

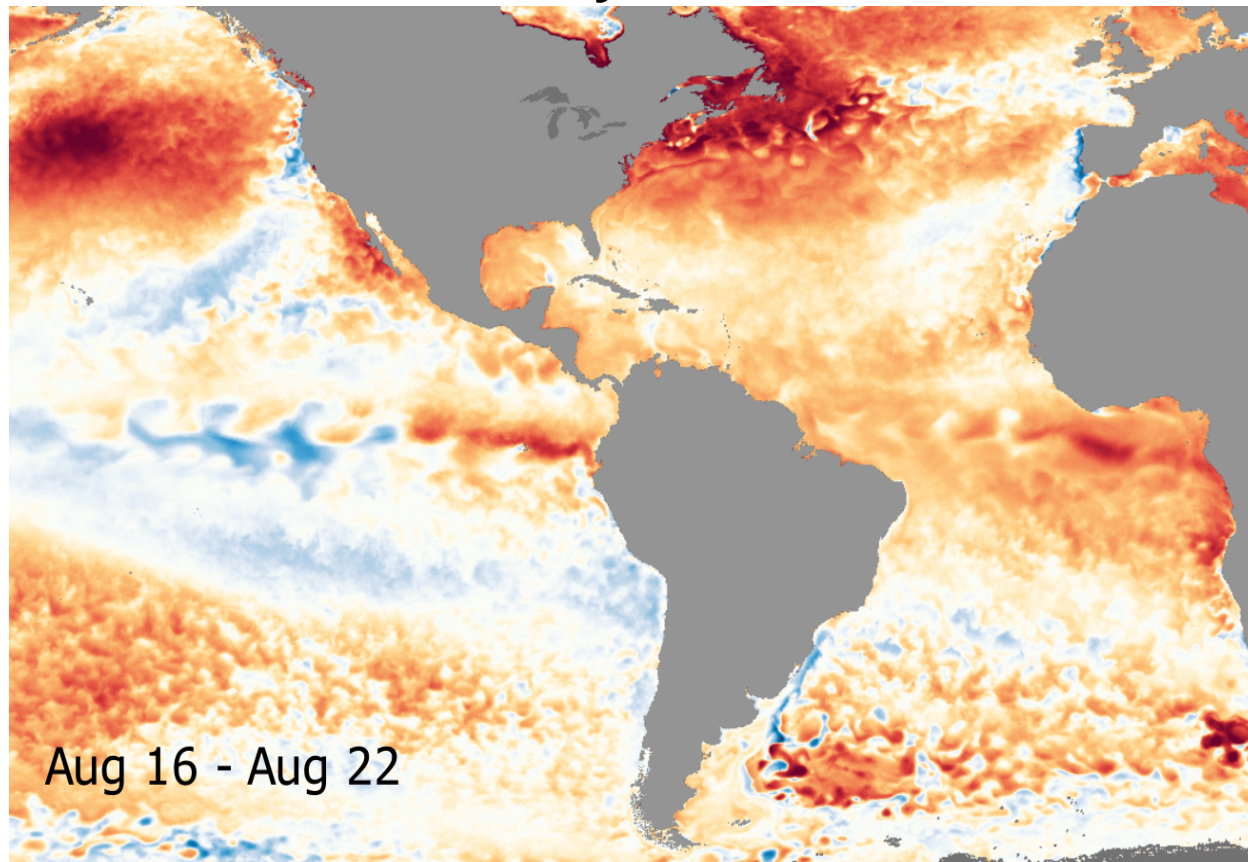


Monthly Regional Focus Group Session

Wednesday 22 September 2021

Sea Surface Temperatures

Anomaly Evolution



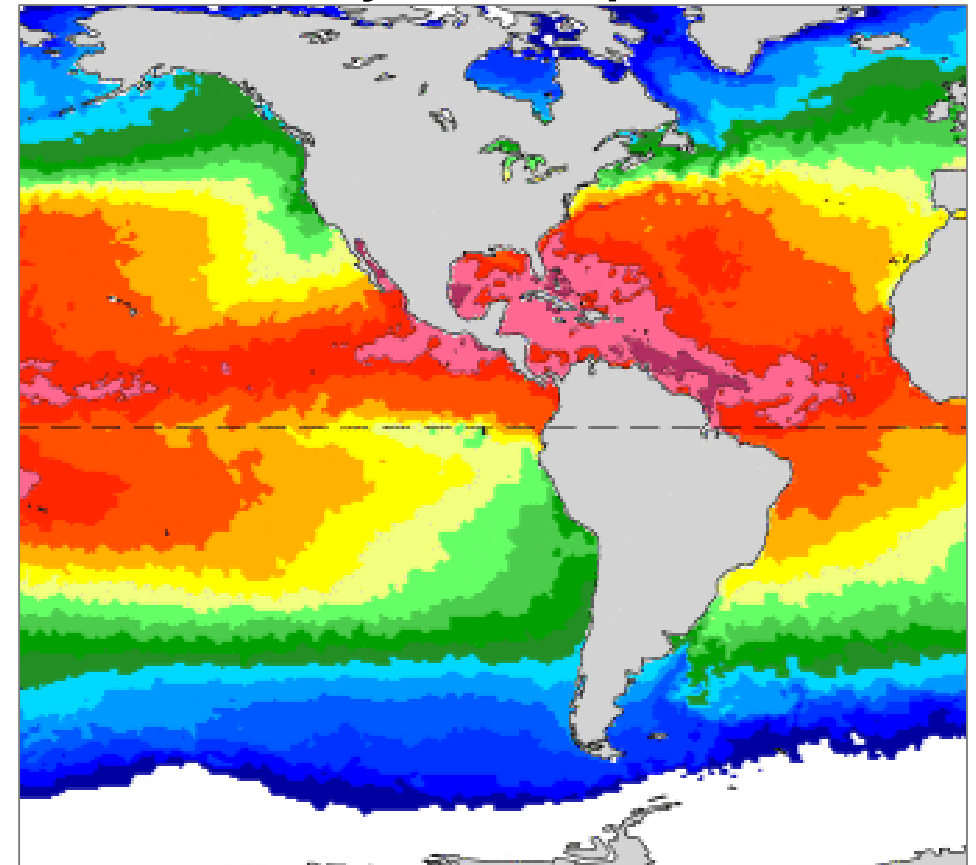
Aug 16 - Aug 22

OISST, NOAA NNVL

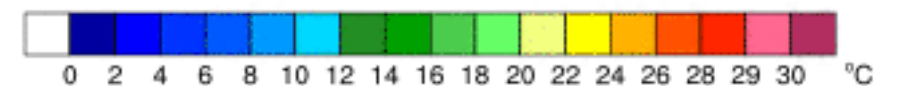


<https://www.nnvl.noaa.gov/view/globaldata.html#SSTA>

Daily SST Sep 20



PSL

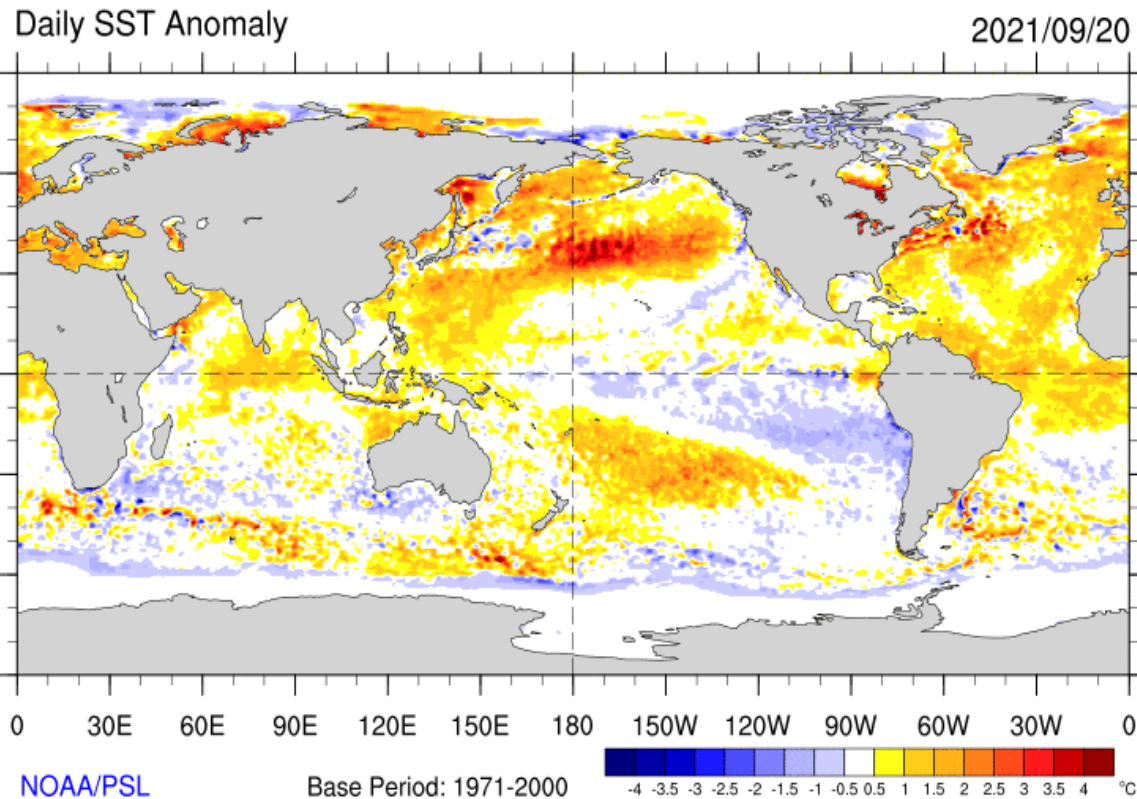


<https://psl.noaa.gov/map/clim/sst.shtml>

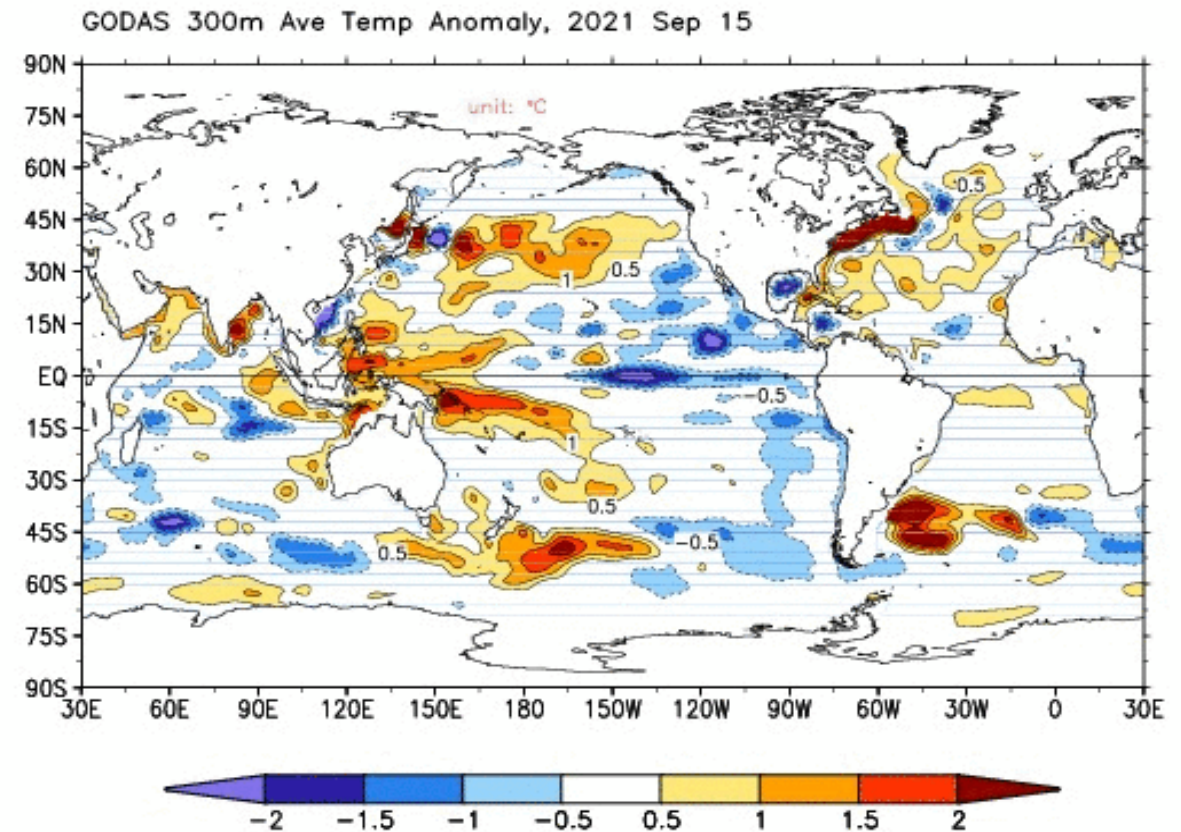
Are the anomalies deep?

Deep anomalies tend to last longer, becoming useful for subseasonal forecasting.

Top 300m Layer Anomaly



Source: <https://psl.noaa.gov/map/clim/sst.shtml>



Source: CPC GODAS, <https://www.cpc.ncep.noaa.gov/products/GODAS/>

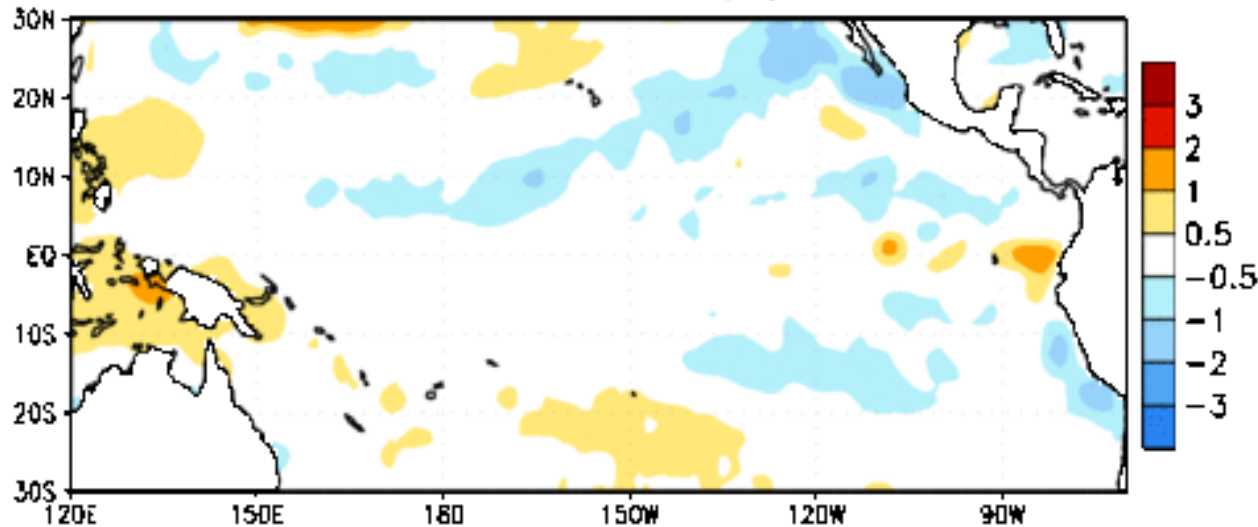
ENSO: Neutral

ENSO Alert System Status: La Niña Watch

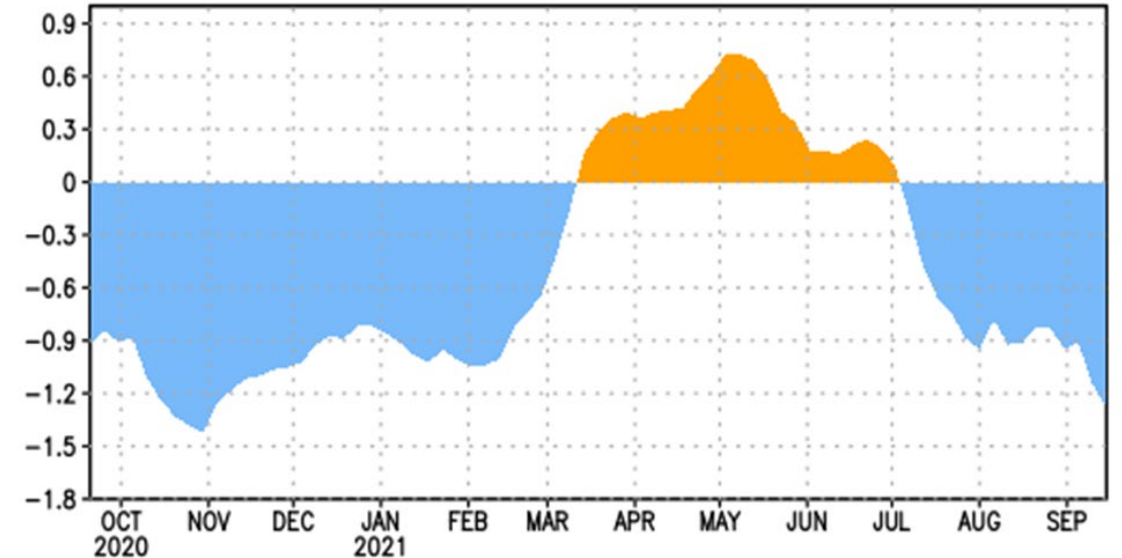
ENSO-neutral conditions are present.*

Equatorial sea surface temperatures (SSTs) are near-to-below average across most of the Pacific Ocean.

Week centered on 30 JUN 2021
SST Anomalies (°C)

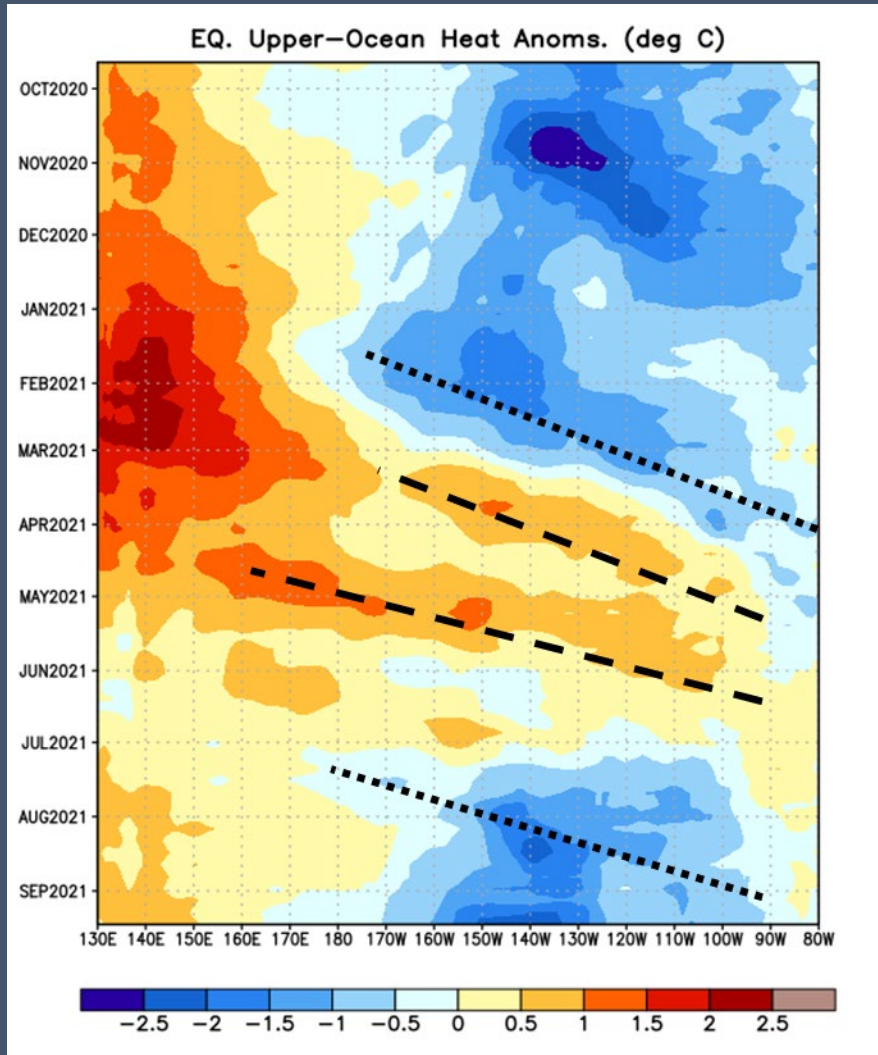


EQ. Upper-Ocean Heat Anoms. (deg C) for 180–100W



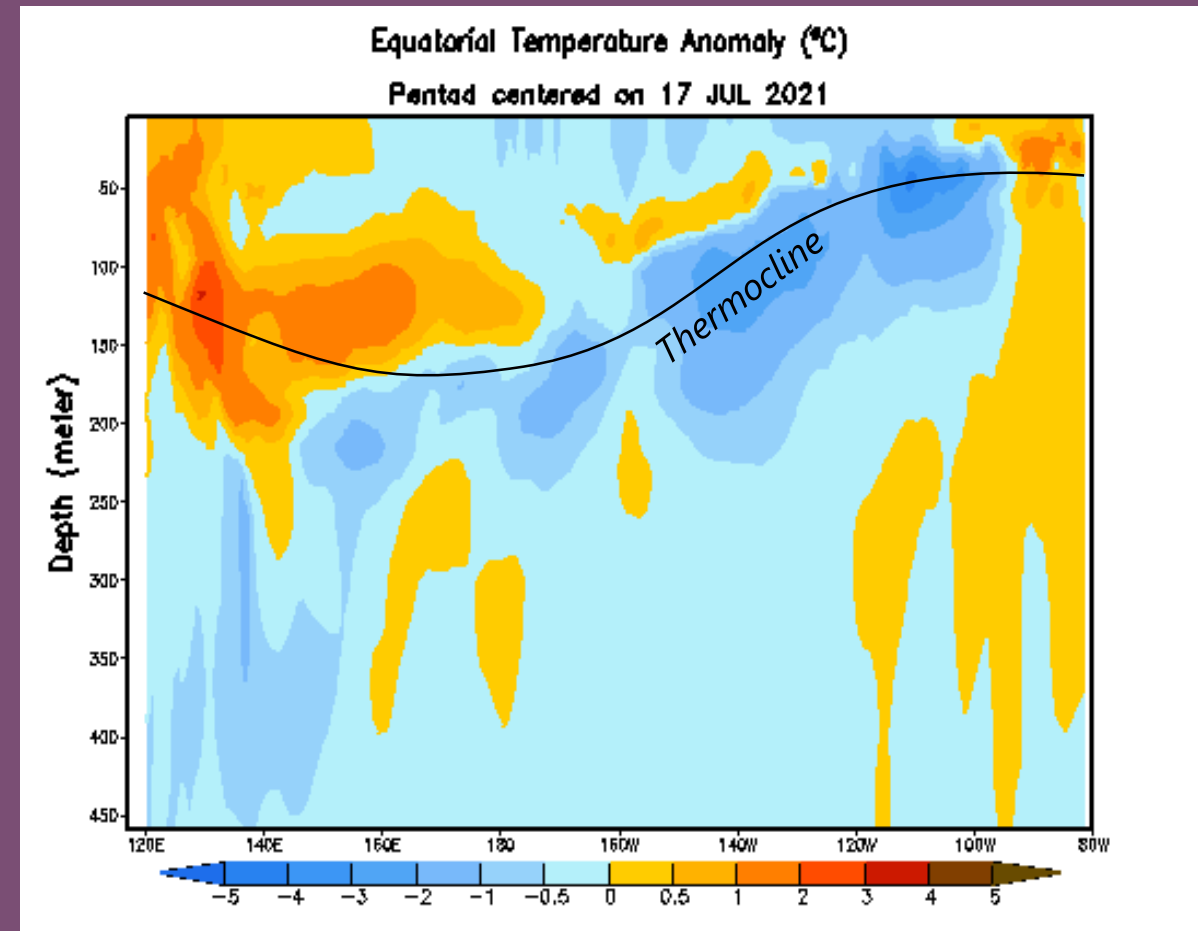
ENSO: Oceanic Kelvin Waves

Hovmöller: Heat Content



Source:
CPC

Equatorial Pacific Temp. Anomaly



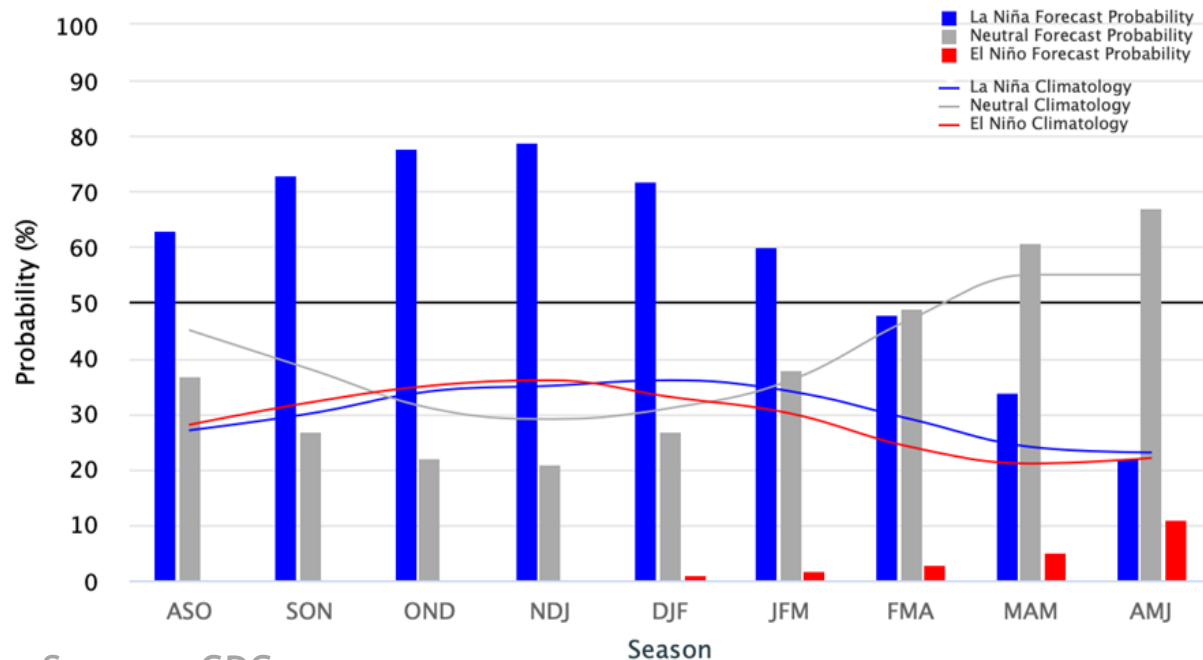
ENSO Outlook

A transition from ENSO-neutral to La Niña is favored in the next couple of months, with a 70-80% chance of La Niña during the Northern Hemisphere winter 2021-22.*

CPC/IRI Probabilistic Forecast

Early-September 2021 CPC/IRI Official Probabilistic ENSO Forecasts

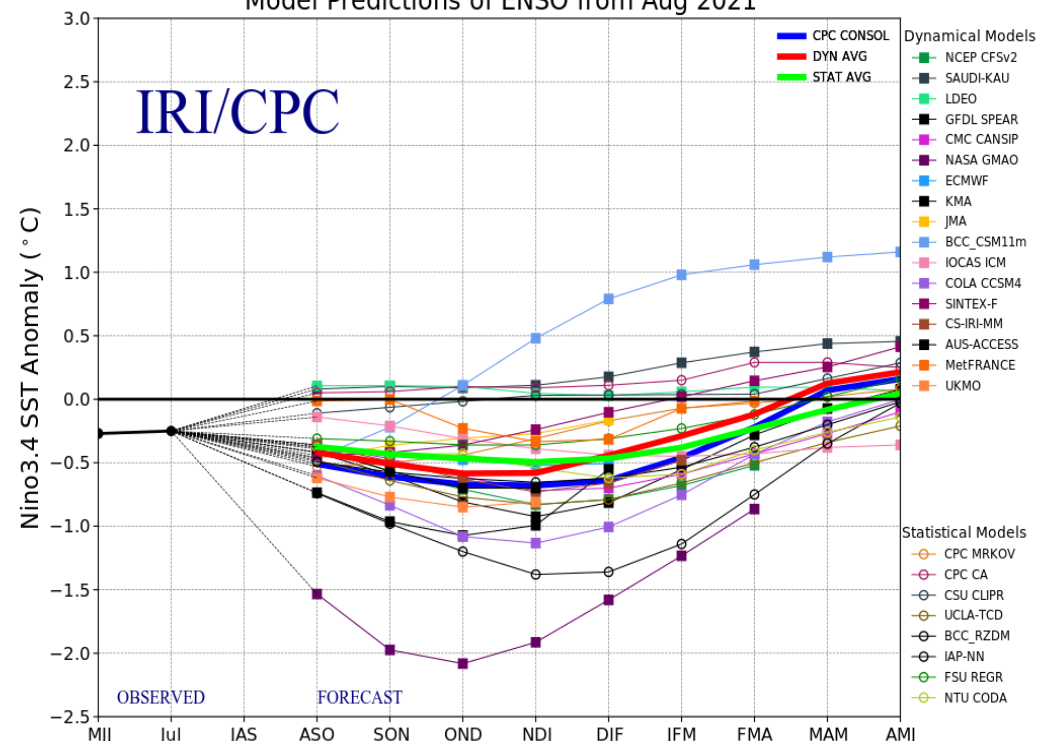
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5°C to 0.5°C



Source: CPC

IRI/CPC Dynamic Models

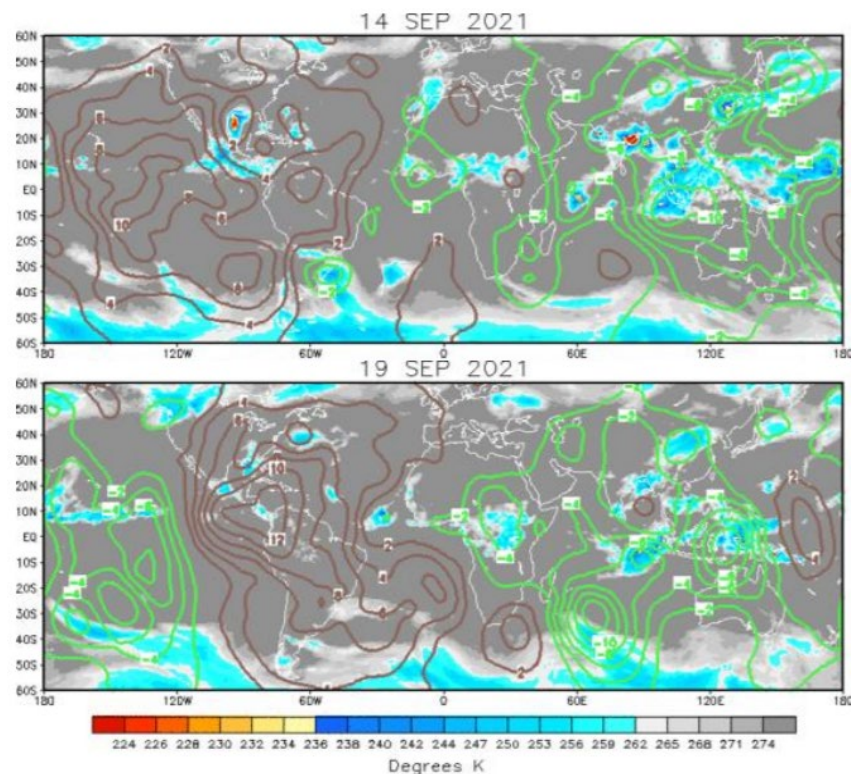
Model Predictions of ENSO from Aug 2021



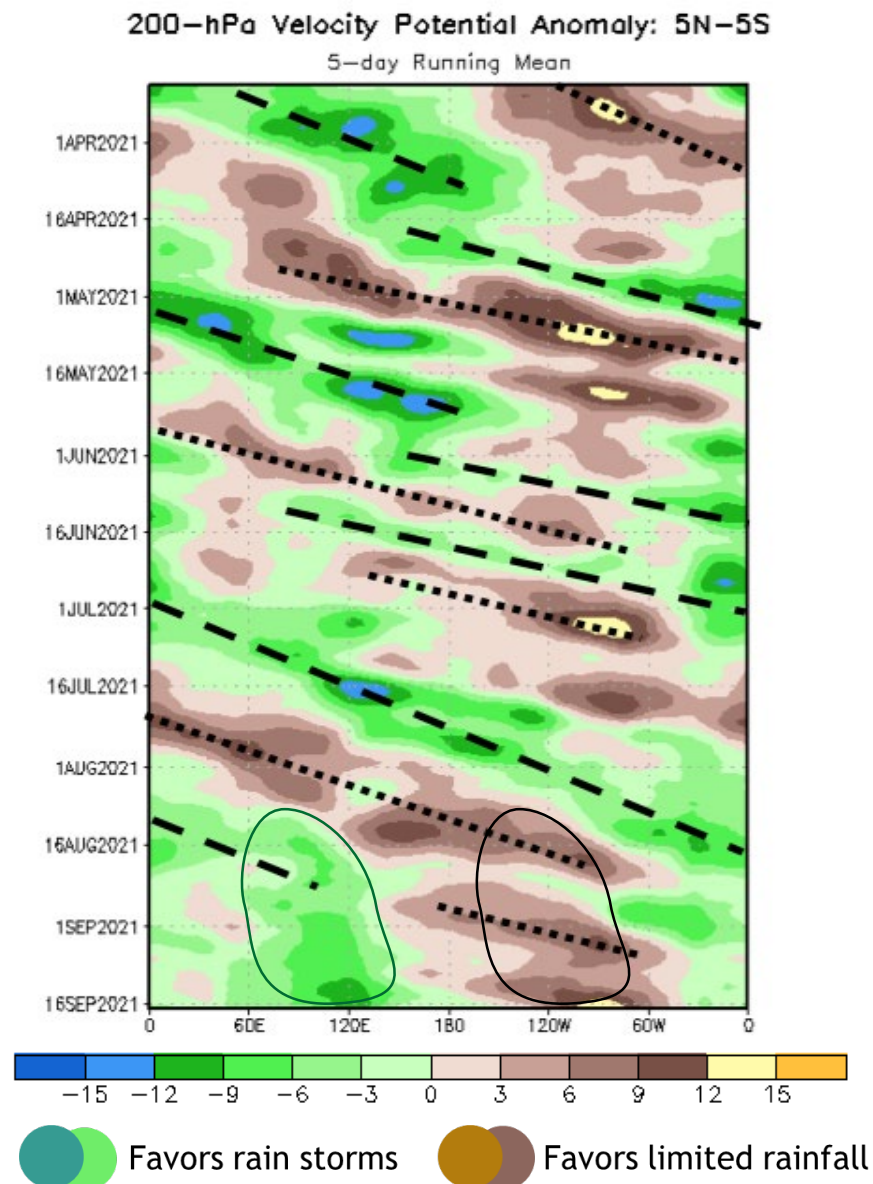
Madden-Julian Oscillation (MJO)

CPC Analysis:

- Wave-1 of the MJO continues
- **Upper divergent (wet)** in the Maritime Continent
- **Upper convergent (dry)** over the Americas
- Increasing evidence of limited propagation

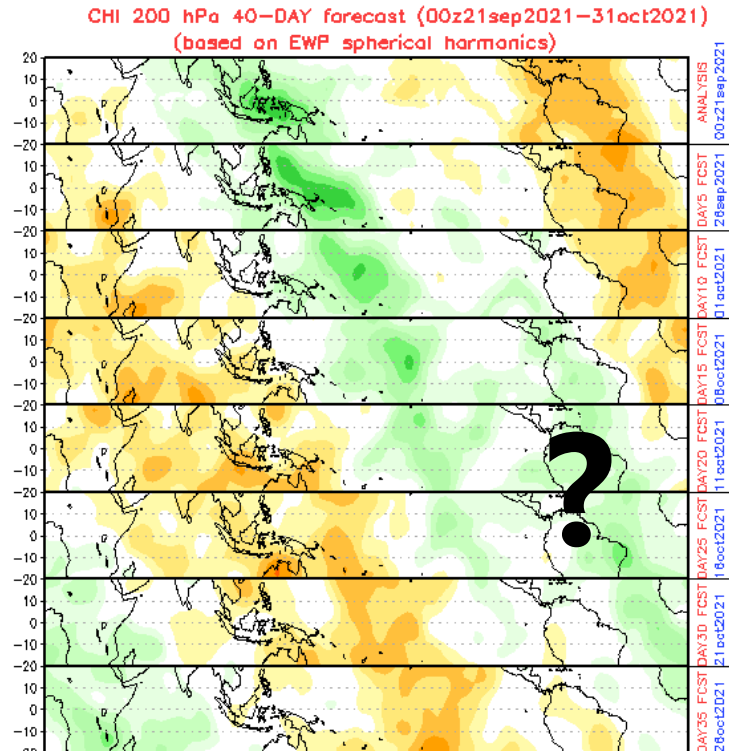


Source: CPC

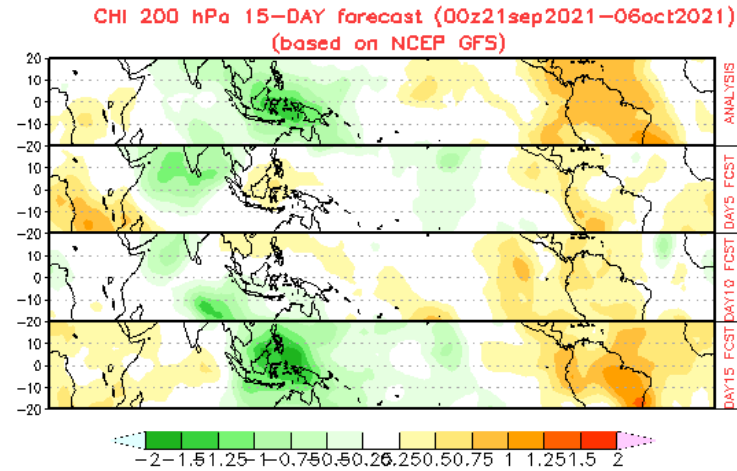


MJO Forecasts

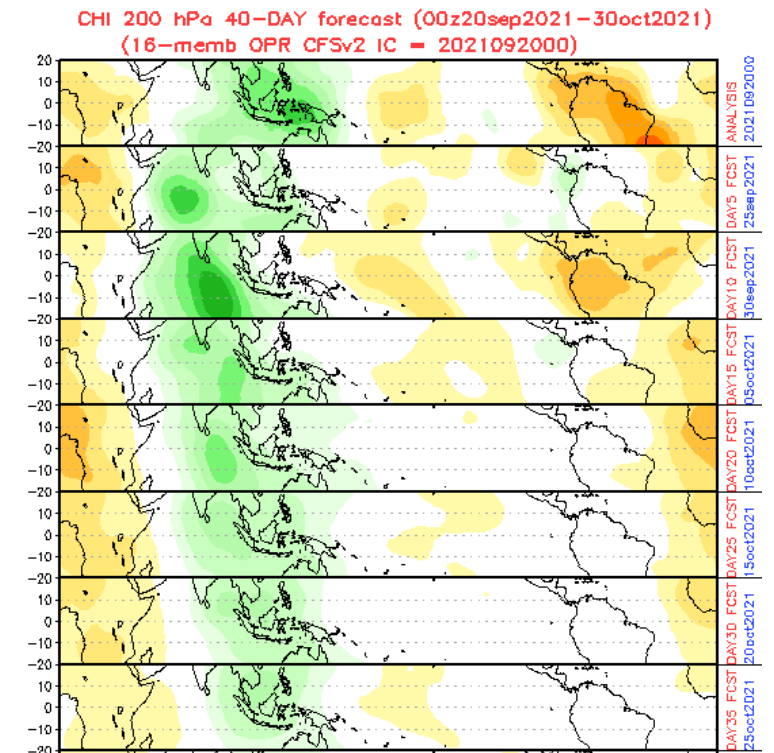
EWP



GFS



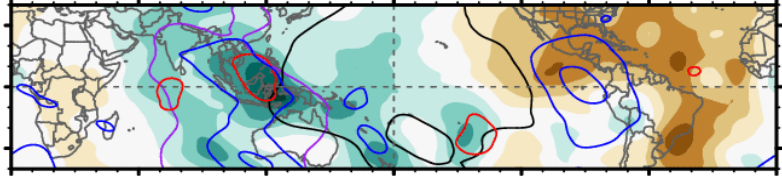
CFS



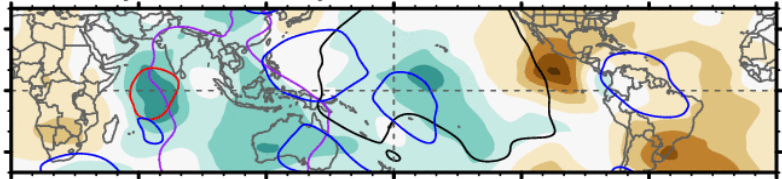
- Upper convergent pattern to continue dominating the Americas through Oct 5-10 (GFS, CFS, ECMWF), with weak Kelvin wave activity over the Americas.
- Less upper convergence by mid-October? Unclear...

Tropospheric Equatorial Waves

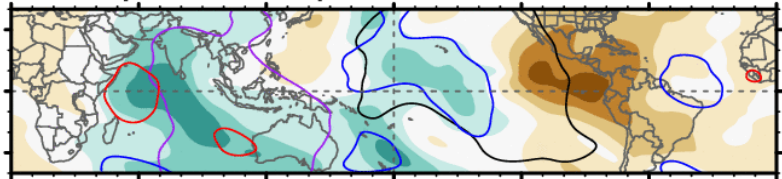
21-Sep to 23-Sep CFS Forecast



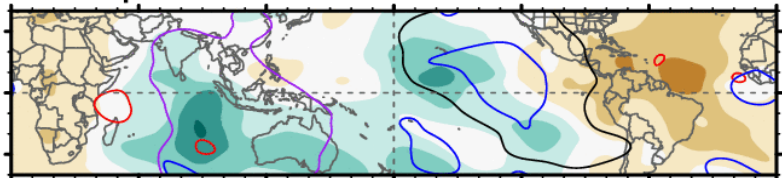
24-Sep to 26-Sep



27-Sep to 29-Sep



30-Sep to 2-Oct



0 60E 120E 180 120W 60W 0

- Upper convergent (drier) pattern continues dominant
- Kelvin Wave Sep 22-25
- Second Kelvin Wave/weak MJO for early October (3-5).



ncics.org/mjo



7-day CHI200 with CFS forecasts

Wed 2020-09-16 1018 UTC

— MJO — Kelvin x2
— Low — ER

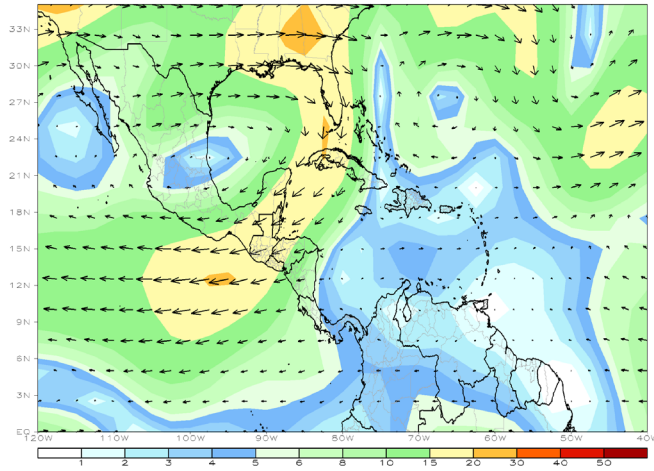
Contours at -2, -6 x10^6 m2 s-1

Carl Schreck
carl_schreck@ncsu.edu

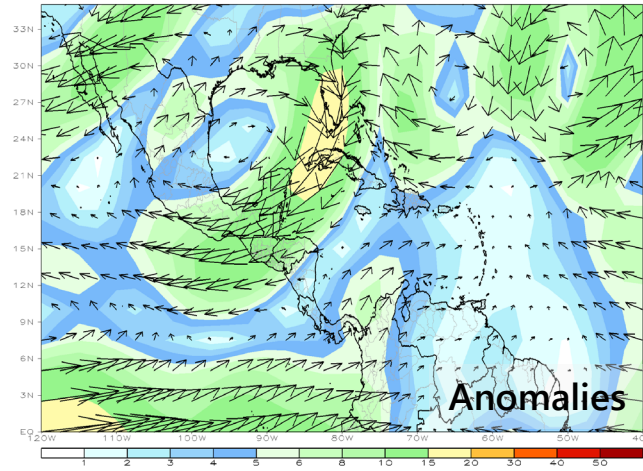
Last Week's Circulation and Rainfall – Tropical Americas

200
hPa

CDAS 200mb 7-Day Mean Vector Wind Total (m/s)
Period: 13Sep2021 – 19Sep2021

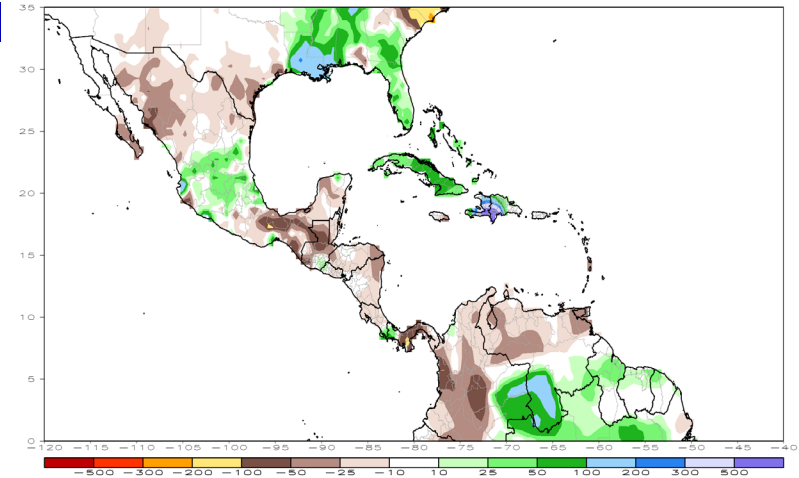


CDAS 200mb 7-Day Mean Vector Wind Anomaly (m/s)
Period: 13Sep2021 – 19Sep2021



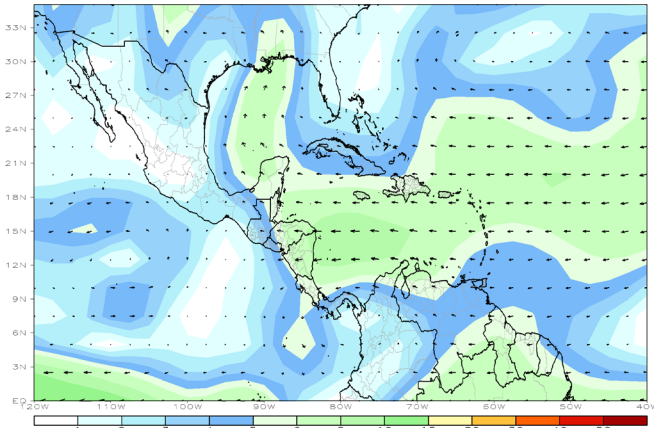
Rainfall

CPC Unified Gauge 7-Day Total Rainfall Anomaly (mm)
Period: 14Sep2021 – 20Sep2021

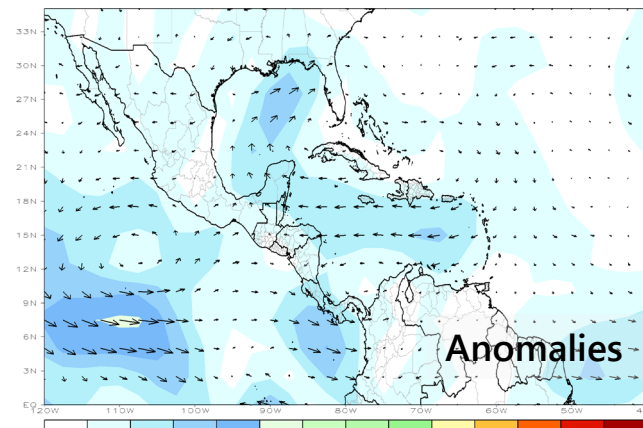


850
hPa

CDAS 850mb 7-Day Mean Vector Wind Total (m/s)
Period: 13Sep2021 – 19Sep2021

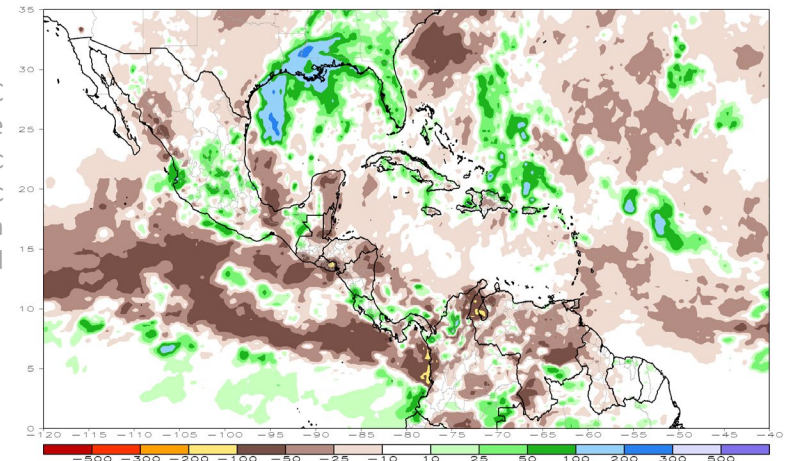


CDAS 850mb 30-Day Mean Vector Wind Anomaly (m/s)
Period: 21Aug2021 – 19Sep2021



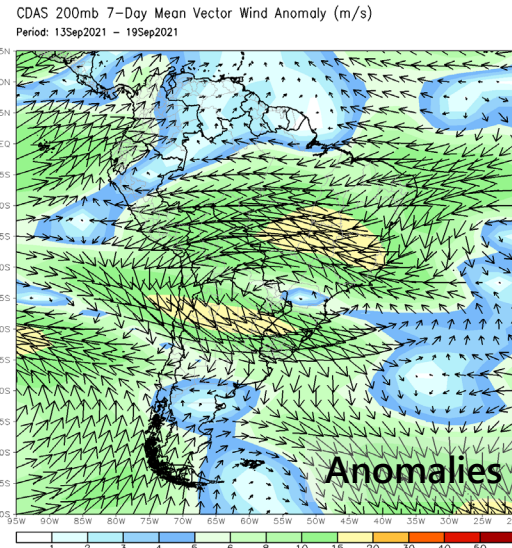
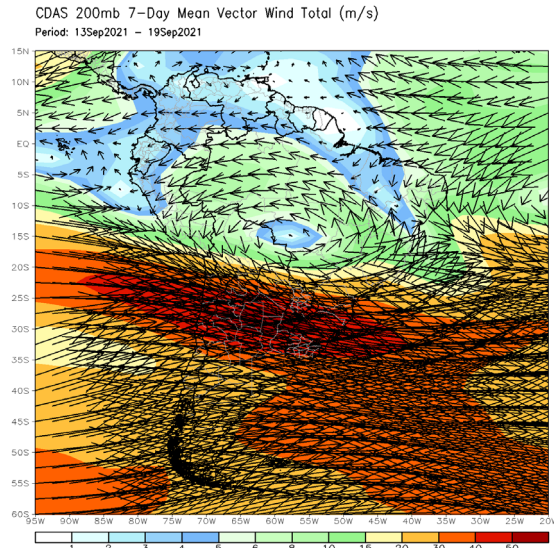
CMORPH: CPC
Morphing Technique
https://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html

CMORPH 7-Day Total Rainfall Anomaly (mm)
Period: 13Sep2021 – 19Sep2021

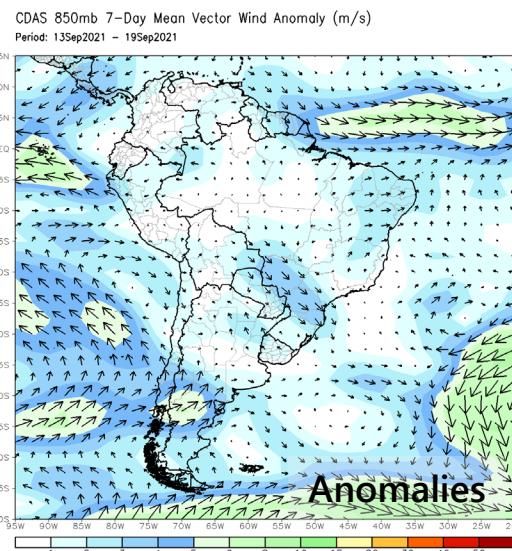
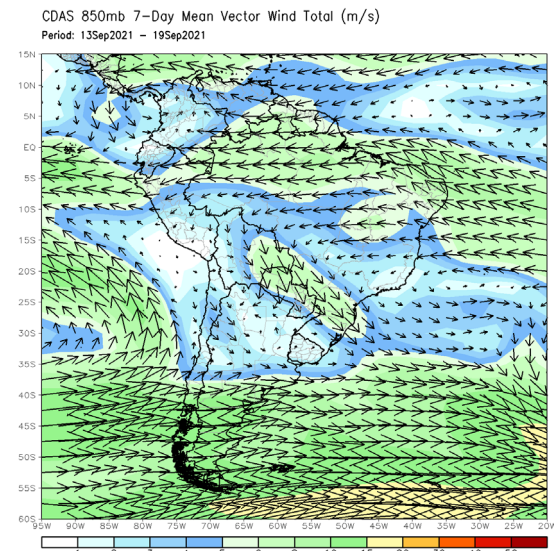


Last Week's Circulation and Rainfall – South America

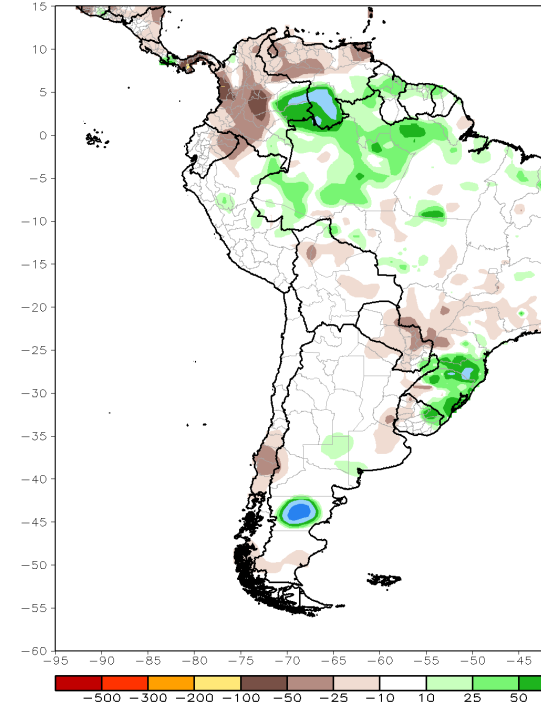
200
hPa



850
hPa

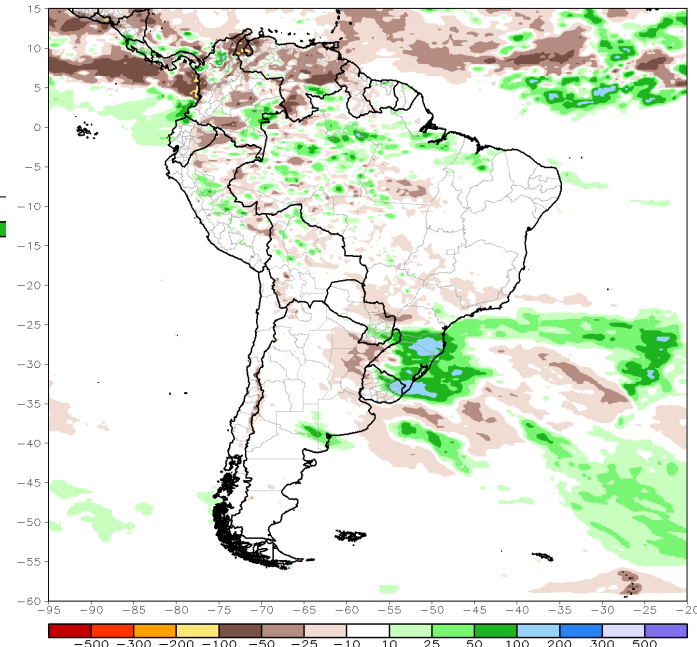


CPC Unified Gauge 7-Day Total Rainfall Anomaly (mm)
Period: 14Sep2021 – 20Sep2021



Rainfall

CMORPH 7-Day Total Rainfall Anomaly (mm)
Period: 13Sep2021 – 19Sep2021



CMORPH: CPC Morphing Technique
https://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html



¡Gracias!

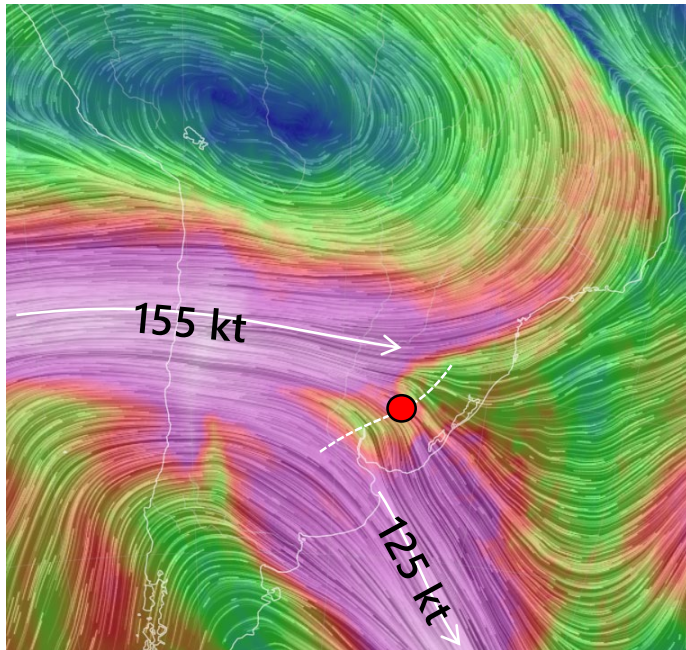
Thank you!

Hail / Severe Weather Event in Uruguay (Sep 12-13)

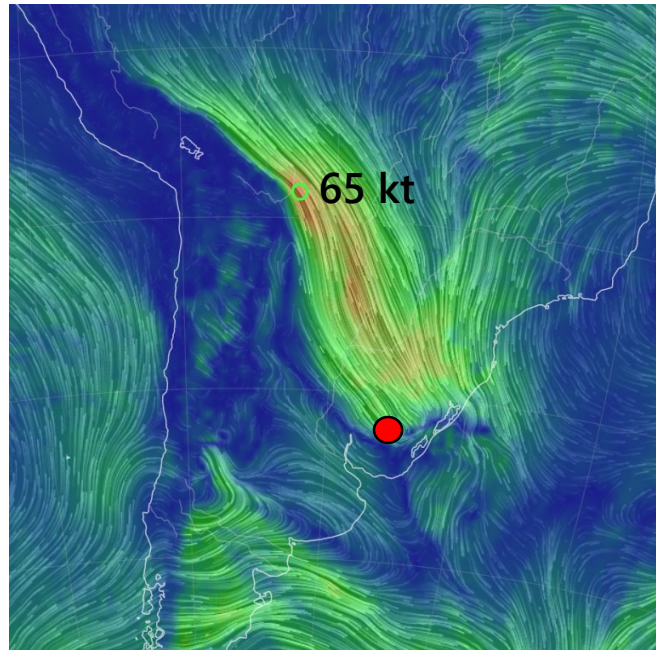
BRIEF ANALYSIS OF MODEL GRIDS: 12 UTC Sep 13

- 60-70kt LLJ in Bolivia
- Upper jets coupled in divergent side
- Short Wave Upper Trough
- PWAT Percent of Normal > 200%

250 hPa Winds



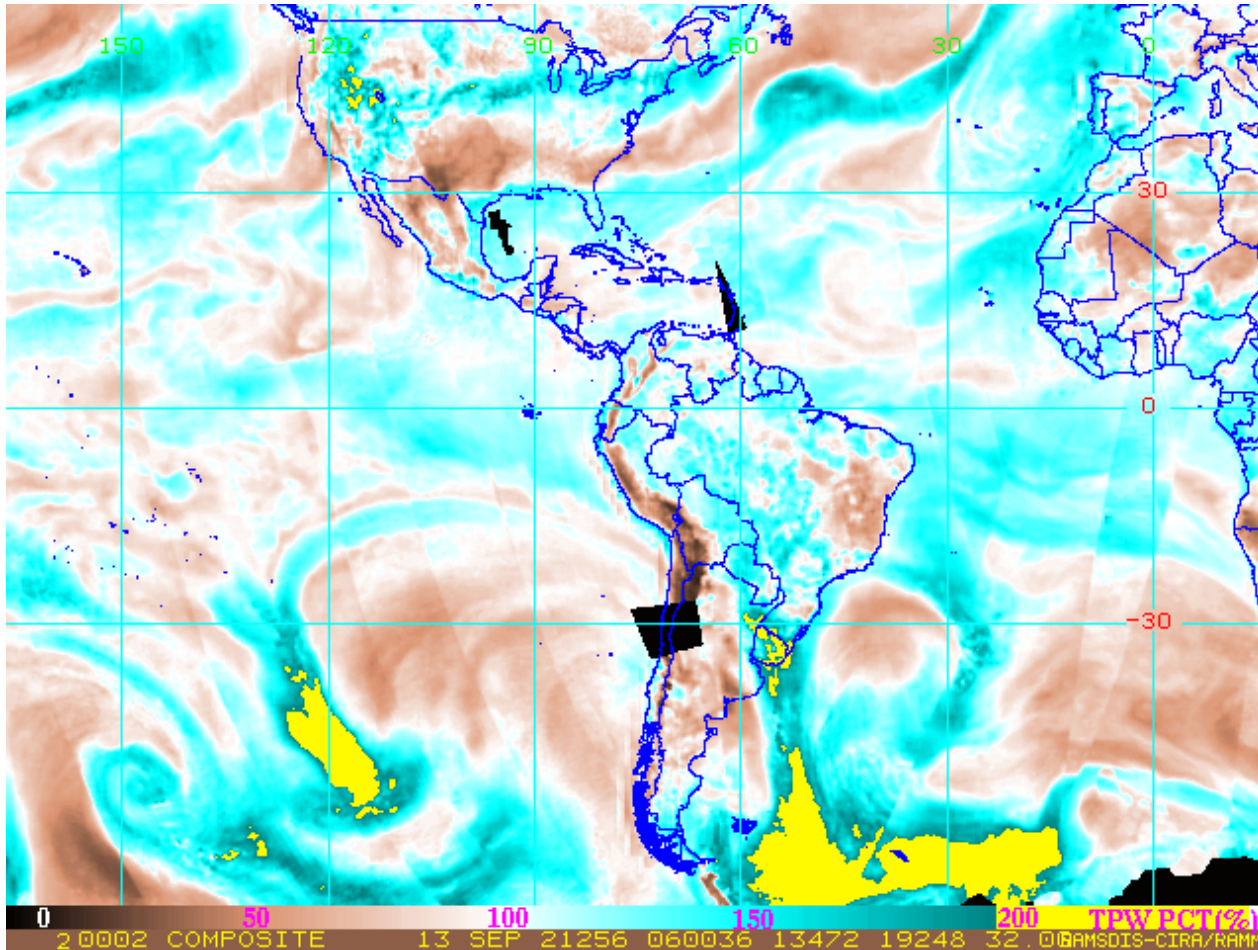
850 hPa Winds



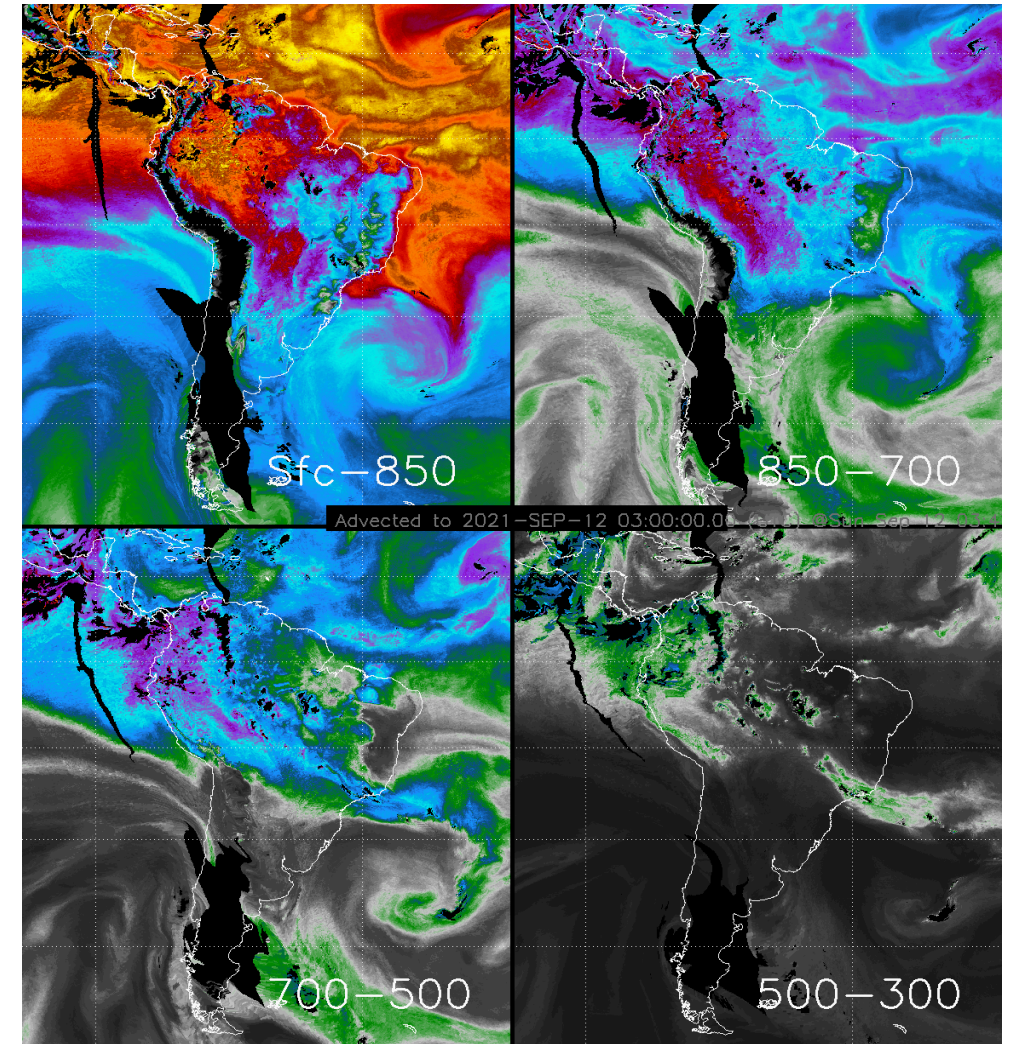
Courtesy: Nestor Santayana (INUMET)

Hail / Severe Weather Event in Uruguay

- PWAT Percent of Normal > 200%

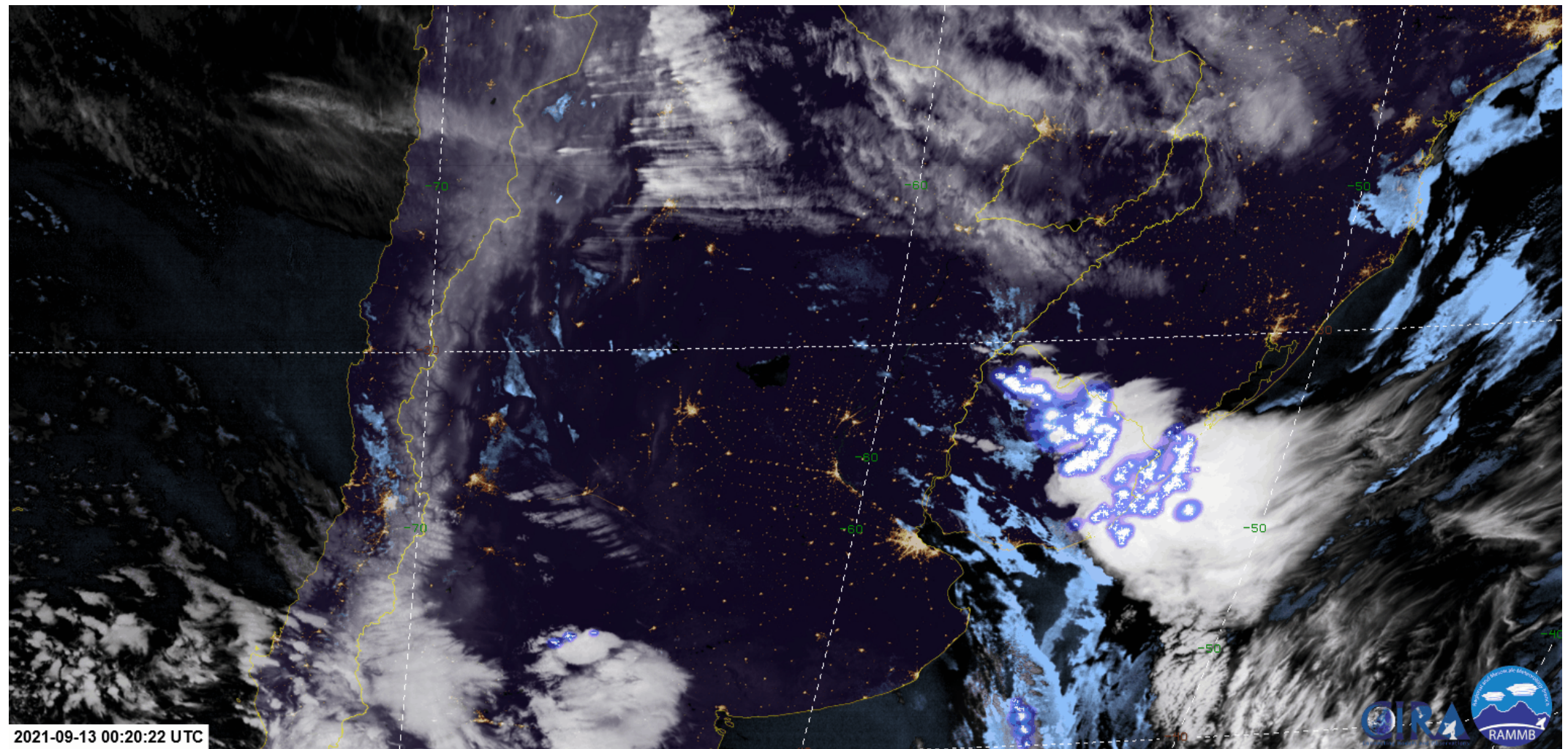


- ALPW: Moist plumes at different levels



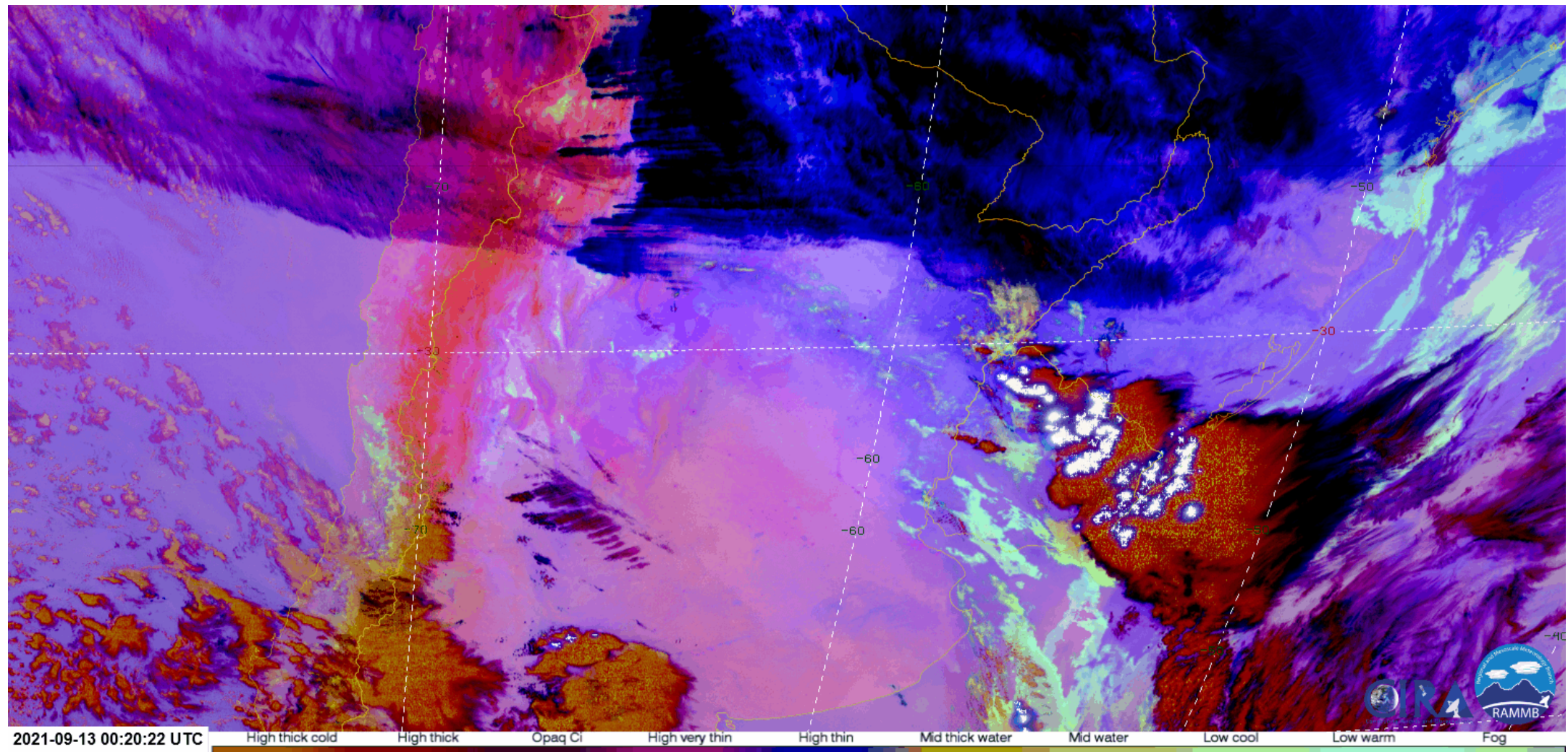
Hail / Severe Weather Event in Uruguay

Geocolor (Night) and GLM Total Optical Energy



Hail / Severe Weather Event in Uruguay

Nocturnal Microphysics RGB and GLM Total Optical Energy



Hail / Severe Weather Event in Uruguay

Band 10.3 um (Band 13)

