Global Tropics Hazards And Benefits Outlook

7/7/2020

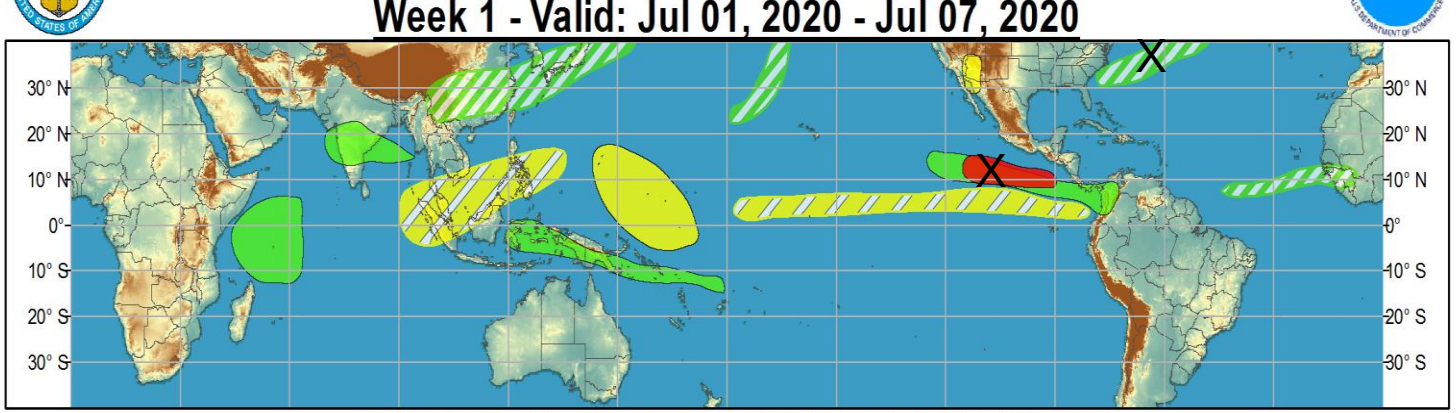
Nick Novella

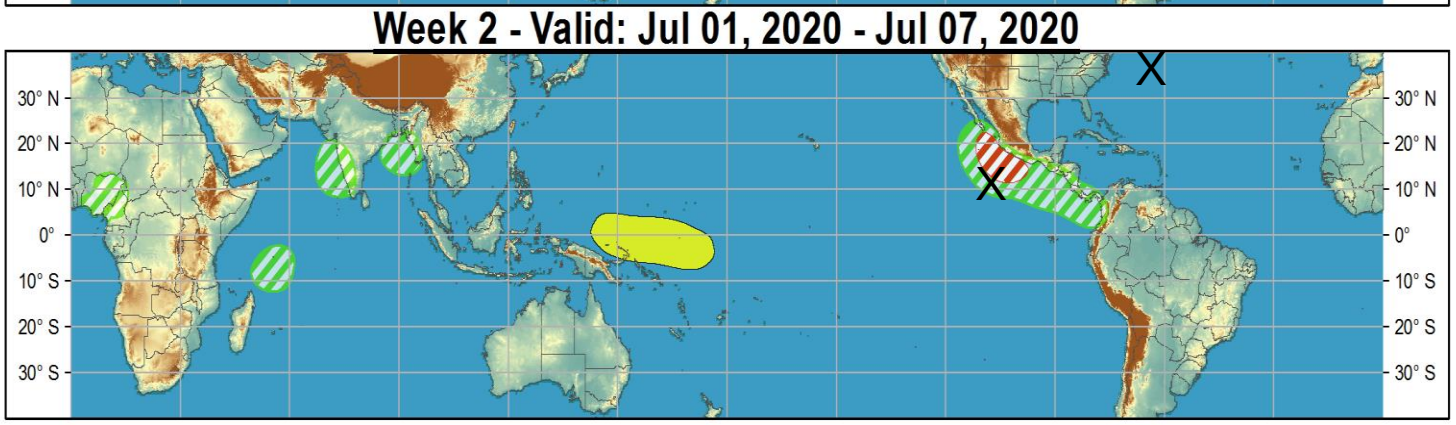
Outline

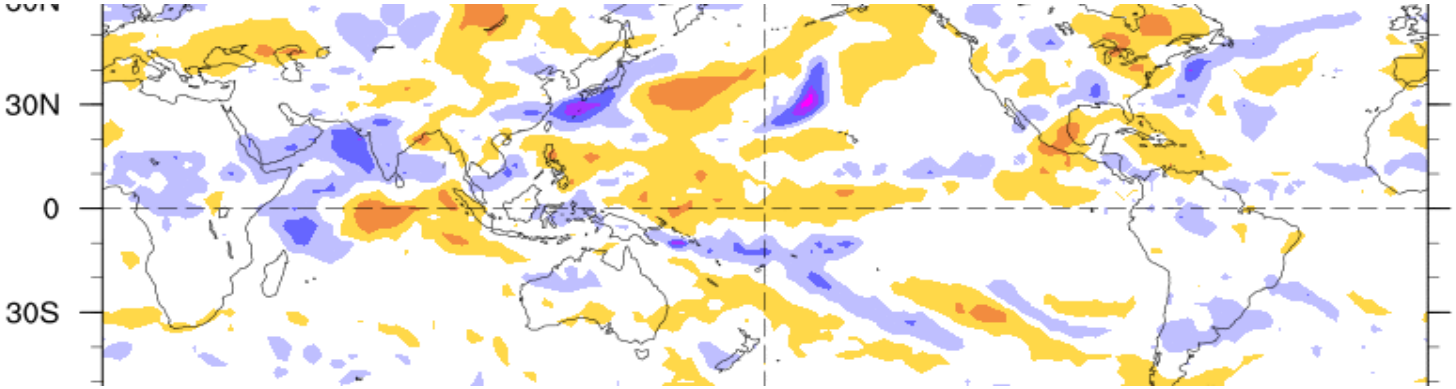
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

- Edouard (7/4)
- Cristina (7/7)







Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (June 11, 2020 Update)

- ENSO Alert System Status: Not Active

- There is a ~60% (from 65%) chance of ENSO-neutral during Northern Hemisphere summer 2020, with roughly equal chances (~40-50%) of La Nina or ENSO-neutral during the autumn and winter 2020-2021.

MJO and other subseasonal tropical variability:

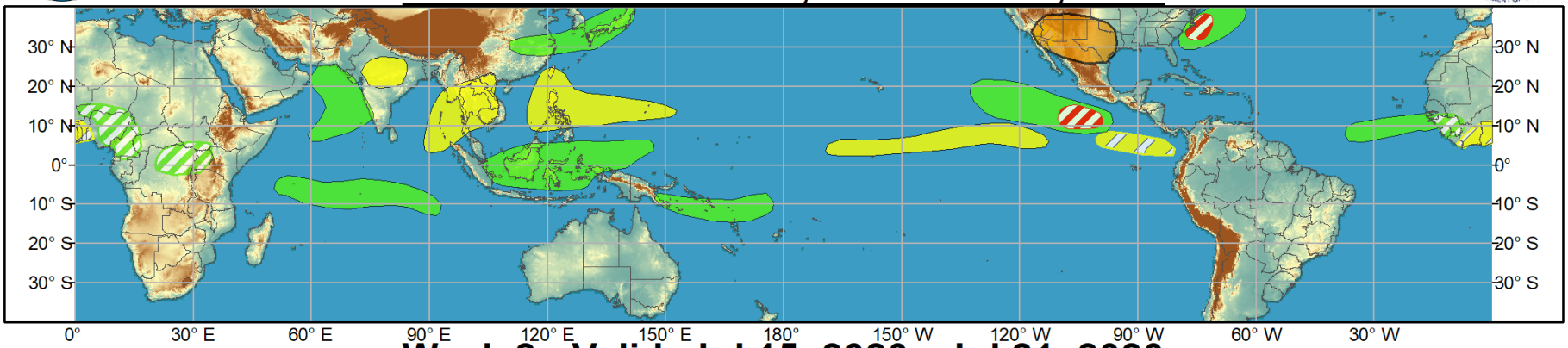
- Velocity potential anomalies suggest a weak and incoherent pattern.

- Dynamical model guidance suggests the MJO may emerge over the western Indian Ocean during the next few days, but there is uncertainty as to how long the signal propagates eastward before falling into the RMM circle.

- TC potential remains weak over the West Pacific, with moderate chances over the Atlantic and East Pacific during the next week.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jul 08, 2020 - Jul 14, 2020



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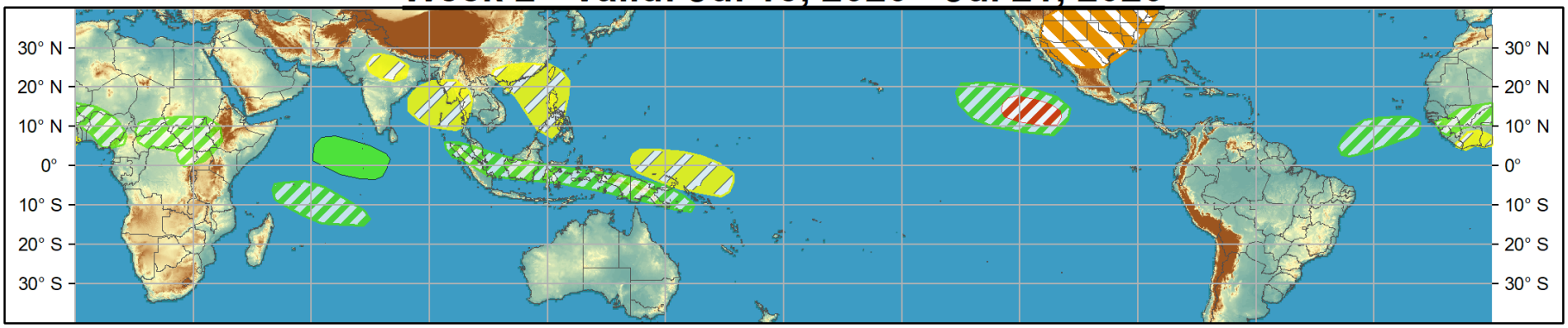

Produced: 07/07/2020

Forecaster: Novella

	Confidence: High	Confidence: 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.
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中央氣象局 Central Weather Bureau

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NPS PRAESTANTIA PER SCIENTIAM

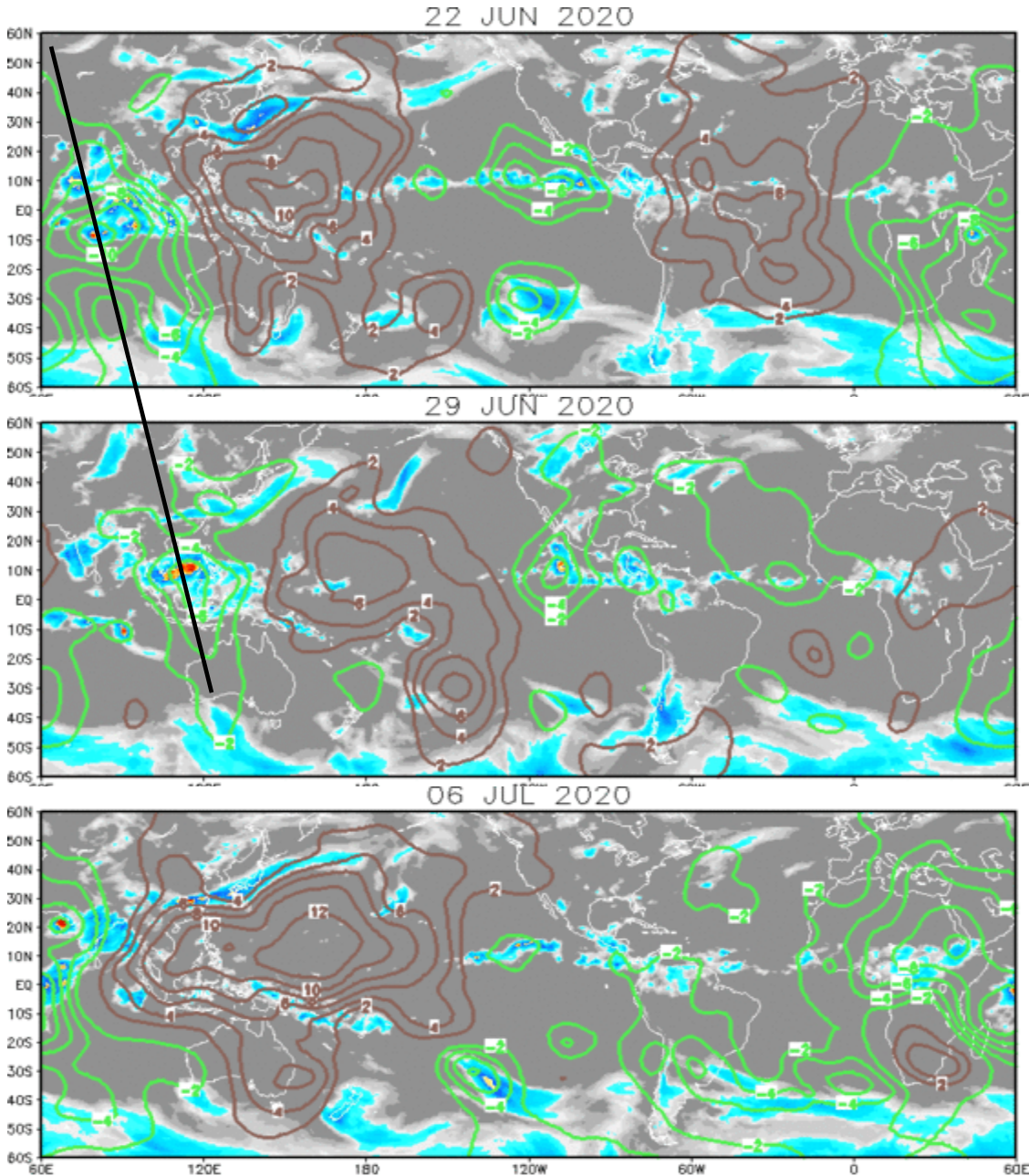
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

The wave-1 pattern remains broken up by the Kelvin wave now over the East Pacific.

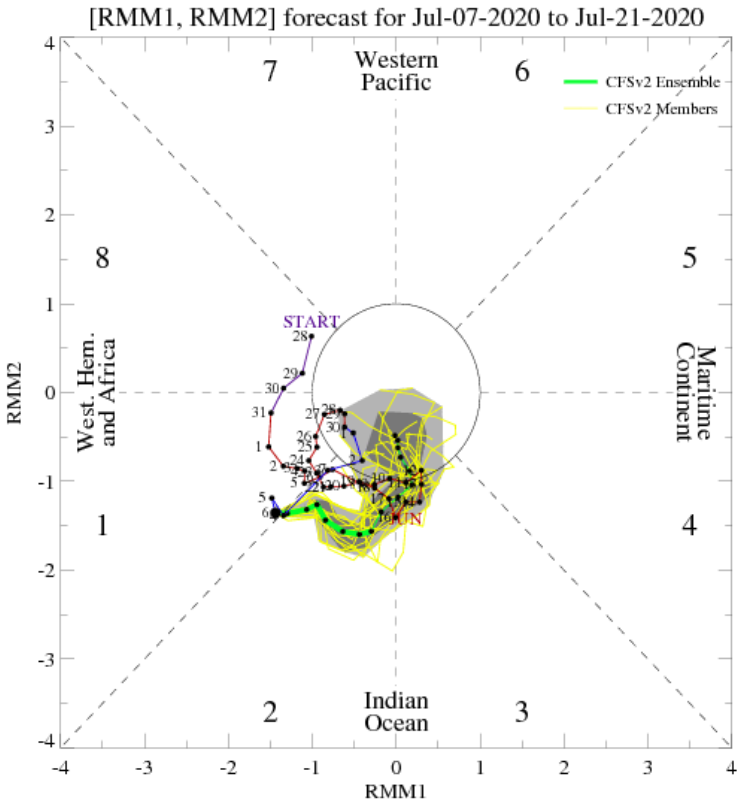
Continued eastward progression of both features, but the Indian Ocean center remains more slowly evolving relative to the Kelvin wave.

Enhanced convection shifted westward over Africa / Indian Ocean with suppressed envelope expanding across Pacific.

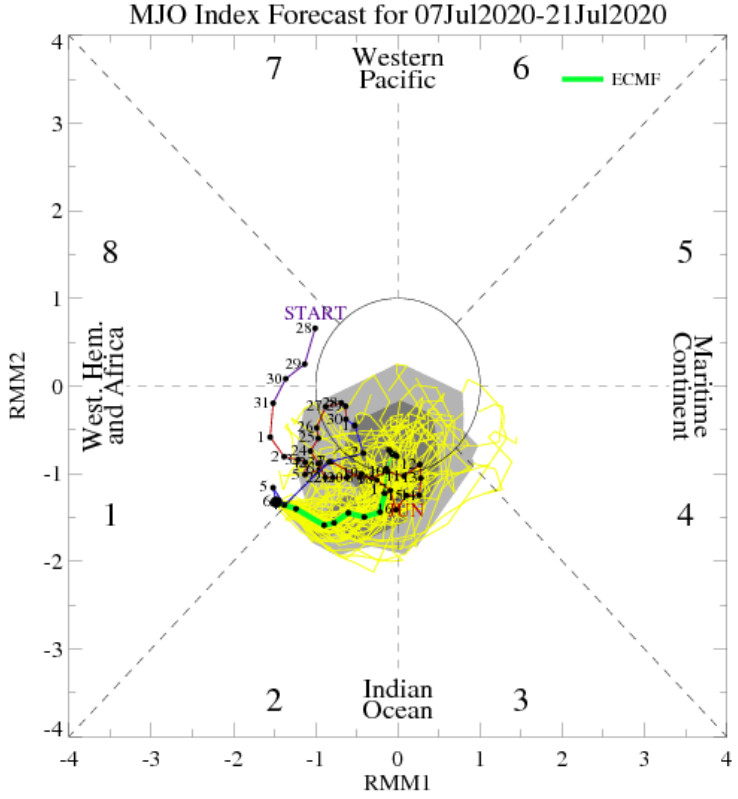


MJO Observation/Forecast

CFS



ECMWF

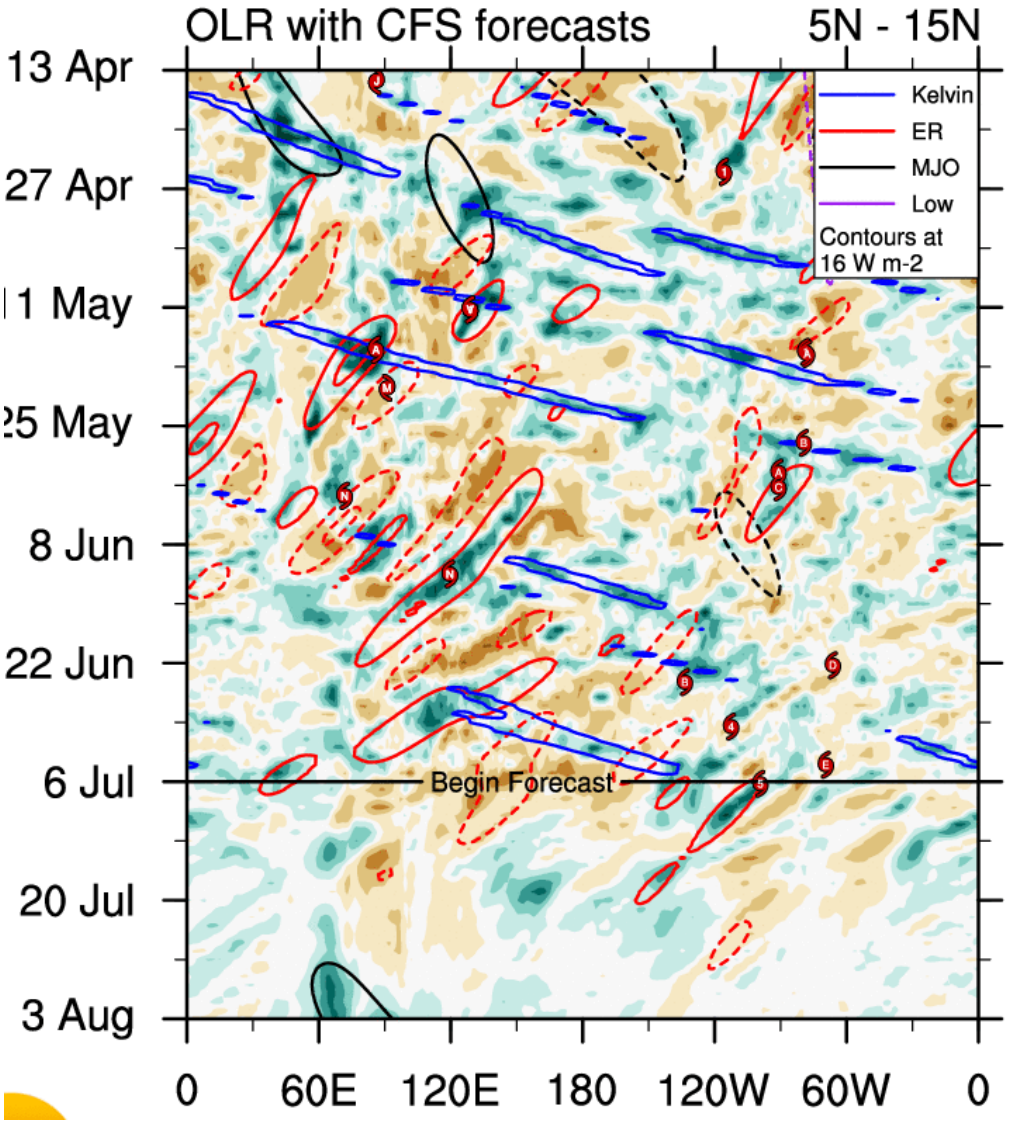


Both the CFS and ECMWF means show a eastward propagation over the western Indian Ocean for week-1 before falling into unit circle by week-2.

A **Kelvin wave** is seen crossing the dateline into the East Pacific in the OLR field.

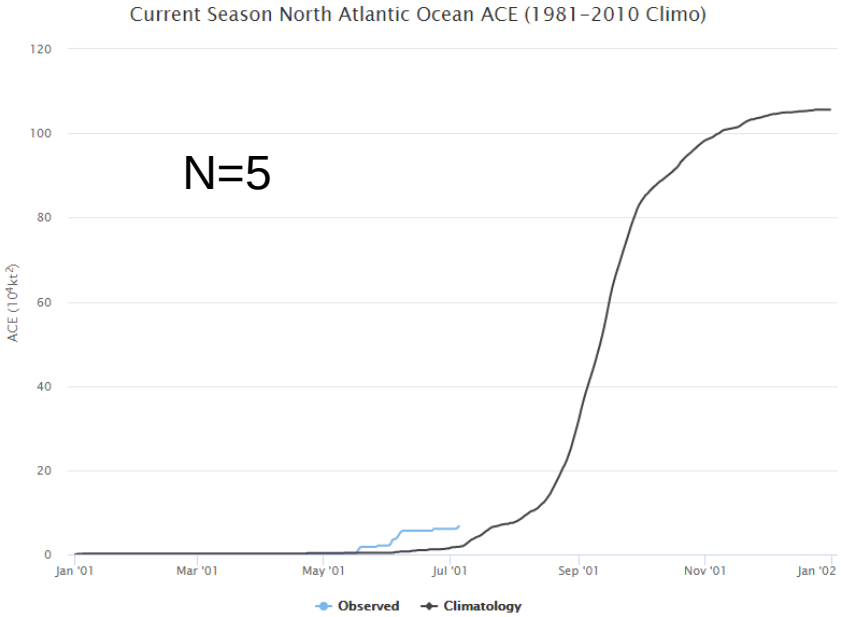
Rossby wave activity evident over the Indian Ocean since late June.

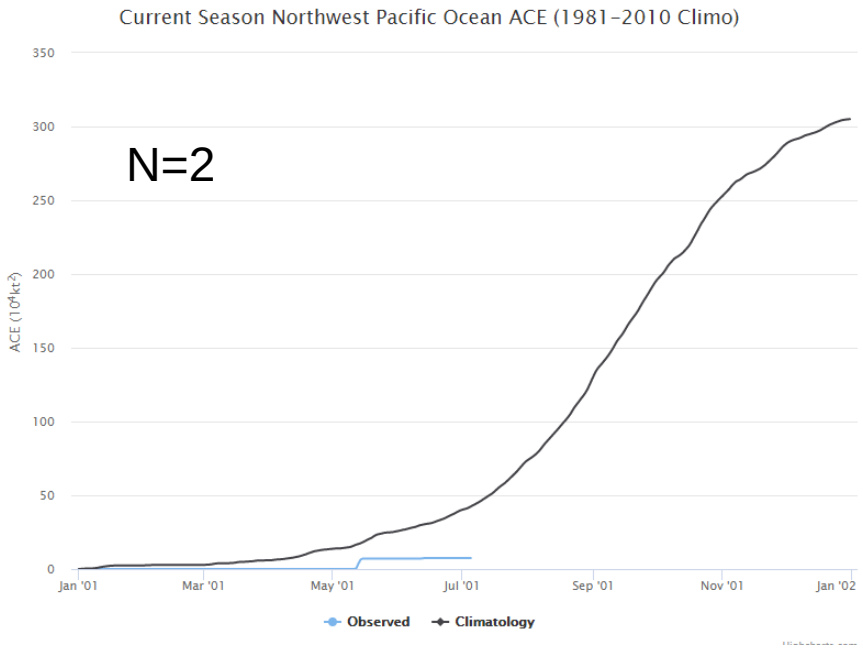
While not objectively analyzed, there appears to be a **low frequency** component with enhanced convection since mid-June starting near 60E, and currently over the Indian Ocean. Could this grow to become a new **MJO** event?

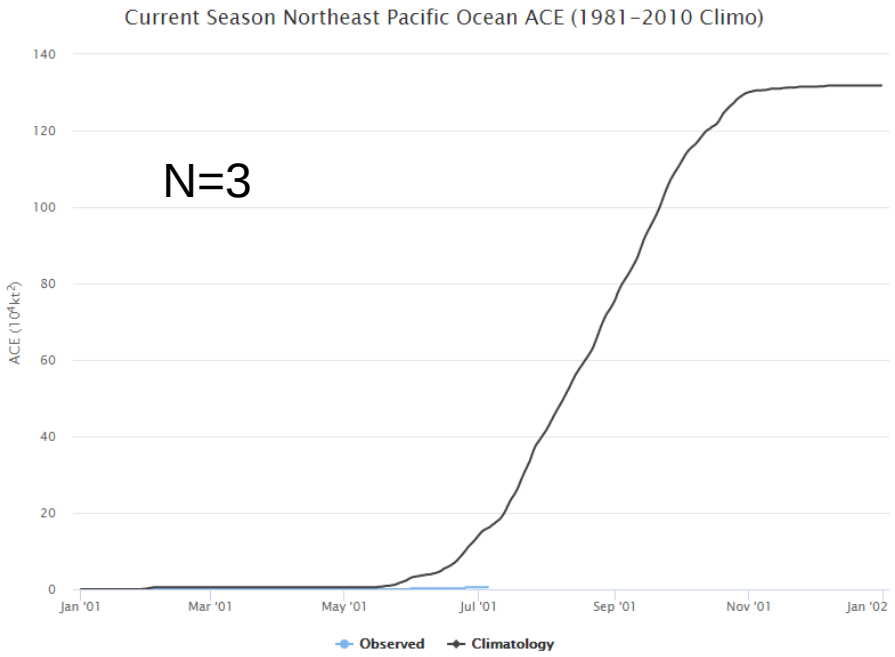


Green: Enhanced precipitation

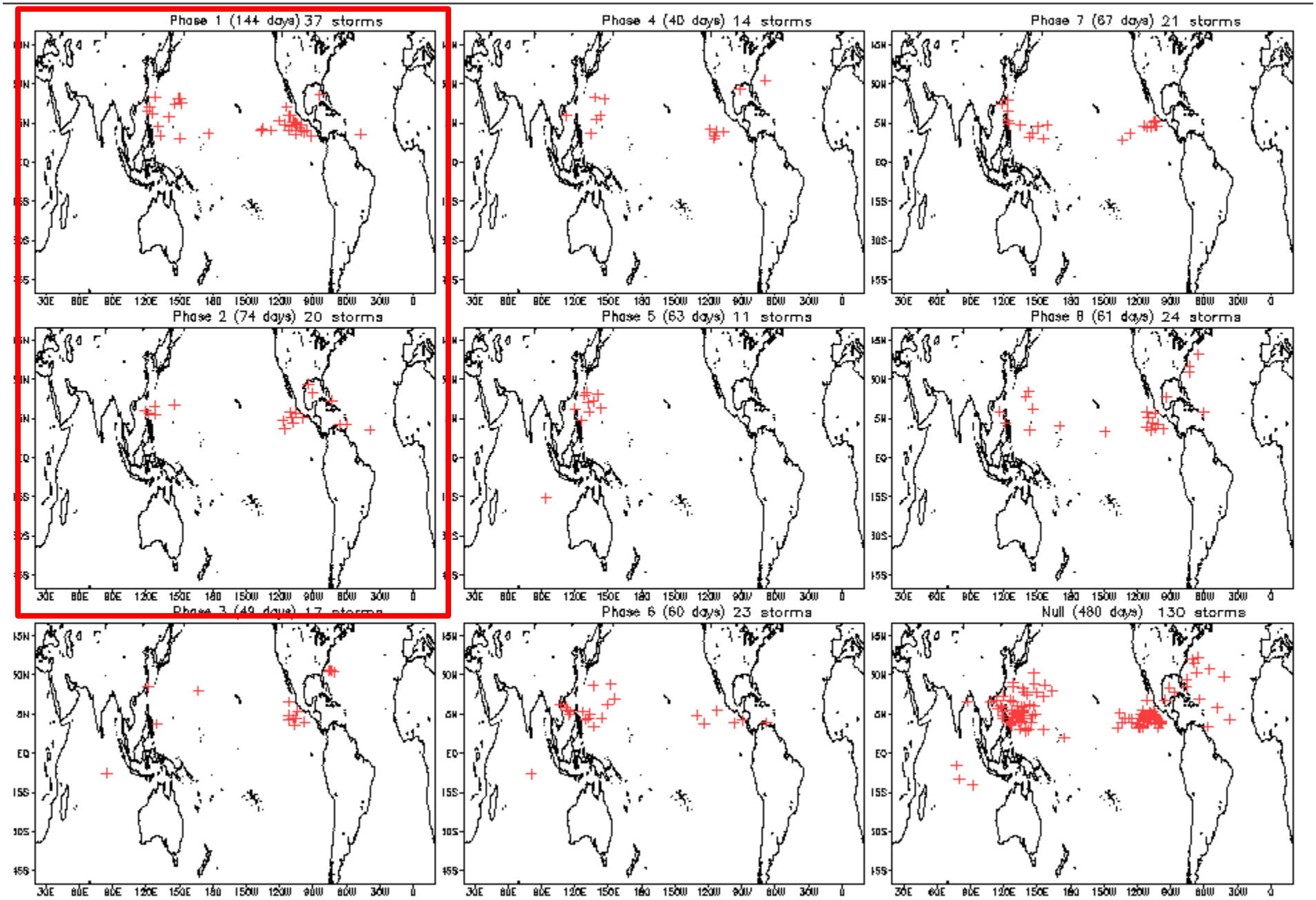
Brown: Suppressed precipitation

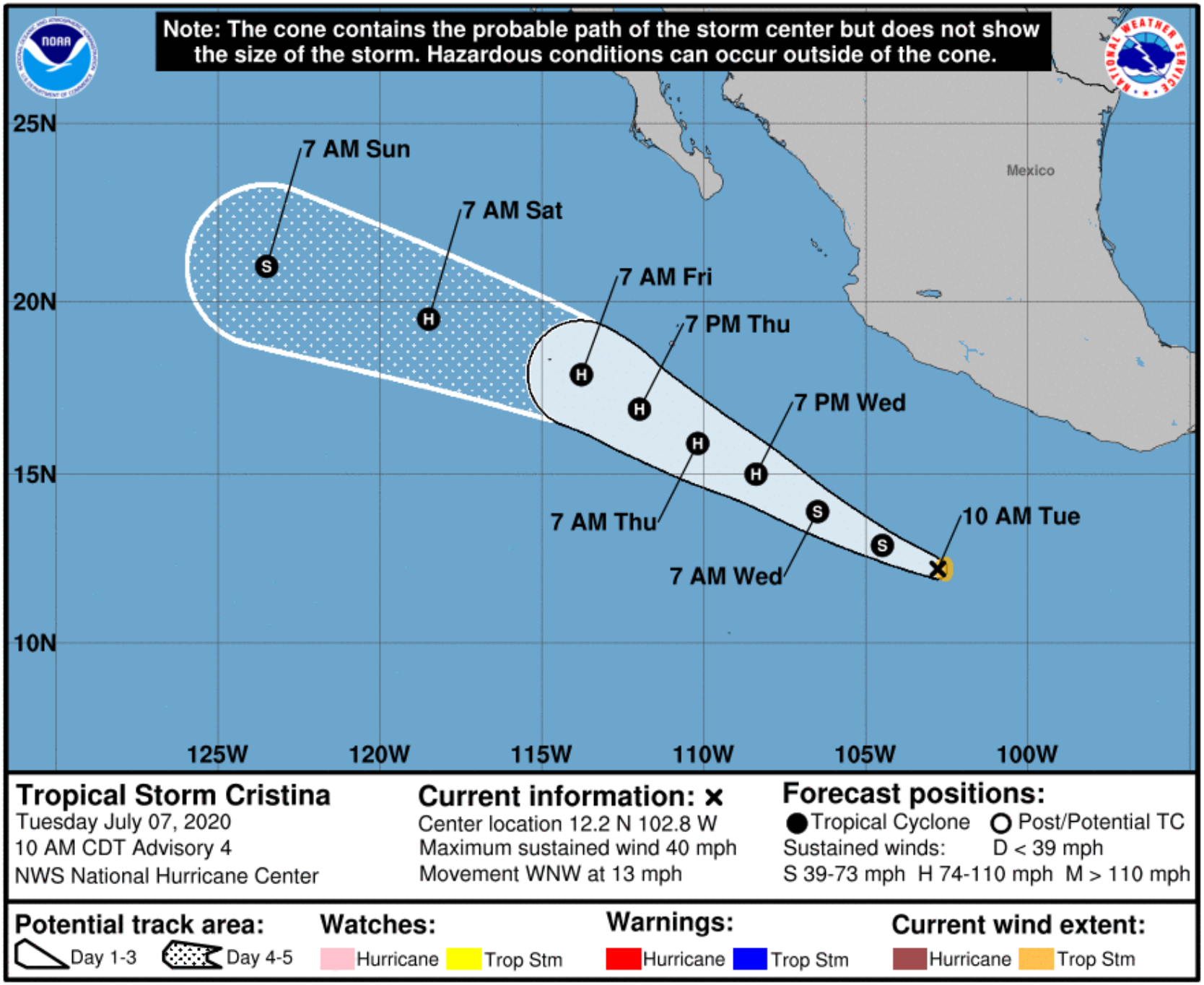

Current Season North Atlantic Ocean ACE (1981–2010 Climo)
N=5
ACE (10^4kt^2)
120
100
80
60
40
20
0
Jan '01
Mar '01
May '01
Jul '01
Sep '01
Nov '01
Jan '02
Observed
Climatology


Current Season Northwest Pacific Ocean ACE (1981–2010 Climo)
N=2
ACE (10^4kt^2)
350
300
250
200
150
100
50
0
Jan '01
Mar '01
May '01
Jul '01
Sep '01
Nov '01
Jan '02
Observed
Climatology


Current Season Northeast Pacific Ocean ACE (1981–2010 Climo)
N=3
ACE (10^4kt^2)
140
120
100
80
60
40
20
0
Jan '01
Mar '01
May '01
Jul '01
Sep '01
Nov '01
Jan '02
Observed
Climatology

July Tropical Storm Formation by MJO phase





Tropical Storm Cristina
Tuesday July 07, 2020
10 AM CDT Advisory 4
NWS National Hurricane Center

Current information: ×
Center location 12.2 N 102.8 W
Maximum sustained wind 40 mph
Movement WNW at 13 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, Day 4-5

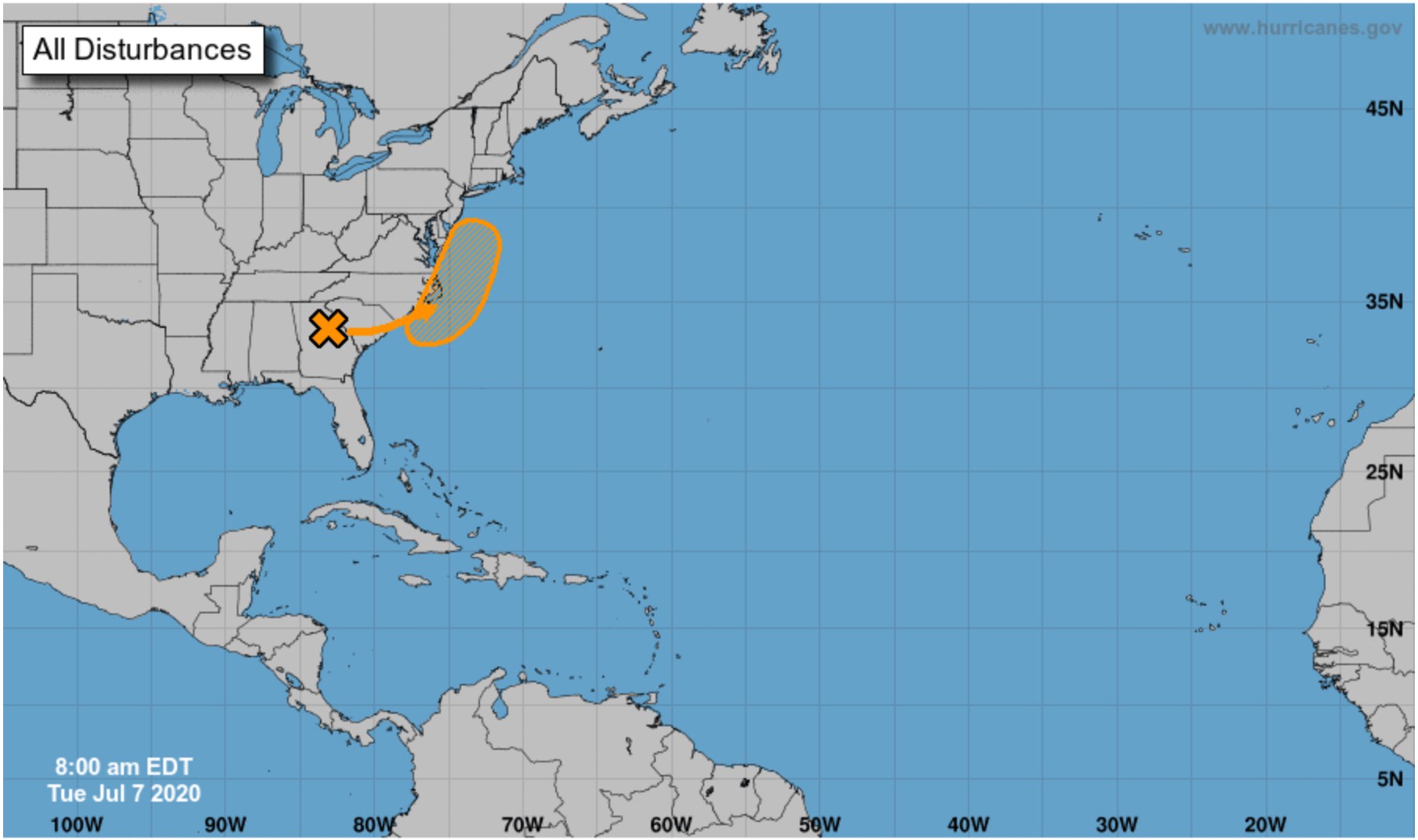
Watches: Hurricane, Trop Stm

Warnings: Hurricane, Trop Stm

Current wind extent: Hurricane, Trop Stm

Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

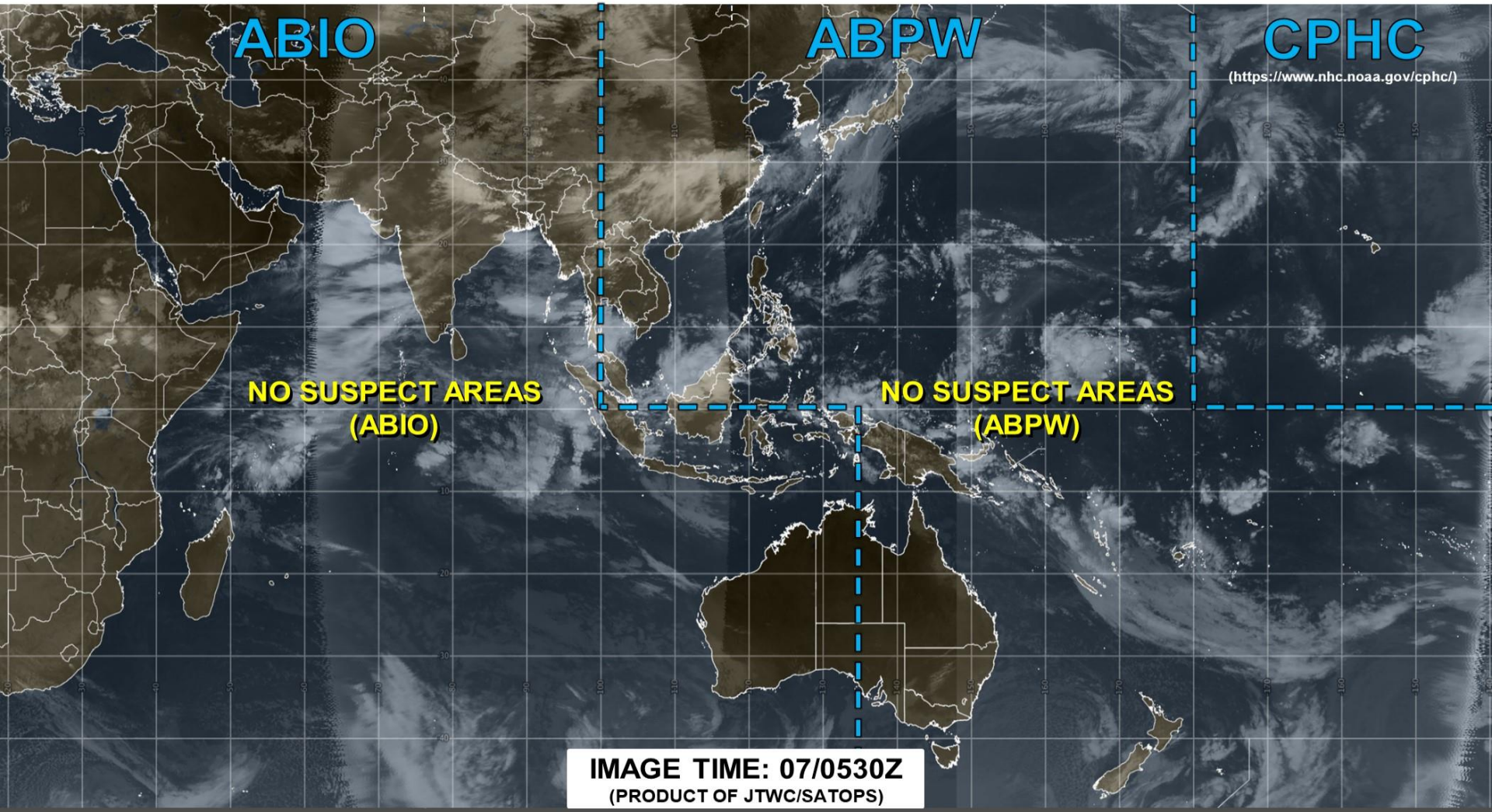


Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

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)

SUB TROPICAL — Monitoring for potential transition to TC. Invest color denotes tropical transition probability

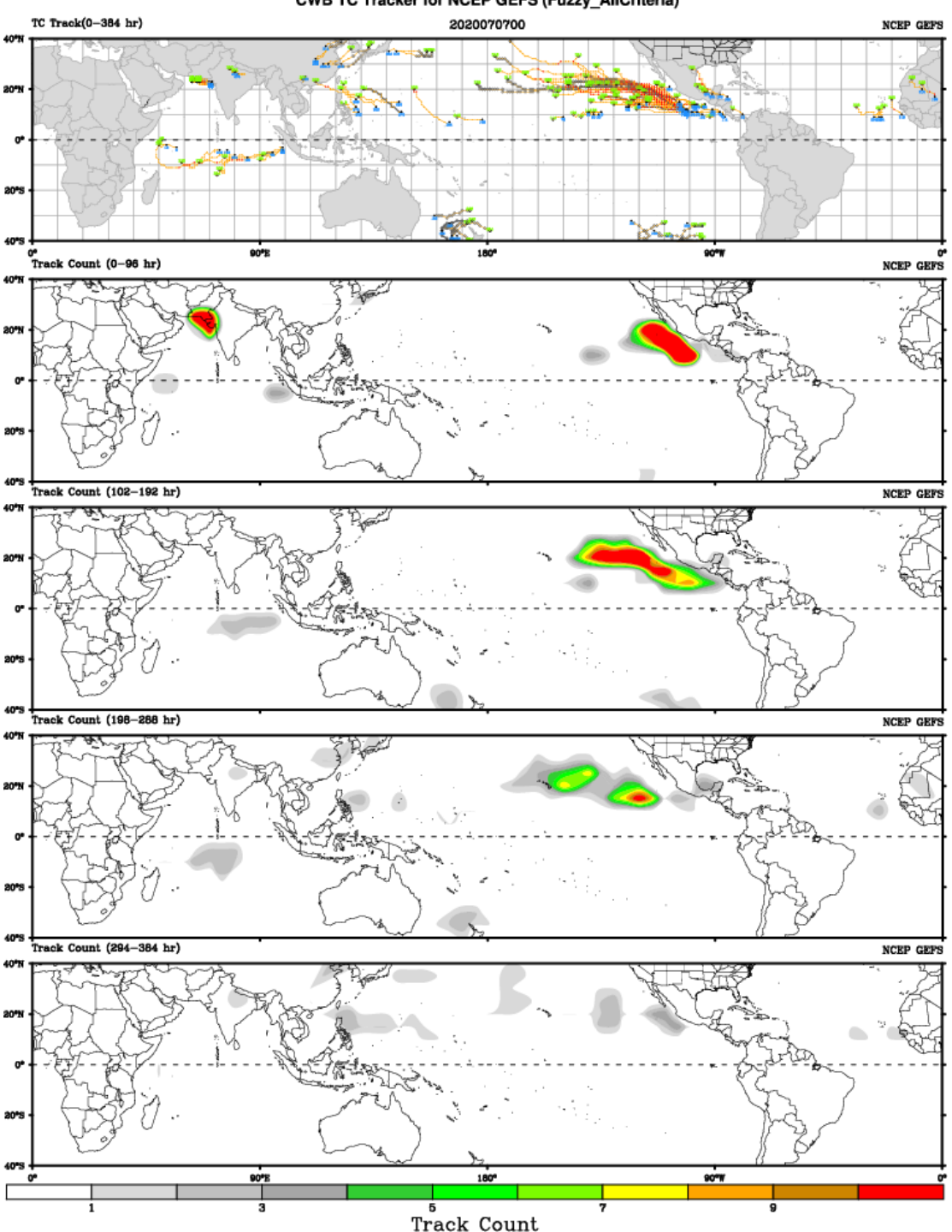
Tropical Cyclone (Reference Warning)

Days 1-4

Day 5-8

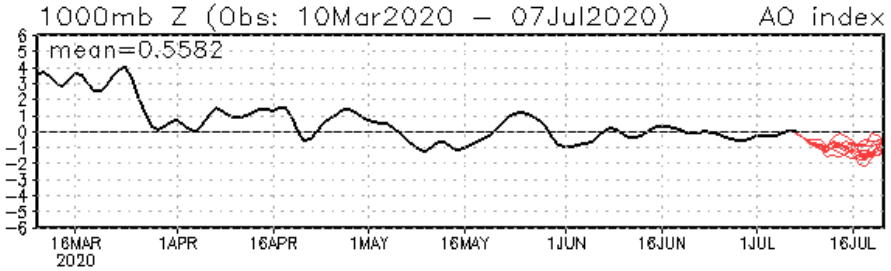
Day 9-12

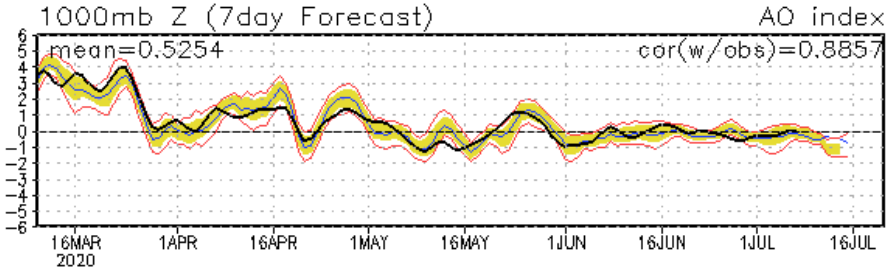
Day 13-15

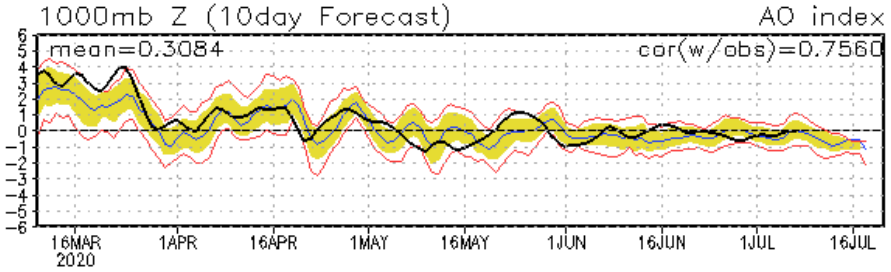


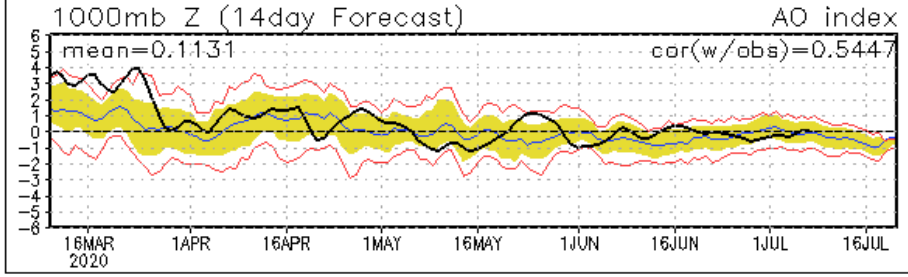
Connections to U.S. Impacts

AO: Observed & ENSM forecasts

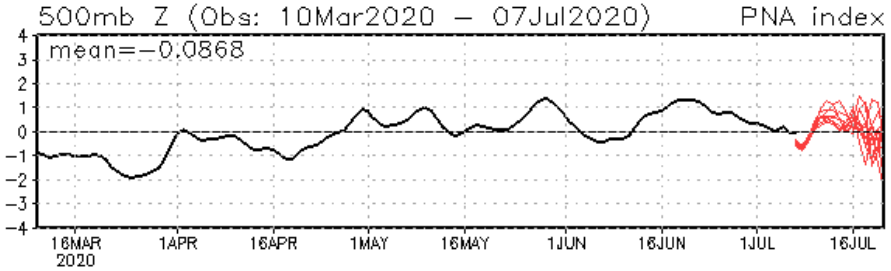


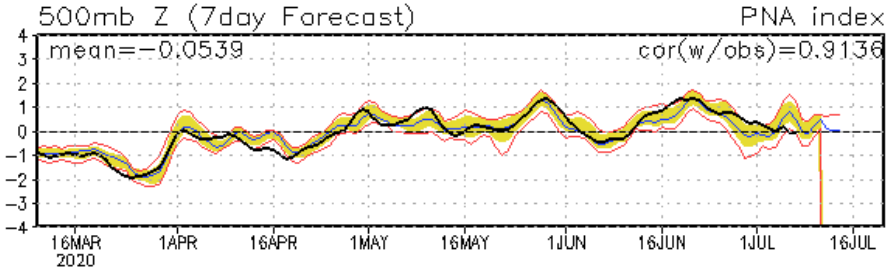


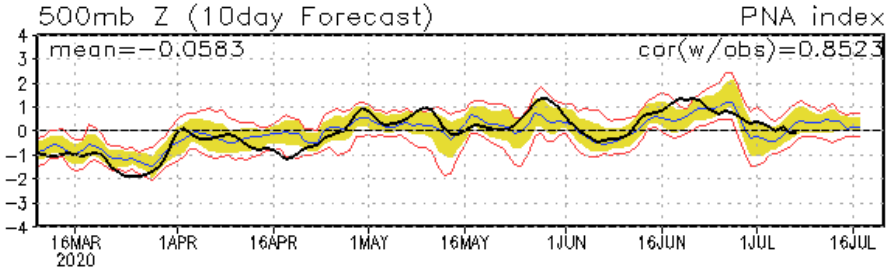


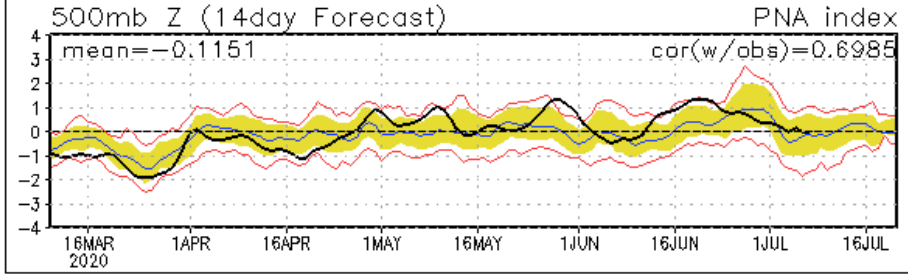


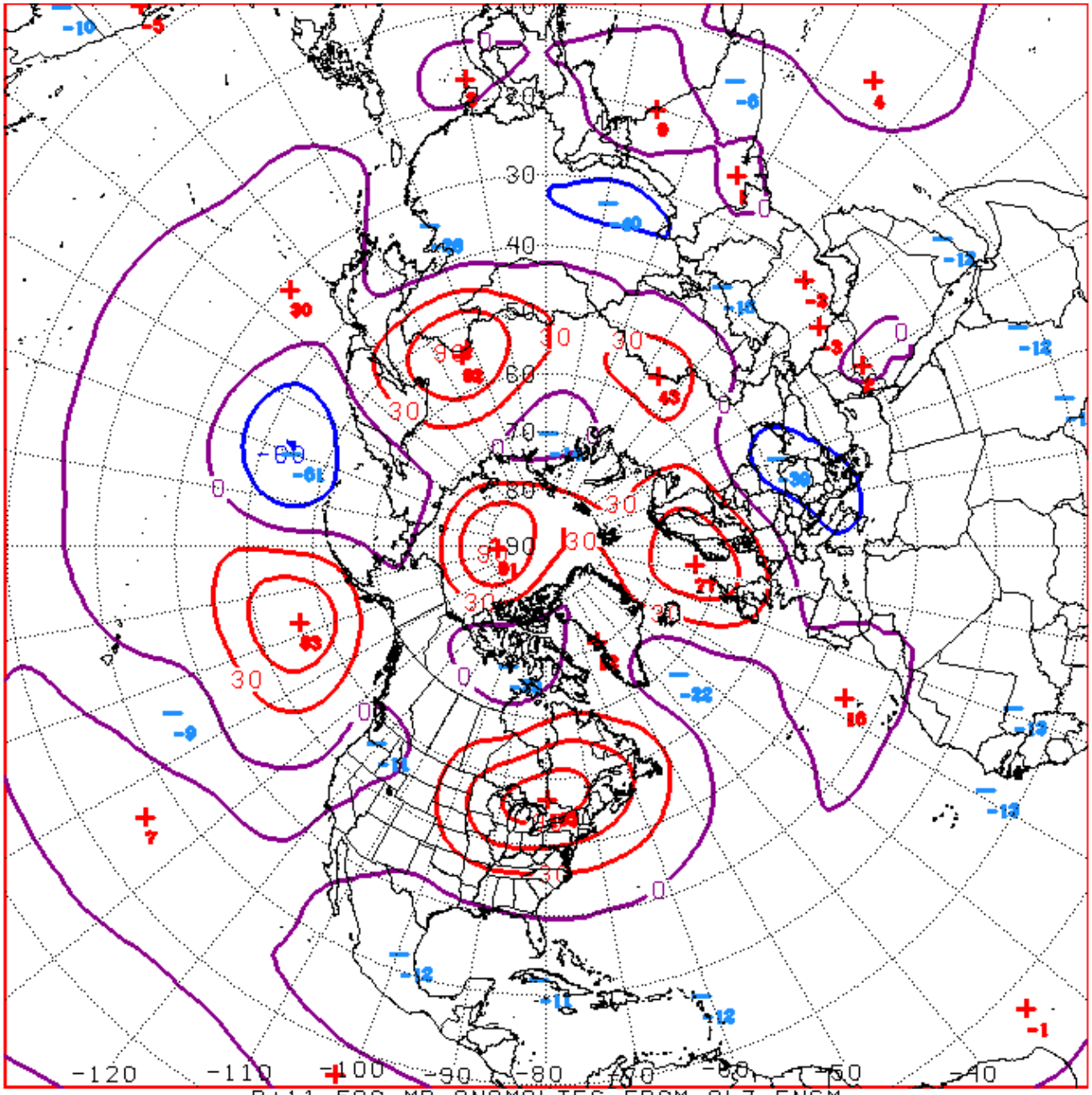
PNA: Observed & ENSM forecasts





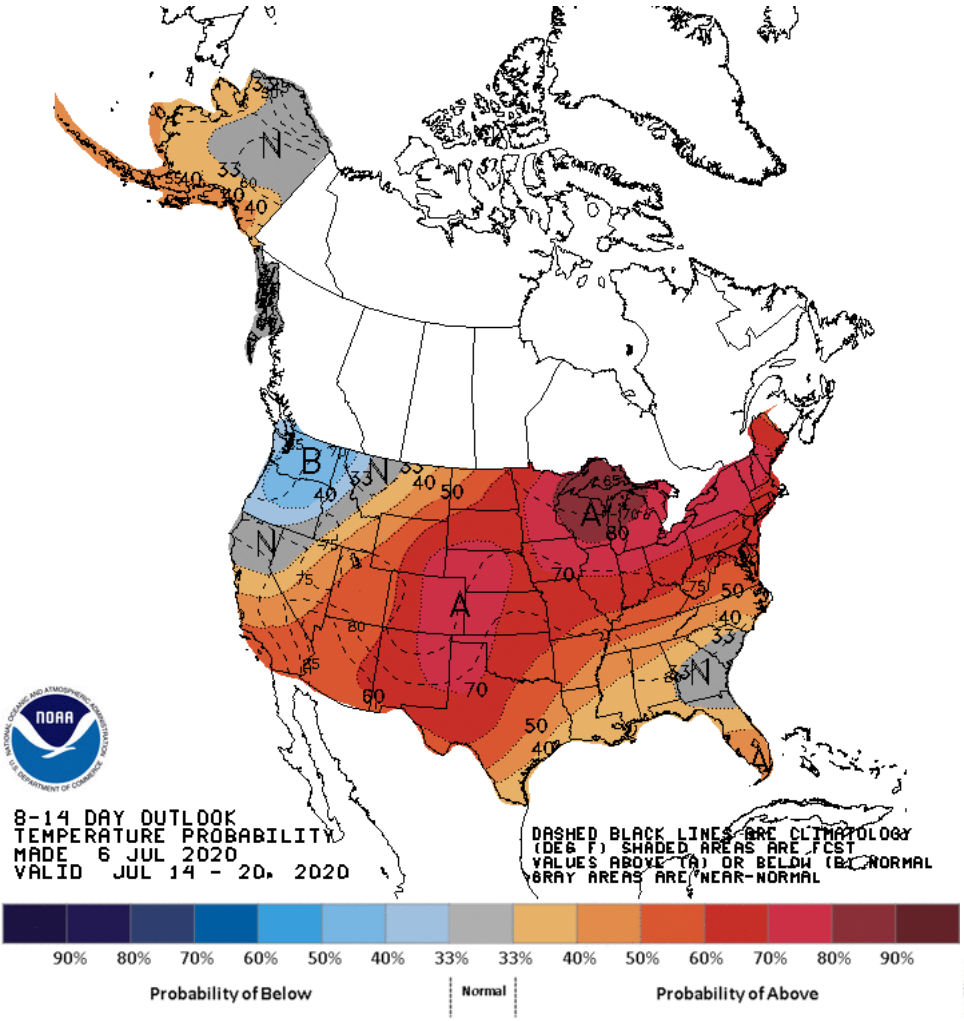


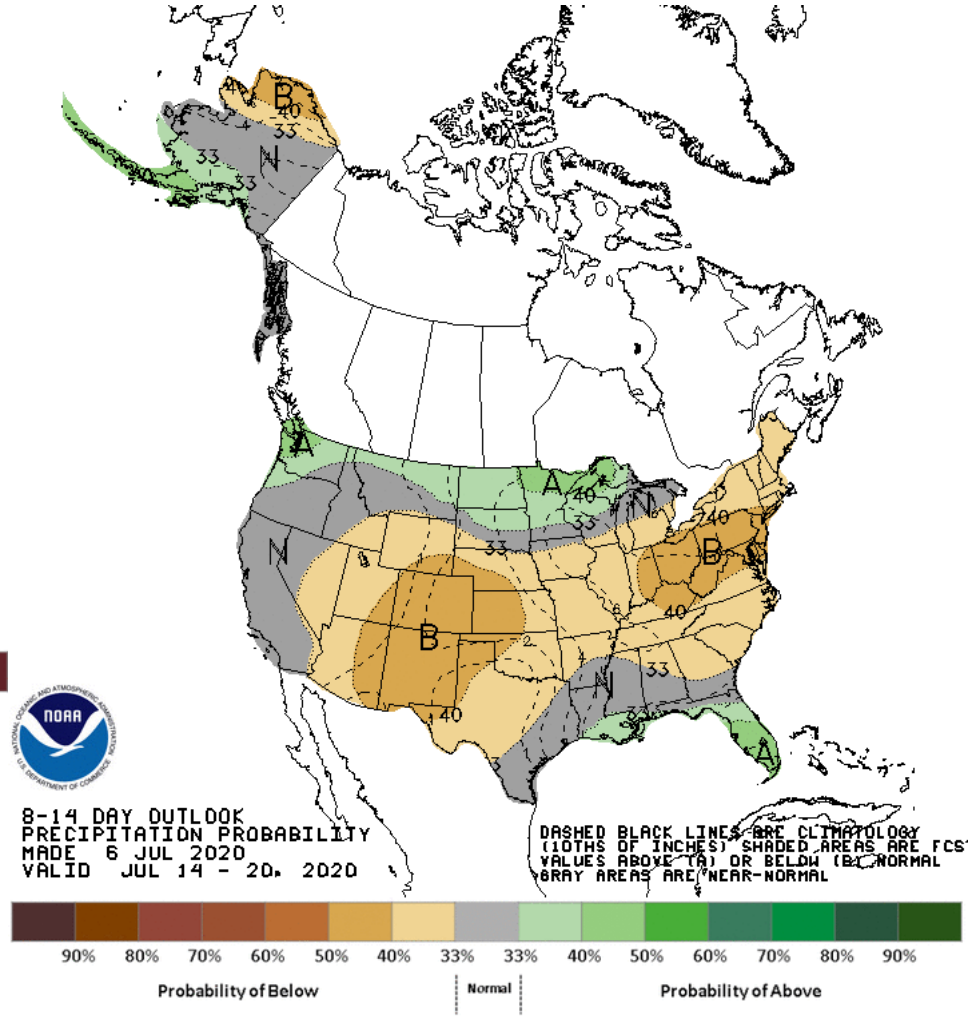




D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE JUL 07 2020 1307 UTC CNTD JUL 18 2020

Week 2 – Temperature and Precipitation





warmer/drier conditions expected across much of CONUS.

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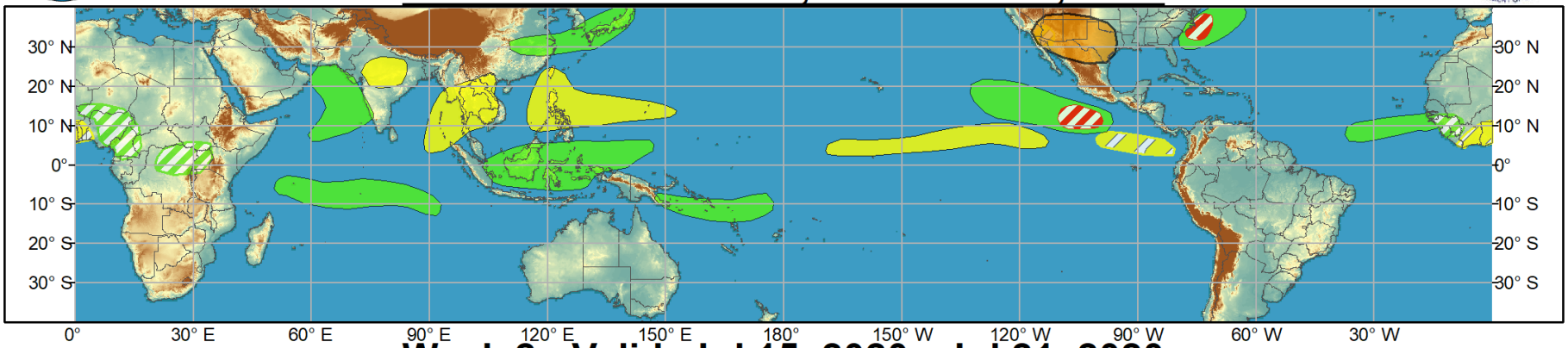

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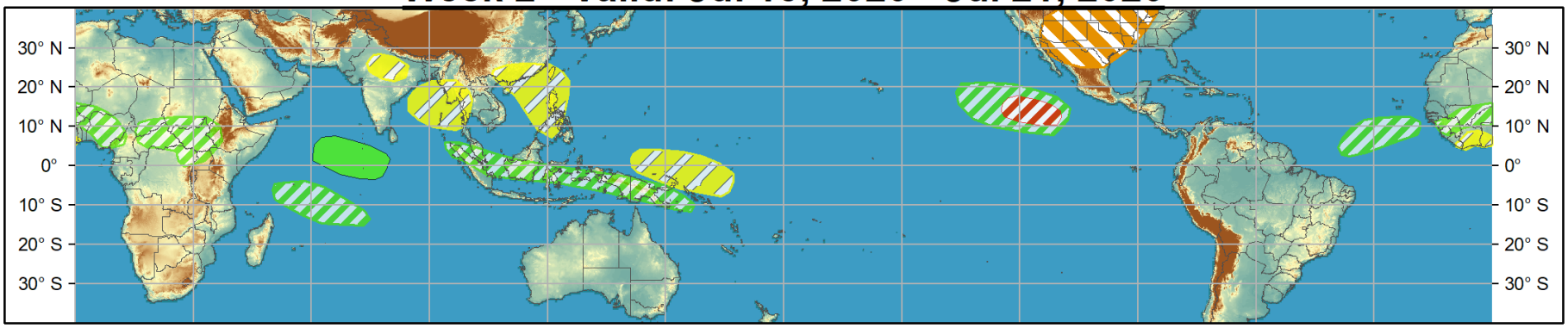

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