

Global Tropics Hazards And Benefits Outlook

12/24/2019

Adam Allgood

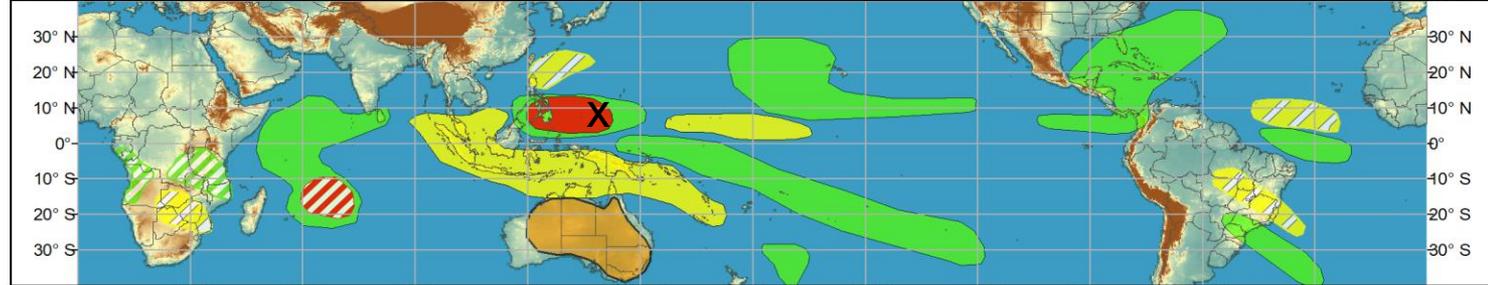
Outline

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 18, 2019 - Dec 24, 2019

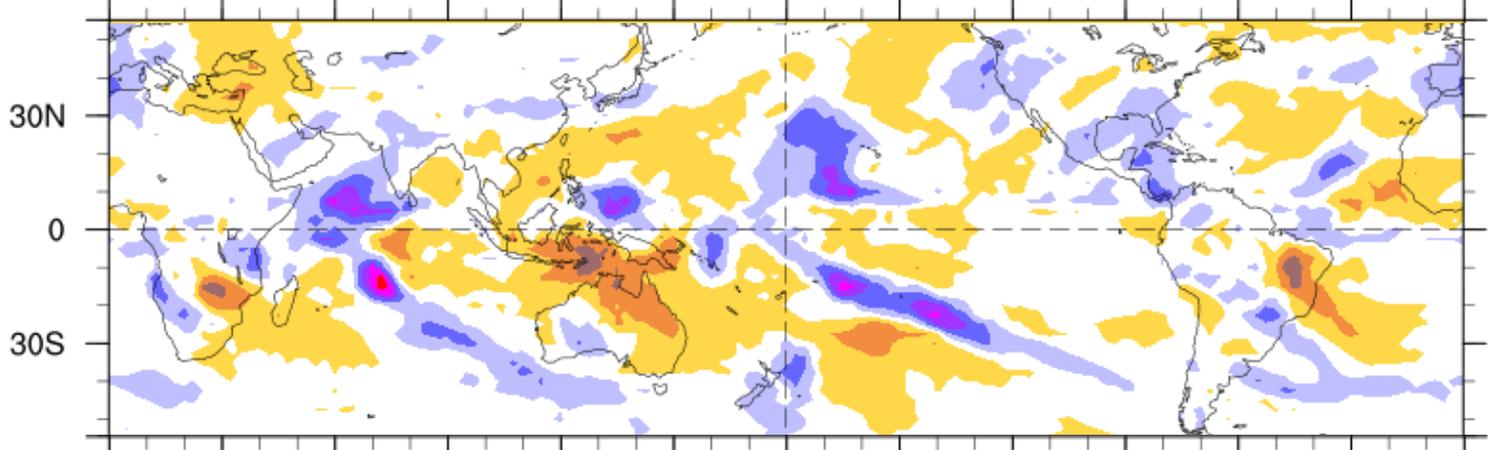


Week 2 - Valid: Dec 18, 2019 - Dec 24, 2019



7-Day Average OLR Anomaly

2019/12/16 - 2019/12/22



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (December 12, 2019 Update)

- ENSO Alert System Status: Not Active
- ENSO-neutral is favored during the Northern Hemisphere winter 2019-20 (70% chance), continuing through spring 2020 (~65% chance).

MJO and other subseasonal tropical variability:

- The MJO remained weak, with little convective footprint, but there is evidence of an eastward propagating signal in the upper level wind field, now over the West Pacific.
- Dynamical models show an amplifying MJO RMM index signal over the West Pacific during Week-1, but the GEFS and ECMWF reverse the signal during Week-2 with a quick return to the Maritime Continent.
- Potential tropical cyclone activity may be contributing to the reversal of the index

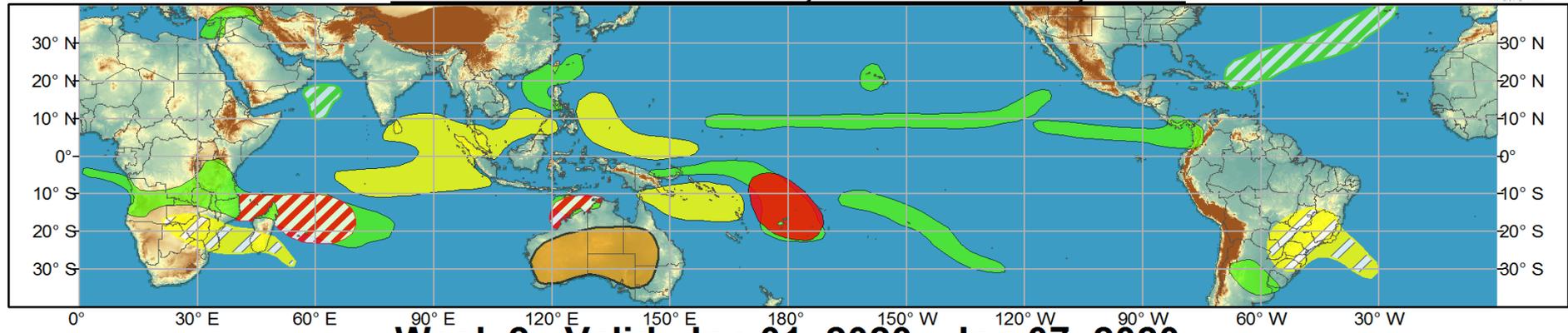
Extratropics:

- Due to the lack of a clear convective signal associated with the MJO and the highly uncertain dynamical model forecasts, the MJO is not anticipated to play a role in the evolution of the extratropical circulation. Dynamical models favor Arctic air invading the Western Hemisphere, but there is no clear mechanism for sustained Arctic outbreaks into the CONUS.

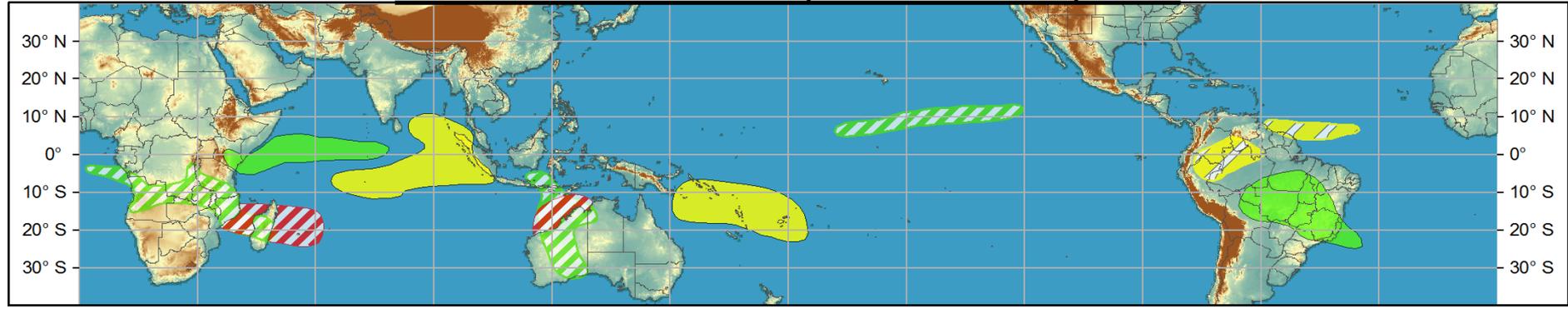


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 25, 2019 - Dec 31, 2019



Week 2 - Valid: Jan 01, 2020 - Jan 07, 2020



Produced: 12/24/2019
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.

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IR Satellite & 200-hpa Velocity Potential Anomalies

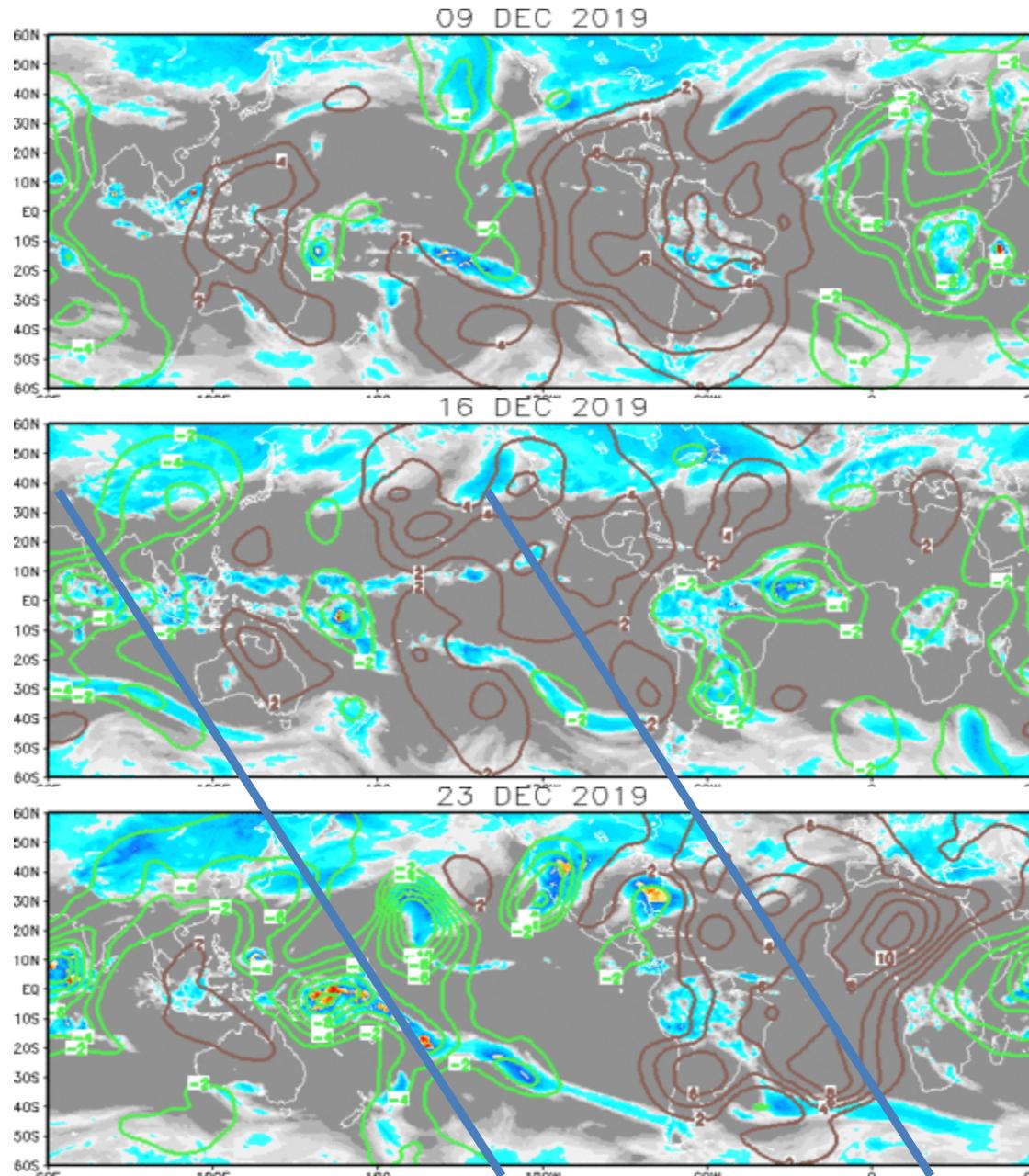
Green: Enhanced Divergence

Brown: Enhanced Convergence

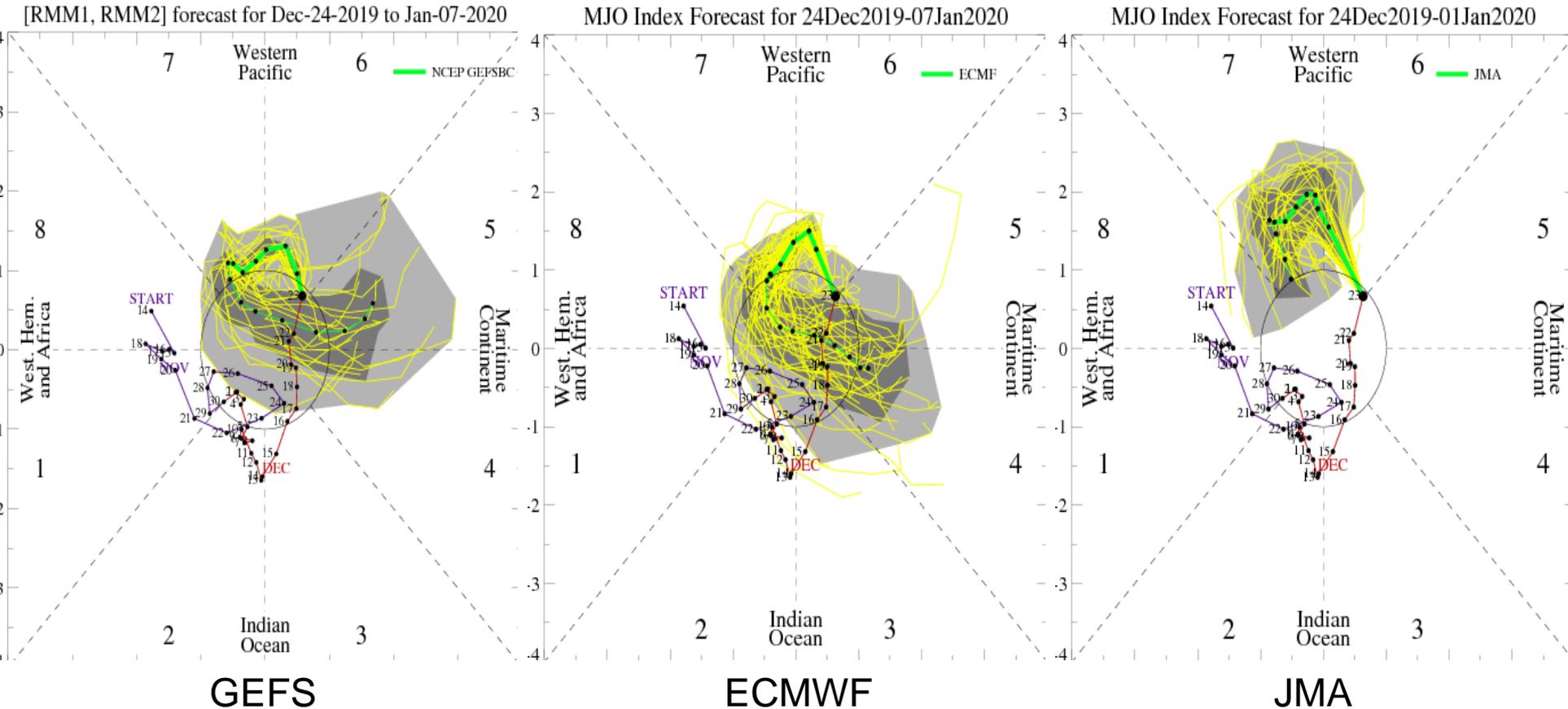
Upper-level pattern reflective of a response to the ongoing positive IOD.

Notable eastward shift in the upper-level VP anomalies over the Indian Ocean as the IOD began to weaken.

Eastward propagation of the upper-level VP anomalies suggestive of an intraseasonal signal, though the IOD response continues.



MJO Observation/Forecast

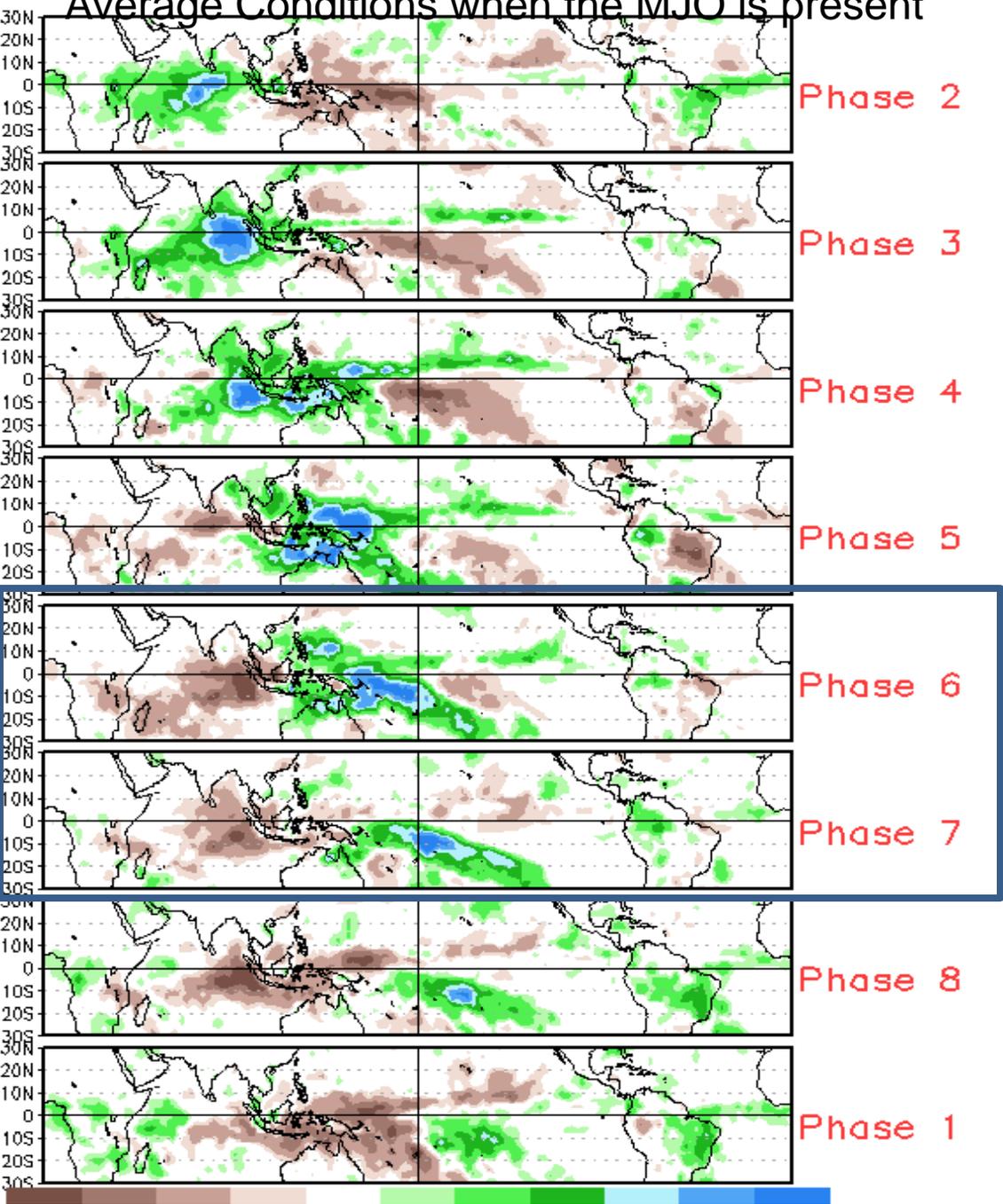


All models show some signal emerging over the Pacific.

The GEFS and ECMWF rapidly weaken the signal by Week-2 and return it to the Maritime Continent (TC activity near the Kimberley Coast?)

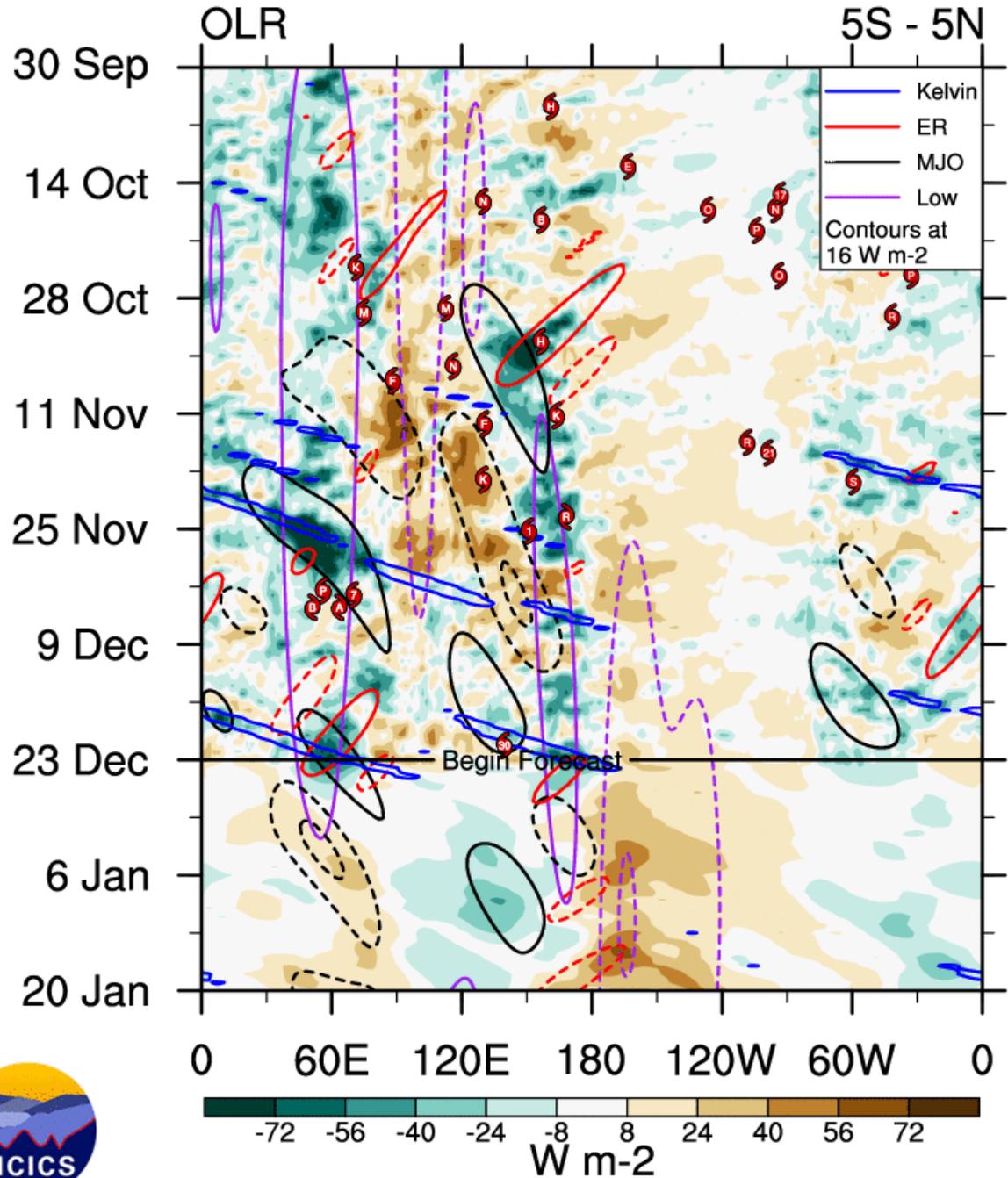
The JMA is more consistent with an MJO event.

Average Conditions when the MJO is present

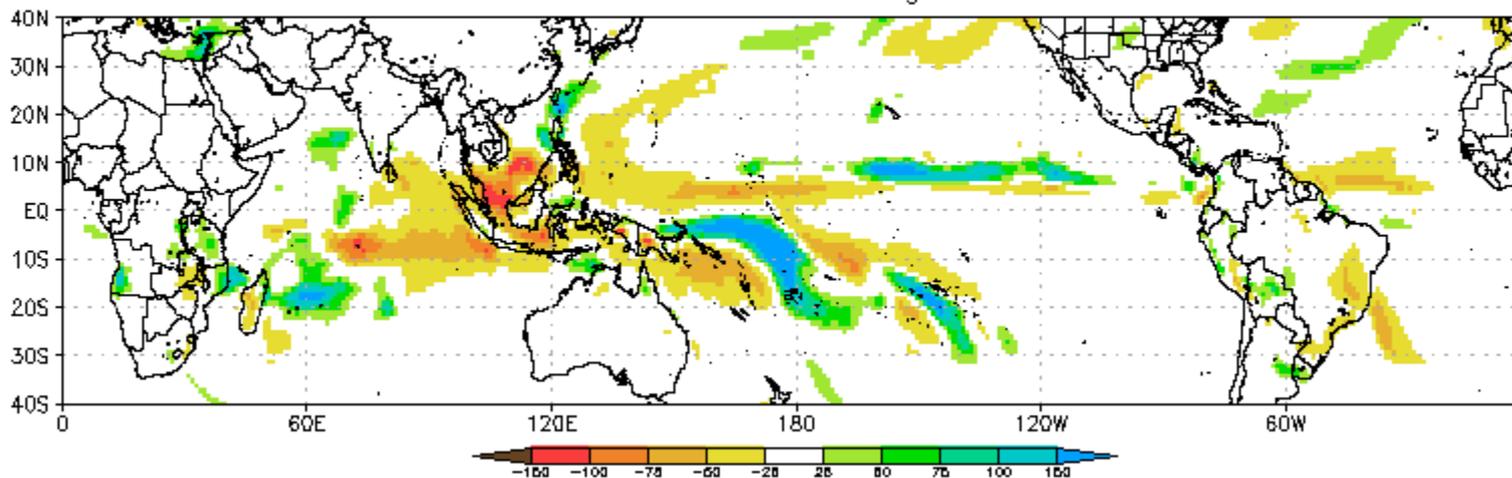


CAVEAT: These panels are representative of robust MJO events.

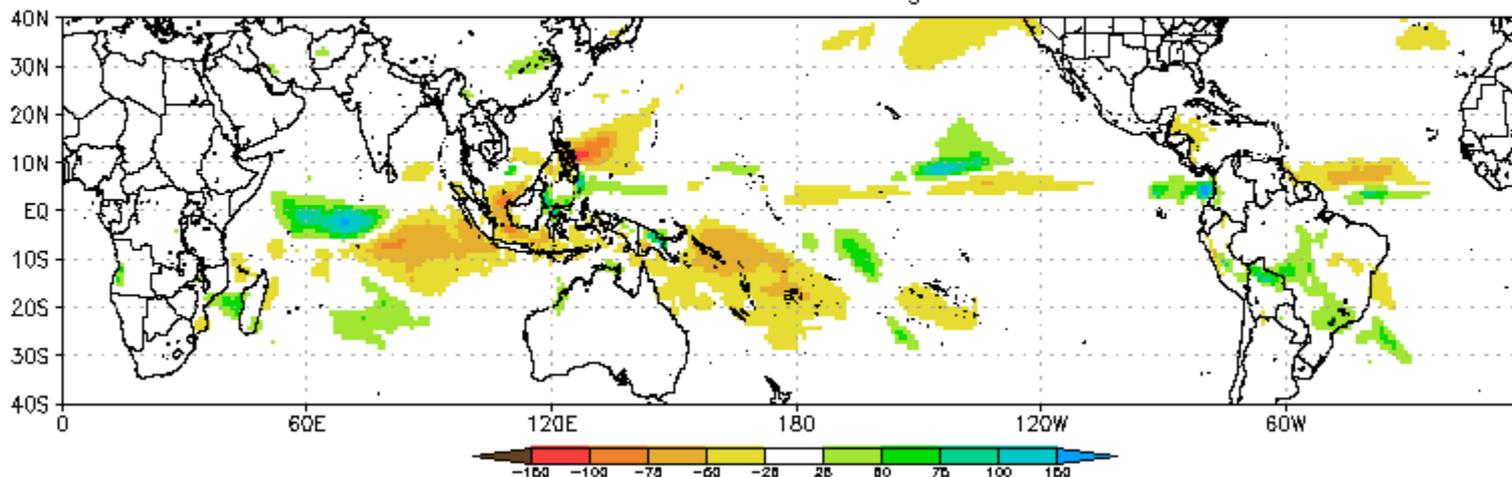
IOD convective anomalies weakened in mid-December, but convection over the western IO increased recently.



CFS Precipitation Anomalies (mm) Issued 23Dec2019
Week-1 Forecast Ending 31Dec2019

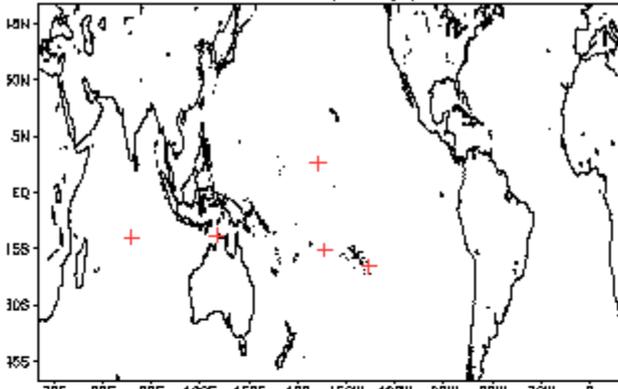


CFS Precipitation Anomalies (mm) Issued 23Dec2019
Week-2 Forecast Ending 07Jan2020

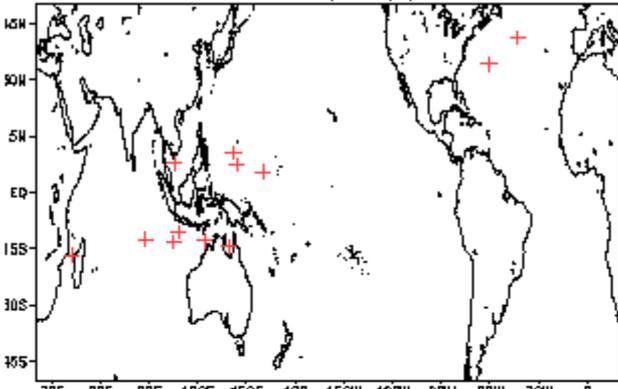


December Tropical Storm Formation by MJO phase

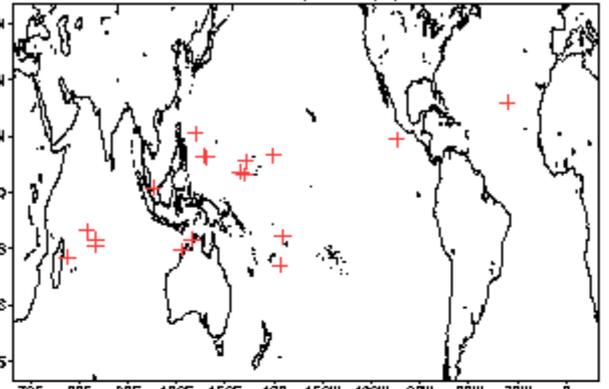
Phase 1 (48 days) 7 storms



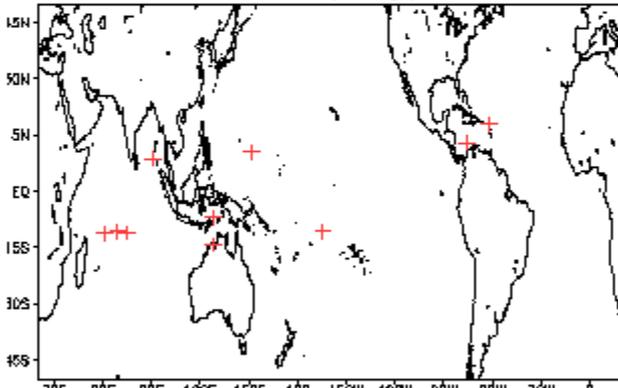
Phase 4 (72 days) 13 storms



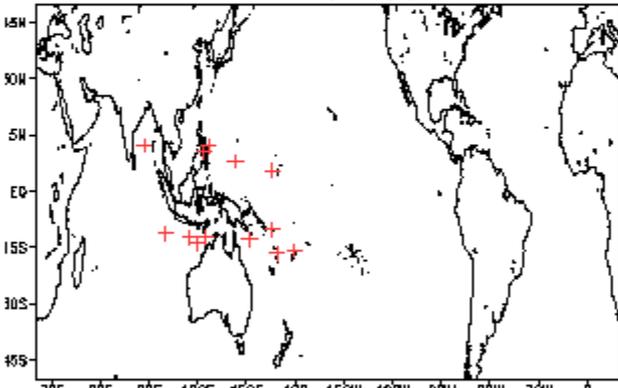
Phase 7 (103 days) 19 storms



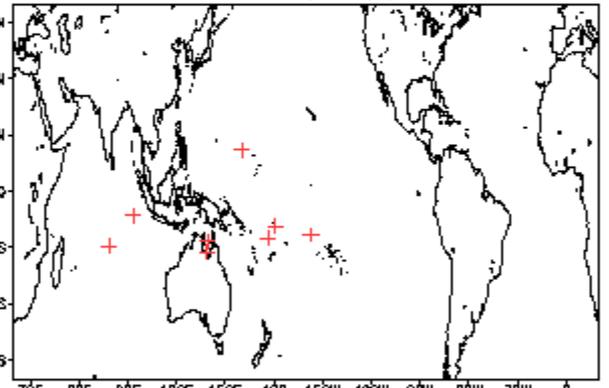
Phase 2 (67 days) 11 storms



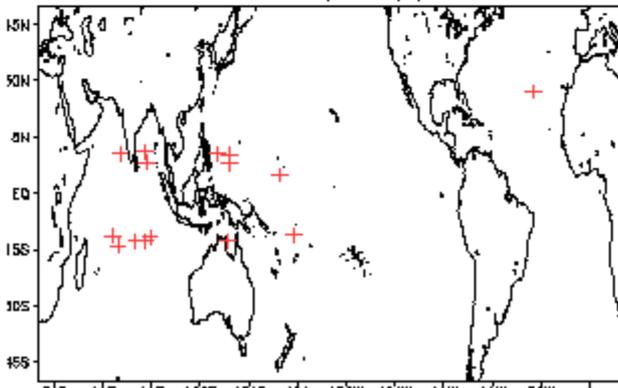
Phase 5 (73 days) 14 storms



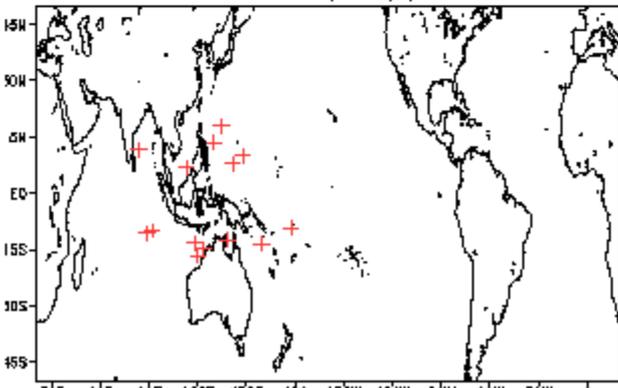
Phase 8 (76 days) 9 storms



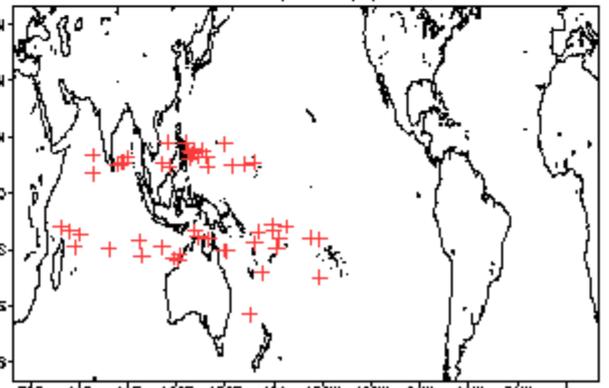
Phase 3 (101 days) 16 storms



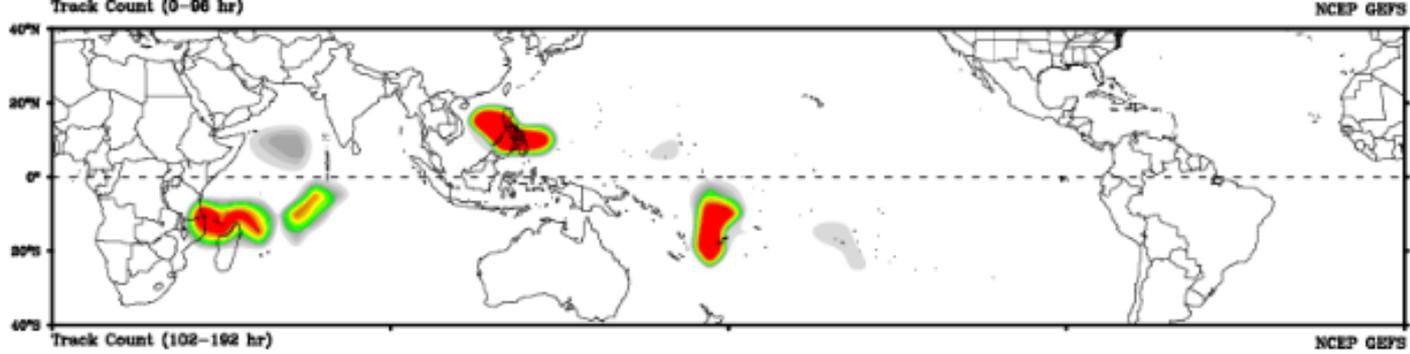
Phase 6 (69 days) 15 storms



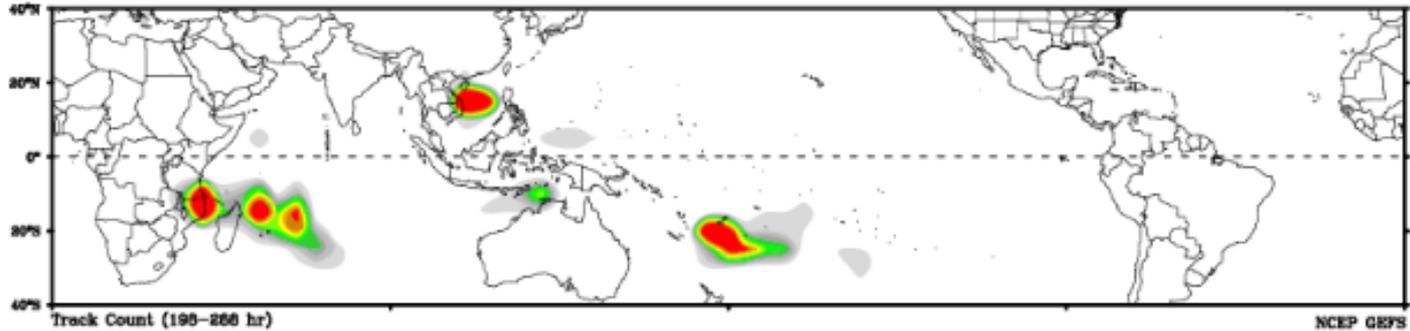
Null (416 days) 52 storms



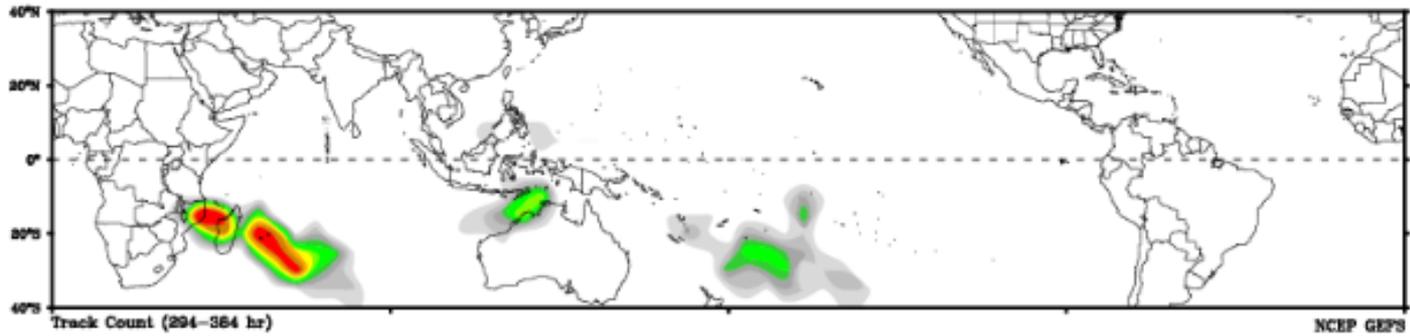
Days 1-4



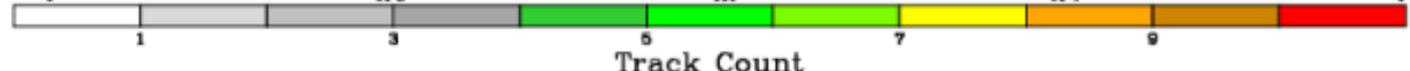
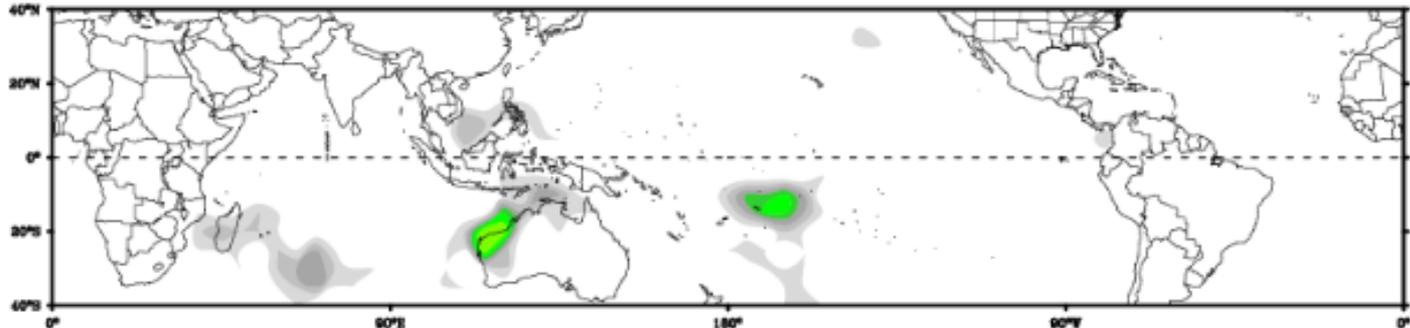
Day 5-8



Day 9-12

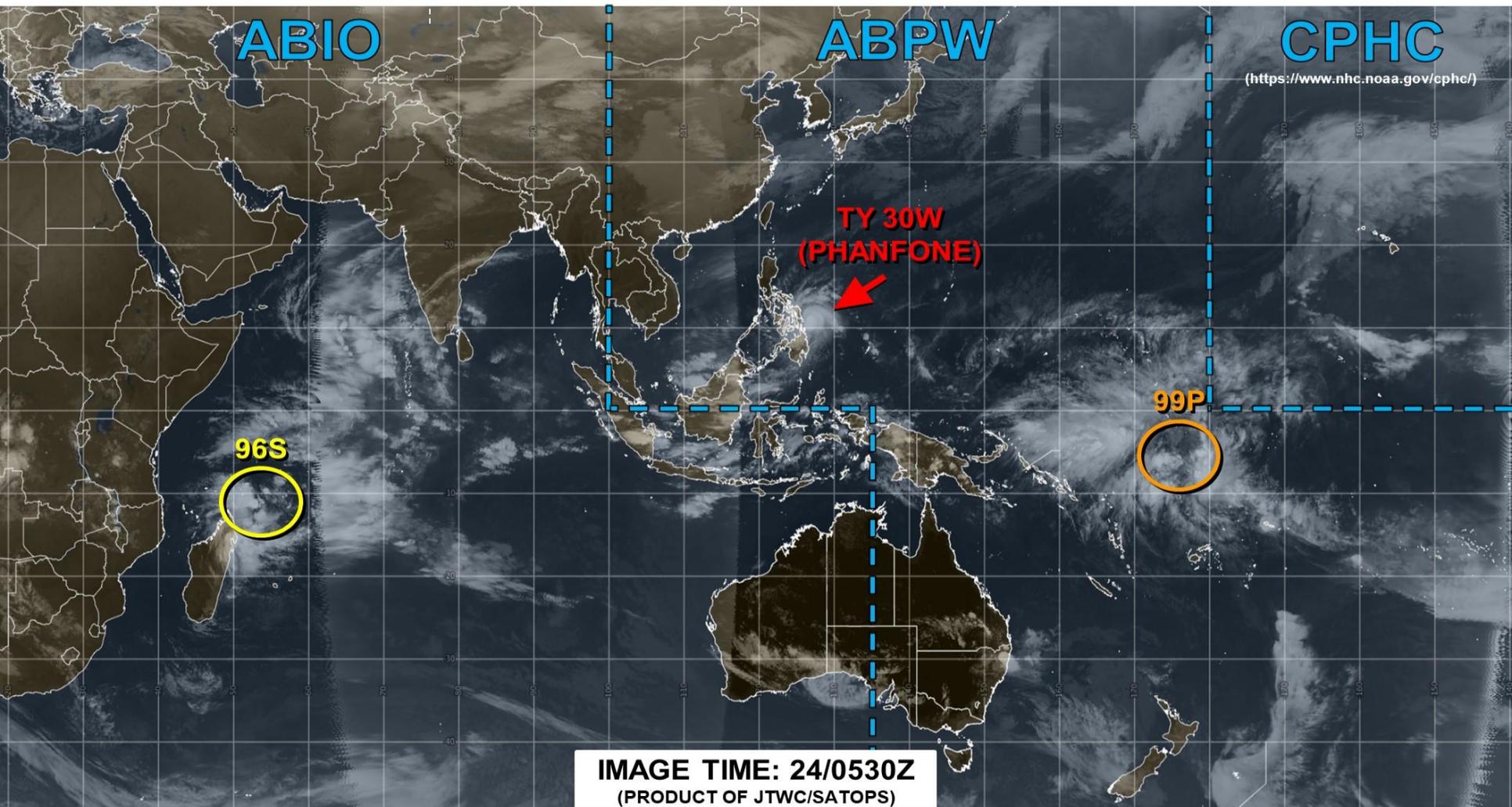


Day 13-15





JOINT TYPHOON WARNING CENTER



ABIO

ABPW

CPHC
[\(https://www.nhc.noaa.gov/cphc/\)](https://www.nhc.noaa.gov/cphc/)

TY 30W
(PHANFONE)

96S

99P

IMAGE TIME: 24/0530Z
(PRODUCT OF JTWC/SATOPS)

LOW TC development unlikely within 24 hours

MEDIUM TC development likely, but expected to occur beyond 24 hours

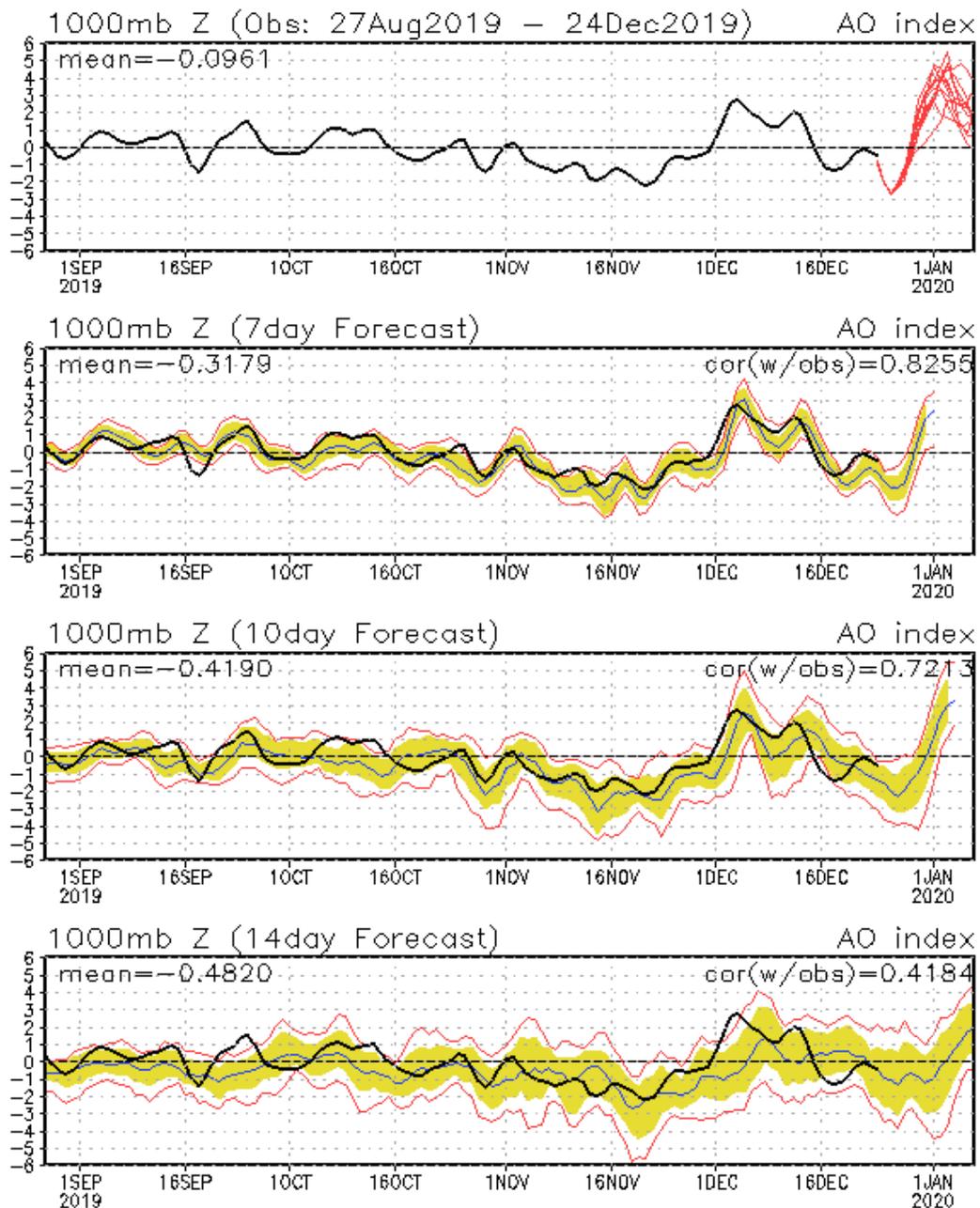
HIGH TC development likely within 24 hours (Reference TCFA)

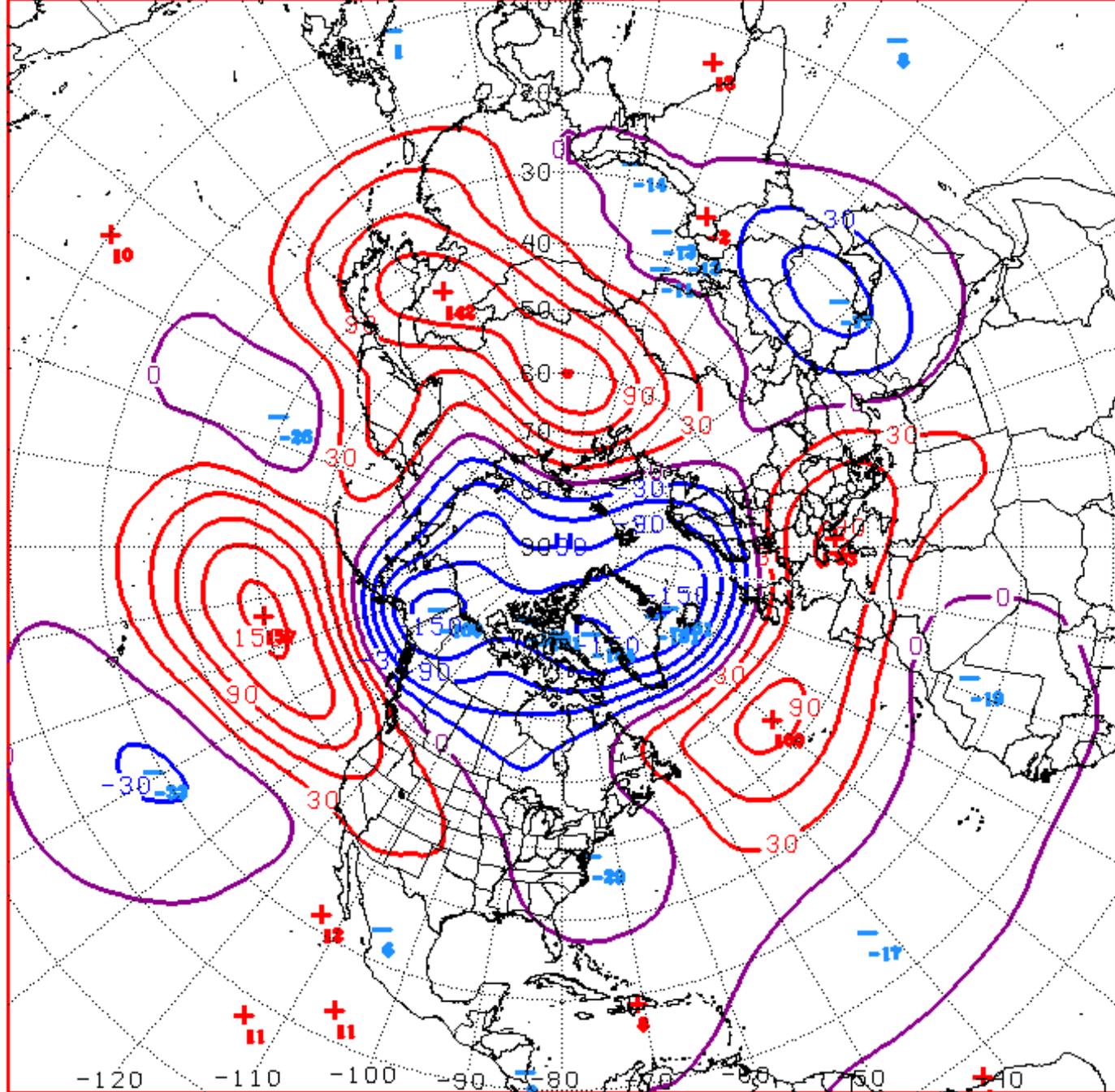
SUB TROPICAL Monitoring for potential transition to TC. Invest color denotes tropical transition probability

Tropical Cyclone (Reference Warning)

Connections to U.S. Impacts

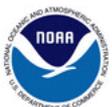
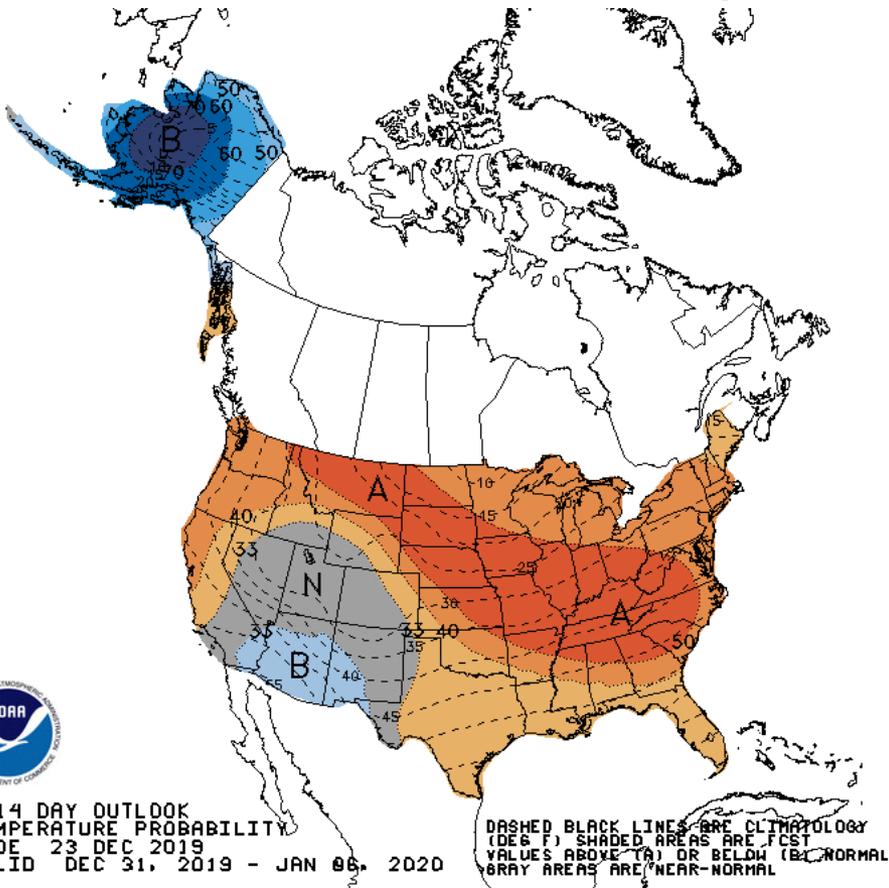
AO: Observed & ENSM forecasts





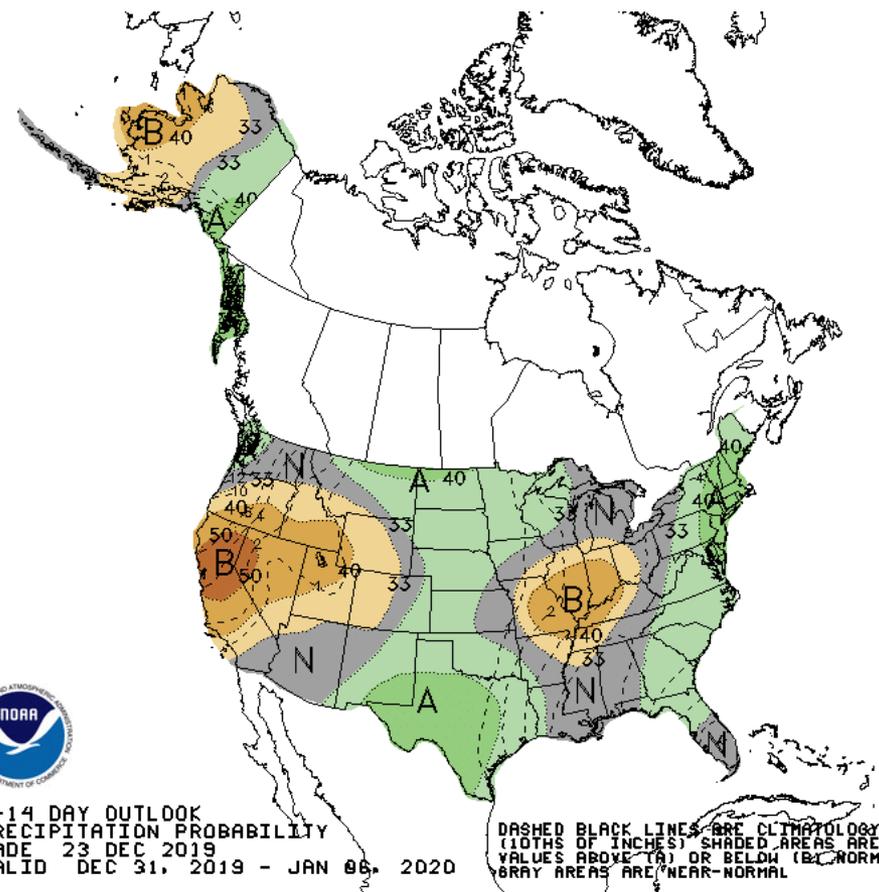
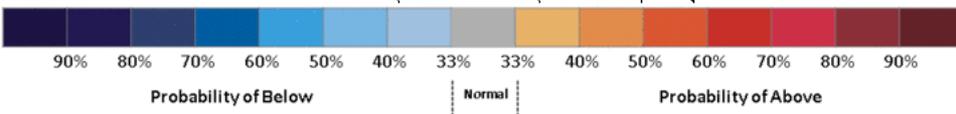
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE DEC 24 2019 1317 UTC CNTD JAN 04 2020

Week 2 – Temperature and Precipitation



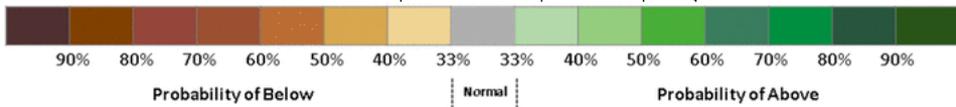
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 23 DEC 2019
VALID DEC 31, 2019 - JAN 06, 2020

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 23 DEC 2019
VALID DEC 31, 2019 - JAN 06, 2020

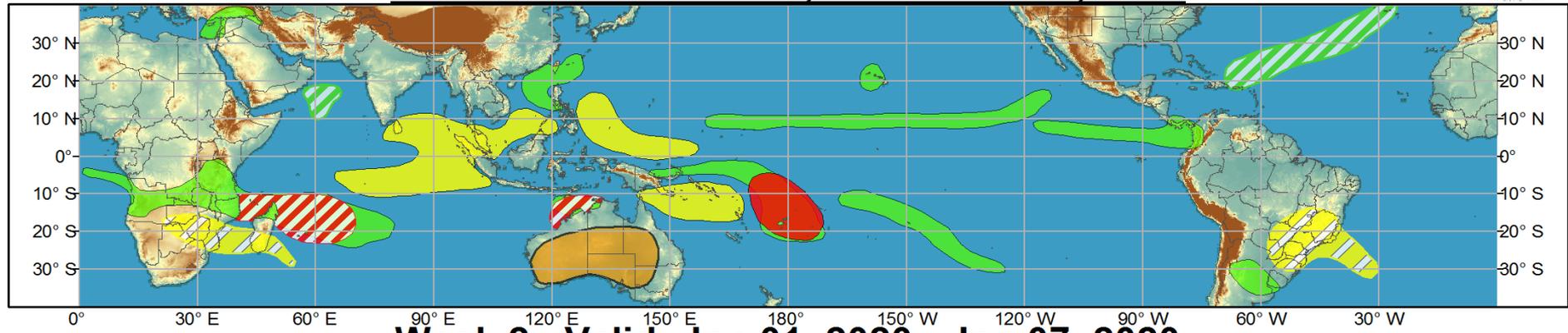
DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



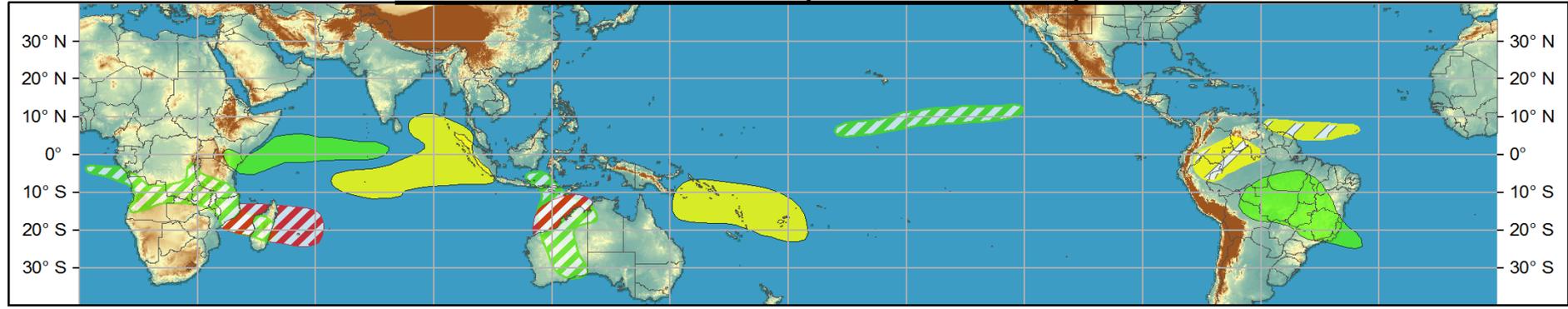


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