Global Tropics Hazards And Benefits Outlook

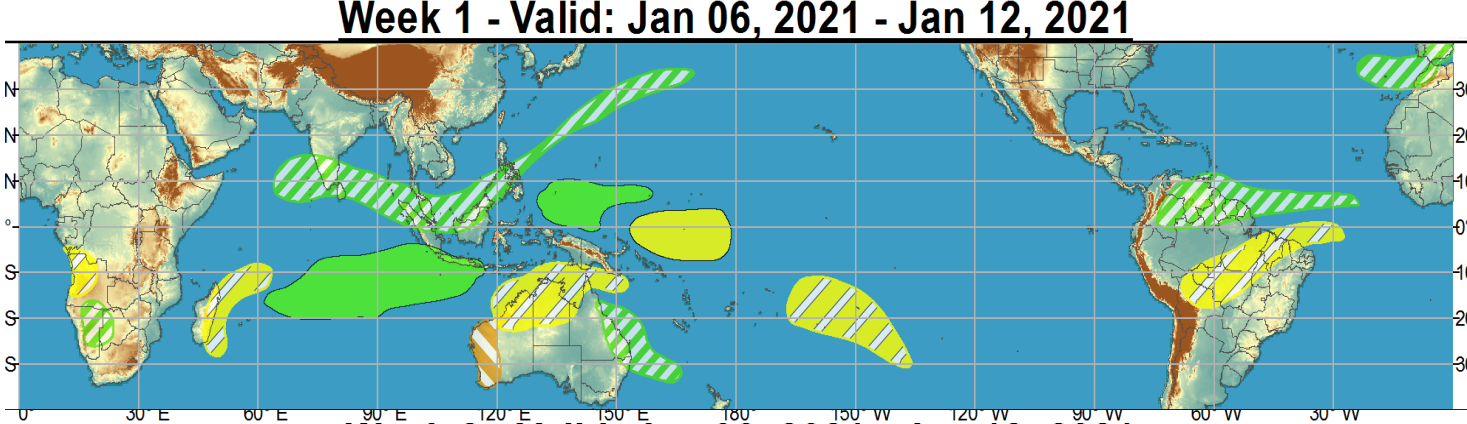
1/12/2021

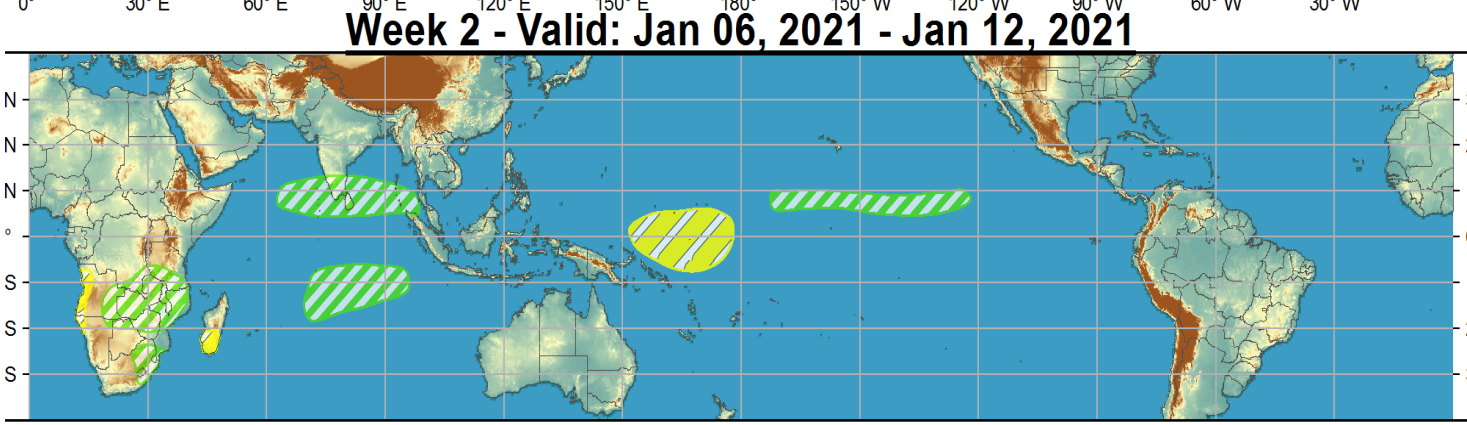
Adam Allgood

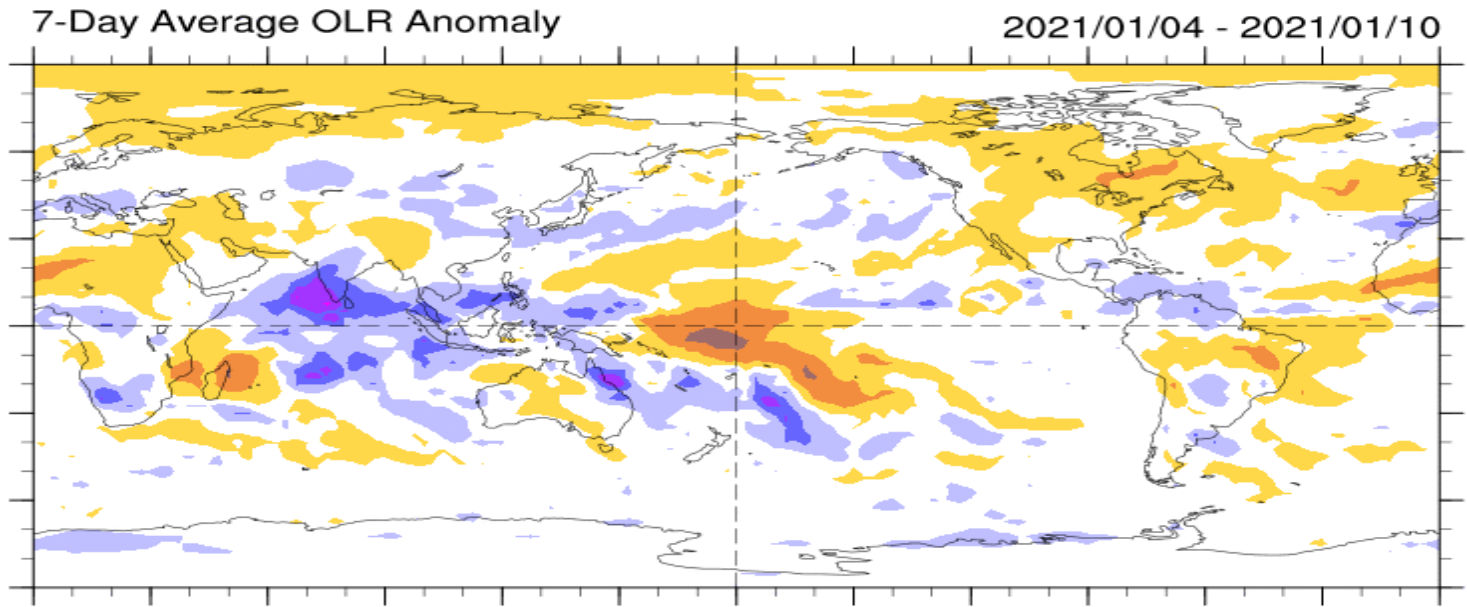
Outline

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

Outlook Review







Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (December 10, 2020 Update) ***next update on 14th of Jan.!***

- 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:

- The amplitude of the MJO indices increased during the past week, suggesting potential convectively coupled Kelvin wave or renewed MJO activity over the Indian Ocean.

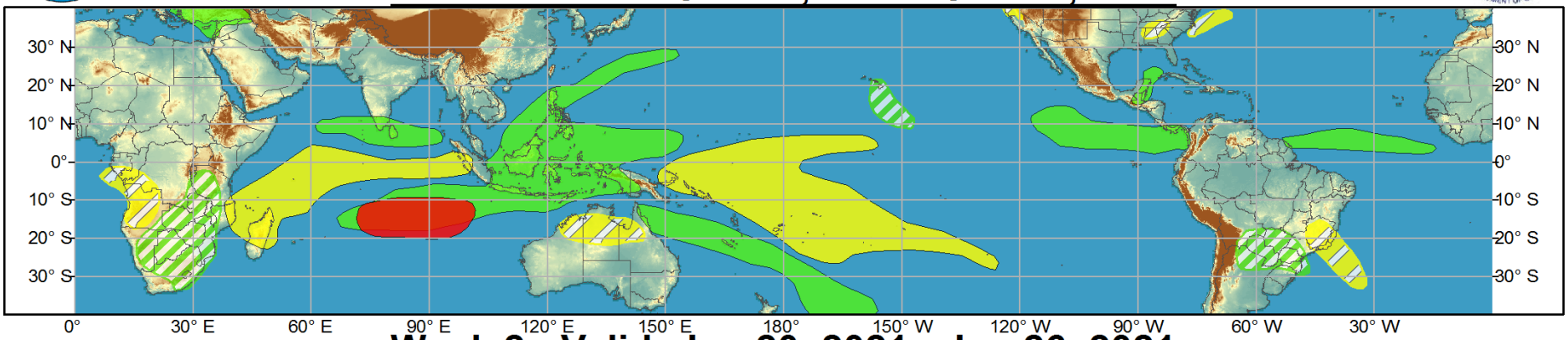
- Strong Rossby wave activity over the Maritime Continent and Indian Ocean may be projecting onto the indices as well.

- Dynamical models show a weakening signal as the Rossby waves move out of phase with the MJO/Kelvin wave activity.

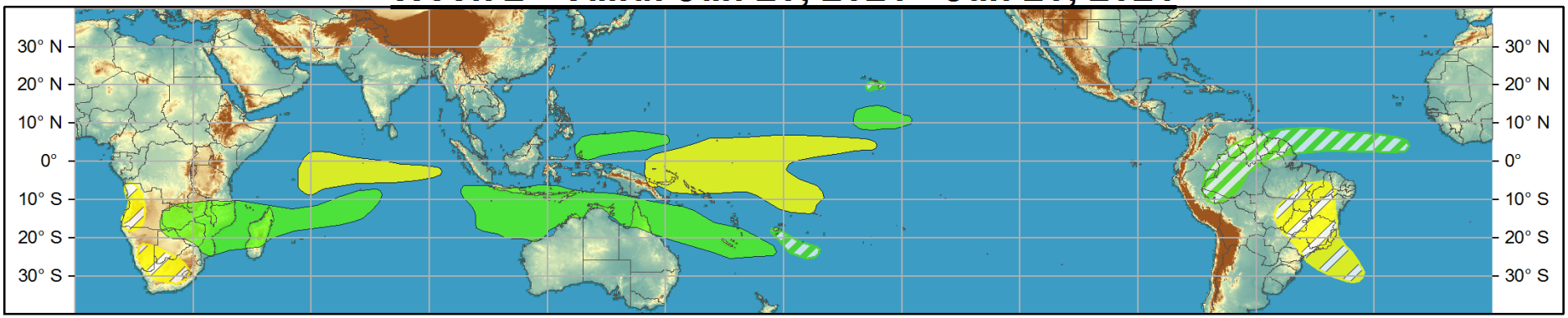
- While several ensemble members of the GEFS and ECMWF show an increasing West Pacific signal in Week-2, confidence is low, and the ongoing La Niña is favored to remain the dominant driver of tropical convective anomalies.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 13, 2021 - Jan 19, 2021



Week 2 - Valid: Jan 20, 2021 - Jan 26, 2021



Produced: 01/12/2021

Forecaster: Allgood

	Confidence: High	Confidence: Moderate	
Tropical Cyclone Formation			Development of a tropical cyclone (tropical depression - TD, or greater strength).
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EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

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NPS PRAESTANTIA PER SCIENTIAM

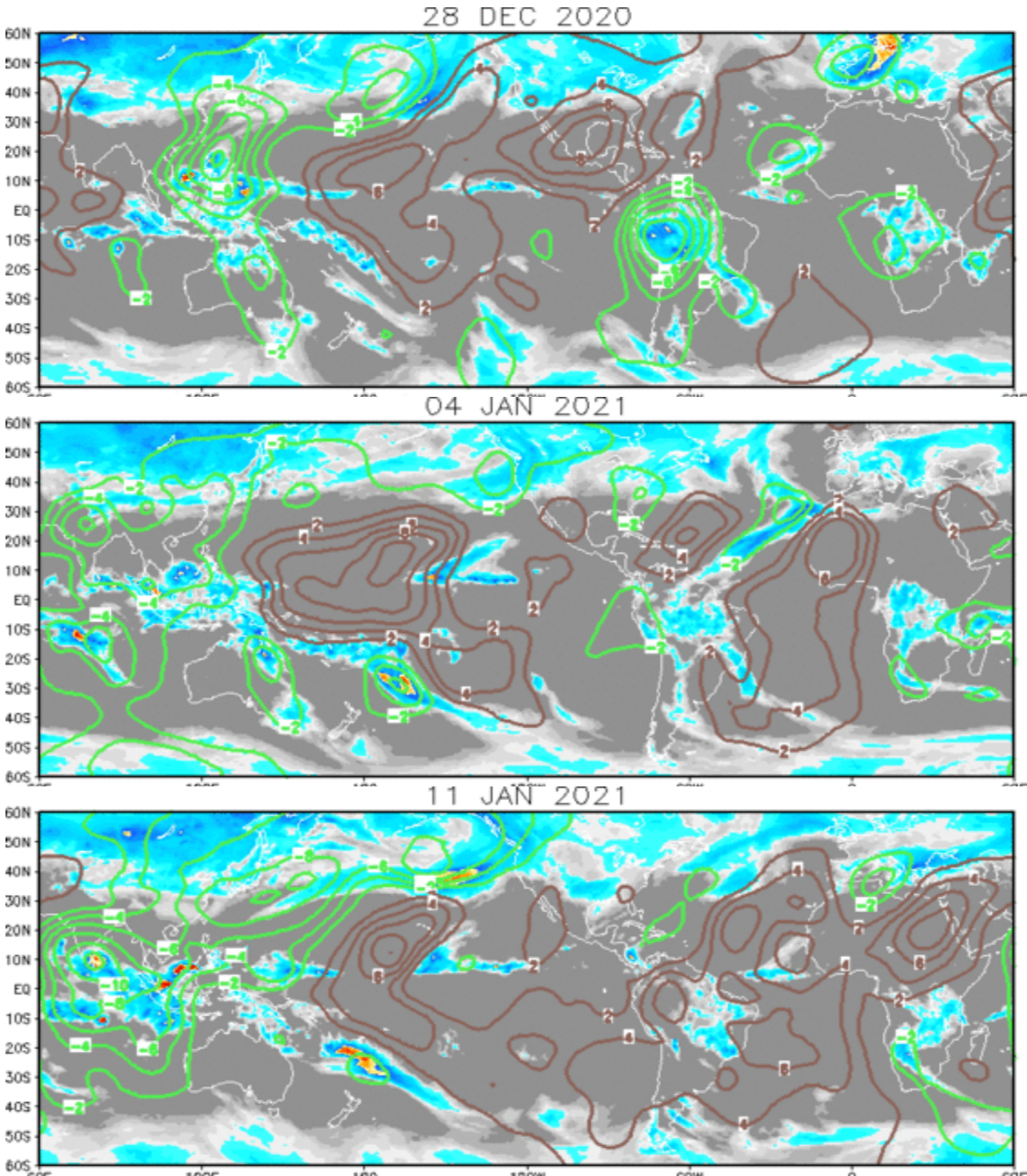
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

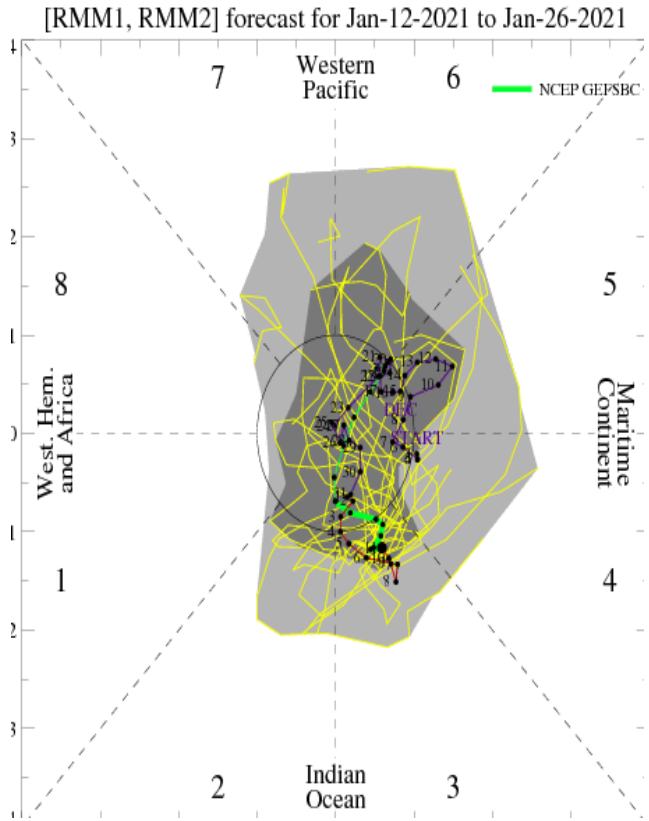
Enhanced Walker Circulation due to La Niña is the most prominent feature.

Some enhancement over the Indian Ocean became apparent by early January.

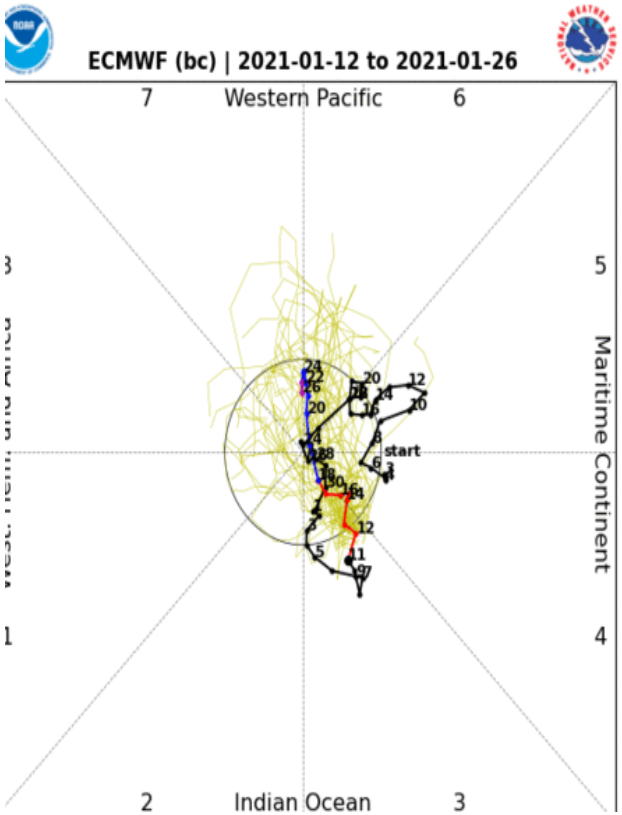
Strongly negative upper-level VP anomalies over the Indian Ocean indicate the initiation of a broad-scale enhanced convective envelope.



MJO Observation/Forecast



GEFS



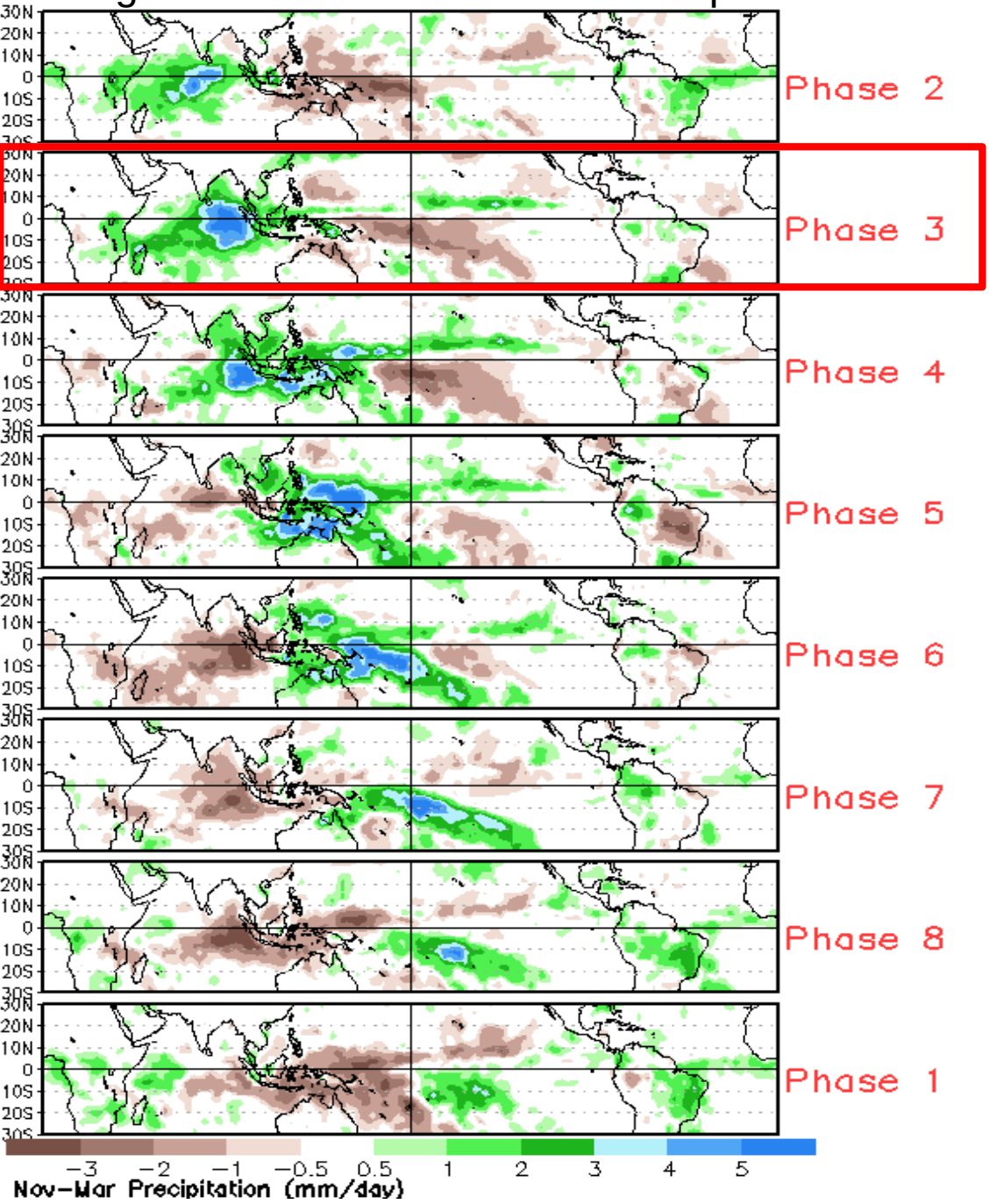
ECMWF

GEFS and ECWMF in good agreement supporting weakening of the MJO signal due to Rossby wave interference.

Some ensemble members show a signal emerging over the West Pacific by late Week-2.

Confidence remains low that MJO activity will substantially impact the ongoing La Niña response.

Average Conditions when the MJO is present



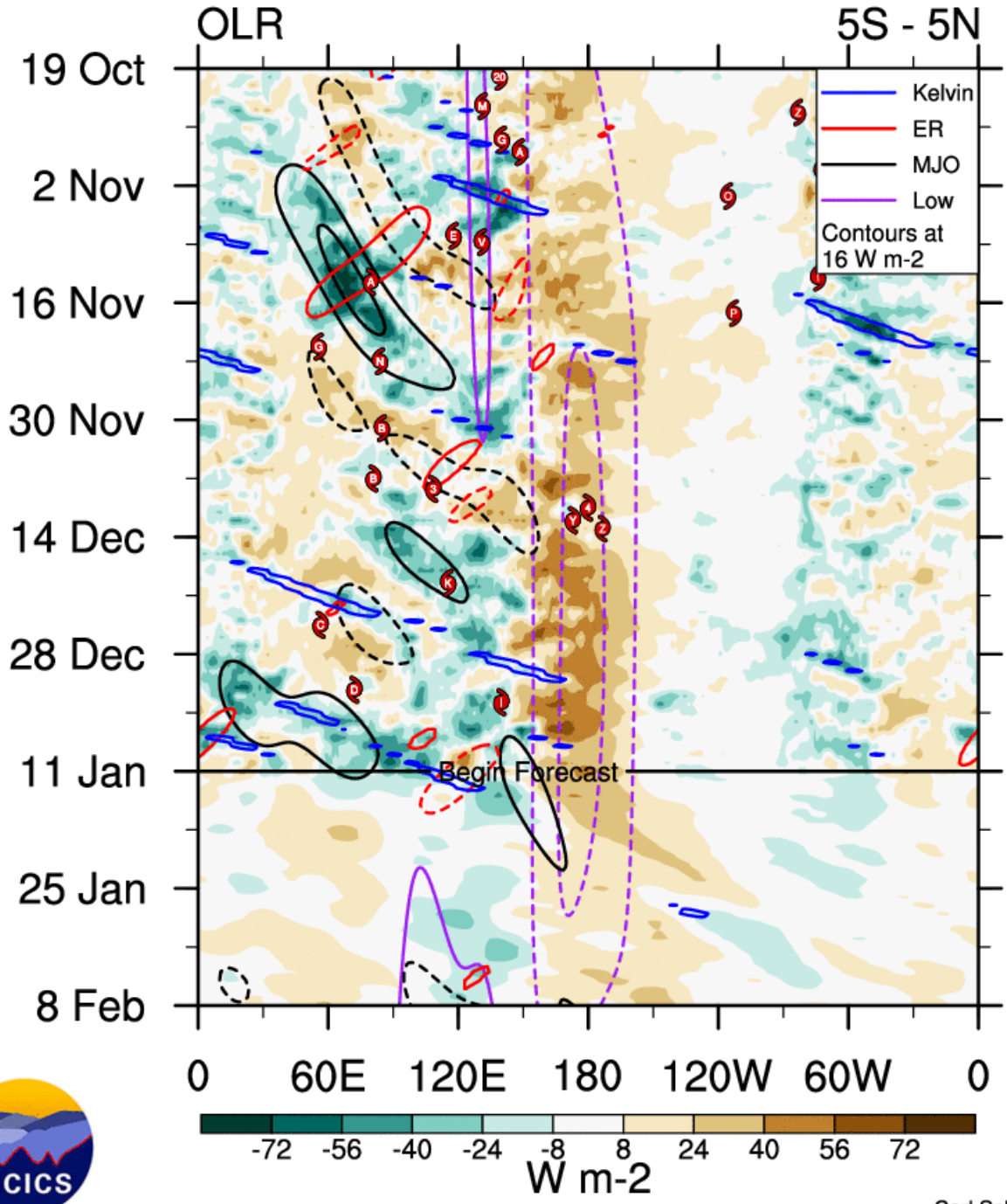
Enhanced convection is usually centered over the equatorial I.O., but dynamical model forecasts show most of the convection associated with the current projection to be off-equator.

CAVEAT: These panels are representative of robust MJO events.

Kelvin wave activity returning to the Indian Ocean may have helped amplify the RMM-based MJO index.

Rossby wave activity is present (more apparent in the meridionally wider band).

Low frequency contours depict ENSO cold conditions and are the dominant feature.



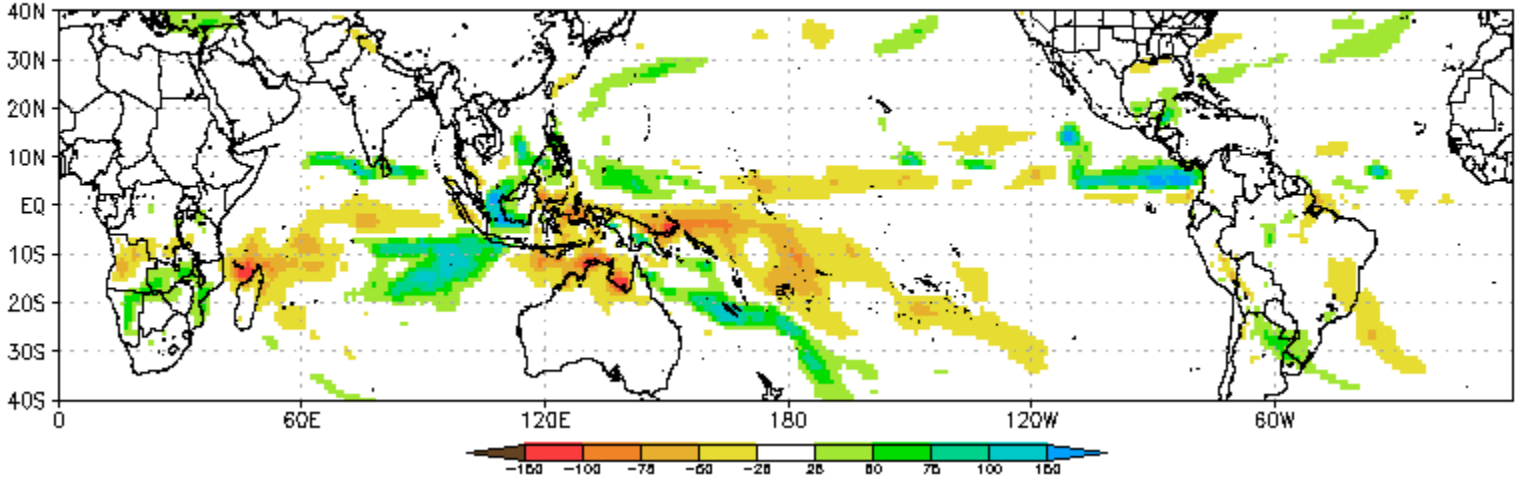
NCICS

ncics.org/mjo

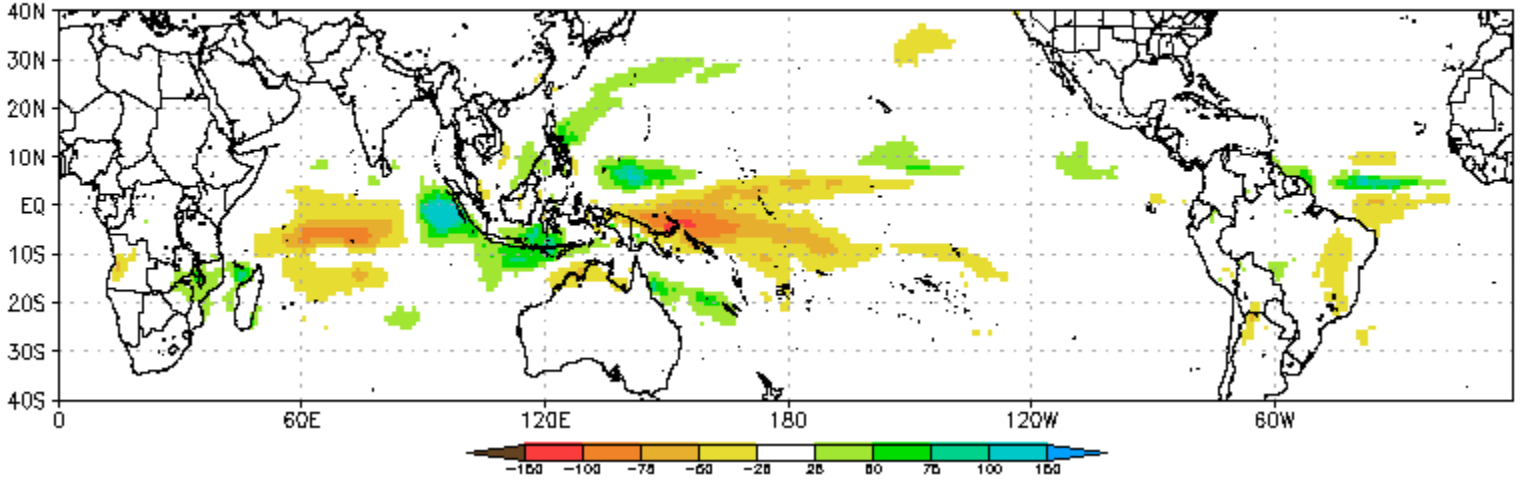
Tue 2021-01-12 1611 UTC

Carl Schreck
carl_schreck@ncsu.edu

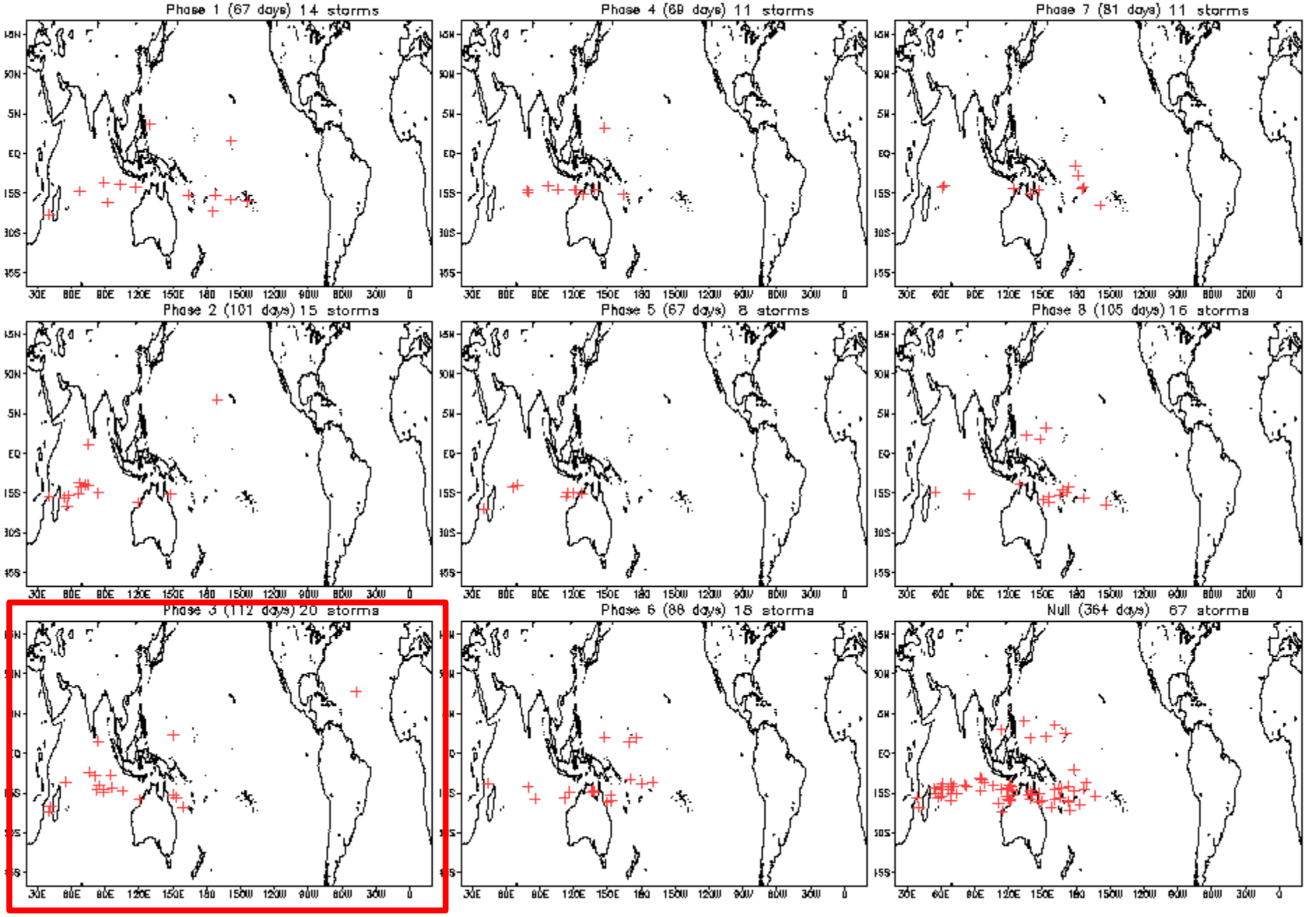
CFS Precipitation Anomalies (mm) Issued 11Jan2021
Week-1 Forecast Ending 19Jan2021

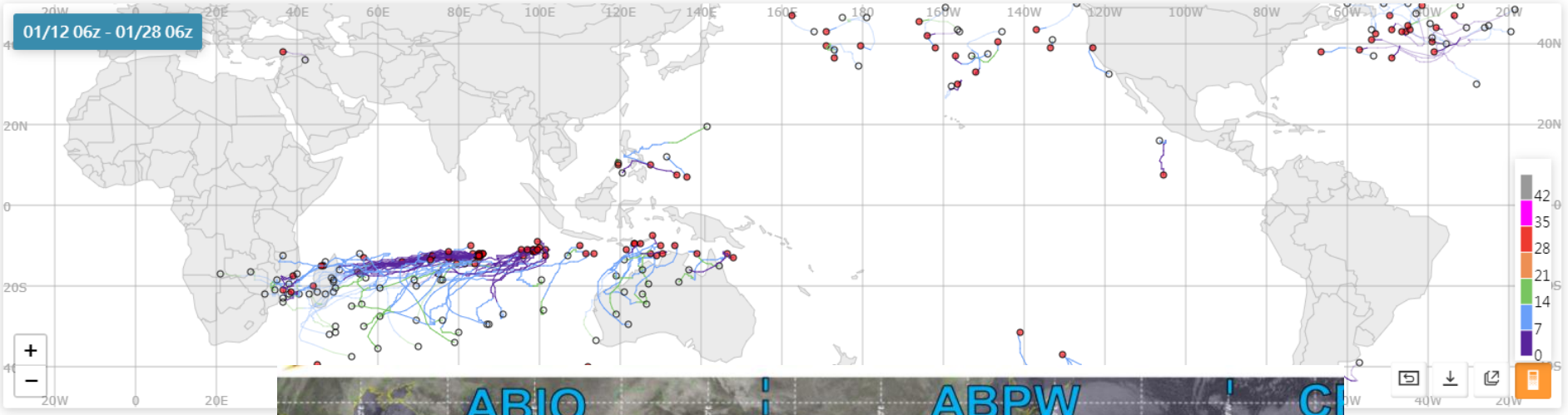


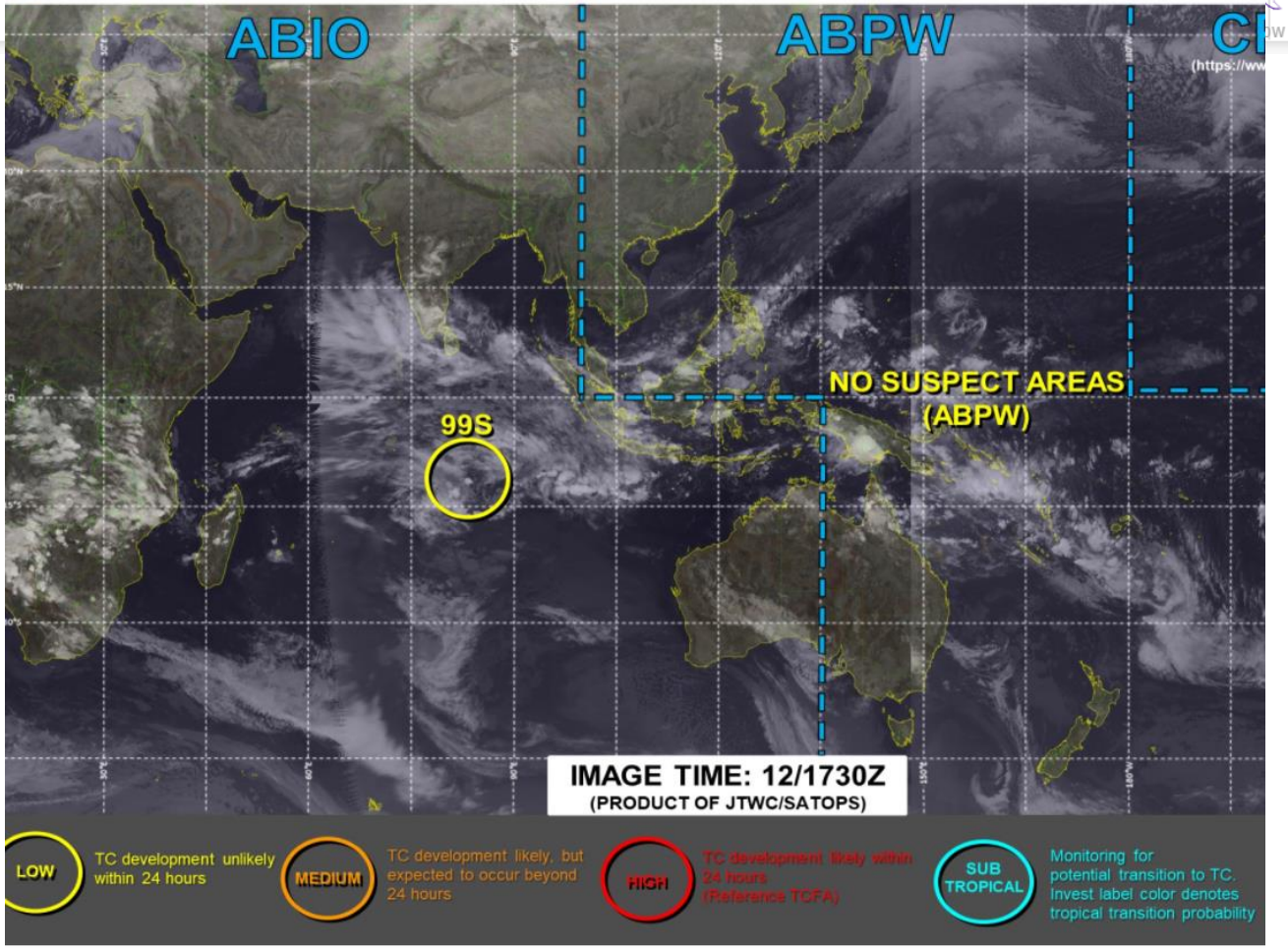
CFS Precipitation Anomalies (mm) Issued 11Jan2021
Week-2 Forecast Ending 26Jan2021



January Tropical Storm Formation by MJO phase

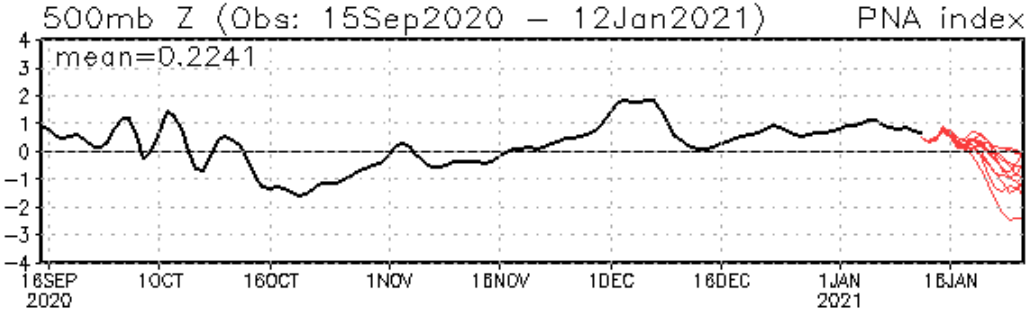


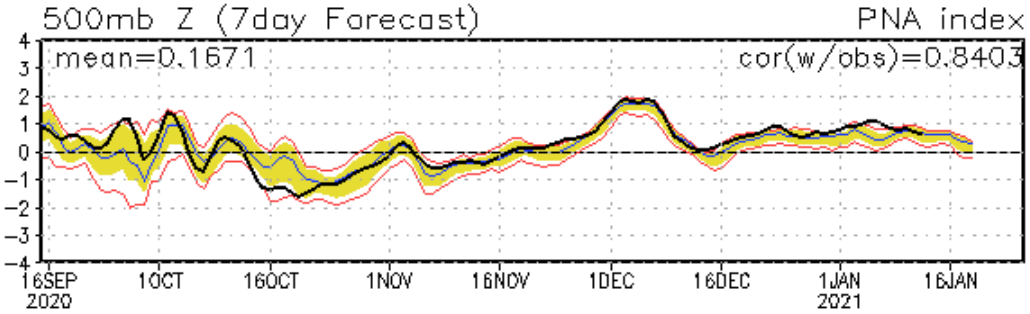

01/12 06z - 01/28 06z
42
35
28
21
14
7
0

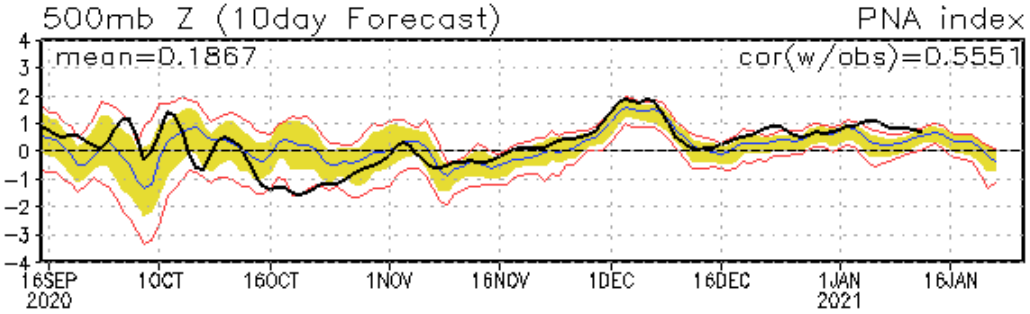

ABIO
ABPW
NO SUSPECT AREAS
(ABPW)
99S
IMAGE TIME: 12/1730Z
(PRODUCT OF JTWC/SATOPS)
LOW
TC development unlikely within 24 hours
MEDIUM
TC development likely, but expected to occur beyond 24 hours
HIGH
TC development likely within 24 hours (Reference TCFA)
SUB TROPICAL
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

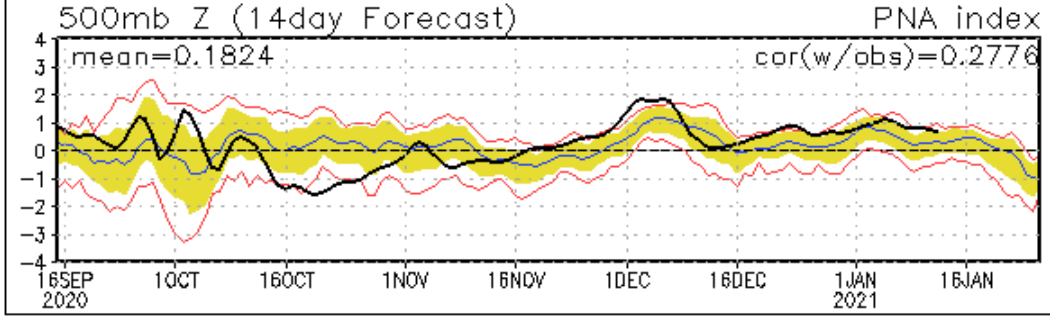
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts

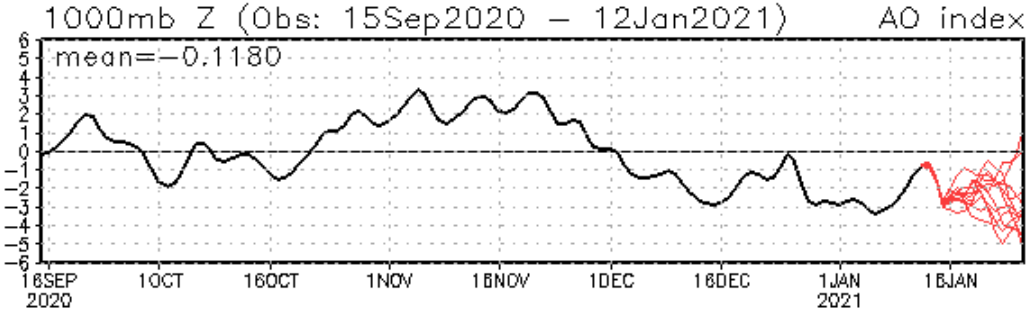


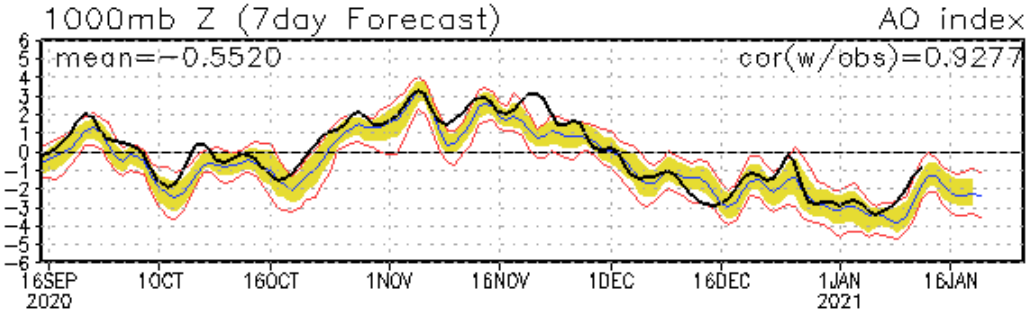


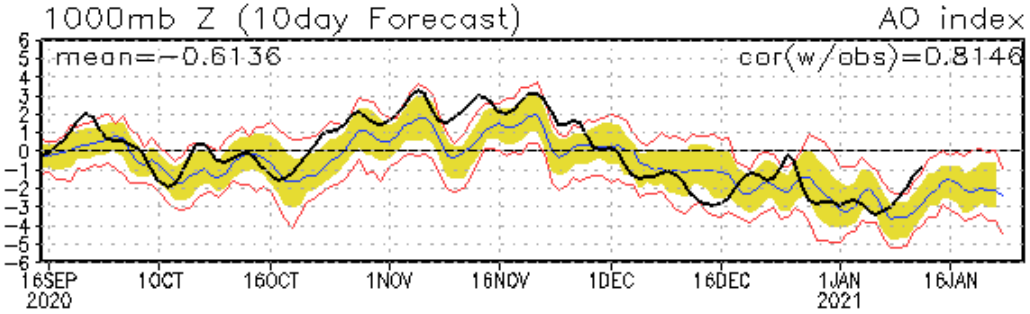


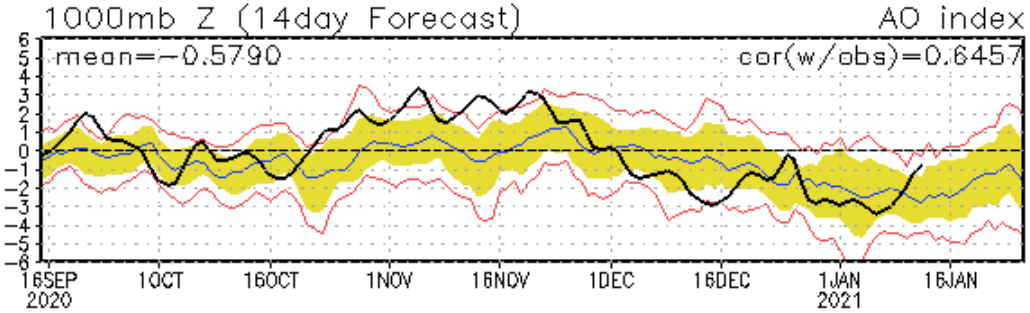


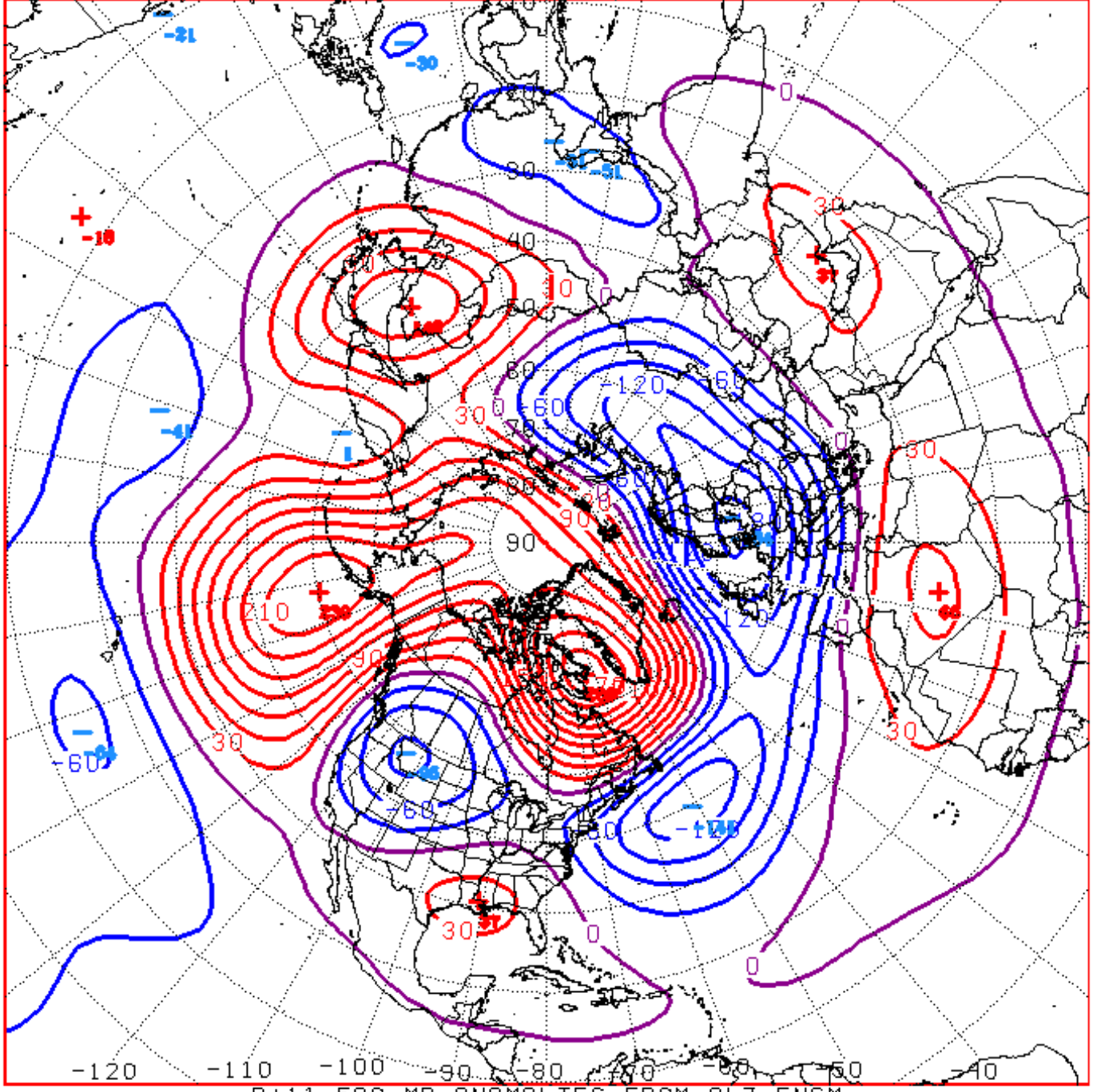
AO: Observed & ENSM forecasts





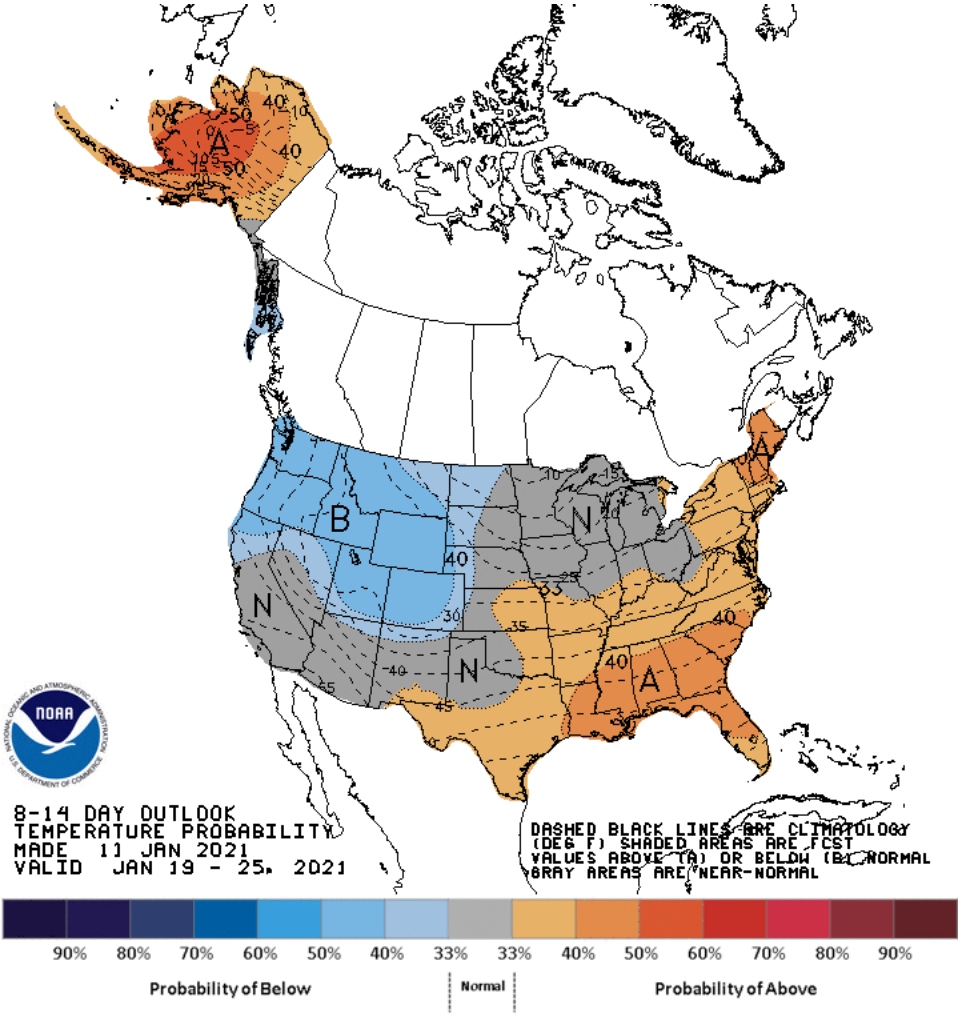


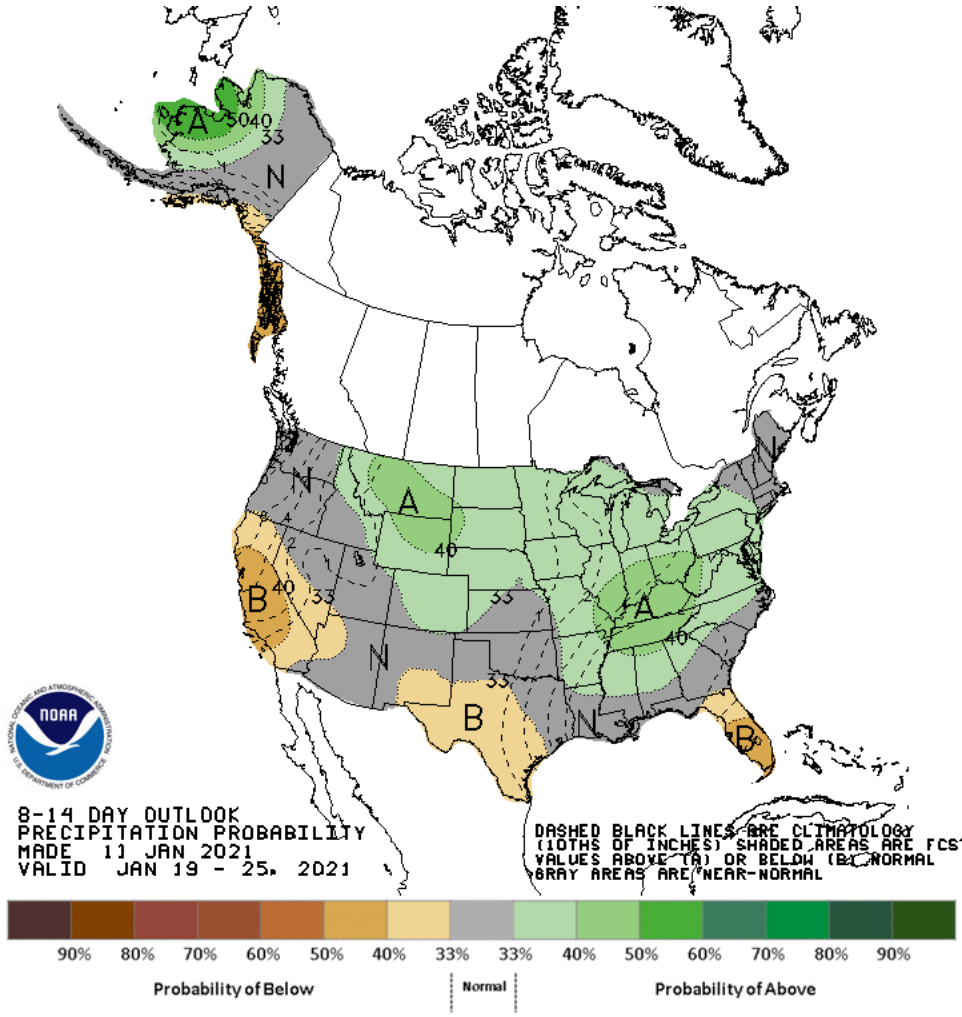




D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE JAN 12 2021 1425 UTC CNTD JAN 23 2021

Week 2 – Temperature and Precipitation





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

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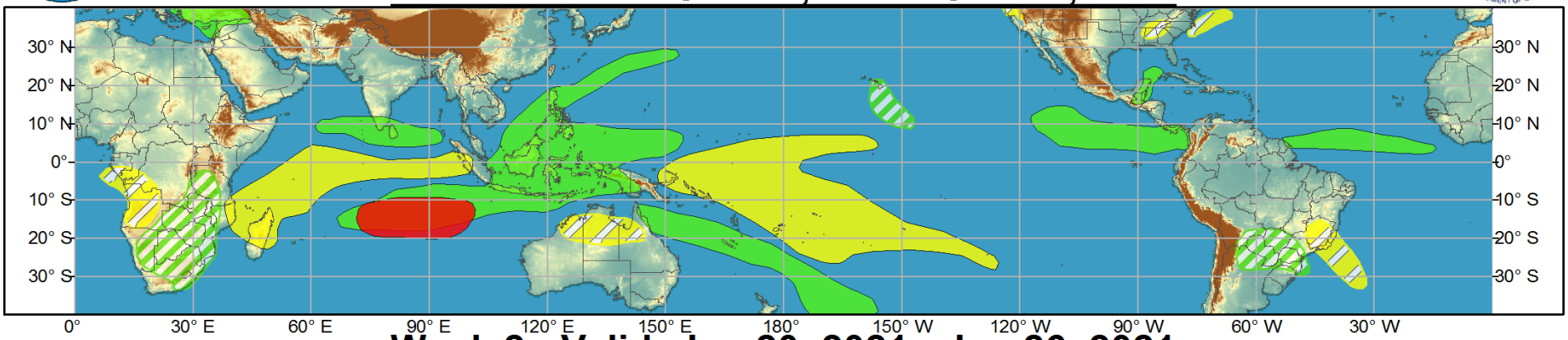

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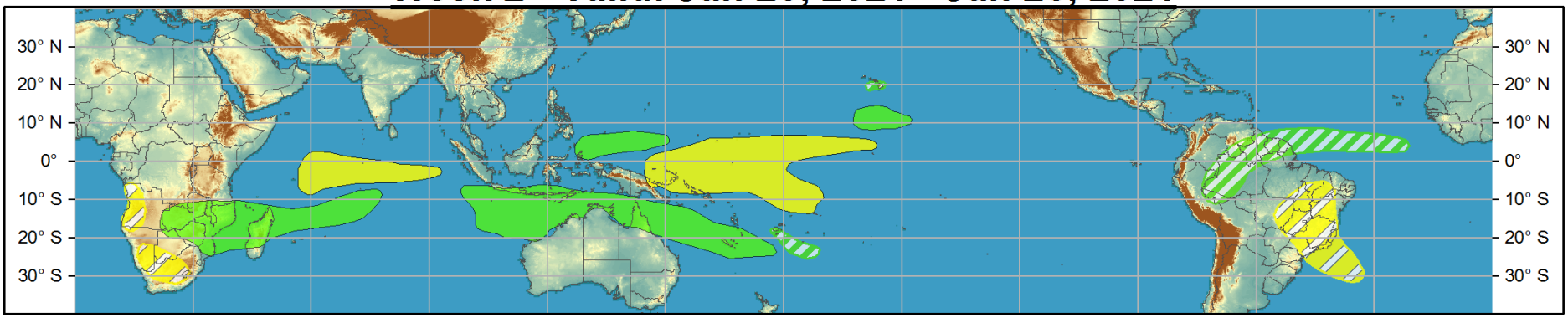

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NPS PRAESTANTIA PER SCIENTIAM