

Global Tropics Hazards And Benefits Outlook

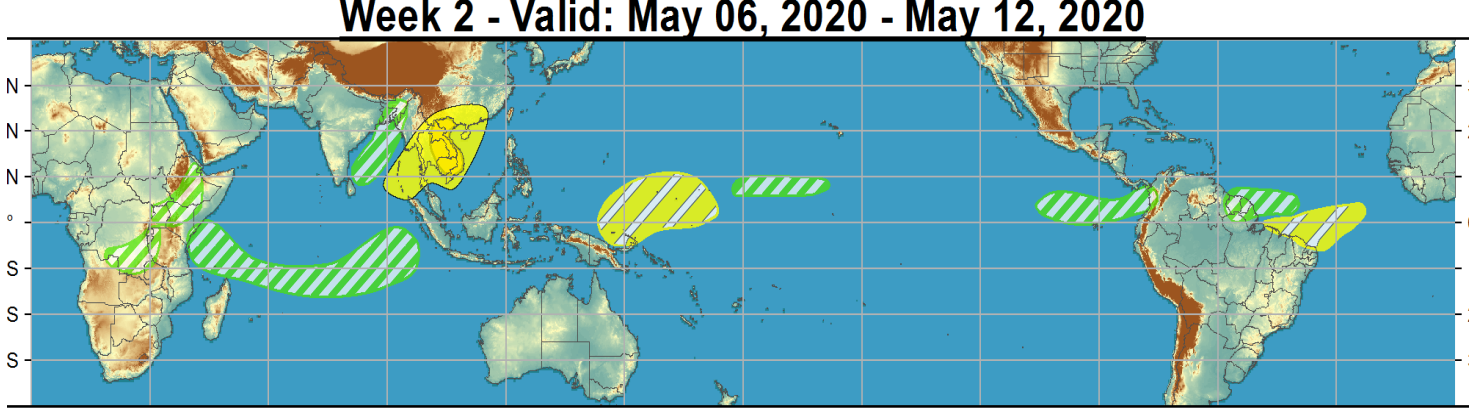
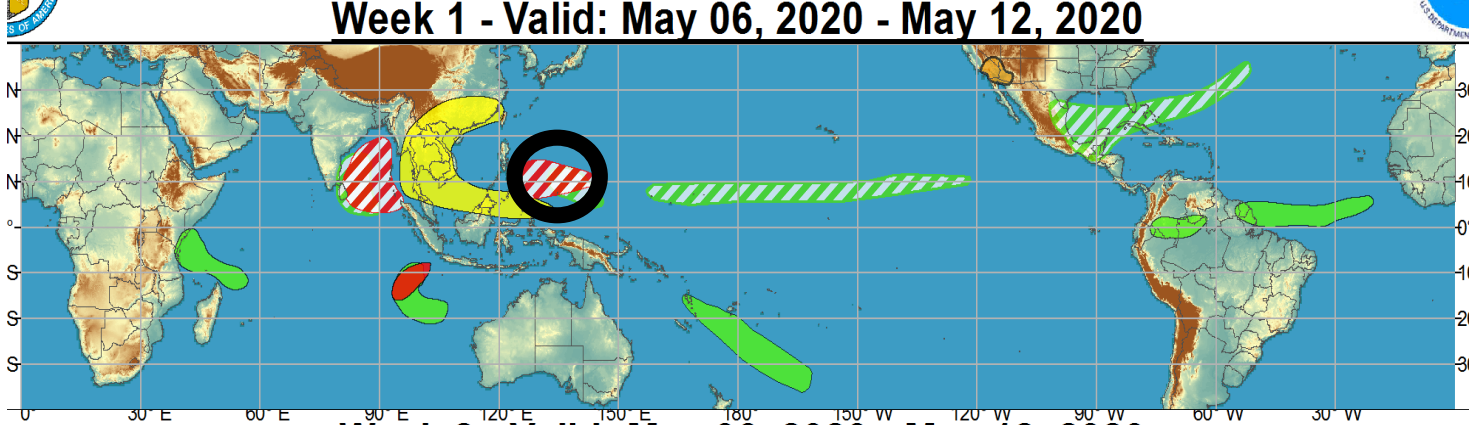
5/12/2020

Kyle MacRitchie

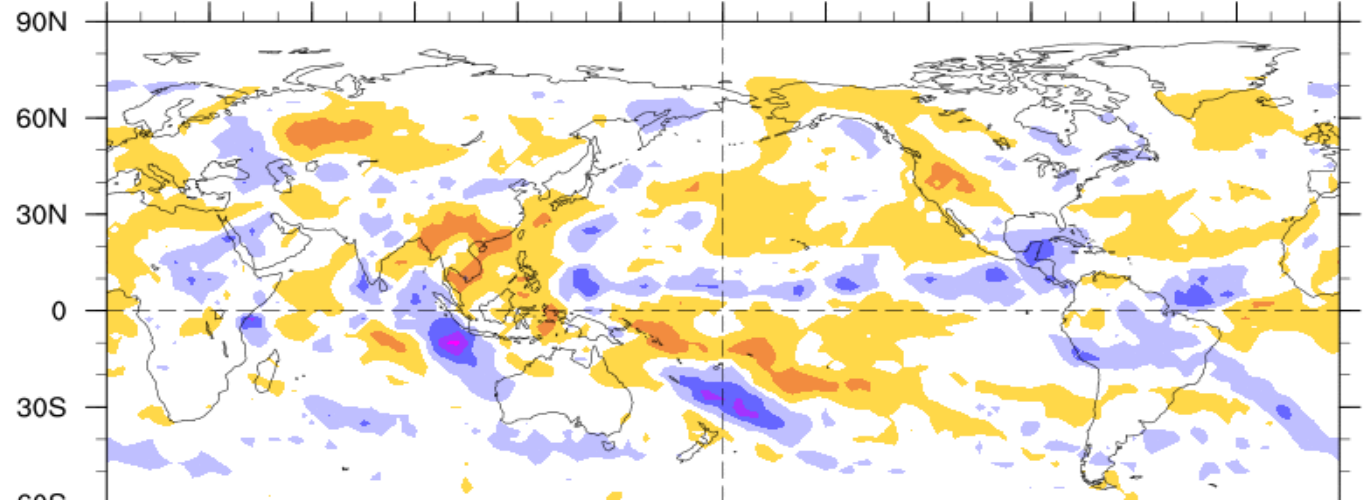
Outline

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

Outlook Review



7-Day Average OLR Anomaly 2020/05/04 - 2020/05/10



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (April 9, 2020 Update)

next update on May 14 (Thursday)

- ENSO Alert System Status: Not Active
- ENSO-neutral is favored during the Northern Hemisphere summer 2020 (~60% chance), remaining the most likely outcome through autumn.

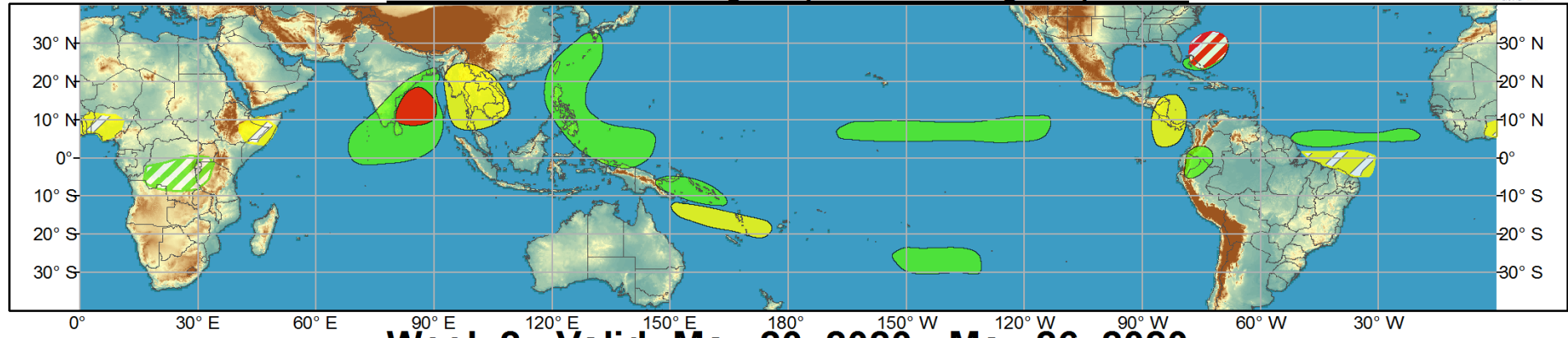
MJO and other subseasonal tropical variability:

- The MJO is weak. Most model guidance suggests that it will remain weak, although the ECMWF has a fair number of members that forecast the MJO to strengthen over the Indian Ocean during Week-1.
- Kelvin and Rossby wave activity throughout the Tropics will increase the probability of tropical cyclone formation in Week-1 (Bay of Bengal) and Week-2 (north of Philippines).
- Midlatitude wave activity has resulted in high PV air off the US East Coast. We have posted a moderate risk of tropical cyclone formation near the Bahamas during Week-1, which is in-line with NHC's latest forecast.

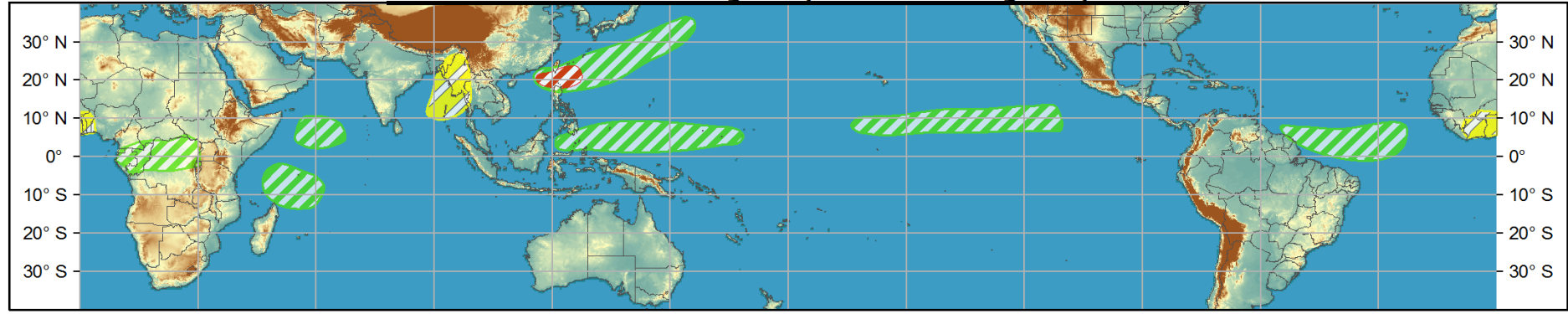


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: May 13, 2020 - May 19, 2020



Week 2 - Valid: May 20, 2020 - May 26, 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: 05/12/2020
Forecaster: MacRitchie

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

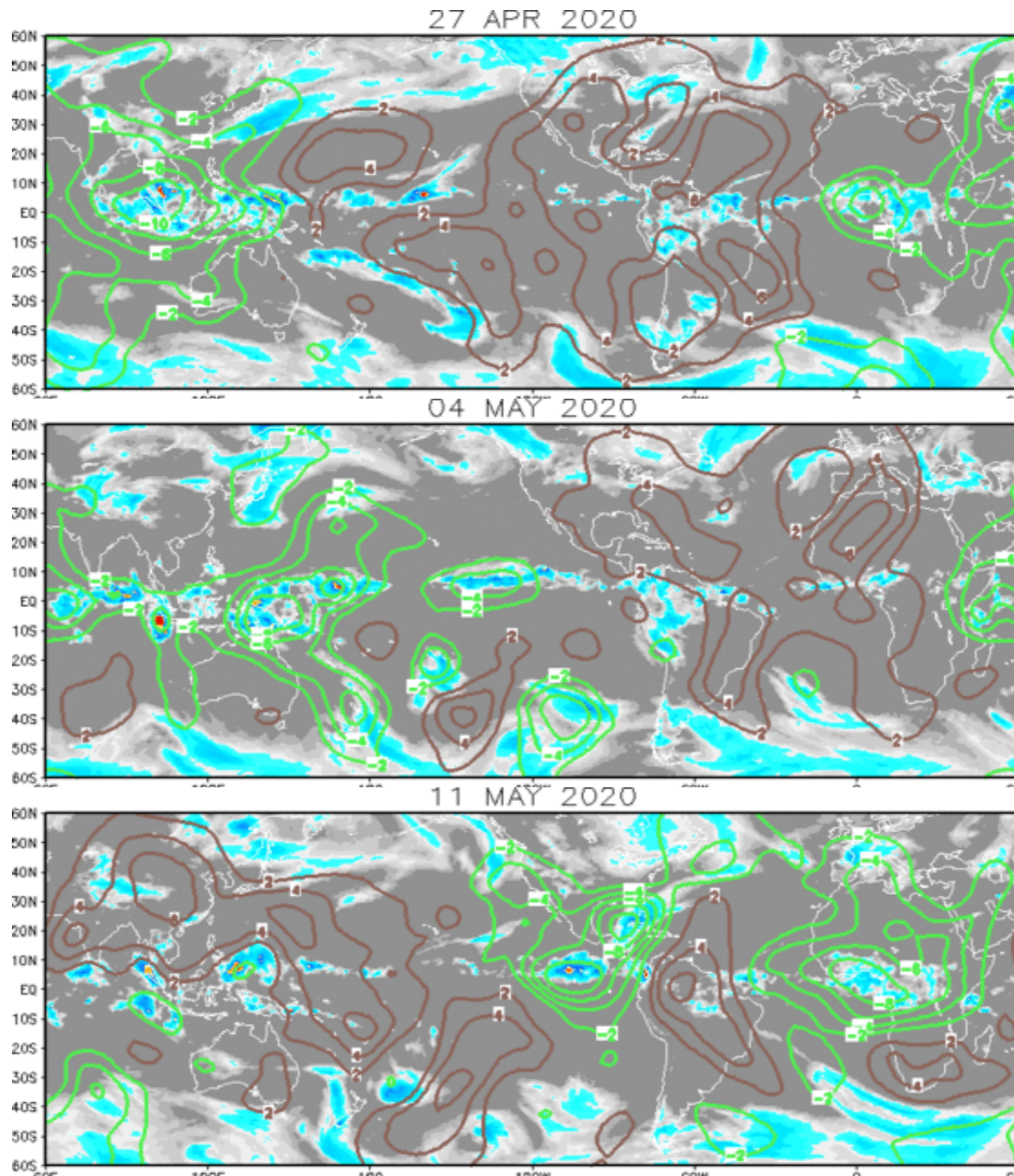
Green: Enhanced Divergence

Brown: Enhanced Convergence

Wave-1 pattern resulted from an MJO event.

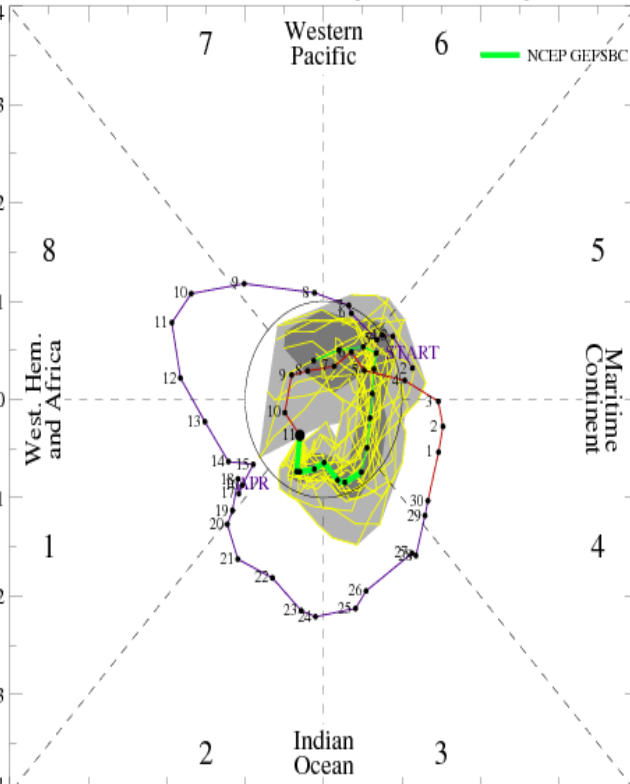
Wave-1 pattern weakened as the MJO weakened.

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



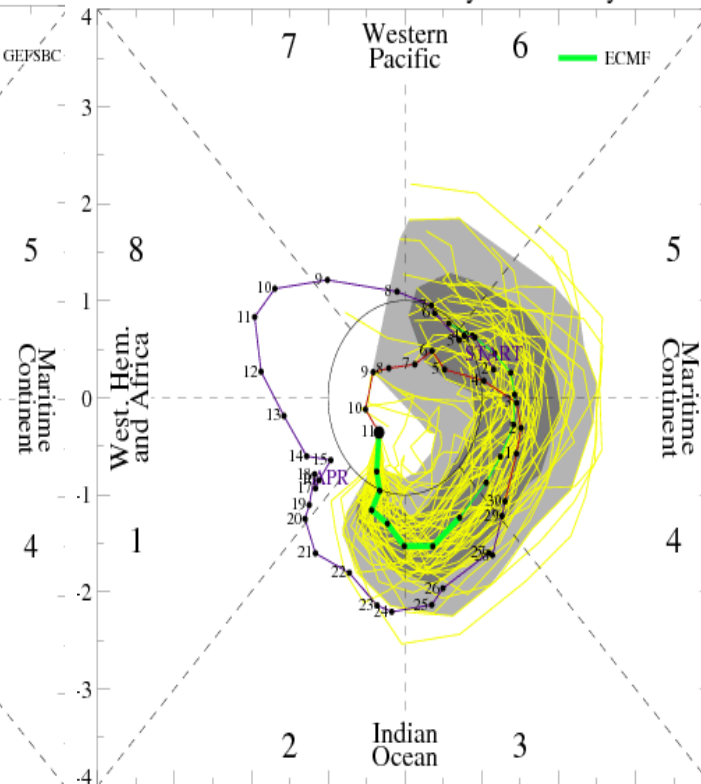
MJO Observation/Forecast

[RMM1, RMM2] forecast for May-12-2020 to May-26-2020



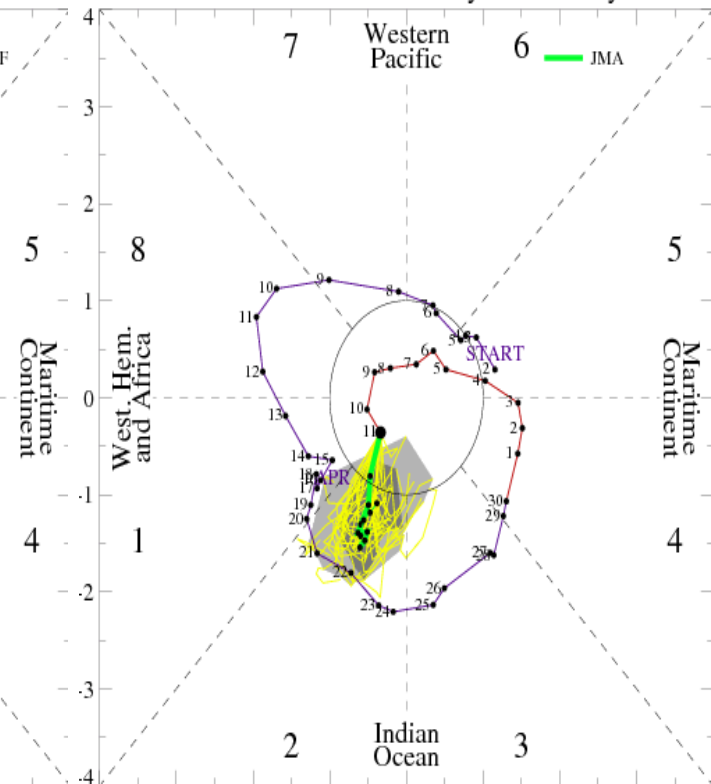
GEFS

MJO Index Forecast for 12May2020-26May2020



ECMWF

MJO Index Forecast for 12May2020-20May2020



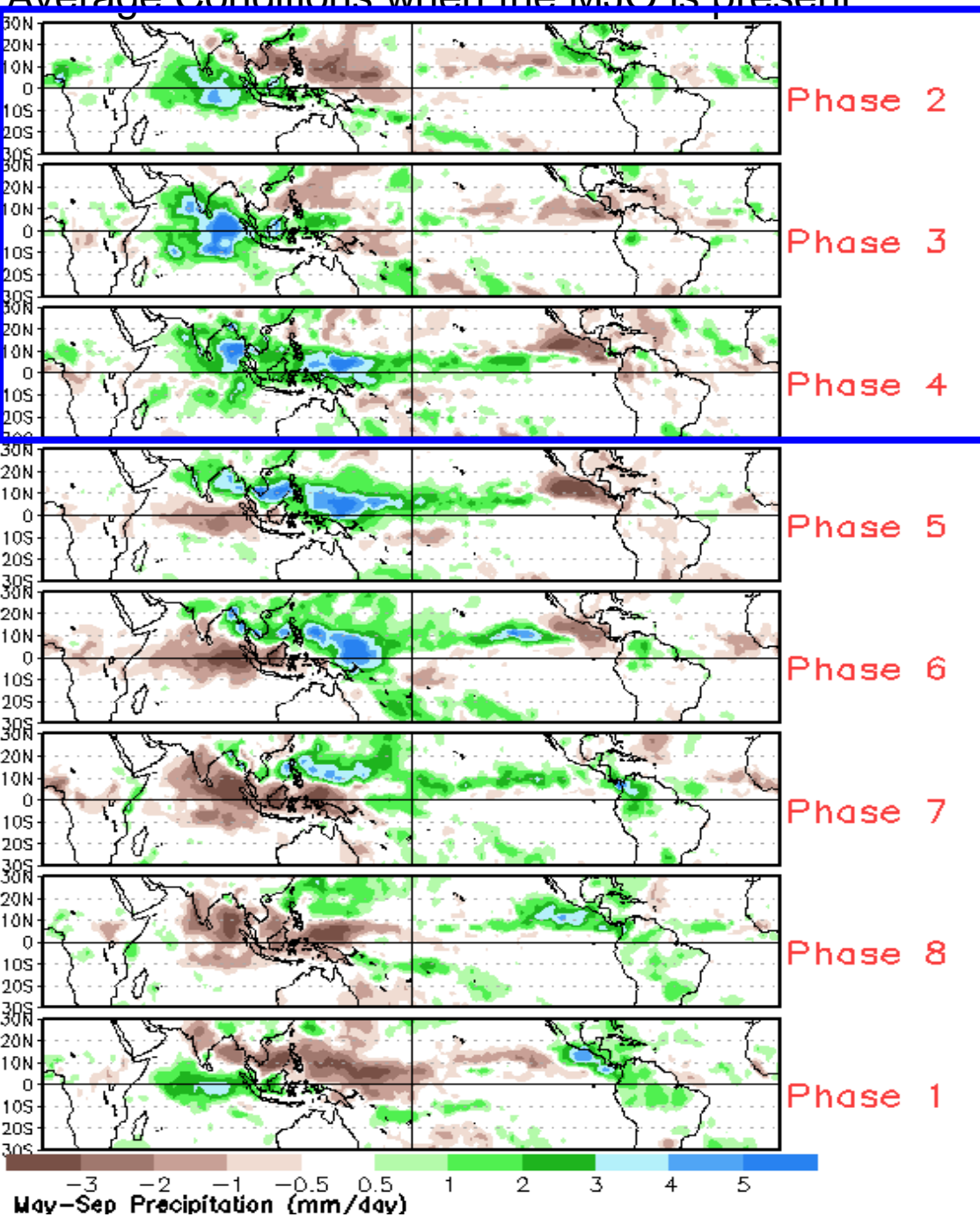
JMA

The GEFS suggests the MJO stays weak.

ECMWF has several ensemble members outside of the unit circle.

JMA forecasts a quasi-stationary MJO signal that amplifies during the next two weeks.

Average Conditions when the MJO is present

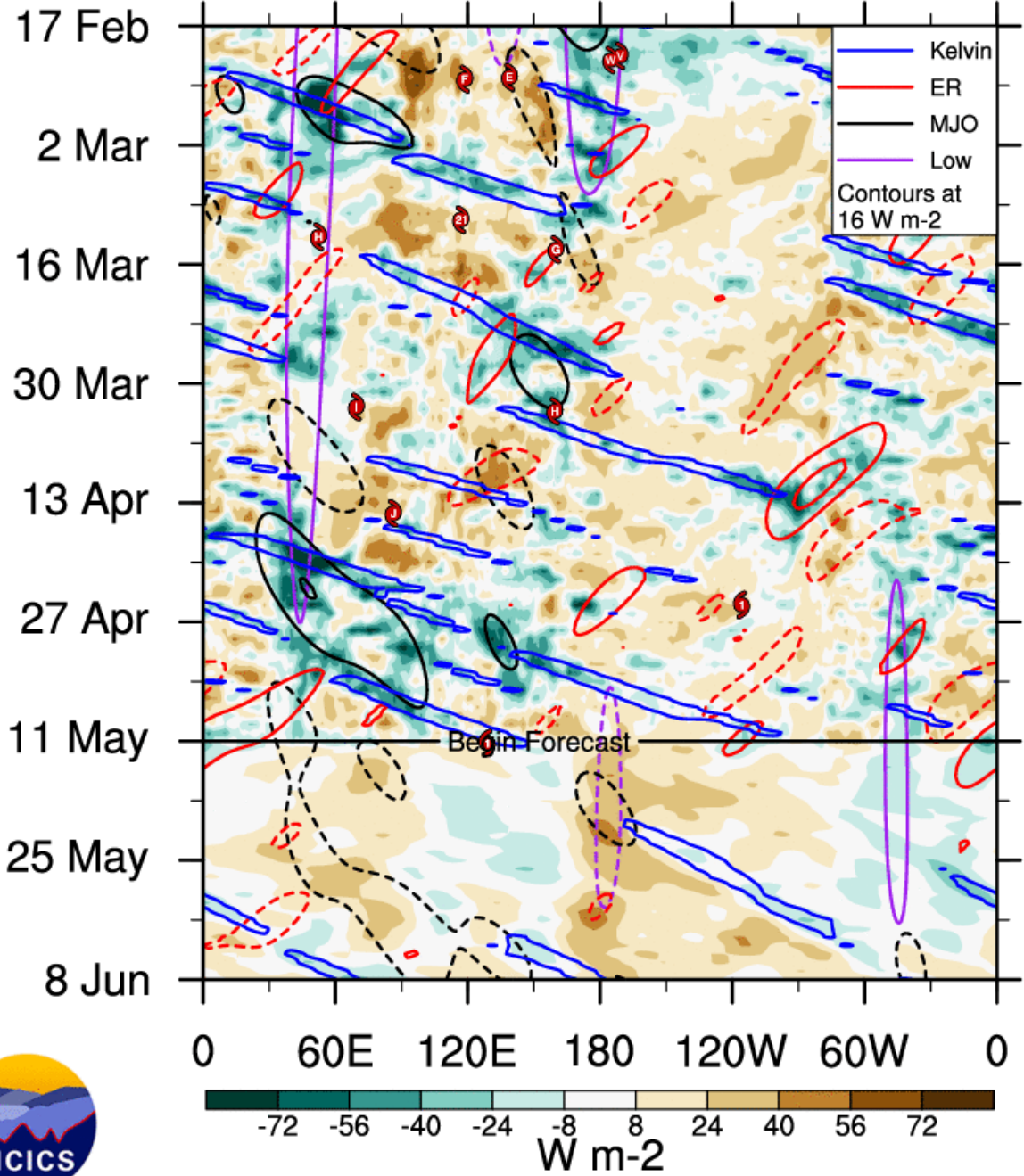


Phases 2-4 if ECMWF is correct.

CAVEAT: These panels are representative of robust MJO events.

OLR

5S - 5N



MJO is much weaker than in late April.

Kelvin wave activity over the Indian Ocean, Pacific, and Atlantic.

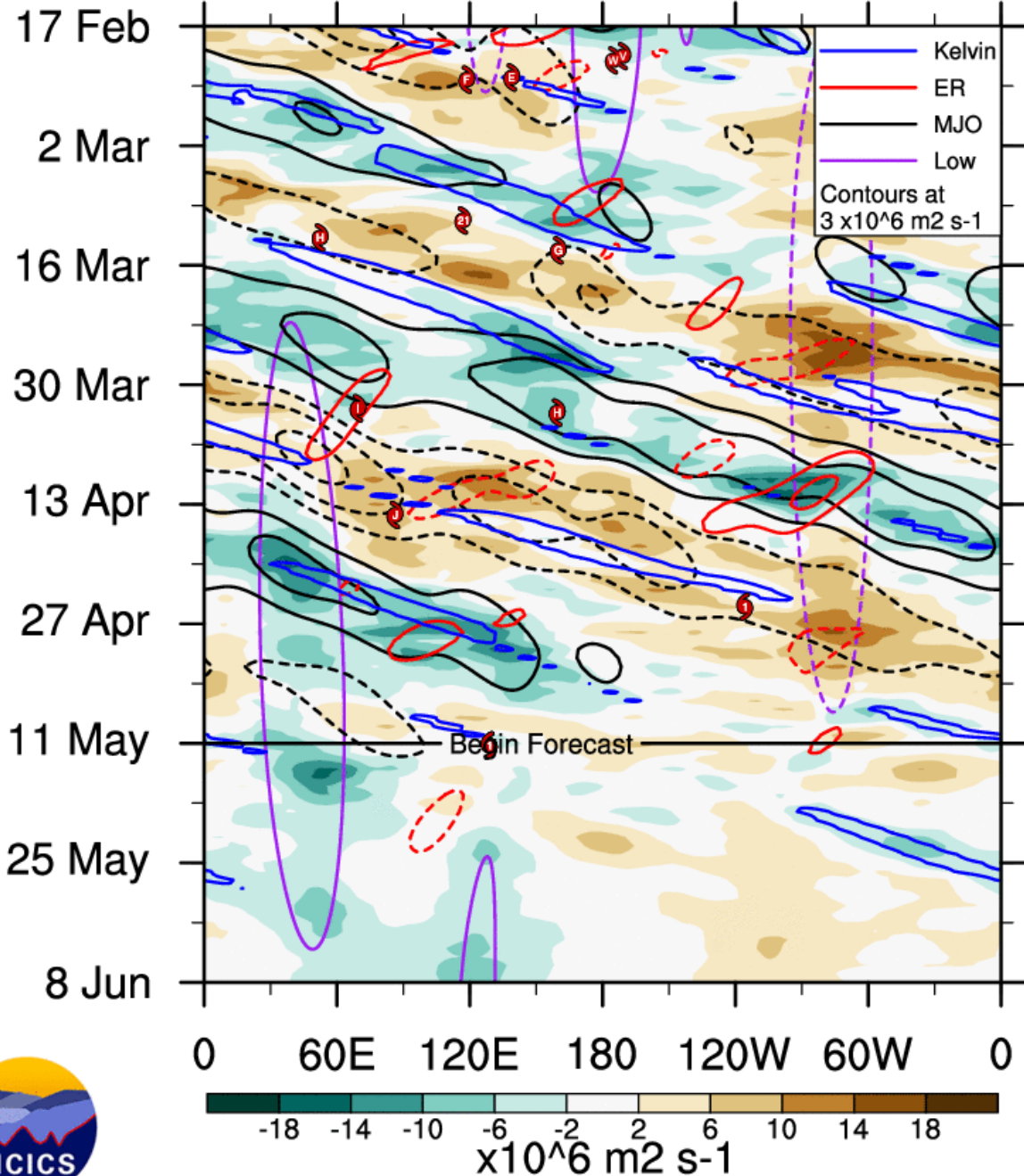


ncics.org/mjo

Tue 2020-05-12 15:17 UTC

Carl Schreck
carl_schreck@ncsu.edu

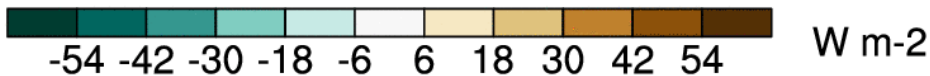
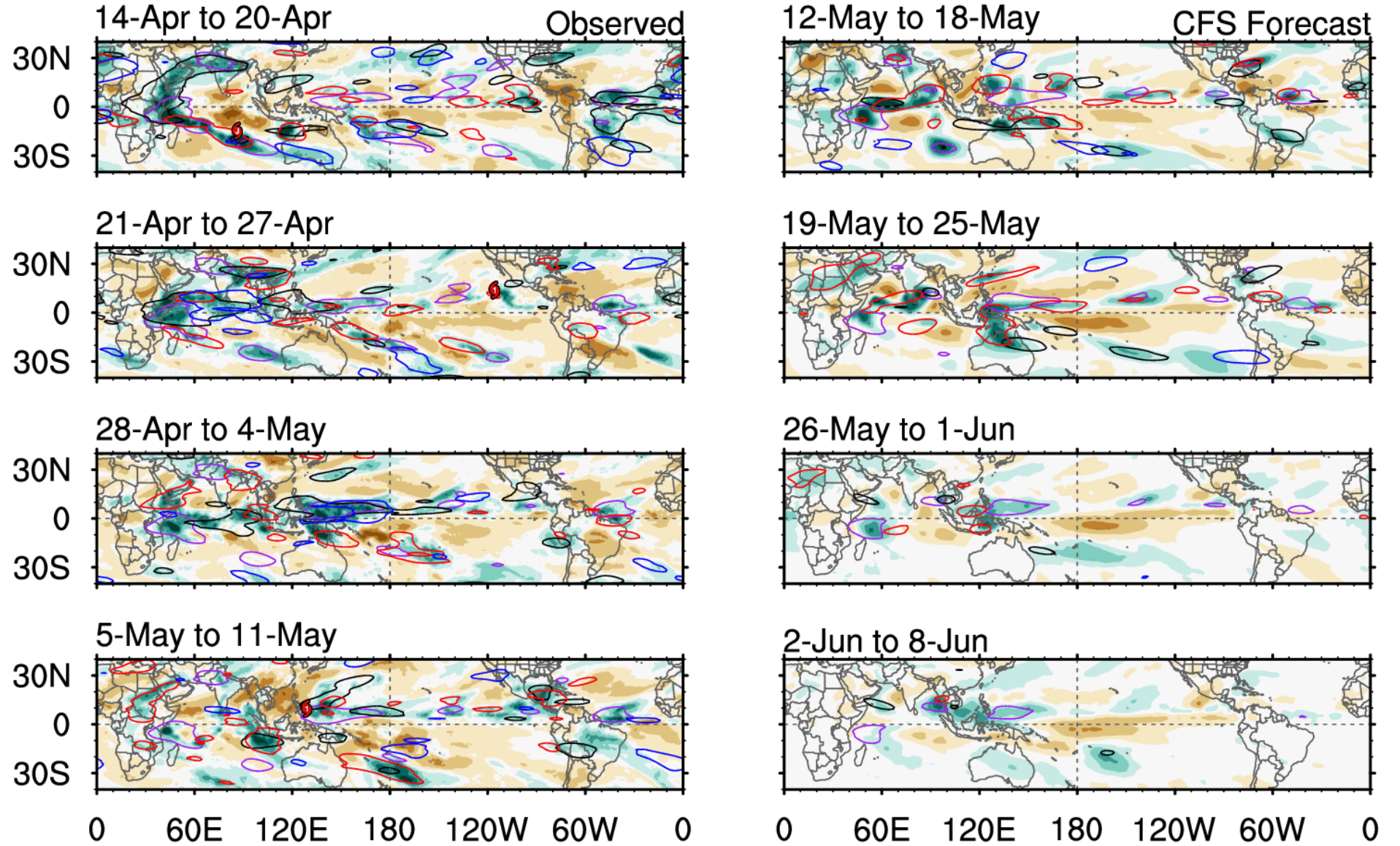
CHI200 with CFS forecasts 5S - 5N



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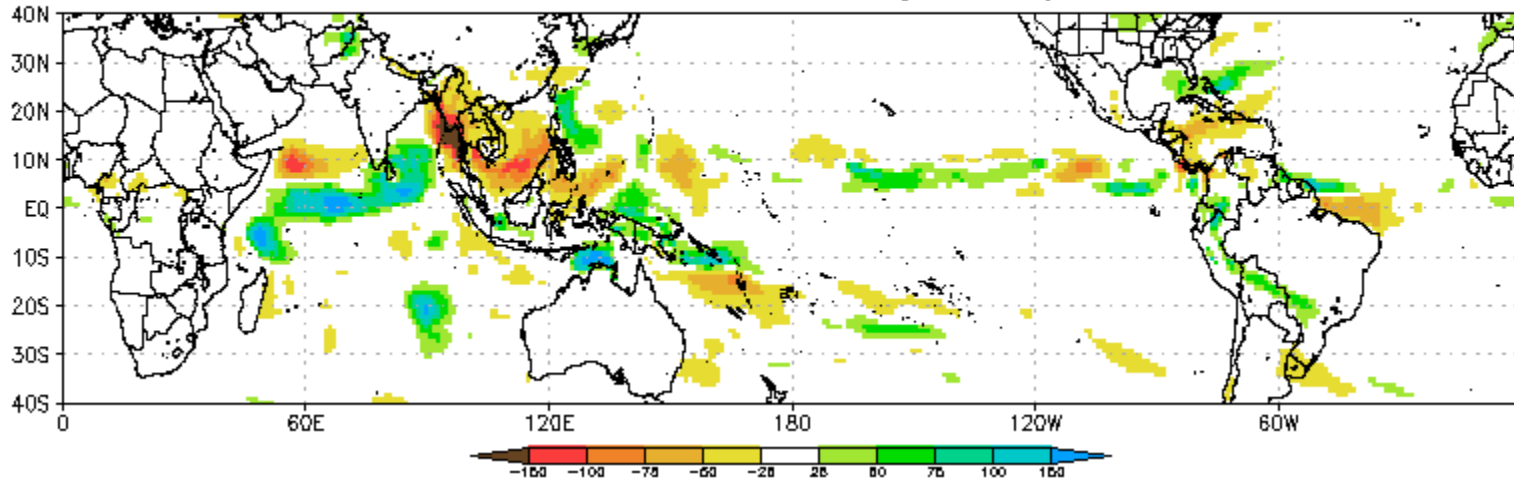


— MJO — Kelvin x2
 — Low — ER

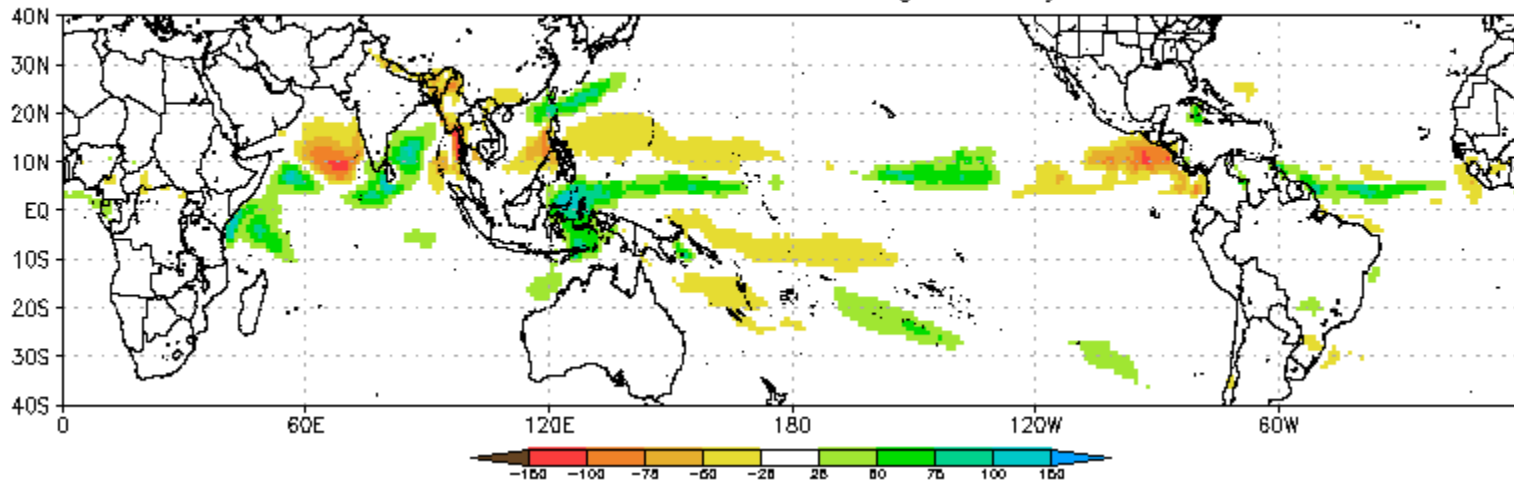
Contours at -12, -36 W m⁻²

7-day OLR with CFS forecasts

CFS Precipitation Anomalies (mm) Issued 11May2020
Week-1 Forecast Ending 19May2020

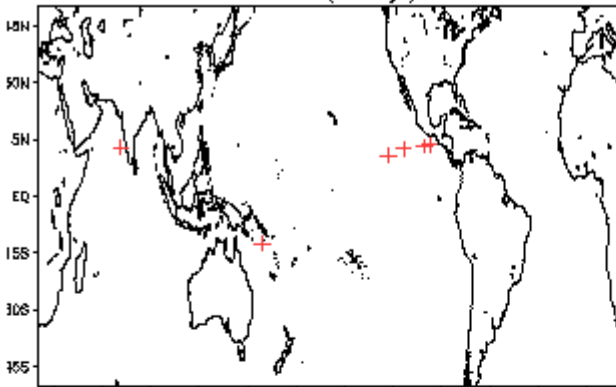


CFS Precipitation Anomalies (mm) Issued 11May2020
Week-2 Forecast Ending 26May2020

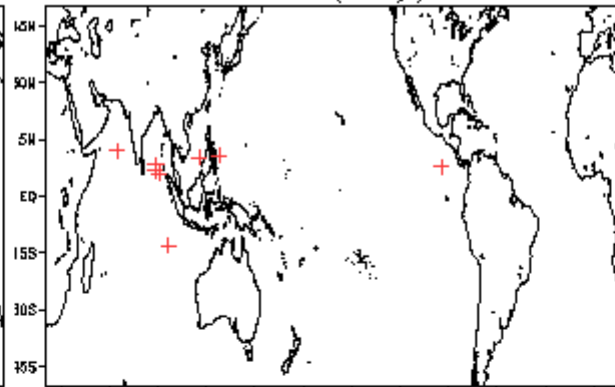


May Tropical Storm Formation by MJO phase

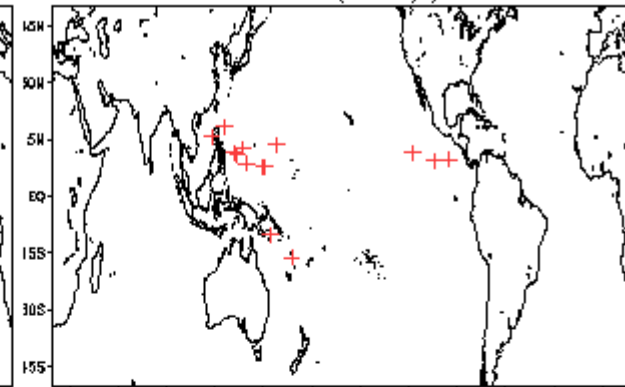
Phase 1 (85 days) 7 storms



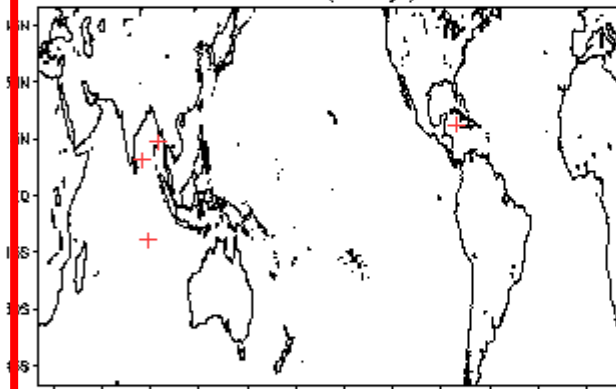
Phase 4 (85 days) 9 storms



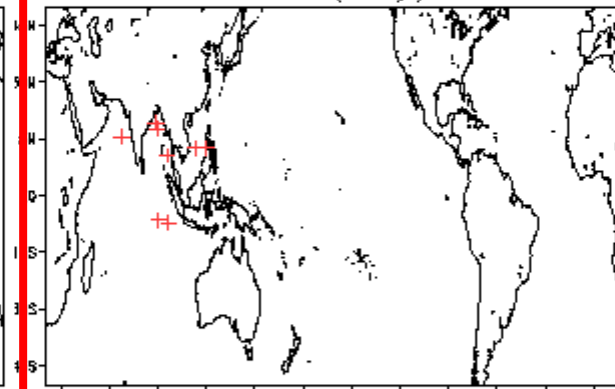
Phase 7 (111 days) 15 storms



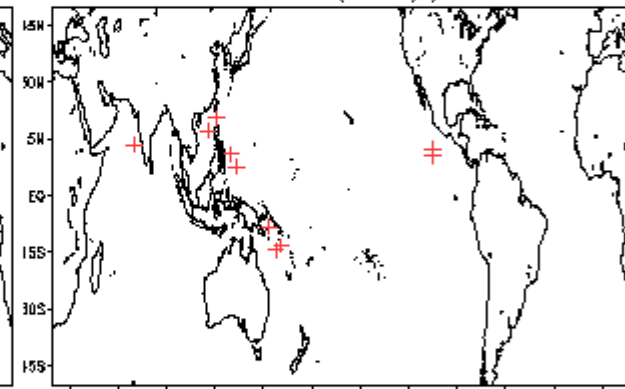
Phase 2 (76 days) 5 storms



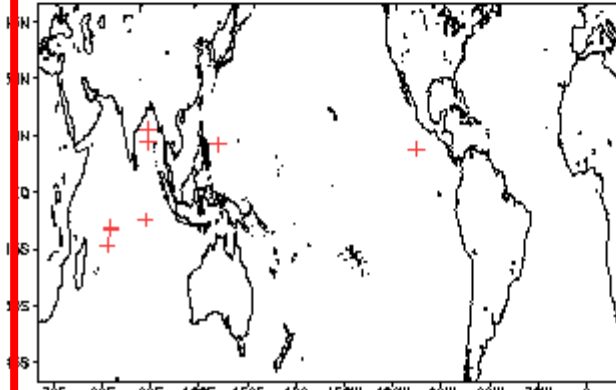
Phase 5 (66 days) 9 storms



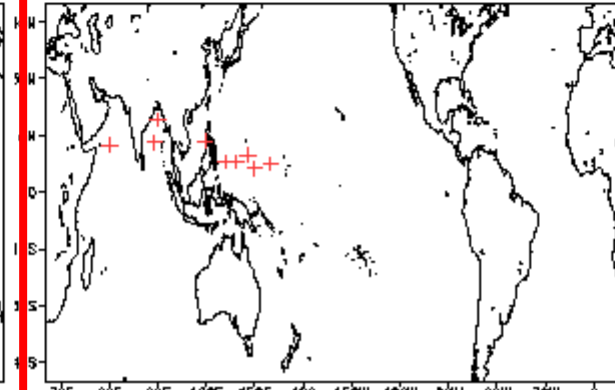
Phase 8 (111 days) 11 storms



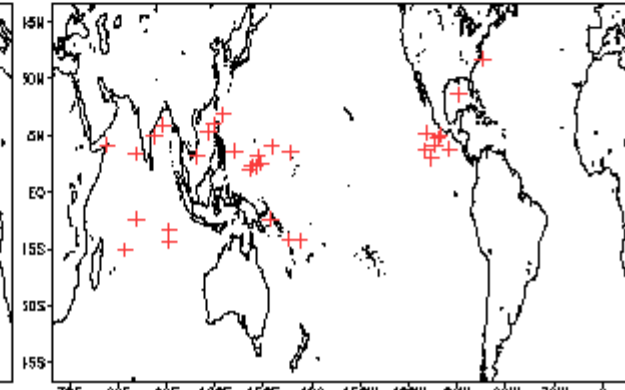
Phase 3 (73 days) 9 storms



Phase 6 (87 days) 10 storms

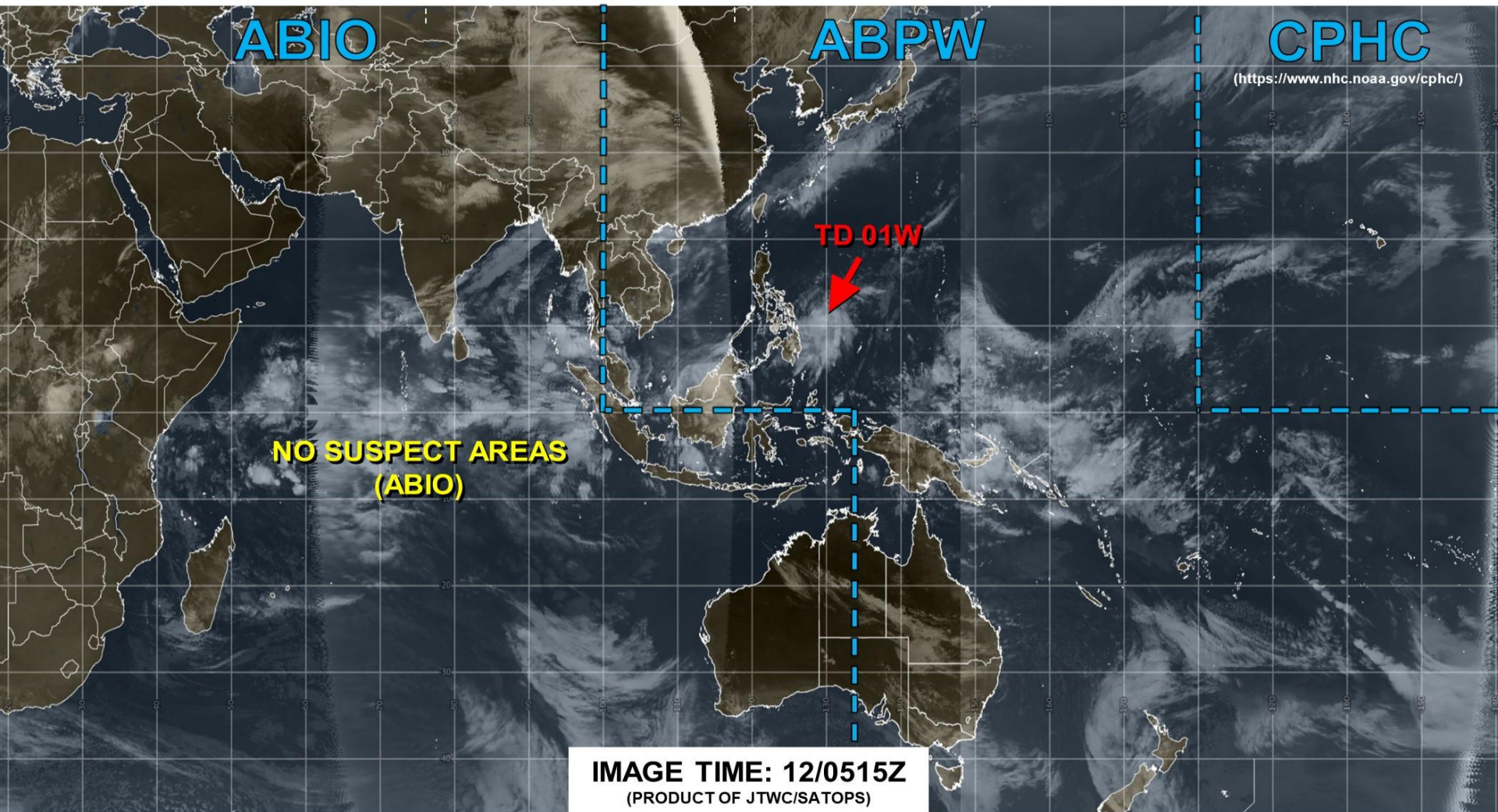


Null (349 days) 33 storms





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)

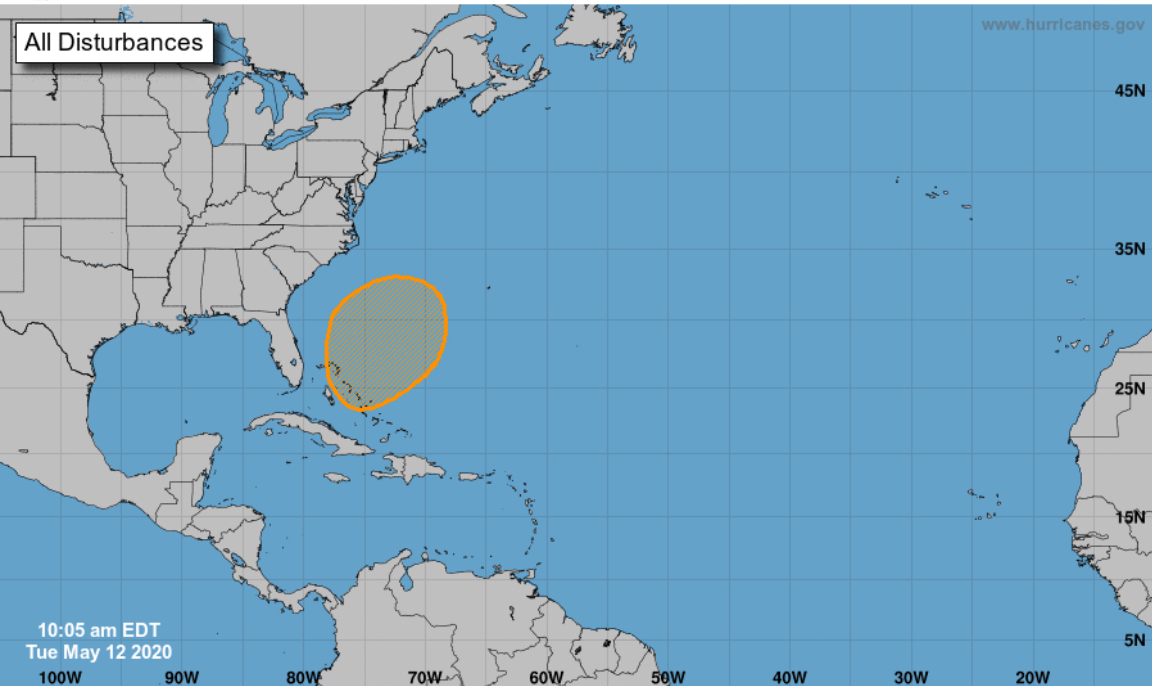
SUB TROPICAL Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

 Tropical Cyclone (Reference Warning)



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



All Disturbances

10:05 am EDT
Tue May 12 2020

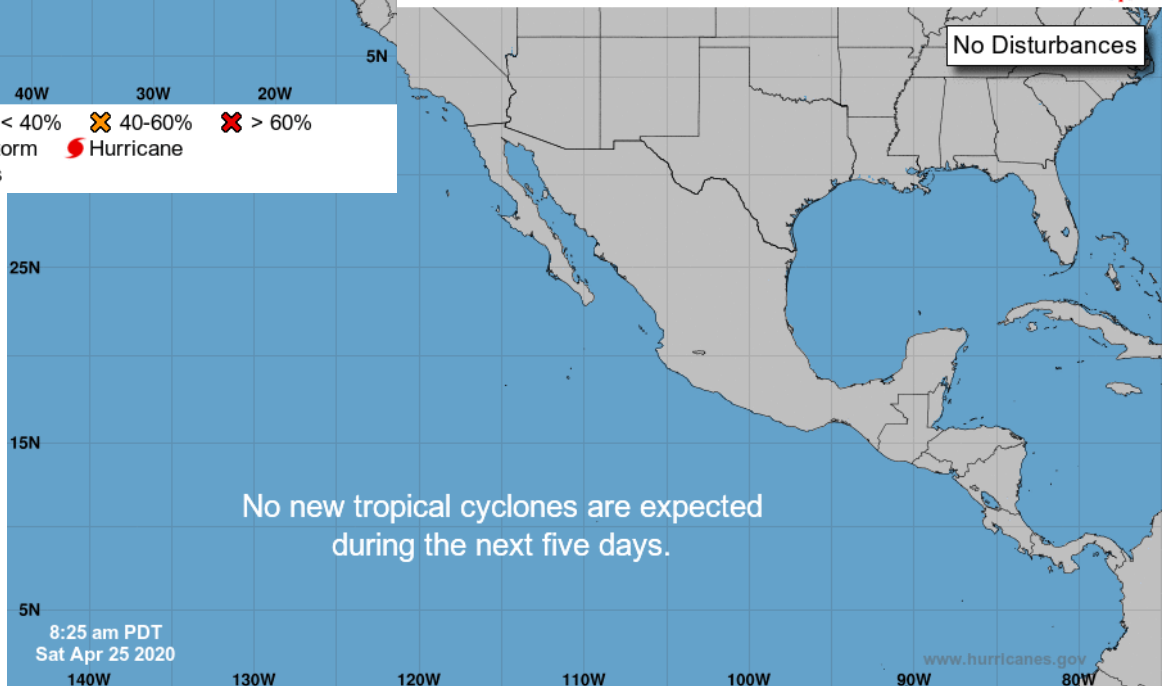
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



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

8:25 am PDT
Sat Apr 25 2020

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

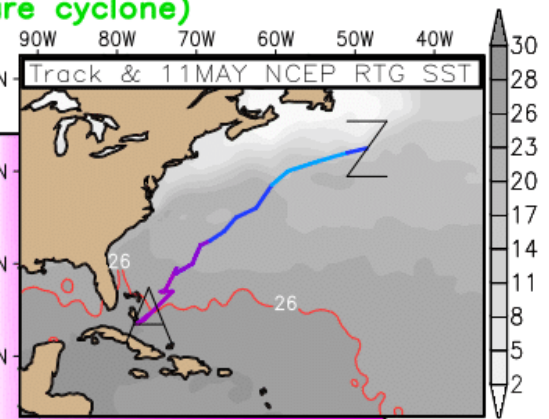
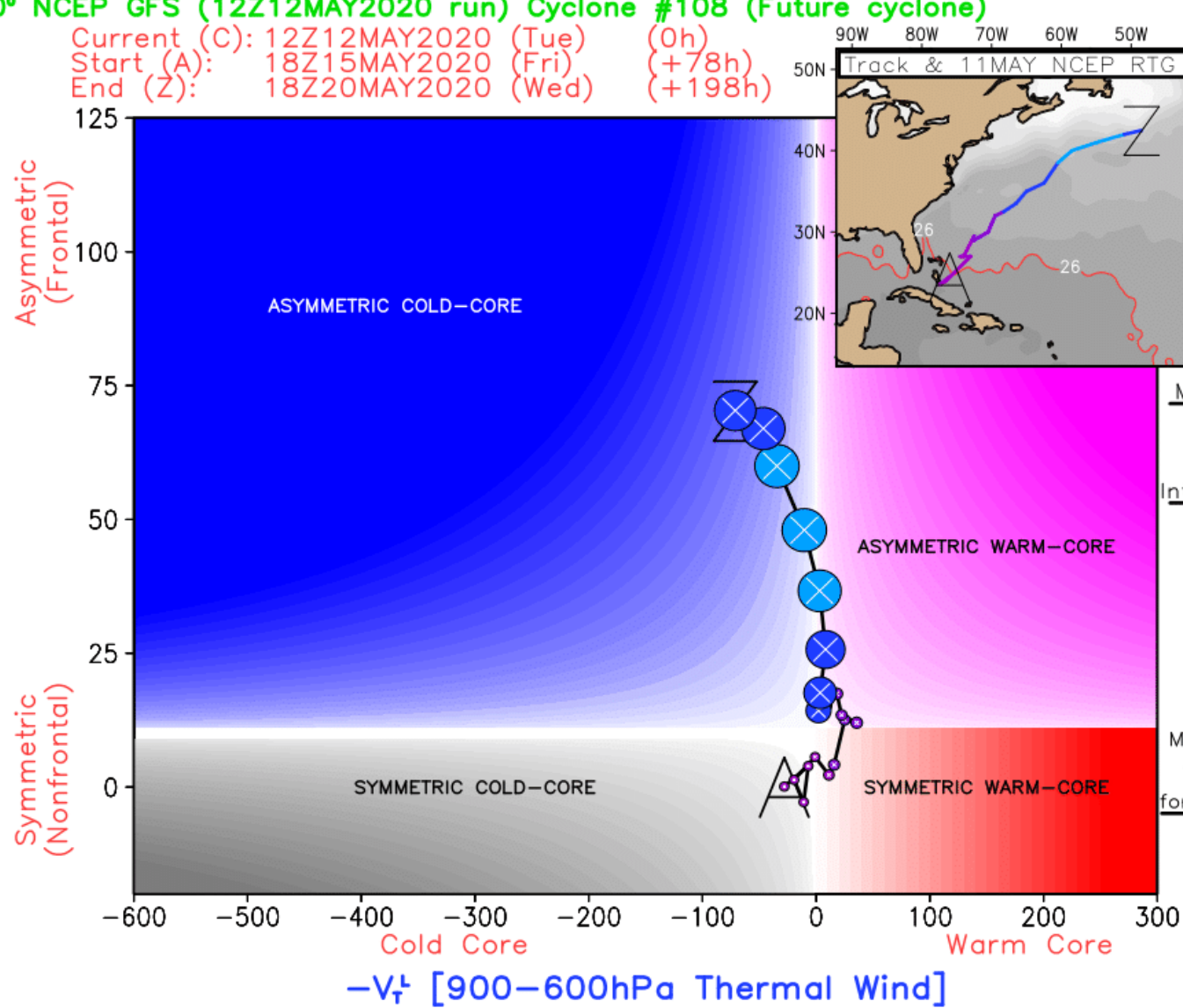
Bob Hart's phase space forecast:

<http://moe.met.fsu.edu/cyclonephase/gfs/fcst/archive/20051212/108.html>

0.50° NCEP GFS (12Z12MAY2020 run) Cyclone #108 (Future cyclone)

Current (C): 12Z12MAY2020 (Tue) (0h)
 Start (A): 18Z15MAY2020 (Fri) (+78h)
 End (Z): 18Z20MAY2020 (Wed) (+198h)

B [900–600hPa Storm–Relative Thickness Symmetry]



Marker Style:
 Analysis: ●
 Forecast: ⊗

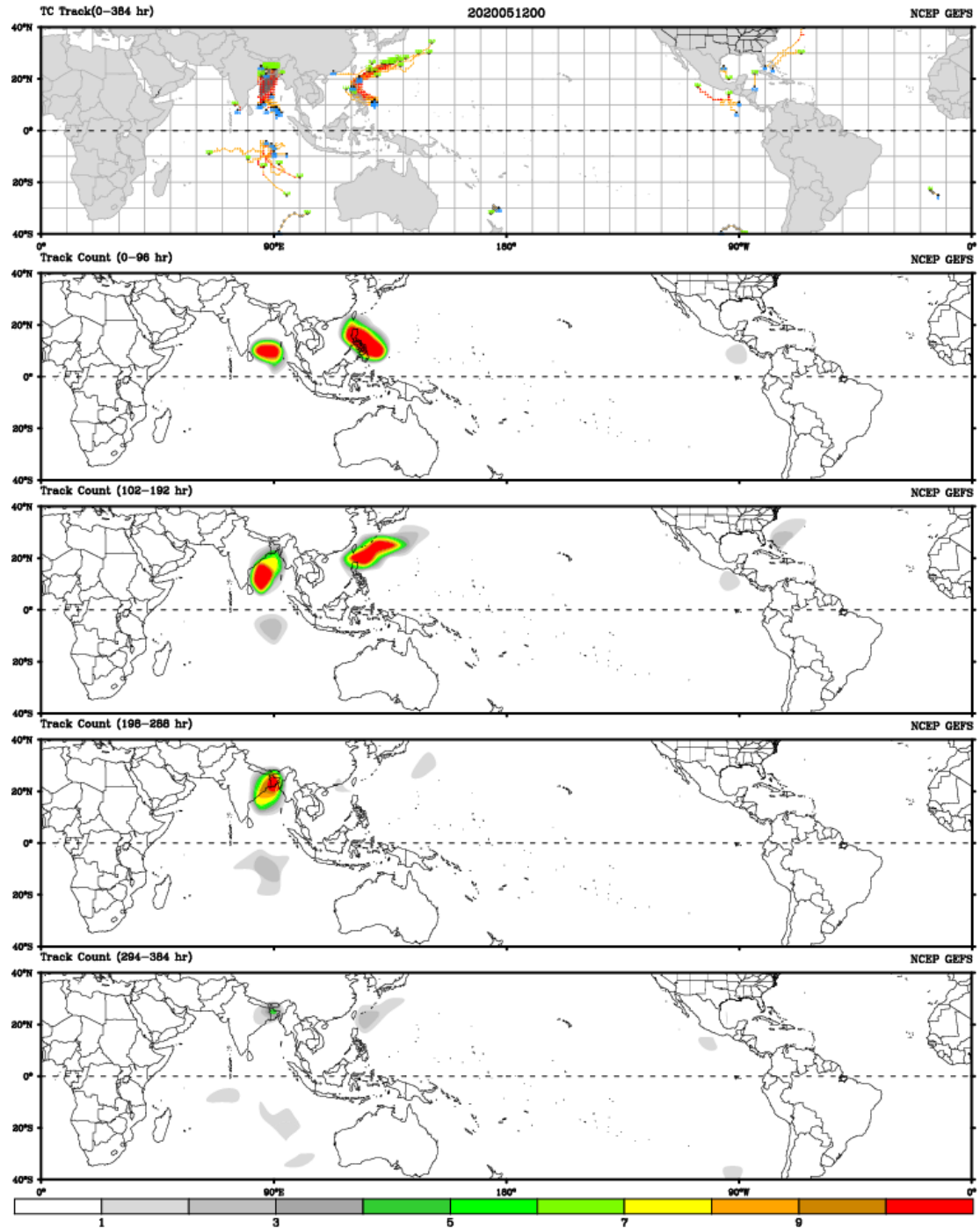
Intensity (hPa):

● 1015	● 980
● 1010	● 970
● 1000	● 960
● 990	● 950

Mean radius of 925hPa gale force wind (km):

- <100
- 200
- 300
- 500
- 750

NOTE: A 24hr running mean smoother is applied to the CPS trajectory.



Days 1-4

Day 5-8

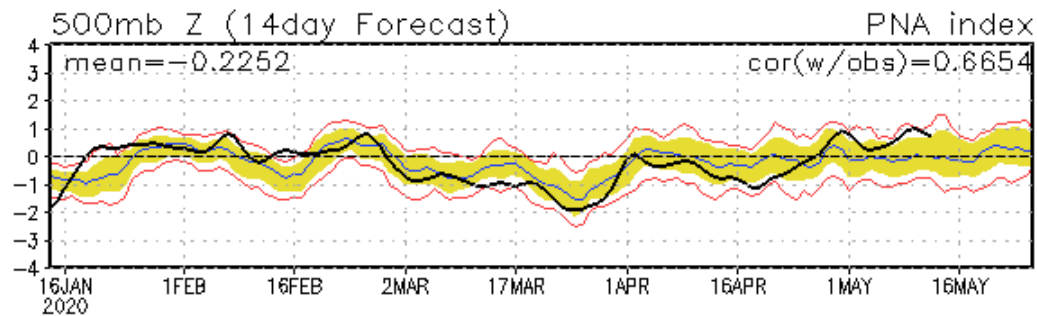
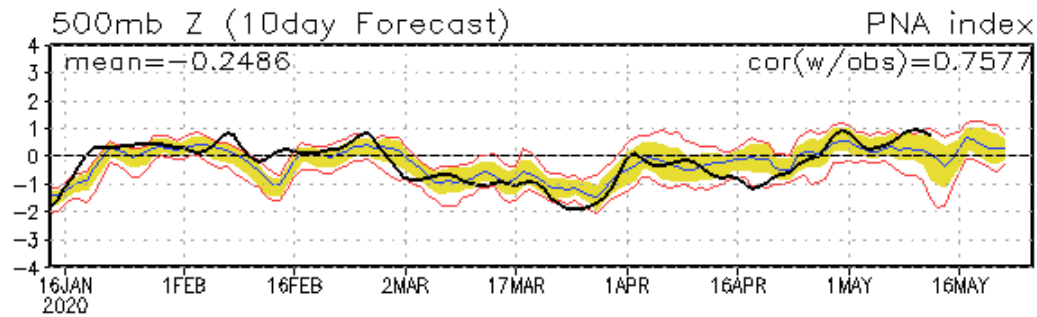
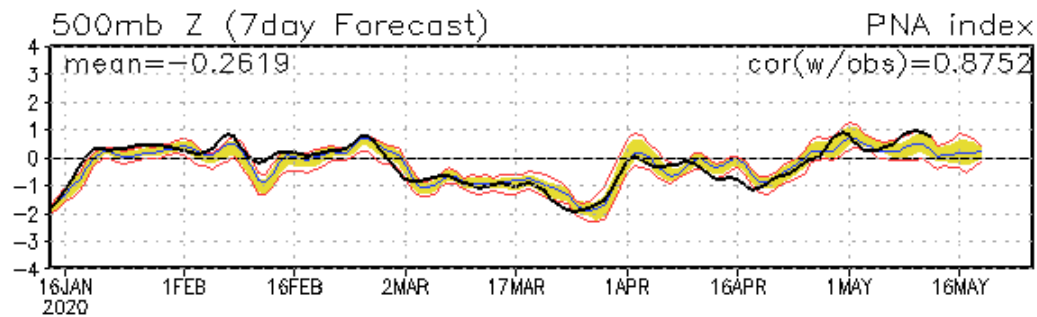
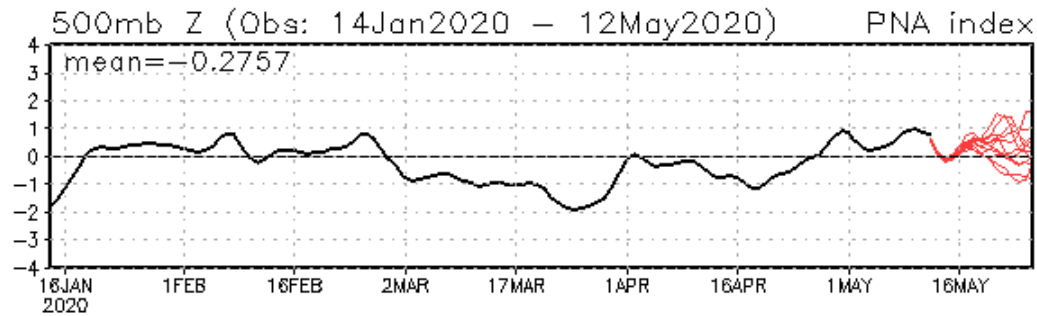
Day 9-12

Day 13-15

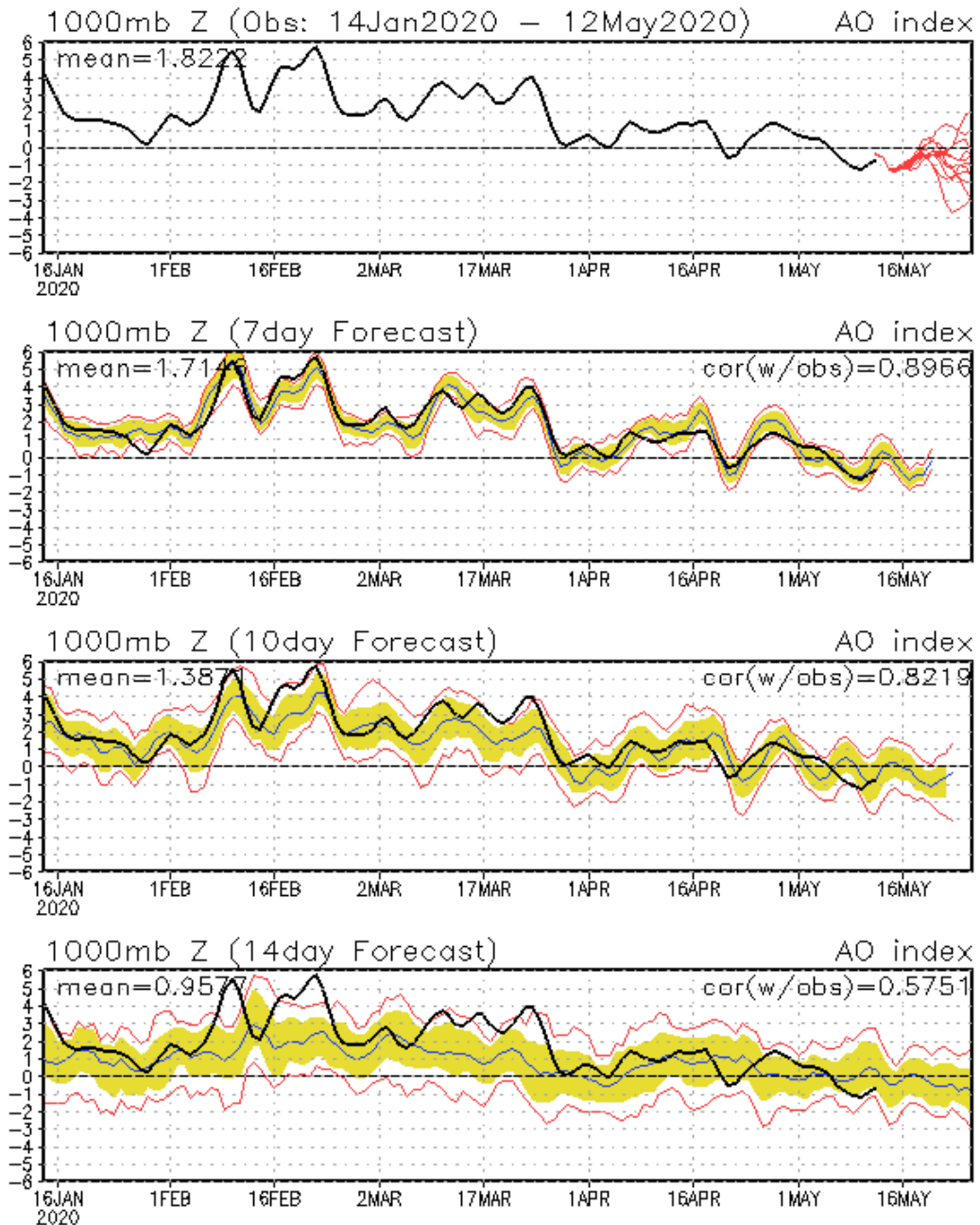
Track Count

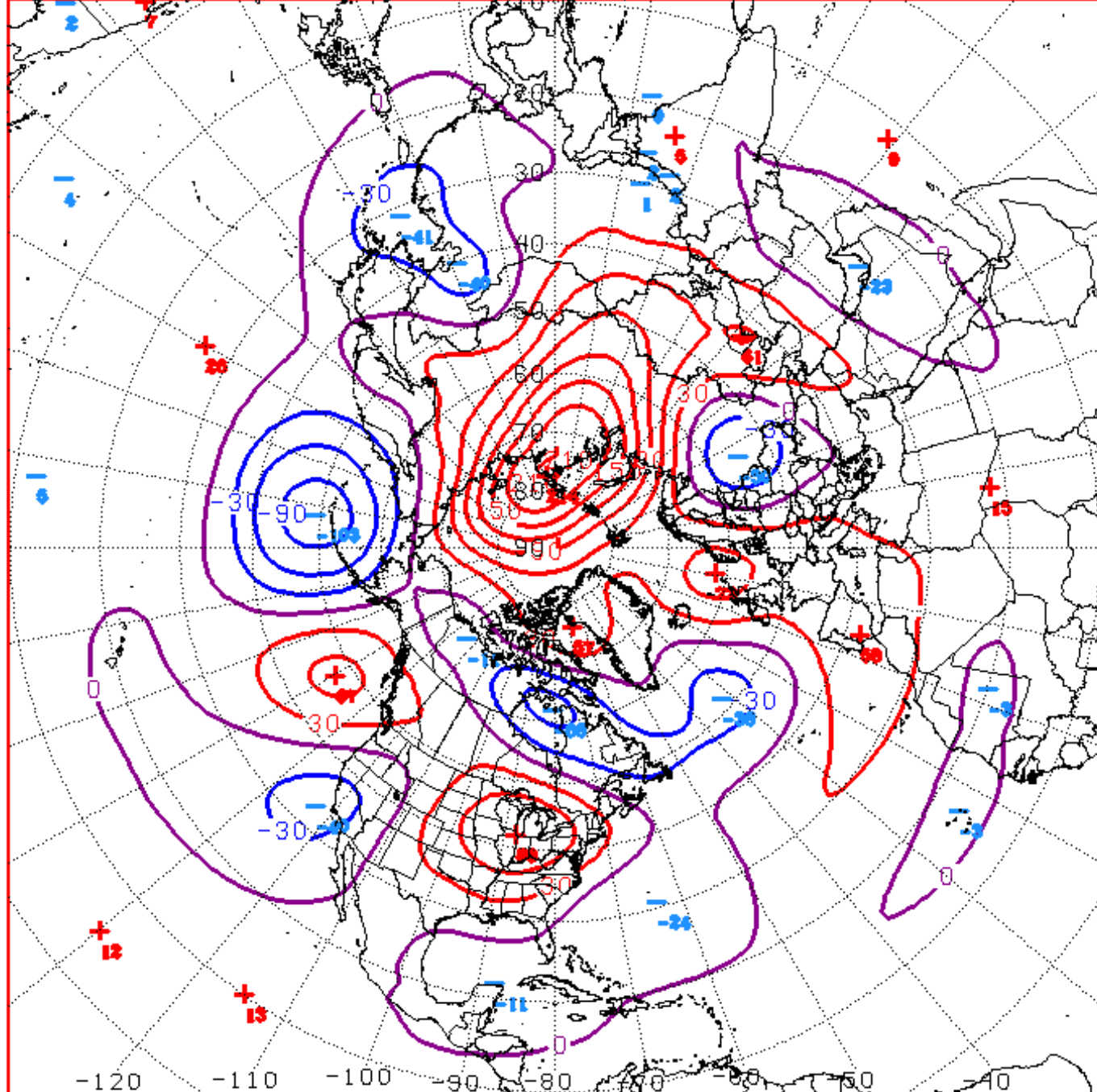
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts



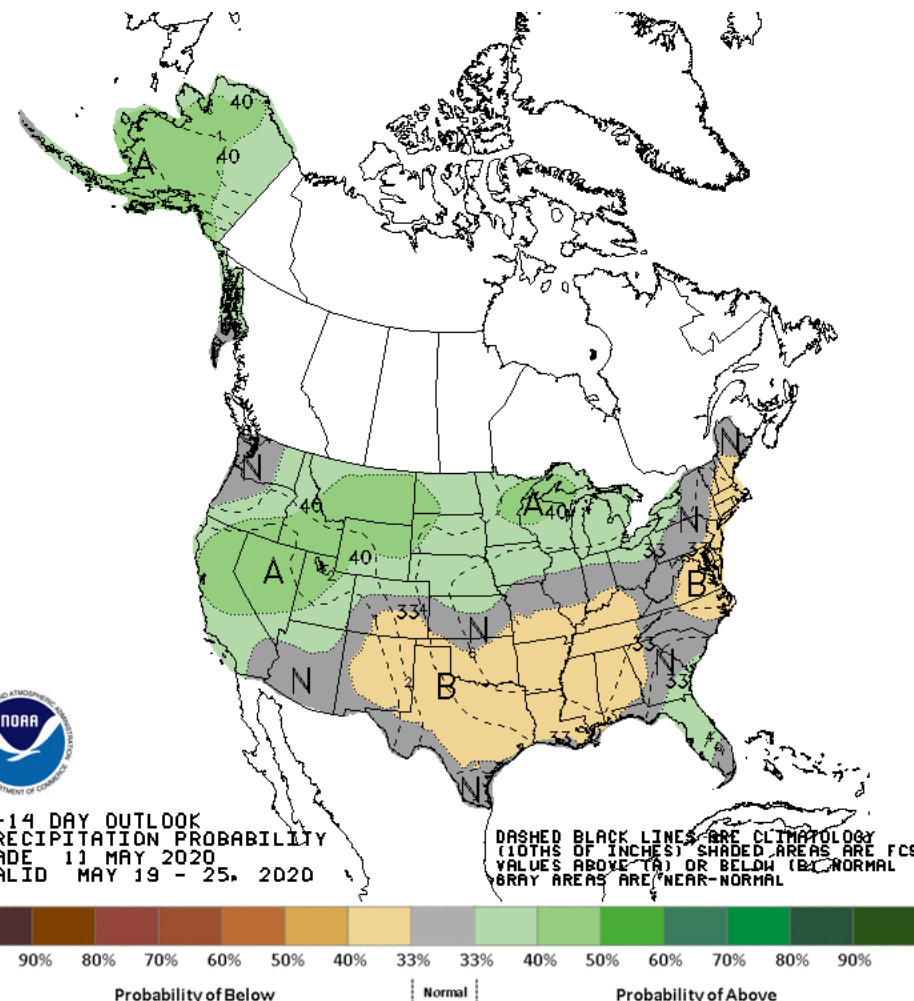
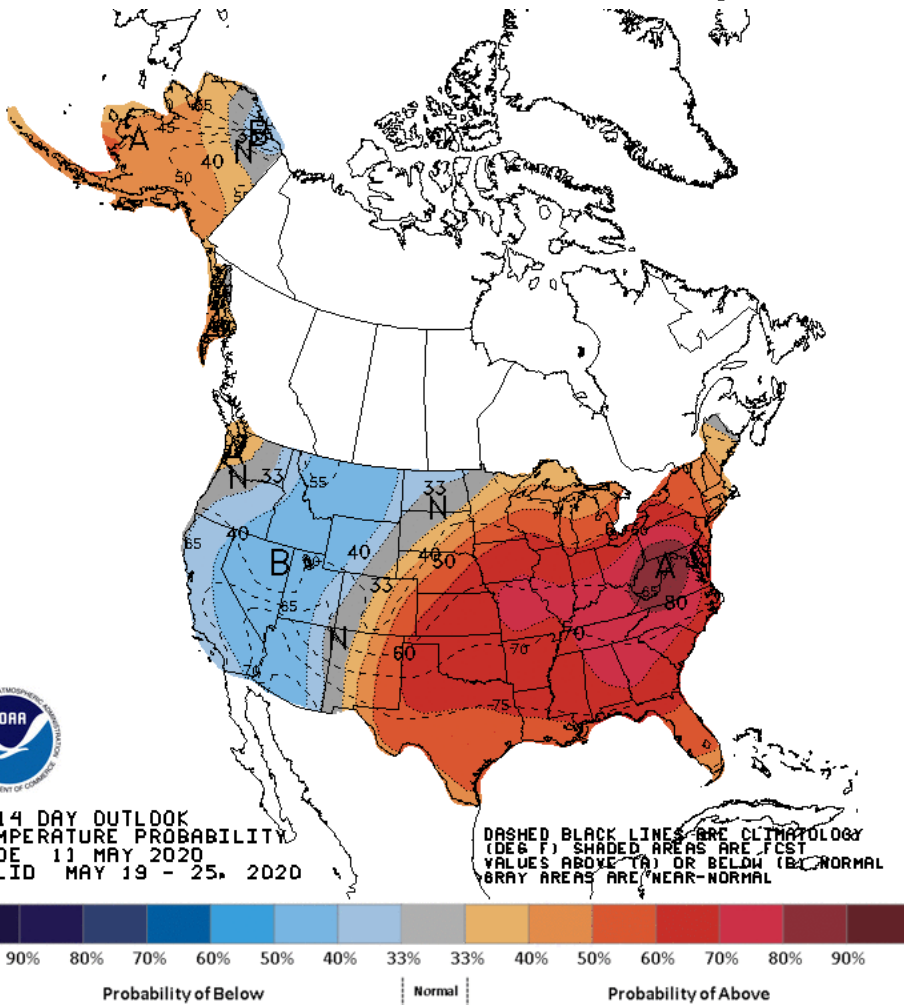
AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE MAY 12 2020 1349 UTC CNTD MAY 23 2020

Week 2 – Temperature and Precipitation

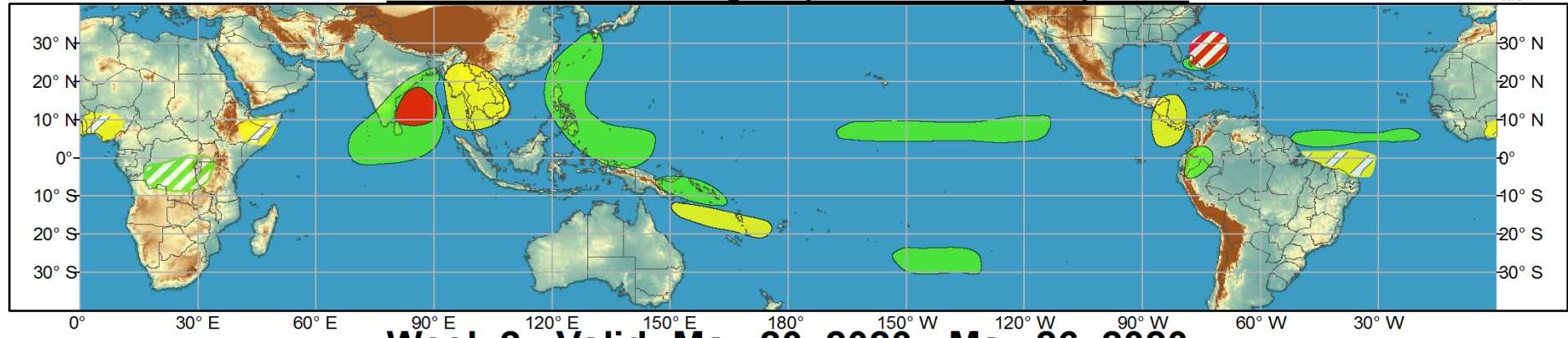


Since we are in an amplified, stable pattern today's outlooks are likely to be similar.

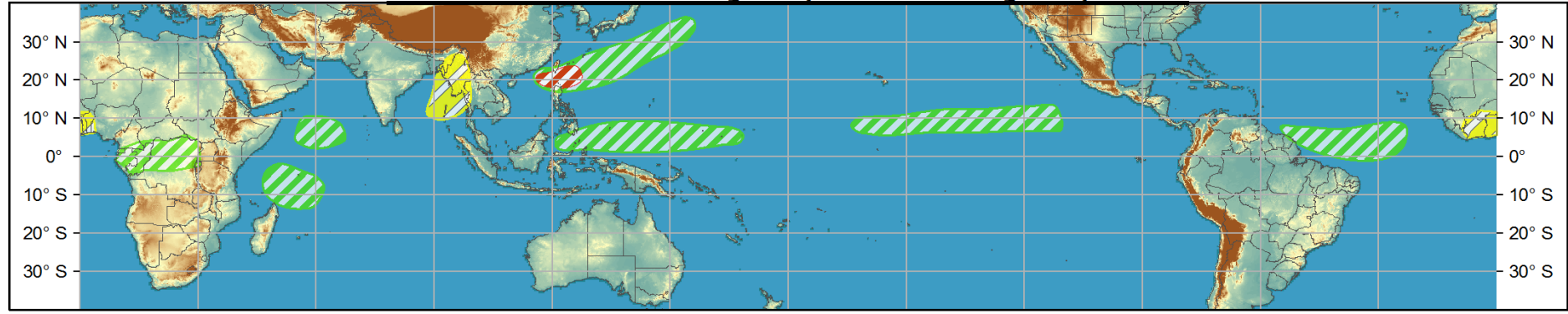


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