

Global Tropics Hazards And Benefits Outlook

01/01/2019

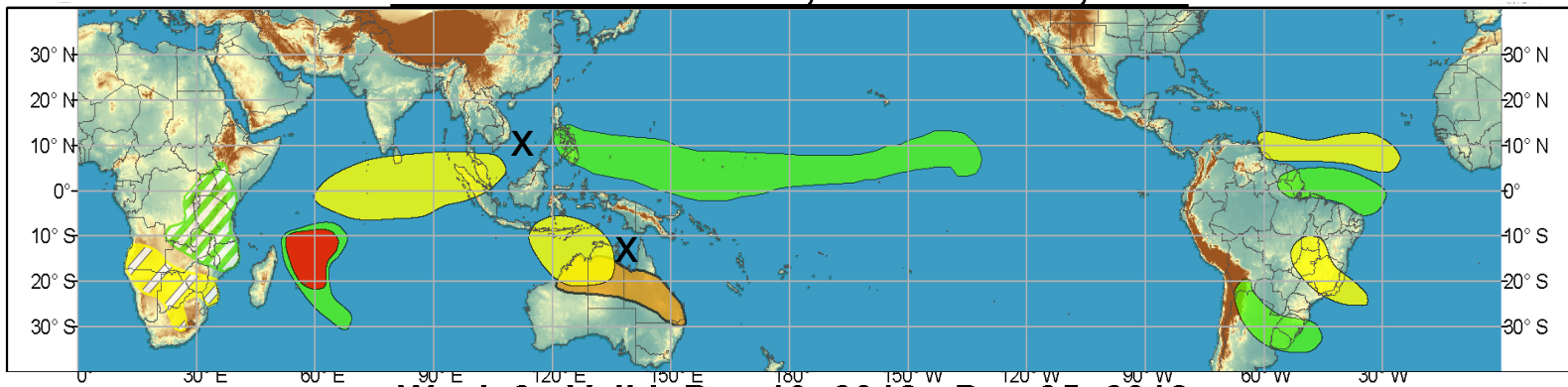
Kyle MacRitchie

Outline

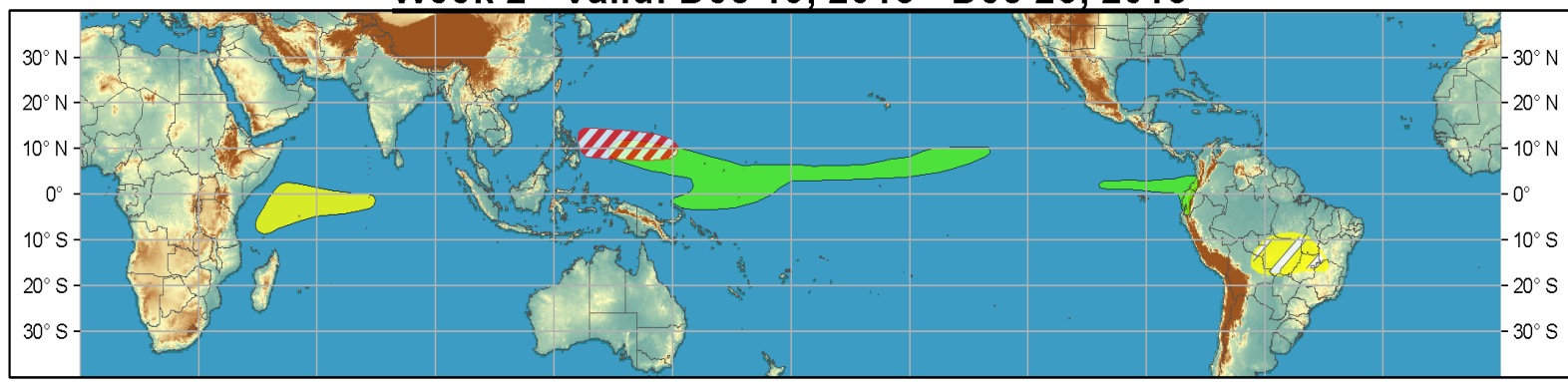
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

Week 1 - Valid: Dec 19, 2018 - Dec 25, 2018



Week 2 - Valid: Dec 19, 2018 - Dec 25, 2018



Synopsis of Climate Modes

ENSO: (December 13, 2018 Update)

- ENSO Alert System Status: [El Niño Watch](#)
- El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~90% chance) and through spring (~60% chance).

MJO and other subseasonal tropical variability:

- The MJO is over the West Pacific and expected to propagate eastward during the next two weeks.
- Strong equatorial Rossby wave activity has slowed the MJO's progression and its projection onto the RMM index has created an unusually strong signal.
- Dynamical models suggest that, broadly speaking, the large-scale tropical flow over the next two weeks will be in-line with what is expected from an MJO in RMM Phases 6 and 7.

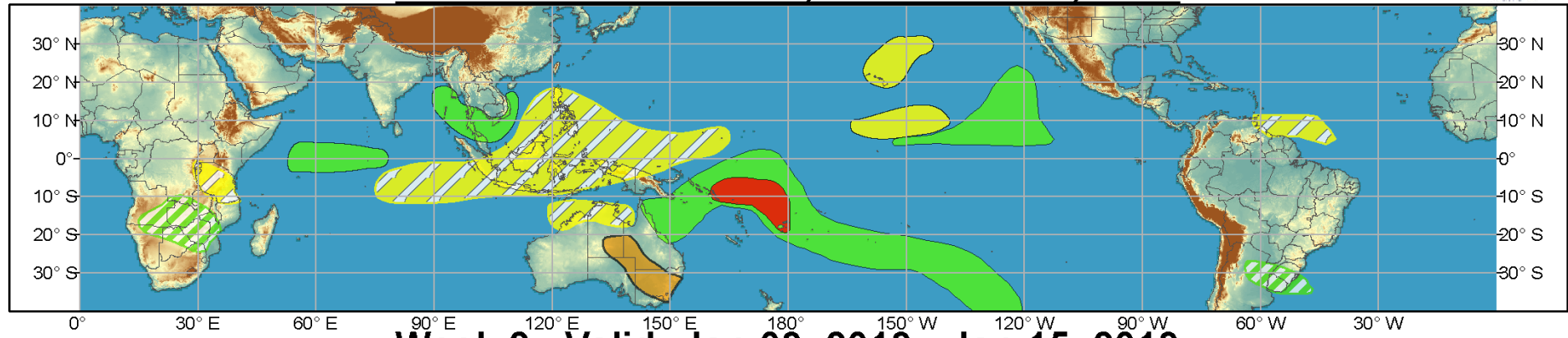
Extratropics:

- MJO in Phase 6-7 would favor warmth over the eastern CONUS and slight cold over the western CONUS.

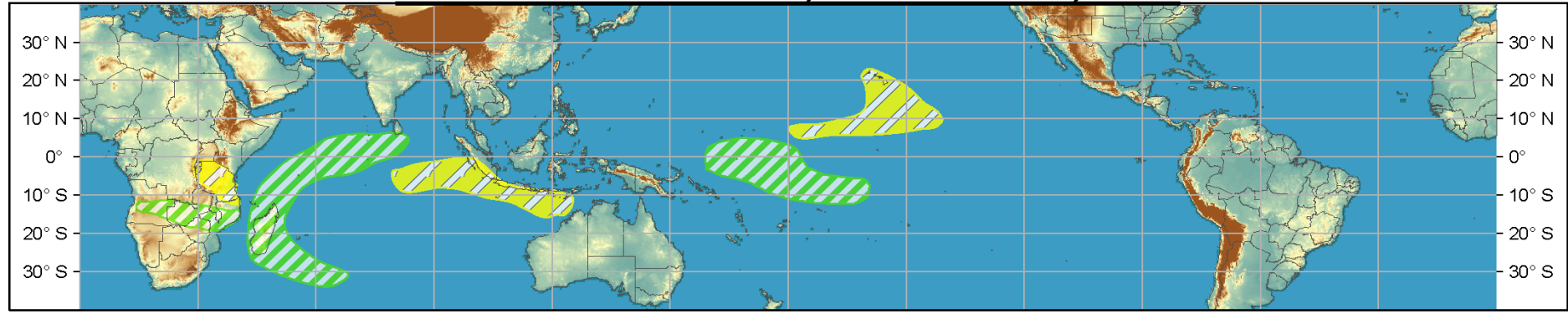


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 02, 2019 - Jan 08, 2019



Week 2 - Valid: Jan 09, 2019 - Jan 15, 2019



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: 01/01/2019

Forecaster: MacRitchie

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

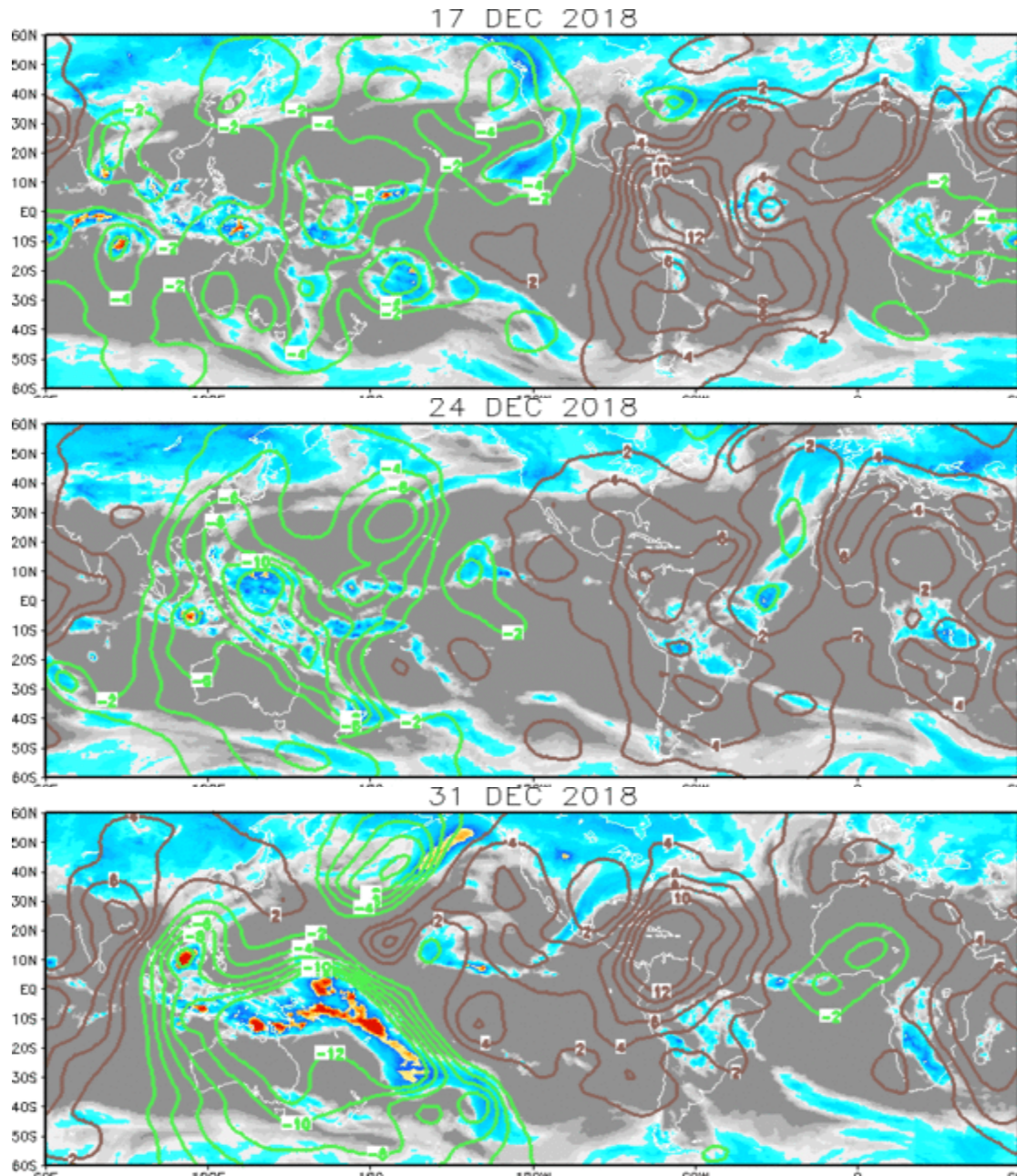
Green: Enhanced Divergence

Brown: Enhanced Convergence

By mid-December, the upper-level field became increasingly consistent with canonical MJO anomalies.

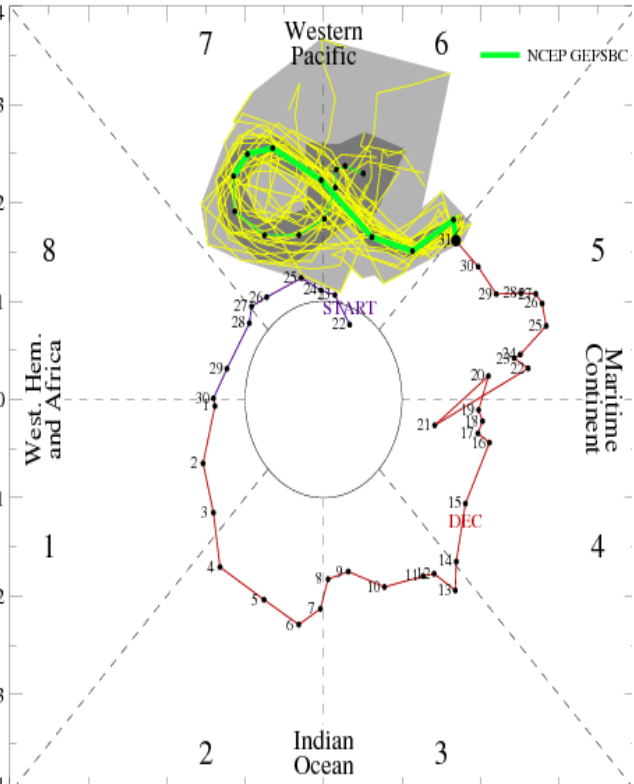
The upper-level field remains organized, with a Wave-1 pattern indicative of continued MJO activity.

Enhanced convection associated with the SPCZ is functioning as an anchor for the upper-level point.



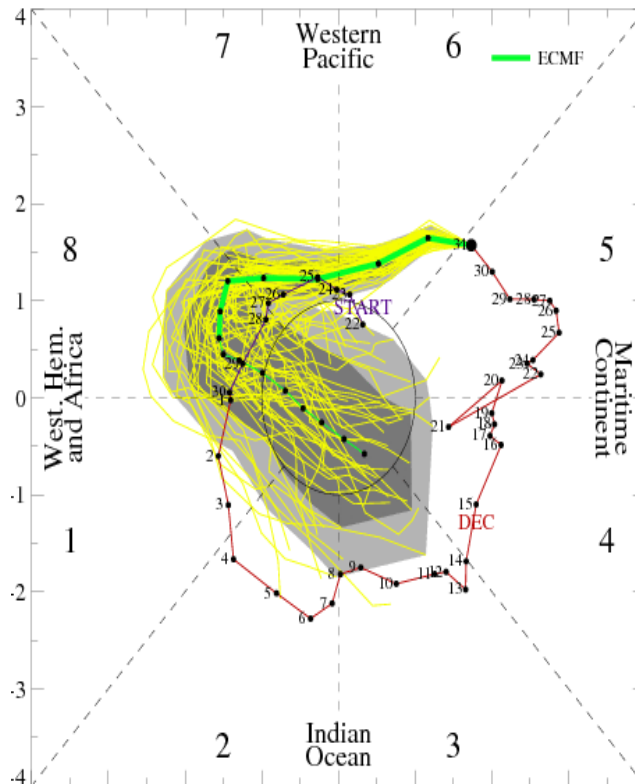
MJO Observation/Forecast

[RMM1, RMM2] forecast for Jan-01-2019 to Jan-15-2019



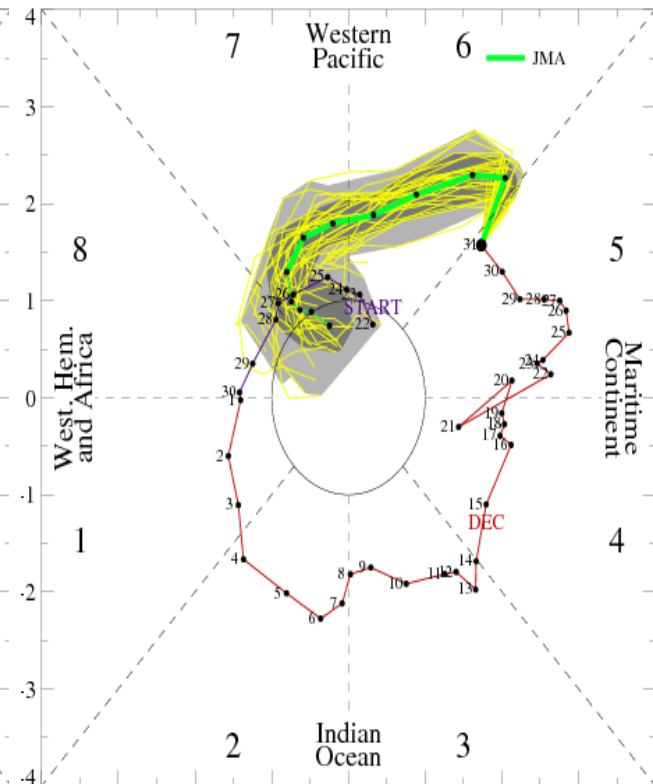
GEFS

MJO Index Forecast for 01Jan2019-15Jan2019



ECMWF

MJO Index Forecast for 01Jan2019-09Jan2019



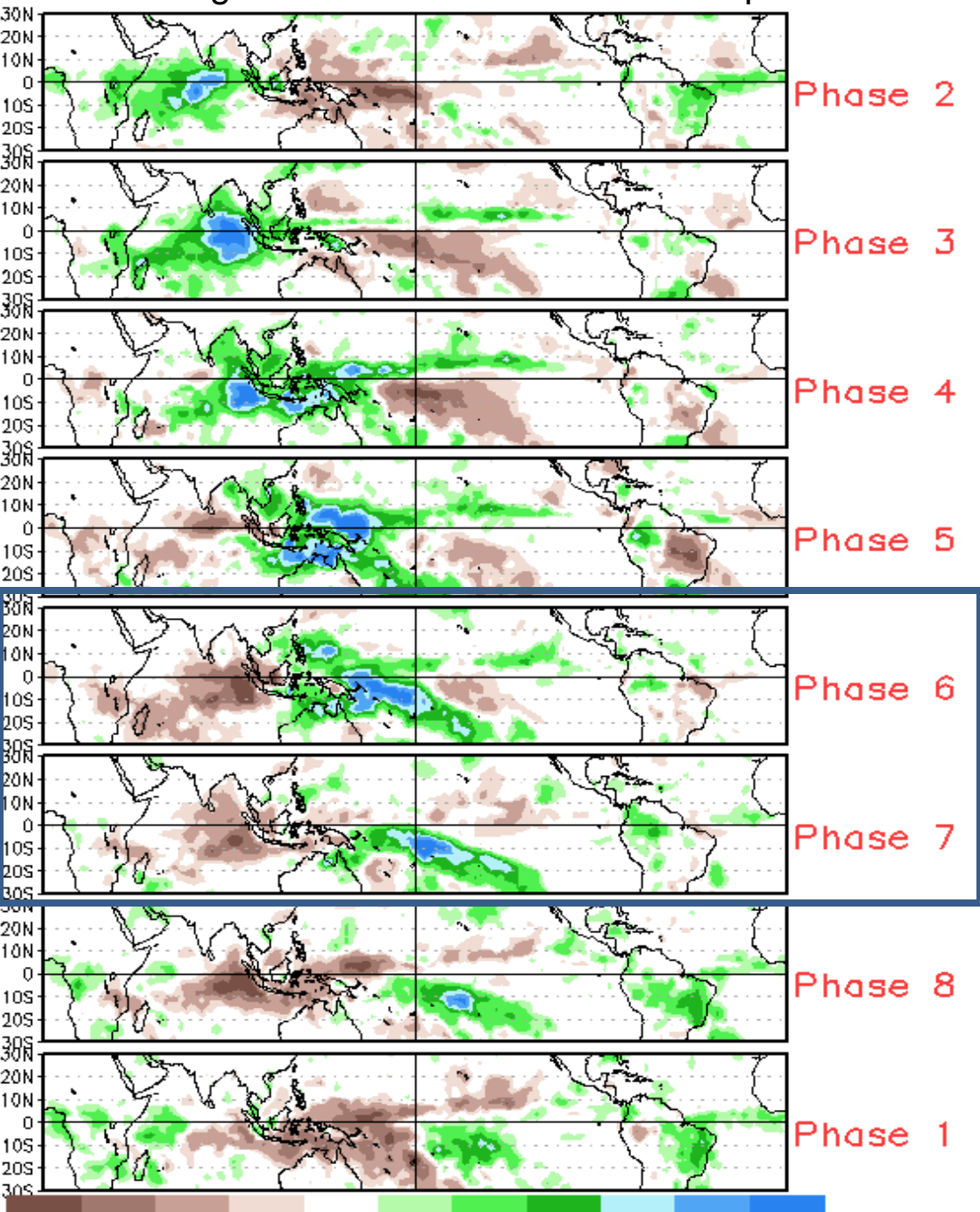
JMA

GEFS – High amplitude MJO that stalls in the Western Pacific during Week-2.

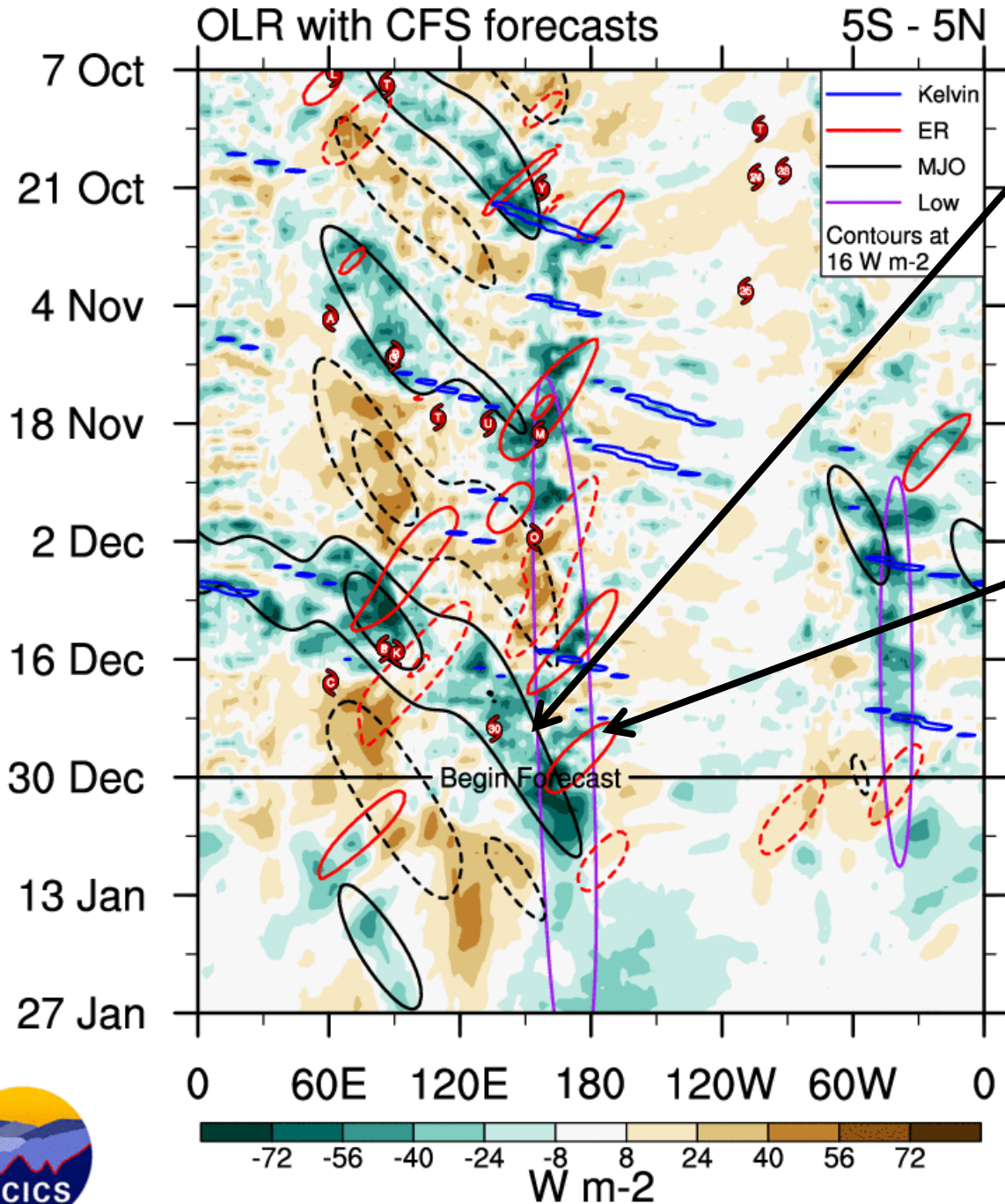
ECMWF – Lower amplitude MJO that propagates quickly over the Western Pacific before dissipating late in Week-2.

JMA – Similar to GEFS, the MJO is forecast to stall and weaken over the Western Pacific.

Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

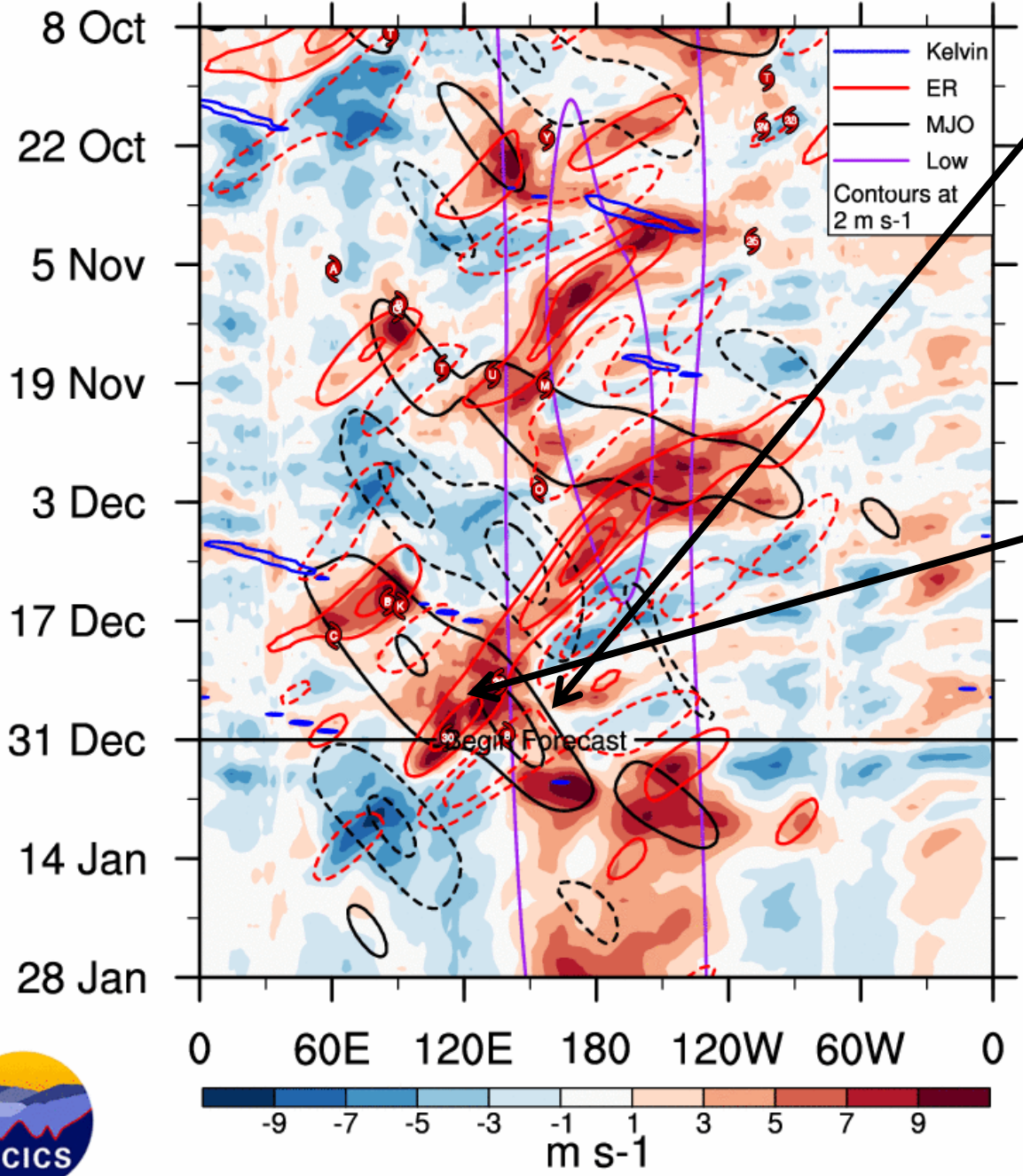


Strong **MJO** enters the Pacific and stalls near the Dateline.

Equatorial Rossby wave is weak in OLR but stronger in wind field.



UWIND850 with CFS forecasts 5S - 5N

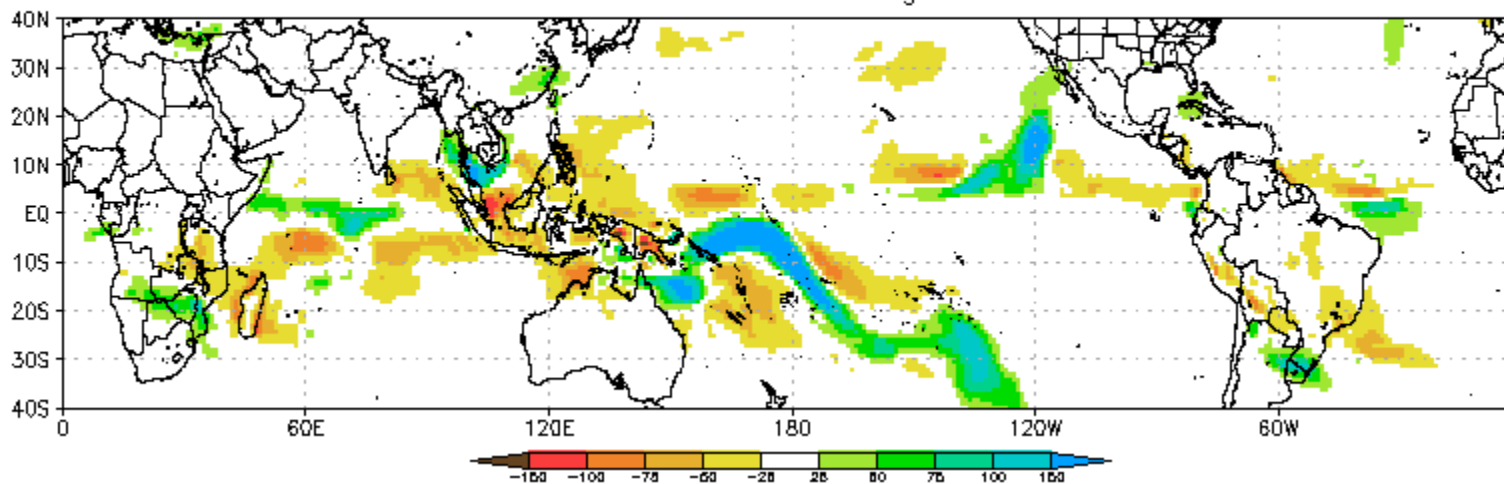


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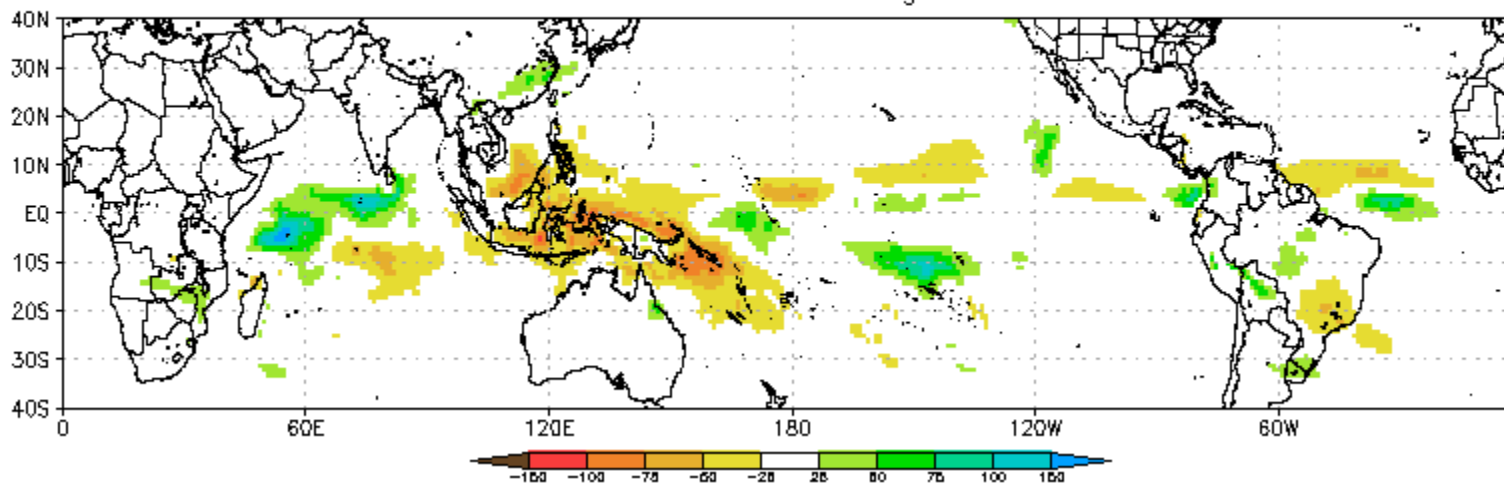
Equatorial Rossby wave is weak in OLR but stronger in wind field.



CFS Precipitation Anomalies (mm) Issued 31Dec2018
Week-1 Forecast Ending 08Jan2019

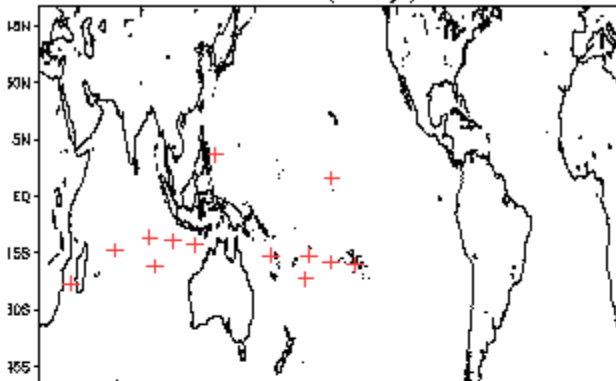


CFS Precipitation Anomalies (mm) Issued 31Dec2018
Week-2 Forecast Ending 15Jan2019

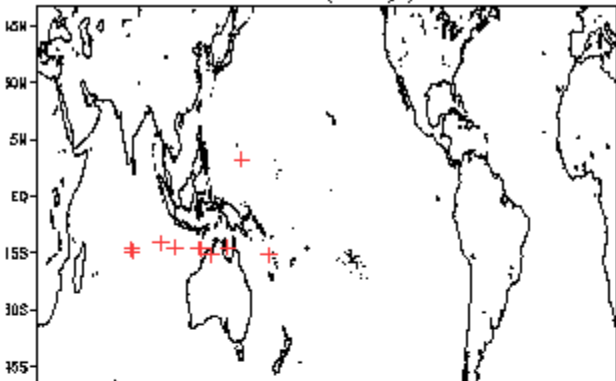


January Tropical Storm Formation by MJO phase

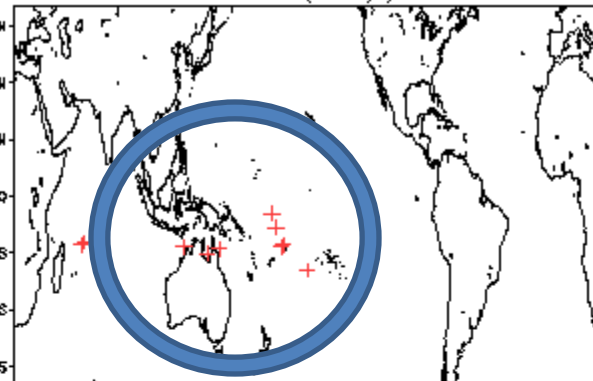
Phase 1 (67 days) 14 storms



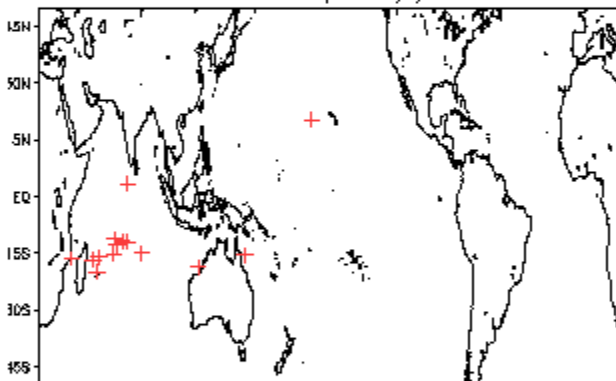
Phase 4 (69 days) 11 storms



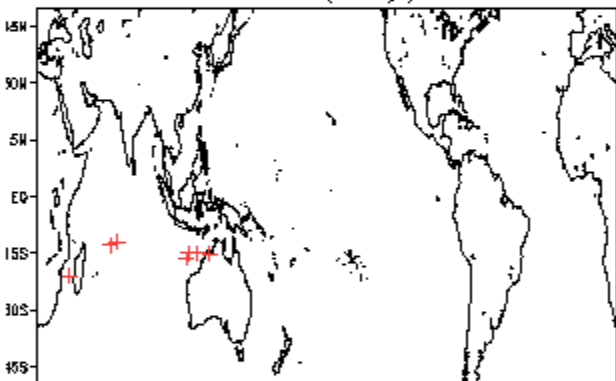
Phase 7 (81 days) 11 storms



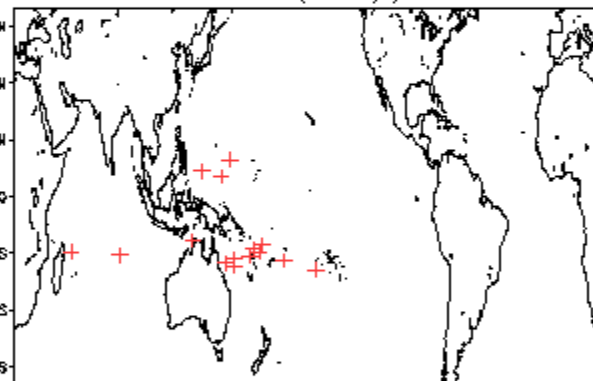
Phase 2 (101 days) 15 storms



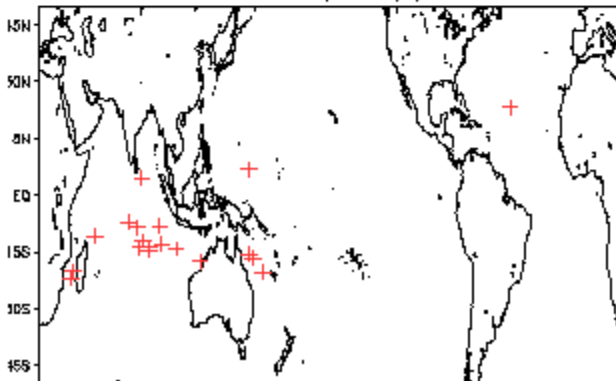
Phase 5 (67 days) 8 storms



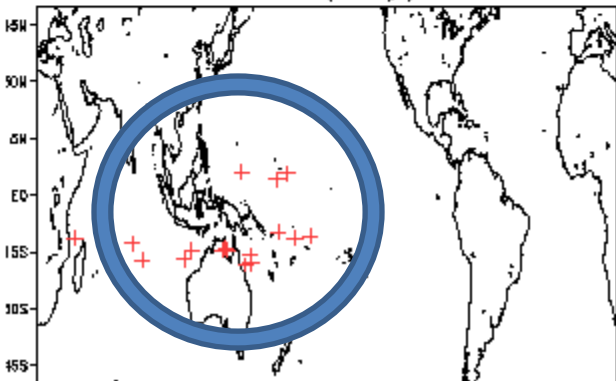
Phase 8 (105 days) 16 storms



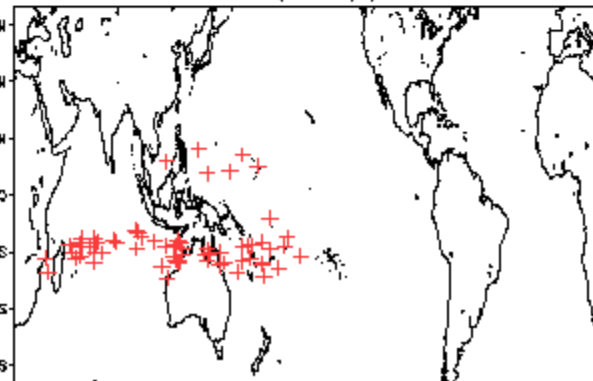
Phase 3 (112 days) 20 storms



Phase 6 (88 days) 18 storms

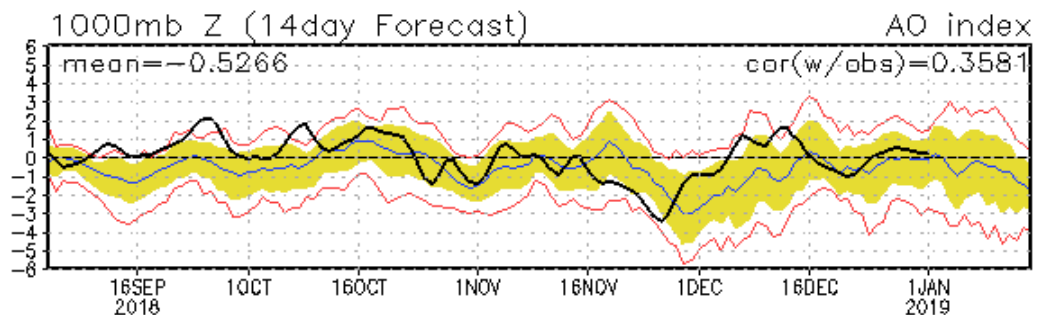
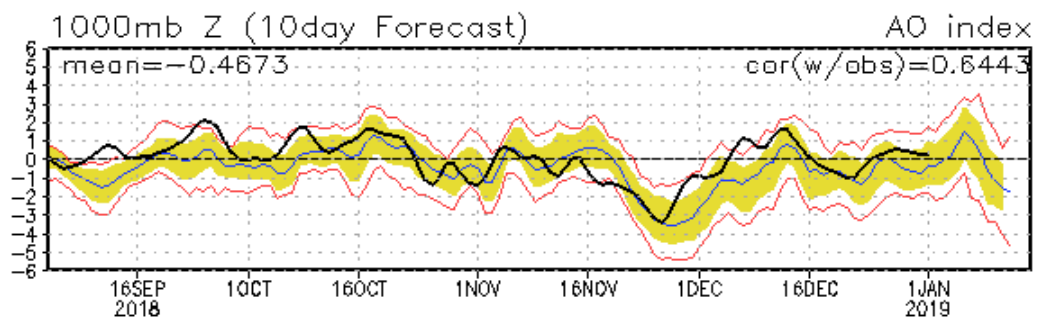
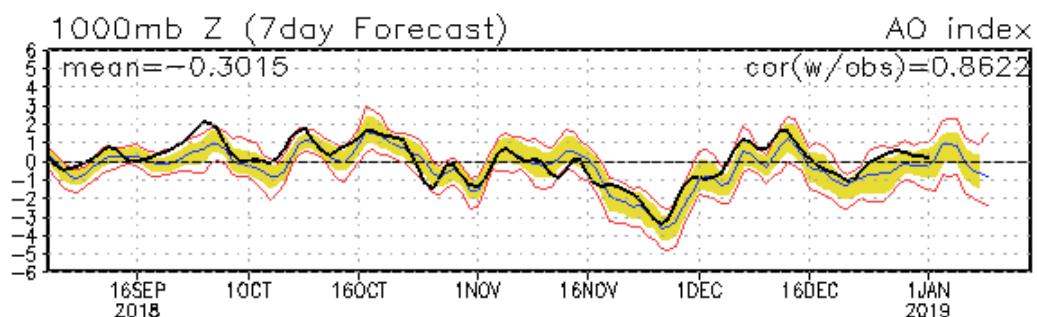
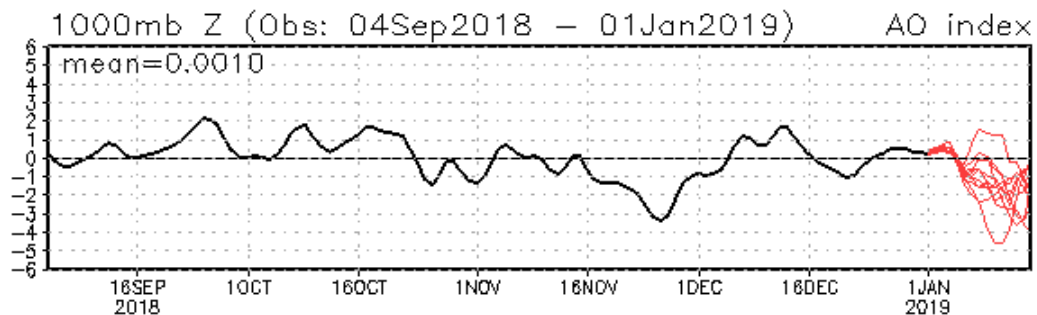


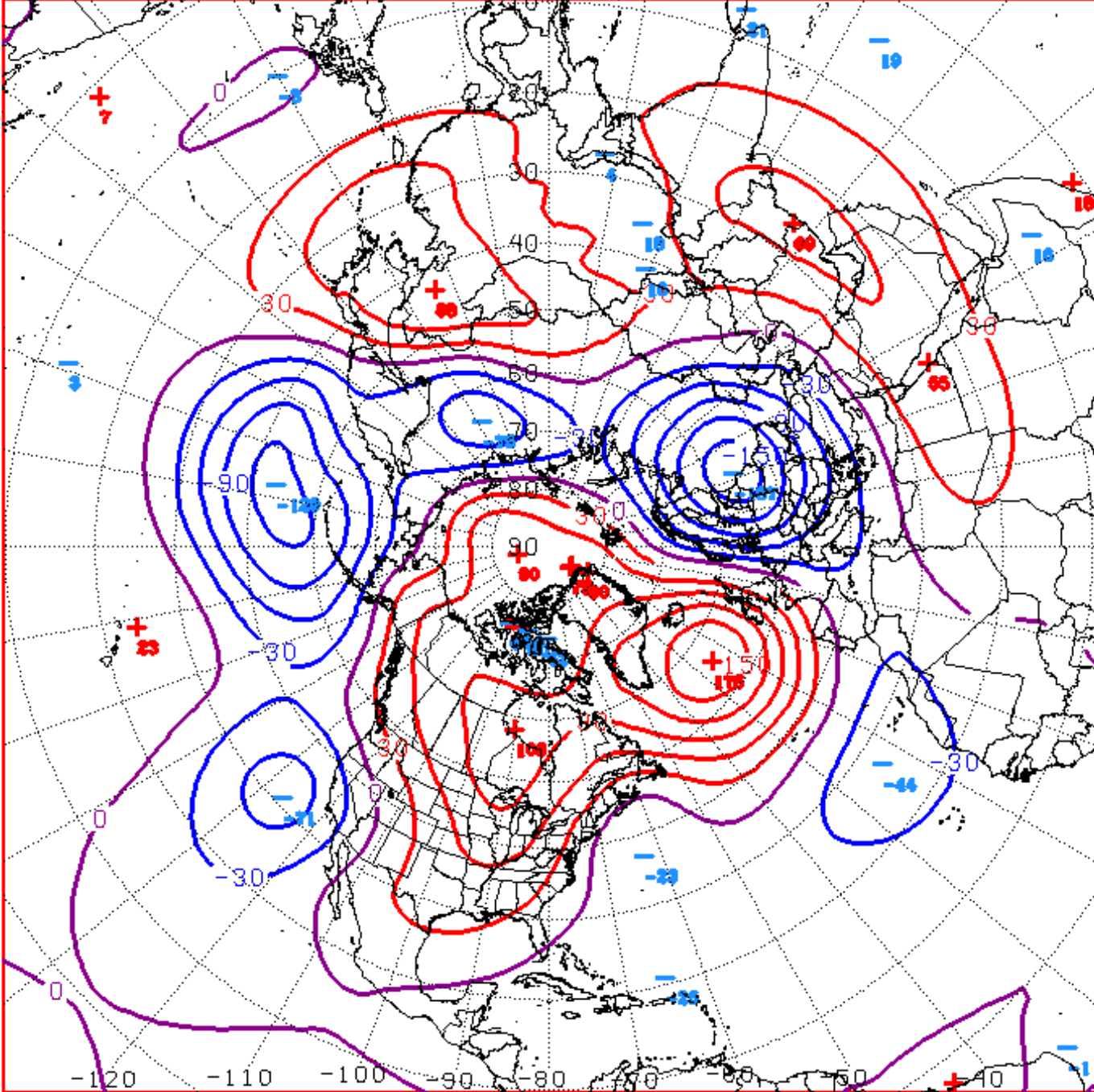
Null (364 days) 67 storms



Connections to U.S. Impacts

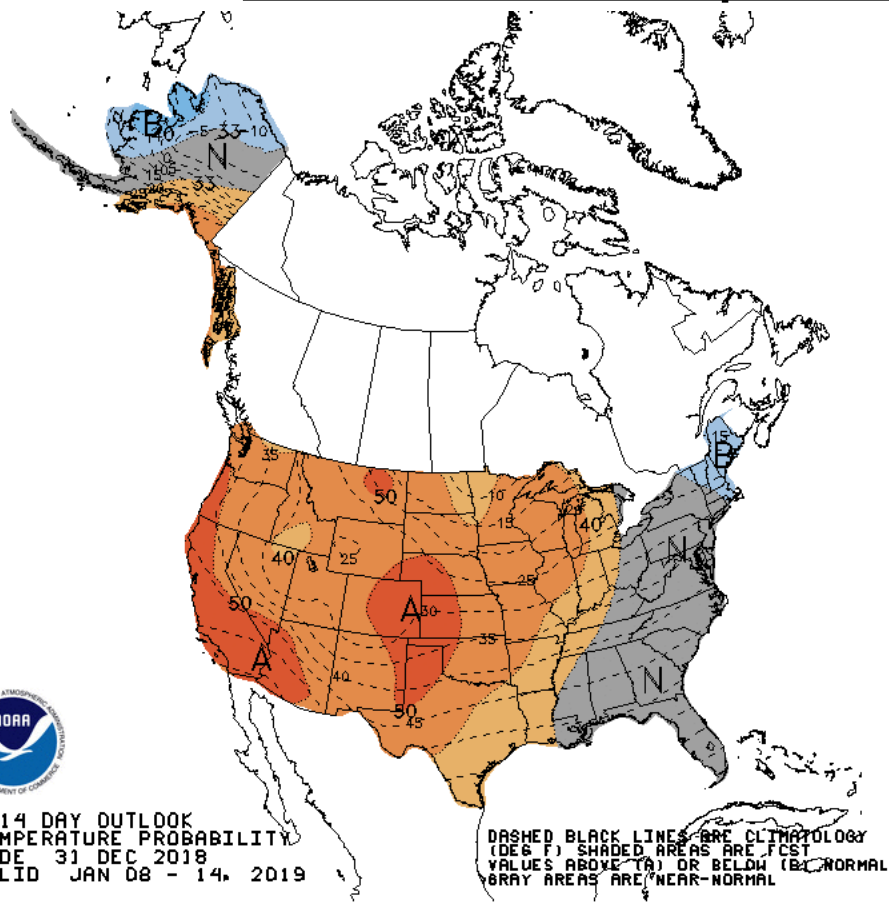
AO: Observed & ENSM forecasts





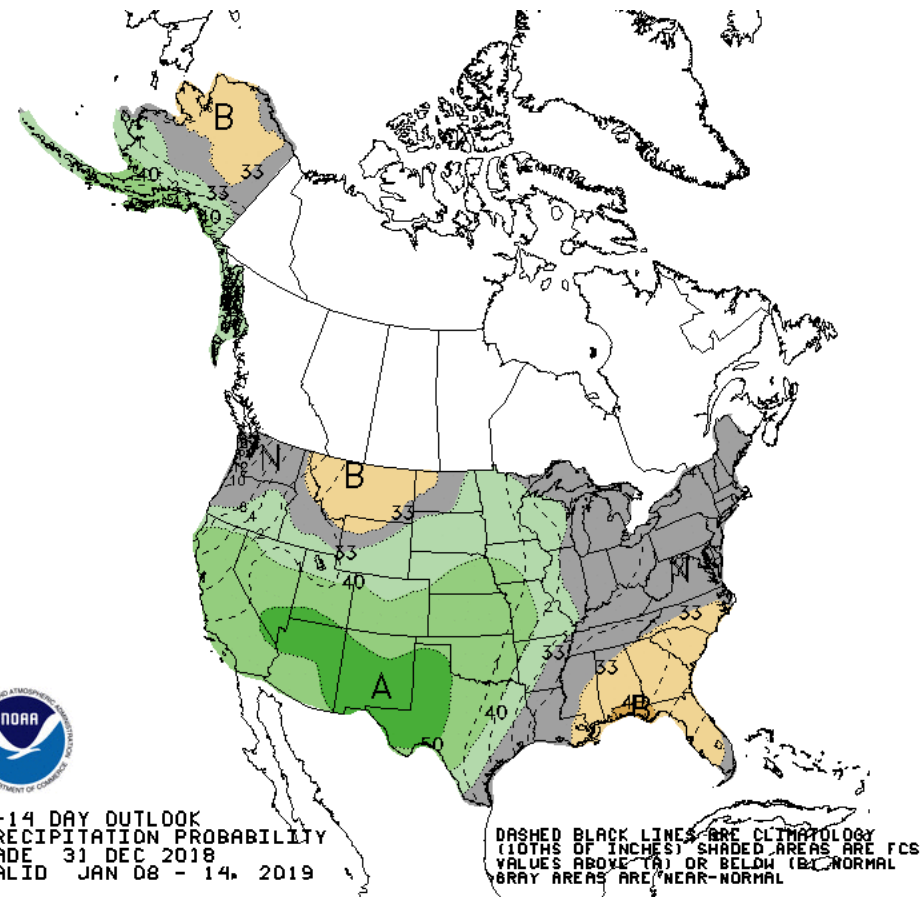
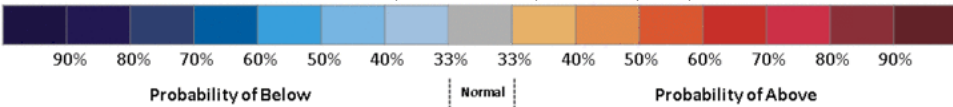
D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE JAN 01 2019 1304 UTC CNTD JAN 12 2019

Week 2 – Temperature and Precipitation



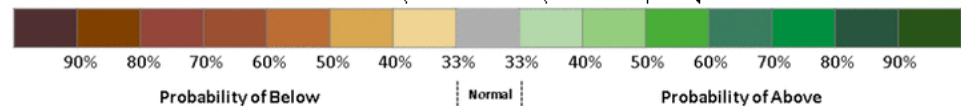
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 31 DEC 2018
VALID JAN 08 - 14, 2019

DASHED BLACK LINES ARE CLIMATOLOGY (DEG F). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 31 DEC 2018
VALID JAN 08 - 14, 2019

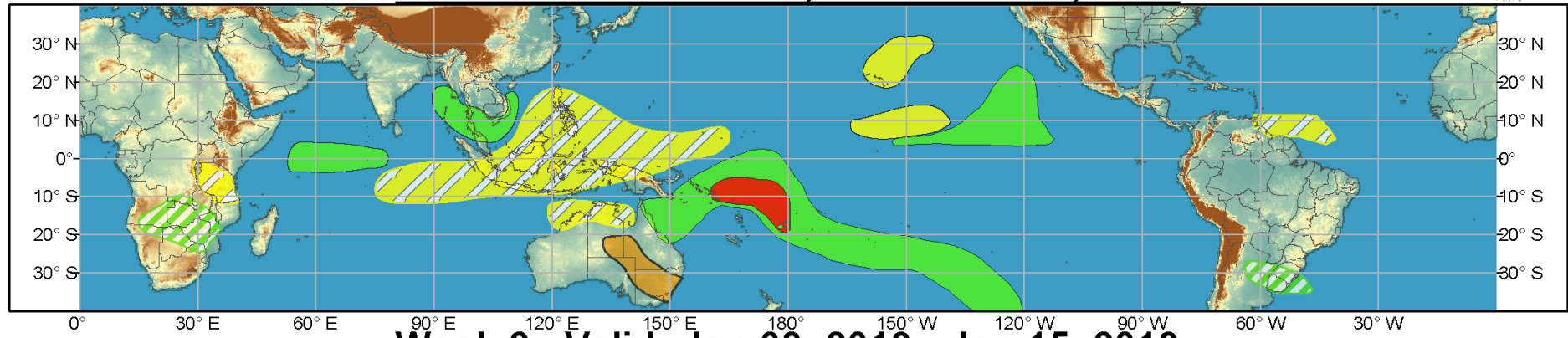
DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



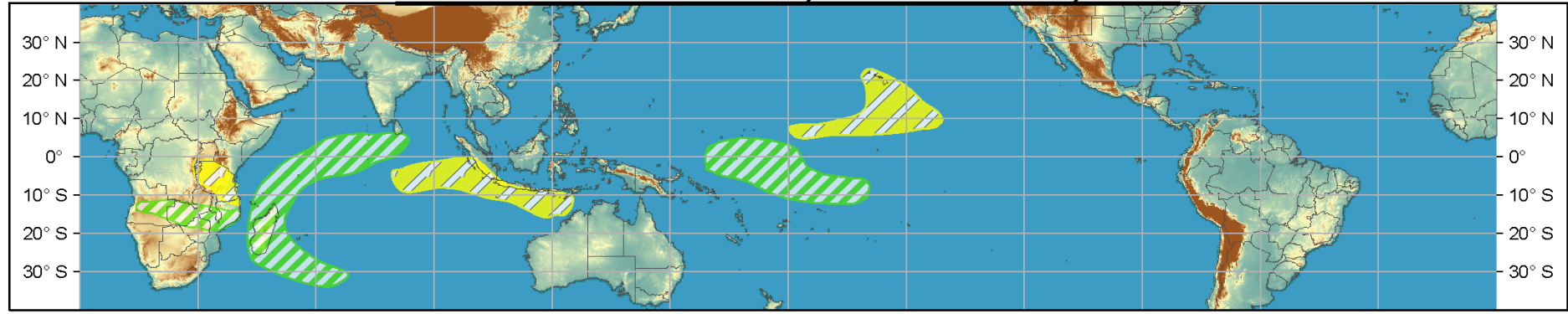


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