

Global Tropics Hazards And Benefits Outlook

April 5, 2016

Adam Allgood

Outline

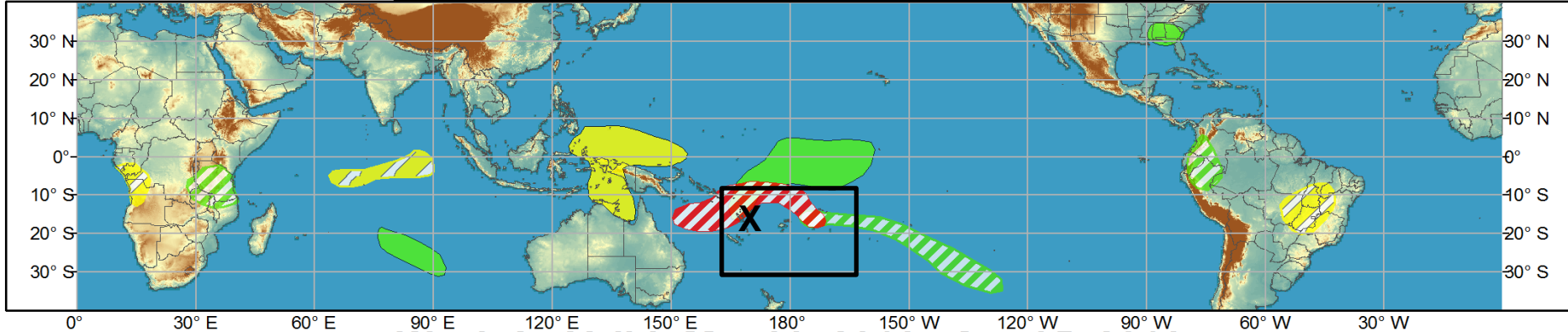
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review – Tropical Cyclones

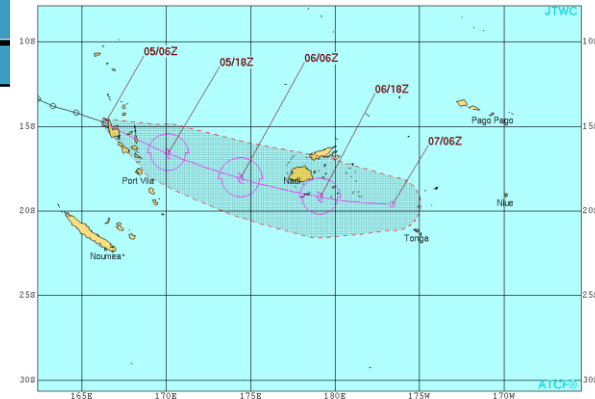
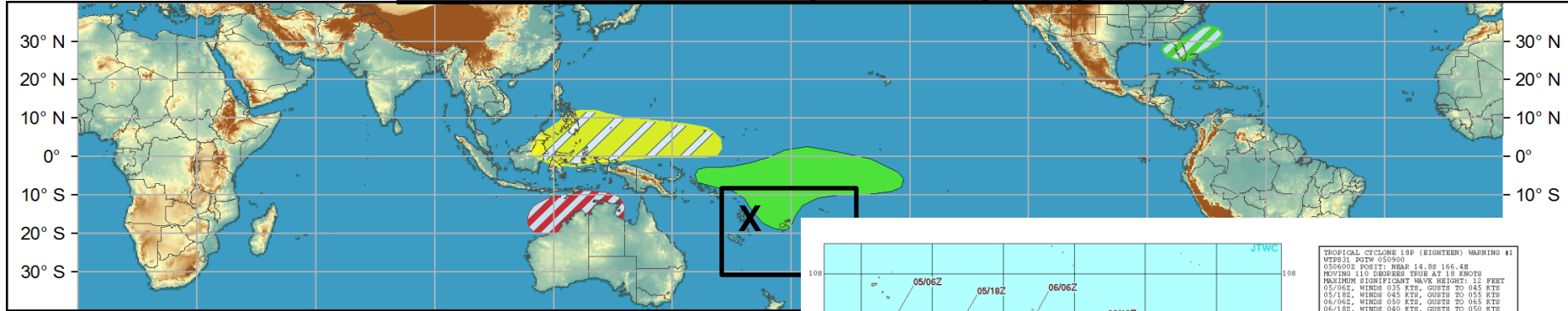
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Mar 30, 2016 - Apr 05, 2016



Week 2 - Valid: Mar 30, 2016 - Apr 05, 2016



TROPICAL CYCLONE 10P (RIGHTEN) WARNING #1
 WPS#11 POTW 050500
 050600Z POSIT: WPAP 14.88 166.48
 MOVING 110 DEGREES TRUE AT 1.8 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 12 FEET
 05/06Z, WINDS 015 KTS, GUSTS TO 045 KTS
 05/18Z, WINDS 045 KTS, GUSTS TO 085 KTS
 06/06Z, WINDS 050 KTS, GUSTS TO 085 KTS
 06/18Z, WINDS 040 KTS, GUSTS TO 050 KTS
 07/06Z, WINDS 030 KTS, GUSTS TO 040 KTS

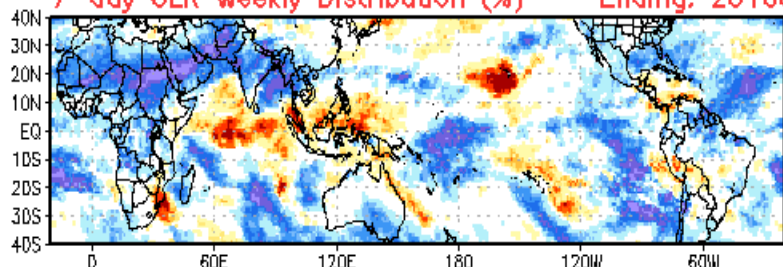
CPA TO:	NM	DTG
NOUMEA	394	05/18Z
NOVA	54	06/18Z
NIUE	181	07/06Z
TORUA	120	07/06Z

BEARING AND DISTANCE	DIR	DIST	TAU
	(DEG)	(NM)	(HRS)
SUVA	269	228	24

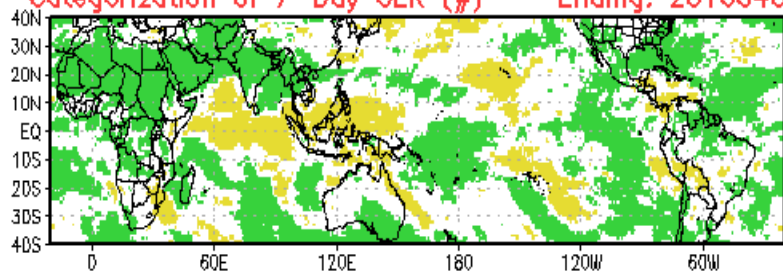
○ LESS THAN 34 KNOTS
 ○ 34-63 KNOTS
 ● MORE THAN 63 KNOTS
 ● PAST 6 HOURLY CYCLONE POSITS IN BLACK
 ● FORECAST CYCLONE POSITS IN COLOR



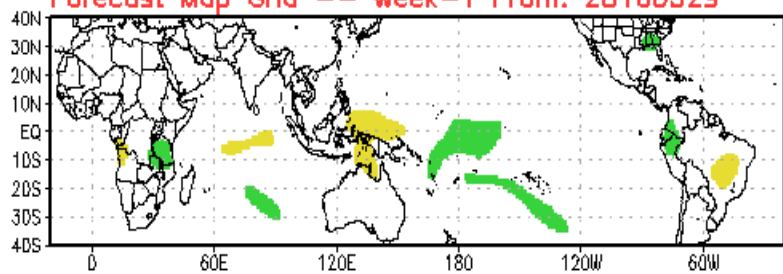
7-day OLR Weekly Distribution (%) -- Ending: 20160405



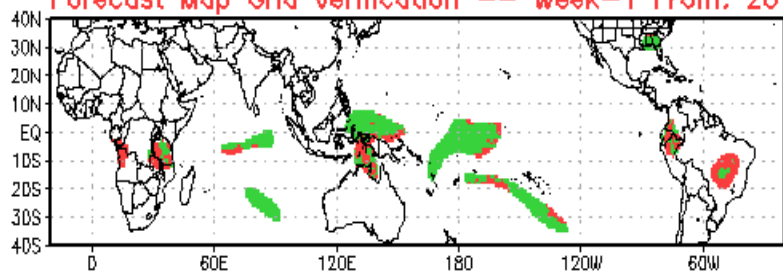
Categorization of 7-Day OLR (#) -- Ending: 20160405



Forecast Map Grid -- Week-1 From: 20160329

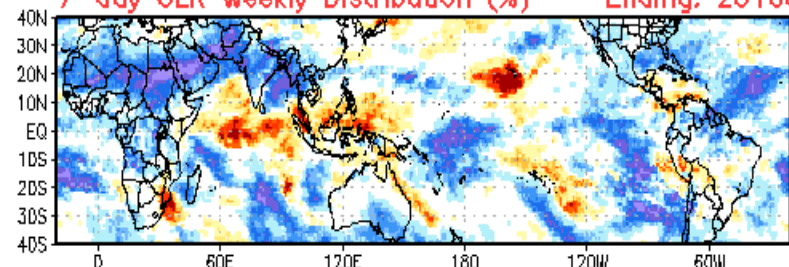


Forecast Map Grid Verification -- Week-1 From: 20160329

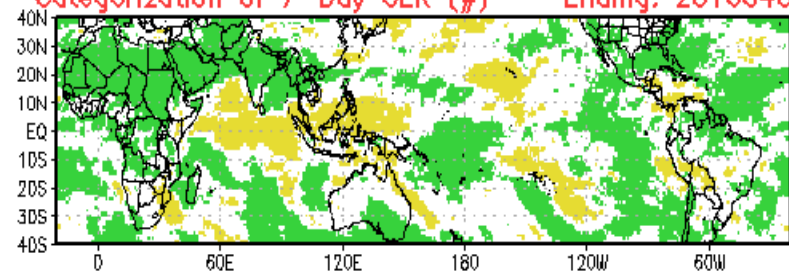


Hit: Green, Miss: Red
Heidke Skill Score: 52.5497

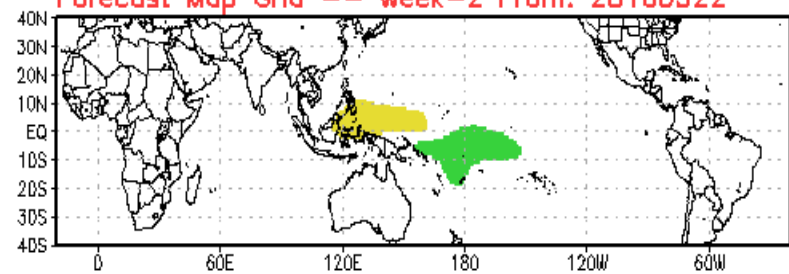
7-day OLR Weekly Distribution (%) -- Ending: 20160405



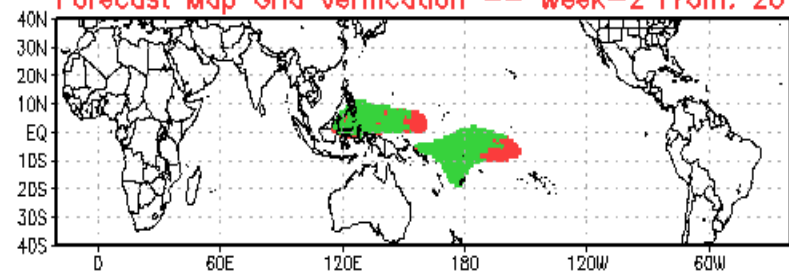
Categorization of 7-Day OLR (#) -- Ending: 20160405



Forecast Map Grid -- Week-2 From: 20160322



Forecast Map Grid Verification -- Week-2 From: 20160322



Hit: Green, Miss: Red
Heidke Skill Score: 70.1816

Synopsis of Climate Modes

ENSO:

- Current: [El Niño Advisory](#)
- Nino 3.4 – 1.8°C above normal – Continuing to decrease.
- Outlook: A transition to ENSO-neutral is likely during late Northern Hemisphere spring or early summer 2016, with close to a 50 percent chance for La Niña conditions to develop by the fall.

MJO and other subseasonal tropical variability:

- A complex pattern has taken shape, with a remnant intraseasonal signal now over Africa and the far western Indian Ocean, and a zonally narrow but strong couplet of enhanced (suppressed) convection over the West Pacific (Maritime Continent).
- Most dynamical model MJO index forecasts depict weakening of the MJO Index during the next two weeks.

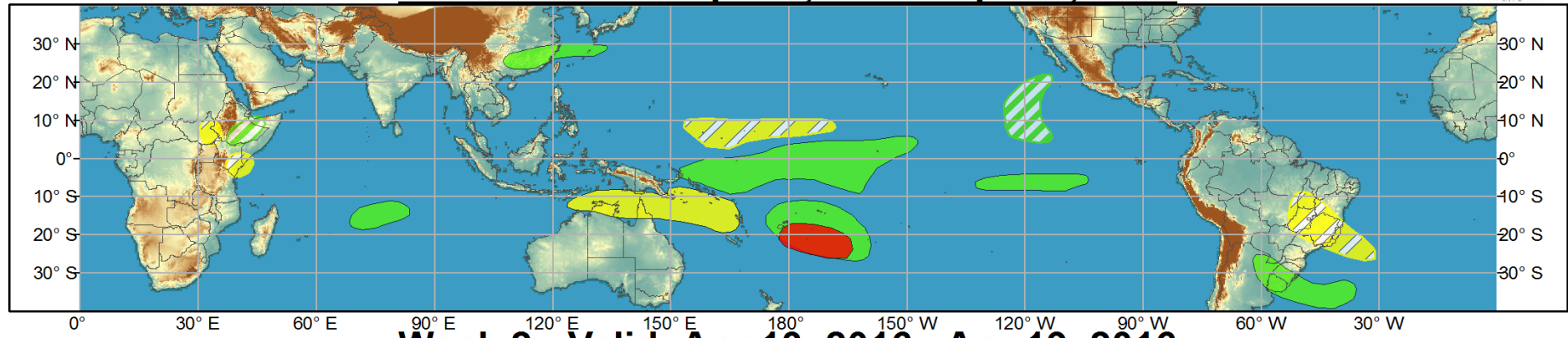
Extratropics:

- Recent MJO activity, coupled with persistent convection over the West Pacific has played a substantial role in the evolution of the extratropical pattern, with much above normal temperatures over Alaska, and deep troughing over eastern North America.

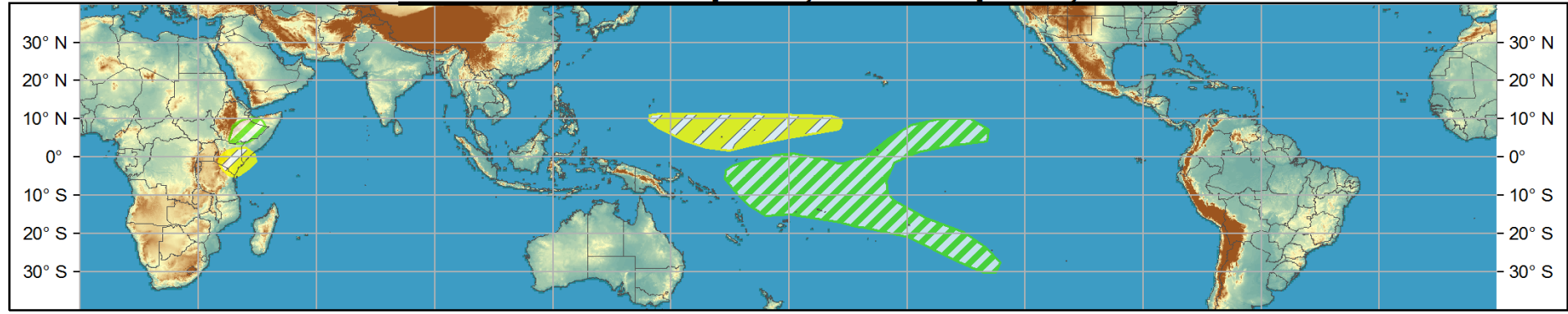


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Apr 06, 2016 - Apr 12, 2016



Week 2 - Valid: Apr 13, 2016 - Apr 19, 2016



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: 04/05/2016
Forecaster: Allgood

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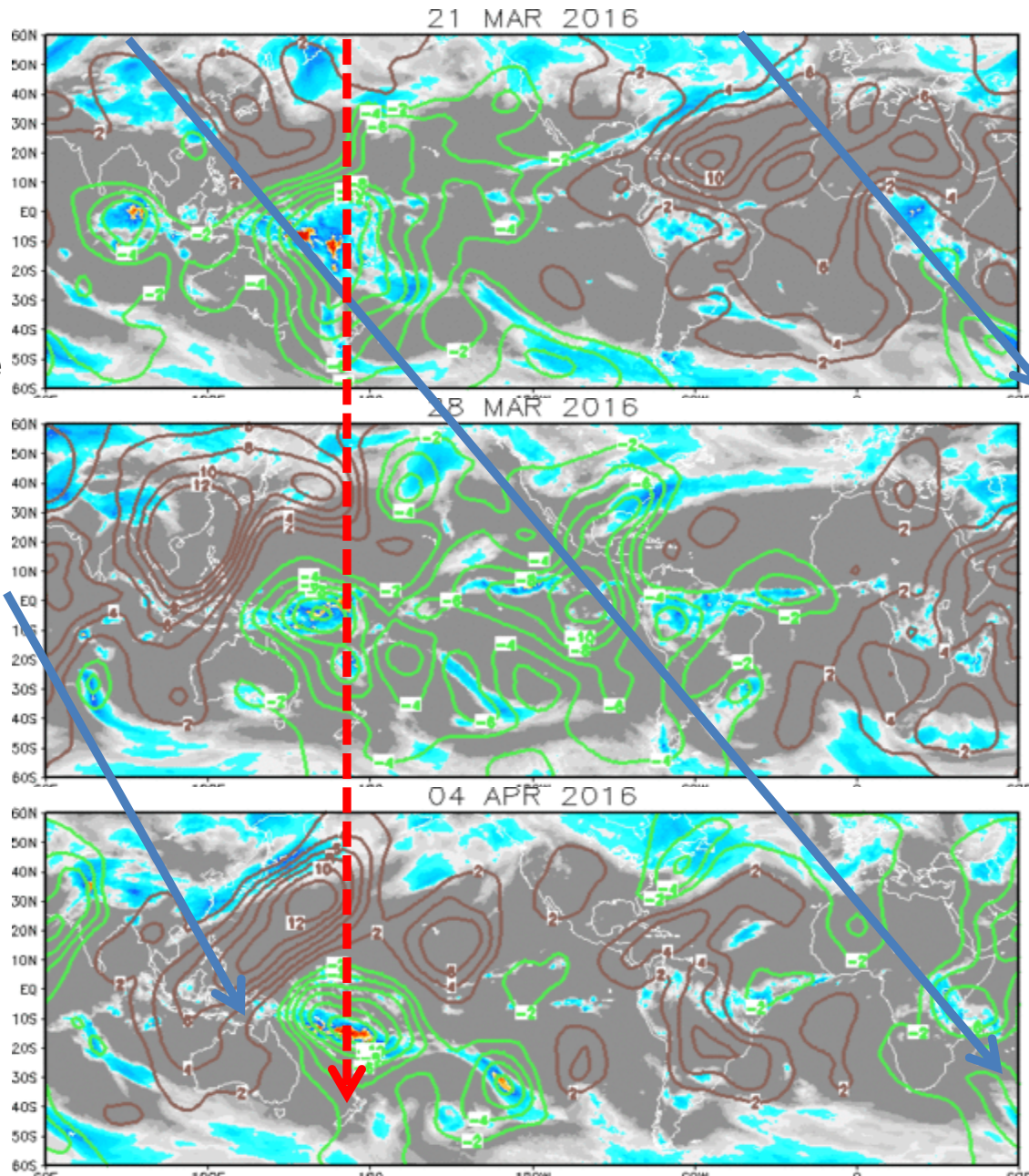


IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

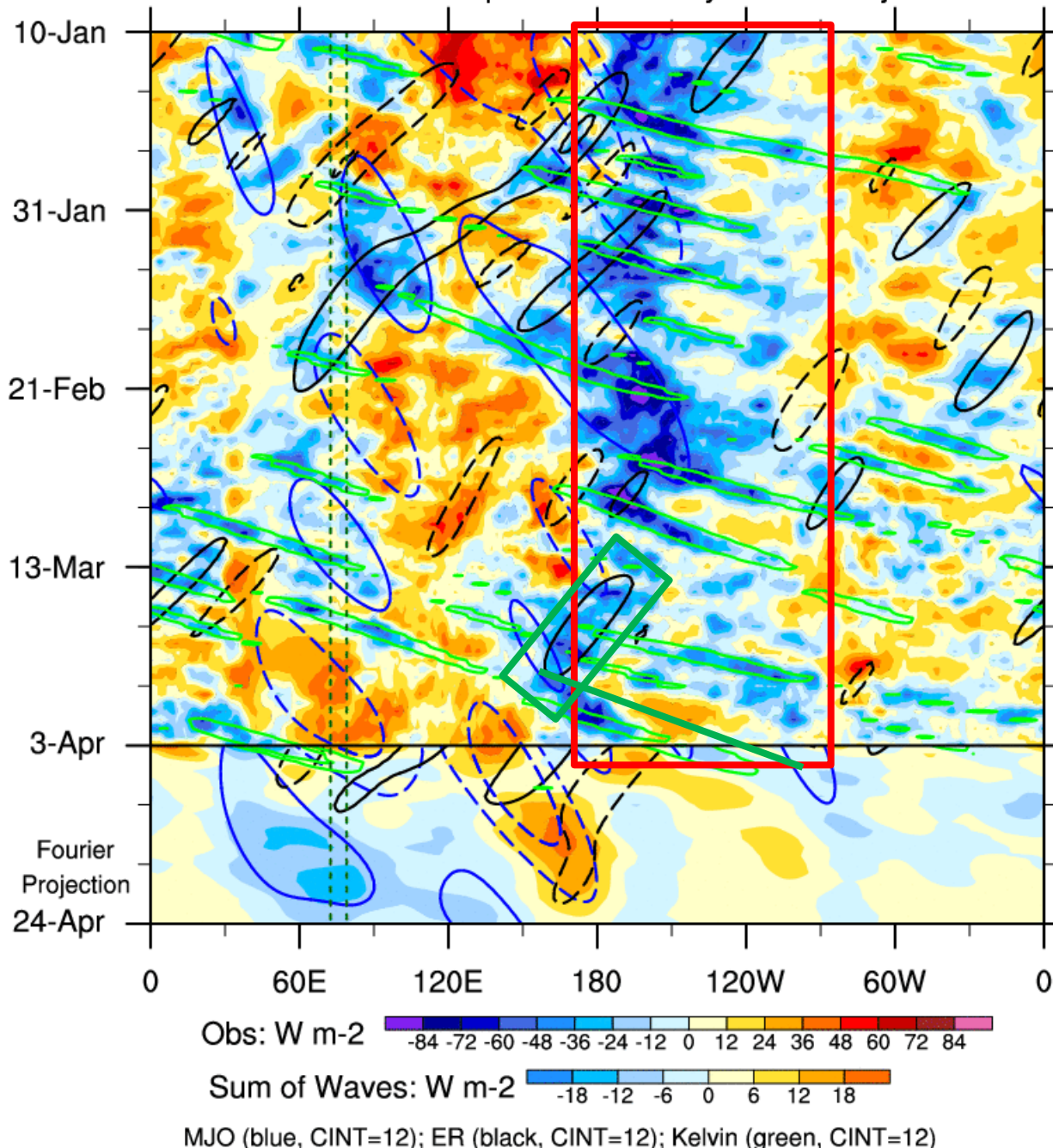
A fast eastward signal is evident (blue lines) – enhanced phase now over Africa/western I.O

Persistent convection over the West Pacific is NOT ENSO related (red line)



NOAA CDR HIRS OLR anomalies: 7.5°S - 7.5°N

10-Jan-2016 to 3-Apr-2016 + 21-day Fourier Projection



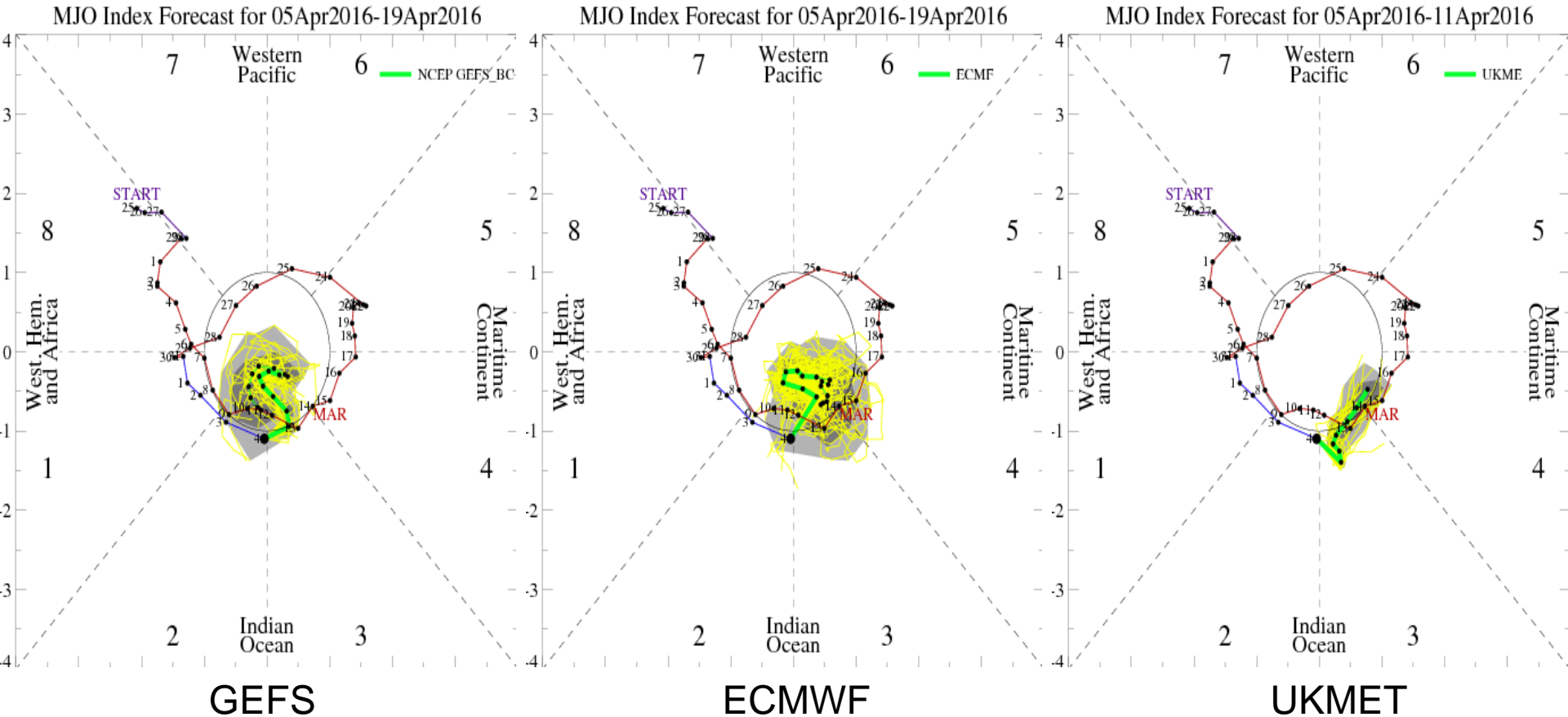
El Niño enhanced convective anomalies are highlighted with the red box.

Constructive interference with MJO in early March.

Equatorial Rossby Wave (ERW) activity was observed during late March near the Date Line (green box).

During early April, the ERW interacted with an eastward-moving feature.

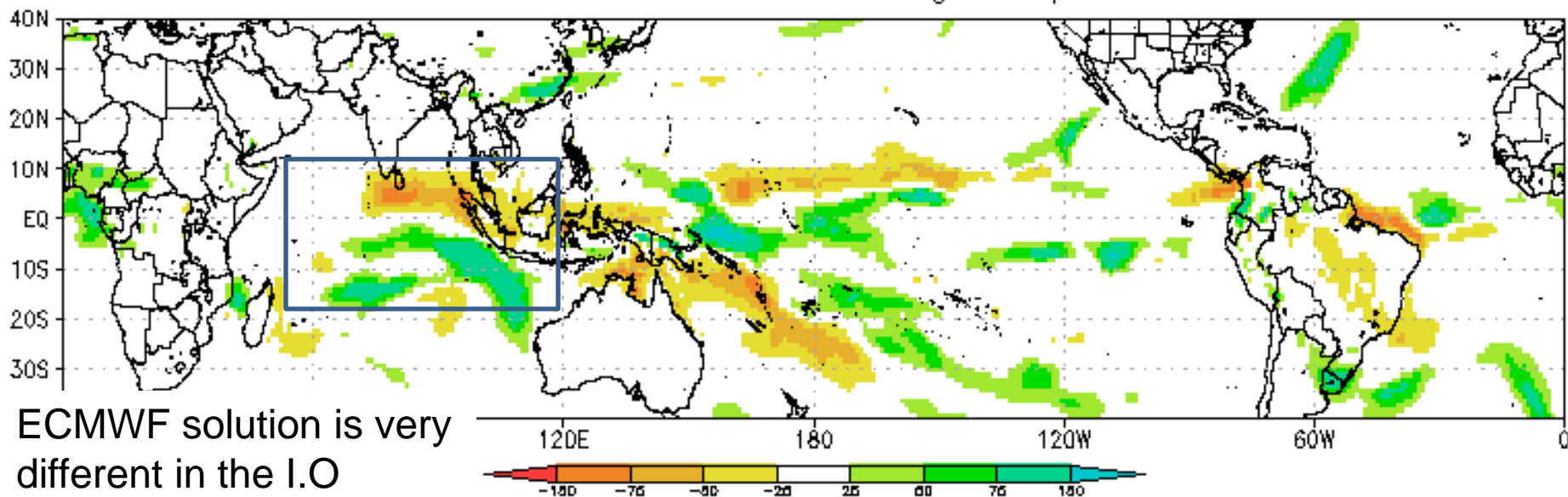
MJO Observation/Forecast



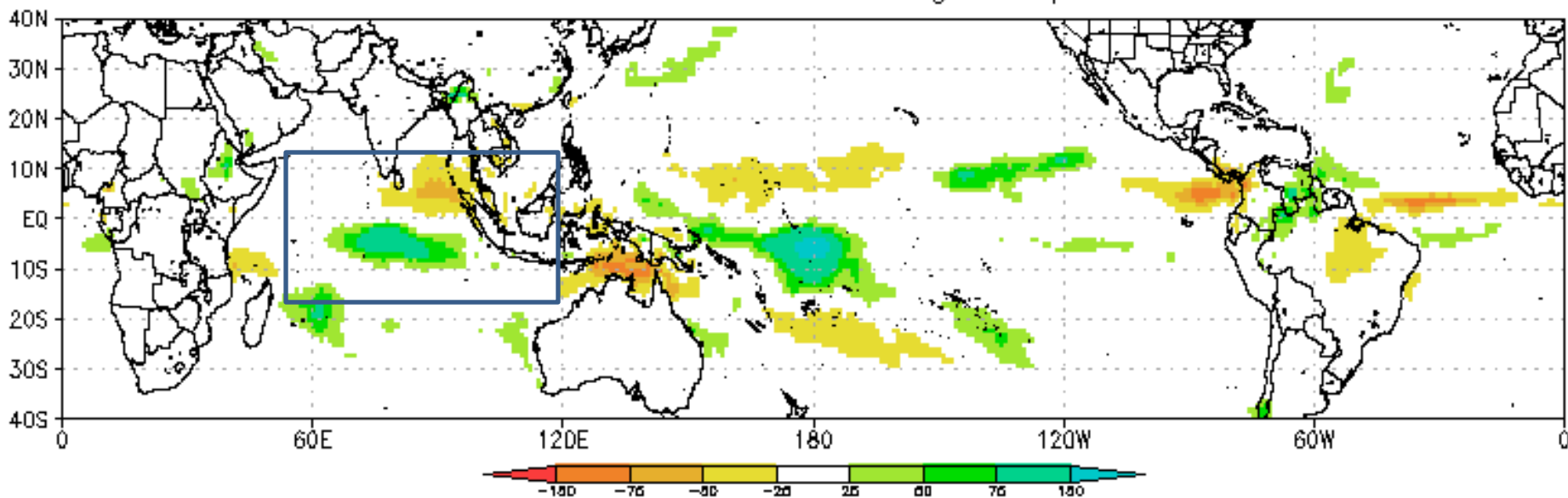
Wheeler-Hendon based analyses of model forecasts indicate a fast-moving signal over the Indian Ocean.

Most models depict weakening.

CFSv2 Precip Anomalies (mm) Issued 04Apr2016
Week-1 Forecast Ending 12Apr2016

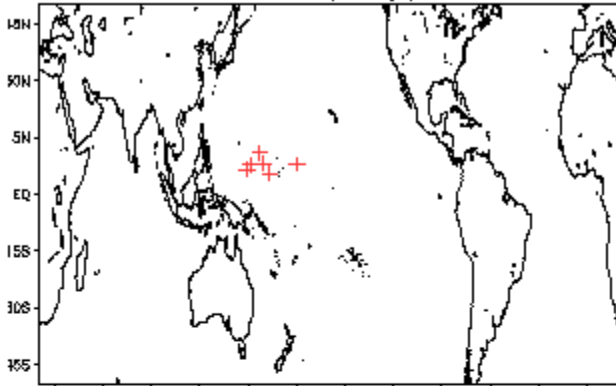


CFSv2 Precip Anomalies (mm) Issued 04Apr2016
Week-2 Forecast Ending 19Apr2016

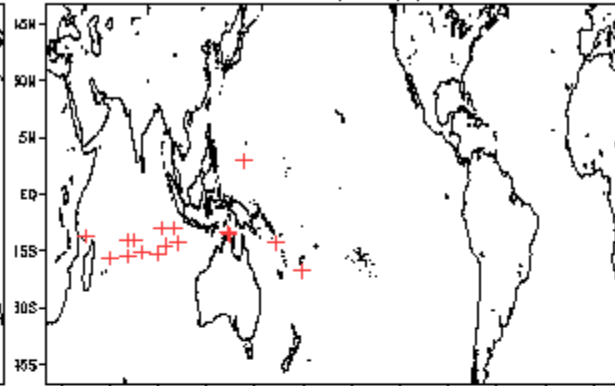


April Tropical Storm Formation by MJO phase

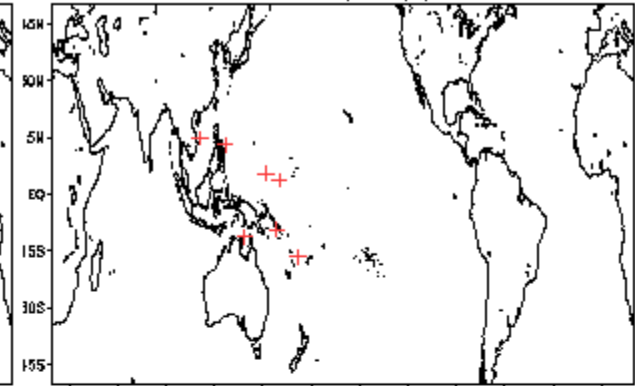
Phase 1 (70 days) 7 storms



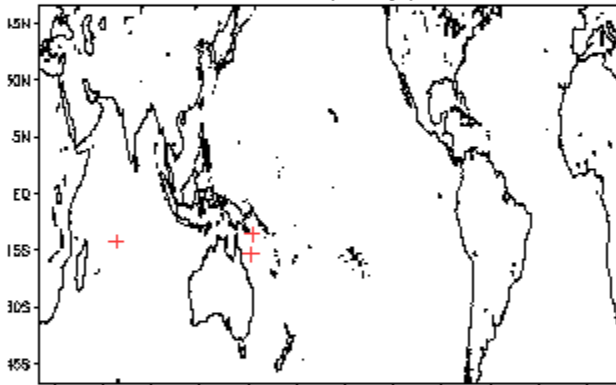
Phase 4 (95 days) 17 storms



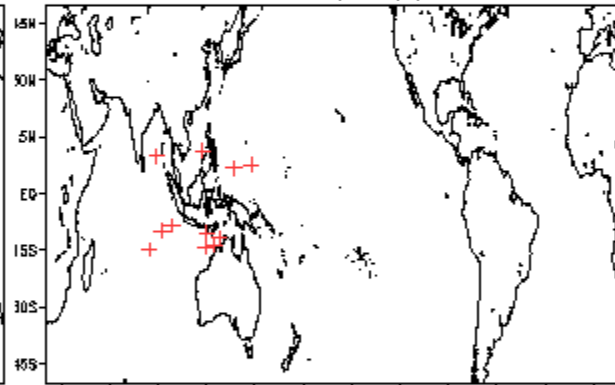
Phase 7 (87 days) 8 storms



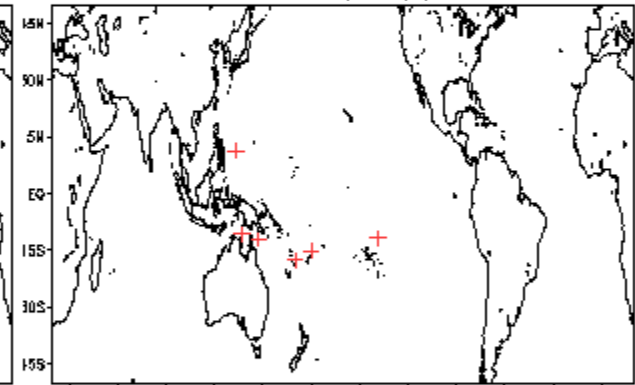
Phase 2 (65 days) 4 storms



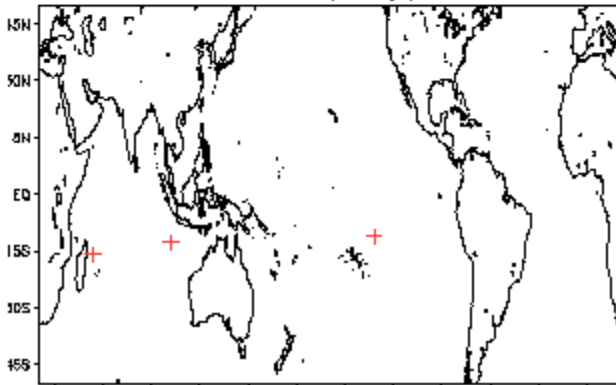
Phase 5 (77 days) 12 storms



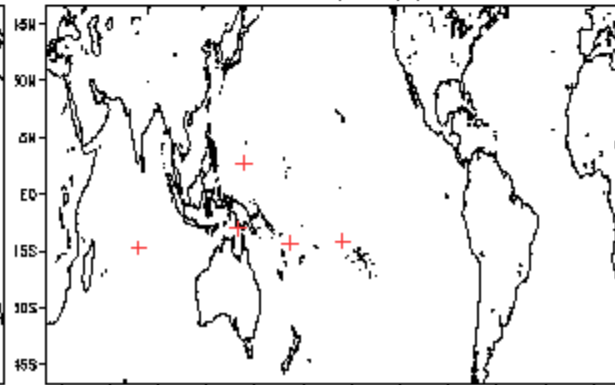
Phase 8 (75 days) 7 storms



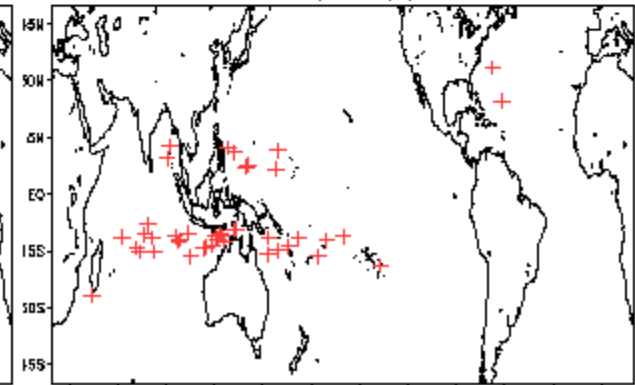
Phase 3 (68 days) 4 storms



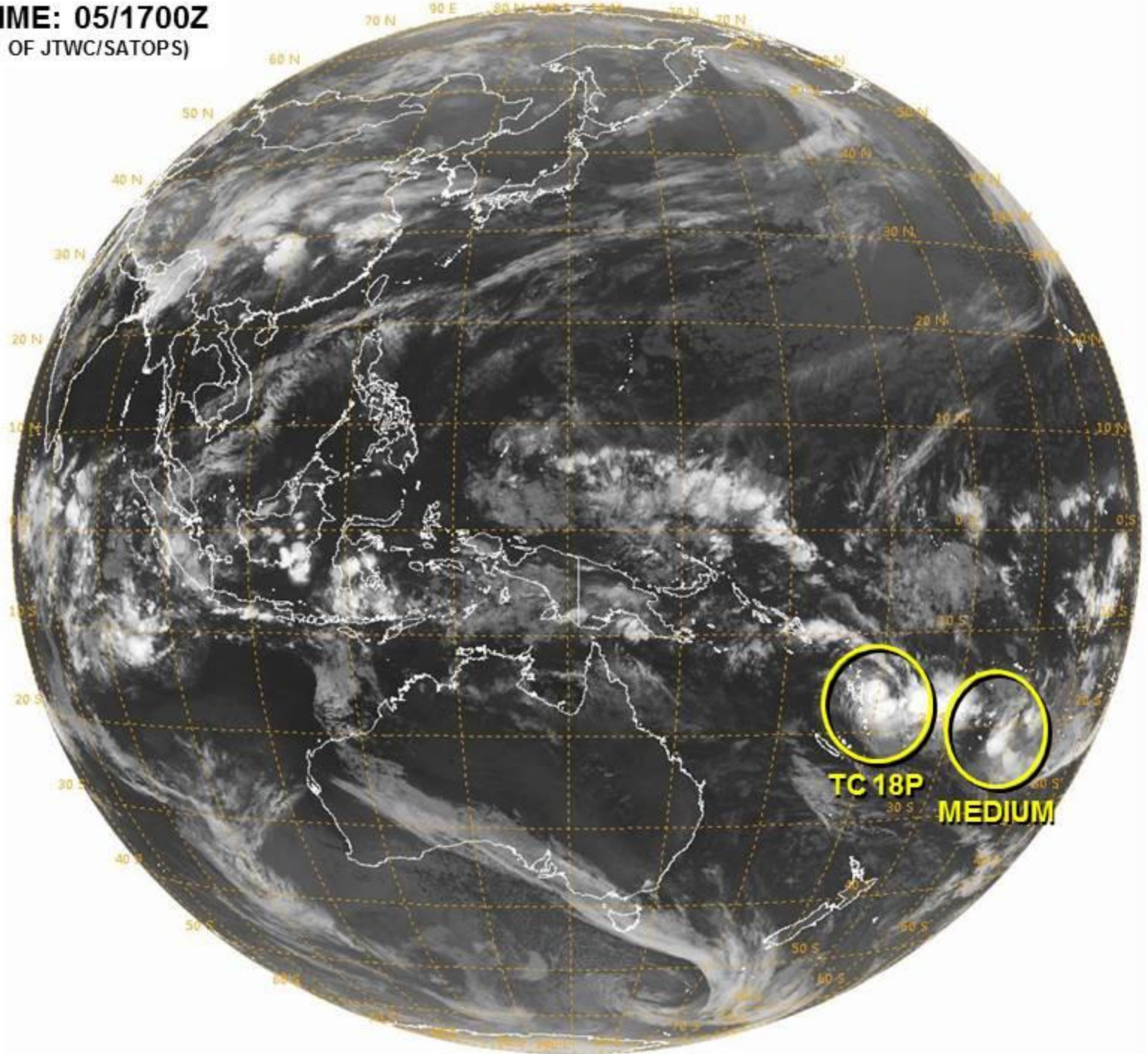
Phase 6 (65 days) 8 storms



Null (388 days) 43 storms



VALID TIME: 05/1700Z
(PRODUCT OF JTWC/SATOPS)

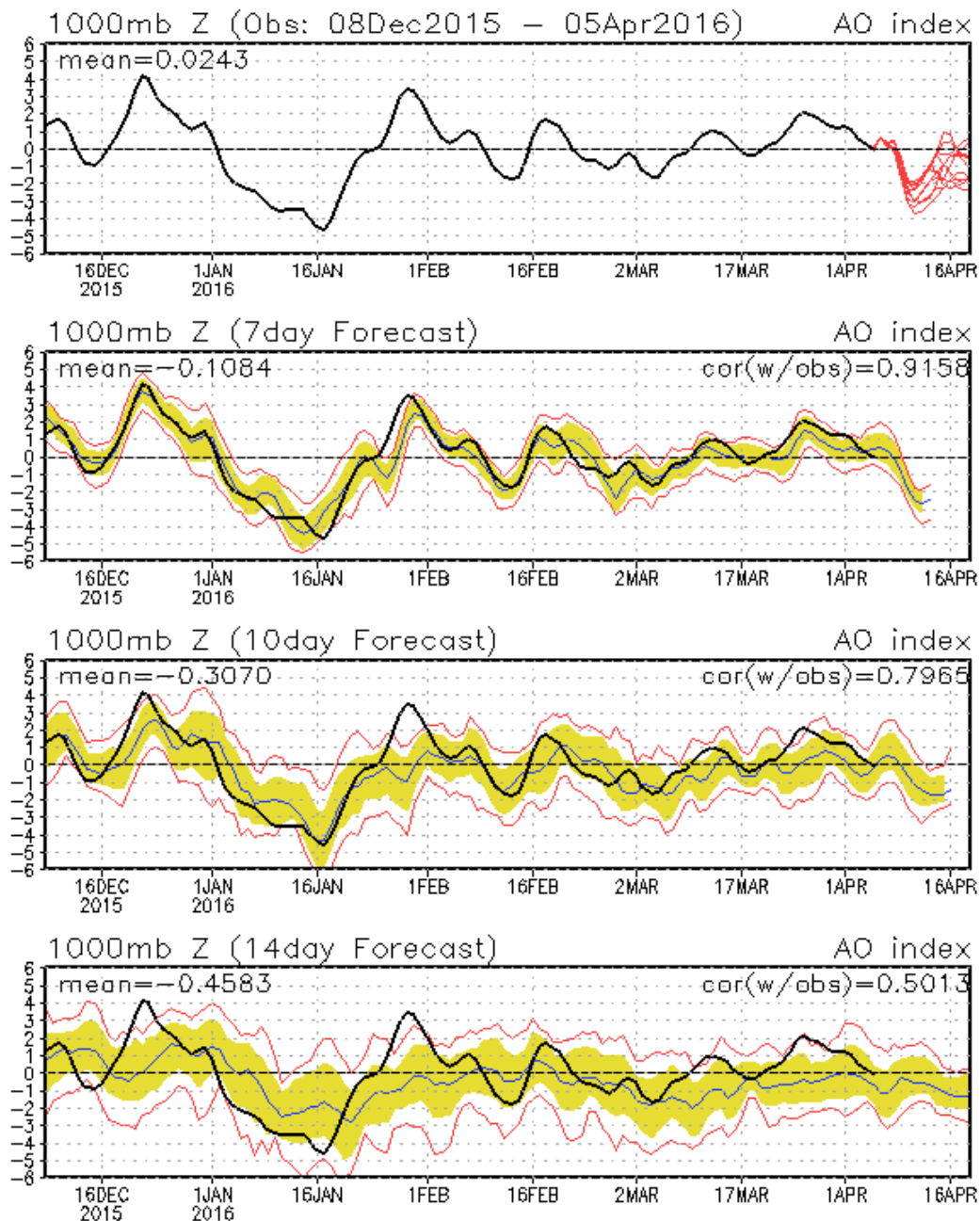


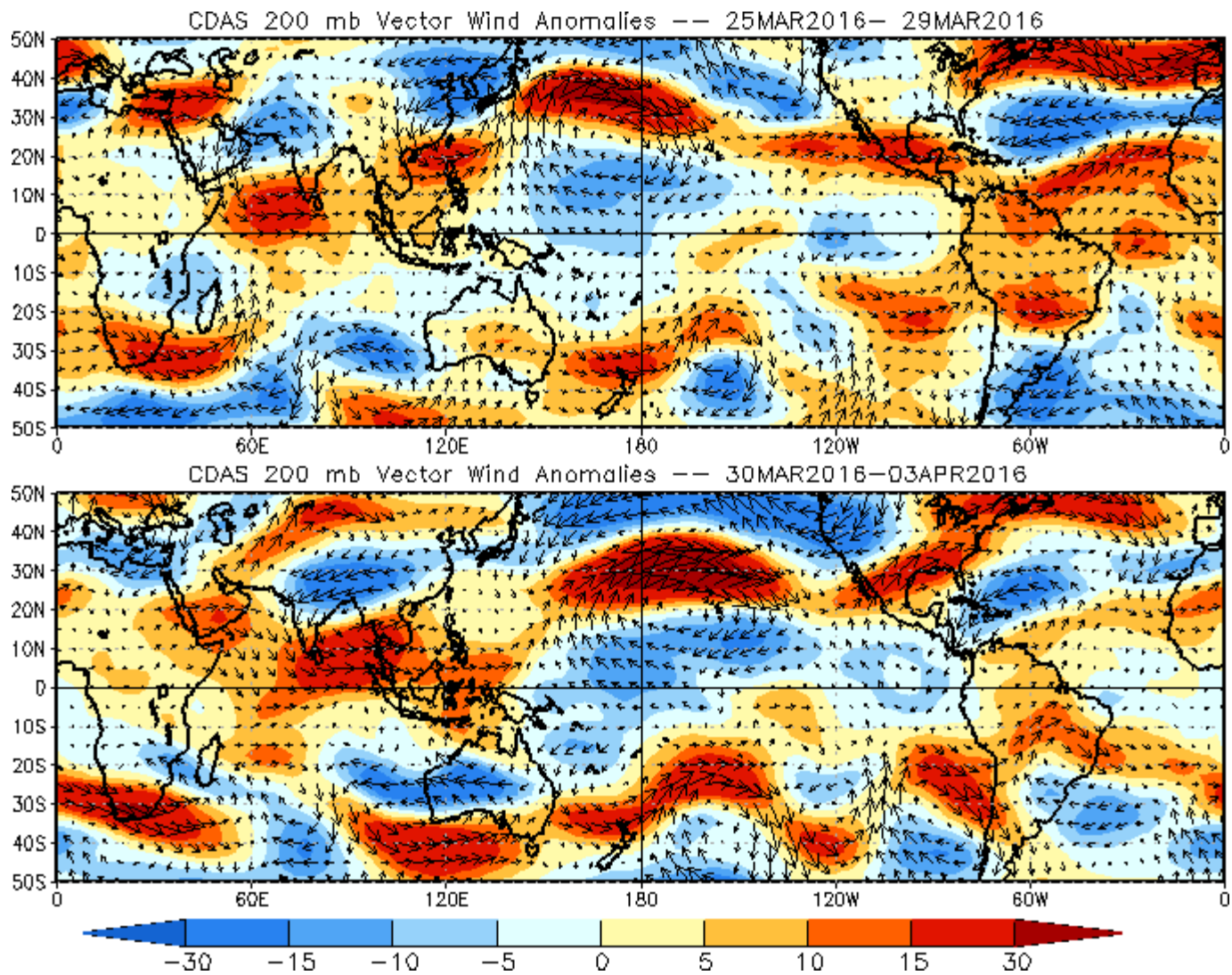
TC 18P

MEDIUM

Connections to U.S. Impacts

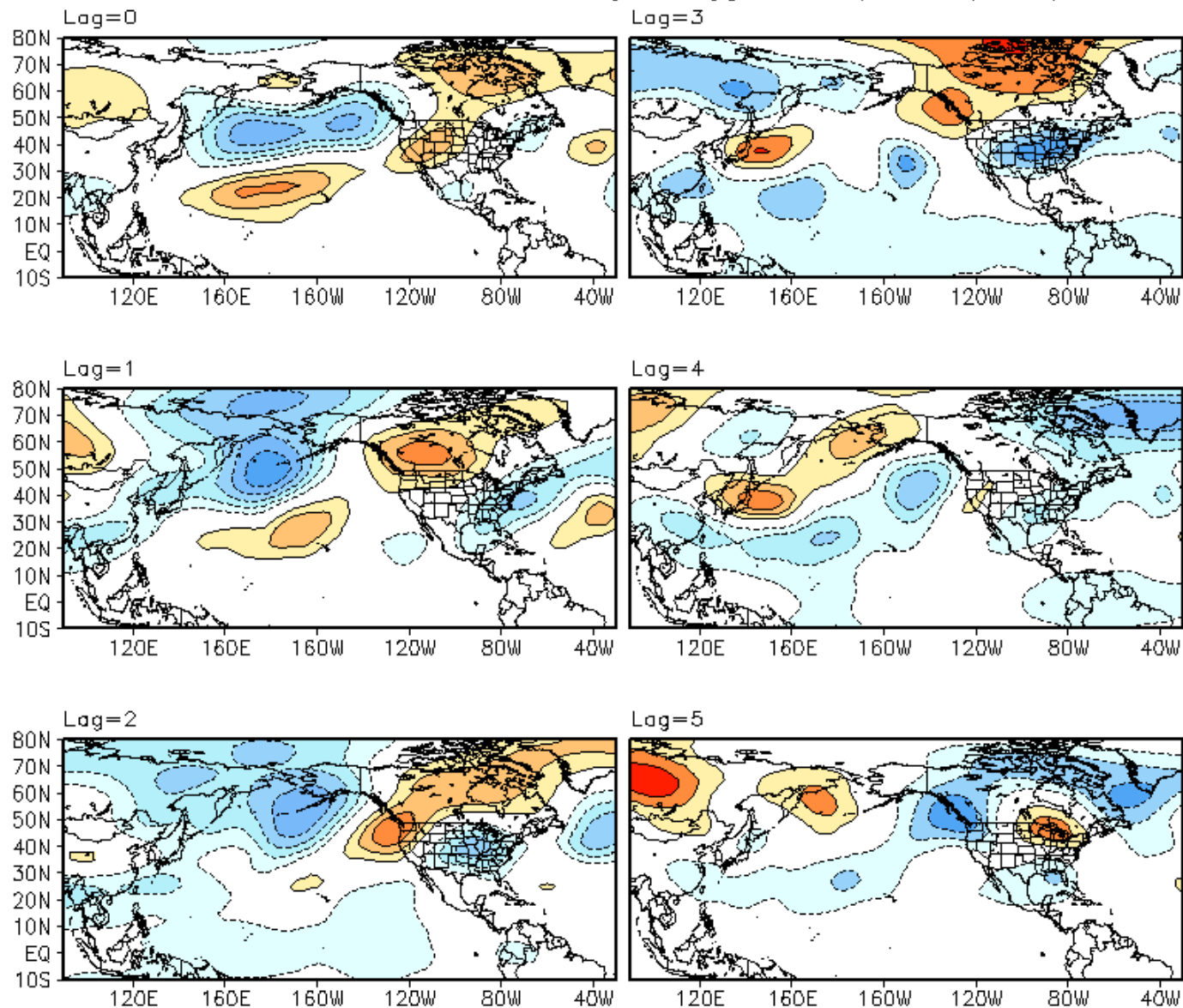
AO: Observed & ENSM forecasts

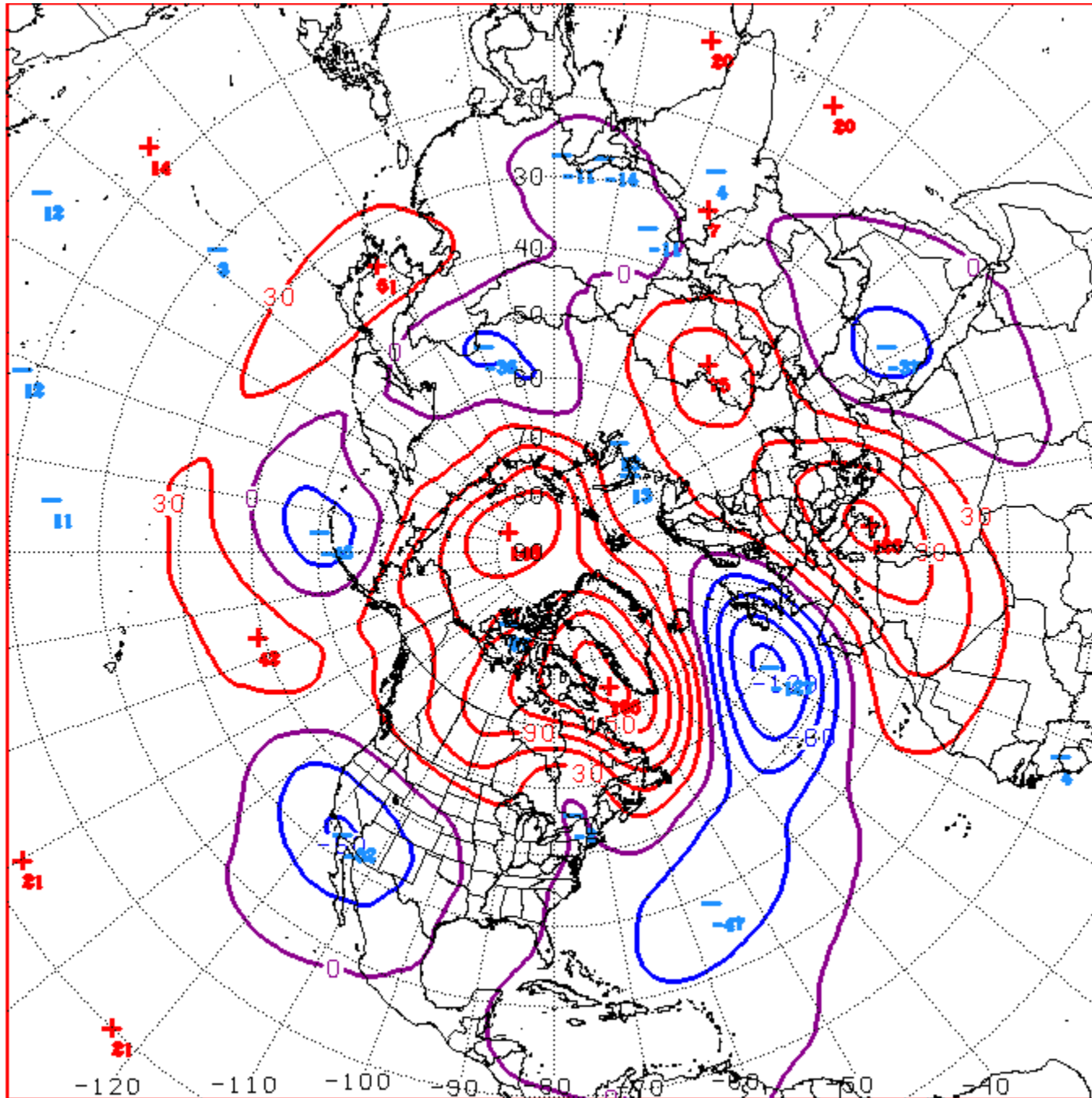




Enhanced convection over the West Pacific is producing a very MJO-like atmospheric response

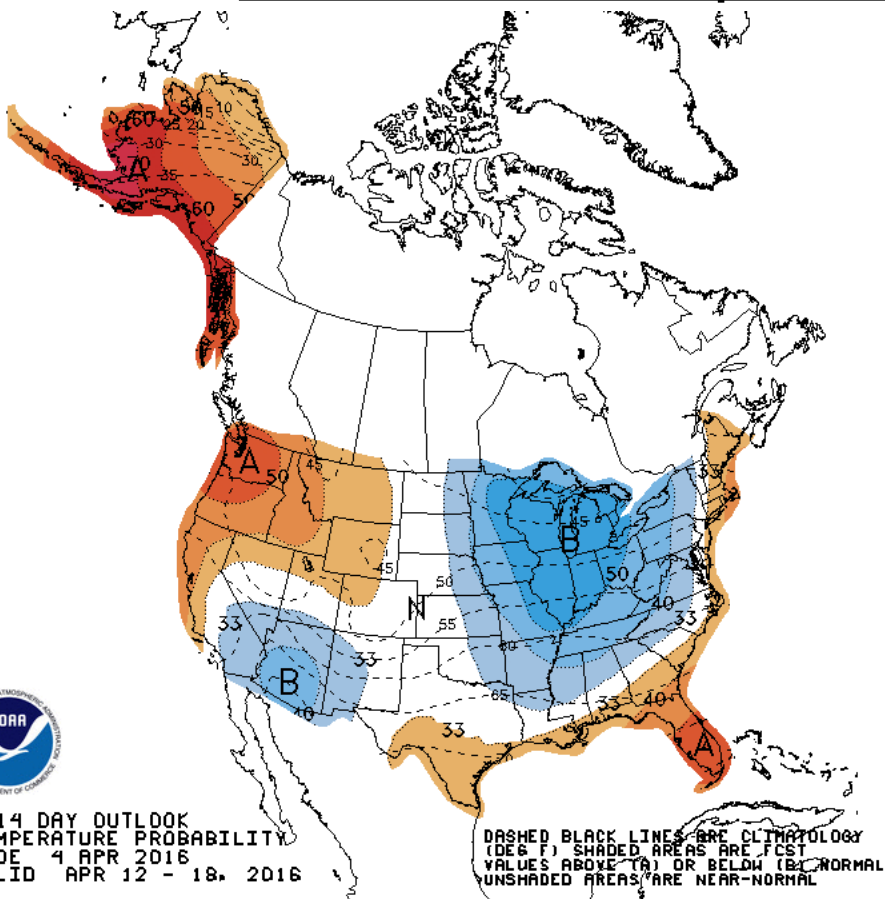
RMM Phase 7 200-hPa Height Lagged Composite (mam)



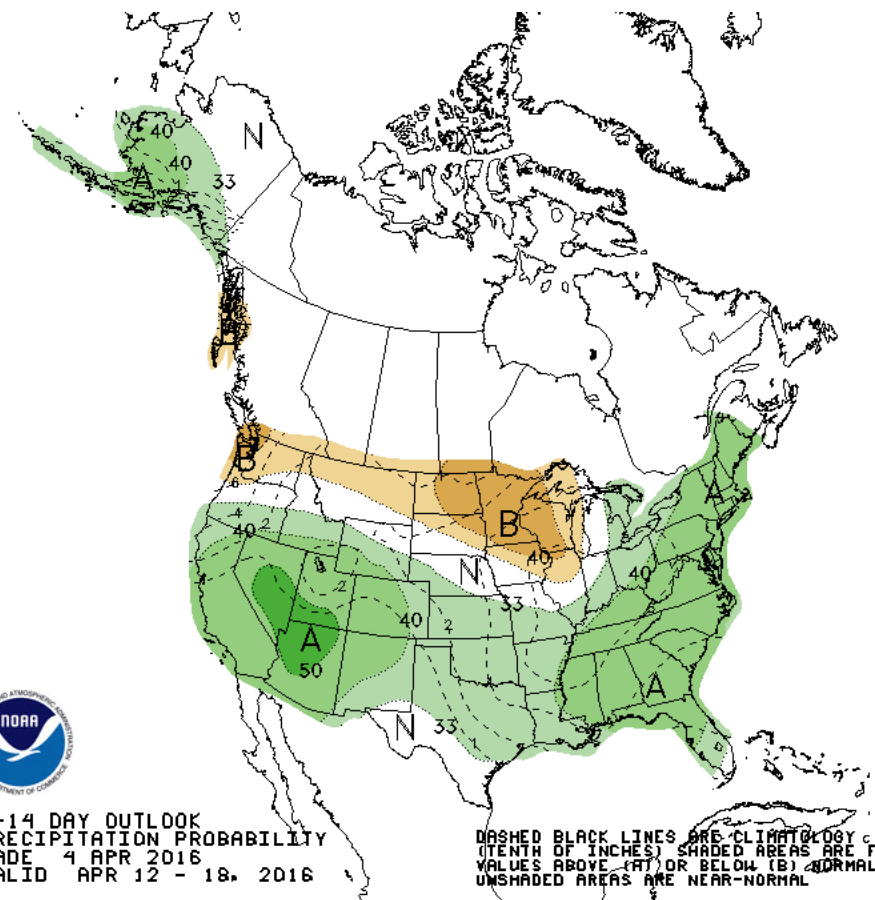
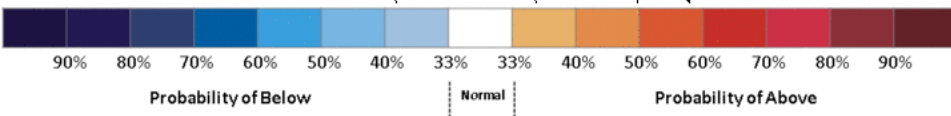


D+11 500 MB ANOMALIES FROM 06Z ENSM
CPC MAP MADE APR 05 2016 1229 UTC CNTD APR 16 2016

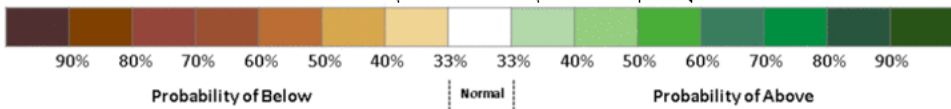
Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 4 APR 2016
VALID APR 12 - 18, 2016



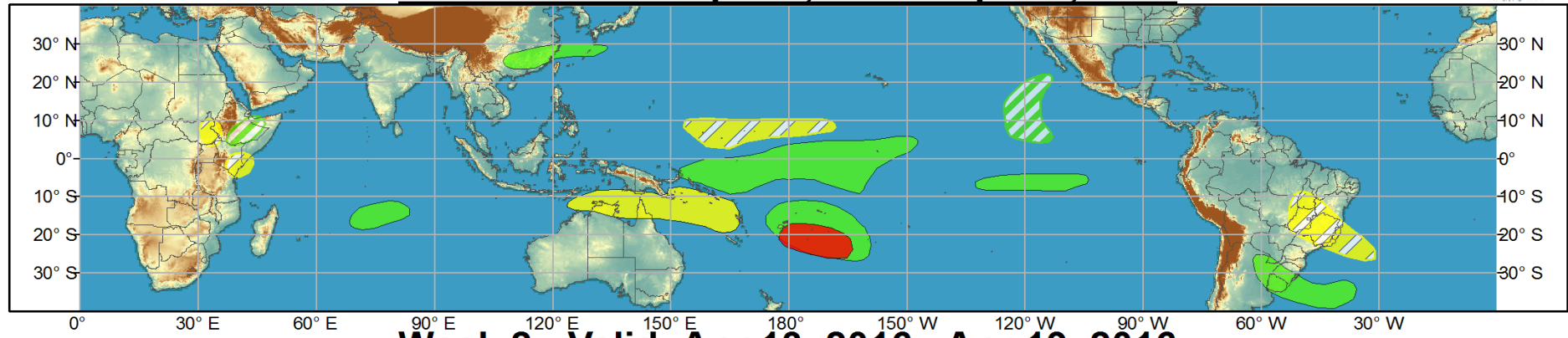
8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 4 APR 2016
VALID APR 12 - 18, 2016



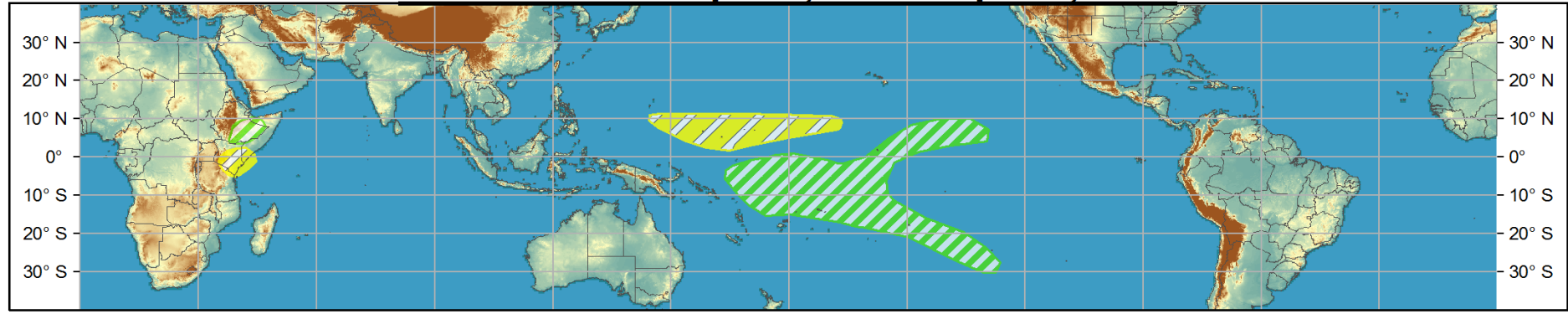


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