

Global Tropics Hazards And Benefits Outlook

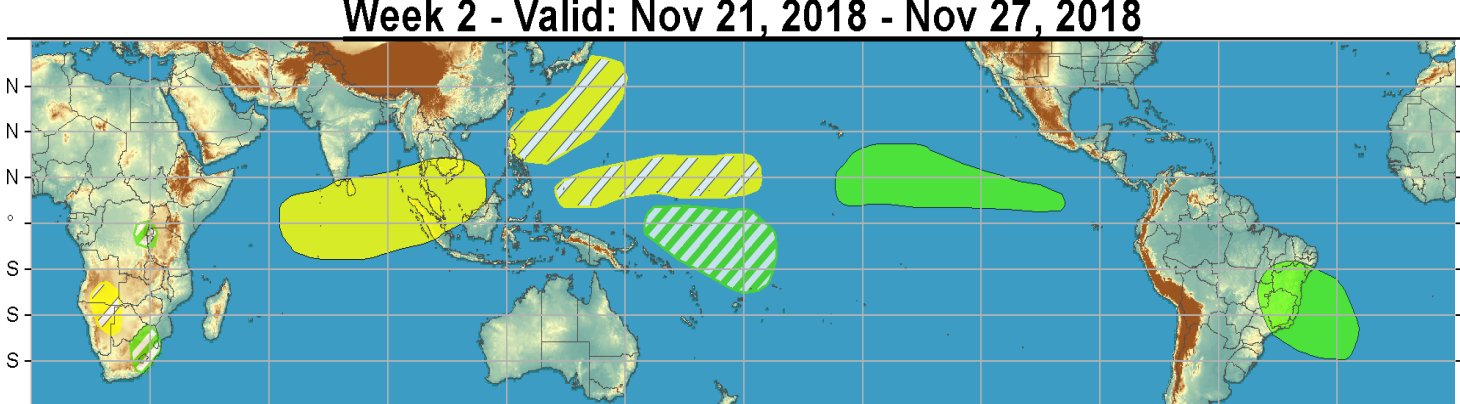
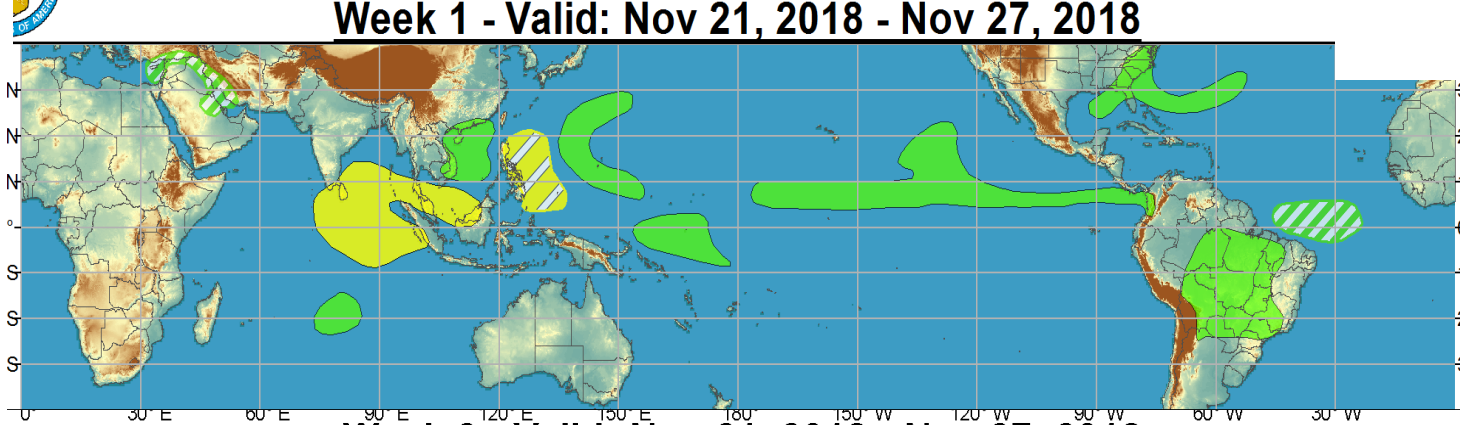
11/27/2018

Kyle MacRitchie

Outline

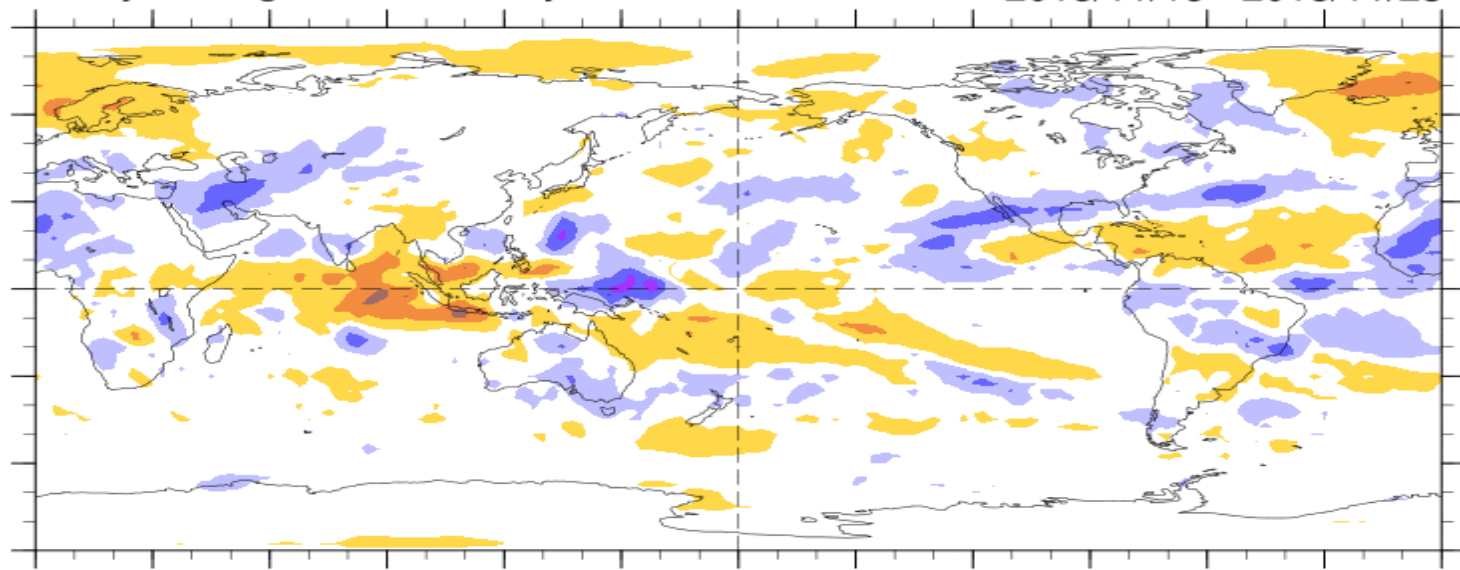
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review



7-Day Average OLR Anomaly

2018/11/19 - 2018/11/25



Synopsis of Climate Modes

ENSO: (8 November, 2018 Update)

- ENSO Alert System Status: [El Niño Watch](#)
- El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~80% chance) and into spring (55-60% chance).

MJO and other subseasonal tropical variability:

- MJO is active, in Phase 7 (Western Pacific).
- Equatorial Rossby wave could spawn up to two tropical cyclones in the West Pacific this week.
- Dynamical models are in good agreement that the MJO will stay active and propagate through Phase 8, 1, and 2 (maybe 3) during the next two weeks.

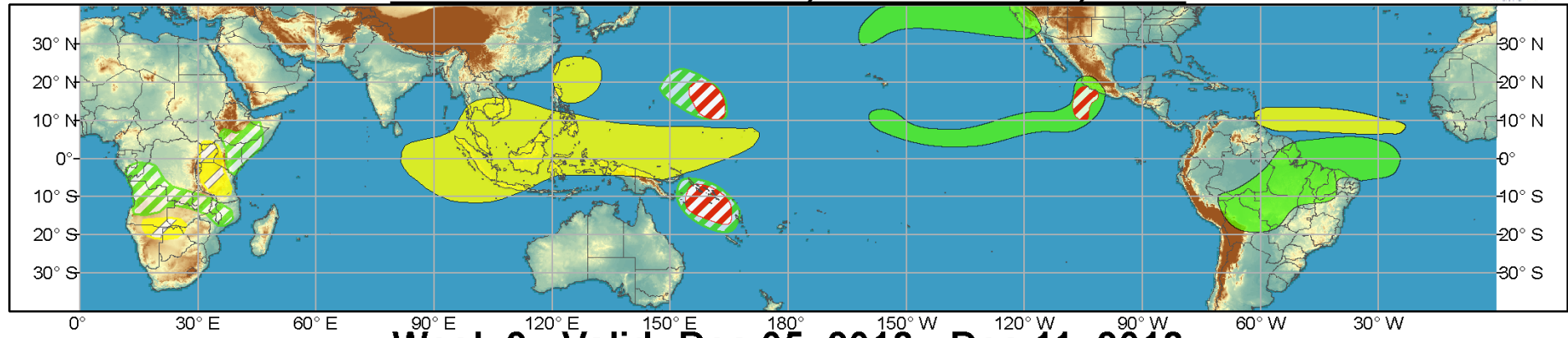
Extratropics:

- Southward displacement of the subtropical North Pacific jet is likely to lead to above average rainfall in parts of central and southern California.

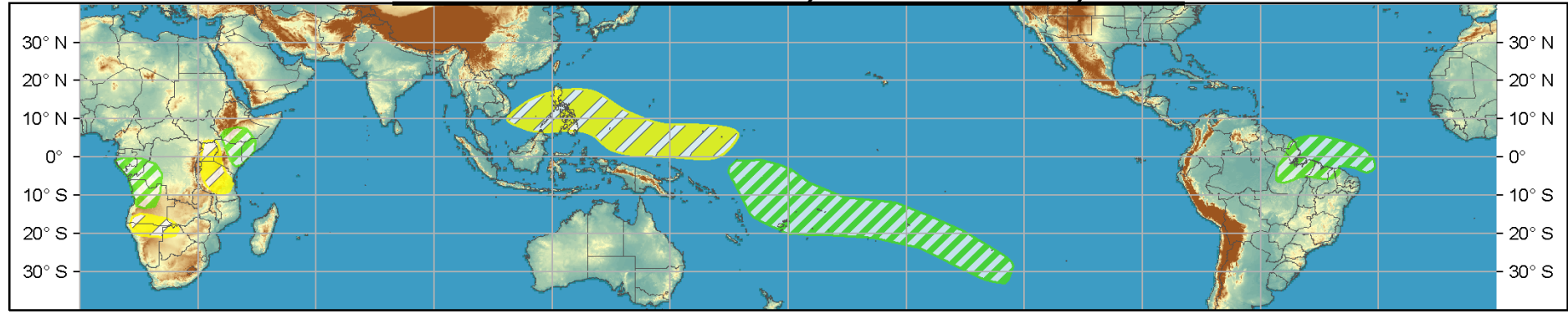


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Nov 28, 2018 - Dec 04, 2018



Week 2 - Valid: Dec 05, 2018 - Dec 11, 2018



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.
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Produced: 11/27/2018

Forecaster: MacRitchie

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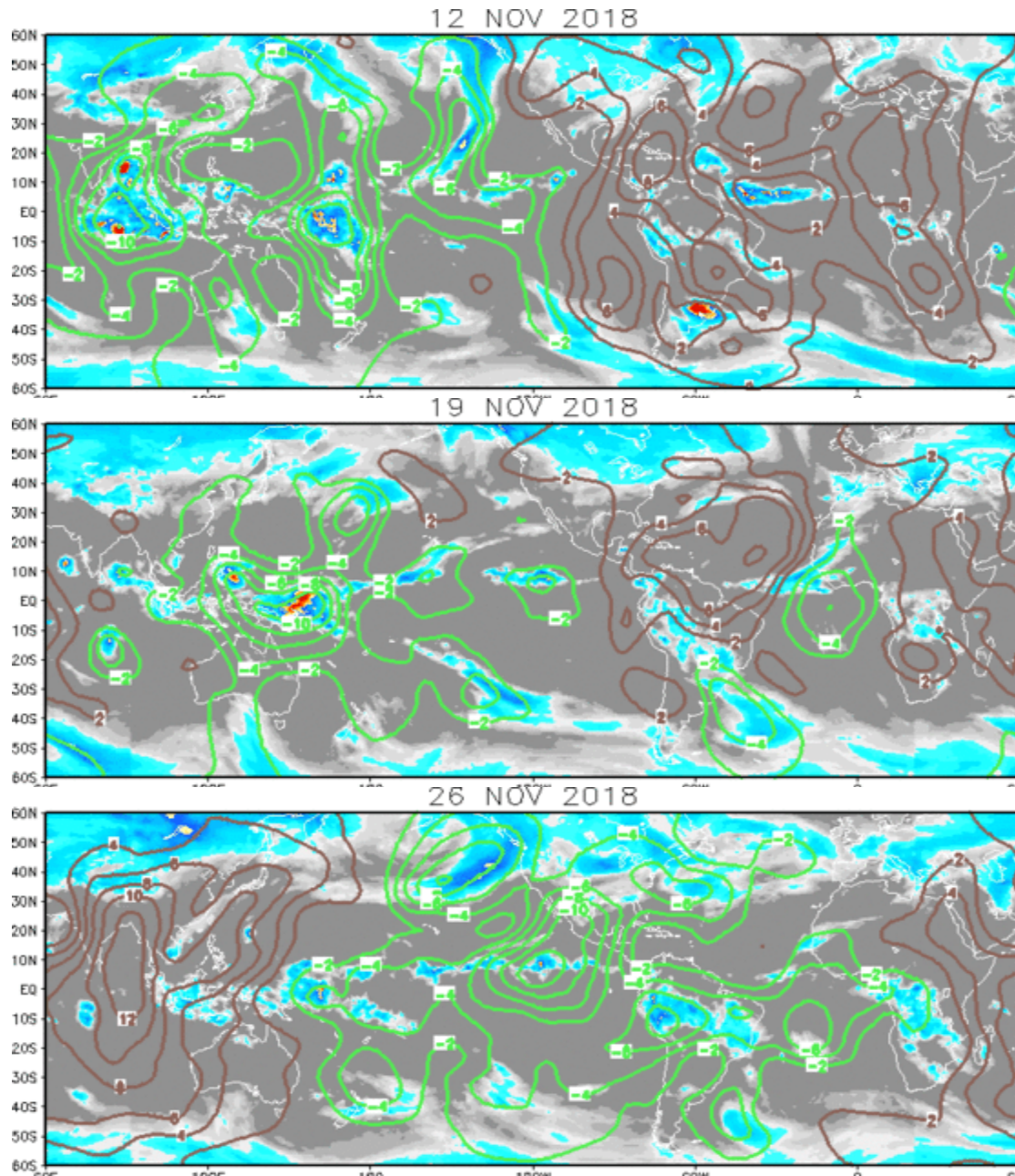
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence

Brown: Enhanced Convergence

Wave-1 pattern, modulated largely by the MJO.

The Wave-1 patterns follows the MJO propagation around the globe.

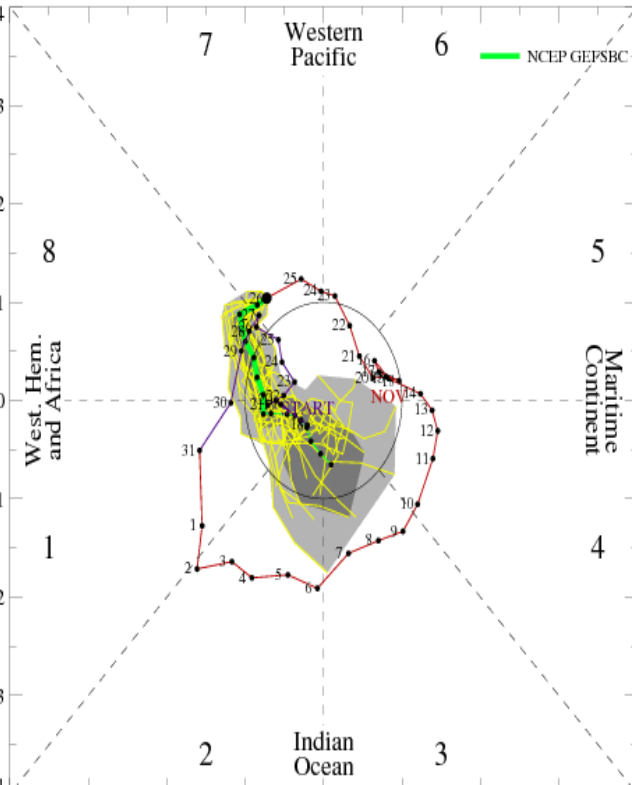


MJO Observation/Forecast

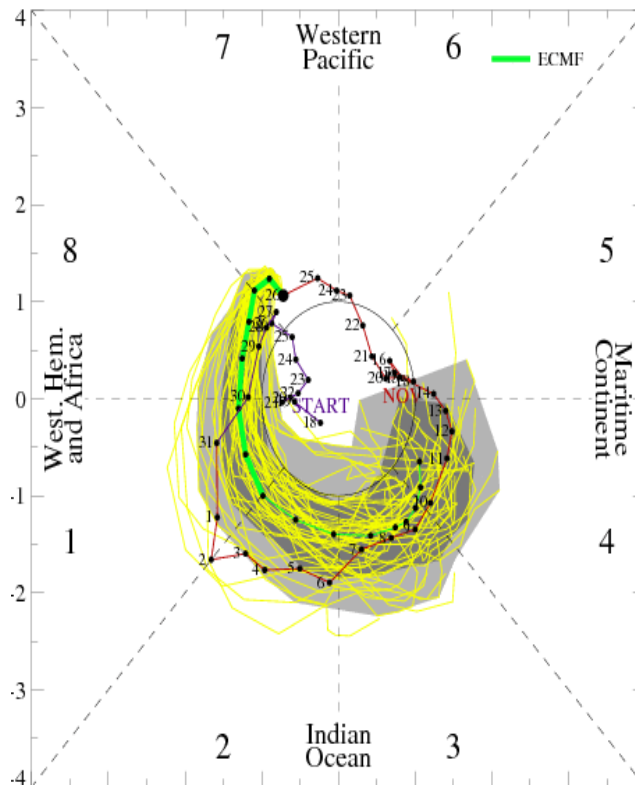
[RMM1, RMM2] forecast for Nov-27-2018 to Dec-11-2018

MJO Index Forecast for 27Nov2018-11Dec2018

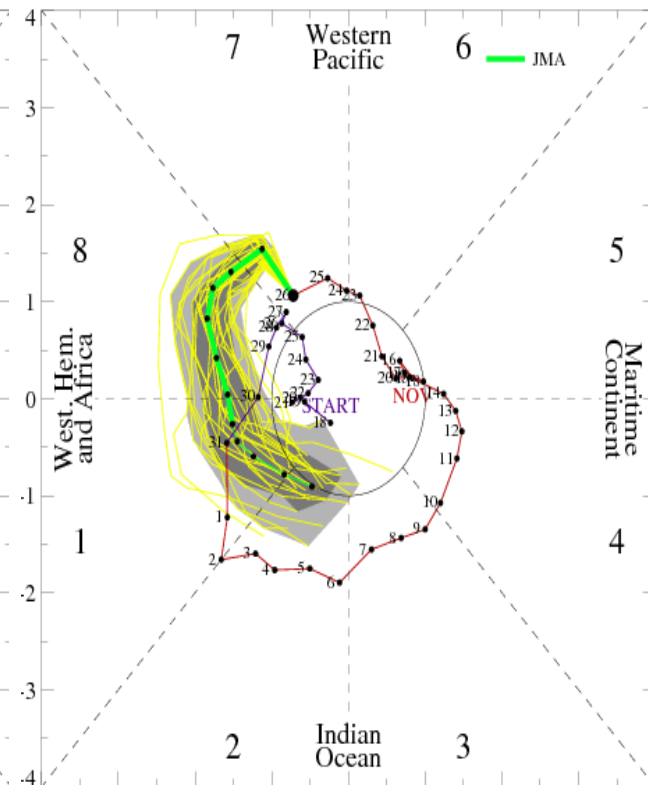
MJO Index Forecast for 27Nov2018-05Dec2018



GEFS



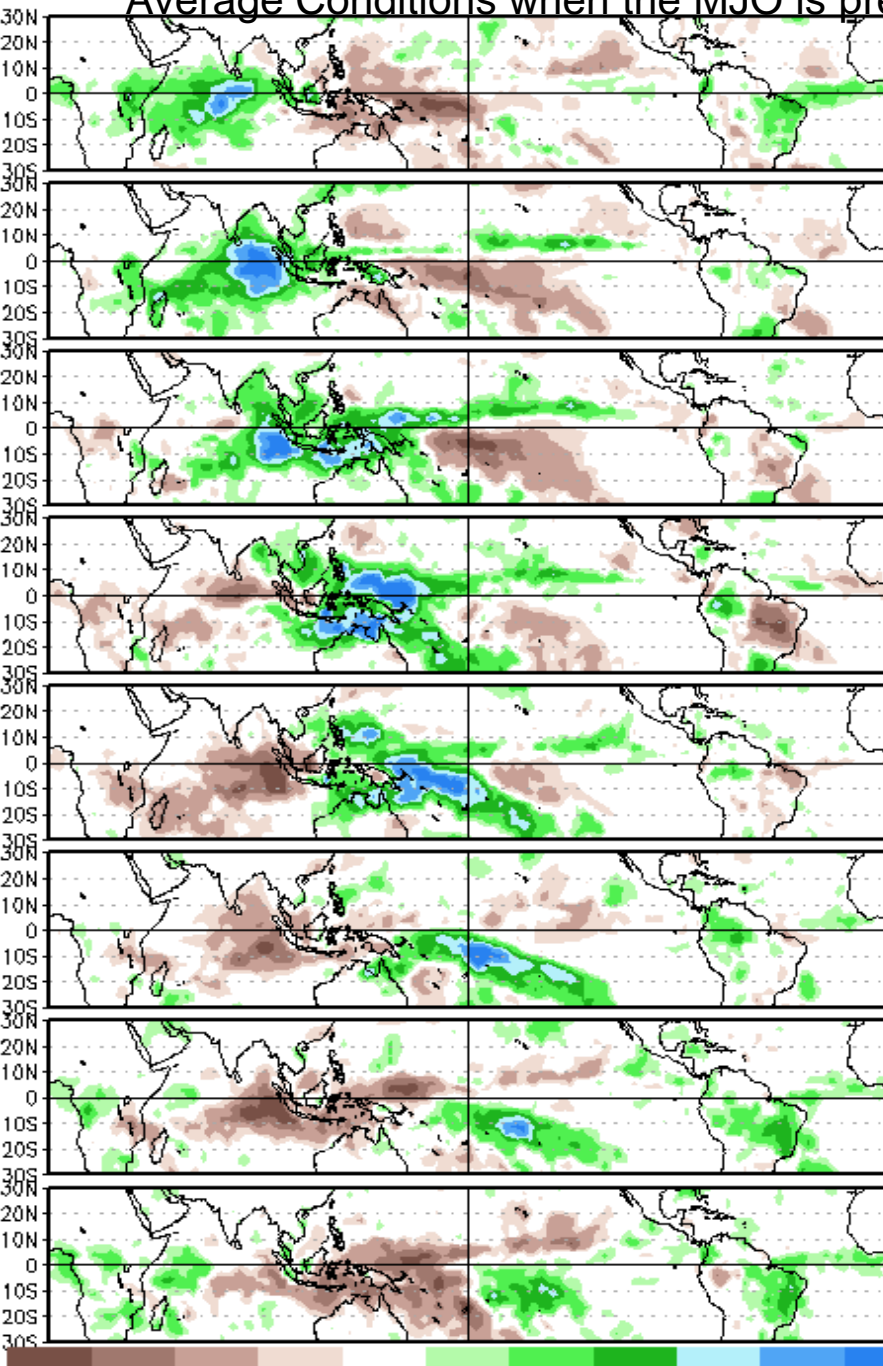
ECMWF



JMA

All models show a strong MJO propagating through Phases 8, 1, 2, and sometimes 3 during the next two weeks.

Average Conditions when the MJO is present



Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

Phase 7

Phase 8

Phase 1

Week 2

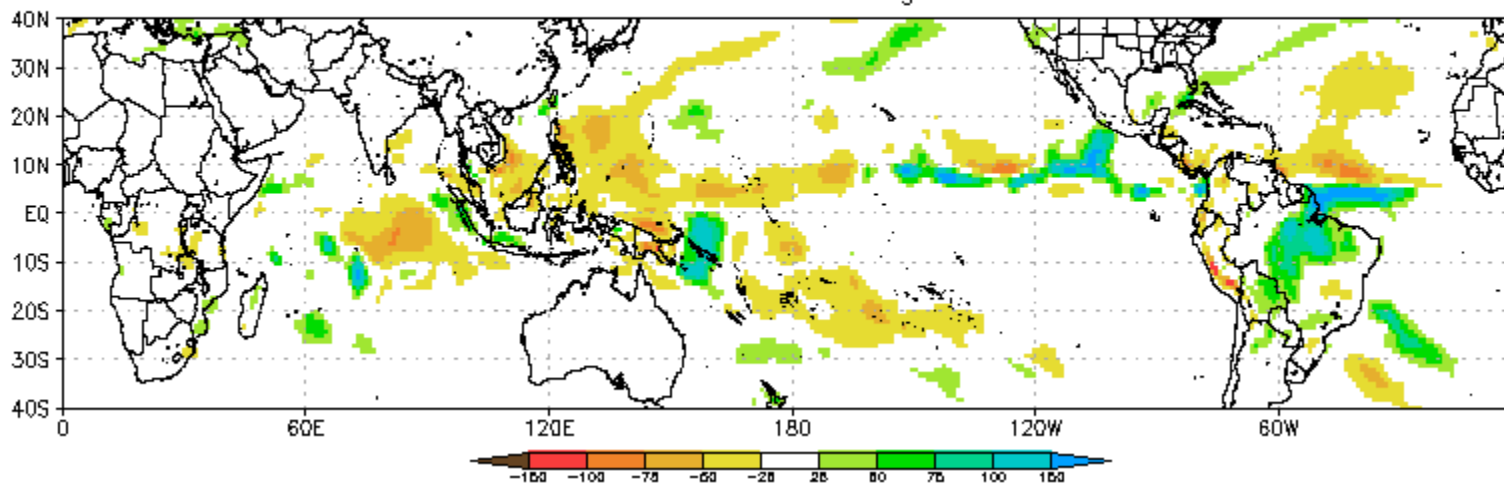
CAVEAT: These panels are representative of robust MJO events.

Week 1

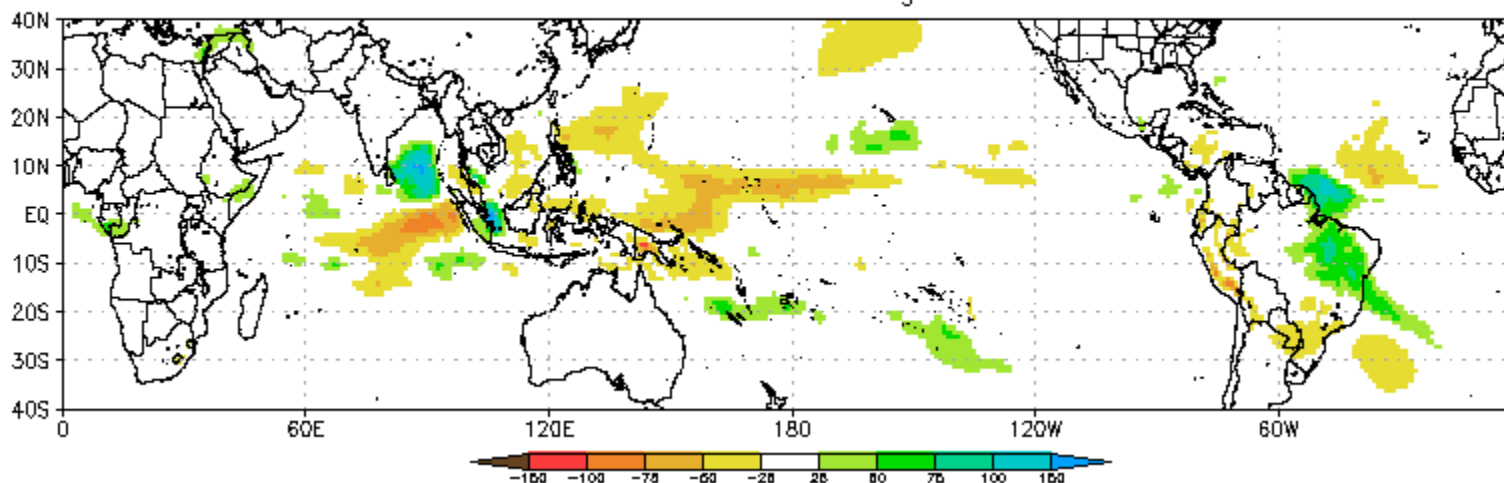
Week 1

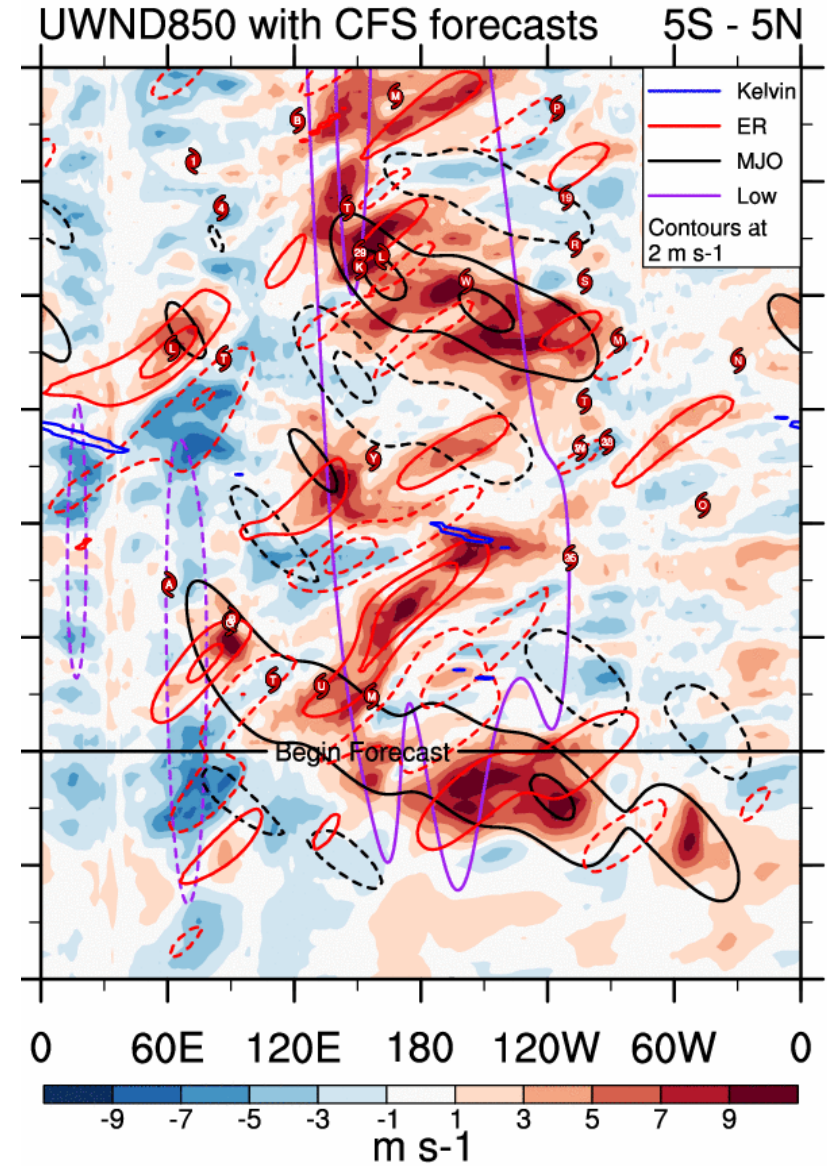
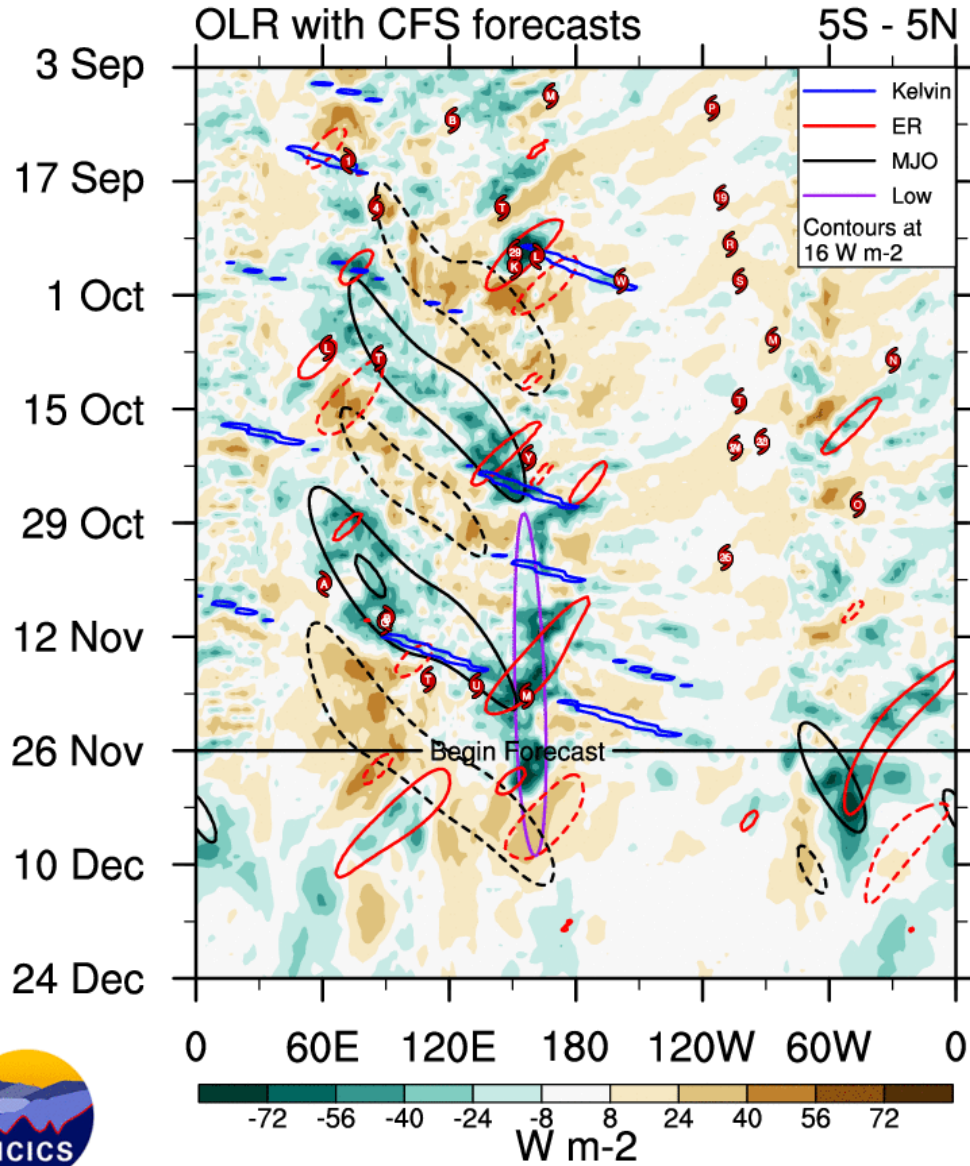
Week 2

CFS Precipitation Anomalies (mm) Issued 26Nov2018
Week-1 Forecast Ending 04Dec2018

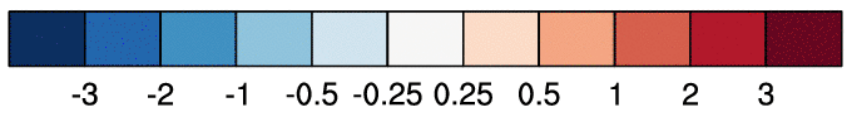
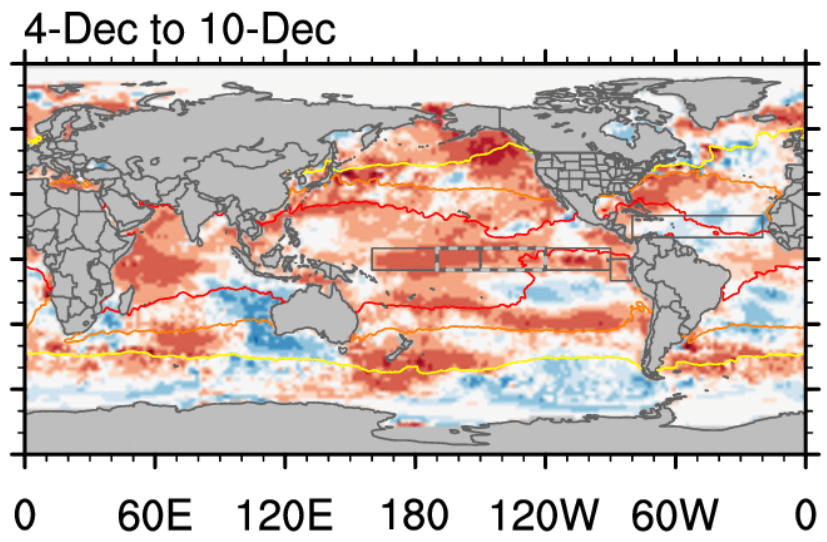
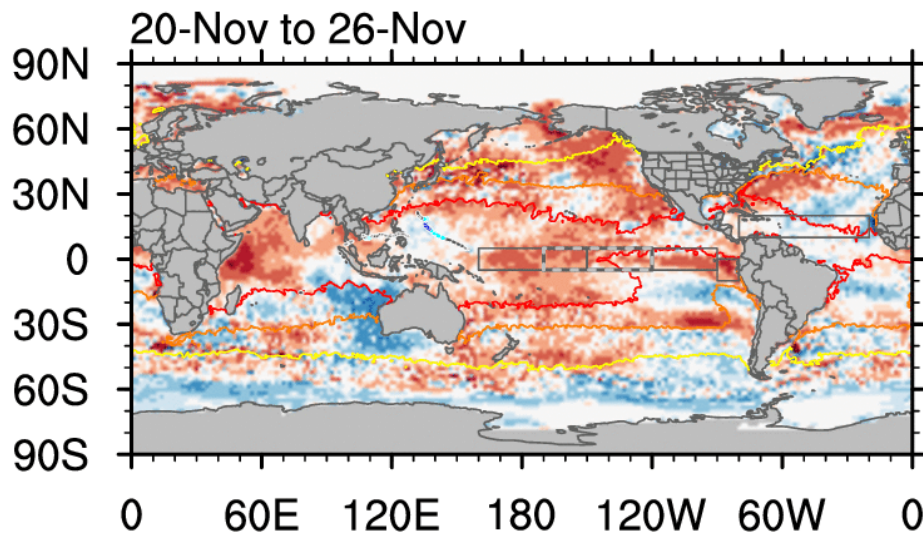
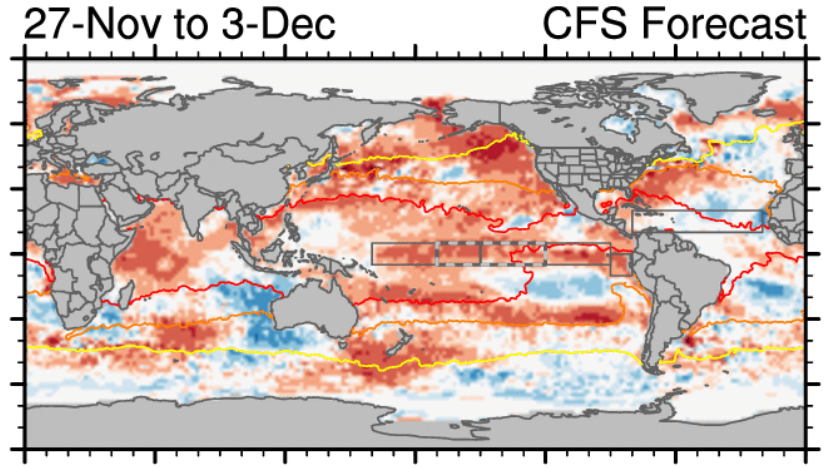
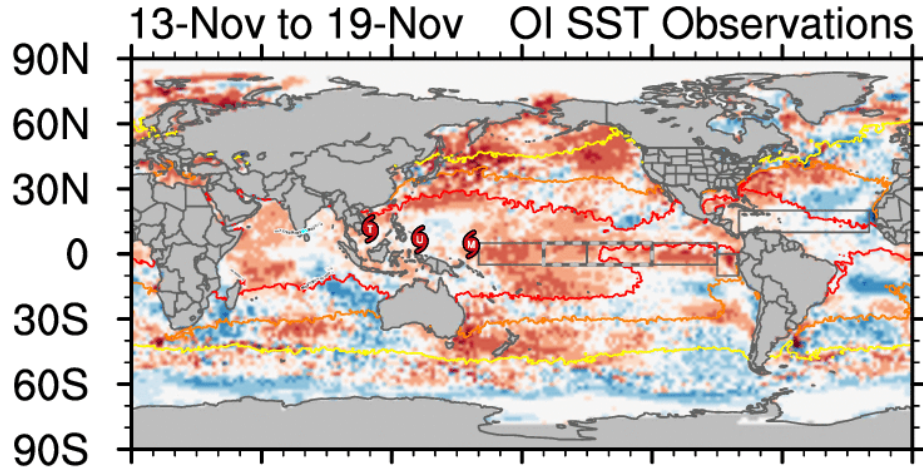


CFS Precipitation Anomalies (mm) Issued 26Nov2018
Week-2 Forecast Ending 11Dec2018



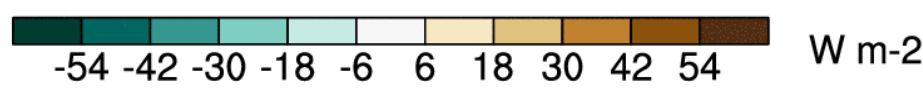
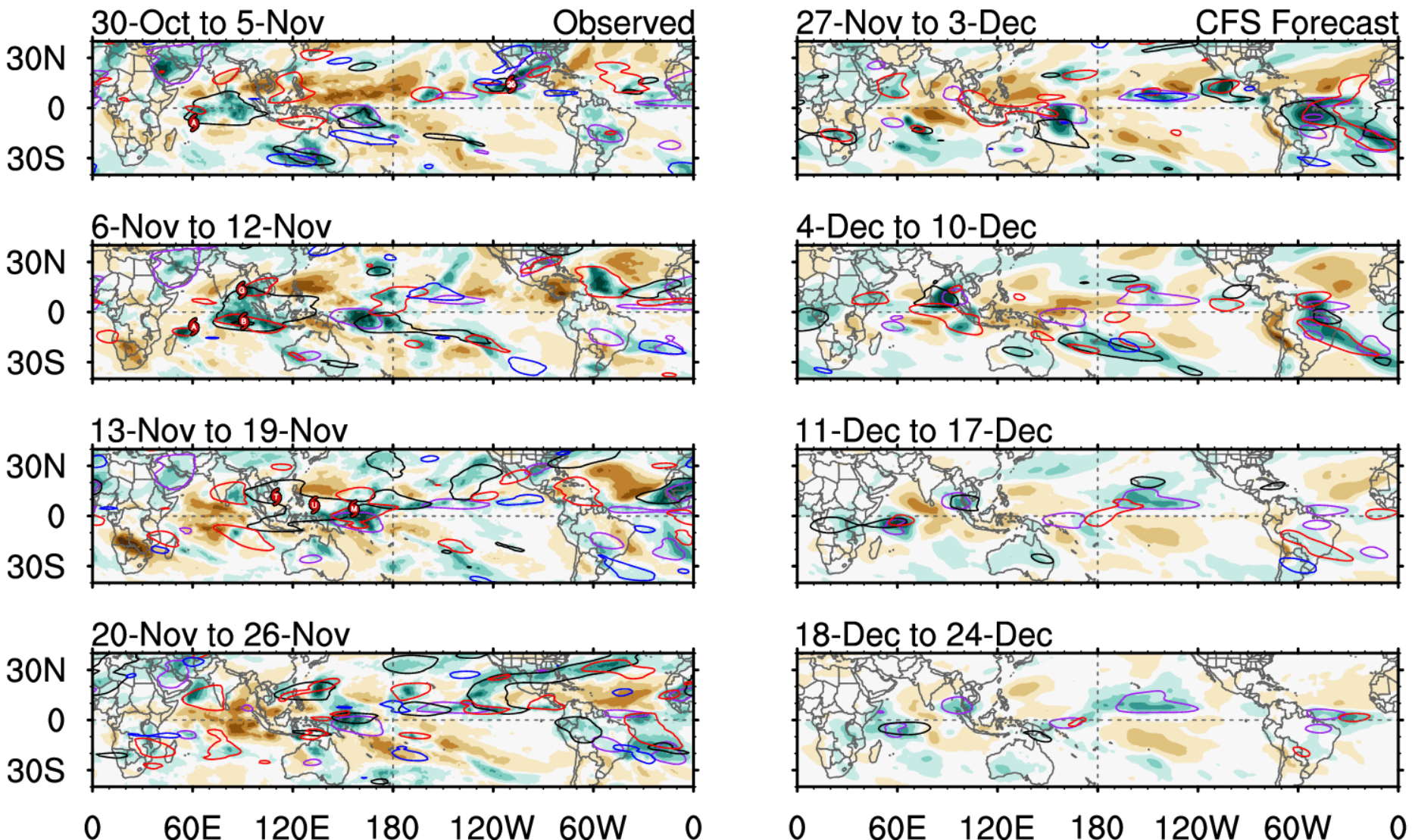


The **MJO** appears stronger in the wind signature (right panel) than the convection signal (left panel). **Equatorial Rossby** wave activity is apparent in both panels over the West Pacific.



7-day ANOM



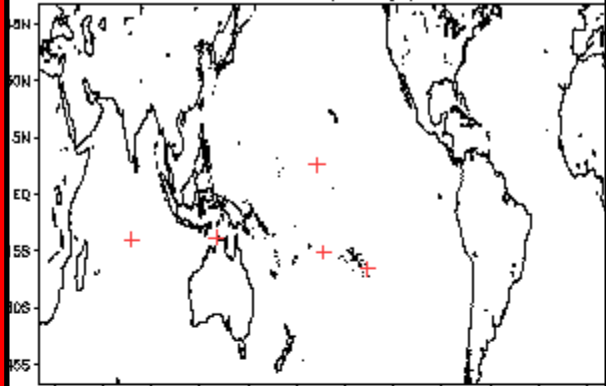


— MJO — Kelvin x 2
 — Low — ER
 Contours at -12, -36 W m⁻²

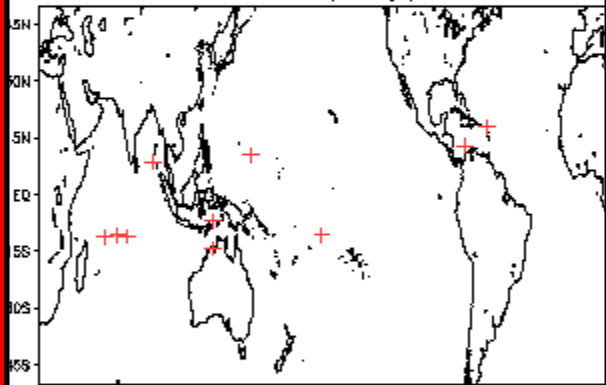
7-day OLR with CFS forecasts

December Tropical Storm Formation by MJO phase

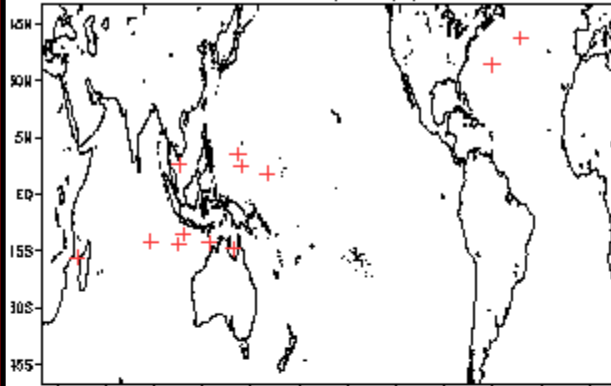
Phase 1 (48 days) 7 storms



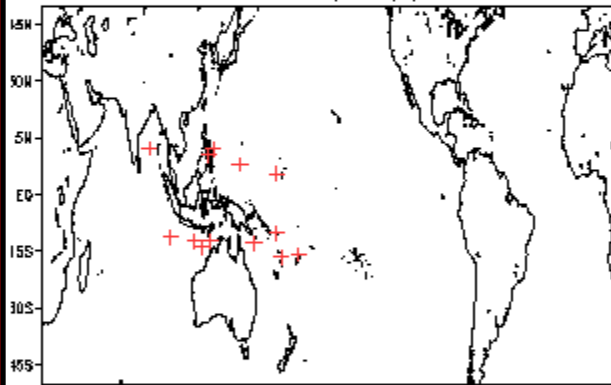
Phase 2 (67 days) 11 storms



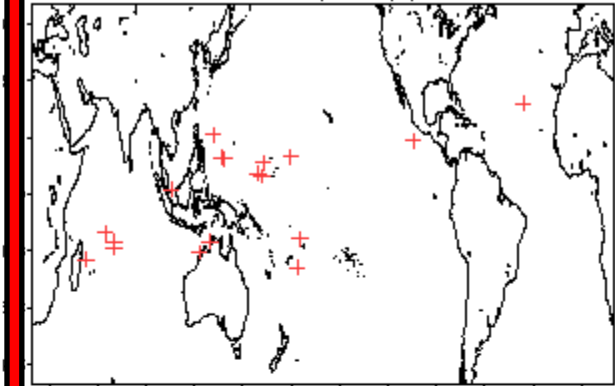
Phase 4 (72 days) 13 storms



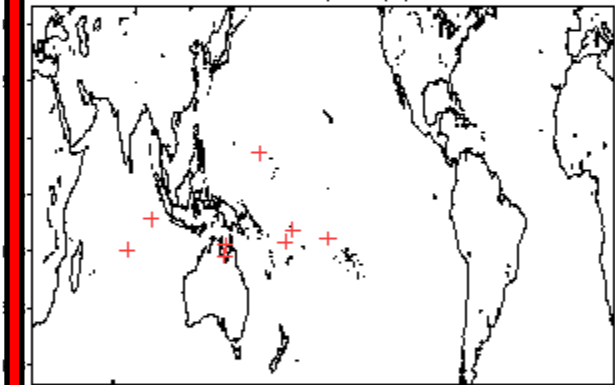
Phase 5 (73 days) 14 storms



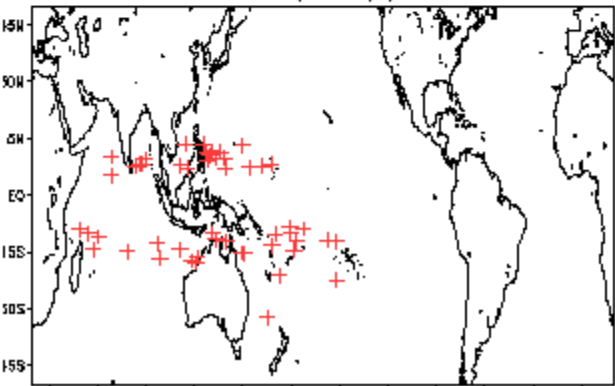
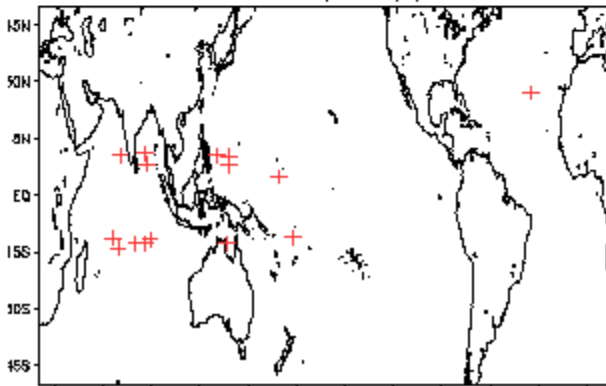
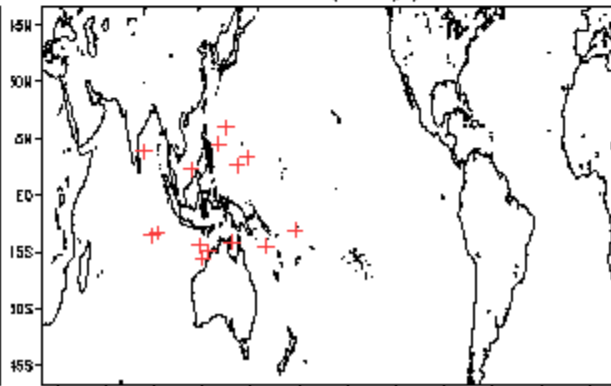
Phase 7 (103 days) 19 storms



Phase 8 (76 days) 9 storms



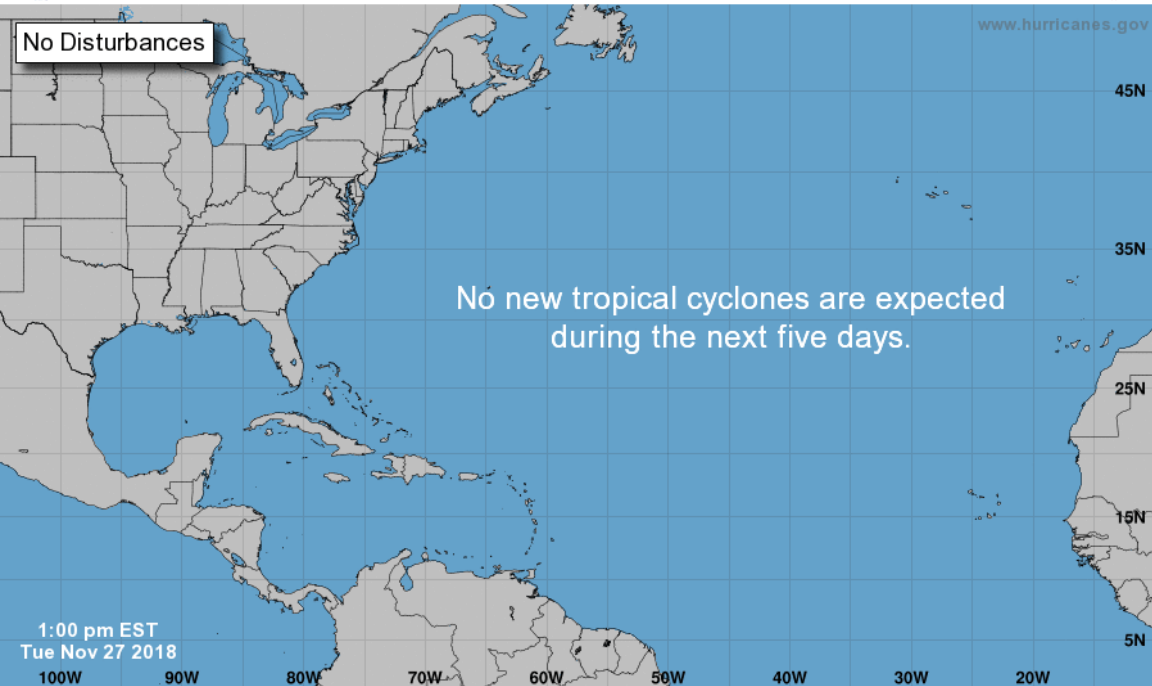
Phase 6 (69 days) 15 storms





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



1:00 pm EST
Tue Nov 27 2018

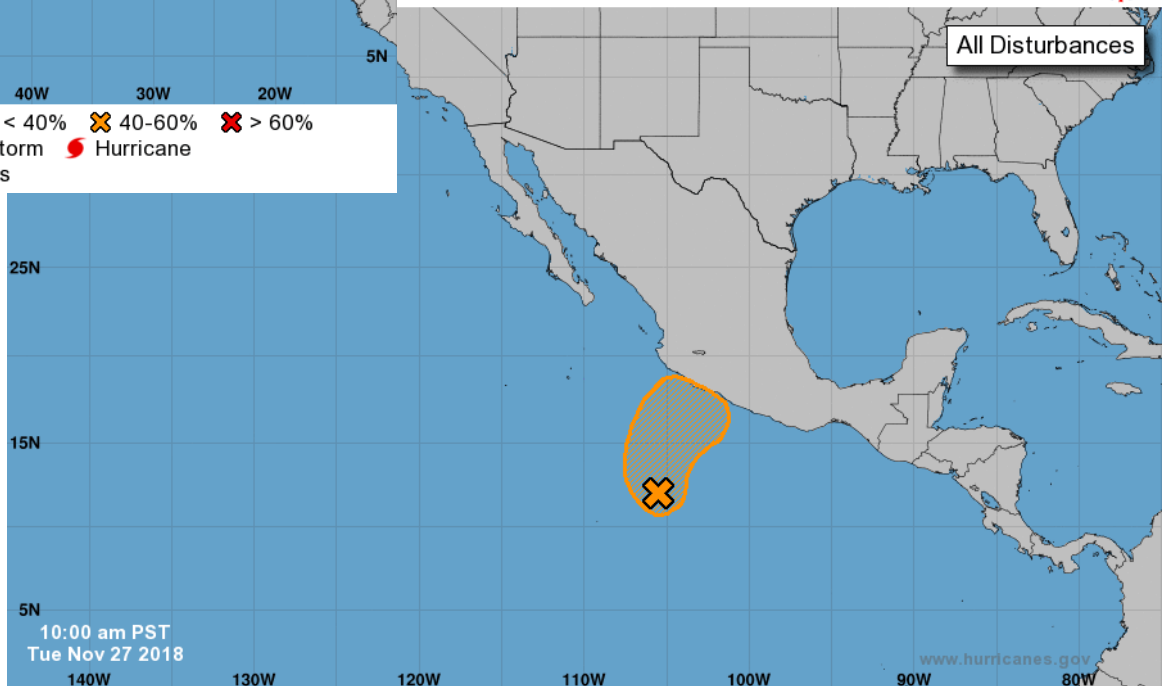
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

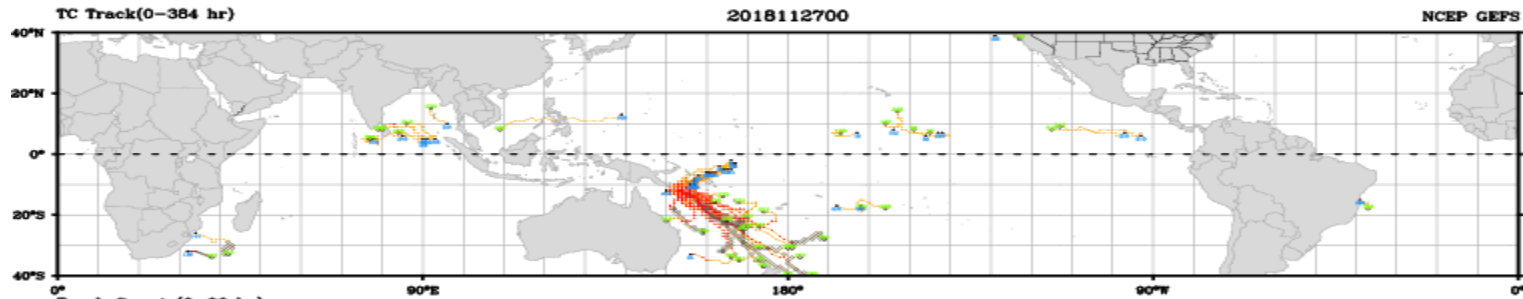
National Hurricane Center Miami, Florida



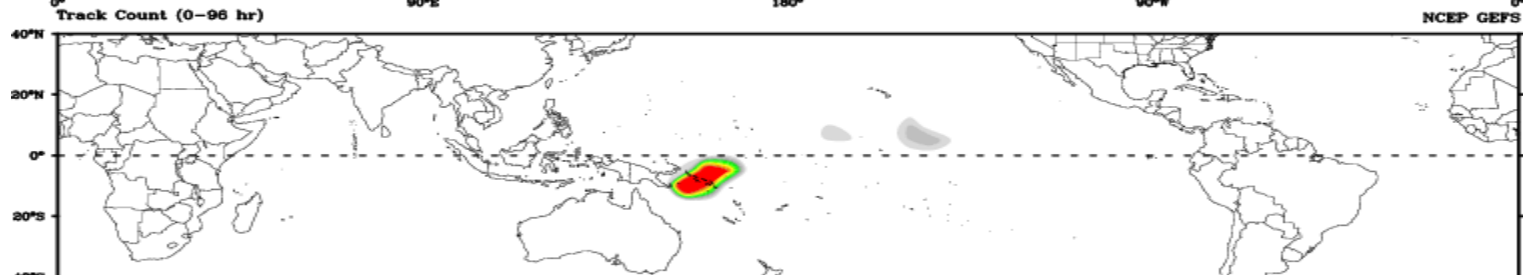
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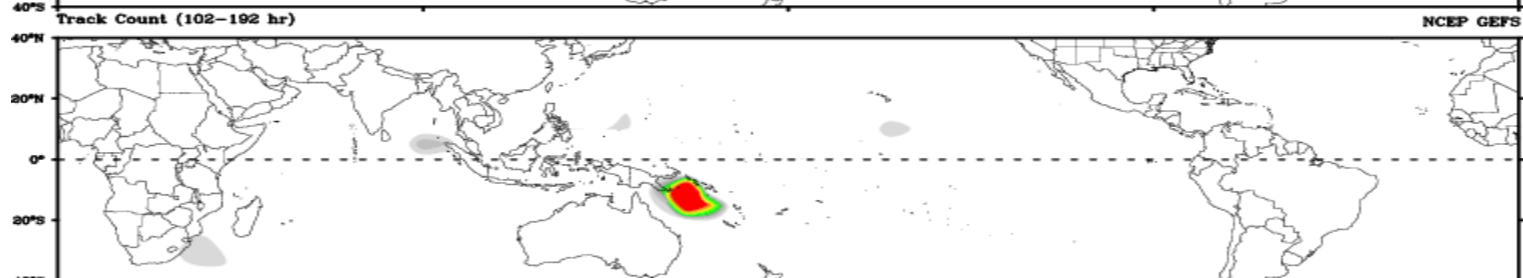
Post-Tropical Cyclone or Remnants



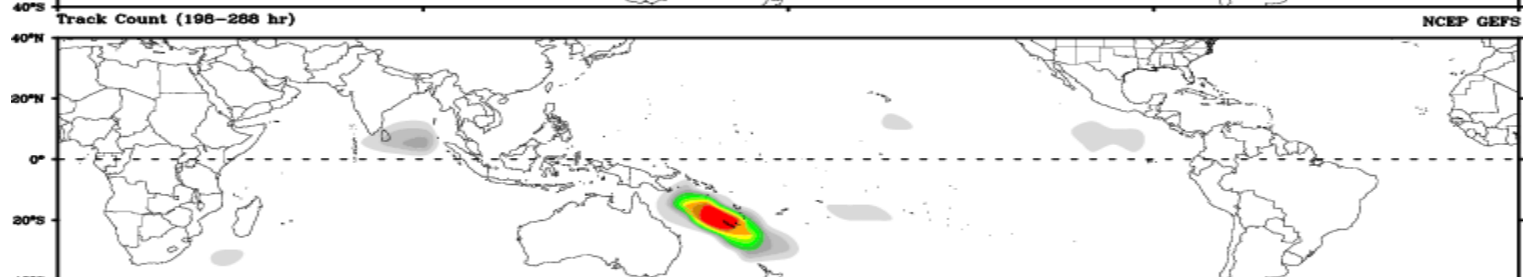
Days 1-4



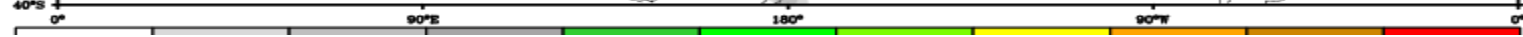
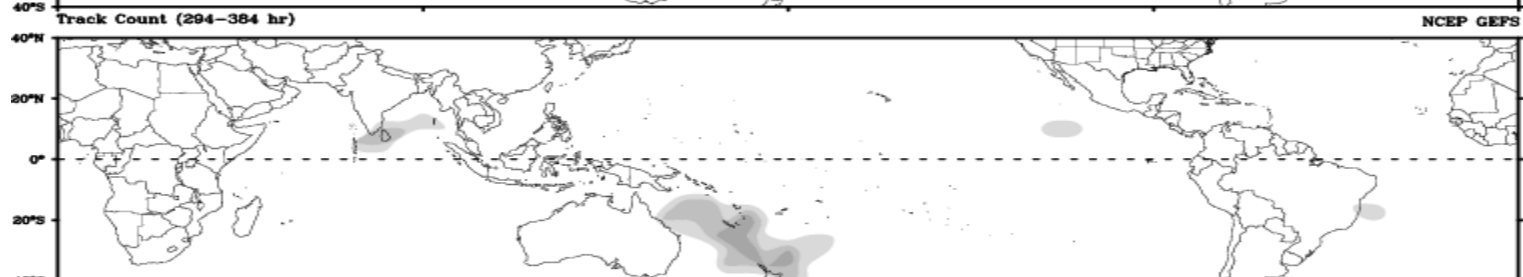
Day 5-8



Day 9-12

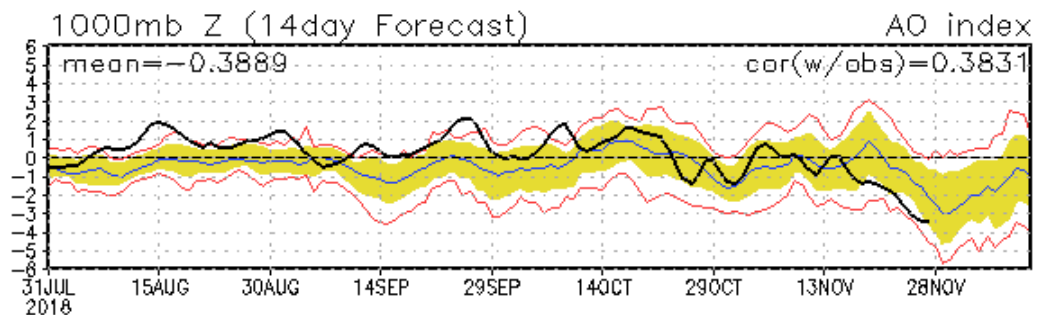
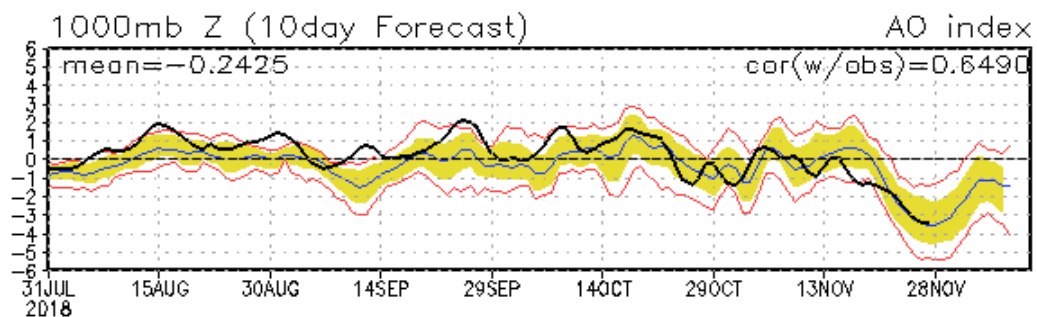
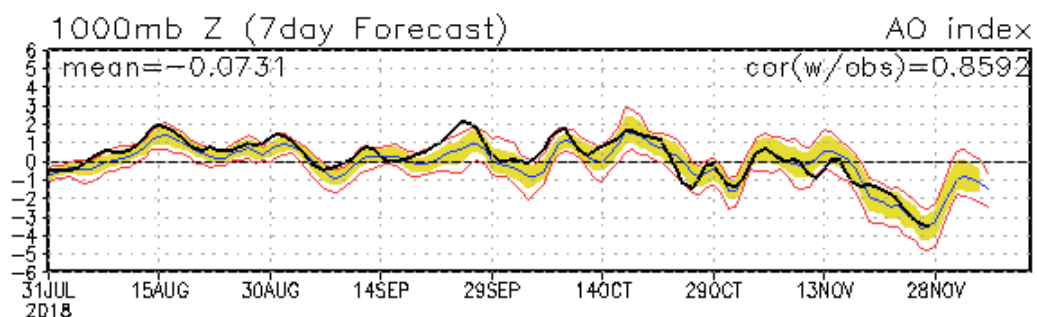
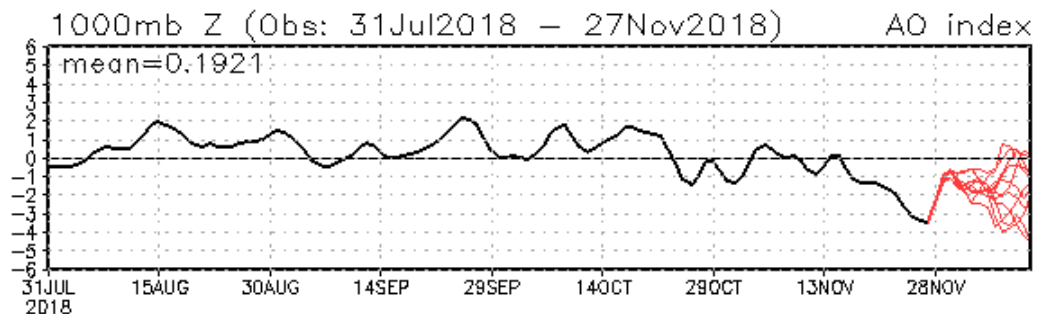


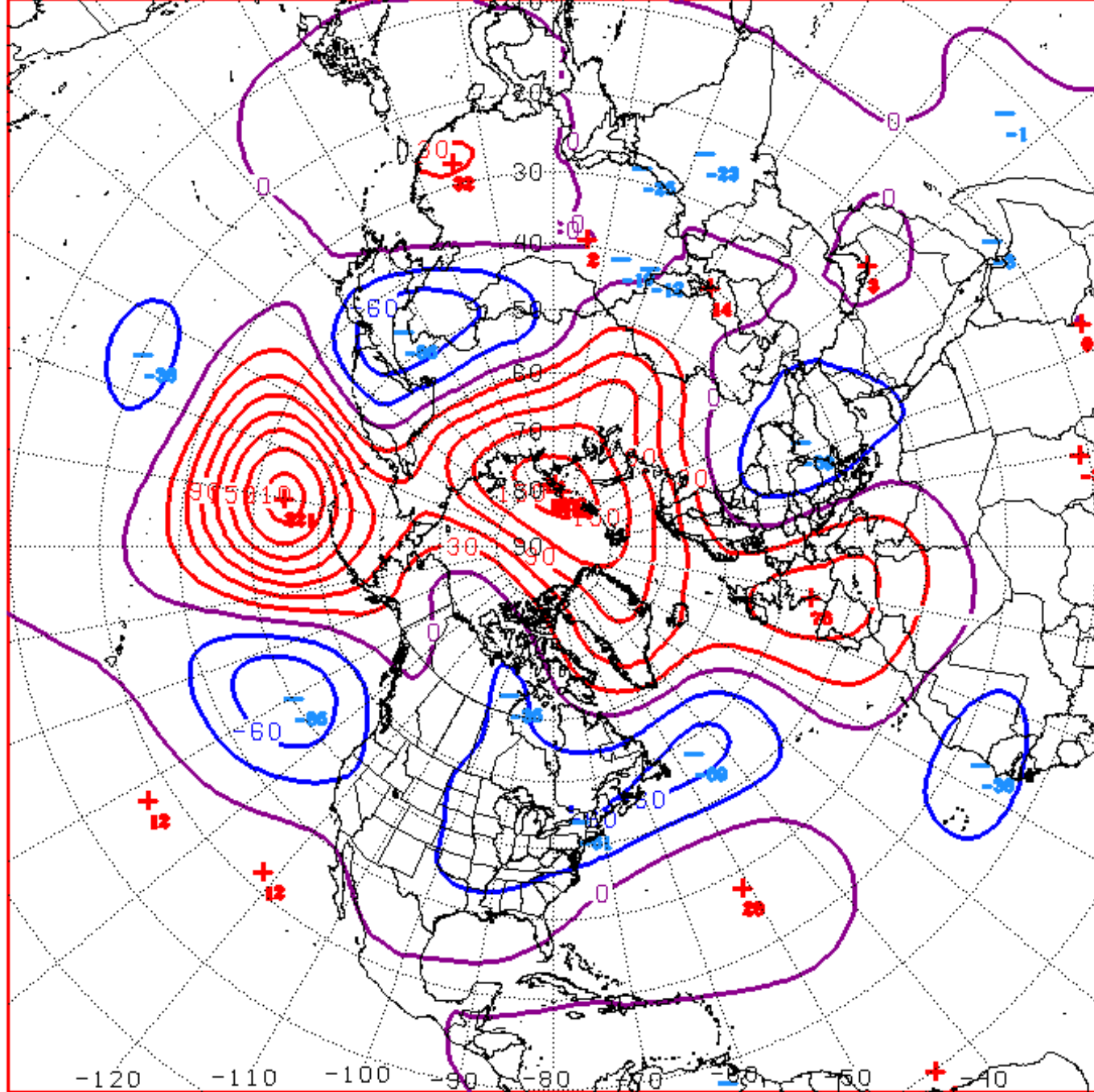
Day 13-15



Connections to U.S. Impacts

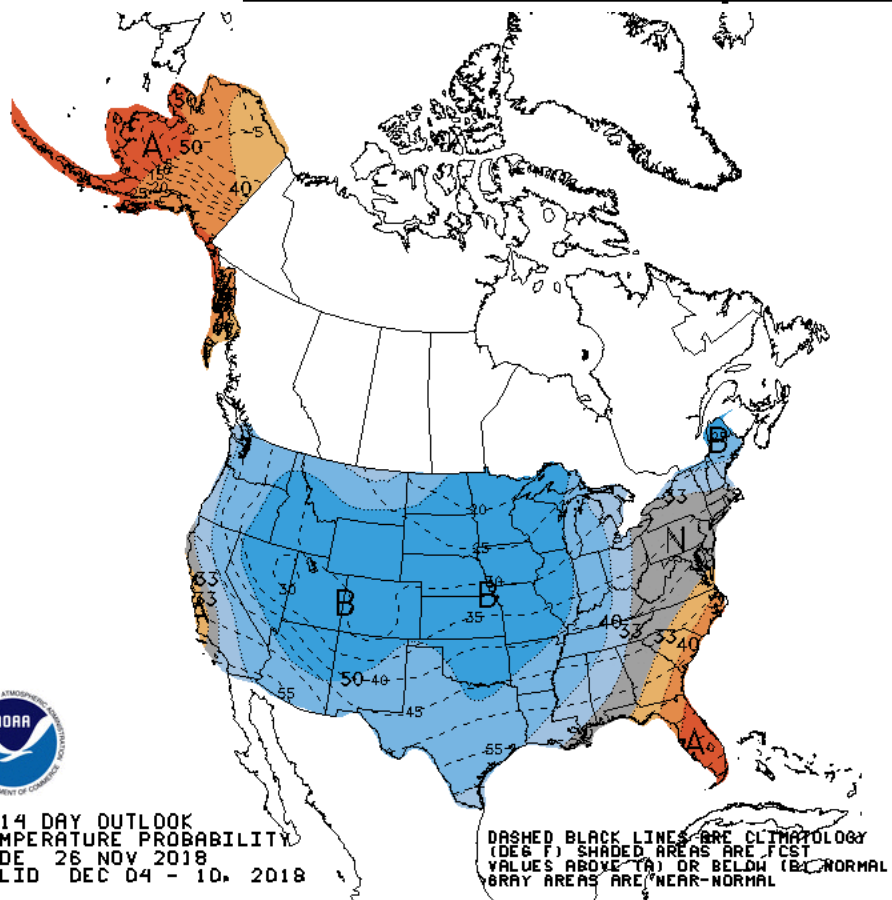
AO: Observed & ENSM forecasts



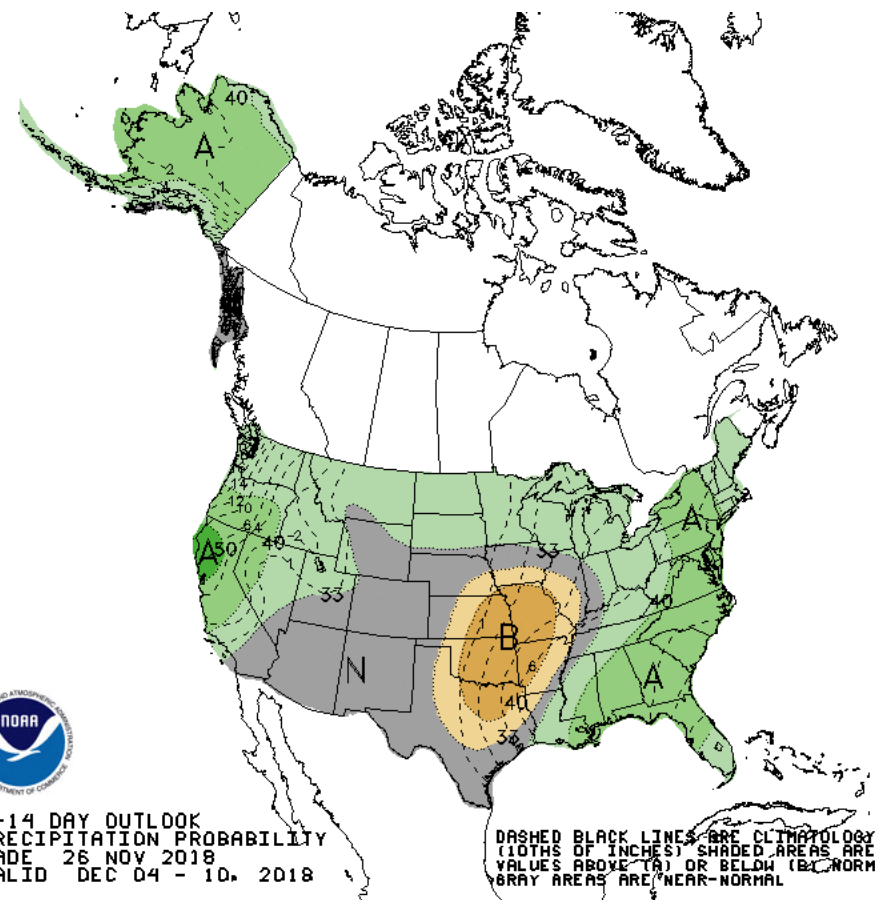
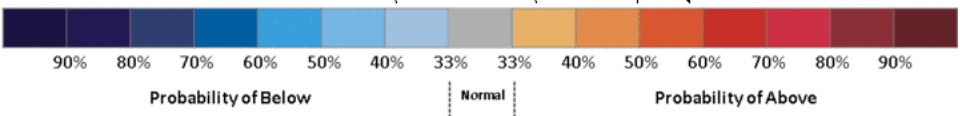


D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE NOV 27 2018 1305 UTC CNTD DEC 08 2018

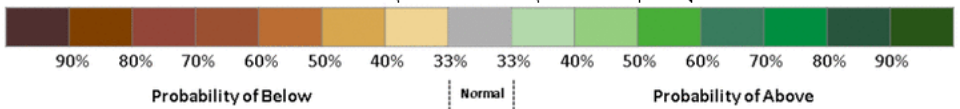
Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 26 NOV 2018
VALID DEC 04 - 10, 2018



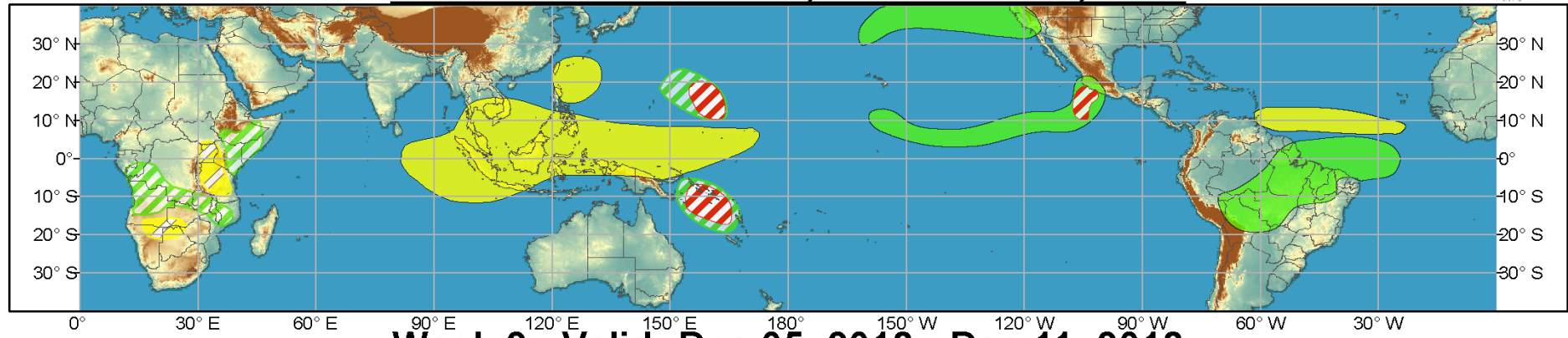
8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 26 NOV 2018
VALID DEC 04 - 10, 2018



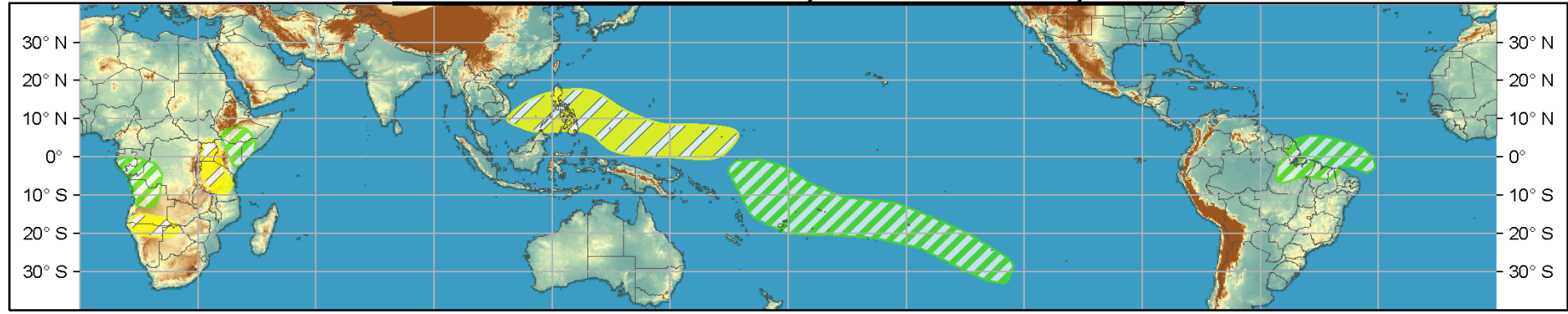


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