

Global Tropics Hazards And Benefits Outlook

9/6/2022

Thomas Collow

Outline

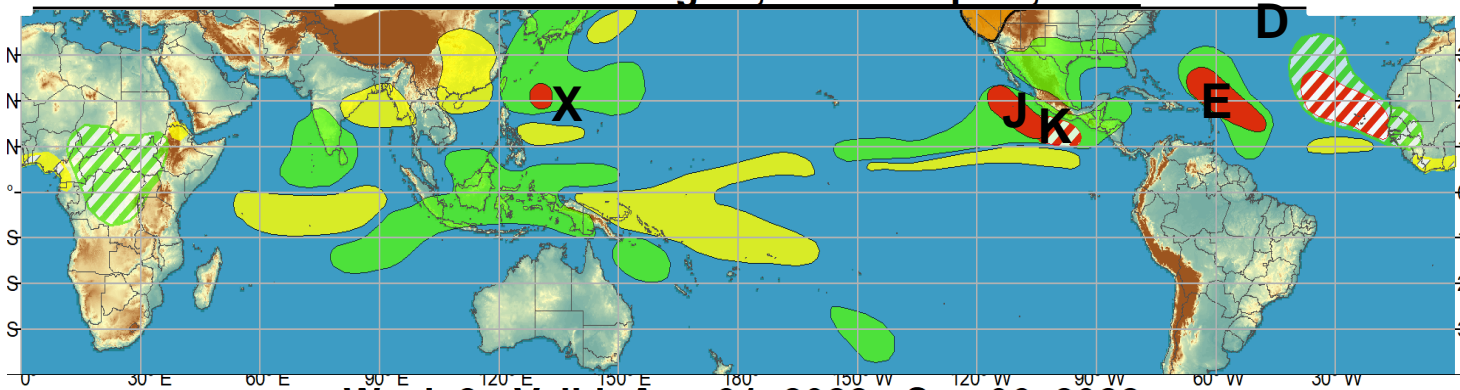
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Announcement

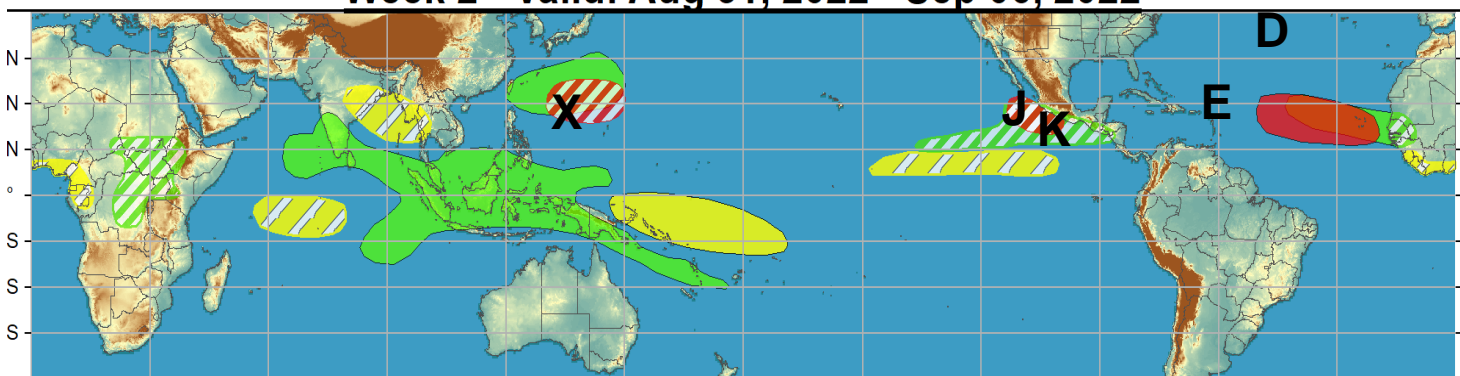
Beginning on **September 13, 2022**, the Climate Prediction Center will terminate the week-1 portion of the Global Tropics and Benefits Hazards outlook. The week-2 portion of the outlook will remain operational and will transition entirely to a probabilistic format, with a name change to the Global Tropics Hazards Outlook. An experimental week-3 probabilistic temperature and precipitation forecast will be issued beginning on this date as well.

Please direct any questions related to this change to Jon Gottschalck (Jon.Gottschalck@noaa.gov)

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

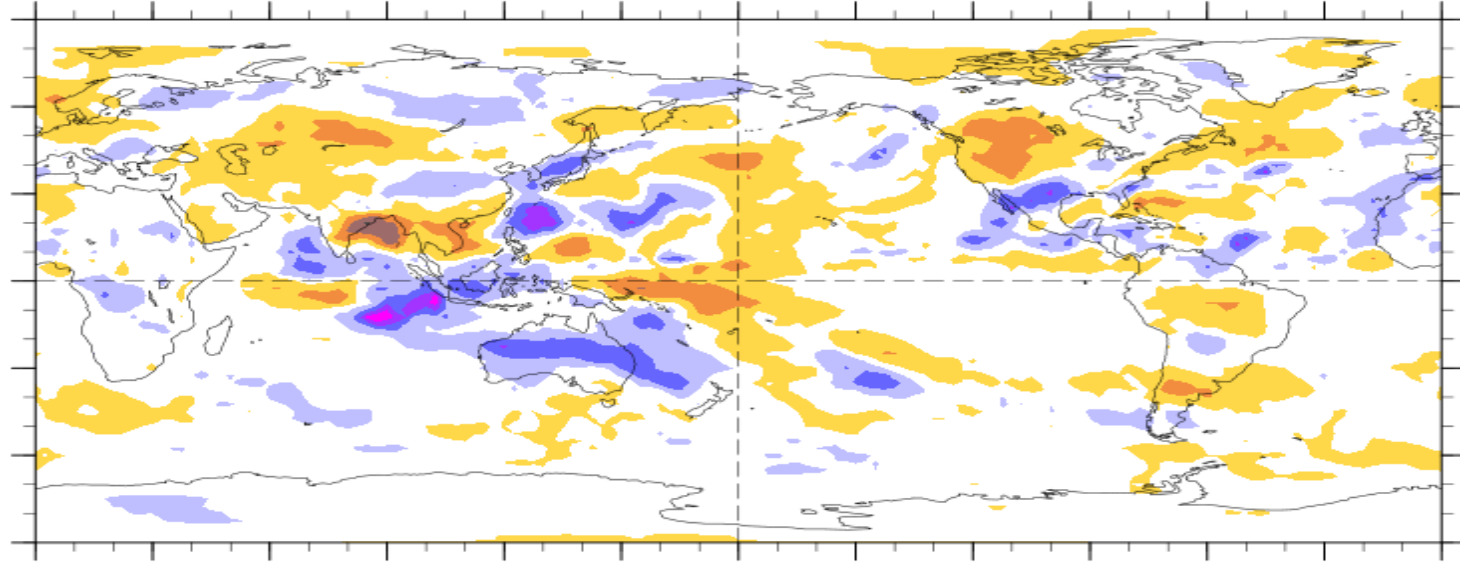


Week 2 - Valid: Aug 31, 2022 - Sep 06, 2022



7-Day Average OLR Anomaly

2022/08/29 - 2022/09/04



Outlook Review

West Pacific
 13W (8/30, not inc.)
 14W (9/6, X)

East Pacific
 Javier (9/1, J)
 Kay (9/4, K)

Atlantic
 Danielle (9/1, D)
 Earl (9/3, E)

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:

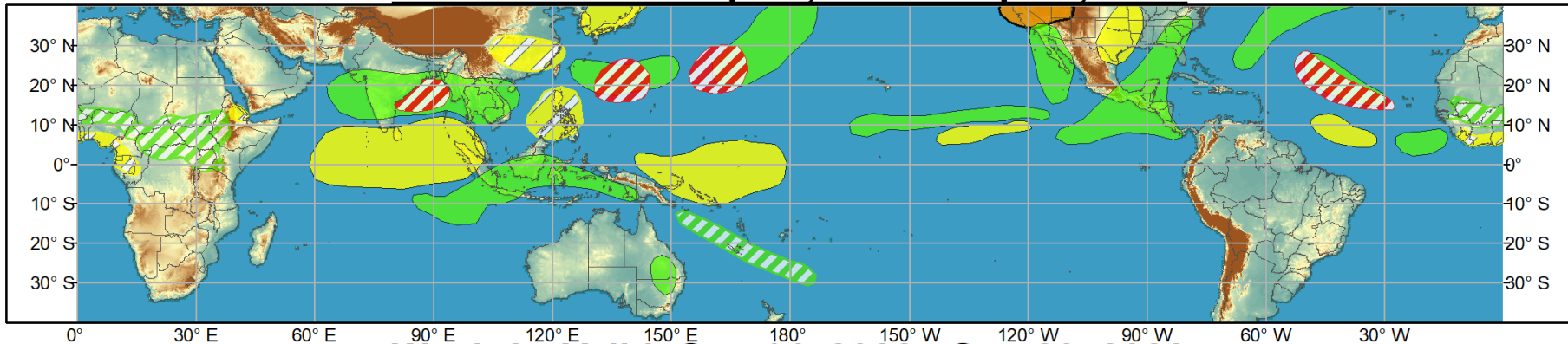
- Following an amplification of the Madden Julian Oscillation (MJO) over the Indian Ocean in late-August, the intraseasonal signal has since retreated back into the RMM-based unit circle.
- Enhanced convection is located across the Indian Ocean, Maritime Continent, and far Western Pacific, with suppressed convection over much of the Western Hemisphere. The GEFS and ECMWF ensembles depict little eastward propagation of the convective envelope, consistent with a weakened MJO.
- Kelvin Wave activity may promote tropical cyclone development across the Eastern Pacific and Atlantic Basins during the next 2 weeks, coinciding with the climatological peak of hurricane season.



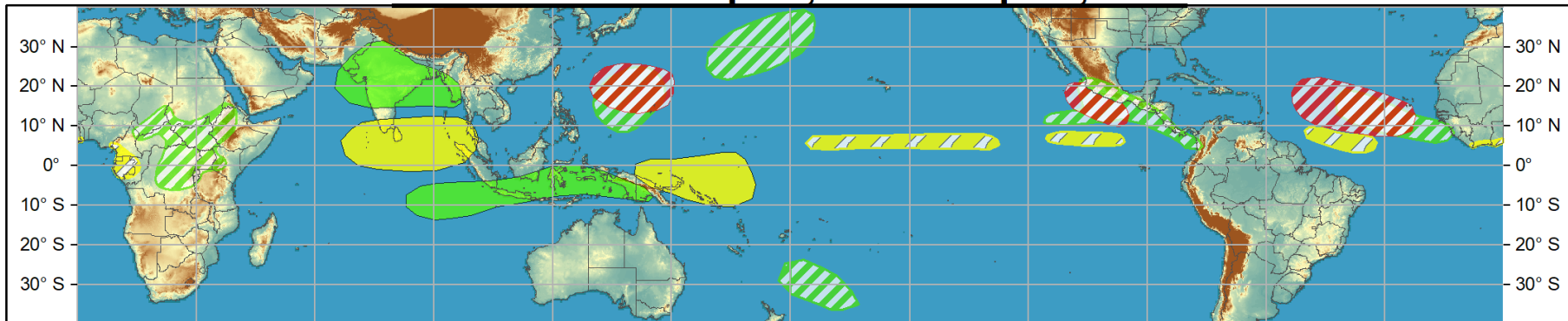
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Sep 07, 2022 - Sep 13, 2022



Week 2 - Valid: Sep 14, 2022 - Sep 20, 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: 09/06/2022

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

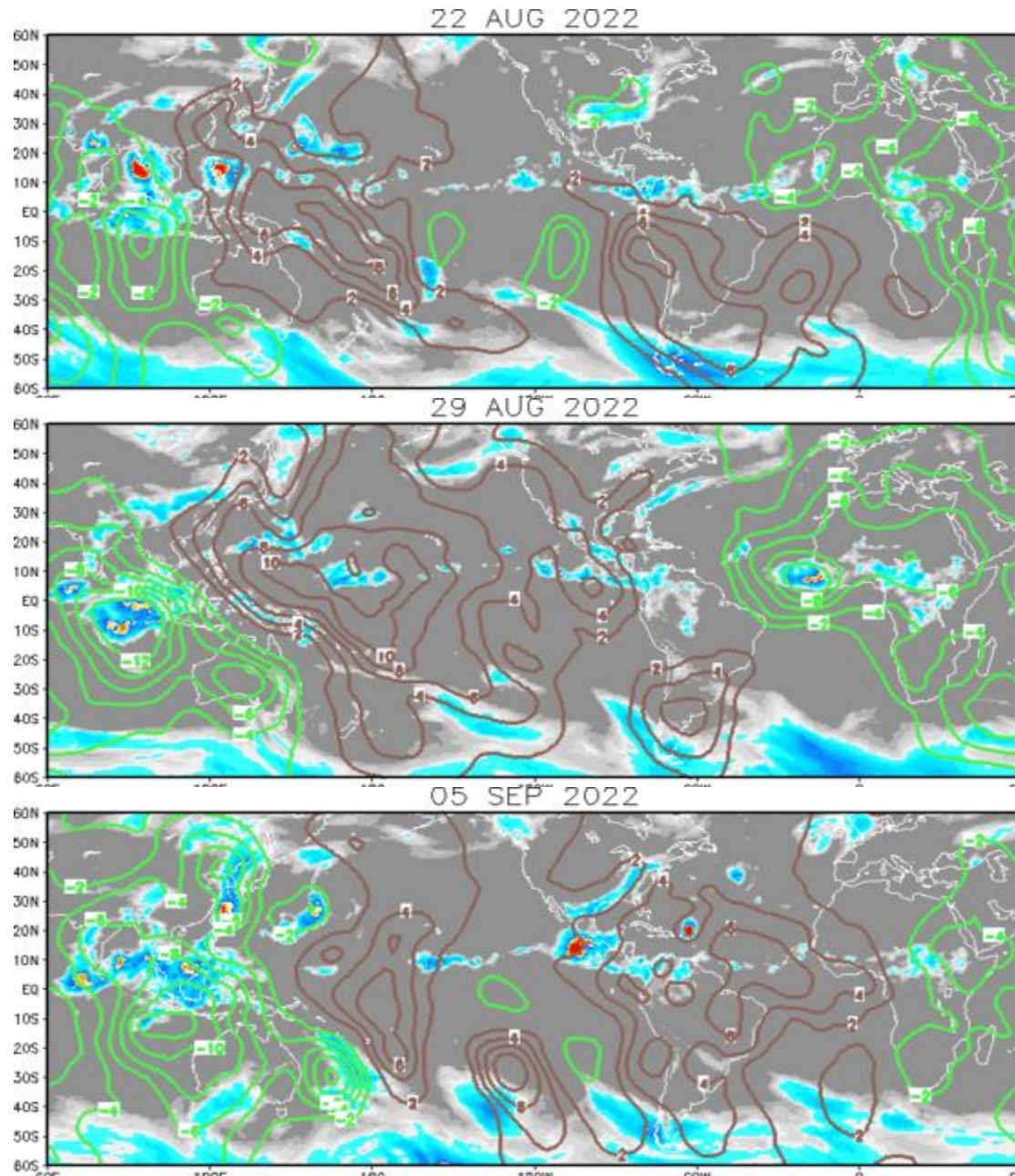
Green: Enhanced Divergence

Brown: Enhanced Convergence

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

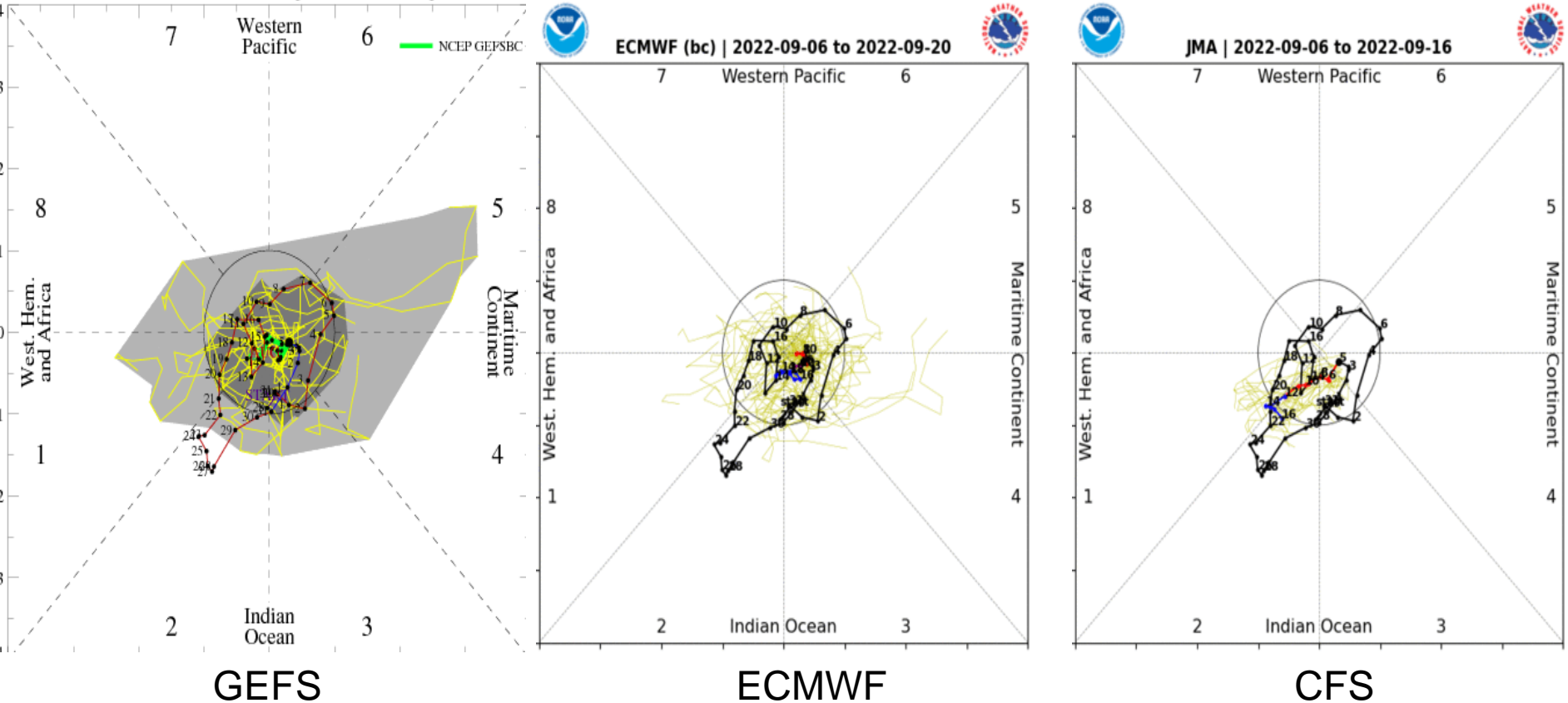
A wave-1 pattern emerged in late August suggestive of the MJO becoming better organized with a more uniform distribution of suppressed conditions overspreading the East Pacific and Americas.

There is little eastward propagation in the convective envelope in the past week, indicative of a quickly weakening MJO signal.



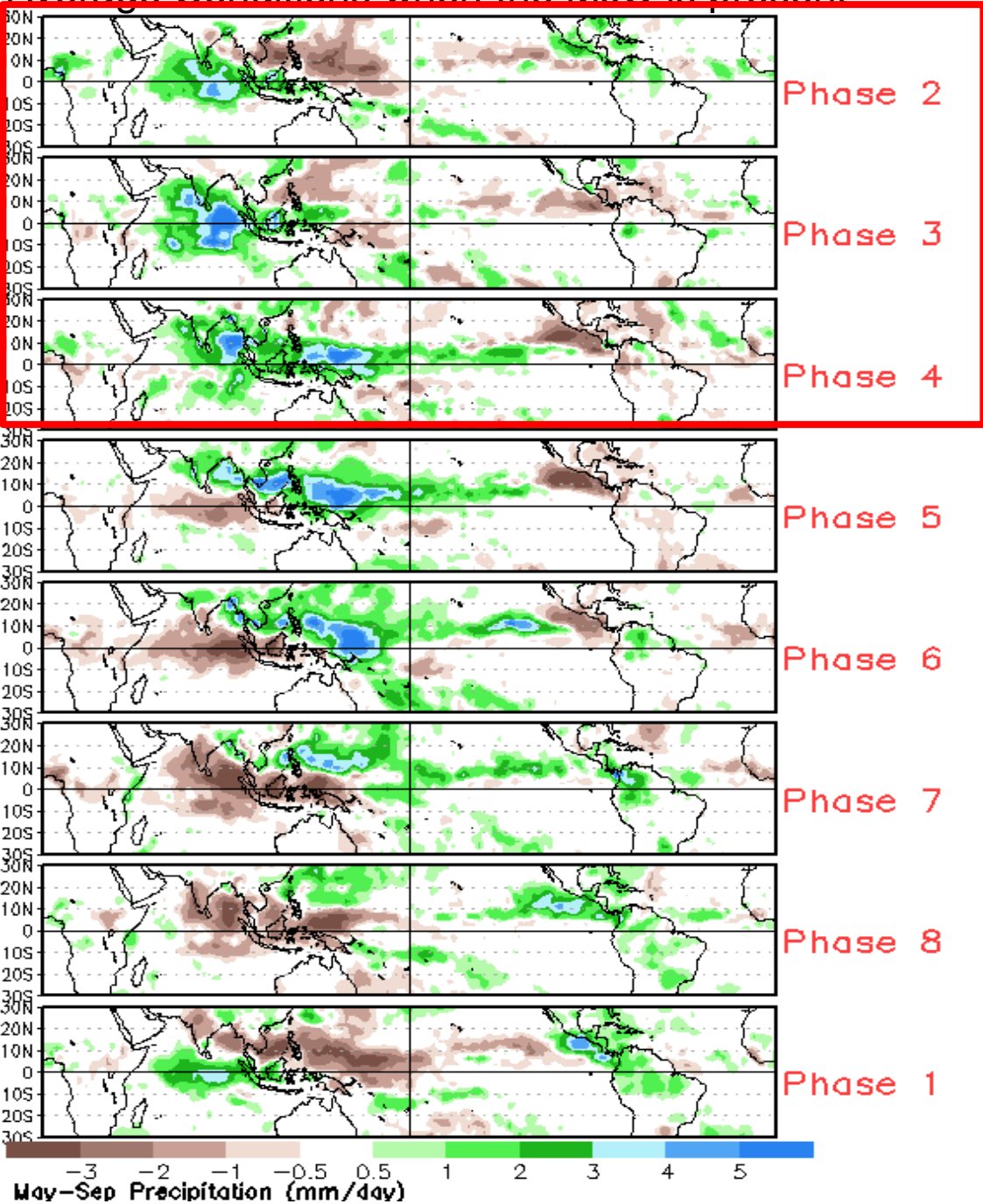
MJO Observation/Forecast

[RMM1, RMM2] forecast for Sep-06-2022 to Sep-20-2022



The dynamical model ensembles depict an incoherent signal in regards to MJO propagation during the next 2 weeks, with the GEFS and ECMWF ensemble means remaining within the RMM-unit circle, and large variability noted among the individual members.

Average Conditions when the MJO is present

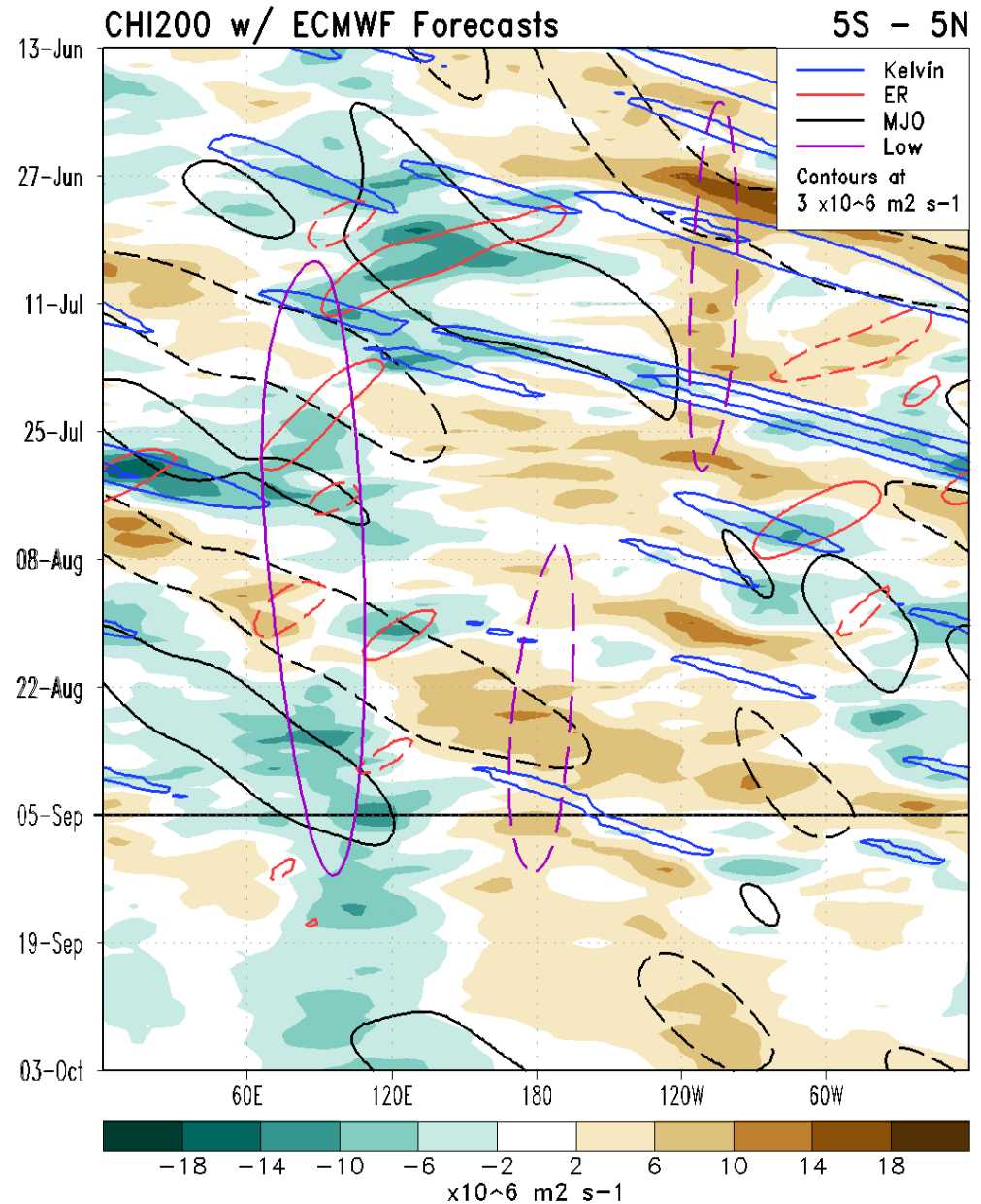


CAVEAT: These panels are representative of robust MJO events.

During the past 2 weeks, **MJO** activity was coming through the upper-level velocity potential filtering. However, eastward propagation has stalled.

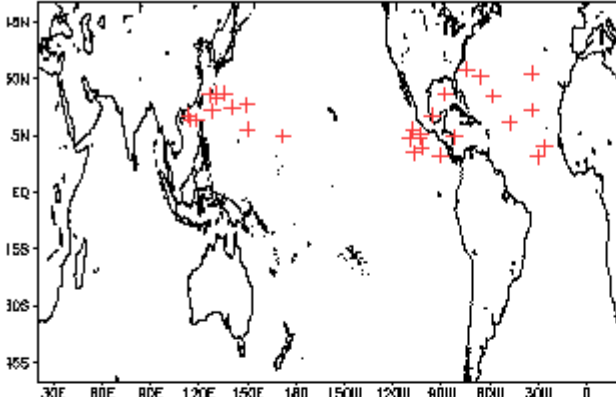
Kelvin wave activity may promote increased convection and TC development across the East Pacific and Atlantic

Low frequency contours depict ENSO cold conditions along and west of 120E.

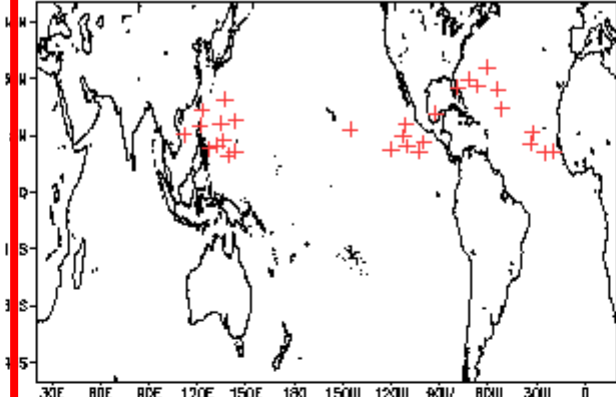


September Tropical Storm Formation by MJO phase

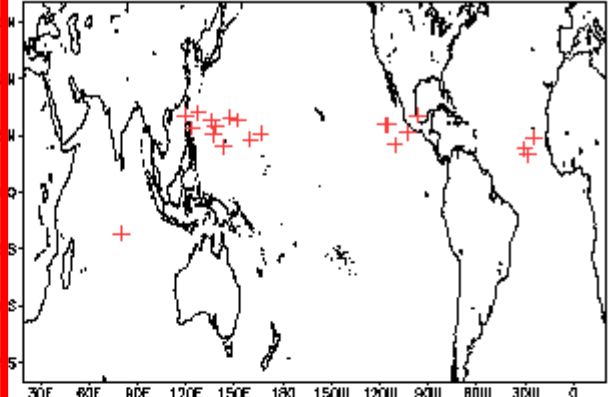
Phase 1 (81 days) 31 storms



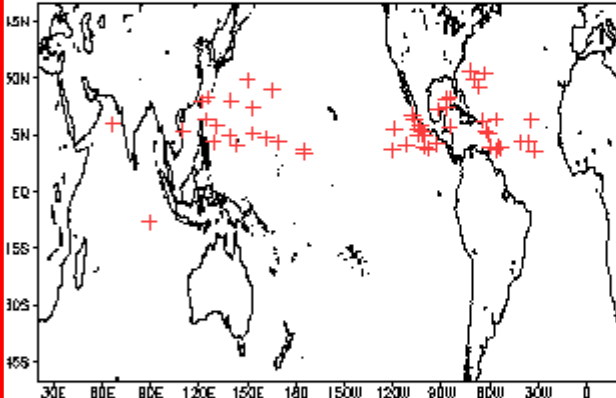
Phase 4 (70 days) 30 storms



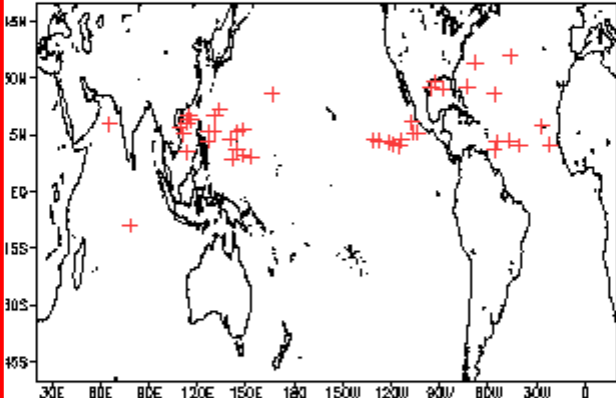
Phase 7 (38 days) 22 storms



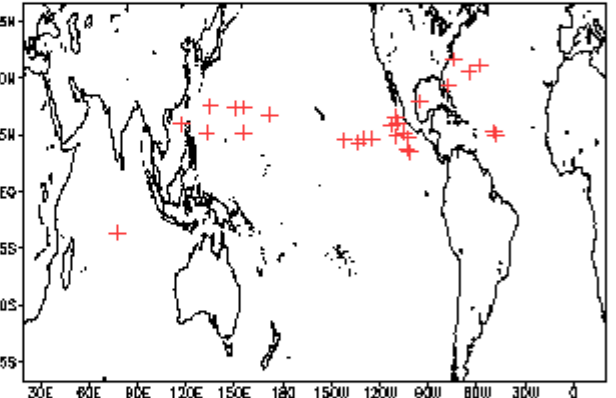
Phase 2 (122 days) 56 storms



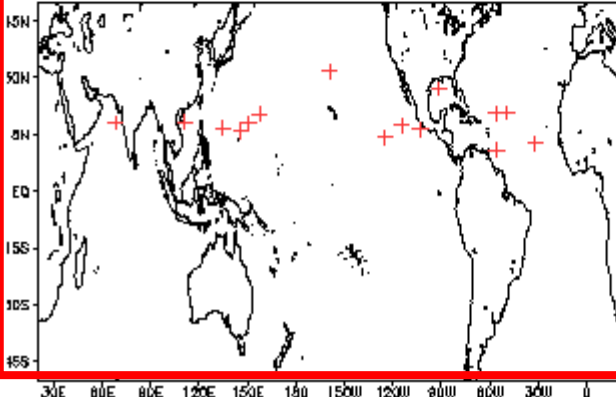
Phase 5 (106 days) 45 storms



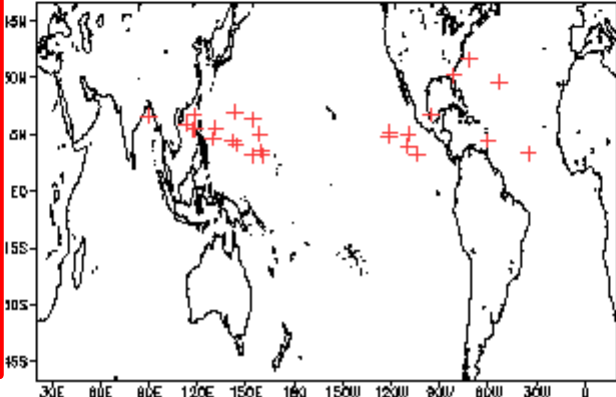
Phase 8 (67 days) 29 storms



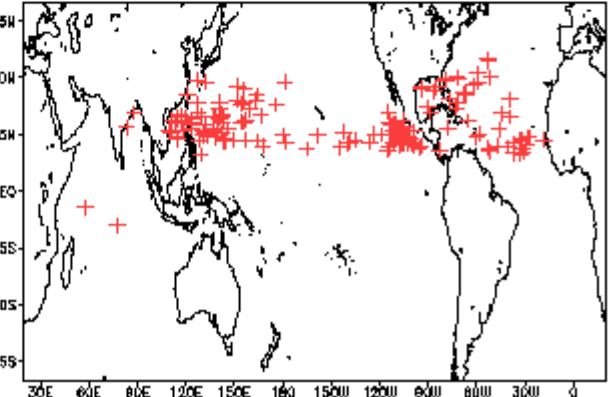
Phase 3 (51 days) 16 storms



Phase 6 (61 days) 27 storms



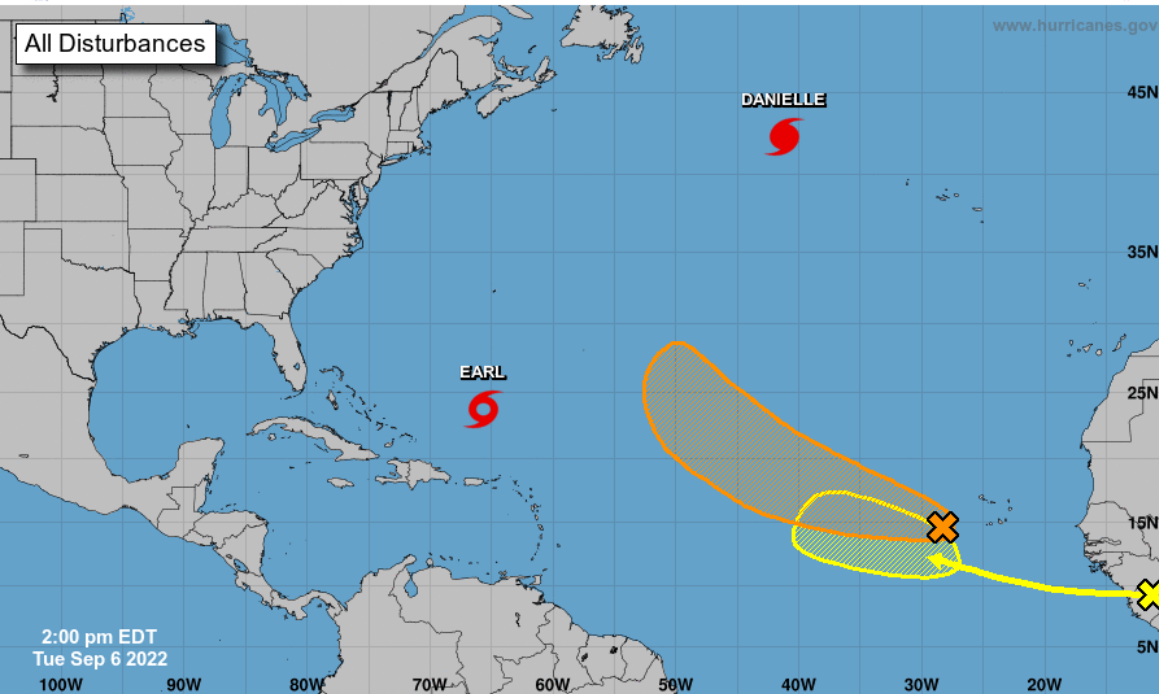
Null (393 days) 169 storms





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



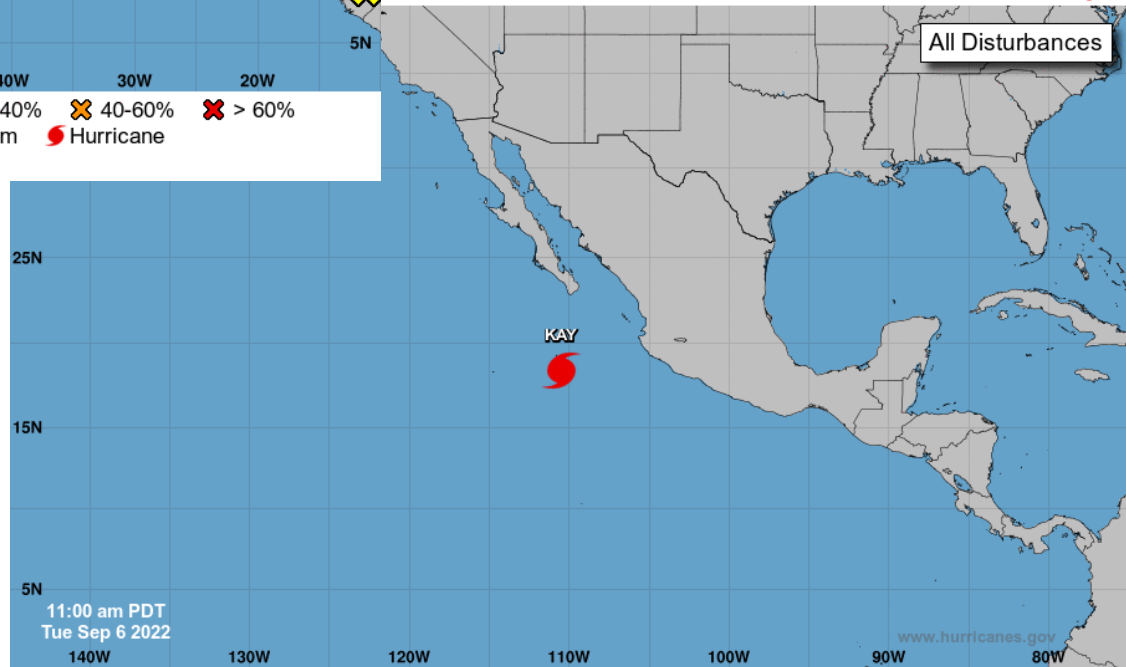
2:00 pm EDT
Tue Sep 6 2022

Current Disturbances and Five-Day Cyclone Formation Chance:
 Tropical or Sub-Tropical Cyclone:
 ○ Depression ◐ Storm ◑ Hurricane
 ⊗ Post-Tropical Cyclone or Remnants

Formation Chance:
 ✕ < 40% ✖ 40-60% ✗ > 60%

Five-Day Graphical Tropical Weather Outlook

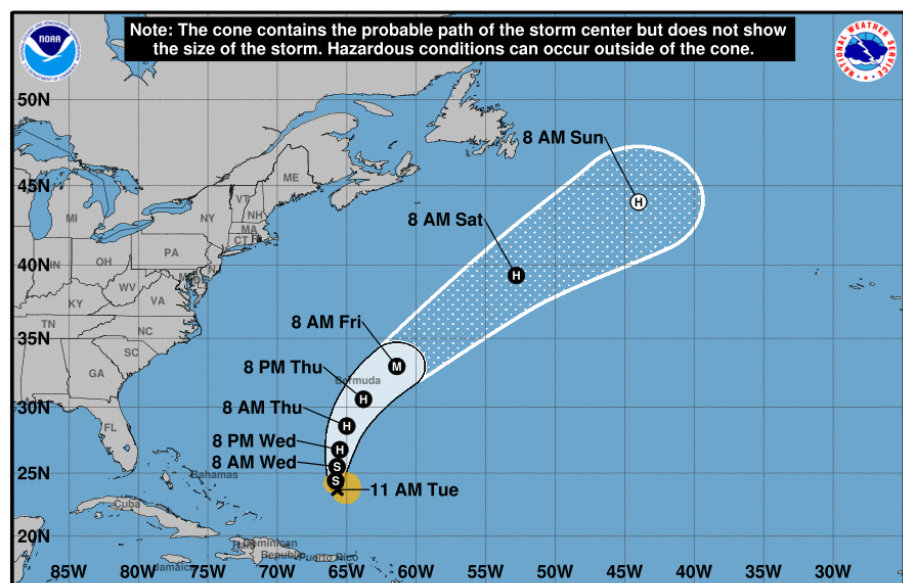
National Hurricane Center Miami, Florida



11:00 am PDT
Tue Sep 6 2022

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

Formation Chance:
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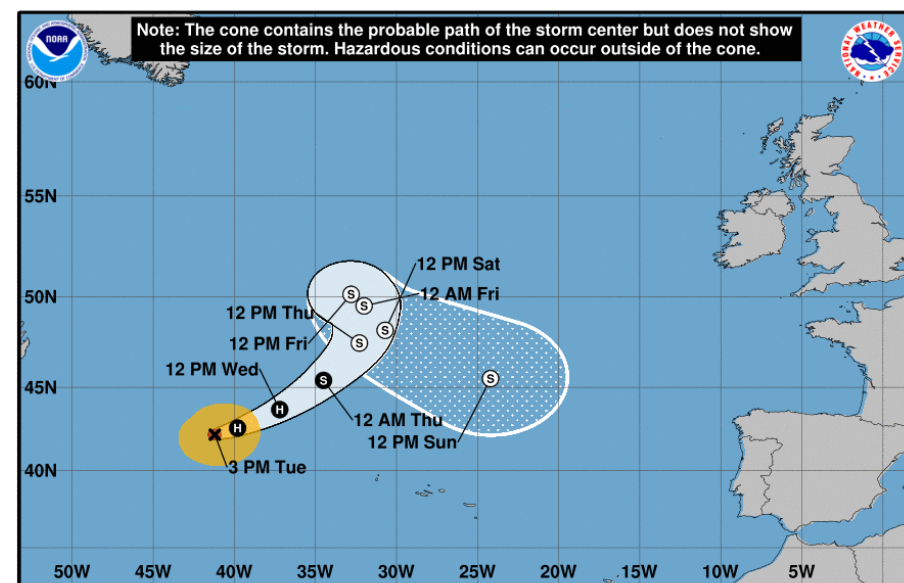


Tropical Storm Earl
 Tuesday September 06, 2022
 11 AM AST Advisory 15
 NWS National Hurricane Center

Current information: x
 Center location 23.7 N 65.7 W
 Maximum sustained wind 65 mph
 Movement N at 5 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area: Day 1-3 (solid line), Day 4-5 (dotted line)
Watches: Hurricane (pink), Trop Stm (yellow)
Warnings: Hurricane (red), Trop Stm (blue)
Current wind extent: Hurricane (brown), Trop Stm (orange)

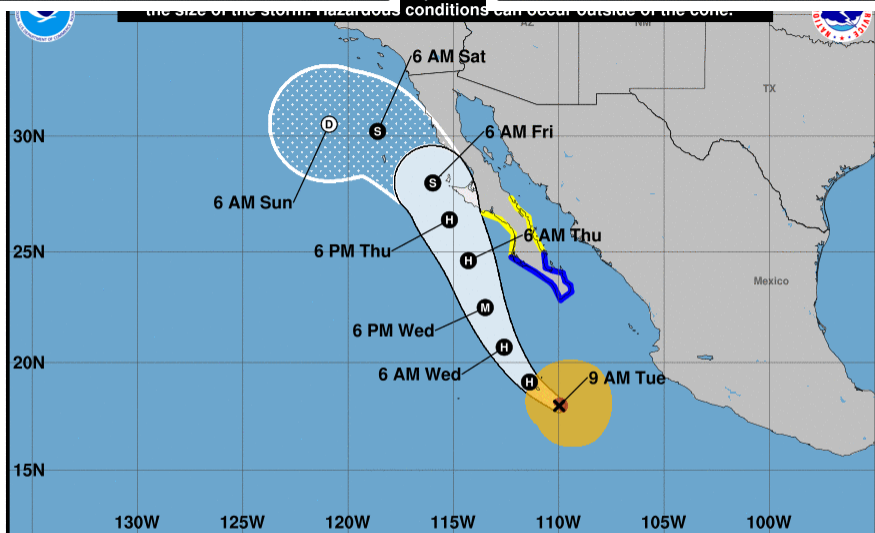


Hurricane Danielle
 Tuesday September 06, 2022
 3 PM GMT Advisory 22
 NWS National Hurricane Center

Current information: x
 Center location 42.2 N 41.2 W
 Maximum sustained wind 75 mph
 Movement ENE at 6 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area: Day 1-3 (solid line), Day 4-5 (dotted line)
Watches: Hurricane (pink), Trop Stm (yellow)
Warnings: Hurricane (red), Trop Stm (blue)
Current wind extent: Hurricane (brown), Trop Stm (orange)



Hurricane Kay
 Tuesday September 06, 2022
 9 AM MDT Advisory 9
 NWS National Hurricane Center

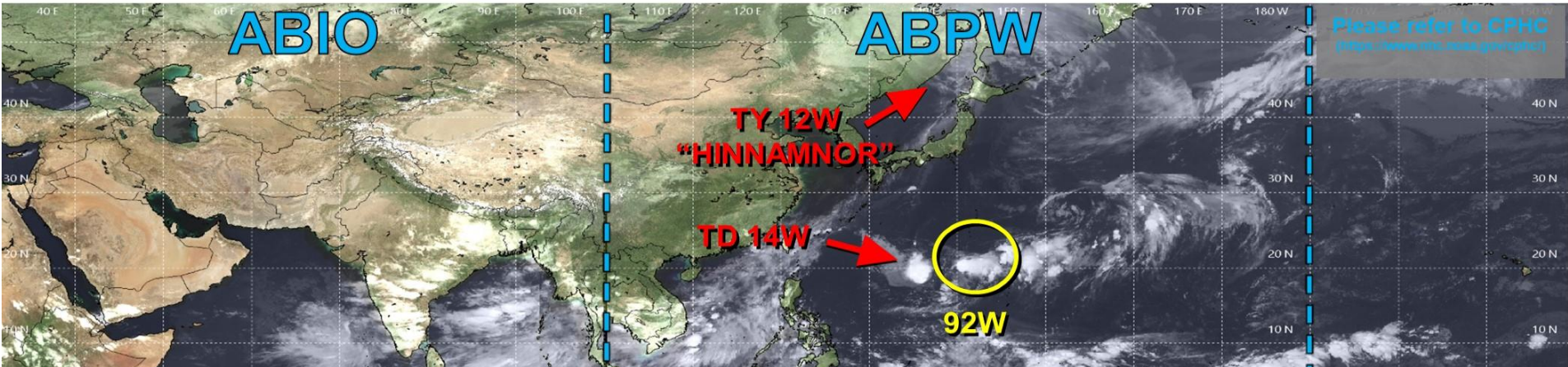
Current information: x
 Center location 18.0 N 110.0 W
 Maximum sustained wind 85 mph
 Movement NW at 14 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area: Day 1-3 (solid line), Day 4-5 (dotted line)
Watches: Hurricane (pink), Trop Stm (yellow)
Warnings: Hurricane (red), Trop Stm (blue)
Current wind extent: Hurricane (brown), Trop Stm (orange)

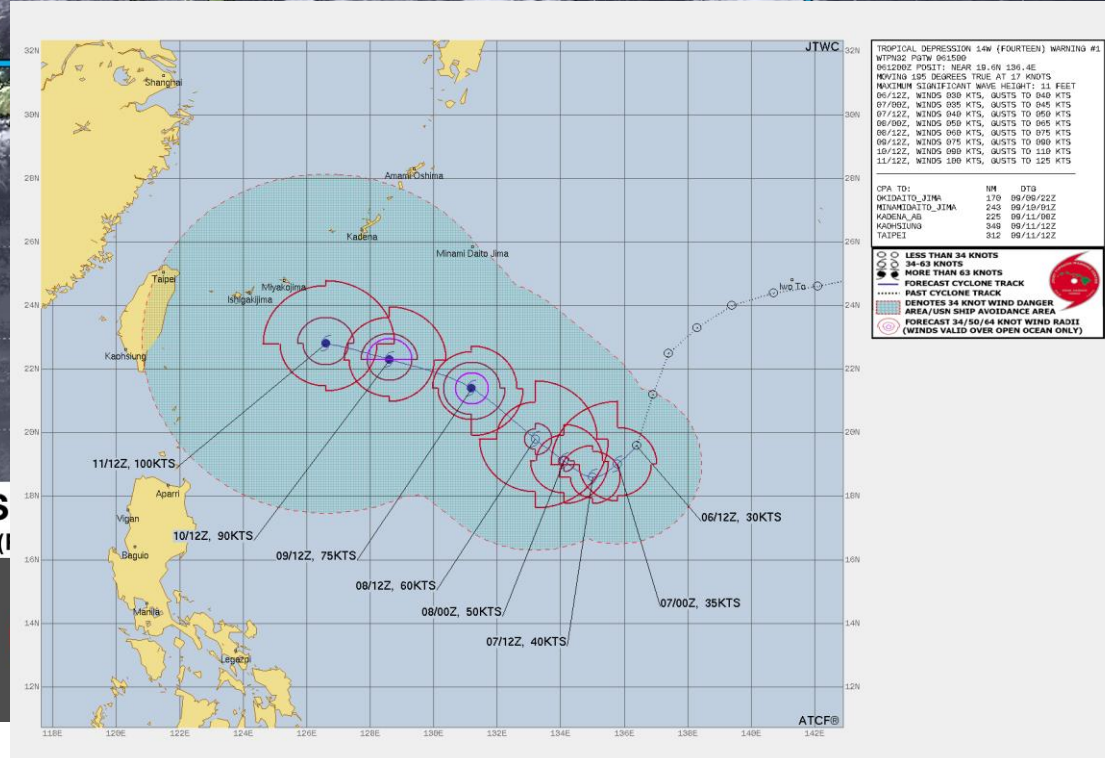


JOINT TYPHOON WARNING CENTER



Please refer to CPHC
(<http://www.mtc.navy.gov/cphc/>)

**NO SUSPECT AREAS
(ABIO)**



LOW TC development unlikely within 24 hours

MEDIUM TC development likely, but expected to occur beyond 24 hours

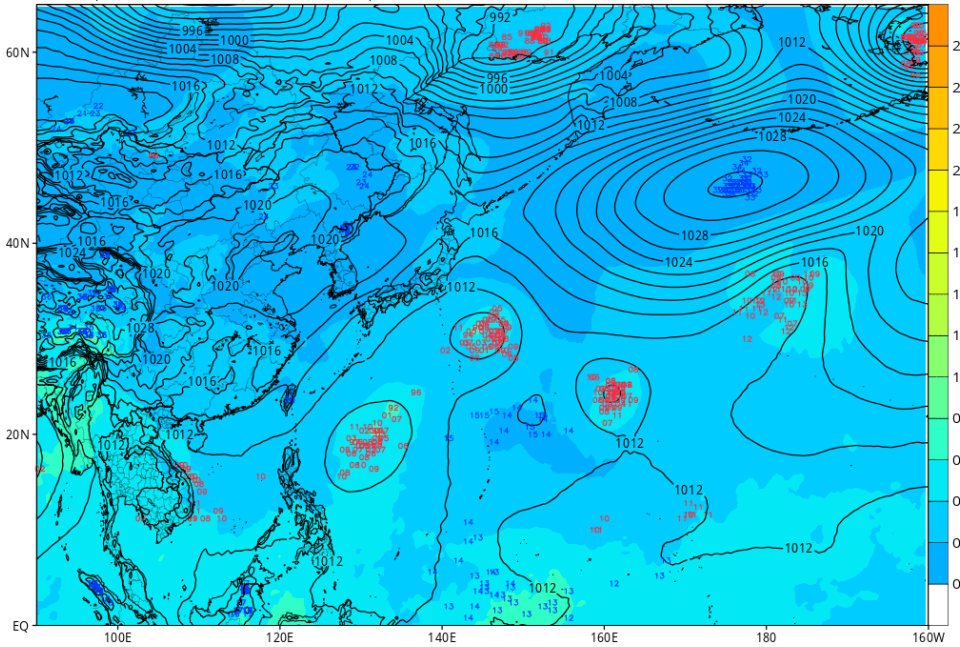
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ATCF®

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

Init: 06z Sep 06 2022 Forecast Hour: [66] valid at 00z Fri, Sep 09 2022

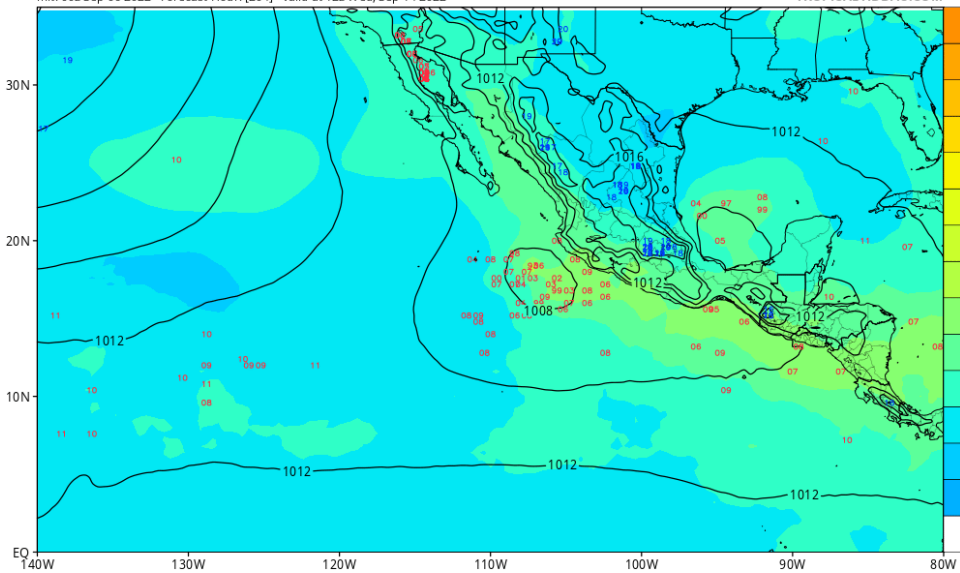
TROPICALTIDBITS.COM



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

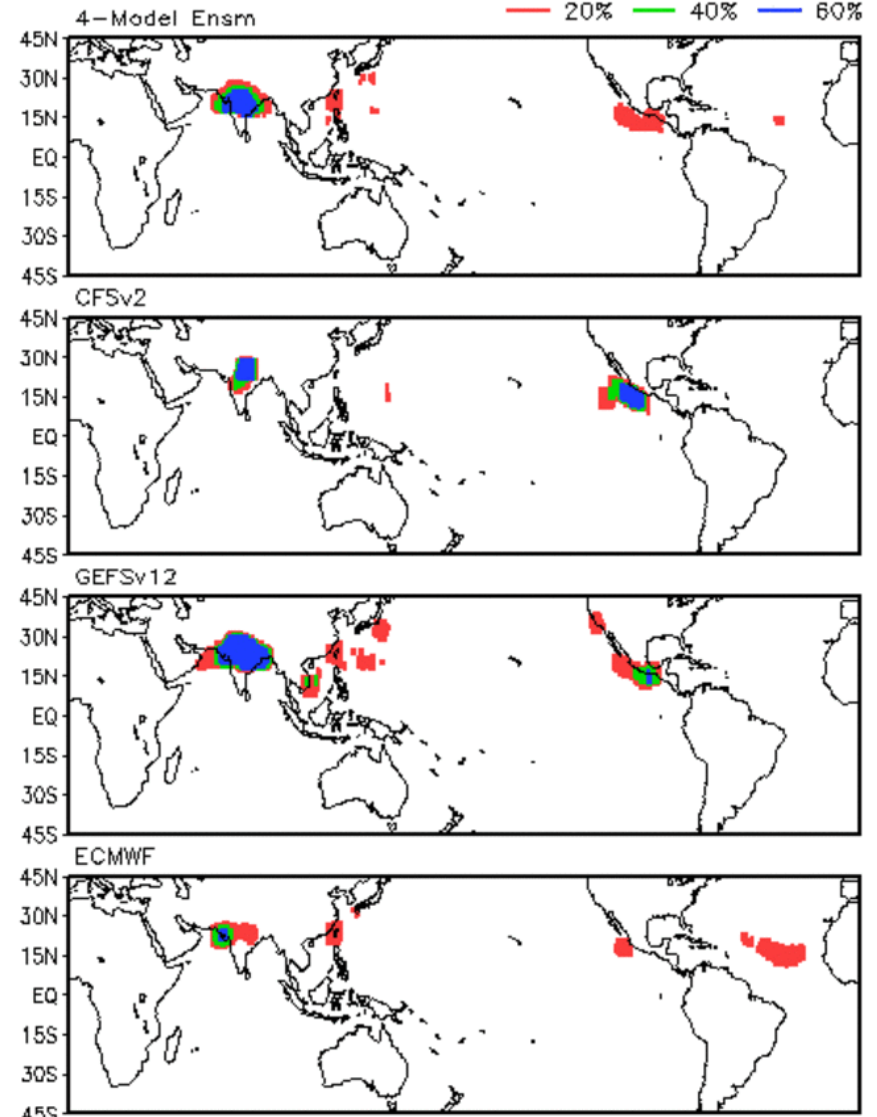
Init: 00z Sep 06 2022 Forecast Hour: [204] valid at 12z Wed, Sep 14 2022

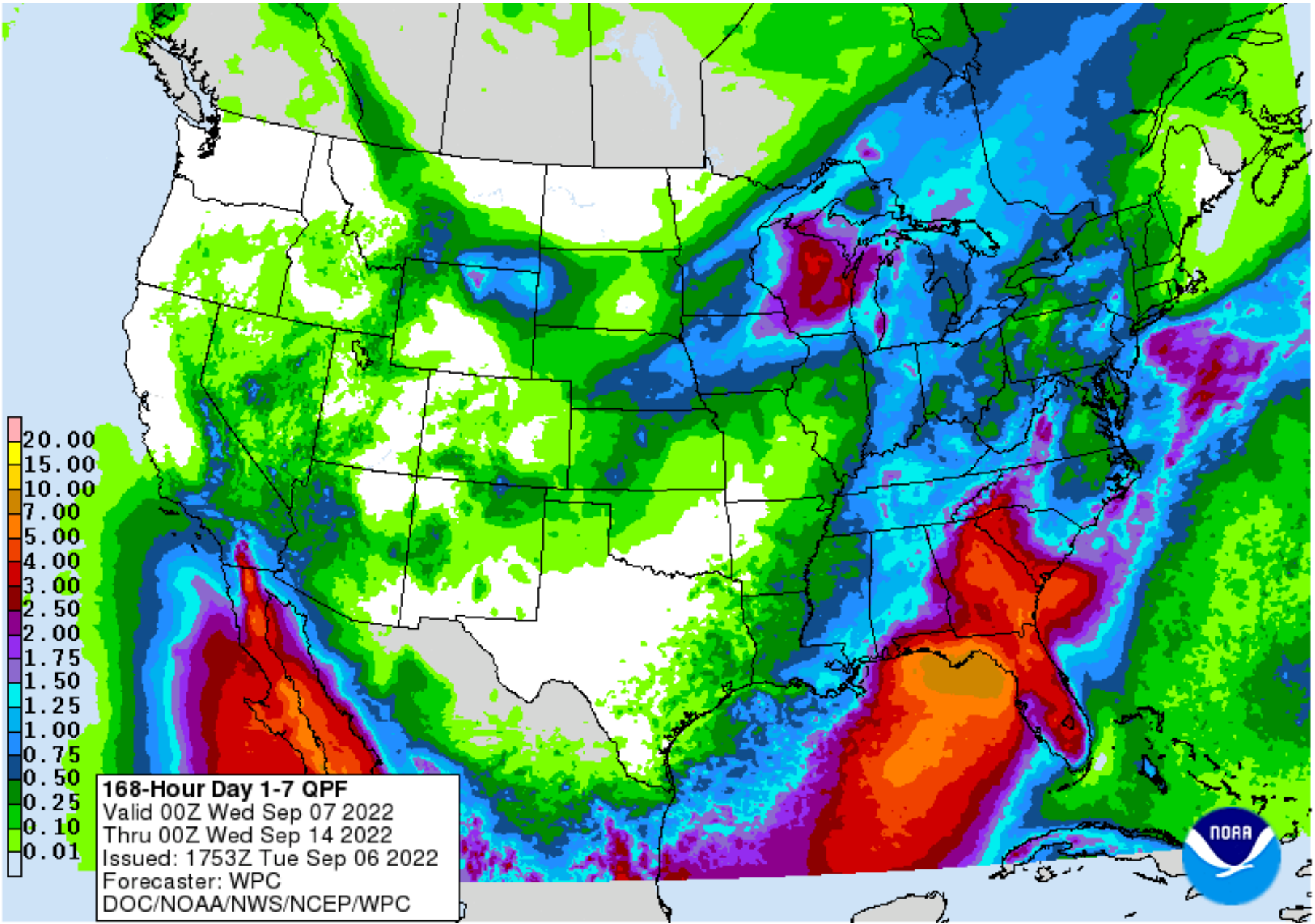
TROPICALTIDBITS.COM



Storm Track Probabilities, IC=20220905

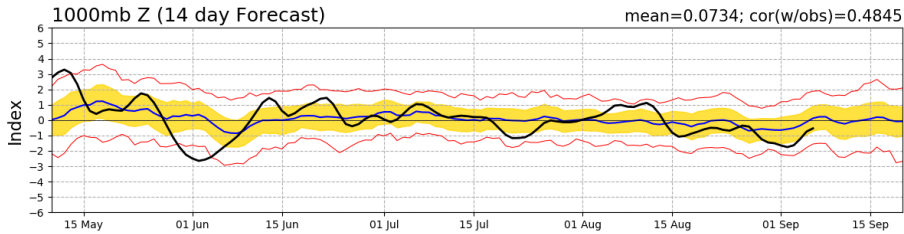
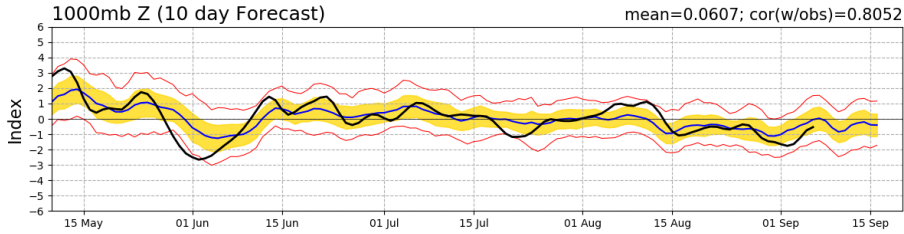
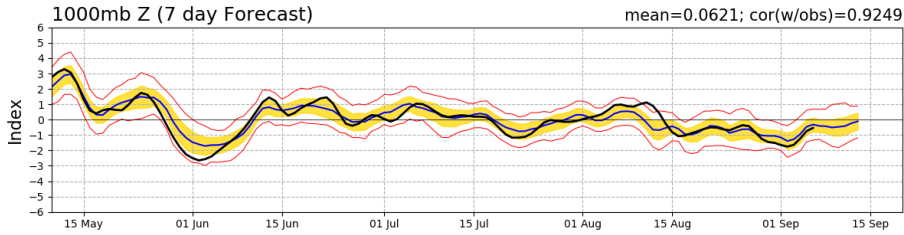
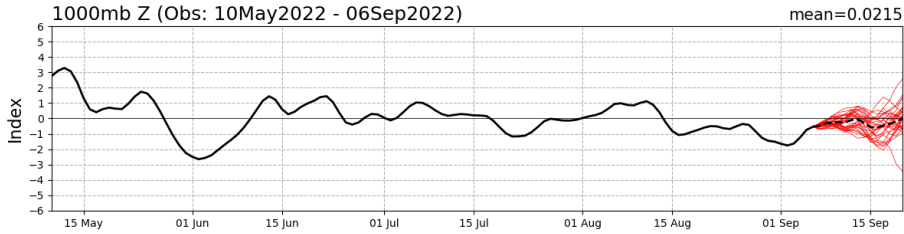
Week 2: 0914 - 0920



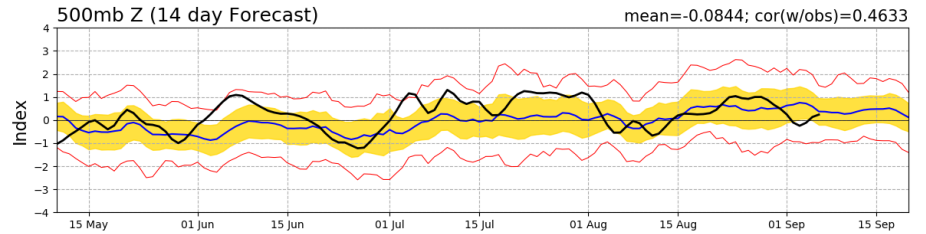
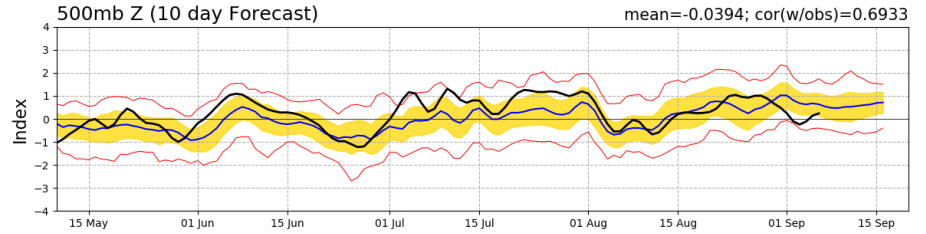
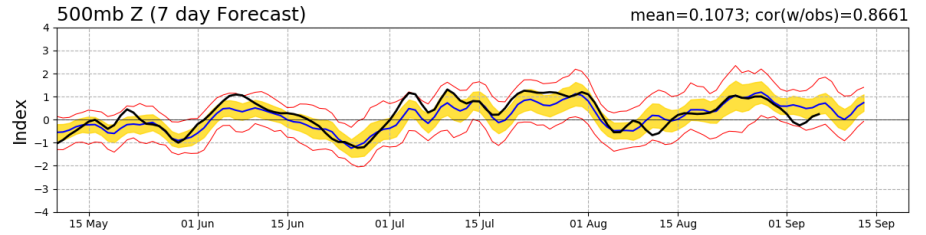
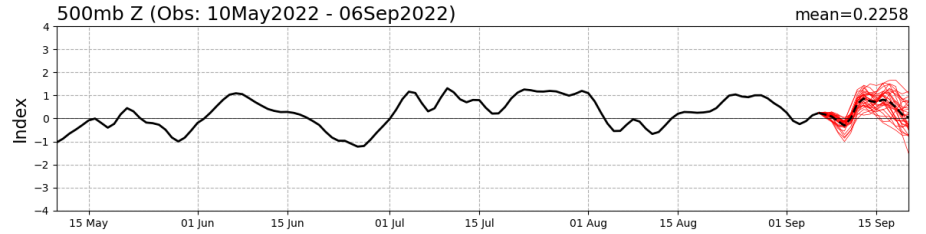


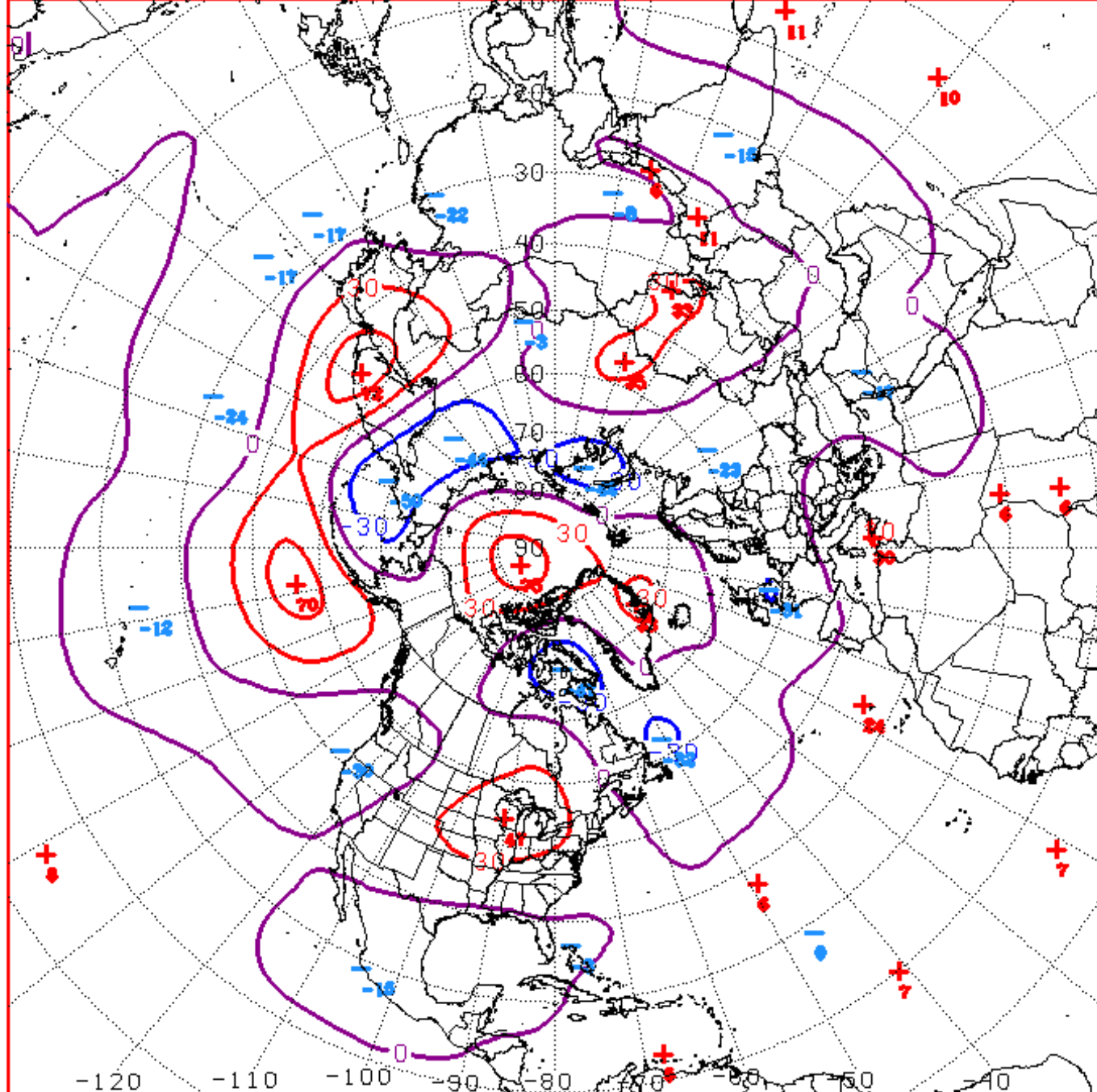
Connections to U.S. Impacts

AO Index: Observed & GEFS Forecasts



PNA Index: Observed & GEFS Forecasts





D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE SEP 06 2022 1350 UTC CNTD SEP 17 2022

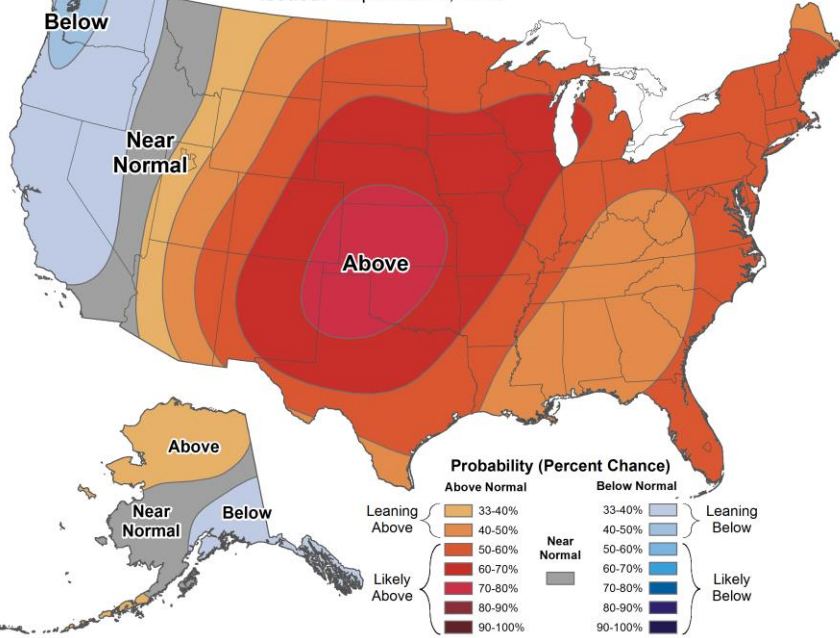
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



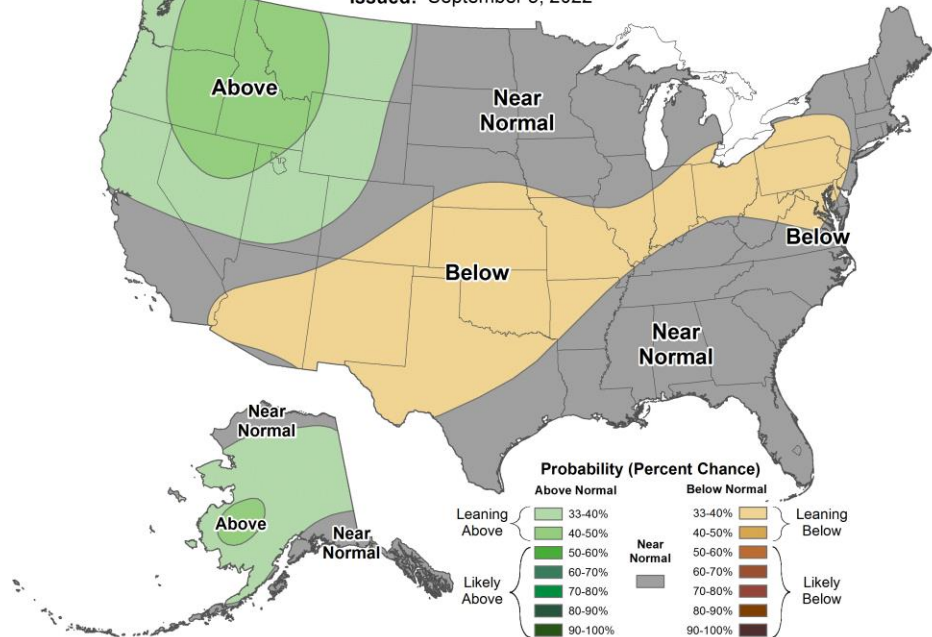
Valid: September 13 - 19, 2022
 Issued: September 5, 2022



8-14 Day Precipitation Outlook



Valid: September 13 - 19, 2022
 Issued: September 5, 2022



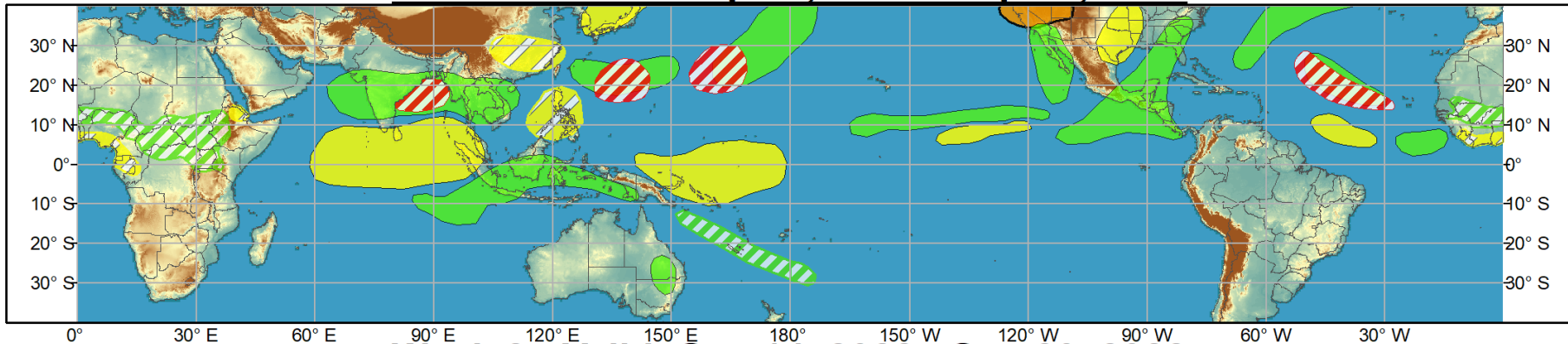
Since we are in a stable pattern today's outlooks are likely to be similar.



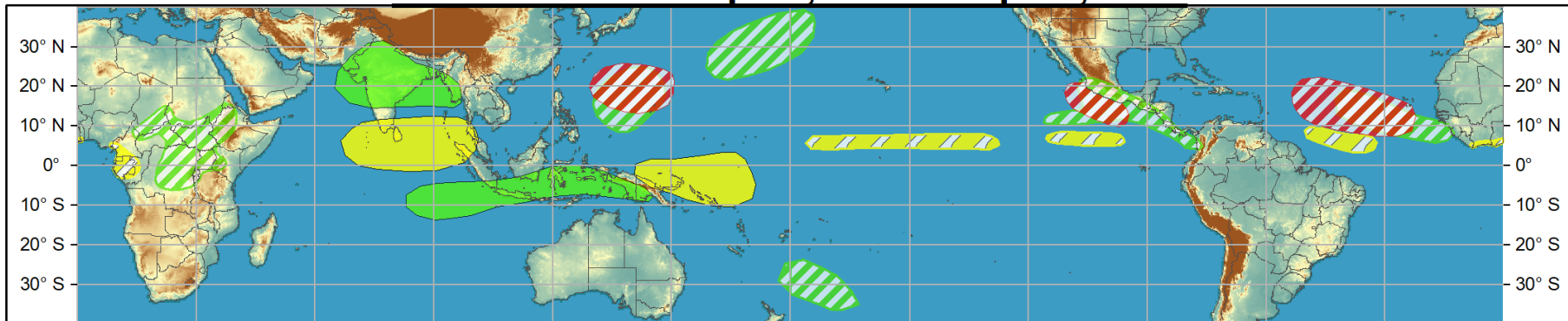
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Week 2 - Valid: Sep 14, 2022 - Sep 20, 2022



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.

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