Global Tropics Hazards And Benefits Outlook

12/20/2016

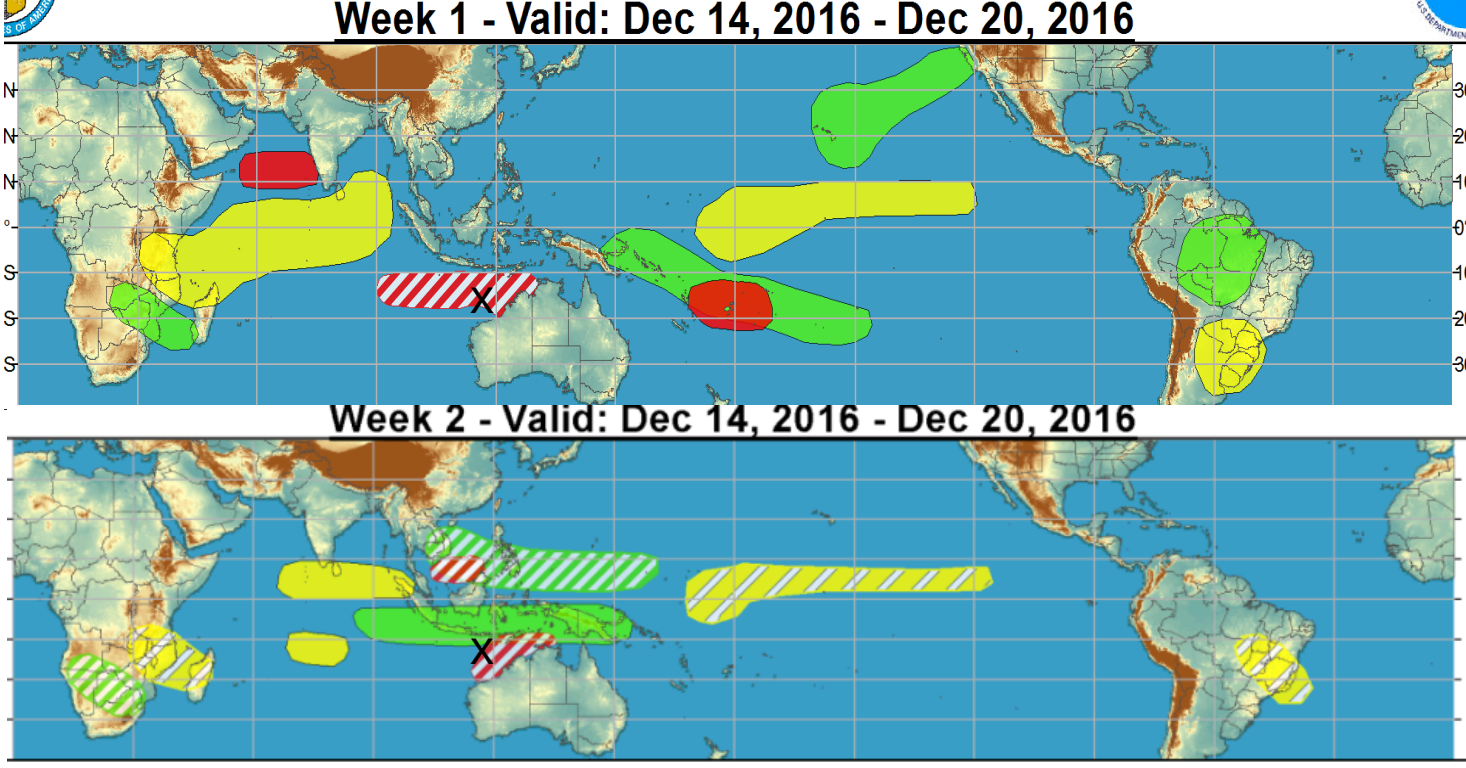
Dan Harnos

Outline

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

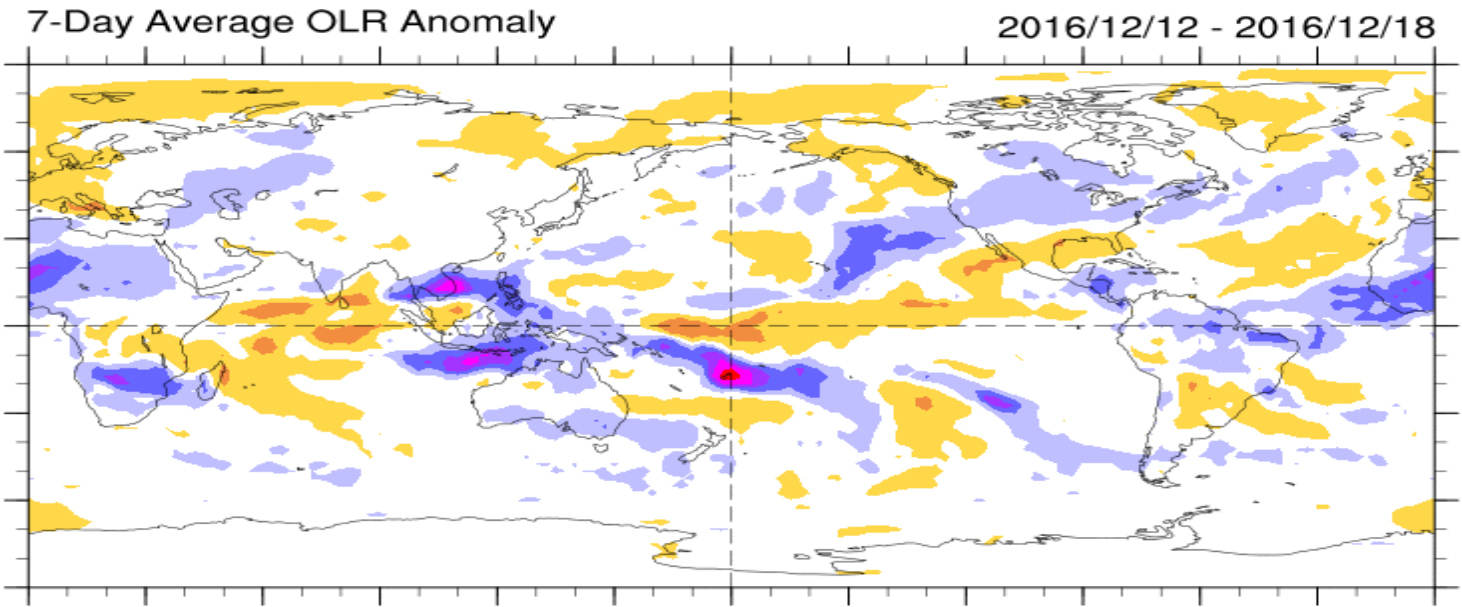
Outlook Review

Tropical Storm 2 northwest of Australia

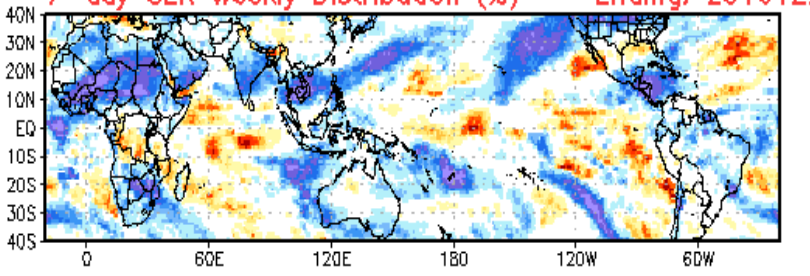


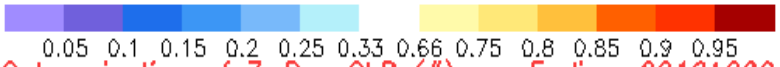
Cool shading
More clouds/rain

Warm shading
Less clouds/rain

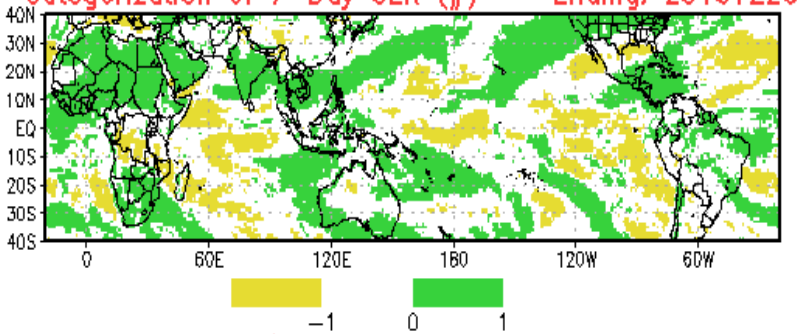


7-day OLR Weekly Distribution (%) -- Ending: 20161220

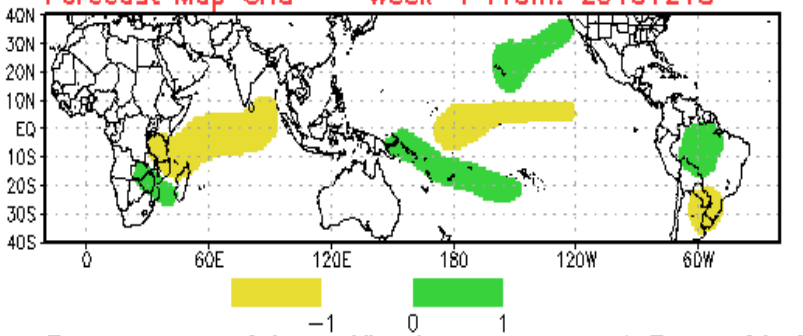




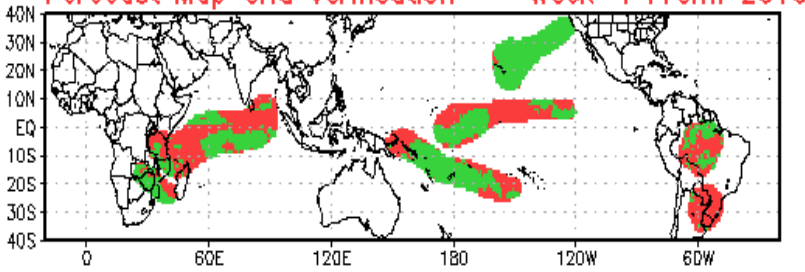
Categorization of 7-Day OLR (#) -- Ending: 20161220



Forecast Map Grid -- Week-1 From: 20161213

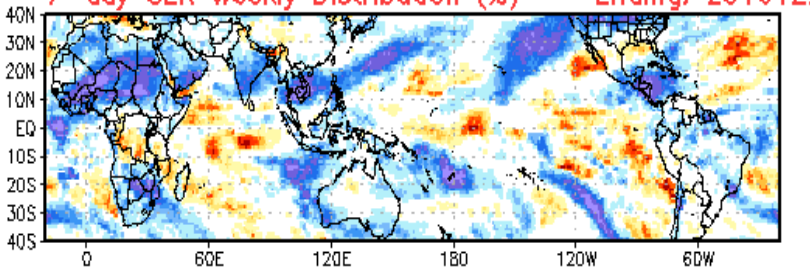


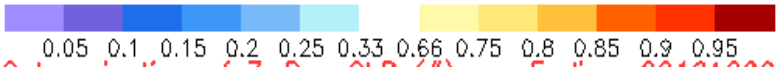
Forecast Map Grid Verification -- Week-1 From: 20161213



Hit: Green, Miss: Red
Heidke Skill Score: 27.0320

7-day OLR Weekly Distribution (%) -- Ending: 20161220





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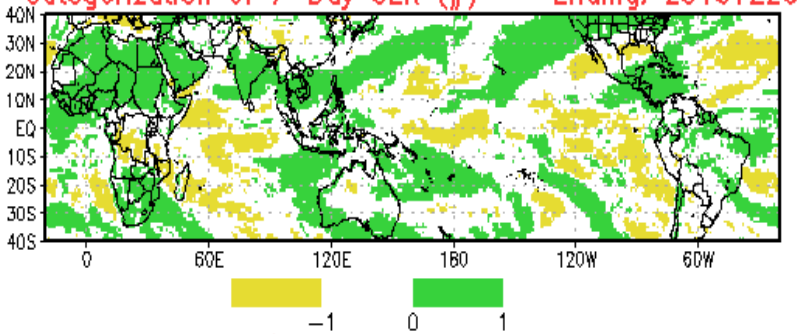
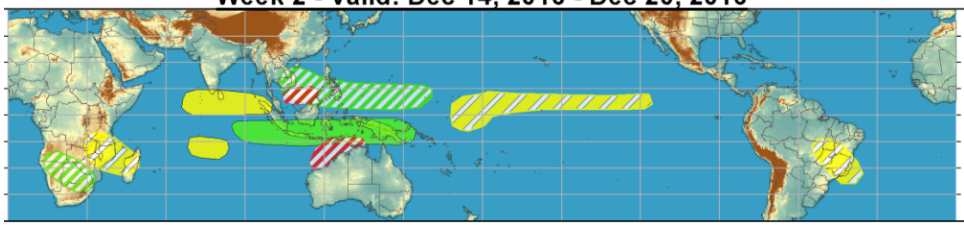
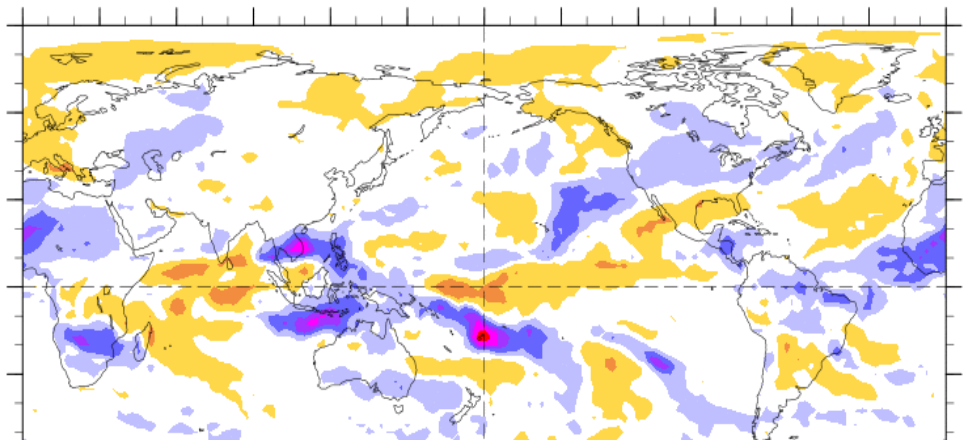


Week 2 - Valid: Dec 14, 2016 - Dec 20, 2016



7-Day Average OLR Anomaly 2016/12/12 - 2016/12/18



Synopsis of Climate Modes

ENSO:

- **La Niña Advisory**

La Niña conditions are present, with a transition to ENSO-neutral favored during January-March, 2017.

MJO and other subseasonal tropical variability:

- Kelvin wave approaching the date line. Signal appears to be aliased into the RMM index, despite no apparent Madden-Julian Oscillation (MJO) event.

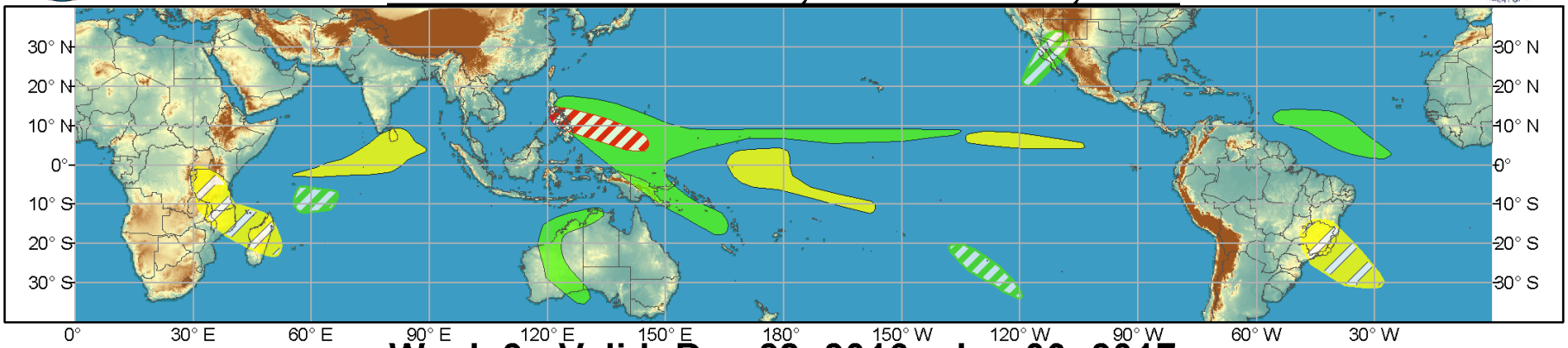
- Dynamical models support a brief amplification of the intraseasonal signal during Week-1 over the Maritime Continent or West Pacific, before decay during Week-2. Given the lack of characteristic eastward propagation or a consistent character, this signal appears tied to competing modes of variability instead of the MJO.

Extratropics:

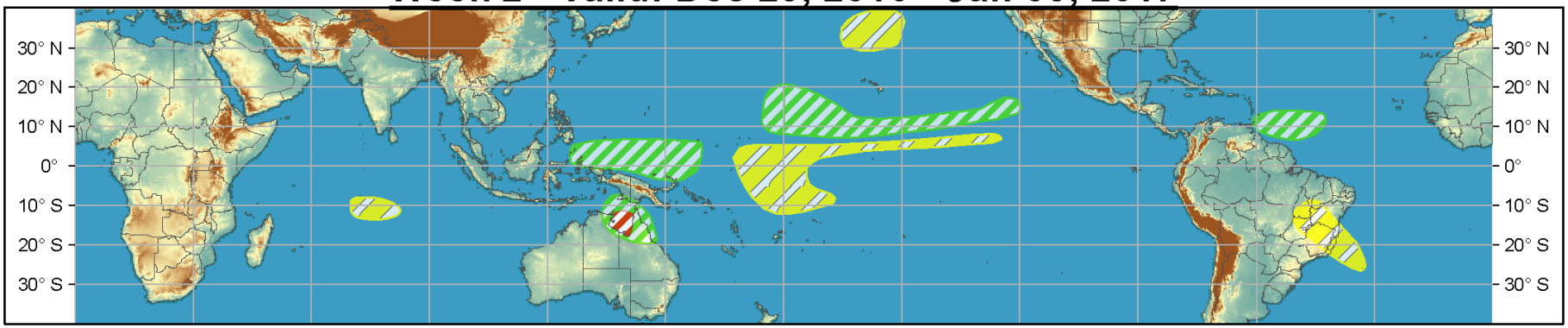
- The extended range temperature and precipitation forecasts for the U.S. are unlikely to be impacted by the MJO.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 21, 2016 - Dec 27, 2016



Week 2 - Valid: Dec 28, 2016 - Jan 03, 2017



Produced: 12/20/2016

Forecaster: D.Harnos

	Confidence: High	Confidence: Moderate	
Tropical Cyclone Formation			Development of a tropical cyclone (tropical depression - TD, or greater strength).
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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

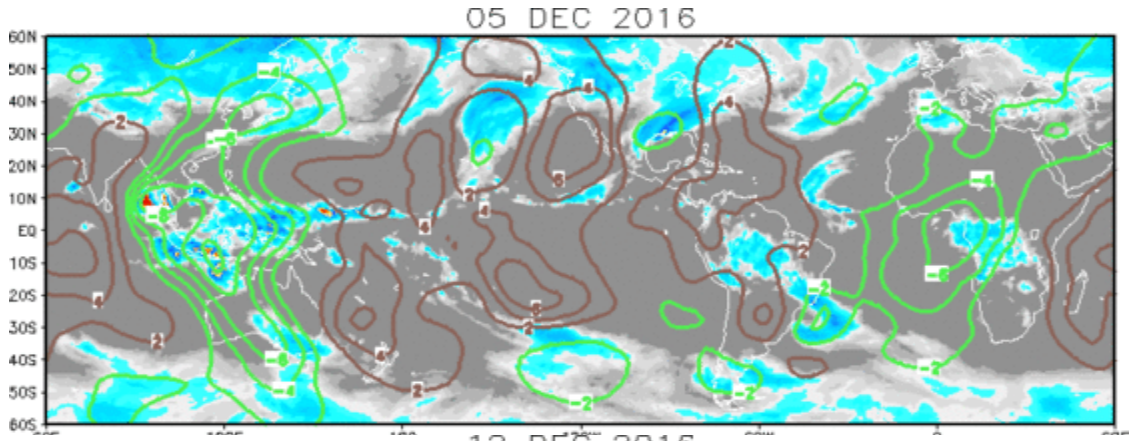
IR Satellite & 200-hpa Velocity Potential Anomalies

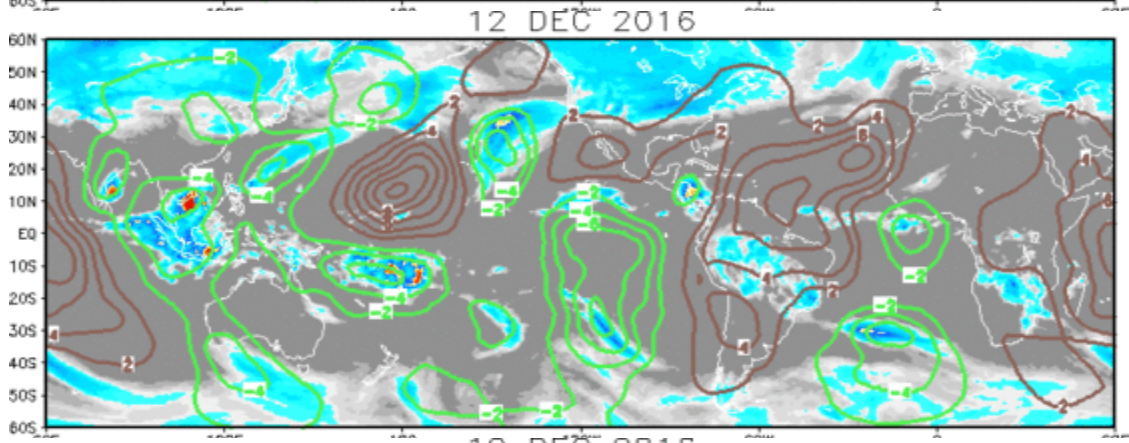
Green: Enhanced Divergence Brown: Enhanced Convergence

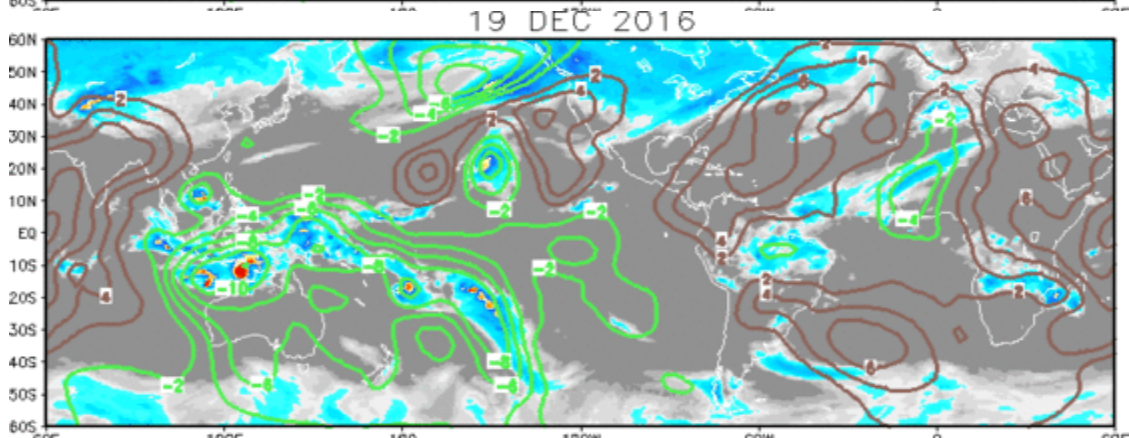
Wave-2 pattern, enhancement over Africa and the Maritime Continent.

Breakdown of the signal into higher wavenumber modes.

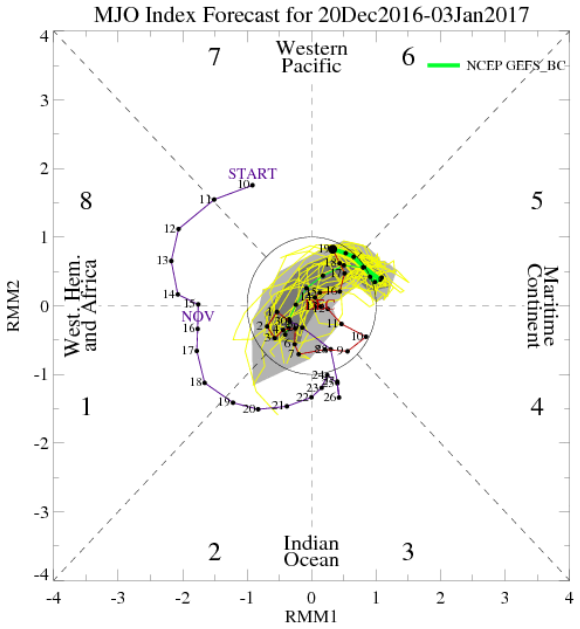
Complicated pattern with general tendency for enhanced (suppressed) convection in the Western (Eastern) Hemisphere.



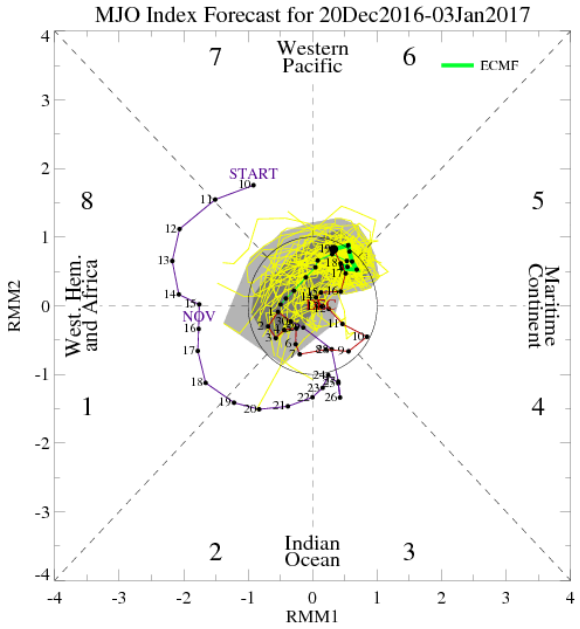




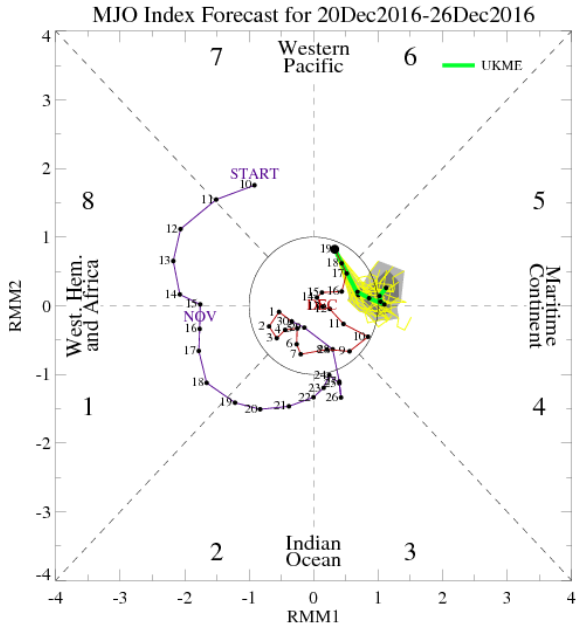
MJO Observation/Forecast



GEFS



ECMWF



UKMET

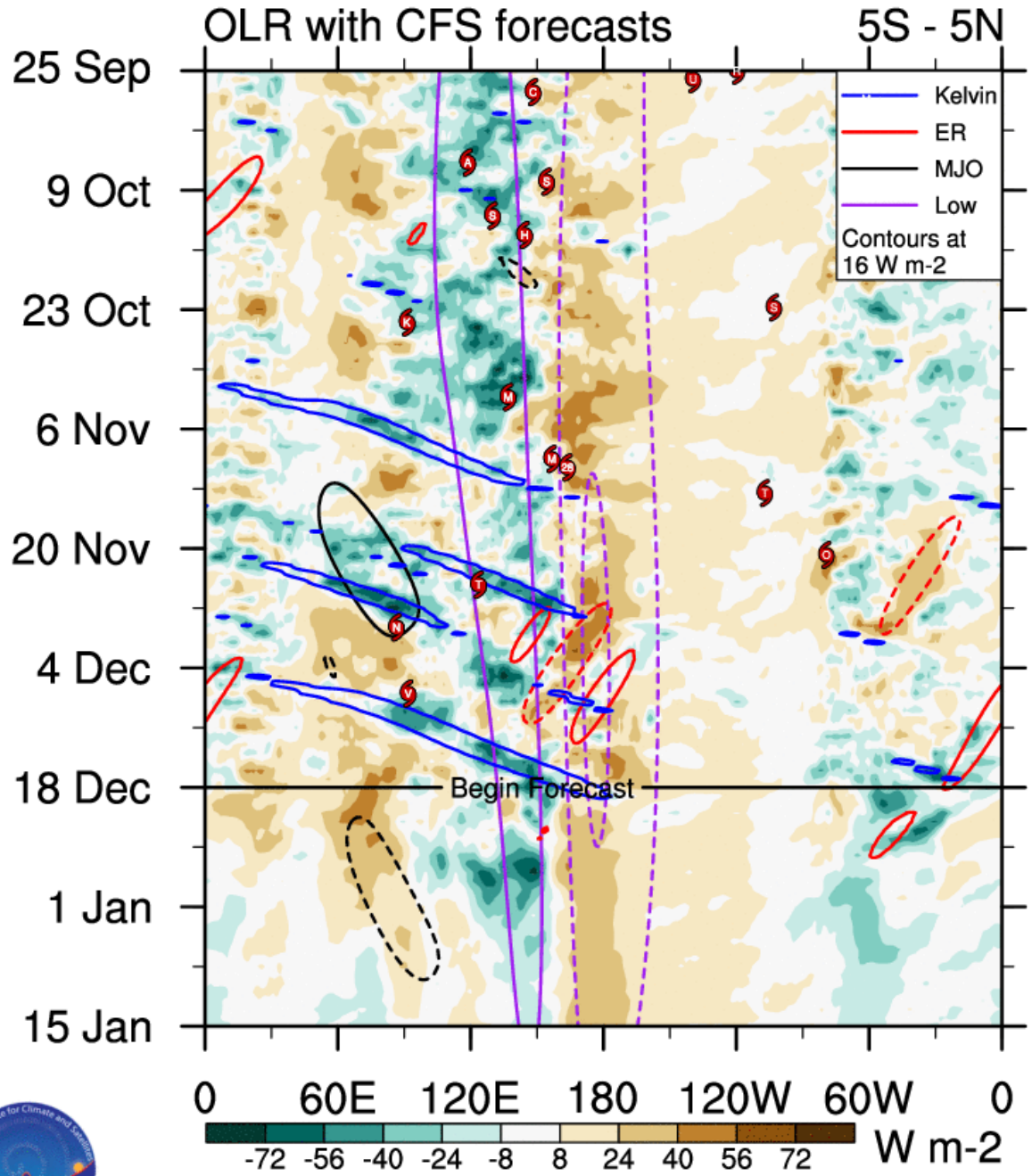
RMM-based analyses of model forecasts indicate a signal outside the unit circle at some point in Week-1 over the eastern Maritime Continent or West Pacific and uncharacteristic westward propagation.

GFS and European solutions support a return to eastward propagation, but decay during Week-2.

Everything against backdrop of **low frequency** state of La Niña.

Kelvin wave present near date line.

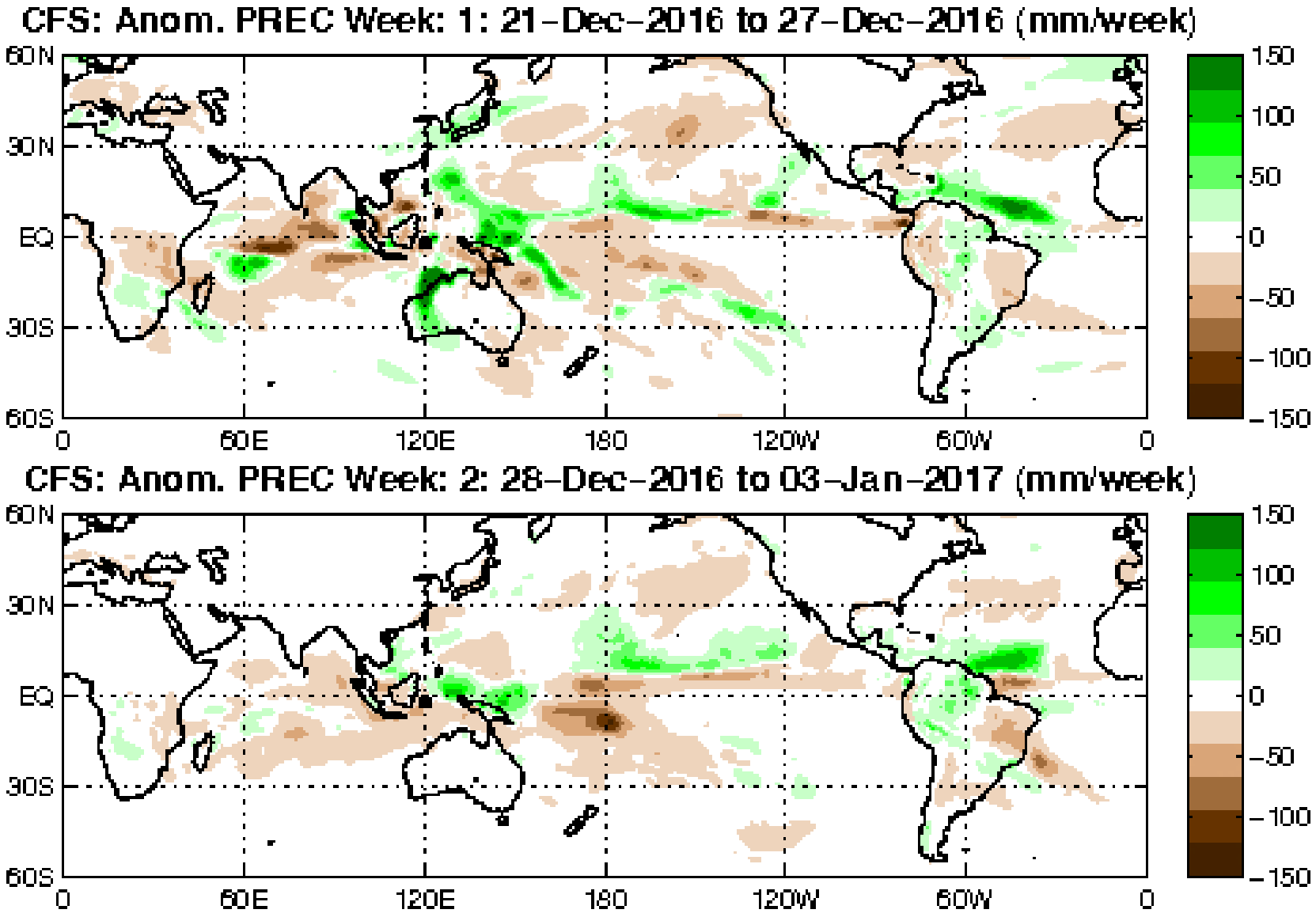
Rossby wave in eastern Atlantic.

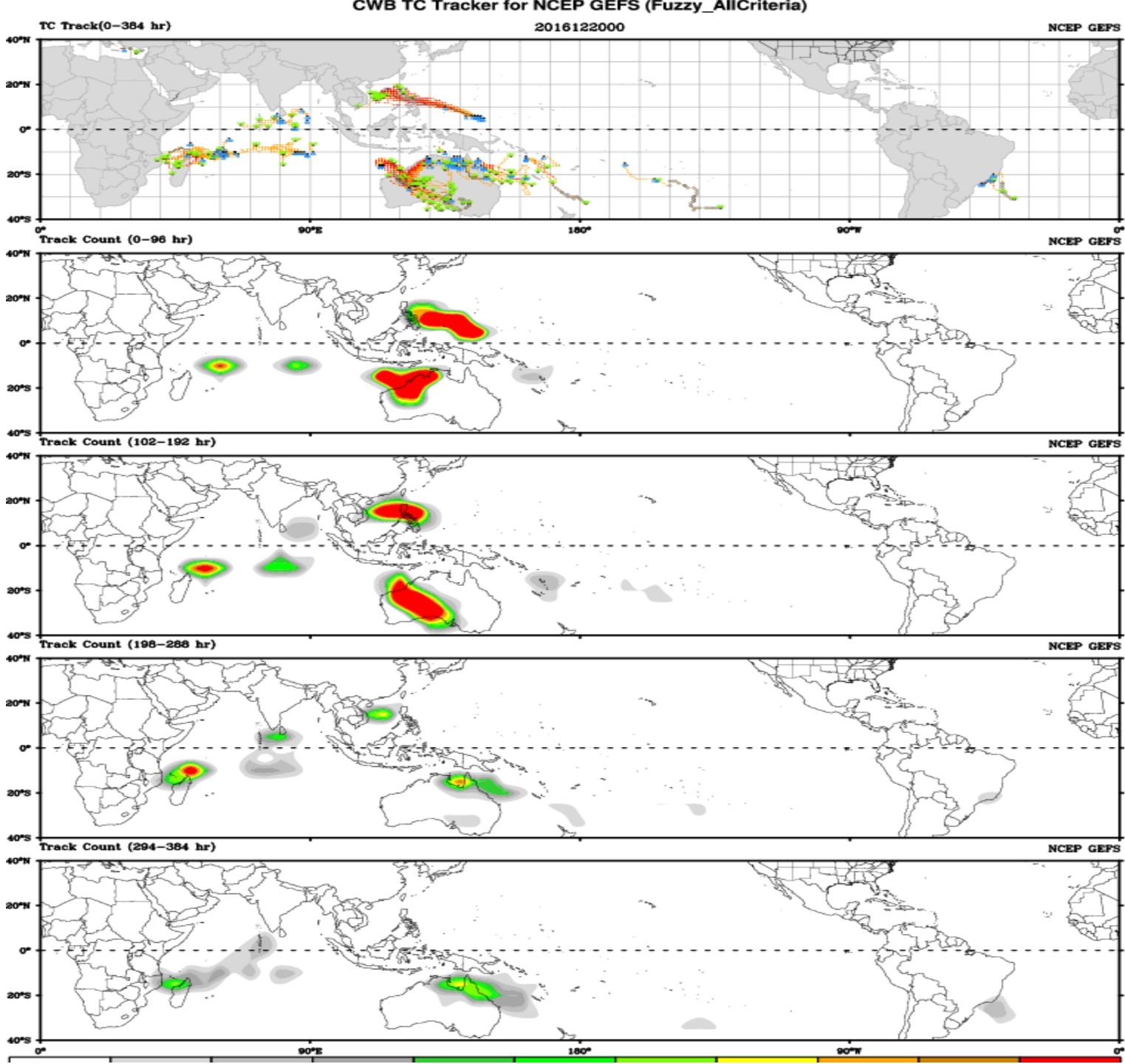


ncics.org/mjo

Mon 2016-12-19 1613 UTC

Carl Schreck (cjschrec@ncsu.edu)


CFS: Anom. PREC Week: 1: 21-Dec-2016 to 27-Dec-2016 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150
CFS: Anom. PREC Week: 2: 28-Dec-2016 to 03-Jan-2017 (mm/week)
60N
30N
EQ
30S
60S
0
60E
120E
180
120W
60W
0
150
100
50
0
-50
-100
-150



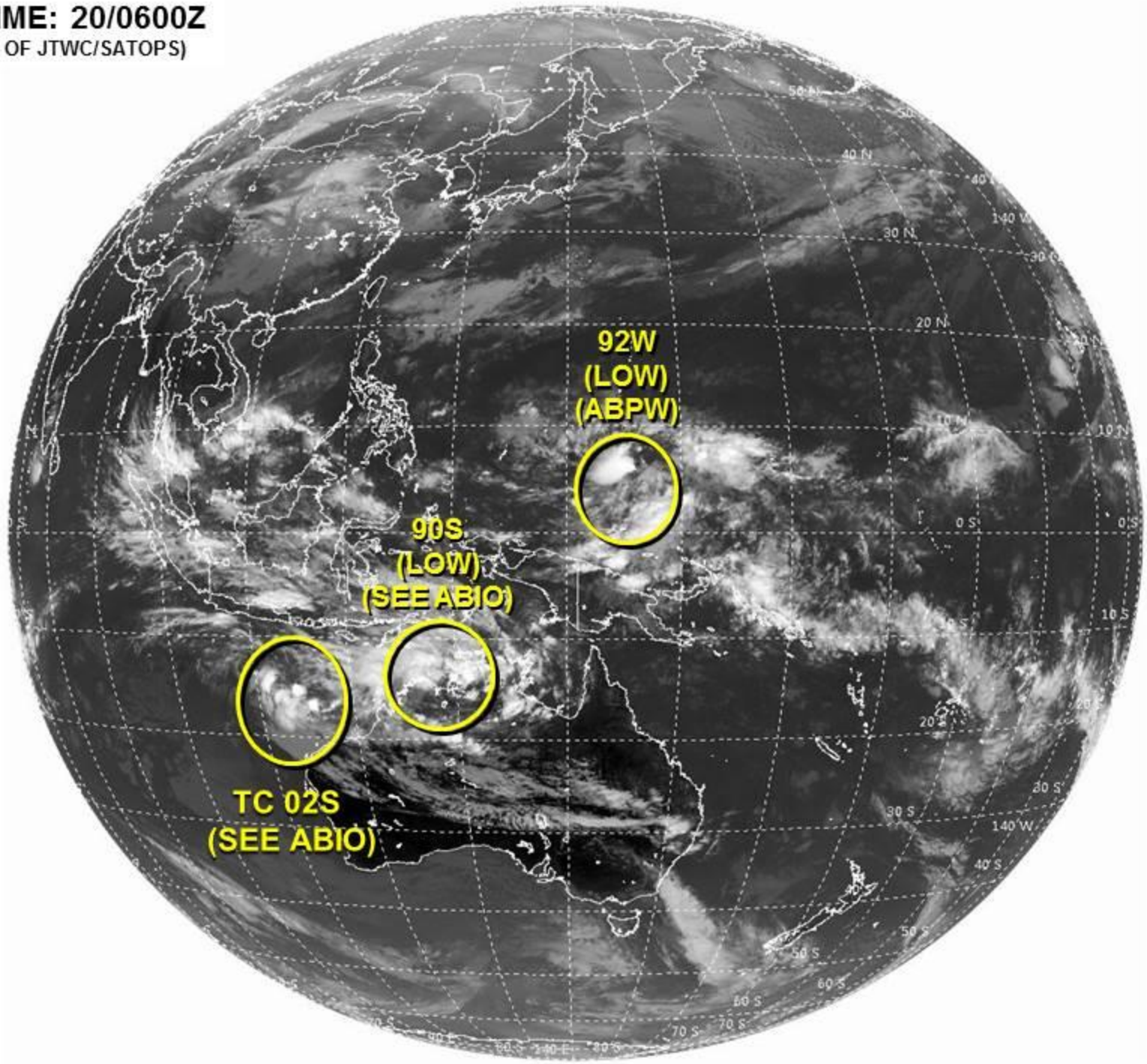
Days 1-4

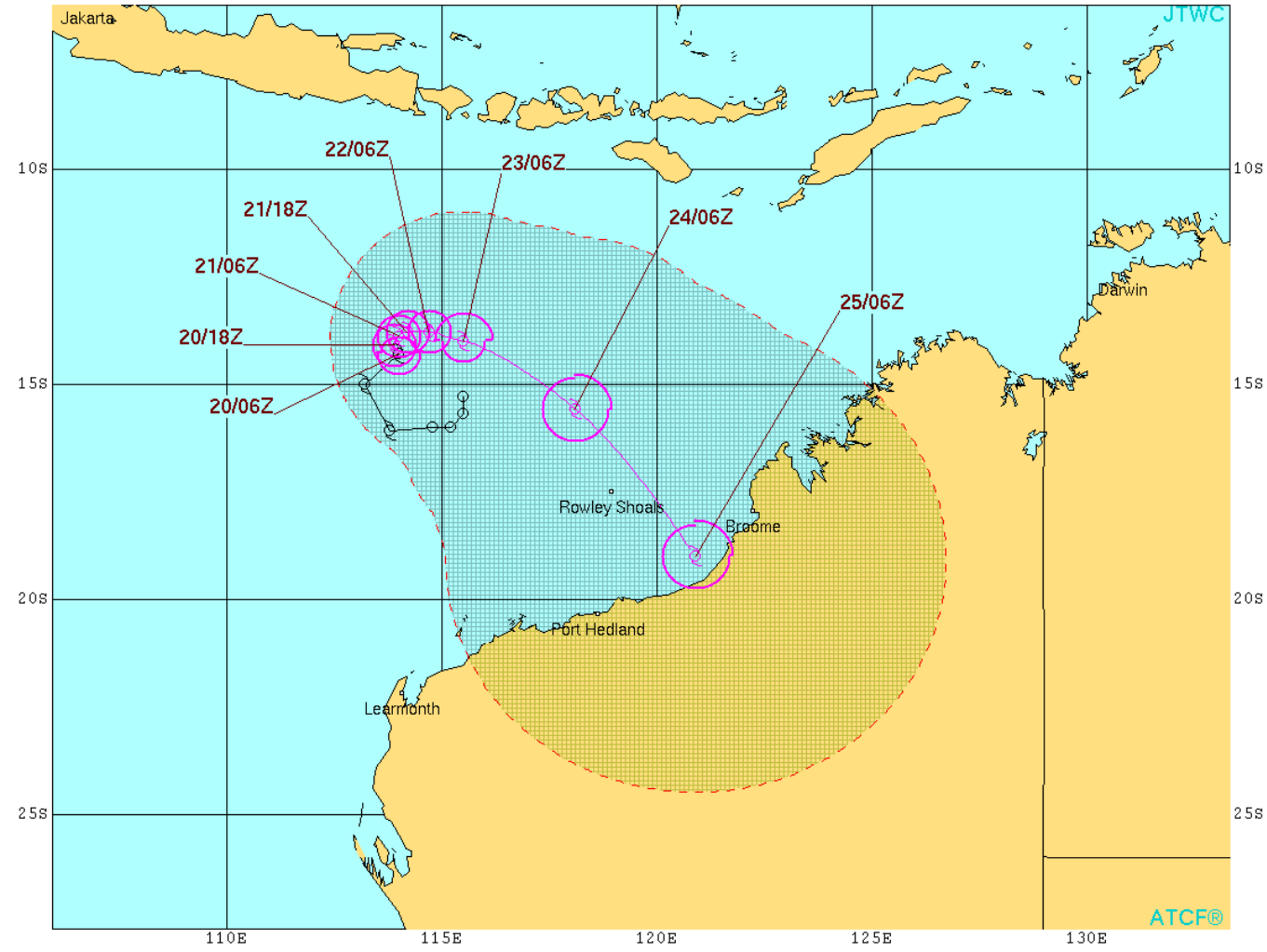
Day 5-8

Day 9-12

Day 13-15

VALID TIME: 20/0600Z
(PRODUCT OF JTWC/SATOPS)

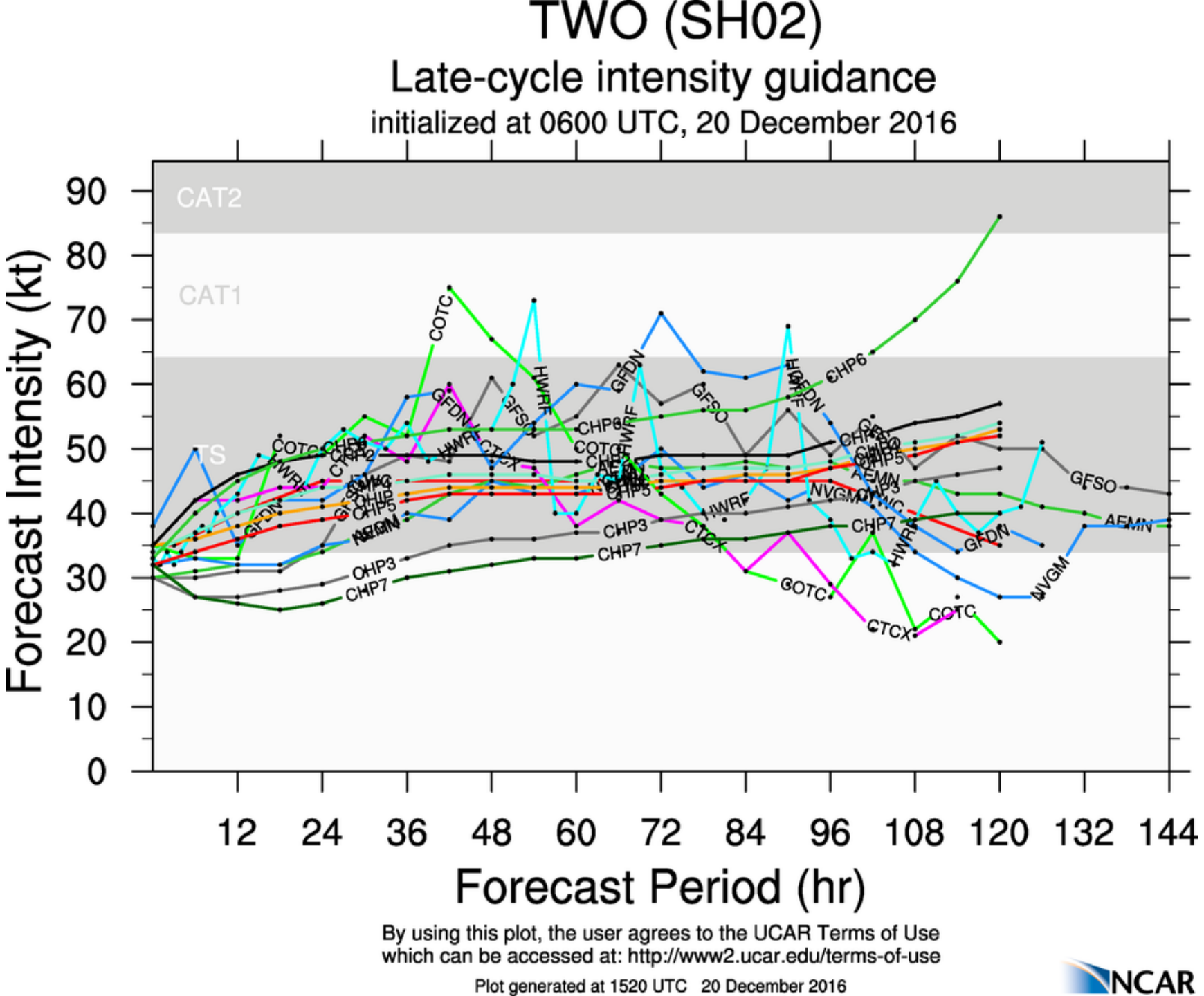




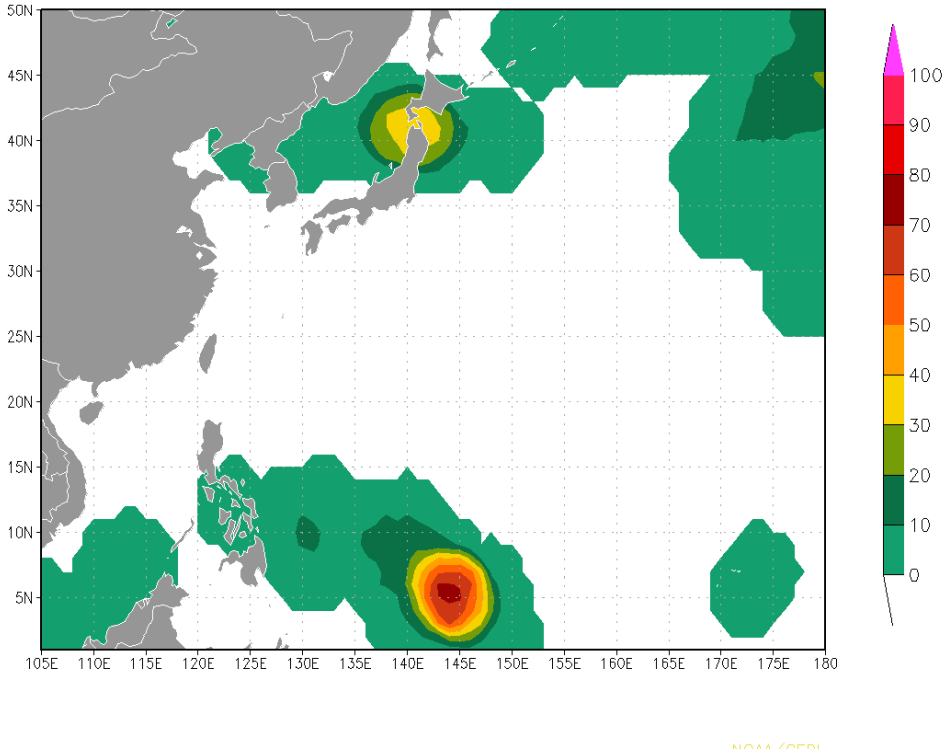
TROPICAL CYCLONE 02S (TWO) WARNING #2
WTXS31 PGTW 200900
200600Z POSIT: NEAR 14.3S 114.0E
MOVING 050 DEGREES TRUE AT 10 KNOTS
MAXIMUM SIGNIFICANT WAVE HEIGHT: 10 FEET
20/06Z, WINDS 035 KTS, GUSTS TO 045 KTS
20/18Z, WINDS 040 KTS, GUSTS TO 050 KTS
21/06Z, WINDS 045 KTS, GUSTS TO 055 KTS
21/18Z, WINDS 045 KTS, GUSTS TO 055 KTS
22/06Z, WINDS 045 KTS, GUSTS TO 055 KTS
23/06Z, WINDS 045 KTS, GUSTS TO 055 KTS
24/06Z, WINDS 045 KTS, GUSTS TO 055 KTS
25/06Z, WINDS 035 KTS, GUSTS TO 045 KTS

CPA TO:	NM	DTG
BROOME	98	25/05Z
PORT_HEDLAND	152	25/06Z

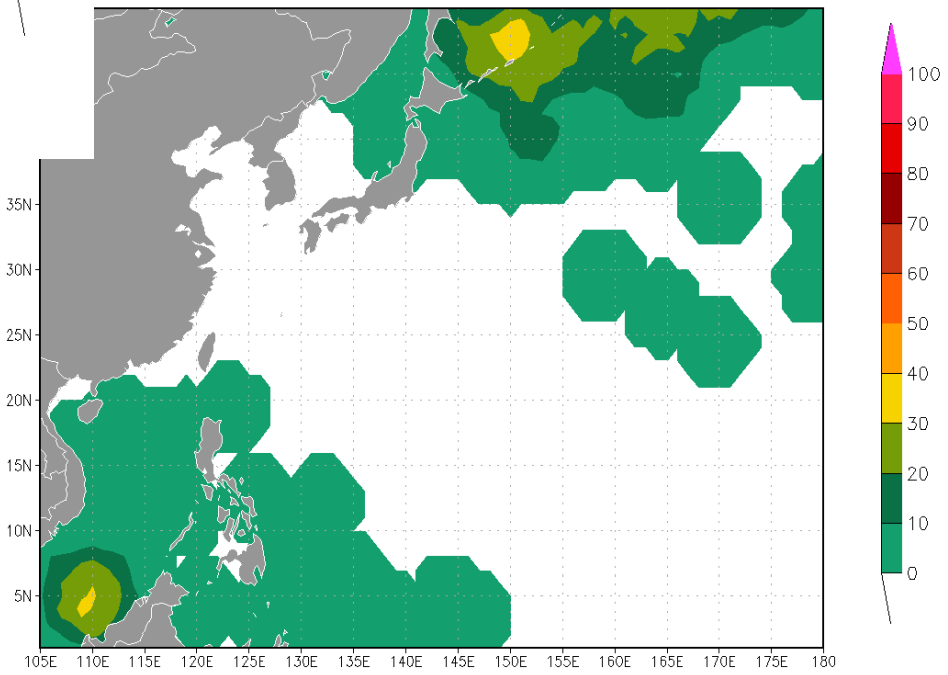
○ LESS THAN 34 KNOTS
◔ 34-63 KNOTS
● MORE THAN 63 KNOTS
PAST 6 HOURLY CYCLONE POSITS IN BLACK
FORECAST CYCLONE POSITS IN COLOR


TWO (SH02)
Late-cycle intensity guidance
initialized at 0600 UTC, 20 December 2016
Forecast Intensity (kt)
Forecast Period (hr)
CAT2
CAT1
TS
0
10
20
30
40
50
60
70
80
90
12
24
36
48
60
72
84
96
108
120
132
144
COTC
GFDN
HWRF
GFSO
CHP6
CHP3
CHP7
CTCX
GOTC
AEMN
NVGM
By using this plot, the user agrees to the UCAR Terms of Use
which can be accessed at: http://www2.ucar.edu/terms-of-use
Plot generated at 1520 UTC 20 December 2016
NCAR

Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF
For forecasts during the 00-120h period from initial time = 2016122000

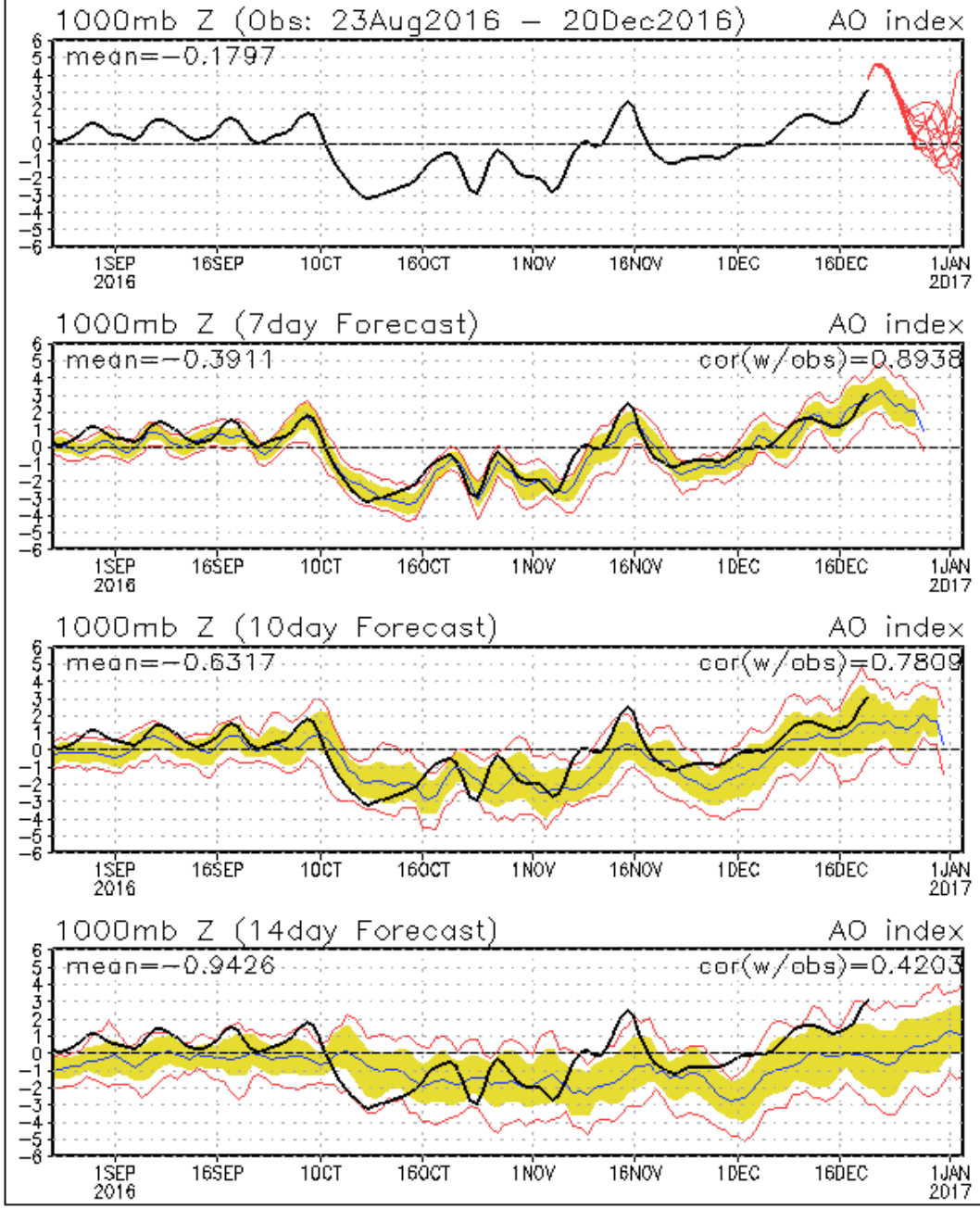


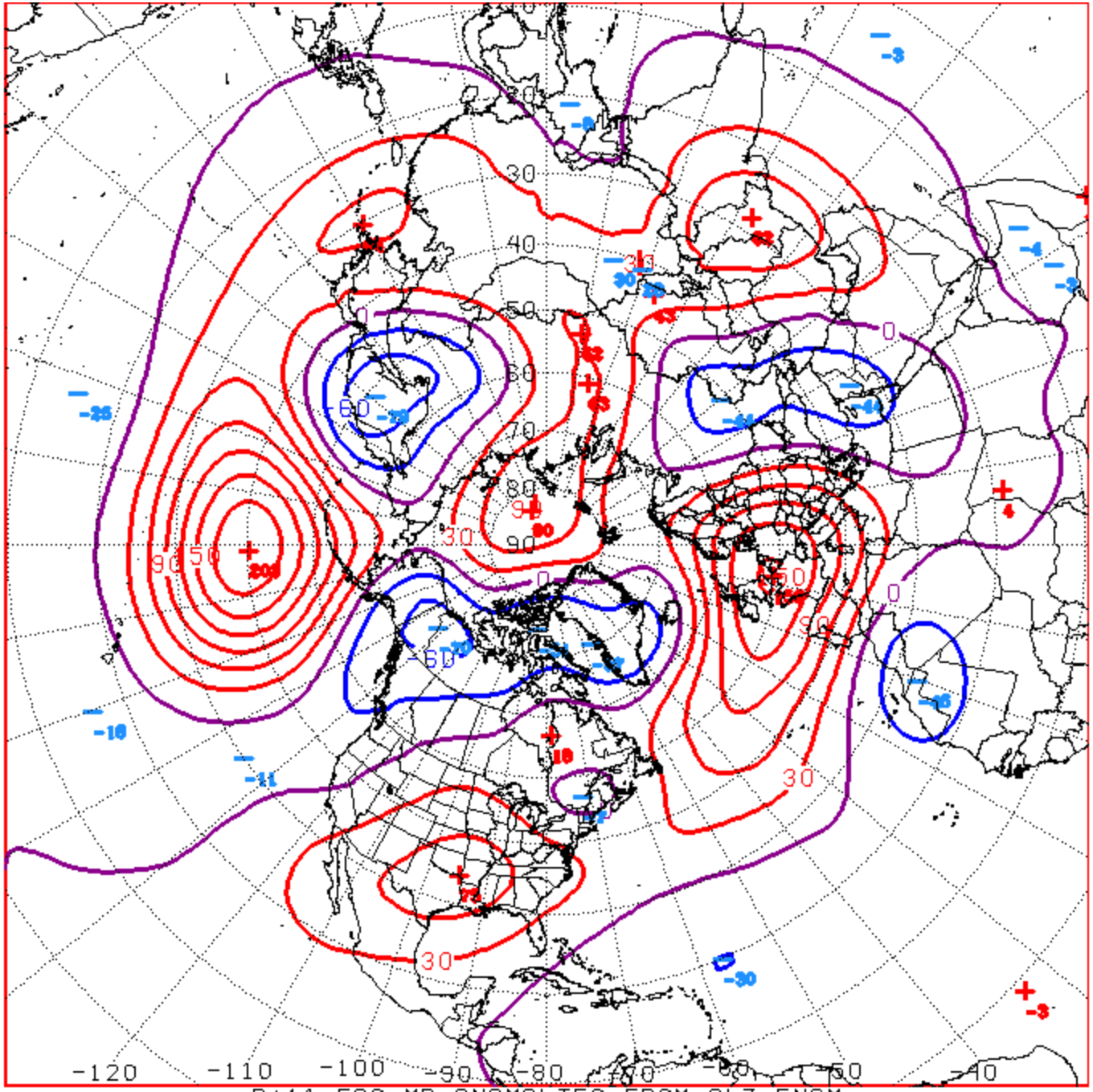
Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF
ecasts during the 120-240h period from initial time = 2016122000



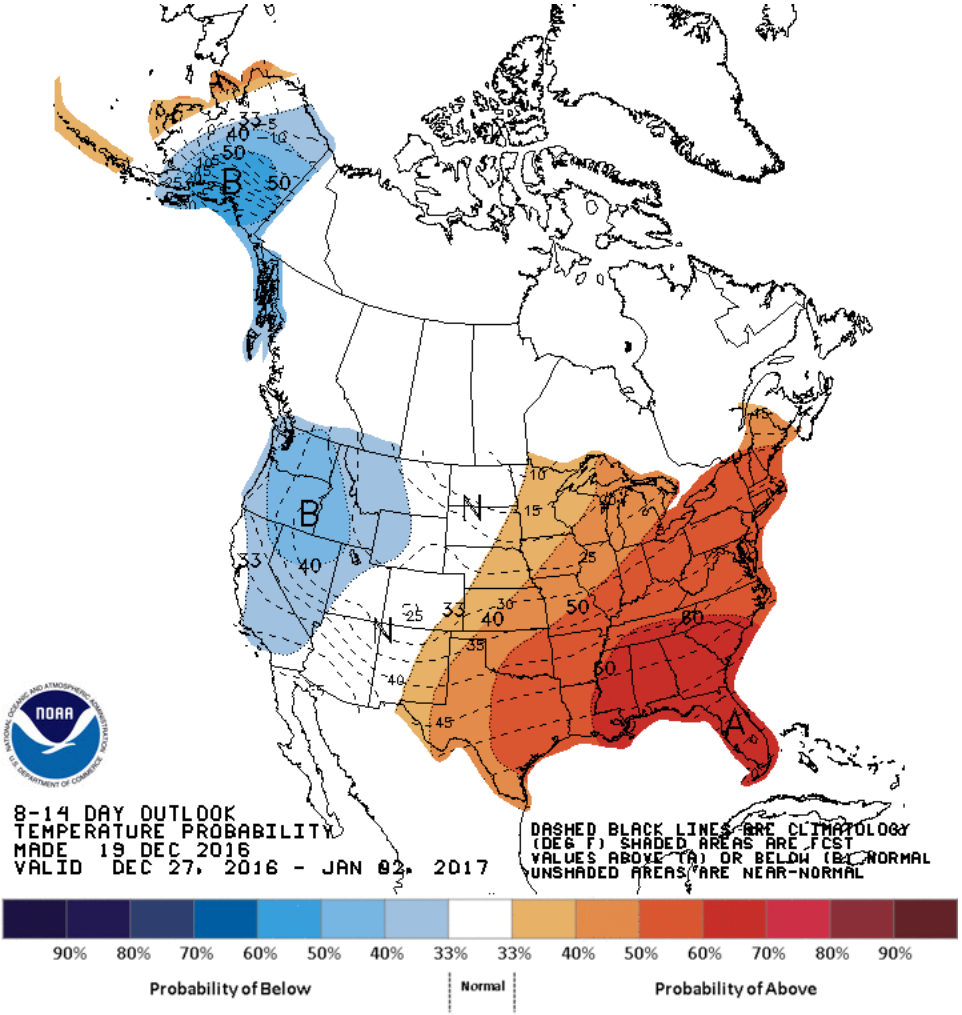
Connections to U.S. Impacts

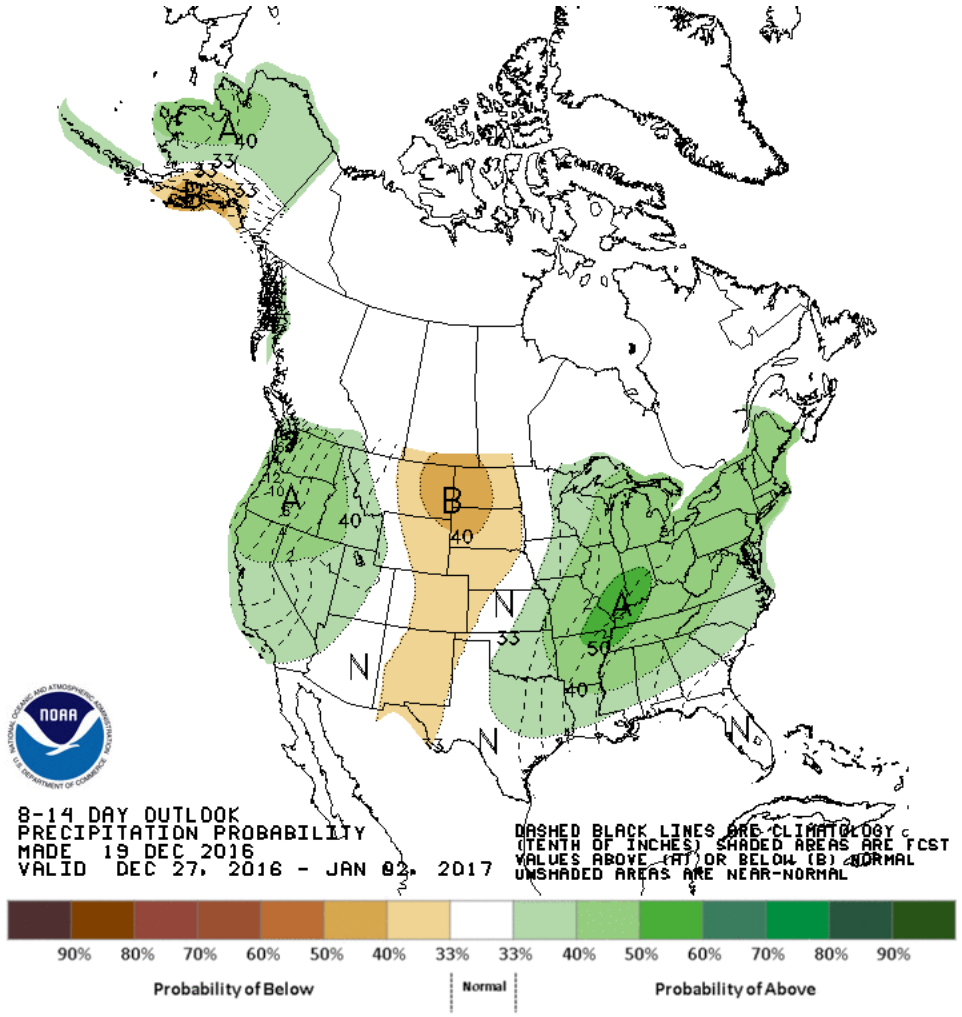
AO: Observed & ENSM forecasts




-120
-110
-100
-90
-80
-70
-60
-50
-40
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE DEC 20 2016 1334 UTC CNTD DEC 31 2016

Week 2 – Temperature and Precipitation





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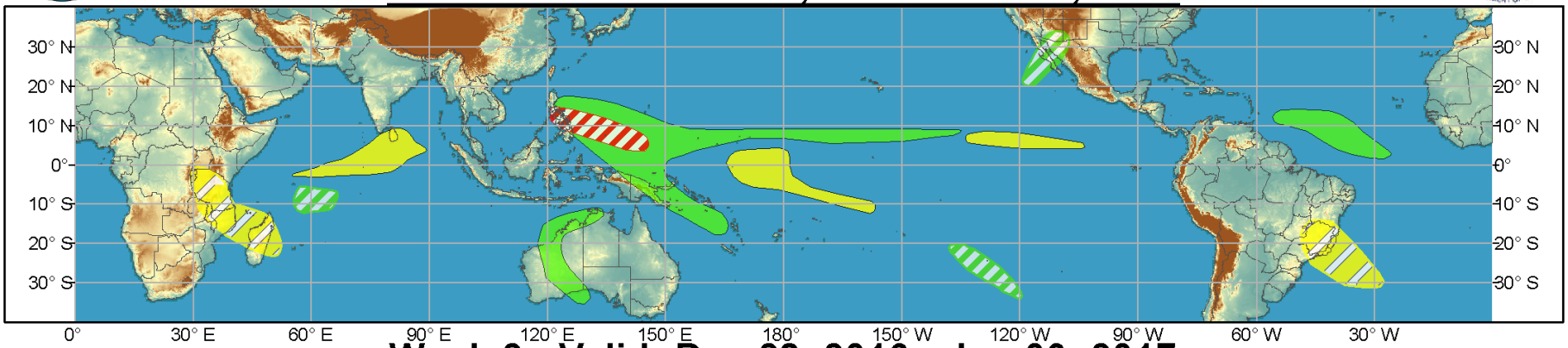

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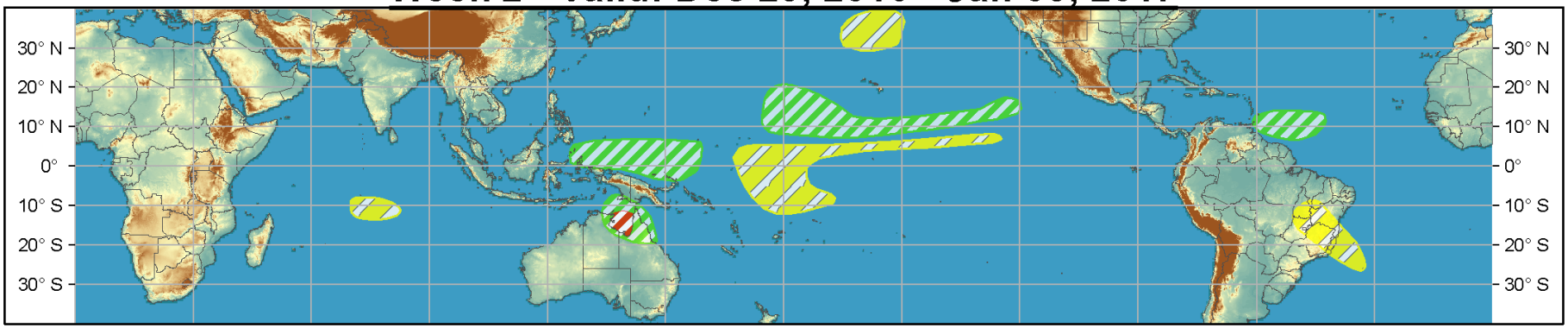

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