Global Tropics Hazards And Benefits Outlook

11/2/2021

Thomas Collow

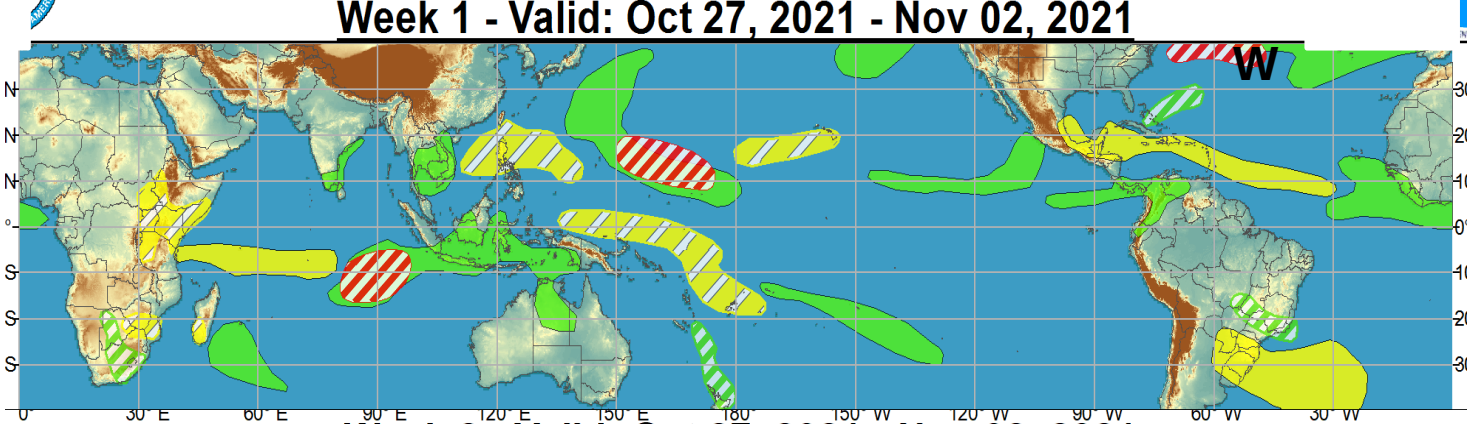
Outline

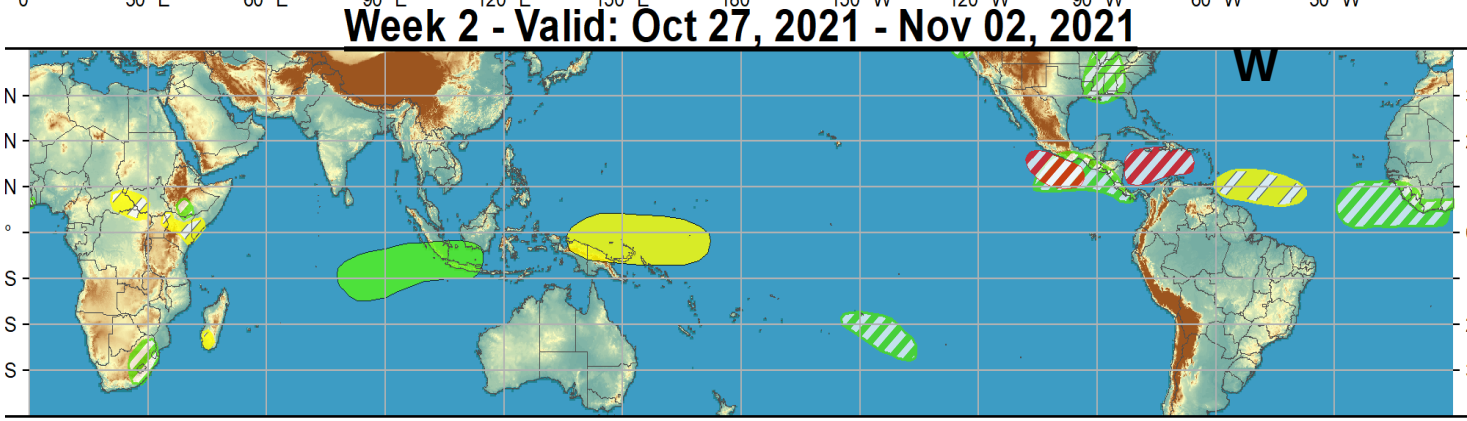
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

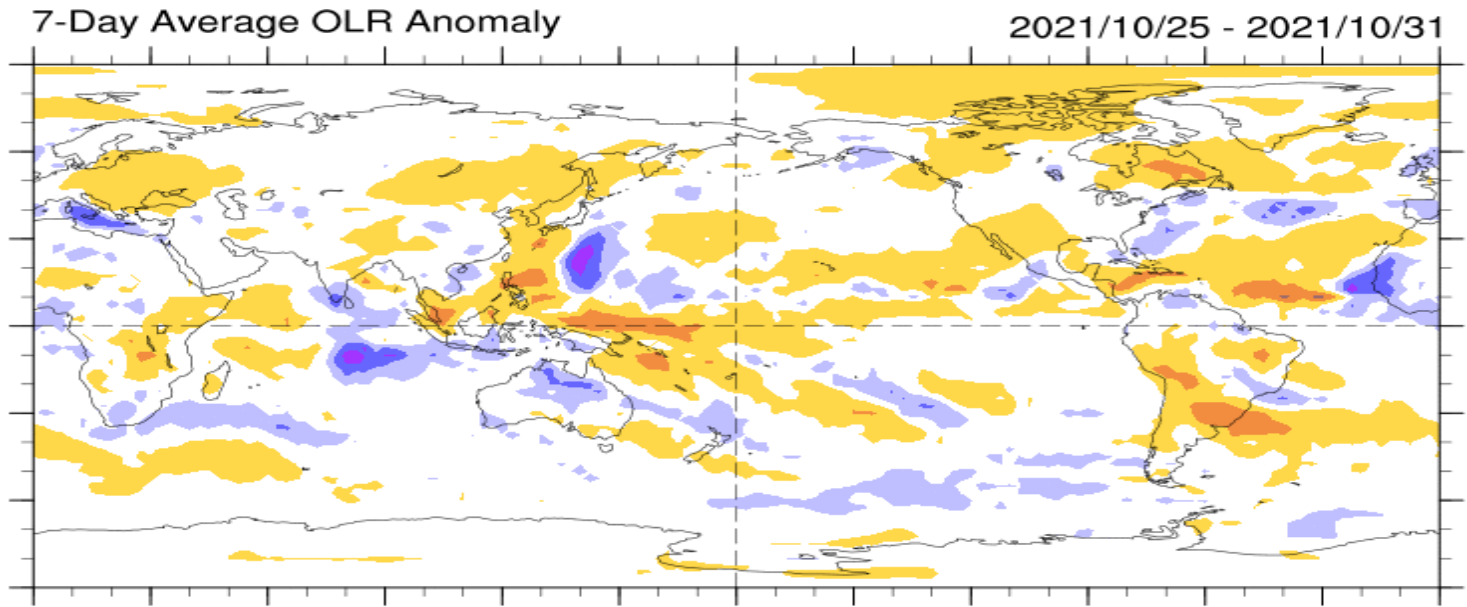
Outlook Review

TCs formed since 10/27:

Wanda (10/31)







Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (October 14, 2021 Update) ***next update on 11th of Nov.!***

- ENSO Alert System Status: La Niña Advisory

- La Niña conditions have developed and are expected to continue with an 87% chance of La Niña in December 2021- February 2022.

MJO and other subseasonal tropical variability:

- The MJO signal remains weak with enhanced convection persisting cross the Maritime Continent, consistent with the low frequency La Niña base state.

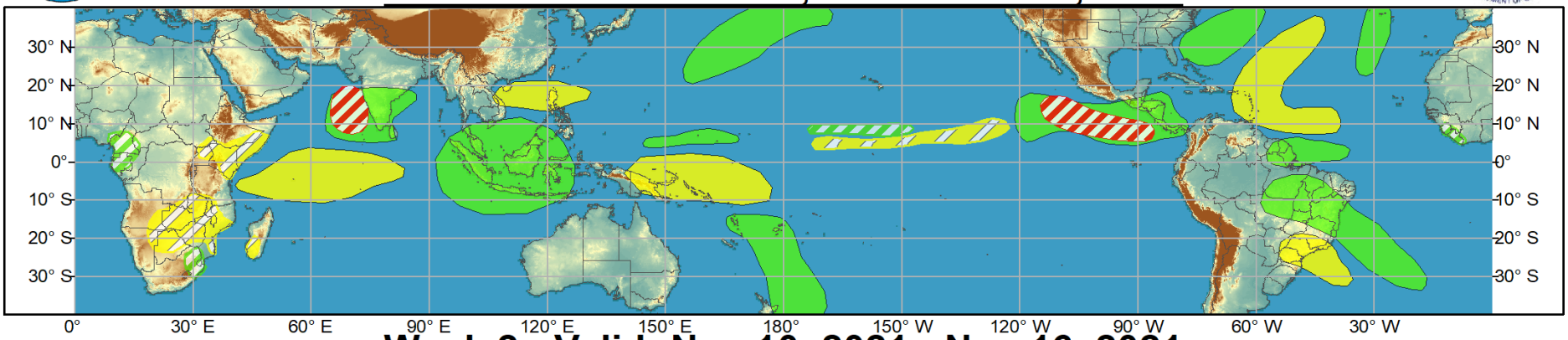
- A Convectively Coupled Kelvin Wave (KW) emerged from this main convective envelope, and has circumnavigated much of the globe during the month of October.

- As this KW moves back over the Indian Ocean and Maritime Continent, it will likely reinvigorate the MJO signal to some degree over the next 2 weeks.

- While some eastward propagation of the intraseasonal signal is possible, the well established low frequency signal is likely to inhibit its eastward progression beyond the far Western Pacific.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Nov 03, 2021 - Nov 09, 2021



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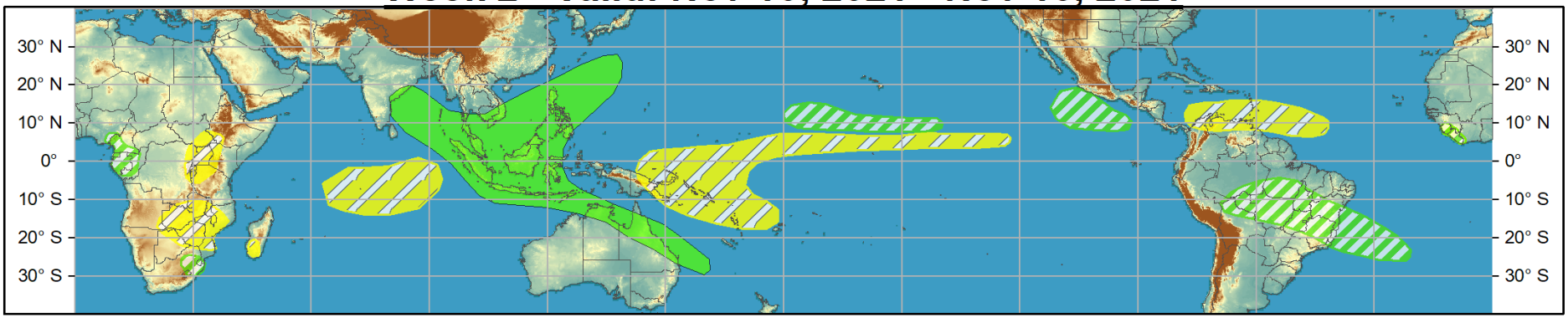

Produced: 11/02/2021

Forecaster: Collow

	Confidence: High	Confidence: Moderate	
Tropical Cyclone Formation			Development of a tropical cyclone (tropical depression - TD, or greater strength).
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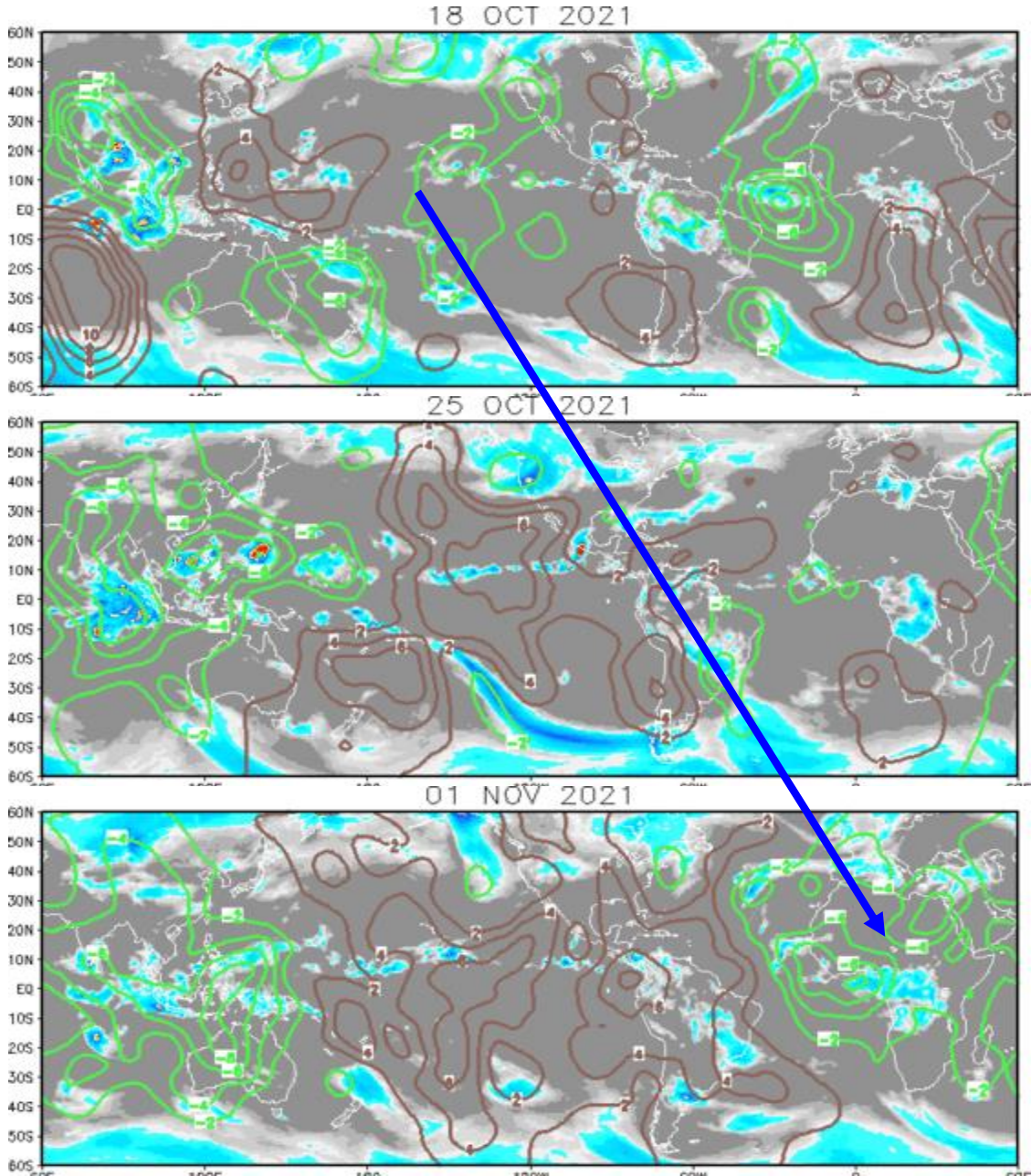
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

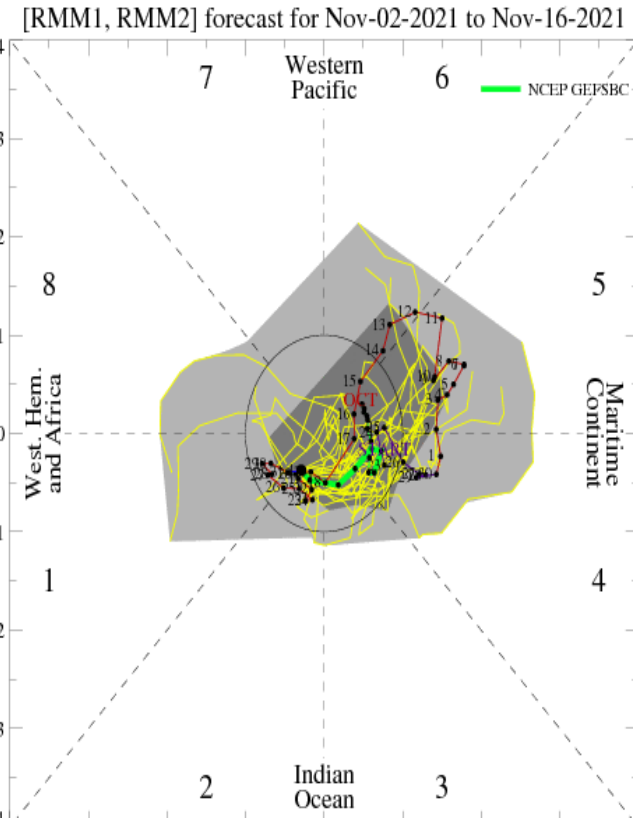
Rapid weakening during mid-October as the enhanced phase destructively interfered with the base state (La Niña). Rossby wave activity over the I.O.

A larger-scale signal has recently redeveloped over the eastern Indian Ocean.

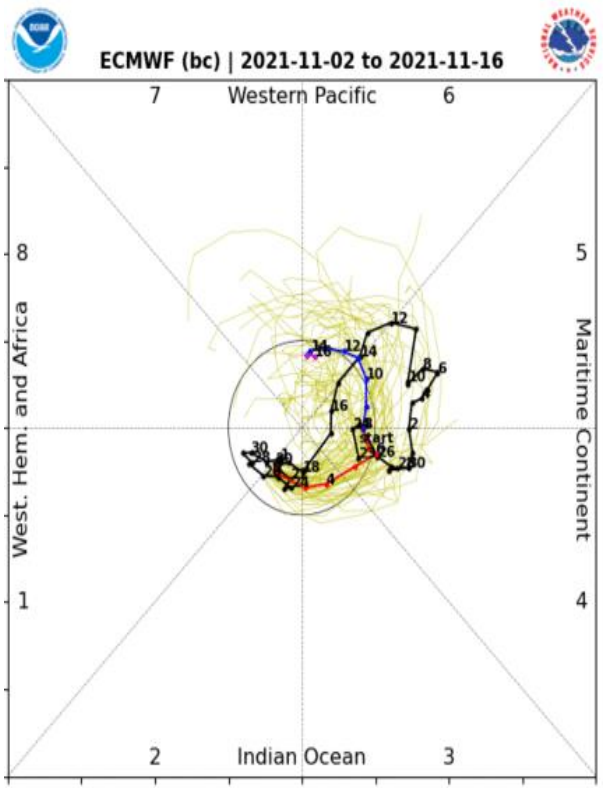
Kelvin Wave indicated across the Eastern Atlantic and Africa.



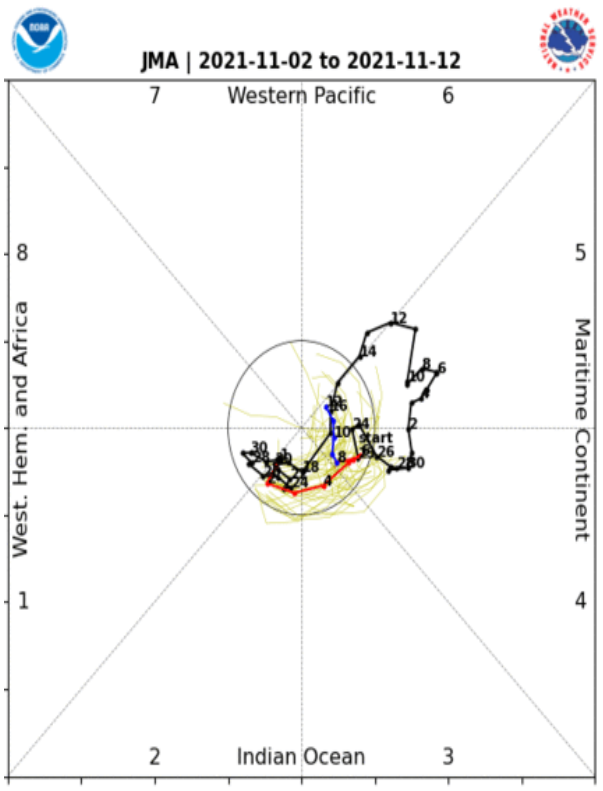
MJO Observation/Forecast



GEFS



ECMWF

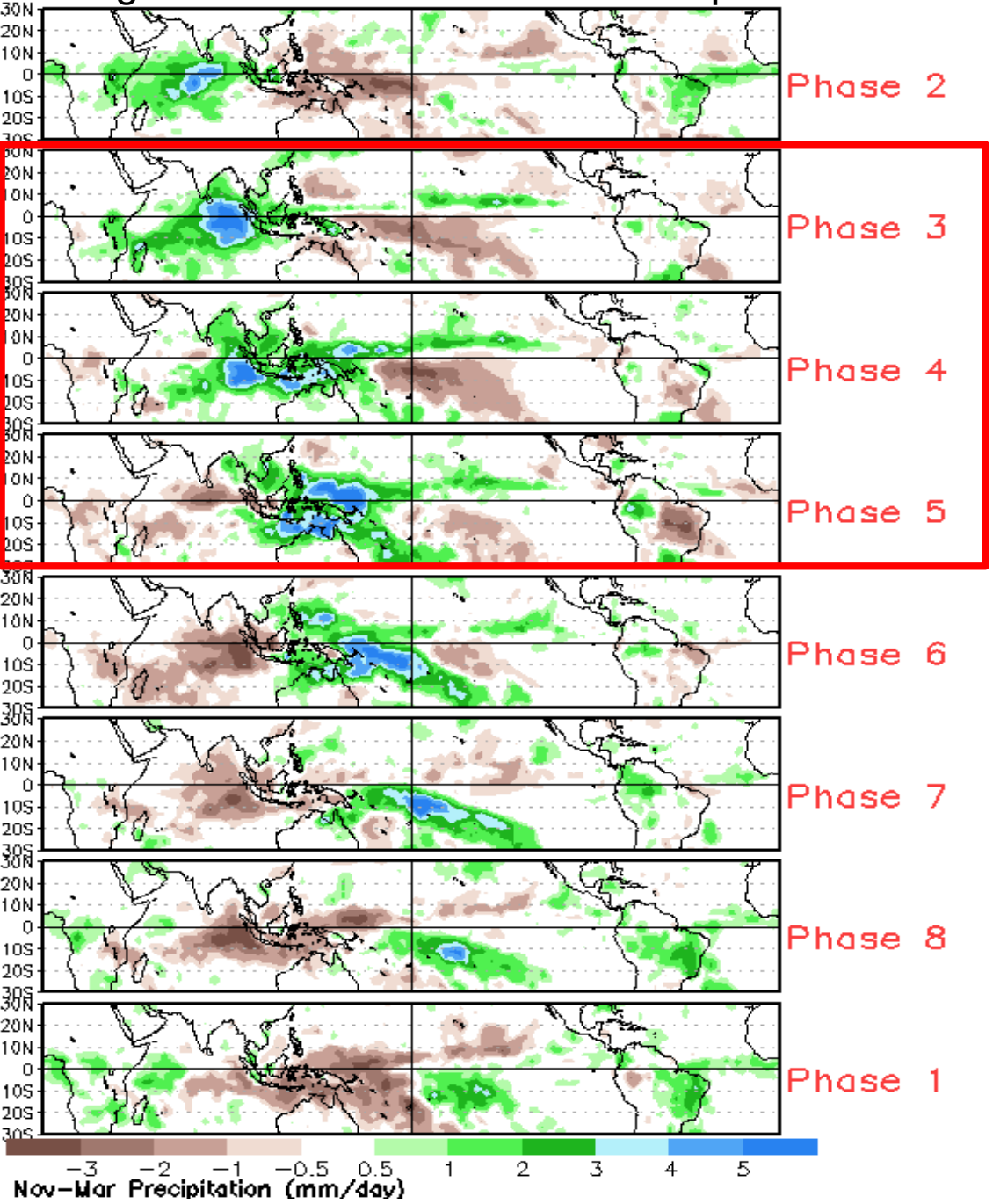


JMA

Dynamical models show a renewed eastward propagation of the MJO signal within the RMM-unit circle, with possible amplification across the Maritime Continent and Western Pacific over the next 2 weeks.

There is a fairly large spread among the ensemble members. The ECMWF ensemble is the most robust in terms of amplification.

Average Conditions when the MJO is present

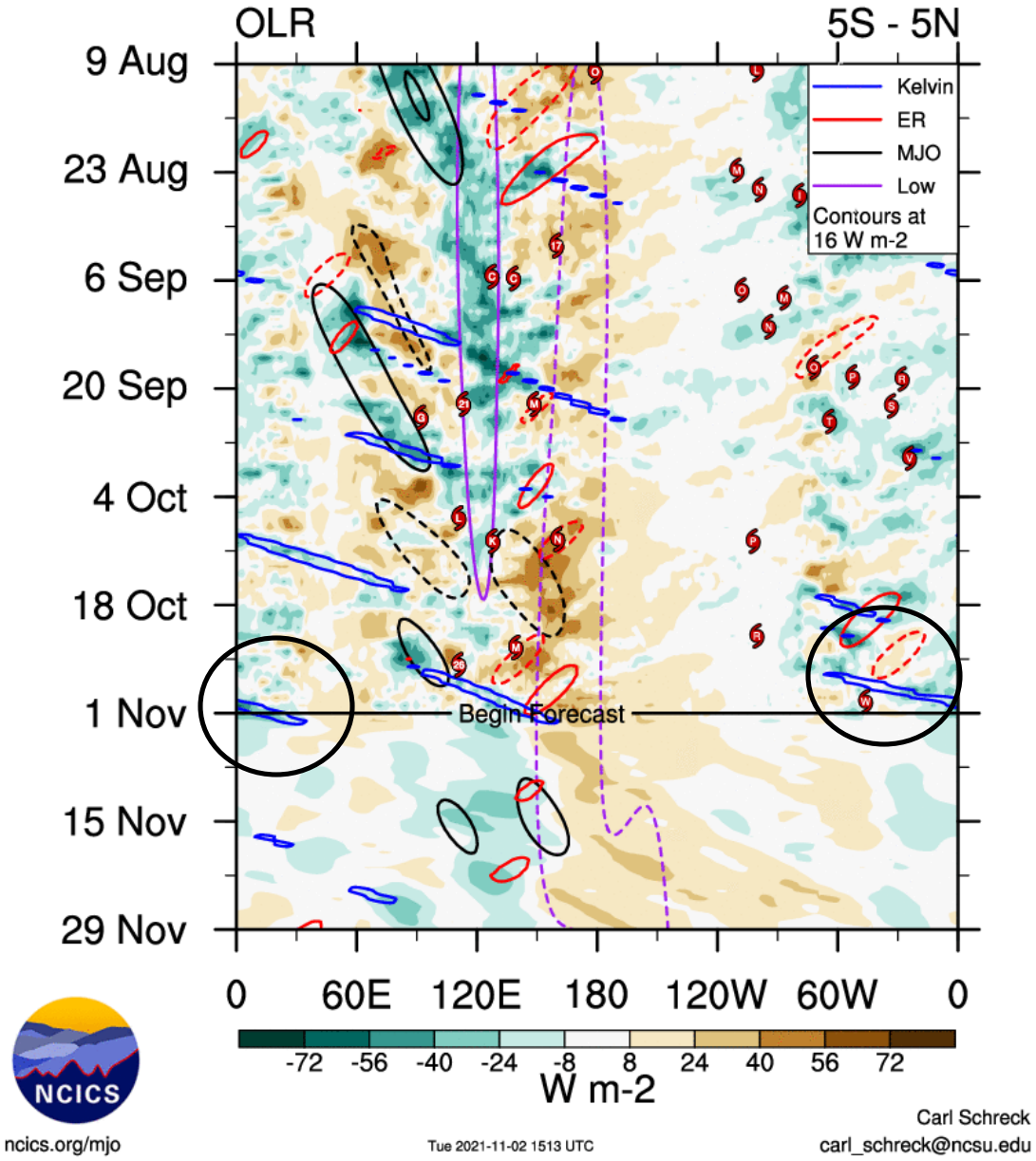


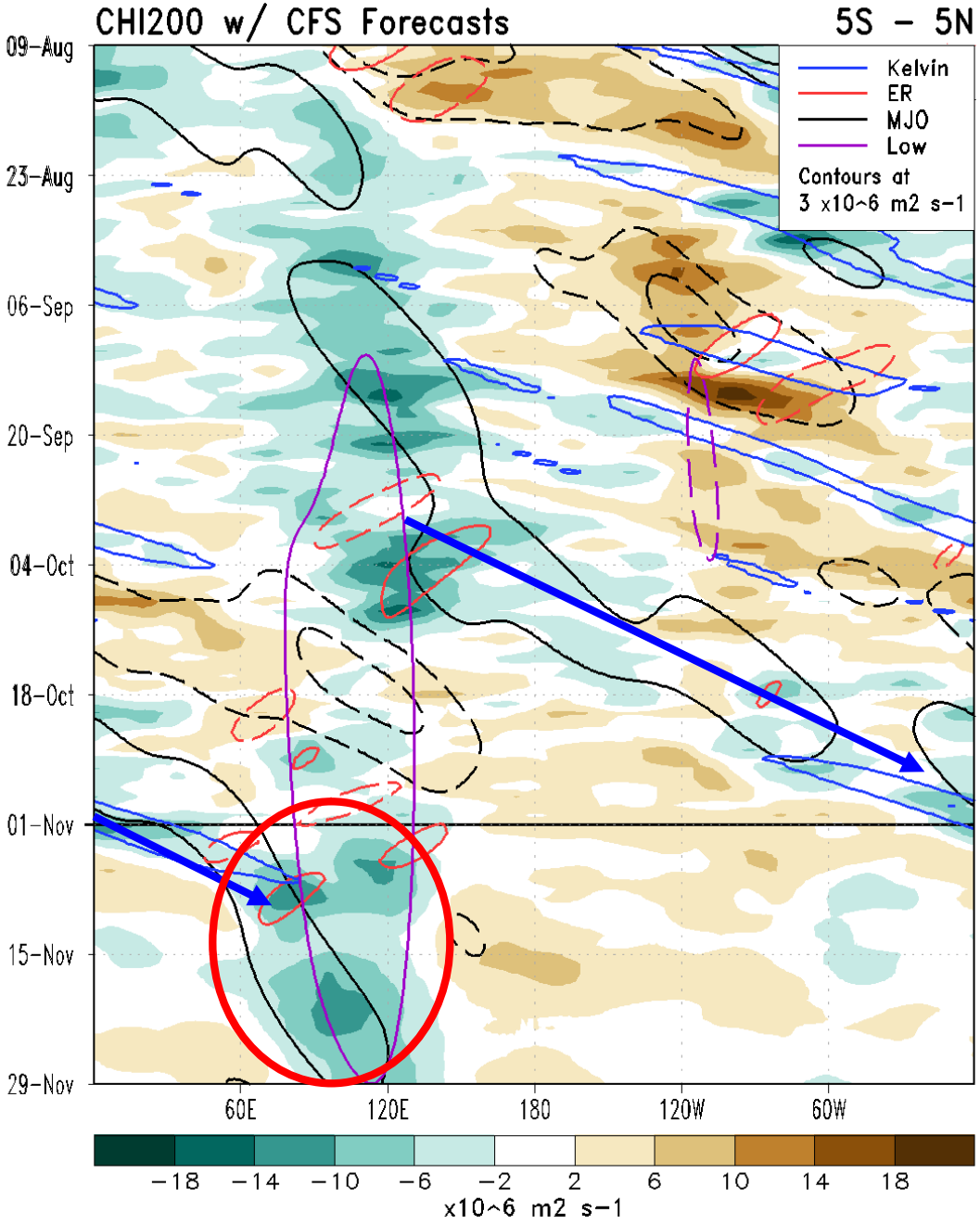
CAVEAT: These panels are representative of robust MJO events.

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

Kelvin wave activity is currently over the eastern Atlantic and is forecast to move into the Indian Ocean

Low frequency contours depict La Niña conditions.





Kelvin wave shows up better using the 200-hPa velocity potential compared to the OLR on the previous slide.

Forecast to interact with established convective signal across the Indian Ocean.

GEFS Accumulated Precip. Anomaly (mm) from 00z03Nov2021 to 00z10Nov2021 (Days 2-8)

Init: 00z Nov 02 2021 Forecast Hour: [192] valid at 00z Wed, Nov 10 2021

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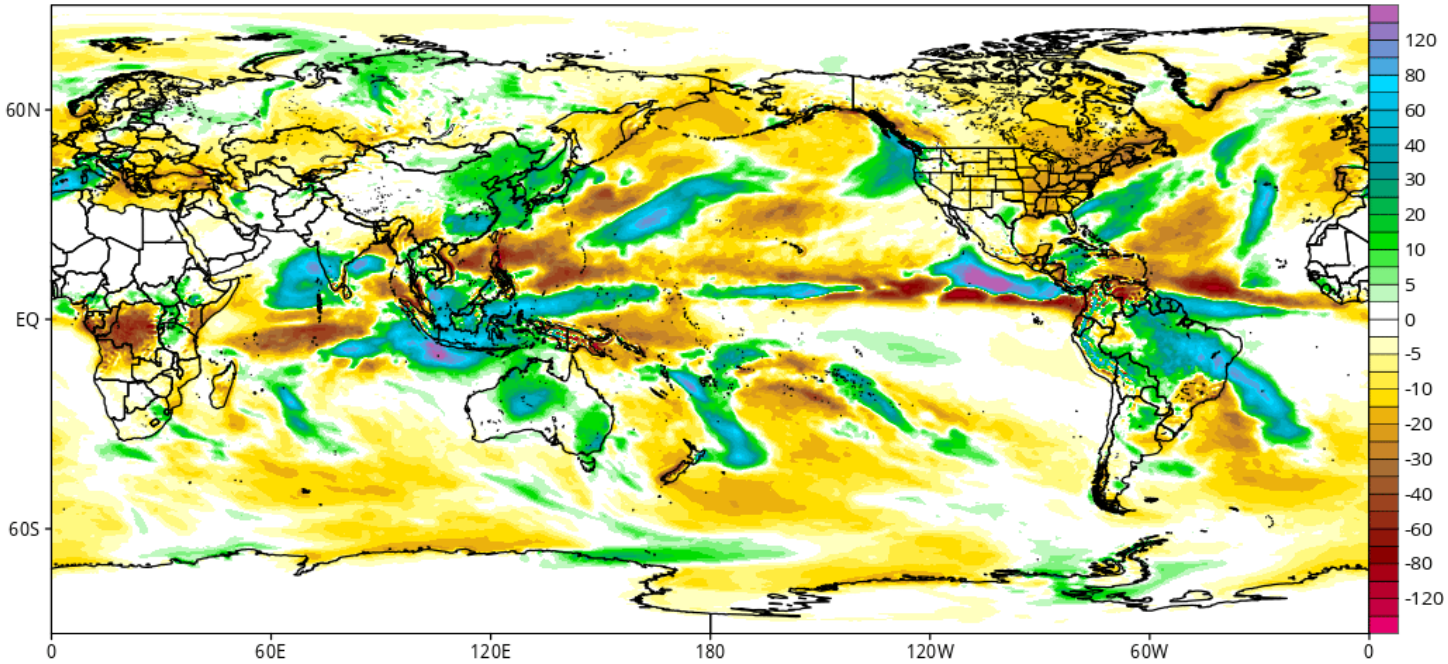

GEFS Accumulated Precip. Anomaly (mm) from 00z10Nov2021 to 00z17Nov2021 (Days 9-15)

Init: 00z Nov 02 2021 Forecast Hour: [360] valid at 00z Wed, Nov 17 2021

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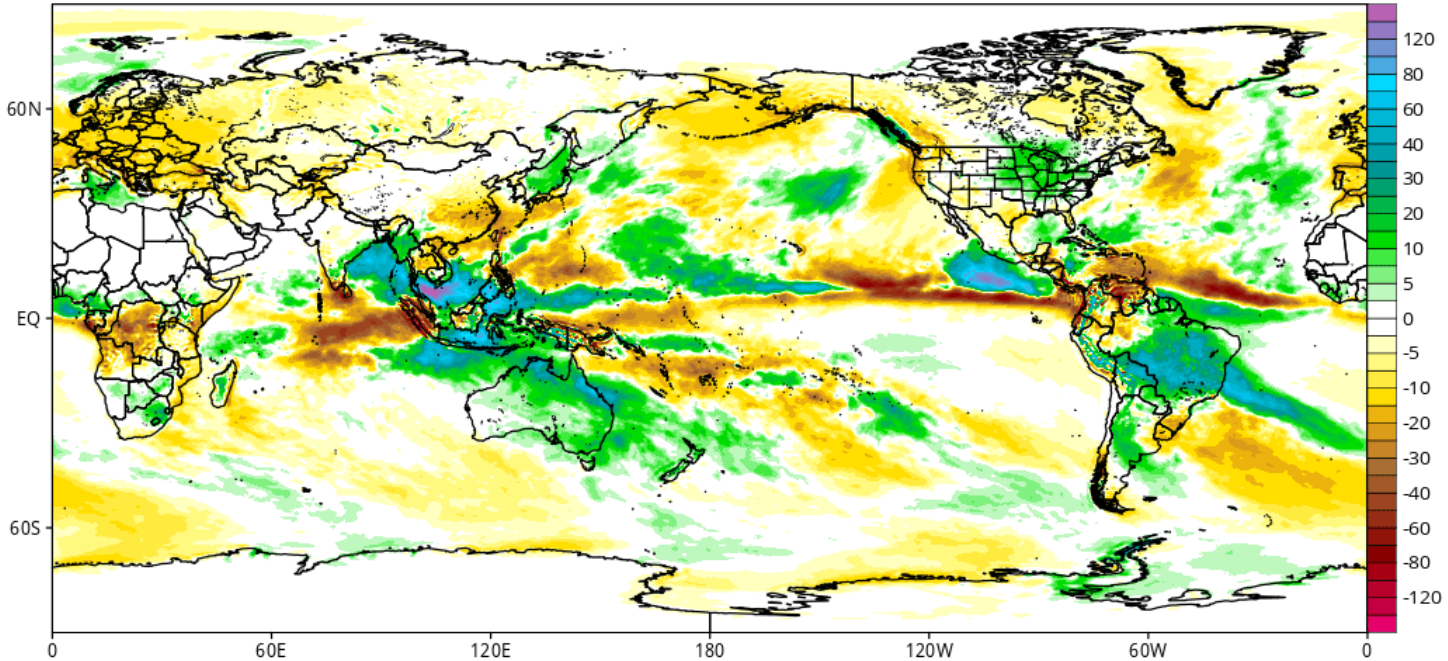
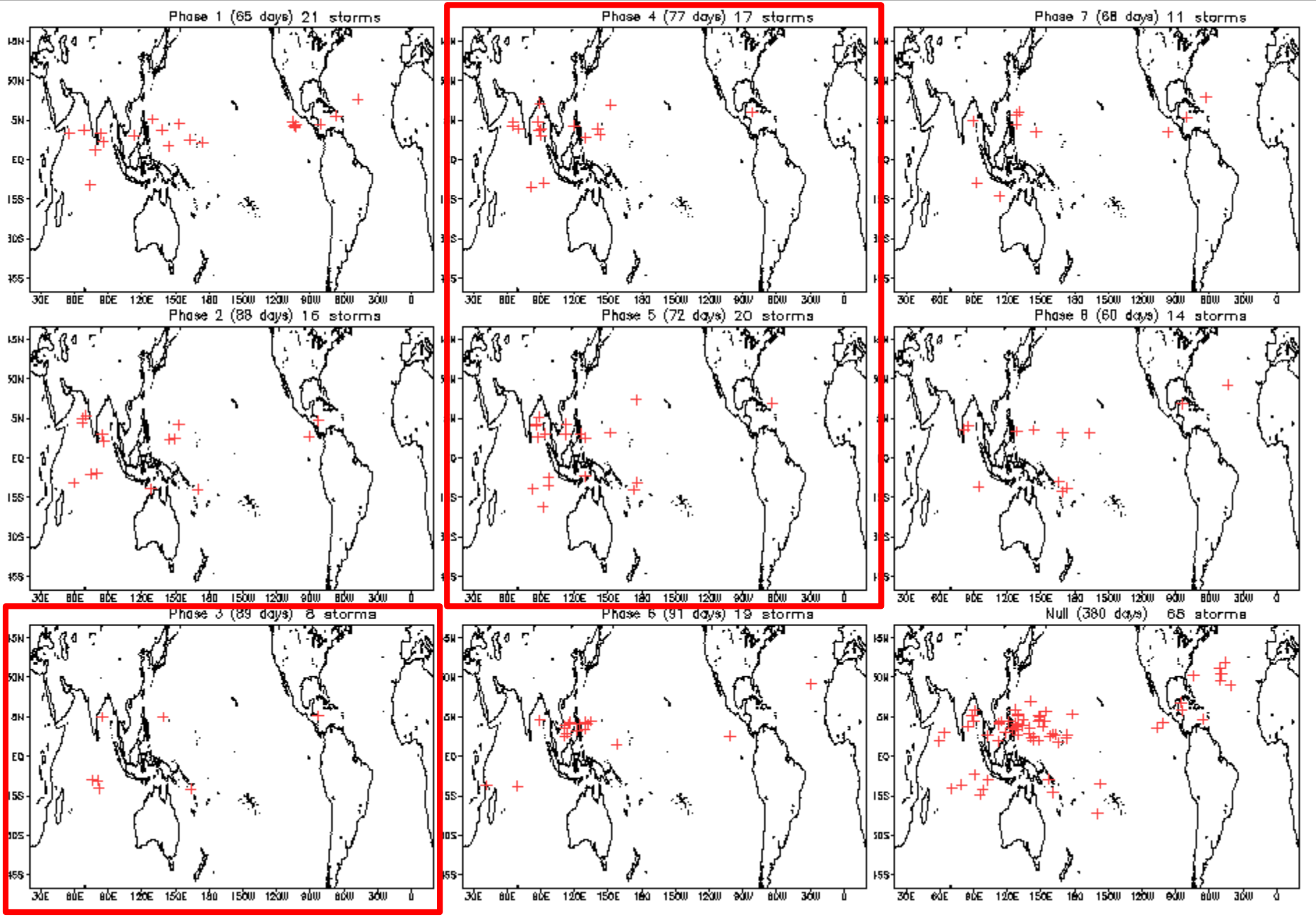
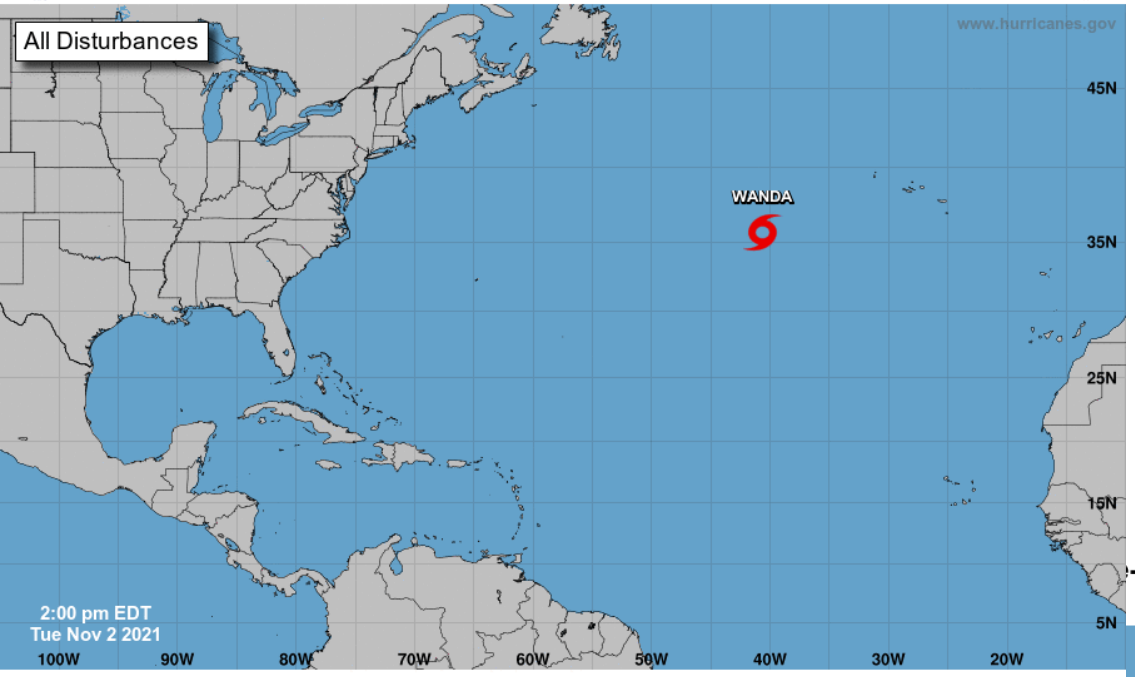


November Tropical Storm Formation by MJO phase



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

-Day Graphical Tropical Weather Outlook

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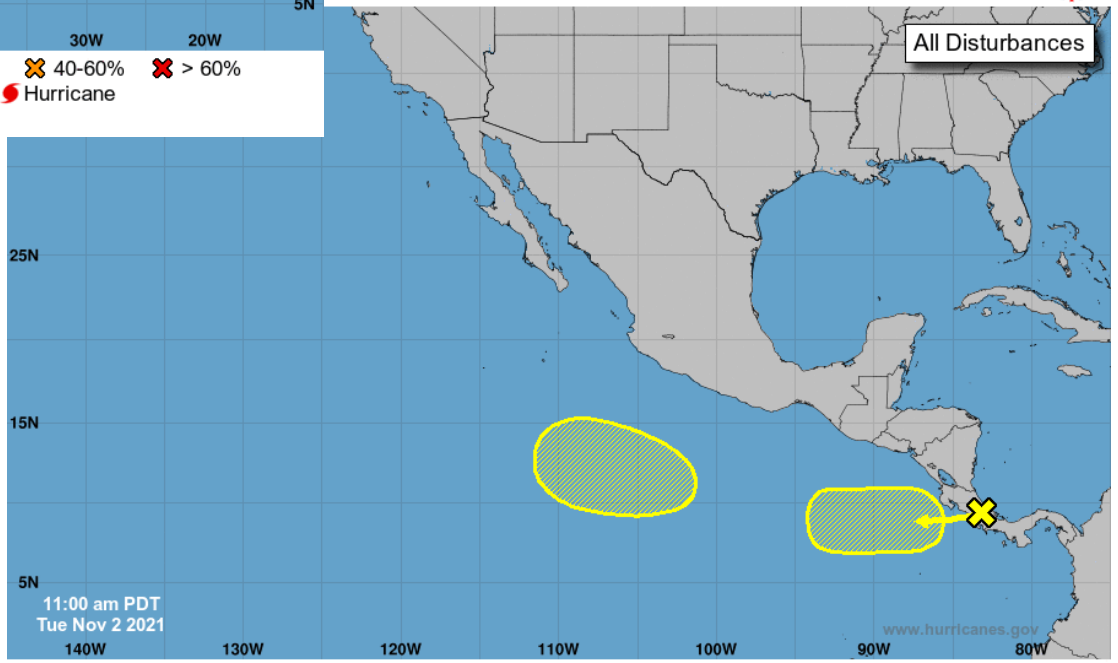

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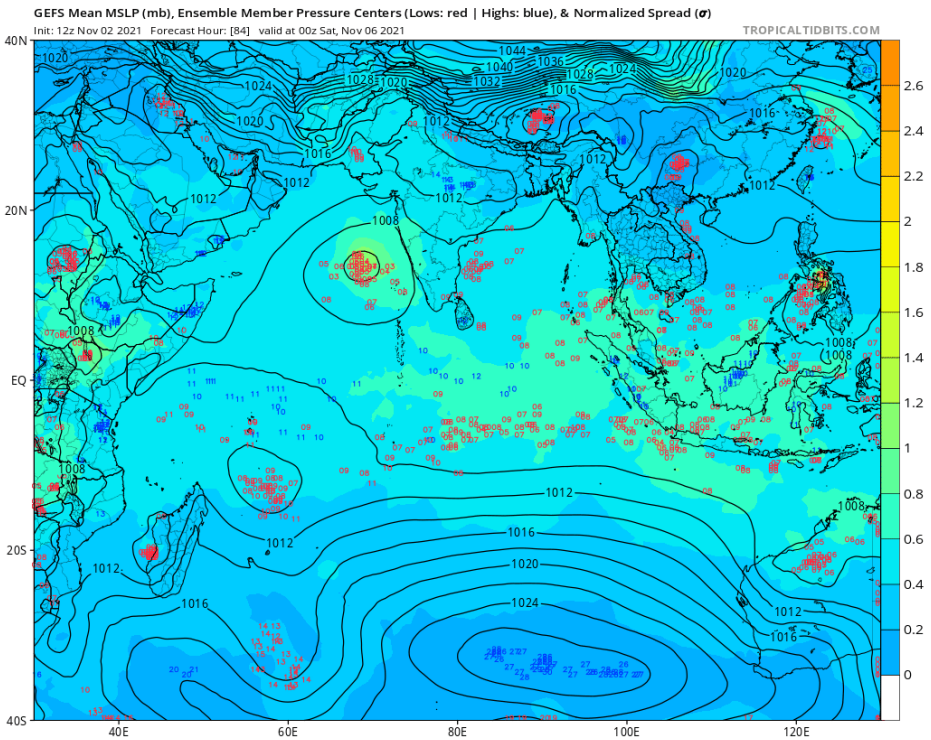
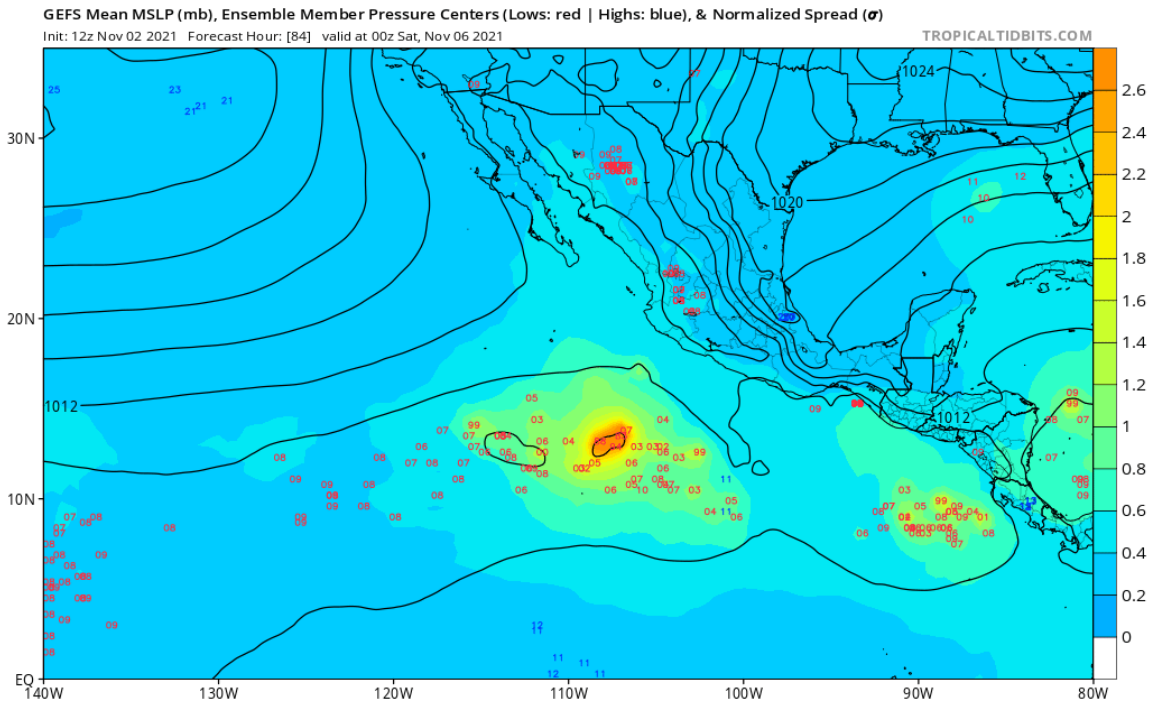


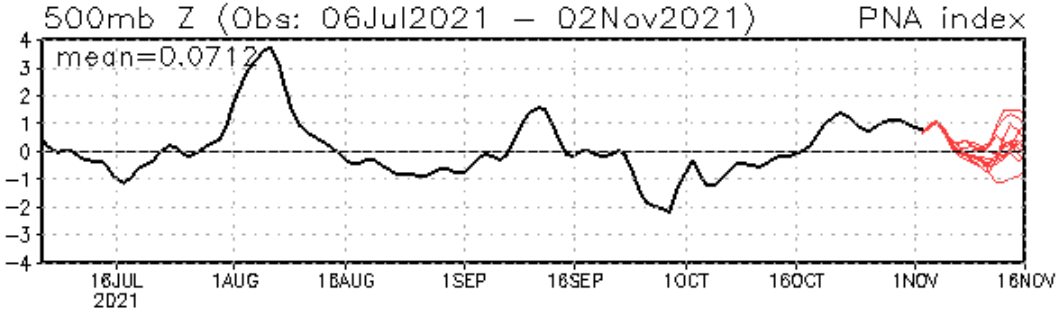
Several 12z GEFS ensemble members indicate tropical cyclone (TC) development over the Eastern Arabian Sea as the aforementioned Kelvin Wave interacts with the enhanced convection across the Indian Ocean.

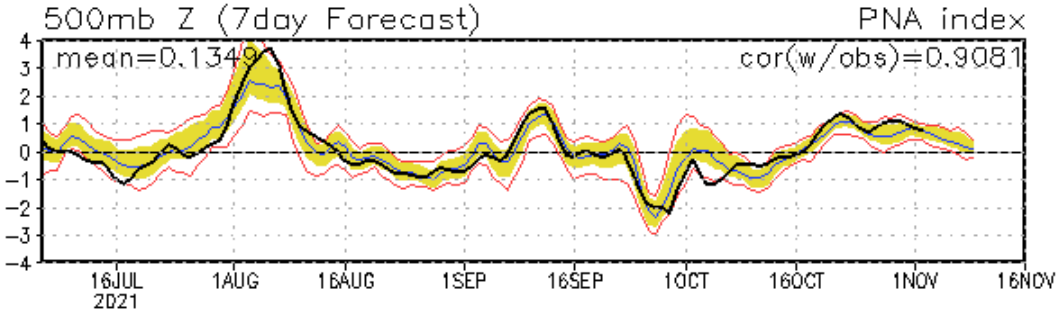
There is also a decent TC signal emerging over the Eastern Pacific with surface low pressure near Central America forecast to move into the basin

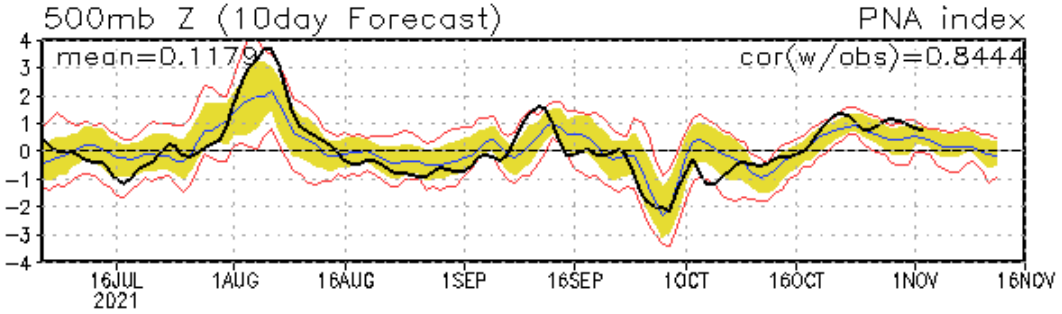


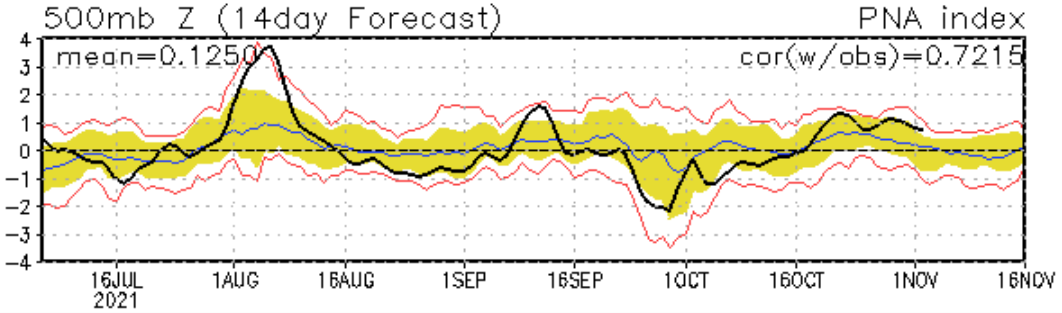
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts

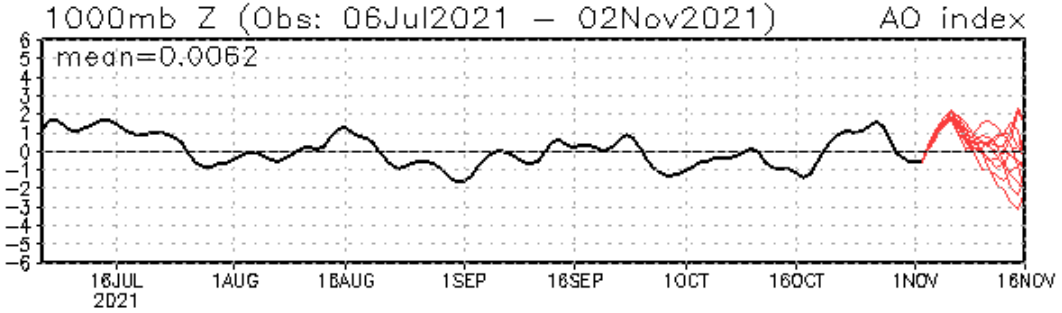


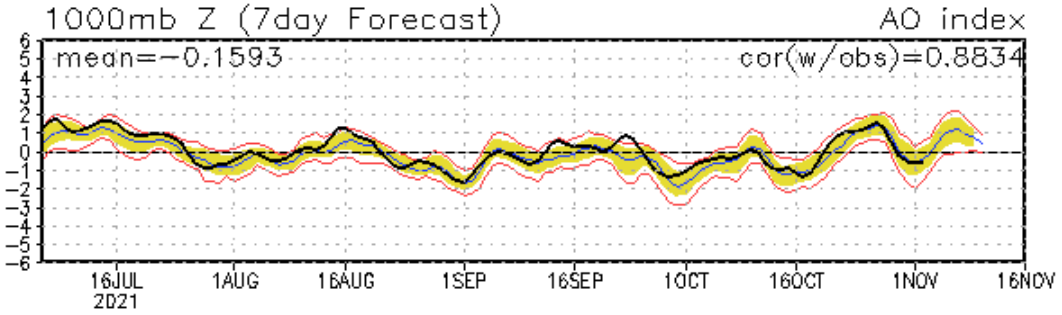


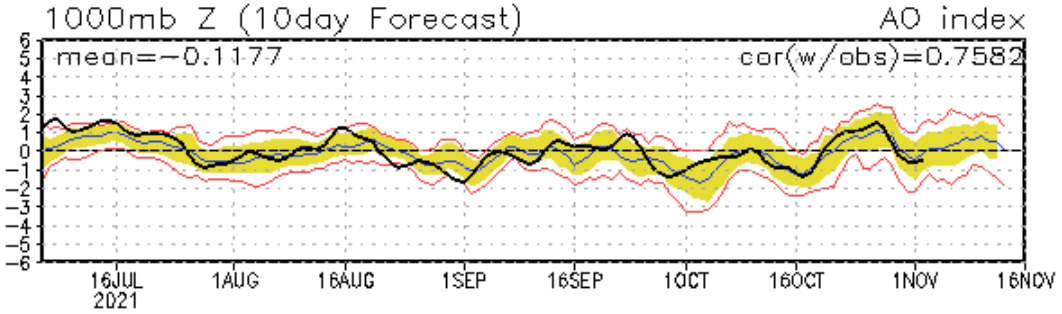


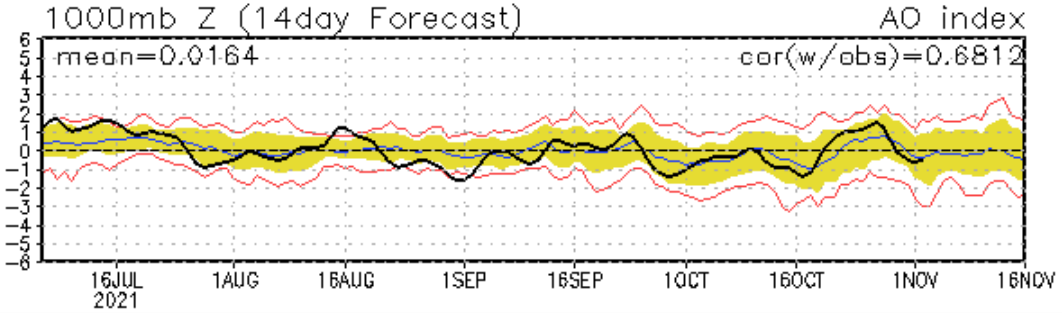


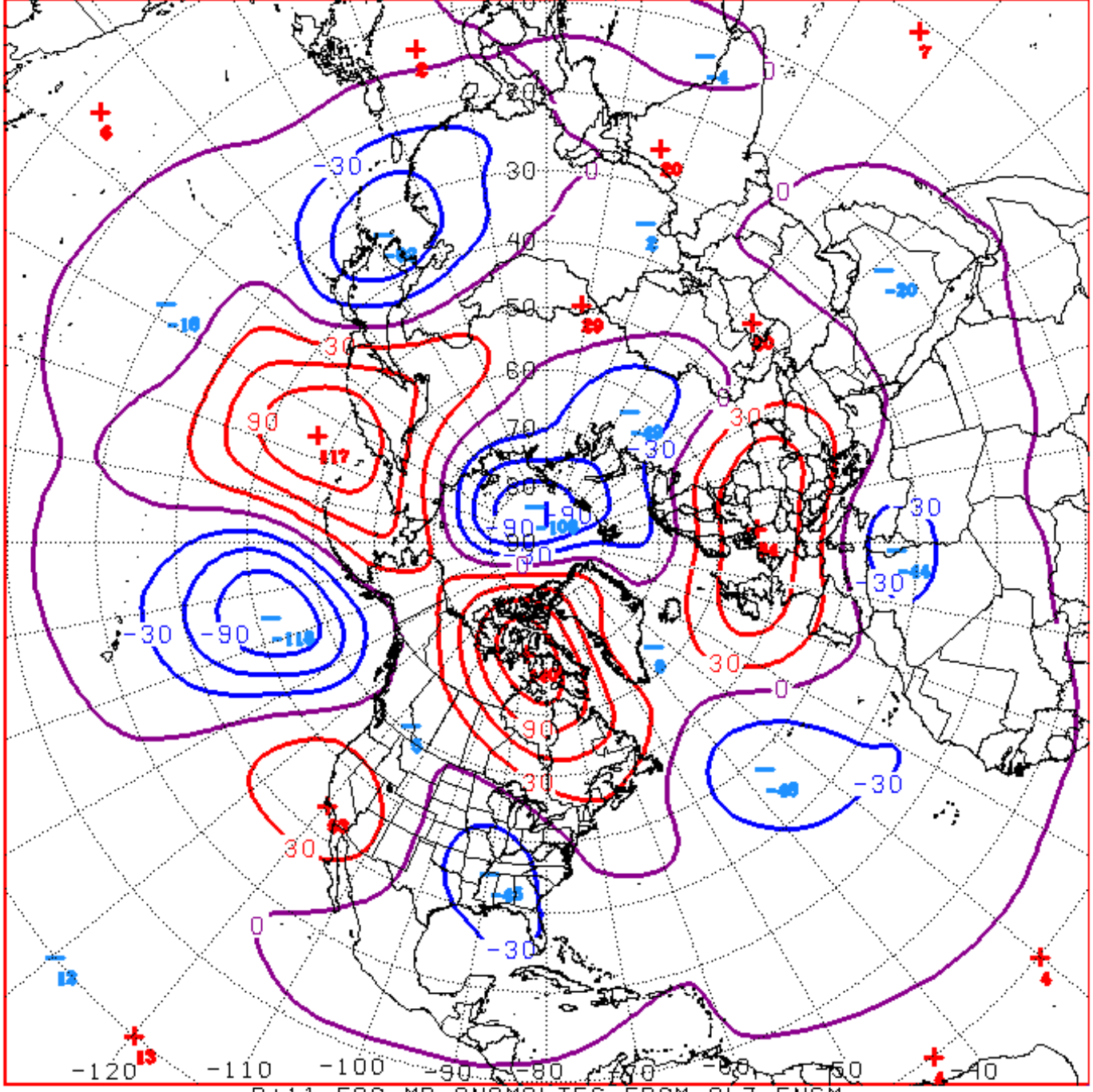
AO: Observed & ENSM forecasts





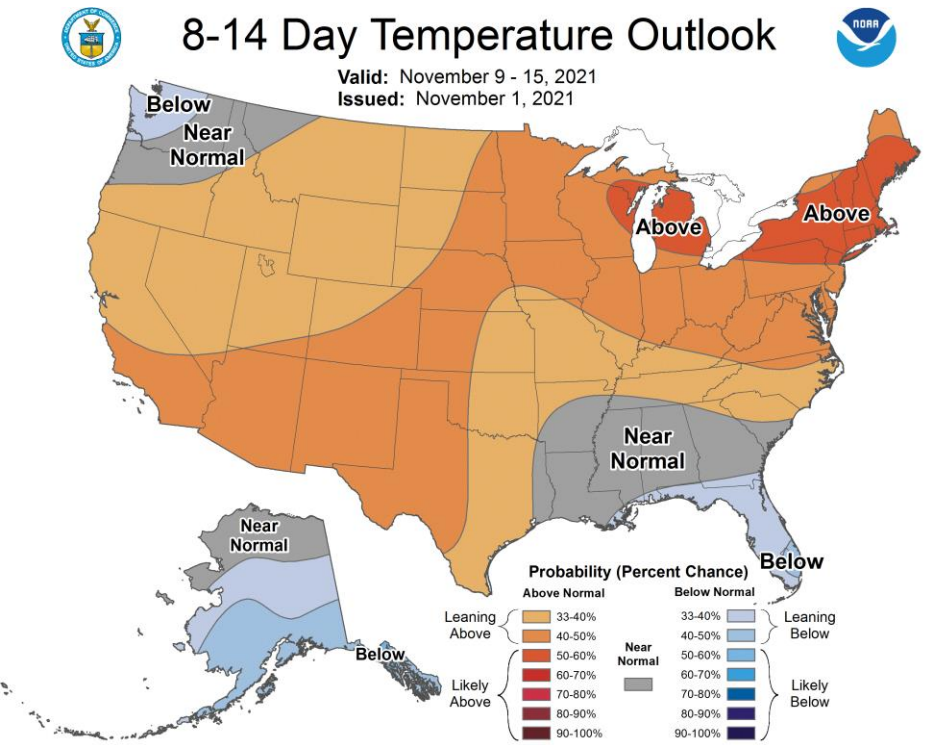


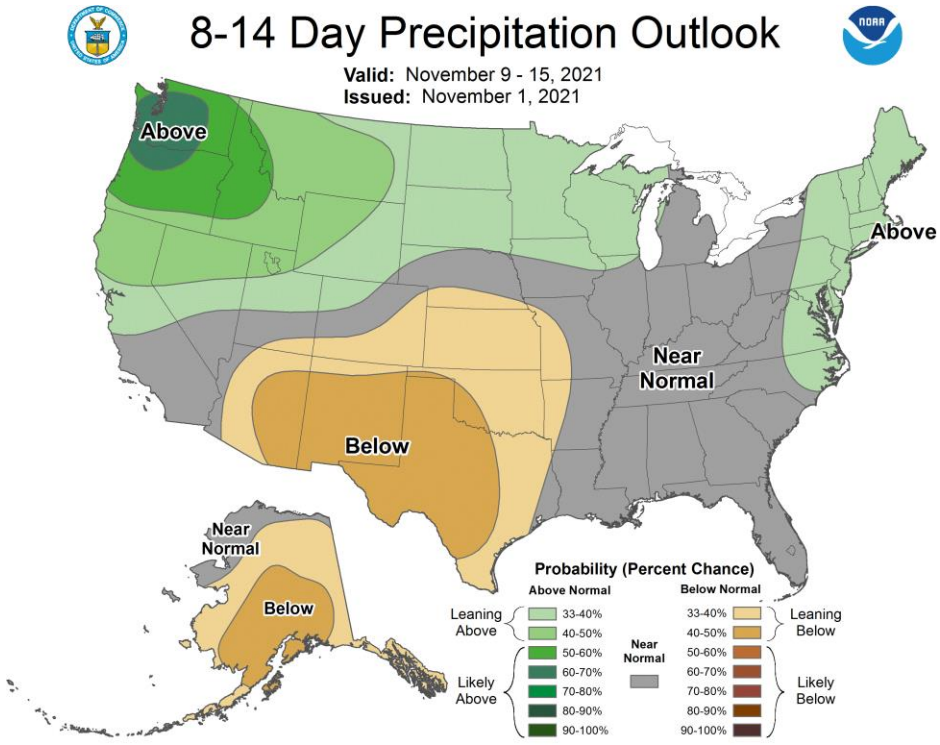




D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE NOV 02 2021 1358 UTC CNTD NOV 13 2021

Week 2 – Temperature and Precipitation





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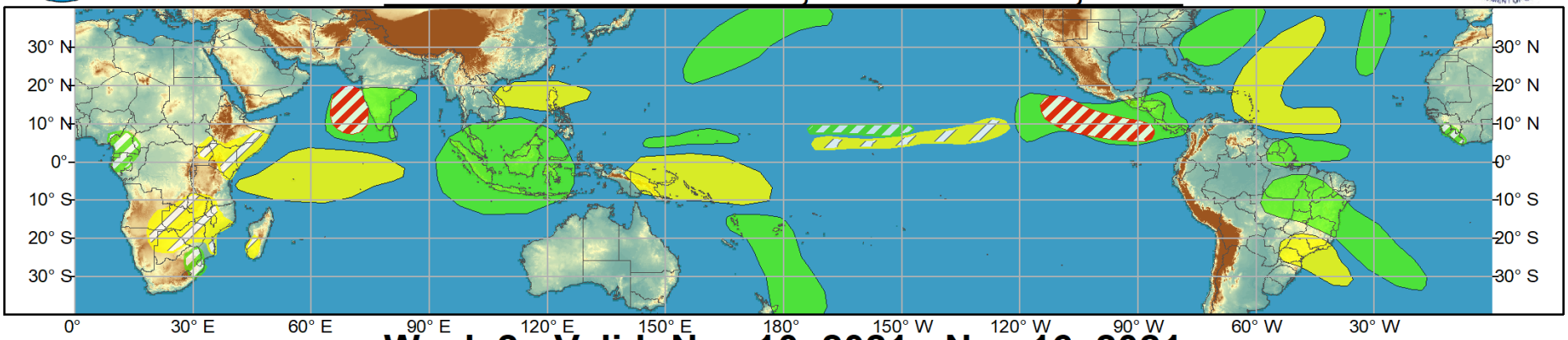

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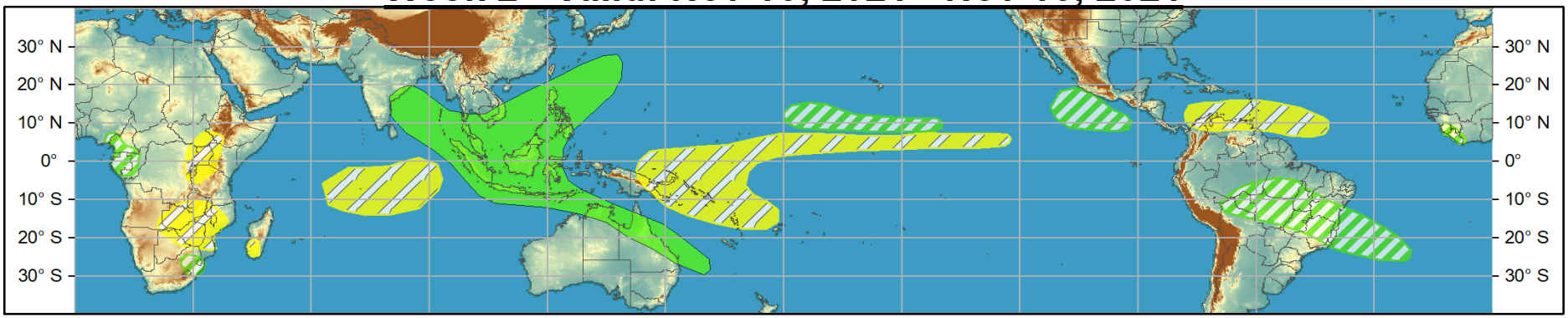

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