

Global Tropics Hazards And Benefits Outlook

10/10/2017

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

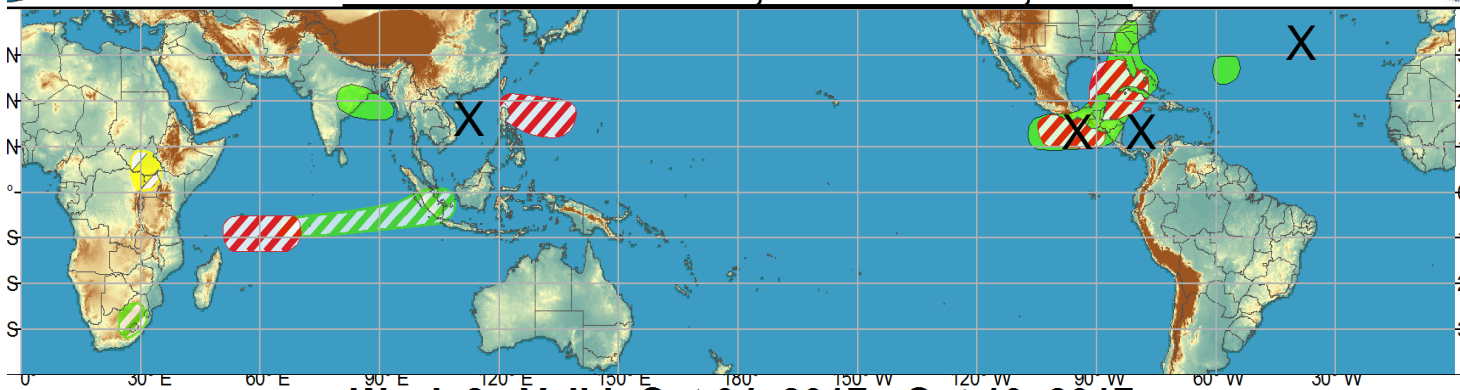
Outlook Review

W. Pacific
TD 23: 8th-10th

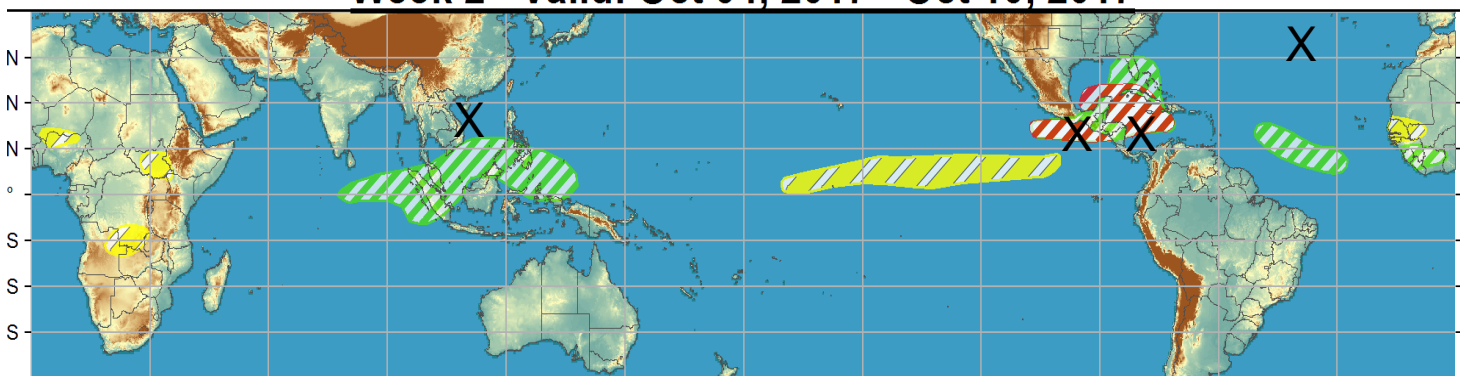
E. Pacific
TS Ramon: 4th-5th

Atlantic
Hurr Nate: 4th-9th
TS Ophelia: 9th-now

Week 1 - Valid: Oct 04, 2017 - Oct 10, 2017

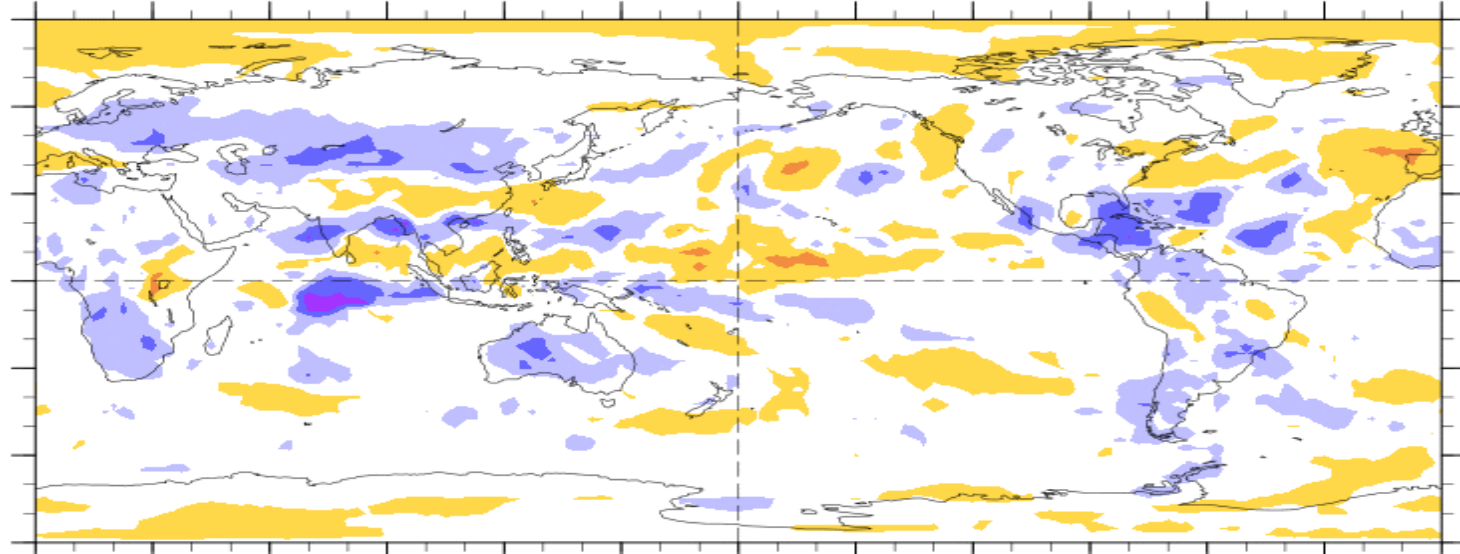


Week 2 - Valid: Oct 04, 2017 - Oct 10, 2017



7-Day Average OLR Anomaly

2017/10/02 - 2017/10/08



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO:

- [La Niña watch in effect.](#) There is an increasing chance (~55-60%) of La Niña during the Northern Hemisphere fall and winter 2017-18.
- A recent uptick in sea surface temperatures in the Central Pacific associated with an atmospheric Kelvin wave may delay La Niña onset some.
- The next ENSO diagnostic discussion will be released **Thursday, October 12th**.

MJO and other subseasonal tropical variability:

- The MJO has emerged and is presently analyzed over the western Maritime Continent. Dynamical models forecast strengthening of this feature and its propagation across the Maritime Continent it to approach the West Pacific by late in Week-2.

Extratropics:

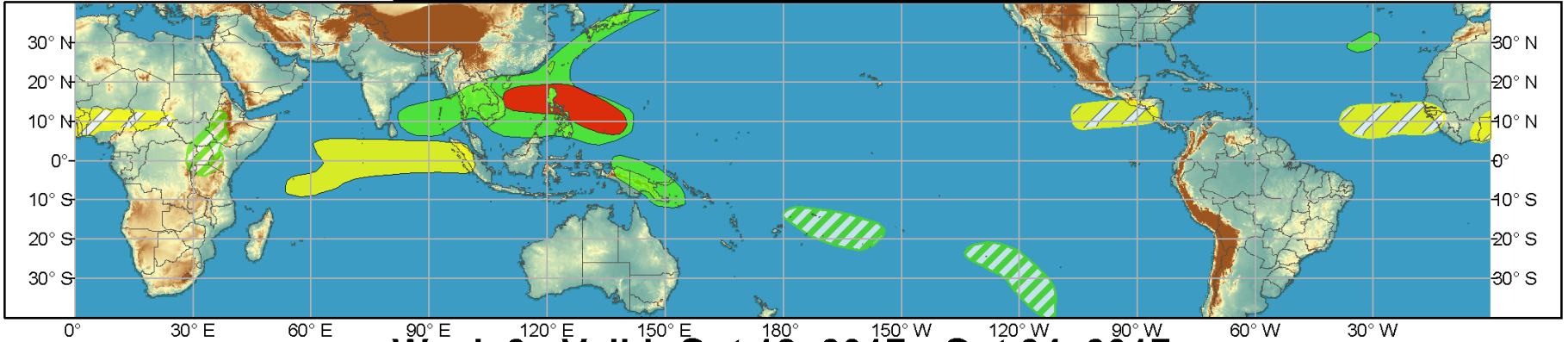
- Observed teleconnections between the tropics and extratropics continue to be weak to nonexistent. Tropical cyclone formation odds will be increasing (decreasing) in the West Pacific (East Pacific and Atlantic) for the next two weeks. If this tropical cyclone formation area was to shift further eastward there are potential for recurvature of these systems and subsequent amplification of the flow over North America but this appears premature at present.



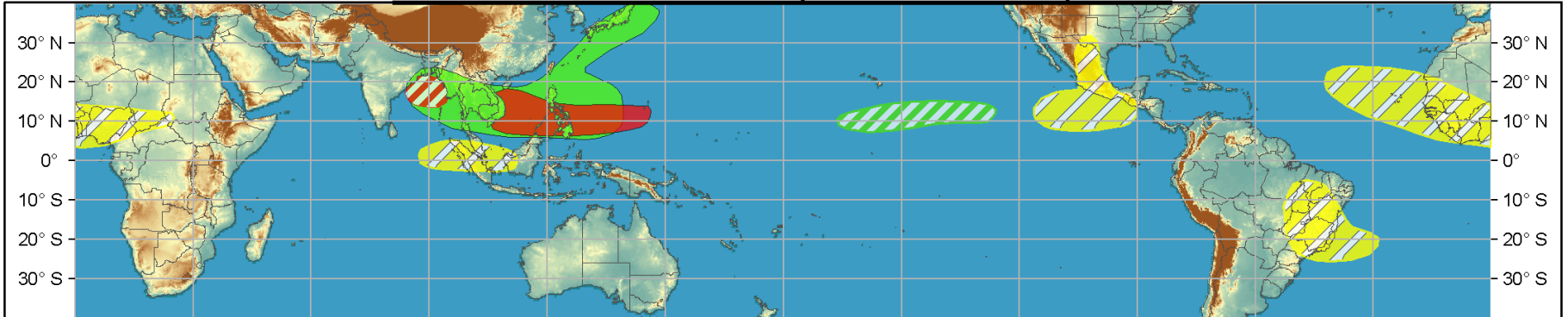
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Oct 11, 2017 - Oct 17, 2017



Week 2 - Valid: Oct 18, 2017 - Oct 24, 2017



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.

Produced: 10/10/2017

Forecaster: D.Harnos

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

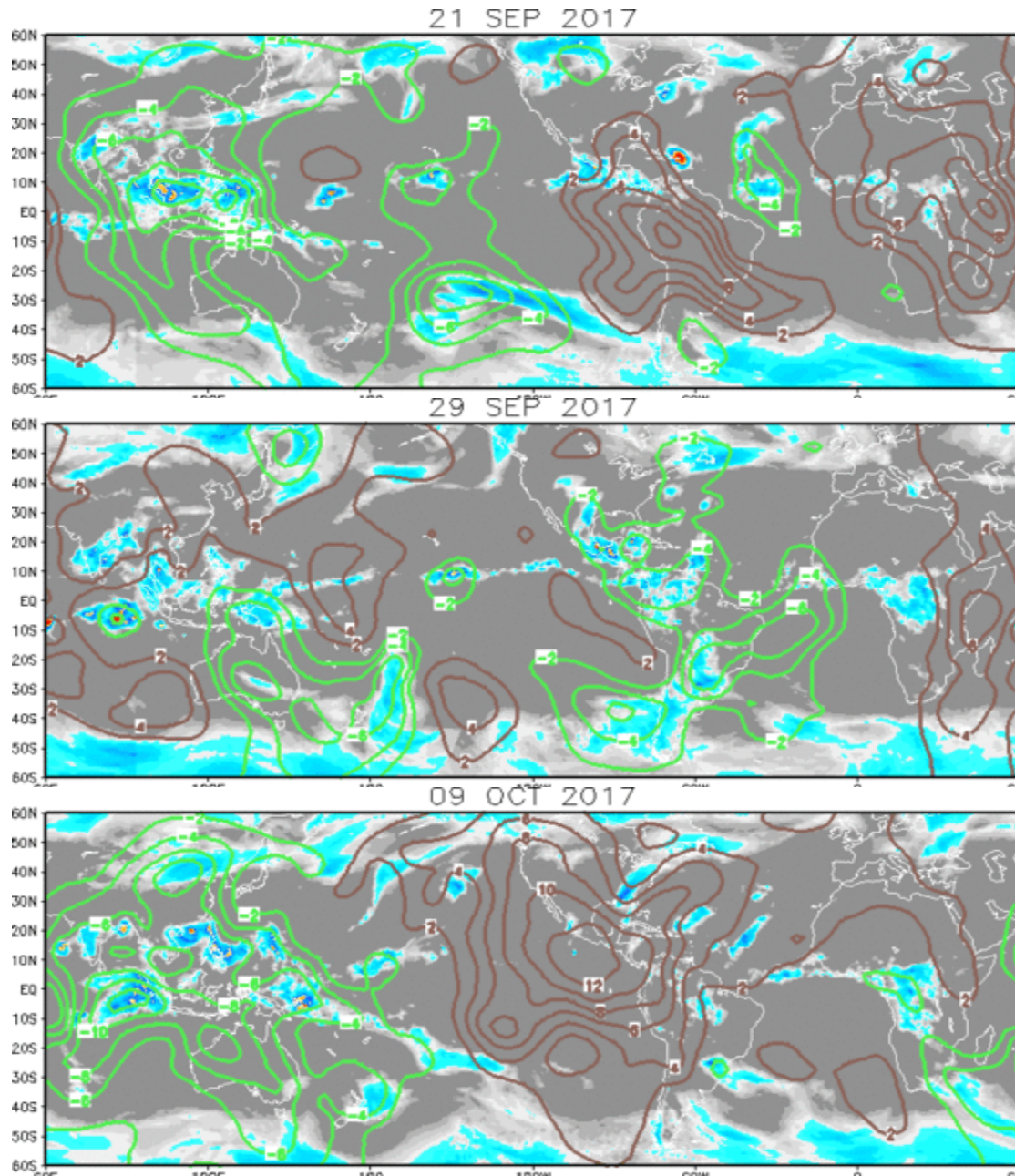
Green: Enhanced Divergence

Brown: Enhanced Convergence

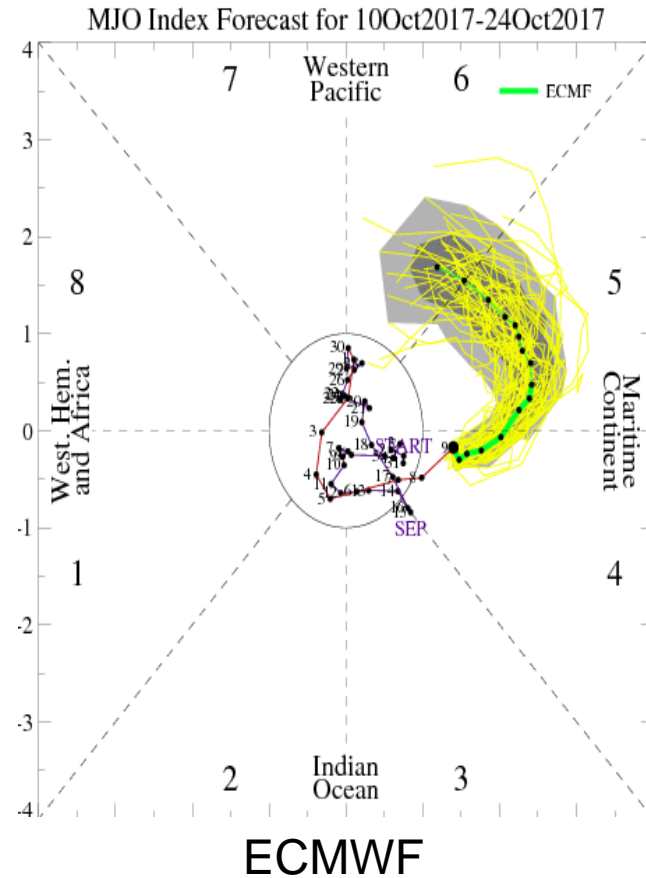
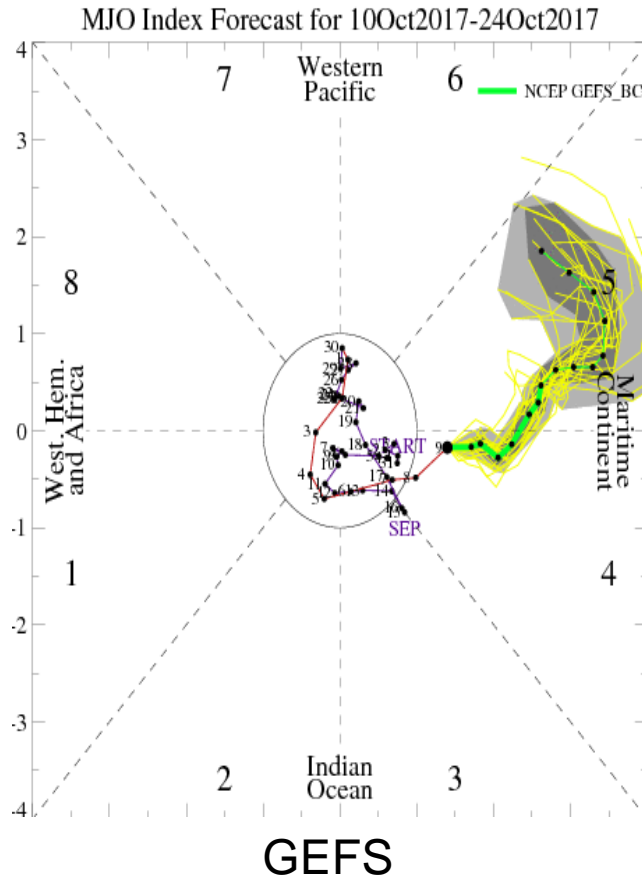
Wave-2 or higher pattern, with no clear link to MJO activity.

Continued higher wave number mode with no distinct ties to intraseasonal activity.

Wave-1 signal with enhanced (suppressed) convection over the Eastern (Western) Hemisphere. Clear ties to emerging MJO over Maritime Continent.

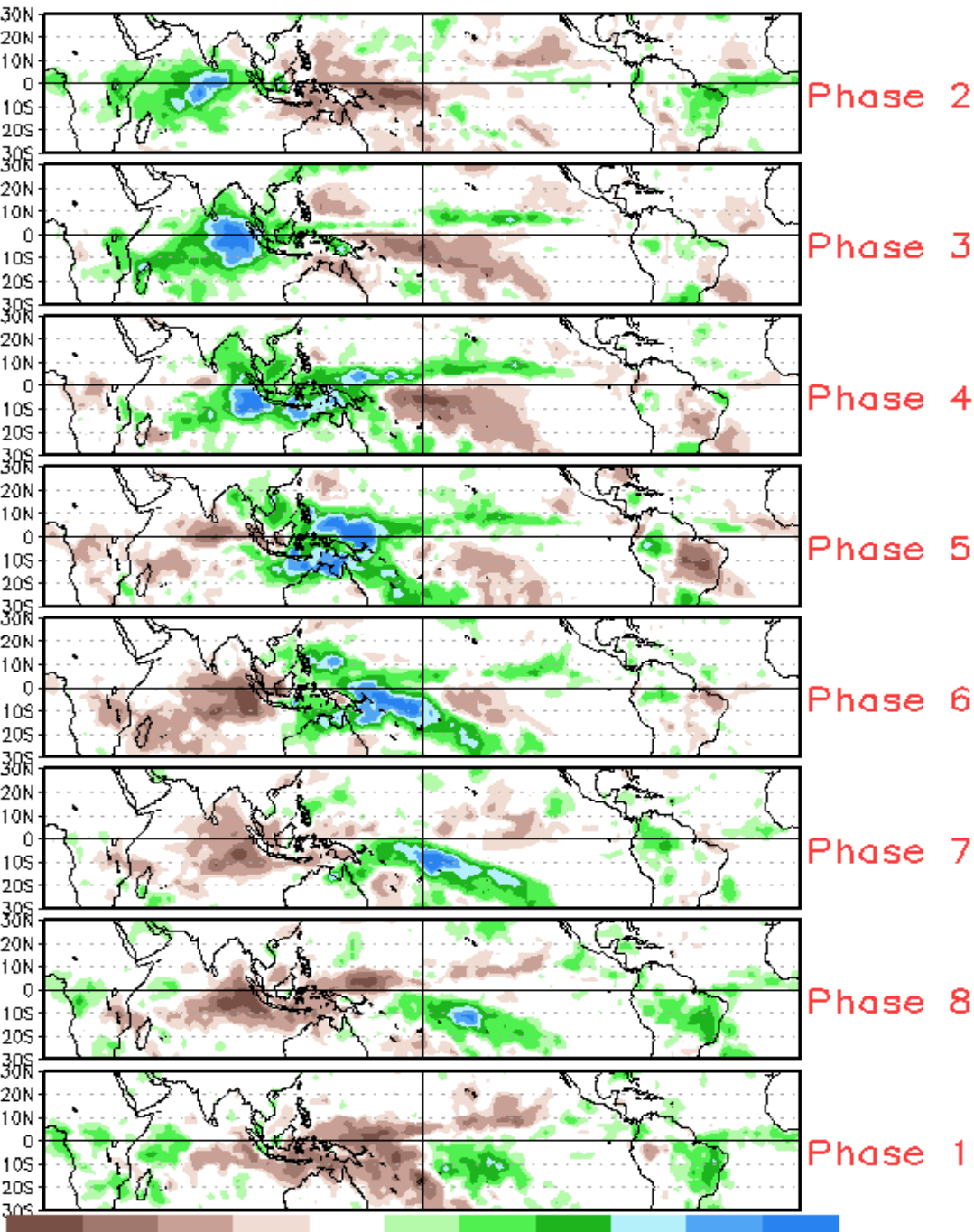


MJO Observation/Forecast



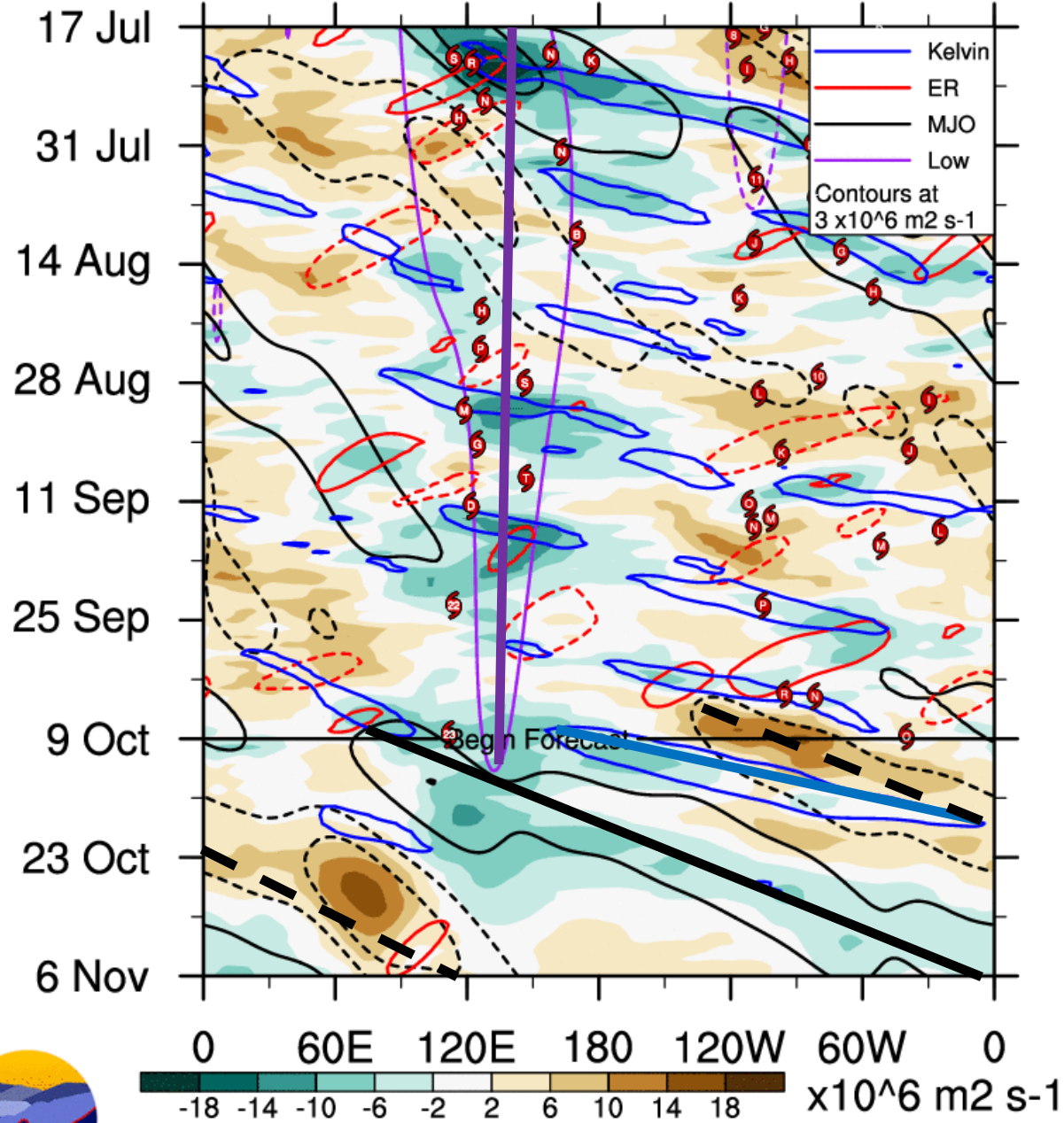
RMM analyses of model forecasts indicate propagation to the east at varied amplitudes and speeds. GFS is stronger in Week-2, while the ECMWF is faster throughout.

Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

CHI200 with CFS forecasts 5S - 5N



— Kelvin
 — ER
 — MJO
 — Low
 Contours at $3 \times 10^6 \text{ m}^2 \text{ s}^{-1}$

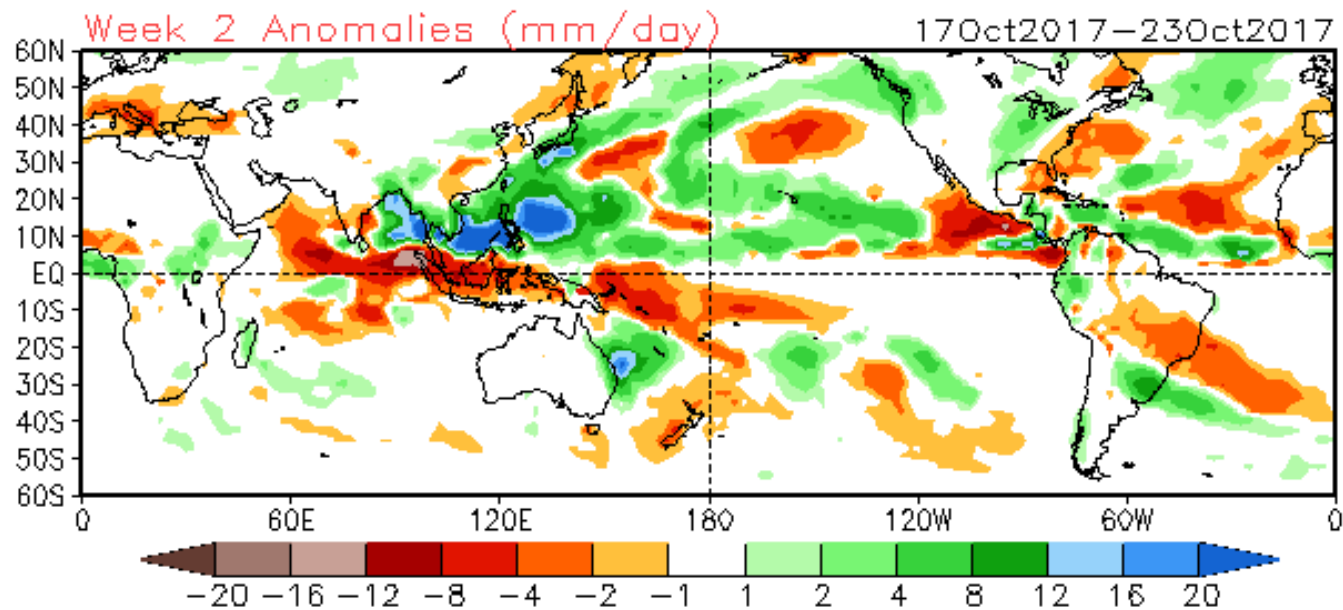
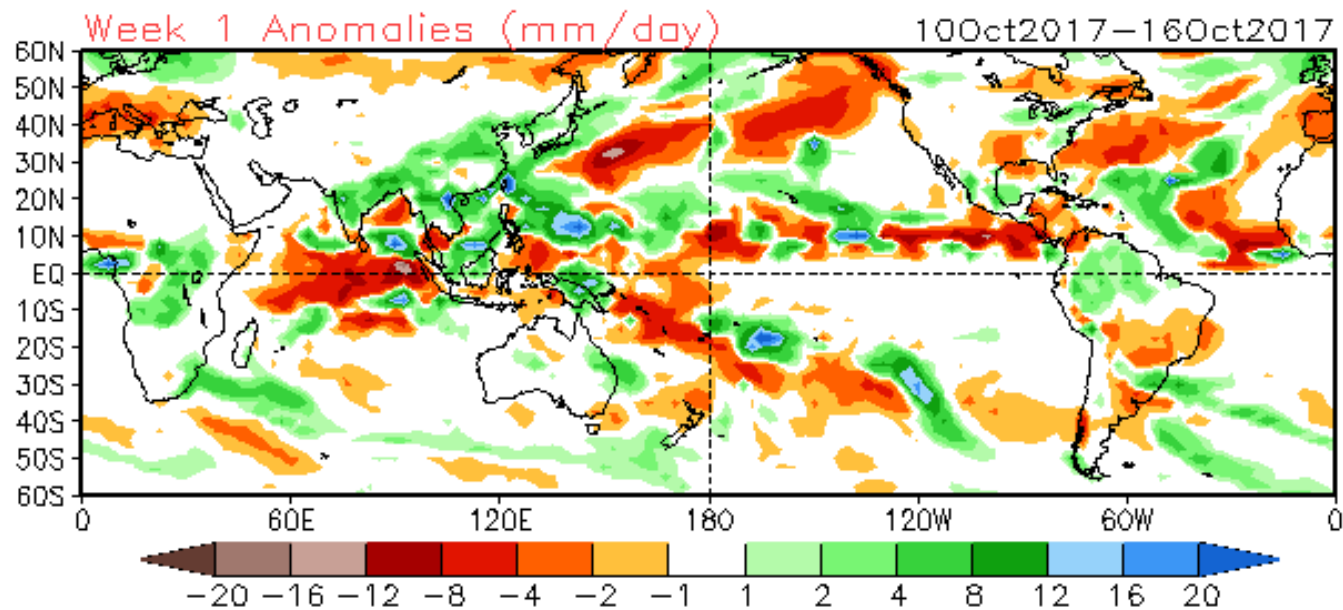
MJO and **Kelvin wave** influences on the pattern.

Low-frequency footprint may have some impact on the RMM magnitude getting so high during Week-1.



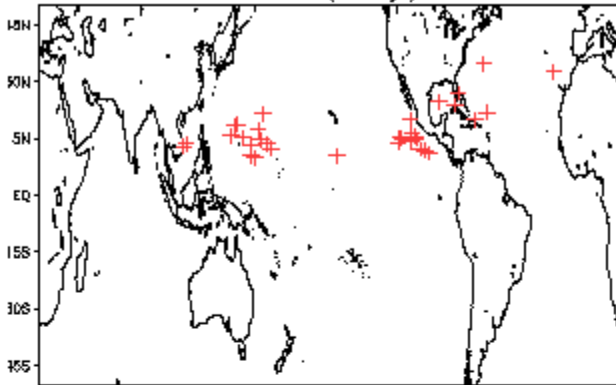
CFSv2 Weeks 1 & 2 Precipitation

16 Member Ensemble Mean Forecast from 09Oct2017

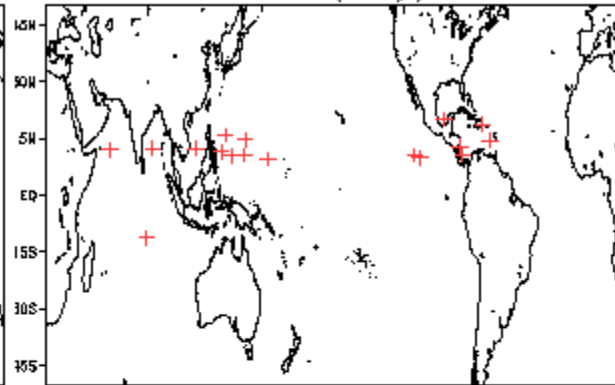


October Tropical Storm Formation by MJO phase

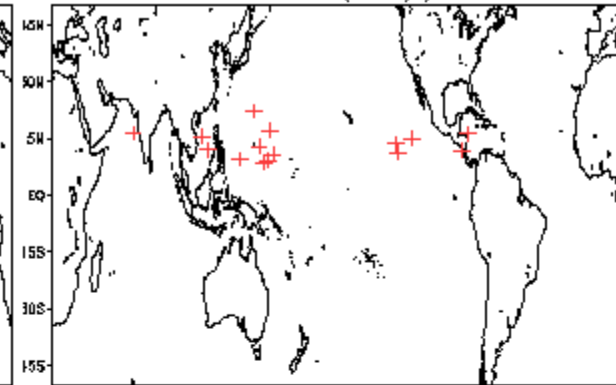
Phase 1 (94 days) 34 storms



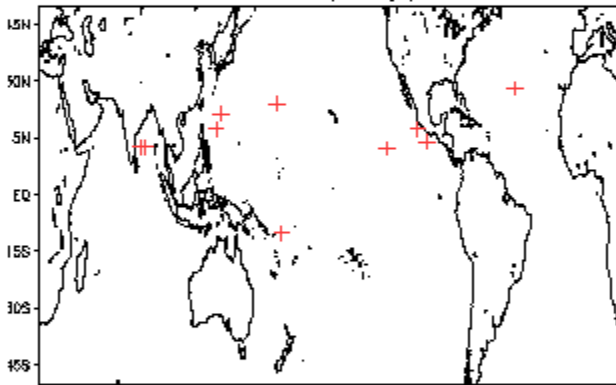
Phase 4 (85 days) 18 storms



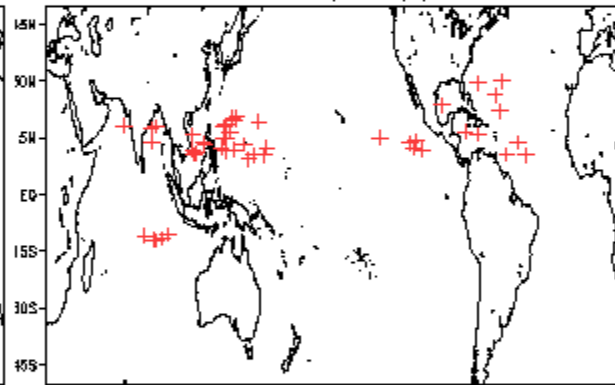
Phase 7 (48 days) 16 storms



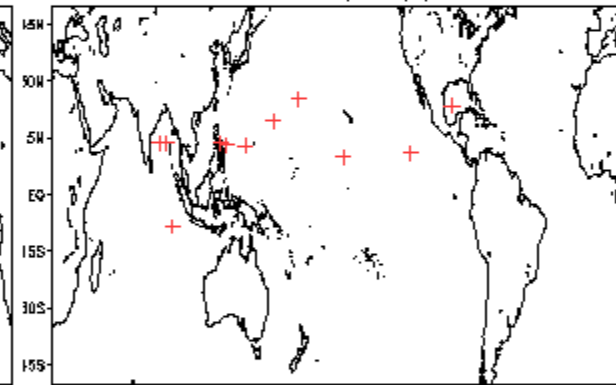
Phase 2 (75 days) 11 storms



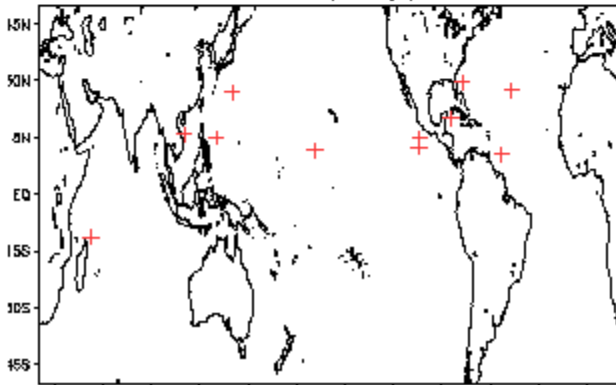
Phase 5 (133 days) 48 storms



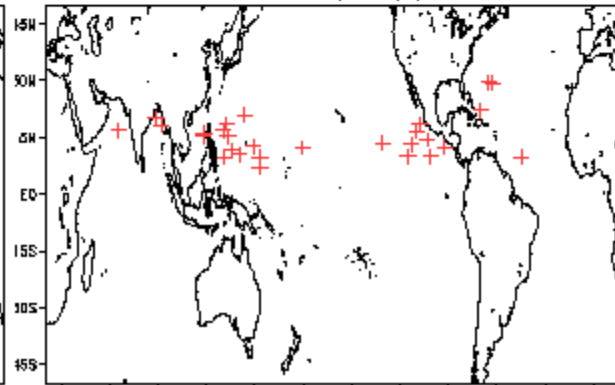
Phase 8 (66 days) 12 storms



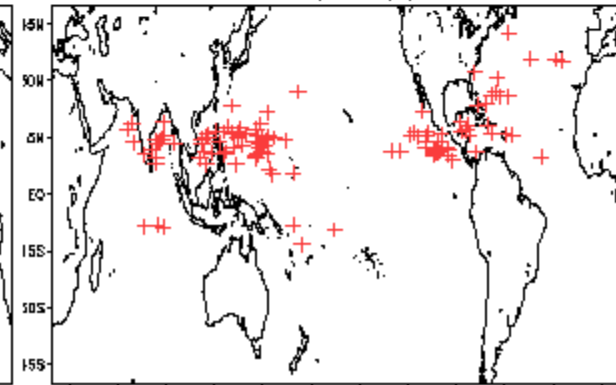
Phase 3 (41 days) 12 storms



Phase 6 (78 days) 30 storms



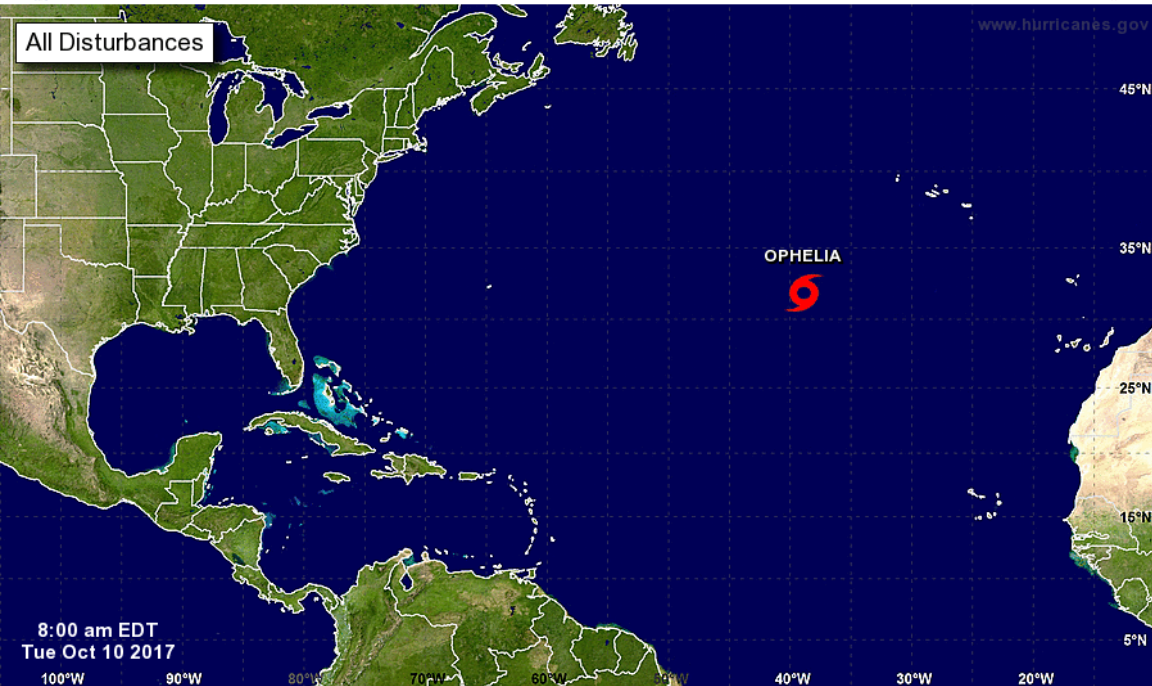
Null (422 days) 119 storms





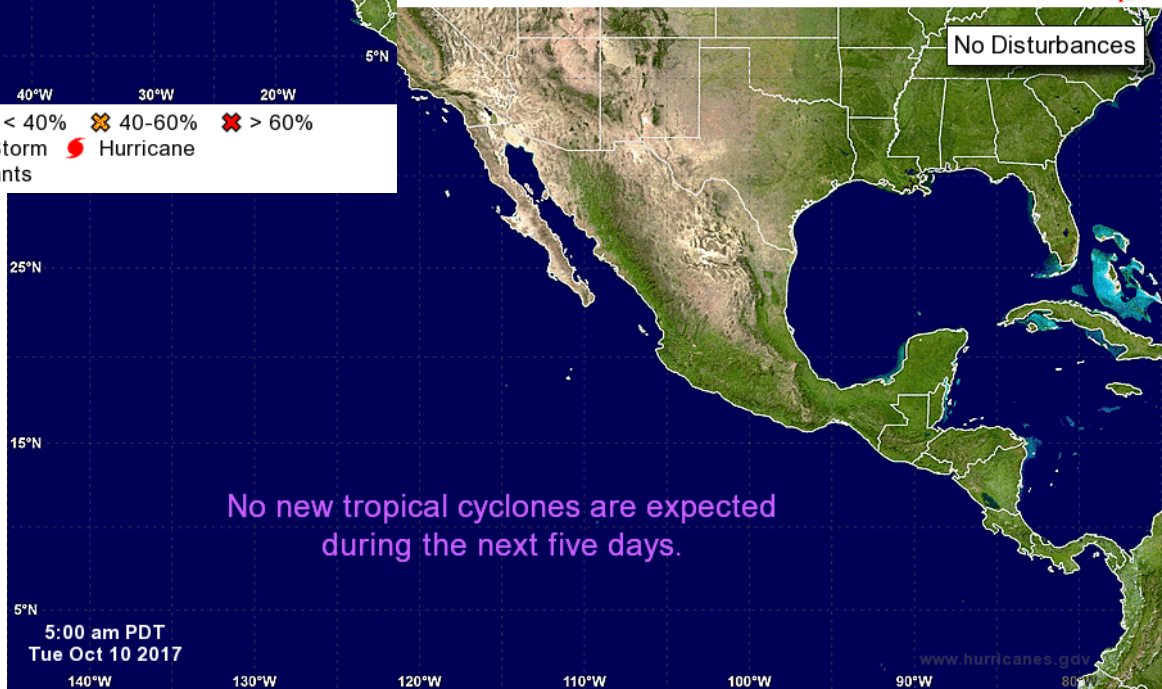
Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Graphical Tropical Weather Outlook

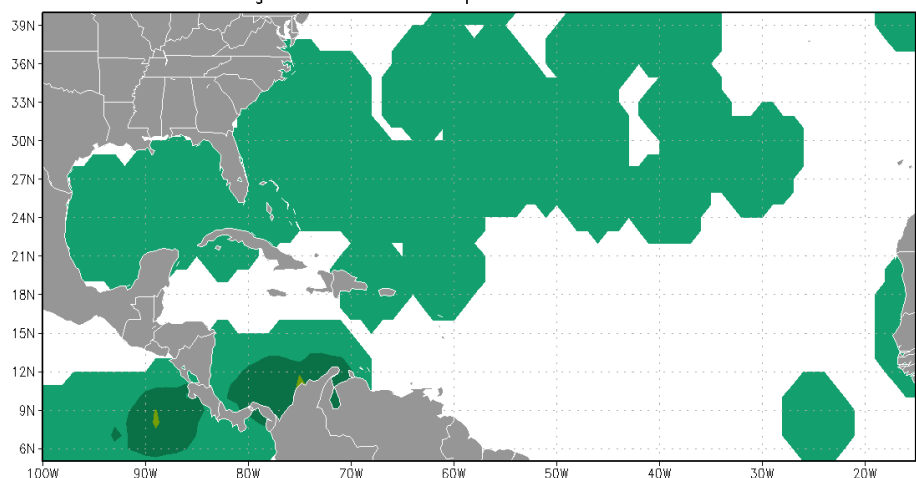
National Hurricane Center Miami, Florida



Beyond 5-day Tropical Cyclone Formation Potential

Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF

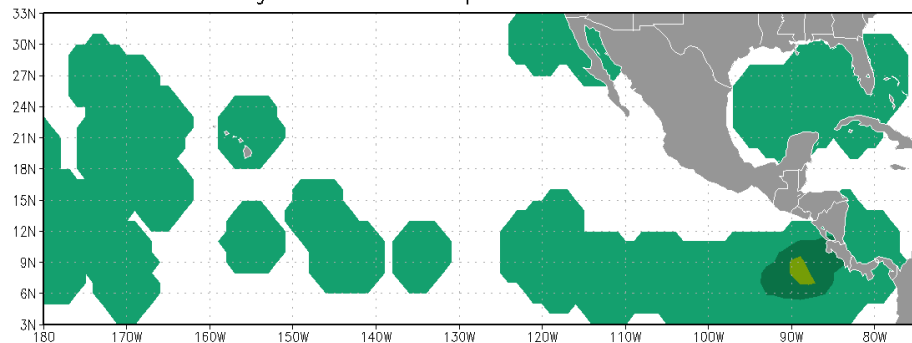
For forecasts during the 120–240h period from initial time = 2017101000



North Atlantic: 6-10 days

Ensemble-based Probability (%) of TC genesis
using these global ensembles: NCEP CMC ECMWF

For forecasts during the 120–240h period from initial time = 2017101000



East Pacific: 6-10 days



Tropical Cyclone Development Potential

IMAGE TIME 10/0500Z

(PRODUCT OF JTWC/SATOPS)



ABIO

ABPW

CPHC

(<http://www.prh.noaa.gov/cphc/>)

RMNTS TD 23W

NO SUSPECT AREAS

LOW

TC formation unlikely within 24 hours

MEDIUM

TC development likely, but expected to occur beyond 24 hours

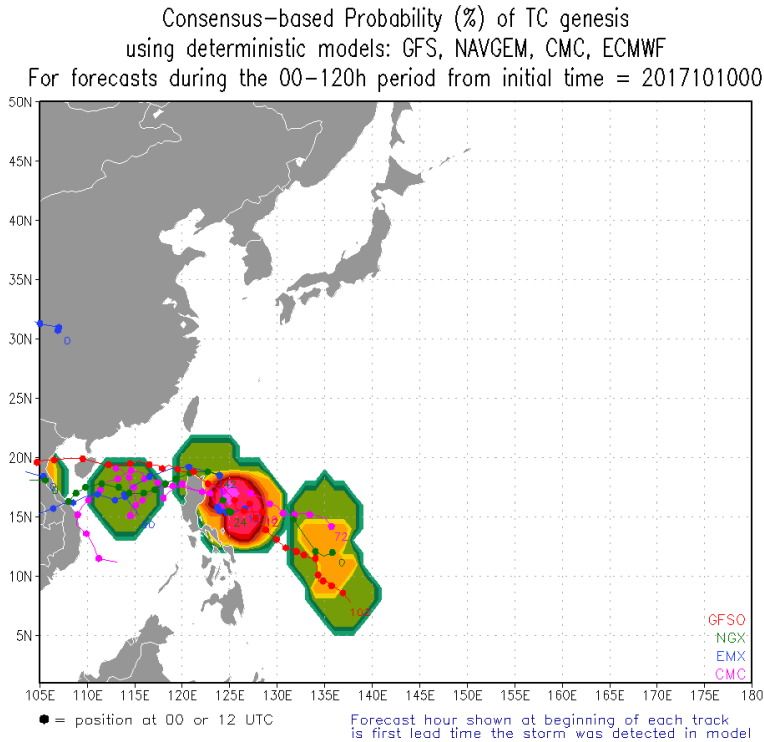
HIGH

TC development likely within 24 hours (Reference TCFA)

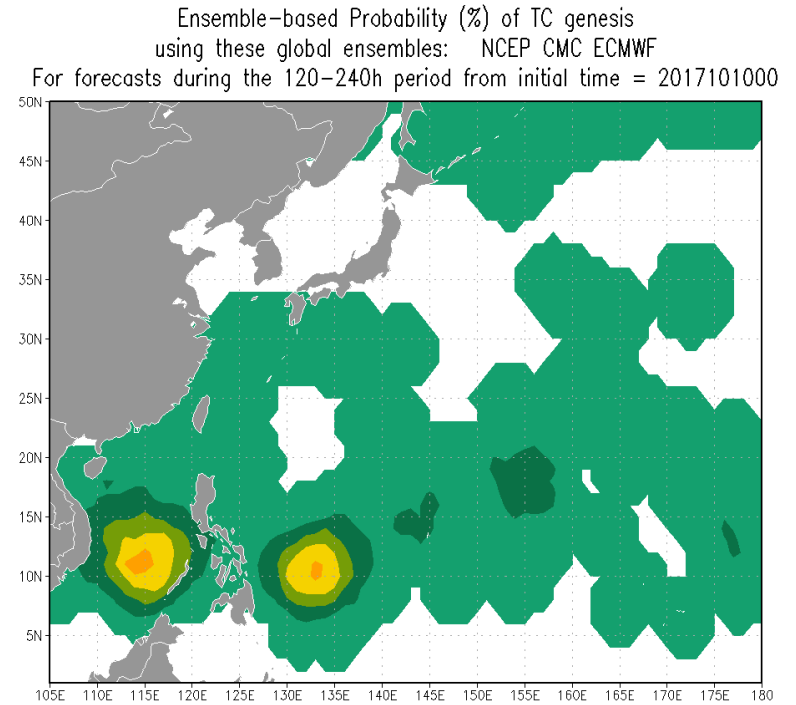


Tropical Cyclone (Reference Warning)

W. Pacific Tropical Cyclone Formation Potential

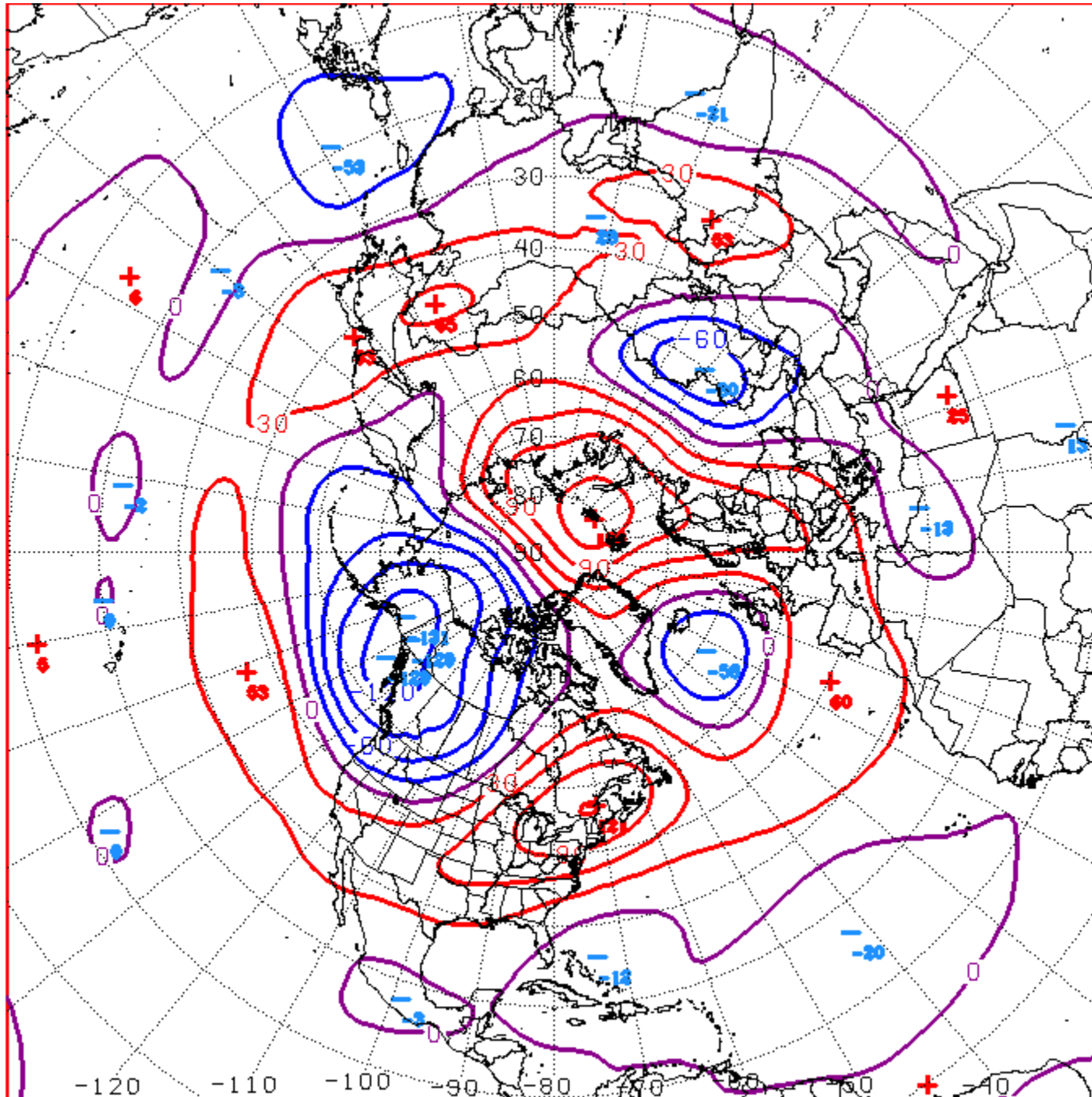


Through 5-days



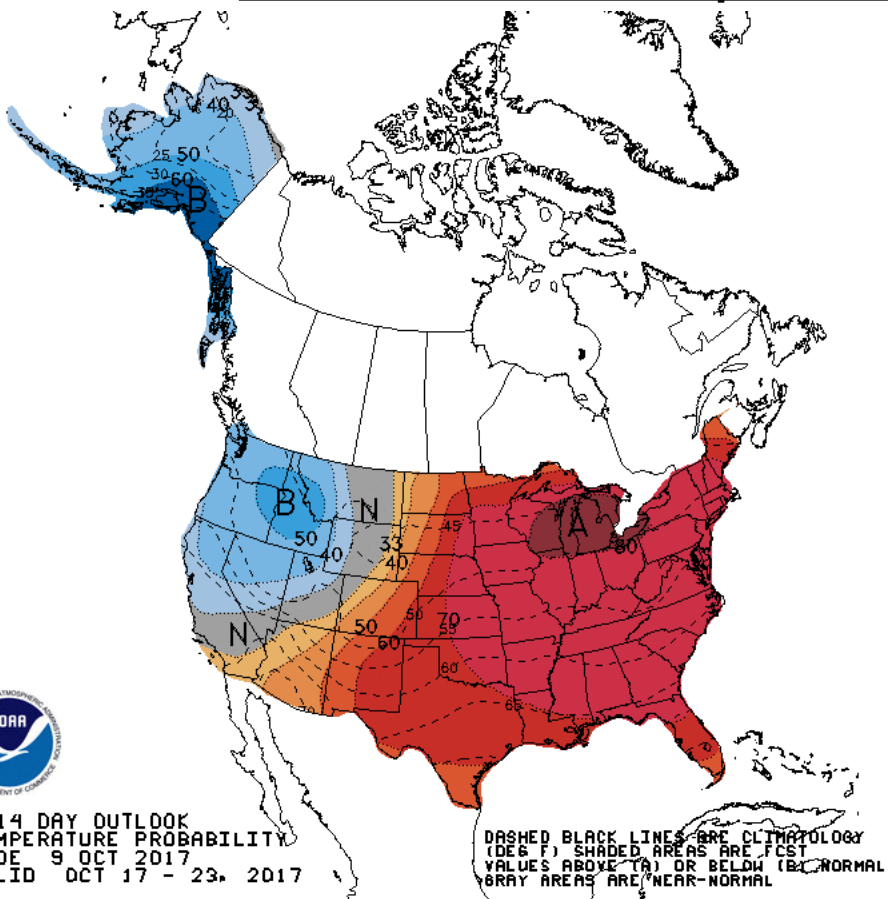
6-10 days

Connections to U.S. Impacts



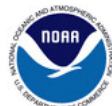
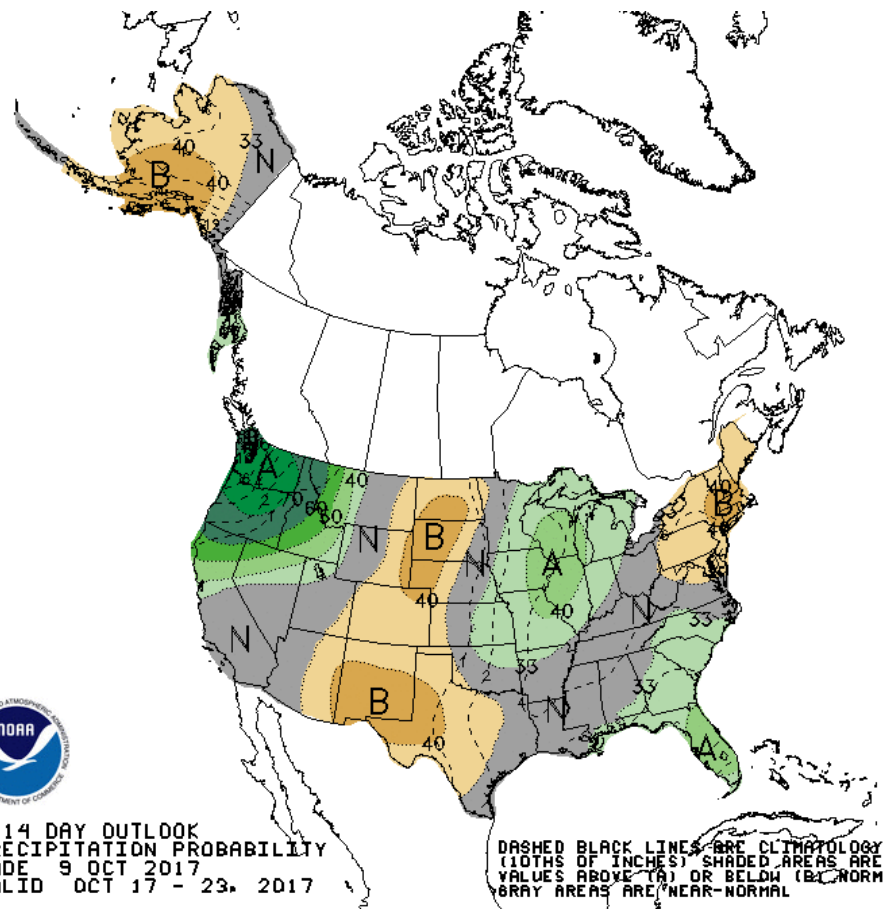
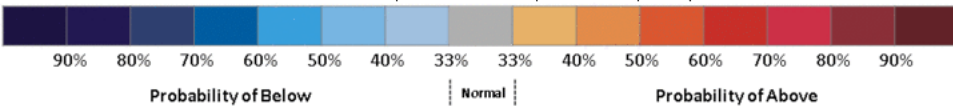
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE OCT 10 2017 1302 UTC CNTD OCT 21 2017

Week 2 – Temperature and Precipitation



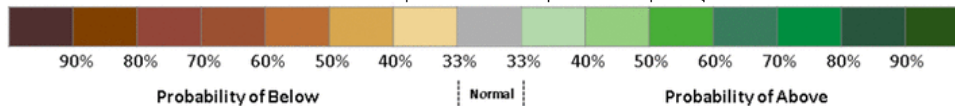
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 9 OCT 2017
VALID OCT 17 - 23, 2017

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 9 OCT 2017
VALID OCT 17 - 23, 2017

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

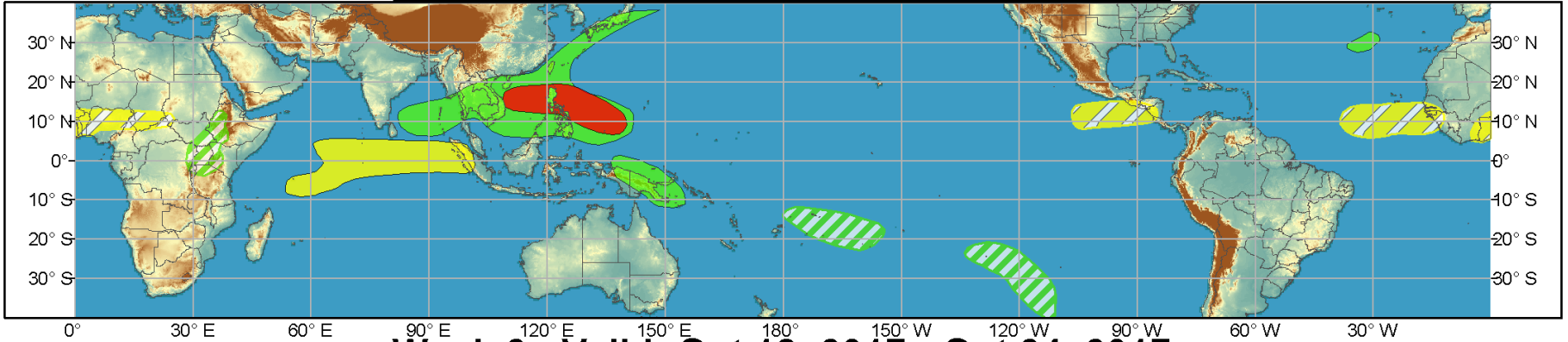




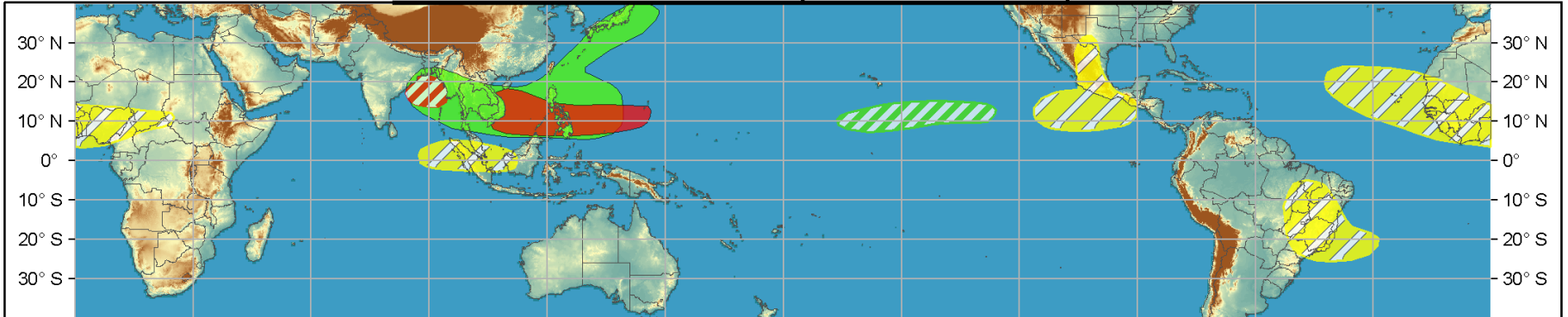
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