

Global Tropics Hazards And Benefits Outlook

9/22/2020

Dan Harnos

Outline

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

Outlook Review

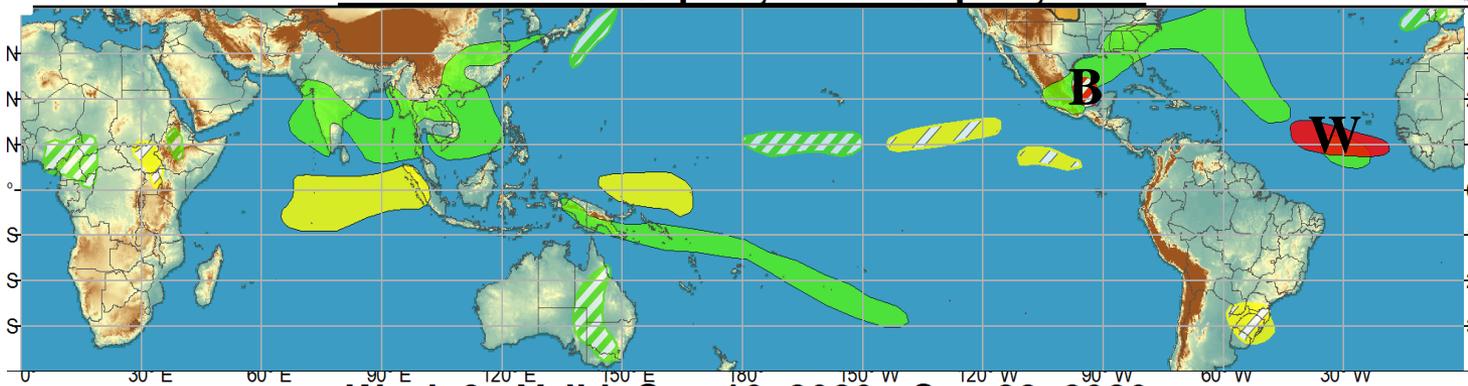
TS Wilfred

9/18-9/20
Peak: 35 kt

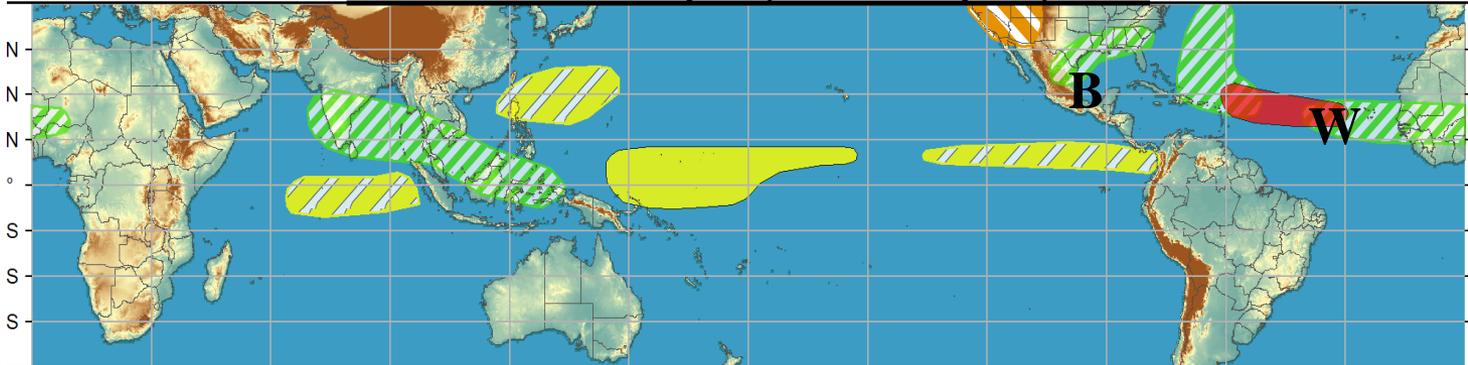
TS Beta

9/18-present
Peak: 50 kt

Week 1 - Valid: Sep 16, 2020 - Sep 22, 2020

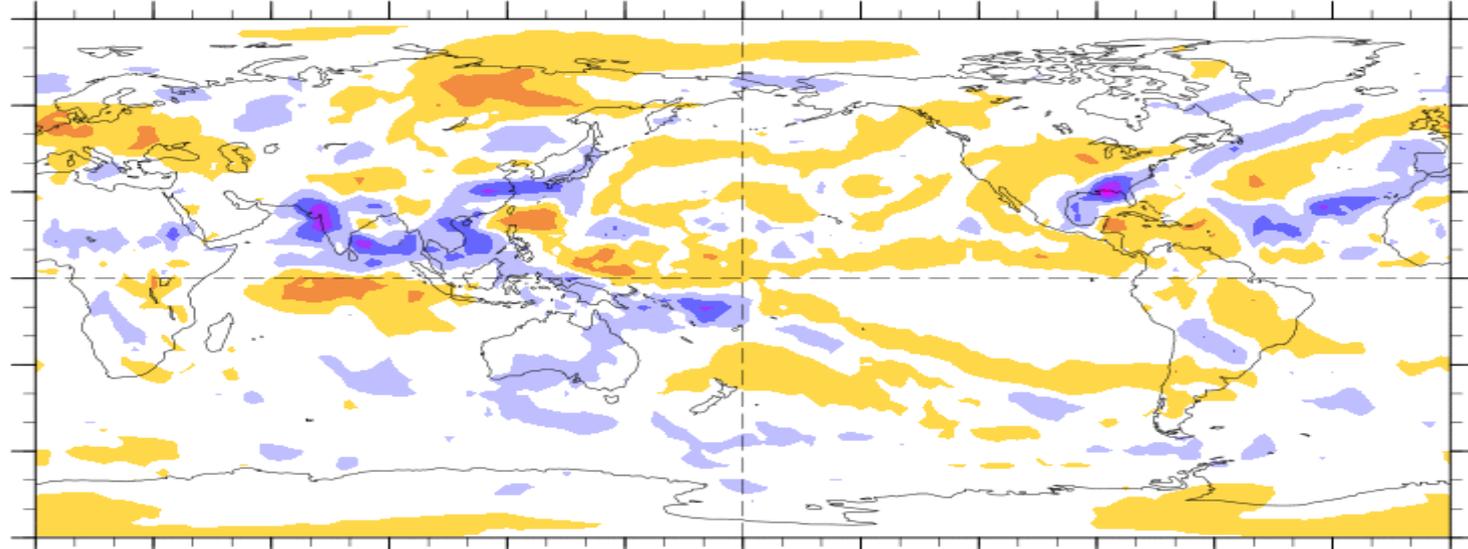


Week 2 - Valid: Sep 16, 2020 - Sep 22, 2020



7-Day Average OLR Anomaly

2020/09/14 - 2020/09/20



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (September 10, 2020 Update)

next update on 8th of Oct.!

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña conditions are present and are likely to continue through the Northern Hemisphere winter (~75% chance).

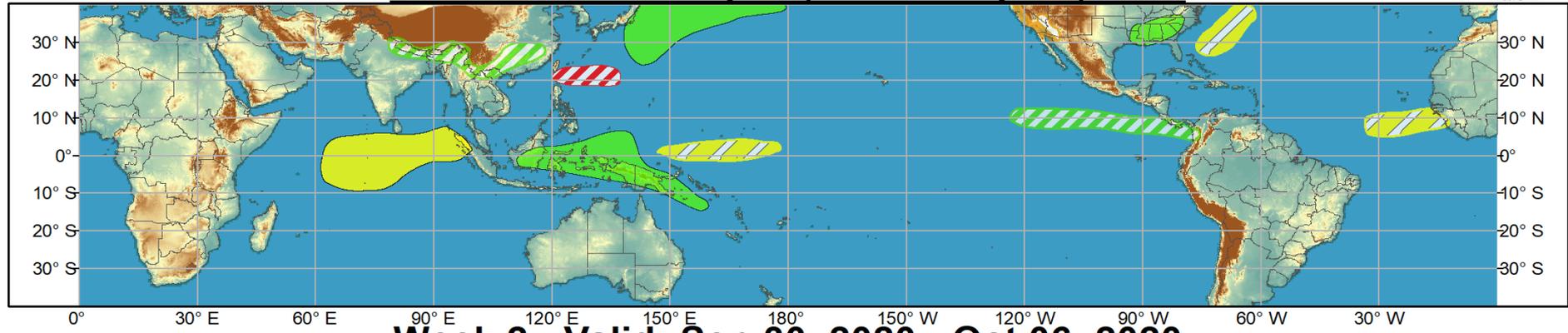
MJO and other subseasonal tropical variability:

- The MJO is presently over the Maritime Continent, although at a limited amplitude.
- Model guidance is split on whether the MJO continues eastward or lingers over the Maritime Continent, but both perspectives feature a weak MJO signal that would potentially begin to destructively interfere with the La Niña background state.
- Tropical cyclone activity over the Atlantic is currently being suppressed somewhat by the MJO, but will become less unfavorable by Week-2 as this envelope continues eastward somewhat. Kelvin wave activity currently over the Indian Ocean may increase tropical cyclone activity for the East Pacific and western Caribbean by Week-2.



Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Sep 23, 2020 - Sep 29, 2020



Week 2 - Valid: Sep 30, 2020 - Oct 06, 2020



Produced: 09/22/2020
Forecaster: Harnos

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.

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

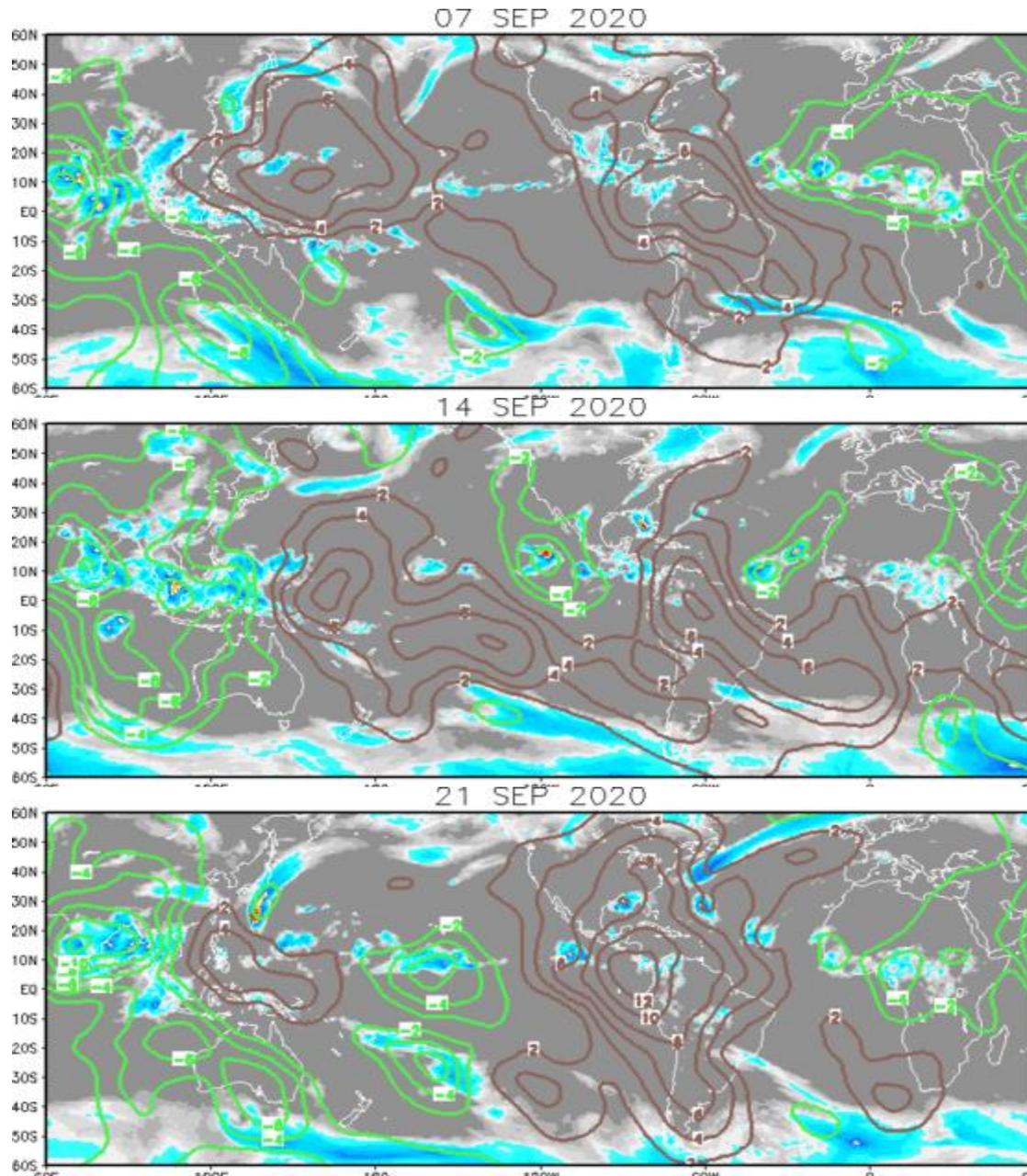
Green: Enhanced Divergence

Brown: Enhanced Convergence

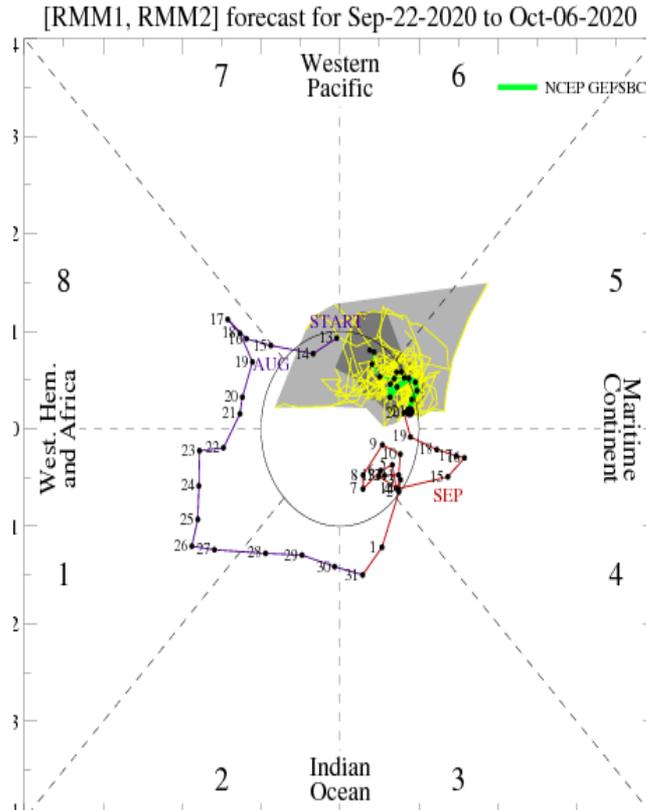
Wave-1 asymmetry apparent with enhanced envelope over Africa and the Western Indian Ocean. Kelvin wave over the East Pacific.

Tropical Cyclone activity is apparent over the Atlantic and East Pacific amidst the suppressed MJO envelope.

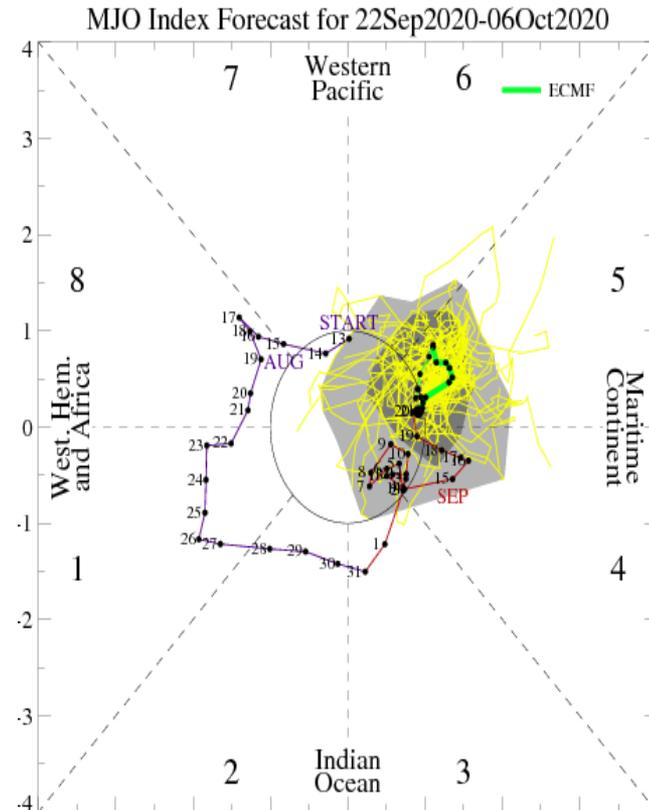
A messy perspective with the MJO remaining over the Maritime Continent, La Niña suppressing convection over the West Pacific, and a Kelvin wave over the Central Pacific.



MJO Observation/Forecast



GEFS



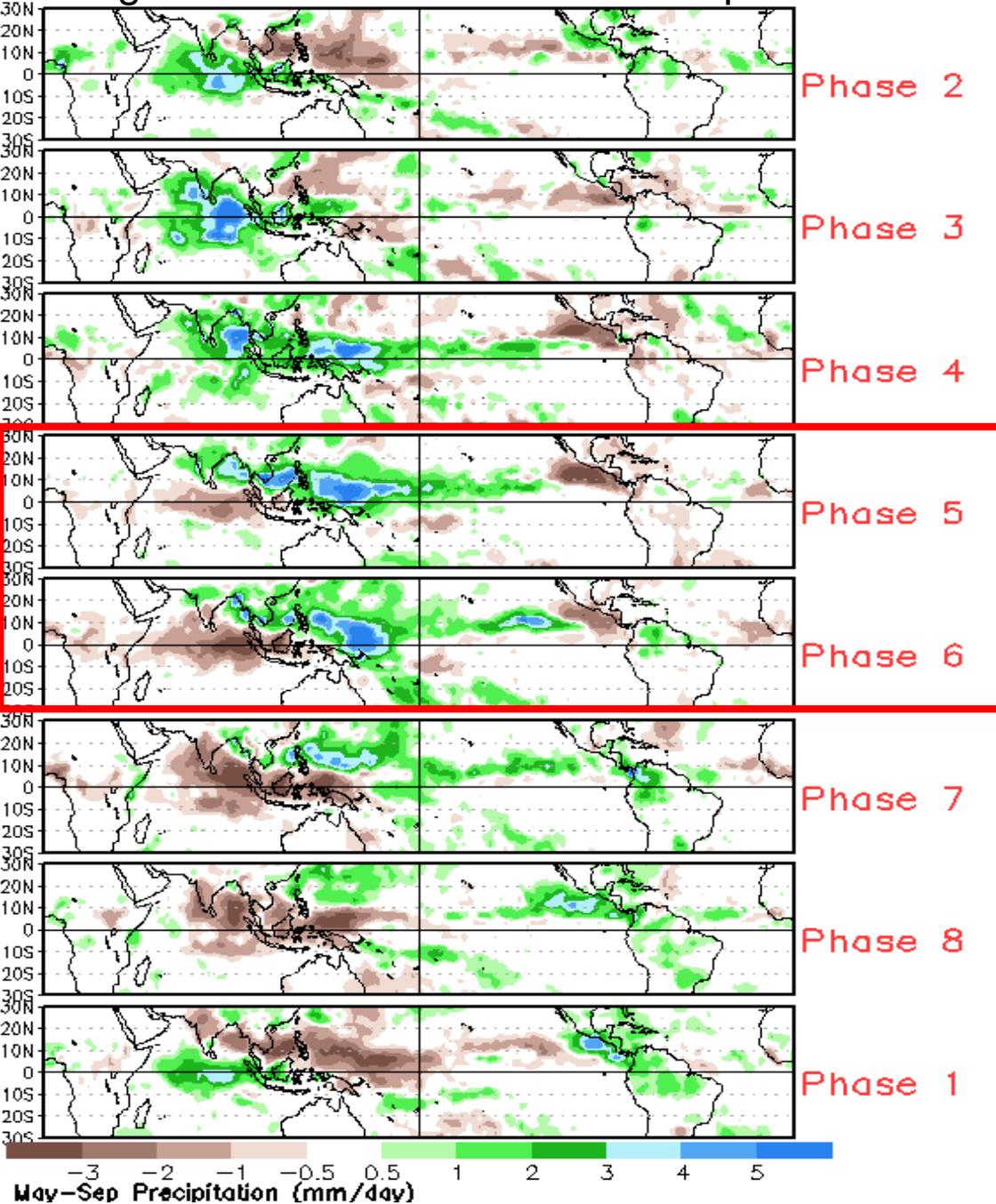
ECMWF

GEFS pushes the signal further east than the ECMWF, but remains at a low amplitude.

The ECMWF slows substantially and has a late westward turn, suggestive of equatorial Rossby wave activity.

The La Niña background state favors a weaker signal in RMM Phases 6/7 (see the last event from mid-August).

Average Conditions when the MJO is present



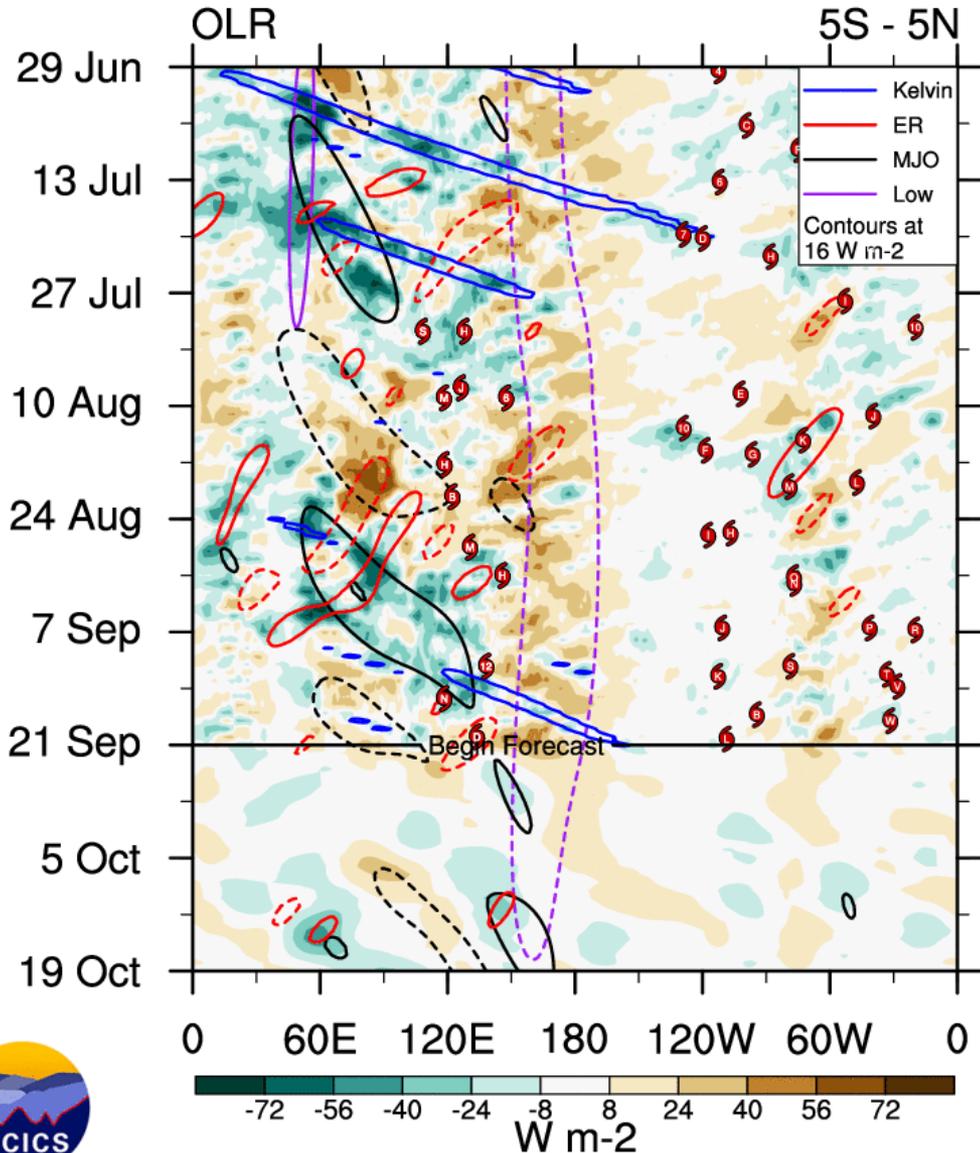
La Niña favors suppressed rain for the West Pacific (destructive interference).

CAVEAT: These panels are representative of robust MJO events.

MJO activity is being broken up by the suppressed phase of an **equatorial Rossby wave** over the Maritime Continent.

Kelvin wave activity is present over the Indian Ocean and Central Pacific.

Low frequency contours loom east of the **MJO**, ready for the two to destructively interfere.

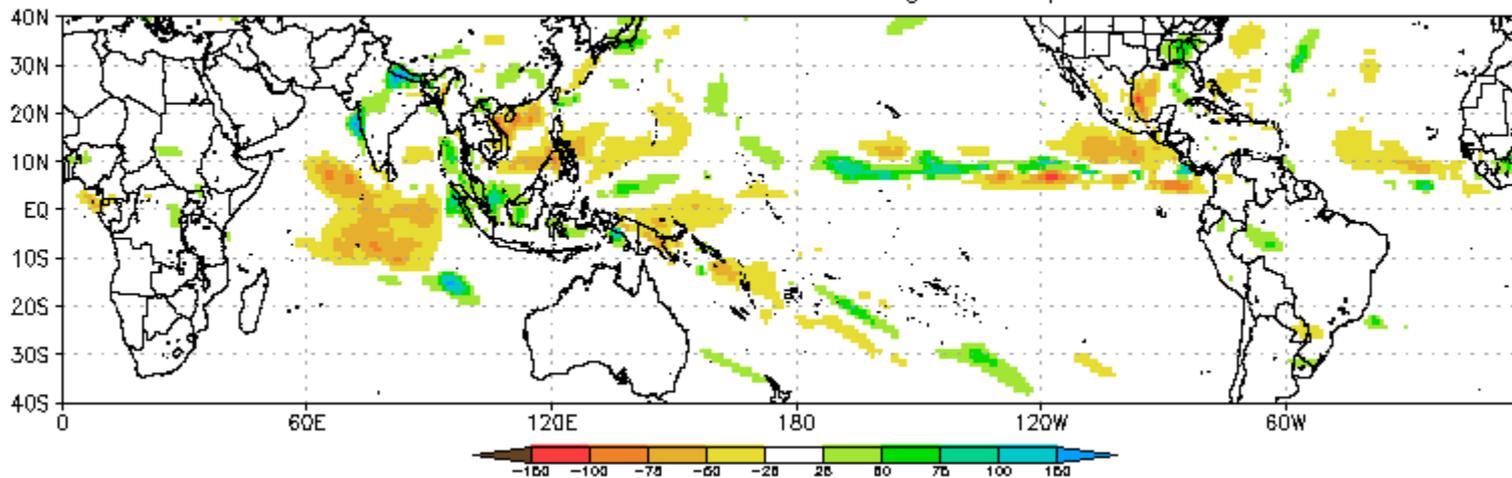


ncics.org/mjo

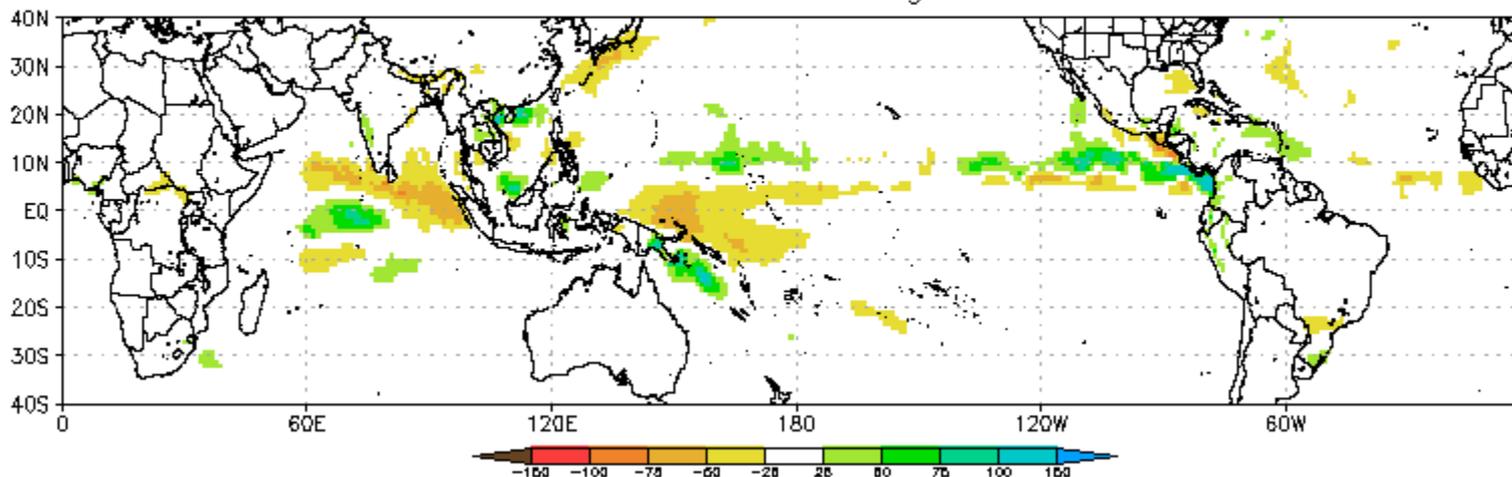
Tue 2020-09-22 15:12 UTC

Carl Schreck
carl_schreck@ncsu.edu

CFS Precipitation Anomalies (mm) Issued 21Sep2020
Week-1 Forecast Ending 29Sep2020

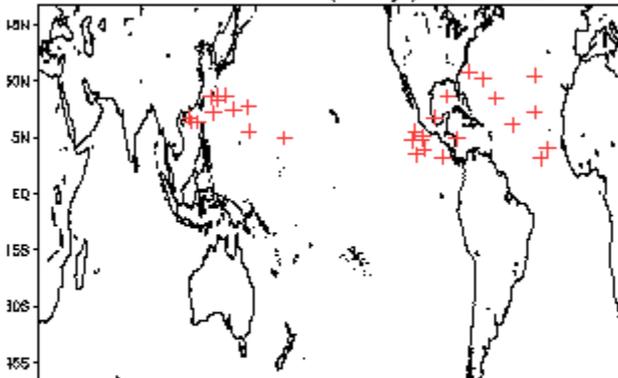


CFS Precipitation Anomalies (mm) Issued 21Sep2020
Week-2 Forecast Ending 06Oct2020

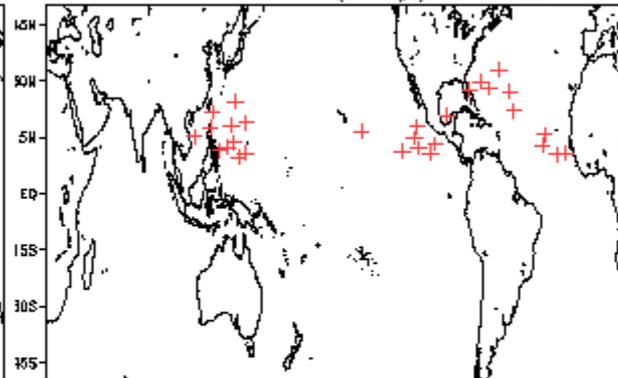


September Tropical Storm Formation by MJO phase

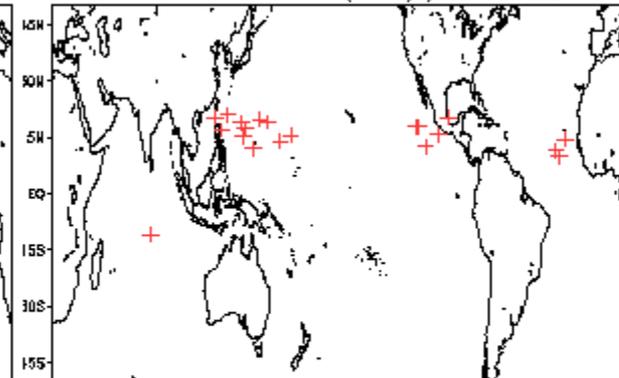
Phase 1 (81 days) 31 storms



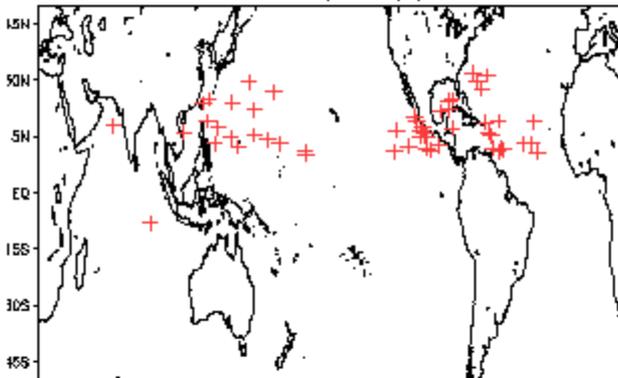
Phase 4 (70 days) 30 storms



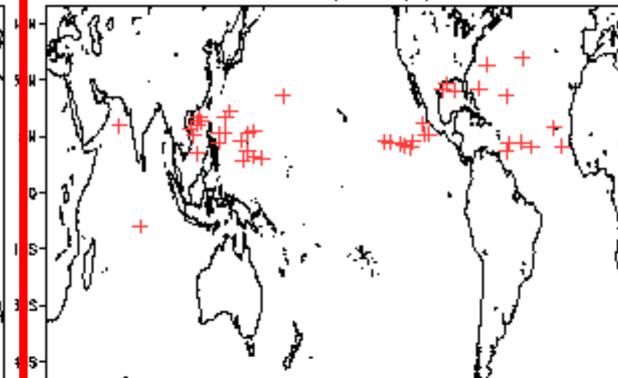
Phase 7 (38 days) 22 storms



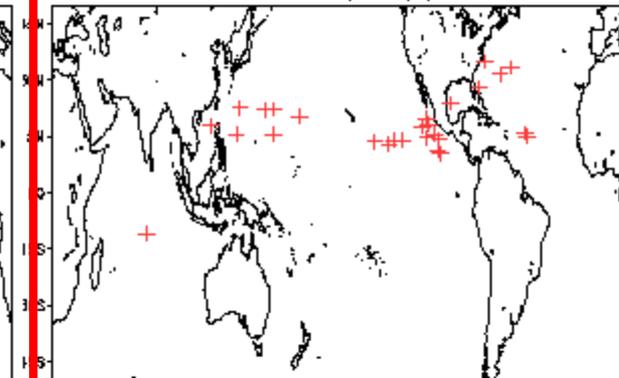
Phase 2 (122 days) 56 storms



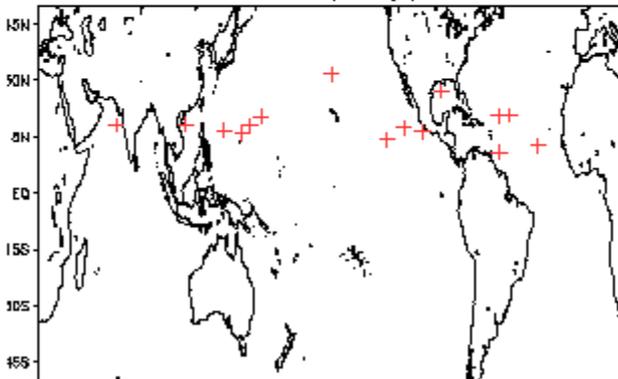
Phase 5 (106 days) 45 storms



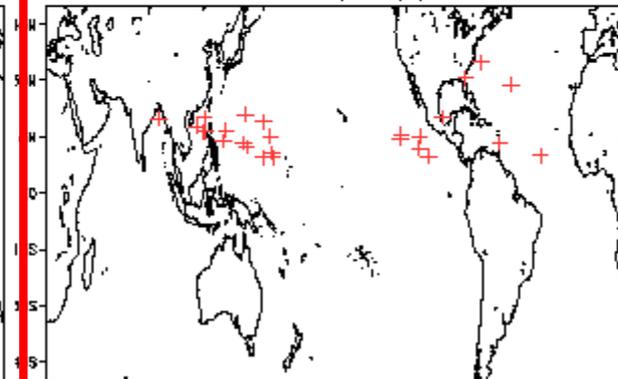
Phase 8 (67 days) 29 storms



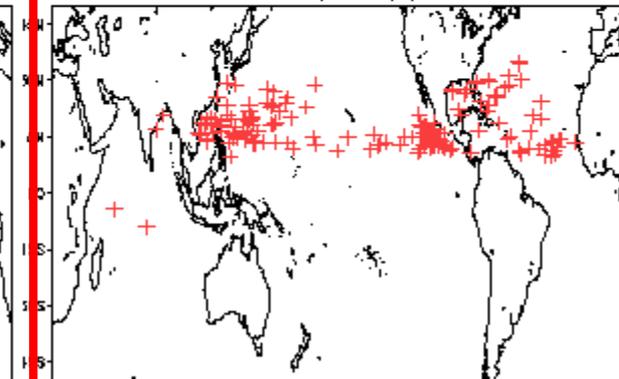
Phase 3 (51 days) 16 storms



Phase 6 (61 days) 27 storms



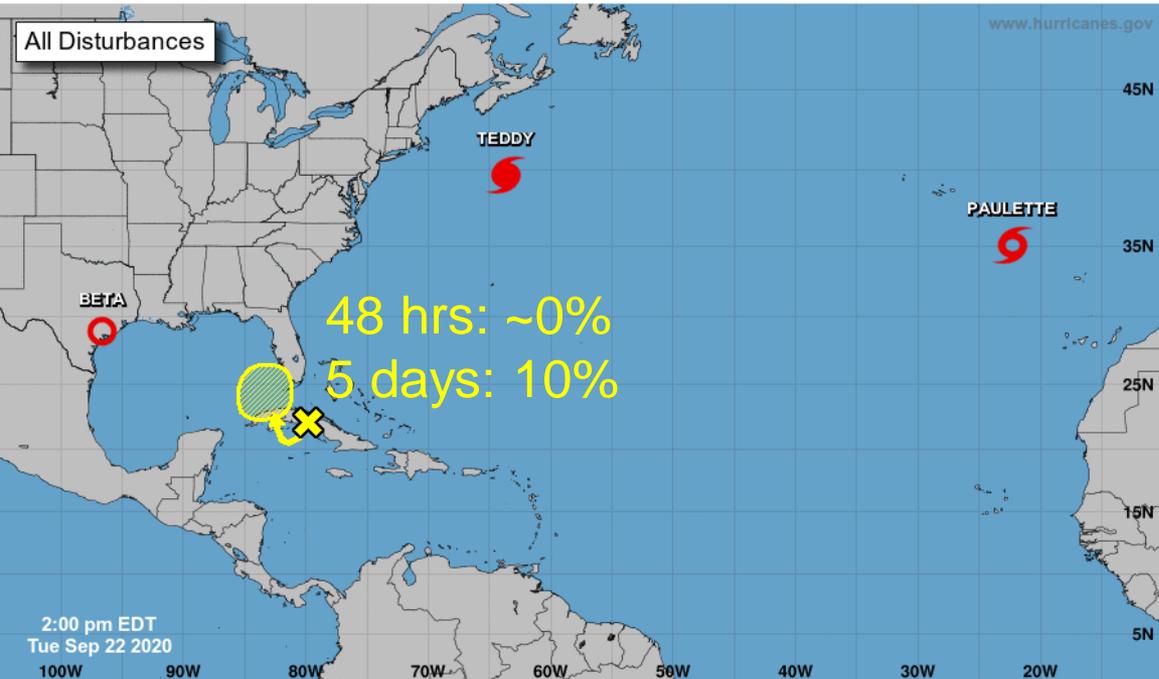
Null (393 days) 189 storms





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



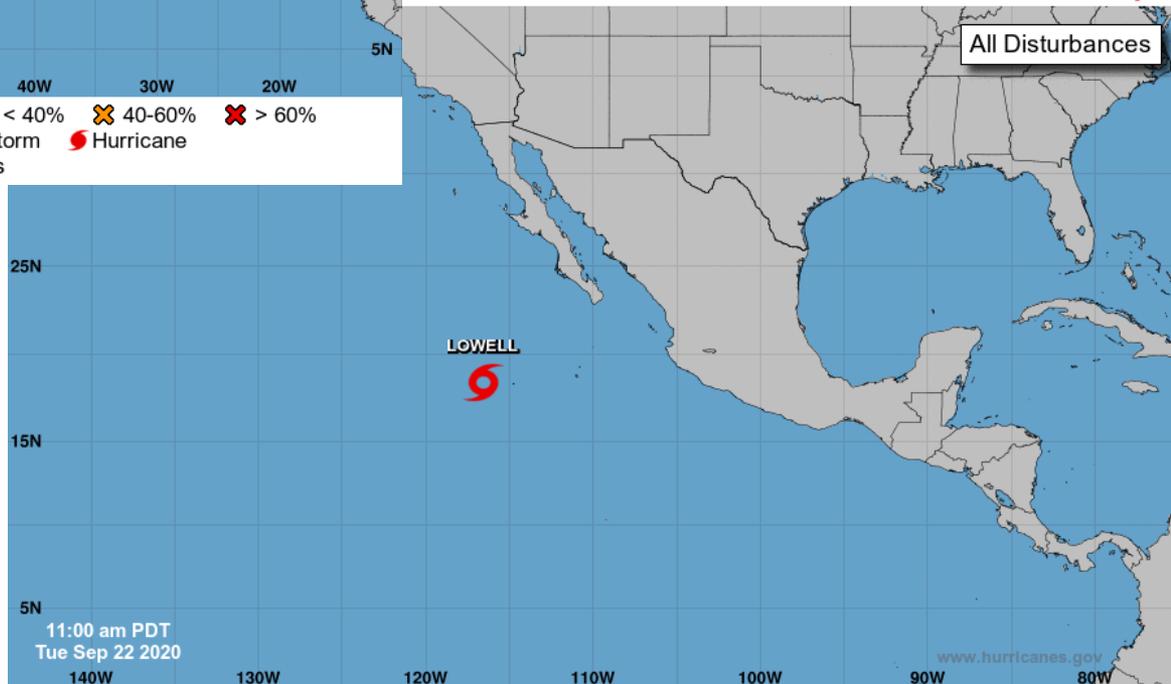
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



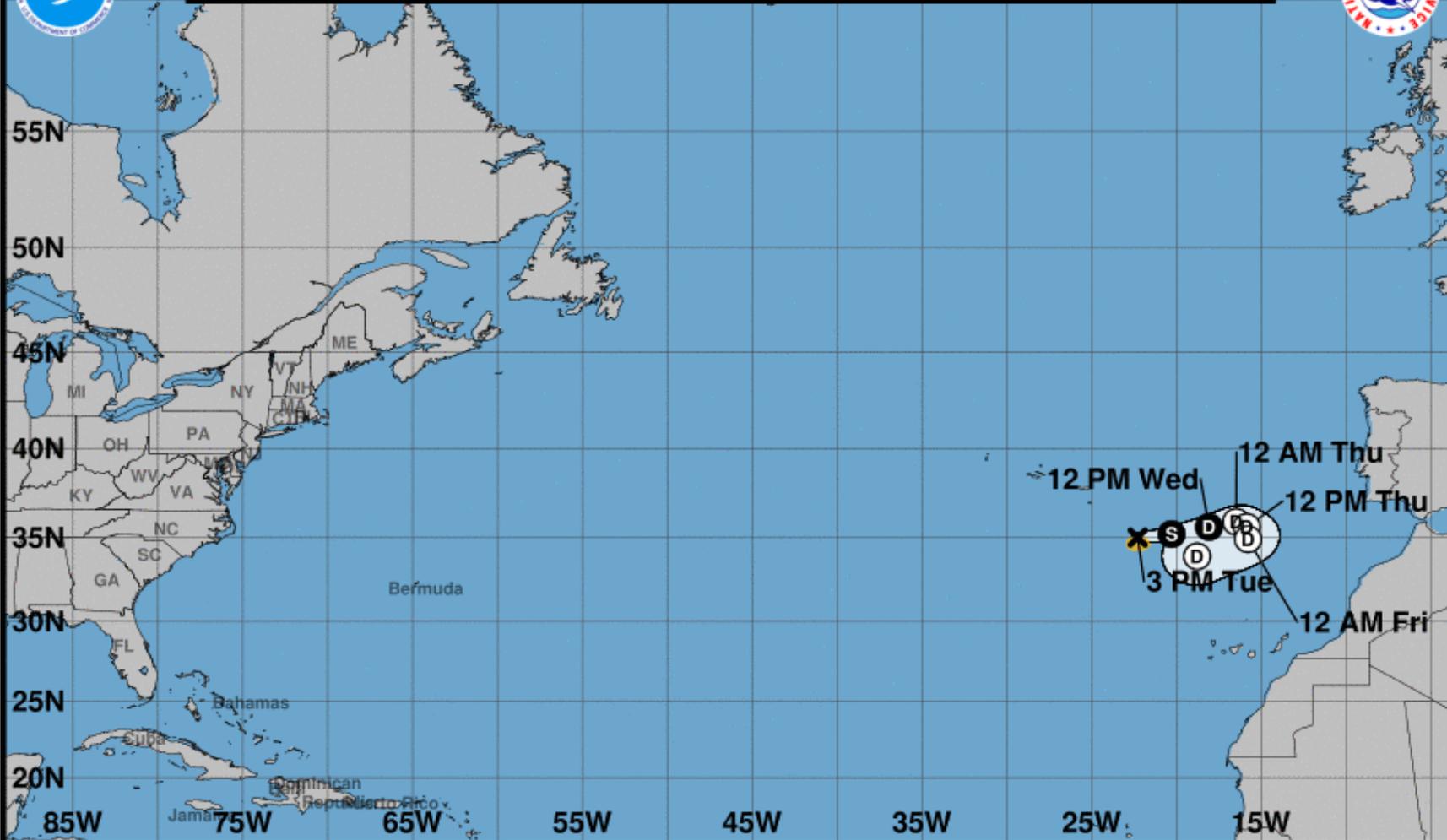
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



Tropical Storm Paulette

Tuesday September 22, 2020

3 PM GMT Advisory 42

NWS National Hurricane Center

Current information: x

Center location 35.0 N 22.3 W

Maximum sustained wind 40 mph

Movement E 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 Day 4-5

Watches:

Hurricane Trop Stm

Warnings:

Hurricane Trop Stm

Current wind extent:

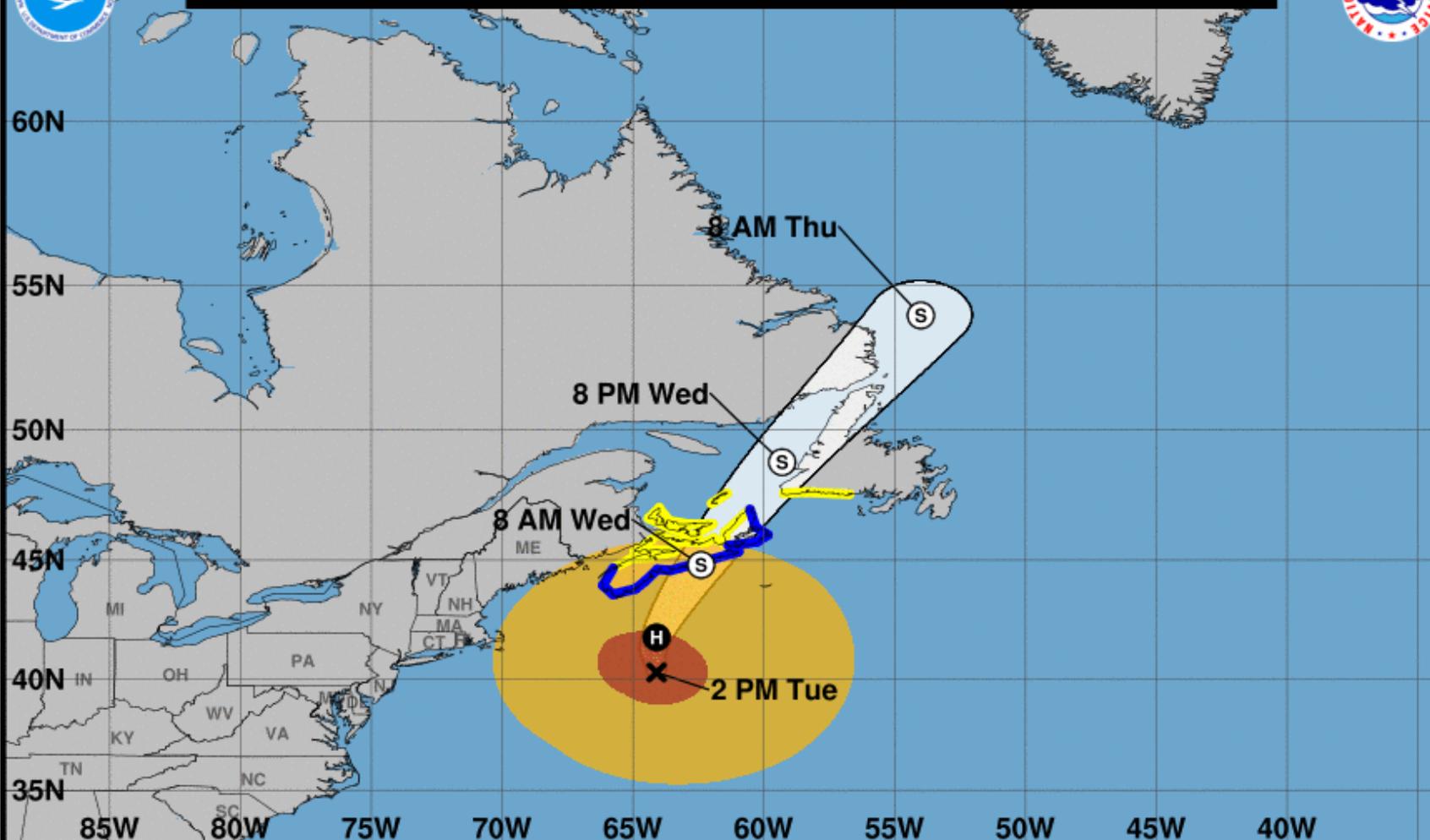
Hurricane Trop Stm



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



60N
55N
50N
45N
40N
35N



Hurricane Teddy

Tuesday September 22, 2020
2 PM AST Intermediate Advisory 41A
NWS National Hurricane Center

Current information: x

Center location 40.3 N 64.1 W
Maximum sustained wind 100 mph
Movement NNW at 16 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 Day 4-5

Watches:

Hurricane Trop Stm

Warnings:

Hurricane Trop Stm

Current wind extent:

Hurricane Trop Stm

85W

80W

75W

70W

65W

60W

55W

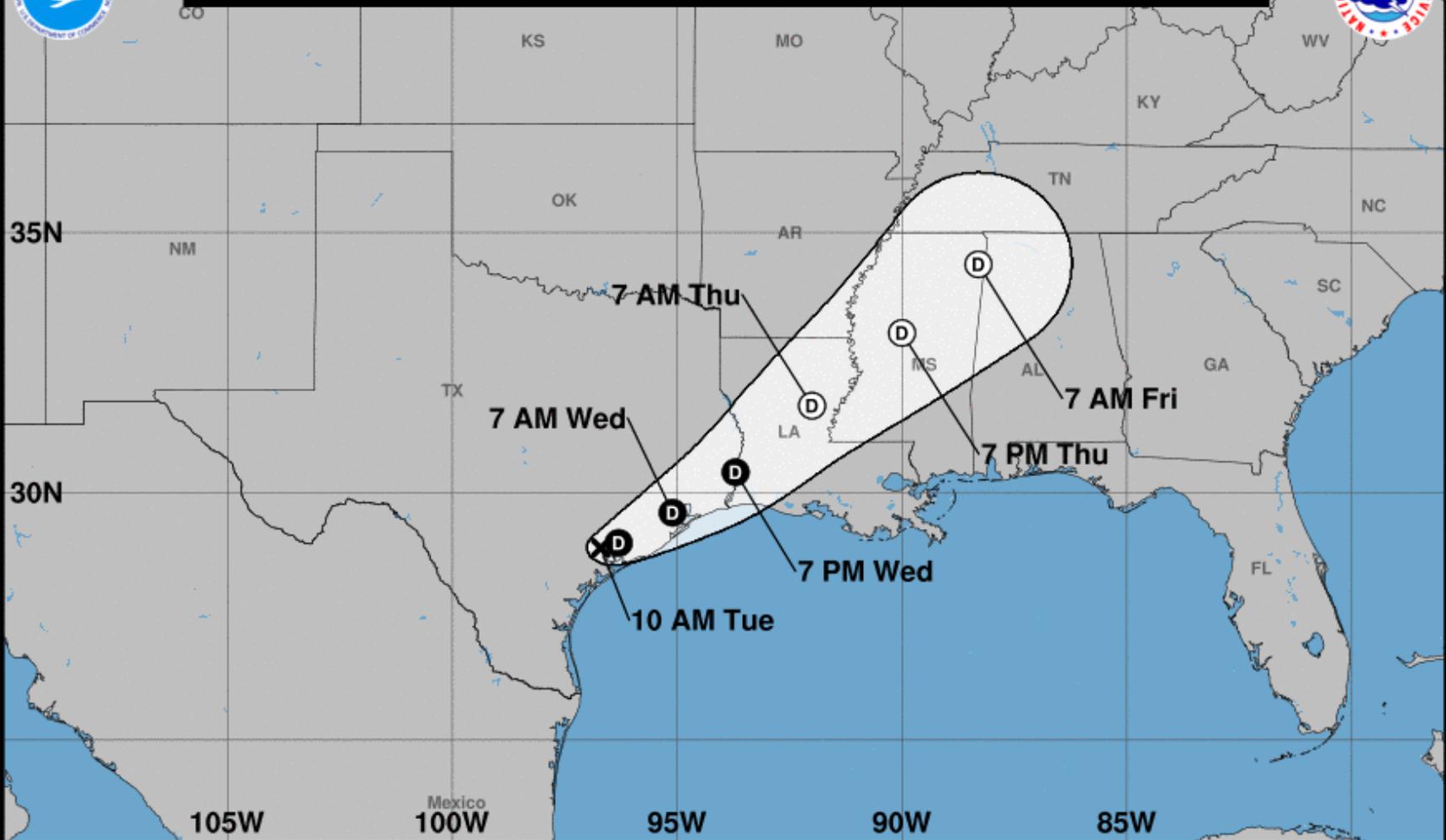
50W

45W

40W



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

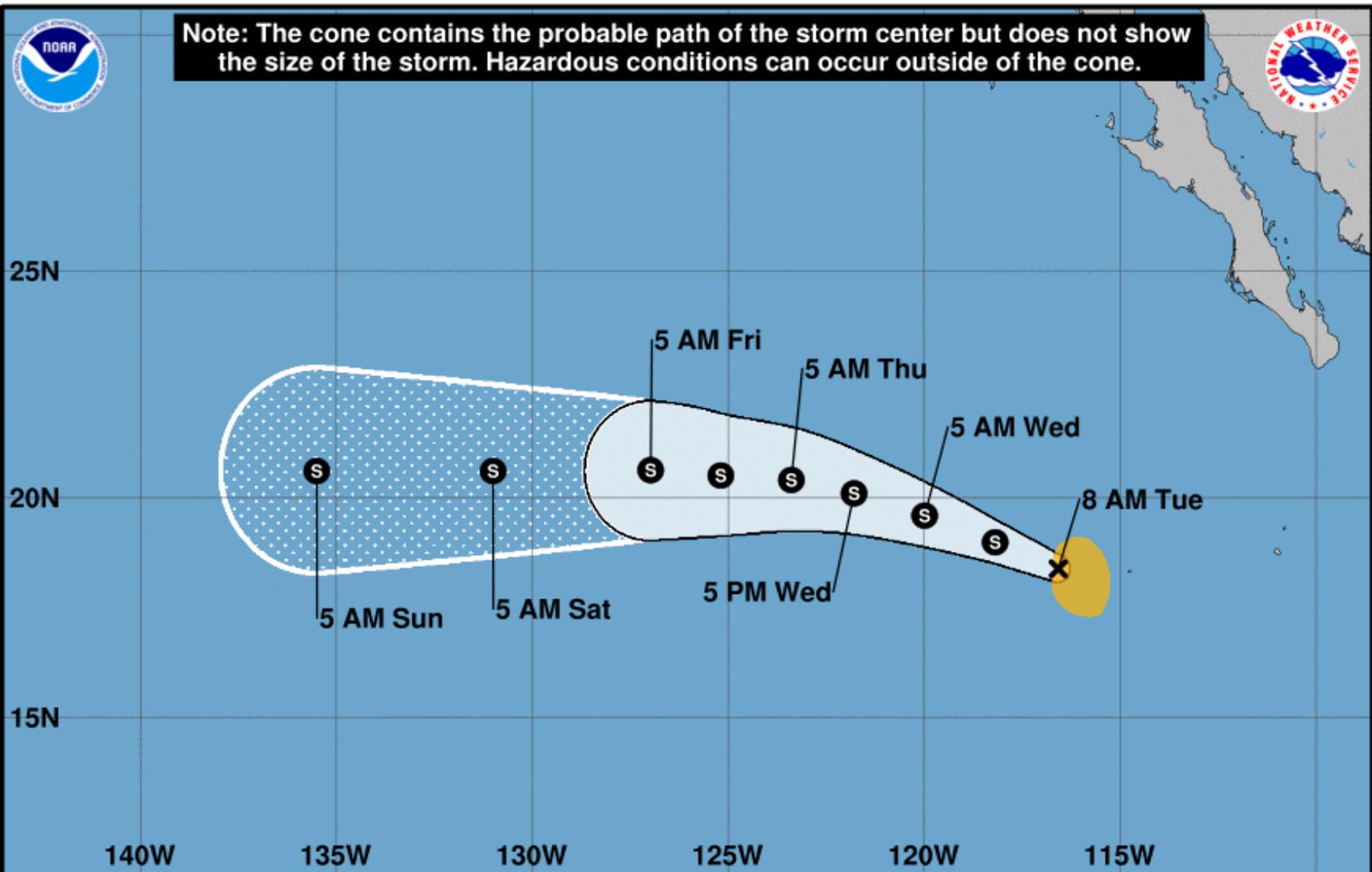


<p>Tropical Depression Beta Tuesday September 22, 2020 10 AM CDT Advisory 20 NWS National Hurricane Center</p>	<p>Current information: x Center location 28.9 N 96.7 W Maximum sustained wind 35 mph Movement NE at 2 mph</p>	<p>Forecast positions: ● Tropical Cyclone ○ Post/Potential TC Sustained winds: D < 39 mph S 39-73 mph H 74-110 mph M > 110 mph</p>
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<p>Potential track area:  Day 1-3  Day 4-5</p>	<p>Watches:  Hurricane  Trop Stm</p>	<p>Warnings:  Hurricane  Trop Stm</p>	<p>Current wind extent:  Hurricane  Trop Stm</p>
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Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

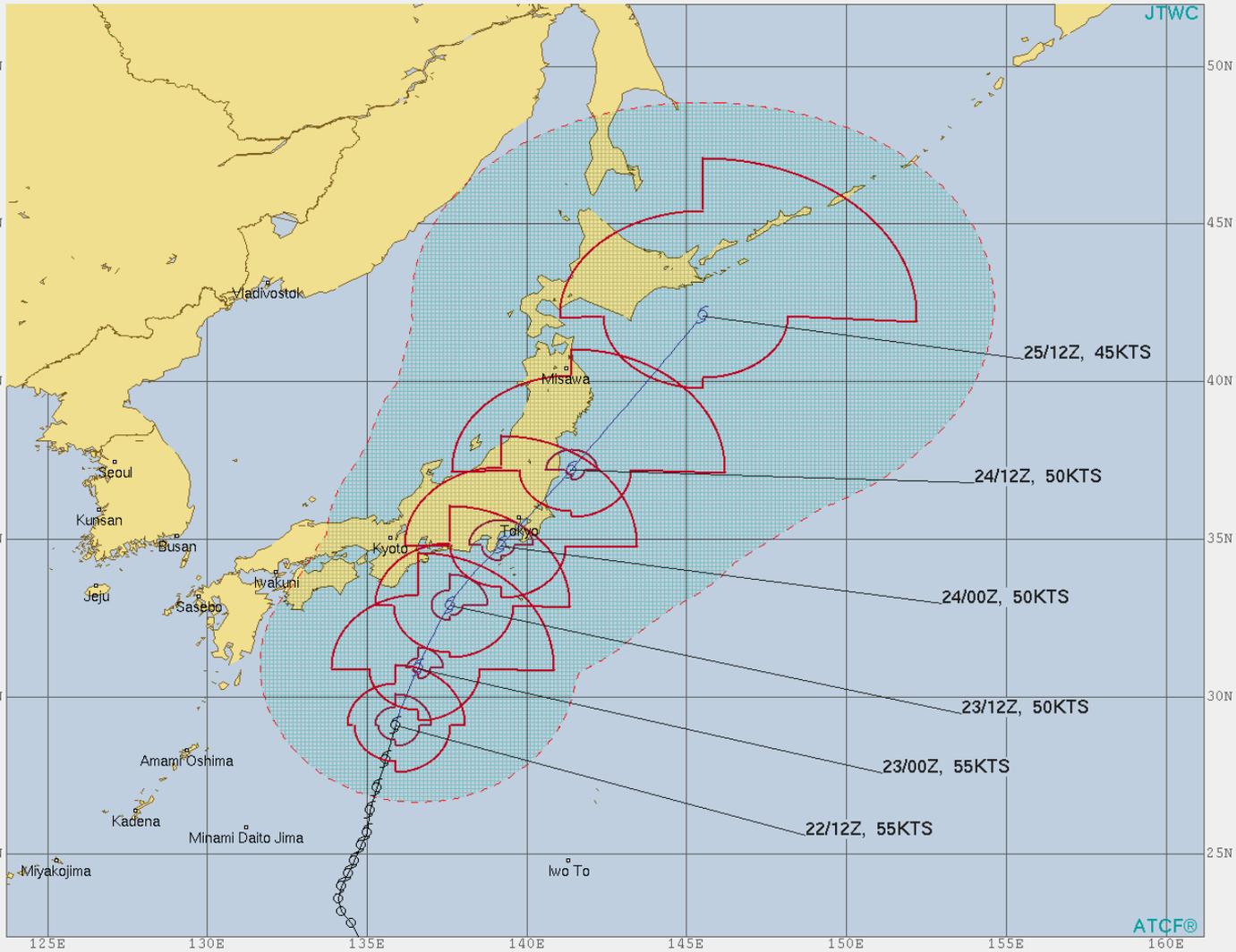


Tropical Storm Lowell
 Tuesday September 22, 2020
 8 AM PDT Advisory 8
 NWS National Hurricane Center

Current information: x
 Center location 18.4 N 116.6 W
 Maximum sustained wind 50 mph
 Movement WNW at 13 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:	Watches:	Warnings:	Current wind extent:
Day 1-3 Day 4-5	Hurricane Trop Stm	Hurricane Trop Stm	Hurricane Trop Stm



TROPICAL STORM 14W (DOLPHIN) WARNING #9
 WTPN31 PGTW 221500
 221200Z POSIT: NEAR 29.1N 135.9E
 MOVING 015 DEGREES TRUE AT 11 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 21 FEET
 22/12Z, WINDS 055 KTS, GUSTS TO 070 KTS
 23/00Z, WINDS 055 KTS, GUSTS TO 070 KTS
 23/12Z, WINDS 050 KTS, GUSTS TO 065 KTS
 24/00Z, WINDS 050 KTS, GUSTS TO 065 KTS
 24/12Z, WINDS 050 KTS, GUSTS TO 065 KTS
 25/12Z, WINDS 045 KTS, GUSTS TO 055 KTS

CPA TO:	NM	DTG
CHICHI JIMA	353	22/14Z
CAMP KENGUN	312	23/01Z
SASEBO	376	23/02Z
IWAKUNI	275	23/08Z
R2S2	194	23/19Z
CAMP FUJI	30	24/01Z
ATSUGI	17	24/03Z
CAMP ZAMA	17	24/03Z
YOKOSUKA	4	24/03Z
YOKOTA AB	28	24/03Z
NARITA AIRPORT	12	24/06Z
SHARIKI	167	24/23Z
MISAWA	115	25/00Z

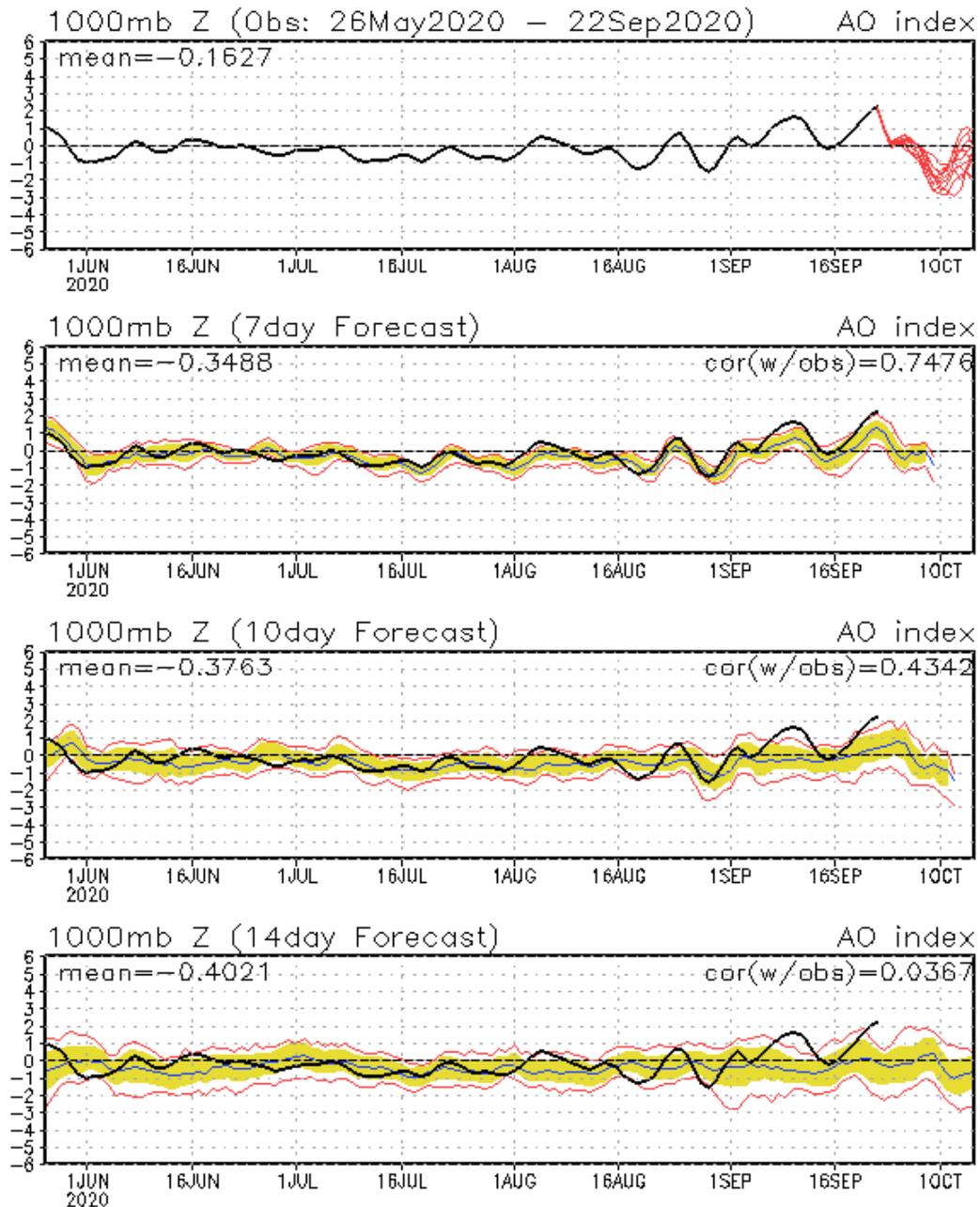
BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
CHICHI JIMA	291	354	0
IWAKUNI	147	355	0
IWO TO	313	387	0
OKIDAITO JIMA	041	373	0
MINAMIDAITO JIMA	051	319	0
CAMP KENGUN	129	340	0

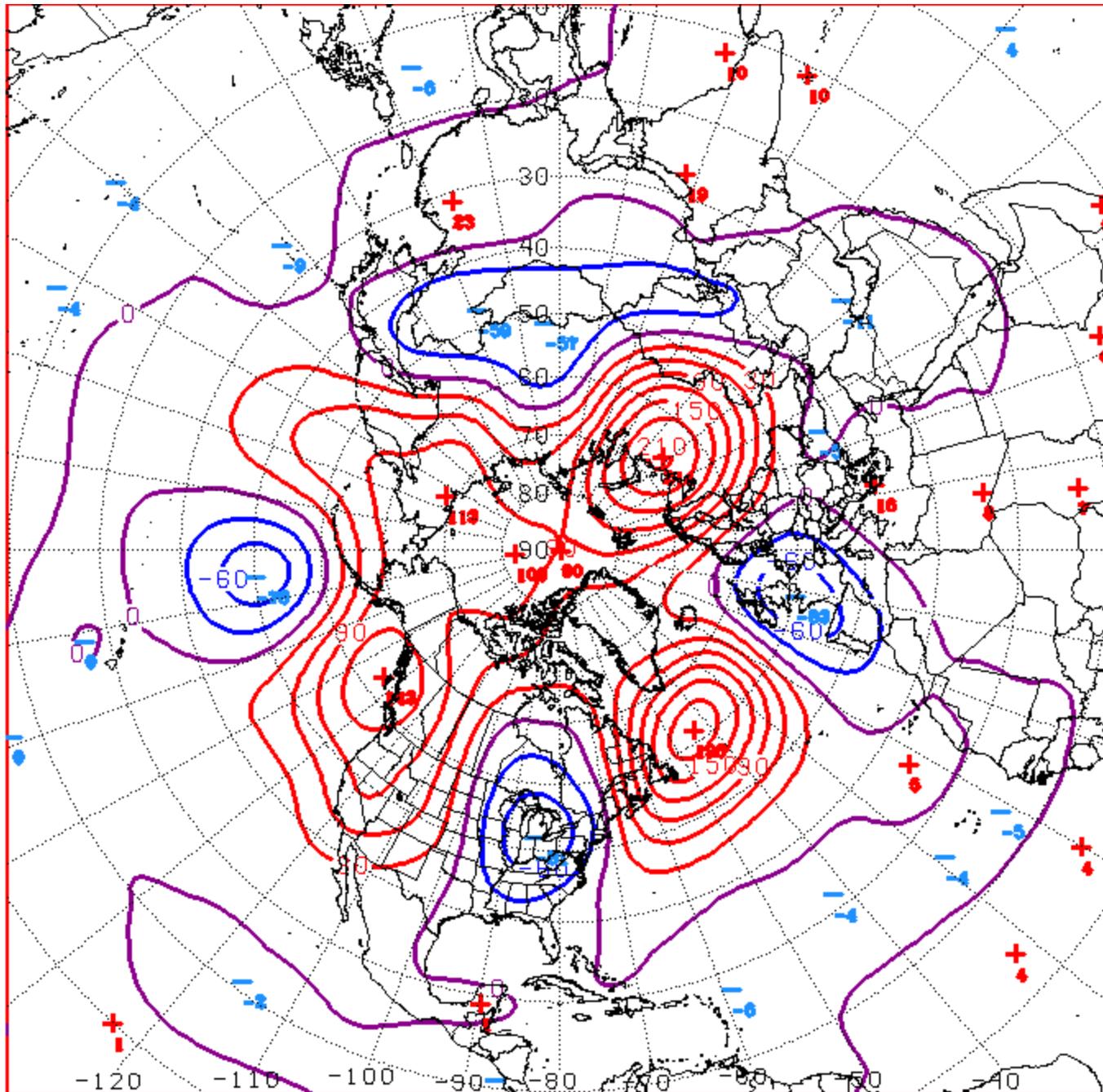
○ ○ LESS THAN 34 KNOTS
 ○ ○ 34-63 KNOTS
 ○ ○ MORE THAN 63 KNOTS
 — FORECAST CYCLONE TRACK
 - - - PAST CYCLONE TRACK
 [Shaded Area] DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
 [Concentric Circles] FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)



Connections to U.S. Impacts

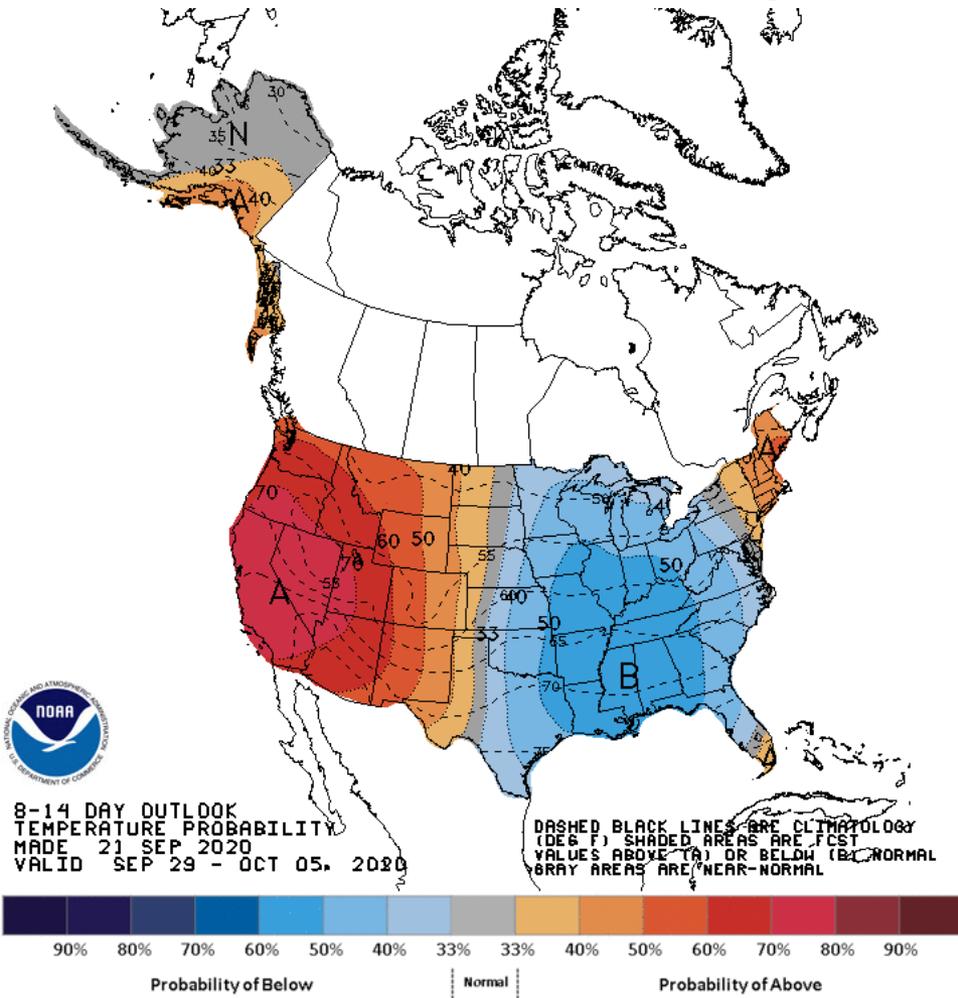
AO: Observed & ENSM forecasts



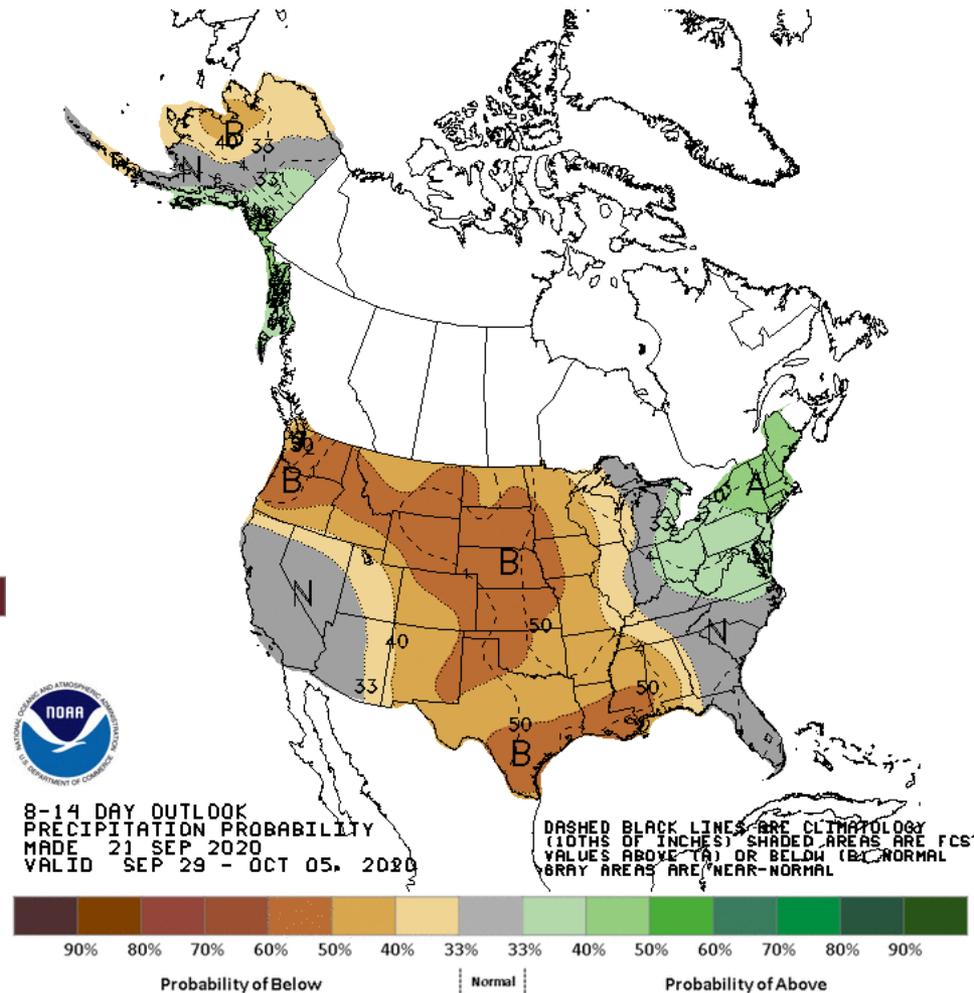


D+11 500 MB ANOMALIES FROM 00Z ECMM
 CPC MAP MADE SEP 22 2020 1136 UTC CNTD OCT 03 2020

Week 2 – Temperature and Precipitation



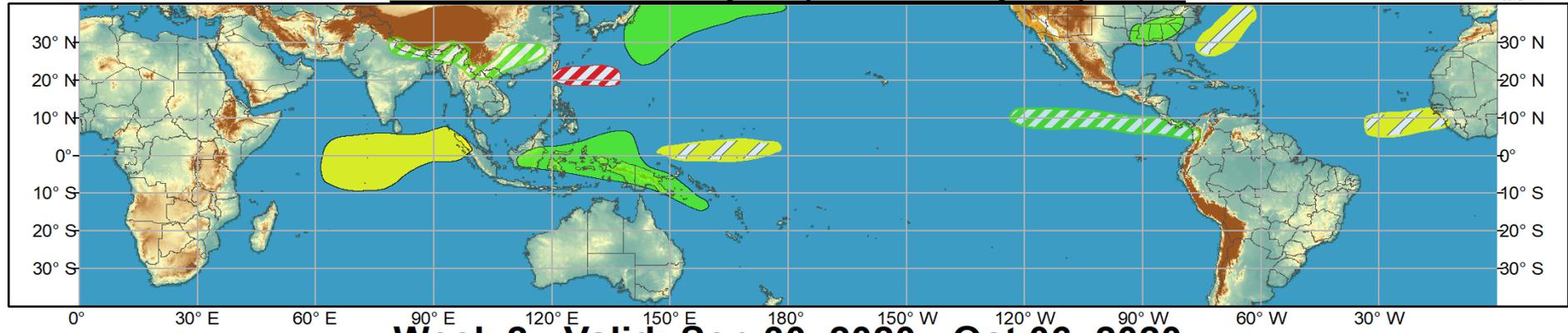
Forecast increased in its amplitude since yesterday, so these probabilities are likely to be generally higher today.





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Produced: 09/22/2020
Forecaster: Harnos

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