

Global Tropics Hazards And Benefits Outlook

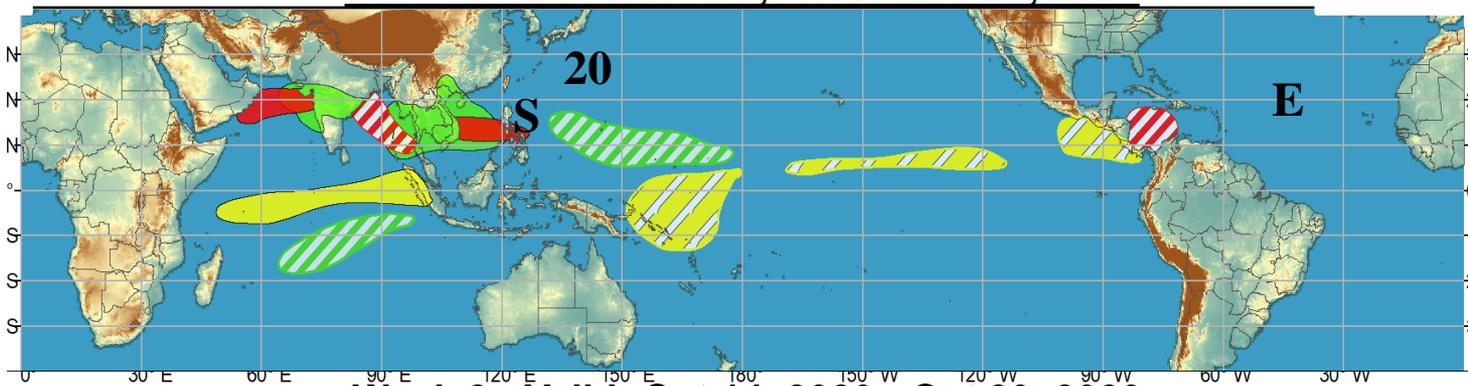
10/20/2020

Nick Novella

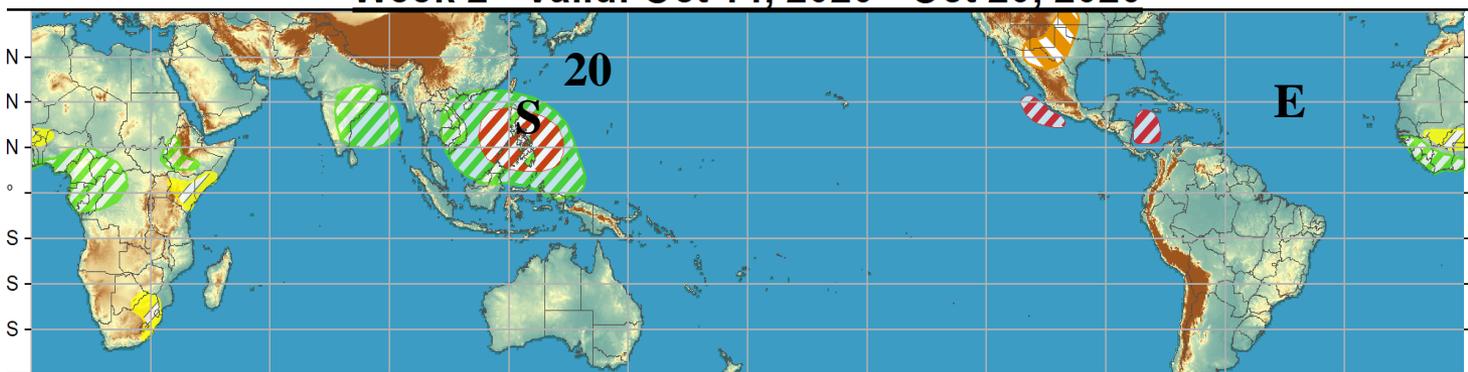
Outline

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

Week 1 - Valid: Oct 14, 2020 - Oct 20, 2020

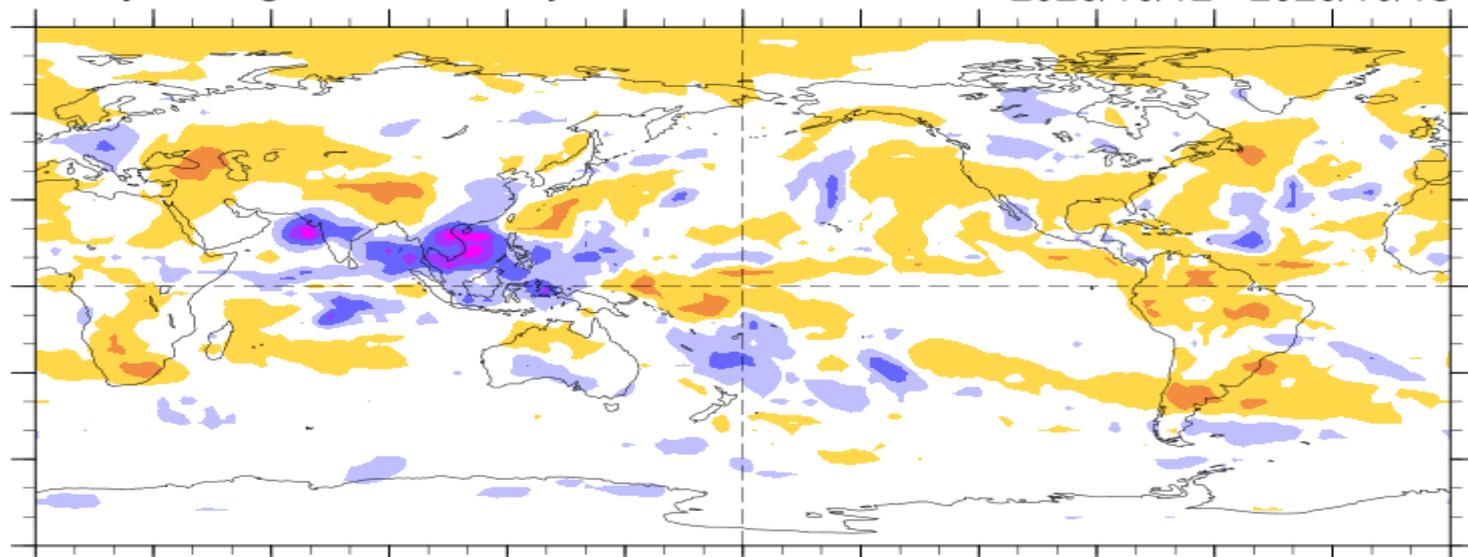


Week 2 - Valid: Oct 14, 2020 - Oct 20, 2020



7-Day Average OLR Anomaly

2020/10/12 - 2020/10/18



Outlook Review

TS Saudel

10/19-present
Peak: 45 kt winds

TS Epsilon

10/19-present
Peak: 50 kt winds

TD 20

10/20-present
Peak: 30kts

Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (October 8, 2020 Update)

next update on the 12th of Nov.

- ENSO Alert System Status: [La Niña Advisory](#)
- La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~85% chance) and into spring 2021 (~60% chance during February-April).

MJO and other subseasonal tropical variability:

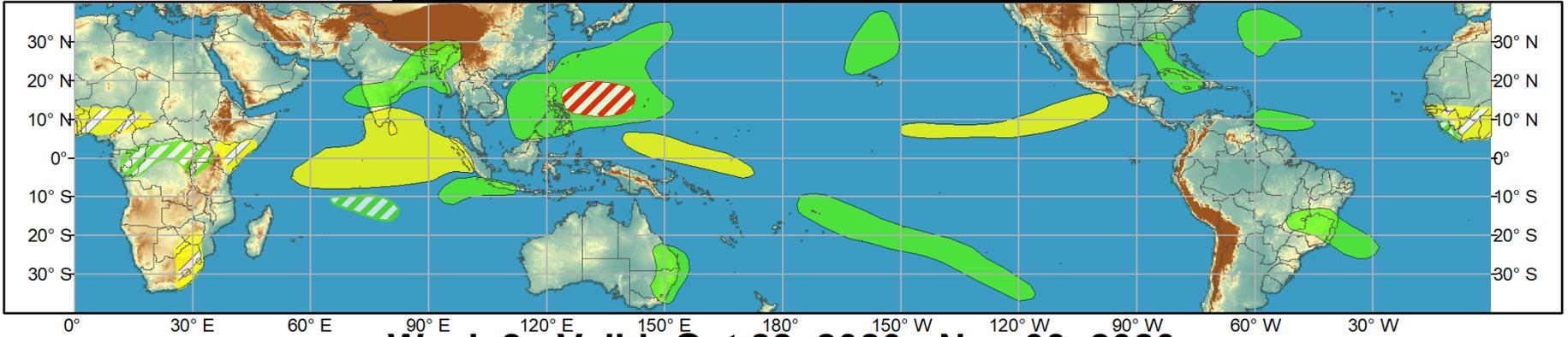
- The MJO has shown signs of strengthening as it has begun to propagate eastward over the Maritime Continent during the last week.
- Dynamical models indicate a continued eastward propagation of the MJO with varying degrees of amplitude and phase progression. Destructive interference between the MJO and the strengthening La Nina base state remains a concern, increasing uncertainty over the next two weeks.
- If the MJO does propagate eastward as fast as some ensemble members suggest, increased tropical cyclone (TC) activity is likely over the East Pacific and Caribbean (as tools and guidance indicate late in week-2). However, if the signal is slow to propagate, continued TC activity is anticipated over the West Pacific.



Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Oct 21, 2020 - Oct 27, 2020



Week 2 - Valid: Oct 28, 2020 - Nov 03, 2020



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.

Produced: 10/20/2020

Forecaster: Novella

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

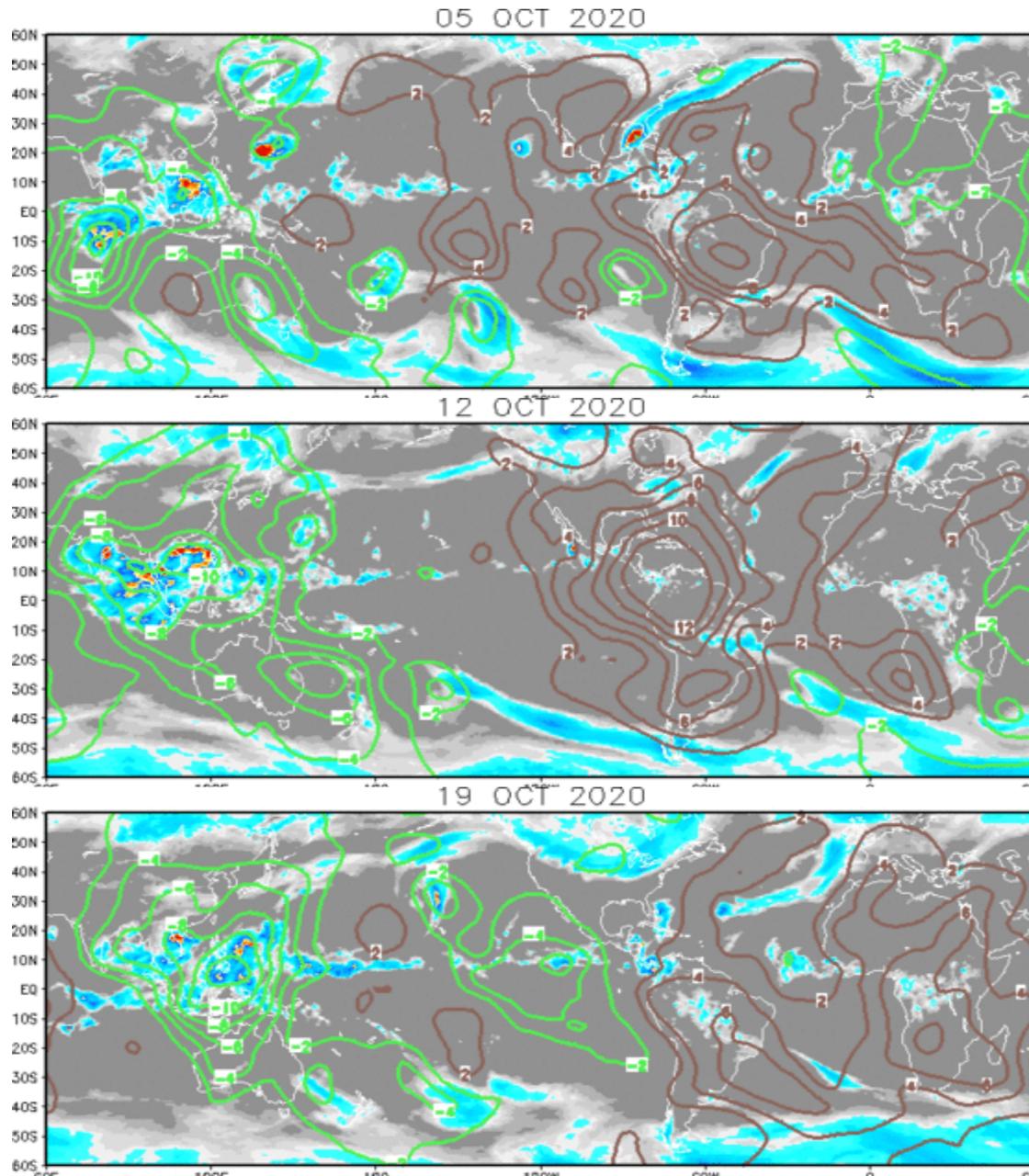
Green: Enhanced Divergence

Brown: Enhanced Convergence

Little to no propagation of the pattern, and if anything maybe it shifts westward. Little coherence over the Tropical Pacific.

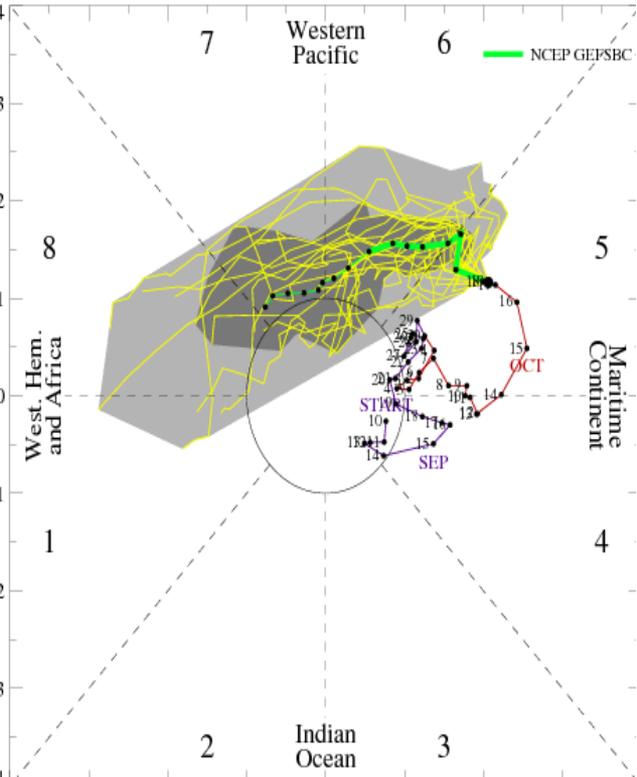
Increased organization, but still little to no large-scale movement.

Suppressed phase shifted eastward, becoming less wave-1 like in recent days.



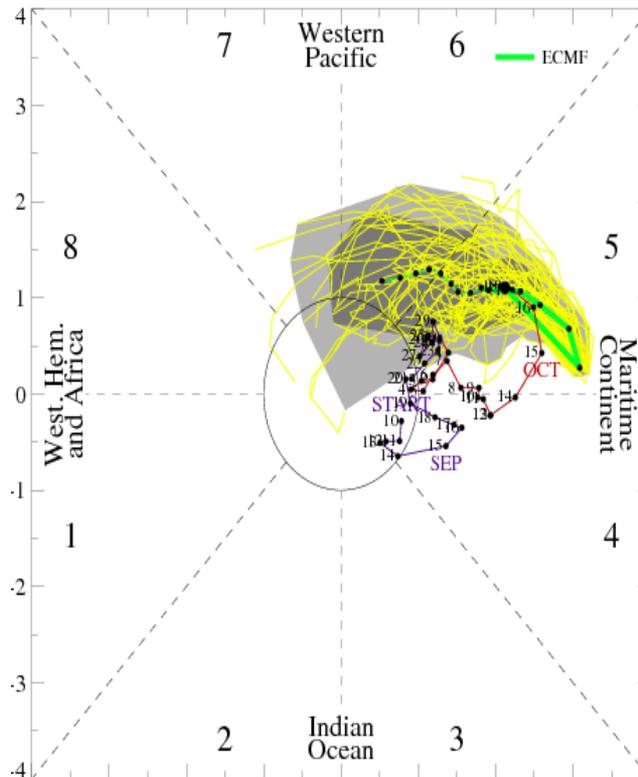
MJO Observation/Forecast

[RMM1, RMM2] forecast for Oct-20-2020 to Nov-03-2020



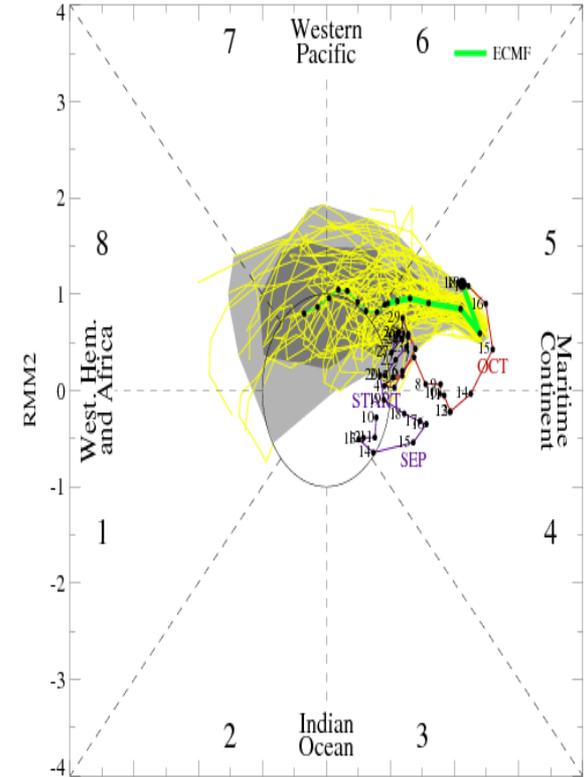
GEFS

MJO Index Forecast for 20 Oct 2020 - 03 Nov 2020



ECMWF

MJO Index Forecast for 20 Oct 2020 - 03 Nov 2020

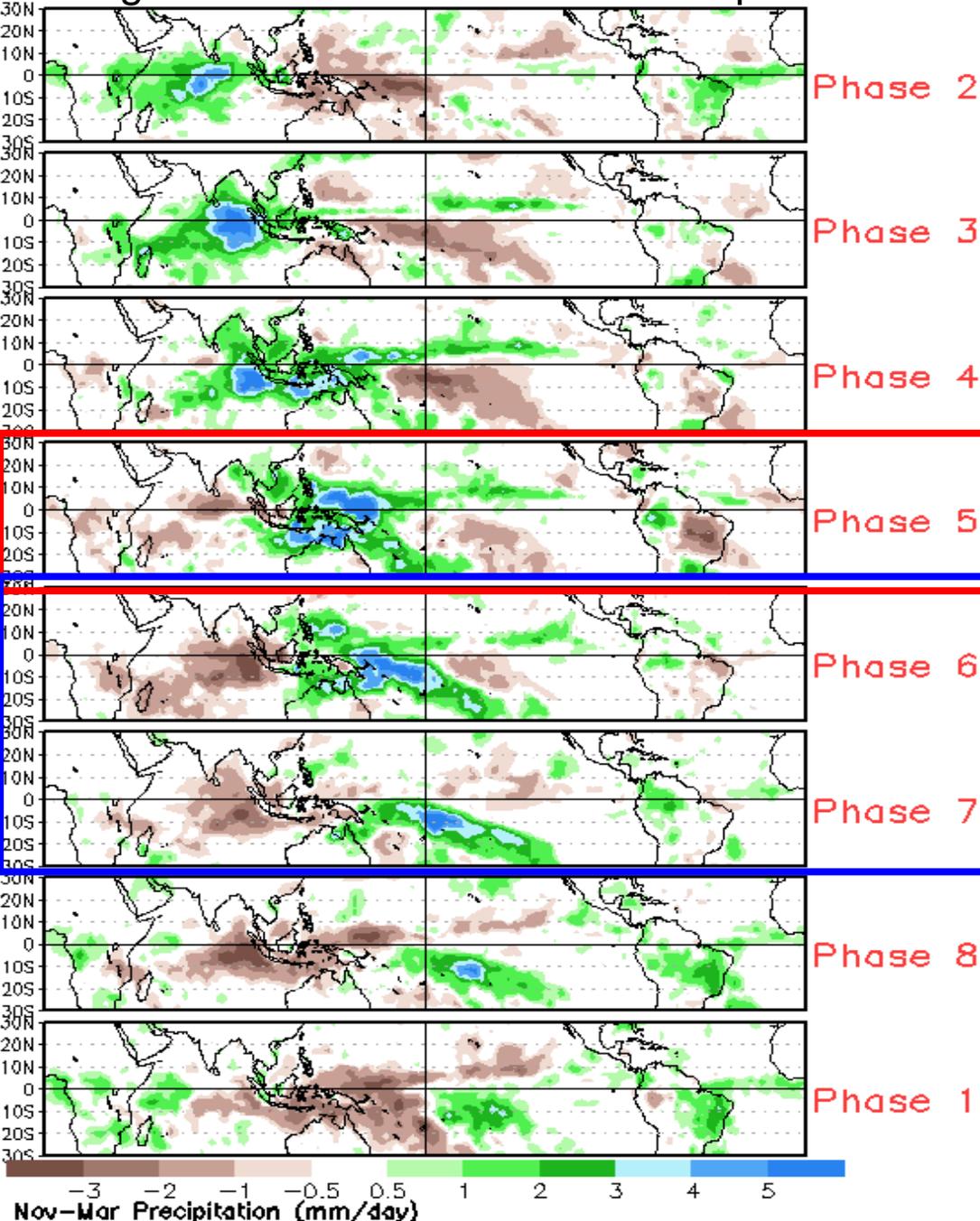


Canadian

Dynamical models continue to propagate the intraseasonal signal eastward over the next two weeks.

Similar to the RMM forecasts last week, there is a large degree of spread with a faster progression of the signal (esp CFS) compared to the ECMWF and Canadian which depict westward moving variability in the near term.

Average Conditions when the MJO is present



Week-1: Phase 5

Week-2: Phase 6/7

Wetter conditions can be expected in the East Pacific and Americas in later phases.

CAVEAT: These panels are representative of robust MJO events.

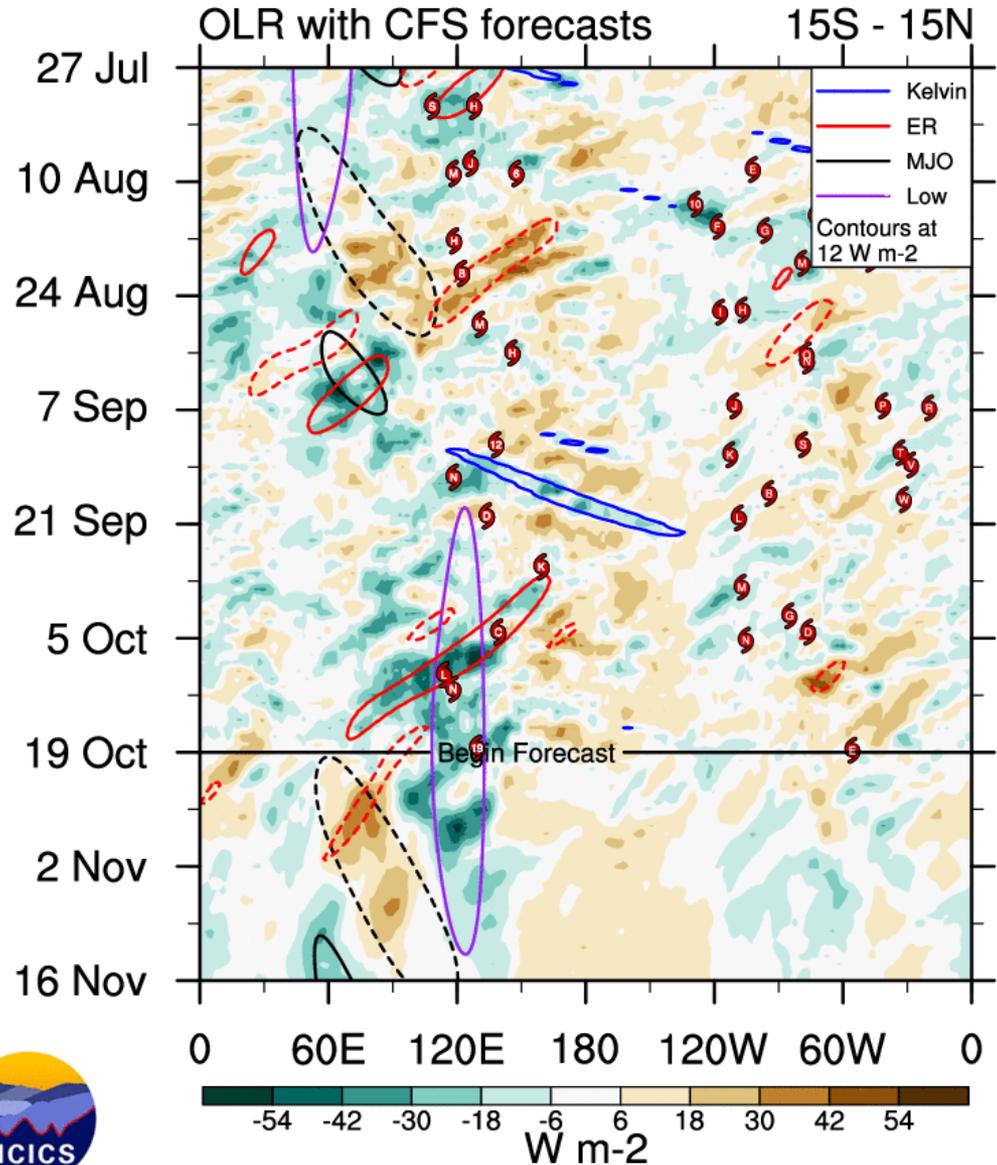
Rosby wave tied to TC activity in last several weeks.

Though not analyzed in this latitude average, the **low frequency state** (La Niña) continues to suppress convection west of the Date Line.

A weakness in the suppressed convective signal is apparent near the Date Line in the CFS forecast, with more enhanced convection east of 120W later in the period.



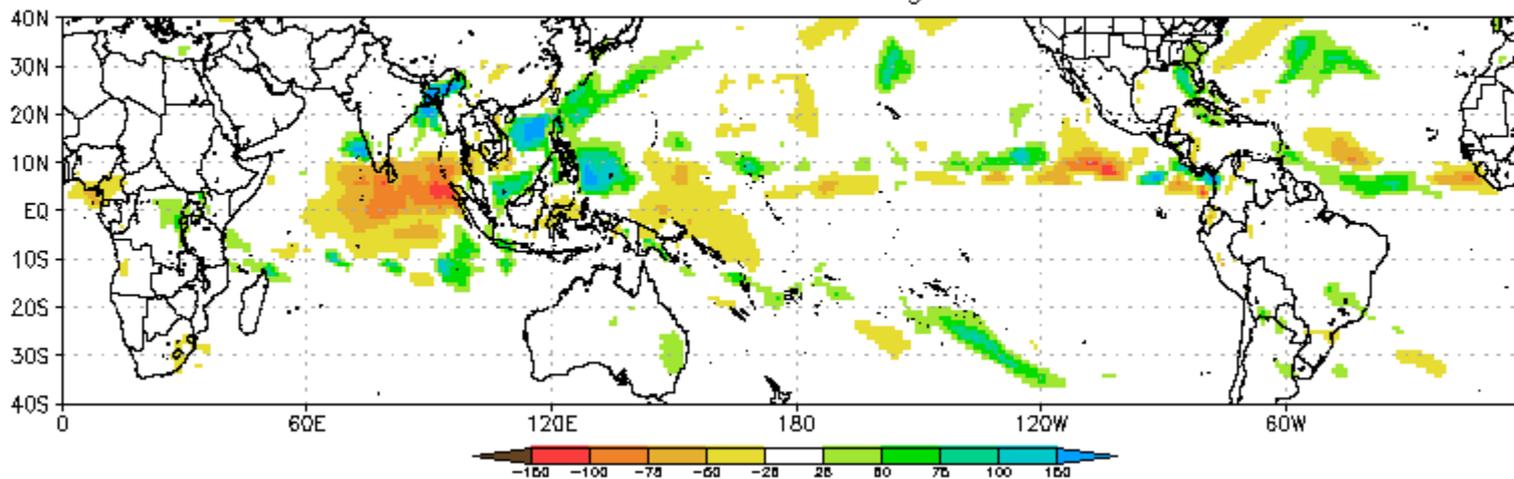
ncics.org/mjo



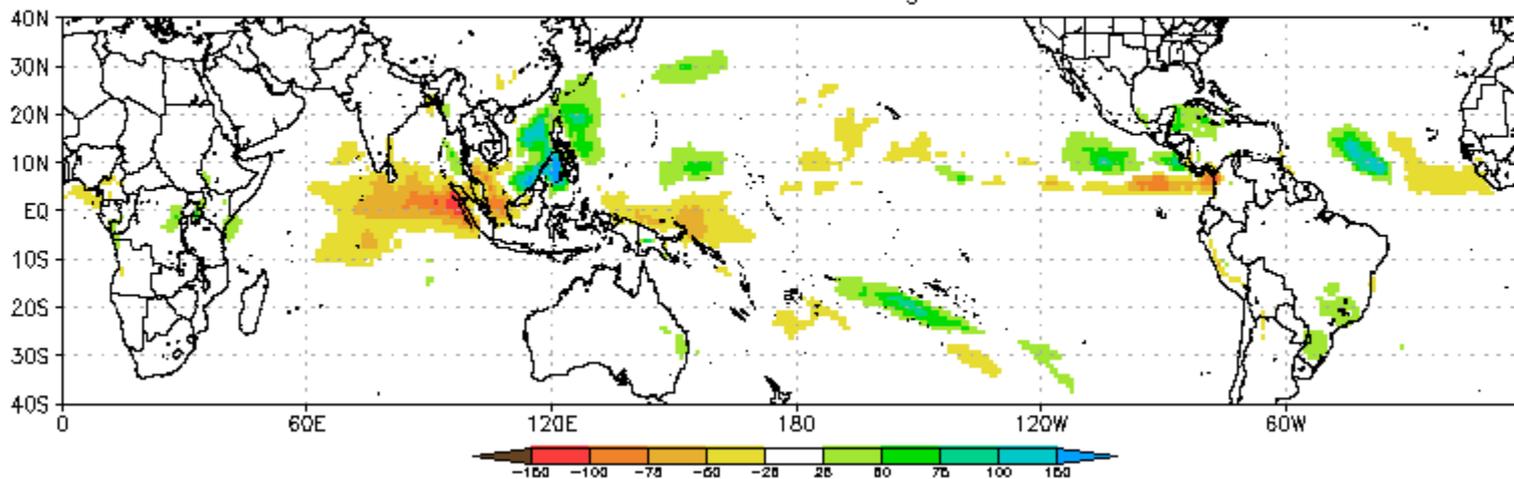
Tue 2020-10-20 15:18 UTC

Carl Schreck
carl_schreck@ncsu.edu

CFS Precipitation Anomalies (mm) Issued 19Oct2020
Week-1 Forecast Ending 27Oct2020

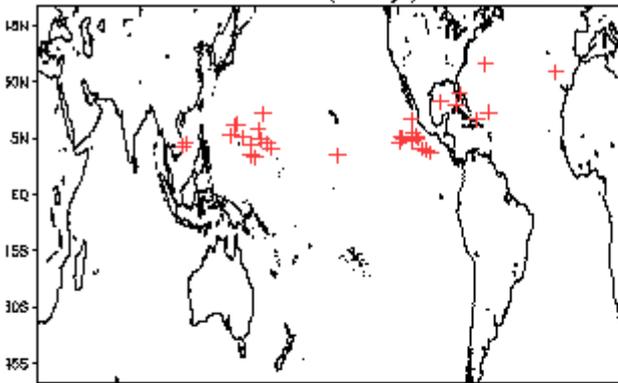


CFS Precipitation Anomalies (mm) Issued 19Oct2020
Week-2 Forecast Ending 03Nov2020

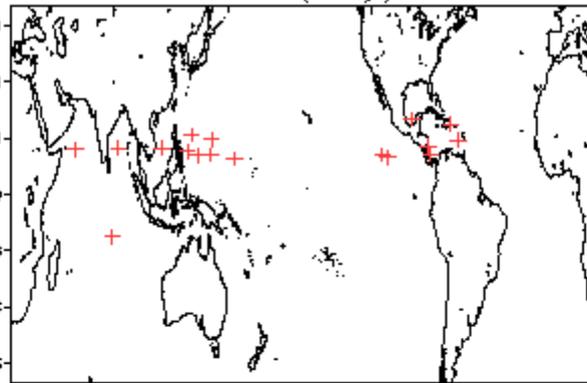


October Tropical Storm Formation by MJO phase

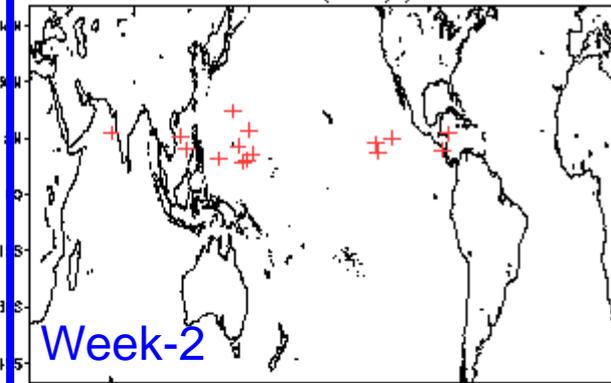
Phase 1 (94 days) 34 storms



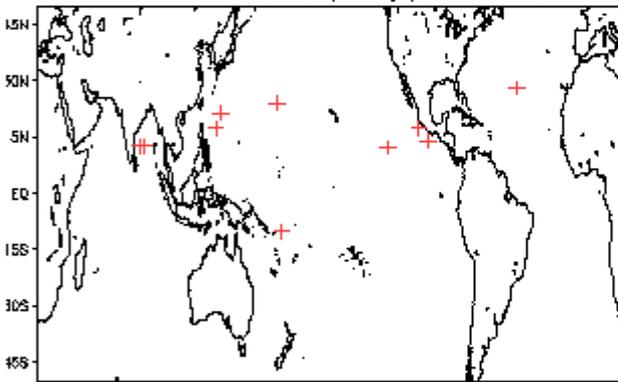
Phase 4 (85 days) 18 storms



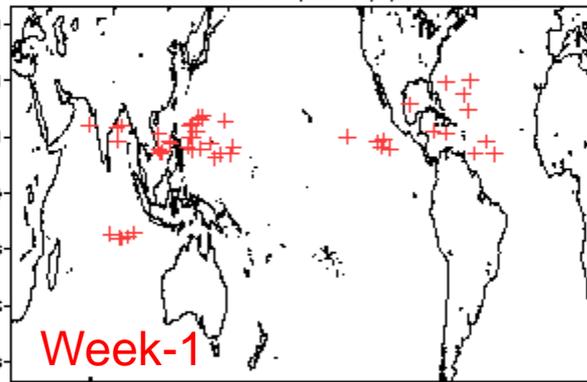
Phase 7 (49 days) 16 storms



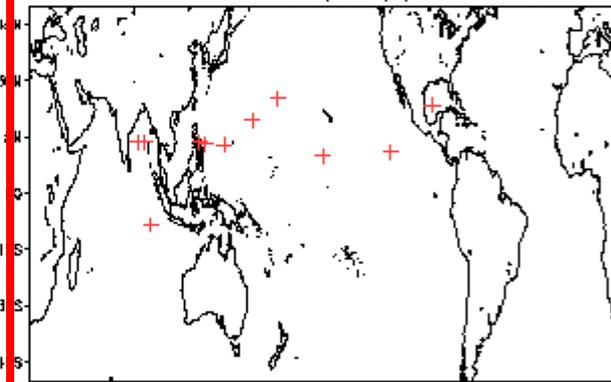
Phase 2 (75 days) 11 storms



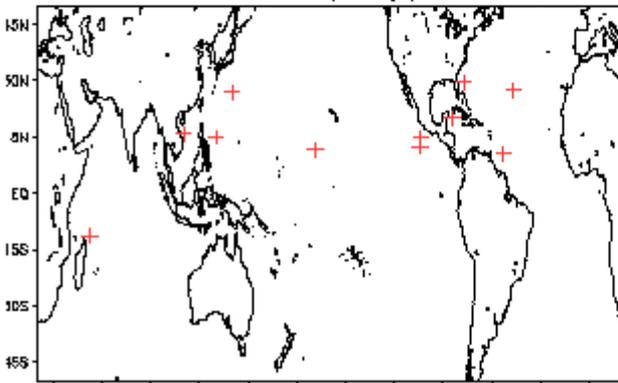
Phase 5 (133 days) 48 storms



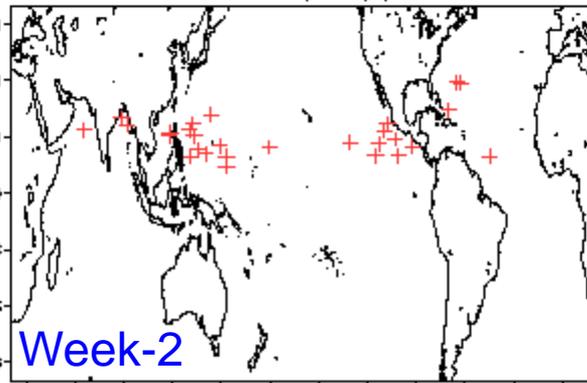
Phase 8 (66 days) 12 storms



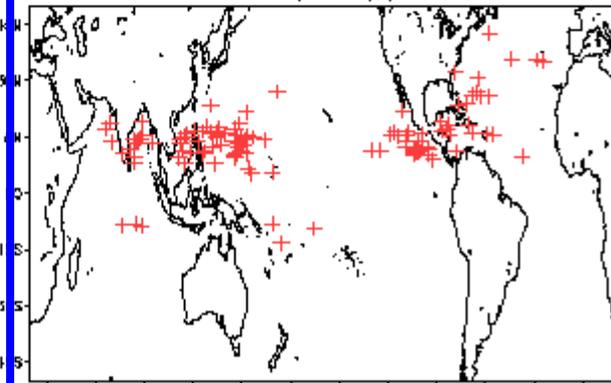
Phase 3 (41 days) 12 storms

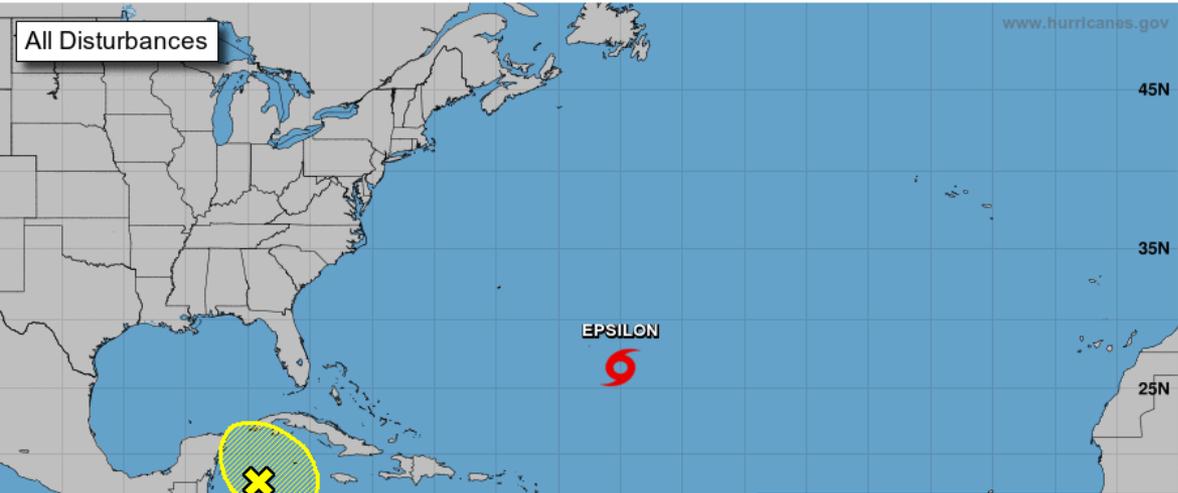


Phase 6 (78 days) 30 storms



Null (422 days) 119 storms





www.hurricanes.gov

2:00 pm EDT
Tue Oct 20 2020



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



← Central Pacific

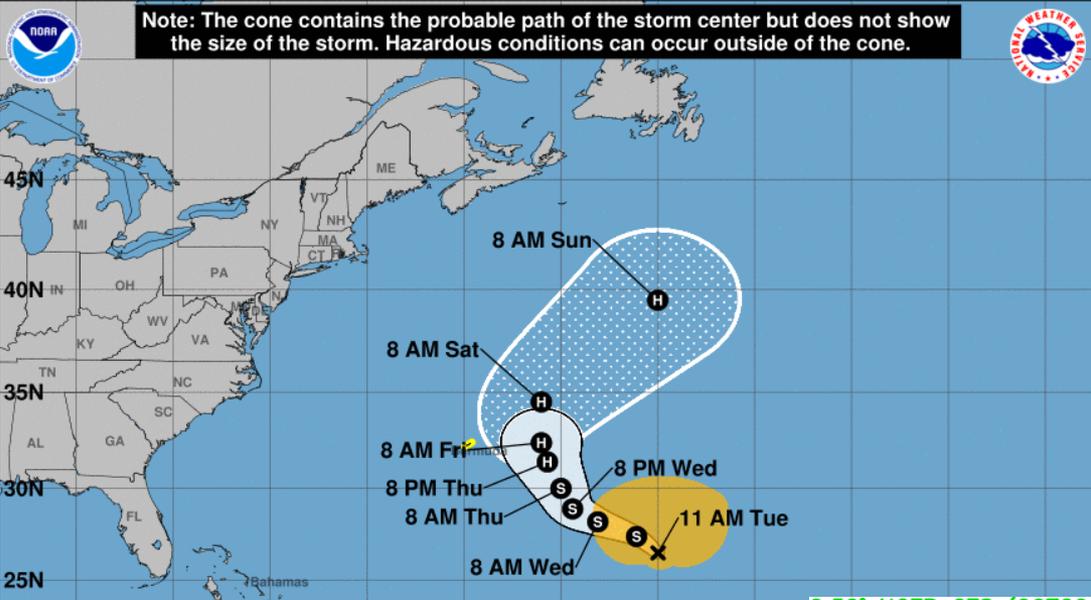


Current Disturbances and Five-Day Cyclone Formation Chance:
 Tropical or Sub-Tropical Cyclone: ○ Depression ○ Storm ○ Hurricane
 ⊗ Post-Tropical Cyclone or Remnants

11:00 am PDT
Tue Oct 20 2020

www.hurricanes.gov

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



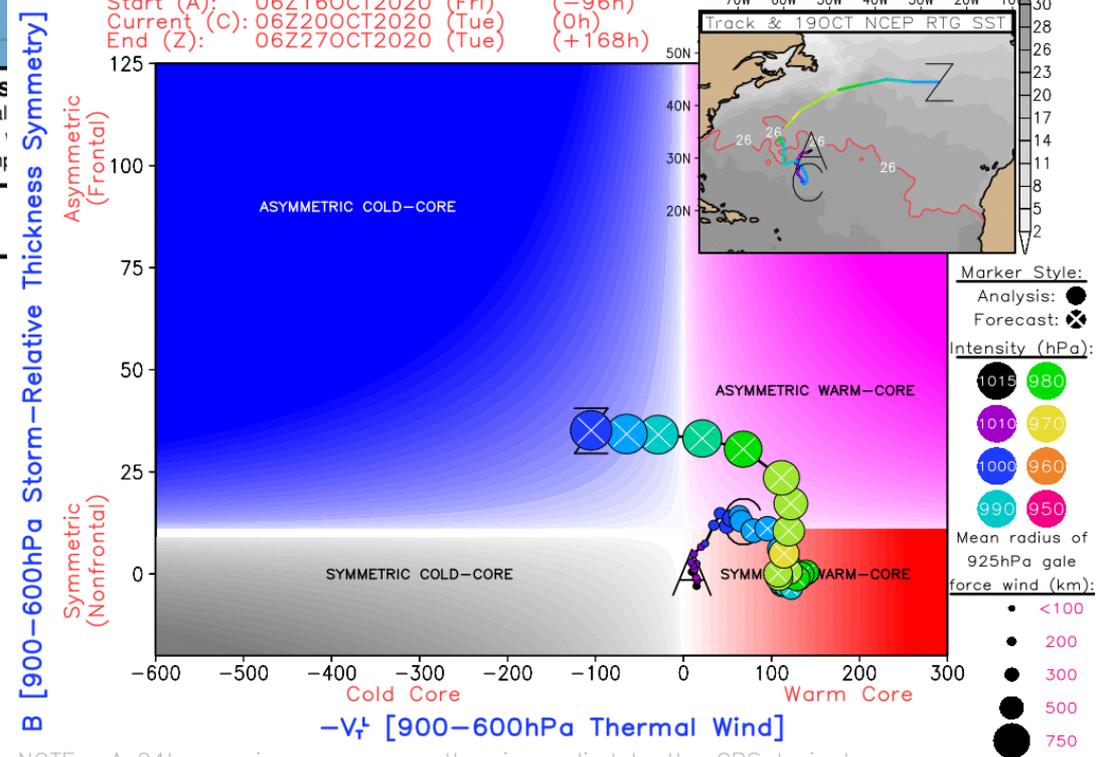
Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

Tropical Storm Epsilon Tuesday October 20, 2020 11 AM AST Advisory 6 NWS National Hurricane Center	Current information: x Center location 26.5 N 55.0 W Maximum sustained wind 50 mph Movement NNW at 8 mph	Forecast ● Tropical Sustained S 39-73 mph
Potential track area: Day 1-3	Watches: Hurricane (Pink) Trop Stm (Yellow)	Warnings: Hurricane (Red) Trop Stm (Blue)

TS Watch issued for Bermuda

0.50° NCEP GFS (06Z20OCT2020 run) Cyclone #7 (Existing cyclone)

Start (A): 06Z16OCT2020 (Fri) (-96h)
Current (C): 06Z20OCT2020 (Tue) (0h)
End (Z): 06Z27OCT2020 (Tue) (+168h)



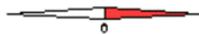
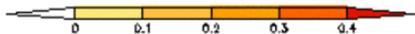
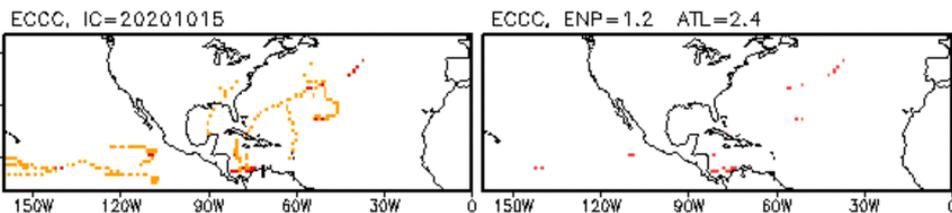
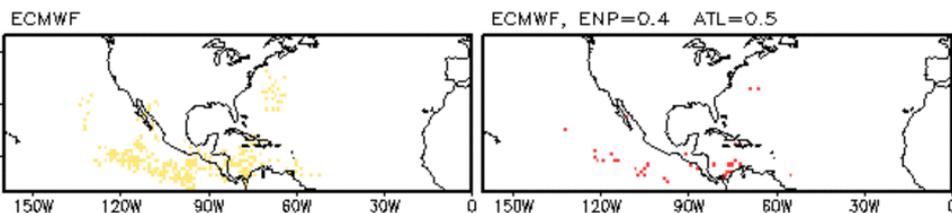
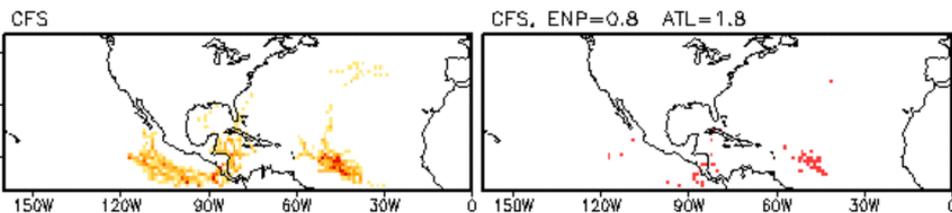
NOTE: A 24hr running mean smoother is applied to the CPS trajectory.

Storm Track Density Distribution, IC=20201019

Week 2 Forecast: 1028-1103

TRACK DENSITY

FILTERED

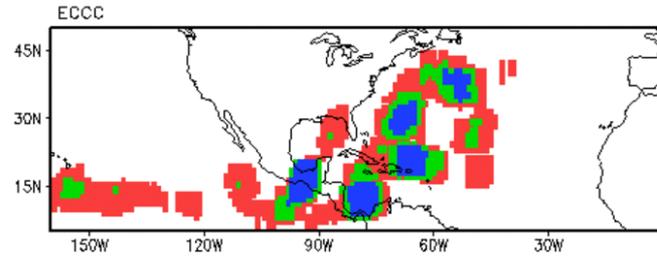
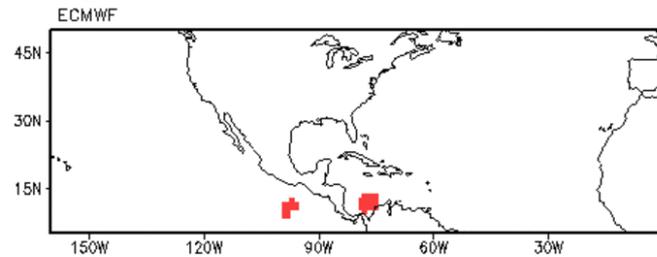
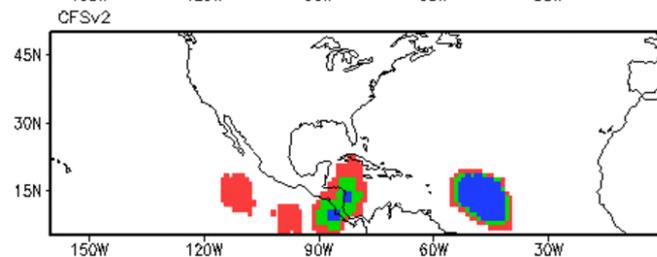
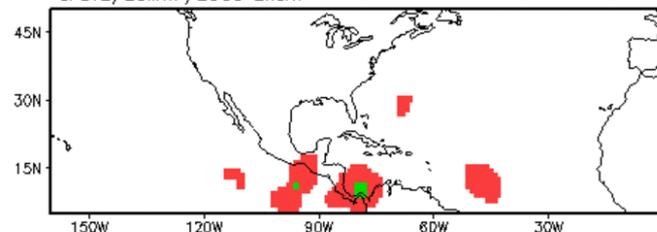


Storm Track Probabilities, IC=20201019

Week 2: 1028 - 1103

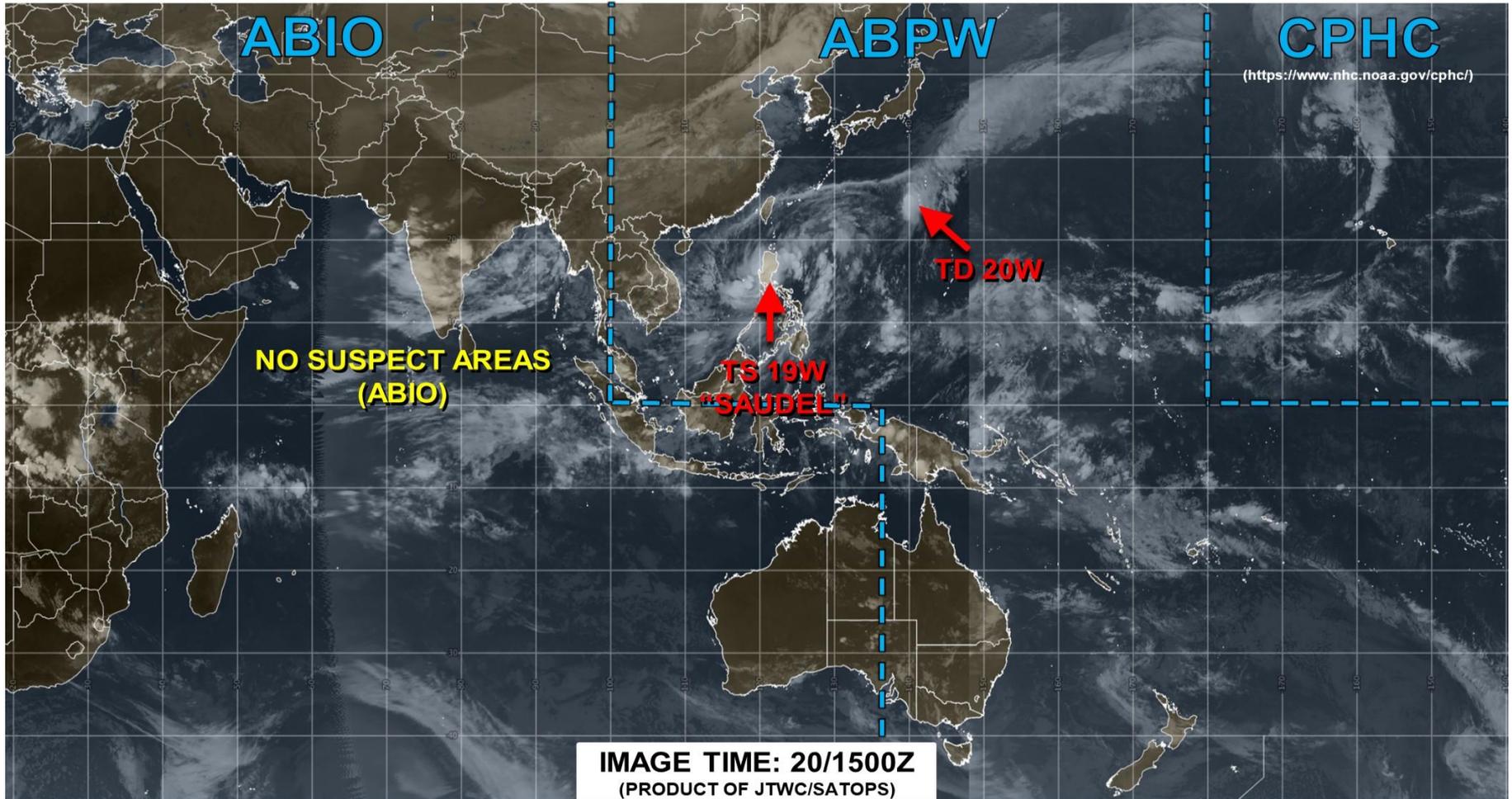
CFSv2/ECMWF/ECCC Ensm

20% 40% 60%





JOINT TYPHOON WARNING CENTER



LOW

TC development unlikely within 24 hours

MEDIUM

TC development likely, but expected to occur beyond 24 hours

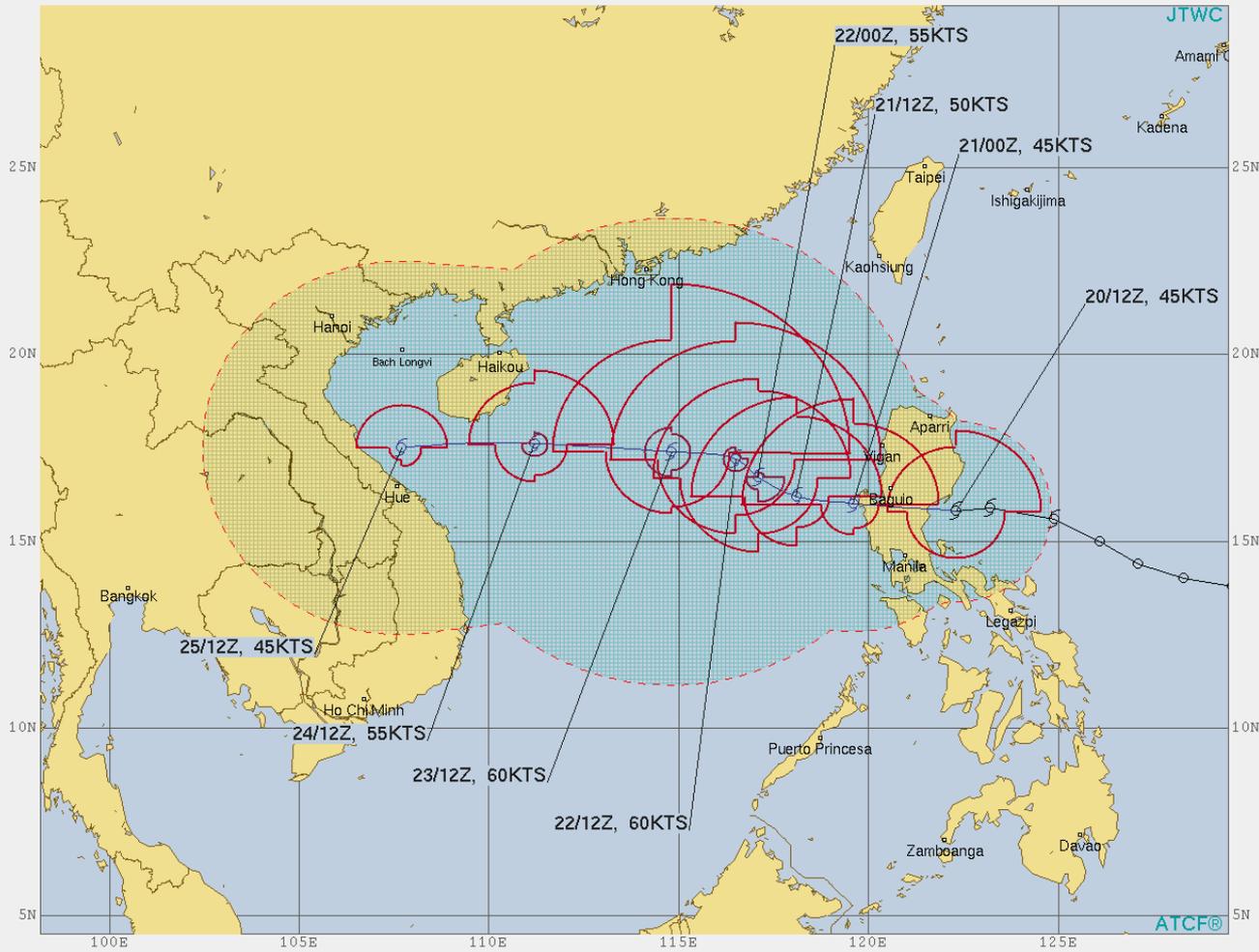
HIGH

TC development likely within 24 hours (Reference TCFA)

SUB TROPICAL

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

 Tropical Cyclone (Reference Warning)



TROPICAL STORM 19W (SAUDEL) WARNING #7
 WTPN31 PGTW 201500
 201200Z POSIT: NEAR 15.8N 122.3E
 MOVING 265 DEGREES TRUE AT 09 KNOTS
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 18 FEET
 20/12Z, WINDS 045 KTS, GUSTS TO 055 KTS
 21/00Z, WINDS 045 KTS, GUSTS TO 055 KTS
 21/12Z, WINDS 050 KTS, GUSTS TO 065 KTS
 22/00Z, WINDS 055 KTS, GUSTS TO 070 KTS
 22/12Z, WINDS 060 KTS, GUSTS TO 075 KTS
 23/12Z, WINDS 060 KTS, GUSTS TO 075 KTS
 24/12Z, WINDS 055 KTS, GUSTS TO 070 KTS
 25/12Z, WINDS 045 KTS, GUSTS TO 055 KTS

CPA TO:	NM	DTG
MANILA	74	20/17Z
CLARK_AB	41	20/19Z
SUBIC_BAY	67	20/20Z
PUERTO_PRINCESA	381	21/01Z
KAOHSIUNG	388	22/11Z
HONG KONG	290	23/19Z
DA NANG	92	25/09Z
HANOI	233	25/12Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAU (HRS)
CLARK_AB	070	105	0
MANILA	046	104	0
SUBIC_BAY	063	136	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)

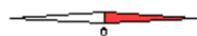
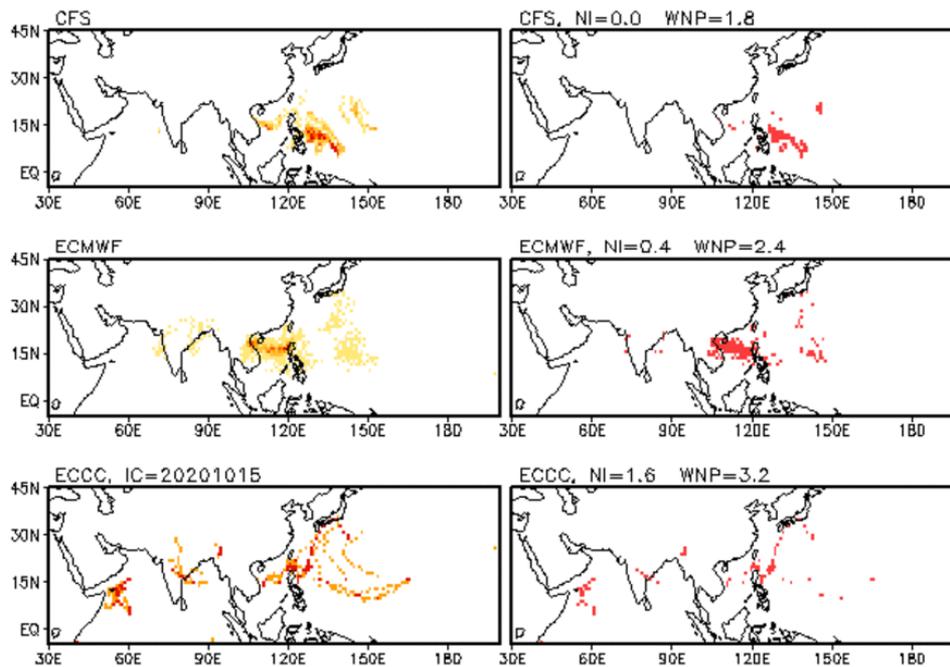


Storm Track Density Distribution, IC=20201019

Week 1 Forecast: 1021-1027

TRACK DENSITY

FILTERED

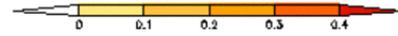
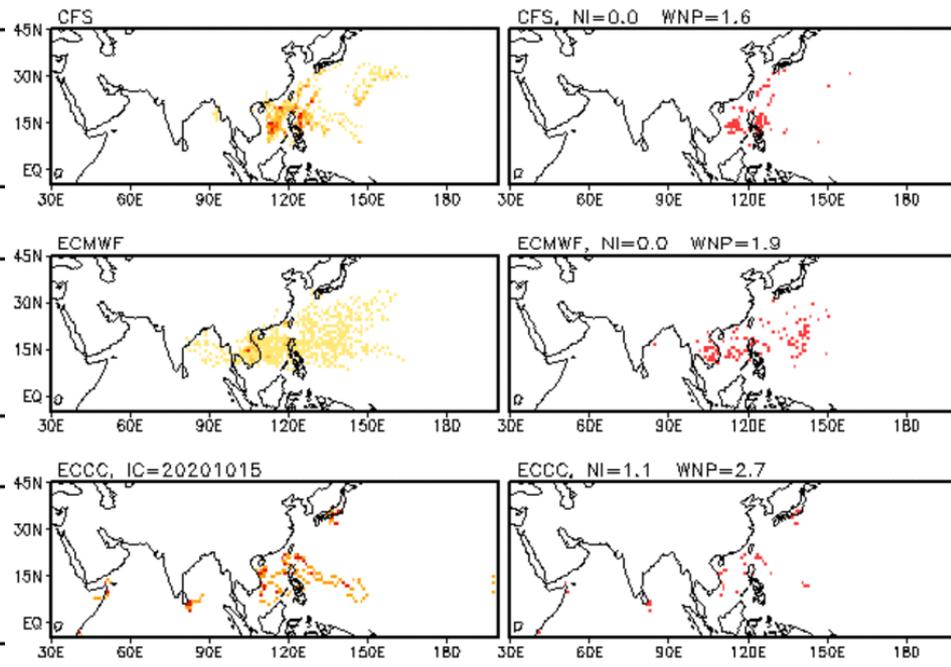


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Week 2 Forecast: 1028-1103

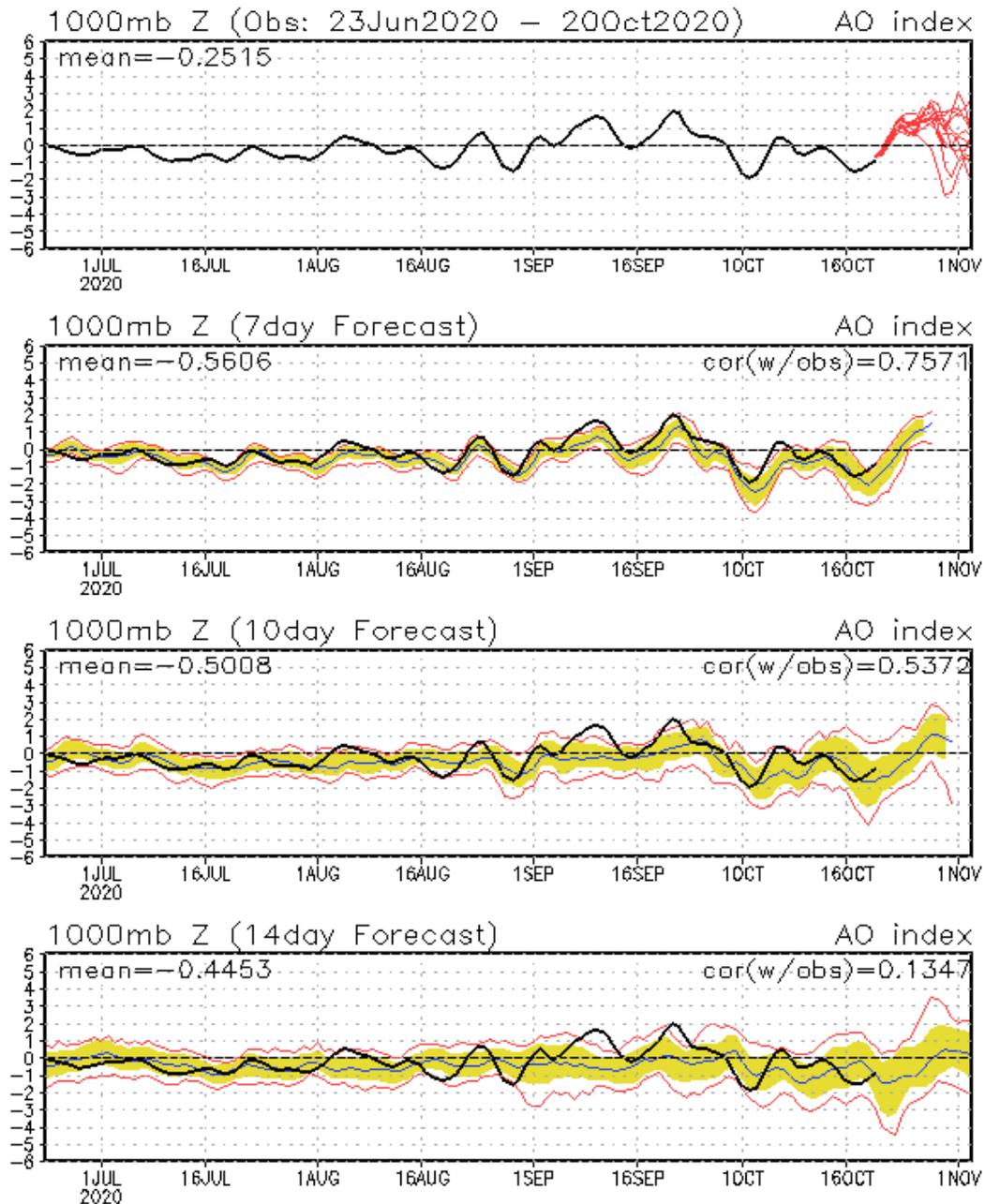
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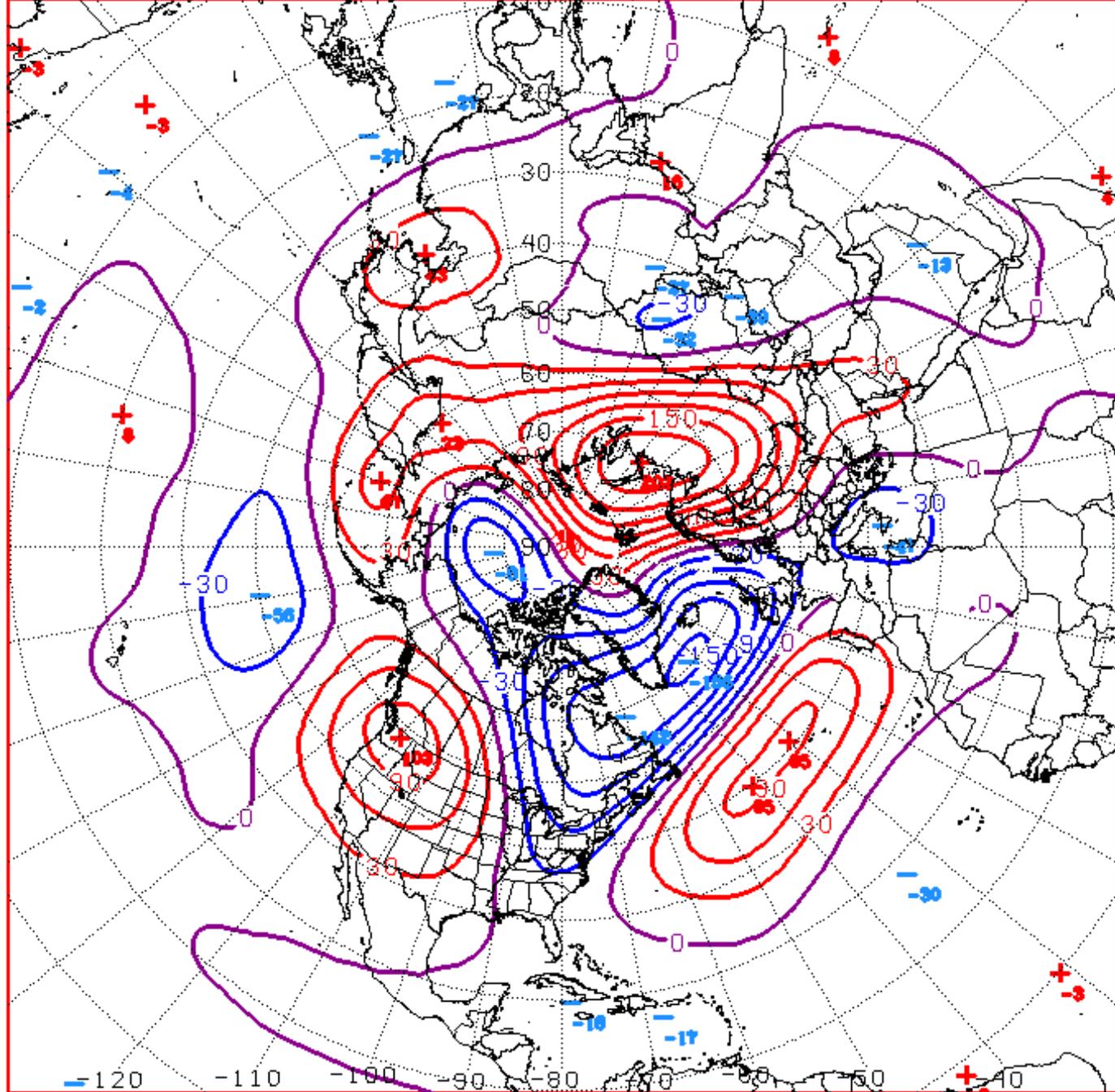
FILTERED



Connections to U.S. Impacts

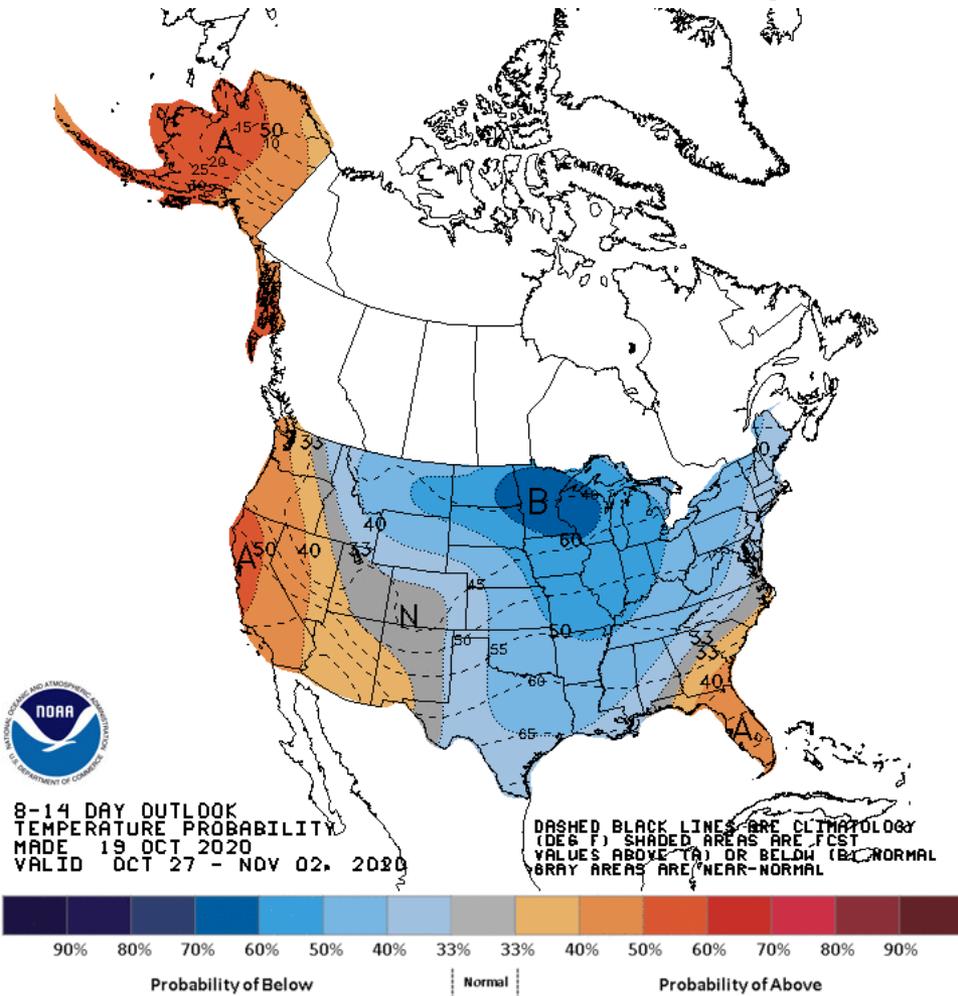
AO: Observed & ENSM forecasts



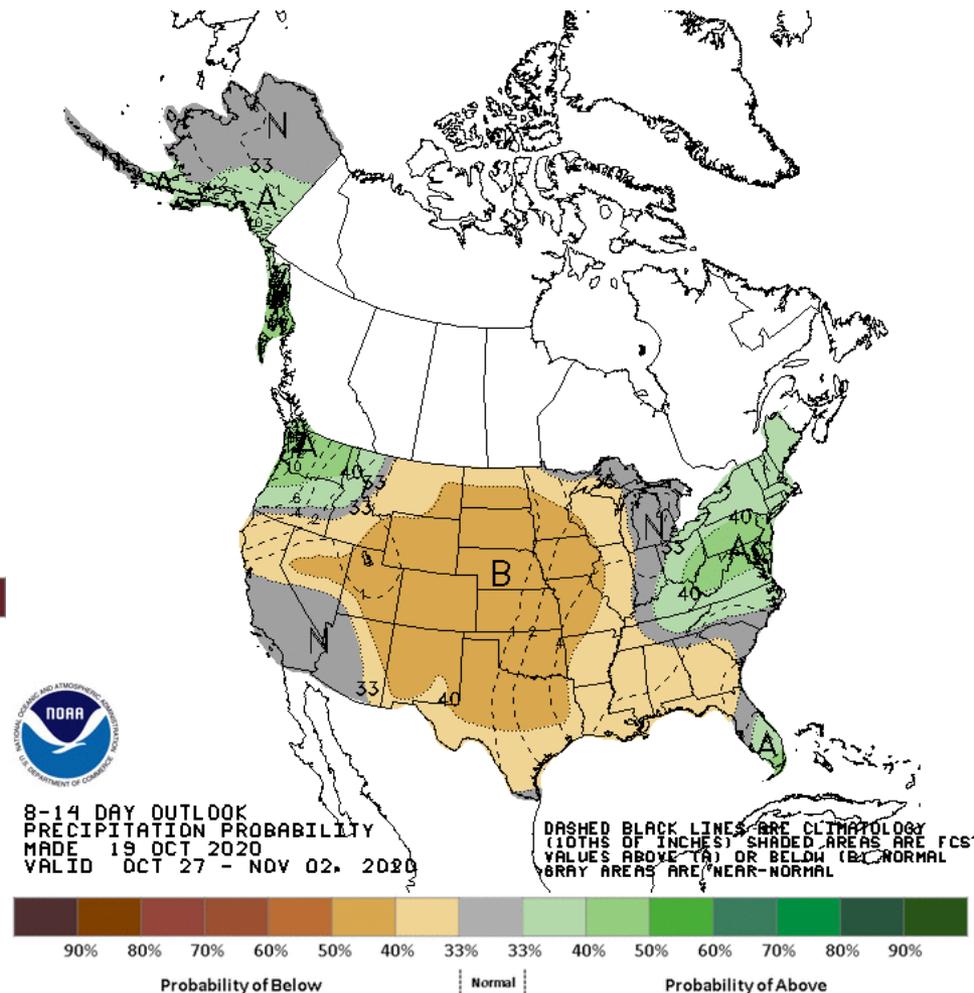


D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE OCT 20 2020 1416 UTC CNTD OCT 31 2020

Week 2 – Temperature and Precipitation



Increasing confidence exists for cold air across the Central U.S., probabilities are likely to be higher for below-normal temperatures today.

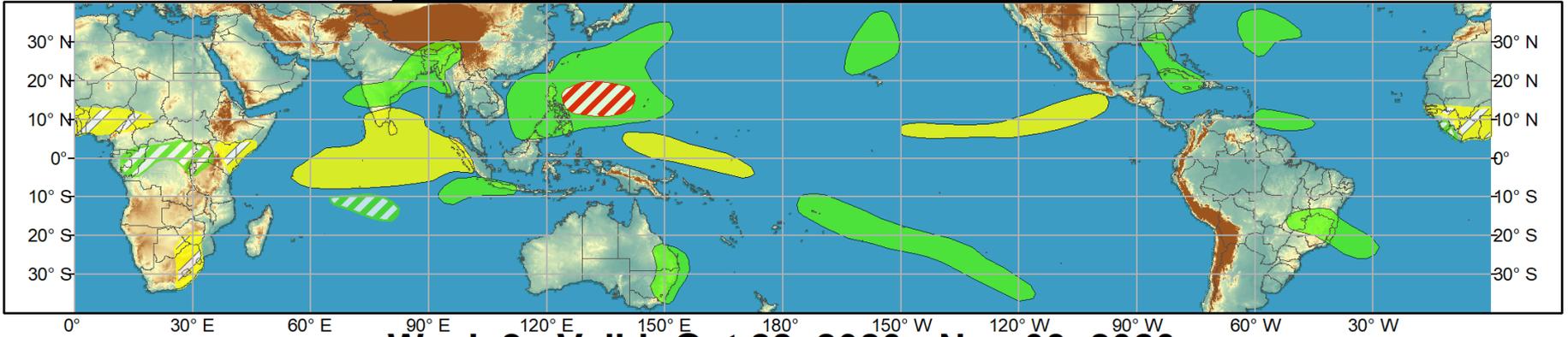




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