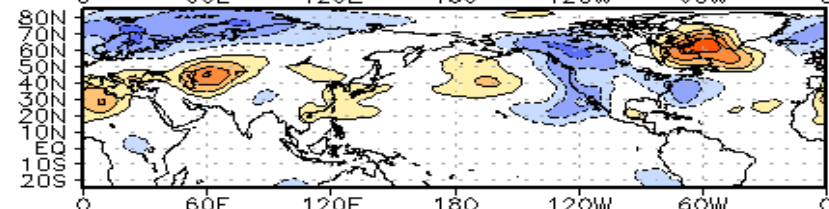
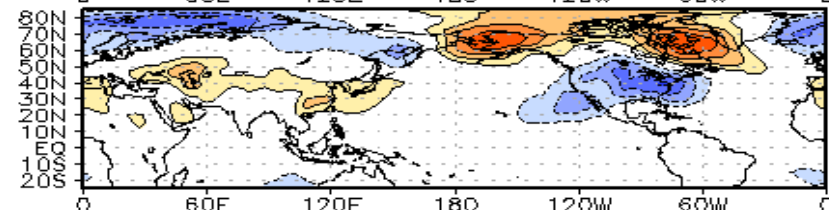
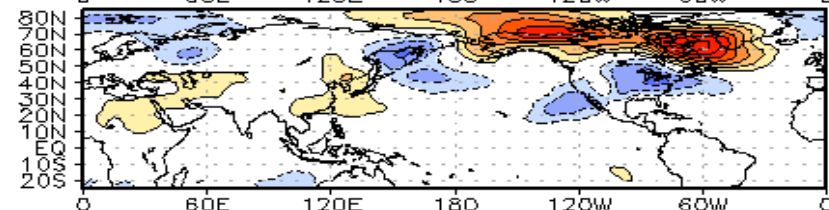
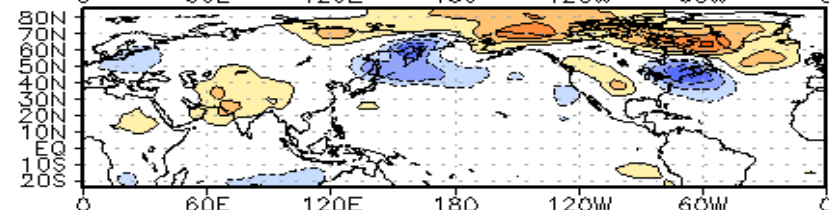
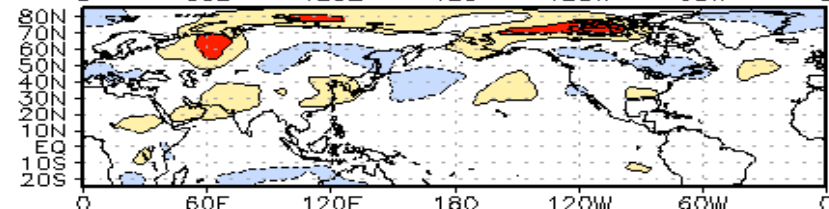
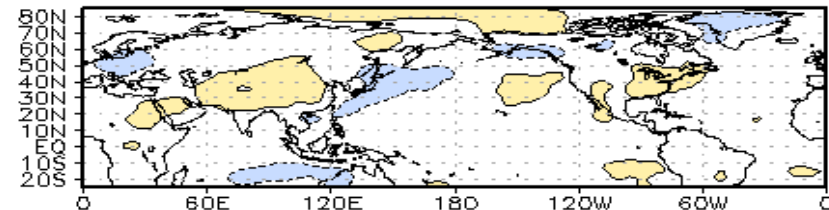
+10-days

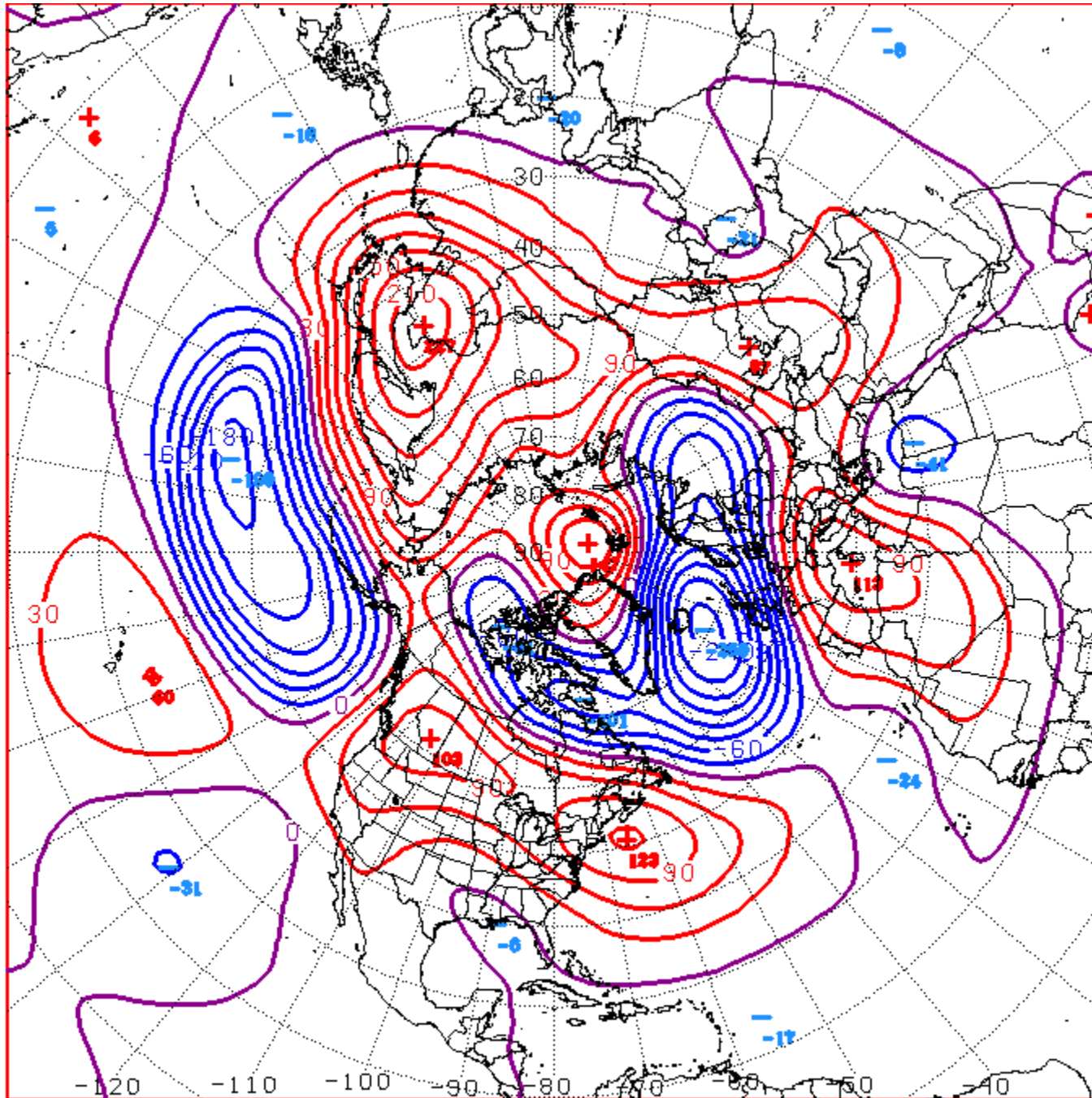
+15-days

+20-days

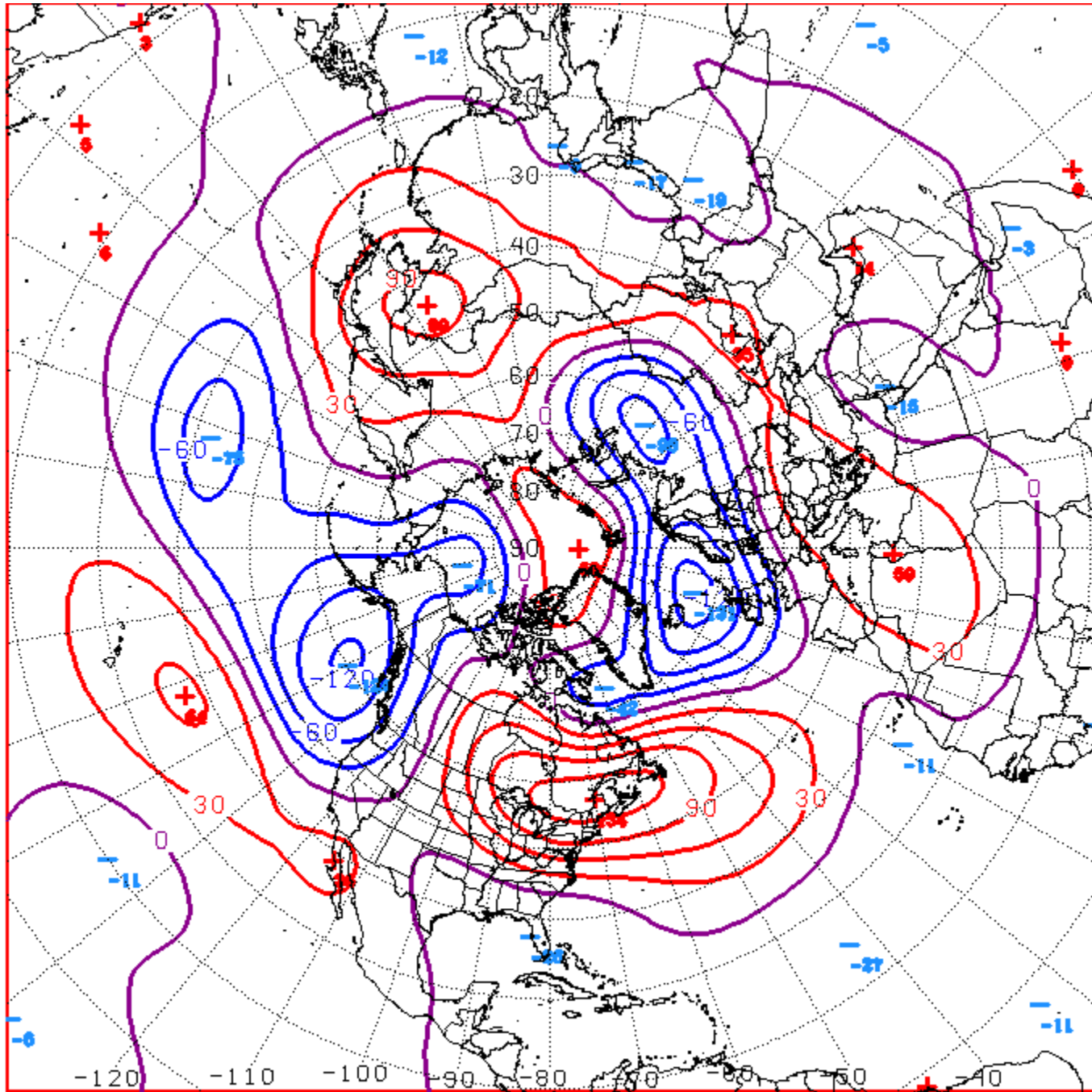
+25-days

WHMJO Phase 6 t850 Lagged Composite (djf)



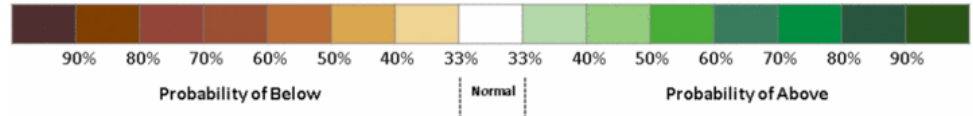
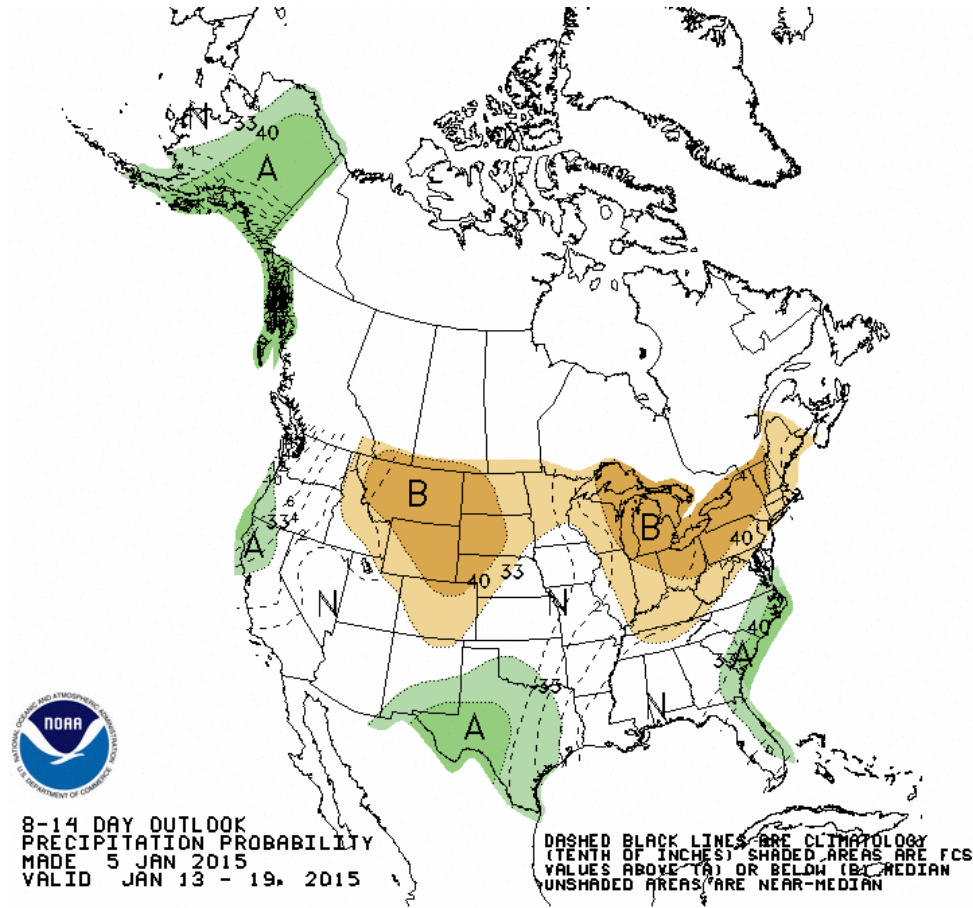
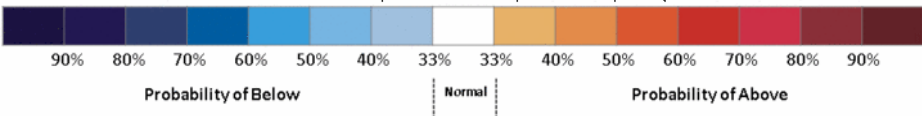
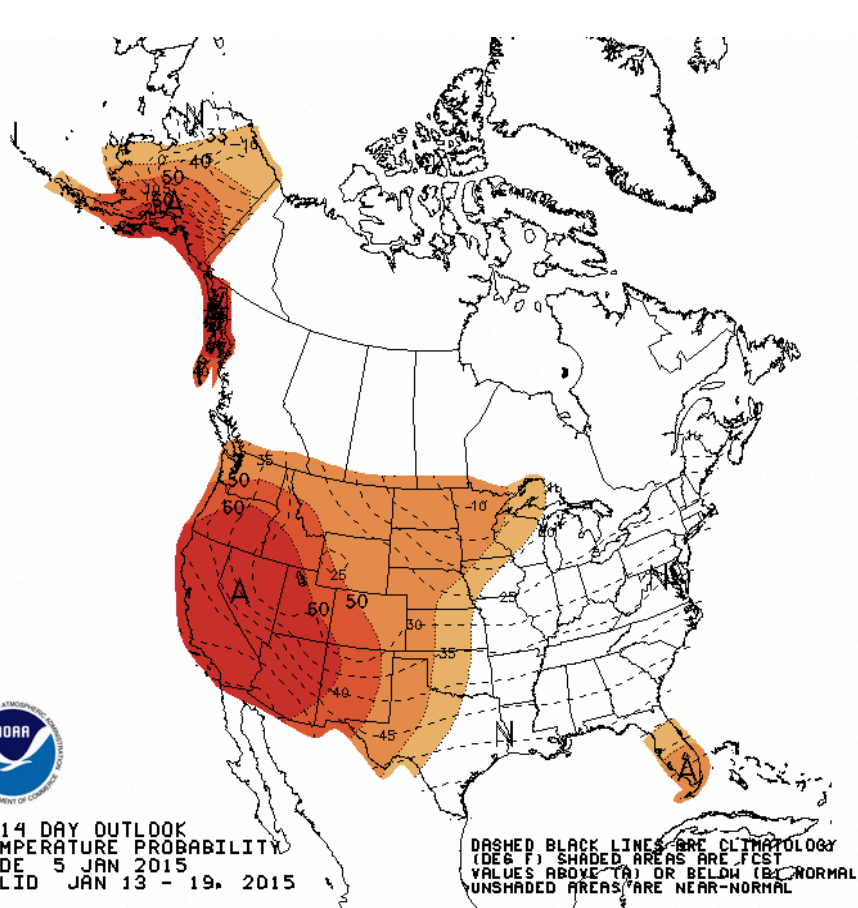


D+8 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE JAN 06 2015 1029 UTC CNTD JAN 14 2015



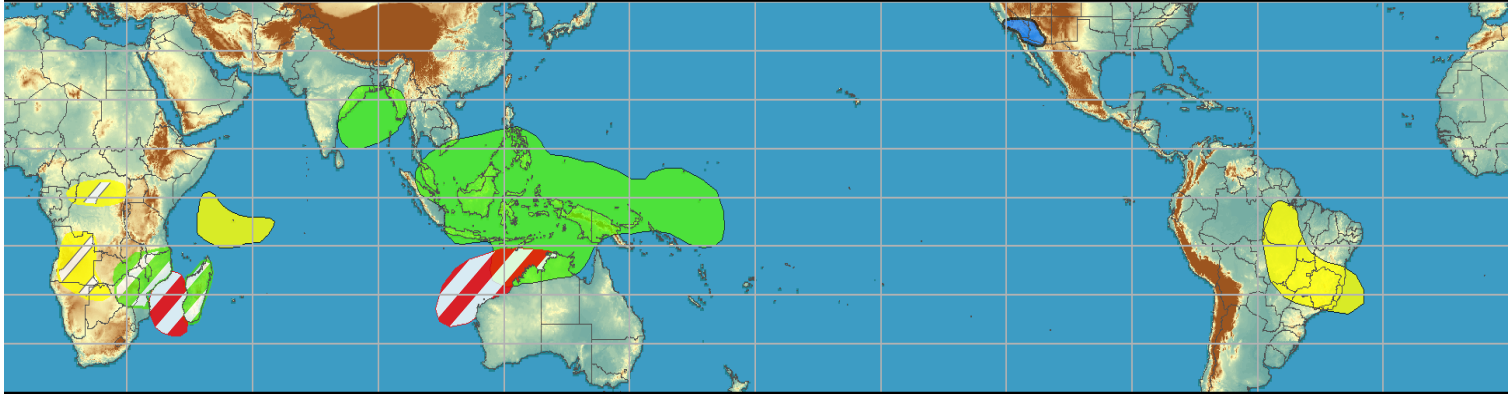
D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE JAN 06 2015 1030 UTC CNTD JAN 17 2015

Week 2 – Temperature and Precipitation

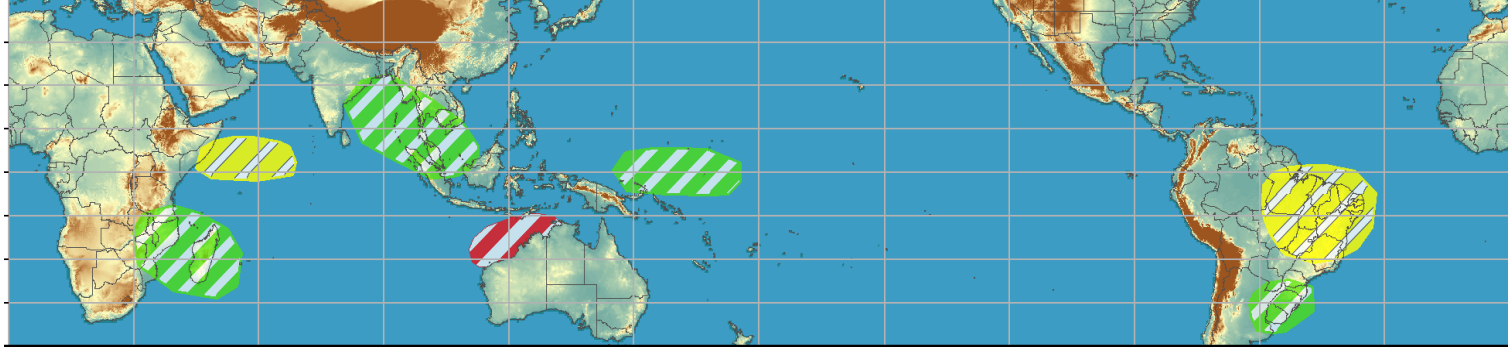


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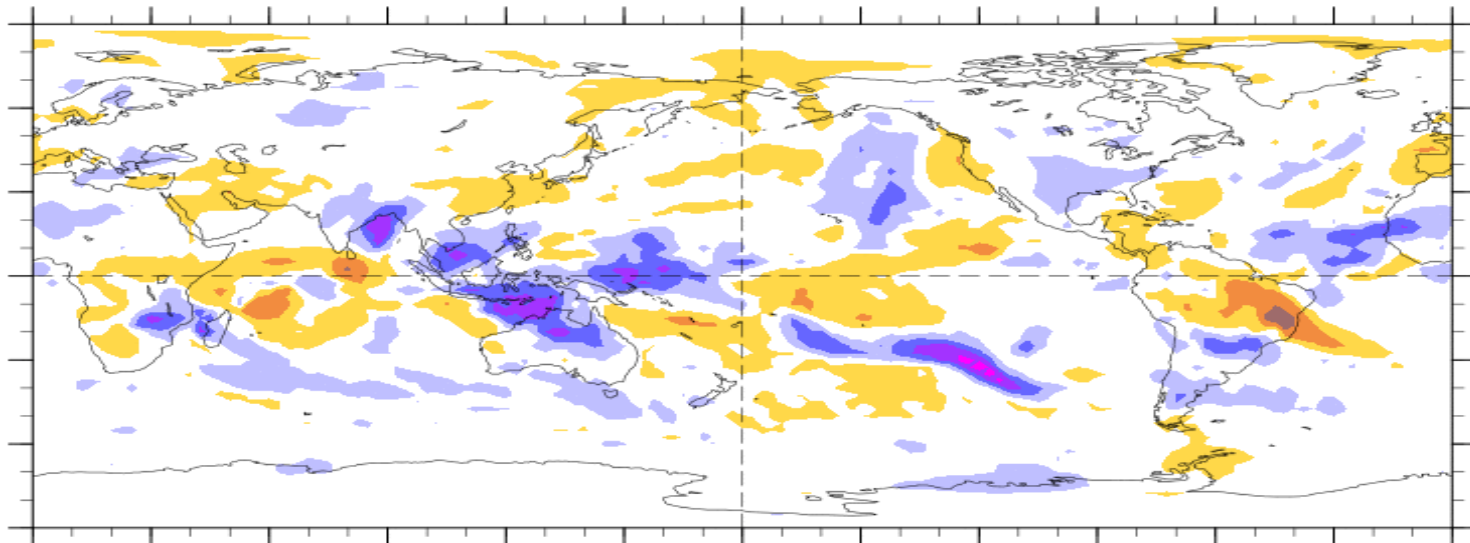


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