



Weeks 2-3 Global Tropics Hazards Outlook

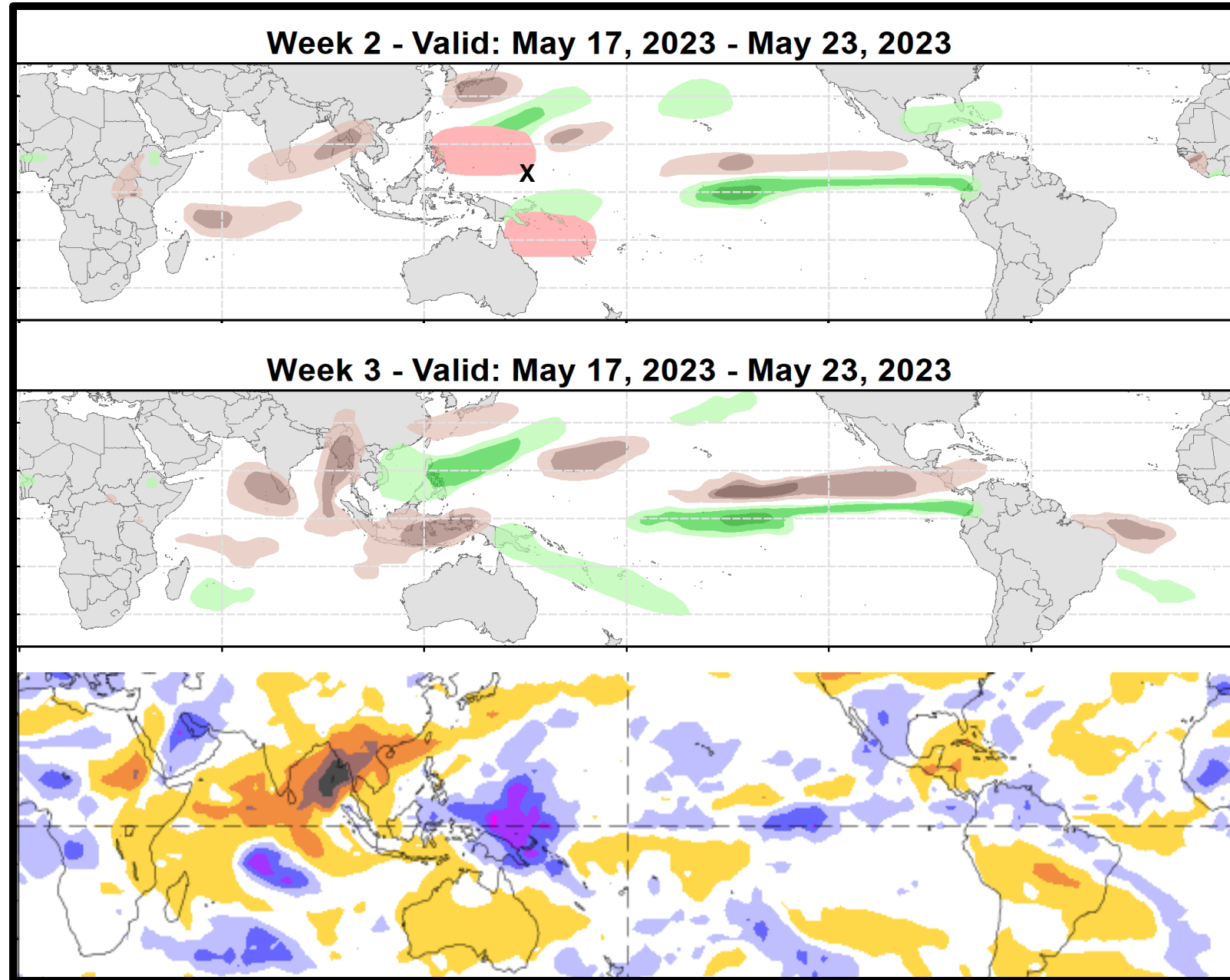
5/23/2023

Adam Allgood

NWS / NCEP / Climate Prediction Center

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

- WNP TC forecast was correct, though formation occurred at a lower latitude (Mawar)
- North Indian Ocean suppression was well forecast, convection very strong north of New Guinea (partly due to Mawar).
- Couplet of enhanced (suppressed) across the Pacific was well depicted.



Synopsis of Climate Modes:

ENSO: (May 11, 2023 Update) *next update on Thursday, June 8th*

- ENSO Alert System Status: [El Niño Watch](#)
- A transition from ENSO-neutral is expected in the next couple of months, with a greater than 90% chance of El Niño persisting into the Northern Hemisphere winter.

MJO and other subseasonal tropical variability:

- The MJO remains active, though eastward propagation has slowed considerably over the Pacific in response to the evolving base state and tropical cyclone activity.
- The MJO and particularly low-latitude and large-circulation Super-Typhoon Mawar have generated an exceptionally strong westerly wind burst (WWB) right along the equator over the West Pacific. This will provide substantial support for additional warming across the upper-oceanic layer of the central Pacific.
- MJO forecasts are mixed, with the GEFs showing little eastward propagation and continued enhancement over the Pacific, while the ECMWF depicts and more progressive but weaker signal.
- The MJO will likely continue to play a role in the tropical convective pattern, but the evolving base state will become the increasingly dominant mode over the next several weeks to months.

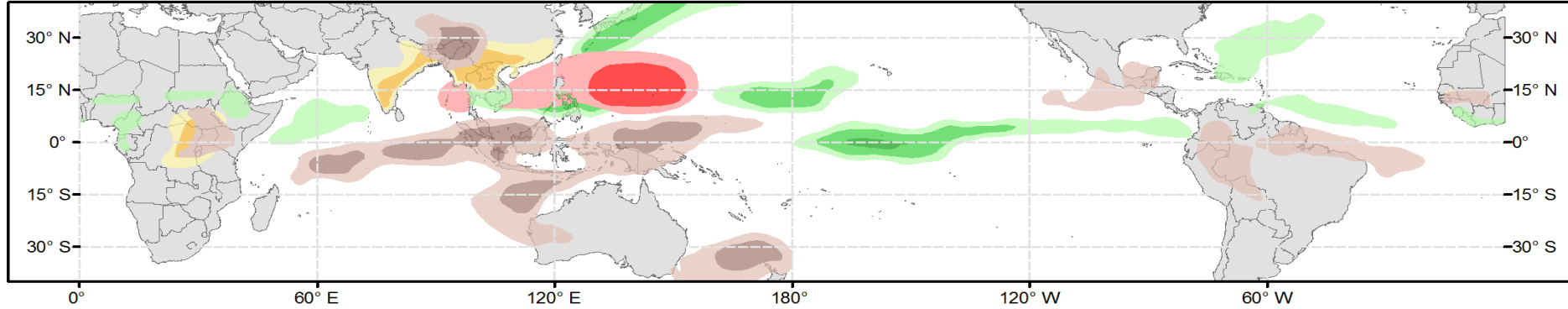
GTH Outlook:



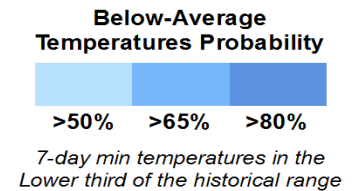
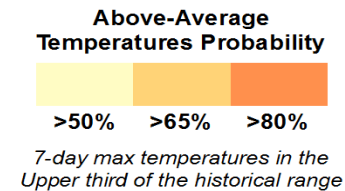
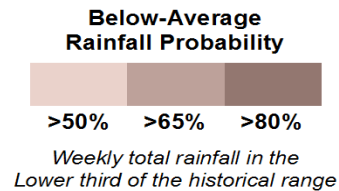
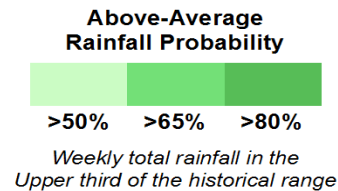
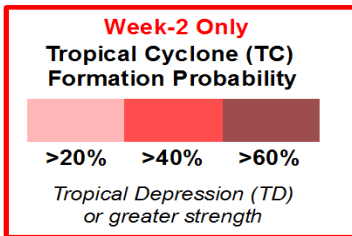
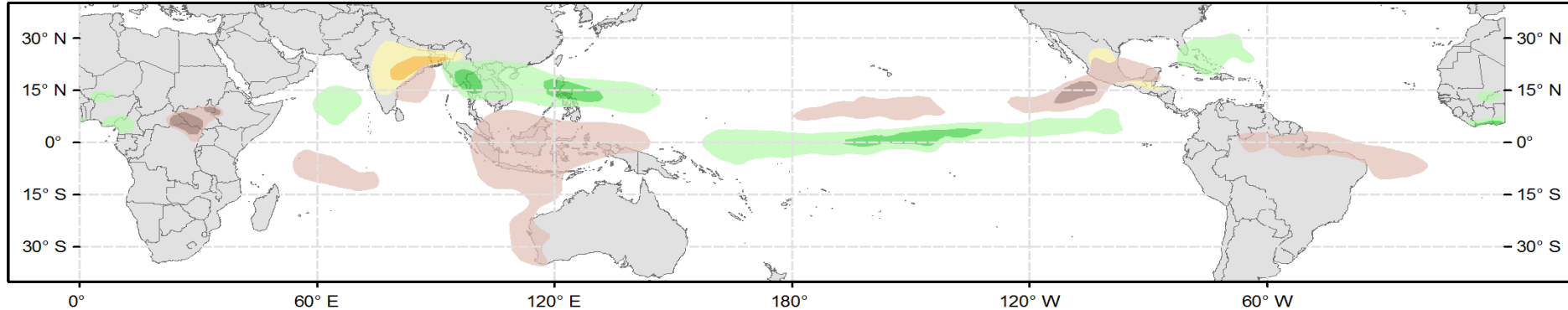
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: May 31, 2023 - Jun 06, 2023



Week 3 - Valid: Jun 07, 2023 - Jun 13, 2023

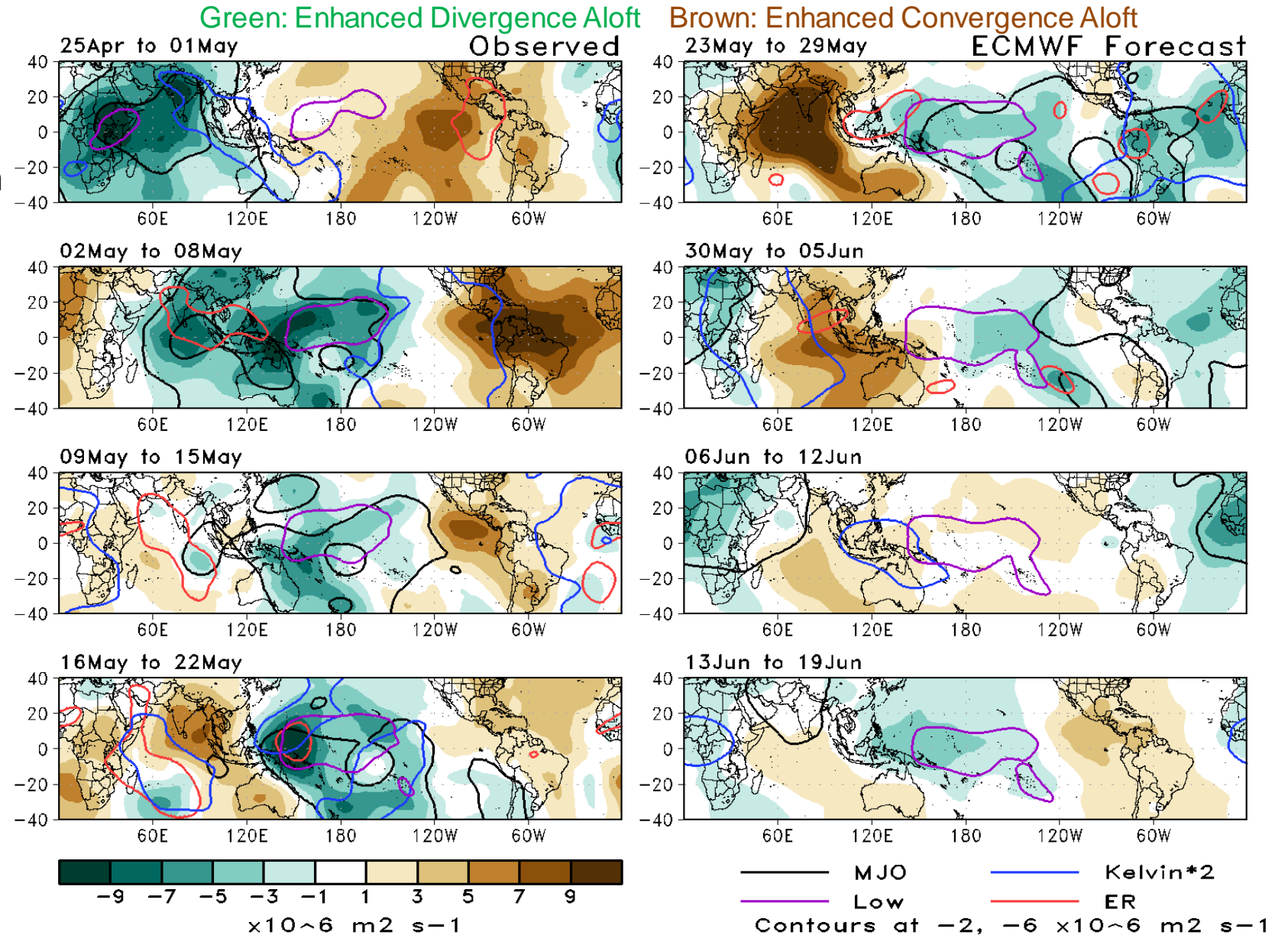


Issued: 05/23/2023
Forecaster: Allgood

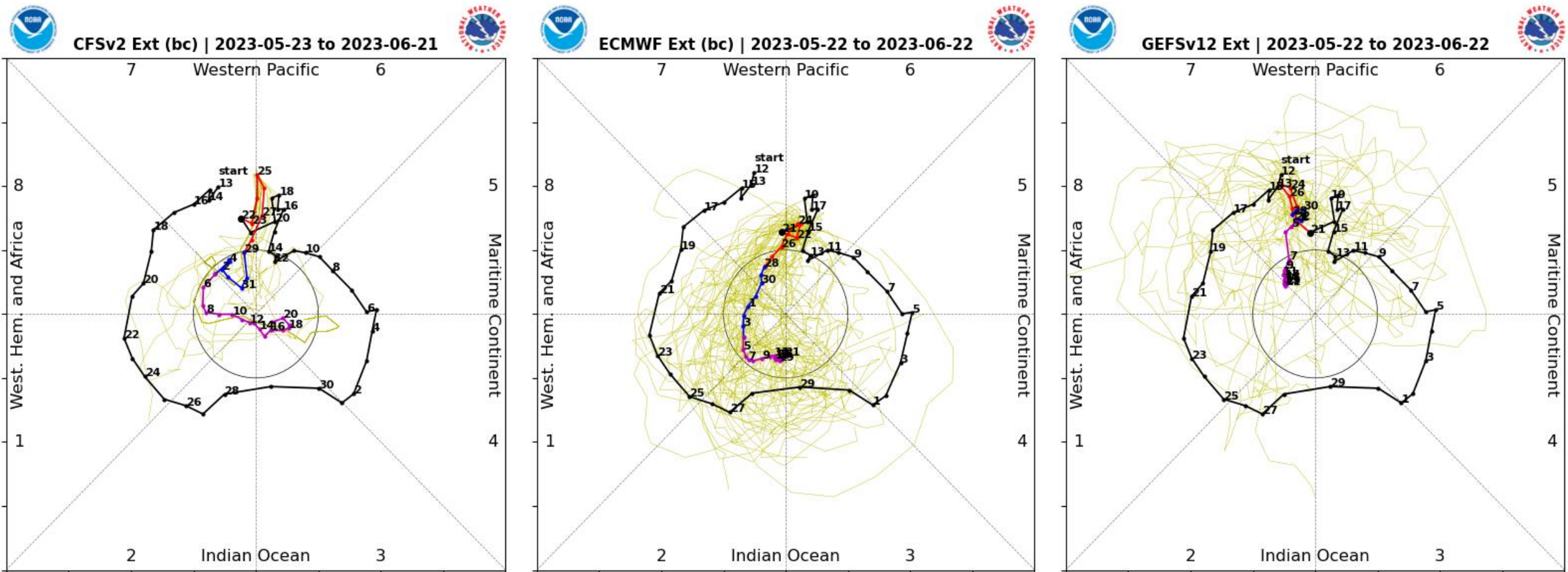
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

200-hPa Velocity Potential Anomaly Maps:

- Eastward propagation on the fast end of the envelope through early May was replaced by a more stationary signal with an enhanced Pacific by mid-May.
- The ECMWF depicts a resumption of eastward propagation over the next couple of weeks, with the signal returning to the Pacific by mid-June.

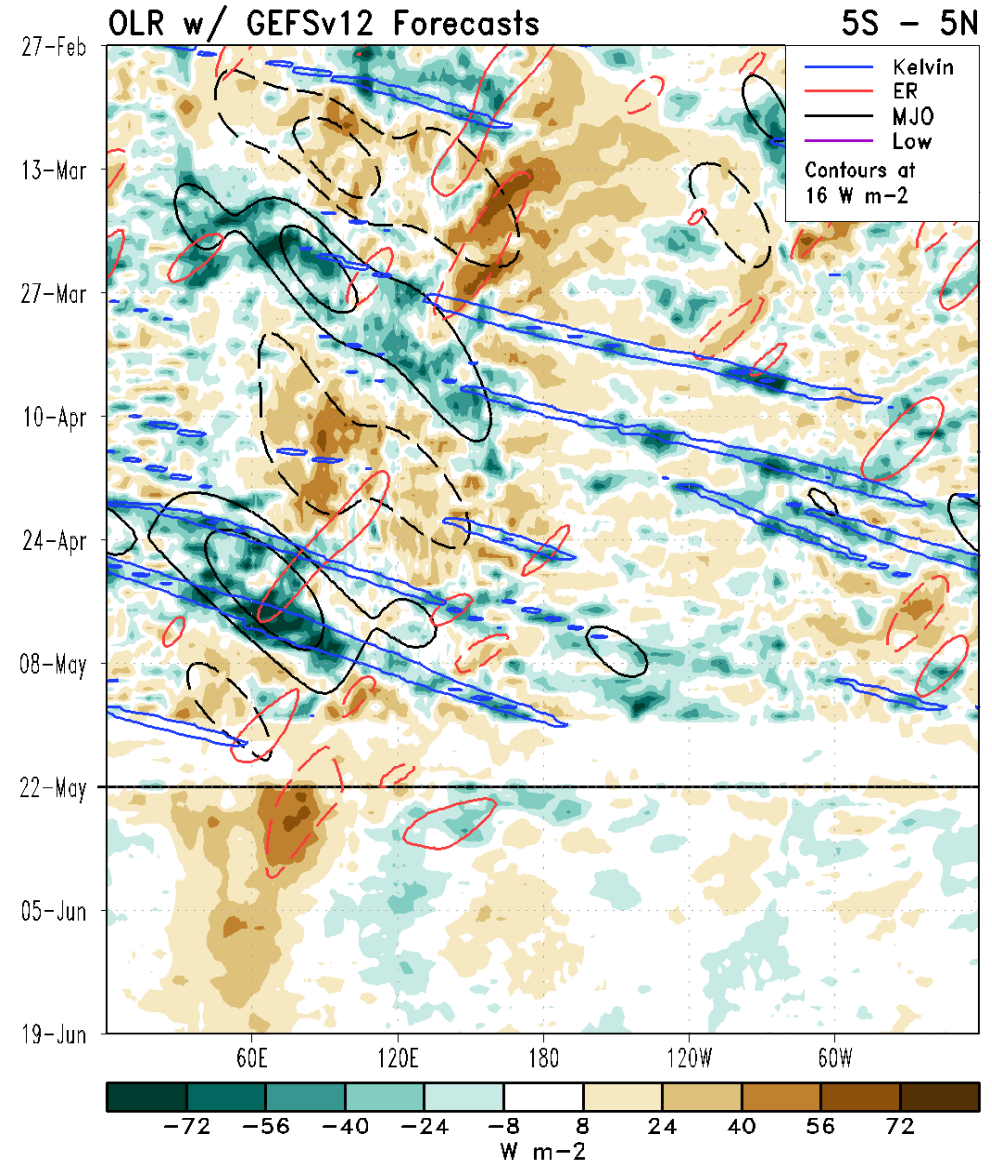
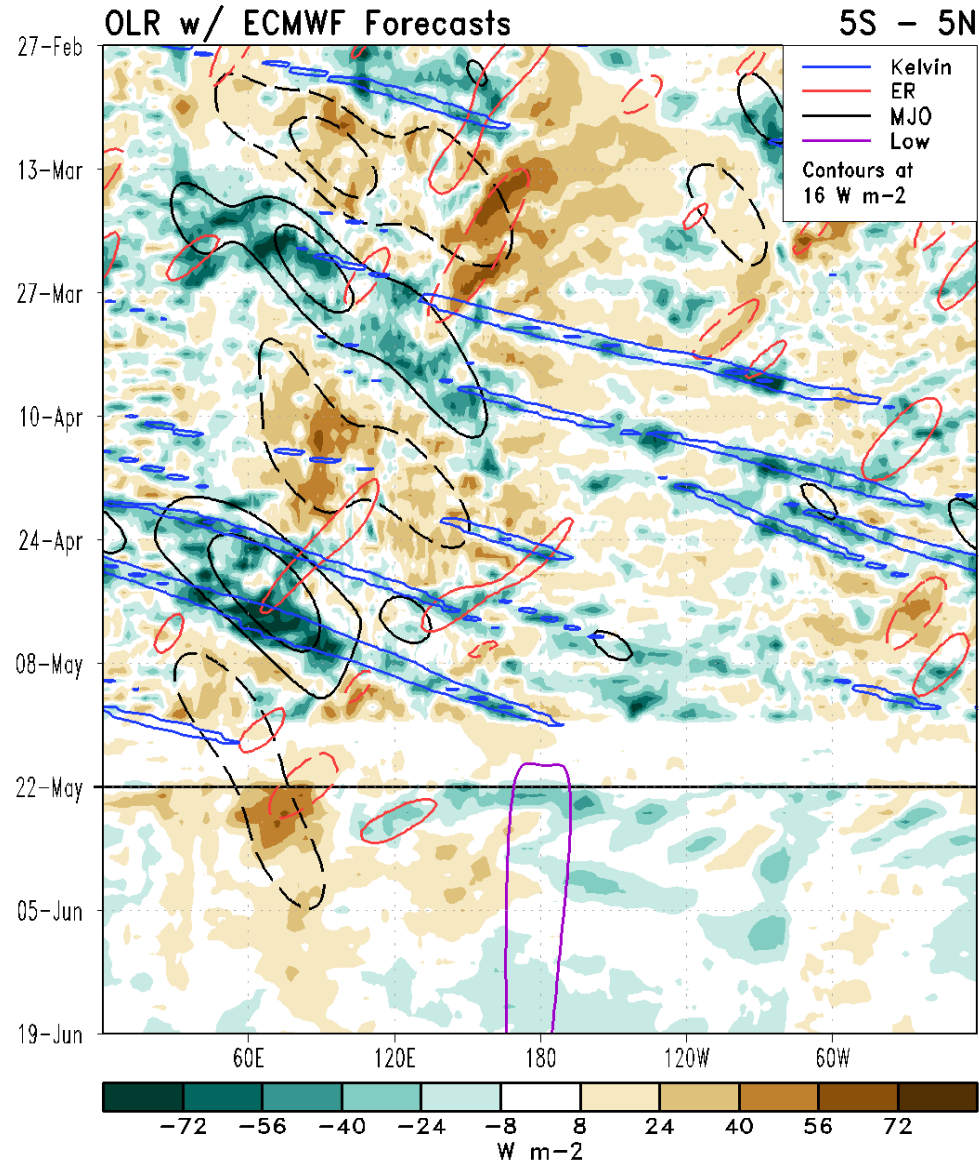


RMM Index Observations & Forecasts:



- The ECMWF (center) depicts continued MJO activity, with differences among the tools regarding strength of the signal.
- The GFS depicts far less eastward propagation, and a more enhanced signal persisting over the West Pacific.
- Neither outcome is favorable for a timely onset of the South Asian monsoon, though the ECMWF indicates a potential onset by early July.

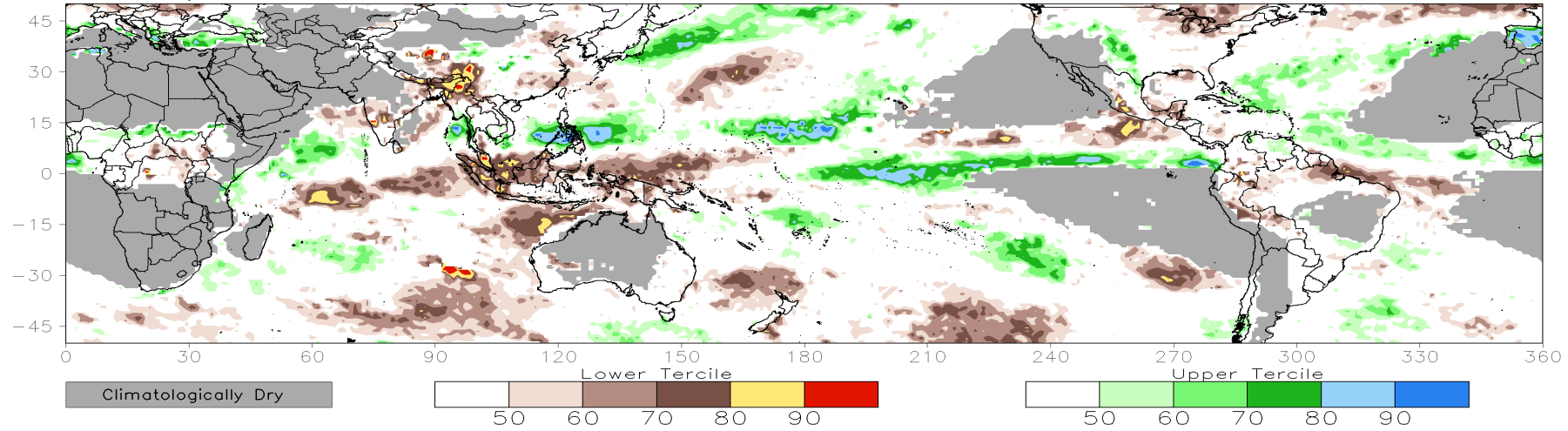
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

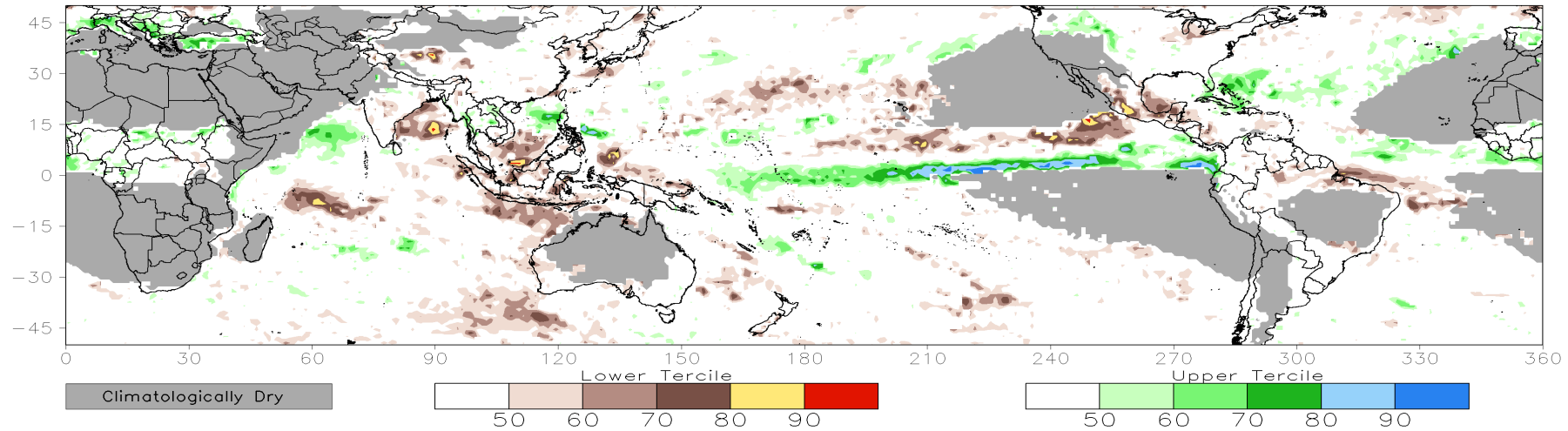
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 31May2023–06Jun2023



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

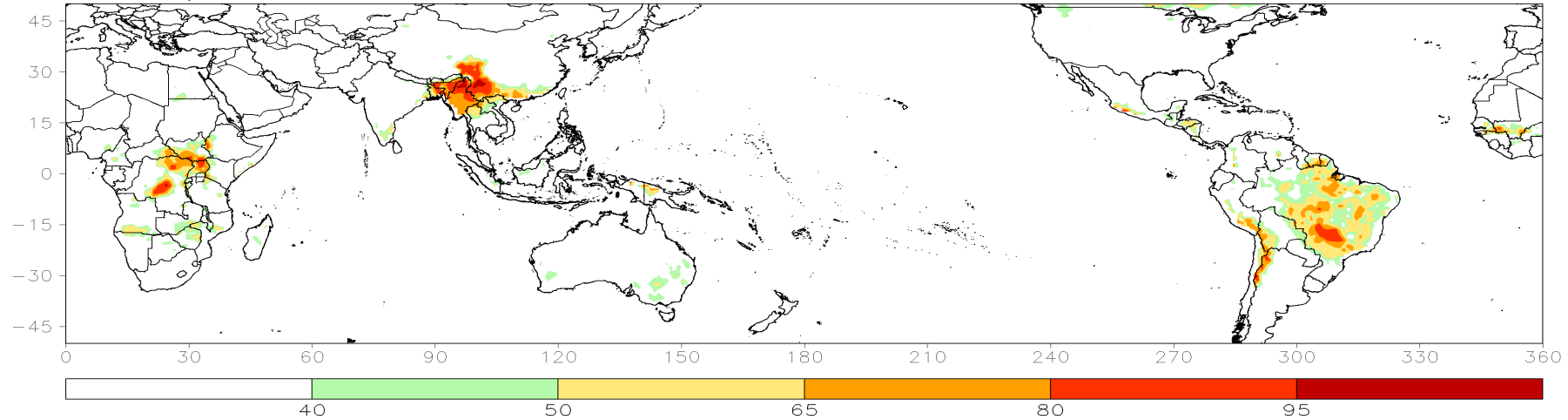
Valid: 07Jun2023–13Jun2023



Consolidated Probabilistic Temperatures: Week-2

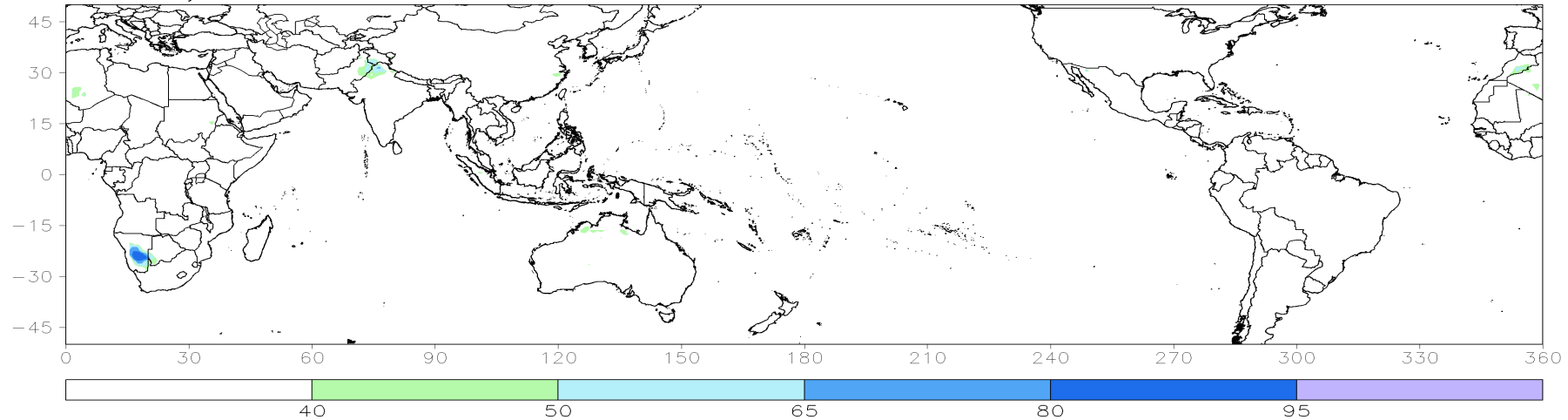
CFS/ECMWF/GEFS Correlation Weighted: Week2 Probability for Tmax Above Upper Tercile (%)

Valid: 31May2023-06Jun2023



CFS/ECMWF/GEFS Correlation Weighted: Week2 Probability for Tmin Below Lower Tercile (%)

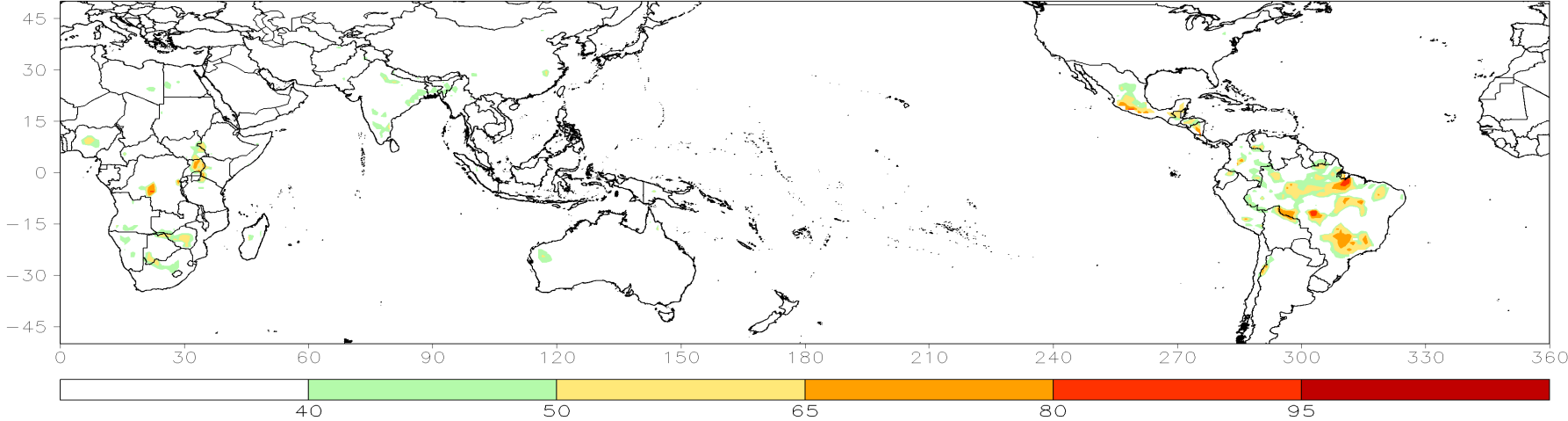
Valid: 31May2023-06Jun2023



Consolidated Probabilistic Temperatures: Week-3

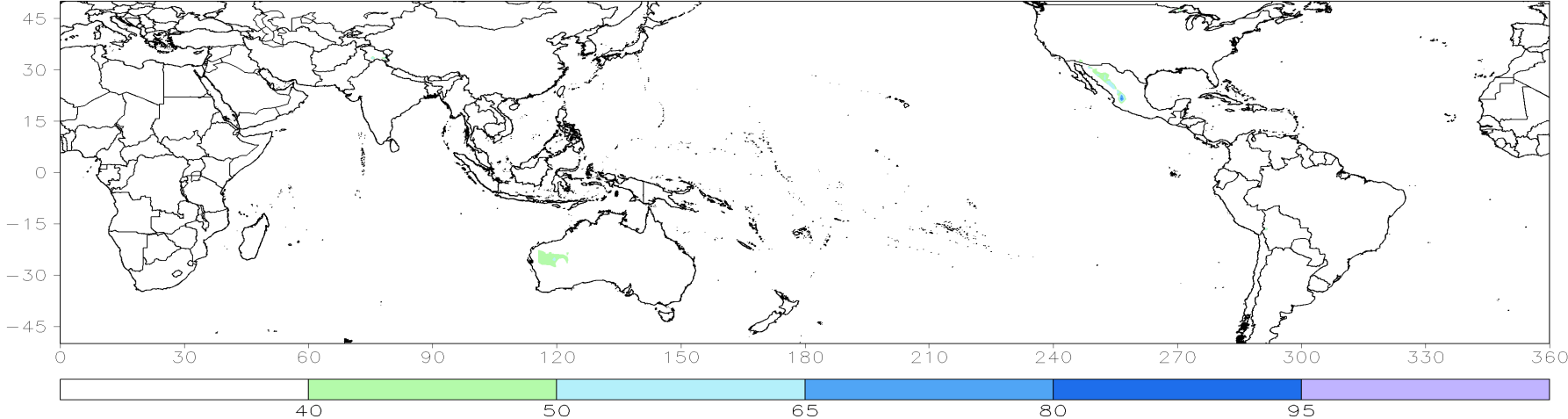
CFS/ECMWF/GEFS Correlation Weighted: Week3 Probability for Tmax Above Upper Tercile (%)

Valid: 07Jun2023-13Jun2023



CFS/ECMWF/GEFS Correlation Weighted: Week3 Probability for Tmin Below Lower Tercile (%)

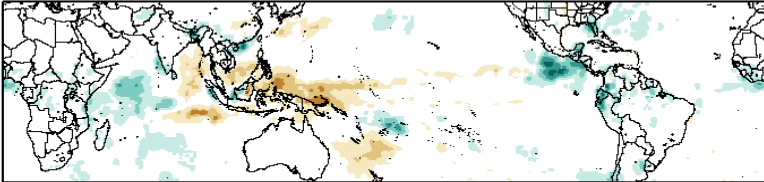
Valid: 07Jun2023-13Jun2023



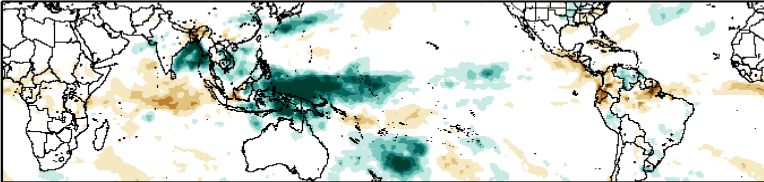
Historical Precipitation Anomalies By MJO Phase:

AMJ MJO Composite: GPCP1DD (mm/day)

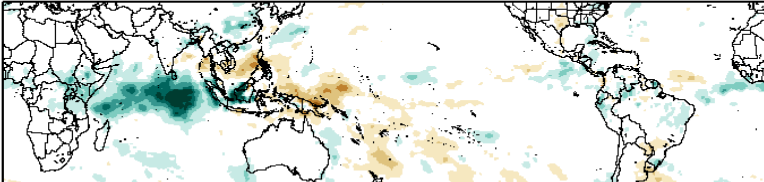
Phase 1



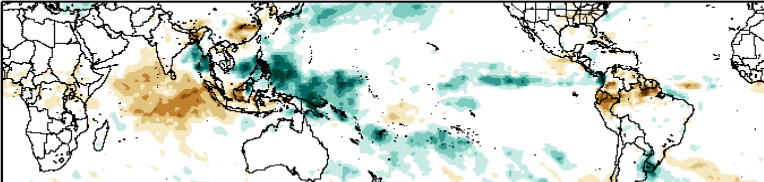
Phase 5



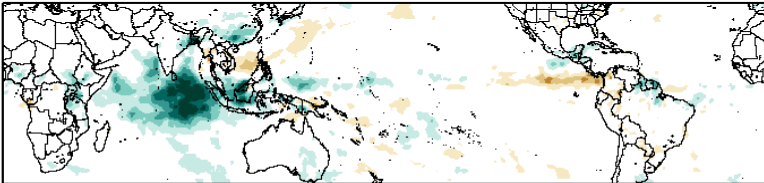
Phase 2



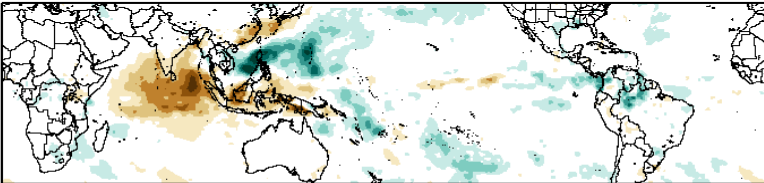
Phase 6



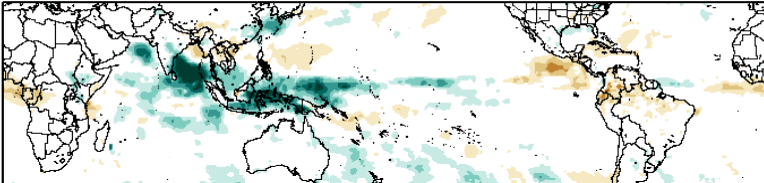
Phase 3



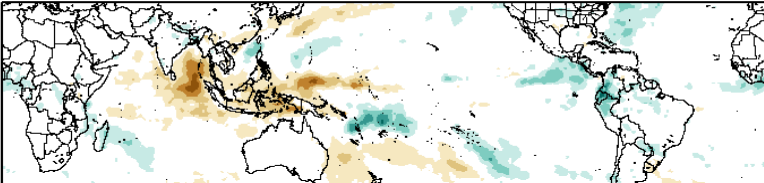
Phase 7



Phase 4

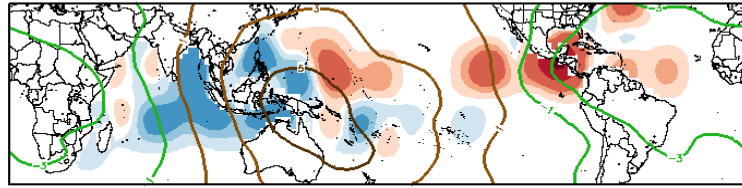


Phase 8

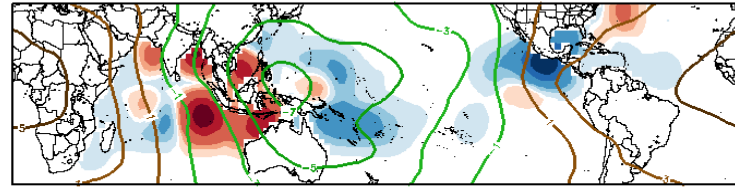


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

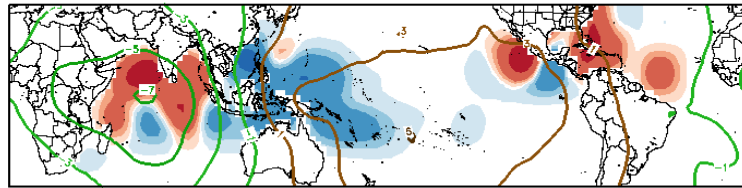
AMJ MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ AMJ CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



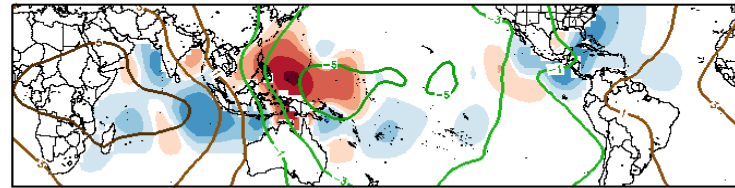
Phase 1



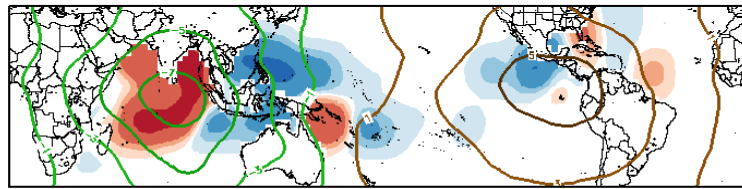
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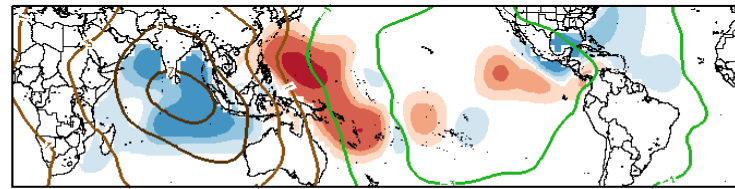
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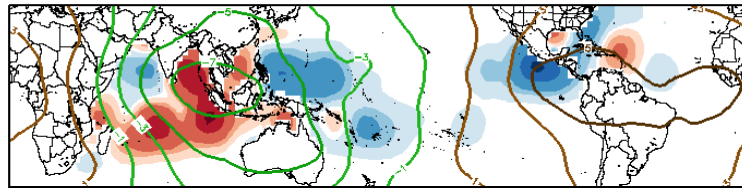
Phase 6



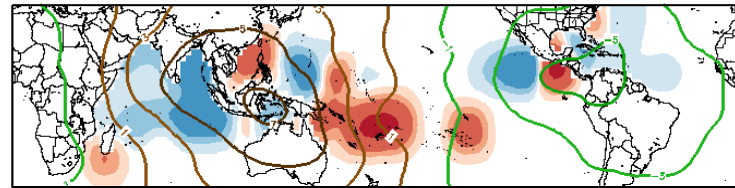
Phase 3



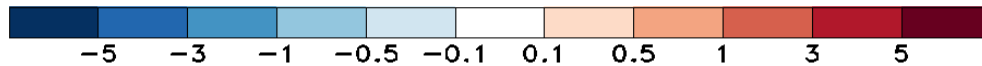
Phase 7



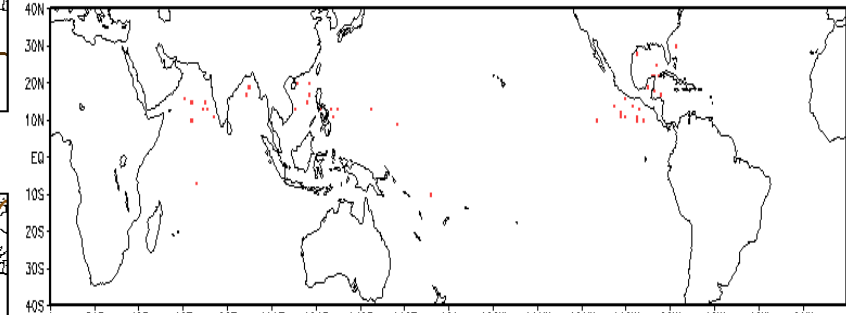
Phase 4



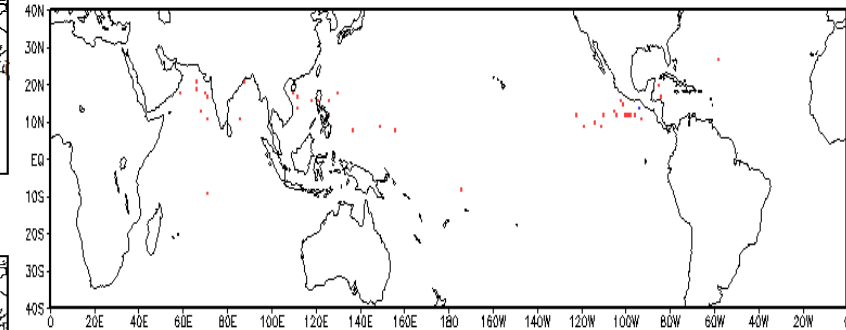
Phase 8



Observed TC Genesis, 1979–2021
7-day Period 0531 to 0606

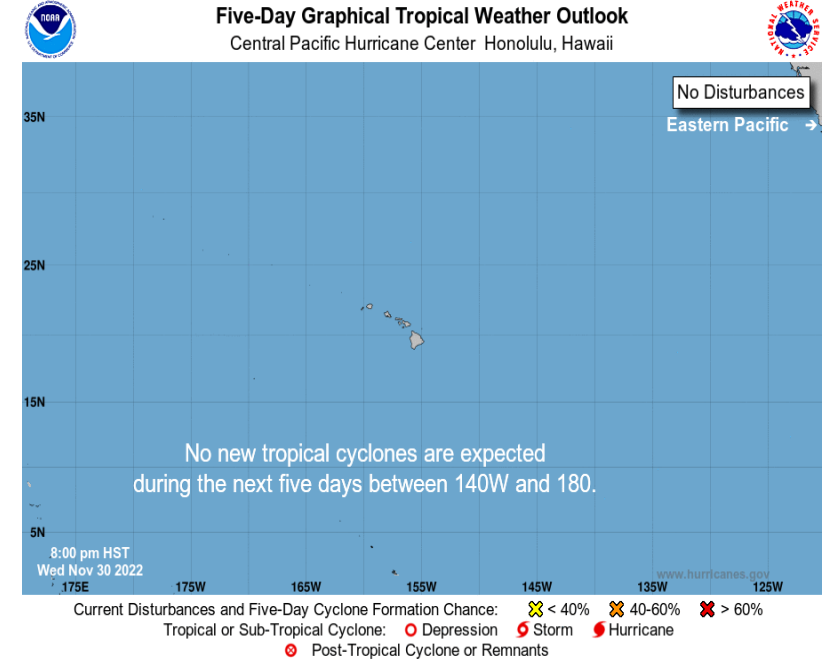
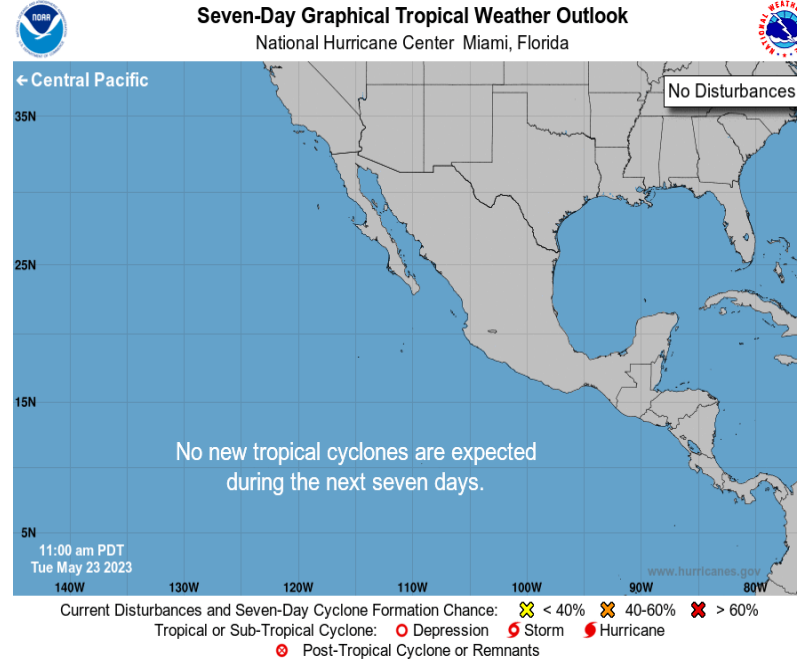
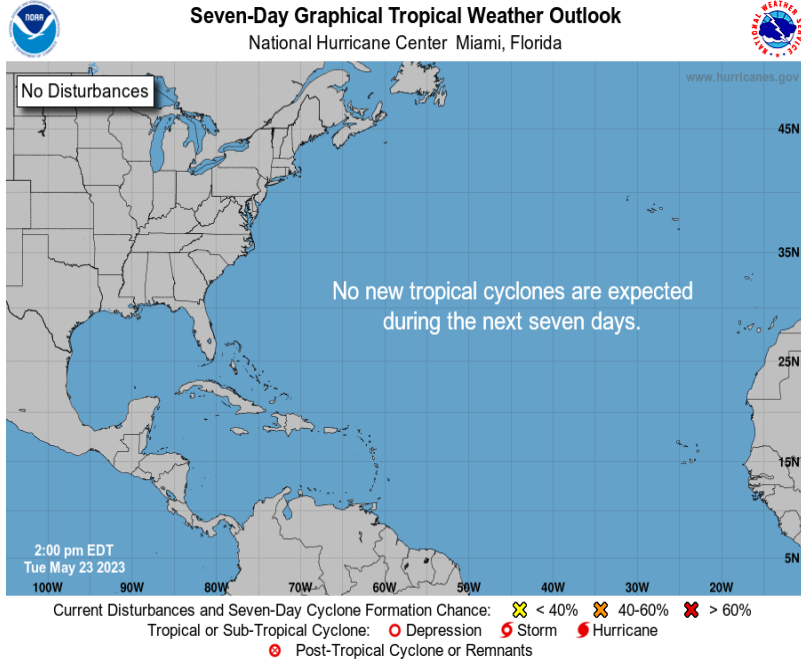


Observed TC Genesis, 1979–2021
7-day Period 0607 to 0613



Experimental

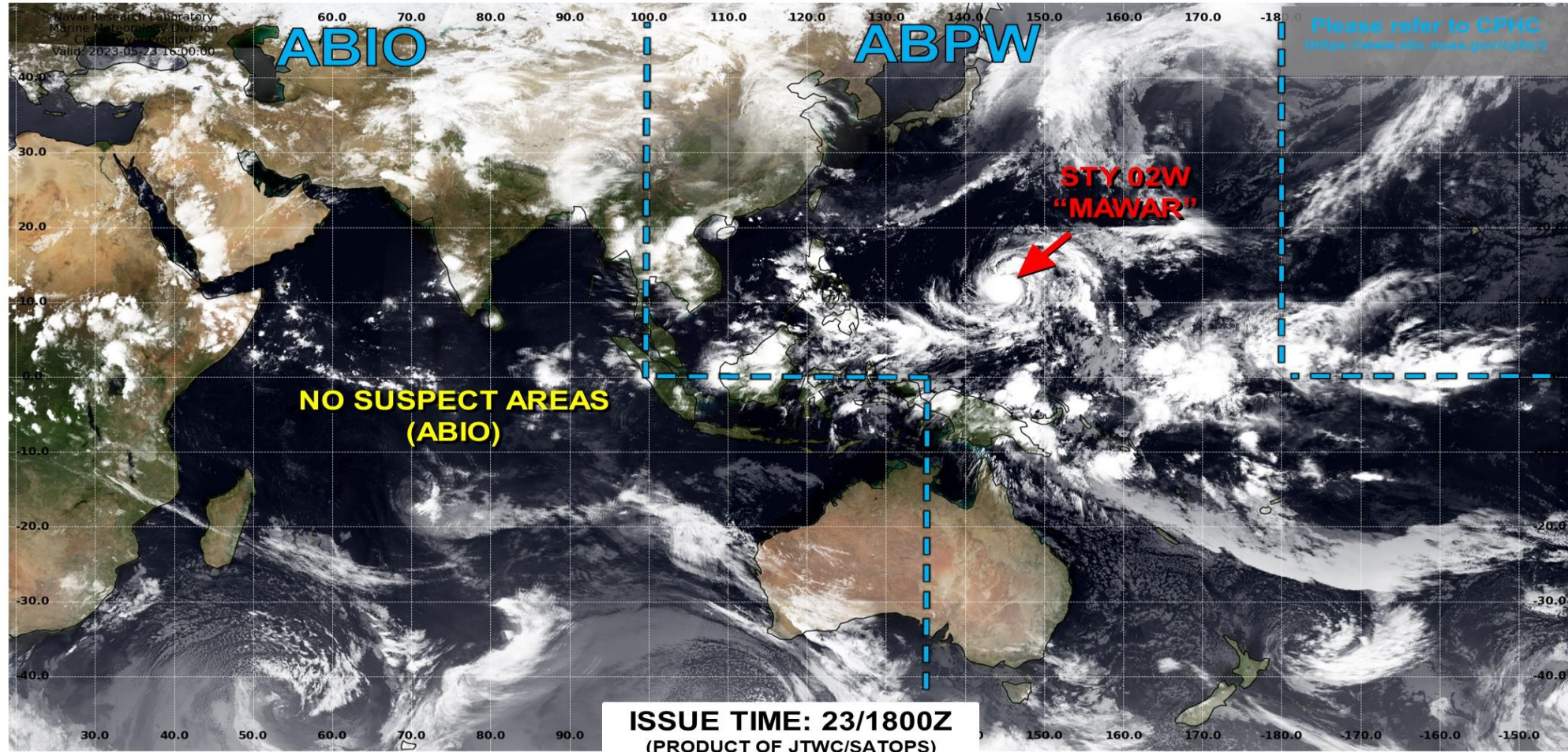
Tropical Cyclone Monitoring/Forecast: NHC



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



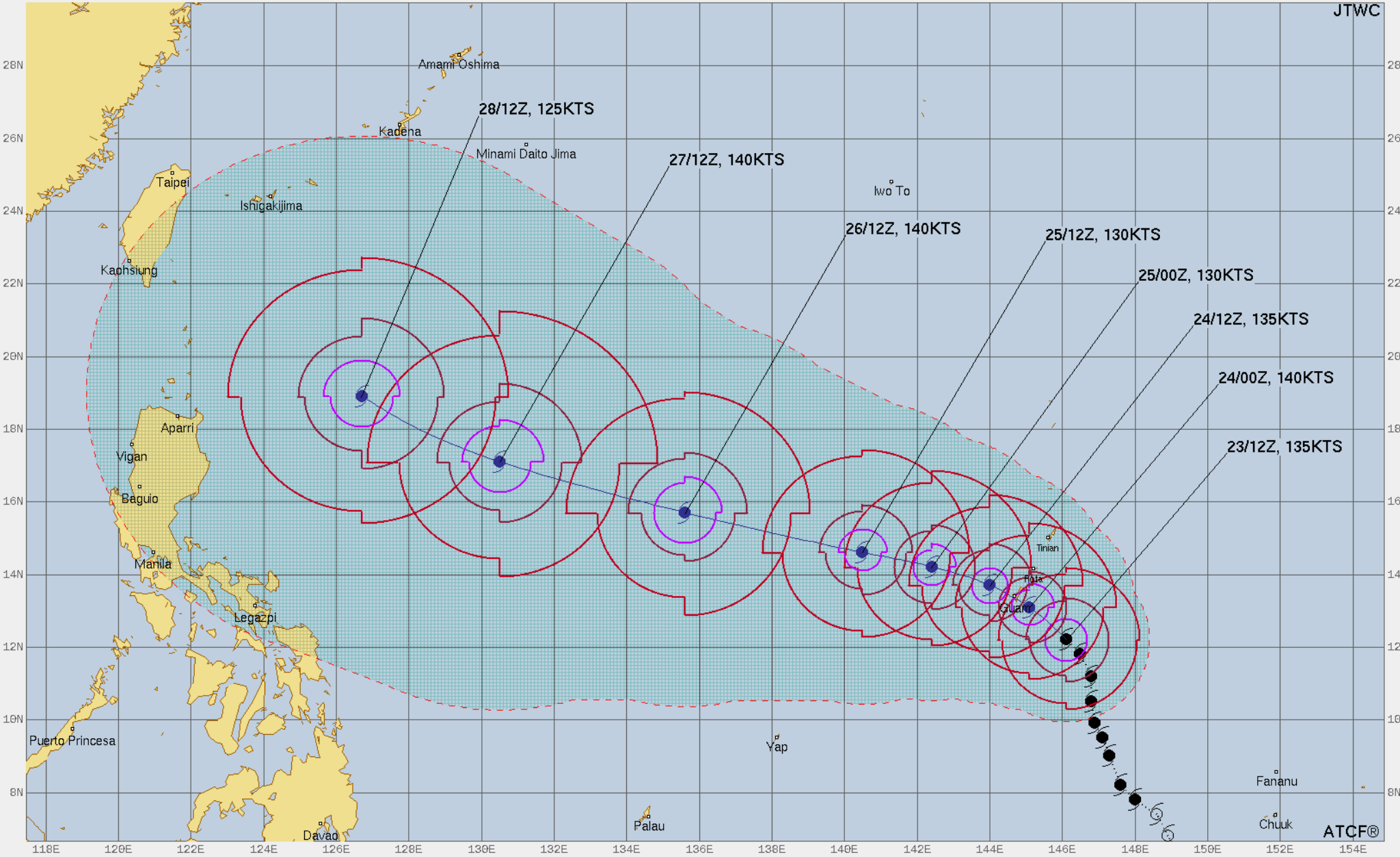
JTWC

SUPER TYPHOON 02W (MAWAR) WARNING #15
 WTPN31 PGTW 231500
 231200Z POSIT: NEAR 12.2N 146.1E
 MOVING 315 DEGREES TRUE AT 06 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 46 FEET
 23/12Z, WINDS 135 KTS, GUSTS TO 165 KTS
 24/00Z, WINDS 140 KTS, GUSTS TO 170 KTS
 24/12Z, WINDS 135 KTS, GUSTS TO 165 KTS
 25/00Z, WINDS 130 KTS, GUSTS TO 160 KTS
 25/12Z, WINDS 130 KTS, GUSTS TO 160 KTS
 26/12Z, WINDS 140 KTS, GUSTS TO 170 KTS
 27/12Z, WINDS 140 KTS, GUSTS TO 170 KTS
 28/12Z, WINDS 125 KTS, GUSTS TO 150 KTS

CPA TO:	NM	DTG
HAGATNA	1	05/24/03Z
ANDERSEN_AFB	18	05/24/04Z
ROTA	53	05/24/04Z
SAIPAN	119	05/24/05Z
TINIAN	111	05/24/05Z
WFO_GUAM	10	05/24/05Z
NAVSTA_GUAM	2	05/24/06Z
ANATAHAN	188	05/24/09Z
ALAMAGAN	256	05/24/12Z
PAGAN	284	05/24/13Z
AGRIHAN	321	05/24/14Z
SOROL	377	05/25/05Z
FAIS	282	05/25/06Z
ULITHI	287	05/25/11Z
YAP	329	05/25/18Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
HAGATNA	131	101	0
AGRIHAN	177	397	0
ALAMAGAN	177	324	0
ANATAHAN	175	253	0
ANDERSEN_AFB	140	109	0
Eauripik	029	378	0
FARAUPEL	023	236	0
FAIS	066	360	0
IFALIK	019	311	0
LAMOTREK	356	283	0
NAVSTA_GUAM	129	114	0
PAGAN	177	354	0
PULUWAT	331	351	0
ROTA	155	126	0
SAIPAN	172	176	0
SATAWAL	348	294	0
TINIAN	170	171	0
WFO_GUAM	136	109	0
WOLEAI	024	316	0

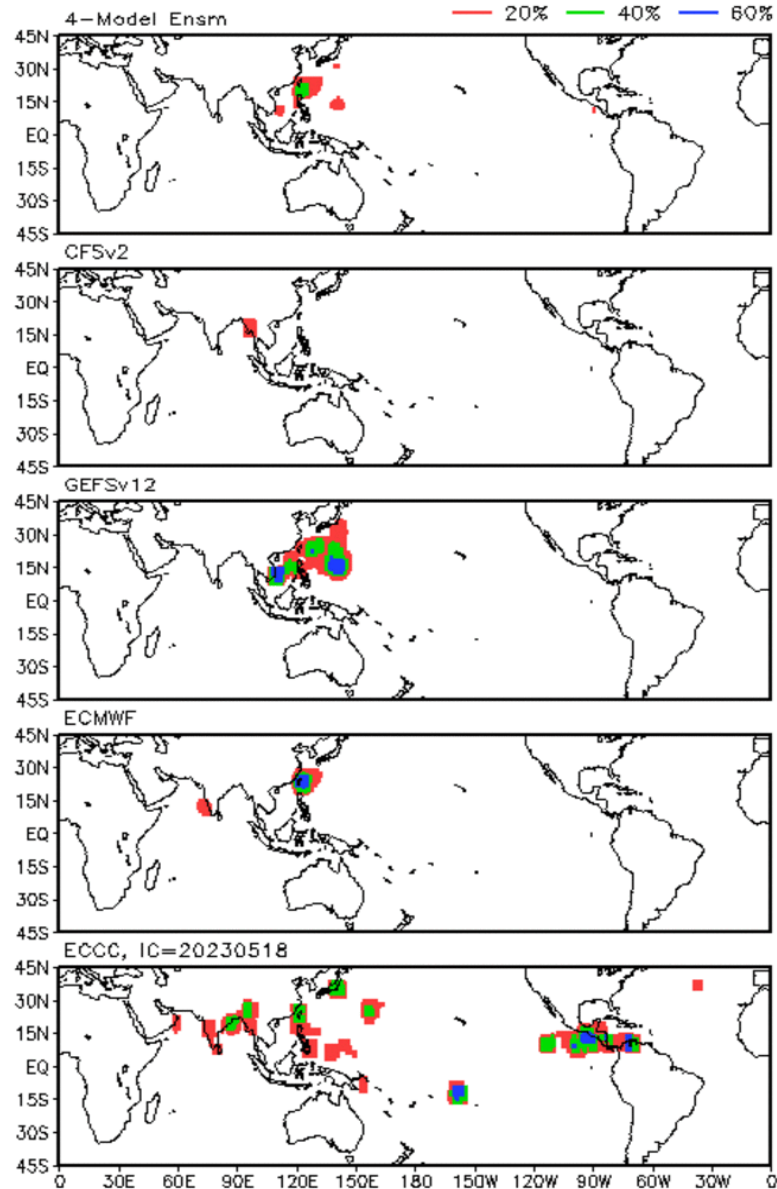
○ ○ LESS THAN 34 KNOTS
 ○ ○ 34-63 KNOTS
 ● ● MORE THAN 63 KNOTS
 — FORECAST CYCLONE TRACK
 - - - PAST CYCLONE TRACK
 [Grid] DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
 [Circle with concentric lines] FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)



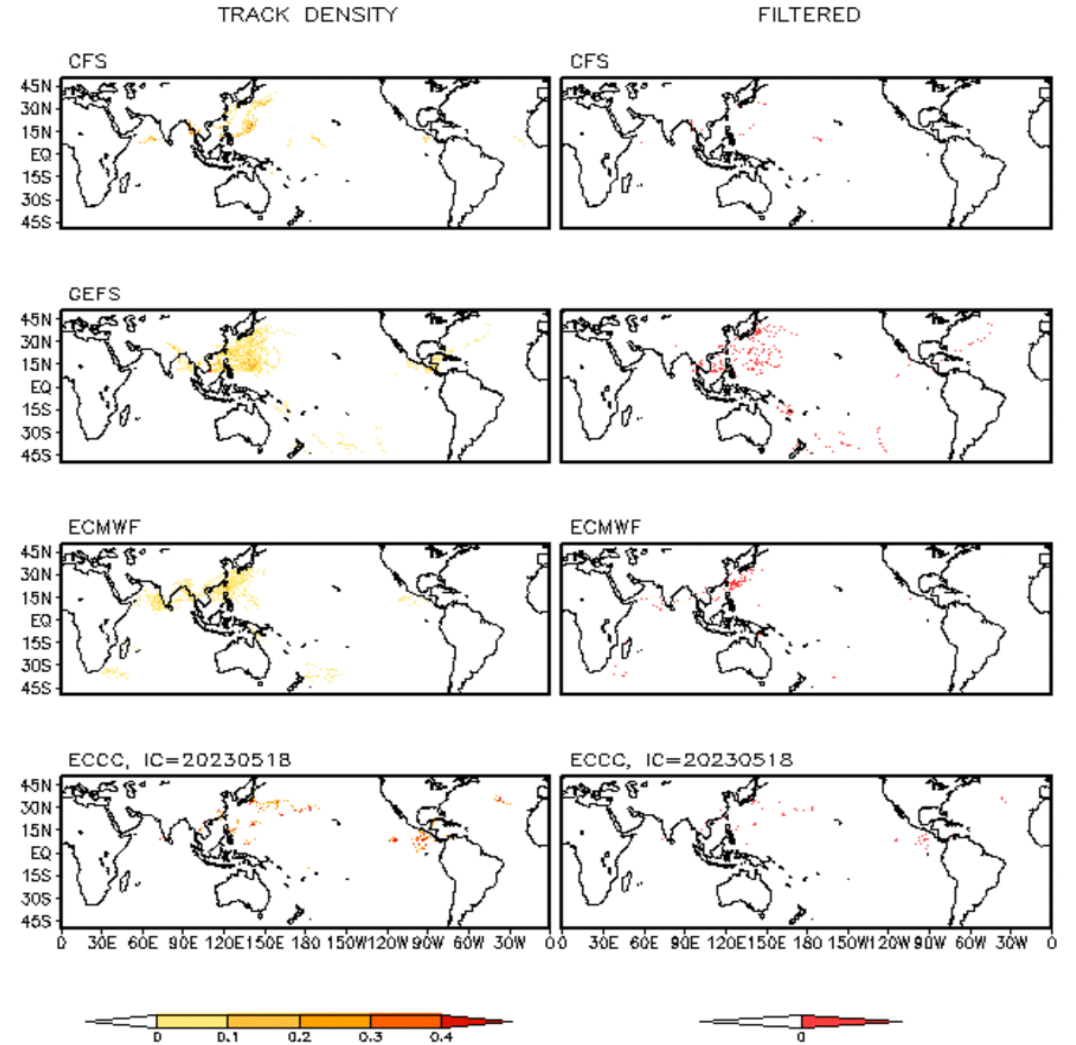
ATCF®

Multi-Model TC Track Probabilities/Densities: Week-2

Storm Track Probabilities, IC=20230522
Week 2: 0531 - 0606

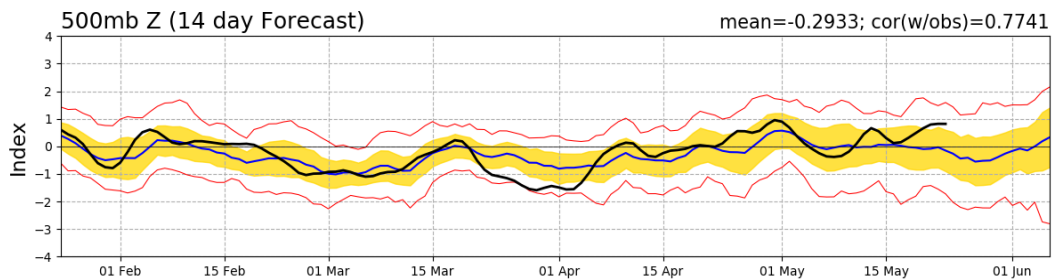
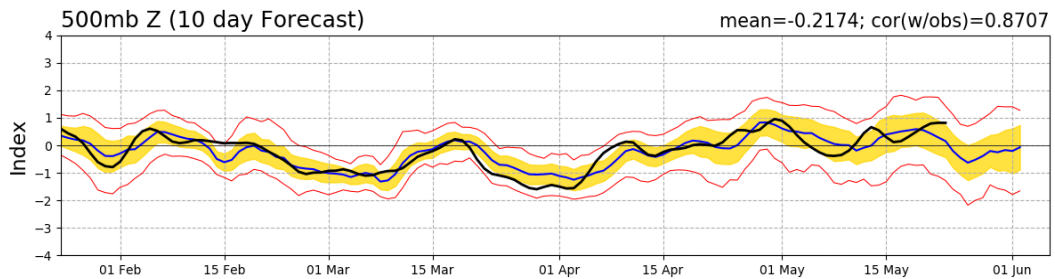
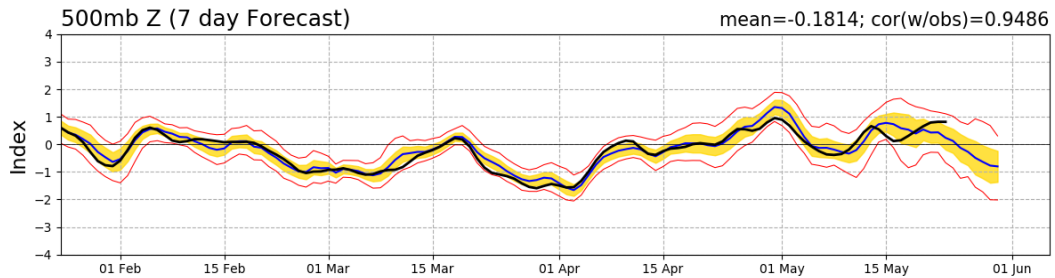
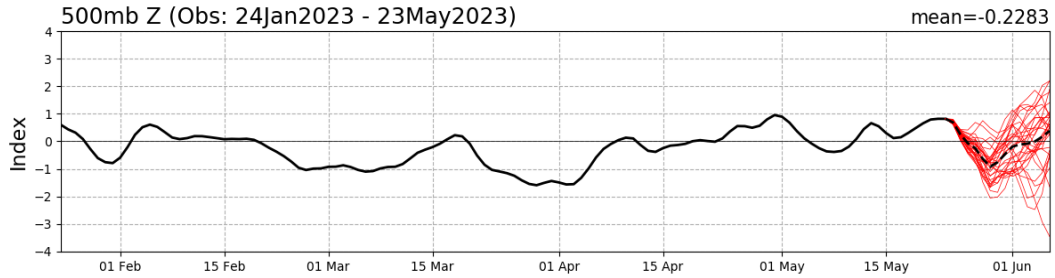


Storm Track Density Distribution, IC=20230522
Week 2 Forecast: 0531-0606

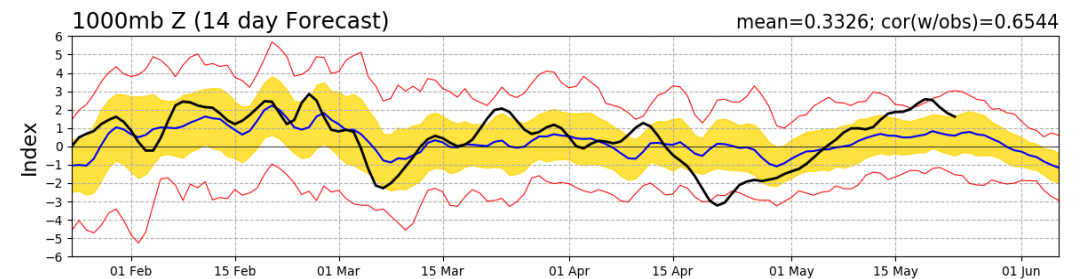
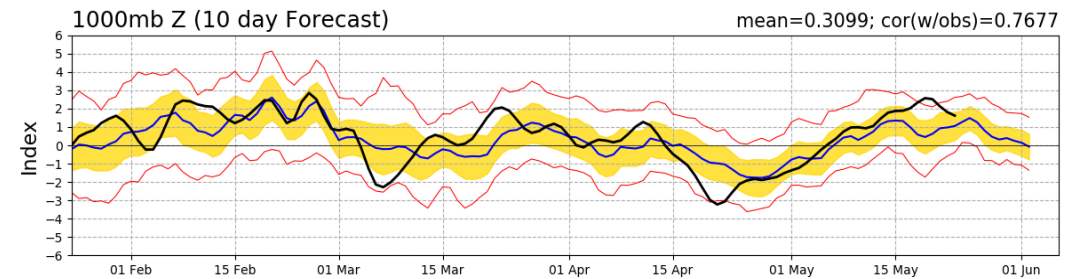
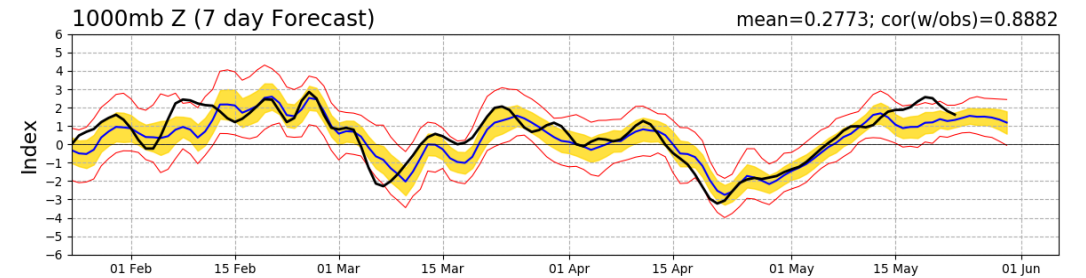
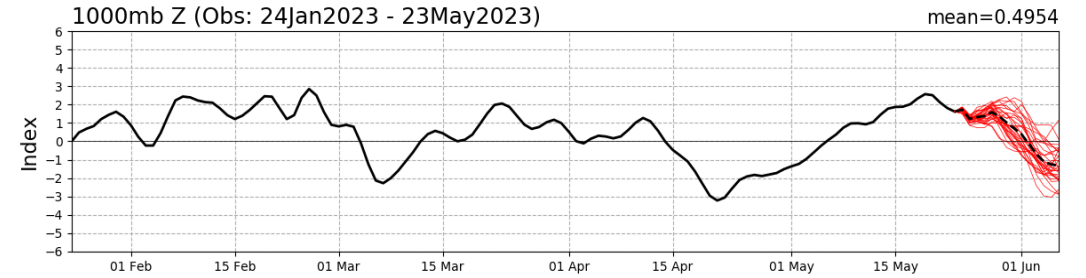


Teleconnection Indices: PNA / AO:

PNA Index: Observed & GEFS Forecasts



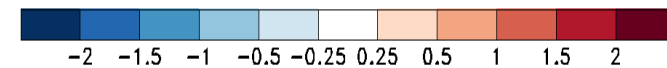
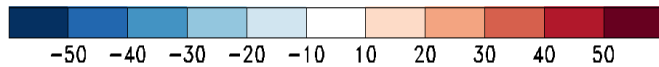
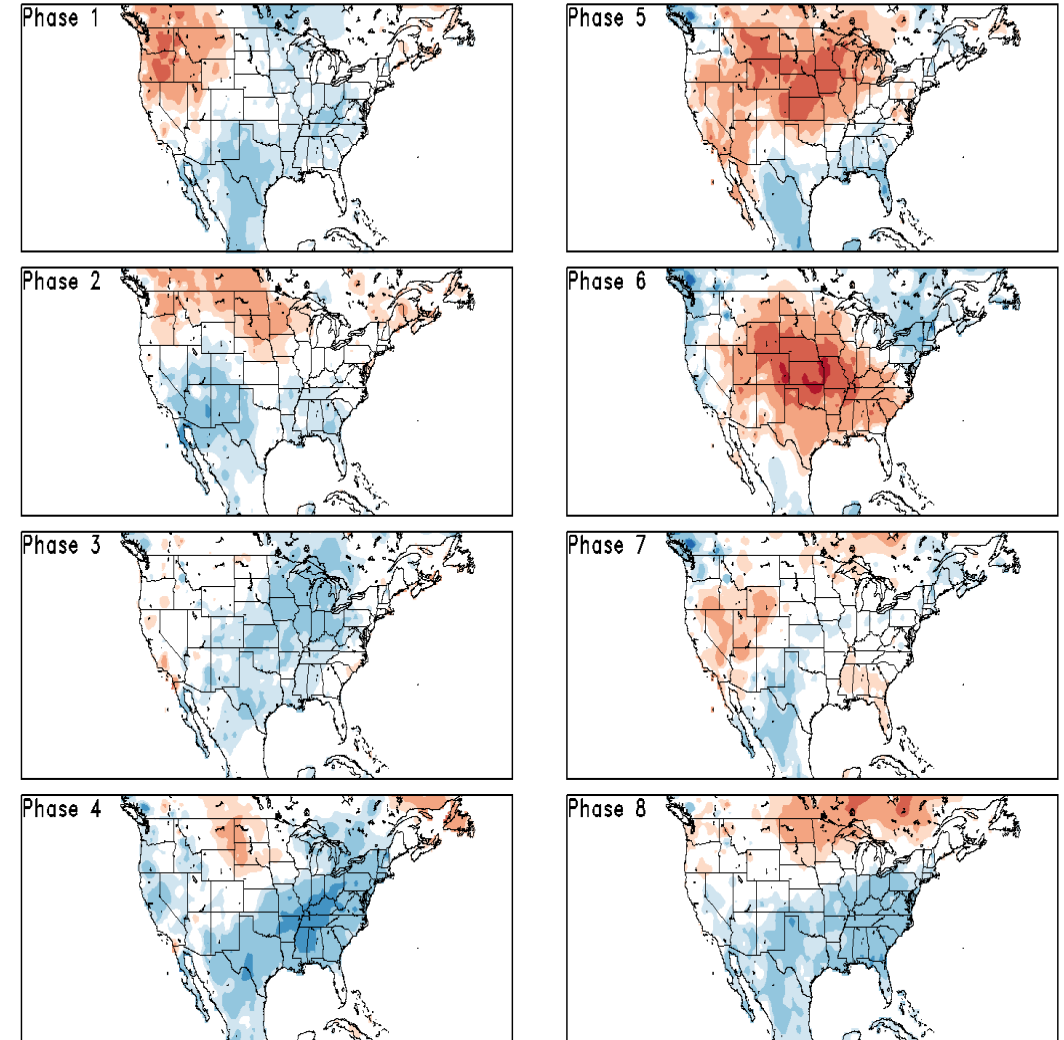
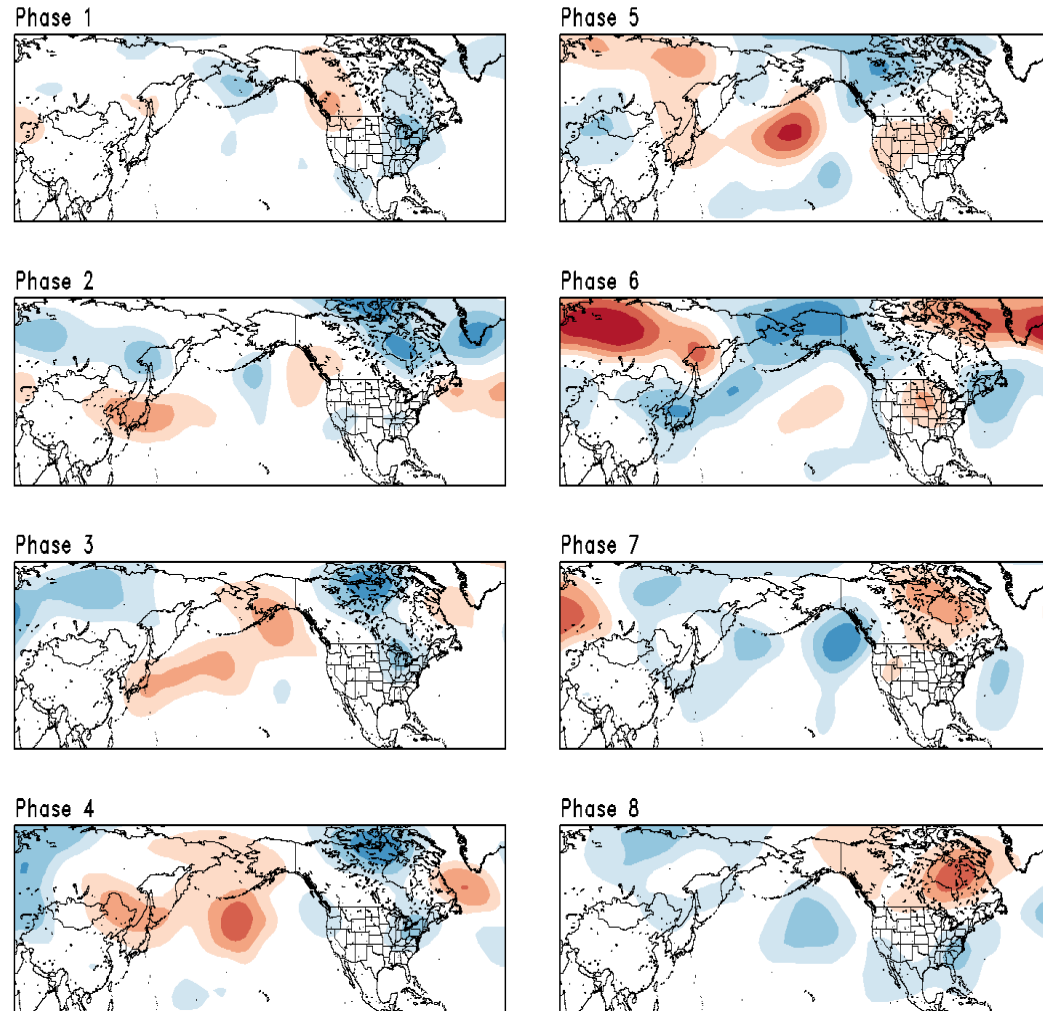
AO Index: Observed & GEFS Forecasts



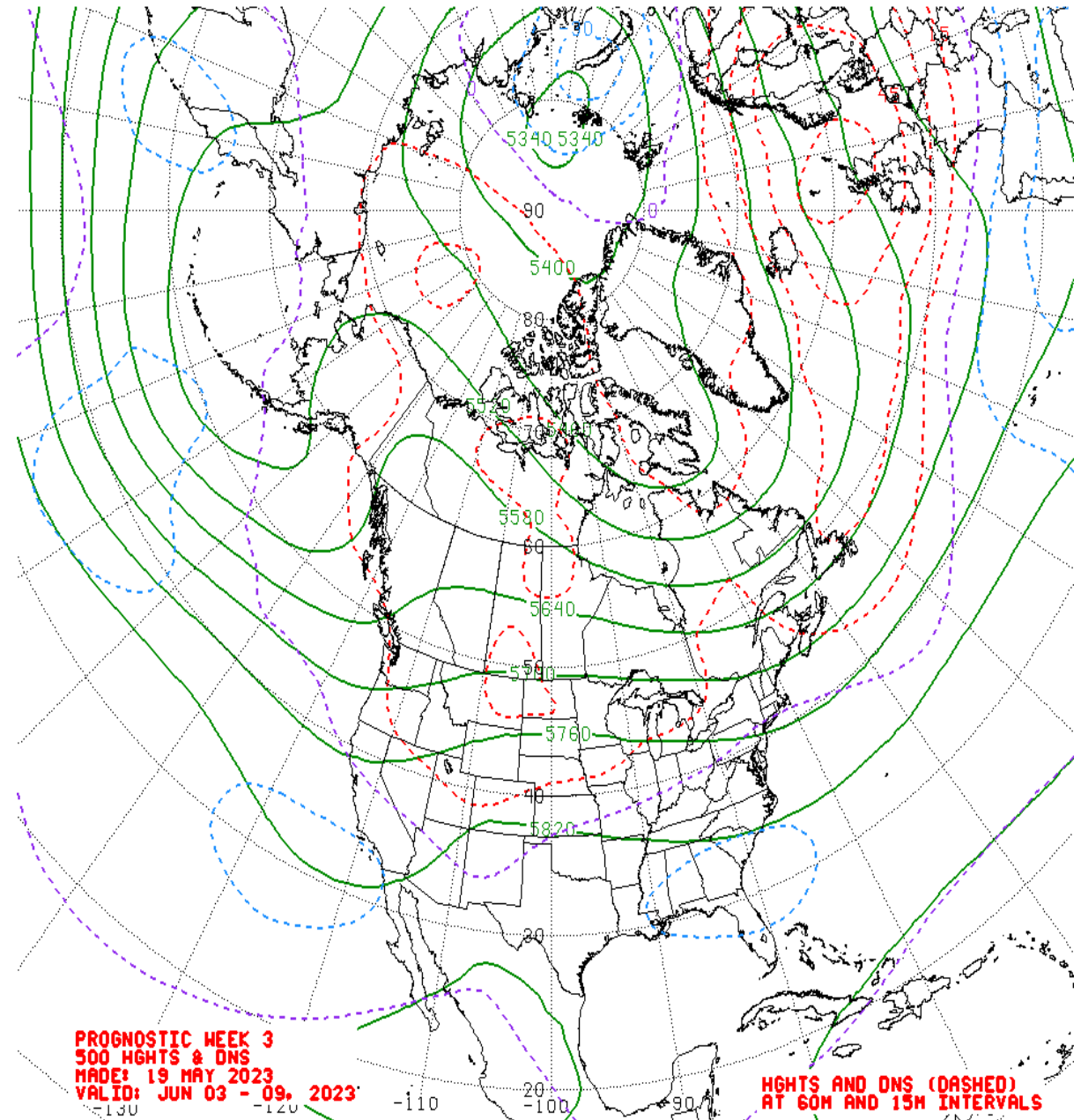
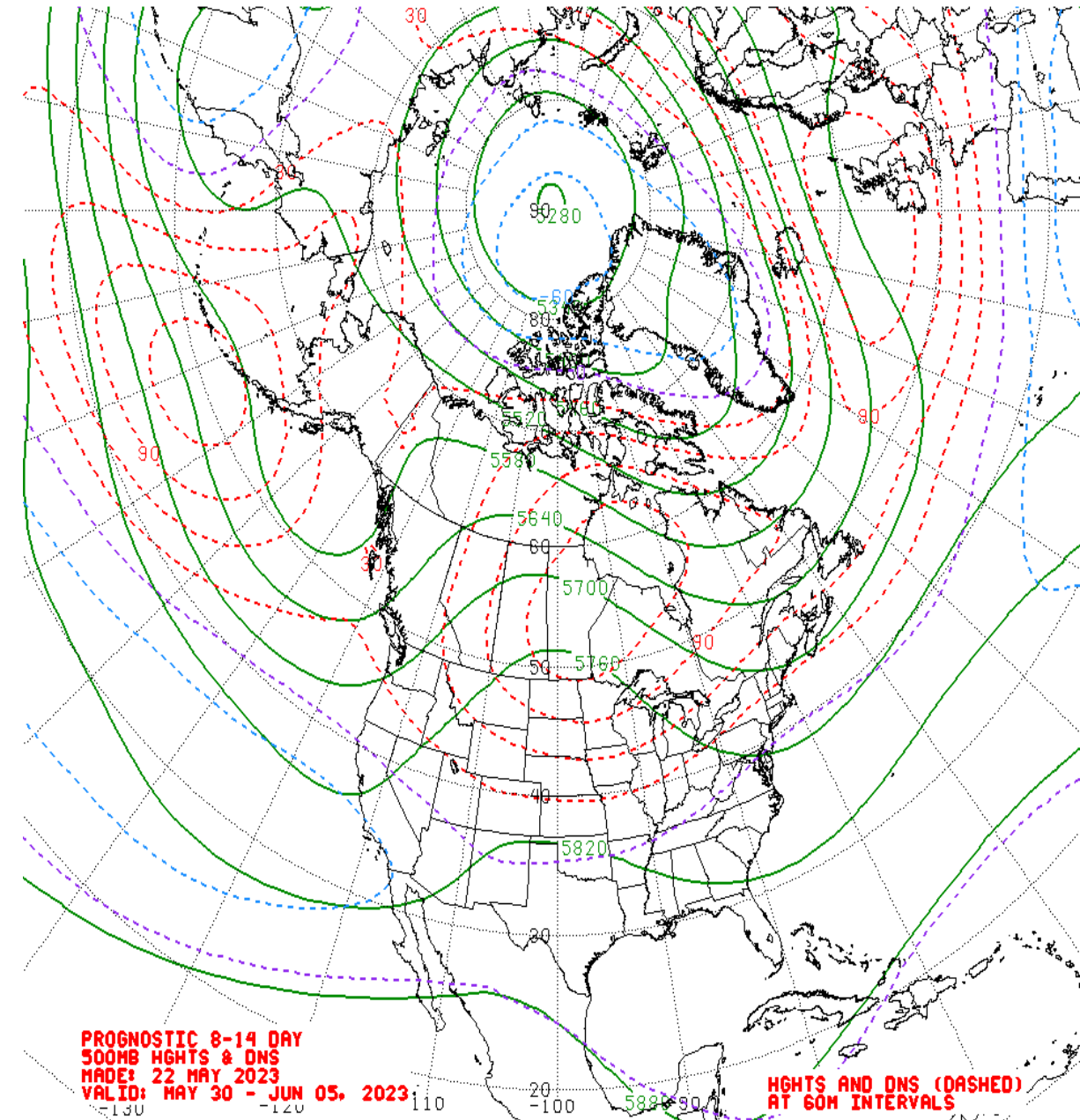
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

AMJ MJO Composite: CDAS 500-hPa Height (m)

AMJ MJO Composite: GLBT (degC)



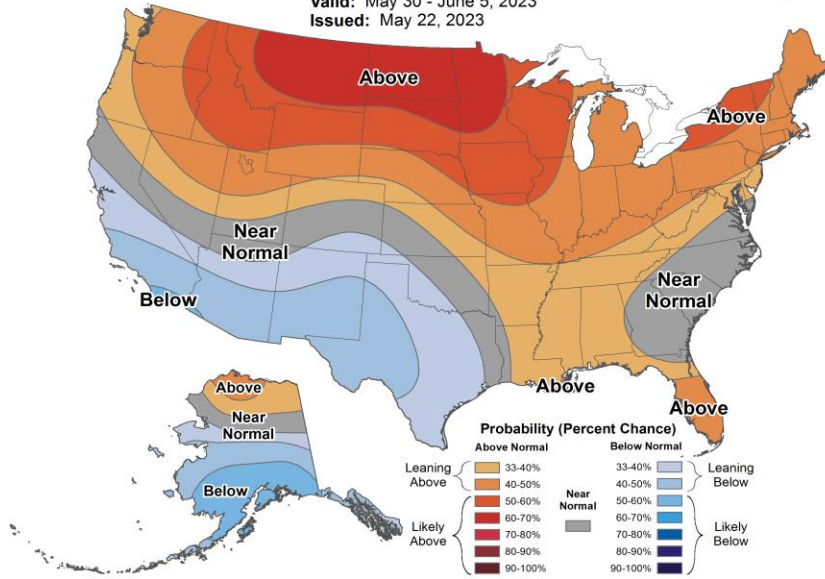
Mean 500-hPa Height Anomaly Forecasts:



Official Temperature & Precipitation Forecasts:

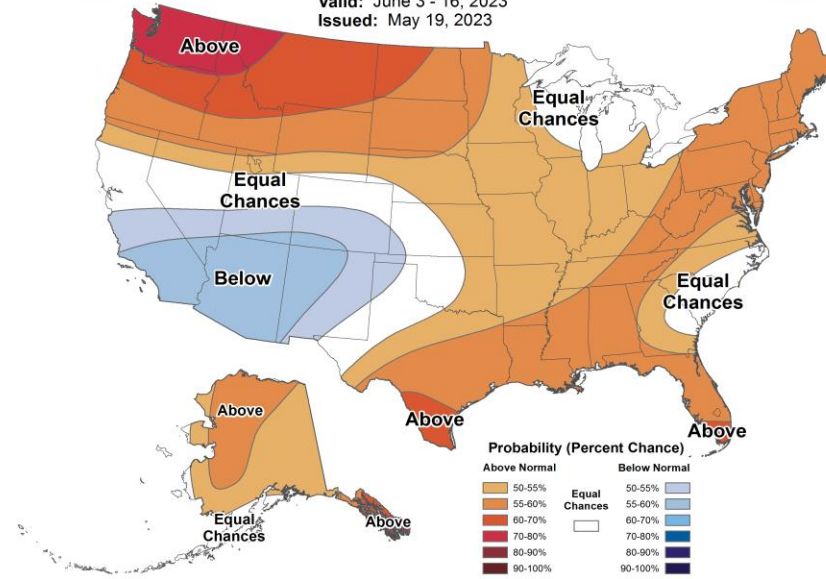
8-14 Day Temperature Outlook

Valid: May 30 - June 5, 2023
 Issued: May 22, 2023



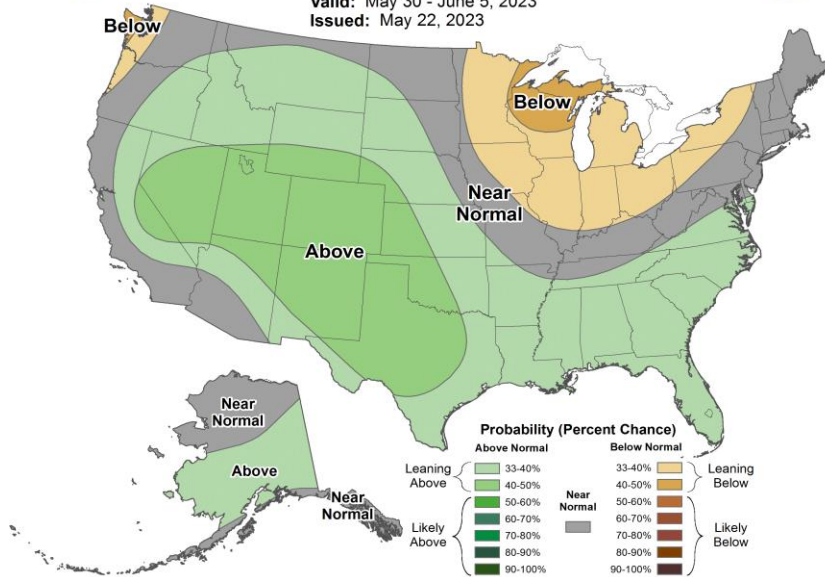
Weeks 3-4 Temperature Outlook

Valid: June 3 - 16, 2023
 Issued: May 19, 2023



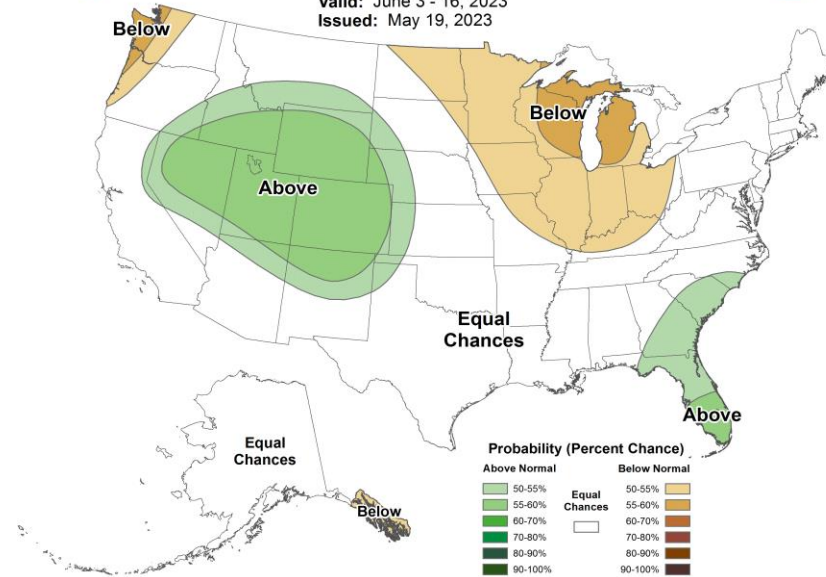
8-14 Day Precipitation Outlook

Valid: May 30 - June 5, 2023
 Issued: May 22, 2023



Weeks 3-4 Precipitation Outlook

Valid: June 3 - 16, 2023
 Issued: May 19, 2023



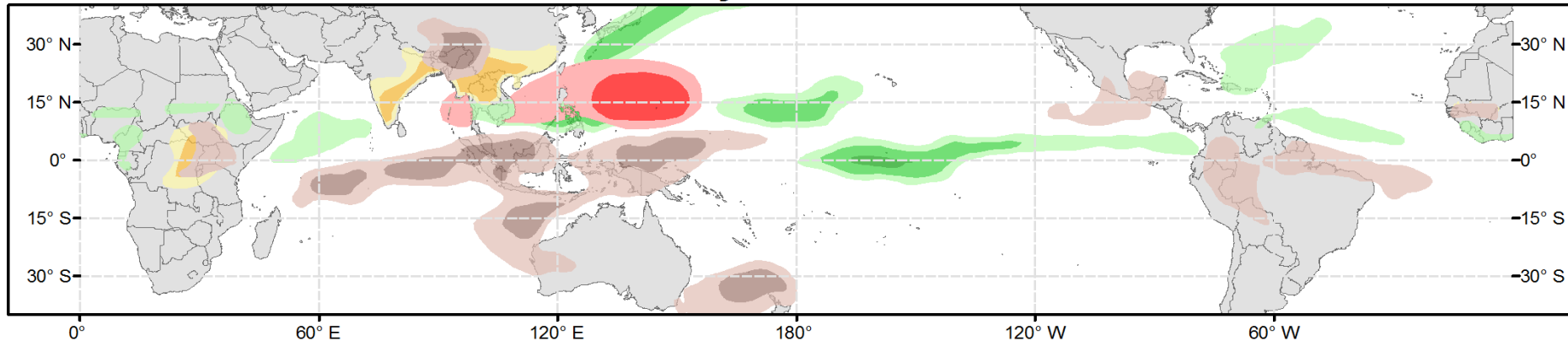


Global Tropics Hazards Outlook

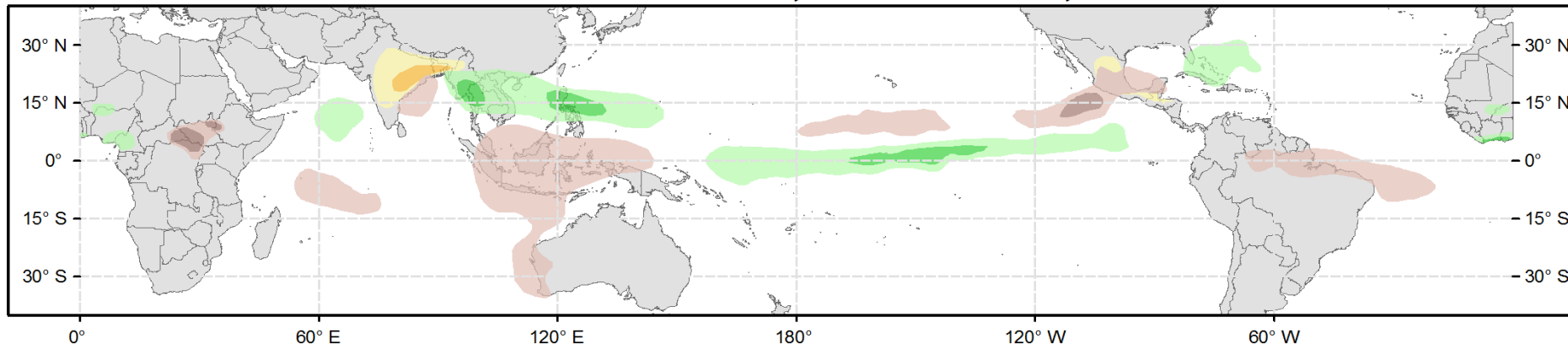
Climate Prediction Center



Week 2 - Valid: May 31, 2023 - Jun 06, 2023



Week 3 - Valid: Jun 07, 2023 - Jun 13, 2023



Week-2 Only

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 Lower third of the historical range

Issued: 05/23/2023
Forecaster: Allgood

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.