Global Tropics Hazards And Benefits Outlook

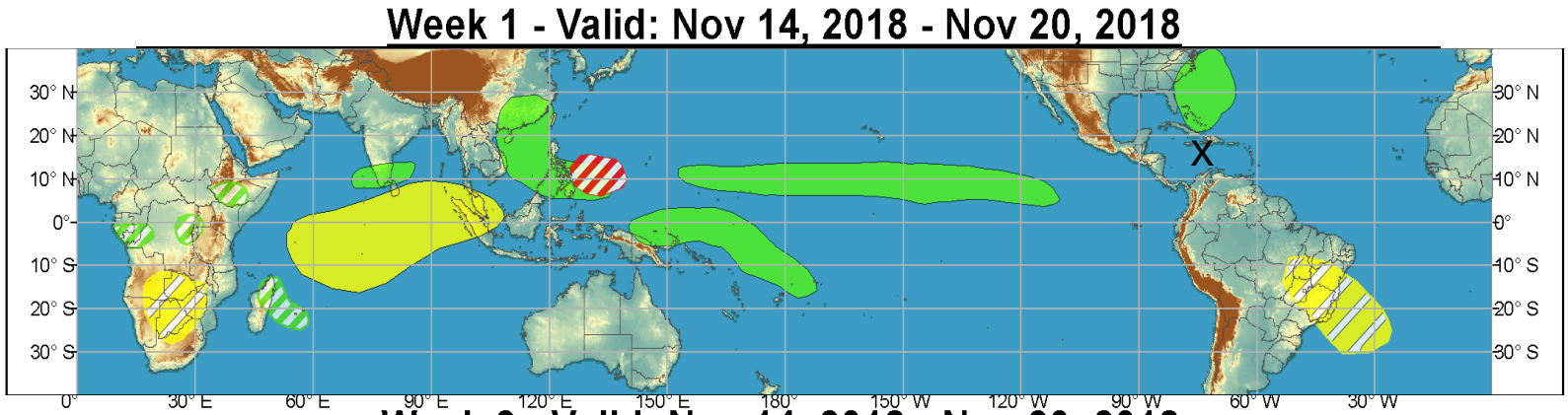
11/20/2018

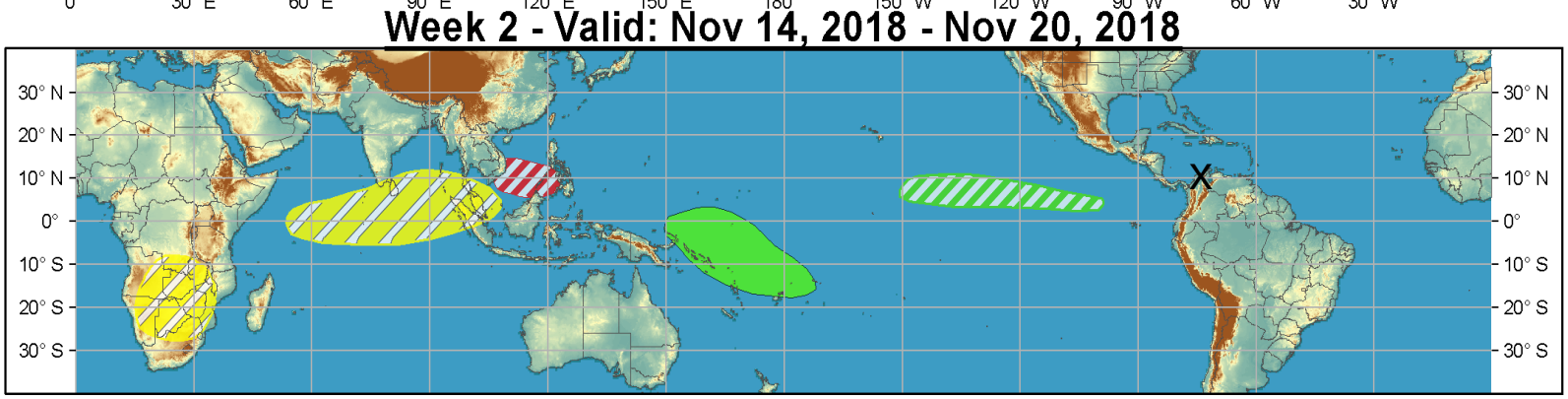
Adam Allgood

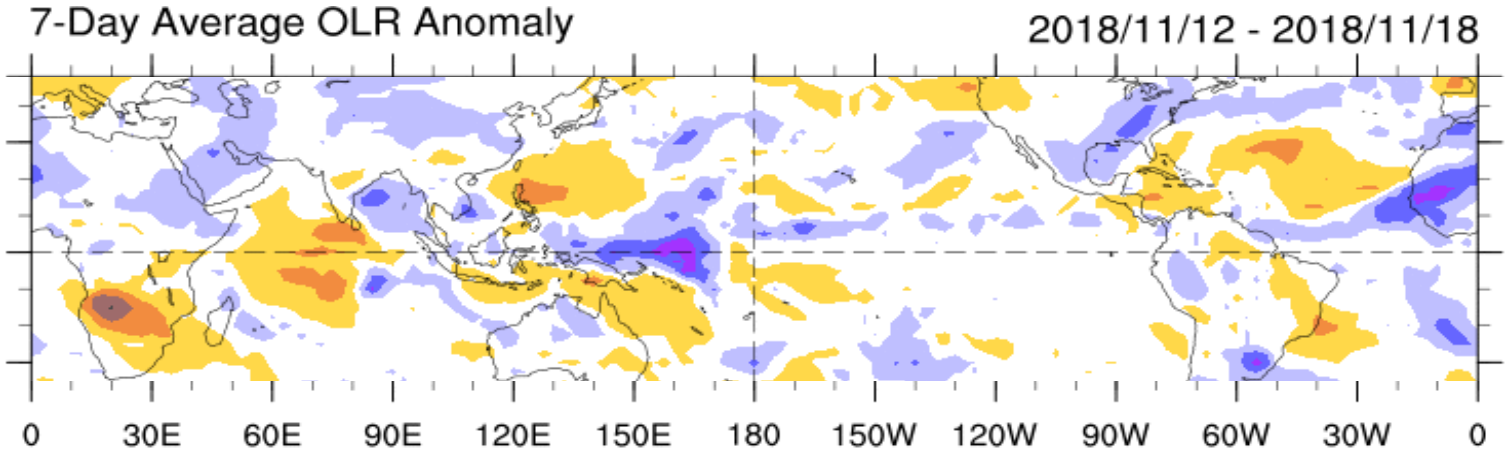
Outline

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

Outlook Review







Synopsis of Climate Modes

ENSO: (8 November, 2018 Update)

- ENSO Alert System Status: El Niño Watch

- El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~80% chance) and into spring (55-60% chance).

MJO and other subseasonal tropical variability:

• The MJO remains active, with the enhanced phase currently over the Maritime Continent.

• Interactions between the MJO, a Rossby wave over the West Pacific, and the low frequency state have weakened and slowed the RMM index over the past week.

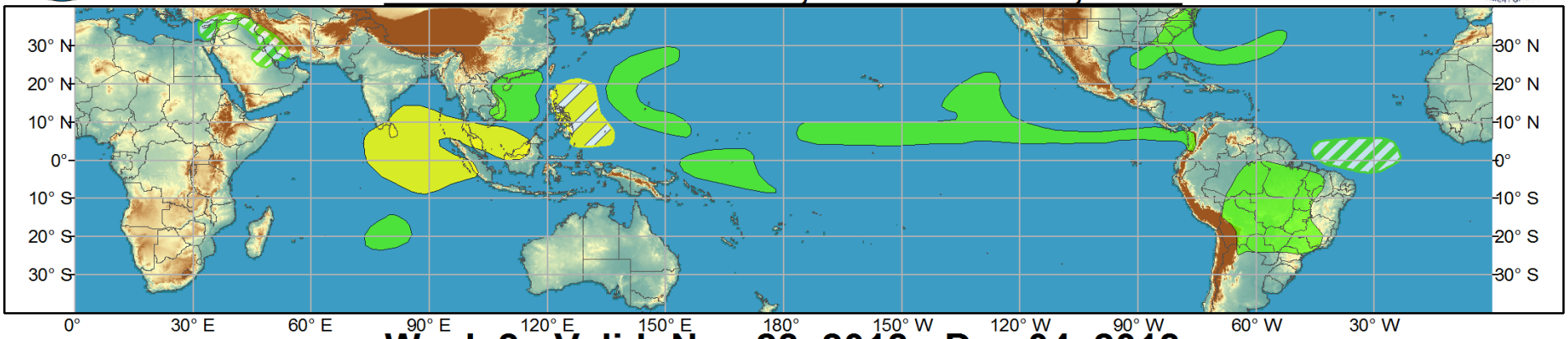
• Dynamical models indicate a re-strengthening of the signal over the West Pacific during Week-1, with eastward propagation to the Western Hemisphere during Week-2.

Extratropics:

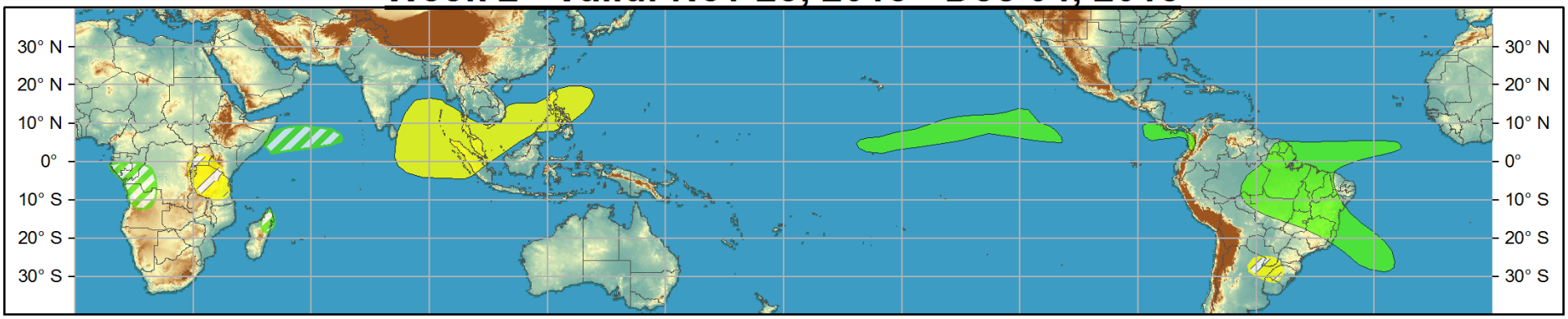
• The MJO is likely to play a role in the evolution of the midlatitude pattern. Pacific MJO events are associated with a transition to a negative AO pattern and below-average temperatures over the eastern CONUS. This is consistent with the Week-2 guidance from CPC.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Nov 21, 2018 - Nov 27, 2018



Week 2 - Valid: Nov 28, 2018 - Dec 04, 2018



Produced: 11/20/2018

Forecaster: Allgood

	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.
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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

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NPS PRAESTANTIA PER SCIENTIAM

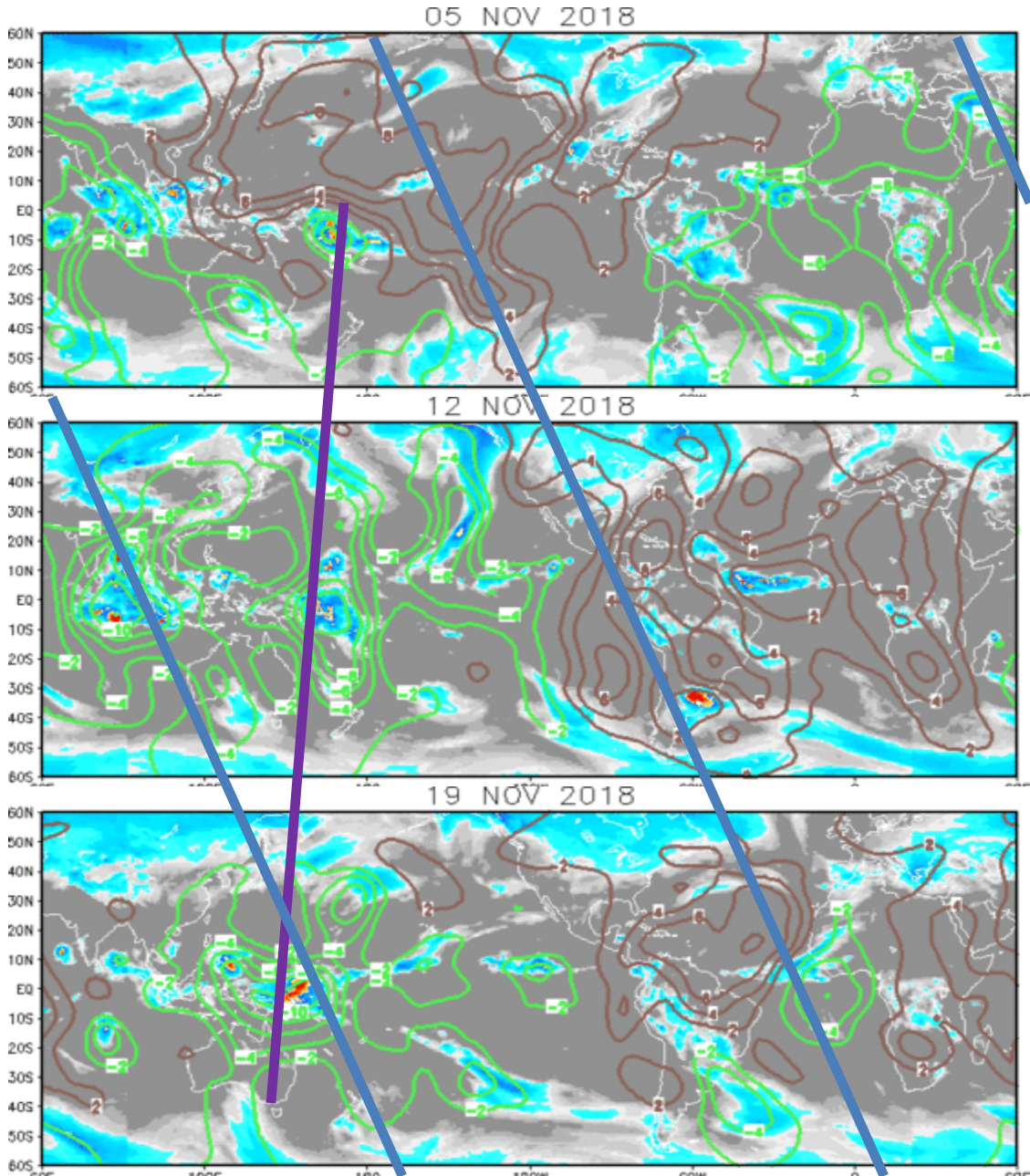
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

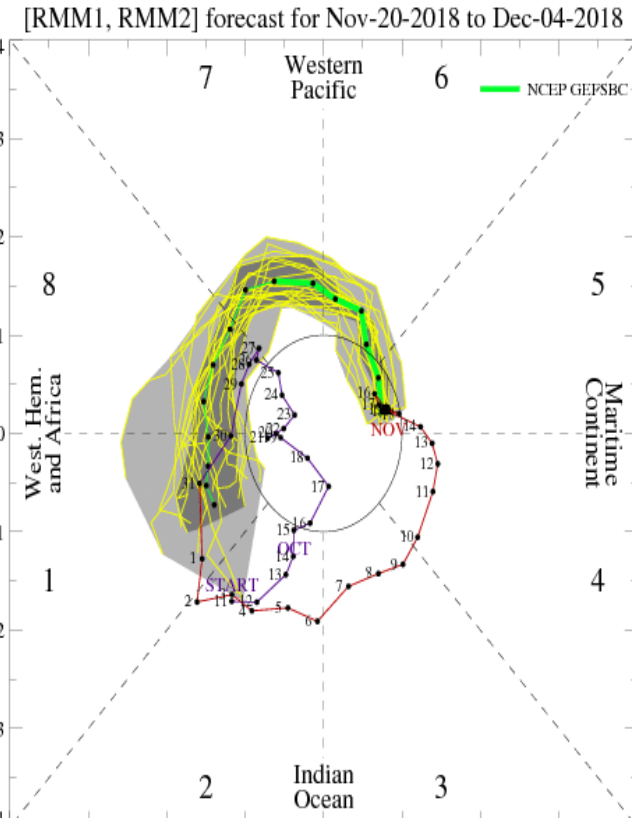
Robust MJO Wave-1 asymmetry, Indian Ocean event destructively interfering with the low frequency state.

The MJO overspreads the Maritime Continent, convection begins returning to the Pacific.

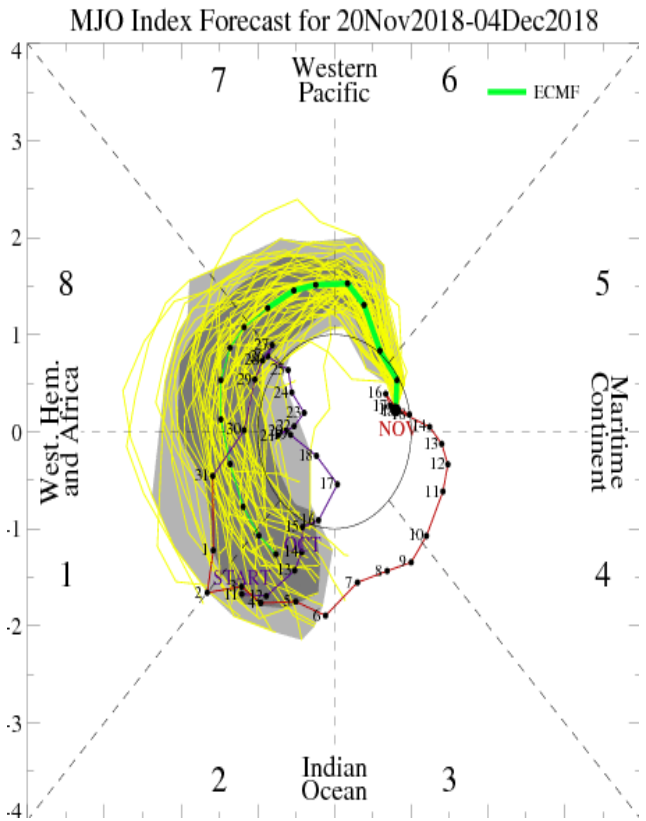
Other modes begin interfering with the signal.



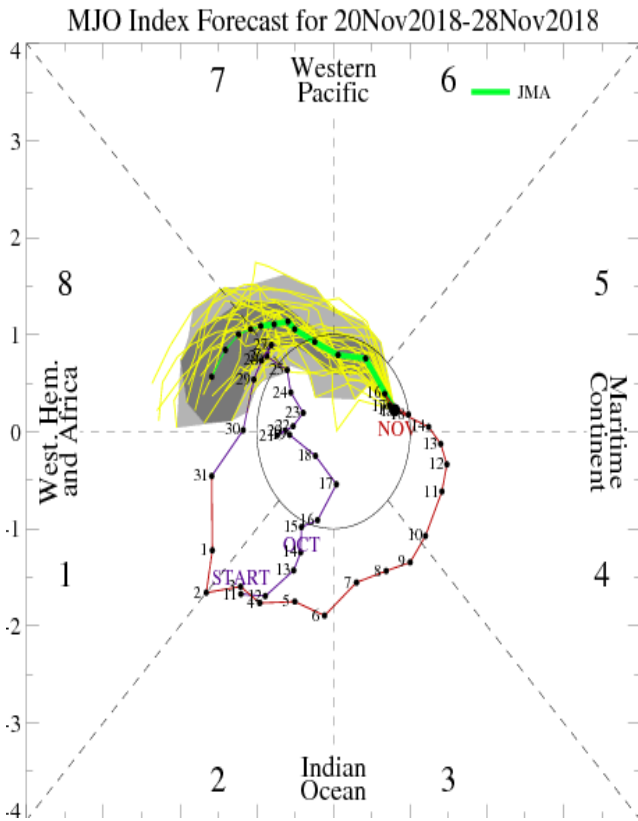
MJO Observation/Forecast



GEFS



ECMWF



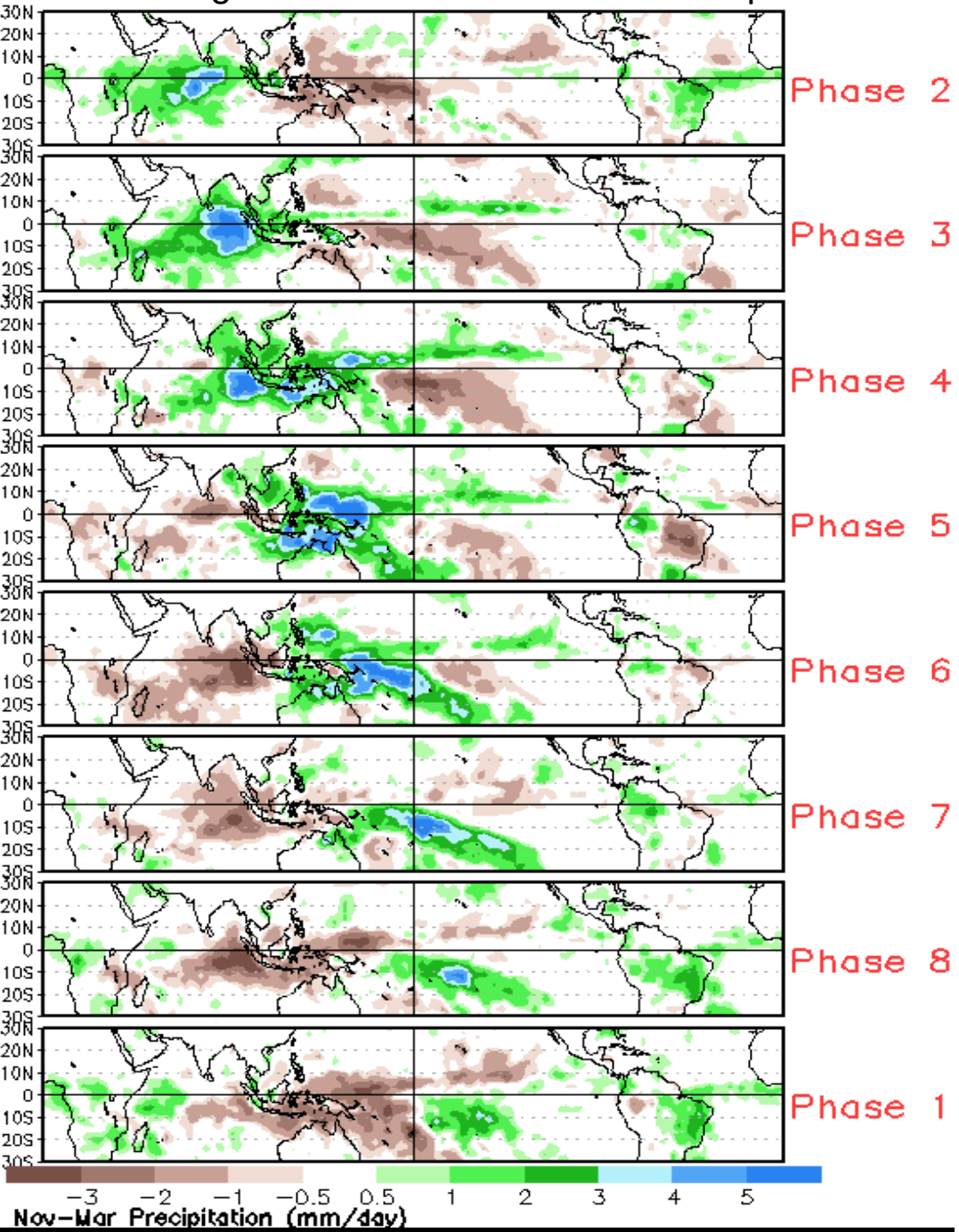
JMA

GEFS – robust MJO activity, moving from the Pacific (Week-1) to the Western Hemisphere (Week-2)

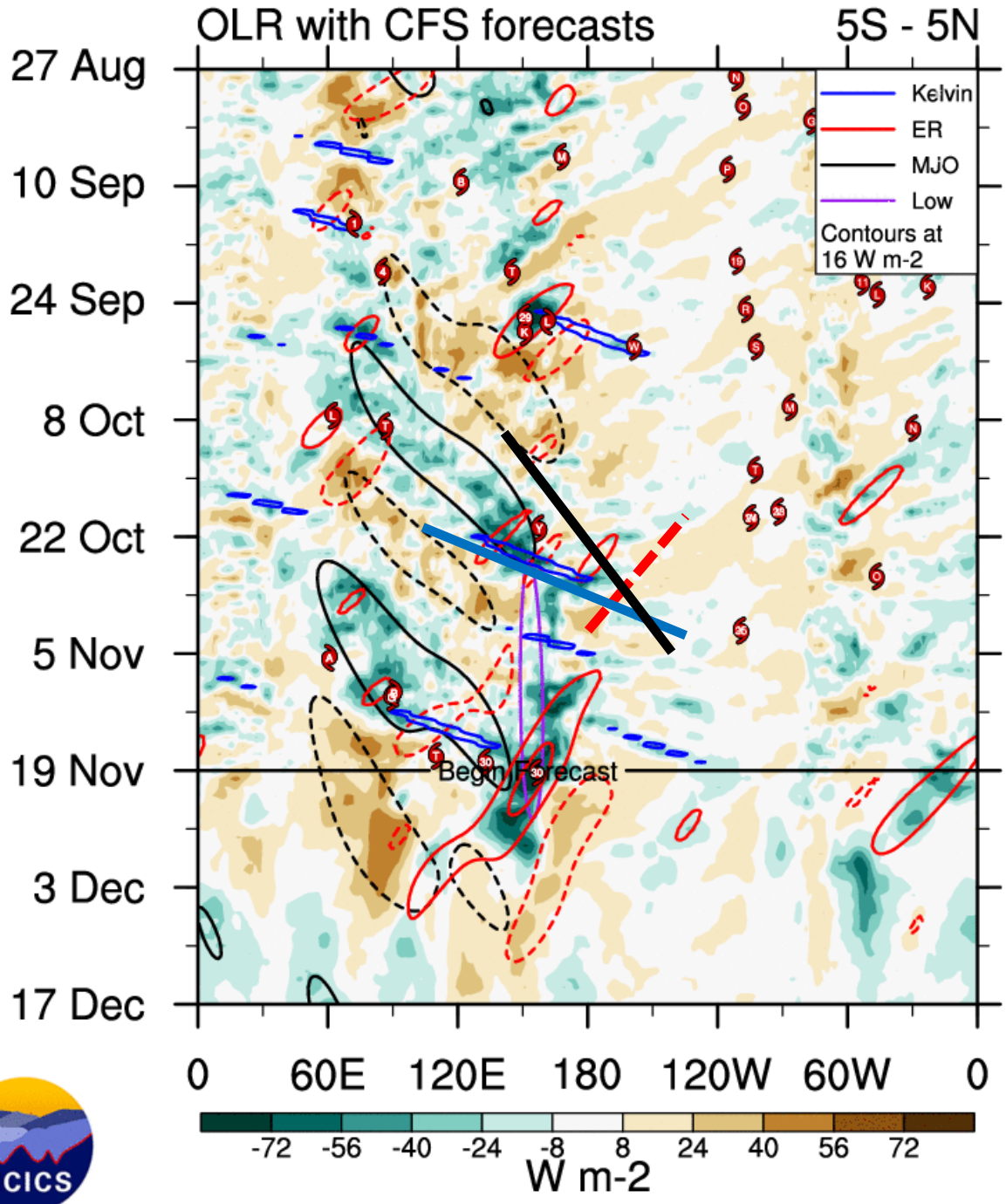
ECMWF – faster phase speed, enhanced signal reaches the Indian Ocean by the end of Week-2

JMA – Similar to GEFS/ECMWF, but a little later with the amplification

Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.



MJO envelope apparent**,**
Rossby wave activity
influencing the pattern

Low-frequency pattern
beginning to constructively
interfere with the MJO

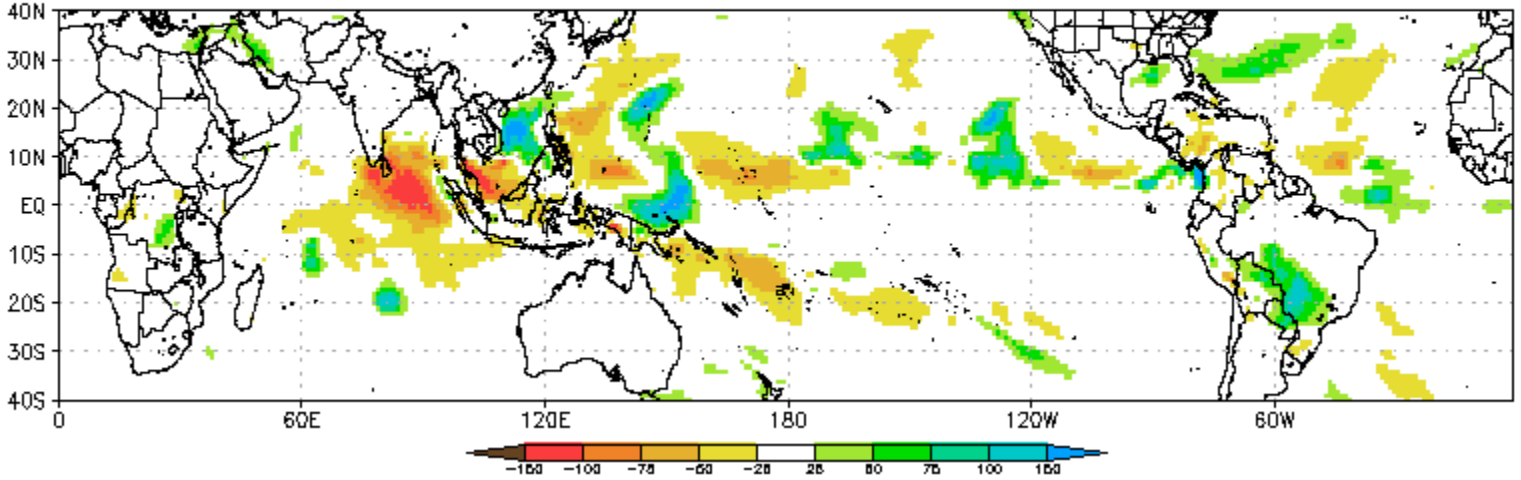
NCICS

ncics.org/mjo

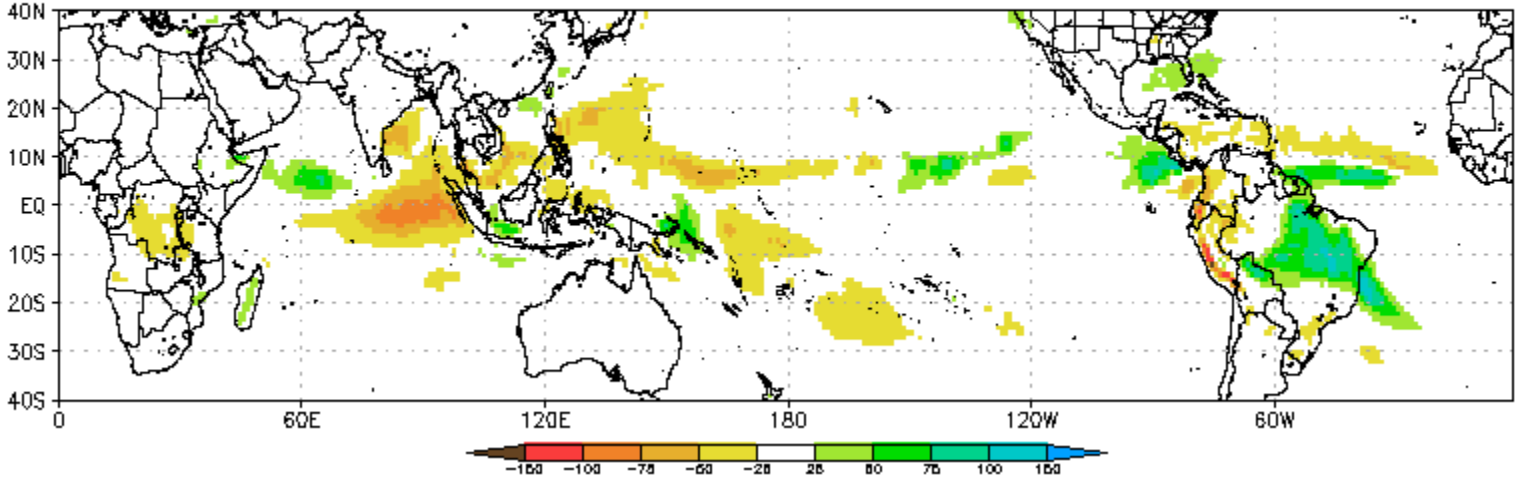
Tue 2018-11-20 1615 UTC

Carl Schreck (cjschrec@ncsu.edu)

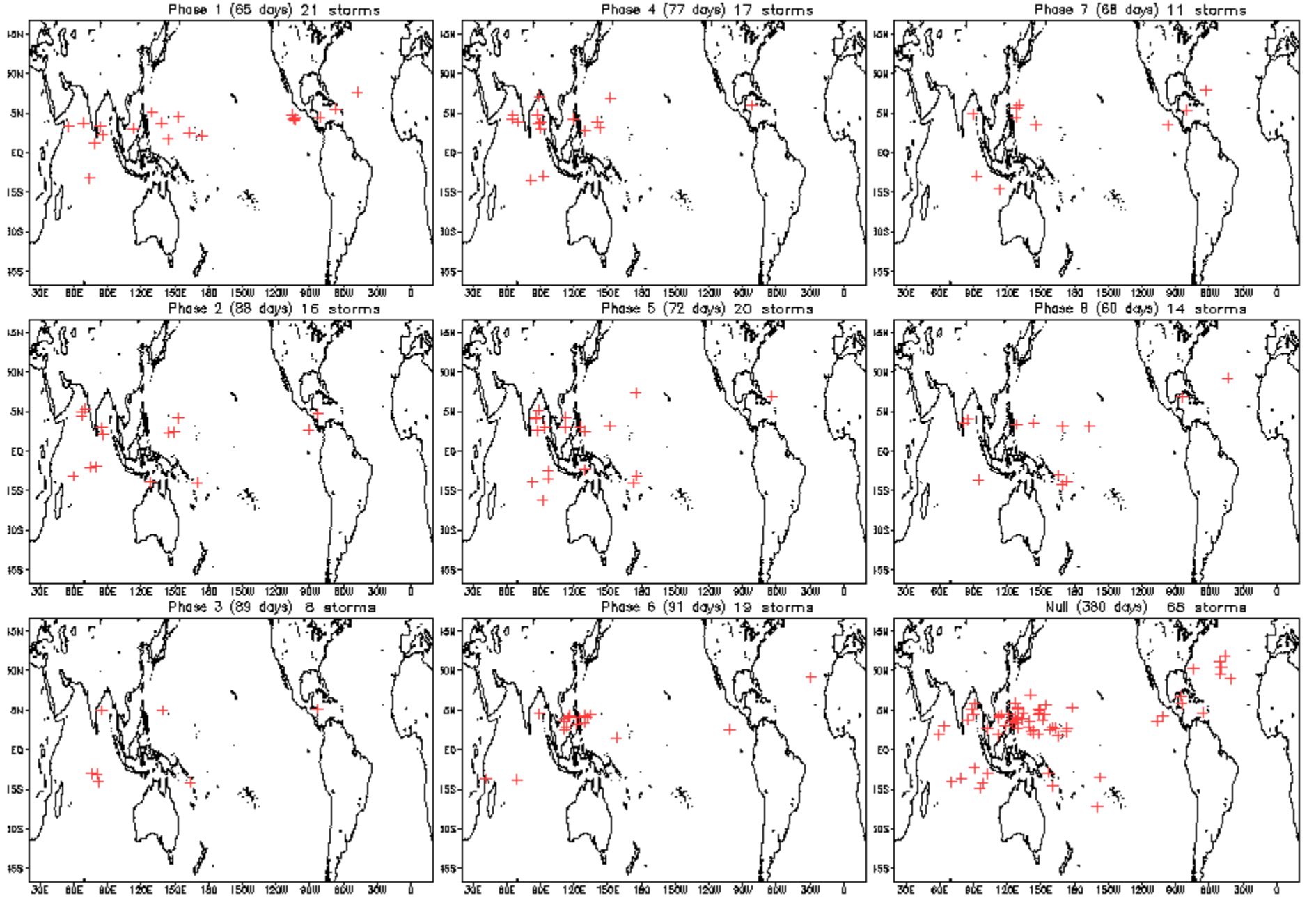
CFS Precipitation Anomalies (mm) Issued 19Nov2018
Week-1 Forecast Ending 27Nov2018



CFS Precipitation Anomalies (mm) Issued 19Nov2018
Week-2 Forecast Ending 04Dec2018

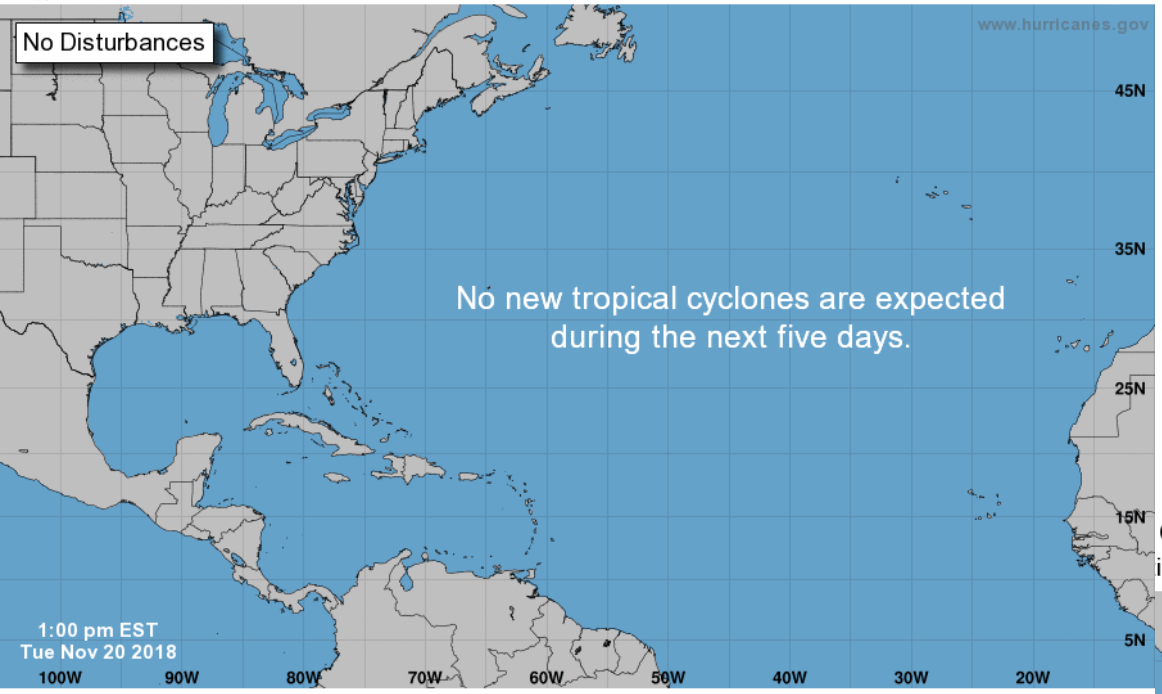


November Tropical Storm Formation by MJO phase



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

ional Hurricane Center Miami, Florida

Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

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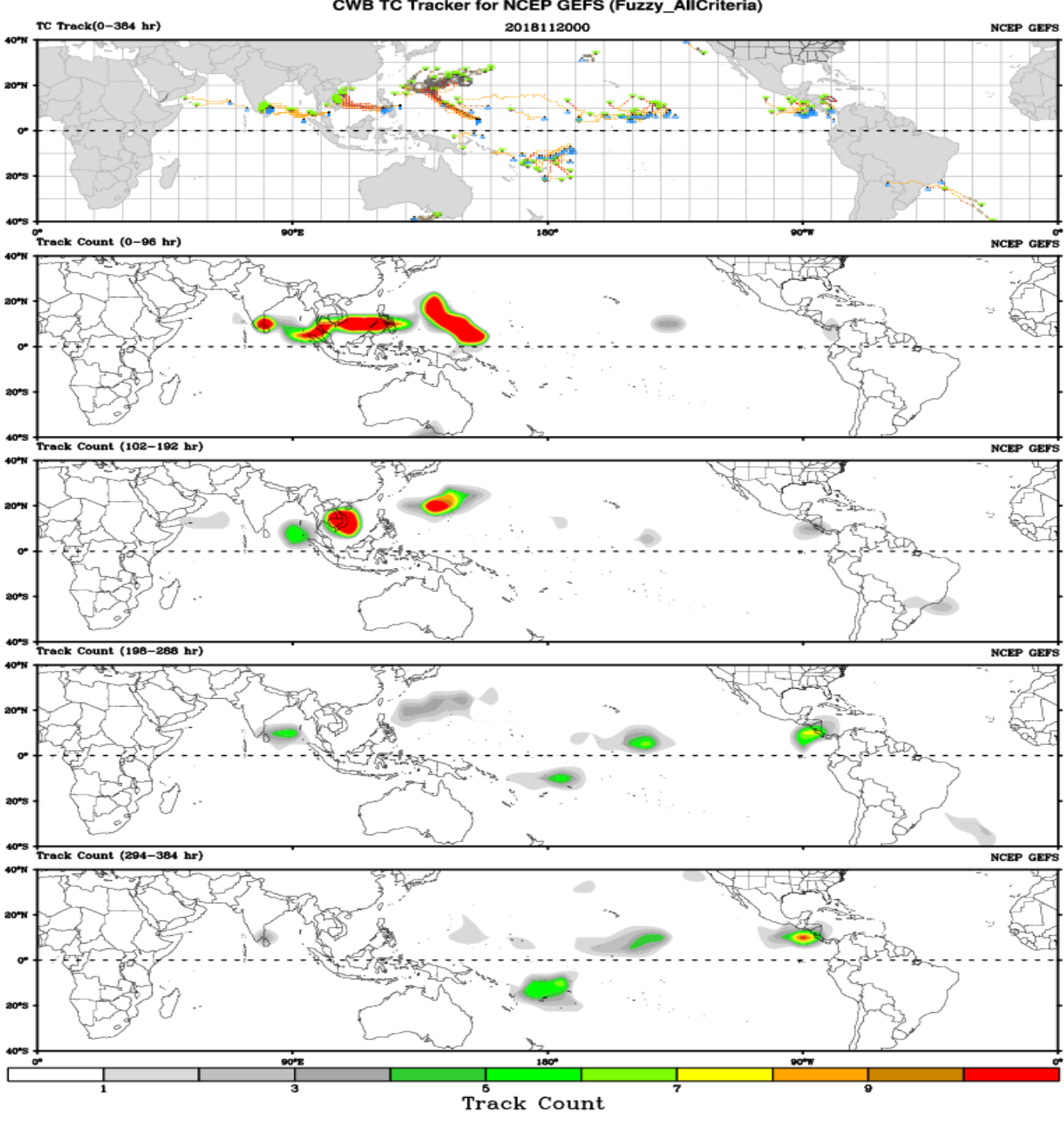
Post-Tropical Cyclone or Remnants

Days 1-4

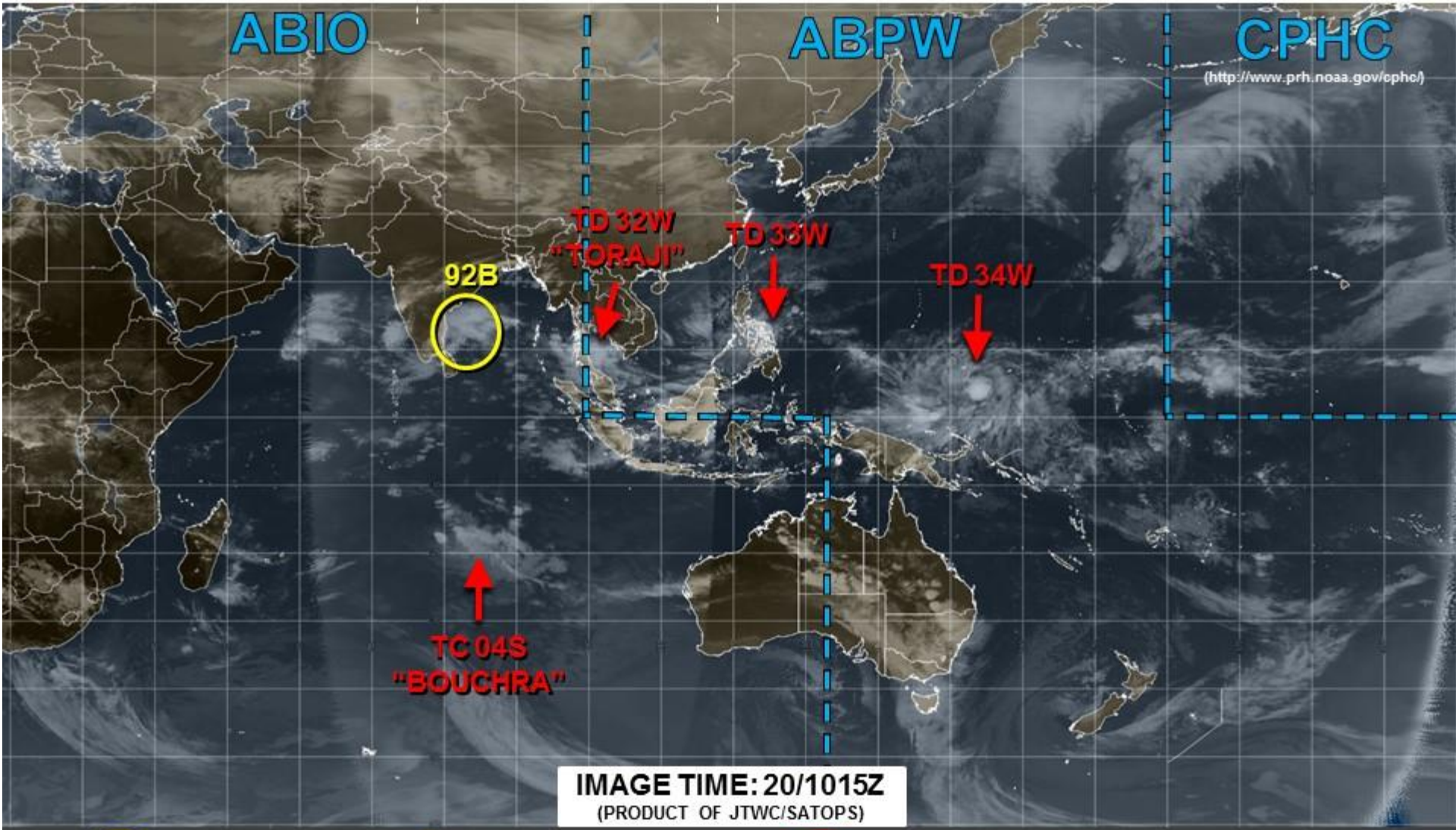
Day 5-8

Day 9-12

Day 13-15



JOINT TYPHOON WARNING CENTER



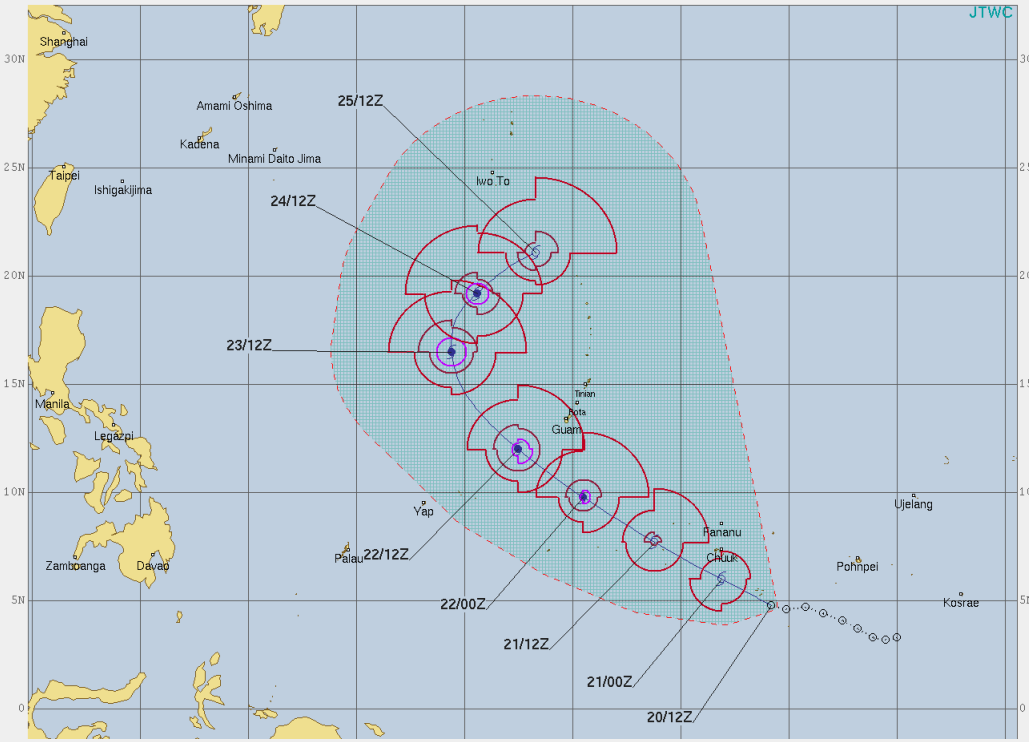
LOW — TC development unlikely within 24 hours

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 34W (Man-Yi)

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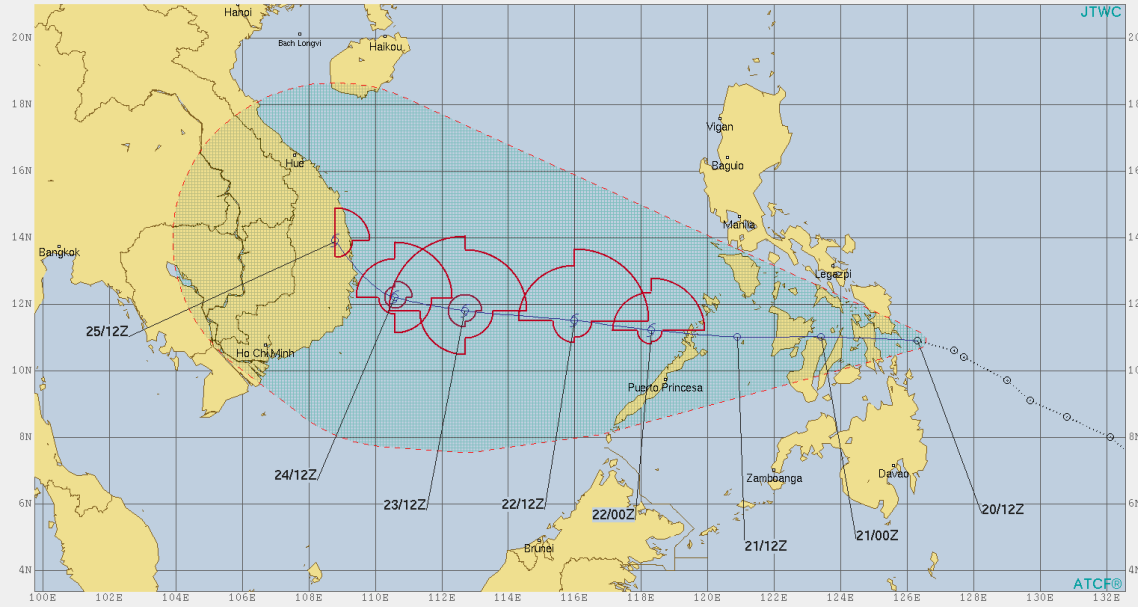
TROPICAL DEPRESSION 34W (MAN-YI) WARNING #4
WTPN31 PGTW 201500
201200Z POSIT: NEAR 4.8N 154.2E
MOVING 285 DEGREES TRUE AT 07 KNOTS
MAXIMUM SIGNIFICANT WAVE HEIGHT: 11 FEET
20/12Z, WINDS 030 KTS, GUSTS TO 040 KTS
21/00Z, WINDS 040 KTS, GUSTS TO 050 KTS
21/12Z, WINDS 055 KTS, GUSTS TO 070 KTS
22/00Z, WINDS 075 KTS, GUSTS TO 090 KTS
22/12Z, WINDS 085 KTS, GUSTS TO 105 KTS
23/12Z, WINDS 100 KTS, GUSTS TO 125 KTS
24/12Z, WINDS 100 KTS, GUSTS TO 125 KTS
25/12Z, WINDS 060 KTS, GUSTS TO 075 KTS

CPA TO:                 NM     DTG
LUKUNOR                 38   20/14Z
OROLUK                 182   20/14Z
CHUUK                   79   21/03Z
PULUWAT                 27   21/10Z
SATAWAL                 68   21/16Z
LAMOTREK                86   21/18Z
IFALIK                 161   21/23Z
FARAULEP                93   22/00Z
WOLEAI                 172   22/00Z
EAURIPIK               237   22/01Z
ANDERSEN_AFB           163   22/09Z
HAGATNA                145   22/09Z
ROTA                   197   22/09Z
WFO_GUAM               154   22/09Z
NAVSTA_GUAM            143   22/10Z
SAIPAN                 270   22/10Z
SOROL                  256   22/10Z
TINIAN                 254   22/10Z
FAIS                   177   22/12Z
ULITHI                 207   22/14Z
NGULU                  362   22/15Z
YAP                    285   22/16Z
AGRIHAN                193   25/12Z
ALAMAGAN               253   25/12Z
ANATAHAN               313   25/12Z
CHICHI_JIMA            365   25/12Z
IWO_TO                 248   25/12Z
PAGAN                  229   25/12Z

BEARING AND DISTANCE    DIR   DIST  TAU
                              (NM) (HRS)
CHUUK                   140    212    0
KAPINGAMARANGI          351    225    0
LUKUNOR                 166     49    0
MOKIL                   251    355    0
NUKUORO                 321     77    0
OROLUK                  199    184    0
PAKIN                   237    255    0
PINGELAP                258    397    0
POHNPEI                 242    270    0
PULUWAT                 114    340    0
SAPWUAFIK               252    195    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 DEPRESSION 33W (THIRTYTHREE) WARNING #10
WTPN32 PGTW 201500
201200Z POSIT: NEAR 10.9N 126.3E
MOVING 285 DEGREES TRUE AT 11 KNOTS
MAXIMUM SIGNIFICANT WAVE HEIGHT: 14 FEET
20/12Z, WINDS 025 KTS, GUSTS TO 035 KTS
21/00Z, WINDS 025 KTS, GUSTS TO 035 KTS
21/12Z, WINDS 030 KTS, GUSTS TO 040 KTS
22/00Z, WINDS 040 KTS, GUSTS TO 050 KTS
22/12Z, WINDS 045 KTS, GUSTS TO 055 KTS
23/12Z, WINDS 055 KTS, GUSTS TO 070 KTS
24/12Z, WINDS 050 KTS, GUSTS TO 065 KTS
25/12Z, WINDS 035 KTS, GUSTS TO 045 KTS

CPA TO:                 NM     DTG
ZAMBOANGA              246   21/06Z
MANILA                 216   21/12Z
CLARK_AB               251   21/15Z
SUBIC_BAY              225   21/17Z
PUERTO_PRINCESA         87   21/21Z
HO_CHI_MINH_CITY       212   25/04Z
DA_NANG                129   25/12Z

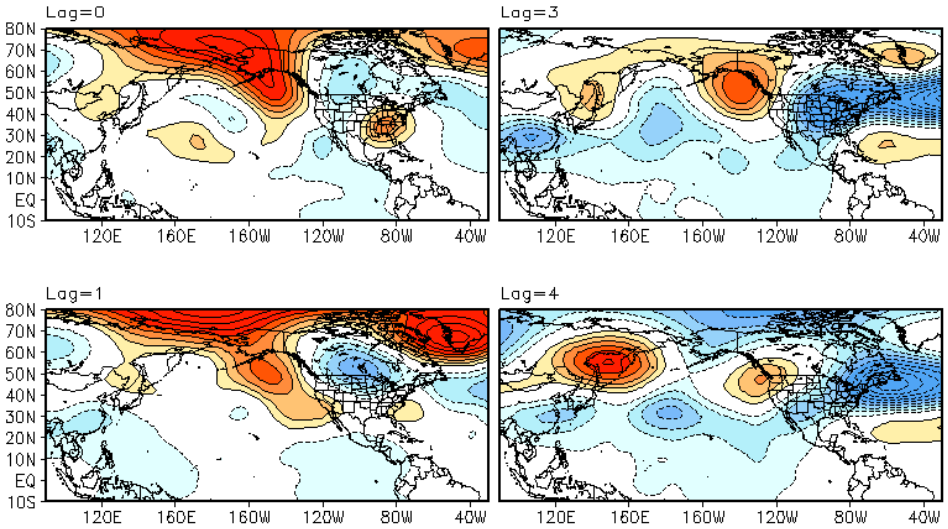
BEARING AND DISTANCE    DIR   DIST  TAU
                              (NM) (HRS)
MANILA                  125    381    0
ZAMBOANGA               046    346    0
```

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

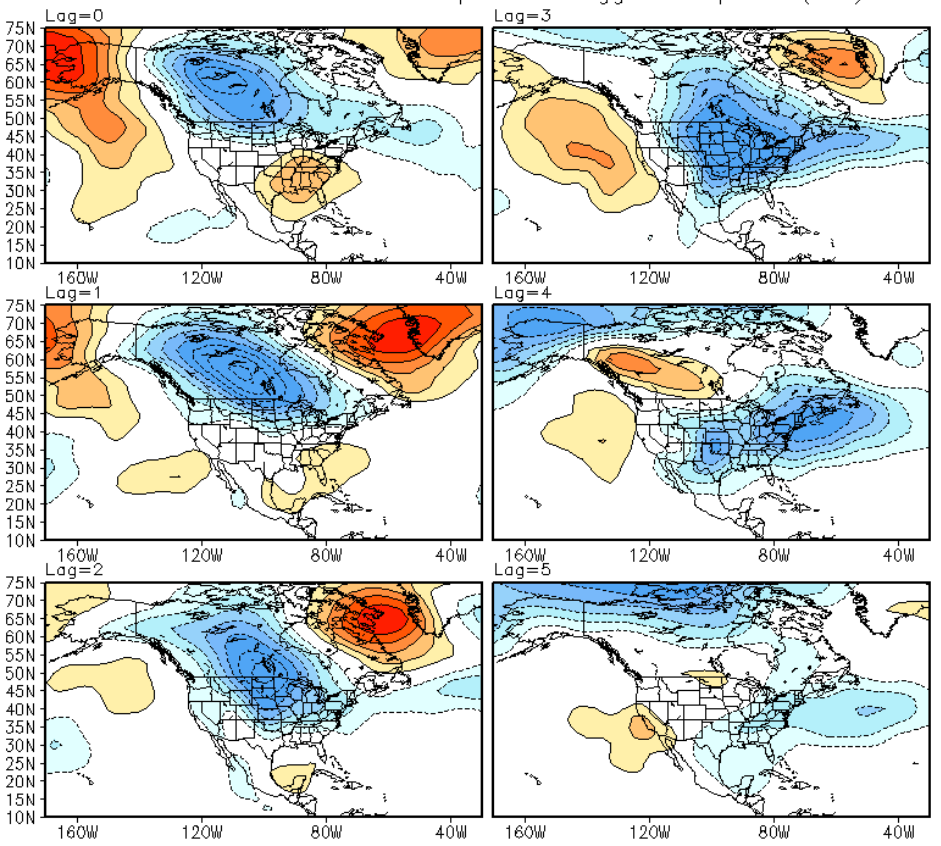
Tropical Depression 33W

Connections to U.S. Impacts

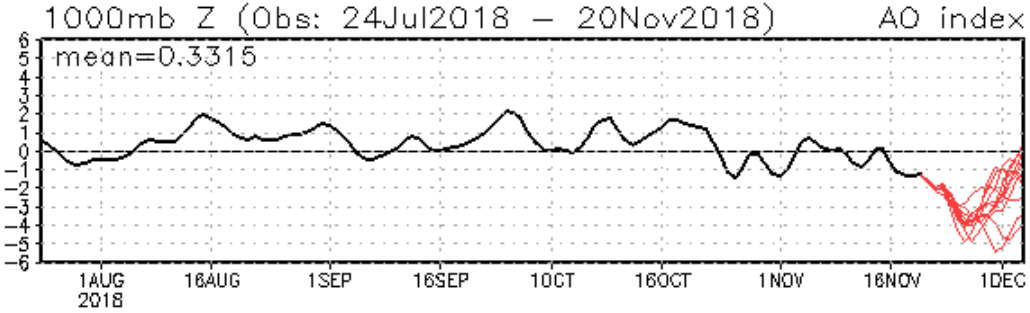
RMM Phase 7 200-hPa Height Lagged Composite (ond)

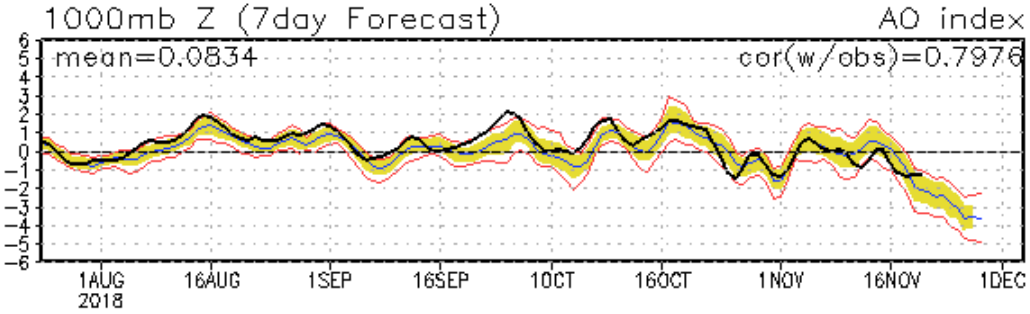


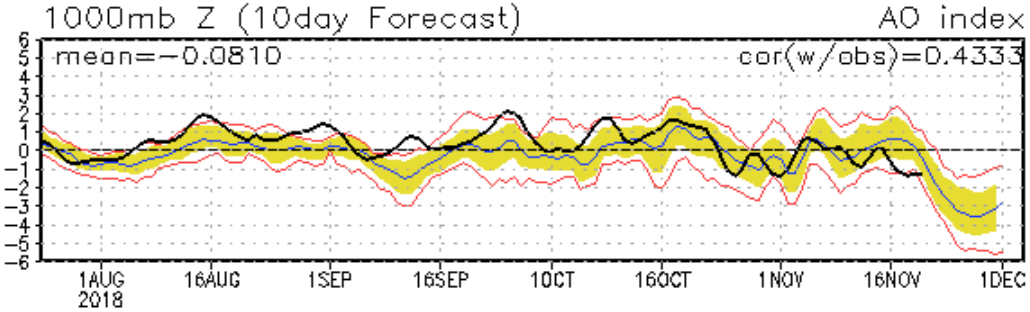
RMM Phase 7 850-hPa Temperature Lagged Composite (ond)

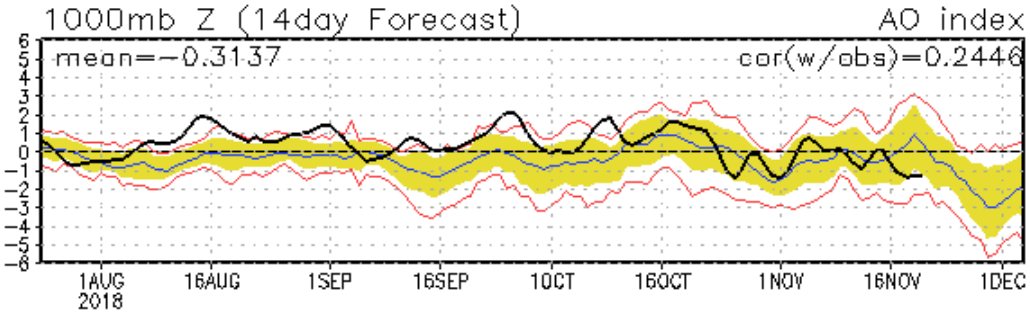


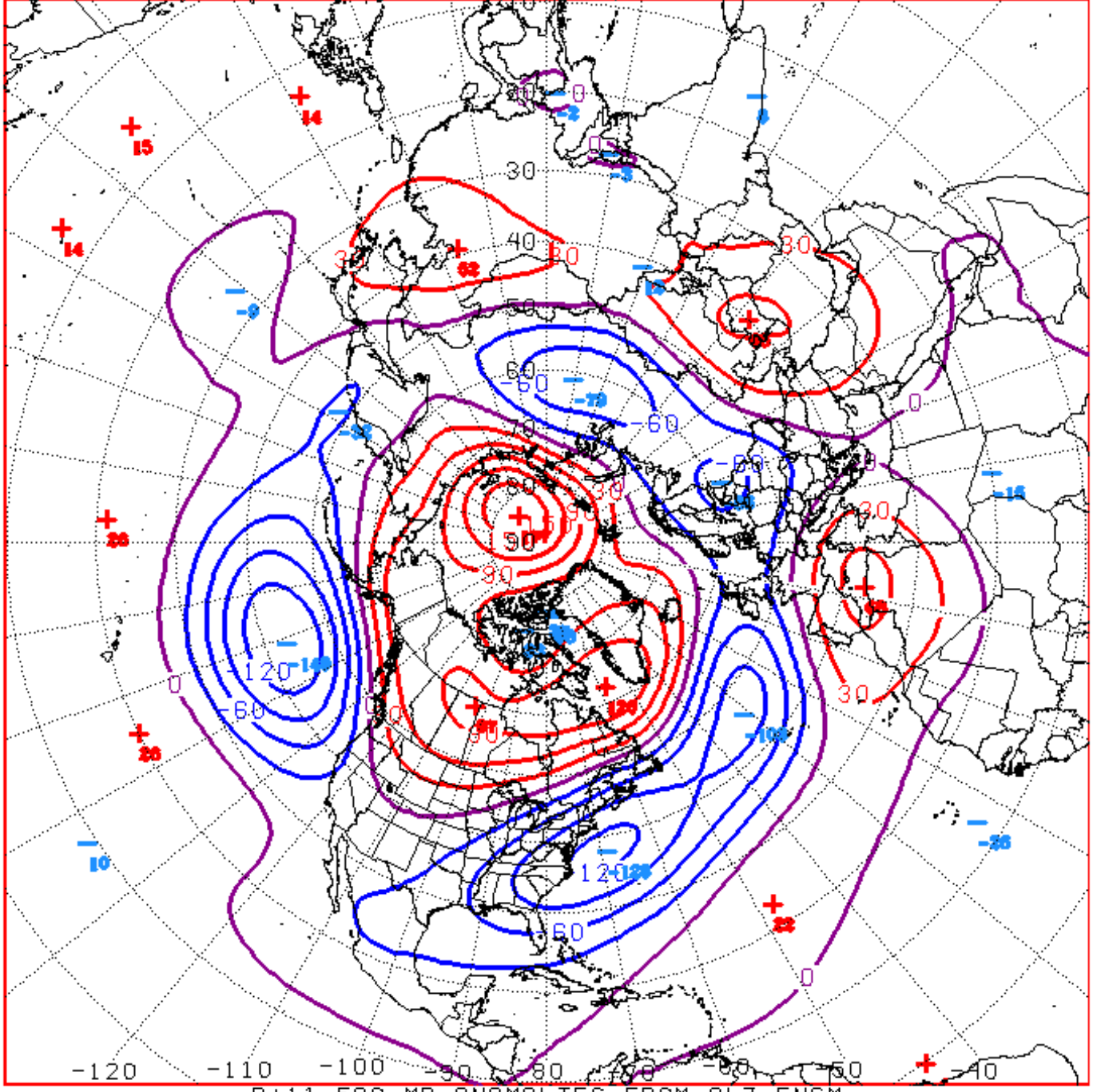
AO: Observed & ENSM forecasts



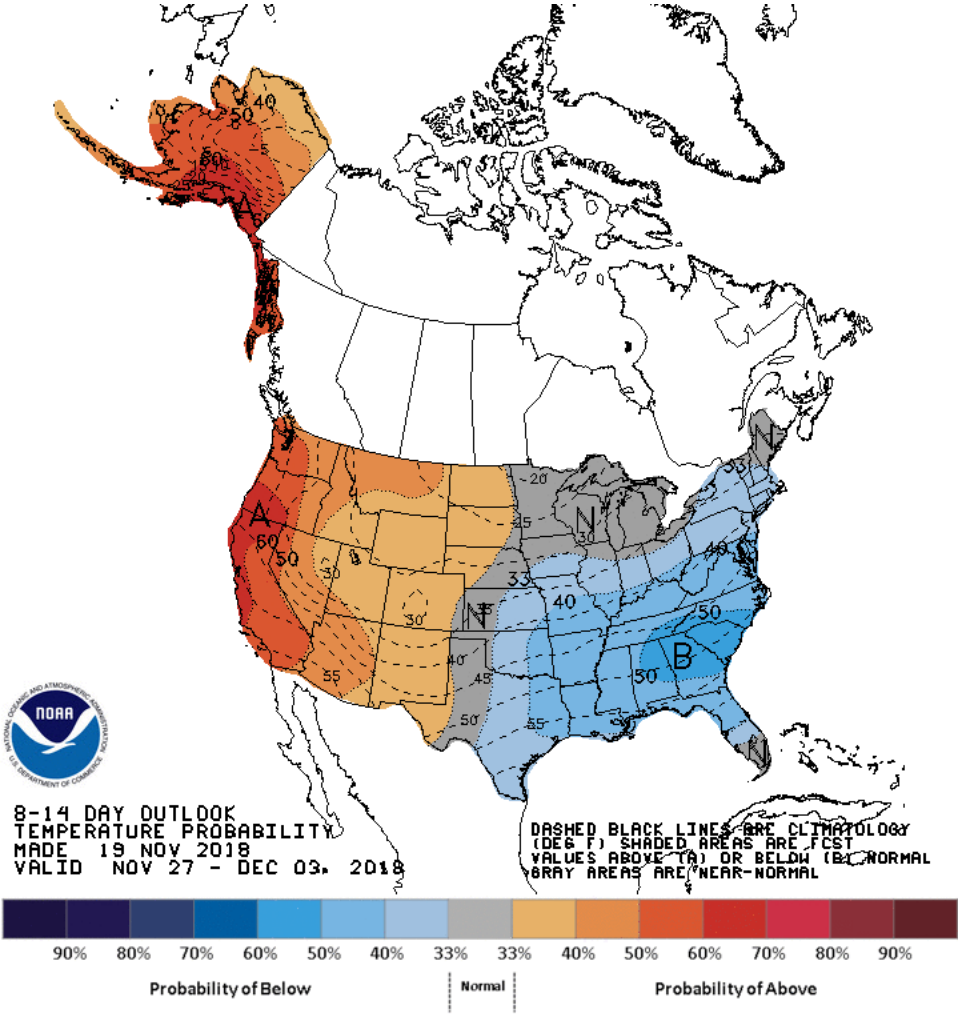


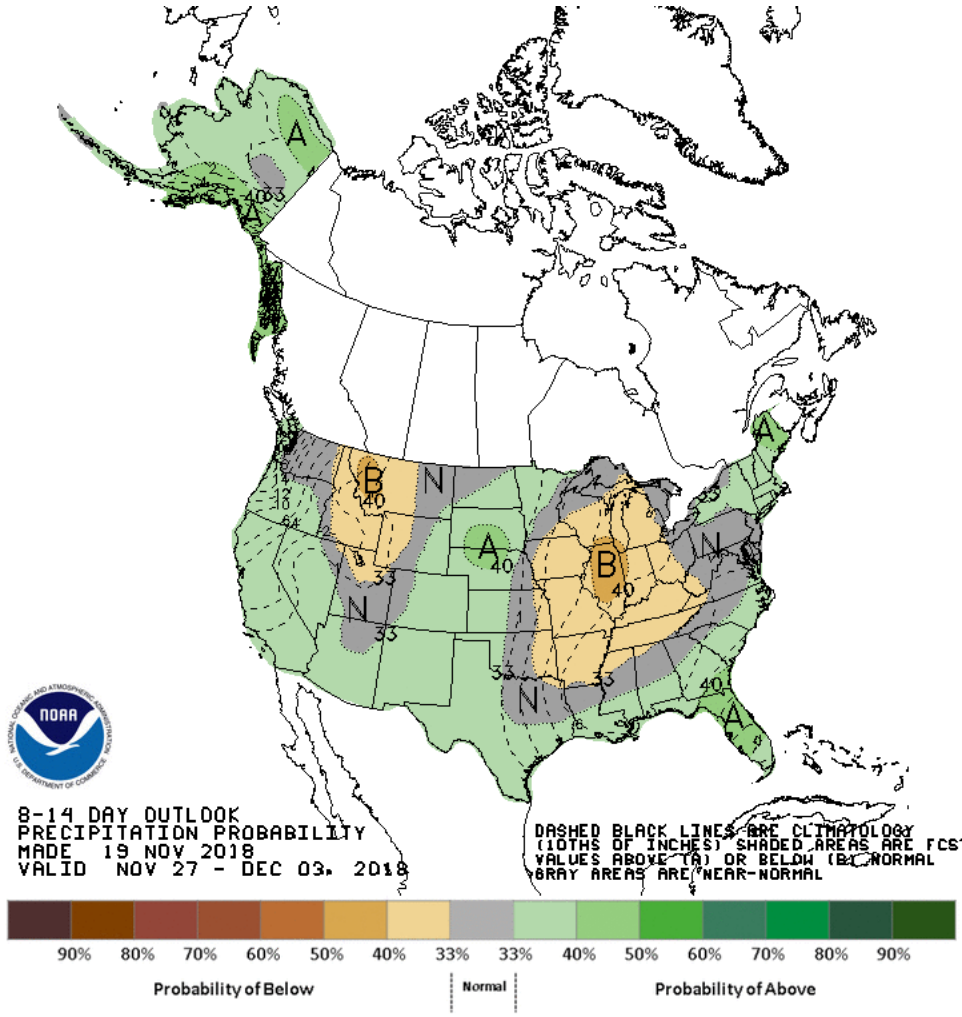





-120
-110
-100
-90
-80
-70
-60
-50
-40
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE NOV 20 2018 1302 UTC CNTD DEC 01 2018

Week 2 – Temperature and Precipitation





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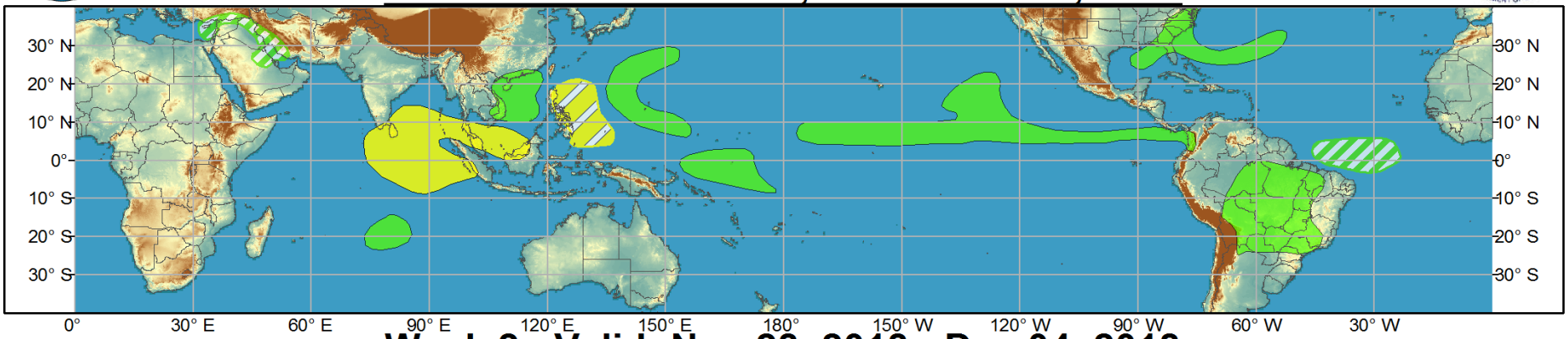

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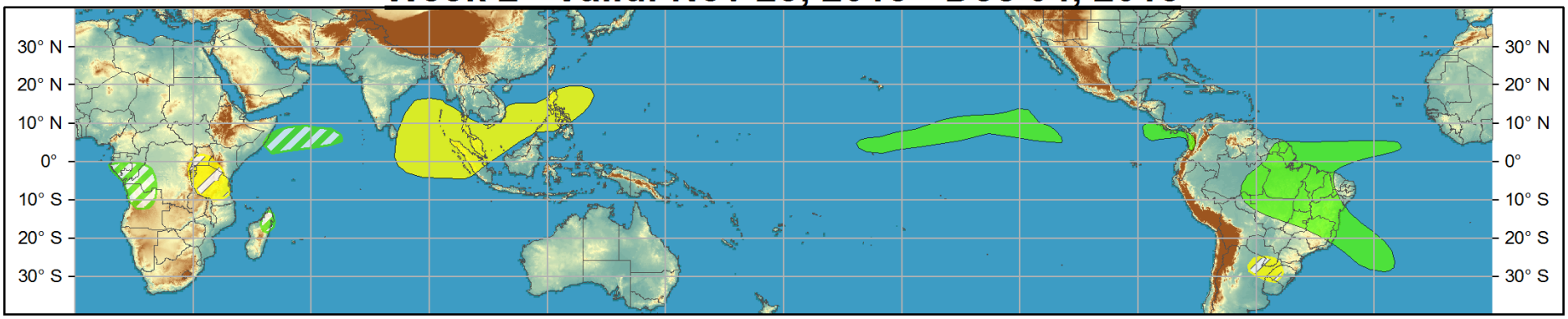

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