Global Tropics Hazards And Benefits Outlook

2/6/2018

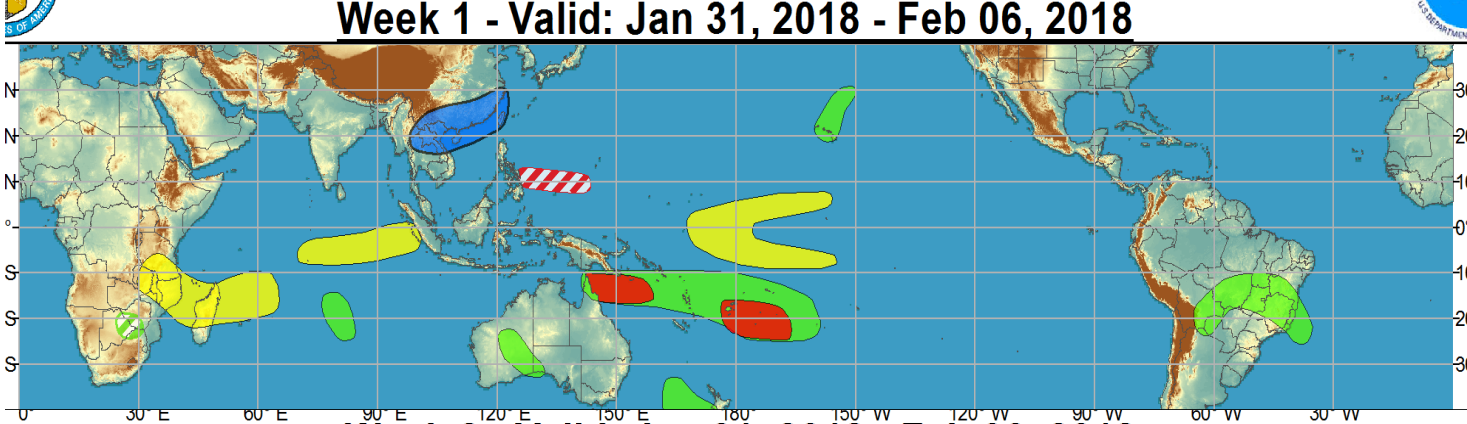
Dan Harnos

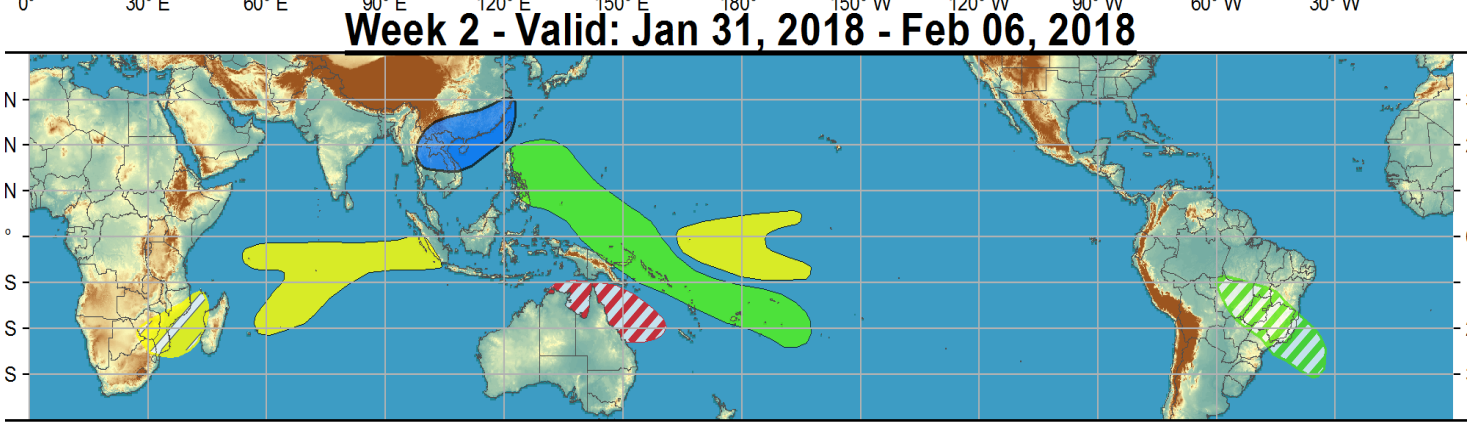
Outline

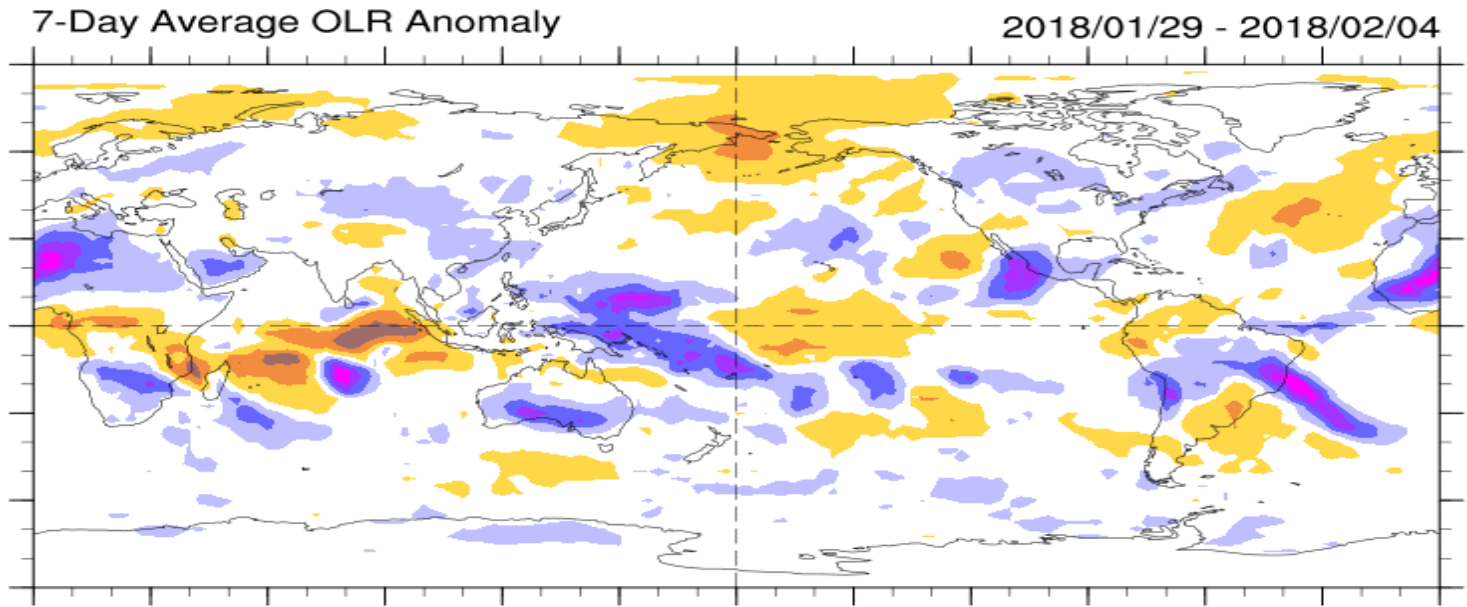
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

No tropical cyclones developed last week.



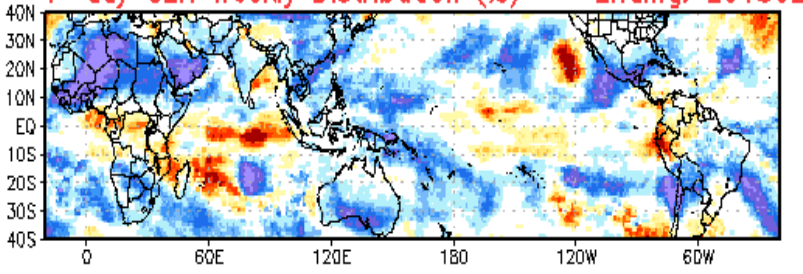


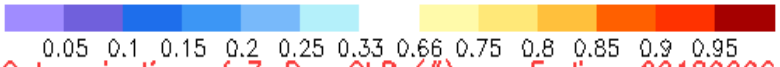


Cool shading
More clouds/rain

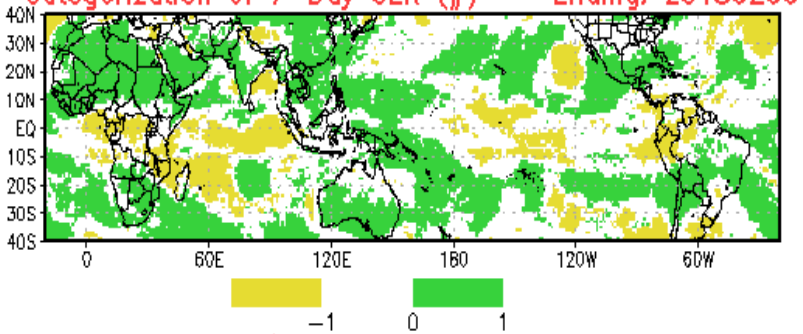
Warm shading
Less clouds/rain

7-day OLR Weekly Distribution (%) -- Ending: 20180206

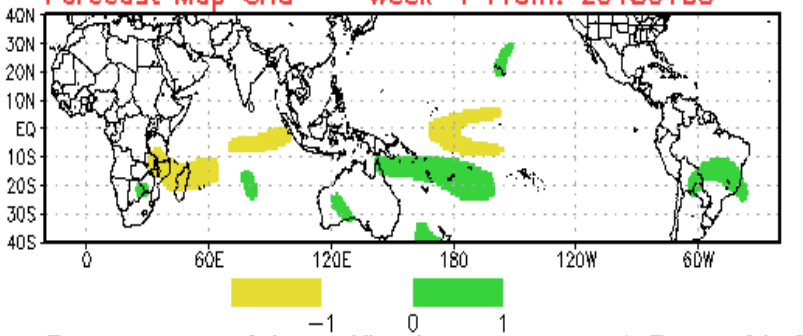




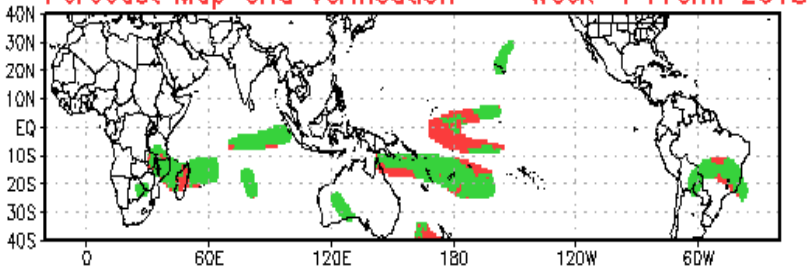
Categorization of 7-Day OLR (#) -- Ending: 20180206



Forecast Map Grid -- Week-1 From: 20180130

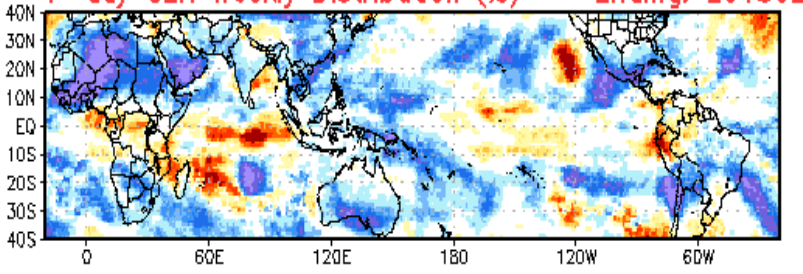


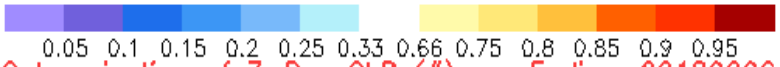
Forecast Map Grid Verification -- Week-1 From: 20180130



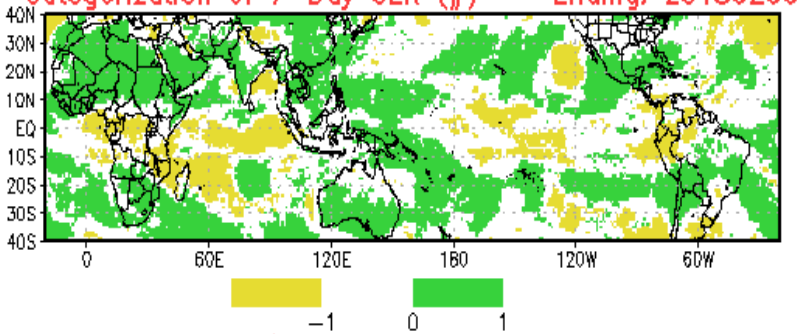
Hit: Green, Miss: Red
Heidke Skill Score: 59.7075

7-day OLR Weekly Distribution (%) -- Ending: 20180206

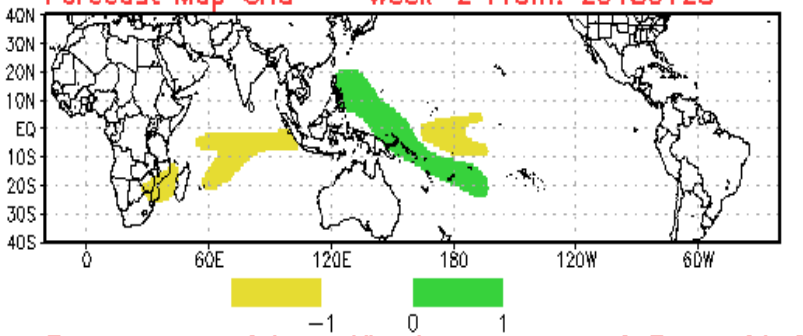




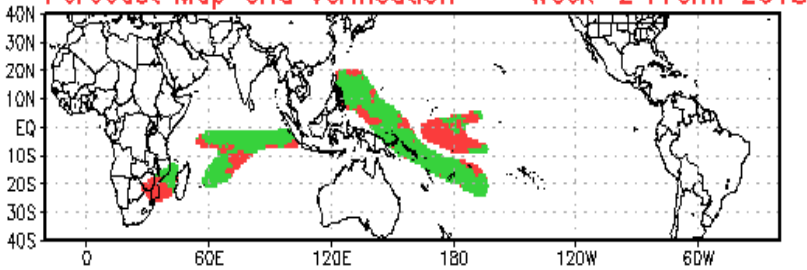
Categorization of 7-Day OLR (#) -- Ending: 20180206



Forecast Map Grid -- Week-2 From: 20180123



Forecast Map Grid Verification -- Week-2 From: 20180123



Hit: Green, Miss: Red
Heidke Skill Score: 53.2983

Synopsis of Climate Modes

ENSO:

- ENSO Alert System Status: La Niña Advisory
- La Niña is likely (~85-95%) through Northern Hemisphere winter, with a transition to ENSO-neutral expected during the spring.
- Next update to be released this Thursday, February 8th.

MJO and other subseasonal tropical variability:

• The MJO remained active, with the enhanced phase crossing the West Pacific.

• Dynamical and statistical models continue the MJO with an eastward propagation across the Pacific (Phases 7 and 8) and some reduction in amplitude during the next two weeks.

• The MJO in Phase 7 supports enhanced tropical cyclone formation probabilities in the South Pacific during Week-1. Tropical cyclone formation odds are generally depressed globally if the enhanced phase of the MJO makes it into the Western Hemisphere.

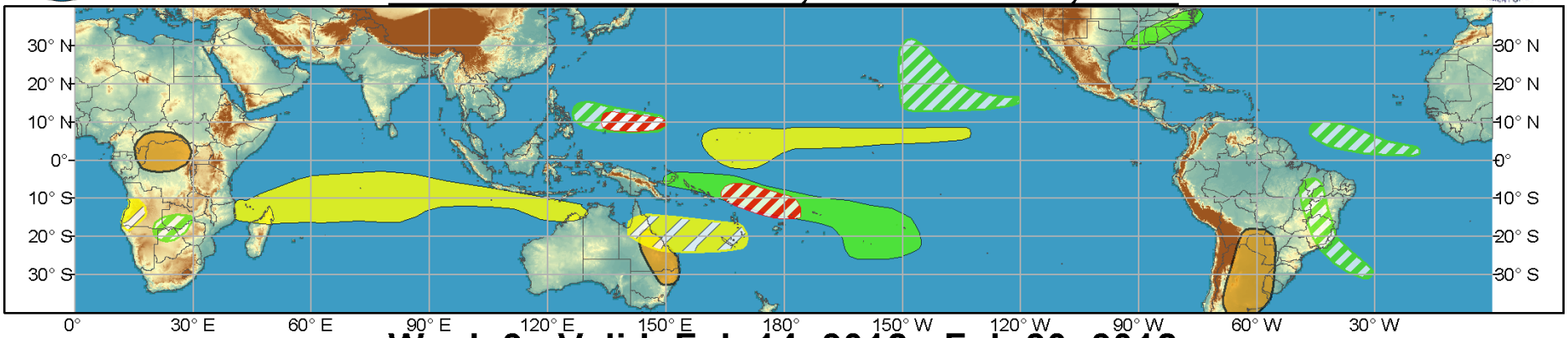
Extratropics:

• A West Pacific MJO event favors a continuation of below-normal temperatures beyond Week-2 across parts of the central and eastern U.S.

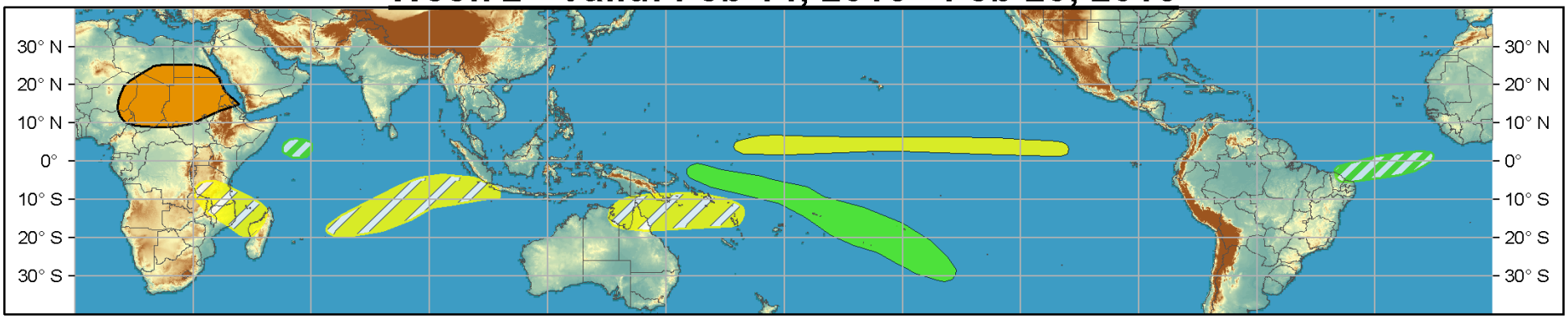
•BUT, strong westerlies are forecast across Canada that appear to limit the potential for the U.S. to experience this arctic air.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Feb 07, 2018 - Feb 13, 2018



Week 2 - Valid: Feb 14, 2018 - Feb 20, 2018



Produced: 02/06/2018

Forecaster: D.Harnos

	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.
Below-average rainfall			Weekly total rainfall in the lower third of the historical range.
Above-normal temperatures			7-day mean temperatures in the upper third of the historical range.
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Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

Central Weather Bureau 中央氣象局 · University at Albany, State University of New York · Earth System Science Interdisciplinary Center, University of Maryland · Australian Government Bureau of Meteorology · cics.nc · NPS Praestantia per Scientiam

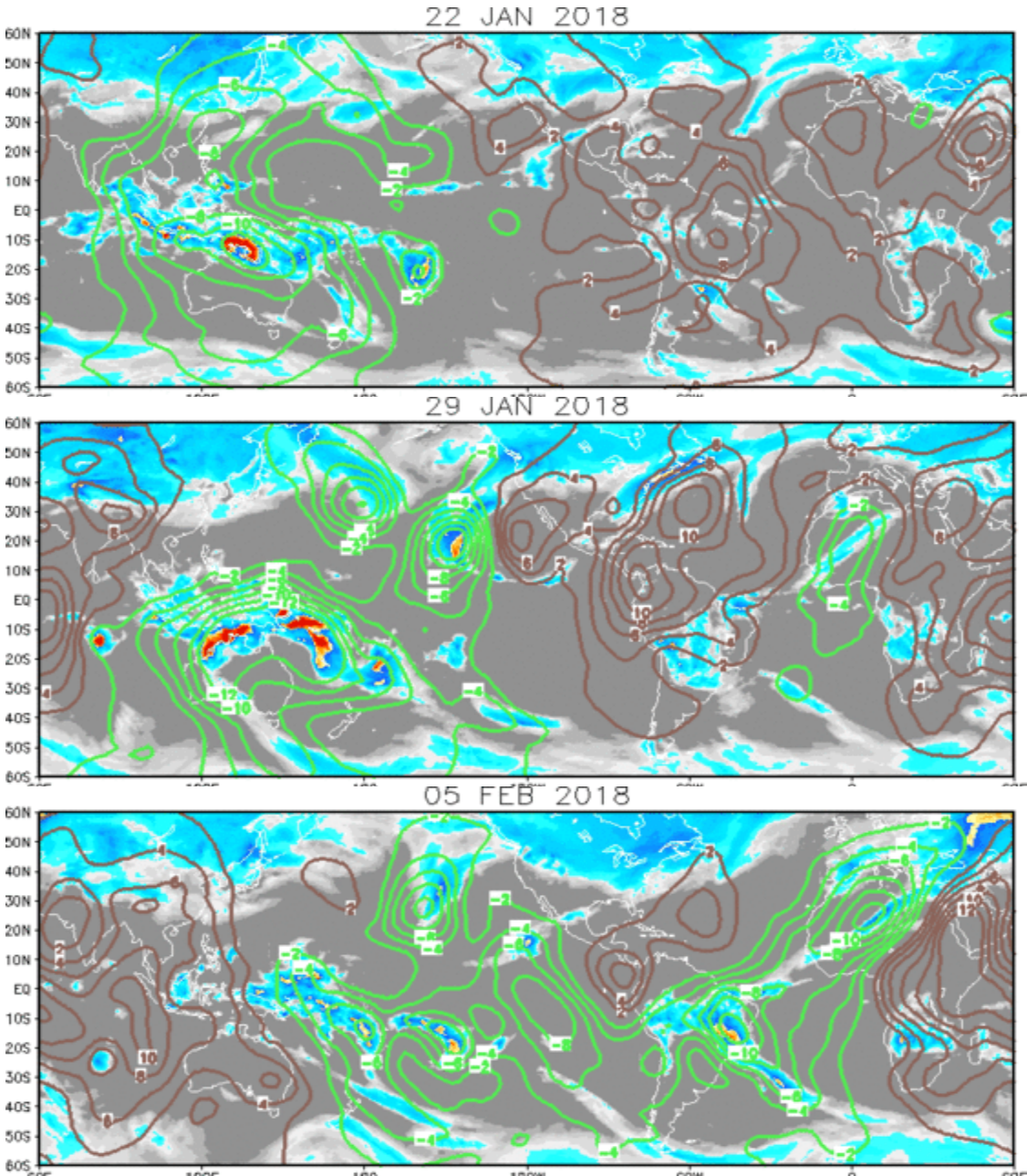
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

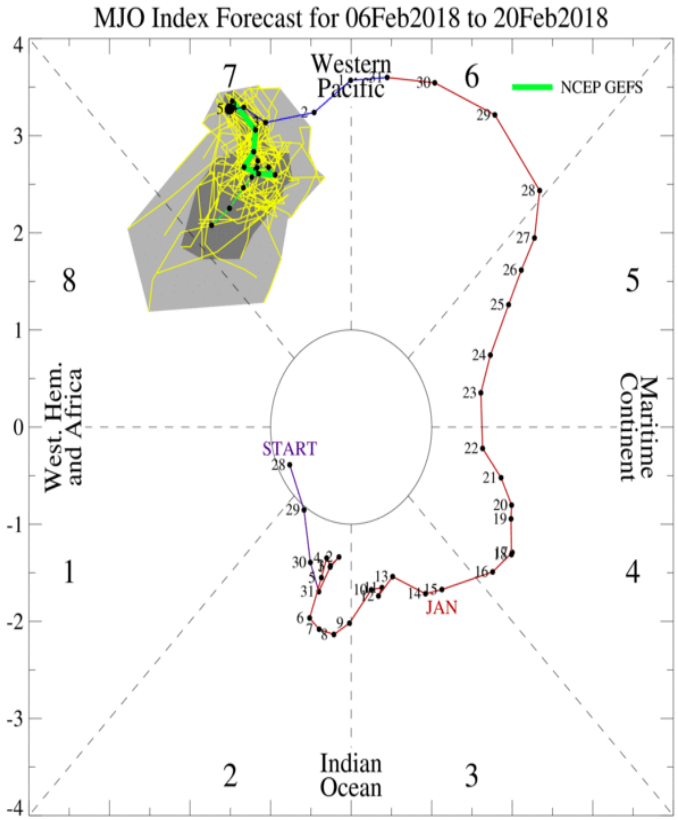
A coherent Wave-1 pattern with enhanced convection over Indian Ocean through Central Pacific.

Eastward propagation of enhanced phase to the West Pacific, while suppressed phase enters western Indian Ocean.

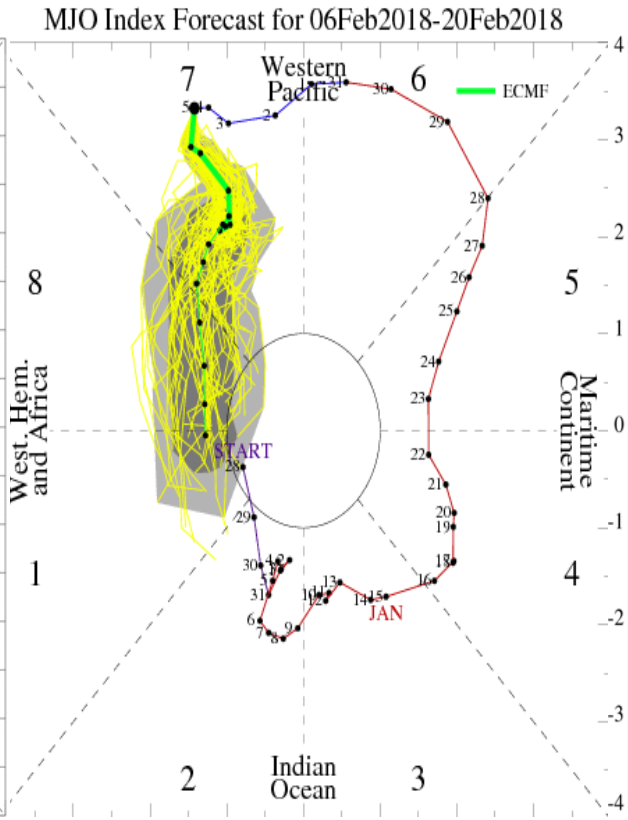
A complicated pattern with generally enhanced convection across the Western Hemisphere which is consistent with the MJO in the Pacific and a Kelvin wave in the Atlantic.



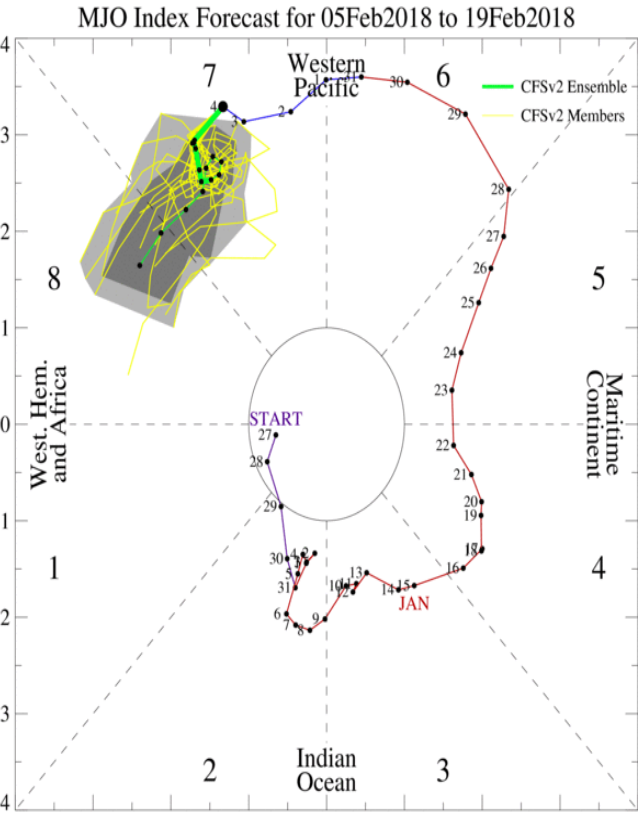
MJO Observation/Forecast



GEFS



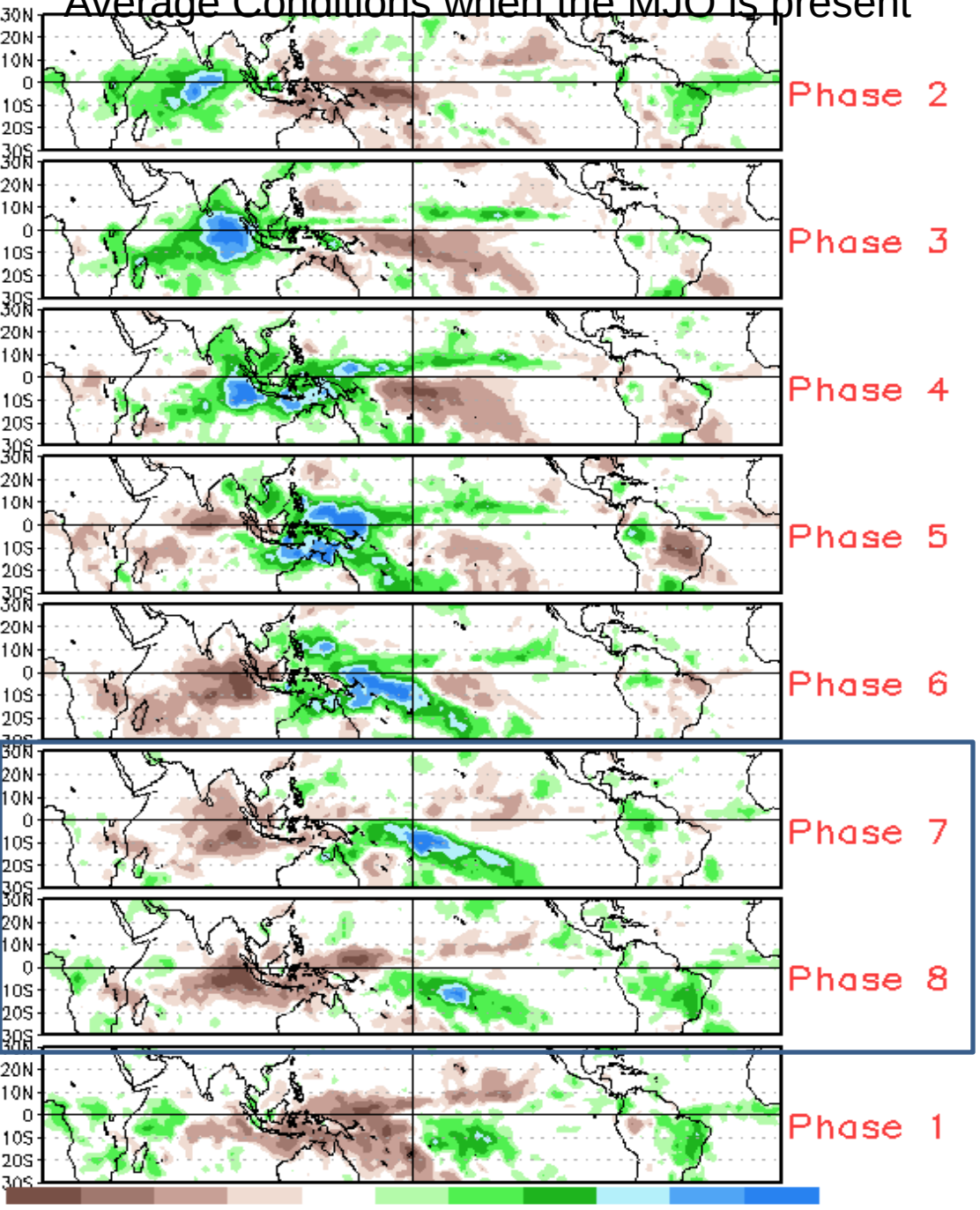
ECMWF



CFS (yesterday)

Models continue to propagate the MJO envelope eastward the next two weeks. The GEFS and CFS are slower than the ECMWF model, as these two models suggest more interaction with Rossby waves (and possibly tropical cyclones). All three models do portray some weakening of the MJO amplitude the next two weeks.

Average Conditions when the MJO is present

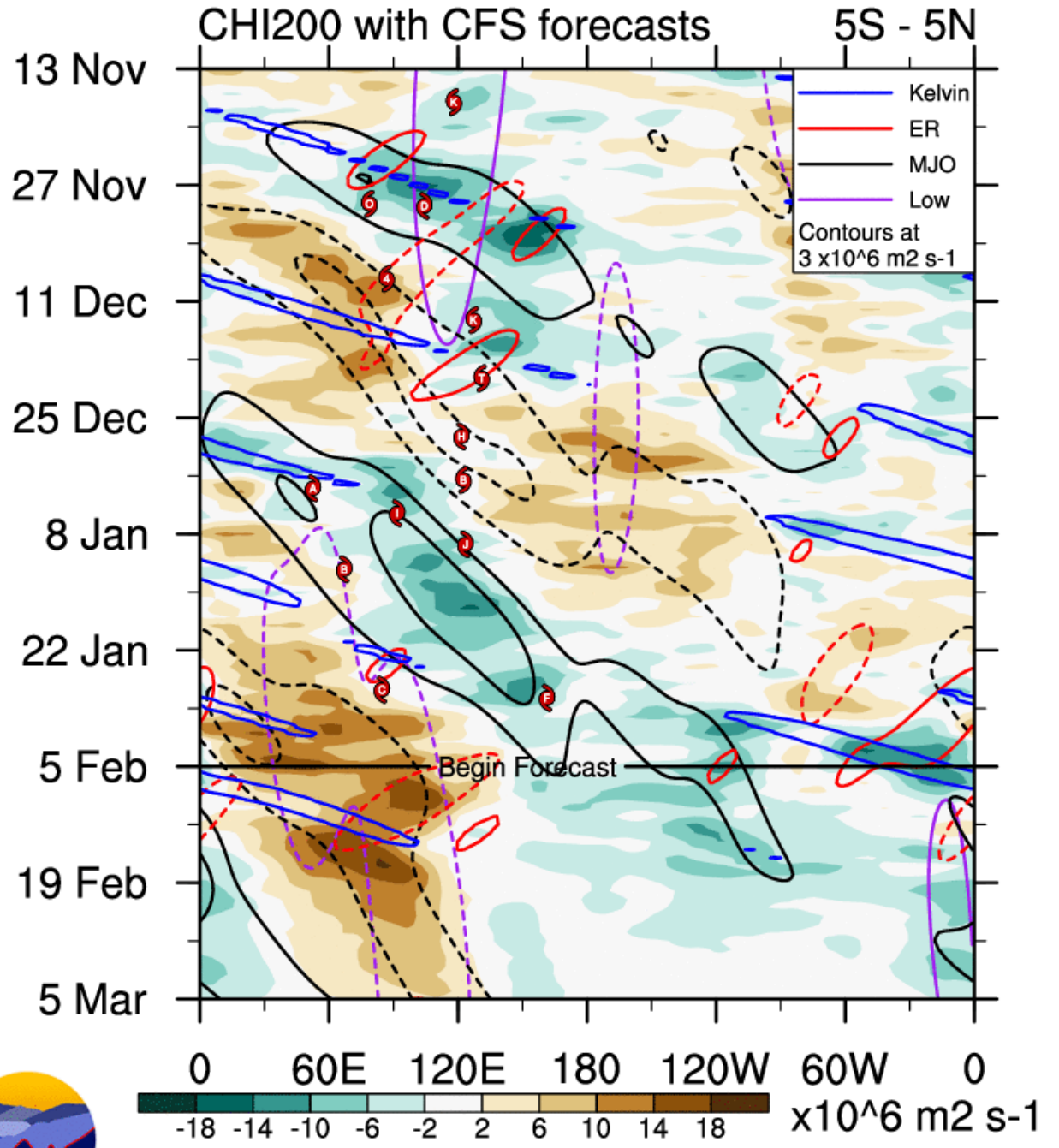


Week-1: Phase 7
Week-2: Phase 7/8

CAVEAT: These panels are representative of robust MJO events.

MJO, **Rossby waves** , and a **Kelvin wave** all exhibit influences on enhancing convection over the Western Hemisphere.

The **Low-frequency pattern** is helping enhance suppressed convection with the **MJO** over the Indian Ocean.



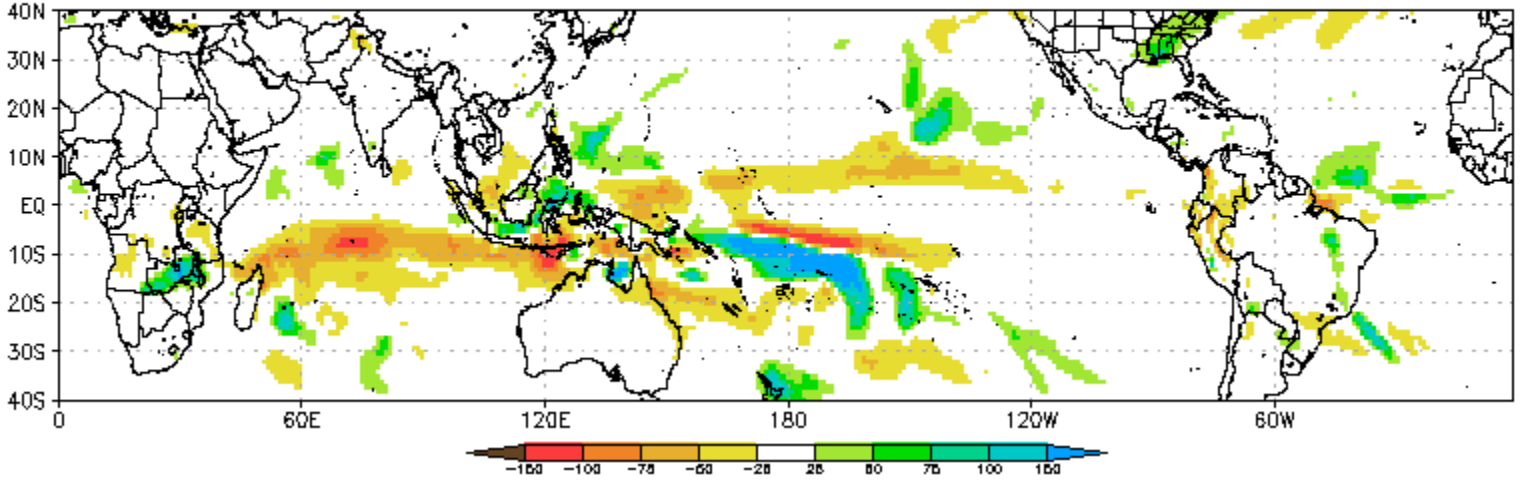
NCICS

ncics.org/mjo

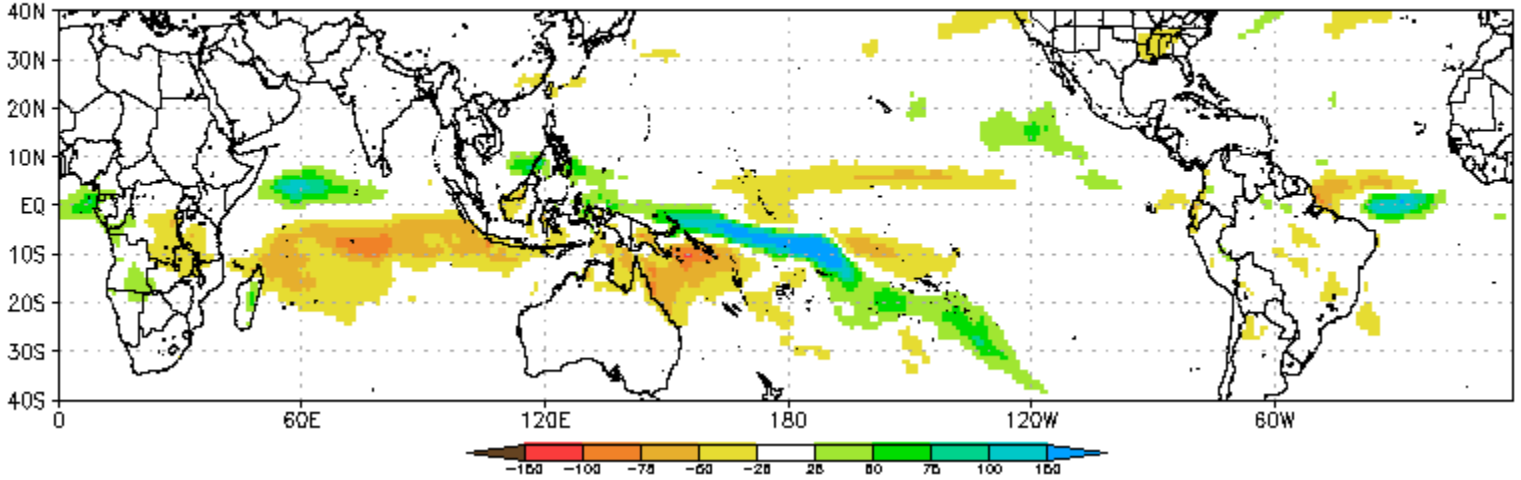
Tue 2018-02-06 1110 UTC

Carl Schreck (cjschrec@ncsu.edu)

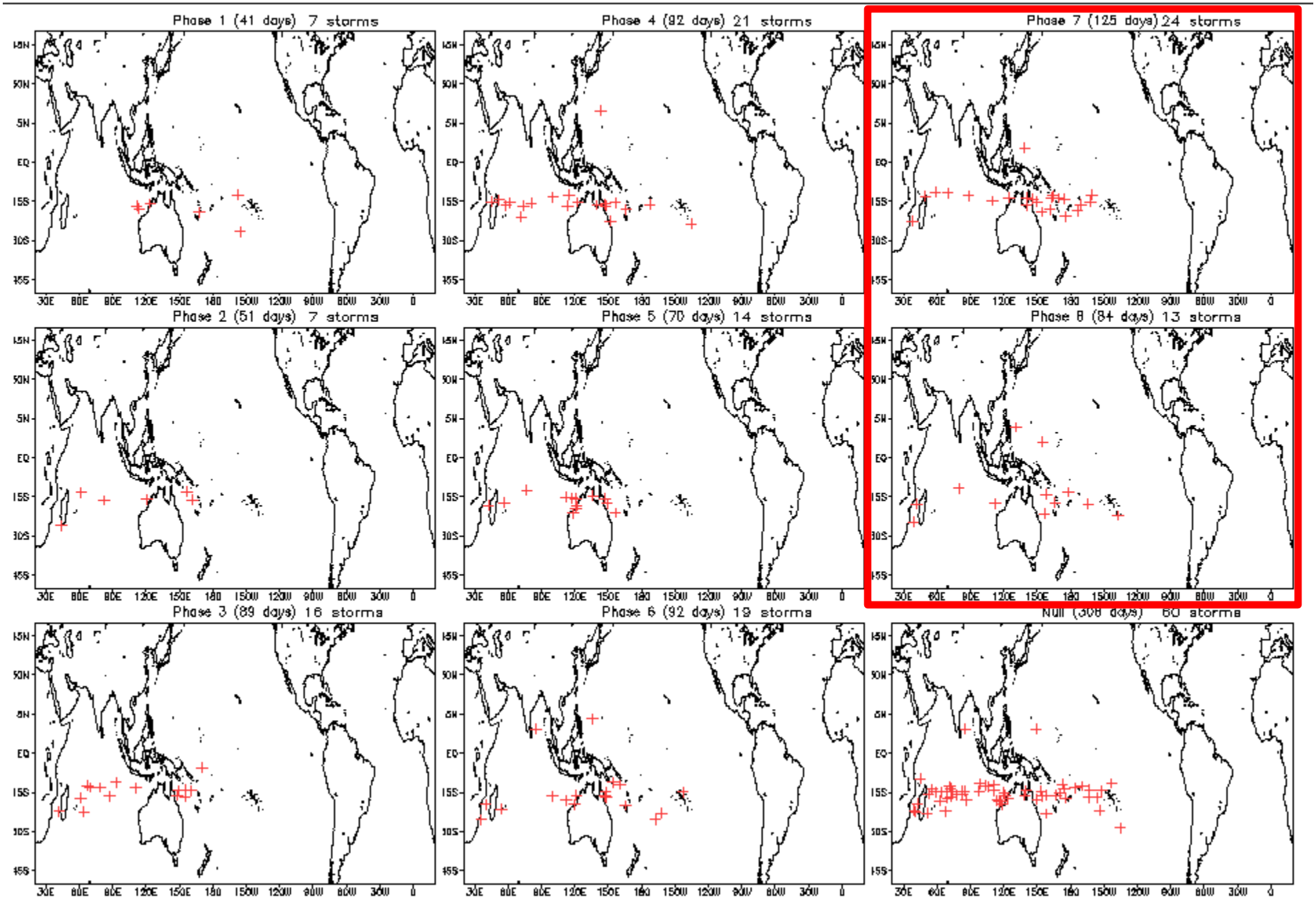
CFS Precipitation Anomalies (mm) Issued 05Feb2018
Week-1 Forecast Ending 13Feb2018

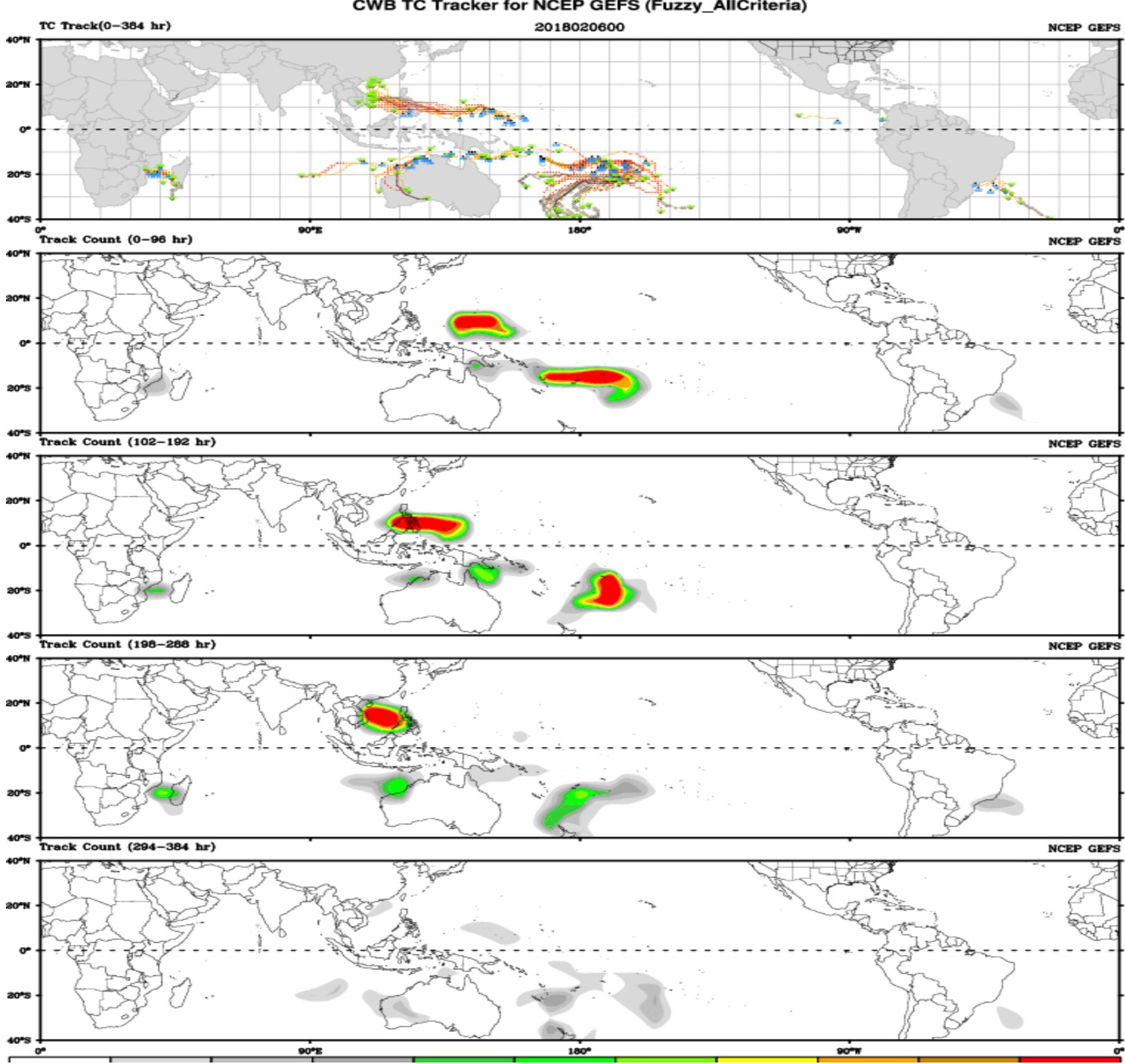


CFS Precipitation Anomalies (mm) Issued 05Feb2018
Week-2 Forecast Ending 20Feb2018



February Tropical Storm Formation by MJO phase





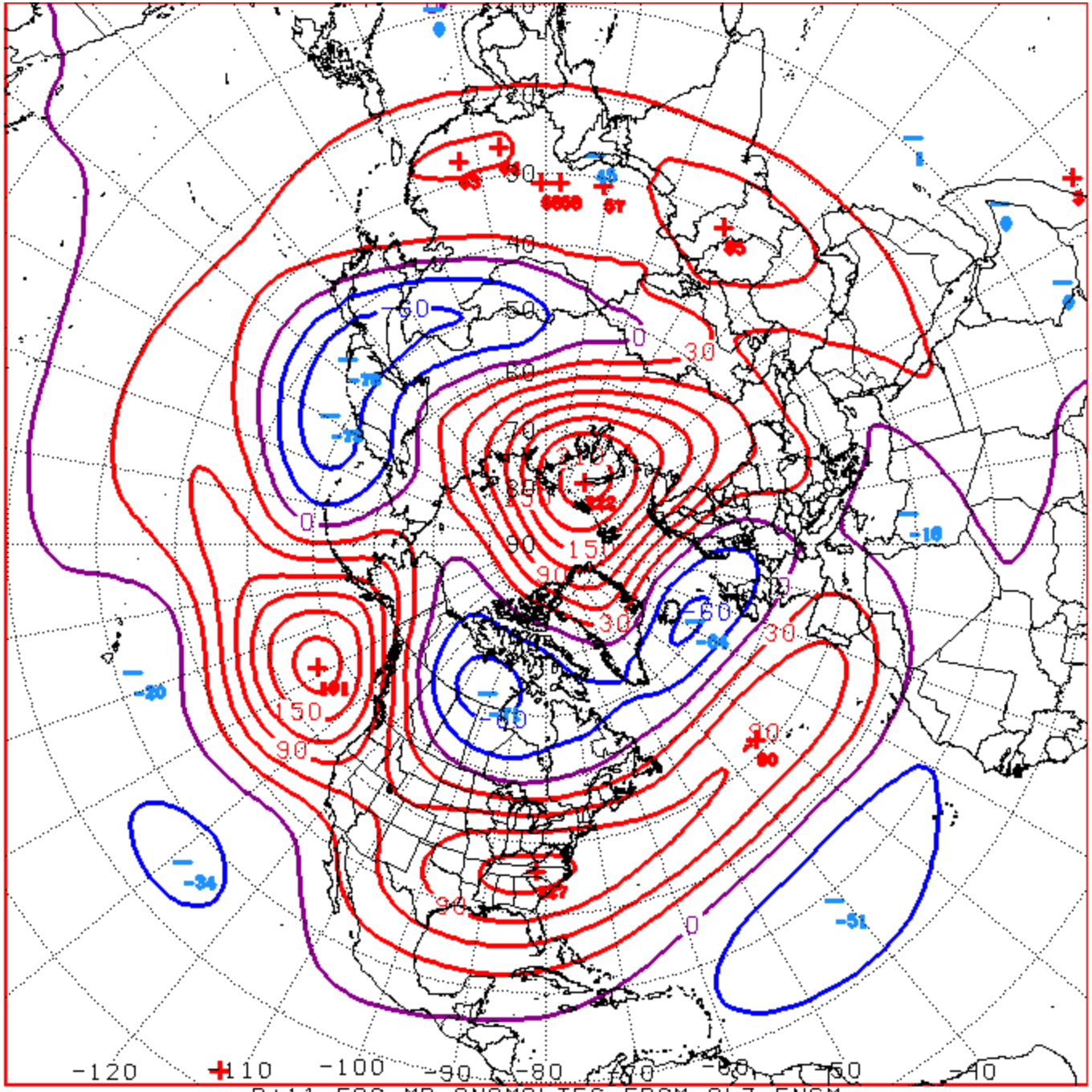
Days 1-4

Day 5-8

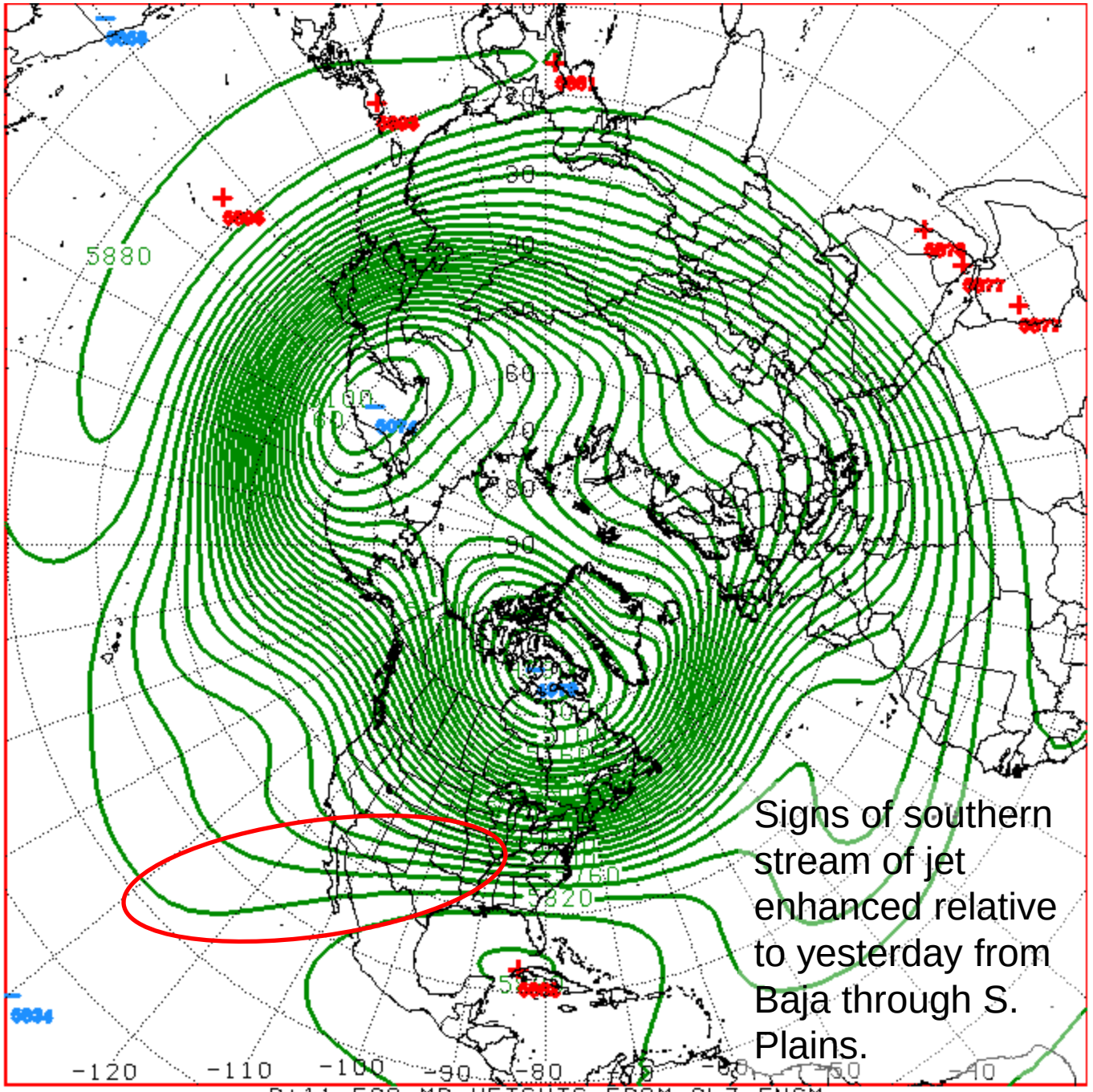
Day 9-12

Day 13-15

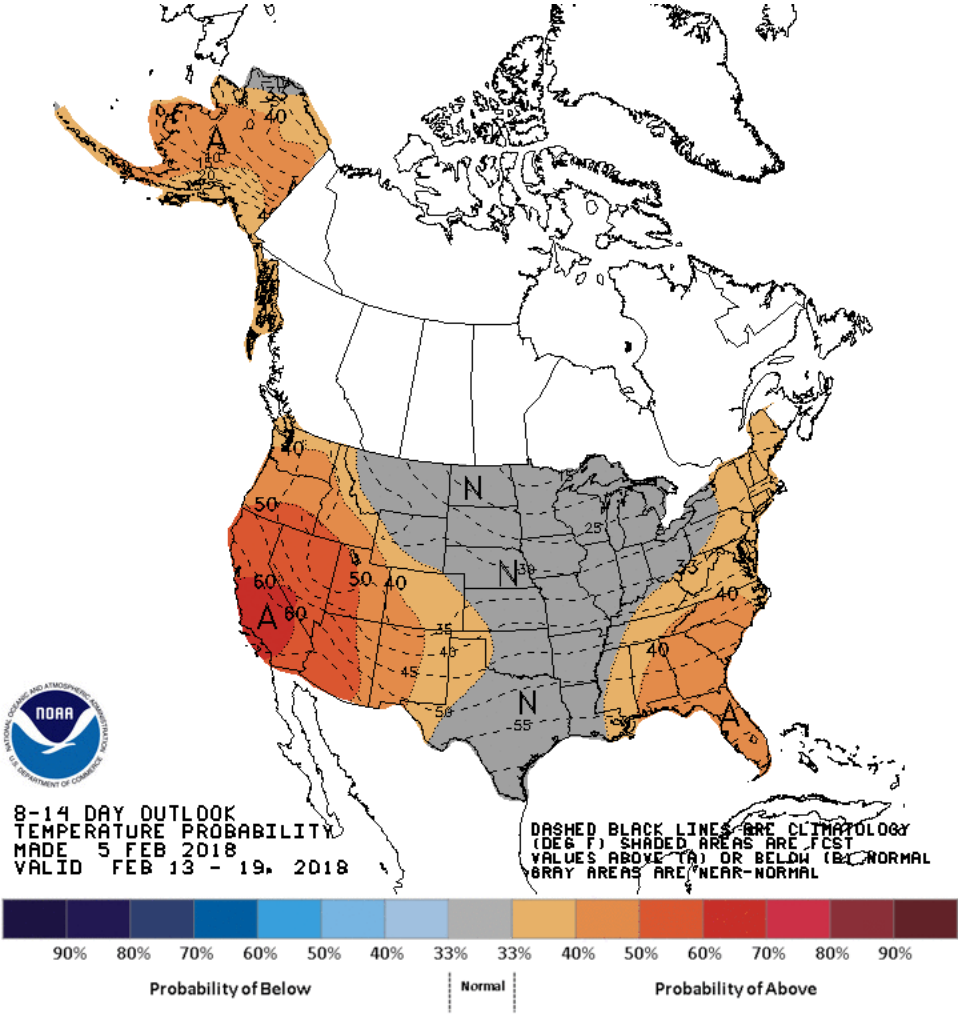
Connections to U.S. Impacts

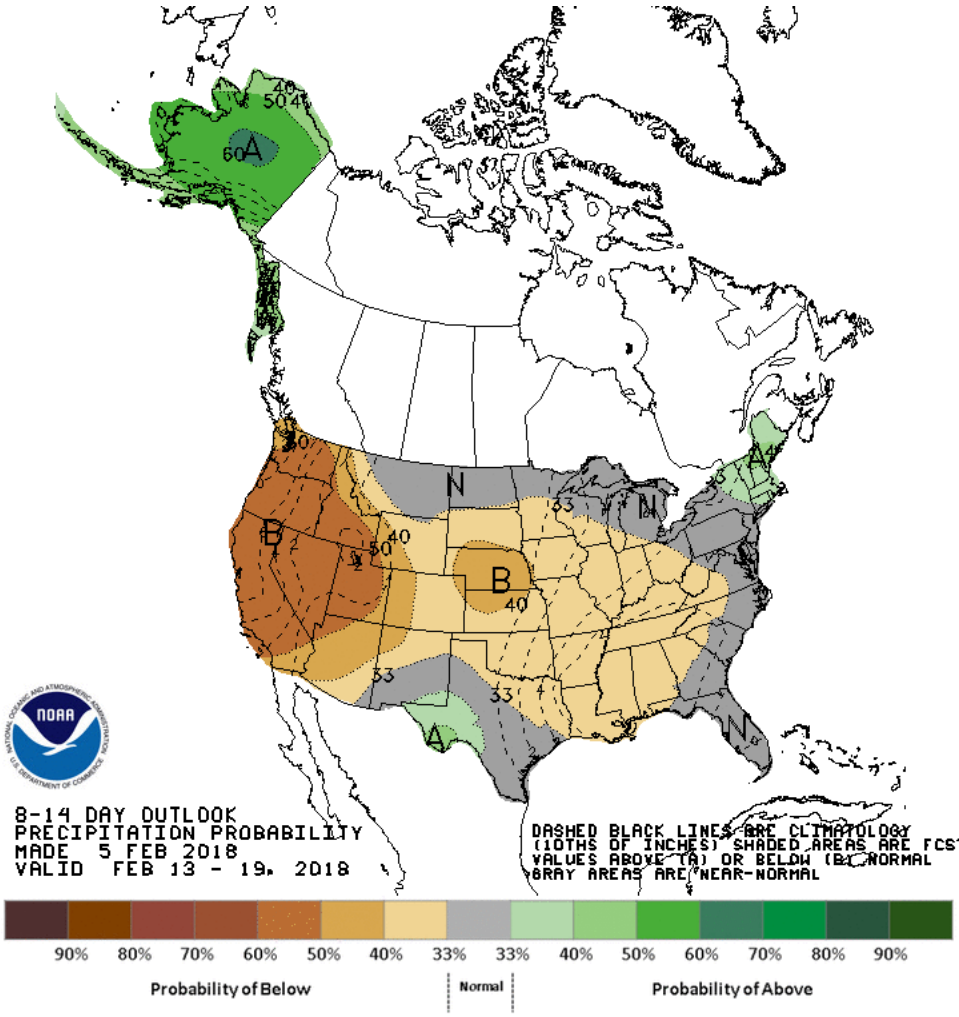


D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE FEB 06 2018 1307 UTC CNTD FEB 17 2018


5880
5820
-120
-110
-100
-90
-80
Signs of southern stream of jet enhanced relative to yesterday from Baja through S. Plains.
D+11 500 MB HEIGHTS FROM ALZ ENSM
CPC MAP MADE FEB 06 2018 1306 UTC CNTD FEB 17 2018

Week 2 – Temperature and Precipitation





Temp: Likely warmer today in South, East. Maybe some below-normal for N. Plains?

Precip: Likely wetter across South through Ohio Valley; drier for Florida.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

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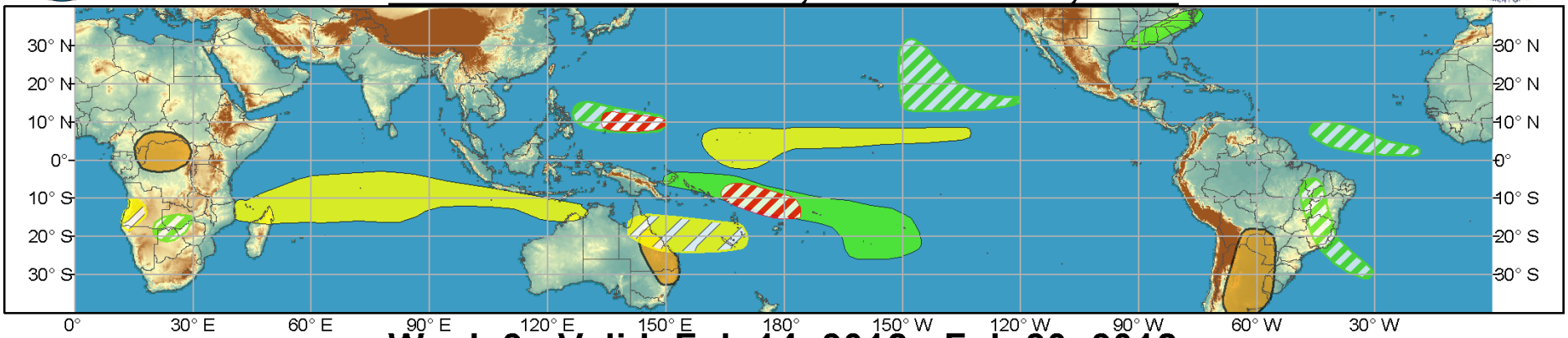

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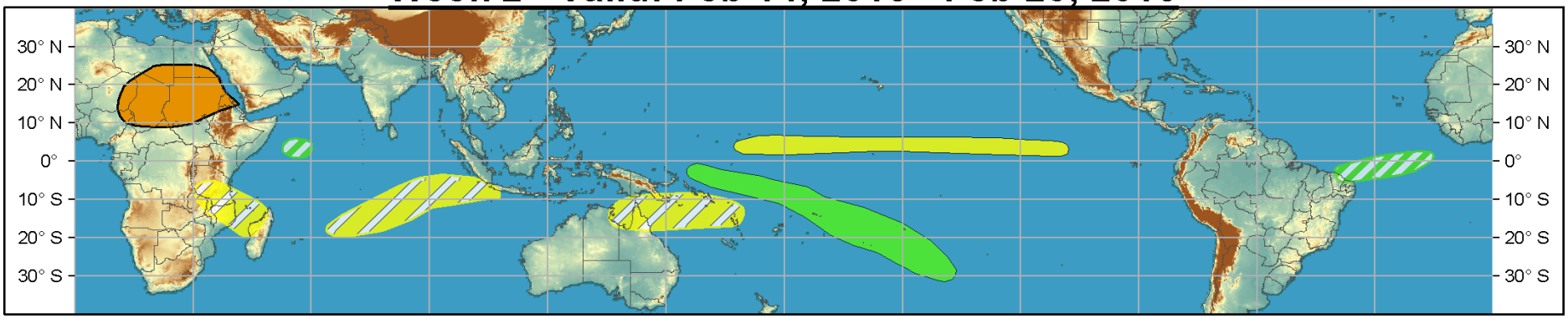

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