Global Tropics Hazards And Benefits Outlook

11/14/2017

Christina Maurin

Outline

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

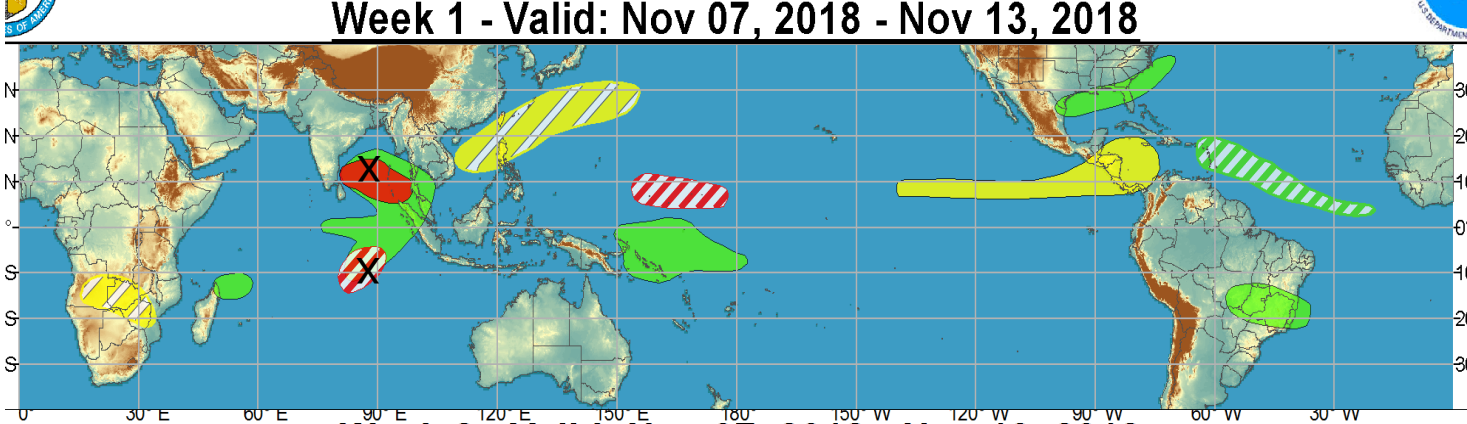
Outlook Review

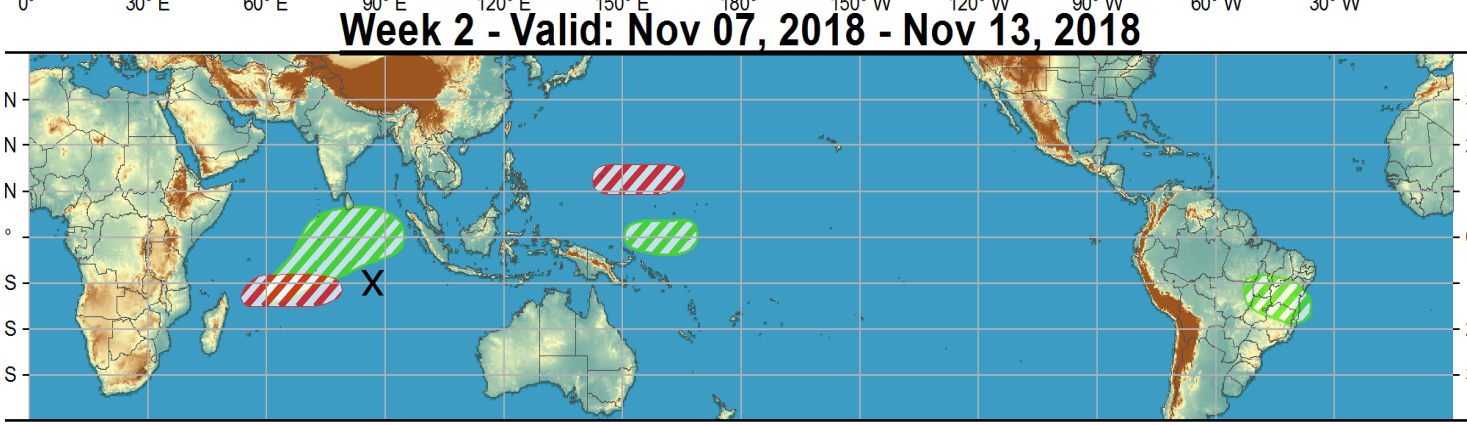
N. Indian Ocean
TS Gaja
11/10-current

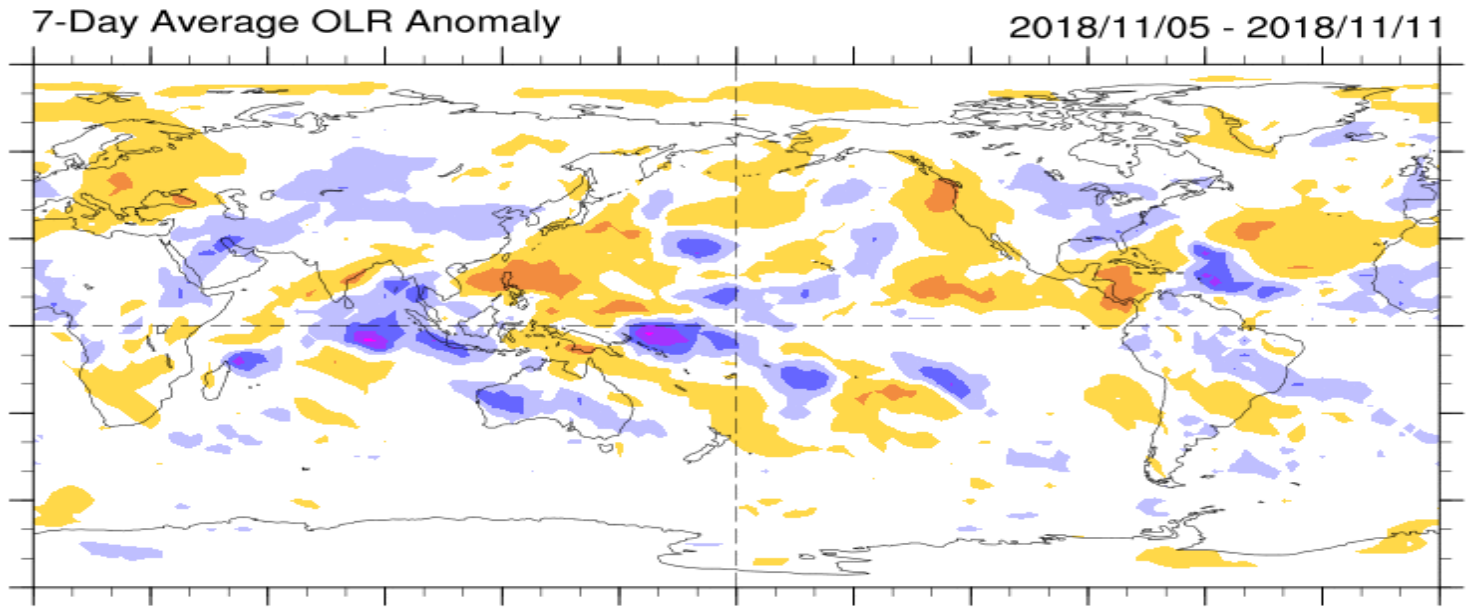
S. Indian Ocean
TS Bouchra
11/10-current

Cool shading
More clouds/rain

Warm shading
Less clouds/rain







Synopsis of Climate Modes

ENSO: (Nov 8, 2018 Update)

- ENSO Alert System Status: El Niño Watch

- El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~80%) and into spring (~55-60% chance).

MJO and other subseasonal tropical variability:

• The MJO remained of moderate strength, and propagated into Phase 4, over the Maritime Continent.

• Dynamical models indicate eastward propagation into Phase 5, with a drastic weakening of the signal toward the end of Week-1 into Week-2. Statistical models maintain a moderate signal. Official outlook maintains the signal with continued fast propagation into Phases 5/6 in Week-1 and Phases 7/8 in Week-2.

Extratropics:

• Extratropical influences are expected to be more dominant over the U.S. rather than tropical signals.

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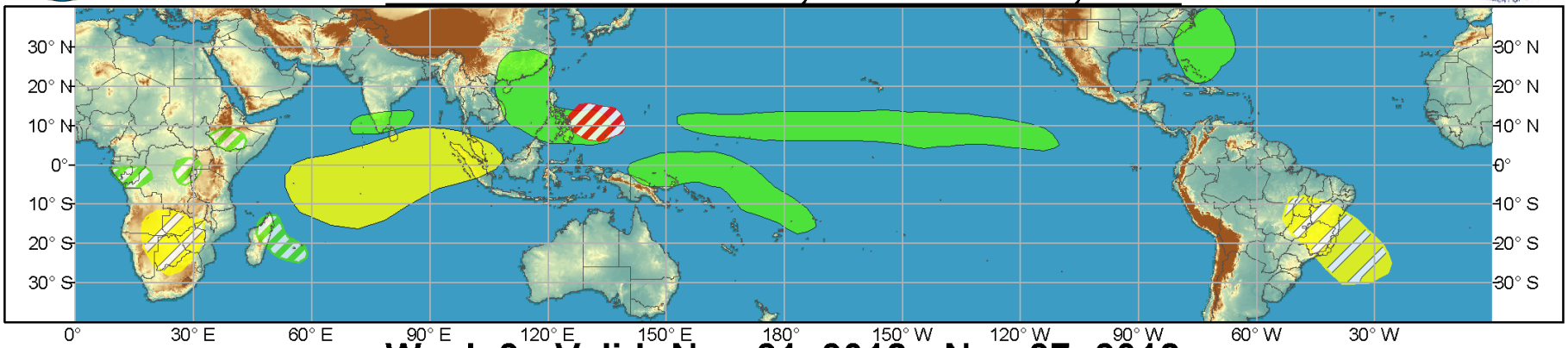

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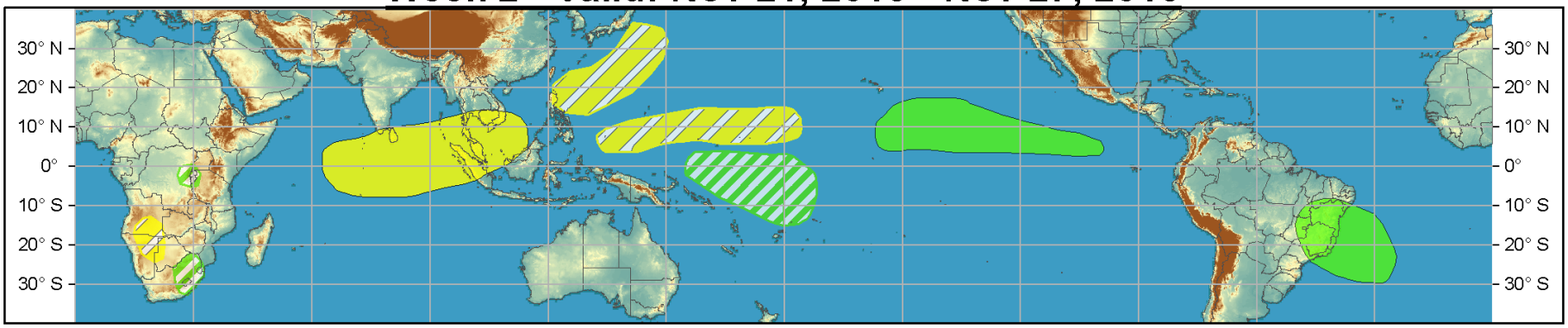

Produced: 11/13/2018

Forecaster: Maurin

	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

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NPS PRAESTANTIA PER SCIENTIAM

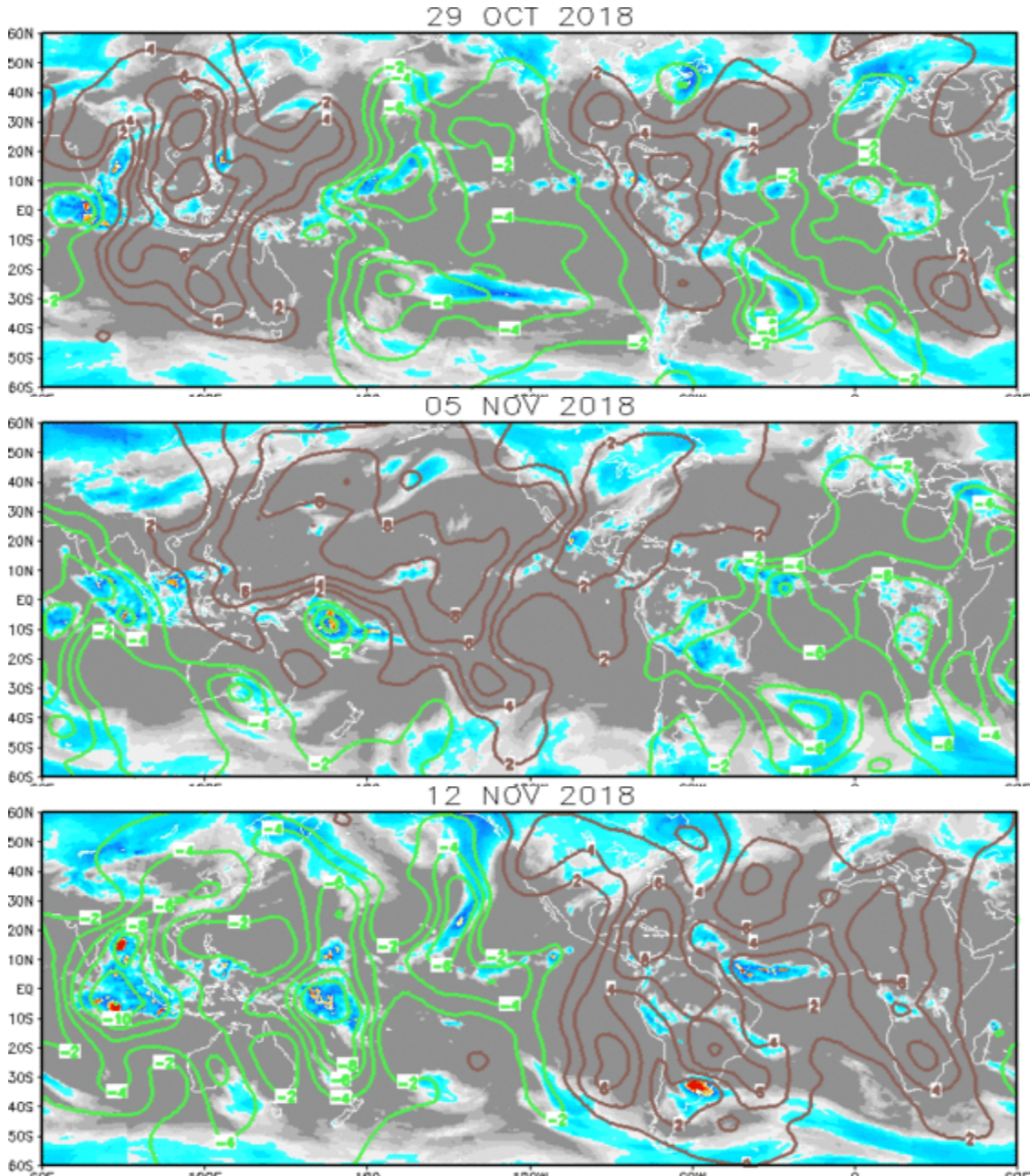
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

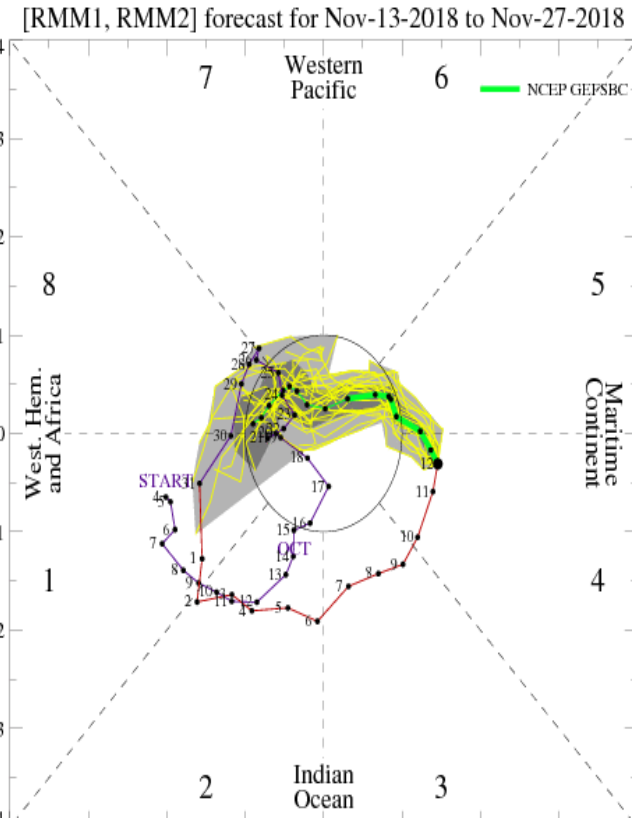
Wave-2 projecting onto MJO. Suppressed convection over Maritime Continent and the Americas.

Wave-1 with some noise. Enhanced convection stretching from the Atlantic east over the Indian Ocean basin.

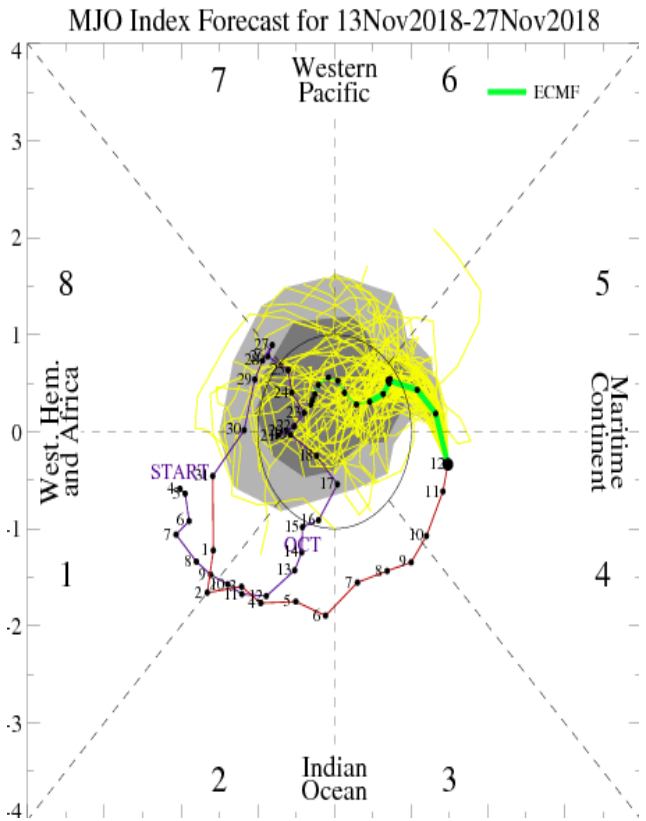
Well organized Wave-1 projection on MJO signal. Enhanced (suppressed) convection over the eastern (western) hemisphere.



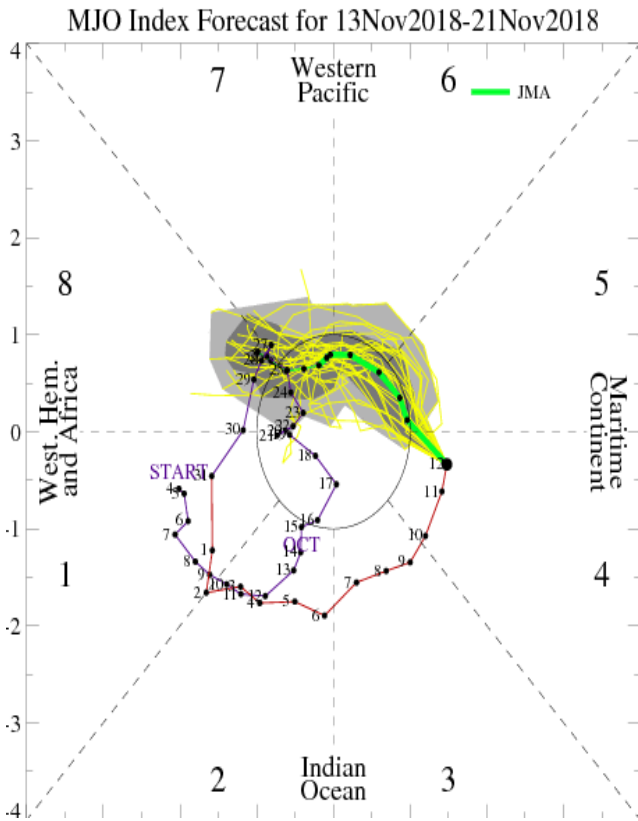
MJO Observation/Forecast



GEFS



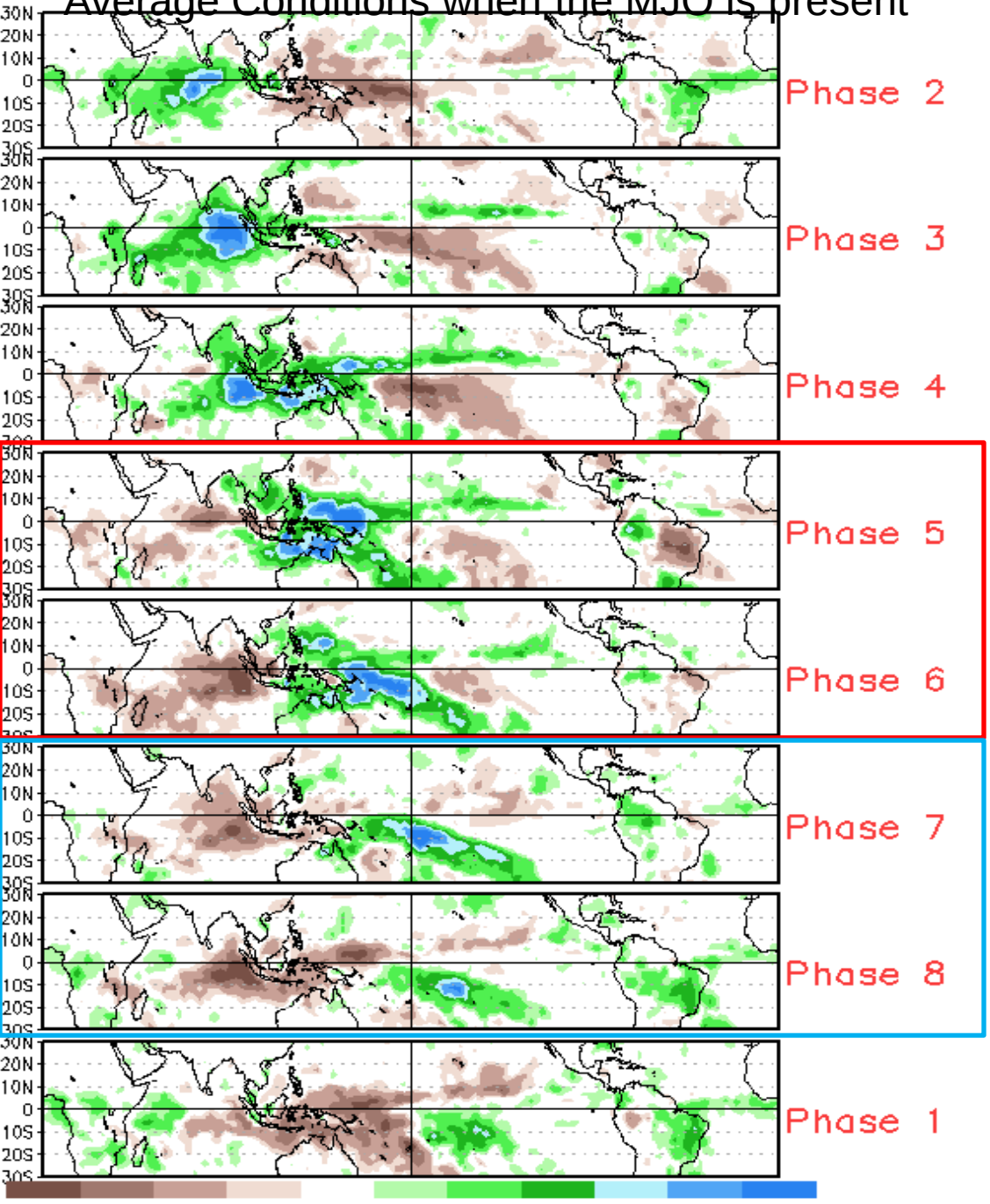
ECMWF



JMA

Dynamical model consensus shows propagation into Phase 5 during Week-1 with degradation in amplitude. If the signal maintains amplitude, MJO will likely be in Phase 5/6 in Week-1 and 7/8 in Week-2.

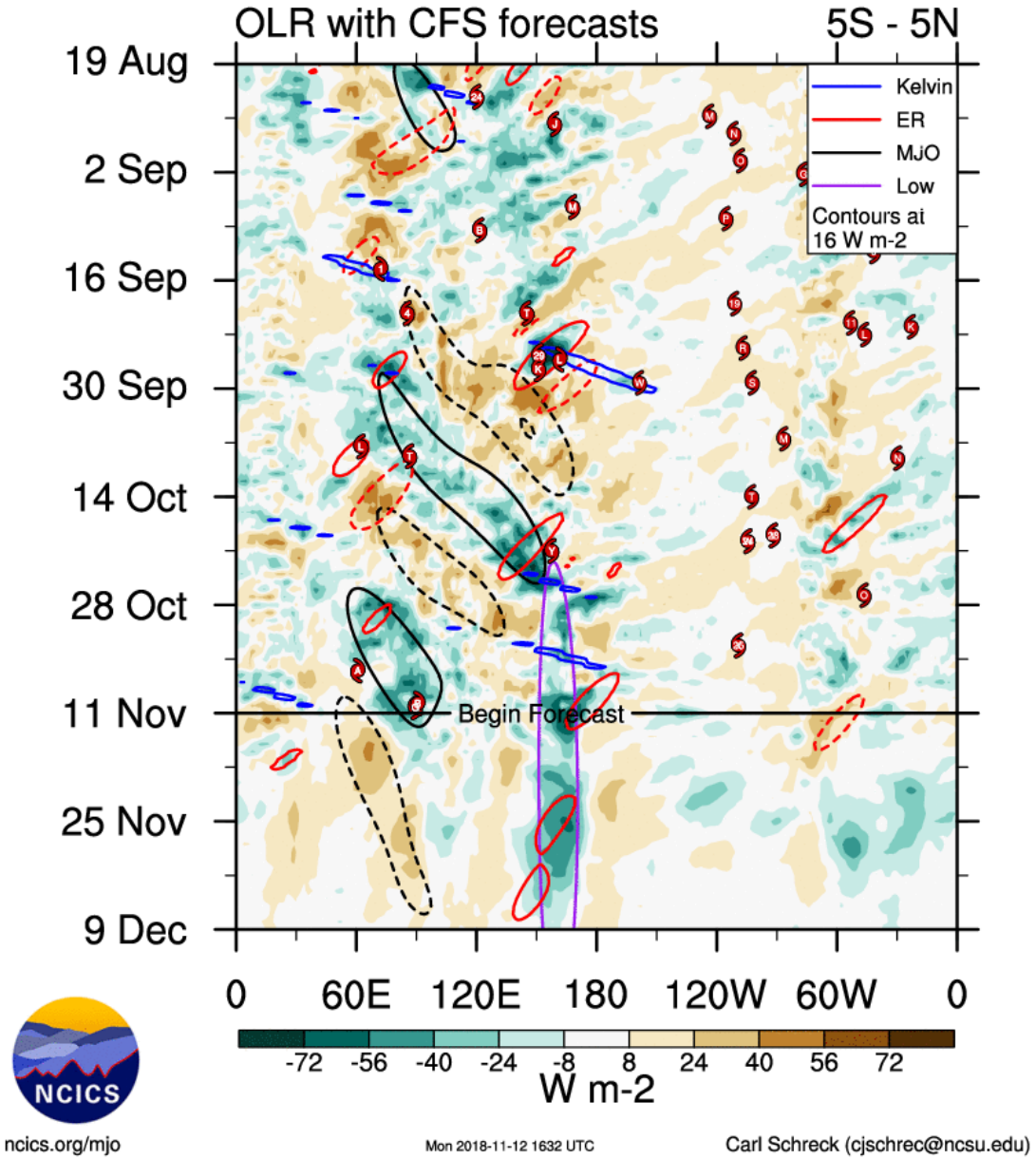
Average Conditions when the MJO is present



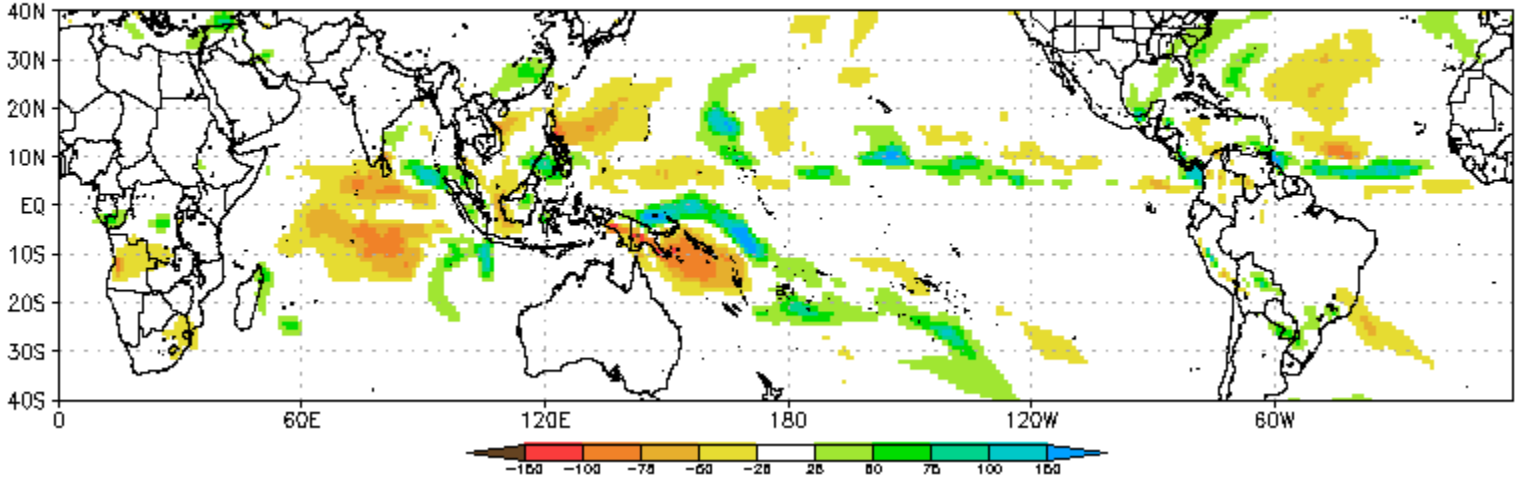
CAVEAT: These panels are representative of robust MJO events.

MJO is active and forecast to continue to have an impact. **Rossby waves** and Kelvin wave also having an influence.

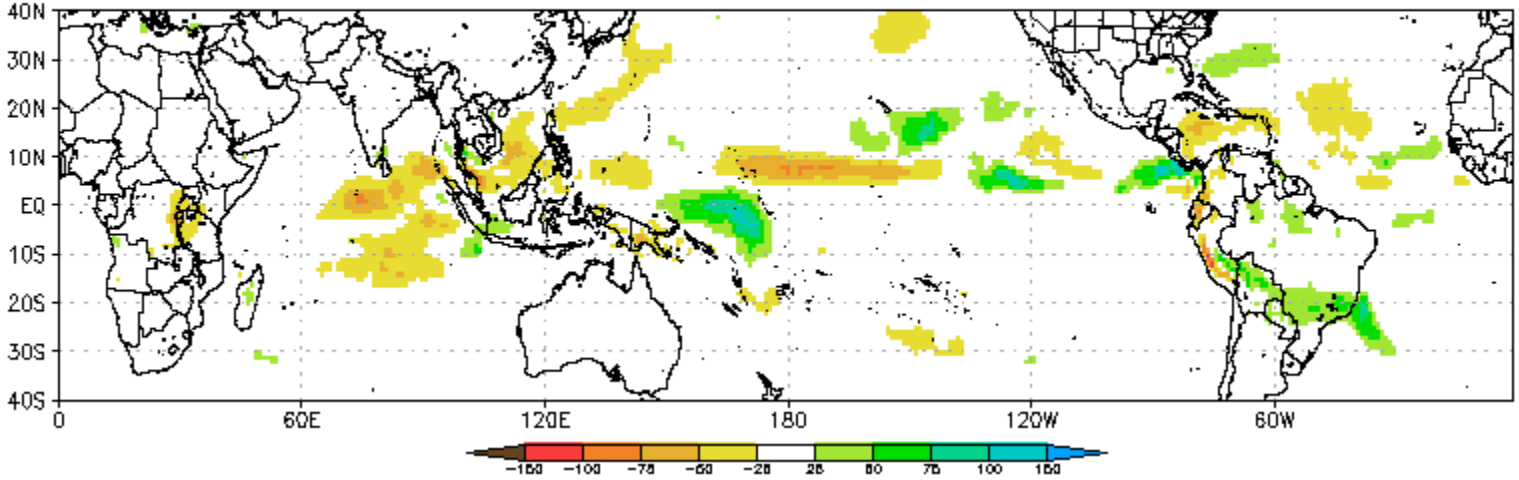
Low-frequency pattern becoming more of an influence.



CFS Precipitation Anomalies (mm) Issued 12Nov2018
Week-1 Forecast Ending 20Nov2018

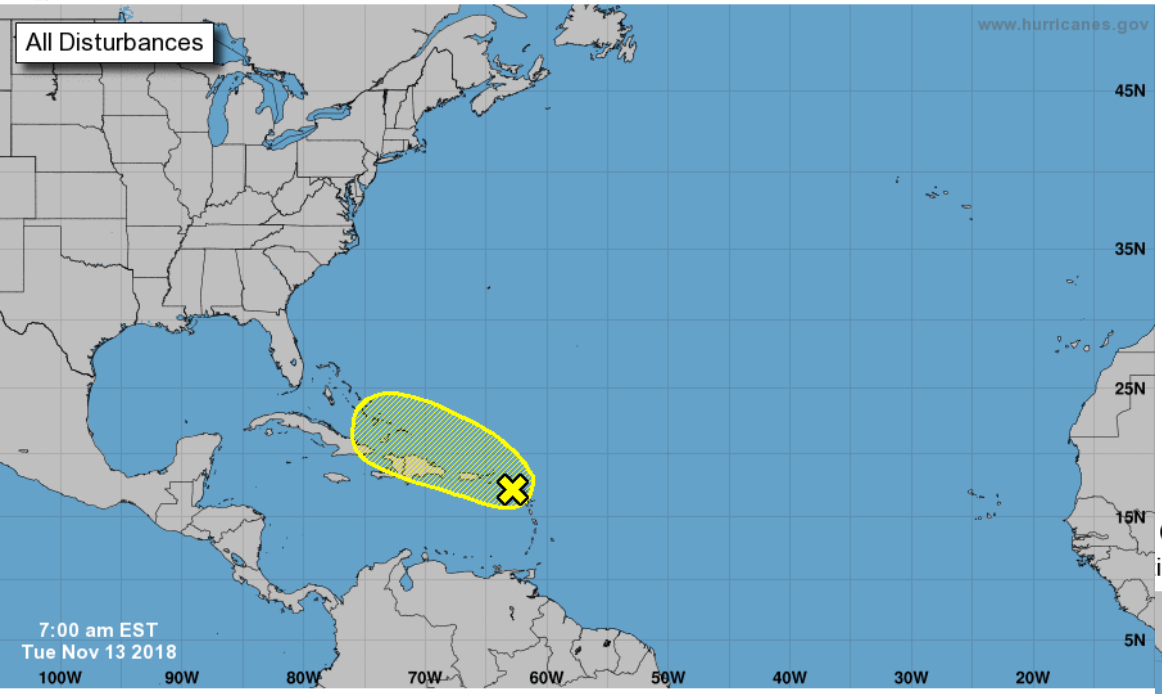


CFS Precipitation Anomalies (mm) Issued 12Nov2018
Week-2 Forecast Ending 27Nov2018



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

Graphical Tropical Weather Outlook

ional Hurricane Center Miami, Florida

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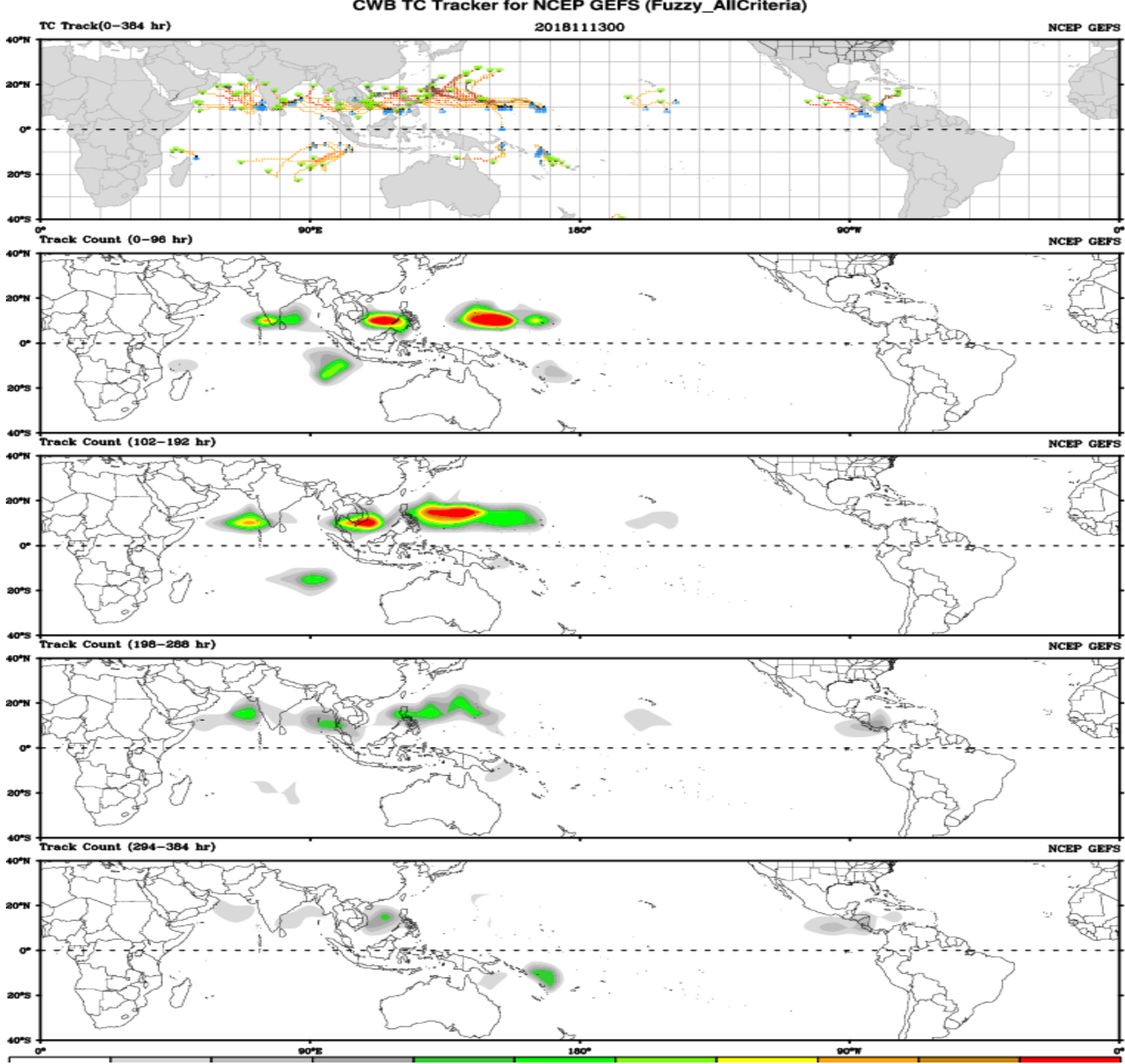
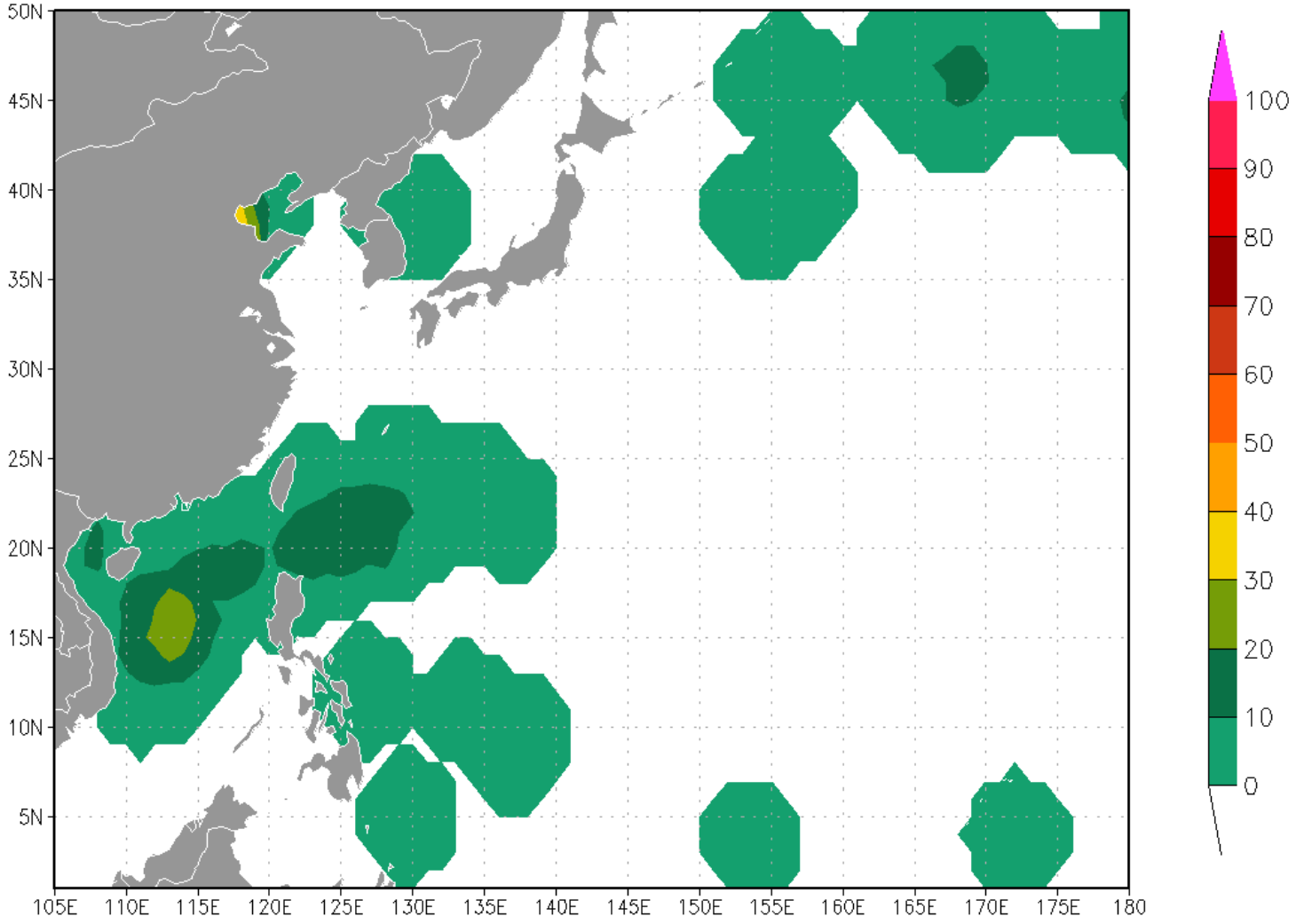


Days 1-4

Day 5-8

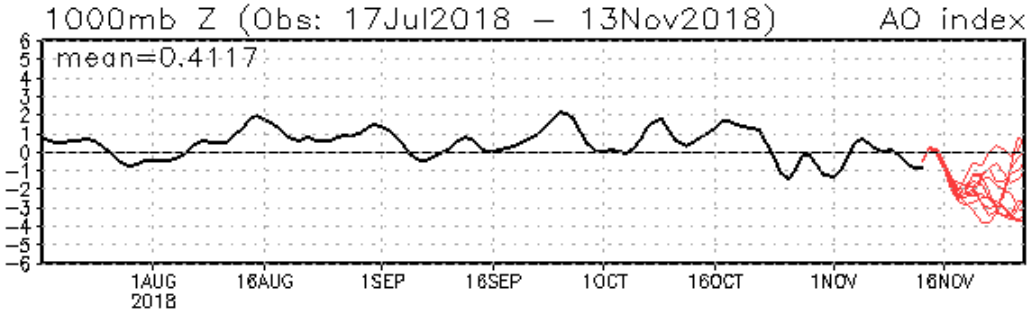
Day 9-12

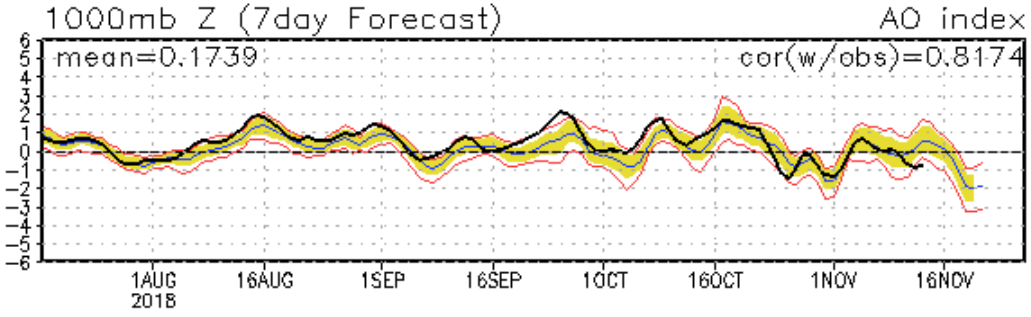
Day 13-15

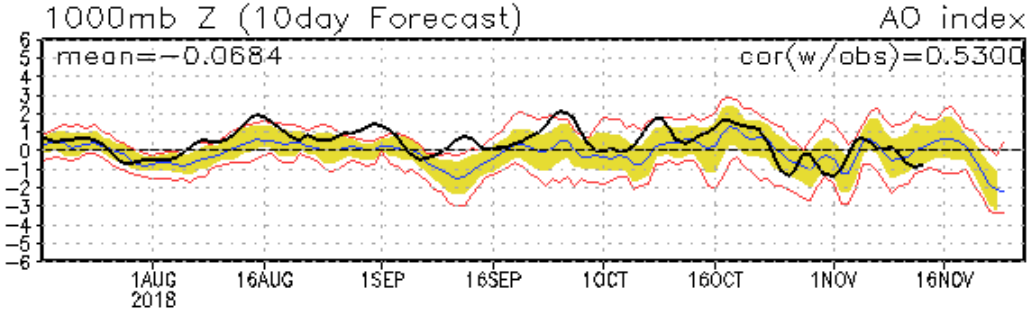

Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF
For forecasts during the 00-120h period from initial time = 2017051600
50N
45N
40N
35N
30N
25N
20N
15N
10N
5N
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
100
90
80
70
60
50
40
30
20
10
0

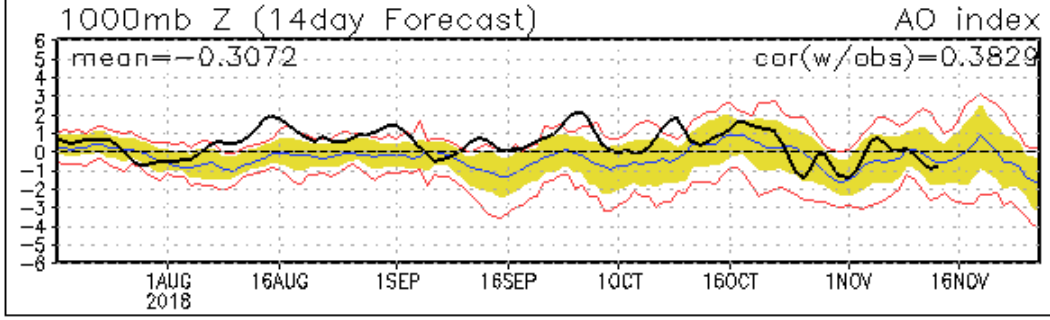
Connections to U.S. Impacts

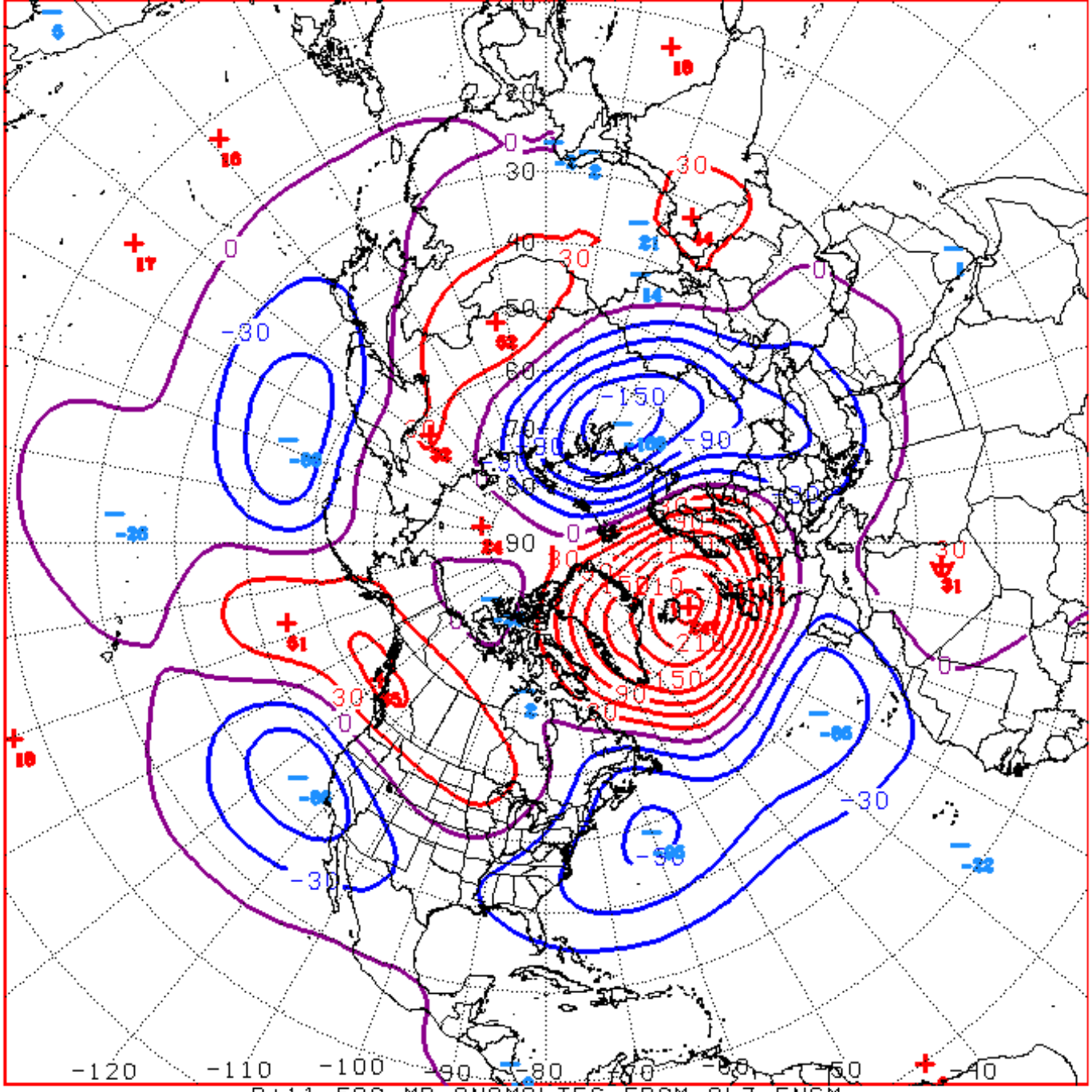
AO: Observed & ENSM forecasts





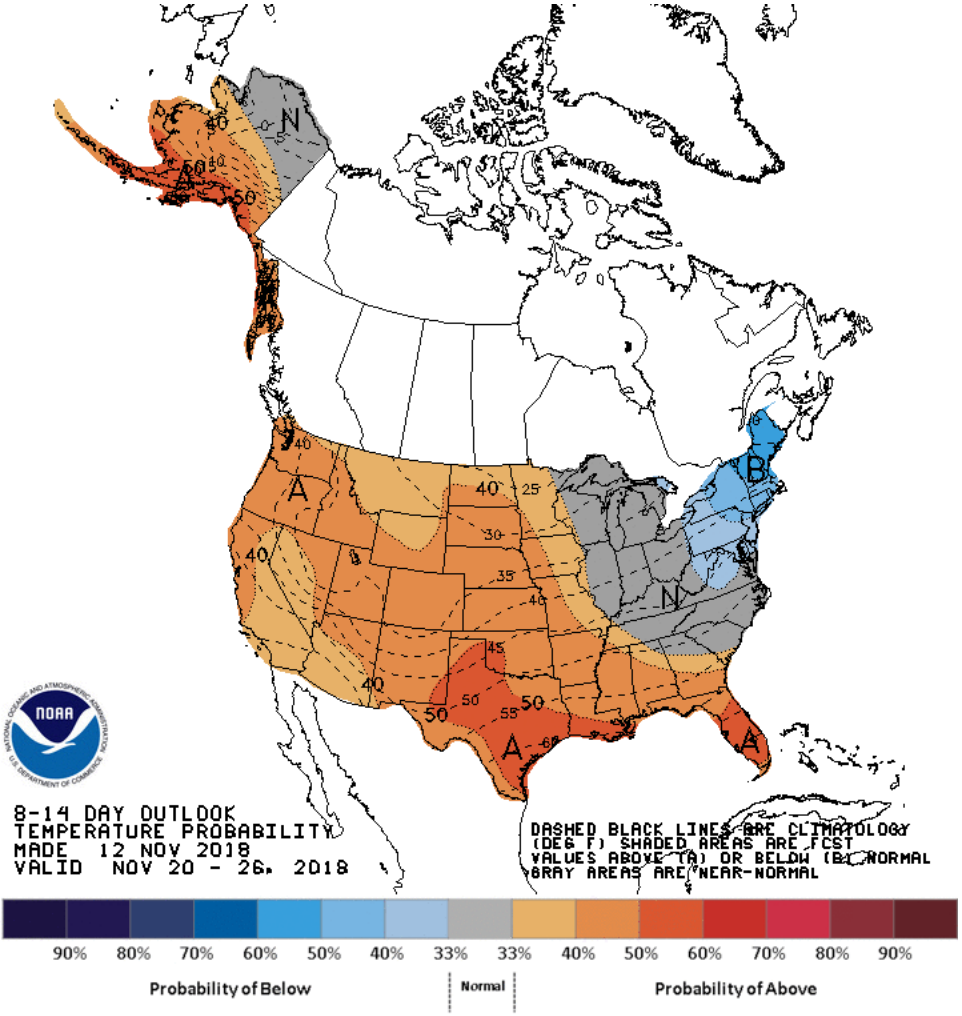


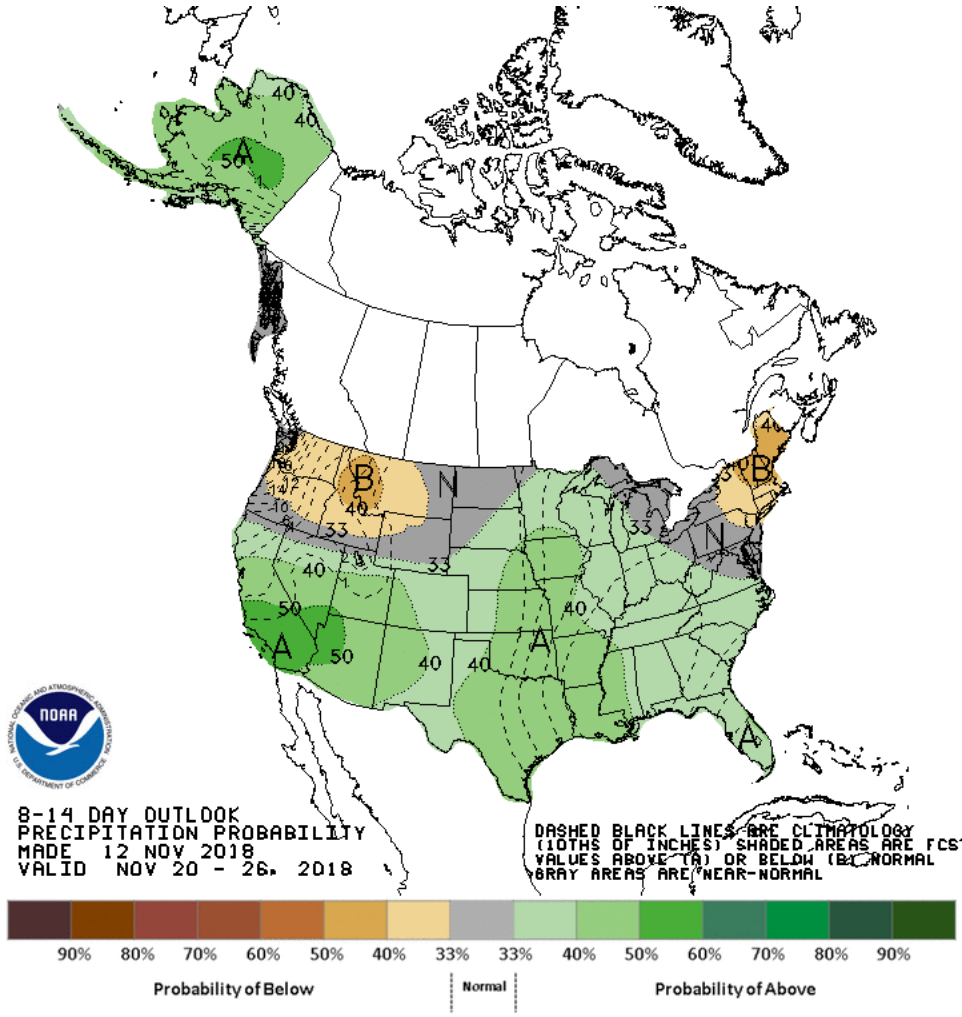




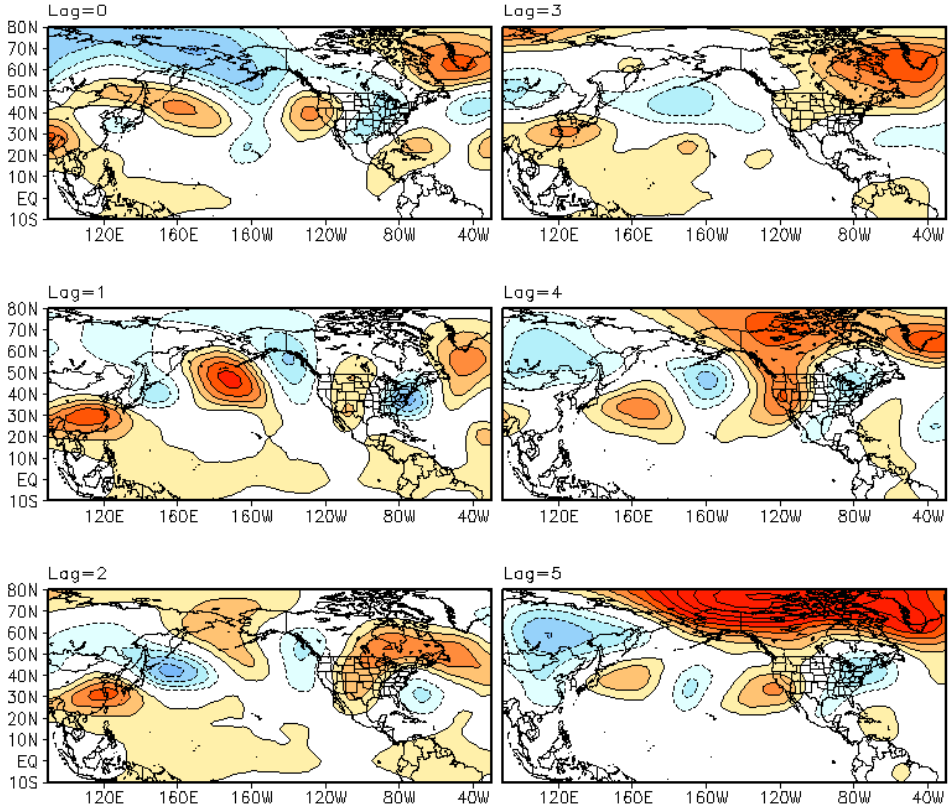
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE NOV 13 2018 1300 UTC CNTD NOV 24 2018

Week 2 – Temperature and Precipitation

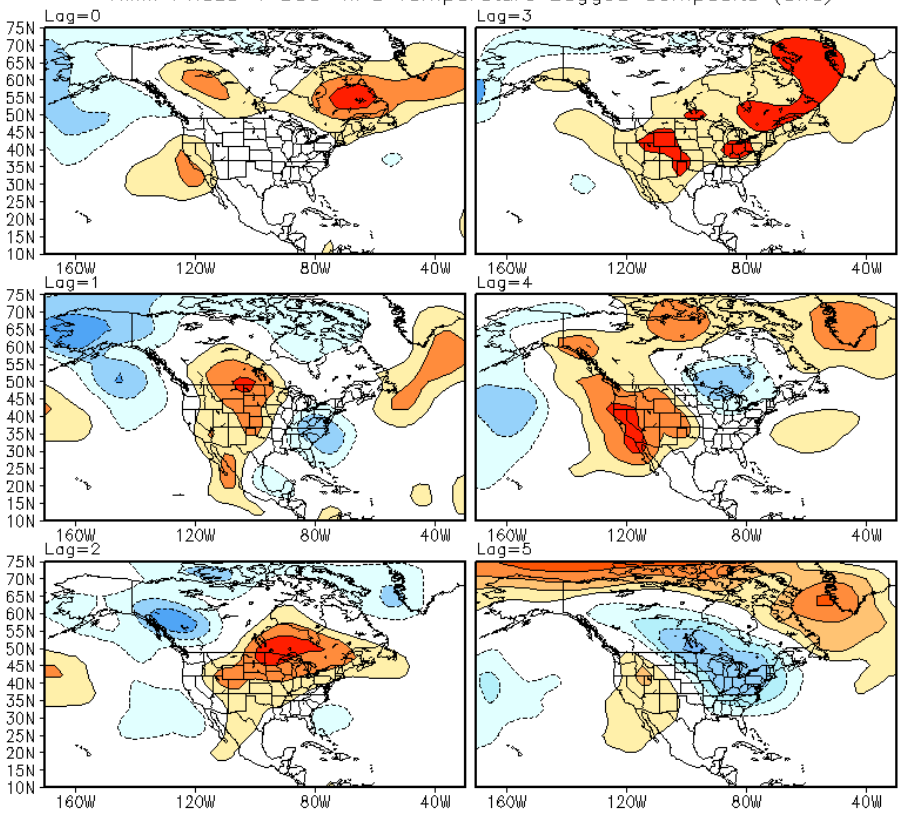


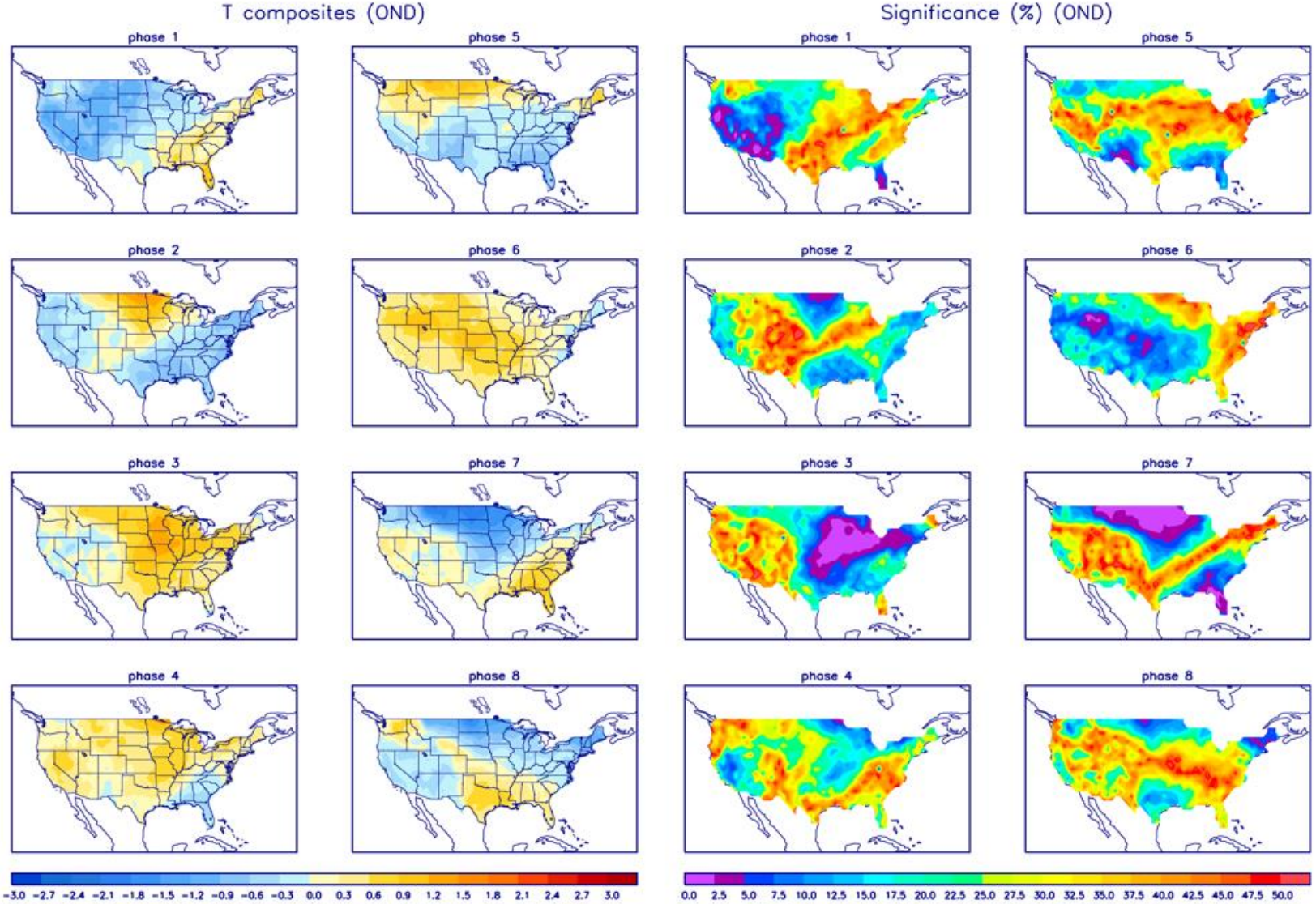


RMM Phase 4 200-hPa Height Lagged Composite (ond)



RMM Phase 4 850-hPa Temperature Lagged Composite (ond)




T composites (OND)
Significance (%) (OND)
phase 1
phase 5
phase 2
phase 6
phase 3
phase 7
phase 4
phase 8
-3.0 -2.7 -2.4 -2.1 -1.8 -1.5 -1.2 -0.9 -0.6 -0.3 0.0 0.3 0.6 0.9 1.2 1.5 1.8 2.1 2.4 2.7 3.0
0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5 30.0 32.5 35.0 37.5 40.0 42.5 45.0 47.5 50.0

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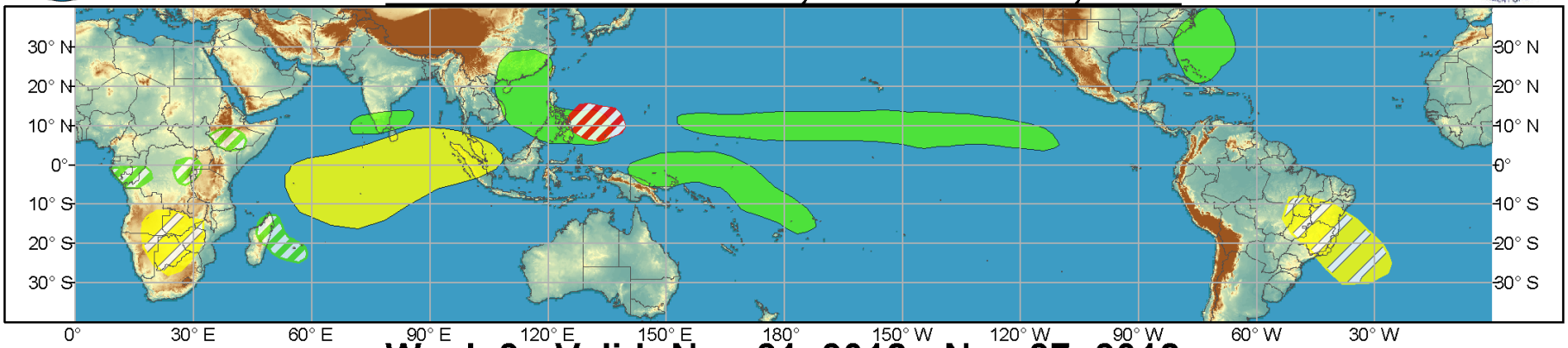

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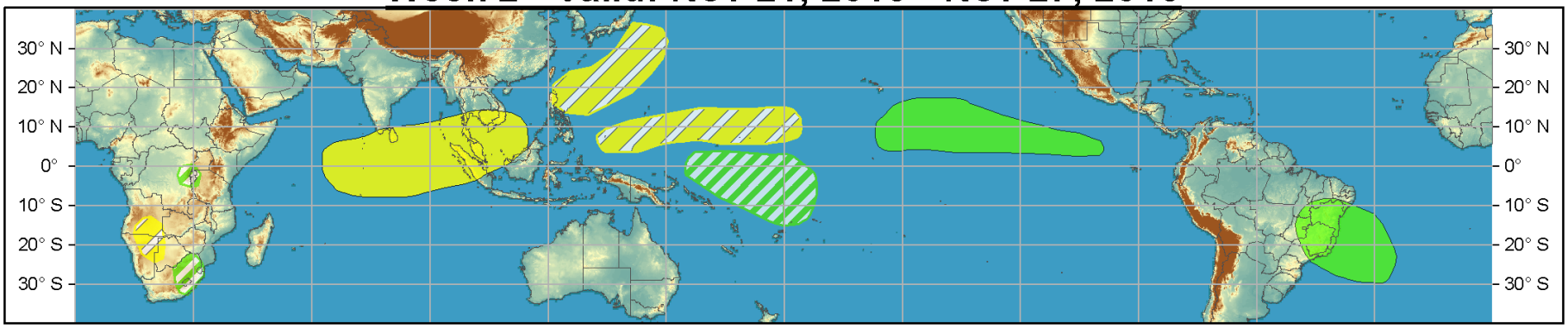

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NPS PRAESTANTIA PER SCIENTIAM