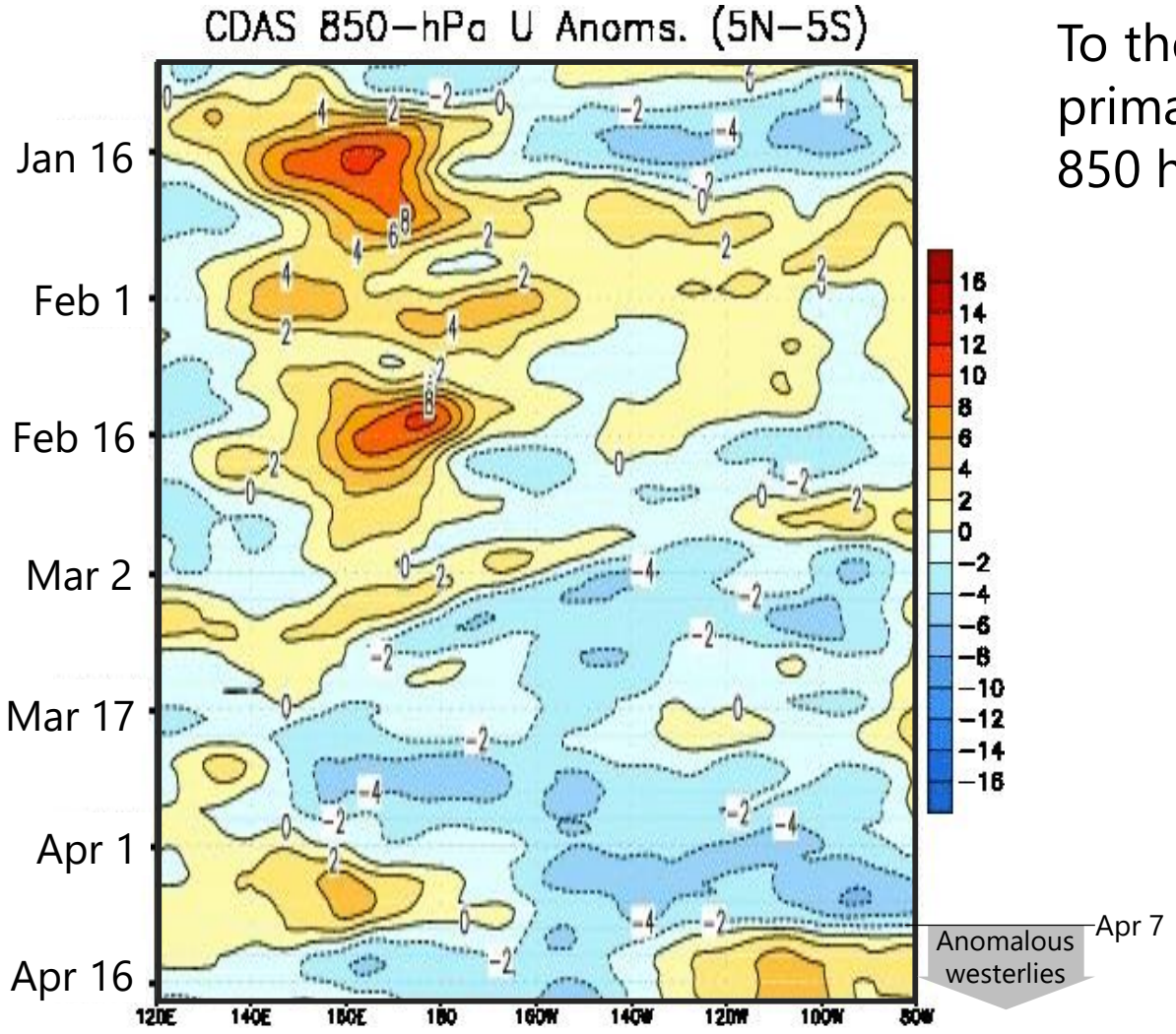
Monthly Regional Focus Group Session

Wednesday 22 April 2020

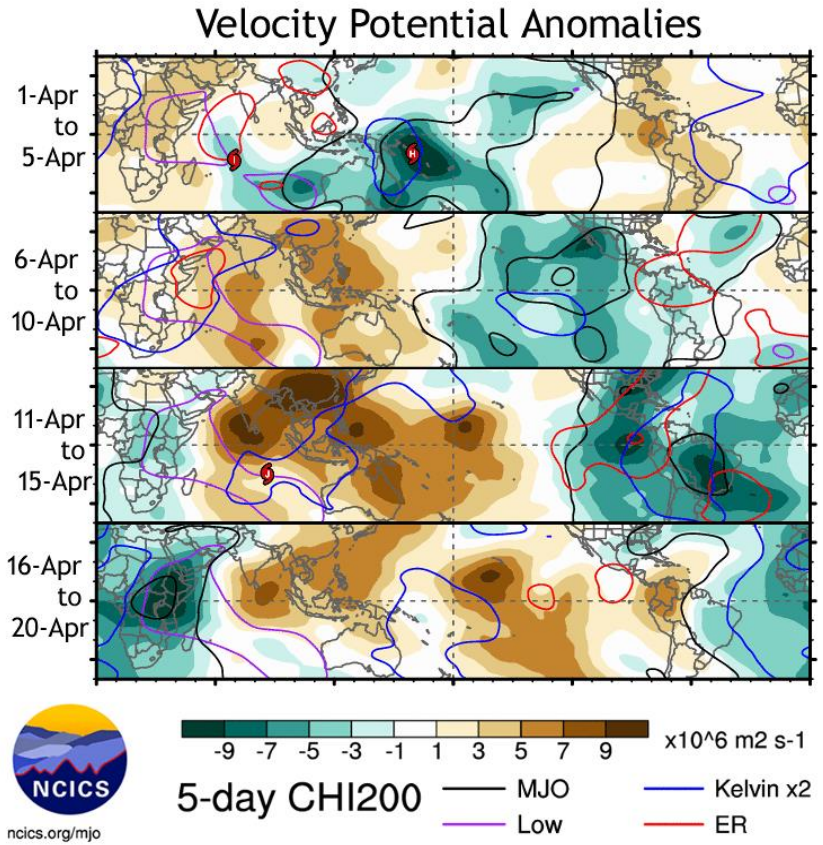
Anomalous 850 hPa Winds - Equatorial Pacific



Source: CPC

To the audience: Can anyone mention the primary process responsible for the anomalous 850 hPa westerlies from April 7 to the 15th?

MJO



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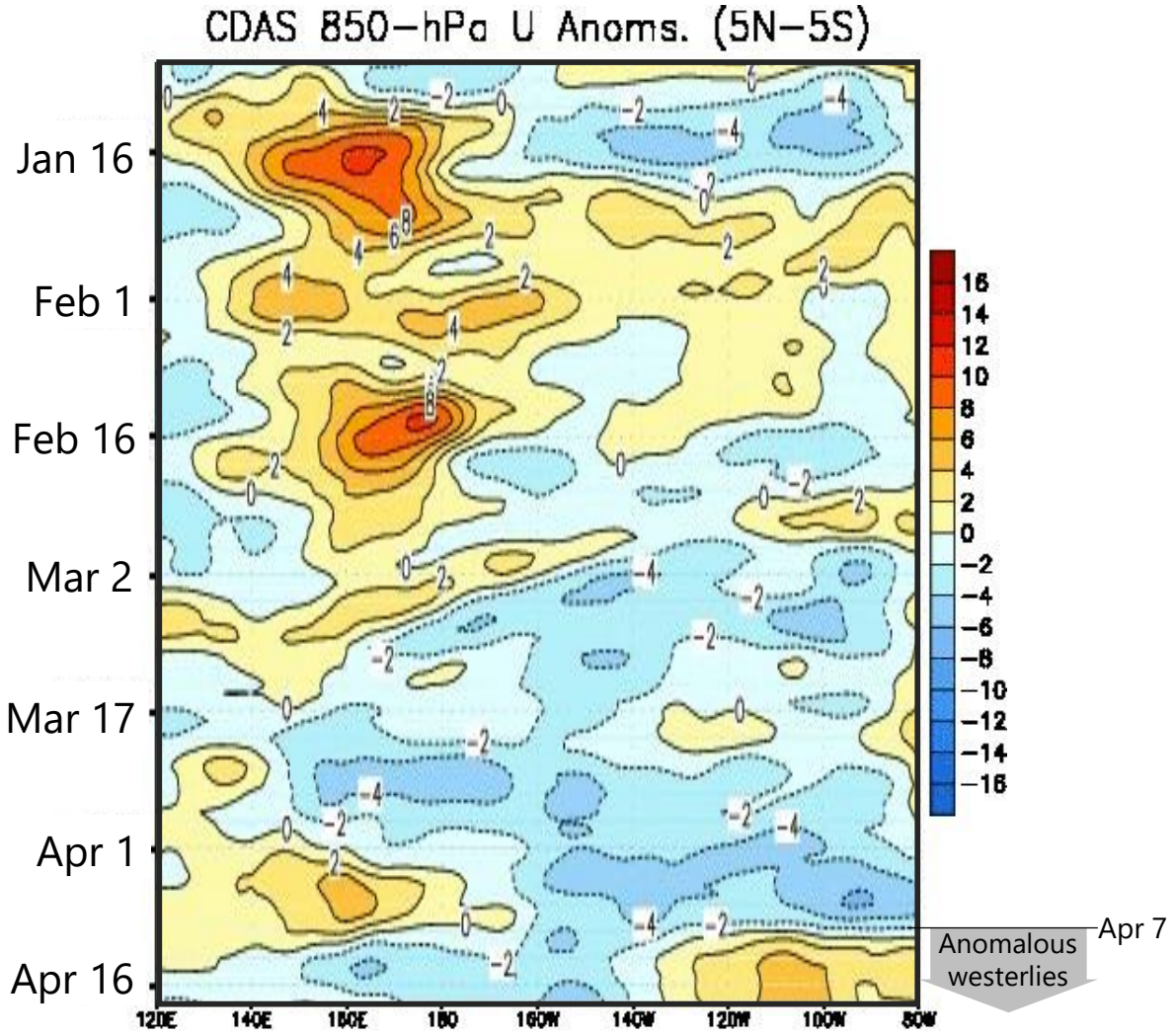
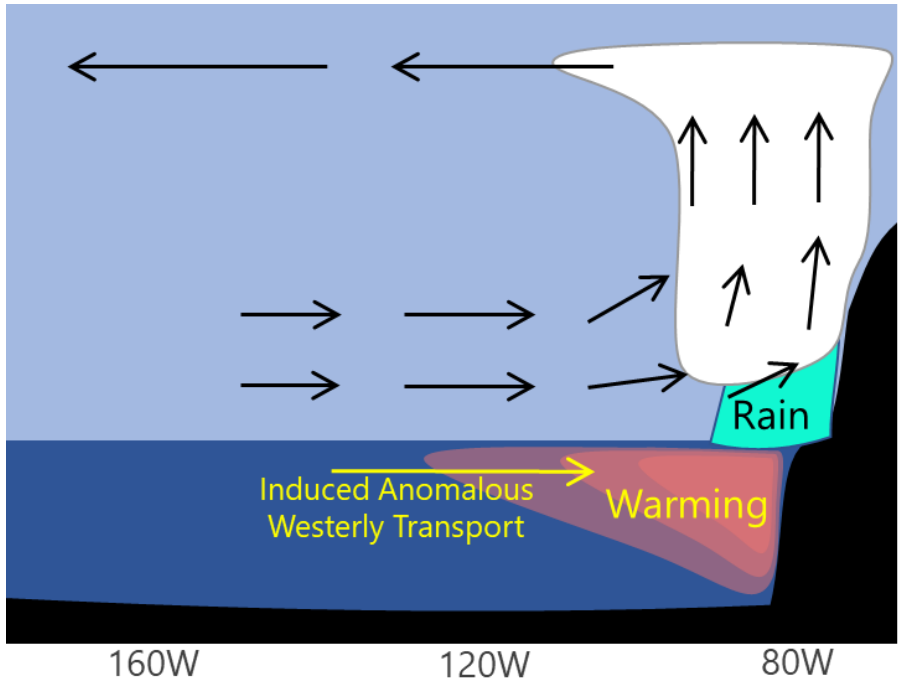


Source: CPC

Effect of the westerlies (Apr 7 – 15)

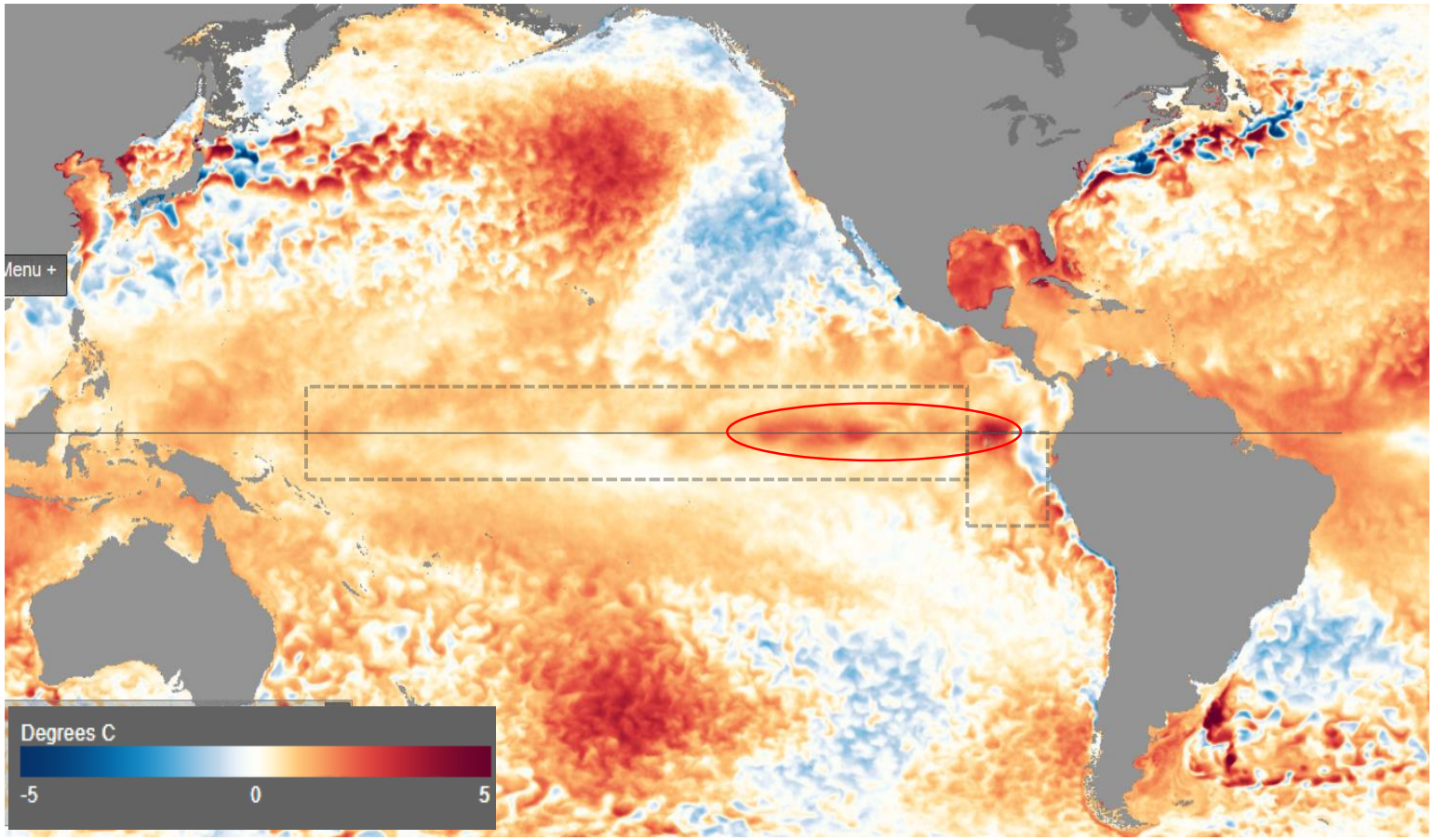


- Heavy rains in western South America and southern Central America.
- Superficial warming of the ocean by reduced upwelling.

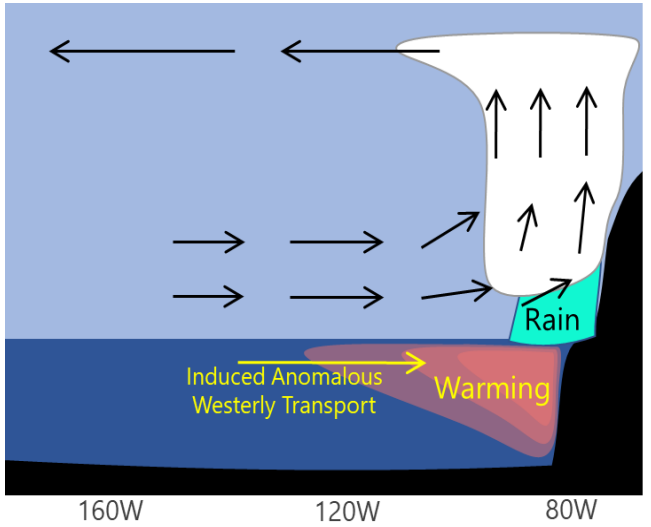
Superficial Transient Warming due to MJO Pulse

OISST Sea Surface Temperature Anomaly

April 13-19, 2020



Source: NOAA NNVL

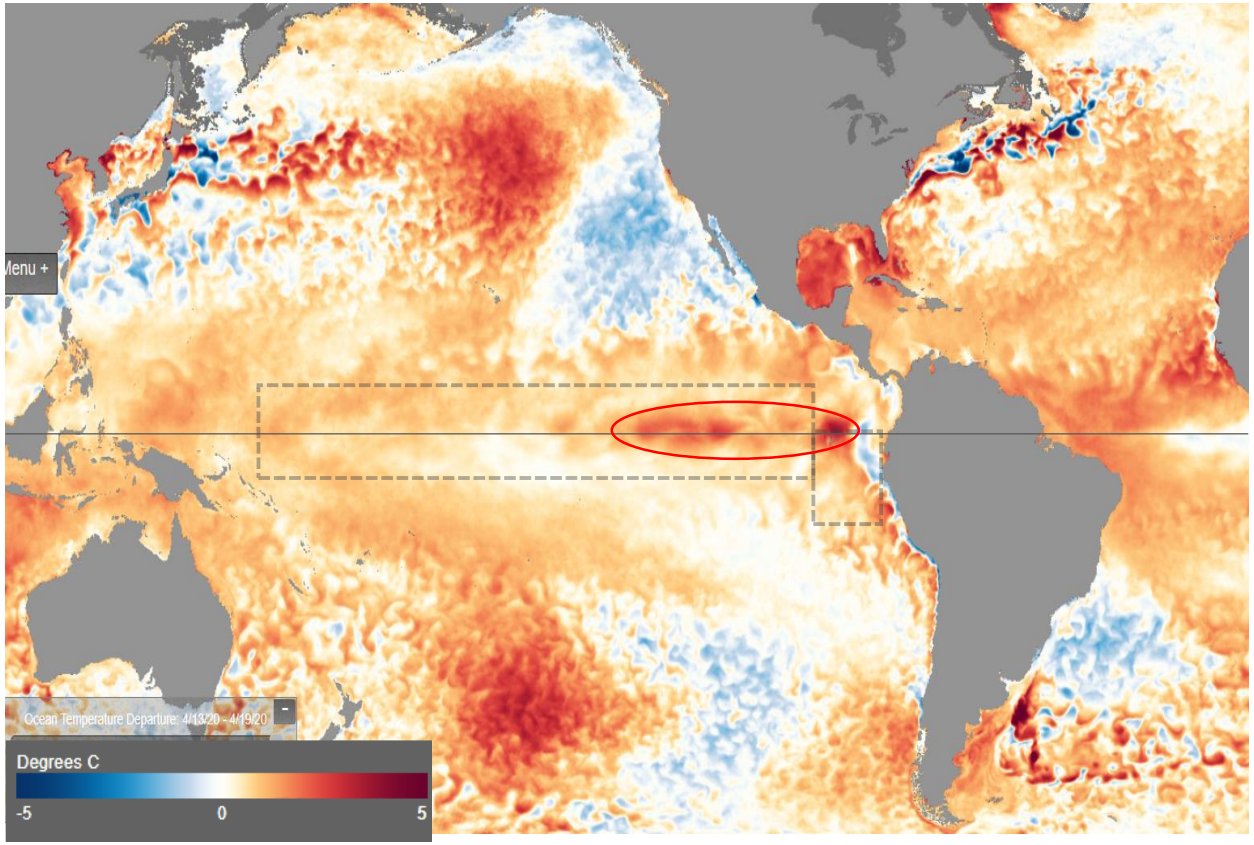


- Superficial warming in the Niño 3 region and in the Galapagos Islands, in phase with tail end of downwelling (warm) Oceanic Kelvin Wave.

Are the Surface Anomalies Deep?

OISST Sea Surface Temperature Anomaly

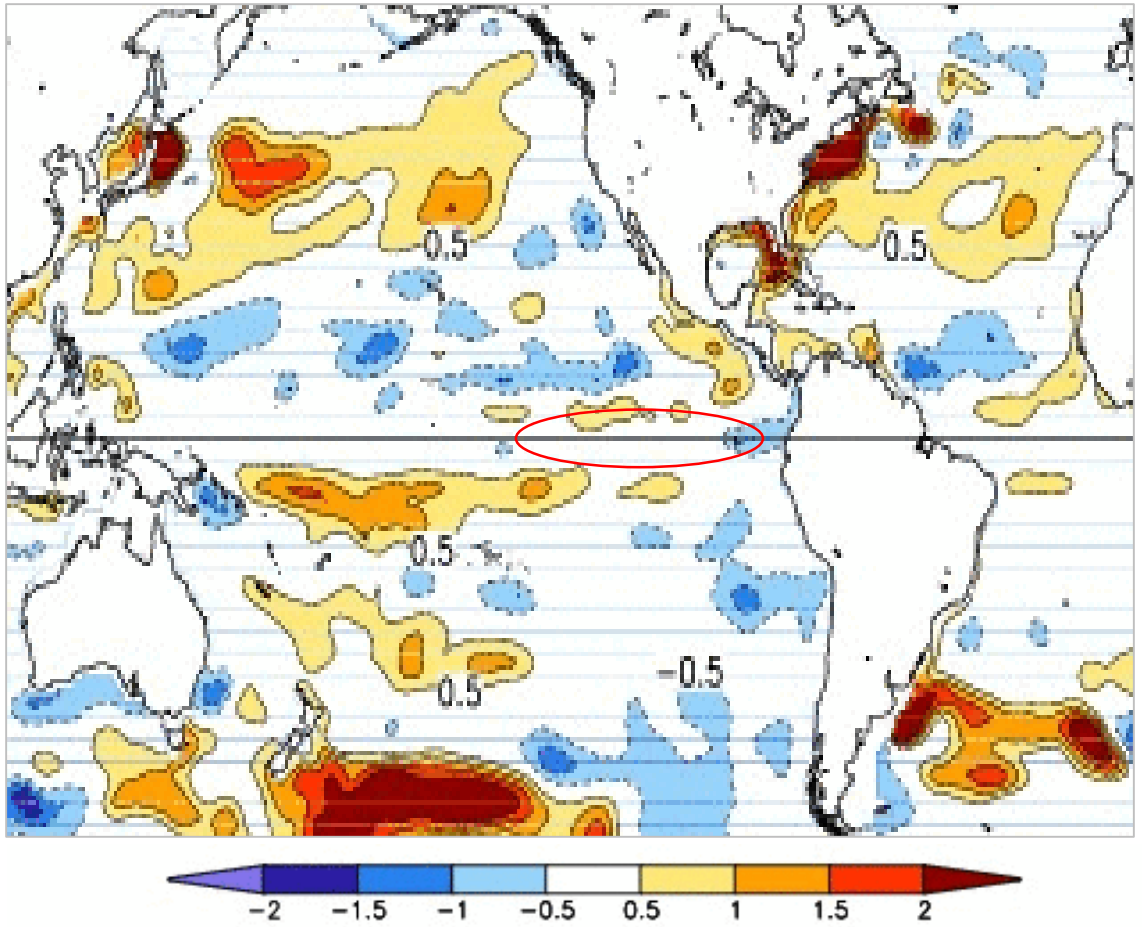
April 13-19, 2020



Source: NOAA NNVL

Top 300-m Sea Temperature Anomaly

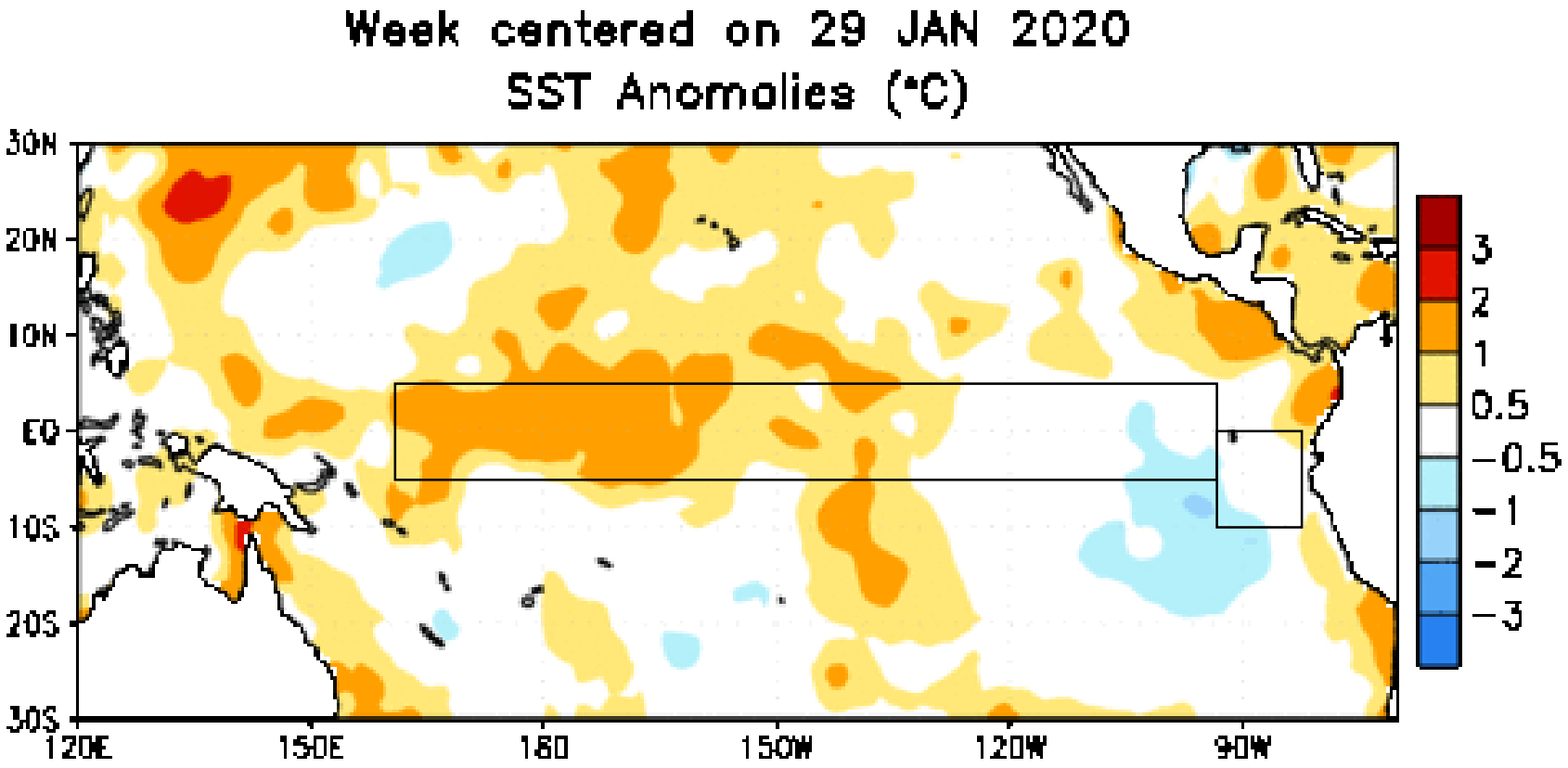
April 13, 2020



Source: GODAS, CPC

ENSO
Neutral

- Neutral conditions are present.
- Equatorial SSTs are near-to-above average across the Pacific.
- The tropical atmospheric circulation is generally consistent.



Source: CPC

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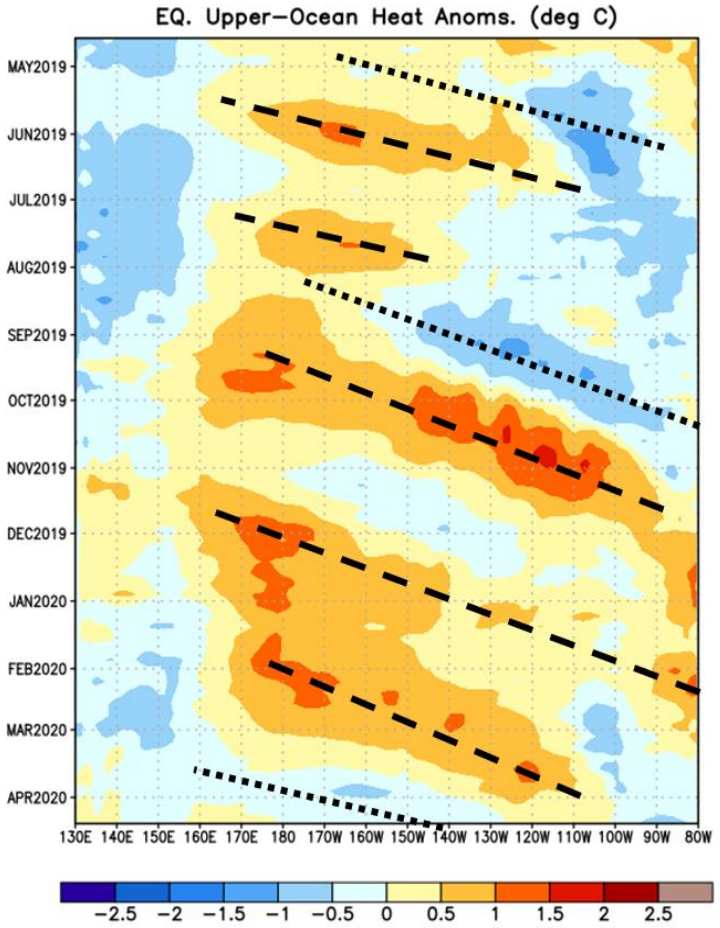
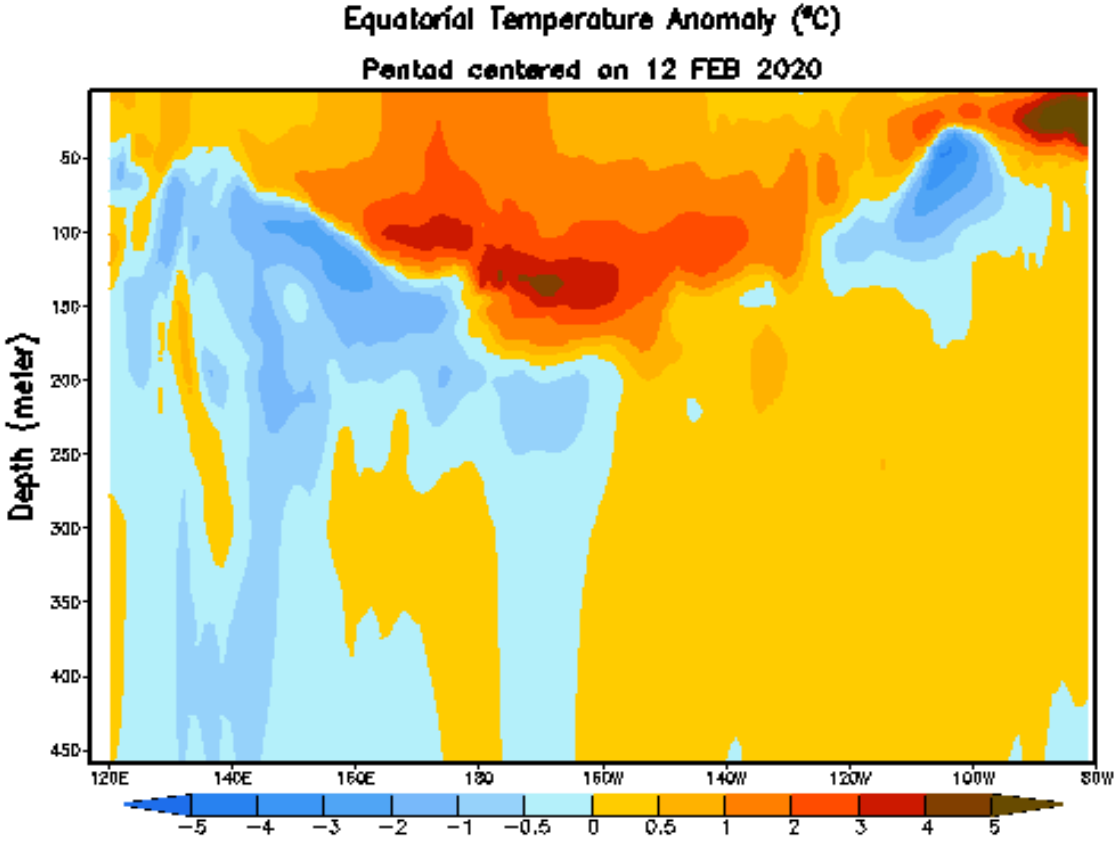
Upper Ocean Heat Content Hovmöller



Source: CPC

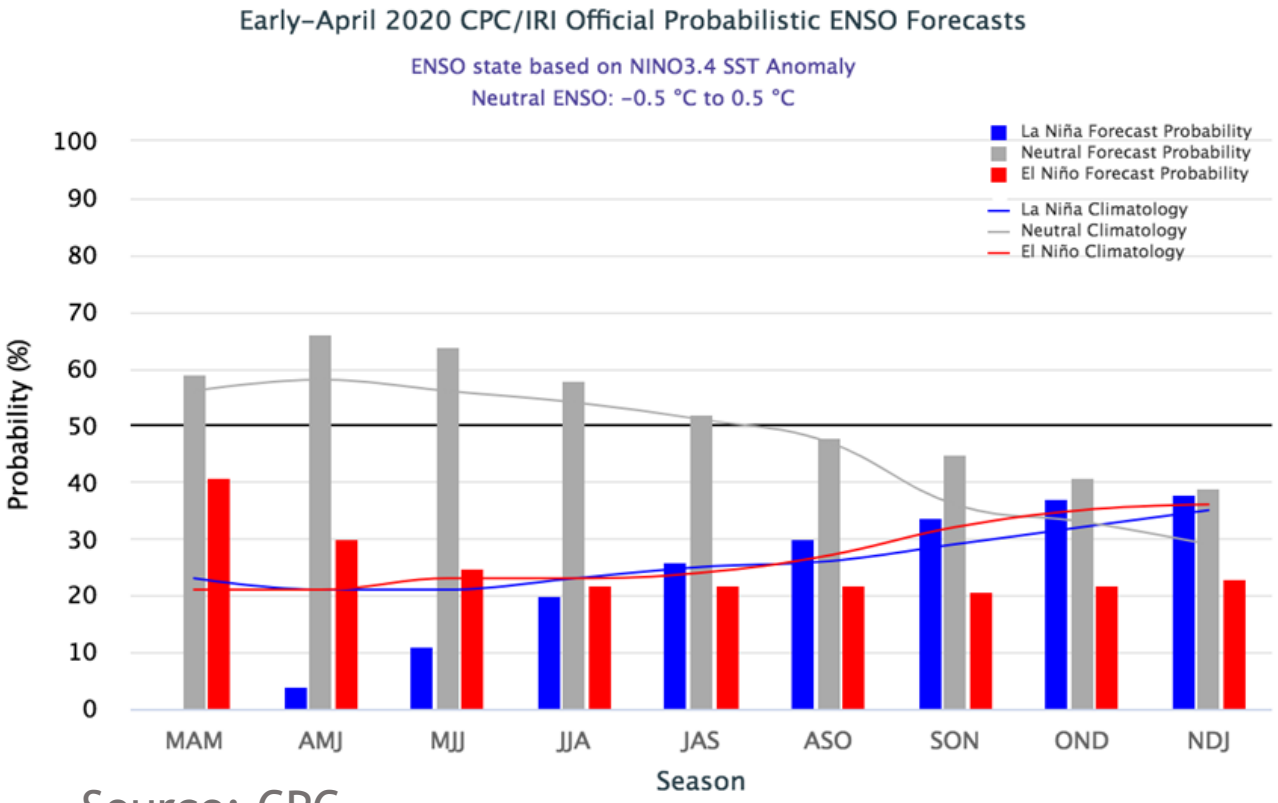


Source: CPC

ENSO Outlook

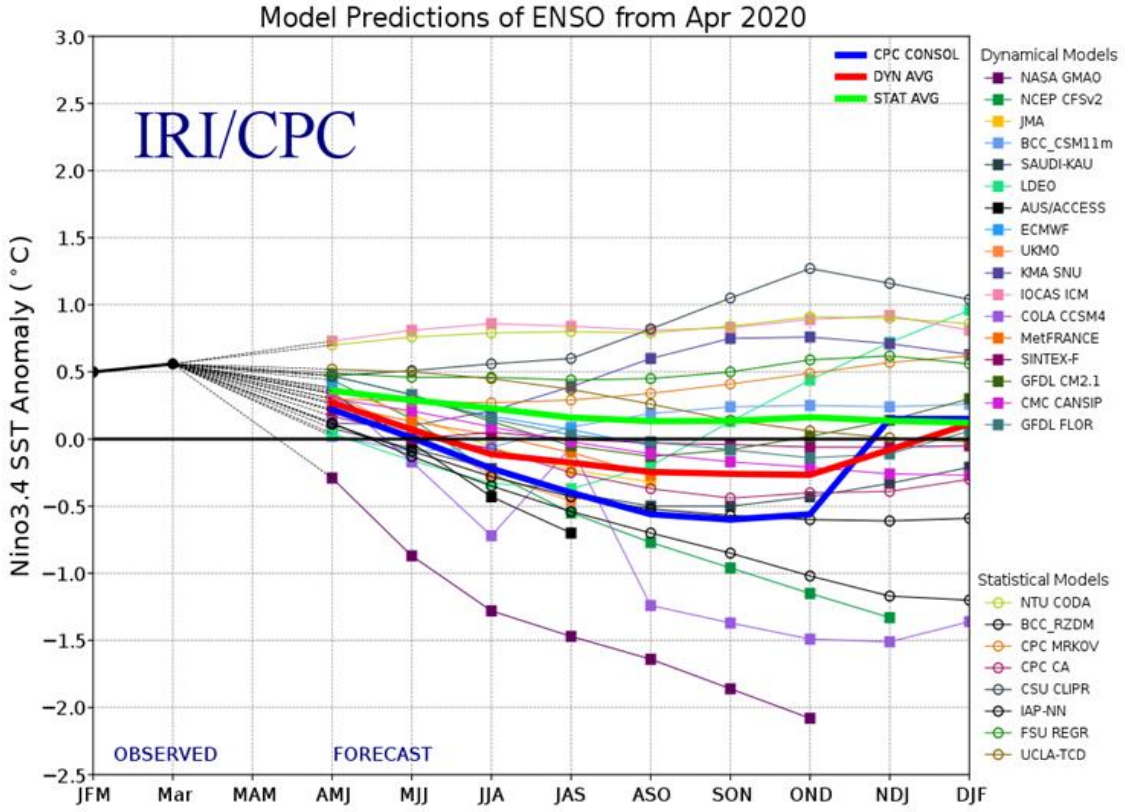
ENSO-neutral is favored for the Northern Hemisphere summer 2020 (~60% chance), remaining the most likely outcome through autumn.

CPC/IRI Probabilistic Forecast



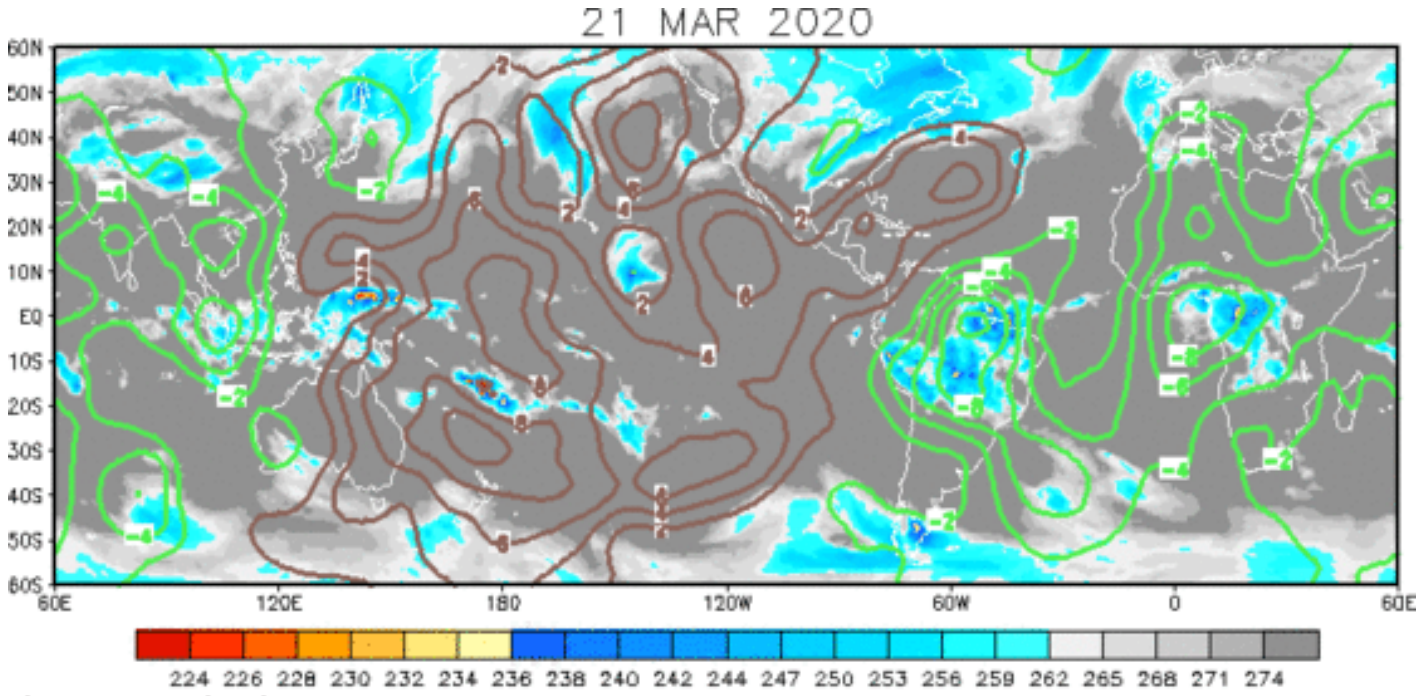
Source: CPC

IRI/CPC Dynamic Models



Madden-Julian Oscillation (MJO)

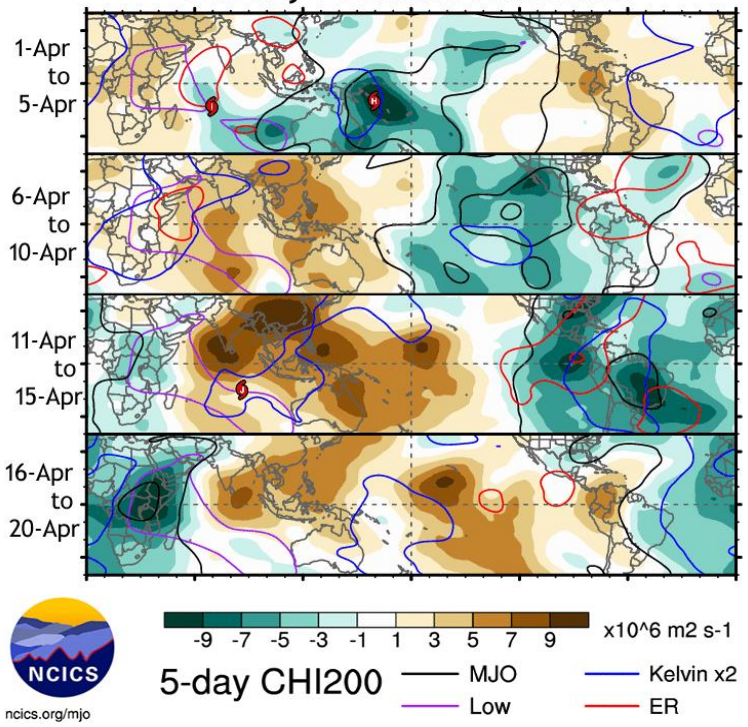
200 hPa Velocity Potential (CHI) and OLR Daily Anomalies



Source: CPC

OLR in °K

Velocity Potential Anomalies



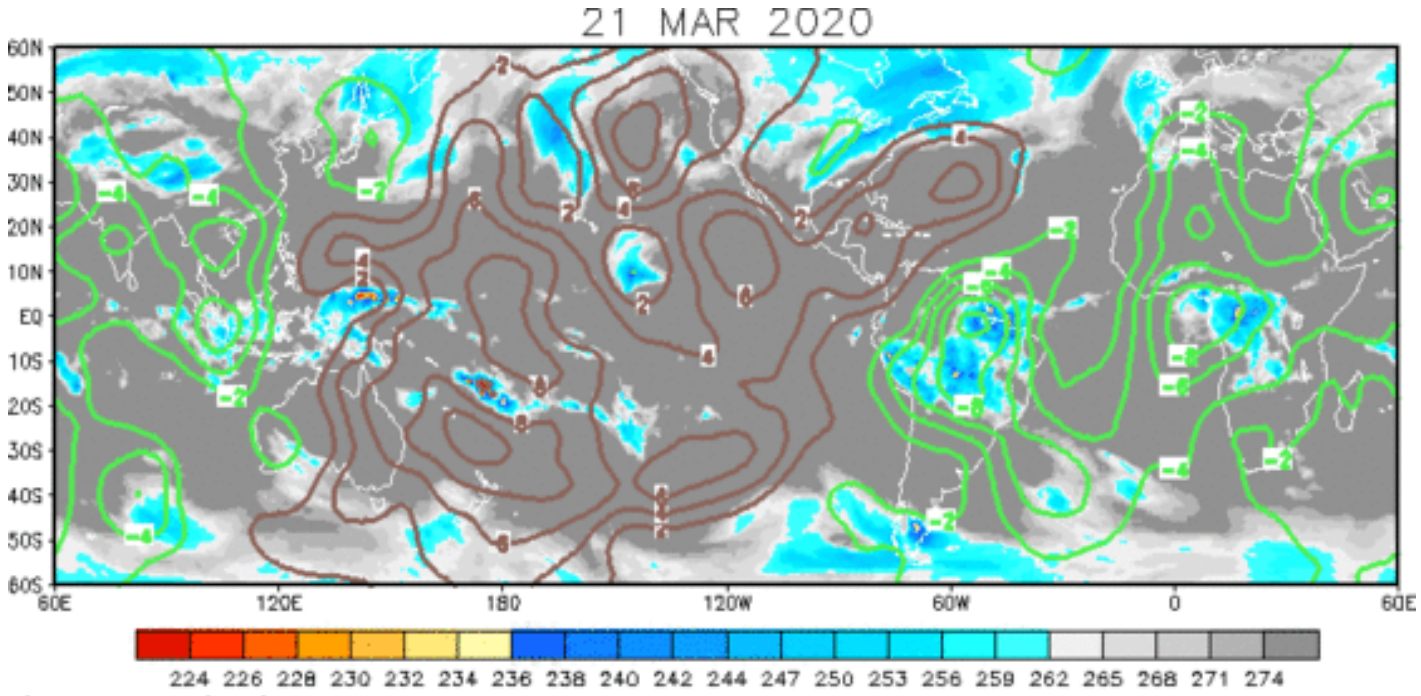
Source: NCICS

Favors rain storms

Favors limited rainfall

Madden-Julian Oscillation (MJO)

200 hPa Velocity Potential (CHI) and OLR Daily Anomalies



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OLR in °K

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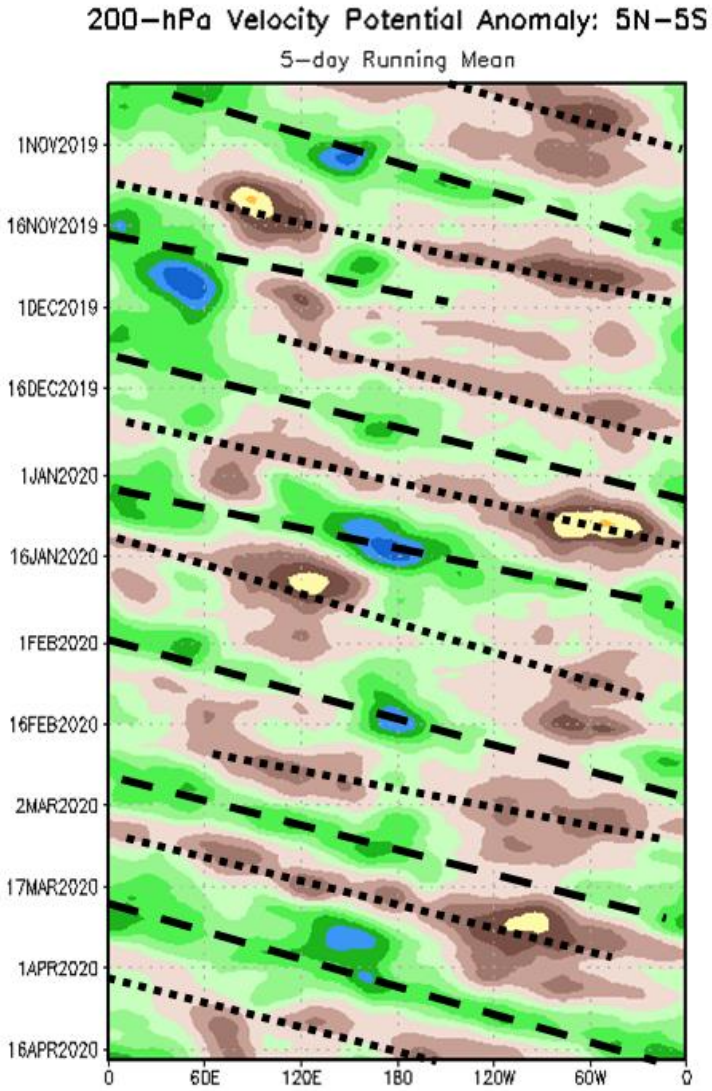
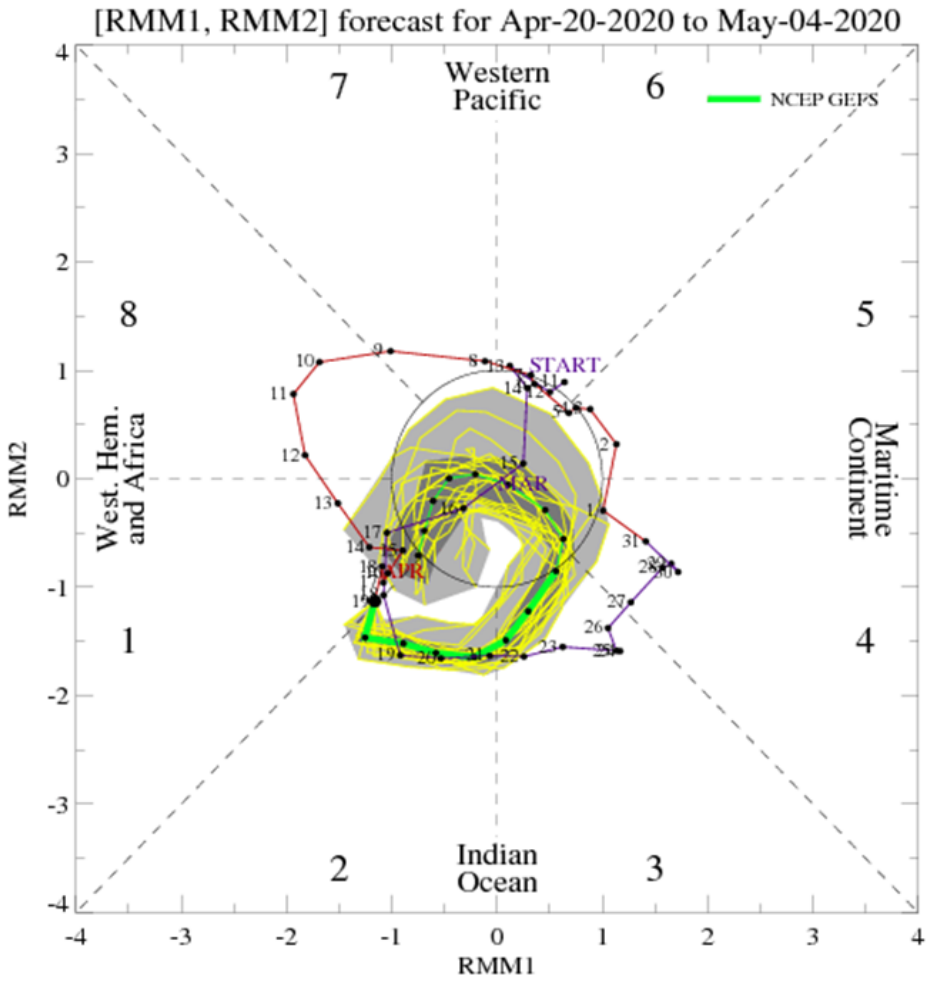
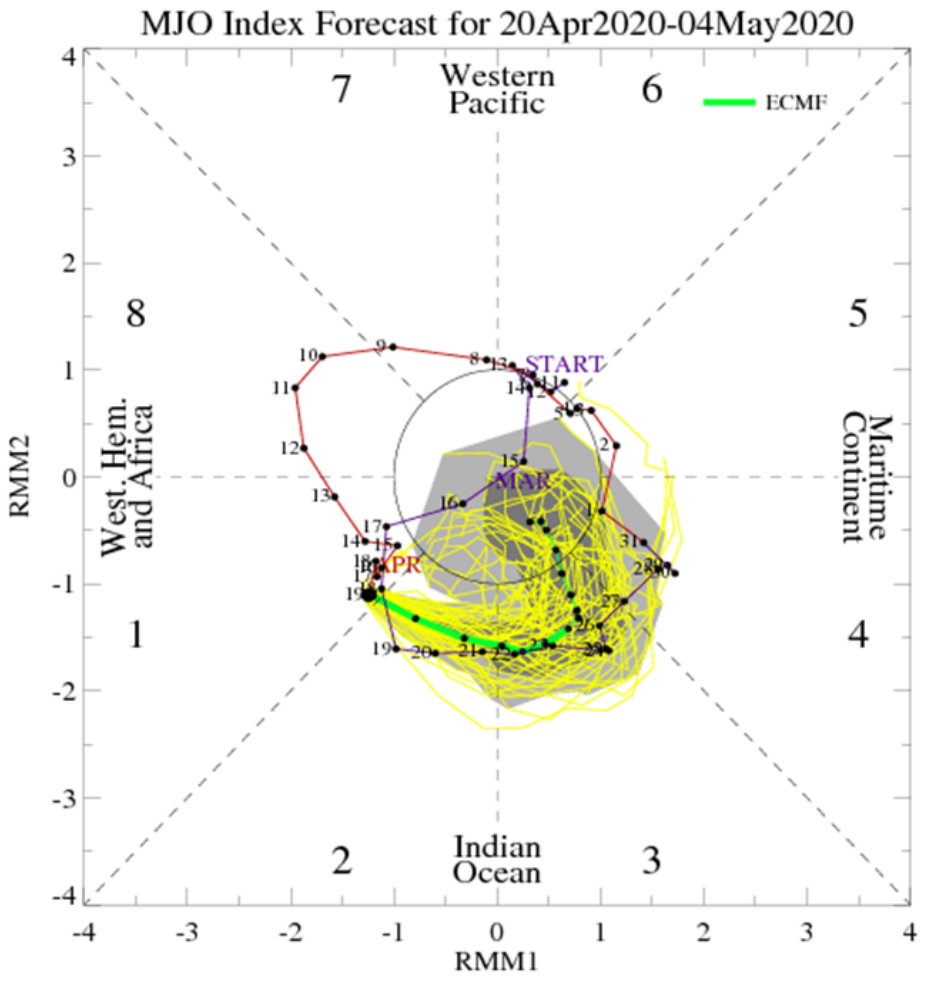


MJO Forecasts



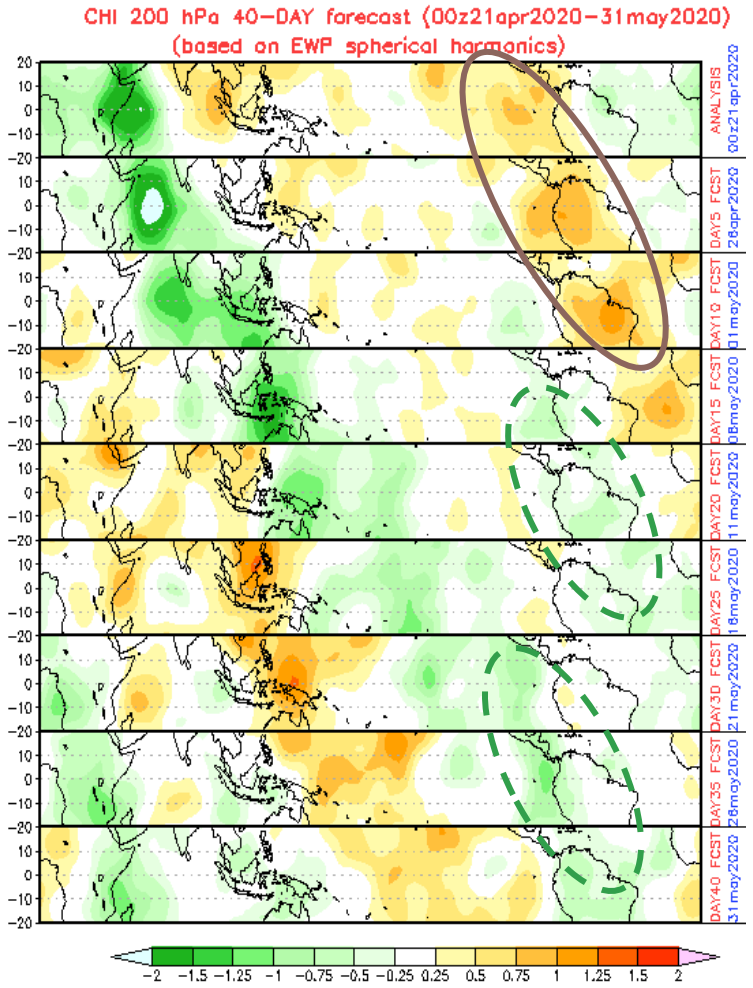
GEFS Forecast



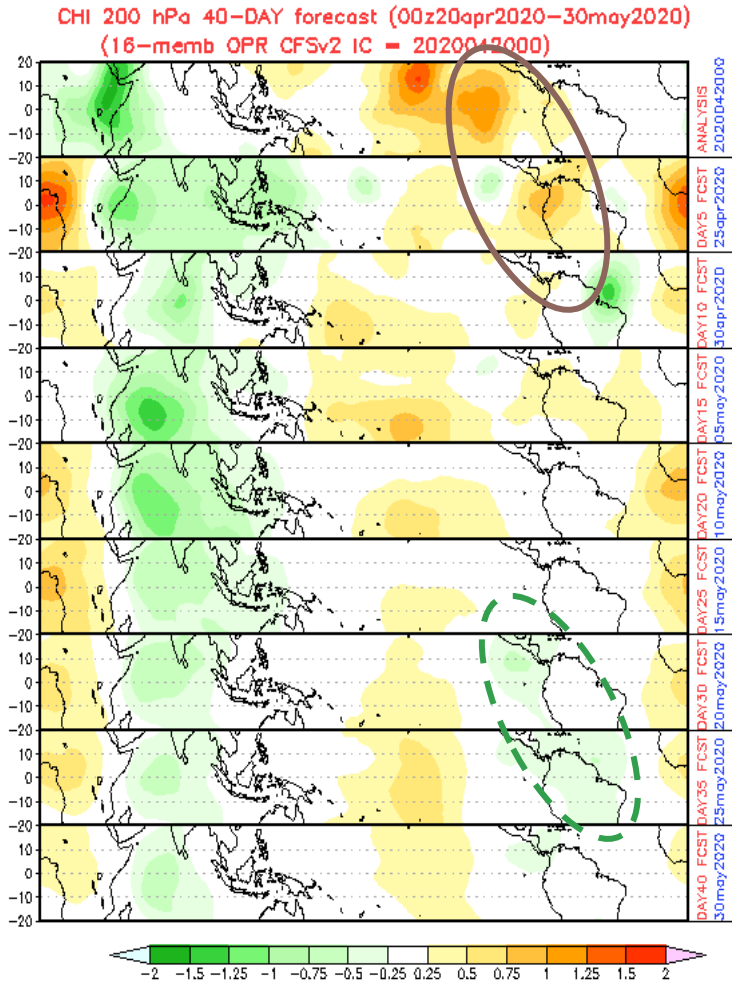
ECMWF Forecast

MJO Forecasts

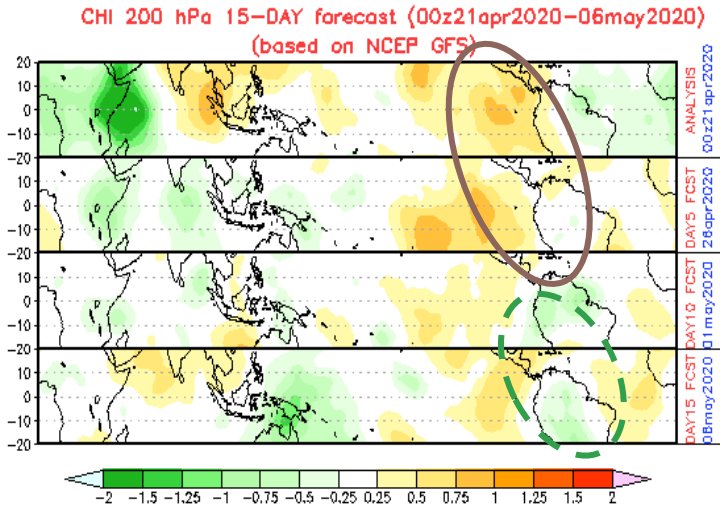
EWP



CFS

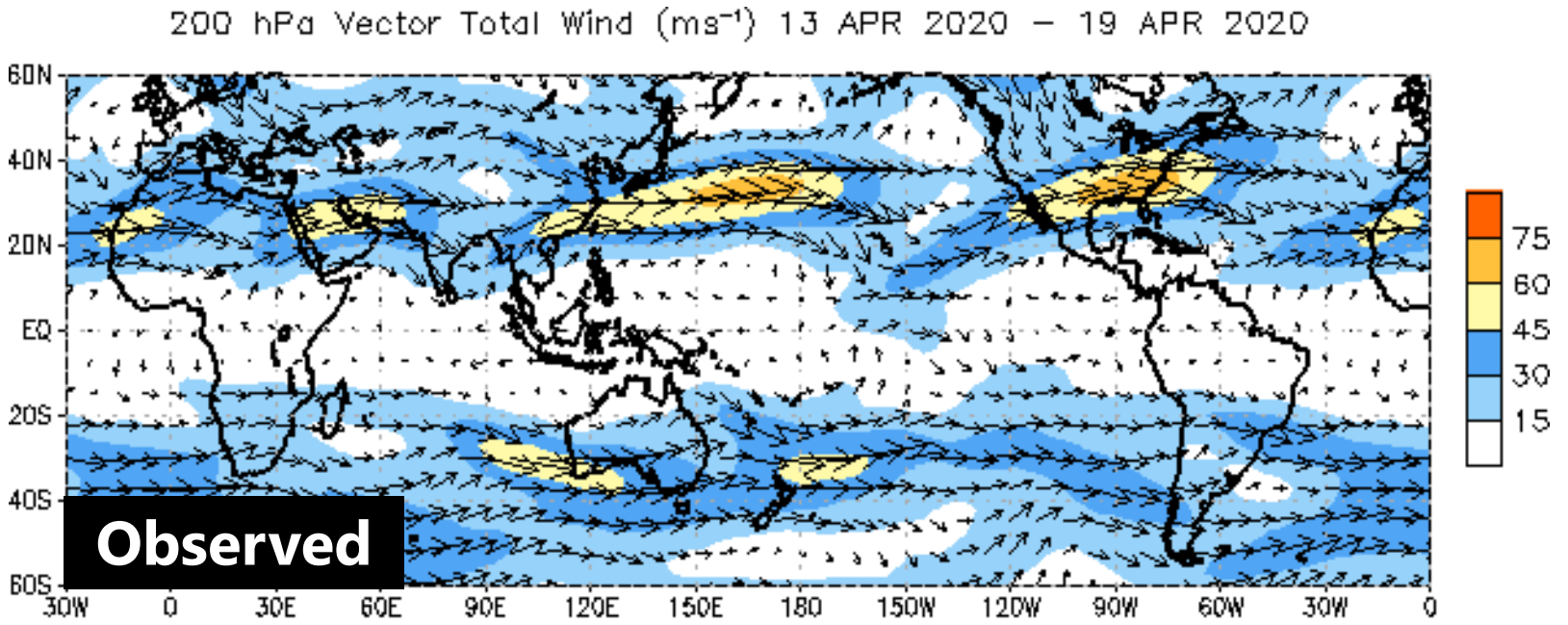


GFS

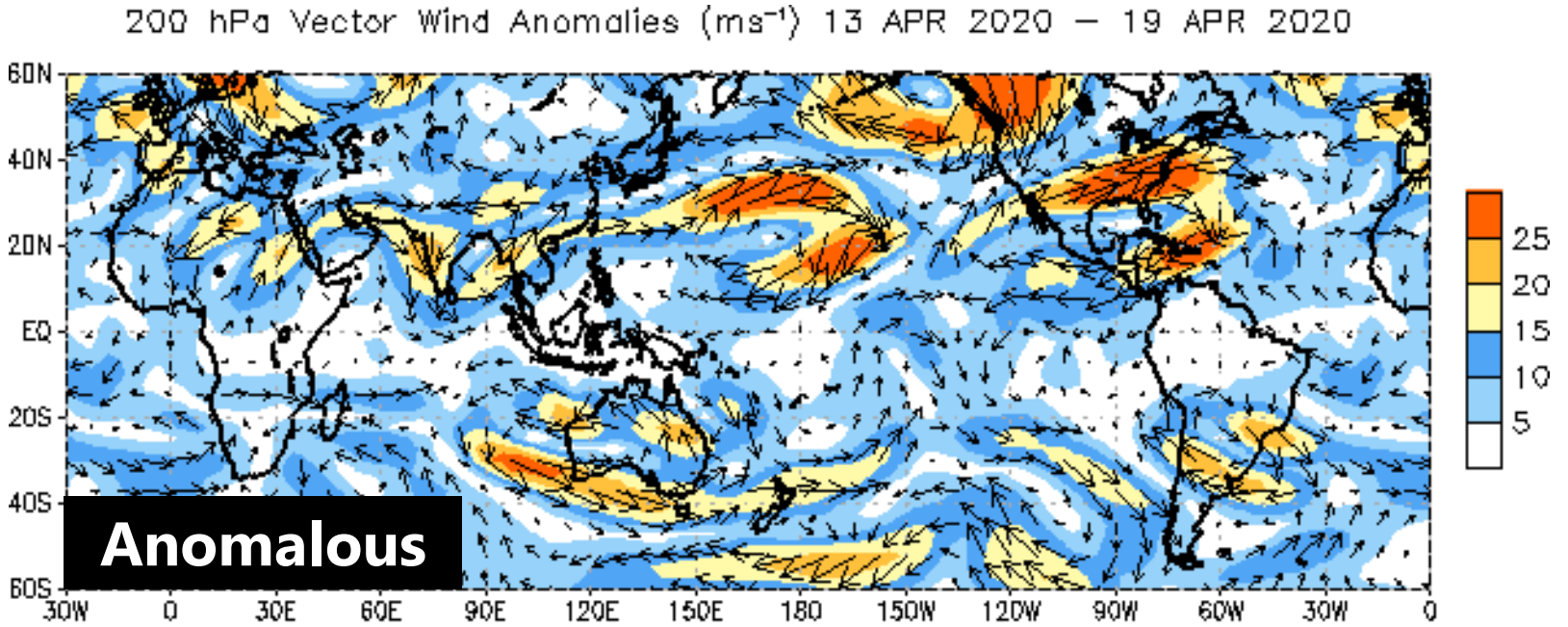


- Upper convergent (dry) through late April.
- Upper divergent (wet) maybe Mid-May? Low confidence.

Last Week's 200 hPa Winds

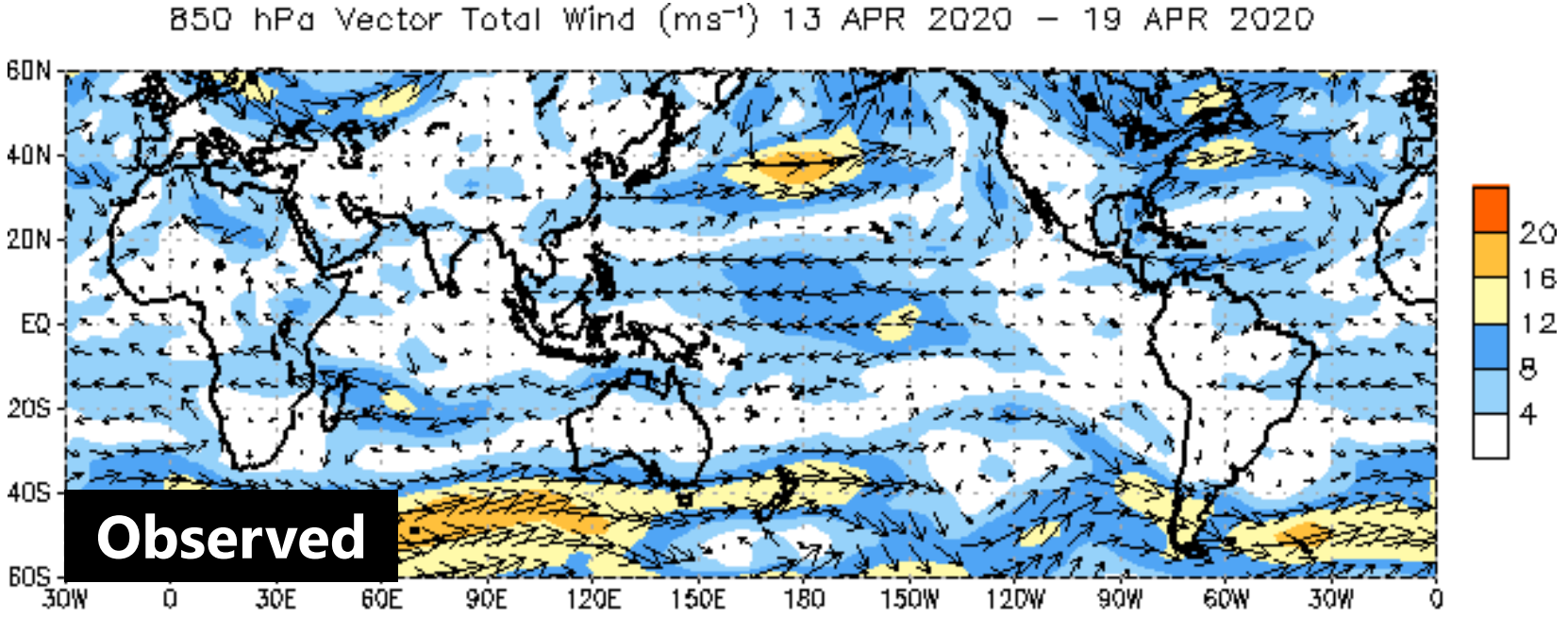


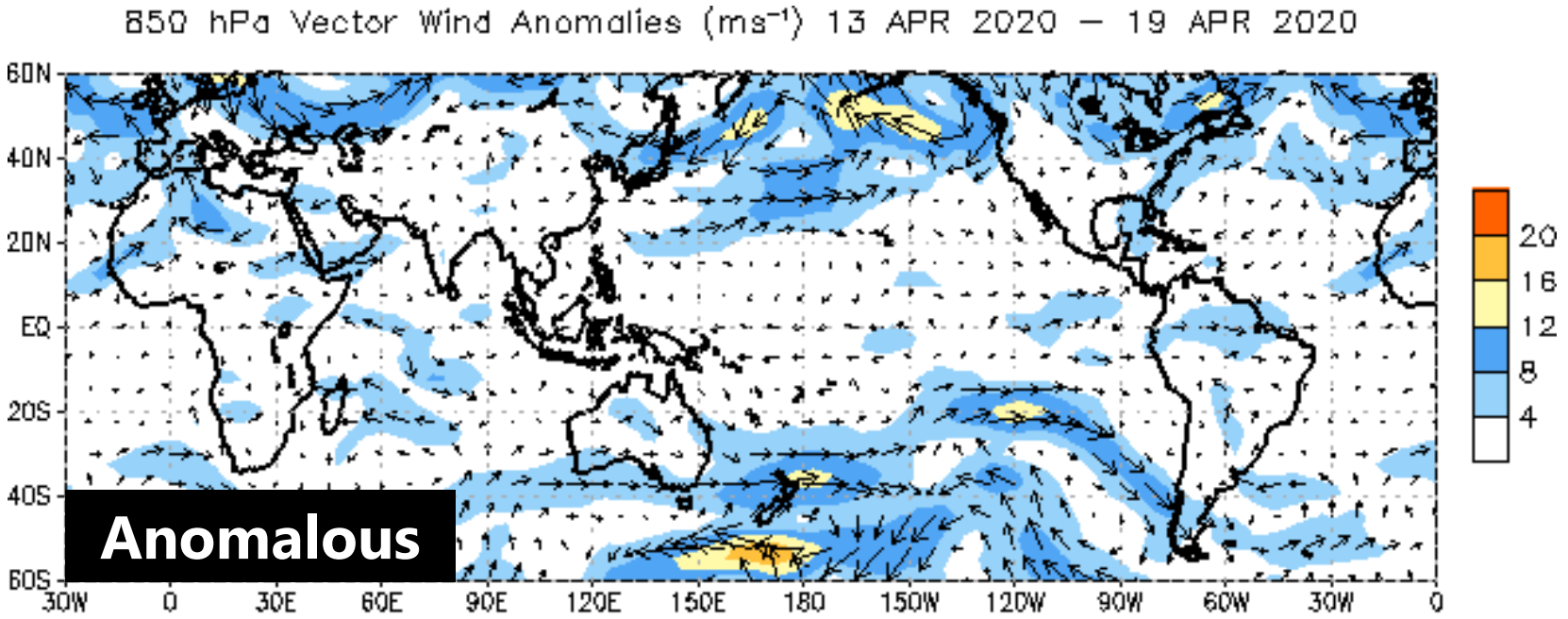
Data Source: NCEP/CDAS – Climatology (1981–2010)
(Wind speed > 5 ms⁻¹ shaded)



Data Source: NCEP/CDAS
(Wind speed > 15 ms⁻¹ shaded)

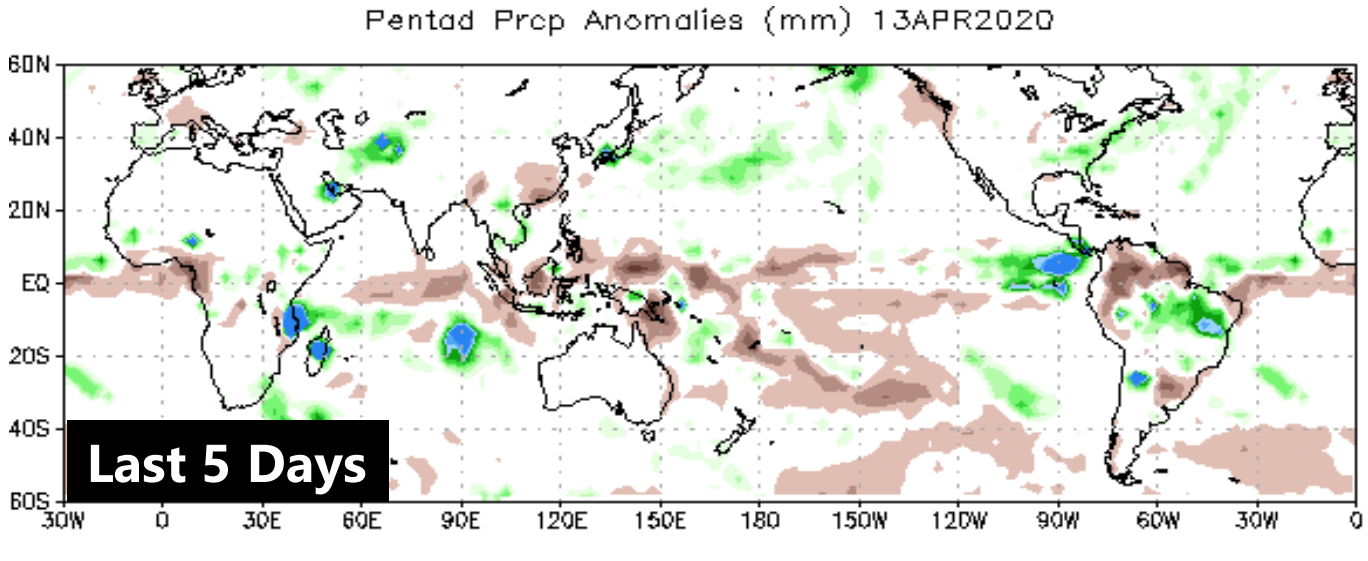
Last Week's 850 hPa Winds

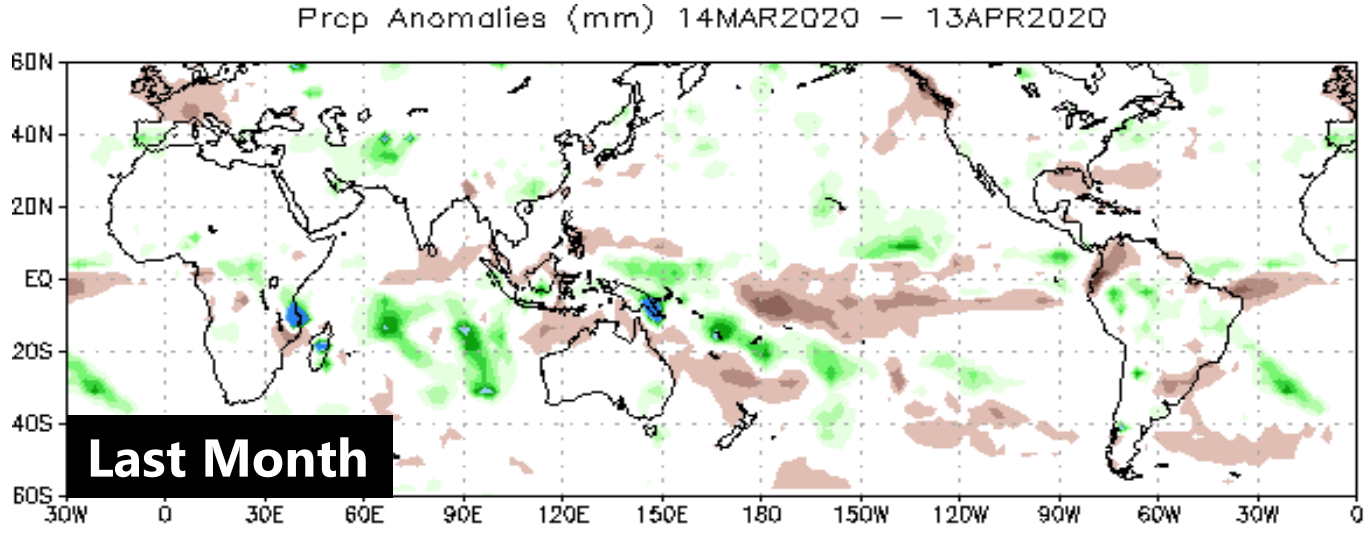


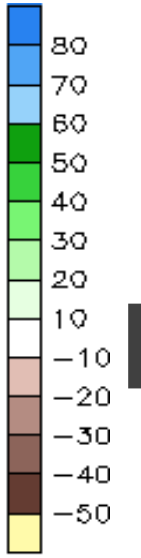


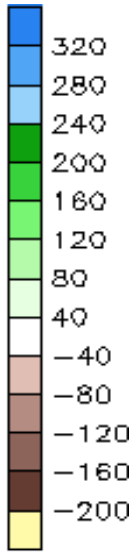
Data Source: NCEP/CDAS
(Wind speed > 4 ms⁻¹ shaded)

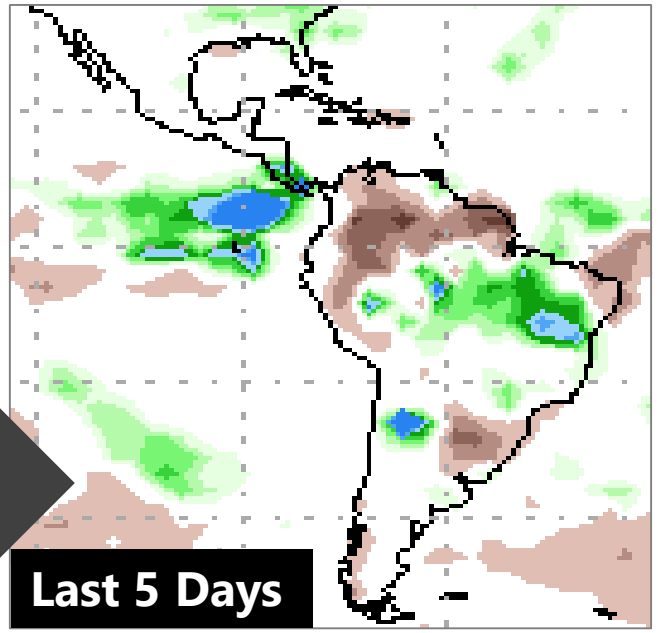
Precipitation Anomalies

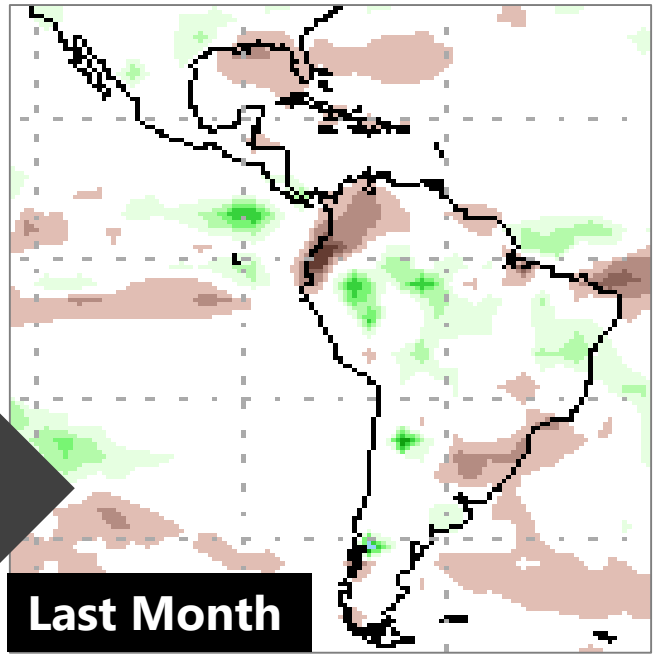








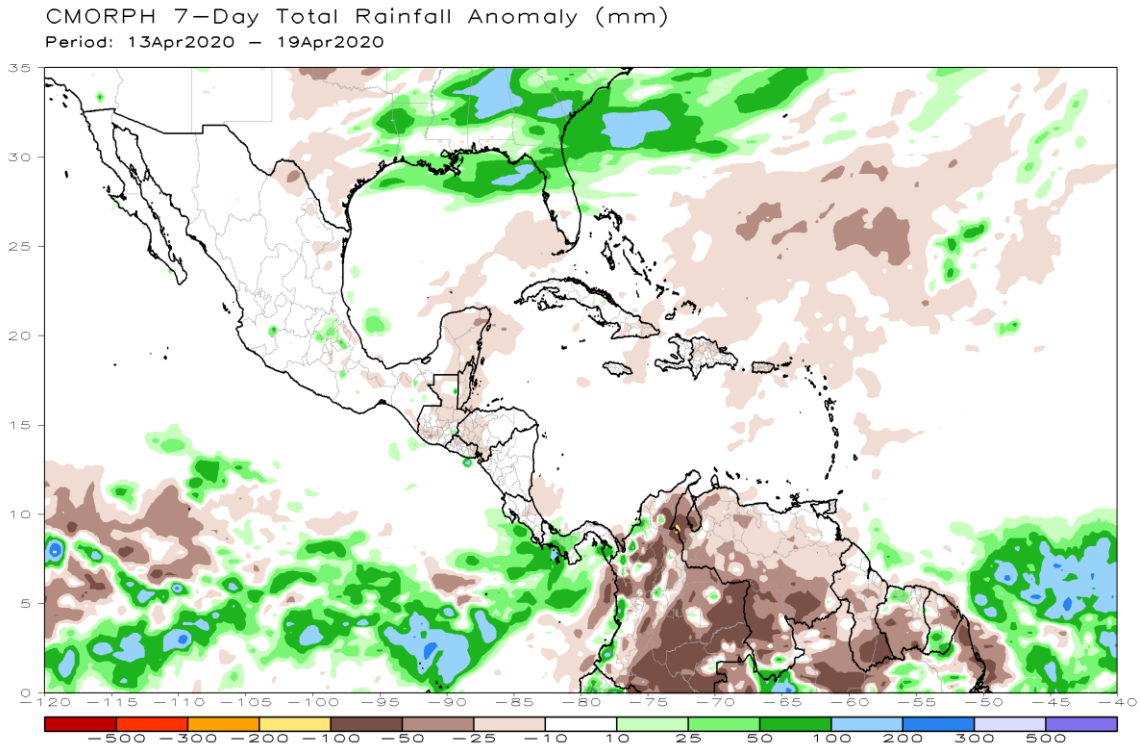




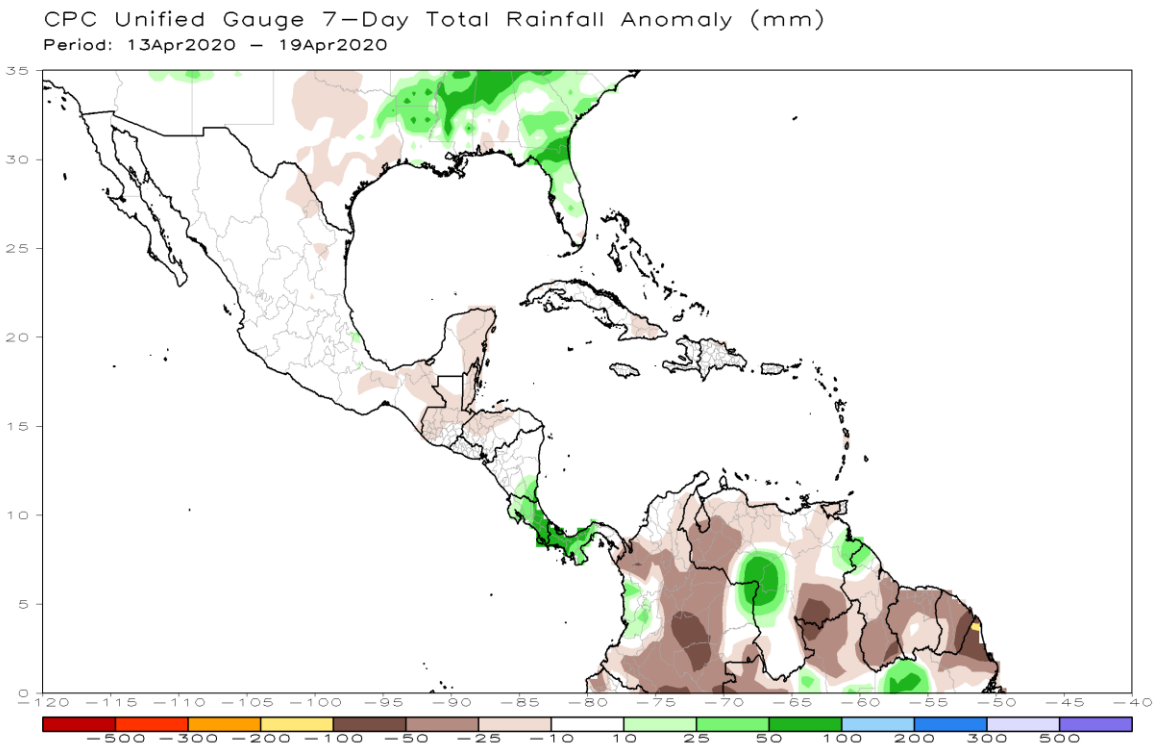
Data Source: NCEP CMAP Precipitation Climatology (1979–1995)

OBSERVED: Last Week's Rainfall Anomalies

CMORPH



CPC Unified Analysis



OBSERVED: Last Week's Rainfall Anomalies

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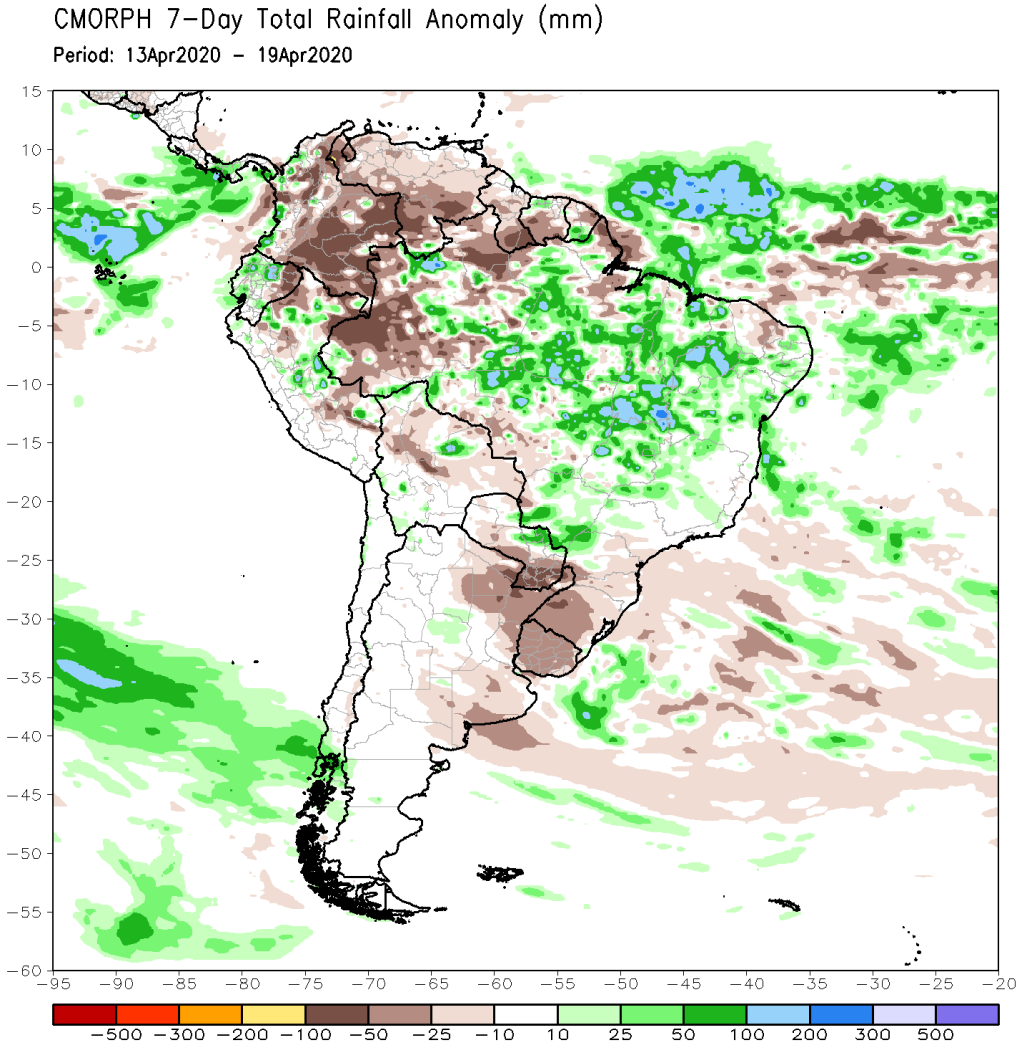

CPC Unified Analysis