Global Tropics Hazards And Benefits Outlook

8/20/2019

Dan Harnos

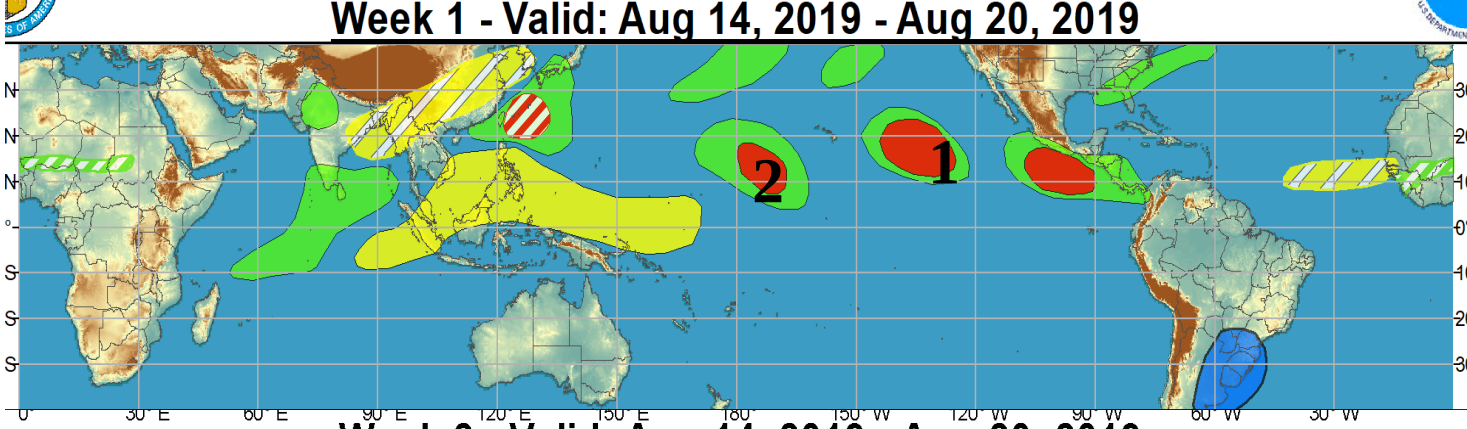
Outline

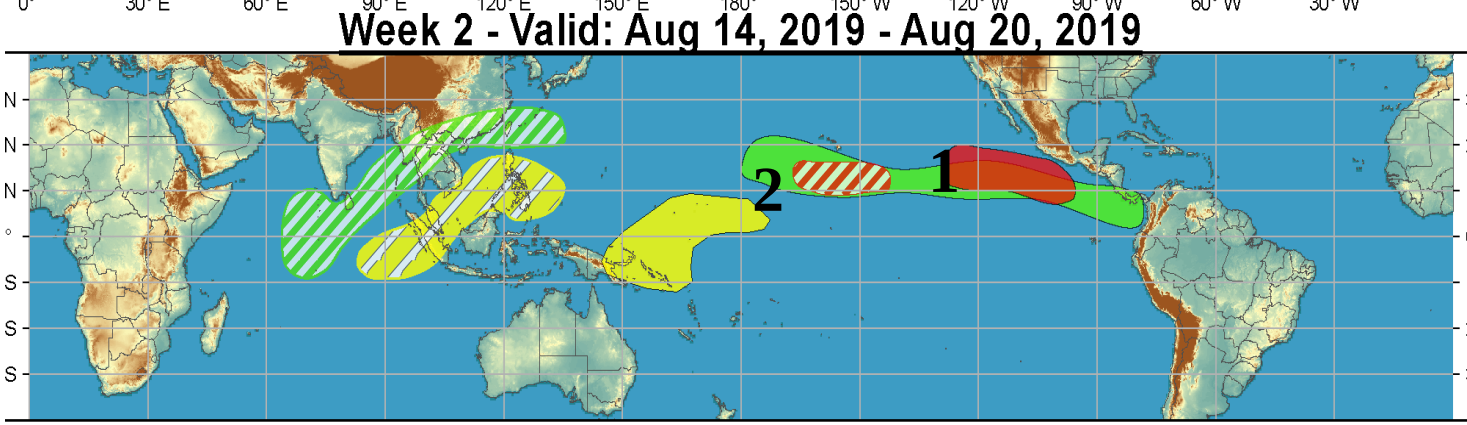
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

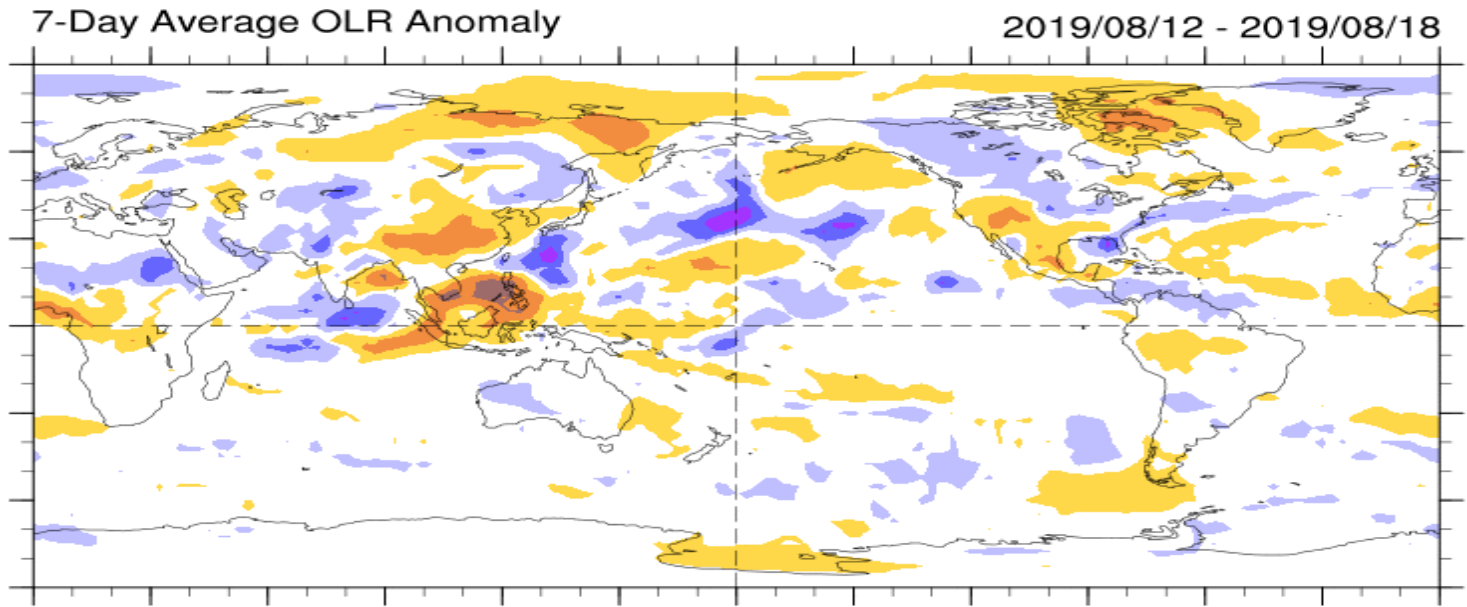
Outlook Review

Two short-lived Tropical Depressions

- 8/15
- 8/17







Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (as of August 12, 2019 – next update on Thursday, September 12th)

- ENSO Alert System Status: Final El Niño Advisory

- ENSO-neutral conditions are present, and is most likely to continue through Northern Hemisphere Winter 2019-2020 (50-55% chance).

MJO and other subseasonal tropical variability:

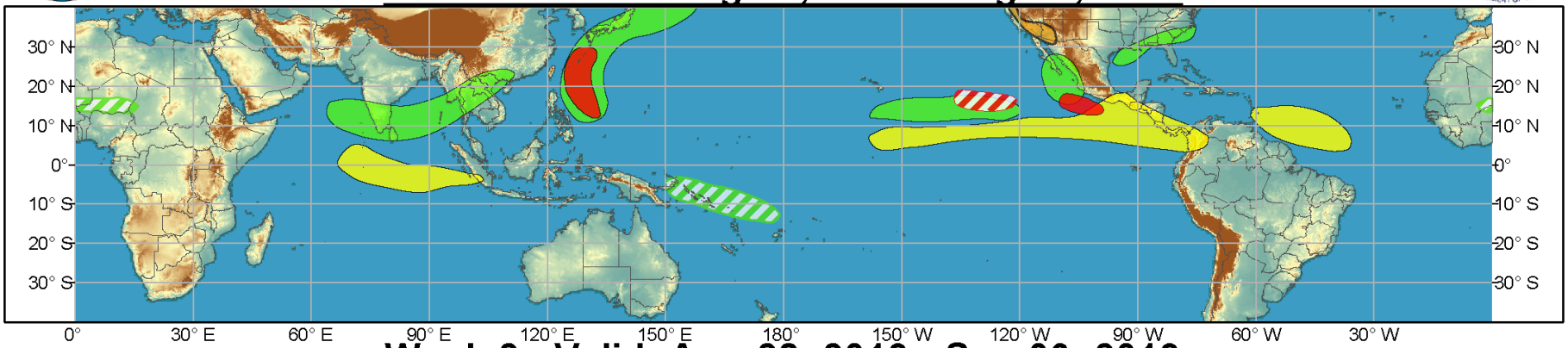
• The MJO was incoherent over the past week.

• The MJO is forecast to not remain a major player during most of the forecast period, although some models suggest a marginal event.

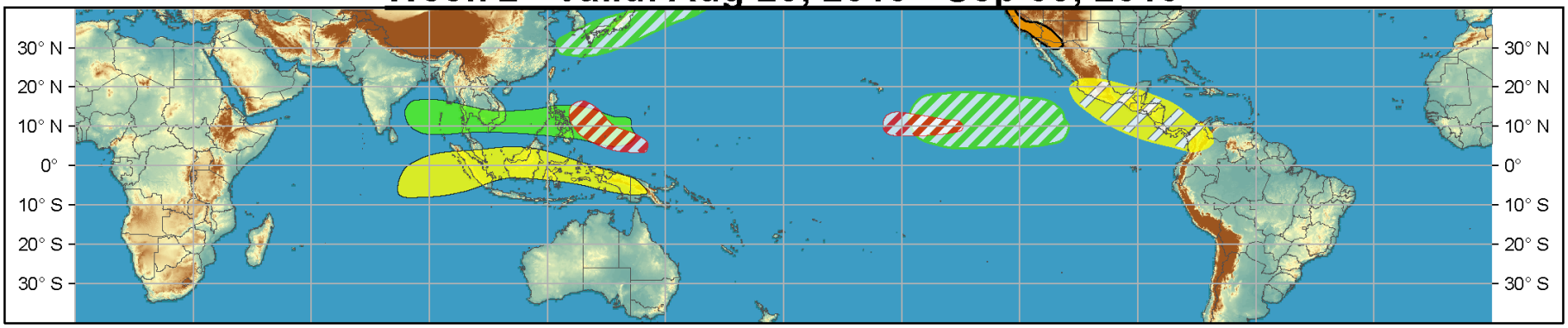
• A Kelvin wave currently over the South Atlantic is likely to lead to a reduction in vertical wind shear over the tropical Atlantic, which would be more supportive for Tropical Cyclone development. Despite this, large-scale subsidence is forecast to continue to limit formation chances across the basin.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Aug 21, 2019 - Aug 27, 2019



Week 2 - Valid: Aug 28, 2019 - Sep 03, 2019



Produced: 08/20/2019

Forecaster: D.Harnos

	Confidence: High	Confidence: Moderate	
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NPS PRAESTANTIA PER SCIENTIAM

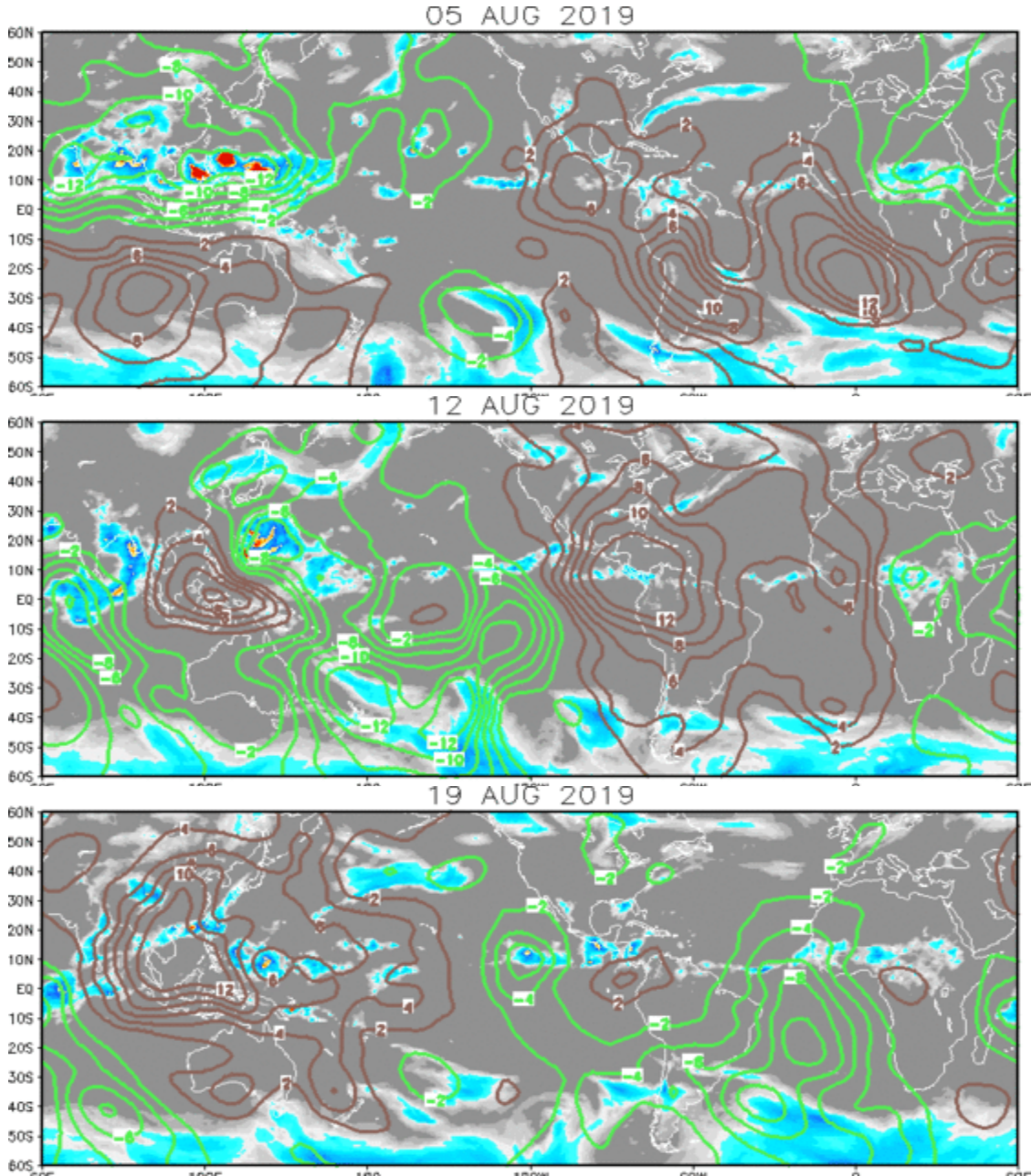
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

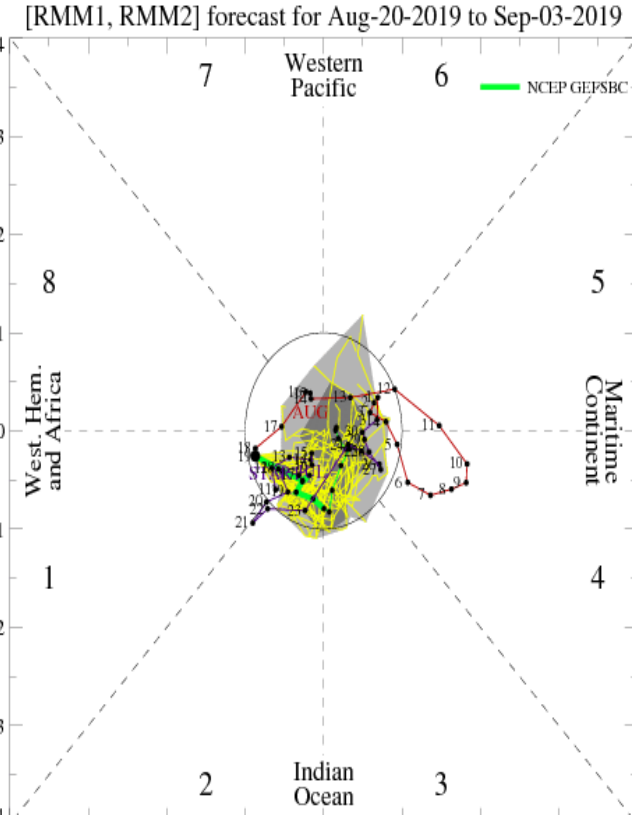
TC activity in West Pacific anchored enhanced convection, however a north-south dipole of VP was observed over the Eastern Hemisphere.

TC activity in the West Pacific continues to strongly influence what would otherwise be a wavenumber-1 pattern (typical of a robust MJO over the West Pacific).

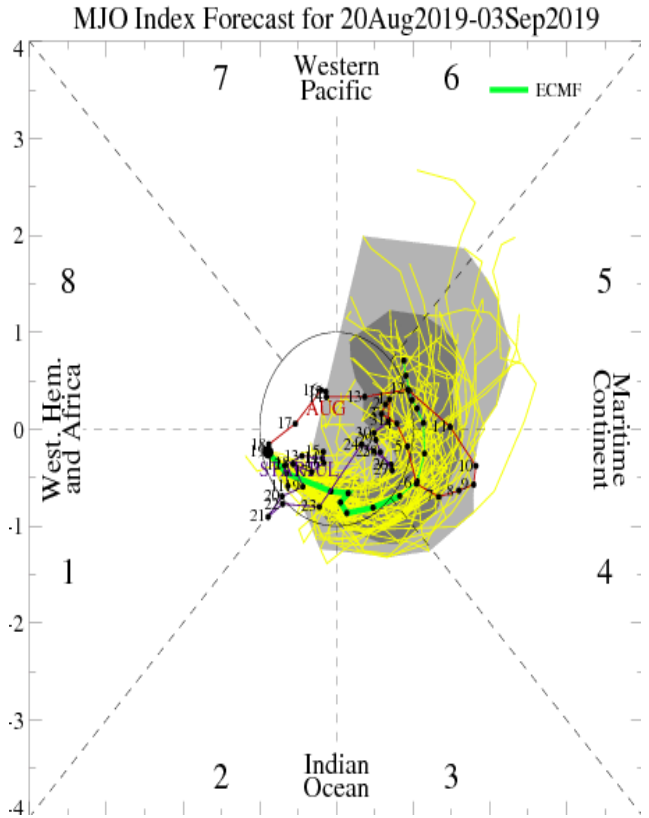
The Kelvin wave over South America and the Atlantic is apparent, while descending motion has overtaken much of the Eastern Hemisphere.



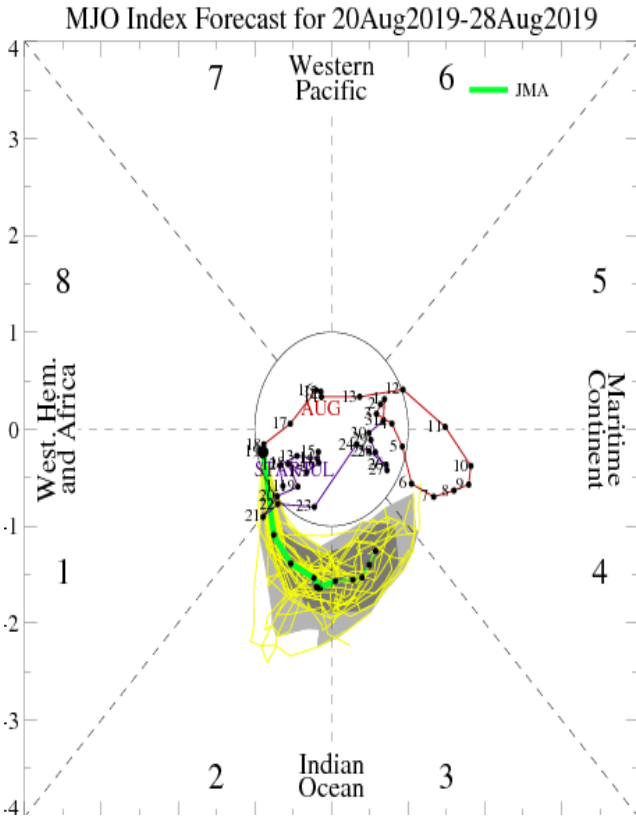
MJO Observation/Forecast



GEFS



ECMWF



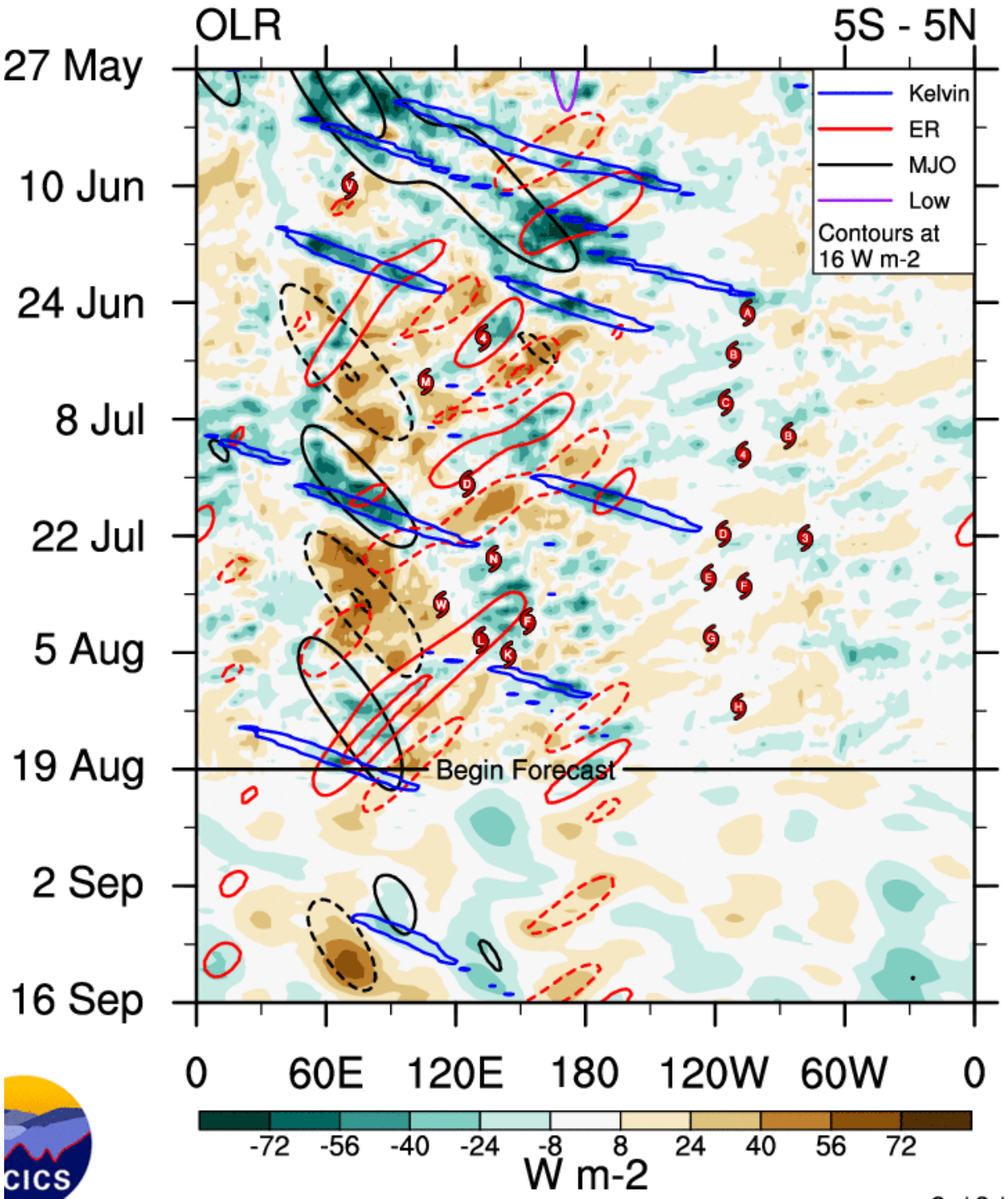
JMA

- Diversity of solutions this week with the ECMWF and JMA being the most prominent in terms of having a MJO.
- The ECMWF is on the faster end of the spectrum, likely tied to the Kelvin wave across the South Atlantic, while the JMA is slower at a speed more characteristic of the MJO.
- The GEFS is an outlier with a very weak signal throughout that does not show any coherent MJO-like signal.

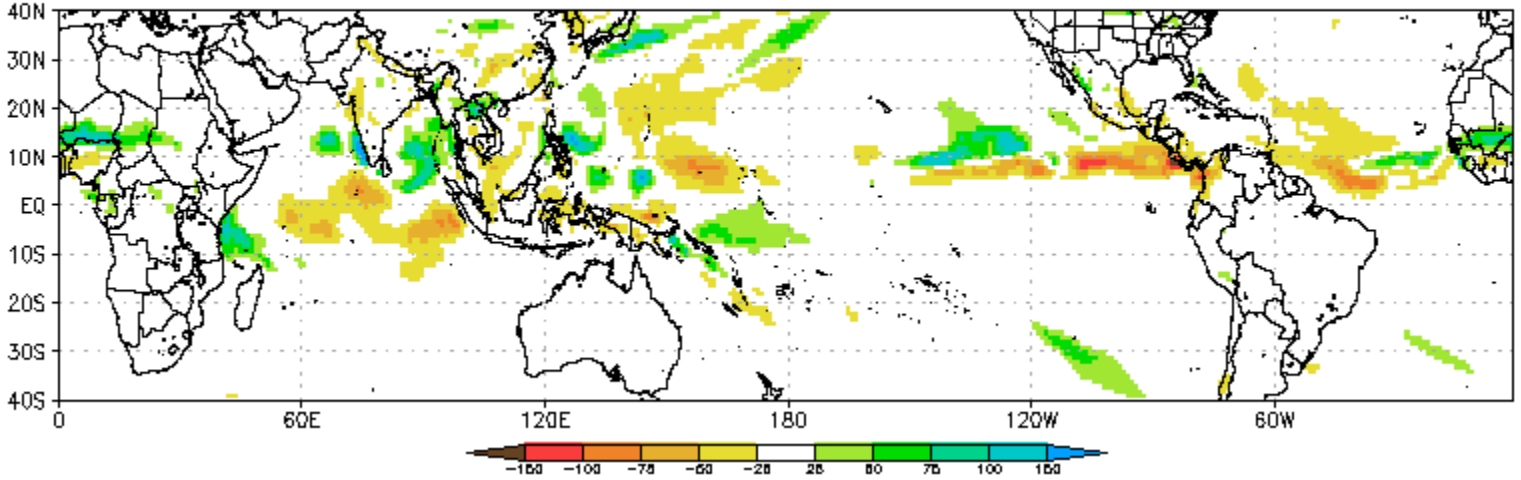
This analysis shows some kind of slower eastward-moving envelope over the Indian Ocean (**MJO**?)

Most obvious is the **Kelvin wave** over the Indian Ocean while another pair of subtle features (missed by the filtering) are over the East Pacific (~120°W) and Atlantic (~30°W).

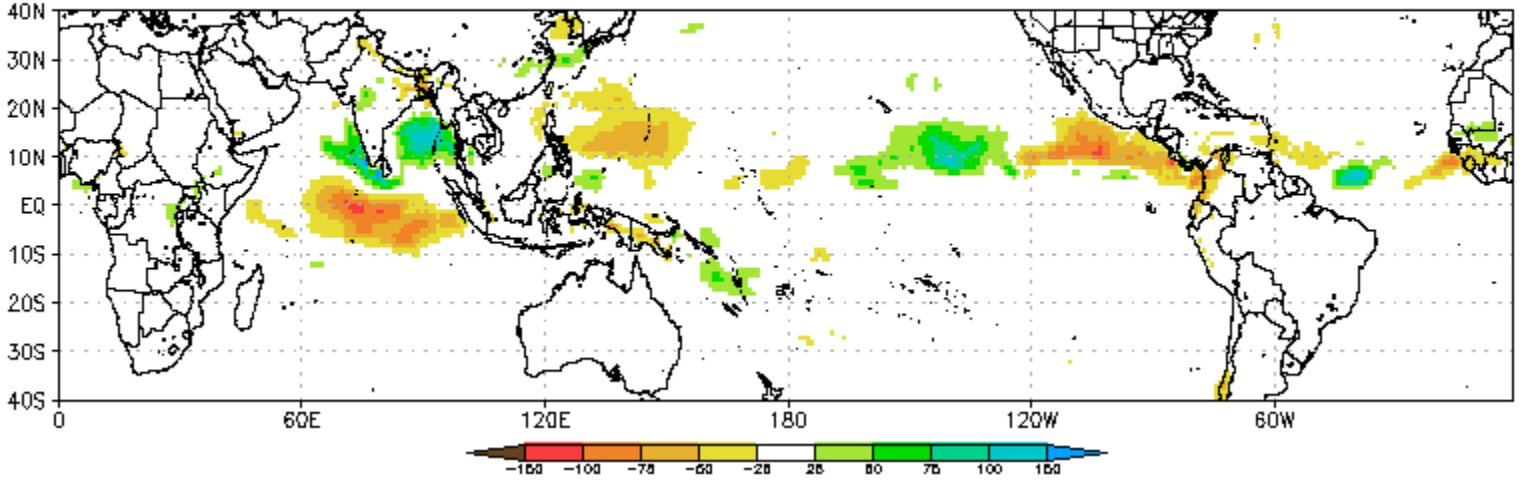
Alternative periods of enhanced/suppressed **Rossby wave** activity continues over much of the Eastern Hemisphere.



CFS Precipitation Anomalies (mm) Issued 19Aug2019
Week-1 Forecast Ending 27Aug2019

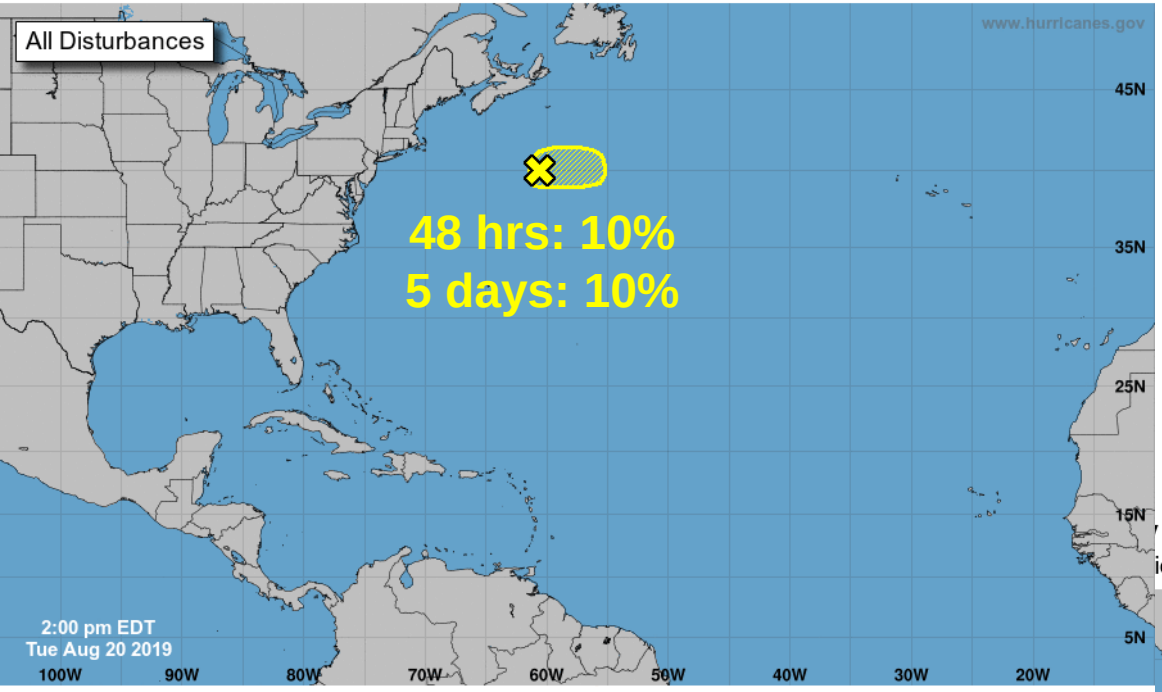


CFS Precipitation Anomalies (mm) Issued 19Aug2019
Week-2 Forecast Ending 03Sep2019



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

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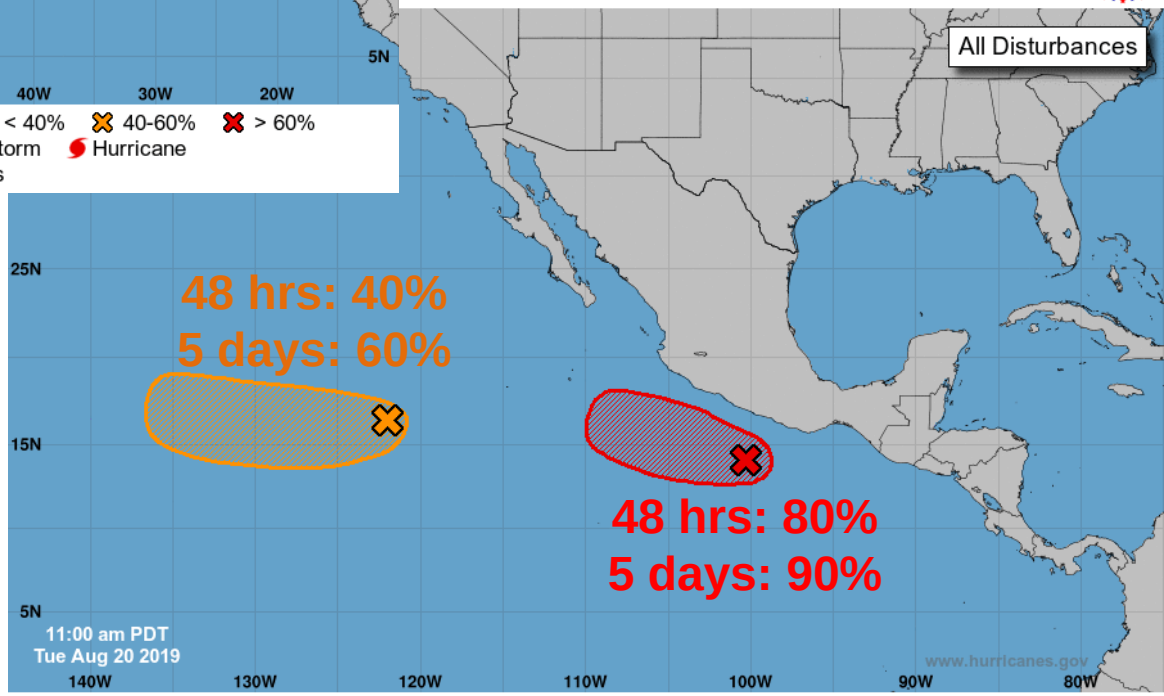

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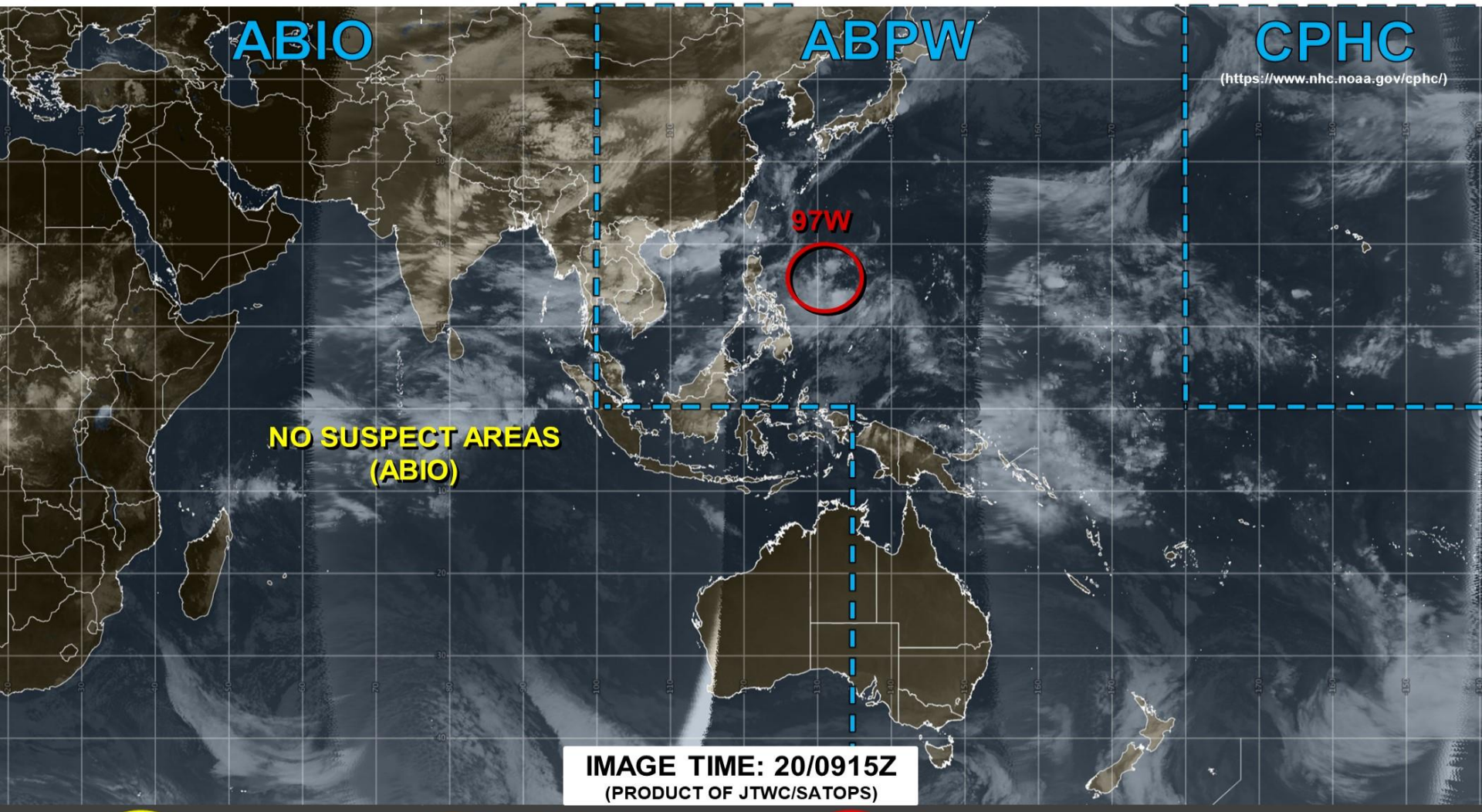
JOINT TYPHOON WARNING CENTER



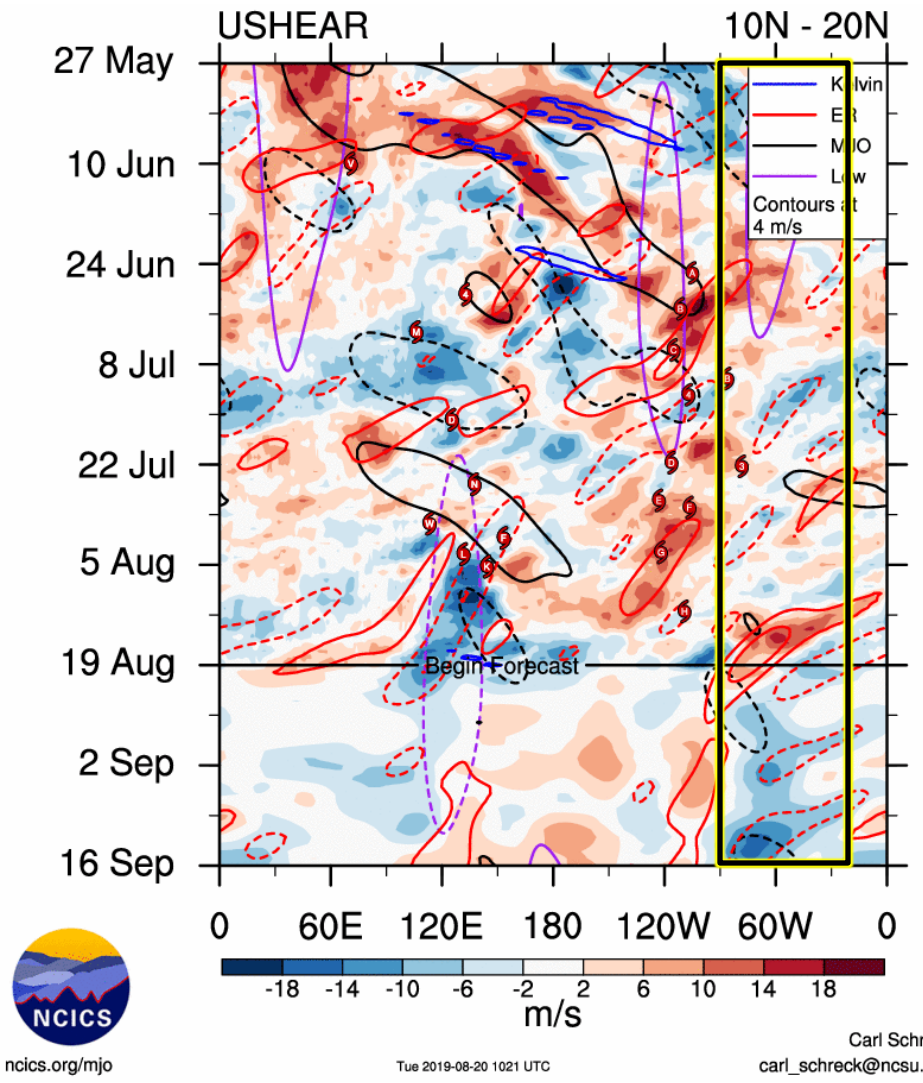
LOW TC formation unlikely within 24 hours

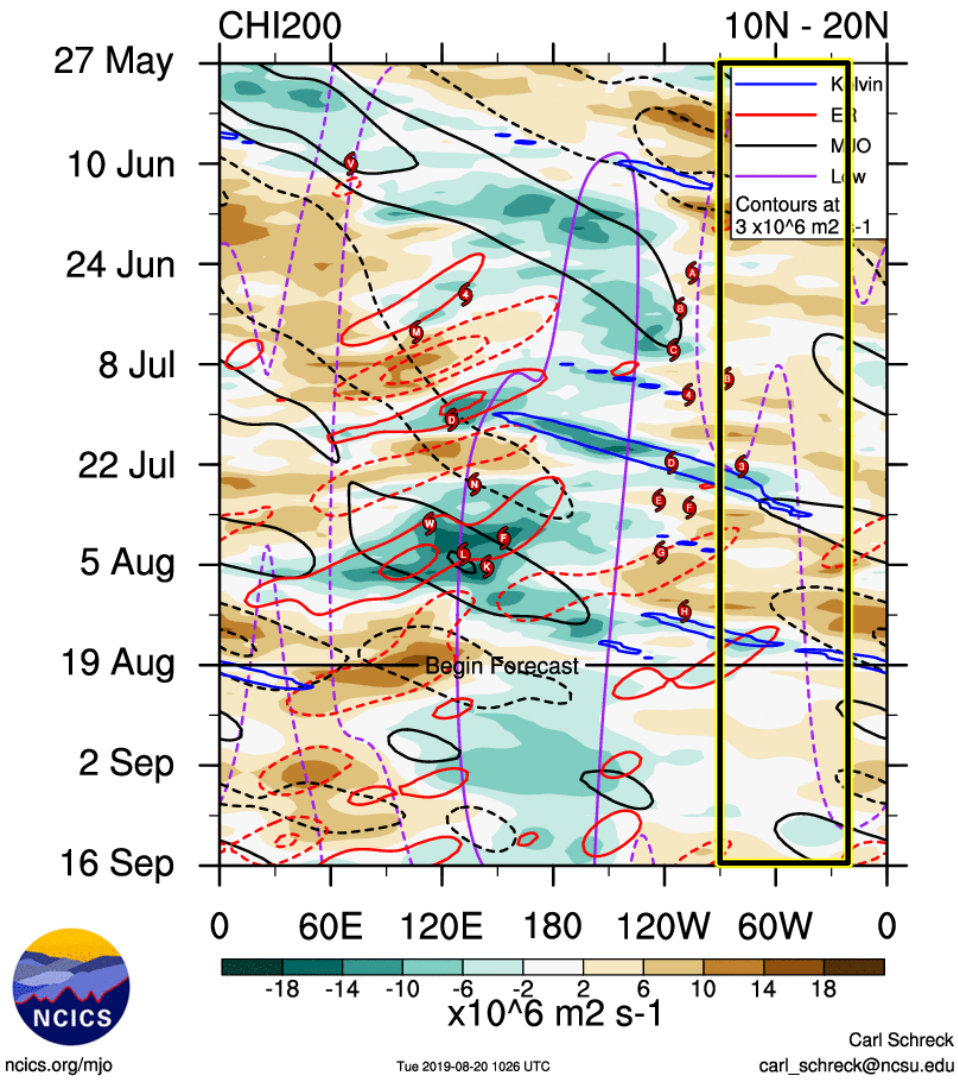
MEDIUM TC development likely, but expected to occur beyond 24 hours

HIGH TC development likely within 24 hours (Reference TCFA)

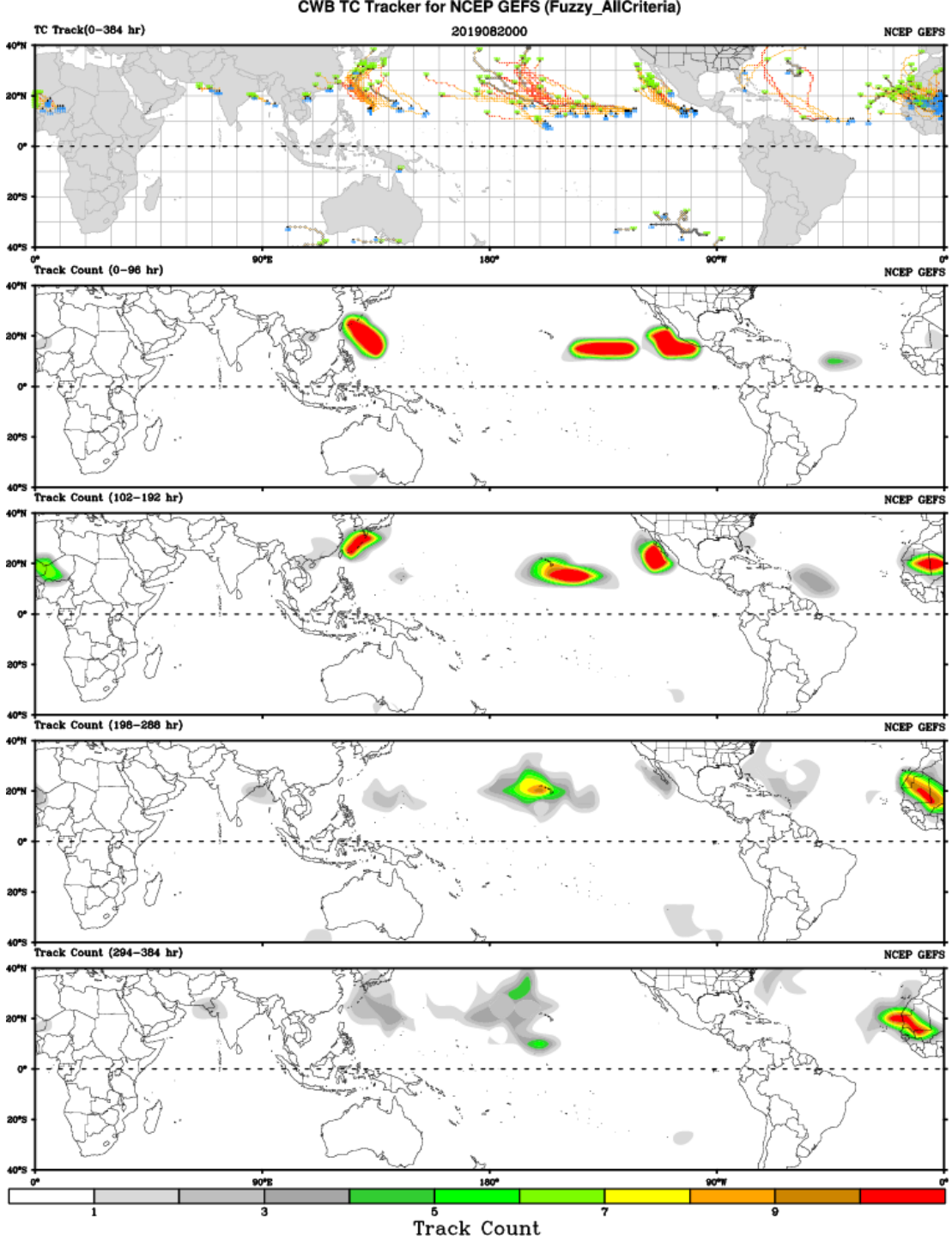
Tropical Cyclone (Reference Warning)

Improving Atlantic TC Conditions?





- Wind shear becoming easterly (blue colors at left), more favorable for TC formation.
- Still lots of sinking air (brown shading at right), could continue to limit things.



Days 1-4

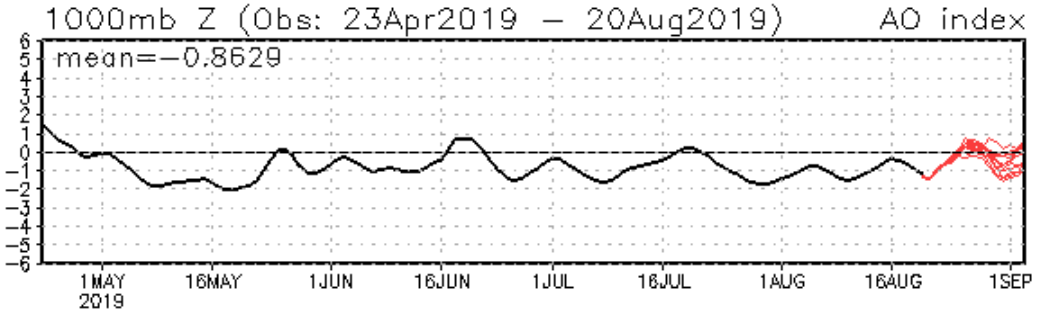
Day 5-8

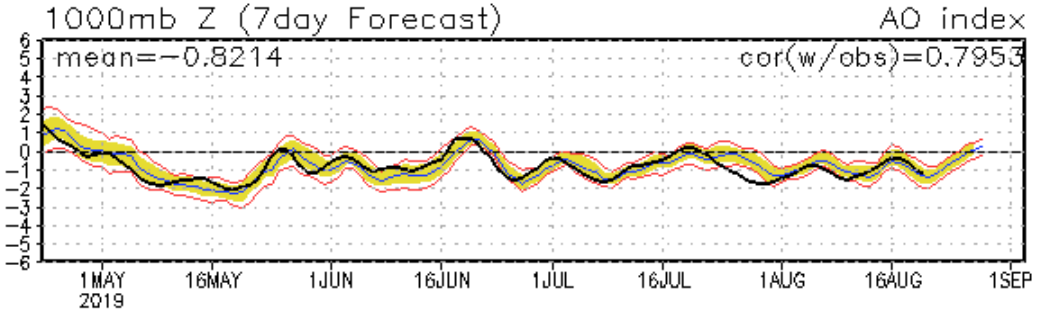
Day 9-12

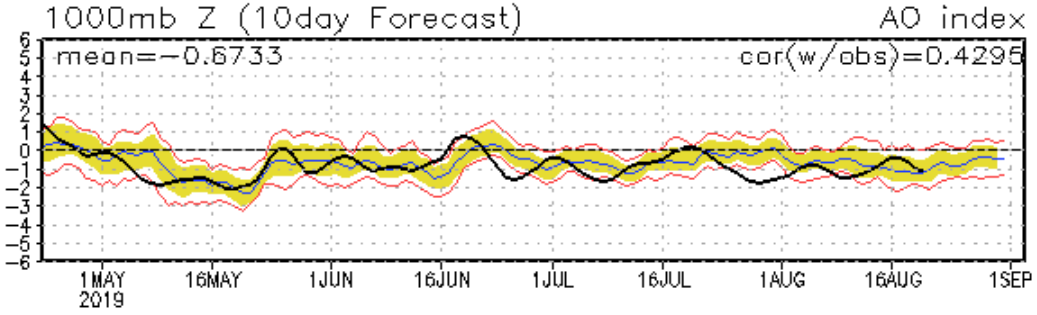
Day 13-15

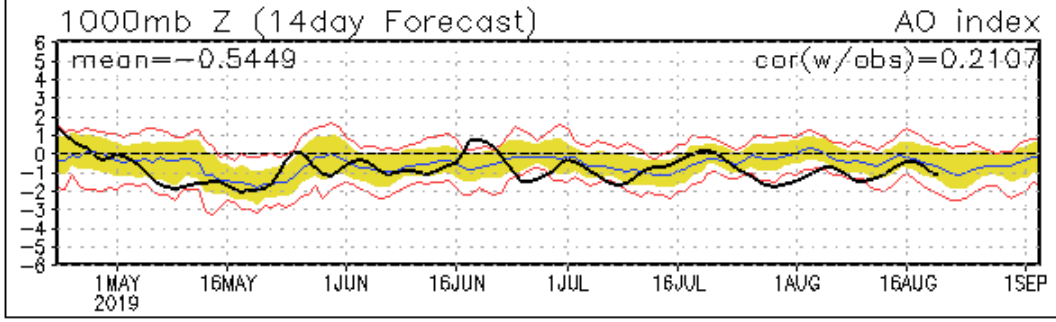
Connections to U.S. Impacts

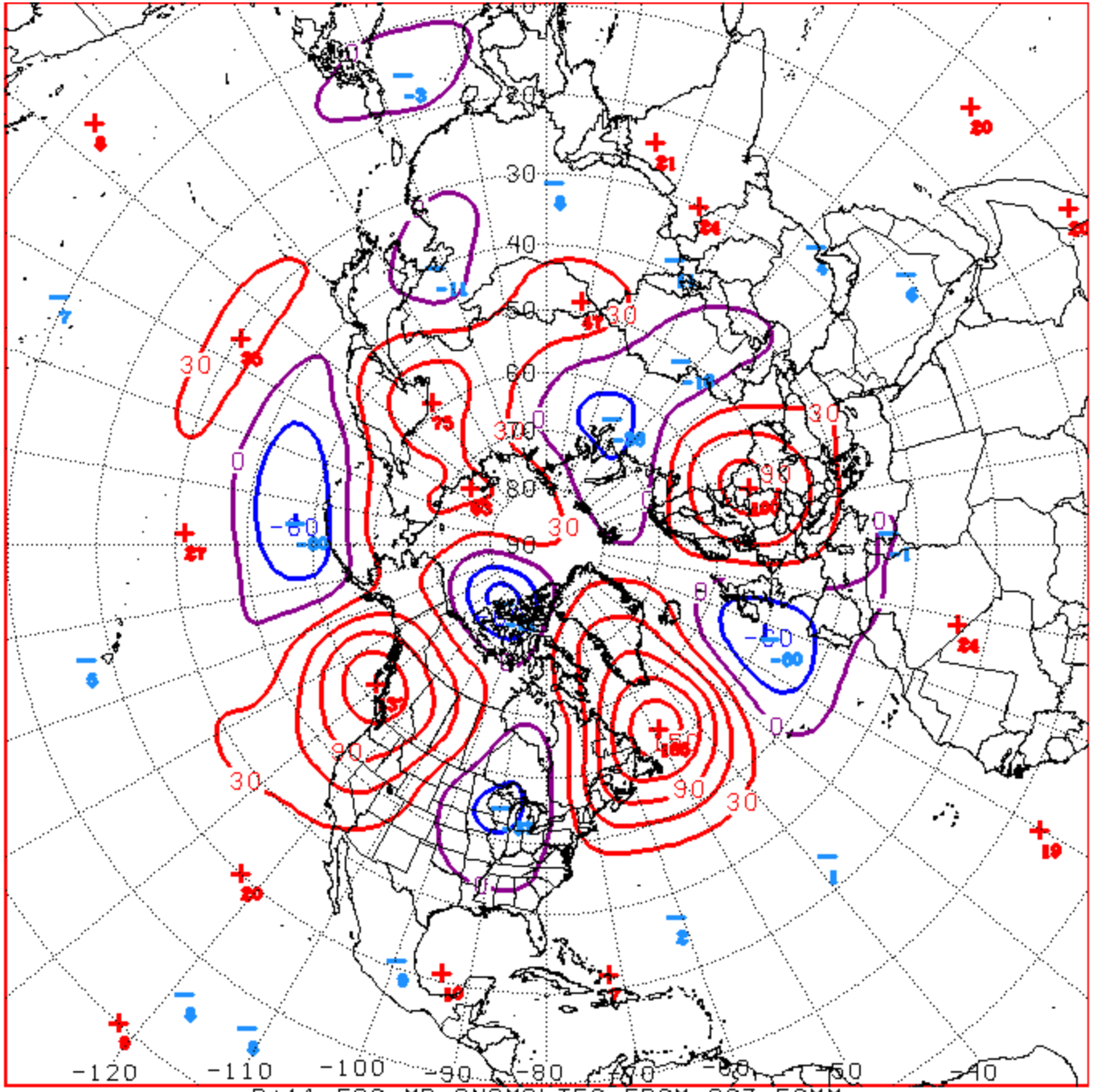
AO: Observed & ENSM forecasts





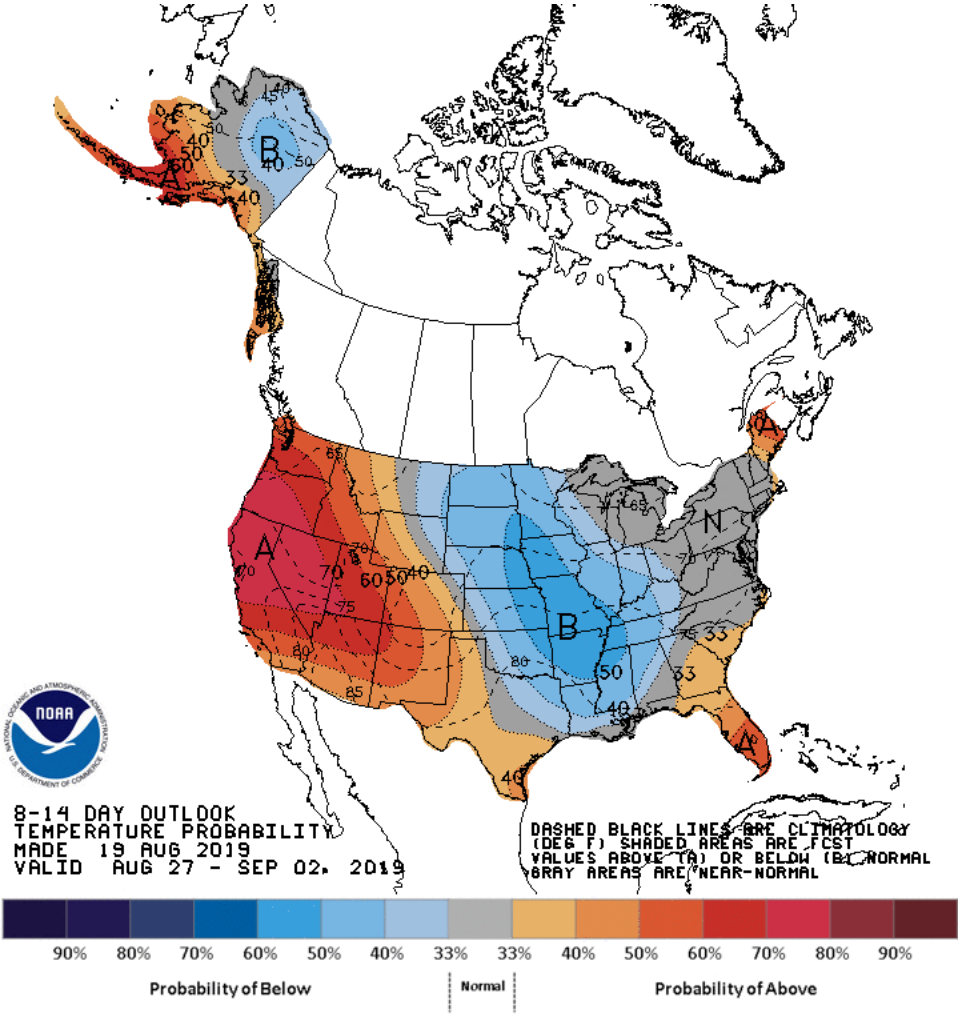


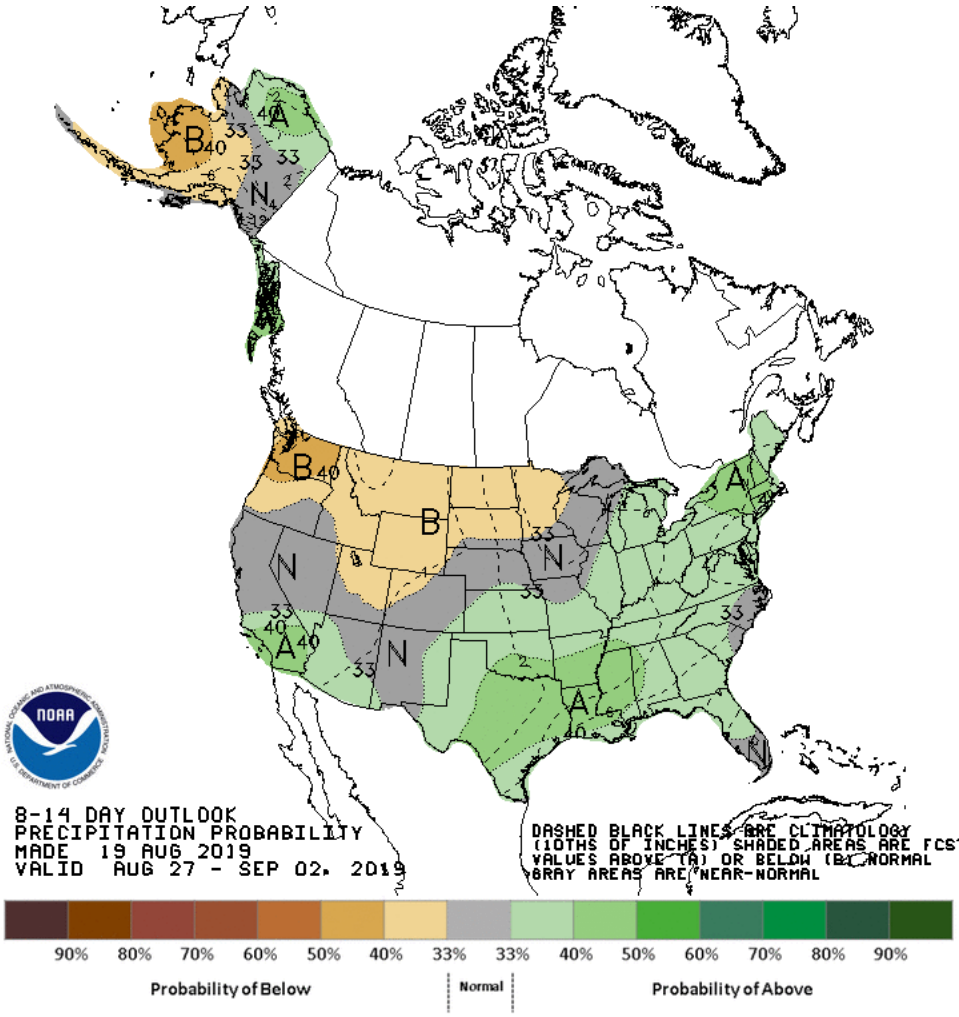




D+11 500 MB ANOMALIES FROM 00Z ECMM
CPC MAP MADE AUG 20 2019 1047 UTC CNTD AUG 31 2019

Week 2 – Temperature and Precipitation





Below-normal temperature probabilities likely sliding a bit west, above-normal probabilities along East coast.

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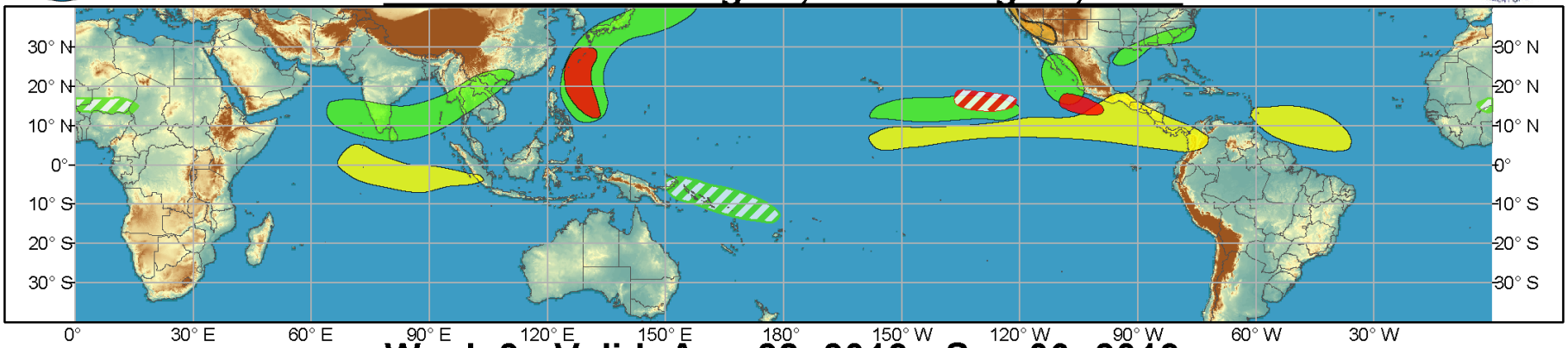

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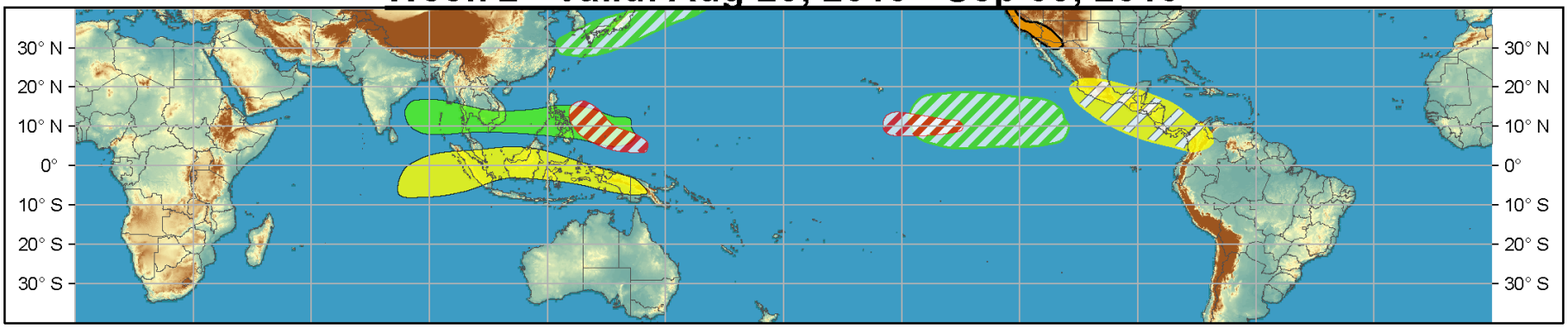

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