

Global Tropics Hazards And Benefits Outlook

10/16/2018

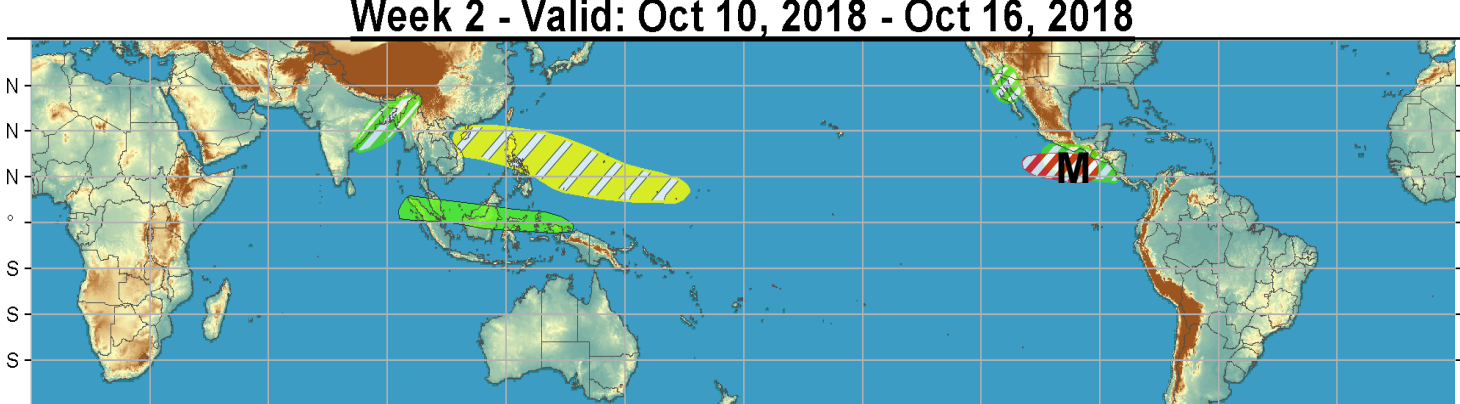
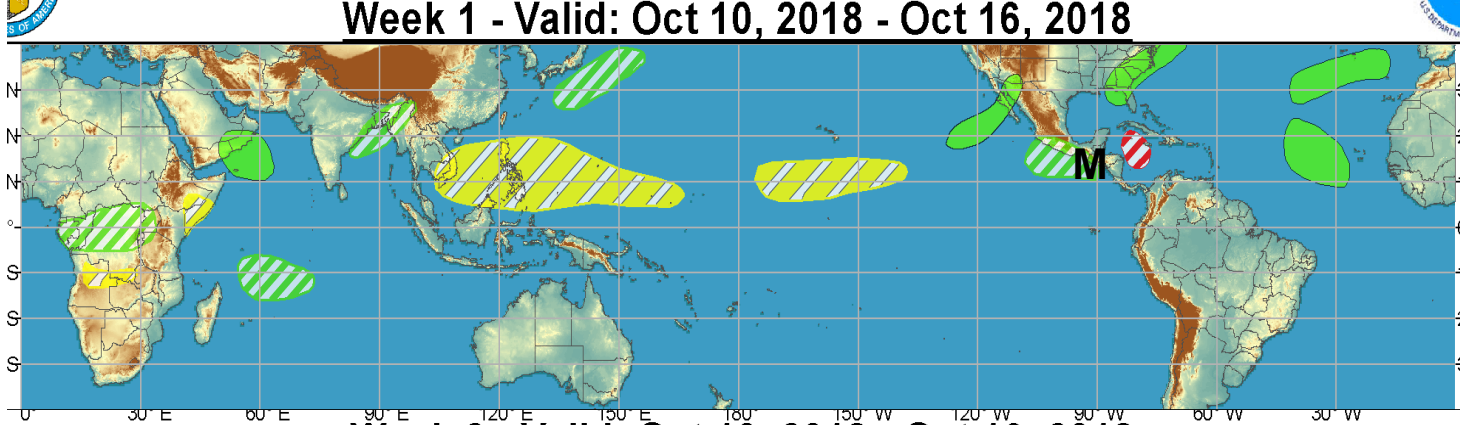
Kyle MacRitchie

Outline

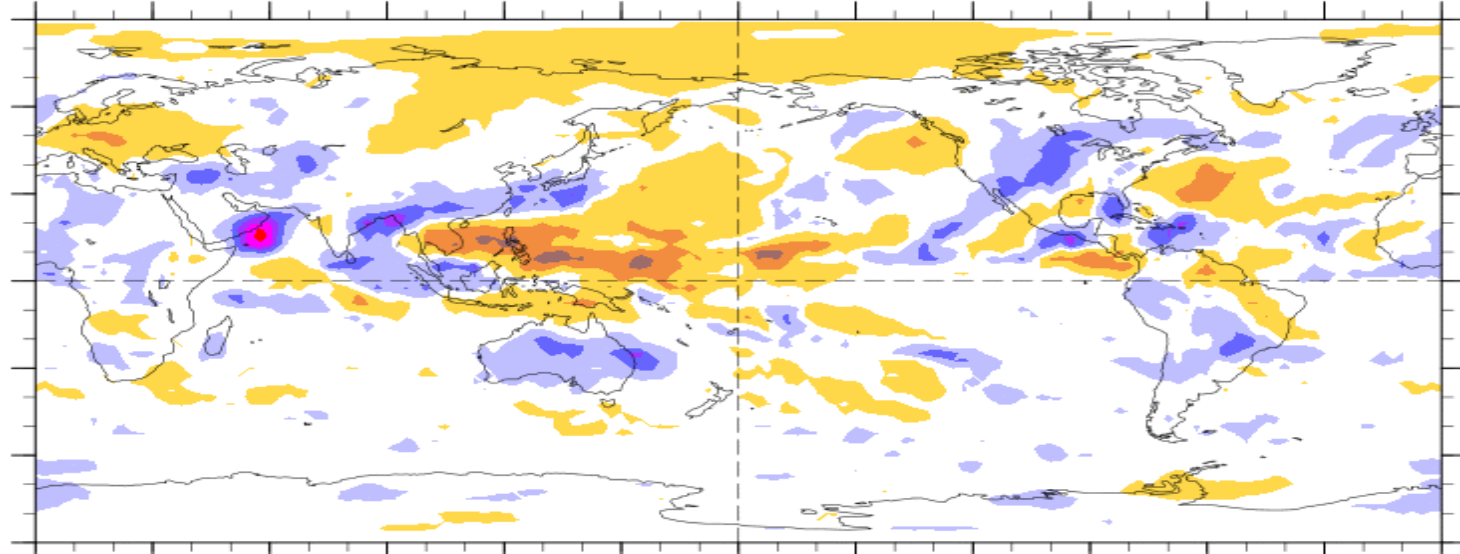
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

Tropical Storm
Tara – 10/15



7-Day Average OLR Anomaly 2018/10/08 - 2018/10/14



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO:

- ENSO Alert System Status as of 11 October: [*El Niño Watch*](#)
 - El Niño is favored to form in the next couple of months and continue through the Northern Hemisphere winter 2018-19 (70-75% chance).

MJO and other subseasonal tropical variability:

- The MJO is allegedly in Phase 2 and forecast to weaken over the next few days.
- Redevelopment in Phase 1 is possible during Week-2, but the forecast is complicated by projection from El Niño onto the RMM patterns.

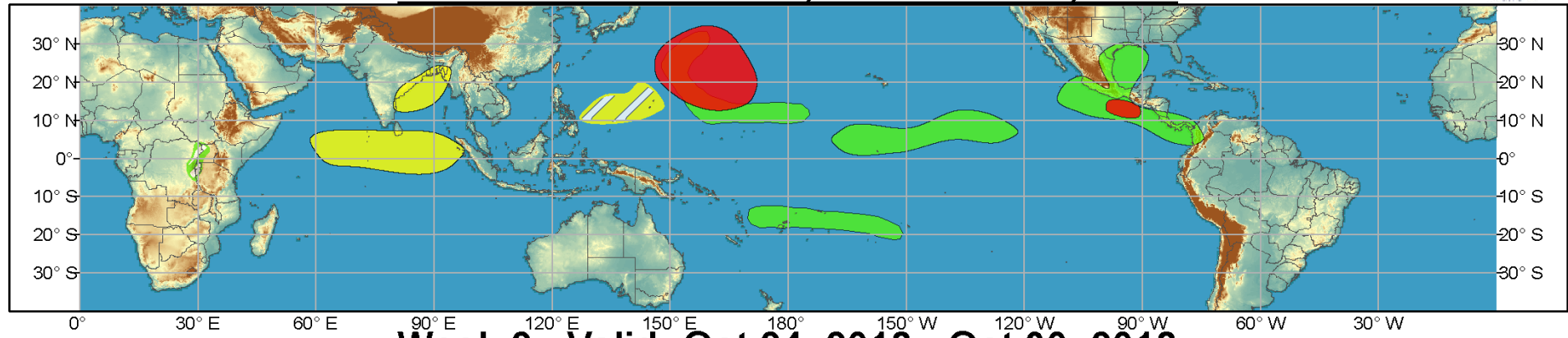
Extratropics:

- Pattern change over North America.

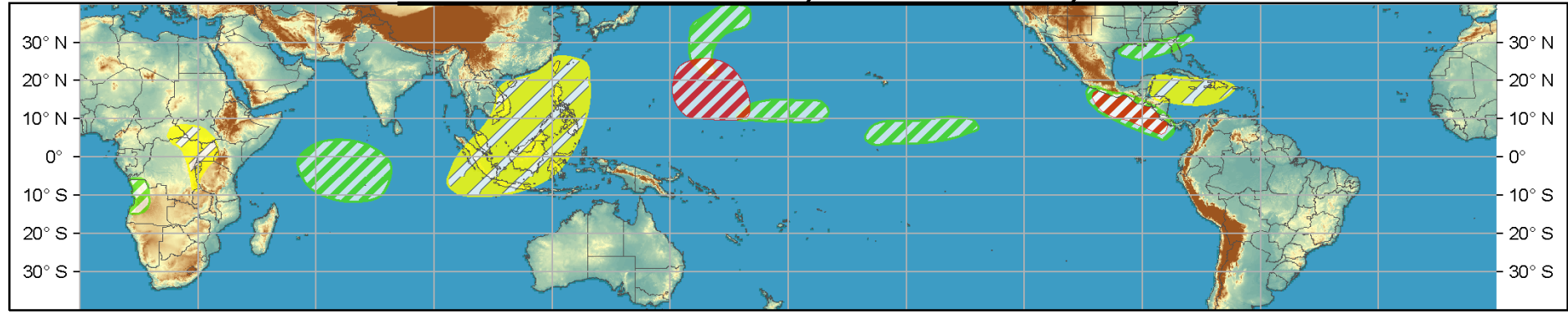


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Oct 17, 2018 - Oct 23, 2018



Week 2 - Valid: Oct 24, 2018 - Oct 30, 2018



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.
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- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
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Produced: 10/16/2018

Forecaster: MacRitchie

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IR Satellite & 200-hpa Velocity Potential Anomalies

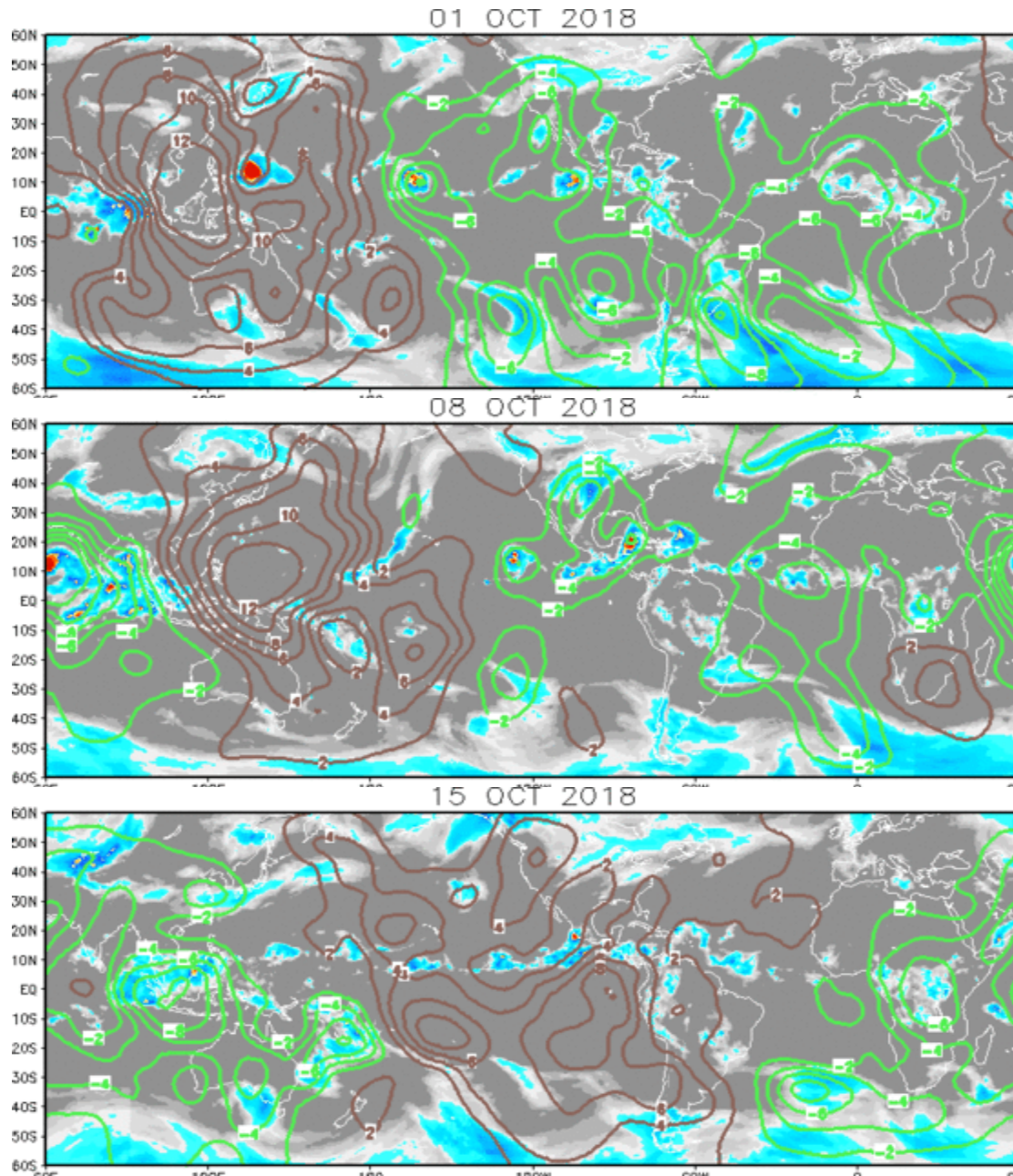
Green: Enhanced Divergence

Brown: Enhanced Convergence

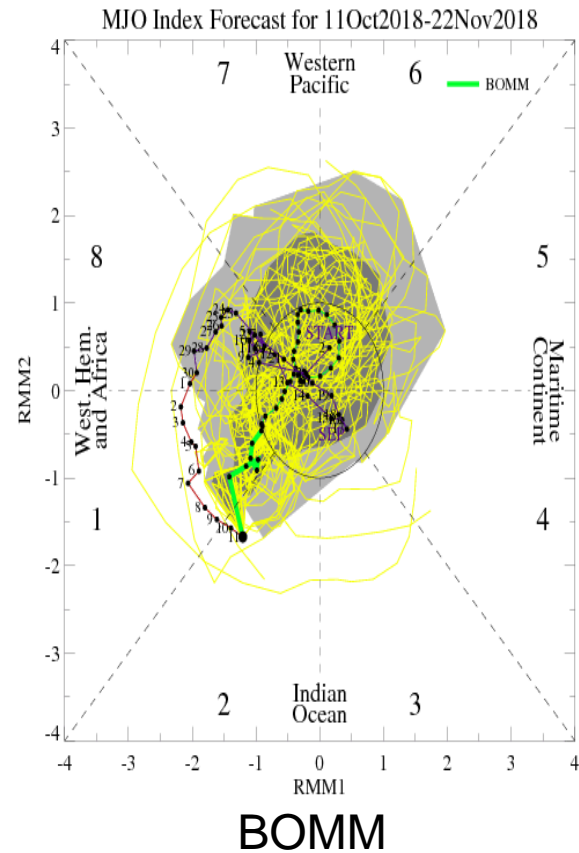
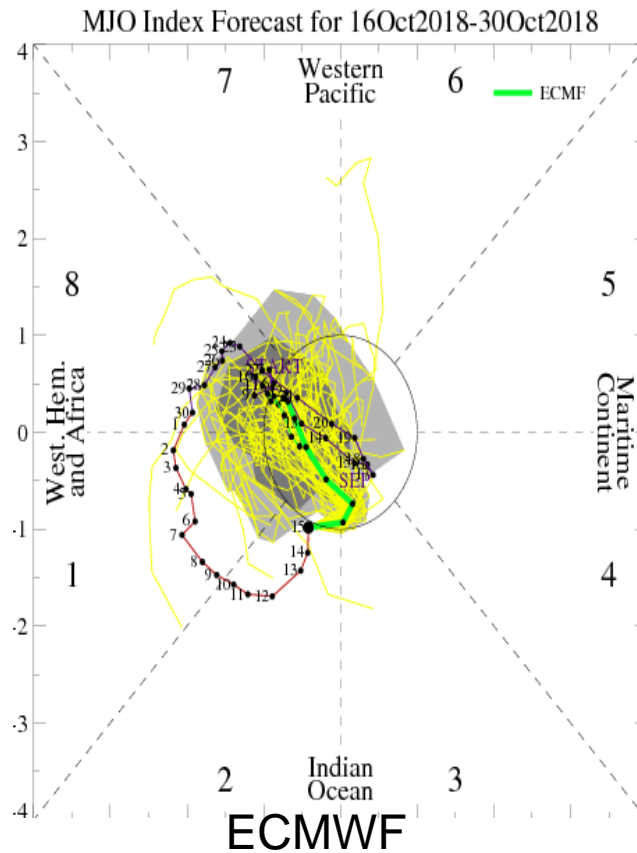
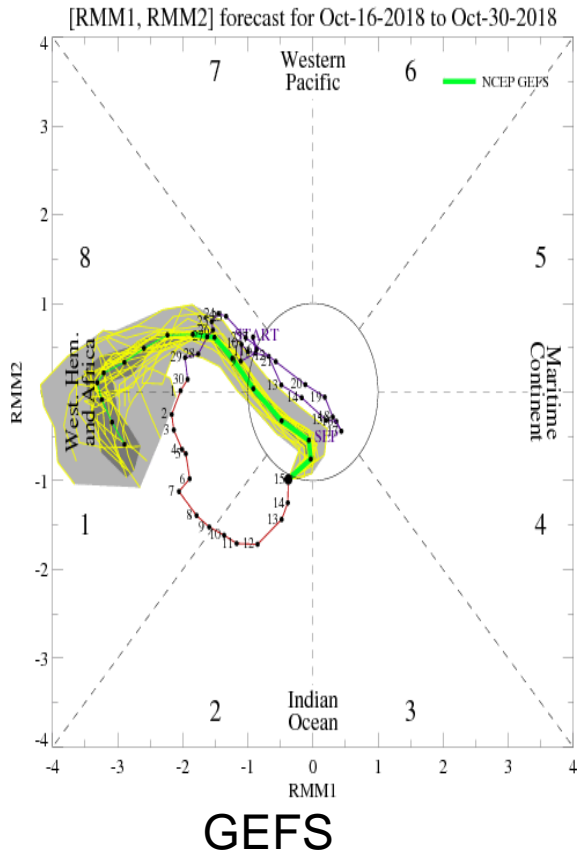
Wave-1 pattern; convection is scattered throughout the globe.

Convection over the Indian Ocean helps to anchor the upper-level pattern.

Convection subsides over the Indian Ocean; anomalous subsidence over the Maritime Continent also begins to subside.

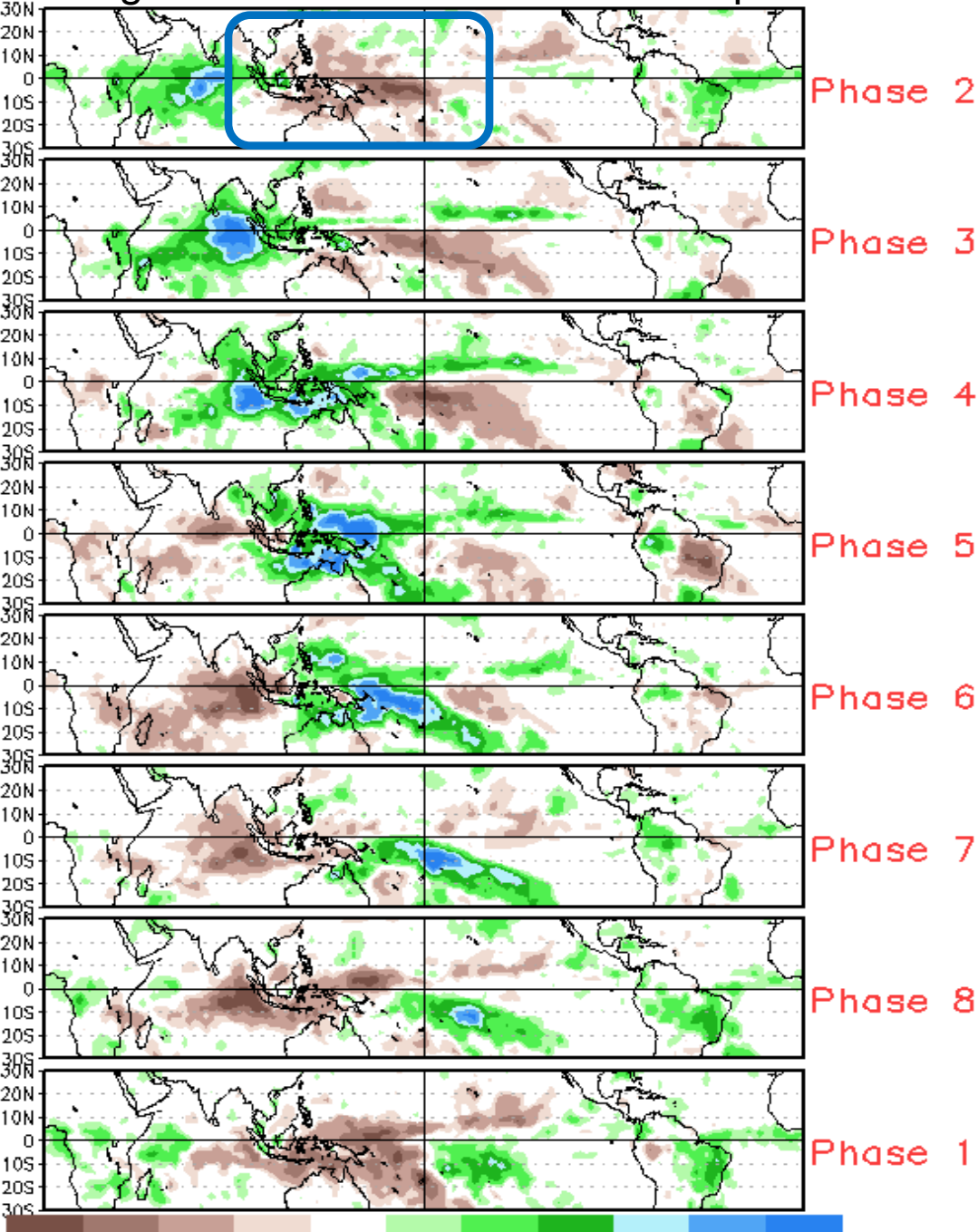


MJO Observation/Forecast

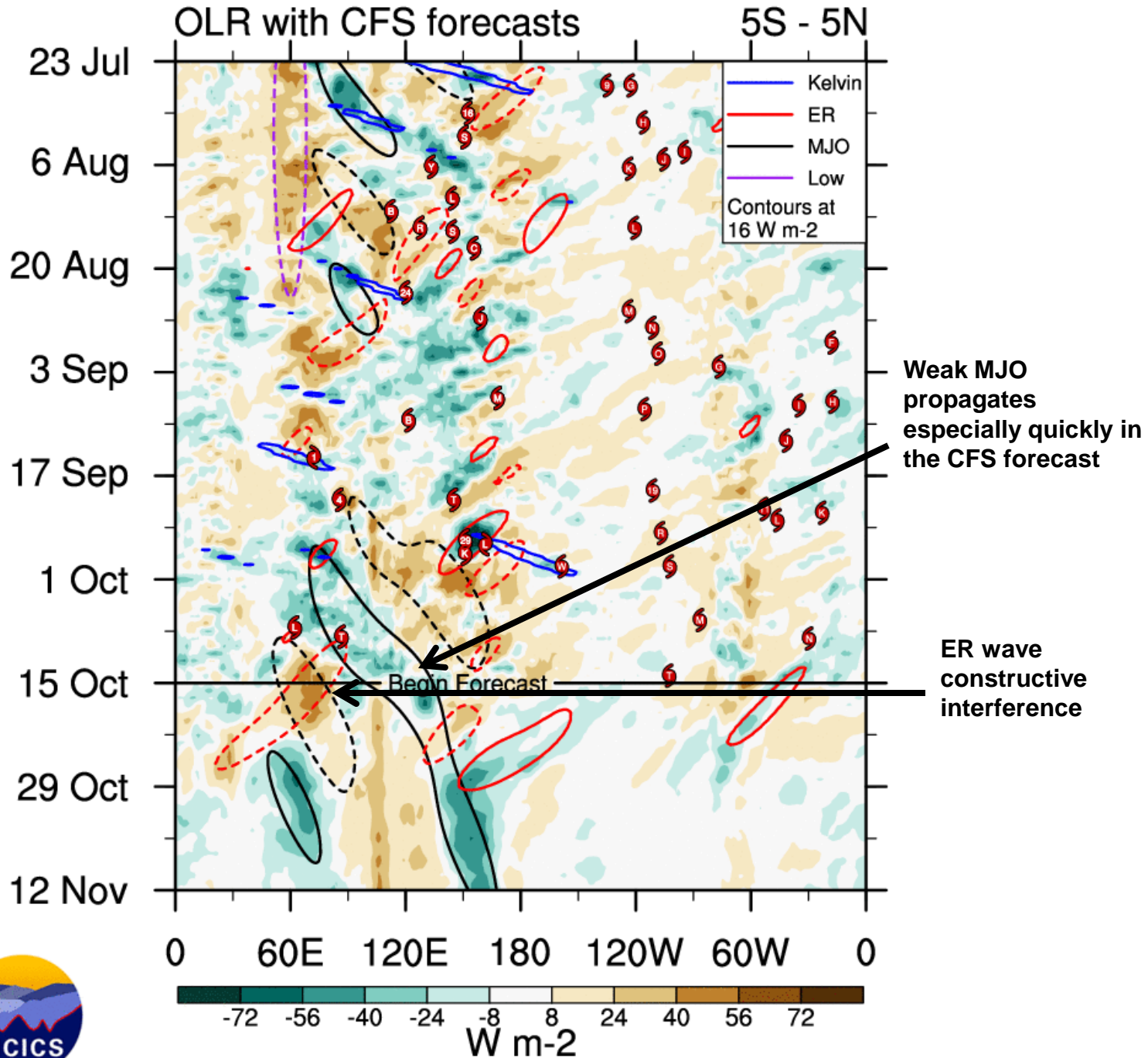


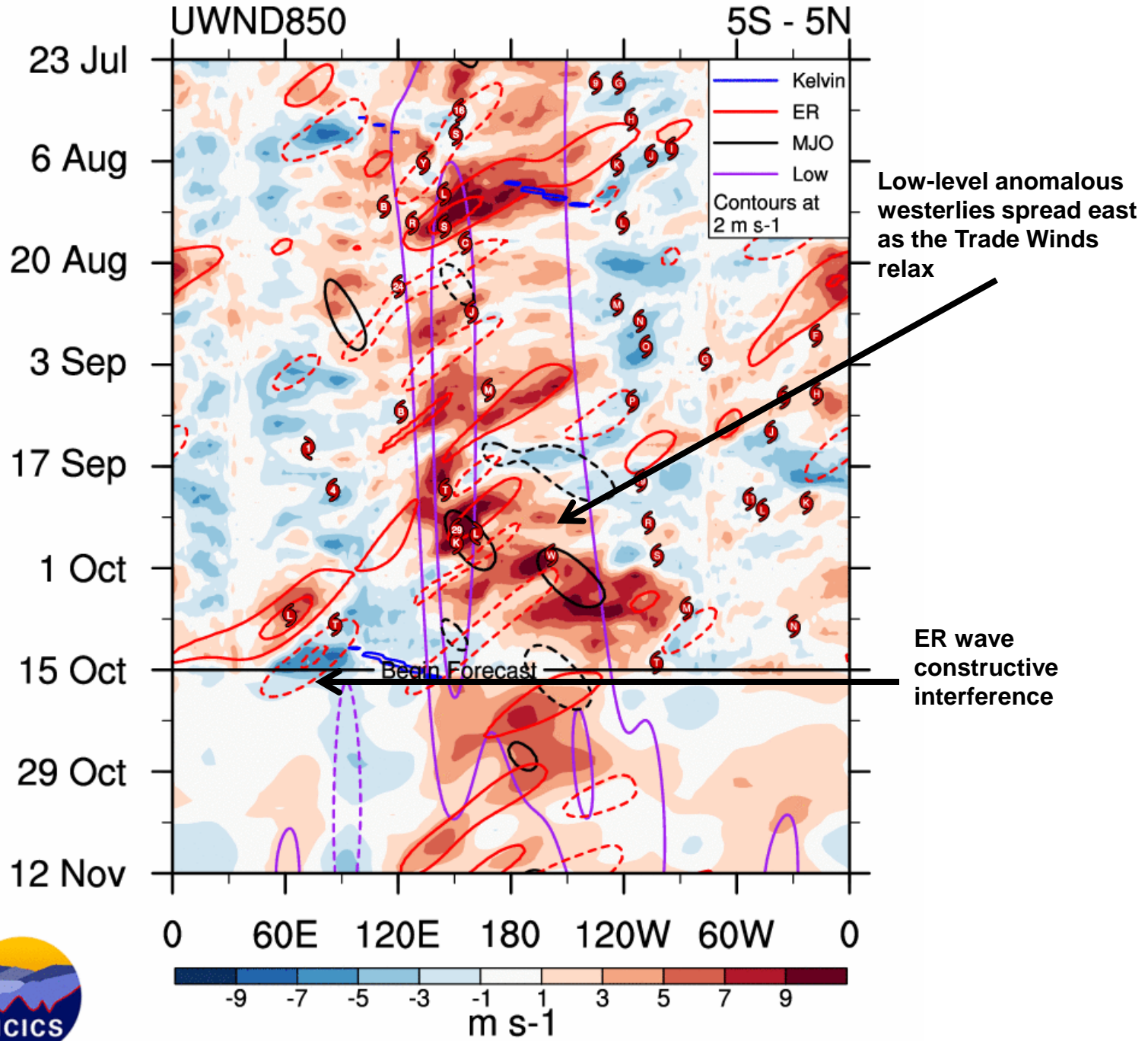
The future of the MJO is uncertain. El Niño's footprint over the Maritime Continent and Warm Pool is similar to the MJO's and it's unclear how much of the current and forecast signals are due to El Niño versus a legitimate MJO event.

Average Conditions when the MJO is present



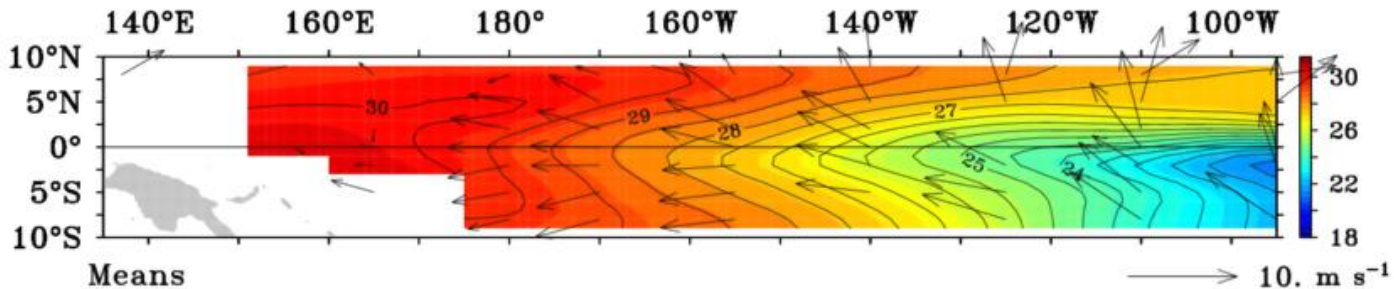
CAVEAT: These panels are representative of robust MJO events.



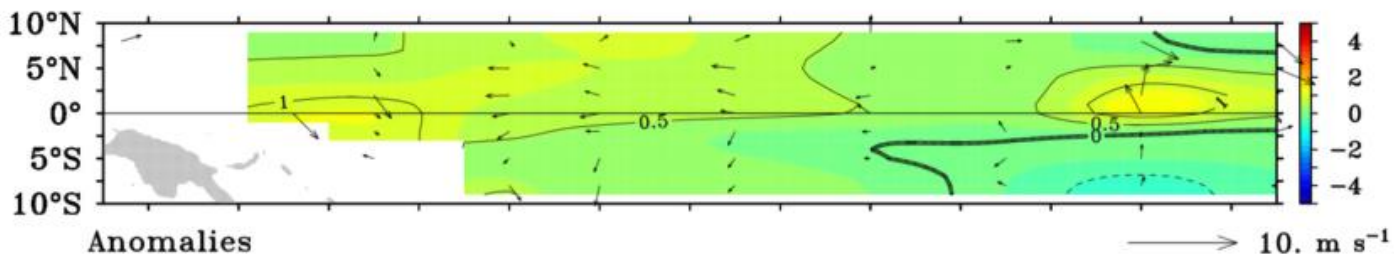


TAO/TRITON Five-Day Data Ending On September 15 2018

SST (°C) and Wind



**Warm waters
nudge eastward.**



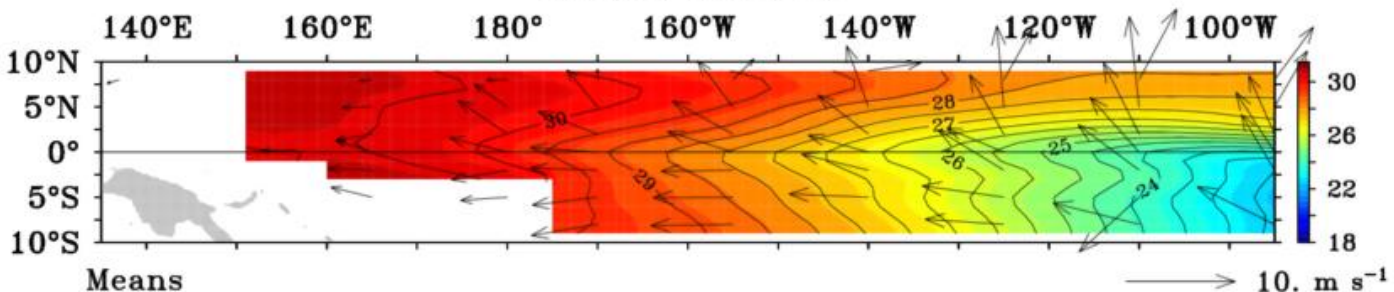
**Trade winds
weaken.**

Global Tropical Moored Buoy Array Program Office, NOAA/PMEL

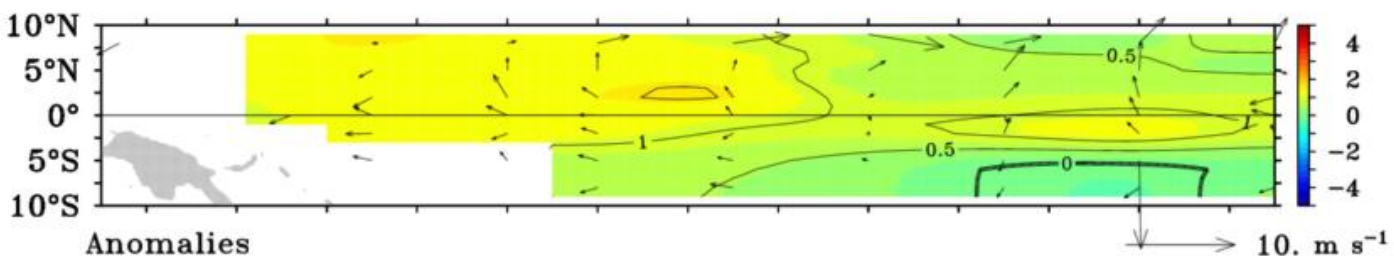
Oct 16 2018

TAO/TRITON Five-Day Data Ending On October 15 2018

SST (°C) and Wind



**SST anomalies >
0.5C overtake most
of the basin.**



Trade winds (negative values/easterly) weaken substantially

Anomalous westerlies overtake the basin

Warm water spreads over the Pacific basin

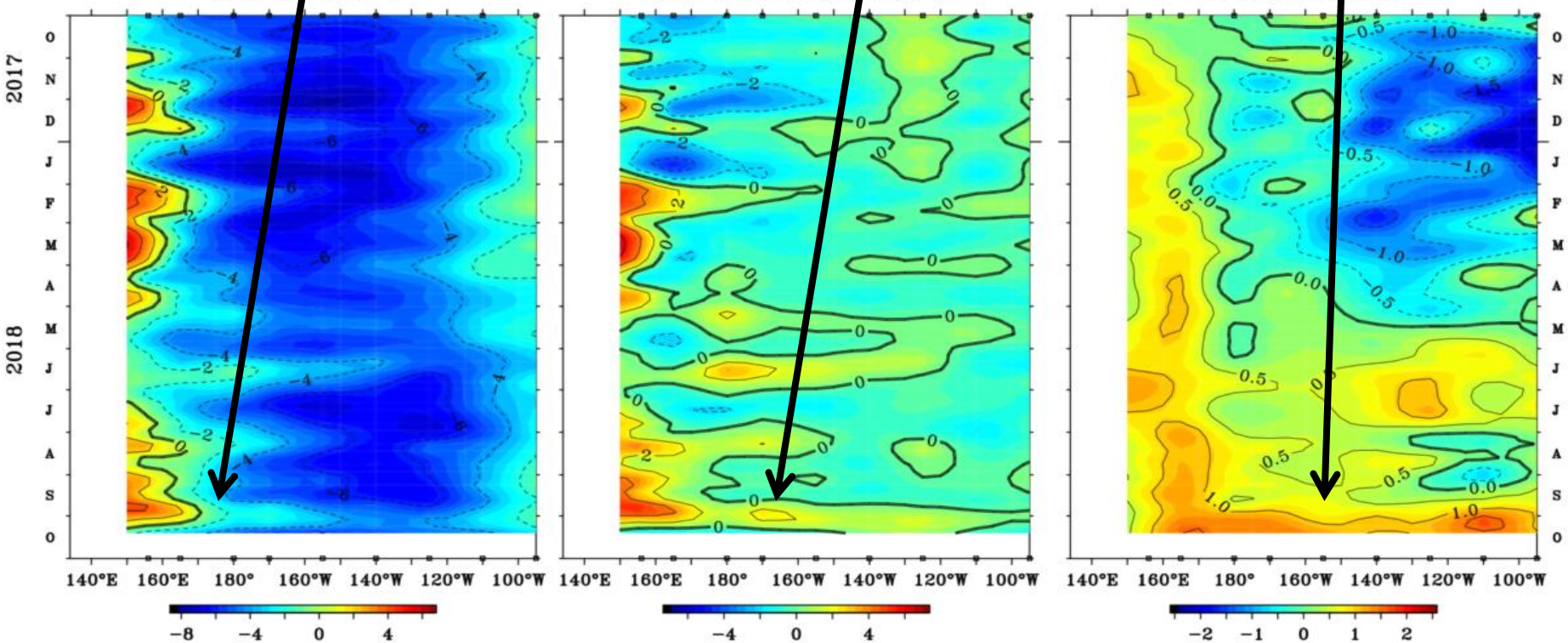
Five-Day Zonal Wind and 20°C Iso

Five-Day Zonal Wind and SST 2°S to 2°N Average

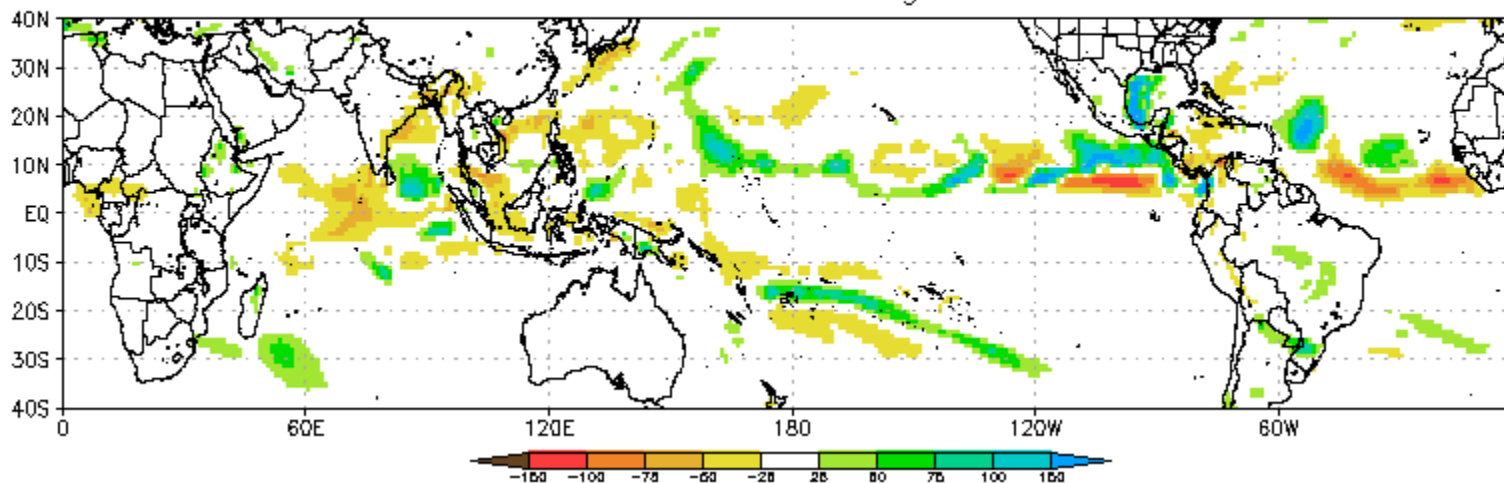
Zonal Wind (m s^{-1})

Zonal Wind Anomalies (m s^{-1})

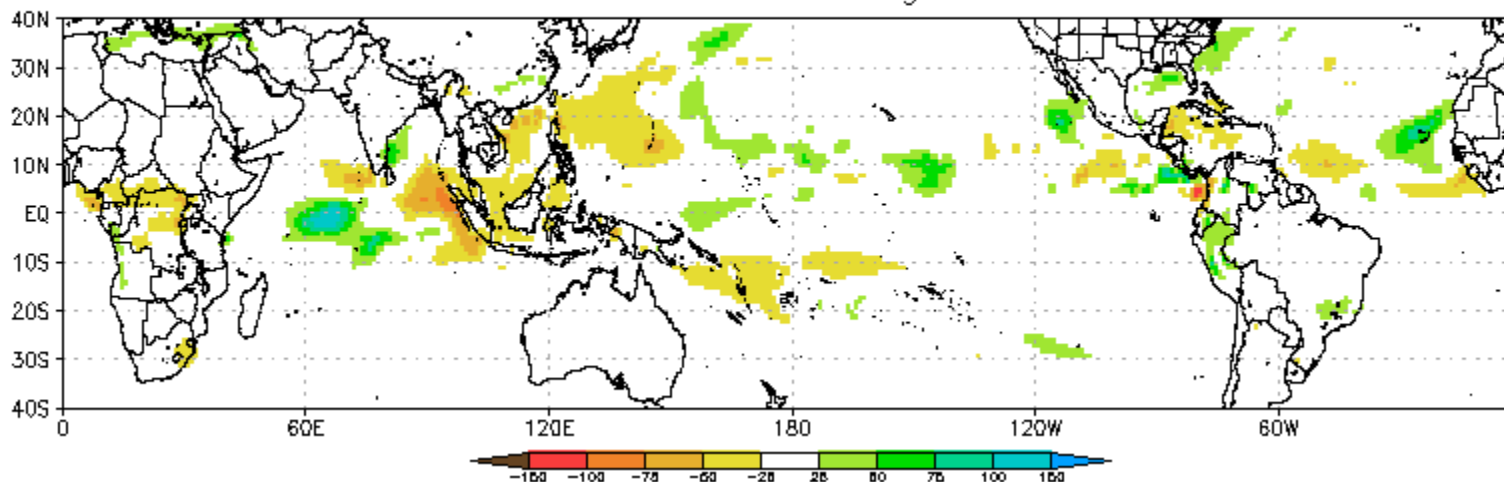
SST Anomalies ($^{\circ}\text{C}$)



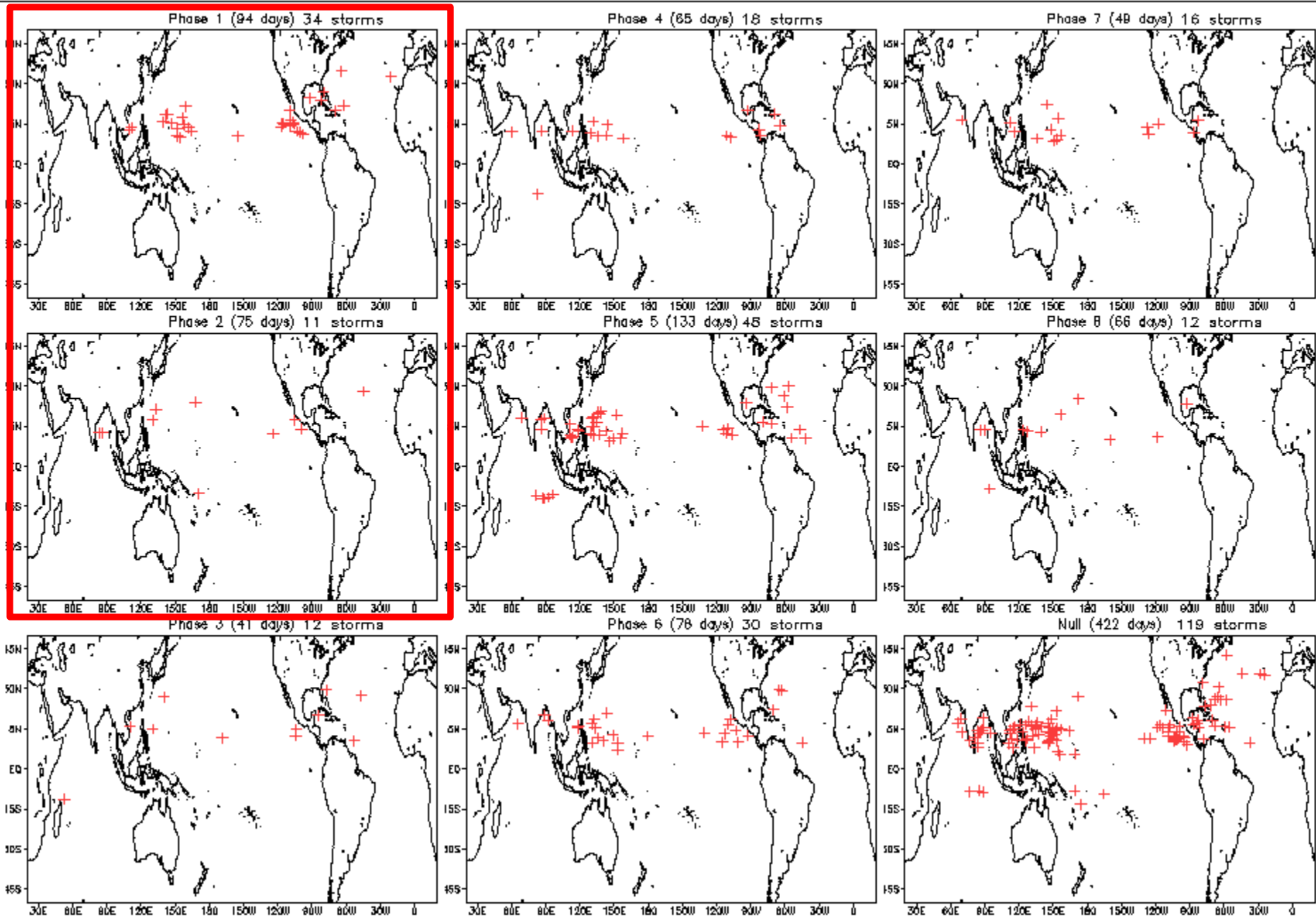
CFS Precipitation Anomalies (mm) Issued 15Oct2018
Week-1 Forecast Ending 23Oct2018



CFS Precipitation Anomalies (mm) Issued 15Oct2018
Week-2 Forecast Ending 30Oct2018



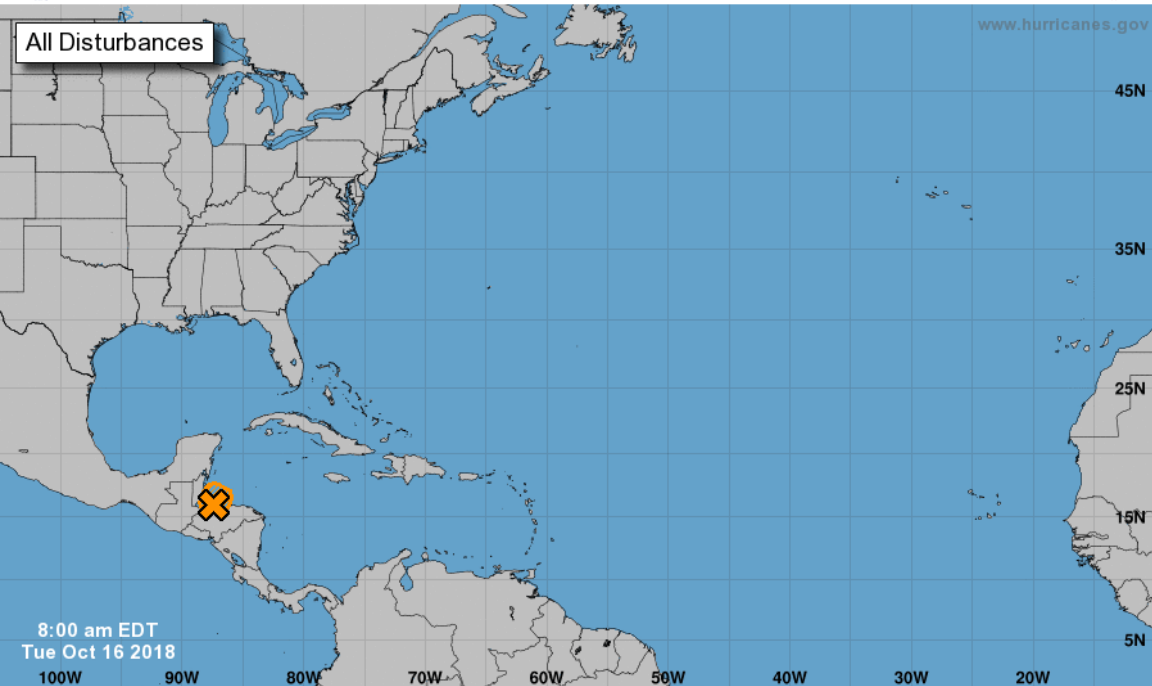
October Tropical Storm Formation by MJO phase





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



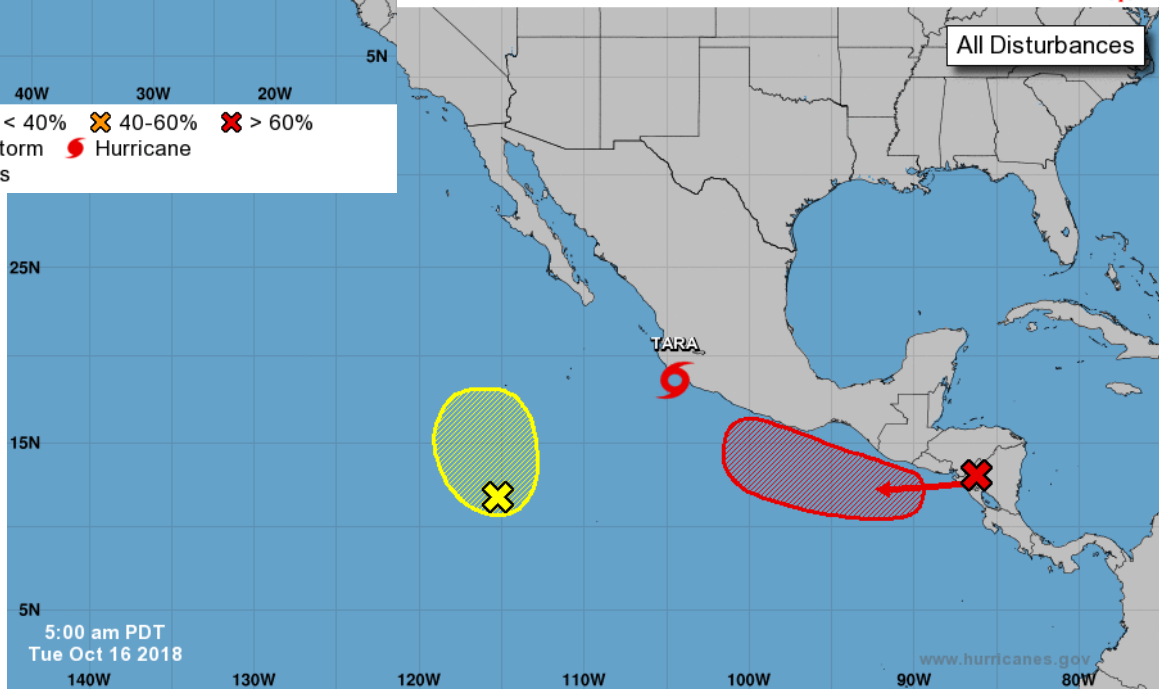
Current Disturbances and Five-Day Cyclone Formation Chance: X < 40% X 40-60% X > 60%

Tropical or Sub-Tropical Cyclone: ○ Depression ◉ Storm ◉ Hurricane

⊗ Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

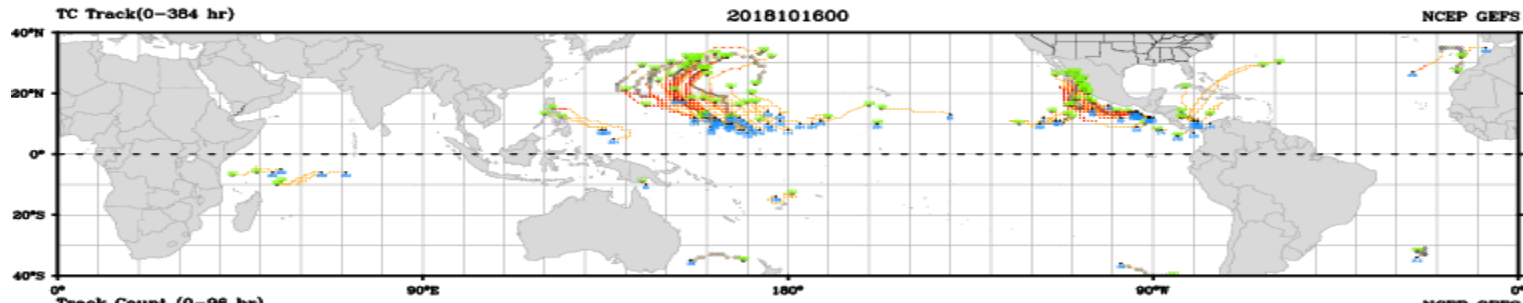


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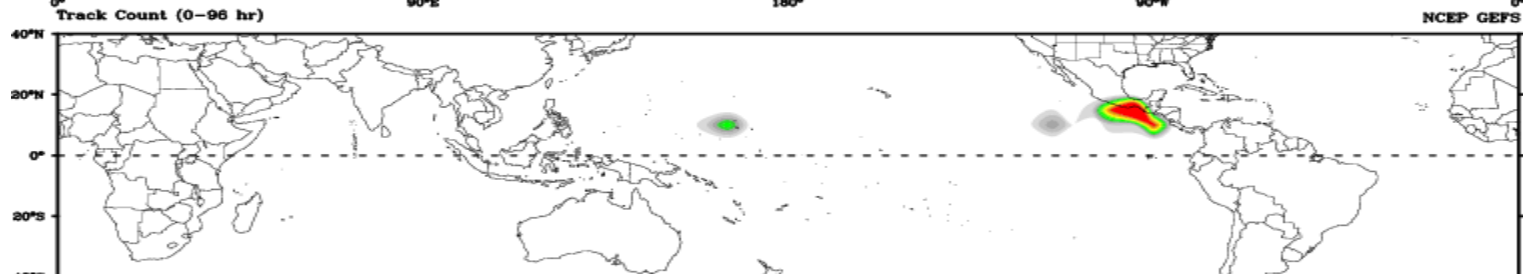
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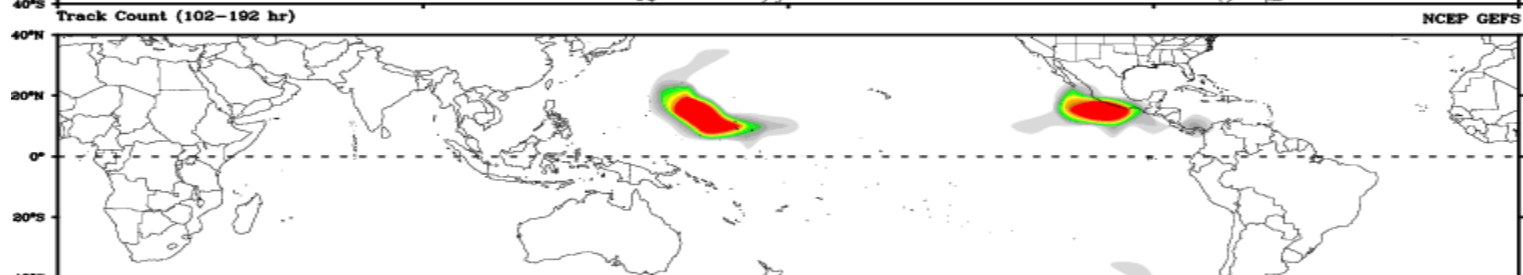
2018101600



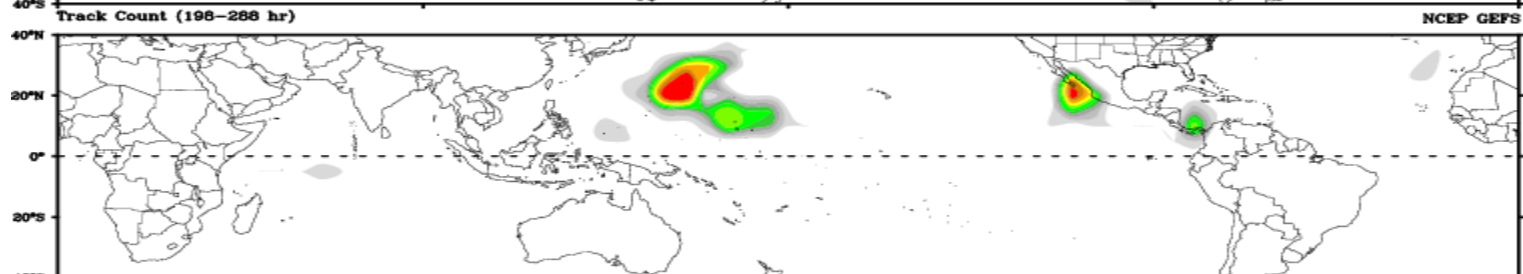
Days 1-4



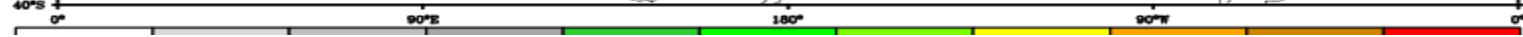
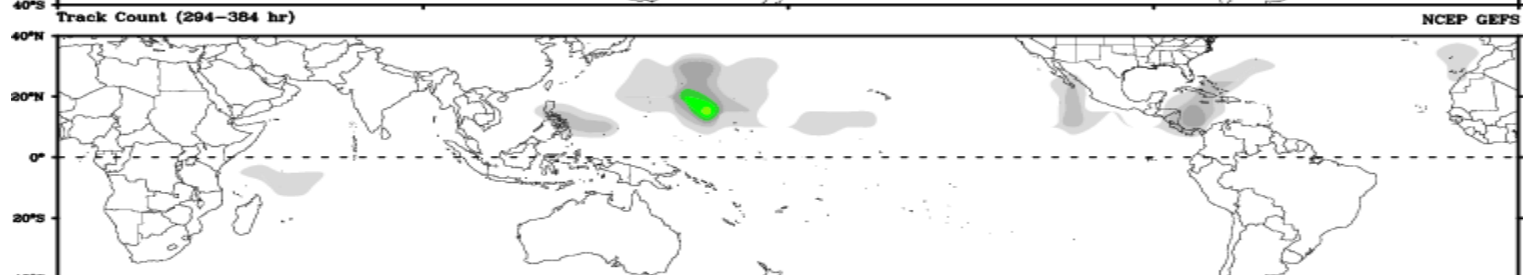
Day 5-8



Day 9-12

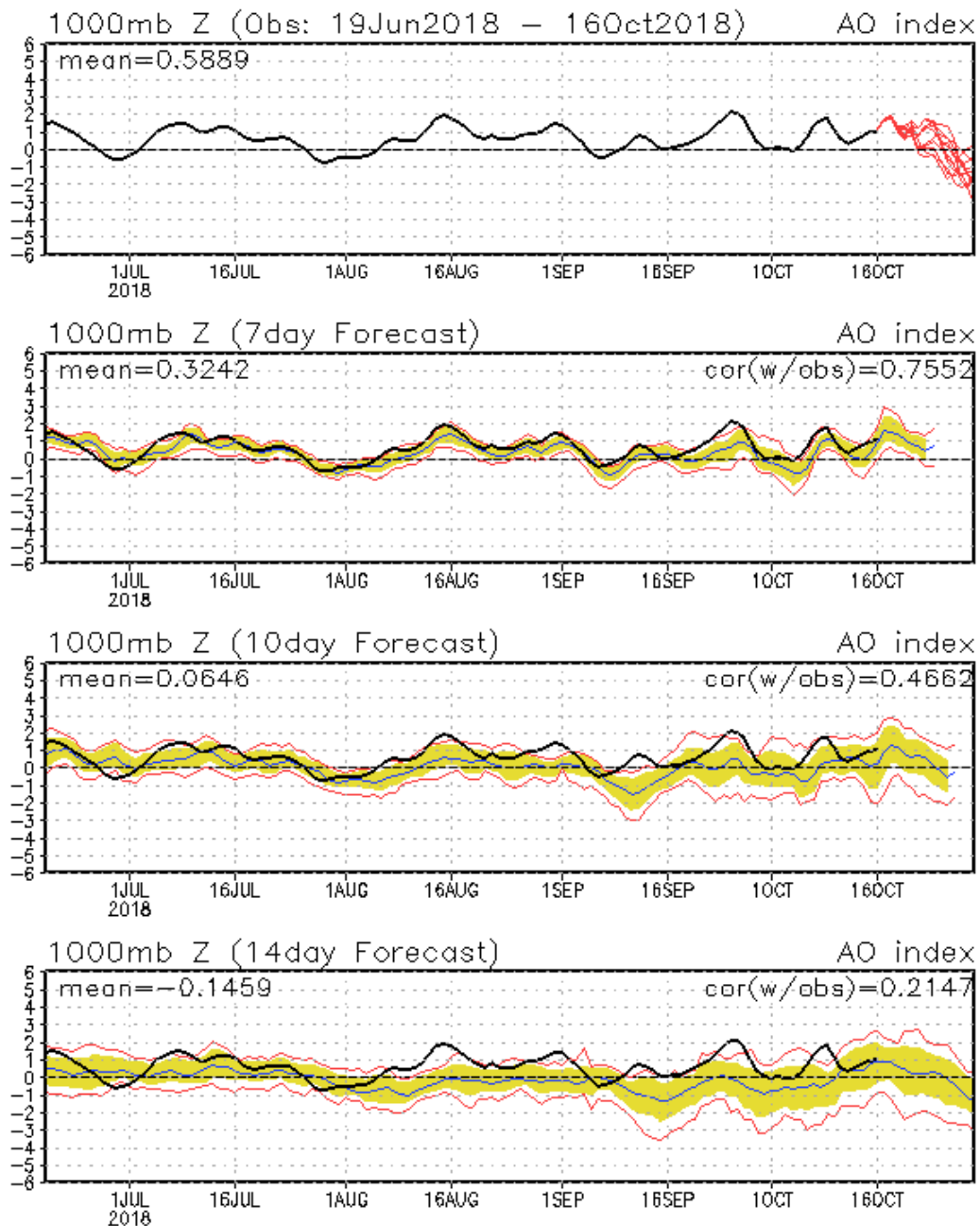


Day 13-15



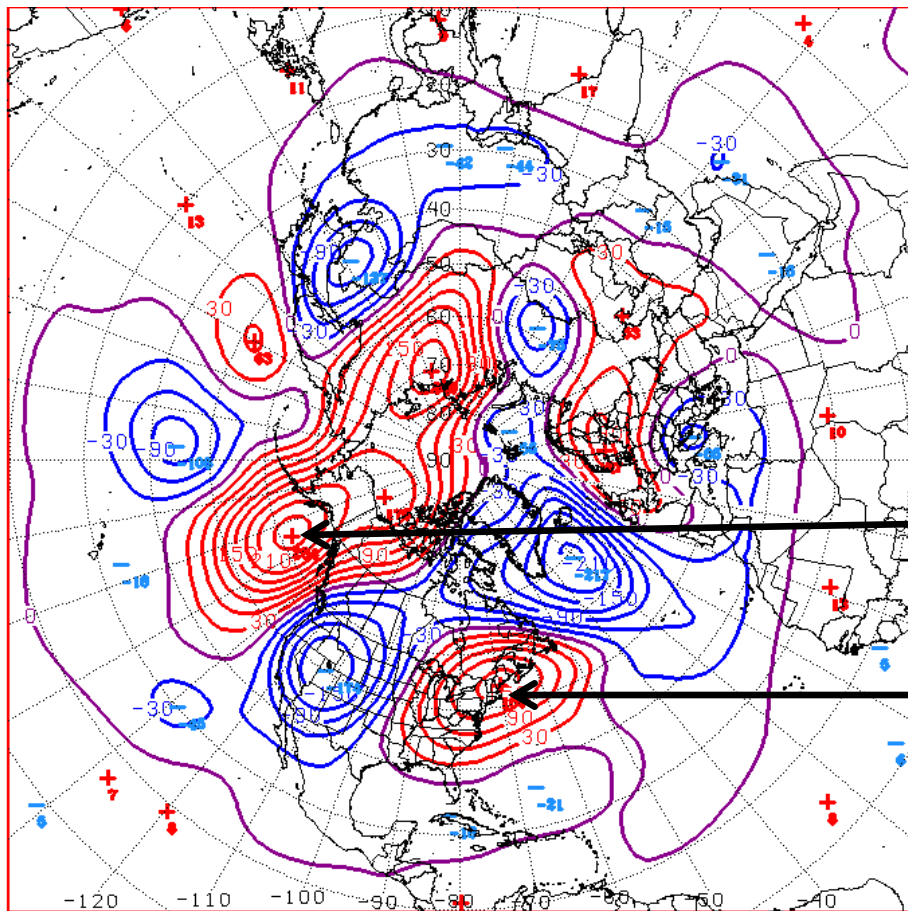
Connections to U.S. Impacts

AO: Observed & ENSM forecasts



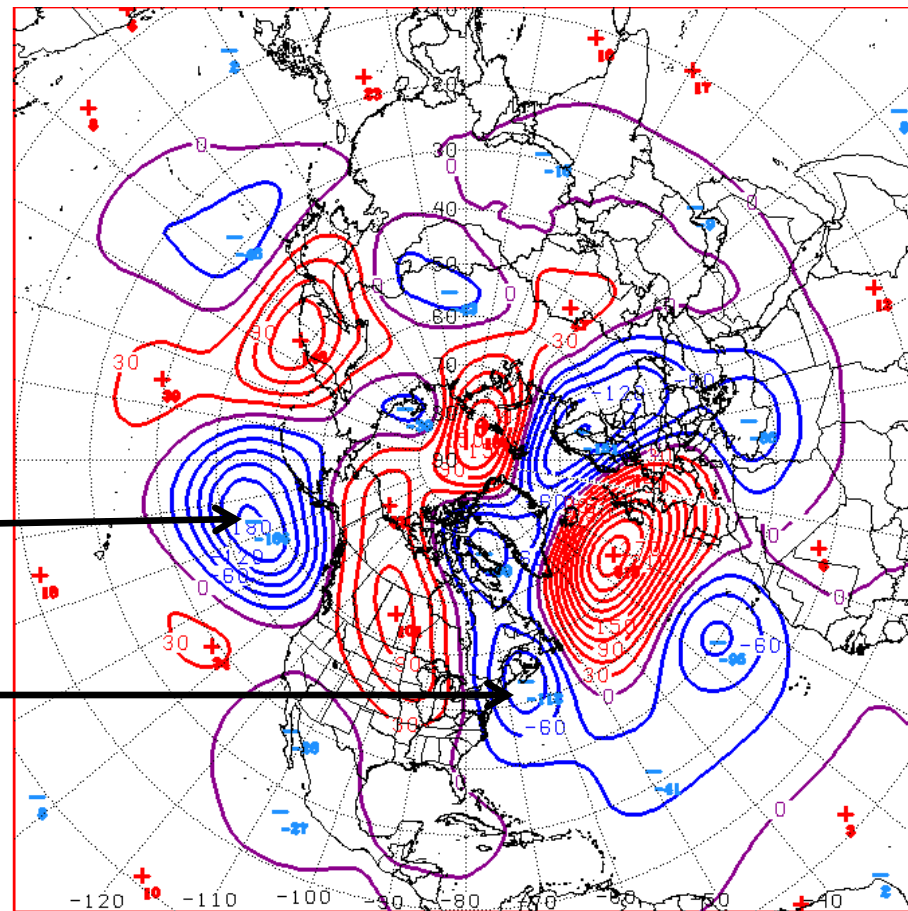
GFS Ensemble 500-hPa Height Anomalies

October 1, 2018 Forecast



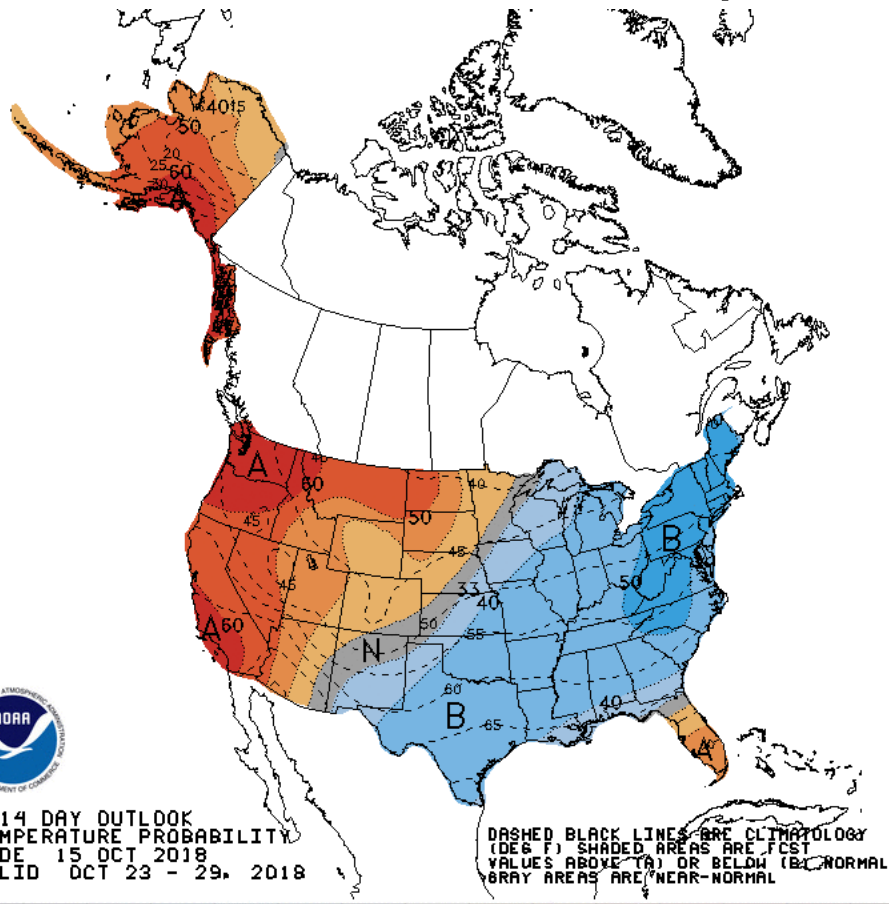
D+8 500 MB ANOMALIES FROM 06Z ENSM
CPC MAP MADE OCT 01 2018 1155 UTC CNTD OCT 09 2018

October 16, 2018 Forecast



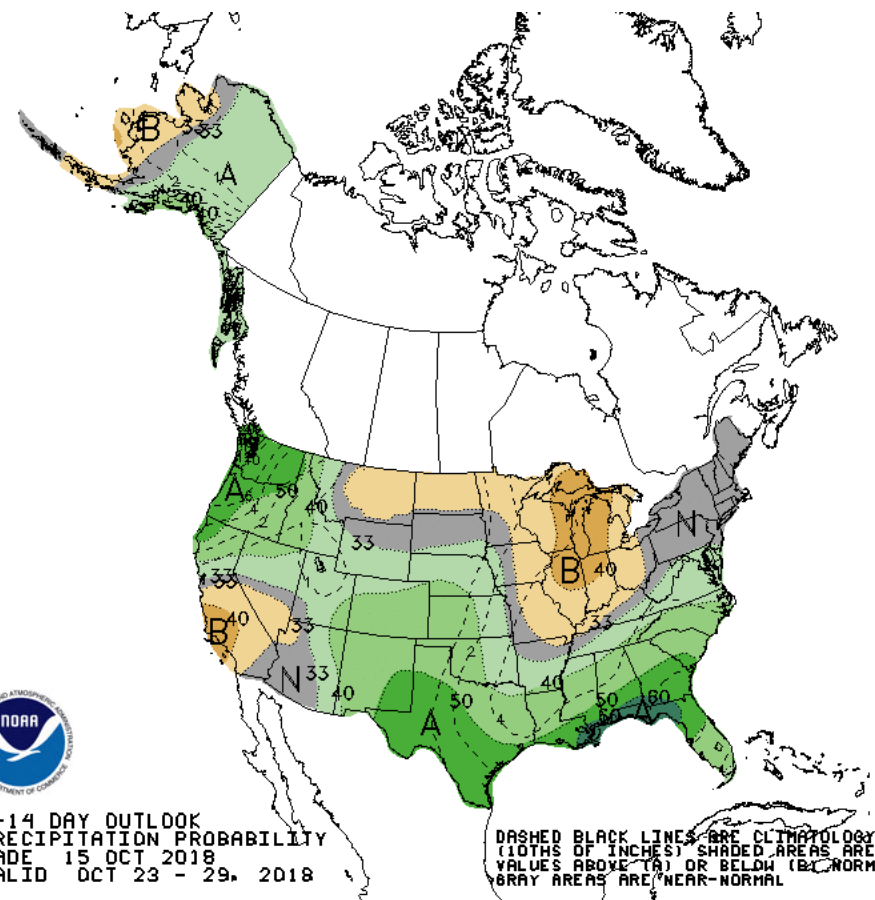
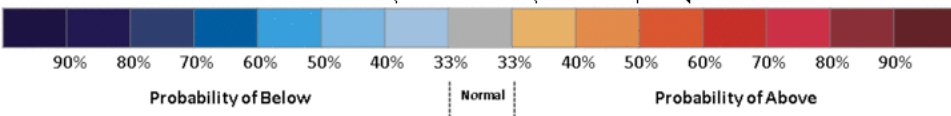
D+8 500 MB ANOMALIES FROM 06Z ENSM
CPC MAP MADE OCT 16 2018 1201 UTC CNTD OCT 24 2018

Week 2 – Temperature and Precipitation



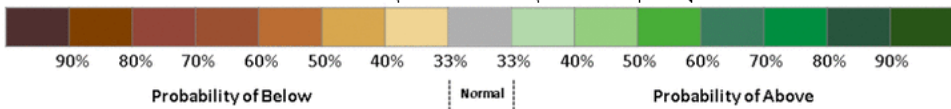
8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 15 OCT 2018
VALID OCT 23 - 29, 2018

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 15 OCT 2018
VALID OCT 23 - 29, 2018

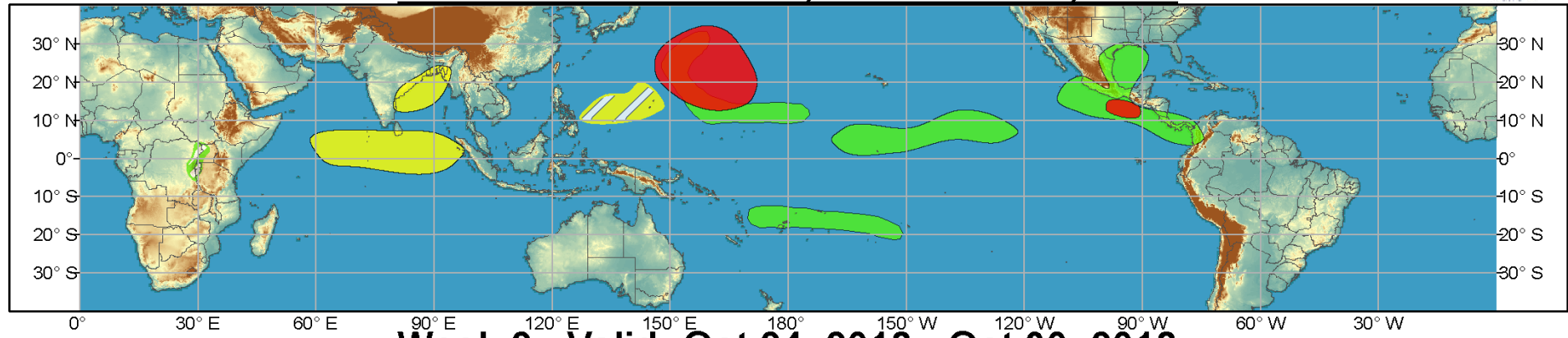
DASHED BLACK LINES ARE CLIMATOLOGY (10THS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



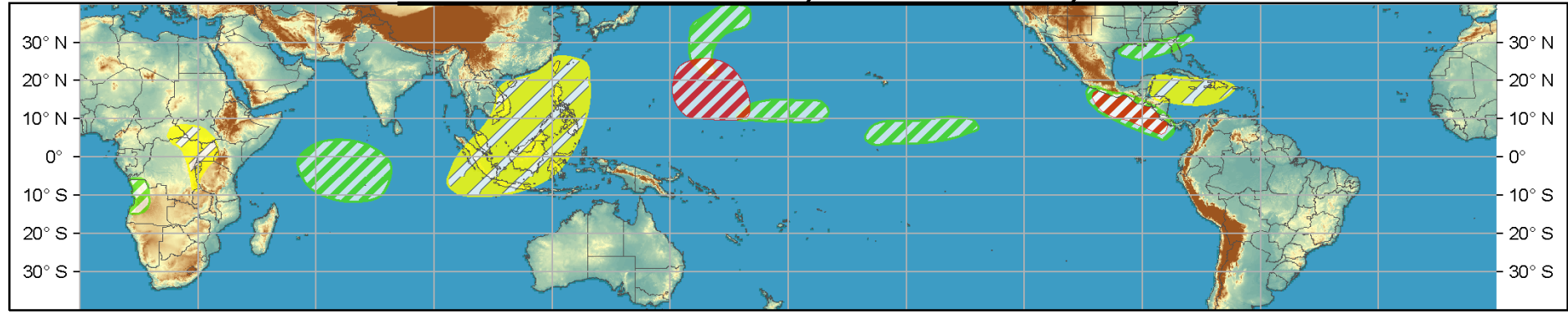


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