



Weeks 2-3 Global Tropics Hazards Outlook

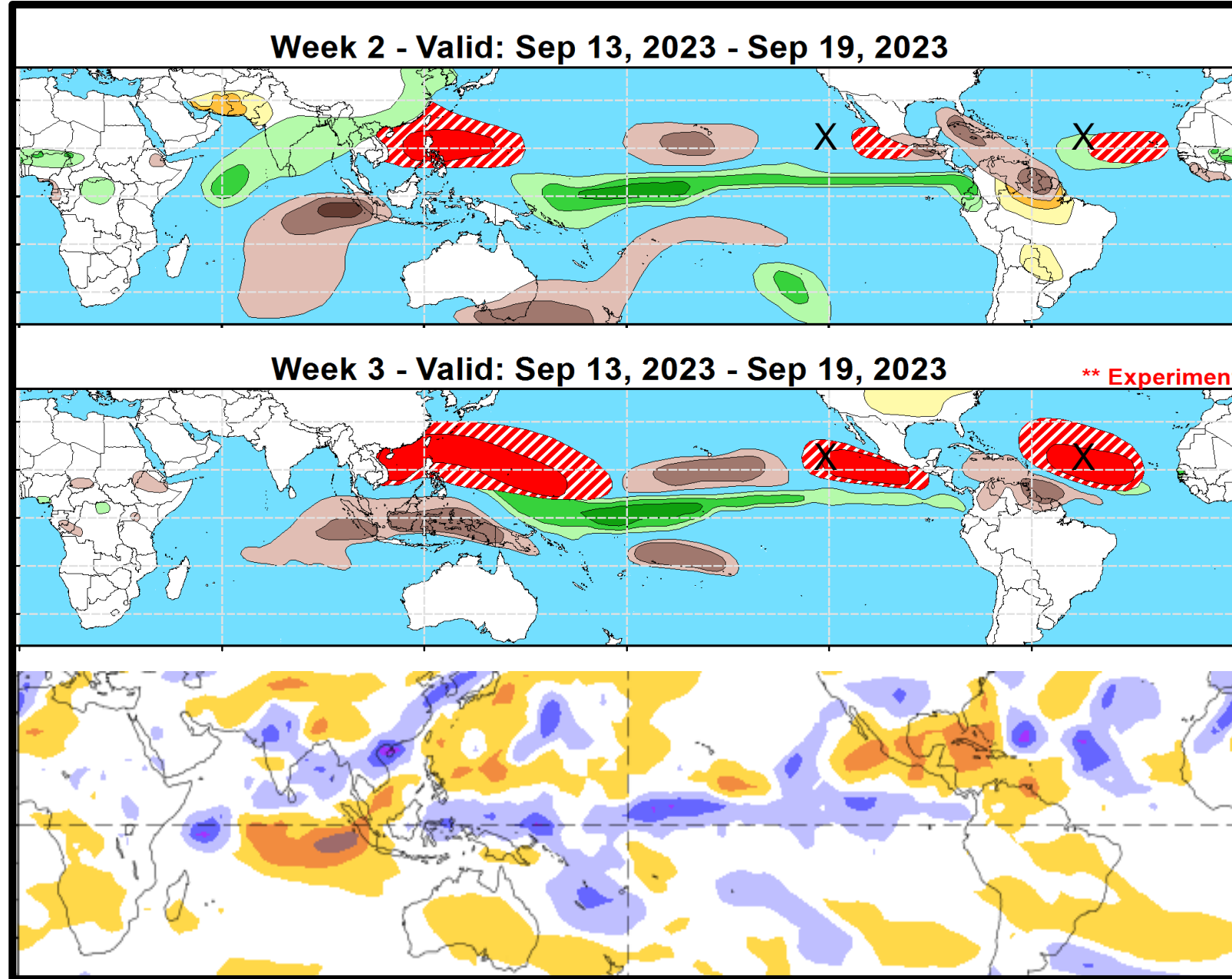
9/19/2023

Nick Novella

NWS / NCEP / Climate Prediction Center

Outlook Review: TC development & anomalous precipitation during the past week

- ATL: Nigel
- EPAC: TD13



Synopsis of Climate Modes:

ENSO: (Sep 14, 2023 Update) *next update on Thursday, Oct 12th*

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño is anticipated to continue through the Northern Hemisphere winter, with greater than 95% chance through Jan-Mar, 2024.

MJO and other subseasonal tropical variability:

- The MJO has become largely disorganized during the past week, which is likely associated with destructive interference with the ongoing El Niño, as well as other competing modes of variability in the tropics.
- Based on RMM and upper-level velocity potential anomaly forecasts, a more coherent MJO reemerging across the global tropics appears increasingly likely, with the enhanced phase favored to shift across the Maritime Continent and into the western Pacific through the end of October.
- A reorganizing MJO would largely support increased (decreased) chances for tropical cyclogenesis across the eastern (western) Hemisphere. However, the reduced potential for tropical cyclone development in the eastern Pacific and Atlantic basins looks to be offset by their active climatologies, as well as potential Kelvin wave activity to incite formation.

GTH Outlook:

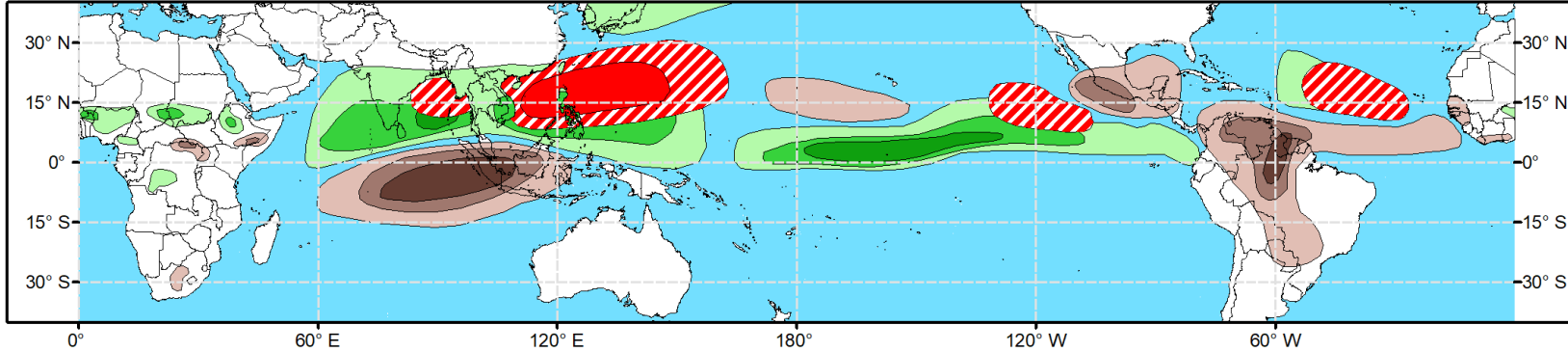


Global Tropics Hazards Outlook

Climate Prediction Center

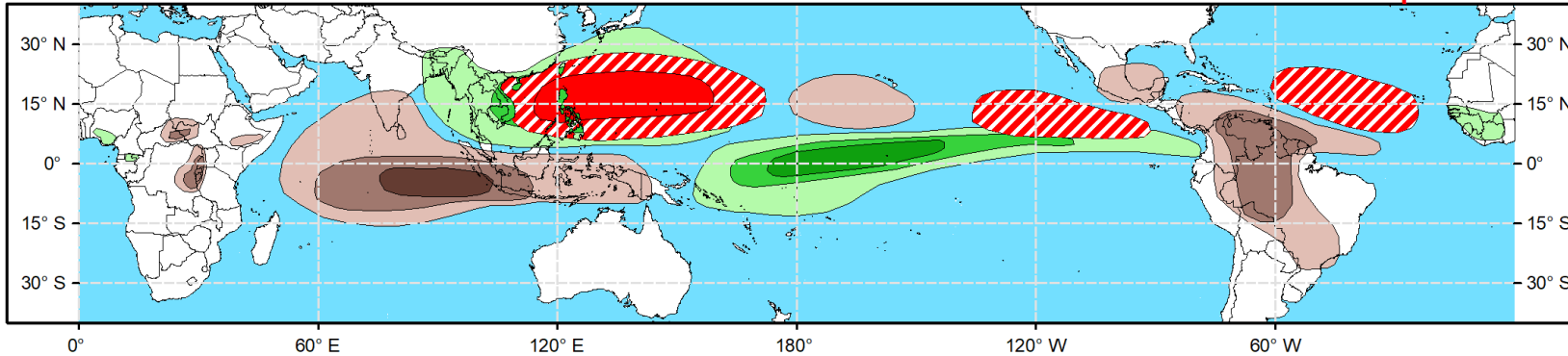


Week 2 - Valid: Sep 27, 2023 - Oct 03, 2023



Week 3 - Valid: Oct 04, 2023 - Oct 10, 2023

**** Experimental ****



**Tropical Cyclone (TC)
Formation Probability**



>20% >40% >60%

*Tropical Depression (TD)
or greater strength*

**Above-Average
Rainfall Probability**



>50% >65% >80%

*Weekly total rainfall in the
Upper third of the historical range*

**Below-Average
Rainfall Probability**



>50% >65% >80%

*Weekly total rainfall in the
Lower third of the historical range*

**Above-Average
Temperatures Probability**



>50% >65% >80%

*7-day max temperatures in the
Upper third of the historical range*

**Below-Average
Temperatures Probability**



>50% >65% >80%

*7-day min temperatures in the
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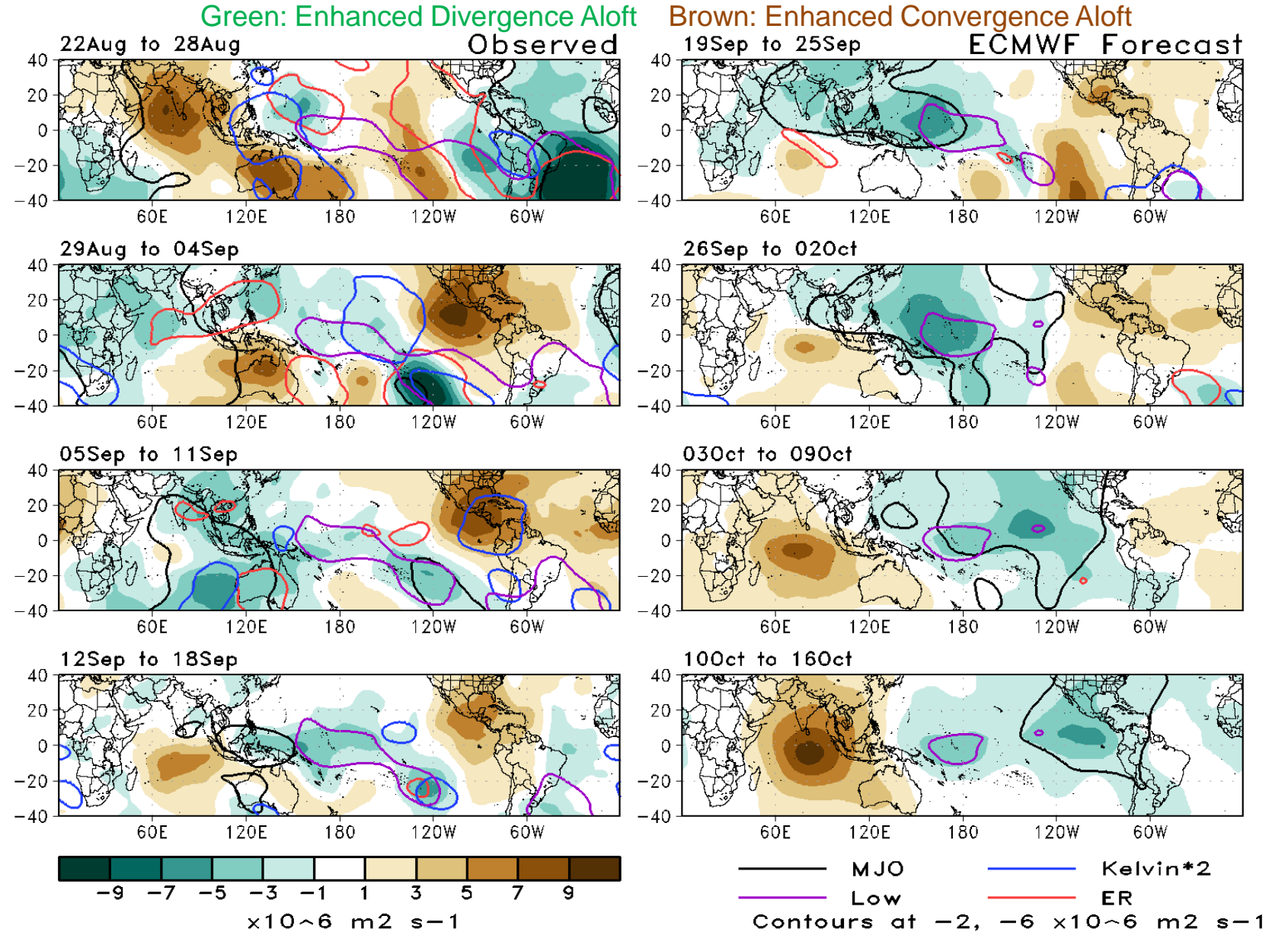
Issued: 09/19/2023

Forecaster: Novella

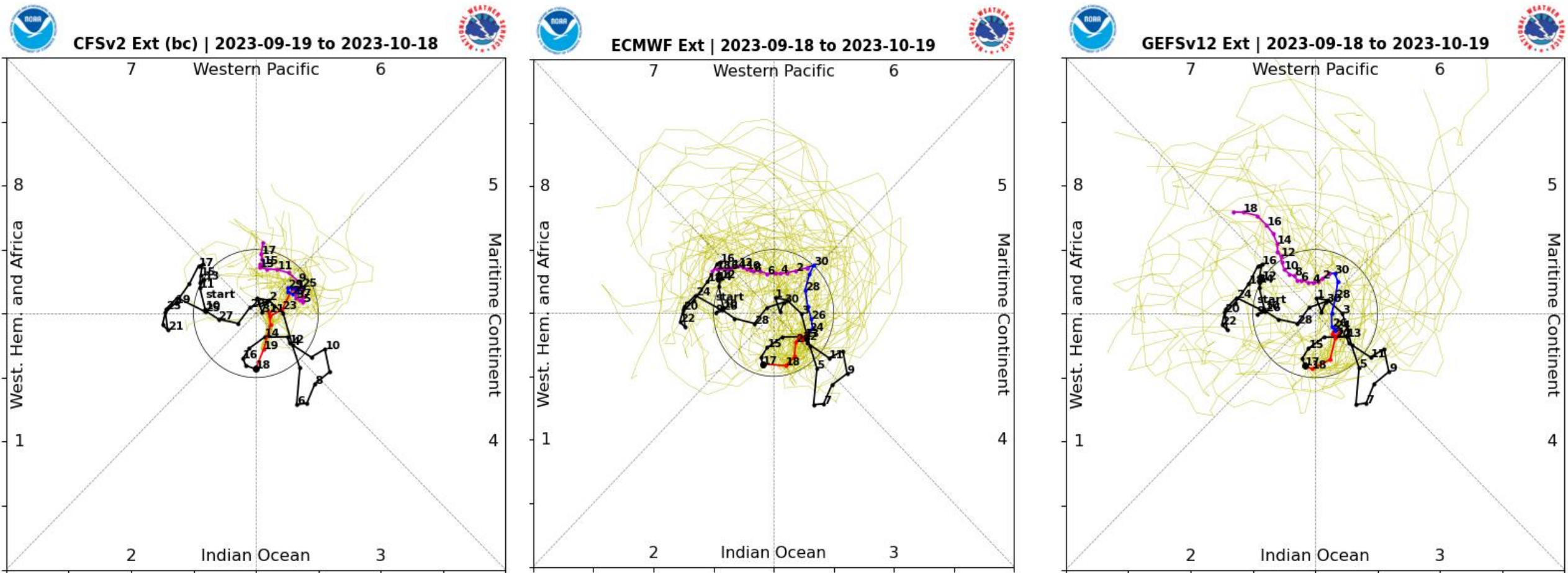
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

200-hPa Velocity Potential Anomaly Maps:

- Competing modes of tropical variability are evident in the most recent upper-level velocity potential field, though the suppressed conditions aloft shifted eastward into the Indian Ocean suggestive of residual MJO activity.
- The pattern is forecast to become more coherent with a wave-1 pattern emerging towards the end of September.
- The enhanced phase of the MJO looks to constructively interfere with the ongoing El Nino.



RMM Index Observations & Forecasts:

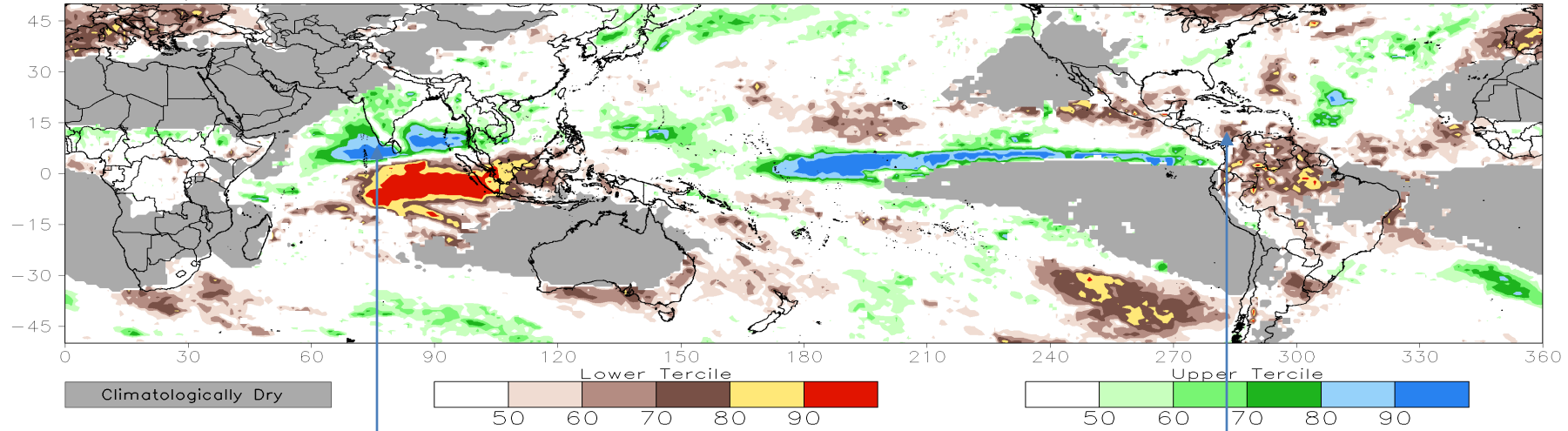


- Following a westward retreat during the past week, RMM forecasts agree on the resumption of an eastward propagating MJO signal.
- While ensemble spread remains quite high to temper the mean amplitudes, there are several ensemble members that depict a potentially robust West Pacific MJO event in the extended range.

Consolidated Probabilistic Precipitation: Weeks 2 & 3

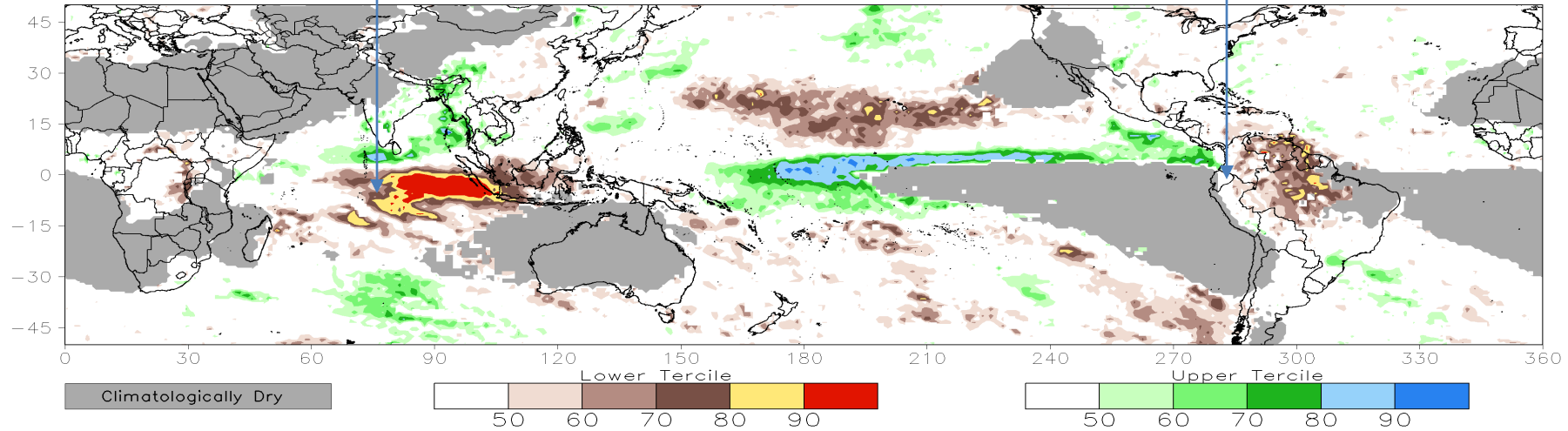
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 27Sep2023-030Oct2023



CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

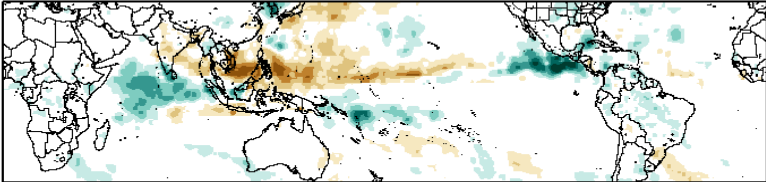
Valid: 04Oct2023-100Oct2023



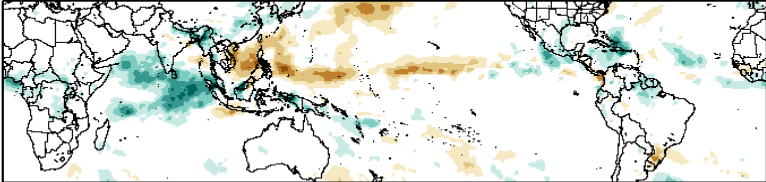
Historical Precipitation Anomalies By MJO Phase:

ASO MJO Composite: GPCP1DD (mm/day)

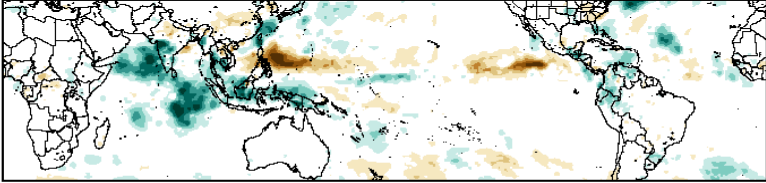
Phase 1



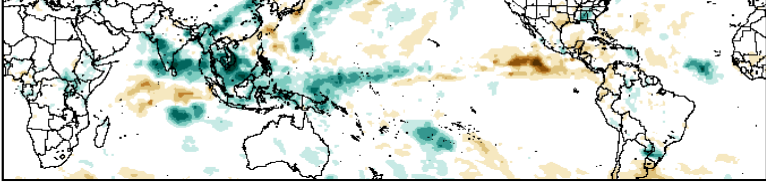
Phase 2



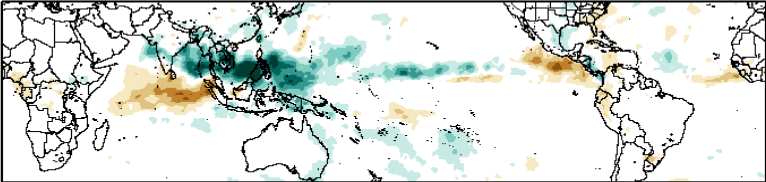
Phase 3



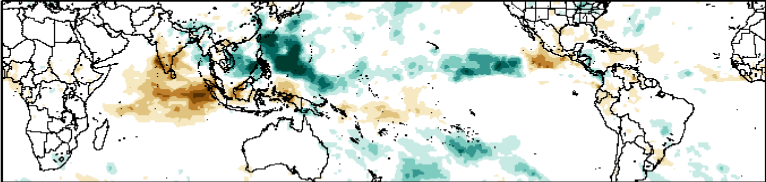
Phase 4



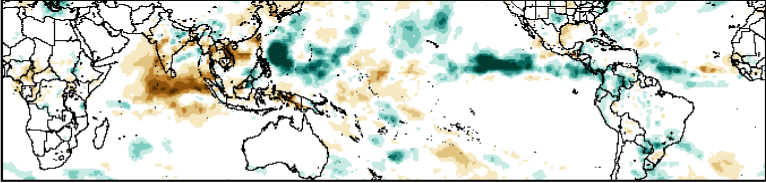
Phase 5



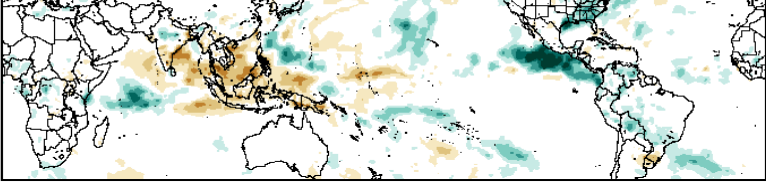
Phase 6



Phase 7

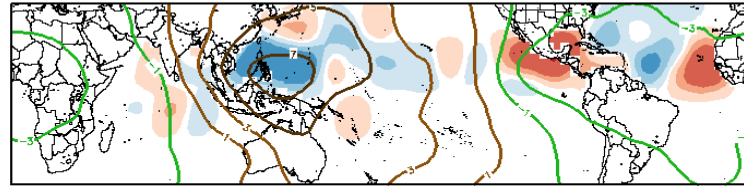


Phase 8

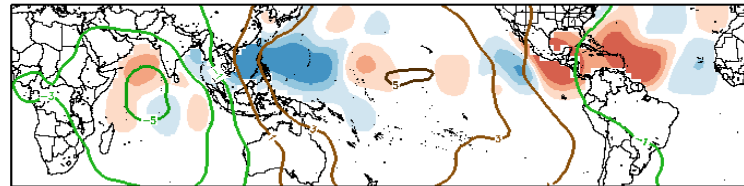


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

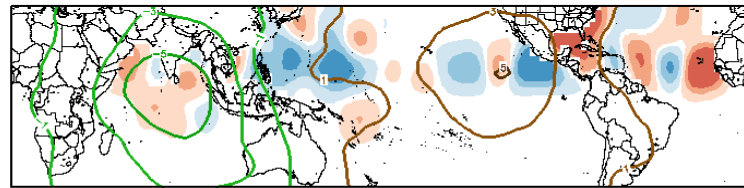
ASO MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ ASO CH200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



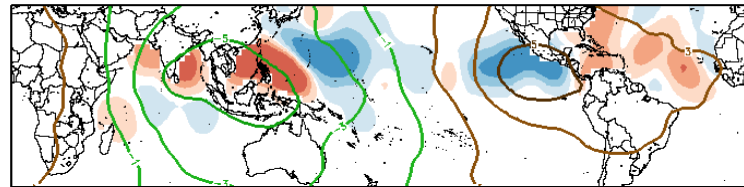
Phase 1



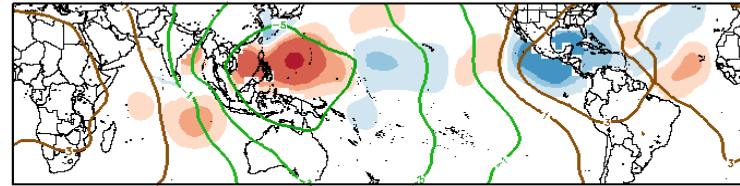
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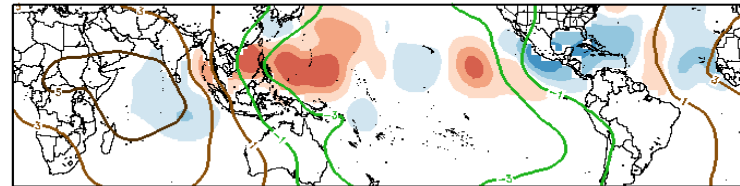
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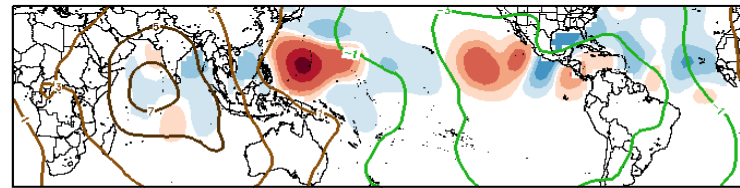
Phase 4



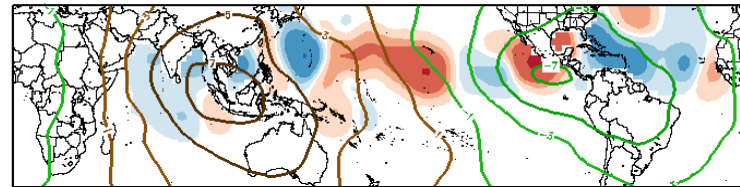
Phase 5



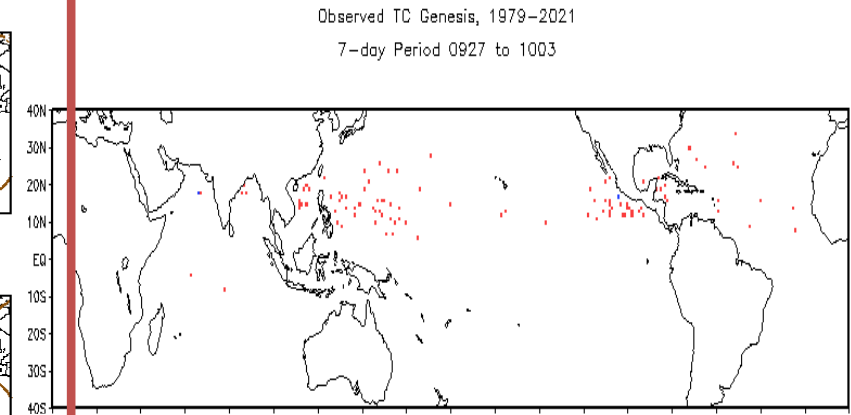
Phase 6



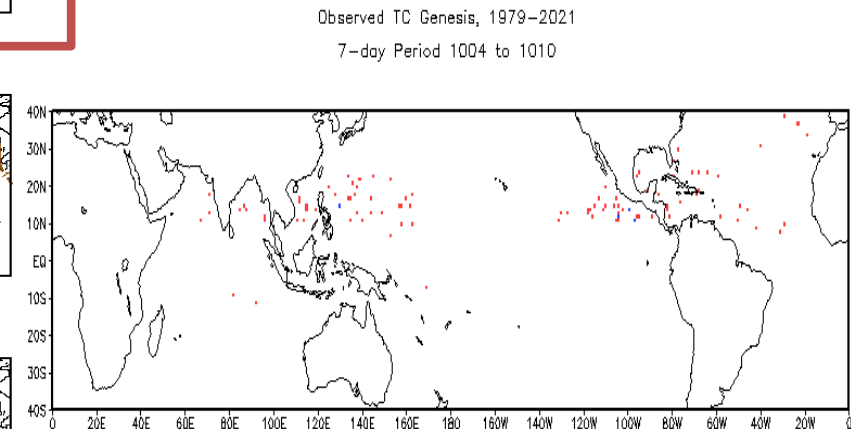
Phase 7



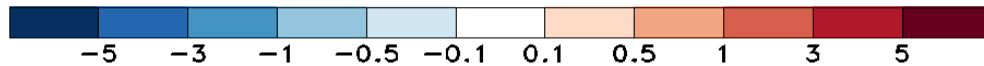
Phase 8



Observed TC Genesis, 1979-2021
7-day Period 0927 to 1003



Observed TC Genesis, 1979-2021
7-day Period 1004 to 1010



Experimental

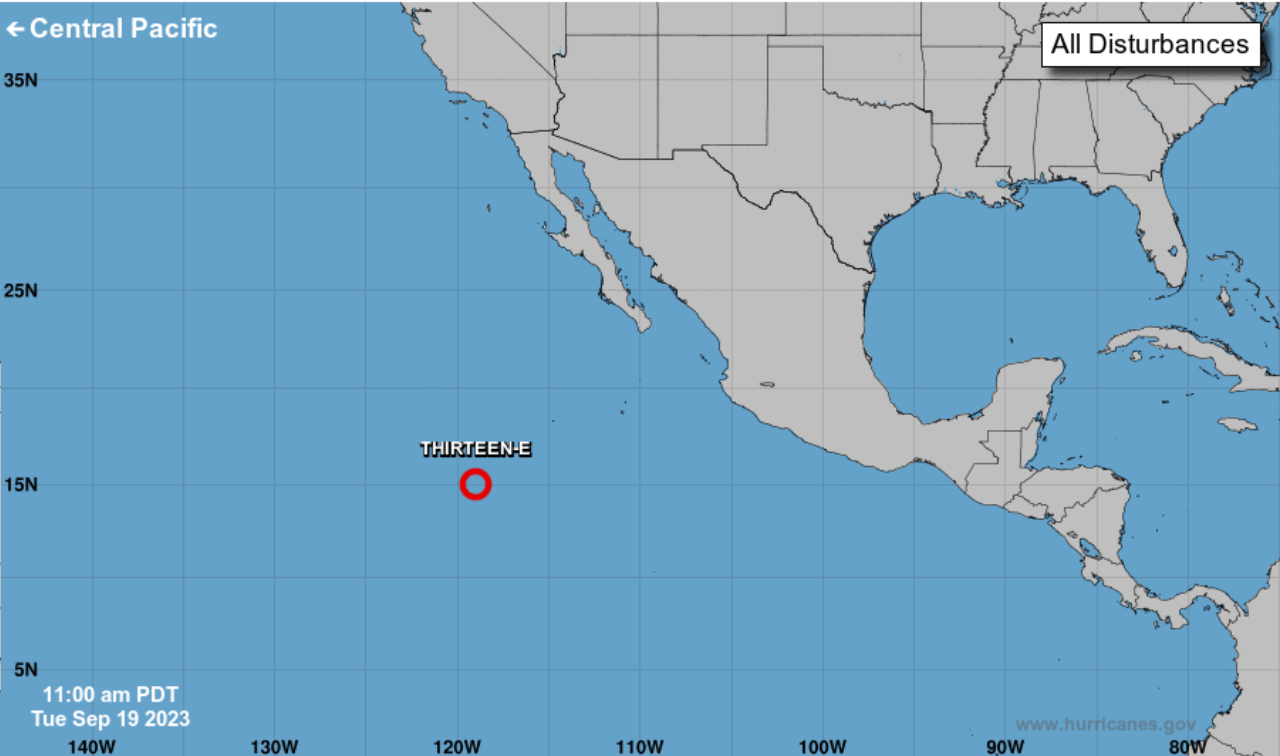
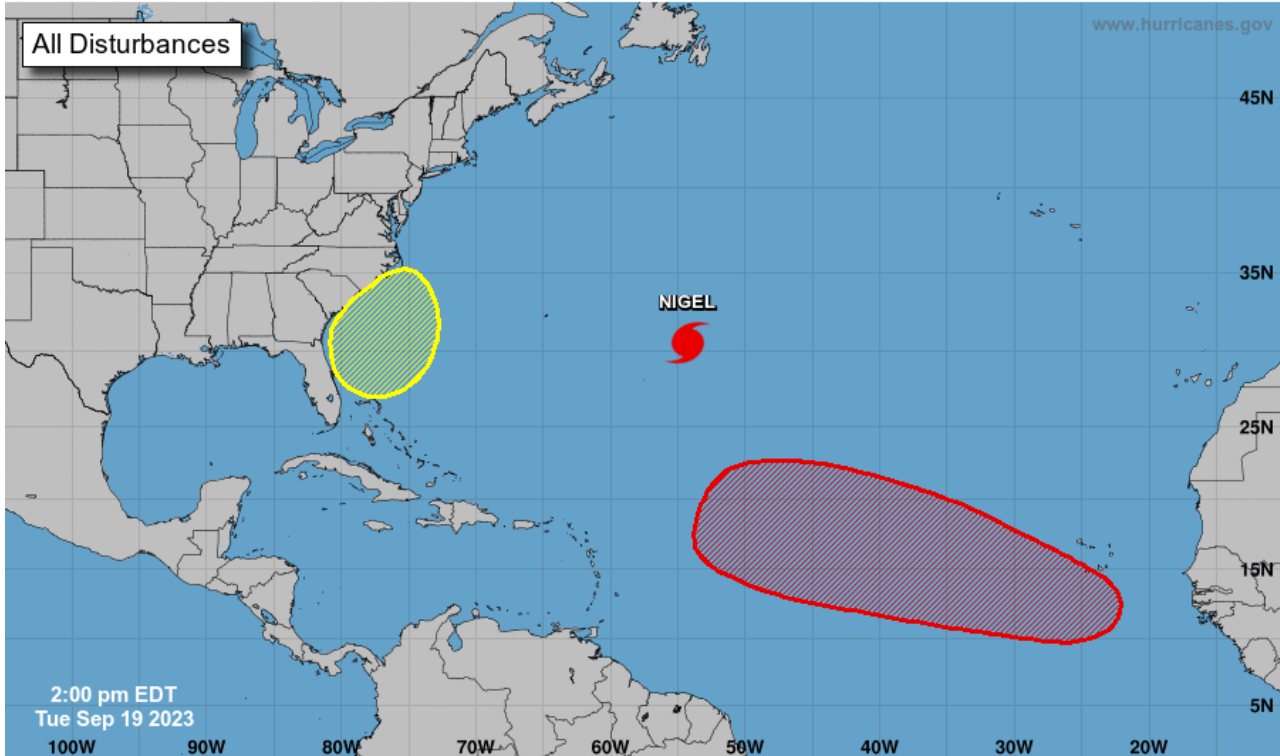
Tropical Cyclone Monitoring/Forecast: NHC / CPHC



Seven-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida



Seven-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida



2:00 pm EDT
Tue Sep 19 2023

11:00 am PDT
Tue Sep 19 2023

Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane
 Post-Tropical Cyclone or Remnants

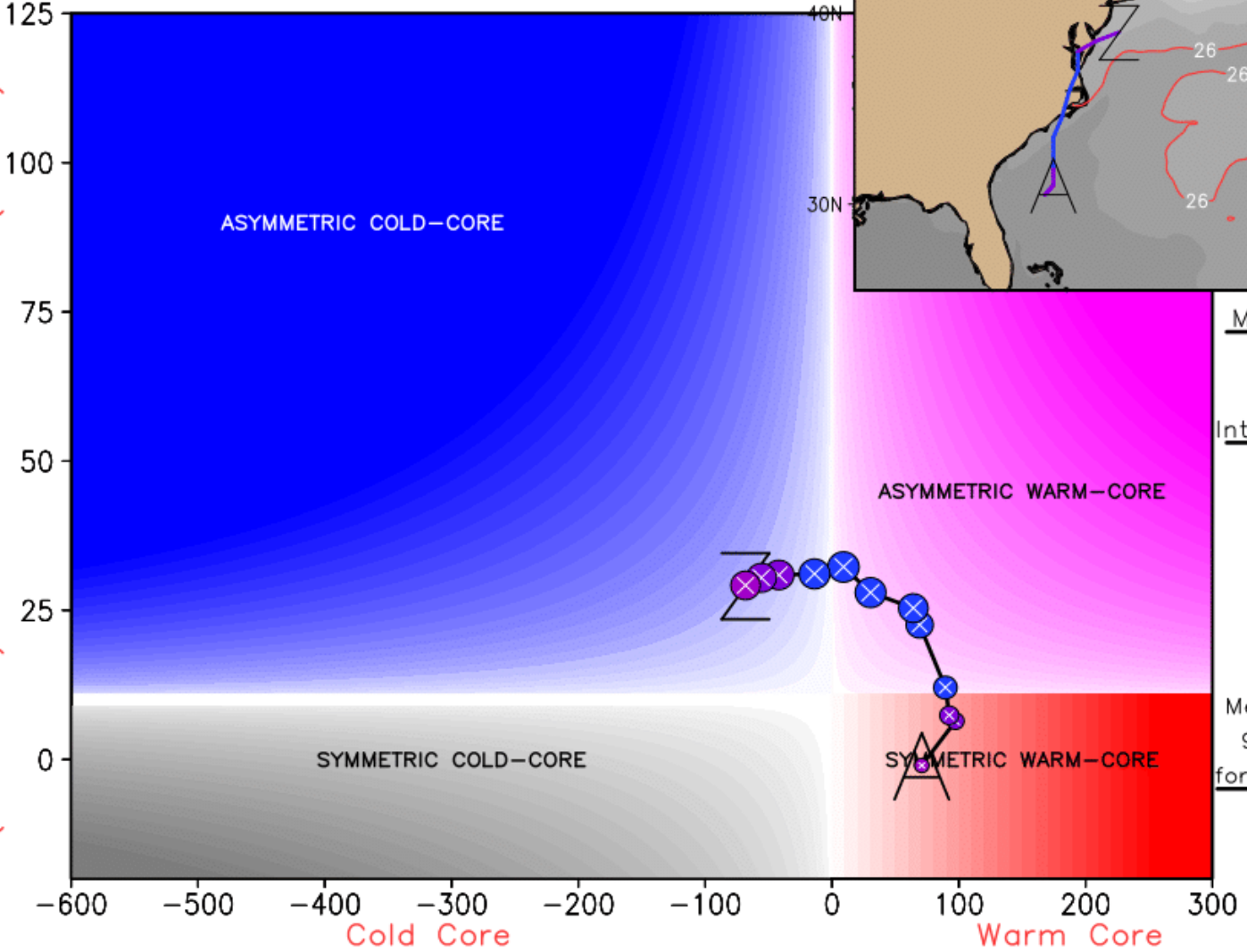
Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%
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 Post-Tropical Cyclone or Remnants

0.50° NCEP GFS (12Z19SEP2023 run) Cyclone #85 (Future cyclone)

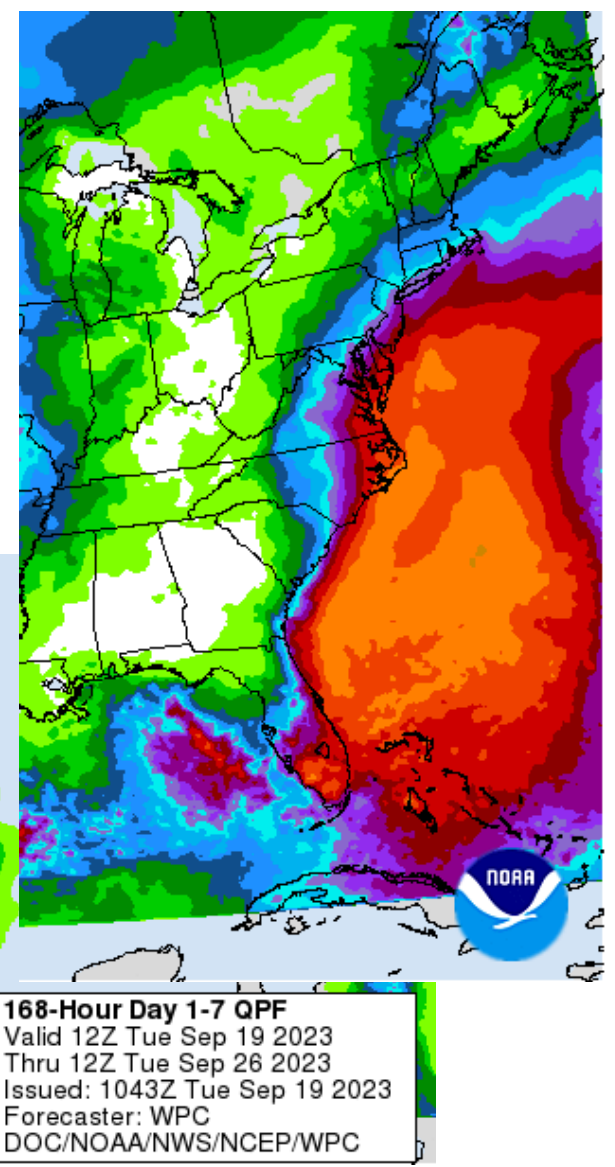
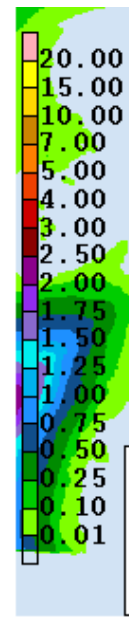
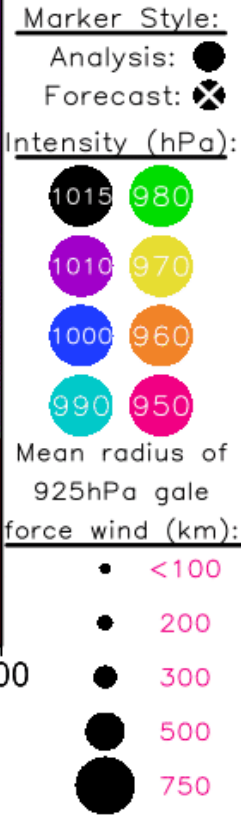
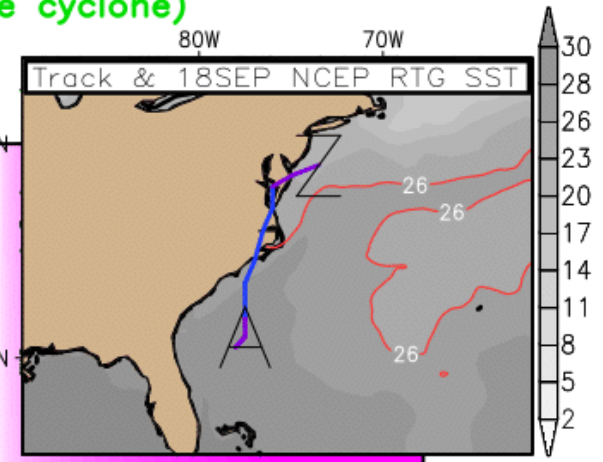
Current (C): 12Z19SEP2023 (Tue) (0h)
 Start (A): 00Z22SEP2023 (Fri) (+60h)
 End (Z): 18Z24SEP2023 (Sun) (+126h)

B [900-600hPa Storm-Relative Thickness Symmetry]

Asymmetric (Frontal)
 Symmetric (Nonfrontal)

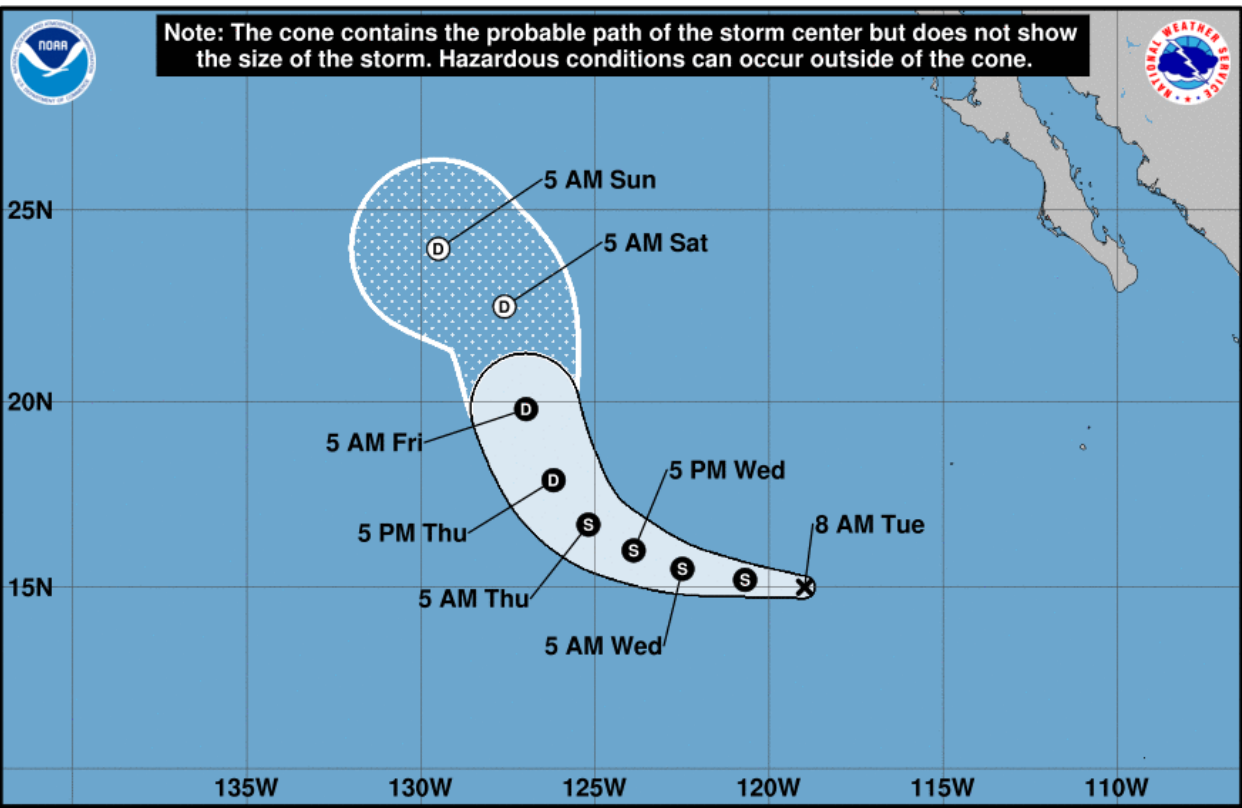
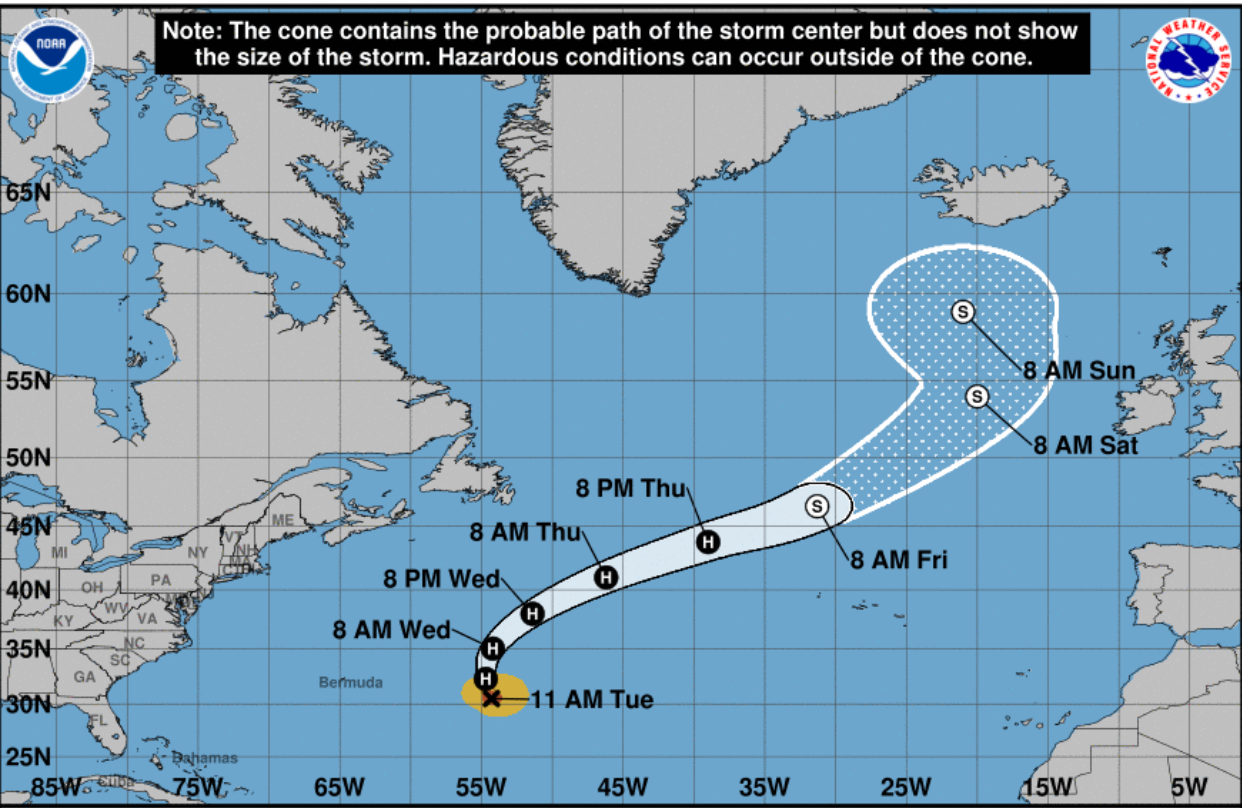


Cold Core Warm Core
 $-V_T^2$ [900-600hPa Thermal Wind]



168-Hour Day 1-7 QPF
 Valid 12Z Tue Sep 19 2023
 Thru 12Z Tue Sep 26 2023
 Issued: 1043Z Tue Sep 19 2023
 Forecaster: WPC
 DOC/NOAA/NWS/NCEP/WPC

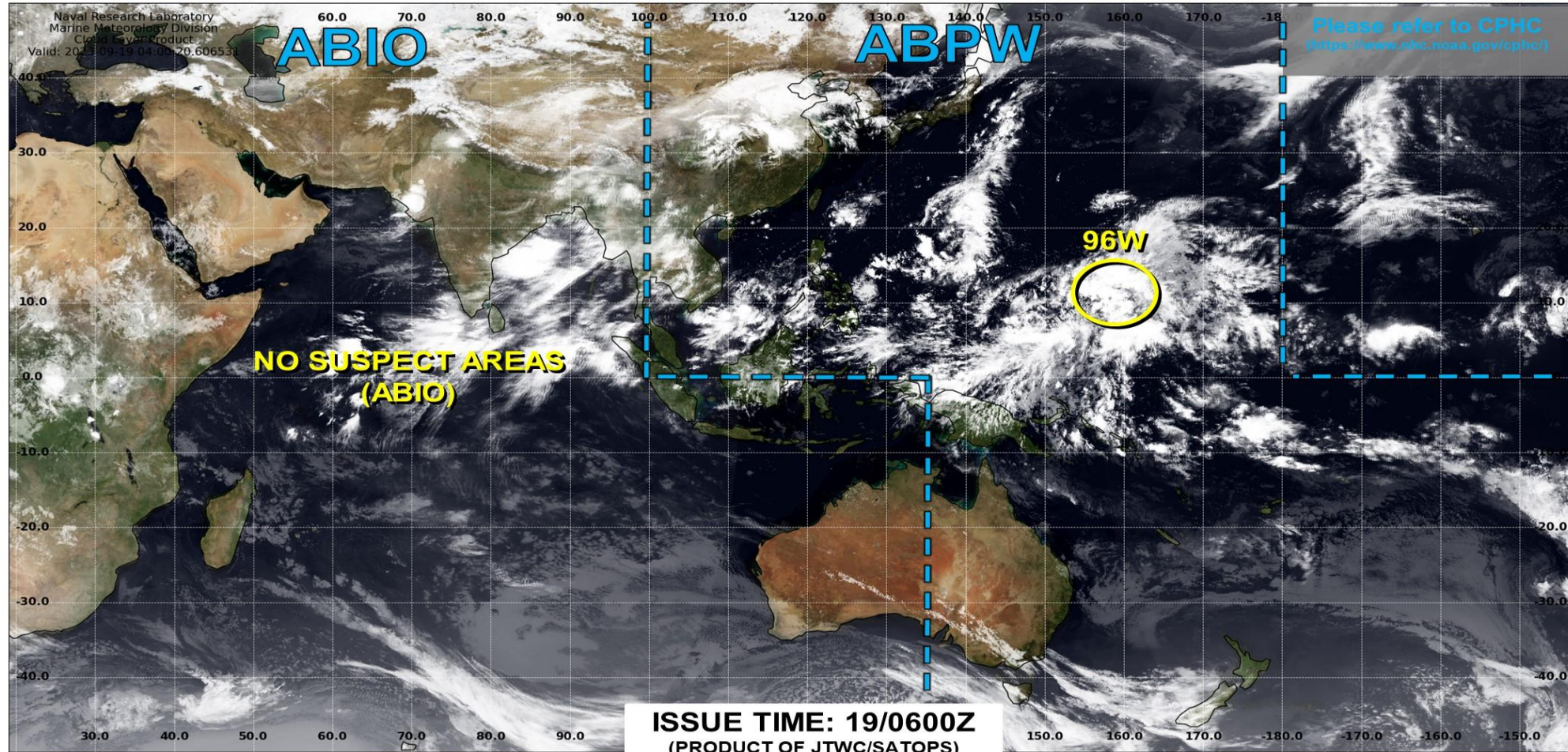
NOTE: A 24hr running mean smoother is applied to the CPS trajectory.



Tropical Cyclone Monitoring/Forecast: JTWC



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)

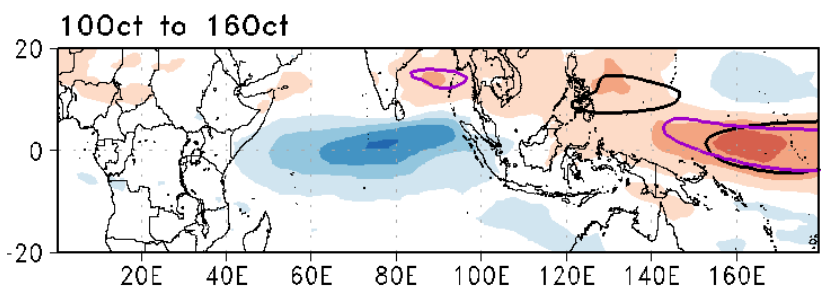
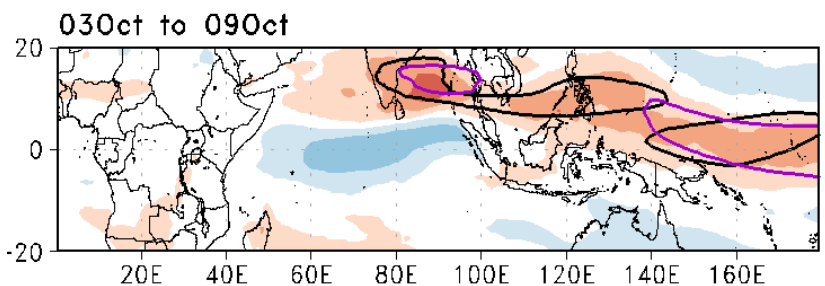
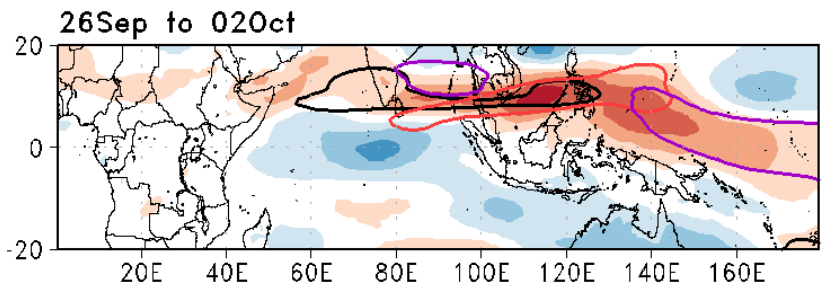
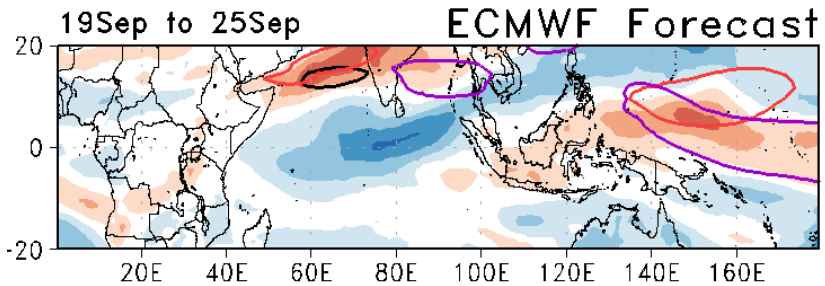


Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



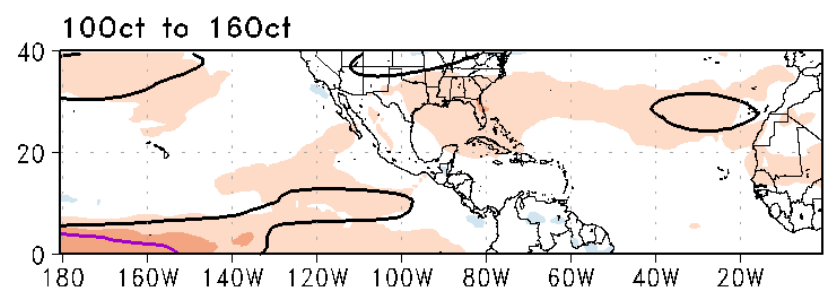
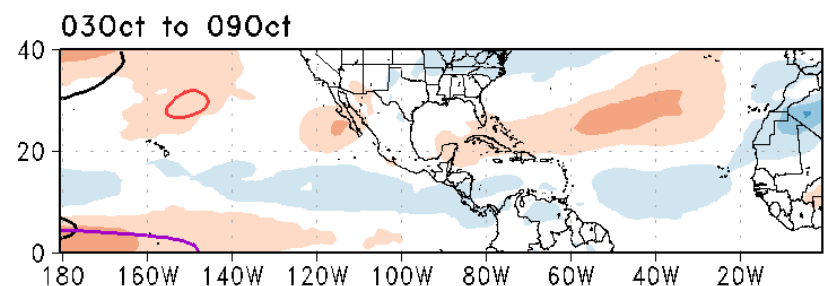
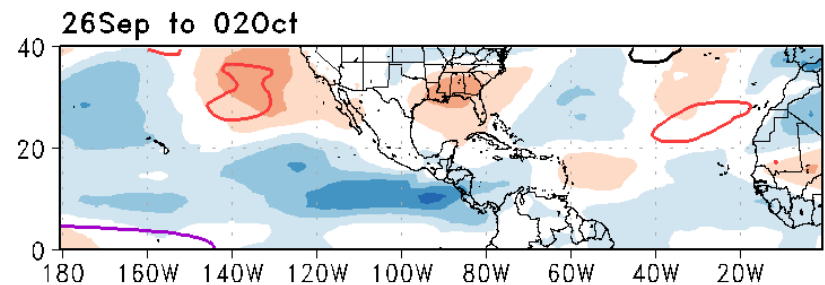
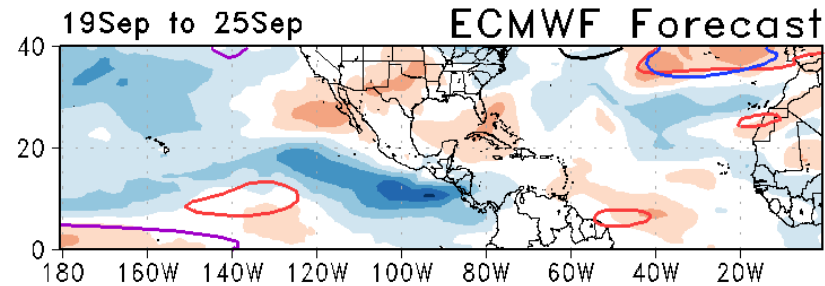
Tropical Cyclone (Reference Warning)

-Day Means



— MJO — Kelvin*2
— Low — ER
Contours at 2, 6 m s⁻¹

-Day Means

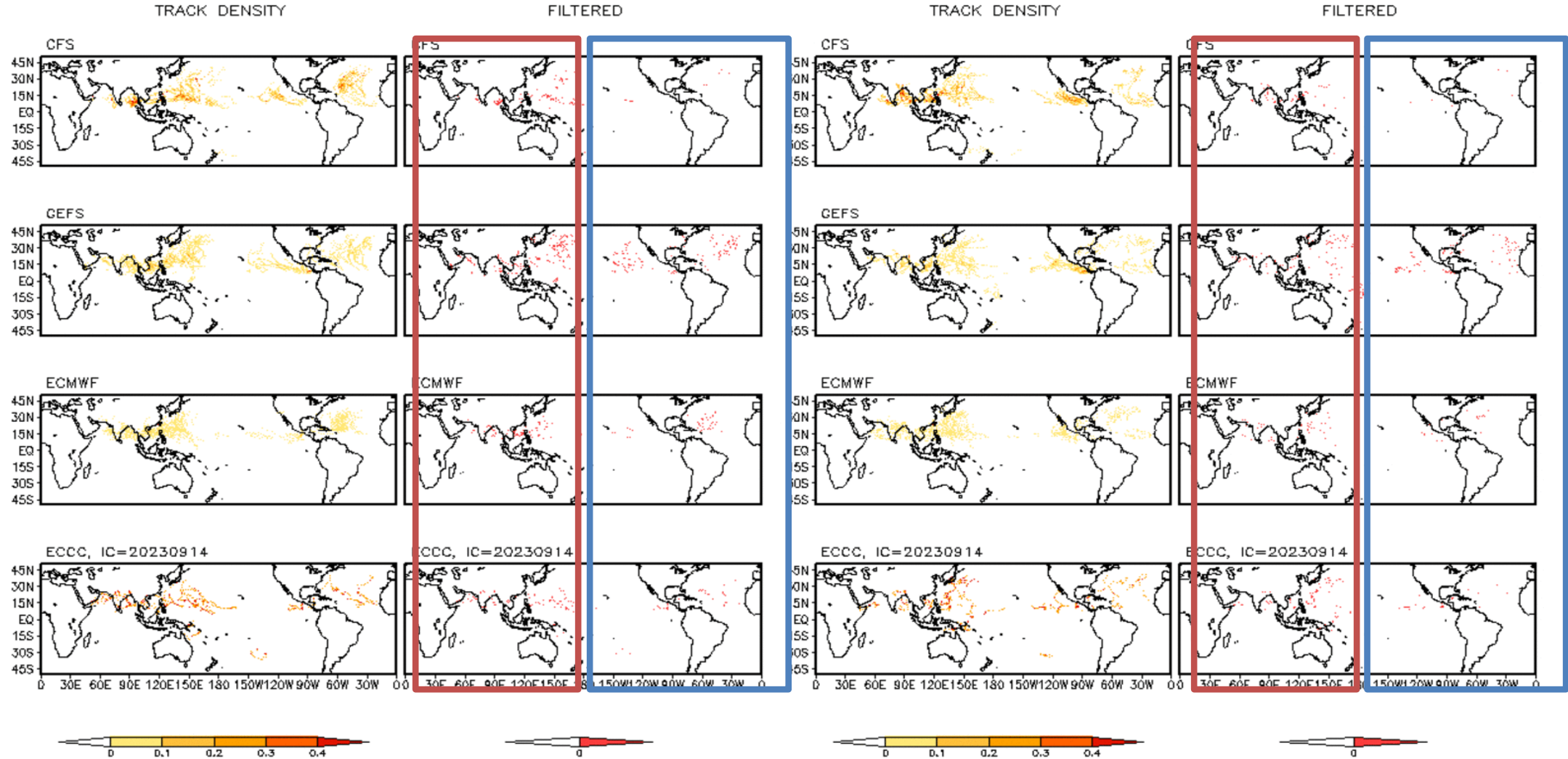


— MJO — Kelvin*2
— Low — ER
Contours at 2, 6 m s⁻¹

Multi-Model TC Track Densities: Weeks 2+3

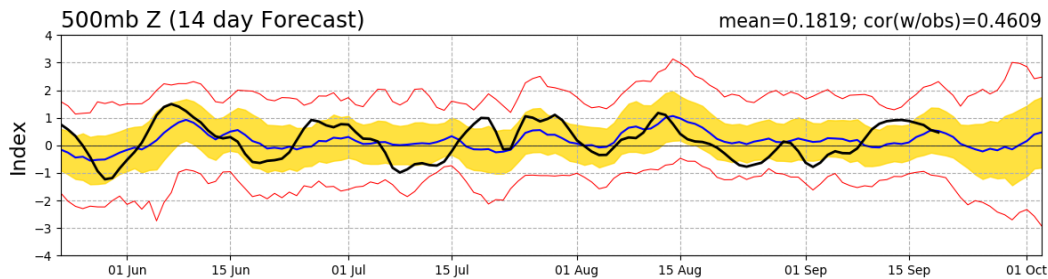
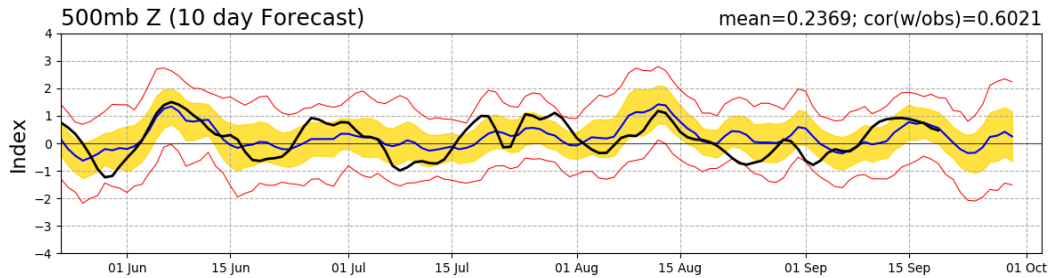
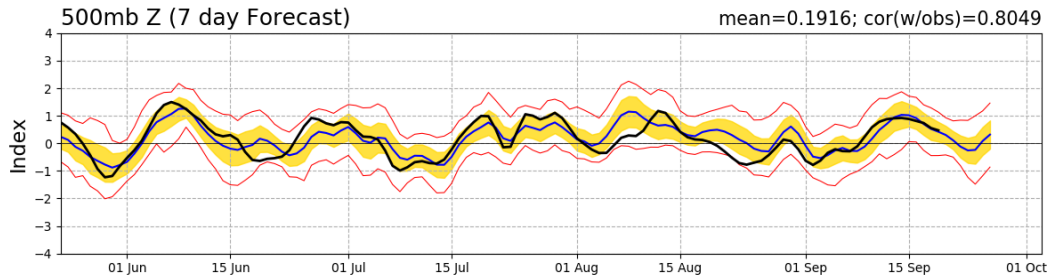
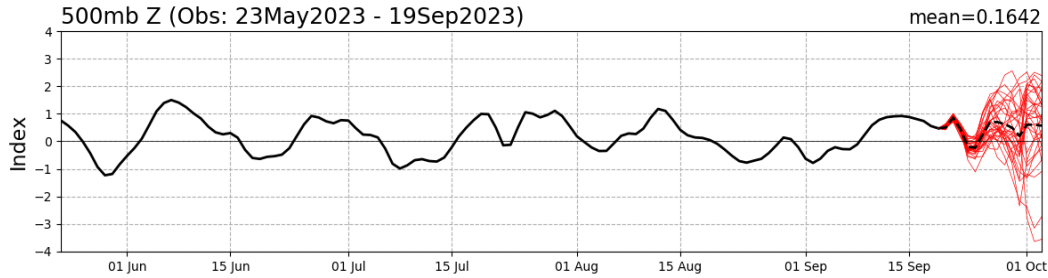
Storm Track Density Distribution, IC=20230918
Week 2 Forecast: 0927-1003

Storm Track Density Distribution, IC=20230918
Week 3 Forecast: 1004-1010

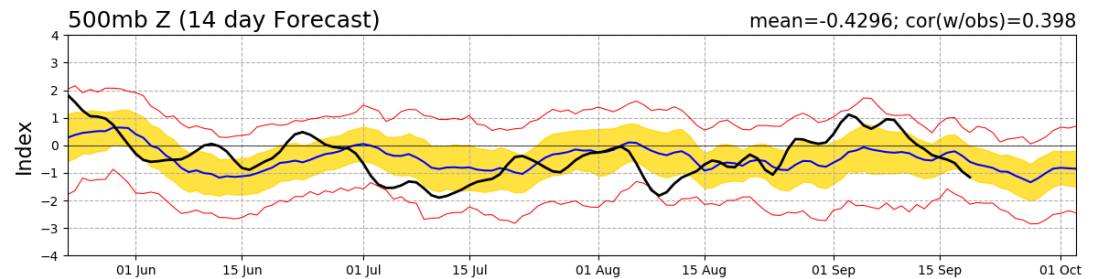
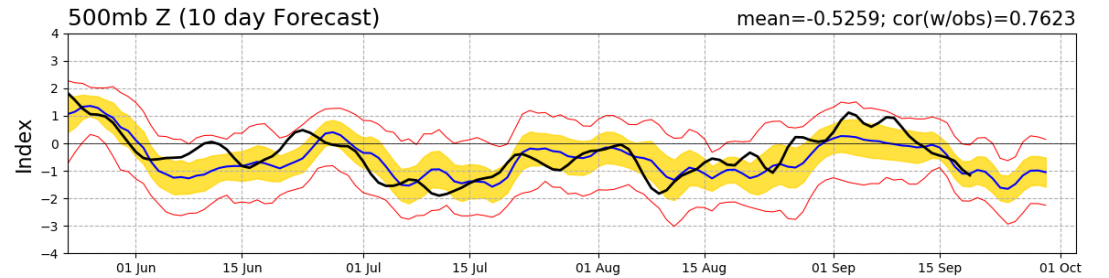
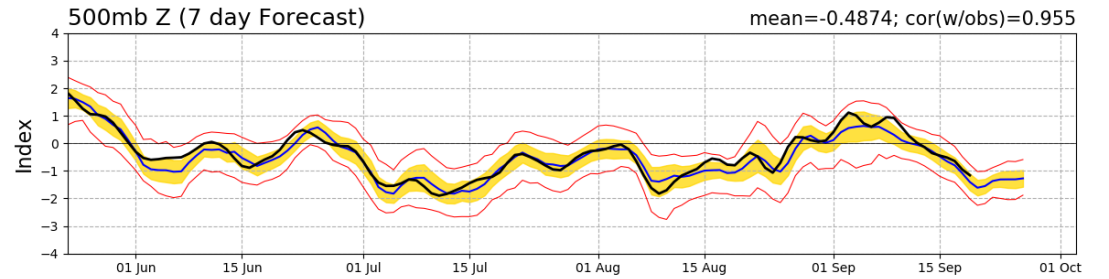
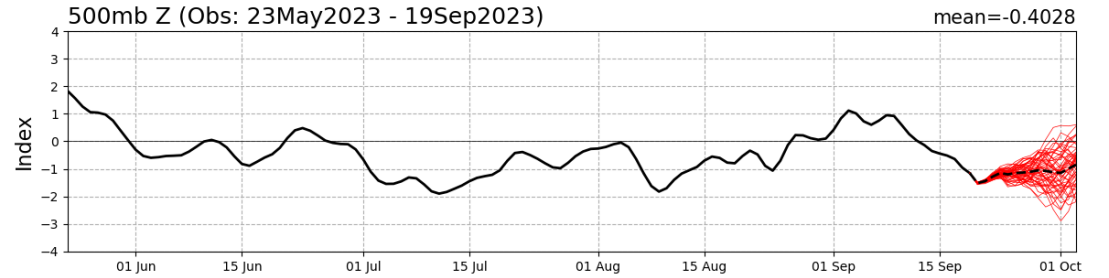


Teleconnection Indices: PNA / AO:

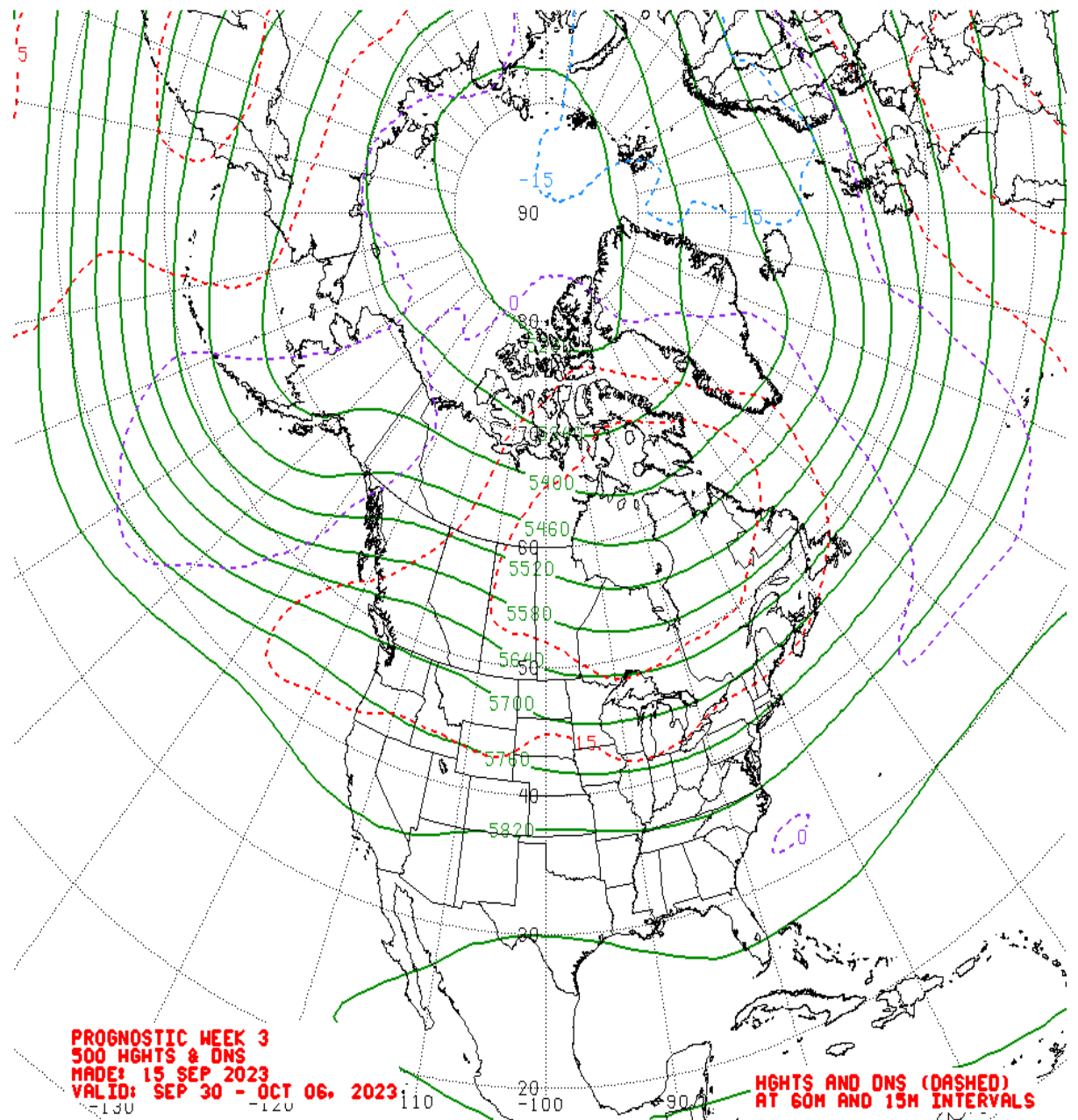
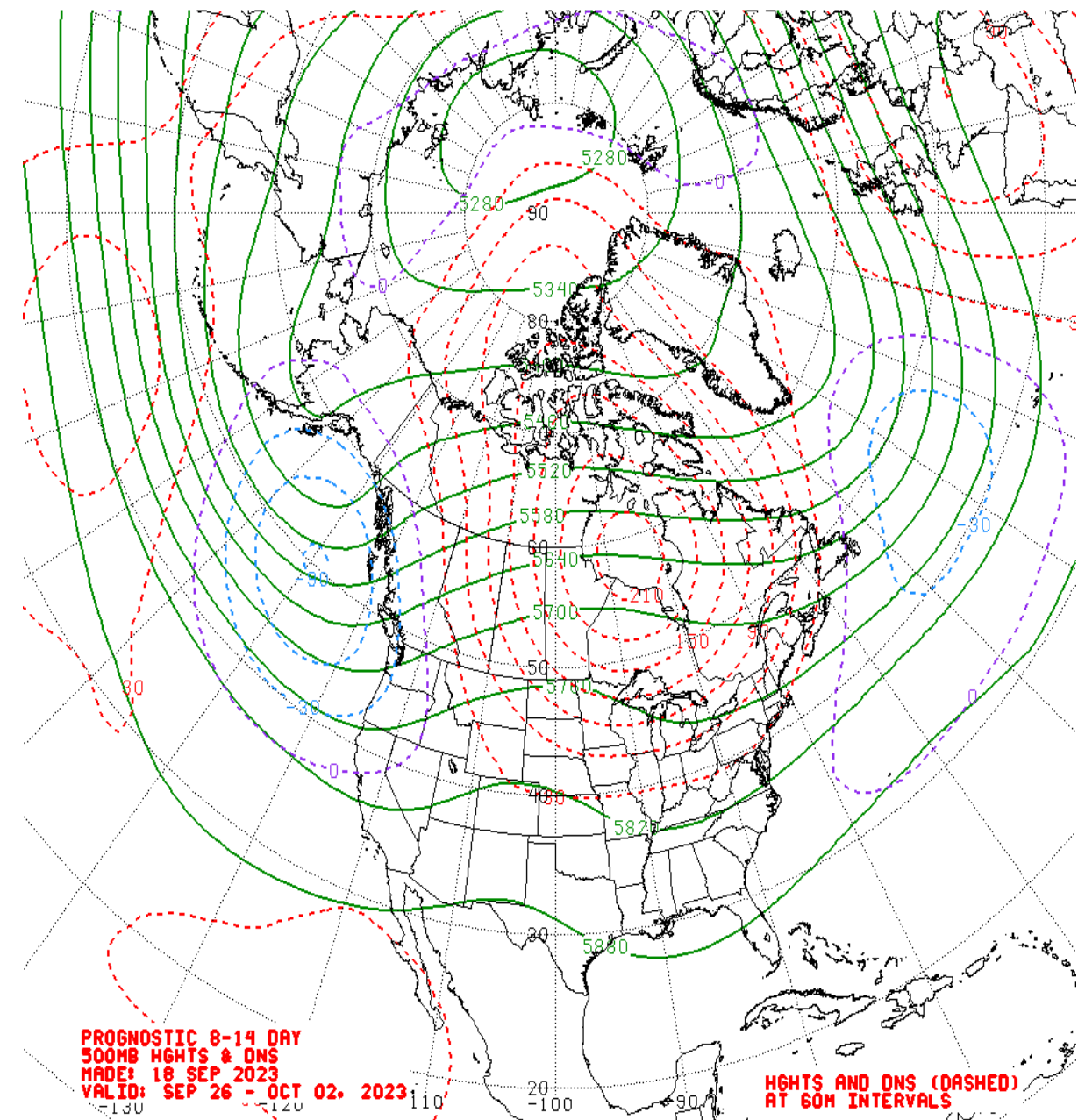
PNA Index: Observed & GEFS Forecasts



NAO Index: Observed & ECMWF Forecasts



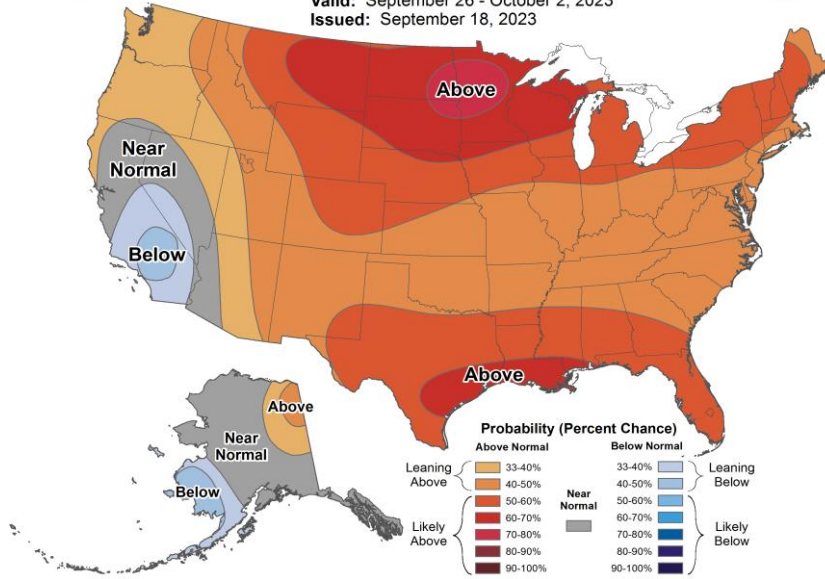
Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3



Official Temperature & Precipitation Forecasts:

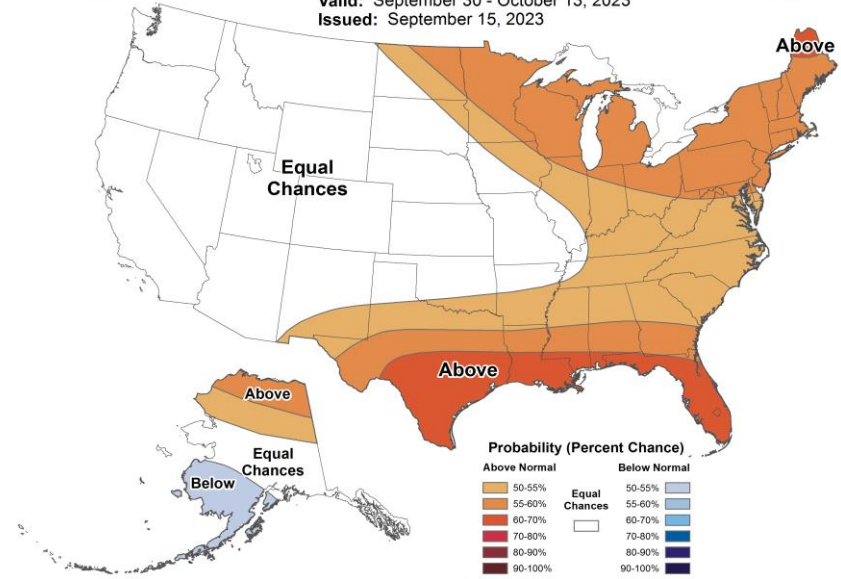
8-14 Day Temperature Outlook

Valid: September 26 - October 2, 2023
 Issued: September 18, 2023



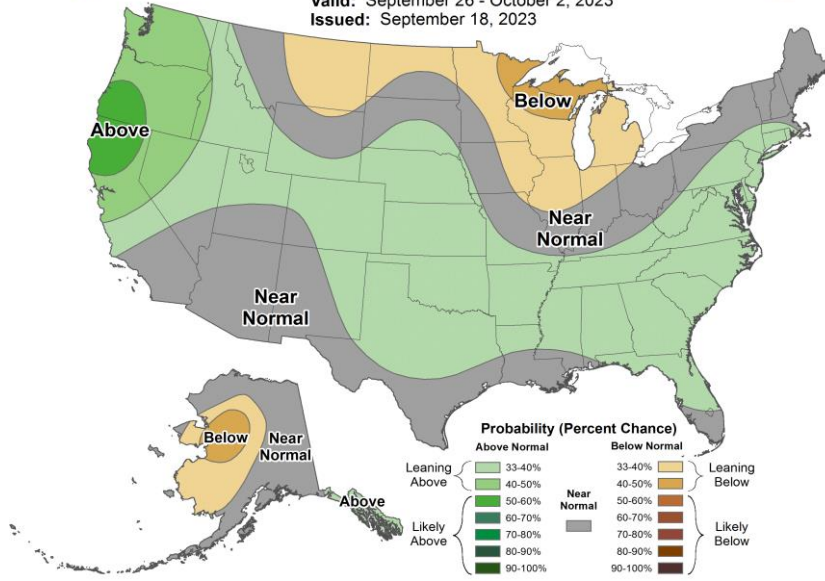
Weeks 3-4 Temperature Outlook

Valid: September 30 - October 13, 2023
 Issued: September 15, 2023



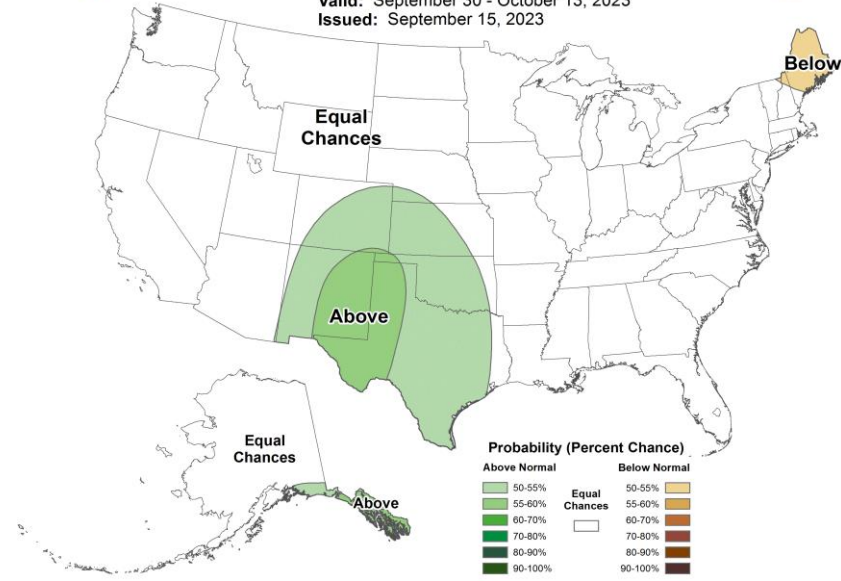
8-14 Day Precipitation Outlook

Valid: September 26 - October 2, 2023
 Issued: September 18, 2023



Weeks 3-4 Precipitation Outlook

Valid: September 30 - October 13, 2023
 Issued: September 15, 2023



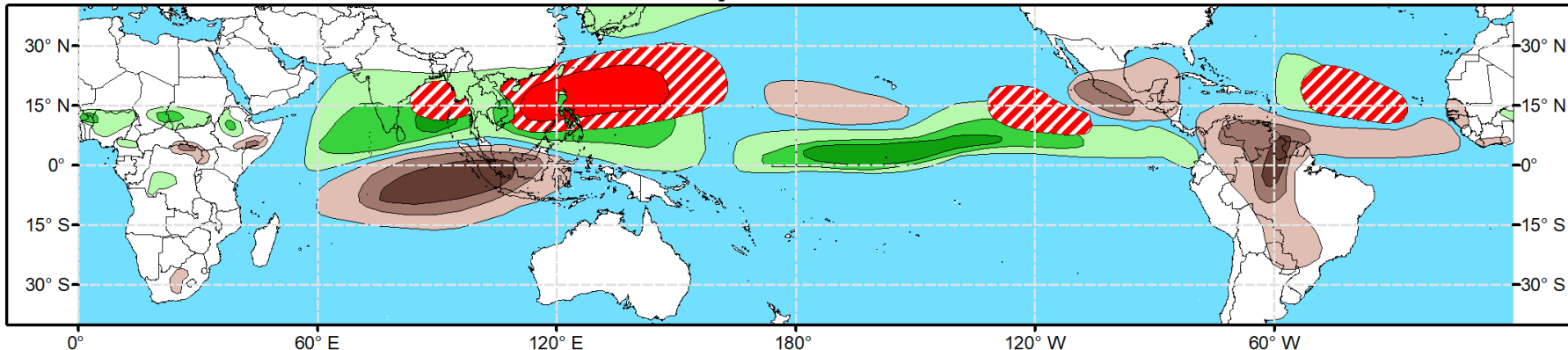


Global Tropics Hazards Outlook

Climate Prediction Center

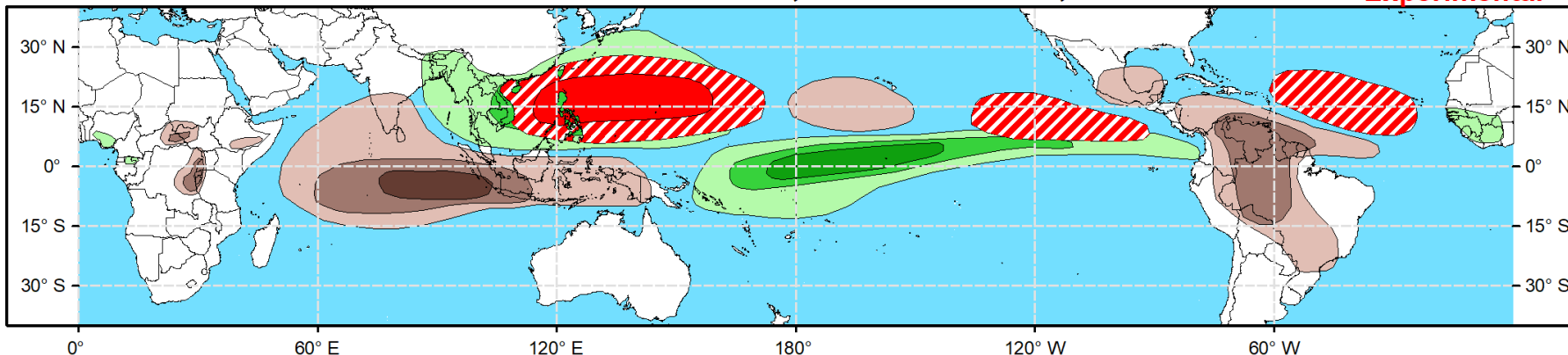


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**Issued: 09/19/2023
Forecaster: Novella**

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Consult your local responsible forecast agency.**