

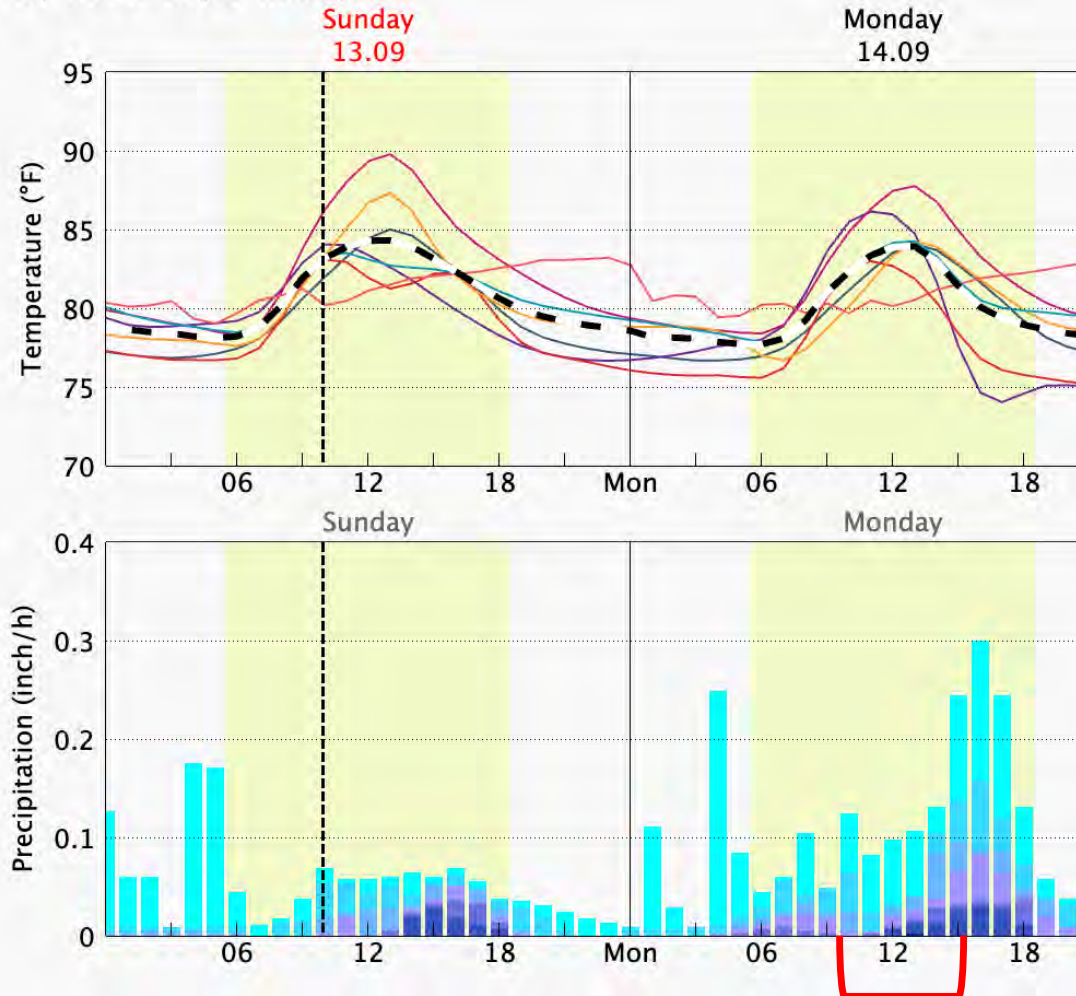
SABRE Forecast Discussion

09/13/2026

Local Forecasts

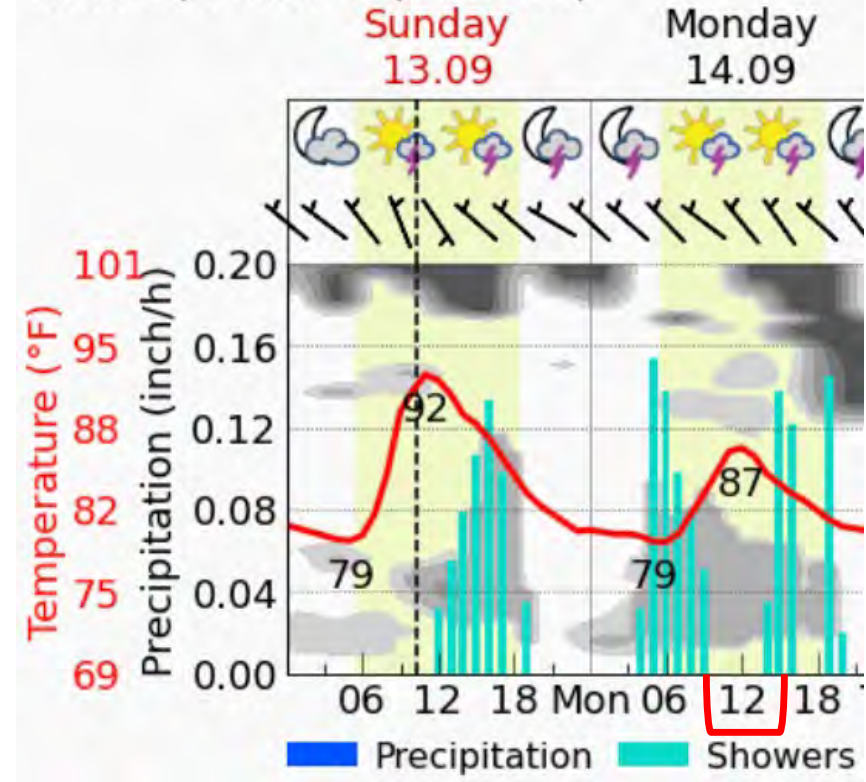
Panama City

8.99°N, 79.52°W (17 m asl)



Panama City

8.99°N, 79.52°W (17 m asl)



Flight time has the usual range of afternoon precip probabilities, cloudy through most of the day.

SABRE Tropics Flight Plan Options

- 1

 Vertical gradients through the TTL into the LS (under 'background' conditions and in outflow)

✓

✓
- 2

 Near-field continental deep convective outflow

✓

✓
- 3

 Aged outflow from deep continental convection (and/or longitudinal sampling)

✓
- 4

 Marine deep (> ~14.5 km) convective outflow

✓

✓
- 5

 Sampling of long-range transport from ASM/WAM crossing the Atlantic

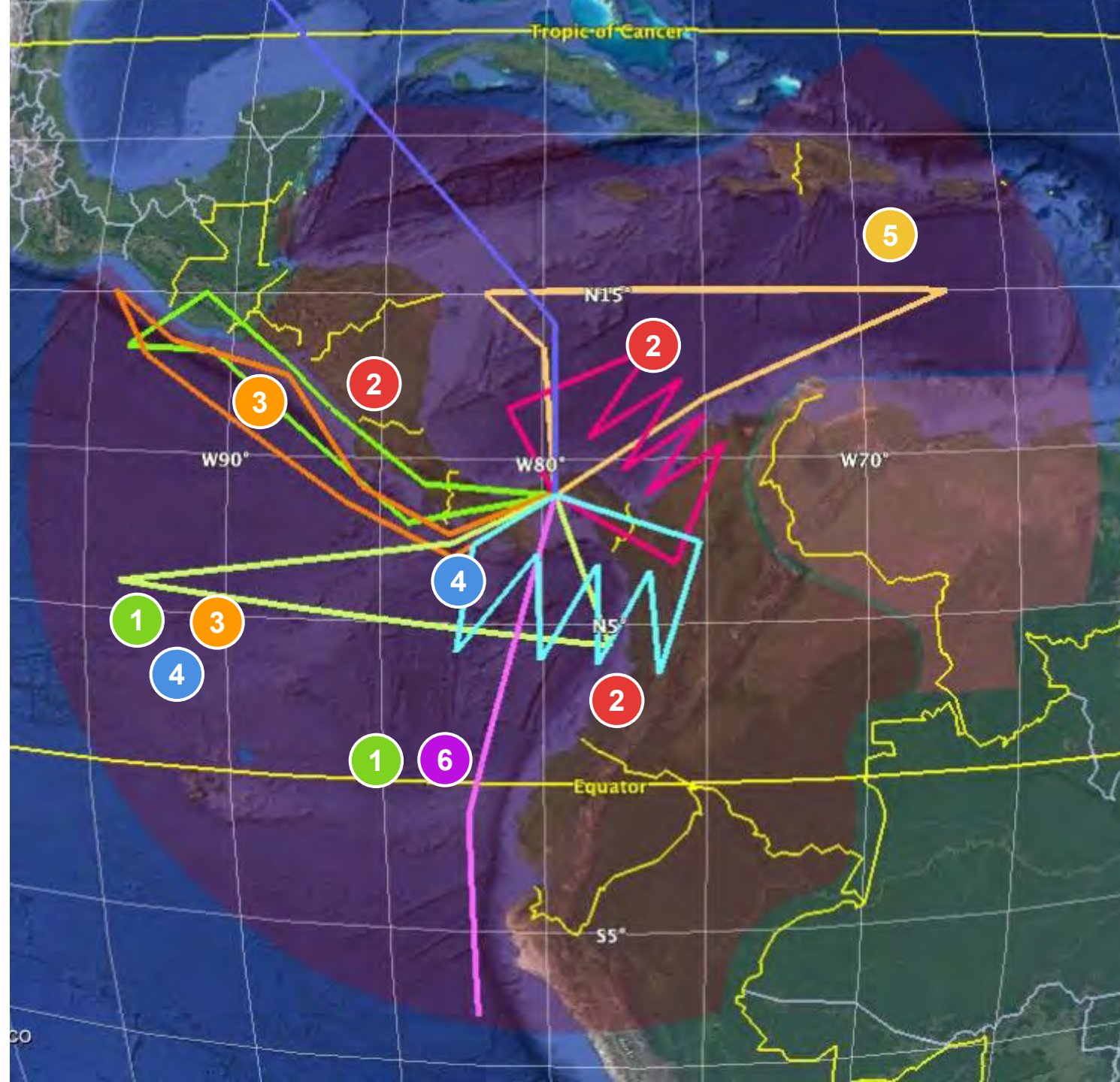
✓

✓
- 6

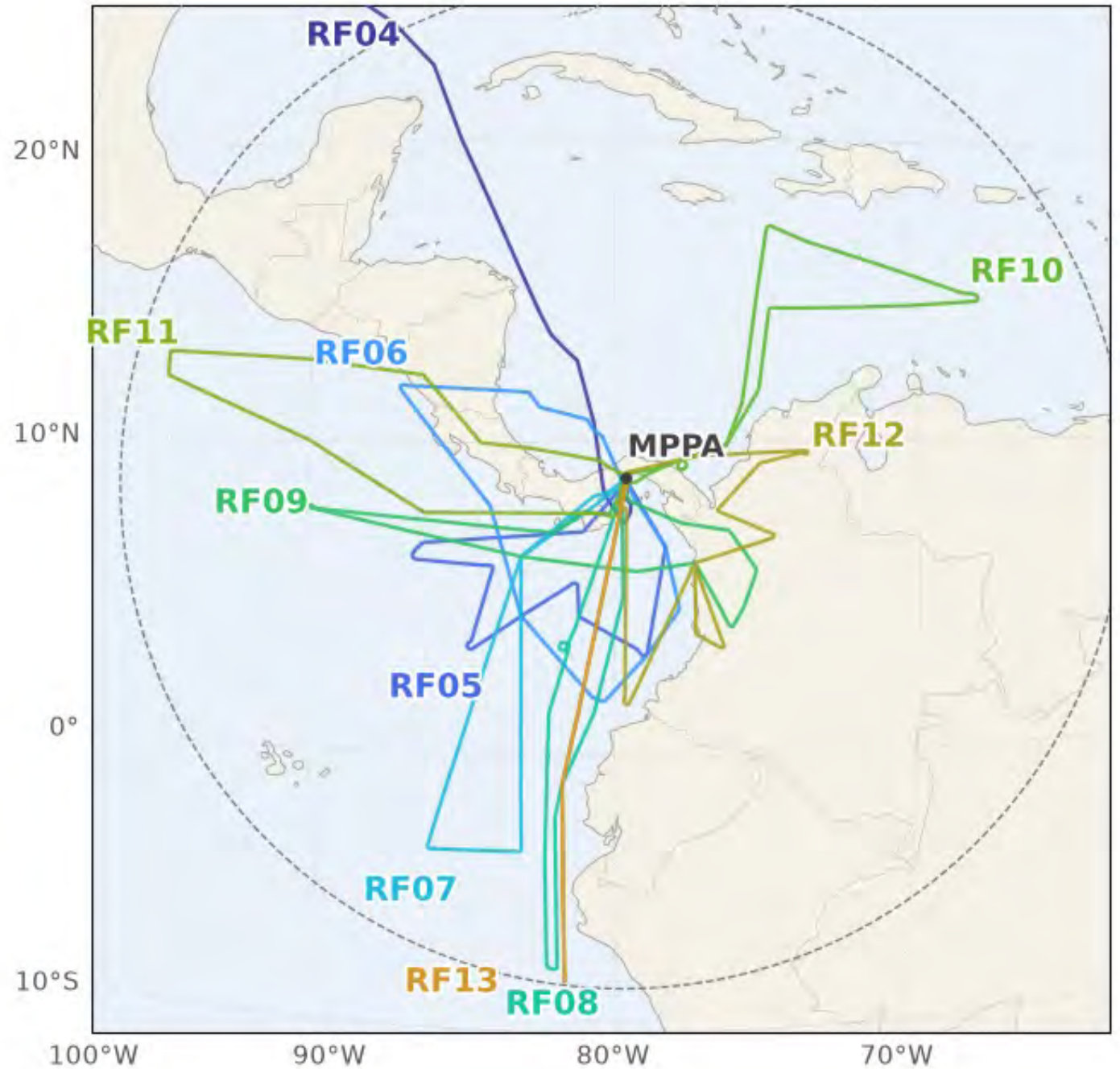
 Cross-ITCZ/equator flights for inter-hemispheric tropical comparison/gradients

✓

✓



SABRE Tropics Flights so far



Upper Level Forecasts for 09/14/2026 and RF14 Flight Plan

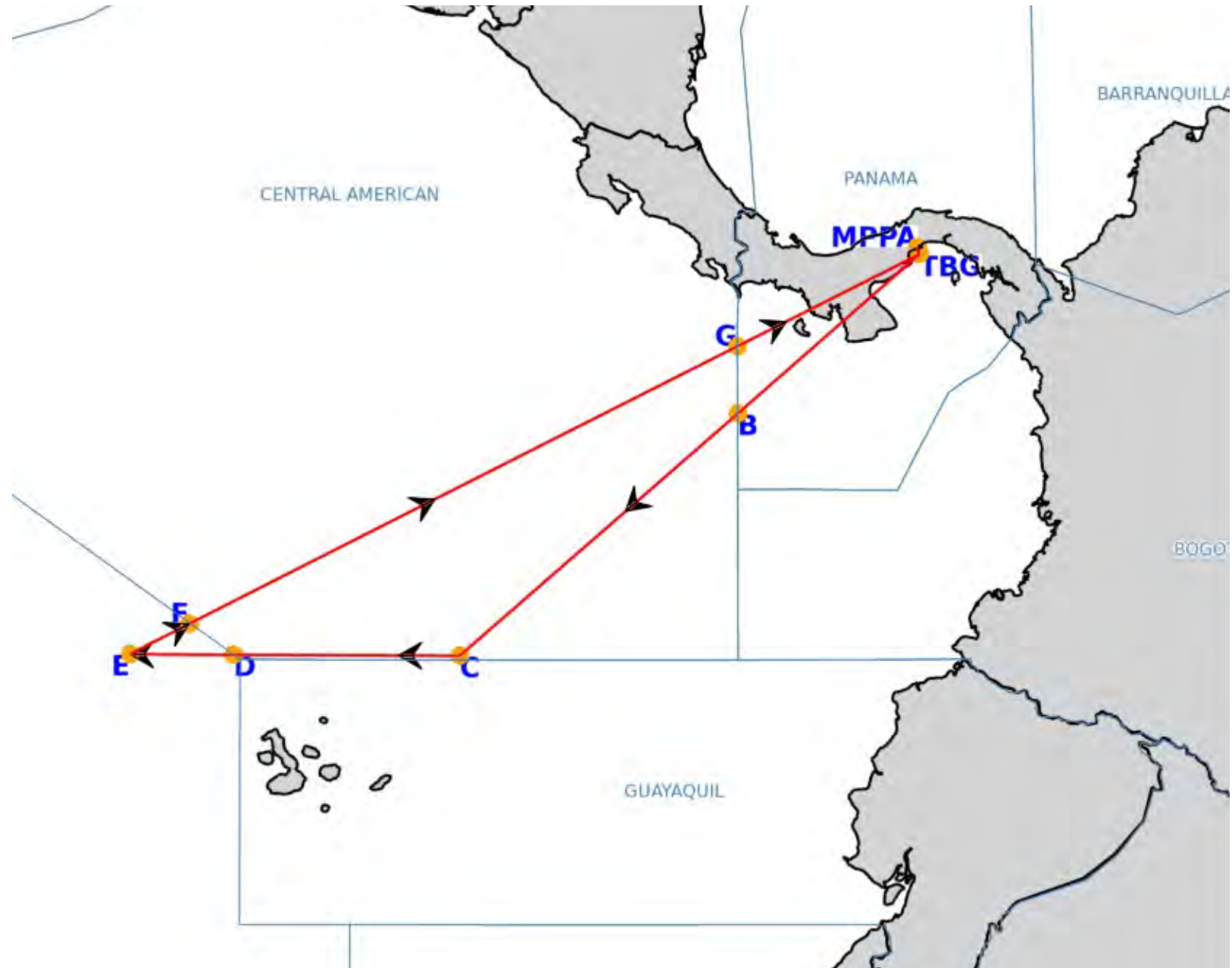
RF14 Flight Plan

Targets

- Longitudinal sampling in equatorial lower stratosphere.
- Sample TTL cirrus.

Flight Specs

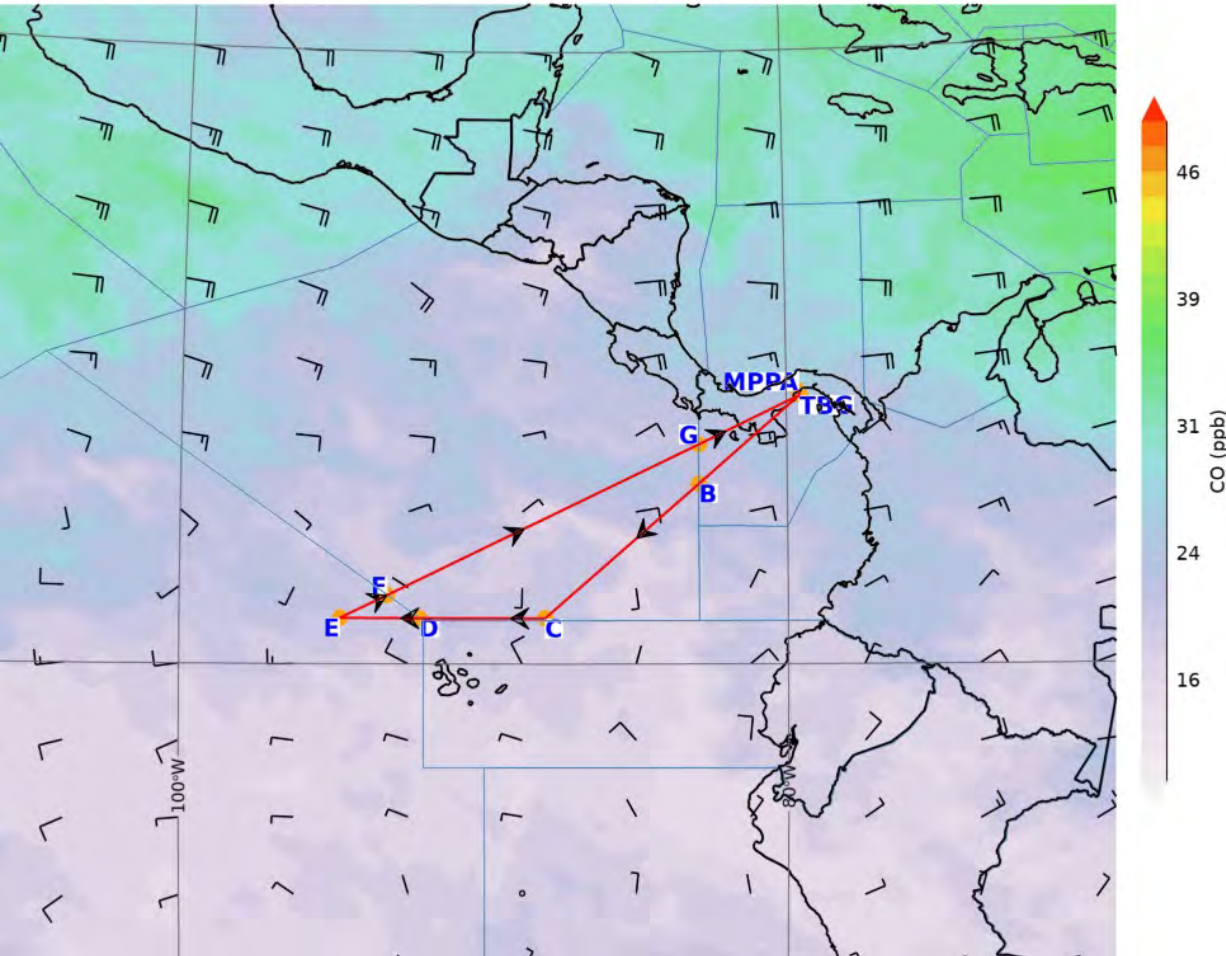
- Take off: 9:30am
- Landing time: 3:15-3:30pm
- Distance: ~2090 nm
- Duration: 5.75 - 6 hours



Upper Level Forecasts

GEOS CO 70 hPa

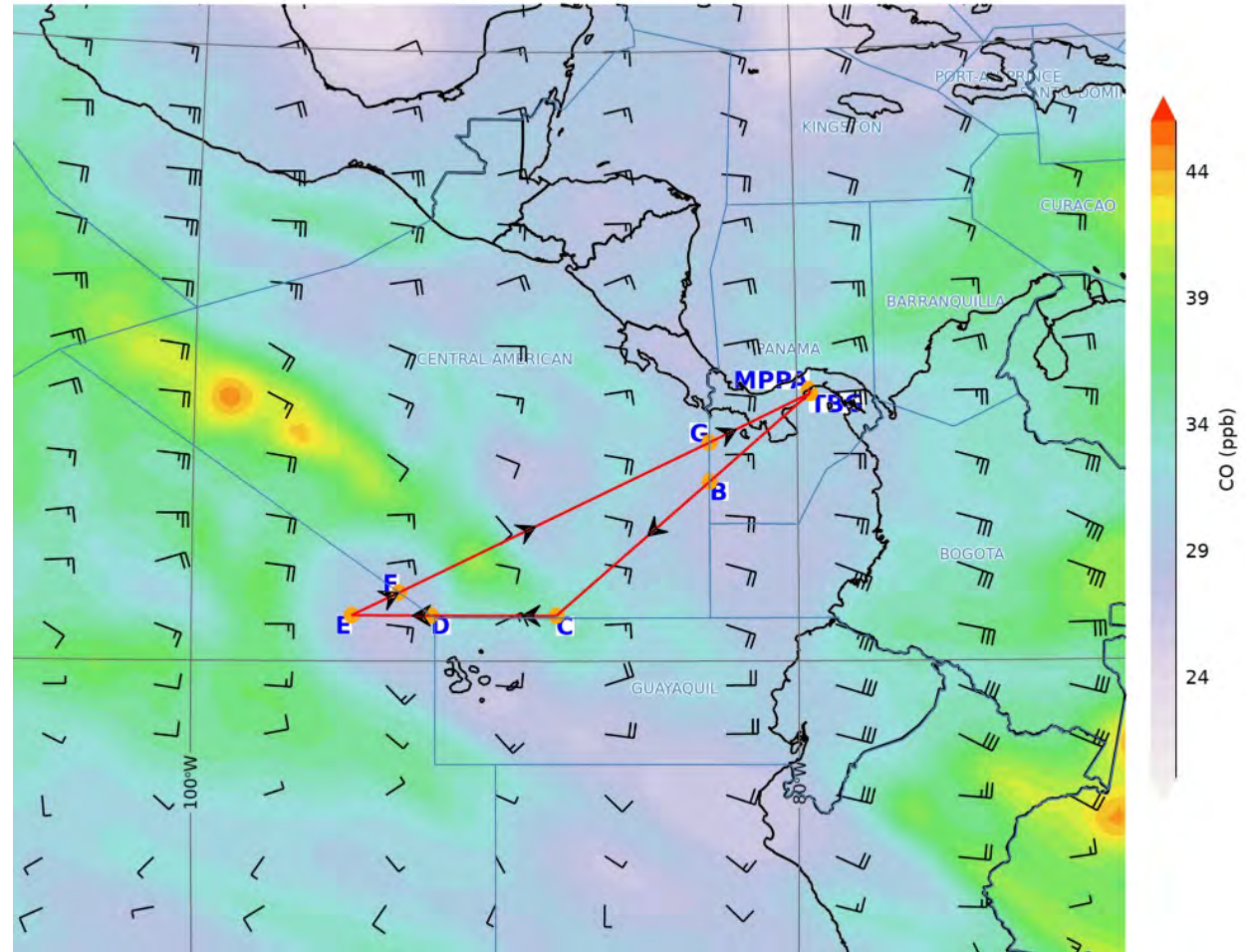
GEOS CO 70 hPa Init: 2026091300 Valid: 2026091418



Latitudinal gradient in CO apparent at 70 hPa.

CAMS CO 83 hPa

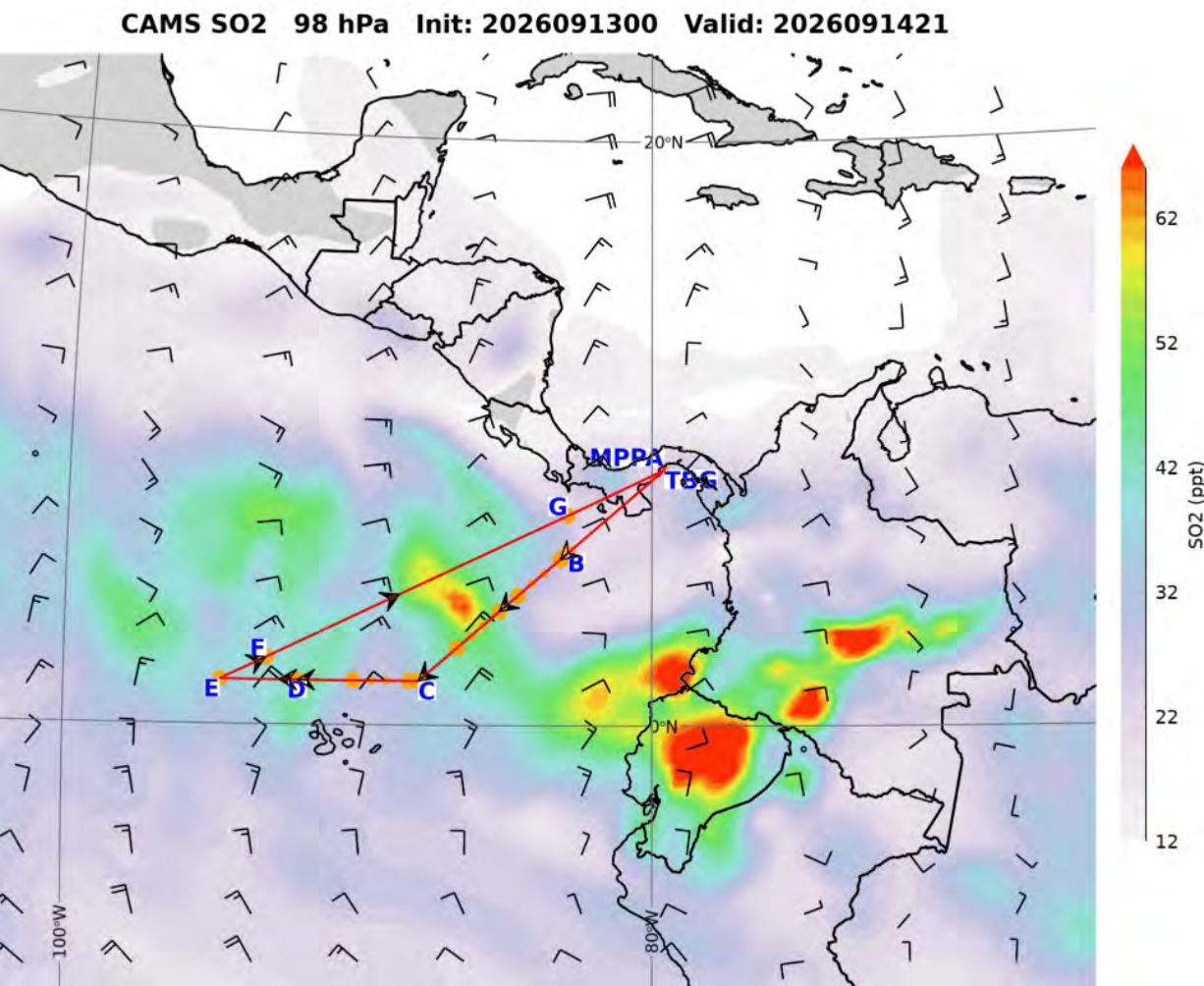
CAMS CO 83 hPa Init: 2026091300 Valid: 2026091418



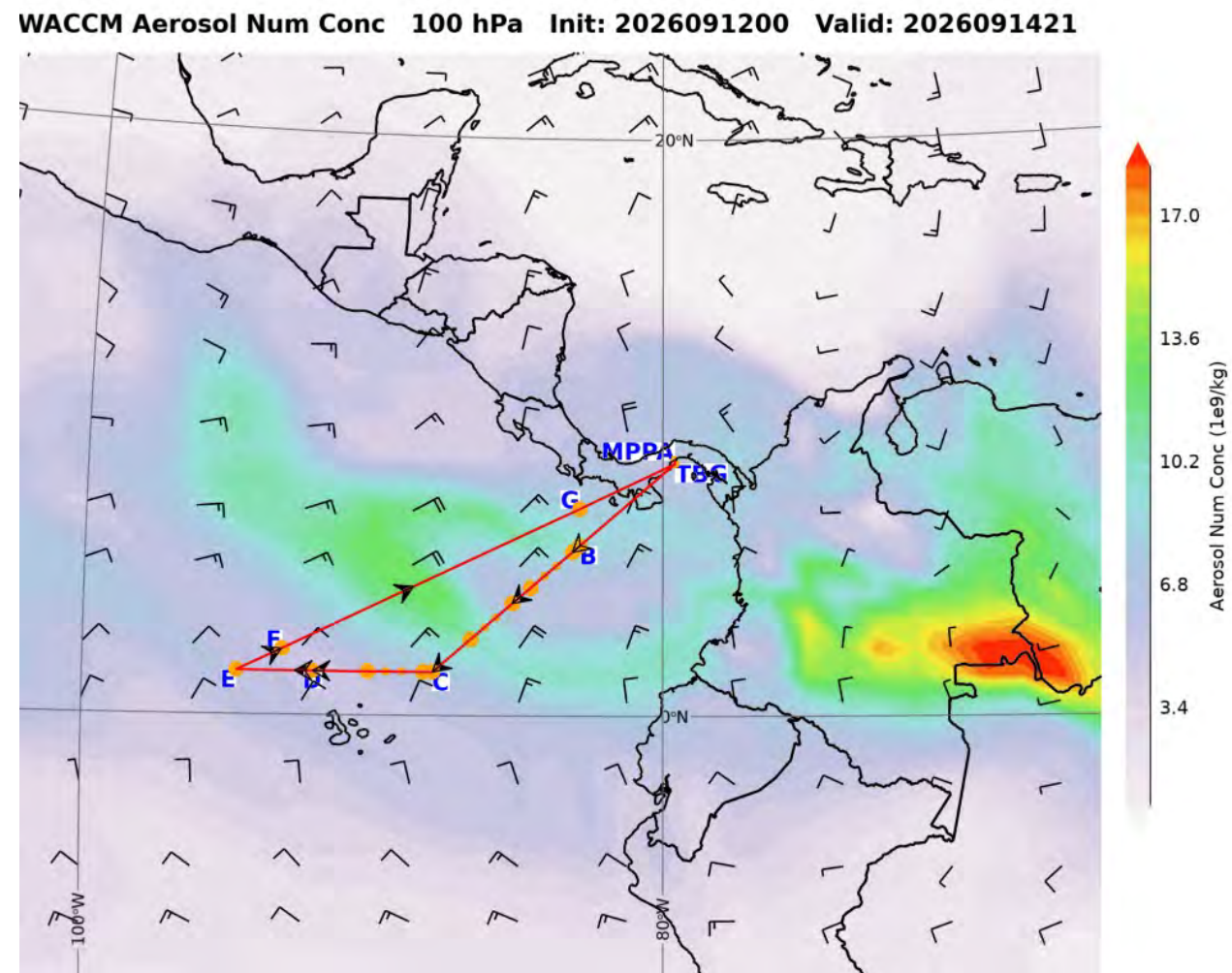
More complicated structure lower down at 83 hPa.

Upper Level Forecasts

CAMS SO2 100 hPa



WACCM Aerosol Num Conc 100 hPa

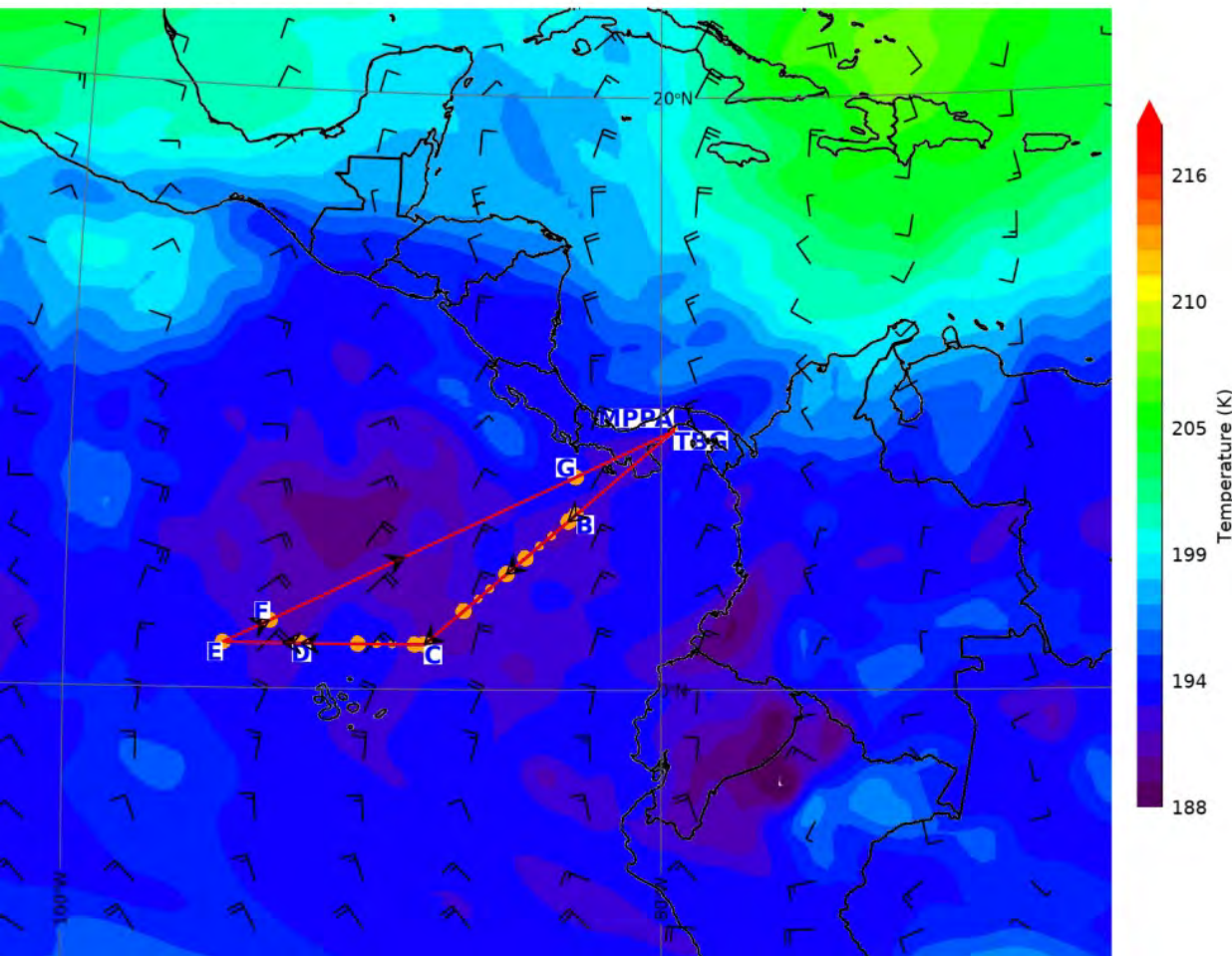


SO2 and aerosol forecasts at 100 hPa suggest continental convective influence in the eastern Pacific north of the equator.

Upper Level Forecasts

CAMS Temperature 109 hPa

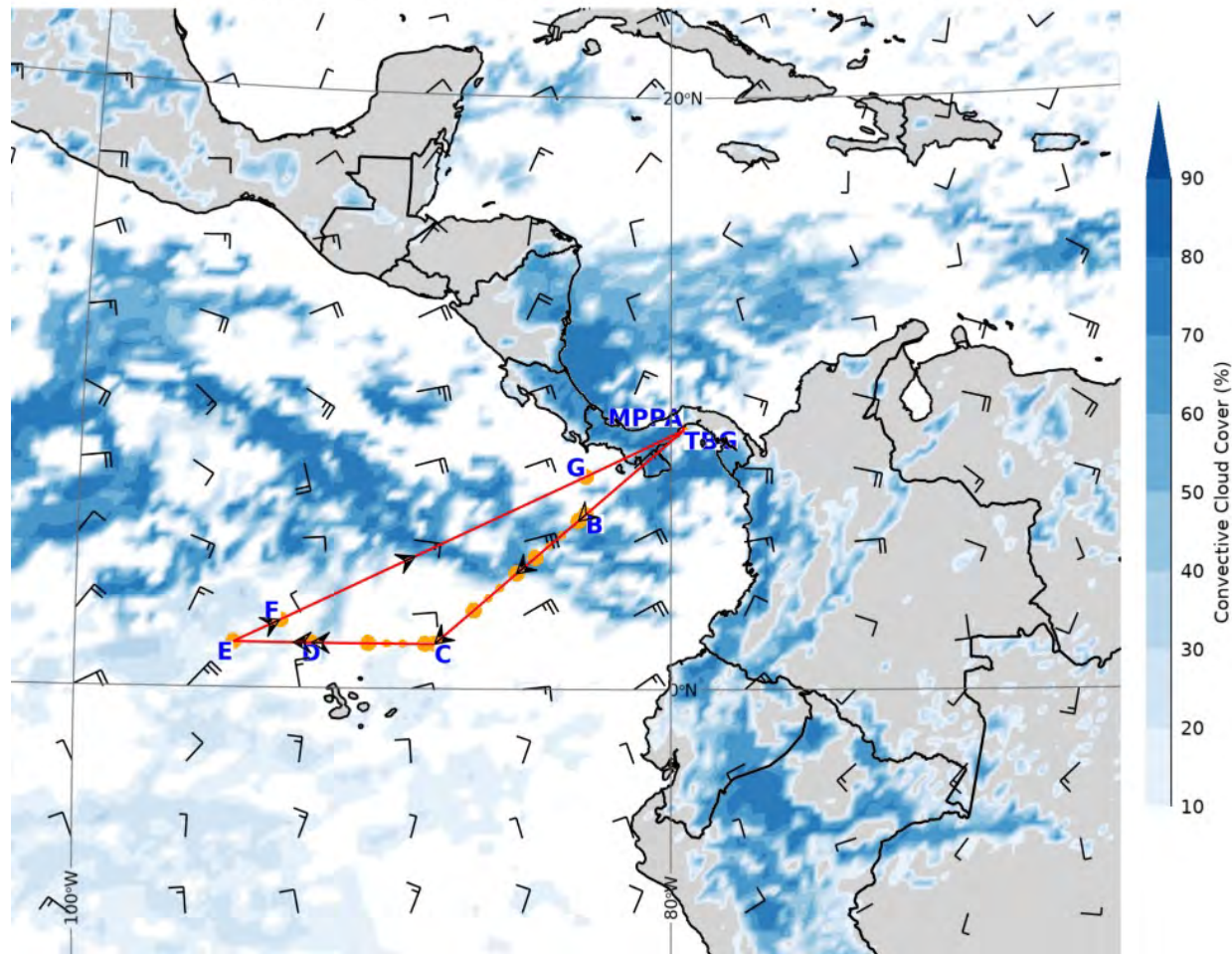
CAMS Temperature 103 hPa Init: 2026091300 Valid: 2026091418



Region of temps in the low 190s around 100 hPa over the tropical eastern Pacific.

Convective Clouds

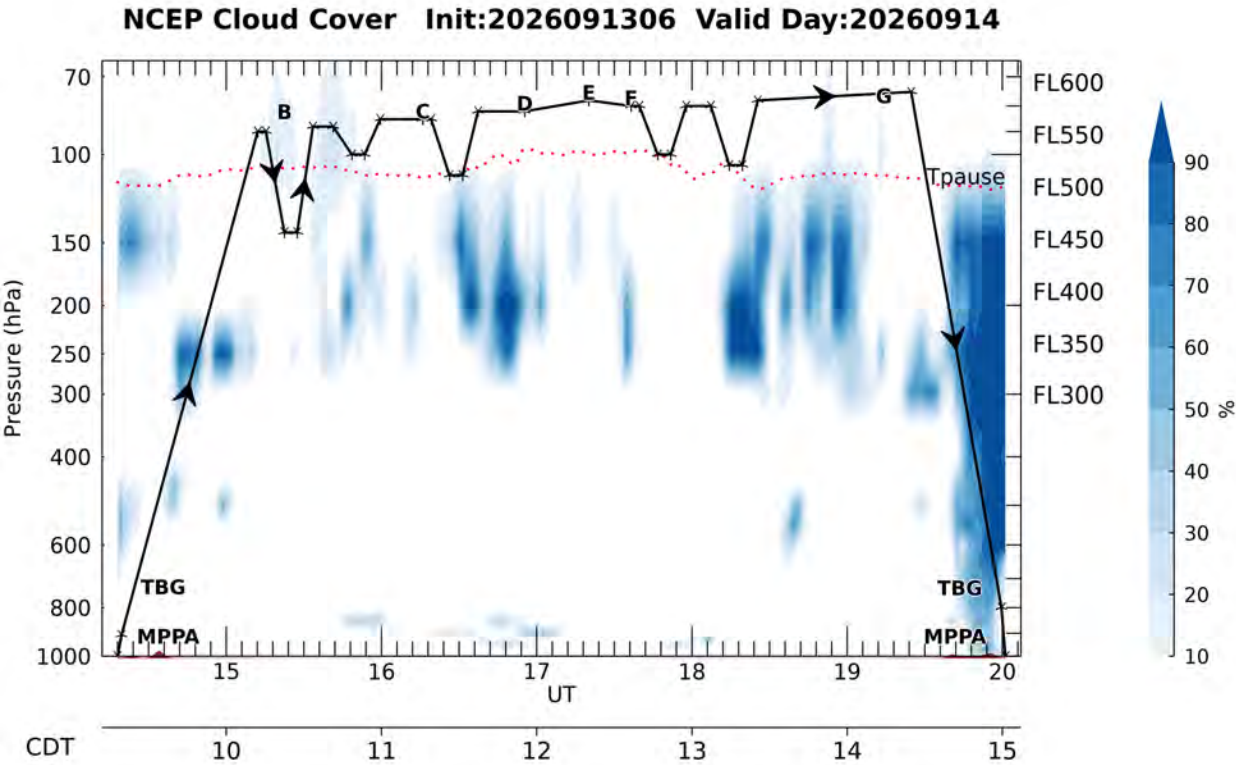
NCEP Convective Cloud Cover Init: 2026091306 Valid: 2026091418



ITCZ expected to have active convection along the route.

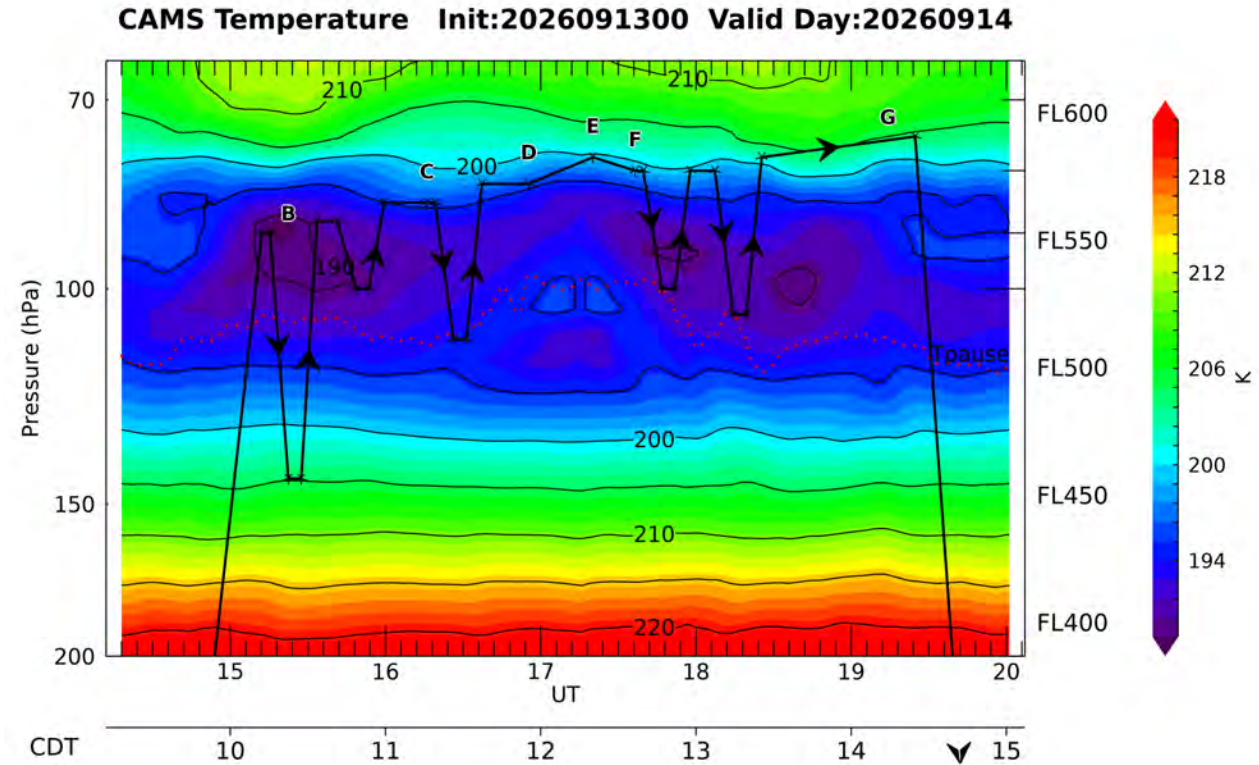
Flight Curtains of Clouds and Temperature

NCEP Clouds



Clouds up to tropopause level at some locations along the route, likely in the ITCZ region, as well as on final descent into MPPA.

CAMS Temperature

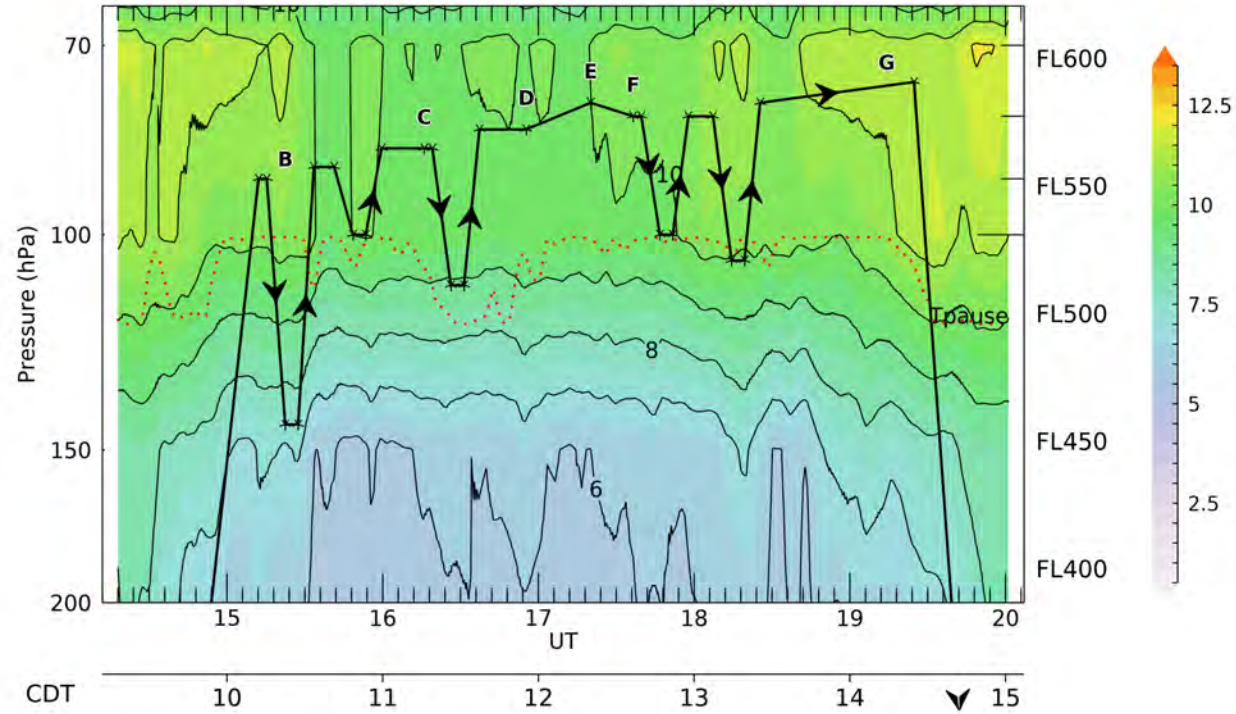


Very cold temperatures (low 190s K) again predicted by CAMS in the 100-85 hPa layer.

Zoomed in Flight Curtains

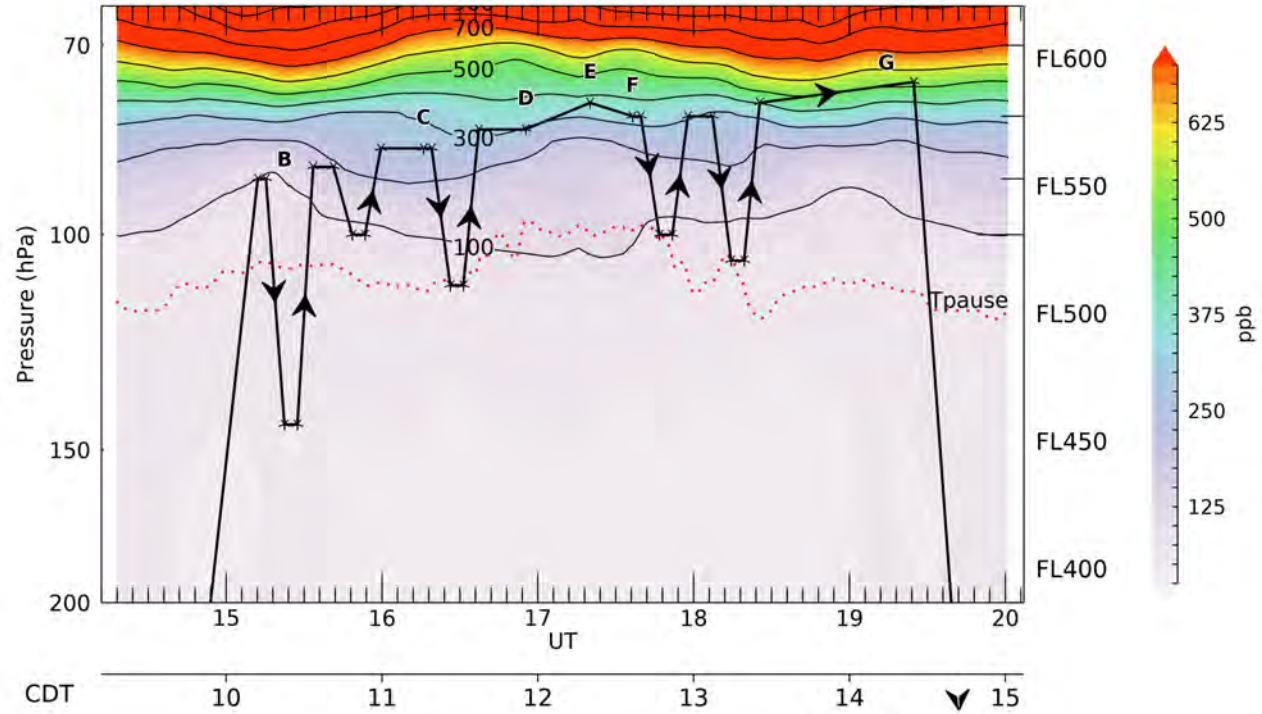
GEOS E. Asia CO

GEOS CO E. Asia Init:2026091300 Valid Day:20260914



CAMS Ozone

CAMS Ozone Init:2026091300 Valid Day:20260914



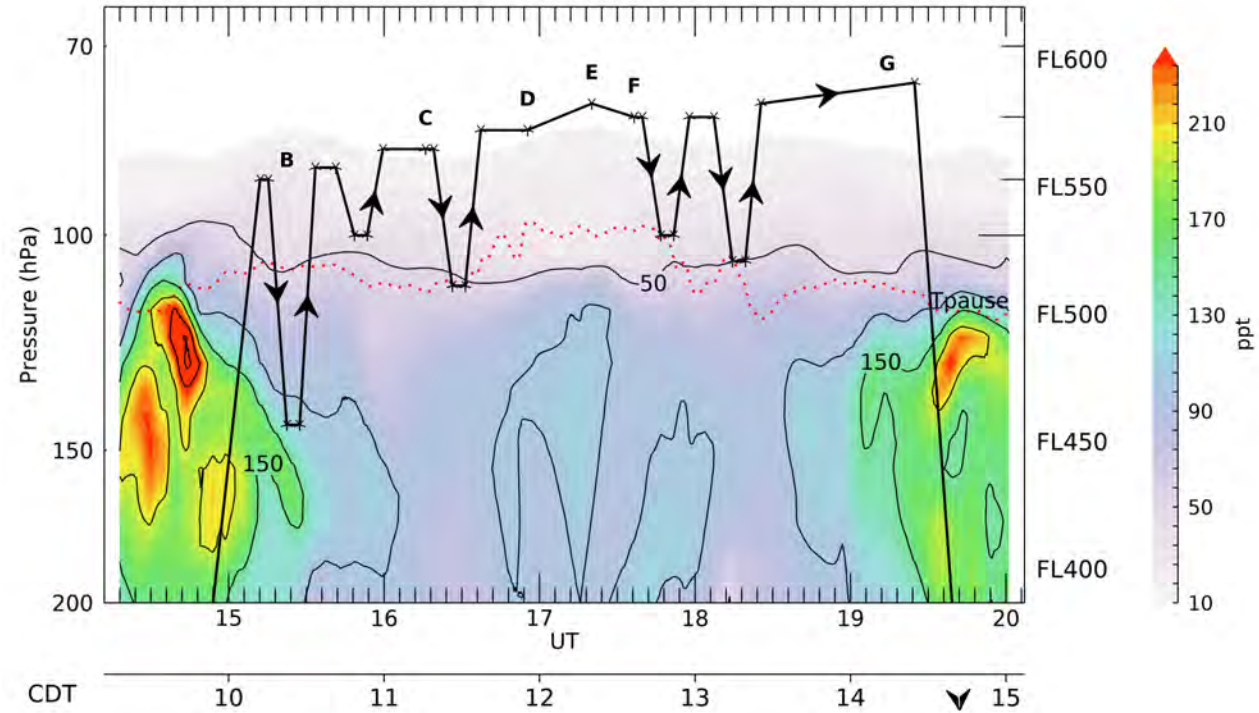
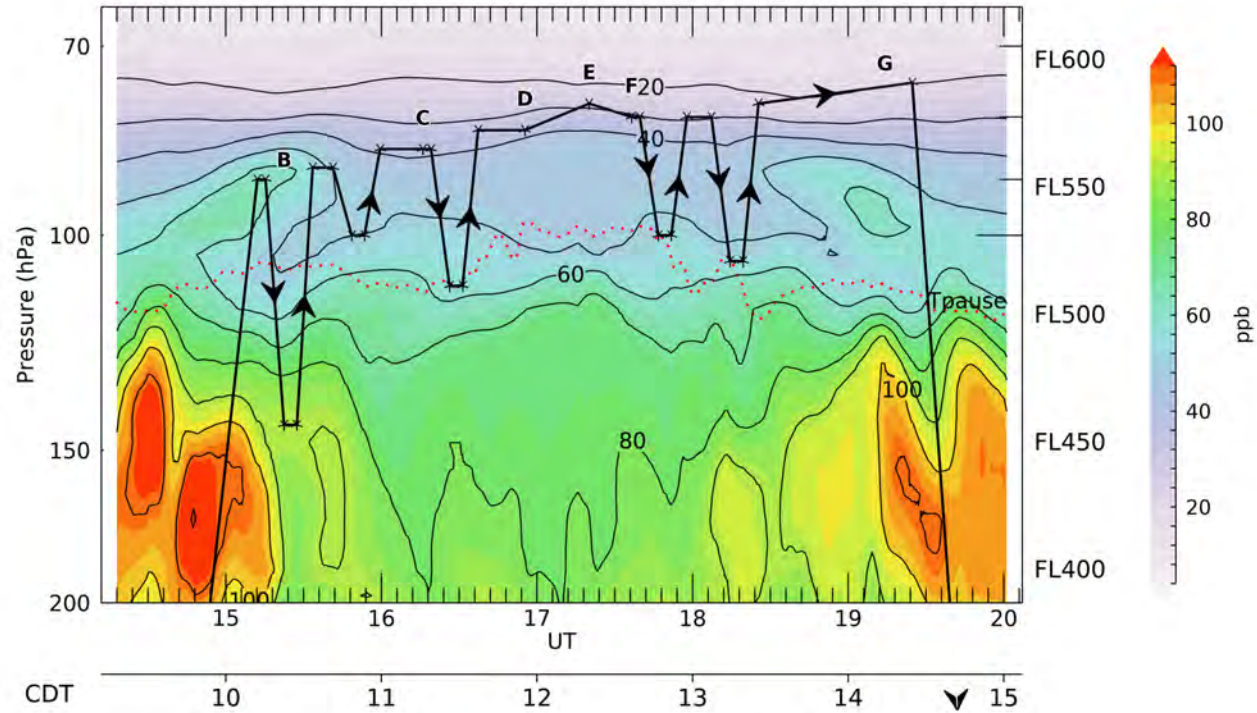
Zoomed in Flight Curtains

CAMS CO

CAMS SO₂

CAMS CO Init:2026091300 Valid Day:20260914

CAMS SO₂ Init:2026091300 Valid Day:20260914

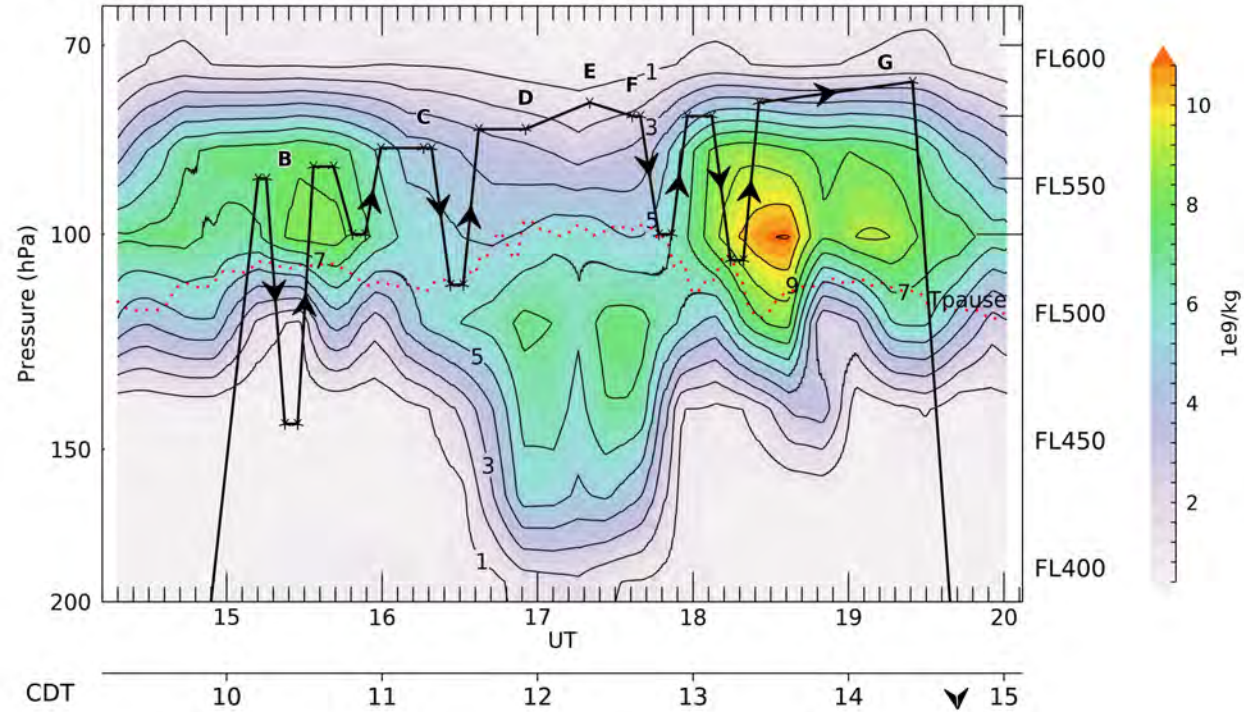


Zoomed in Flight Curtains

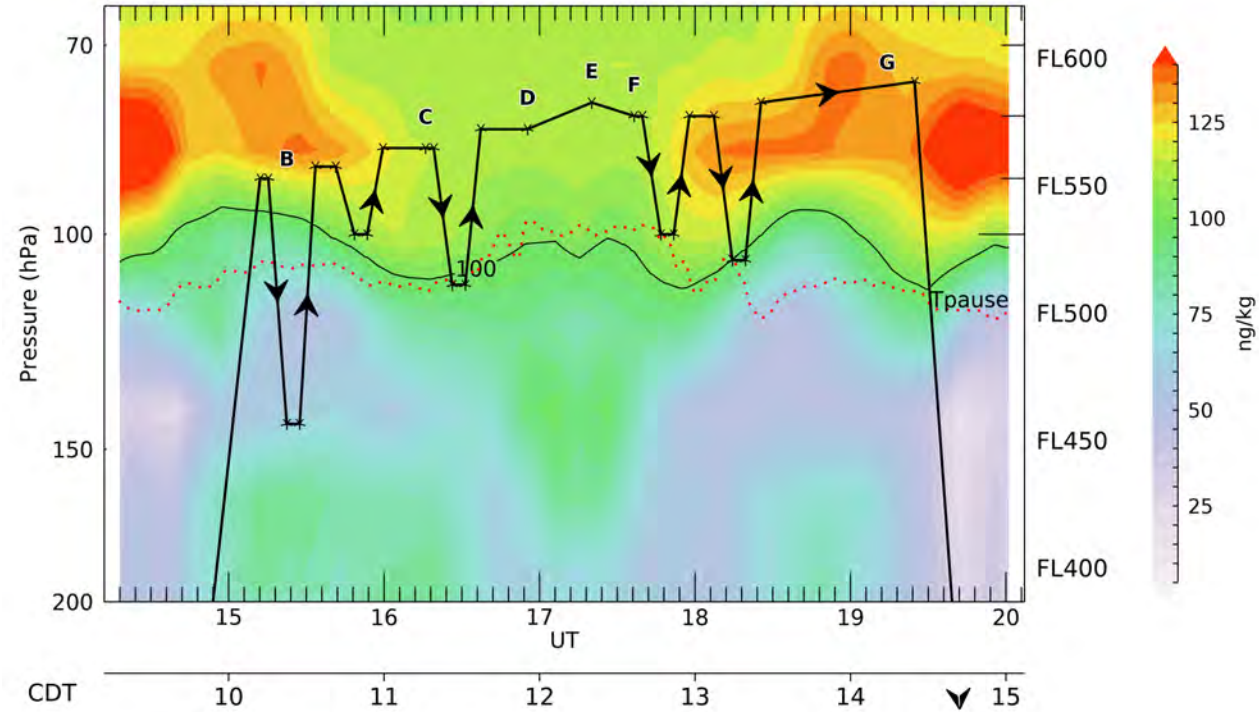
WACCM Aerosol Num Conc

WACCM POA

WACCM Aerosol Num Conc Init:2026091200 Valid Day:20260914



WACCM POA Init:2026091200 Valid Day:20260914



Longitudinal gradient in WACCM aerosols from 150-70 hPa.