

Global Tropics Hazards And Benefits Outlook

4/12/2022

Thomas Collow

Outline

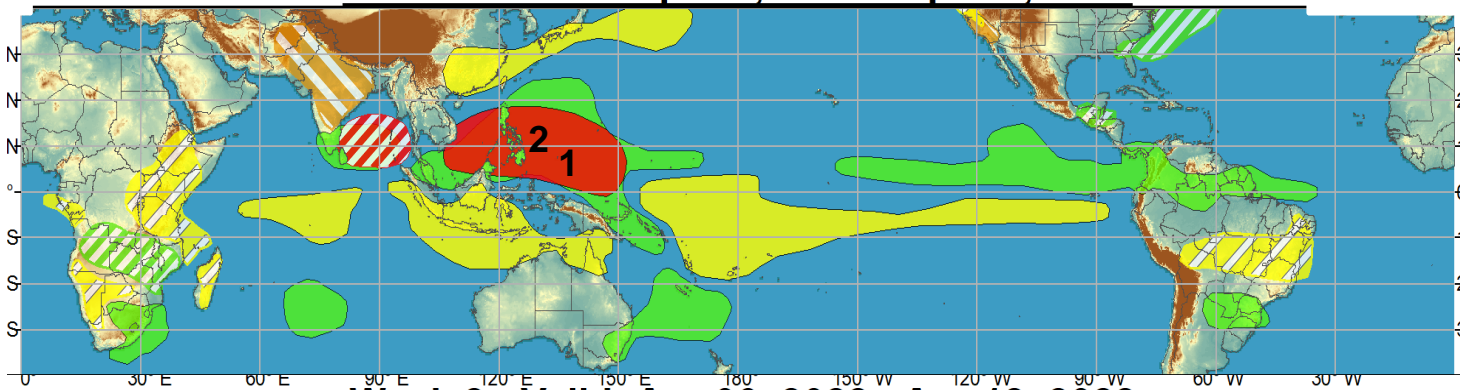
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review

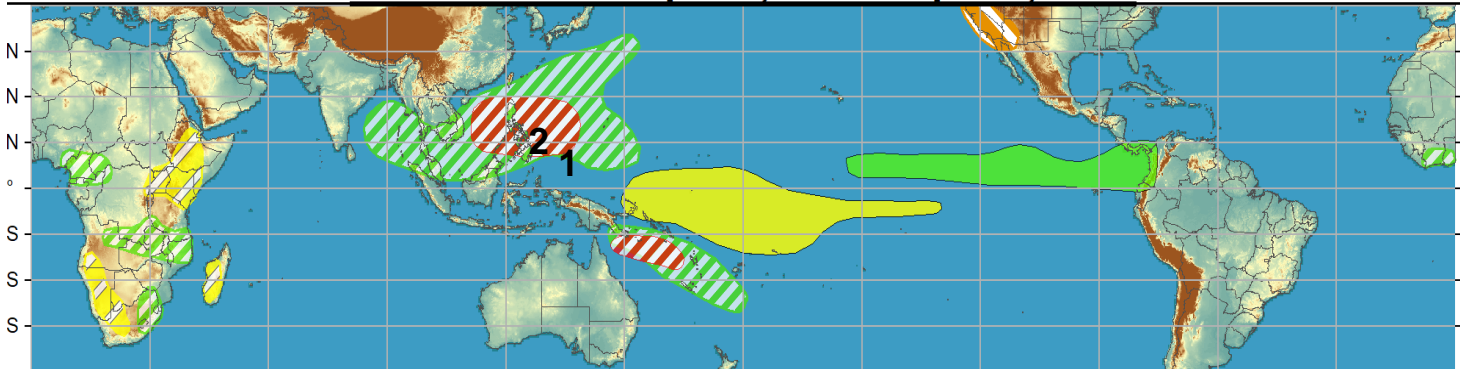
1 = Typhoon Malakas
Formed 4/7
Currently Active (95-kts)

2 = Tropical Storm Megi
Formed 4/9
Currently a remnant low

Week 1 - Valid: Apr 06, 2022 - Apr 12, 2022

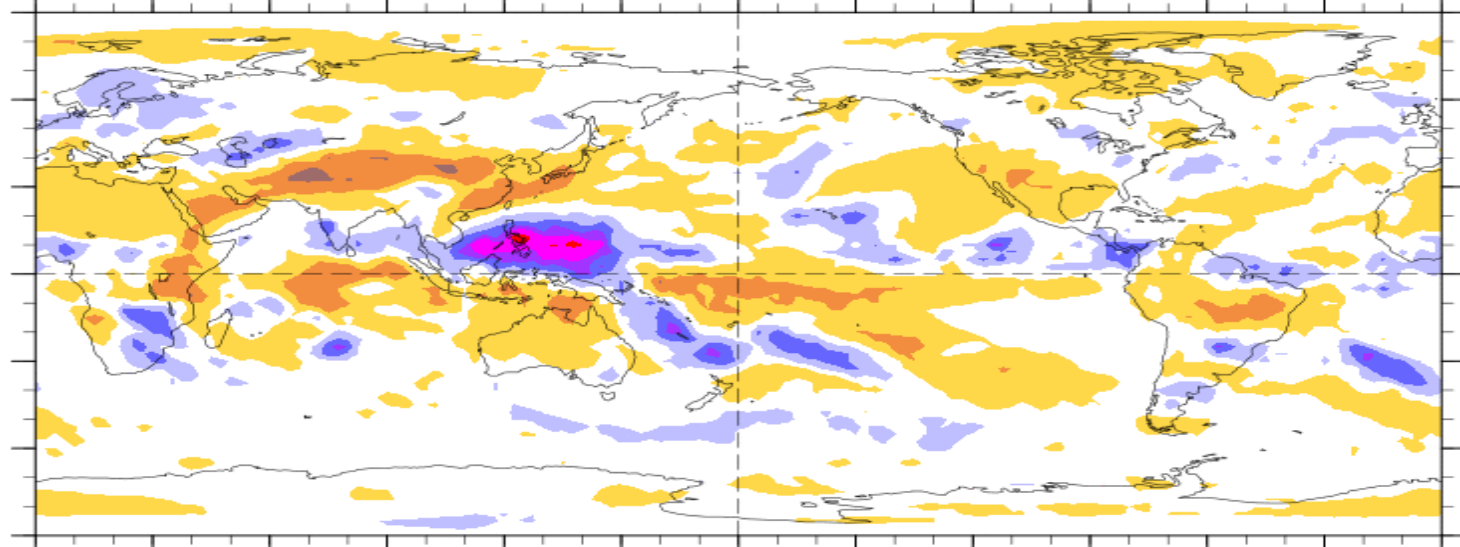


Week 2 - Valid: Apr 06, 2022 - Apr 12, 2022



7-Day Average OLR Anomaly

2022/04/04 - 2022/04/10



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (March 10, 2022 Update)

next update on 14th of Apr.!

- 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.

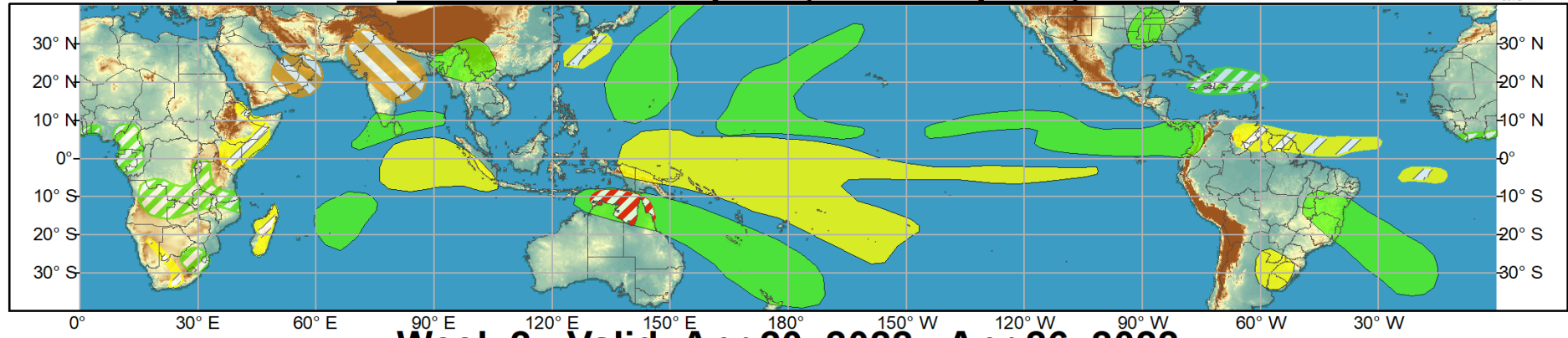
MJO and other subseasonal tropical variability:

- Following an active Madden Julian Oscillation (MJO) signal that propagated eastward across the Indian Ocean and Maritime Continent during March, the intraseasonal signal has since decayed into the RMM-based unit circle.
- Increased convection over the Western Pacific, likely tied to Rossby Wave activity, has led to an increase in the amplitude of the RMM-based MJO index in recent days.
- The MJO is forecast to remain weak due to continuing influence from the low frequency La Niña base state, but some reemergence of the intraseasonal signal is possible over the Western Hemisphere by week-2.
- Following an uptick in tropical cyclone development across the Western Pacific in the past week, the forecast eastward shift of the convective envelope favors decreased TC activity in this region during the next 2 weeks.

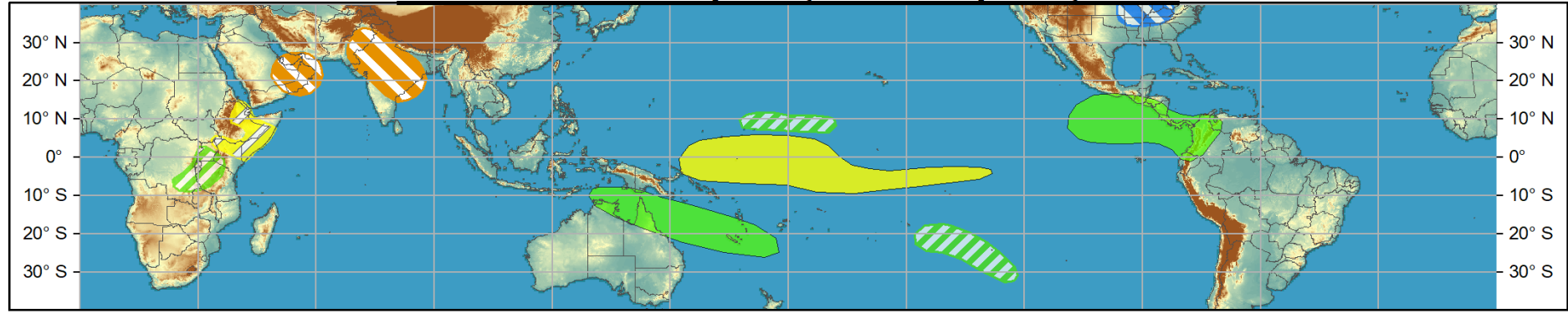


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Apr 13, 2022 - Apr 19, 2022



Week 2 - Valid: Apr 20, 2022 - Apr 26, 2022



Produced: 04/12/2022
Forecaster: Collow

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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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

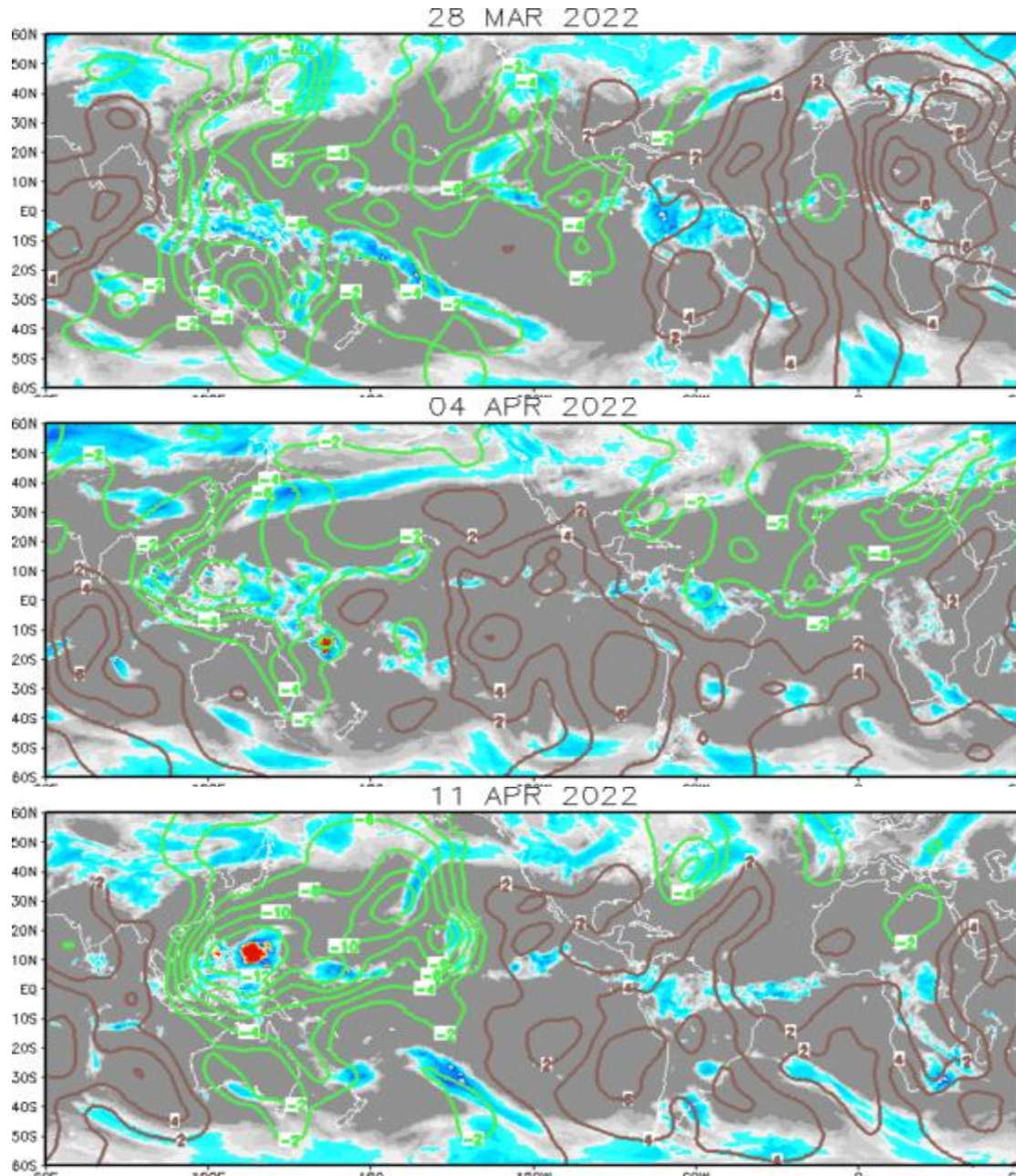
Green: Enhanced Divergence

Brown: Enhanced Convergence

Wave-1 pattern observed in the spatial upper level velocity potential field, with enhanced convection across the Pacific, and suppressed convection over the eastern Atlantic Ocean, Africa, and the Indian Ocean.

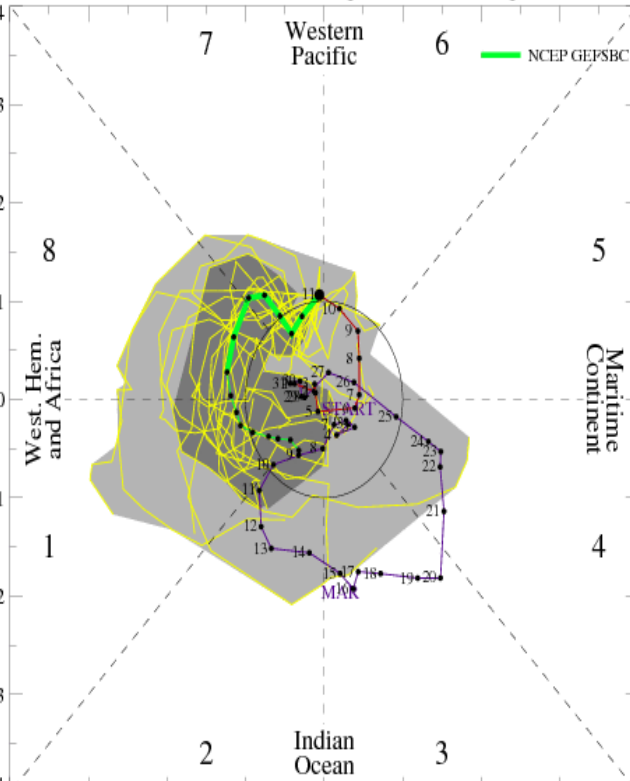
Pattern becomes more wave-2 like as enhanced Kelvin Wave activity led to increased convection across Africa.

Pattern returns to wave-1 as convection over Africa dissipates; enhanced convection spreading across the Pacific.

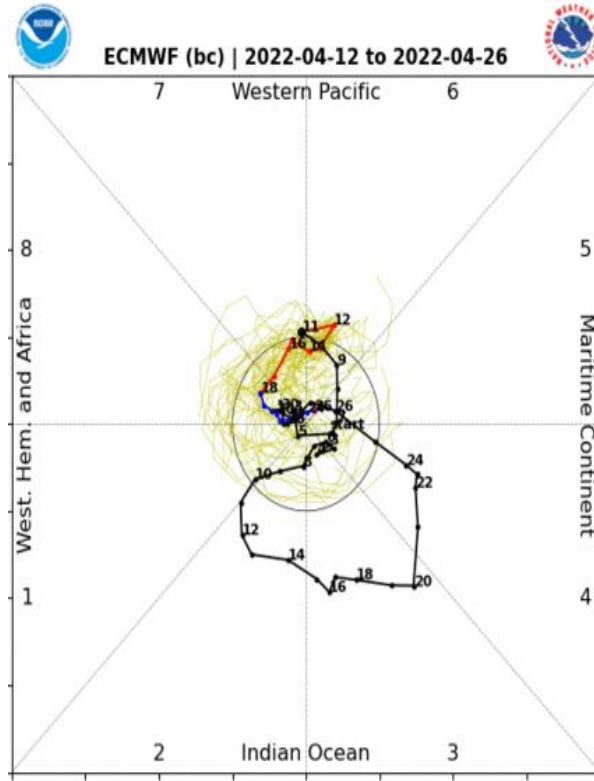


MJO Observation/Forecast

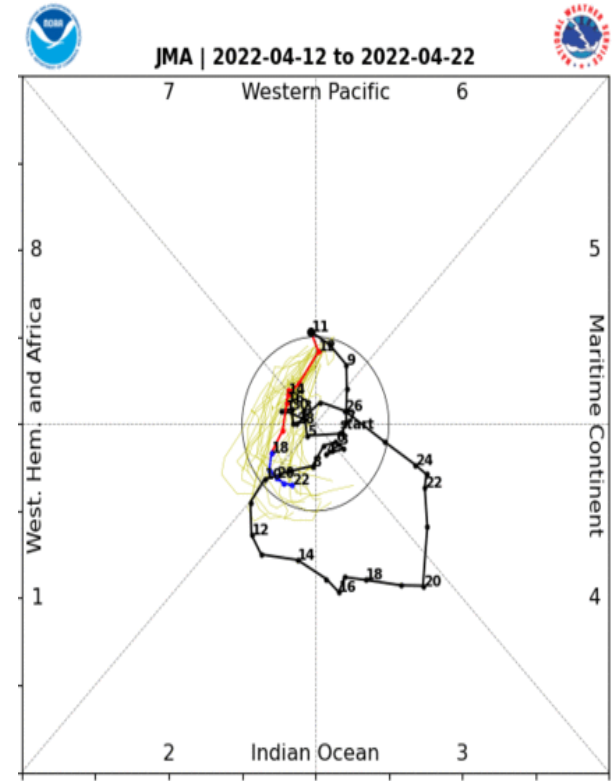
[RMM1, RMM2] forecast for Apr-12-2022 to Apr-26-2022



GEFS



ECMWF

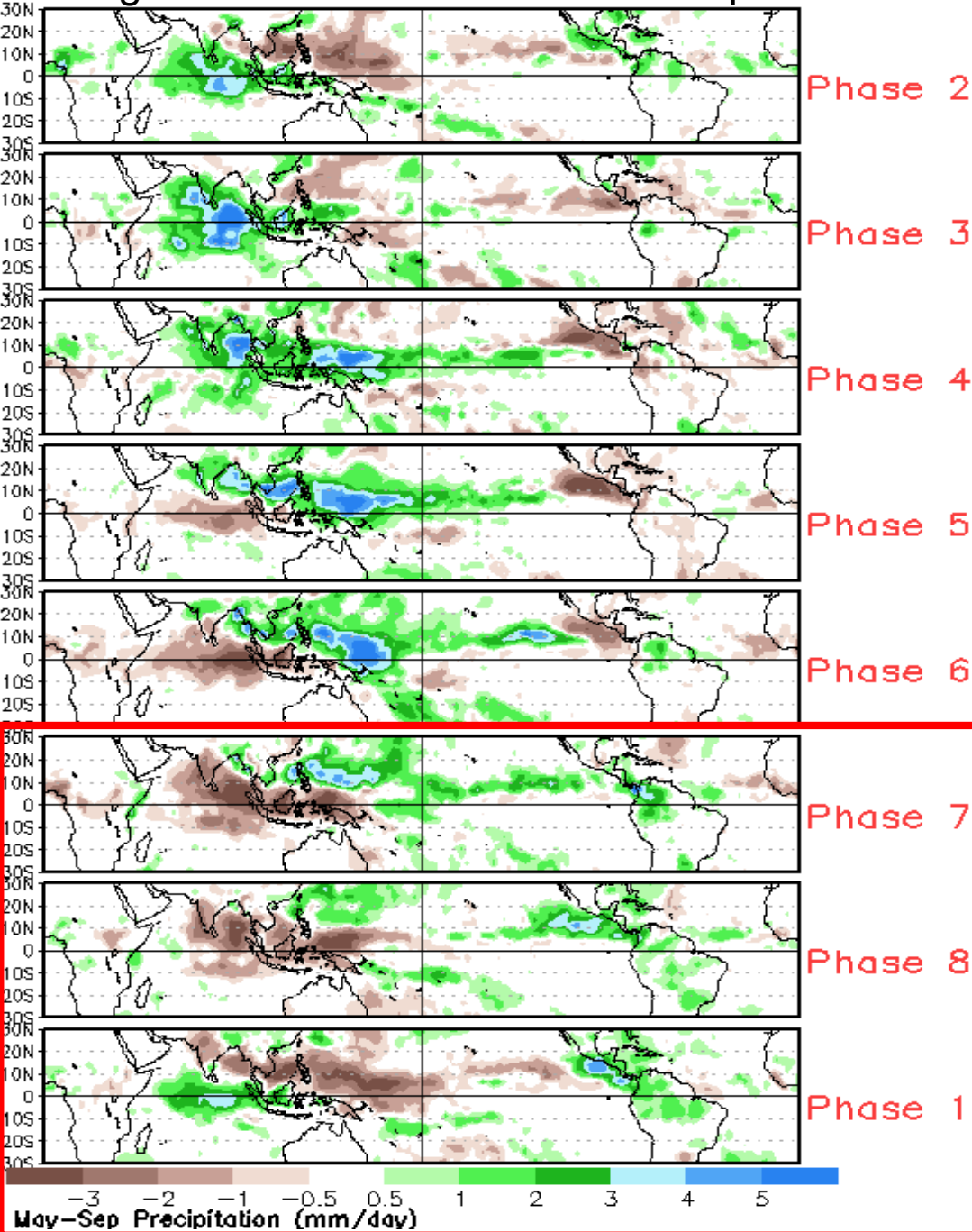


JMA

GEFS, ECMWF, and JMA ensemble means generally agree in terms of a weak MJO signal propagating around the periphery of the unit circle over the Western Hemisphere during the next 2 weeks.

Some GEFS ensemble members indicate a more robust intraseasonal signal in phases 8 and 1 compared to the ECMWF and JMA ensembles.

Average Conditions when the MJO is present



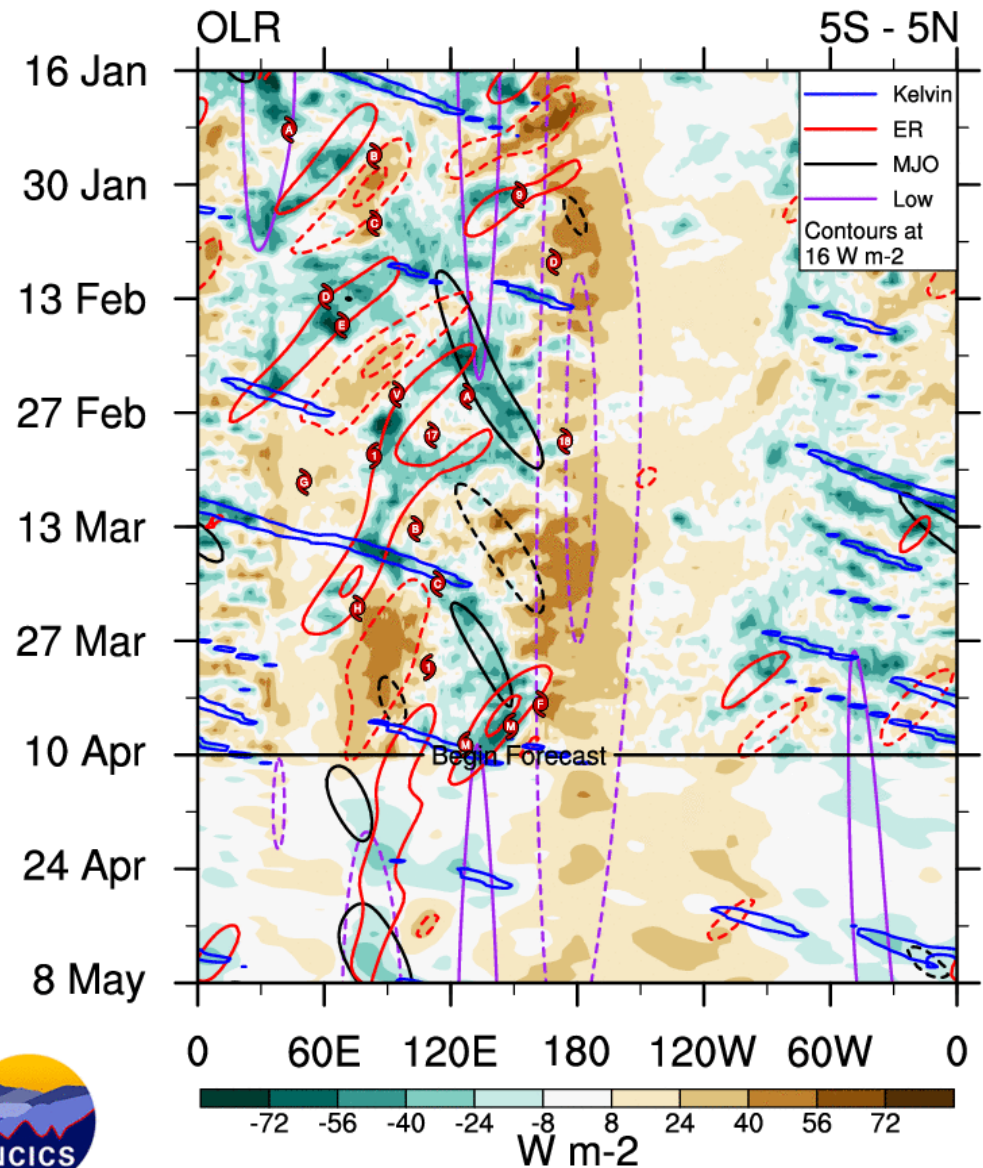
Note: April is an “in-between” month with regard to these composites

CAVEAT: These panels are representative of robust MJO events.

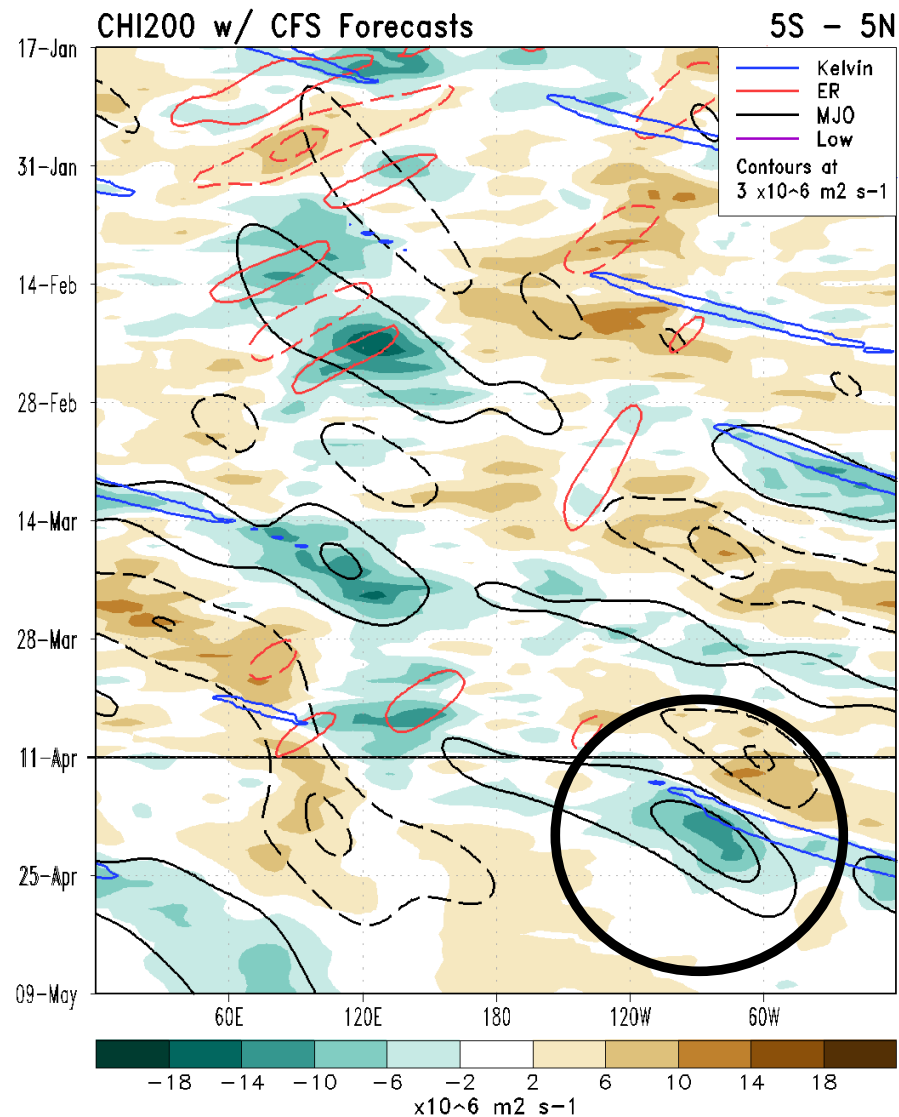
MJO activity was depicted coming through the OLR filtering over the Maritime Continent and Western Pacific during March, with **Rossby Wave** activity becoming more dominant in early April.

Kelvin wave activity is coupled with convection near the Prime Meridian.

Low frequency contours depict ENSO cold conditions, and are currently the most prominent signal.

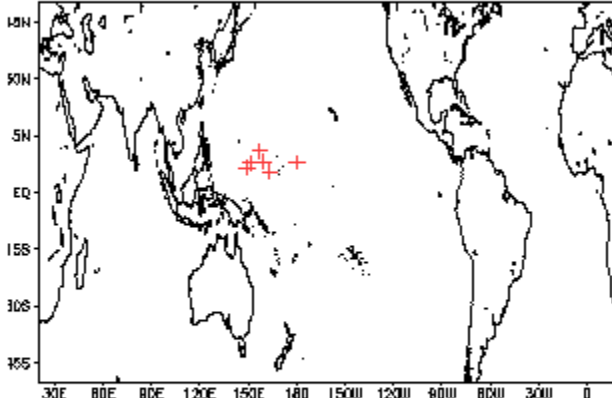


When filtering using the upper-level velocity potential, an enhanced **MJO** signal emerges and propagates across the Western Hemisphere by week-2.

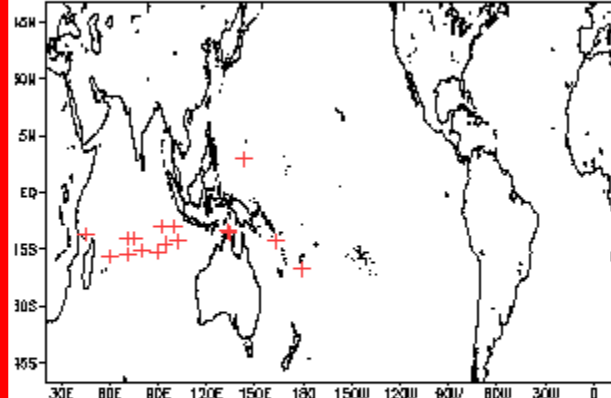


April Tropical Storm Formation by MJO phase

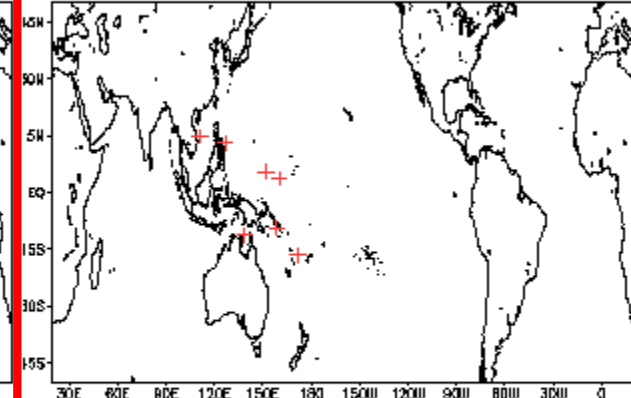
Phase 1 (70 days) 7 storms



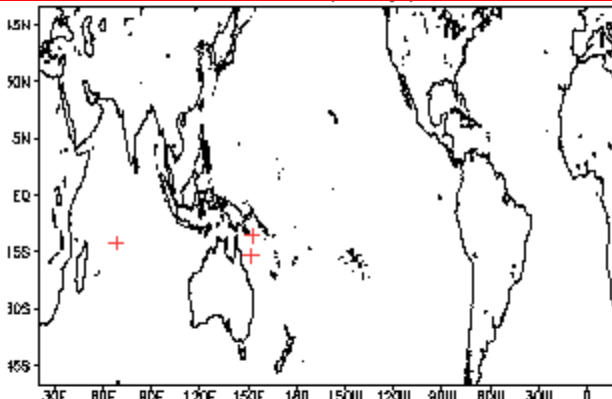
Phase 4 (95 days) 17 storms



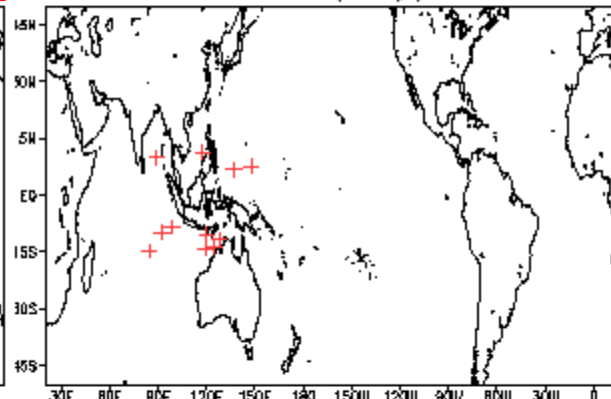
Phase 7 (87 days) 8 storms



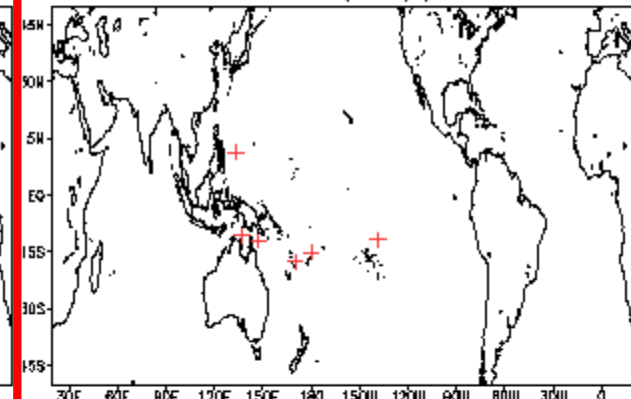
Phase 2 (65 days) 4 storms



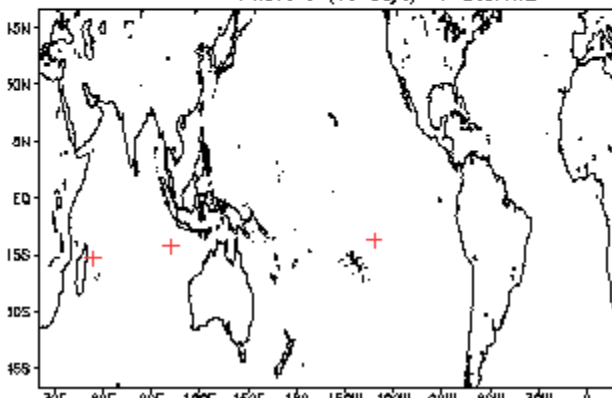
Phase 5 (77 days) 12 storms



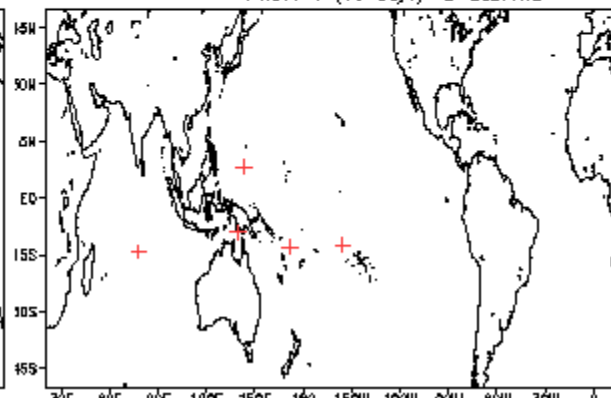
Phase 8 (75 days) 7 storms



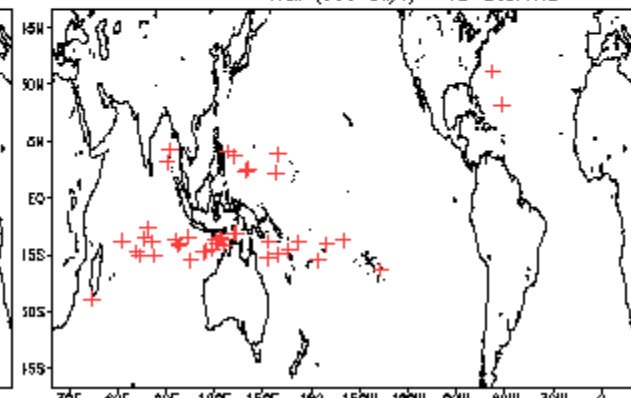
Phase 3 (68 days) 4 storms



Phase 6 (65 days) 8 storms



Null (388 days) 43 storms





JOINT TYPHOON WARNING CENTER



Naval Research Laboratory
Marine Meteorology Division
Cloud Layer Product
Valid: 2022-04-12 12:00:00

ABIO

ABPW

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

**RMNTS TD
03W
"MEGI"**

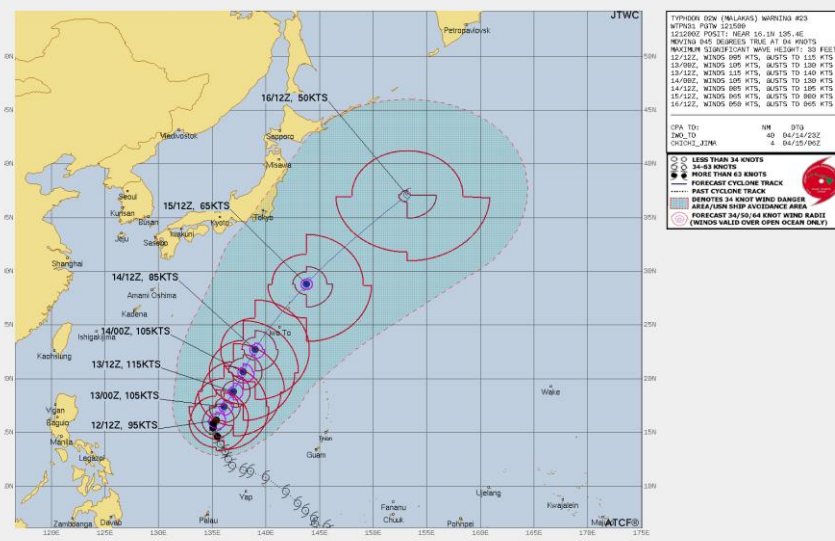
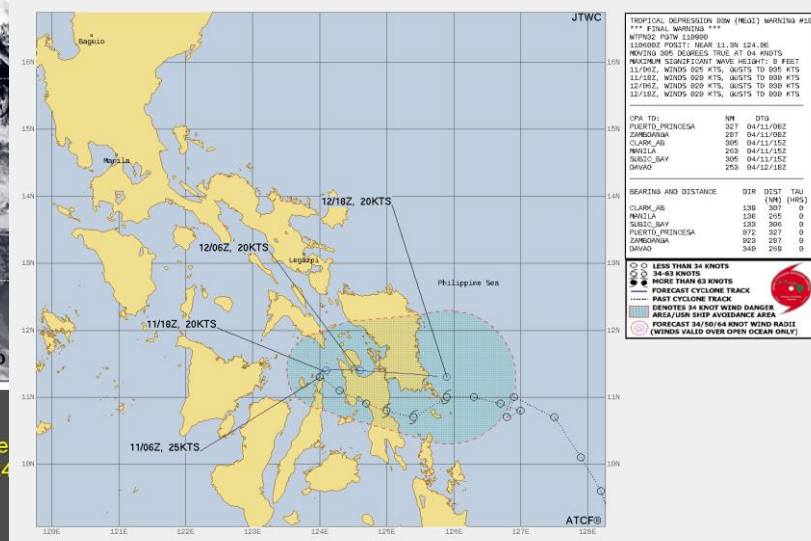
**TY 02W
"MALAKAS"**

**NO SUSPECT AREAS
(ABIO)**

92S

LOW

TC deve
within 24



Storm Track Density Distribution, IC=20220411

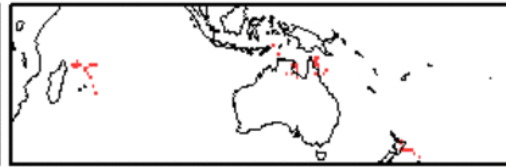
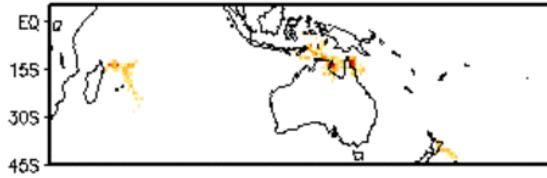
Week 1 Forecast: 0413-0419

TRACK DENSITY

FILTERED

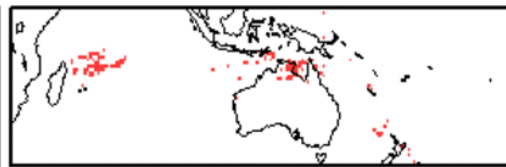
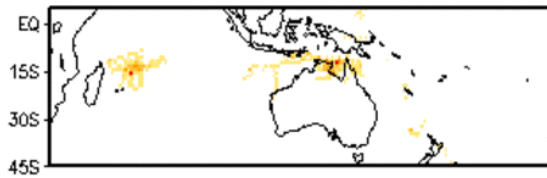
CFS

CFS, SI=0.5 AUS=0.6 SP=0.3



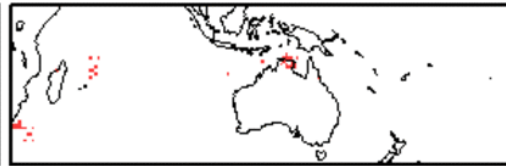
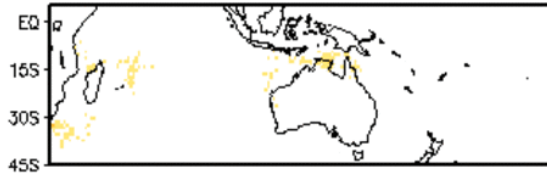
GEFS

GEFS, SI=0.1 AUS=0.6 SP=0.0



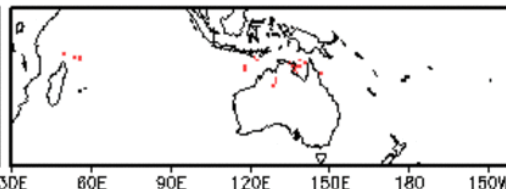
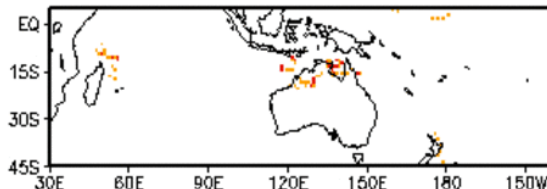
ECMWF

ECMWF, SI=0.5 AUS=0.4 SP=0.0



ECCC, IC=20220407

ECCC, SI=0.8 AUS=1.1 SP=0.3

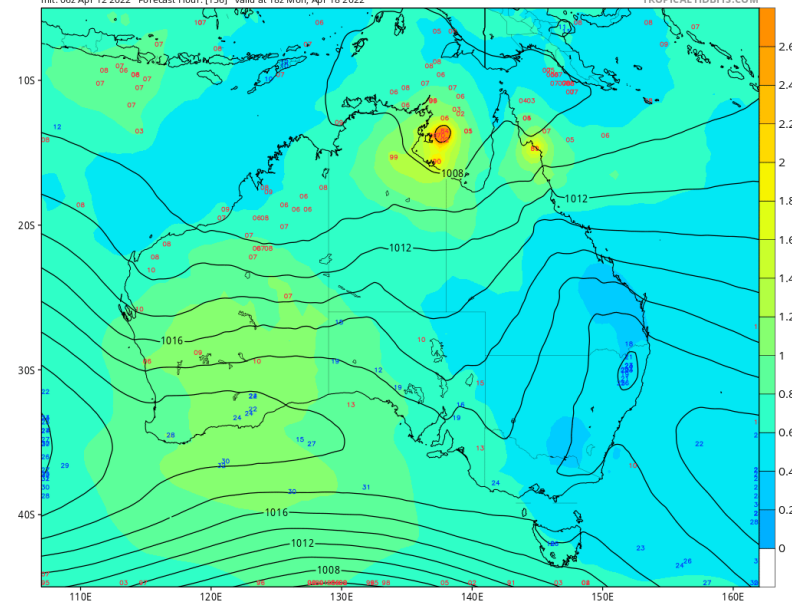


Possible tropical cyclone development in the vicinity of the Gulf of Carpentaria later in week-1, mostly indicated in the GEFS ensembles.

GEFS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | Highs: blue), & Normalized Spread (σ)

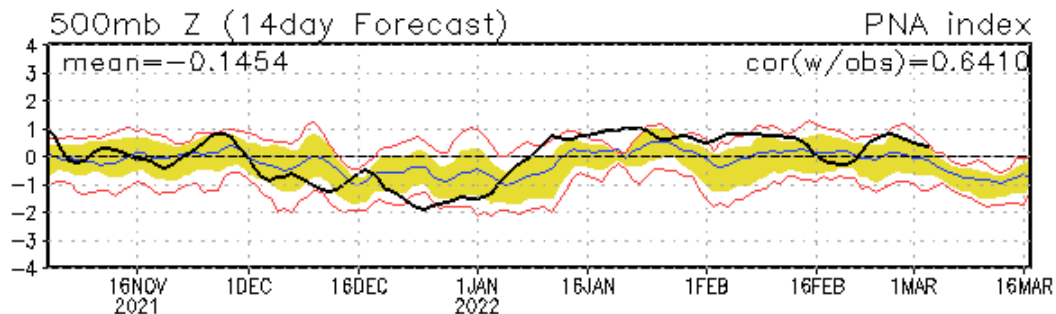
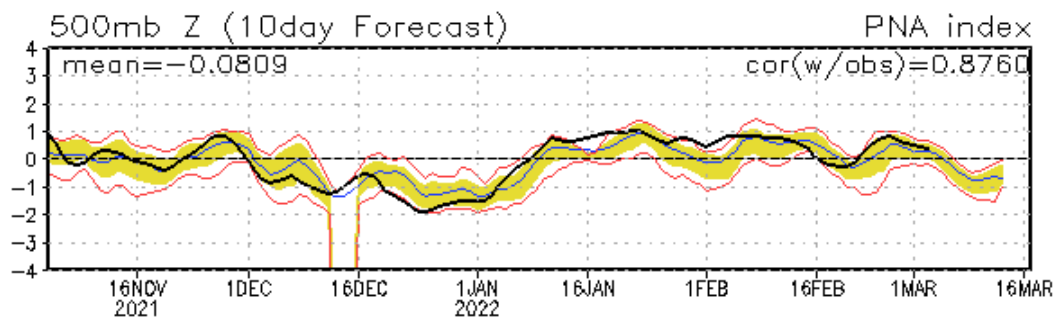
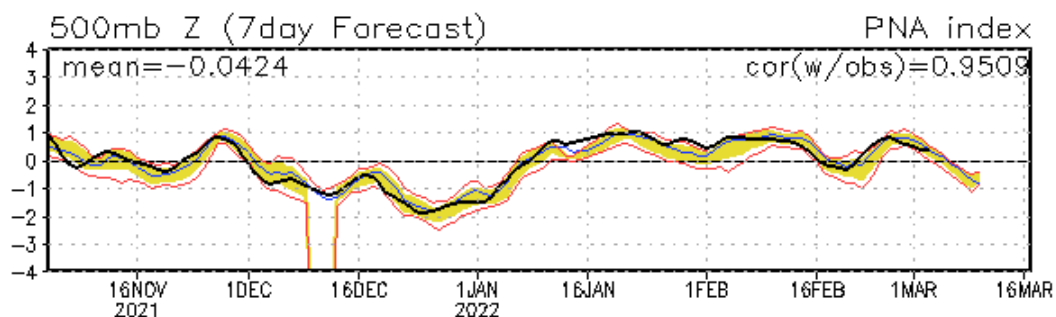
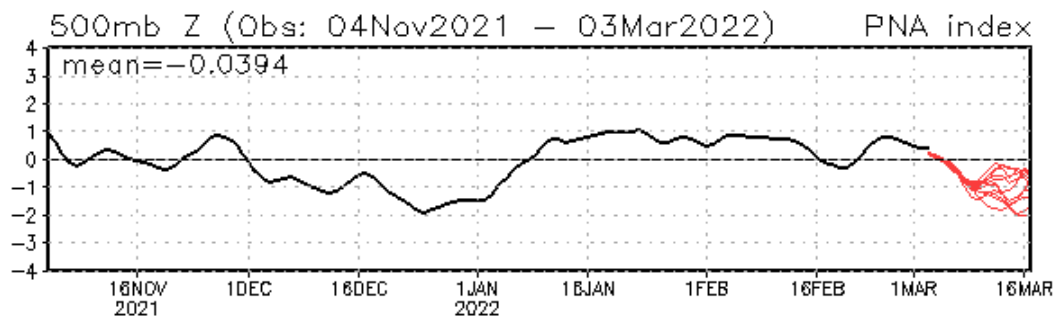
Init: 06z Apr 12 2022 Forecast Hour: [156] valid at 18z Mon, Apr 18 2022

TROPICALTIDBITS.COM

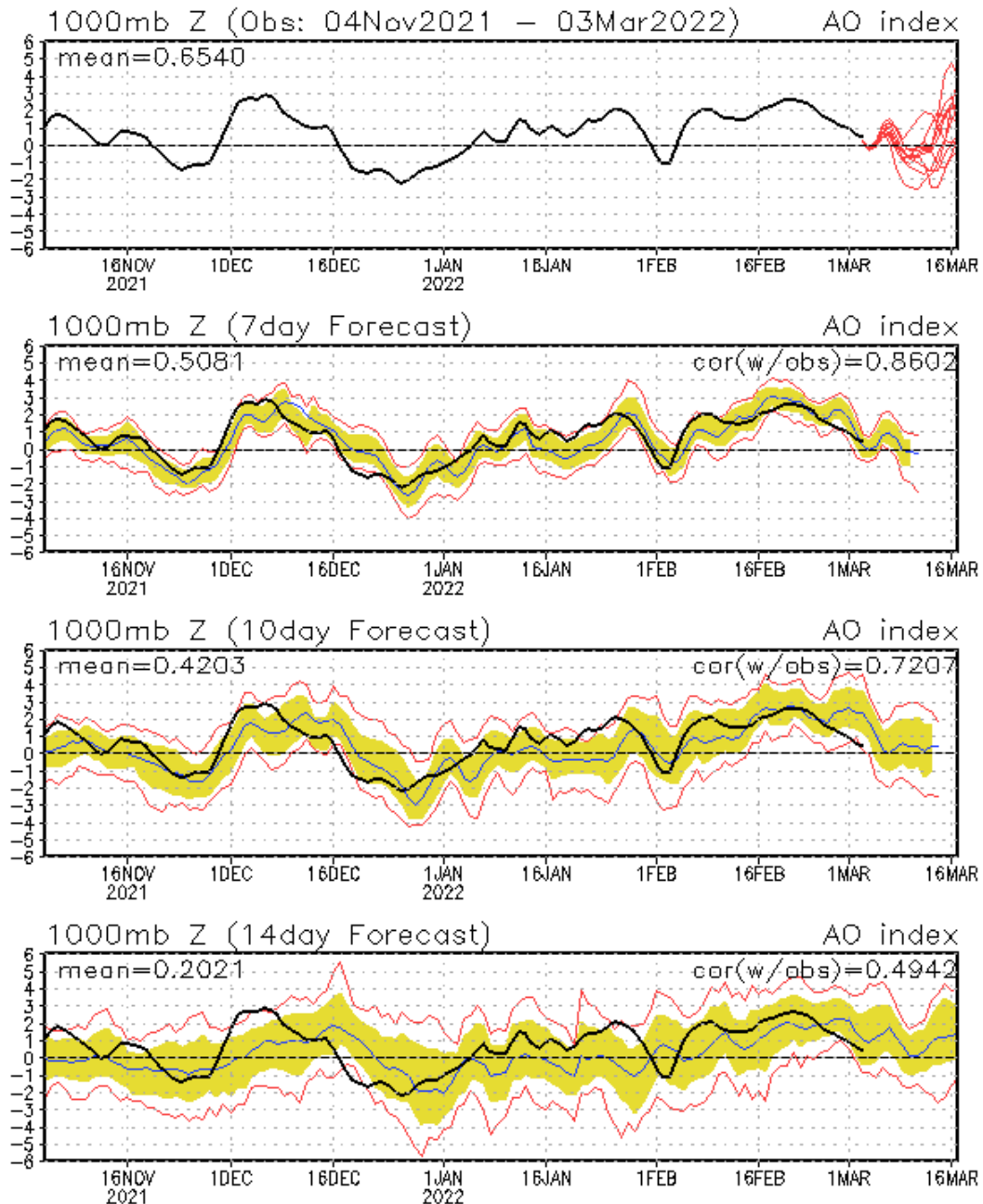


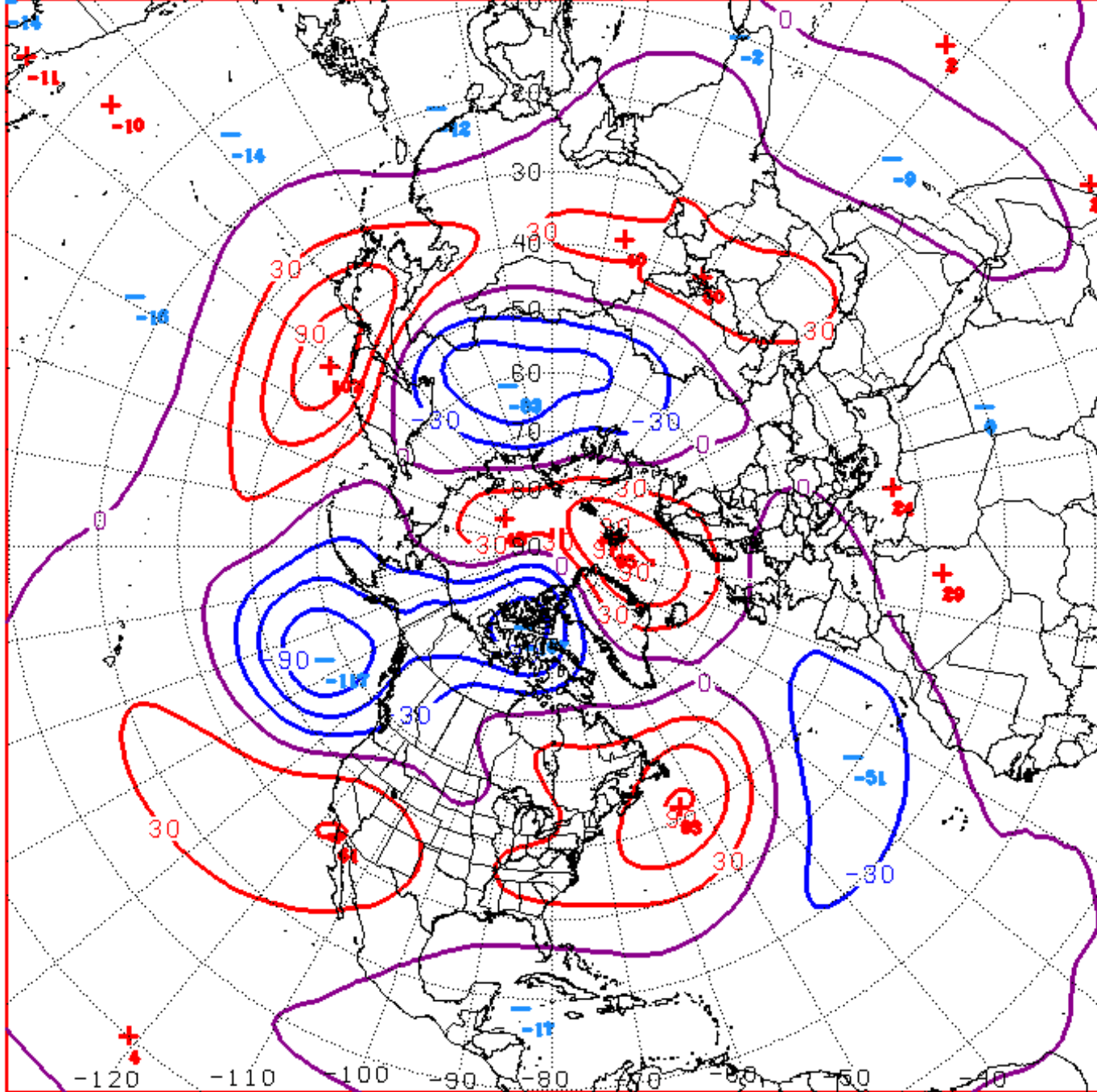
Connections to U.S. Impacts

PNA: Observed & ENSM forecasts



AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE APR 12 2022 1357 UTC CNTD APR 23 2022

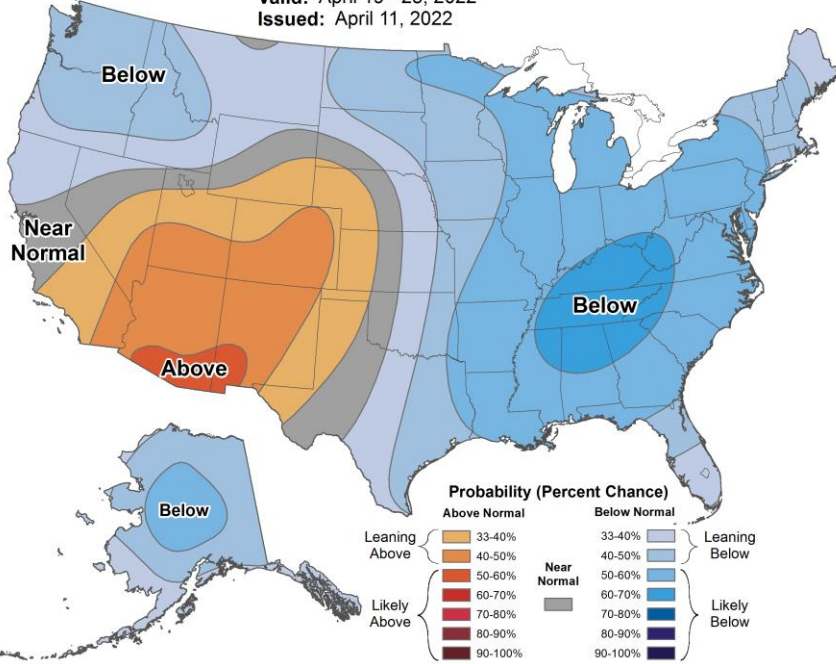
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



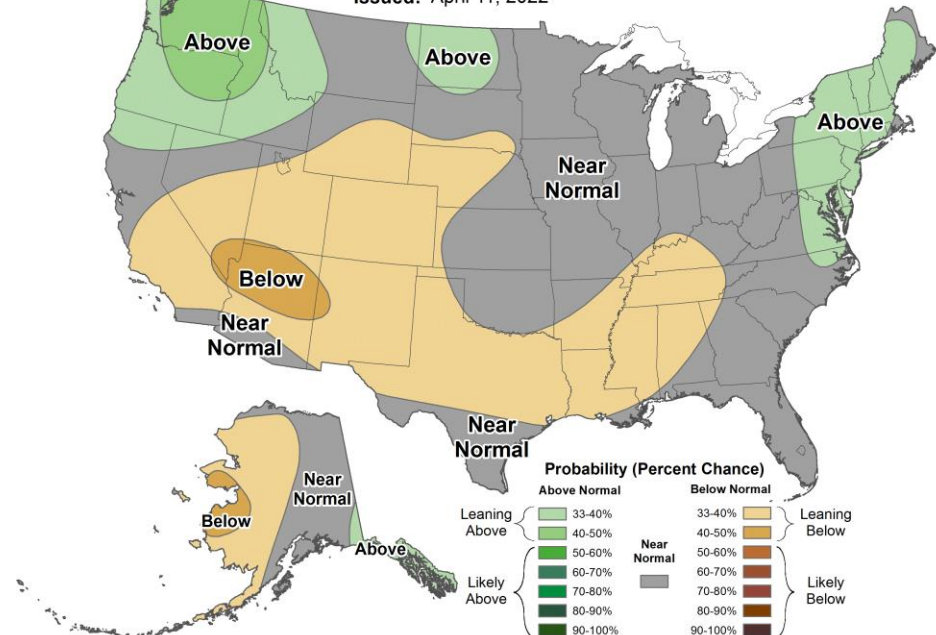
Valid: April 19 - 25, 2022
Issued: April 11, 2022



8-14 Day Precipitation Outlook



Valid: April 19 - 25, 2022
Issued: April 11, 2022

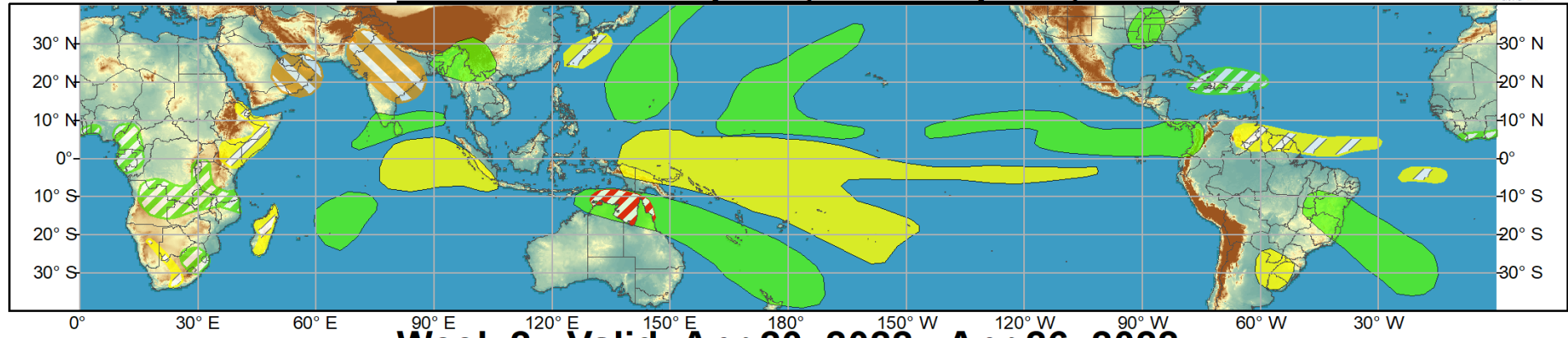


Fairly amplified pattern, potential for much-above average temperatures early in the period for the East.

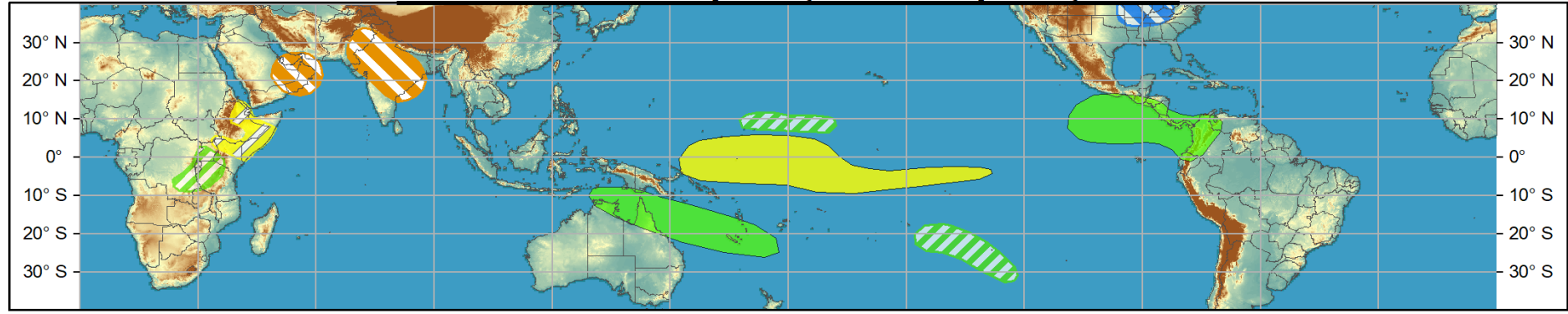


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