Global Tropics Hazards And Benefits Outlook

12/10/2019

Anthony Artusa

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

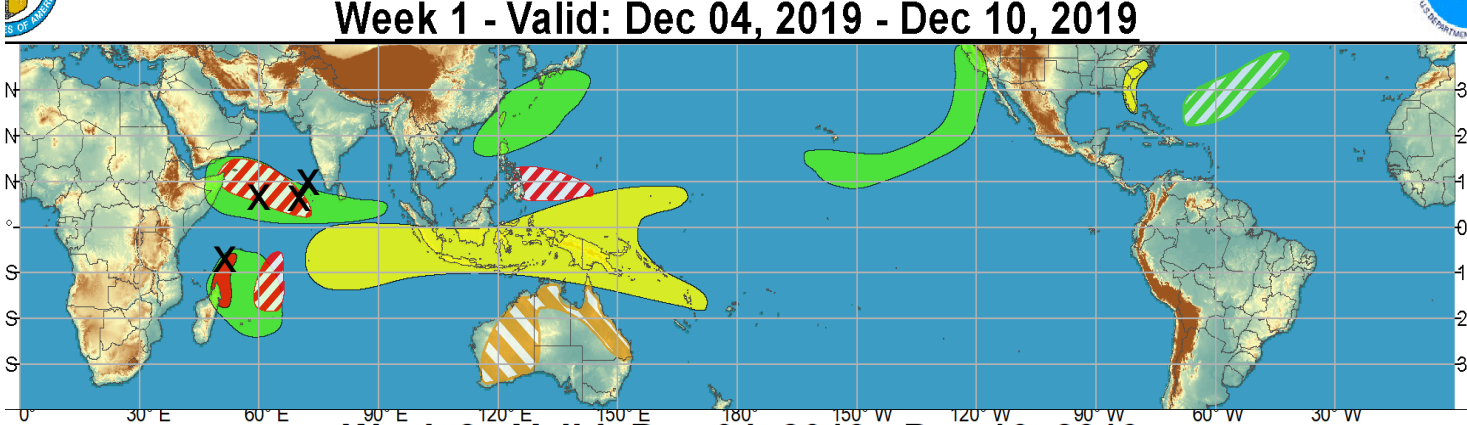
- Pawan (45 mph) (Somalia)

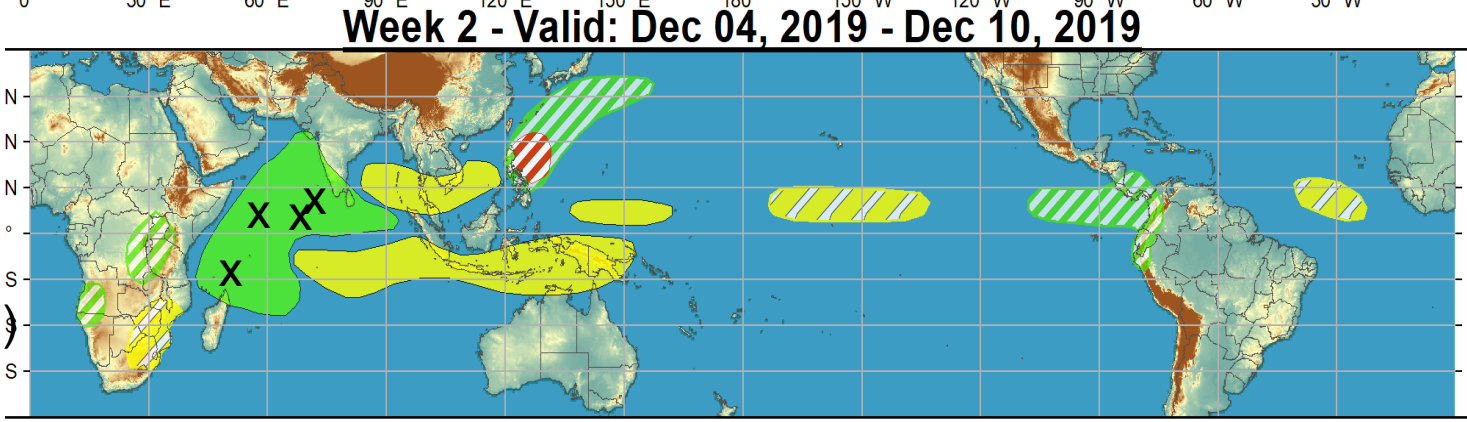
* Deep Depr ARB 06
* Deep Depr ARB 08

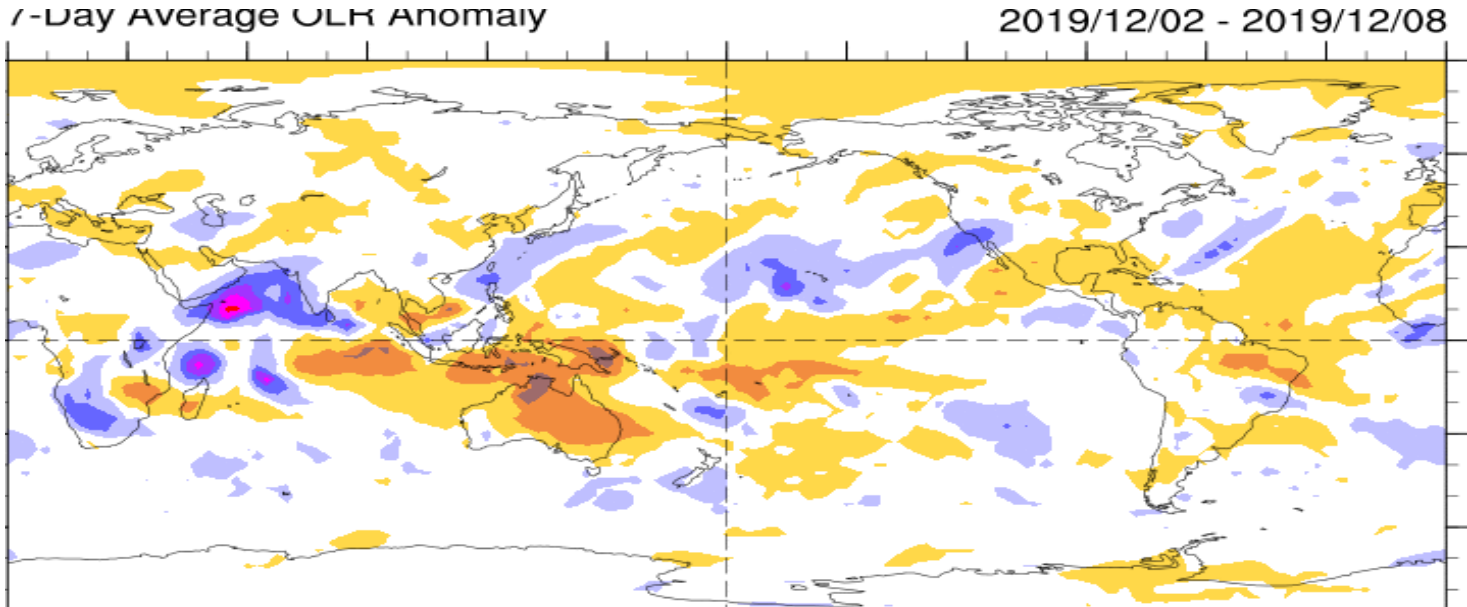
* Belna (90-100 mph) (Madagascar)

Cool shading
More clouds/rain

Warm shading
Less clouds/rain







Synopsis of Climate Modes

ENSO: (Nov 14, 2019 Update)

- ENSO Alert System Status: Not Active

- ENSO-neutral is favored during Northern Hemisphere winter 2019-20 (~70% chance) continuing through spring 2020 (60-65% chance).

MJO and other subseasonal tropical variability:

• The MJO remained weak, and enhanced phase was located over the western Indian Ocean. Competing modes of variability over this region. Constructive interference with positive IOD (Indian Ocean Dipole)

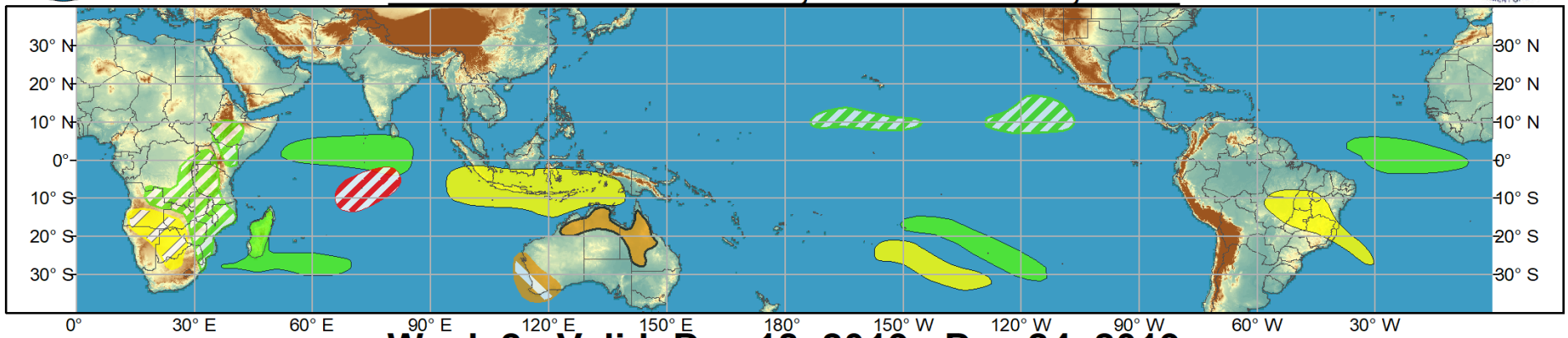
• Dynamical models indicate a weak signal throughout the next 2 weeks, though the enhanced phase may be located anywhere between Phases 1-6.

Extratropics:

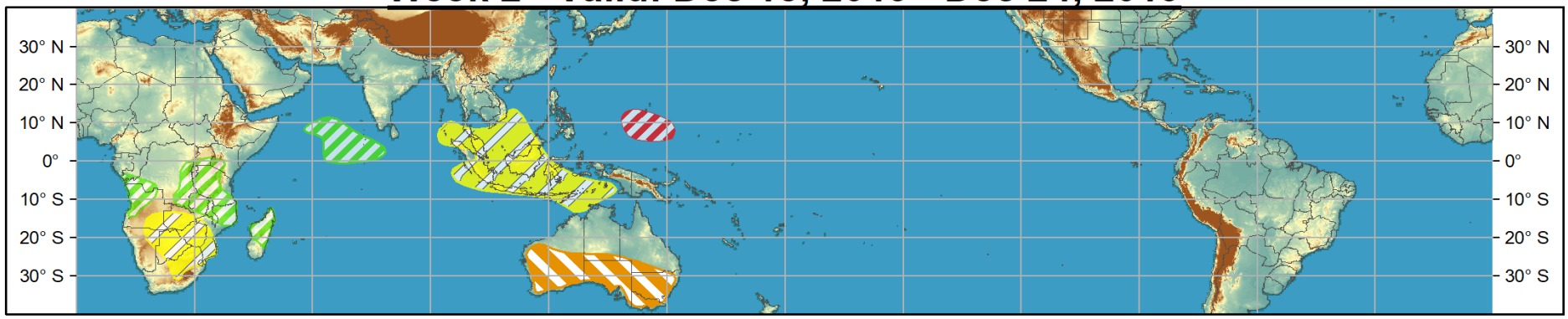
• The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by MJO activity.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 11, 2019 - Dec 17, 2019



Week 2 - Valid: Dec 18, 2019 - Dec 24, 2019



Produced: 12/10/2019

Forecaster: Artusa

	Confidence: High	Confidence: 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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EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

cics.nc

NPS PRAESTANTIA PER SCIENTIAM

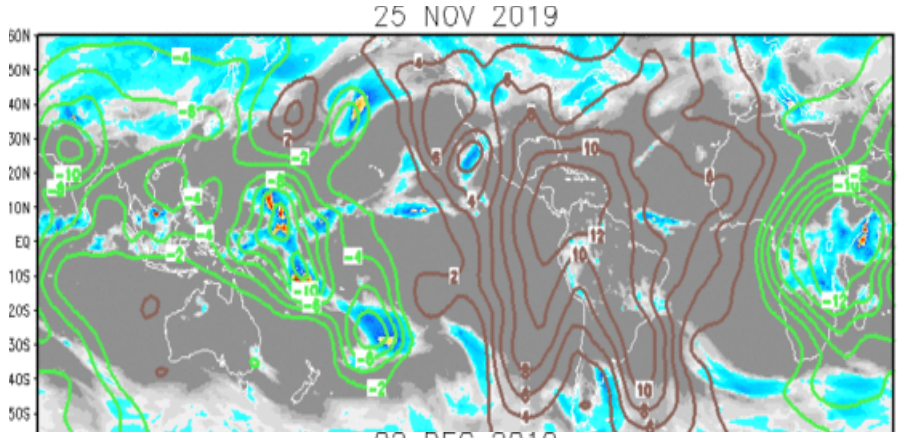
IR Satellite & 200-hpa Velocity Potential Anomalies

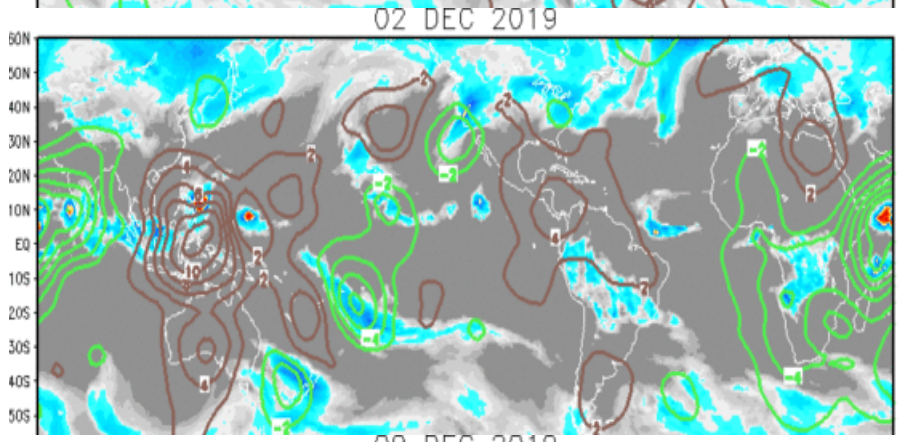
Green: Enhanced Divergence Brown: Enhanced Convergence

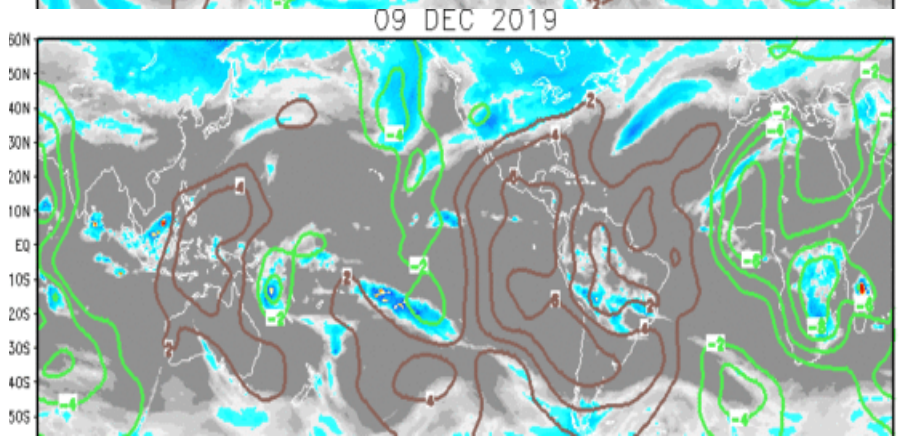
Wave-1 with enhanced DIV over Eastern Hemisphere; CON over Western Hemisphere.

Noisy VPA pattern globally, but good constructive interference between MJO/IOD over Indian Ocean/Maritime Continent.

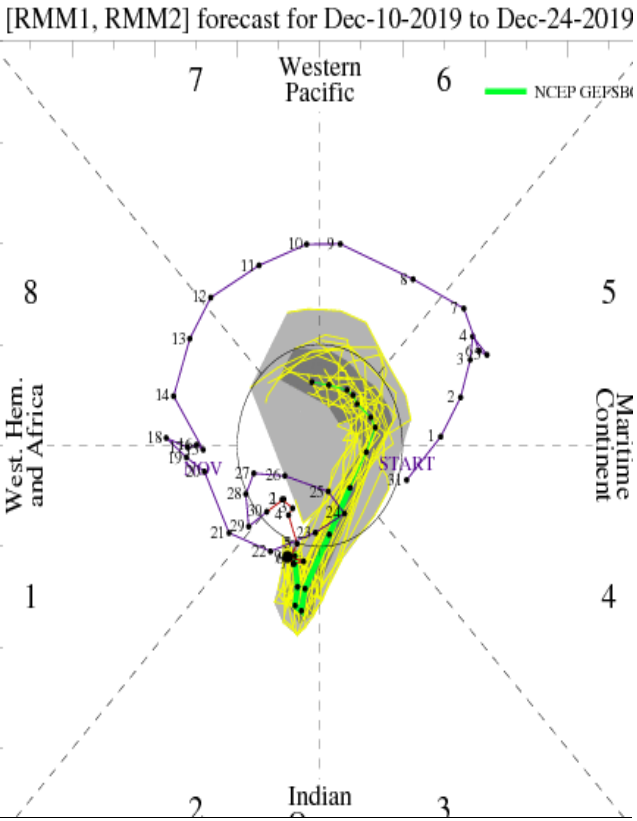
Similar to previous week, though not as amplified in Phases 2/3/4 region.



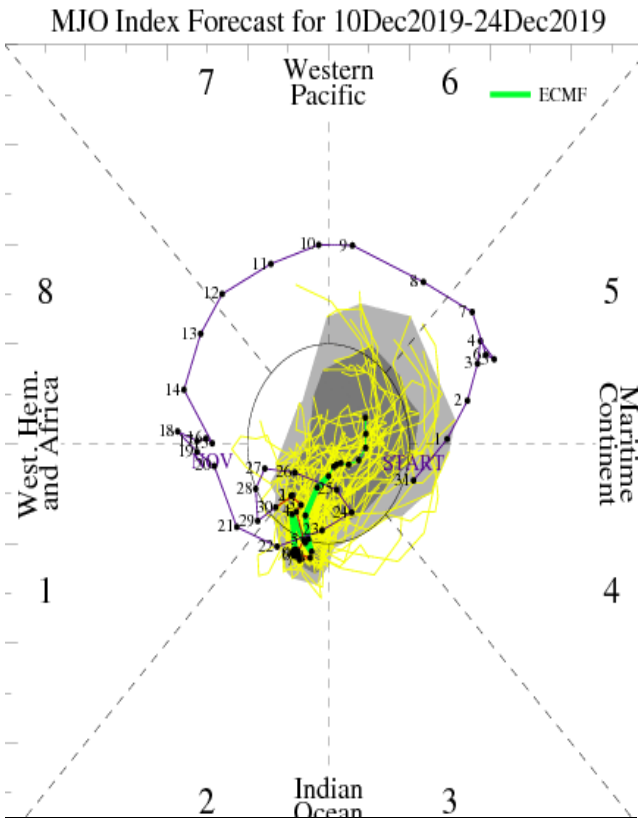




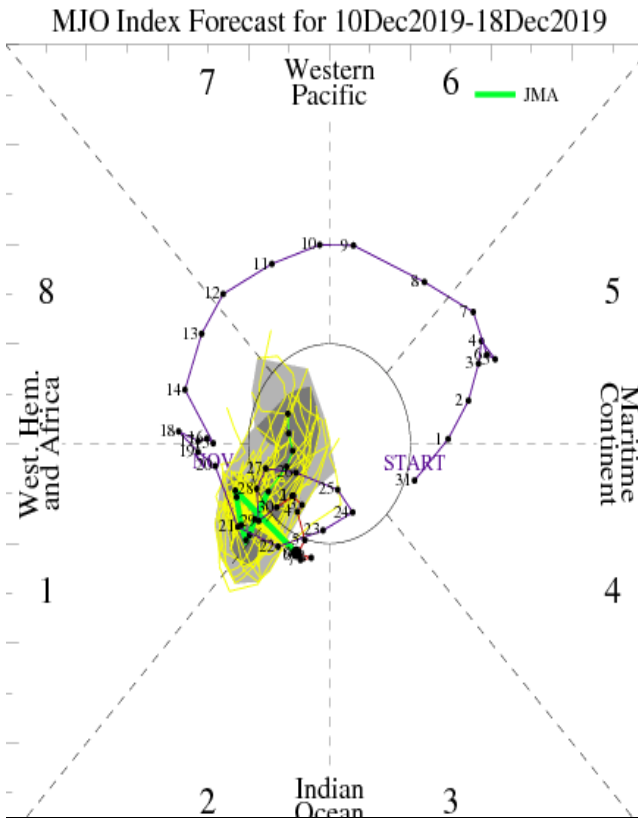
MJO Observation/Forecast



GEFS



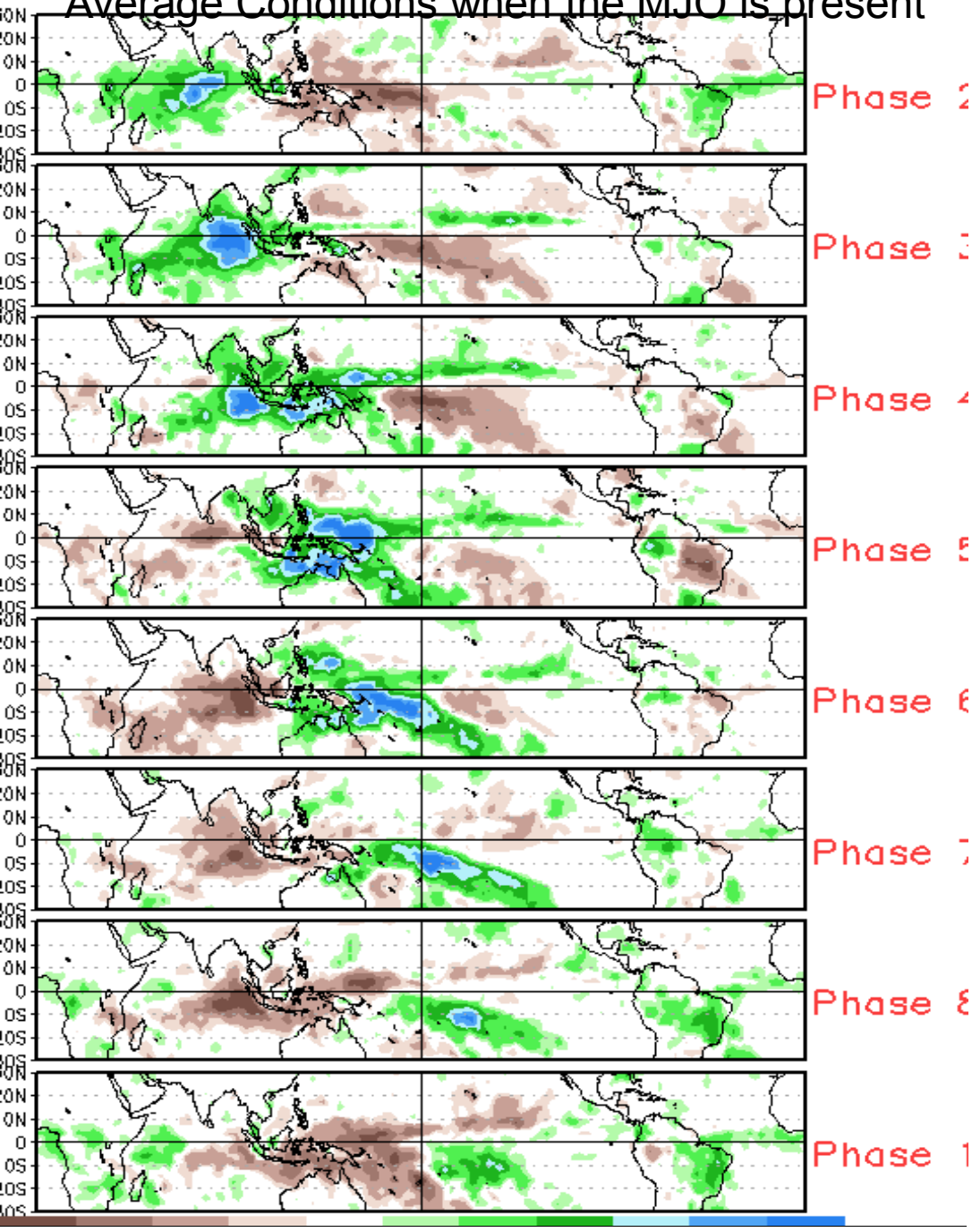
ECMWF



JMA

Wheeler-Hendon based analyses of model forecasts are in poor agreement regarding the forecast phase of the MJO (anywhere between Phases 1-6), but in good agreement on a weak MJO signal.

Average Conditions when the MJO is present



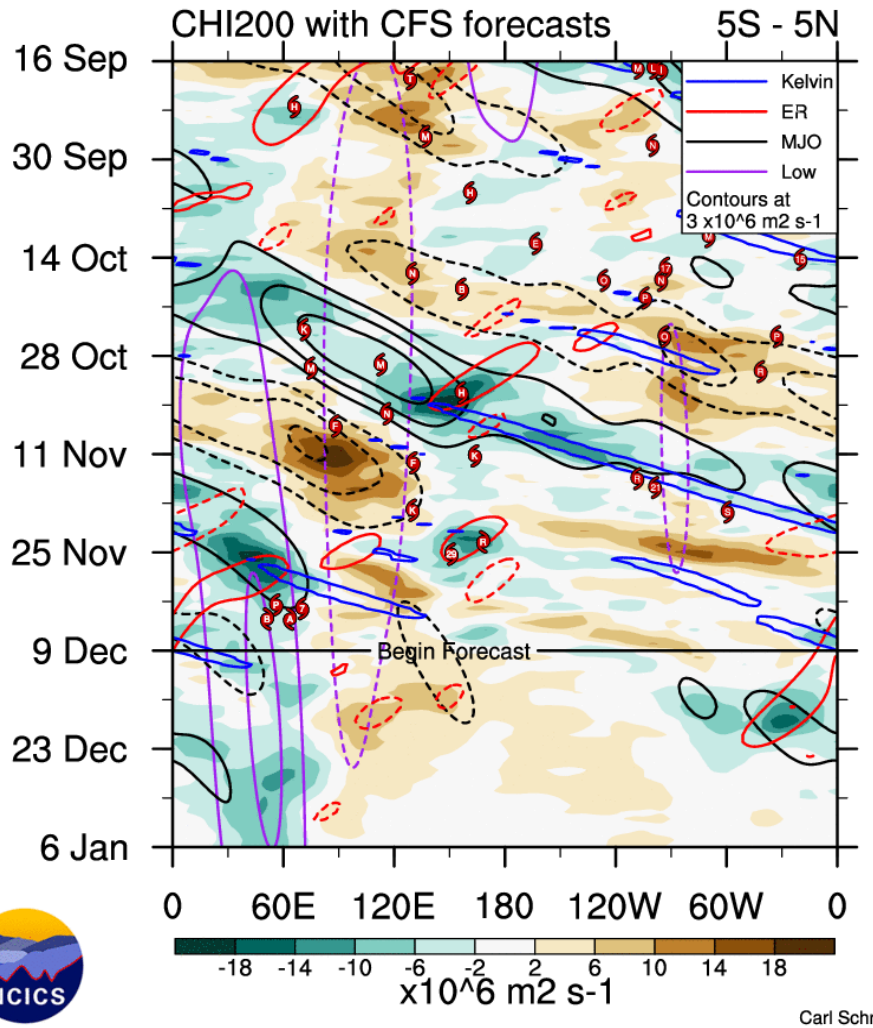
CAVEAT: These panels are representative of ***robust*** MJO events.

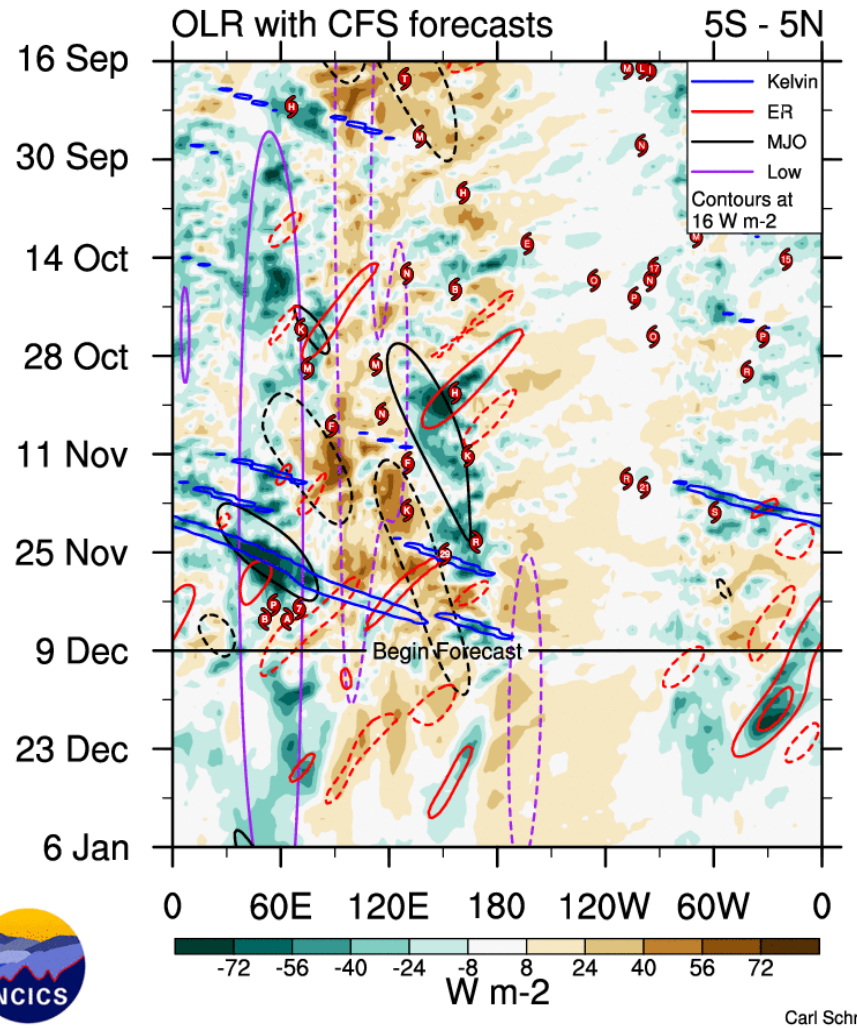
MJO

equatorial Rossby wave

Low frequency signal (IOD)

Kelvin wave





NCICS

ncics.org/mjo

Tue 2019-12-10 1135 UTC

Carl Schreck

carl_schreck@ncsu.edu

NCICS

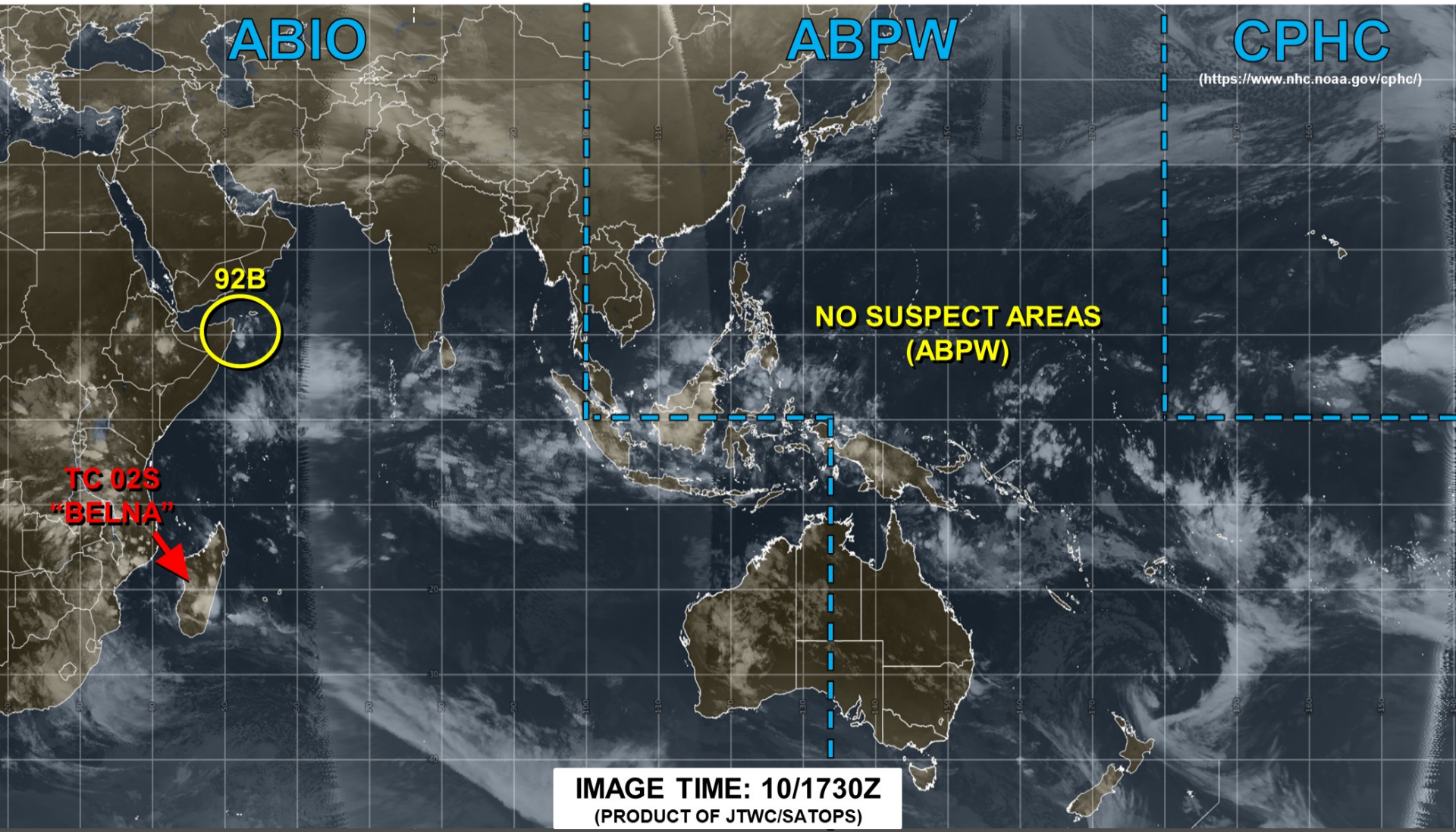
ncics.org/mjo

Tue 2019-12-10 1625 UTC

Carl Schreck

carl_schreck@ncsu.edu

JOINT TYPHOON WARNING CENTER



LOW — TC development unlikely within 24 hours

MEDIUM — TC development likely, but expected to occur beyond 24 hours

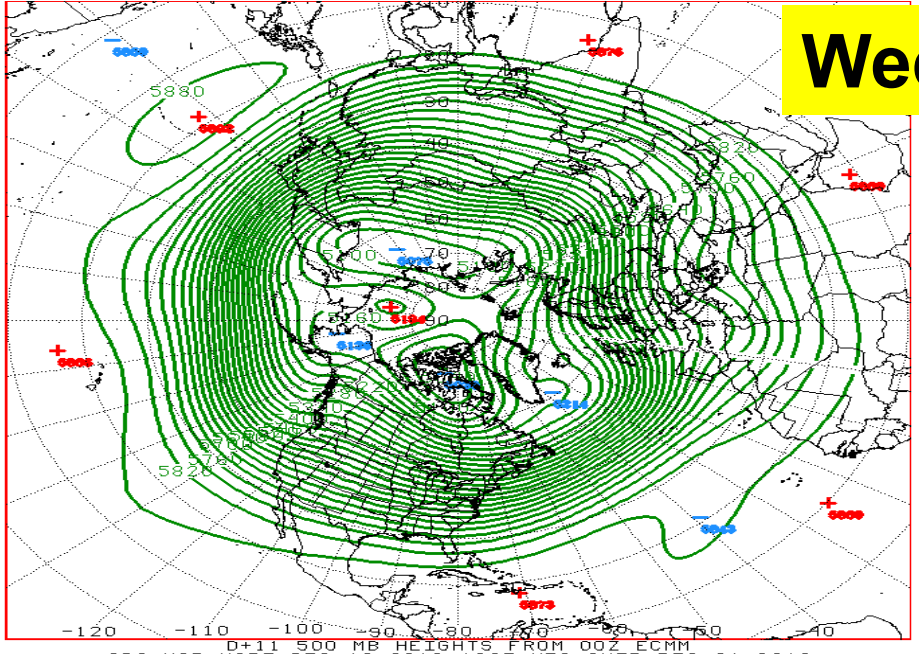
HIGH — TC development likely within 24 hours (Reference TCFA)

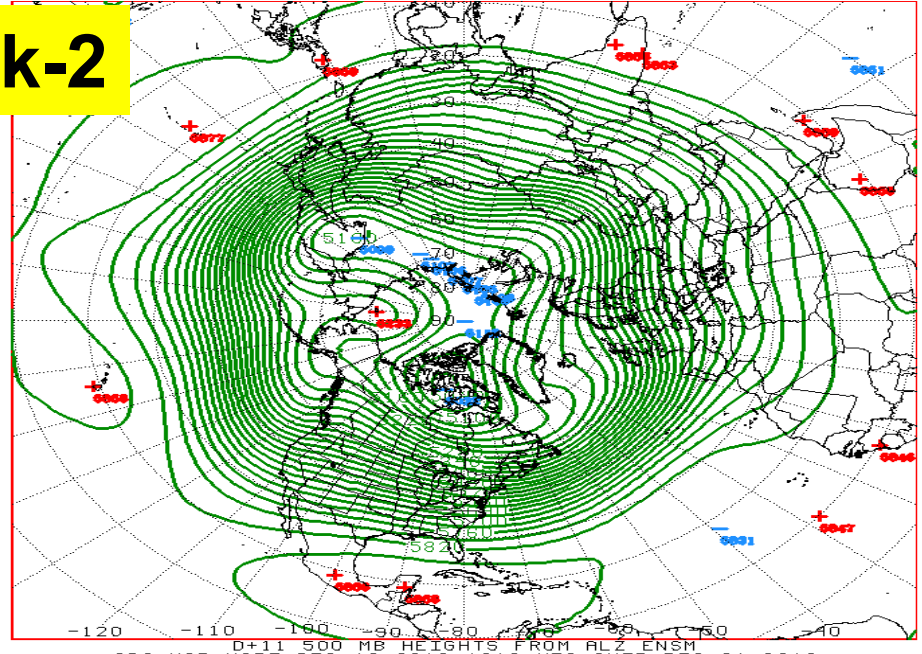
SUB TROPICAL — Monitoring for potential transition to TC. Invest color denotes tropical transition probability

Tropical Cyclone (Reference Warning)

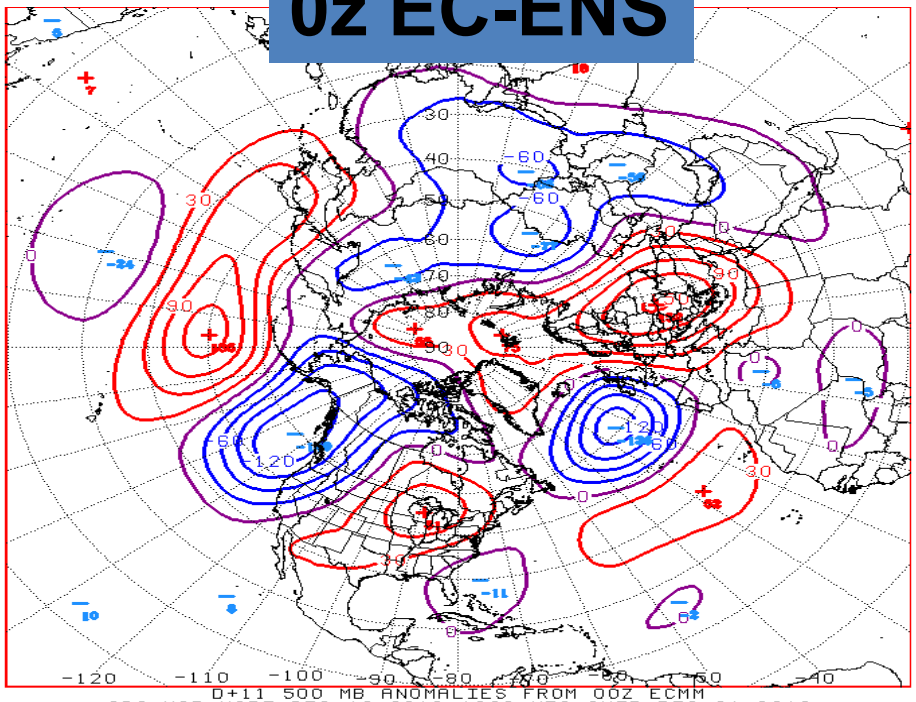
Connections to U.S. Impacts

Week-2

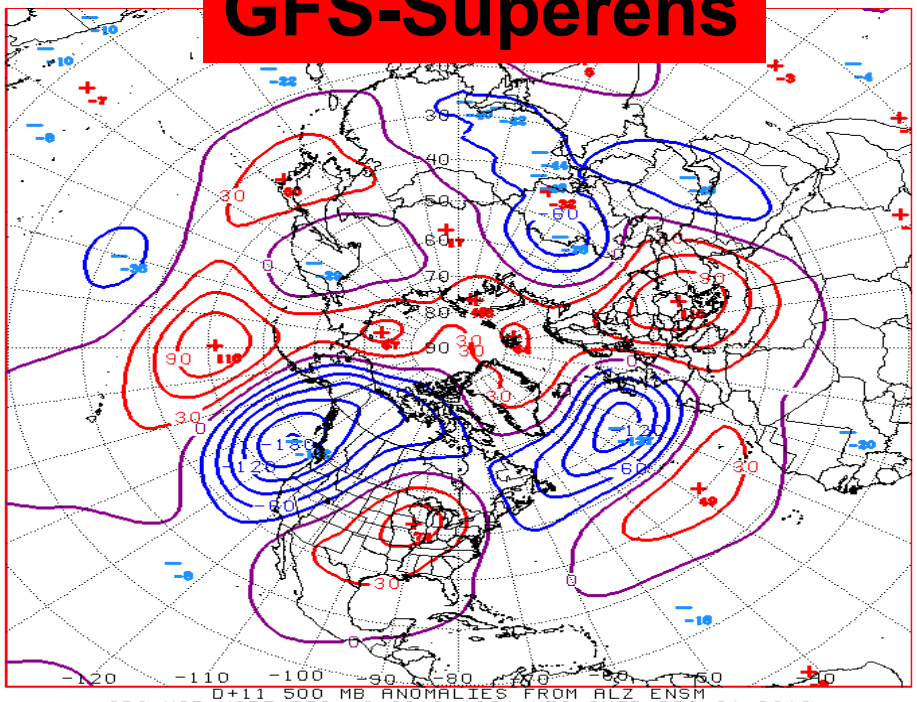




0z EC-ENS

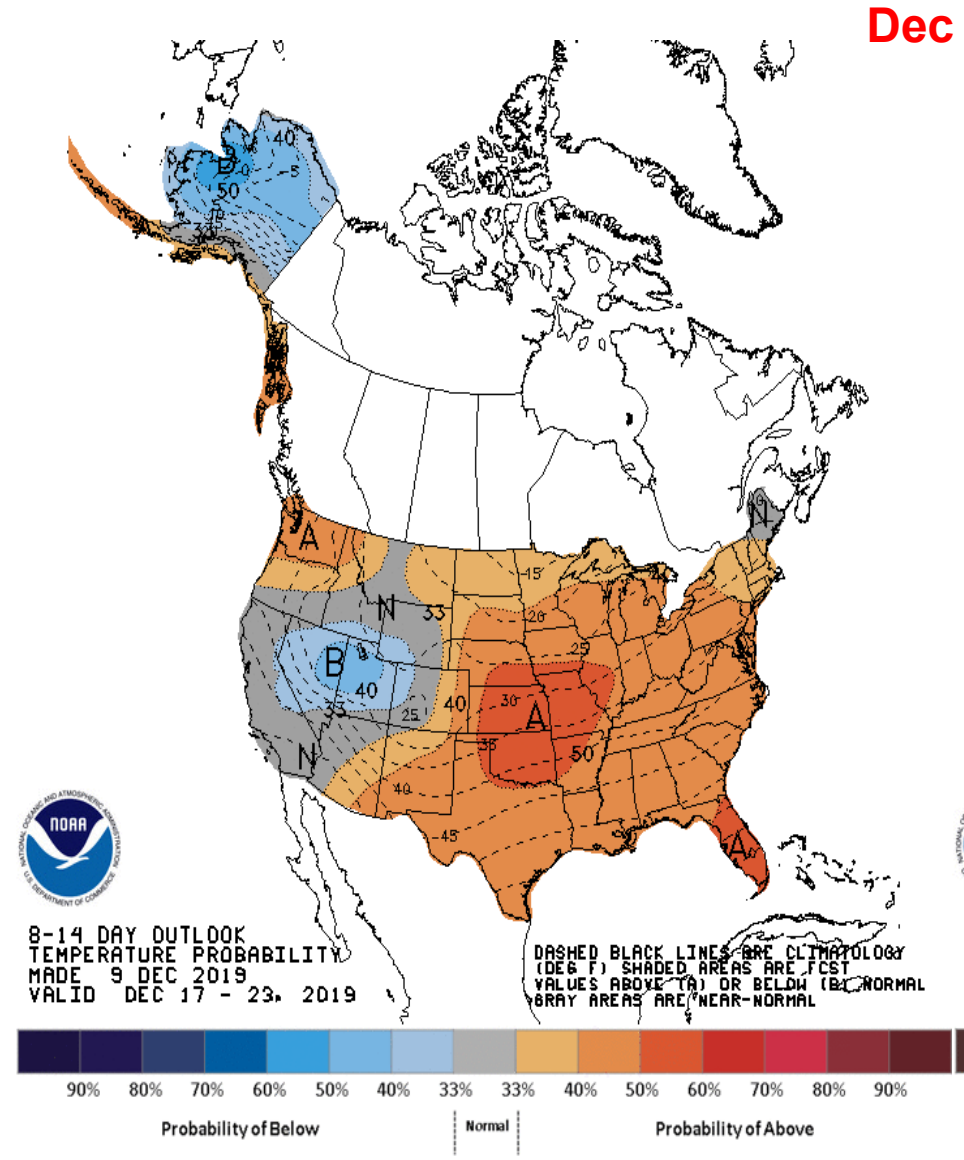


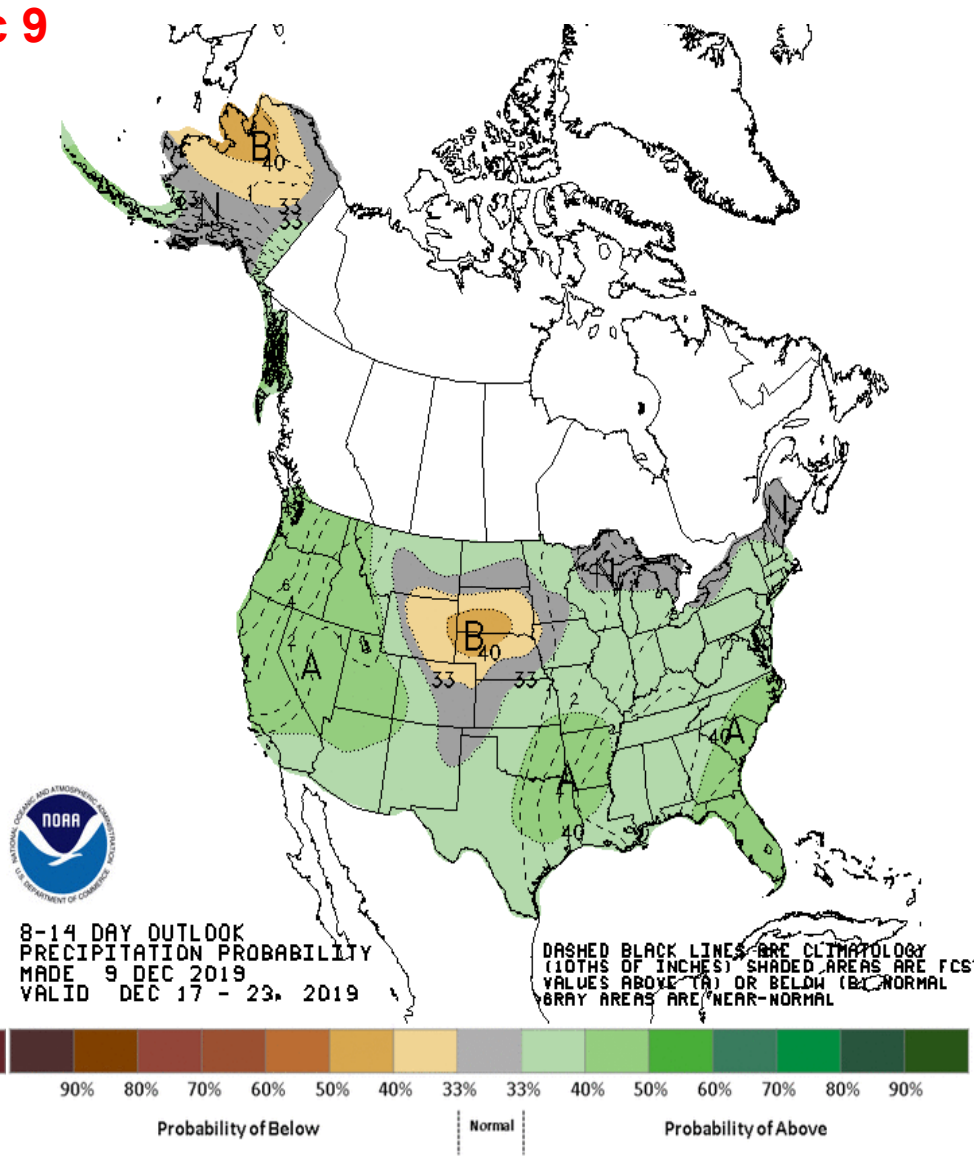
GFS-Superens



Week 2 – Temperature and Precipitation

Dec 9





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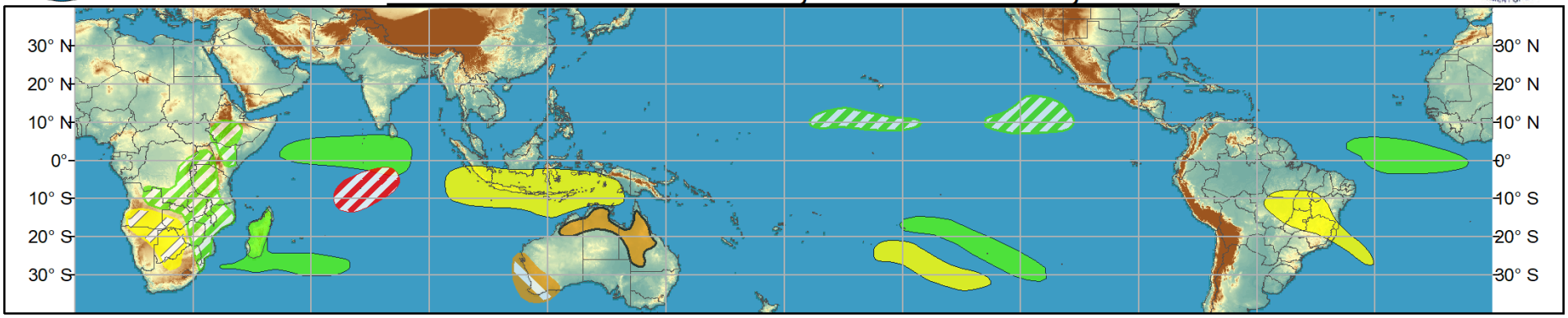

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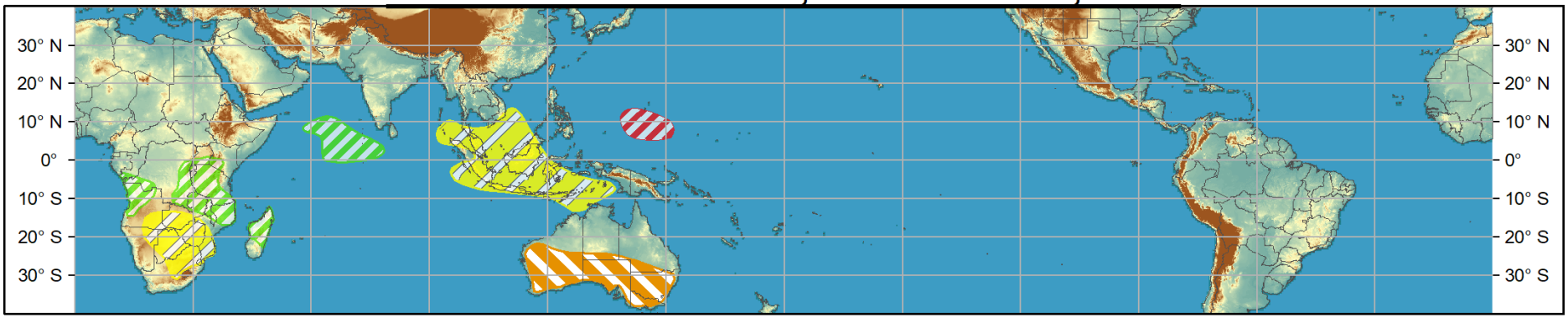

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