

Global Tropics Hazards And Benefits Outlook

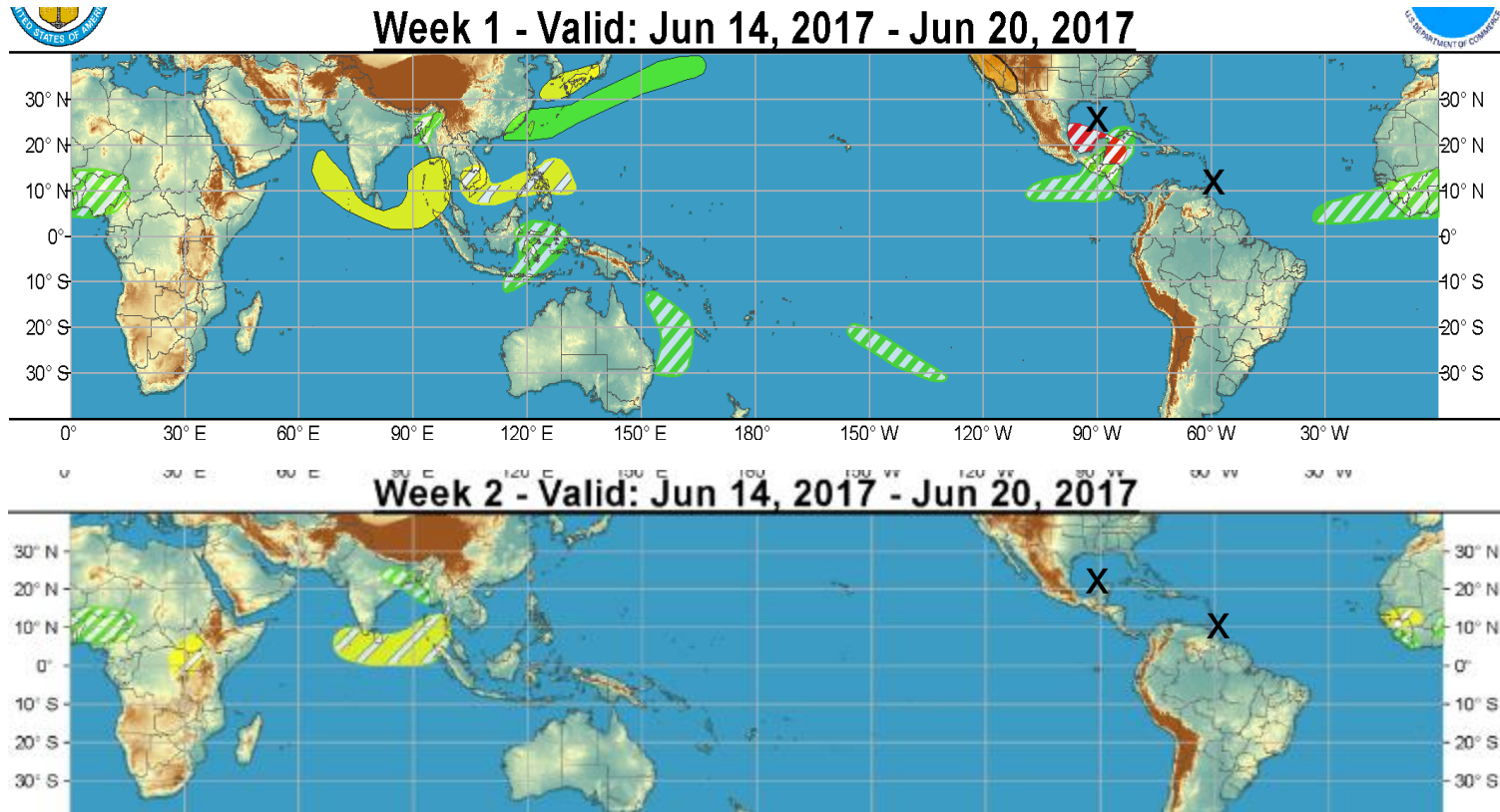
6/20/2017

Brad Pugh

Outline

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

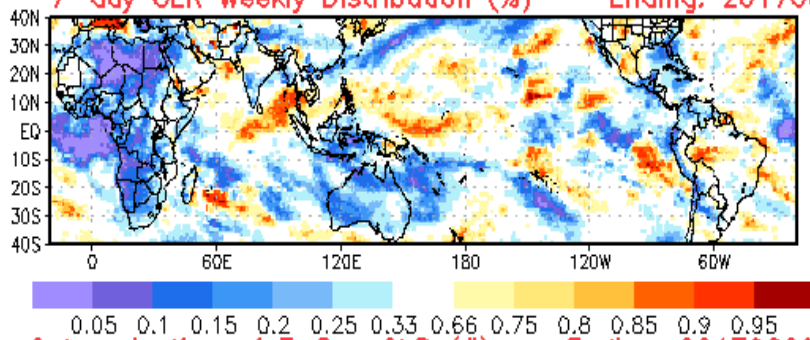
Outlook Review



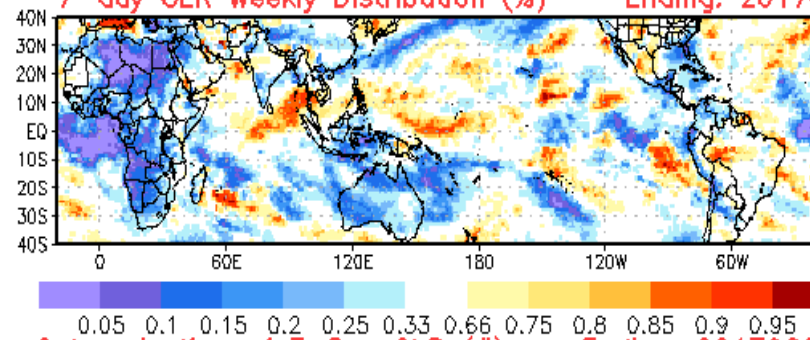
Tropical Storm Bret: developed on June 19 (9.4N/59.8W)

Tropical Storm Cindy: classified in past hour by NHC

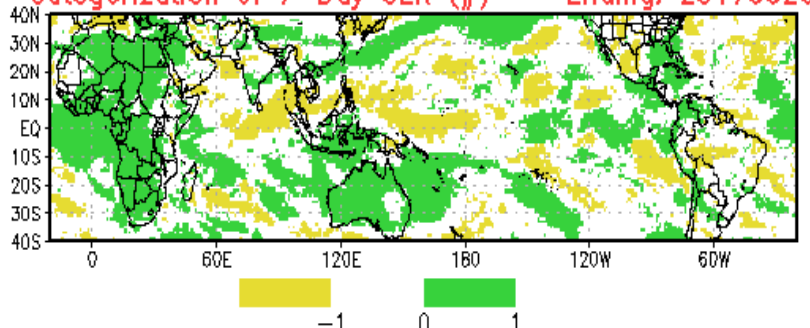
7-day OLR Weekly Distribution (%) -- Ending: 20170620



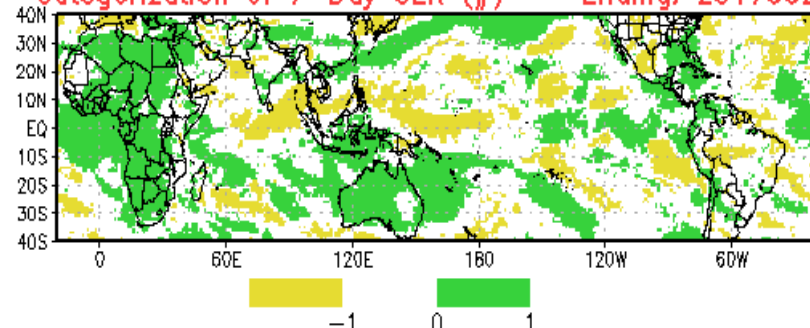
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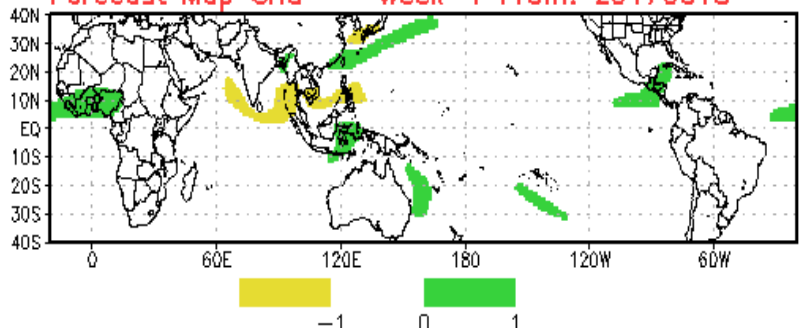
Categorization of 7-Day OLR (#) -- Ending: 20170620



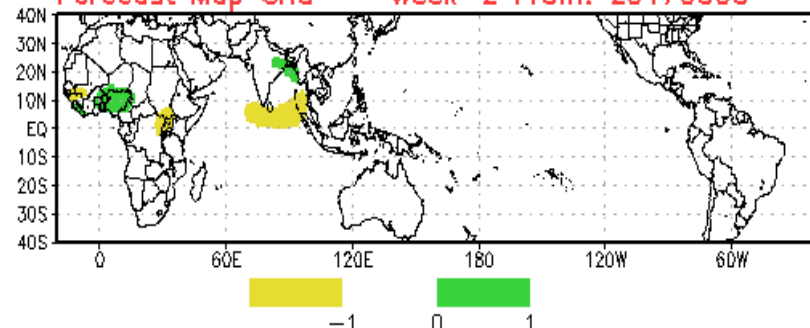
Categorization of 7-Day OLR (#) -- Ending: 20170620



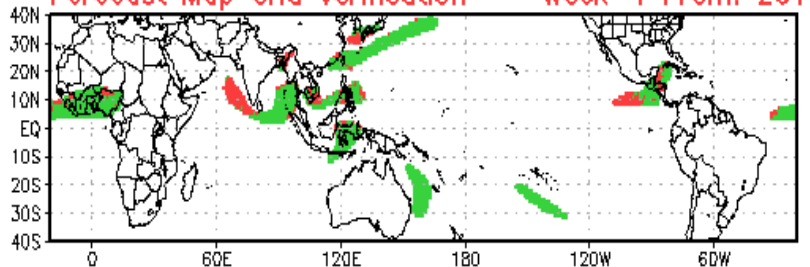
Forecast Map Grid -- Week-1 From: 20170613



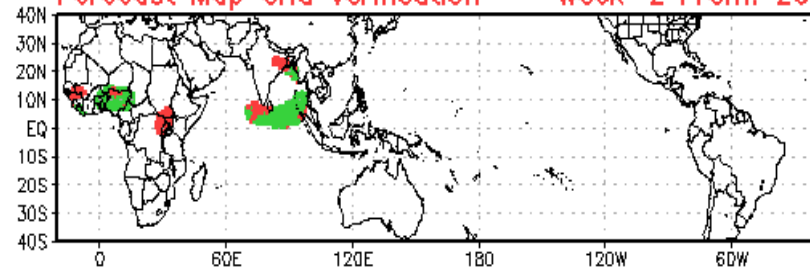
Forecast Map Grid -- Week-2 From: 20170606



Forecast Map Grid Verification -- Week-1 From: 201706



Forecast Map Grid Verification -- Week-2 From: 20170606



Hit: Green, Miss: Red
Heidke Skill Score: 69.6940

Hit: Green, Miss: Red
Heidke Skill Score: 44.0343

Synopsis of Climate Modes

ENSO:

- ENSO-neutral is favored (50-55%) through Northern Hemisphere fall 2017
- The next ENSO diagnostic discussion release will be 13 July.

MJO and other subseasonal tropical variability:

- Diagnostic tools support a weak MJO signal during the past week.
- Faster modes of tropical variability (Kelvin waves) remain most dominant.
- The MJO is expected to remain weak based on the model consensus.

Extratropics:

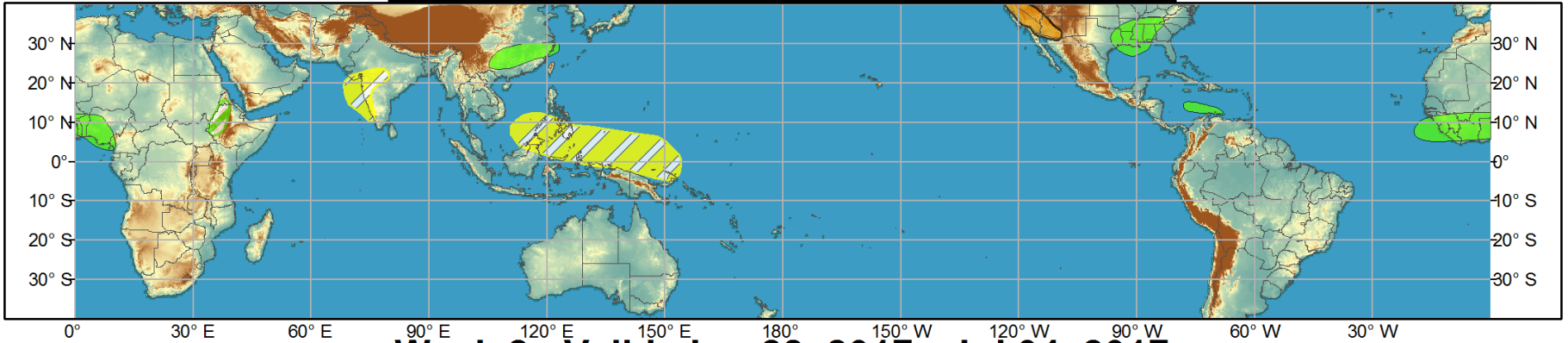
- The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by a MJO.
- Additional tropical cyclone development is expected to be near or below climatology throughout the global tropics during the next two weeks.



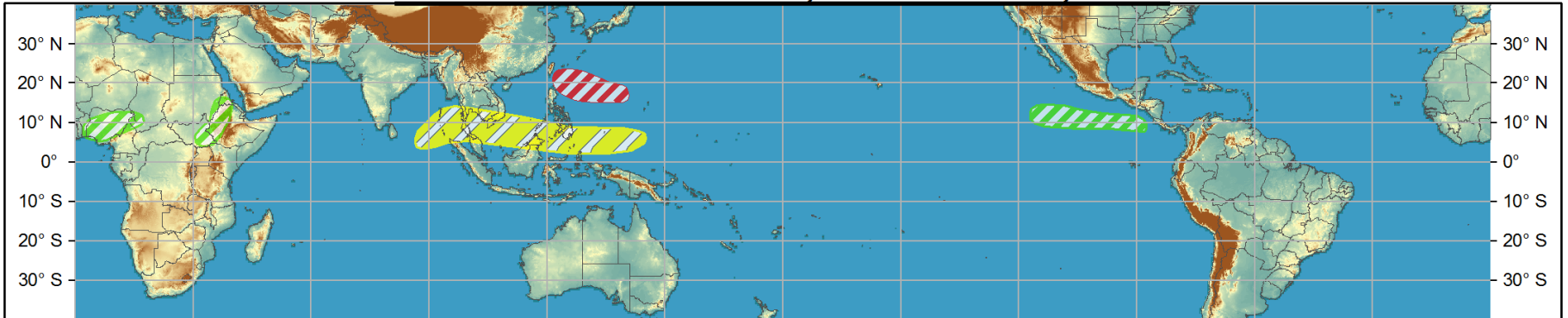
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jun 21, 2017 - Jun 27, 2017



Week 2 - Valid: Jun 28, 2017 - Jul 04, 2017



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.
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- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
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Produced: 06/20/2017
Forecaster: Pugh

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

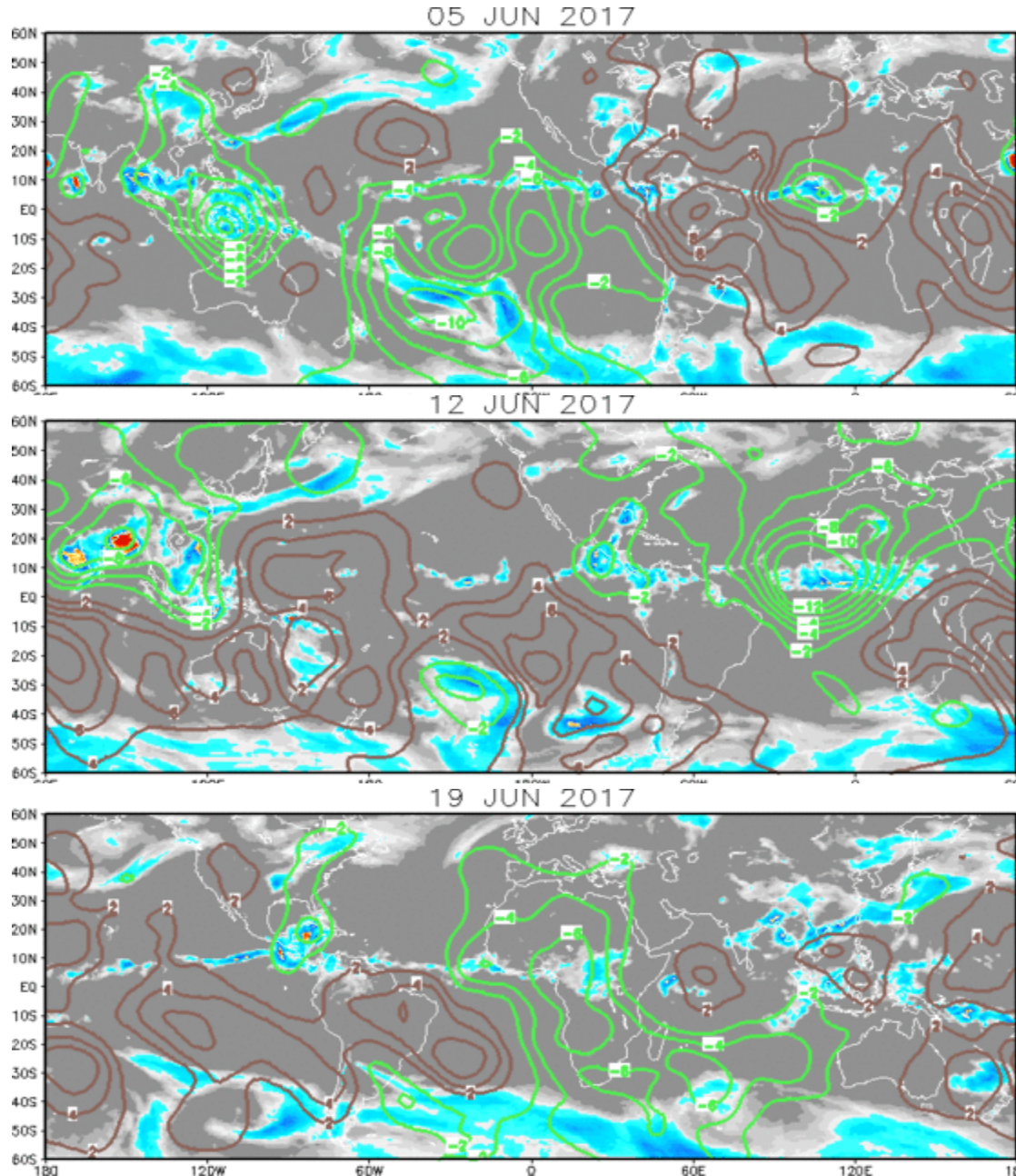
Green: Enhanced Divergence

Brown: Enhanced Convergence

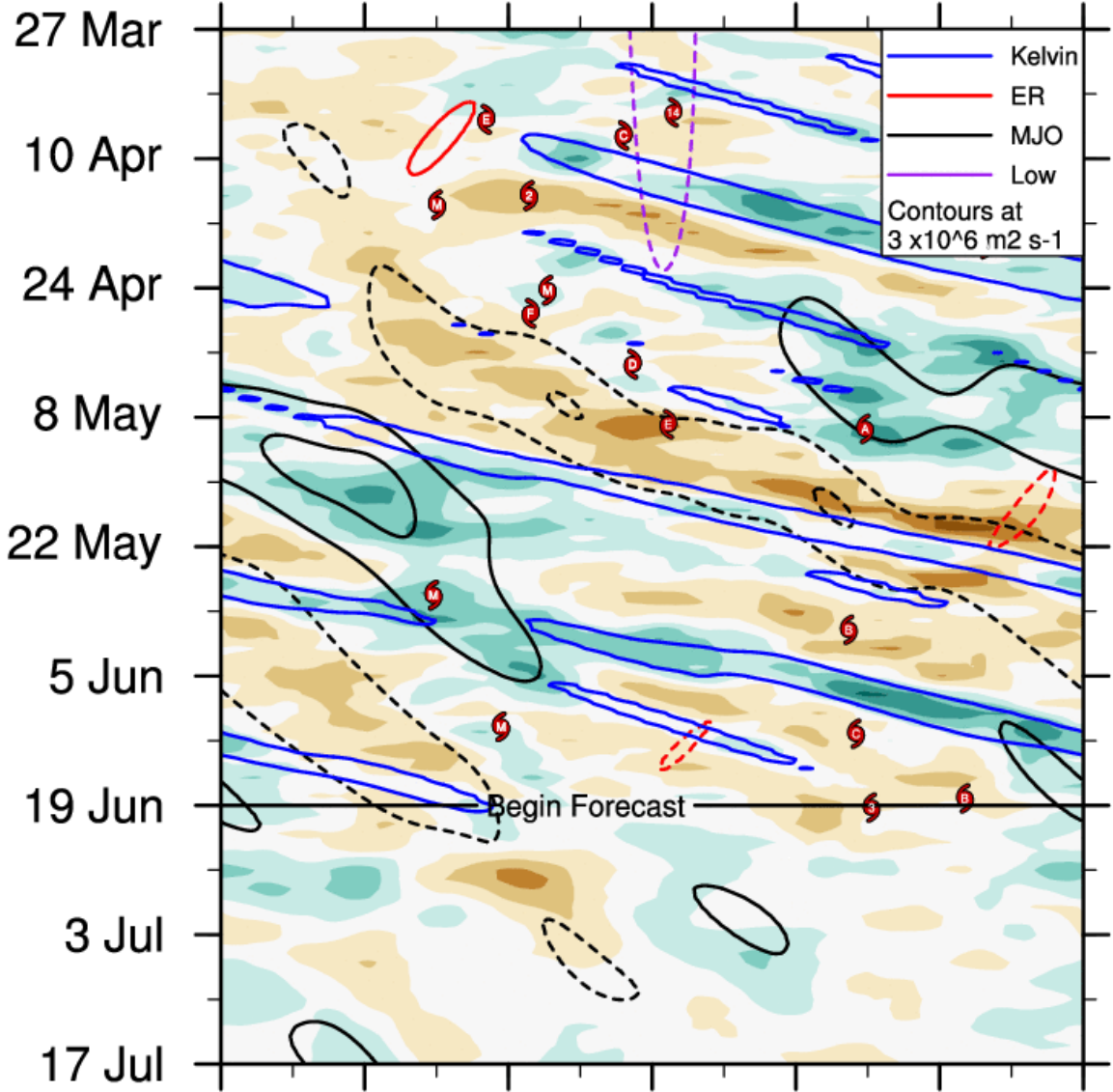
Broadly wave-1 pattern, Kelvin wave over Maritime Continent and another in the East Pacific.

Wave-2 pattern with two centers of action over SE Asia (monsoon, TS Merbok) and Atlantic (Kelvin wave).

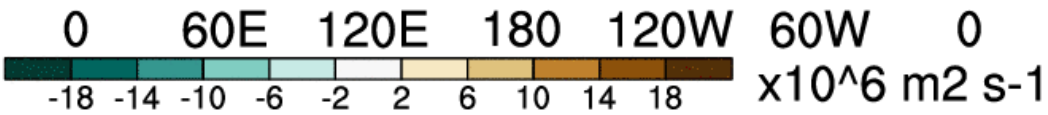
Remnant Kelvin wave over Africa with weak areas of lift and suppression across global tropics.



CHI200 with CFS forecasts 5S - 5N



— Kelvin
 — ER
 - - MJO
 - - Low
 Contours at
 $3 \times 10^6 \text{ m}^2 \text{ s}^{-1}$

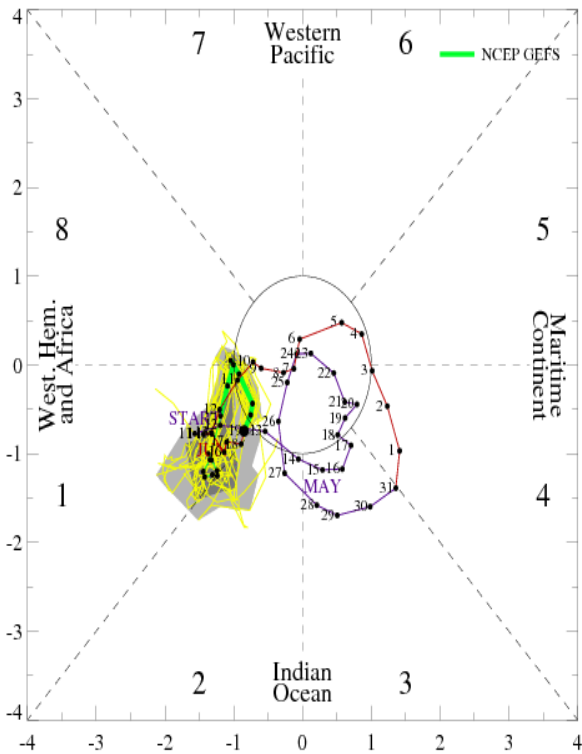


Kelvin waves remain a major factor



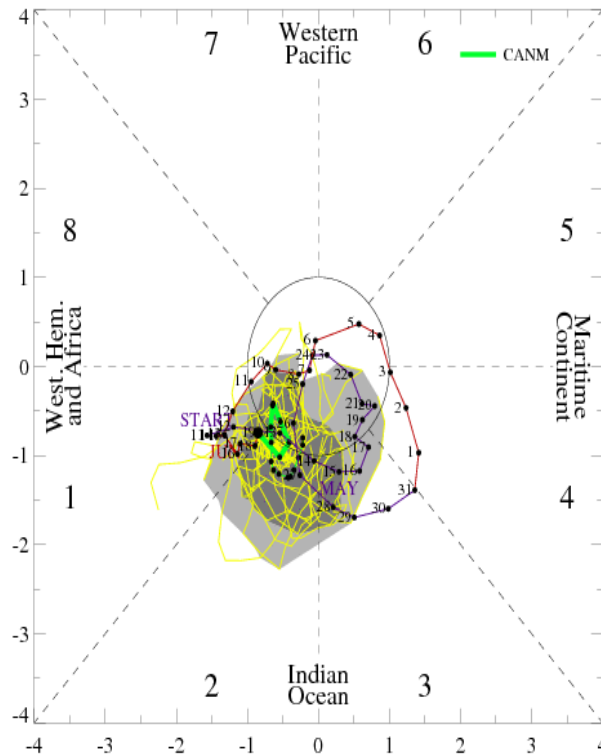
MJO Observation/Forecast

MJO Index Forecast for 20Jun2017-04Jul2017



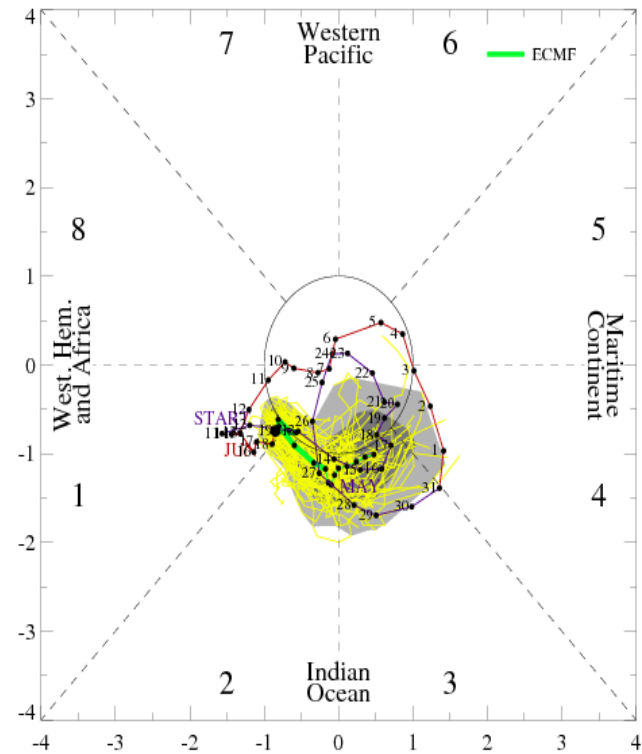
GEFS

MJO Index Forecast for 20Jun2017-04Jul2017



CMC

MJO Index Forecast for 20Jun2017-04Jul2017

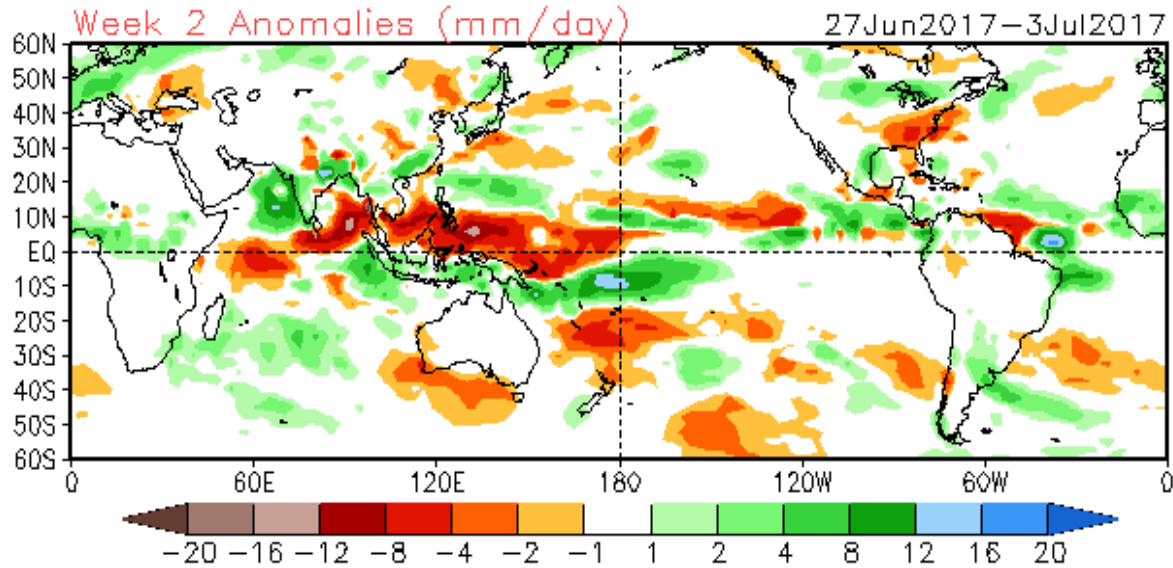
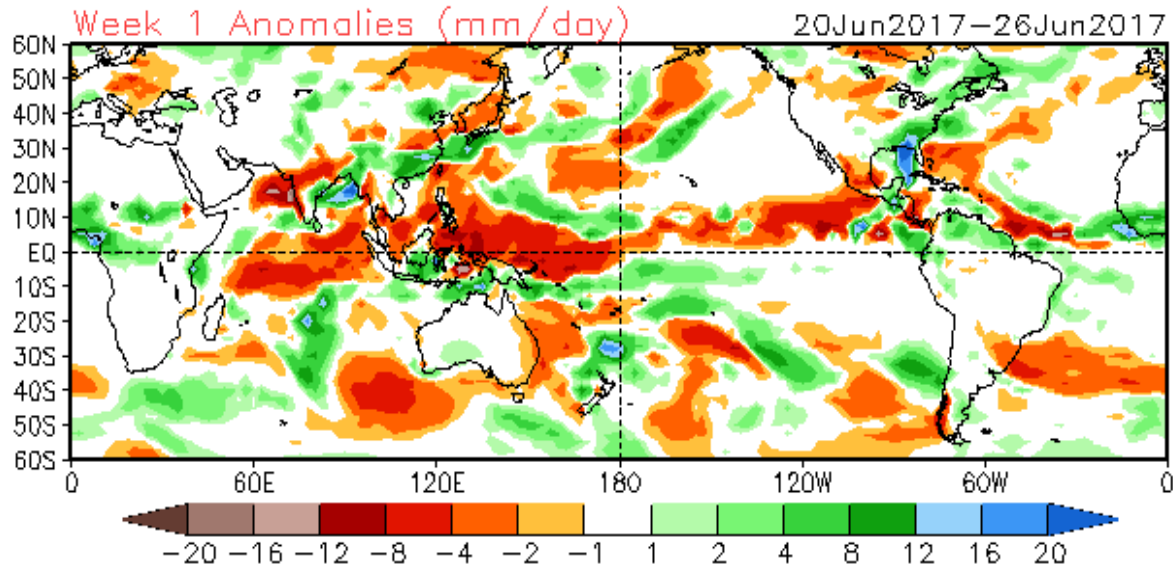


ECMWF

ECMWF model seems to be the least likely outcome with its eastward propagation of a MJO from Africa to the Indian Ocean but it's not completely discounted.

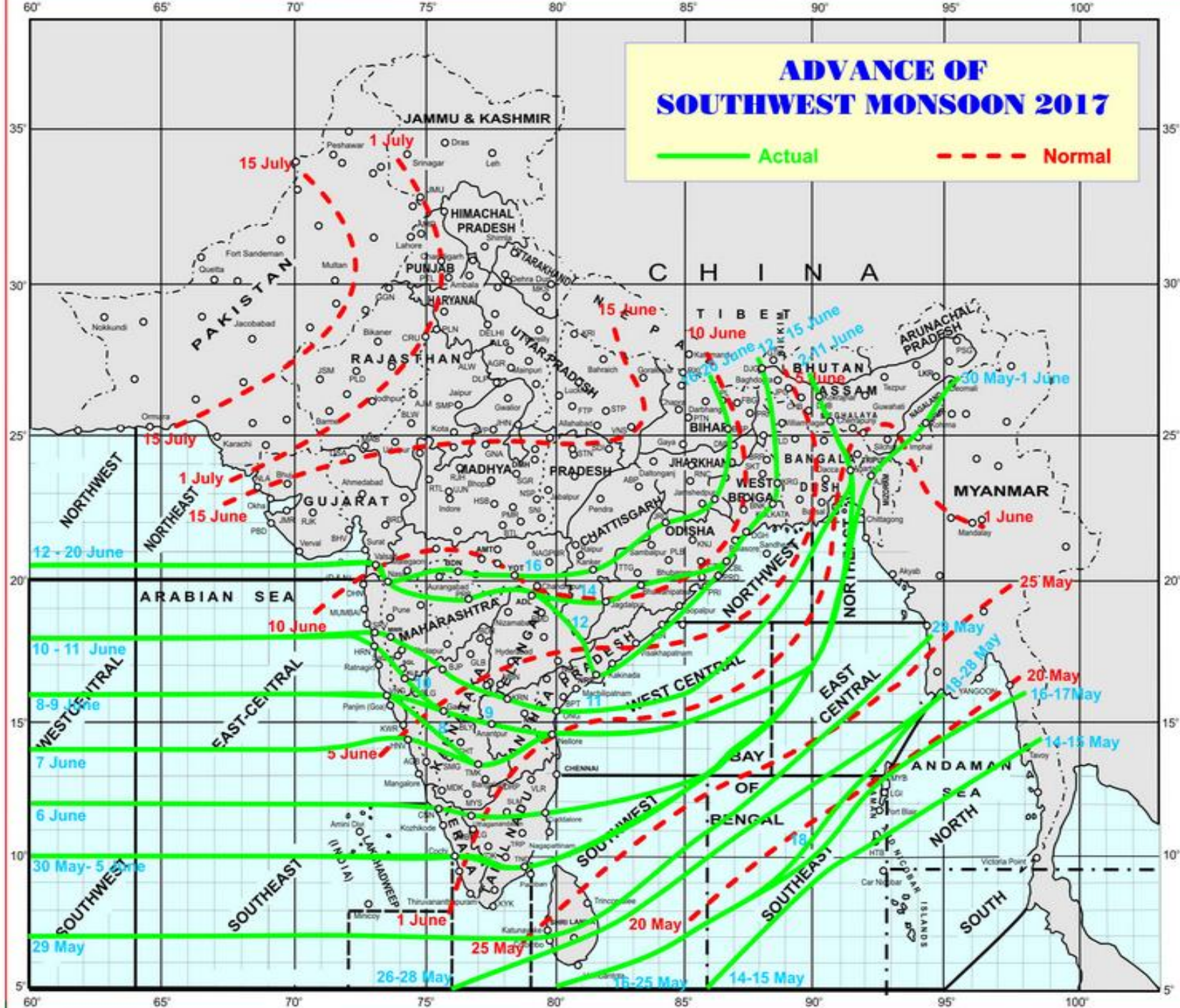
CFSv2 Weeks 1 & 2 Precipitation

16 Member Ensemble Mean Forecast from 19Jun2017



ADVANCE OF SOUTHWEST MONSOON 2017

— Actual - - - Normal





Two-Day Graphical Tropical Weather Outlook

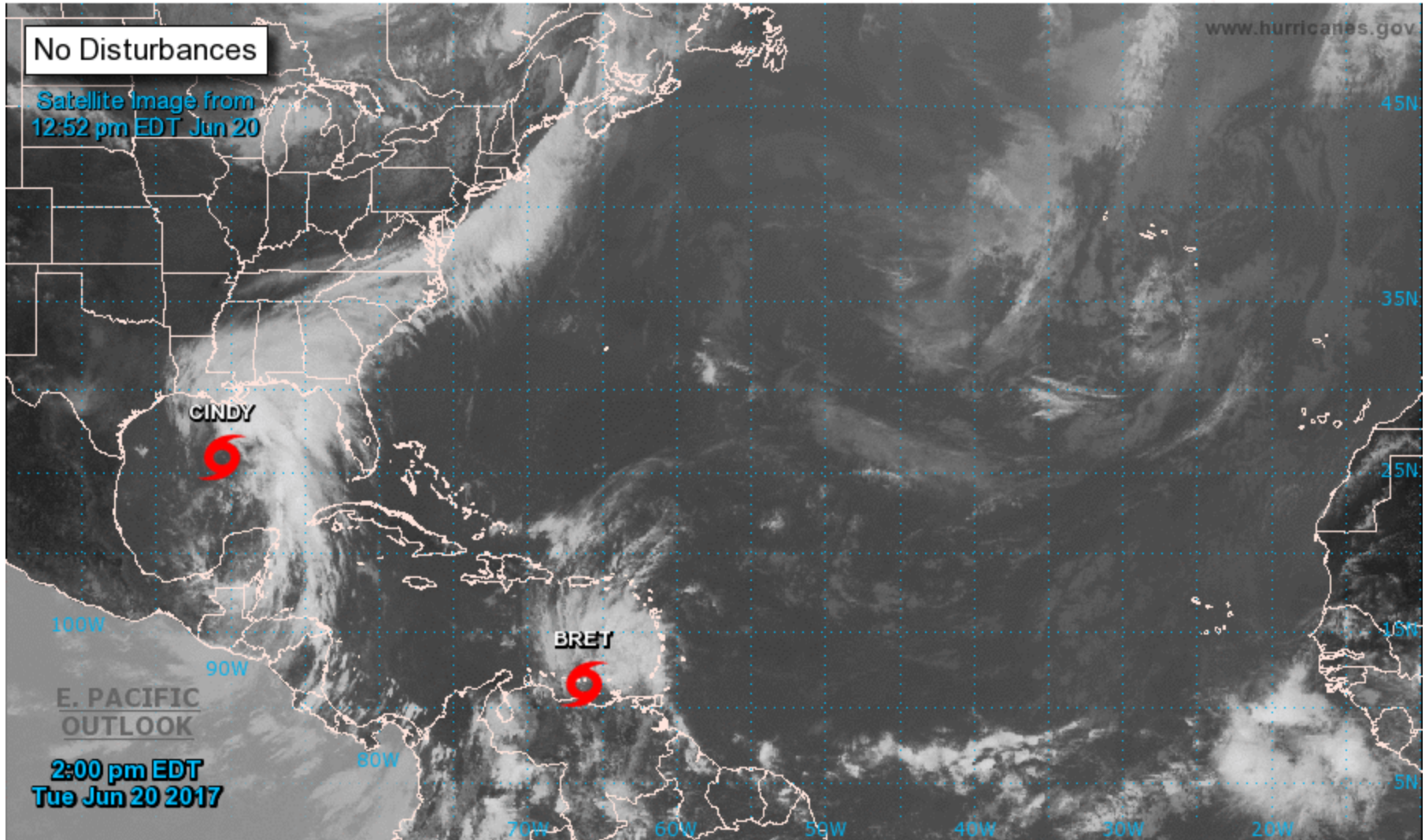
National Hurricane Center Miami, Florida



www.hurricanes.gov

No Disturbances

Satellite image from
12:52 pm EDT Jun 20



E. PACIFIC
OUTLOOK

2:00 pm EDT
Tue Jun 20 2017

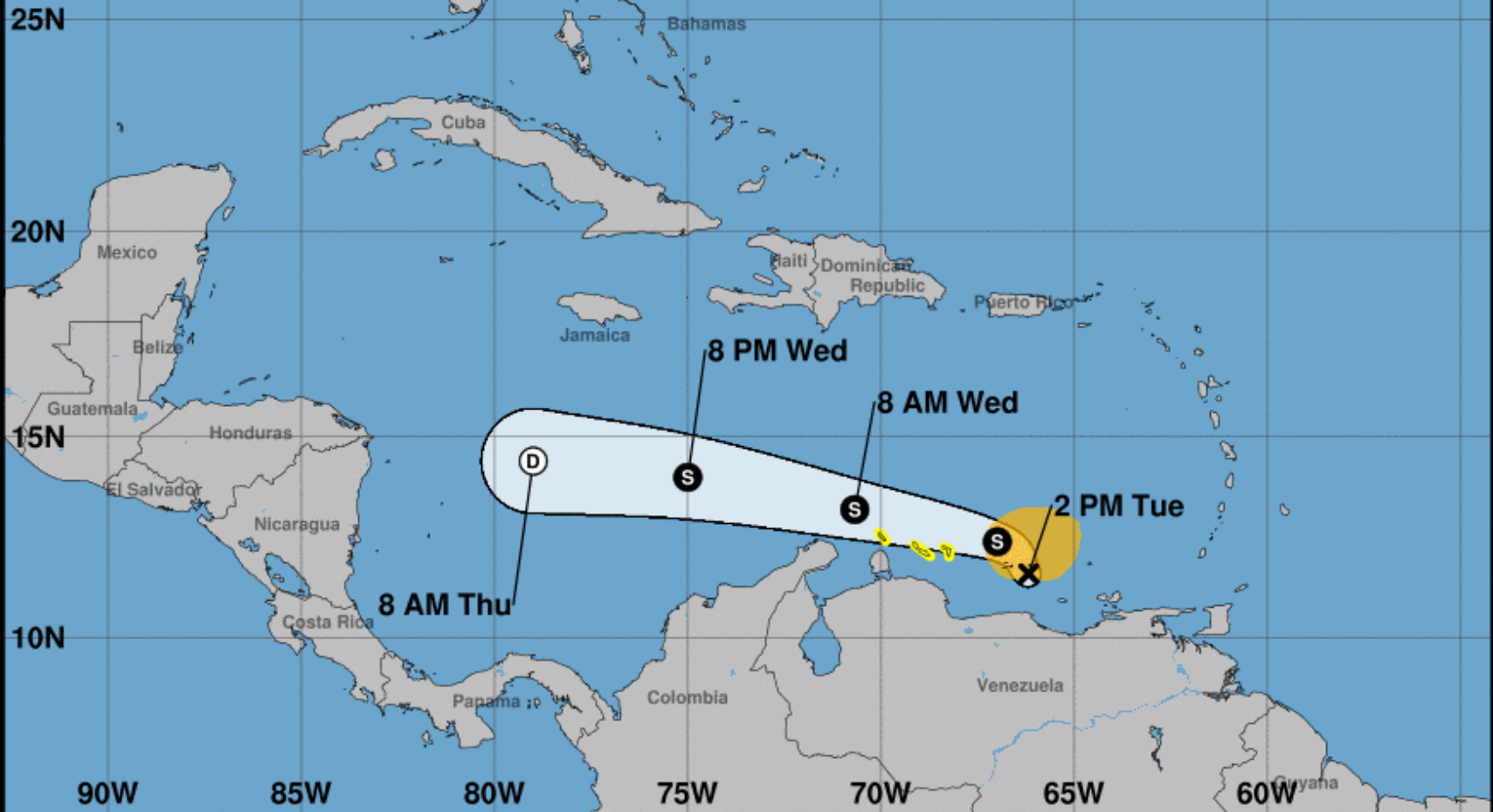
Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone Remnants



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



Tropical Storm Bret
 Tuesday June 20, 2017
 2 PM AST Intermediate Advisory 8A
 NWS National Hurricane Center

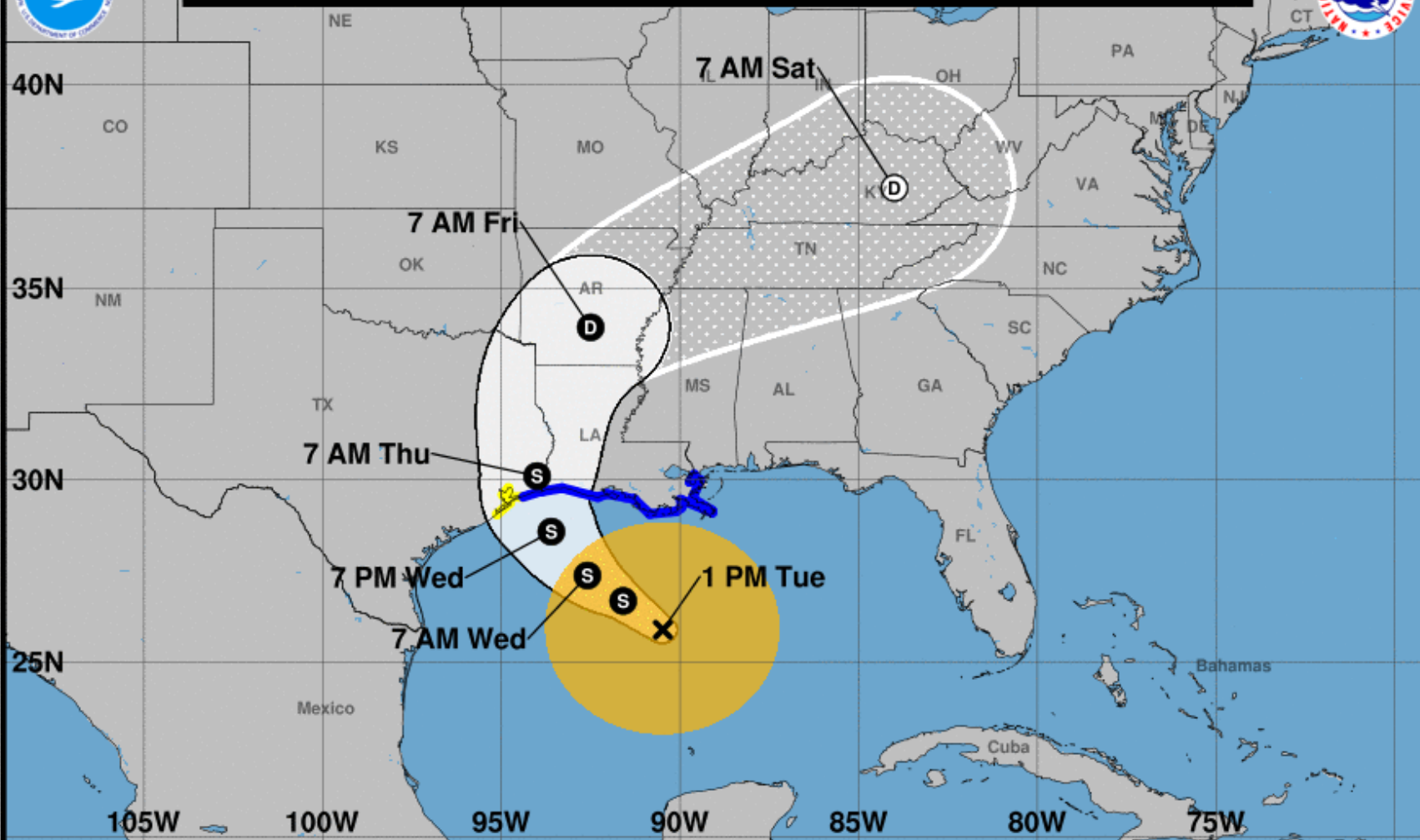
Current information: X
 Center location 11.6 N 66.2 W
 Maximum sustained wind 40 mph
 Movement WNW at 23 mph

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: | Watches: | Warnings: | Current wind extent: |
| Day 1-3 Day 4-5 | Hurricane Trop Stm | Hurricane Trop Stm | Hurricane Trop Stm |



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



Tropical Storm Cindy

Tuesday June 20, 2017

1 PM CDT Intermediate Advisory 4A

NWS National Hurricane Center

Current information: x

Center location 25.9 N 90.5 W

Maximum sustained wind 45 mph

Movement: Stationary

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:

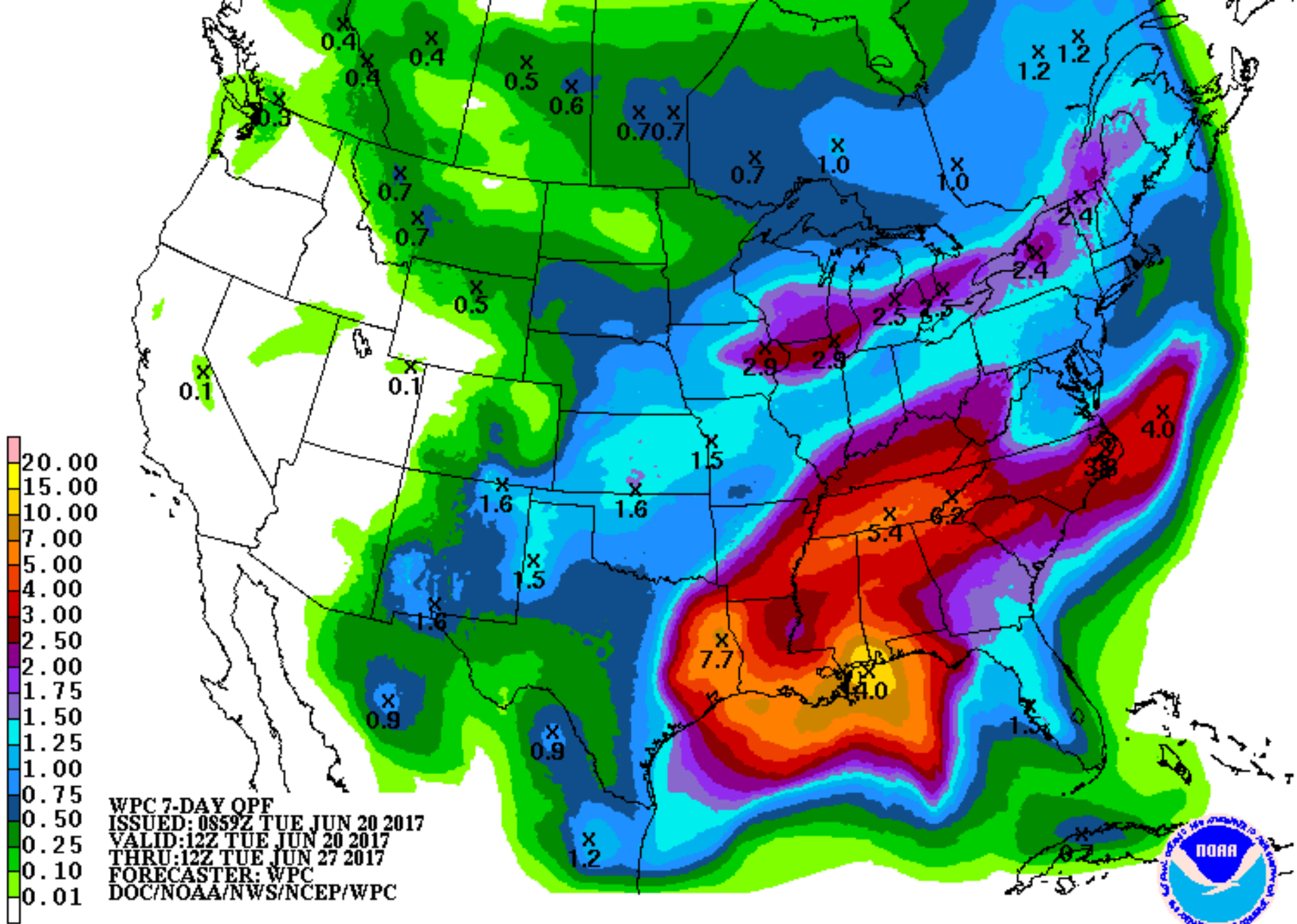
Hurricane Trop Stm

Warnings:

Hurricane Trop Stm

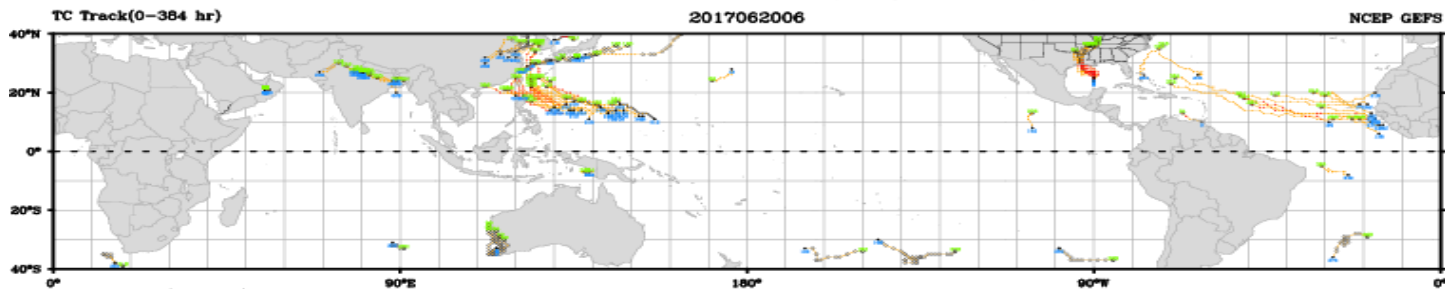
Current wind extent:

Hurricane Trop Stm

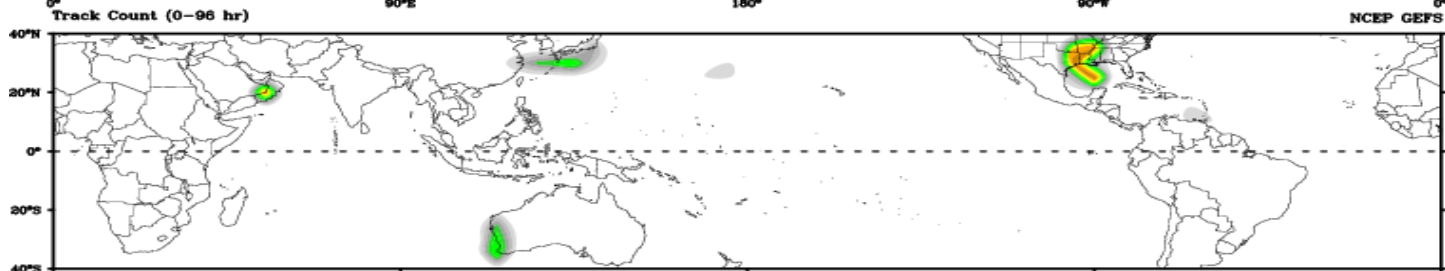


WPC 7-DAY OFF
ISSUED: 0859Z TUE JUN 20 2017
VALID: 12Z TUE JUN 20 2017
THRU: 12Z TUE JUN 27 2017
FORECASTER: WPC
DOC/NOAA/NWS/NCEP/WPC

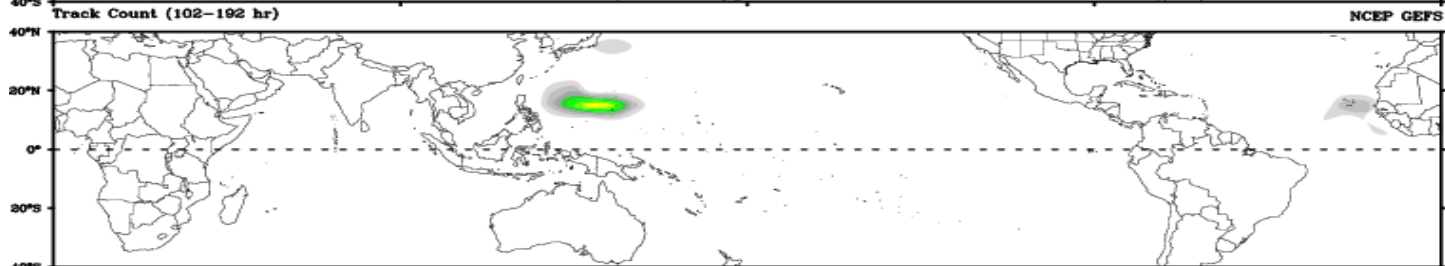




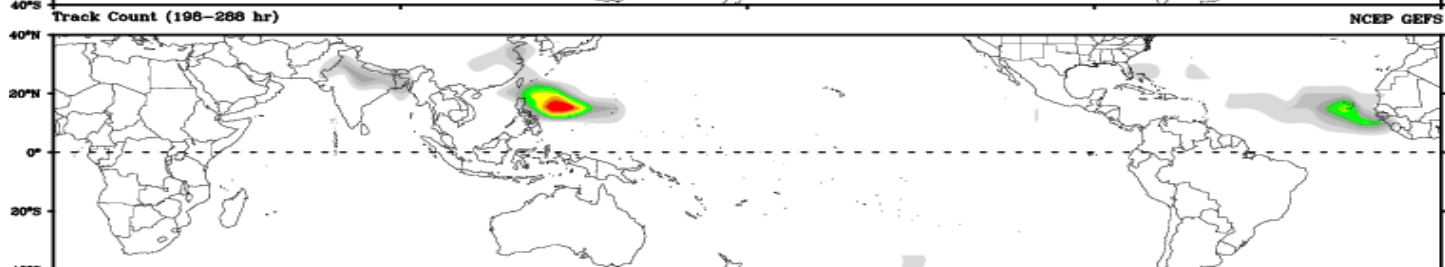
Days 1-4



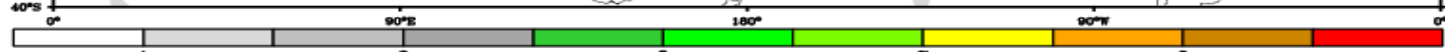
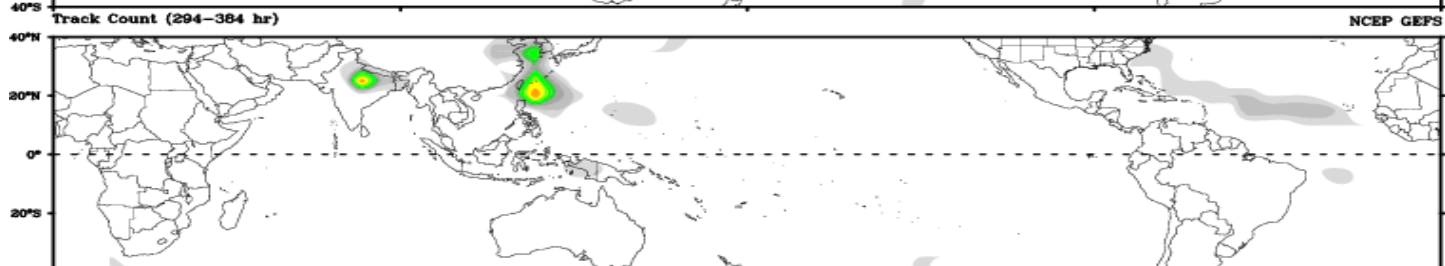
Day 5-8



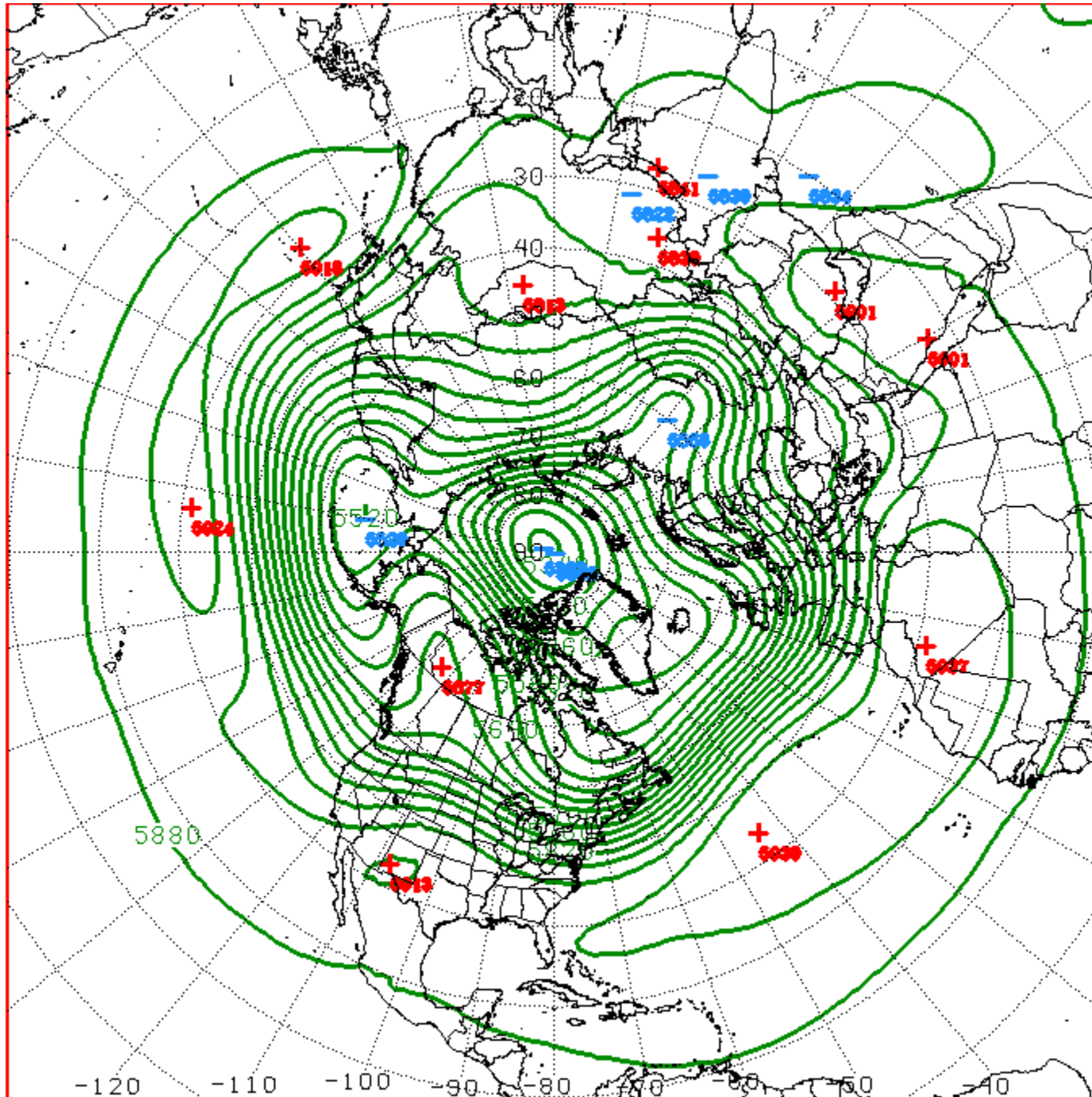
Day 9-12



Day 13-15

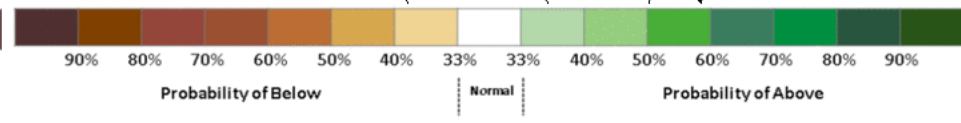
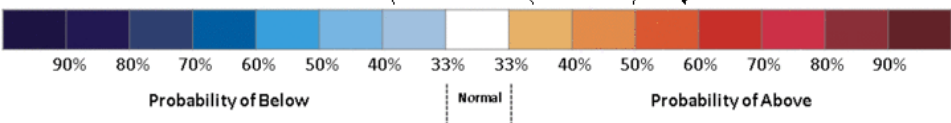
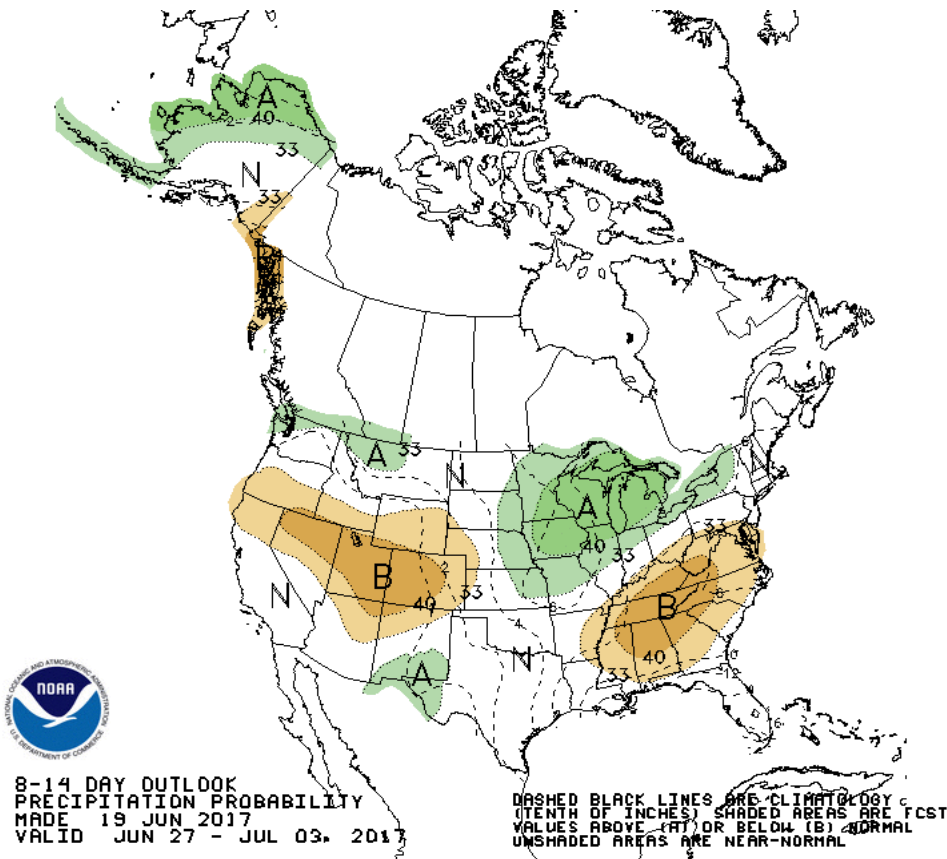
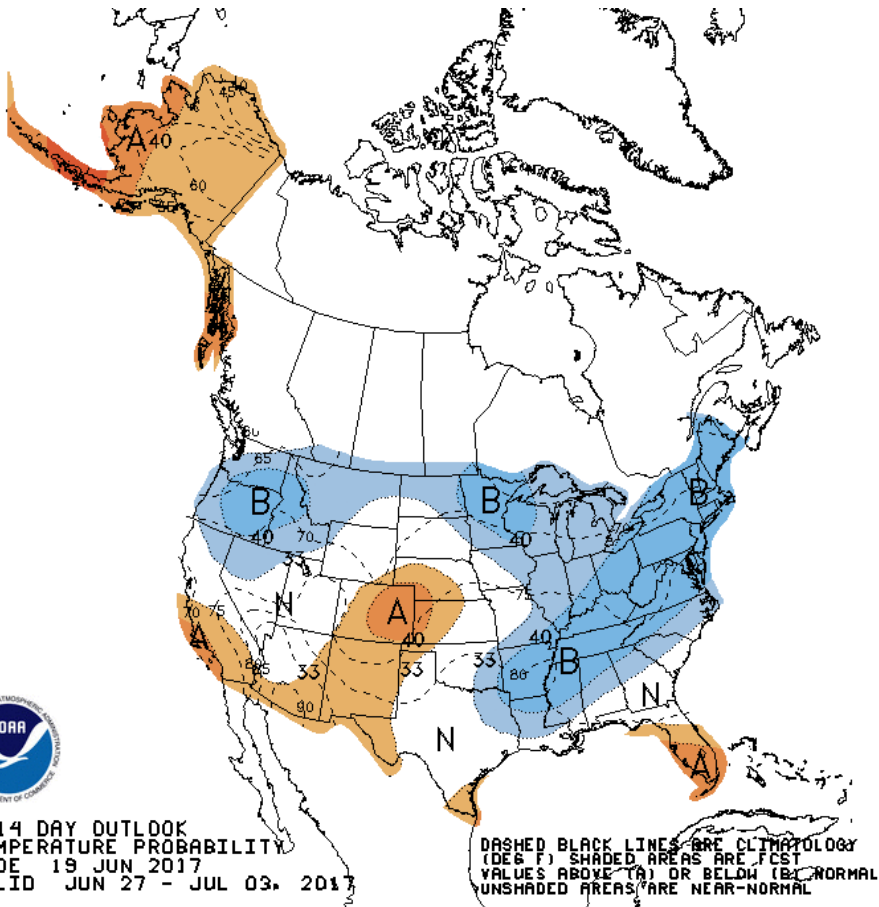


Connections to U.S. Impacts



D+11 500 MB HEIGHTS FROM 06Z ENSM
 CPC MAP MADE JUN 20 2017 1227 UTC CNTD JUL 01 2017

Week 2 – Temperature and Precipitation



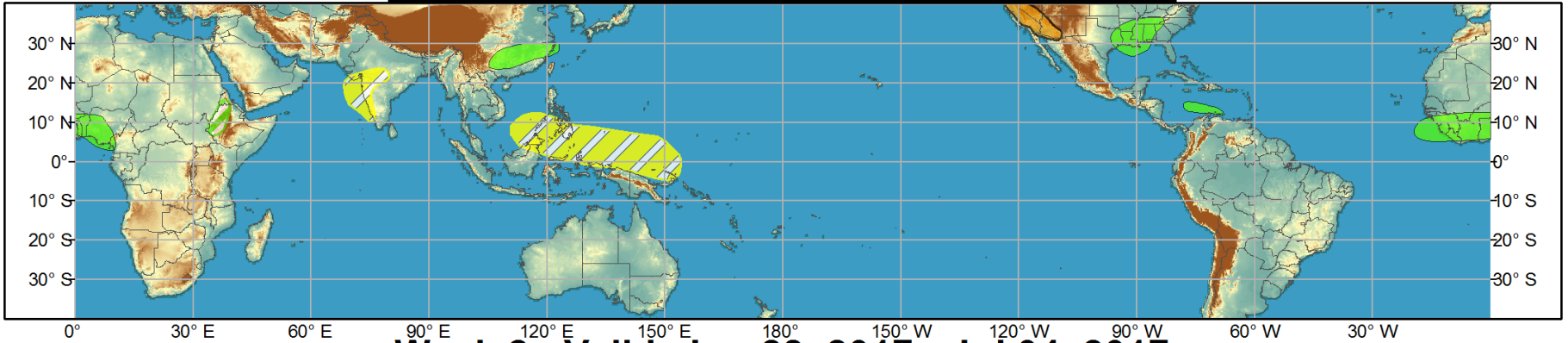
- 500-hpa height pattern is typical for end of June without anomalous troughs/ridges
- Reduced probabilities due to low amplitude flow pattern



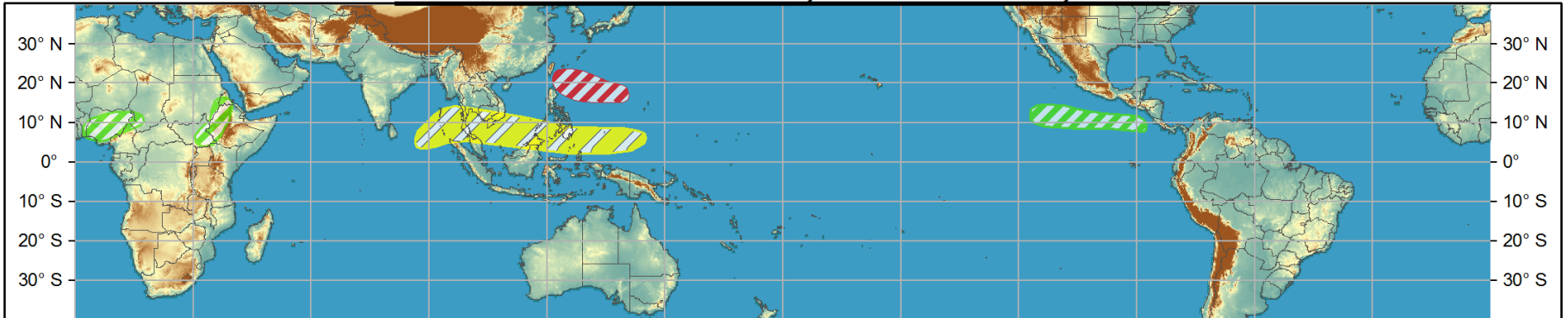
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