

# Global Tropics Hazards And Benefits Outlook

02/13/2018

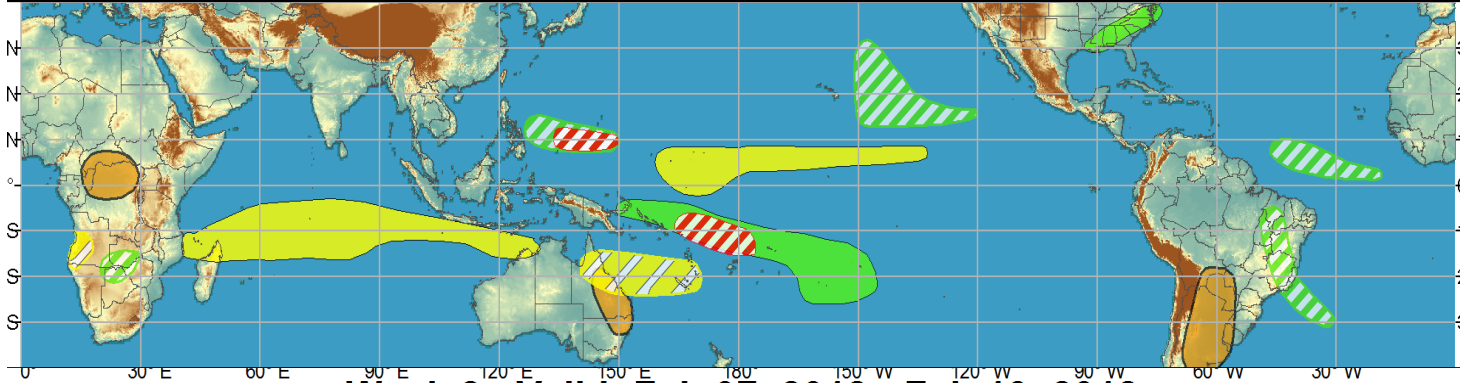
Kyle MacRitchie

## Outline

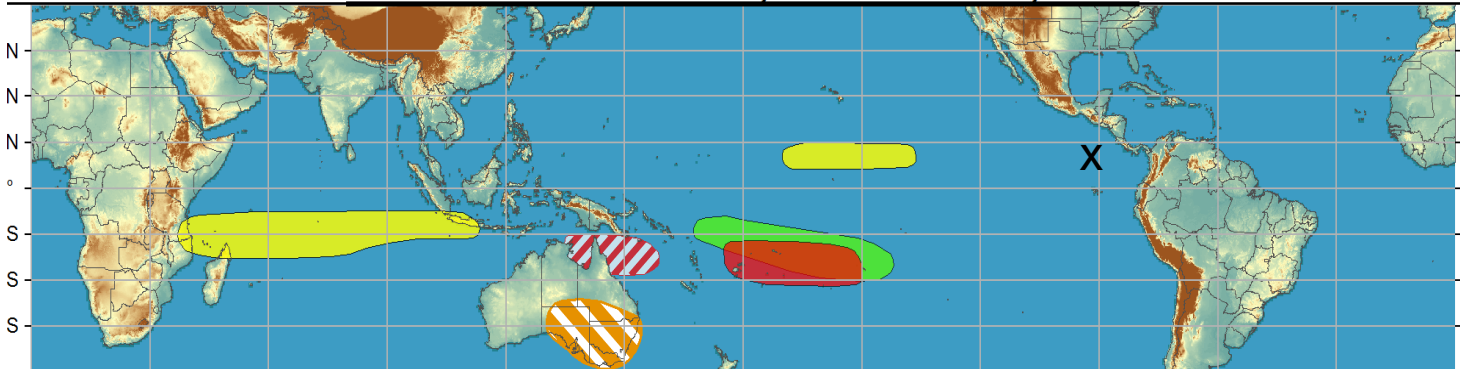
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review

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

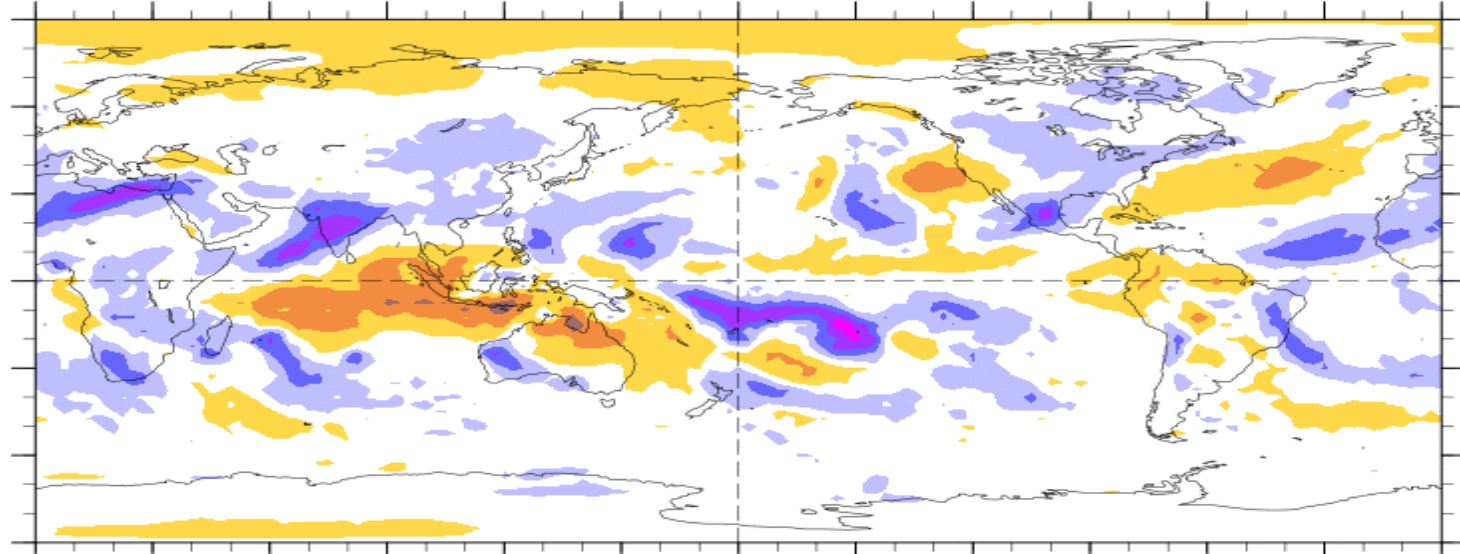


**Week 2 - Valid: Feb 07, 2018 - Feb 13, 2018**



7-Day Average OLR Anomaly

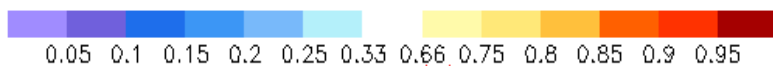
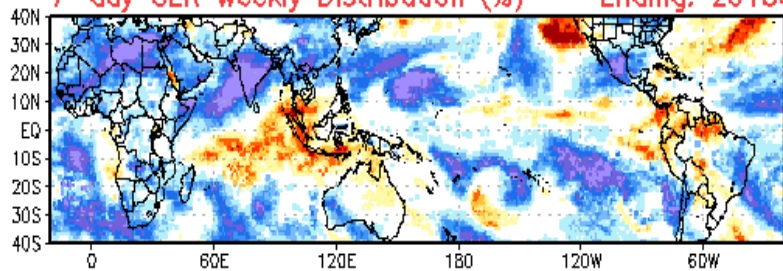
2018/02/05 - 2018/02/11



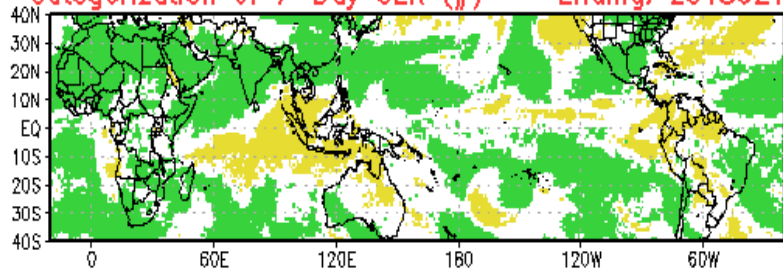
Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

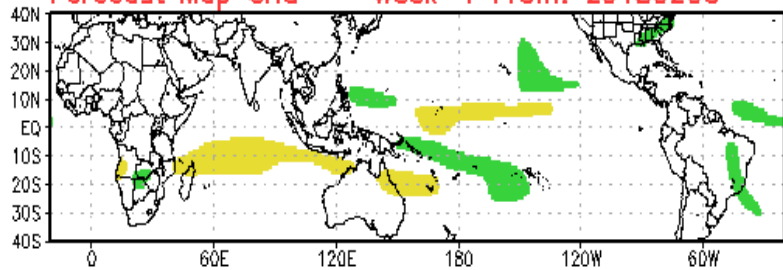
7-day OLR Weekly Distribution (%) -- Ending: 20180213



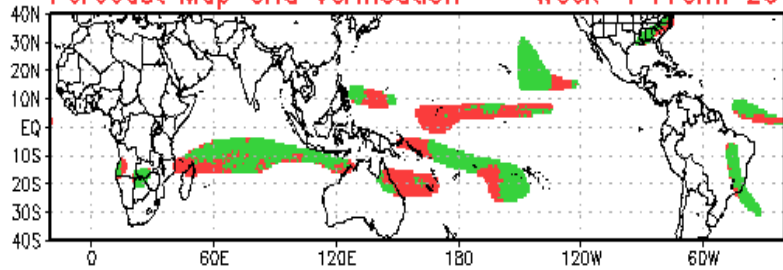
Categorization of 7-Day OLR (#) -- Ending: 20180213



Forecast Map Grid -- Week-1 From: 20180206

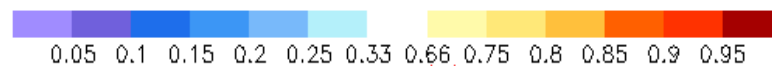
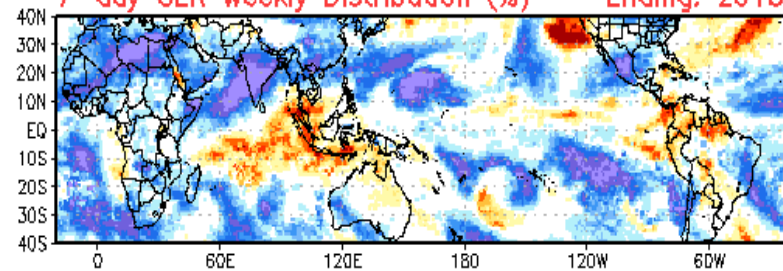


Forecast Map Grid Verification -- Week-1 From: 20180206

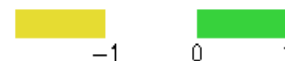
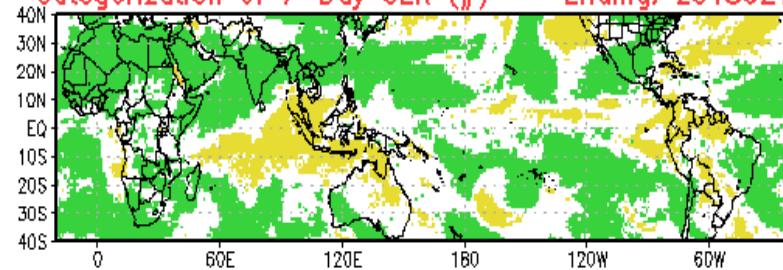


Hit: Green, Miss: Red  
Heidke Skill Score: 38.2735

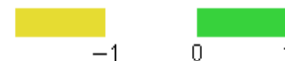
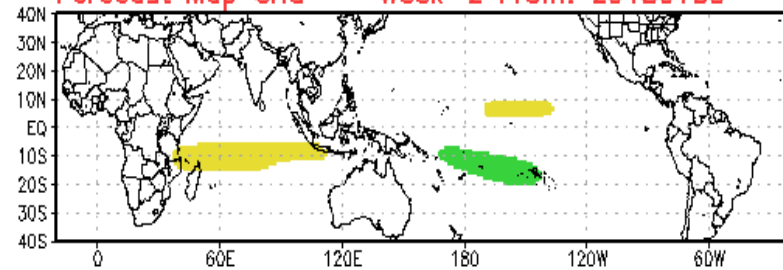
7-day OLR Weekly Distribution (%) -- Ending: 20180213



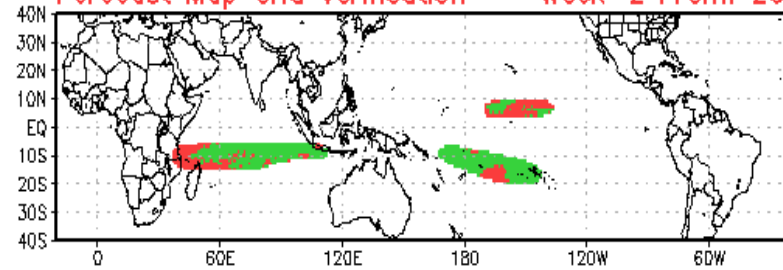
Categorization of 7-Day OLR (#) -- Ending: 20180213



Forecast Map Grid -- Week-2 From: 20180130



Forecast Map Grid Verification -- Week-2 From: 20180130



Hit: Green, Miss: Red  
Heidke Skill Score: 52.9704

# Synopsis of Climate Modes

## **ENSO:**

- ENSO Alert System Status: [La Niña Advisory](#)
- February 8<sup>th</sup> Update: A transition from La Niña to ENSO-neutral is most likely during the Northern Hemisphere spring (~55% chance of ENSO-neutral during the March-May season).

## **MJO and other subseasonal tropical variability:**

- The MJO remained active, with the enhanced phase crossing the West Pacific.
- Dynamical and statistical models continue to propagate the MJO with slowly eastward across the Pacific with a significant reduction in amplitude, especially during Week-2.

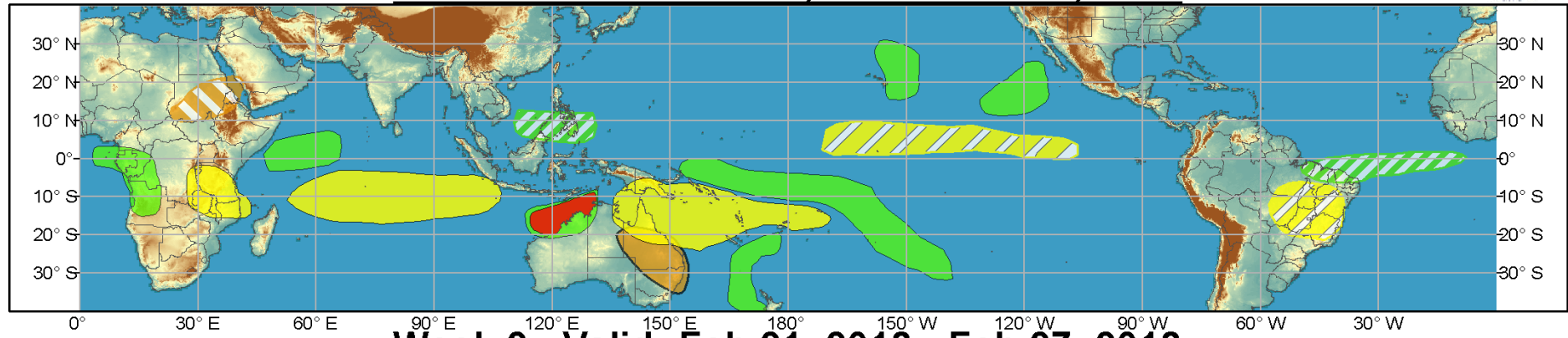
## **Extratropics:**

- Dynamical models forecast the Arctic and North Atlantic oscillations to turn negative within the Week-1 period.

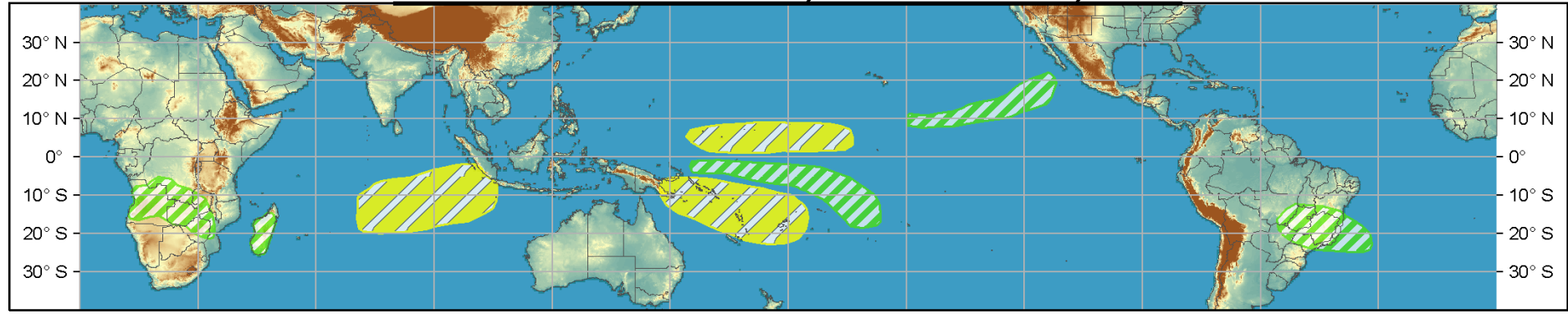


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Feb 14, 2018 - Feb 20, 2018



## Week 2 - Valid: Feb 21, 2018 - Feb 27, 2018



### Confidence

High	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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Produced: 02/13/2018

Forecaster: MacRitchie

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.





# IR Satellite & 200-hpa Velocity Potential Anomalies

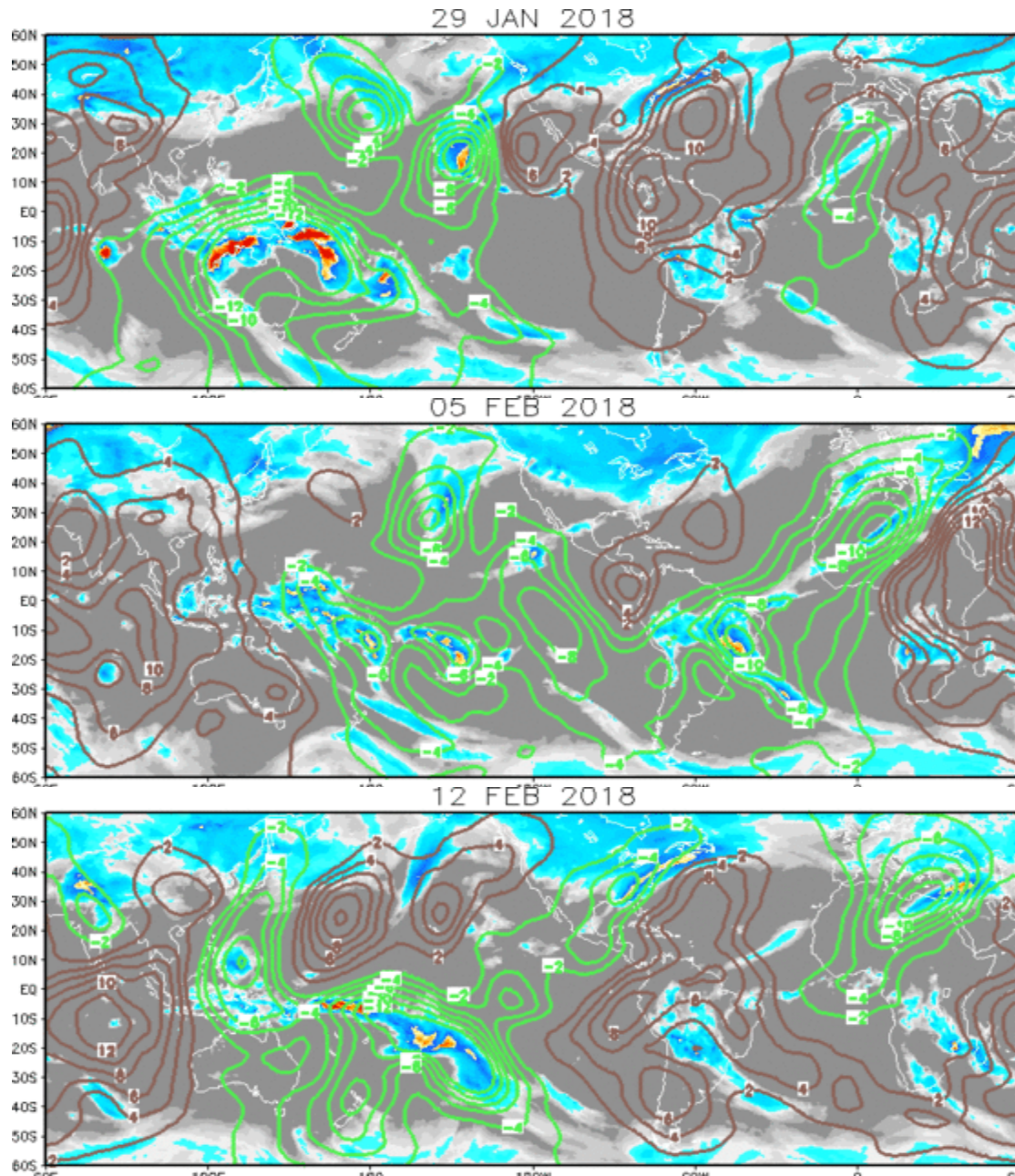
Green: Enhanced Divergence

Brown: Enhanced Convergence

A large-scale pattern with enhanced convection over the eastern Indian Ocean through Central Pacific.

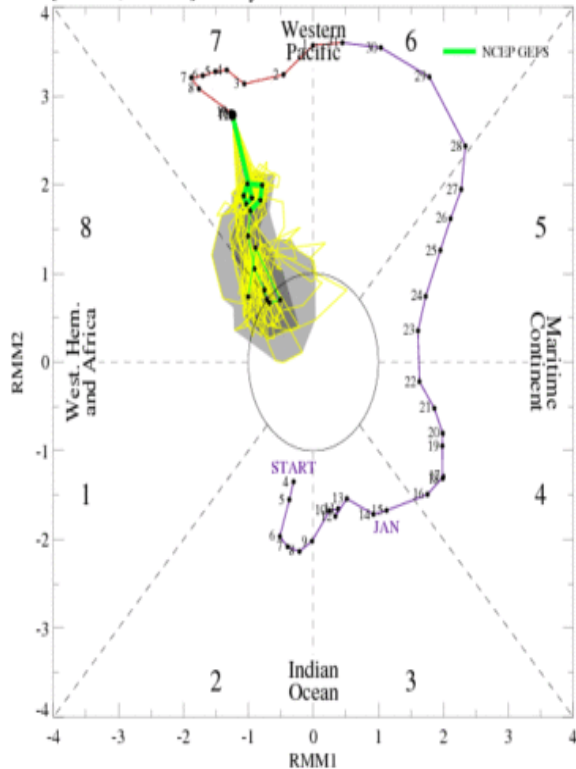
Enhanced phase of the MJO propagates eastward over the Central Pacific while the suppressed phase spreads over the Maritime Continent.

The pattern becomes noisier as the MJO weakens and suppressed convection spreads out over South America.



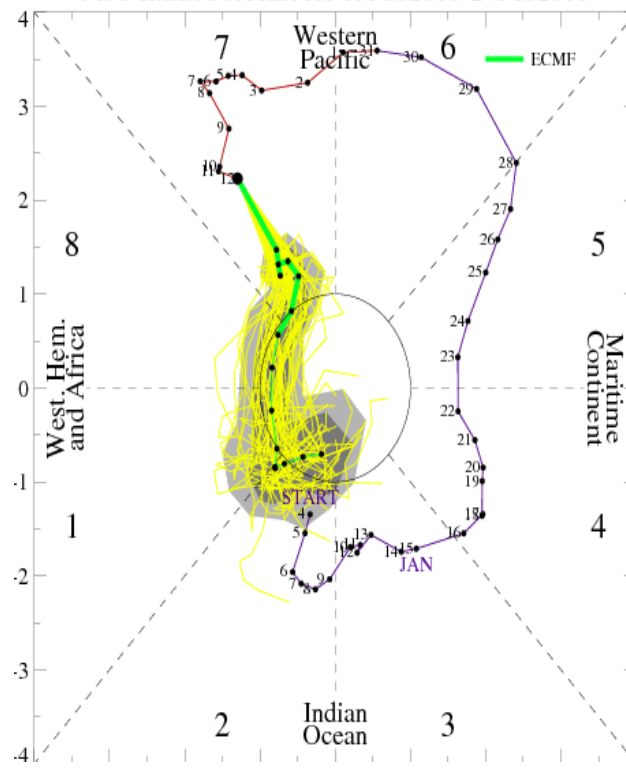
# MJO Observation/Forecast

[RMM1, RMM2] 15-day forecast for 13Feb2018 to 27Feb2018



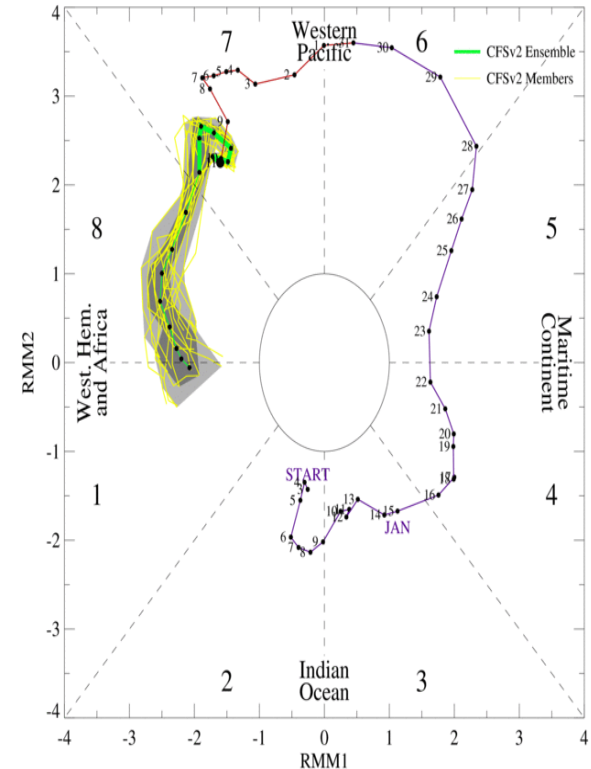
GEFS

MJO Index Forecast for 13Feb2018-27Feb2018



ECMWF

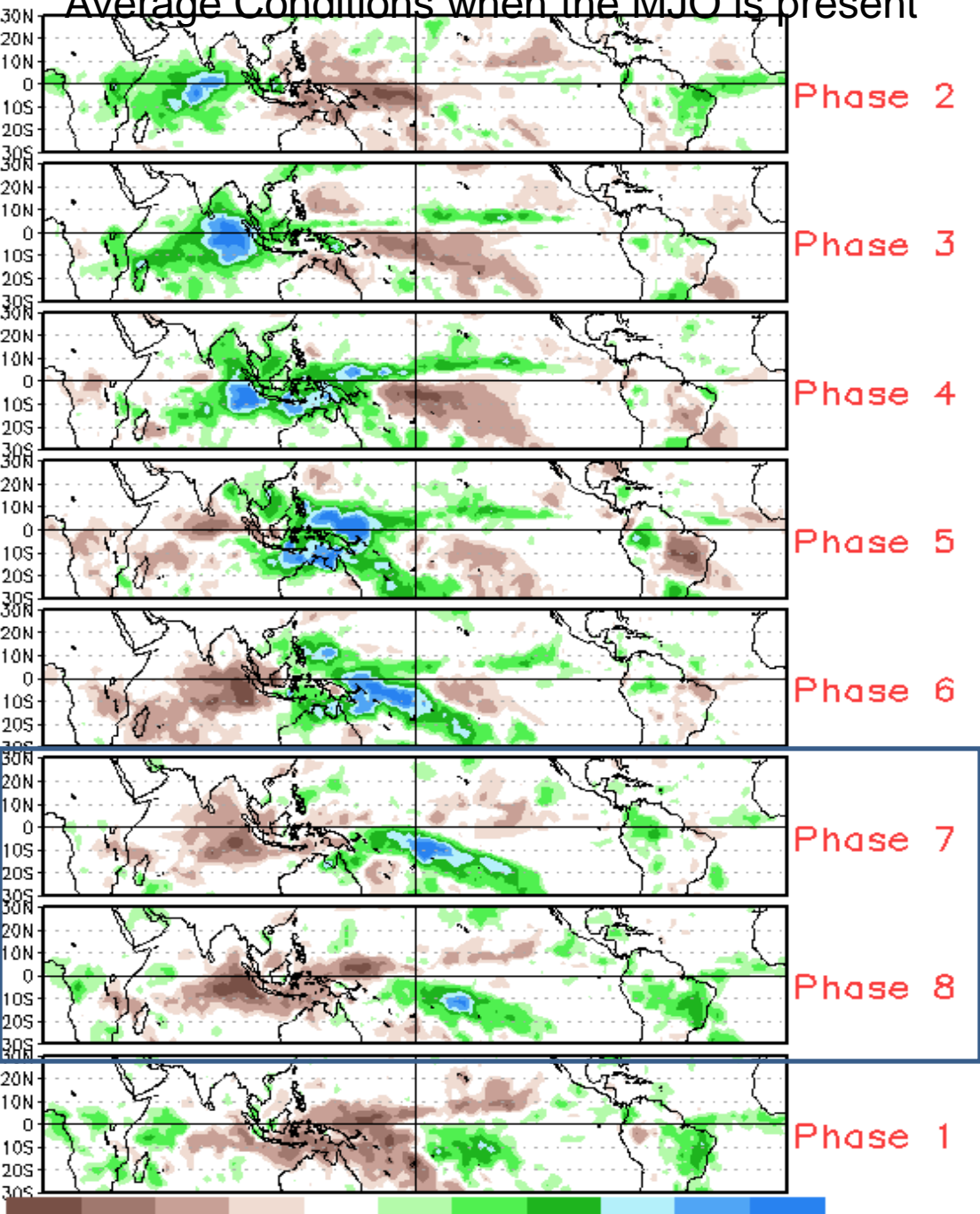
MJO Index Forecast for 12Feb2018 to 26Feb2018



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 7/8**  
**Week-2: Weakening MJO**

CAVEAT: These panels are representative of robust MJO events.

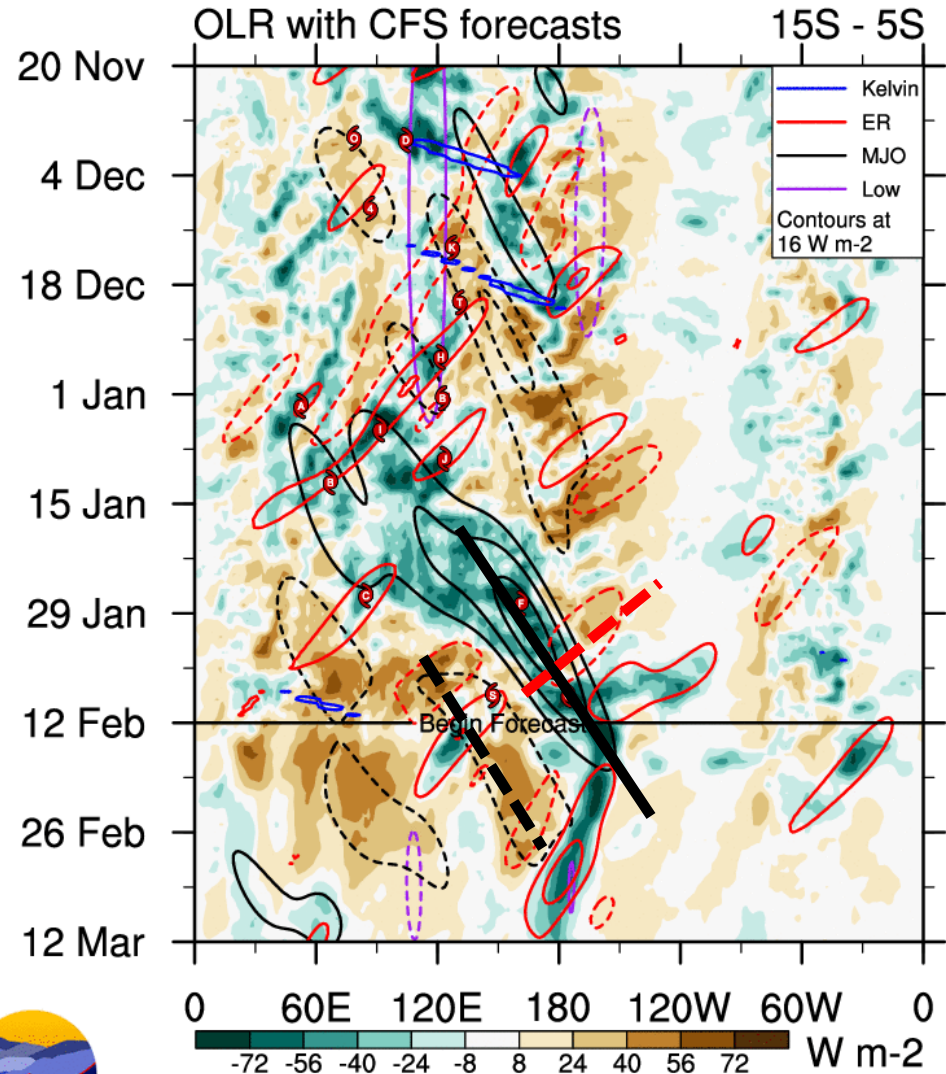


The **MJO** enhances convection over the Central Pacific while a **Rossby wave** suppresses convection over the Date Line.

The **Low-frequency pattern** of suppressed convection is working against the MJO's pattern of enhanced convection over the Pacific.



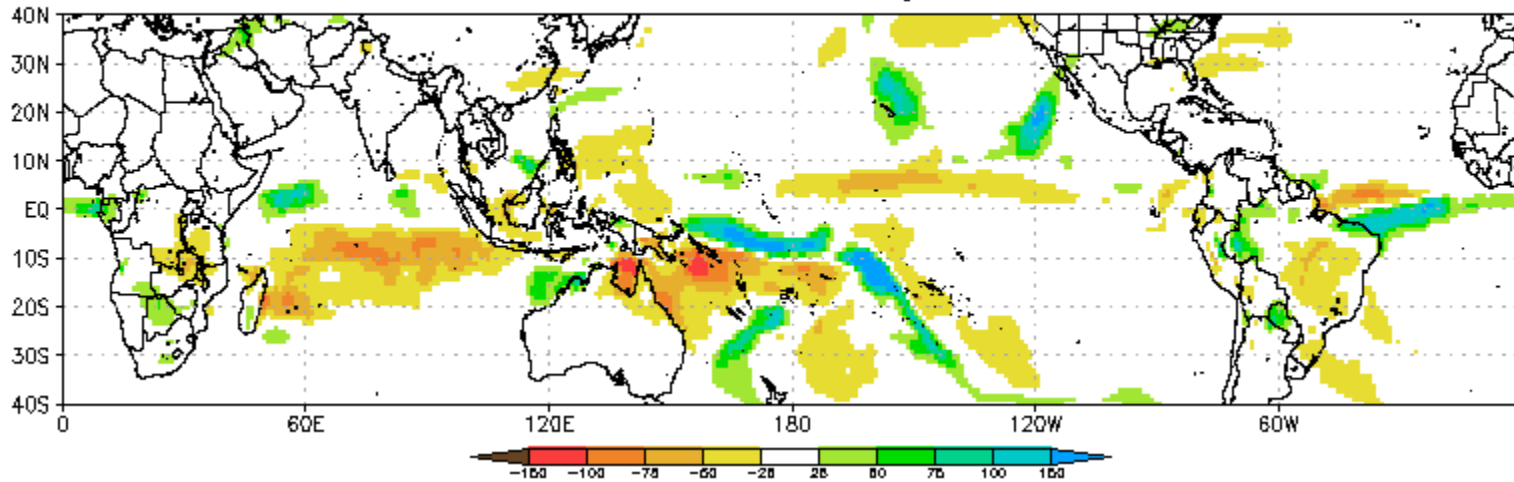
[ncics.org/mjo](http://ncics.org/mjo)



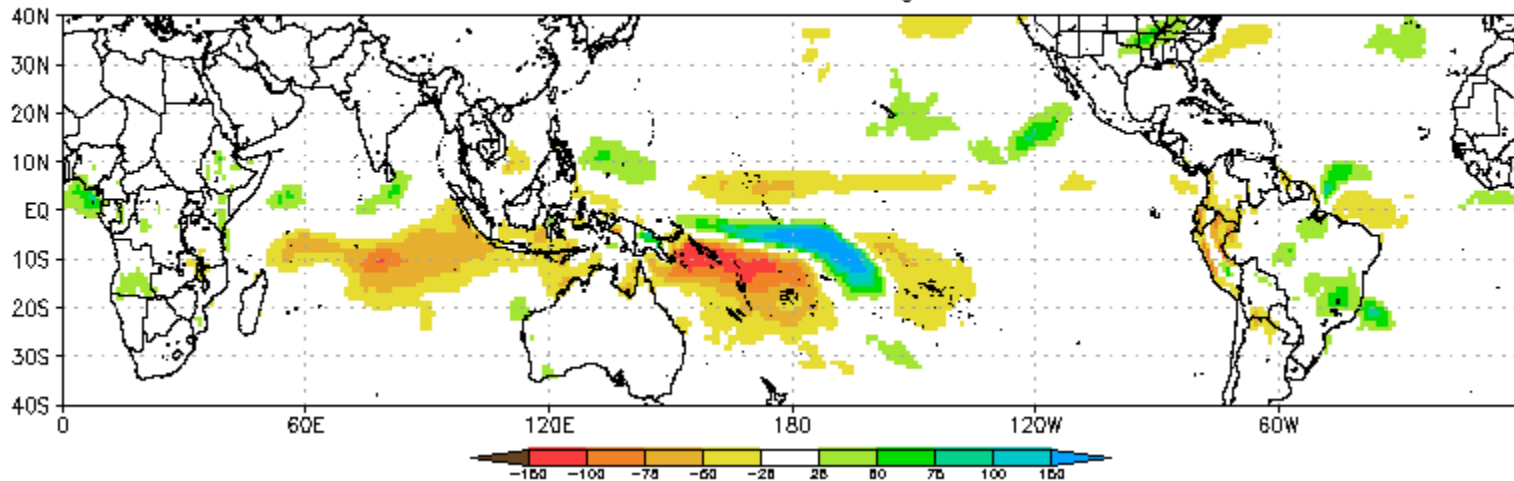
Tue 2018-02-13 16:11 UTC

Carl Schreck ([cjschrec@ncsu.edu](mailto:cjschrec@ncsu.edu))

CFS Precipitation Anomalies (mm) Issued 12Feb2018  
Week-1 Forecast Ending 20Feb2018



CFS Precipitation Anomalies (mm) Issued 12Feb2018  
Week-2 Forecast Ending 27Feb2018

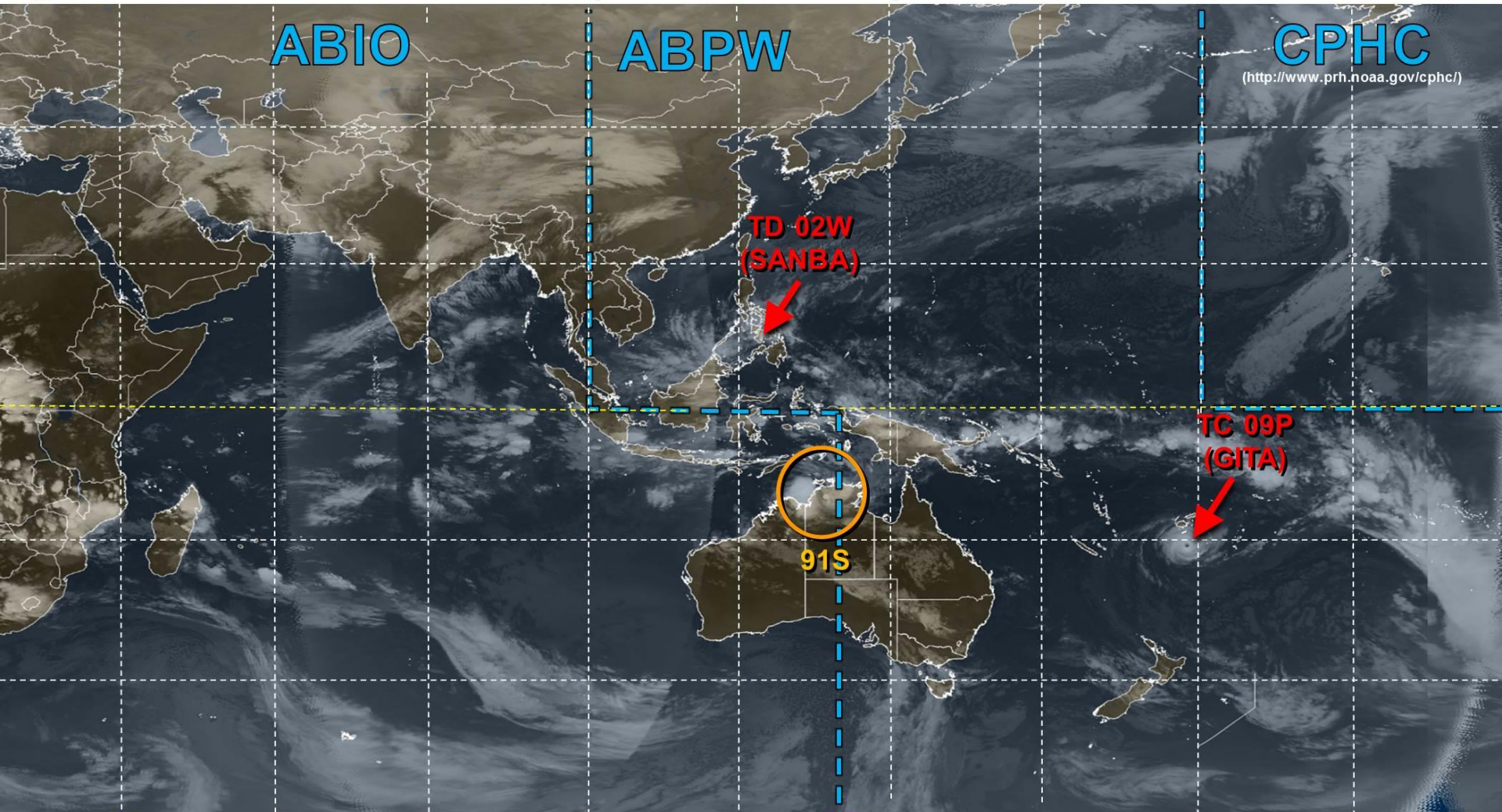




# Tropical Cyclone Development Potential

IMAGE TIME 13/1700Z

(PRODUCT OF JTWC/SATOPS)



ABIO

ABPW

CPHC  
[\(http://www.prh.noaa.gov/cphc/\)](http://www.prh.noaa.gov/cphc/)

TD-02W  
(SANBA)

TC 09P  
(GITA)

91S

**LOW**

TC formation unlikely within 24 hours

**MEDIUM**

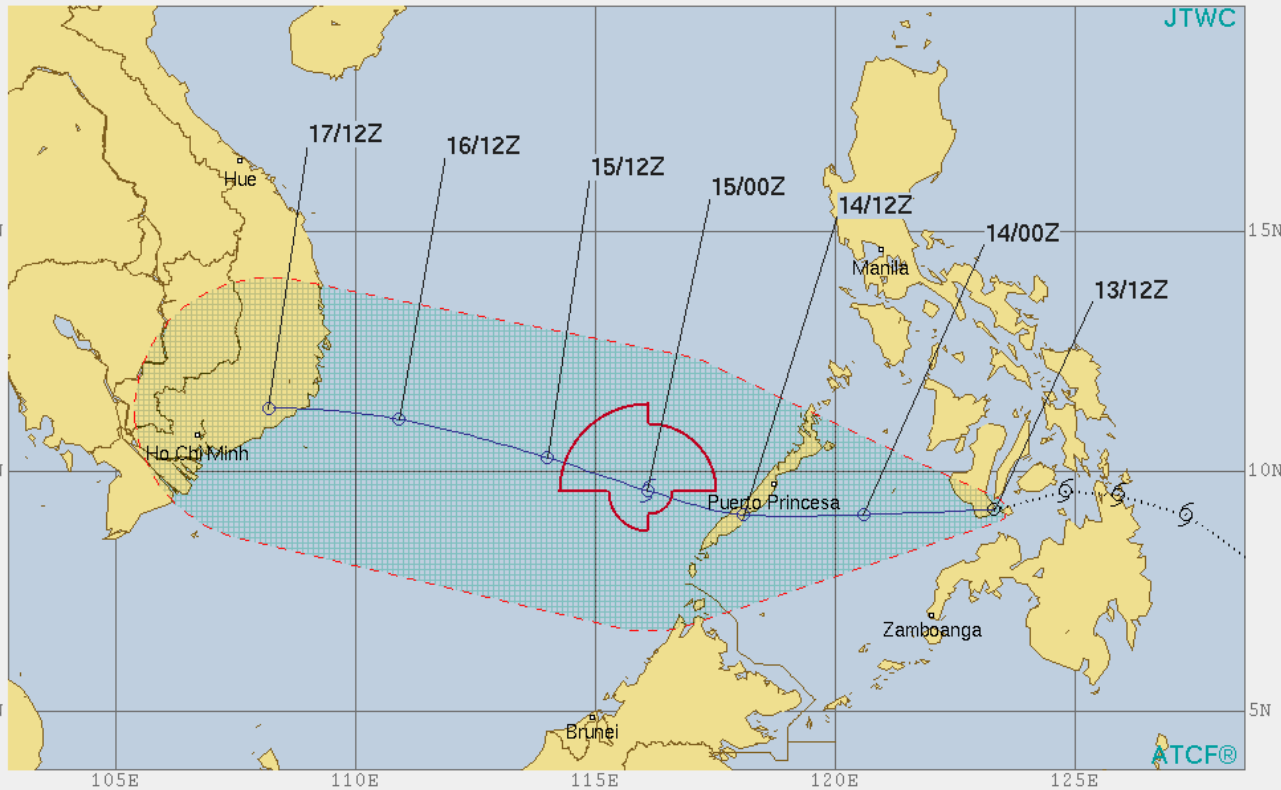
TC development likely, but expected to occur beyond 24 hours

**HIGH**

TC development likely within 24 hours (Reference TCFA)

 Tropical Cyclone (Reference Warning)






TROPICAL DEPRESSION 02W (SANBA) WARNING #20  
 WTPN31 PGTW 131500  
 131200Z POSIT: NEAR 9.2N 123.3E  
 MOVING 255 DEGREES TRUE AT 15 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 15 FEET  
 13/12Z, WINDS 030 KTS, GUSTS TO 040 KTS  
 14/00Z, WINDS 030 KTS, GUSTS TO 040 KTS  
 14/12Z, WINDS 030 KTS, GUSTS TO 040 KTS  
 15/00Z, WINDS 035 KTS, GUSTS TO 045 KTS  
 15/12Z, WINDS 030 KTS, GUSTS TO 040 KTS  
 16/12Z, WINDS 025 KTS, GUSTS TO 035 KTS  
 17/12Z, WINDS 020 KTS, GUSTS TO 030 KTS

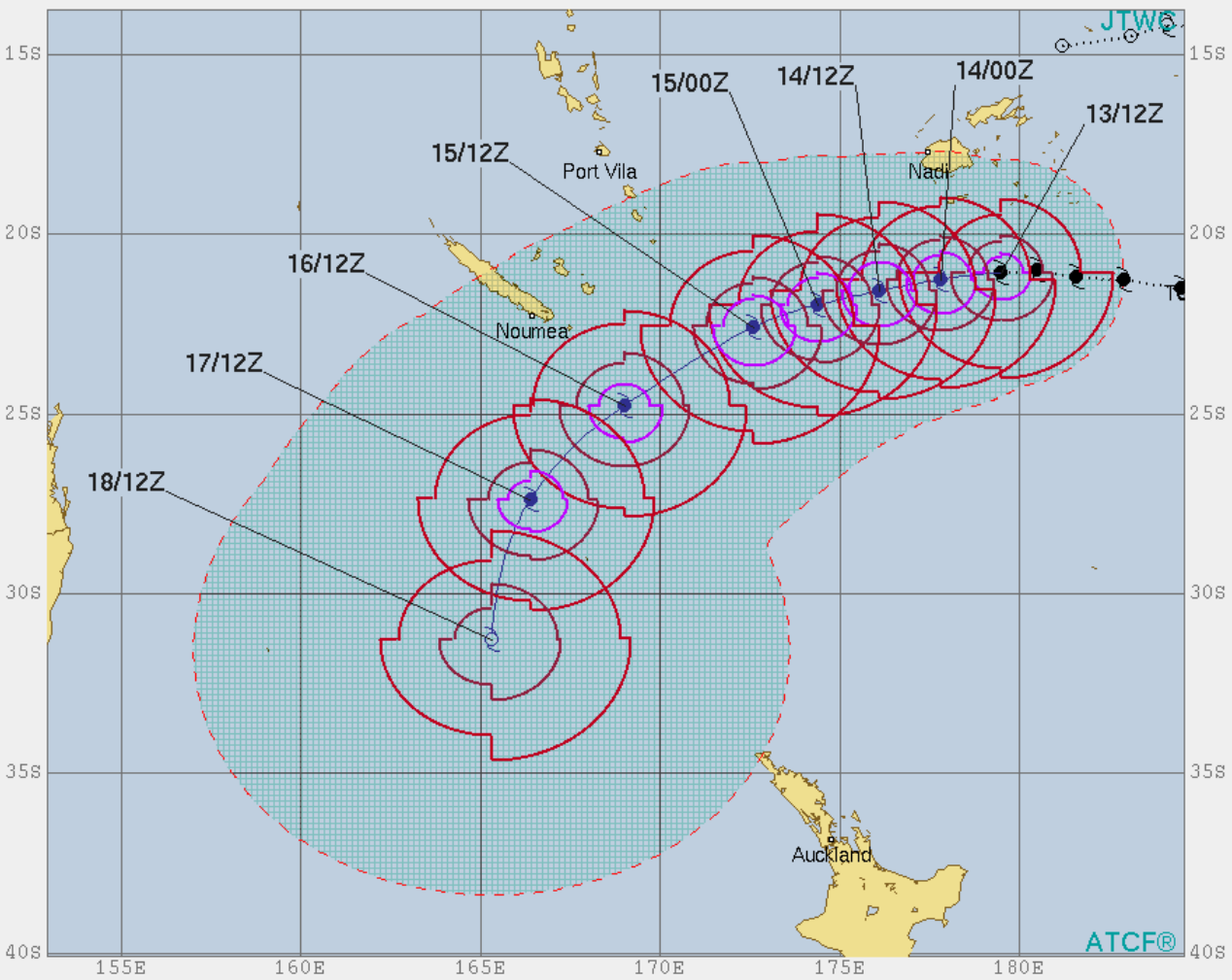
CPA TO:	NM	DTG
ZAMBOANGA	137	13/18Z
MANILA	329	13/21Z
CLARK AB	366	13/23Z
SUBIC_BAY	343	14/01Z
PUERTO_PRINCESA	38	14/09Z
DA_NANG	282	17/10Z
HO_CHI_MINH_CITY	93	17/12Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
CLARK AB	156	393	0
MANILA	157	351	0
SUBIC_BAY	151	382	0
PUERTO_PRINCESA	096	274	0
ZAMBOANGA	027	155	0

- LESS THAN 34 KNOTS
- 34-63 KNOTS
- MORE THAN 63 KNOTS
- FORECAST CYCLONE TRACK
- PAST CYCLONE TRACK
- DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
- FORECAST 34/50/64 KNOT WIND RADII







TROPICAL CYCLONE 09P (GITA) WARNING #19  
 WTPS31 PGTW 131500  
 131200Z POSIT: NEAR 21.1S 179.5E  
 MOVING 265 DEGREES TRUE AT 09 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 30 FEET  
 13/12Z, WINDS 110 KTS, GUSTS TO 135 KTS  
 14/00Z, WINDS 110 KTS, GUSTS TO 135 KTS  
 14/12Z, WINDS 105 KTS, GUSTS TO 130 KTS  
 15/00Z, WINDS 100 KTS, GUSTS TO 125 KTS  
 15/12Z, WINDS 095 KTS, GUSTS TO 115 KTS  
 16/12Z, WINDS 085 KTS, GUSTS TO 105 KTS  
 17/12Z, WINDS 065 KTS, GUSTS TO 080 KTS  
 18/12Z, WINDS 050 KTS, GUSTS TO 065 KTS

CPA TO:	NM	DTG
LABASA	276	13/14Z
SAVUSAVU	258	13/14Z
SUVA	183	13/17Z
PORT VILA	374	15/18Z
NOUMEA	227	16/14Z
KINGSTON_IS.	126	18/00Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
SUVA	161	190	0
TONGA	269	297	0
SAVUSAVU	178	258	0
LABASA	178	276	0


LESS THAN 34 KNOTS  
 34-63 KNOTS  
 MORE THAN 63 KNOTS

FORECAST CYCLONE TRACK  

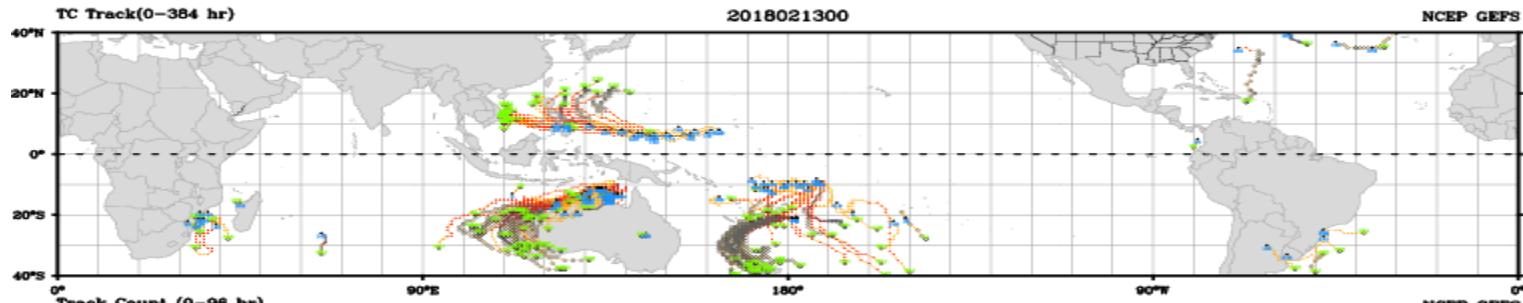
 PAST CYCLONE TRACK

DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA  

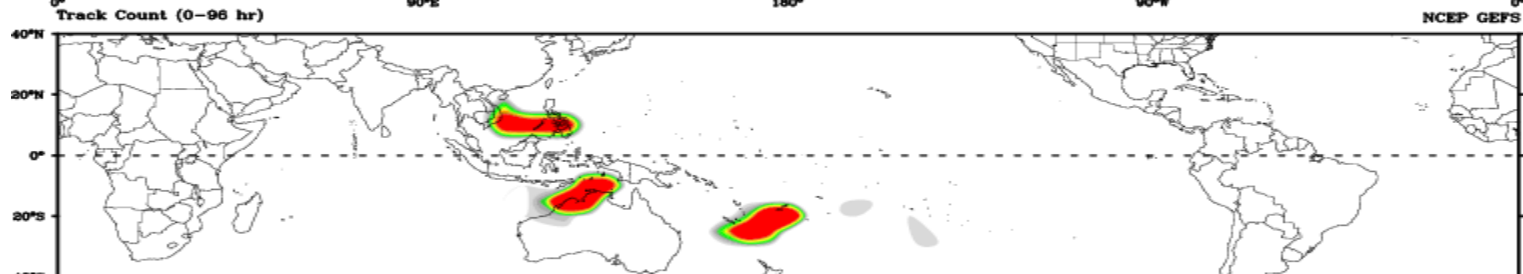
 FORECAST 34/50/64 KNOT WIND RADII



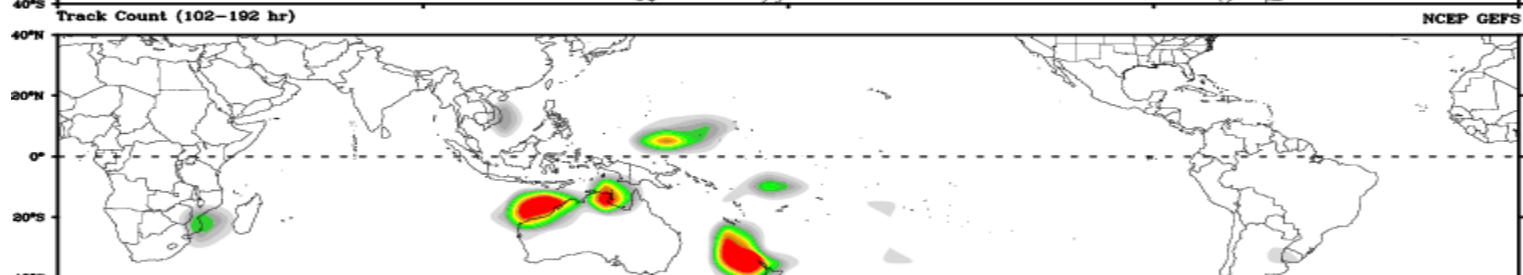
ATCF®



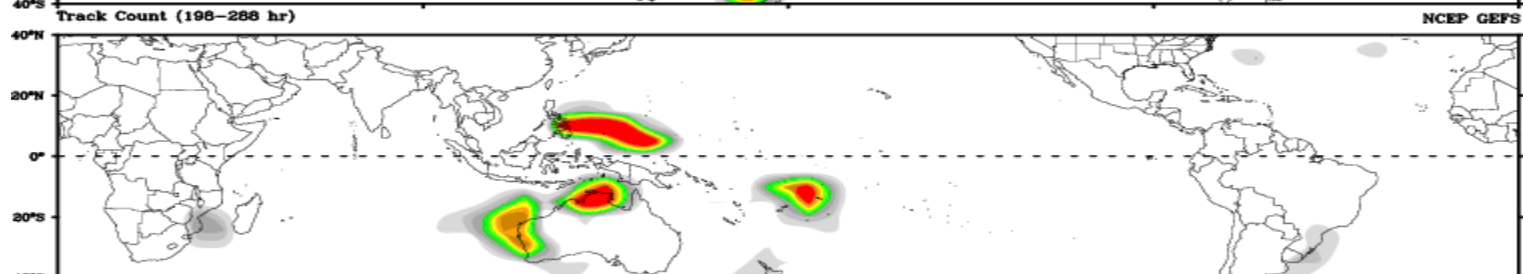
Days 1-4



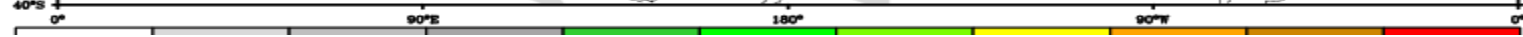
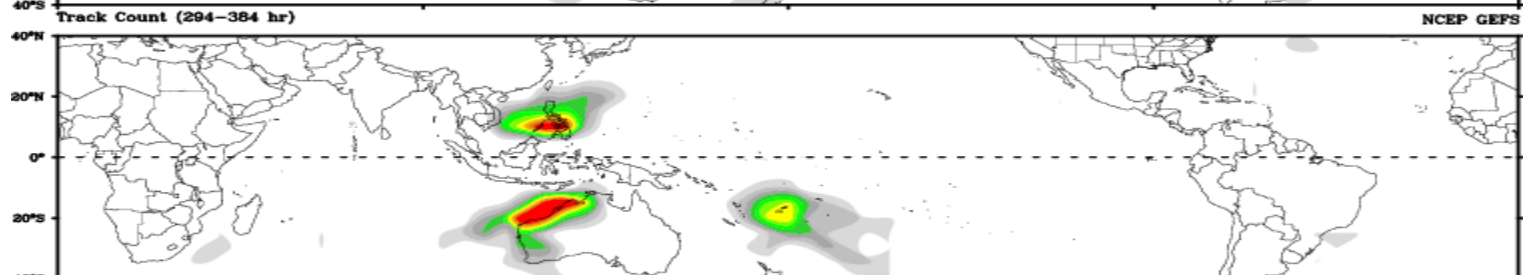
Day 5-8



Day 9-12

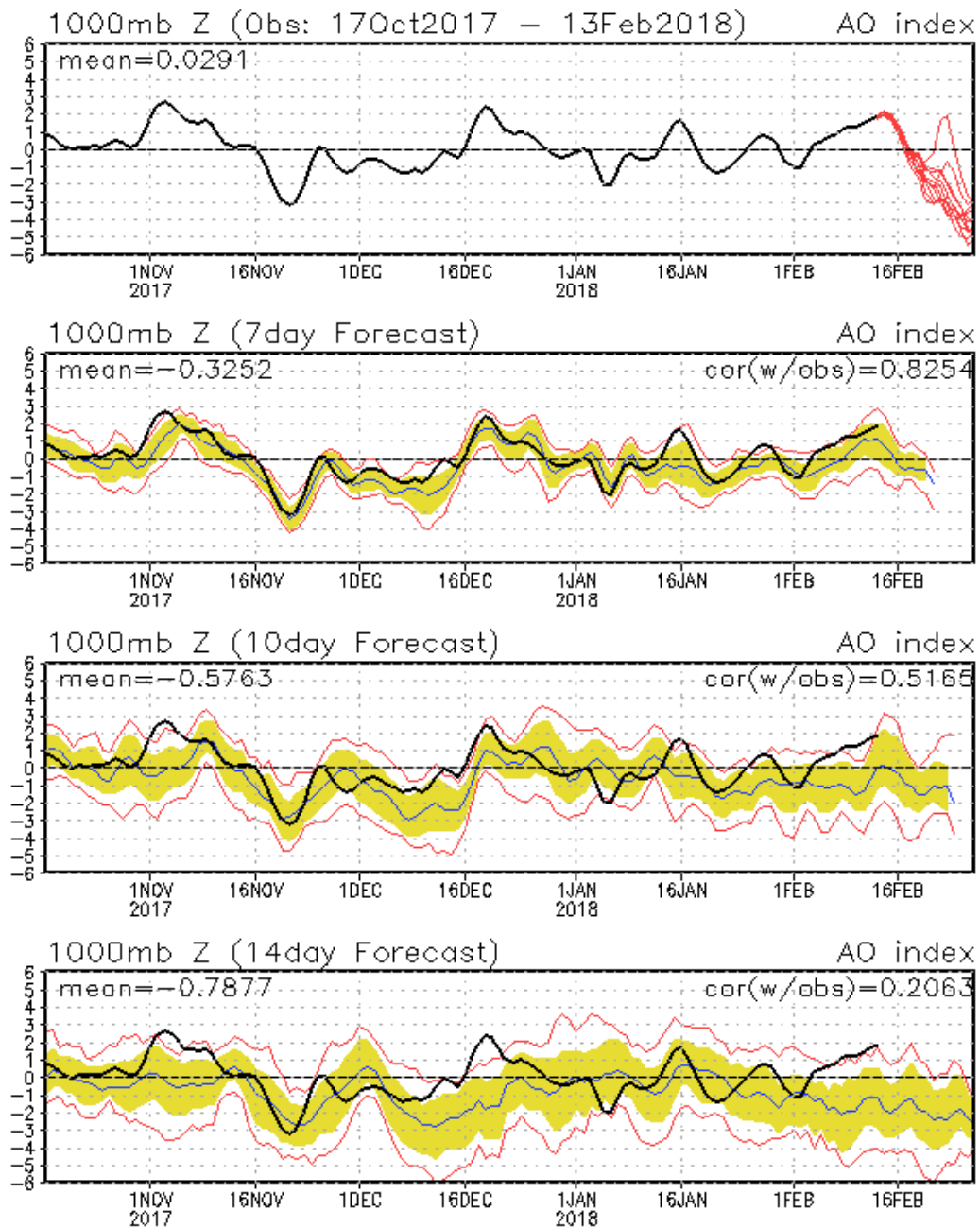


Day 13-15



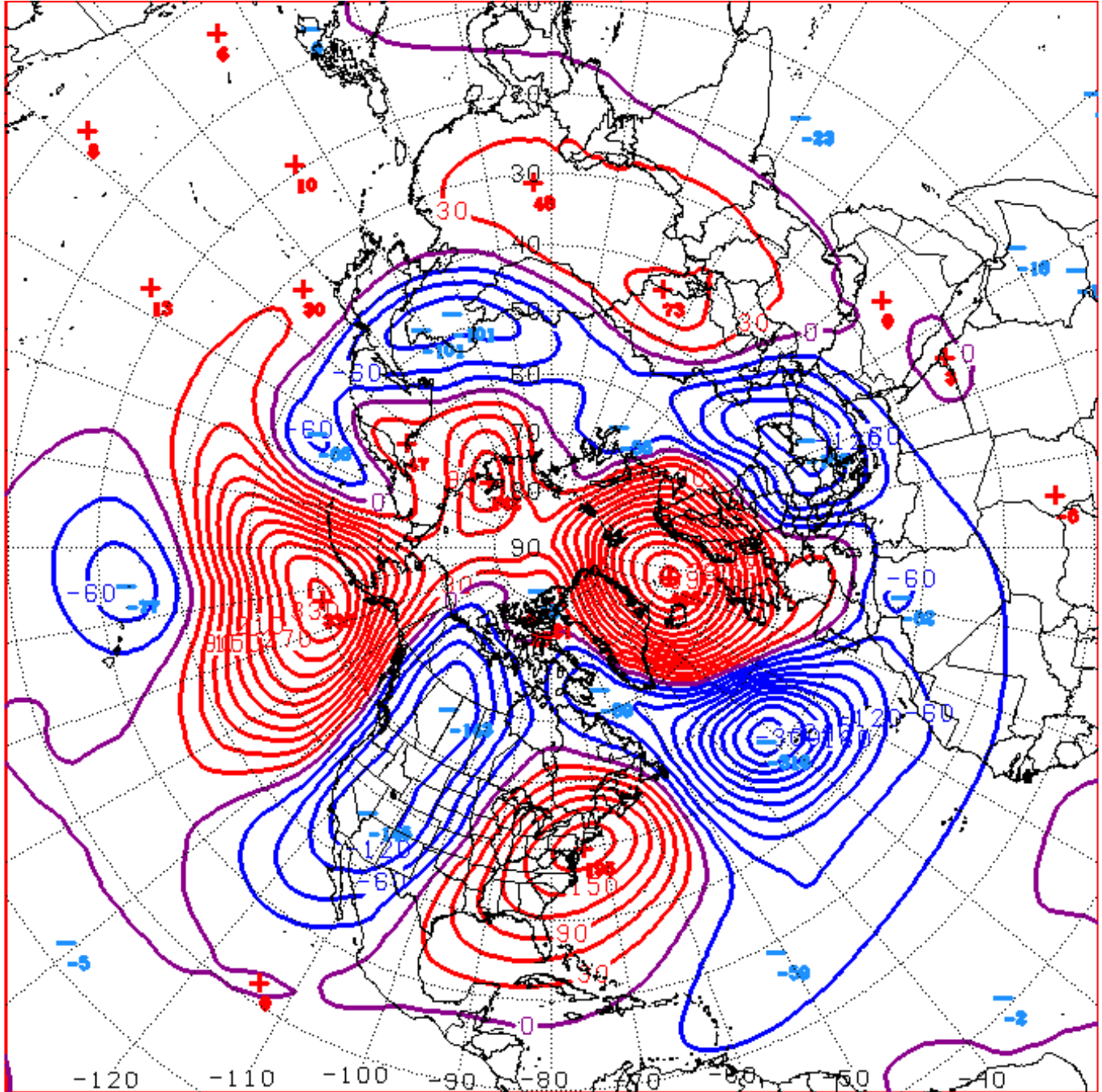
# Connections to U.S. Impacts

## AO: Observed & ENSM forecasts



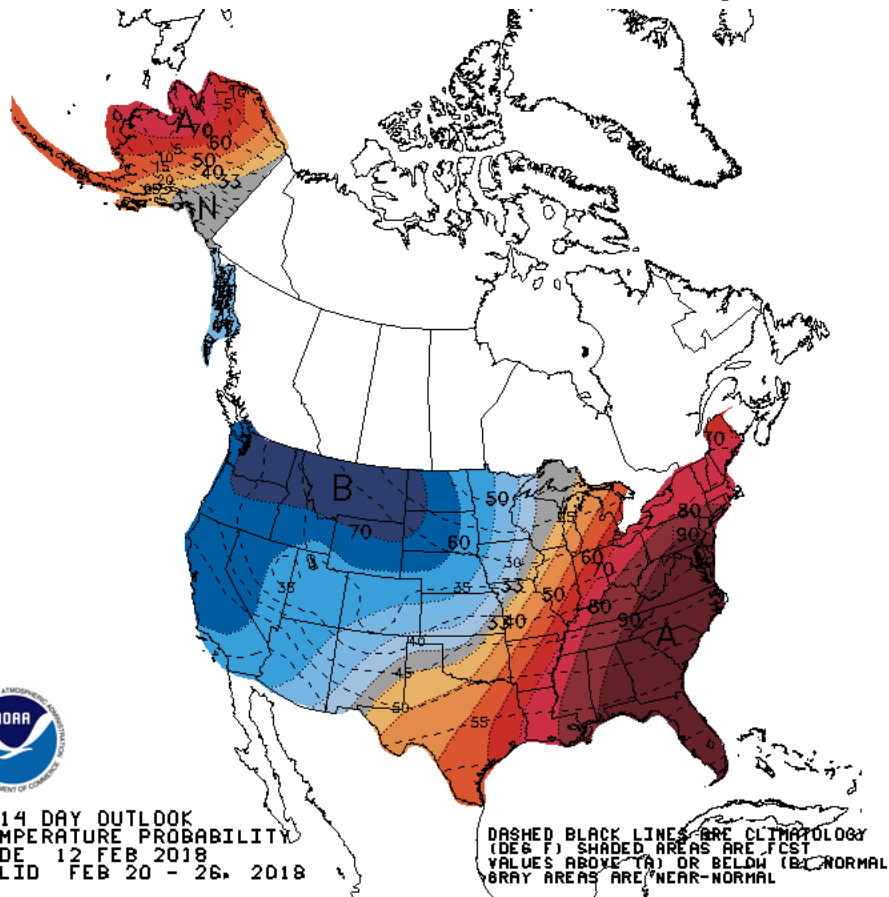


# Week 2 Forecast From GFS



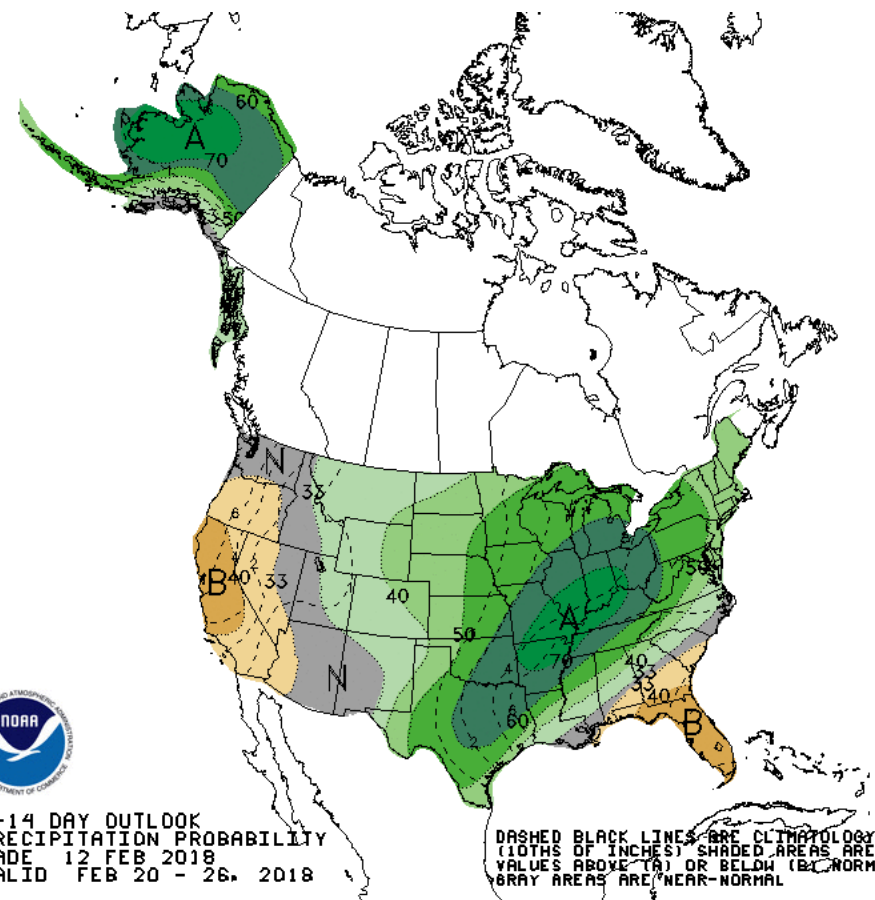
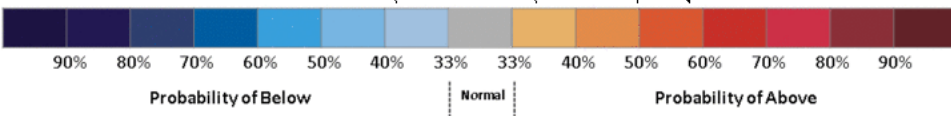
D+11 500 MB ANOMALIES FROM 12Z GFS  
CPC MAP MADE FEB 13 2018 1734 UTC CNTD FEB 24 2018

# Week 2 – Temperature and Precipitation



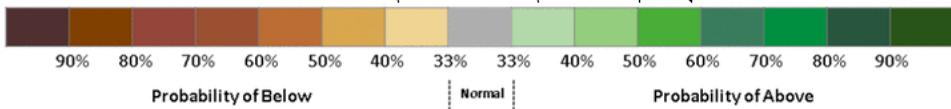
8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 12 FEB 2018  
VALID FEB 20 - 26, 2018

DASHED BLACK LINES ARE CLIMATOLOGY (DEG F). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 12 FEB 2018  
VALID FEB 20 - 26, 2018

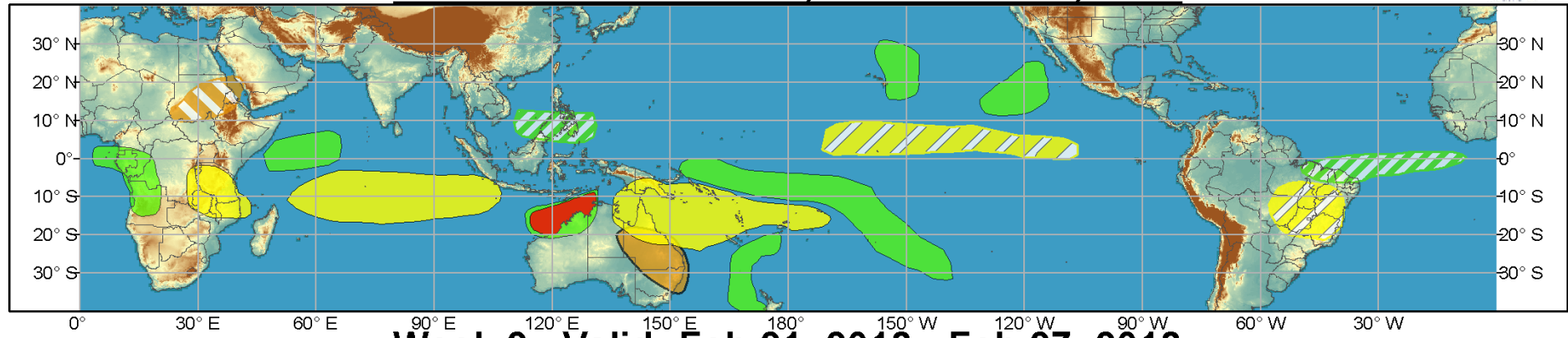
DASHED BLACK LINES ARE CLIMATOLOGY (10THS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



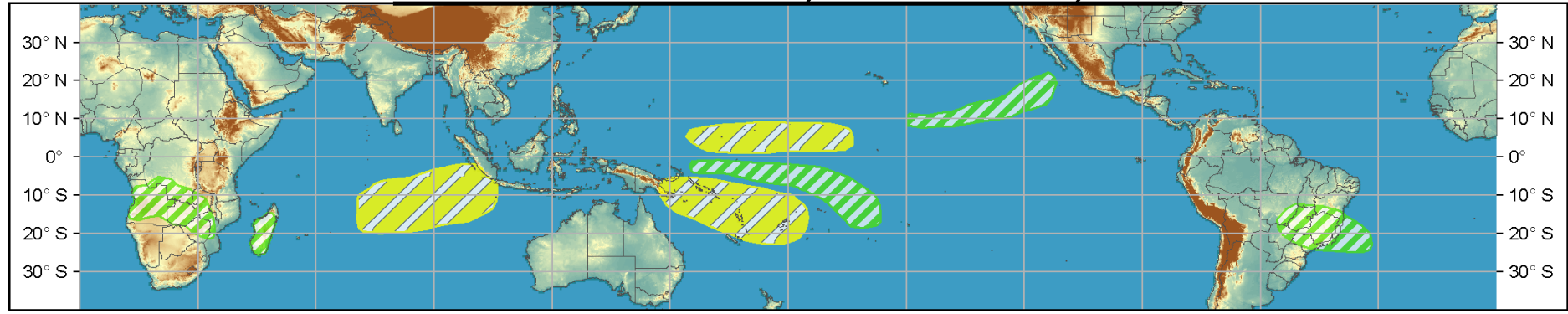


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