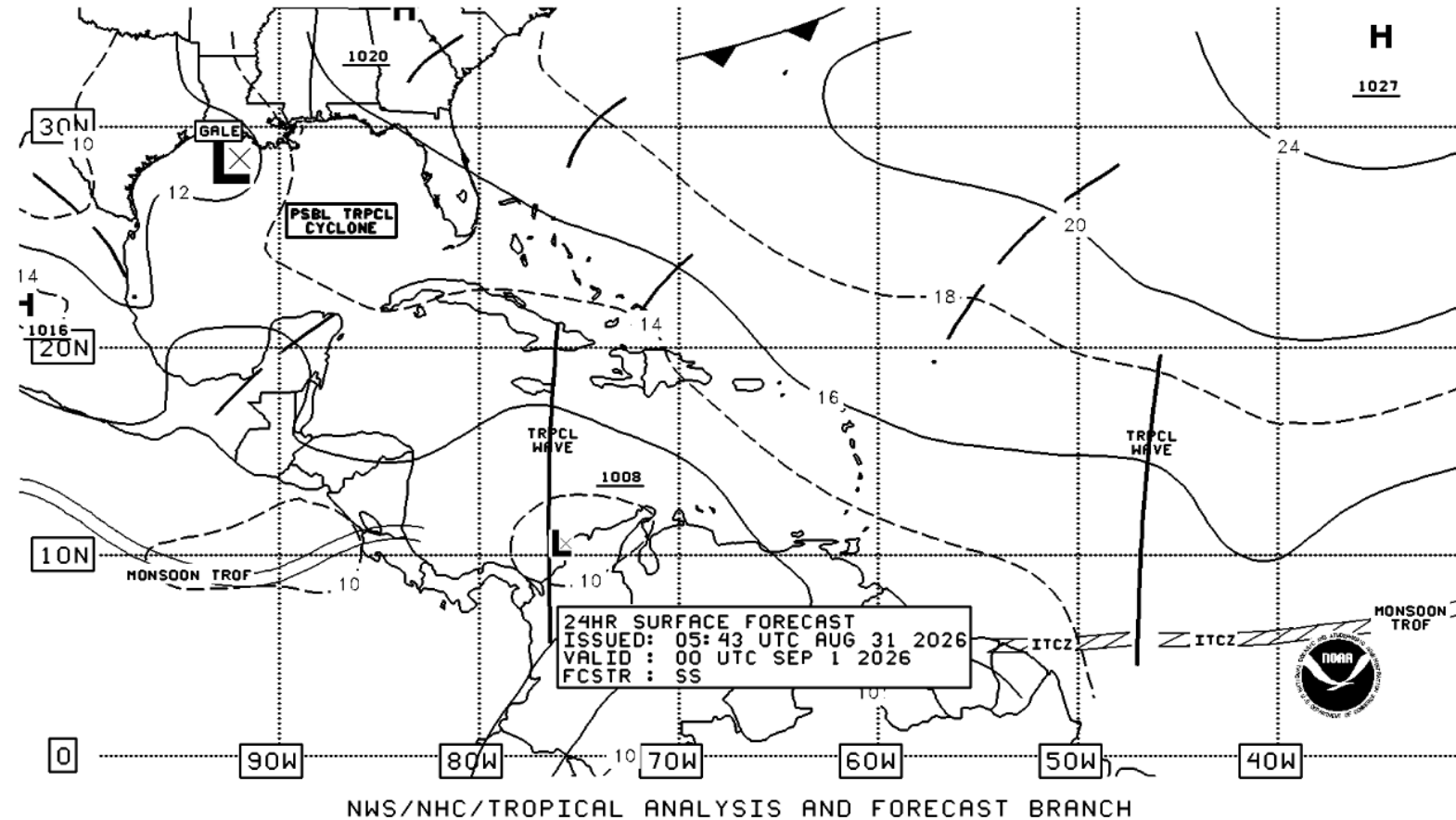


SABRE Forecast Discussion 08/31/2026

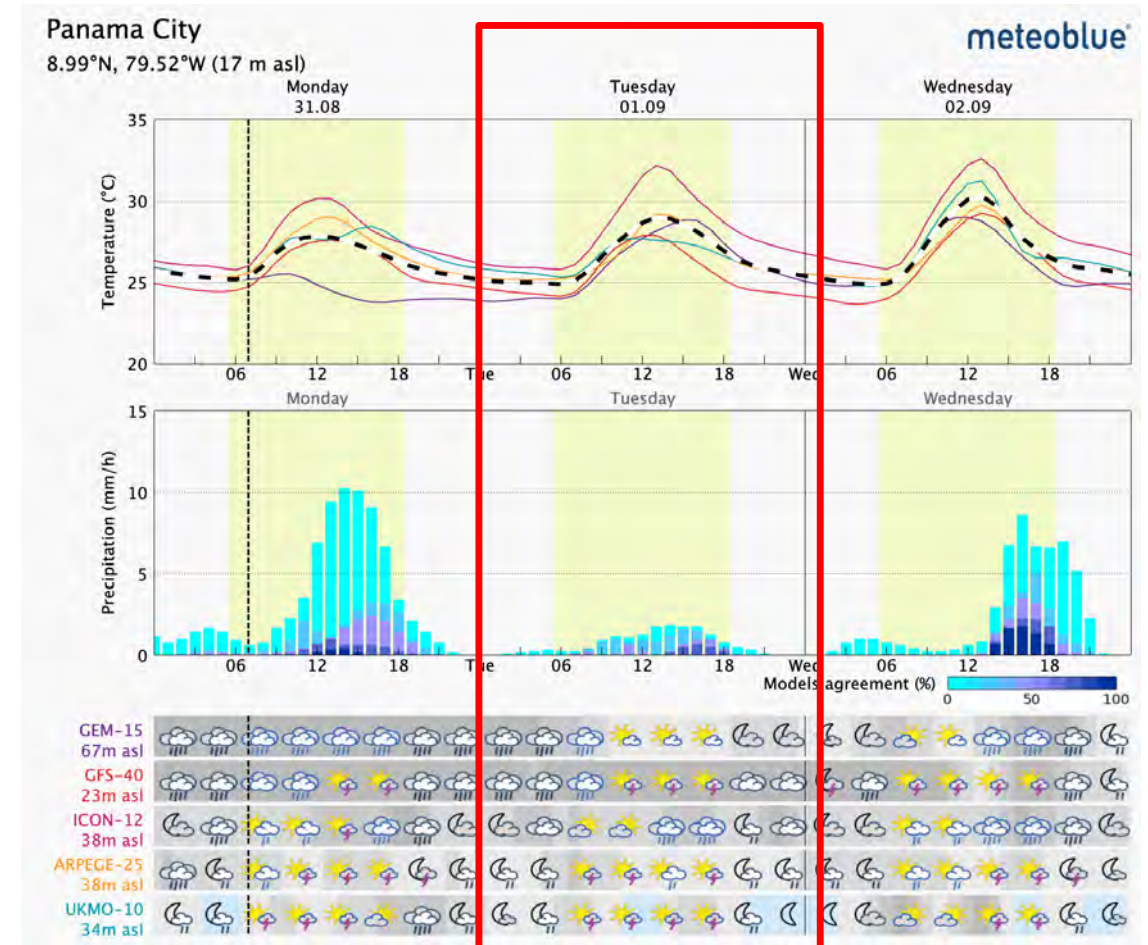
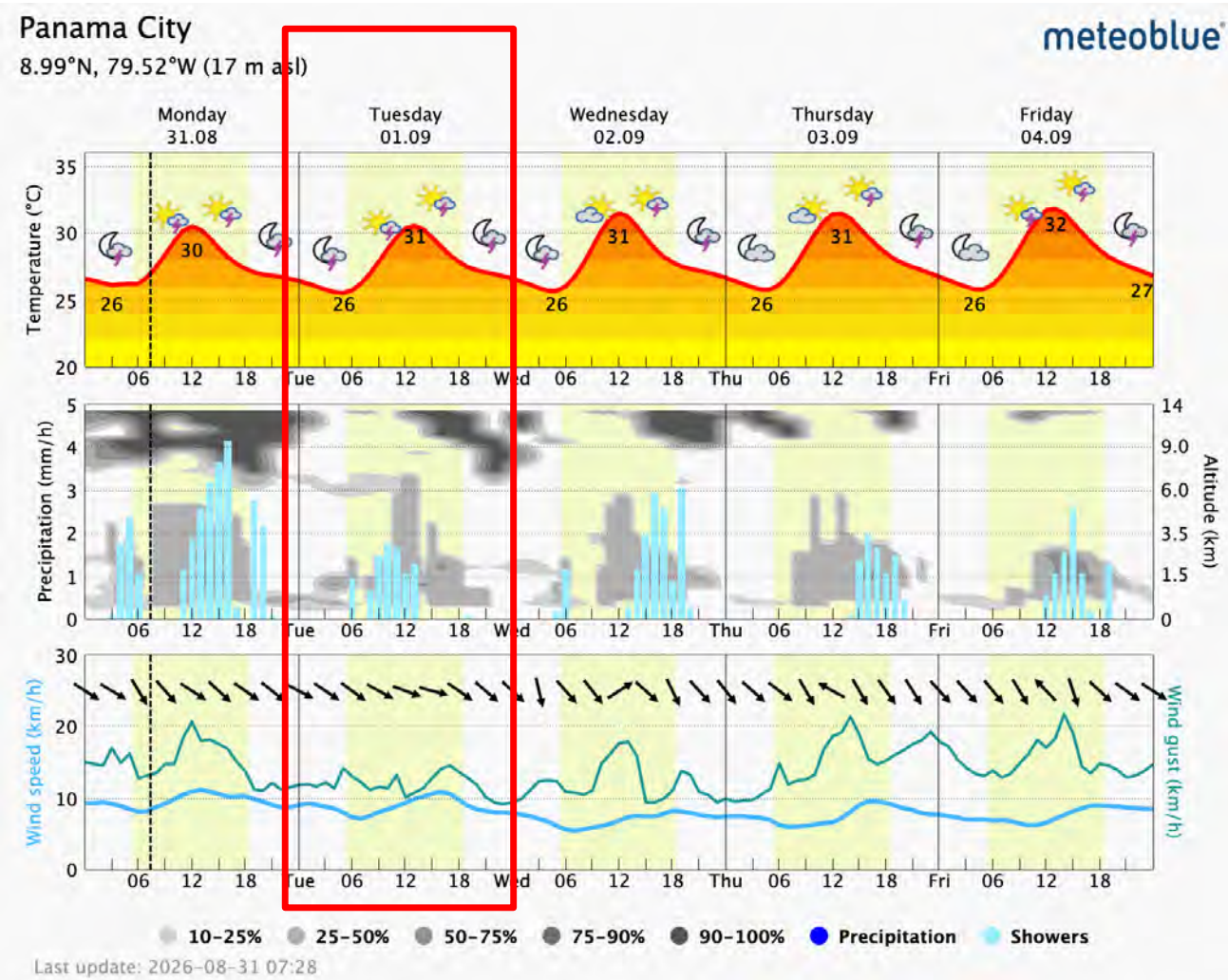
Surface Chart



- Scattered moderate to strong convection is noted N of 03N between 88W and 98W.
- The monsoon trough extends from 10N85W to 10N100W to 14N116W, then resumes SW of Karina near 12N130W to 11N139W. Scattered moderate to isolated strong convection is evident N of 03N E of 88W, and from 00N to 10N W of 120W.

Flight day:

- Low agreement among models for precipitation during both takeoff and landing times.
- Winds of ~8.5 knots from the west during landing



Upper Level Forecasts for 09/01/2026

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

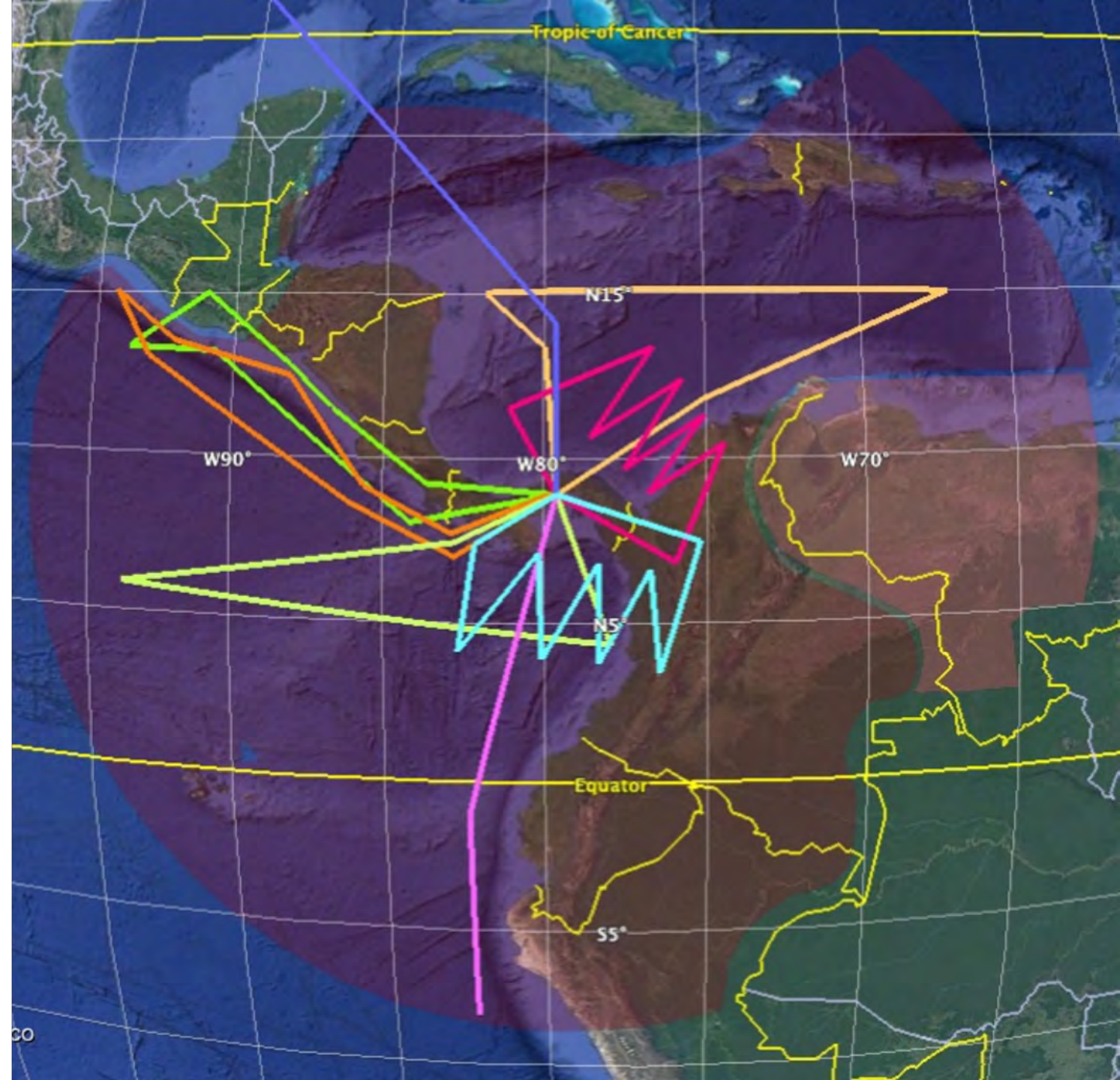
3. Aged outflow from deep continental convection (and/or longitudinal sampling if we can manage)

4. Marine deep ($> \sim 14.5$ 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

7. Long longitudinal gradient



RF07 Flight plan

Targets

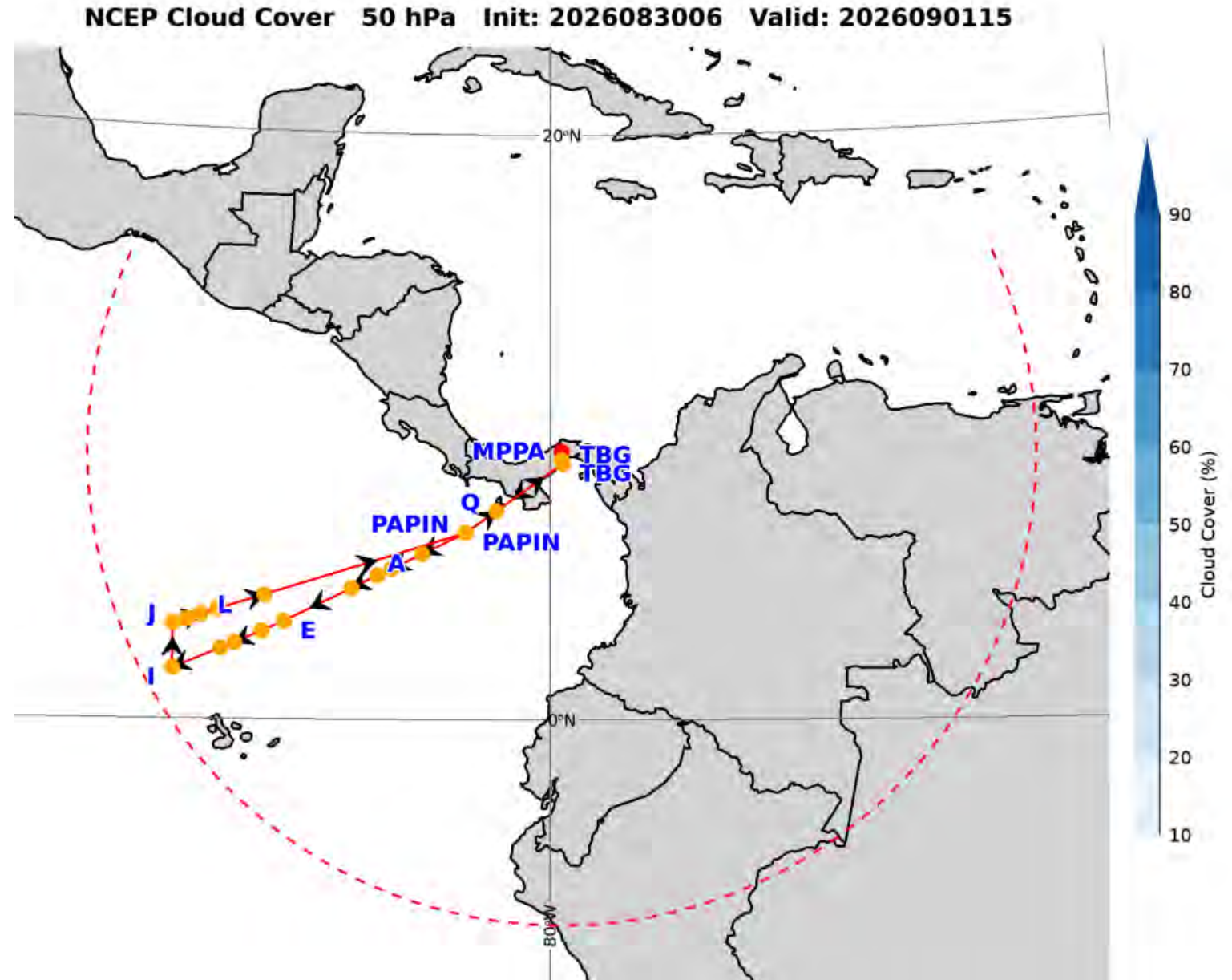
- Long longitudinal gradient
- Target profiles through the cold point tropopause

Bonus Targets

- Possible fly intercept of elevated short-lived tracers from continental convection

Flight Specs

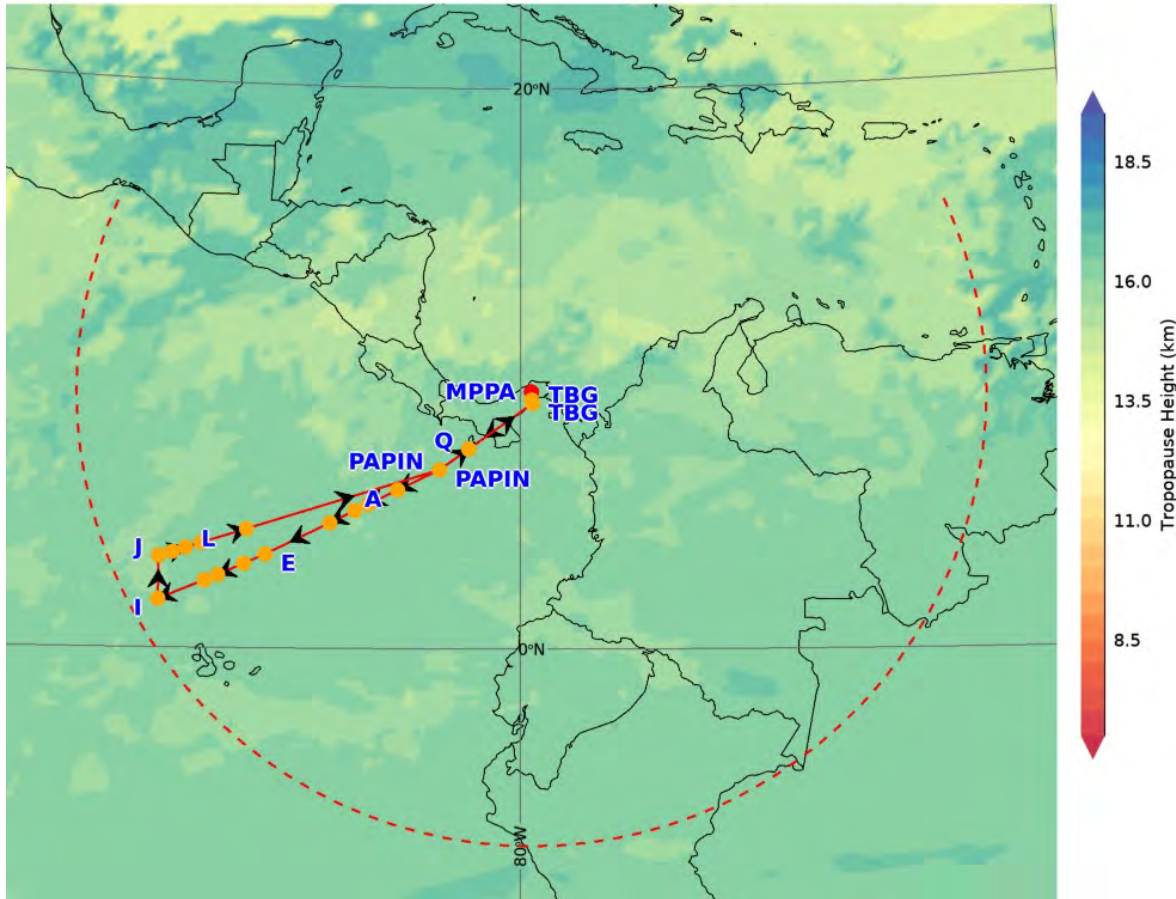
- Take off: 9:30am
- Landing time: 3:00pm
- Distance: 1,890 nautical miles
- Duration: 5.5 hours



Tropopause 15Z (10a local)

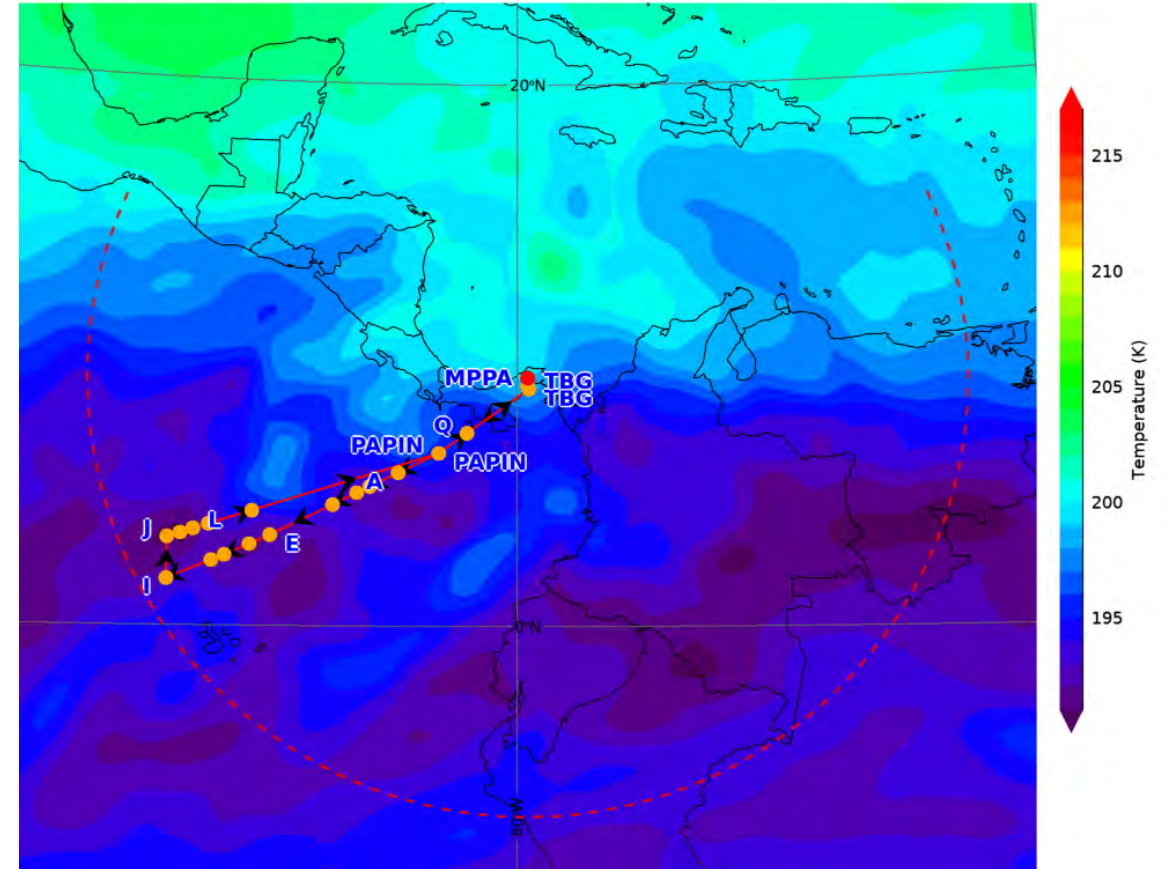
Pressure

NCEP Tropopause Height Init: 2026083006 Valid: 2026090115



Temperature

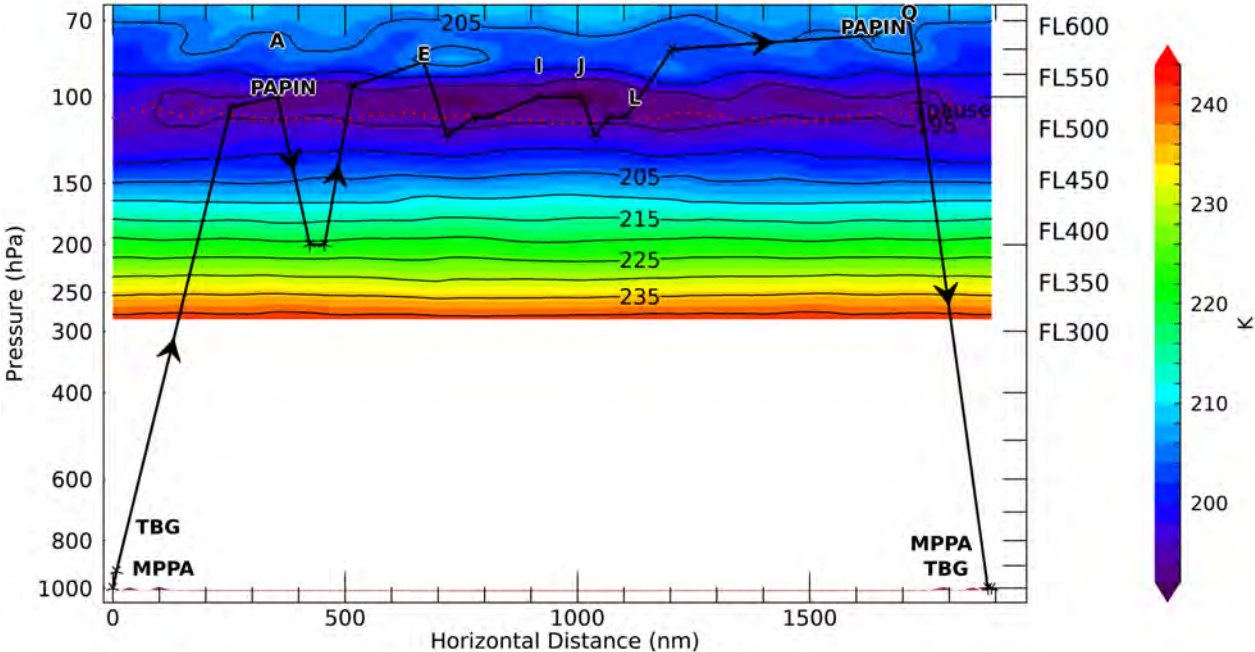
CAMS Temperature 98 hPa Init: 2026083000 Valid: 2026090115



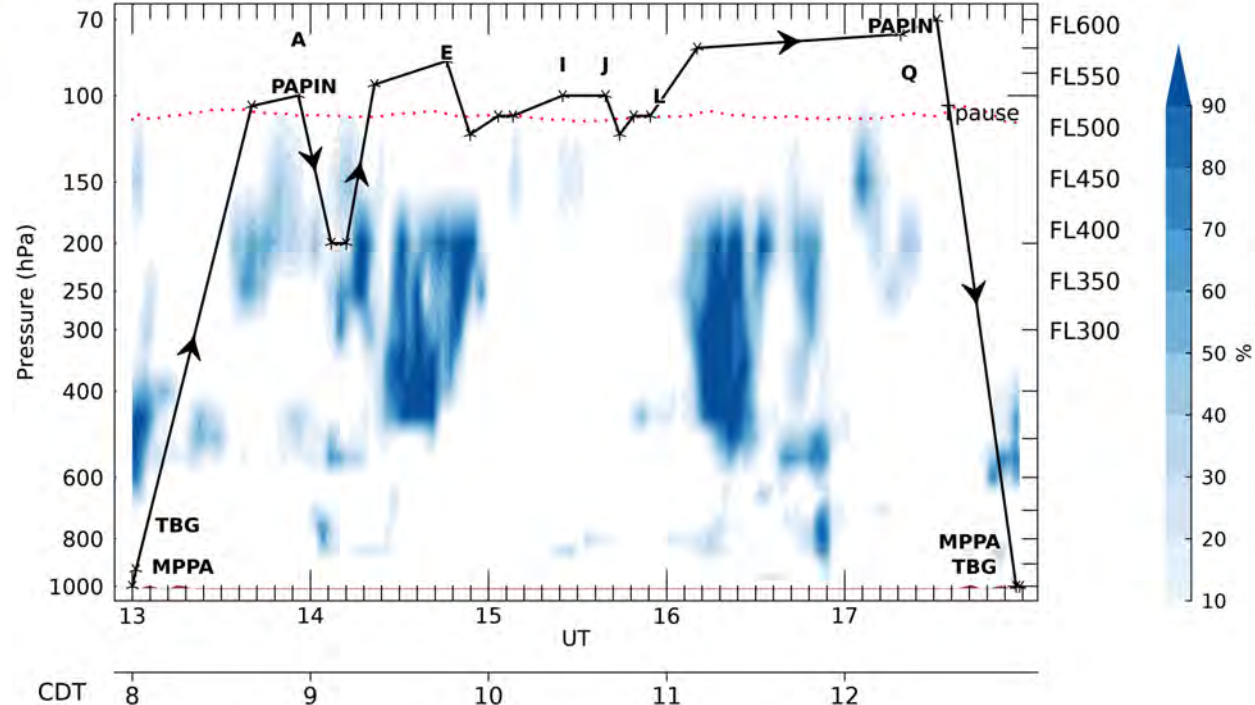
Region of higher tropopause heights to the north. Tropopause height of ~16km over planned flight region. Tropopause temperatures get much colder to south-southwest (~190 K) with easterly 100 mb winds

Vertical Profiles

CAMS Temperature Init:2026083000 Valid Time:2026090115

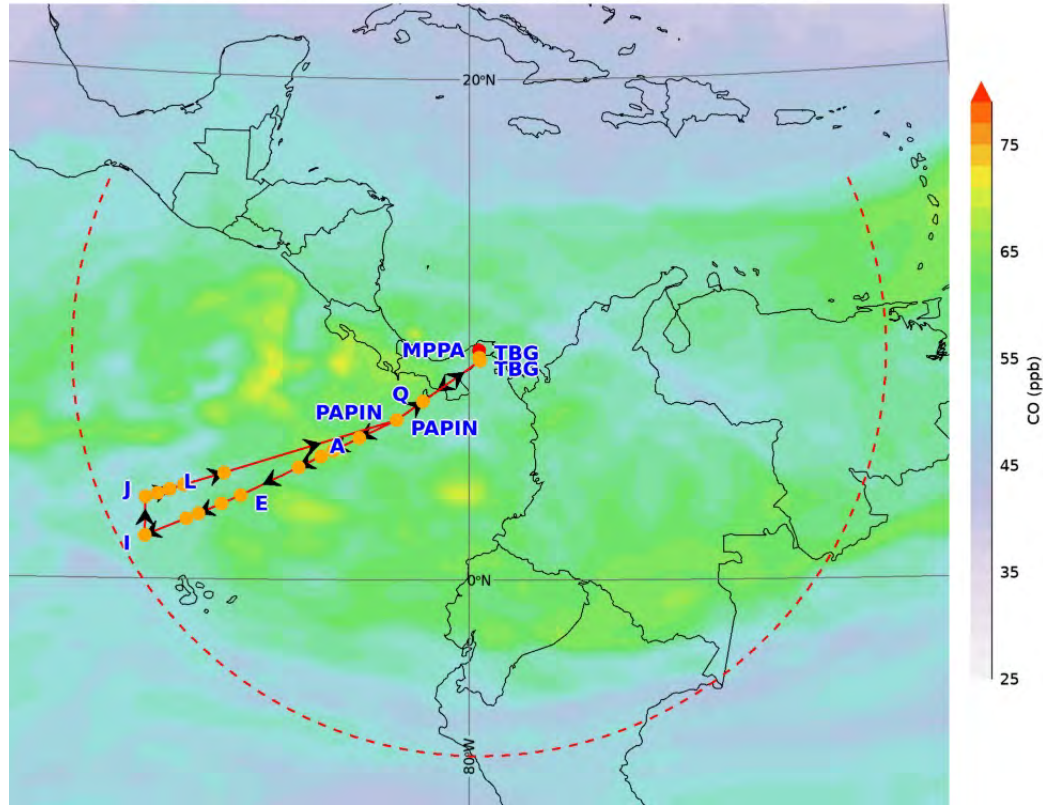


NCEP Cloud Cover Init:2026083006 Valid Day:20260901



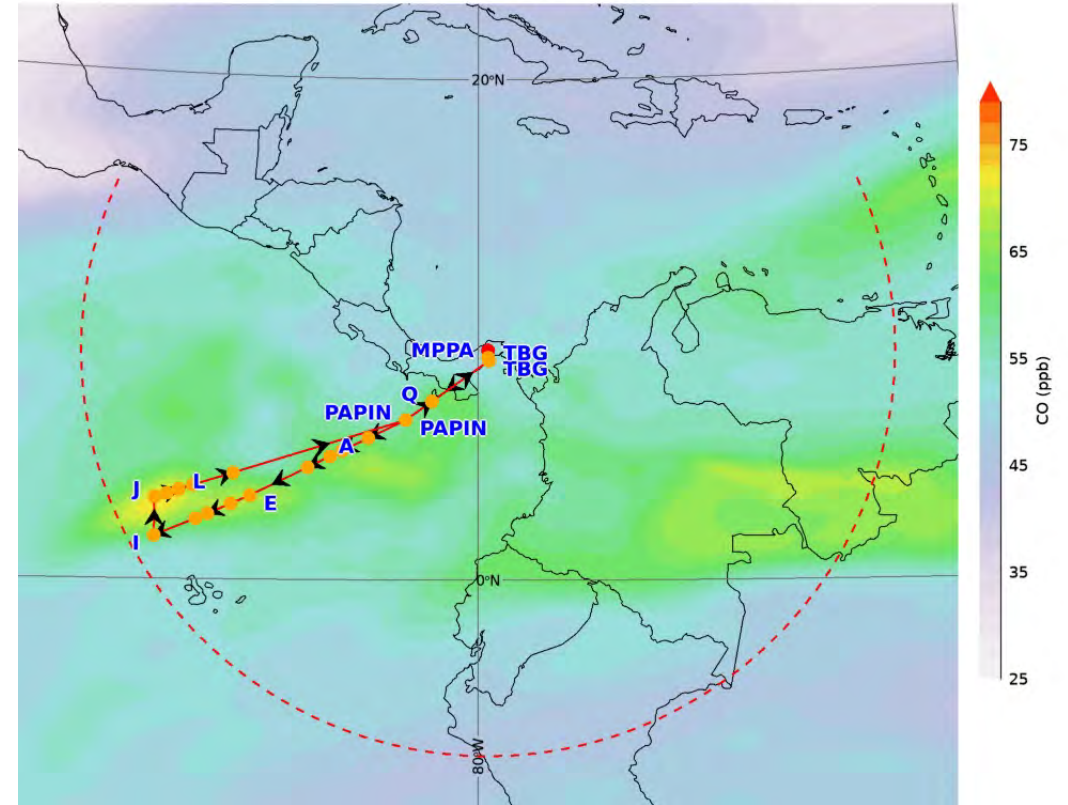
CO@100 hPa

GEOS CO 100 hPa Init: 2026082909 Valid: 2026090115



GEOS

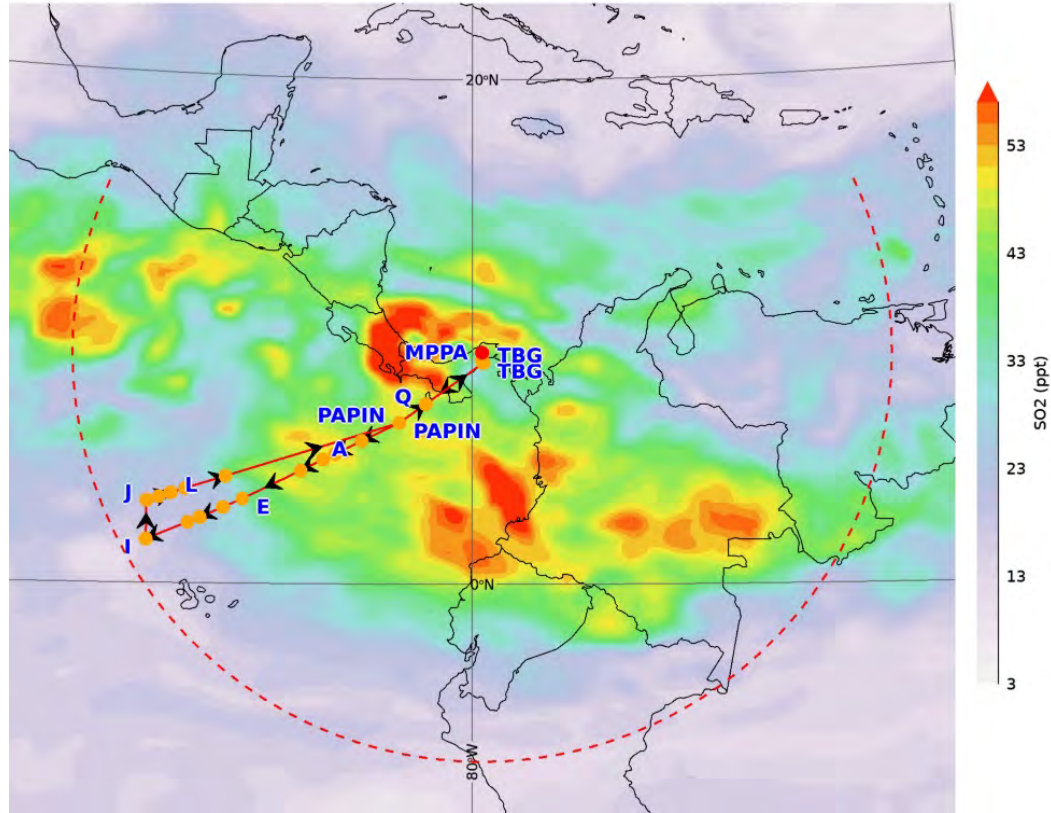
CAMS CO 98 hPa Init: 2026083000 Valid: 2026090115



CAMS

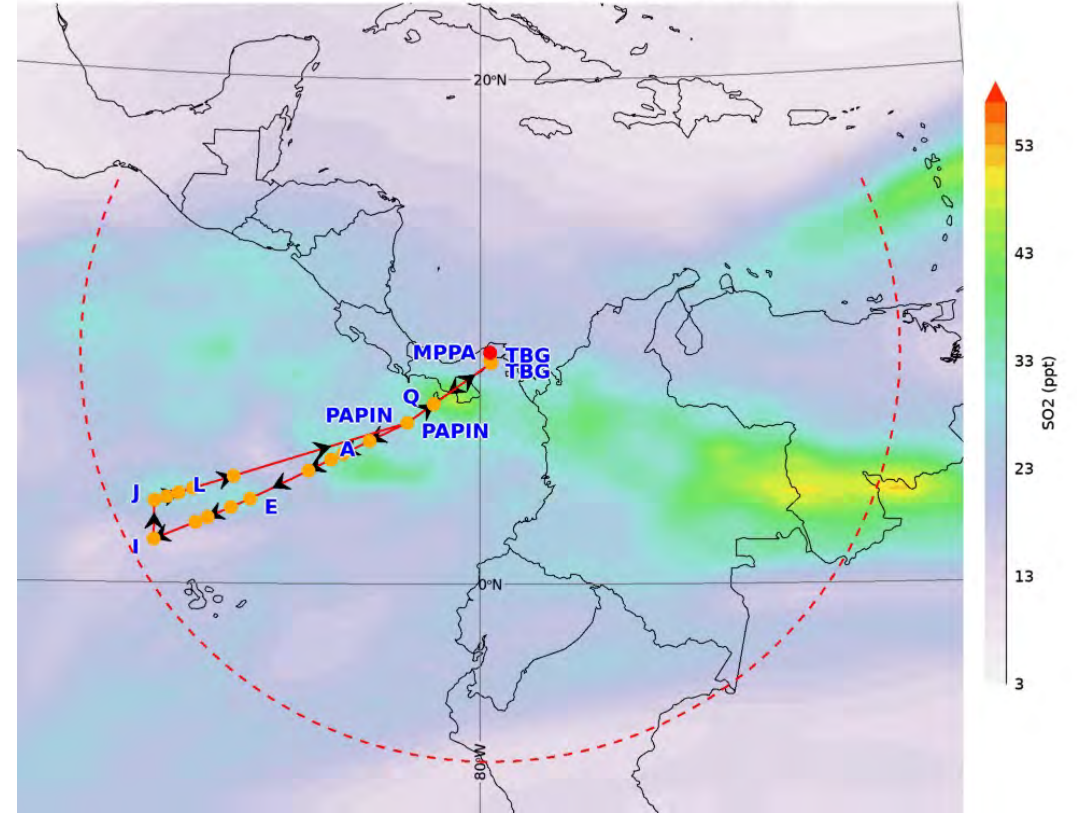
SO₂@100 hPa

GEOS SO₂ 100 hPa Init: 2026082909 Valid: 2026090115



GEOS

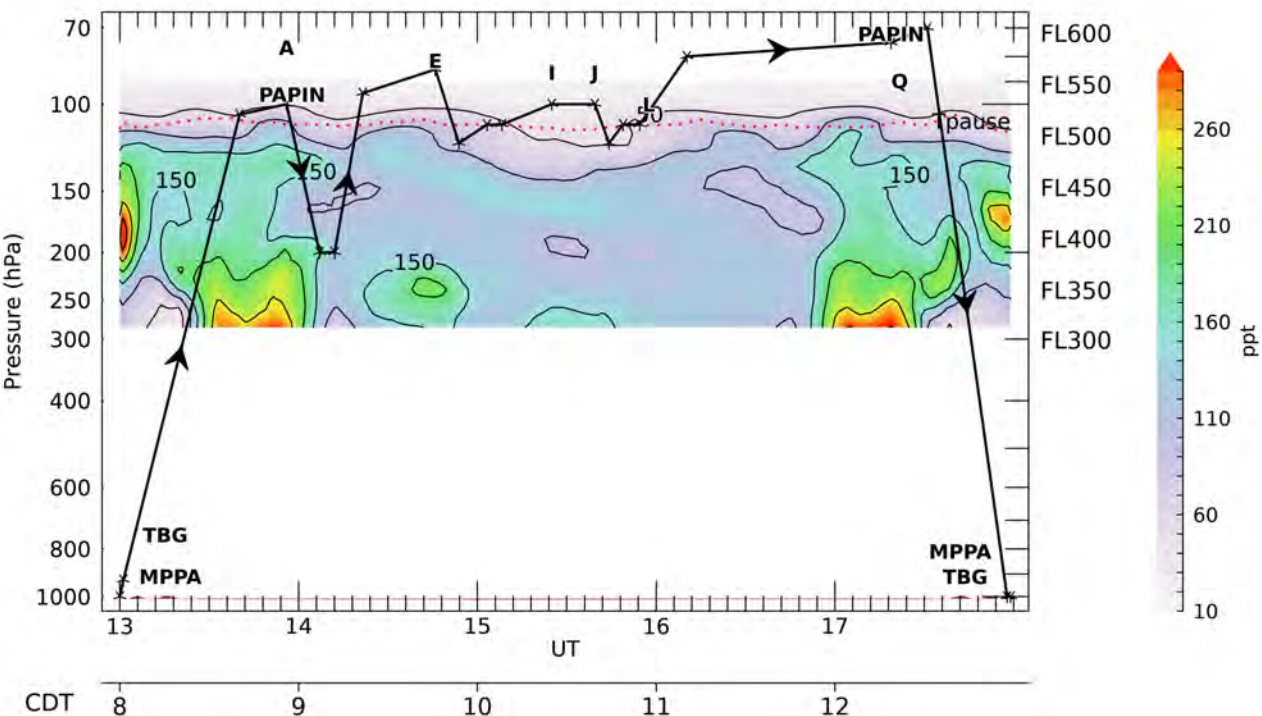
CAMS SO₂ 98 hPa Init: 2026083000 Valid: 2026090115



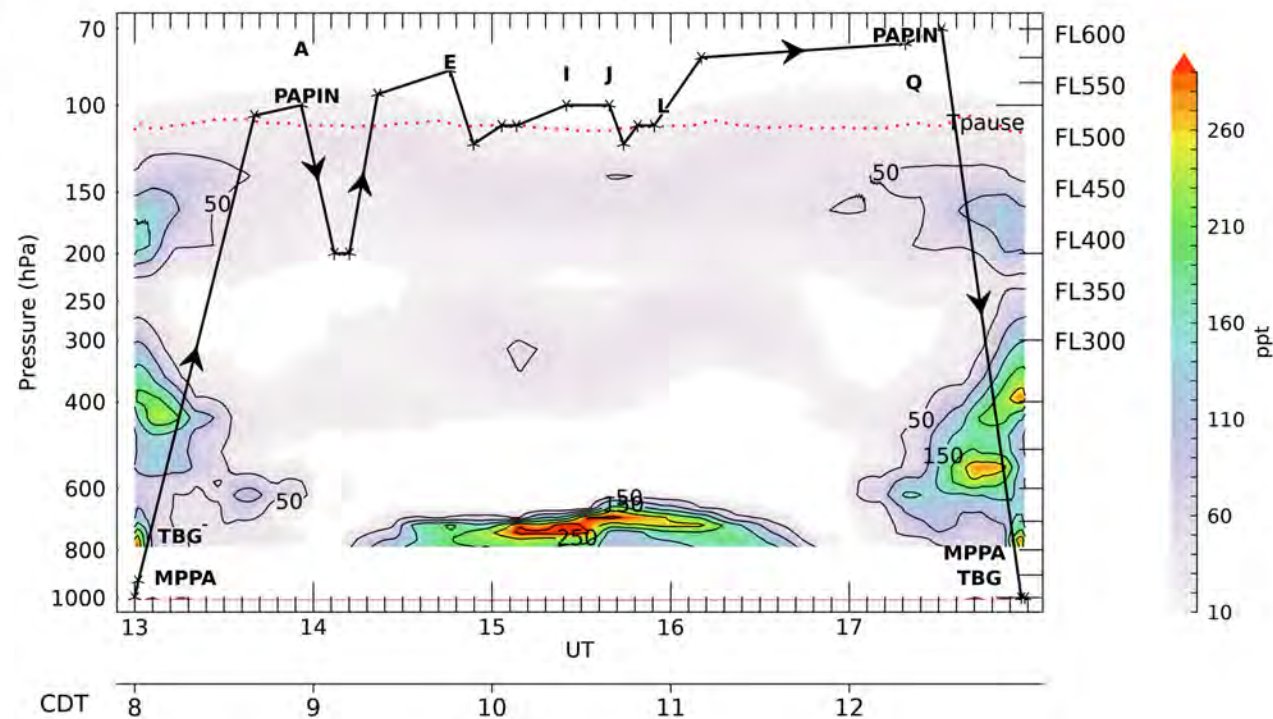
CAMS

Vertical Profiles

CAMS SO2 Init:2026083000 Valid Day:20260901

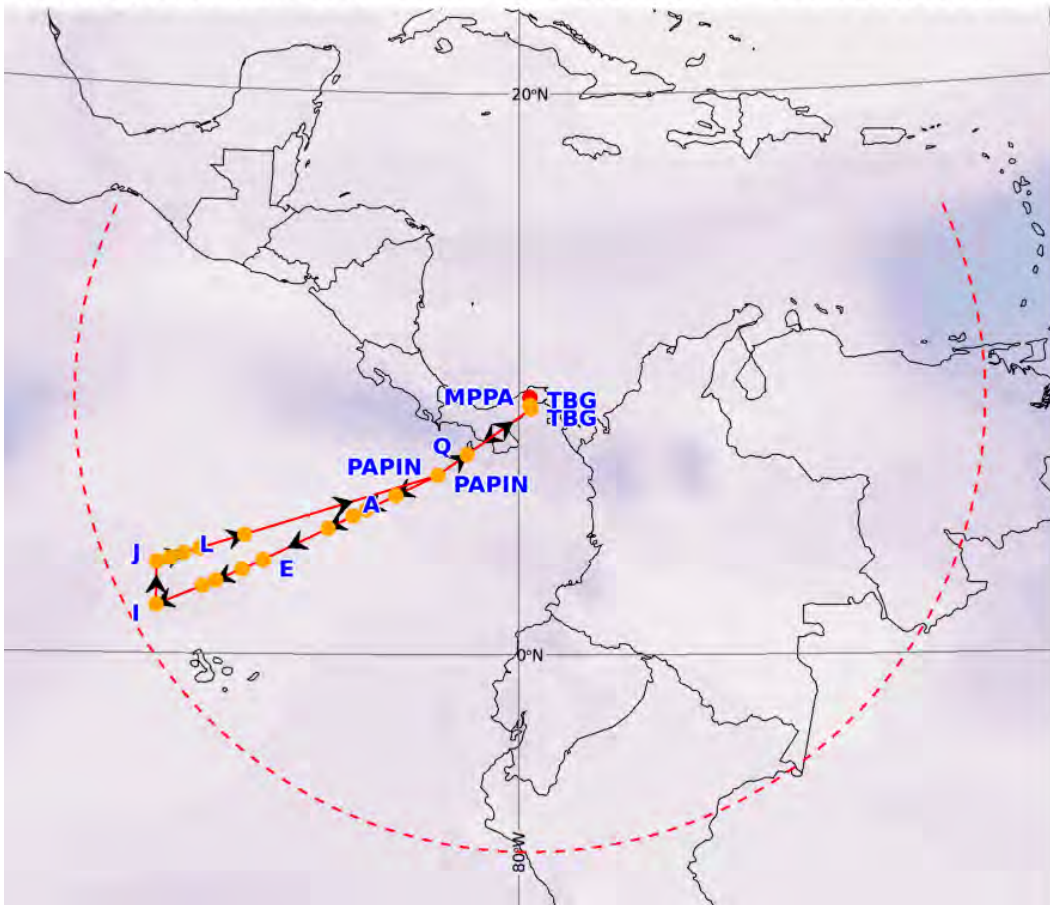


WACCM SO2 Init:2026082700 Valid Day:20260901

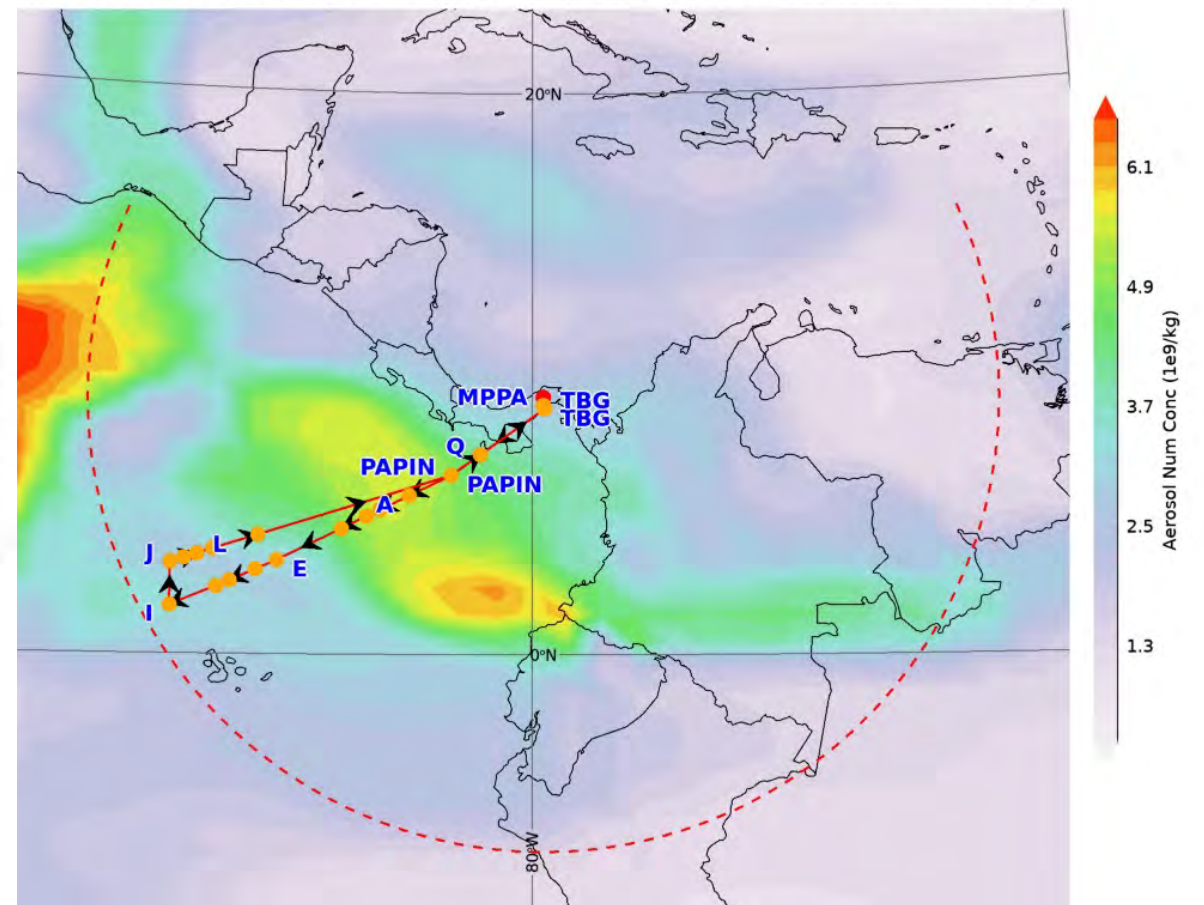


Aerosol Number Concentration

WACCM Aerosol Num Conc 85 hPa Init: 2026082700 Valid: 2026090115

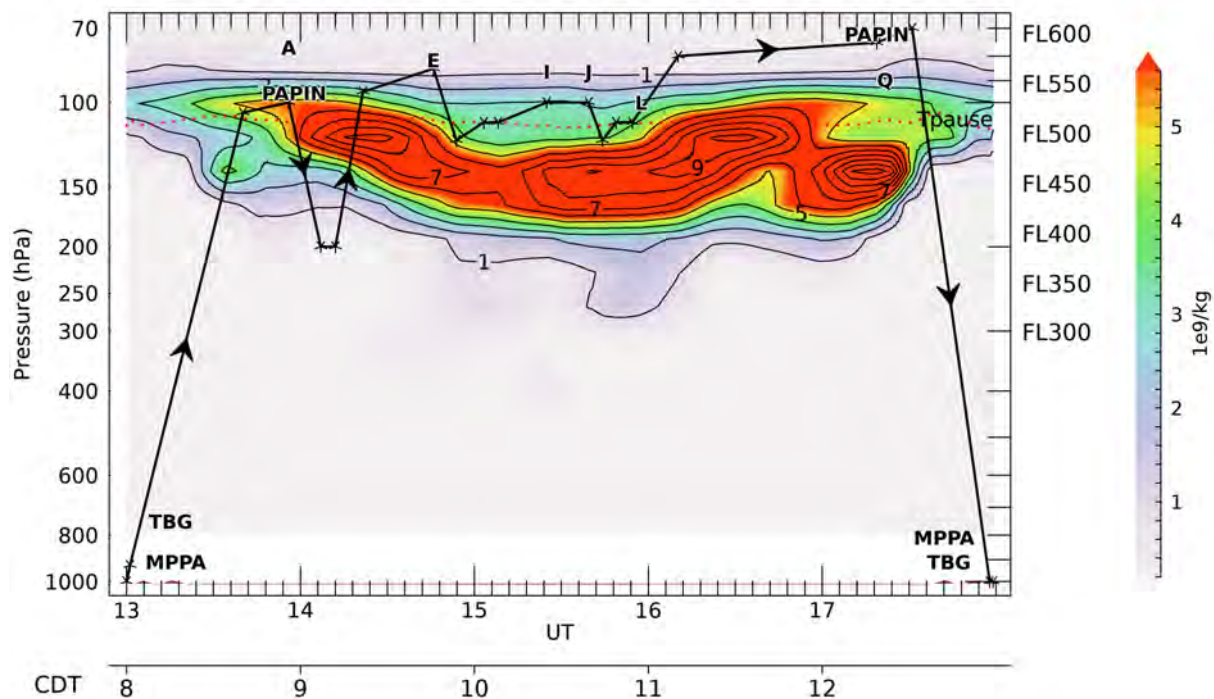


WACCM Aerosol Num Conc 100 hPa Init: 2026082700 Valid: 2026090115

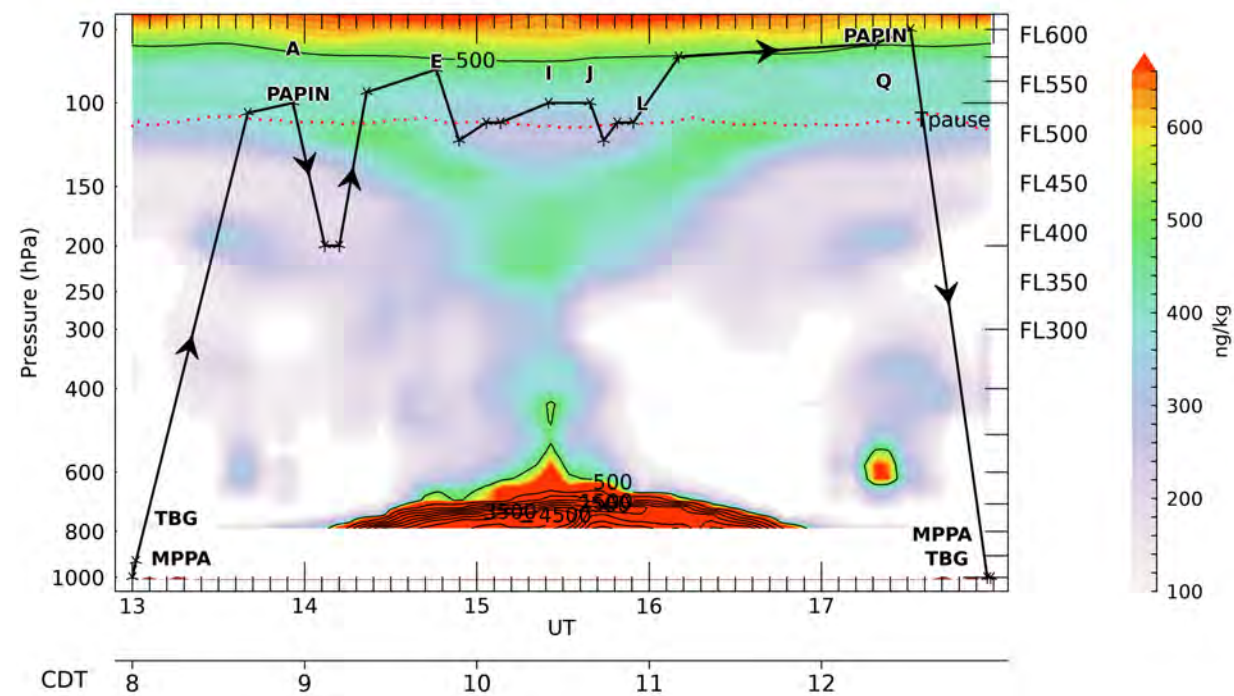


Vertical Profiles

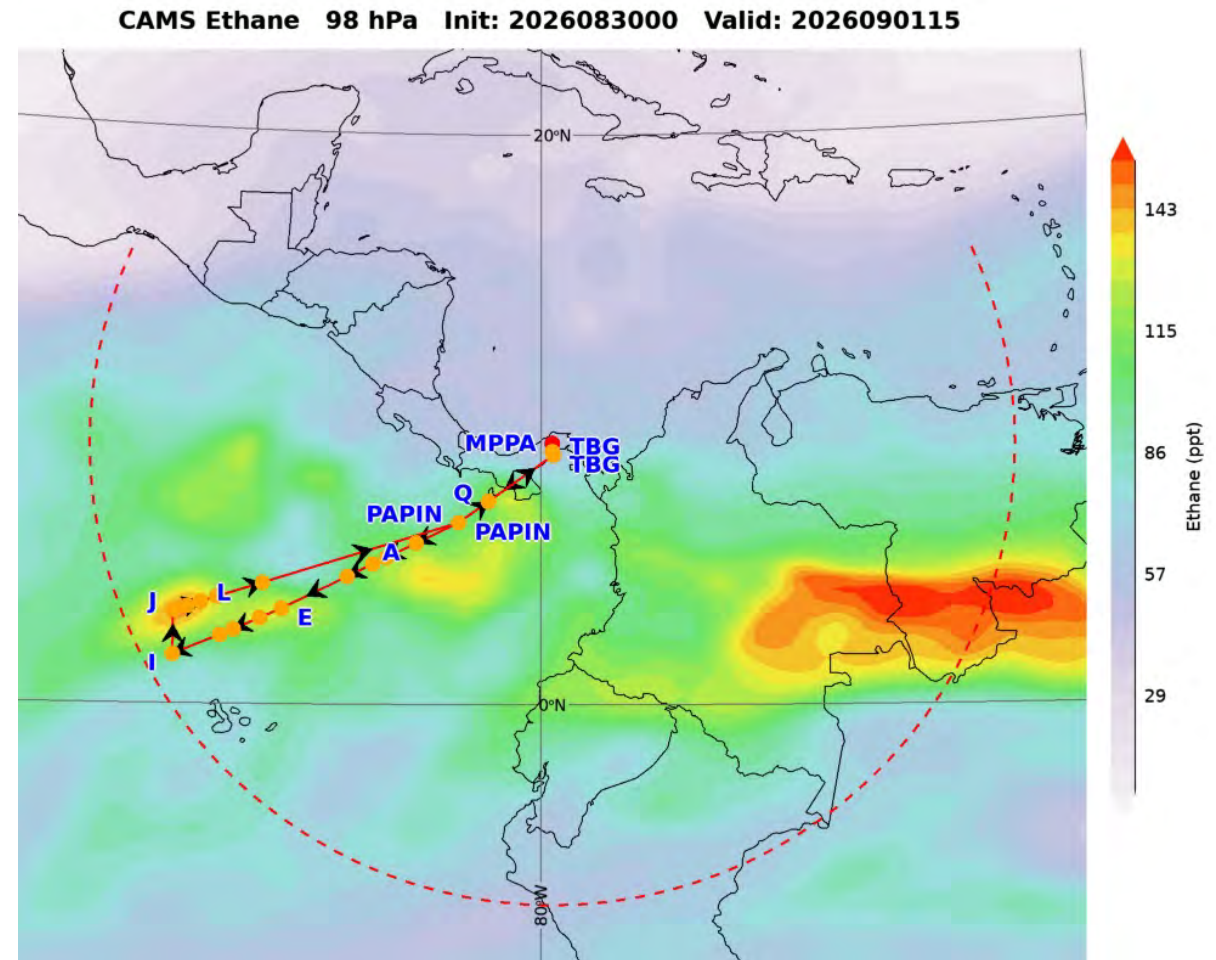
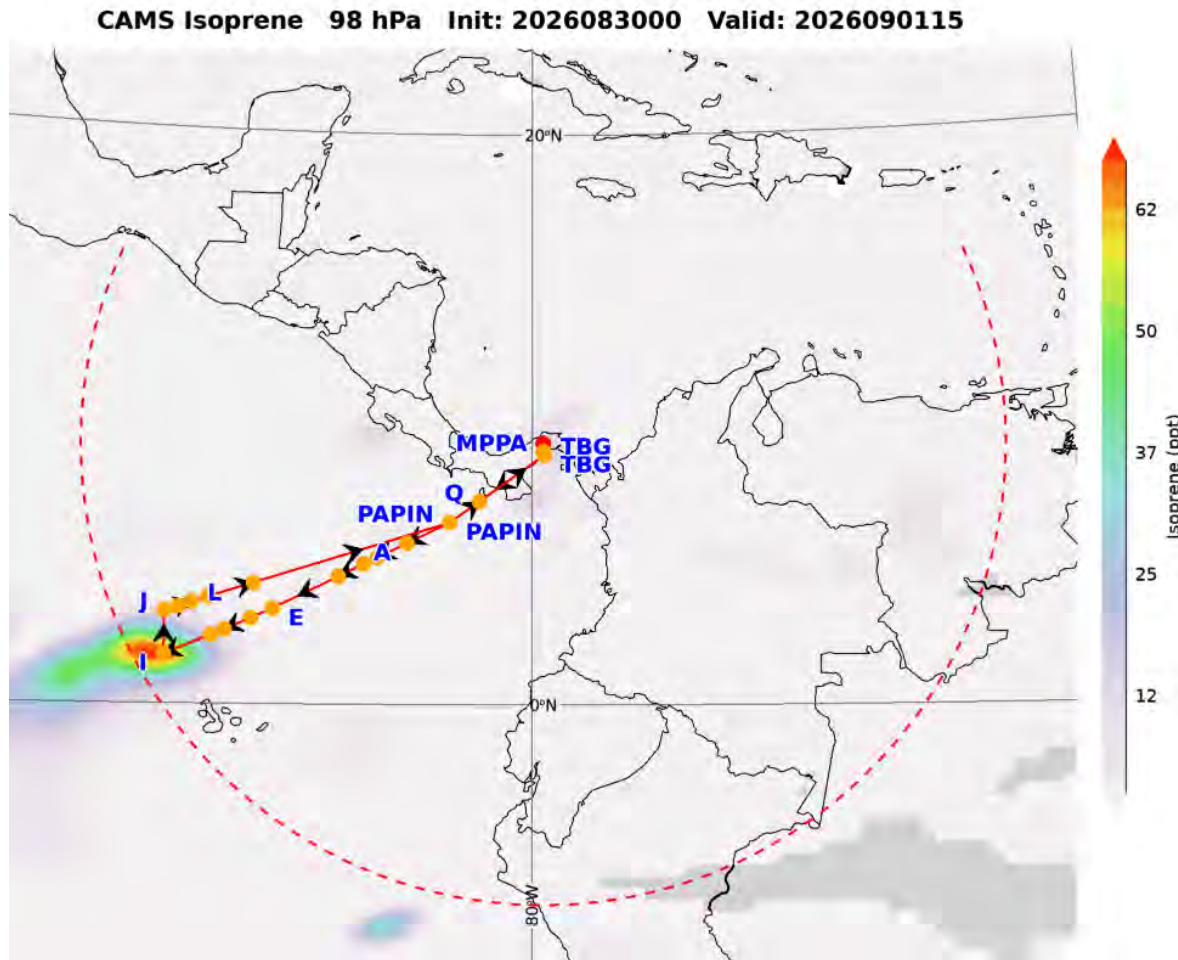
WACCM Aerosol Num Conc Init:2026082700 Valid Day:20260901



WACCM Sulfate Init:2026082700 Valid Day:20260901



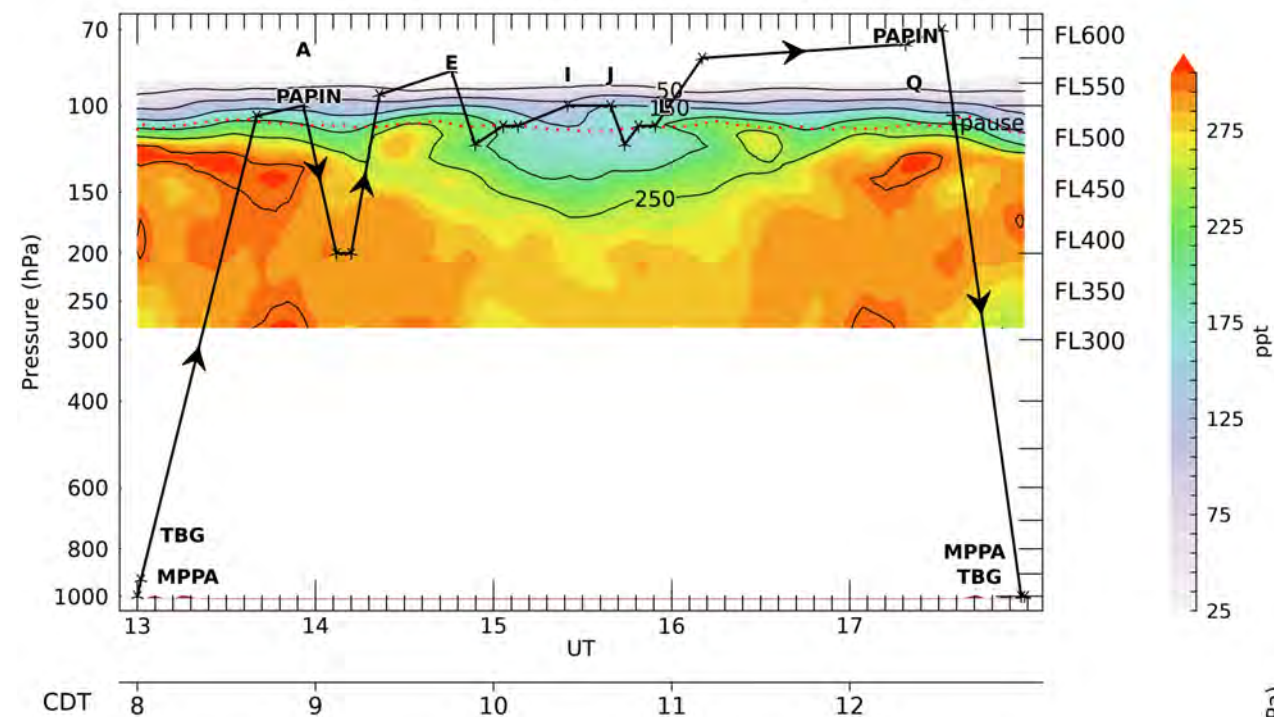
Short-lived tracers



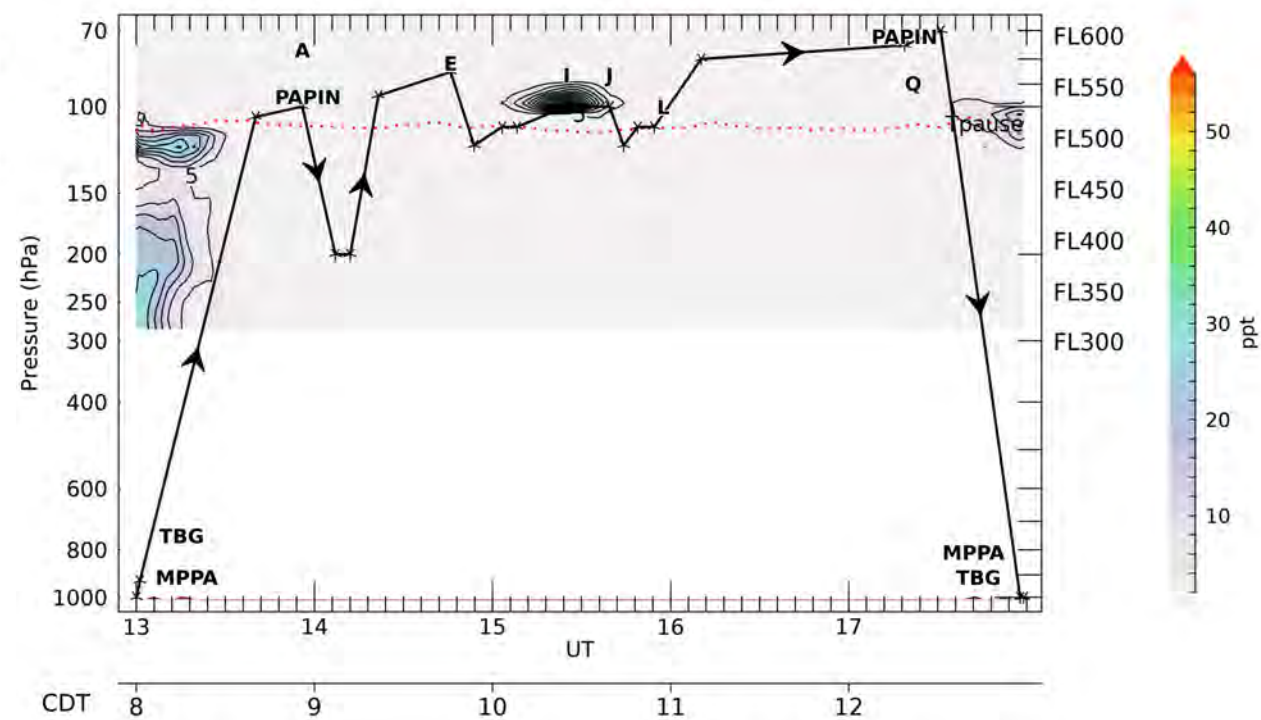
Target: The regions of elevated isoprene and ethane over the Pacific

Vertical Profiles

CAMS Ethane Init:2026083000 Valid Day:20260901

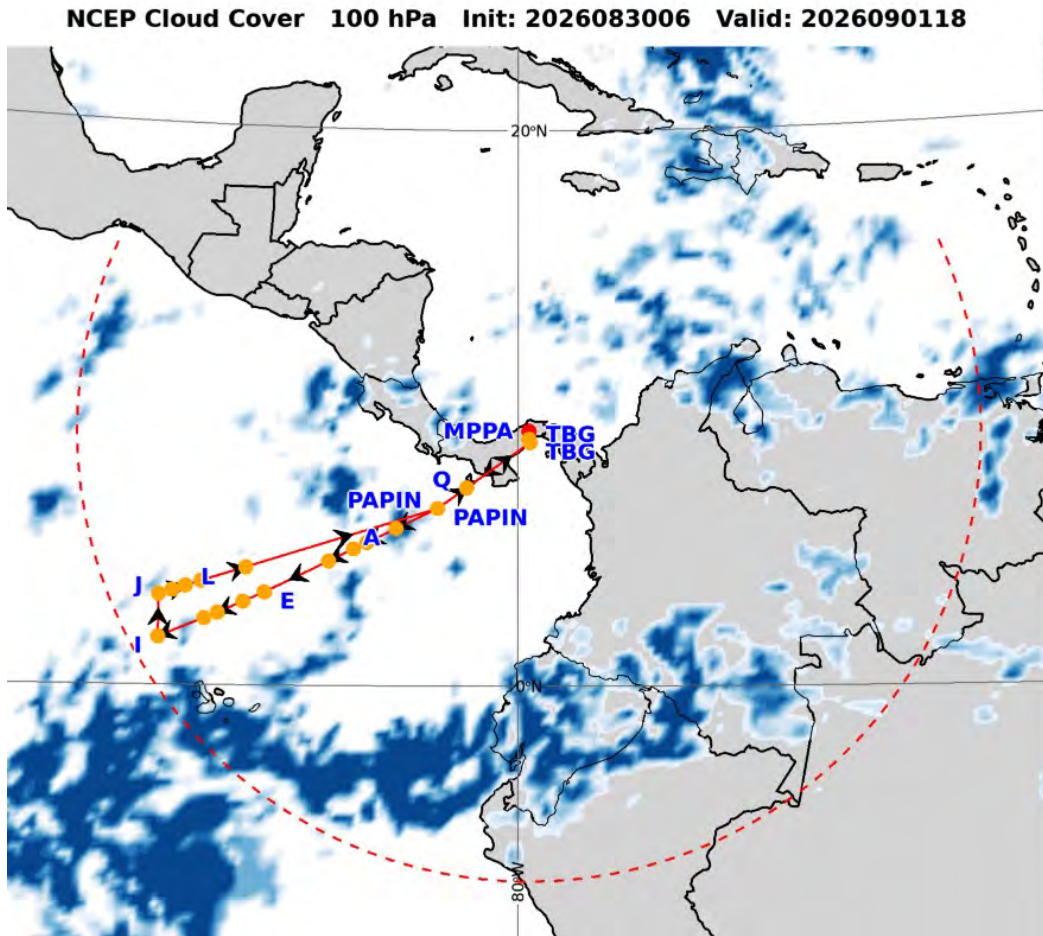


CAMS Isoprene Init:2026083000 Valid Day:20260901

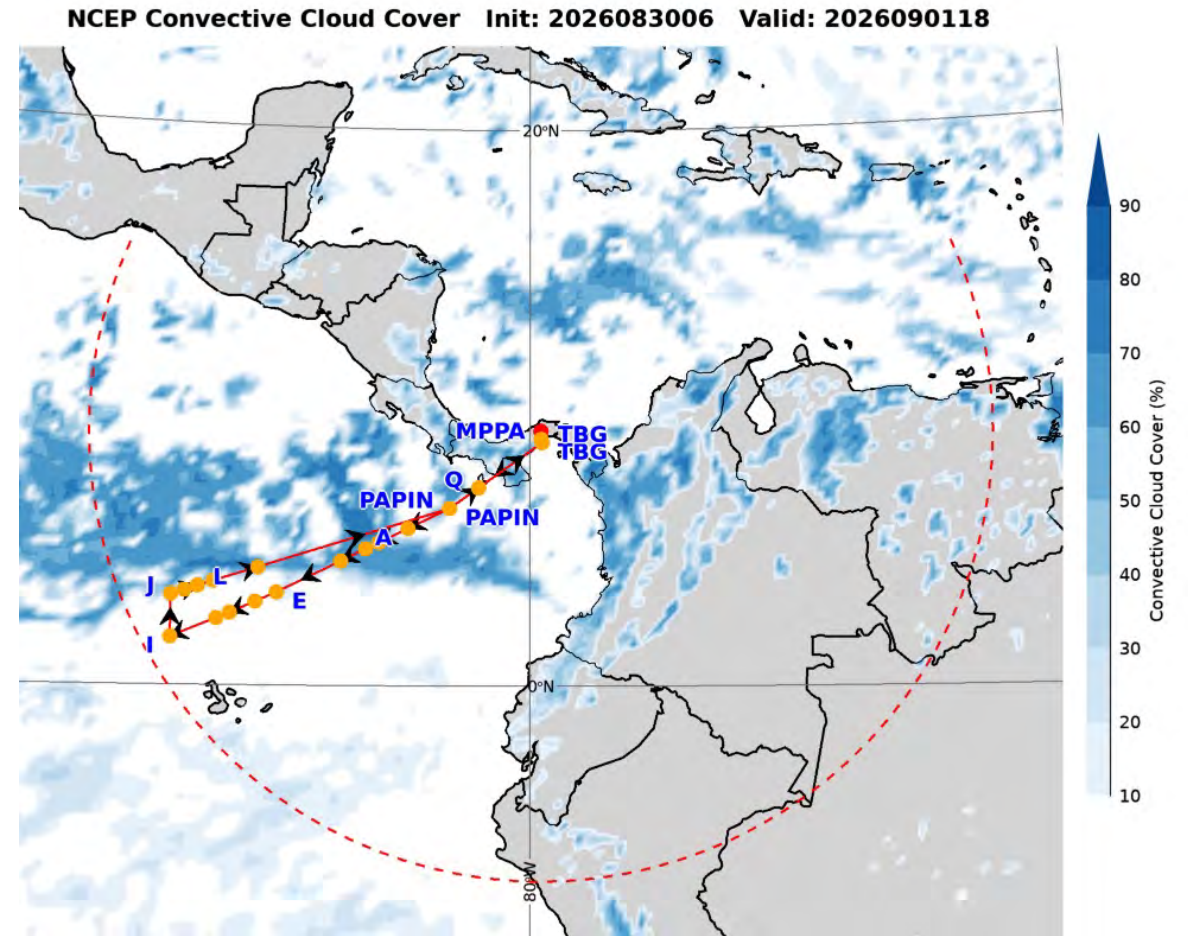


Cloud Cover 18Z (1p local)

Clouds at 100 hPa

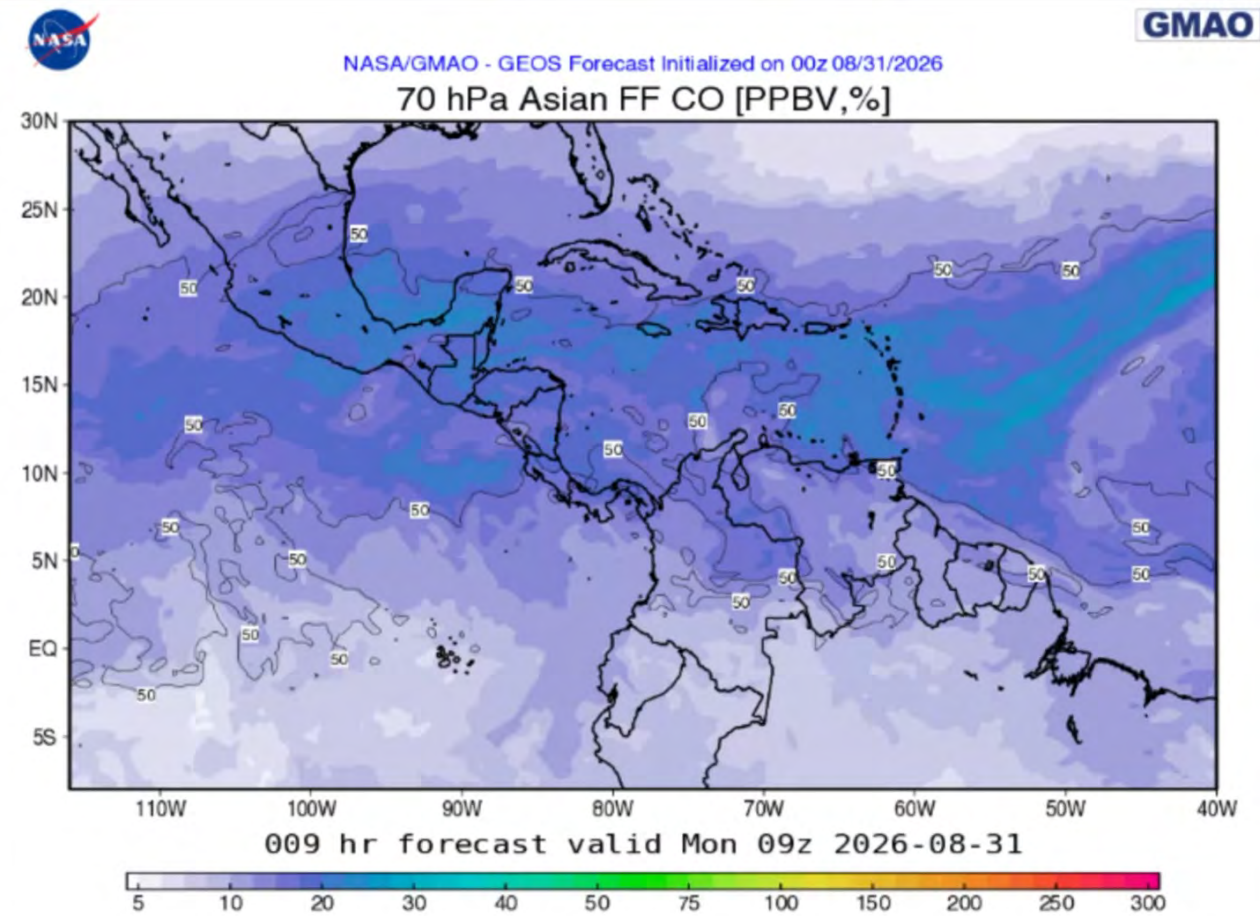
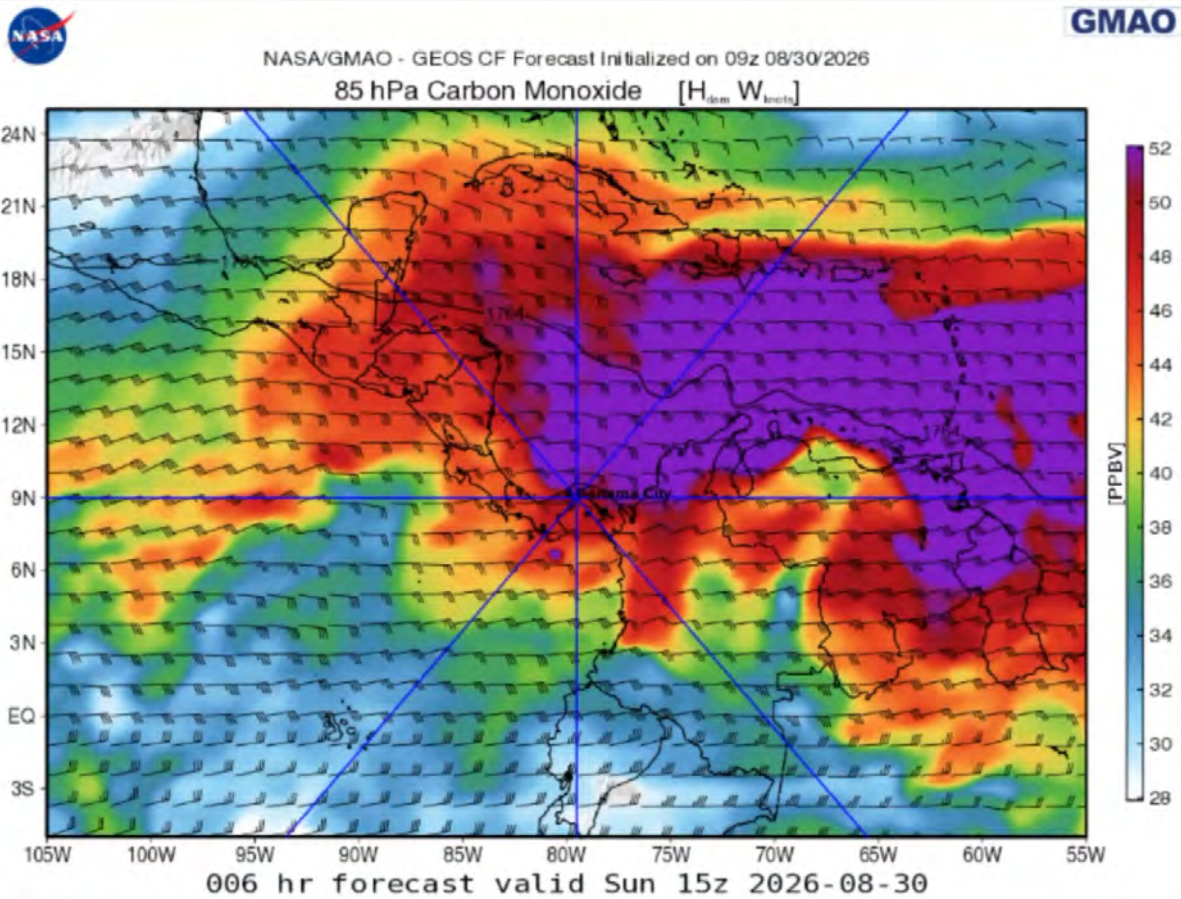


Convective

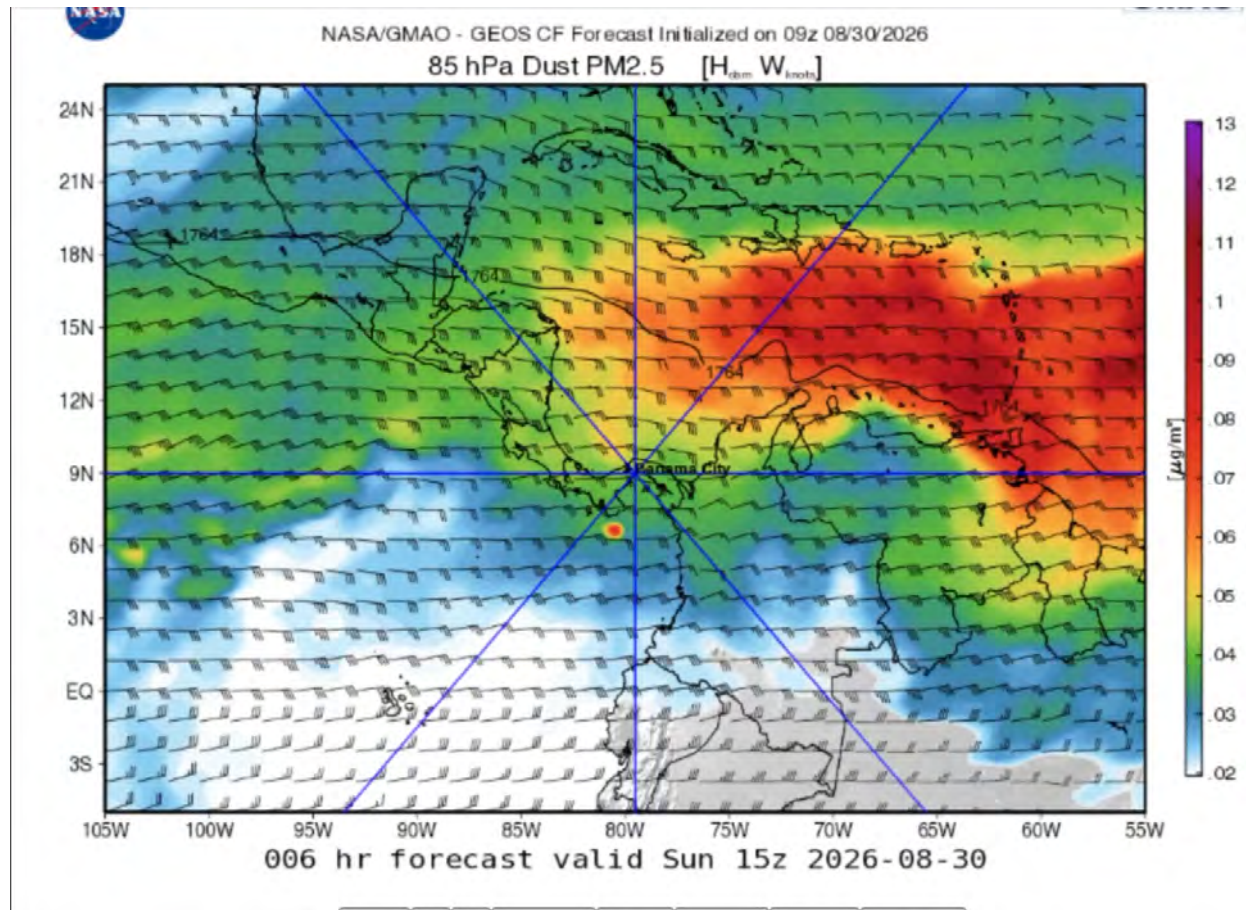
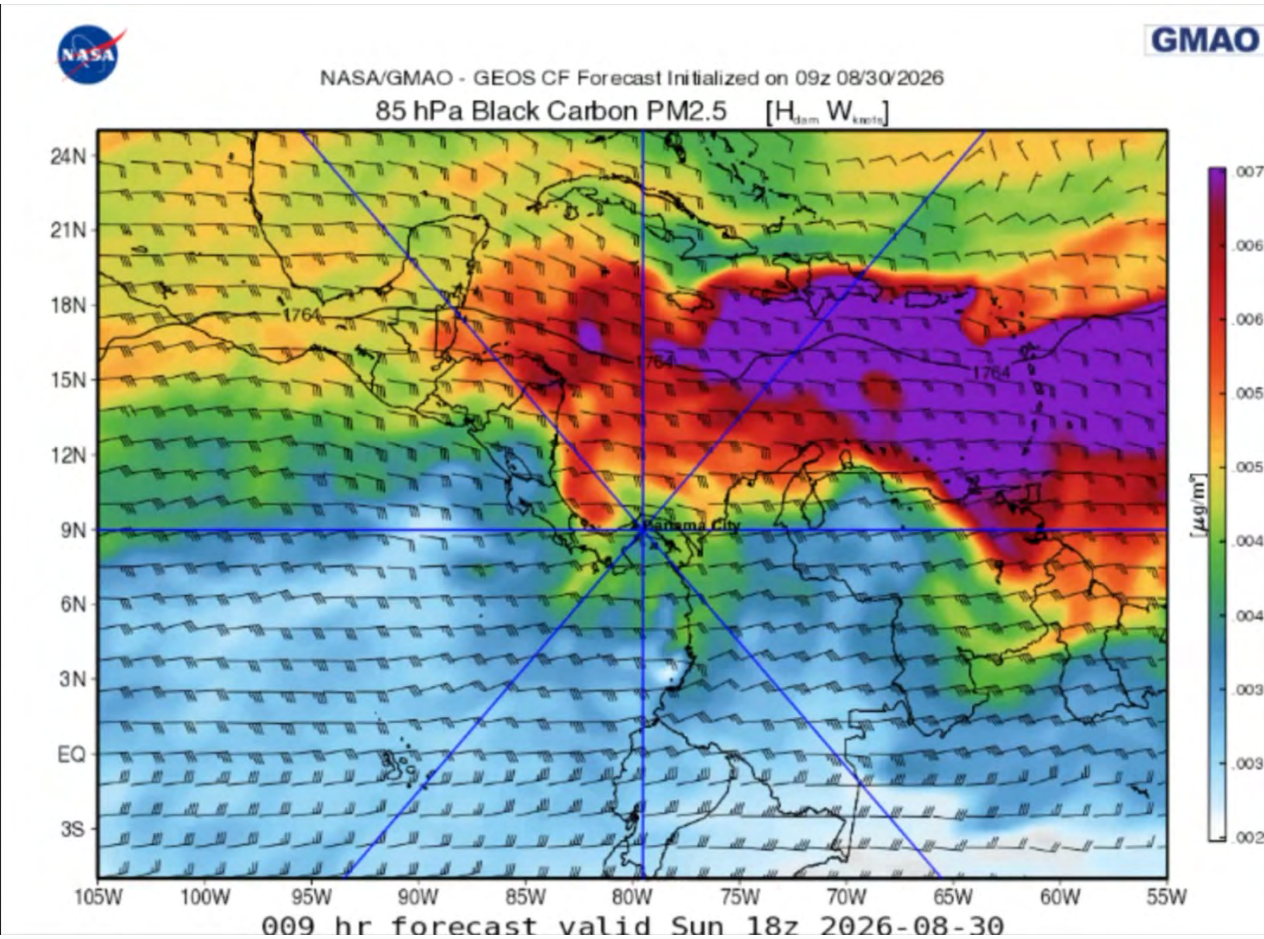


High cloud cover follows the monsoon trough. Convective cloud cover expected over most of the middle of the flight track region and Panama.

Rest of the week: CO

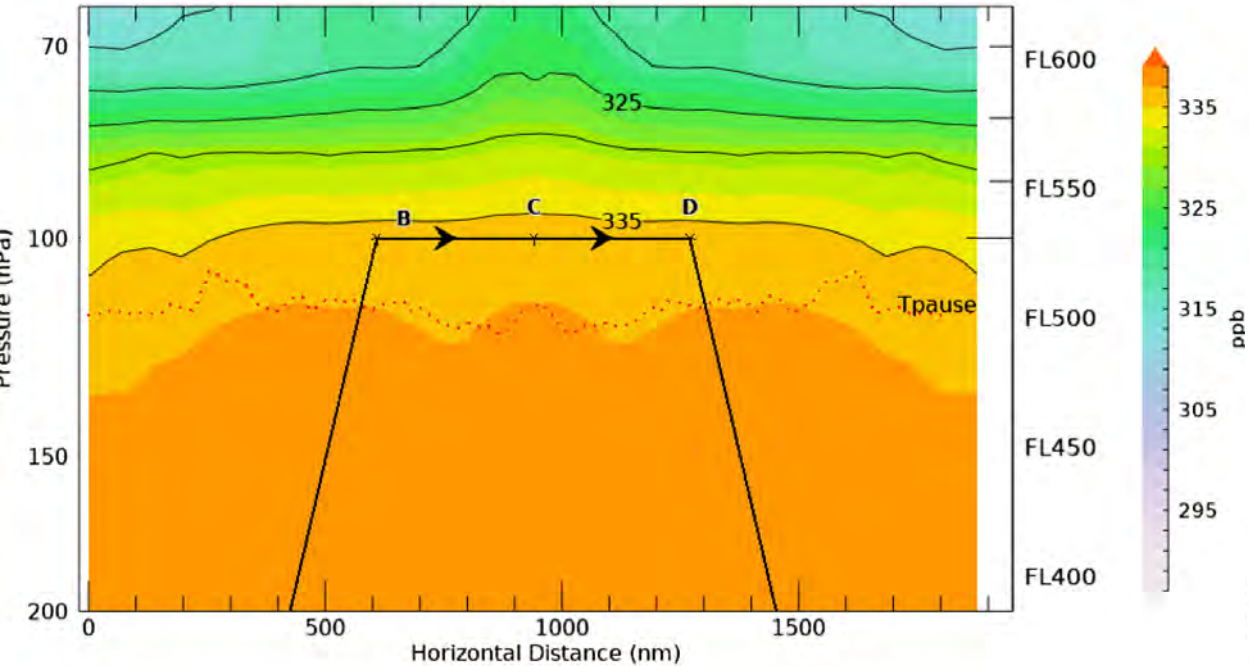


Rest of the Week: Aerosols

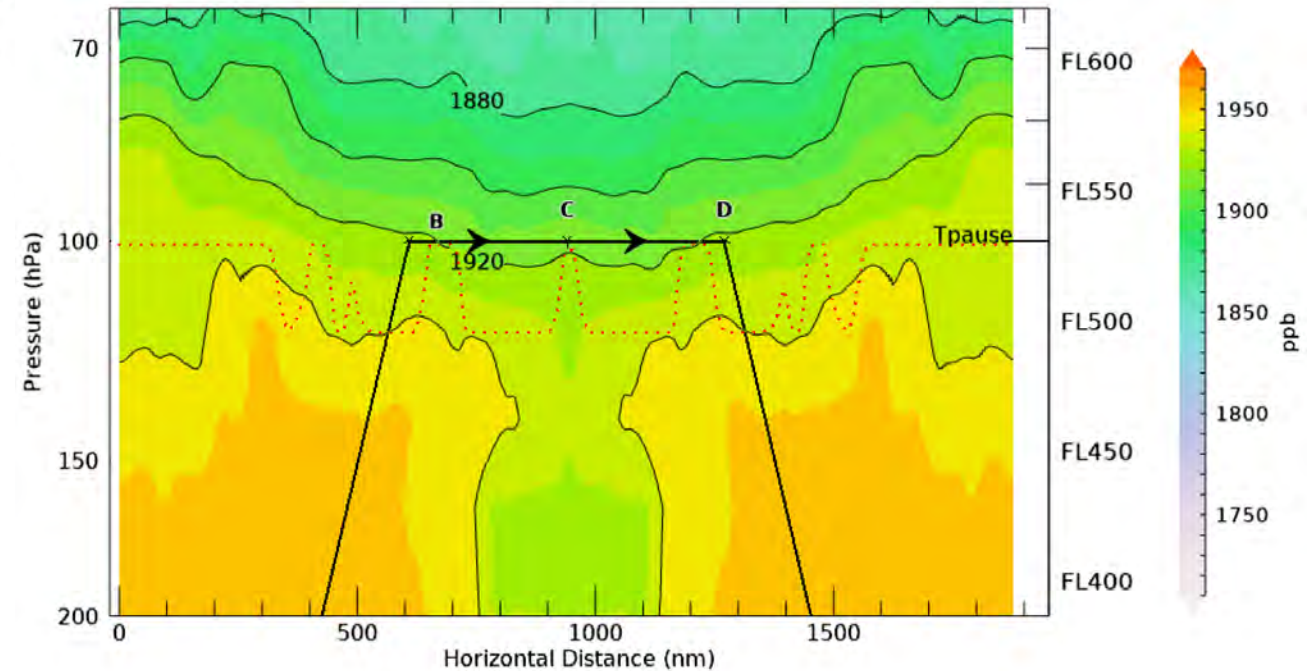


Wednesday Outlook: Long lived tracers

WACCM N2O Init:2026082700 Valid Time:2026090215

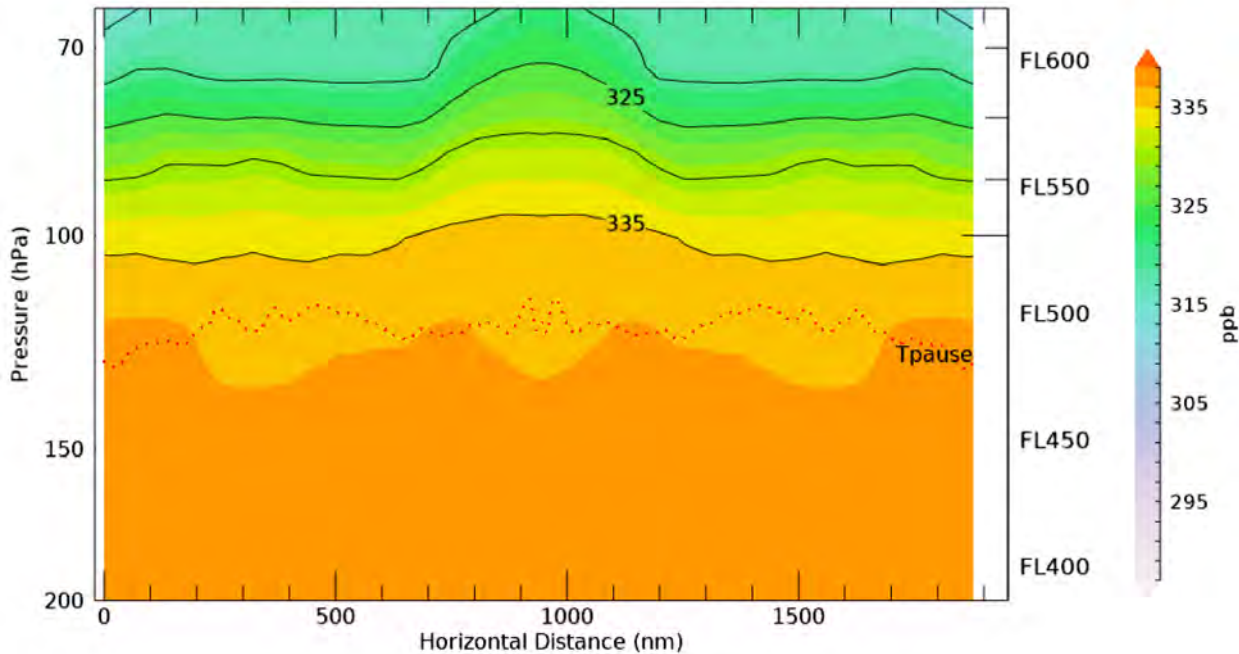


GEOS CH4 Init:2026083009 Valid Time:2026090215

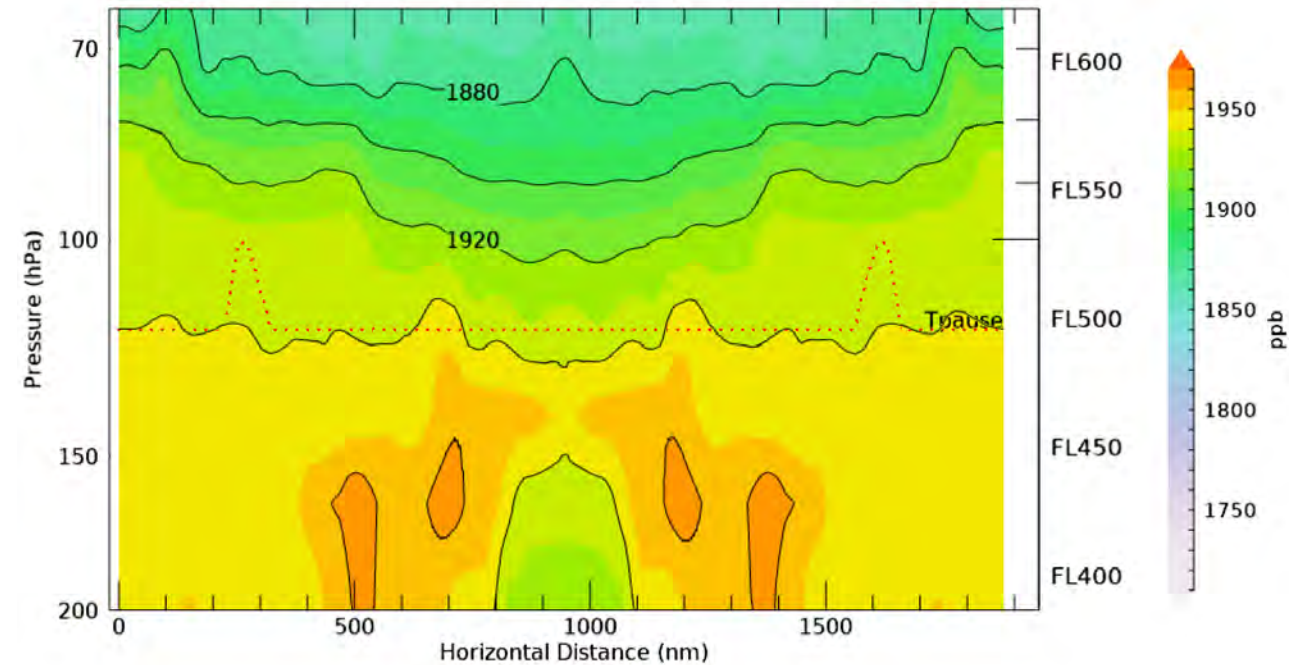


Thursday Outlook: Long lived tracers

WACCM N2O Init:2026082700 Valid Time:2026090315



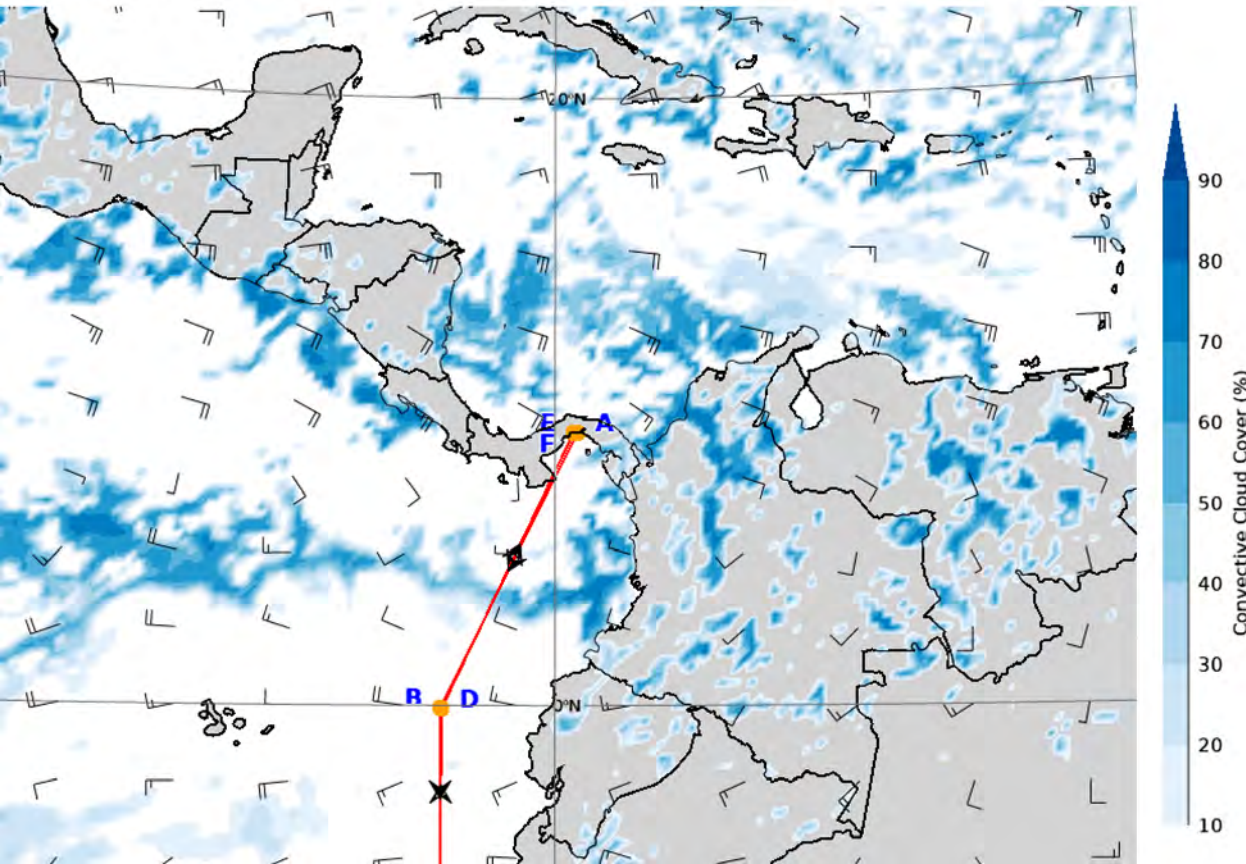
GEOS CH4 Init:2026083009 Valid Time:2026090315



Wednesday & Thursday 6z Columbia Convection

Wednesday

NCEP Convective Cloud Cover Init: 2026083106 Valid: 2026090206



Thursday

NCEP Convective Cloud Cover Init: 2026083106 Valid: 2026090306

