

Global Tropics Hazards And Benefits Outlook

11/24/2020

Nick Novella

Outline

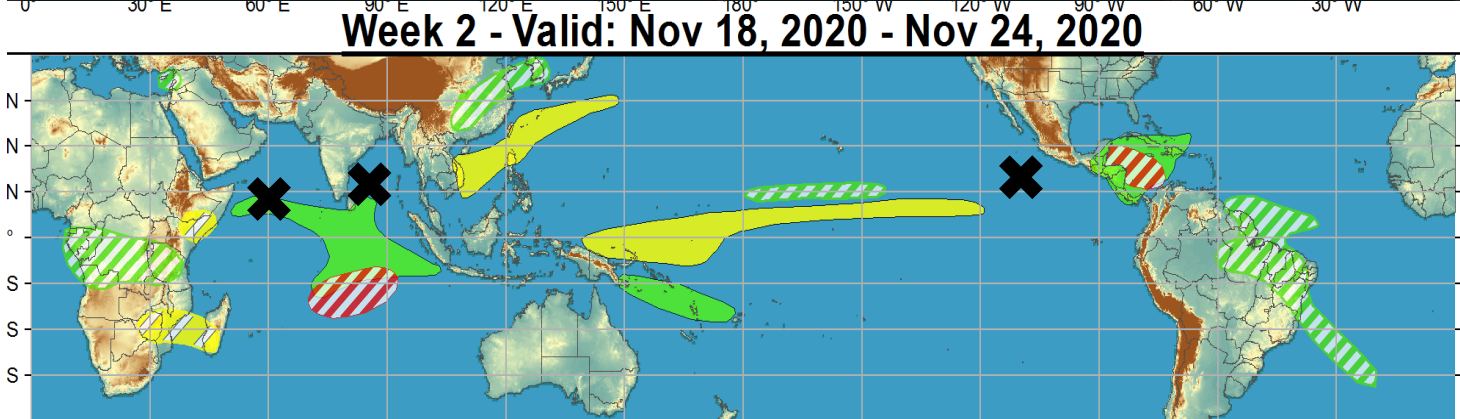
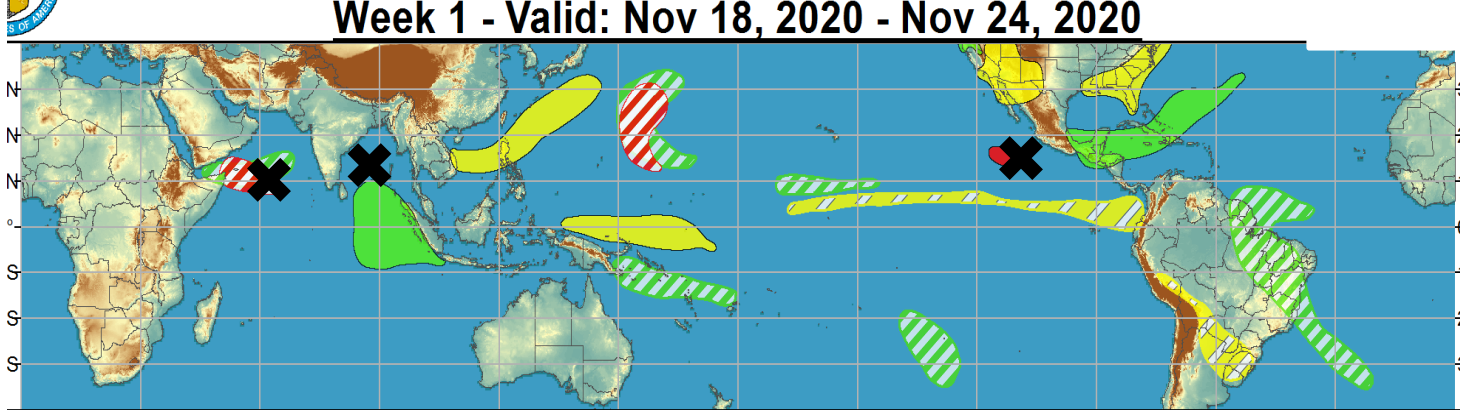
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

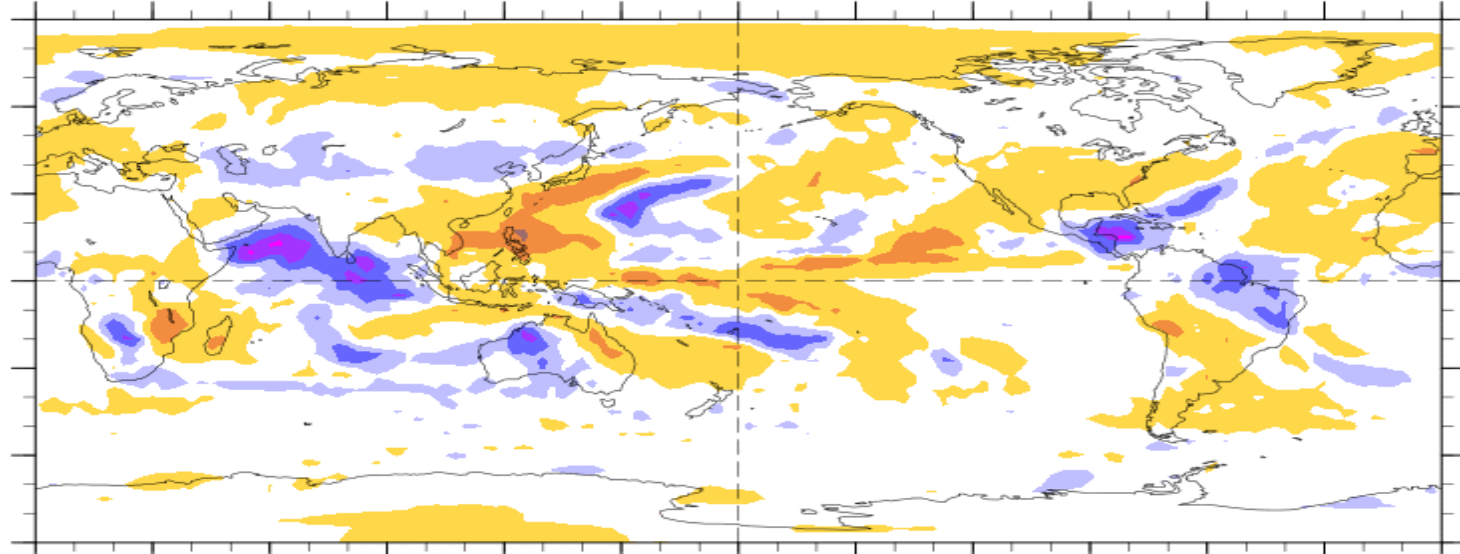
EPAC: Polo (11/18)

IO: TC Gati (11/21)

IO: TC Nivar
(11/23)



7-Day Average OLR Anomaly 2020/11/16 - 2020/11/22



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: November 12, 2020 Update

Next update December 10

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) and into spring 2021 (~65% chance during March-May)

MJO and other subseasonal tropical variability:

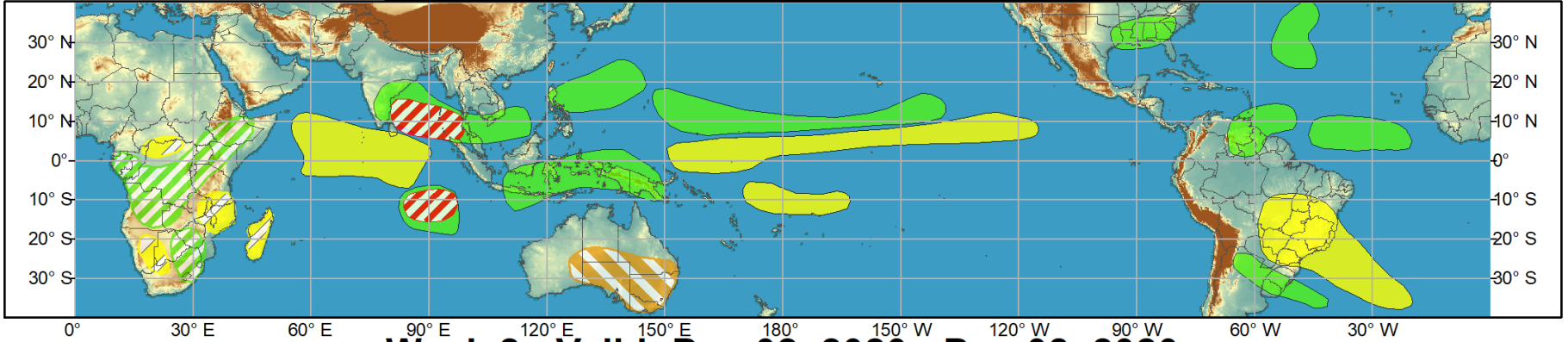
- The MJO has become better organized during mid-November, with the enhanced (suppressed) phase of the MJO is over the Indian Ocean (Western Hemisphere). Recently, the MJO has begun to shown signs of weakening.
- Model spread remains quite high, as ensemble means show the intraseasonal signal falling within the unit circle in RMM space thus limiting forecast confidence on the predicted evolution of the MJO.
- Despite this uncertainty, increased chances for TC development are favored over the Indian Ocean and West Pacific.



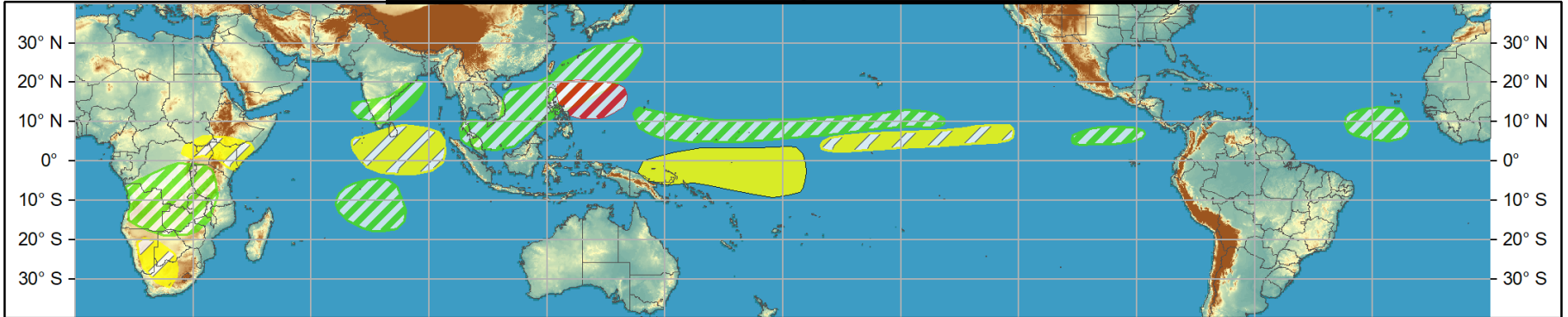
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Nov 25, 2020 - Dec 01, 2020



Week 2 - Valid: Dec 02, 2020 - Dec 08, 2020



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.

Produced: 11/24/2020

Forecaster: Novella

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.

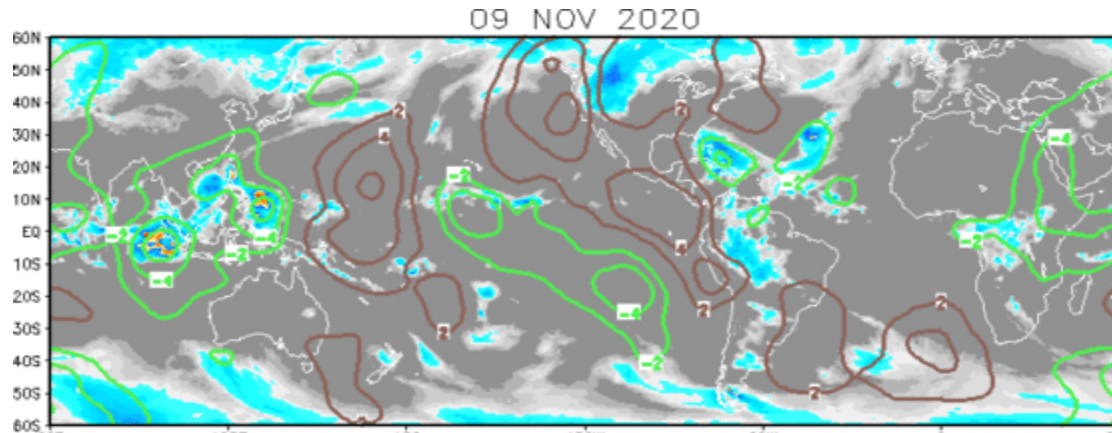


IR Satellite & 200-hpa Velocity Potential Anomalies

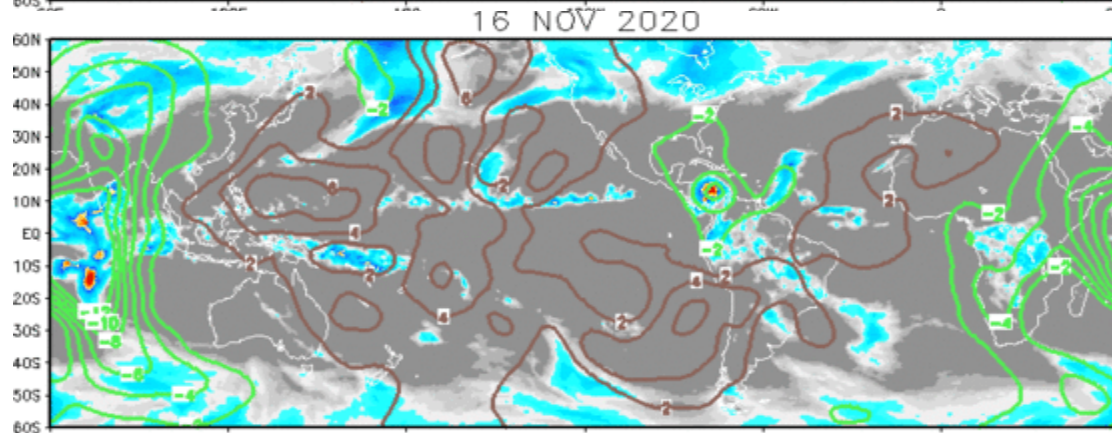
Green: Enhanced Divergence

Brown: Enhanced Convergence

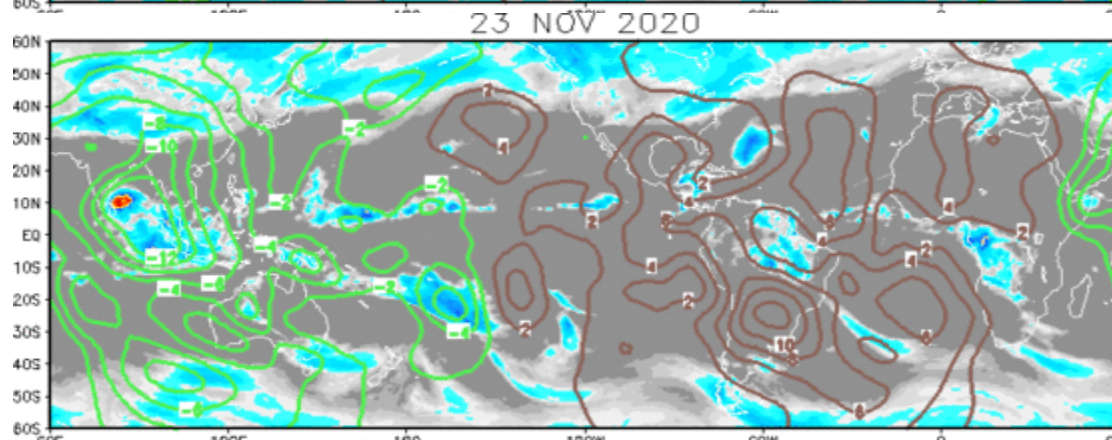
Semi persistent convection over the Maritime Continent associated with La Nina and MJO activity.



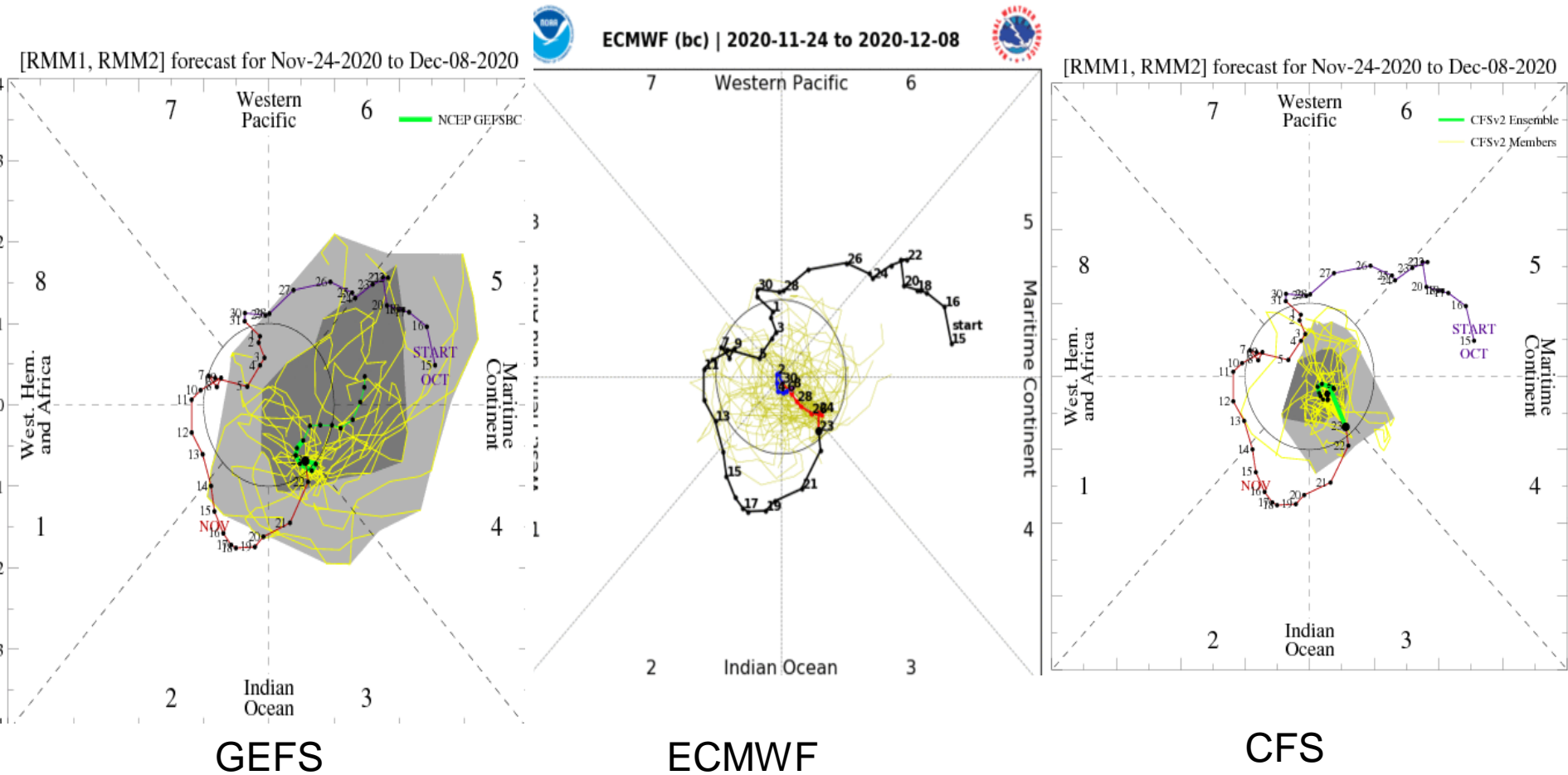
More organized pattern with strengthening convection over Indian Ocean aided by TC Gati developing in Arabian Sea.



A better defined wave-1 pattern, with the eastern edge of enhanced envelope extending into the West Pacific.

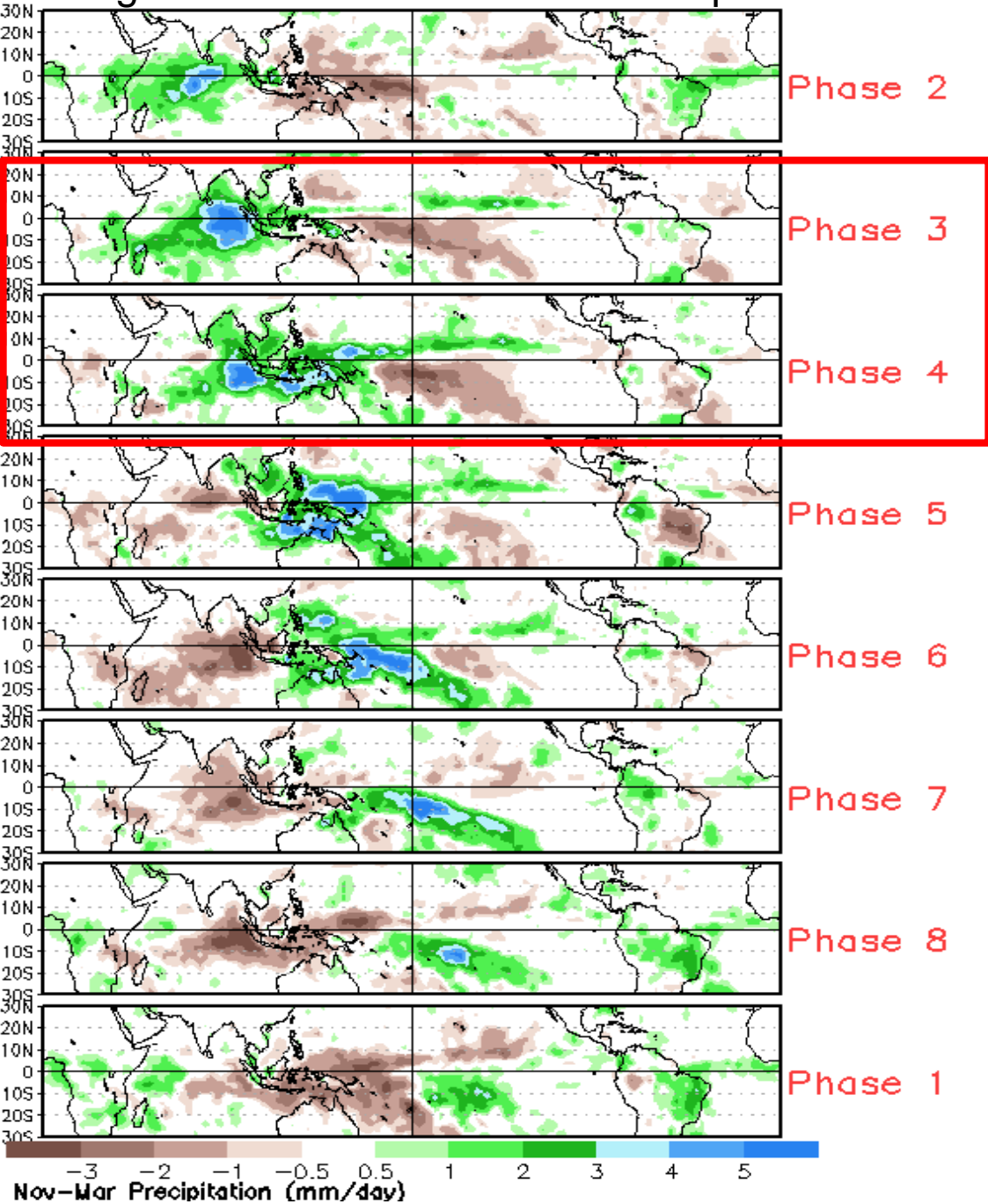


MJO Observation/Forecast

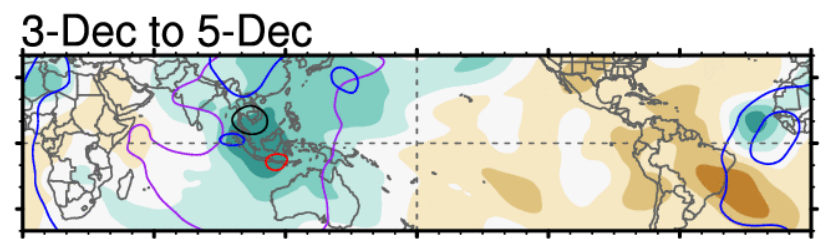
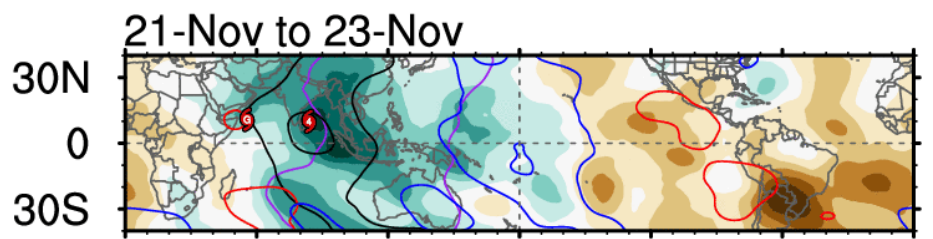
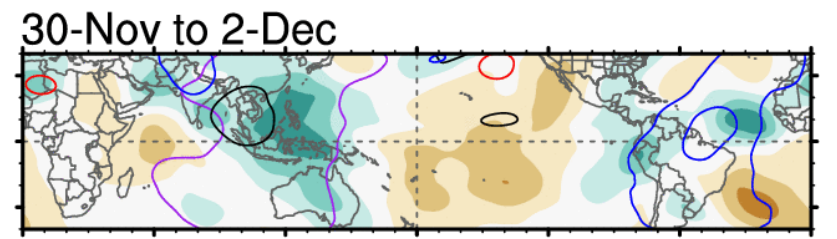
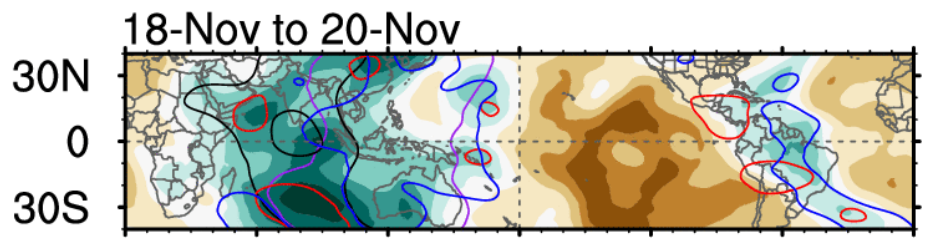
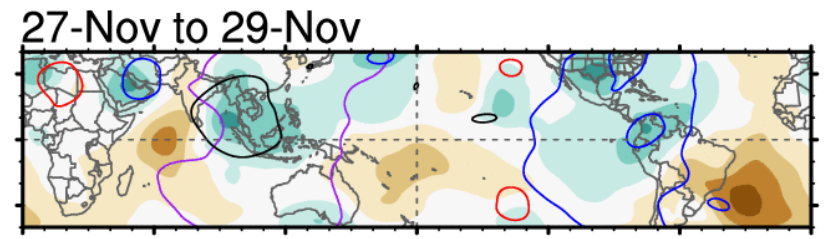
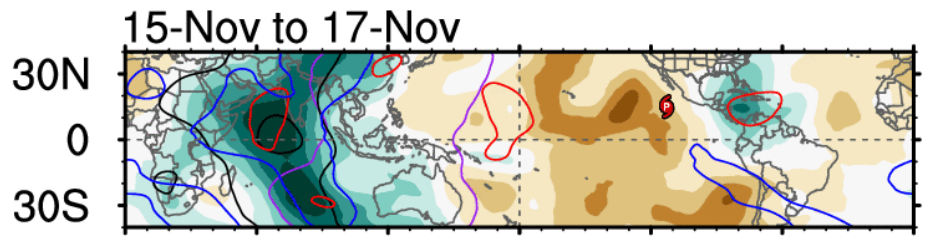
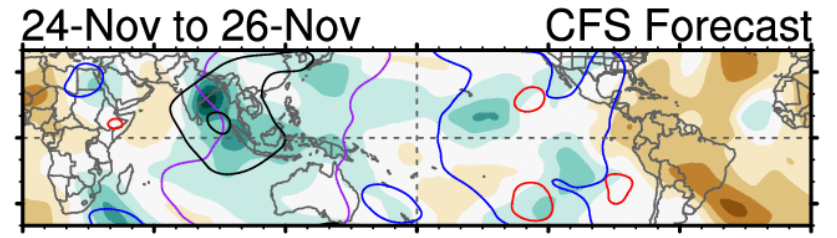
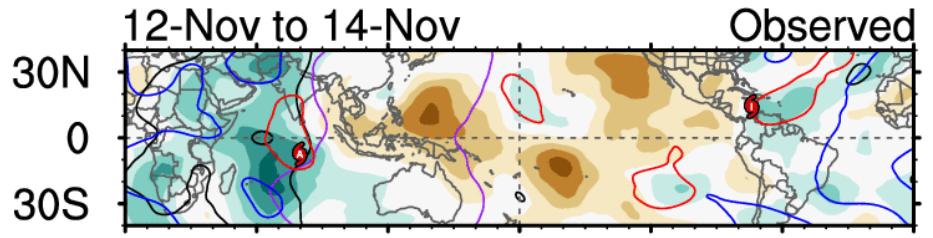


- Model ensemble means project a continued weakening of the MJO into early December, although the GEFS indicates possible renewed activity in week-2 across the Maritime Continent.
- Significant spread remains among the ensemble members.

Average Conditions when the MJO is present

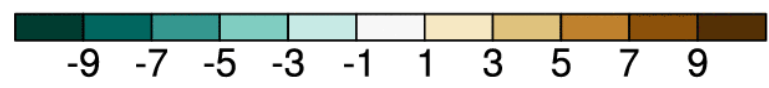


CAVEAT: These panels are representative of robust MJO events.



0 60E 120E 180 120W 60W 0

0 60E 120E 180 120W 60W 0



$\times 10^6 \text{ m}^2 \text{ s}^{-1}$

- MJO
- Kelvin x2
- Low
- ER

3-day CHI200 with CFS forecasts

Contours at $-2, -6 \times 10^6 \text{ m}^2 \text{ s}^{-1}$

Carl Schreck
carl_schreck@ncsu.edu

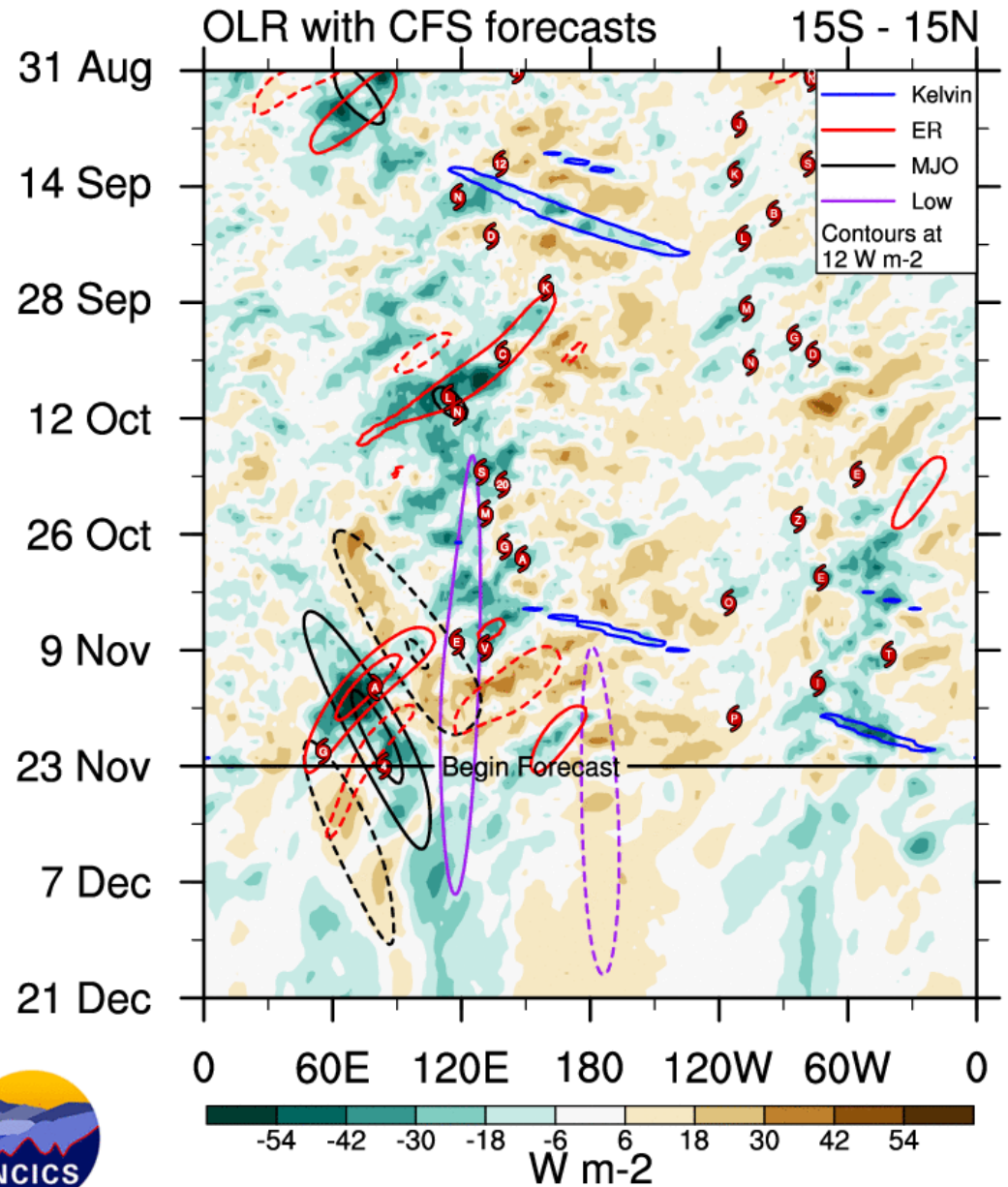
Robust **MJO** signal during mid-Nov.

Low frequency contours depict ENSO cold conditions. CFS favors return of enhanced convection over MT

Equatorial Rossby wave activity over the Indian Ocean.



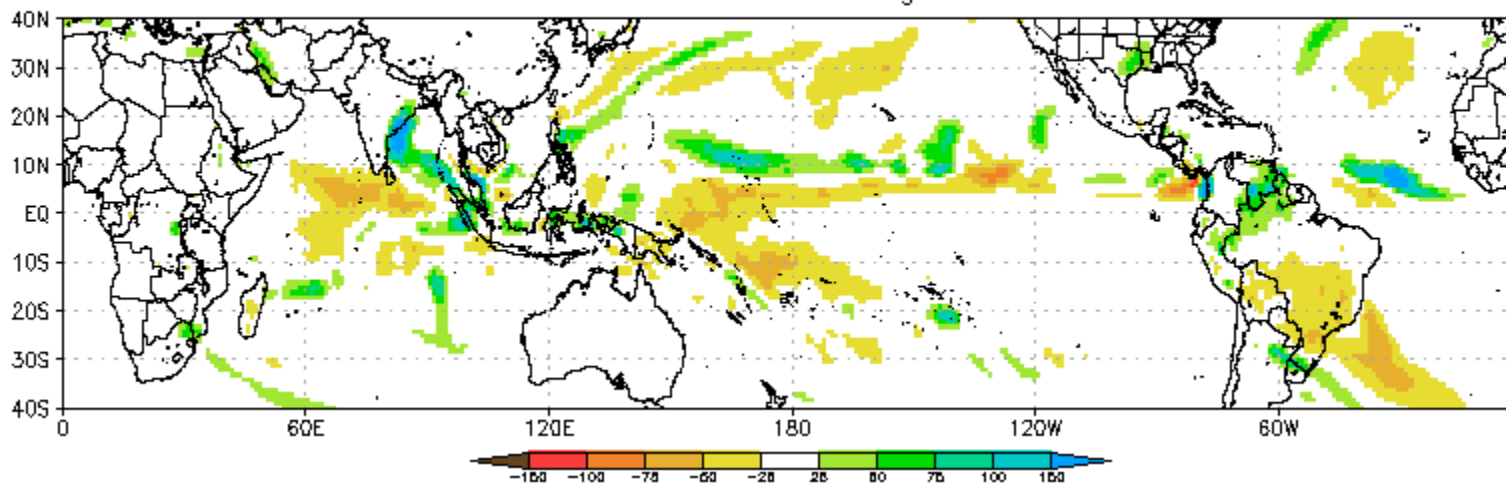
ncics.org/mjo



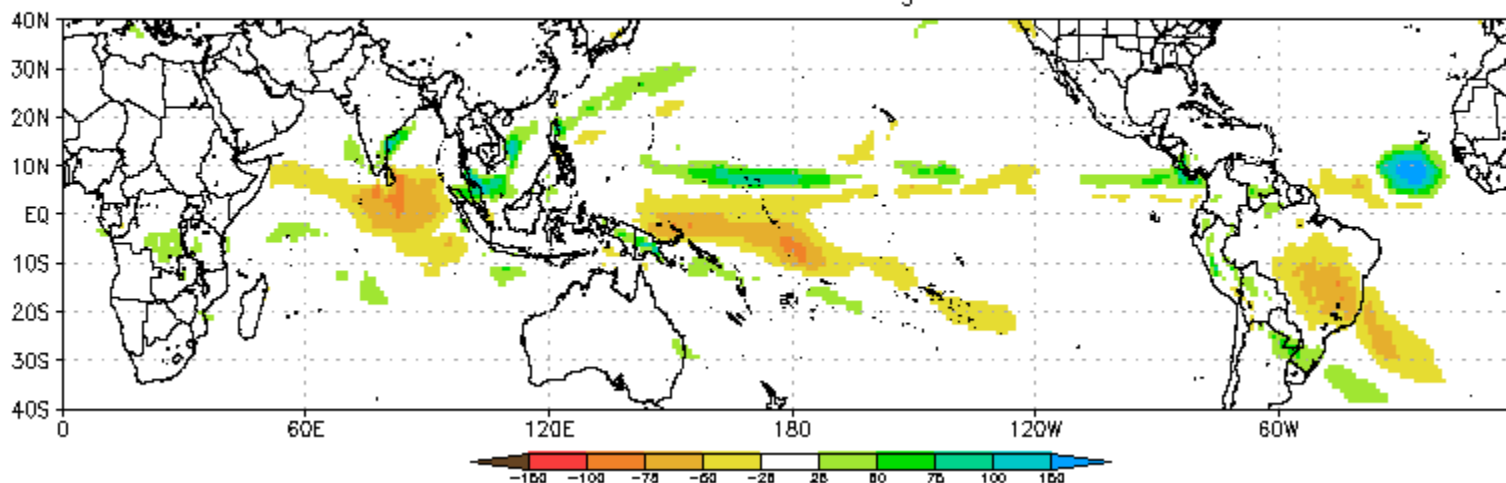
Tue 2020-11-24 1637 UTC

Carl Schreck
carl_schreck@ncsu.edu

CFS Precipitation Anomalies (mm) Issued 23Nov2020
Week-1 Forecast Ending 01Dec2020

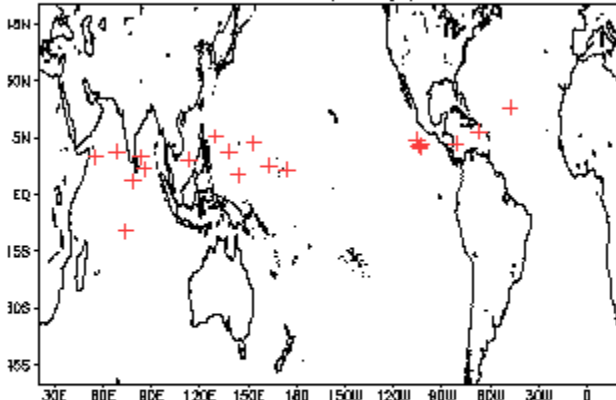


CFS Precipitation Anomalies (mm) Issued 23Nov2020
Week-2 Forecast Ending 08Dec2020

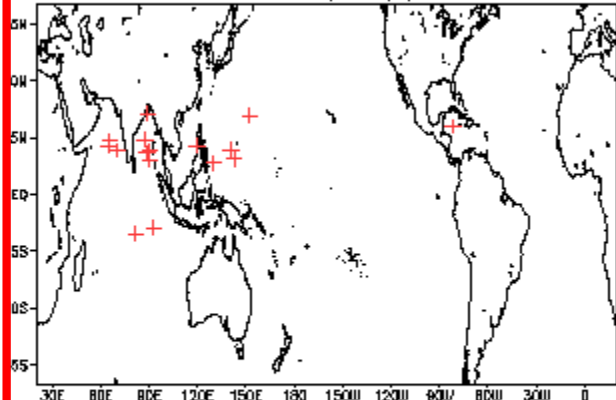


November Tropical Storm Formation by MJO phase

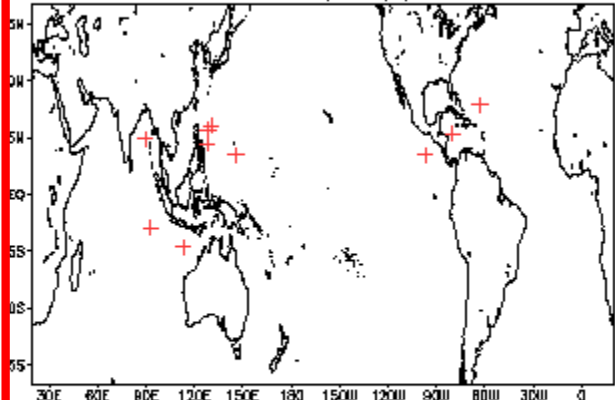
Phase 1 (65 days) 21 storms



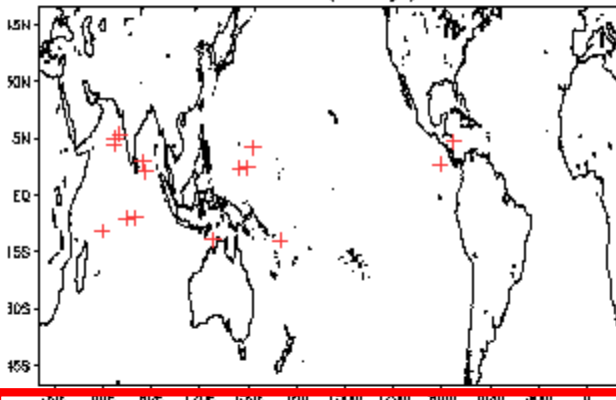
Phase 4 (77 days) 17 storms



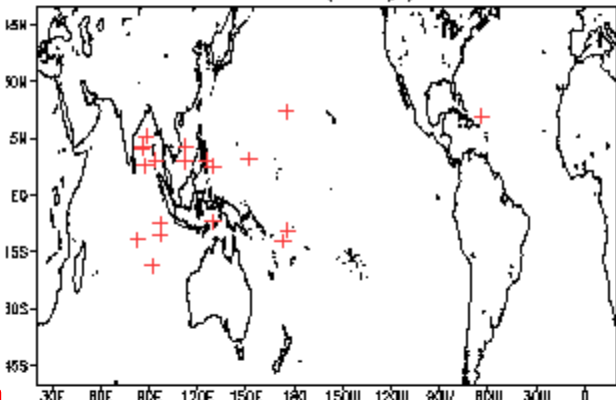
Phase 7 (68 days) 11 storms



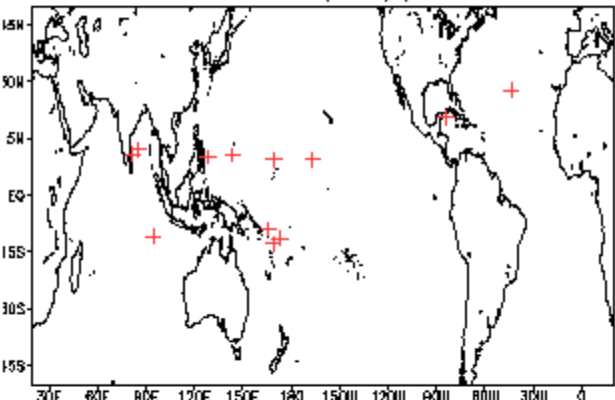
Phase 2 (88 days) 16 storms



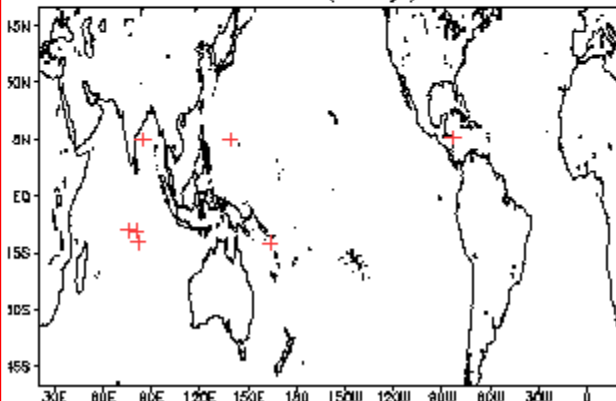
Phase 5 (72 days) 20 storms



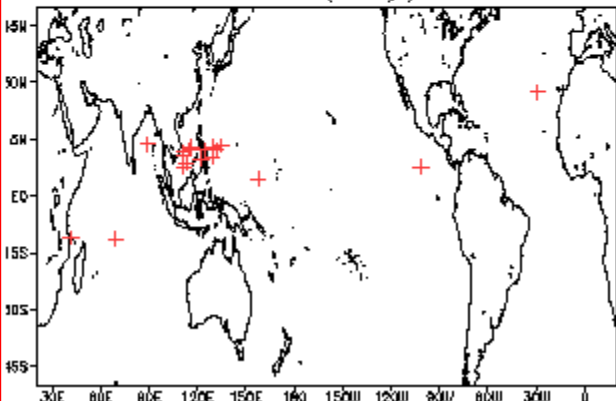
Phase 8 (60 days) 14 storms



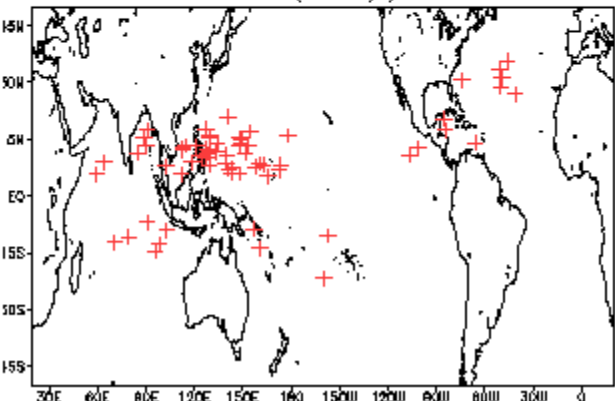
Phase 3 (89 days) 8 storms



Phase 6 (91 days) 19 storms



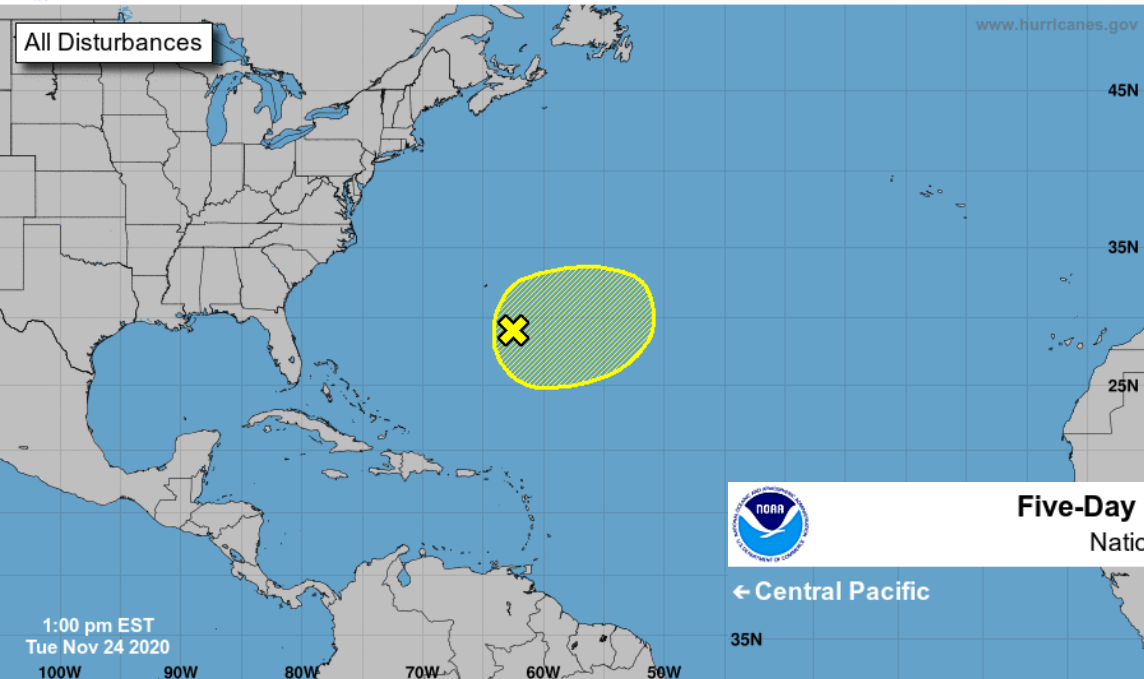
Null (380 days) 65 storms





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



← Central Pacific



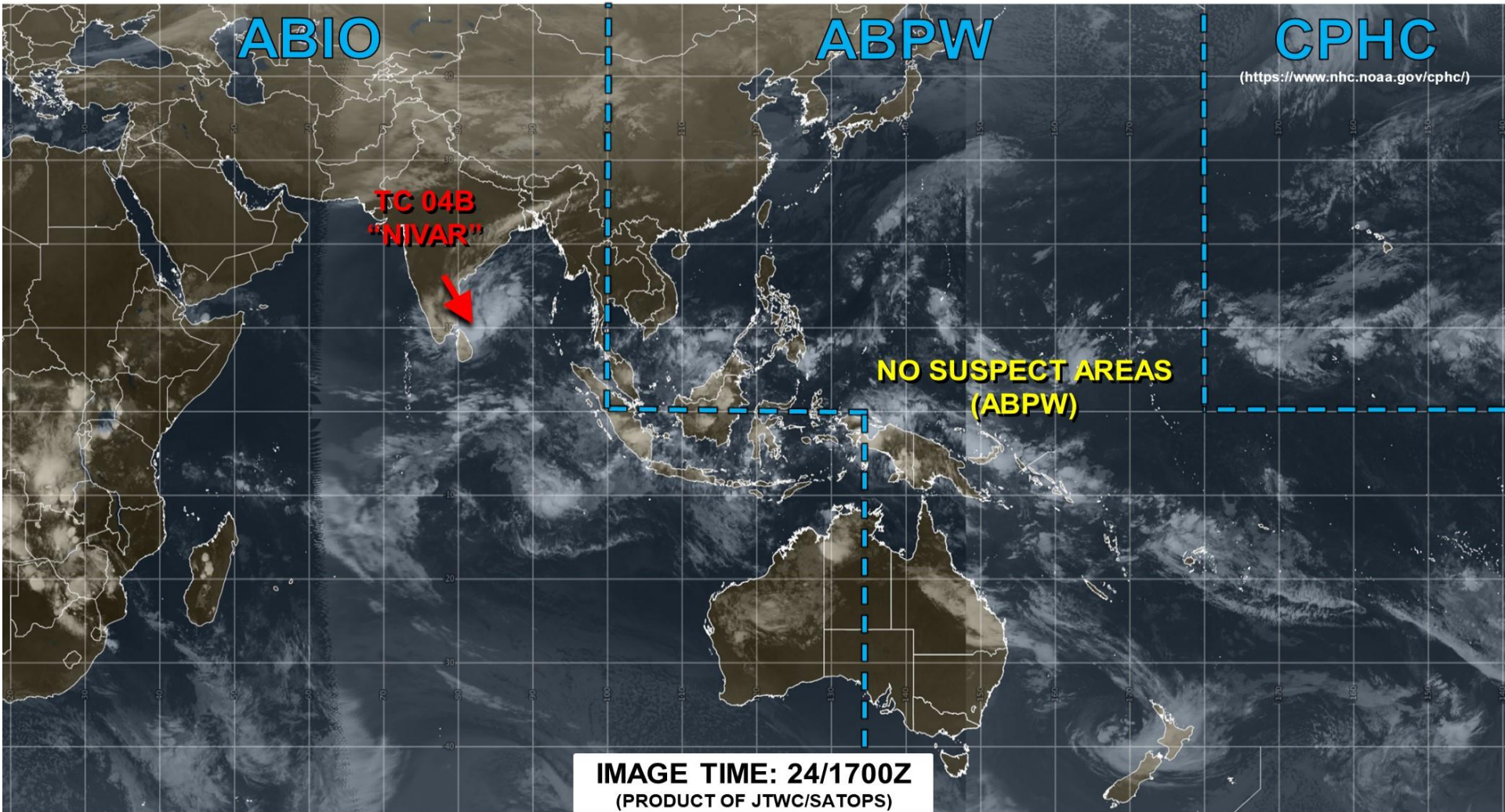
Current Disturbances and Five-Day Cyclone Formation Chance:
 Tropical or Sub-Tropical Cyclone: ○ Depression ○ Storm ○ Hurricane
 ⊗ Post-Tropical Cyclone or Remnants

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

No new tropical cyclones are expected during the next five days.



JOINT TYPHOON WARNING CENTER



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)

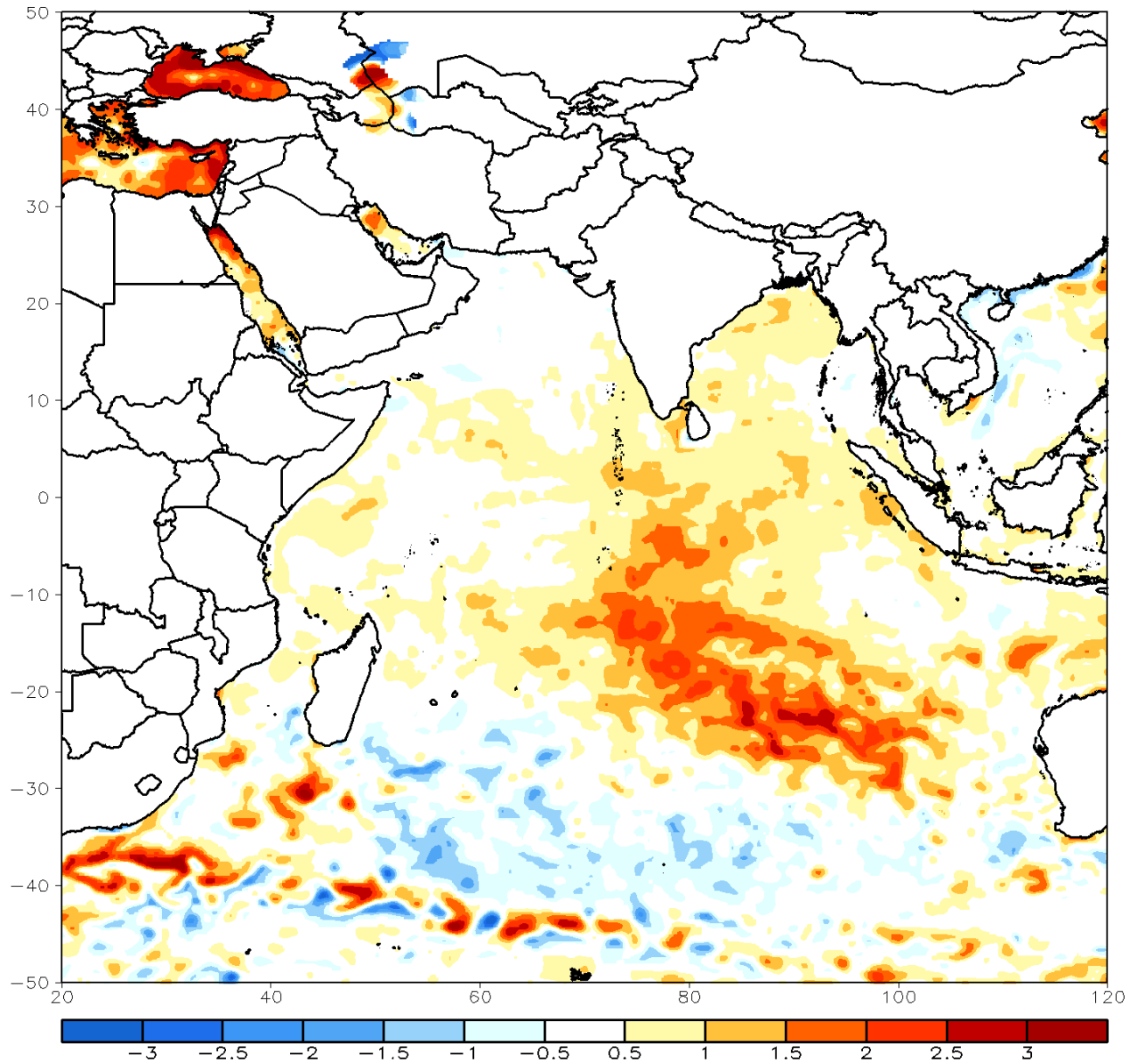
SUB TROPICAL

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

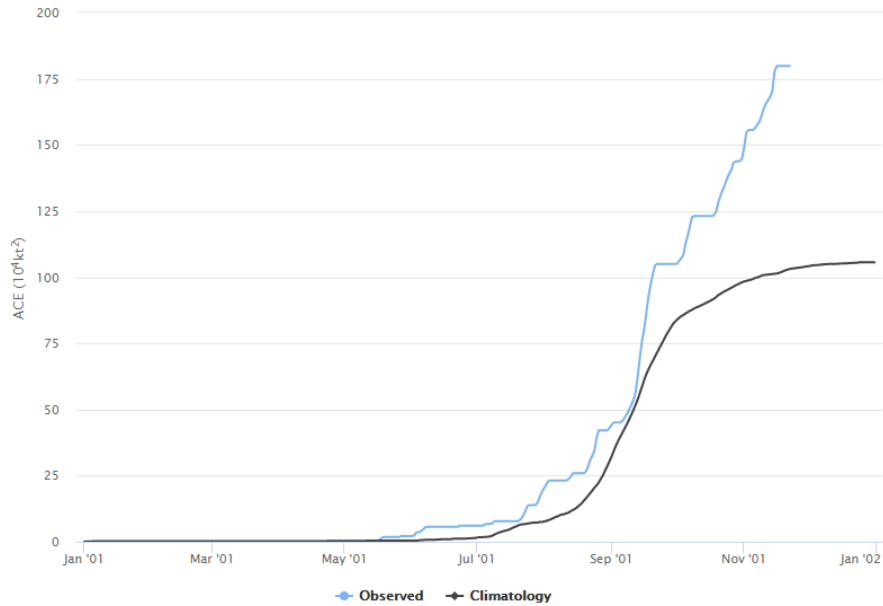
**Tropical Cyclone
(Reference Warning)**

OI SST (v2) 7-Day Anomaly (C)

Period: 16Nov2020 - 22Nov2020

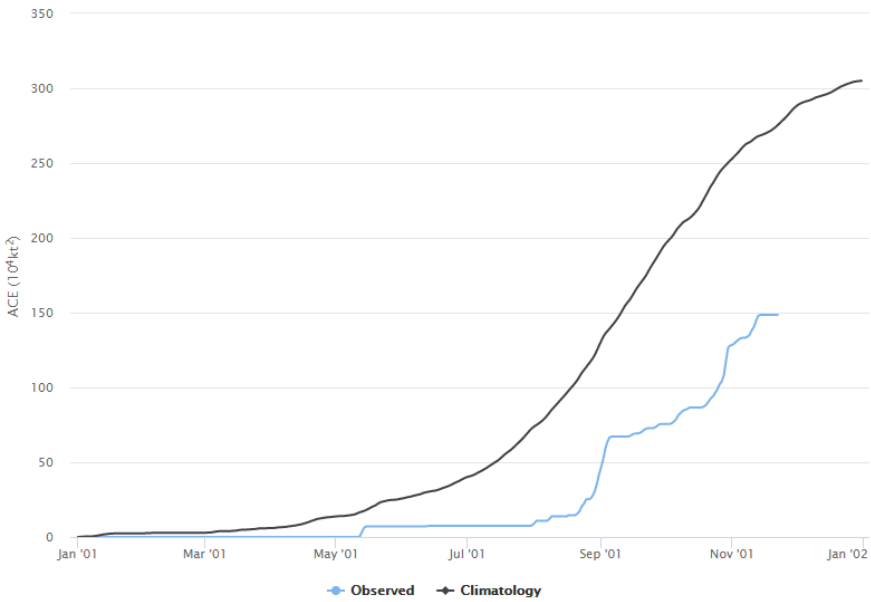


Current Season North Atlantic Ocean ACE (1981–2010 Climo)

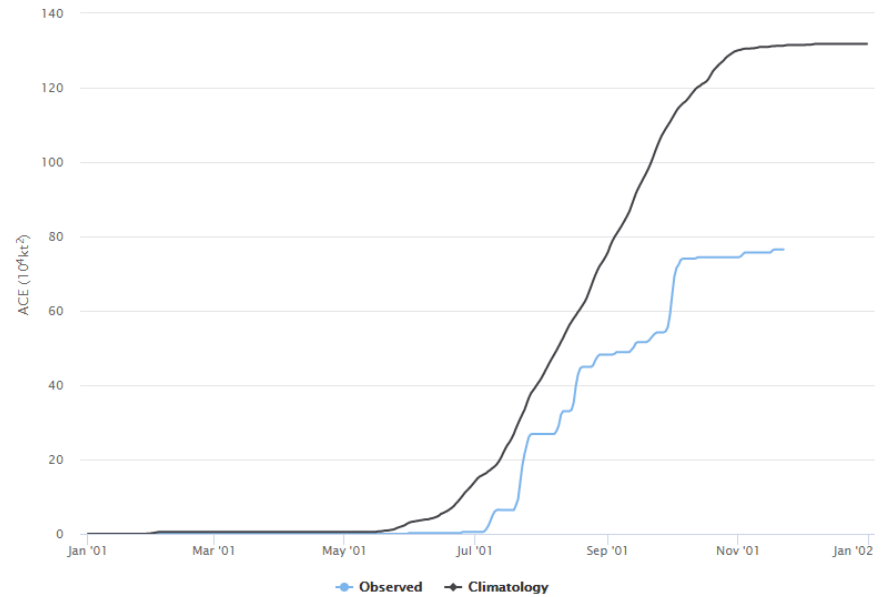


Highcharts.com

Current Season Northwest Pacific Ocean ACE (1981–2010 Climo)



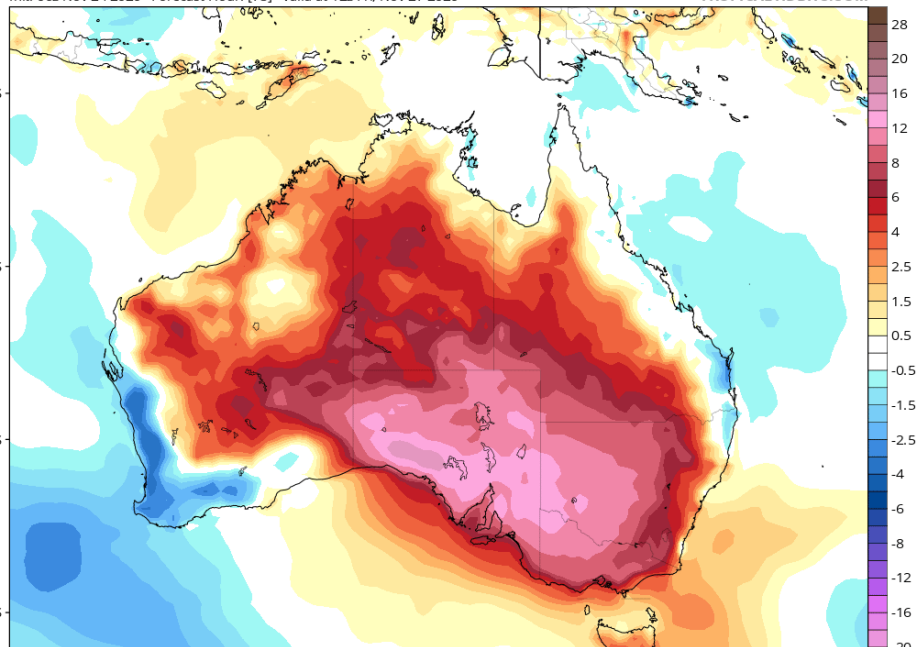
Current Season Northeast Pacific Ocean ACE (1981–2010 Climo)



GEFS 2-meter Temperature Anomaly (°C) (based on CFSR 1981-2010 Climatology)

Init: 06z Nov 24 2020 Forecast Hour: [78] valid at 12z Fri, Nov 27 2020

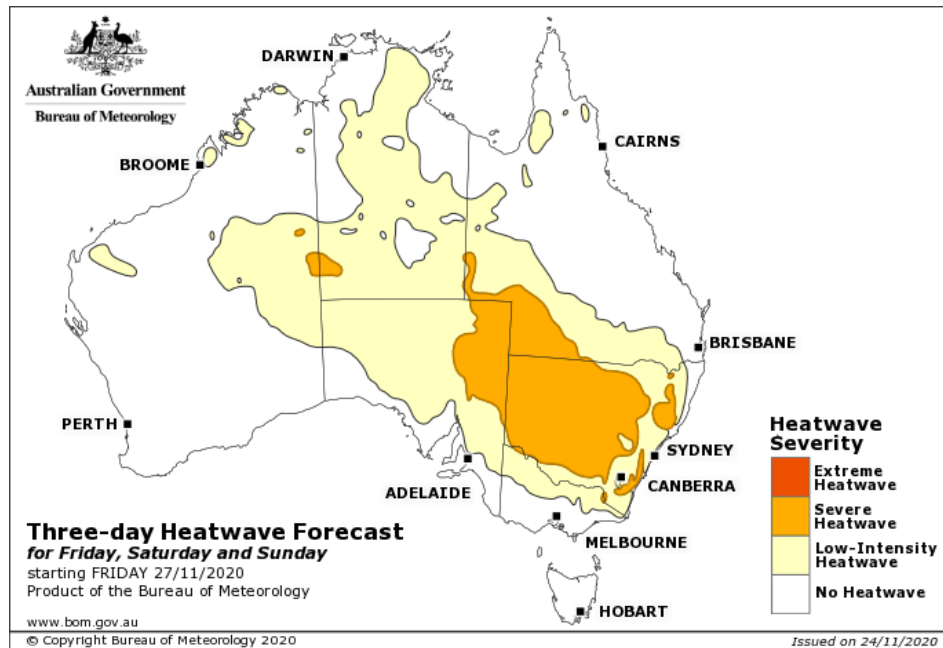
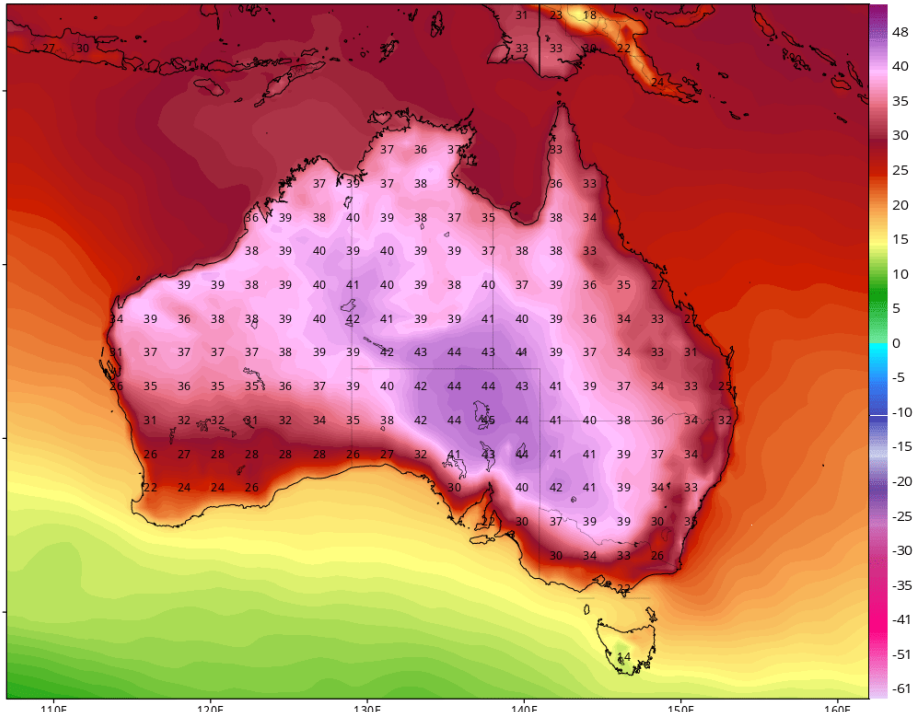
TROPICALTIDBITS.COM



GEFS 2-meter Air Temperature (°C)

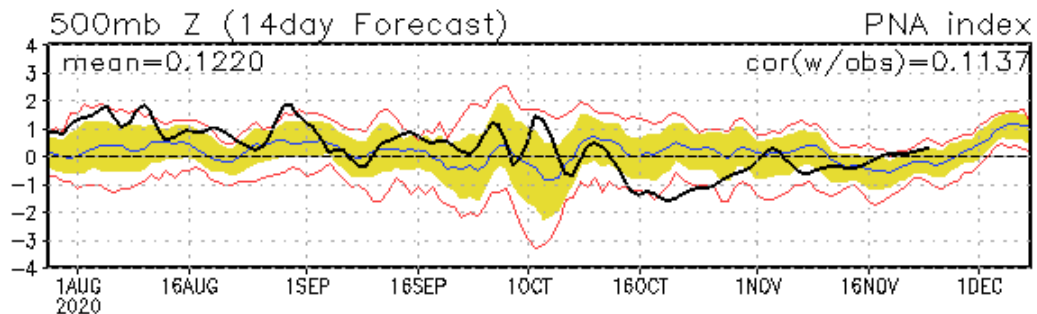
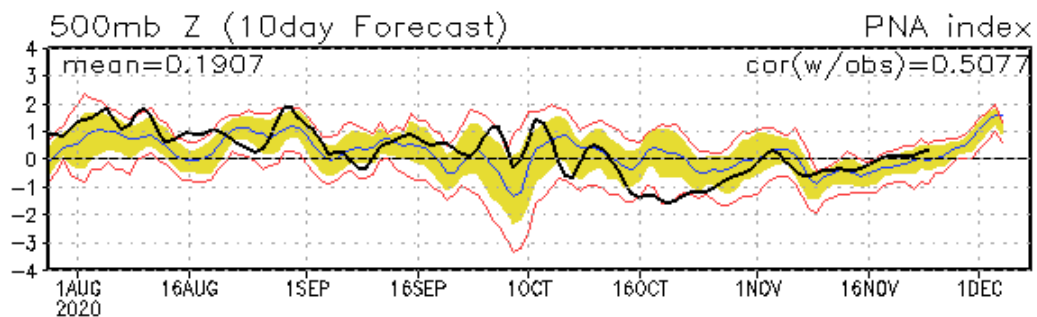
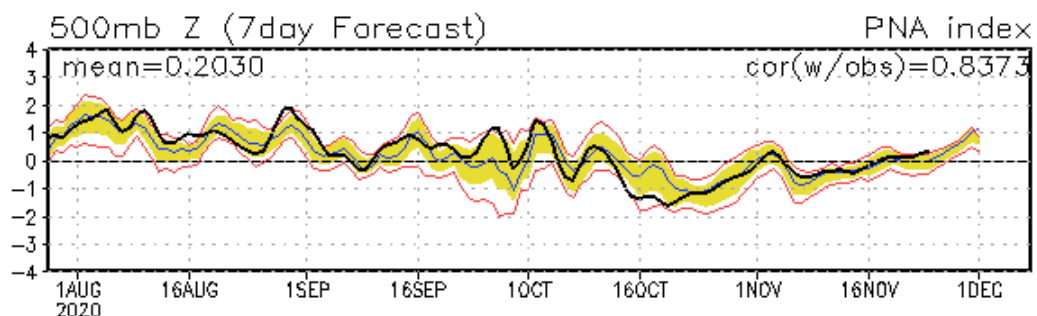
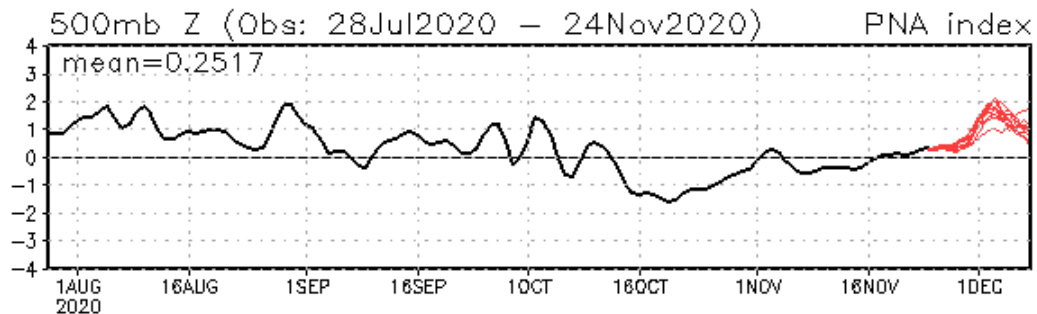
Init: 06z Nov 24 2020 Forecast Hour: [96] valid at 06z Sat, Nov 28 2020

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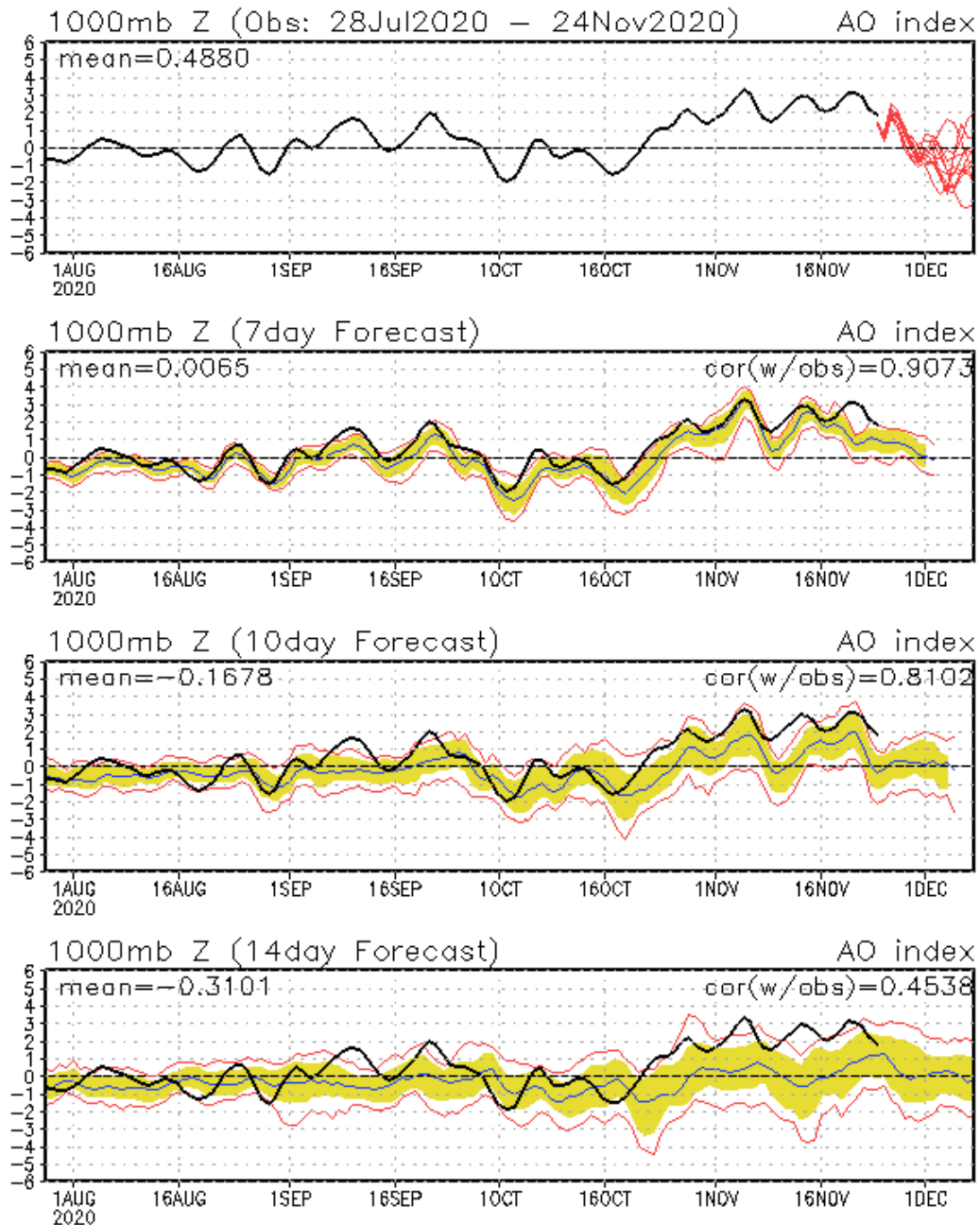


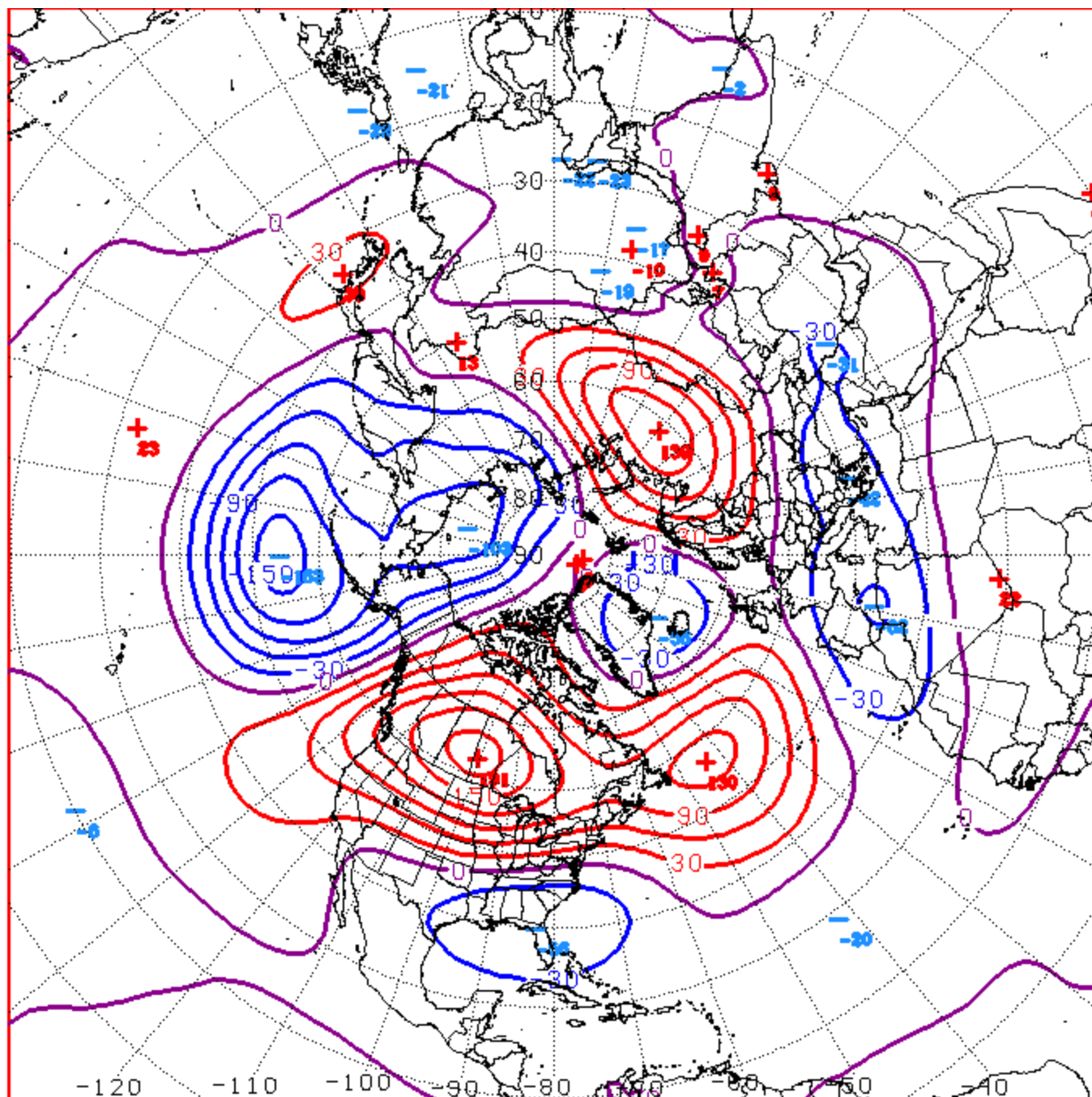
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts



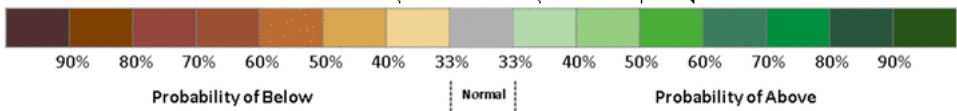
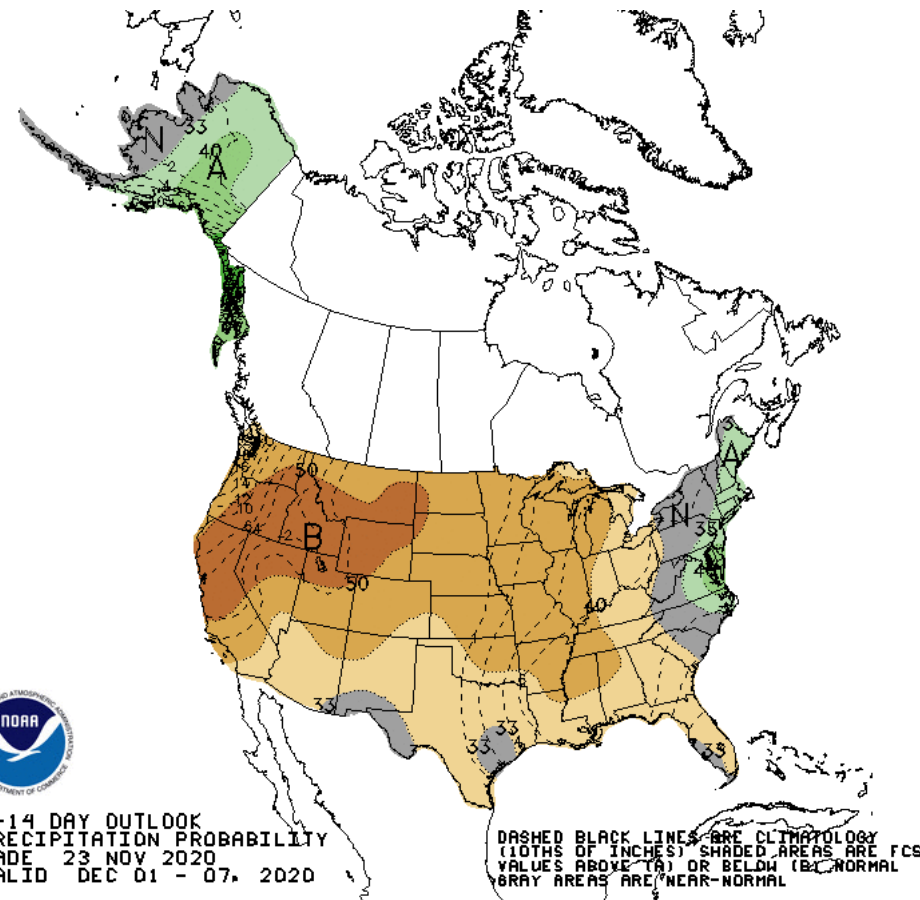
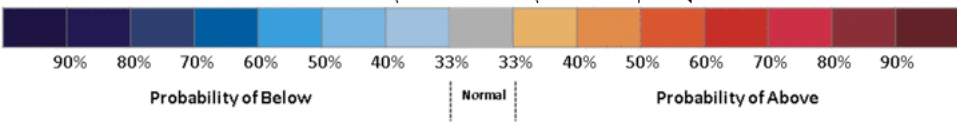
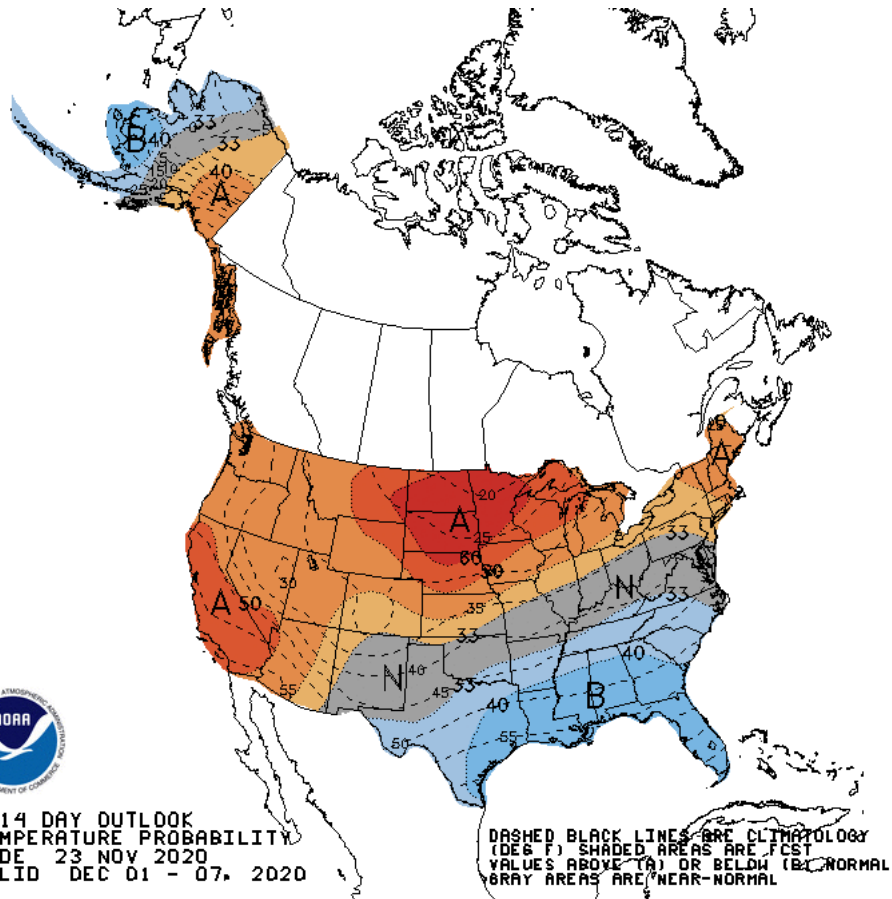
AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE NOV 24 2020 1515 UTC CNTD DEC 05 2020

Week 2 – Temperature and Precipitation

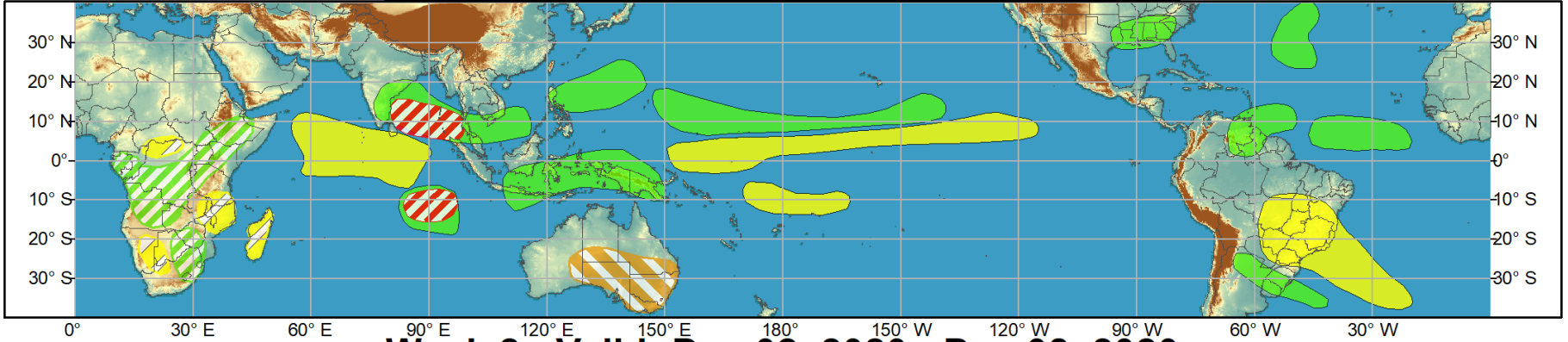




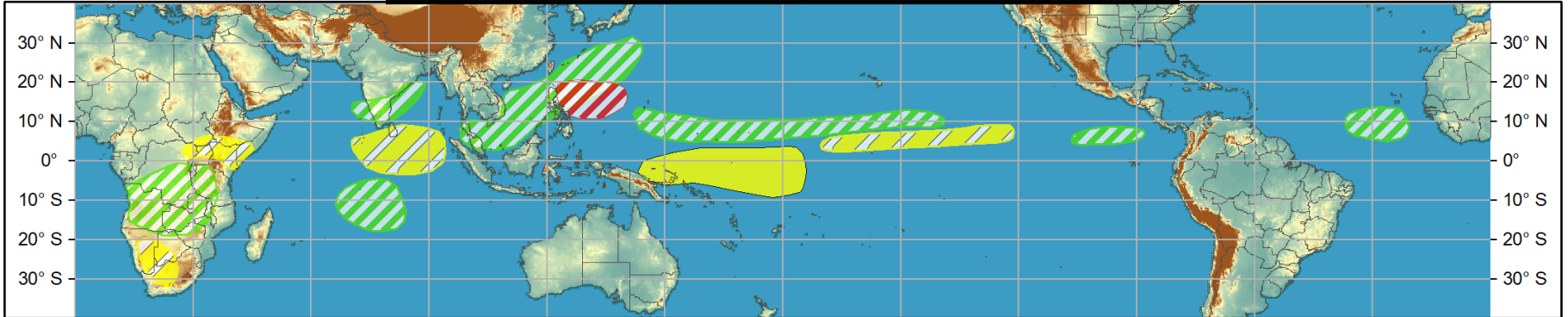
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- Above-average rainfall** Weekly total rainfall in the upper third of the historical range.
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- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
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