

Global Tropics Hazards And Benefits Outlook

11/30/2021

Nick Novella

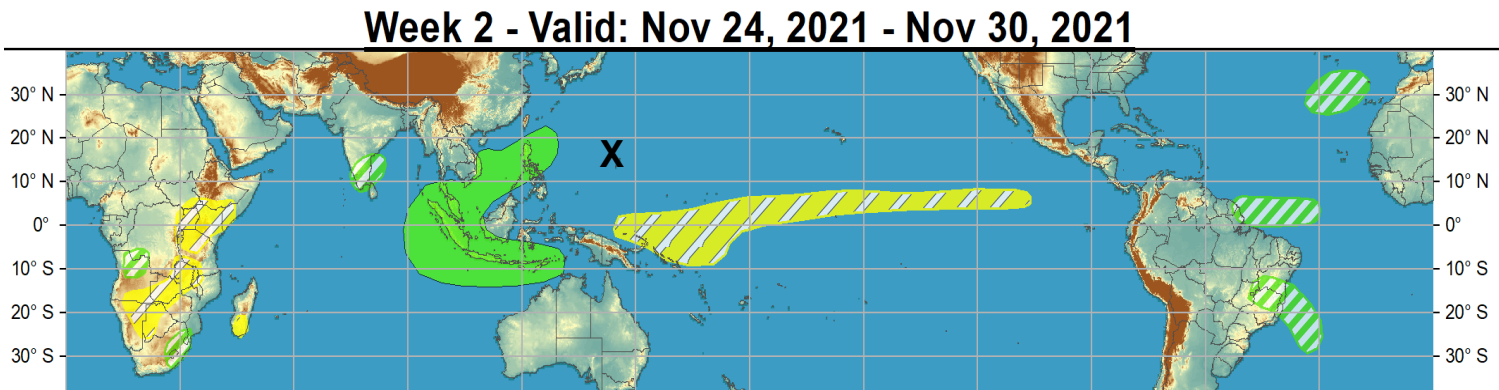
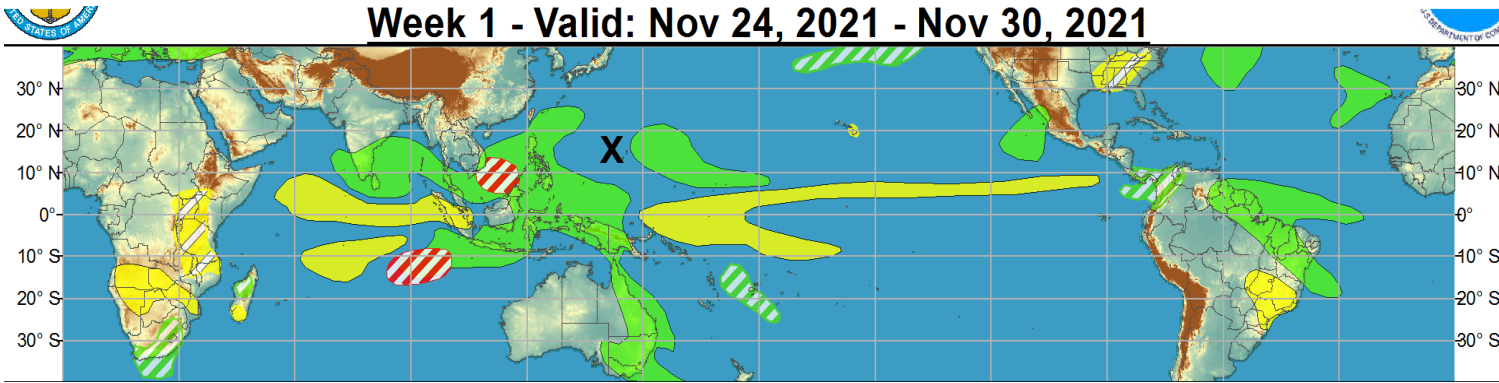
Outline

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

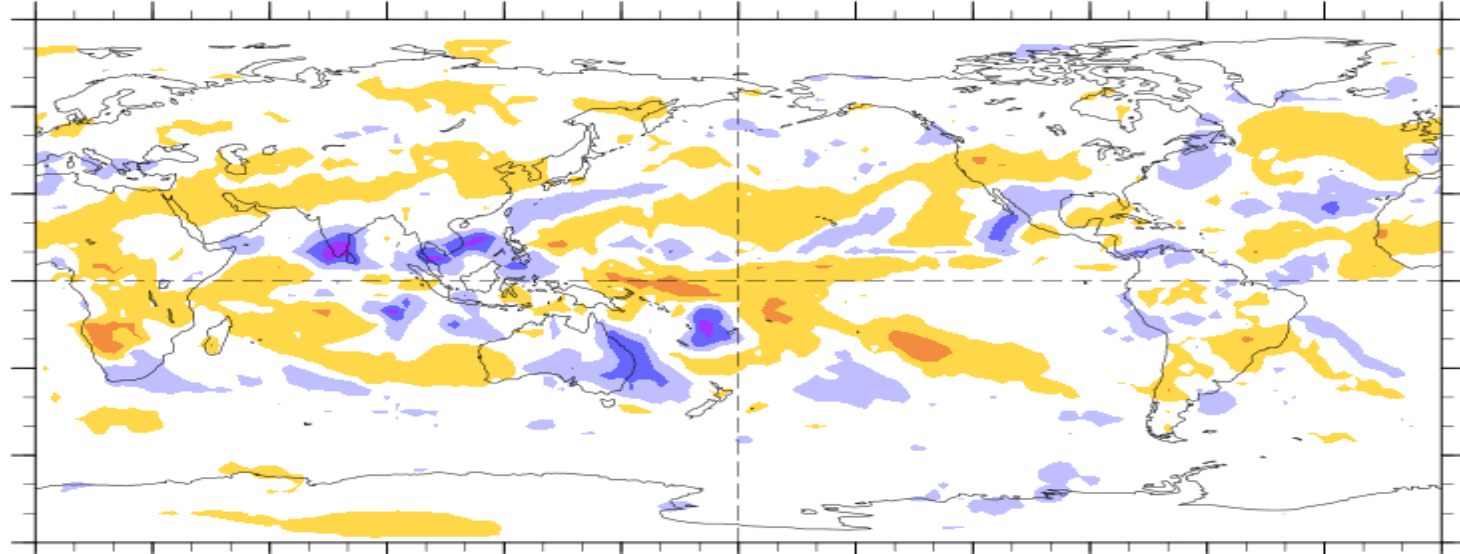
Outlook Review

TCs formed since 11/24:
- TS Nyatoh (11/29)

* First TC to form in West Pacific since Malou (10/24)



7-Day Average OLR Anomaly 2021/11/22 - 2021/11/28



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:

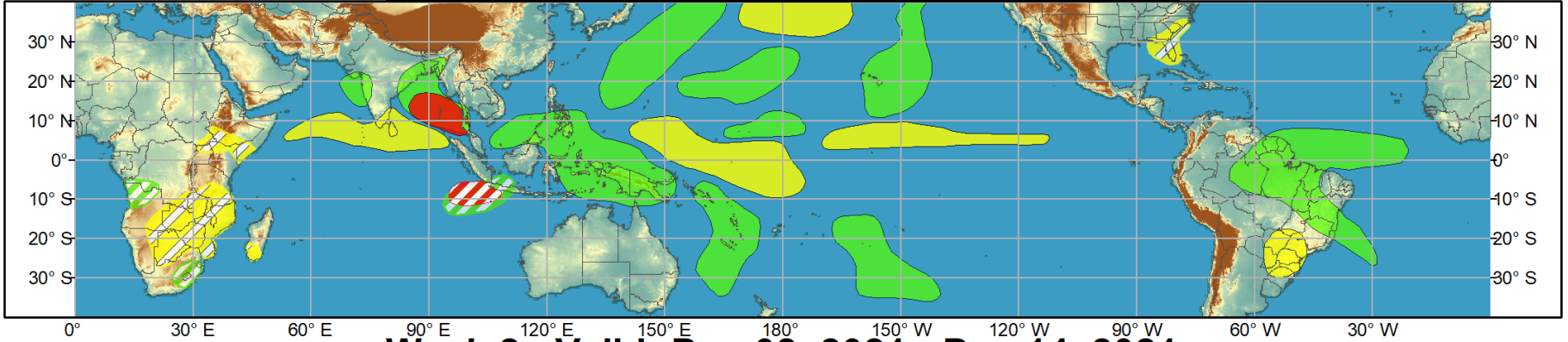
- Observations show that the MJO has remained incoherent for some time, but there is increasing support for renewed activity over the West Pacific during the next two weeks.
- Tropical cyclone formation remains favored in the eastern Hemisphere, with more favorable conditions for development expected over the tropical southern Hemisphere during the next two weeks.
- There remains much uncertainty regarding extratropical impacts over North America associated with a Pacific MJO event in part due to destructive interference with the ongoing La Nina, and differences between the forecast mid-level pattern and historical composites during such events.



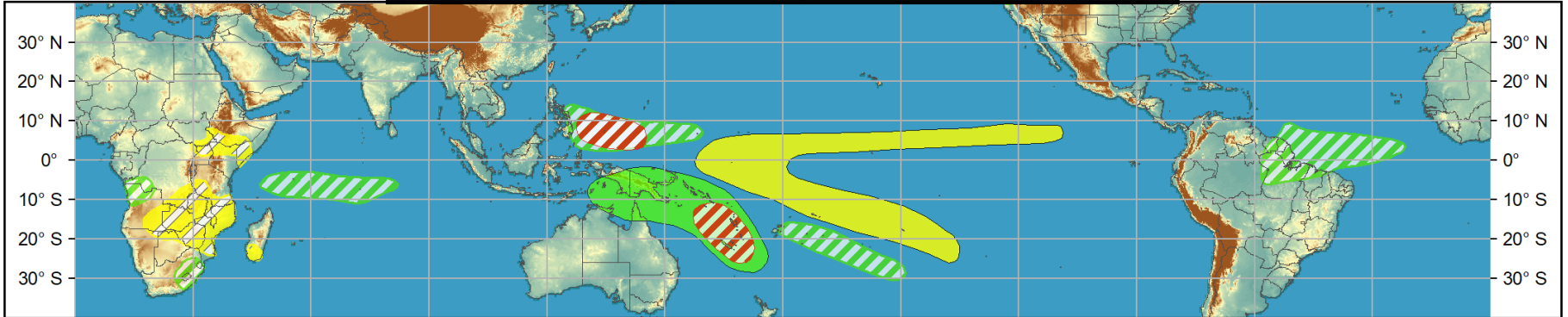
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 01, 2021 - Dec 07, 2021



Week 2 - Valid: Dec 08, 2021 - Dec 14, 2021



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.
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- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
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Produced: 11/30/2021
Forecaster: Novella

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IR Satellite & 200-hpa Velocity Potential Anomalies

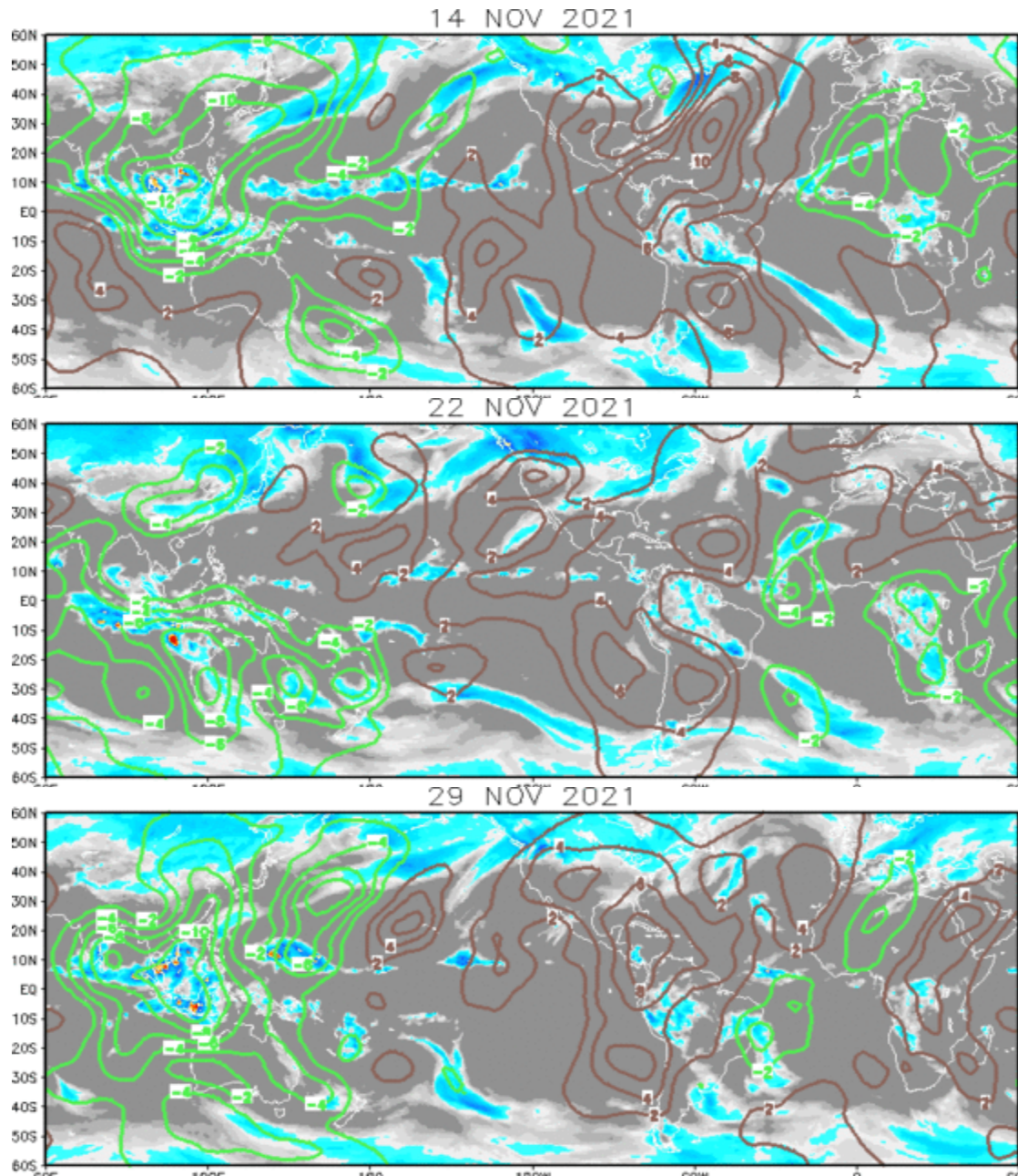
Green: Enhanced Divergence

Brown: Enhanced Convergence

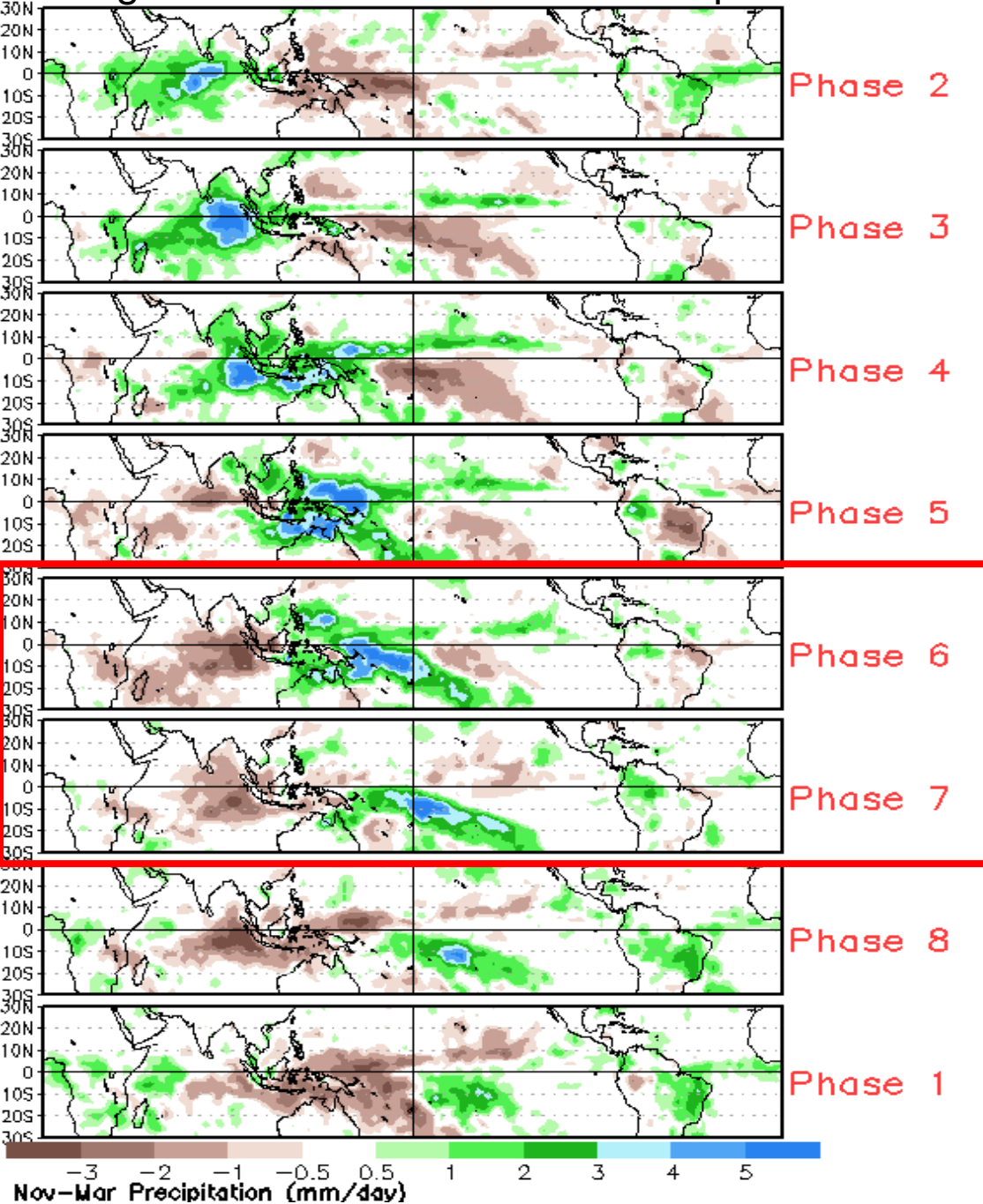
Kelvin wave activity crossed the Pacific with a return to an enhanced Maritime Continent.

Increased divergence aloft over the SPCZ region.

Enhanced (suppressed) conditions beginning to build over the West Pacific (Africa / Western Indian Ocean) .



Average Conditions when the MJO is present

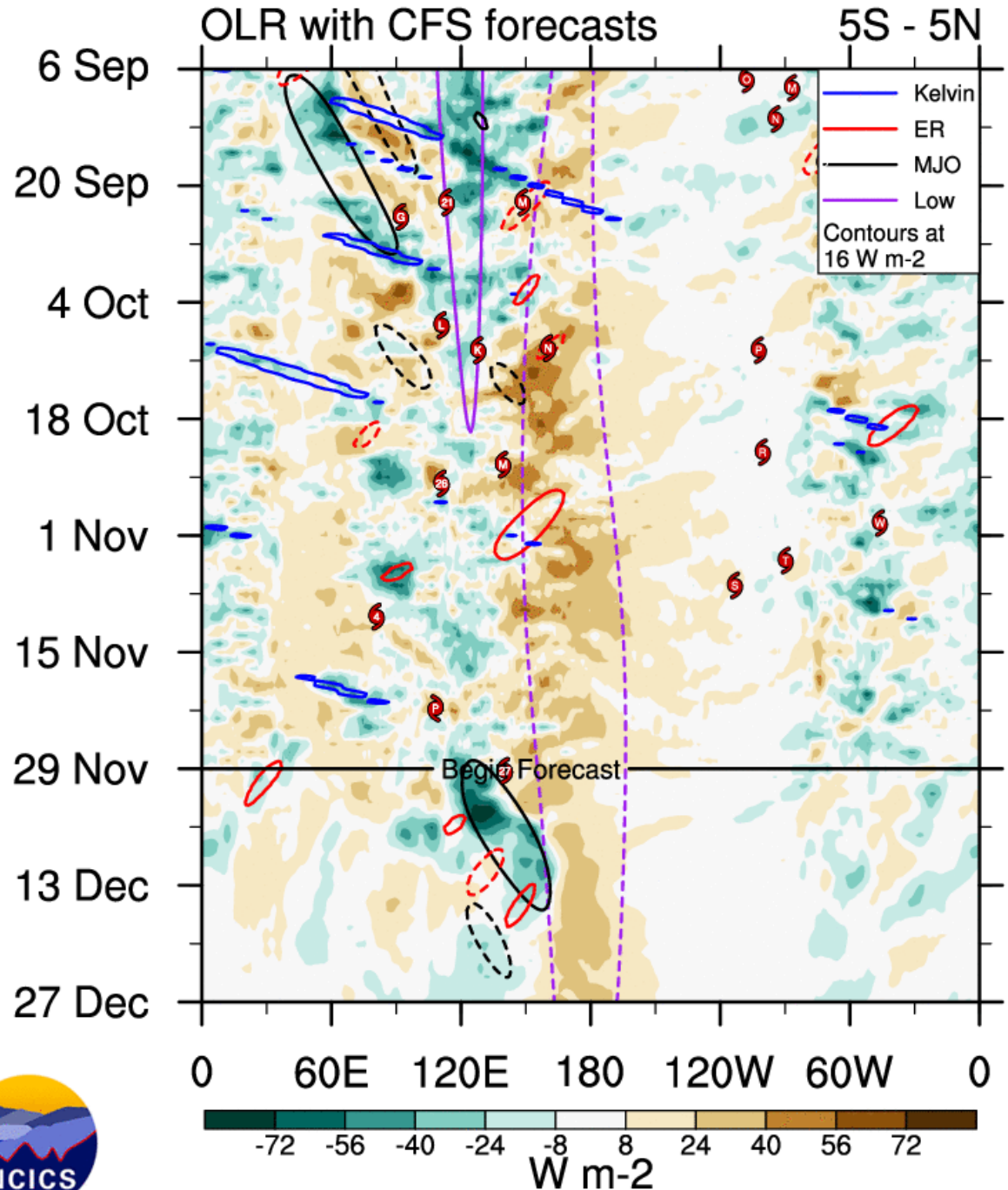


La Niña conditions will dampen the response near the Date Line and across the central Pacific.

CAVEAT: These panels are representative of robust MJO events.

Low frequency contours depict ENSO cold conditions.

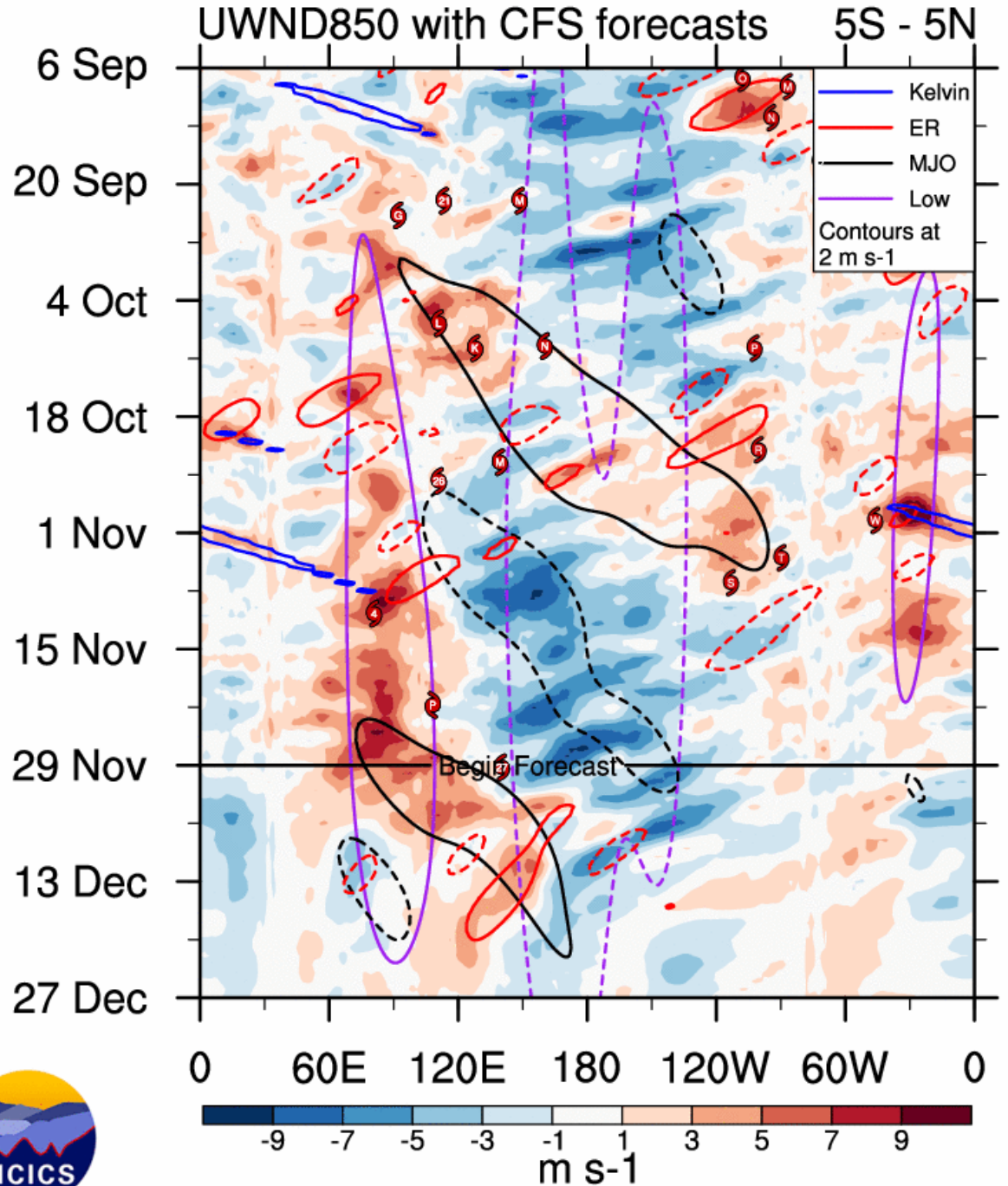
Enhanced convection tied to **MJO** activity is expected to shift eastward into the West Pacific.



Low frequency contours depict ENSO cold conditions.

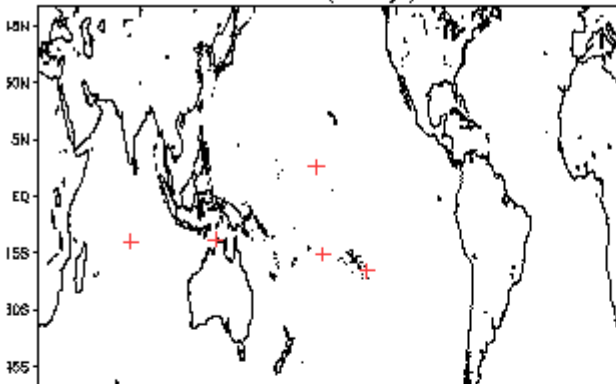
MJO activity is also coming through the filtering, where lower-level westerlies look to shift eastward reduce the enhanced trades tied to the ongoing La Nina as evidenced previously in Oct.

Rossby wave activity is also analyzed over the West Pacific later in the period.

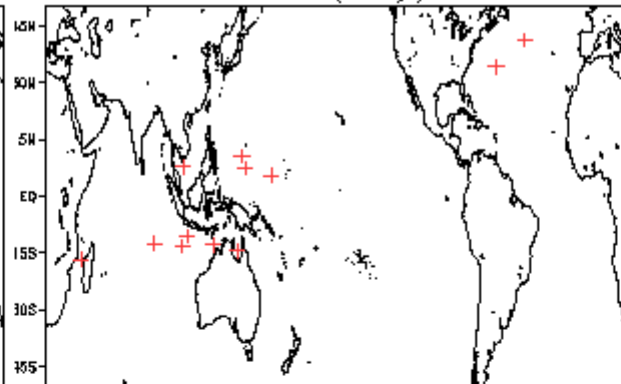


December Tropical Storm Formation by MJO phase

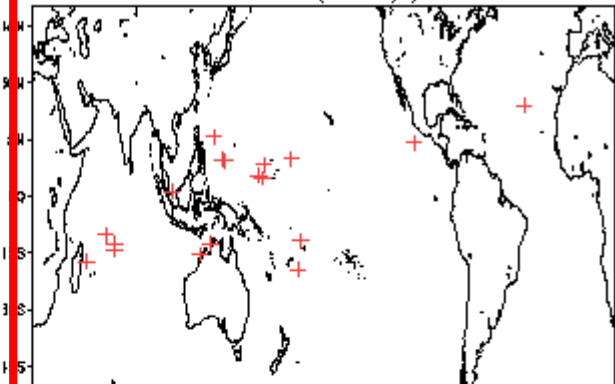
Phase 1 (48 days) 7 storms



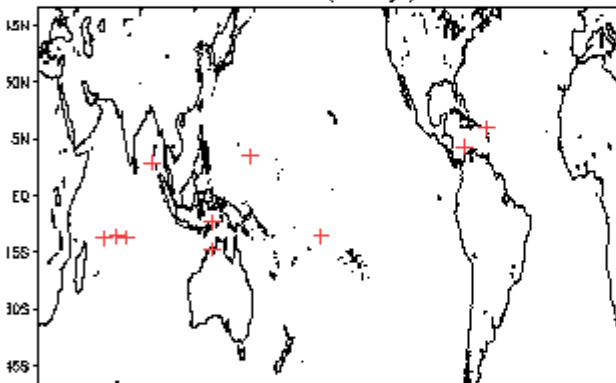
Phase 4 (72 days) 13 storms



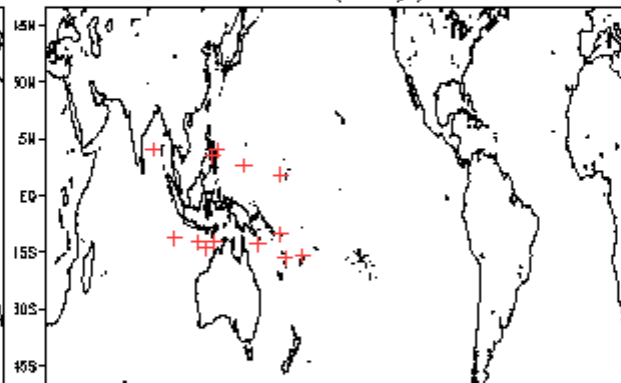
Phase 7 (103 days) 19 storms



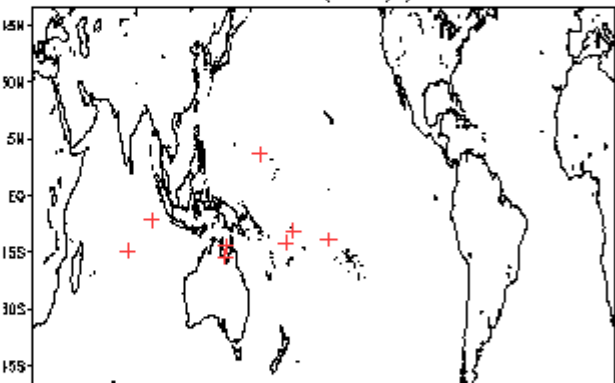
Phase 2 (67 days) 11 storms



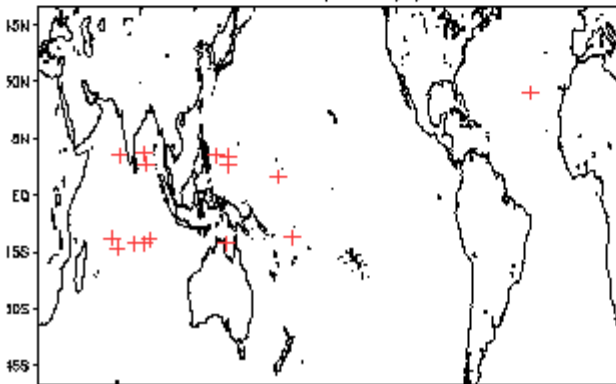
Phase 5 (73 days) 14 storms



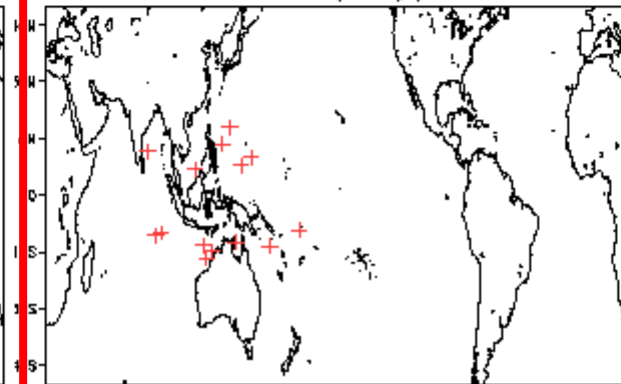
Phase 8 (76 days) 8 storms



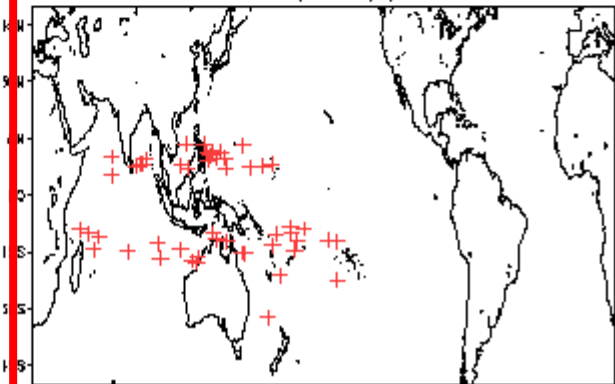
Phase 3 (101 days) 16 storms



Phase 6 (69 days) 15 storms

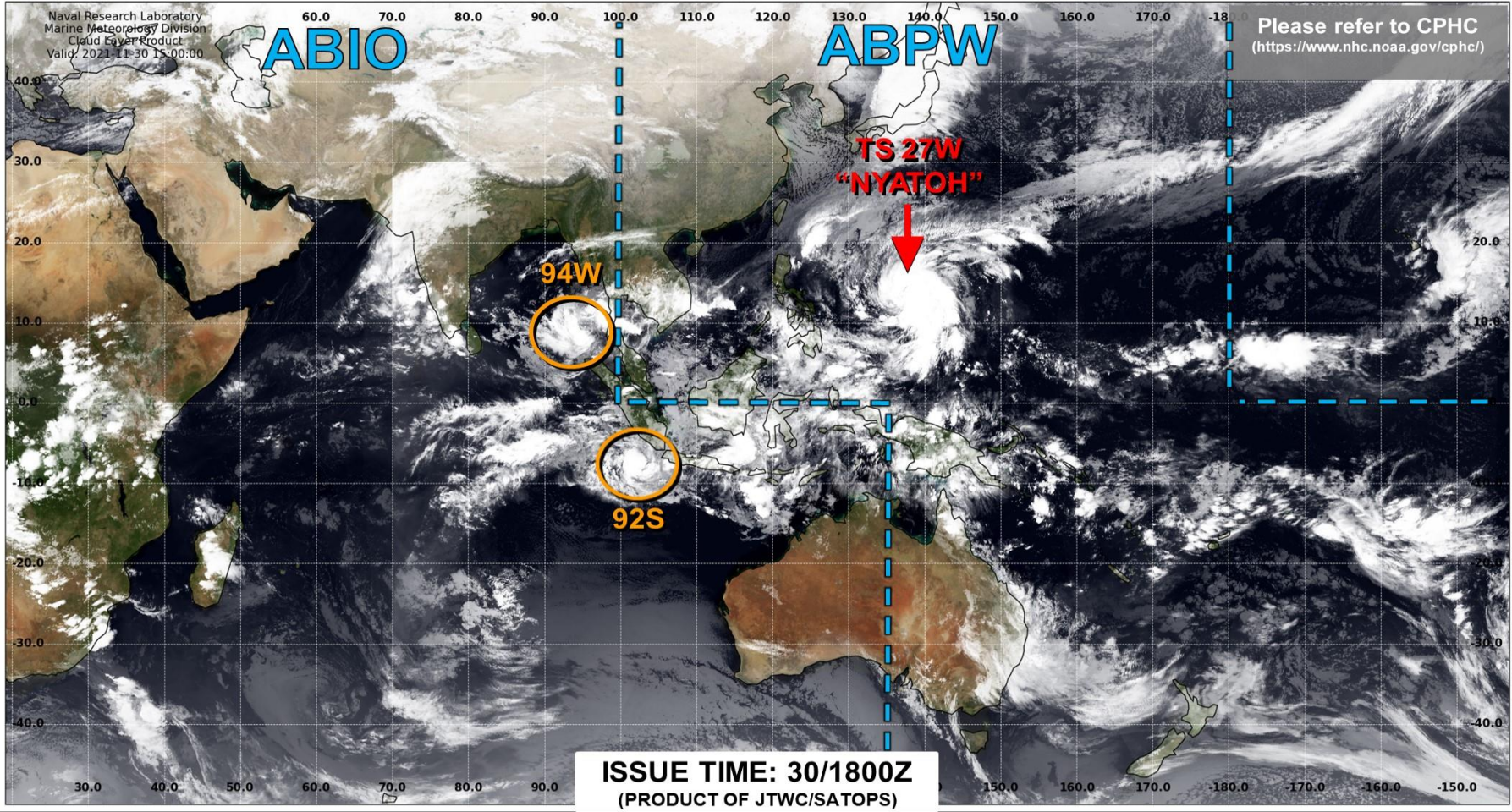


Null (416 days) 52 storms

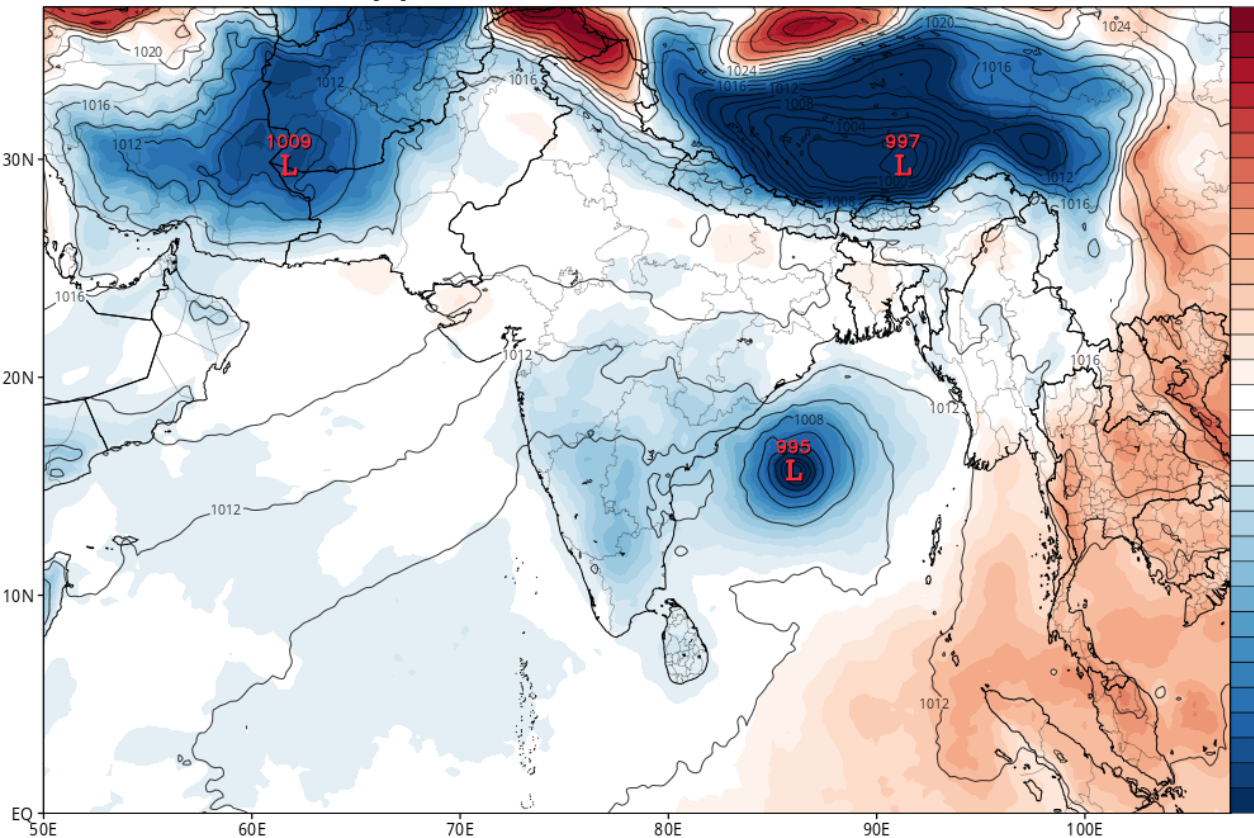




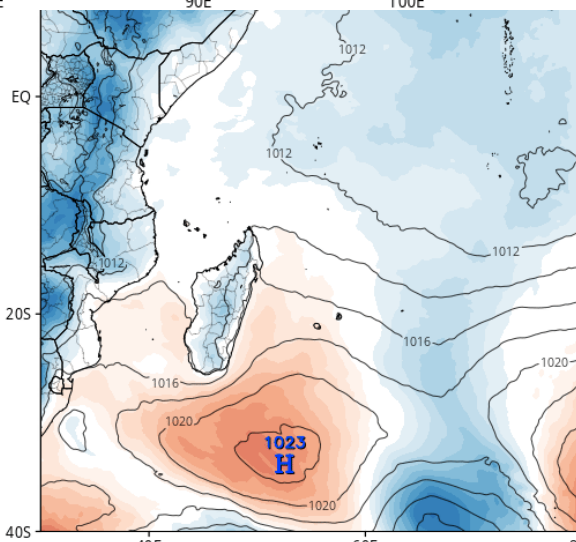
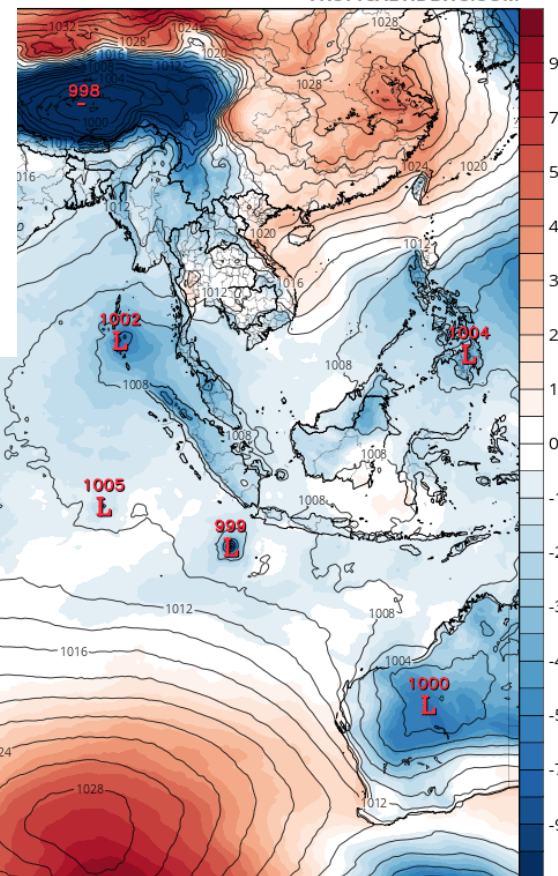
JOINT TYPHOON WARNING CENTER



	<p>TC development unlikely within 24 hours</p>		<p>TC development likely, but expected to occur beyond 24 hours</p>		<p>TC development likely within 24 hours (Reference TCFA)</p>		<p>Monitoring for potential transition to TC. Invest label color denotes tropical transition probability</p>	<p>Tropical Cyclone (Reference Warning)</p>
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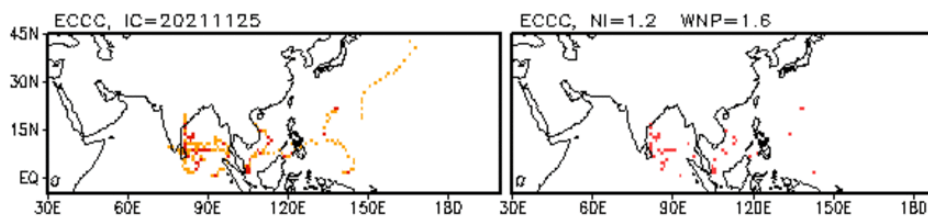
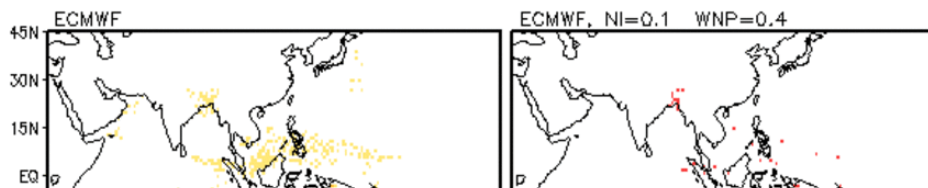
(ology)



Storm Track Density Distribution, IC=20211129
 Week 2 Forecast: 1208-1214

TRACK DENSITY

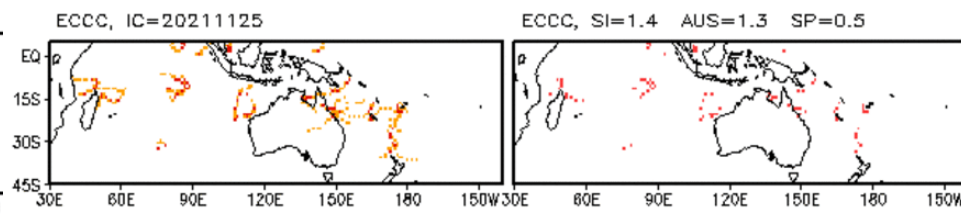
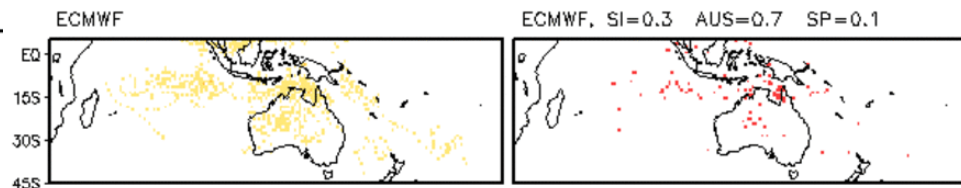
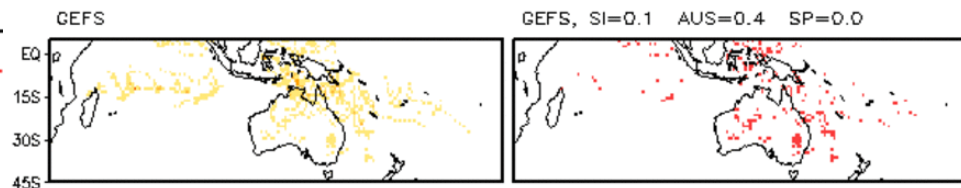
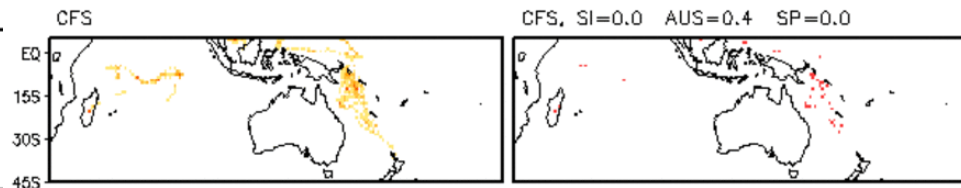
FILTERED



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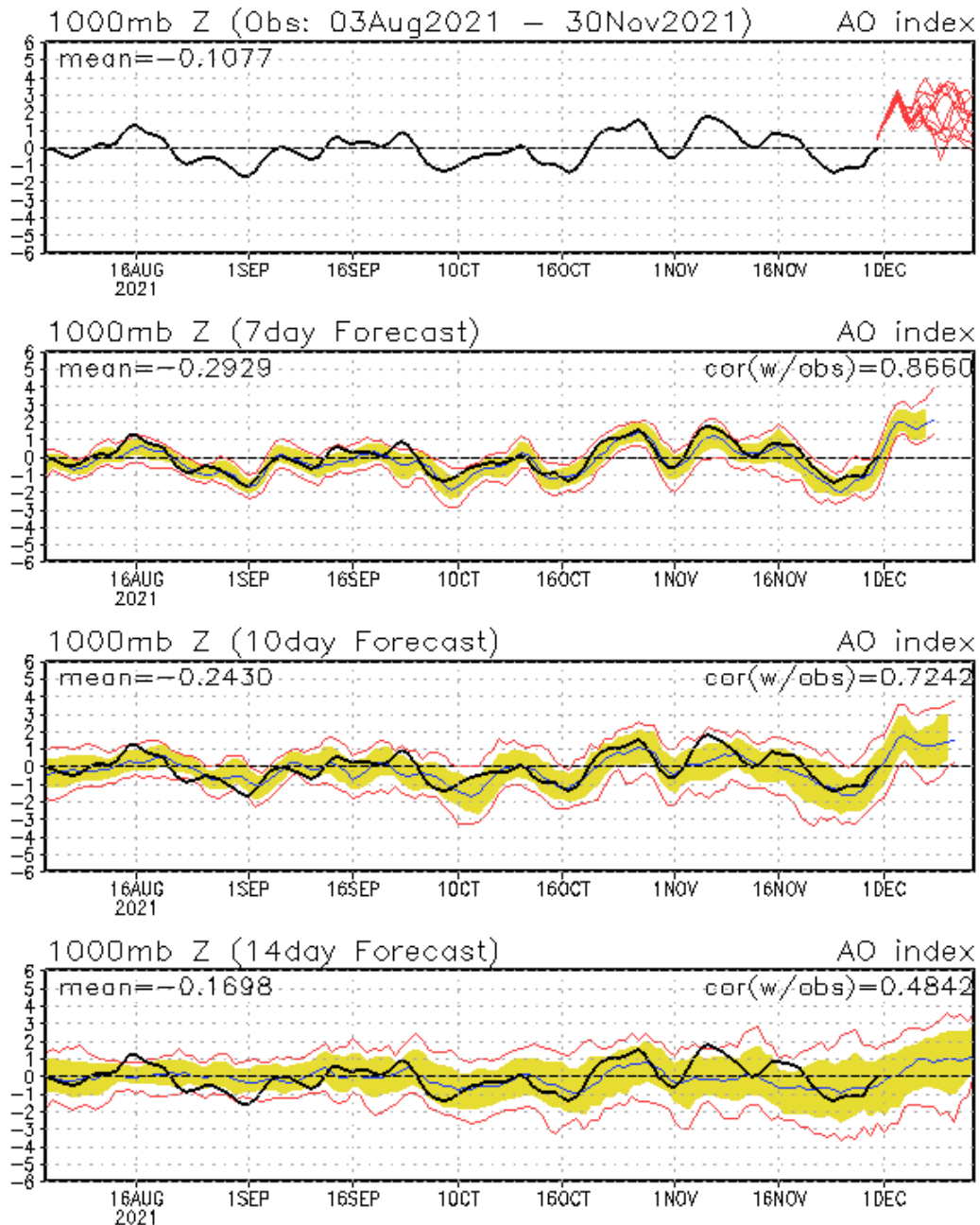
TRACK DENSITY

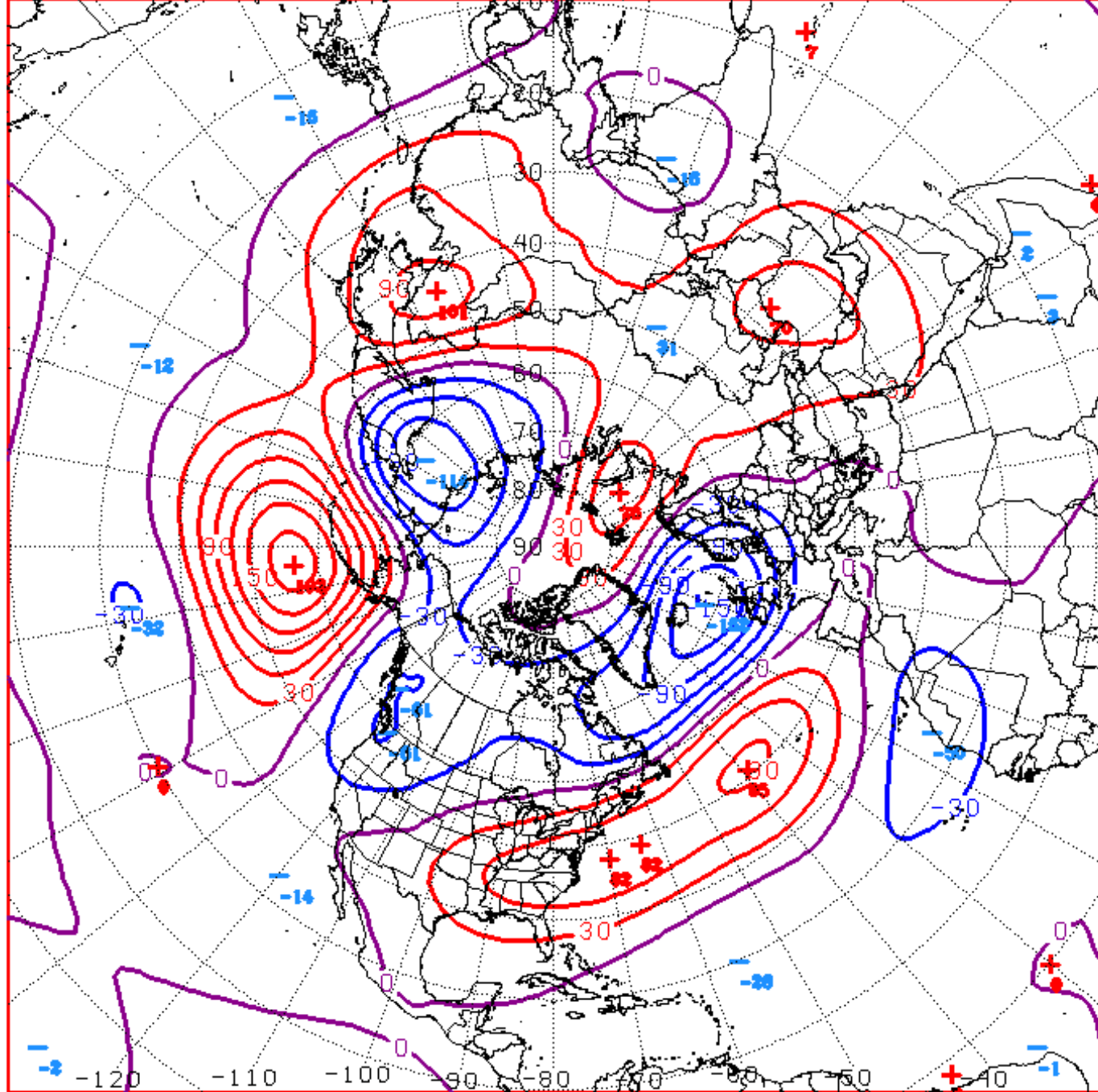
FILTERED



Connections to U.S. Impacts

AO: Observed & ENSM forecasts

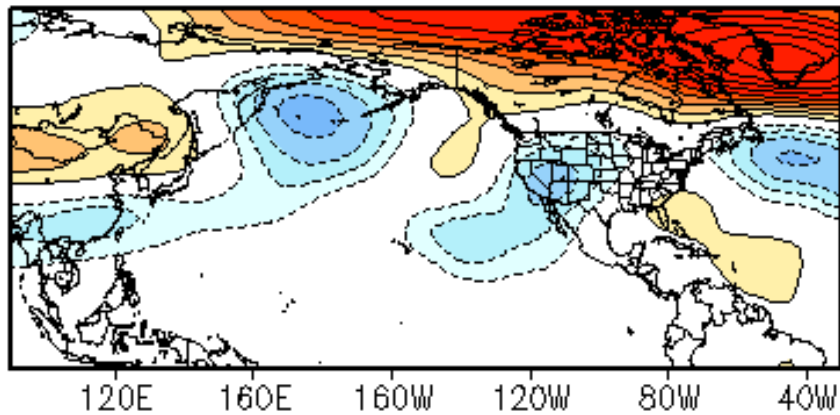




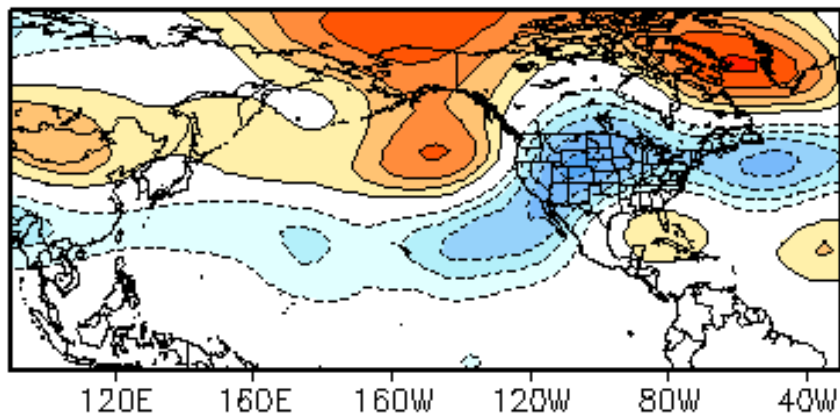
D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE NOV 30 2021 1359 UTC CNTD DEC 11 2021

Week-2 Height composite for phase 6 MJO during NDJ

Lag=3

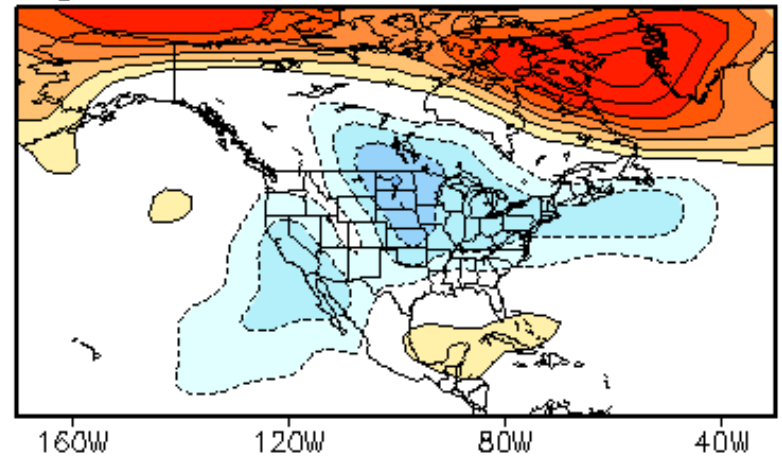


Lag=4

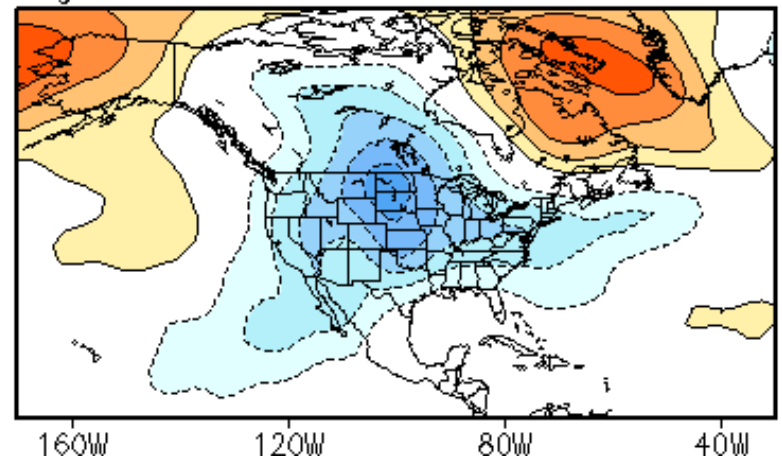


Week-2 Temp composite for phase 6 MJO during NDJ

Lag=3



Lag=4



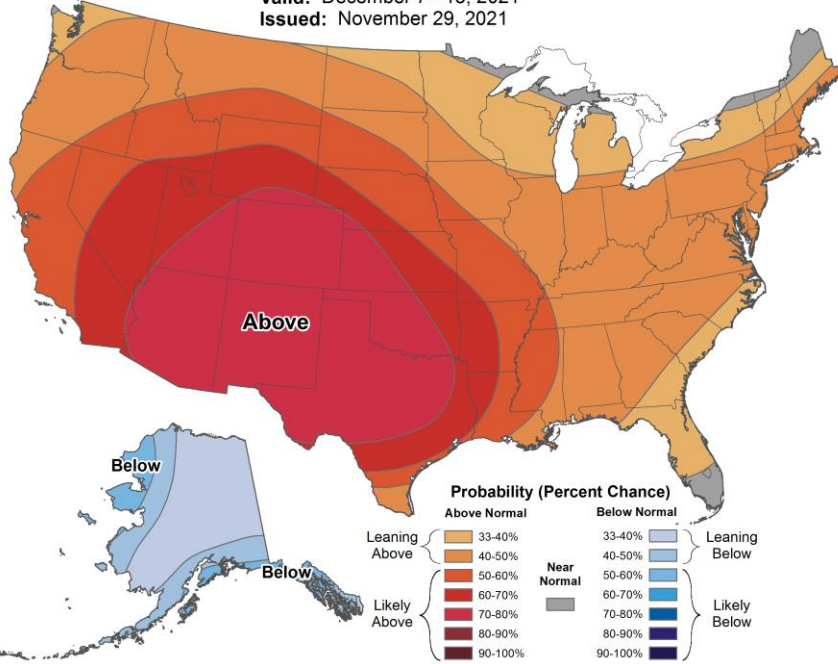
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



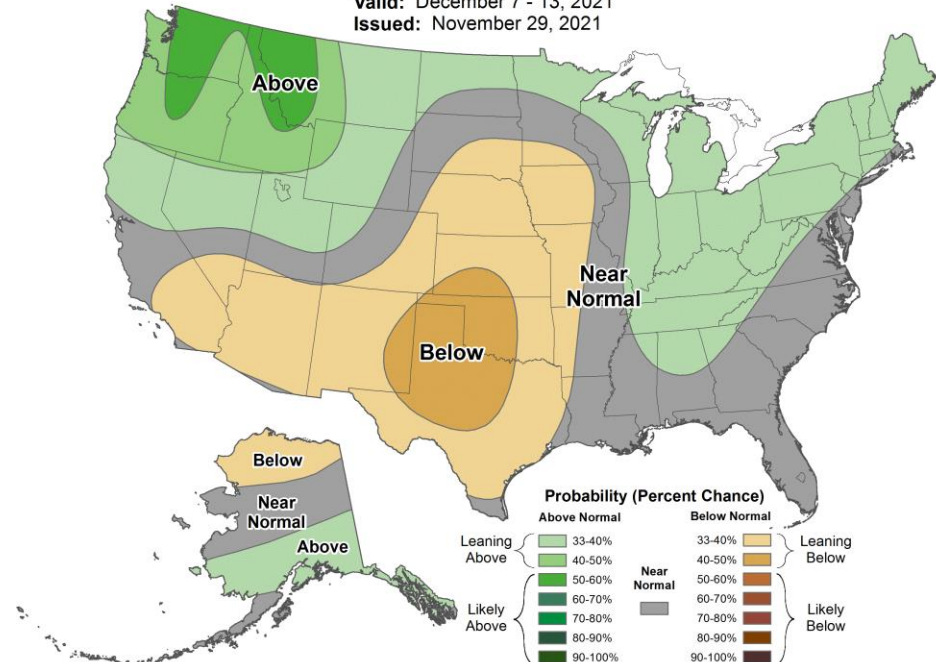
Valid: December 7 - 13, 2021
 Issued: November 29, 2021



8-14 Day Precipitation Outlook



Valid: December 7 - 13, 2021
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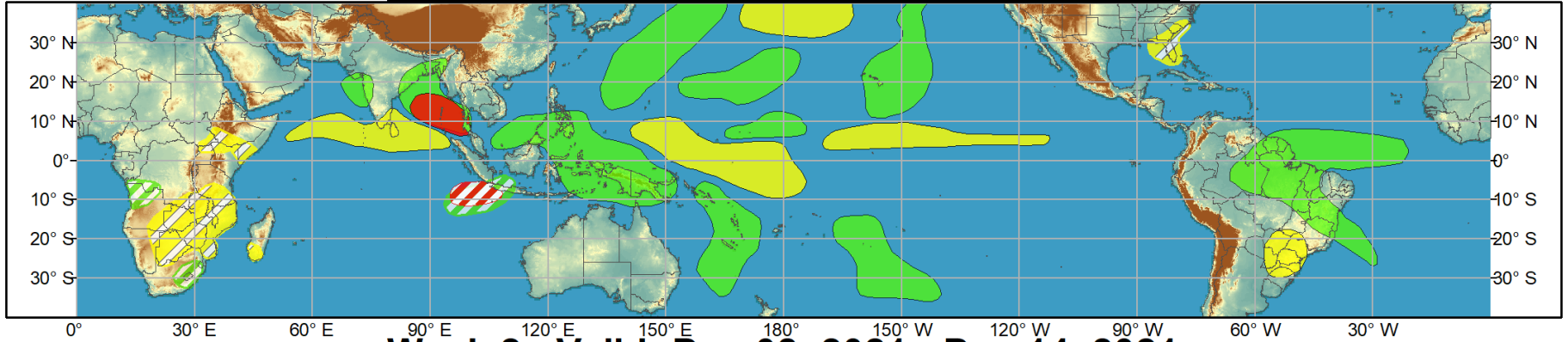




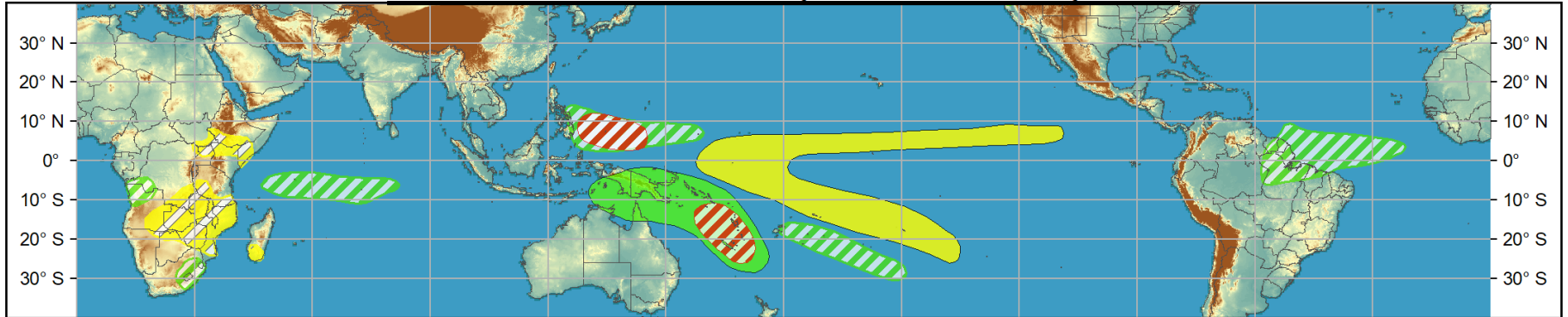
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