

Global Tropics Hazards And Benefits Outlook

11/26/2019

Nick Novella

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

WPAC: "Kammuri"
(11/25- present)

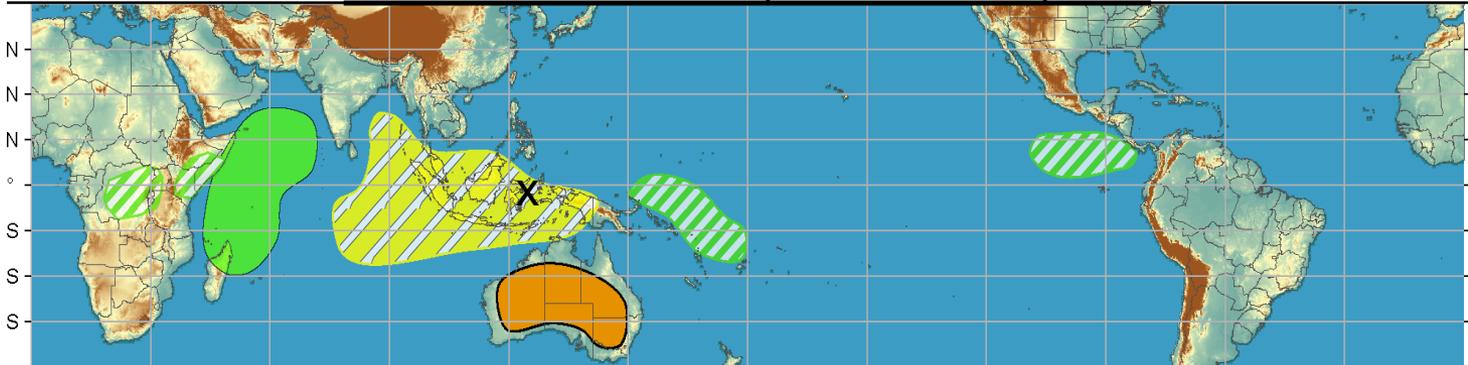
WPAC: "Fung-Wong"
(11/20 – 11/22)

SPAC: "Rita"
(11/24) ongoing

Week 1 - Valid: Nov 20, 2019 - Nov 26, 2019

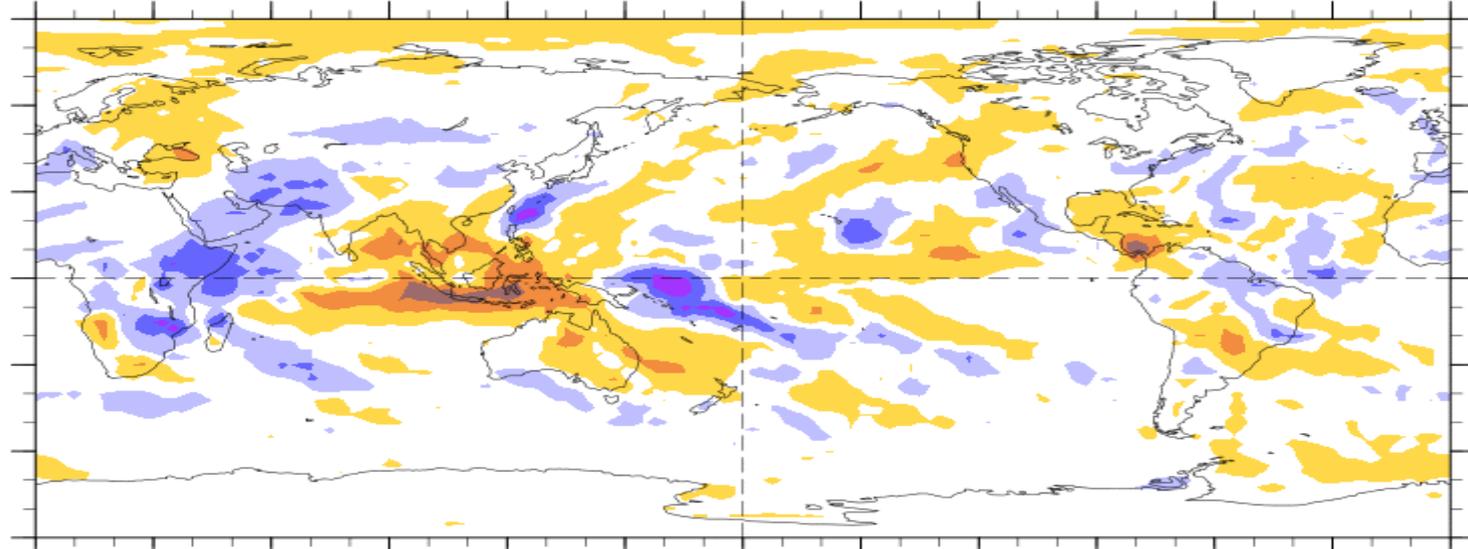


Week 2 - Valid: Nov 20, 2019 - Nov 26, 2019



7-Day Average OLR Anomaly

2019/11/18 - 2019/11/24



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (November 14, 2019 Update)

- ENSO Alert System Status: None
- ENSO-neutral is favored during the Northern Hemisphere winter 2019-20 (~70% chance), continuing through spring 2020 (60 to 65% chance).

MJO and other subseasonal tropical variability:

- The MJO has continued to weaken and slowdown during the past week and is currently situated in Phase-3 within the unit circle in RMM space.
- Fair agreement in dynamical models which suggest MJO eventually reemerges and propagates eastward, however differences remain as to when this may occur.
- Other modes (the strong positive IOD and Rossby wave activity over the Pacific) are expected to be the dominant modes of variability across tropics.

Extratropics:

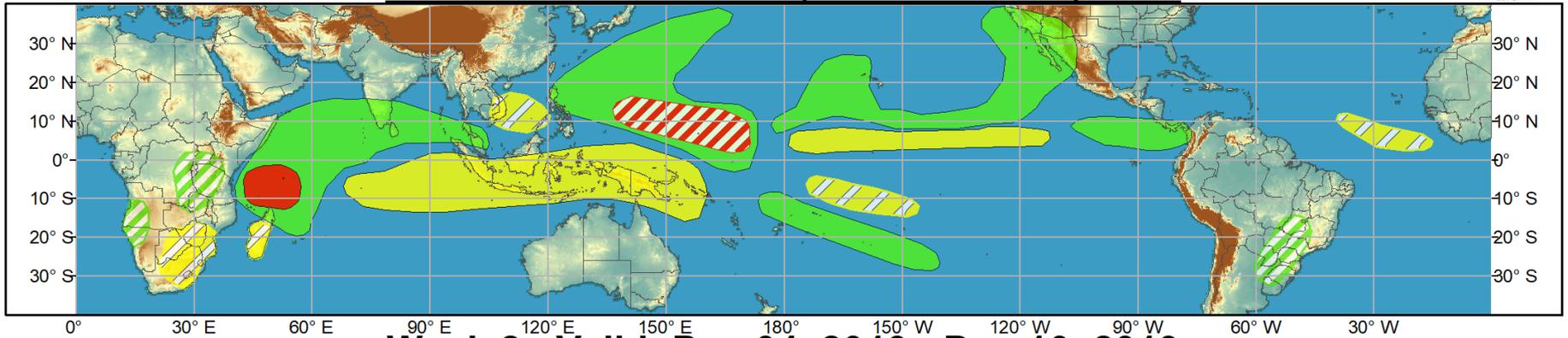
- If MJO reemerges in Phases 1 or 2, enhanced convection over the western Indian Ocean may influence the extratropics and help bring troughing to the Western U.S. (colder temperatures and wetter). However, strong AO/NAO favored by models.



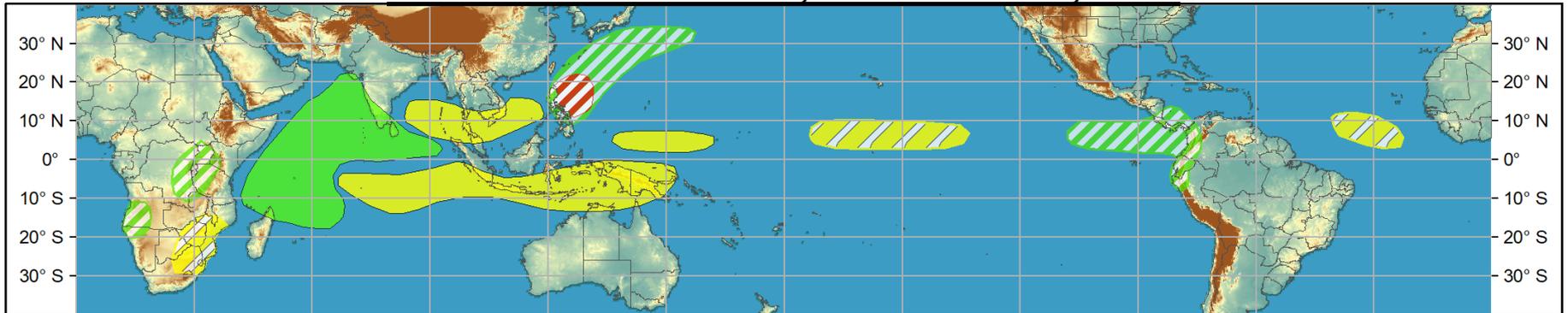
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Nov 27, 2019 - Dec 03, 2019



Week 2 - Valid: Dec 04, 2019 - Dec 10, 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.
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IR Satellite & 200-hpa Velocity Potential Anomalies

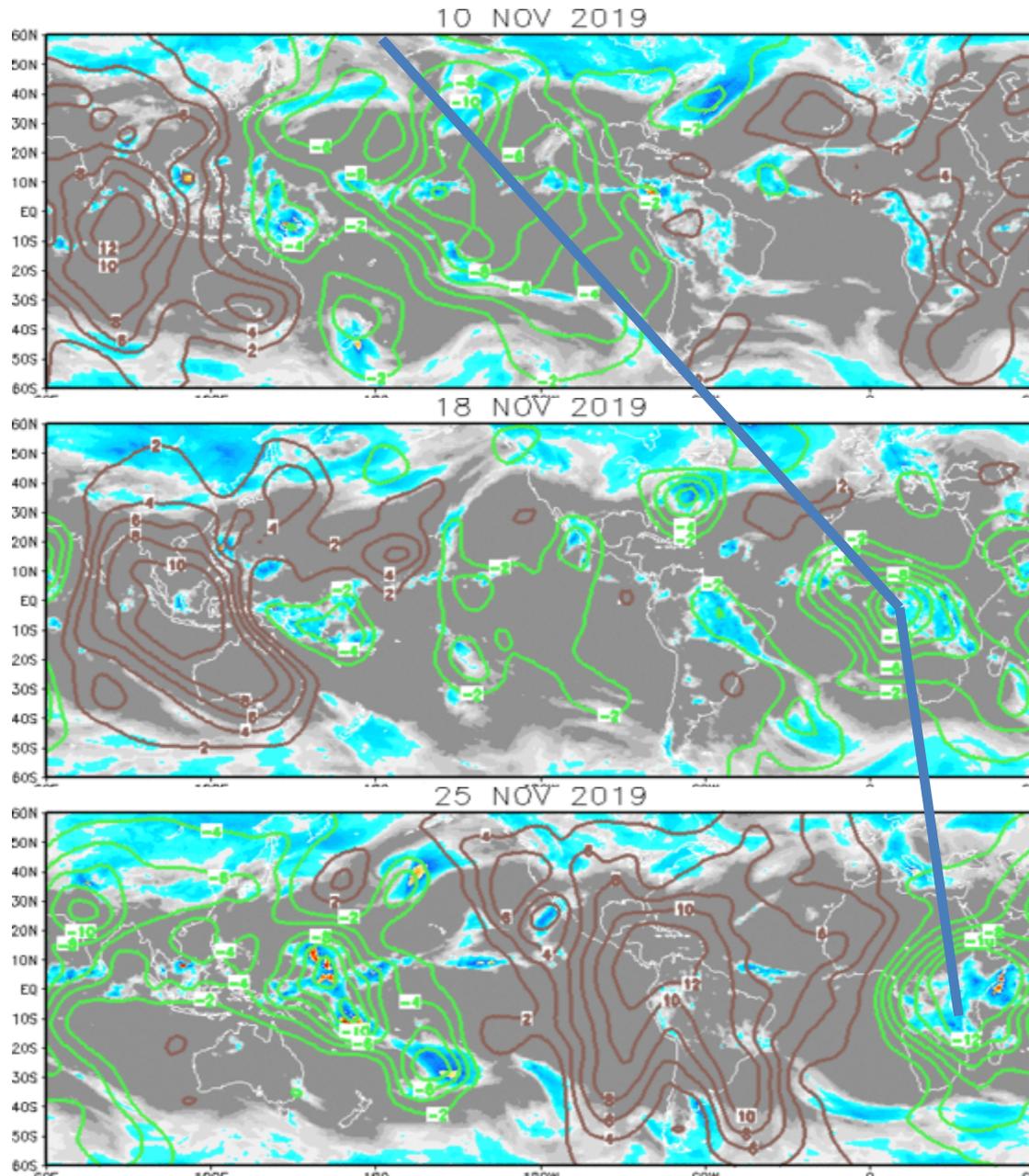
Green: Enhanced Divergence

Brown: Enhanced Convergence

Robust Wave-1 pattern showing MJO emerging over the Pacific.

Continued strong upper-level footprint as the MJO rapidly crossed western Hemisphere.

Enhanced convection again appears anchored over Africa (similar to mid-Oct). Weakening UL convergence associated w/ Rossby Wave / TC activity over Maritime Continent.

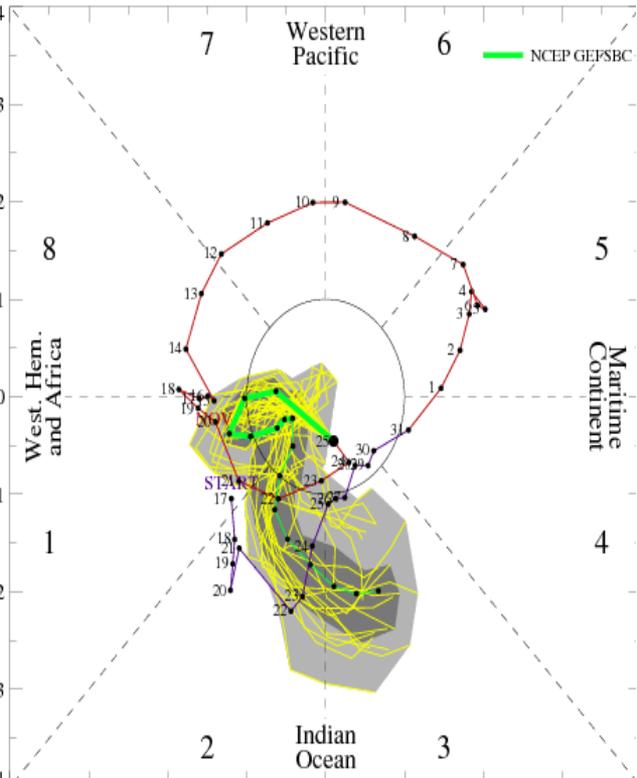


MJO Observation/Forecast

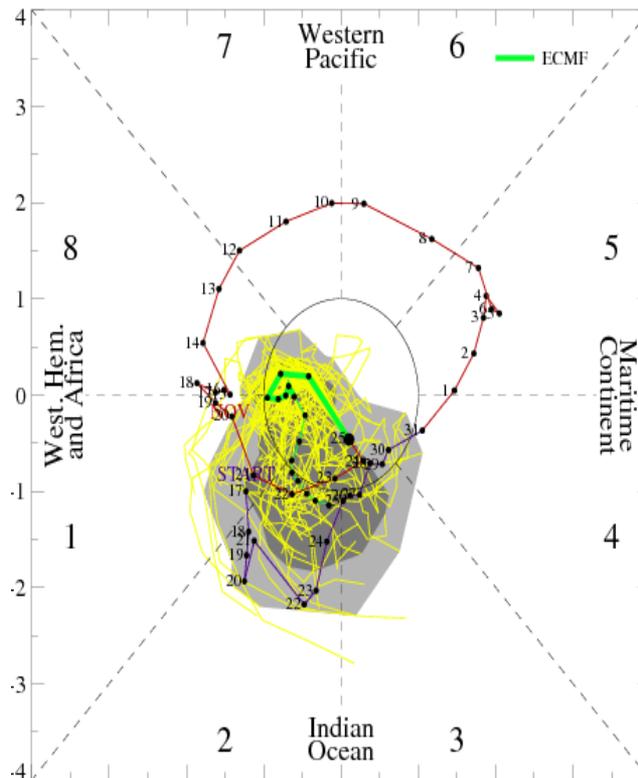
[RMM1, RMM2] forecast for Nov-26-2019 to Dec-10-2019

MJO Index Forecast for 26Nov2019-10Dec2019

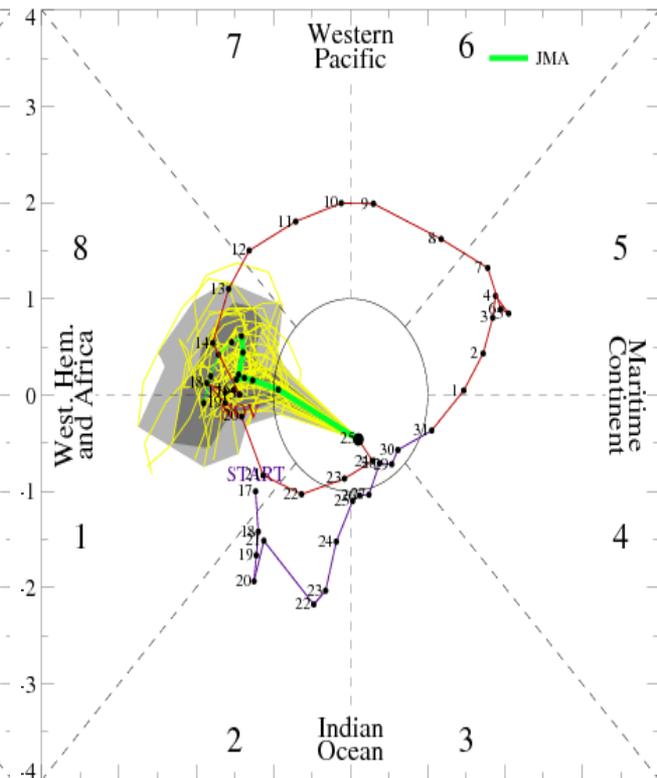
MJO Index Forecast for 26Nov2019-04Dec2019



GEFS

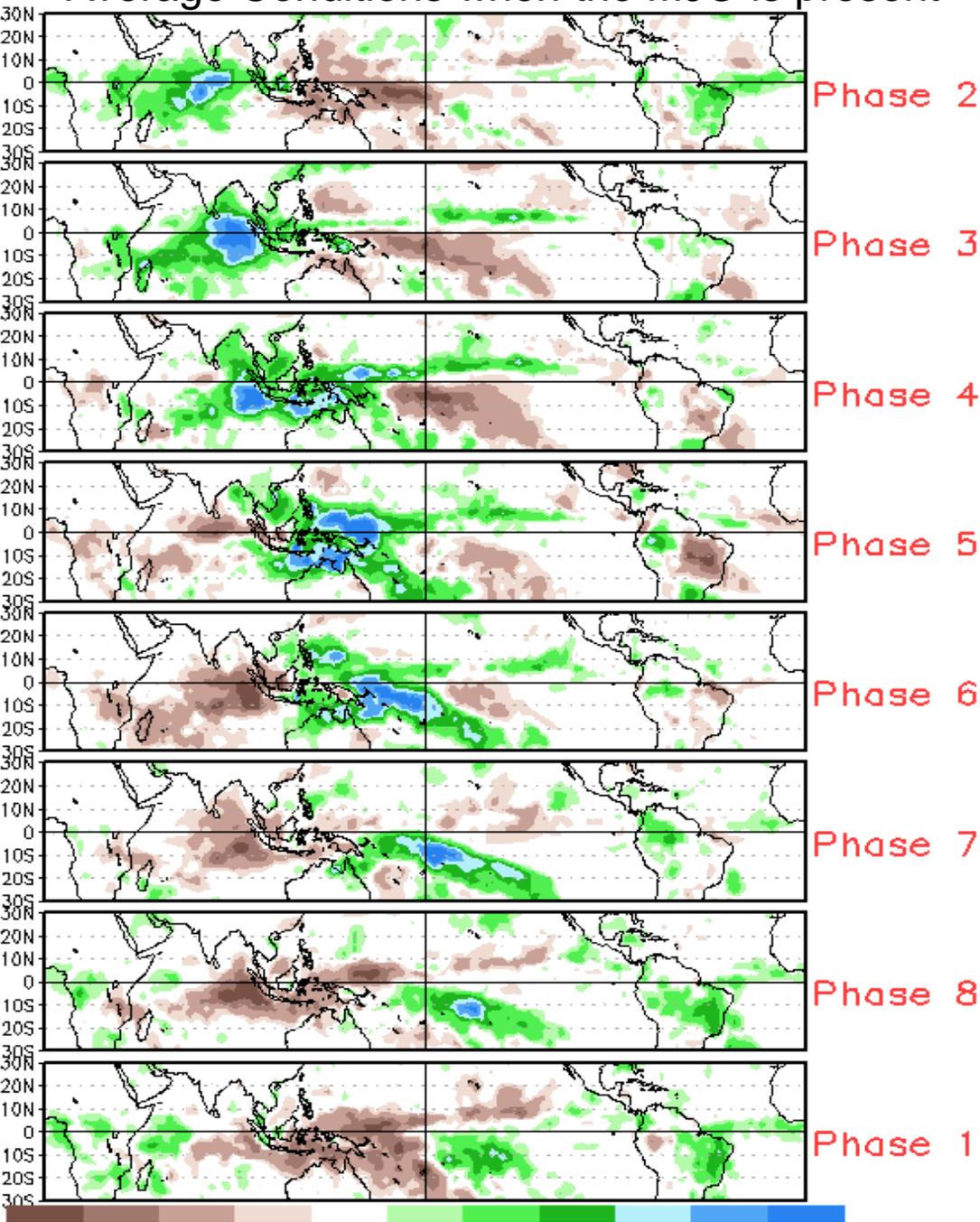


ECMWF

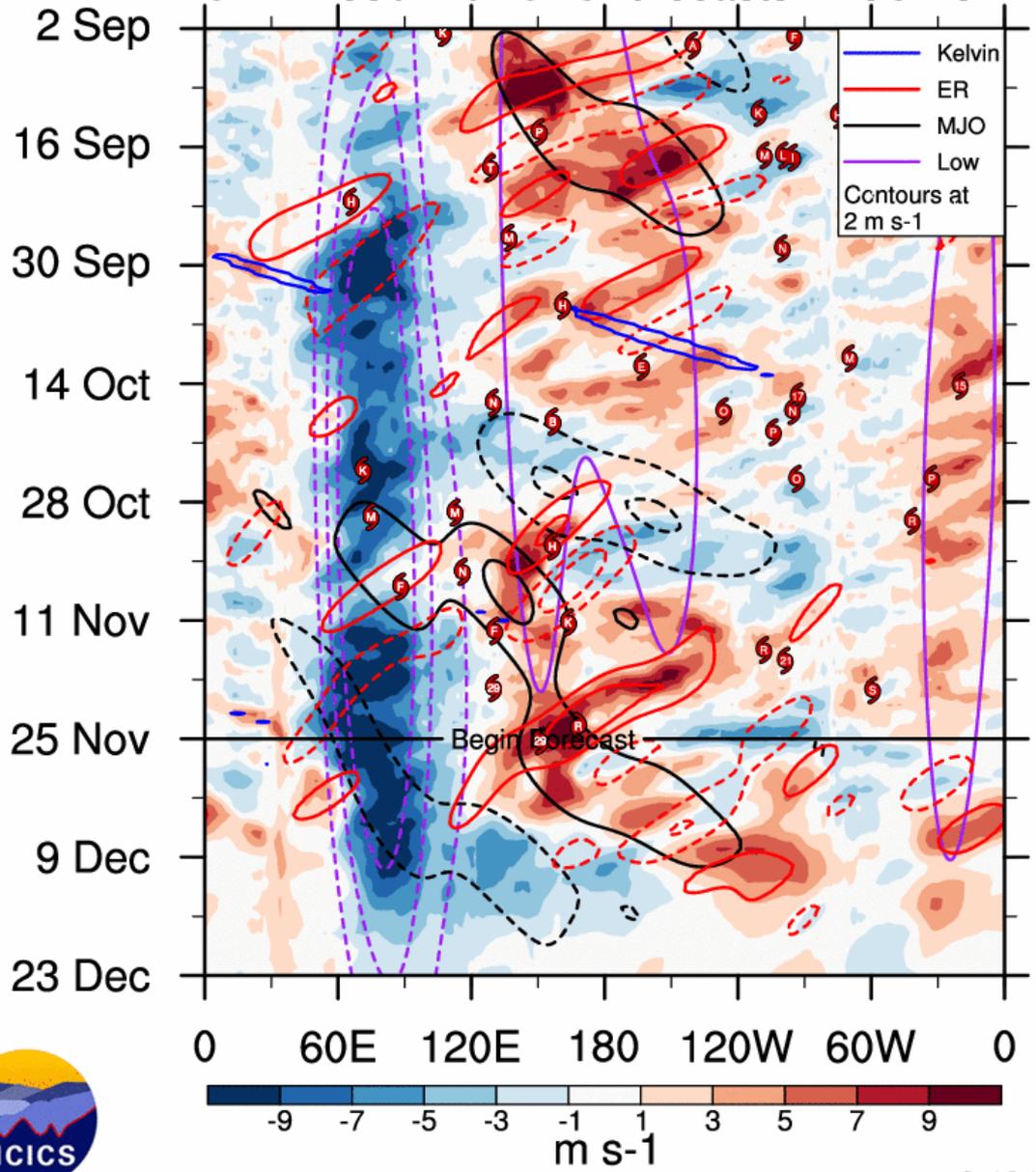


JMA

Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.



IOD signal strongly apparent in the low-level wind field.

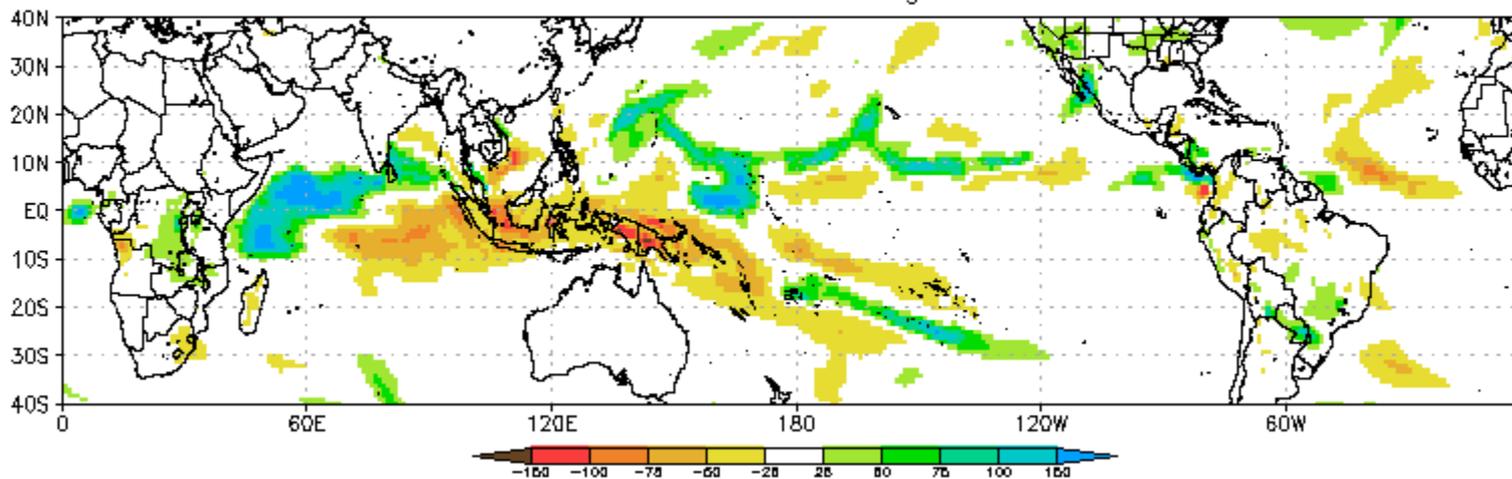
The MJO briefly disrupted the pattern in early November.

The CFS suggests continued strong IOD footprint with enhanced easterlies over equatorial IO and Rossby wave activity over the Pacific.

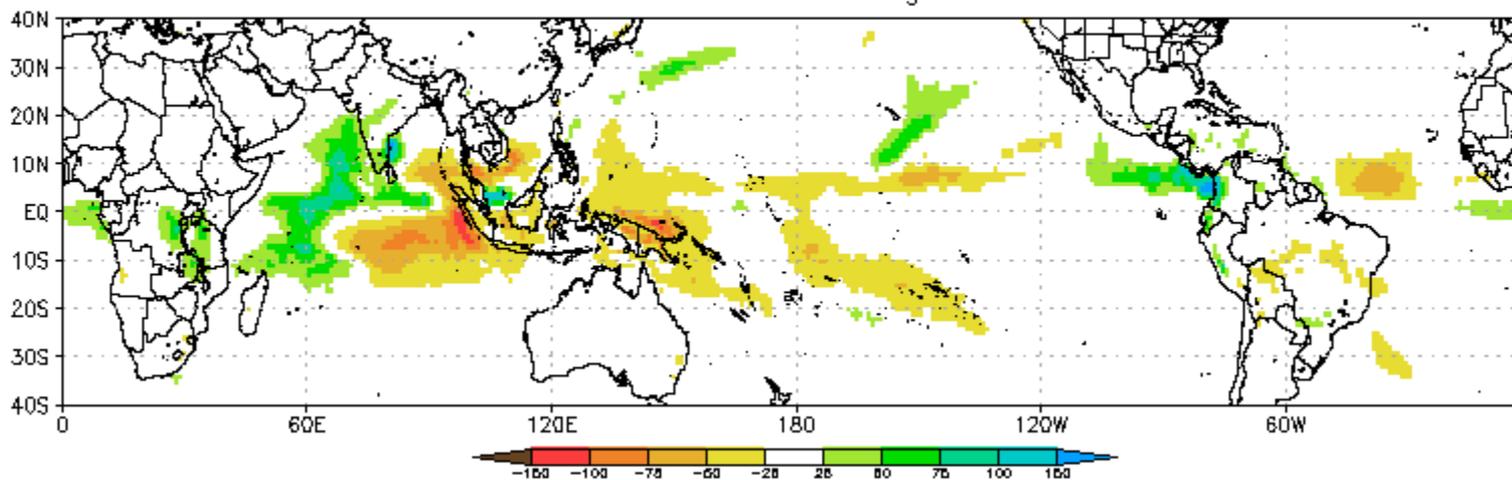
Eastward propagating MJO seen in early Dec (fastest solution)



CFS Precipitation Anomalies (mm) Issued 25Nov2019
Week-1 Forecast Ending 03Dec2019



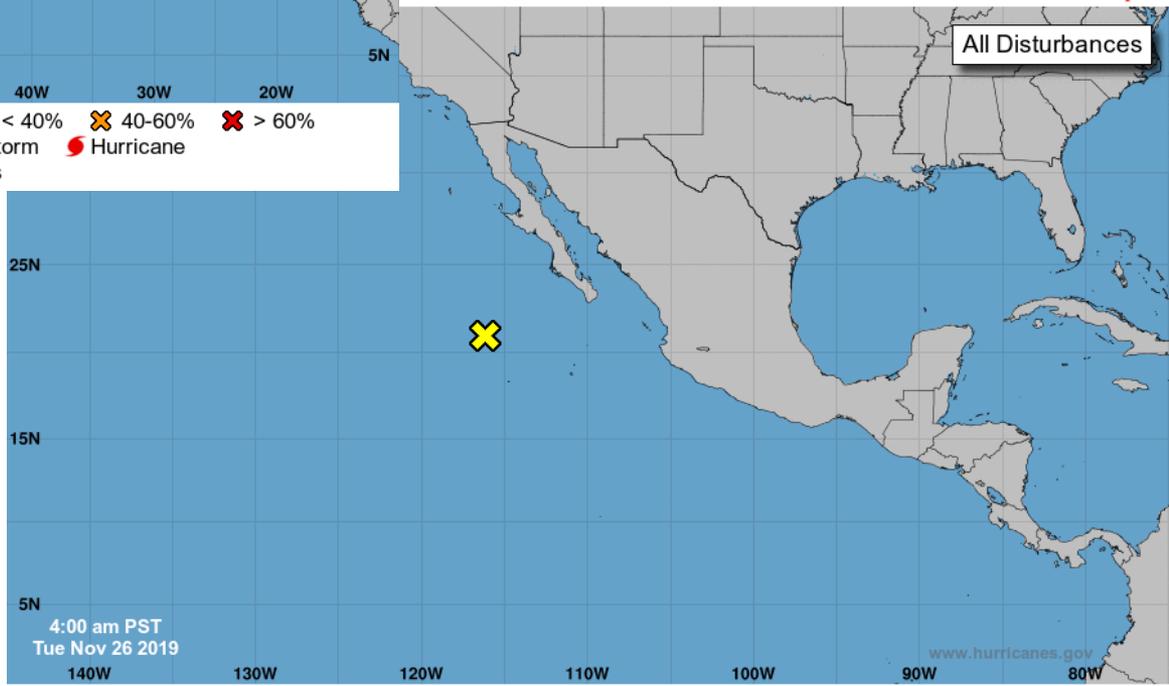
CFS Precipitation Anomalies (mm) Issued 25Nov2019
Week-2 Forecast Ending 10Dec2019





7:00 am EST
Tue Nov 26 2019

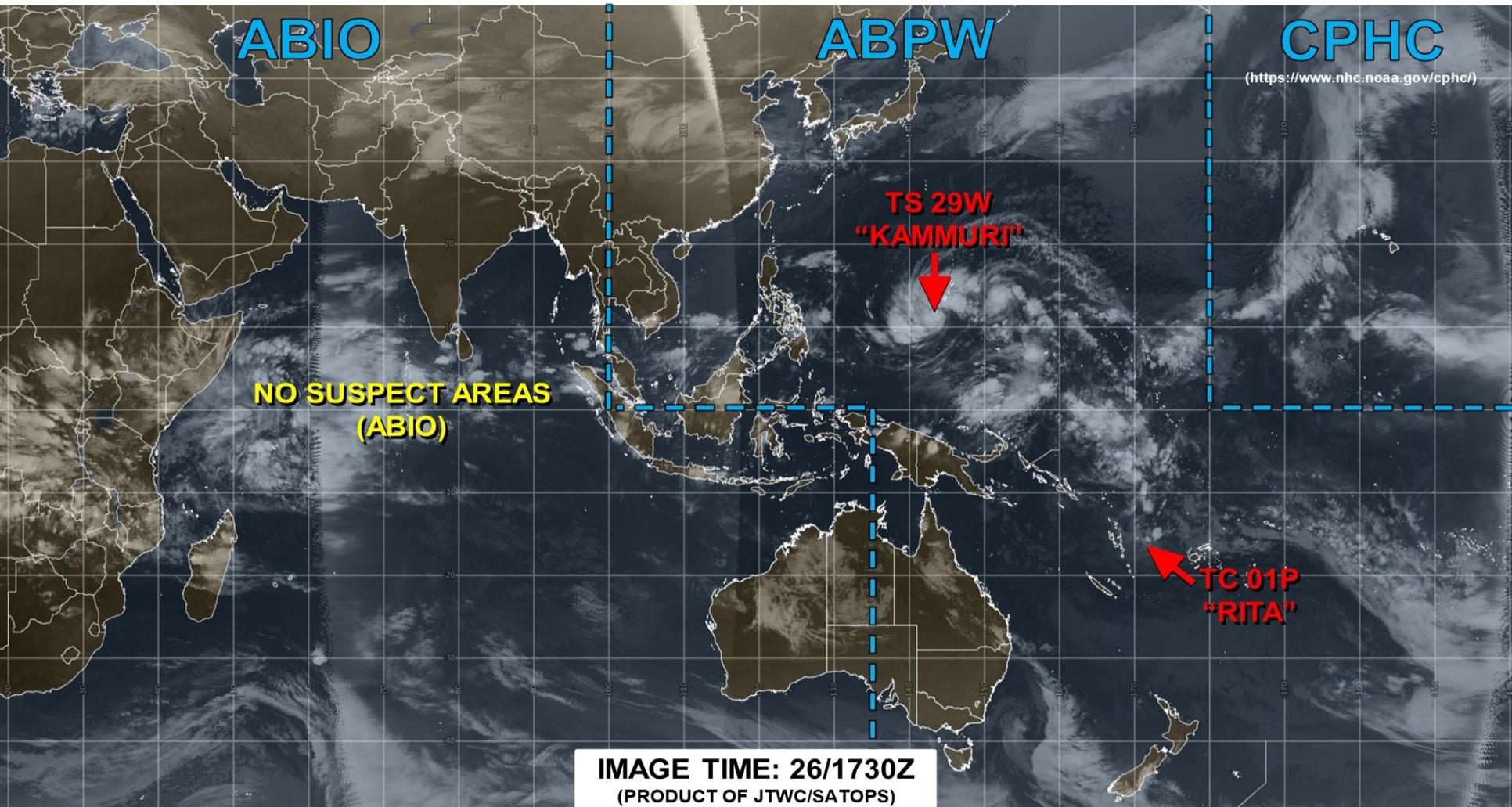
Current Disturbances and Five-Day Cyclone Formation Chance:  < 40%  40-60%  > 60%
Tropical or Sub-Tropical Cyclone:  Depression  Storm  Hurricane
 Post-Tropical Cyclone or Remnants



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Tropical or Sub-Tropical Cyclone:  Depression  Storm  Hurricane
 Post-Tropical Cyclone or Remnants



JOINT TYPHOON WARNING CENTER



ABIO

ABPW

CPHC

(<https://www.nhc.noaa.gov/cphc/>)

**TS 29W
"KAMMURI"**

**NO SUSPECT AREAS
(ABIO)**

**TC 01P
"RITA"**

**IMAGE TIME: 26/1730Z
(PRODUCT OF JTWC/SATOPS)**

LOW

TC development unlikely within 24 hours

MEDIUM

TC development likely, but expected to occur beyond 24 hours

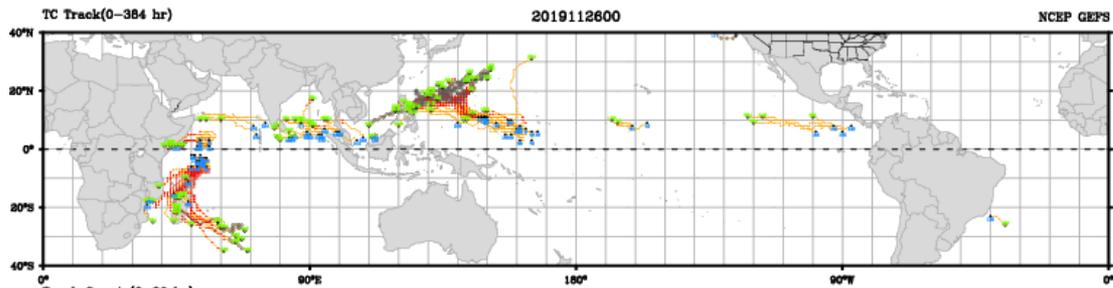
HIGH

TC development likely within 24 hours (Reference TCFA)

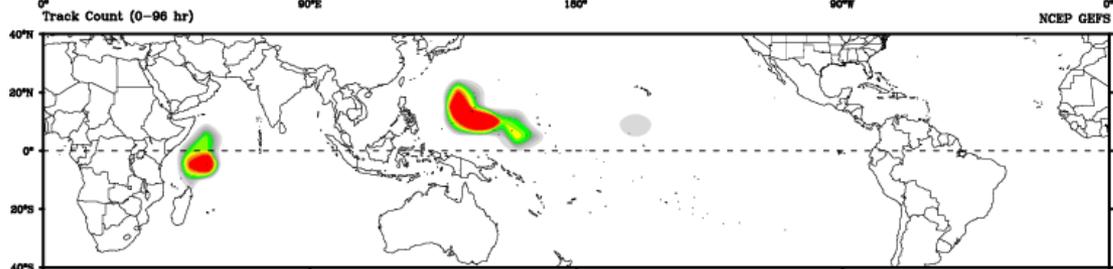
SUB TROPICAL

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

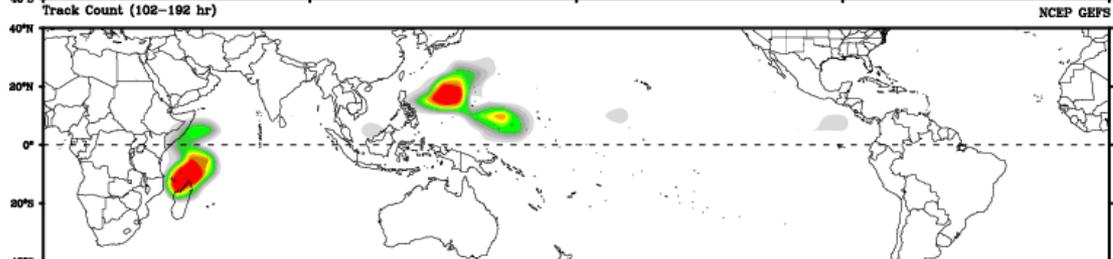
Tropical Cyclone (Reference Warning)



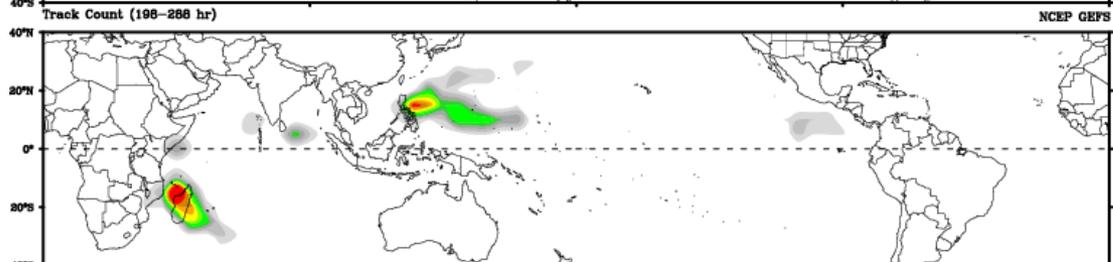
Days 1-4



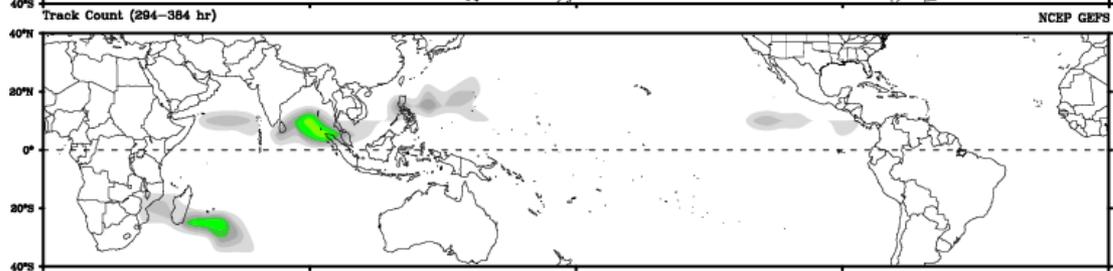
Day 5-8



Day 9-12

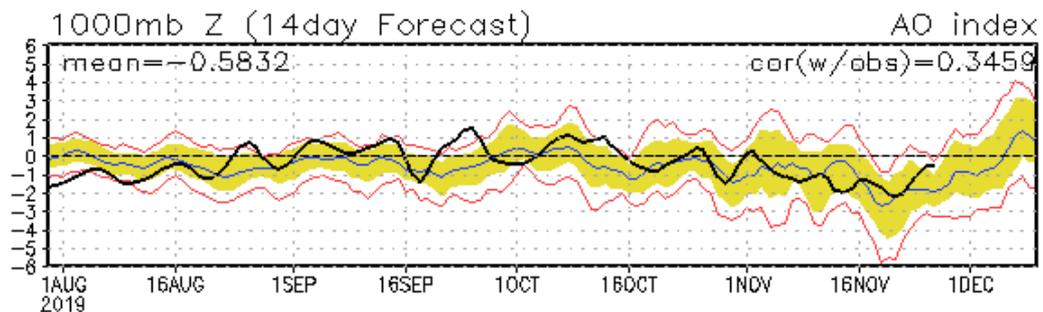
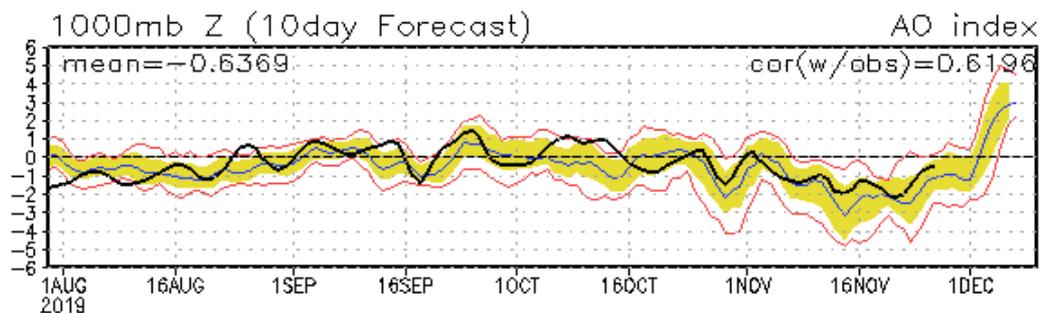
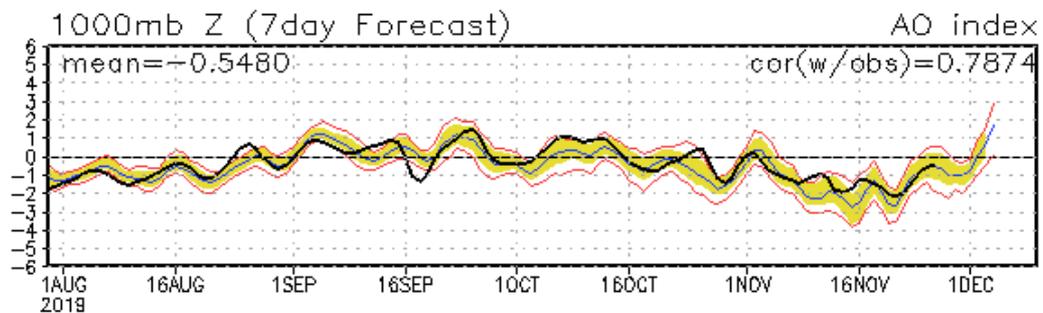
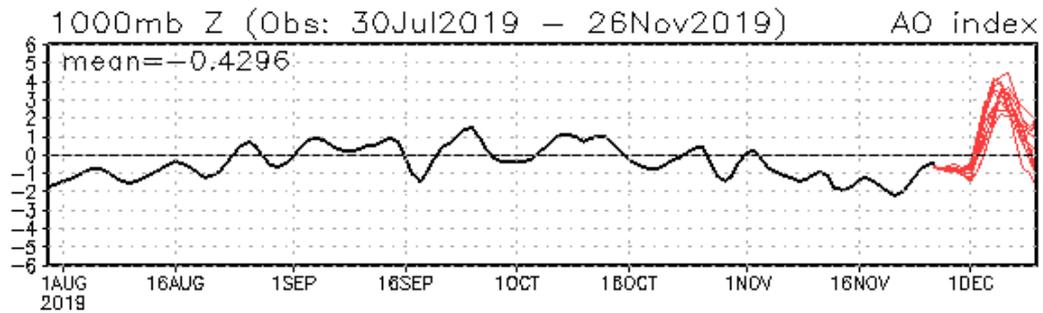


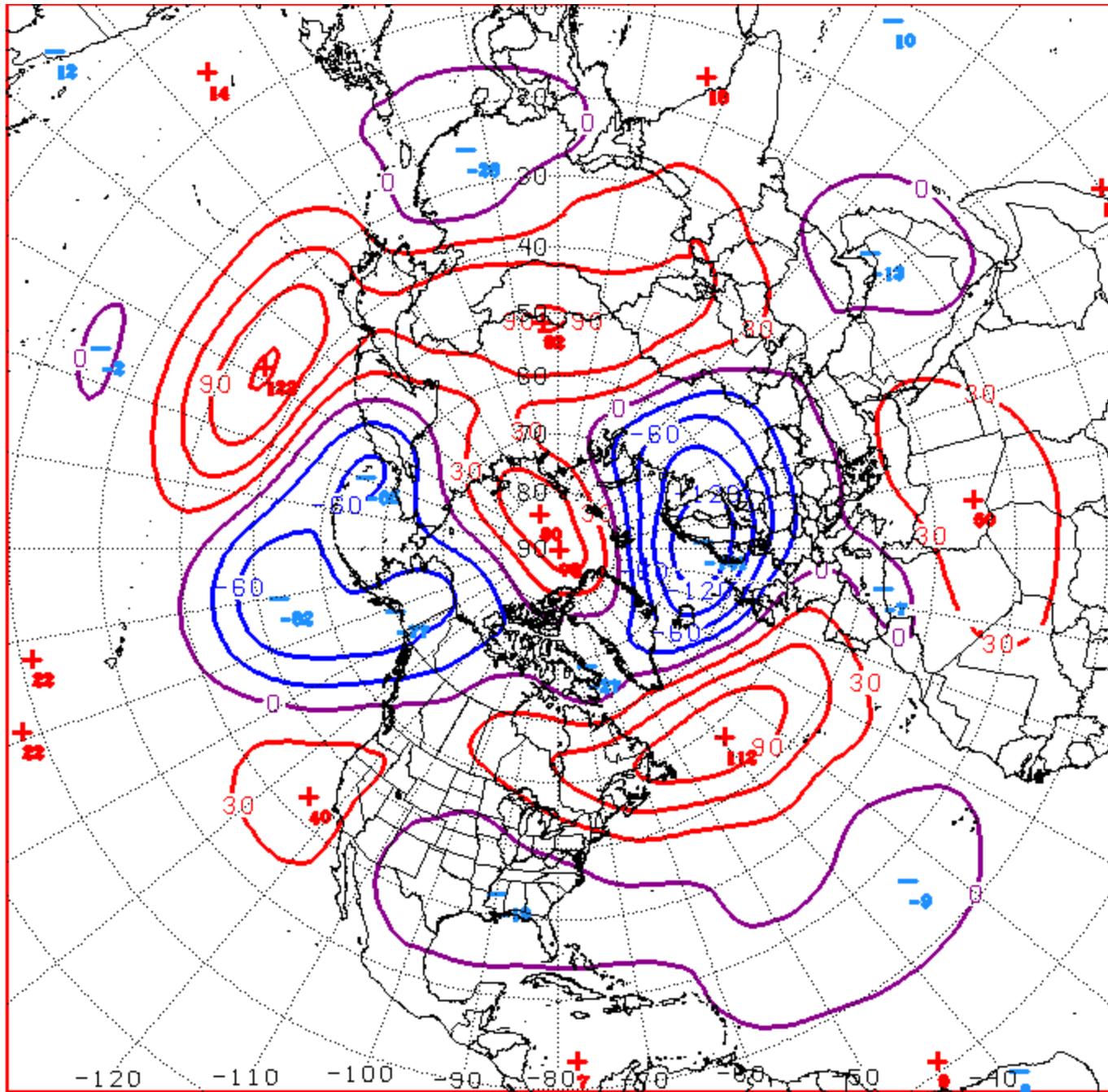
Day 13-15



Connections to U.S. Impacts

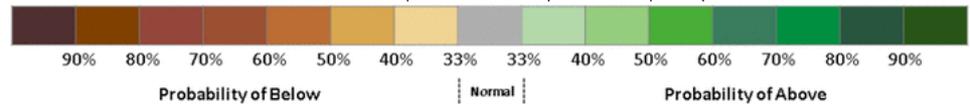
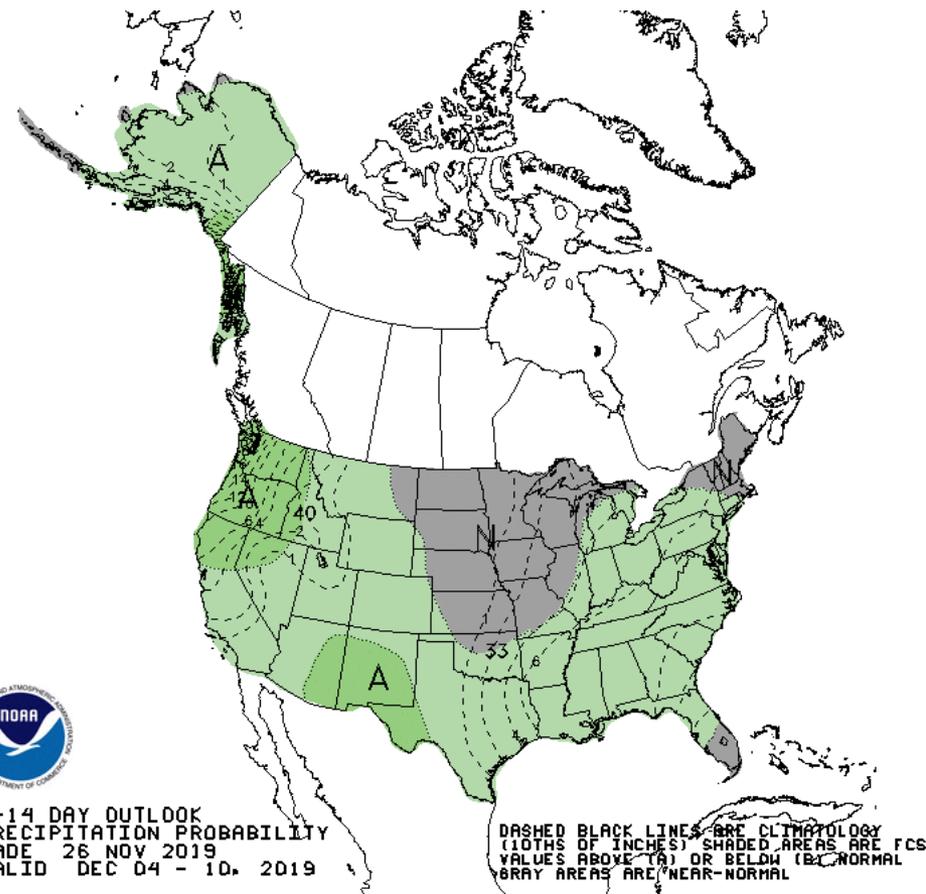
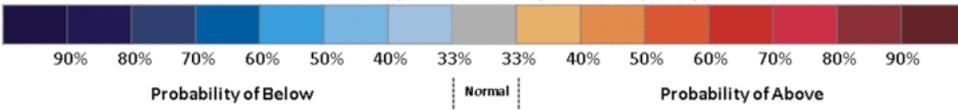
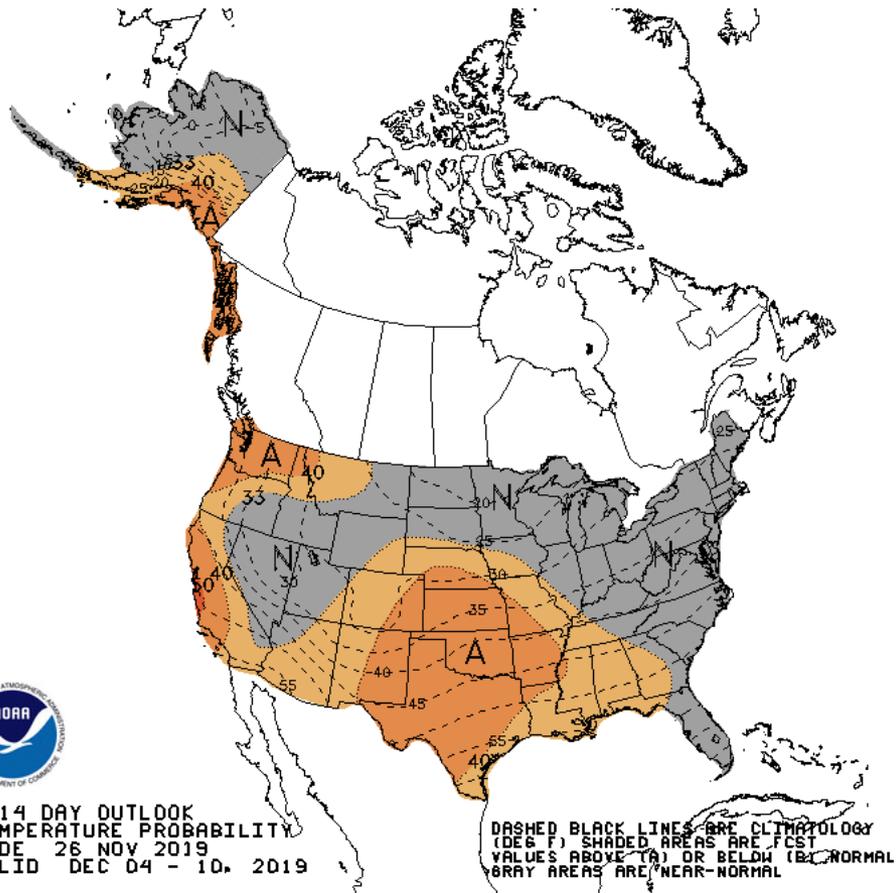
AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM 00Z ECMM
 CPC MAP MADE NOV 26 2019 1058 UTC CNTD DEC 07 2019

Week 2 – Temperature and Precipitation

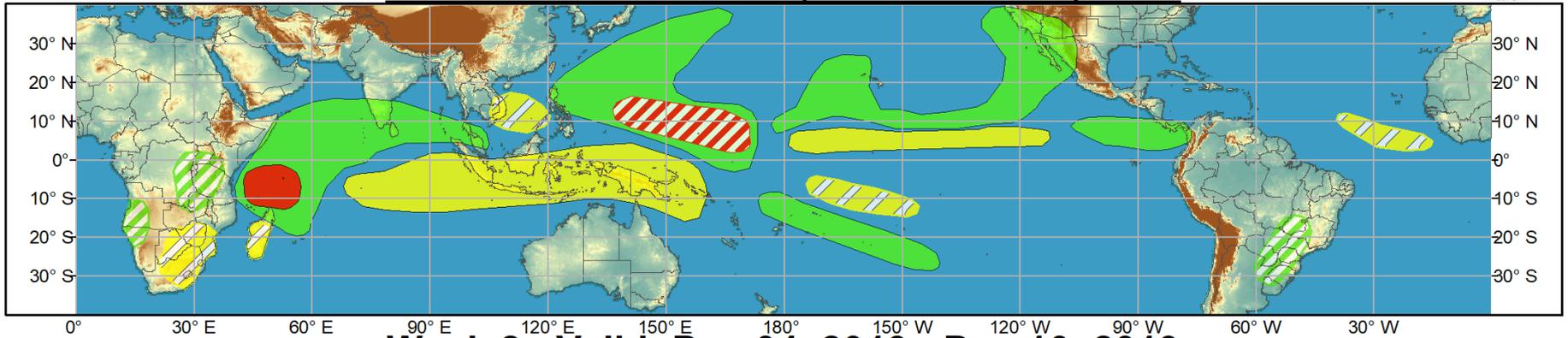




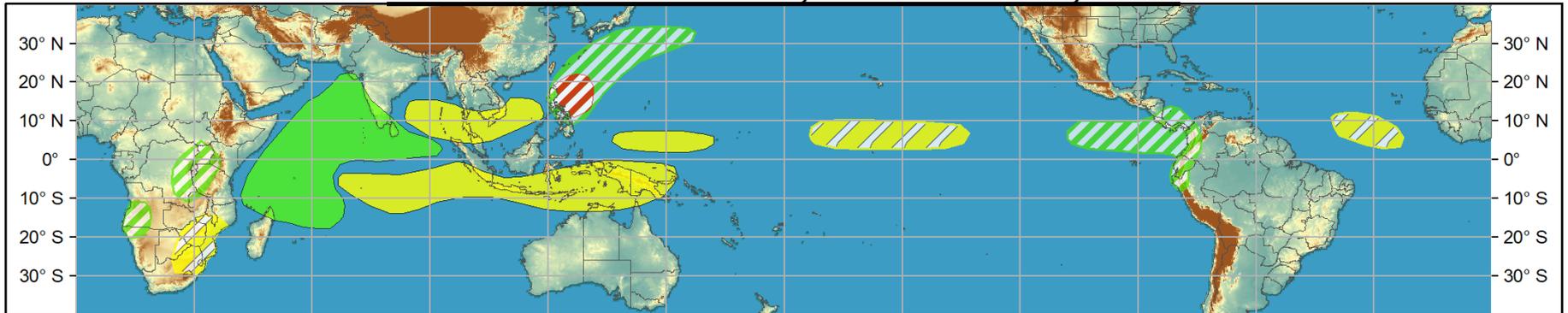
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