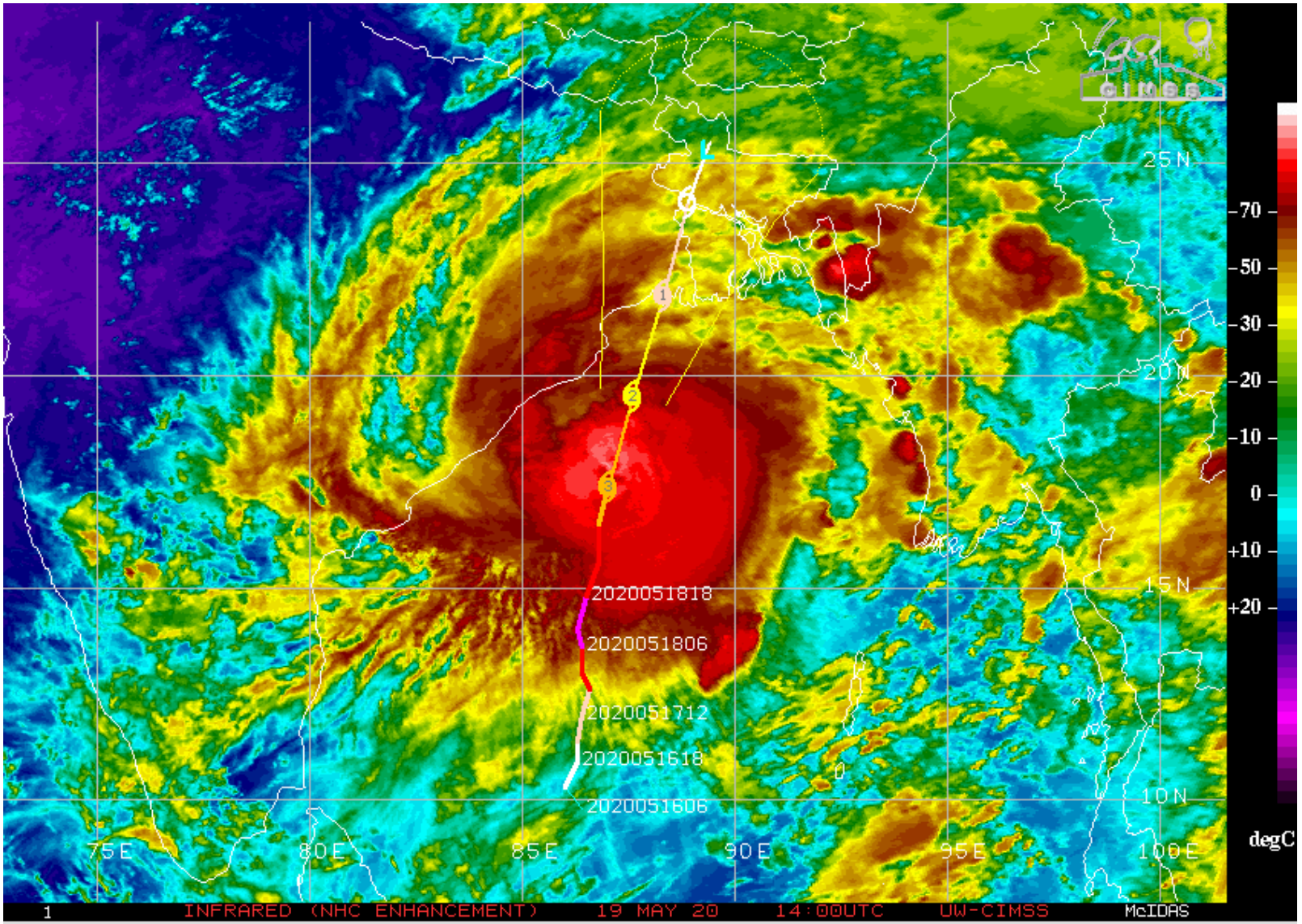
Global Tropics Hazards And Benefits Outlook

5/19/2020

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



Low/Wave
Tropical Depr
Tropical Strm
Category 1
Category 2
Category 3
Category 4
Category 5

I – Invest Area

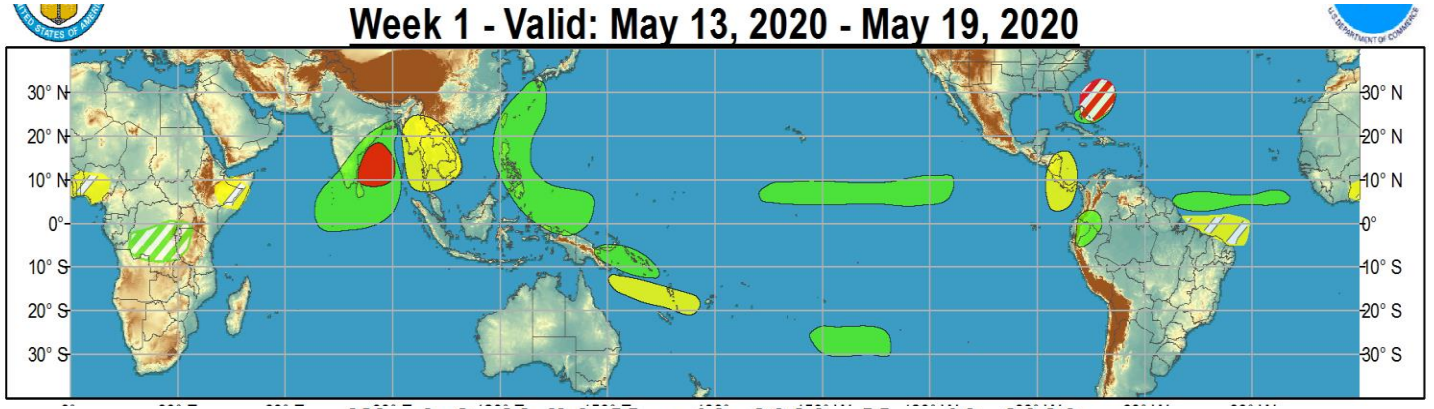
L – Tropical Depression

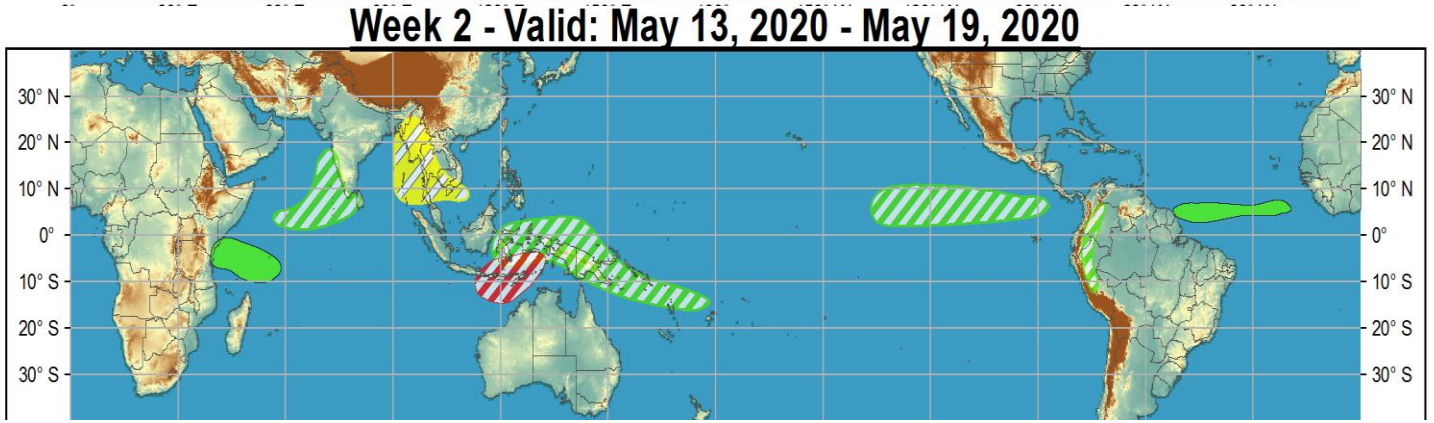
– Tropical Storm

– Hurricane/Typhoon
(w/ category)

Outlook Review

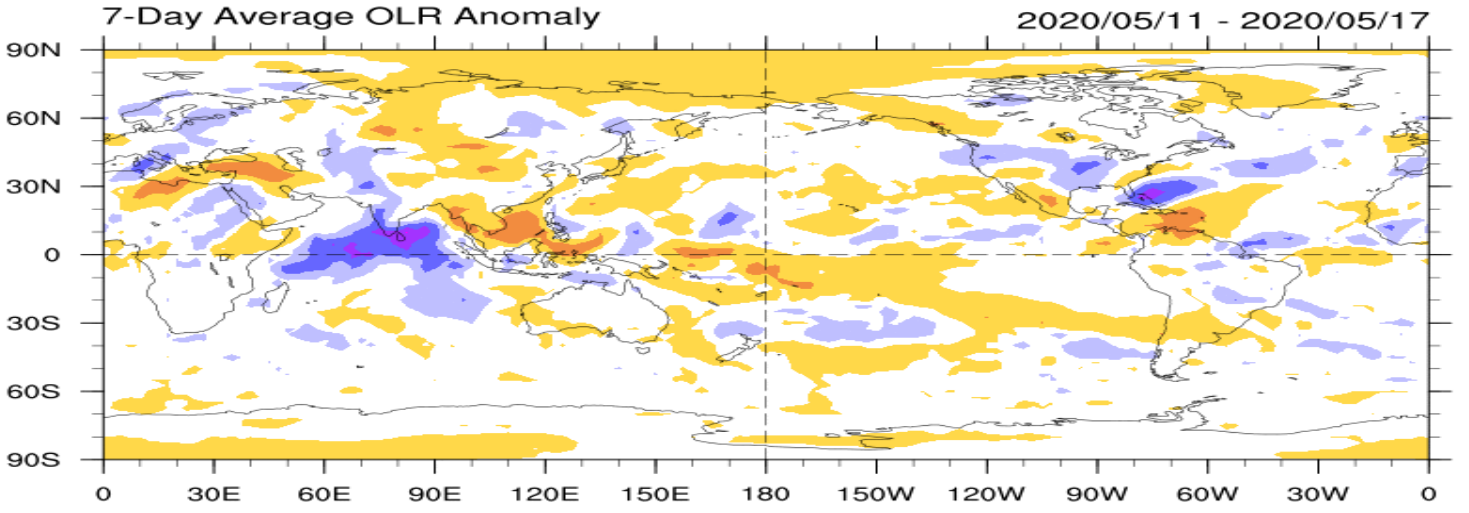
TC Amphan (5/16)
TC Arthur (5/17)





Cool shading
More clouds/rain

Warm shading
Less clouds/rain



Synopsis of Climate Modes

ENSO: (May 14, 2020 Update)

- ENSO Alert System Status: Not Active

- There is a ~65% chance of ENSO-neutral during the Northern Hemisphere summer 2020, with chances decreasing through the autumn (to 45-50%).

MJO and other subseasonal tropical variability:

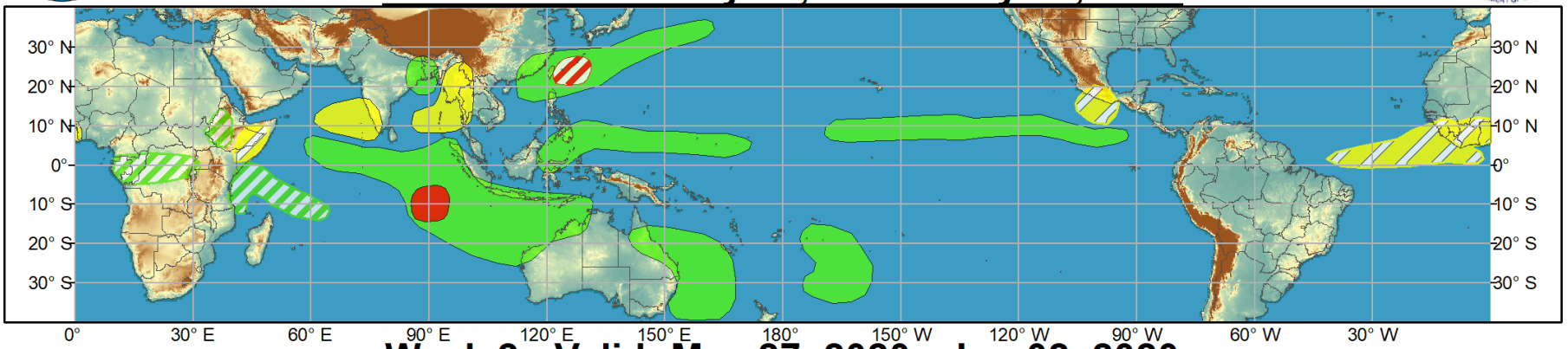
- Following the weakening of the MJO during early May, recent RMM indices indicate a strengthening of the intraseasonal signal over the Indian Ocean. Currently, much of the enhanced convection is tied to Tropical Cyclone Amphan peaking as Cat 5 system over the Bay of Bengal.

- Dynamical models suggest a rapid eastward propagation of this feature over the eastern Indian Ocean/Maritime Continent during Week-1, with some decay in amplitude over the West Pacific and Western Hemisphere during Week-2.

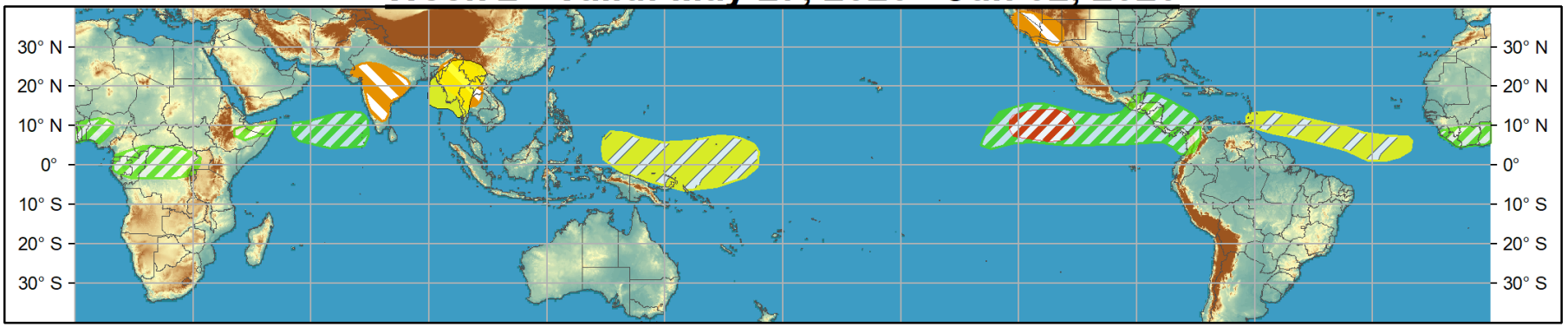
- Kelvin and Rossby wave activity expected to increase chances for tropical cyclone development during the next two weeks.

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: May 20, 2020 - May 26, 2020



Week 2 - Valid: May 27, 2020 - Jun 02, 2020



Produced: 05/19/2020

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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EARTH SYSTEM SCIENCE INTERDISCIPLINARY CENTER ESSIC UNIVERSITY OF MARYLAND

Australian Government Bureau of Meteorology

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NPS PRAESTANTIA PER SCIENTIAM

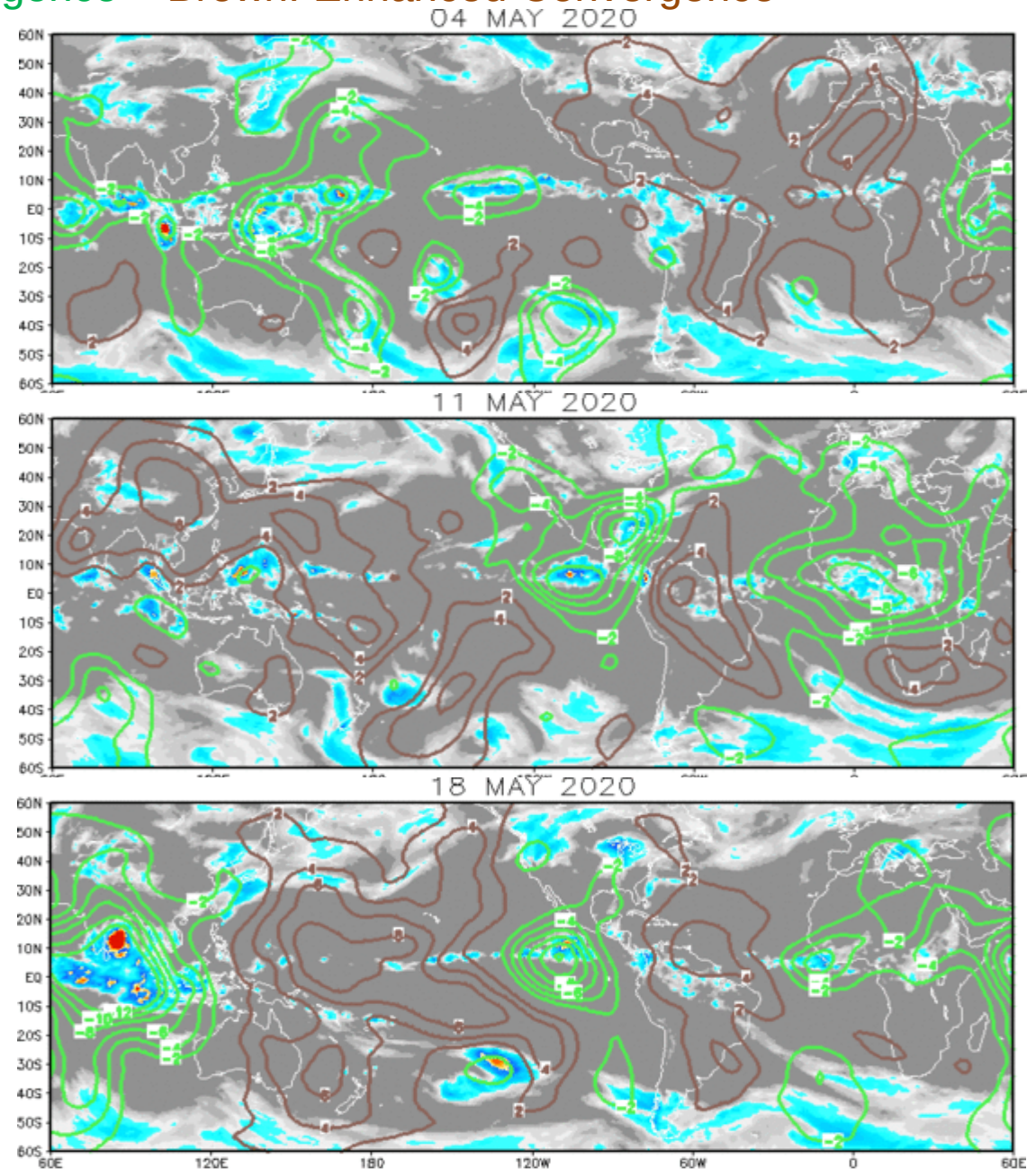
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence Brown: Enhanced Convergence

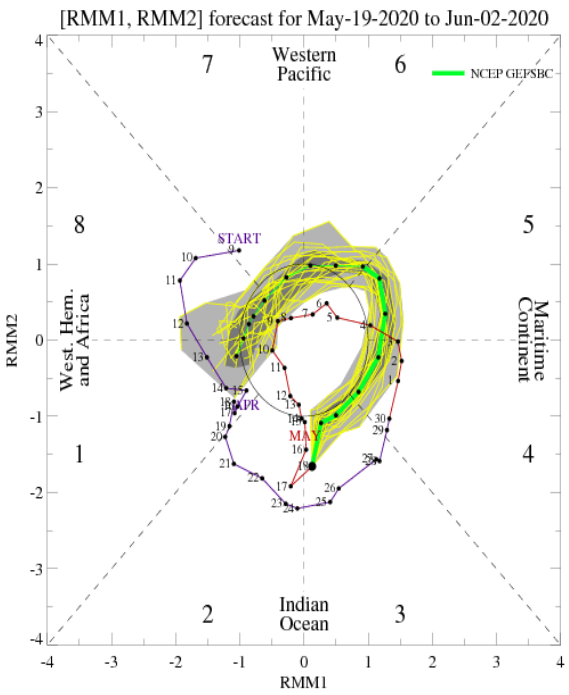
Wave-1 pattern weakened as the MJO weakened.

A noisy Wave-2 pattern, largely forced by high frequency tropical waves.

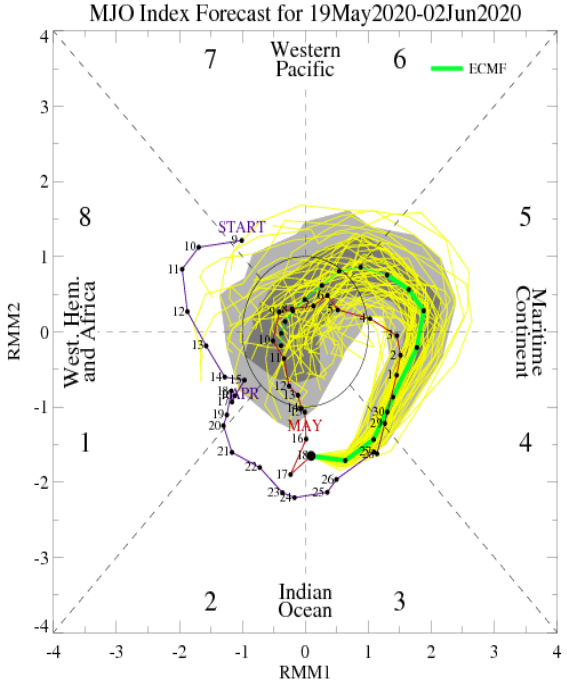
Strong convective envelope where Amphan is currently embedded within the dominant anomalous divergence pattern.



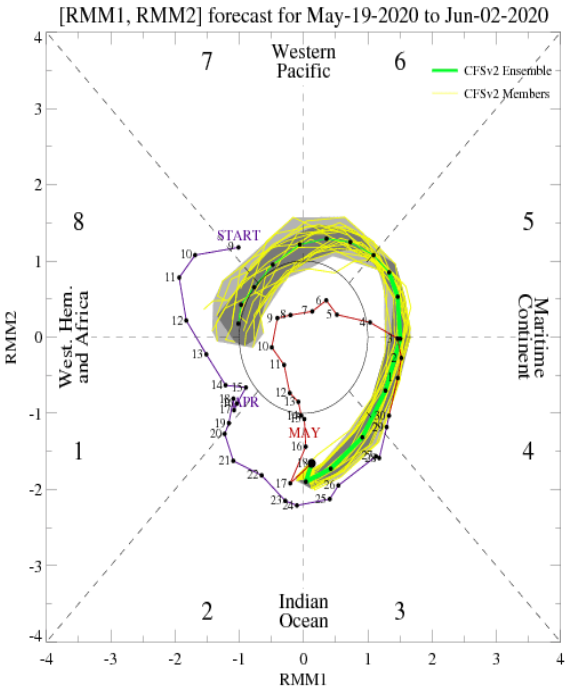
MJO Observation/Forecast



GEFS



ECMWF



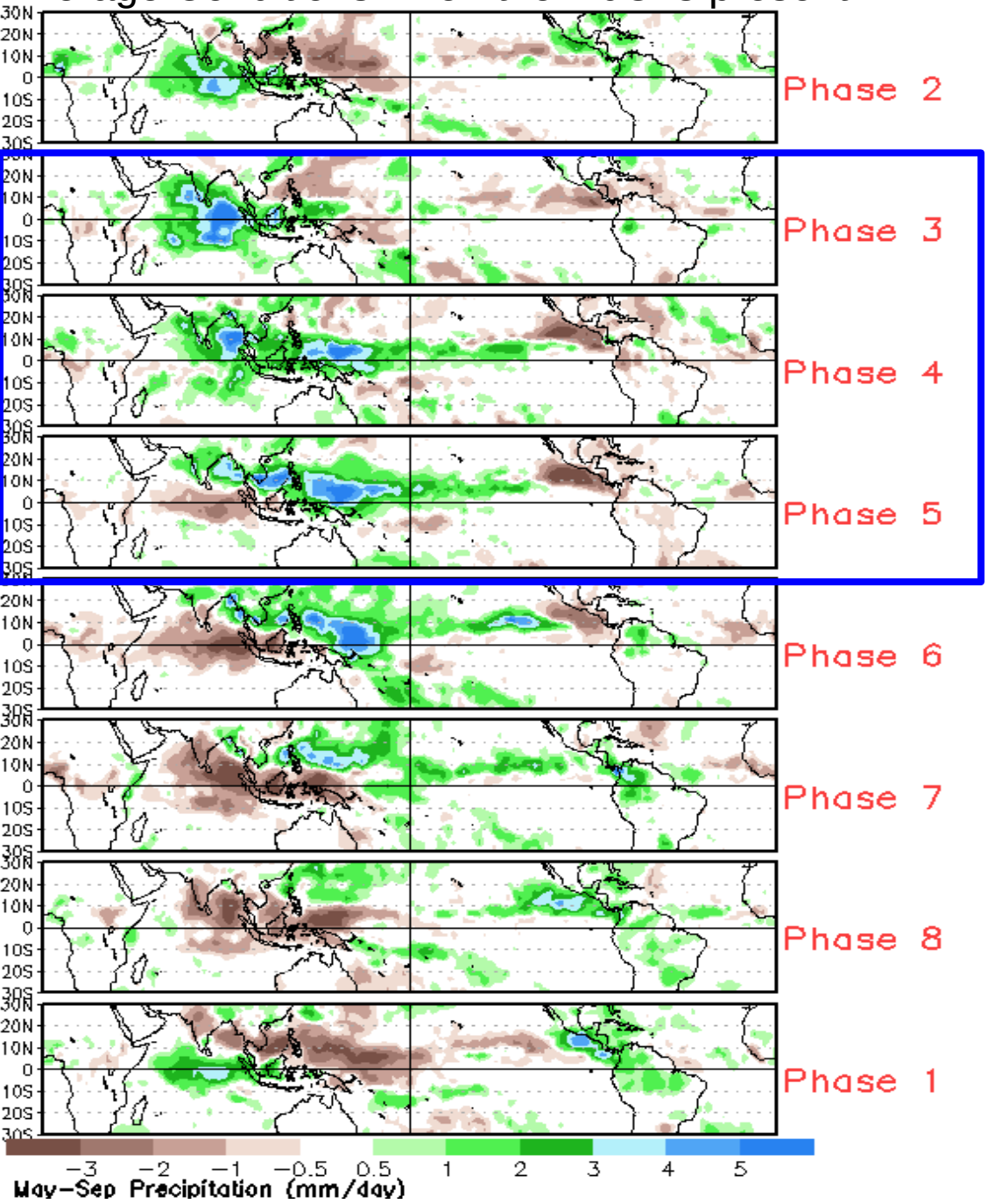
CFS

After a quasi-stationary increase in amplitude, all models show renewed eastward propagation that looks to follow the dissipation of Amphan in the Indian Ocean.

Similar to last week, ECMWF ensemble mean suggests a higher amplitude signal than GEFS/CFS.

However, the rapid phase speed (3-4 days per phase) is suggestive of a convectively coupled Kelvin wave than MJO. Though, deceleration is quite possible into late May.

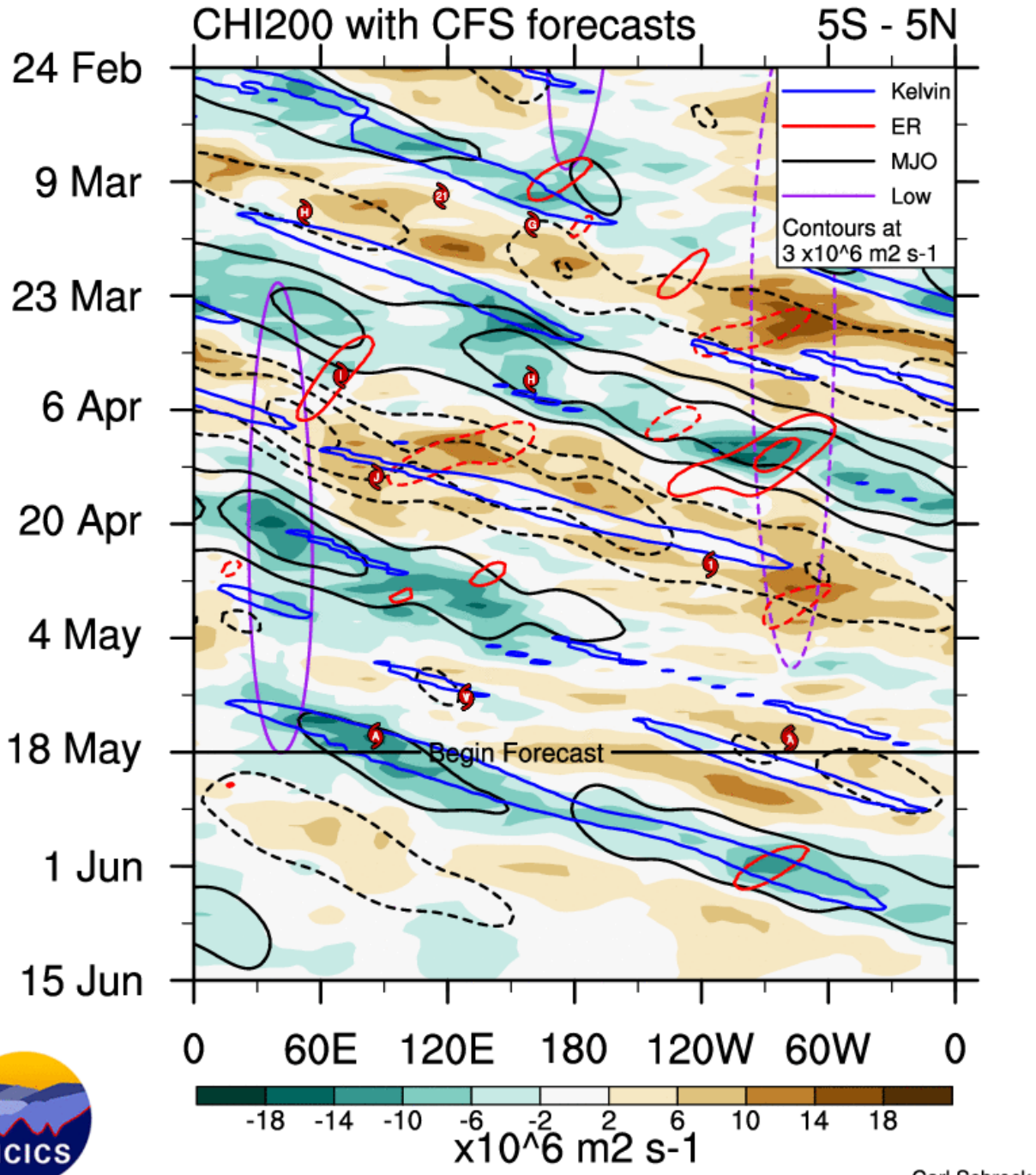
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

Convectively coupled Kelvin wave apparent over next two weeks

VP filters detecting low frequency enhanced signal over Africa since March.



NCICS

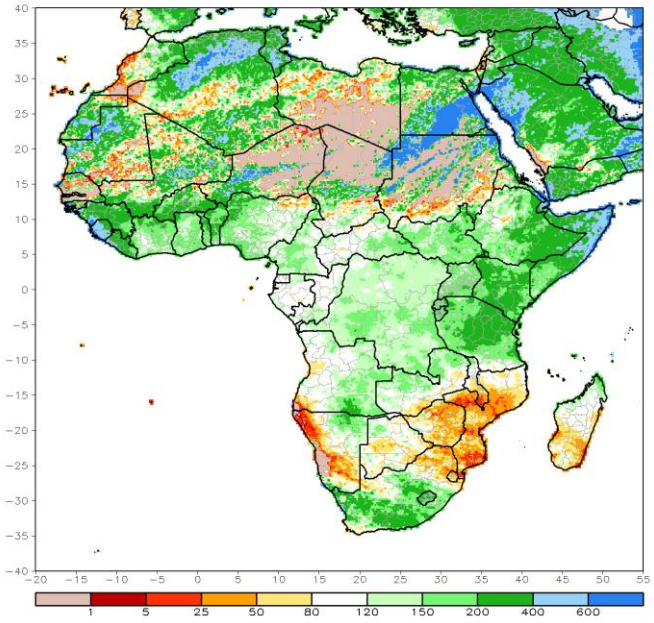
ncics.org/mjo

Tue 2020-05-19 1012 UTC

Carl Schreck
carl_schreck@ncsu.edu

ARC2 90-Day Percent of Normal Rainfall (%)

Period: 18Feb2020 – 17May2020



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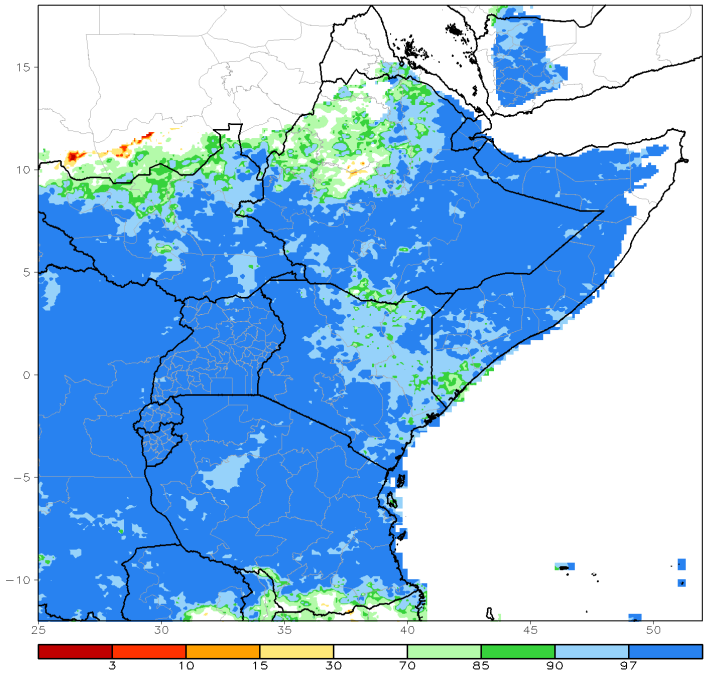
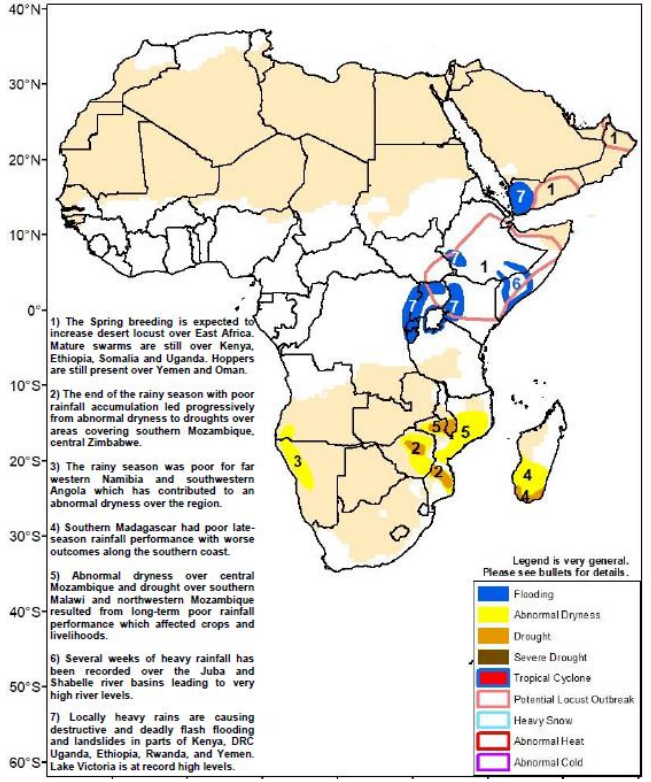


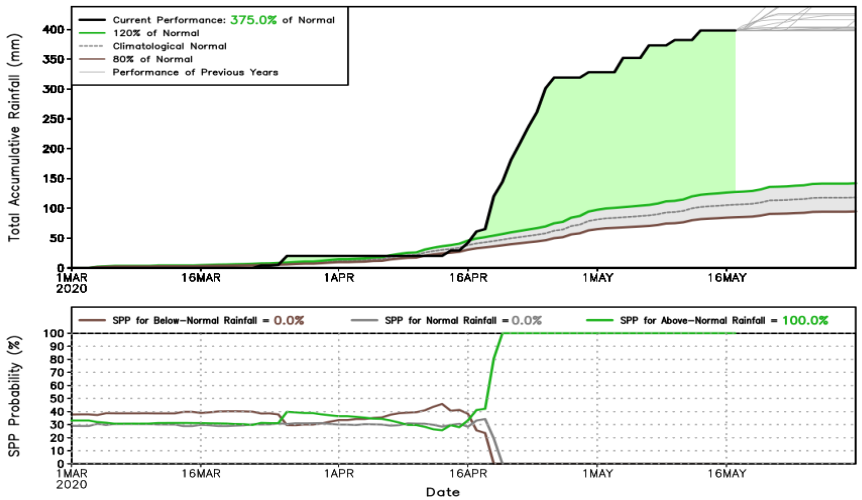
Climate Prediction Center's Africa Hazards Outlook
May 14 – May 20, 2020

- Ongoing heavy rains in East Africa continue to cause deadly flash flooding and river flooding in many areas.
- Locusts remain a serious threat in the east and could spread into the Sahel over the coming months.

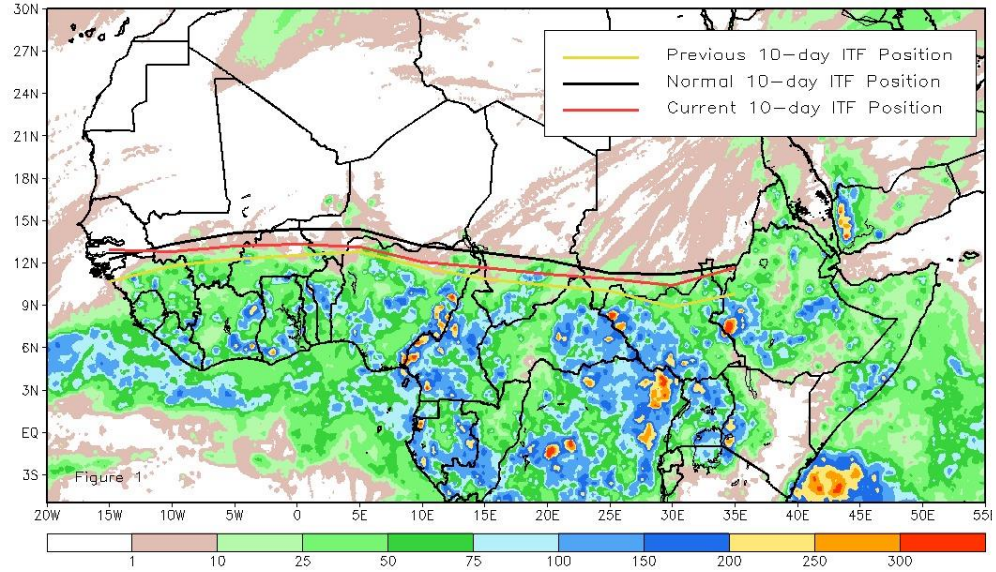


SPP Point Time Series & Probability Evolution: (6.74, 44.26 @ KebriDehar_Ethiopia)

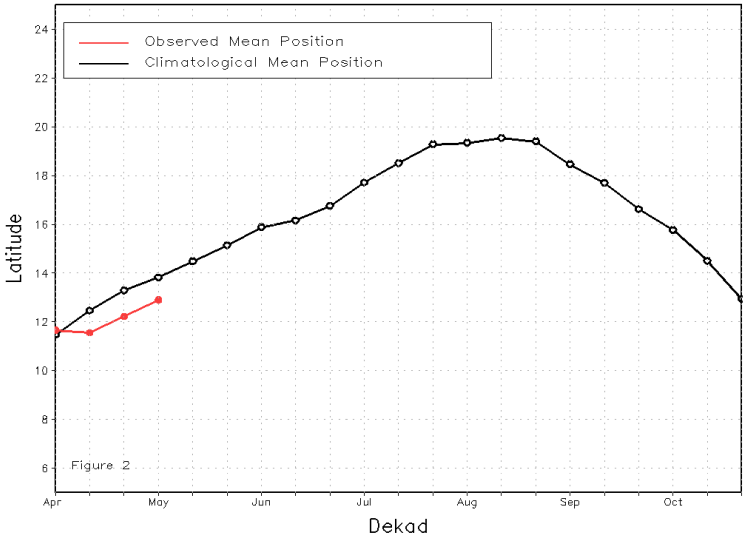
For the Period: 01Mar2020 – 31May2020 (Based on accumulative rainfall: 01Mar2020 – 17May2020)



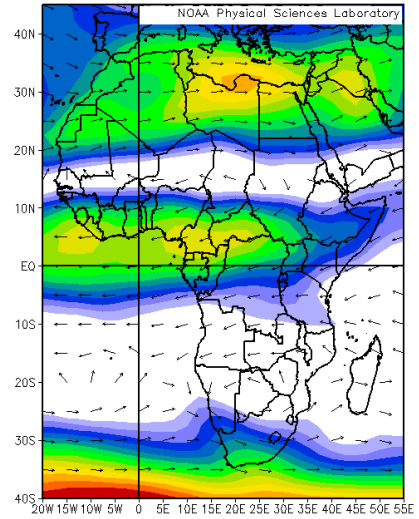
Current vs. Normal Dekadal ITF Position
and RFE Accumulated Precipitation (mm)
May 2020, Dekad 1

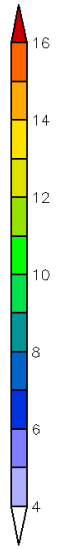


Mean Western Portion of the ITF: Averaged 10W to 10E
As of: May 2020, Dekad 1



NCEP/NCAR Reanalysis
600mb Vector Wind (m/s) Climatology 1981-2010 climo





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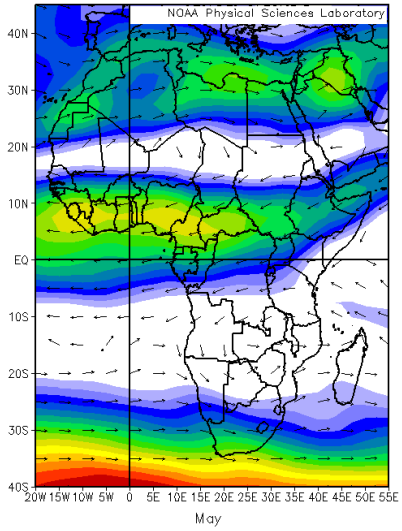
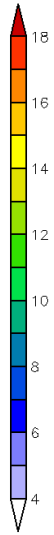
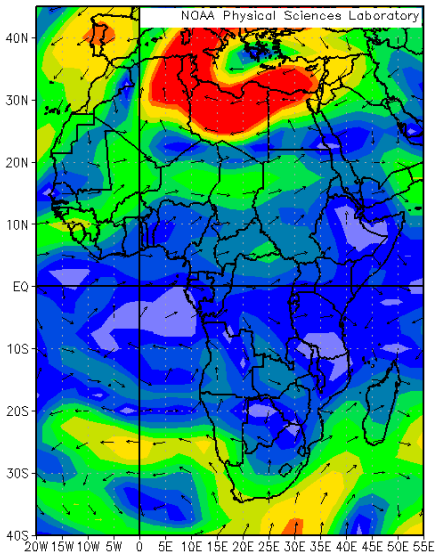
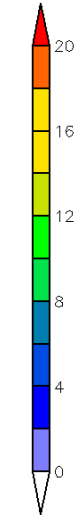


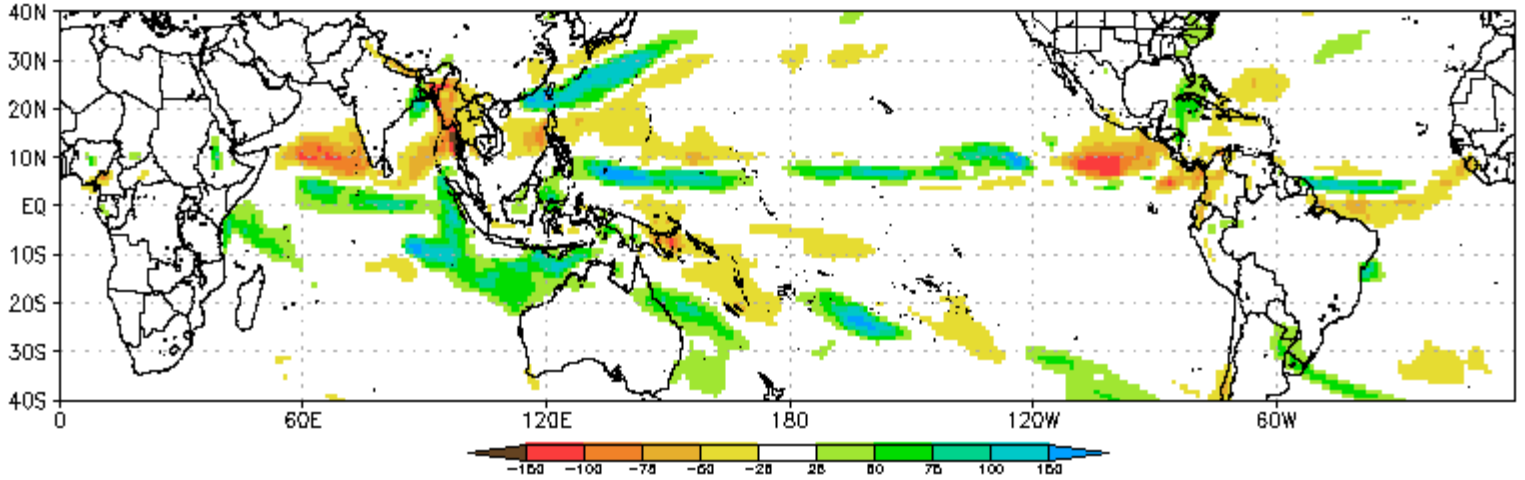




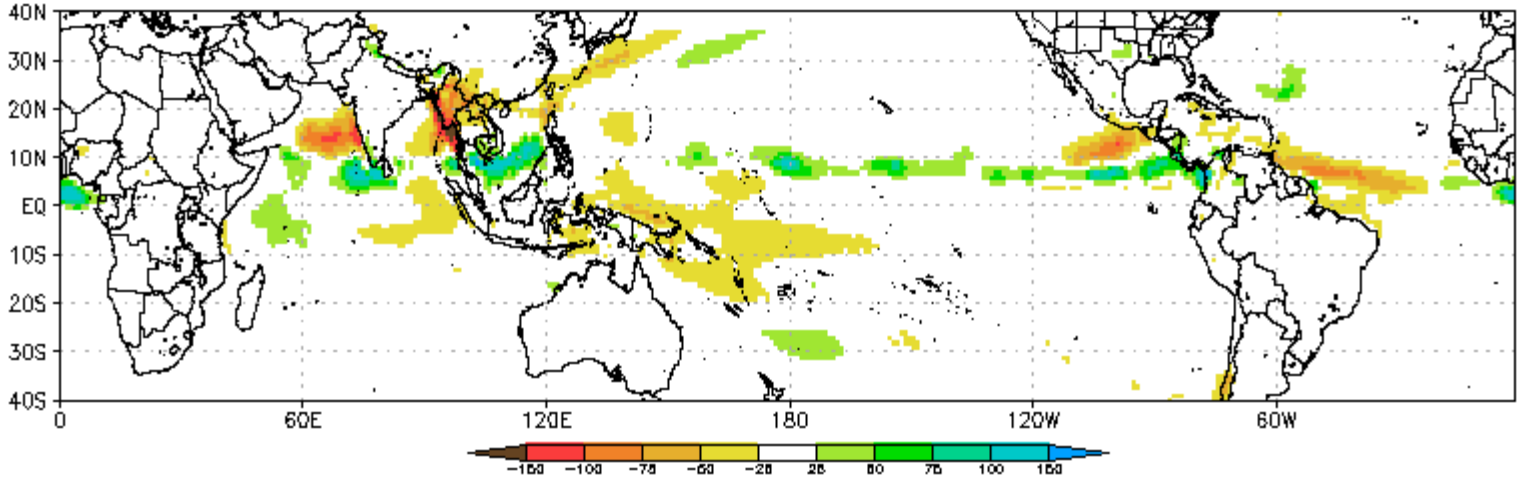


600mb Vector Wind (m/s) Composite Anomaly (1981-2010 Climatology)
5/16/20
NCEP/NCAR Reanalysis

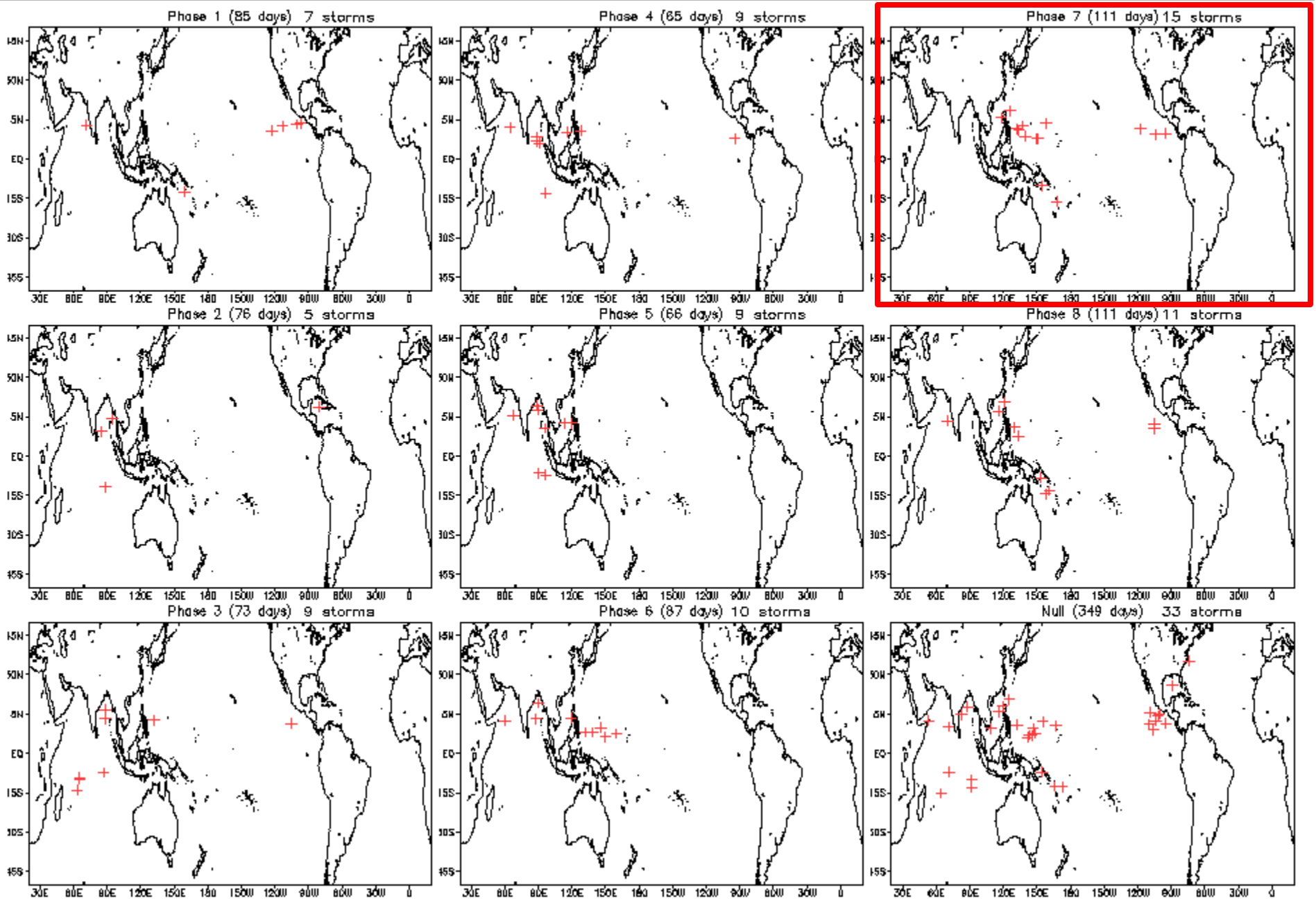
CFS Precipitation Anomalies (mm) Issued 18May2020
Week-1 Forecast Ending 26May2020



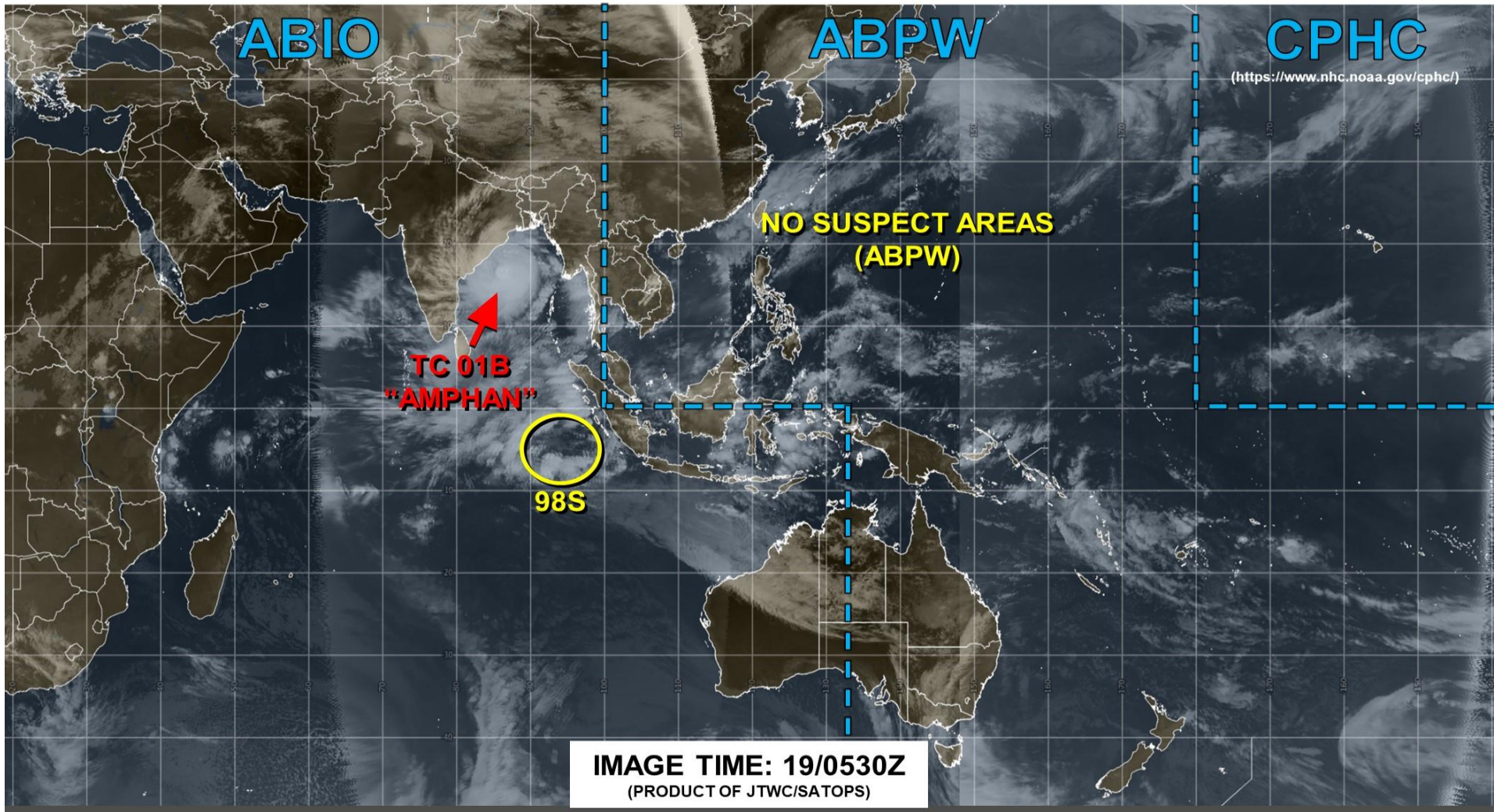
CFS Precipitation Anomalies (mm) Issued 18May2020
Week-2 Forecast Ending 02Jun2020



May Tropical Storm Formation by MJO phase



JOINT TYPHOON WARNING CENTER



LOW — TC development unlikely within 24 hours

MEDIUM — TC development likely, but expected to occur beyond 24 hours

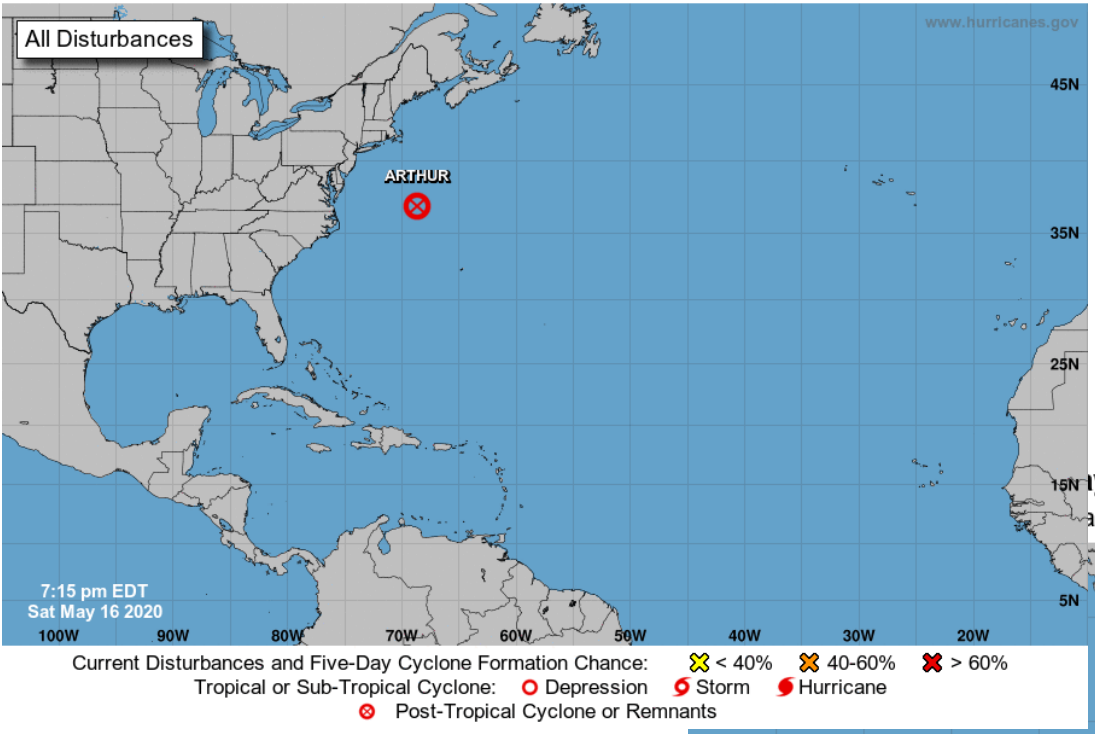
HIGH — TC development likely within 24 hours (Reference TCFA)

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

Tropical Cyclone (Reference Warning)

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

y Graphical Tropical Weather Outlook

ational Hurricane Center Miami, Florida

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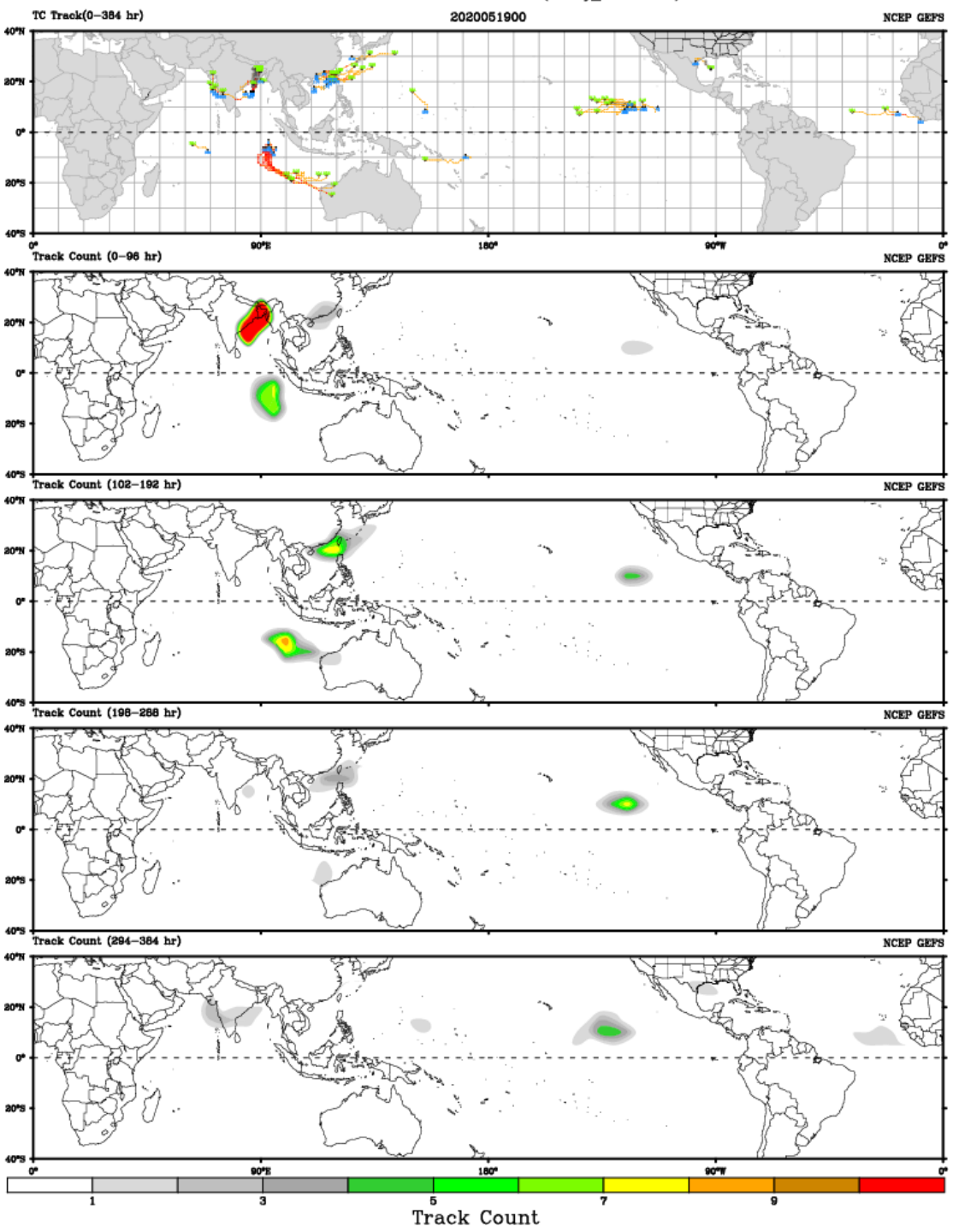


Days 1-4

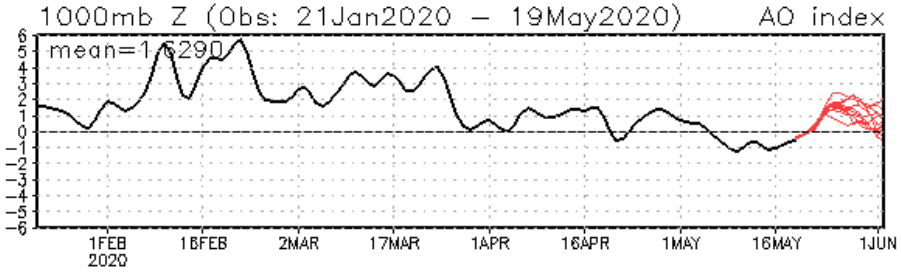
Day 5-8

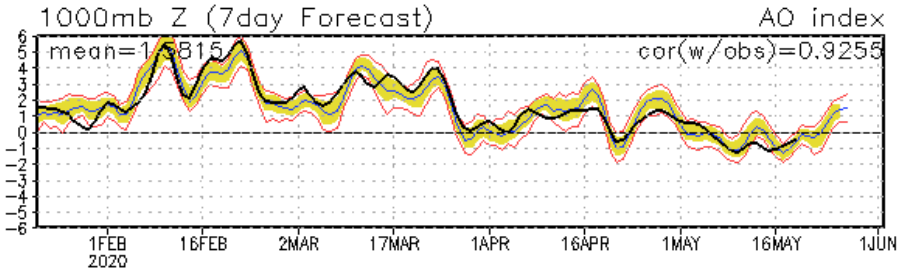
Day 9-12

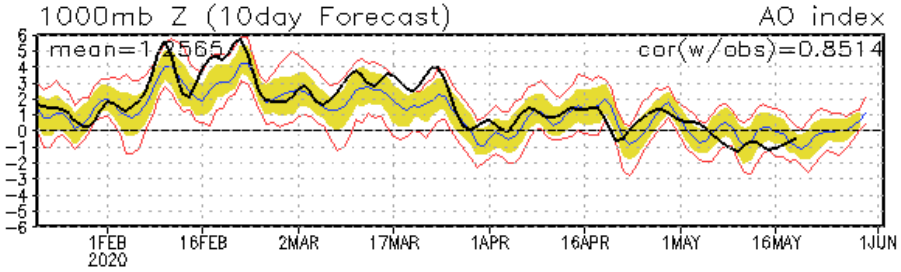
Day 13-15

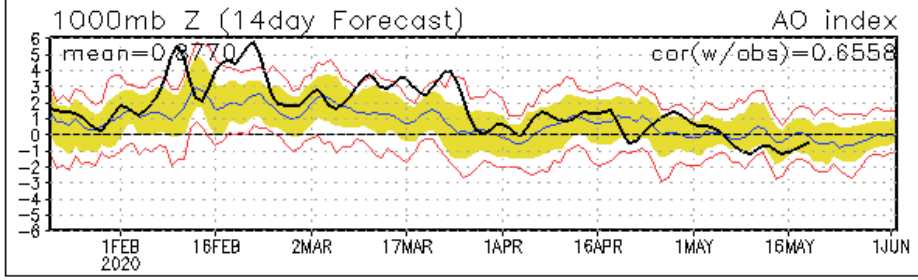
Connections to U.S. Impacts

AO: Observed & ENSM forecasts

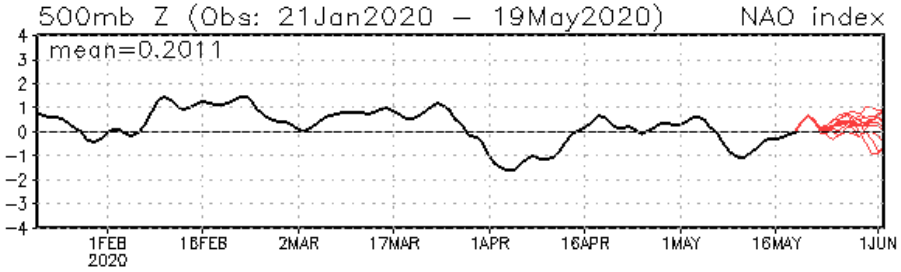


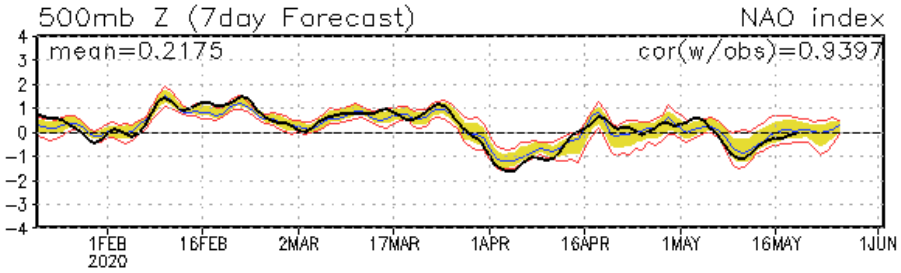


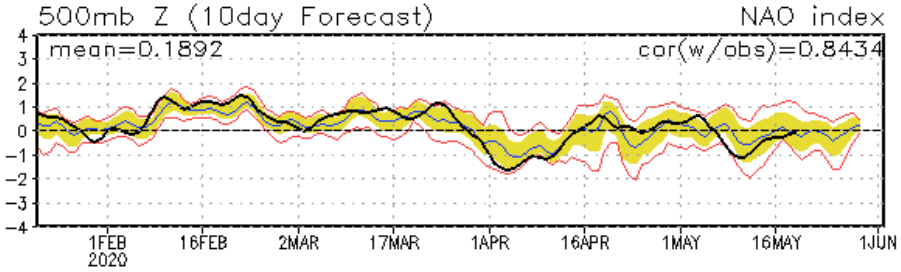


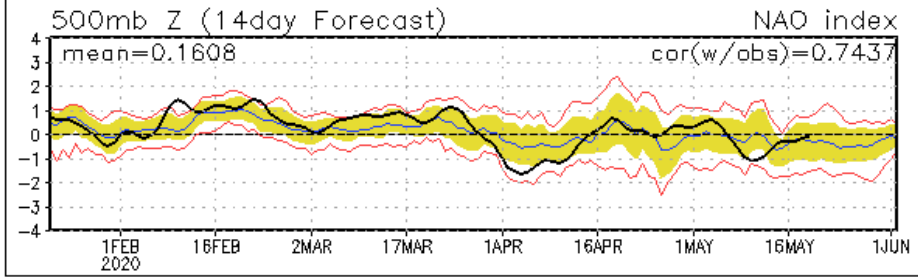


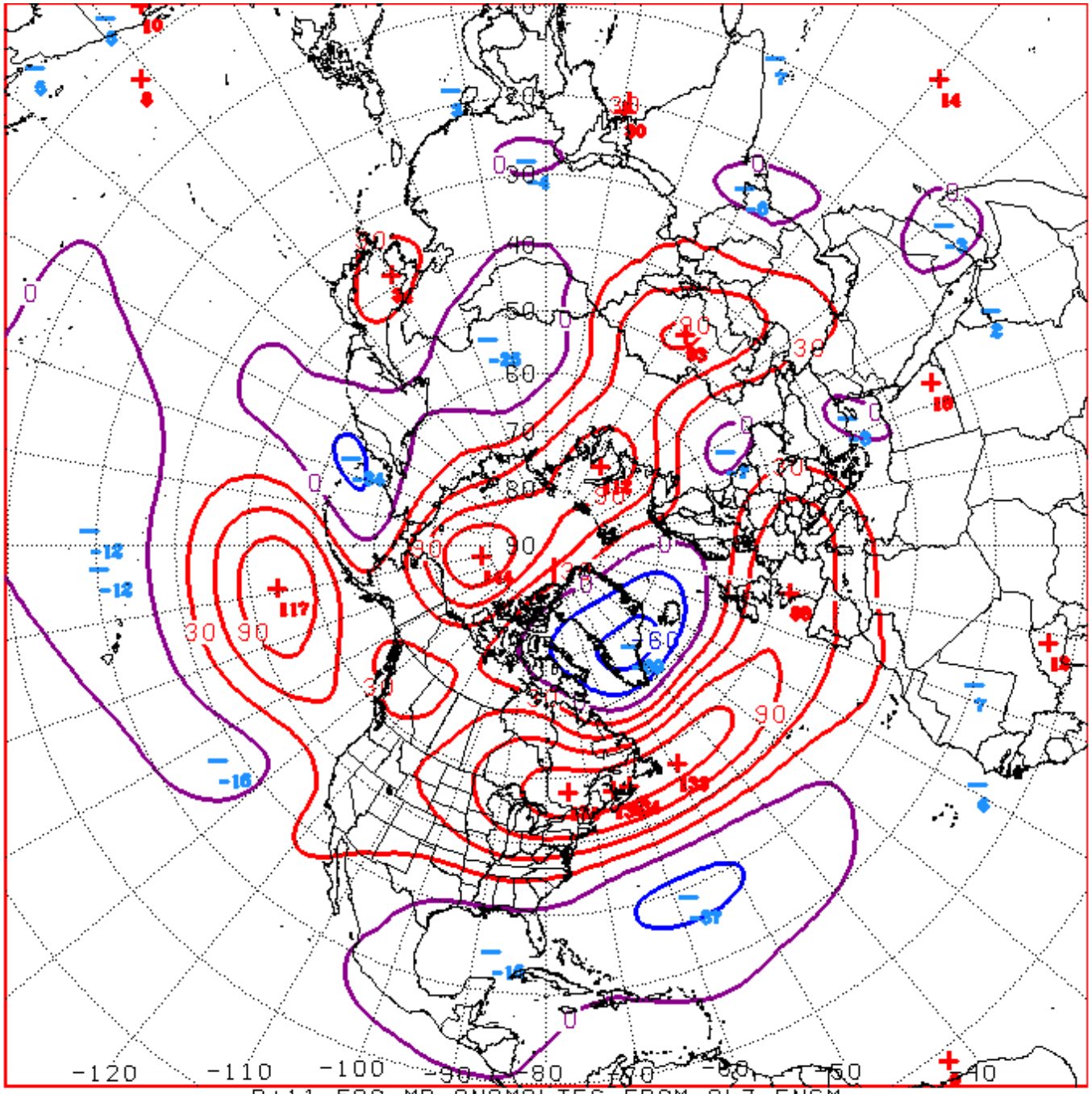
NAO: Observed & ENSM forecasts





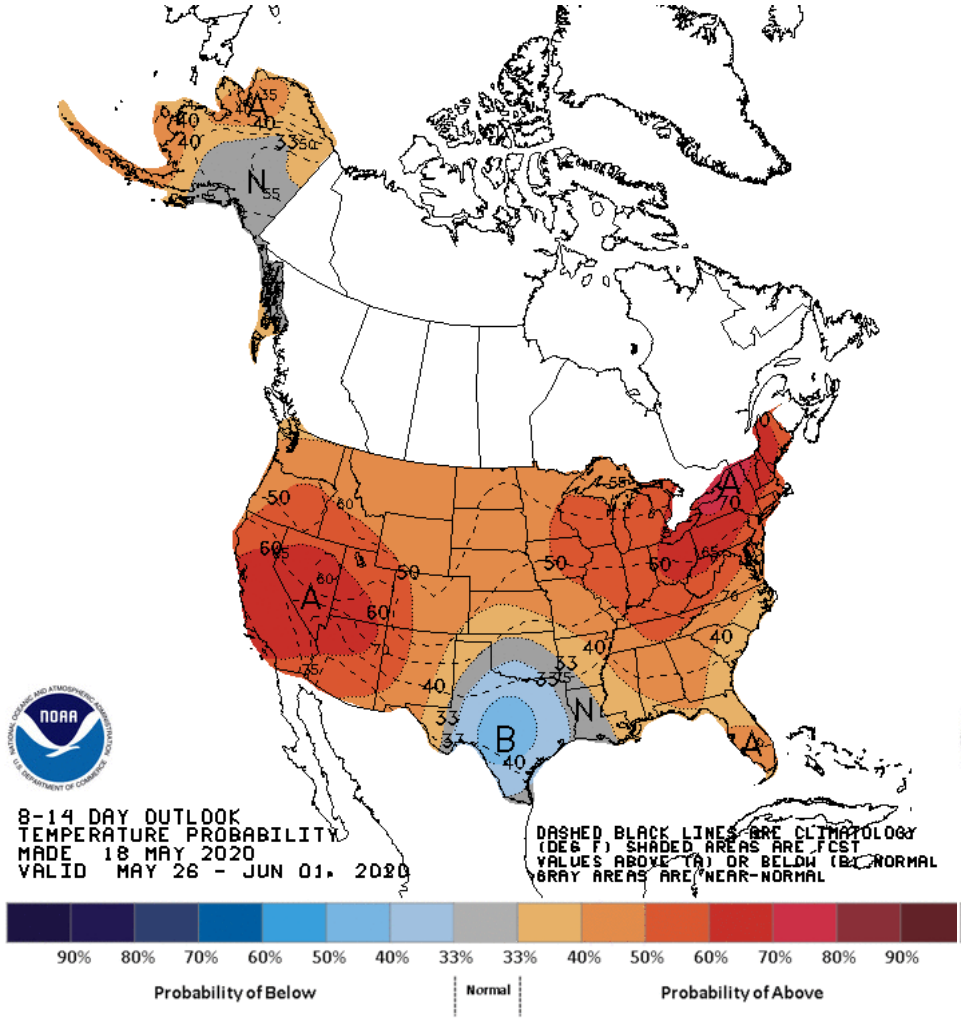


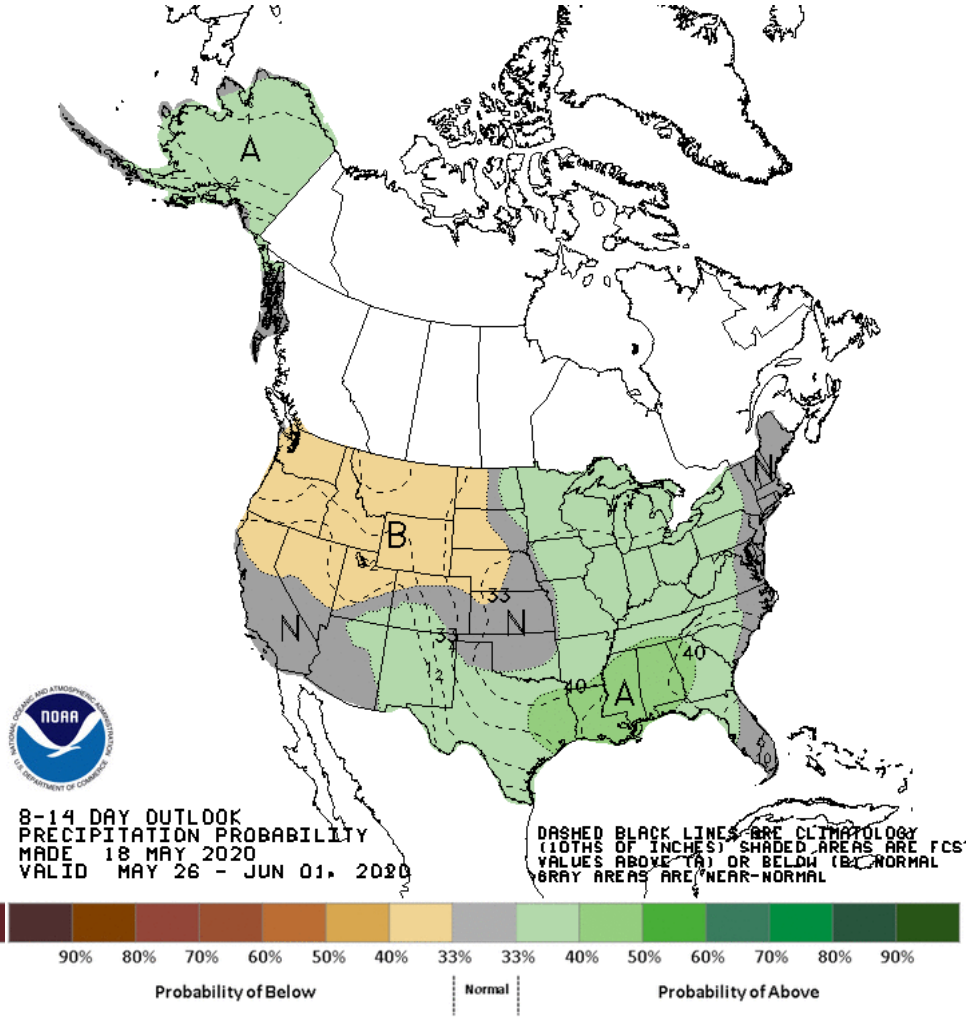




D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE MAY 19 2020 1329 UTC CNTD MAY 30 2020

Week 2 – Temperature and Precipitation





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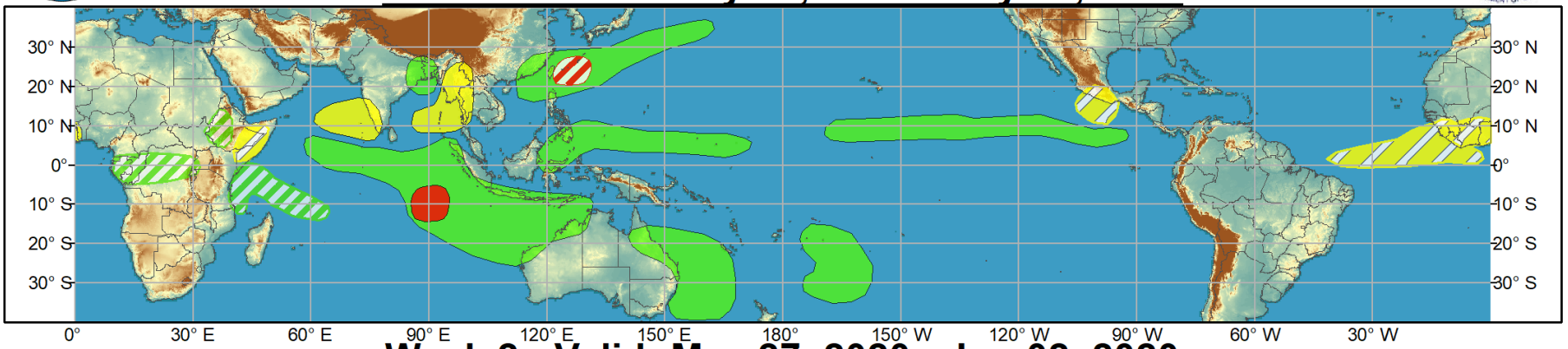

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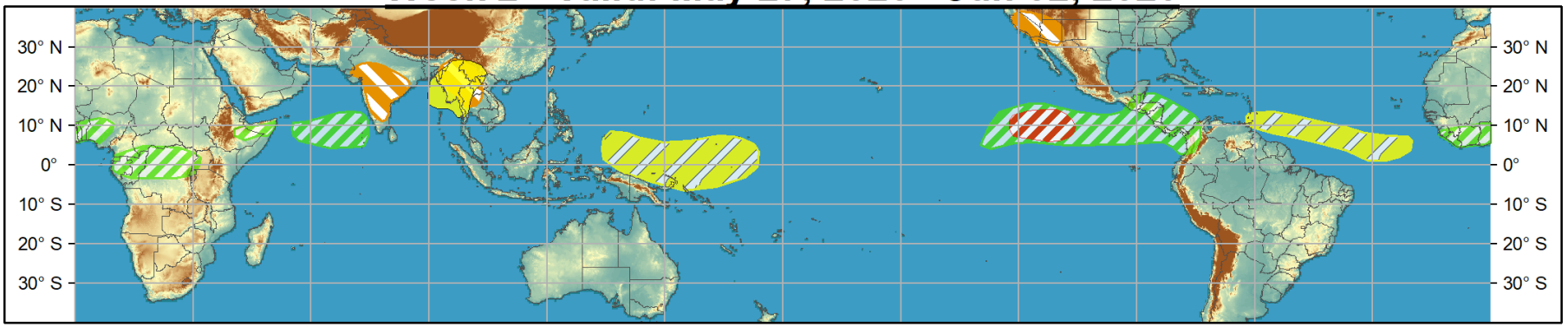

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