

Global Tropics Hazards And Benefits Outlook

7/9/2019

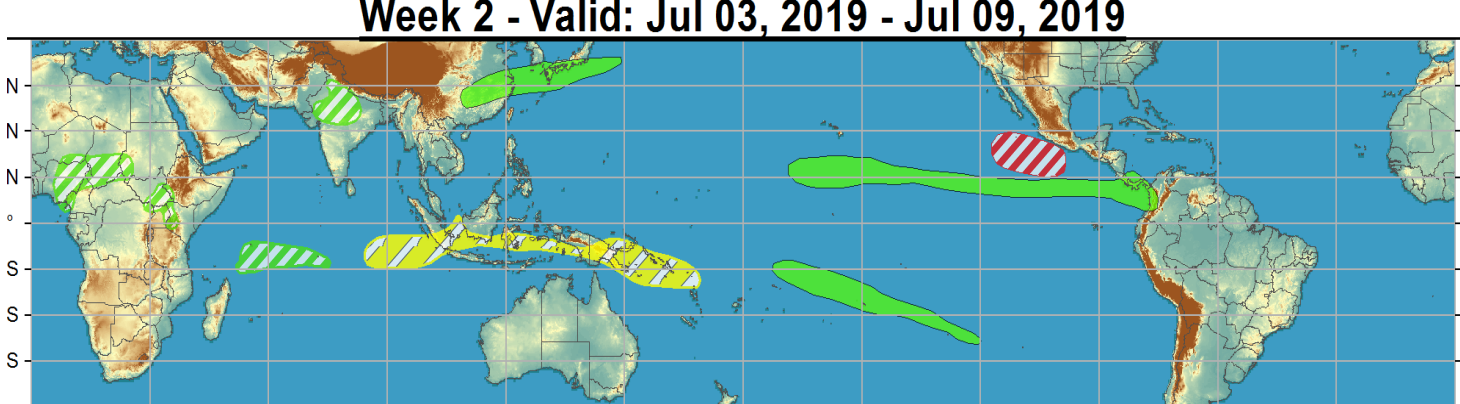
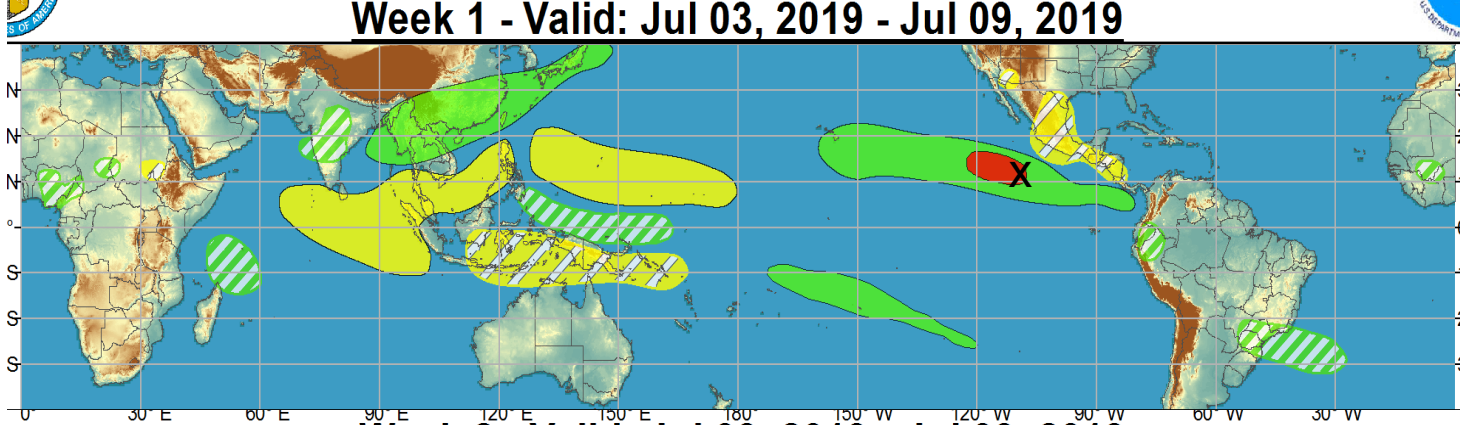
Kyle MacRitchie

Outline

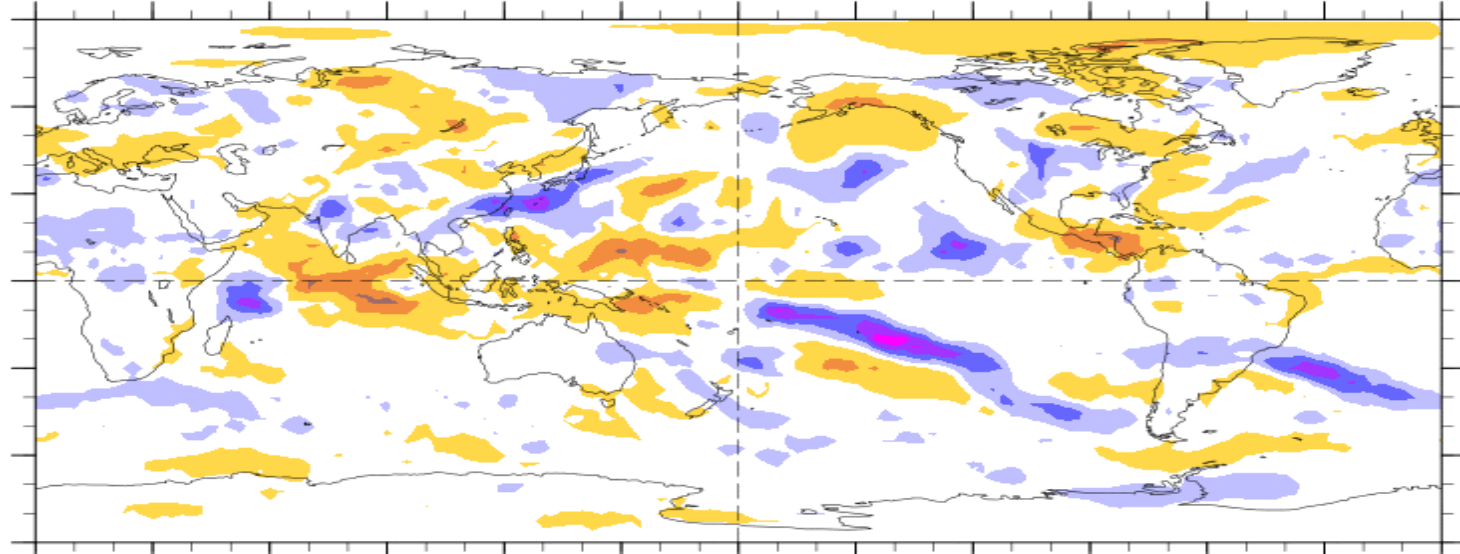
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

TS Cosme
7/6 to 7/7



7-Day Average OLR Anomaly 2019/07/01 - 2019/07/07



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (June 13, 2019 Update – next update on Thursday, July 11)

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño is predicted to persist through the Northern Hemisphere summer 2019 (66% chance), though there is considerable uncertainty beyond that.

MJO and other subseasonal tropical variability:

- The MJO was weak last week and remains weak this week.
- Equatorial Rossby wave interference has caused the RMM index to show an MJO in Phase 1.
- Most models suggest that the RMM MJO signal will weaken as the Rossby wave moves out over the coming days.

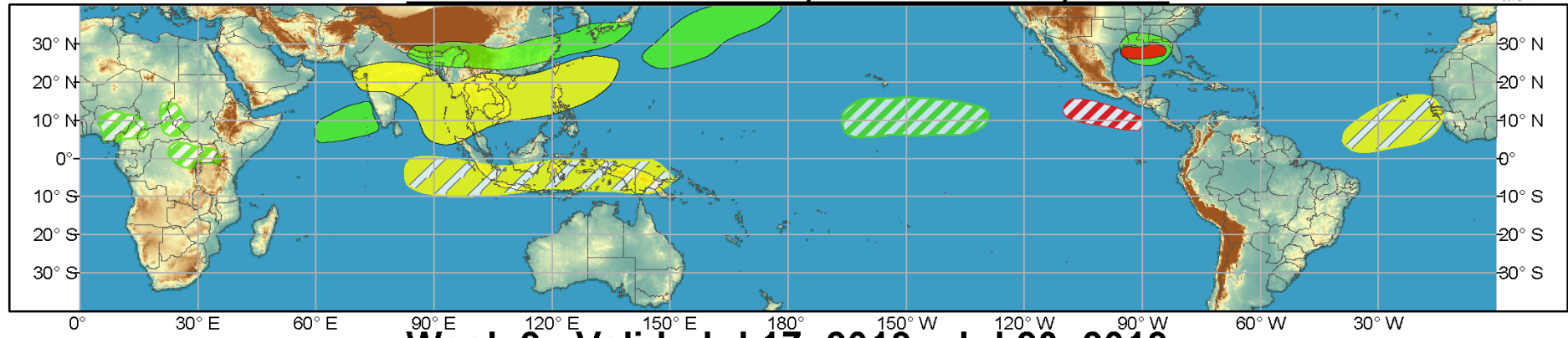
Impacts:

- An MJO in Phase 1 or 2 would support enhanced probabilities of TC formation in the eastern and western Pacific basins.

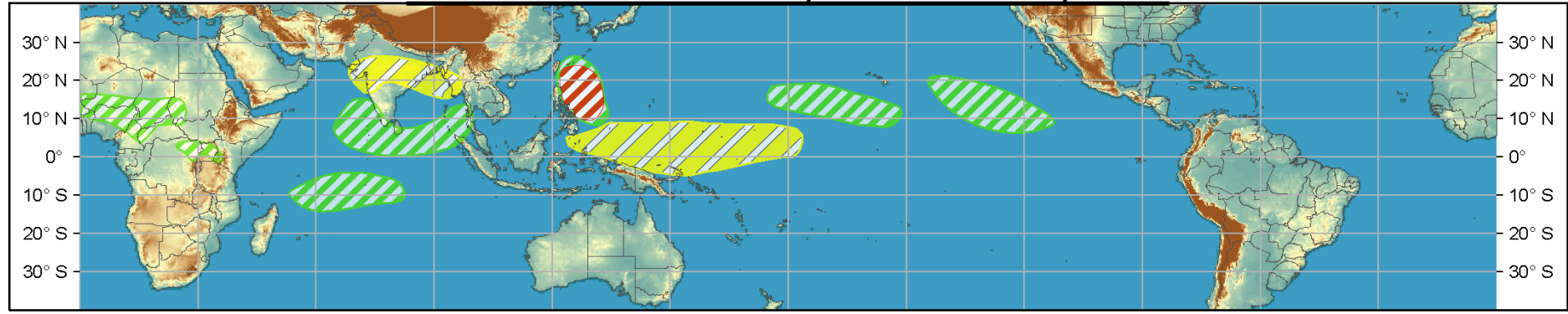


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jul 10, 2019 - Jul 16, 2019



Week 2 - Valid: Jul 17, 2019 - Jul 23, 2019



Confidence
High Moderate

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- 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: 07/09/2019

Forecaster: MacRitchie

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.



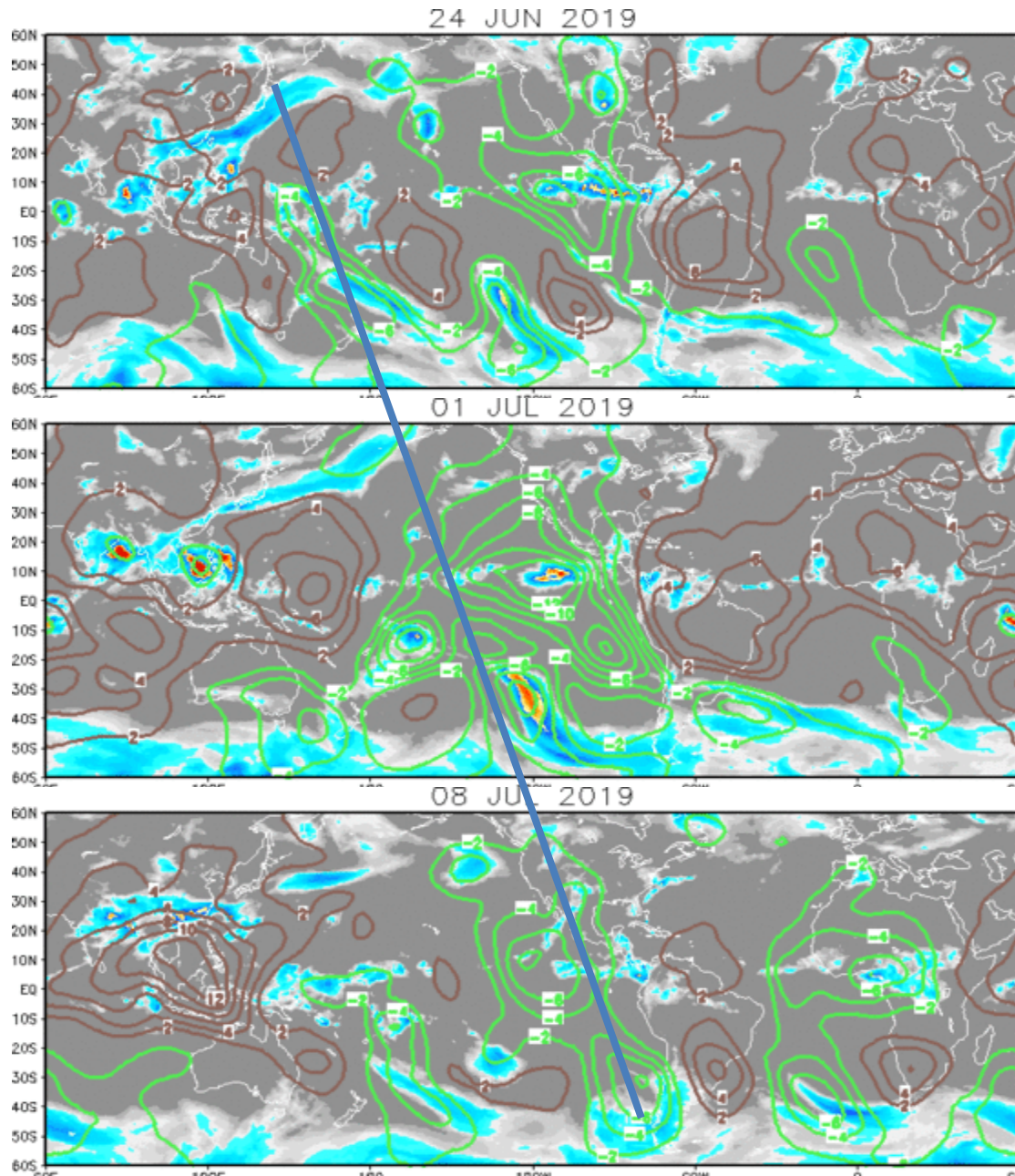
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence

Brown: Enhanced Convergence

Broad Wave-1 features present, but interference from other modes is apparent.

The MJO's suppressed convective region over the Maritime Continent is stronger in the VP field than its enhanced convective region.

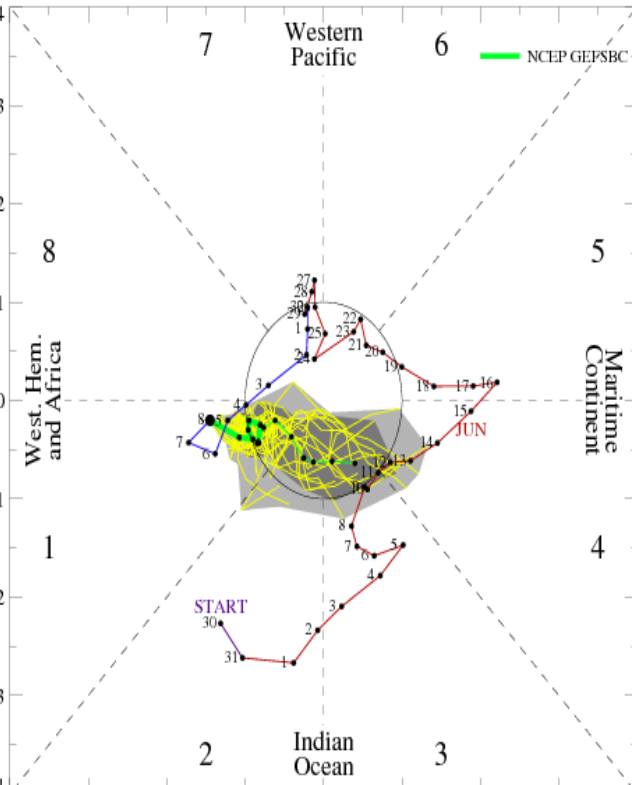


MJO Observation/Forecast

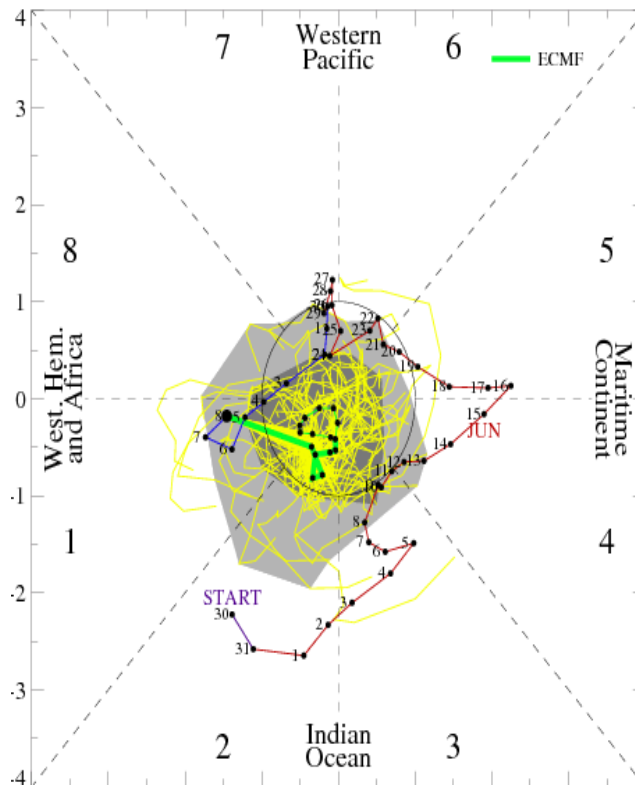
[RMM1, RMM2] forecast for Jul-09-2019 to Jul-23-2019

MJO Index Forecast for 09Jul2019-23Jul2019

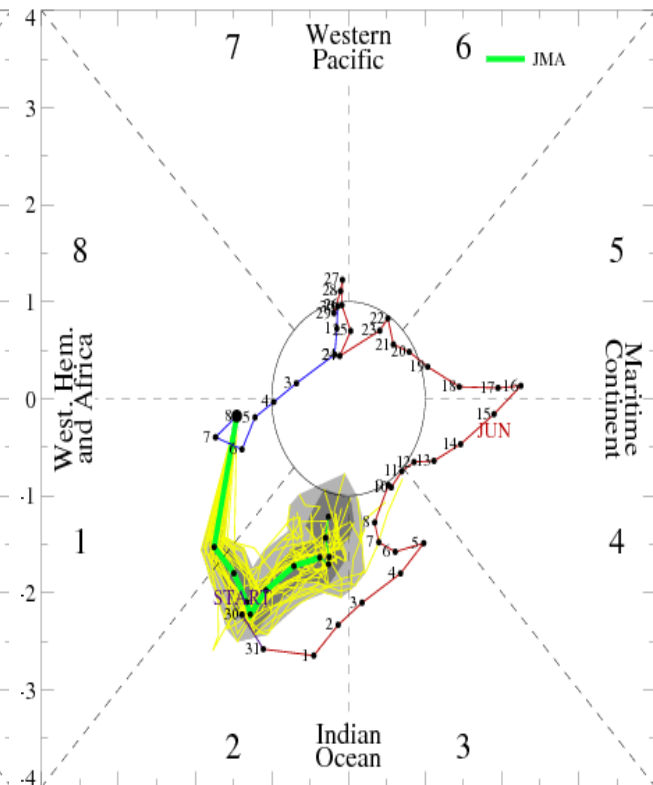
MJO Index Forecast for 09Jul2019-17Jul2019



GEFS



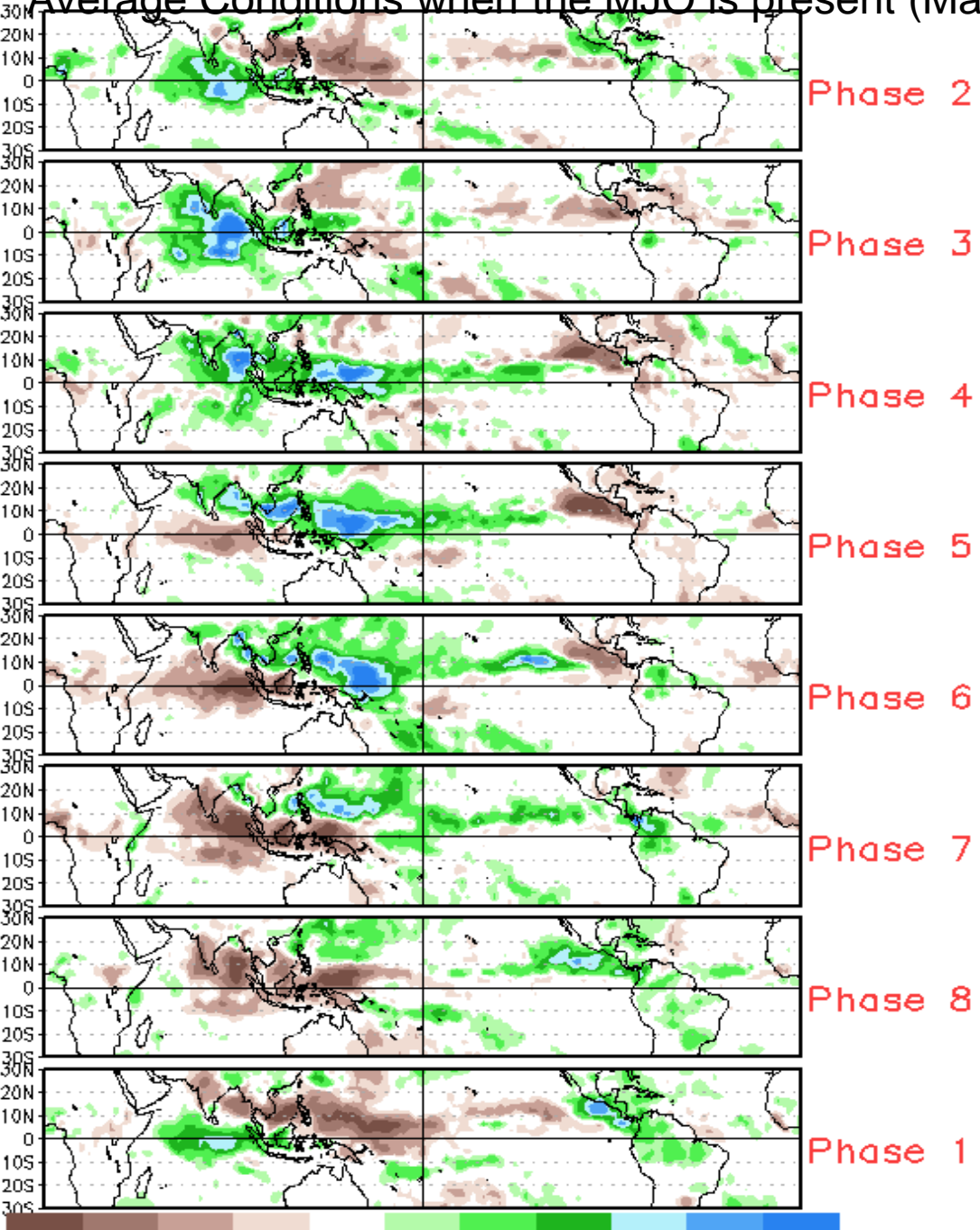
ECMWF



JMA

Ensemble means from GEFS and ECMWF suggest a weak MJO during the next two weeks. The JMA is the lone model suggesting a stronger Phase 1/2 MJO during the next 7 days.

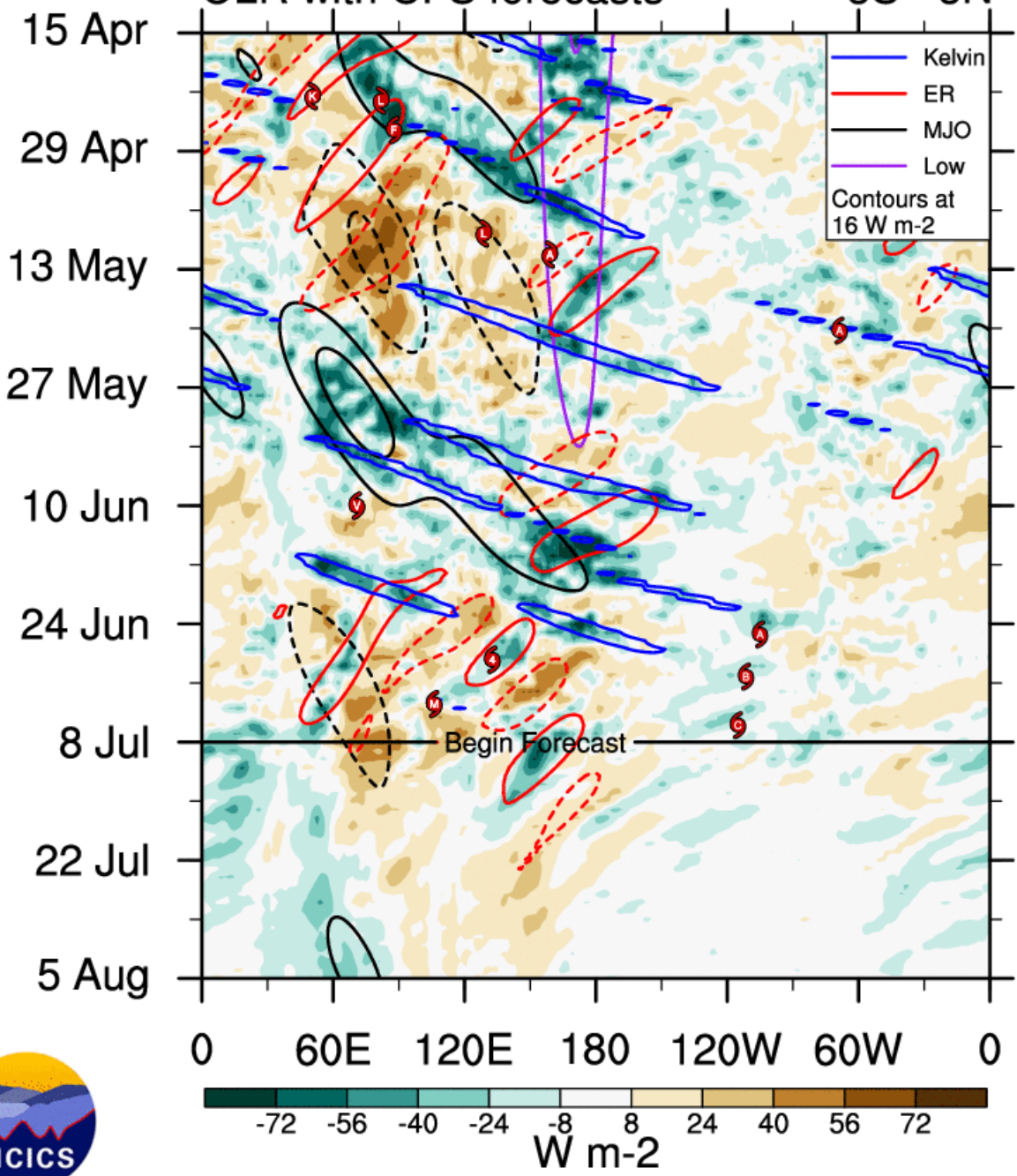
Average Conditions when the MJO is present (May – Sep)



CAVEAT: These panels are representative of robust MJO events.

OLR with CFS forecasts

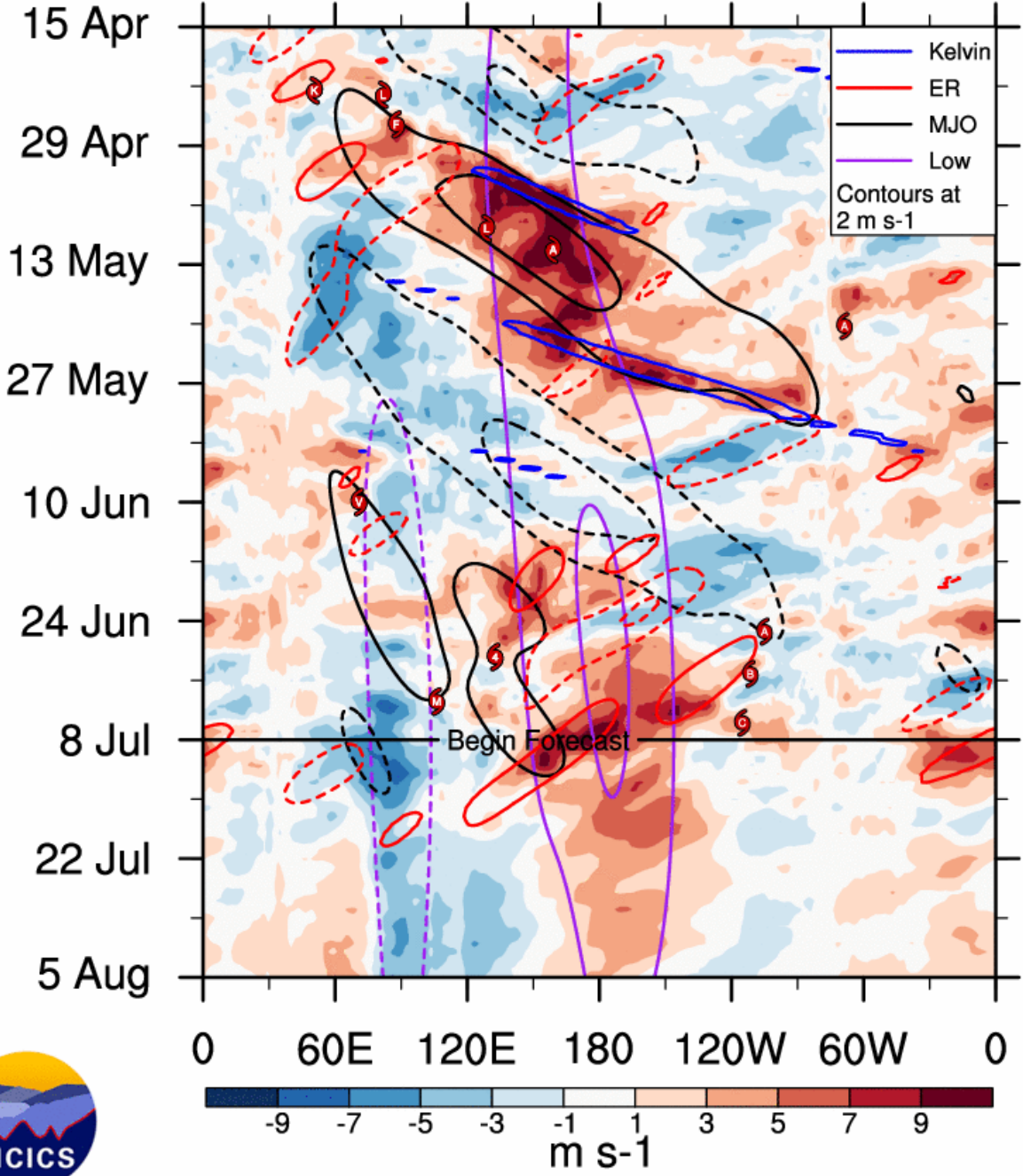
5S - 5N



Destructive interference between the **MJO** and the suppressed phase of a **Rossby wave** is apparent.

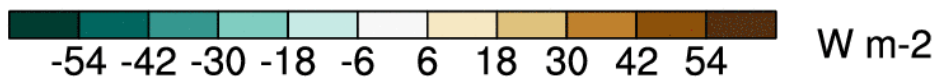
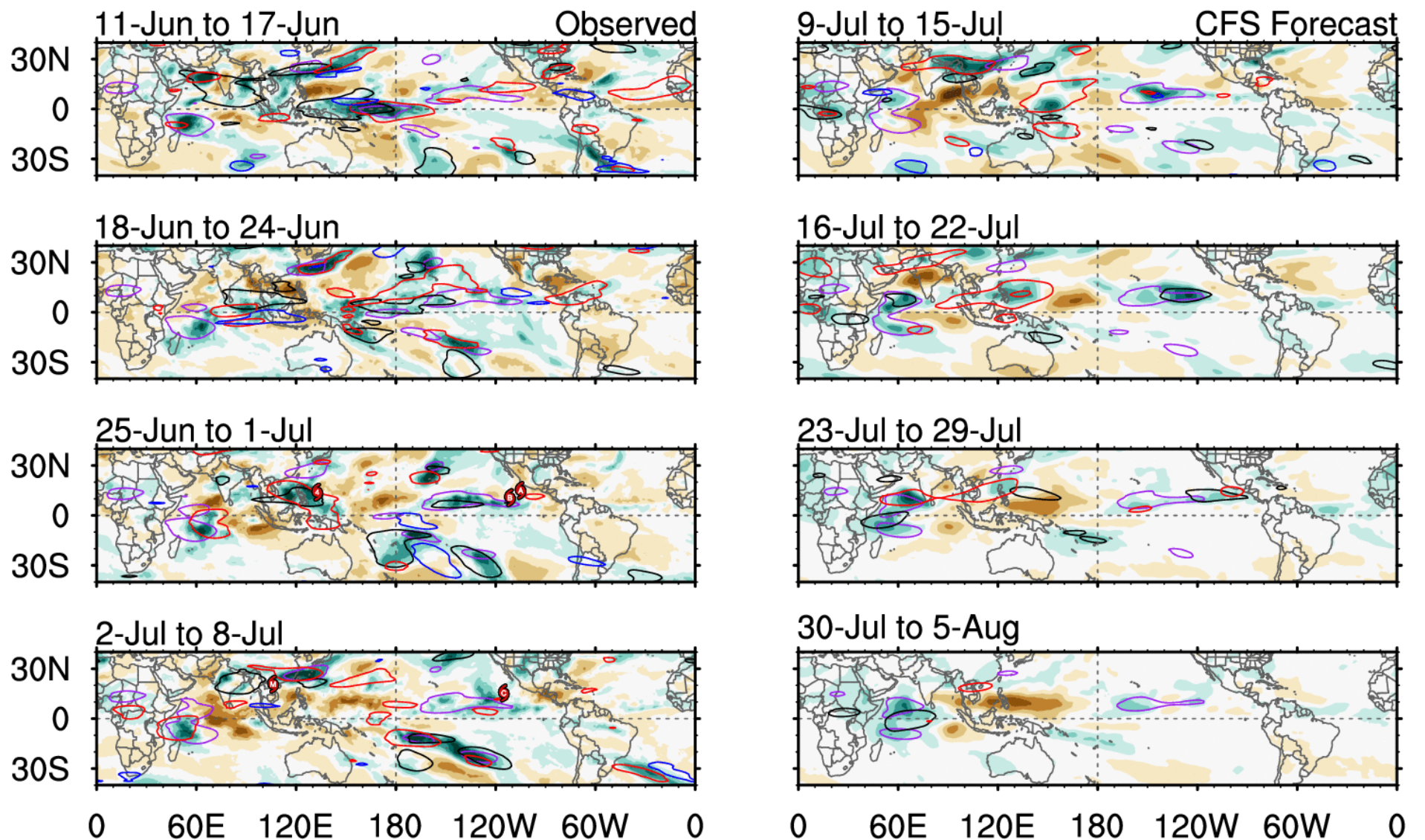


UWIND850 with CFS forecasts 5S - 5N



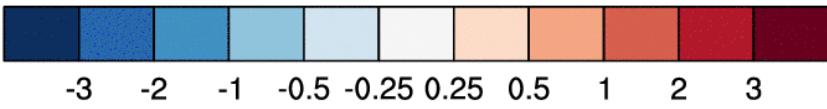
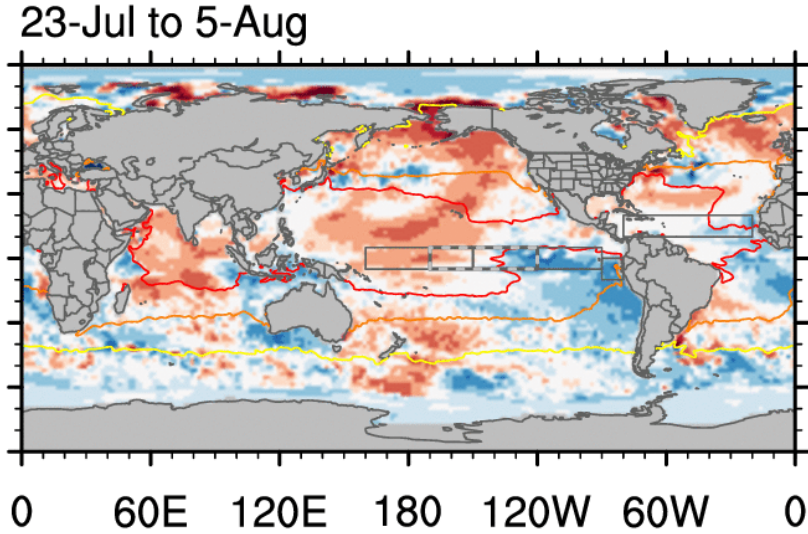
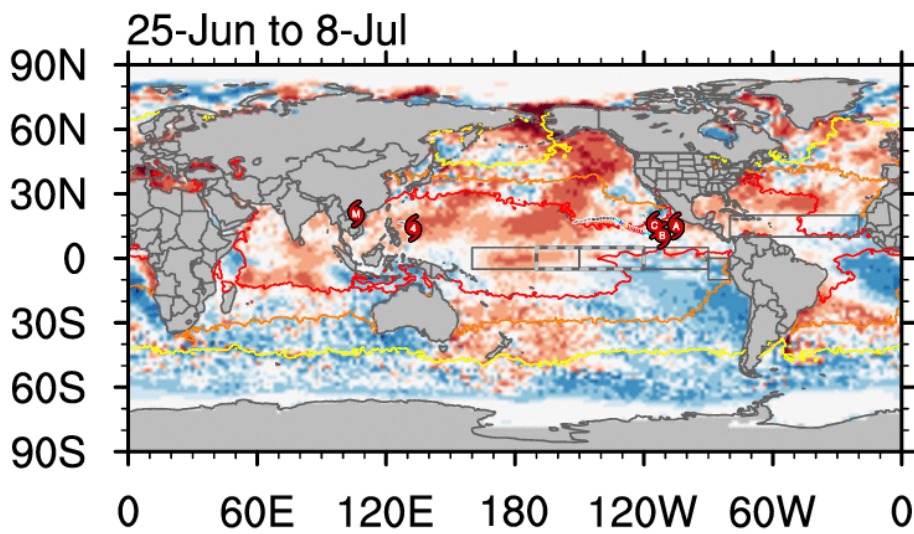
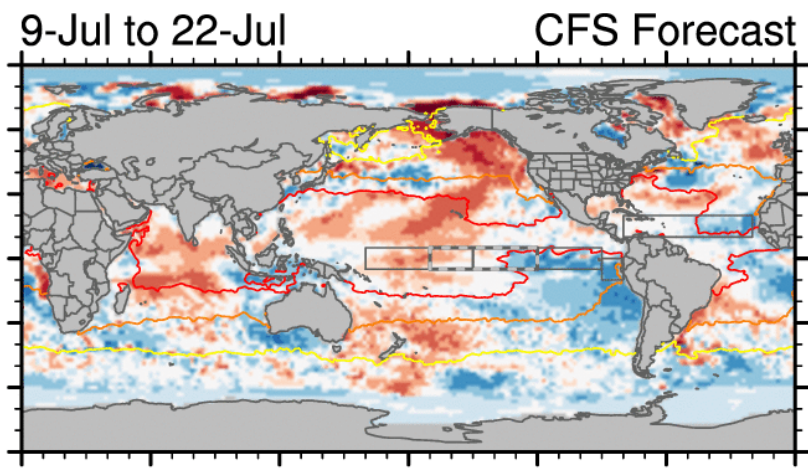
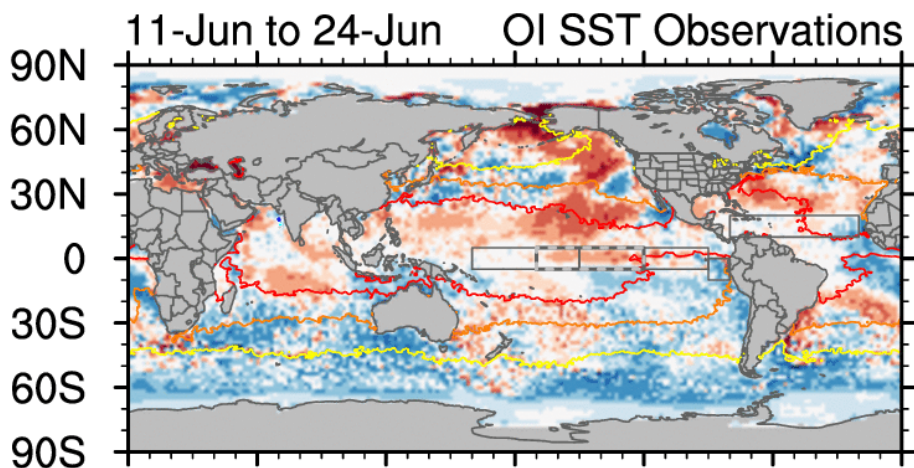
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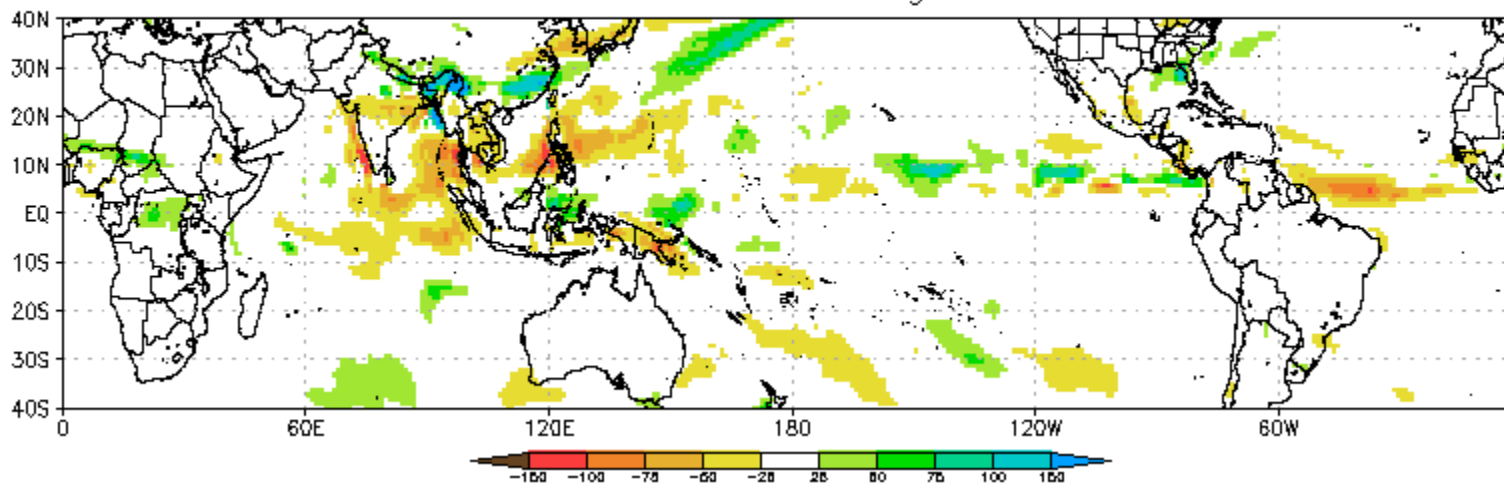
— MJO — Kelvin x2
 — Low — ER
 Contours at -12, -36 W m⁻²

7-day OLR with CFS forecasts

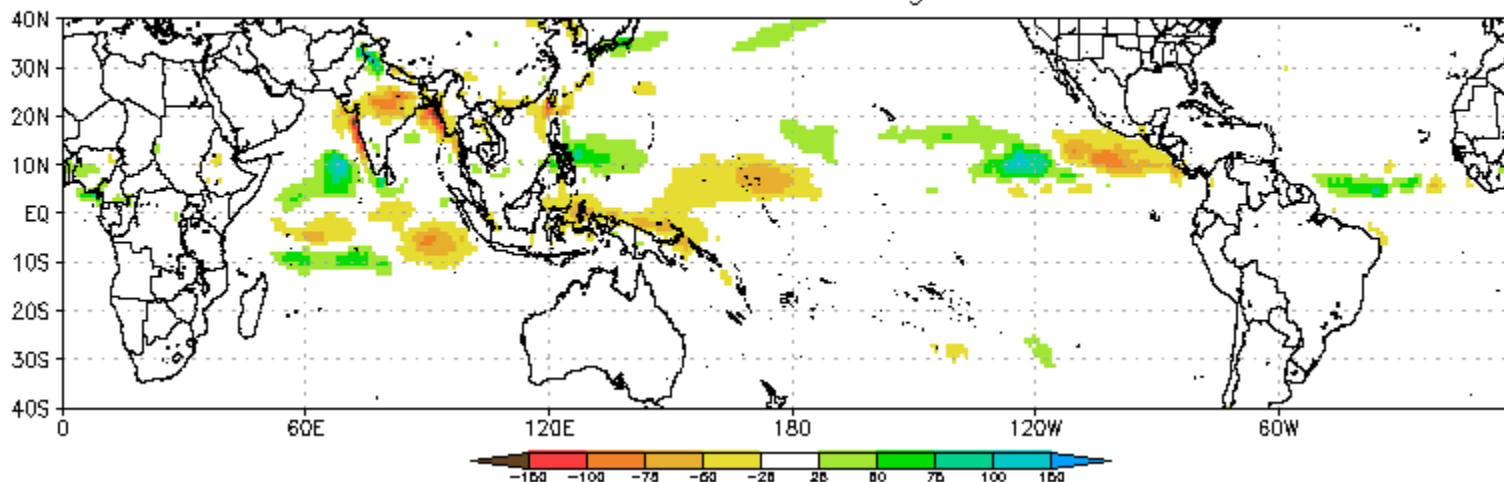


14-day SUB_TROPIC

CFS Precipitation Anomalies (mm) Issued 08Jul2019
Week-1 Forecast Ending 16Jul2019

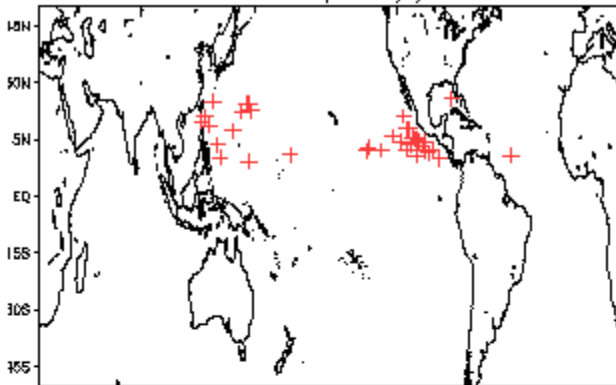


CFS Precipitation Anomalies (mm) Issued 08Jul2019
Week-2 Forecast Ending 23Jul2019

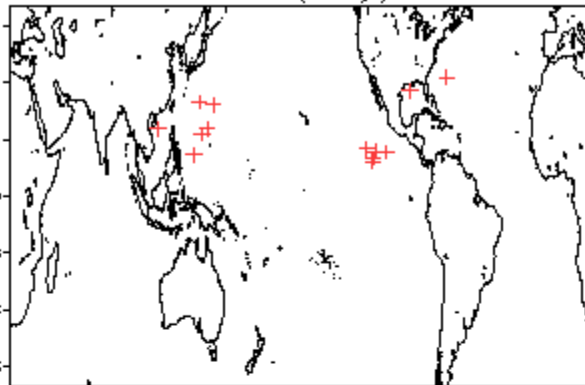


July Tropical Storm Formation by MJO phase

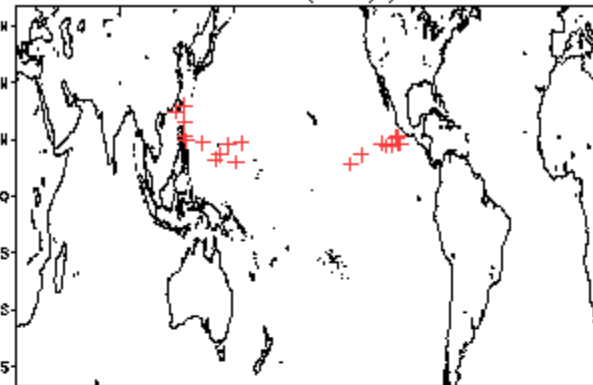
Phase 1 (144 days) 37 storms



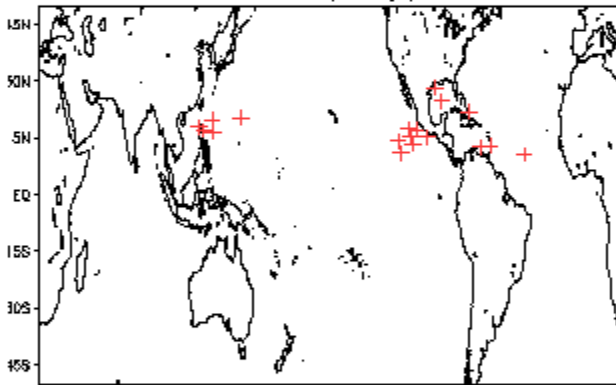
Phase 4 (40 days) 14 storms



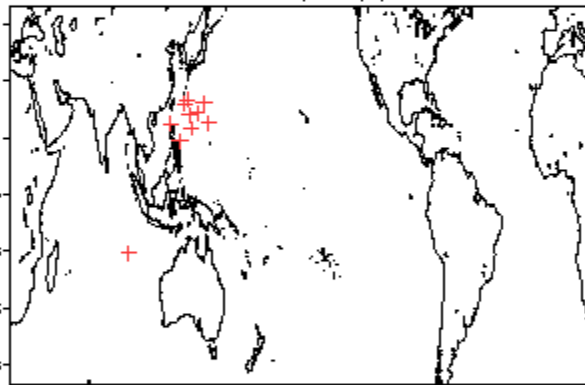
Phase 7 (87 days) 21 storms



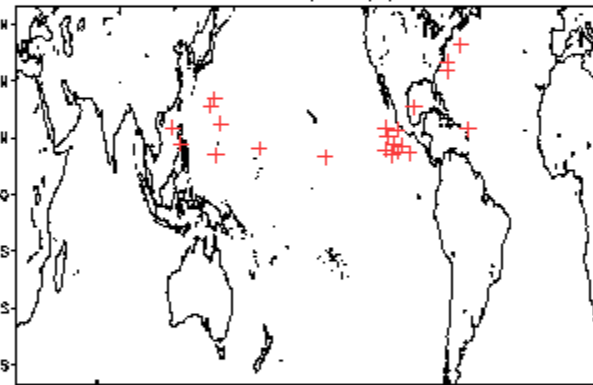
Phase 2 (74 days) 20 storms



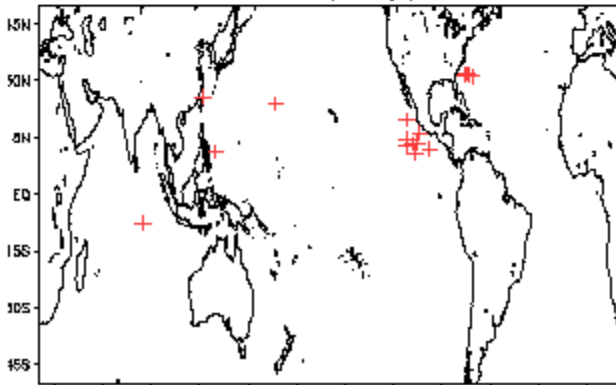
Phase 5 (63 days) 11 storms



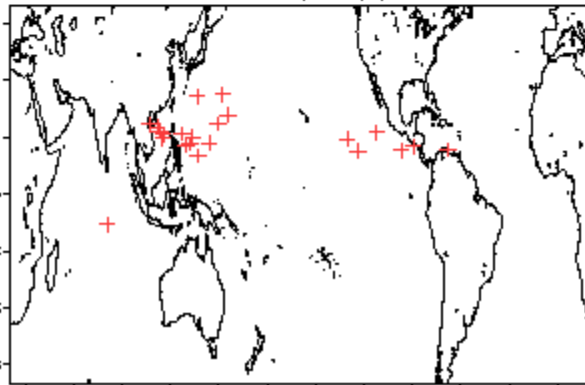
Phase 8 (61 days) 24 storms



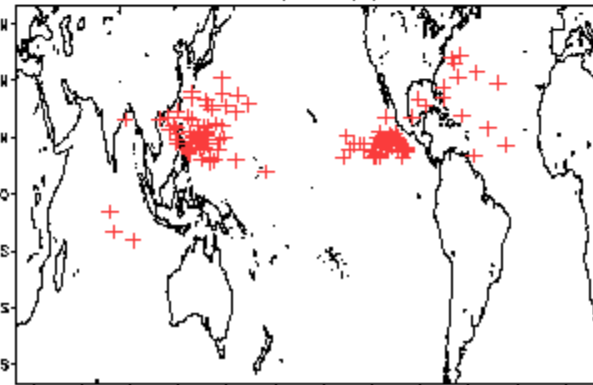
Phase 3 (49 days) 17 storms



Phase 6 (60 days) 23 storms



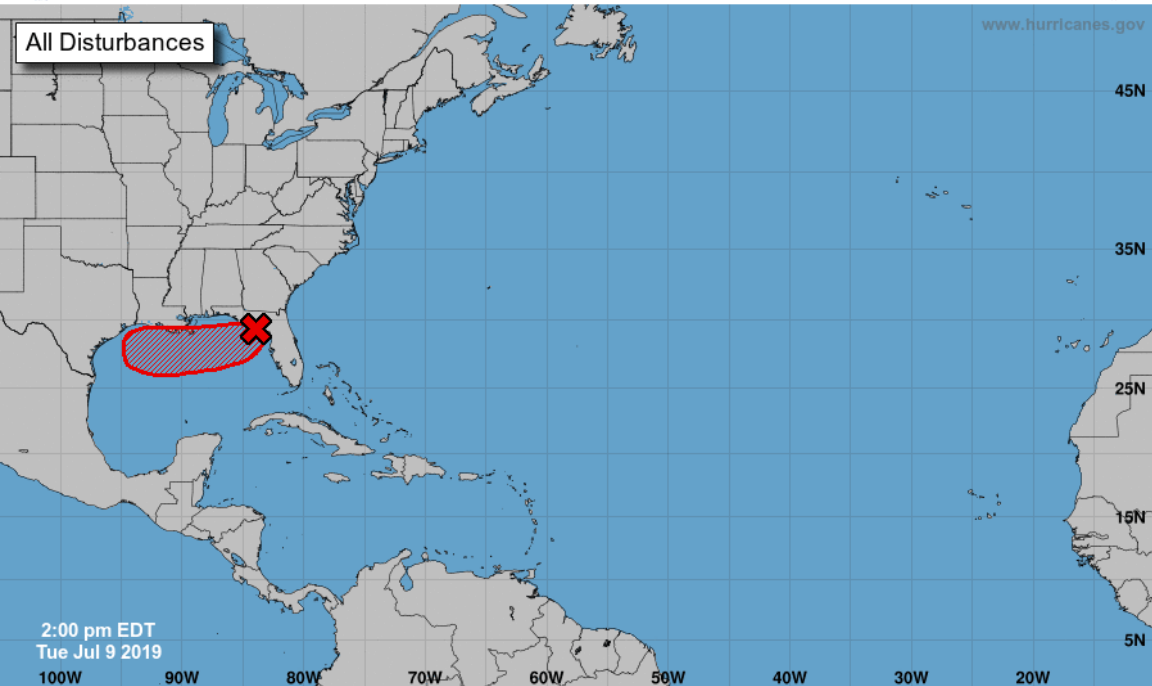
Null (480 days) 130 storms





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



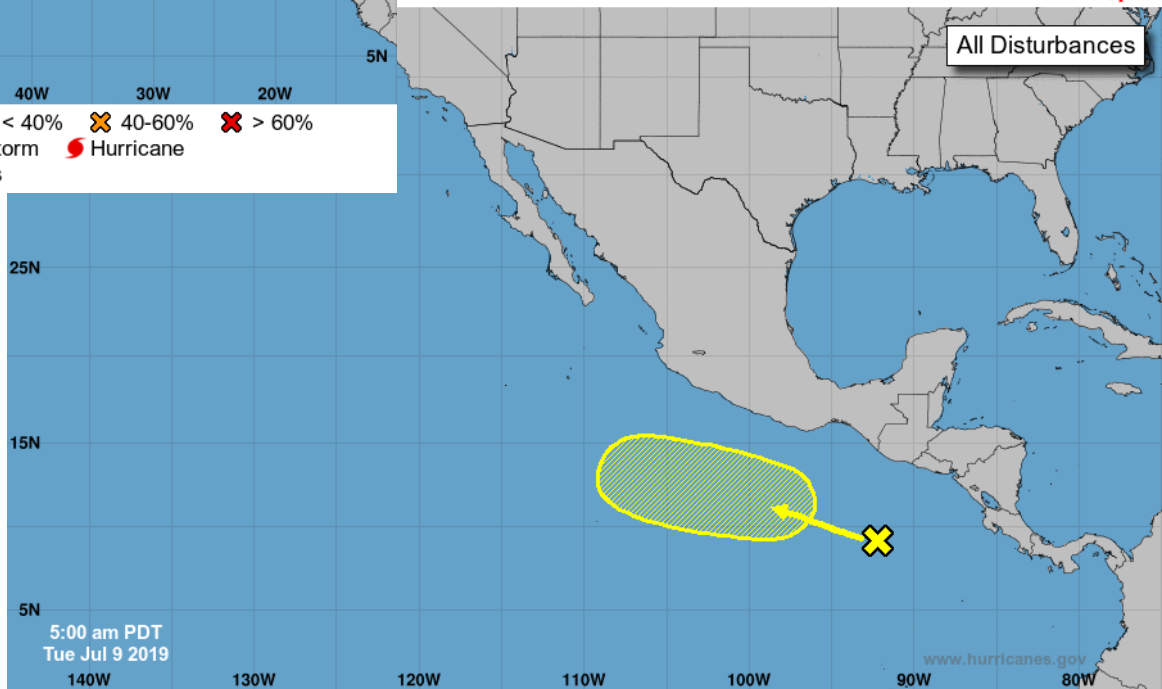
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

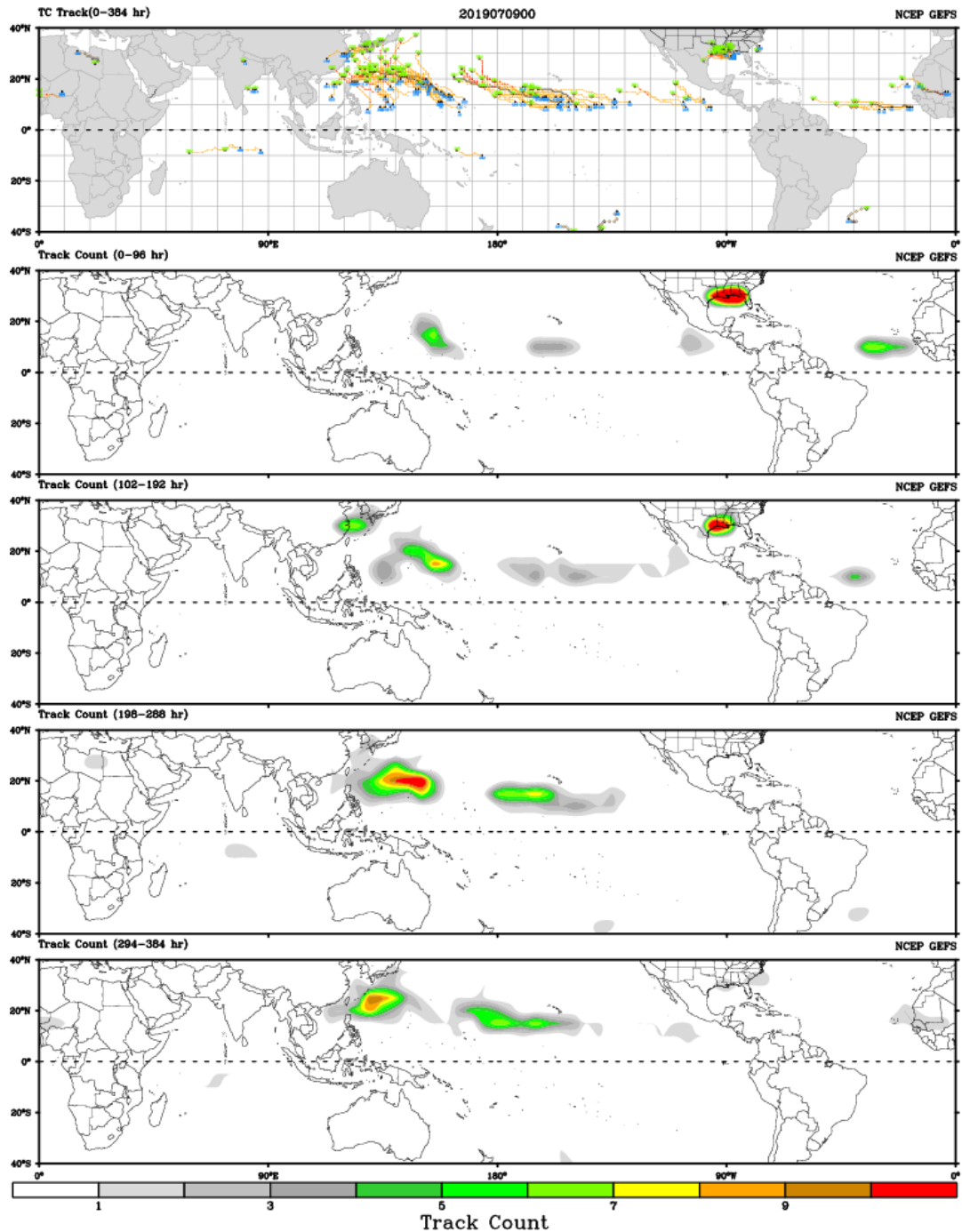


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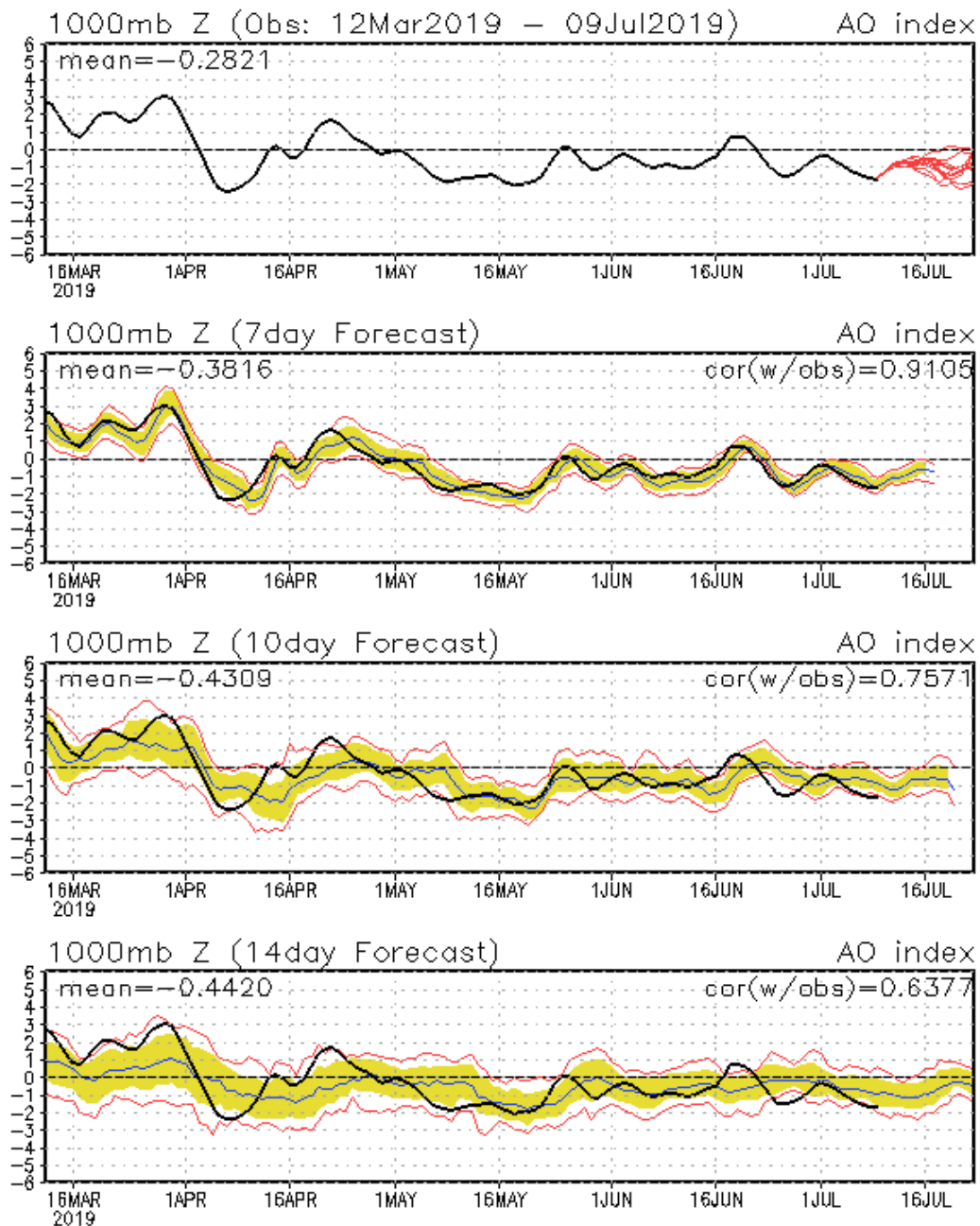
Post-Tropical Cyclone or Remnants

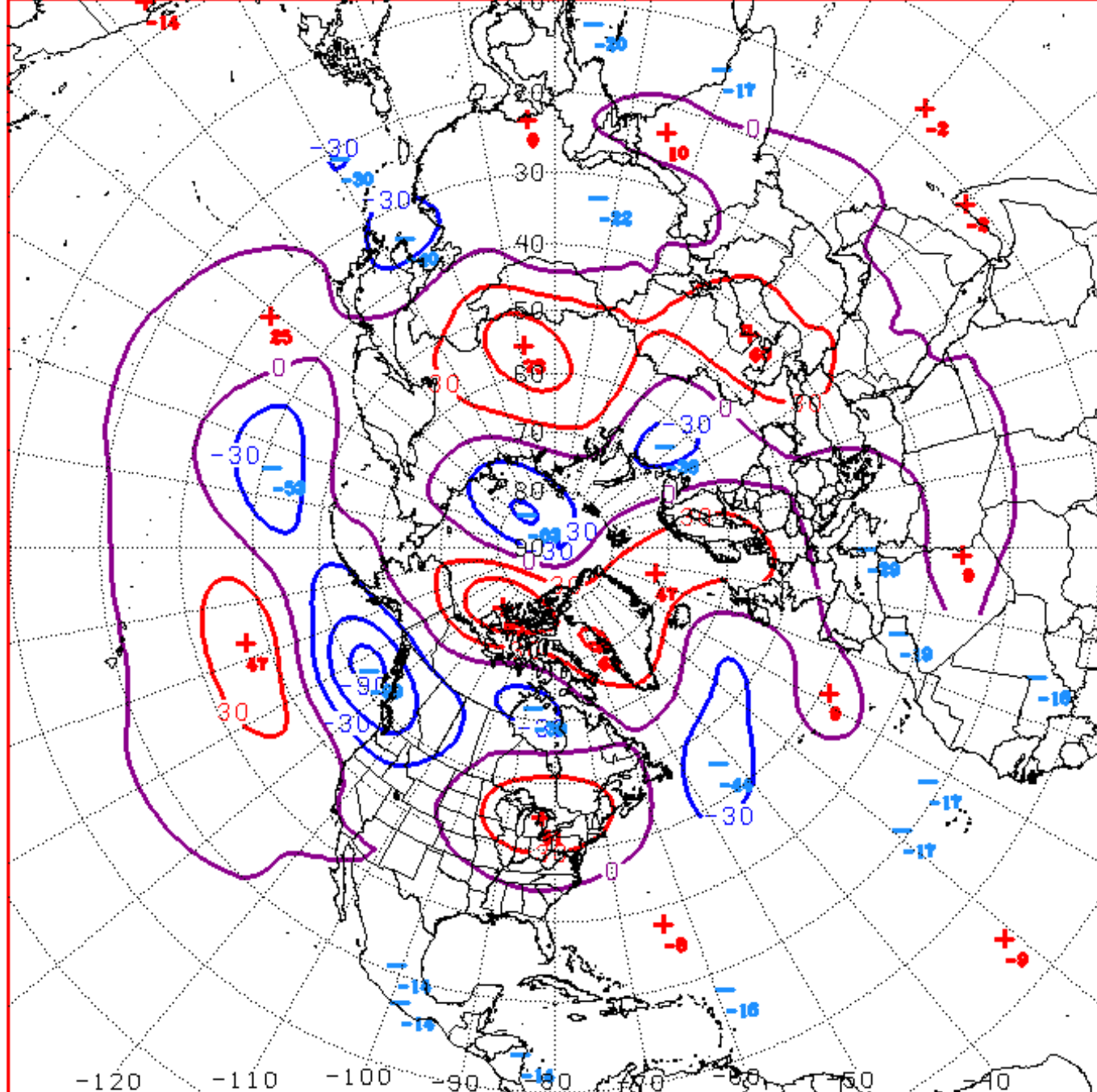
CWB TC Tracker for NCEP GEFS (Fuzzy_AllCriteria)



Connections to U.S. Impacts

AO: Observed & ENSM forecasts

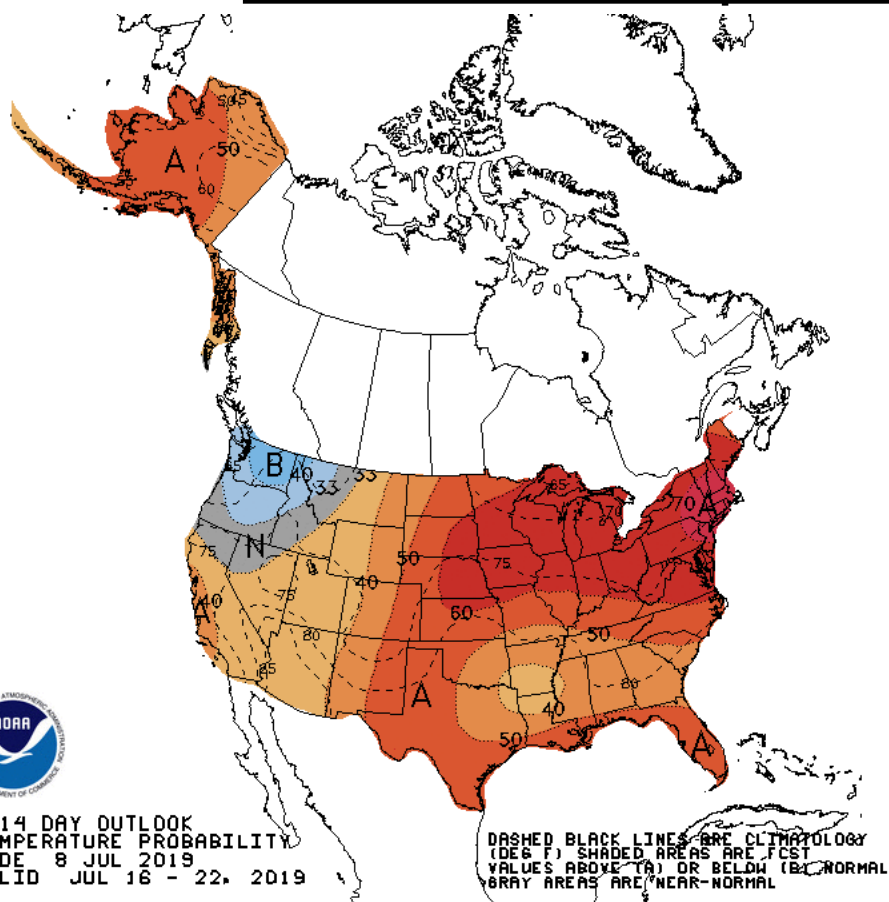




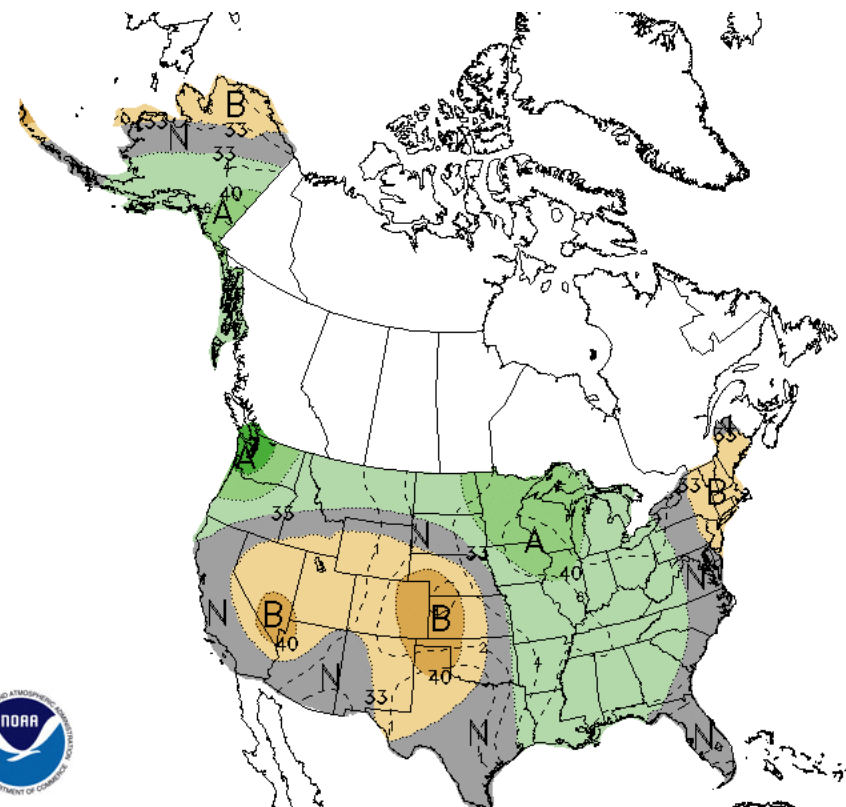
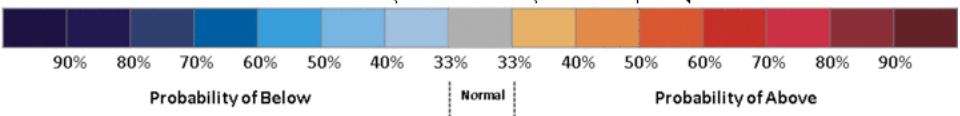
-120 -110 -100 -90 -80 -70 -60 -50

D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE JUL 09 2019 1314 UTC CNTD JUL 20 2019

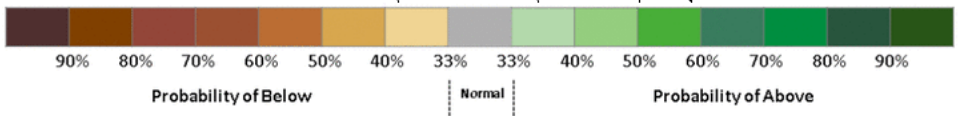
Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 8 JUL 2019
VALID JUL 16 - 22, 2019



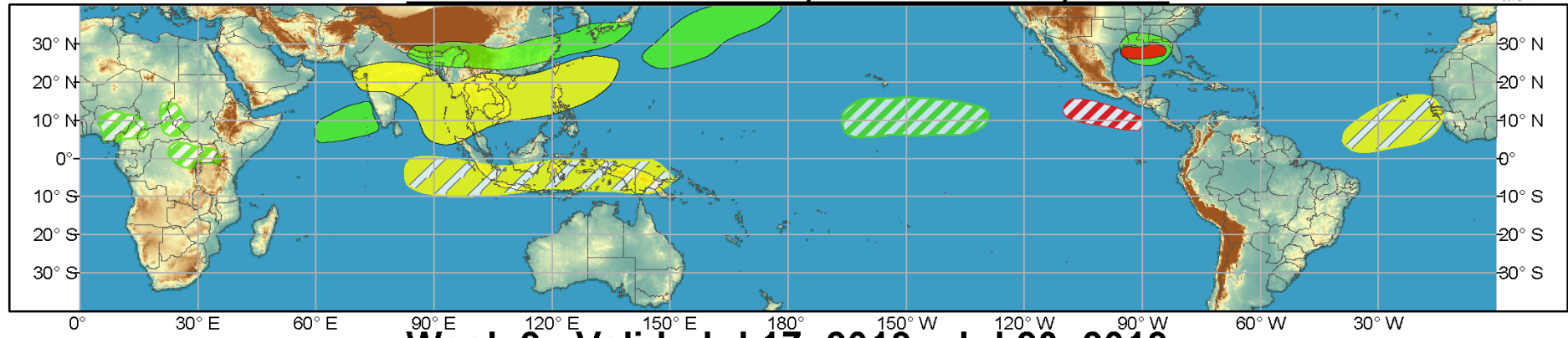
8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 8 JUL 2019
VALID JUL 16 - 22, 2019



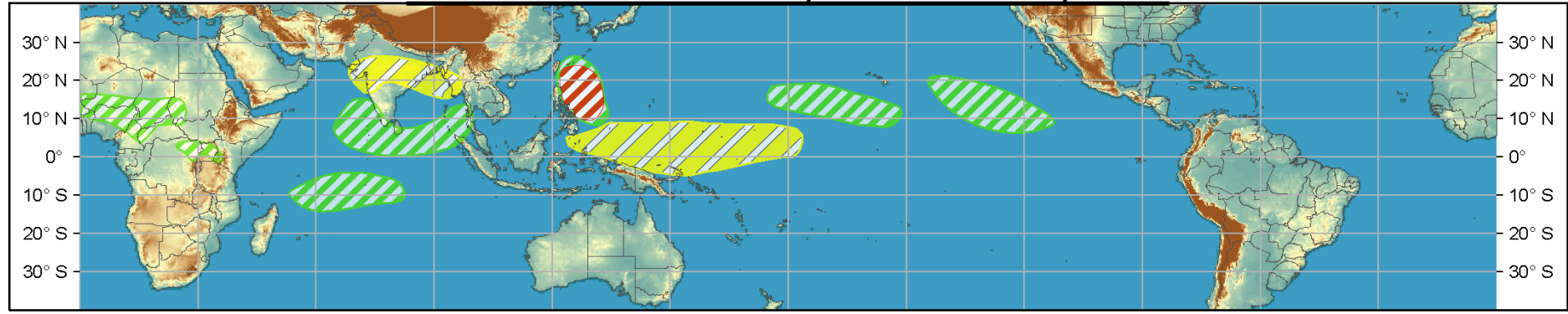


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