



# Weeks 2-3 Global Tropics Hazards Outlook

9/10/2024

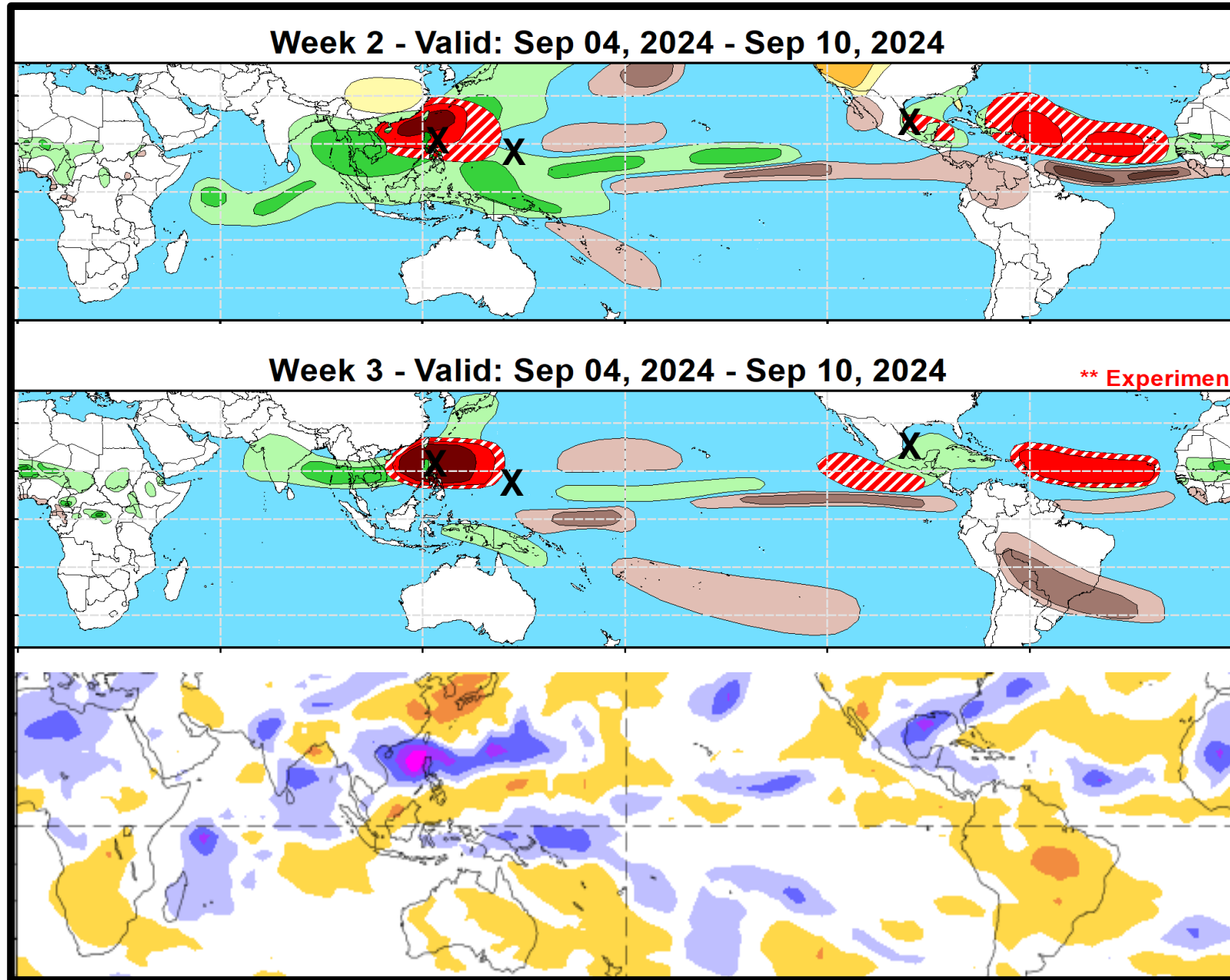
Brad Pugh

NWS / NCEP / Climate Prediction Center

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

Gulf of Mexico: Tropical Storm Francine

West Pacific: Super Typhoon Yagi and Tropical Depression 14



# Synopsis of Climate Modes:

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**ENSO:** (Aug 8, 2024)      *next update on Thursday, Sep 12<sup>th</sup>*

- ENSO Alert System Status: [La Niña Watch](#)
- La Niña favored to emerge during SON (66% chance) and persist into the Northern Hemisphere winter 2024-25 (74% chance during November-January).

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

- A well-defined MJO propagated eastward from the Indian Ocean to the Maritime Continent during the latter half of August. By early September, its eastward progression slowed.
- Dynamical models differ on the future MJO evolution, but the preferred ECMWF model depicts a continued eastward propagating MJO to the Western Hemisphere.
- Tropical cyclone development: West Pacific (very active the next two weeks), East Pacific (increasing chance during late September), Atlantic basin (climatology).

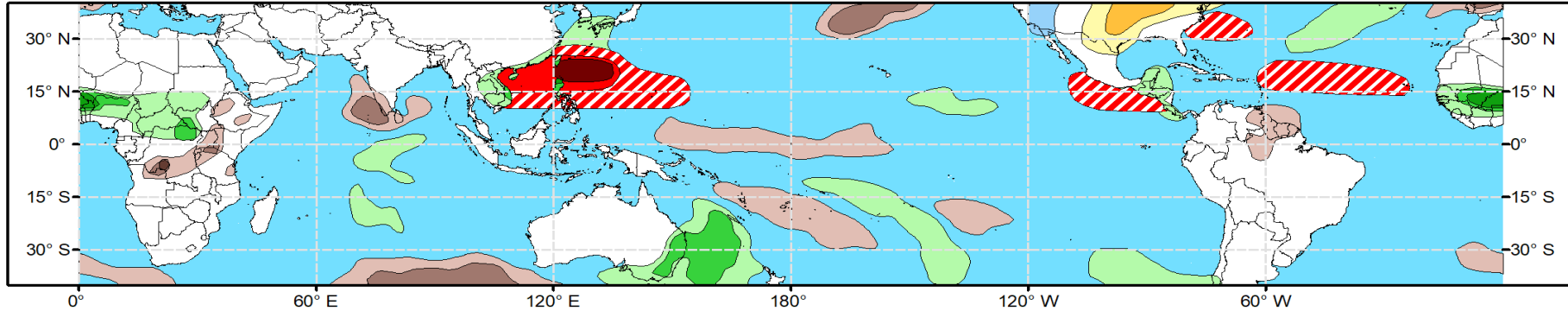
# GTH Outlook:



## Global Tropics Hazards Outlook Climate Prediction Center

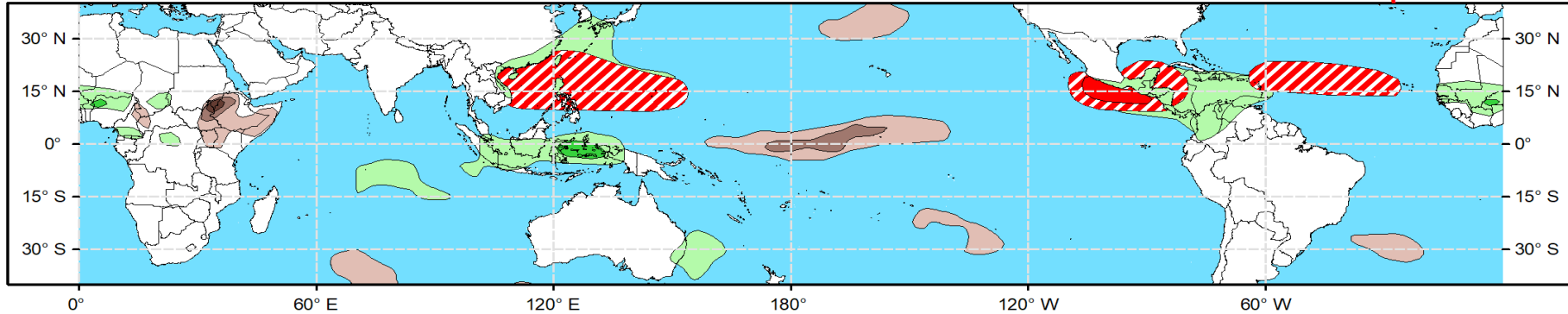


**Week 2 - Valid: Sep 18, 2024 - Sep 24, 2024**



**Week 3 - Valid: Sep 25, 2024 - Oct 01, 2024**

**\*\* 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*

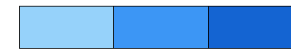
**Above-Average  
Temperatures Probability**



>50% >65% >80%

*7-day max temperatures in the  
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**Below-Average  
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*7-day min temperatures in the  
Lower third of the historical range*

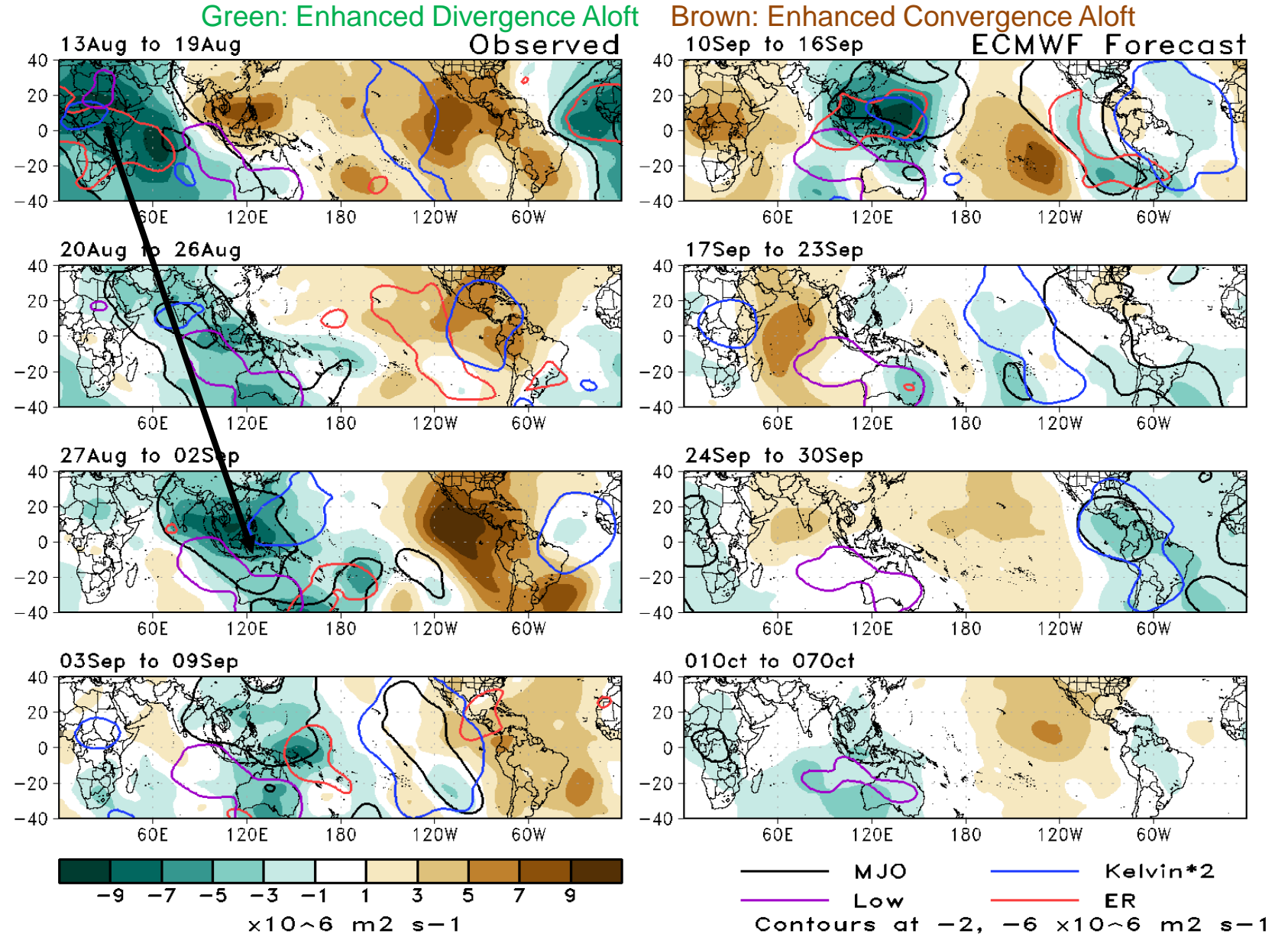
**Issued: 09/10/2024**

**Forecaster: Pugh**

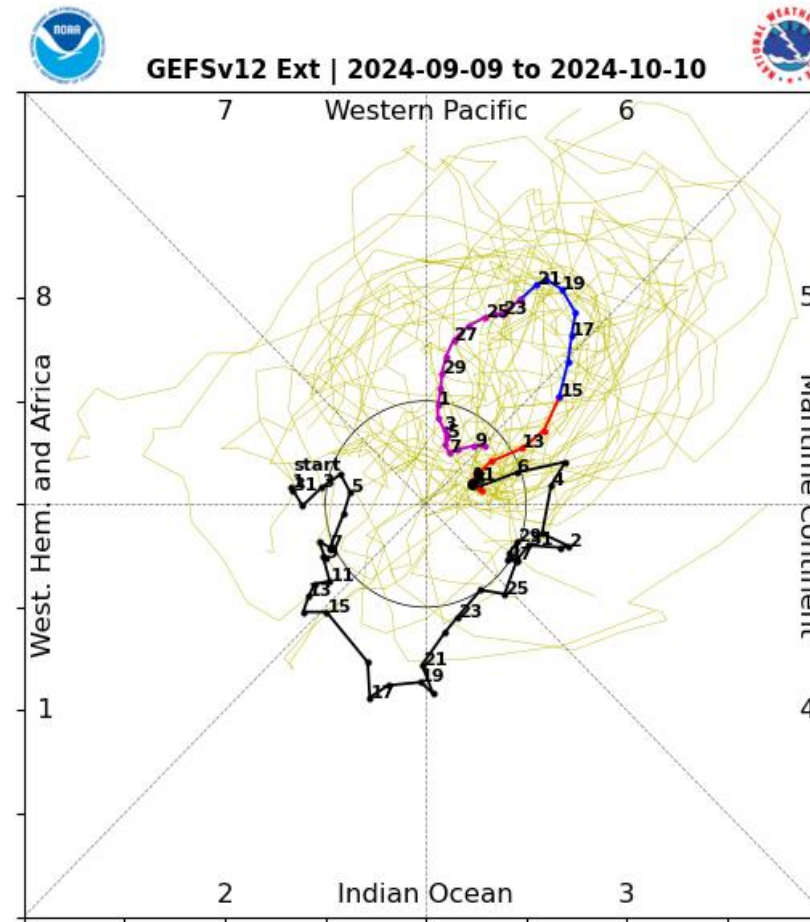
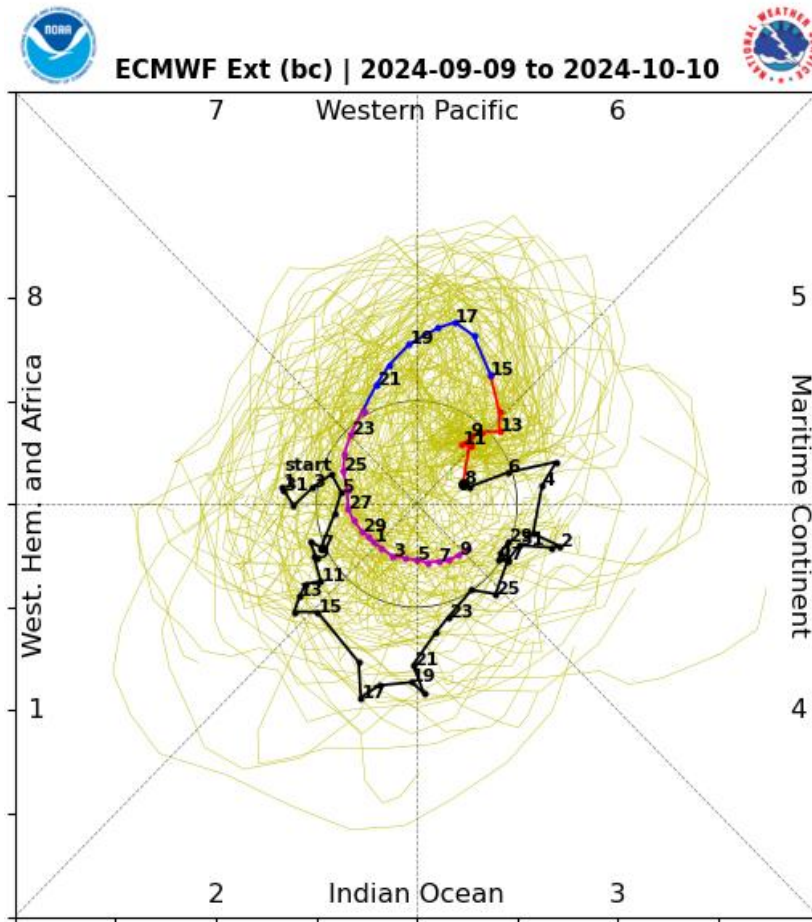
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# 200-hPa Velocity Potential Anomaly Maps:

- Enhanced MJO phase (above-average rainfall) shifted east from late August to the beginning of September.
- Early September: slower eastward progression
- Mid to late September: enhanced phase overspreading the Western Hemisphere



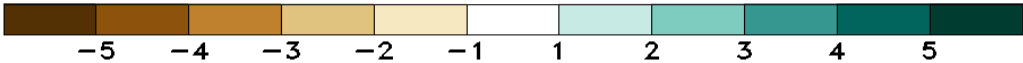
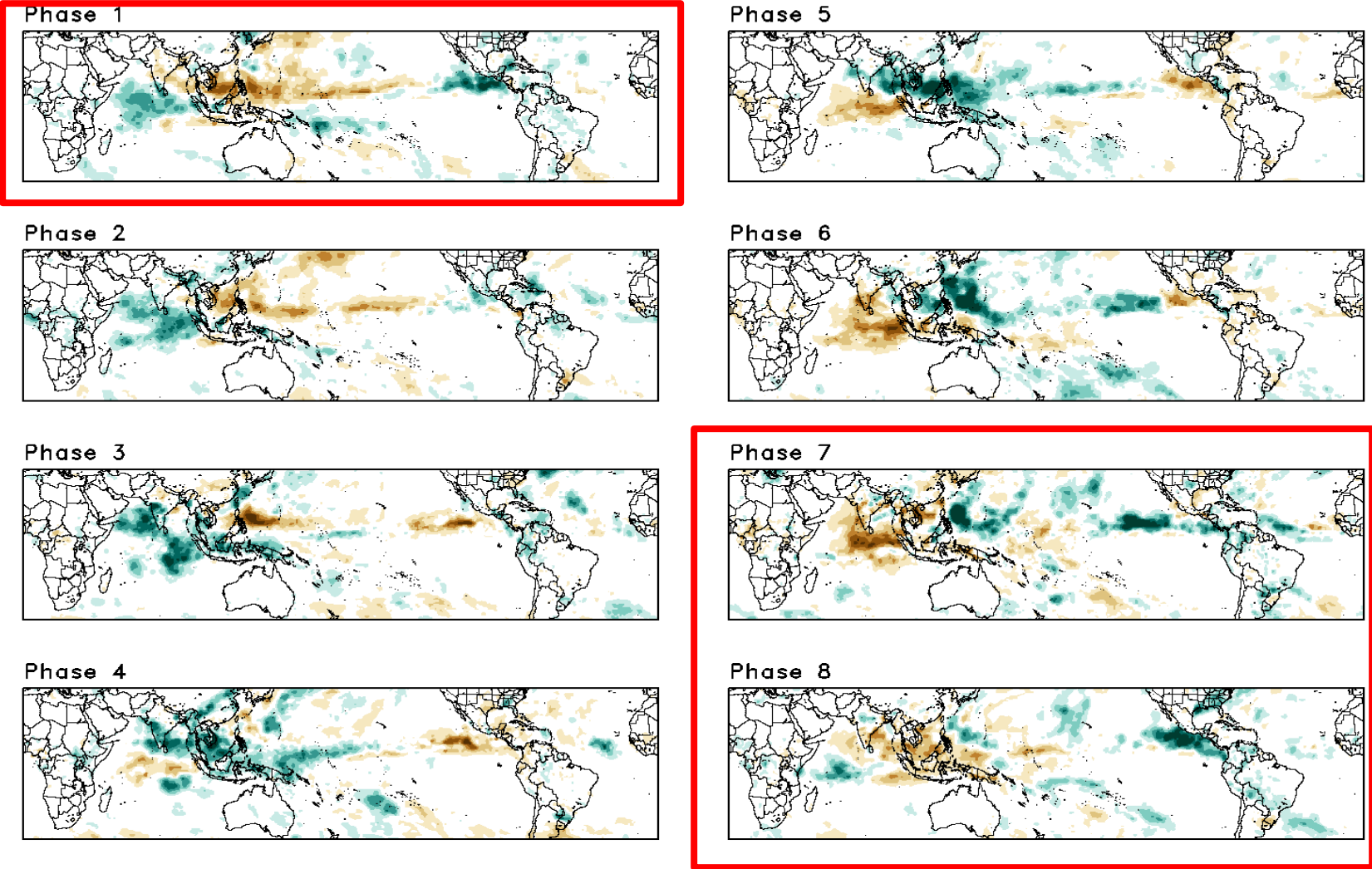
# RMM Index Observations & Forecasts:



- The preferred ECMWF model favors a circumnavigation of the MJO that returns to the Western Hemisphere (phases 8 and 1) during the next 3 weeks.
- However, a majority of the GFS ensemble members depict little or no eastward propagation.

# Historical Precipitation Anomalies By MJO Phase:

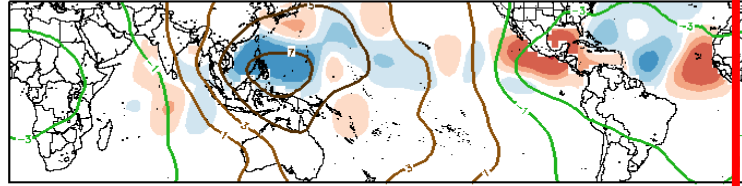
ASO MJO Composite: GPCP1DD (mm/day)



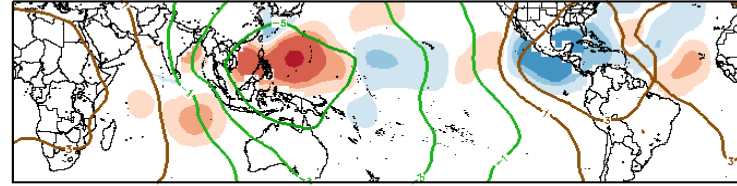
# Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

ASO MJO Composite: Mean TC Origin Density Anomaly ( $\#TCs/277km^2*100$ )

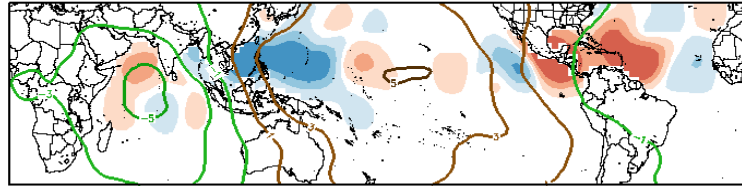
w/ ASO CHIZOO ( $\times 10^{-6} m^2 s^{-1}$ ) / Contours every  $2 \times 10^{-6} m^2 s^{-1}$



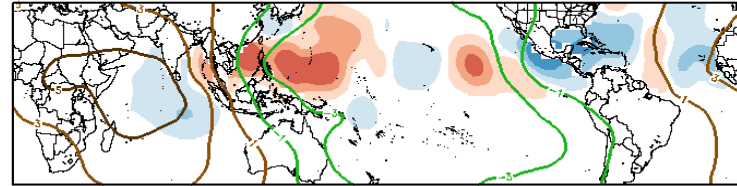
Phase 1



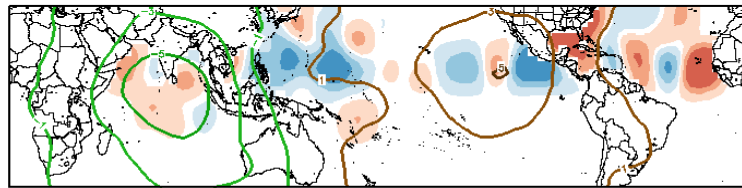
Phase 5



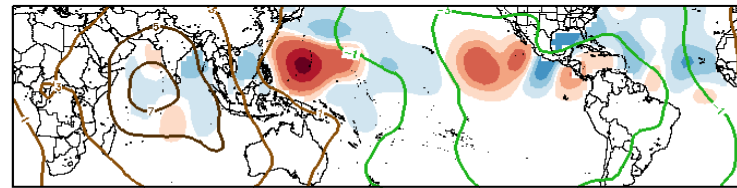
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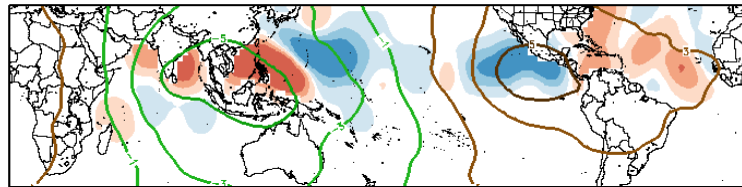
Phase 6



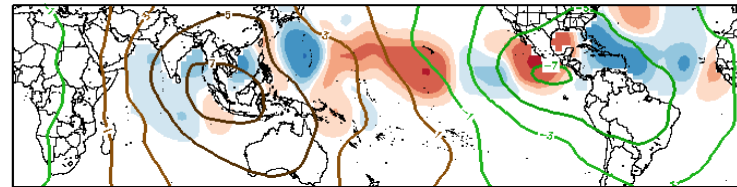
Phase 3



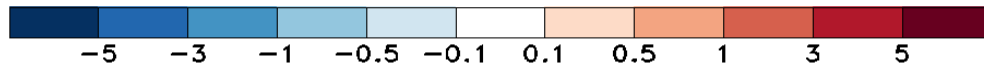
Phase 7



Phase 4

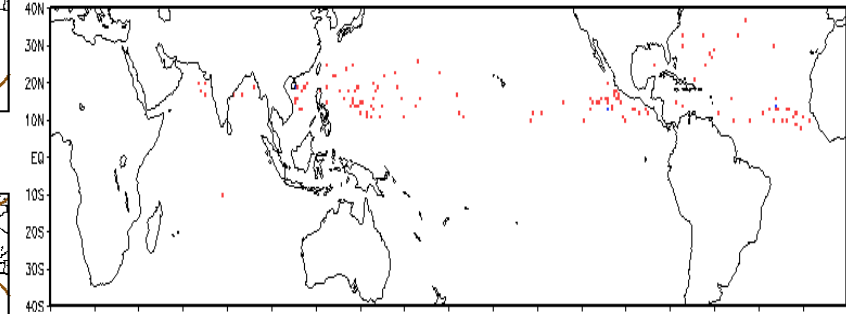


Phase 8



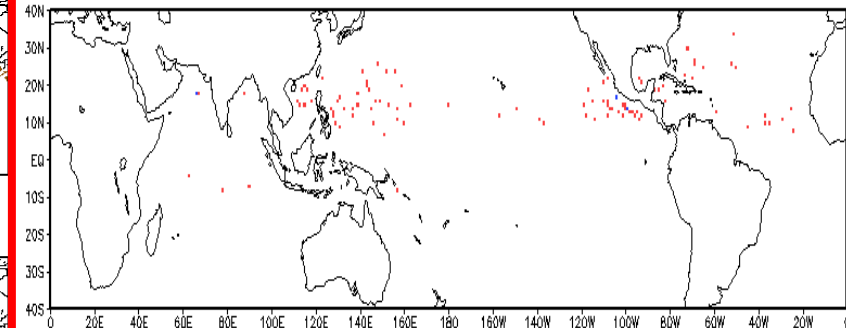
Observed TC Genesis, 1979–2021

7-day Period 0918 to 0924



Observed TC Genesis, 1979–2021

7-day Period 0925 to 1001

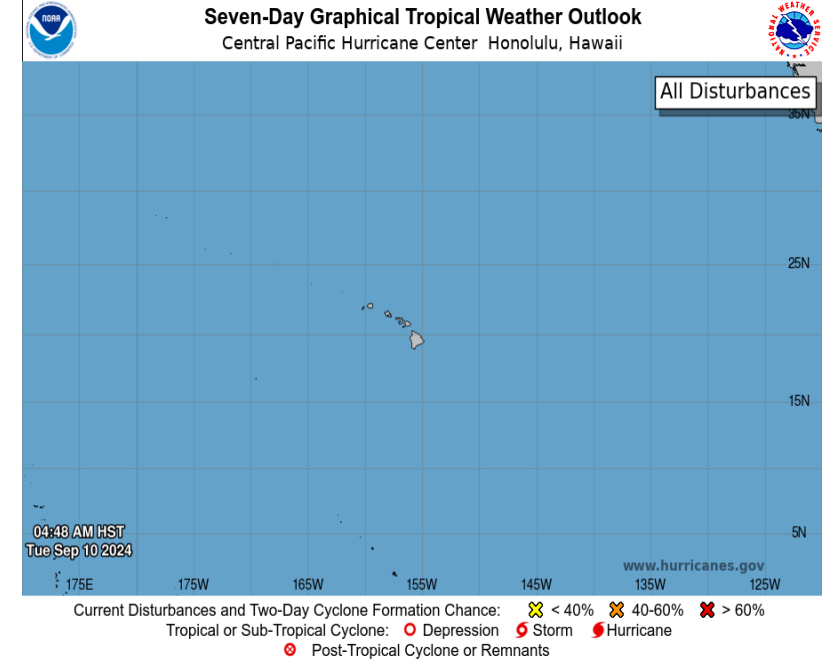
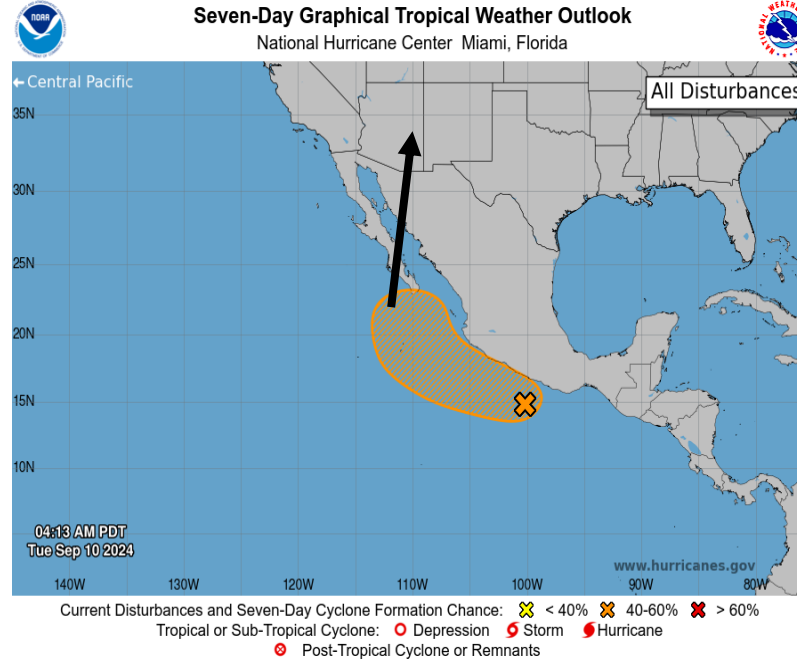
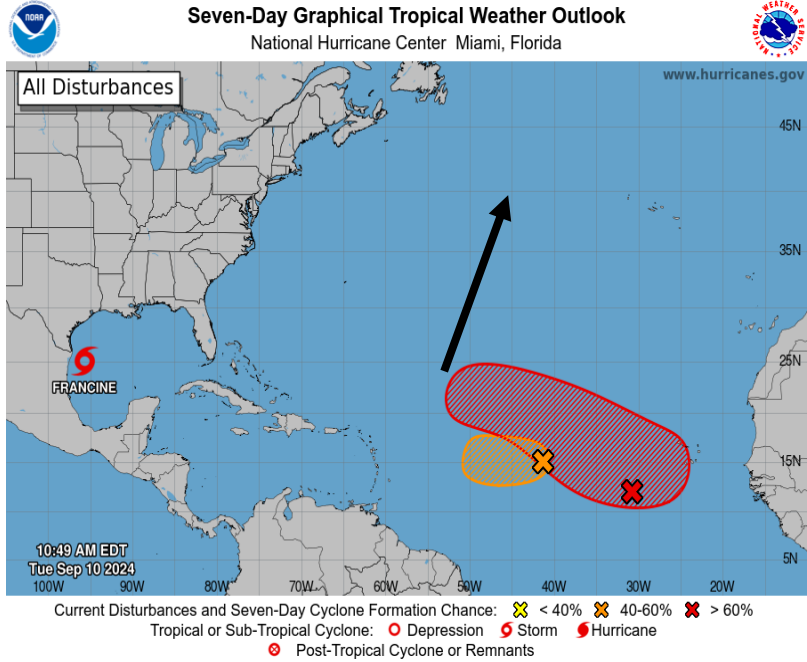


Around the beginning of October, begin a shift from the Central Atlantic to the western Caribbean

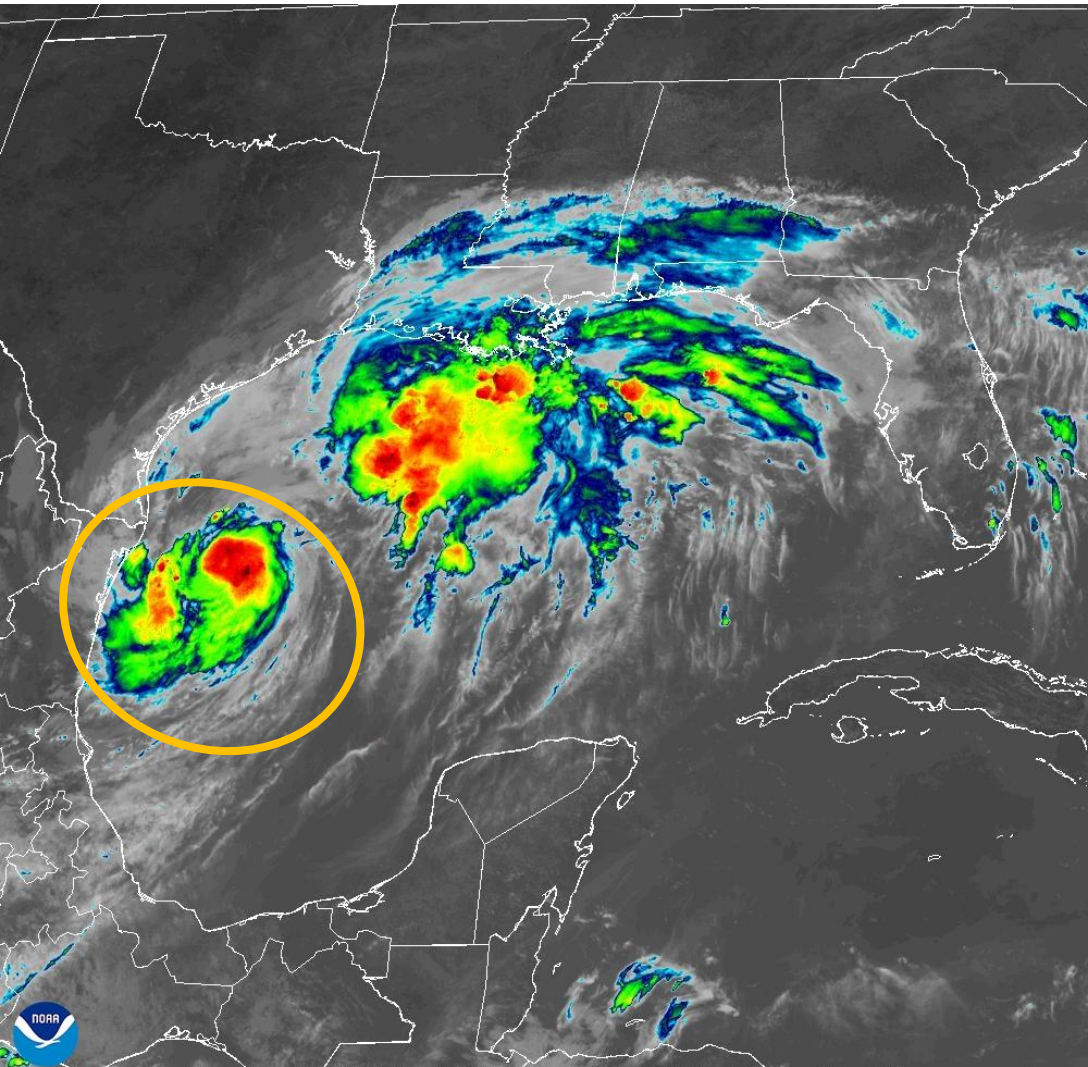
\*Experimental\*



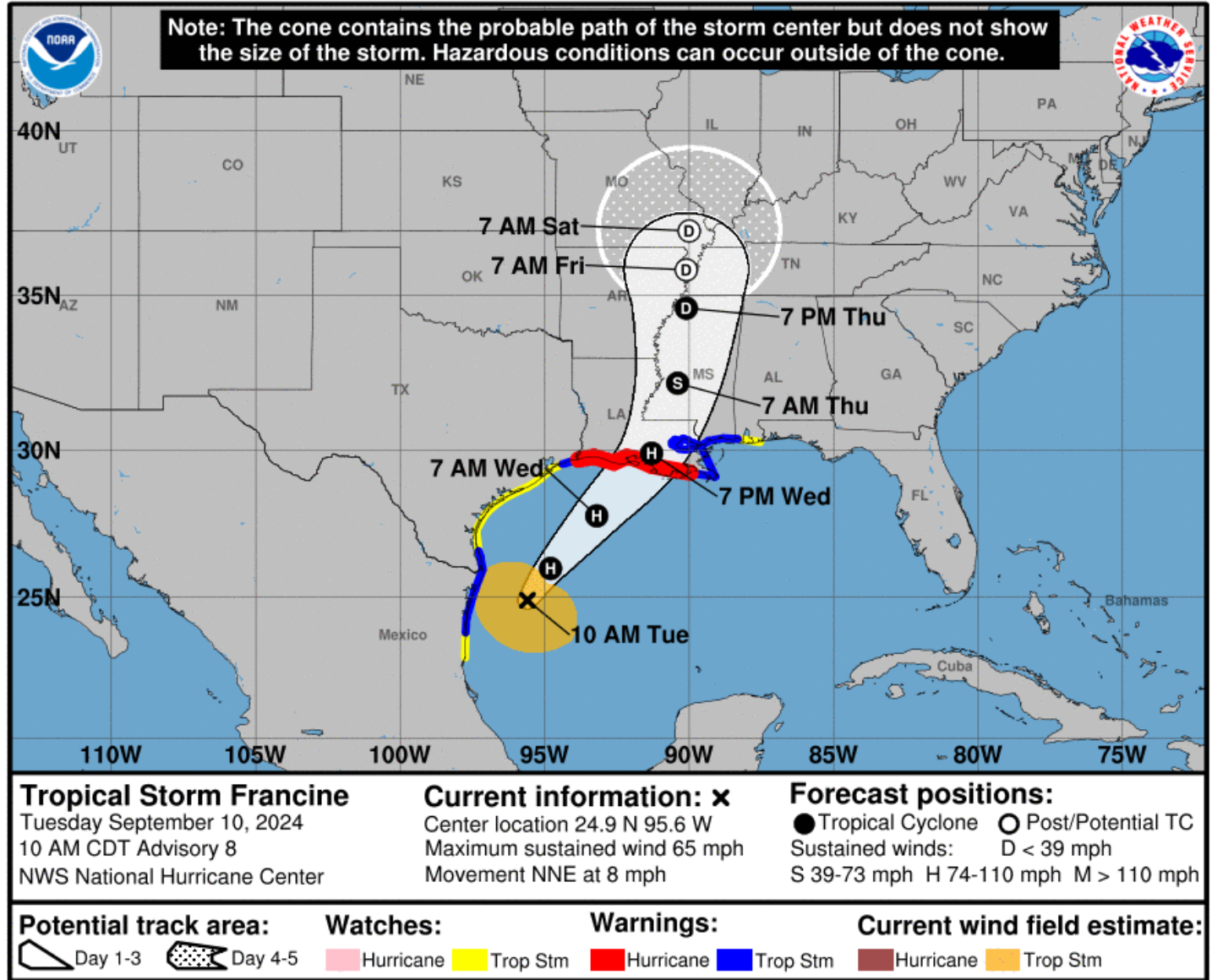
# Tropical Cyclone Monitoring/Forecast: NHC / CPHC



# Tropical Storm Francine



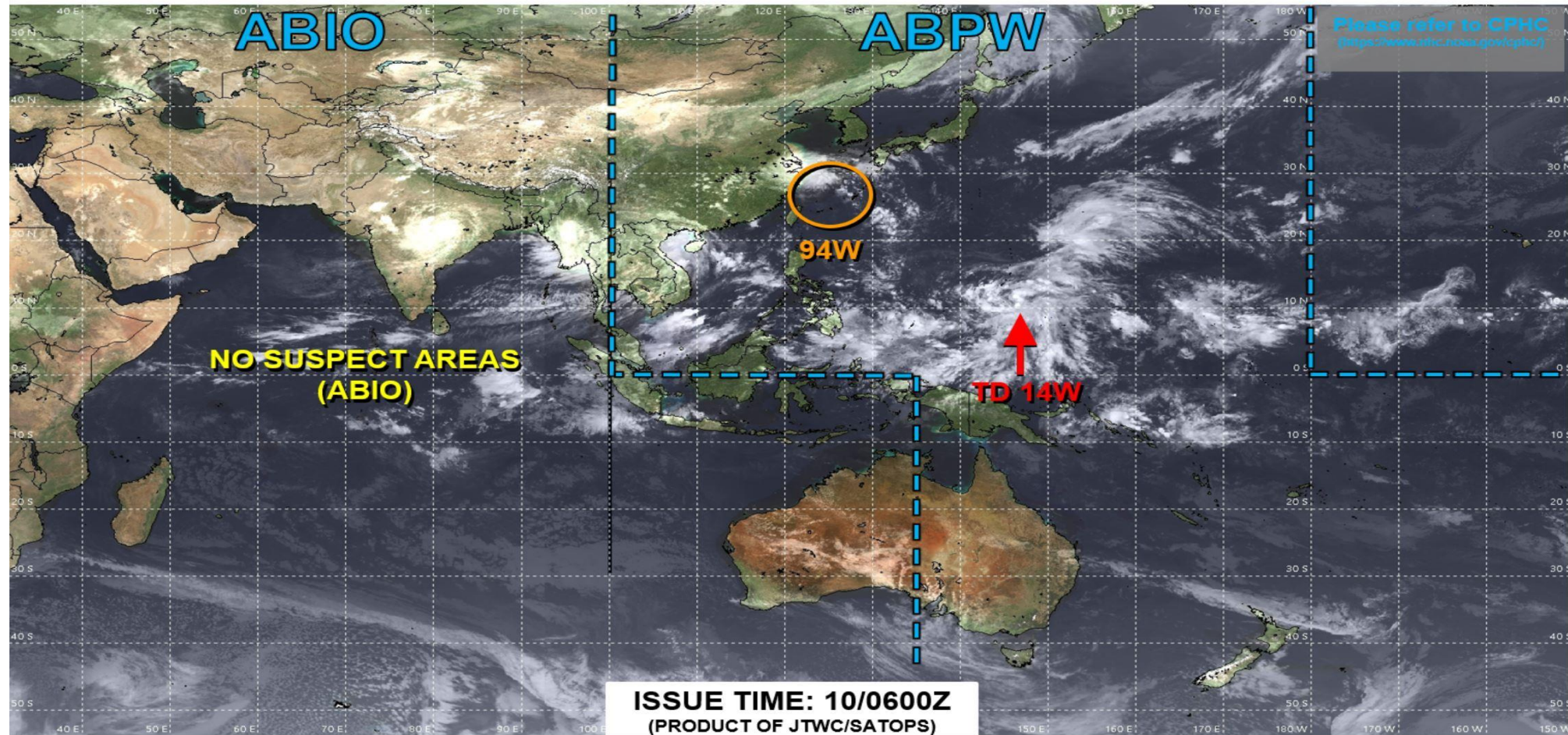
10 Sep 2024 16:51Z - NOAA/NESDIS/STAR - GOES-East - Band 13 - GM



# 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

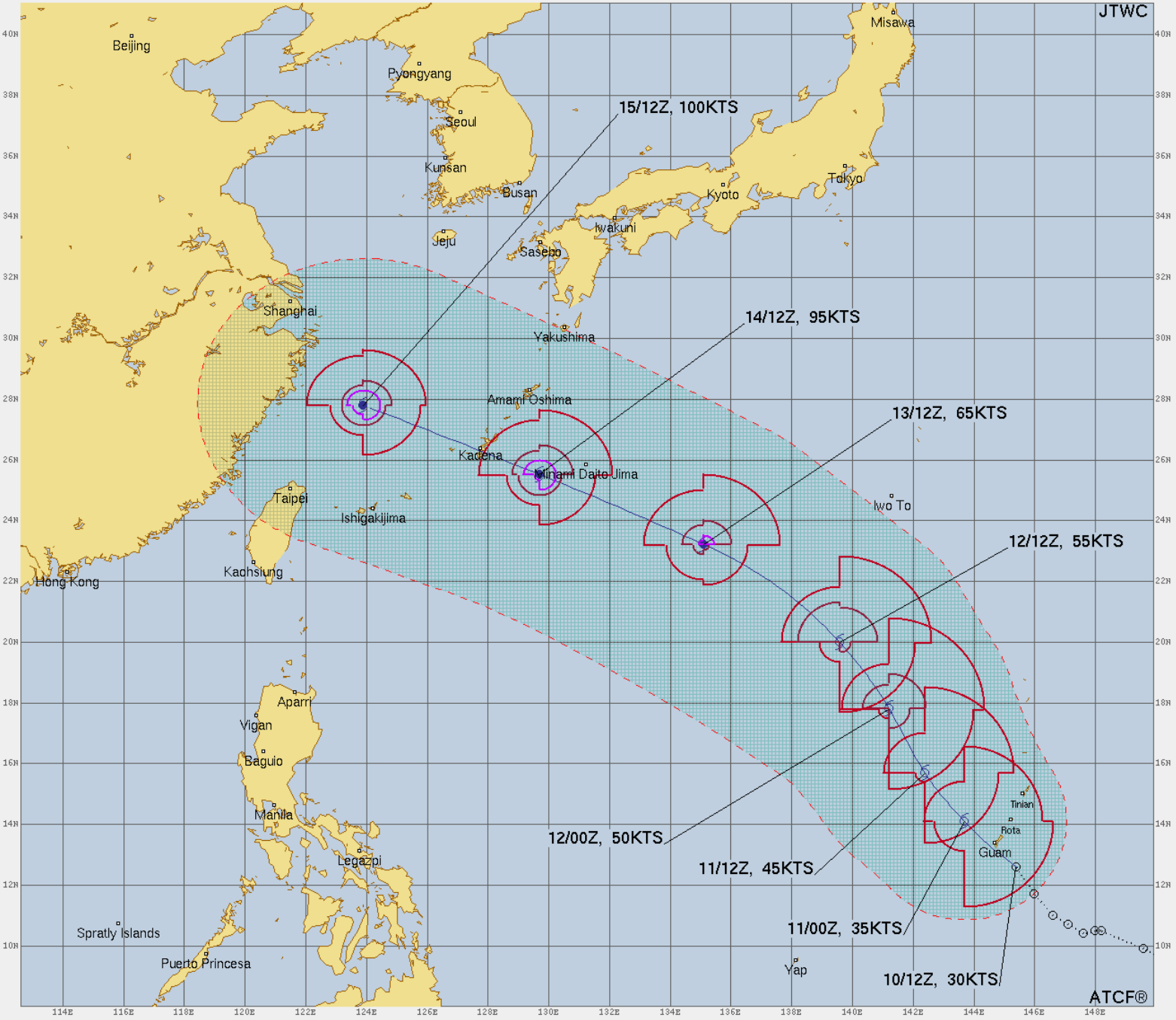


TC development likely within 24 hours (Reference TCFA)



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

 Tropical Cyclone (Reference Warning)



**TROPICAL DEPRESSION 14W (BEEINCA) WARNING #3**  
 WTPN31 PGTW 101500  
 101200Z POSIT: NEAR 12.6N 145.4E  
 MOVING 325 DEGREES TRUE AT 11 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 16 FEET  
 10/12Z, WINDS 030 KTS, GUSTS TO 040 KTS  
 11/00Z, WINDS 035 KTS, GUSTS TO 045 KTS  
 11/12Z, WINDS 045 KTS, GUSTS TO 055 KTS  
 12/00Z, WINDS 050 KTS, GUSTS TO 065 KTS  
 12/12Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 13/12Z, WINDS 065 KTS, GUSTS TO 080 KTS  
 14/12Z, WINDS 095 KTS, GUSTS TO 115 KTS  
 15/12Z, WINDS 100 KTS, GUSTS TO 125 KTS

CPR TO:	MN	DTG
ANDERSEN_AFB	24	09/10/17Z
HAGATNA	6	09/10/17Z
SOROL	395	09/10/17Z
WFO_GUAM	16	09/10/17Z
NAVSTA_GUAM	2	09/10/18Z
ROTA	57	09/10/18Z
SAIPAN	122	09/10/19Z
TINIAN	114	09/10/19Z
FRES	317	09/10/22Z
ULITHI	348	09/11/00Z
ANATAPAN	179	09/11/03Z
ALABRAGAN	226	09/11/11Z
PAOGAN	241	09/11/15Z
AGRIHAN	254	09/11/19Z
IWO_TO	275	09/12/21Z
OKIDAITO_JIMA	23	09/14/05Z
MINAMIDAITO_JIMA	43	09/14/07Z
KANOYA	348	09/14/19Z
KADENA_AB	8	09/14/20Z
WHITE_BEACH	5	09/14/20Z
KAOSHUNG	368	09/15/12Z
SHANGHAI	239	09/15/12Z
TAIPEI	207	09/15/12Z

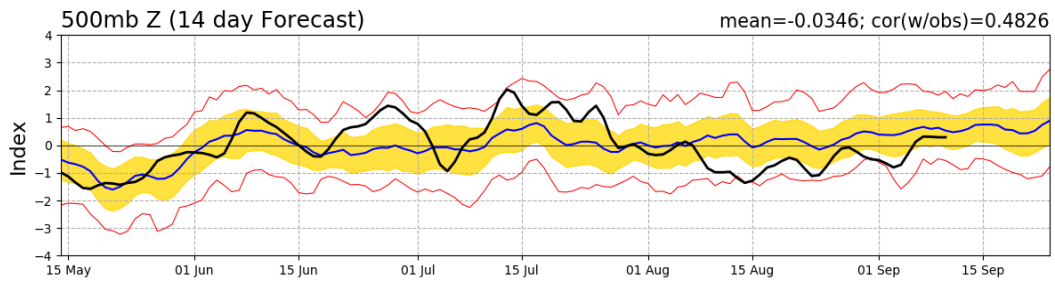
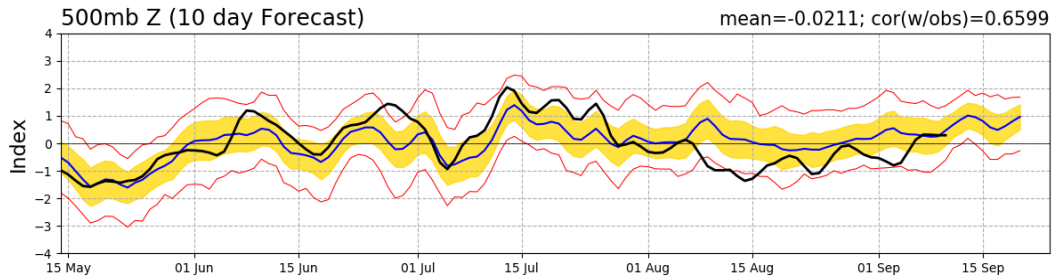
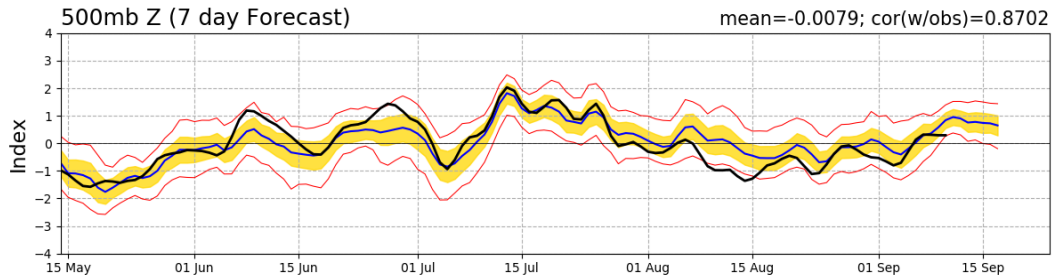
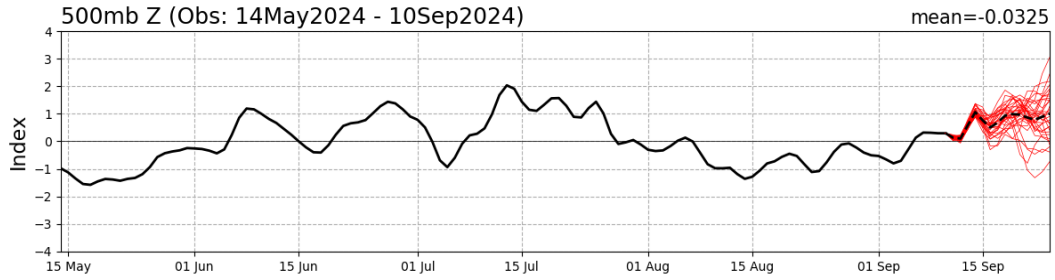
BEARING AND DISTANCE	DIR (NM)	DIST (HRS)	TAV (HRS)
HAGATNA	140	55	0
AGRIHAN	183	372	0
ALABRAGAN	184	301	0
ANATAPAN	184	229	0
ANDERSEN_AFB	154	67	0
SAIPAN	022	381	0
FARAUPEL	012	246	0
FRES	059	334	0
TEFLIK	010	323	0
LENOTREK	349	312	0
NAVSTA_GUAM	136	67	0
PAOGAN	184	331	0
PULUPAT	327	393	0
ROTA	178	91	0
SAIPAN	187	151	0
SATRAWAL	342	328	0
SOROL	048	356	0
TINIAN	185	144	0
ULITHI	064	378	0
WFO_GUAM	147	64	0
WOLEAI	016	324	0

- ○ ○ LESS THAN 34 KNOTS
- ○ ○ 34-63 KNOTS
- ● ● MORE THAN 63 KNOTS
- FORECAST CYCLONE TRACK
- ..... PAST CYCLONE TRACK
- DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
- ○ ○ FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)

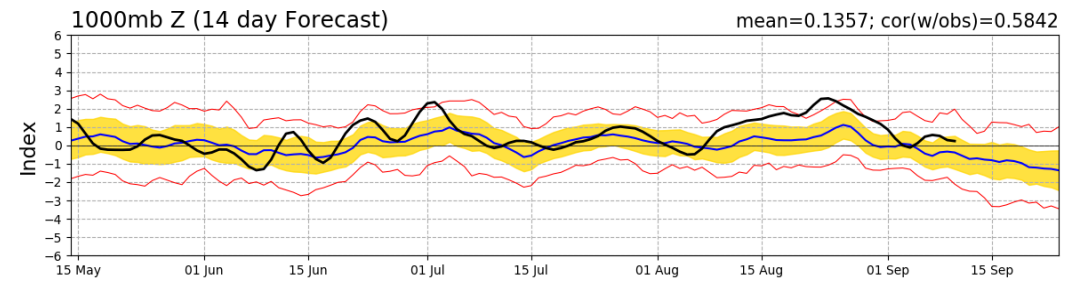
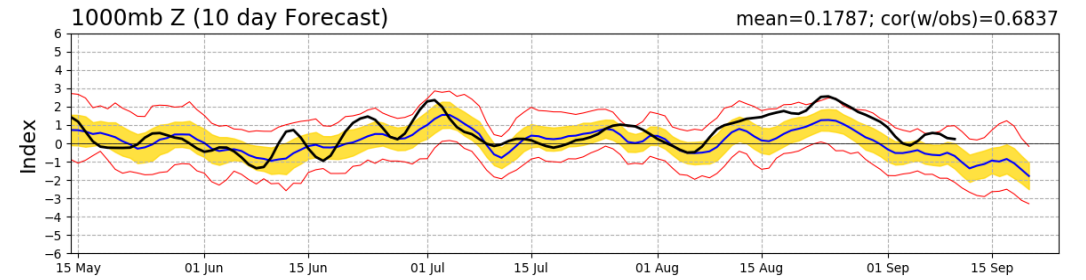
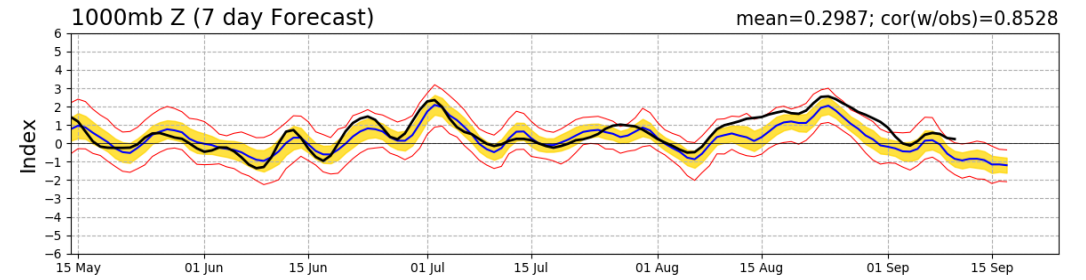
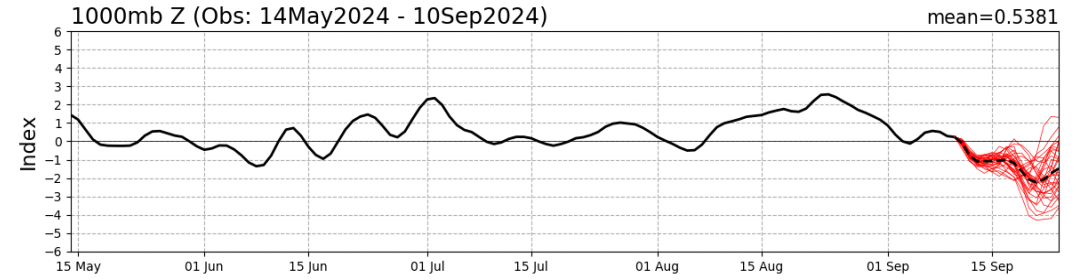
ATCF®

# Teleconnection Indices: PNA / AO:

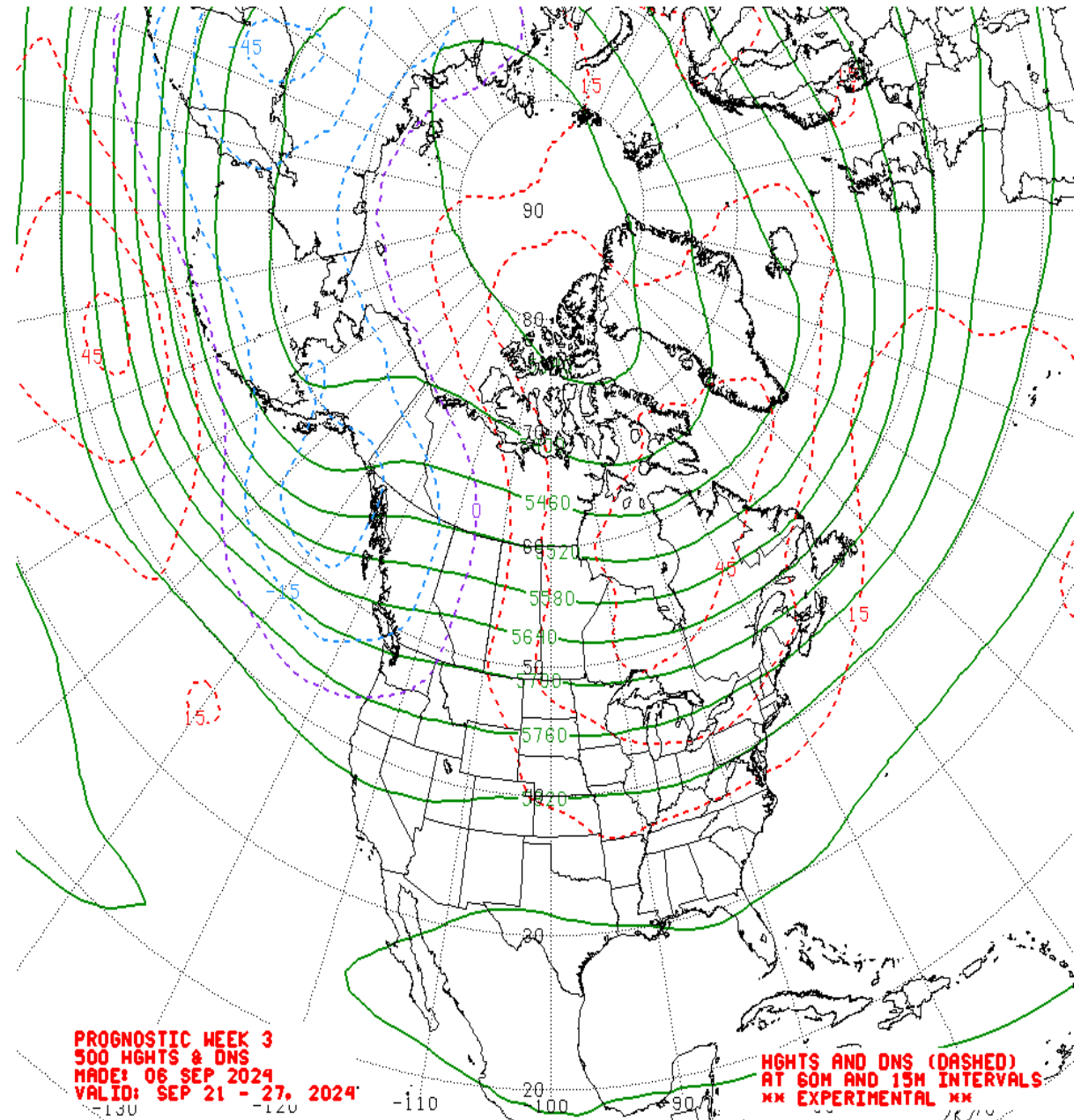
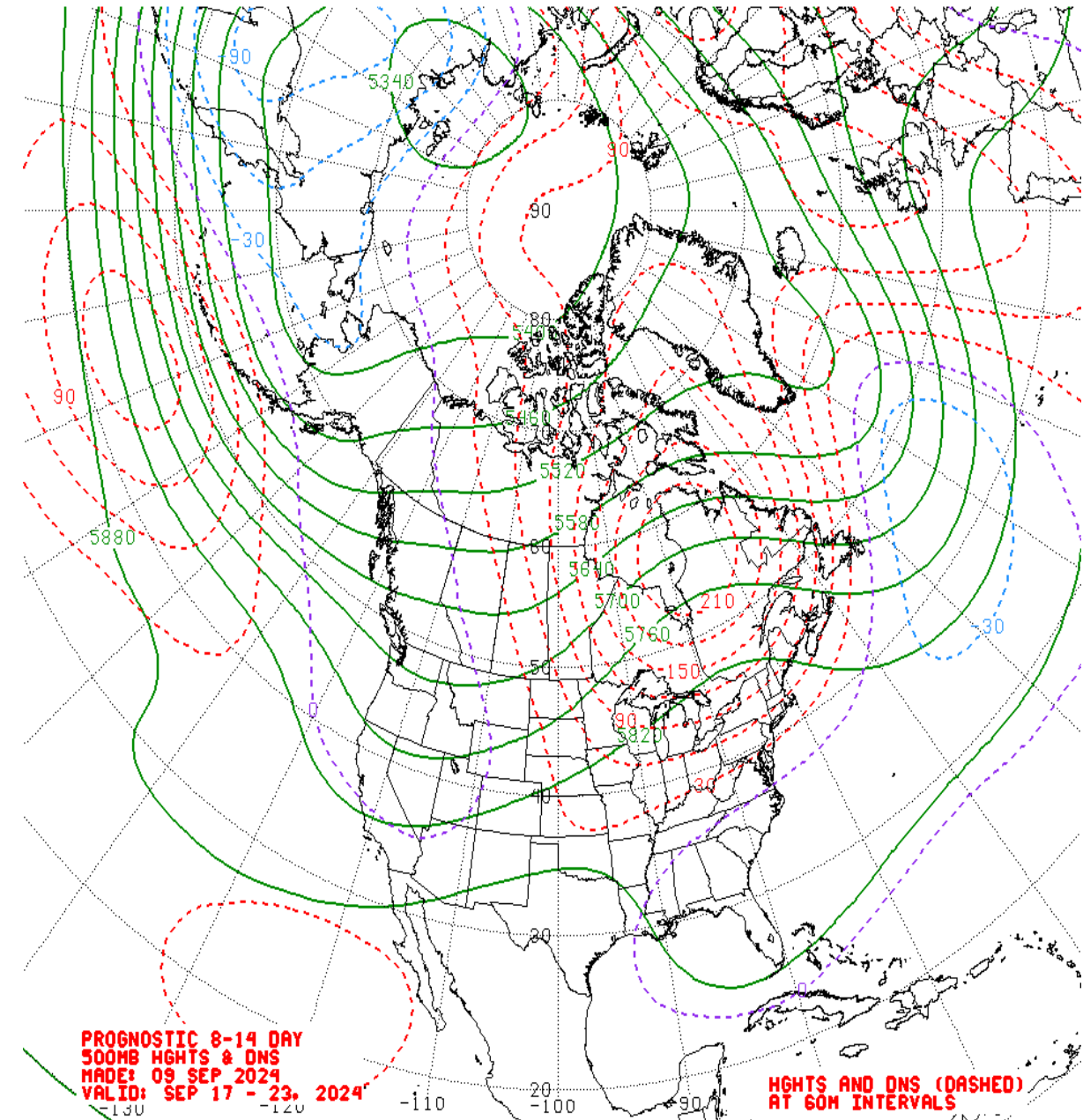
## PNA Index: Observed & GEFS Forecasts



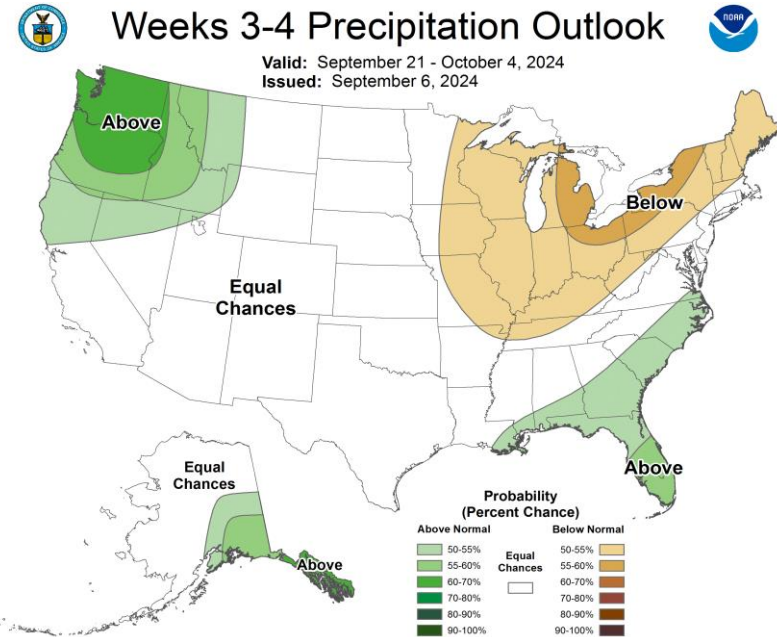
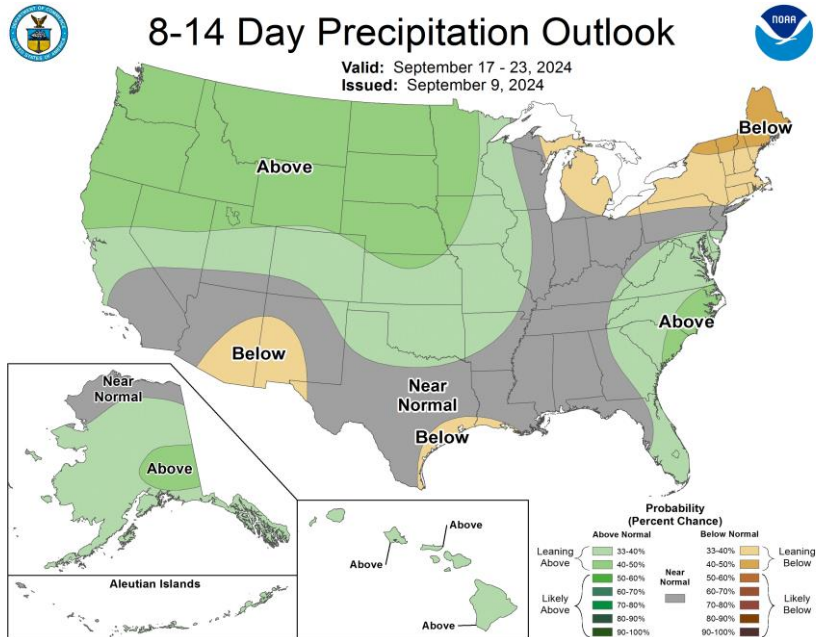
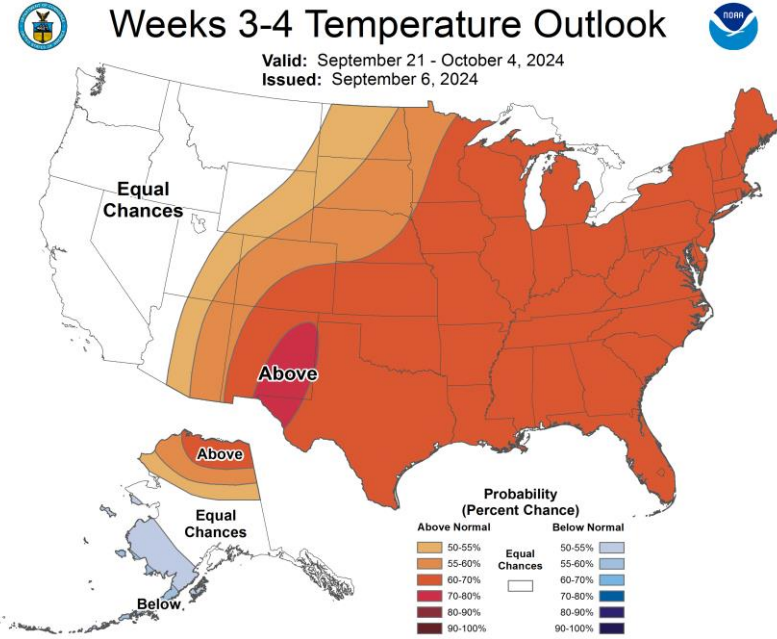
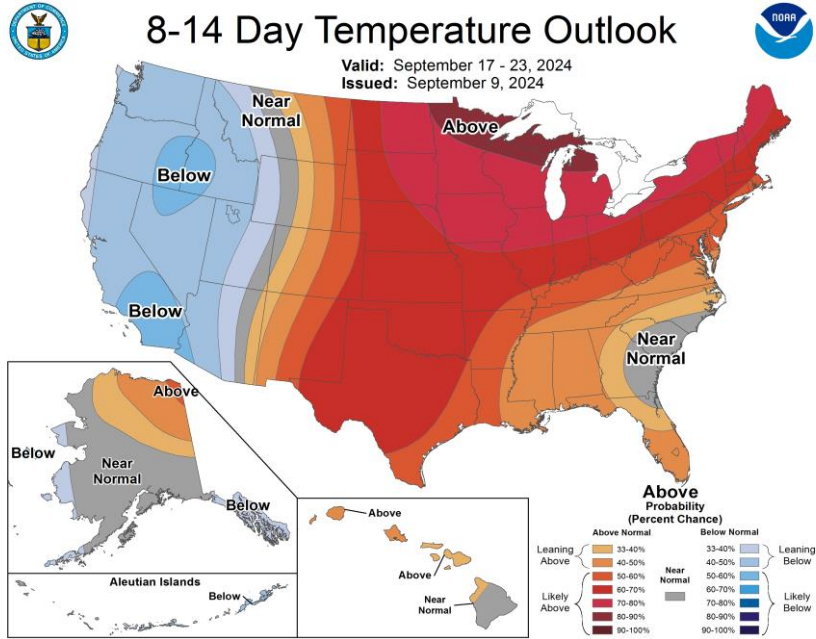
## AO Index: Observed & GEFS Forecasts



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



# Official Temperature & Precipitation Forecasts:



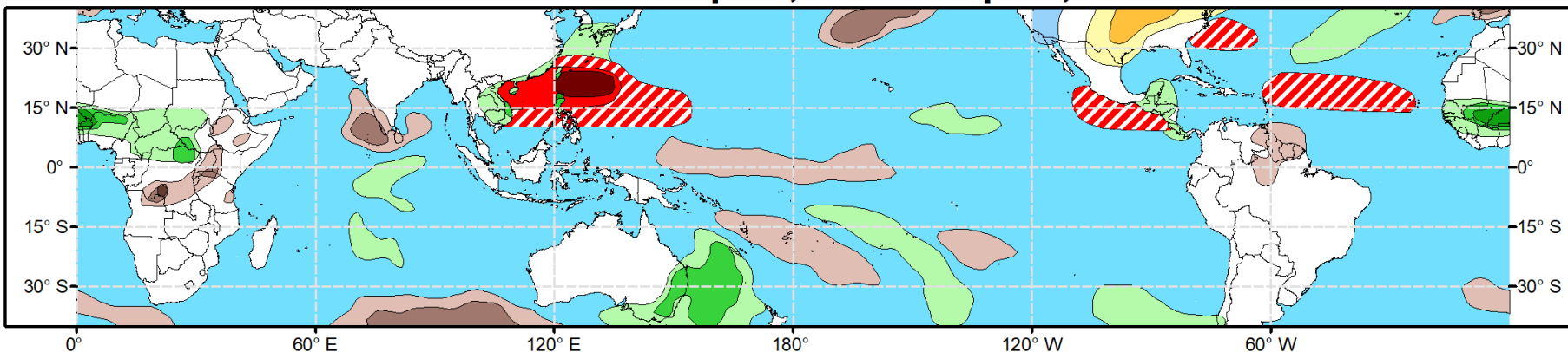


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Climate Prediction Center

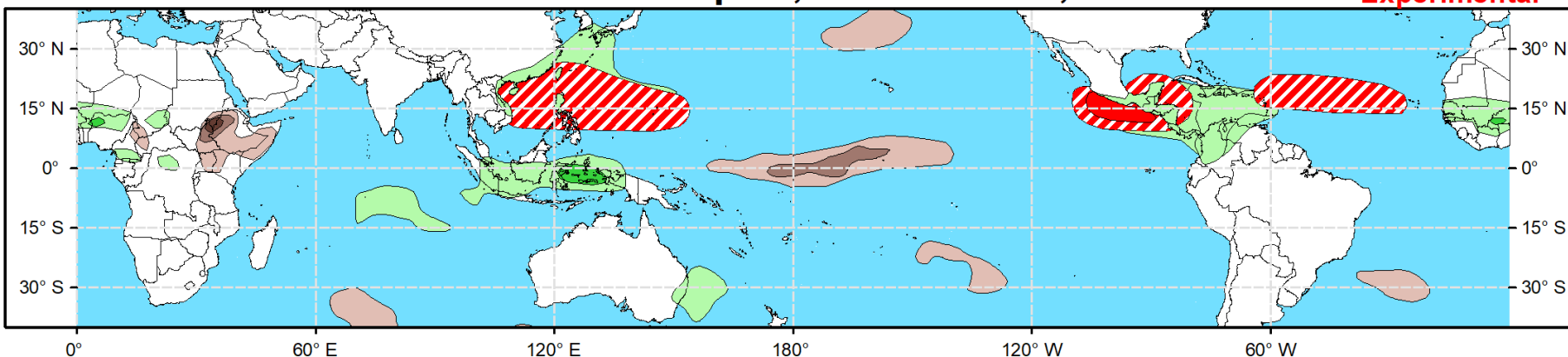


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