



# Weeks 2-3 Global Tropics Hazards Outlook

10/17/2023

Nick Novella

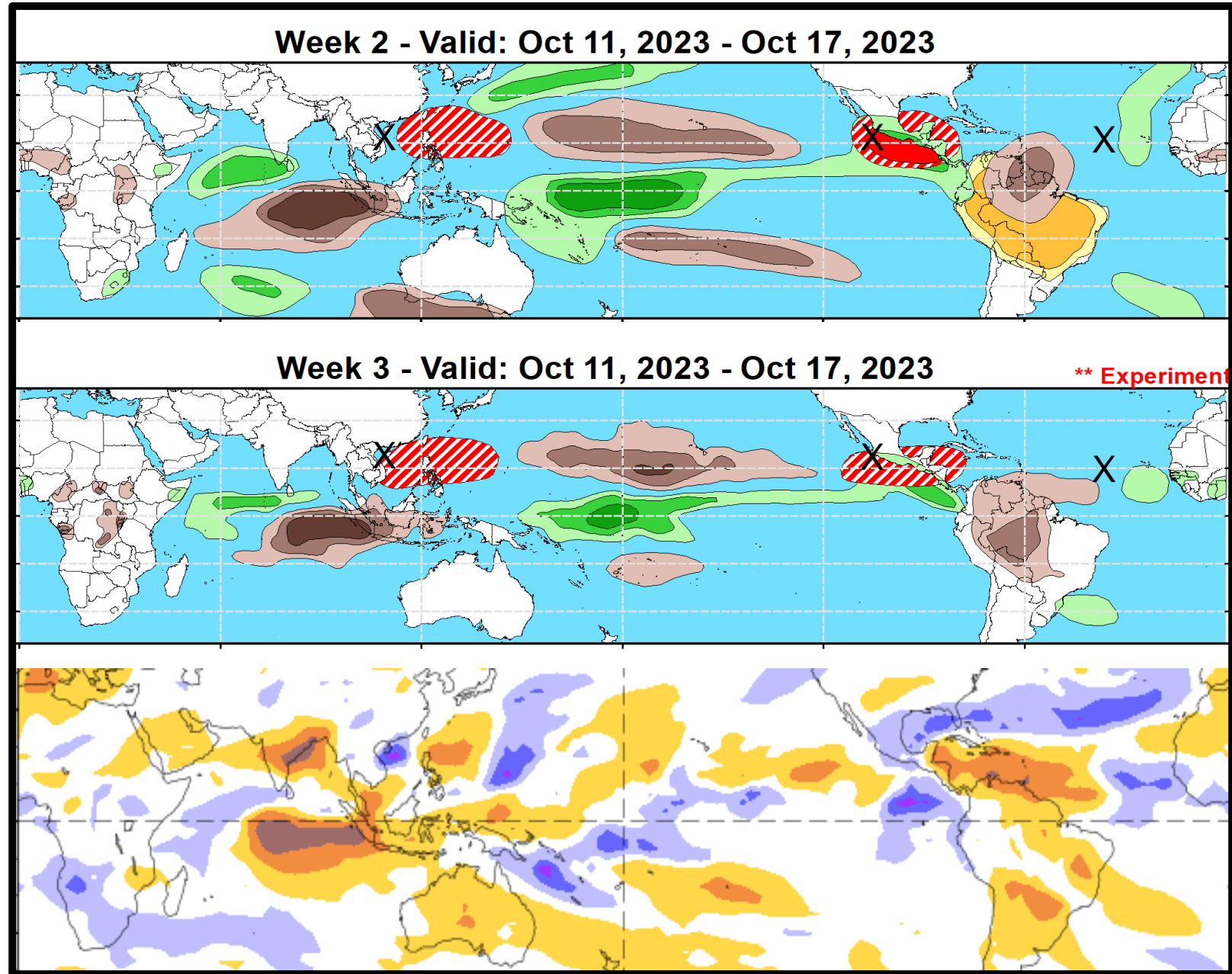
NWS / NCEP / Climate Prediction Center

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

- TC Sean: ATL (10/11)
- TC 16W: WPAC (10/17)

On the verge of forming

- Invest 90E: EPAC (10/17)



# Synopsis of Climate Modes:

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**ENSO:** (Oct 12, 2023 Update)      *next update on Thursday, Nov 9<sup>th</sup>*

- ENSO Alert System Status: [El Niño Advisory](#)
- El Niño is anticipated to continue through the Northern Hemisphere spring (with an 80% chance during Mar-May 2024).

## **MJO and other subseasonal tropical variability:**

- The MJO showed signs of renewed activity over the Western Hemisphere since early October, however the intraseasonal signal has since become more incoherent during the past week.
- An disorganized MJO is generally favored during the next several weeks, as low frequency variability (El Niño and +IOD) is more likely to dominate the convective and circulation pattern across the global tropics.
- Another equatorial westerly wind burst event that is forecast mainly west of the Date Line is likely to further reinforce the El Niño response, as well as increase chances for tropical cyclone development over the western Pacific, on both sides of the equator.
- Extended range guidance among the dynamical models have come into better agreement in the formation of Central America Gyre (CAG) over the tropical Americas, favorable for tropical cyclogenesis over the eastern Pacific and the Caribbean during the outlook period.

# GTH Outlook:

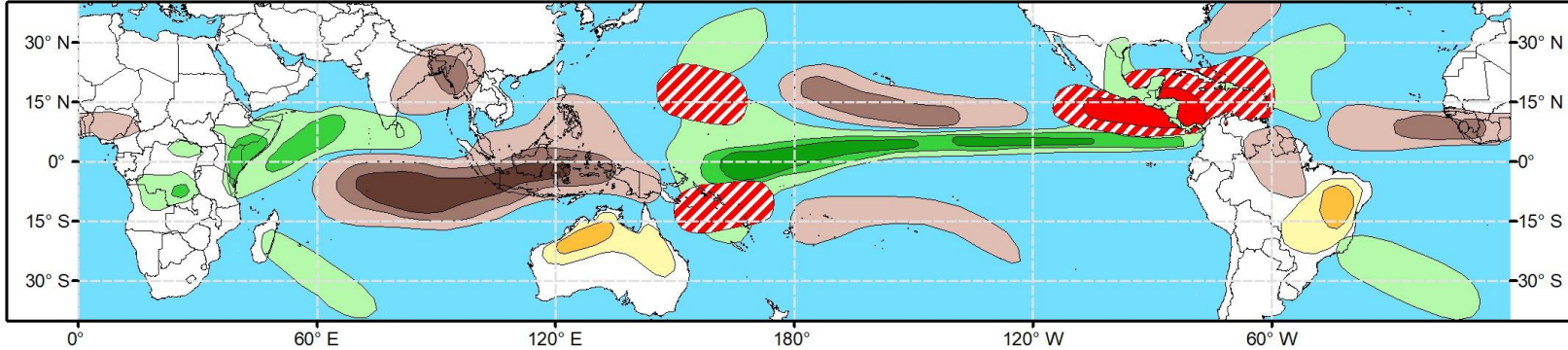


## Global Tropics Hazards Outlook

Climate Prediction Center

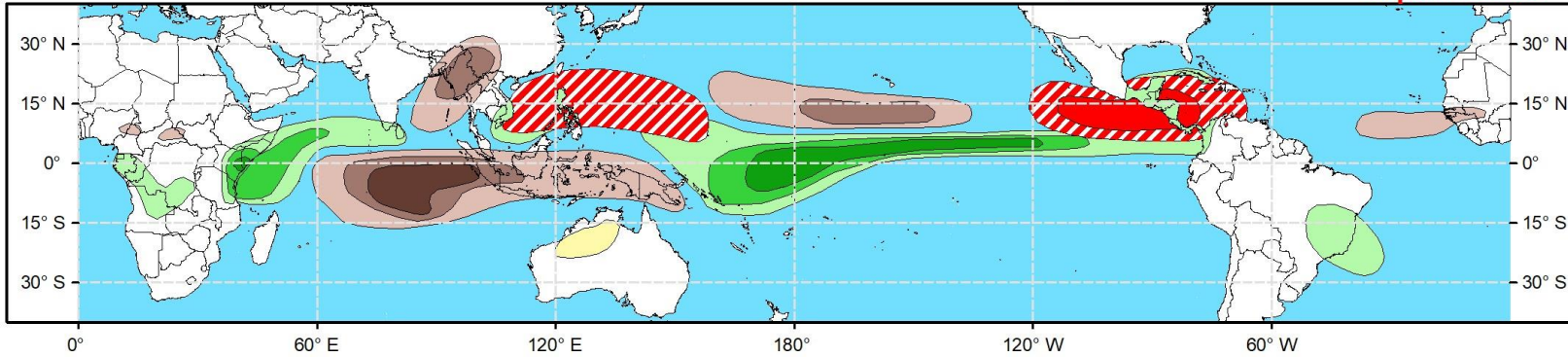


**Week 2 - Valid: Oct 25, 2023 - Oct 31, 2023**



**Week 3 - Valid: Nov 01, 2023 - Nov 07, 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**



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Weekly total rainfall in the  
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**Above-Average  
Temperatures Probability**



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7-day max temperatures in the  
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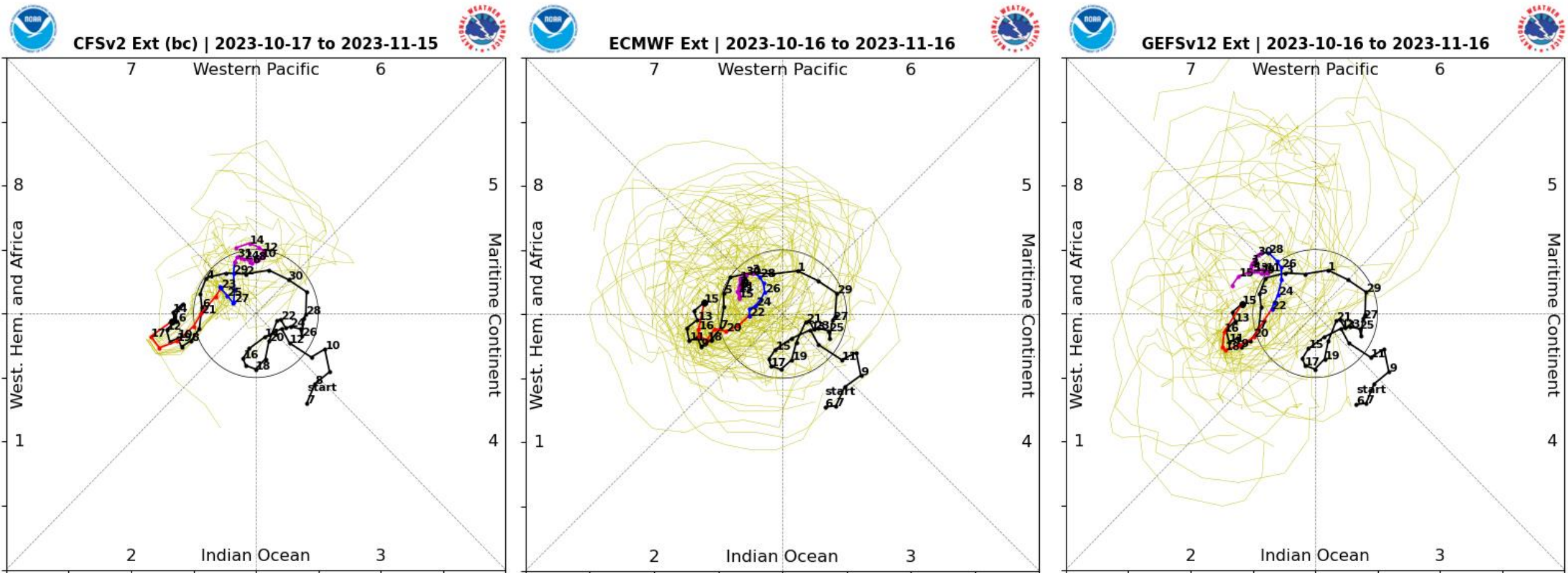
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Issued: 10/17/2023

Forecaster: Novella

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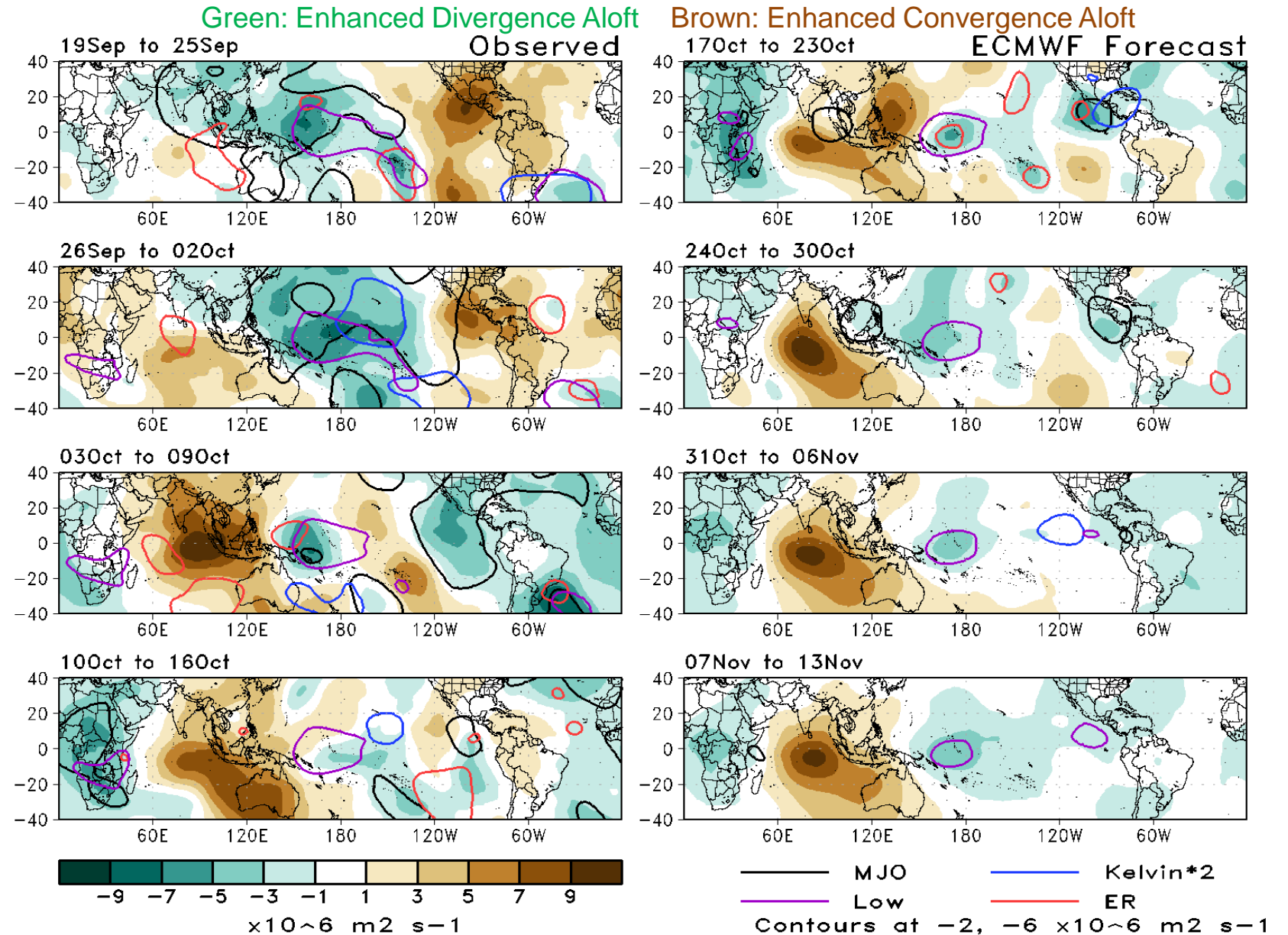
# RMM Index Observations & Forecasts:



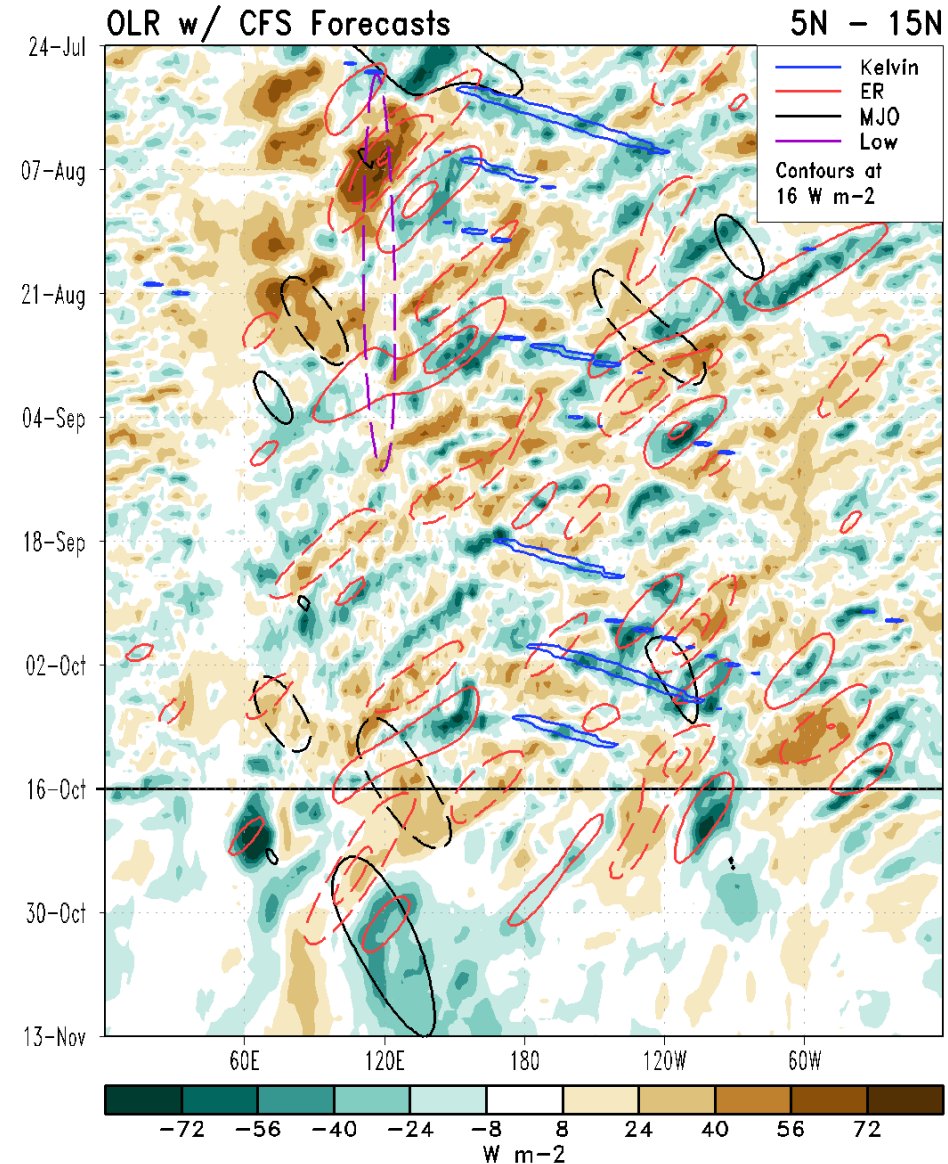
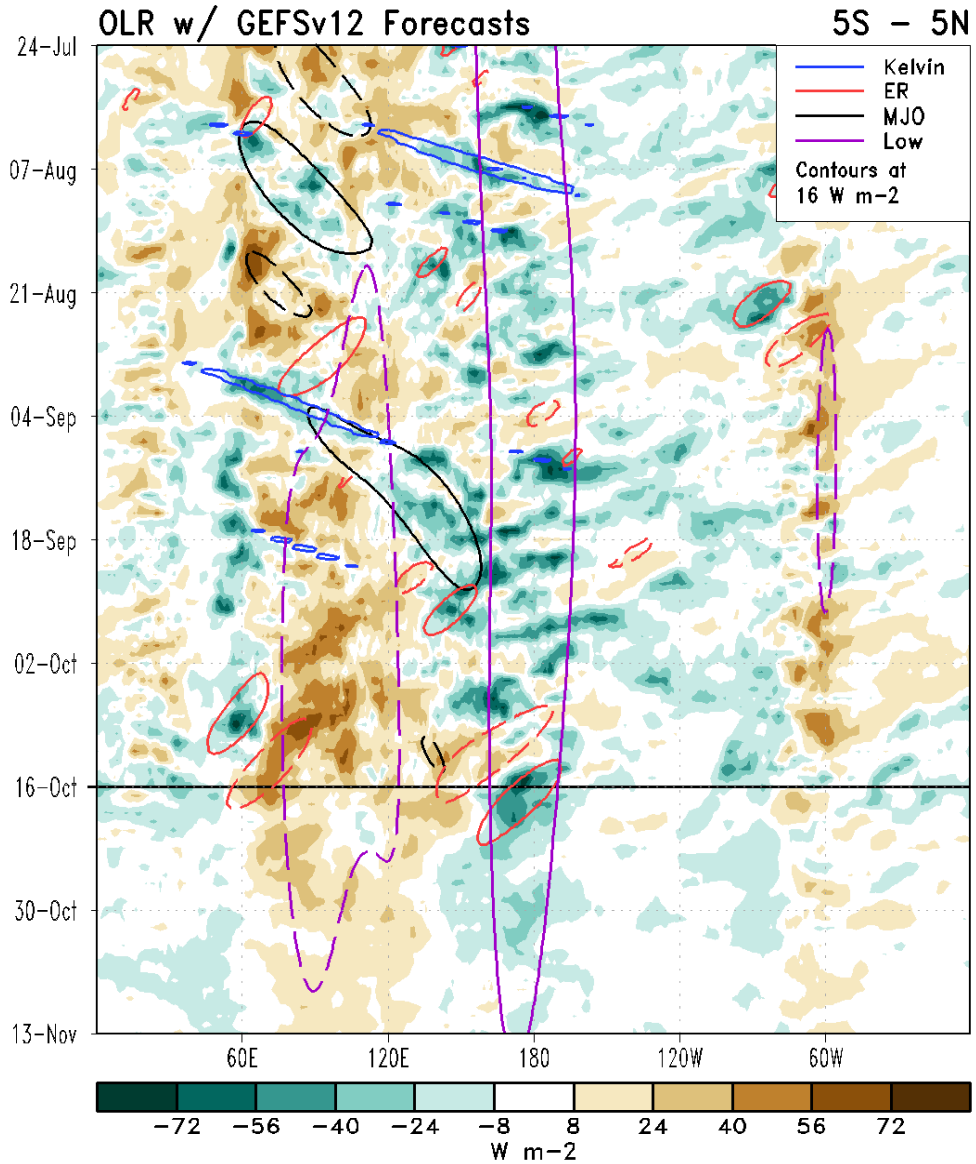
- RMM forecasts generally favor an incoherent MJO, with the signal retreating westward and possibly regaining amplitude in the western Pacific.
- The majority of ensembles members remain in the northwestern half of the RMM phase plot, and are unsupportive of a canonical eastward propagation from the Western Hemisphere into the Indian Ocean.

# 200-hPa Velocity Potential Anomaly Maps:

- In addition to the ongoing El Nino, another low frequency signal emerged over the eastern Indian Ocean (+IOD) since late September, as both look to remain persistent fixtures in the global tropics moving forward.
- Remnant MJO is coming through the filtering over the Indian Ocean, suggestive of continued eastward propagation of the MJO, albeit quite weak and more disorganized.



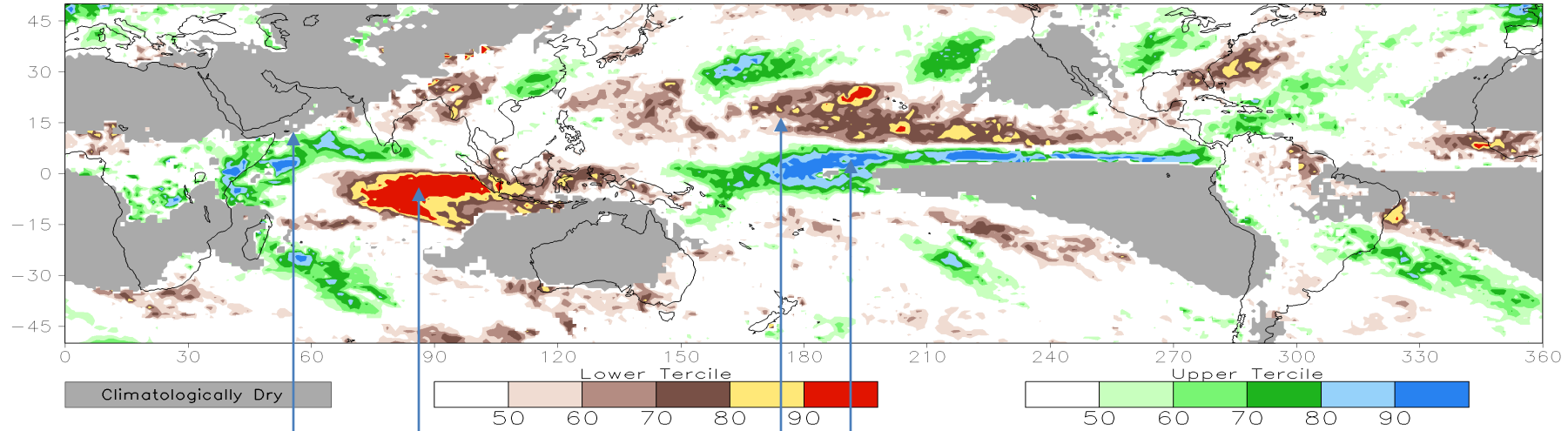
# Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



# Consolidated Probabilistic Precipitation: Weeks 2 & 3

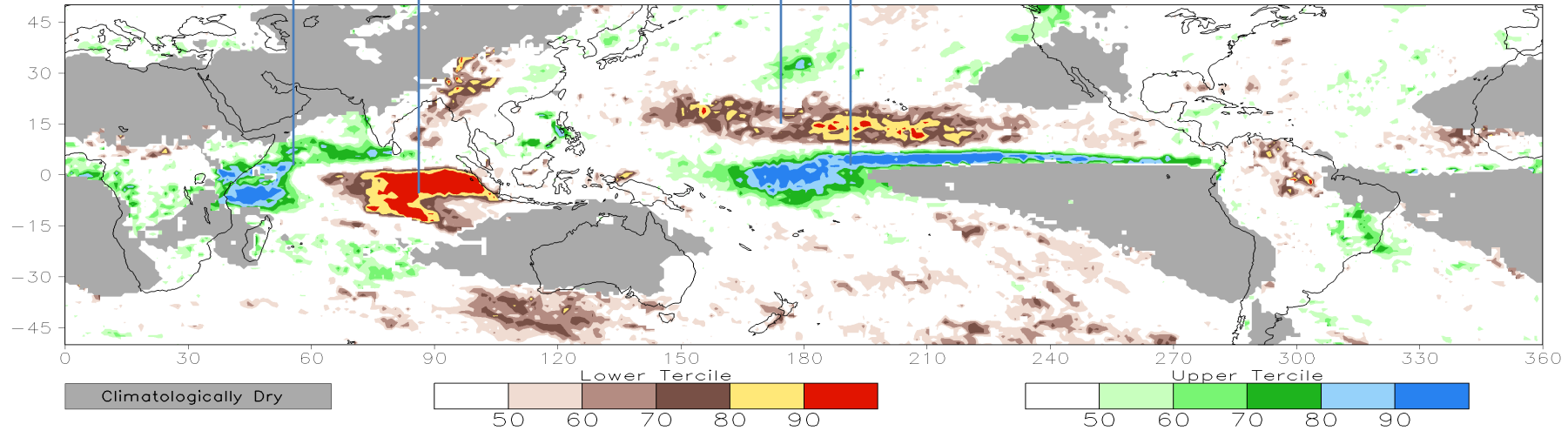
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 25Oct2023–31Oct2023



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

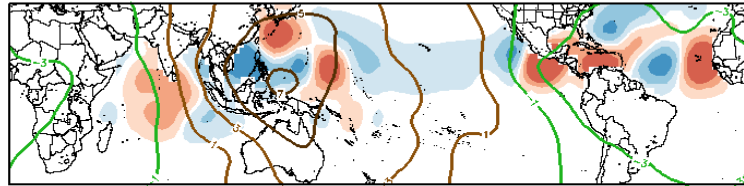
Valid: 01Nov2023–07Nov2023



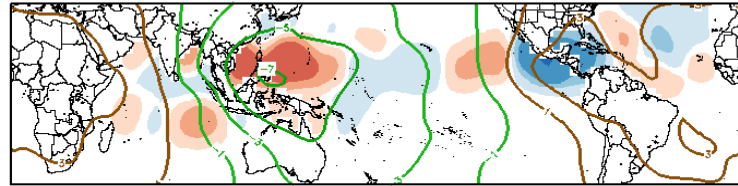


# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

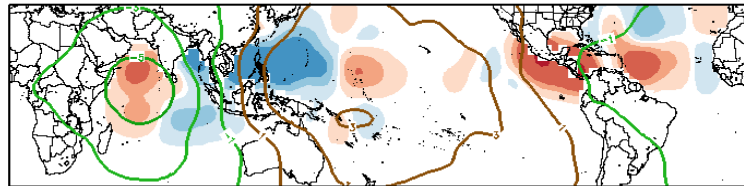
SON MJO Composite: Mean TC Origin Density Anomaly ( $\#TCs/277km^2*100$ )  
w/ SON CHI200 ( $\times 10^6 m^2 s^{-1}$ ) / Contours every  $2 \times 10^6 m^2 s^{-1}$



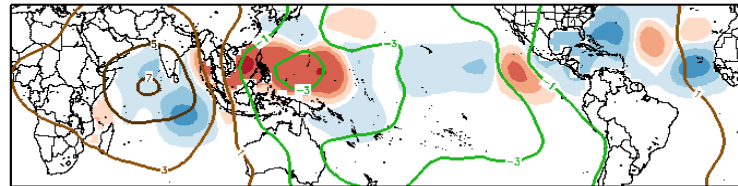
Phase 1



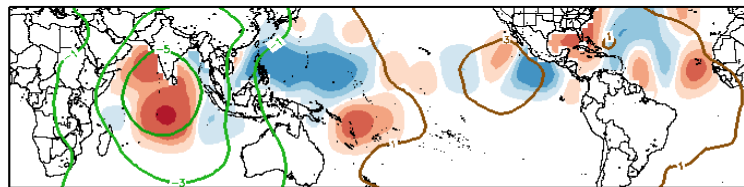
Phase 5



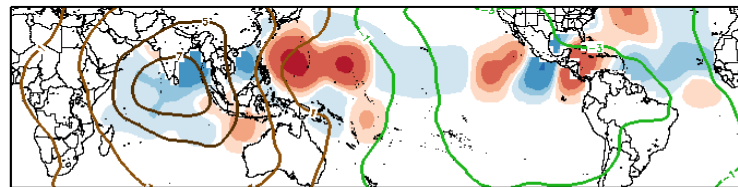
Phase 2



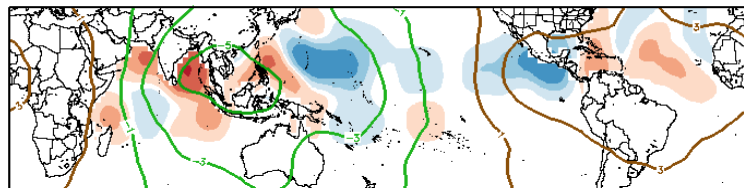
Phase 6



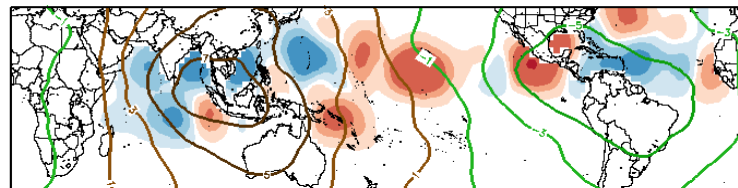
Phase 3



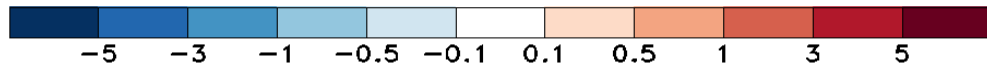
Phase 7



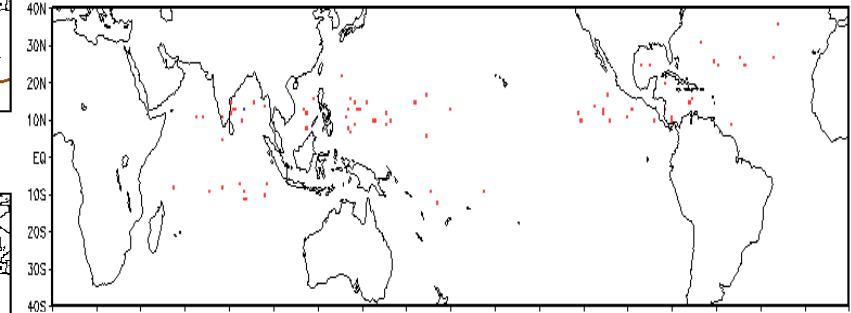
Phase 4



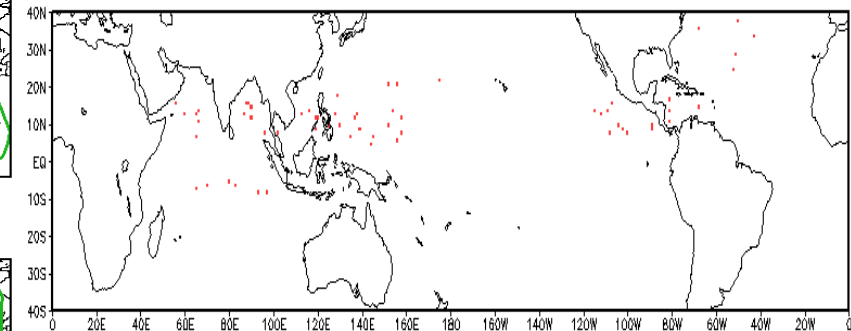
Phase 8



Observed TC Genesis, 1979–2021  
7-day Period 1025 to 1031



Observed TC Genesis, 1979–2021  
7-day Period 1101 to 1107

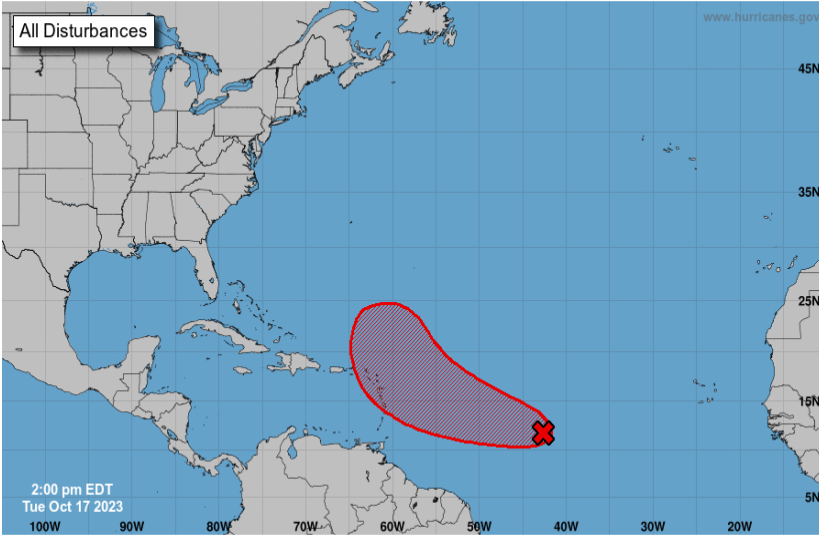


\*Experimental\*

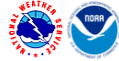
# Tropical Cyclone Monitoring/Forecast: NHC / CPHC



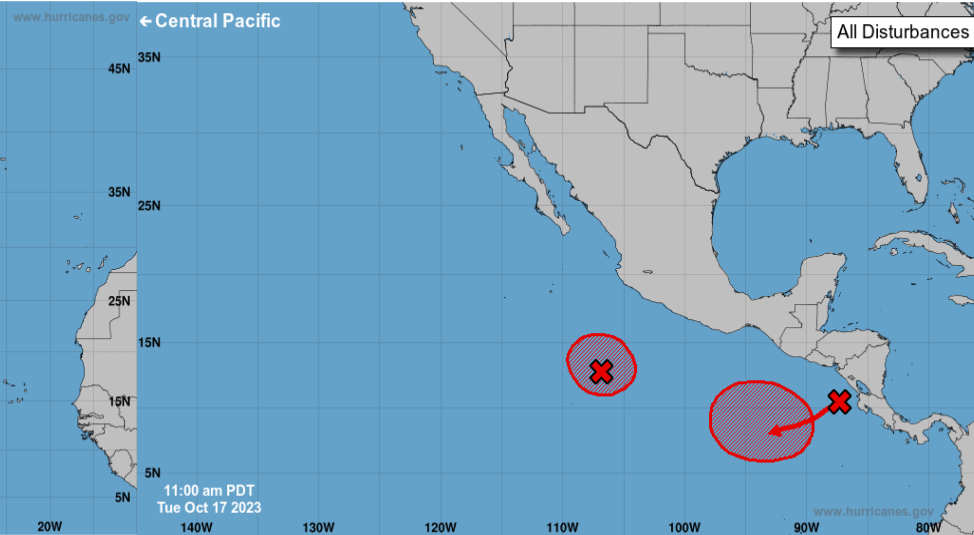
Seven-Day Graphical Tropical Weather Outlook  
National Hurricane Center Miami, Florida



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



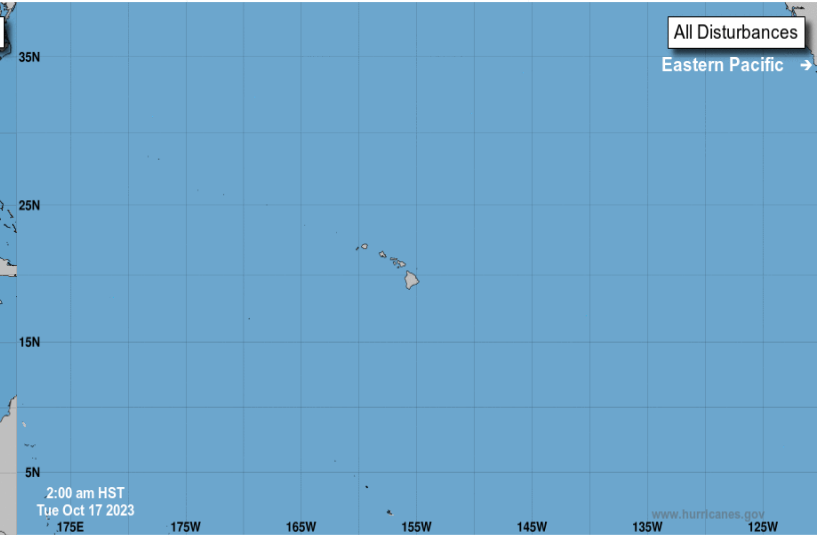
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Central Pacific Hurricane Center Honolulu, Hawaii

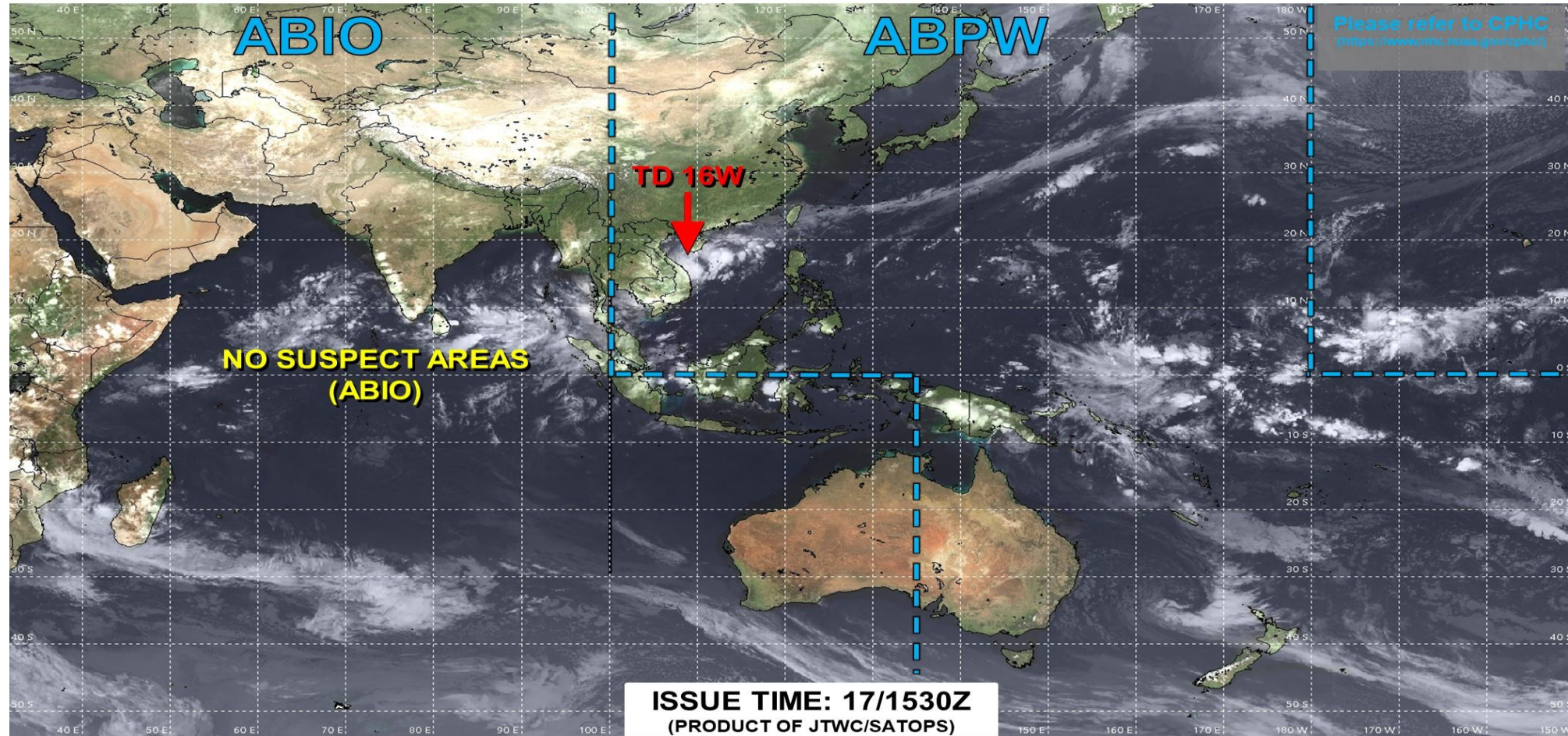


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# Tropical Cyclone Monitoring/Forecast: JTWC



## JOINT TYPHOON WARNING CENTER



**LOW** TC development unlikely within 24 hours



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



**HIGH** TC development likely within 24 hours (Reference TCFA)

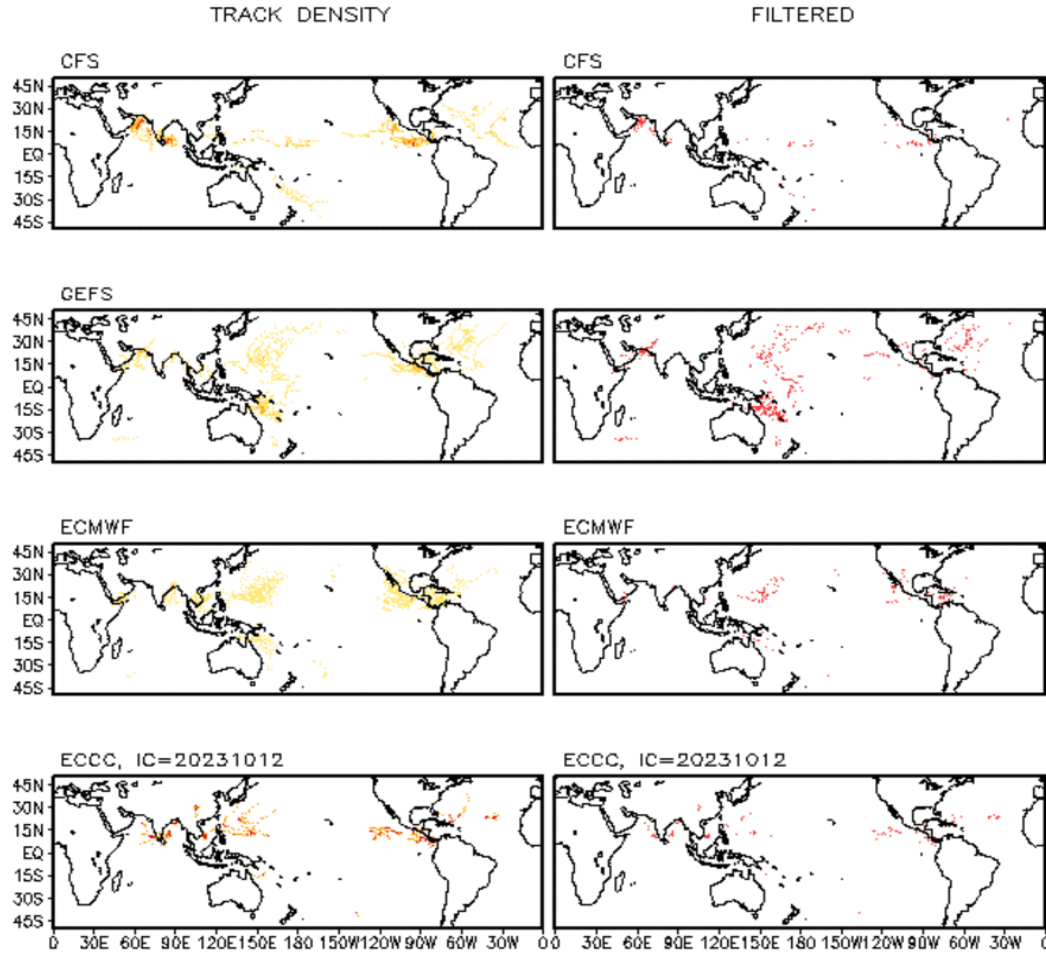


**SUB TROPICAL** Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

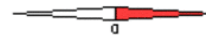
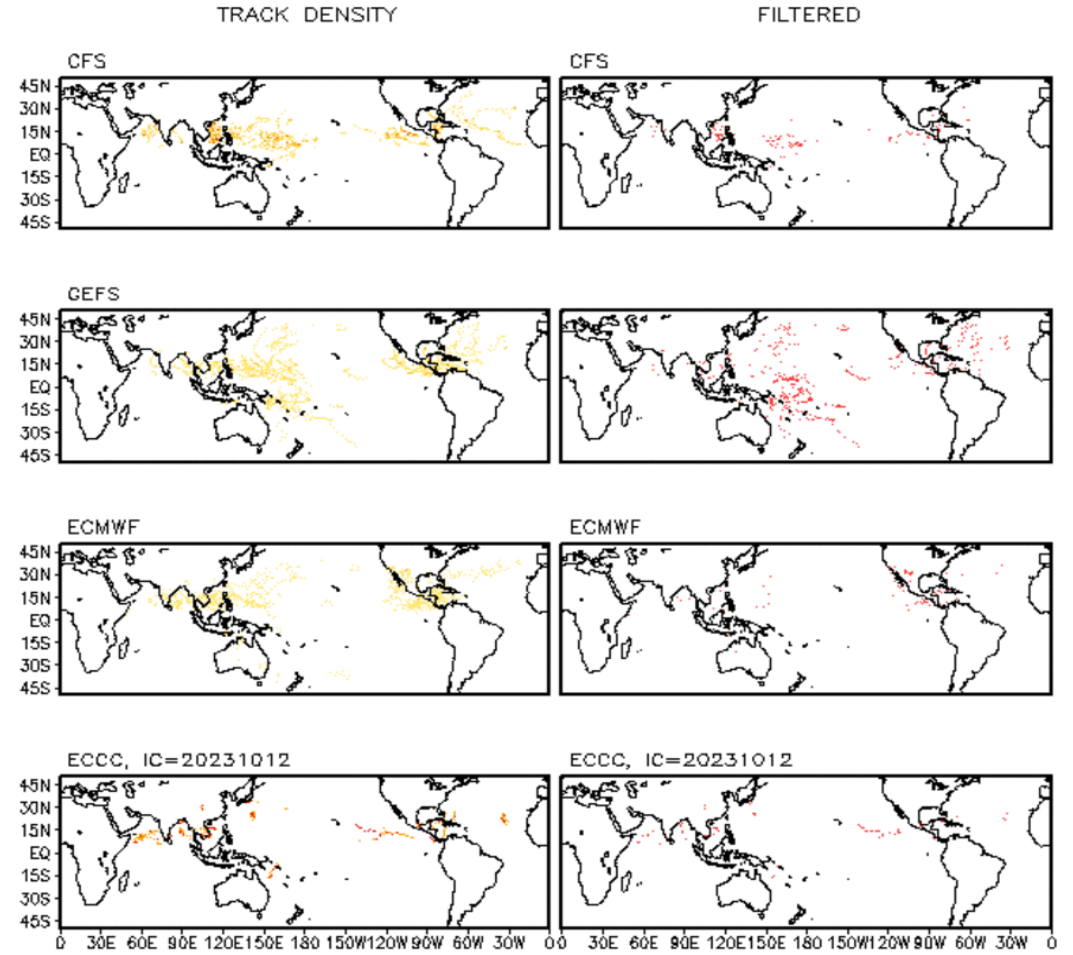
Tropical Cyclone (Reference Warning)

# Multi-Model TC Track Densities: Weeks 2+3

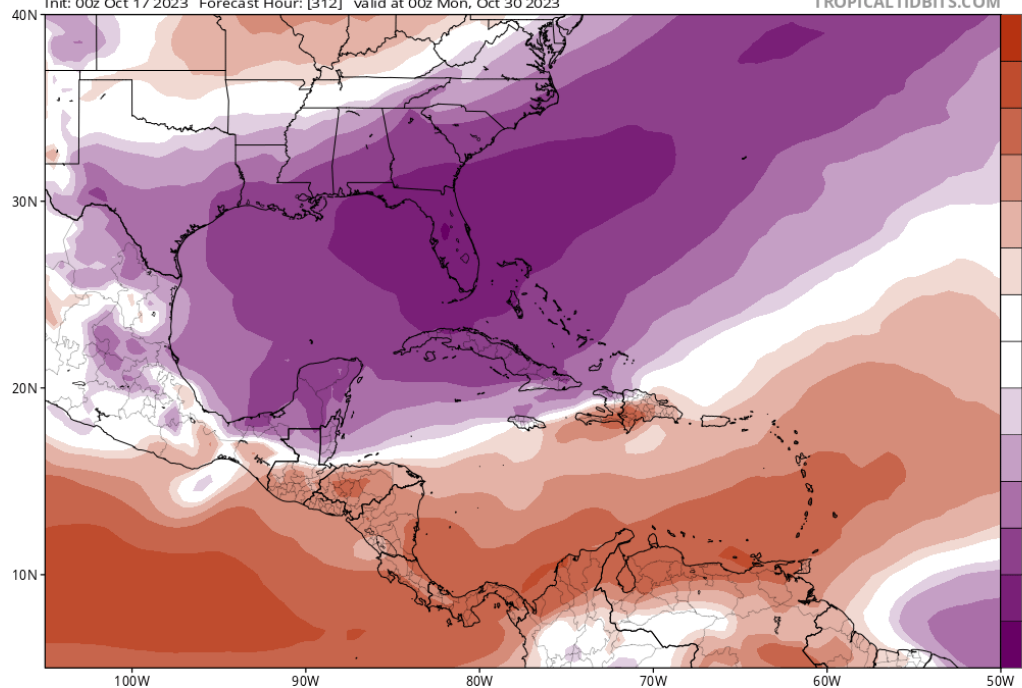
Storm Track Density Distribution, IC=20231016  
Week 2 Forecast: 1025-1031



Storm Track Density Distribution, IC=20231016  
Week 3 Forecast: 1101-1107

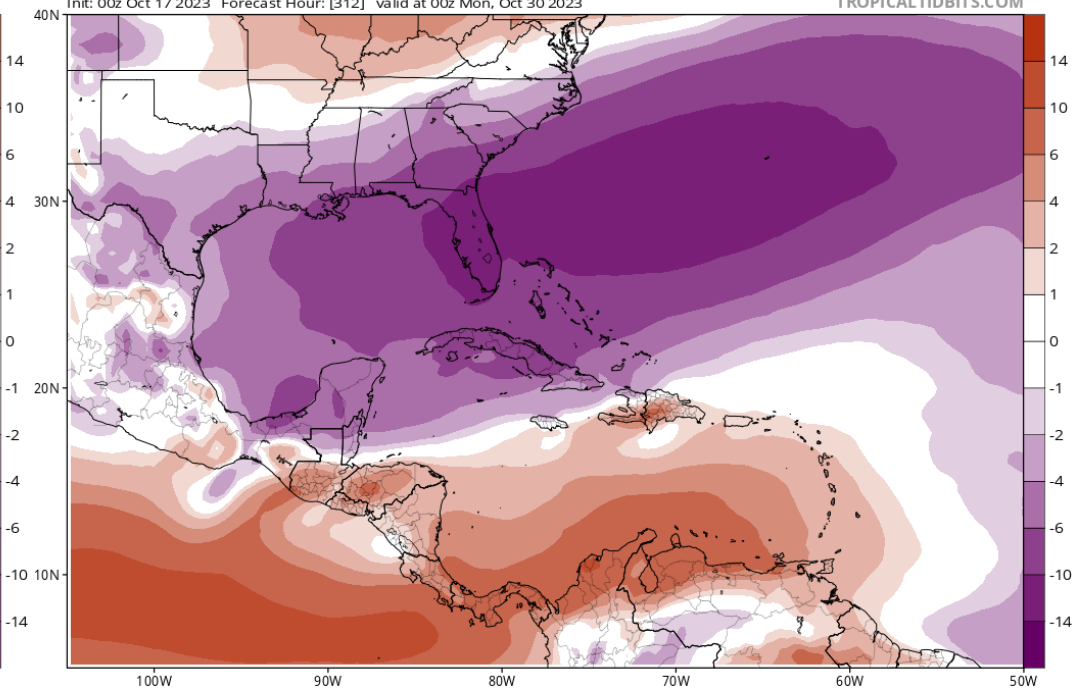


GEFS 850 hPa Zonal Wind Anomaly (kt) from 00z25Oct2023 to 00z30Oct2023 (Days 9-13)  
Init: 00z Oct 17 2023 Forecast Hour: [312] valid at 00z Mon, Oct 30 2023



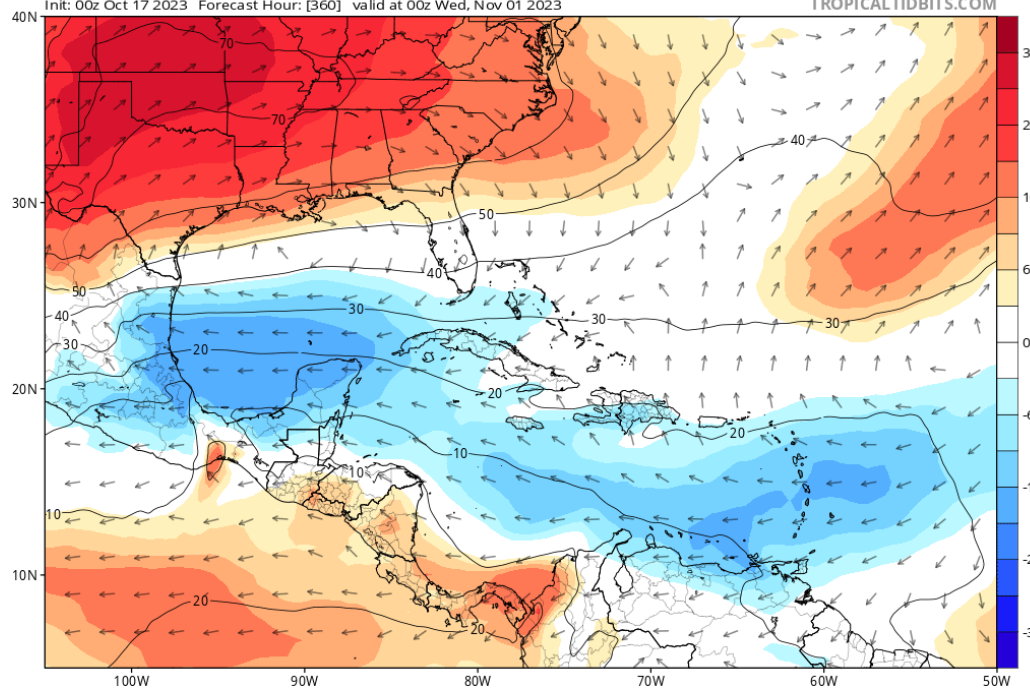
TROPICALTIDBITS.COM

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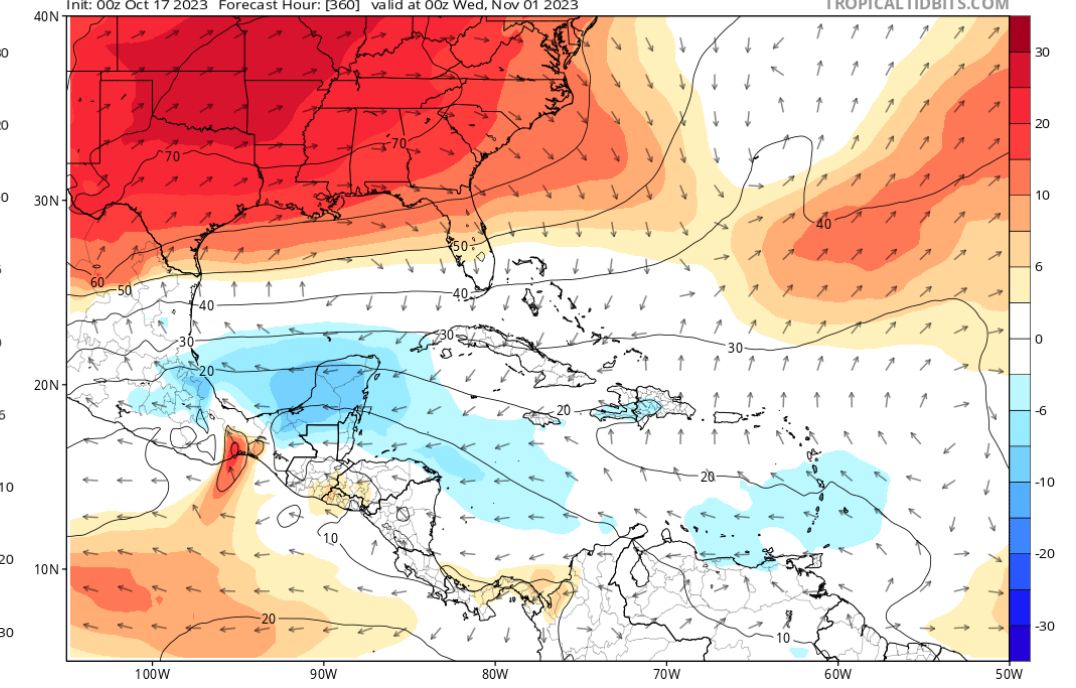
TROPICALTIDBITS.COM

GEFS Mean 850-200 hPa Bulk Shear (kt, contour) & Anomaly (kt, shaded/vector) from 00z27Oct to 00z01Nov (Days 11-15)  
Init: 00z Oct 17 2023 Forecast Hour: [360] valid at 00z Wed, Nov 01 2023



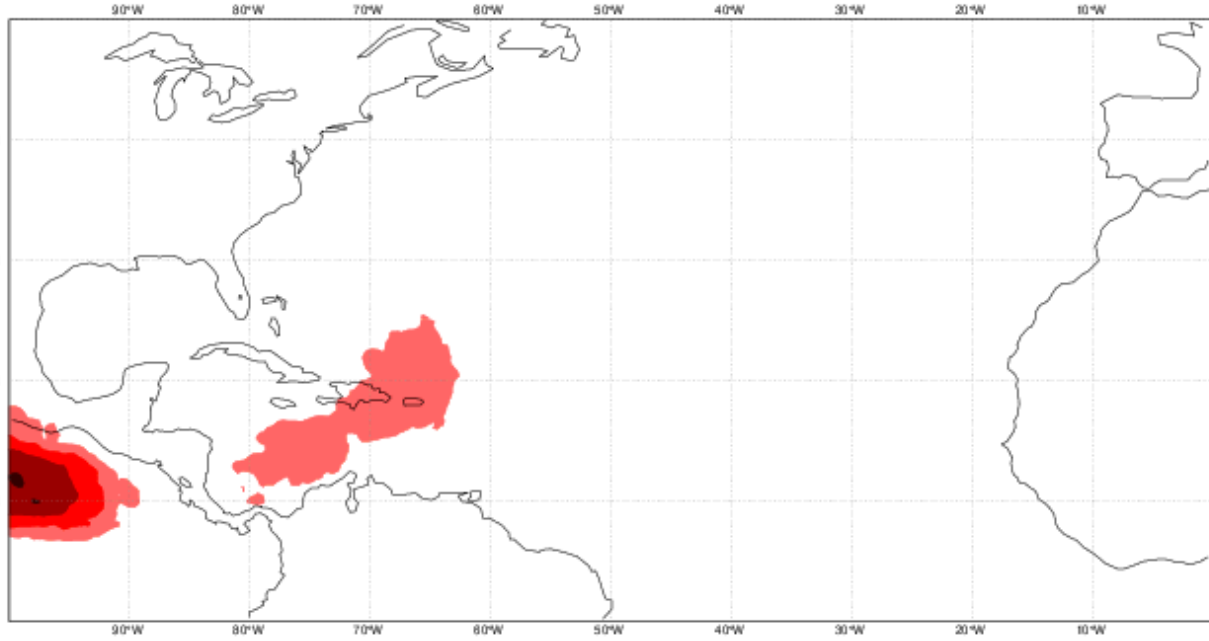
TROPICALTIDBITS.COM

EPS Mean 850-200 hPa Bulk Shear (kt, contour) & Anomaly (kt, shaded/vector) from 00z27Oct to 00z01Nov (Days 11-15)  
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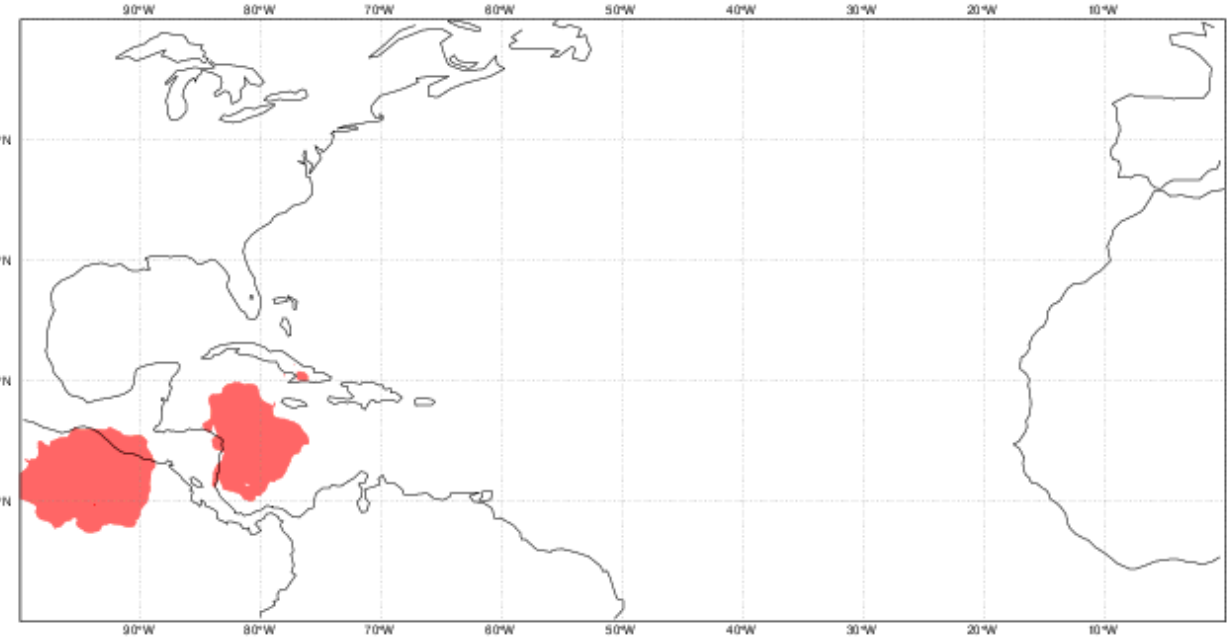


TROPICALTIDBITS.COM

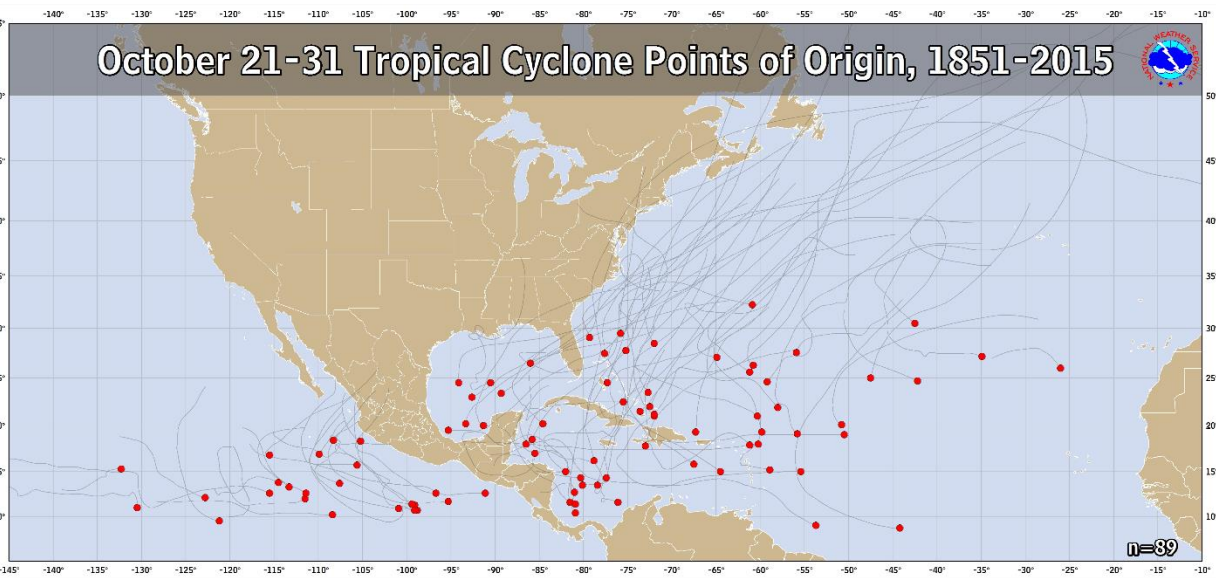
Weekly Mean Anomaly of Tropical Cyclone Strike Probability. Date:20231016 0 UTC t+(168-336)  
Probability of a TC passing within 300km radius



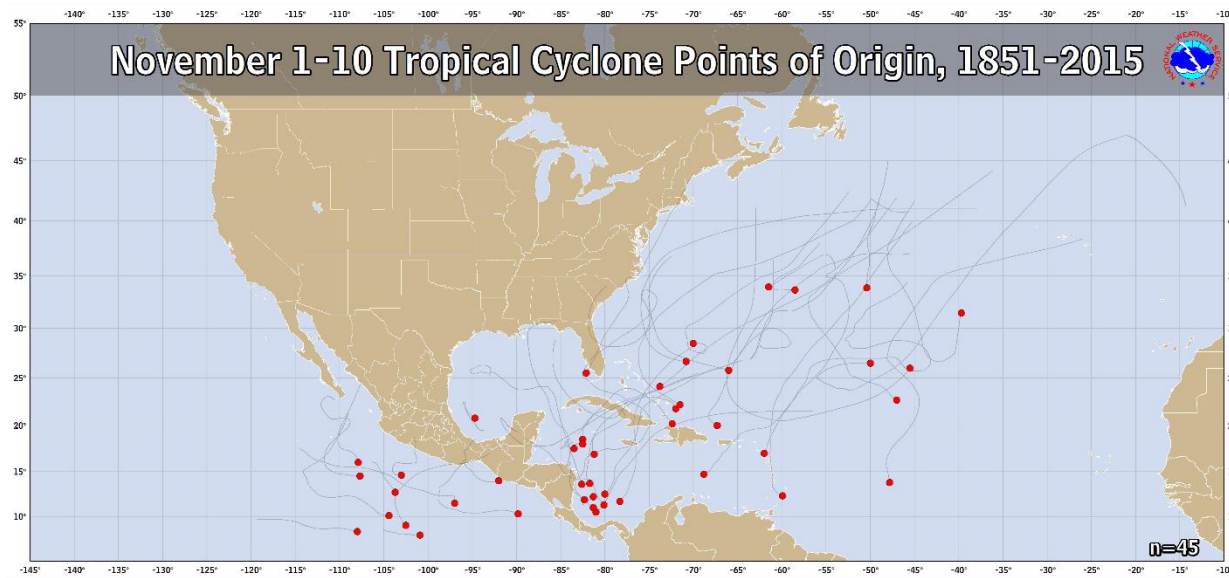
Weekly Mean Anomaly of Tropical Cyclone Strike Probability. Date:20231016 0 UTC t+(336-504)  
Probability of a TC passing within 300km radius



October 21-31 Tropical Cyclone Points of Origin, 1851-2015

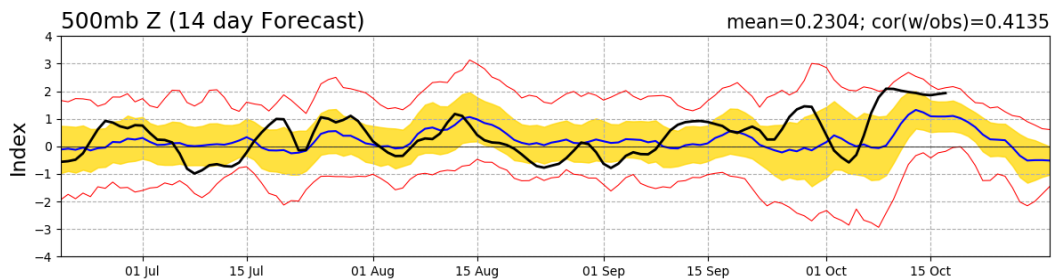
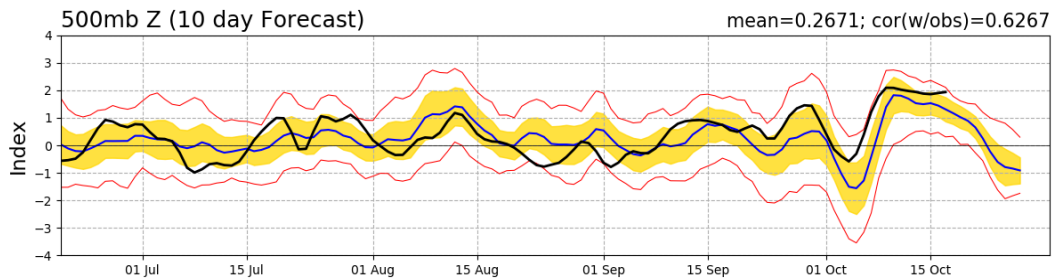
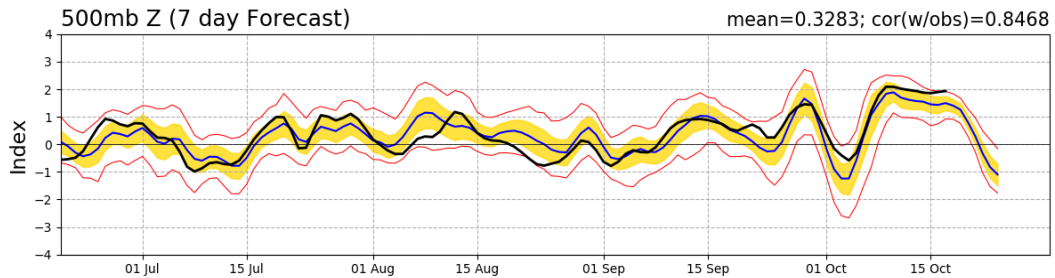
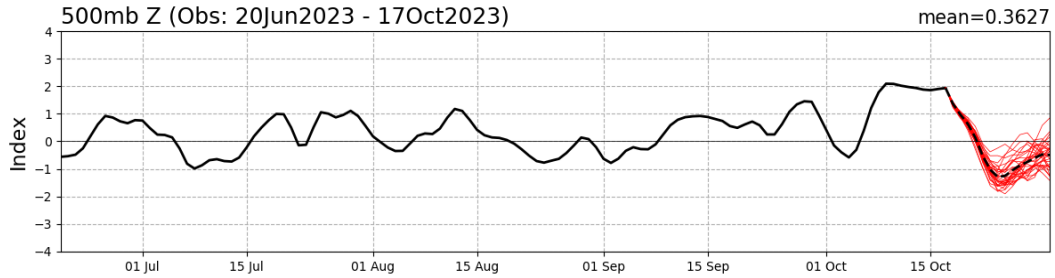


November 1-10 Tropical Cyclone Points of Origin, 1851-2015

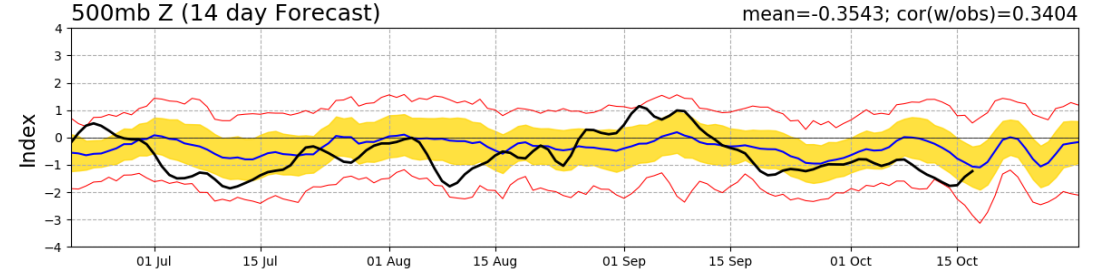
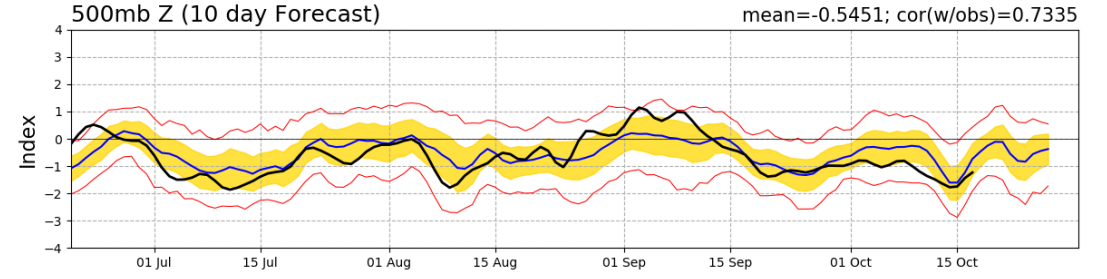
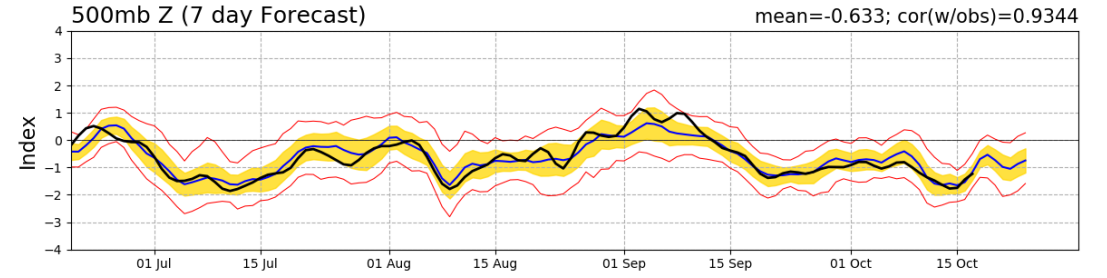
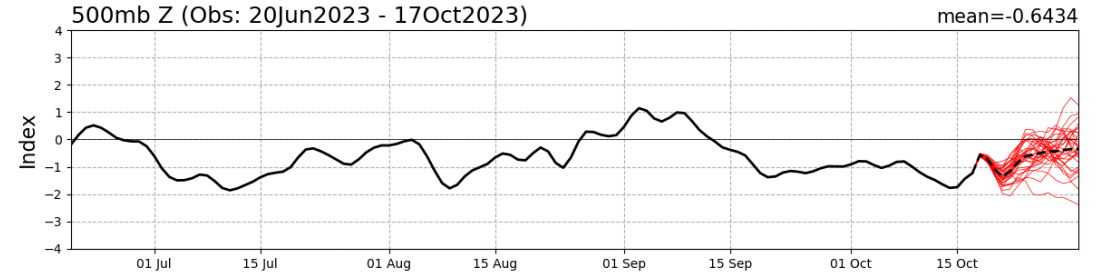


# Teleconnection Indices: PNA / AO:

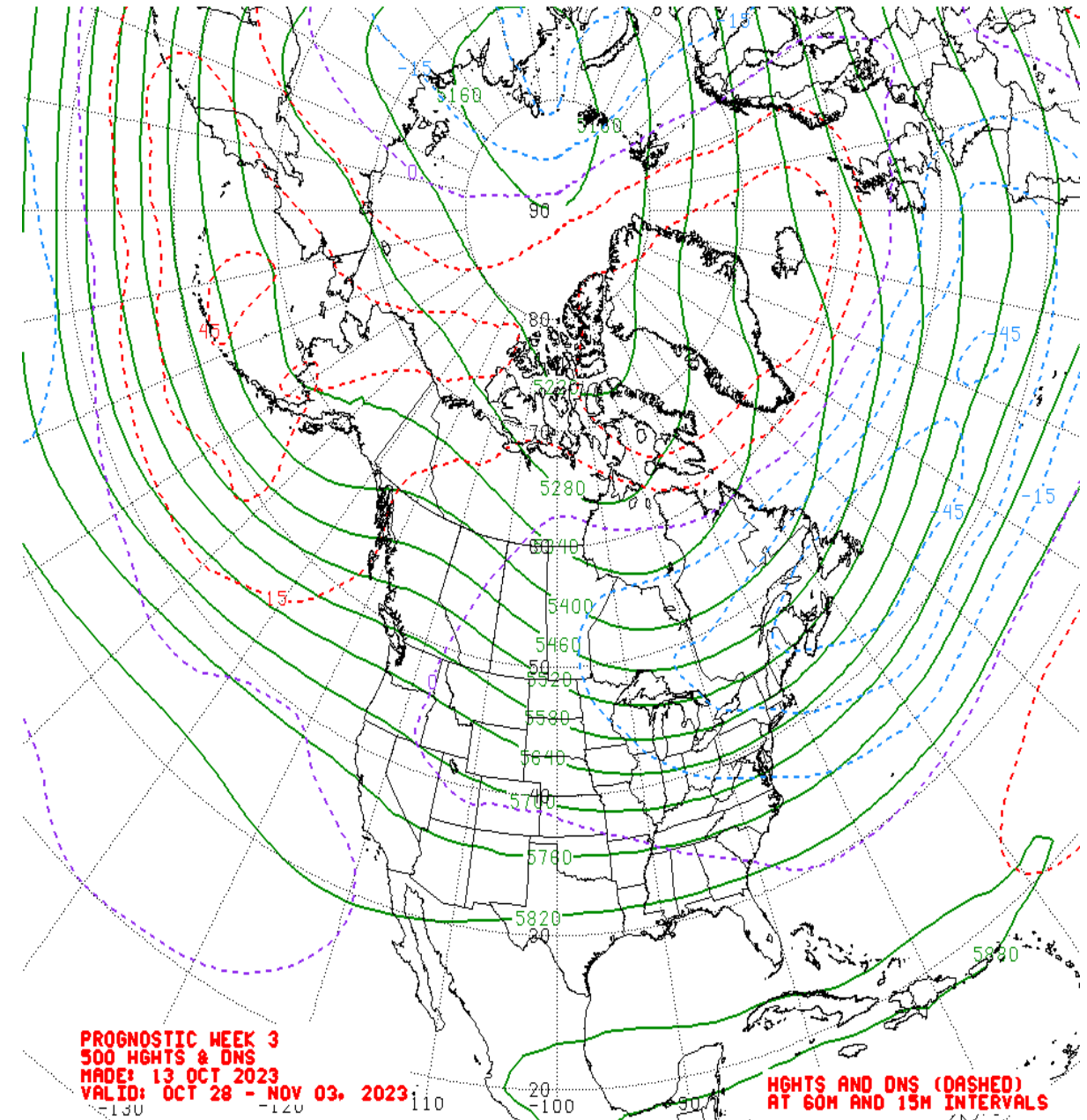
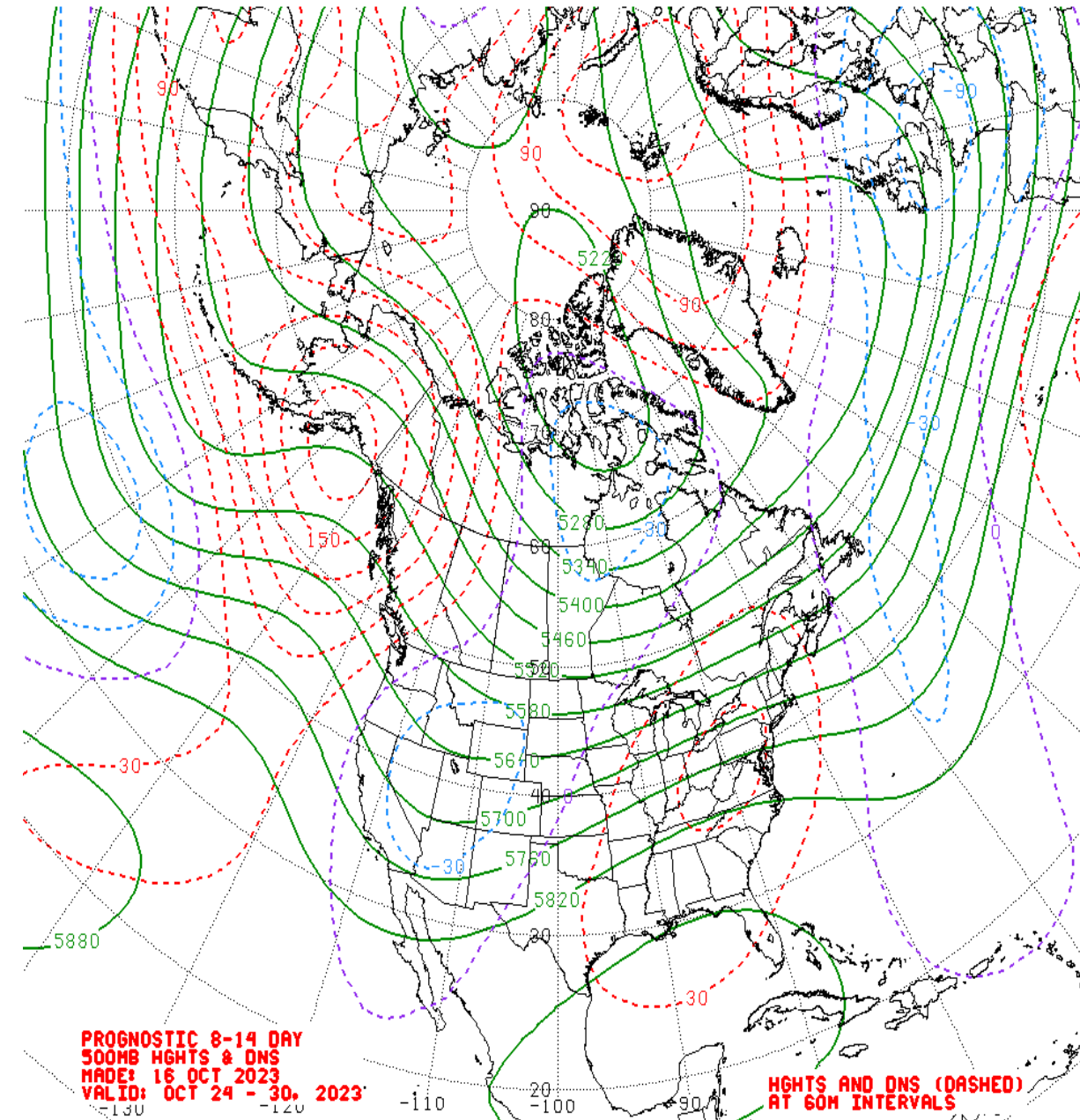
## PNA Index: Observed & GEFS Forecasts



## NAO Index: Observed & GEFS Forecasts

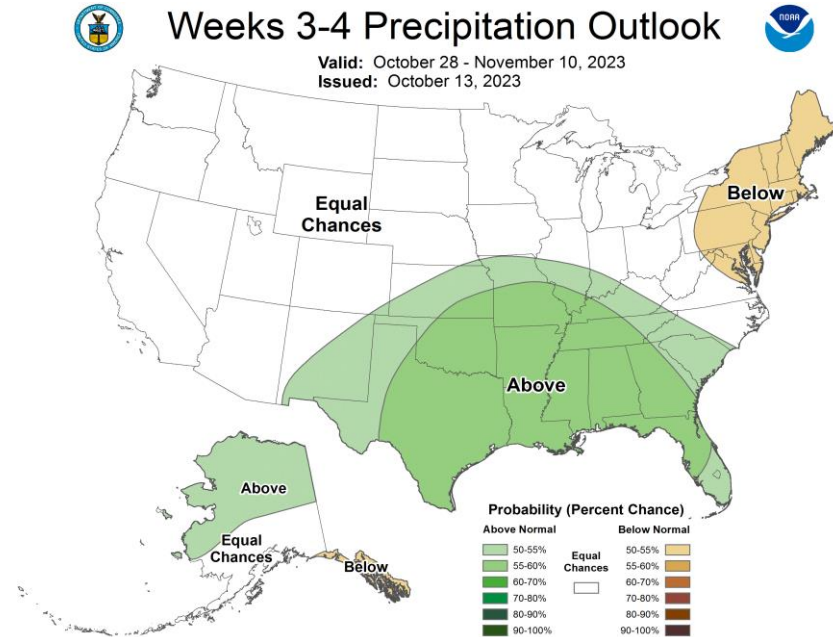
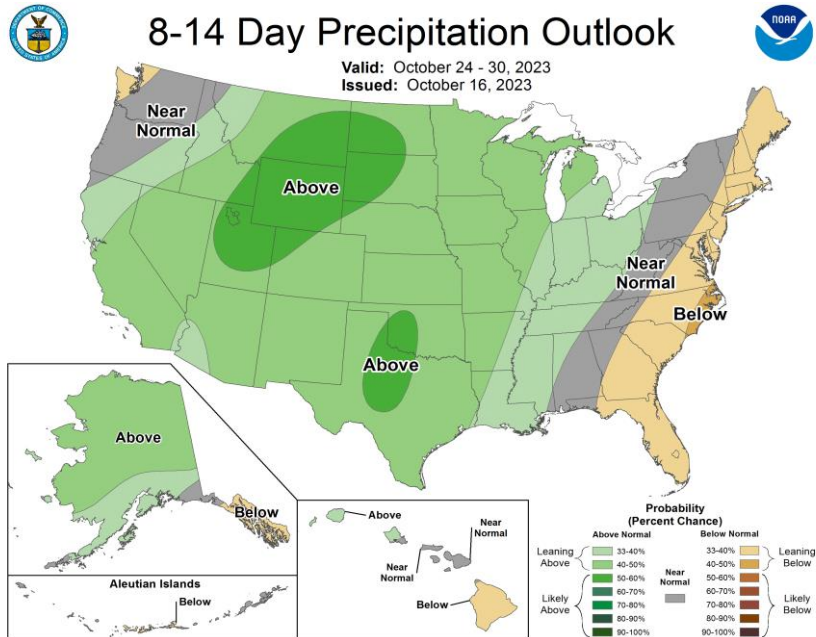
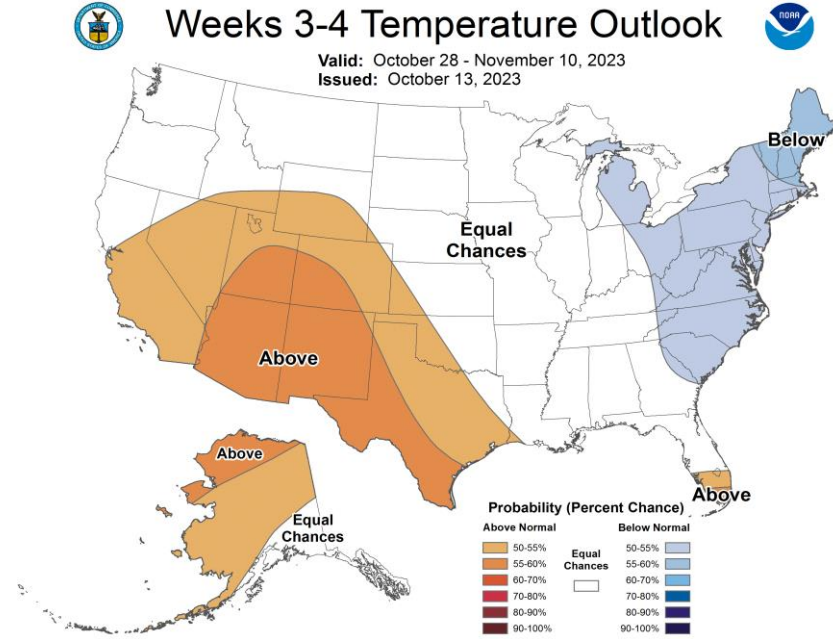
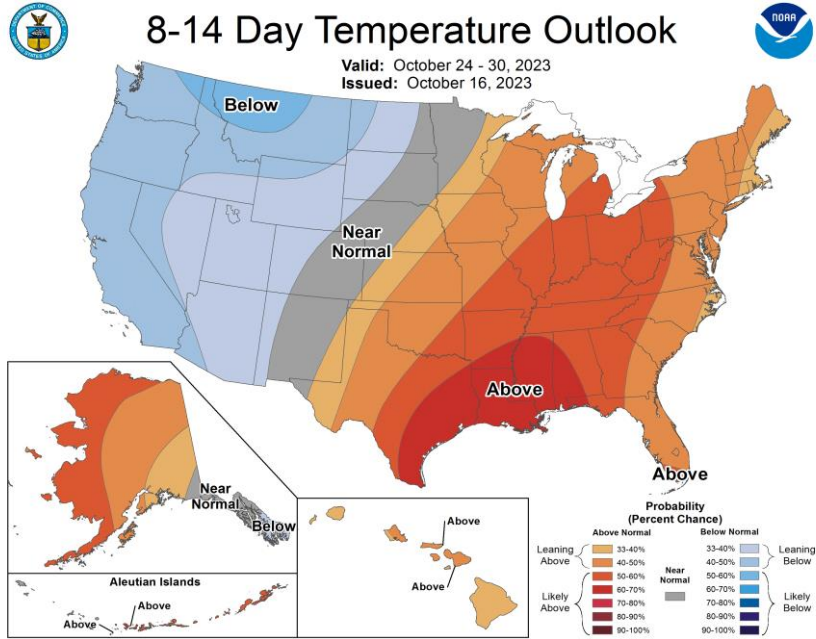


# Mean 500-hPa Height Anomaly Forecasts: Weeks 2+3





# Official Temperature & Precipitation Forecasts:



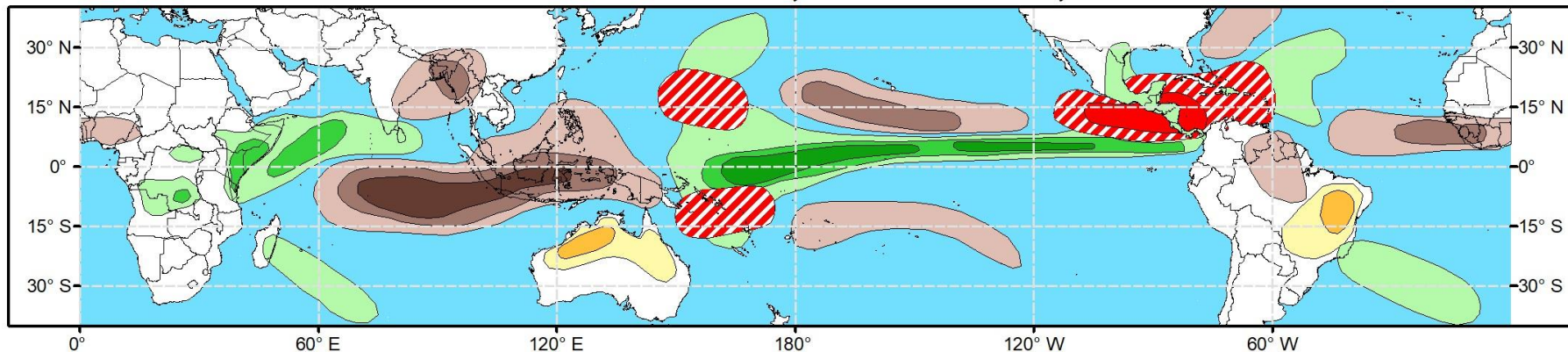


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Climate Prediction Center

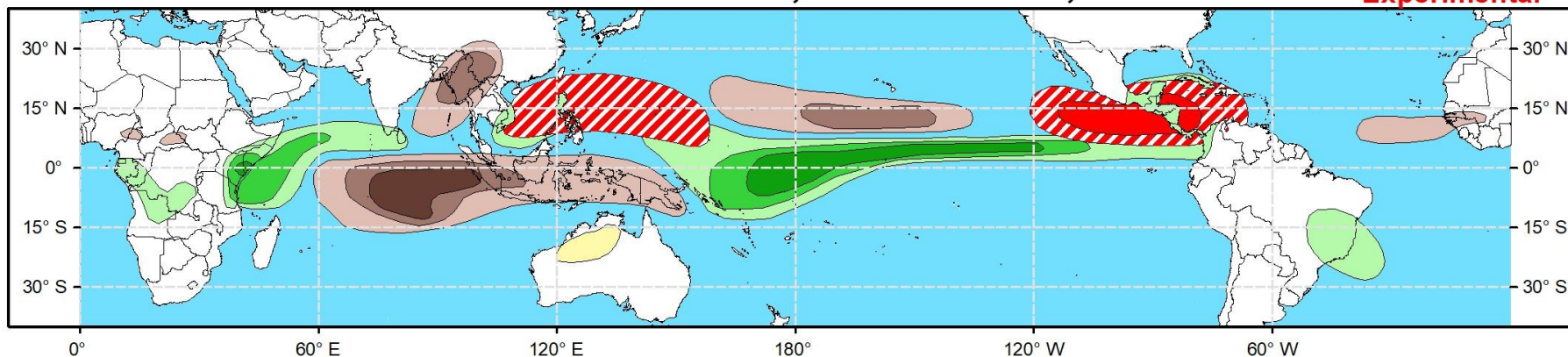


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