

Global Tropics Hazards And Benefits Outlook

10/01/2019

Nick Novella

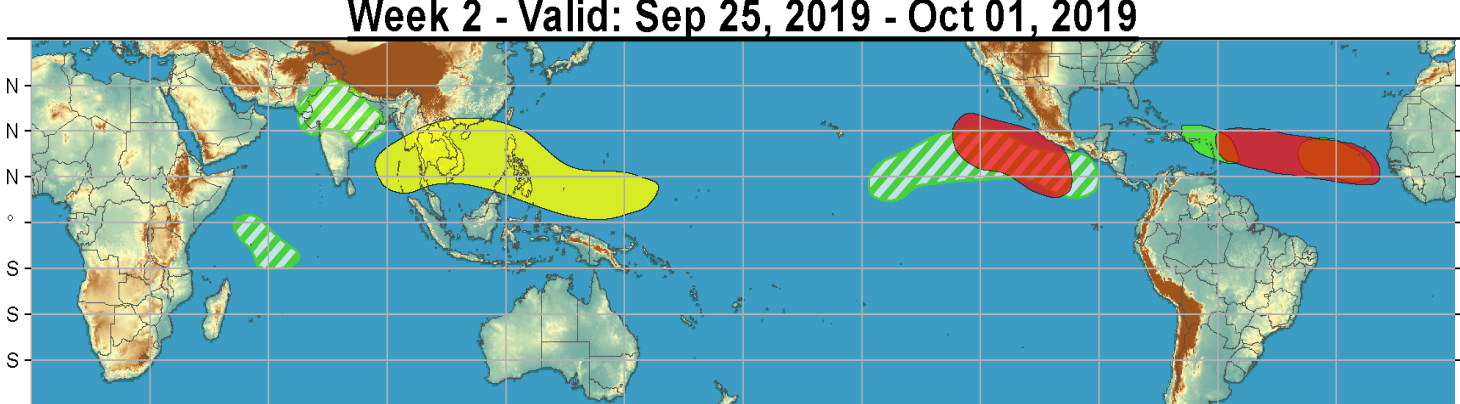
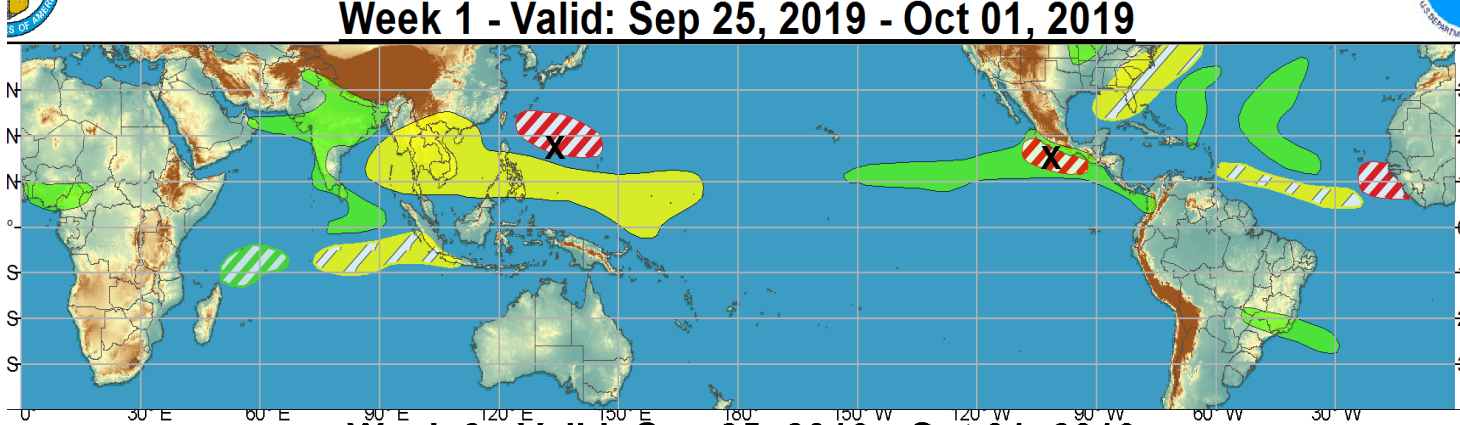
Outline

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

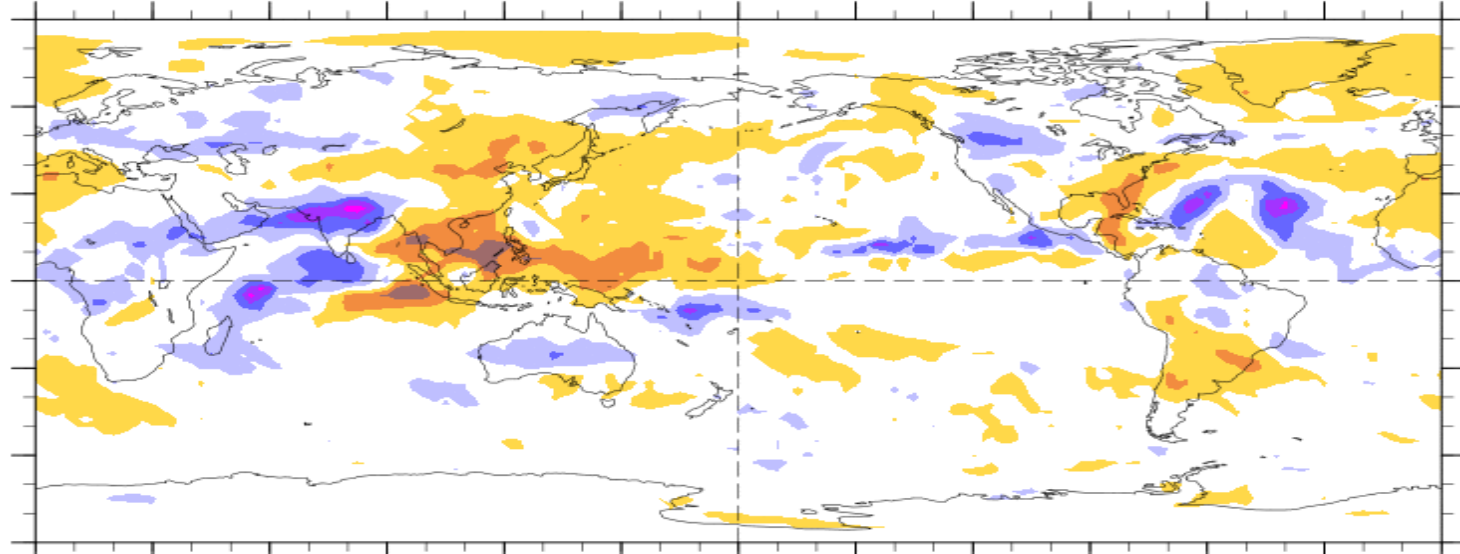
Outlook Review

Mitag (9/27)
Narda (9/29)

Lorenzo (9/23)



7-Day Average OLR Anomaly 2019/09/23 - 2019/09/29



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (September 12, 2019 Update)

- ENSO Alert System Status: Not Active
- ENSO-neutral is favored during the Northern Hemisphere fall 2019 (~75% chance), continuing through spring 2020 (55-60% chance).

MJO and other subseasonal tropical variability:

- The MJO has been primarily present in the UL VP field during much of September but has weakened over the past few days.
- Model guidance in fair agreement and depict a retrograding and weakening signal, with little evidence of eastward propagation mostly through Weeks1-2.
- While RMM analyses support the MJO being active over the Western Hemisphere, the developing positive phase of the Indian Ocean Dipole event across the Eastern Hemisphere appears to be erroneously projecting onto the MJO being in Phase-1 due to the robust easterlies across the Indian Ocean.

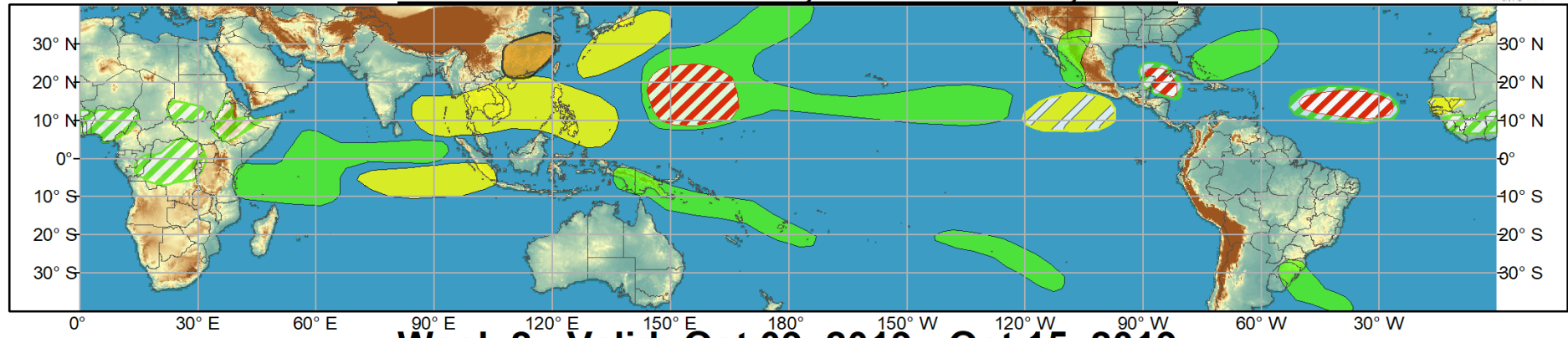
Extratropics:

- A trough/ridge pattern over the western/eastern CONUS has persisted since September.

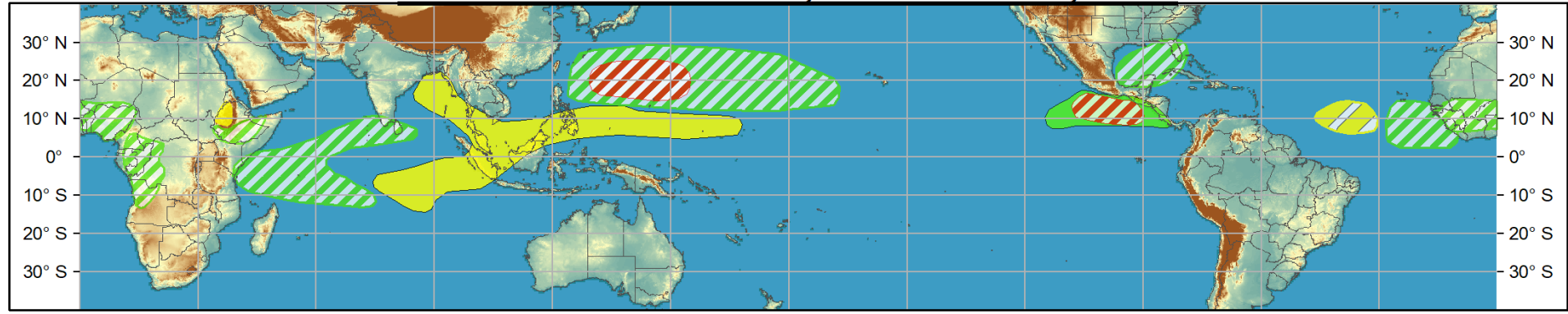


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Oct 02, 2019 - Oct 08, 2019



Week 2 - Valid: Oct 09, 2019 - Oct 15, 2019



Produced: 10/01/2019
Forecaster: Novella

- | 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.



IR Satellite & 200-hpa Velocity Potential Anomalies

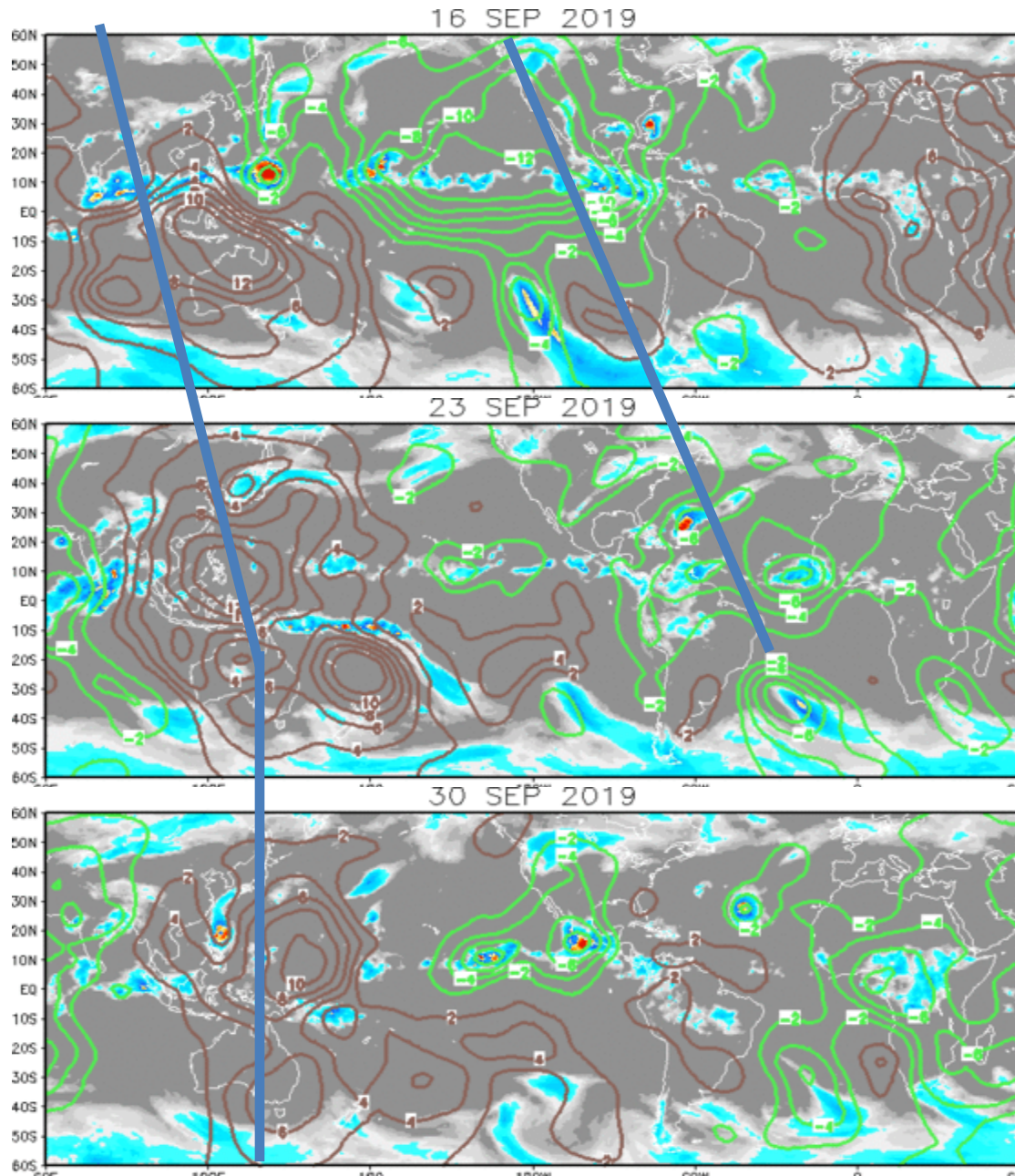
Green: Enhanced Divergence

Brown: Enhanced Convergence

A wave-1 pattern reflects a Western Hemisphere event.

Last week, the enhanced envelope shifted eastward, while suppression intensified over Maritime Continent.

The upper-level suppressed signal has stalled over the eastern IO / Maritime Continent, with a less coherent enhanced envelope.

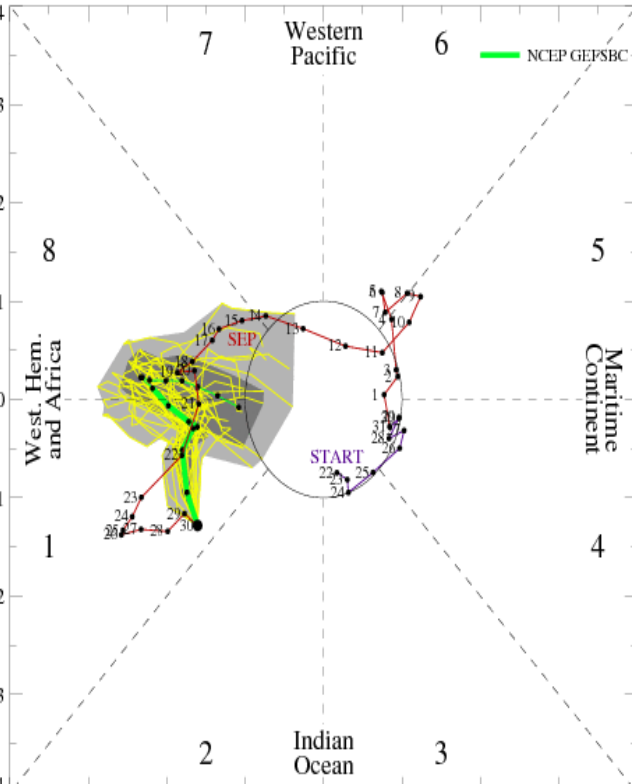


MJO Observation/Forecast

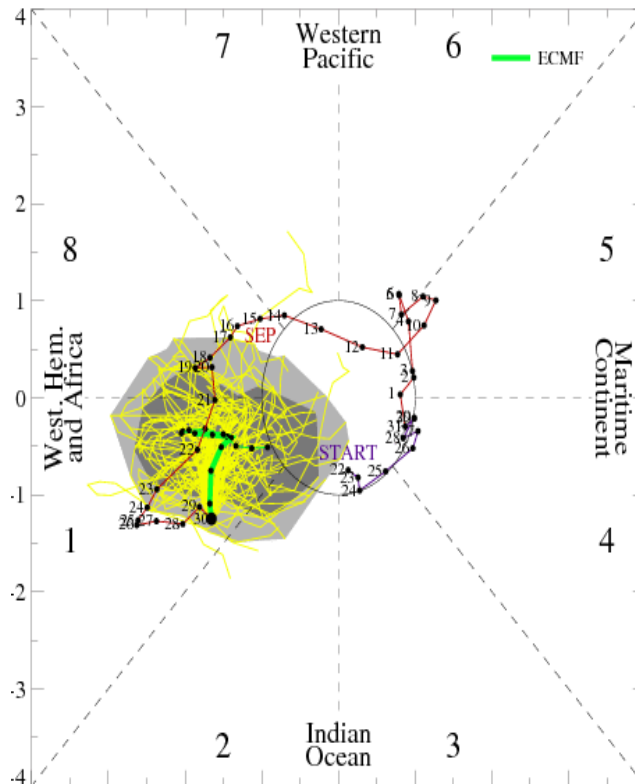
[RMM1, RMM2] forecast for Oct-01-2019 to Oct-15-2019

MJO Index Forecast for 01Oct2019-15Oct2019

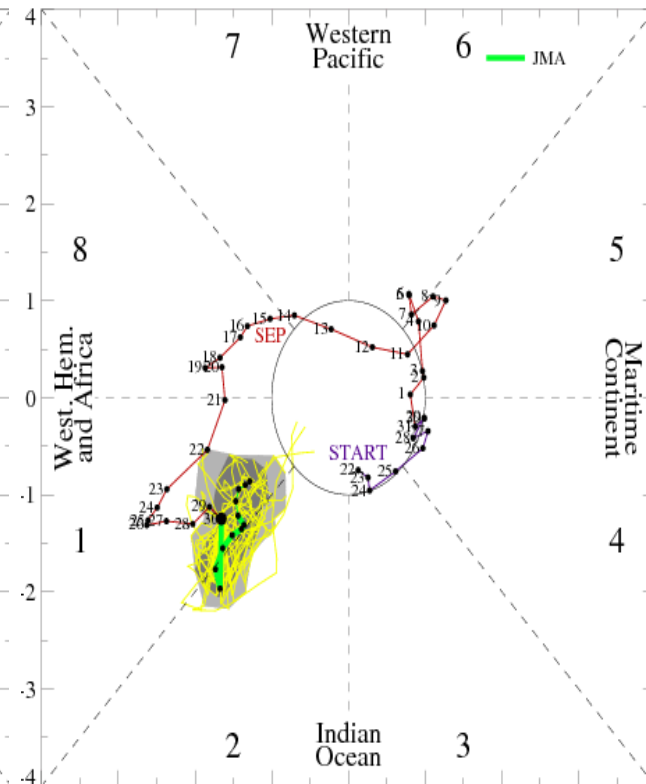
MJO Index Forecast for 01Oct2019-09Oct2019



GEFS



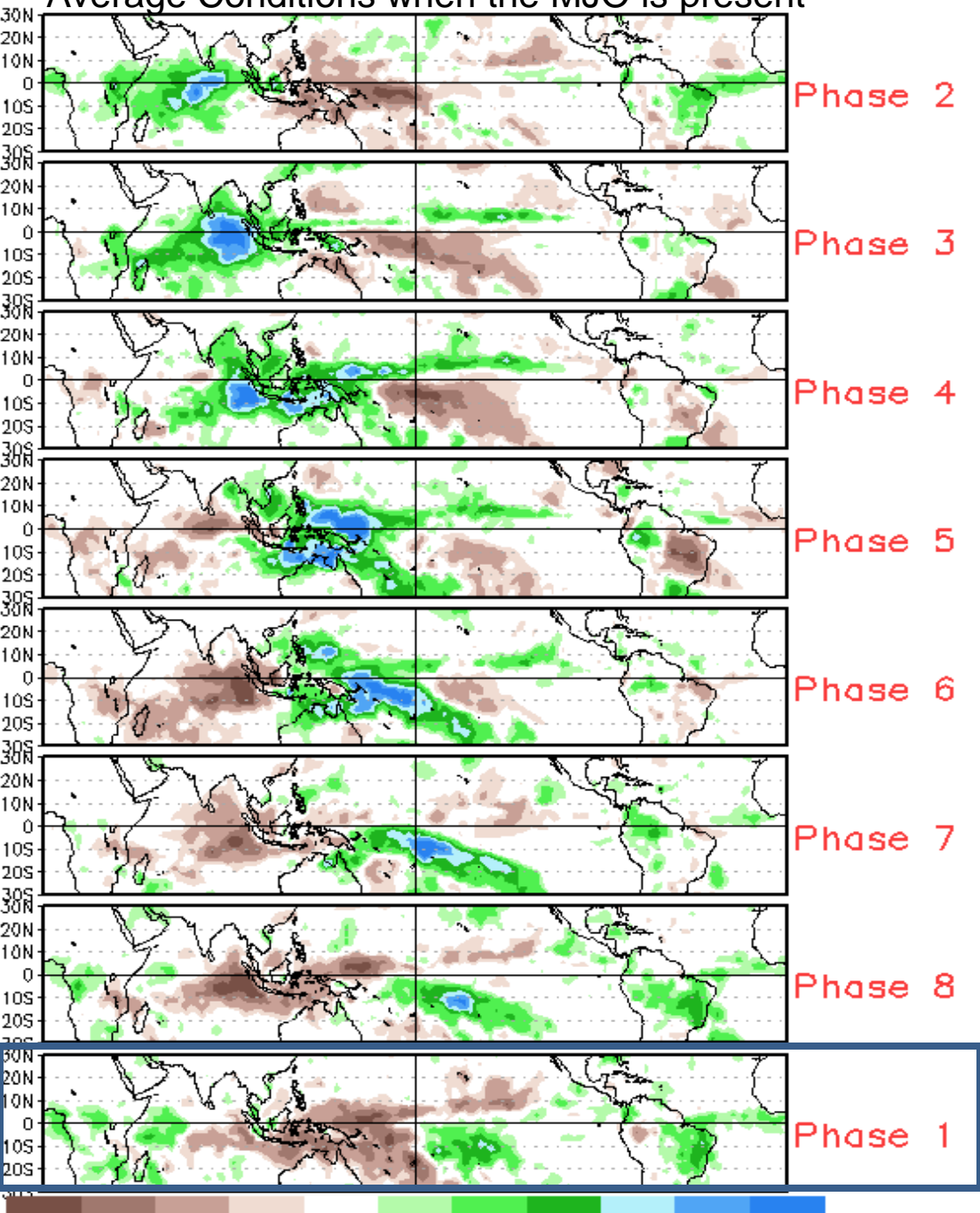
ECMWF



JMA

The GEFS and ECMWF show little to no eastward propagation, with a overall weakening by the end of Week-2. A low amplitude MJO superimposed on a developing +IOD would favor stationary enhanced (suppressed) convection over the western Indian Ocean (eastern IO/Maritime Continent), which is likely contributing to the RMM solutions.

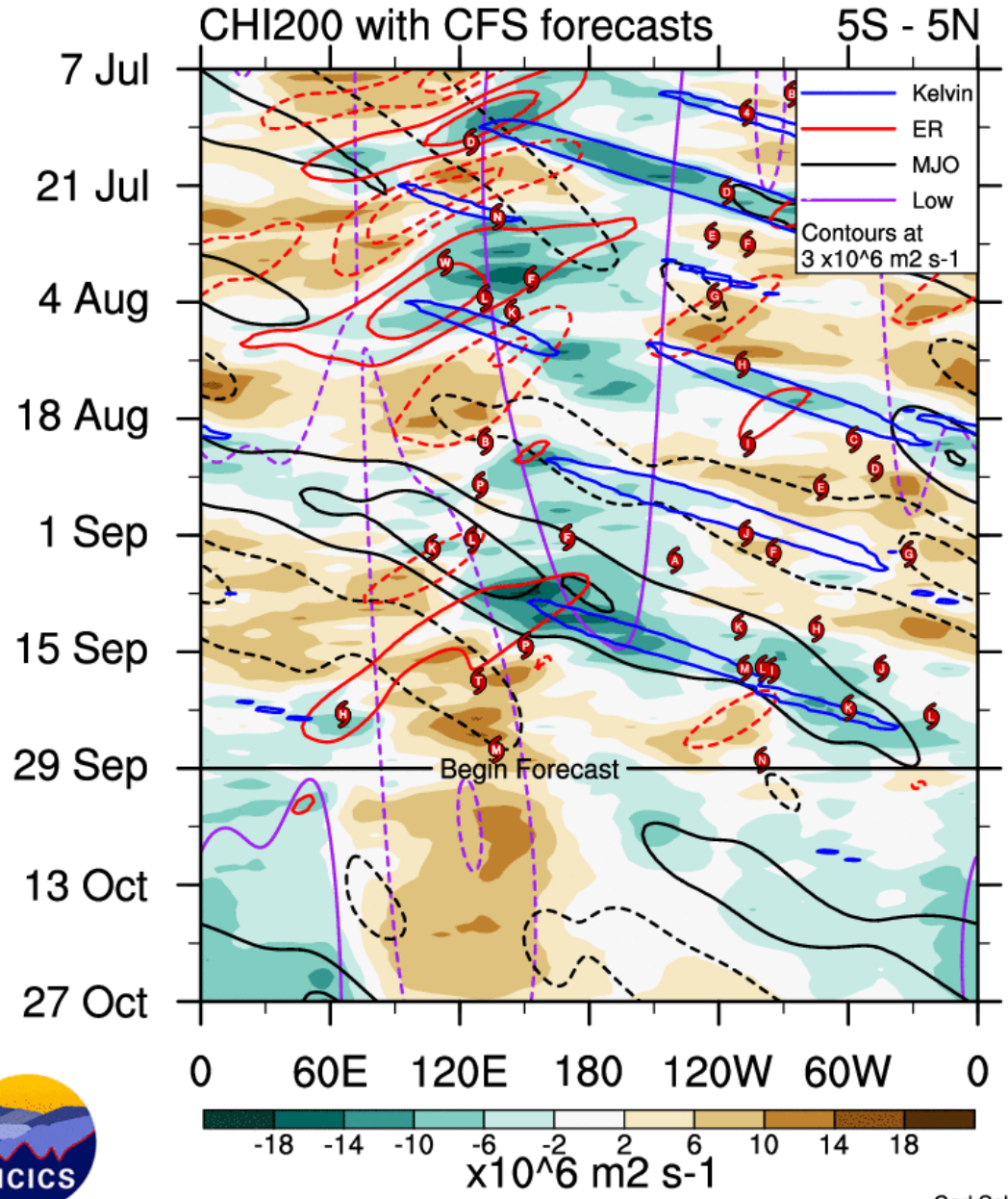
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

Eastward propagating MJO,
evident in the wide band VP
T-Lon plot

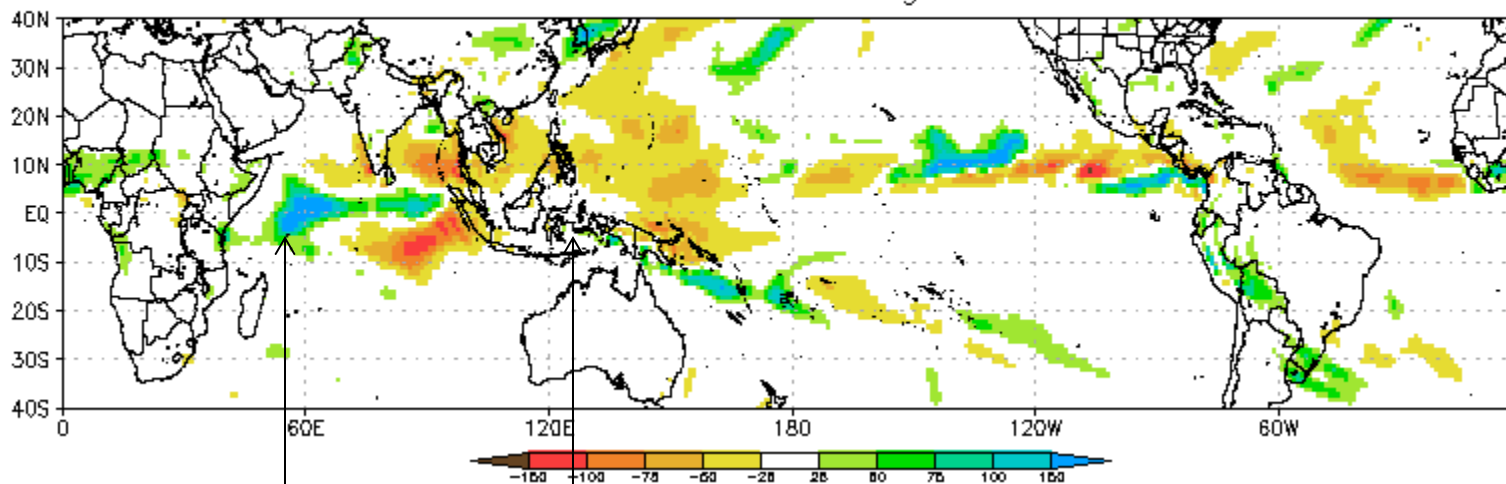
Low-frequency pattern
reflecting positive IOD shows
up in the obs and strengthens
in the CFS



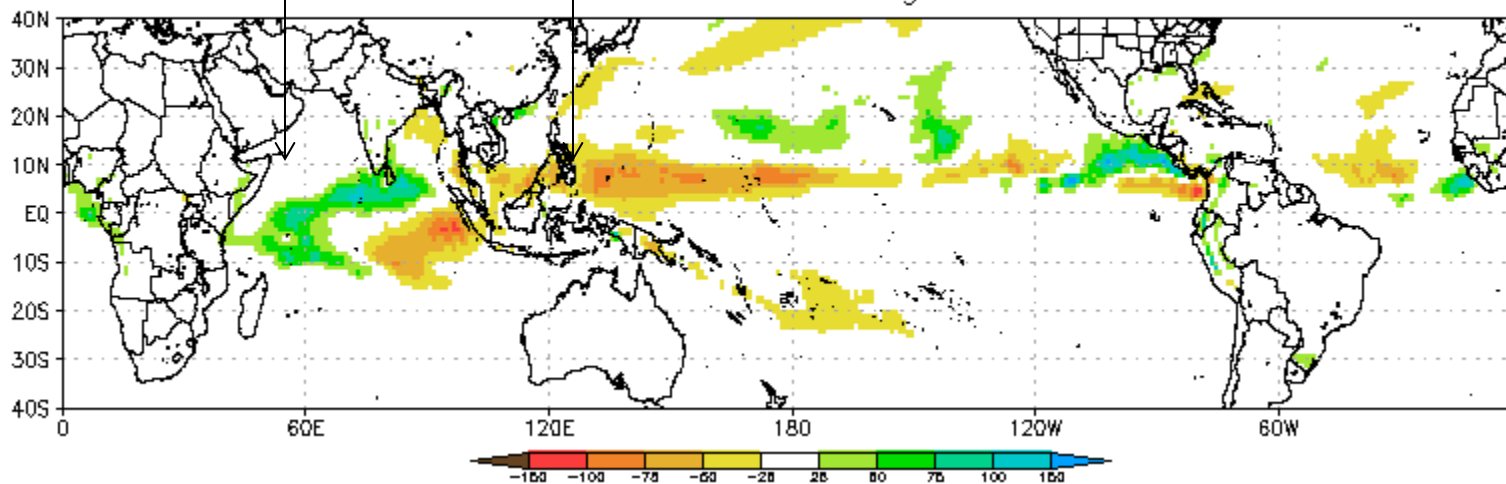
Mon 2019-09-30 1010 UTC

Carl Schreck
carl_schreck@ncsu.edu

CFS Precipitation Anomalies (mm) Issued 30Sep2019
Week-1 Forecast Ending 08Oct2019

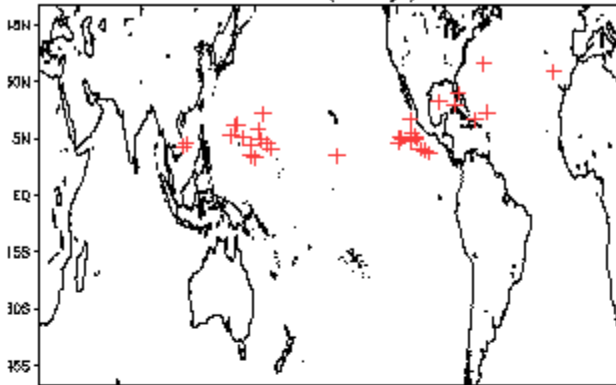


CFS Precipitation Anomalies (mm) Issued 30Sep2019
Week-2 Forecast Ending 15Oct2019

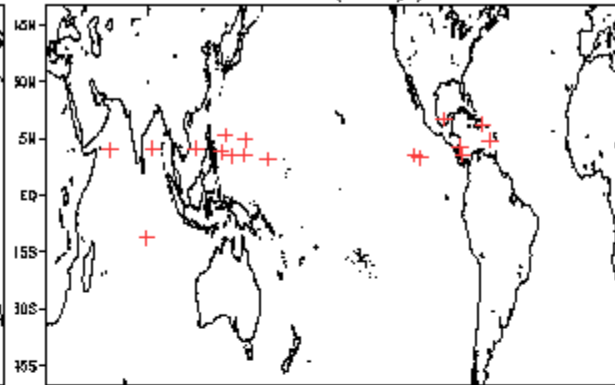


October Tropical Storm Formation by MJO phase

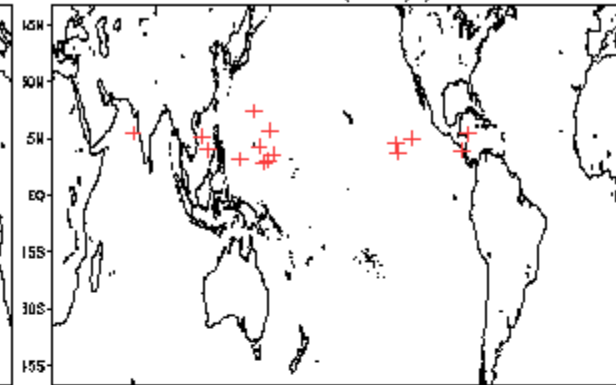
Phase 1 (94 days) 34 storms



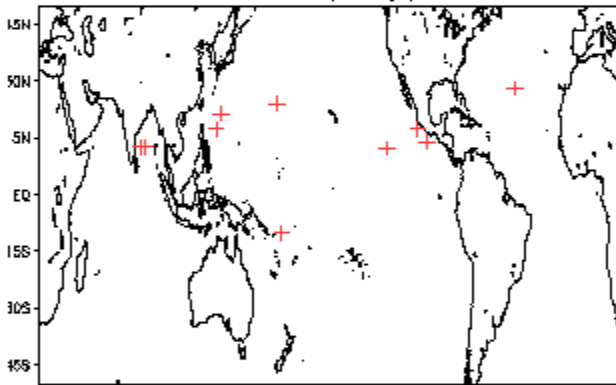
Phase 4 (85 days) 18 storms



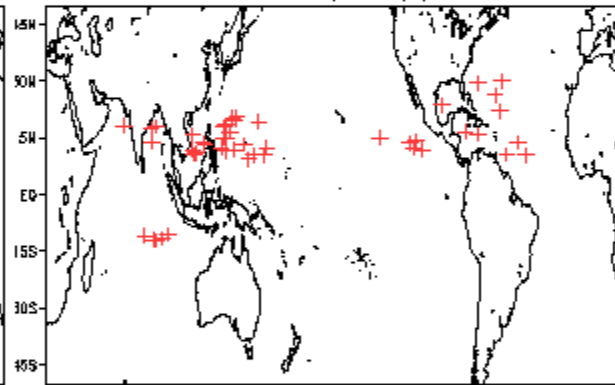
Phase 7 (48 days) 16 storms



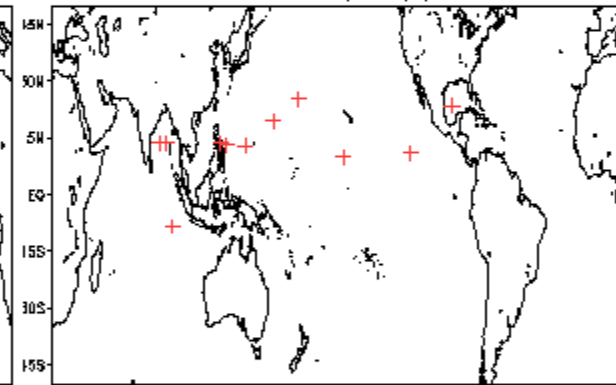
Phase 2 (75 days) 11 storms



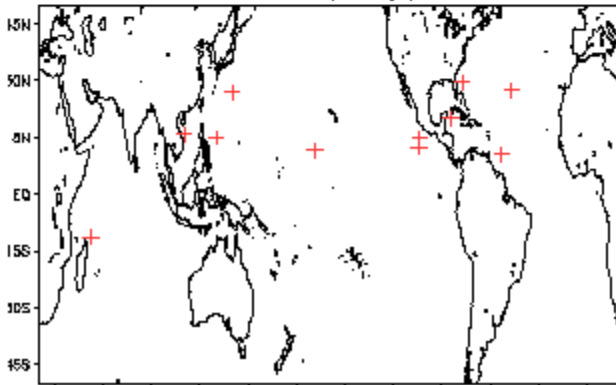
Phase 5 (133 days) 48 storms



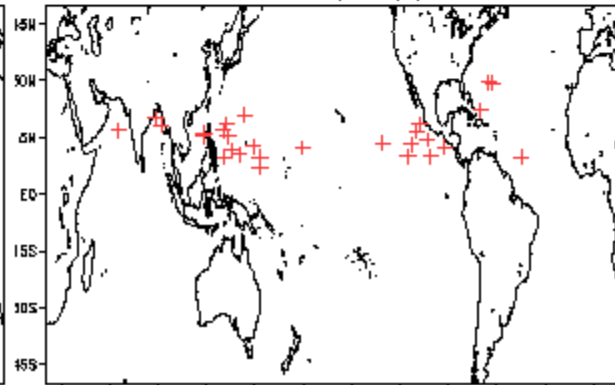
Phase 8 (66 days) 12 storms



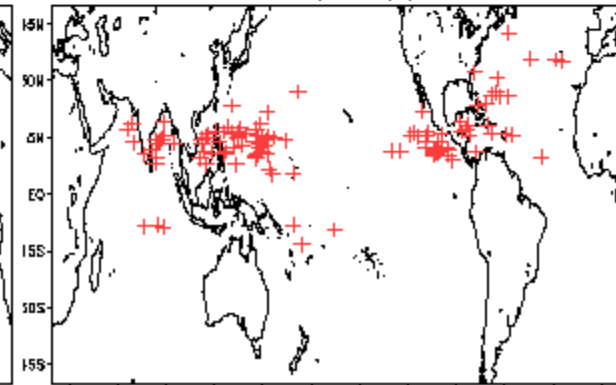
Phase 3 (41 days) 12 storms

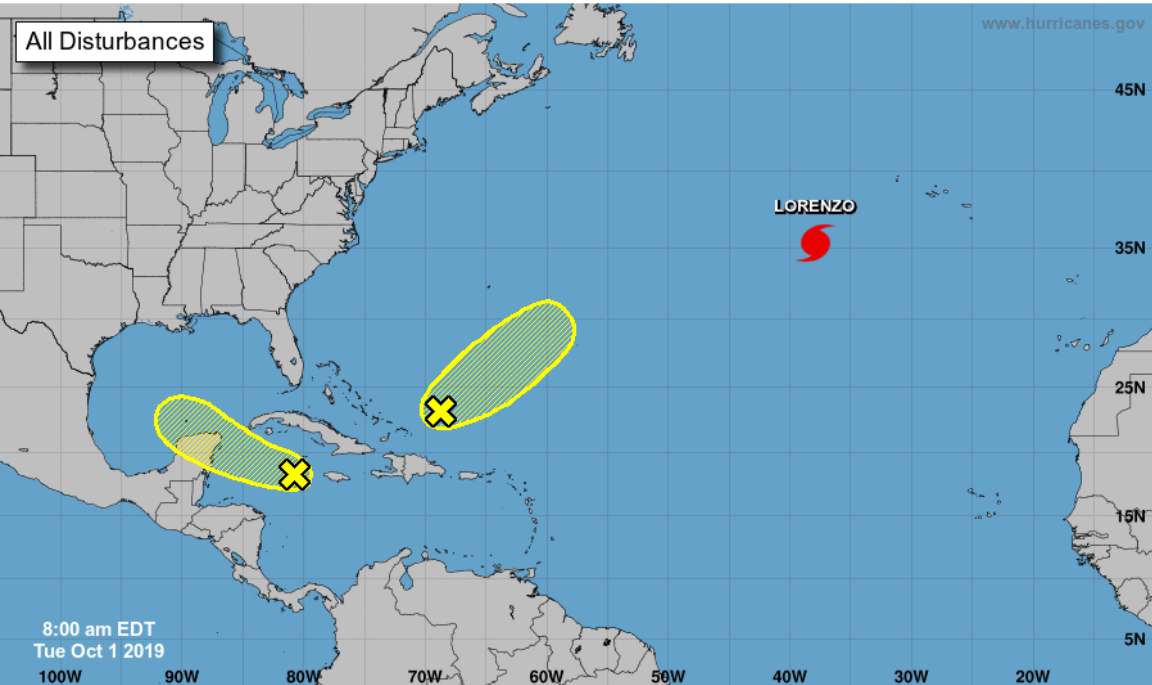


Phase 6 (78 days) 30 storms



Null (422 days) 119 storms

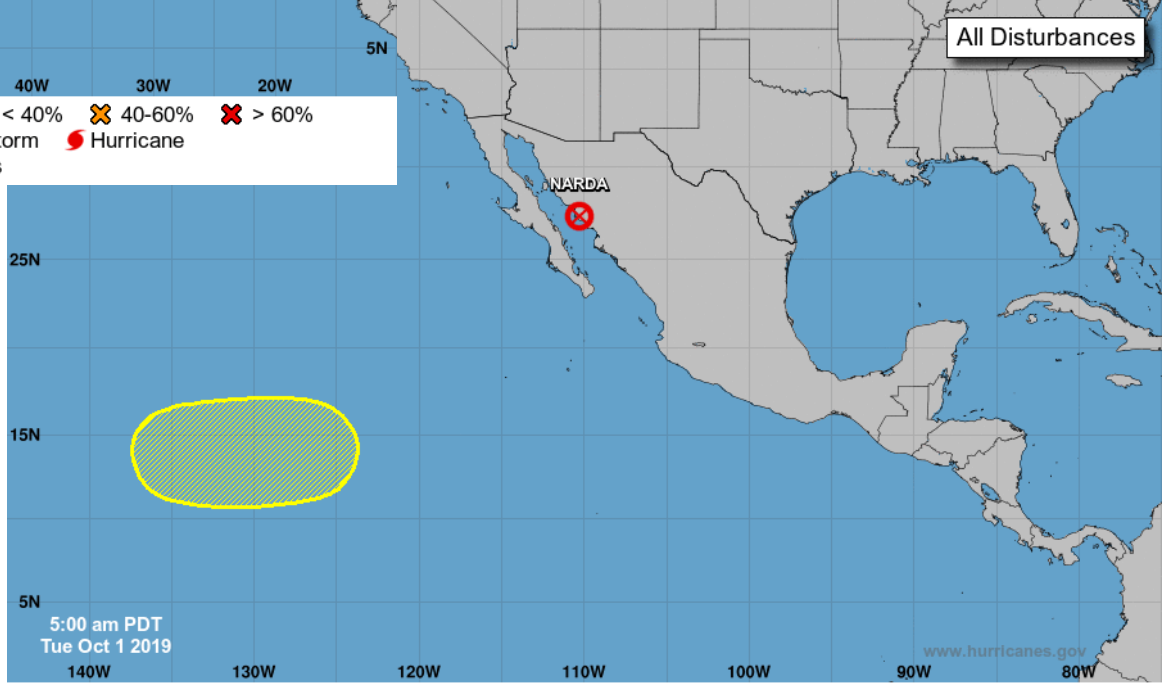




8:00 am EDT
Tue Oct 1 2019

Current Disturbances and Five-Day Cyclone Formation Chance:
 Tropical or Sub-Tropical Cyclone:
 Post-Tropical Cyclone or Remnants

- X < 40%
- X 40-60%
- X > 60%
- Depression
- Storm
- Hurricane
- ⊗ Post-Tropical Cyclone or Remnants

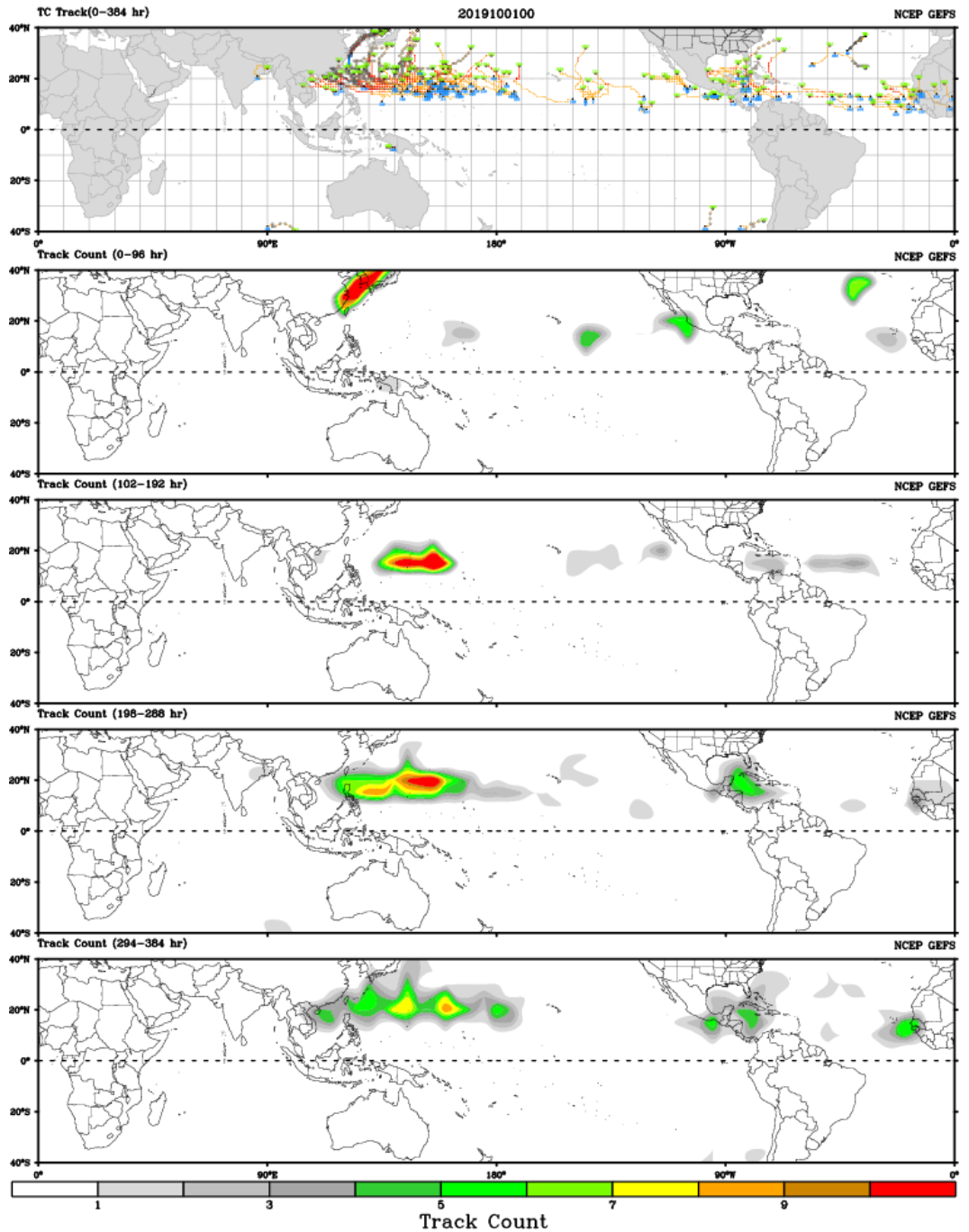


5:00 am PDT
Tue Oct 1 2019

Current Disturbances and Five-Day Cyclone Formation Chance:
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CWB TC Tracker for NCEP GEFS (Fuzzy_AllCriteria)



Days 1-4

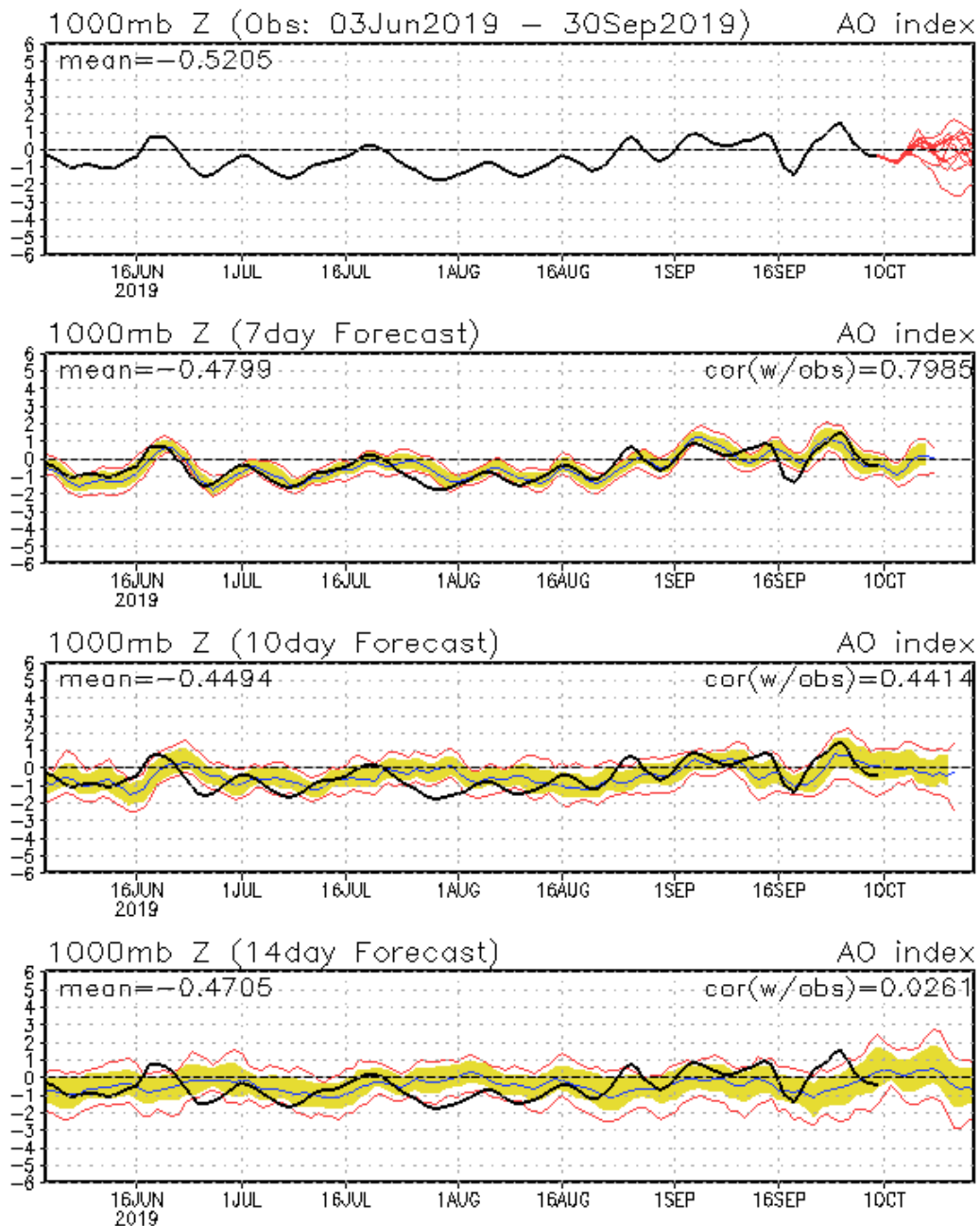
Day 5-8

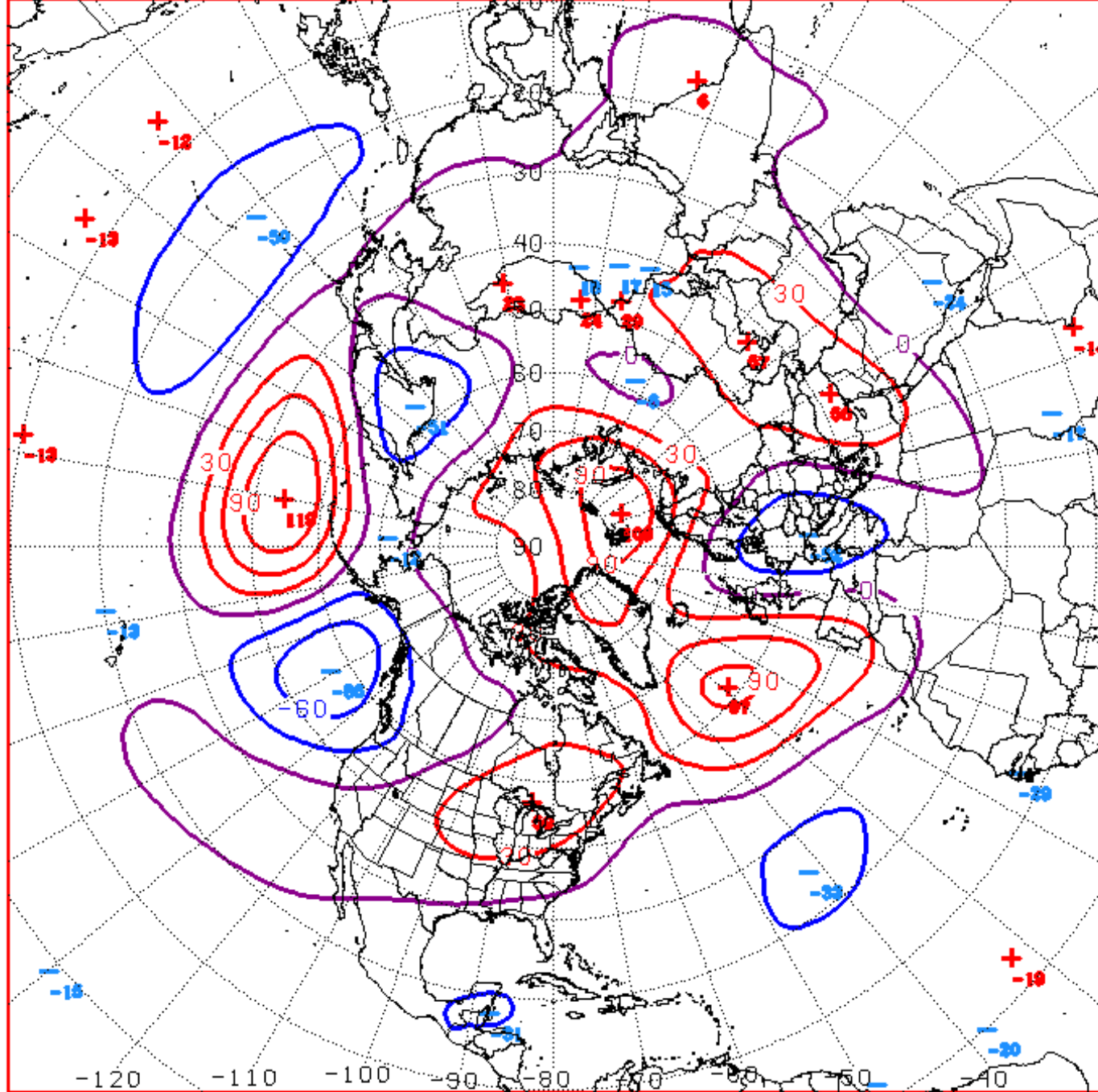
Day 9-12

Day 13-15

Connections to U.S. Impacts

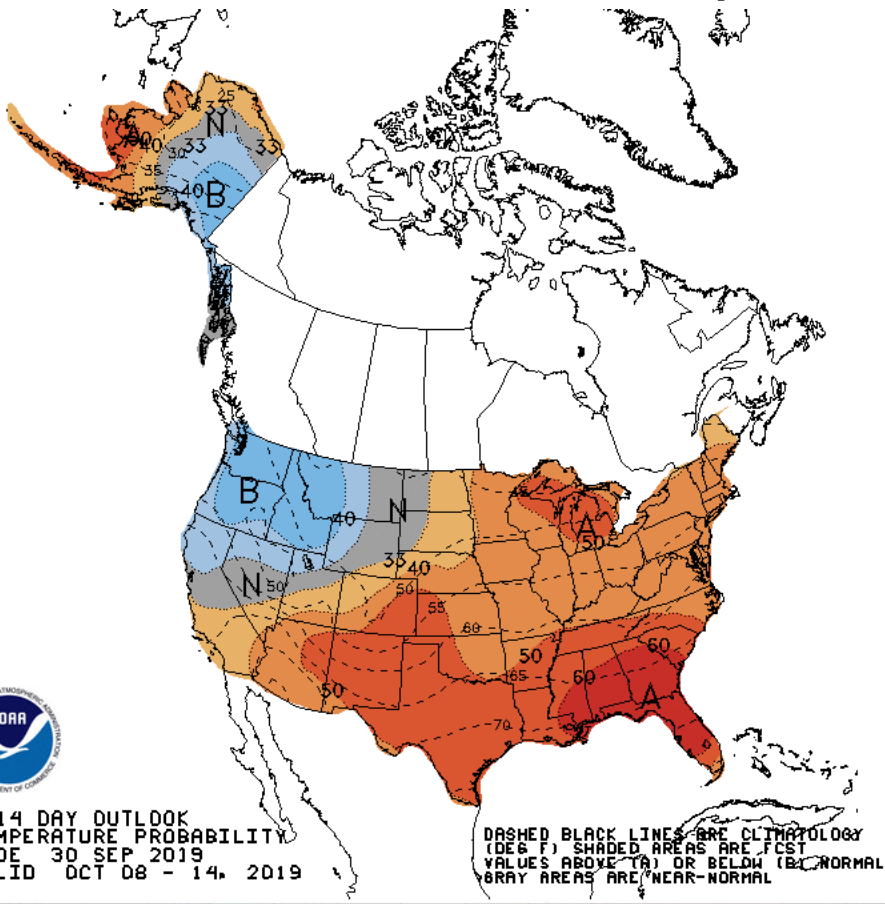
AO: Observed & ENSM forecasts





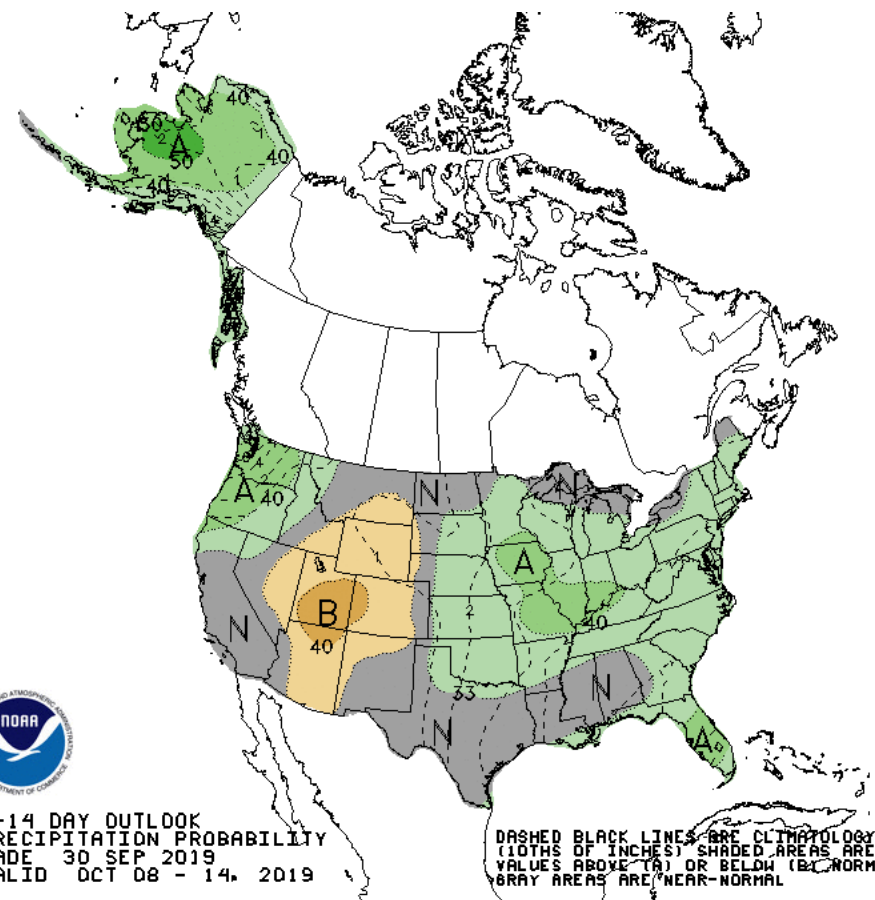
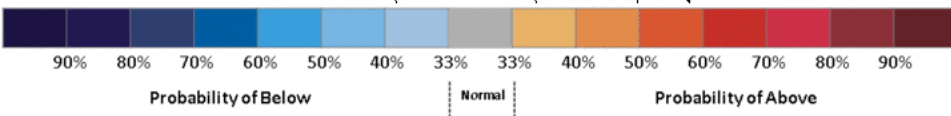
D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE OCT 01 2019 1323 UTC CNTD OCT 12 2019

Week 2 – Temperature and Precipitation



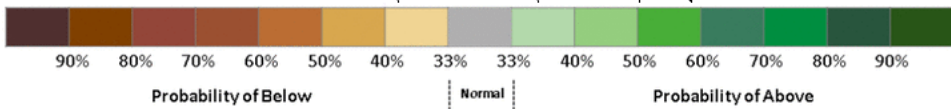
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 30 SEP 2019
VALID OCT 08 - 14, 2019

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 30 SEP 2019
VALID OCT 08 - 14, 2019

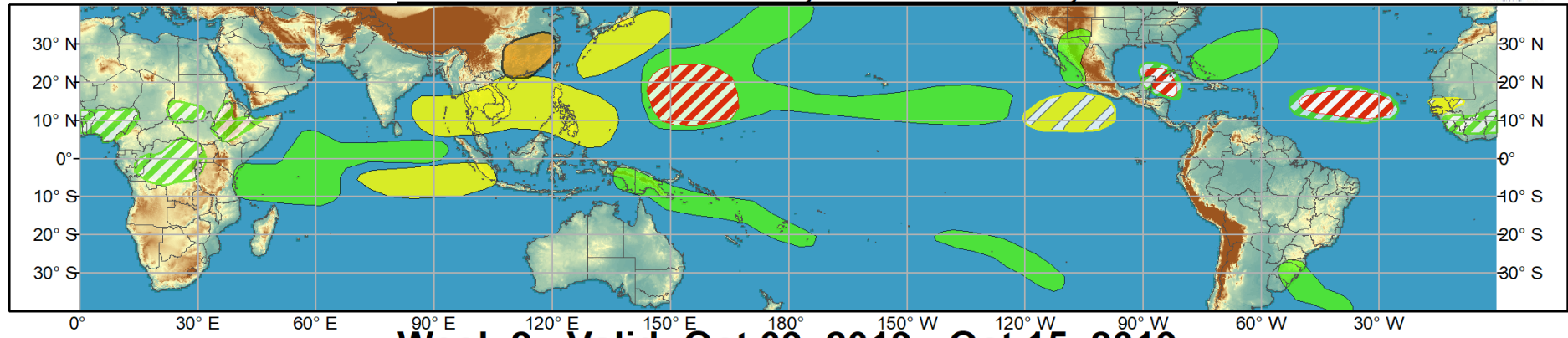
DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



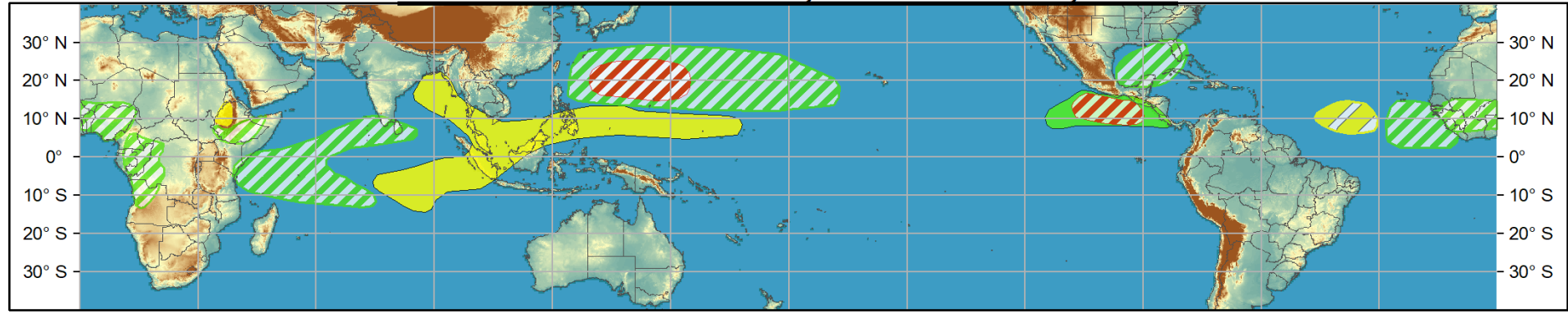


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