

Global Tropics Hazards And Benefits Outlook

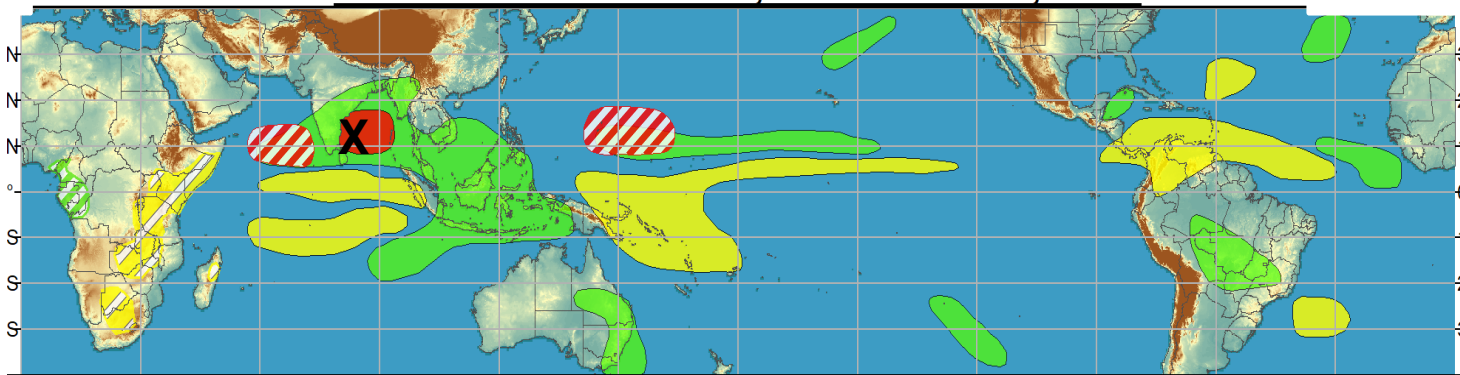
11/16/2021

Thomas Collow

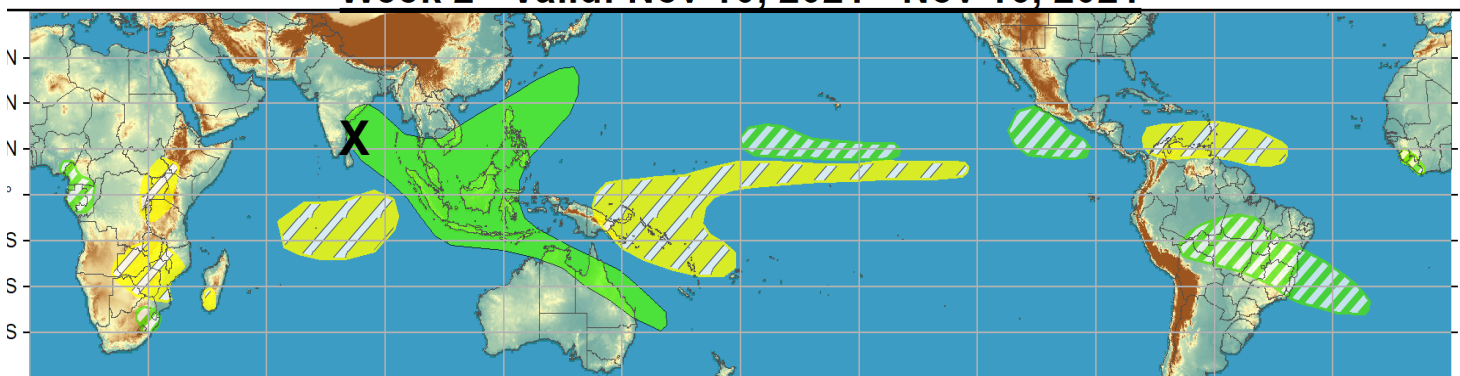
Outline

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: Nov 10, 2021 - Nov 16, 2021

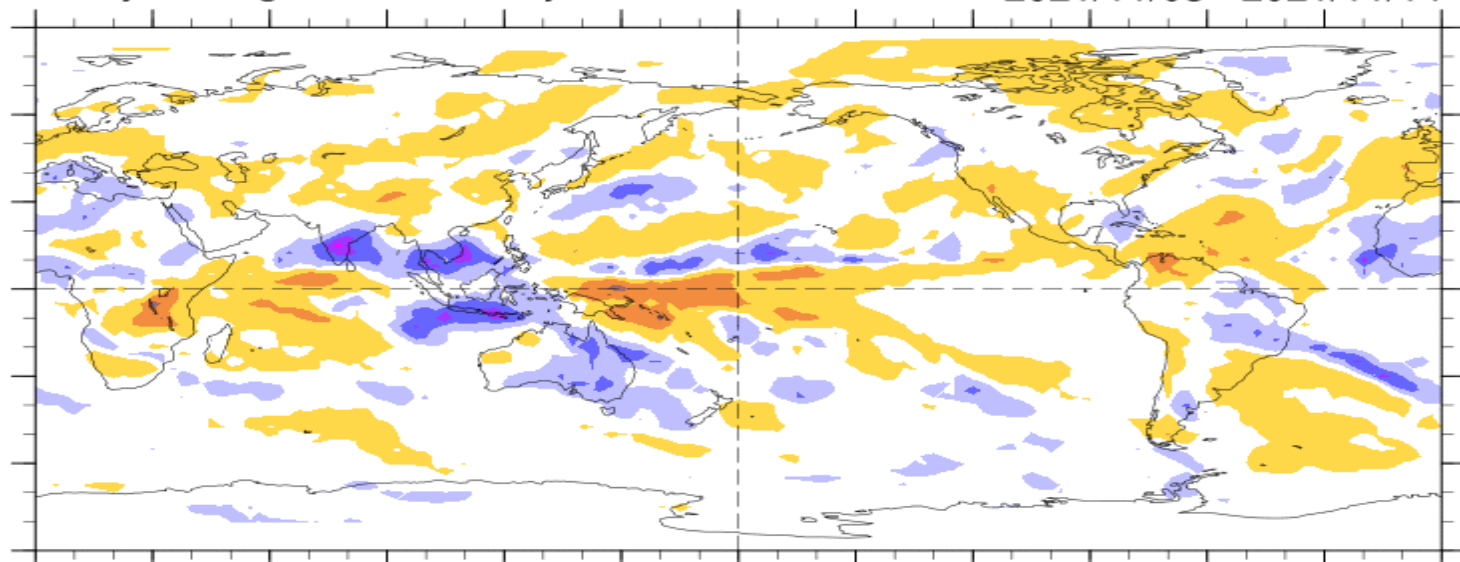


Week 2 - Valid: Nov 10, 2021 - Nov 16, 2021



7-Day Average OLR Anomaly

2021/11/08 - 2021/11/14



Outlook Review

TCs formed since
11/10:

04B (JTWC, 11/11)

Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (November 11, 2021 Update)

next update on 9th of Dec.!

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is likely to continue through the Northern Hemisphere winter 2021-22 (~90% chance) and into spring 2022 (~50% chance during March-May).

MJO and other subseasonal tropical variability:

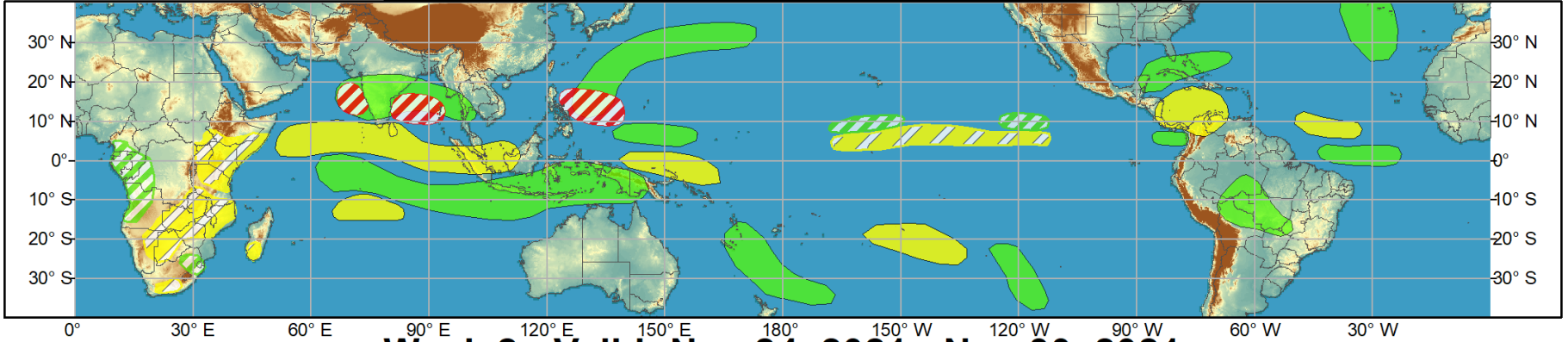
- The MJO signal strengthened slightly and shifted eastward to the Maritime Continent, and lies near the edge of the RMM unit circle.
- The intraseasonal signal has been primarily driven by a convectively coupled Kelvin Wave constructively interfering with the enhanced low frequency convective signal over the Maritime Continent associated with La Niña.
- A slight weakening and retrogression of the signal is favored over the next 2 weeks, although ensemble spread in the dynamical models remains high.



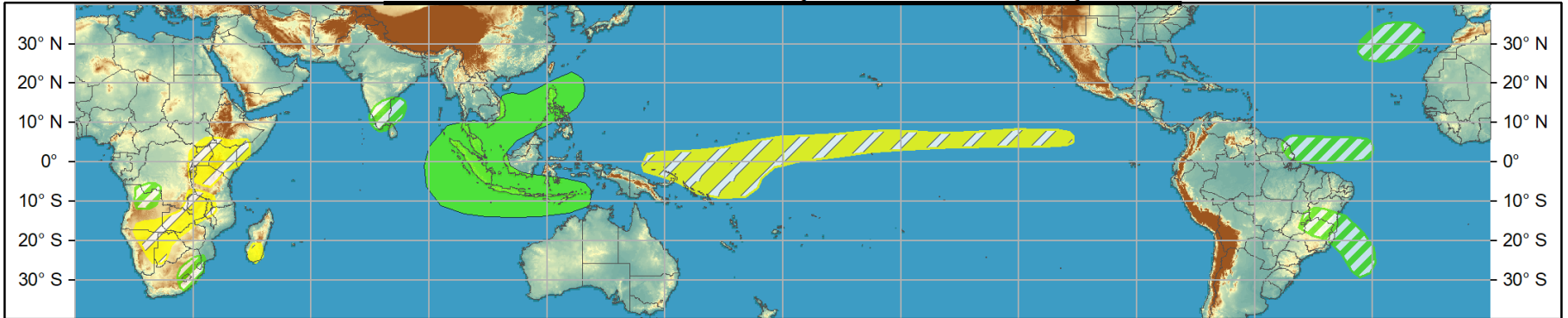
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Nov 17, 2021 - Nov 23, 2021



Week 2 - Valid: Nov 24, 2021 - Nov 30, 2021



Confidence
High Moderate

- Tropical Cyclone Formation**
- Above-average rainfall**
- Below-average rainfall**
- Above-normal temperatures**
- Below-normal temperatures**



- 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.
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Produced: 11/16/2021
Forecaster: Collow

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

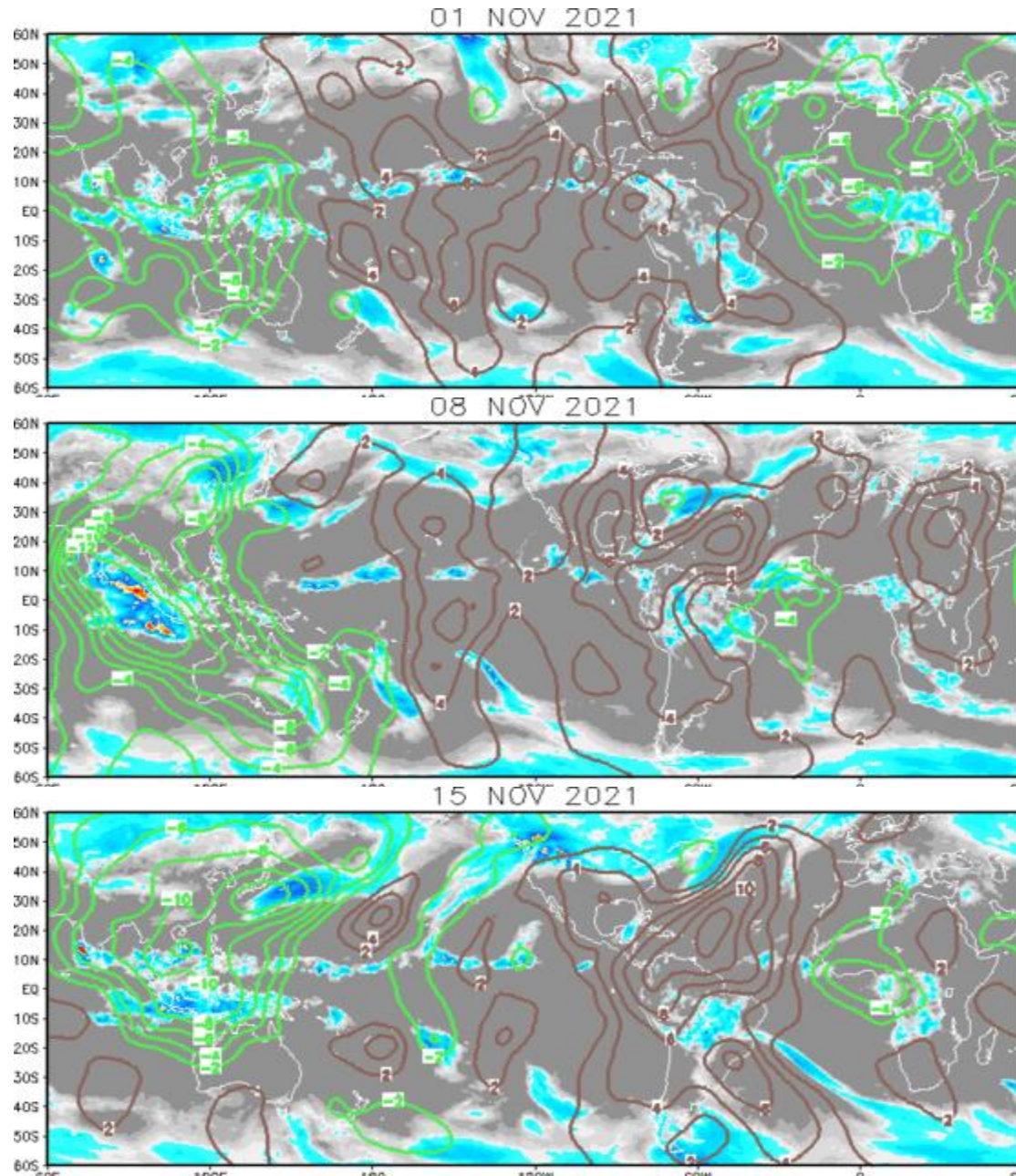
Green: Enhanced Divergence

Brown: Enhanced Convergence

Kelvin Wave indicated across the Eastern Atlantic and Africa. Suppressed conditions prevail over the Western Hemisphere

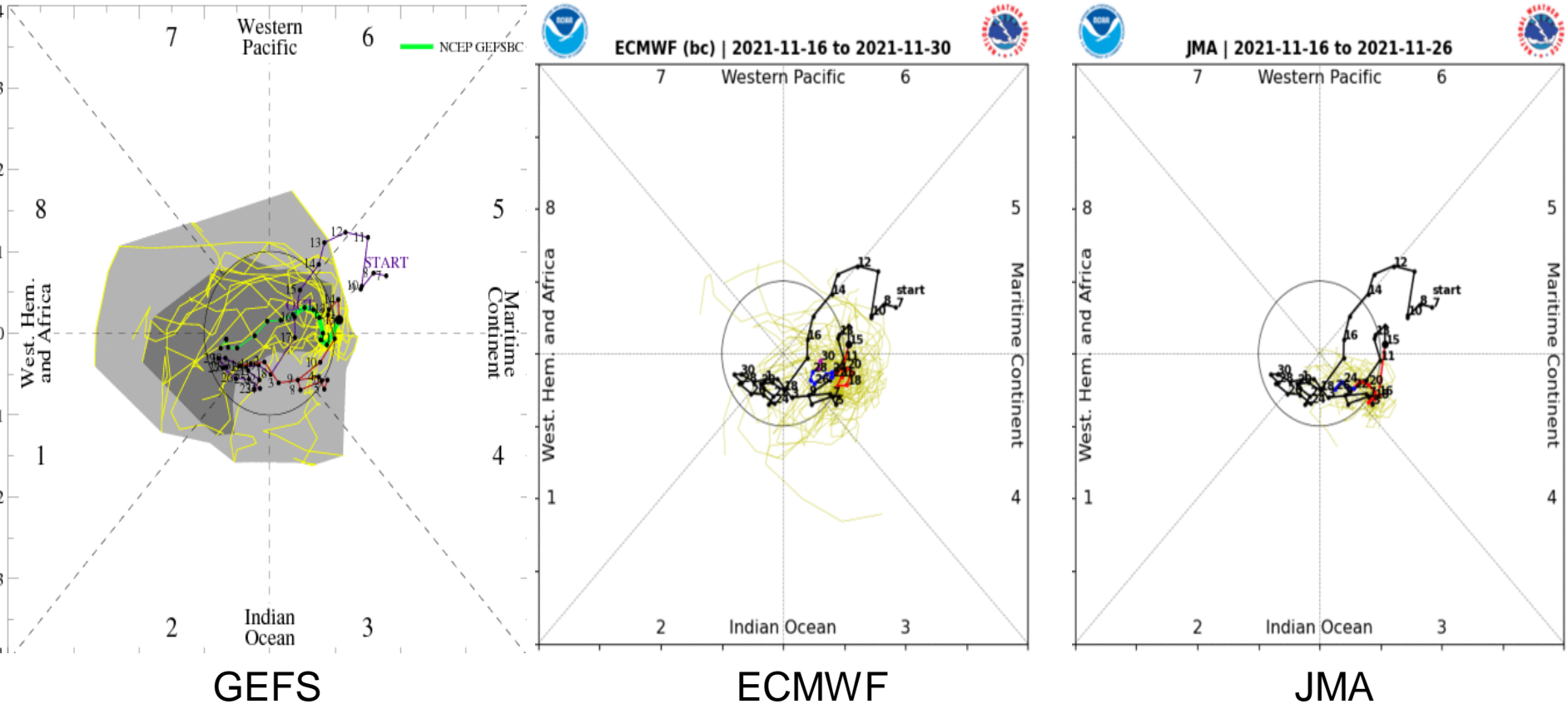
Kelvin Wave and Rossby wave activity contributing to enhanced upper-level divergence and convection over the Indian Ocean and Maritime Continent.

Enhanced convection continues across the Indian Ocean, Maritime Continent, and West Pacific. Rossby Wave activity noted over West Africa.



MJO Observation/Forecast

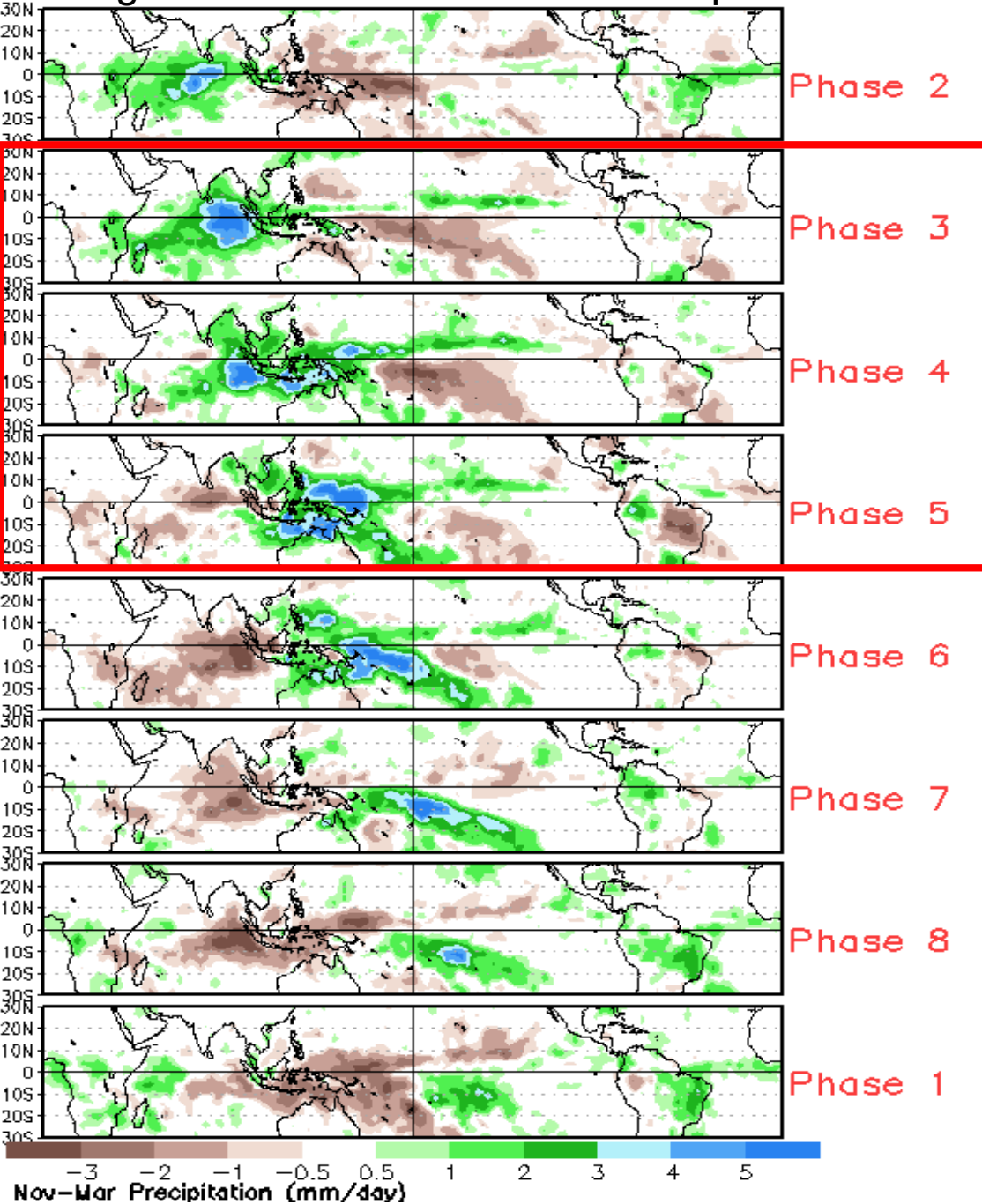
[RMM1, RMM2] forecast for Nov-16-2021 to Nov-30-2021



GEFS and ECMWF ensemble means indicate a slight retrogression of the intraseasonal signal as the established low frequency state favors limited eastward propagation.

There is high variability among the individual ensemble members, with the JMA ensemble having the least amount of spread.

Average Conditions when the MJO is present

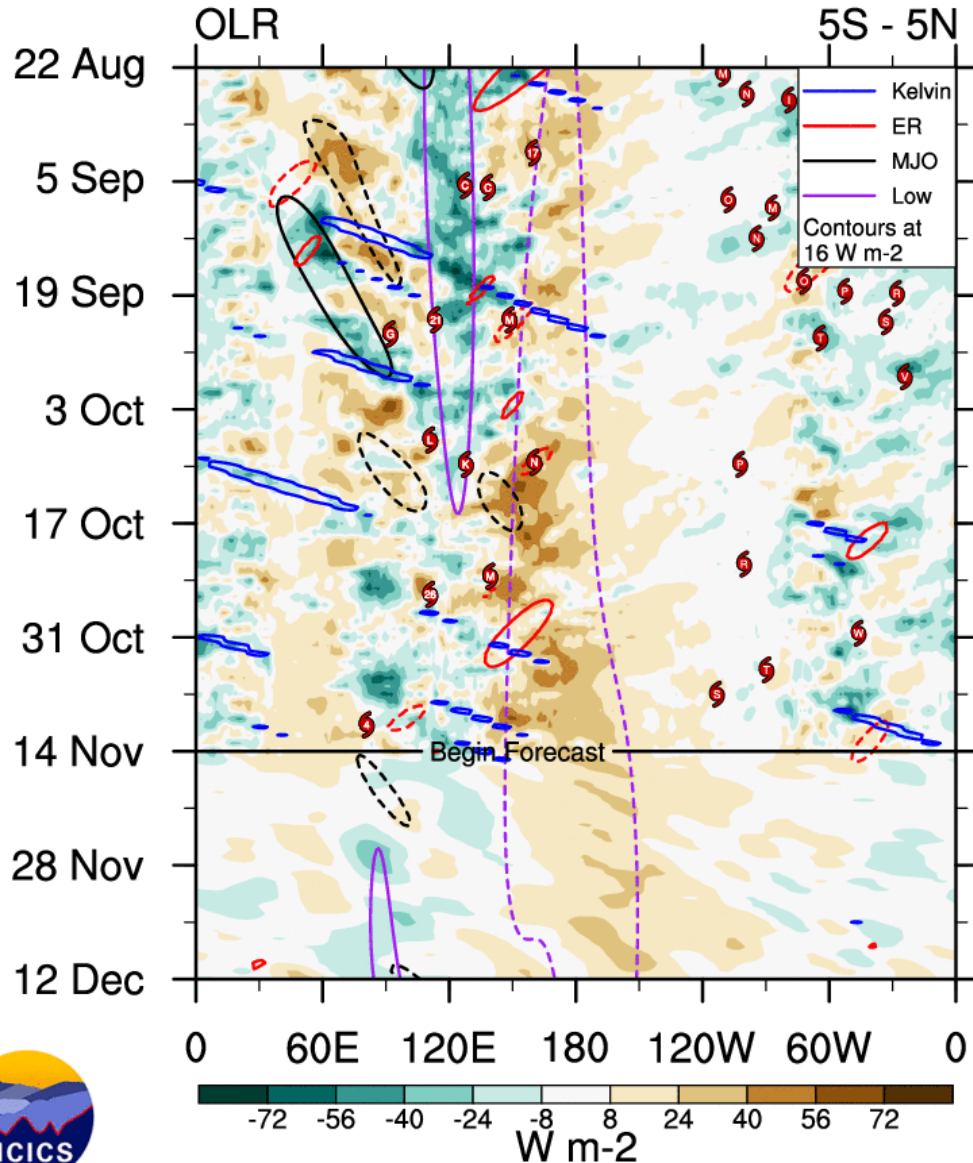


CAVEAT: These panels are representative of robust MJO events.

MJO signal is has been weak or non-existent for much of October and early November.

Kelvin wave activity is seen crossing Africa and the Indian Ocean to interact with the existing low frequency signal across the Maritime Continent.

Low frequency contours depict persistent La Niña conditions.



ncics.org/mjo

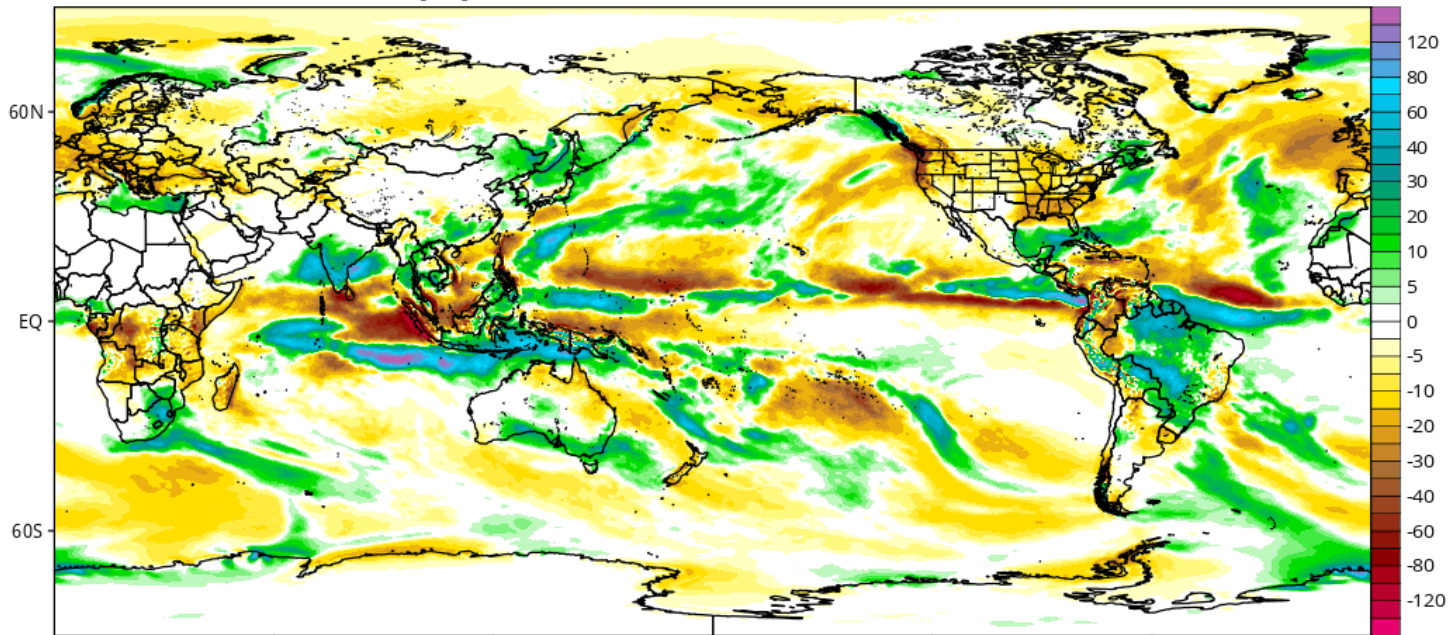
Mon 2021-11-15 1611 UTC

Carl Schreck
carl_schreck@ncsu.edu

GEFS Accumulated Precip. Anomaly (mm) from 00z17Nov2021 to 00z24Nov2021 (Days 2-8)

Init: 00z Nov 16 2021 Forecast Hour: [192] valid at 00z Wed, Nov 24 2021

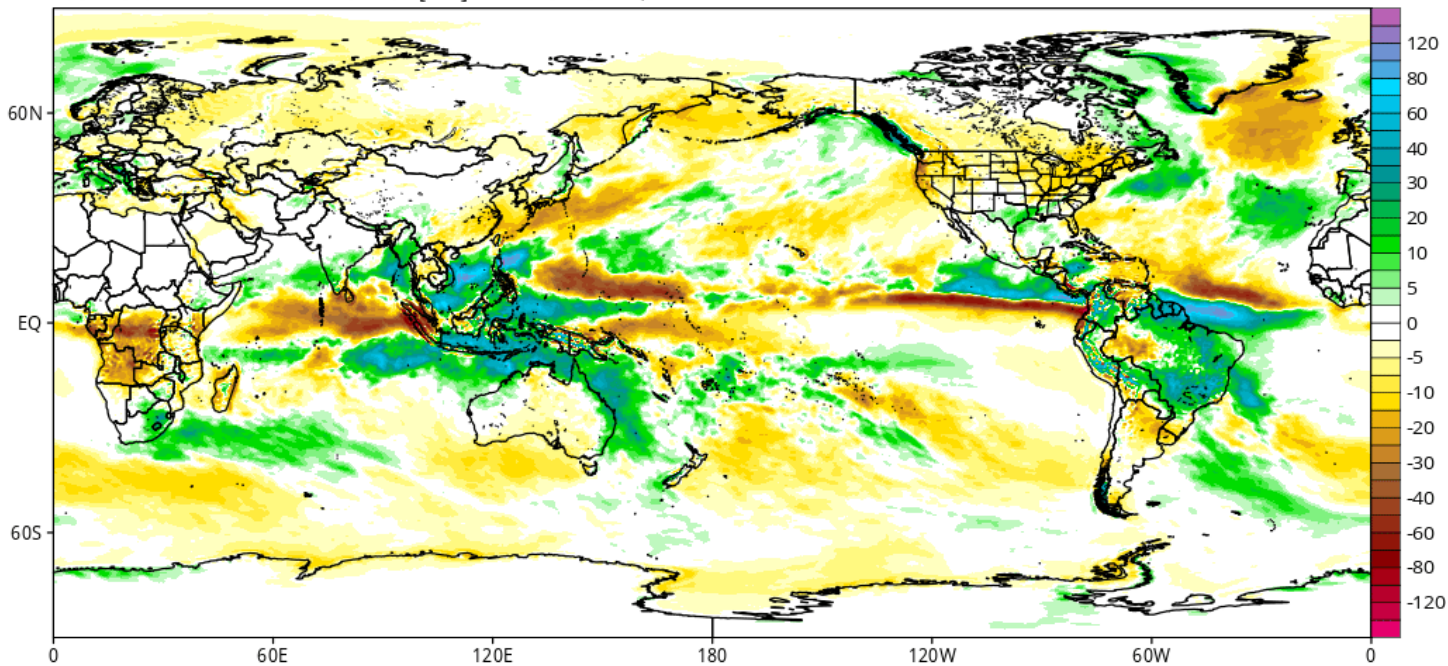
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GEFS Accumulated Precip. Anomaly (mm) from 00z24Nov2021 to 00z01Dec2021 (Days 9-15)

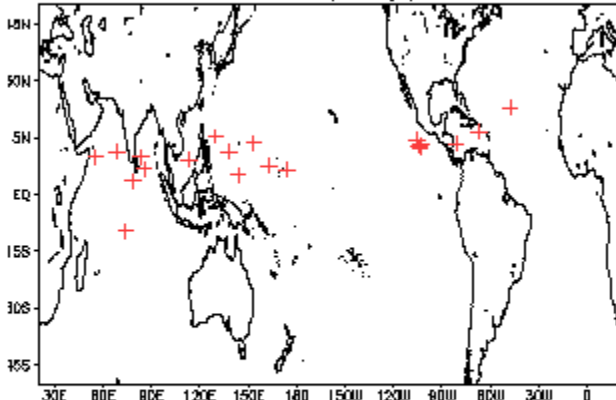
Init: 00z Nov 16 2021 Forecast Hour: [360] valid at 00z Wed, Dec 01 2021

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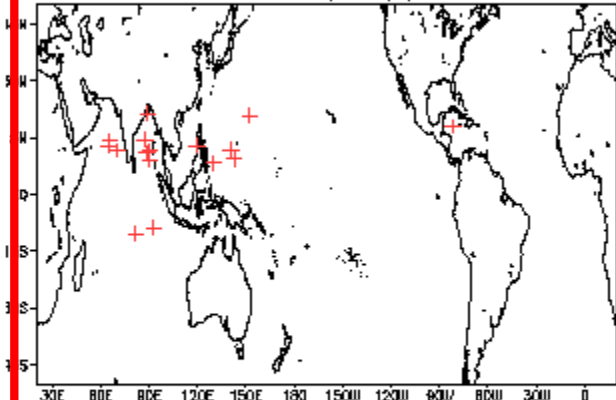


November Tropical Storm Formation by MJO phase

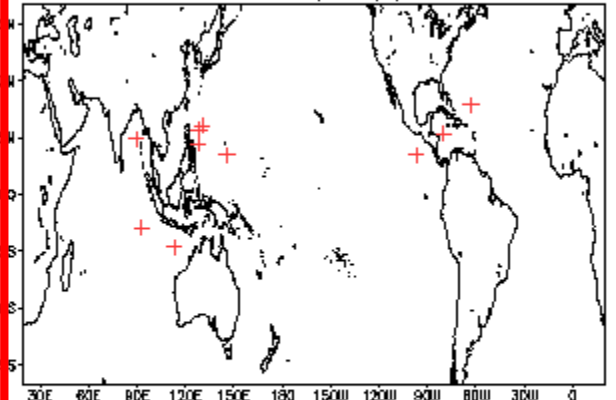
Phase 1 (65 days) 21 storms



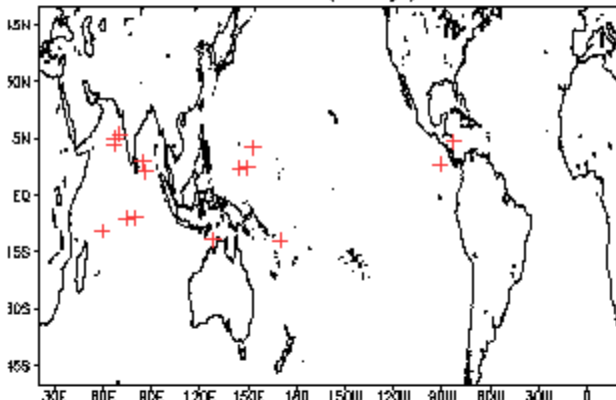
Phase 4 (77 days) 17 storms



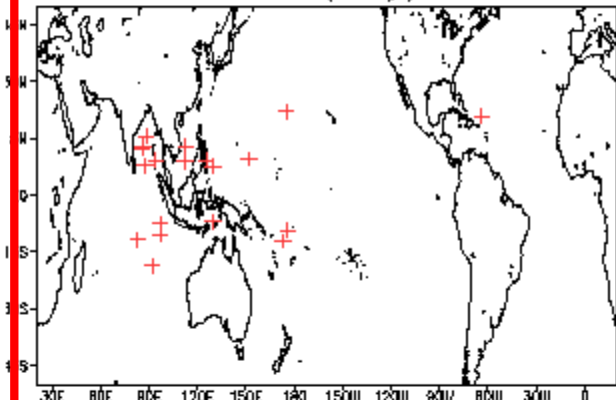
Phase 7 (68 days) 11 storms



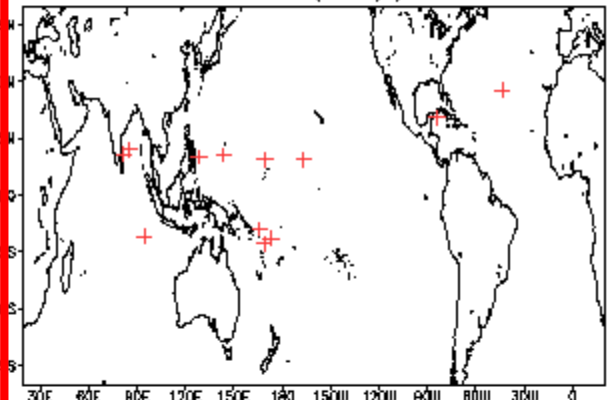
Phase 2 (88 days) 16 storms



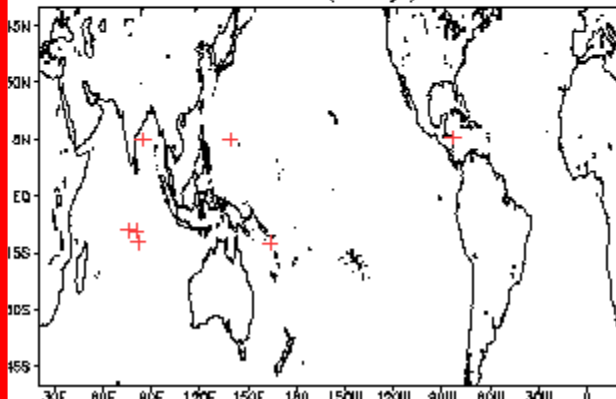
Phase 5 (72 days) 20 storms



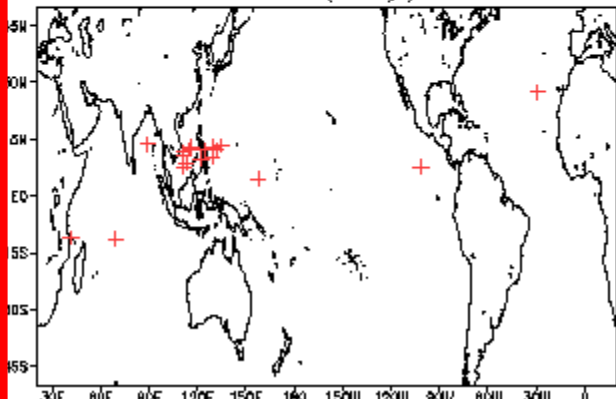
Phase 8 (60 days) 14 storms



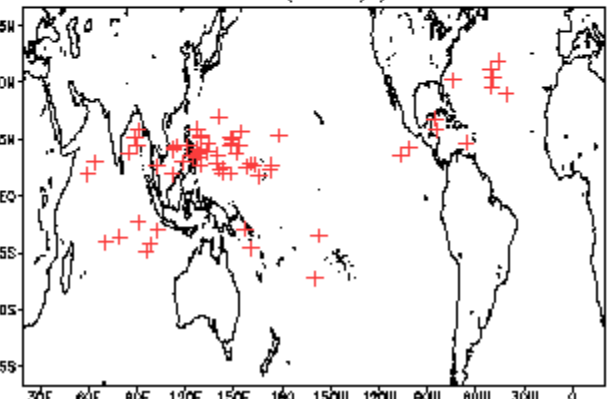
Phase 3 (89 days) 8 storms



Phase 6 (91 days) 19 storms



Null (380 days) 65 storms





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



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



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



JOINT TYPHOON WARNING CENTER



Naval Research Laboratory
Marine Meteorology Division
Cloud Cover Product
Valid: 2021-11-16 04:00:00

ABIO

ABPW

Please refer to CPHC
(<https://www.nhc.noaa.gov/cphc/>)

**NO SUSPECT AREAS
(ABIO)**

**NO SUSPECT AREAS
(ABPW)**

ISSUE TIME: 16/0600Z
(PRODUCT OF JTWC/SATOPS)

LOW

TC development unlikely
within 24 hours

MEDIUM

TC development likely, but
expected to occur beyond
24 hours

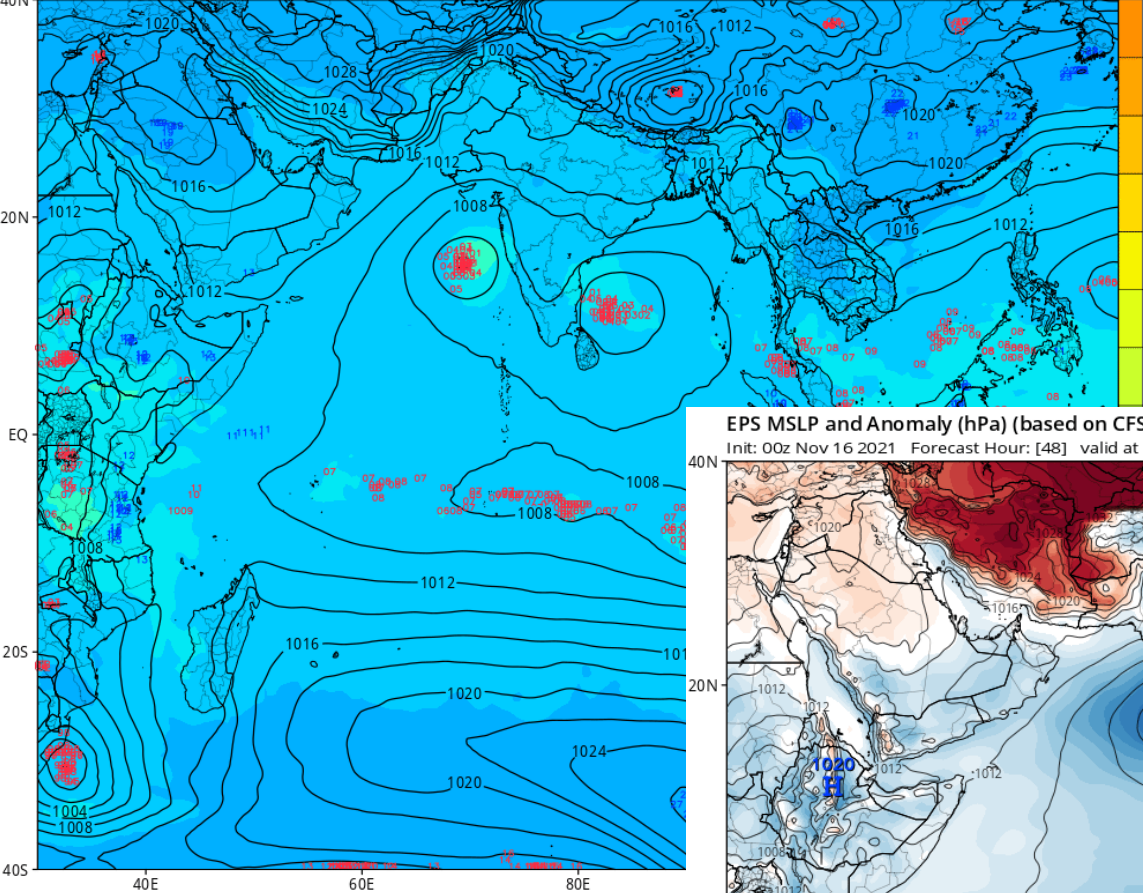
HIGH

TC development likely within
24 hours
(Reference TCFA)

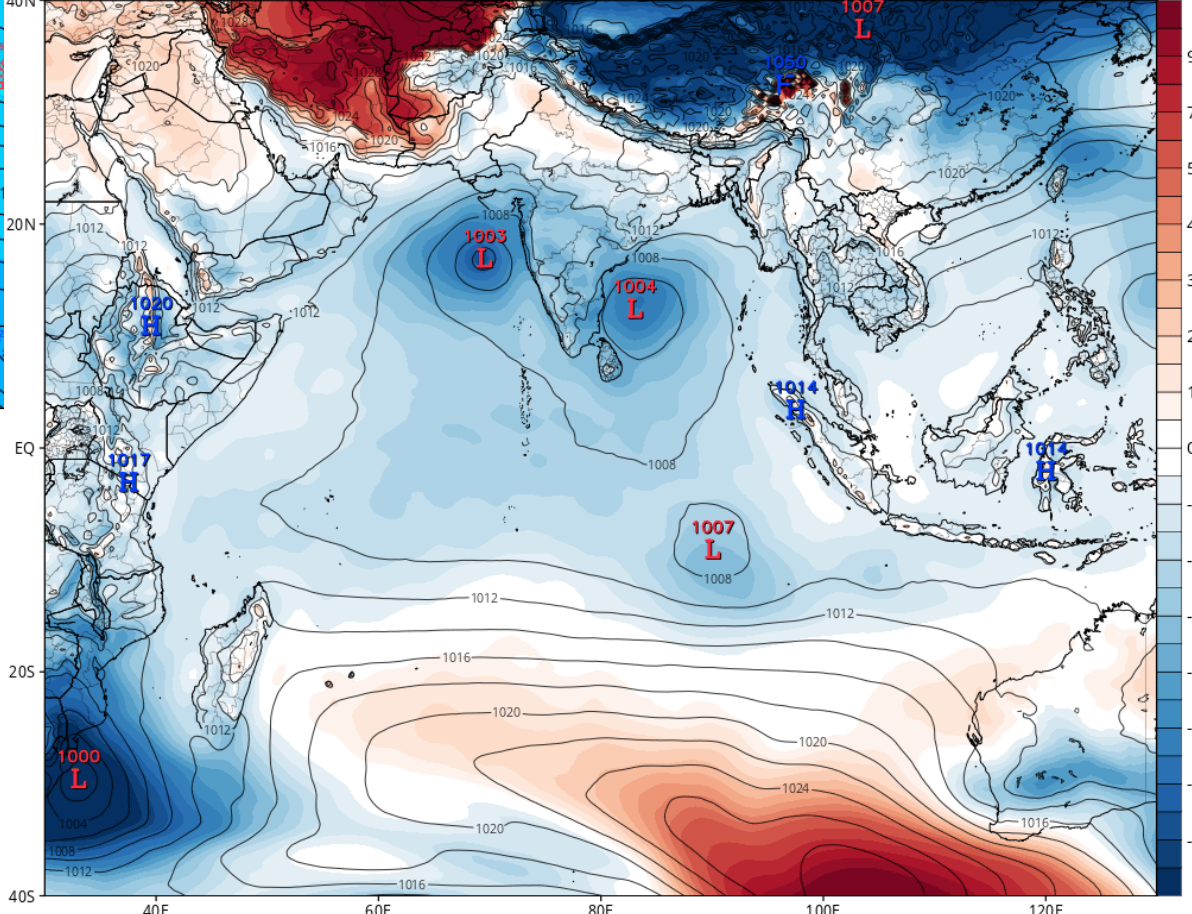
**SUB
TROPICAL**

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

**Tropical Cyclone
(Reference Warning)**



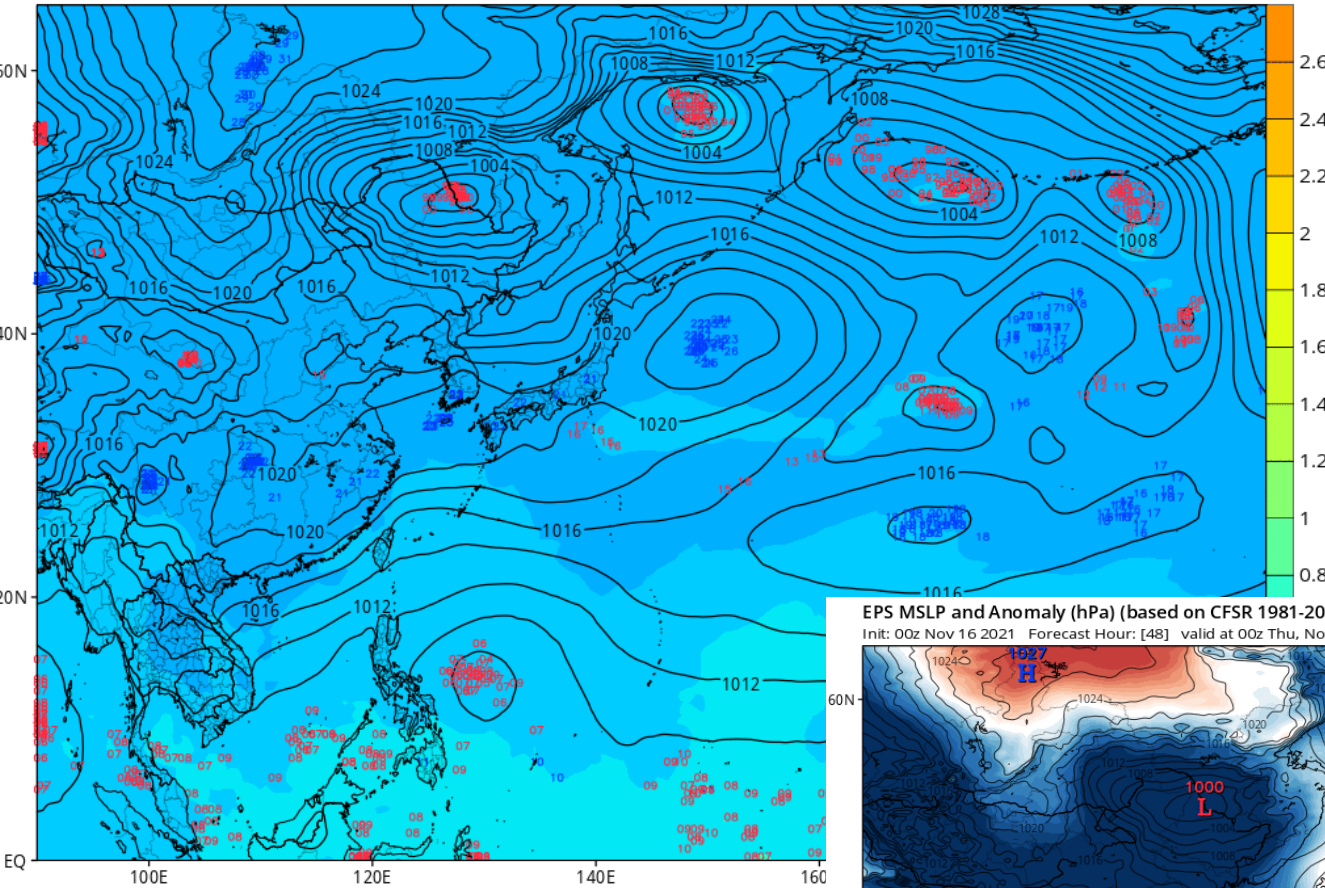
EPS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)



GEFS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | High: blue), & Normalized Spread (σ)

Init: 12z Nov 16 2021 Forecast Hour: [36] valid at 00z Thu, Nov 18 2021

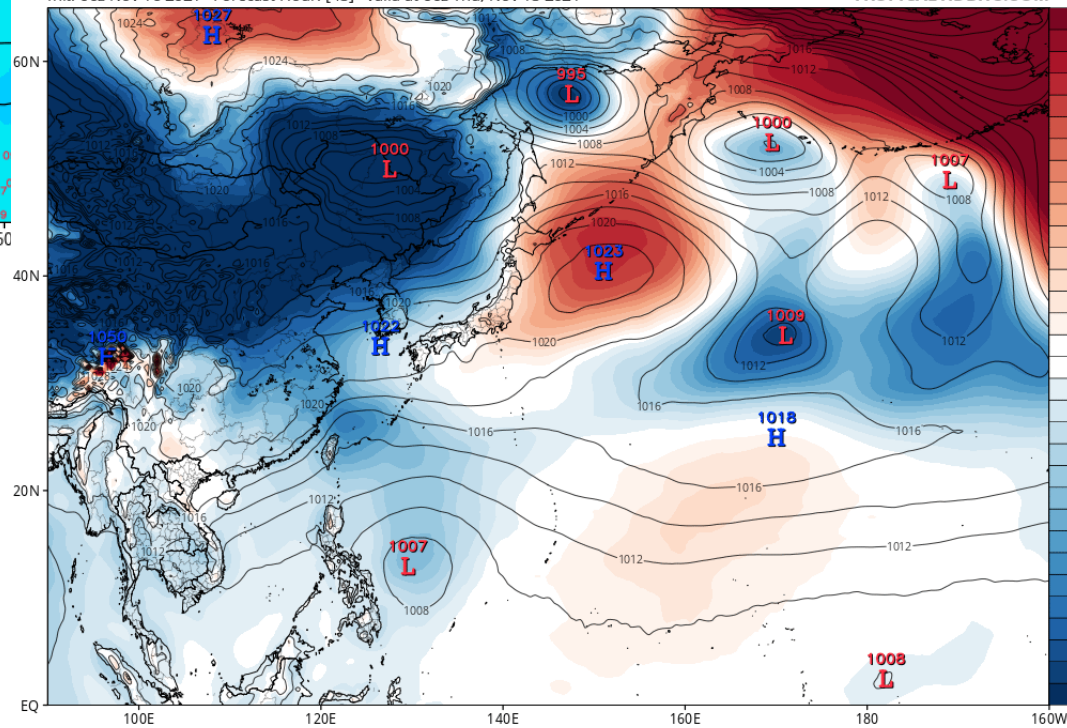
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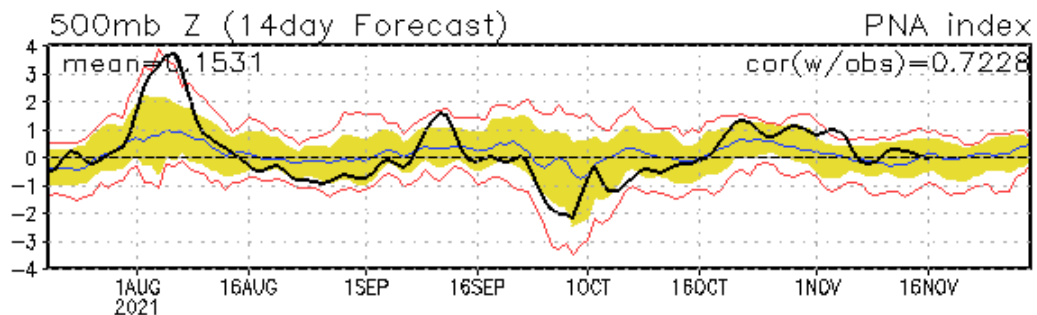
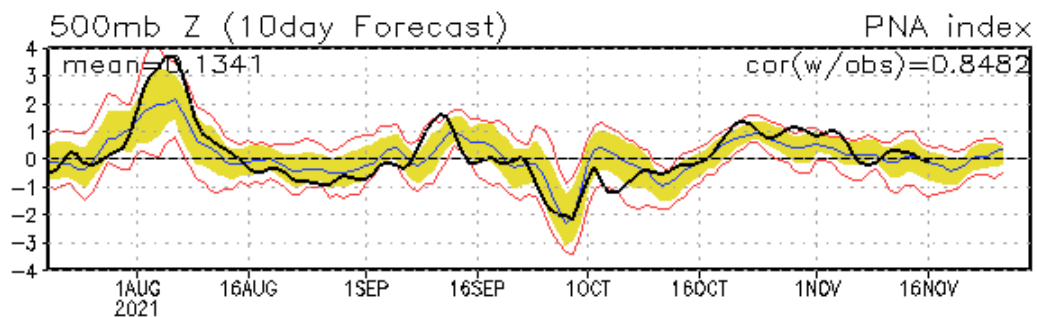
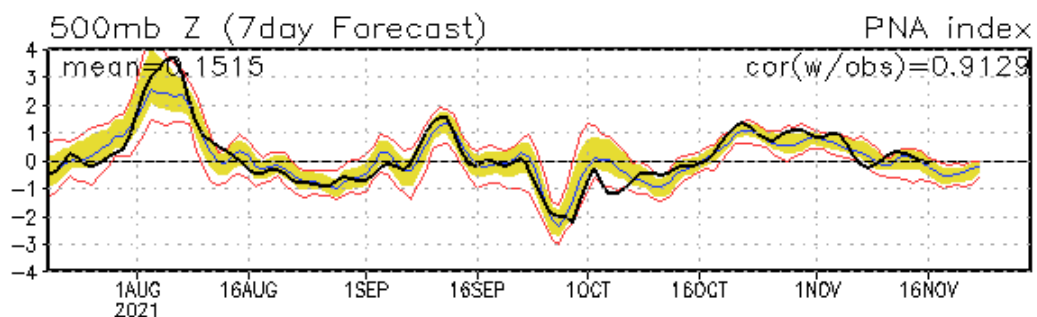
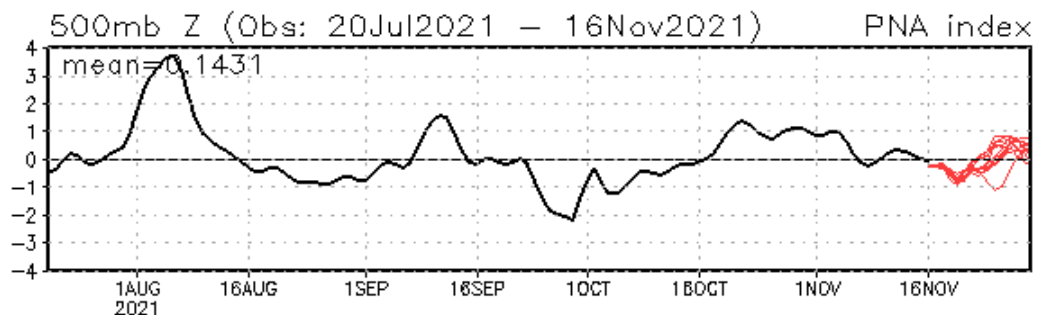
Init: 00z Nov 16 2021 Forecast Hour: [48] valid at 00z Thu, Nov 18 2021

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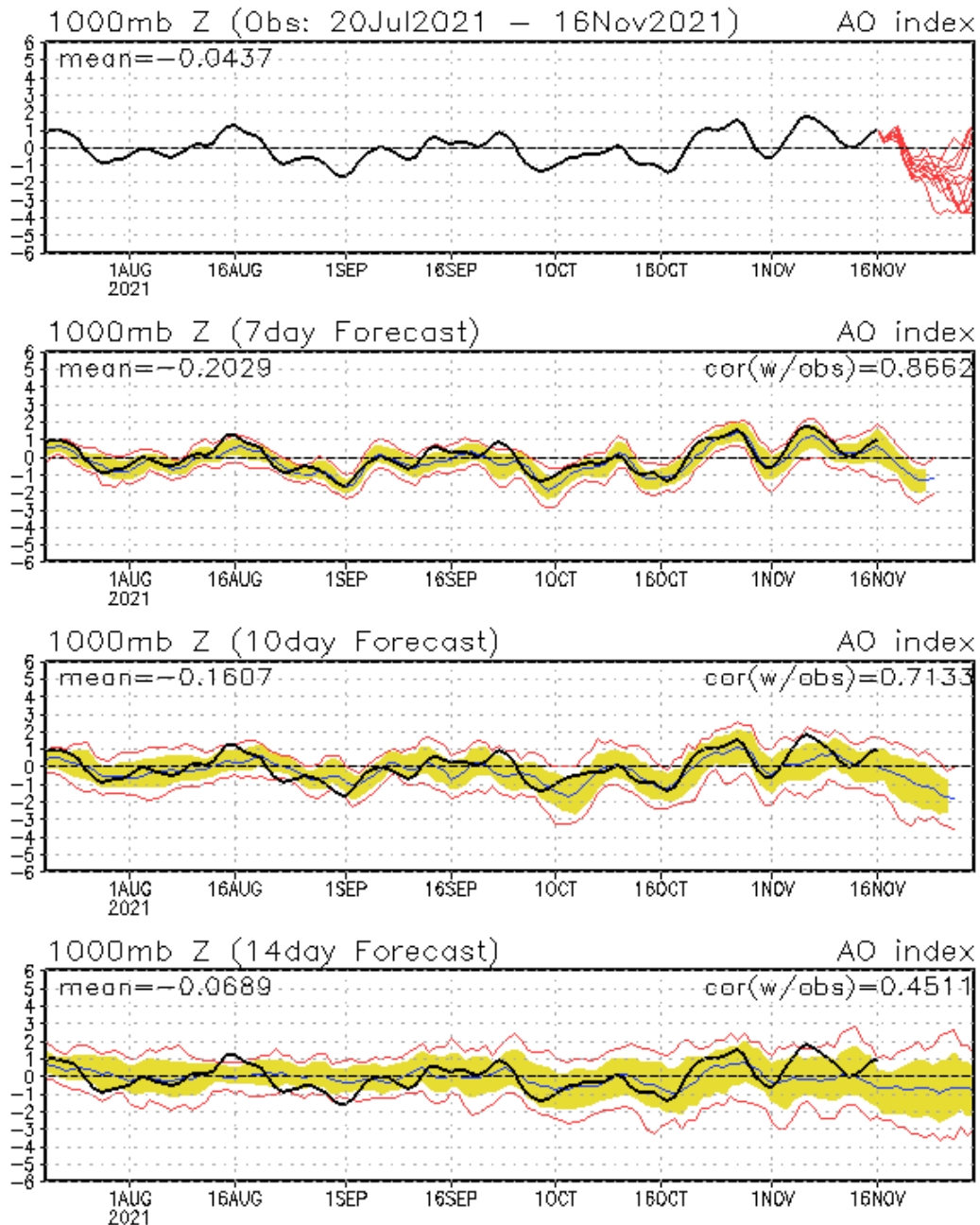


Connections to U.S. Impacts

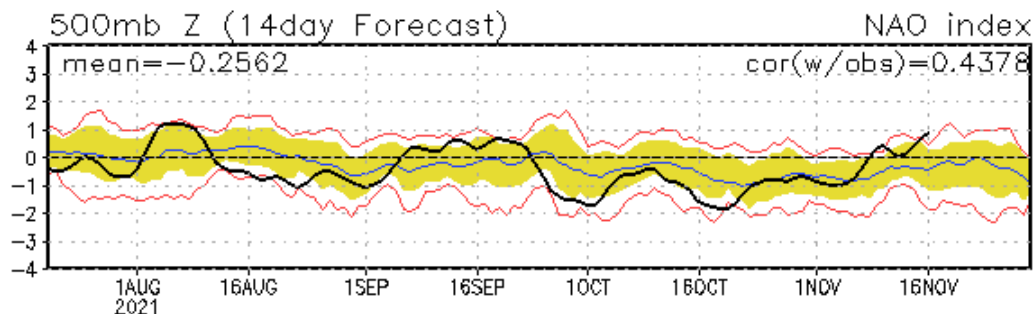
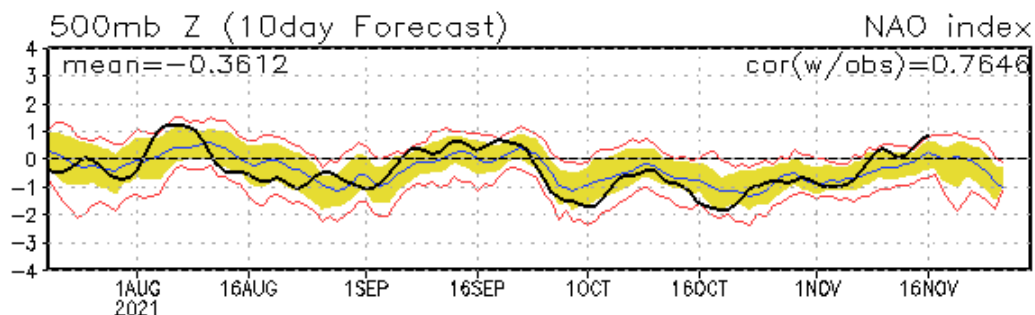
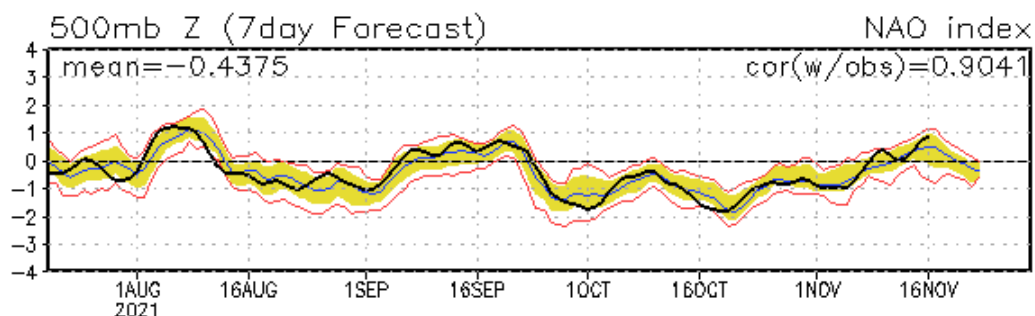
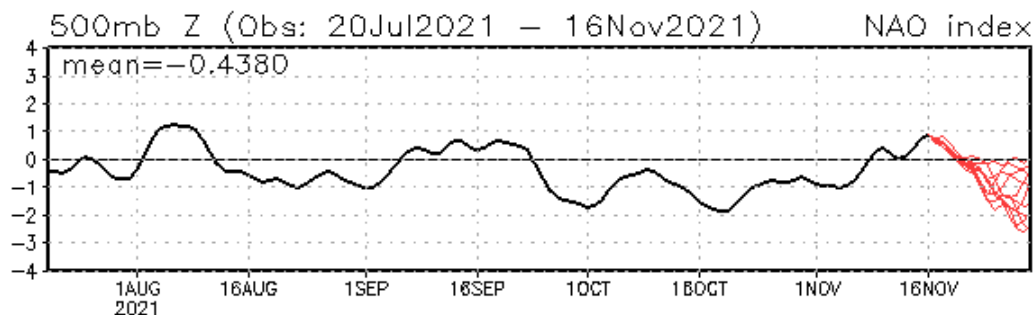
PNA: Observed & ENSM forecasts

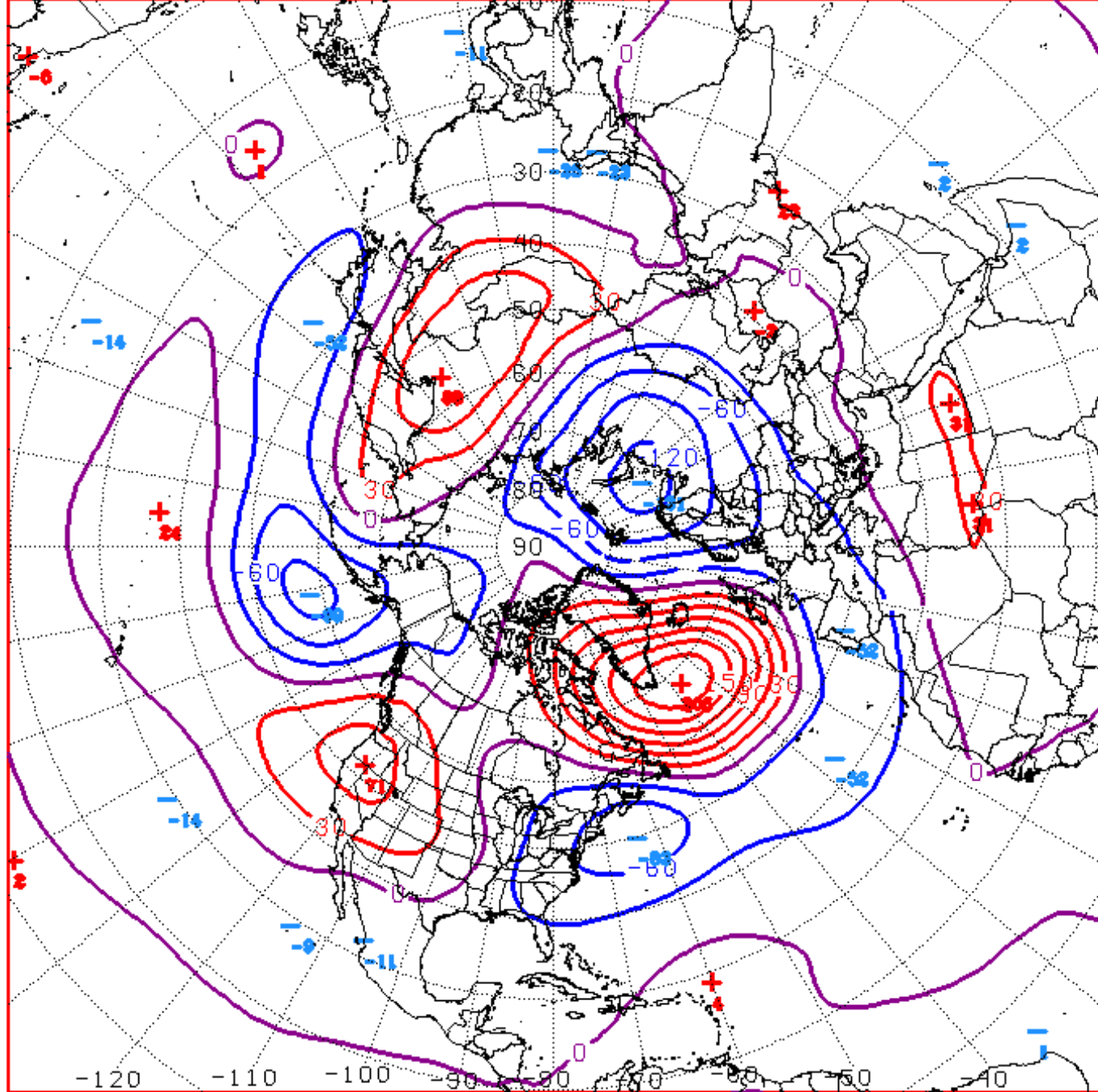


AO: Observed & ENSM forecasts



NAO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE NOV 16 2021 1401 UTC CNTD NOV 27 2021

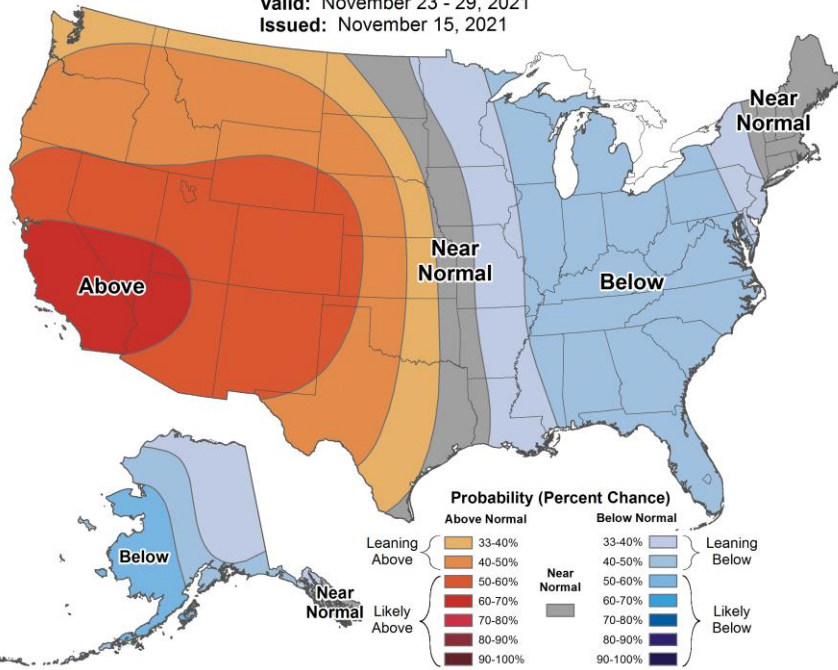
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



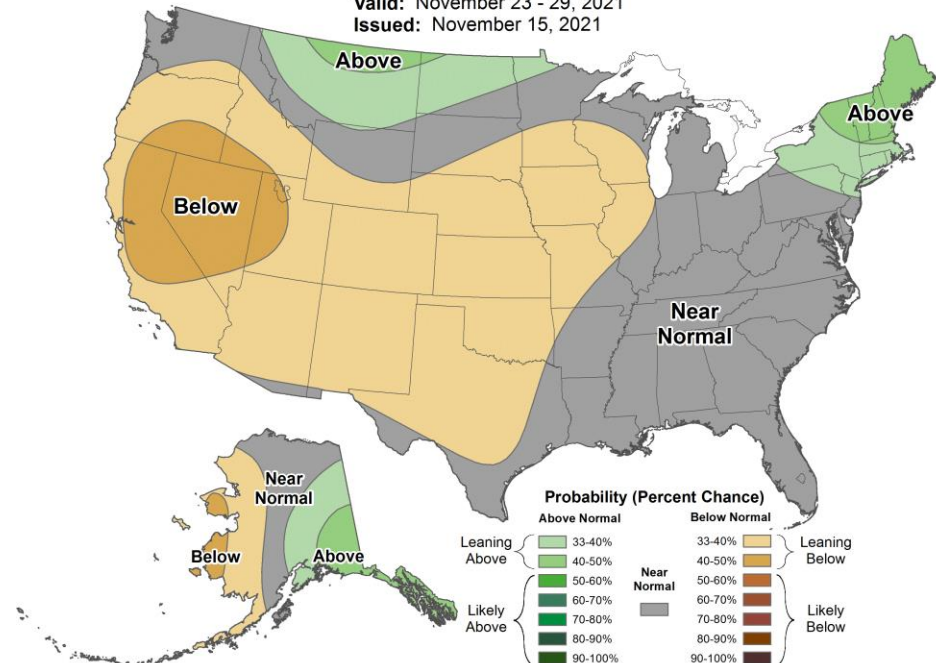
Valid: November 23 - 29, 2021
Issued: November 15, 2021



8-14 Day Precipitation Outlook



Valid: November 23 - 29, 2021
Issued: November 15, 2021



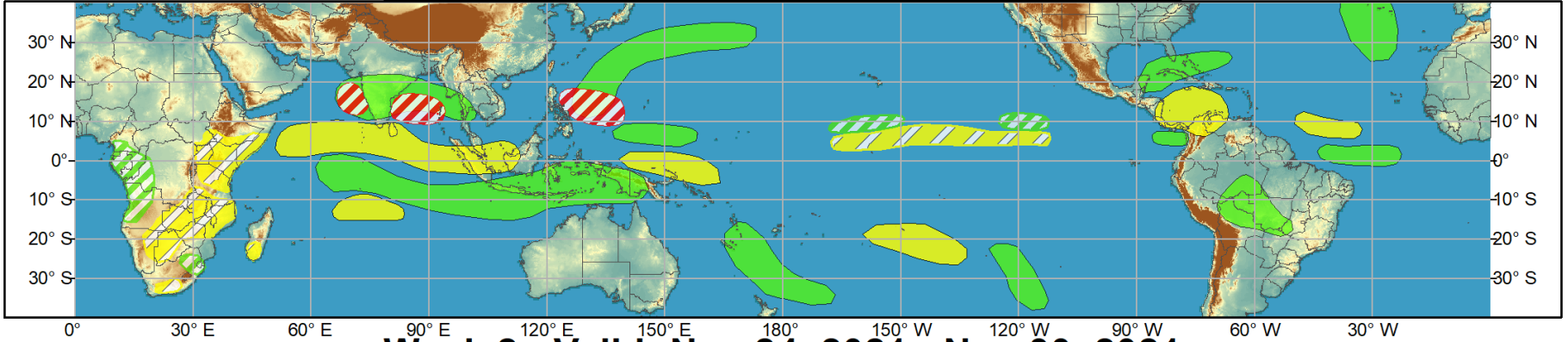
Since we are in an amplified, stable pattern today's outlooks are likely to be similar.



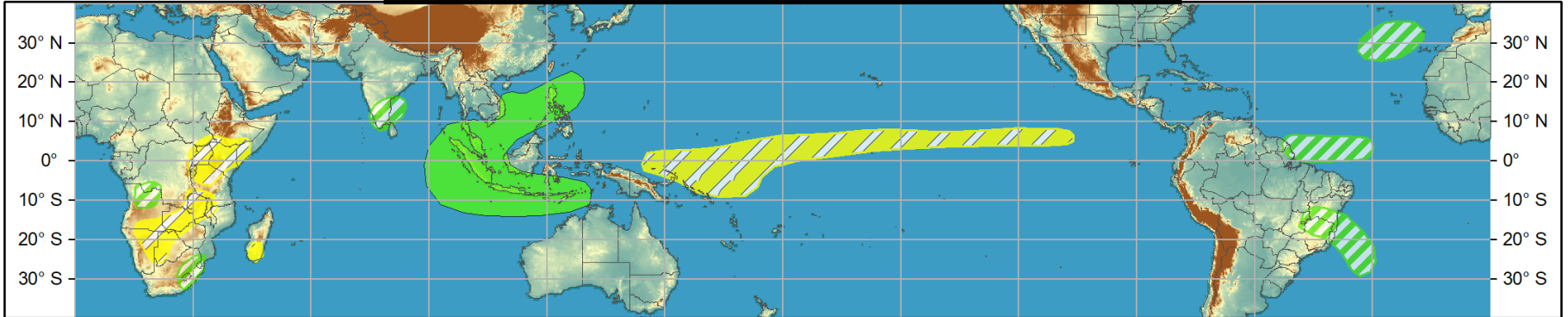
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