

Global Tropics Hazards And Benefits Outlook

12/26/2017

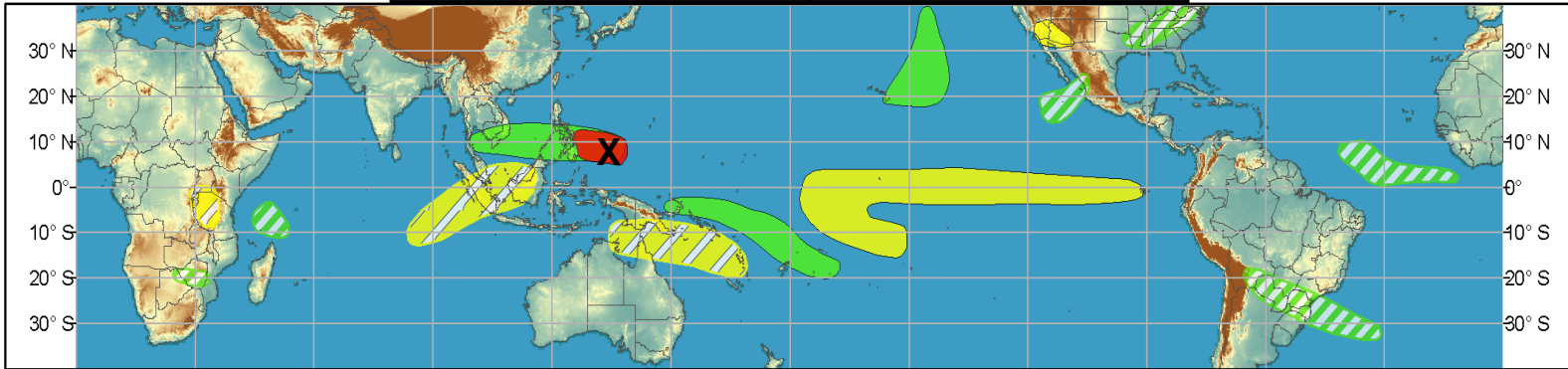
Adam Allgood

Outline

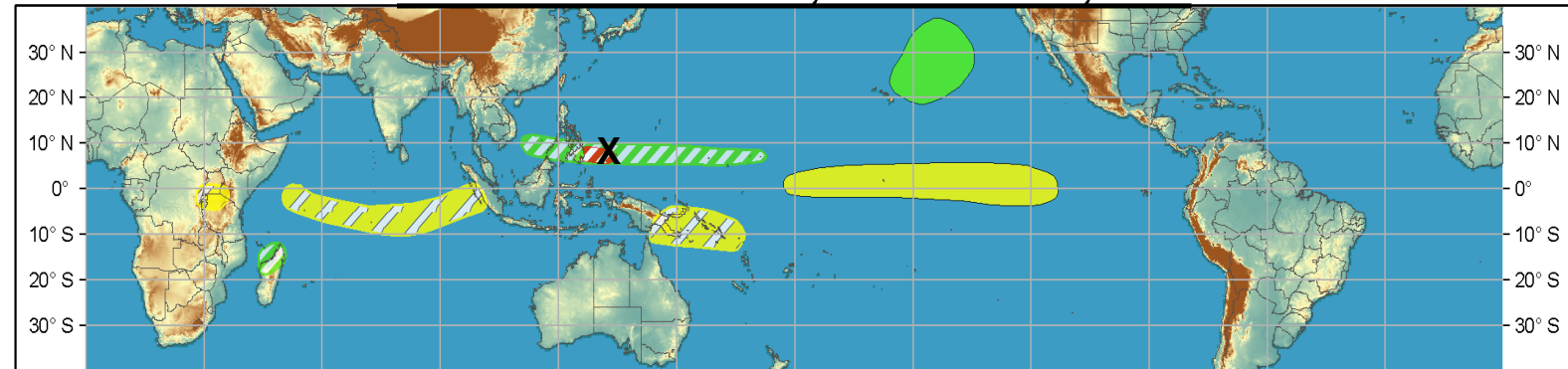
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

Week 1 - Valid: Dec 20, 2017 - Dec 26, 2017

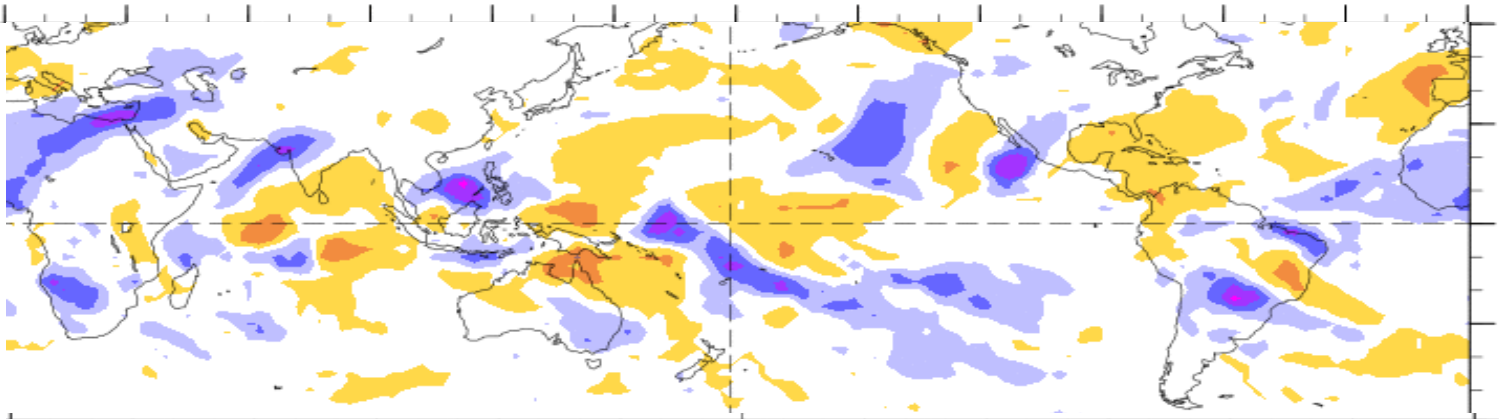


Week 2 - Valid: Dec 20, 2017 - Dec 26, 2017



7-Day Average OLR Anomaly

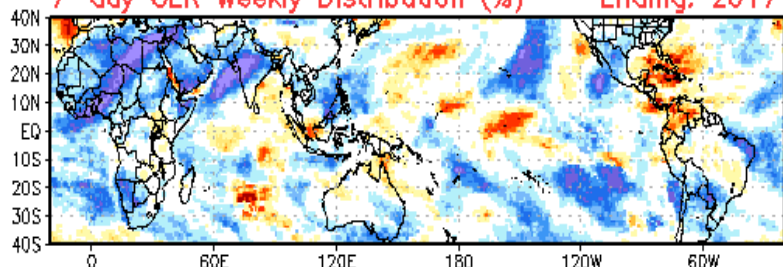
2017/12/18 - 2017/12/24



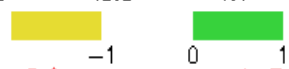
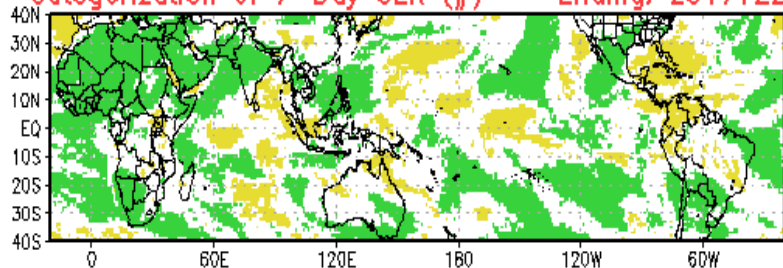
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

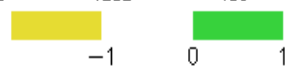
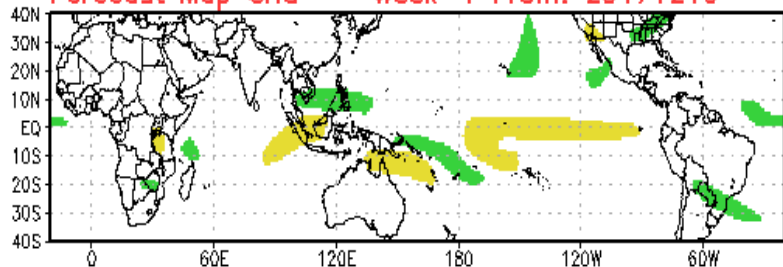
7-day OLR Weekly Distribution (%) -- Ending: 20171226



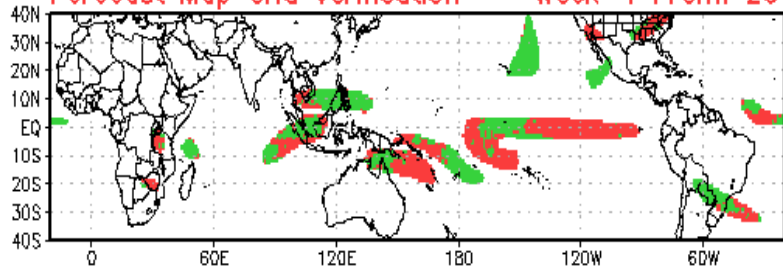
Categorization of 7-Day OLR (#) -- Ending: 20171226



Forecast Map Grid -- Week-1 From: 20171219

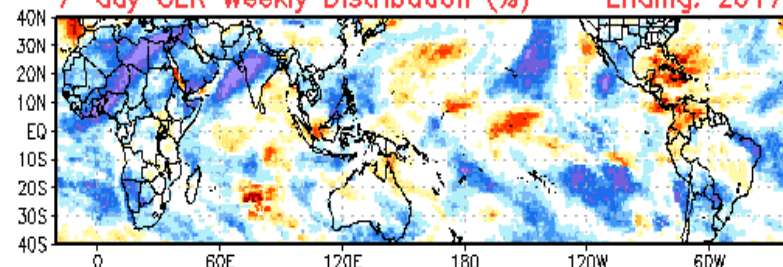


Forecast Map Grid Verification -- Week-1 From: 20171219

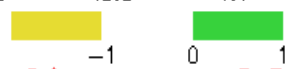
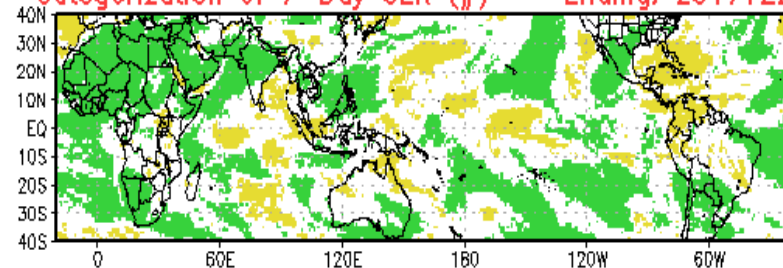


Hit: Green, Miss: Red
Heidke Skill Score: 23.2803

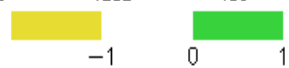
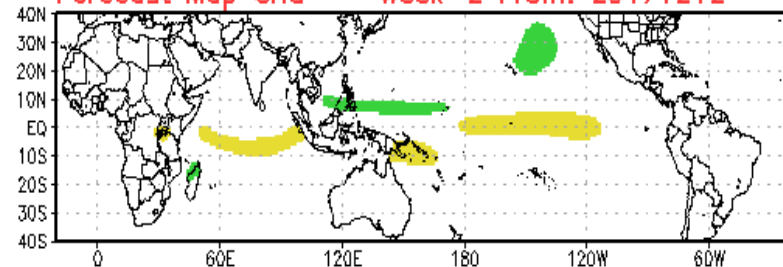
7-day OLR Weekly Distribution (%) -- Ending: 20171226



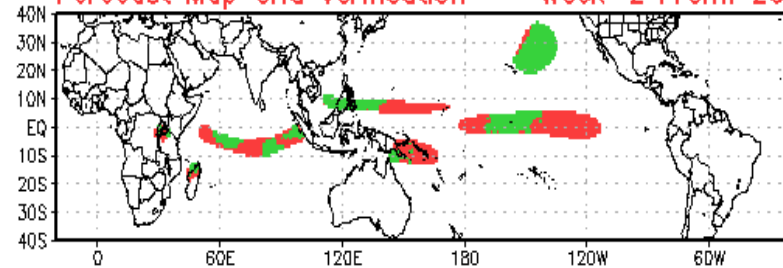
Categorization of 7-Day OLR (#) -- Ending: 20171226



Forecast Map Grid -- Week-2 From: 20171212



Forecast Map Grid Verification -- Week-2 From: 20171212



Hit: Green, Miss: Red
Heidke Skill Score: 18.7634

Synopsis of Climate Modes

ENSO:

- ENSO Alert System Status: **La Niña Advisory**
- La Niña is likely (exceeding ~80%) through the Northern Hemisphere winter 2017-18, with a transition to ENSO-neutral most likely during the mid-to-late spring.

MJO and other subseasonal tropical variability:

- The MJO is currently propagating over the Western Hemisphere, although there is weakened amplitude on the MJO indices due to destructive interference with the La Niña base state.
- Dynamical models fairly consistently indicate a continued weak signal as the MJO propagates across the Western Hemisphere, followed by a strengthening signal over the Indian Ocean during Week-2.

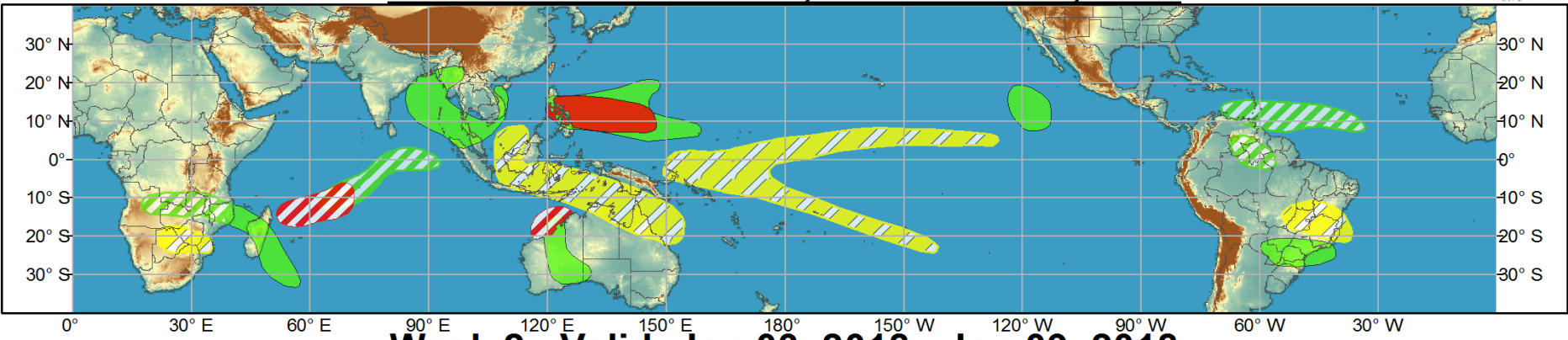
Extratropics:

- Western Hemisphere MJO events generally do not teleconnect well to the North American midlatitude pattern; however, an Indian Ocean MJO event does teleconnect well, and may contribute to a substantial pattern change over North America during January.

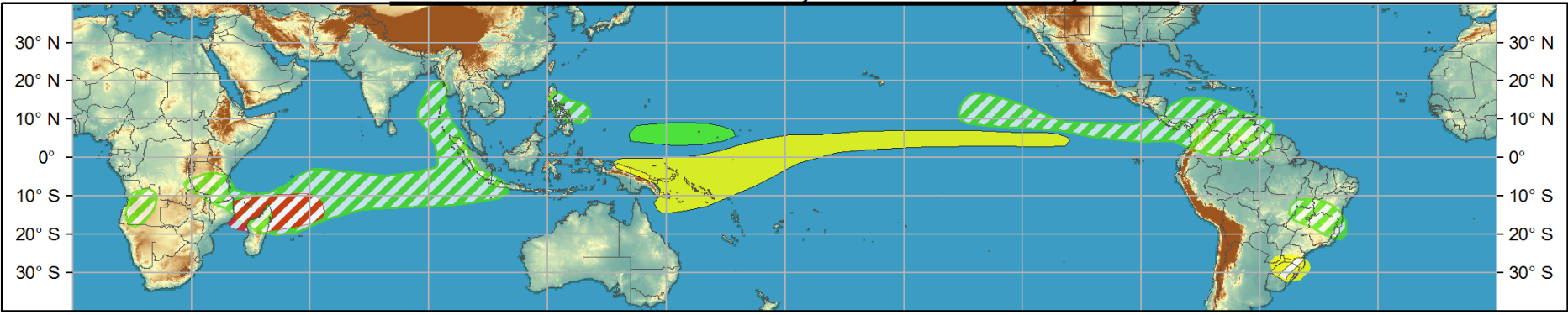


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 27, 2017 - Jan 02, 2018



Week 2 - Valid: Jan 03, 2018 - Jan 09, 2018



Produced: 12/26/2017
Forecaster: Allgood

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.

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

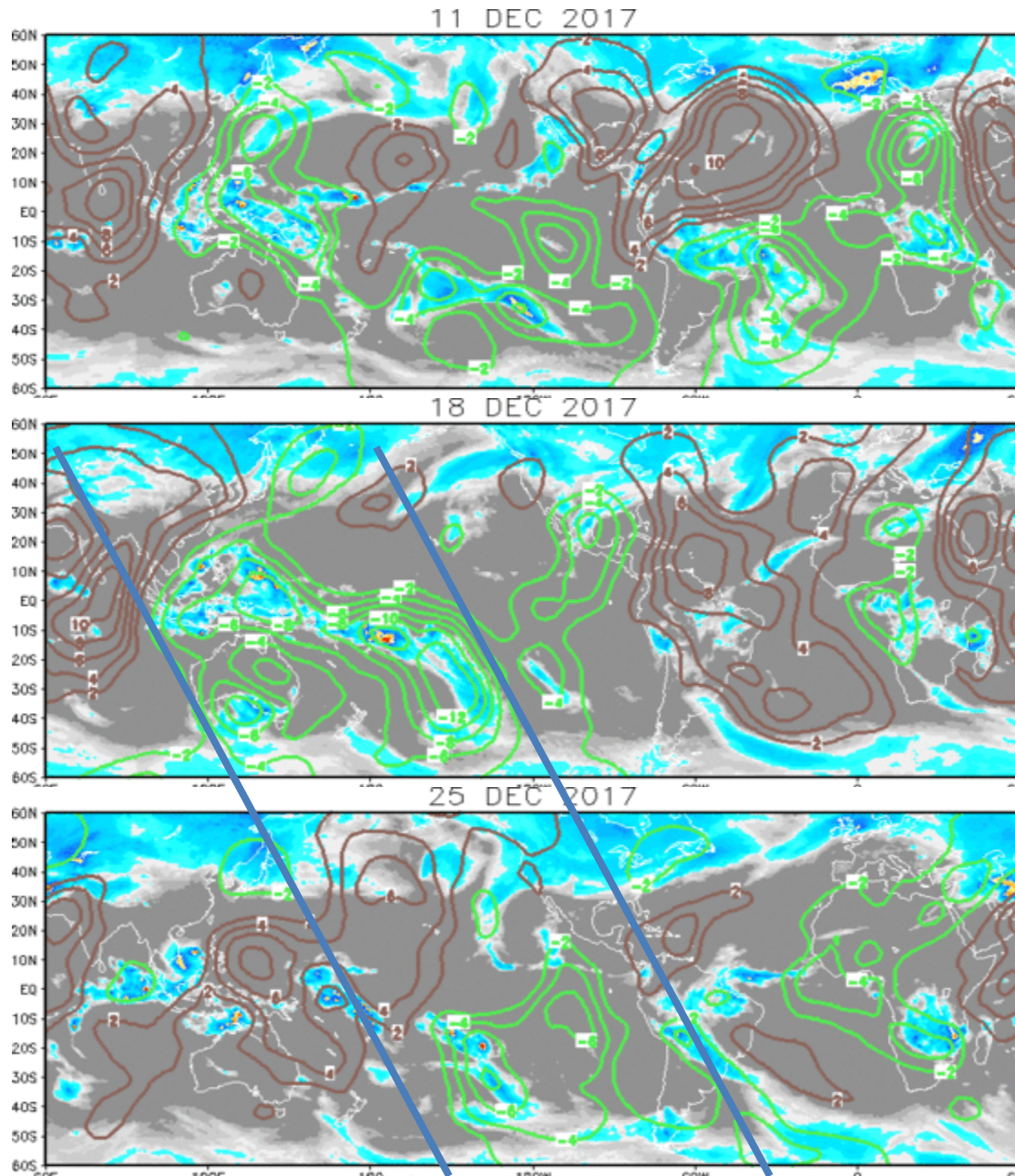
Green: Enhanced Divergence

Brown: Enhanced Convergence

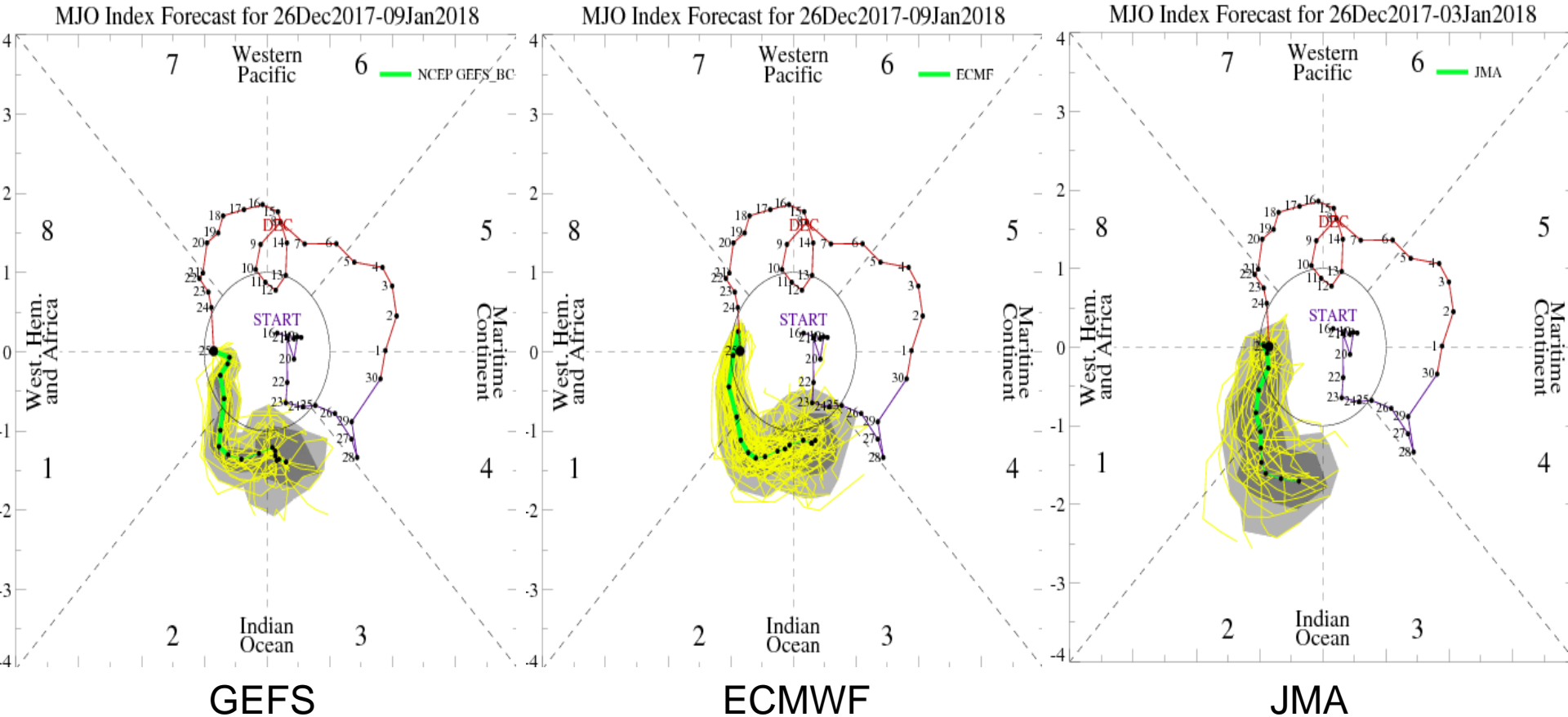
Disorganized pattern as other modes (La Niña, Rossby wave, Kelvin wave) influenced the intraseasonal signal.

Constructive interference between a Rossby wave and the MJO over the West Pacific yielded a more organized response.

Weaker projection as the MJO traverses the Western Hemisphere and interferes with the base state.

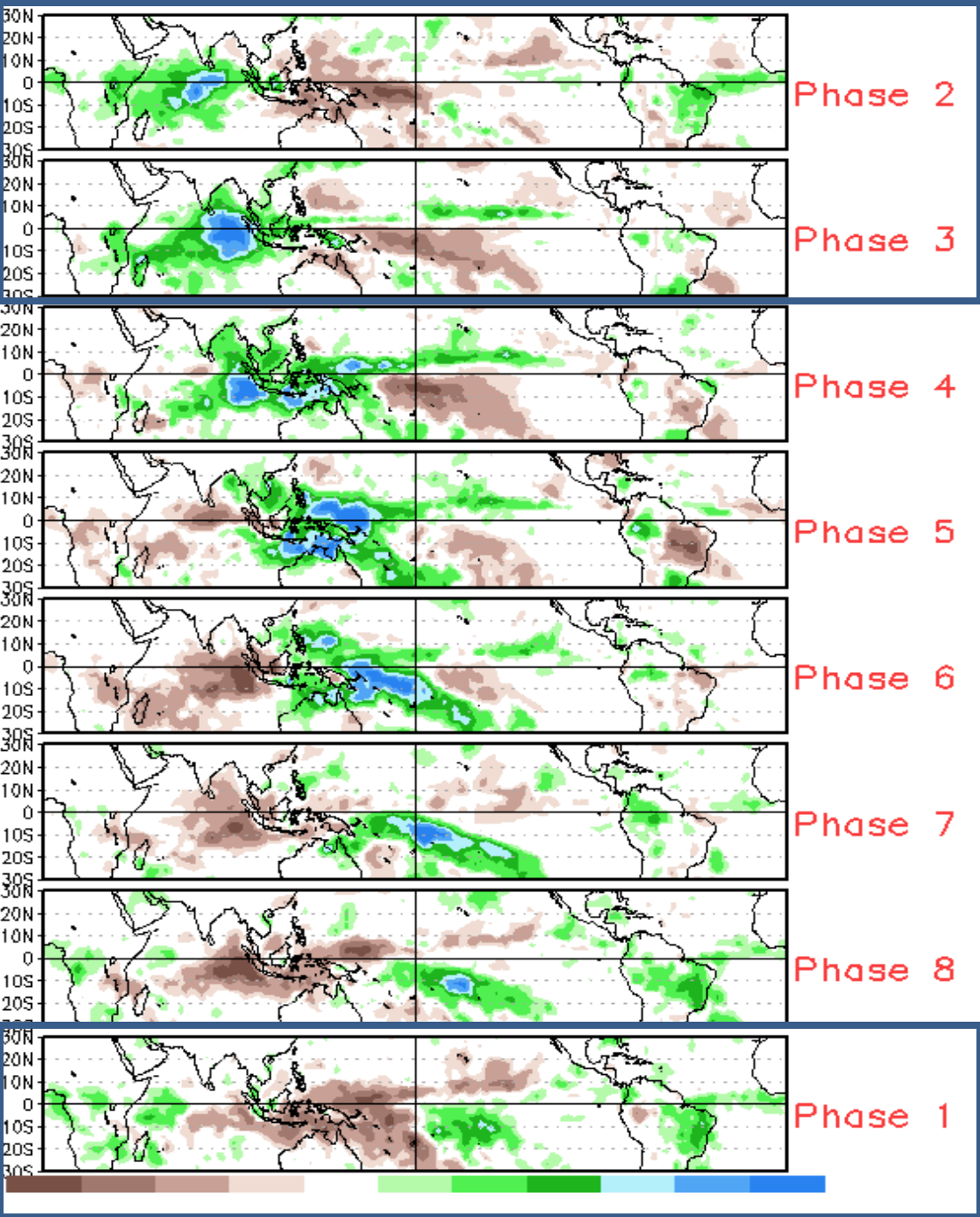


MJO Observation/Forecast



Wheeler-Hendon based analyses of model forecasts show a consistent eastward propagation and strengthening of the signal over the Indian Ocean

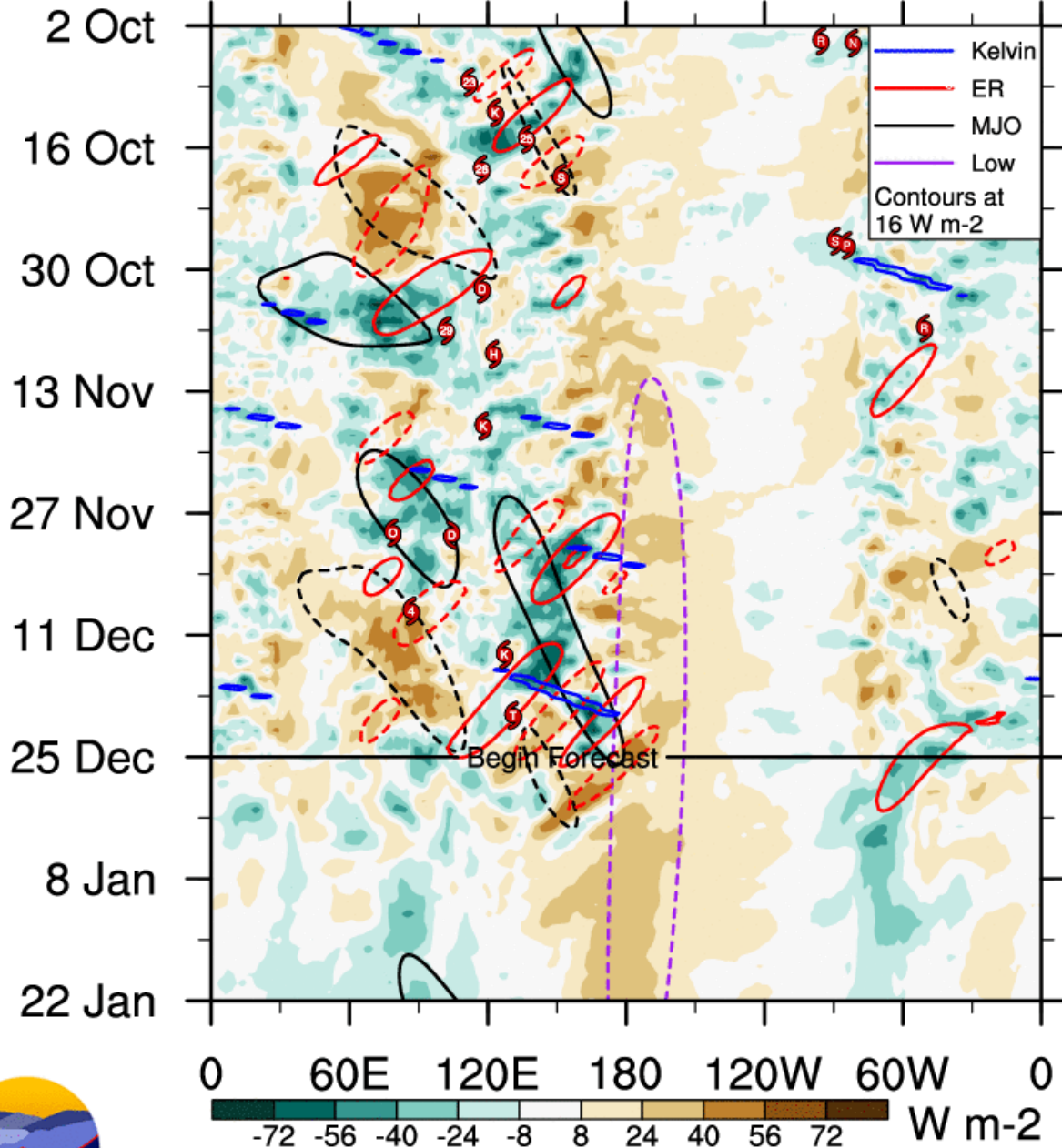
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

OLR with CFS forecasts

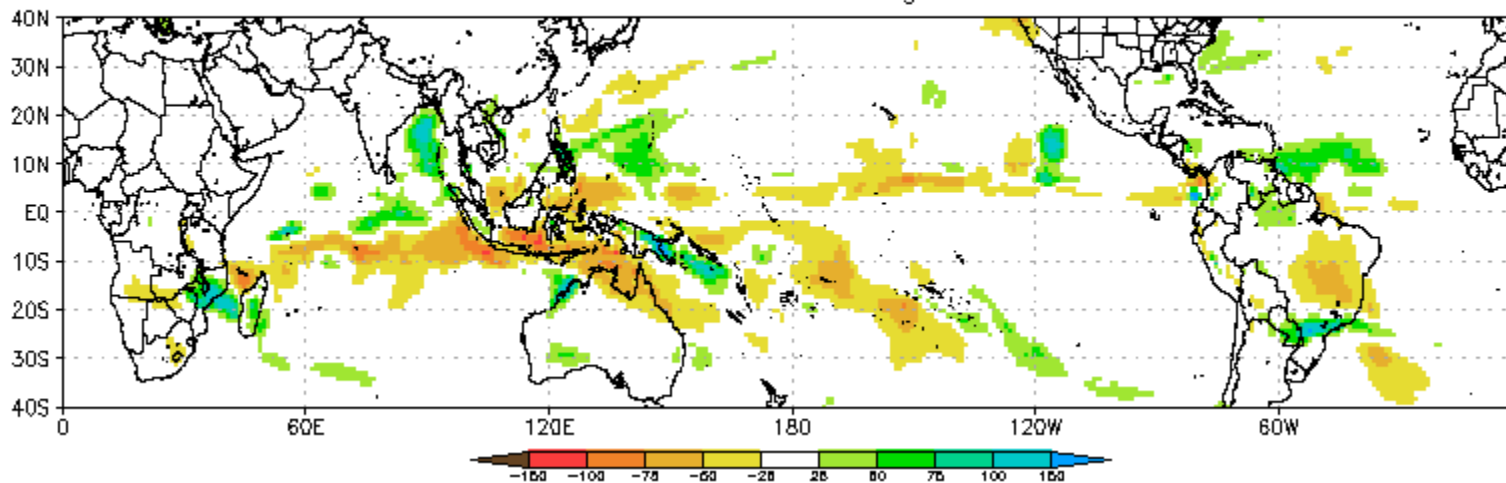
5S - 5N



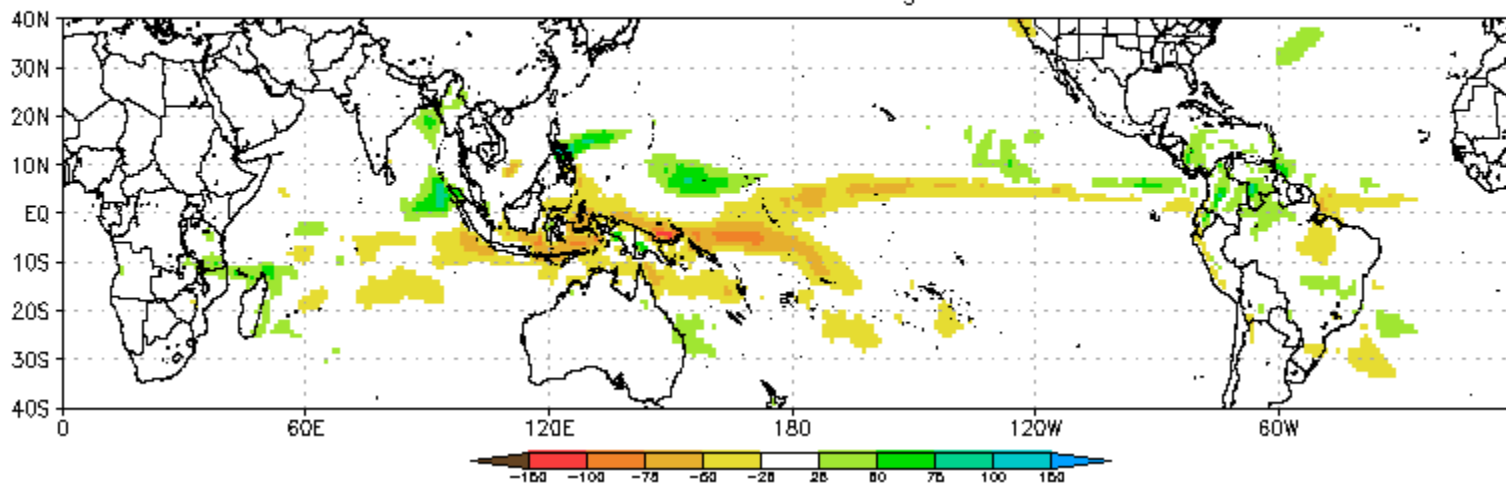
MJO influence seen more in the disruption of the enhanced Maritime signal than overcoming the suppressed convection over the Pacific.



CFS Precipitation Anomalies (mm) Issued 25Dec2017
Week-1 Forecast Ending 02Jan2018

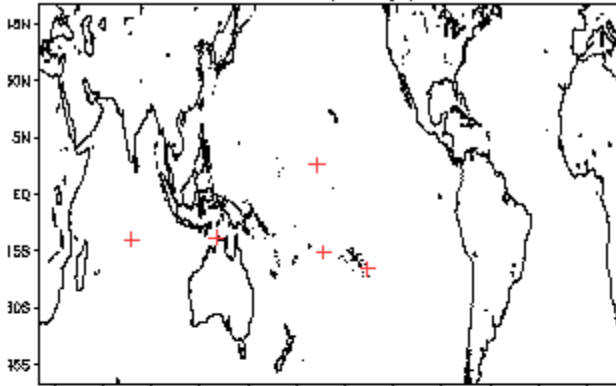


CFS Precipitation Anomalies (mm) Issued 25Dec2017
Week-2 Forecast Ending 09Jan2018

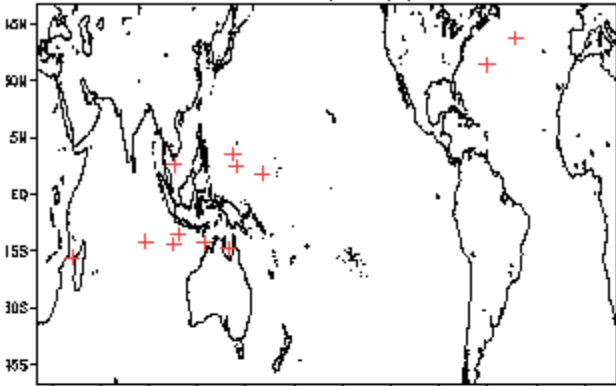


December Tropical Storm Formation by MJO phase

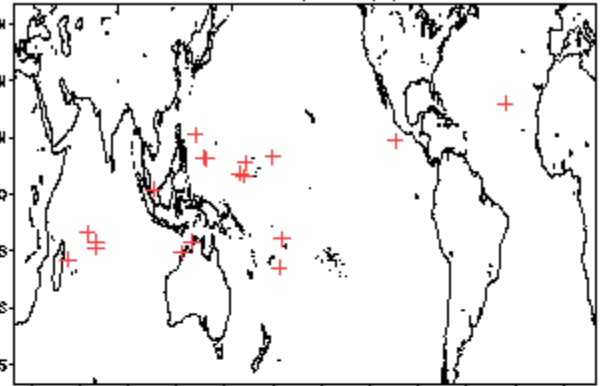
Phase 1 (48 days) 7 storms



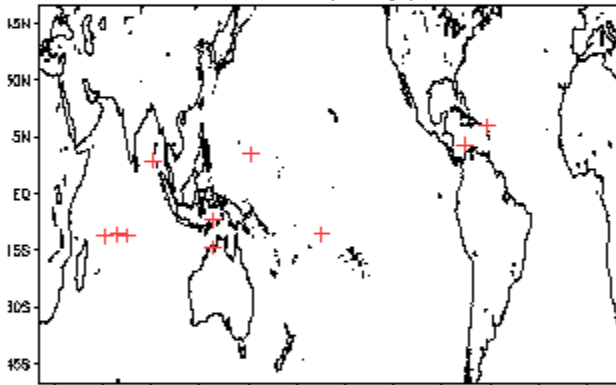
Phase 4 (72 days) 13 storms



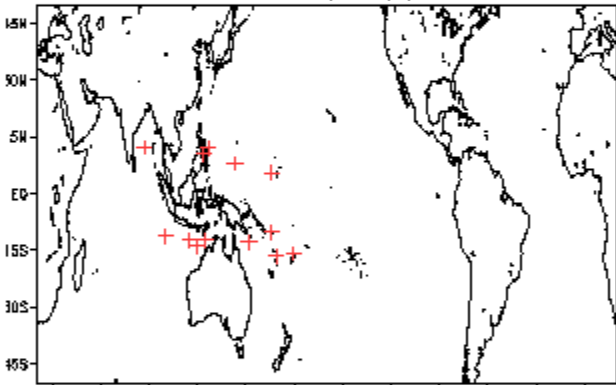
Phase 7 (103 days) 19 storms



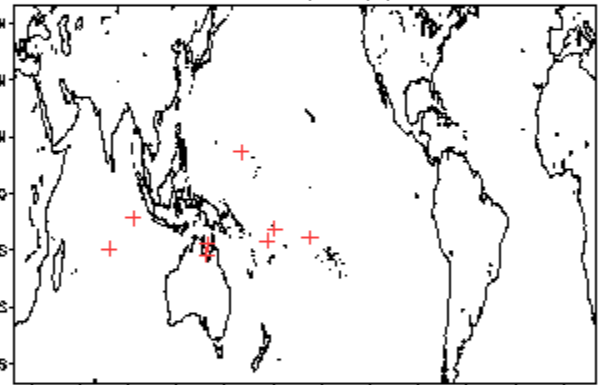
Phase 2 (67 days) 11 storms



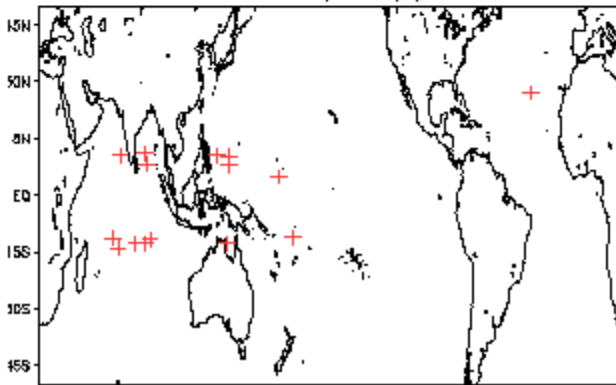
Phase 5 (73 days) 14 storms



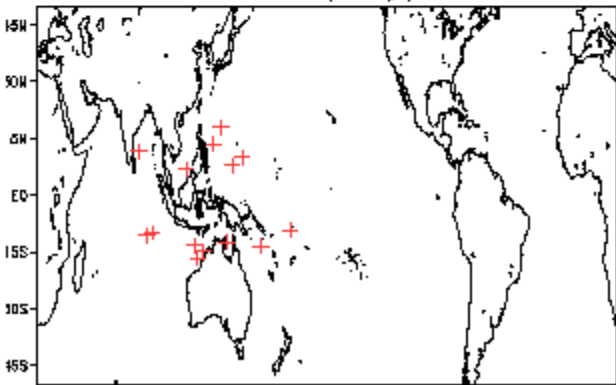
Phase 8 (76 days) 9 storms



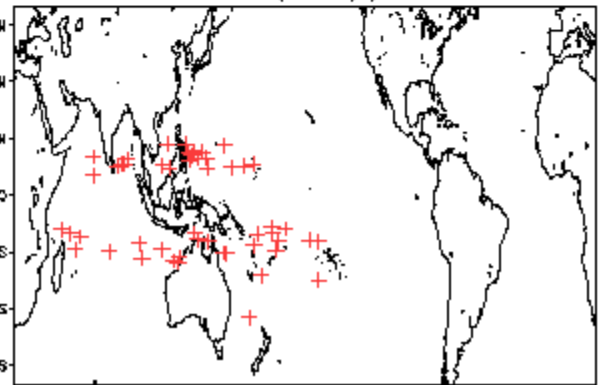
Phase 3 (101 days) 16 storms

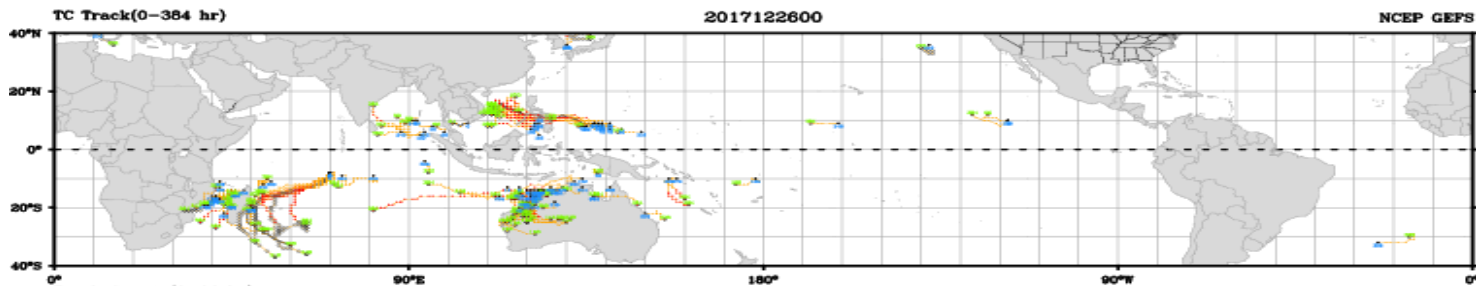


Phase 6 (69 days) 15 storms

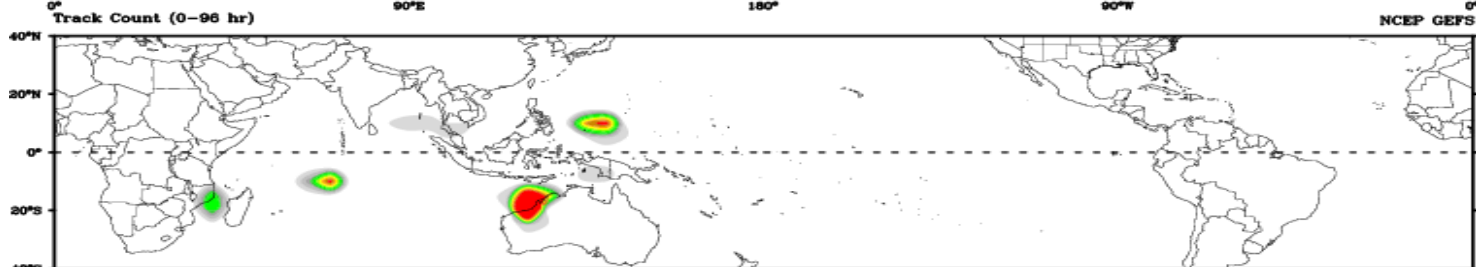


Null (416 days) 52 storms

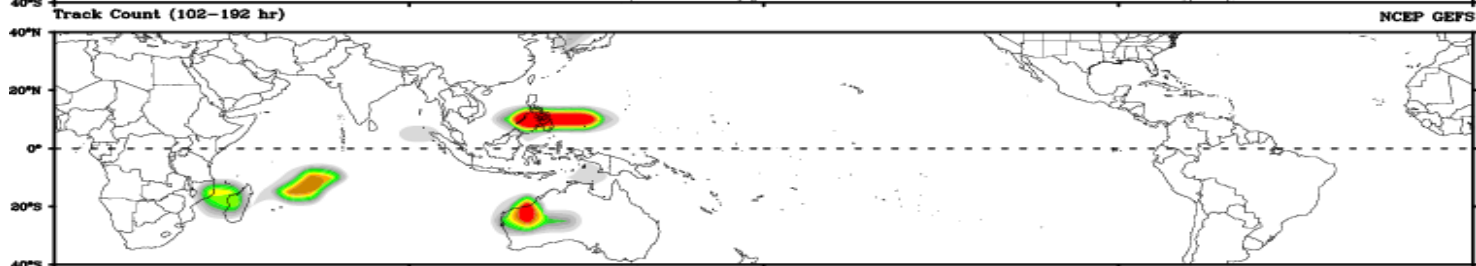




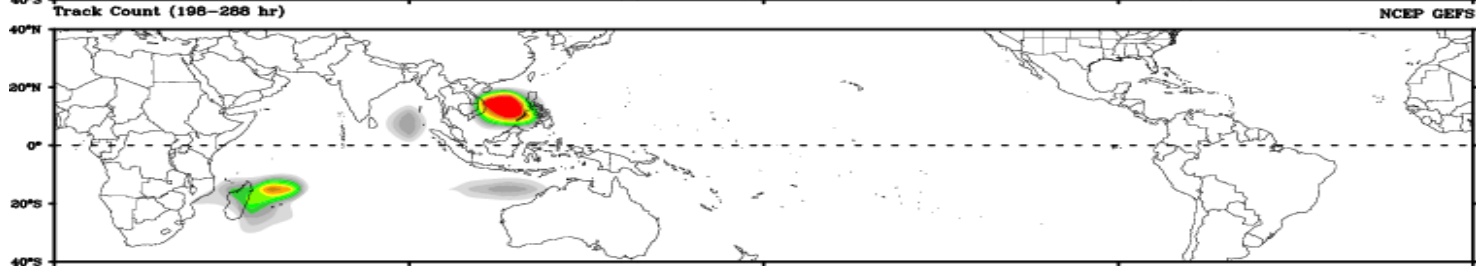
Days 1-4



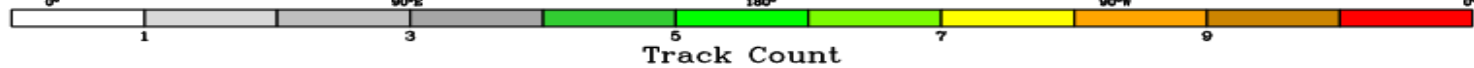
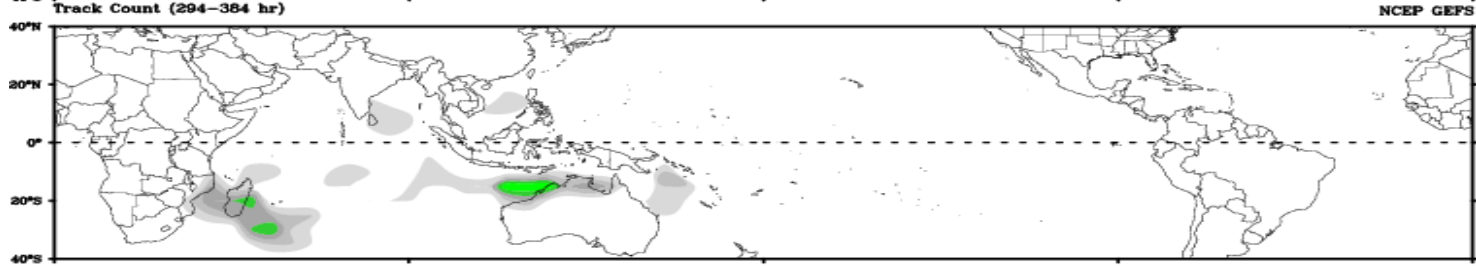
Day 5-8



Day 9-12

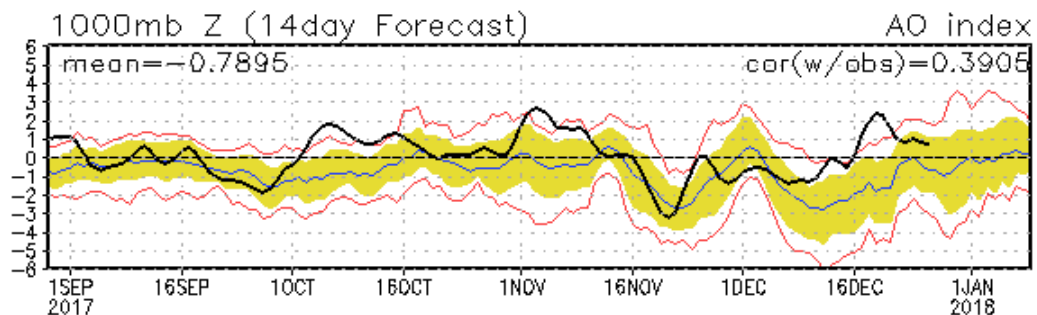
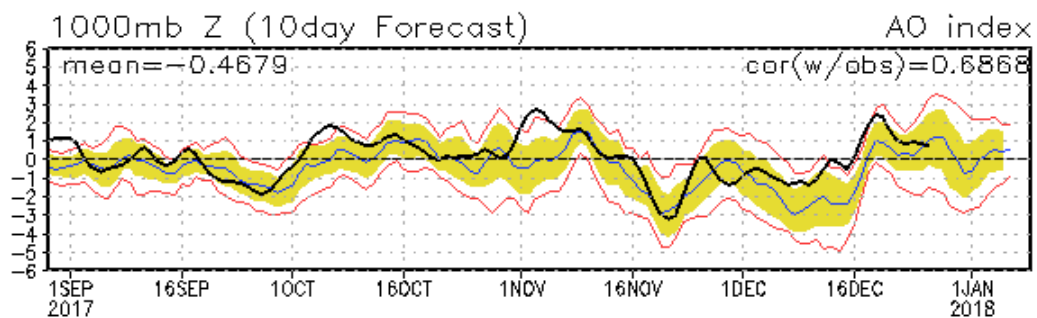
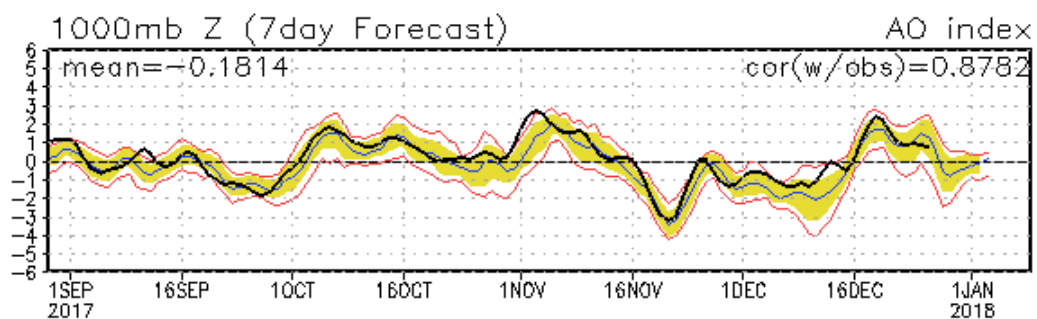
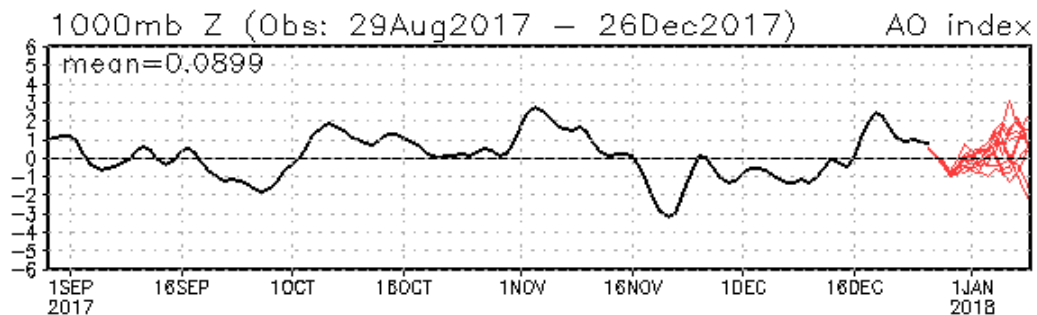


Day 13-15

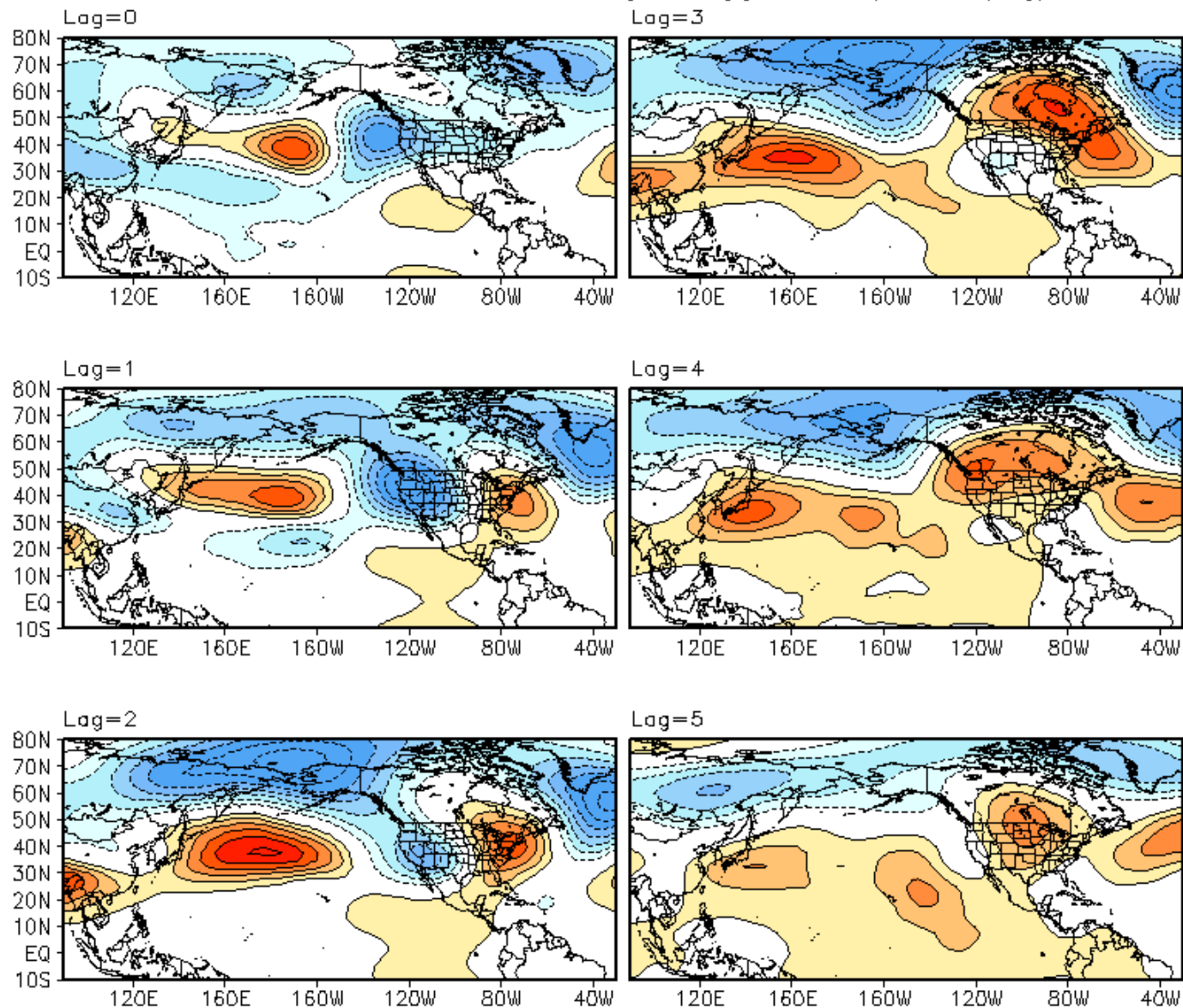


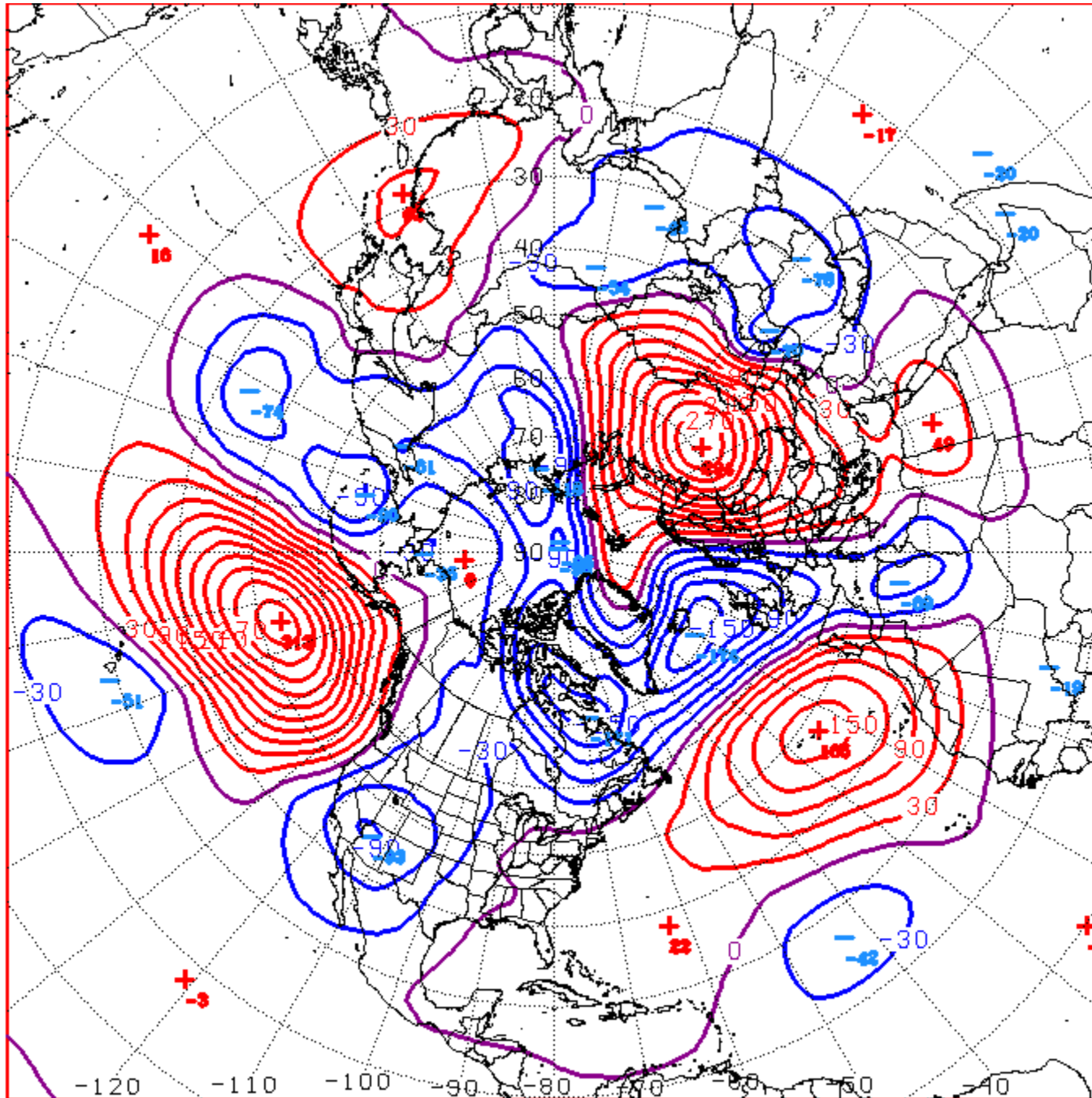
Connections to U.S. Impacts

AO: Observed & ENSM forecasts



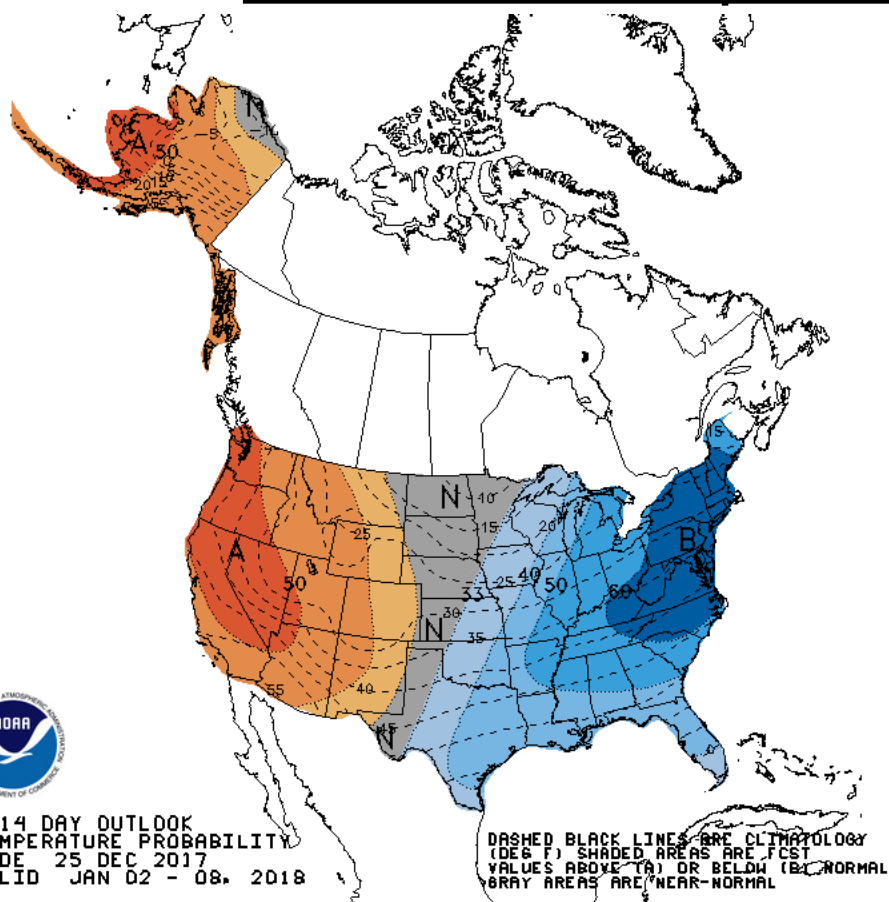
RMM Phase 2 200-hPa Height Lagged Composite (ndj)



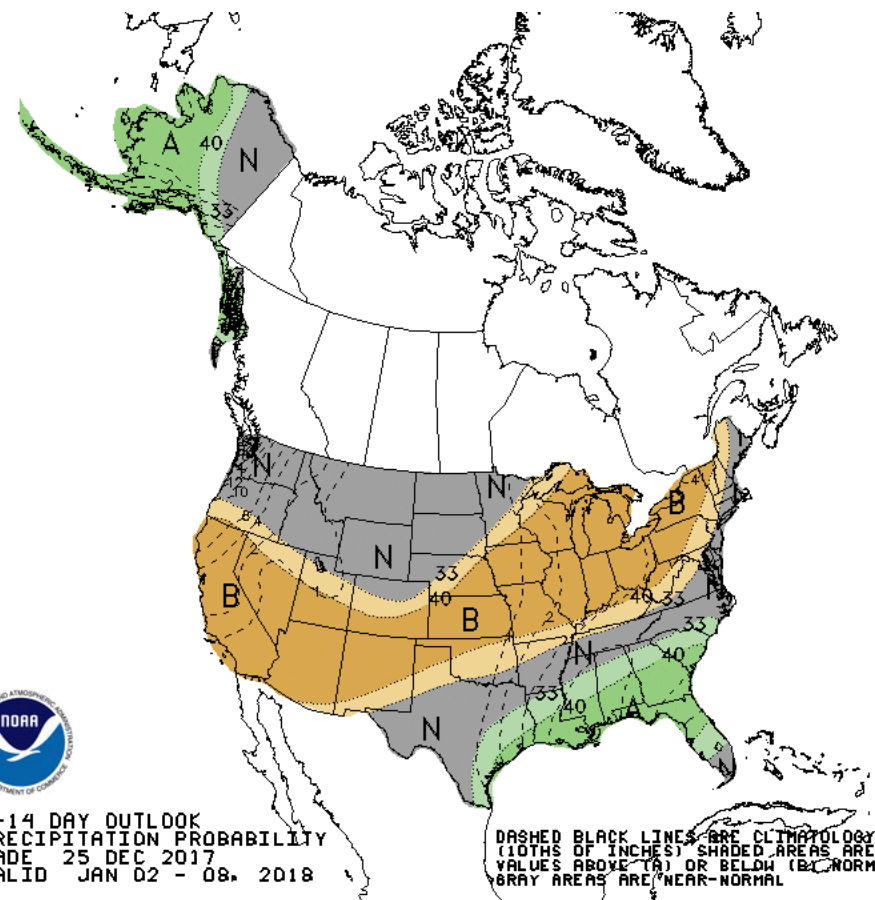
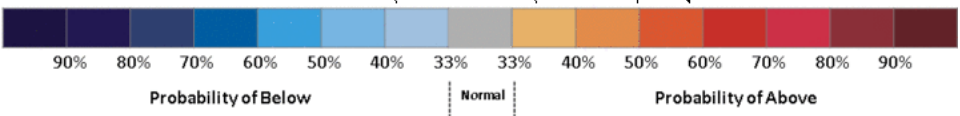


D+11 500 MB ANOMALIES FROM 12Z GFS
 CPC MAP MADE DEC 26 2017 1704 UTC CNTD JAN 06 2018

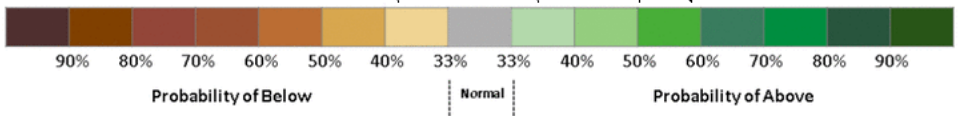
Week 2 – Temperature and Precipitation



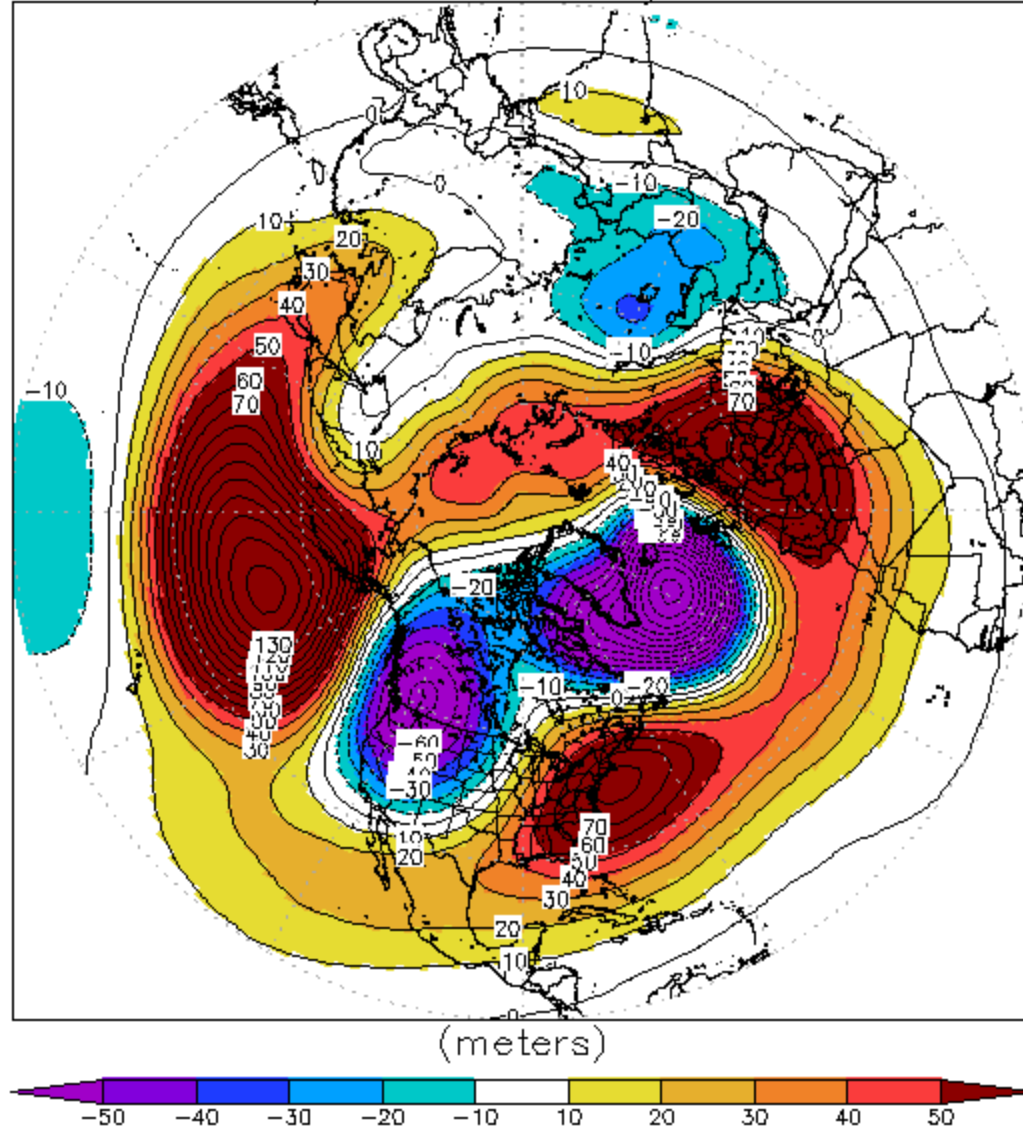
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 25 DEC 2017
VALID JAN 02 - 08, 2018



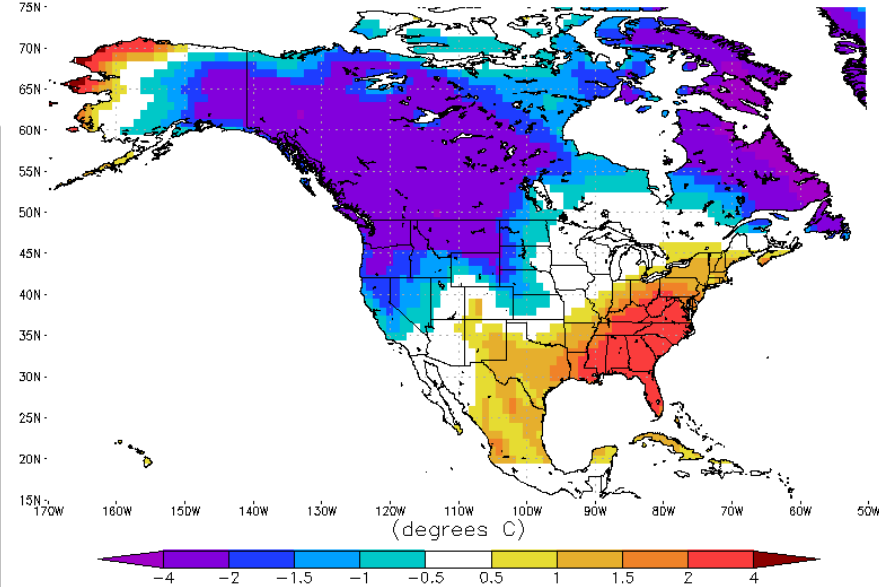
8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 25 DEC 2017
VALID JAN 02 - 08, 2018



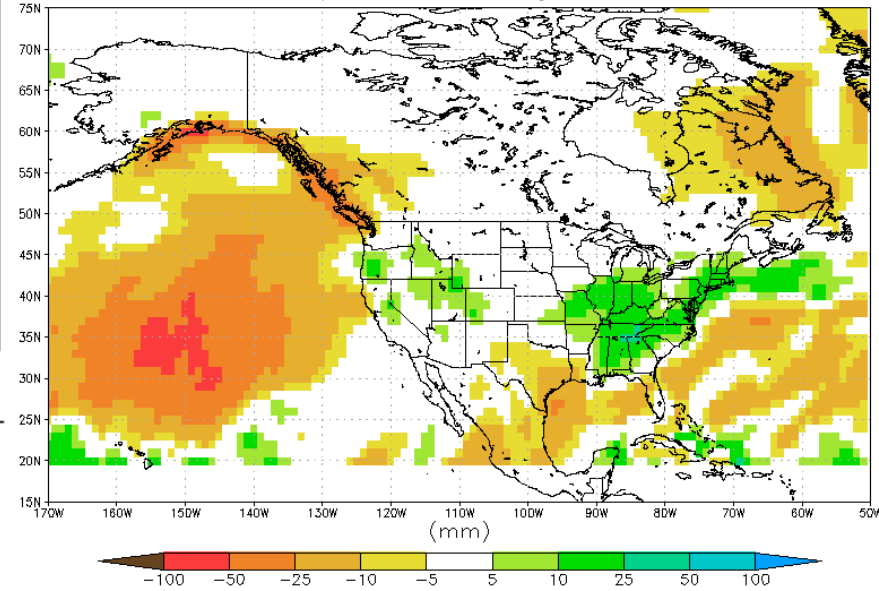
CFS 500hPa Height Anomalies Issued 25Dec2017
 Week-3/4 Forecast Ending 23Jan2018

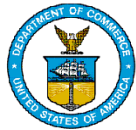


CFS Temperature Anomalies Issued 25Dec2017
 Week-3/4 Forecast Ending 23Jan2018



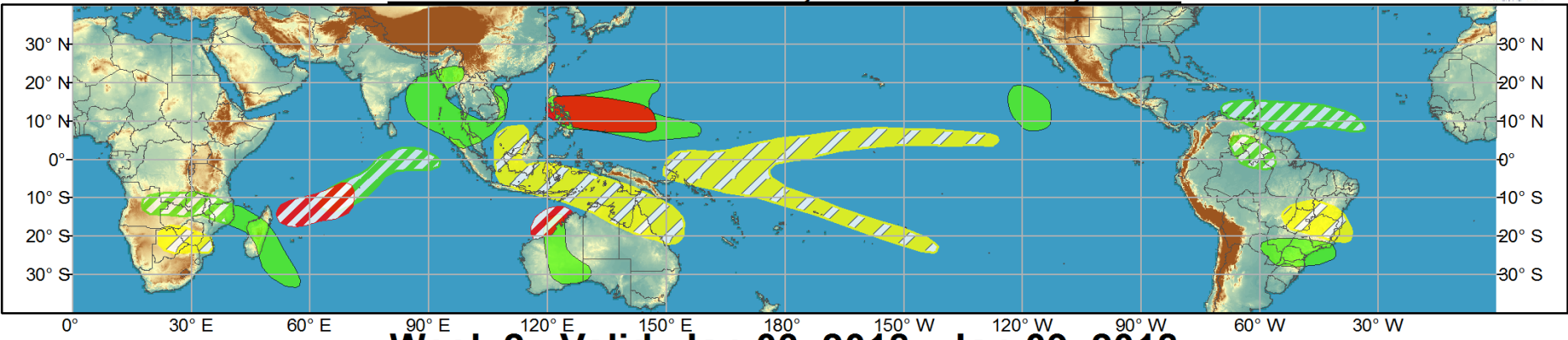
CFS Precipitation Anomalies Issued 25Dec2017
 Week-3/4 Forecast Ending 23Jan2018



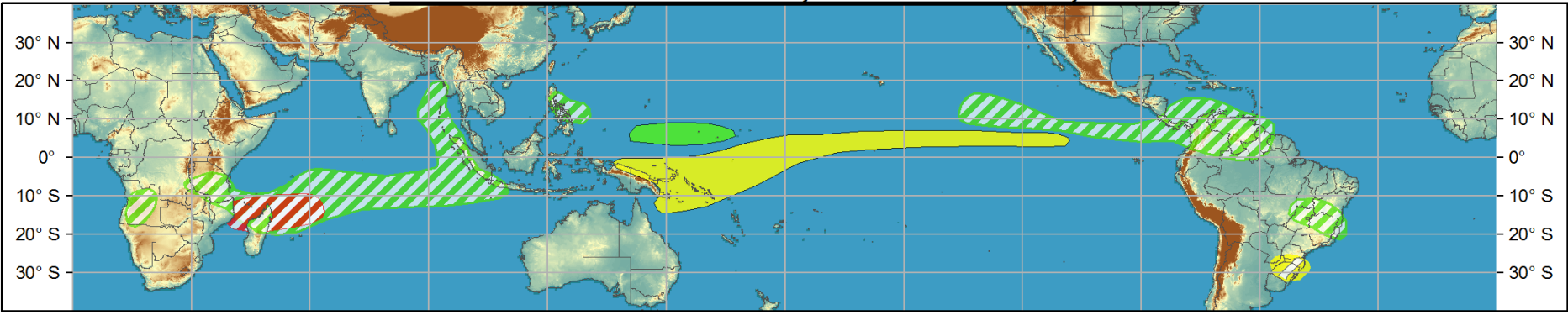


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