

# Global Tropics Hazards And Benefits Outlook

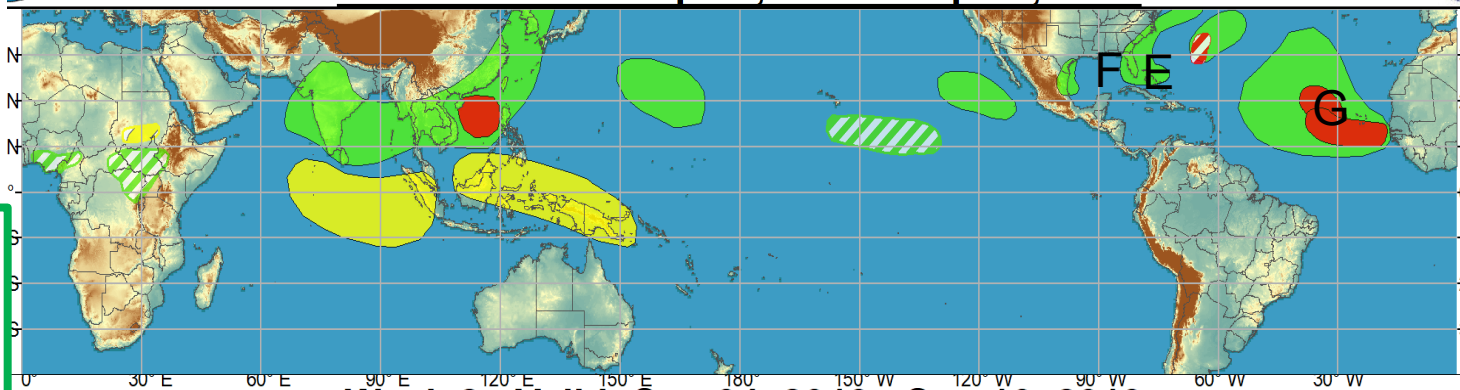
9/10/2019

Anthony Artusa

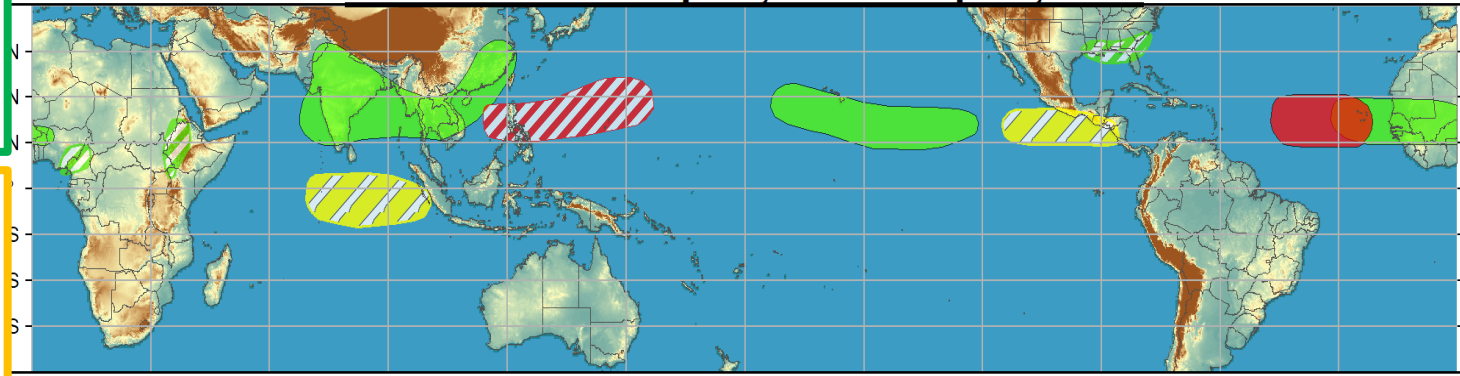
## Outline

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

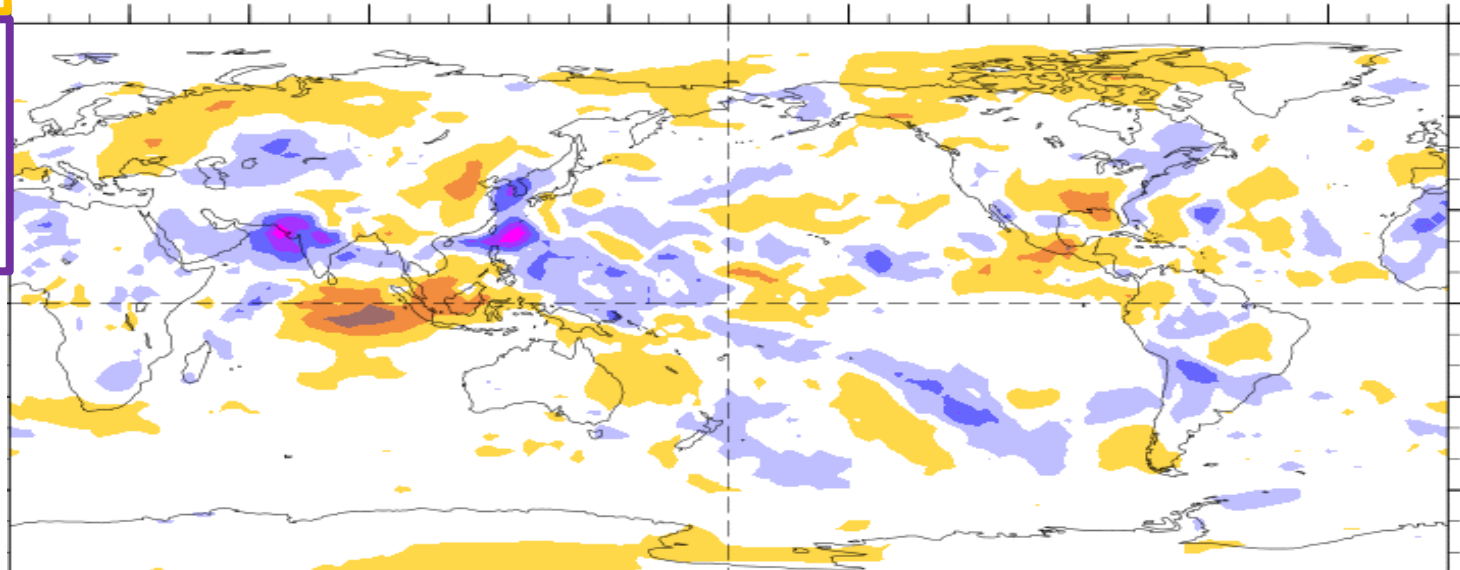
Week 1 - Valid: Sep 04, 2019 - Sep 10, 2019



Week 2 - Valid: Sep 04, 2019 - Sep 10, 2019



7-Day Average OLR Anomaly 2019/09/02 - 2019/09/08



# Outlook Review

Dorian (9/6: landfall at HAT)

Erin (E)  
Fernand (F)  
Gabrielle (G)

West Pac:  
Faxai (Cat-3) Tokyo

Lingling

East Pac:

Hurr Juliette  
TS Akoni

Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

## **ENSO: (Sept 9, 2019)**

- ENSO Alert System Status: ENSO-neutral
- ENSO-neutral is most likely to continue through NH winter 2019-20 (50-55% chance)

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

- The MJO remained weak; enhanced convection over Maritime Continent/West Pac.
- ECMWF strengthens signal in Week-2 (West Pac/WH). GEFS weak throughout the 2-week period (mostly Maritime Continent/West Pac)

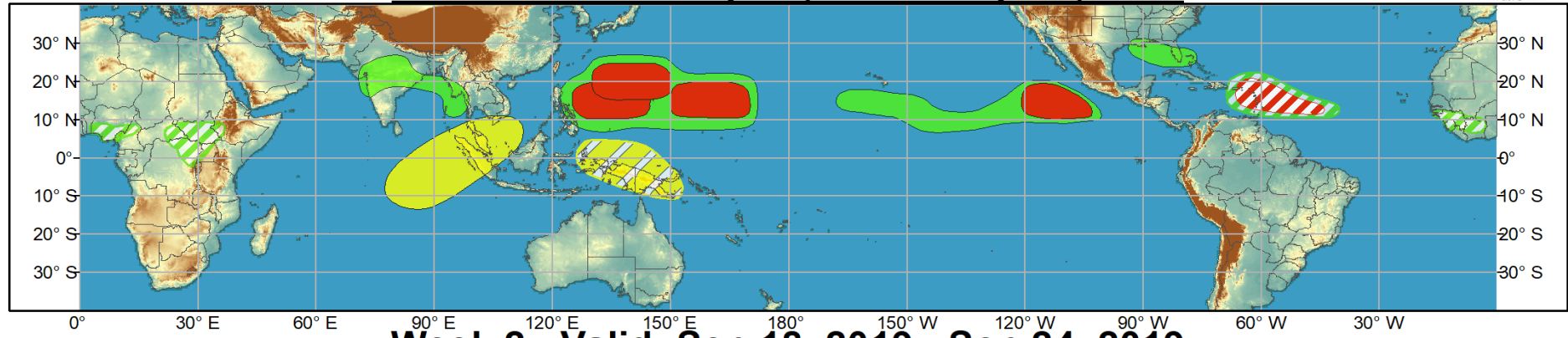
## **Extratropics:**

- The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by MJO activity (but Tropical Cyclone activity possible)

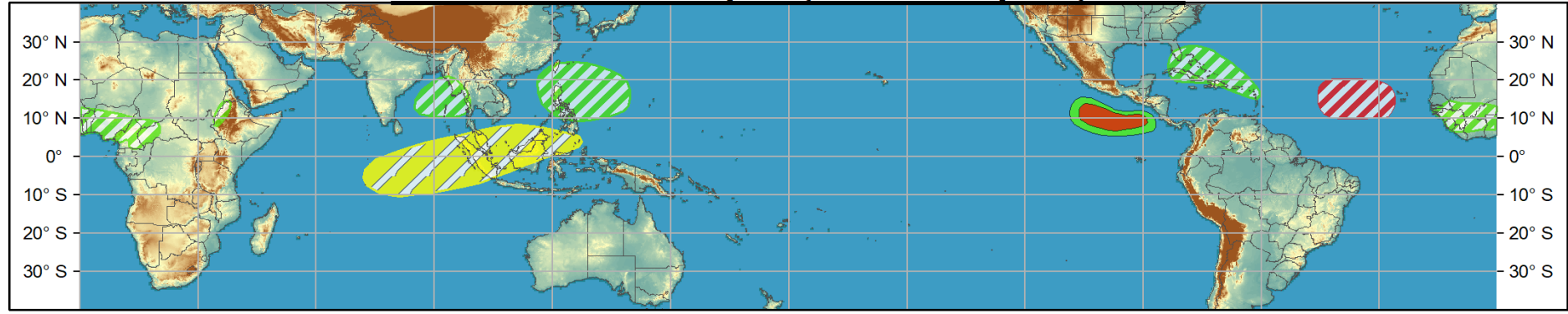


# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

## Week 1 - Valid: Sep 11, 2019 - Sep 17, 2019



## Week 2 - Valid: Sep 18, 2019 - Sep 24, 2019



Produced: 09/10/2019  
Forecaster: Artusa

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.

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# IR Satellite & 200-hpa Velocity Potential Anomalies

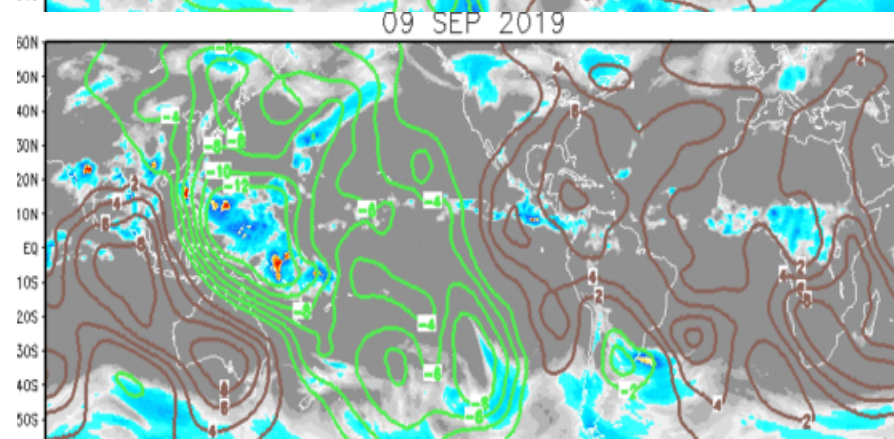
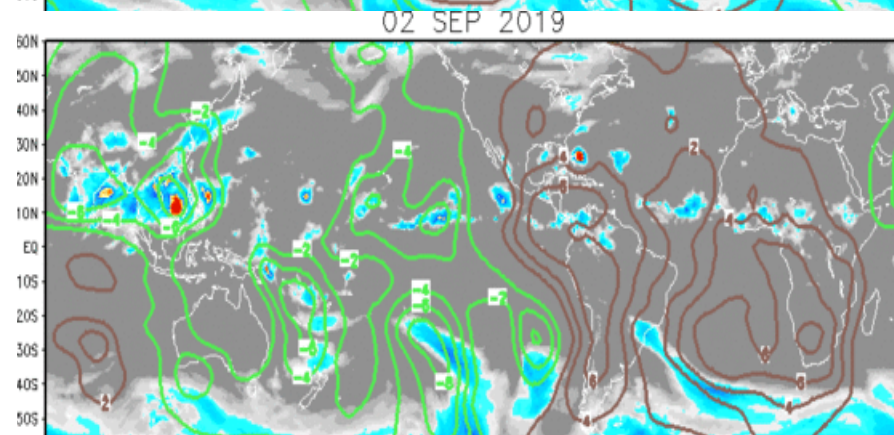
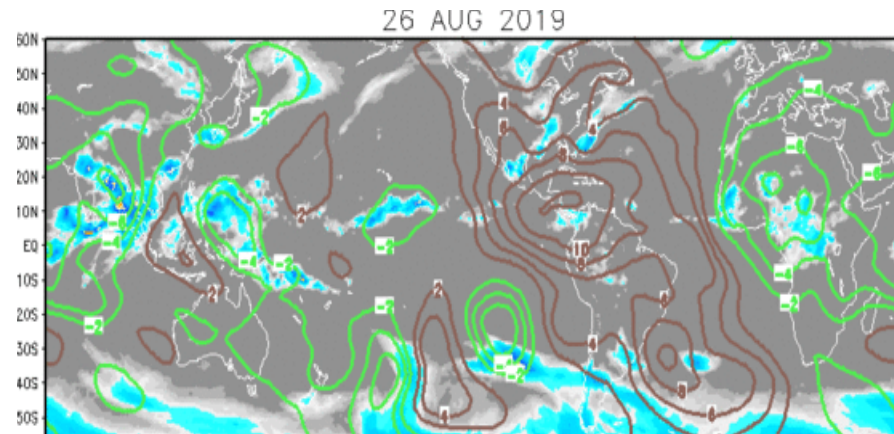
Green: Enhanced Divergence

Brown: Enhanced Convergence

Incoherent wave pattern over much of globe. Enhanced convection over Africa, Indian Ocean, Maritime Continent.

Better organized wave pattern. Enhanced convection over Maritime Continent and most of Pacific.

Wave-1 with enhanced convection over Pacific

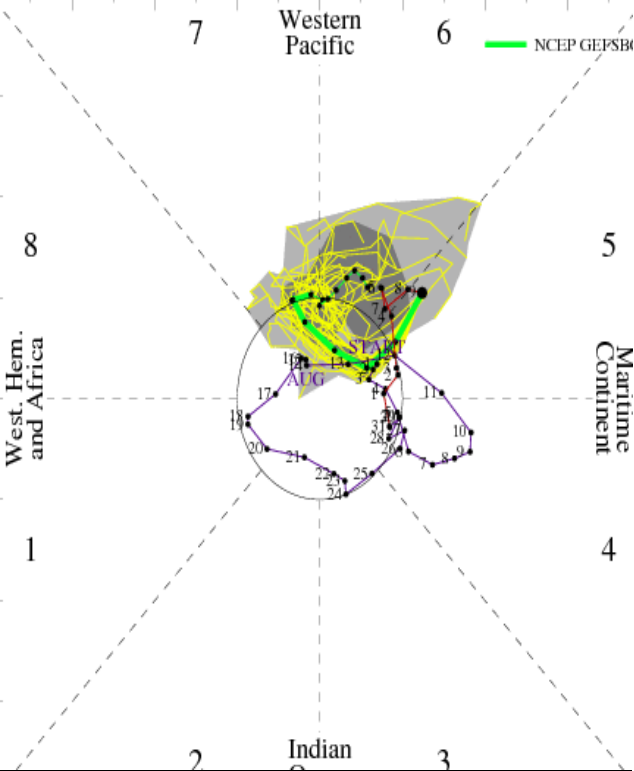


# MJO Observation/Forecast

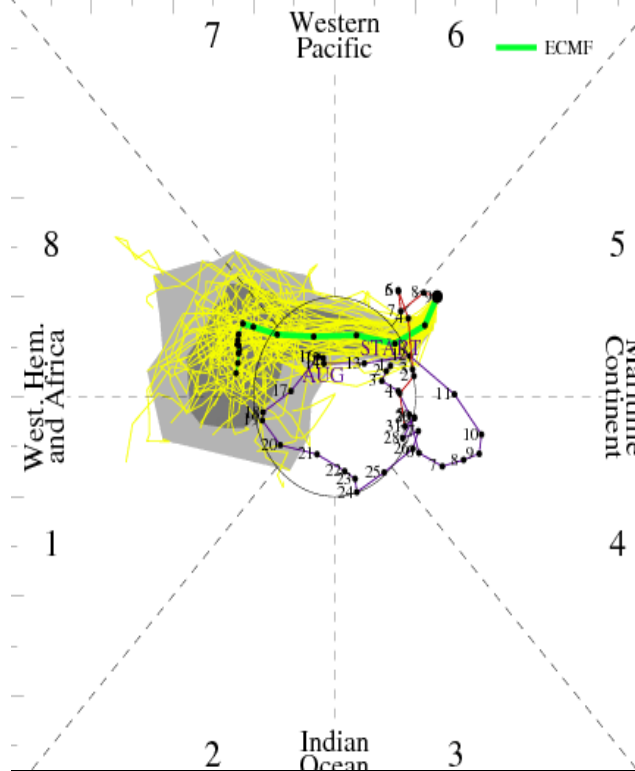
[RMM1, RMM2] forecast for Sep-10-2019 to Sep-24-2019

MJO Index Forecast for 10Sep2019-24Sep2019

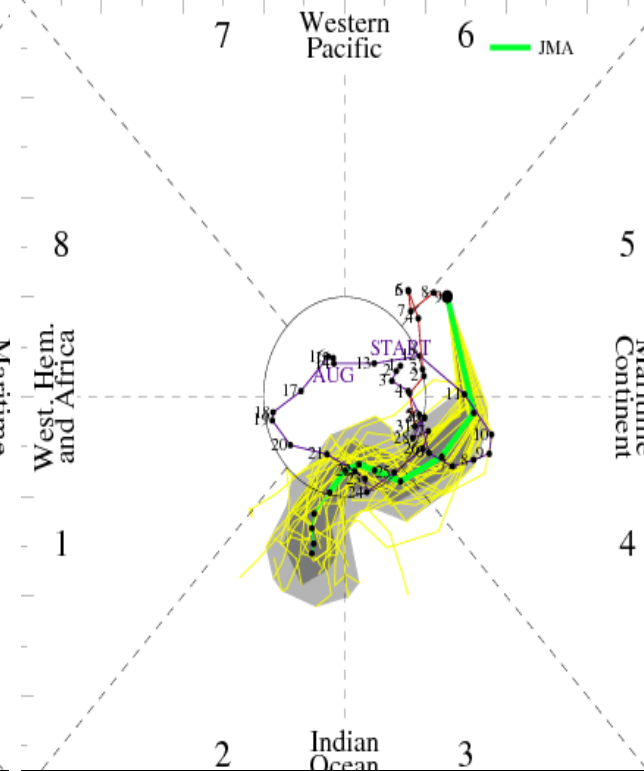
MJO Index Forecast for 10Sep2019-18Sep2019



GEFS



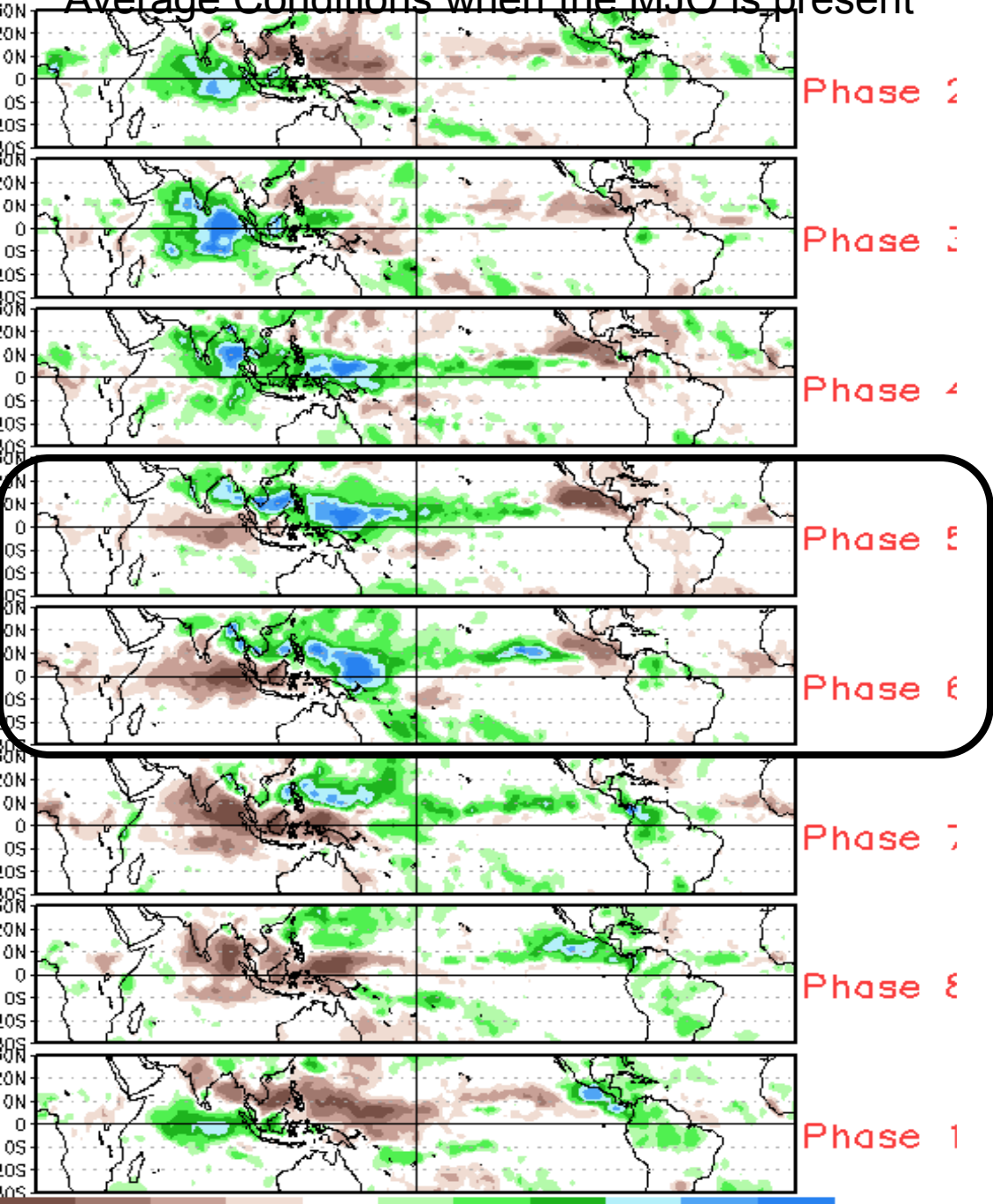
ECMWF



JMA

Wheeler-Hendon based analyses of model forecasts indicate significant differences in RMM space. ECMWF farthest east solution & strengthening signal (week-2). JMA shows westward motion & strengthening signal in week-1. GEFS somewhere in-between the ECMWF and JMA.

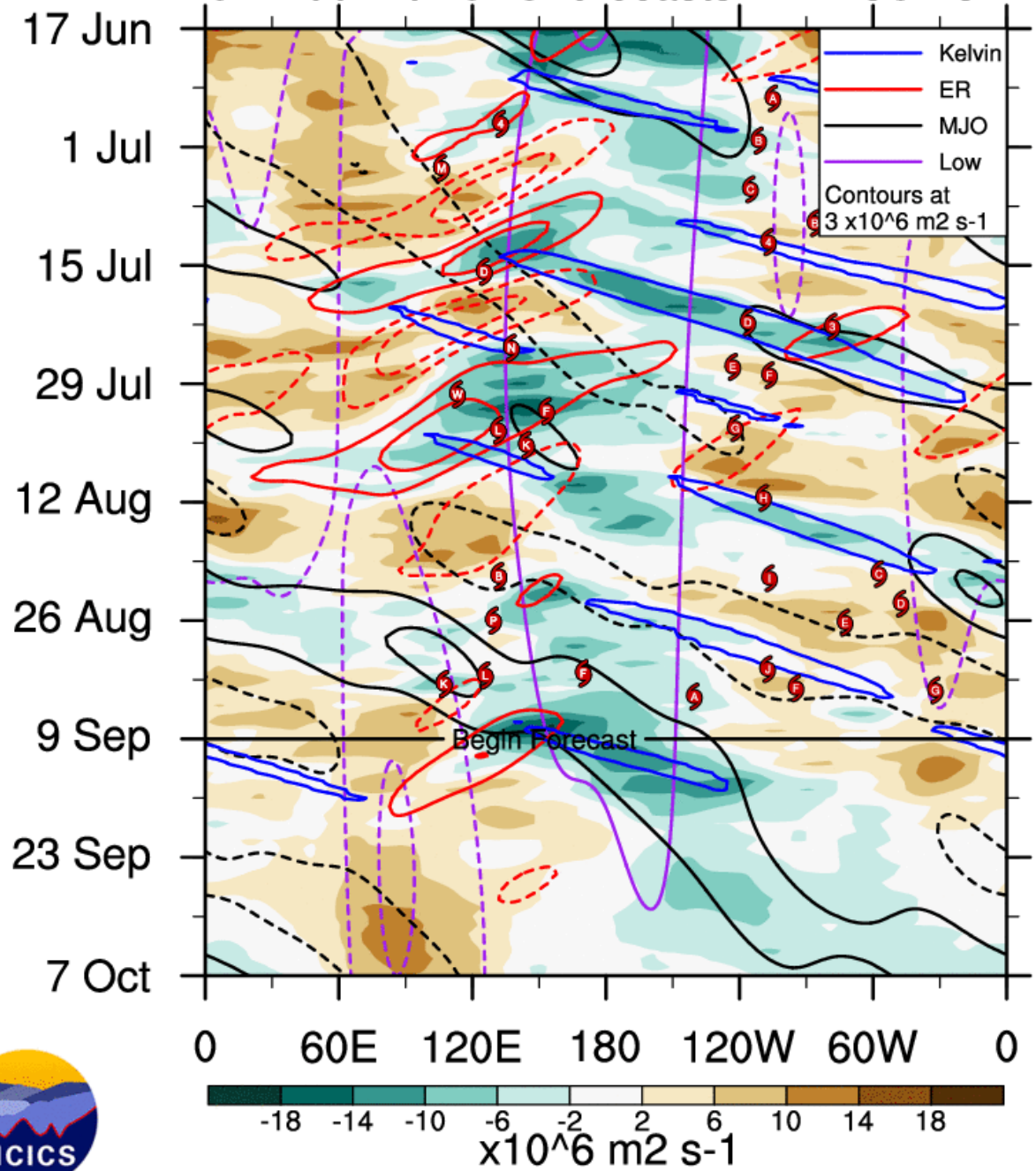
# Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

# CHI200 with CFS forecasts 5S - 5N

- KW
- - - ERW
- MJO







# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

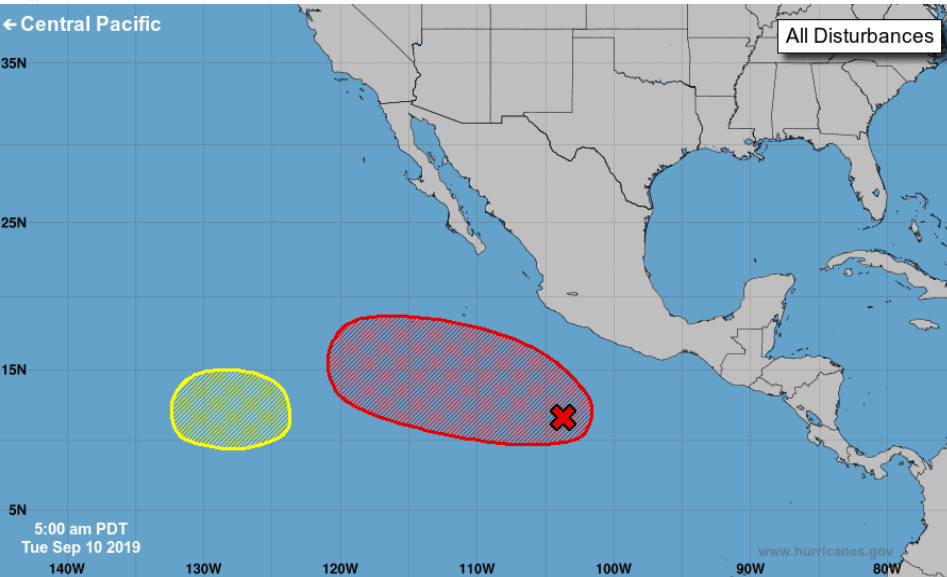


# Five-Day Graphical Tropical Weather Outlook

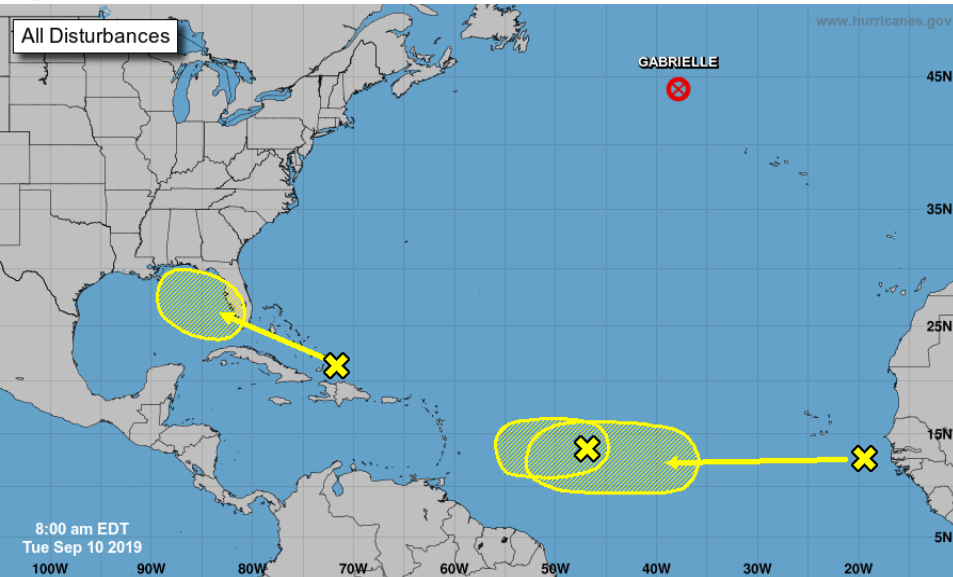
National Hurricane Center Miami, Florida



← Central Pacific



All Disturbances



All Disturbances

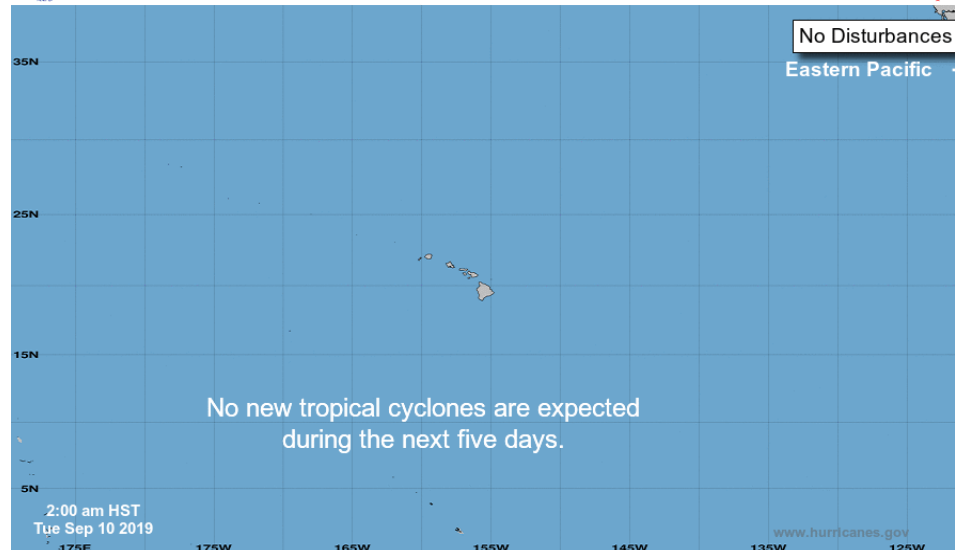
Current Disturbances and Five-Day Cyclone Formation Chance:   
 Tropical or Sub-Tropical Cyclone:   
 Post-Tropical Cyclone or Remnants

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# Five-Day Graphical Tropical Weather Outlook

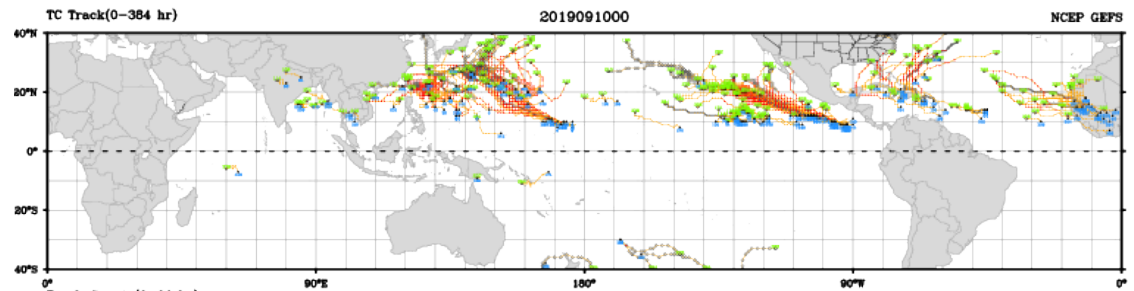
Central Pacific Hurricane Center Honolulu, Hawaii



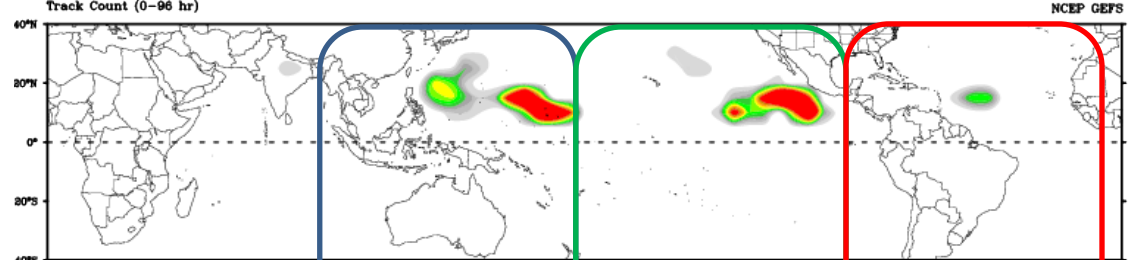
No Disturbances  
Eastern Pacific →

No new tropical cyclones are expected during the next five days.

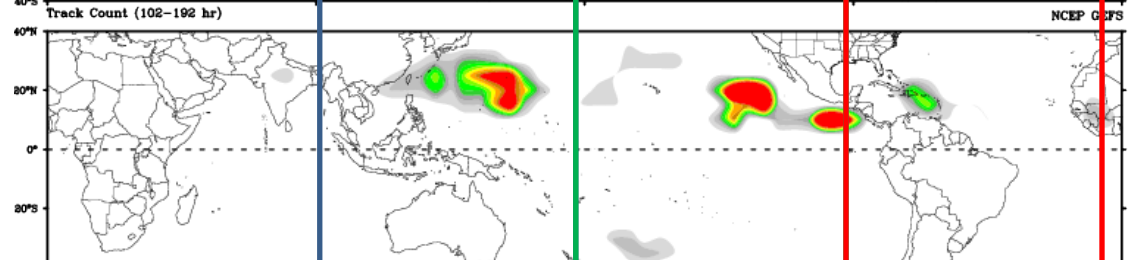
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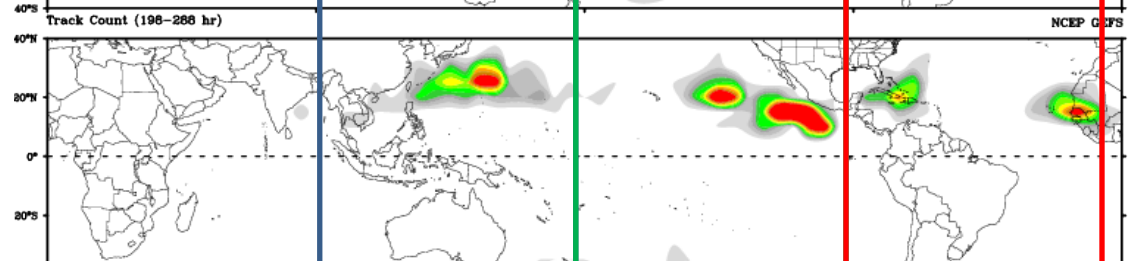
Days 1-4



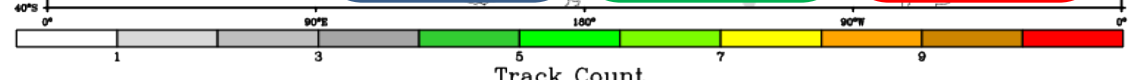
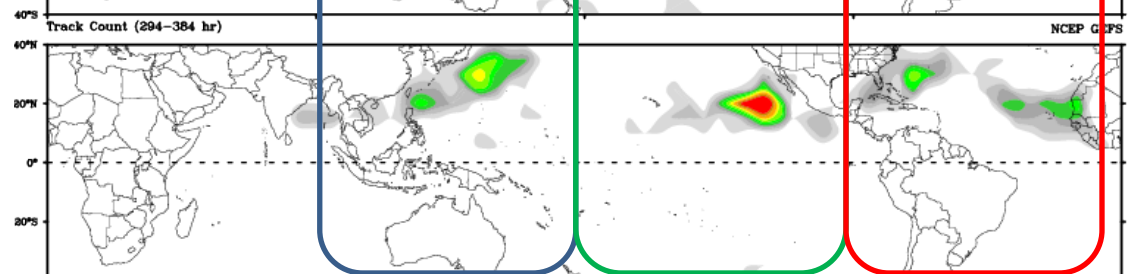
Days 5-8



Days 9-12



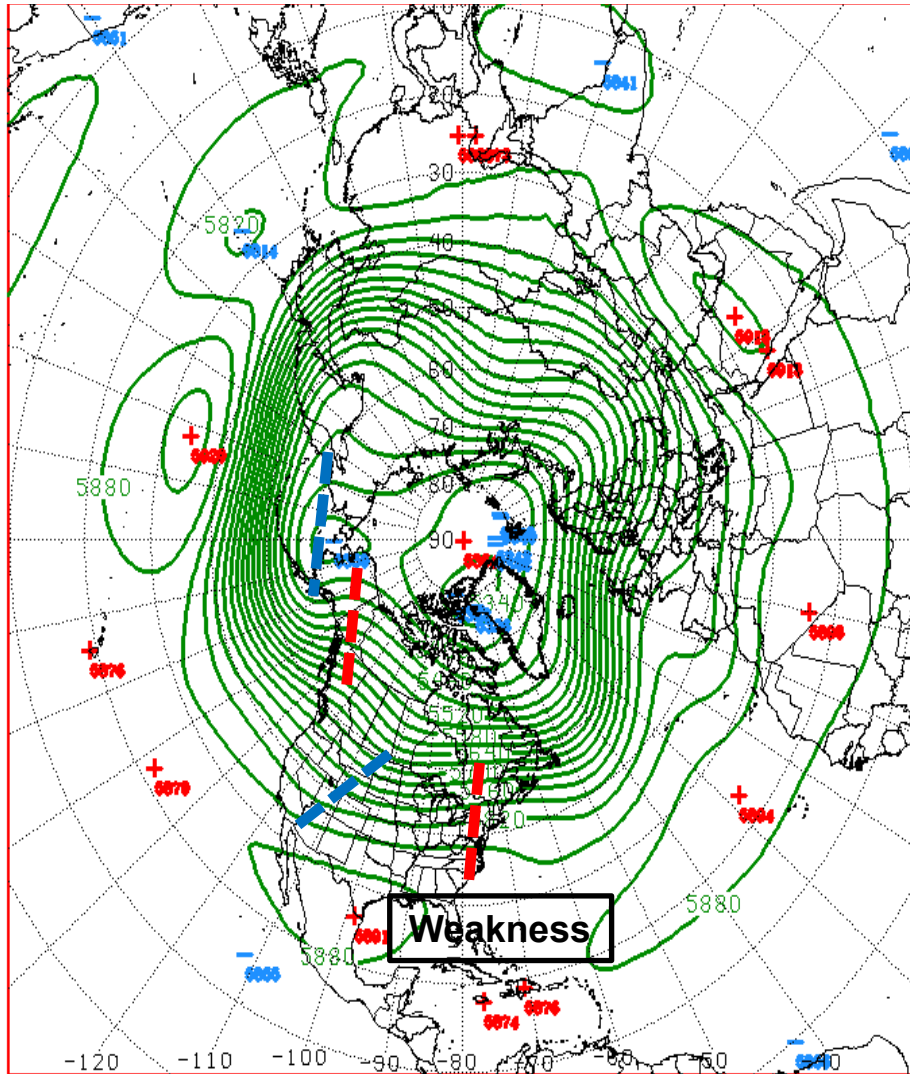
Days 13-15



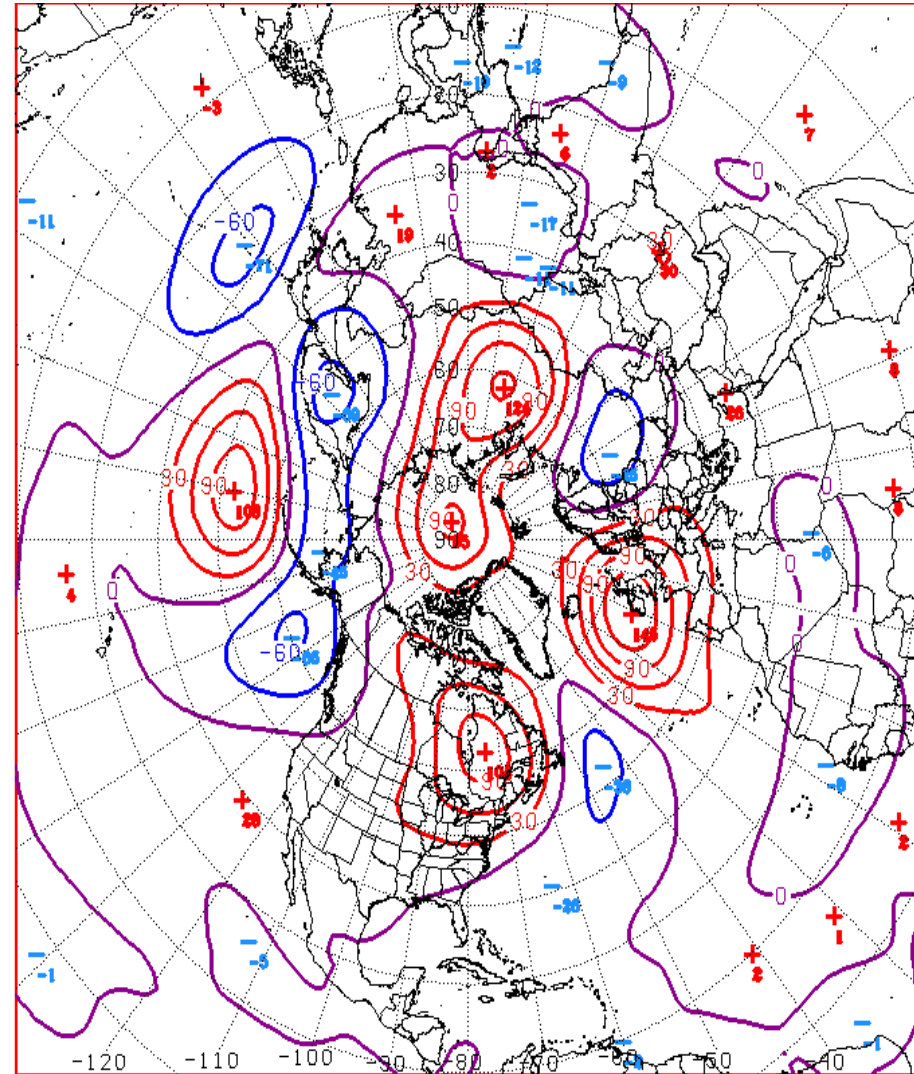
# Connections to U.S. Impacts

# Week-2 500mb Fcst (GFS Superensemble)

## Heights



## Anomalies

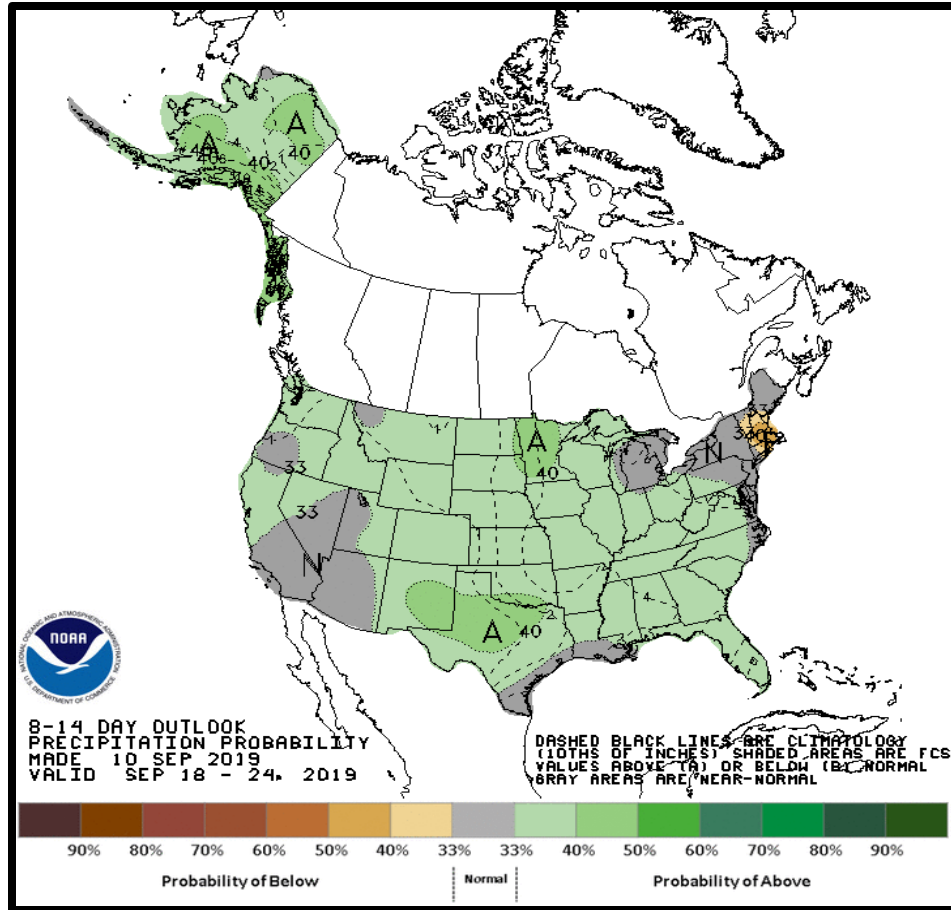
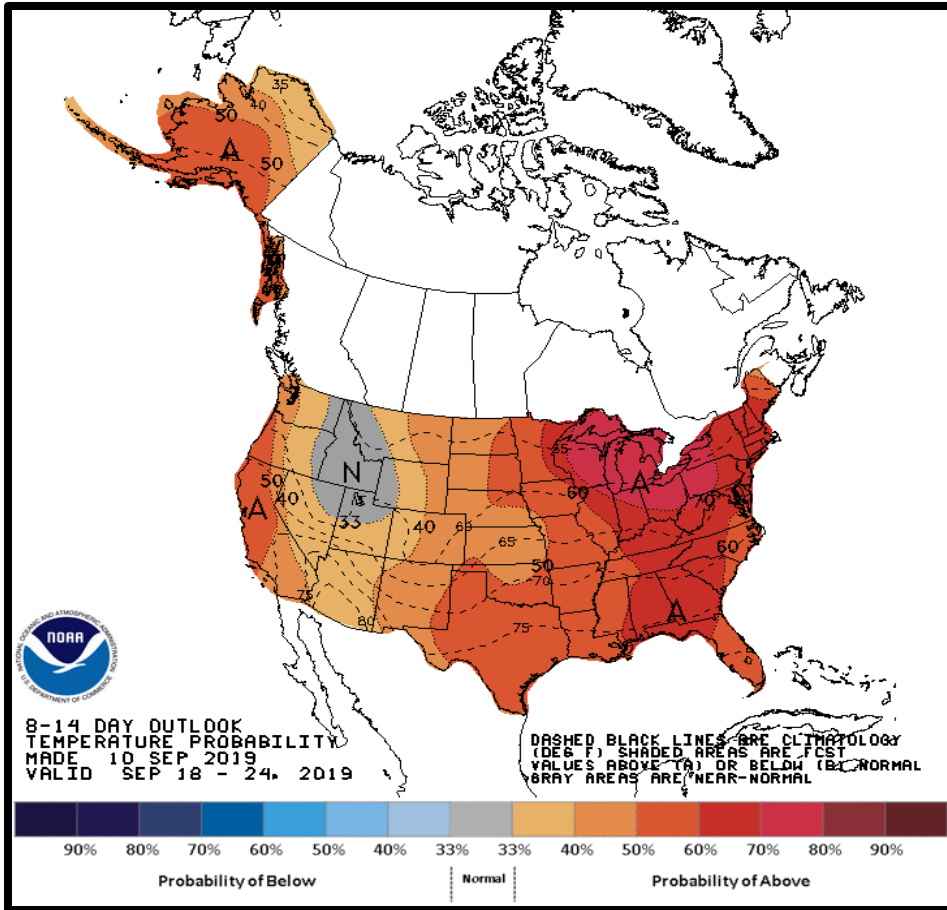


D+11 500 MB HEIGHTS FROM ALZ ENSM  
CPC MAP MADE SEP 10 2019 1310 UTC CNTD SEP 21 2019

D+11 500 MB ANOMALIES FROM ALZ ENSM  
CPC MAP MADE SEP 10 2019 1311 UTC CNTD SEP 21 2019



# Week 2 – Temperature and Precipitation

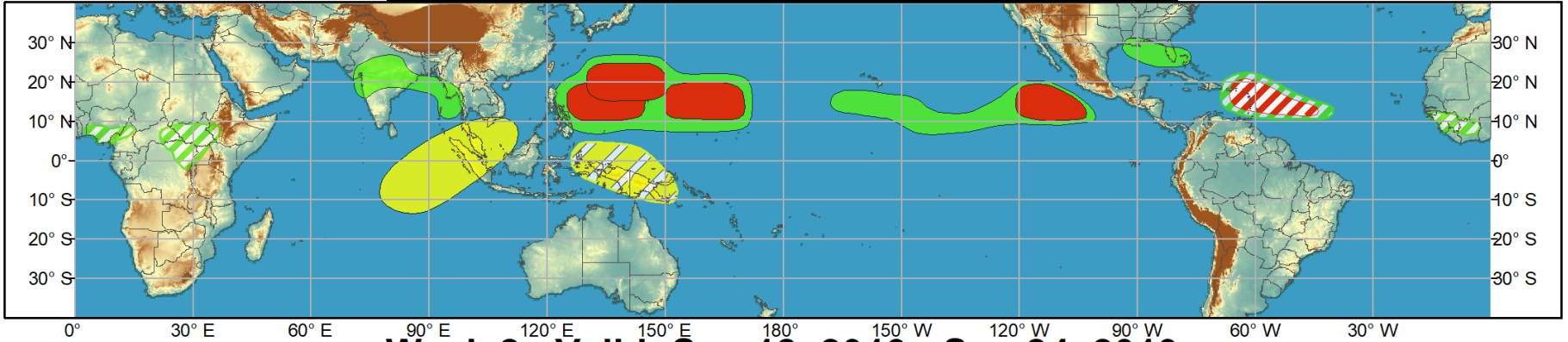




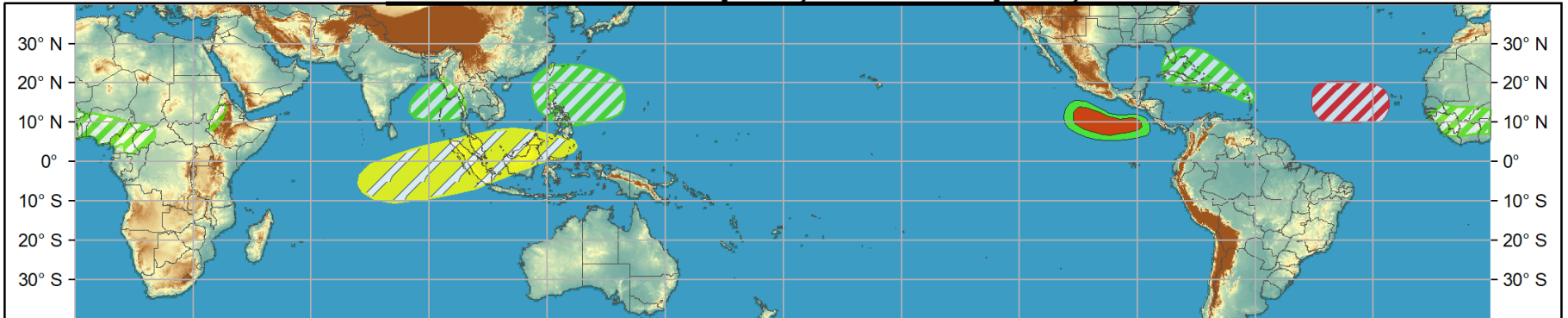
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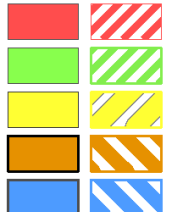
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### Confidence

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- Tropical Cyclone Formation**
- Above-average rainfall**
- Below-average rainfall**
- Above-normal temperatures**
- Below-normal temperatures**



- Development of a tropical cyclone (tropical depression - TD, or greater strength).
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- Weekly total rainfall in the lower third of the historical range.
- 7-day mean temperatures in the upper third of the historical range.
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