

Global Tropics Hazards And Benefits Outlook

March 10, 2015

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

Week 1 - Valid: Mar 04, 2015 - Mar 10, 2015

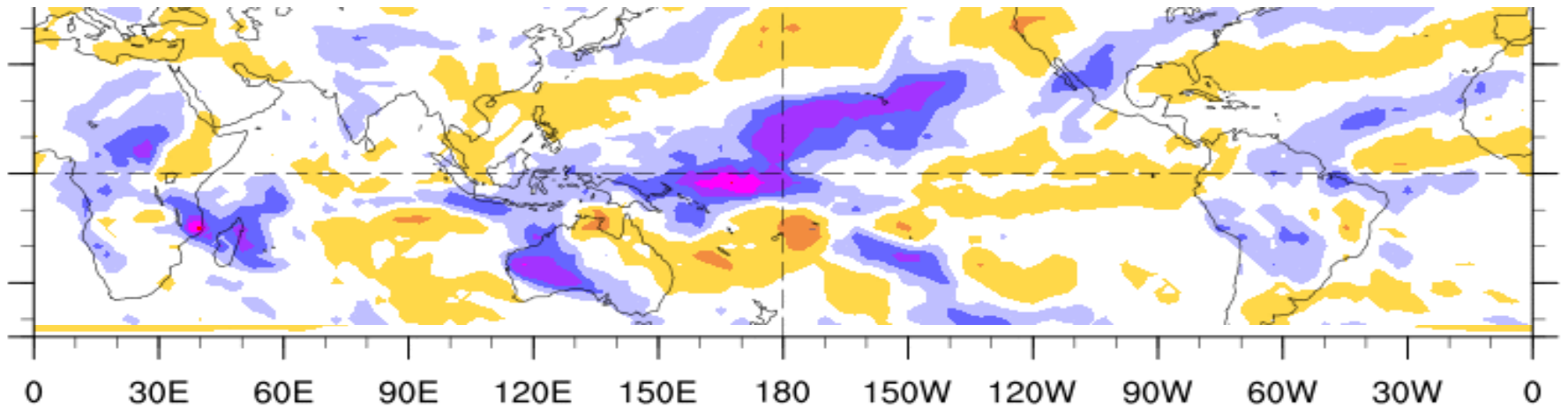


Week 2 - Valid: Mar 04, 2015 - Mar 10, 2015



7-Day Average OLR Anomaly

2015/03/02 - 2015/03/08



Synopsis of Climate Modes

ENSO:

- Current: El Niño Advisory
- Outlook: There is an approximately 50-60% chance that El Niño conditions will continue through Northern Hemisphere summer 2015.

MJO and other subseasonal tropical variability:

- The MJO strengthened during the past week as other modes (ERW over the central Pacific, Kelvin Waves over the Maritime Continent, ENSO state) constructively interfered to produce a broader scale enhanced convective envelope over the West Pacific.
- Dynamical and statistical models favor a robust MJO signal propagating over the West Pacific during the upcoming two weeks. The GFS even forecasts near record projections (> 4 st. dev.) on the RMM MJO Index. Constructive interference between the MJO, the ENSO background state, and a large and potentially intense tropical cyclone (Pam) over the SW Pac. are contributing to the high amplitude of the index.

Extratropics:

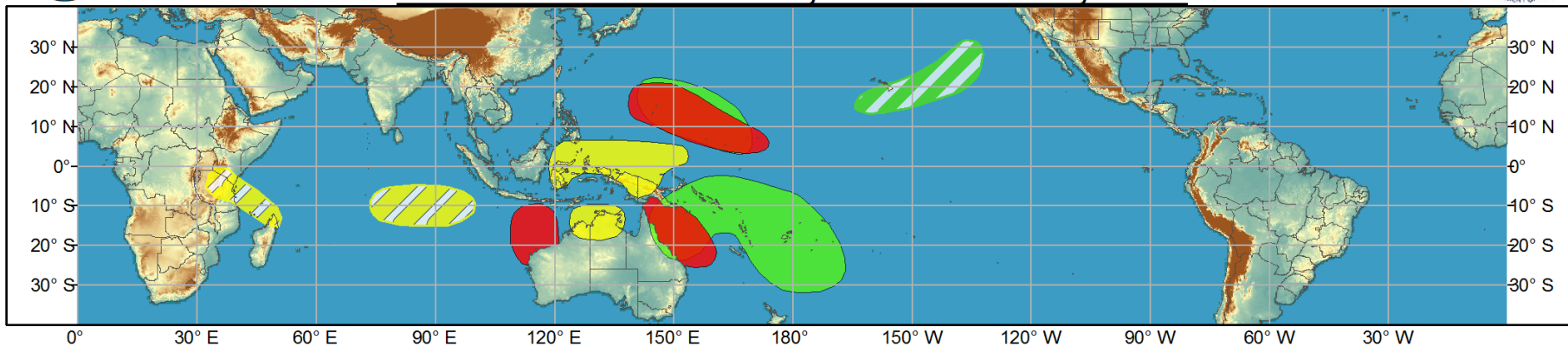
- The developing MJO event is anticipated to play a role in the evolution of the global extratropical pattern. Strong West Pacific events favor ridging over Alaska and troughing over the eastern CONUS. These patterns align well with CPC's Week-2 forecast, as well as dynamical model forecasts into Weeks 3 and 4.



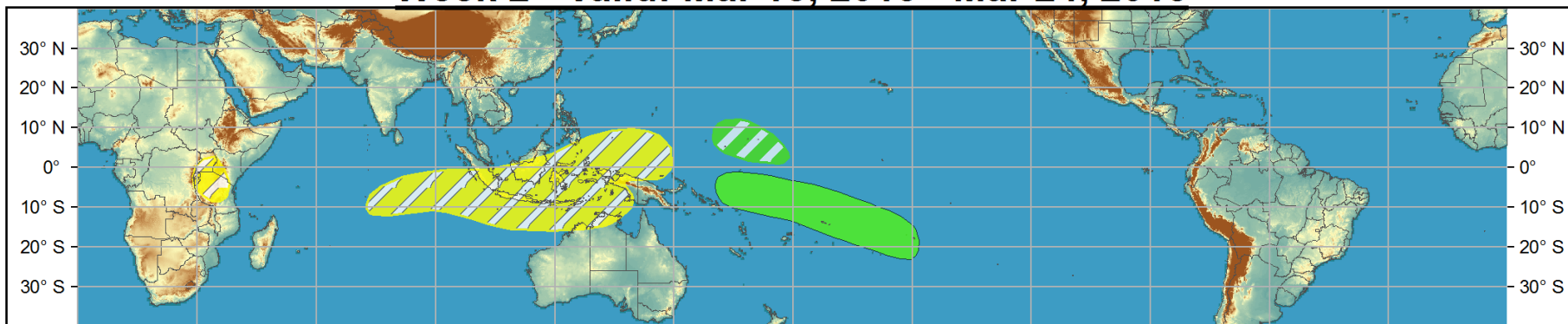
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Mar 11, 2015 - Mar 17, 2015



Week 2 - Valid: Mar 18, 2015 - Mar 24, 2015



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.

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.

Produced: 03/10/2015

Forecaster: Allgood



IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence

Brown: Enhanced Convergence

Rossby Wave over
the central Pacific

+

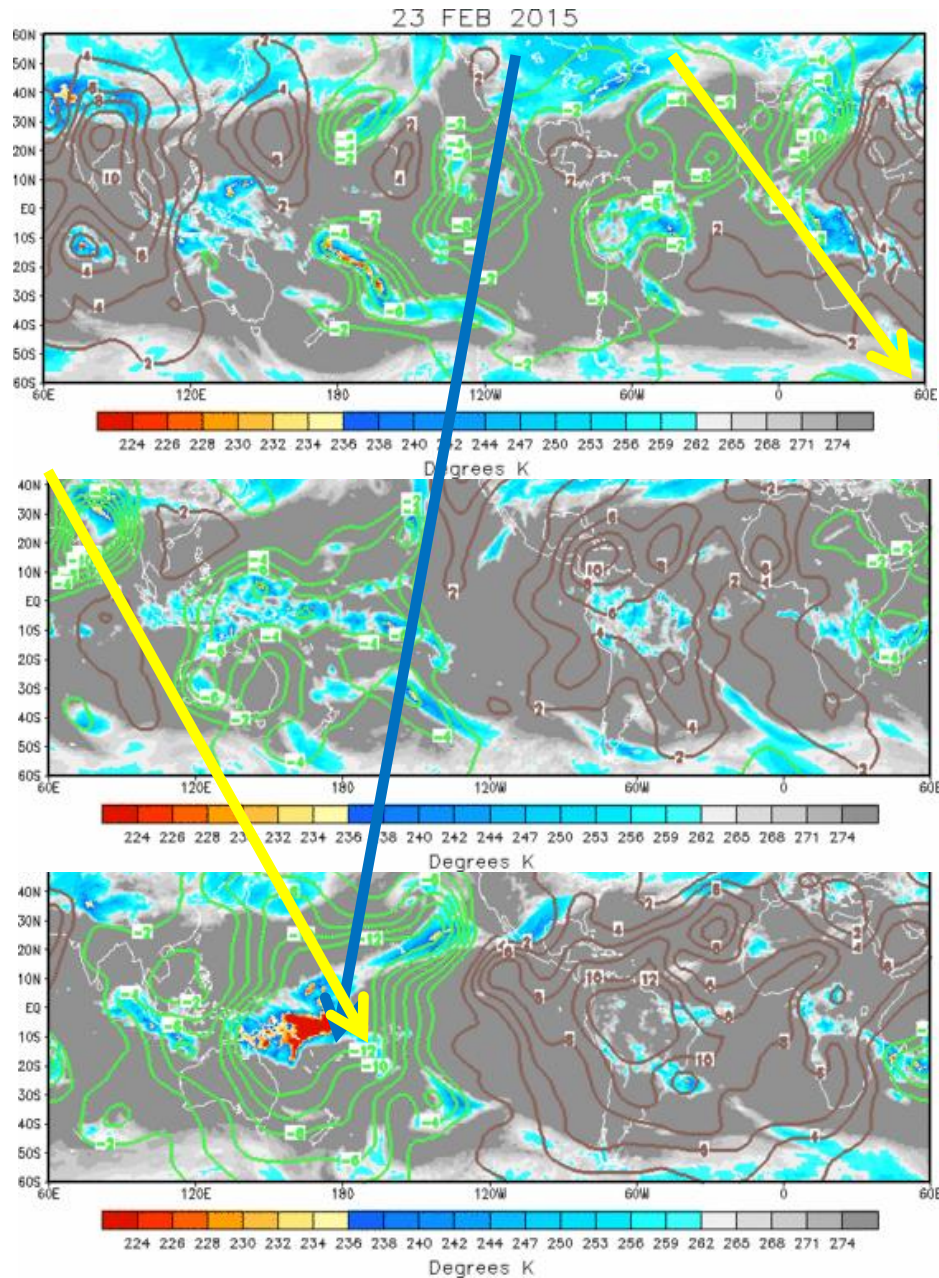
KW activity crossing
the Maritime
Continent

+

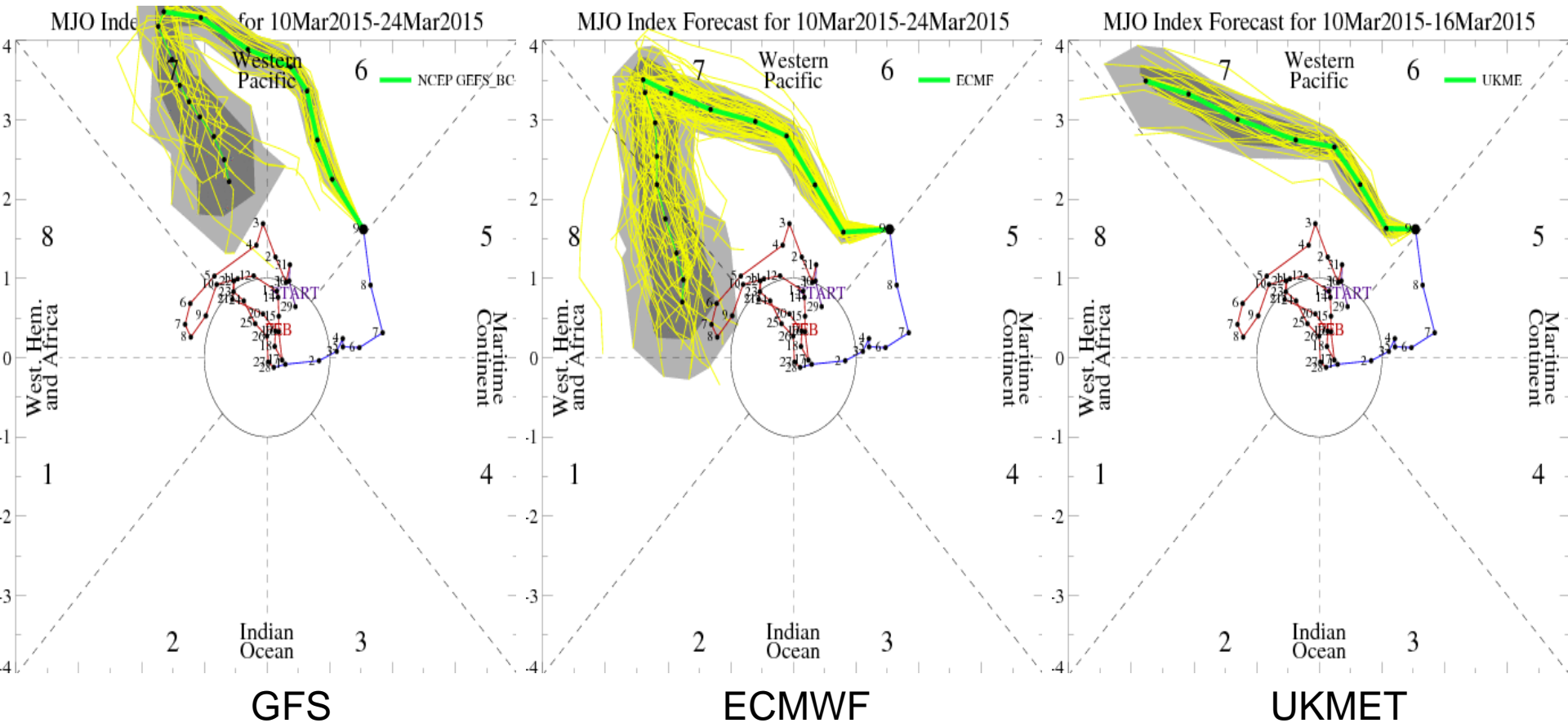
ENSO background
state

=

Large convective
envelope over the
W. Pac.

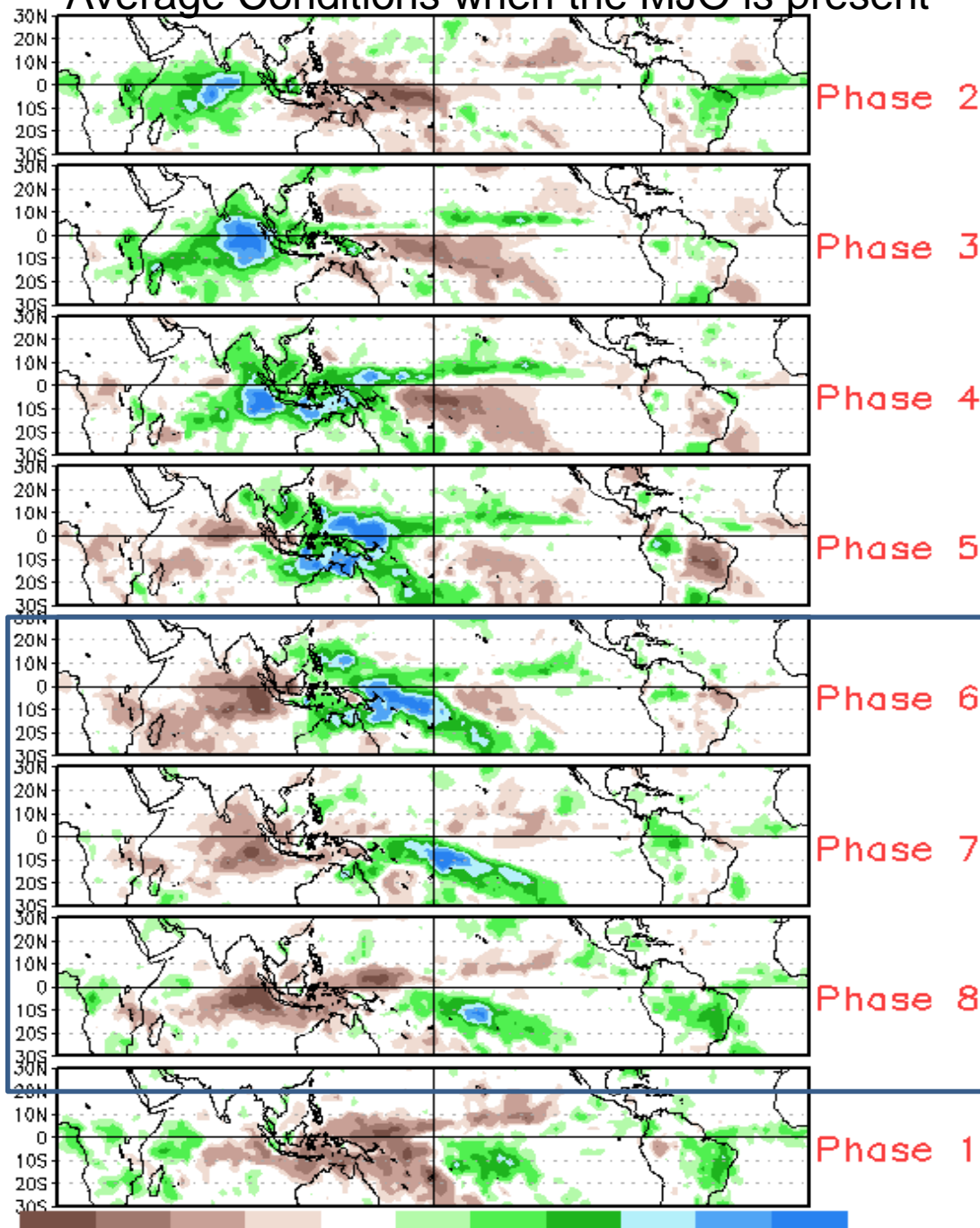


MJO Observation/Forecast



- All index forecasts depict strong projection in Phase-7 (West Pacific) by the end of Week-1.
- GFS depicts index values more than 4 standard deviations from normal!
- Strong TC (Pam) and ENSO background state in addition to MJO may be playing a role in the strong forecast projections.

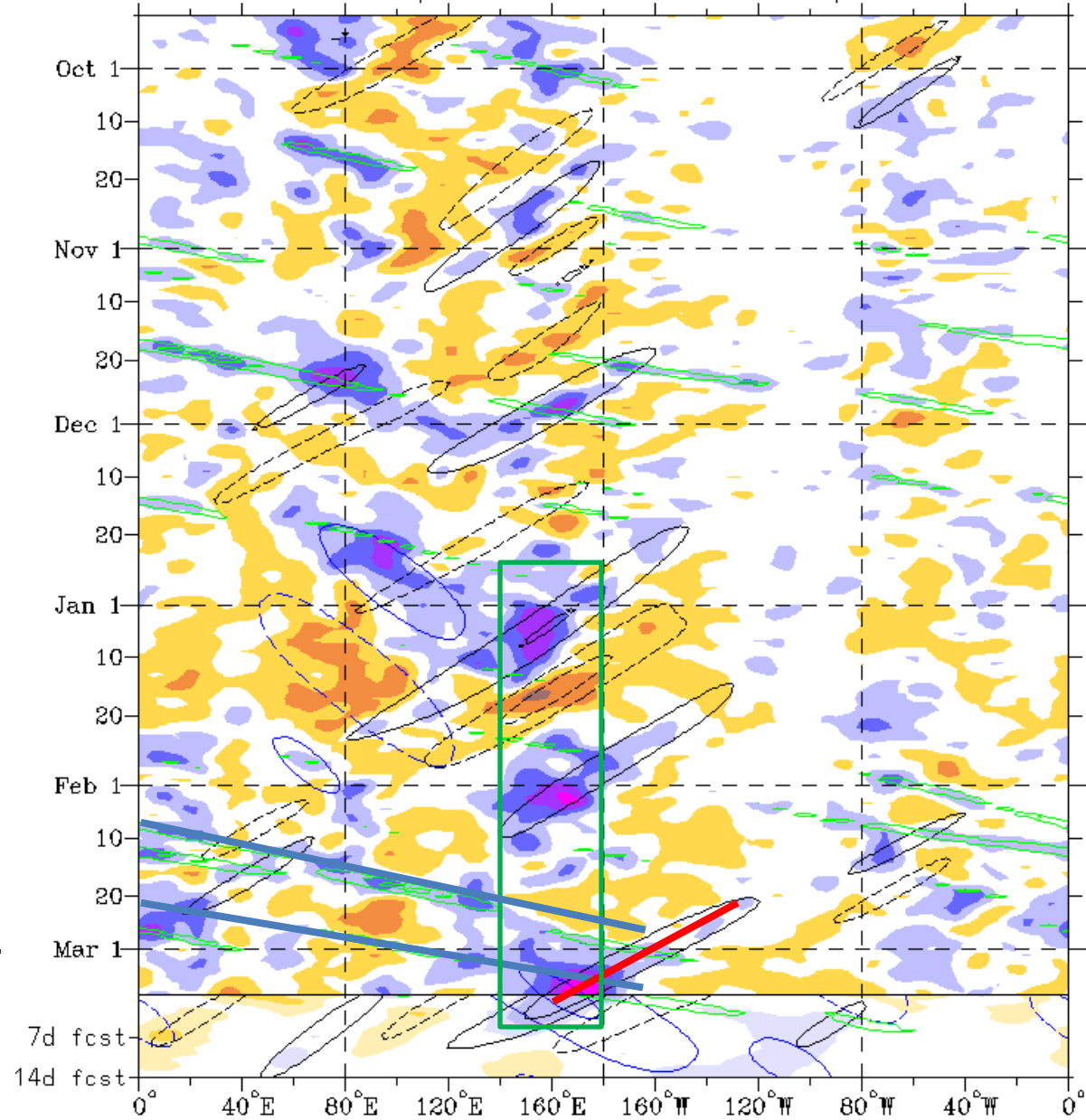
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

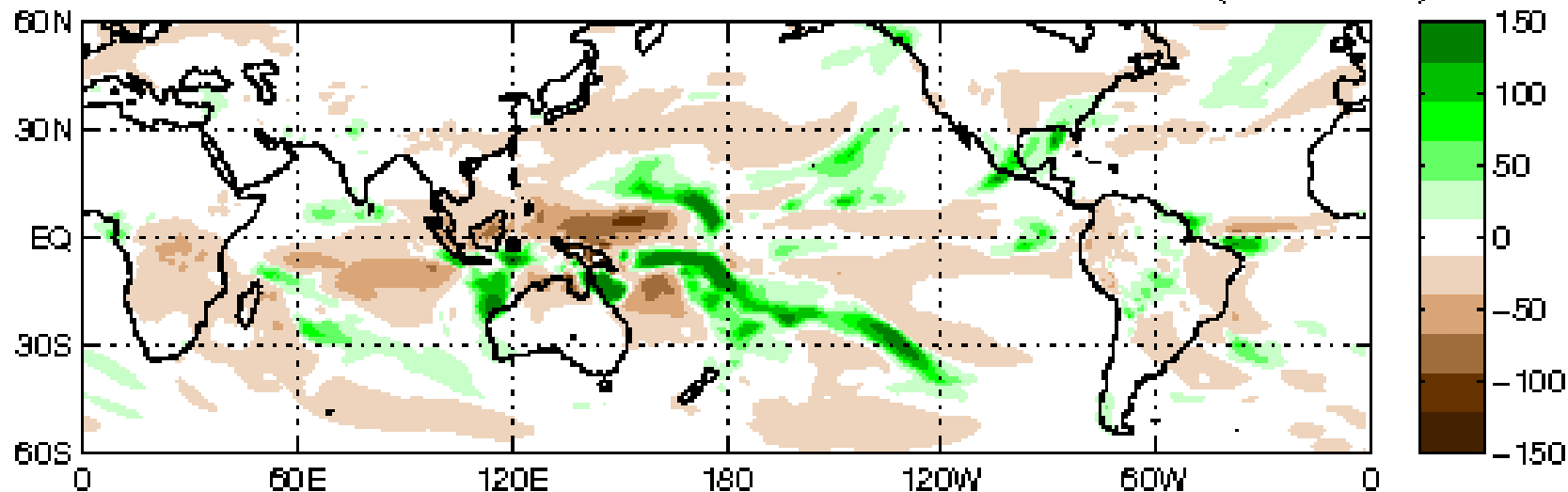
Low frequency is contributing, especially near 170E (Green box).

Kelvin Wave activity from the I.O. across the Maritime Continent (blue lines)

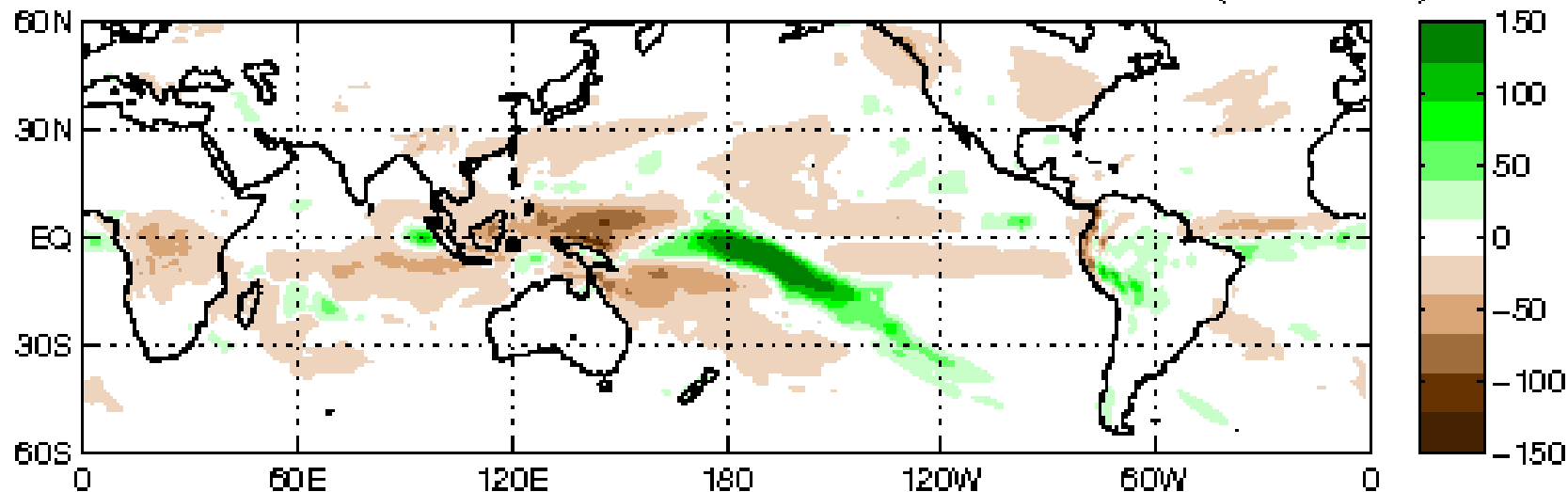


Equatorial Rossby Waves propagating across the central Pacific (red line).

CFS: Anom. PREC Week: 1: 11-Mar-2015 to 17-Mar-2015 (mm/week)

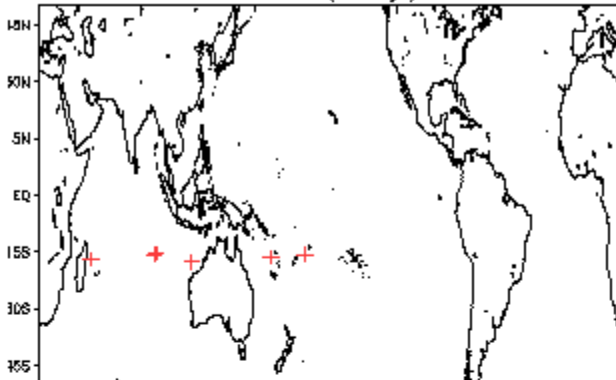


CFS: Anom. PREC Week: 2: 18-Mar-2015 to 24-Mar-2015 (mm/week)

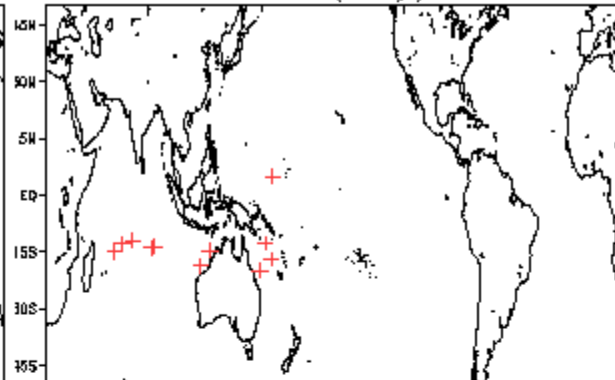


March Tropical Storm Formation by MJO phase

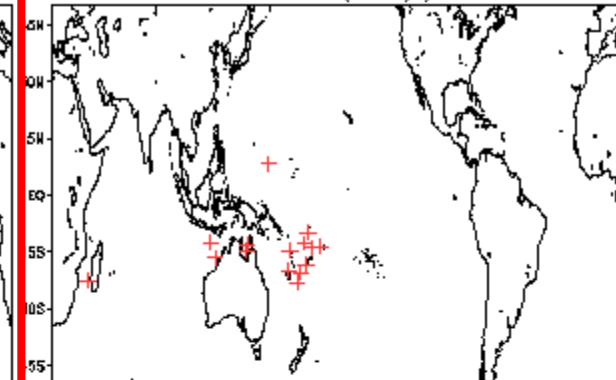
Phase 1 (98 days) 7 storms



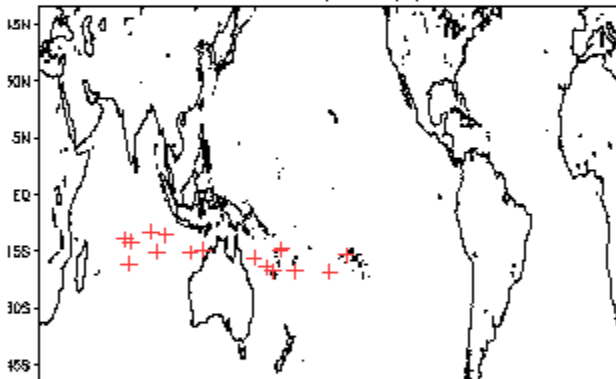
Phase 4 (72 days) 12 storms



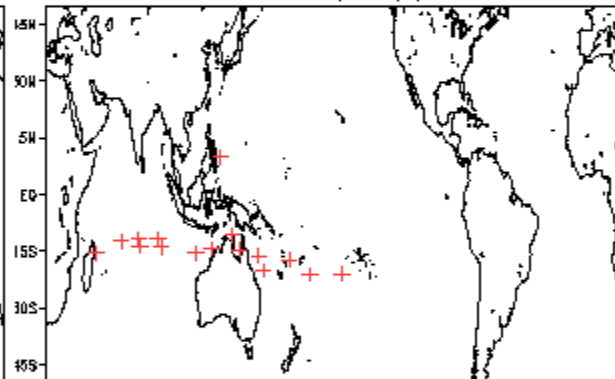
Phase 7 (81 days) 16 storms



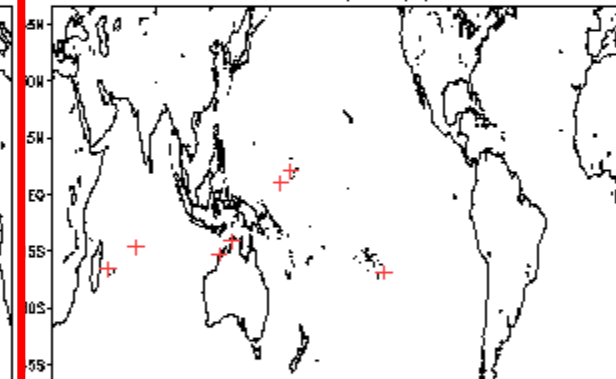
Phase 2 (111 days) 17 storms



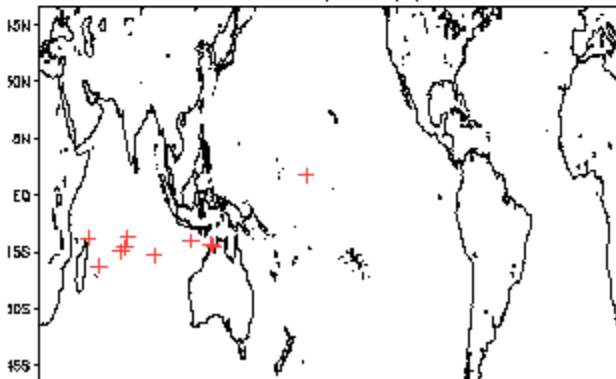
Phase 5 (77 days) 17 storms



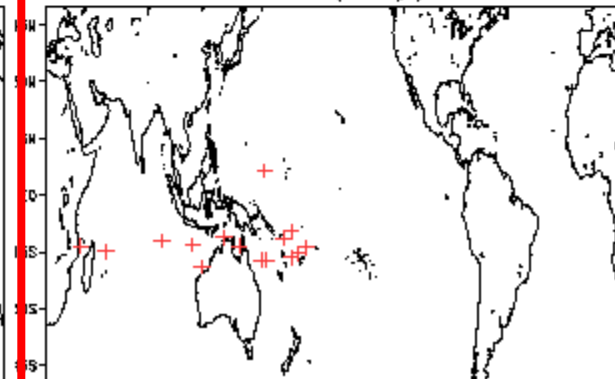
Phase 8 (92 days) 8 storms



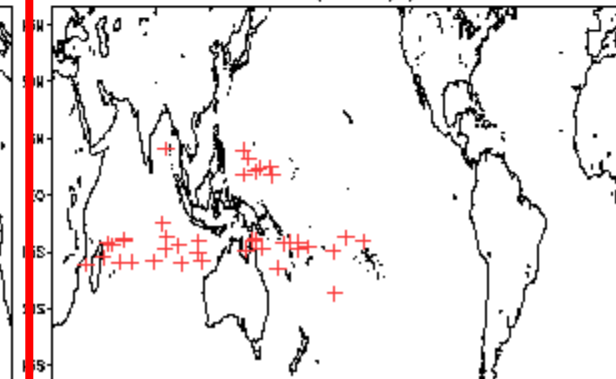
Phase 3 (108 days) 11 storms

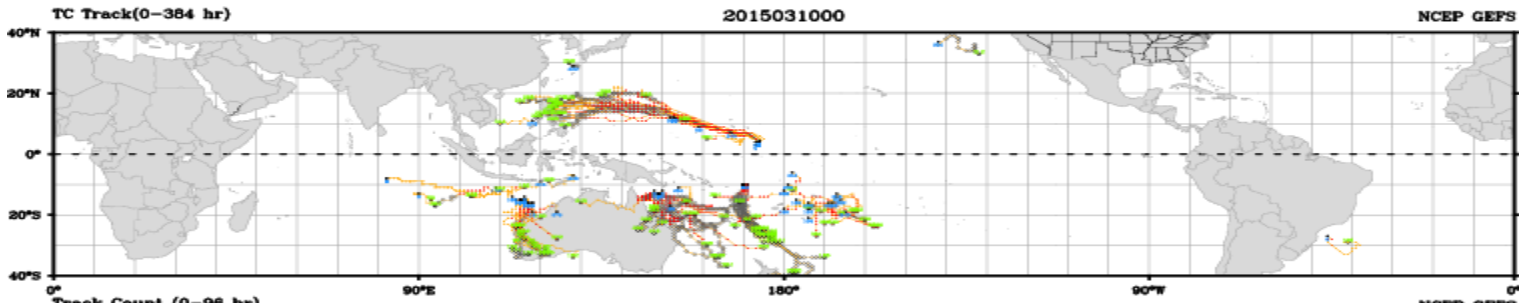


Phase 6 (78 days) 16 storms

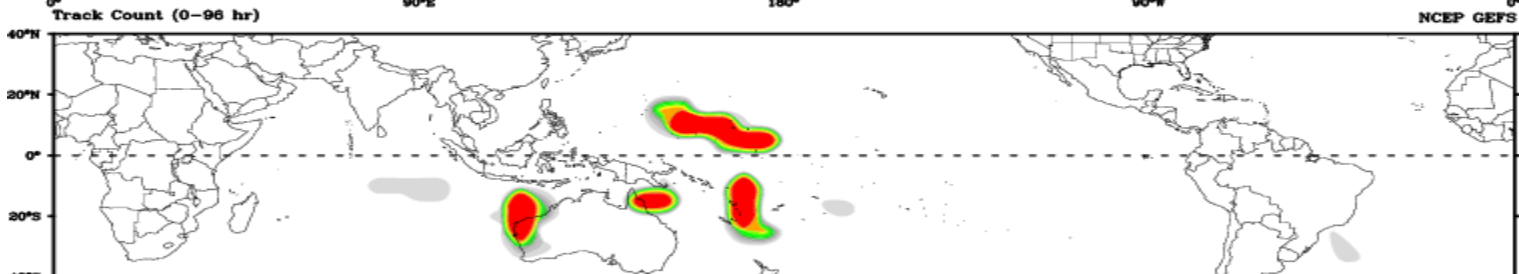


Null (322 days) 40 storms

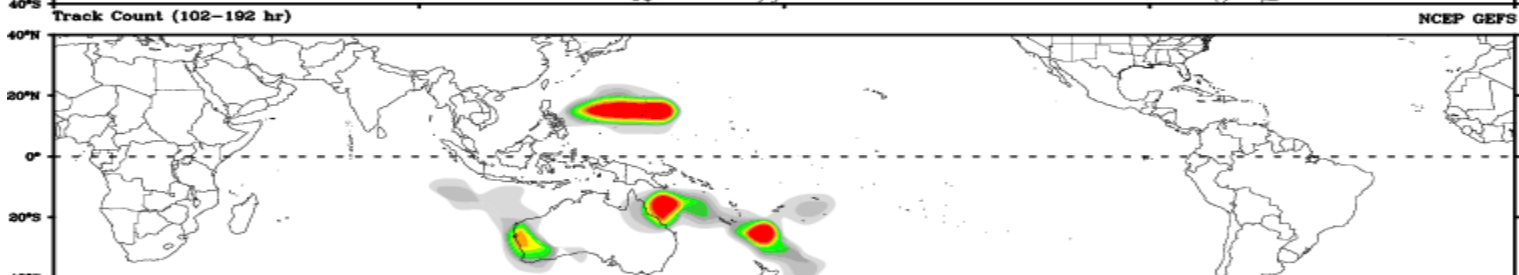




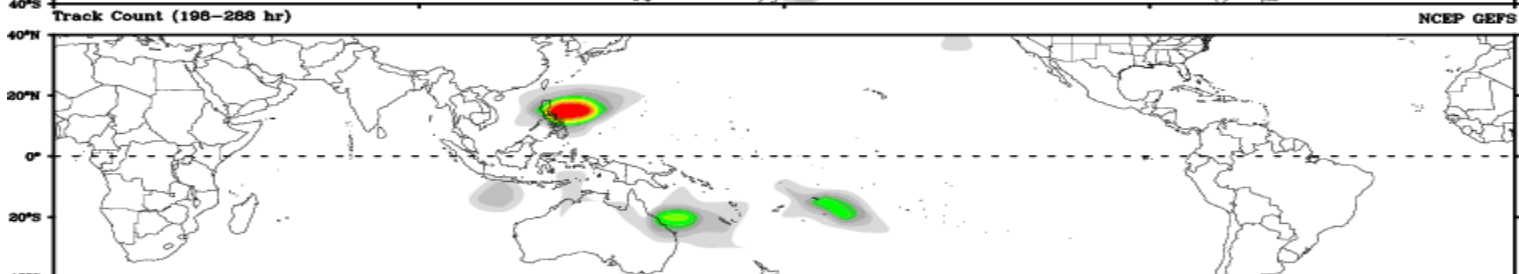
Days 1-4



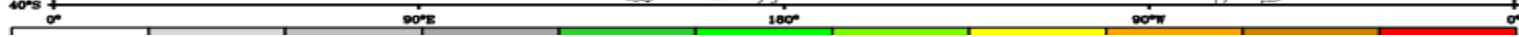
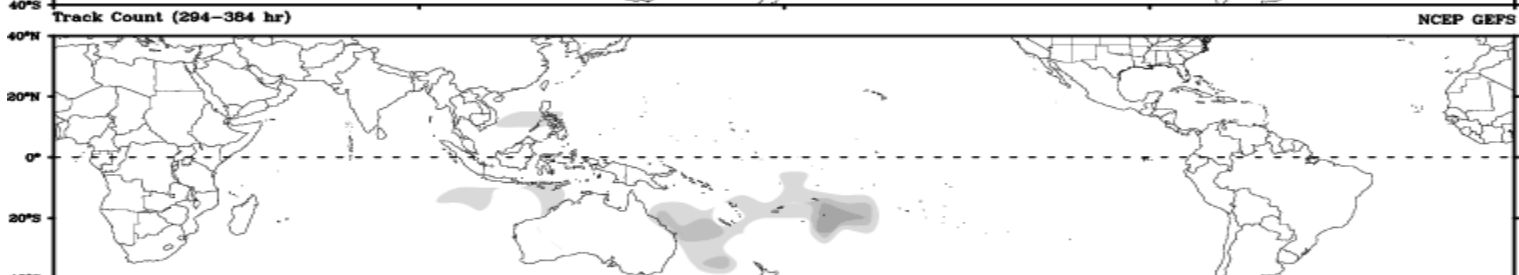
Day 5-8



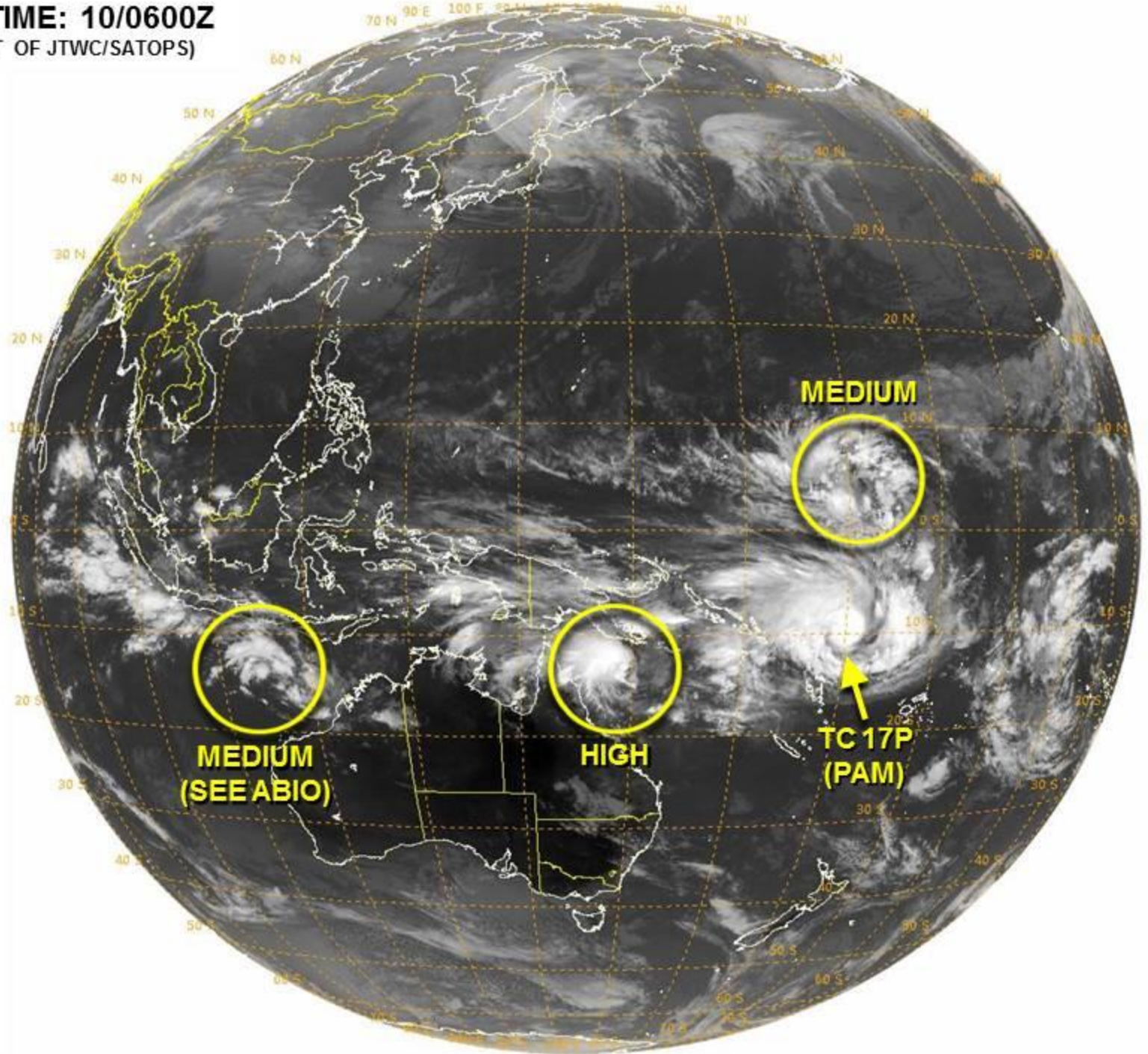
Day 9-12

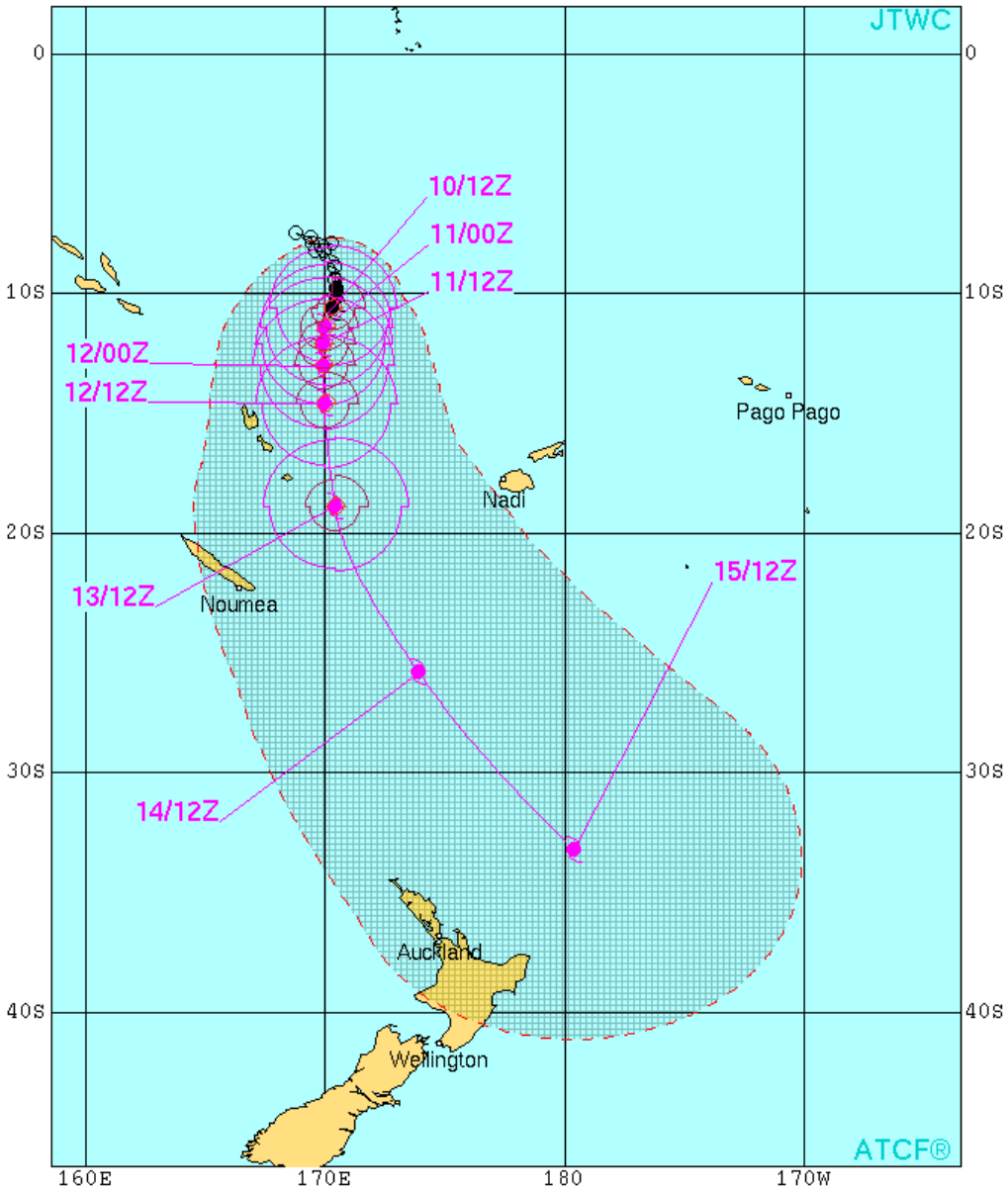


Day 13-15



VALID TIME: 10/0600Z
(PRODUCT OF JTWC/SATOPS)

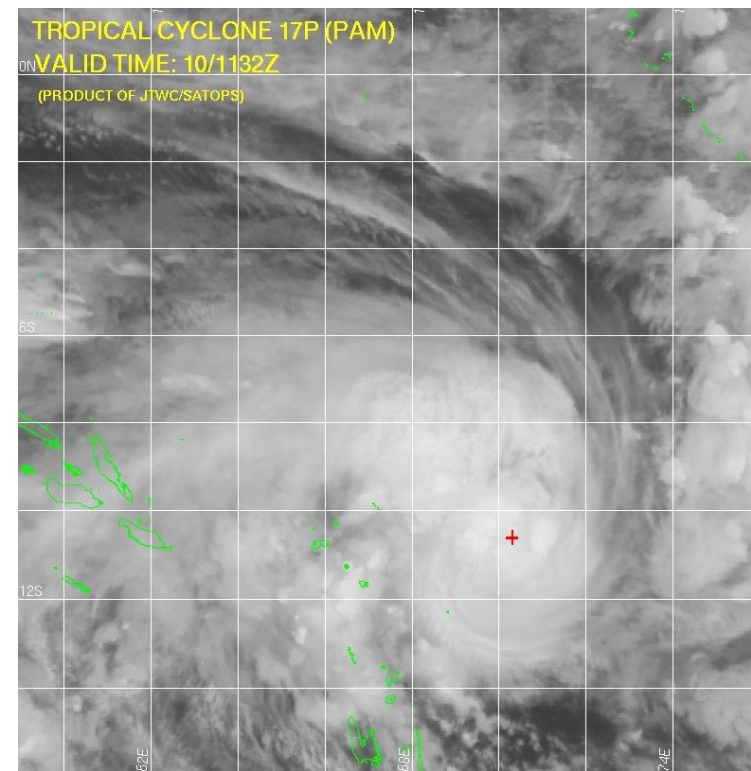




TROPICAL CYCLONE 17P (PAM) WARNING #4
 WTPS31 PGTW 101500
 101200Z POSIT: NEAR 10.6S 170.3E
 MOVING 205 DEGREES TRUE AT 04 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 28 FEET
 10/12Z, WINDS 080 KTS, GUSTS TO 100 KTS
 11/00Z, WINDS 090 KTS, GUSTS TO 110 KTS
 11/12Z, WINDS 105 KTS, GUSTS TO 130 KTS
 12/00Z, WINDS 115 KTS, GUSTS TO 140 KTS
 12/12Z, WINDS 130 KTS, GUSTS TO 160 KTS
 13/12Z, WINDS 140 KTS, GUSTS TO 170 KTS
 14/12Z, WINDS 110 KTS, GUSTS TO 135 KTS
 15/12Z, WINDS 070 KTS, GUSTS TO 085 KTS

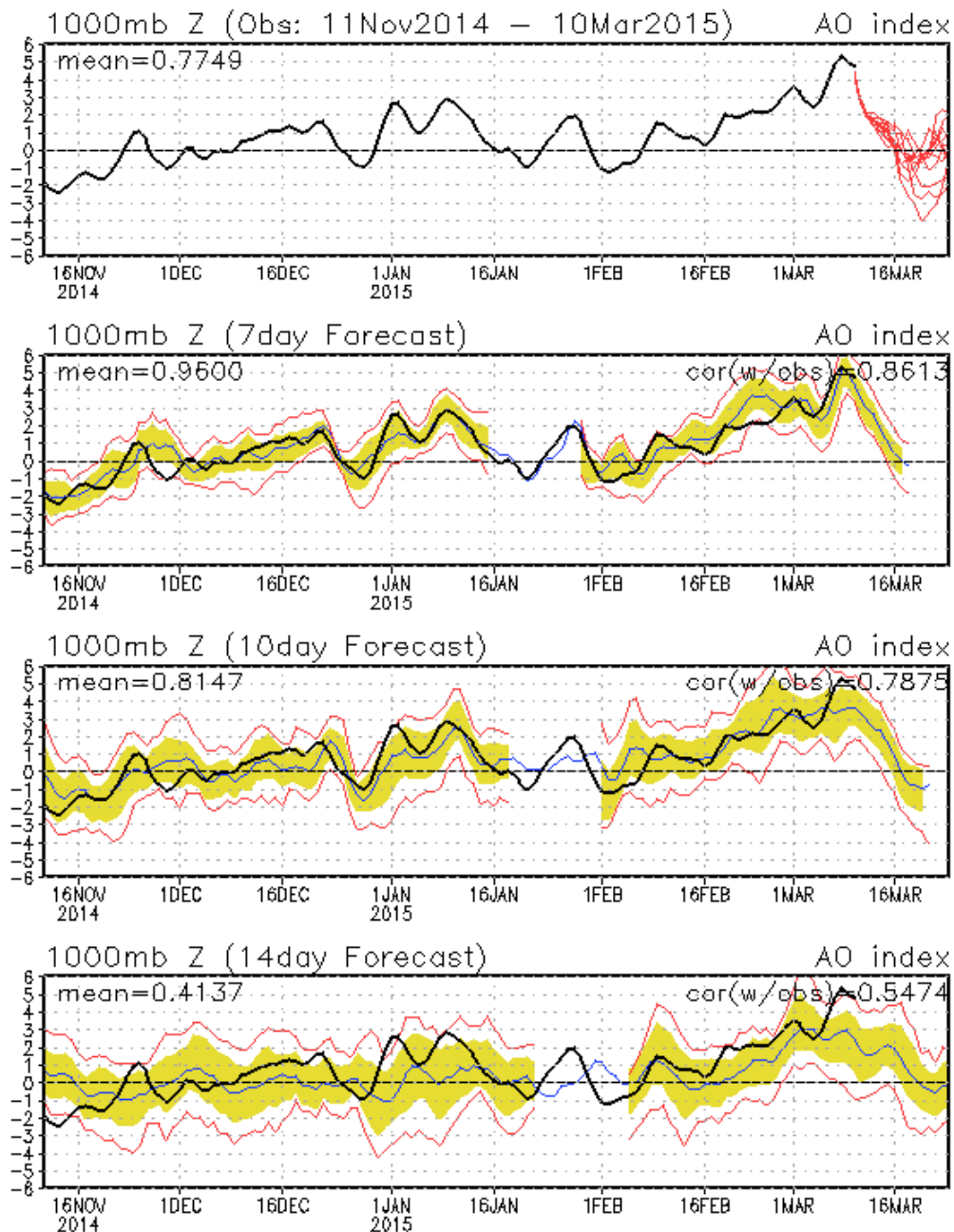
CPA TO:	NM	DTG
NOUMEA	281	13/18Z
KINGSTON_IS.	385	14/14Z

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



Connections to U.S. Impacts

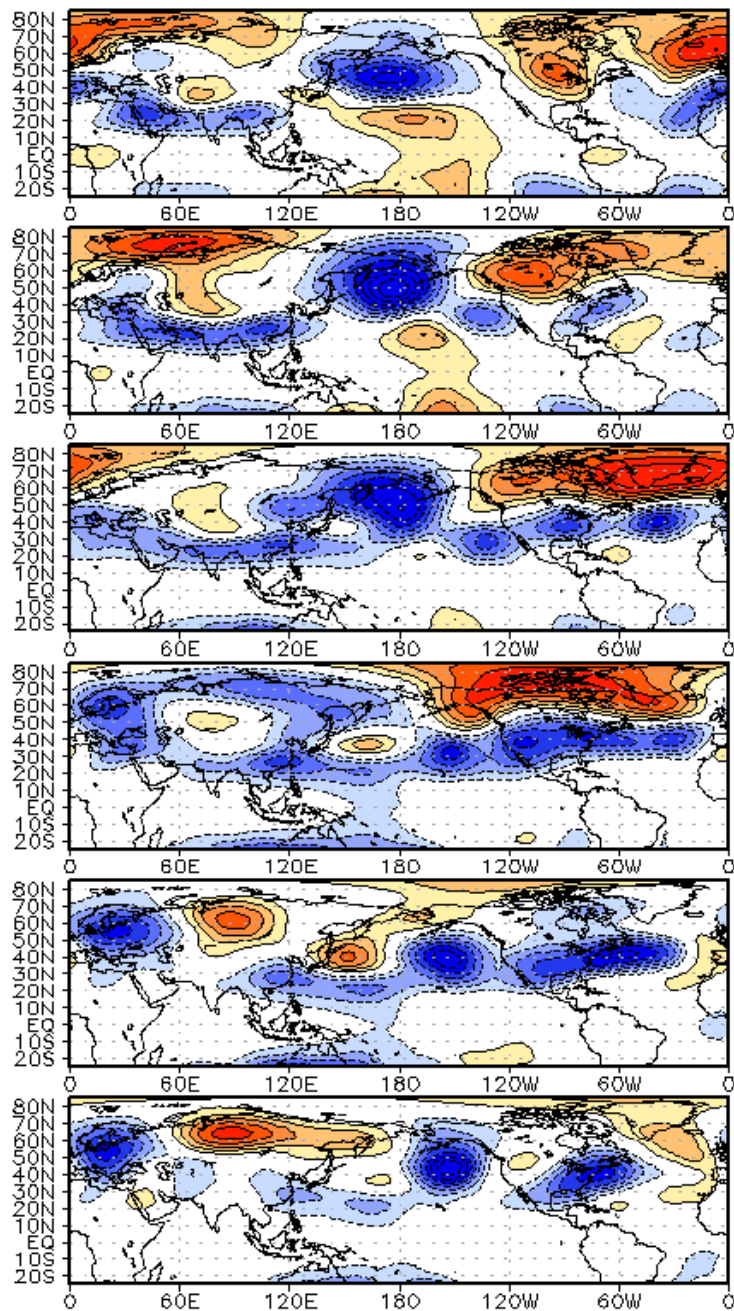
AO: Observed & ENSM forecasts



Lagged composites from MJO

5-day intervals

WHMJO Phase 7 z200 Lagged Composite (fma)



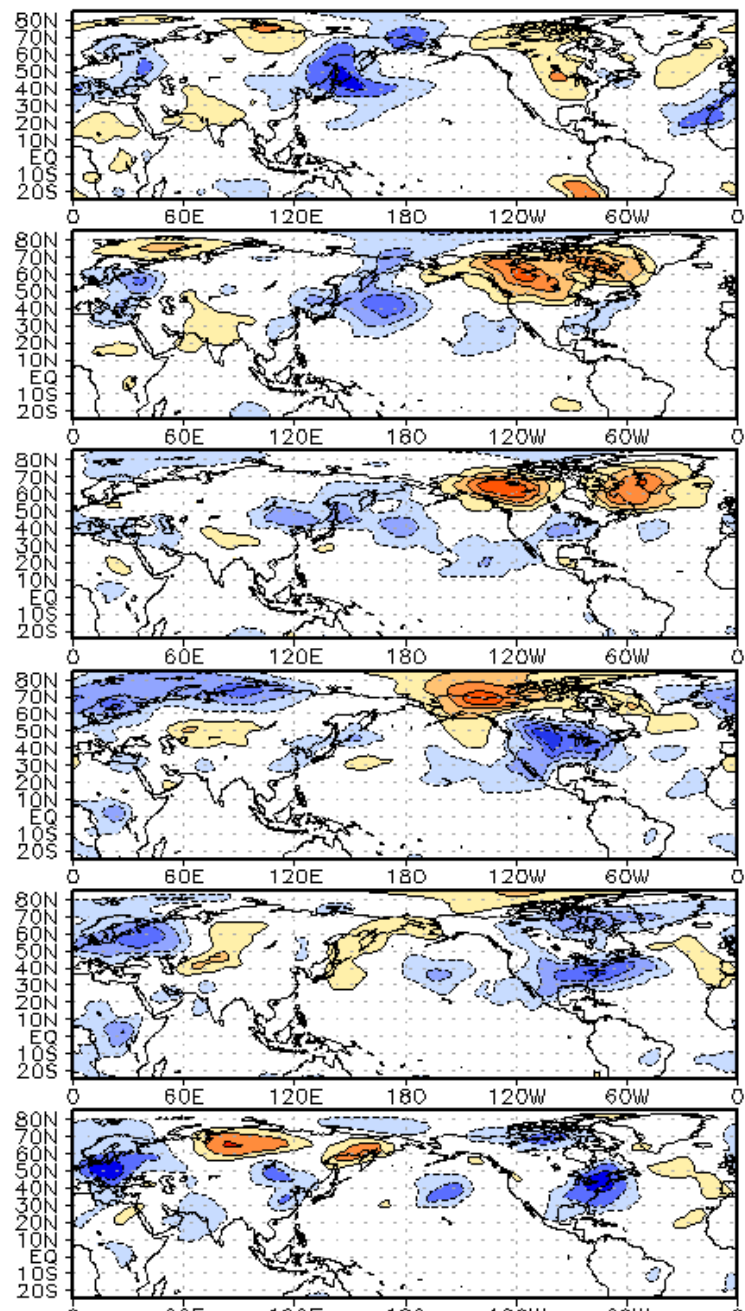
+5-day

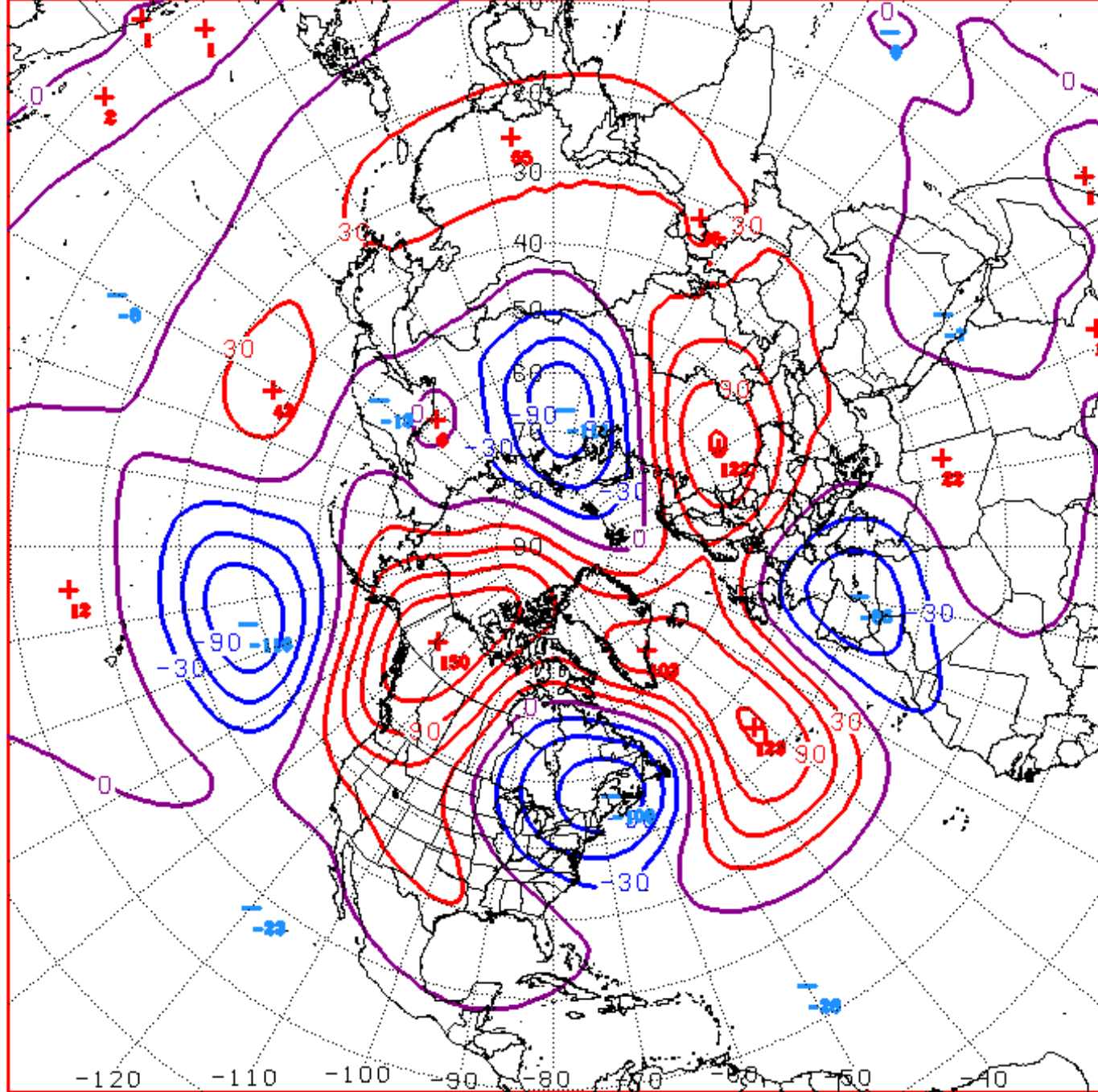
+10-days

+15-days

+20-days

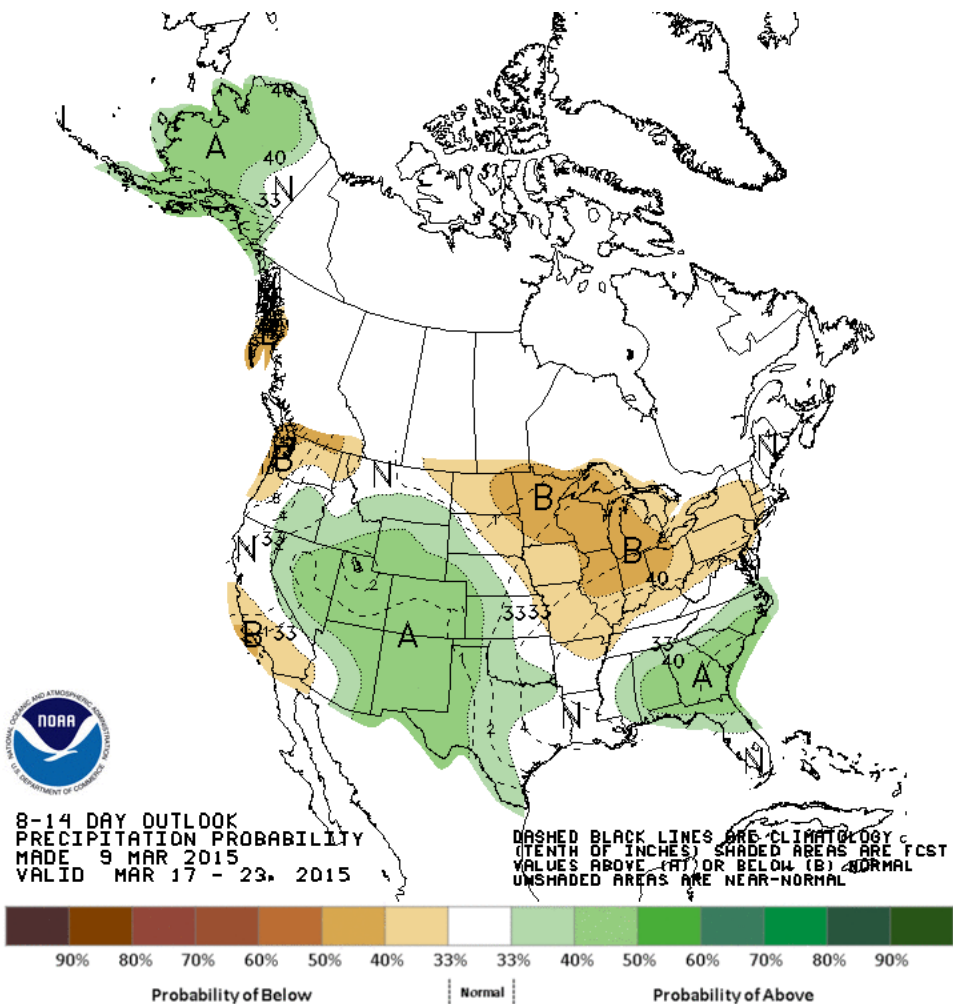
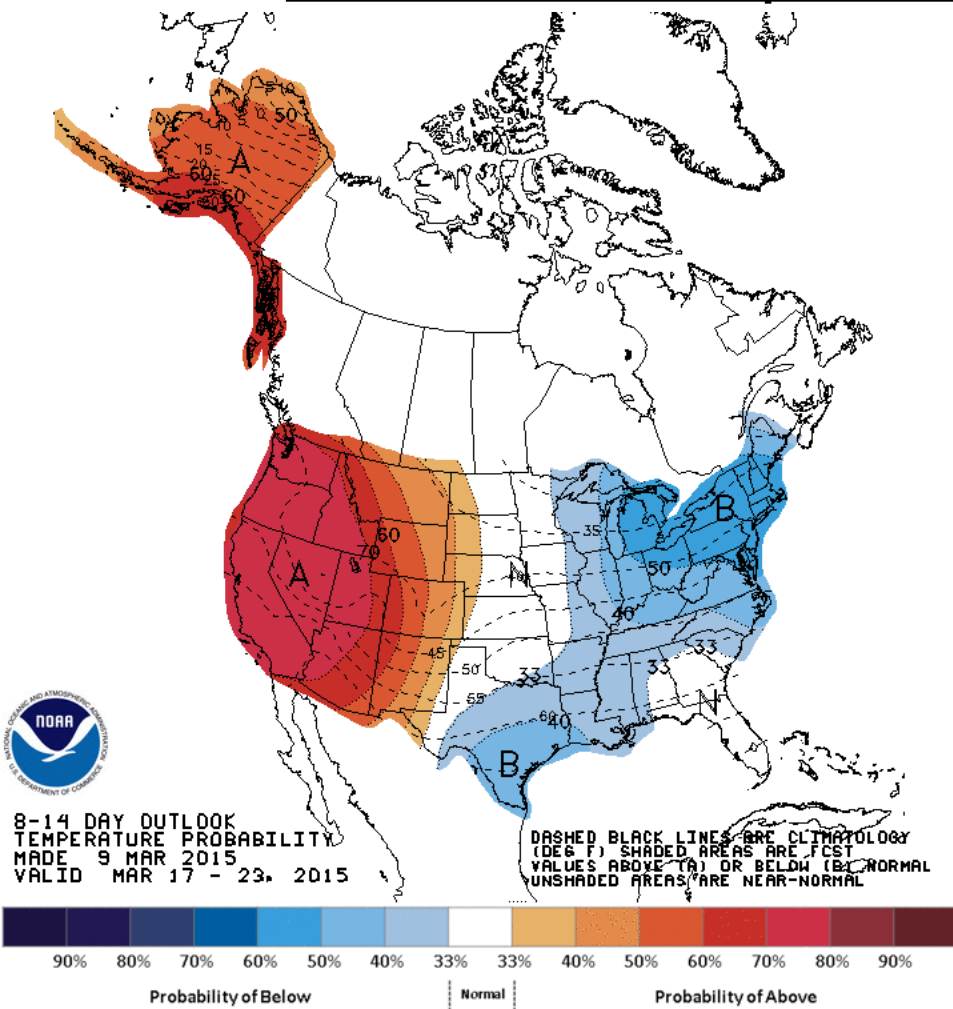
WHMJO Phase 7 t850 Lagged Composite (fma)



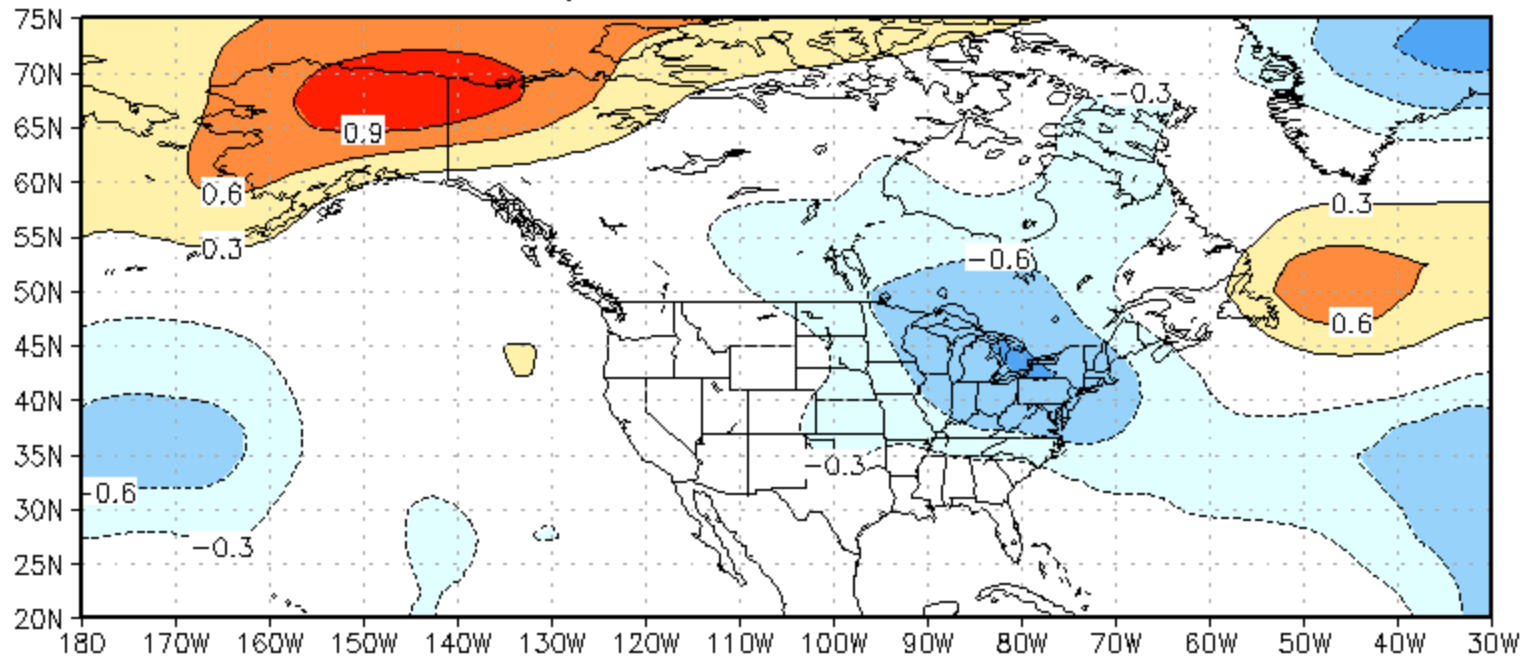


D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE MAR 10 2015 1038 UTC CNTD MAR 21 2015

Week 2 – Temperature and Precipitation



Weeks 3/4 MJO T850 Forecast



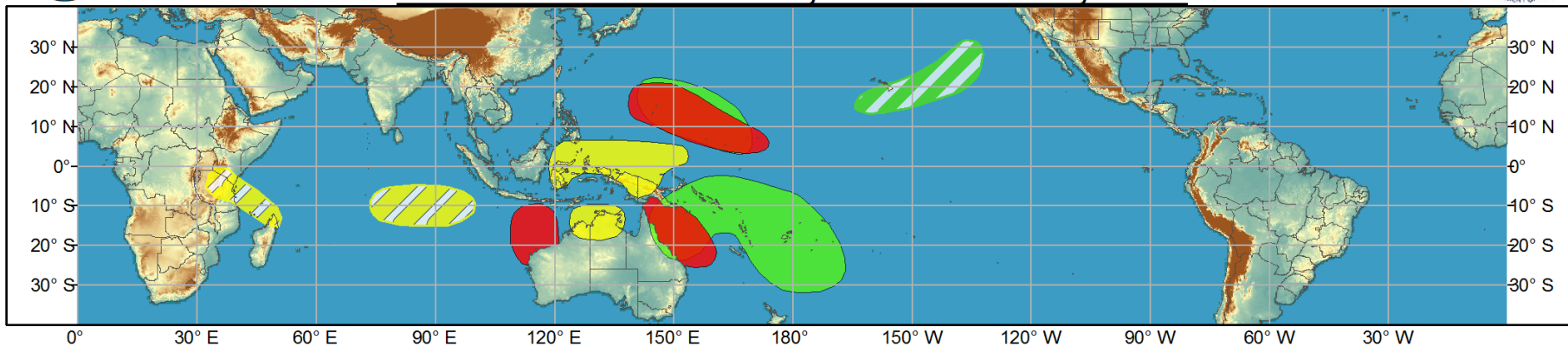
Stronger projection during the winter months, weaker during the Spring.
March is transitional.



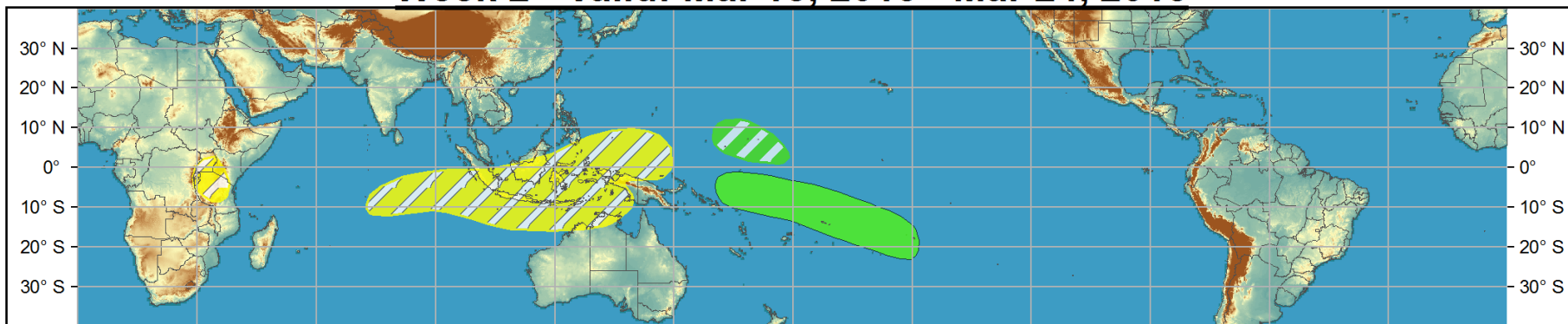
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