Global Tropics Hazards And Benefits Outlook

2/19/2019

Dan Harnos

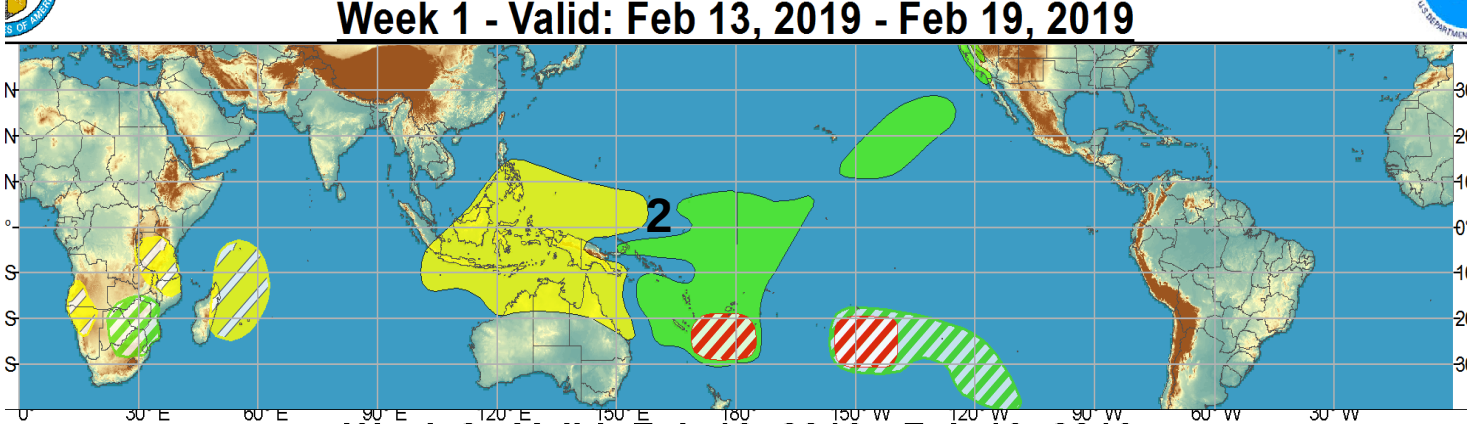
Outline

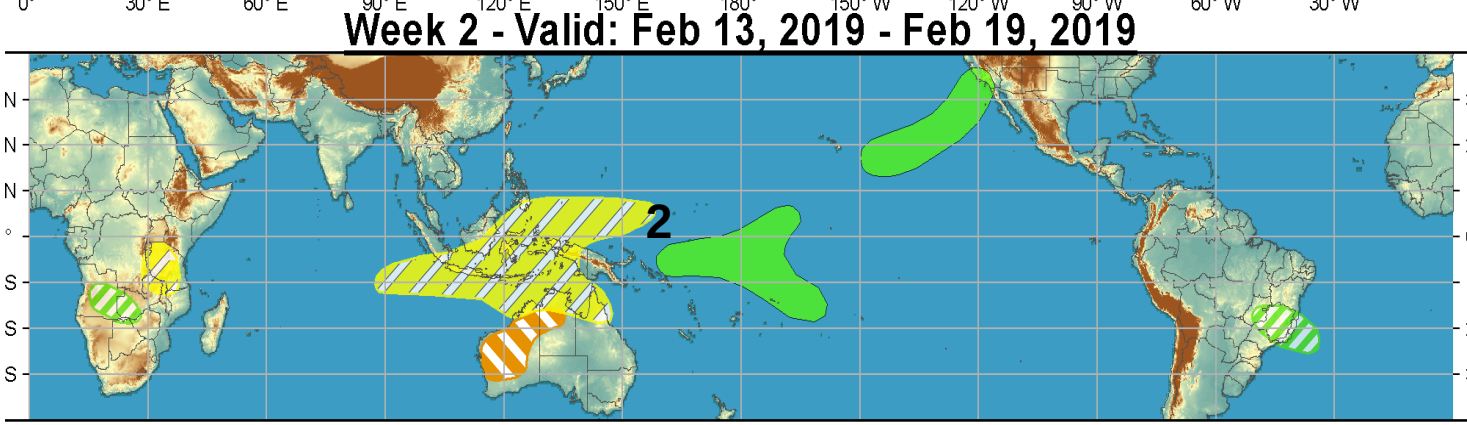
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

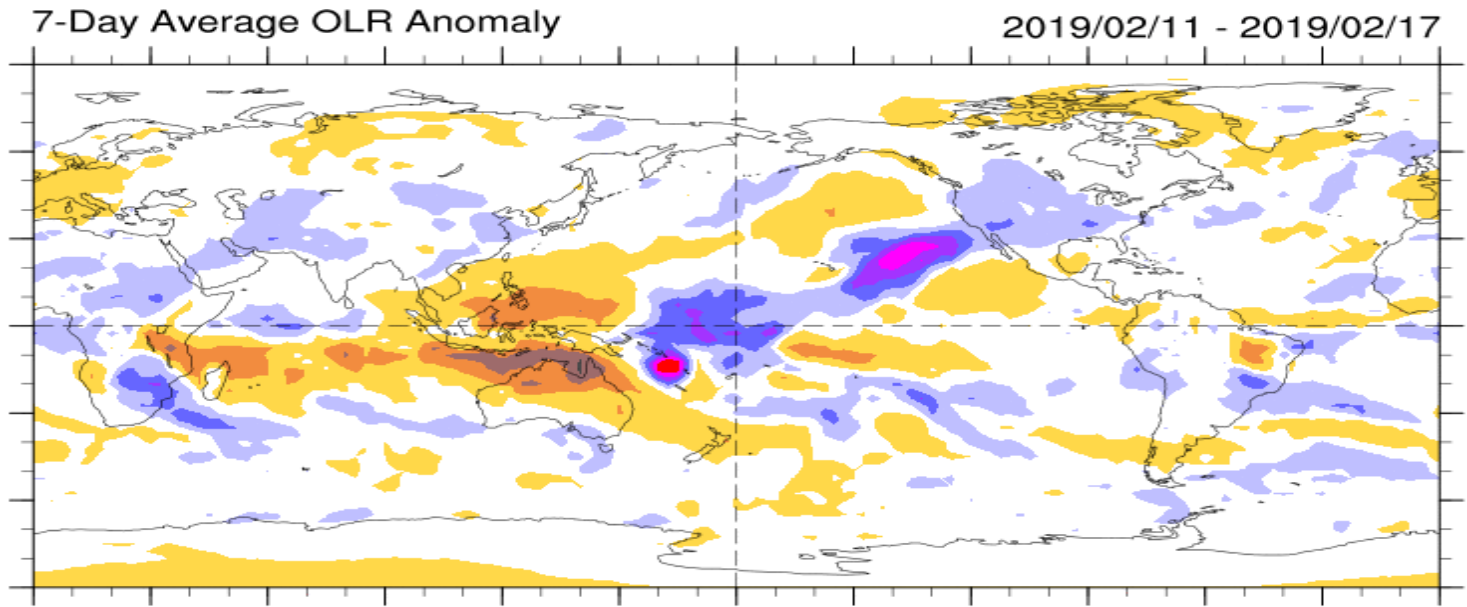
Outlook Review

T.D. 2
2/18-present
30 kt winds

WNW track south of Guam is forecast







Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (14 February, 2019 update)

- ENSO Alert System Status: **El Niño Advisory**

- Weak El Niño conditions are present and are expected to continue through the Northern Hemisphere spring 2019 (~55% chance).

MJO and other subseasonal tropical variability:

• The MJO has showed signs of finally pushing east from near the Date Line.

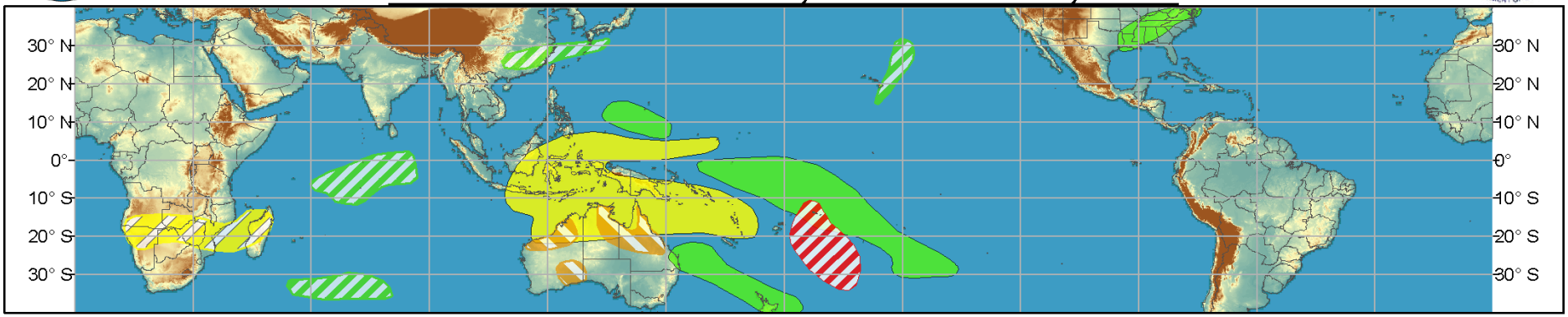
• Model guidance is split on propagating the MJO across the Western Hemisphere in Week-1 and reaching the Indian Ocean in Week-2, while some models weaken the MJO in place over the Central Pacific during the next two weeks. The former solution is favored here (Phase 8/1 during Week-1, Phase 1/2 during Week-2).

Extratropics:

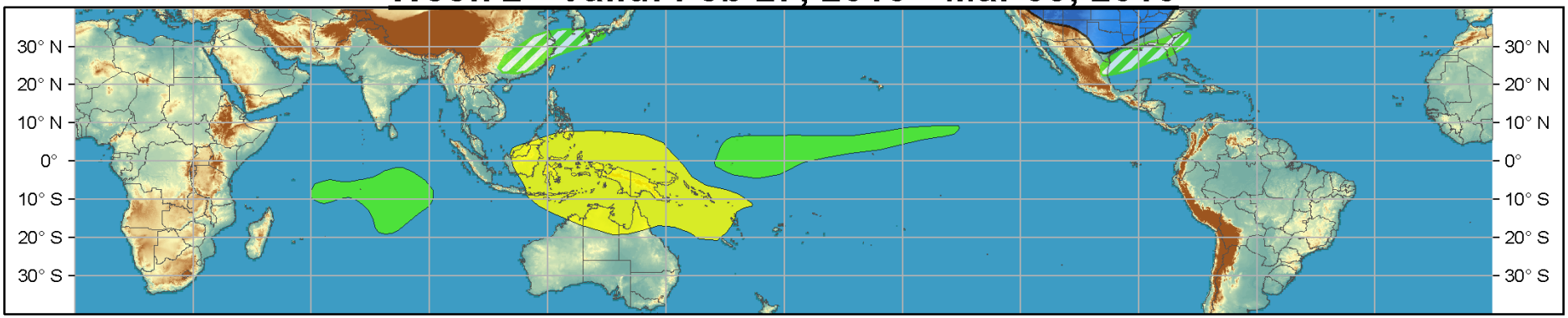
• The lagged response to the MJO crossing the Date Line is increased mid-level troughing across much of the lower-48 states. The cold currently favored in the extended range outlook for much of the country closely mirrors this perspective.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Feb 20, 2019 - Feb 26, 2019



Week 2 - Valid: Feb 27, 2019 - Mar 05, 2019



Produced: 02/19/2019

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.
Below-normal temperatures			7-day mean temperatures in the lower third of the historical range.

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.

中央氣象局 Central Weather Bureau

UNIVERSITY AT ALBANY State University of New York

EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

cics.nc

NPS PRAESTANTIA PER SCIENTIAM

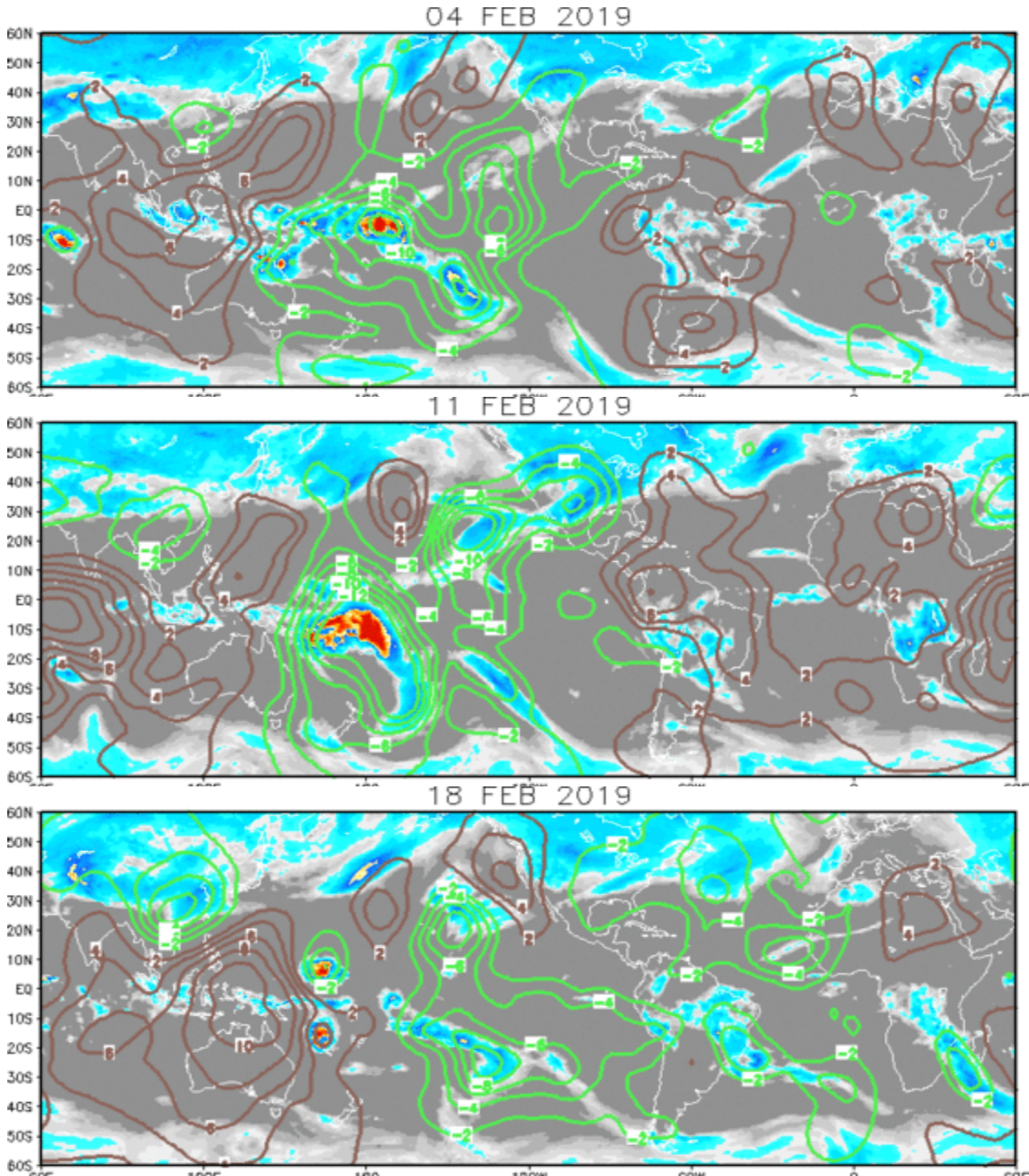
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

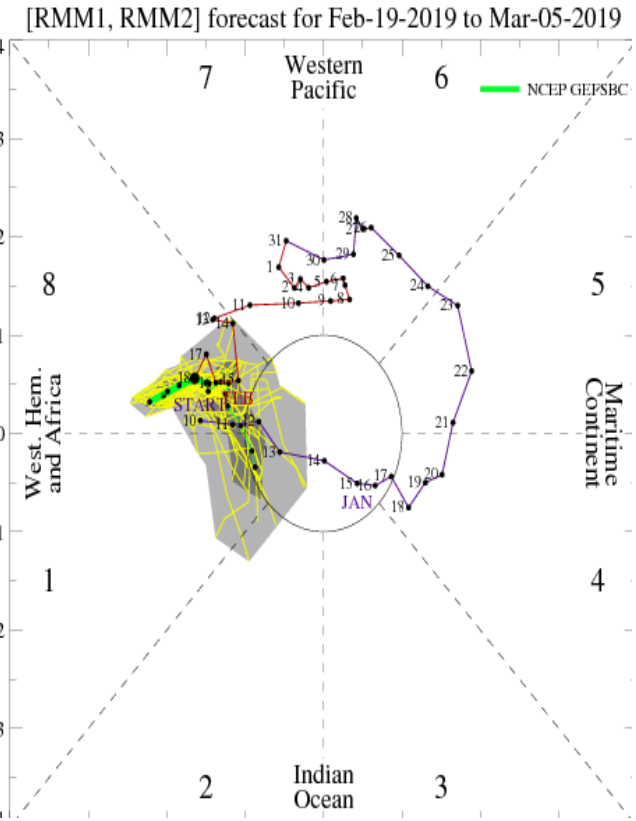
Relatively wave-1 pattern, with the MJO approaching the Date Line.

Constructive interference of El Niño, MJO, and Rossby wave activity near Date Line. Convection extending into subtropics of both hemispheres.

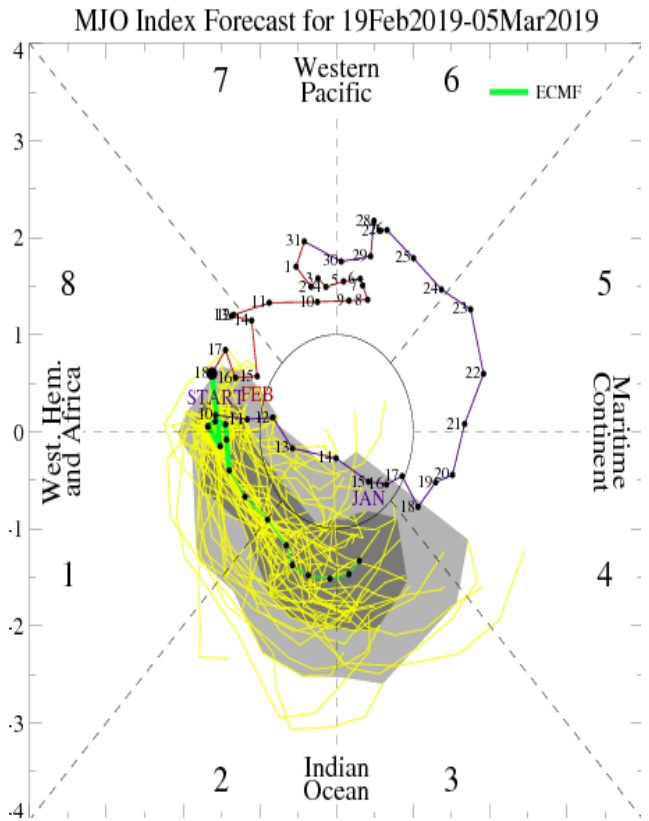
MJO shifts into the eastern half of the Pacific, with its suppressed phase helping to somewhat dampen convection from El Niño.



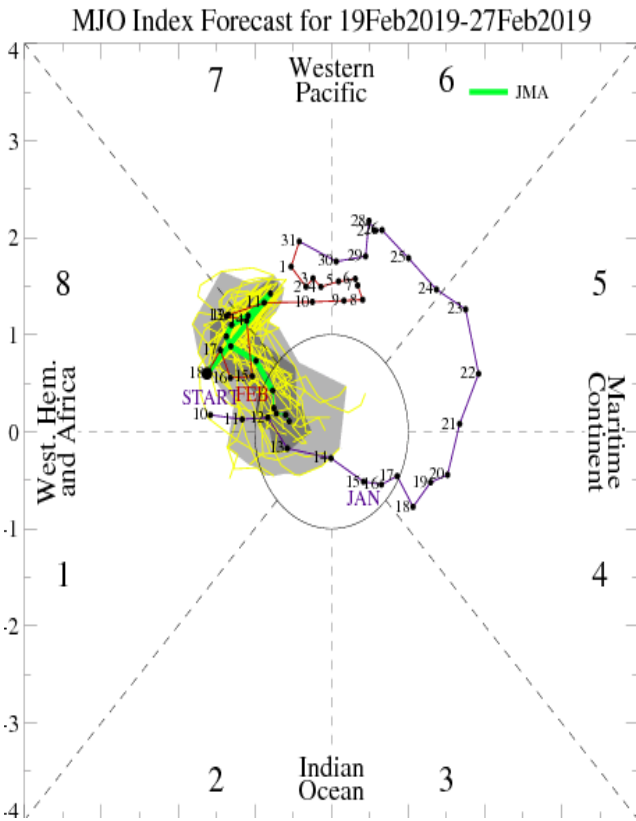
MJO Observation/Forecast



GEFS



ECMWF

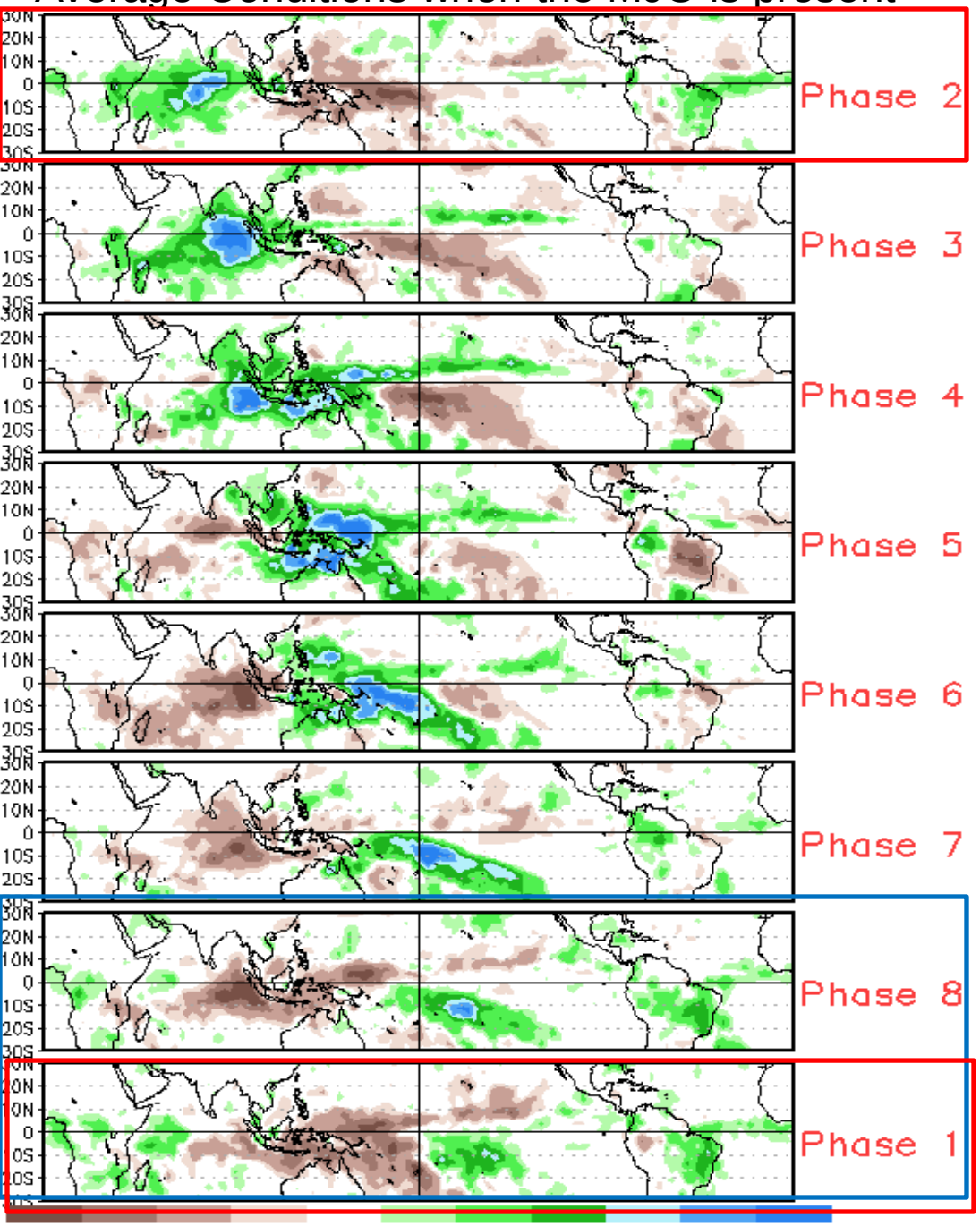


JMA

Models that are coupled with the ocean (ECMWF, and the CFS which is not shown) maintain its strength and propagate the MJO through the Western Hemisphere in Week-1, and bring the MJO into the western Indian Ocean during Week-2.

Models that are not coupled with the ocean (GEFS, JMA, and the Canadian which is not shown) show the MJO slowly decaying in place. These appear to over-emphasize equatorial Rossby wave activity and miss out on the main intraseasonal signal.

Average Conditions when the MJO is present



Week-1: Phases 8/1

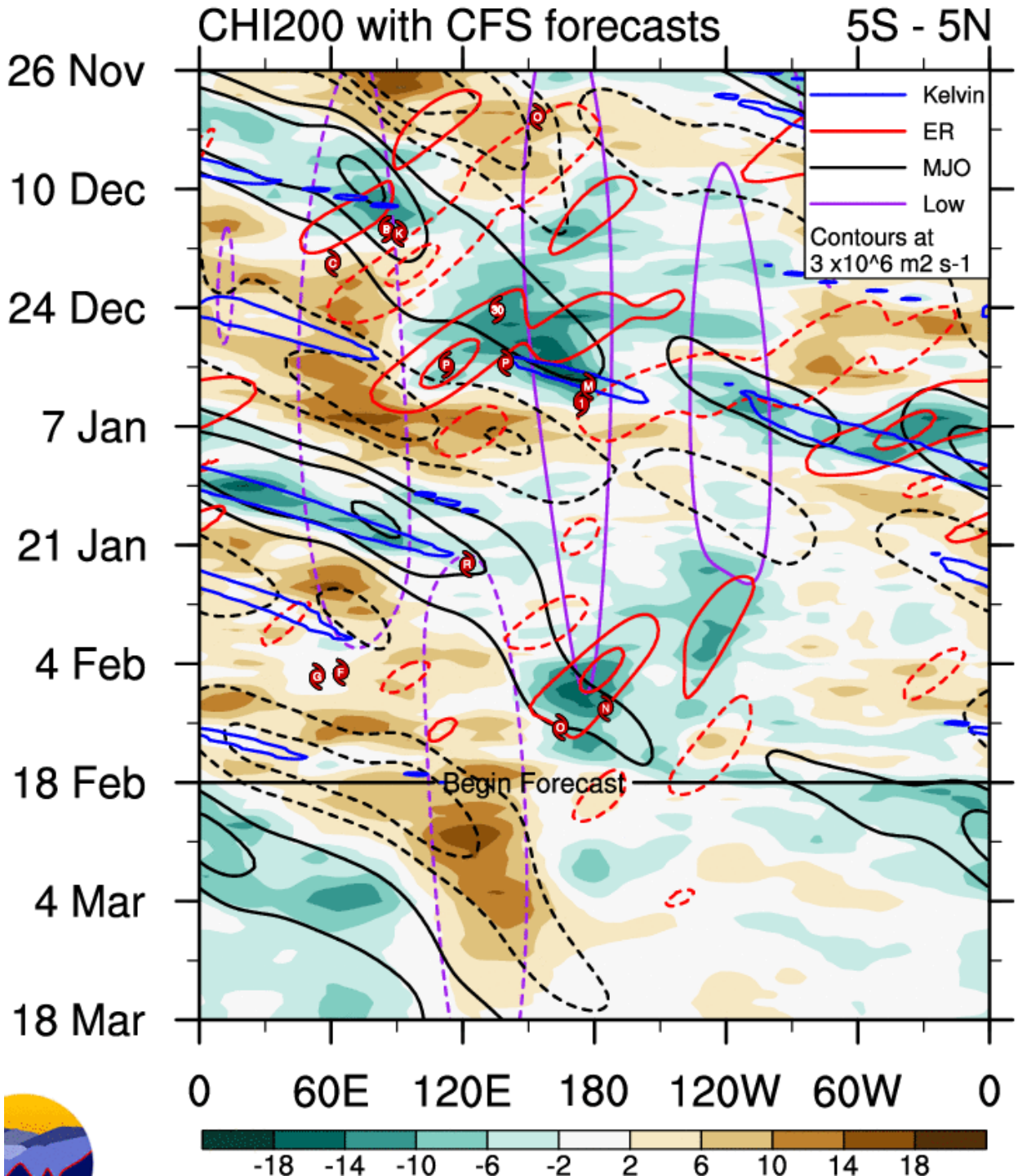
Week-2: Phases 1/2

CAVEAT: These panels are representative of robust MJO events.

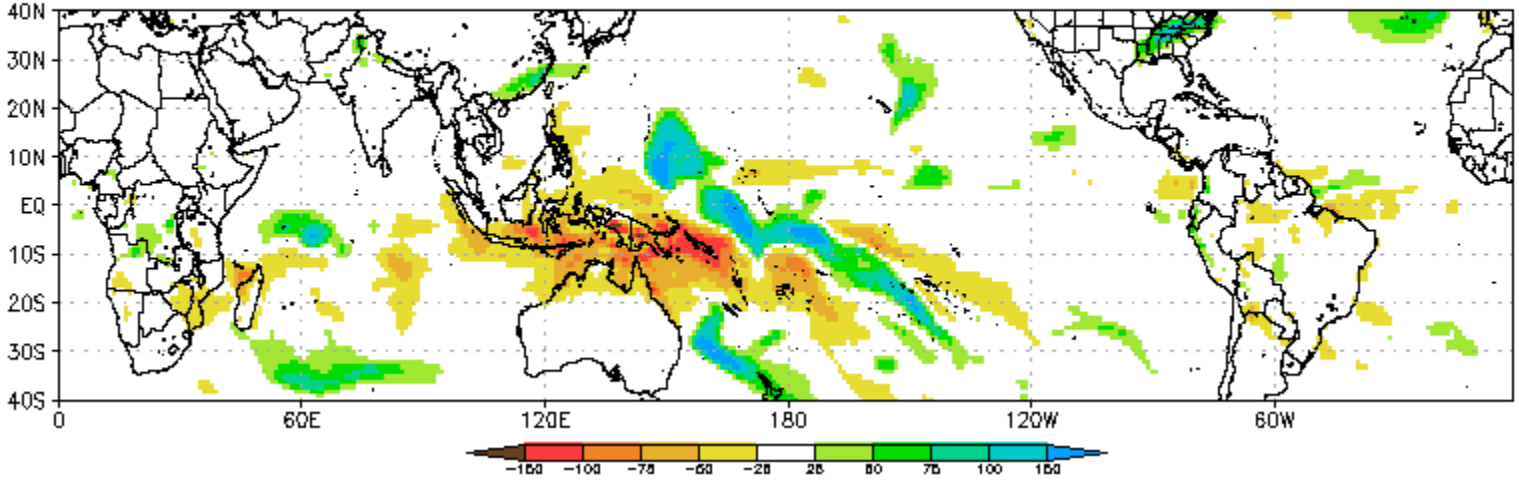
The **low frequency** state (El Niño) is influencing the Maritime Continent through Central Pacific.

The enhanced phase of the **MJO** is pushing into East Pacific, with its suppressed phase constructively interfering with already reduced Maritime Continent convection from **El Niño**.

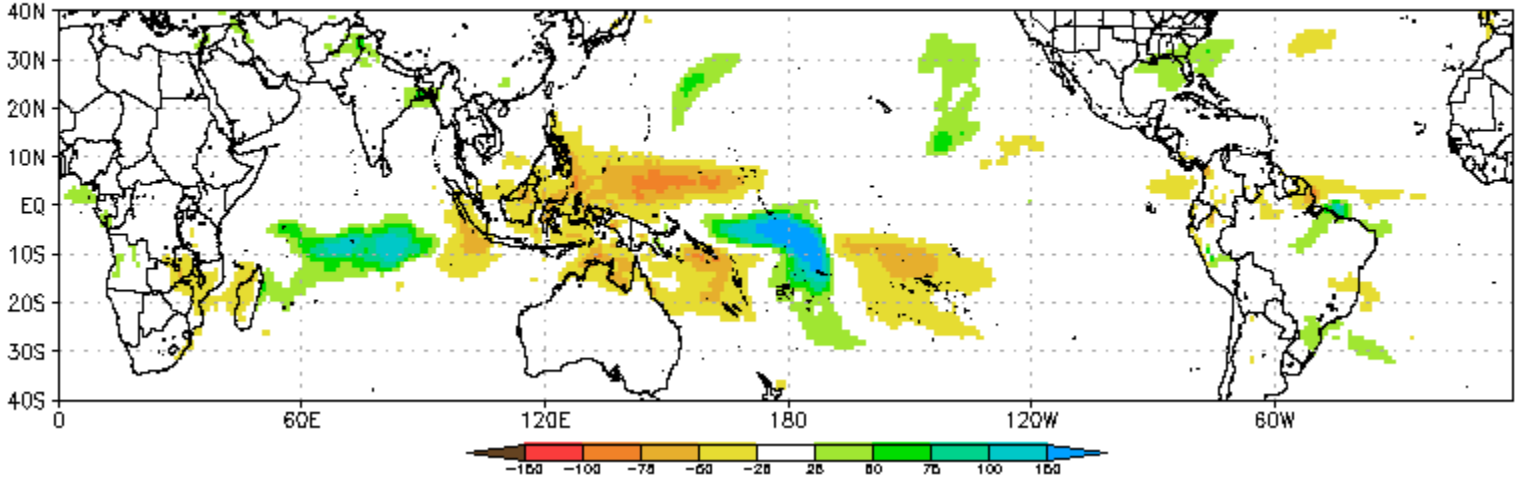
Rossby wave activity continues in the Paciifc.



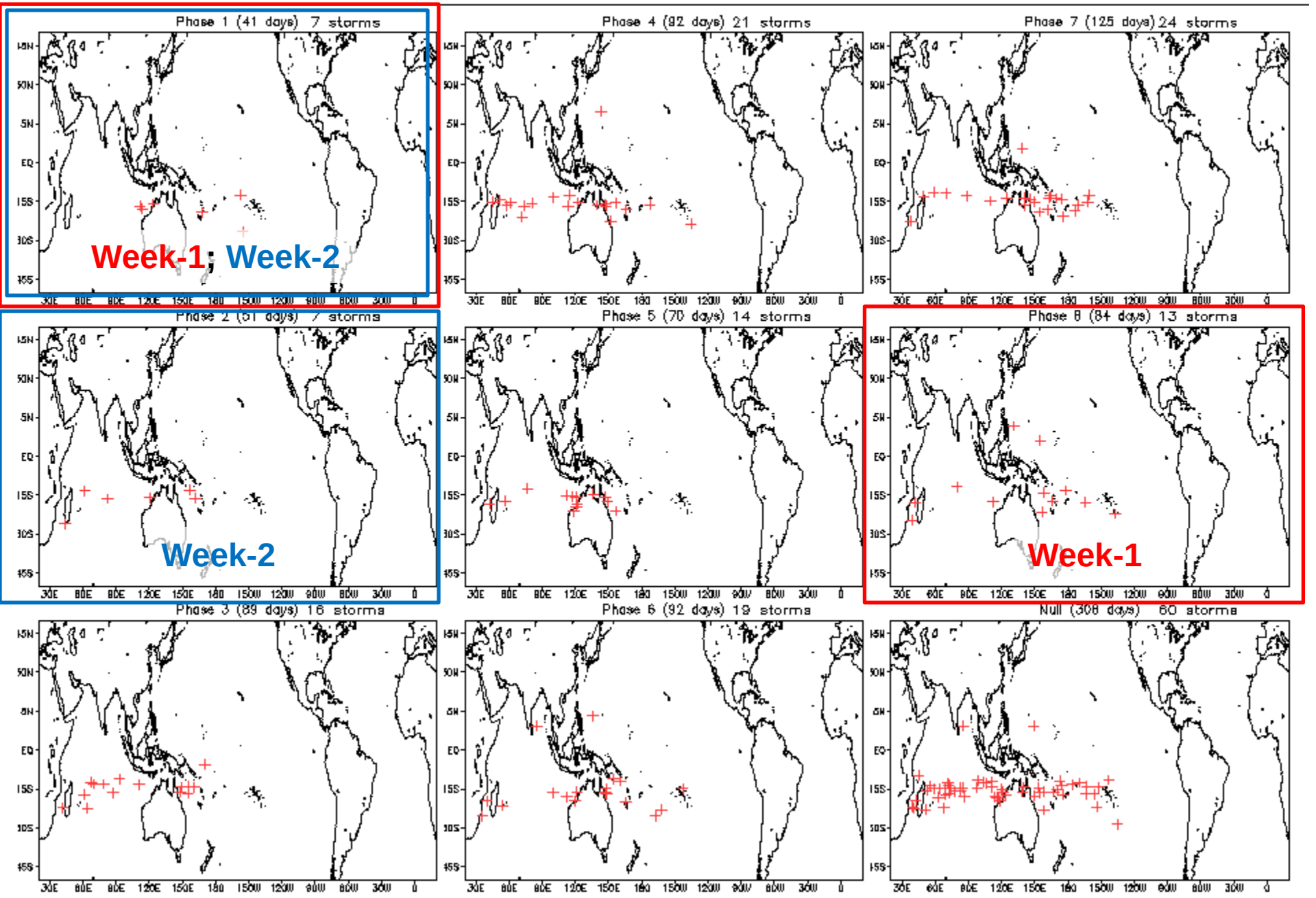
CFS Precipitation Anomalies (mm) Issued 18Feb2019
Week-1 Forecast Ending 26Feb2019



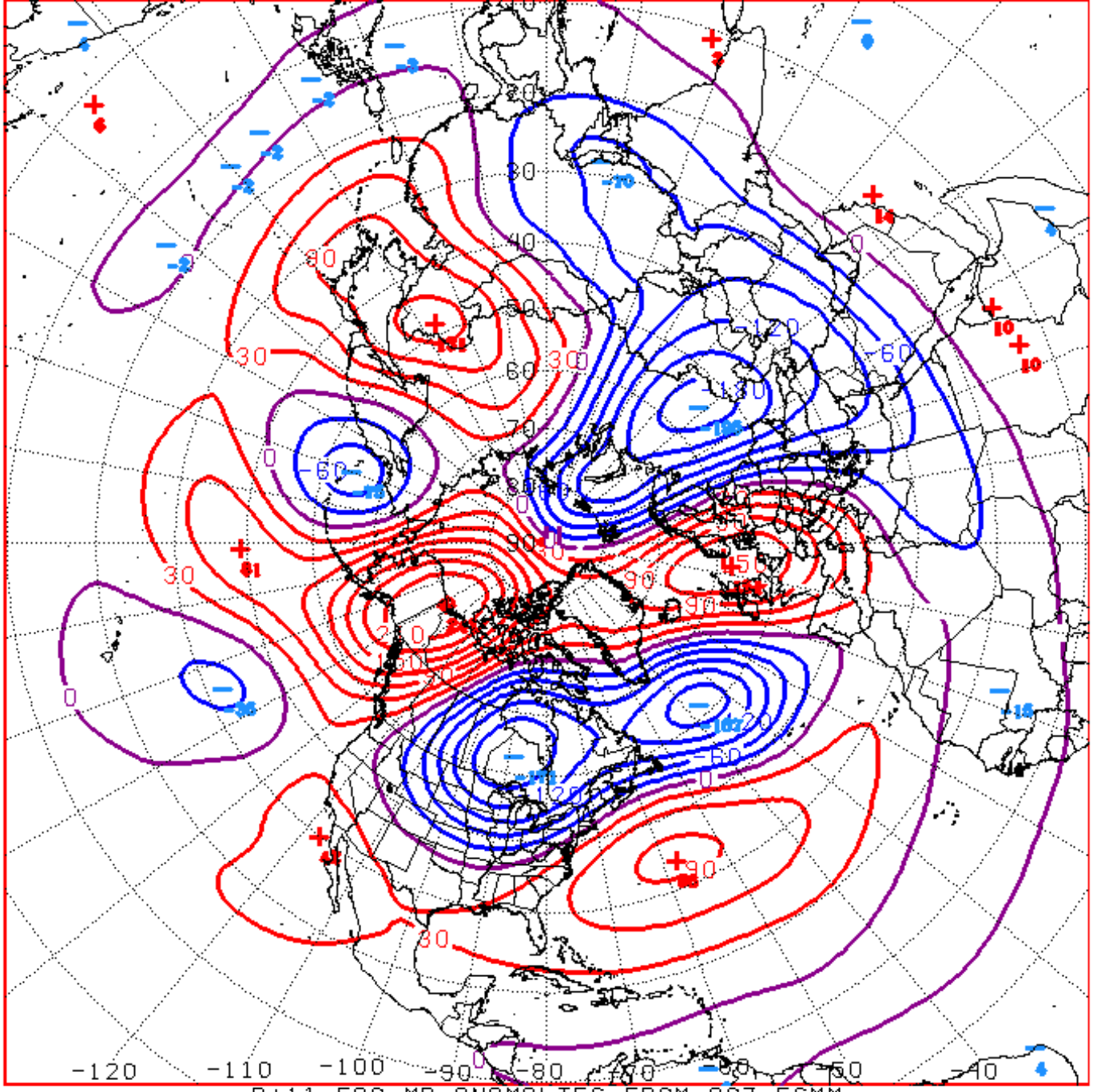
CFS Precipitation Anomalies (mm) Issued 18Feb2019
Week-2 Forecast Ending 05Mar2019



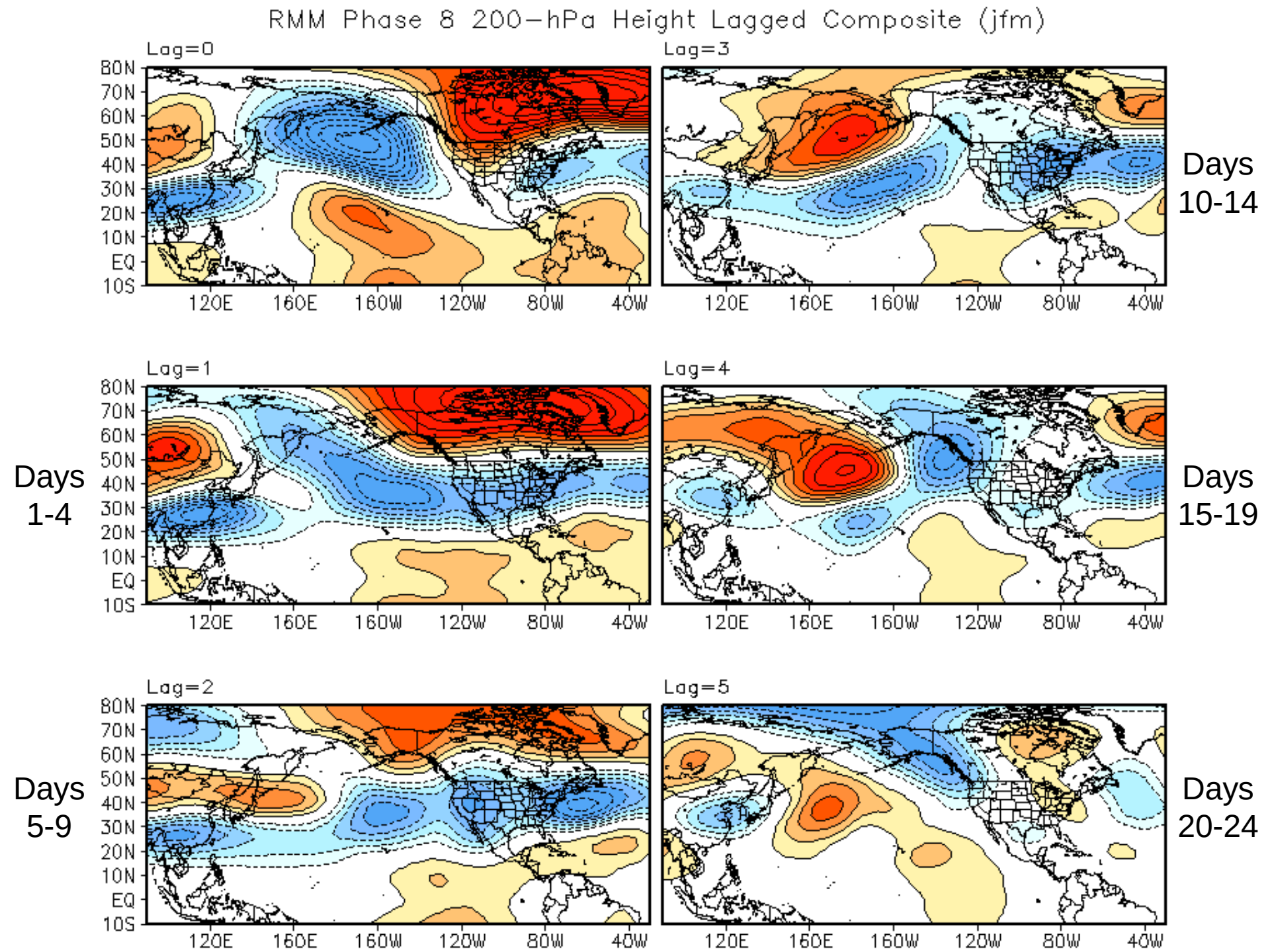
February Tropical Storm Formation by MJO phase



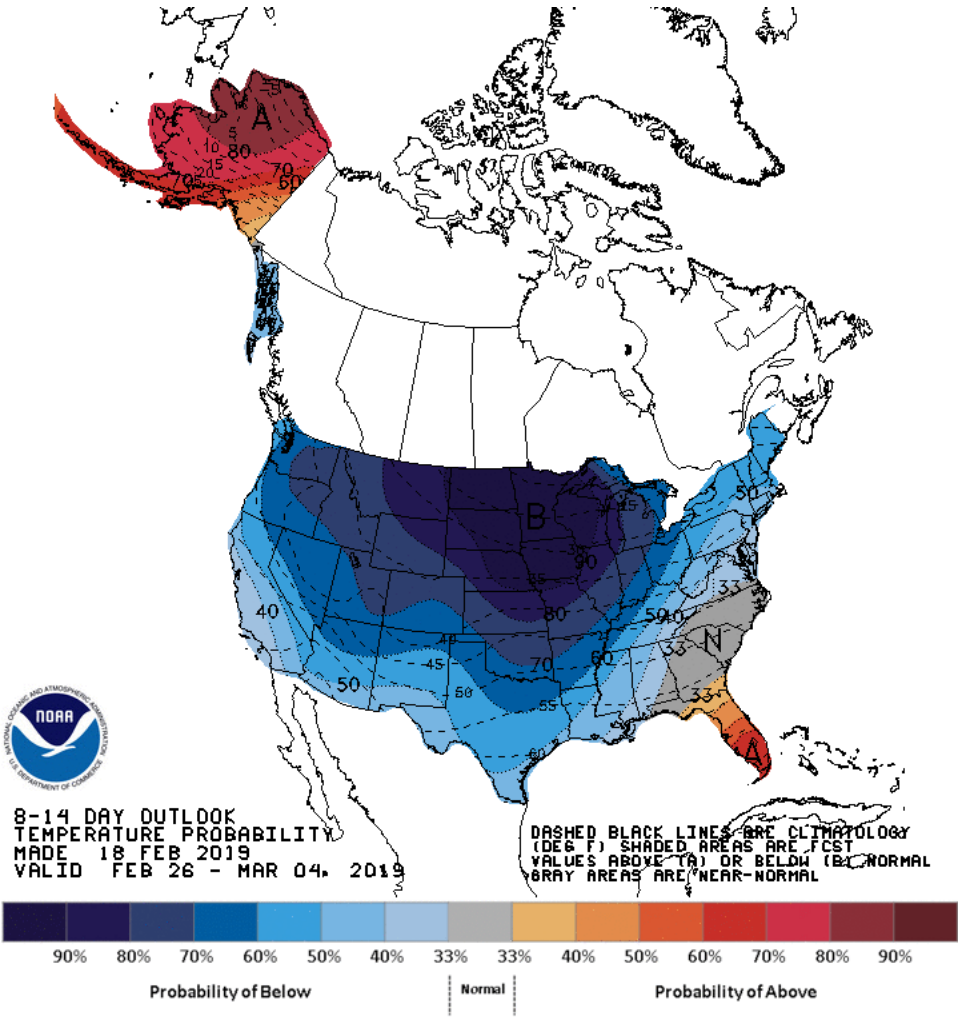
Connections to U.S. Impacts

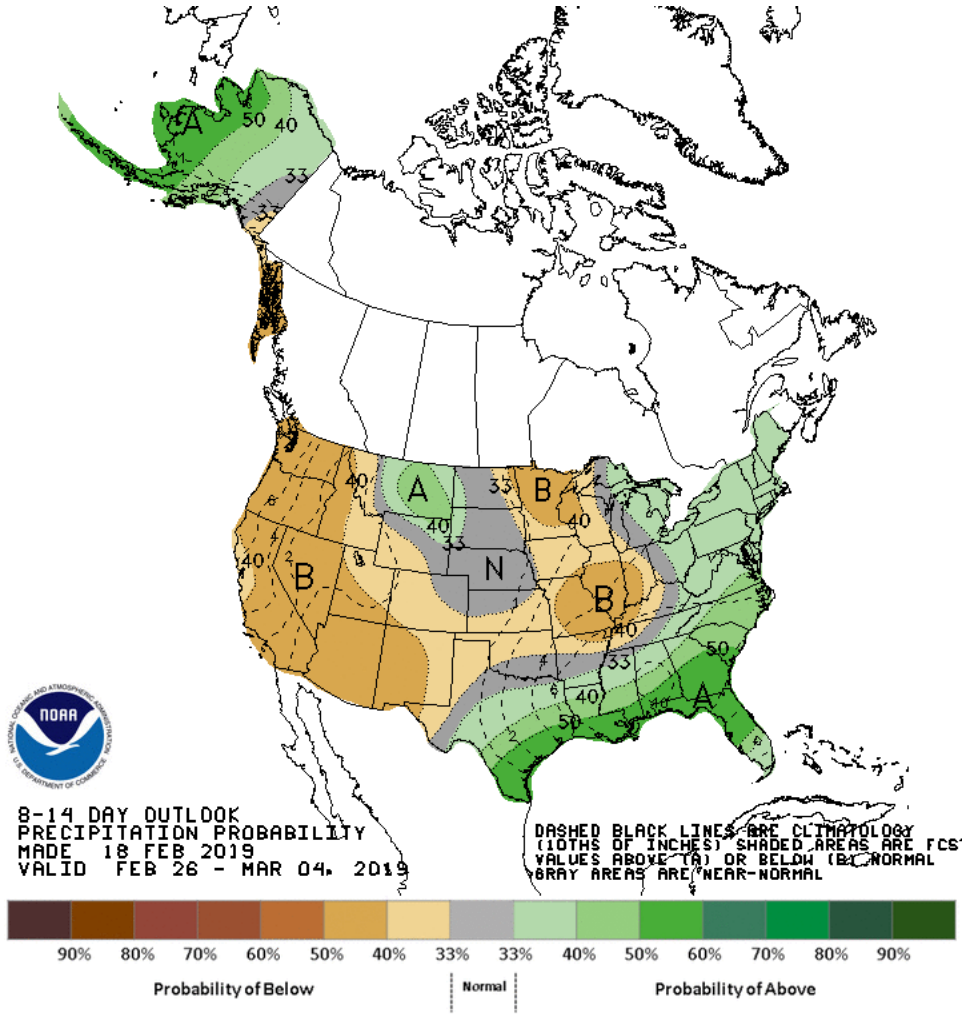


D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE FEB 19 2019 1053 UTC CNTD MAR 02 2019


RMM Phase 8 200-hPa Height Lagged Composite (jfm)
Lag=0
Lag=3
Lag=1
Lag=4
Lag=2
Lag=5
80N
70N
60N
50N
40N
30N
20N
10N
EQ
10S
120E
160E
160W
120W
80W
40W
Days 1-4
Days 5-9
Days 10-14
Days 15-19
Days 20-24

Week 2 – Temperature and Precipitation

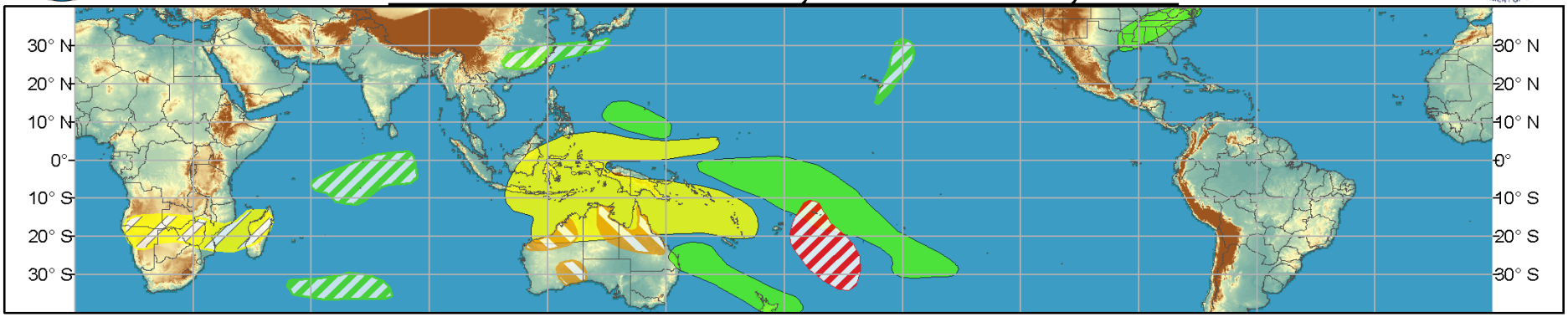




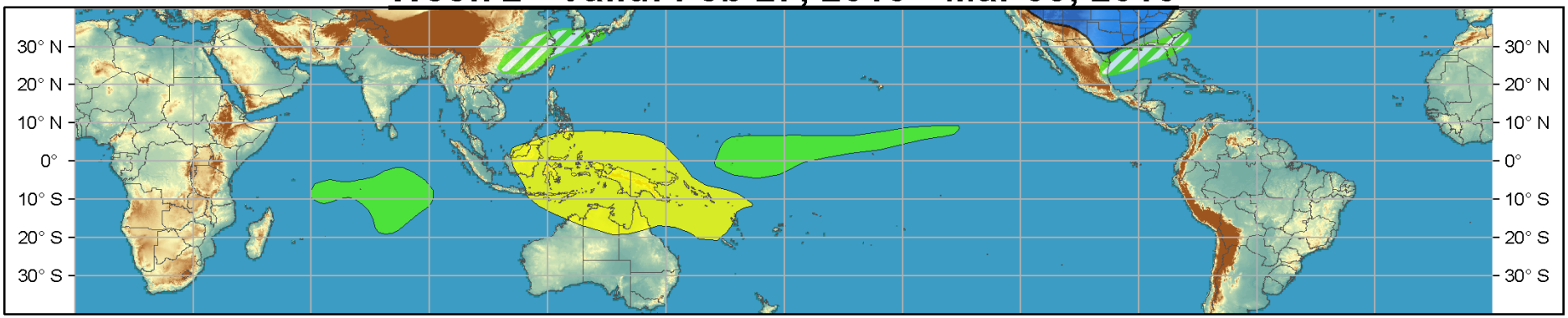
Today's outlooks are unlikely to change much from yesterday's.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Feb 20, 2019 - Feb 26, 2019



Week 2 - Valid: Feb 27, 2019 - Mar 05, 2019



Produced: 02/19/2019

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.
Below-normal temperatures			7-day mean temperatures in the lower third of the historical range.

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.

中央氣象局 Central Weather Bureau

UNIVERSITY AT ALBANY State University of New York

EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

cics.nc

NPS PRAESTANTIA PER SCIENTIAM