

Global Tropics Hazards And Benefits Outlook

1/28/2020

Nick Novella

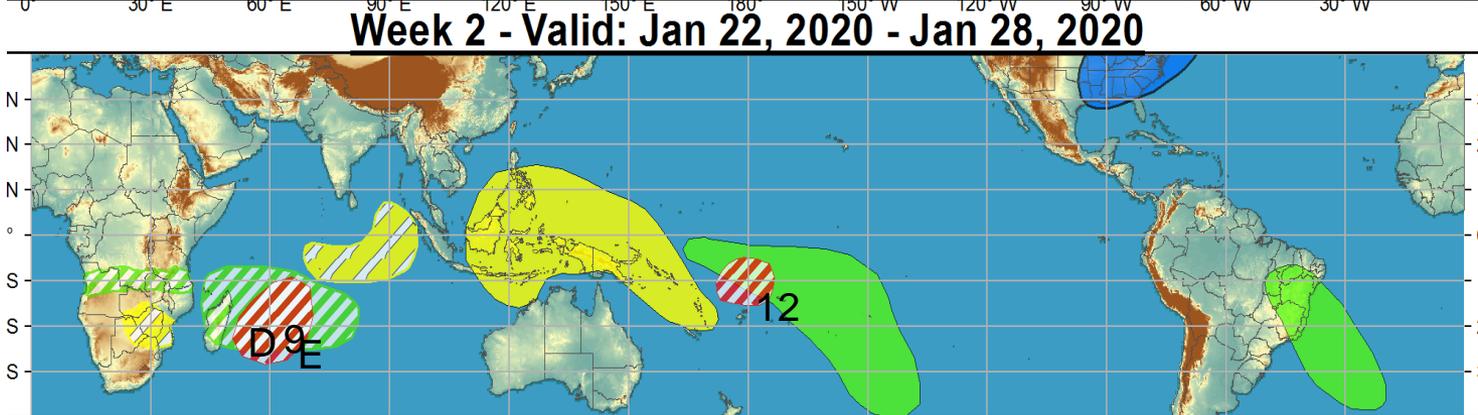
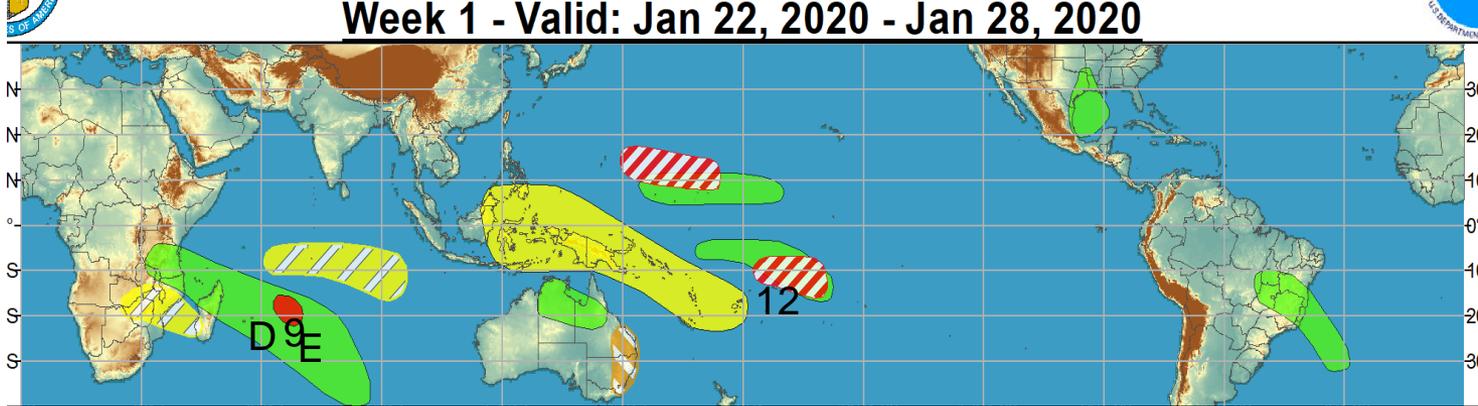
Outline

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

Outlook Review

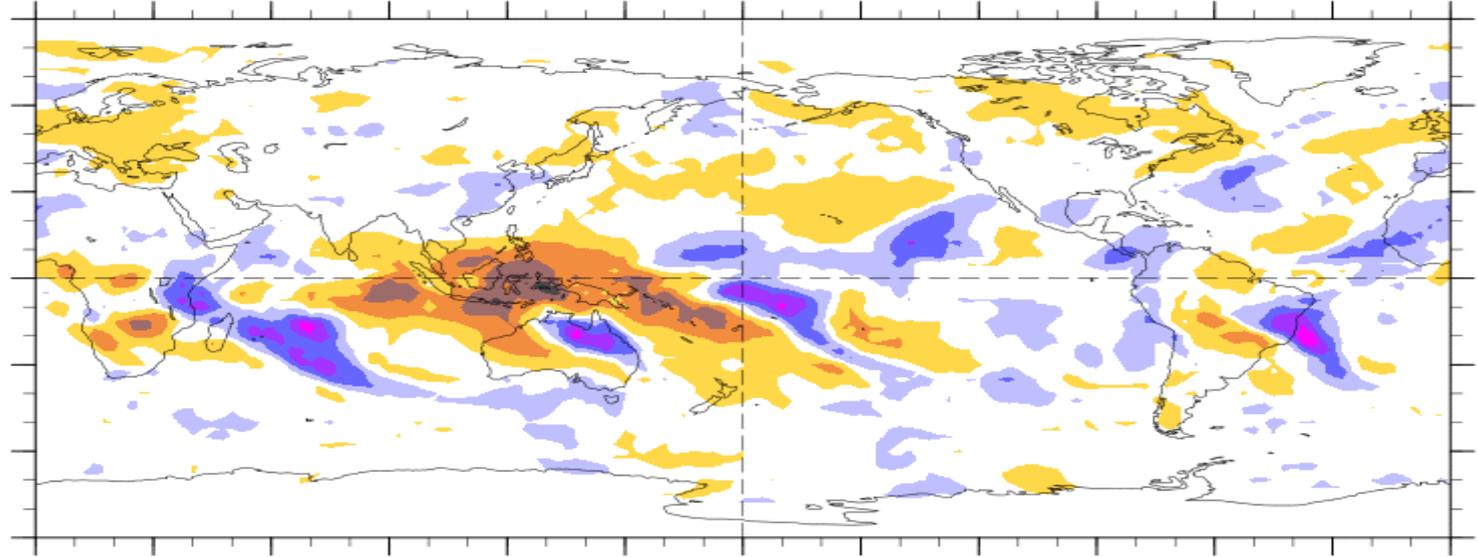
TC's Formed:

- Nine (1/22-1/23)
- Esami (1/25-1/26)
- Twelve (1/25-1/26)
- Diane (1/25-127)



7-Day Average OLR Anomaly

2020/01/20 - 2020/01/26



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (January 9, 2020 Update)

- ENSO Alert System Status: Not Active
- ENSO-neutral is favored during the Northern Hemisphere spring (~60% chance), continuing through summer 2020 (~50% chance).

MJO and other subseasonal tropical variability:

- Following a robust MJO event for most of January, the MJO has rapidly weakened and became disorganized during the last week.
- Global tropical precipitation is likely to be driven by other modes of variability, with the possibility of the MJO reemerging later during Week-2.
- A more stationary pattern of enhanced (suppressed) convection is expected to develop across the western Indian Ocean (Maritime Continent).

Extratropics:

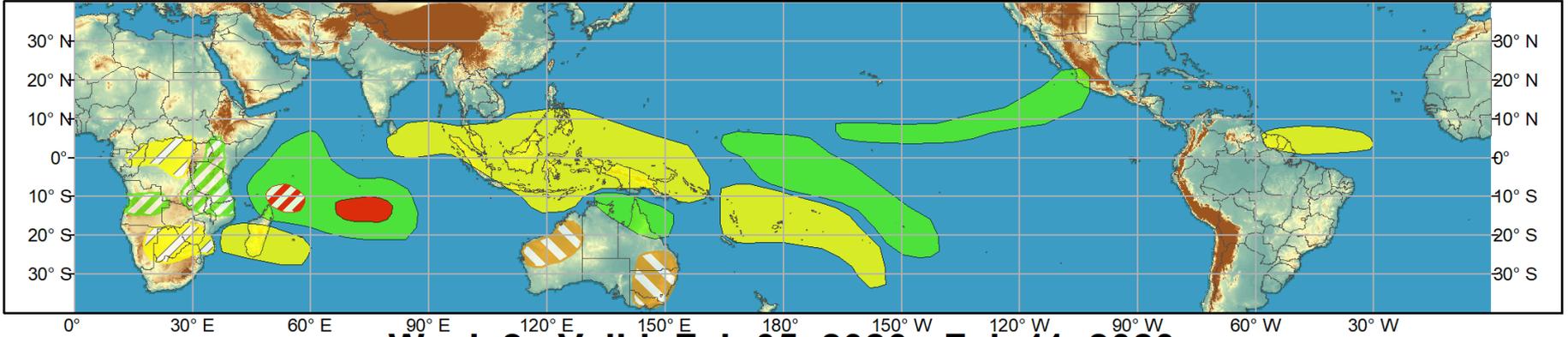
- It is likely that the MJO plays little to no role in the circulation pattern over North America during the next two weeks.



Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jan 29, 2020 - Feb 04, 2020



Week 2 - Valid: Feb 05, 2020 - Feb 11, 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: 01/28/2020
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.

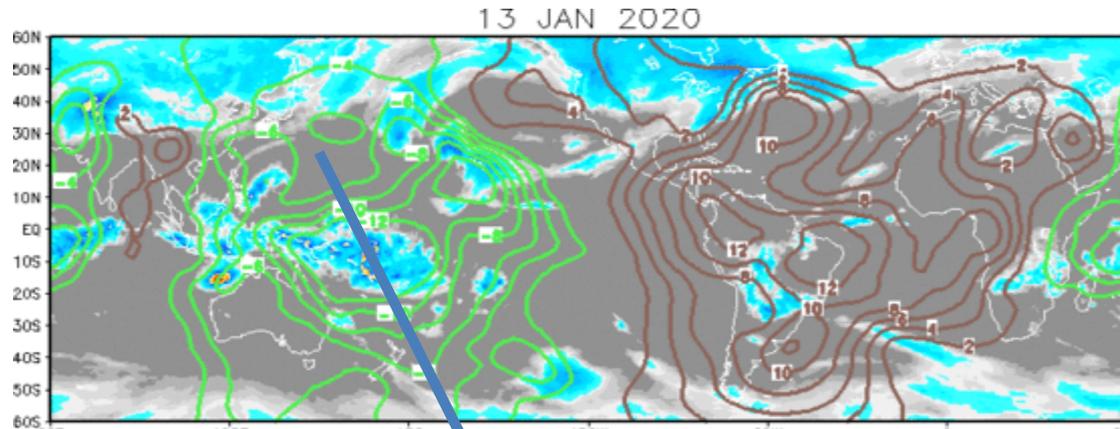


IR Satellite & 200-hpa Velocity Potential Anomalies

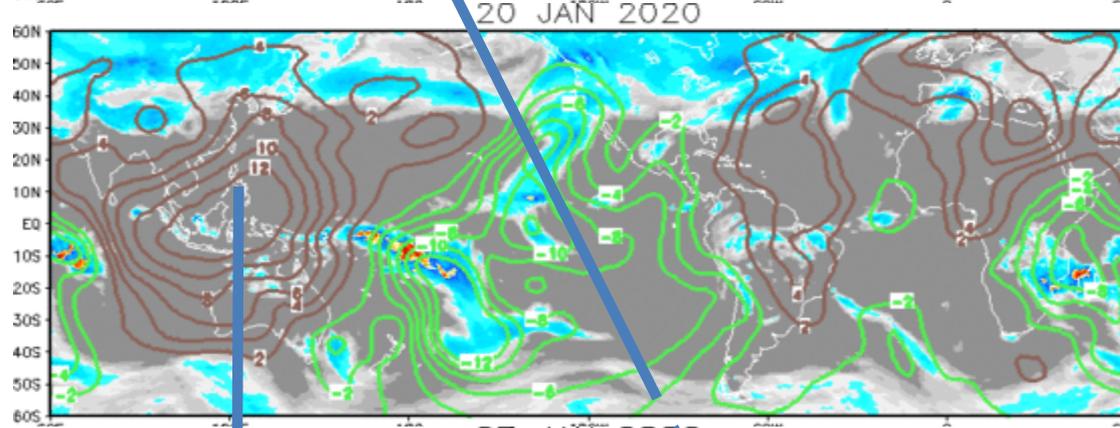
Green: Enhanced Divergence

Brown: Enhanced Convergence

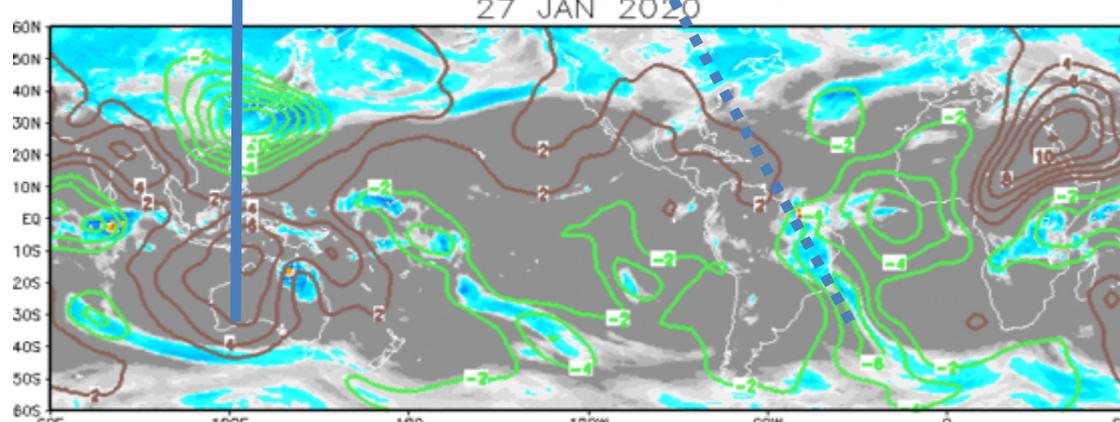
Enhanced convection over MT and WPAC, Clear Wave-1 pattern supporting strong MJO.



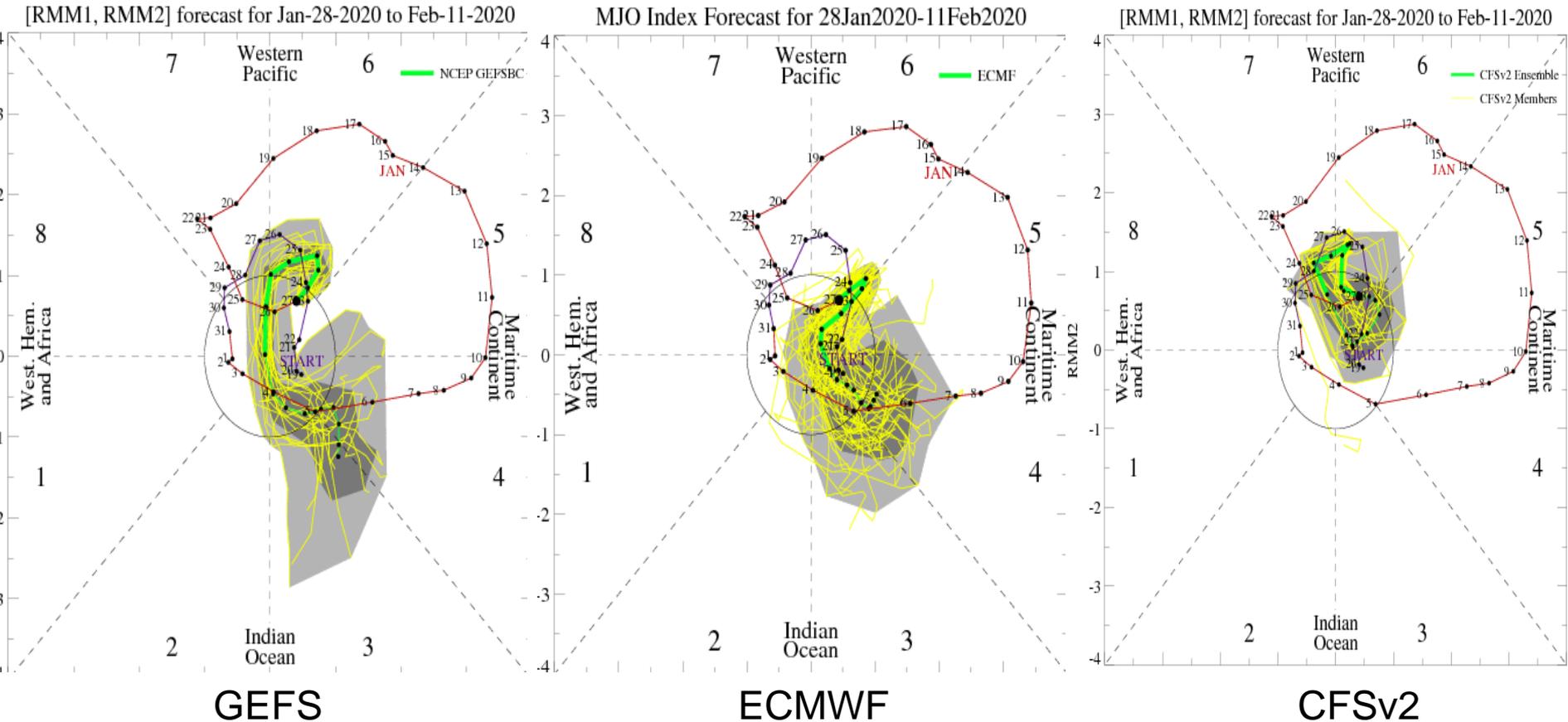
Enhanced convection shifted east across Pacific. Suppressed convection returning to MT. Evolved more into Wave-2 pattern (MJO weakening).



Suppressed convection anchored over the Maritime Continent. Much weaker enhanced convection weaker over WH.



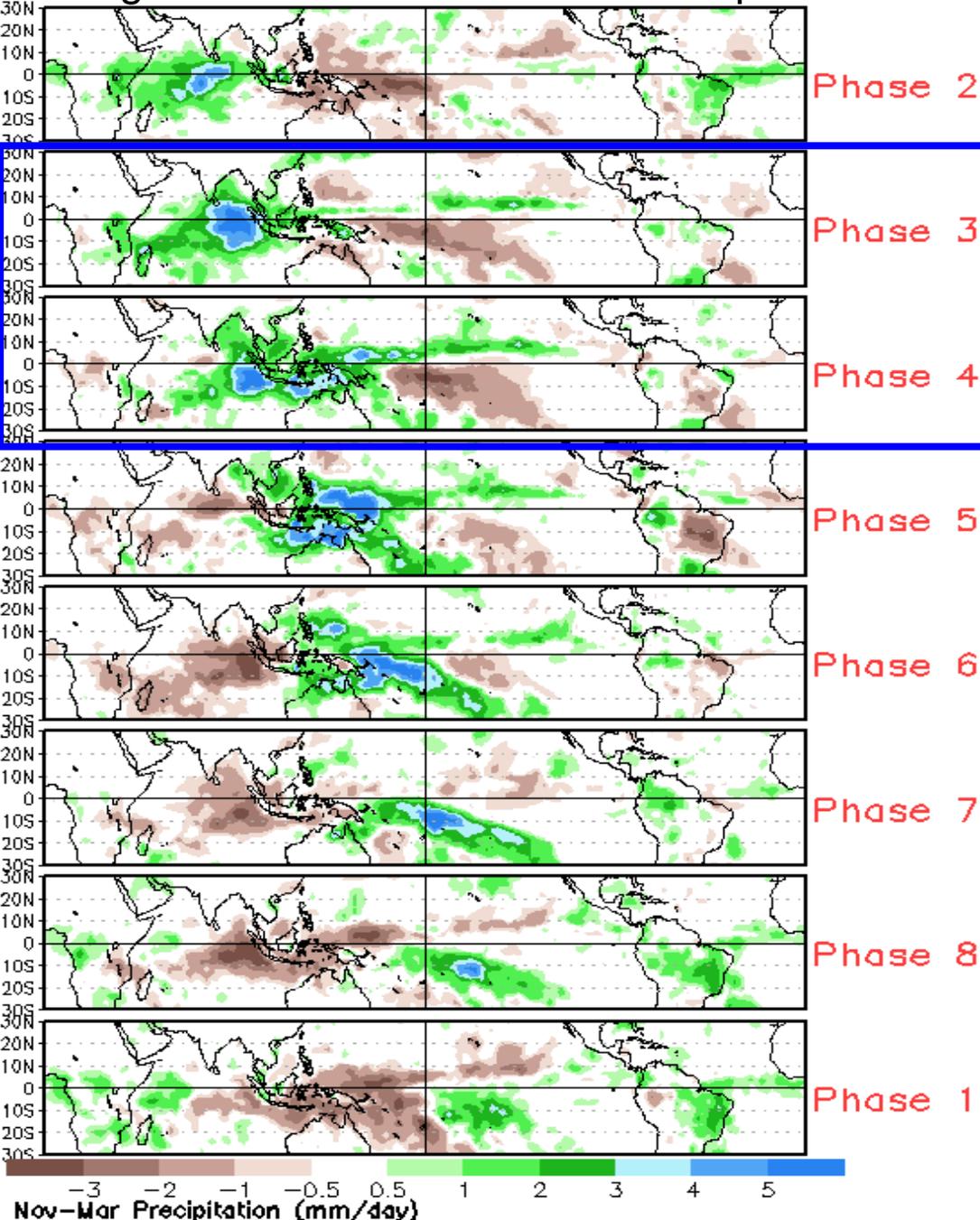
MJO Observation/Forecast



Models all indicate a short-lived increase in RMM amplitude early in Week-1. However, this is likely tied to a Kelvin Wave traversing eastern Asia as suppressed convection is likely to remain stationary over the Maritime Continent throughout Week-1 and into Week-2.

By late Week-2, both the GEFS and ECMWF suggest that an MJO will begin to develop over Phases 3 or 4. If realized, we would see more of transitional rainfall pattern over the Maritime Continent in early February.

Average Conditions when the MJO is present



Week-2: Phases 3 / 4

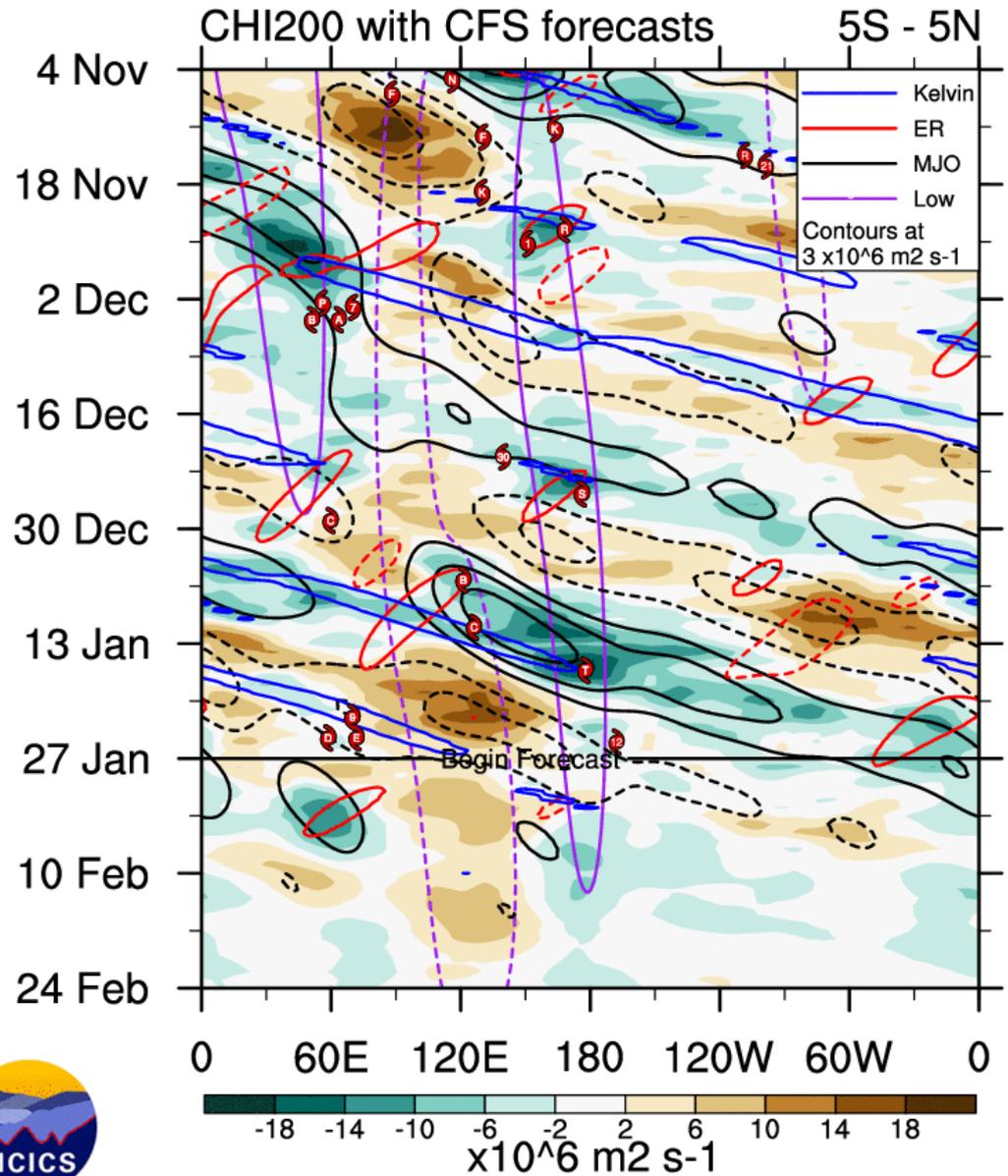
CAVEAT: These panels are representative of robust MJO events.

- MJO**
- equatorial Rossby wave**
- Low frequency signal**
- Kelvin wave**

Kelvin wave recently interfering with upper-level convergence signal over Maritime Continent.

CFS favors persistence of enhanced (suppressed) convection over Western IO (Maritime Continent).

Continued suppression associated with **Low frequency** signals, although other models are beginning to depict wetter conditions.

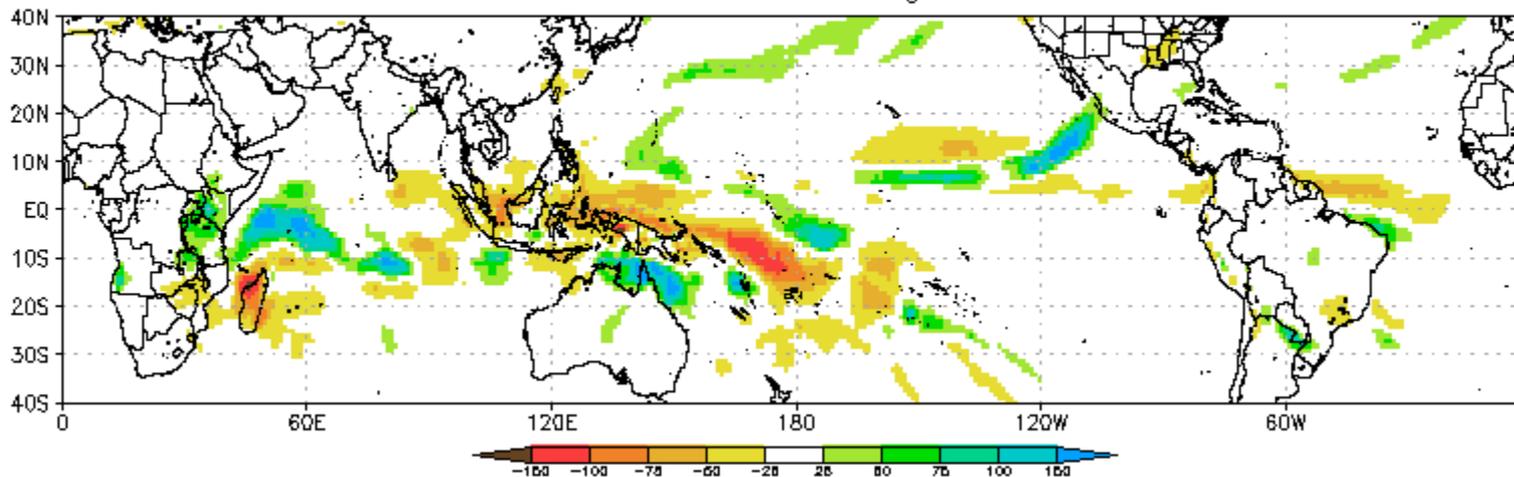


ncics.org/mjo

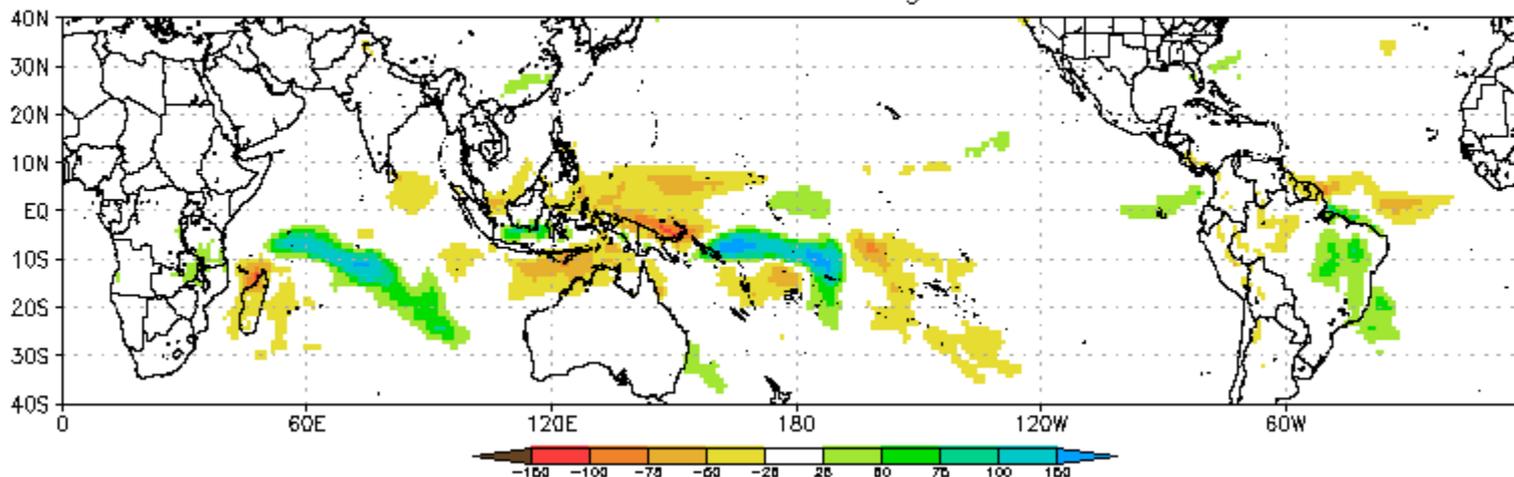
Tue 2020-01-28 1257 UTC

Carl Schreck
carl_schreck@ncsu.edu

CFS Precipitation Anomalies (mm) Issued 27Jan2020
Week-1 Forecast Ending 04Feb2020

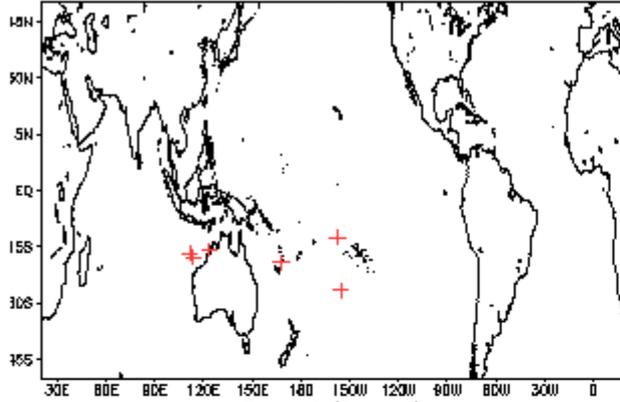


CFS Precipitation Anomalies (mm) Issued 27Jan2020
Week-2 Forecast Ending 11Feb2020

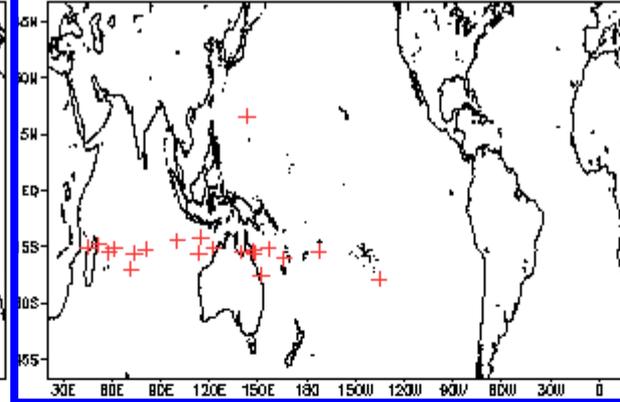


February Tropical Storm Formation by MJO phase

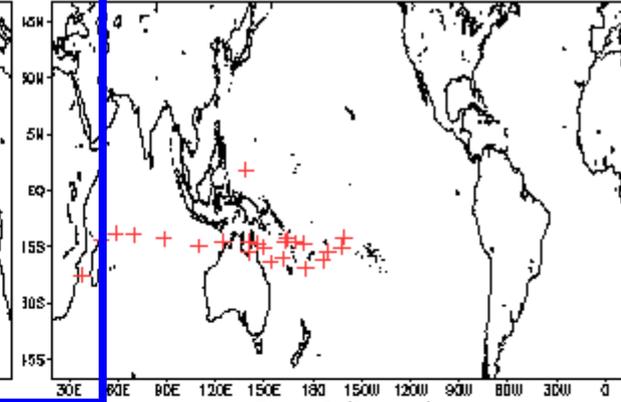
Phase 1 (41 days) 7 storms



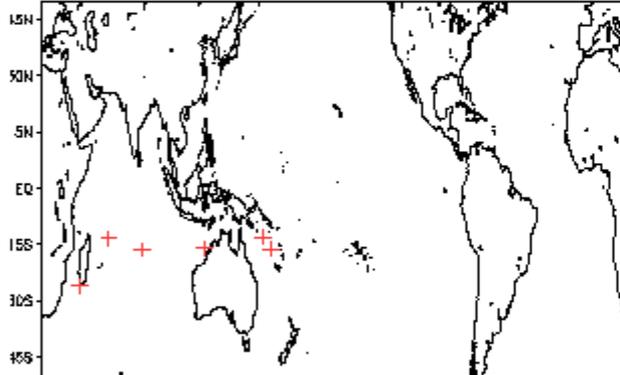
Phase 4 (82 days) 21 storms



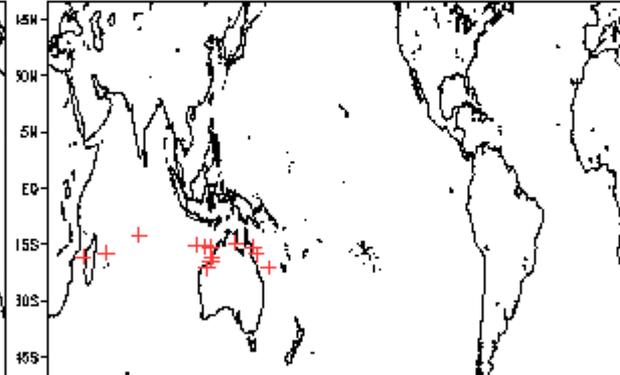
Phase 7 (125 days) 24 storms



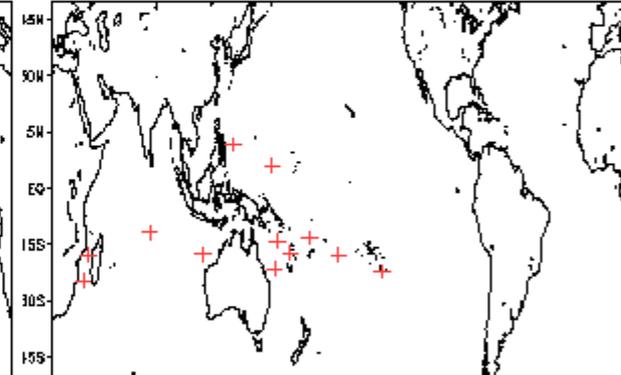
Phase 2 (51 days) 7 storms



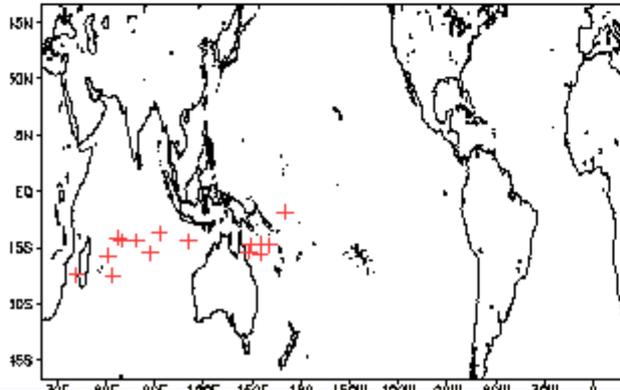
Phase 5 (70 days) 14 storms



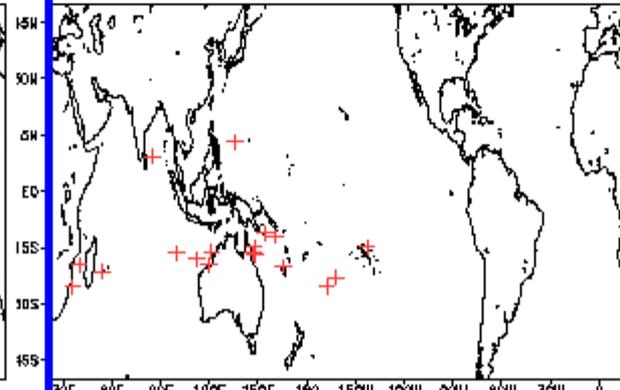
Phase 8 (84 days) 13 storms



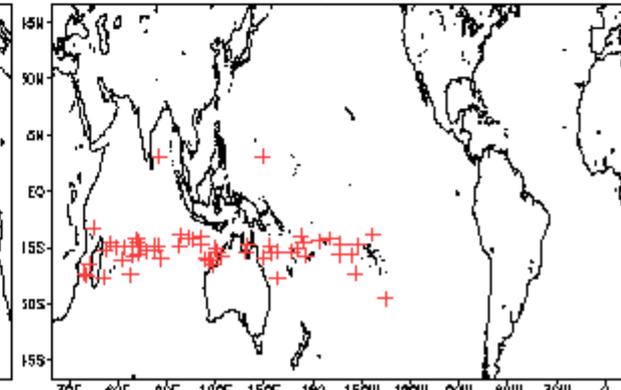
Phase 3 (89 days) 16 storms



Phase 6 (92 days) 19 storms

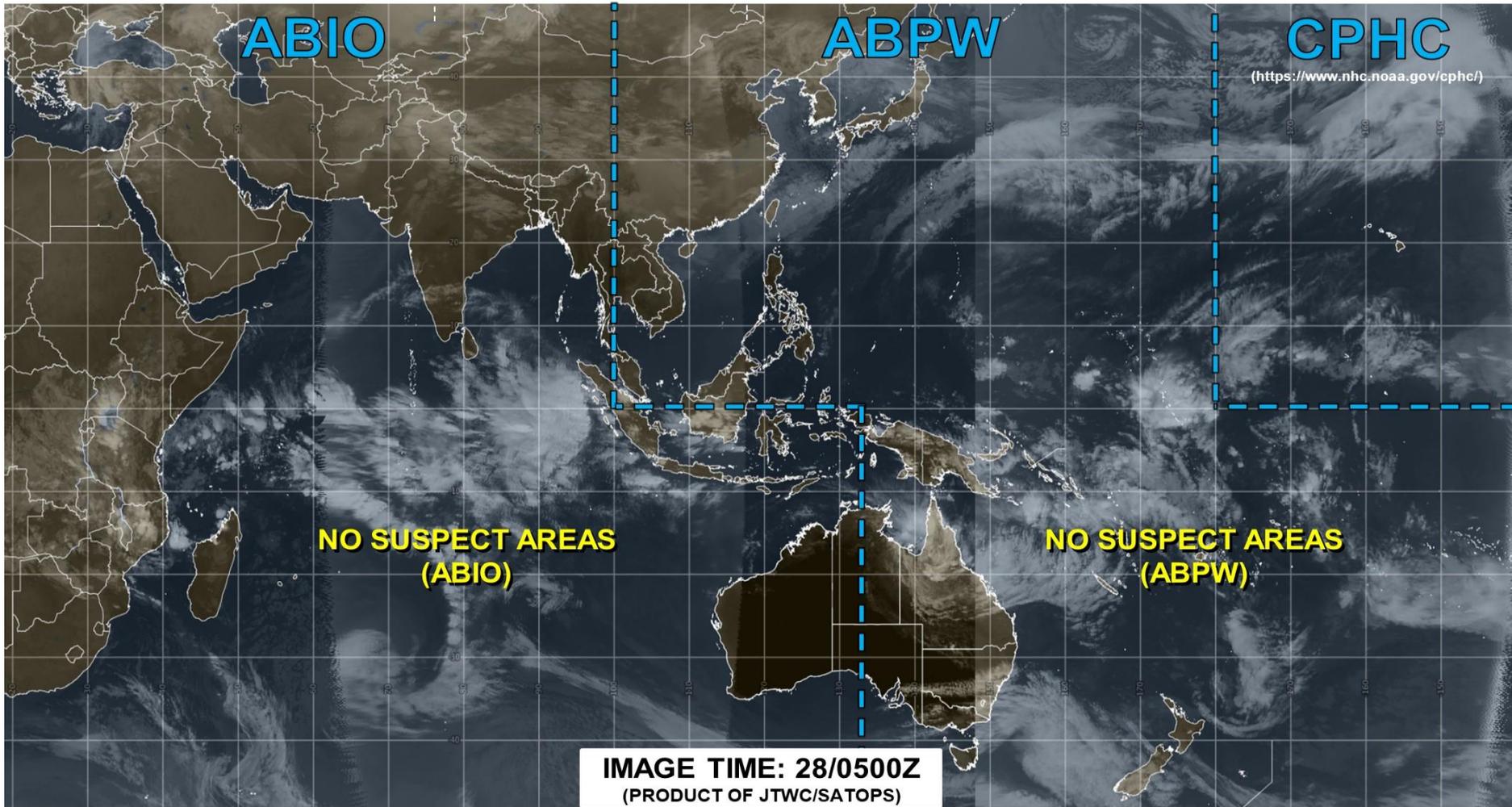


Null (308 days) 60 storms





JOINT TYPHOON WARNING CENTER



TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours

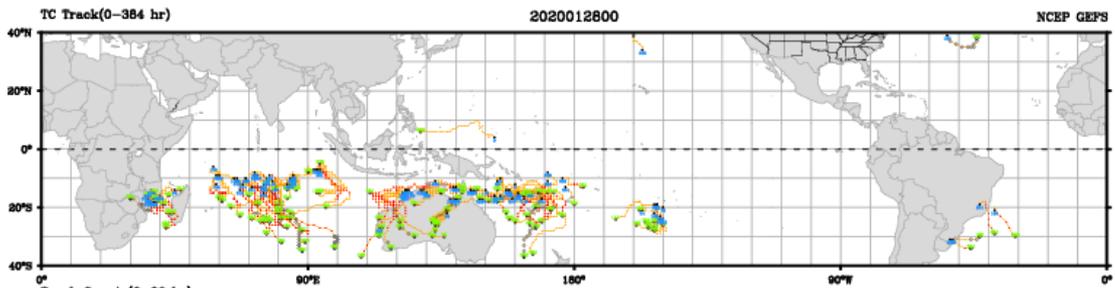


TC development likely within 24 hours
(Reference TCFA)

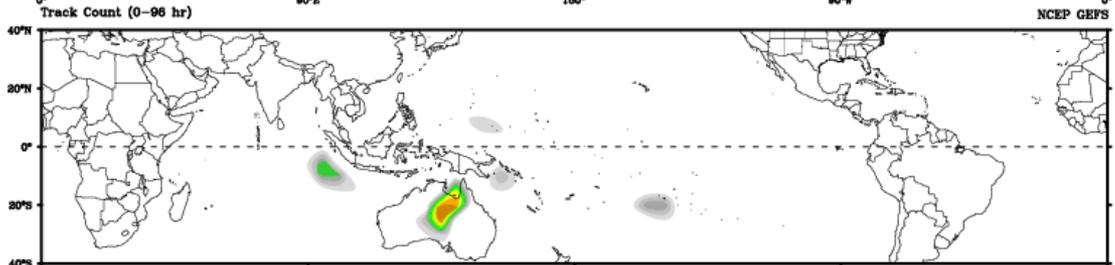


Monitoring for potential transition to TC.
Invest color denotes tropical transition probability

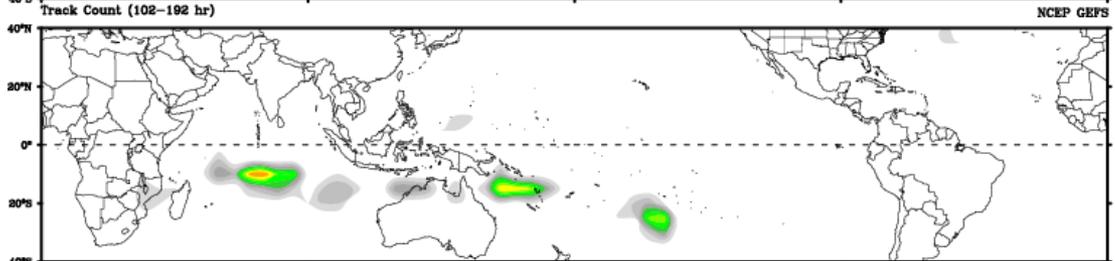
 Tropical Cyclone
(Reference Warning)



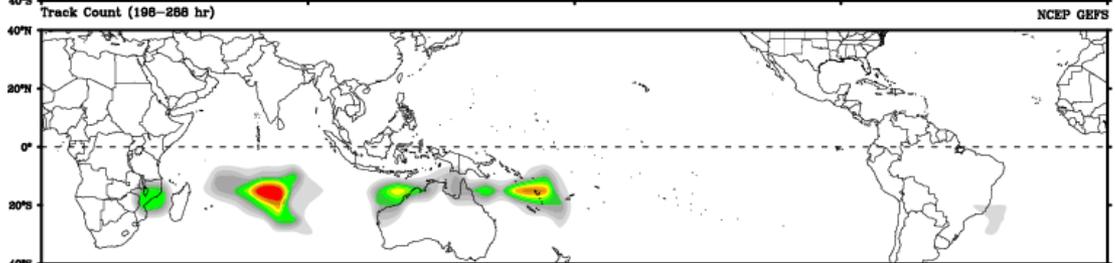
Days 1-4



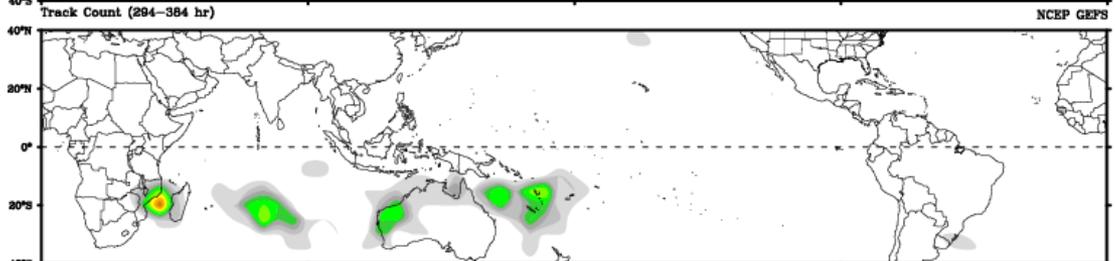
Day 5-8



Day 9-12

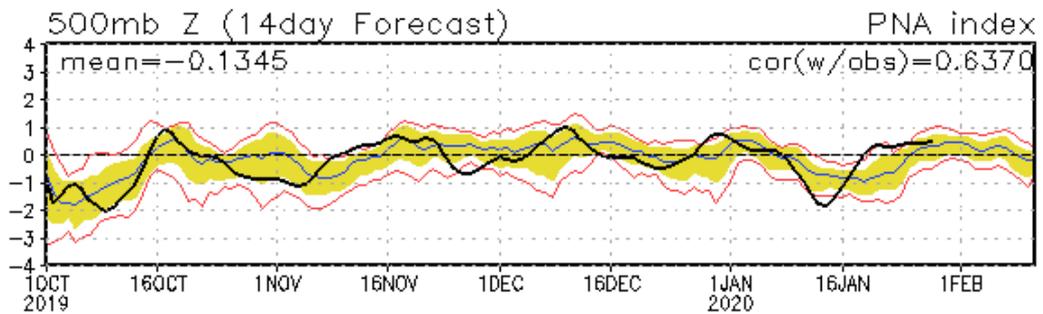
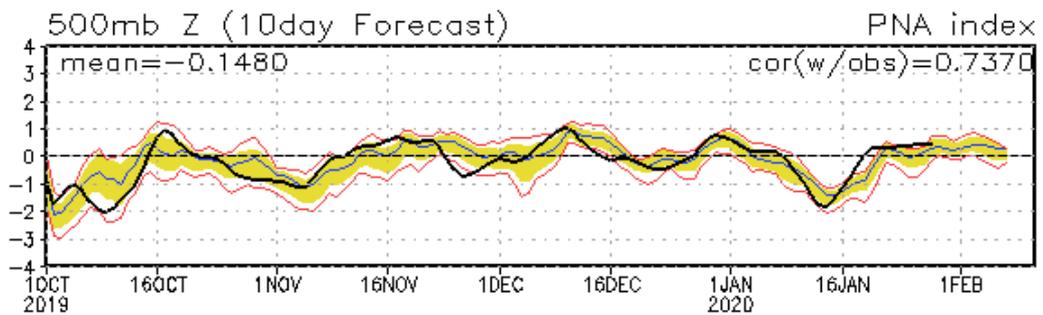
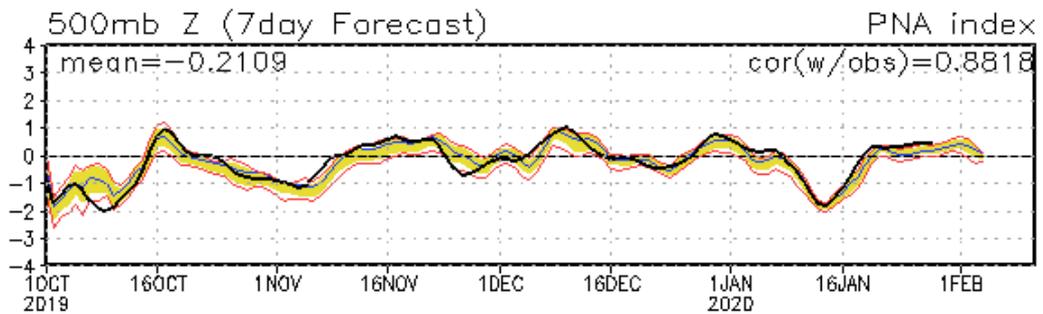
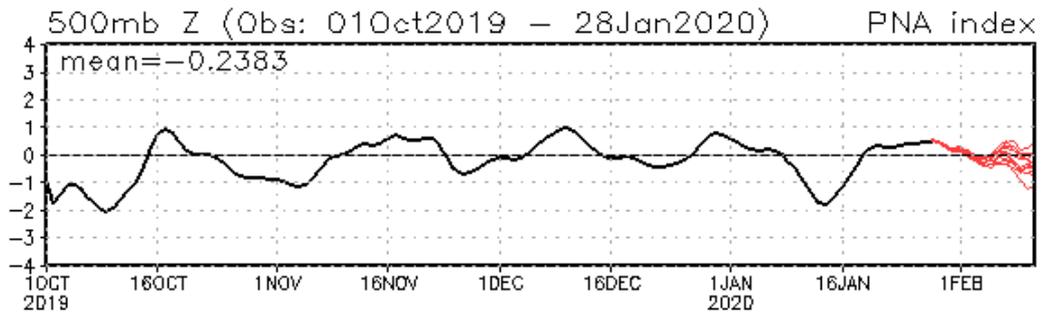


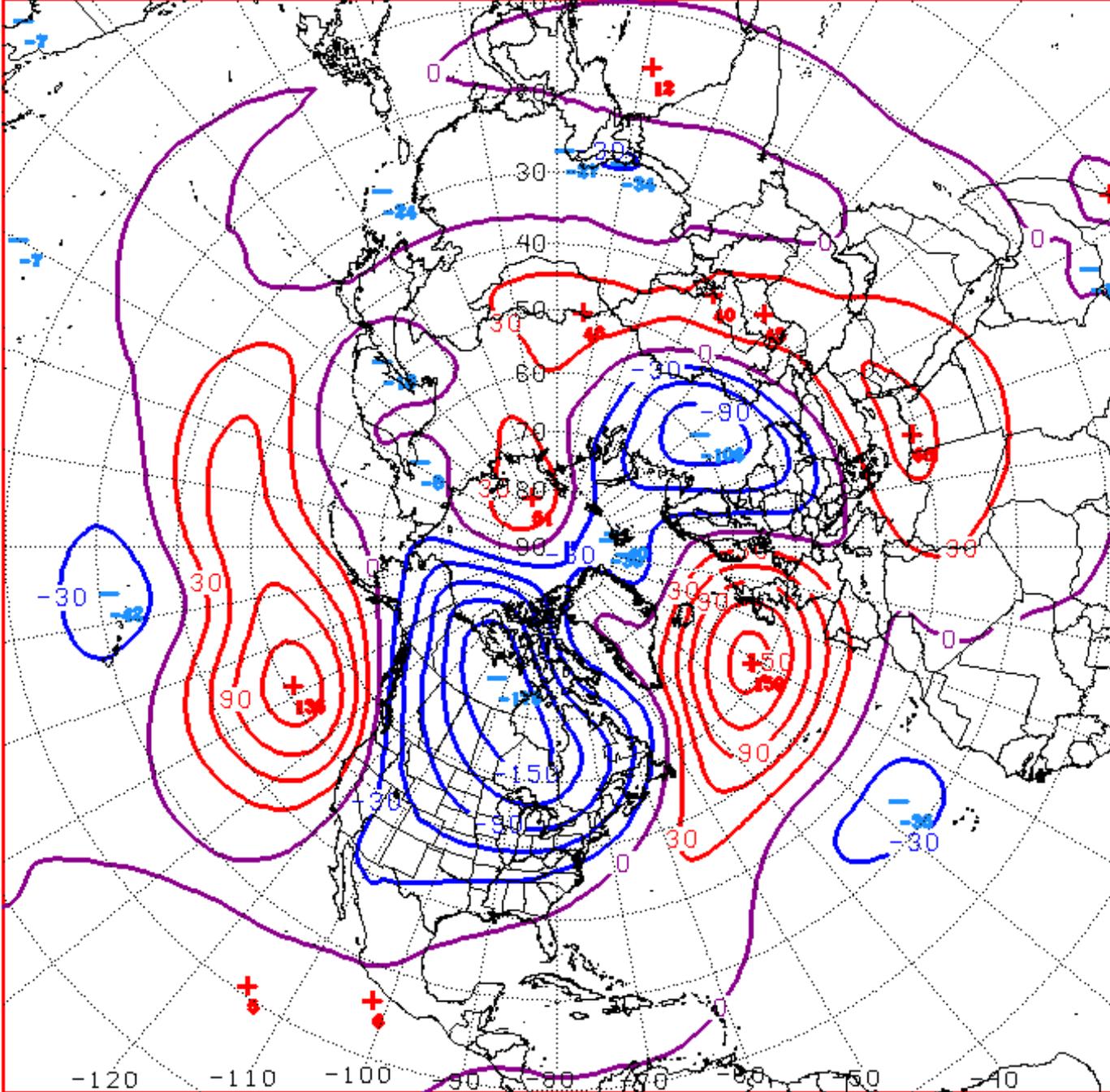
Day 13-15



Connections to U.S. Impacts

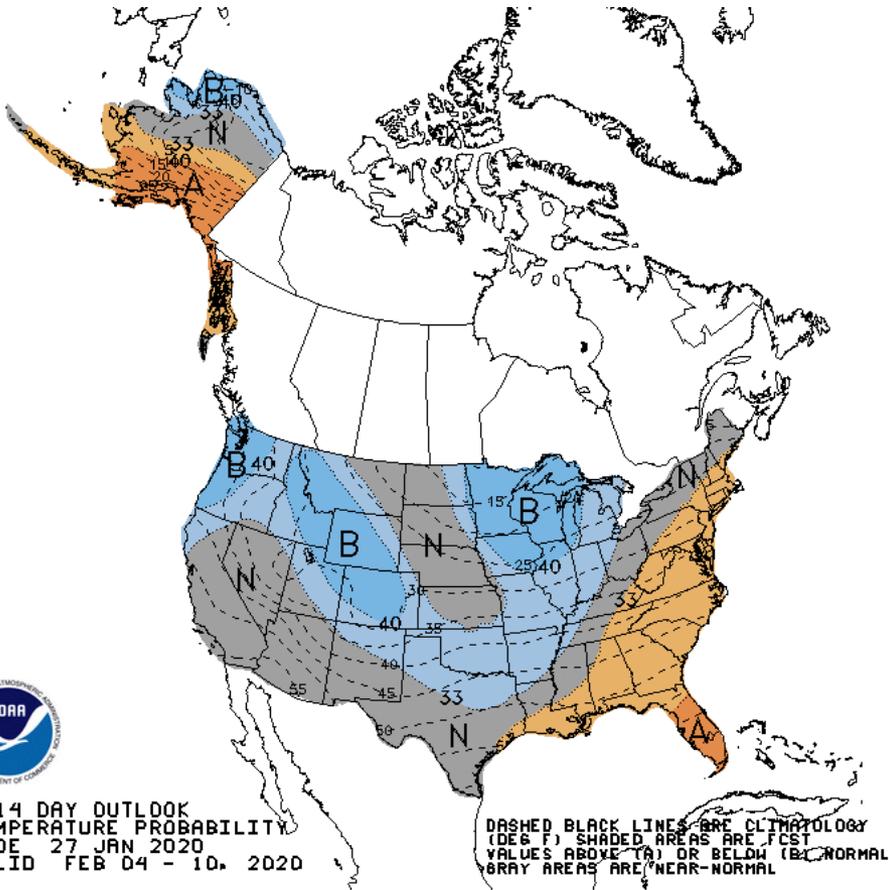
PNA: Observed & ENSM forecasts



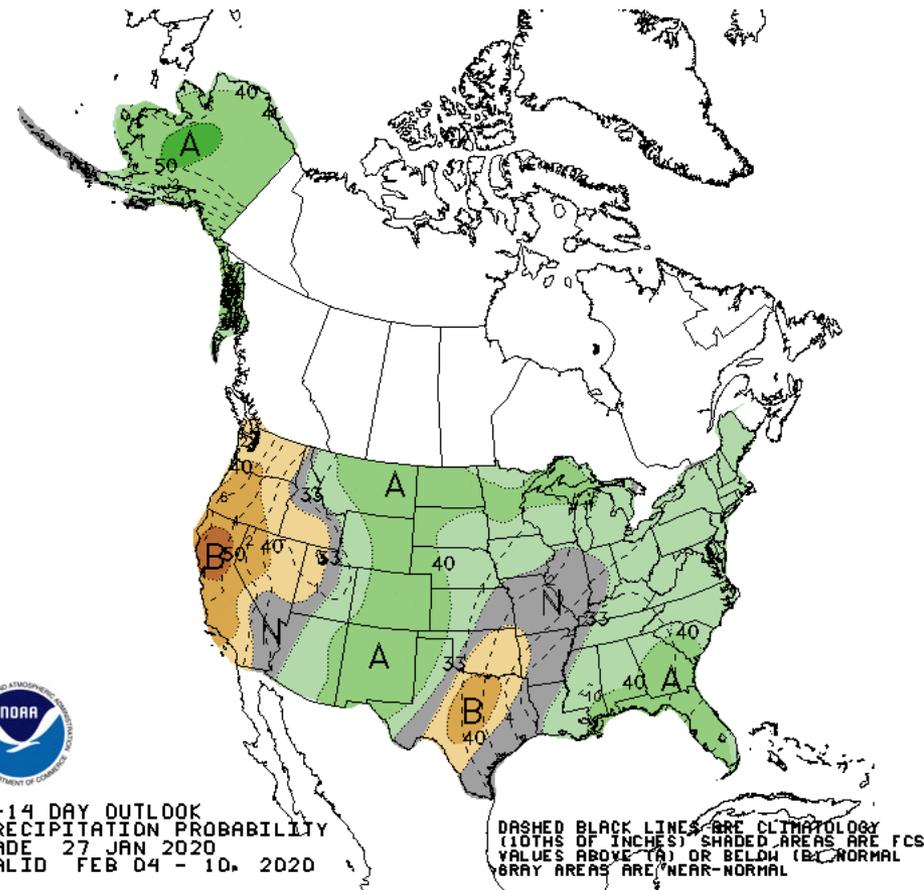
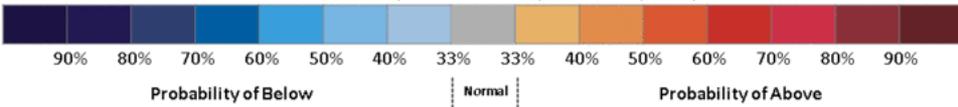


D+11 500 MB ANOMALIES FROM ALZ ENSM
 CPC MAP MADE JAN 28 2020 1329 UTC CNTD FEB 08 2020

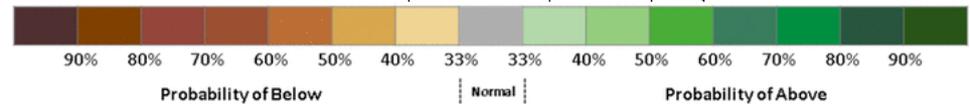
Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 27 JAN 2020
VALID FEB 04 - 10, 2020



8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 27 JAN 2020
VALID FEB 04 - 10, 2020



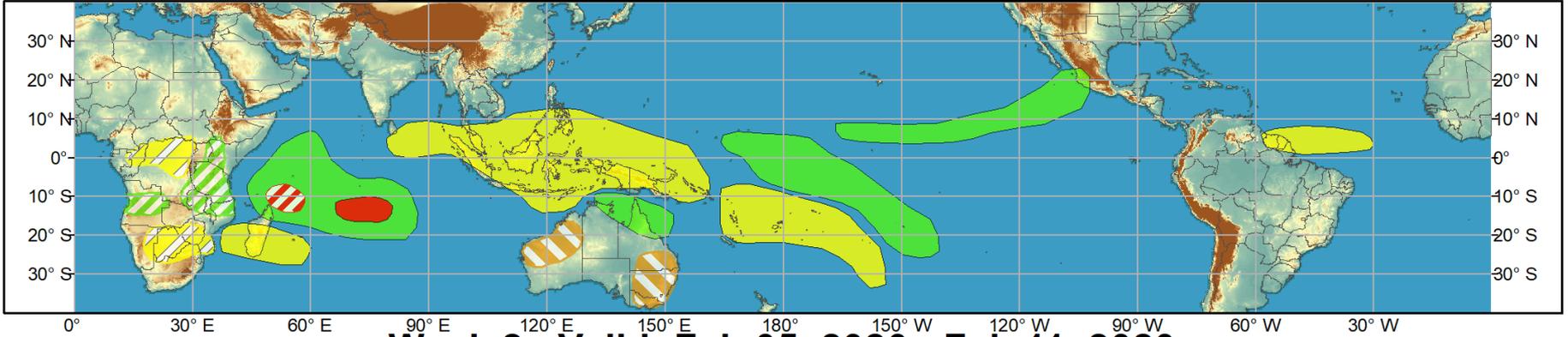
Since we are in an amplified, stable pattern today's outlooks are likely to be similar.



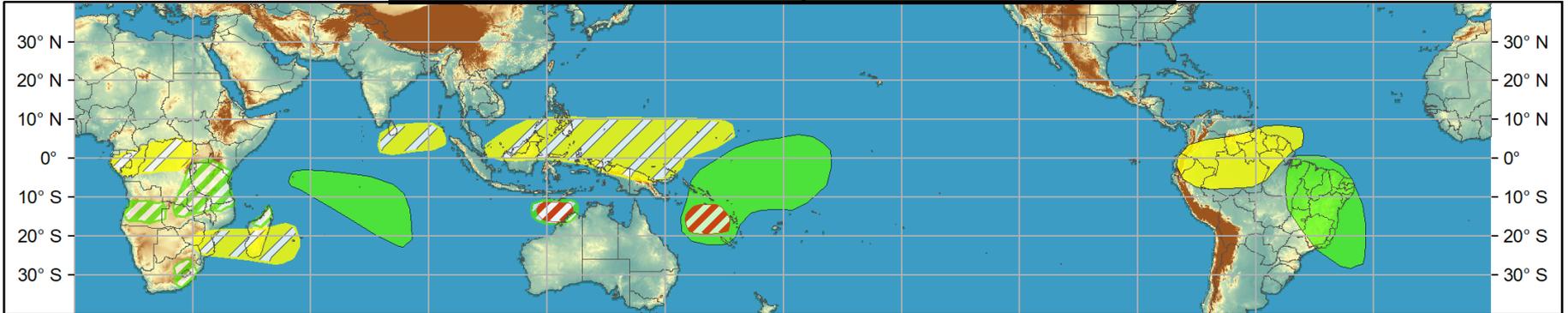
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jan 29, 2020 - Feb 04, 2020



Week 2 - Valid: Feb 05, 2020 - Feb 11, 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: 01/28/2020
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.

