

# Global Tropics Hazards And Benefits Outlook

7/3/2019

Adam Allgood

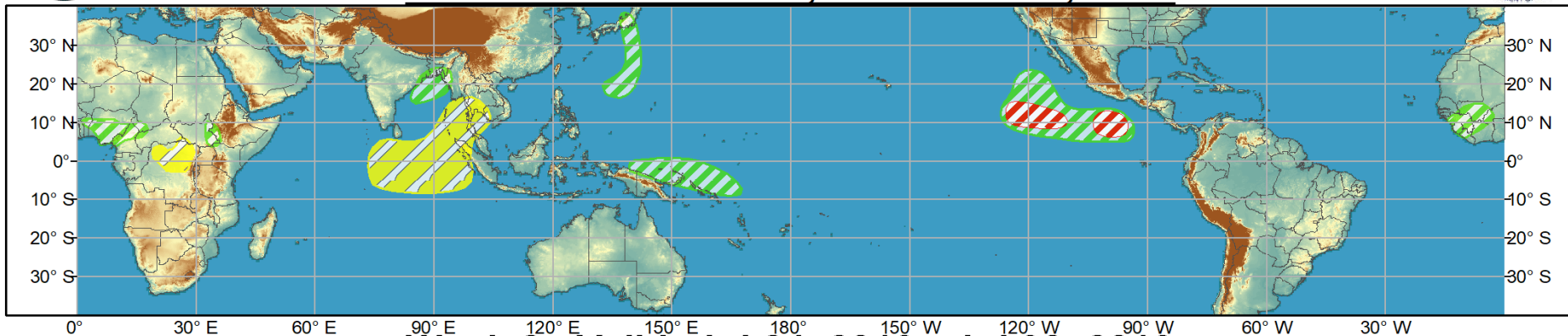
## Outline

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

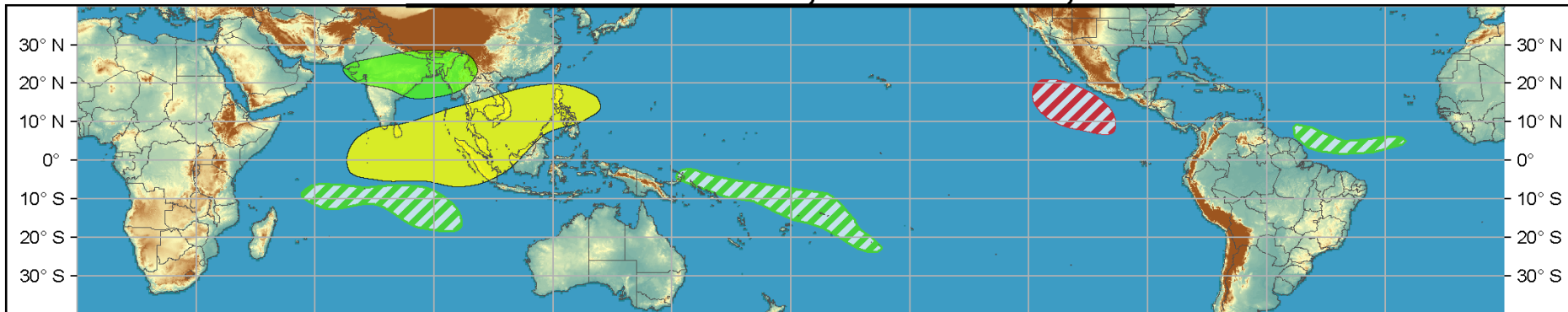


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

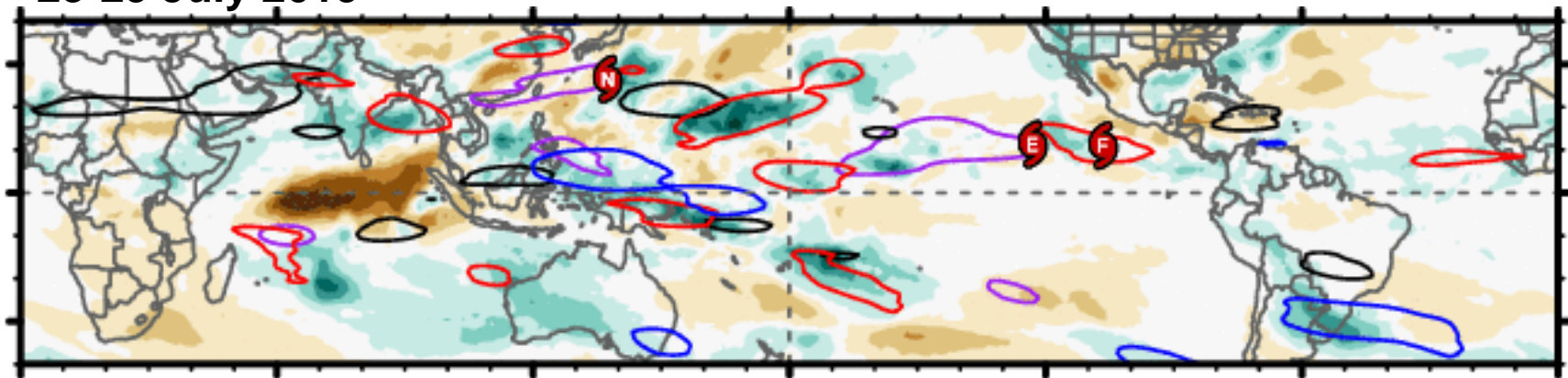
## Week 1 - Valid: Jul 24, 2019 - Jul 30, 2019



## Week 2 - Valid: Jul 24, 2019 - Jul 30, 2019



### 23-29 July 2019



# Synopsis of Climate Modes

## **ENSO: (July 12, 2018 Update)**

- ENSO Alert System Status: [El Niño Advisory](#)
- A transition from El Niño to ENSO-neutral is expected in the next month or two, with ENSO-neutral most likely to continue through Northern Hemisphere fall and winter.

## **MJO and other subseasonal tropical variability:**

- The MJO remained weak, with multiple modes interfering with the overall pattern despite the OLR anomalies broadly resembling a Maritime Continent event.
- Dynamical models are mixed, with the GEFS depicting an amplifying and slowly propagating Maritime Continent MJO, while the ECMWF maintains a weak, stationary signal.
- Tropical cyclone activity may play a substantial role in the overall tropical convective pattern.

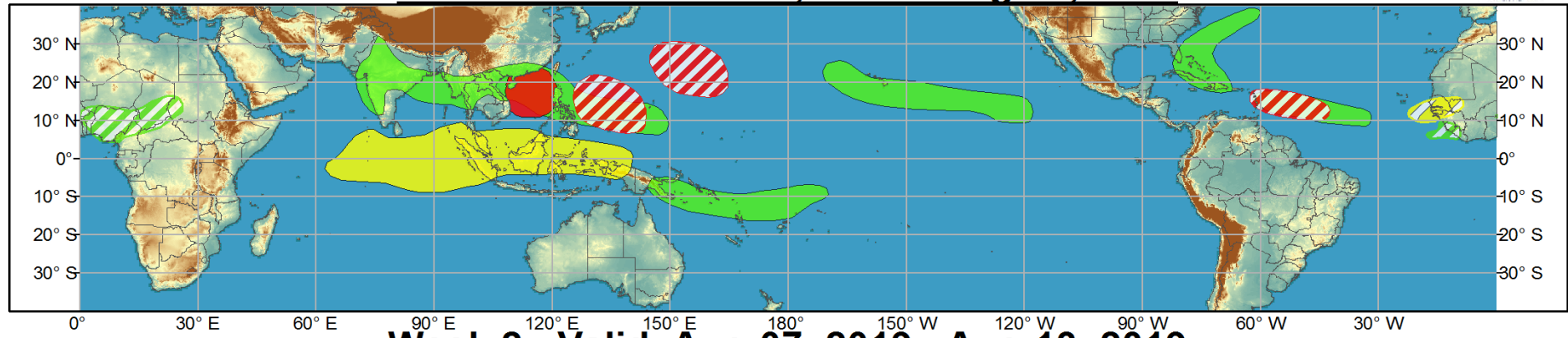
## **Extratropics:**

- Kelvin wave activity may yield a ~ 1-week window for tropical cyclone activity over the MDR. While the (non) MJO is not anticipated to influence the extratropical pattern over North America, dynamical models favor a strongly negative NAO pattern by Week-2.

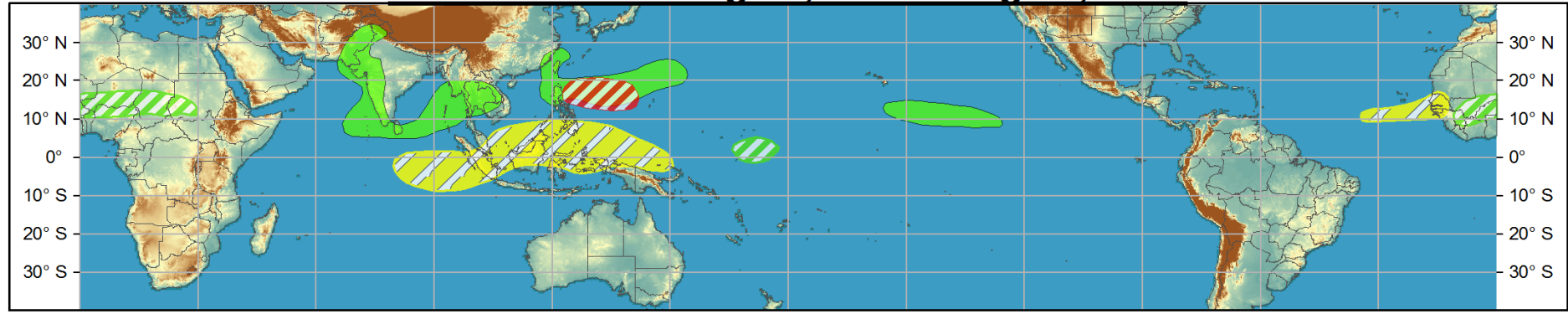


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Jul 31, 2019 - Aug 06, 2019



## Week 2 - Valid: Aug 07, 2019 - Aug 13, 2019



Produced: 07/30/2019  
Forecaster: Allgood

Confidence		
High	Moderate	
		<b>Tropical Cyclone Formation</b> Development of a tropical cyclone (tropical depression - TD, or greater strength).
		<b>Above-average rainfall</b> Weekly total rainfall in the upper third of the historical range.
		<b>Below-average rainfall</b> Weekly total rainfall in the lower third of the historical range.
		<b>Above-normal temperatures</b> 7-day mean temperatures in the upper third of the historical range.
		<b>Below-normal temperatures</b> 7-day mean temperatures in the lower third of the historical range.

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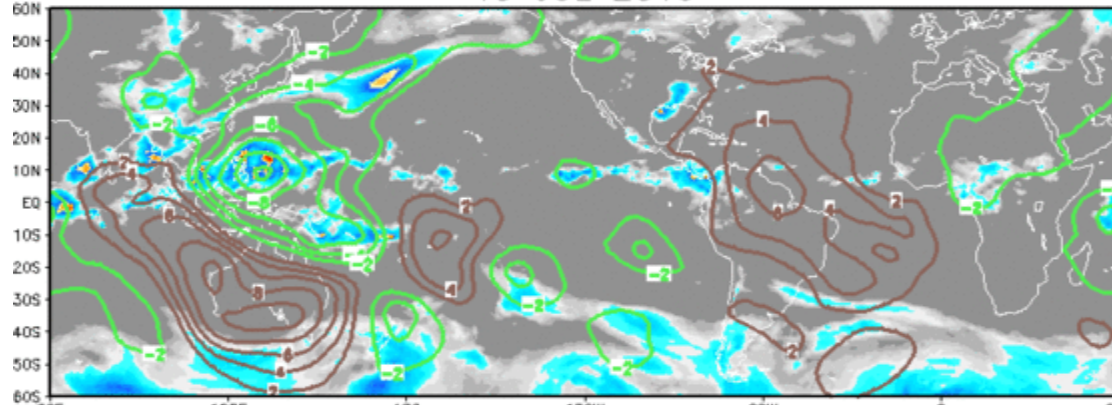
# IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence

Brown: Enhanced Convergence

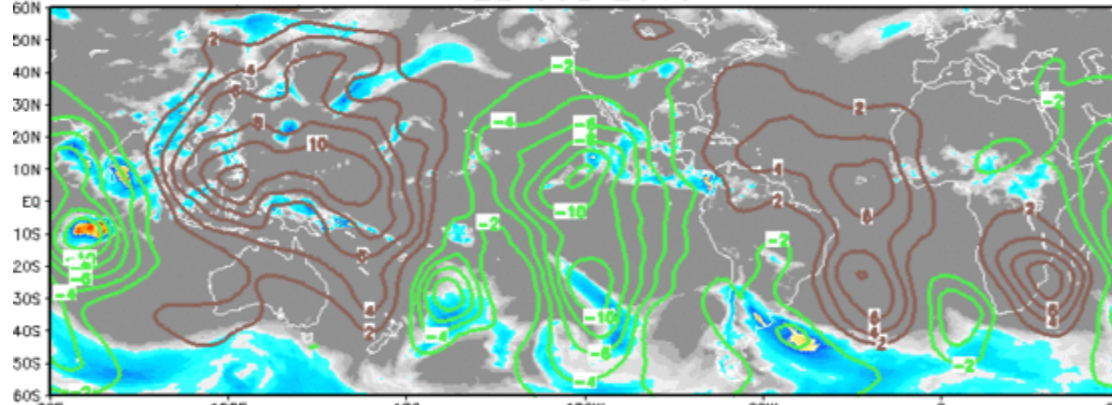
Enhanced convection over the West Pacific, with relatively weak anomalies elsewhere.

15 JUL 2019



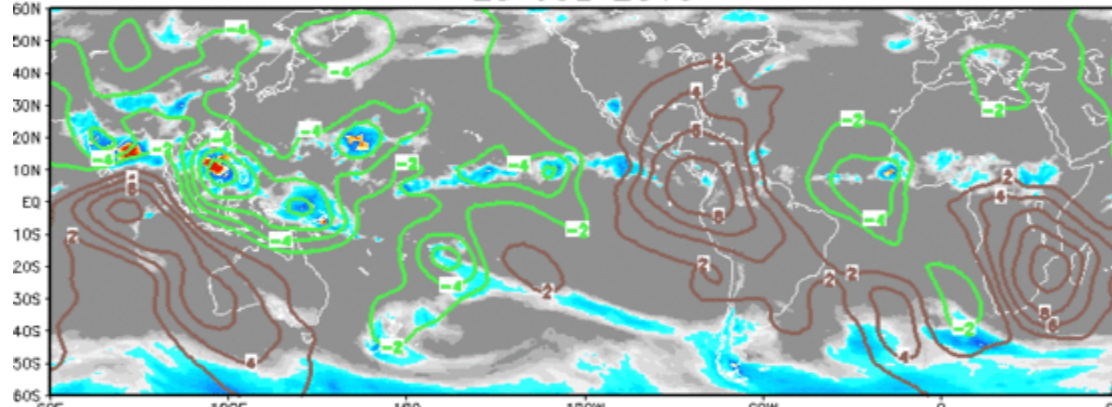
Strong Wave-2 structure, with a Kelvin wave over the East Pacific and a remnant subseasonal signal over the Indian Ocean.

22 JUL 2019



Remnant Kelvin wave activity was over Africa, while enhanced convection transitioned to the Maritime Continent.

29 JUL 2019

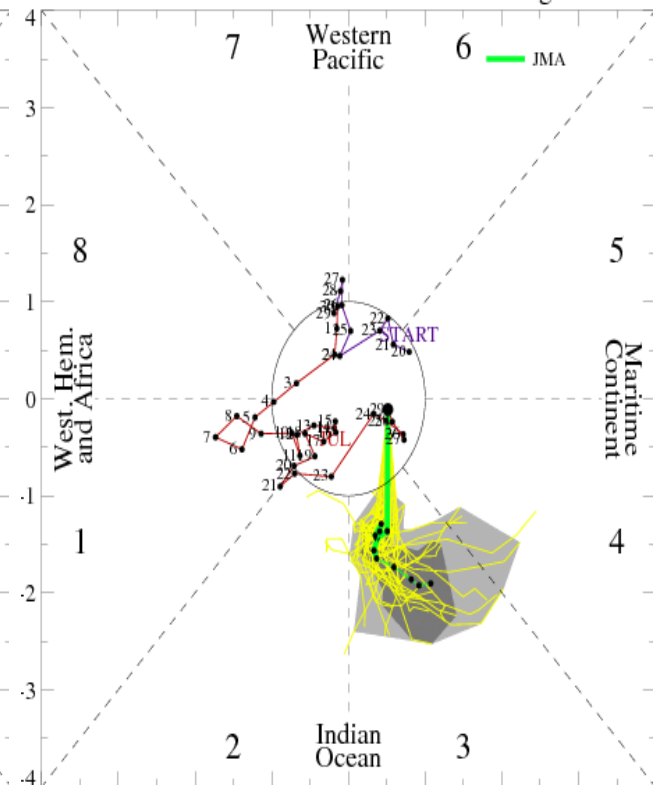
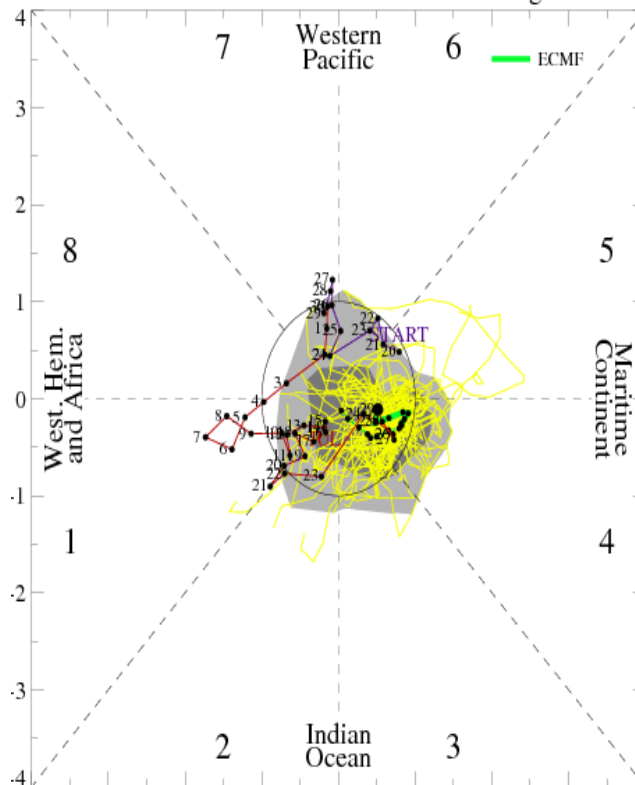
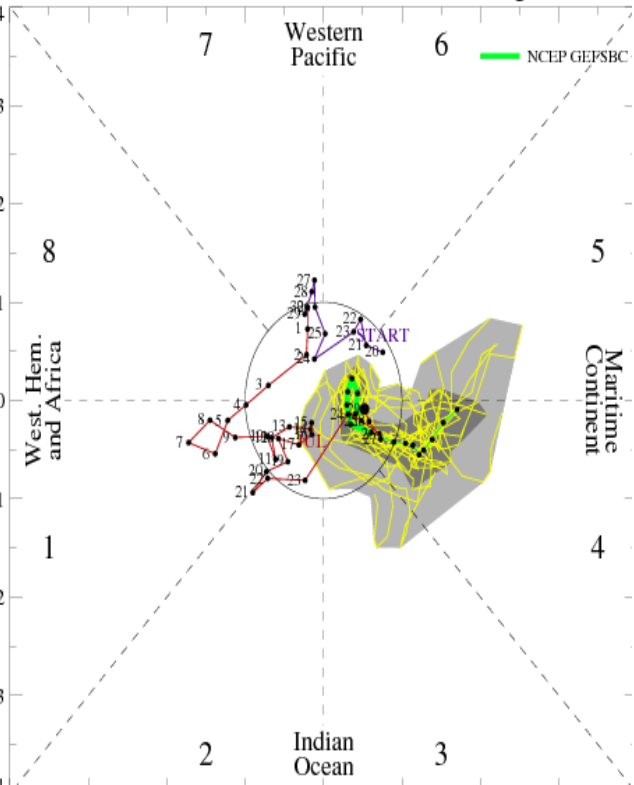


# MJO Observation/Forecast

[RMM1, RMM2] forecast for Jul-30-2019 to Aug-13-2019

MJO Index Forecast for 30Jul2019-13Aug2019

MJO Index Forecast for 30Jul2019-07Aug2019



GEFS

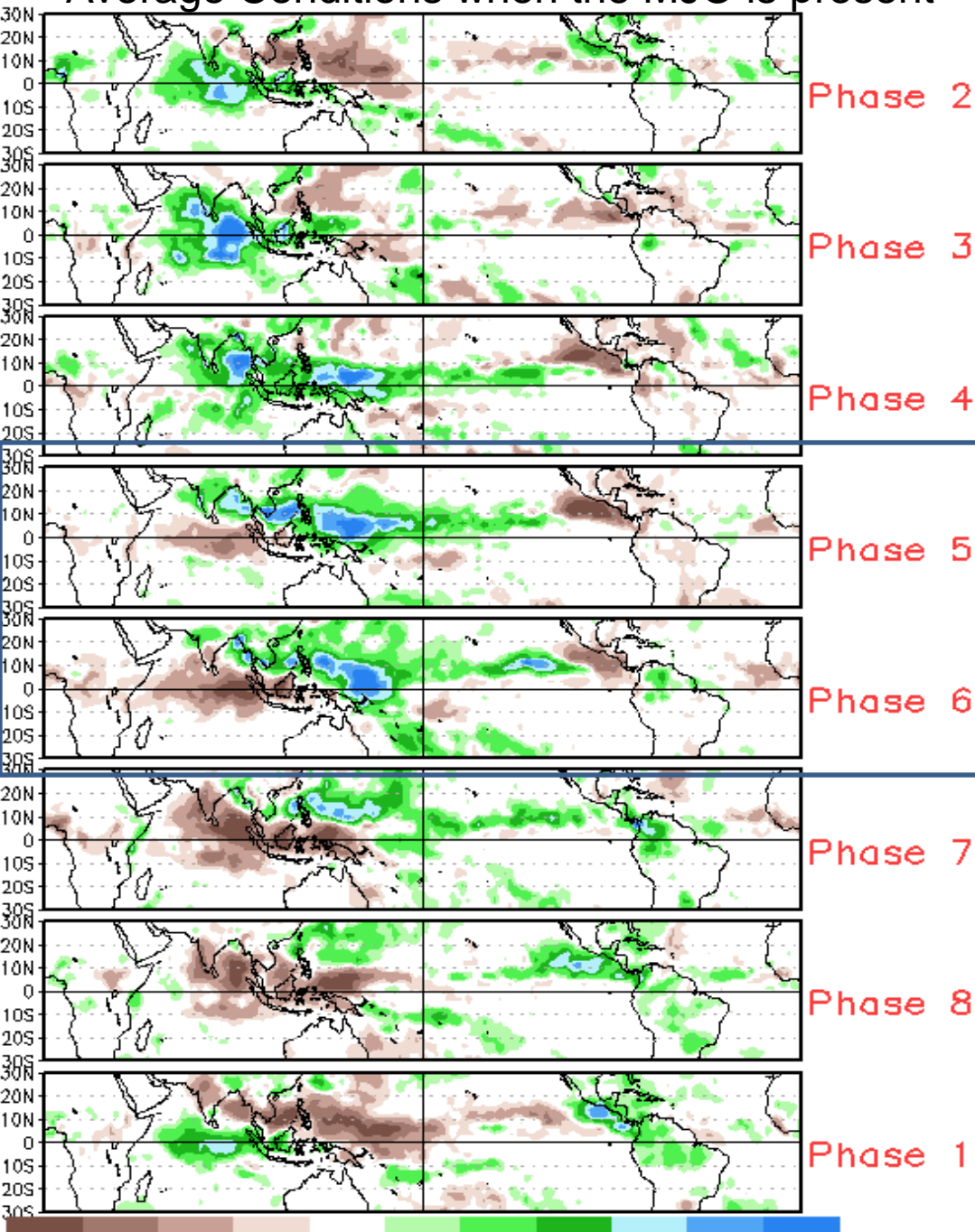
ECMWF

JMA

GEFS – amplifying signal with some eastward propagation in Week-2, but the signal lags the current convective anomalies.

ECMWF – broadly weak, stationary signal, with some ensemble members depicting MJO activity.

# Average Conditions when the MJO is present

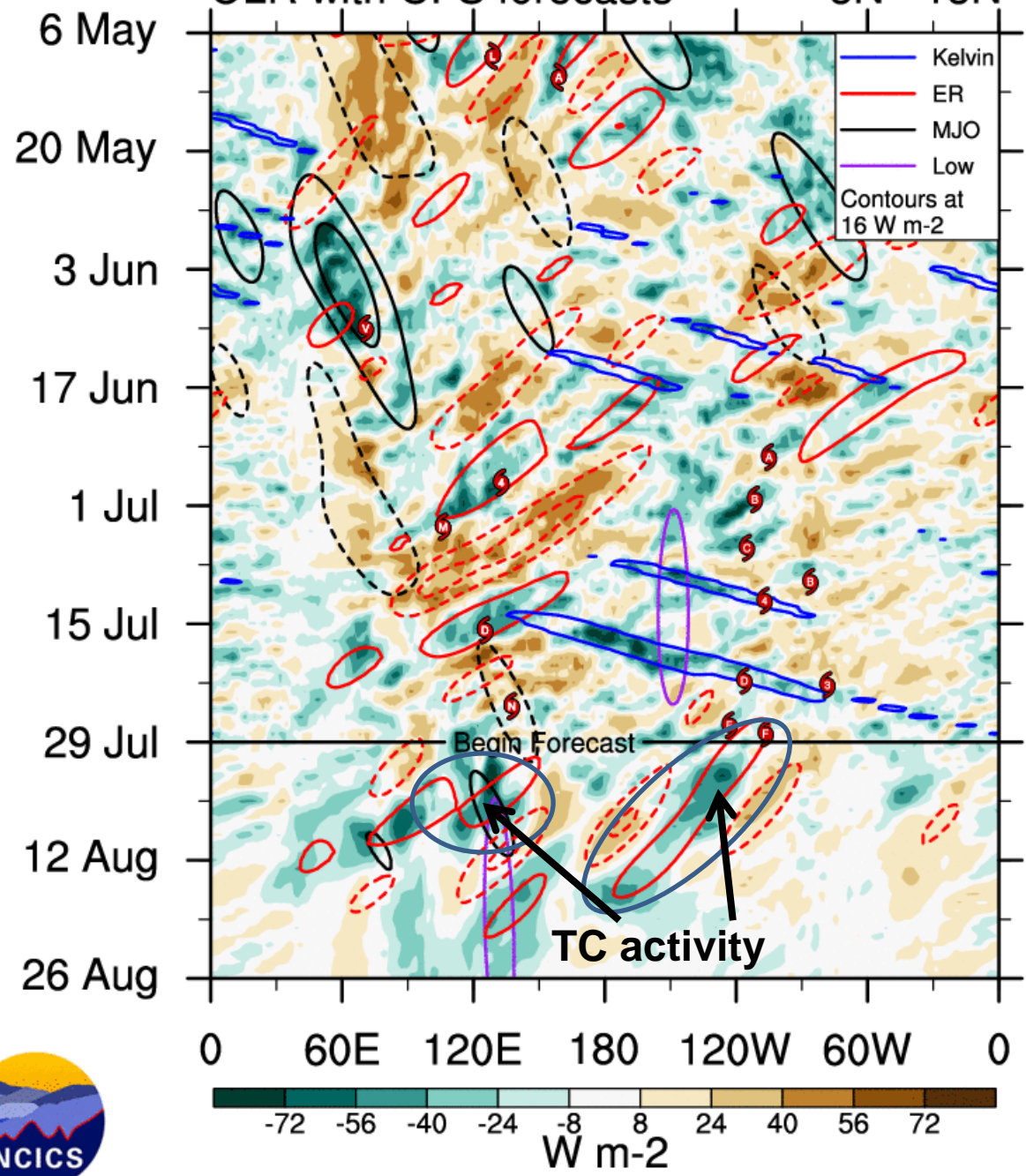


While the MJO signal is weak due to interference from other modes, the forecast convective pattern broadly resembles a Maritime Continent/West Pacific event.

CAVEAT: These panels are representative of robust MJO events.

# OLR with CFS forecasts

5N - 15N



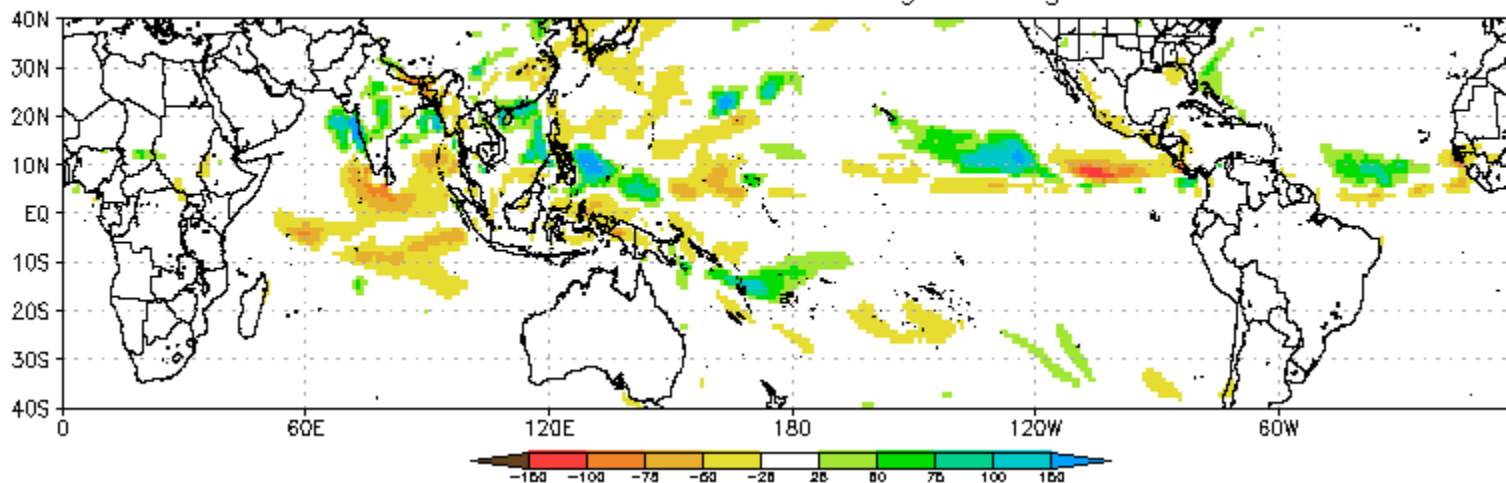
Note: This graphic is centered on the northern tropics

Kelvin wave activity was the most coherent signal since mid-July.

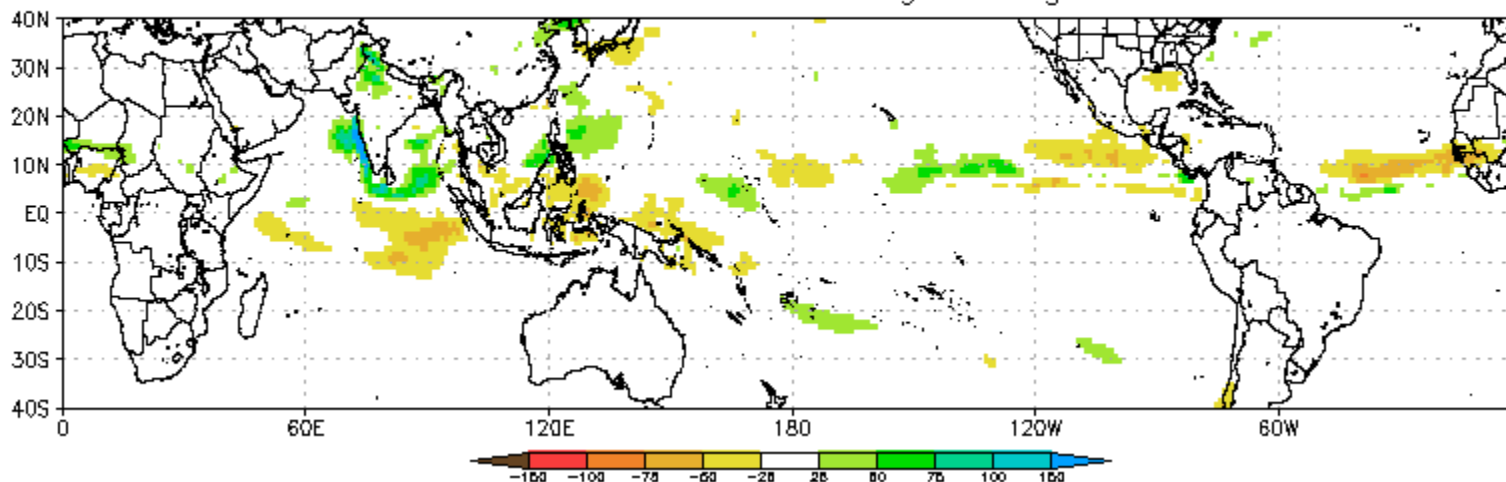




CFS Precipitation Anomalies (mm) Issued 29Jul2019  
Week-1 Forecast Ending 06Aug2019



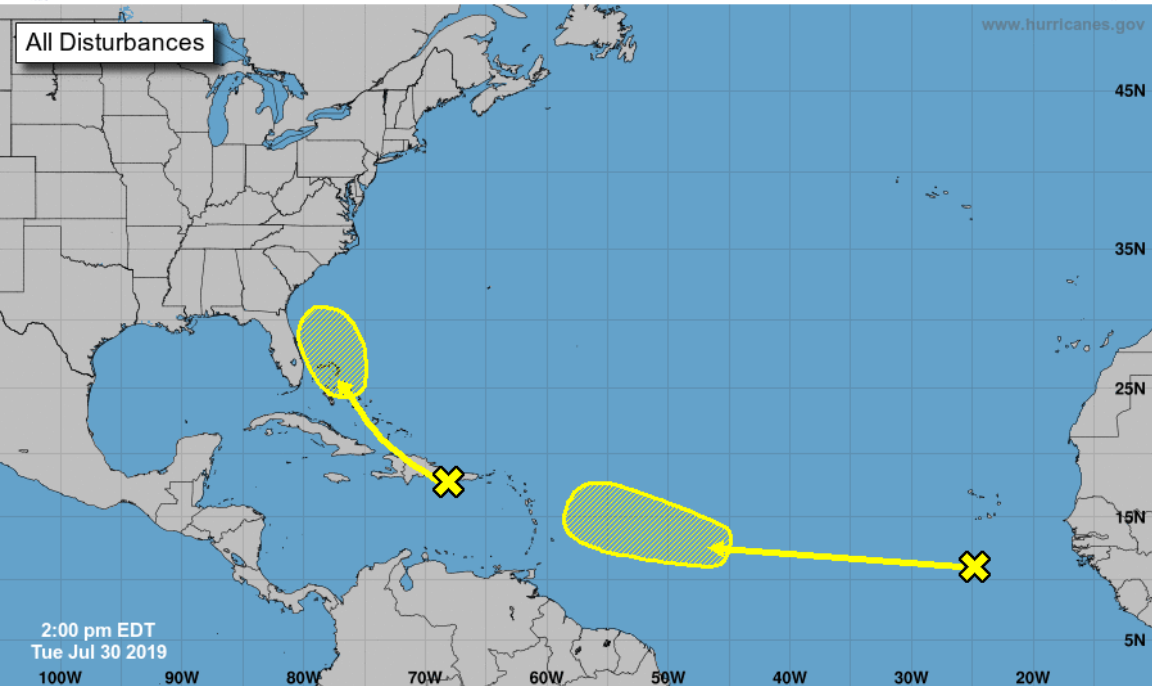
CFS Precipitation Anomalies (mm) Issued 29Jul2019  
Week-2 Forecast Ending 13Aug2019





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



2:00 pm EDT  
Tue Jul 30 2019

100W 90W 80W 70W 60W 50W 40W 30W 20W

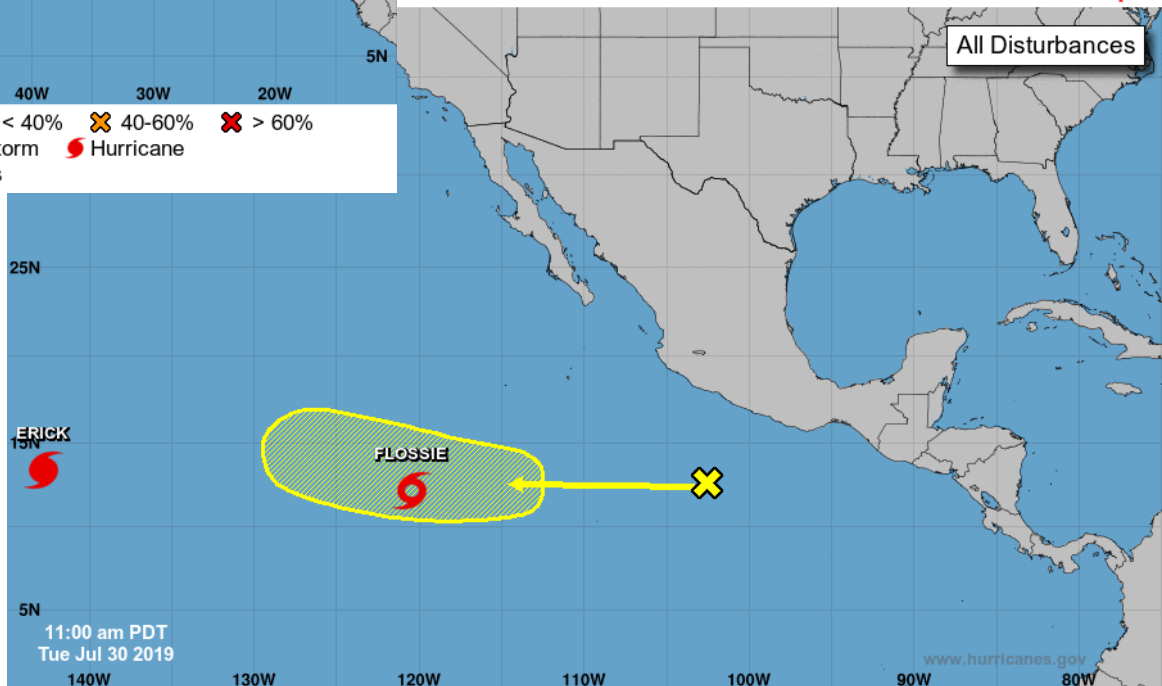
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

# Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



11:00 am PDT  
Tue Jul 30 2019

140W 130W 120W 110W 100W 90W 80W

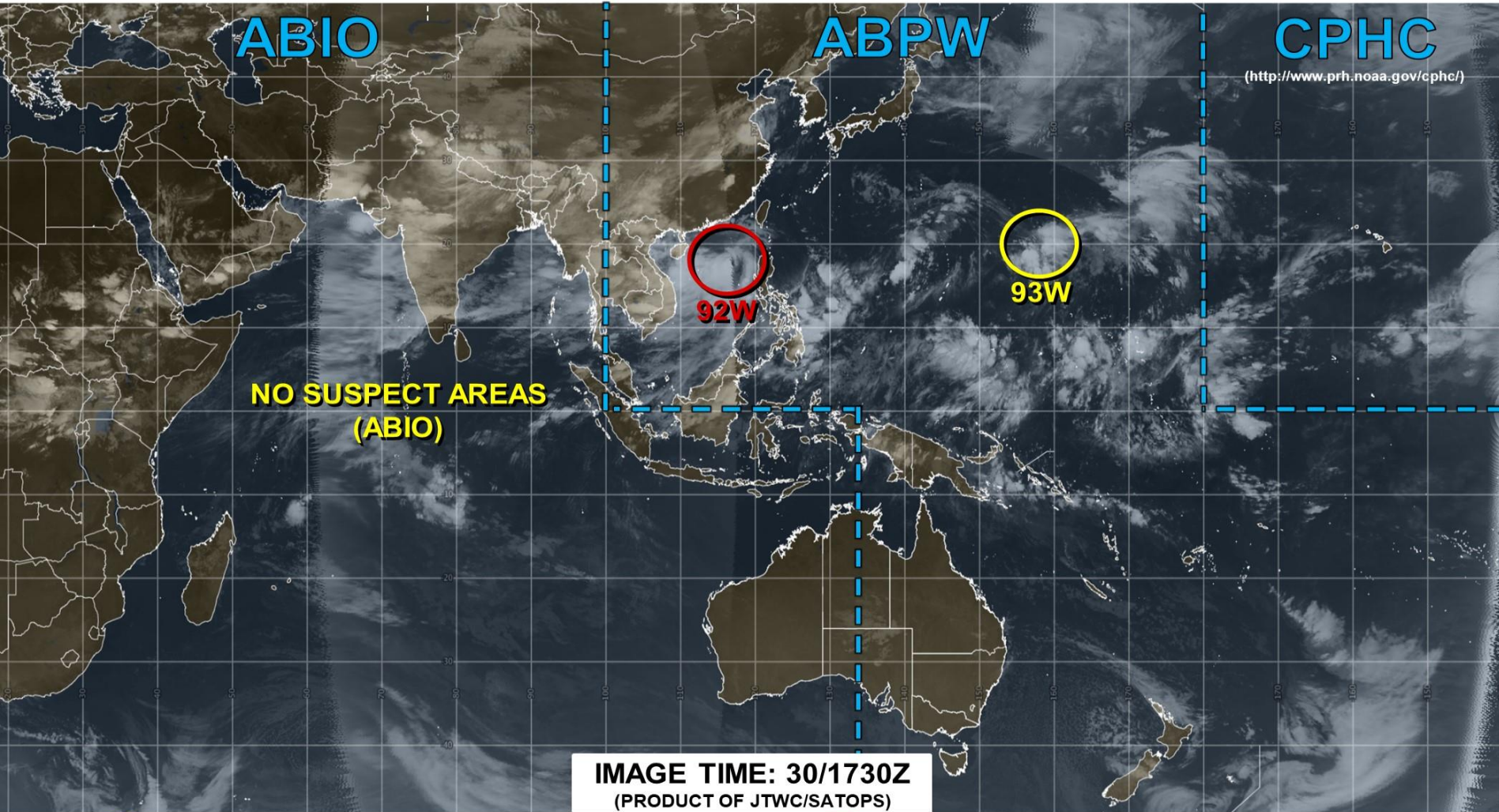
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Post-Tropical Cyclone or Remnants



# JOINT TYPHOON WARNING CENTER



**LOW**

TC development unlikely within 24 hours



**MEDIUM**

TC development likely, but expected to occur beyond 24 hours



**HIGH**

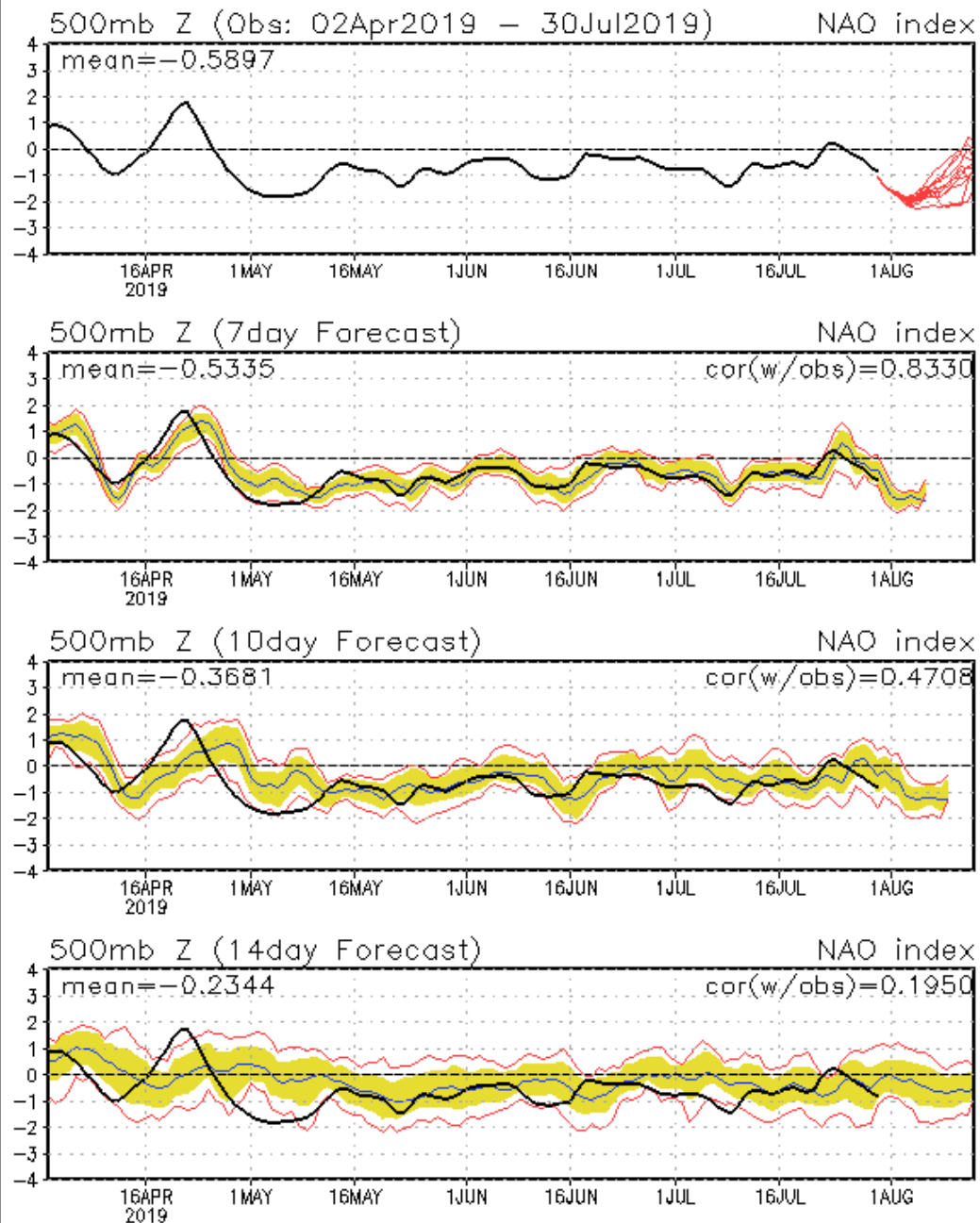
TC development likely within 24 hours (Reference TCFA)

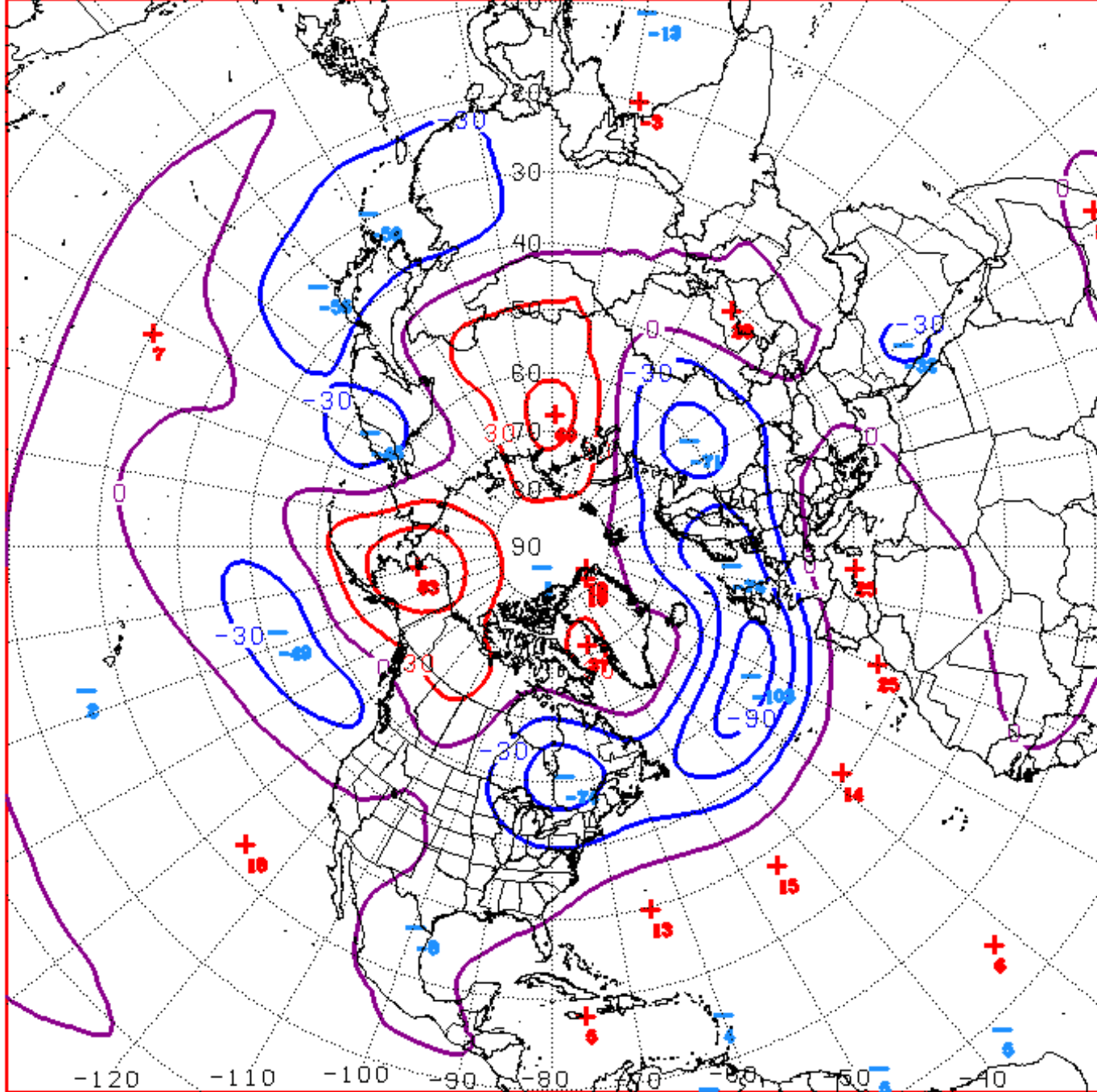


Tropical Cyclone (Reference Warning)

# Connections to U.S. Impacts

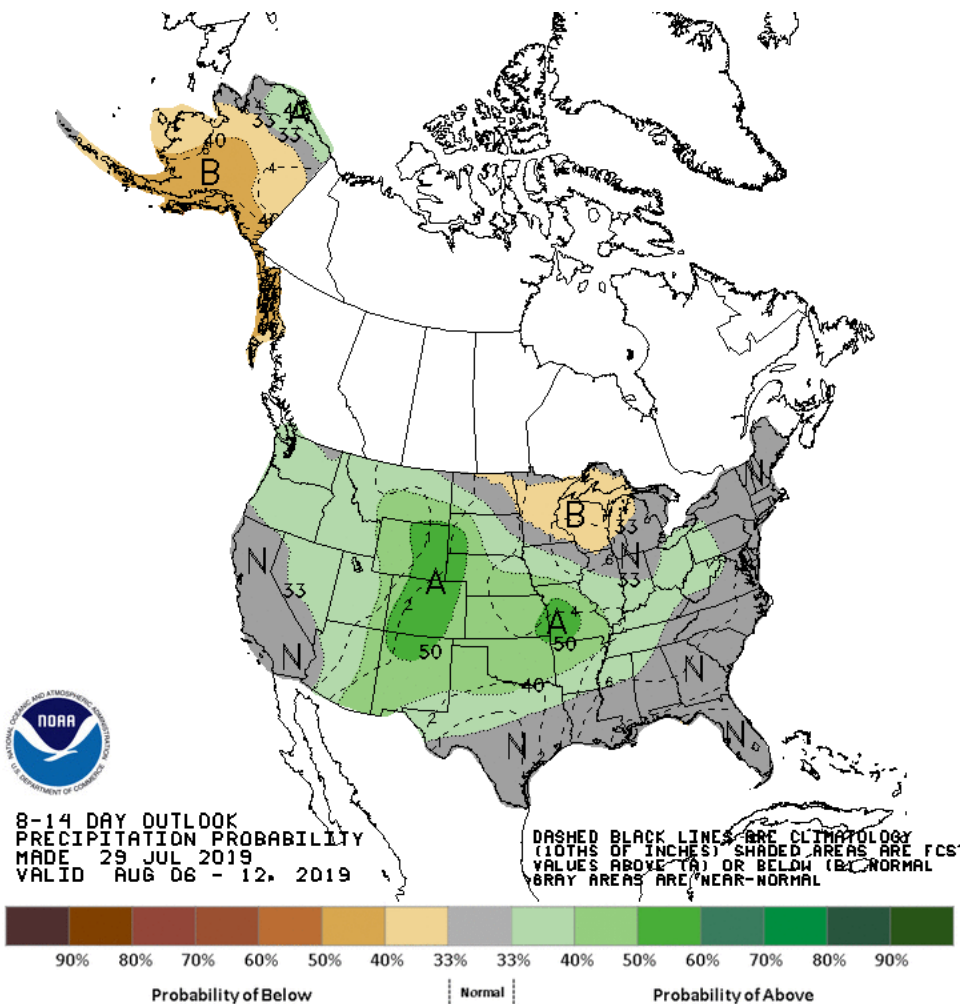
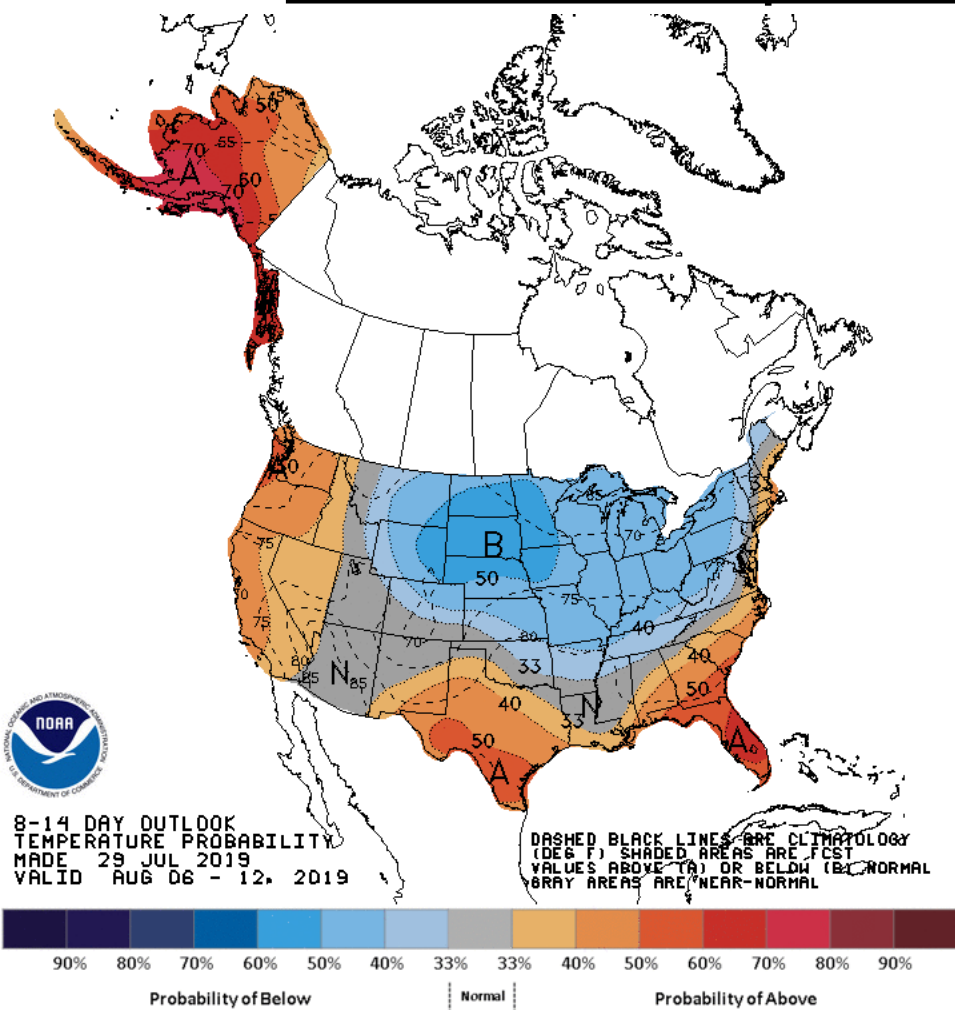
## NAO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM  
CPC MAP MADE JUL 30 2019 1315 UTC CNTD AUG 10 2019

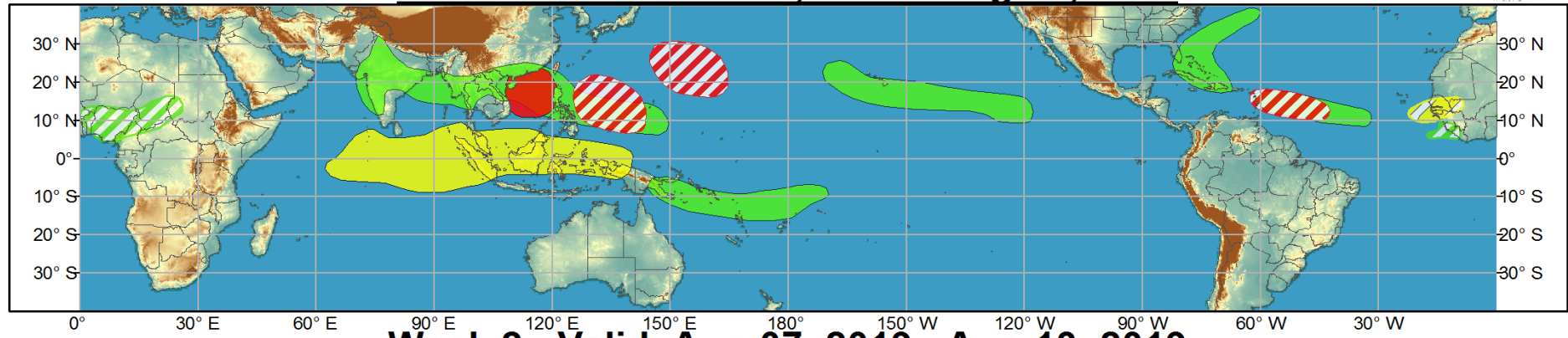
# Week 2 – Temperature and Precipitation



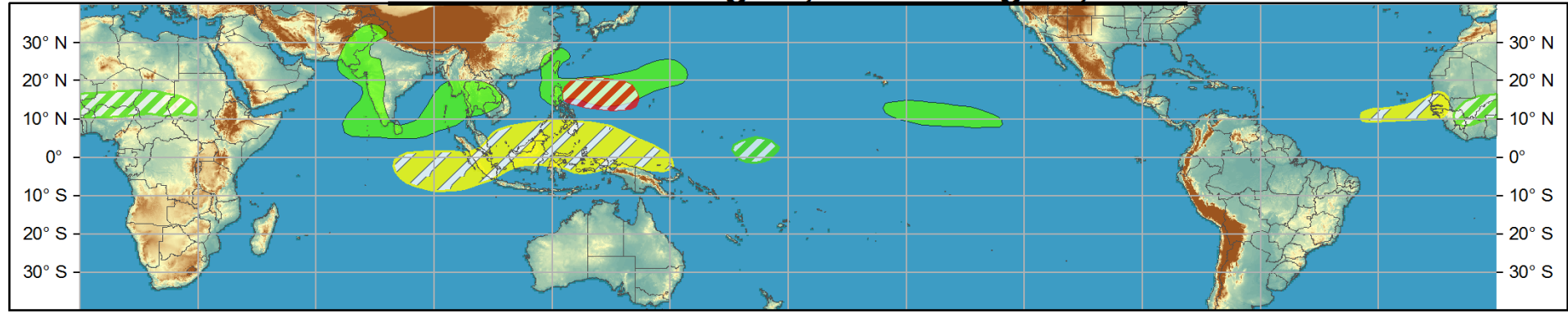


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