

Global Tropics Hazards And Benefits Outlook

3/22/2022

Danny Barandiaran

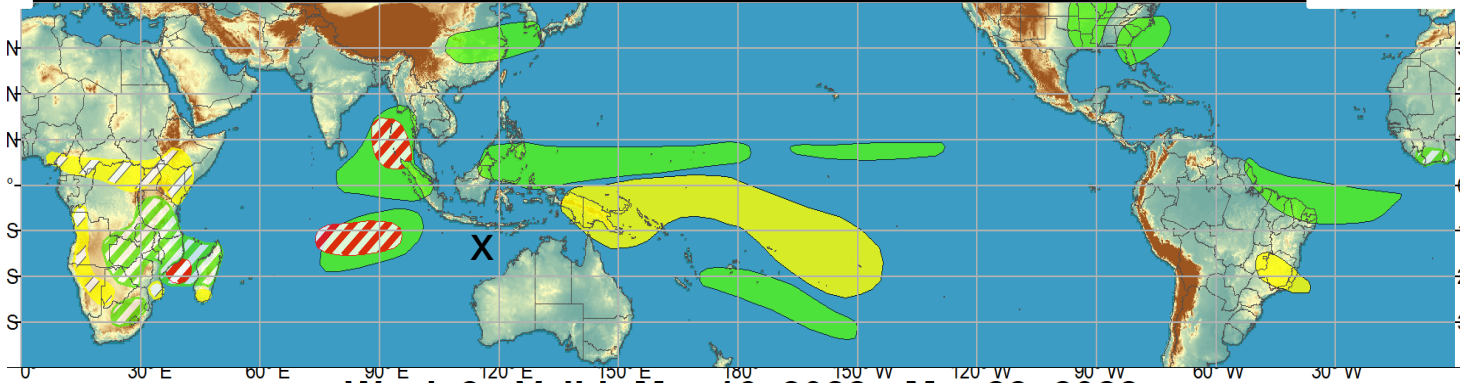
Outline

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

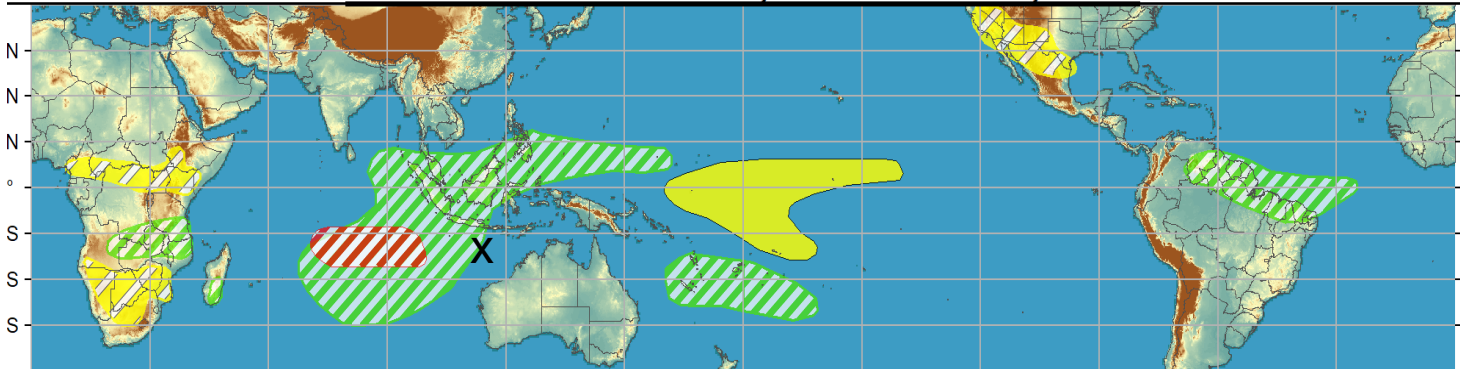
Outlook Review

X= Tropical Cyclone
Charlotte (3/20)

Week 1 - Valid: Mar 16, 2022 - Mar 22, 2022

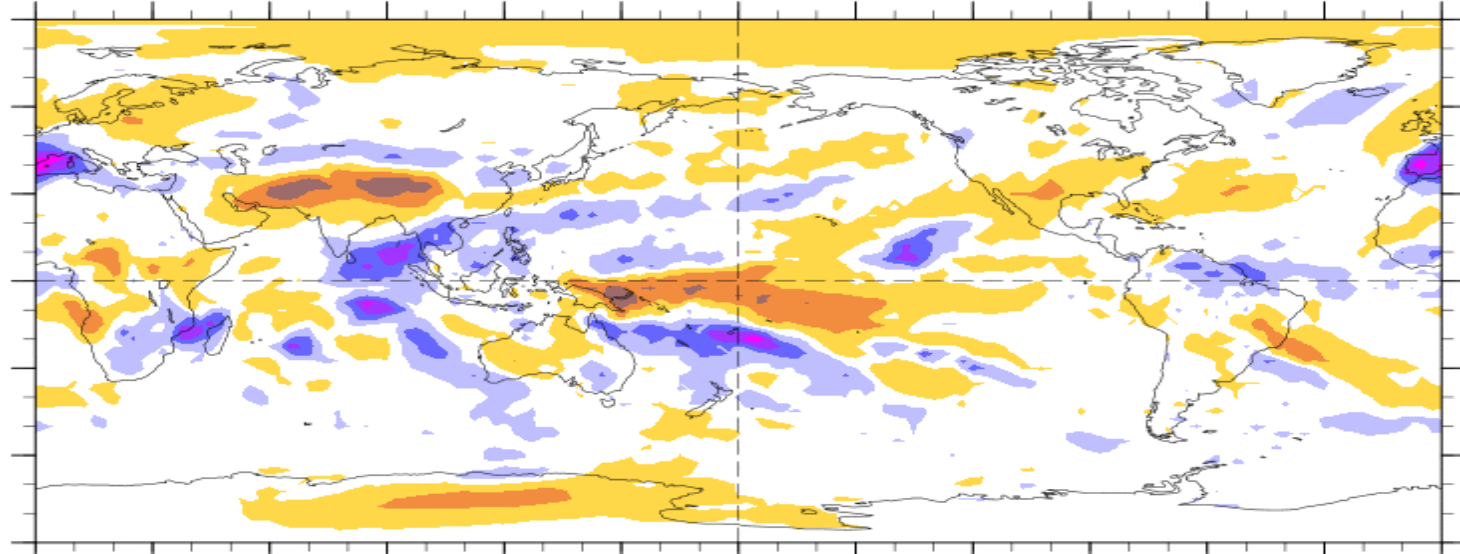


Week 2 - Valid: Mar 16, 2022 - Mar 22, 2022



7-Day Average OLR Anomaly

2022/03/14 - 2022/03/20



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (March 10, 2022 Update)

next update on Thursday, April 14th

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is favored to continue into the Northern Hemisphere Summer (53% chance during June-August 2022), with a 40-50% chance of La Niña or ENSO-neutral thereafter

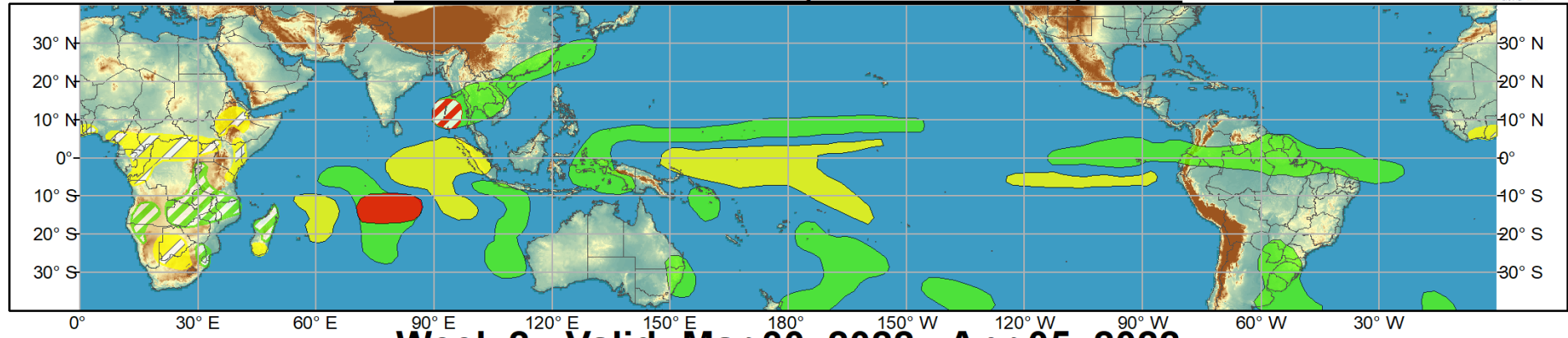
MJO and other subseasonal tropical variability:

- After a more organized intraseasonal signal emerged last week, there are now signs that MJO will weaken significantly as it moves eastward through the Maritime Continent.
- Both the GEFS and ECMWF depict the RMM index declining rapidly in the coming week. There is some disagreement on how quickly the strength of the MJO will decrease, but both models bring the RMM into the unit circle within the next 5 days.
- The enhanced phase of the MJO is beginning to move out of the Indian Ocean, but nonetheless increased convergence over the eastern IO may increase the possibility of TC formation over the area for the next week or so.

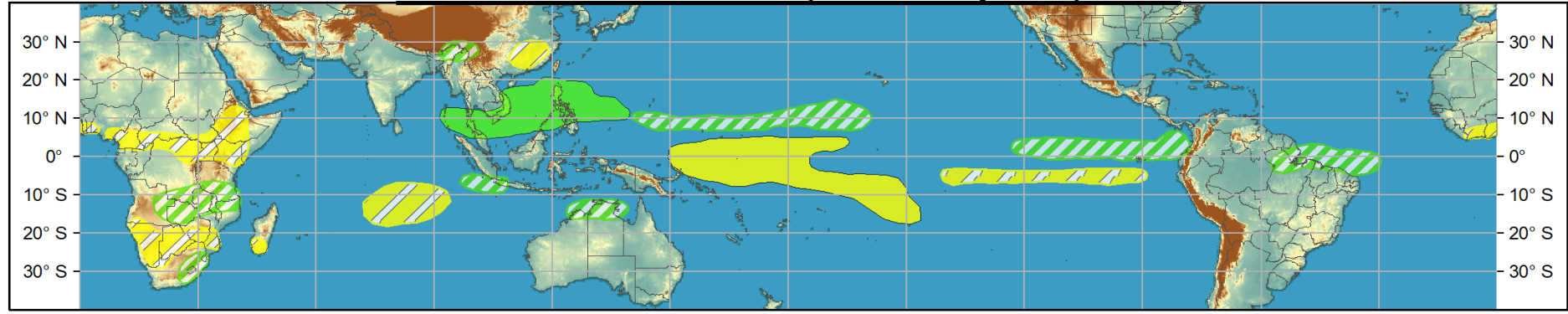


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 23, 2022 - Mar 29, 2022



Week 2 - Valid: Mar 30, 2022 - Apr 05, 2022



Produced: 03/22/2022

Forecaster: Barandiaran

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.
		Below-normal temperatures 7-day mean temperatures in the lower third of the historical range.

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

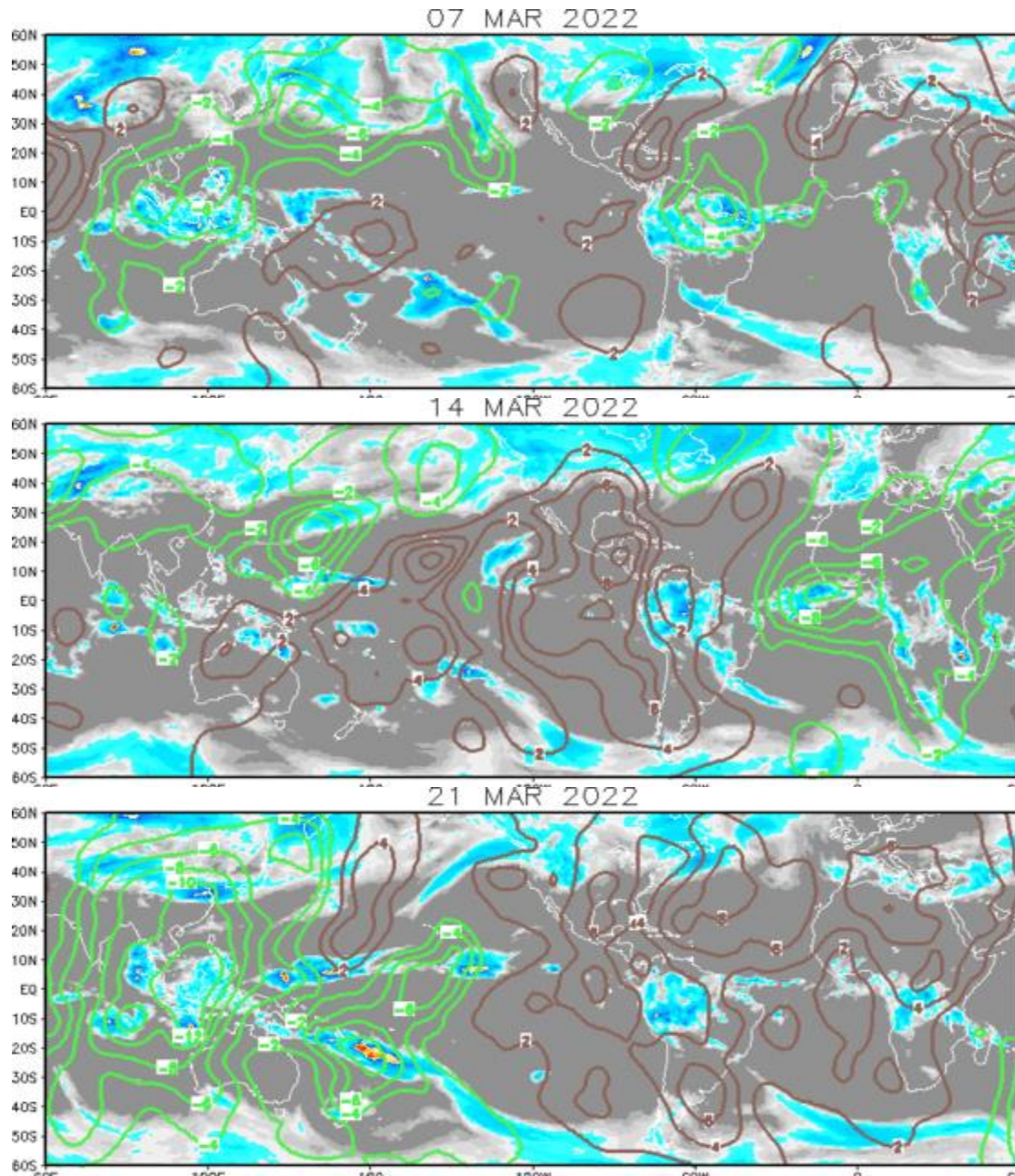
Green: Enhanced Divergence

Brown: Enhanced Convergence

MJO signature emerging but not entirely clear in early March.

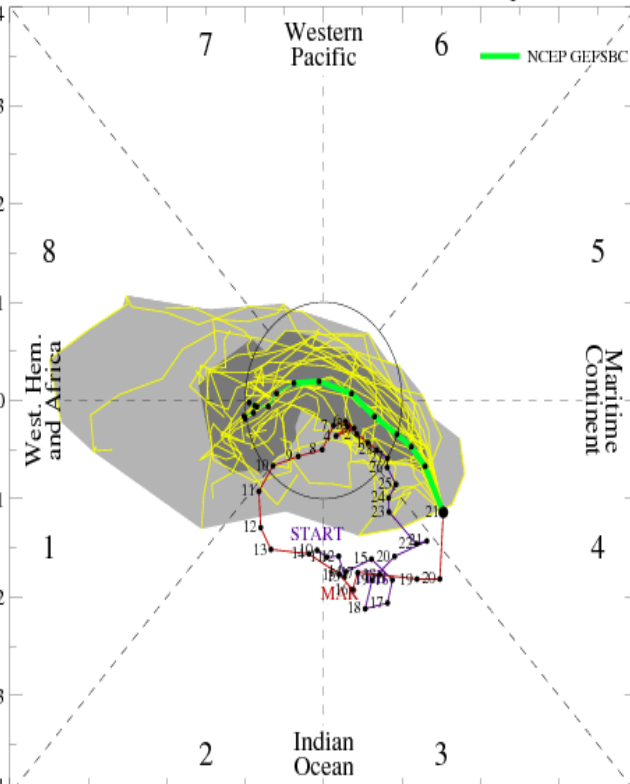
By the middle of March MJO became much more well-defined and began propagating eastward.

Center of enhanced convection now centered over Maritime Continent.

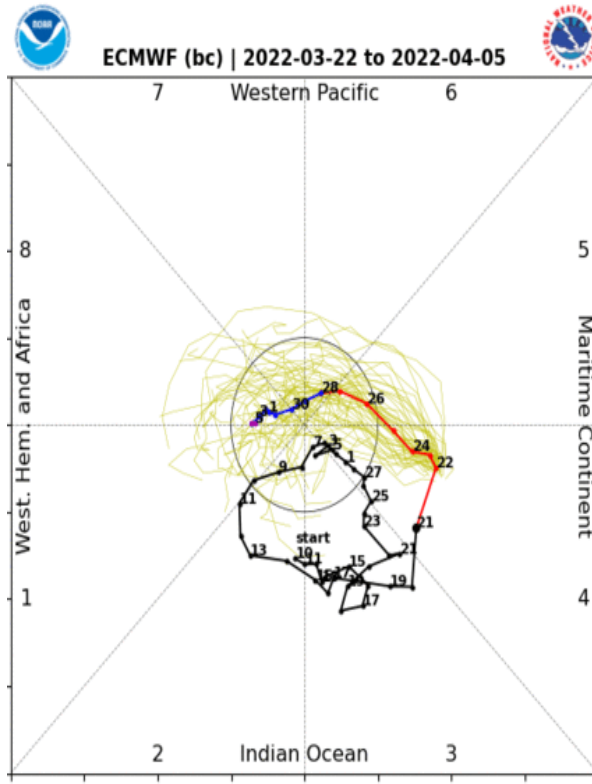


MJO Observation/Forecast

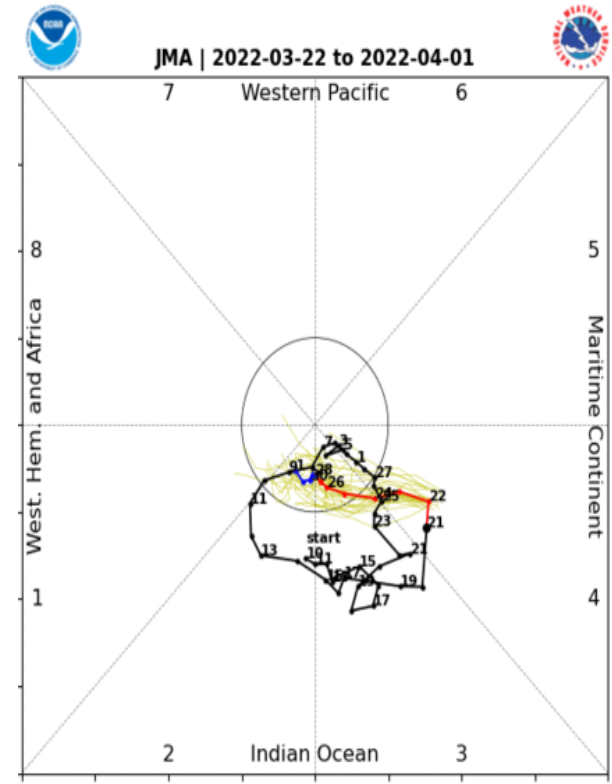
[RMM1, RMM2] forecast for Mar-22-2022 to Apr-05-2022



GEFS



ECMWF

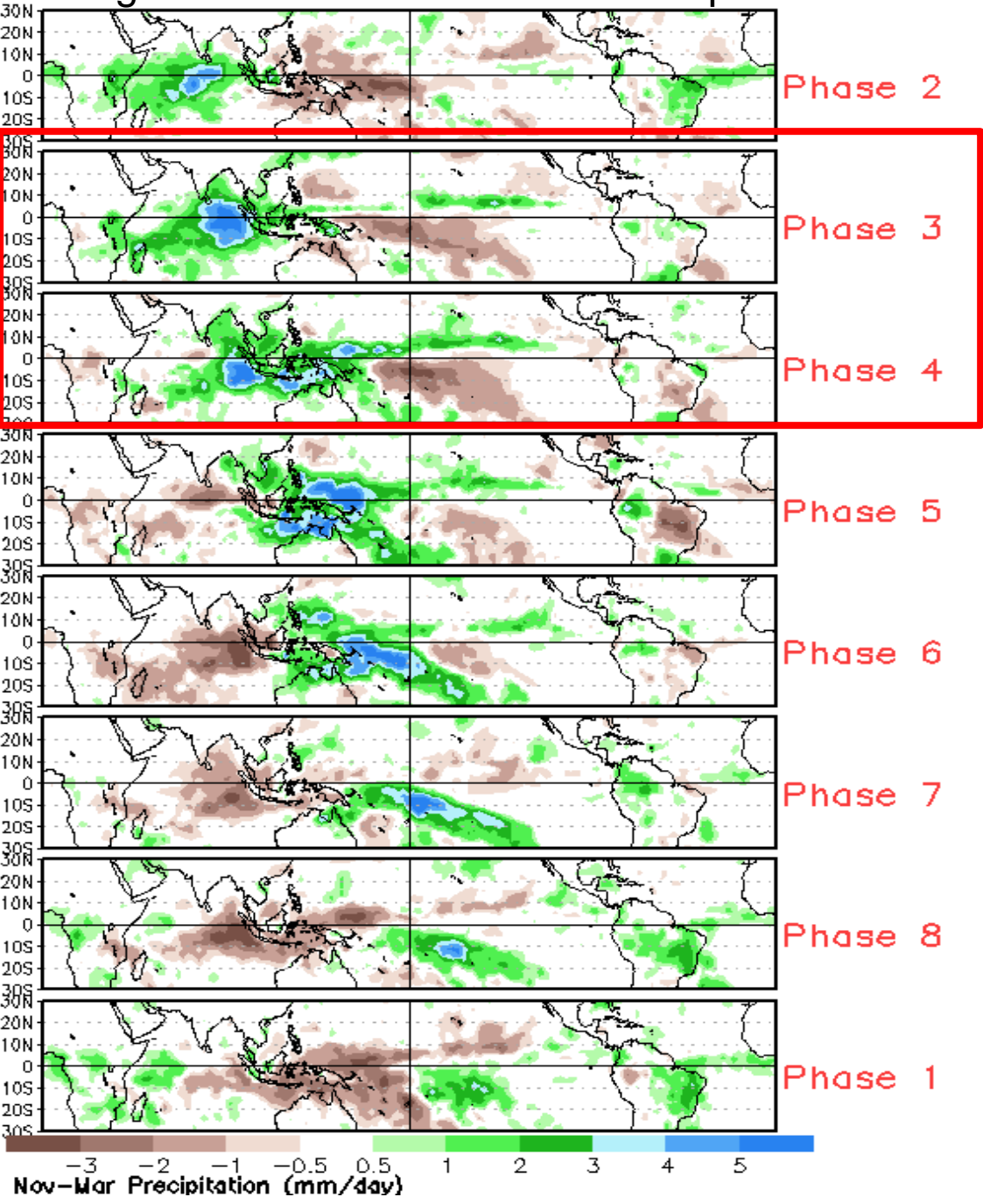


JMA

Following an increase in amplitude in phase 3 during the last week, models now suggest a rapid decrease in MJO strength as it moves across Maritime Continent during week-1.

ECMWF is slower to move the RMM index into the unit circle than either the GEFS or JMA.

Average Conditions when the MJO is present

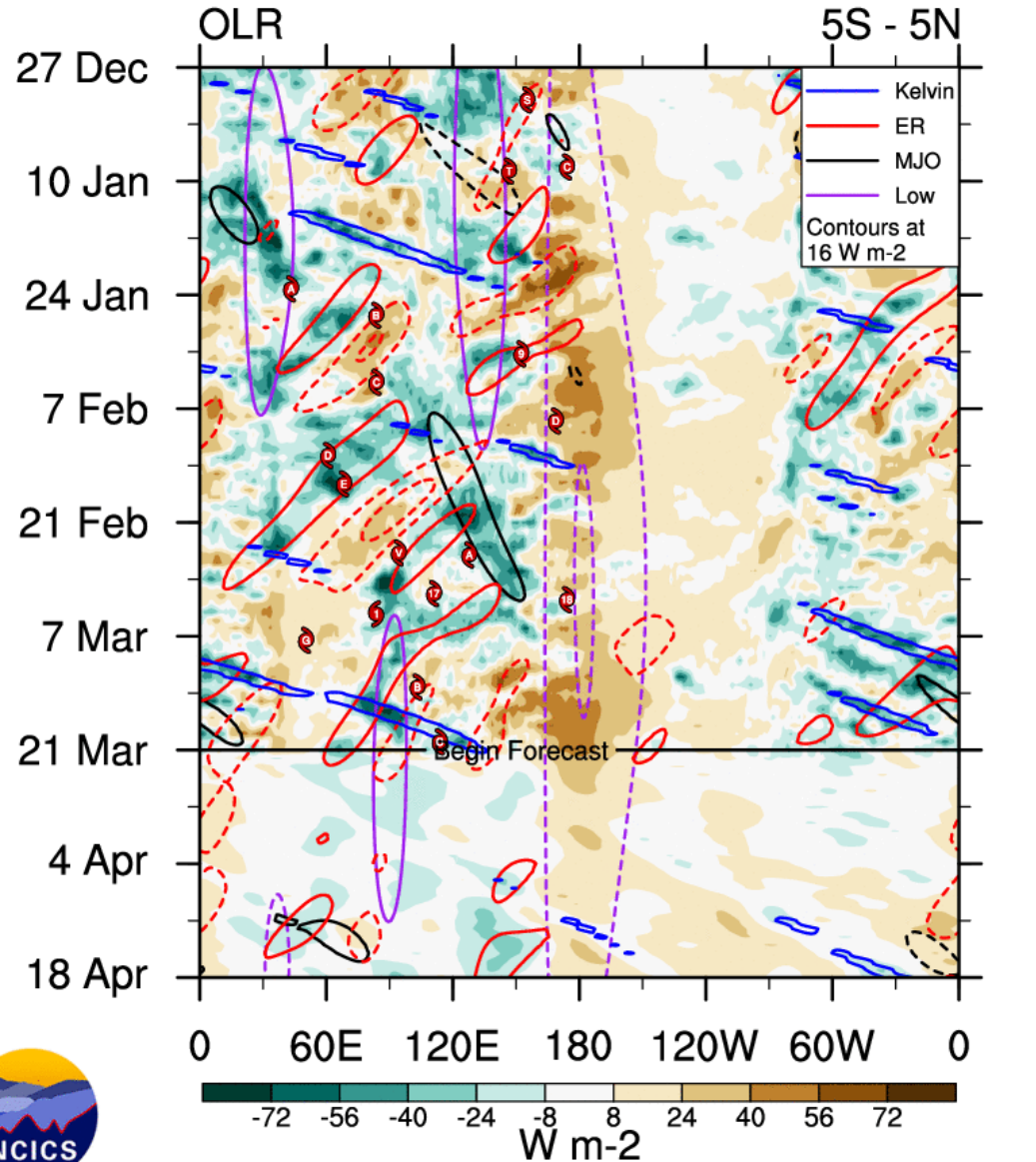


CAVEAT: These panels are representative of robust MJO events.

MJO activity is not apparent the filtering over the Indian Ocean despite the strong signal in the RMM index.

A long-lived **Kelvin wave** is continuing to propagate eastward in the obs field.

Numerous **Equatorial Rossby waves** have been moving through and occasionally enhancing convection associated with other wave types.

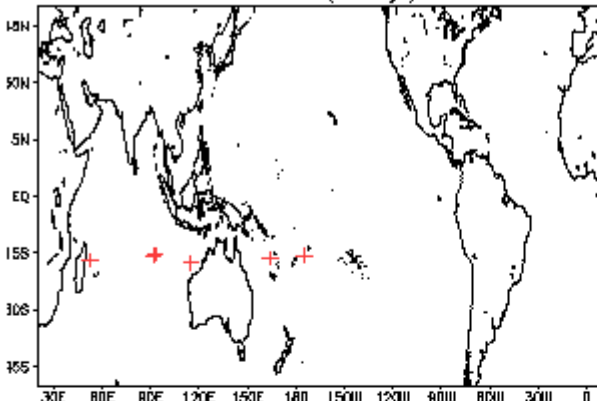


Tue 2022-03-22 1510 UTC

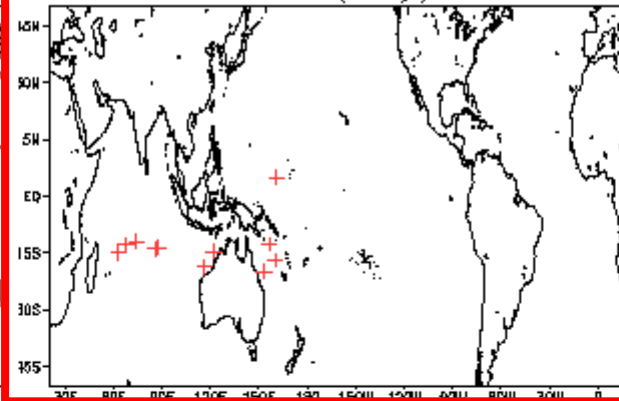
Carl Schreck
carl_schreck@ncsu.edu

March Tropical Storm Formation by MJO phase

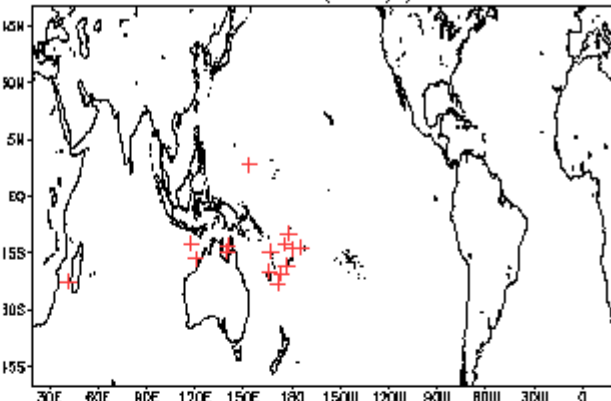
Phase 1 (98 days) 7 storms



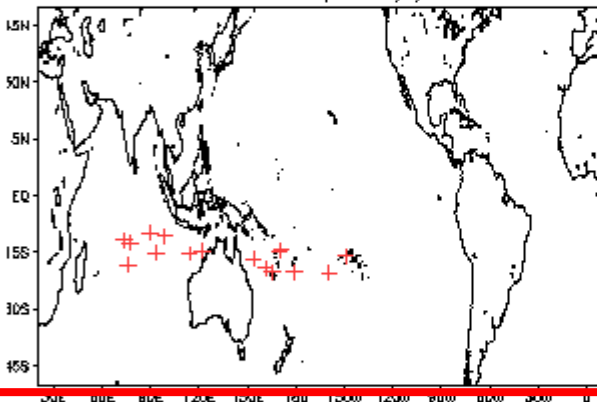
Phase 4 (72 days) 12 storms



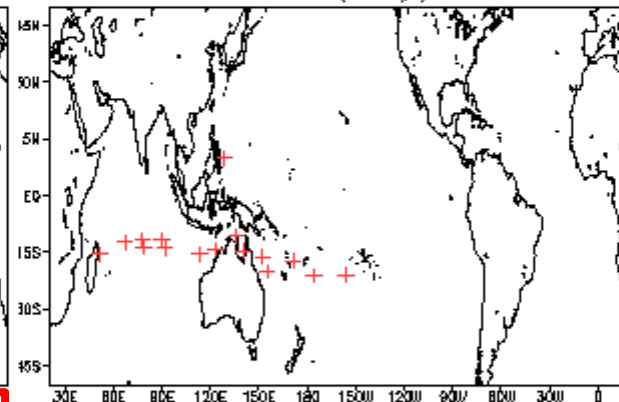
Phase 7 (81 days) 16 storms



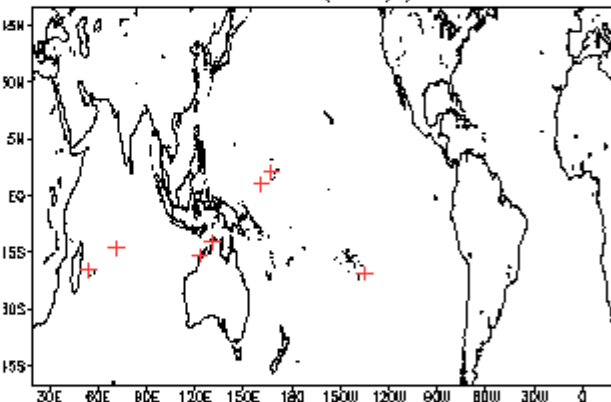
Phase 2 (111 days) 17 storms



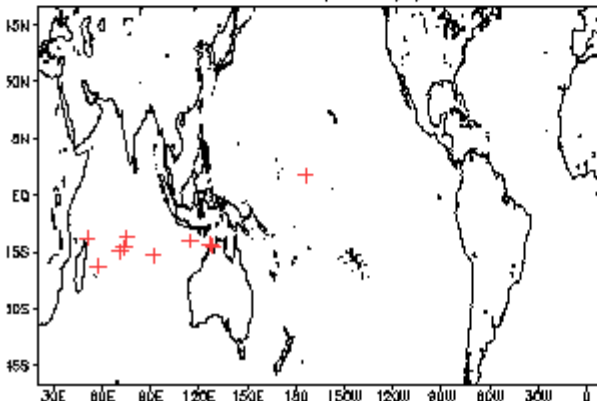
Phase 5 (77 days) 17 storms



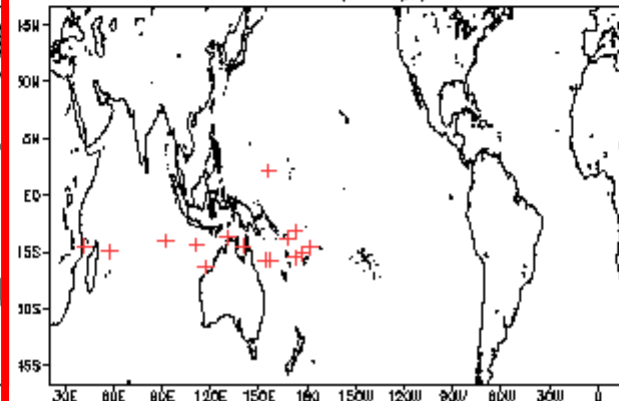
Phase 8 (92 days) 8 storms



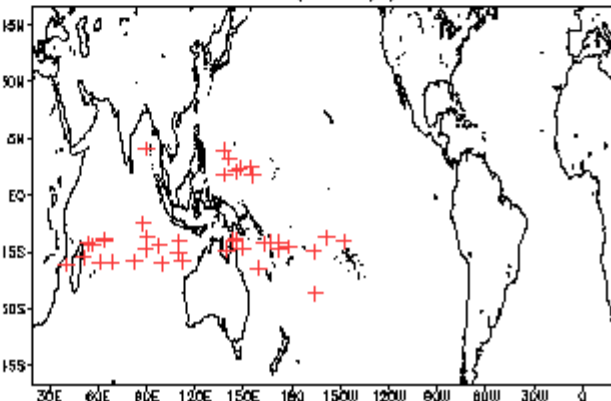
Phase 3 (108 days) 11 storms



Phase 6 (78 days) 16 storms



Null (322 days) 40 storms





JOINT TYPHOON WARNING CENTER



Naval Research Laboratory
Marine Meteorology Division
Cloud Layer Product
Valid: 2022-03-22 16:00:00

FABIO

ABPW

Please refer to CPHC
(<https://www.nhc.noaa.gov/cphc/>)

91B

NO SUSPECT AREAS
(ABPW)

94S

TC 21S
"CHARLOTTE"

ISSUE TIME: 22/1800Z
(PRODUCT OF JTWC/SATOPS)

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)

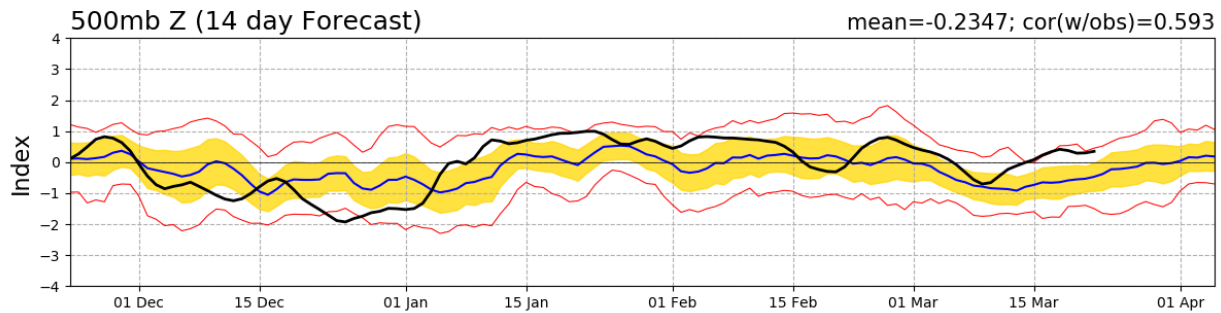
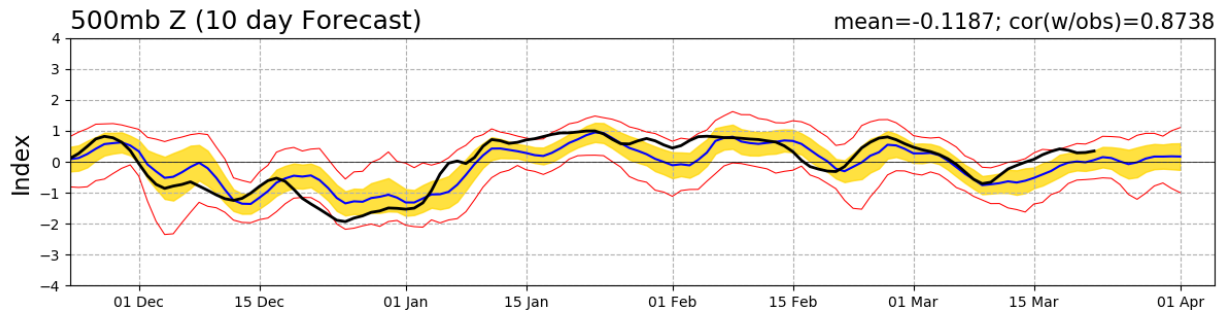
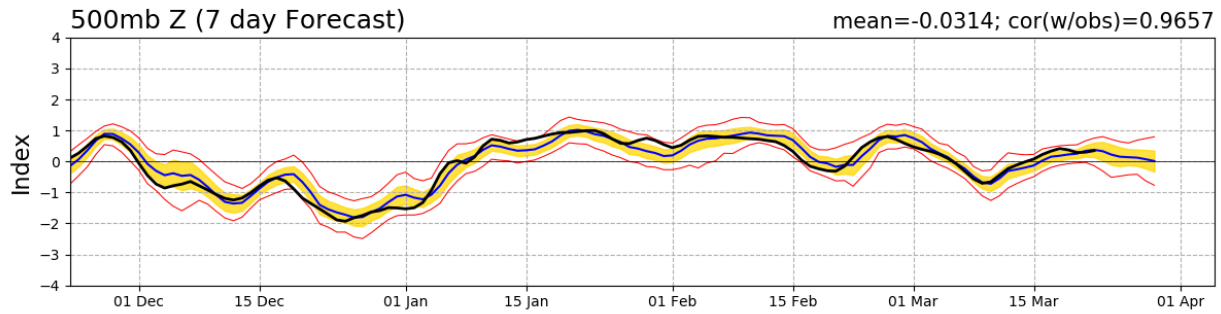
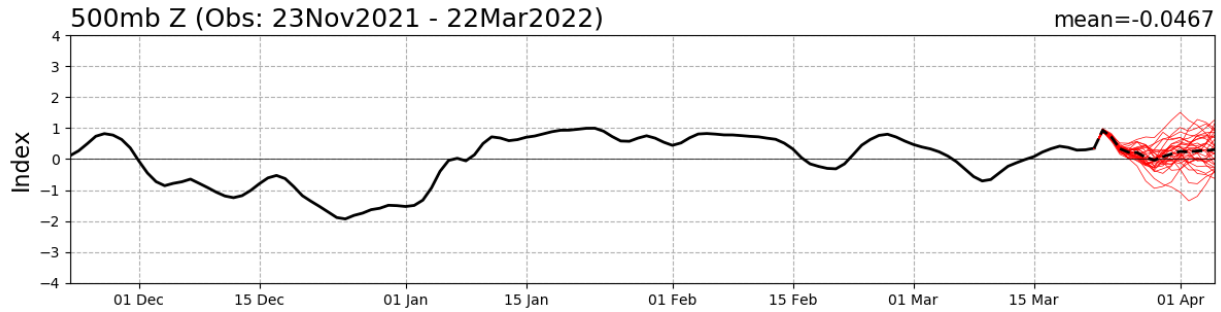
SUB
TROPICAL

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

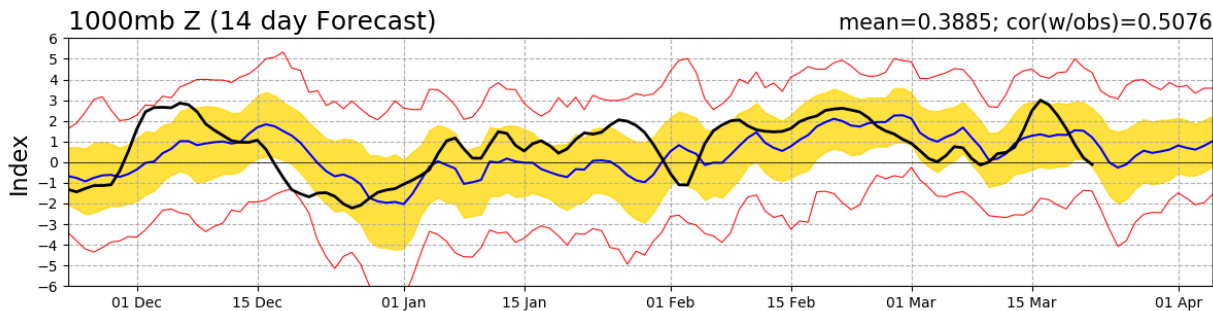
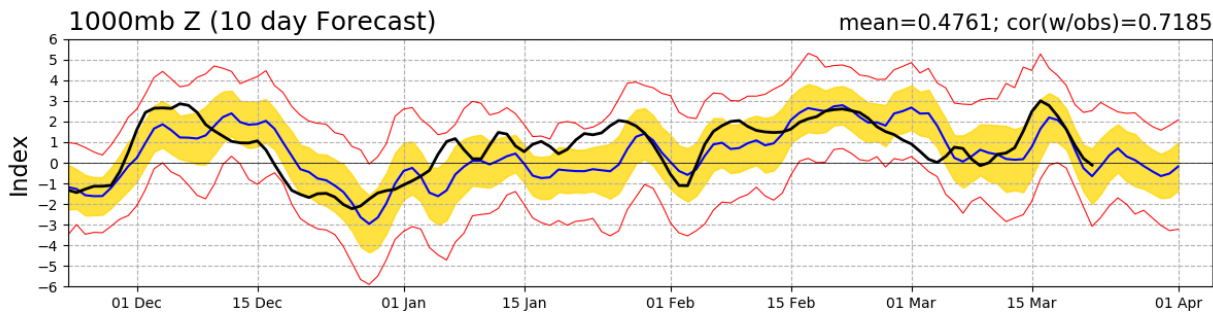
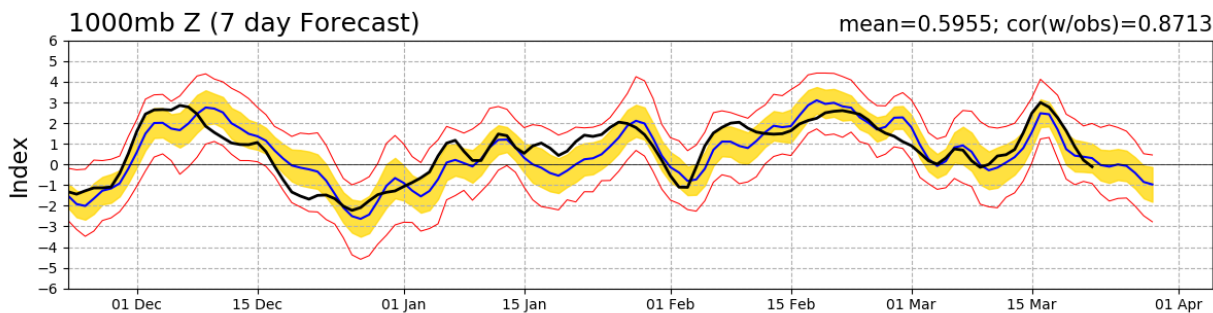
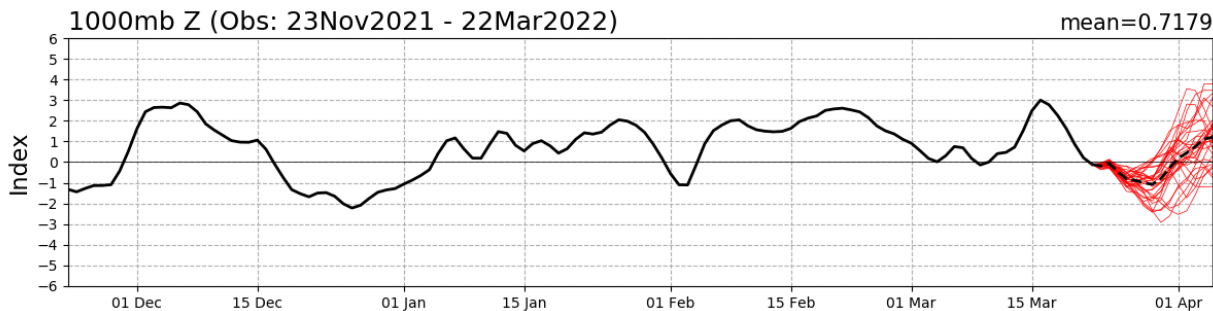
Tropical Cyclone
(Reference Warning)

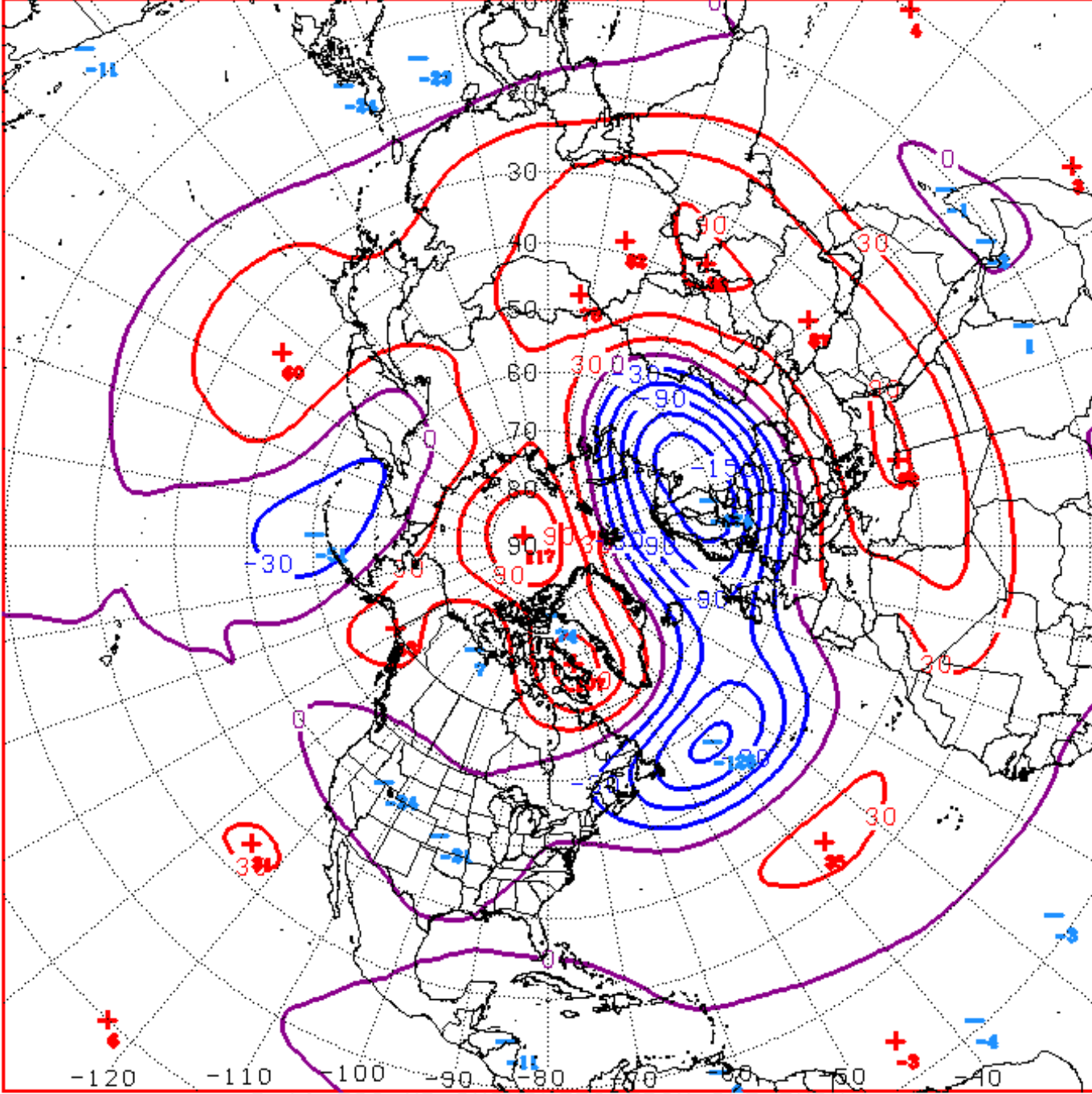
Connections to U.S. Impacts

PNA Index: Observed & GEFS Forecasts



AO Index: Observed & GEFS Forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE MAR 22 2022 1354 UTC CNTD APR 02 2022

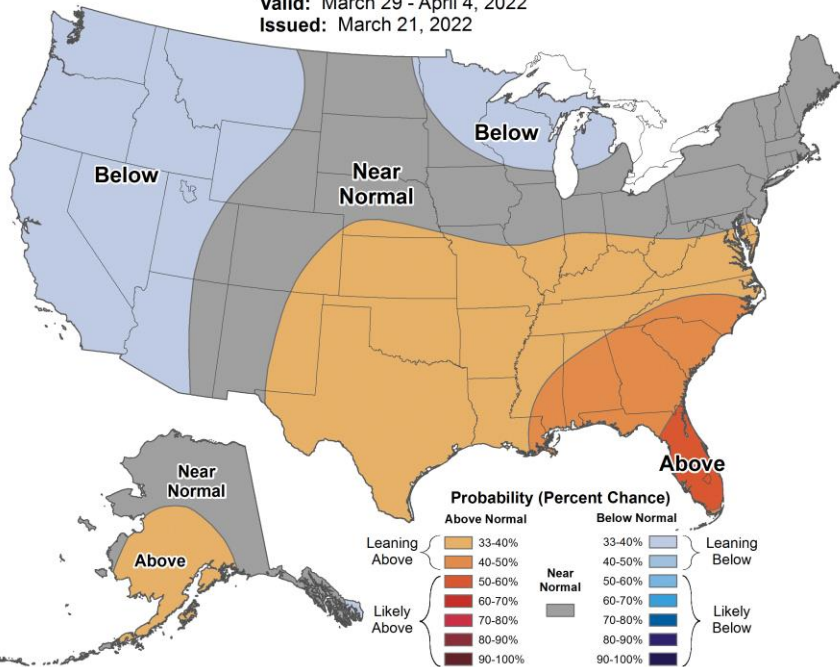
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



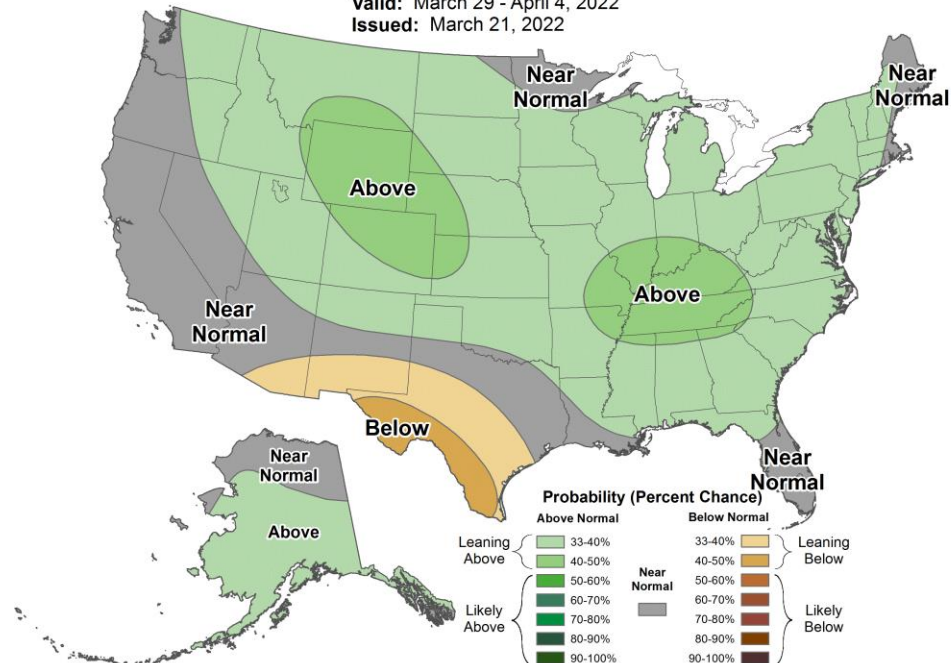
Valid: March 29 - April 4, 2022
 Issued: March 21, 2022



8-14 Day Precipitation Outlook



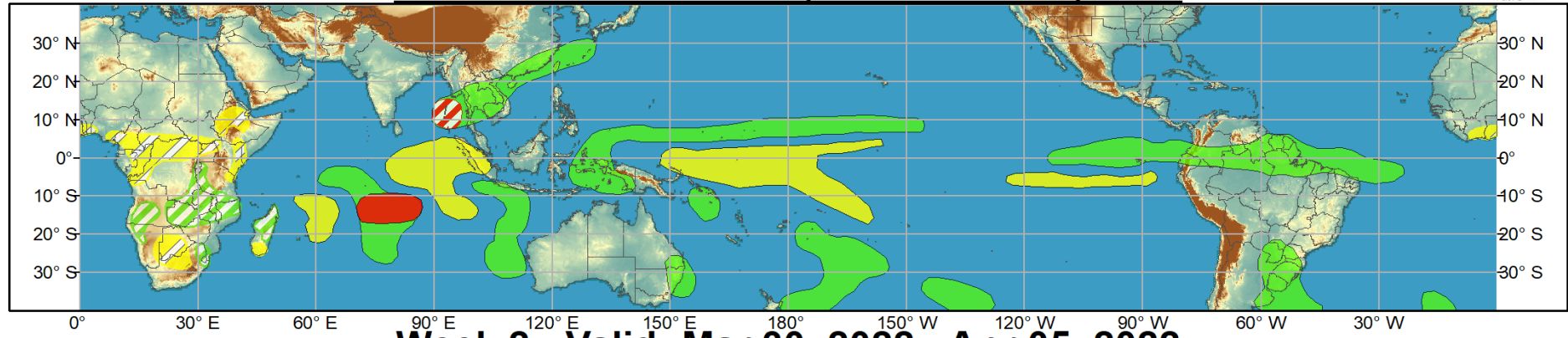
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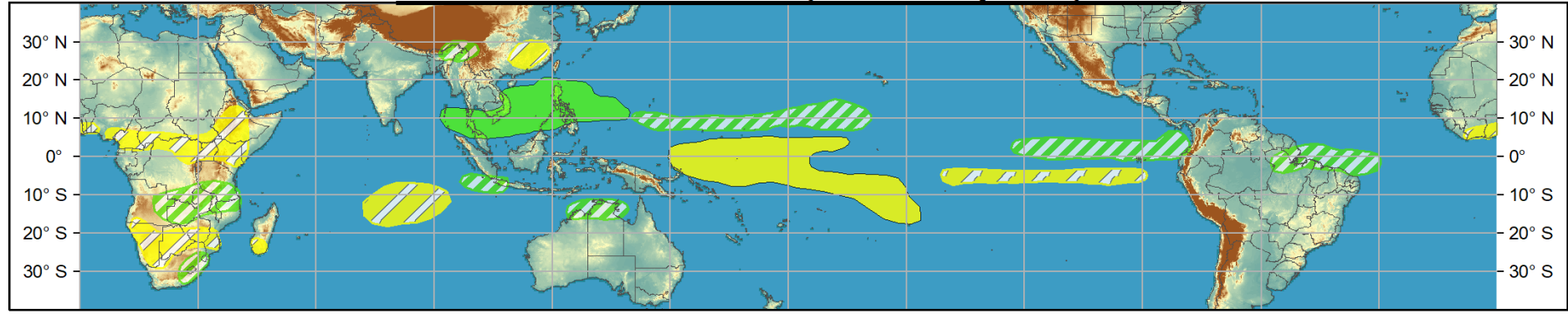


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