

Global Tropics Hazards And Benefits Outlook

2/15/2022

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

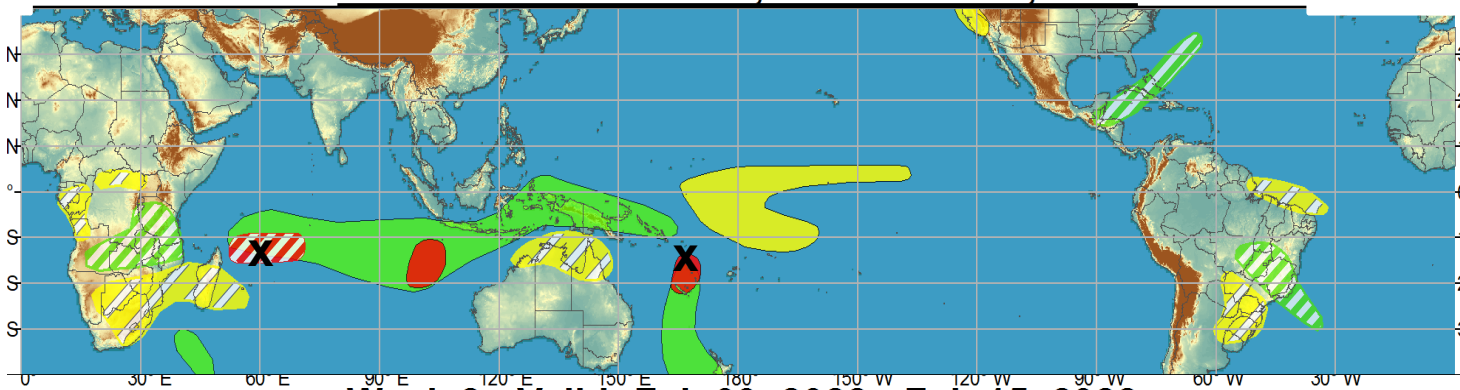
Outlook Review

Latest TCs

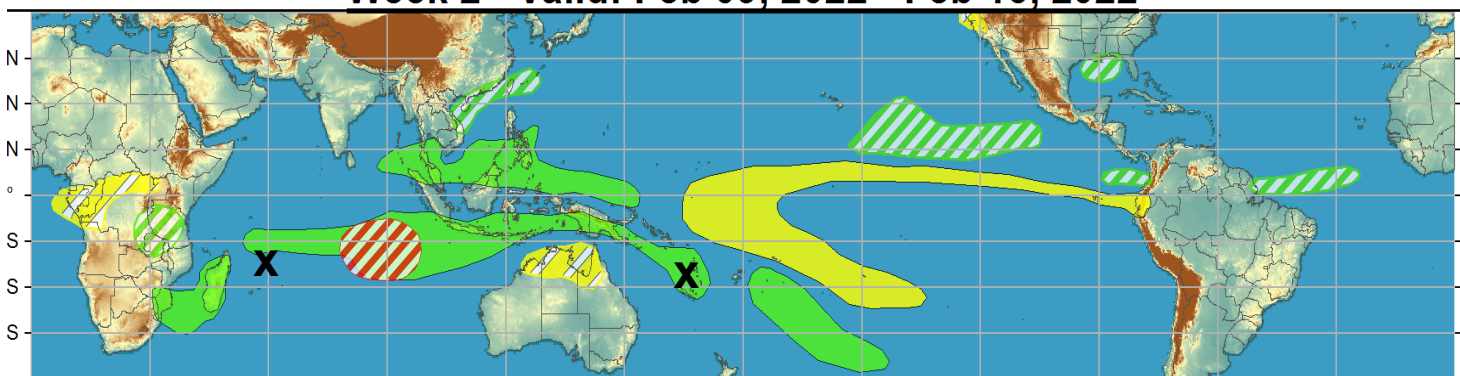
X= Tropical Storm
Dumako
(Southern Indian
Ocean)

X= Severe Tropical
Cyclone Dovi
(Southwest Pacific)

Week 1 - Valid: Feb 09, 2022 - Feb 15, 2022

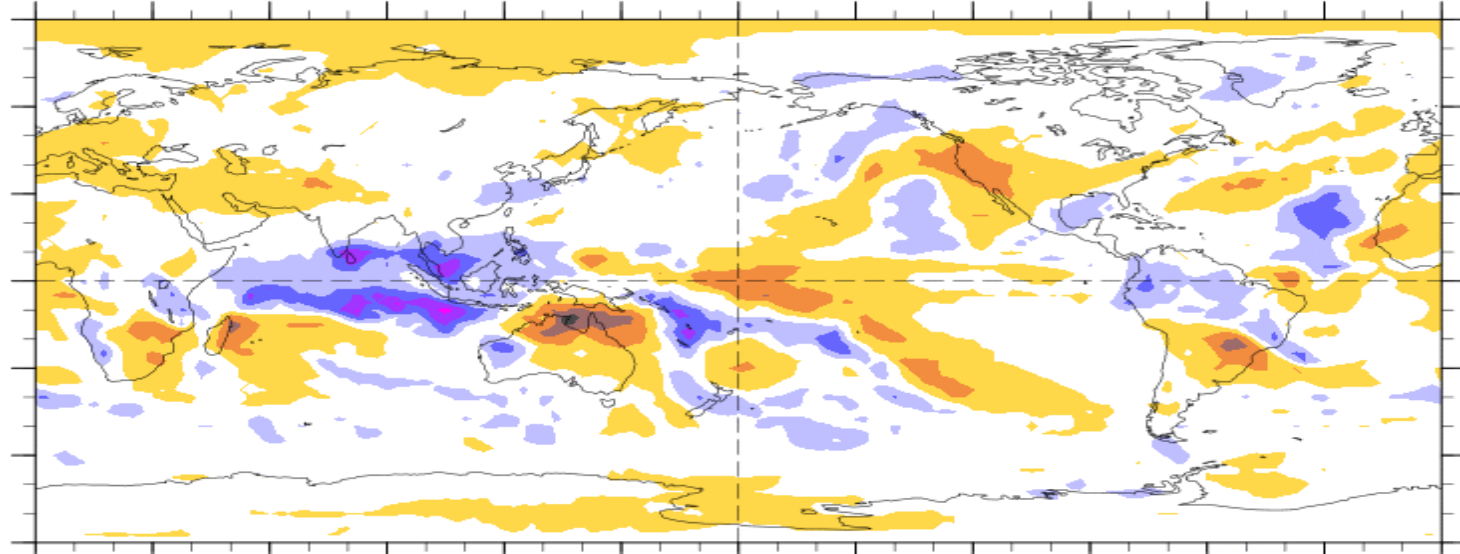


Week 2 - Valid: Feb 09, 2022 - Feb 15, 2022



7-Day Average OLR Anomaly

2022/02/07 - 2022/02/13



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (February 10, 2022 Update)

next update on 10th of Mar.!

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is likely to continue into the Northern Hemisphere spring (77% chance during March-May 2022) and then transition to ENSO-neutral (56% chance during May-July 2022).

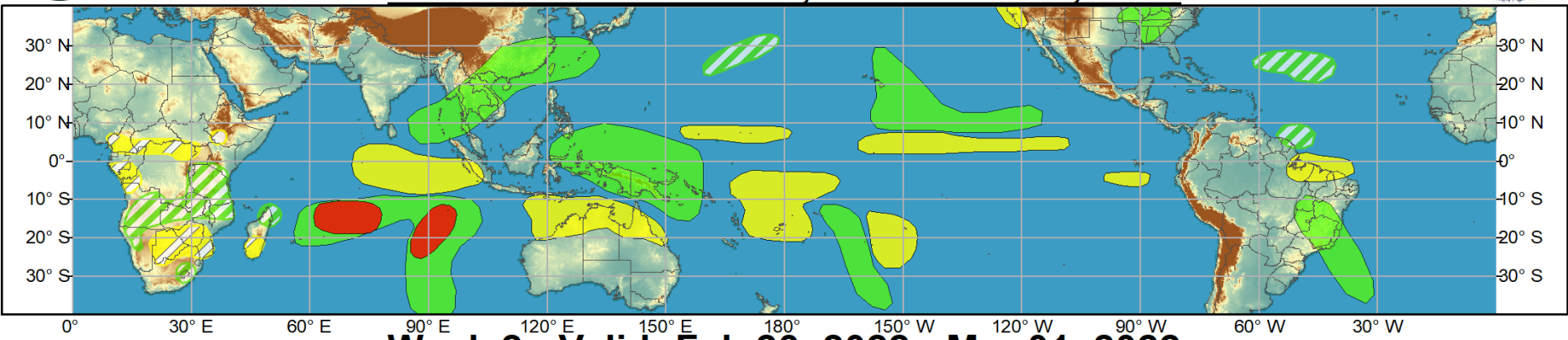
MJO and other subseasonal tropical variability:

- Following a weakening of the Madden Julian Oscillation (MJO) during late January, enhanced convection has developed across the Indian Ocean in response to increased equatorial Rossby Wave Activity.
- The GEFS and ECMWF ensembles favor renewed MJO propagation toward the Maritime Continent and far Western Pacific during the next 2 weeks.
- This MJO event is expected to constructively interfere with the ongoing La Niña, favoring an atmospheric response typical of La Niña across the extratropical regions of the Pacific and North America during late February and early March.

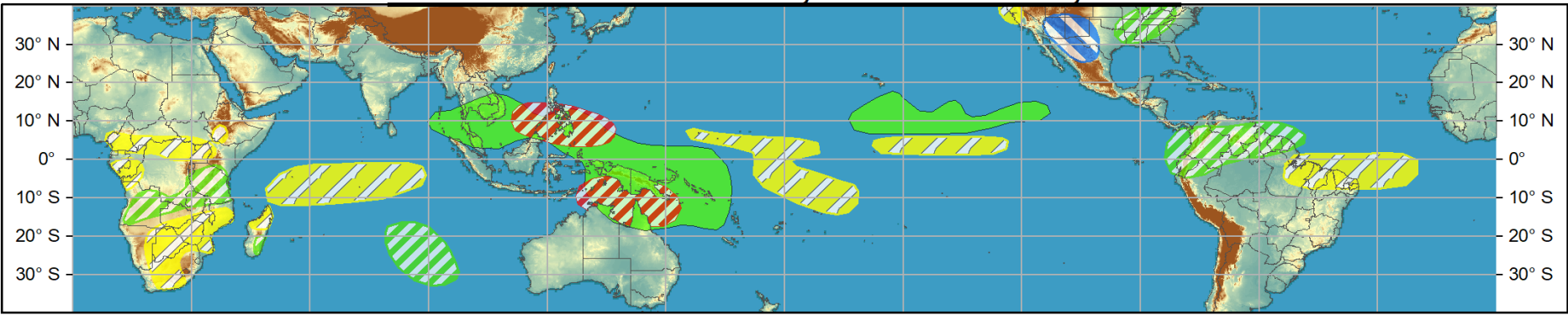


Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

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



Week 2 - Valid: Feb 23, 2022 - Mar 01, 2022



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.

Produced: 02/15/2022
Forecaster: Collow

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

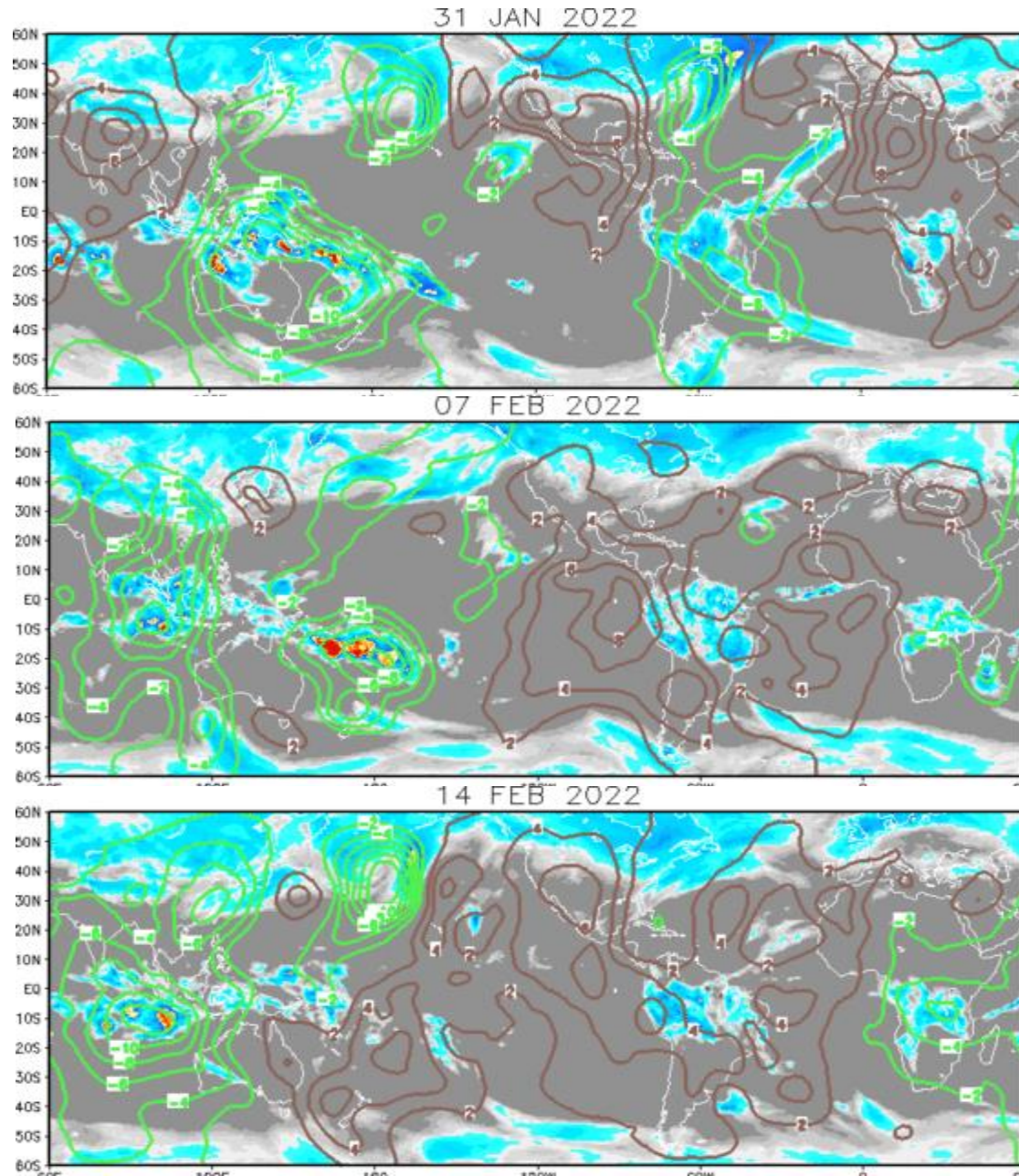
Green: Enhanced Divergence

Brown: Enhanced Convergence

Enhanced convection over the southern Maritime Continent and southwest Pacific associated with increased equatorial Rossby Wave activity.

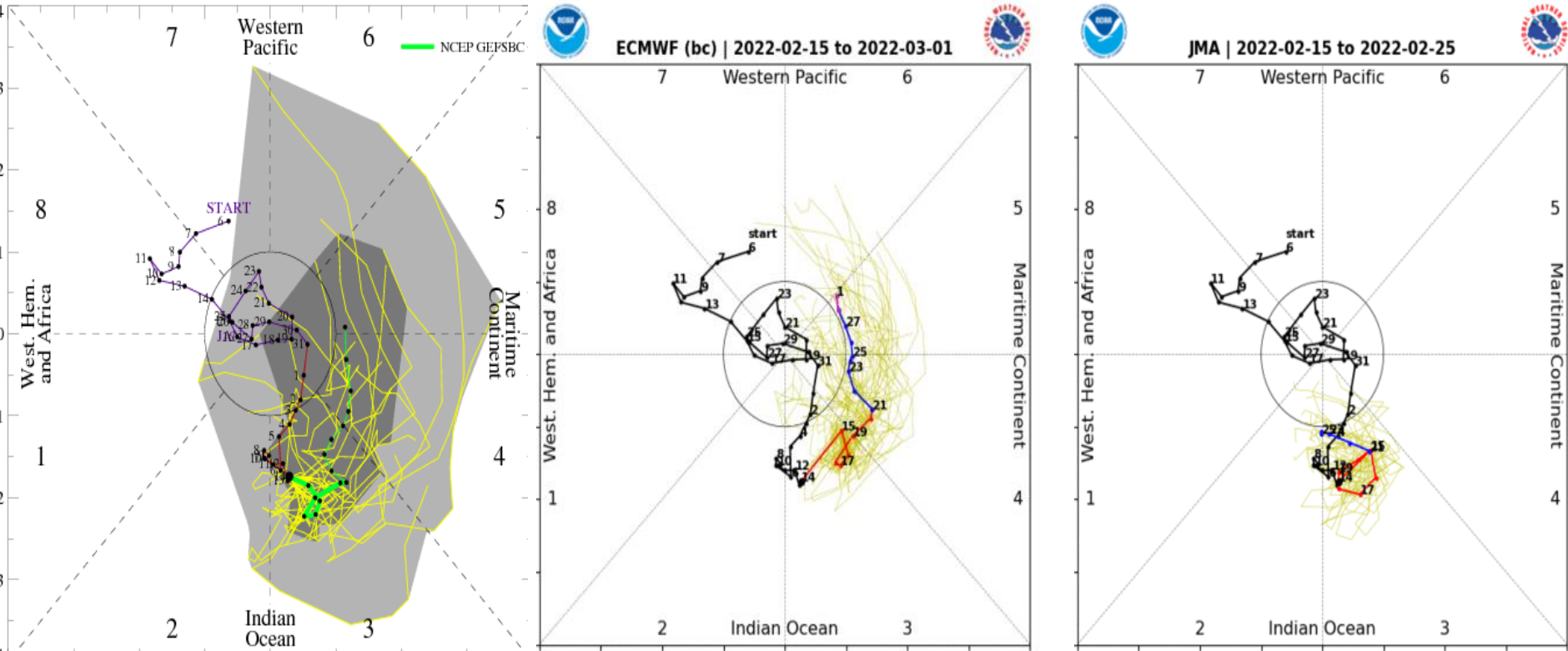
A wave-1 spatial pattern in the velocity potential field developed in early February, with signs of a more coherent MJO emerging.

Enhanced convection persists west of the Date Line, particularly across the eastern Indian Ocean; convection remains suppressed over much of the Western Hemisphere.



MJO Observation/Forecast

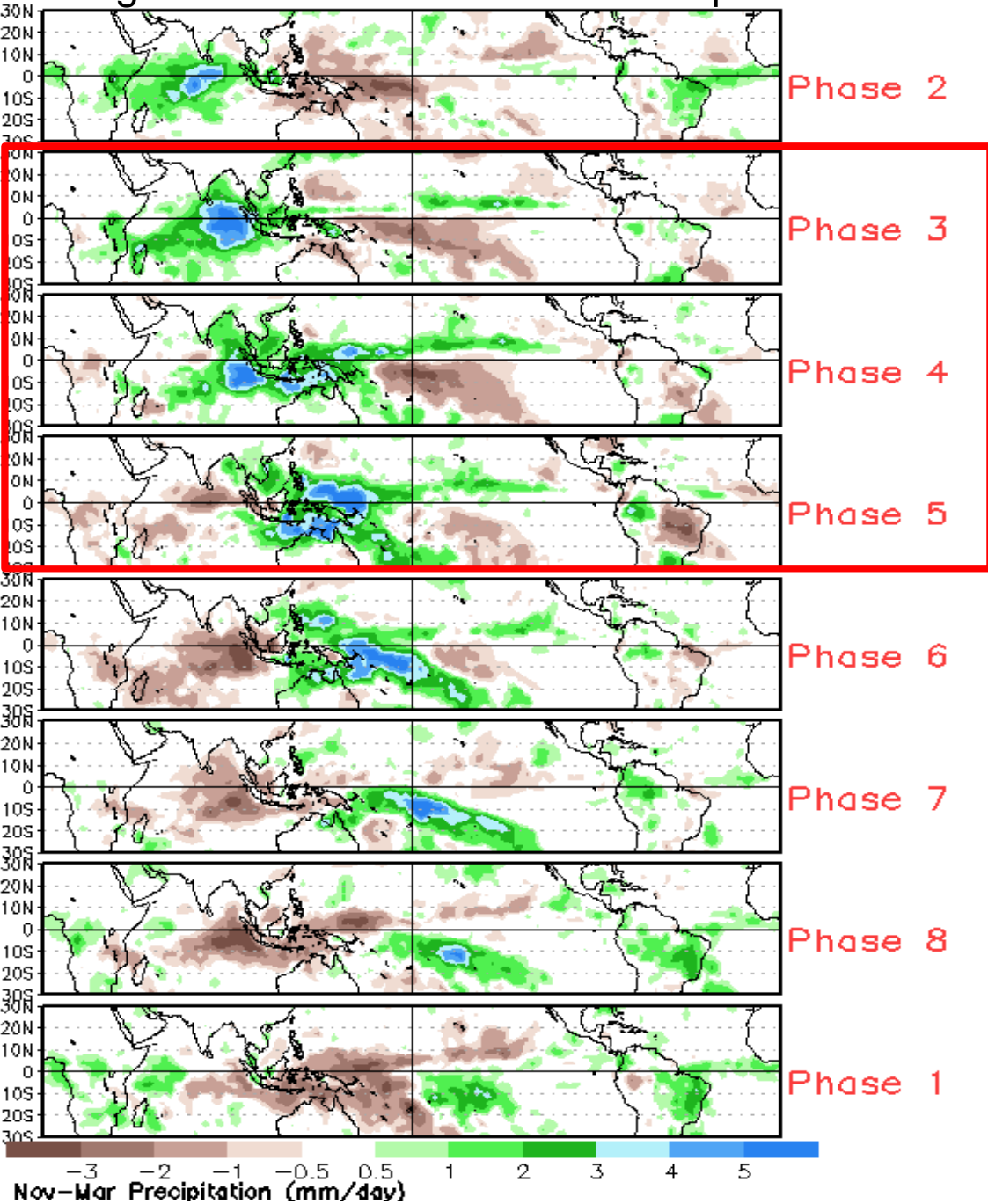
[RMM1, RMM2] forecast for Feb-15-2022 to Mar-01-2022



The ECMWF and GFS ensembles depict eastward propagation of the MJO toward the Maritime Continent and far Western Pacific during the next 2 weeks (RMM phases 3-5).

The JMA meanders the MJO in phase 3 with little eastward propagation.

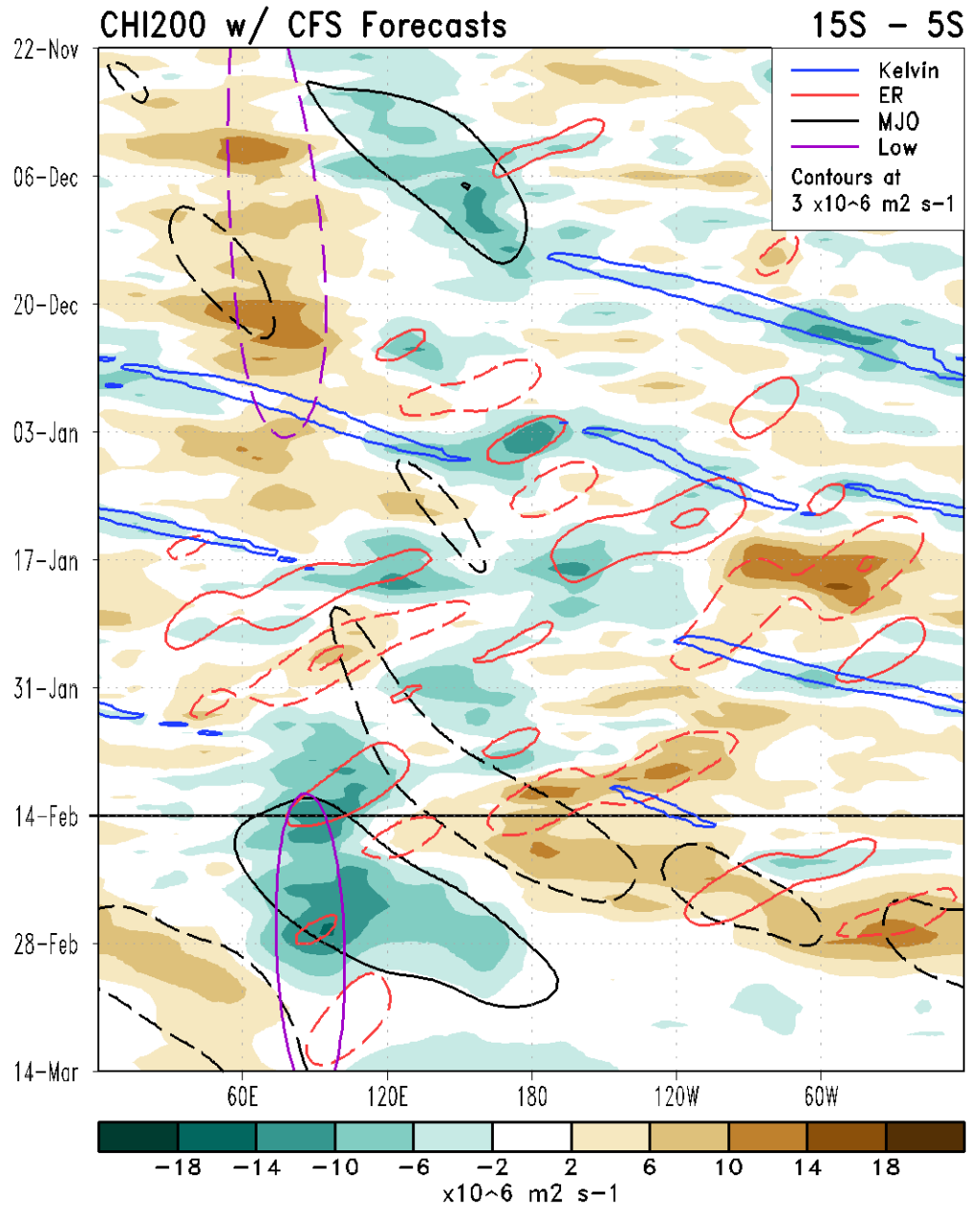
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

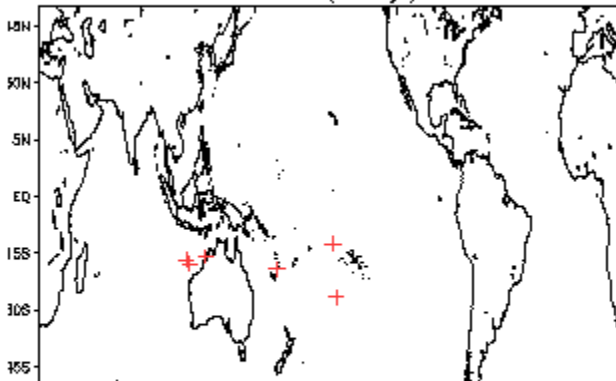
Enhanced **Kelvin** and **Rossby** Wave activity dominated tropical variability during the past several weeks in the absence of an MJO, with the overall velocity potential field largely incoherent.

However, renewed **MJO** activity is now depicted in the velocity potential filtering, with a predicted eastward propagation during late February and early March.

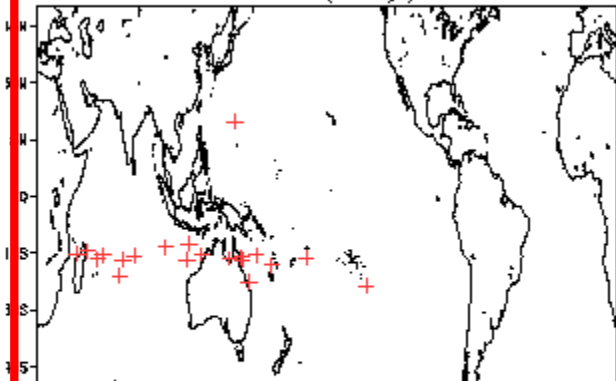


February Tropical Storm Formation by MJO phase

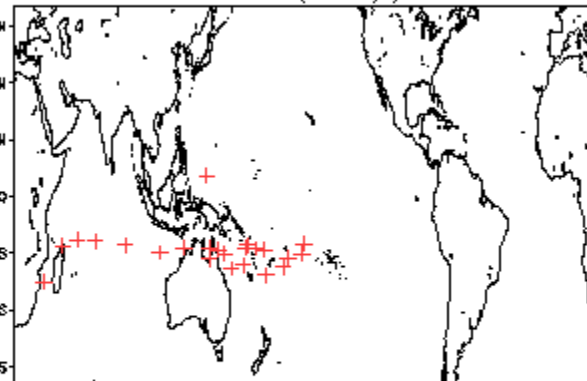
Phase 1 (41 days) 7 storms



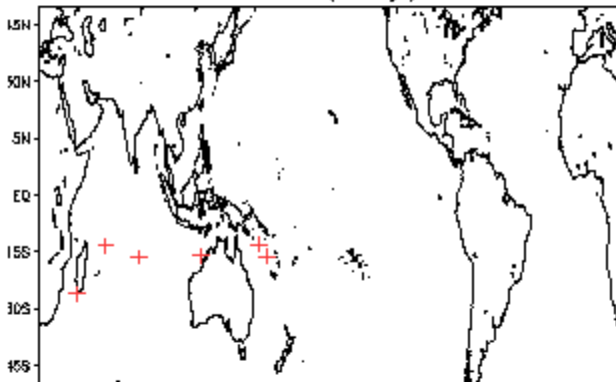
Phase 4 (92 days) 21 storms



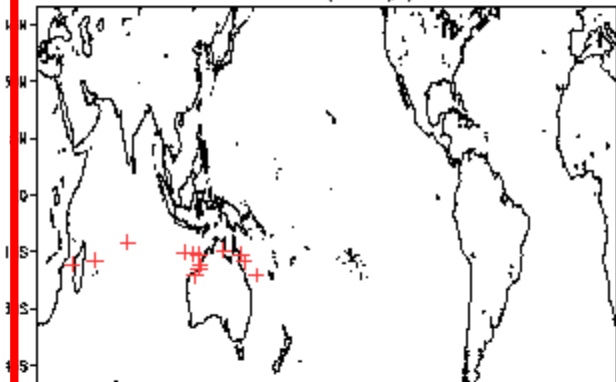
Phase 7 (125 days) 24 storms



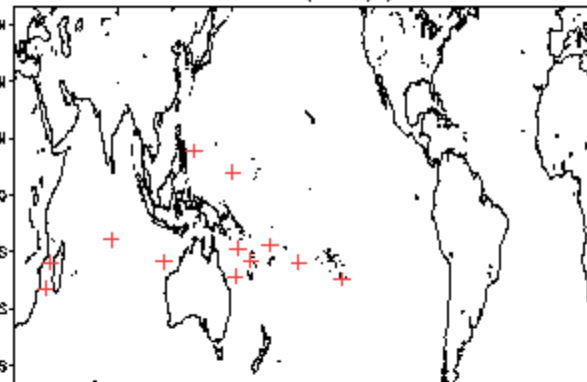
Phase 2 (51 days) 7 storms



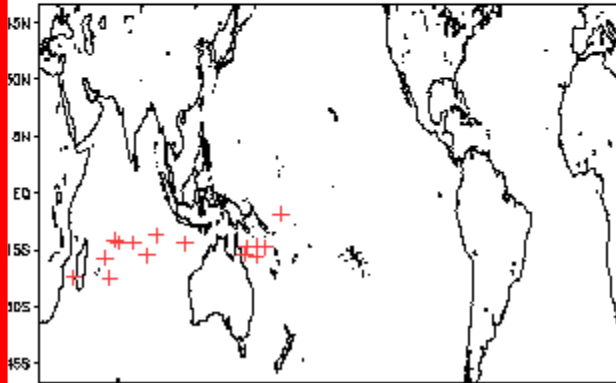
Phase 5 (70 days) 14 storms



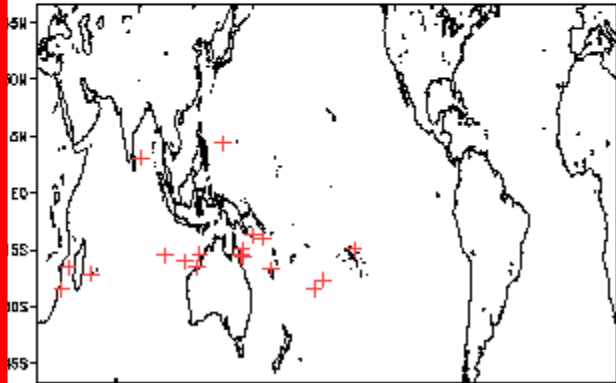
Phase 8 (84 days) 13 storms



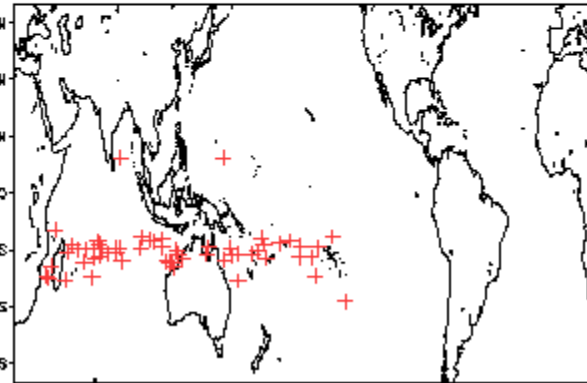
Phase 3 (89 days) 18 storms



Phase 6 (92 days) 19 storms



Null (308 days) 60 storms



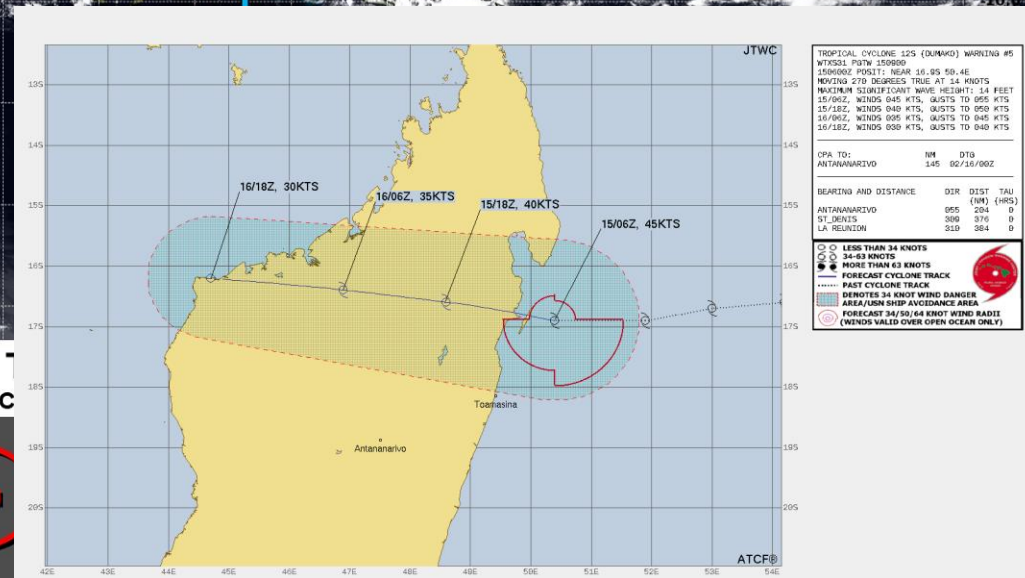
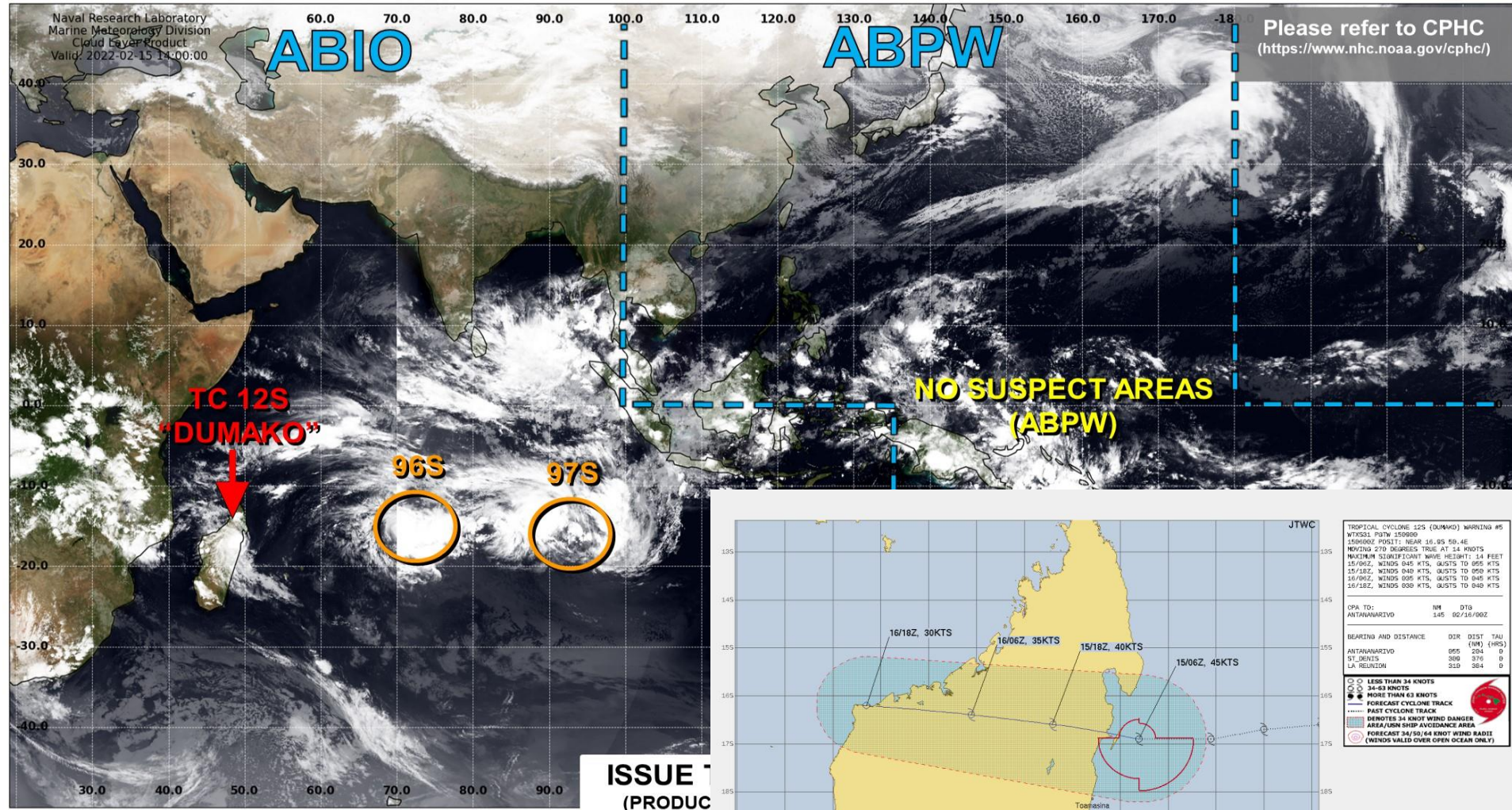


JOINT TYPHOON WARNING CENTER



Naval Research Laboratory
Marine Meteorology Division
Cloud Layer Product
Valid: 2022-02-15 14:00:00

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



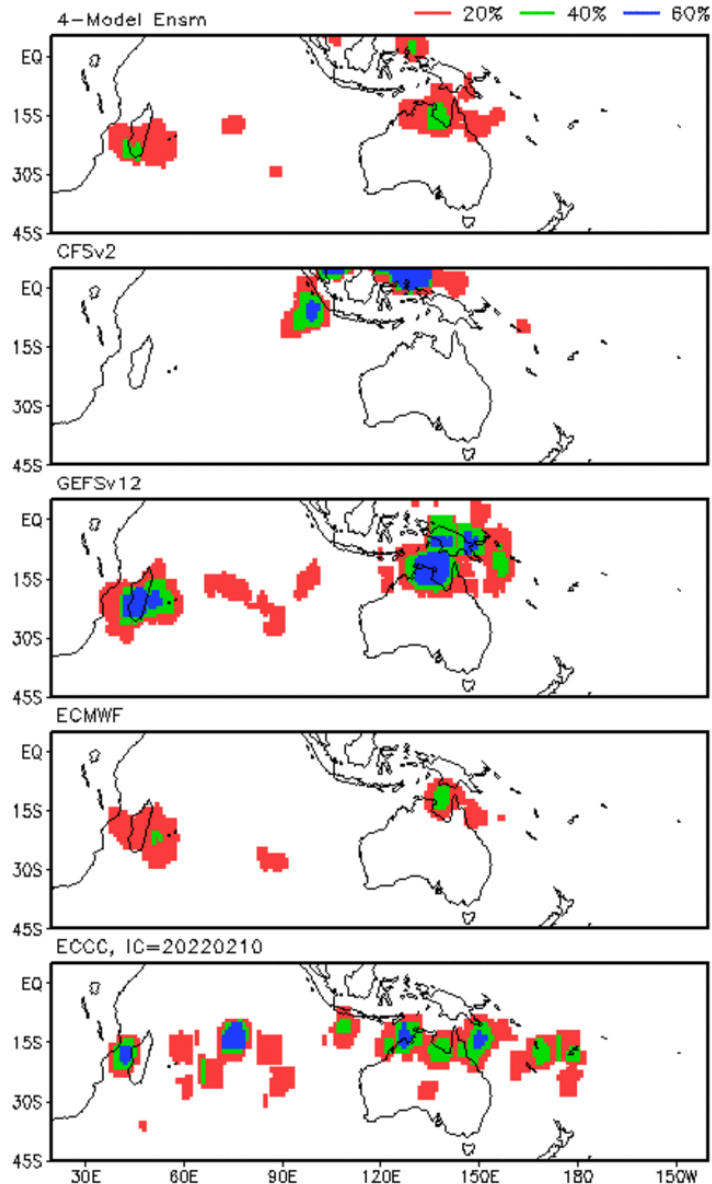
TC development unlikely within 24 hours

TC development likely, but expected to occur beyond 24 hours

TC development highly likely within 24 hours

Storm Track Probabilities, IC=20220214

Week 2: 0223 - 0301



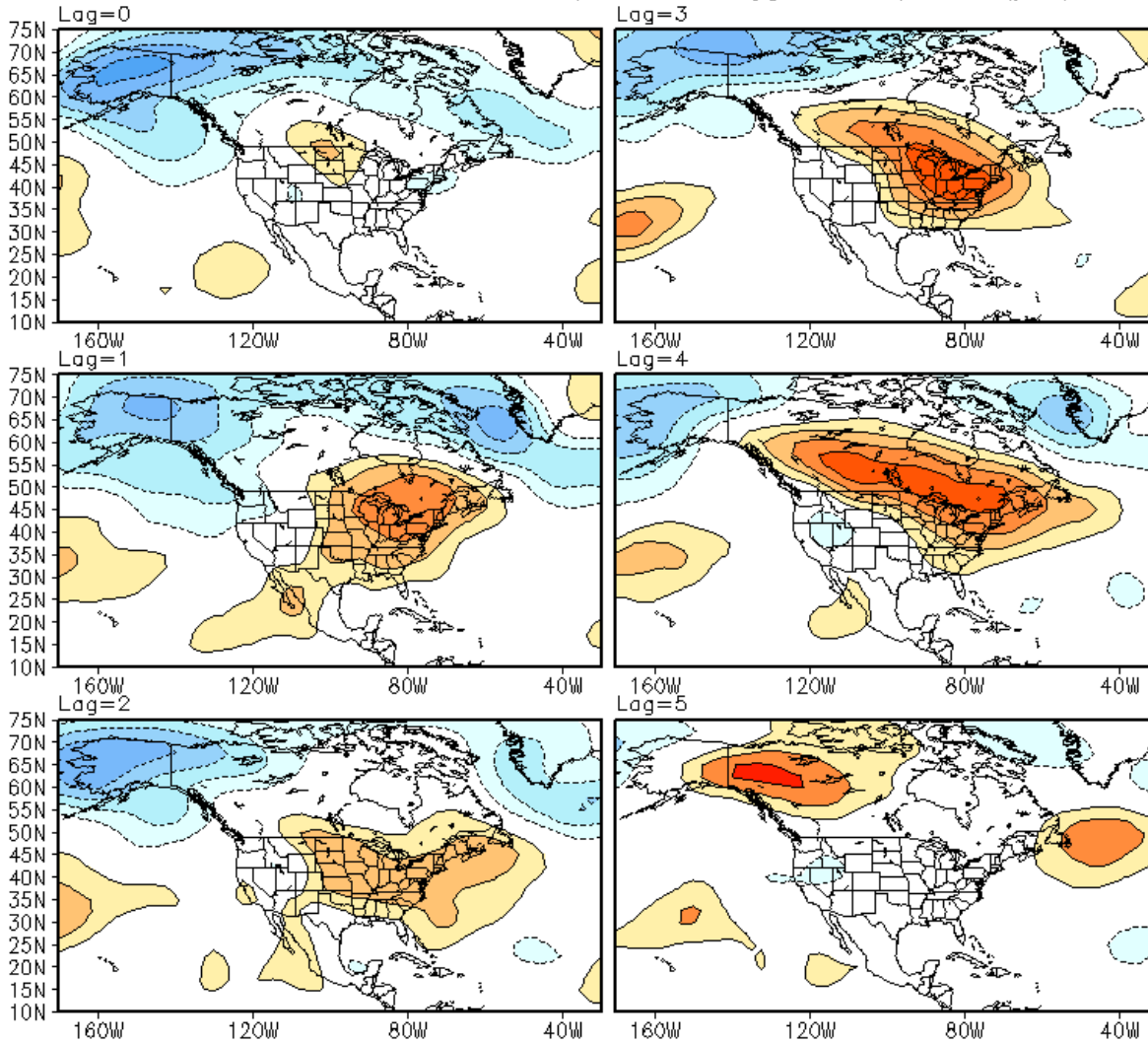
During week-2, the favorable zone for tropical cyclone (TC) development is forecast to shift eastward, corresponding to the MJO propagation.

The GEFS, ECMWF, and Canadian ensembles depict TC development to the north of Australia.

The CFSv2 indicates development across the western North Pacific. While, this is outside the normal climatological time period for TC formation, the active MJO combined with above normal sea surface temperatures may support TC development in this region.

Connections to U.S. Impacts

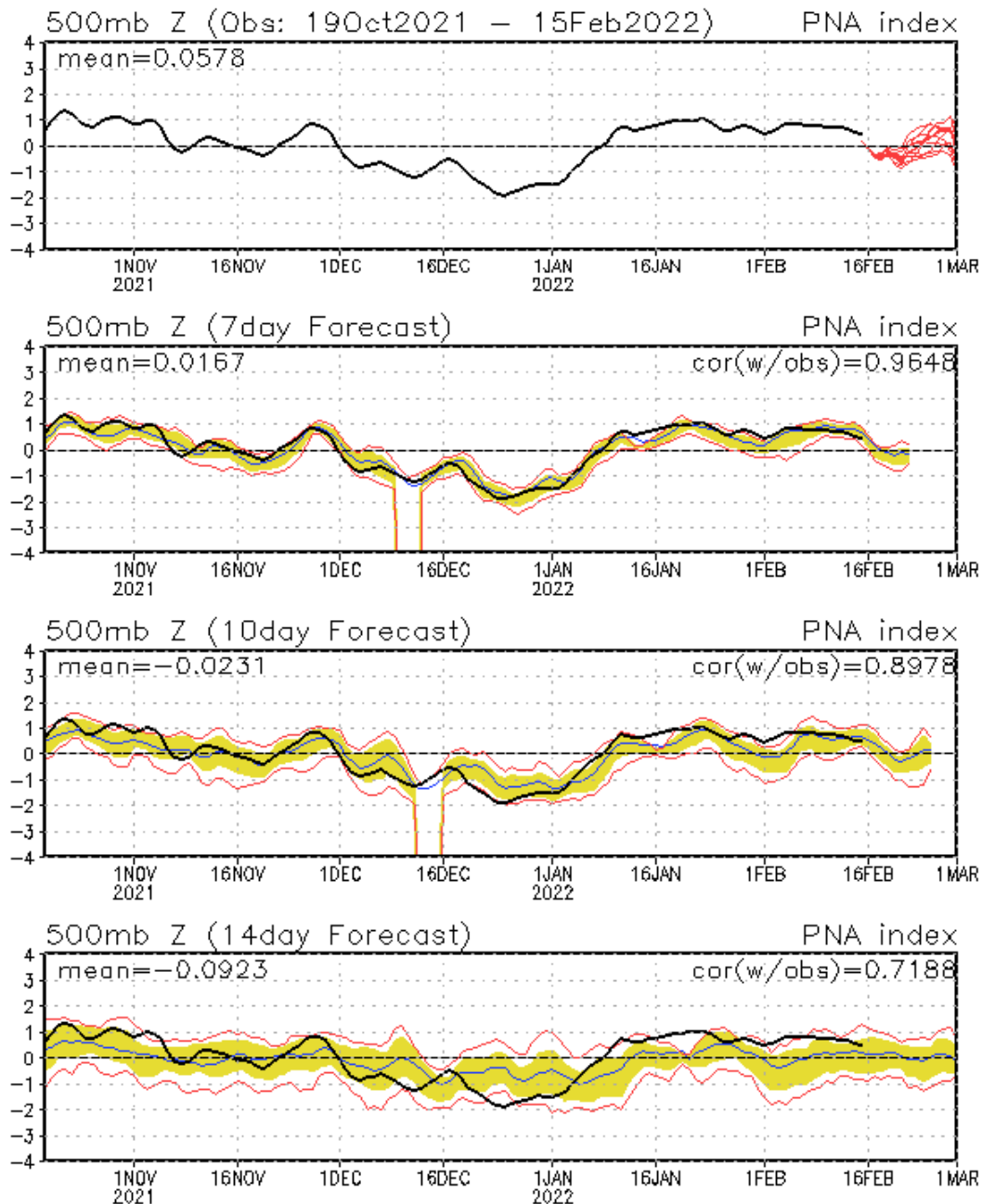
RMM Phase 3 850-hPa Temperature Lagged Composite (jfm)



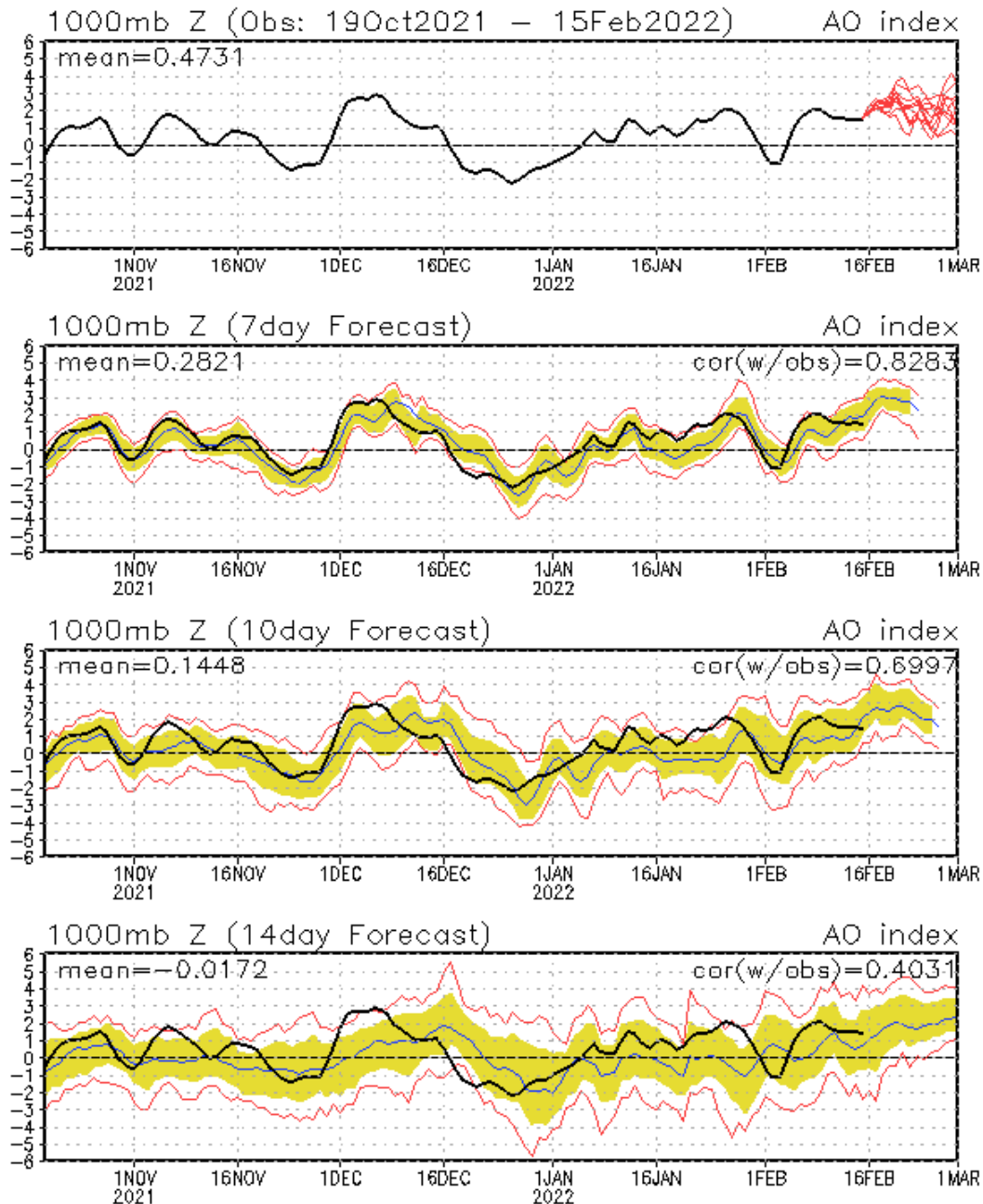
The developing MJO is forecast to constructively interfere with La Nina, potentially influencing the circulation pattern across the mid-latitudes.

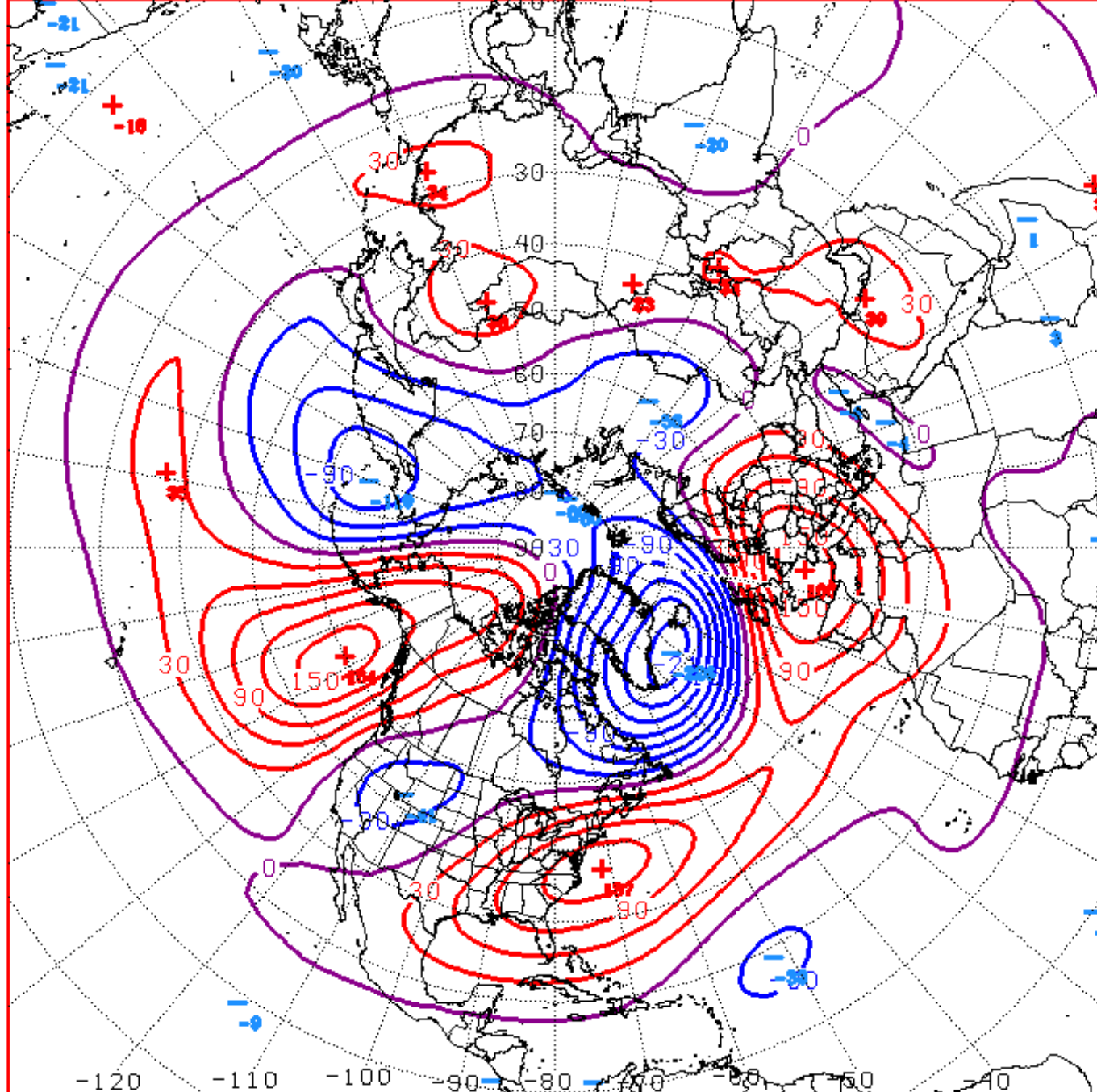
Positive 850-hPa temperature anomalies may overspread much of the eastern and northern U.S. during the next 1-3 weeks based on the lagged MJO composite.

PNA: Observed & ENSM forecasts



AO: Observed & ENSM forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE FEB 15 2022 1356 UTC CNTD FEB 26 2022

Week 2 – Temperature and Precipitation

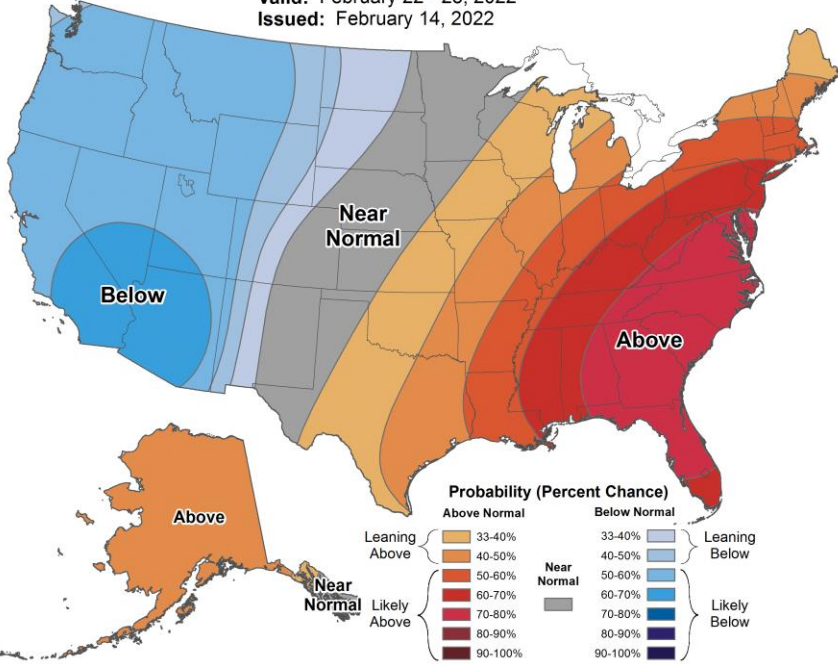


8-14 Day Temperature Outlook



Valid: February 22 - 28, 2022

Issued: February 14, 2022

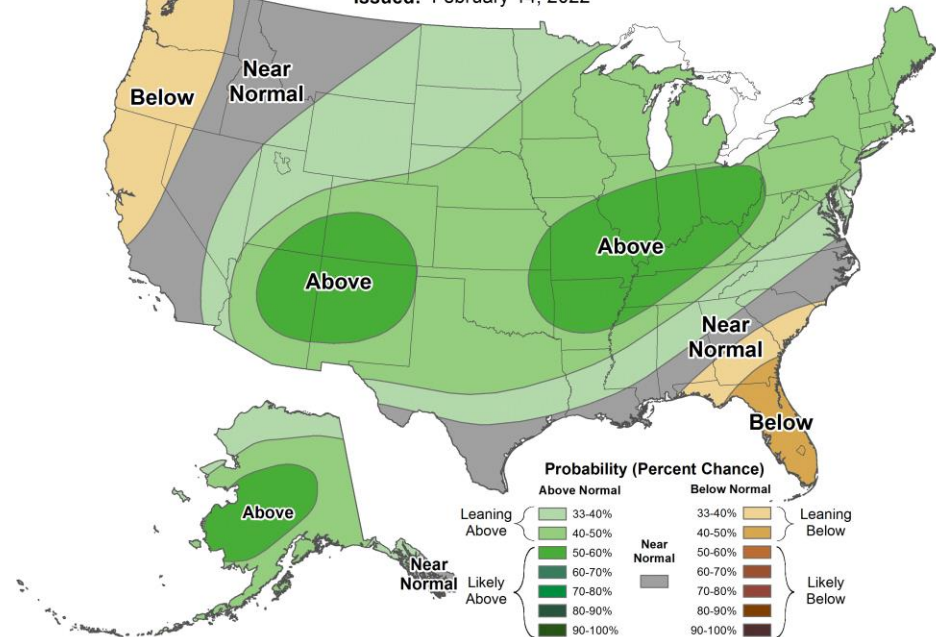


8-14 Day Precipitation Outlook



Valid: February 22 - 28, 2022

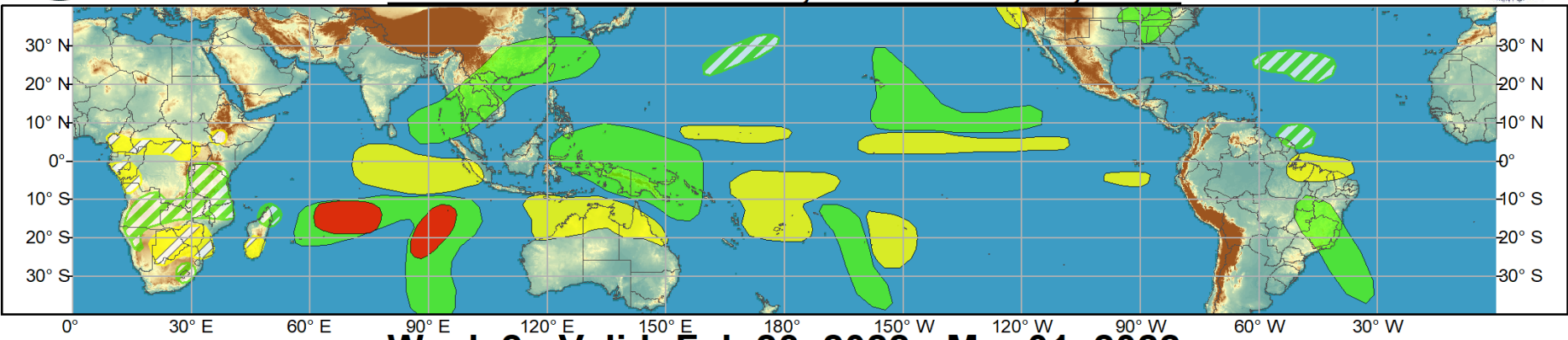
Issued: February 14, 2022



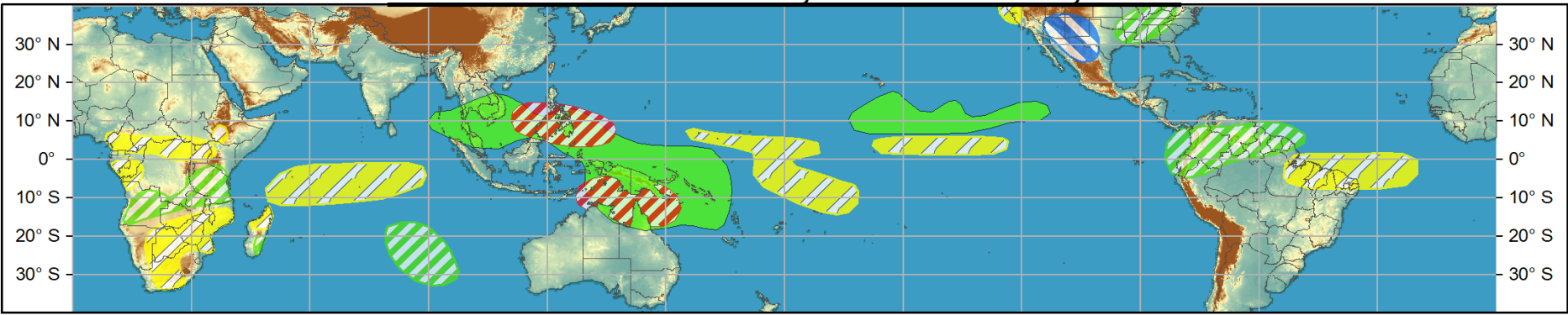


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