

Global Tropics Hazards And Benefits Outlook

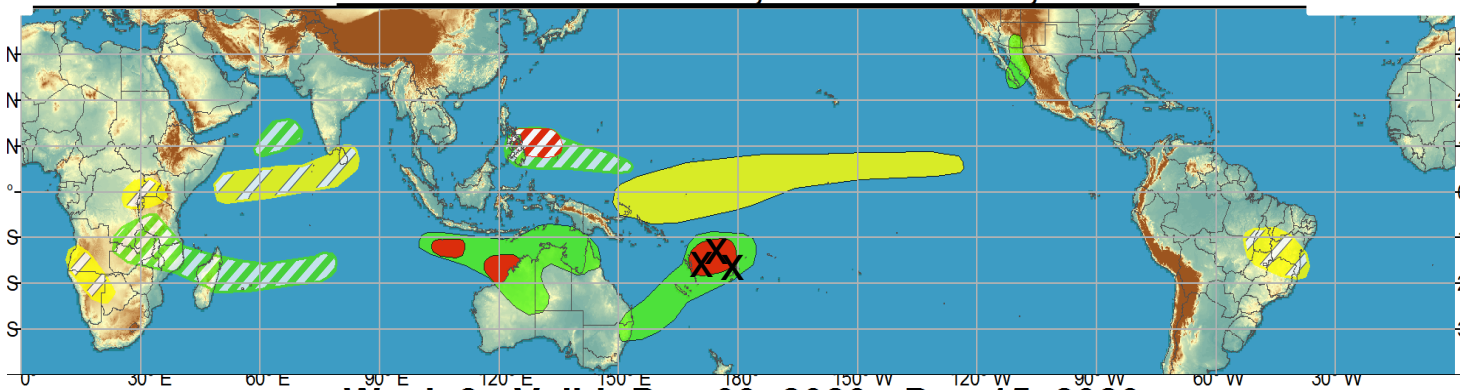
12/15/2020

Nick Novella

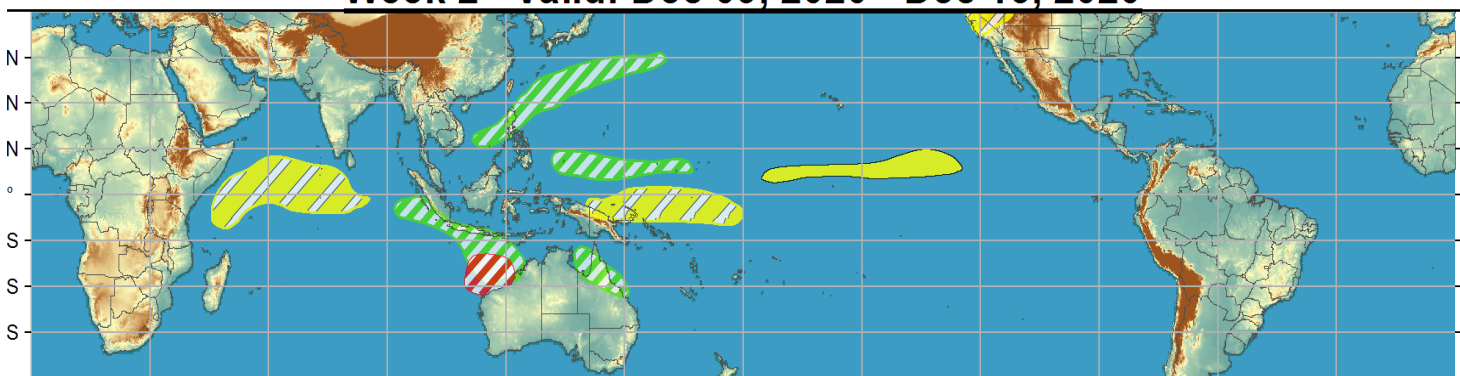
Outline

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

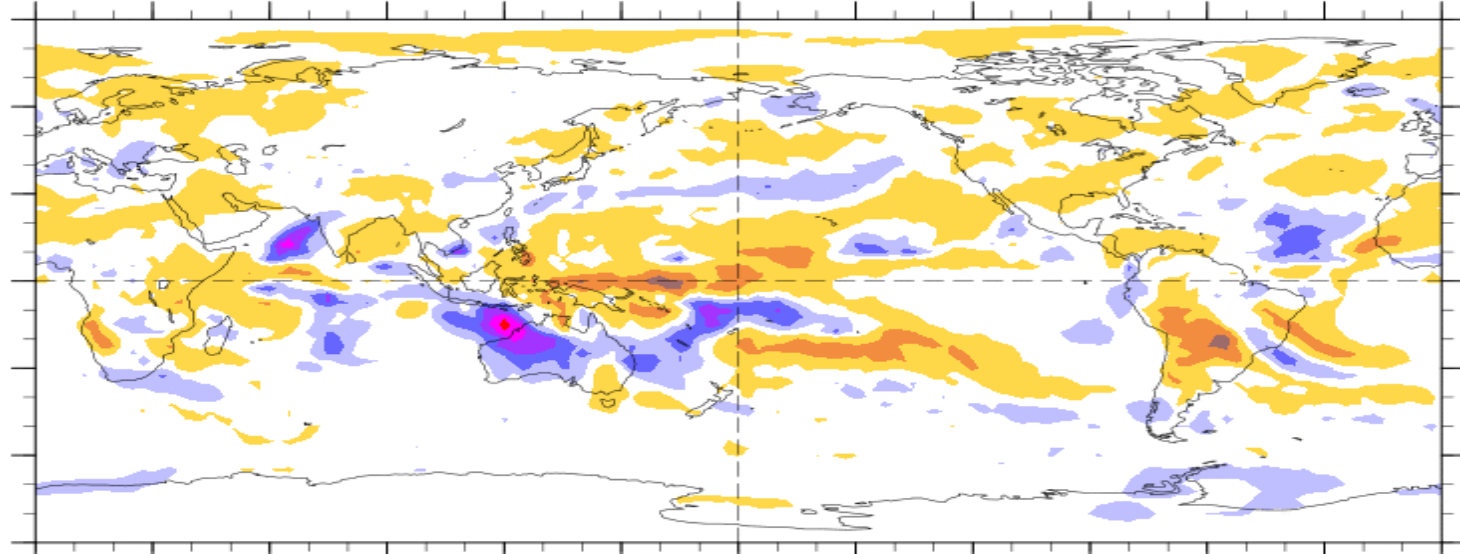
Week 1 - Valid: Dec 09, 2020 - Dec 15, 2020



Week 2 - Valid: Dec 09, 2020 - Dec 15, 2020



7-Day Average OLR Anomaly 2020/12/07 - 2020/12/13



Outlook Review

TC "01F" (12/11-12/12)

TC "Yasa" (12/12 - present)

TC "Zazu" (12/13-present)

Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: December 10, 2020 Update

Next update Jan 14

ENSO Alert System Status: [La Niña Advisory](#)

- La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March) with a potential transition during the spring 2021 (~50 chance of Neutral during April-June)

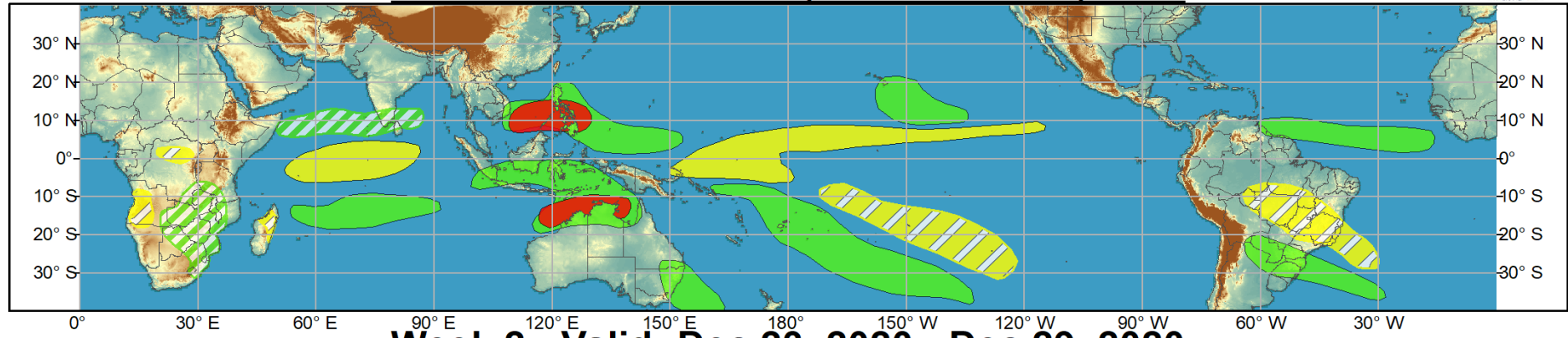
MJO and other subseasonal tropical variability:

- Following signs of a reorganizing MJO over the eastern Maritime Continent during the past week, the intraseasonal signal has weakened.
- Dynamical models favor a continued weakening of the MJO due to destructive interference with La Nina, and there is low forecast confidence in the predicted evolution of the MJO into Late December.
- The MJO contributed to the development of the first series of tropical cyclones (TC) in the South Pacific this season.

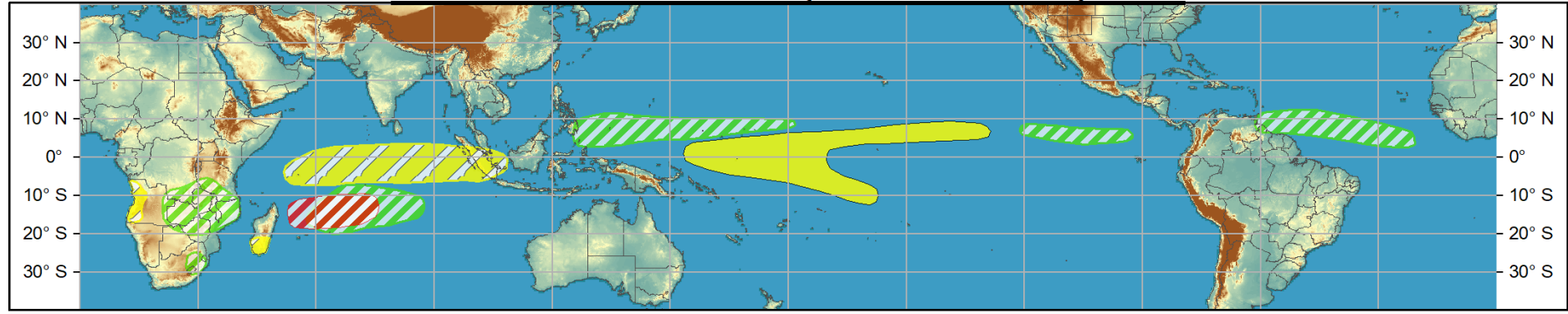


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 16, 2020 - Dec 22, 2020



Week 2 - Valid: Dec 23, 2020 - Dec 29, 2020



Produced: 12/15/2020
Forecaster: Novella

Confidence		
High	Moderate	
		Development of a tropical cyclone (tropical depression - TD, or greater strength).
		Weekly total rainfall in the upper third of the historical range.
		Weekly total rainfall in the lower third of the historical range.
		7-day mean temperatures in the upper third of the historical range.
		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

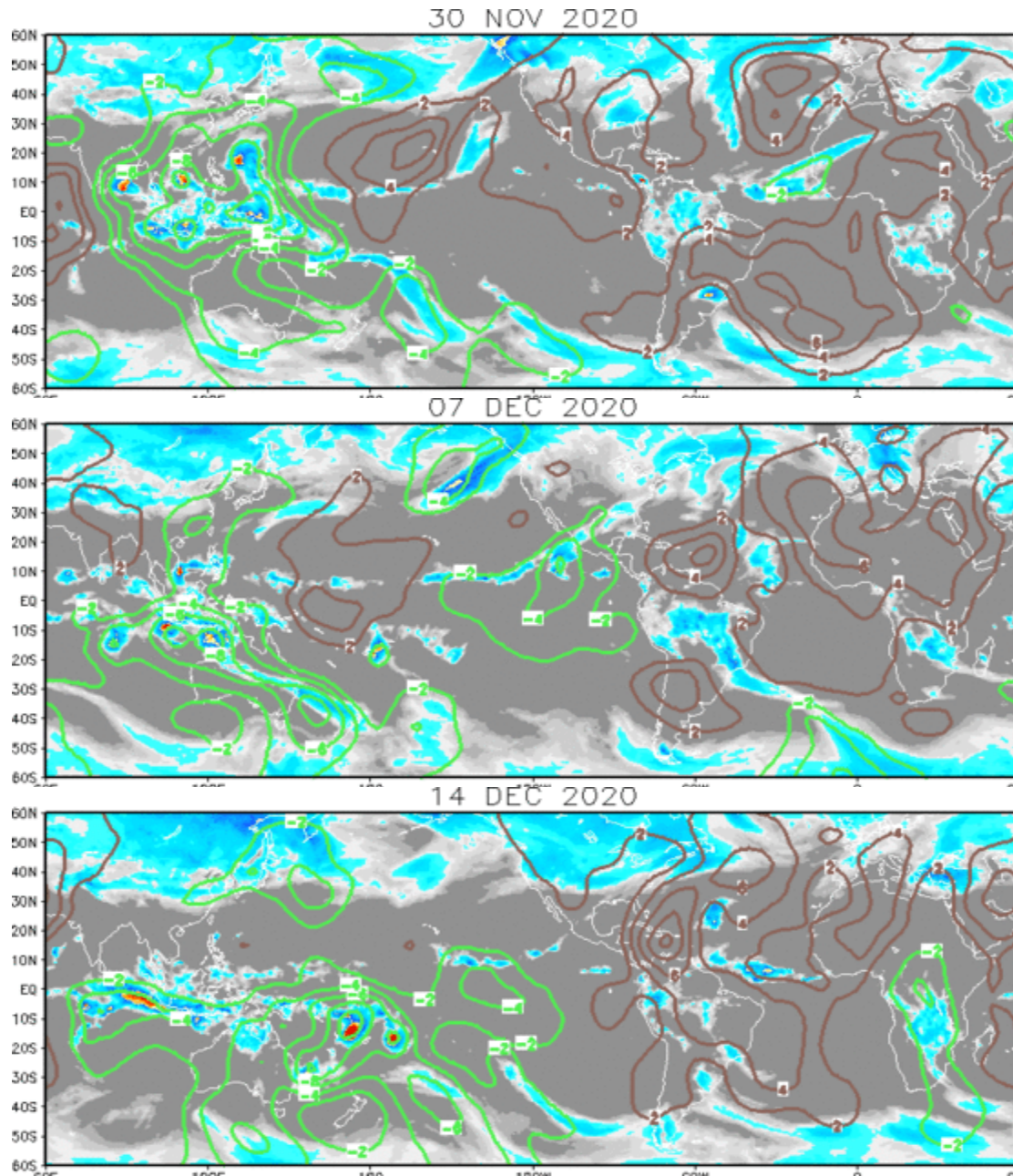
Green: Enhanced Divergence

Brown: Enhanced Convergence

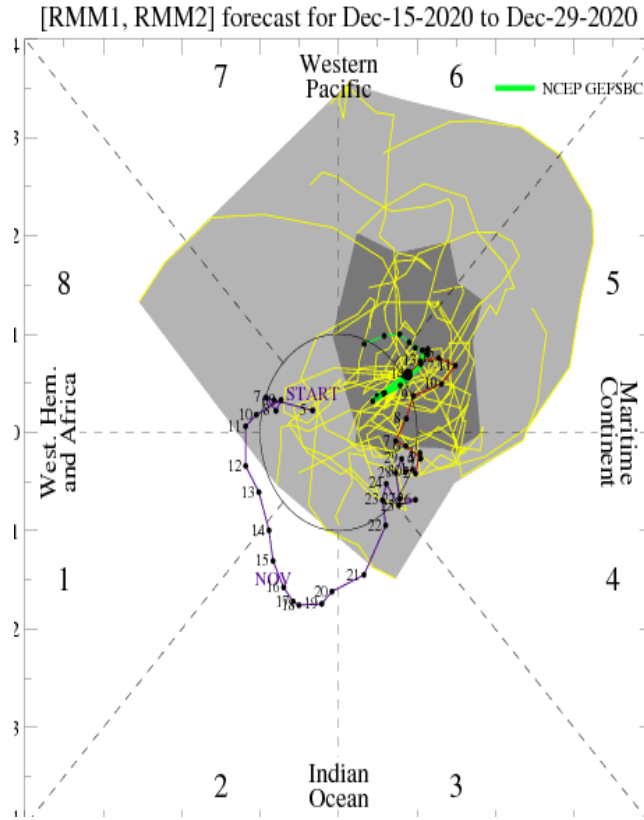
A narrow envelope of enhanced convection observed over Indian Ocean / Maritime Continent in late November.

Anomalous upper-level convergence persisting over the Date Line, with a Kelvin Wave traversing the eastern Pacific.

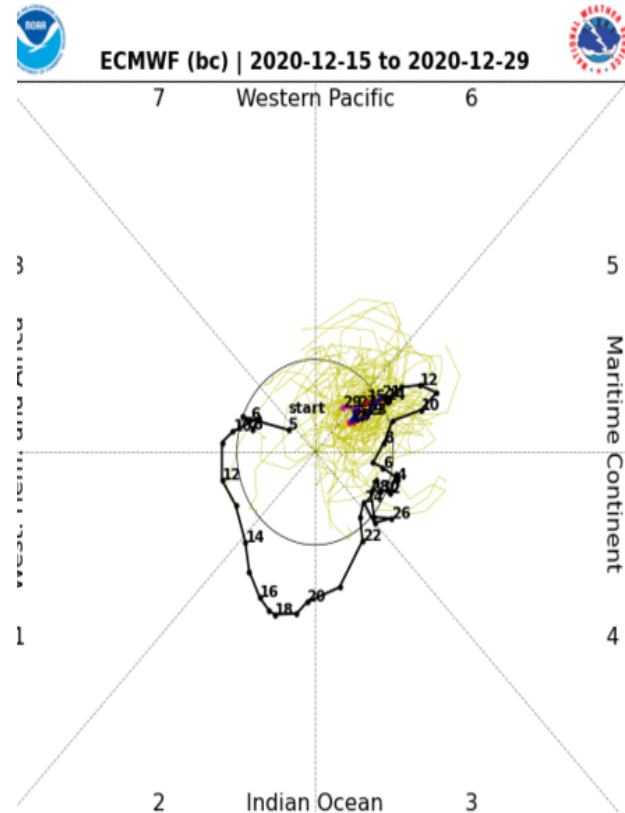
Better organization of the pattern ensued, but soon became less coherent with much of the enhanced envelope now focused across the southern hemisphere tied to TC activity.



MJO Observation/Forecast



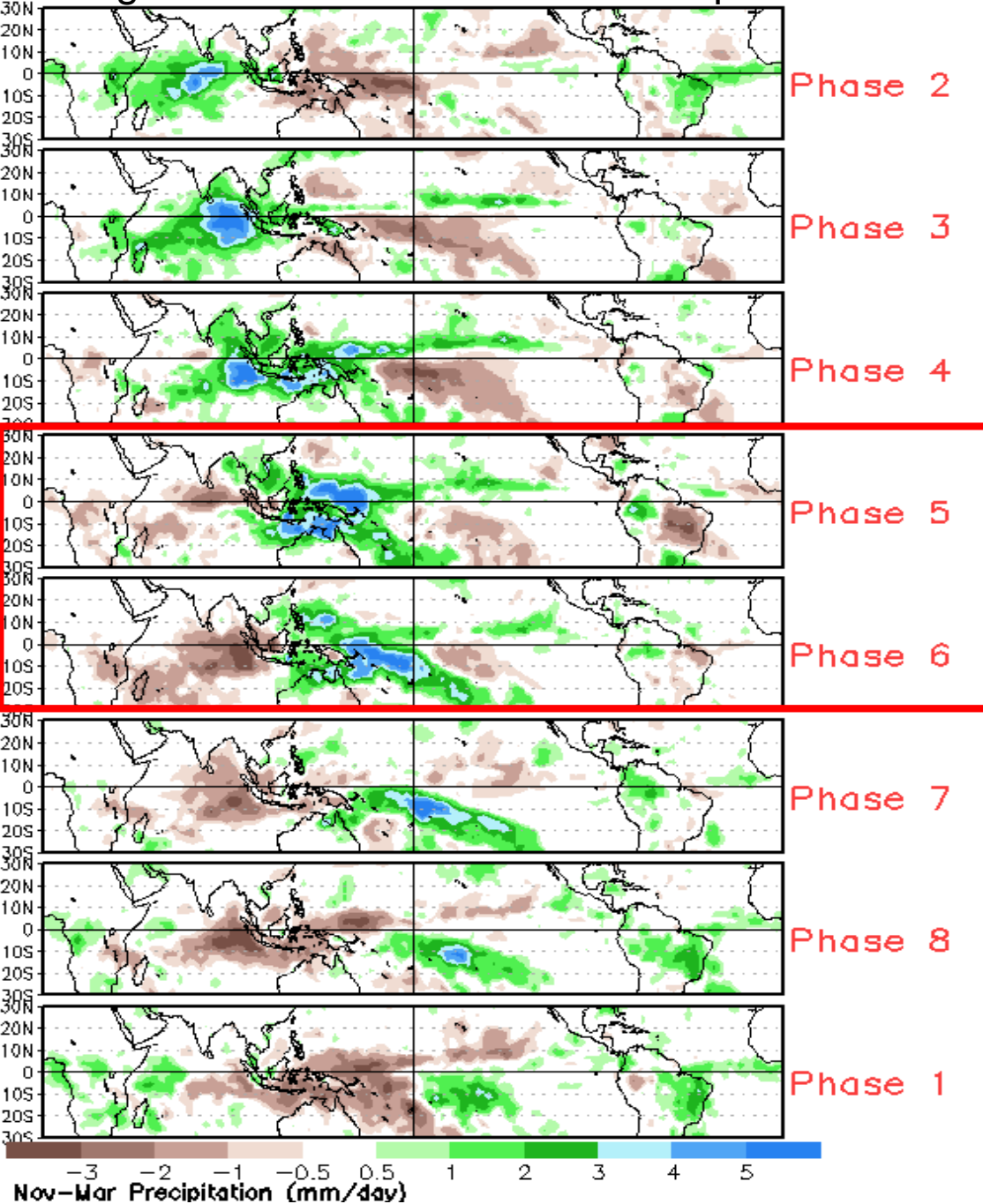
GEFS



ECMWF

The ECMWF model seems to be influenced more by competing modes of variability, while many of the GFS ensemble members depict a strengthening MJO at a high amplitude during week-2.

Average Conditions when the MJO is present

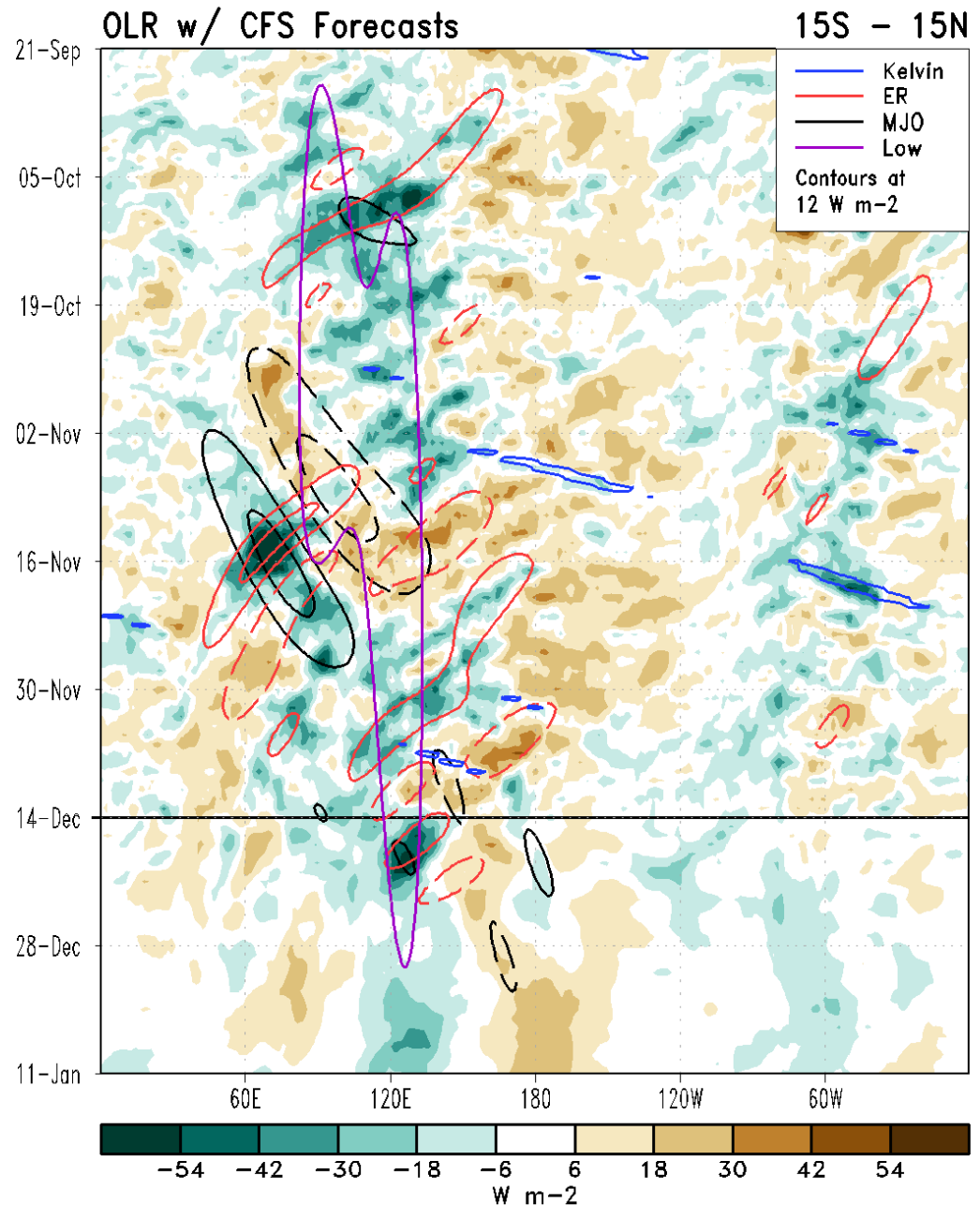


CAVEAT: These panels are representative of robust MJO events.

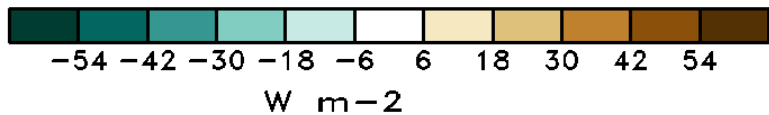
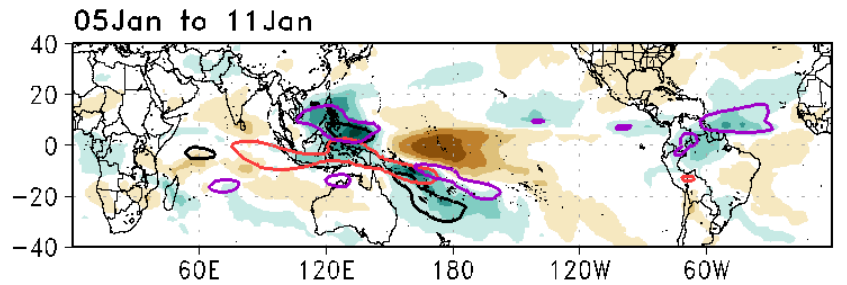
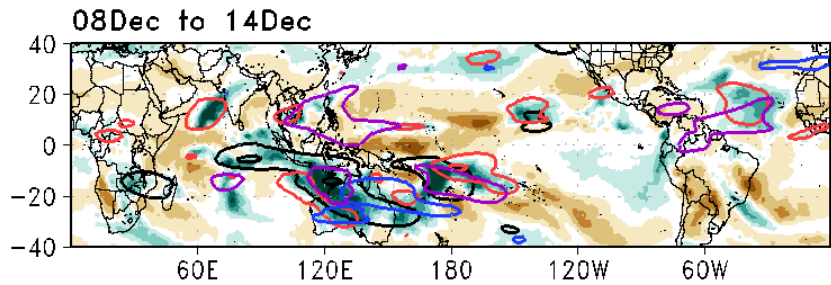
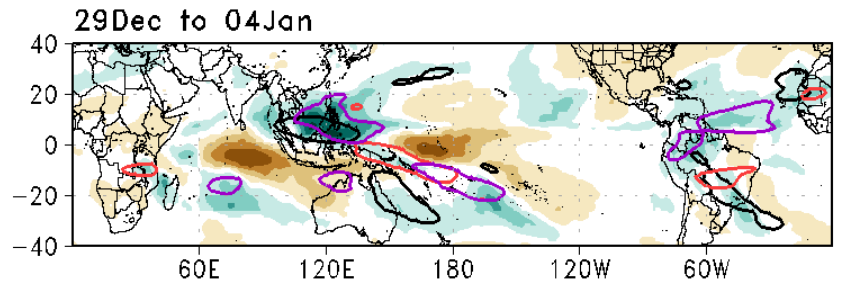
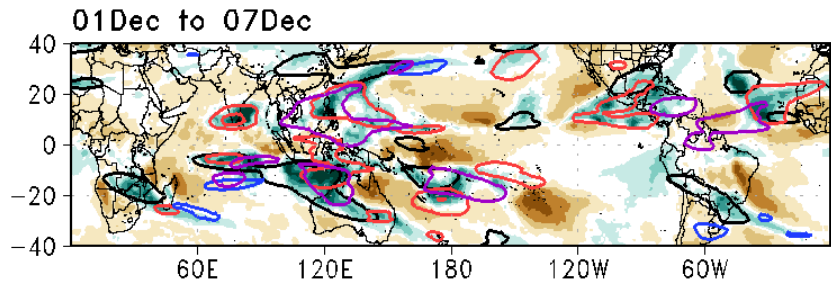
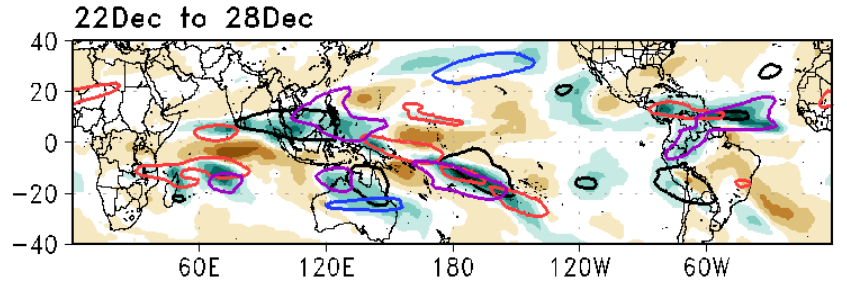
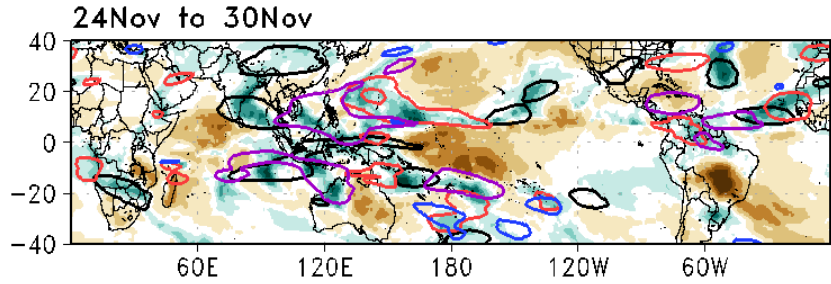
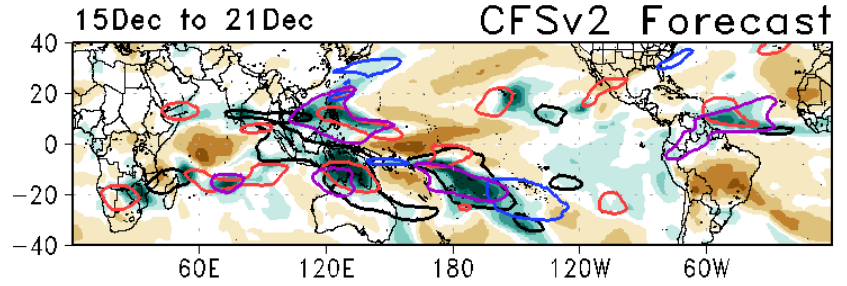
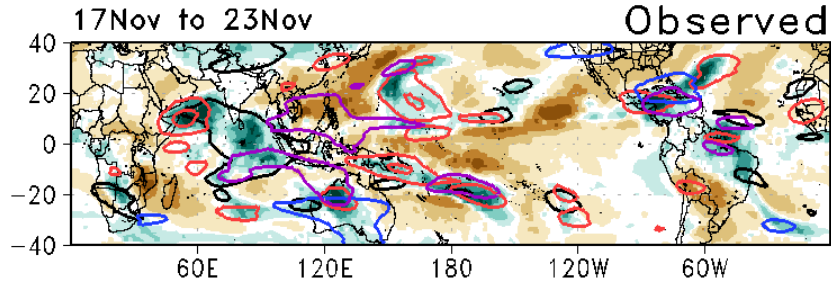
MJO activity is analyzed during early to mid-Nov over the Indian Ocean in the OLR field.

Rosby wave activity anticipated near 120E to aid in TC formation.

Low frequency contours depict persistent enhanced convection over Maritime Continent.

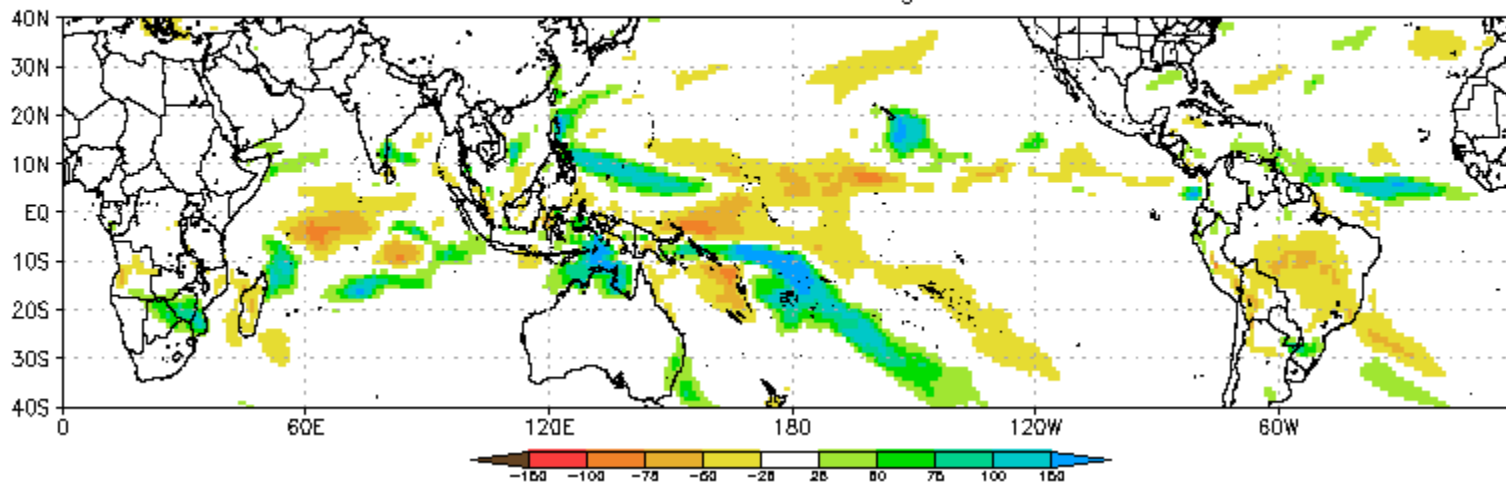


OLR 7-Day Means

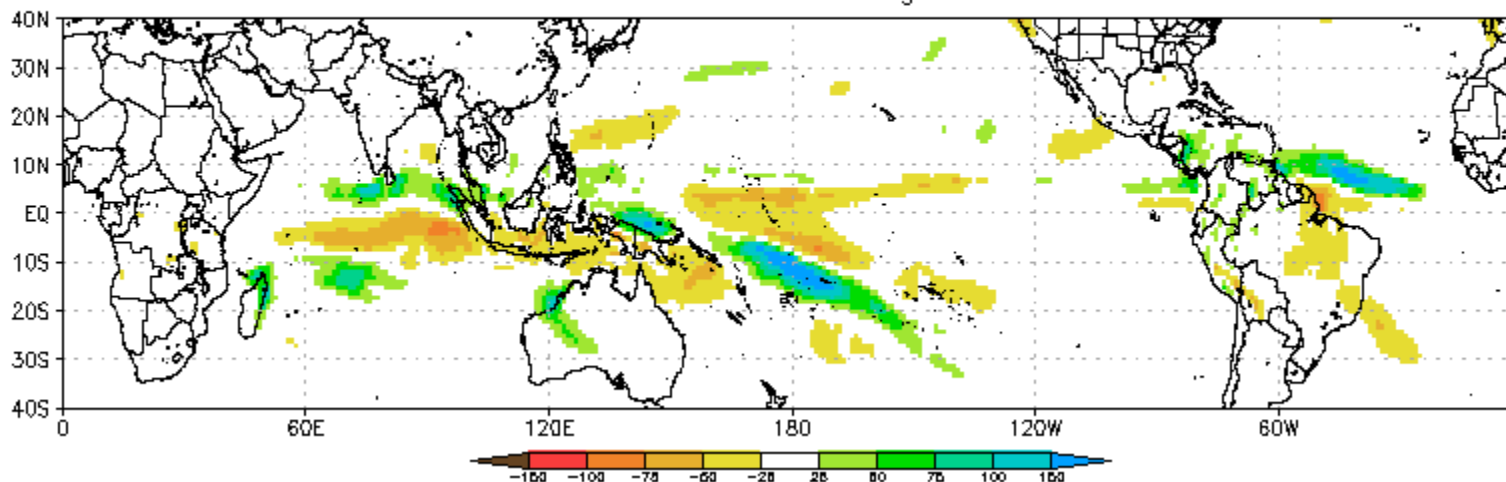


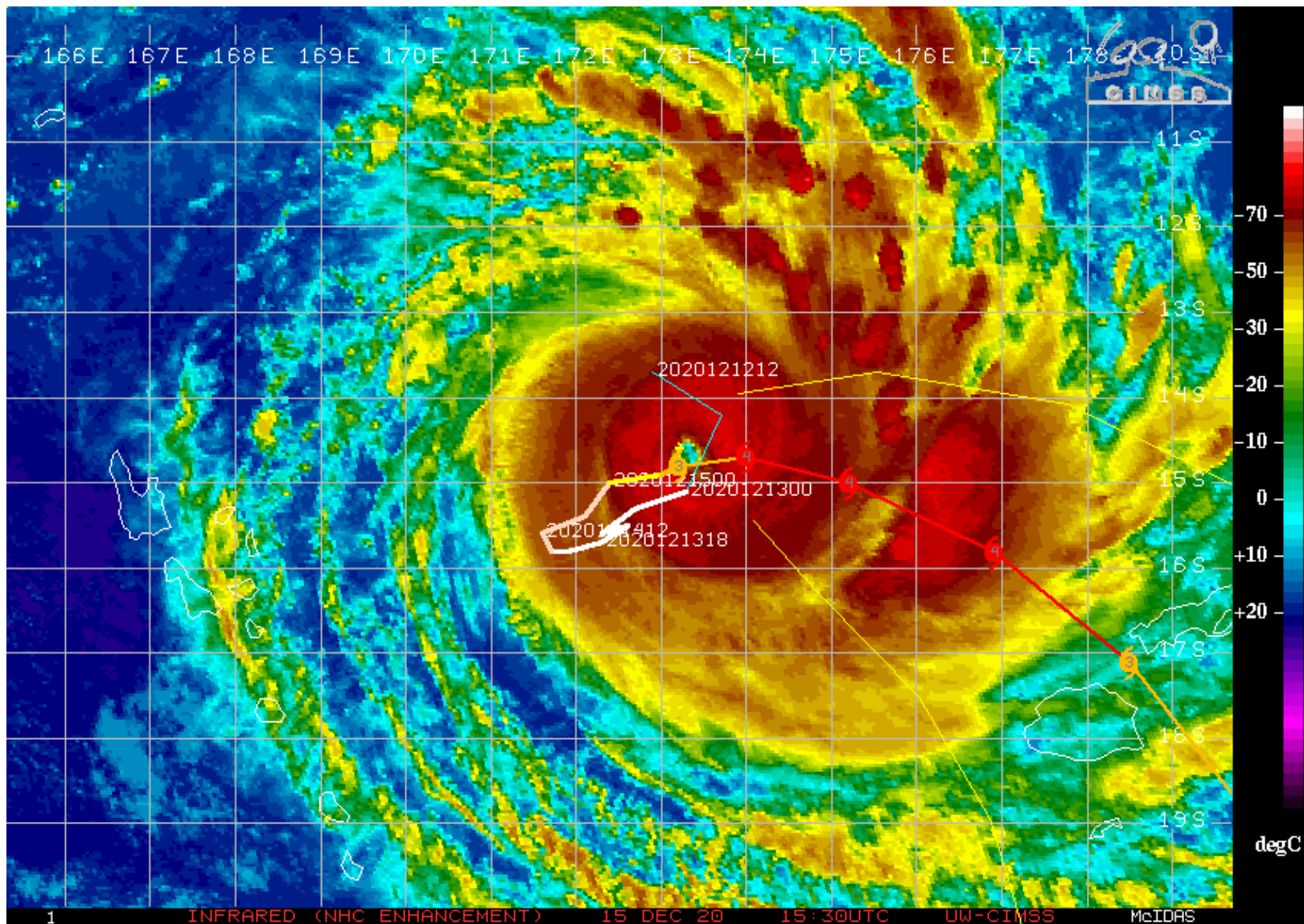
— MJO — Kelvin*2
— Low — ER
 Contours at -12, -36 W m⁻²

CFS Precipitation Anomalies (mm) Issued 14Dec2020
Week-1 Forecast Ending 22Dec2020

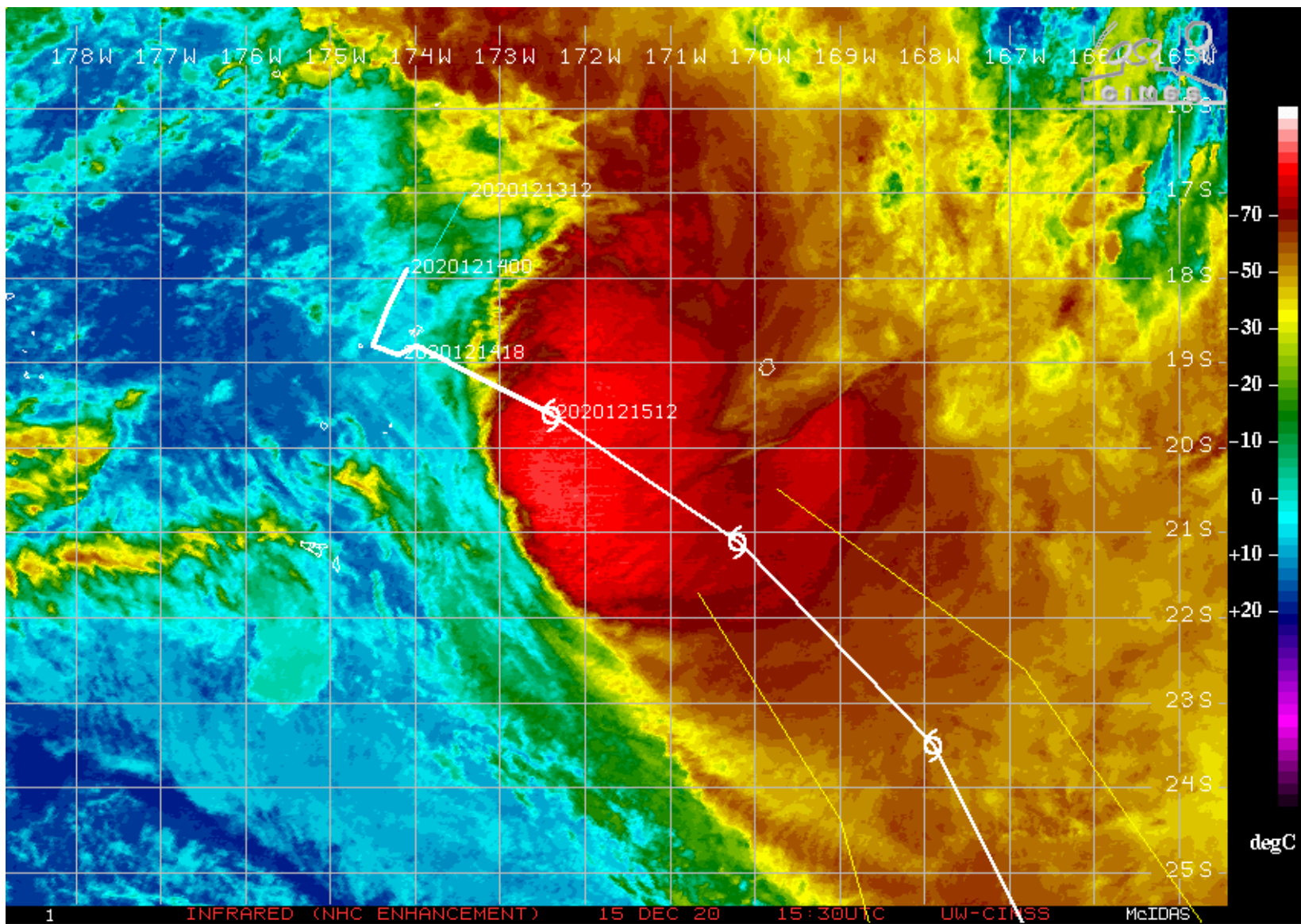


CFS Precipitation Anomalies (mm) Issued 14Dec2020
Week-2 Forecast Ending 29Dec2020





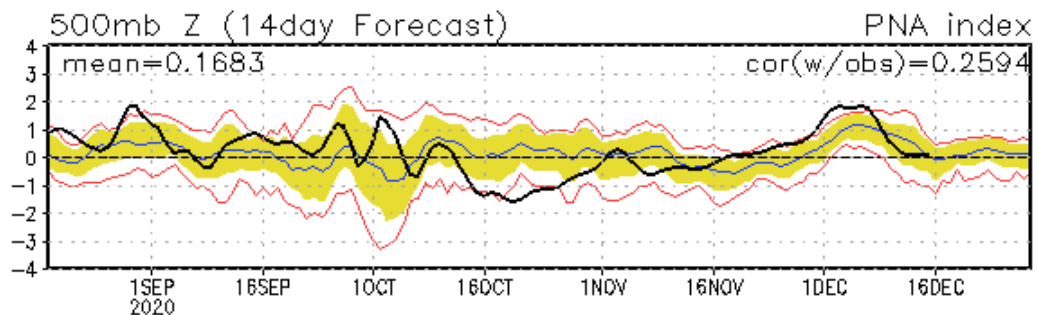
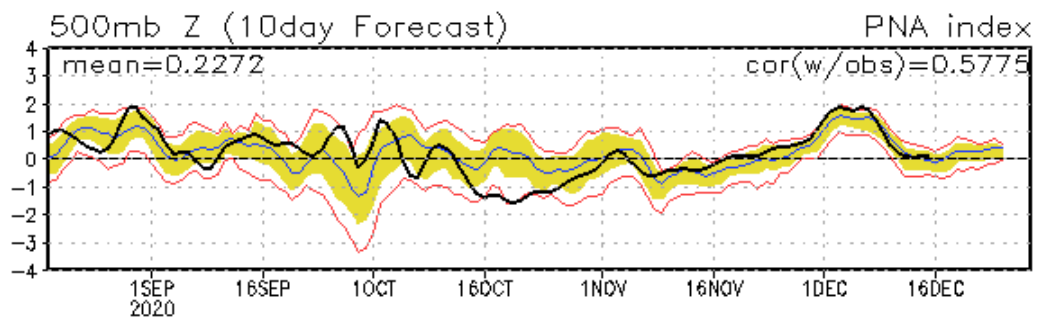
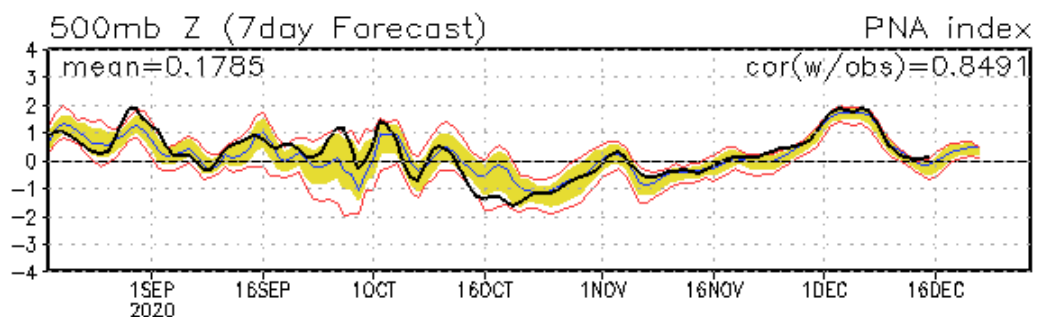
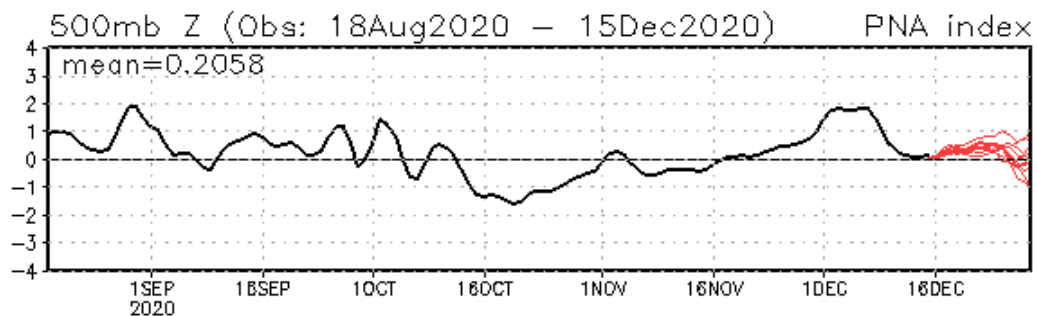
- | | | | |
|---|---------------|----------|-----------------------|
| — | Low/Wave | I | - Invest Area |
| — | Tropical Depr | L | - Tropical Depression |
| — | Tropical Strm | S | - Tropical Storm |
| — | Category 1 | H | - Hurricane/Typhoon |
| — | Category 2 | | (w/ category) |
| — | Category 3 | | |
| — | Category 4 | | |
| — | Category 5 | | |



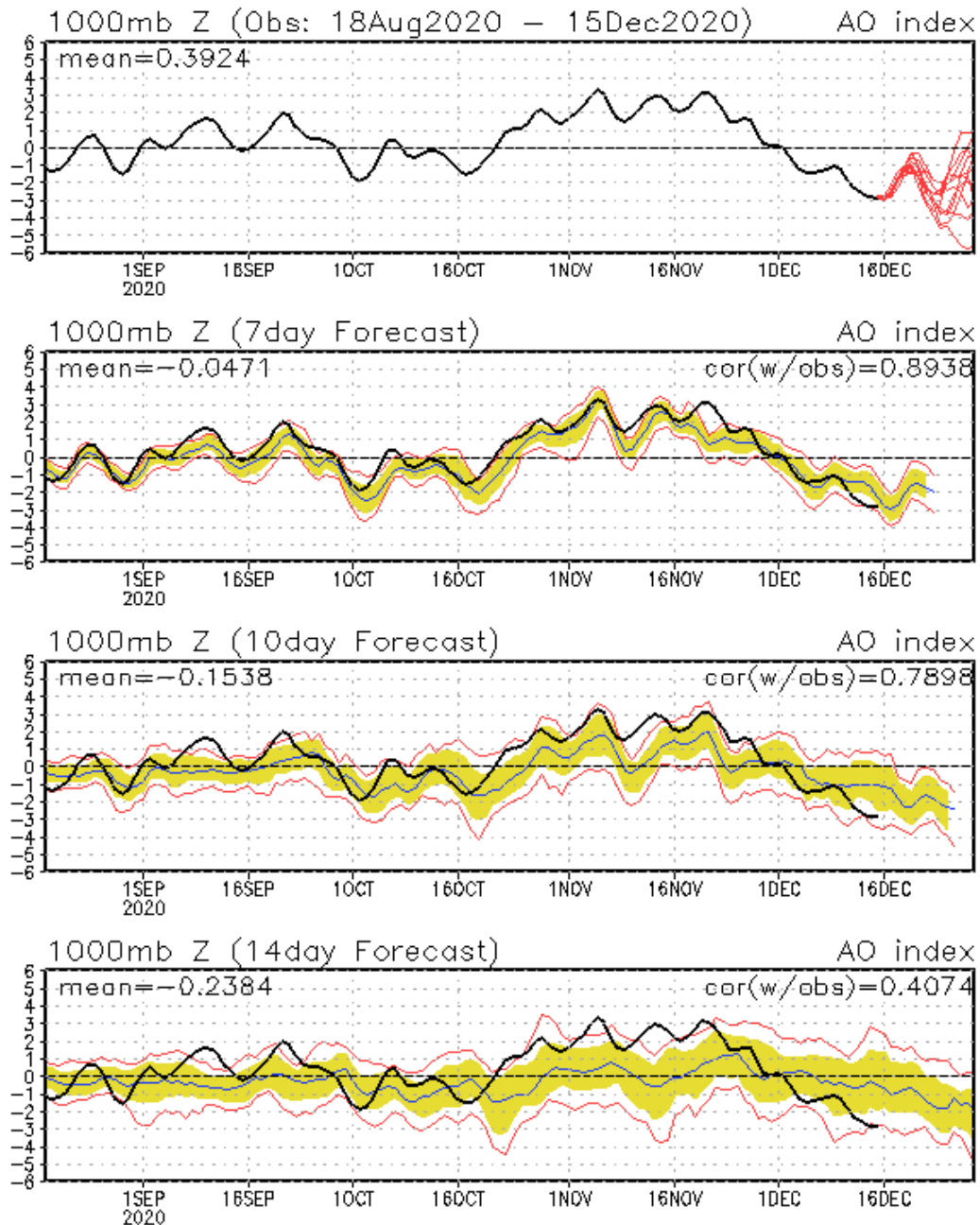
- | | | | |
|---|---------------|----------|-----------------------|
| — | Low/NoVe | I | - Invest Area |
| — | Tropical Depr | L | - Tropical Depression |
| — | Tropical Strm | S | - Tropical Storm |
| — | Category 1 | H | - Hurricane/Typhoon |
| — | Category 2 | | (w/ category) |
| — | Category 3 | | |
| — | Category 4 | | |
| — | Category 5 | | |

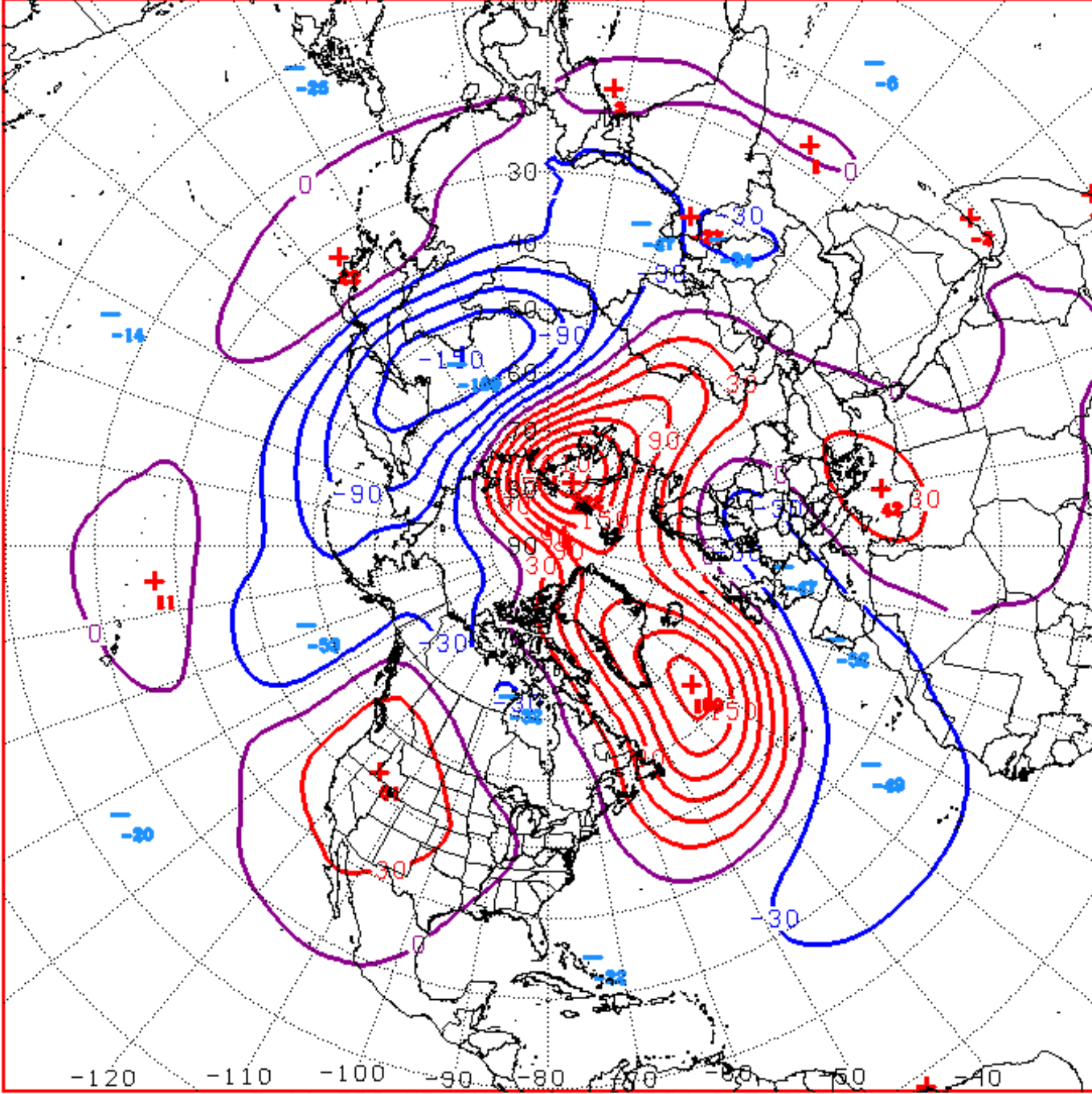
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts



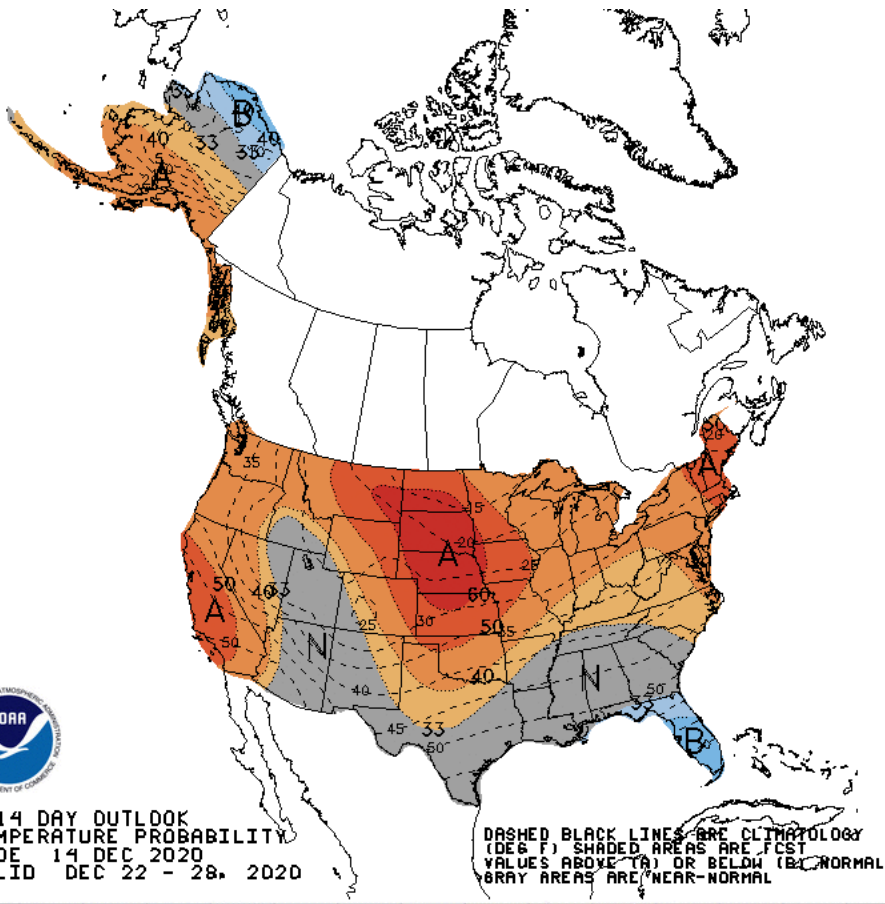
AO: Observed & ENSM forecasts





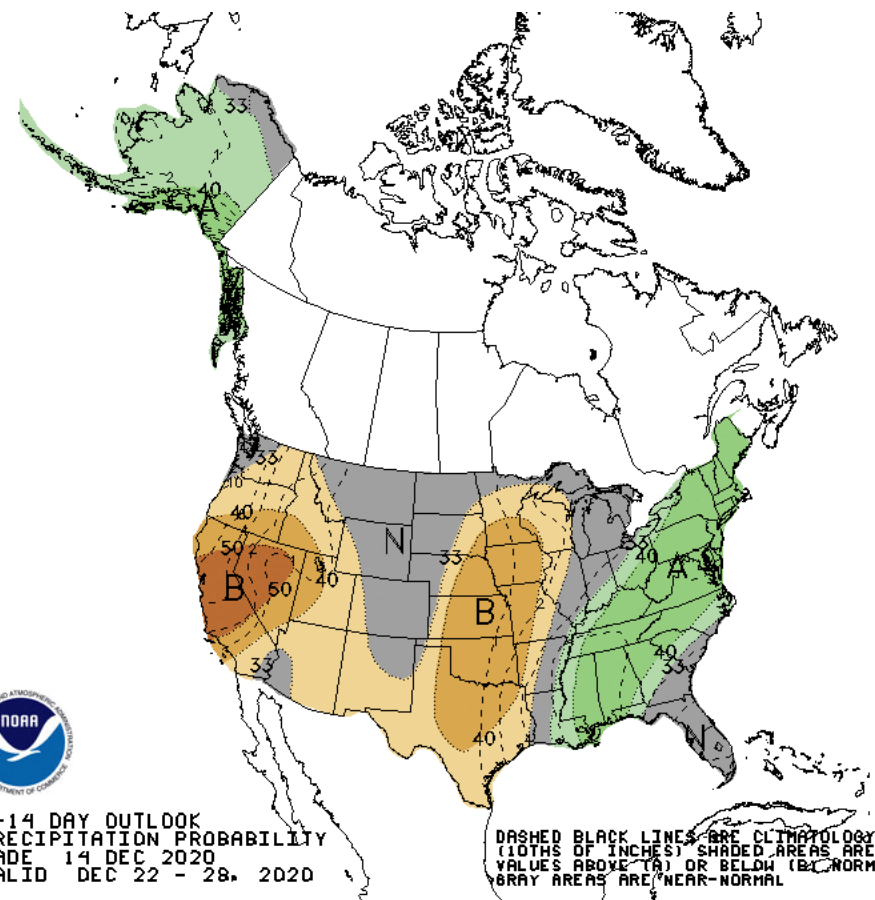
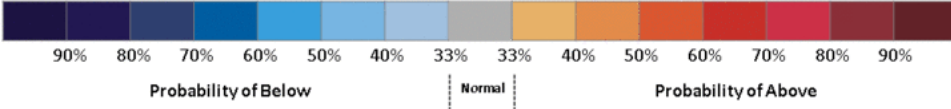
-120 -110 -100 -90 -80 -70 -60 -50

D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE DEC 15 2020 1431 UTC CNTD DEC 26 2020



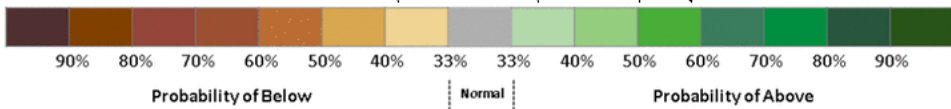
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 14 DEC 2020
VALID DEC 22 - 28, 2020

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 14 DEC 2020
VALID DEC 22 - 28, 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.

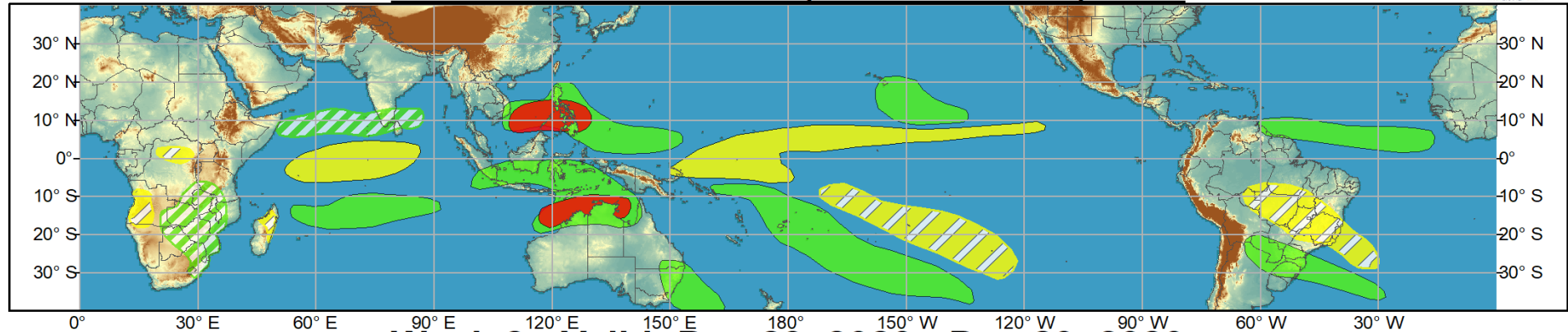




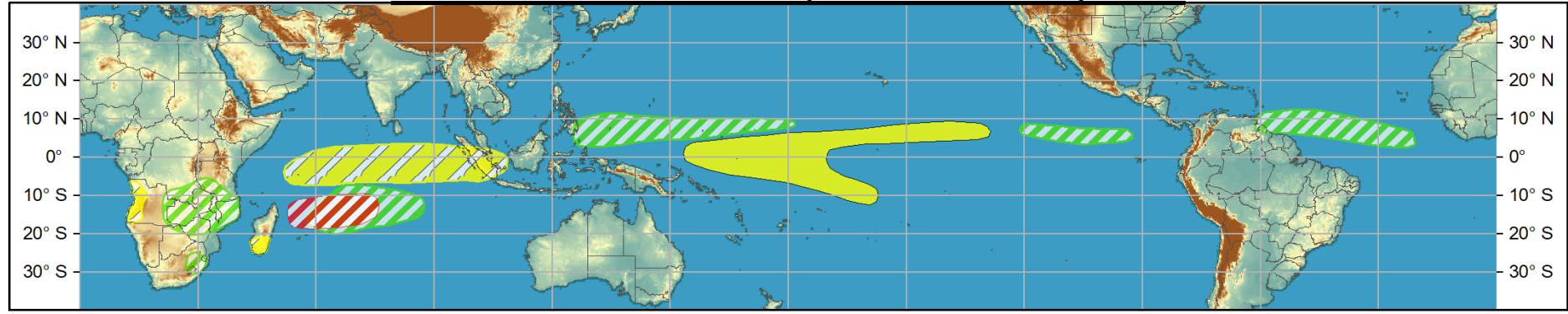
Global Tropical Hazards and Alerts Center

Week 2 - Temperature and Precipitation

Week 1 - Valid: Dec 16, 2020 - Dec 22, 2020



Week 2 - Valid: Dec 23, 2020 - Dec 29, 2020



Produced: 12/15/2020
Forecaster: Novella

Confidence		
High	Moderate	
		Development of a tropical cyclone (tropical depression - TD, or greater strength).
		Weekly total rainfall in the upper third of the historical range.
		Weekly total rainfall in the lower third of the historical range.
		7-day mean temperatures in the upper third of the historical range.
		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.

