

# Global Tropics Hazards And Benefits Outlook

7/21/2020

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

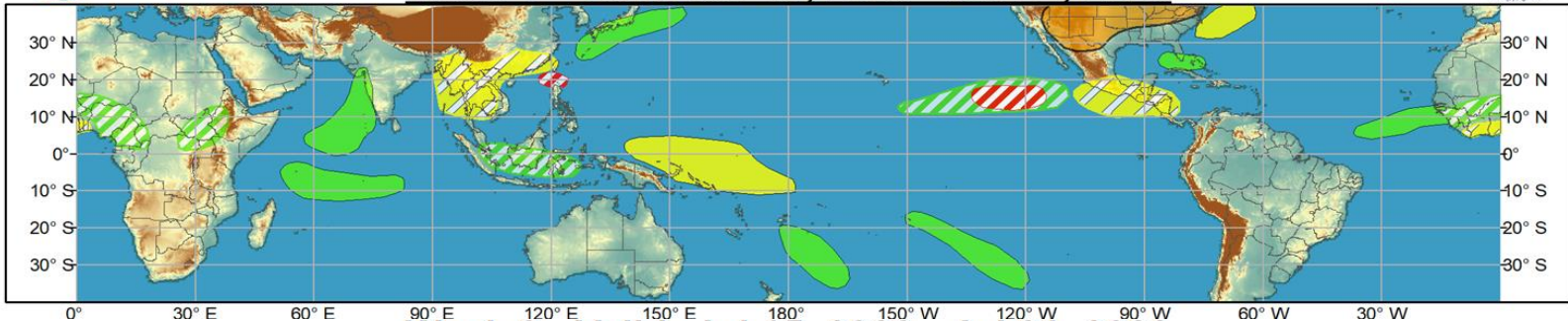
# Outlook Review



## Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



**Week 1 - Valid: Jul 15, 2020 - Jul 21, 2020**



**Week 2 - Valid: Jul 15, 2020 - Jul 21, 2020**

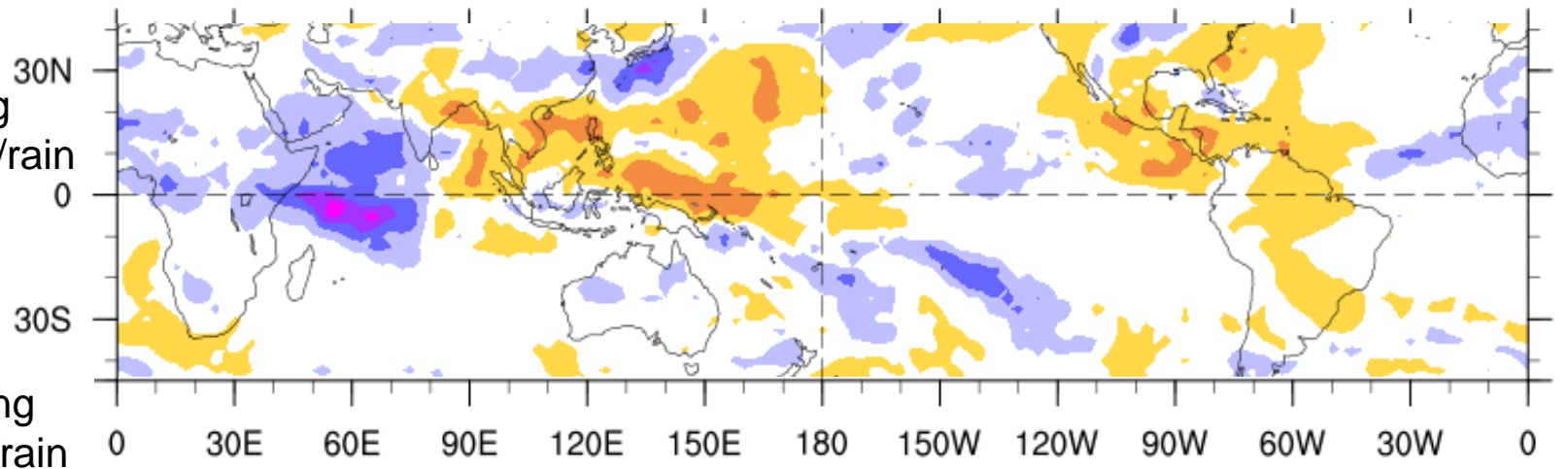


7-Day Average OLR Anomaly

2020/07/14 - 2020/07/20

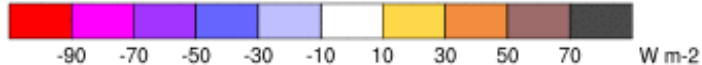
Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain



NOAA/PSL

Base Period: 1981-2010



# Synopsis of Climate Modes

**ENSO: (July 9, 2020 Update)**

*next update on 13<sup>th</sup> of Aug.!*

- ENSO Alert System Status: [La Niña Watch](#)
- ENSO-neutral is favored to continue through the summer, with a 50-55% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~50% chance).

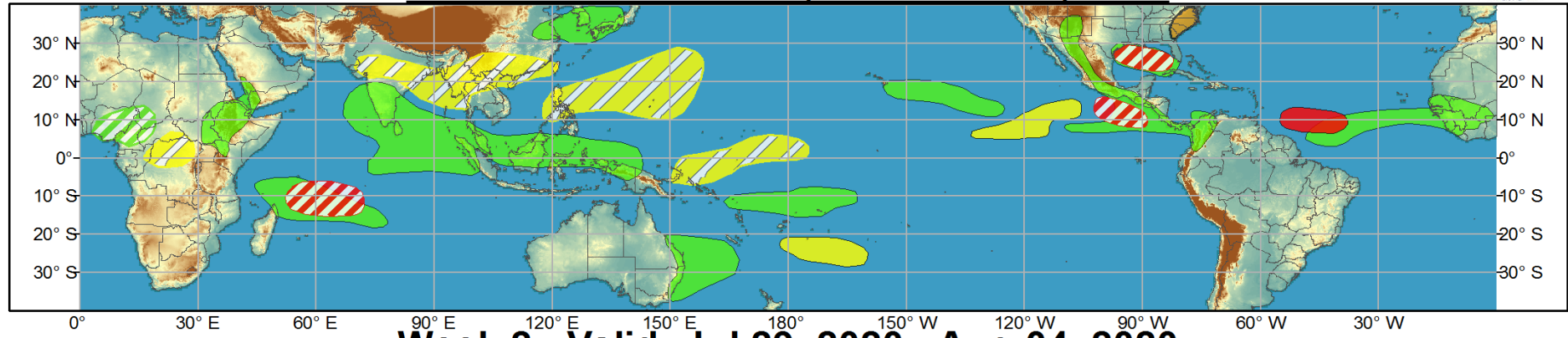
## **MJO and other subseasonal tropical variability:**

- The MJO indices (CPC velocity potential and RMM) depicted a weakening MJO signal.
- Enhanced convection remains over Africa and the western Indian Ocean, while a robust Kelvin wave is crossing the Pacific. The superposition of these signals weakened the index.
- The Kelvin wave is favored to increase convection over the East Pacific and Central America. This may help promote additional tropical cyclogenesis during the outlook period. The NHC is currently tracking Tropical Storm Douglas over the East Pacific, and there are several waves currently being monitored for potential formation.

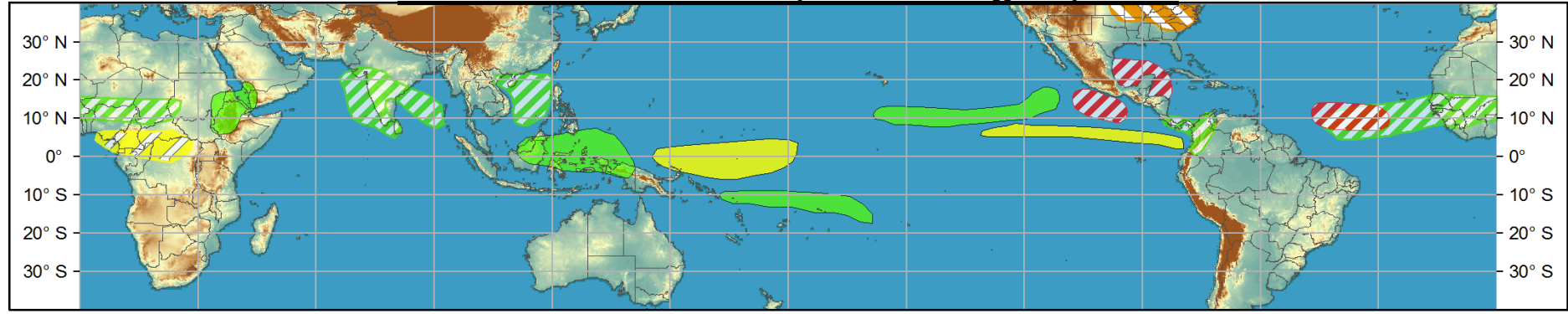


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## Week 1 - Valid: Jul 22, 2020 - Jul 28, 2020



## Week 2 - Valid: Jul 29, 2020 - Aug 04, 2020



**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.
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**Produced: 07/21/2020**  
**Forecaster: Allgood**

**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

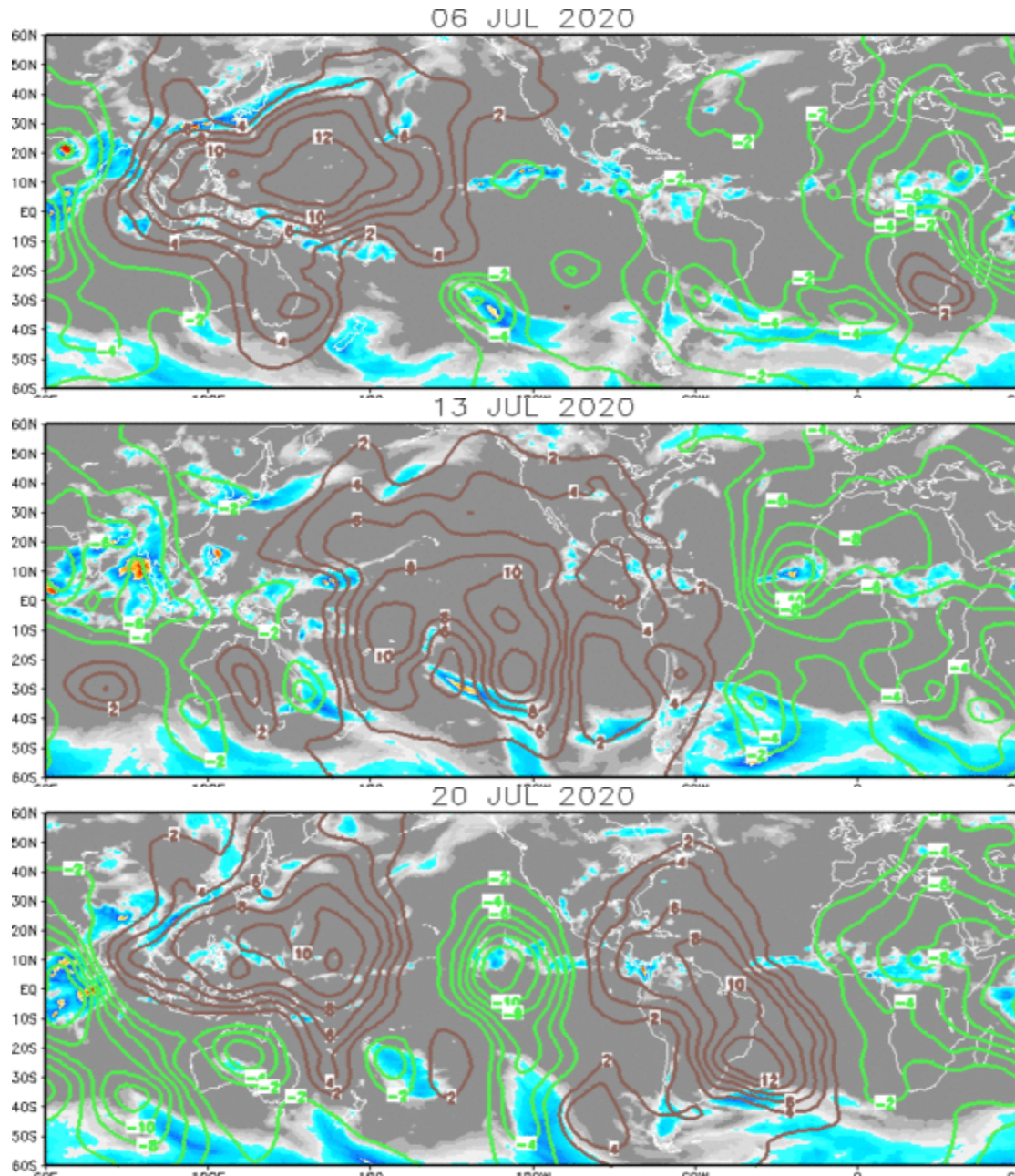
Green: Enhanced Divergence

Brown: Enhanced Convergence

Weaker pattern, with low frequency suppressed convection WPac the strongest signal.

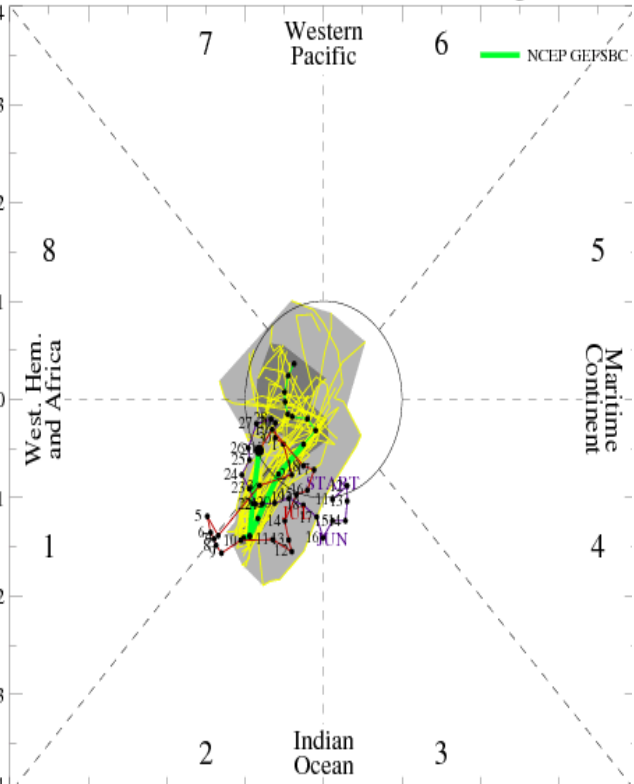
Wave-1 asymmetry looks very MJO-like

Wave-2 asymmetry as a Kelvin wave moved ahead of the broader envelope and crossed the Pacific.



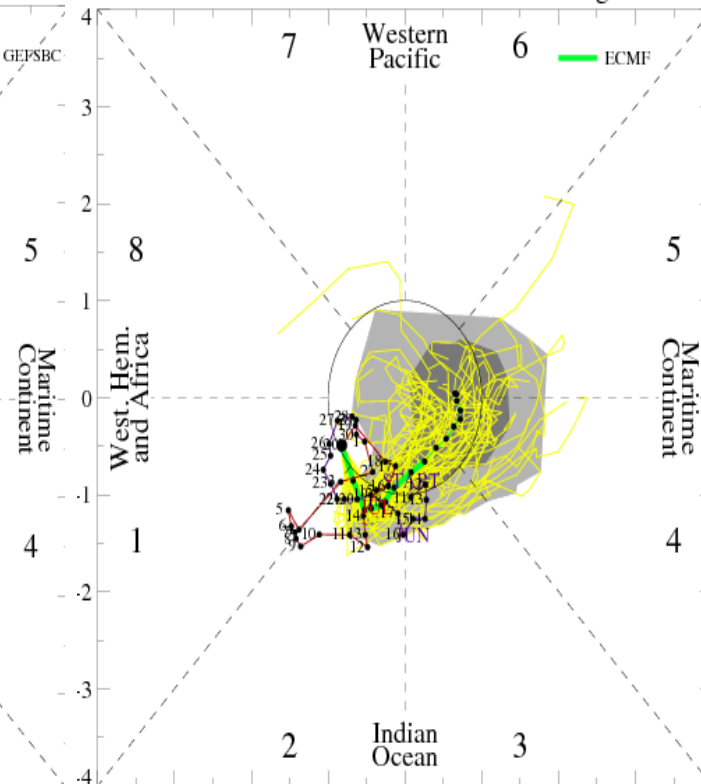
# MJO Observation/Forecast

[RMM1, RMM2] forecast for Jul-21-2020 to Aug-04-2020



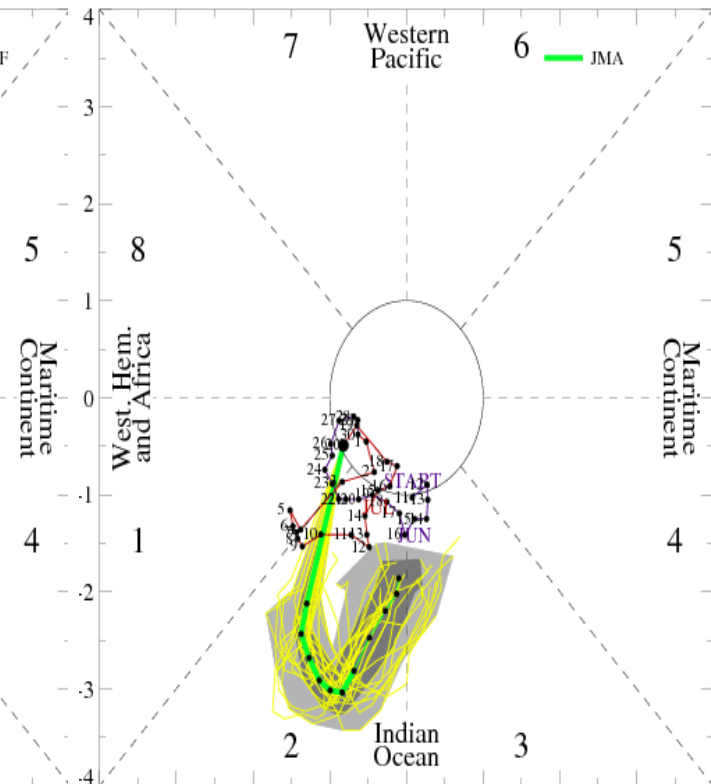
GEFS

MJO Index Forecast for 21 Jul 2020 to 04 Aug 2020



ECMWF

MJO Index Forecast for 21 Jul 2020 to 29 Jul 2020

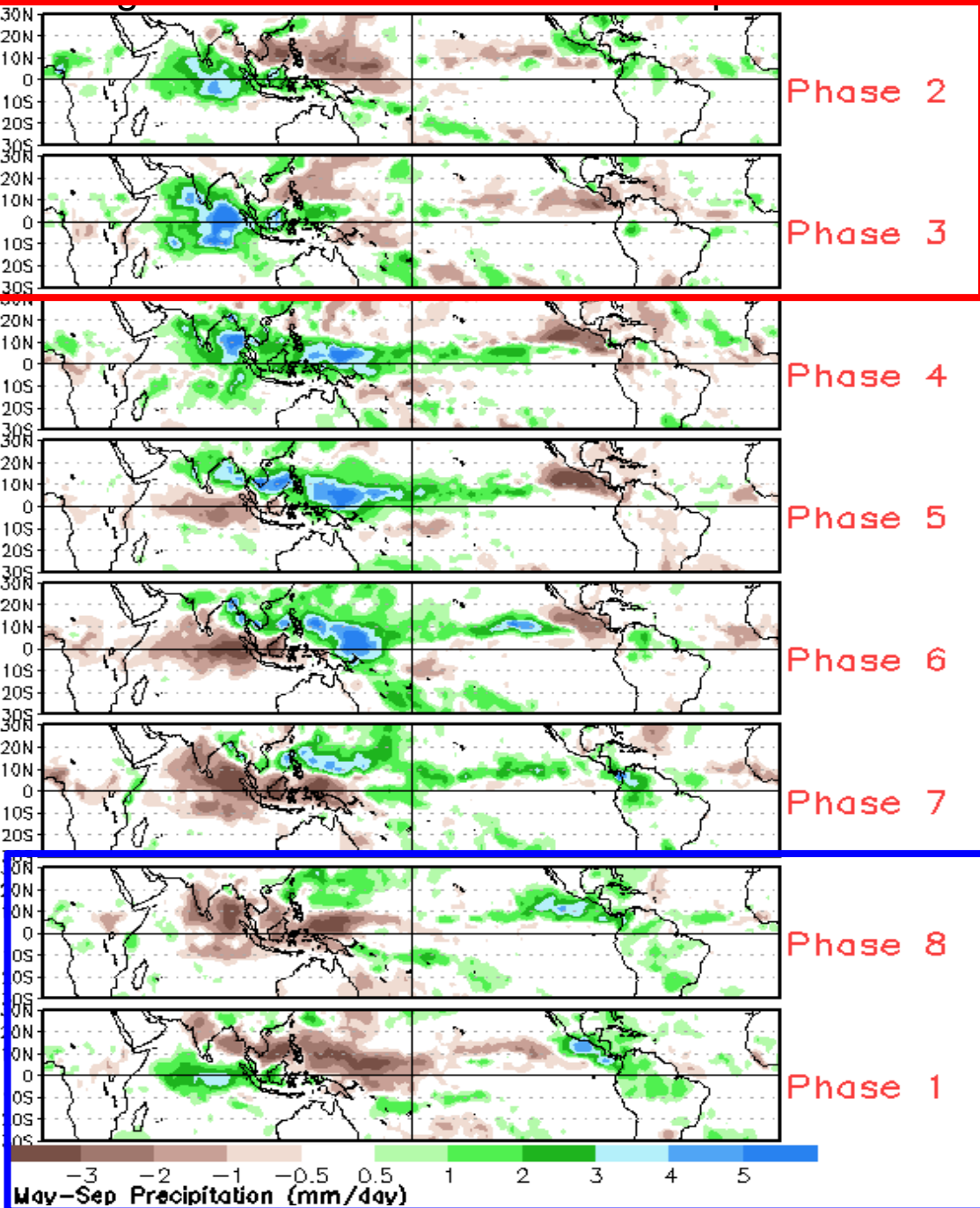


JMA

The GEFS and JMA depict an increase in Indian Ocean convection, possibly related to out-of-season tropical cyclone activity.

The ECMWF depicts an evolution more consistent with MJO activity, albeit with low amplitude.

# Average Conditions when the MJO is present



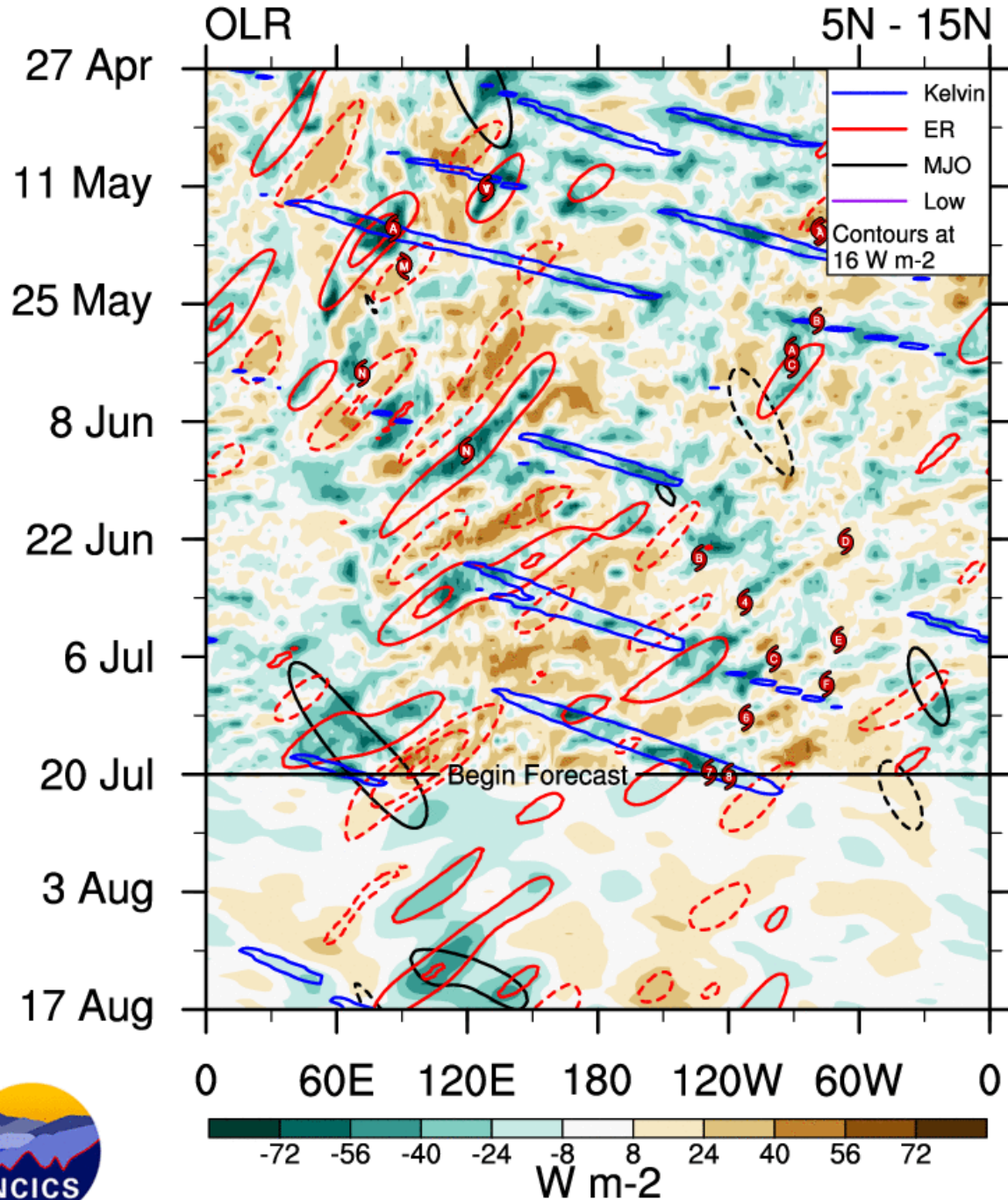
Remnant MJO  
Kelvin wave

CAVEAT: These panels are representative of robust MJO events.



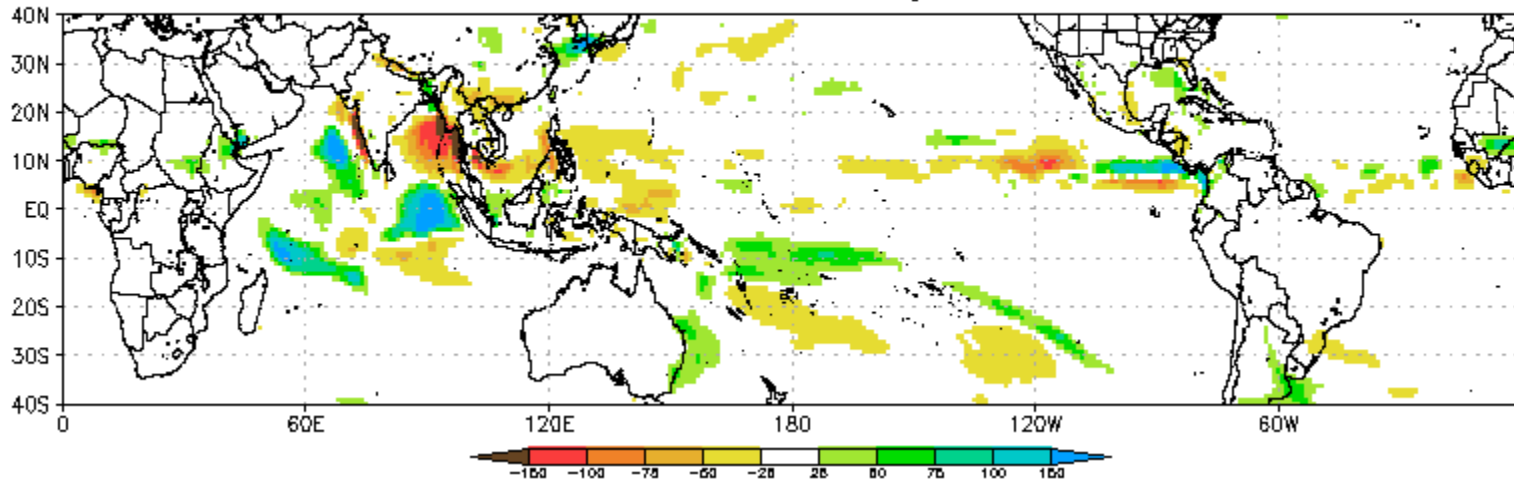
Slower-moving **MJO** / **Rossby wave** signal evident over the Indian Ocean.

Strong **Kelvin wave** now just east of 120W.

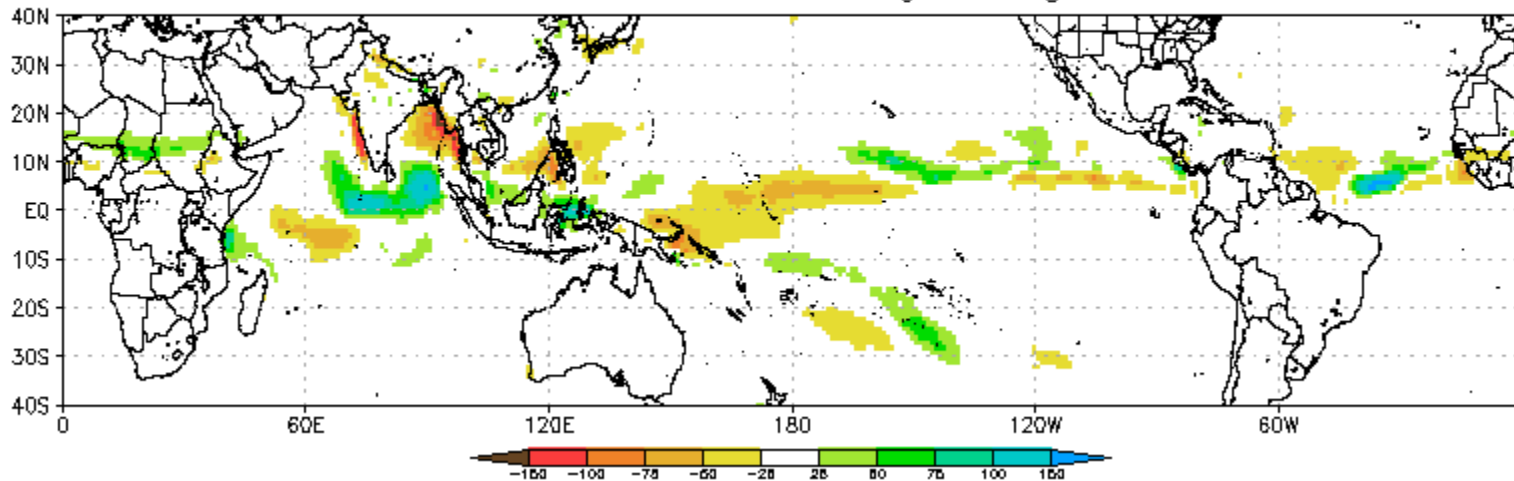




CFS Precipitation Anomalies (mm) Issued 20Jul2020  
Week-1 Forecast Ending 28Jul2020



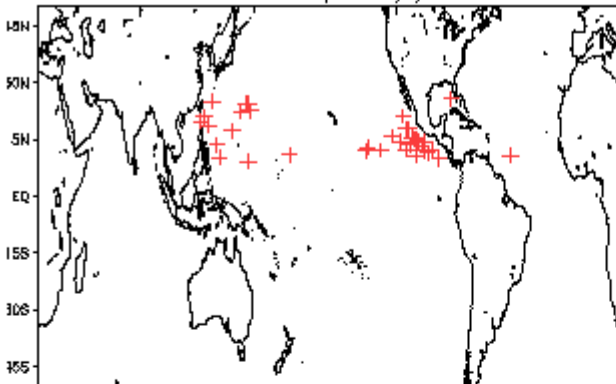
CFS Precipitation Anomalies (mm) Issued 20Jul2020  
Week-2 Forecast Ending 04Aug2020



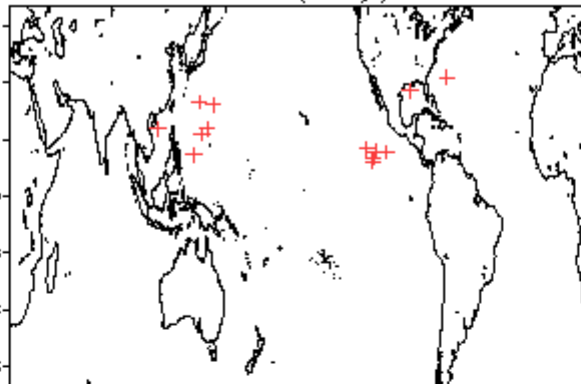
ECMWF more progressive, with  
more pcp S. Asia, equatorial WPac

# July Tropical Storm Formation by MJO phase

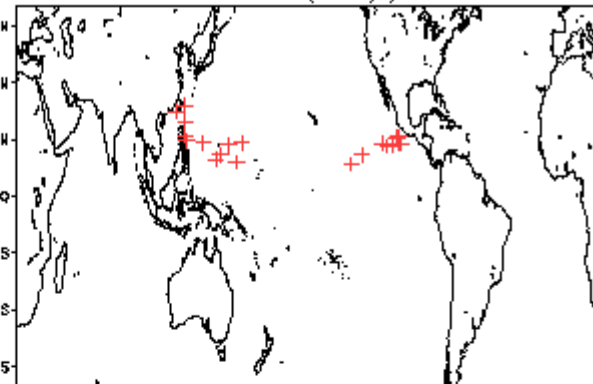
Phase 1 (144 days) 37 storms



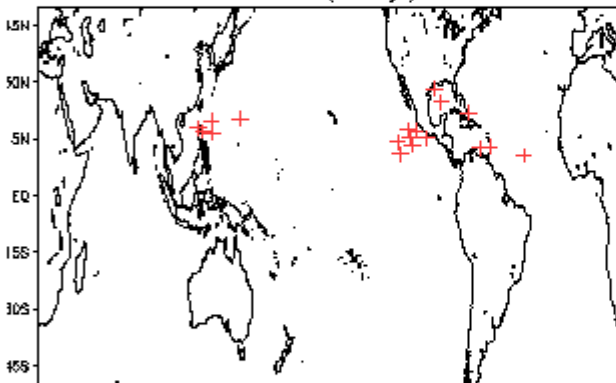
Phase 4 (40 days) 14 storms



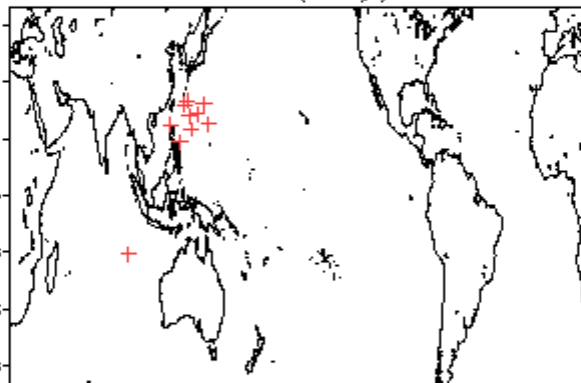
Phase 7 (87 days) 21 storms



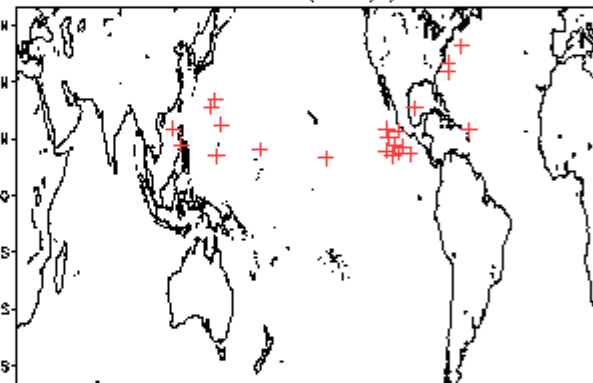
Phase 2 (74 days) 20 storms



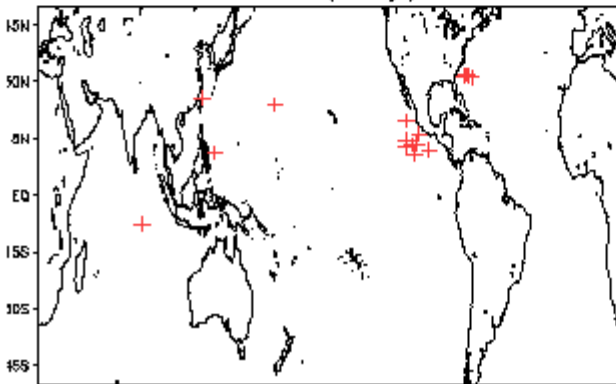
Phase 5 (63 days) 11 storms



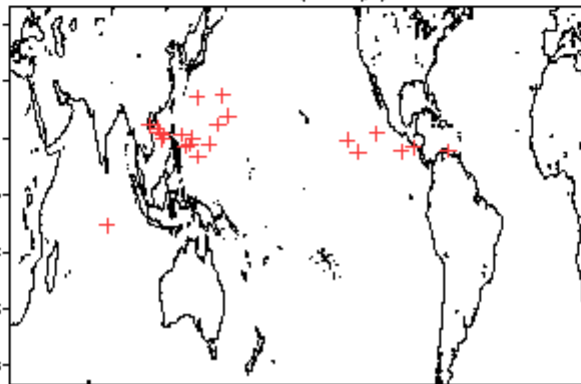
Phase 8 (61 days) 24 storms



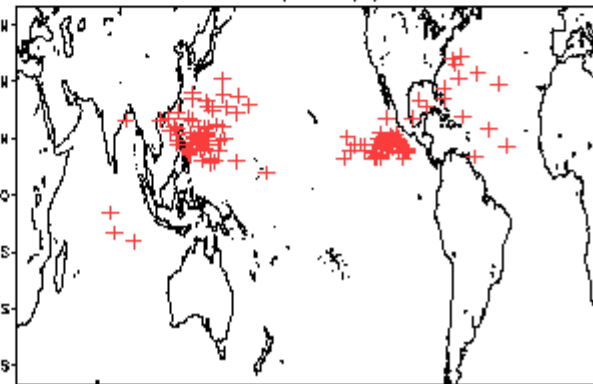
Phase 3 (49 days) 17 storms



Phase 6 (60 days) 23 storms



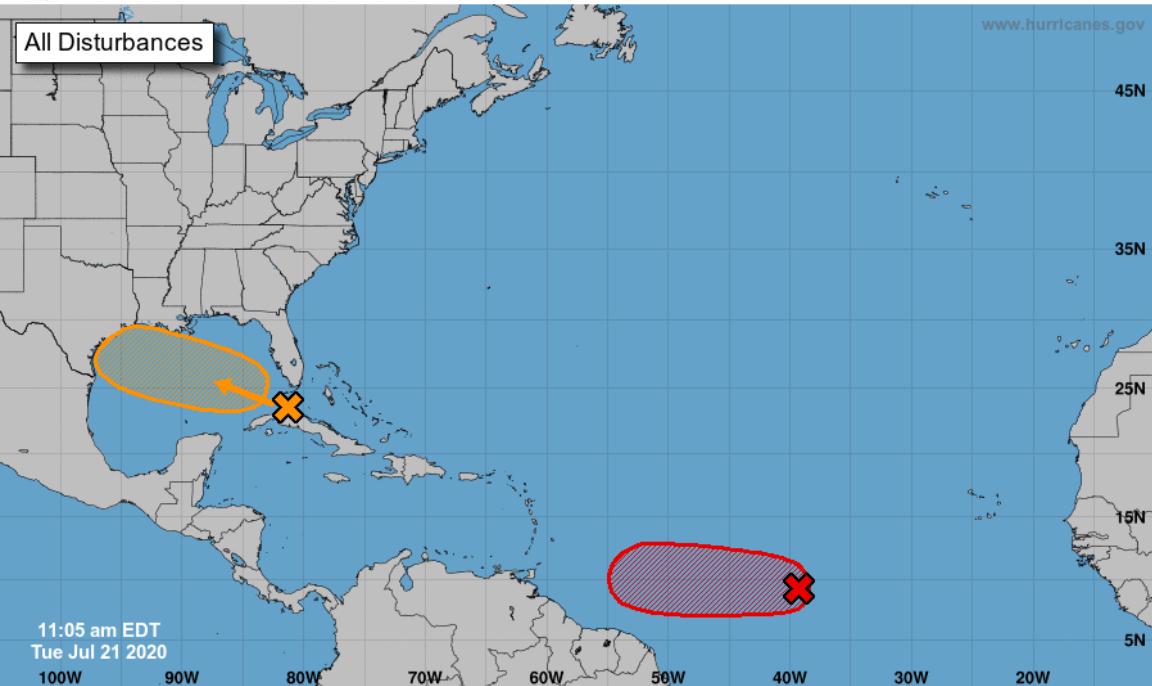
Null (480 days) 130 storms





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



All Disturbances

www.hurricanes.gov

11:05 am EDT  
Tue Jul 21 2020

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

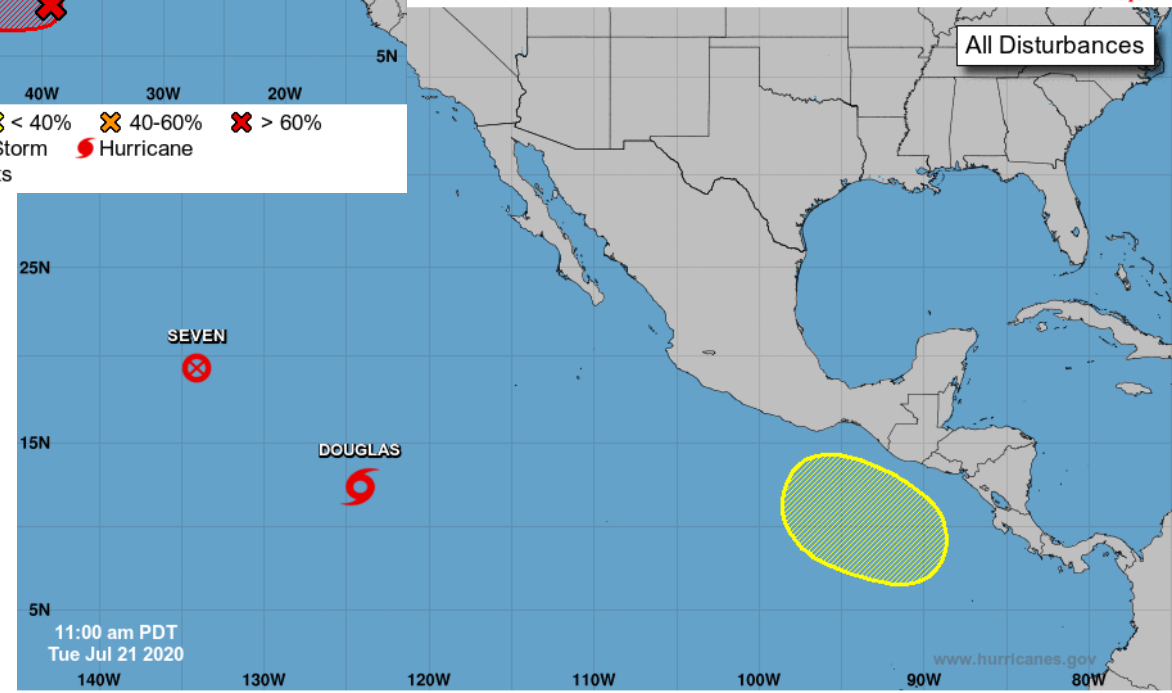
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

# Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



All Disturbances

11:00 am PDT  
Tue Jul 21 2020

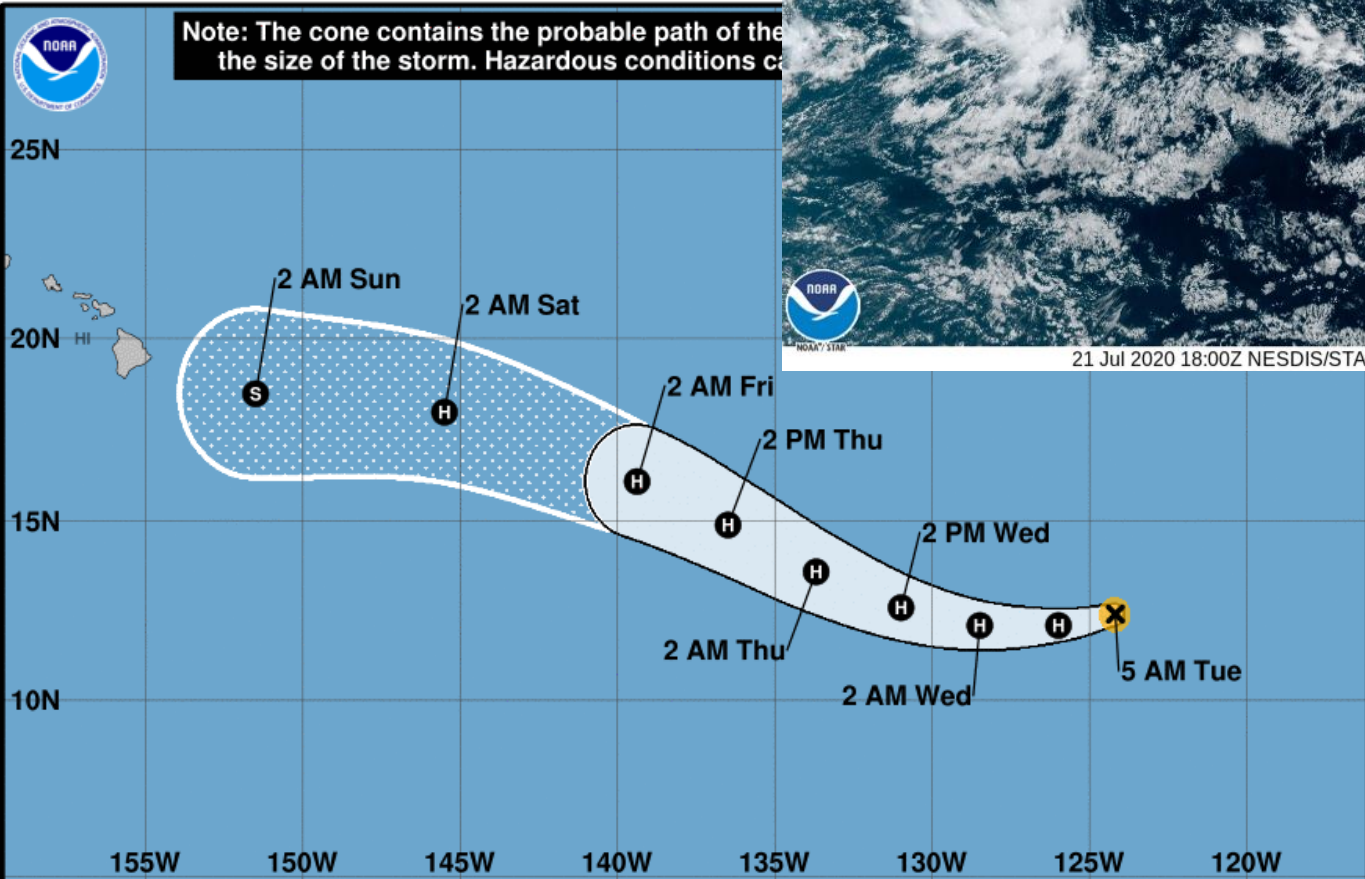
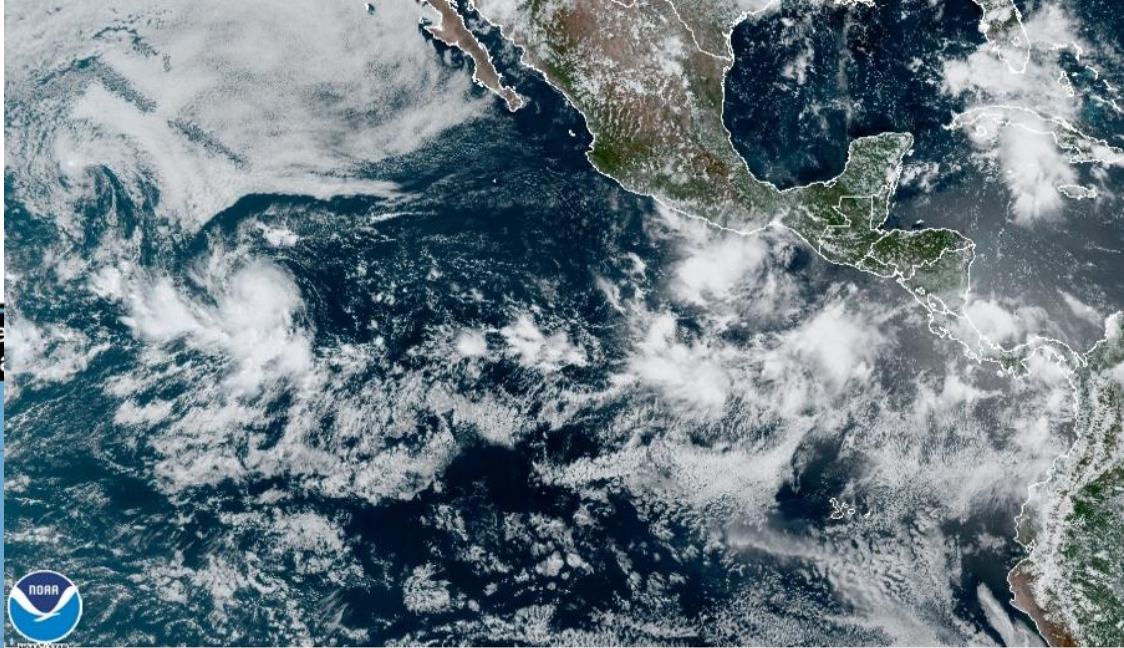
140W 130W 120W 110W 100W 90W 80W

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

www.hurricanes.gov



**Note: The cone contains the probable path of the storm. Hazardous conditions can be expected within the cone.**

21 Jul 2020 18:00Z NESDIS/STAR GOES-East GEOCOLOR

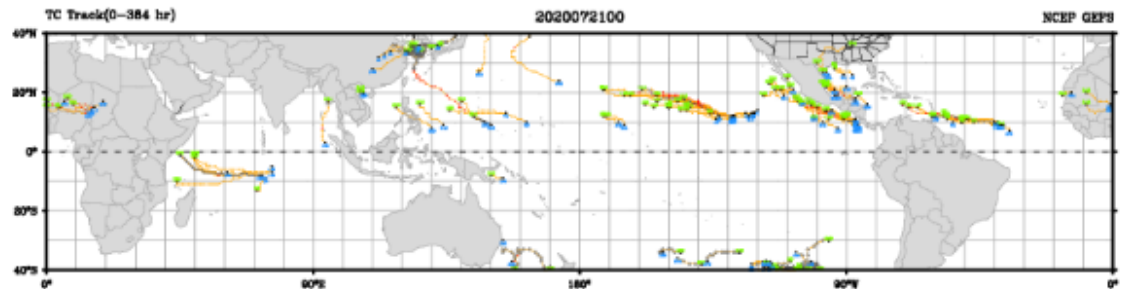
**Tropical Storm Douglas**  
 Tuesday July 21, 2020  
 5 AM HST Advisory 5  
 NWS National Hurricane Center

**Current information: X**  
 Center location 12.4 N 124.2 W  
 Maximum sustained wind 65 mph  
 Movement WSW at 15 mph

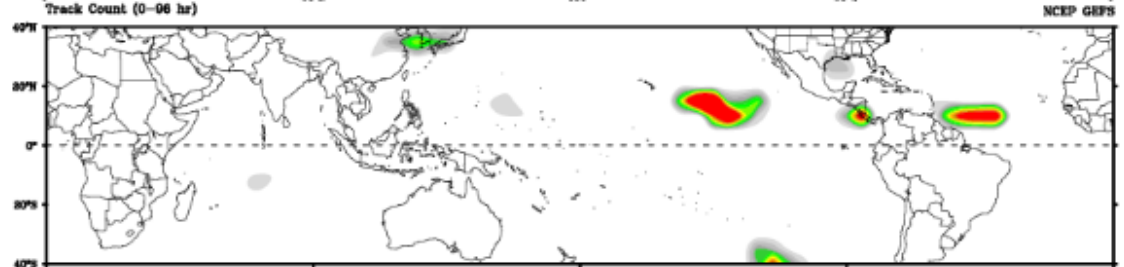
**Forecast positions:**  
 ● Tropical Cyclone ○ Post/Potential TC  
 Sustained winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110 mph

**Potential track area:** Day 1-3 (solid line), Day 4-5 (dotted area)  
**Watches:** Hurricane (pink), Trop Stm (yellow)  
**Warnings:** Hurricane (red), Trop Stm (blue)  
**Current wind extent:** Hurricane (brown), Trop Stm (orange)

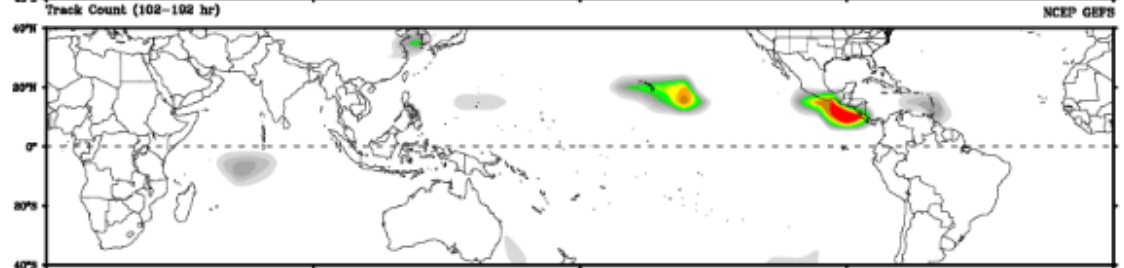




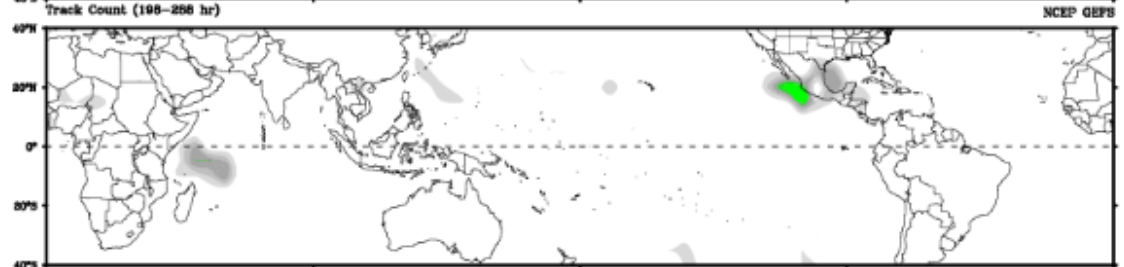
Days 1-4



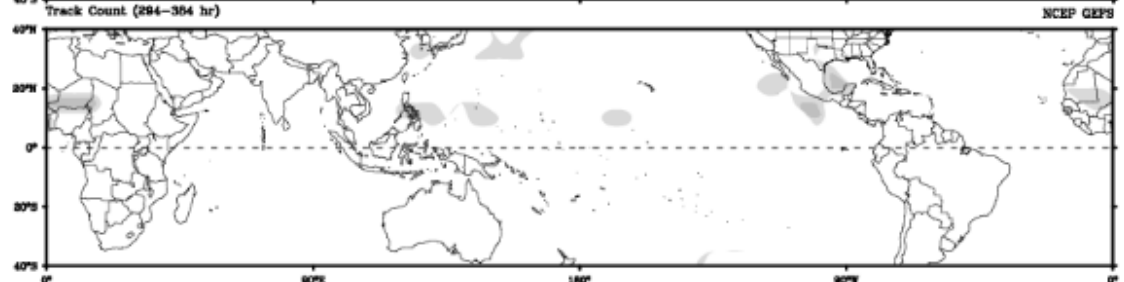
Day 5-8



Day 9-12

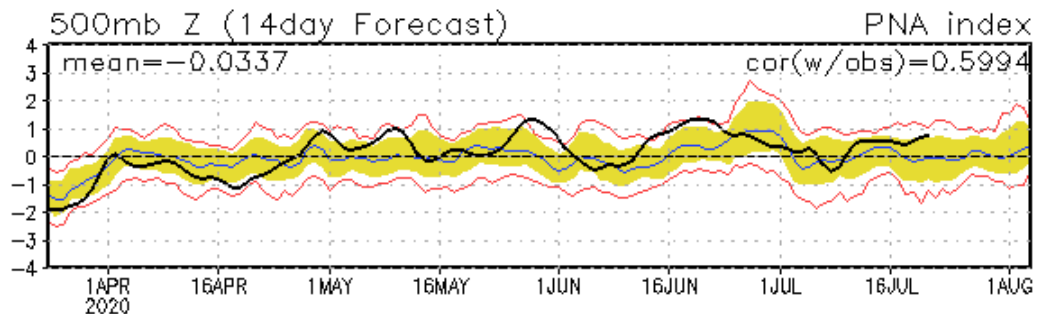
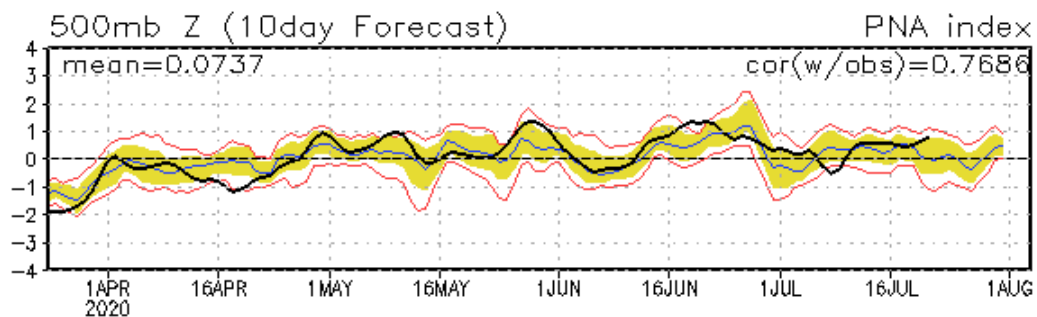
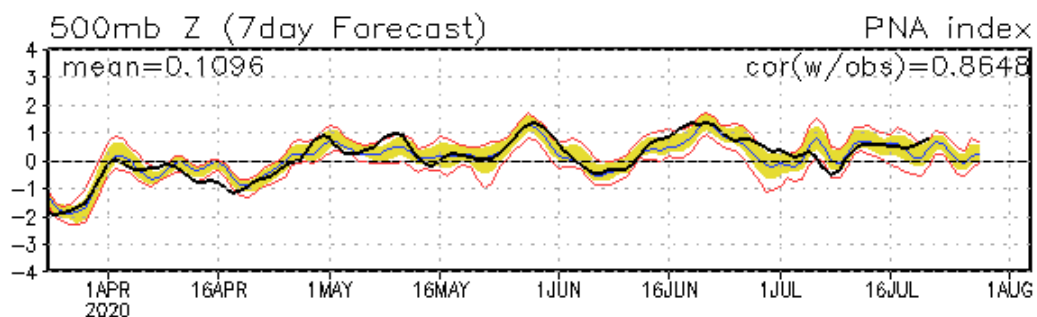
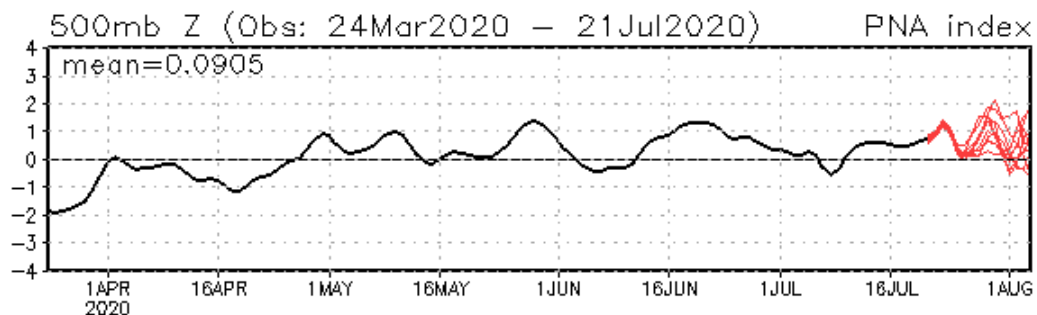


Day 13-15

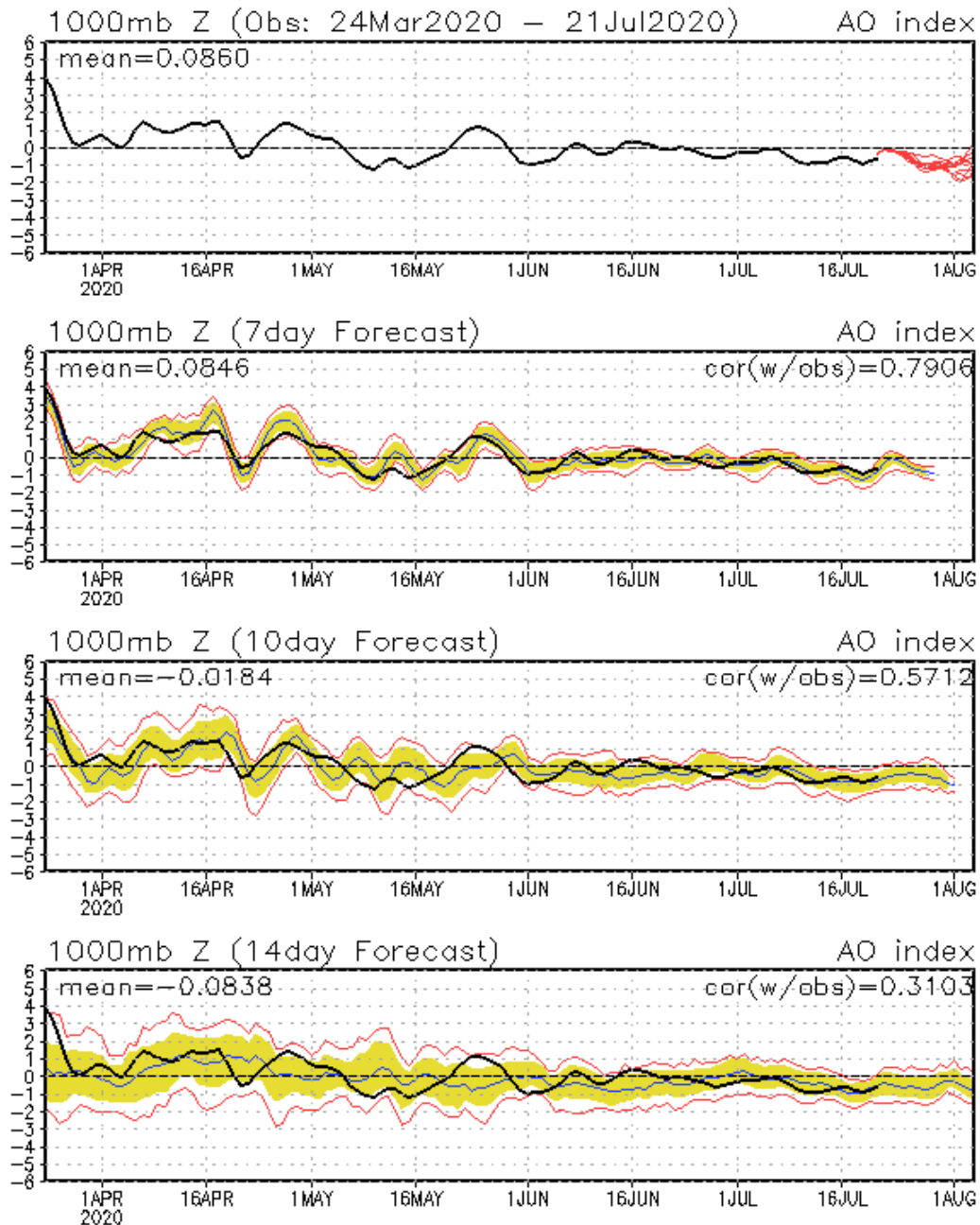


# Connections to U.S. Impacts

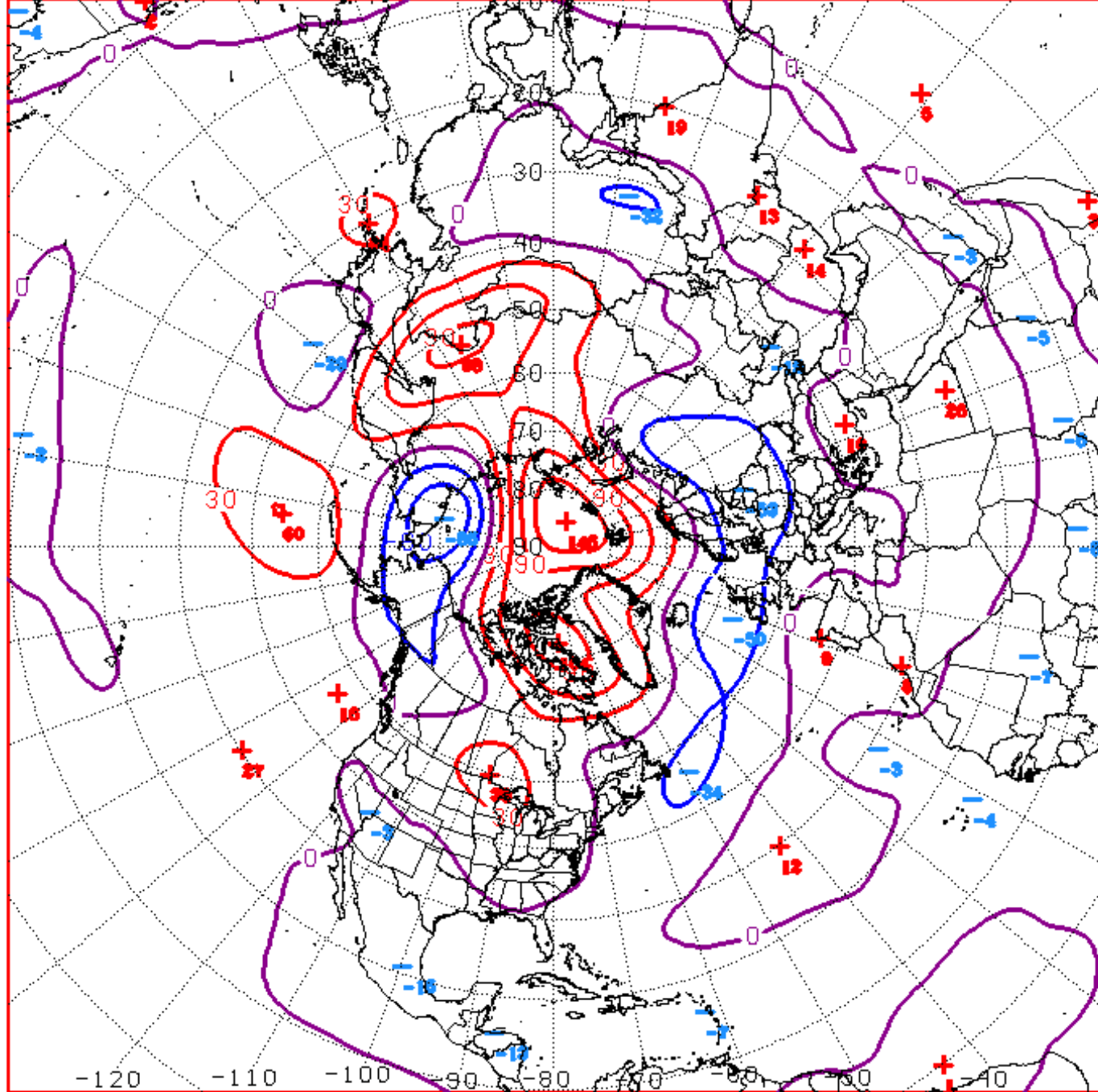
## PNA: Observed & ENSM forecasts



## AO: Observed & ENSM forecasts

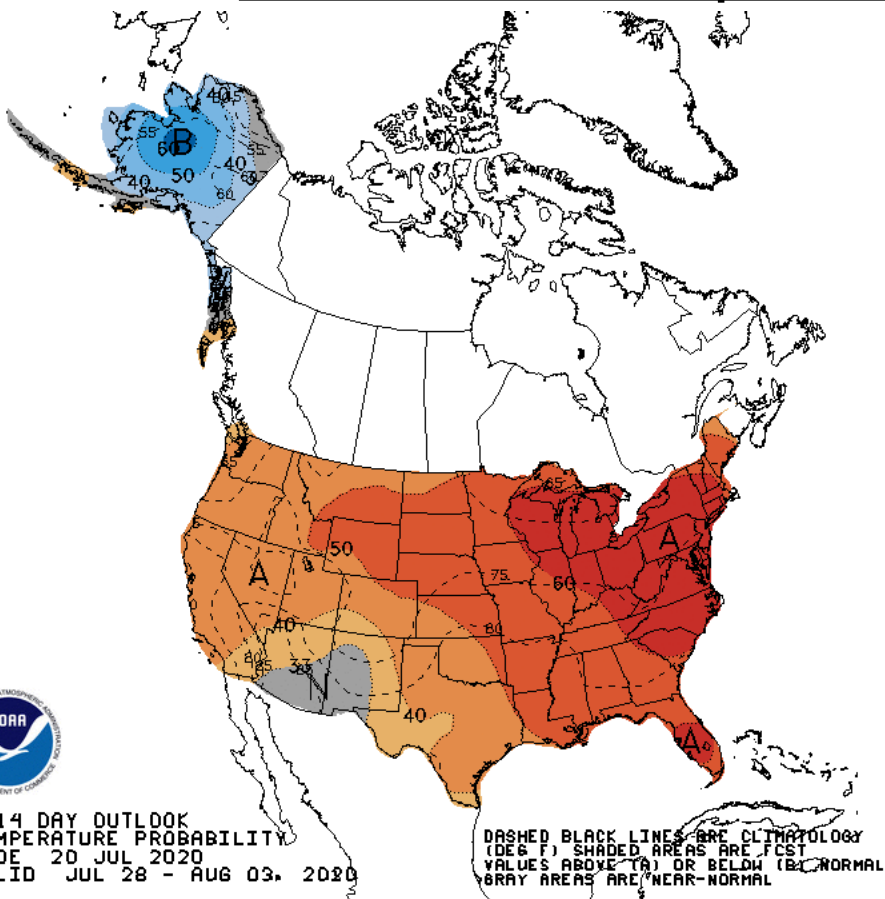






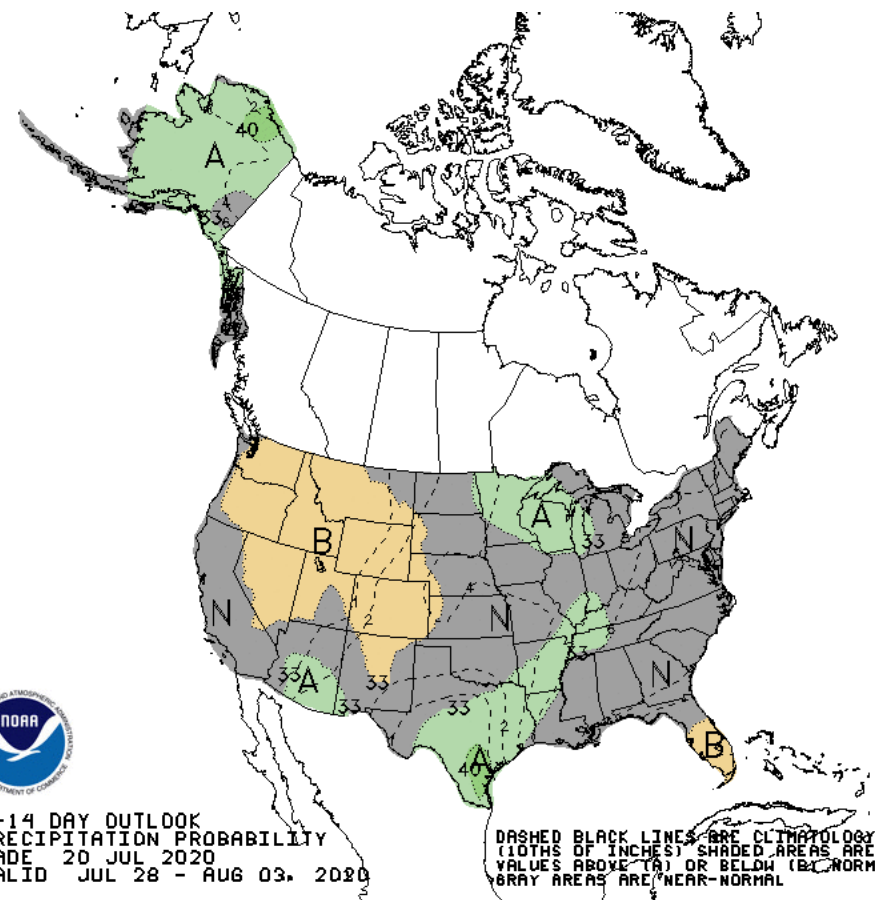
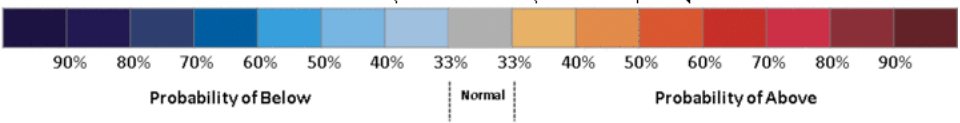
D+11 500 MB ANOMALIES FROM ALZ ENSM  
CPC MAP MADE JUL 21 2020 1257 UTC CNTD AUG 01 2020

# Week 2 – Temperature and Precipitation



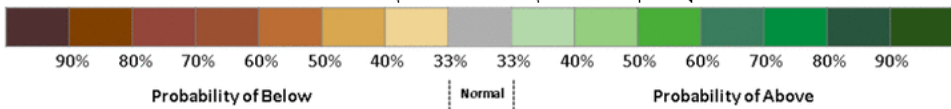
8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 20 JUL 2020  
VALID JUL 28 - AUG 03, 2020

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 20 JUL 2020  
VALID JUL 28 - AUG 03, 2020

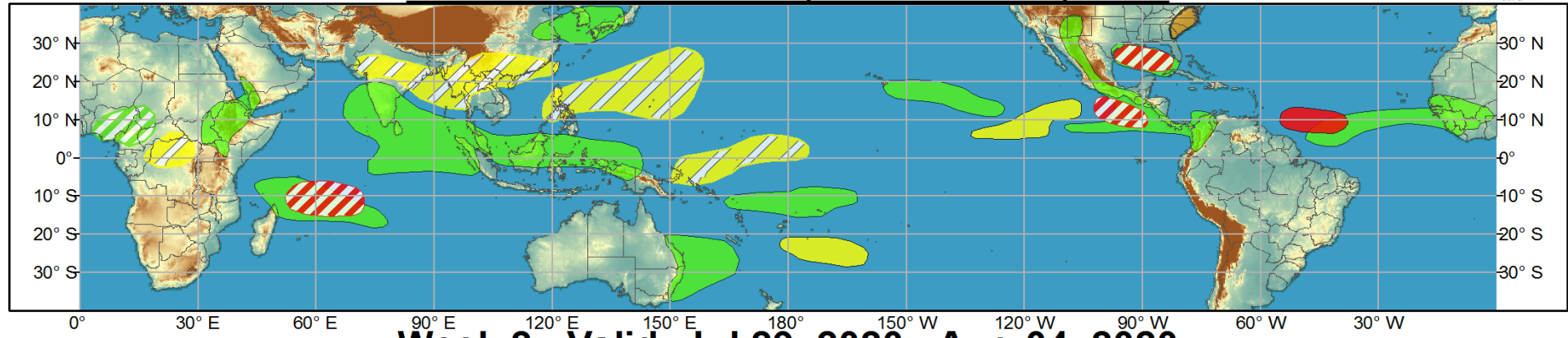
DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



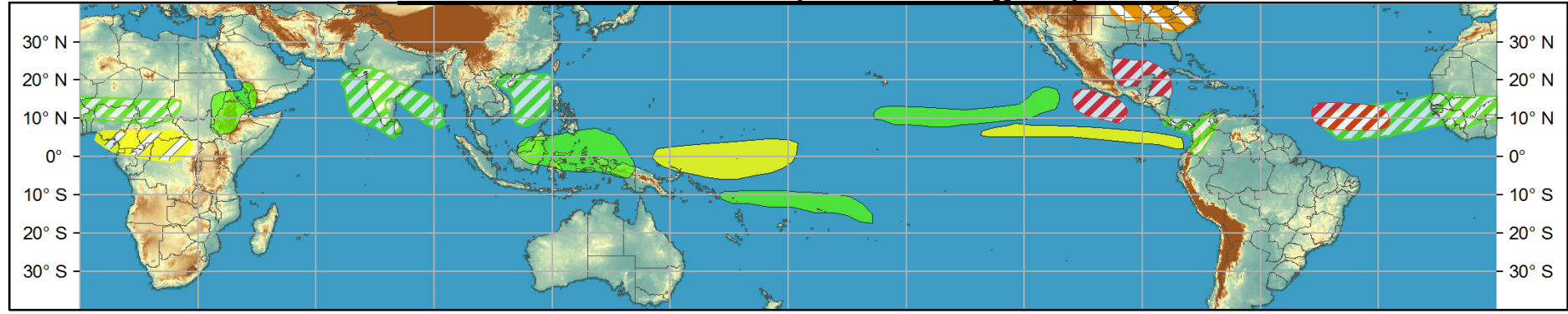


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