

Global Tropics Hazards And Benefits Outlook

8/30/2022

Nick Novella

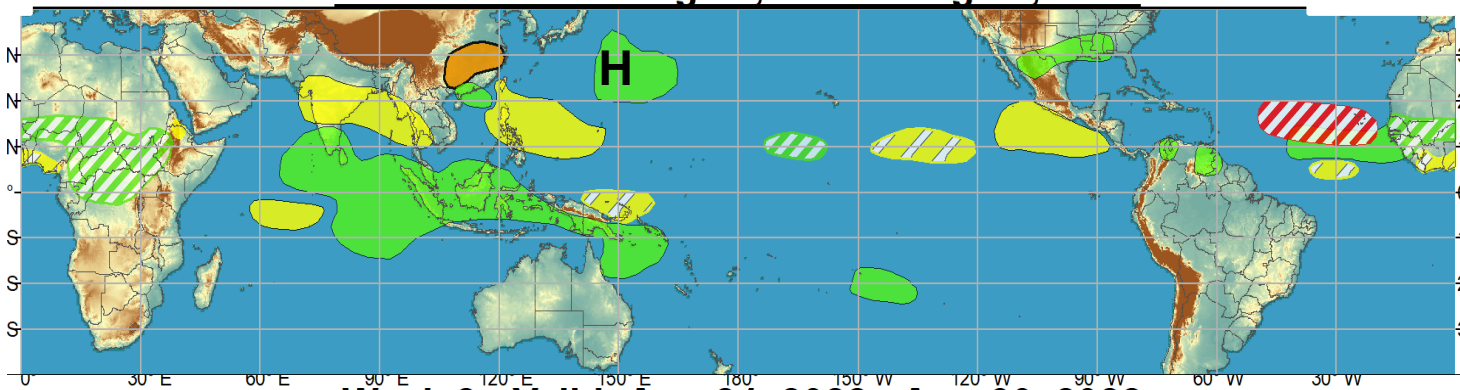
Outline

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

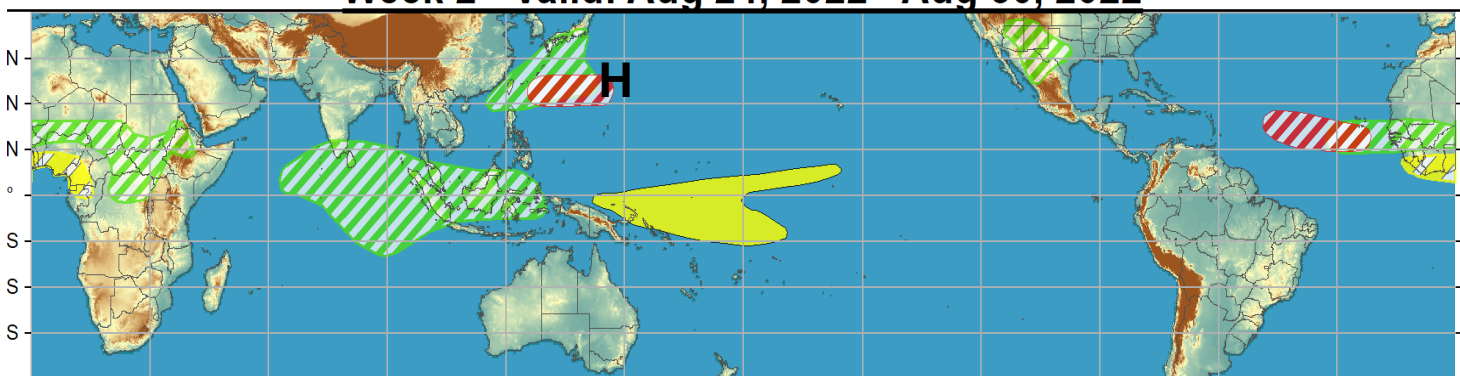
Outlook Review

H = Hinnamnor
(West Pacific; 8/28)

Week 1 - Valid: Aug 24, 2022 - Aug 30, 2022

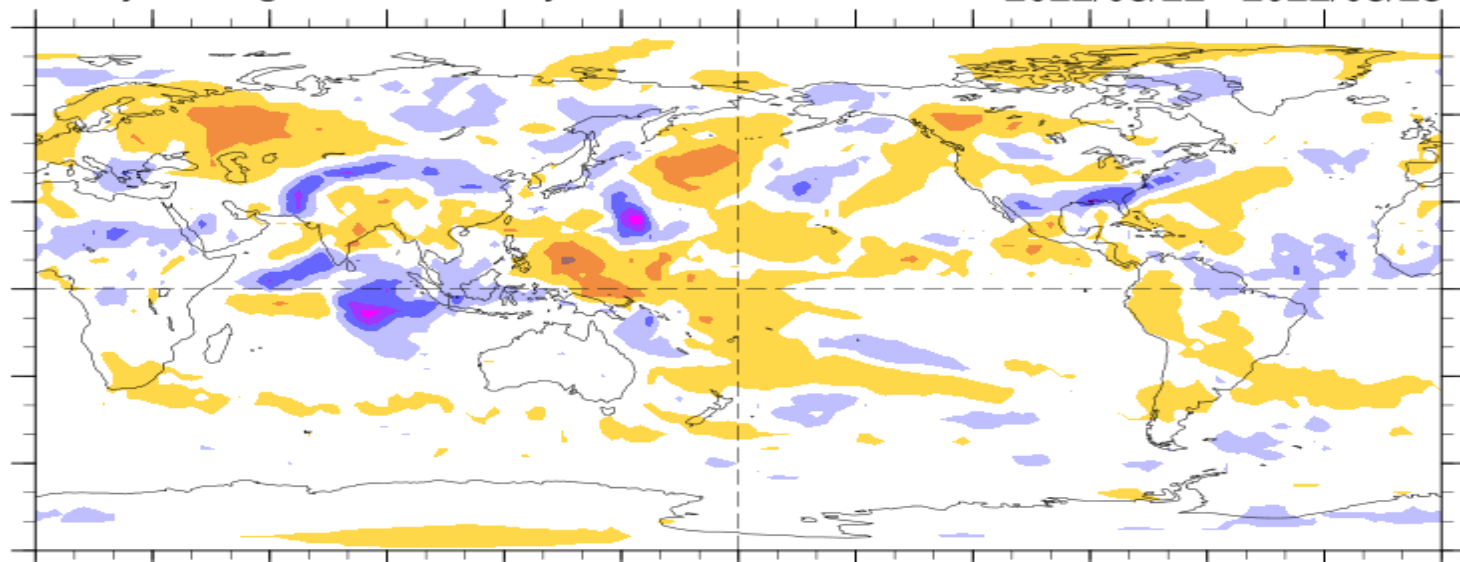


Week 2 - Valid: Aug 24, 2022 - Aug 30, 2022



7-Day Average OLR Anomaly

2022/08/22 - 2022/08/28



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (August 11, 2022)

next update on Thursday, September 8th

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is favored to continue into the Northern Hemisphere Fall (86% chance), with probabilities decreasing to 60% during Dec-Jan-Feb 2022-23.

MJO and other subseasonal tropical variability:

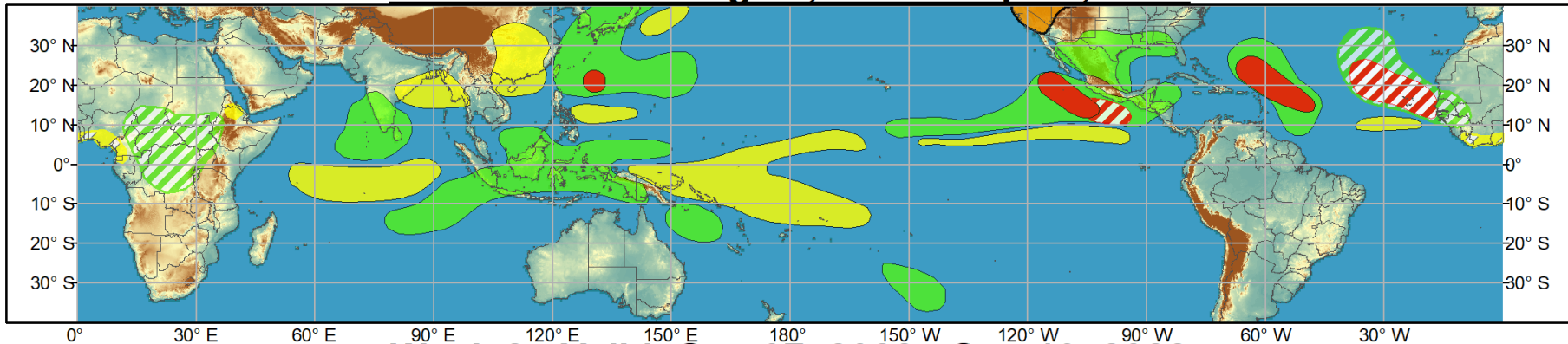
- During the past week, the MJO has shown better signs of organization as supported by upper-level velocity potential anomaly analyses and RMM observations.
- However, the renewed intraseasonal activity is likely to be short lived, with dynamical models favoring a gradual decrease in amplitude as the signal propagates eastward across the Indian Ocean and Maritime Continent during the next two weeks.
- Regardless of a less coherent MJO moving forward, there are increased chances for tropical cyclone (TC) development across the Pacific and Atlantic heading into September, also coinciding with climatological peak of TC activity in these basins.



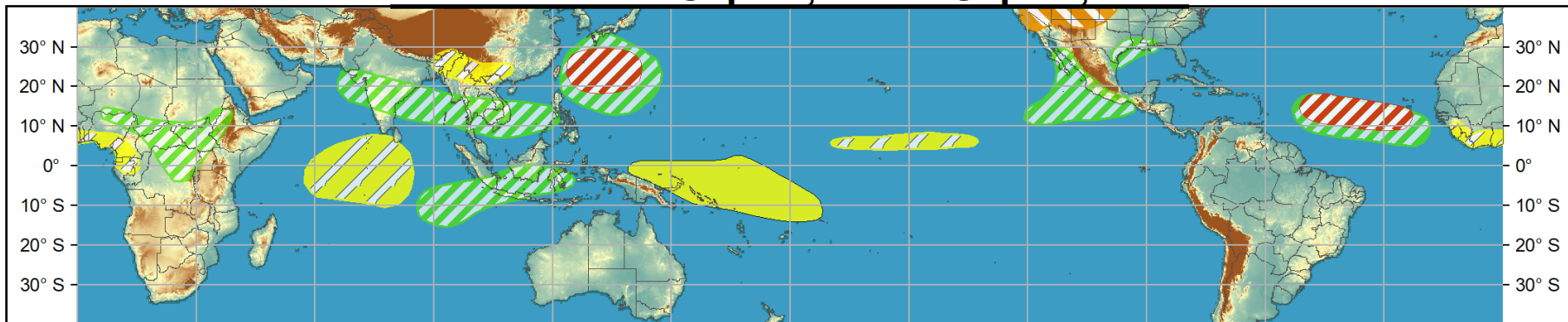
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Aug 31, 2022 - Sep 06, 2022



Week 2 - Valid: Sep 07, 2022 - Sep 13, 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.
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Produced: 08/30/2022

Forecaster: Novella

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IR Satellite & 200-hpa Velocity Potential Anomalies

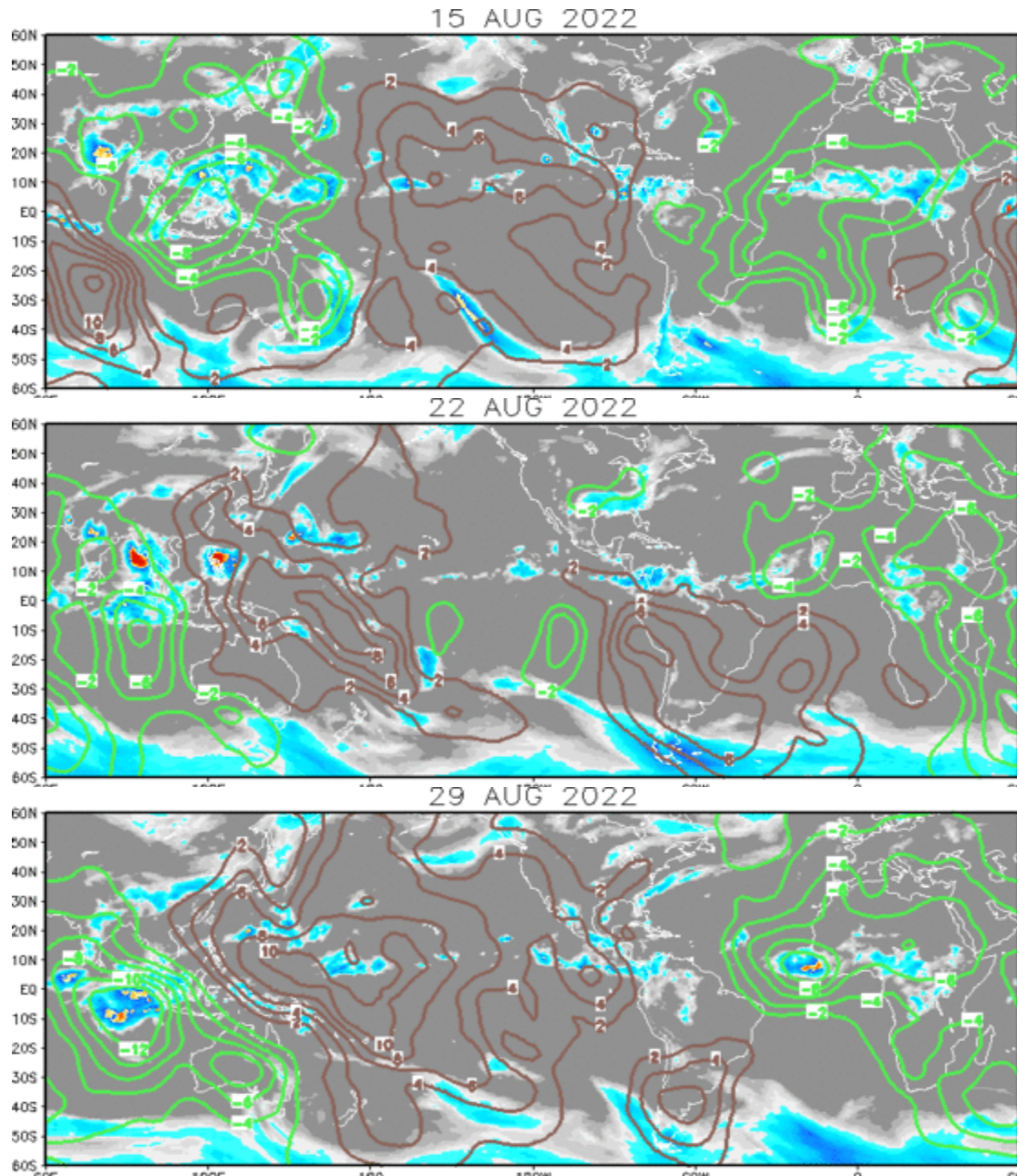
Green: Enhanced Divergence

Brown: Enhanced Convergence

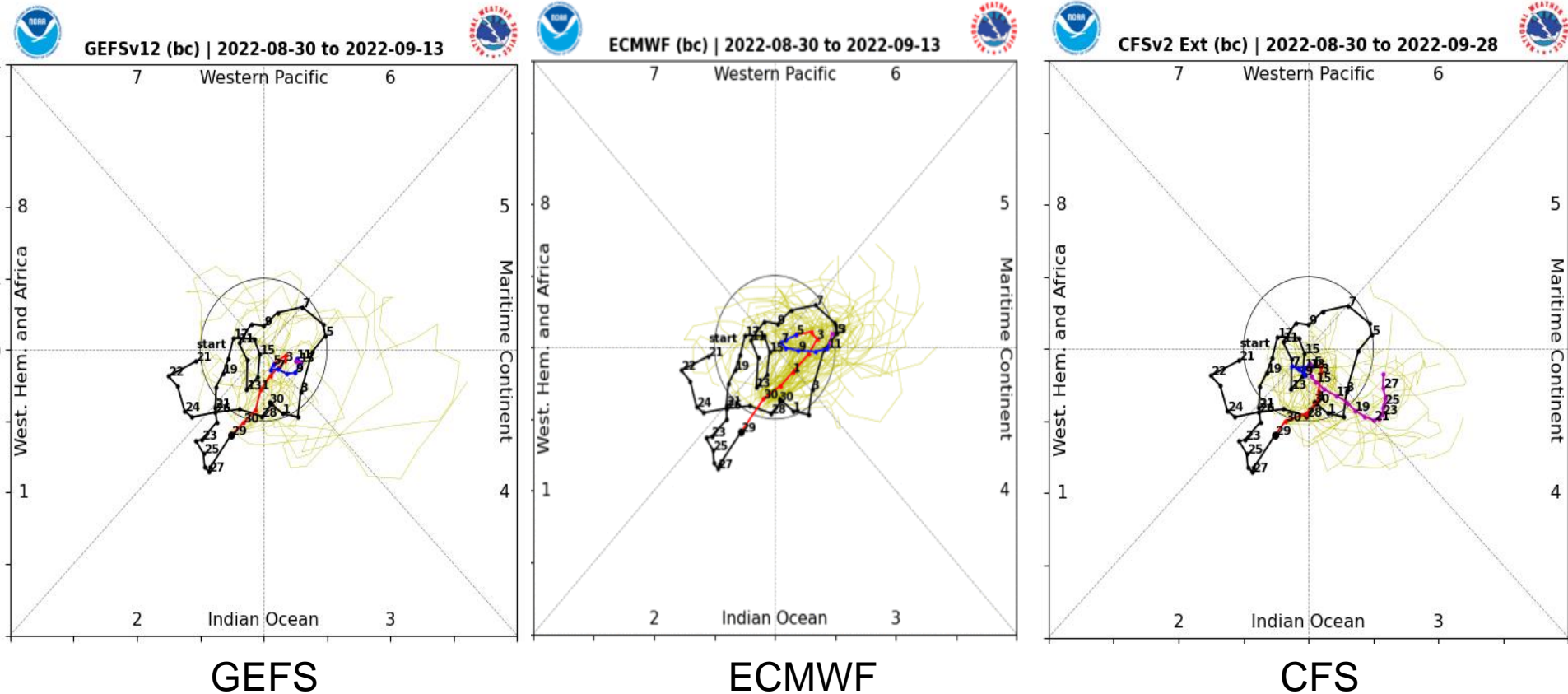
La Nina continues to dominate over the Pacific and Maritime Continent. A Kelvin Wave has led to upper-level divergence across Africa.

Anomalous upper-level divergence continues across Africa and the Indian Ocean, with upper-level convergence (suppressed convection) expanding across the West Pacific.

A wave-1 pattern emerged in late August suggestive of the MJO becoming better organized with a more uniform distribution of suppressed conditions overspreading the East Pacific and Americas.



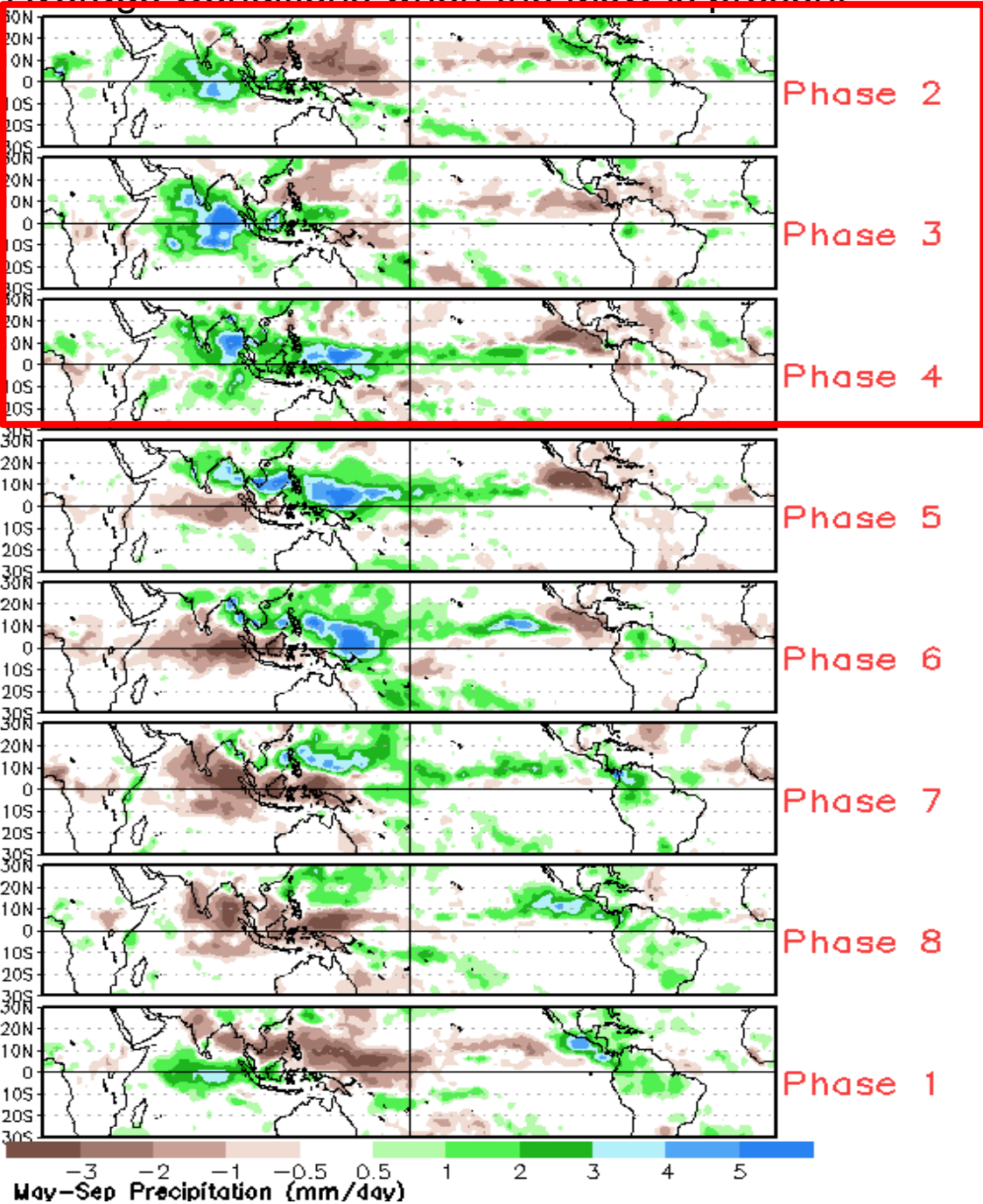
MJO Observation/Forecast



There is a consensus in the dynamical models favoring the continued weakening of the MJO signal during the next two weeks.

Some ensemble members suggest possible reemergence of MJO signal over the Maritime Continent and western Pacific (ECMWF +CFS) beyond the week-2 period, but uncertainty is high given potential destructive interference with La Nina.

Average Conditions when the MJO is present

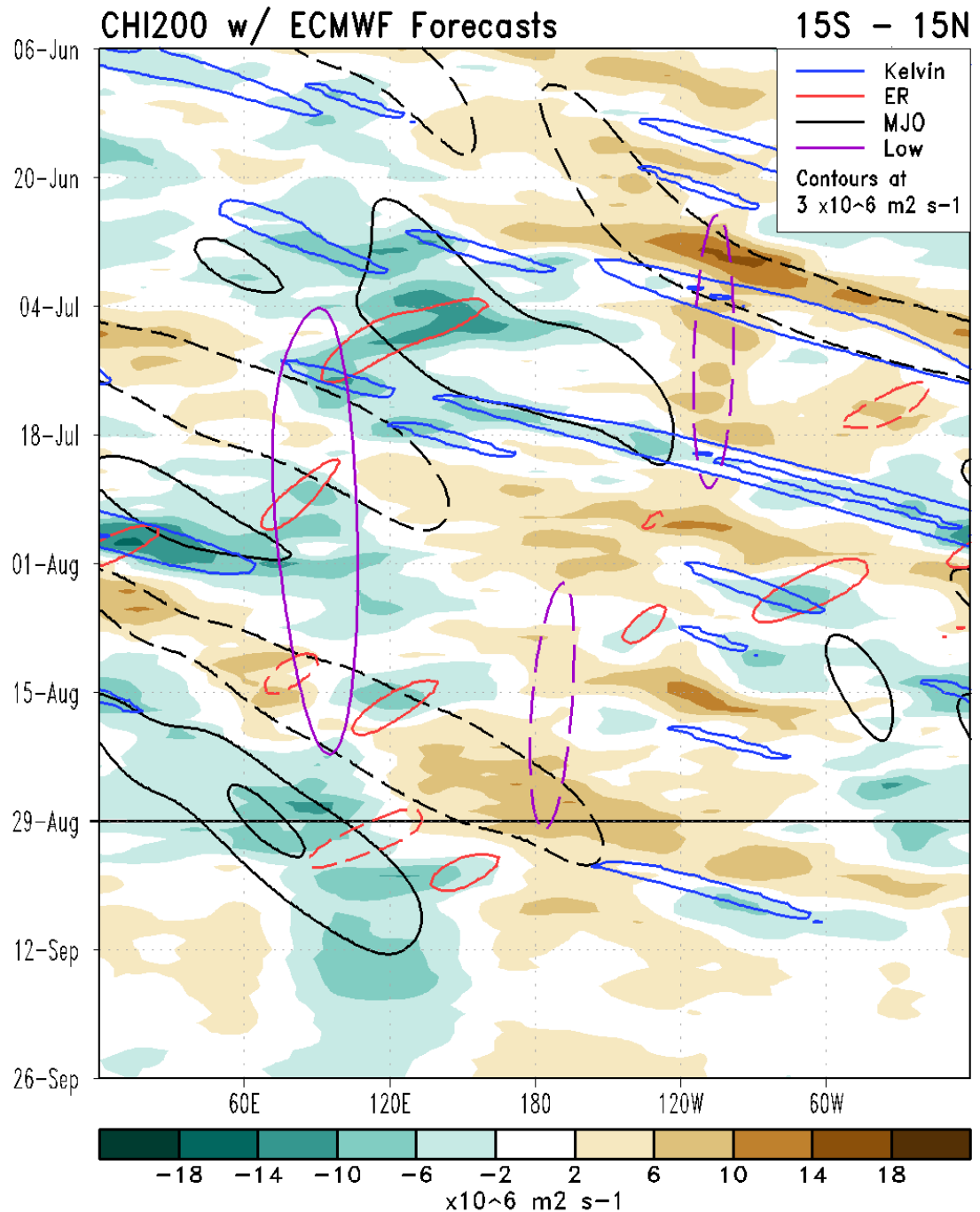


CAVEAT: These panels are representative of robust MJO events.

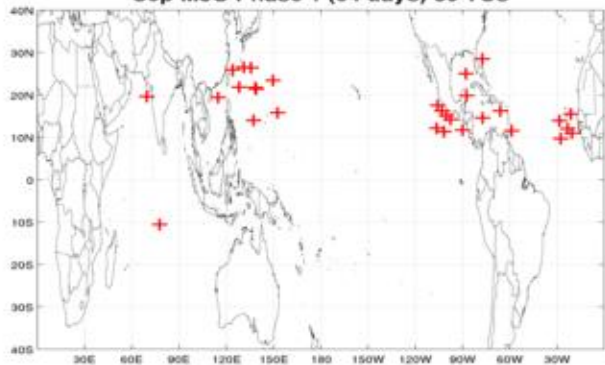
At present, **MJO** activity coming is through the upper-level velocity potential filtering over the Indian Ocean, with the suppressed phase over the Pacific.

In early Sept, the wave-1 pattern breaks down due to **Kelvin wave** activity emerging over the eastern Pacific with enhanced conditions extending into the Atlantic.

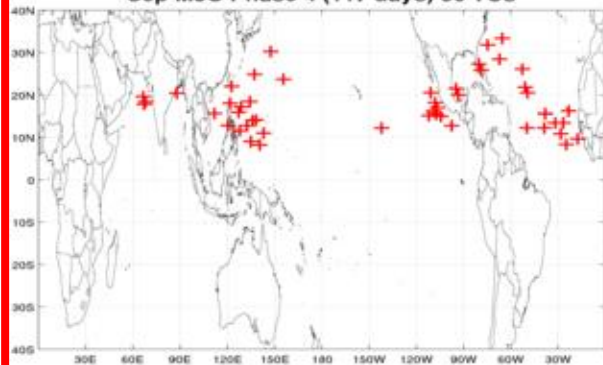
Though not depicted in the forecast, **low frequency** contours depict ENSO cold conditions along and west of 120E.



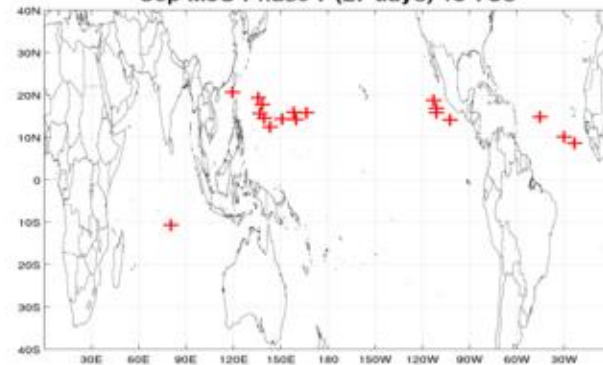
Sep MJO Phase 1 (64 days) 30 TCs



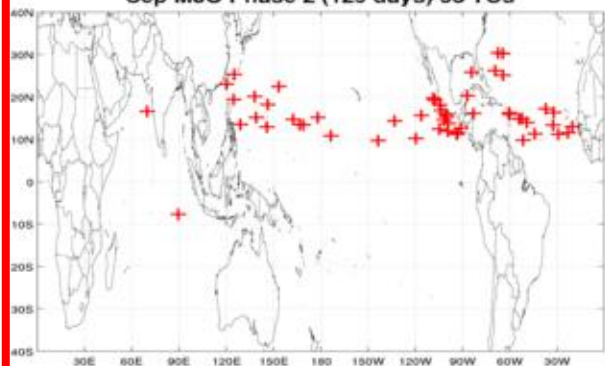
Sep MJO Phase 4 (117 days) 50 TCs



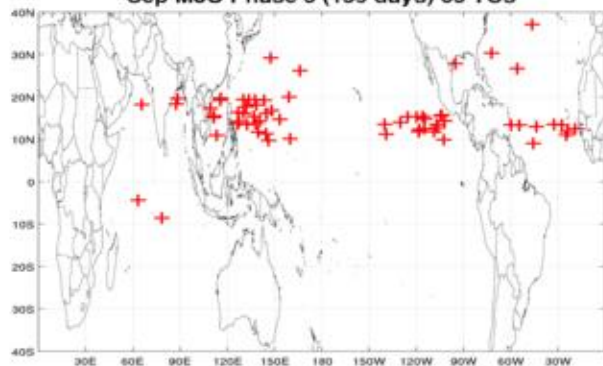
Sep MJO Phase 7 (27 days) 18 TCs



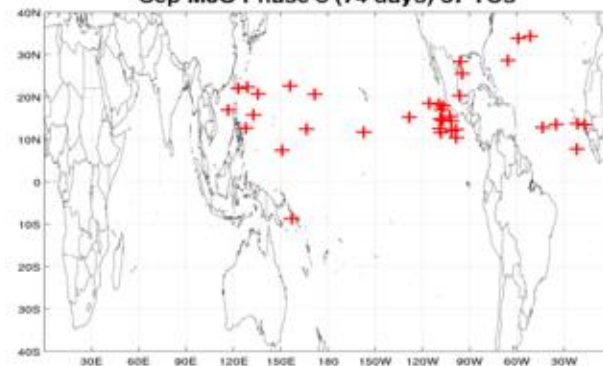
Sep MJO Phase 2 (129 days) 53 TCs



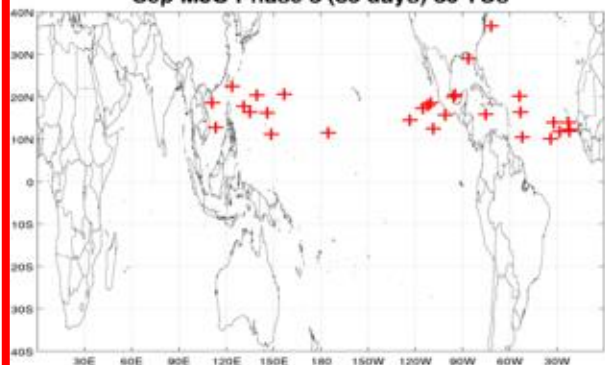
Sep MJO Phase 5 (159 days) 65 TCs



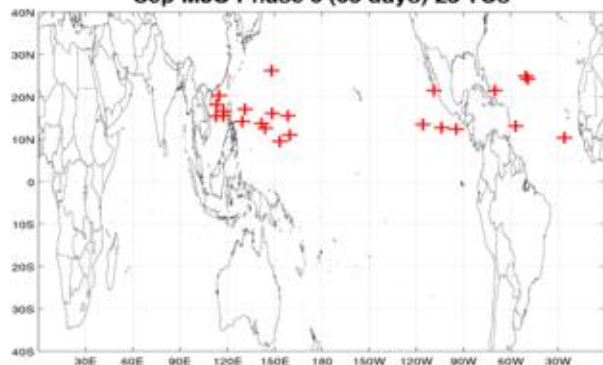
Sep MJO Phase 8 (74 days) 37 TCs



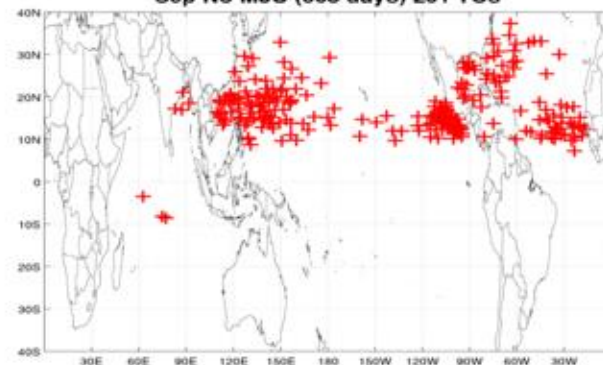
Sep MJO Phase 3 (85 days) 30 TCs



Sep MJO Phase 6 (65 days) 23 TCs

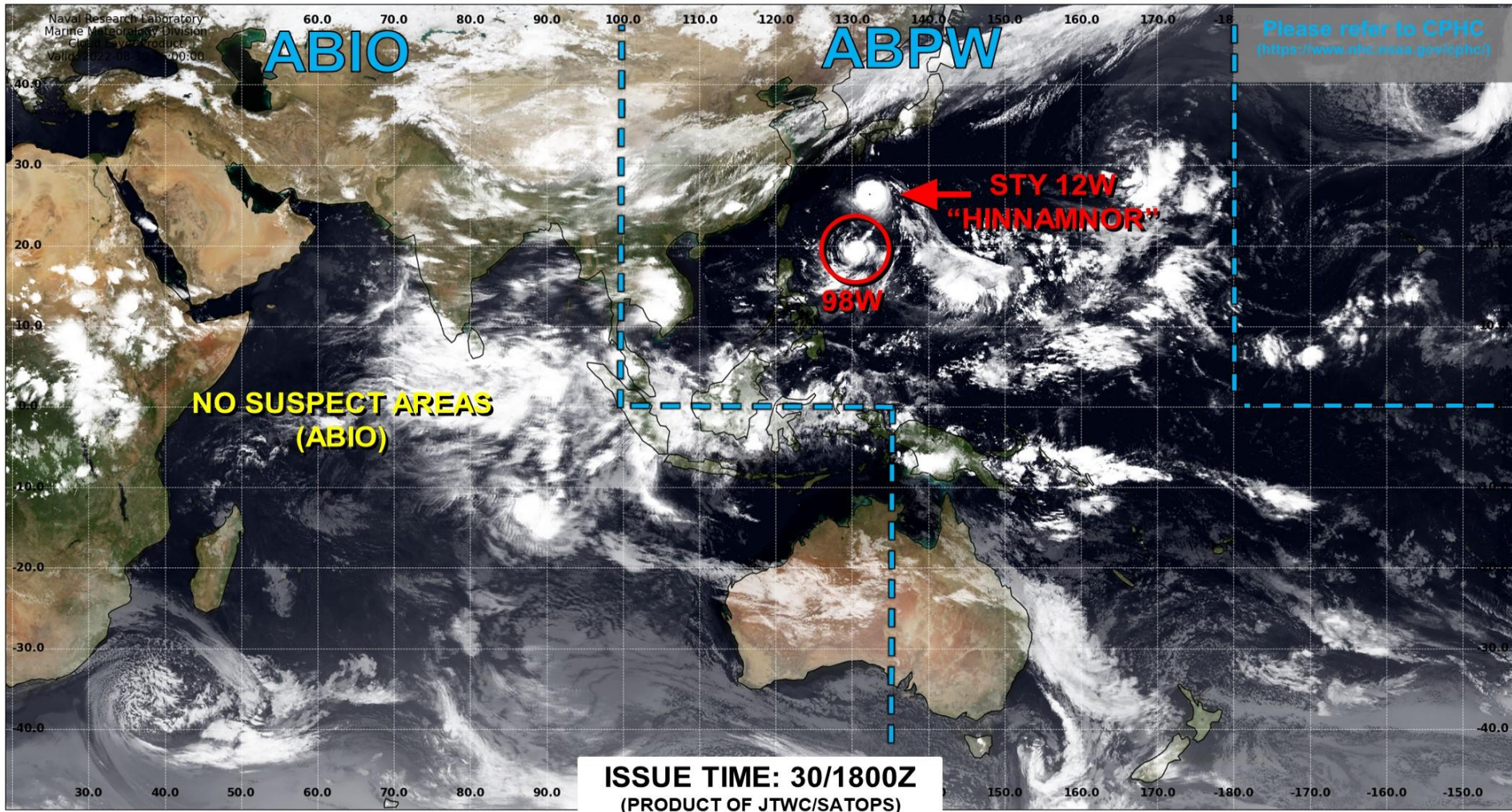


Sep No MJO (568 days) 261 TCs





JOINT TYPHOON WARNING CENTER



TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours



TC development likely within 24 hours (Reference TCFA)

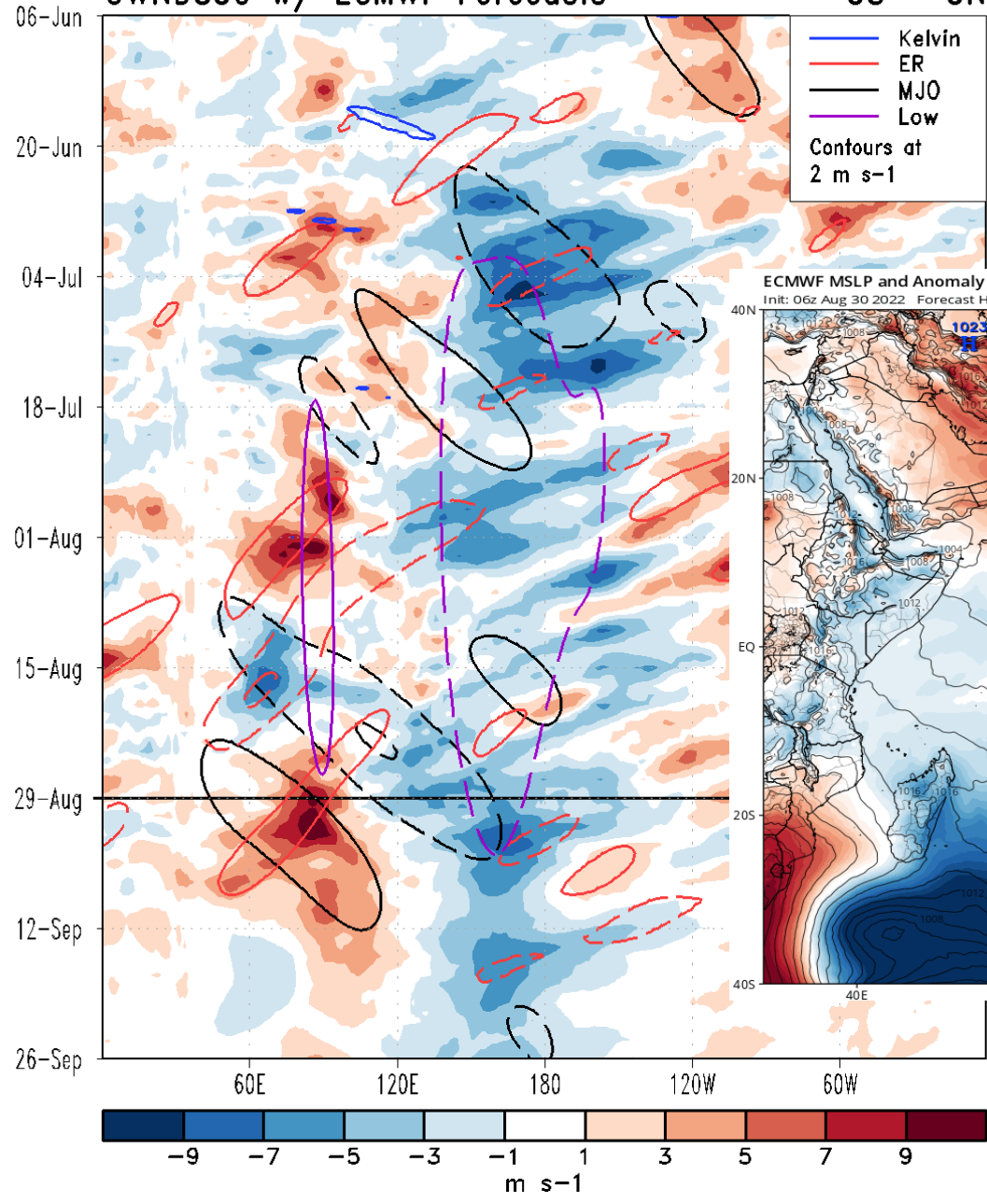


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



UWND850 w/ ECMWF Forecasts

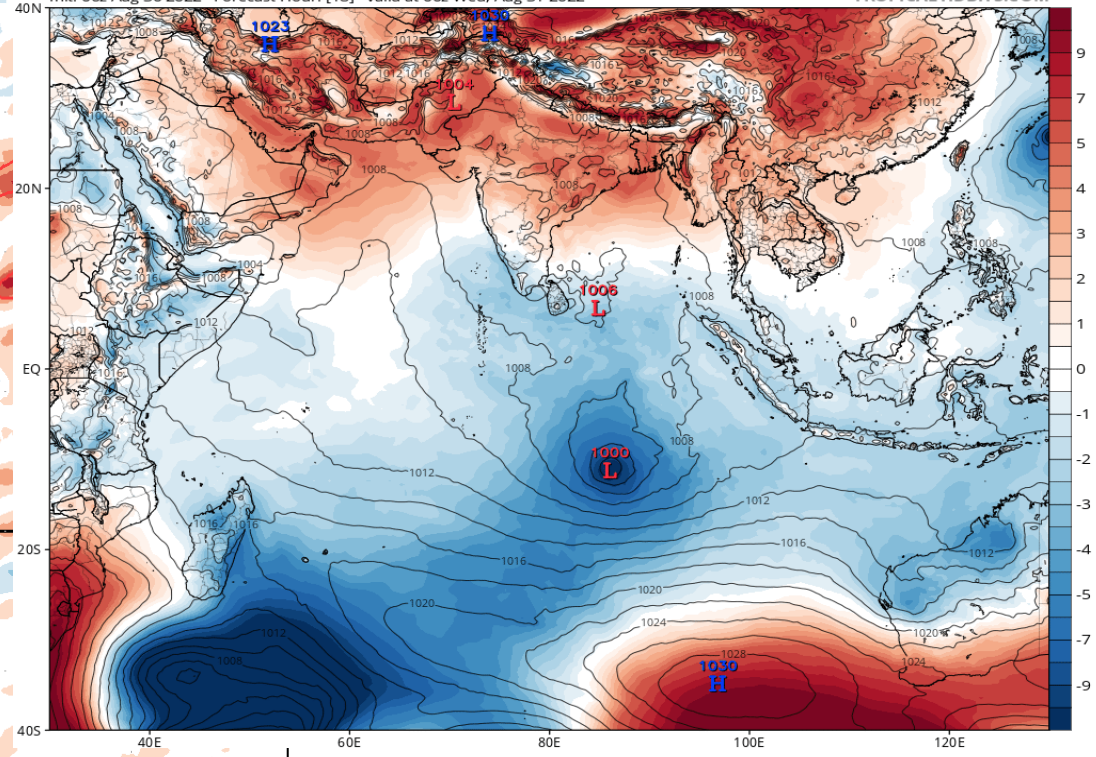
5S - 5N

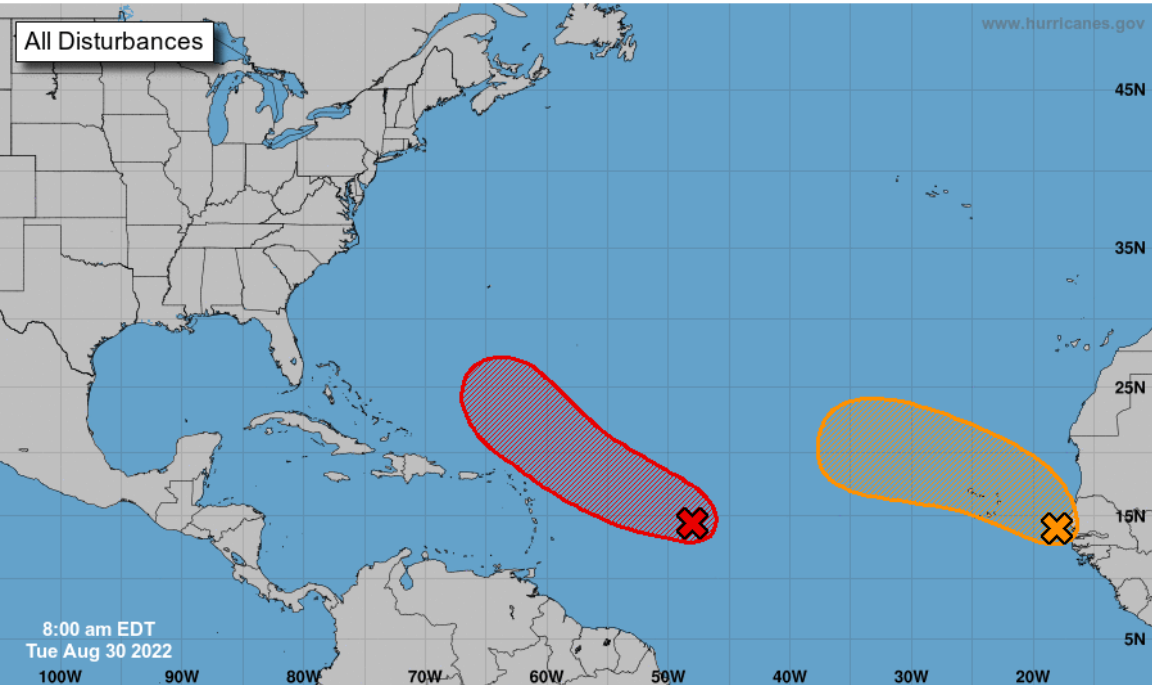


ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 06z Aug 30 2022 Forecast Hour: [18] valid at 00z Wed, Aug 31 2022

TROPICALTIDBITS.COM





All Disturbances

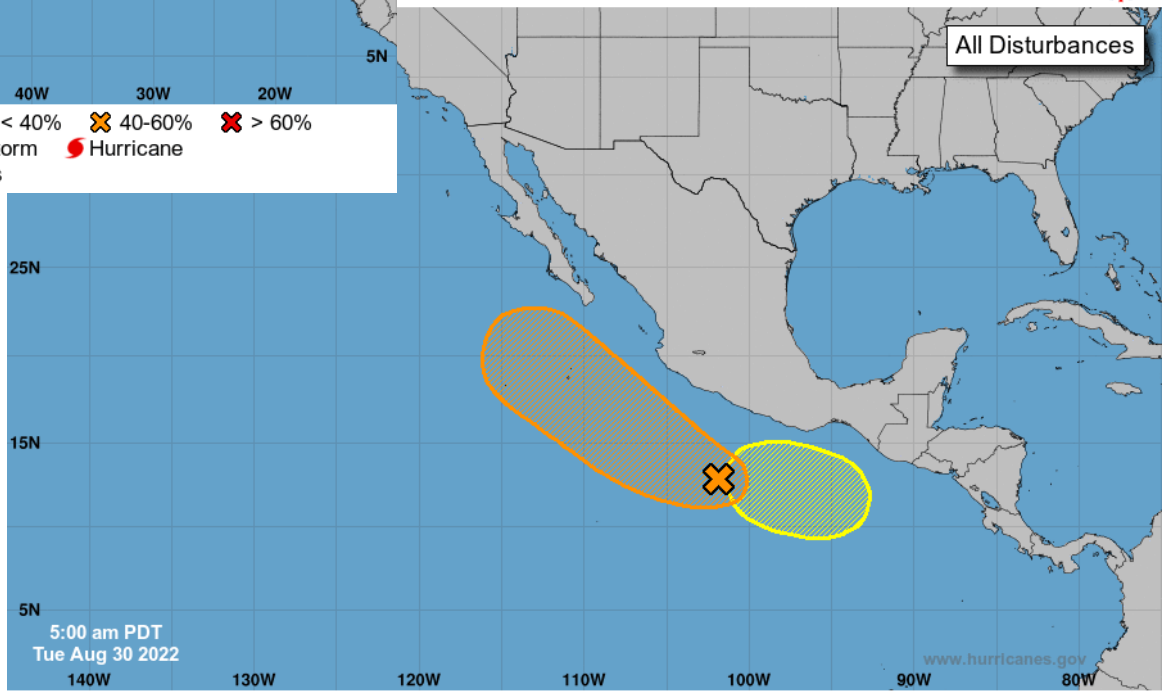
8:00 am EDT
Tue Aug 30 2022

100W 90W 80W 70W 60W 50W 40W 30W 20W

Current Disturbances and Five-Day Cyclone Formation Chance:
 Tropical or Sub-Tropical Cyclone:
 Post-Tropical Cyclone or Remnants

- X < 40%
- X 40-60%
- X > 60%
- Depression
- ◐ Storm
- ◑ Hurricane
- ⊗ Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida



All Disturbances

5:00 am PDT
Tue Aug 30 2022

140W 130W 120W 110W 100W 90W 80W

Current Disturbances and Five-Day Cyclone Formation Chance:
 Tropical or Sub-Tropical Cyclone:
 Post-Tropical Cyclone or Remnants

- X < 40%
- X 40-60%
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Base time

Tue 30 Aug 2022 00 UTC



Valid time

Sun 04 Sep 2022 00 UTC (T+120)



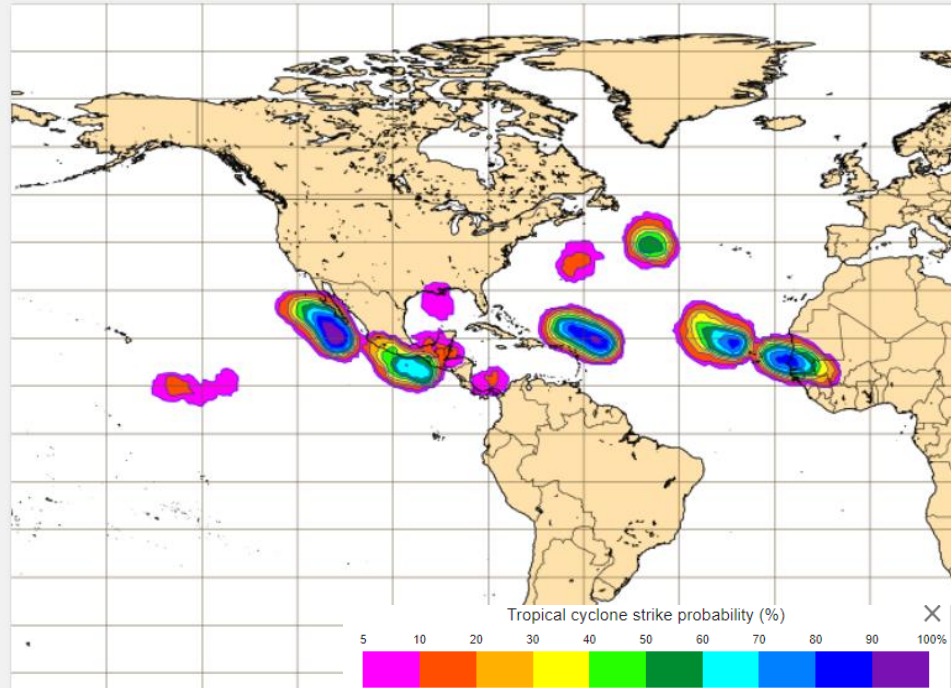
Area

Global



Intensity

Tropical cyclones



Base time

Tue 30 Aug 2022 00 UTC



Valid time

Sun 11 Sep 2022 00 UTC (T+288)



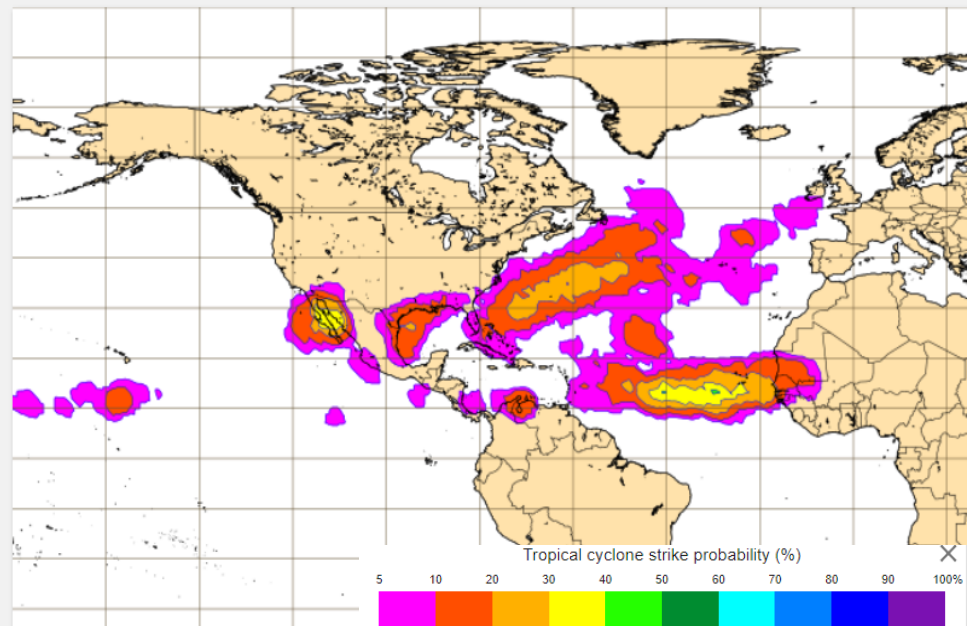
Area

Global



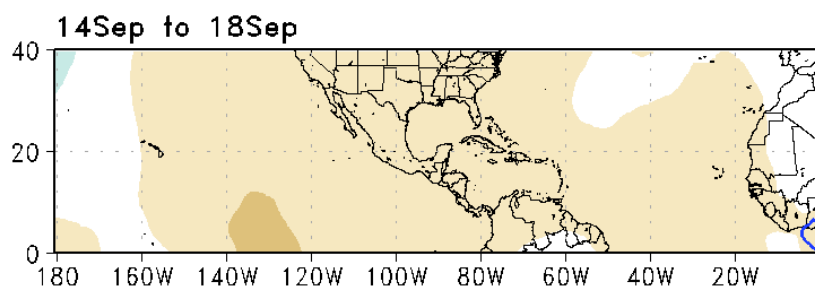
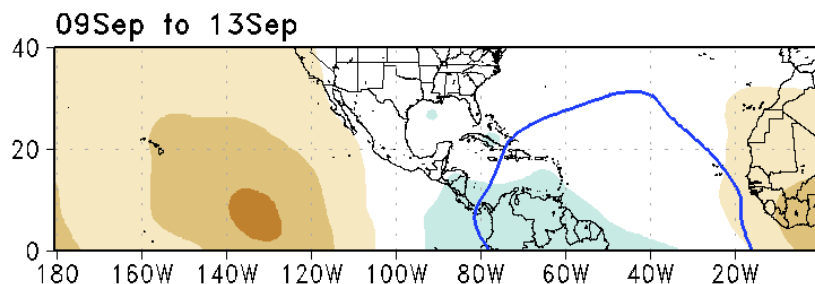
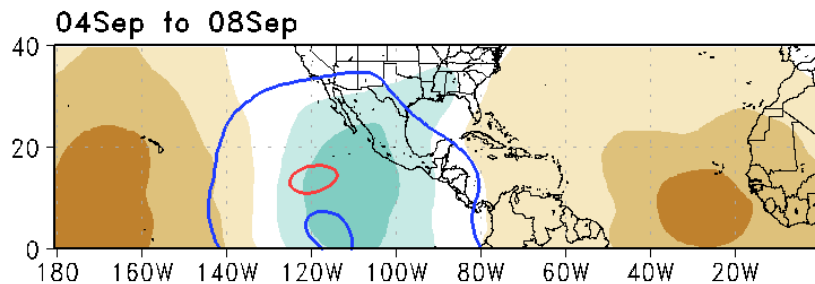
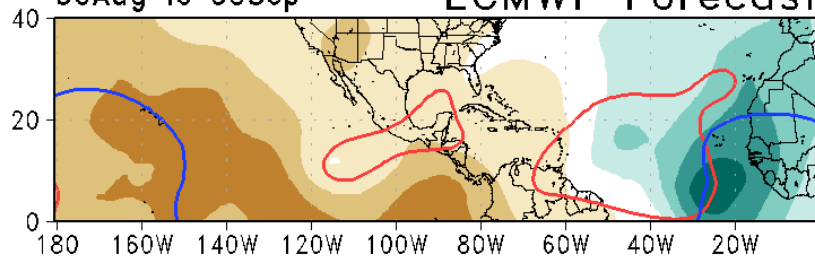
Intensity

Tropical cyclones



-Day Means

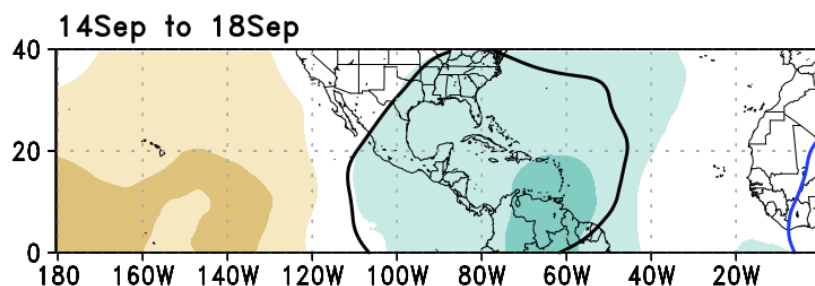
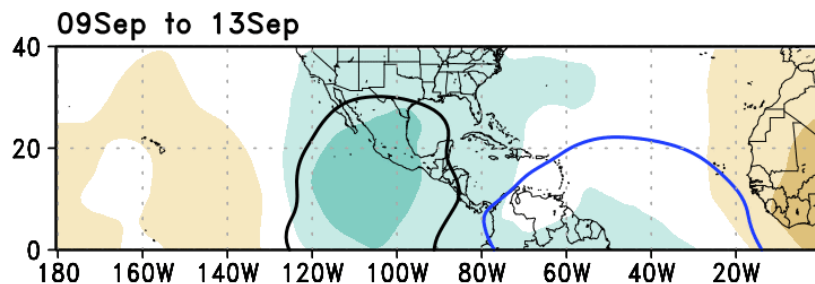
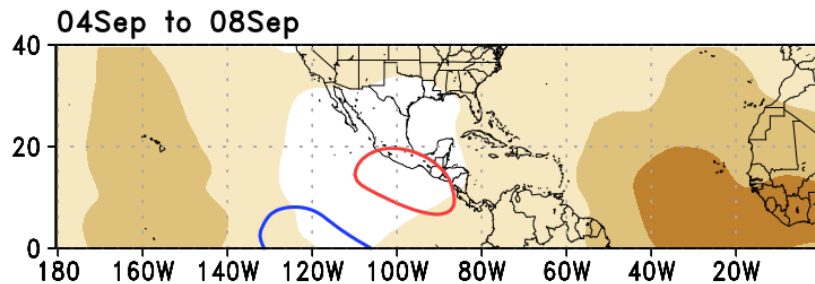
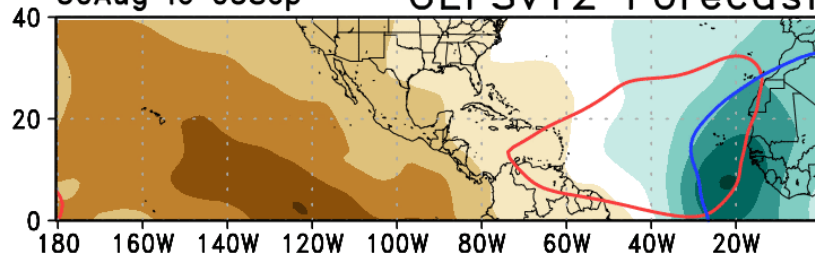
30Aug to 03Sep **ECMWF Forecast**



— MJO — Kelvin*2
— Low — ER
Contours at $-2, -6 \times 10^{-6} \text{ m}^2 \text{ s}^{-1}$

-Day Means

30Aug to 03Sep **GEFSv12 Forecast**

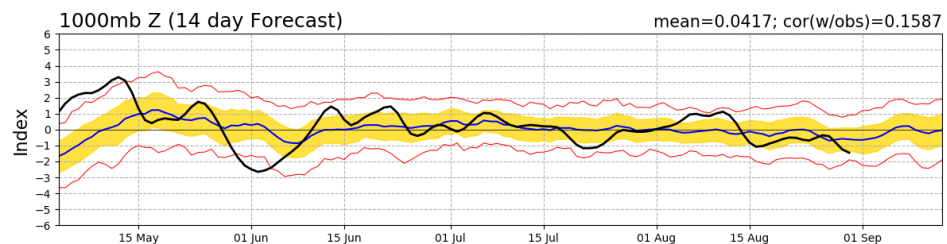
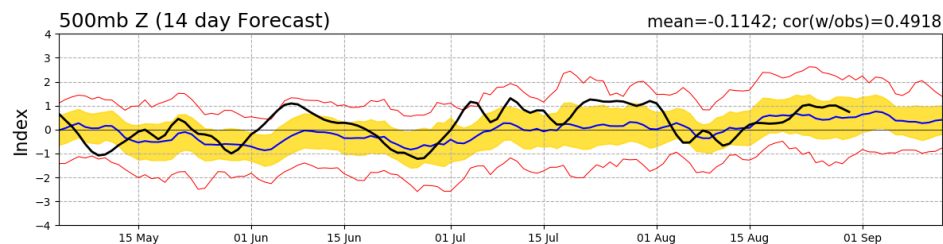
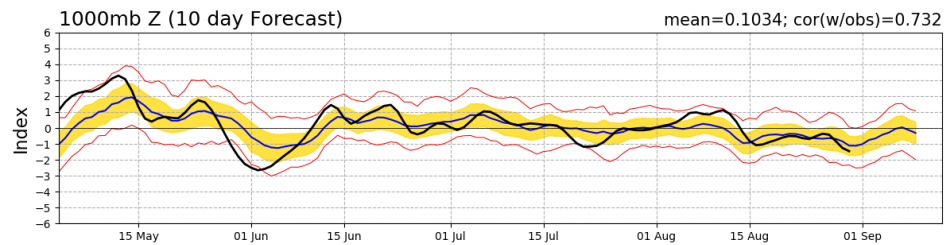
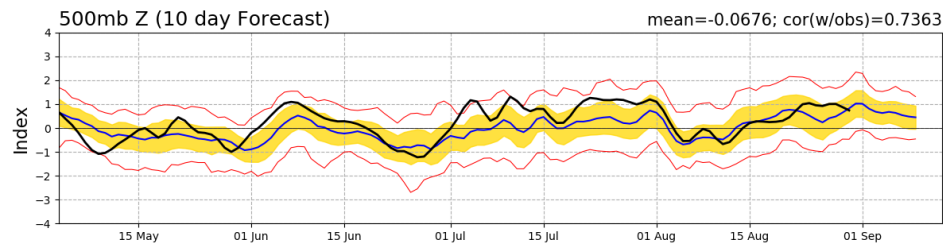
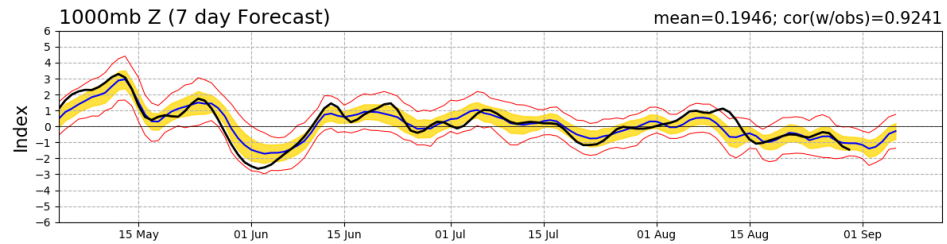
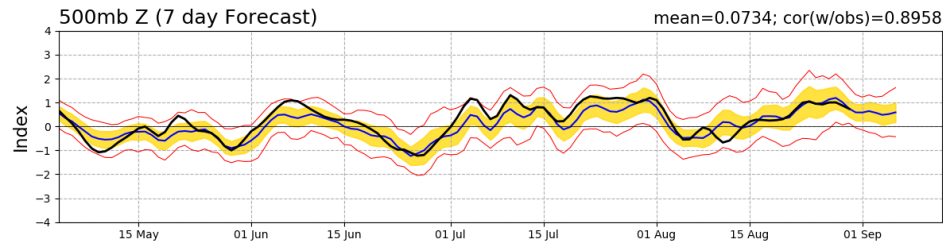
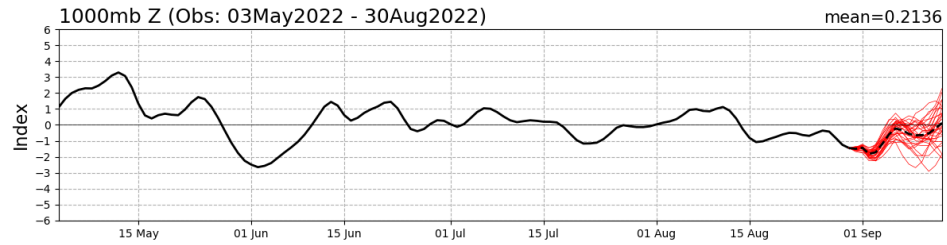
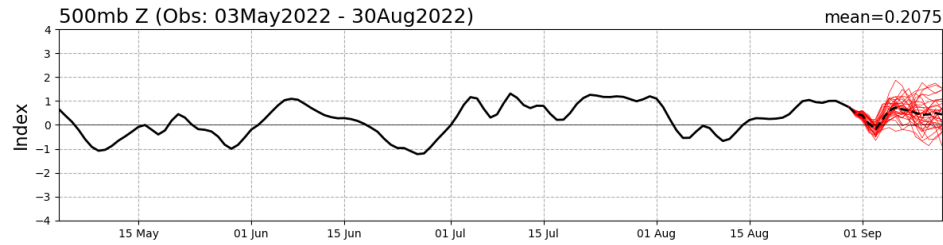


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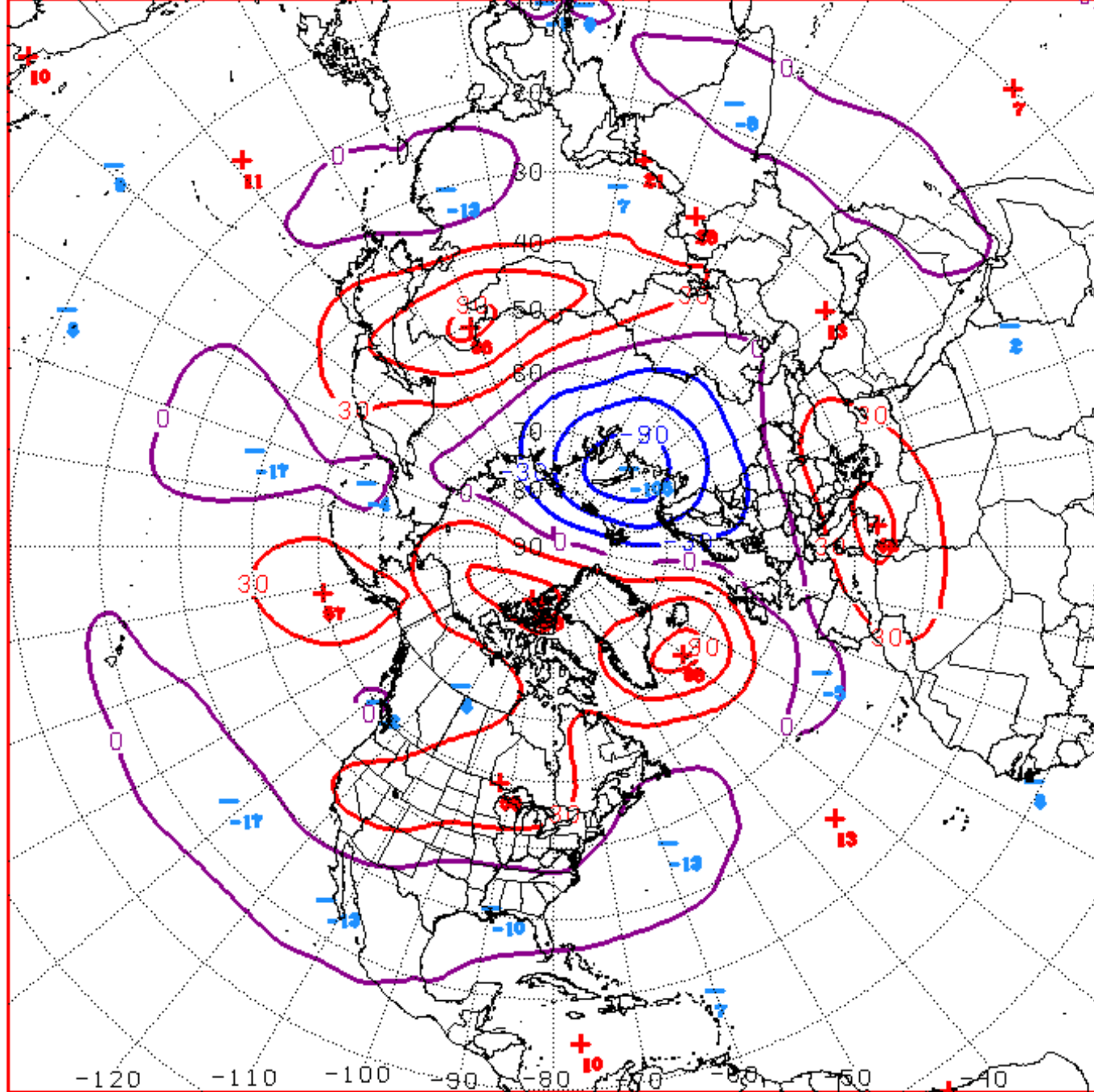
Connections to U.S. Impacts

PNA Index: Observed & GEFS Forecasts

AO Index: Observed & GEFS Forecasts



Models do not show much amplification of the height pattern over higher latitudes of North America when Hinnamnor eventually becomes absorbed in westerlies by next week



-120 -110 -100 -90 -80 -70 -60 -50

D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE AUG 30 2022 1418 UTC CNTD SEP 10 2022

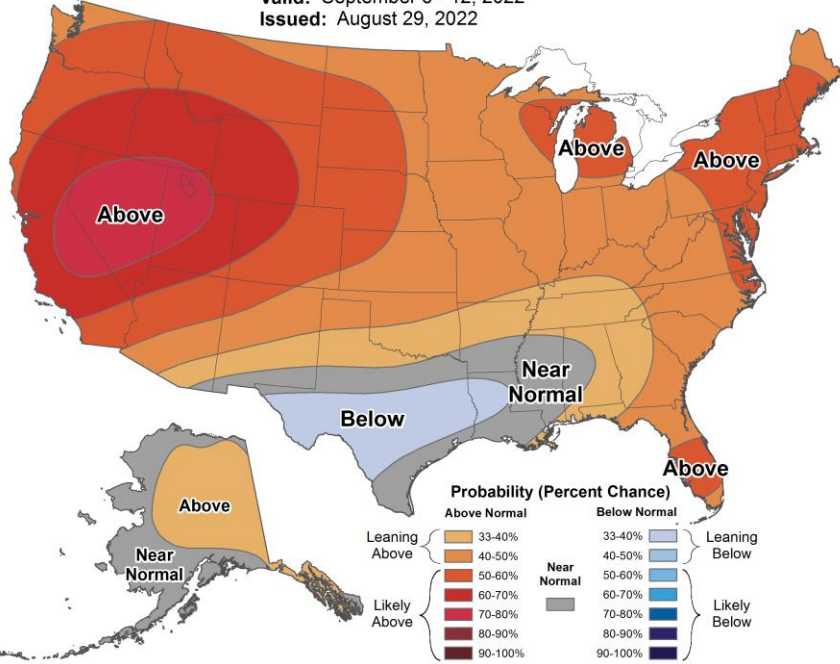
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



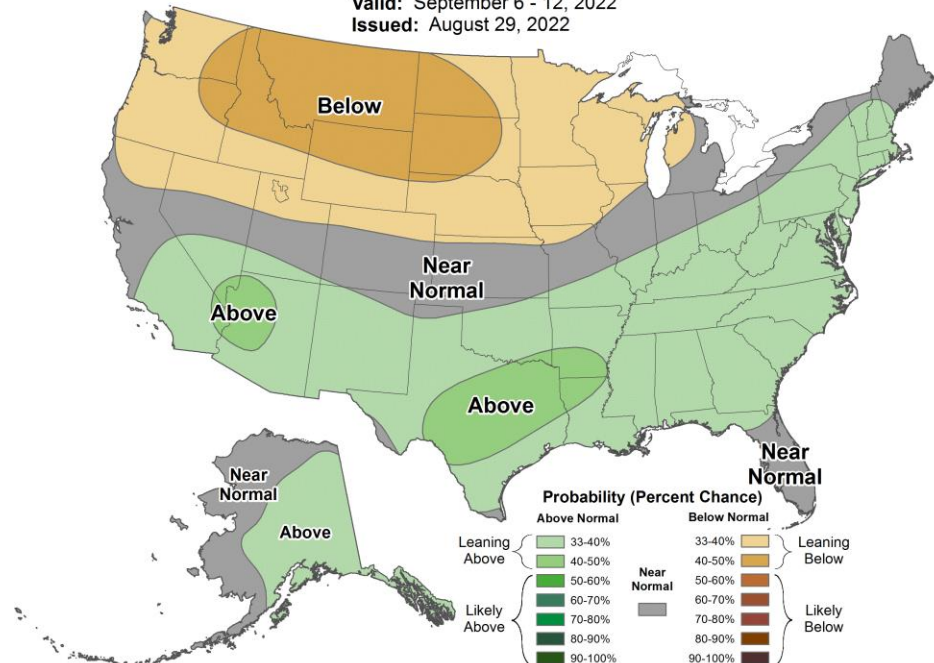
Valid: September 6 - 12, 2022
Issued: August 29, 2022



8-14 Day Precipitation Outlook



Valid: September 6 - 12, 2022
Issued: August 29, 2022



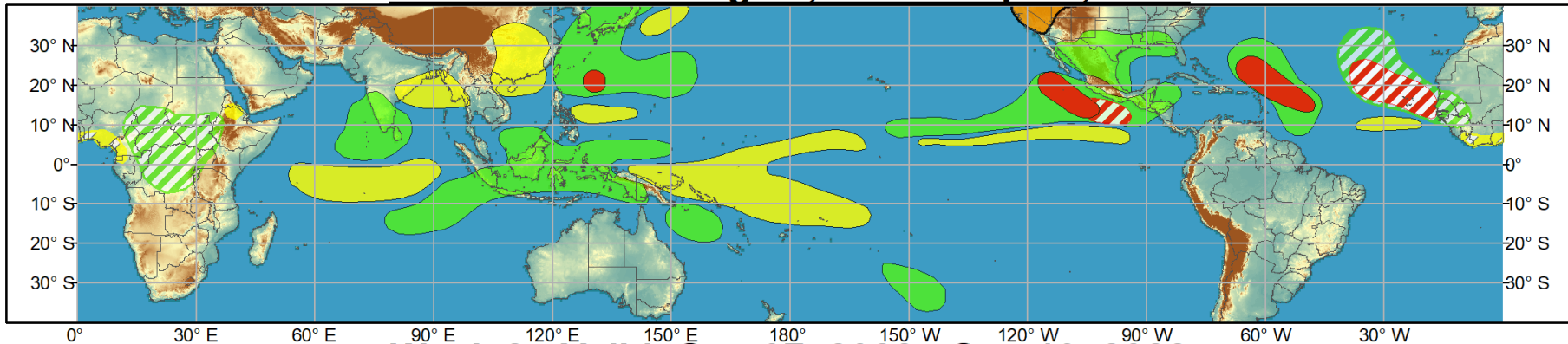
Since we are in a stable pattern today's outlooks are likely to be similar.



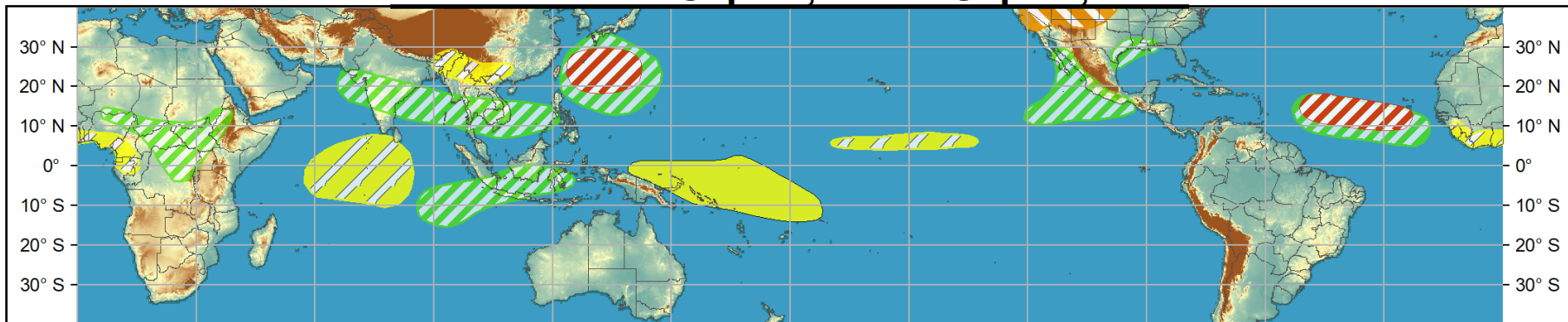
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