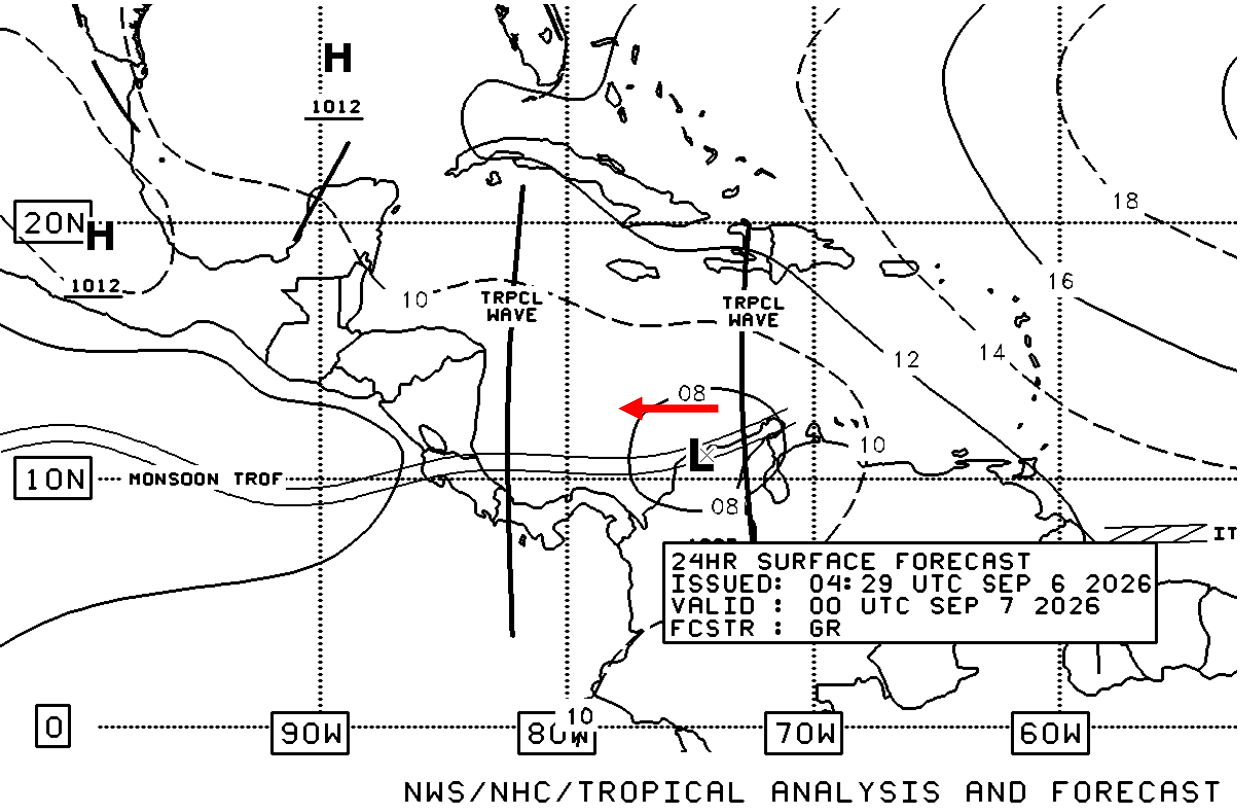
SABRE Forecast Discussion

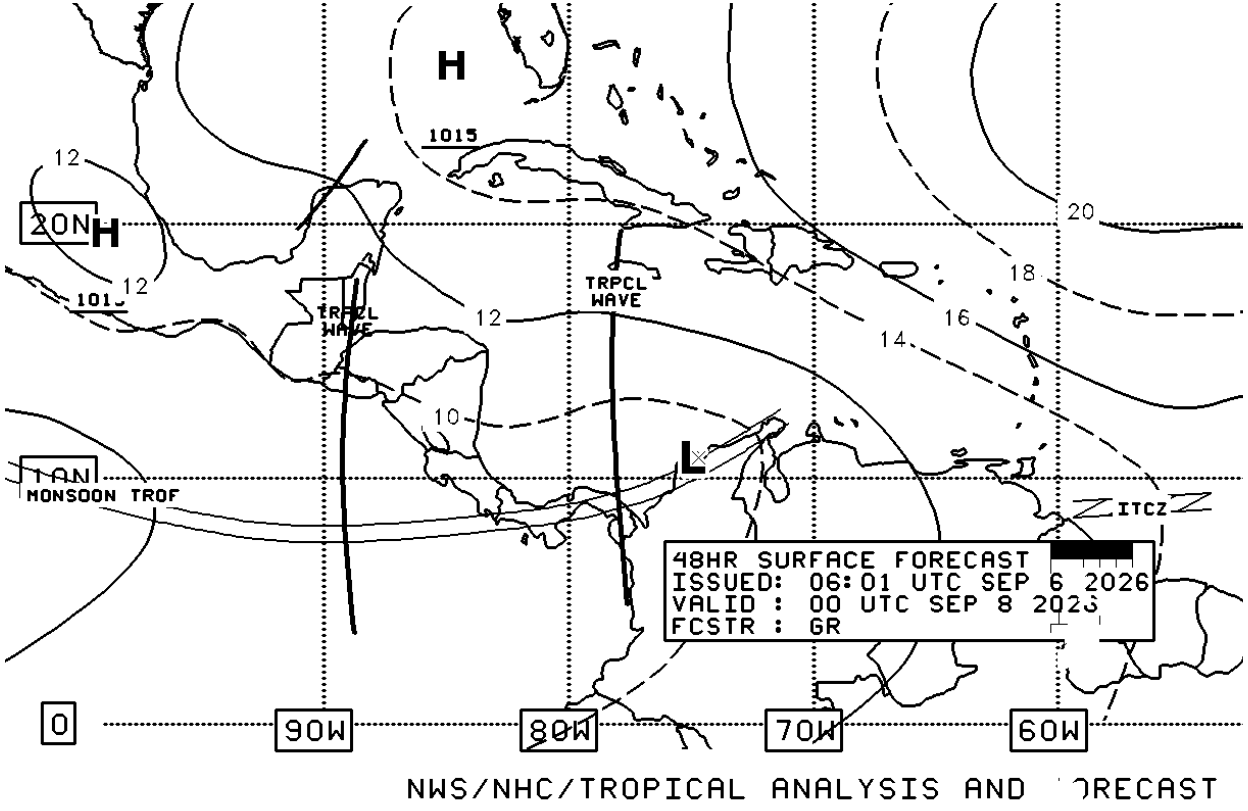
09/06/2026

Surface Charts

09/07 00z (7pm local time)

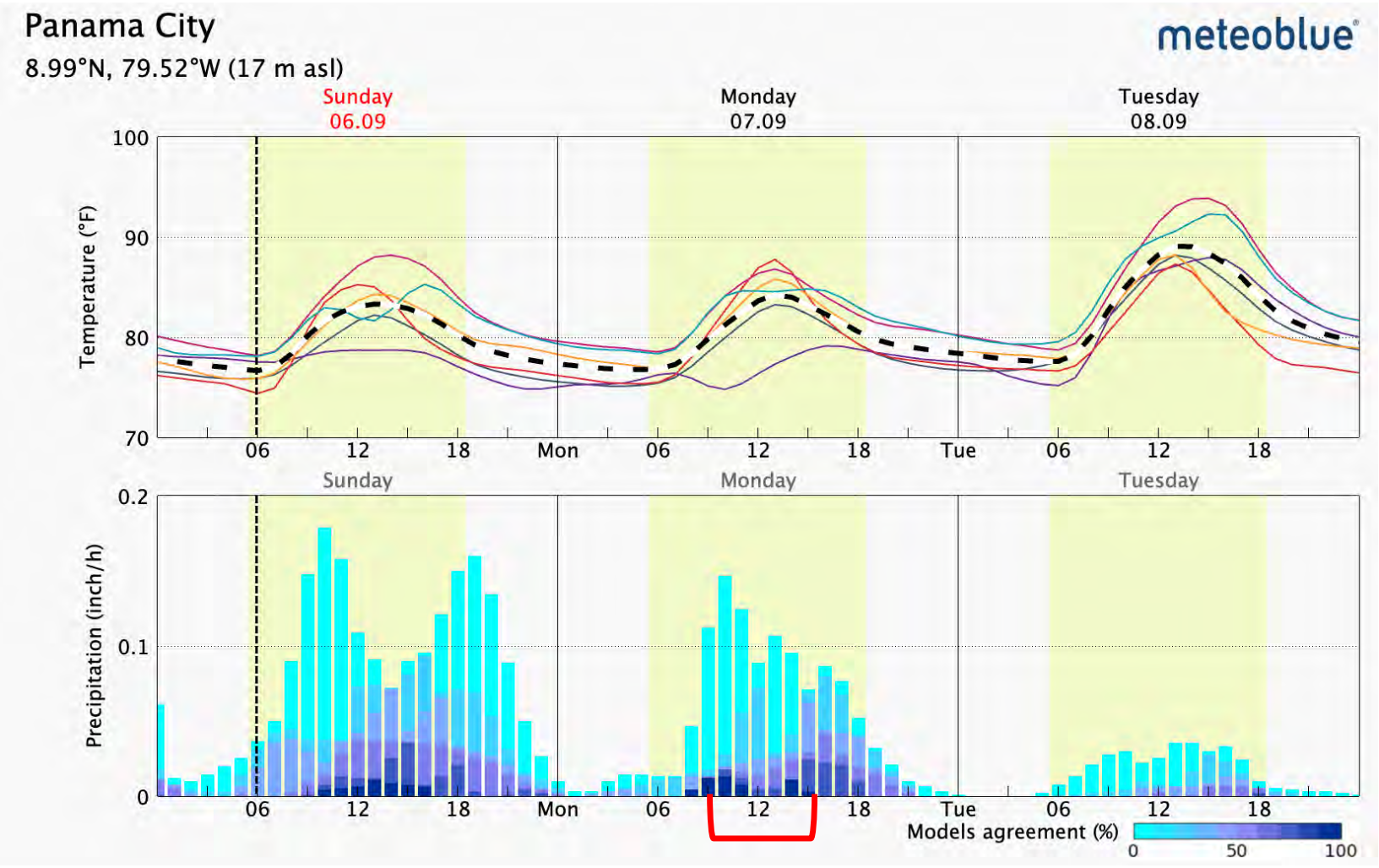


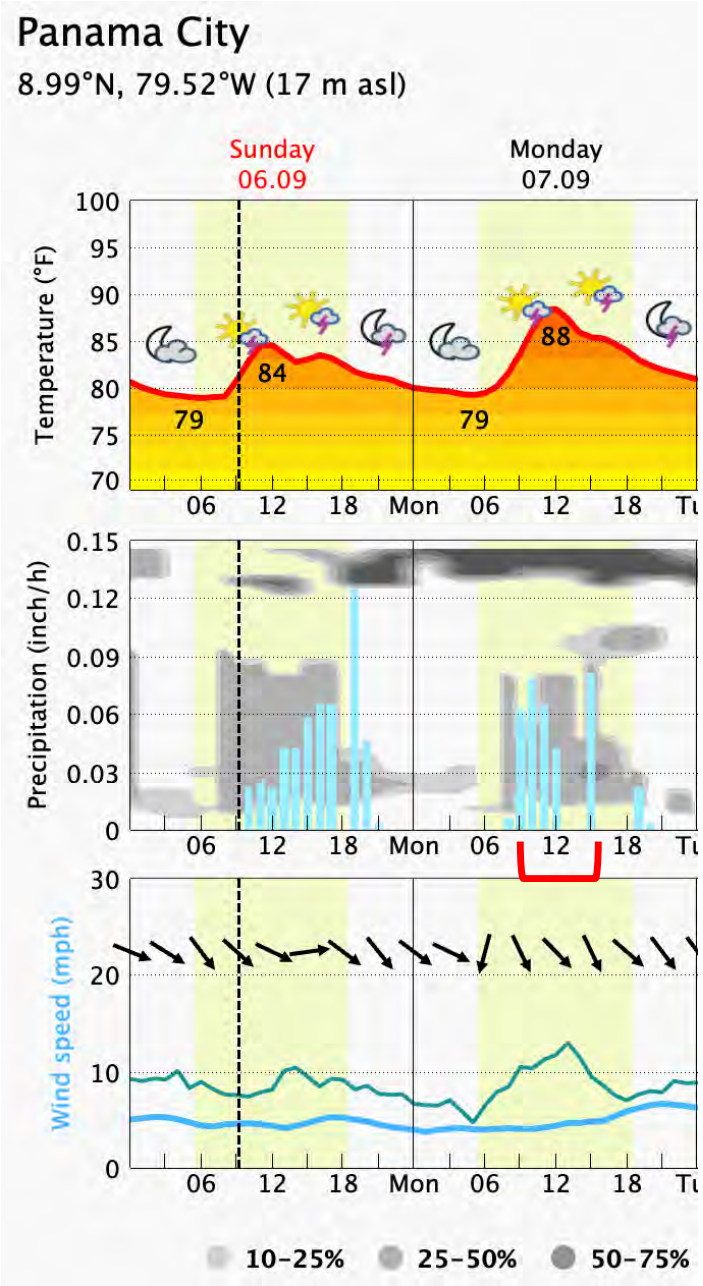
09/08 00z (7pm local time)



- Another tropical wave moves over Panama late tomorrow.
- The monsoon trough will move back south over Panama.

Local Forecasts





- Slight warming and drying trend over the next two days.
- Flight time has the usual range of precip probabilities, although with late morning and late afternoon peaks.
- Current MPPA TAF has no chance of rain on Monday through 6pm.

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)

✓

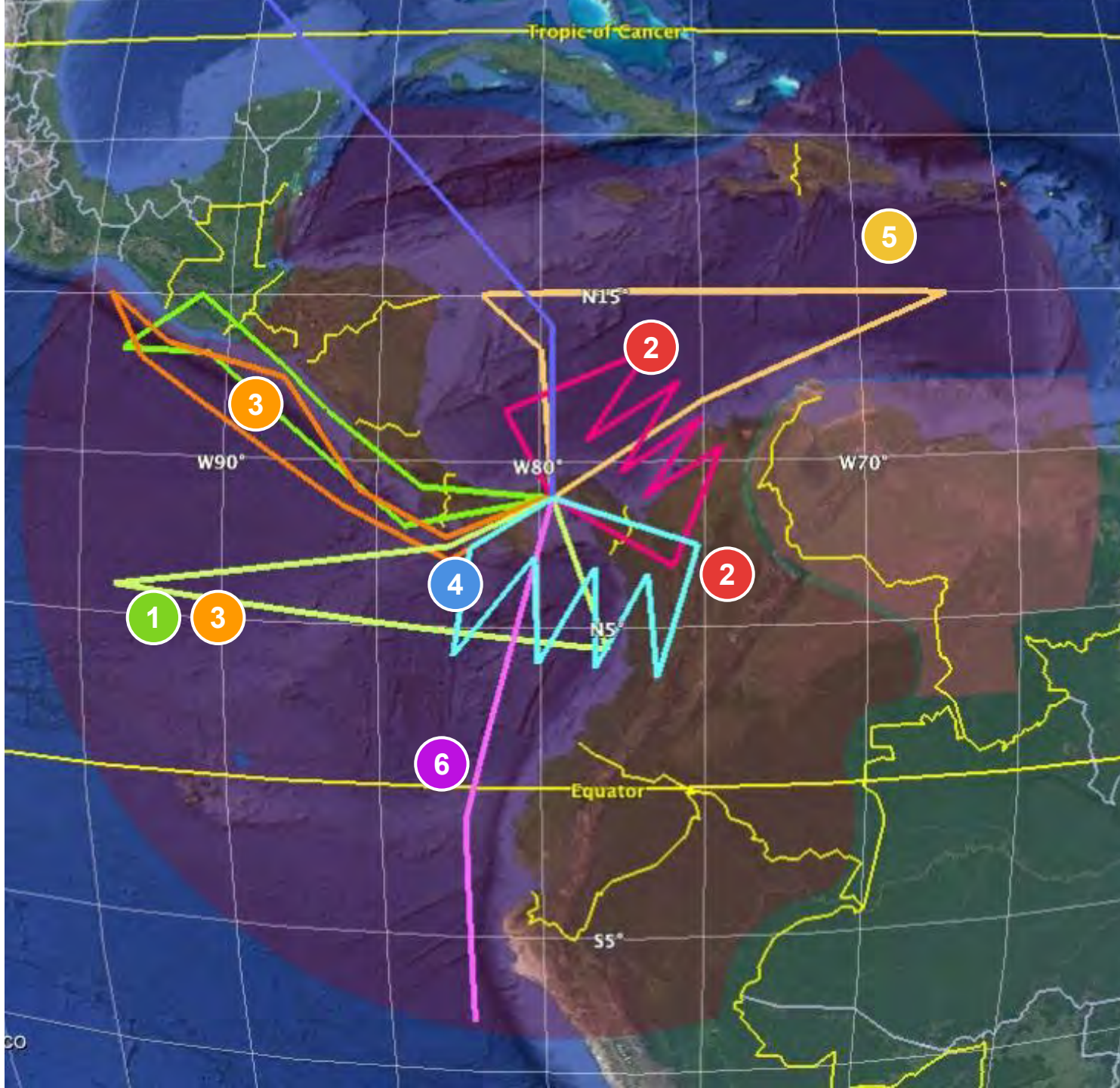
4. Marine deep (> ~14.5 km) convective outflow

✓

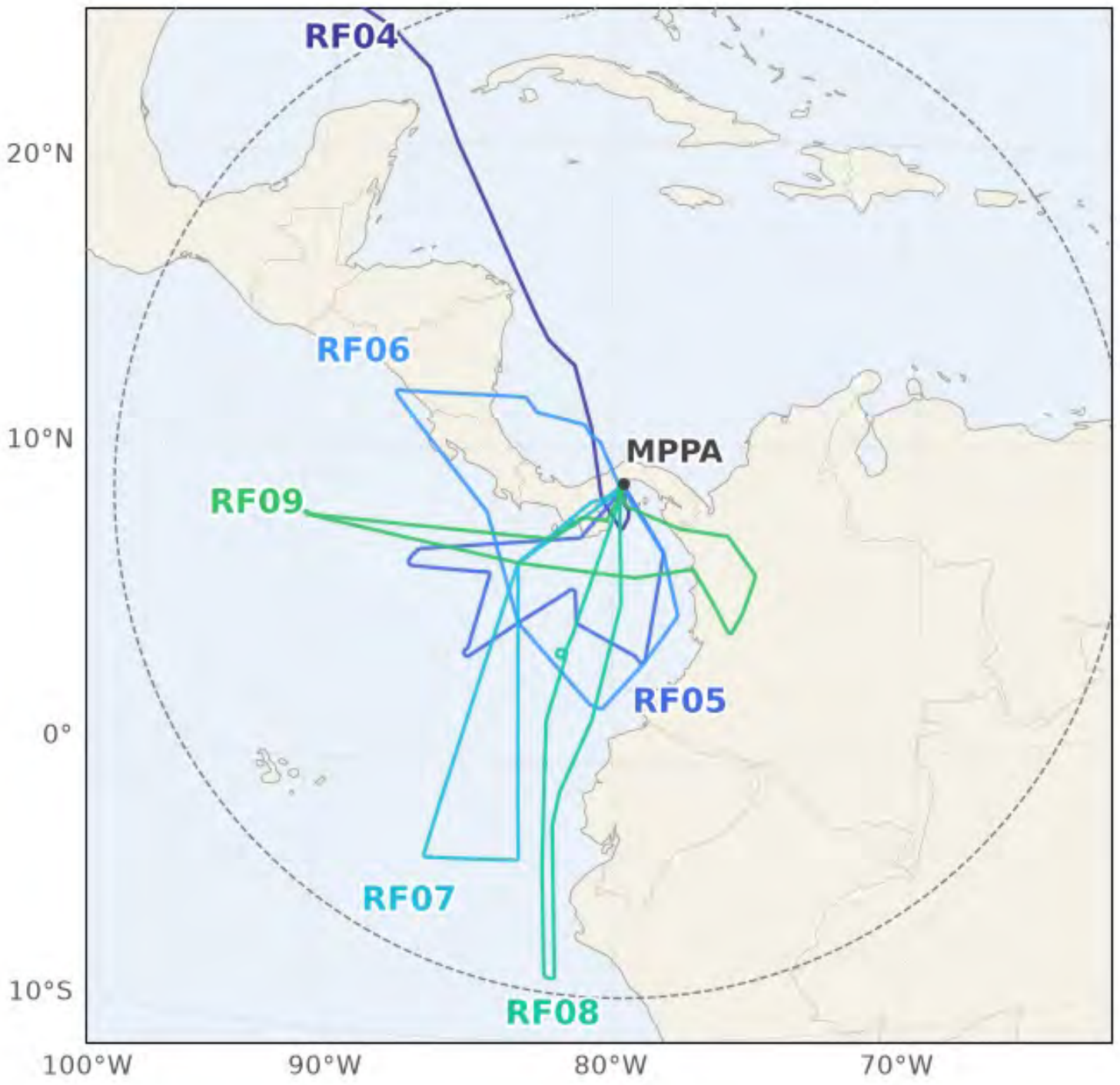
5. Sampling of long-range transport from ASM/WAM crossing the Atlantic

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

✓



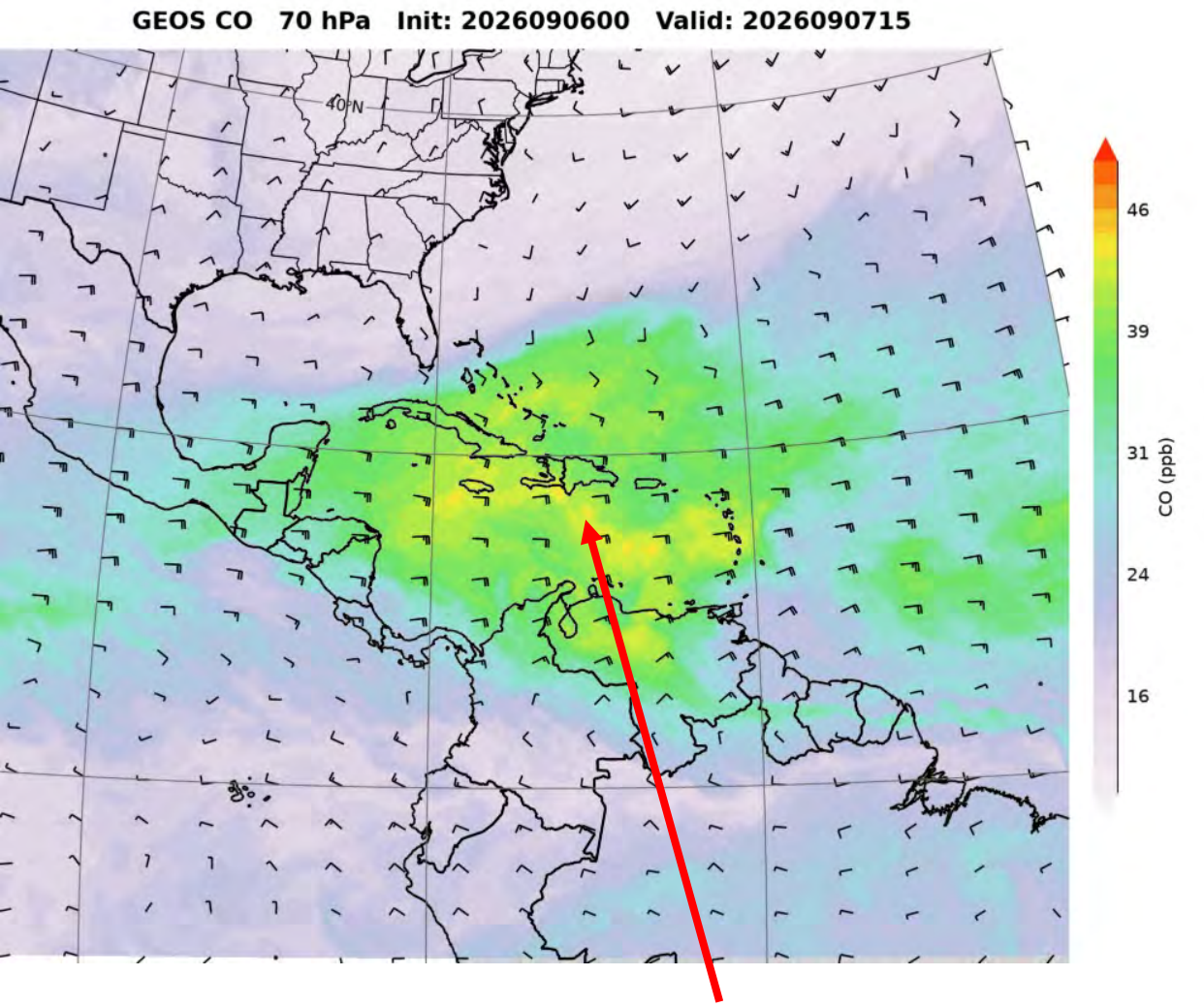
SABRE Tropics Flights so far



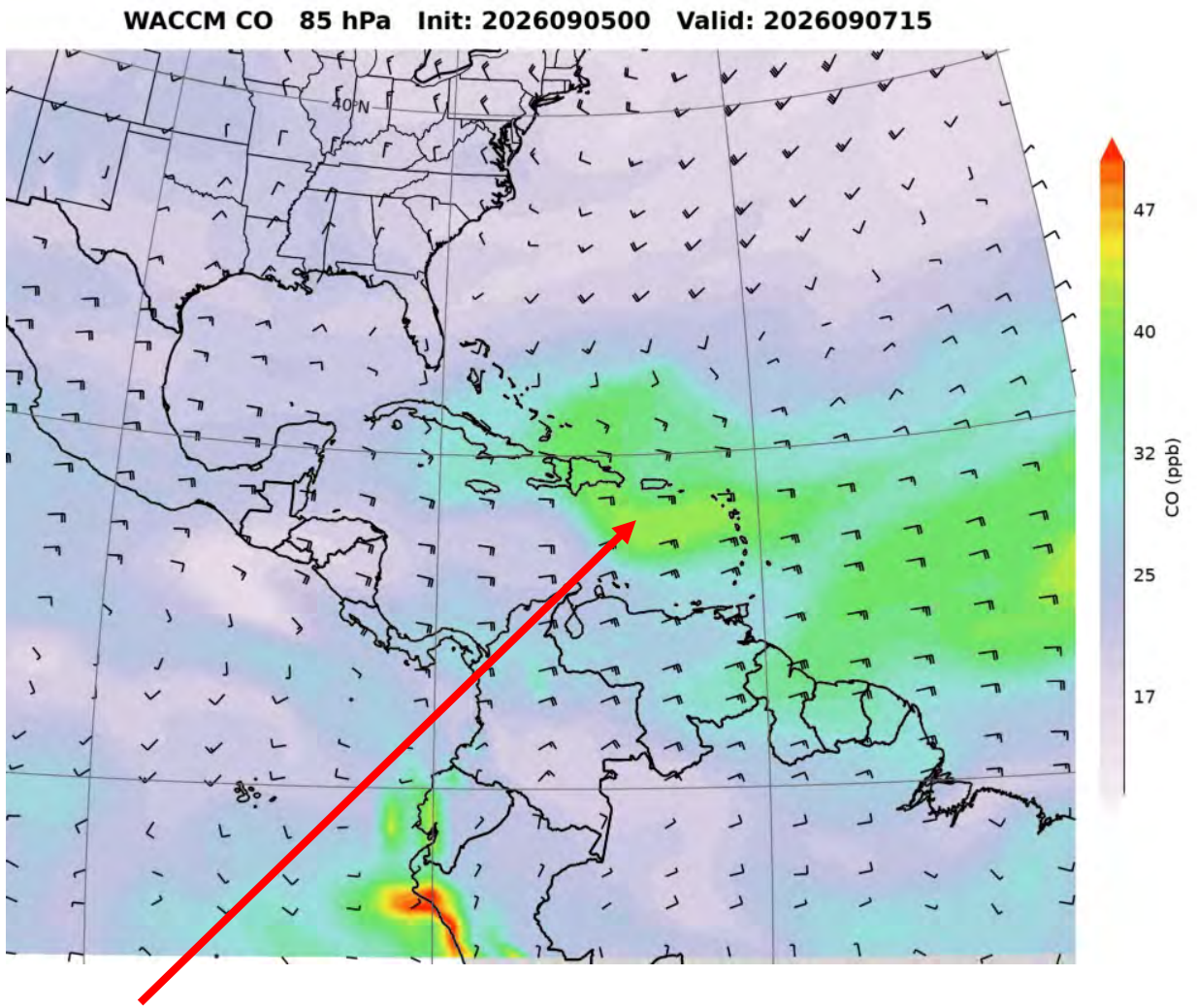
Upper Level Forecasts for 09/07/2026 and RF10 Flight Plan

Asian Monsoon outflow as indicated by CO forecasts

GEOS 70 hPa



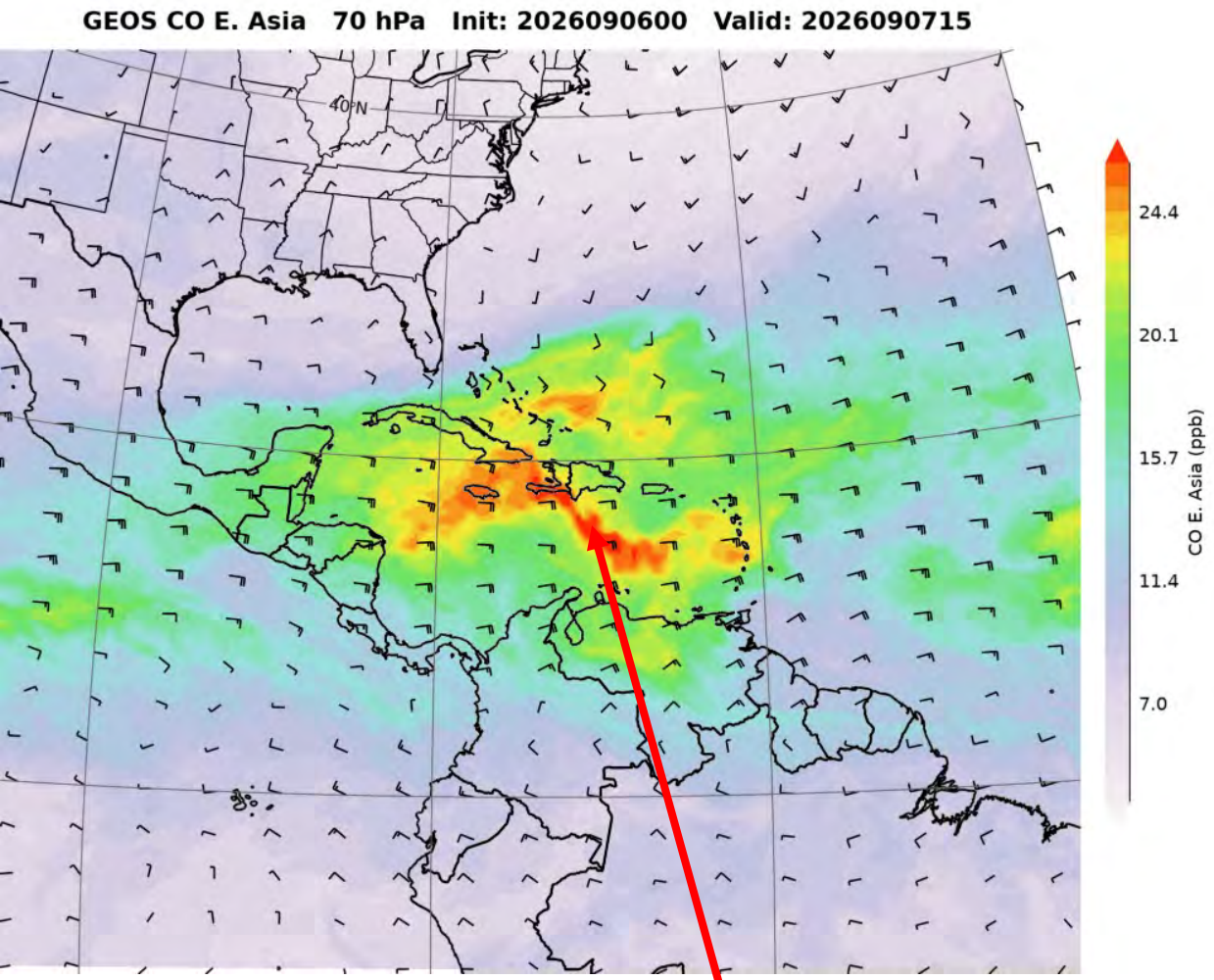
WACCM 85 hPa



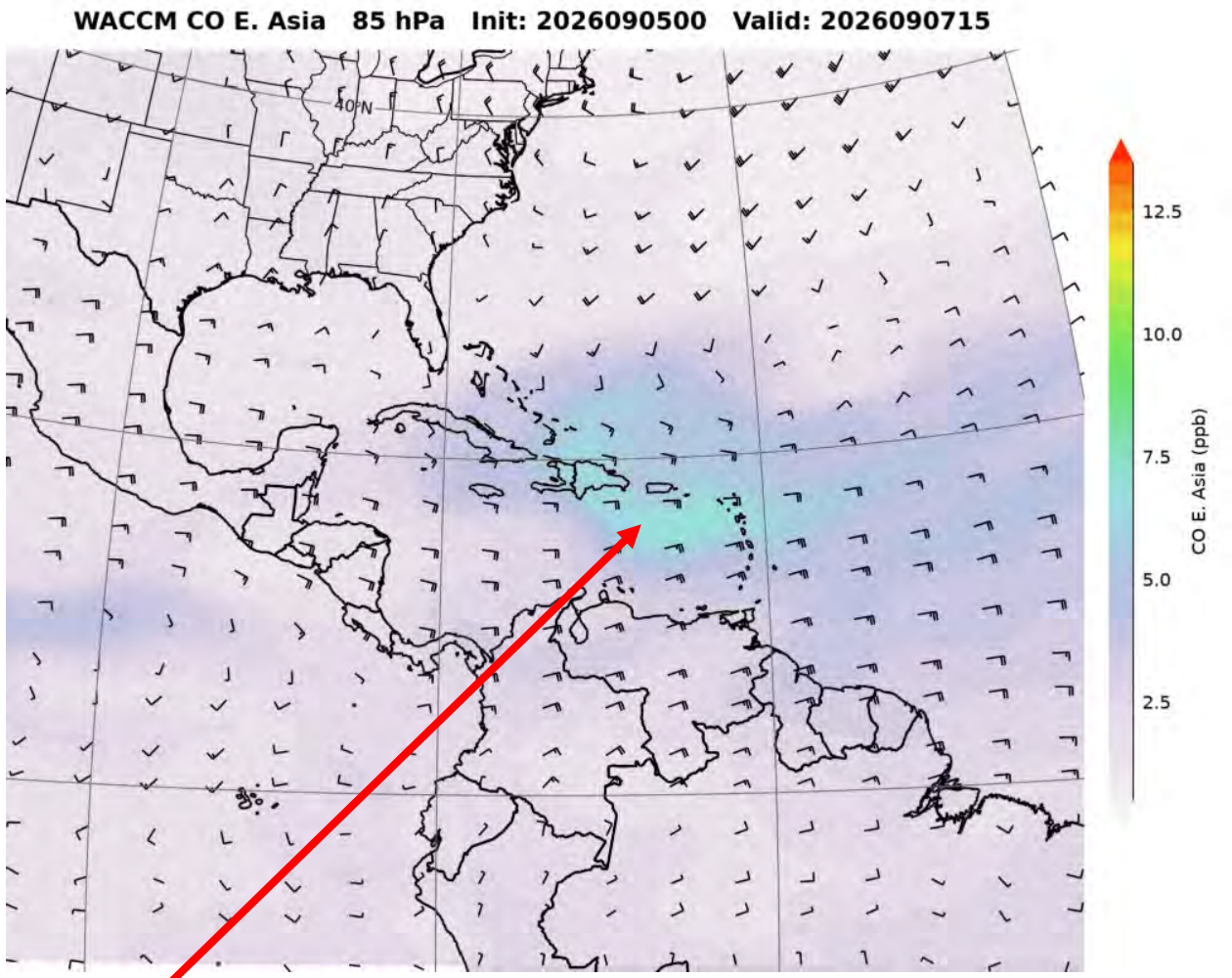
Large region of high CO in the lower stratosphere over the western Atlantic and Carribean has been persistent in the forecasts.

Asian Monsoon outflow as indicated by tagged CO forecasts

GEOS 70 hPa



WACCM 85 hPa



Tagged E. Asia CO in both models indicates most of this enhanced CO is from the Asian monsoon region.

RF10 Flight Plan

Targets

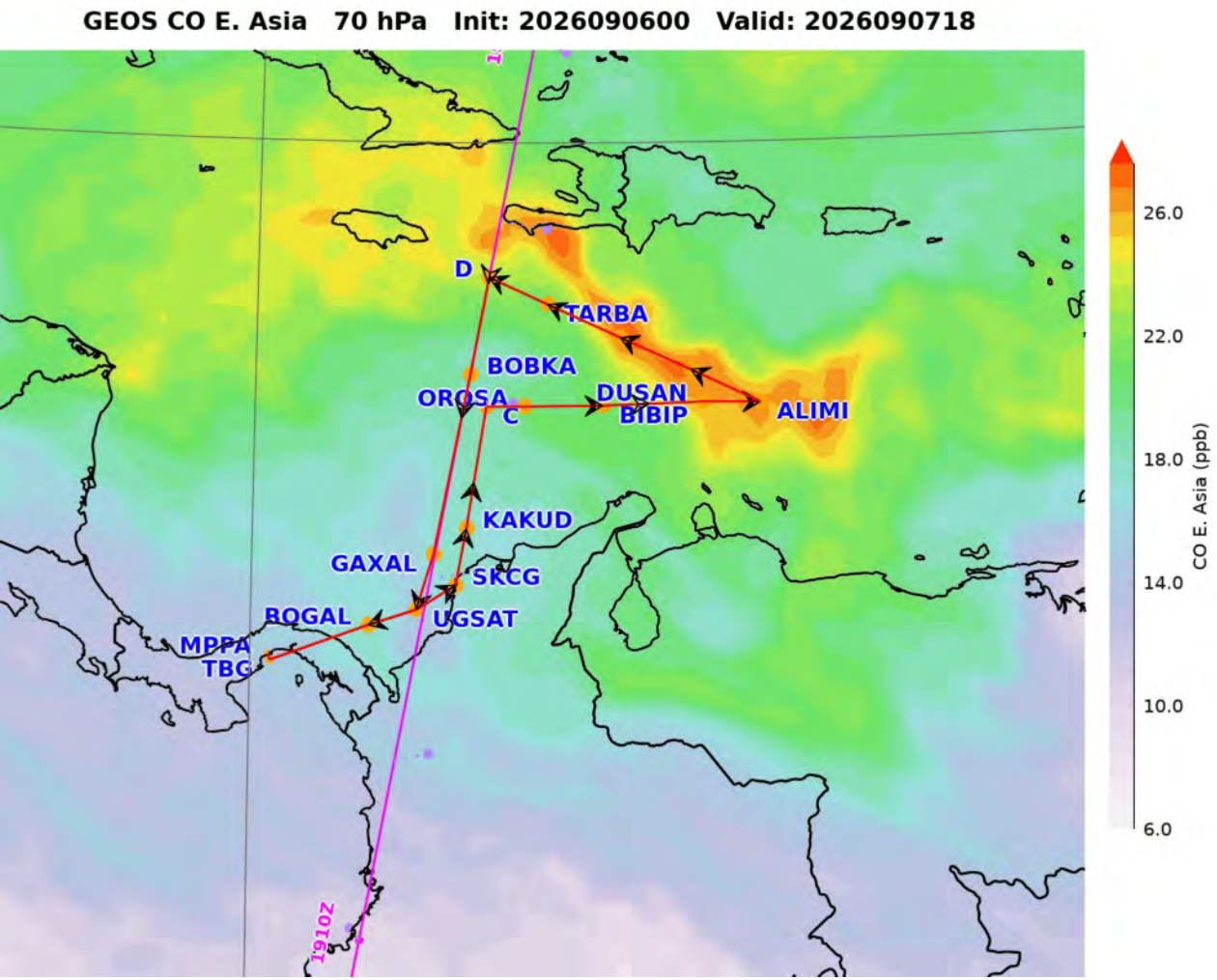
- Sampling of long-range transport from ASM/WAM crossing the Atlantic
- Underfly EarthCARE track

Flight Specs

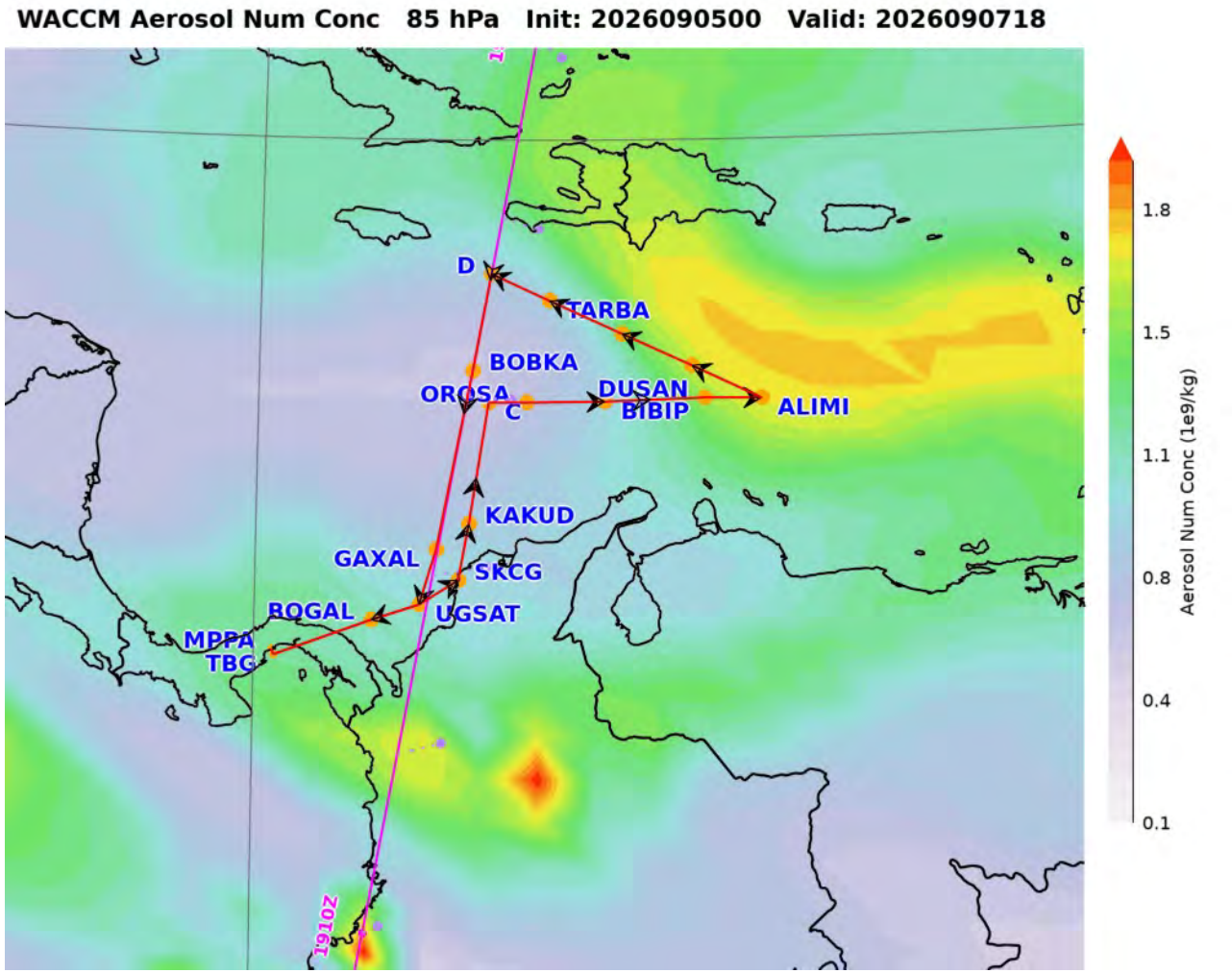
- Take off: 9:30am
- Landing time: 3:00-3:30pm
- Distance: ~2000 nm
- Duration: 5.5 - 6 hours

Upper Level Forecasts

GEOS E. Asia CO

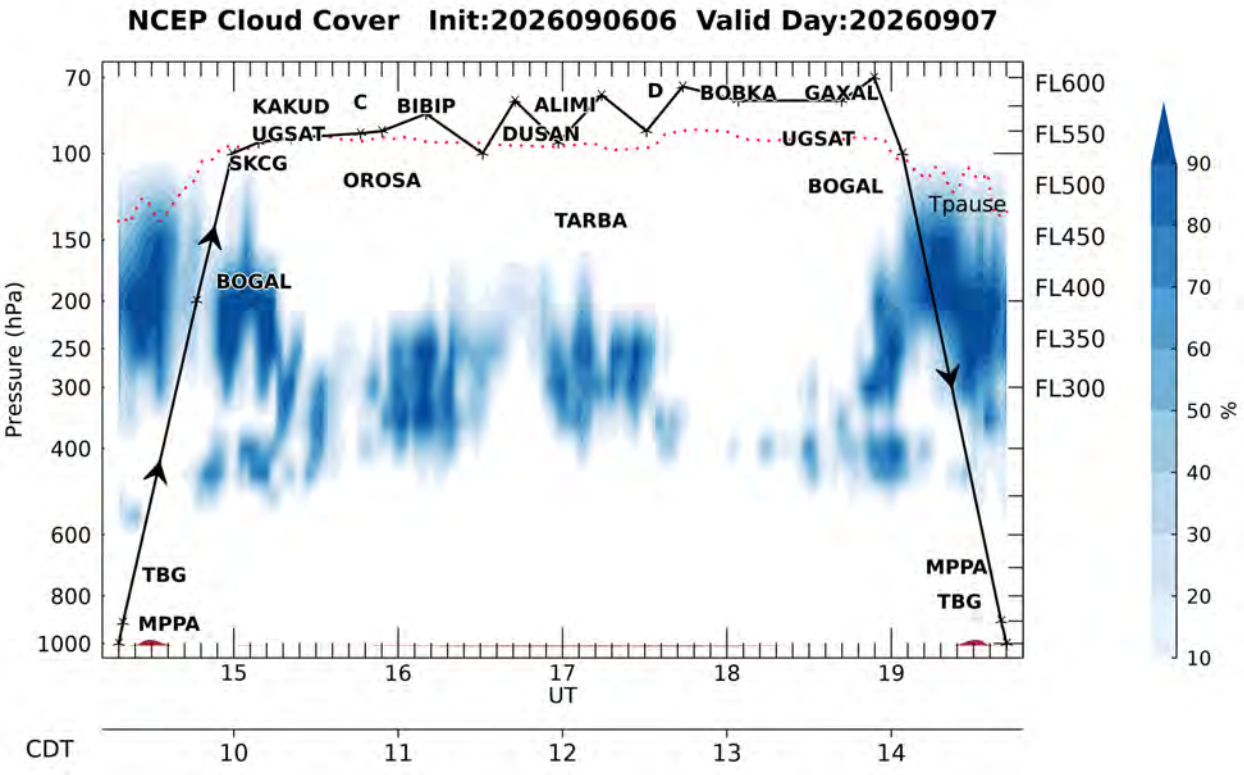


WACCM Aerosols



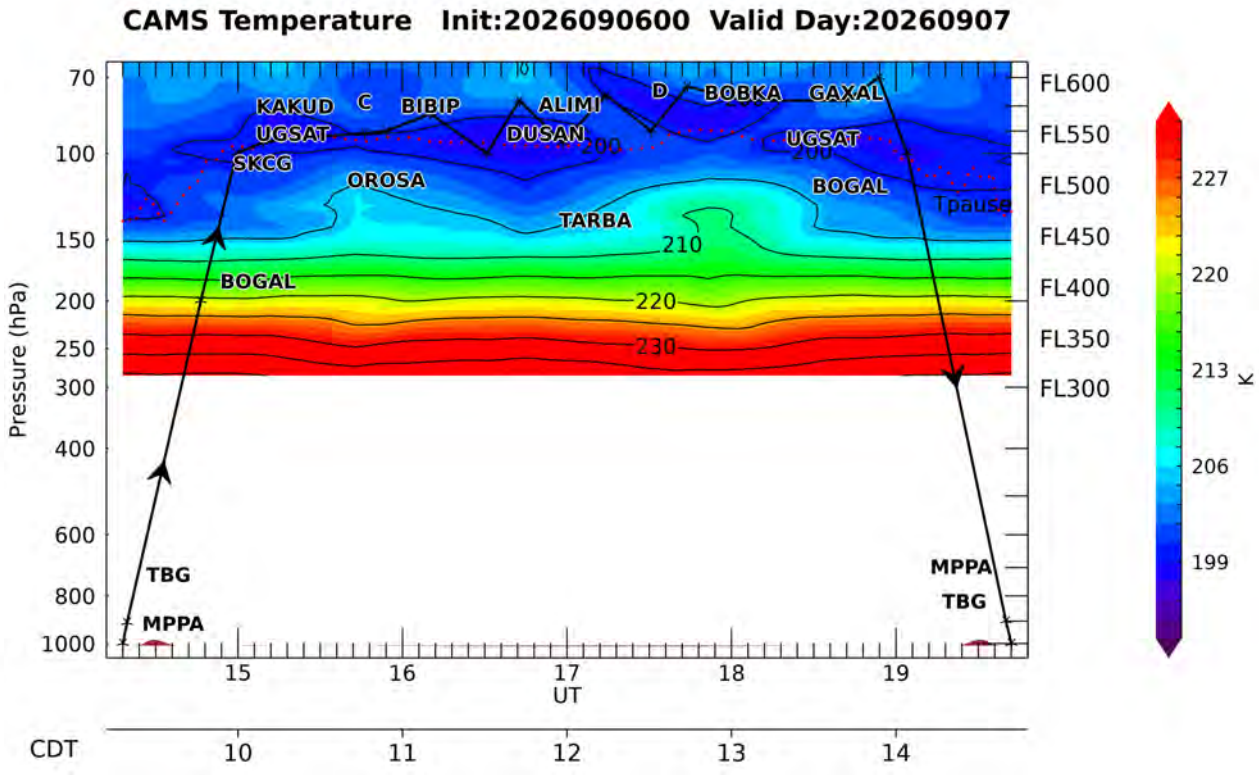
Flight Curtains of Clouds and Temperature

NCEP Clouds



Clouds up to tropopause level expected on initial ascent and final descent into MPPA.

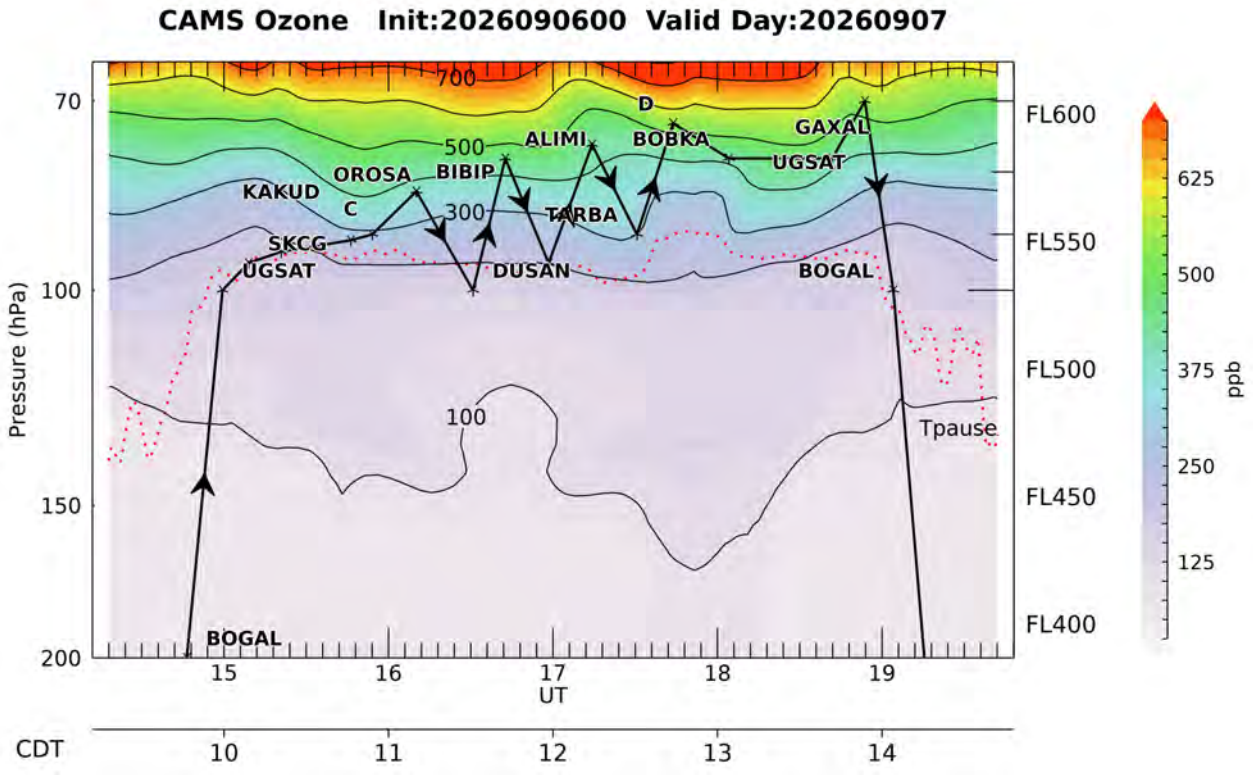
CAMS Temperature



Tropopause temperatures will generally be warmer than we've seen over the Pacific, ~200K.

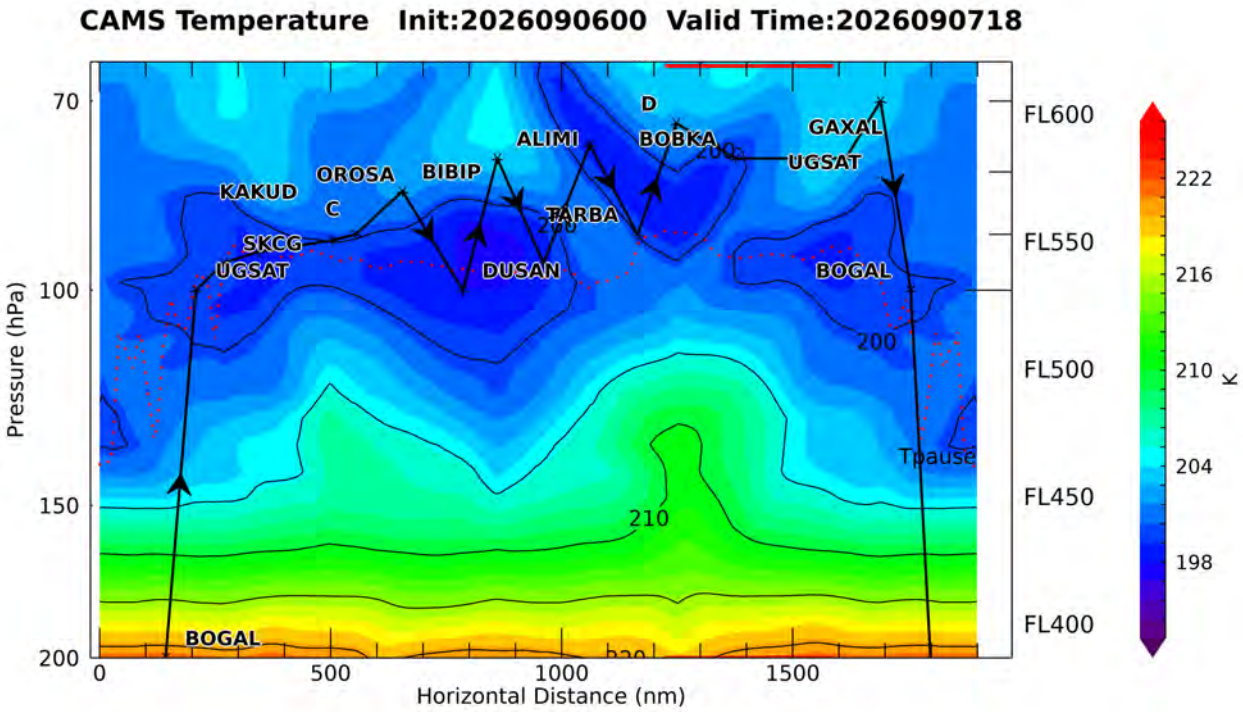
Zoomed in Flight Curtains

CAMS Ozone



Similar ozone gradient in lower stratosphere as we've seen on previous flights.

CAMS Temperature



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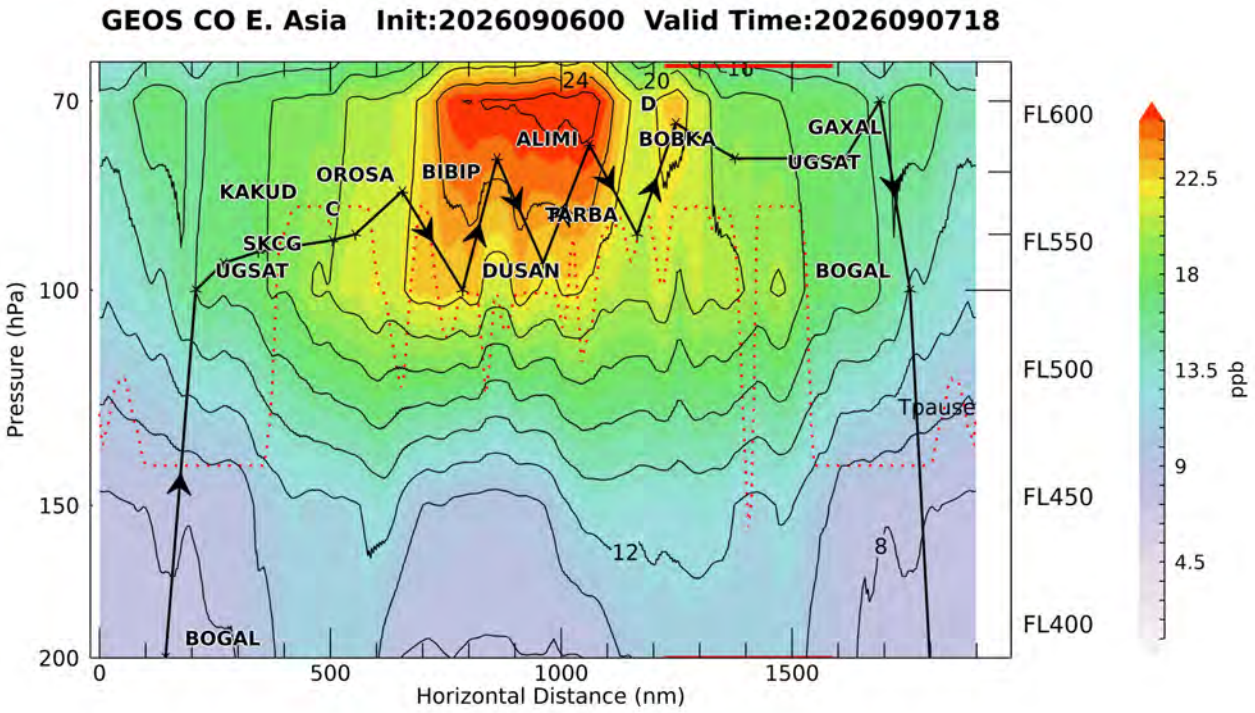
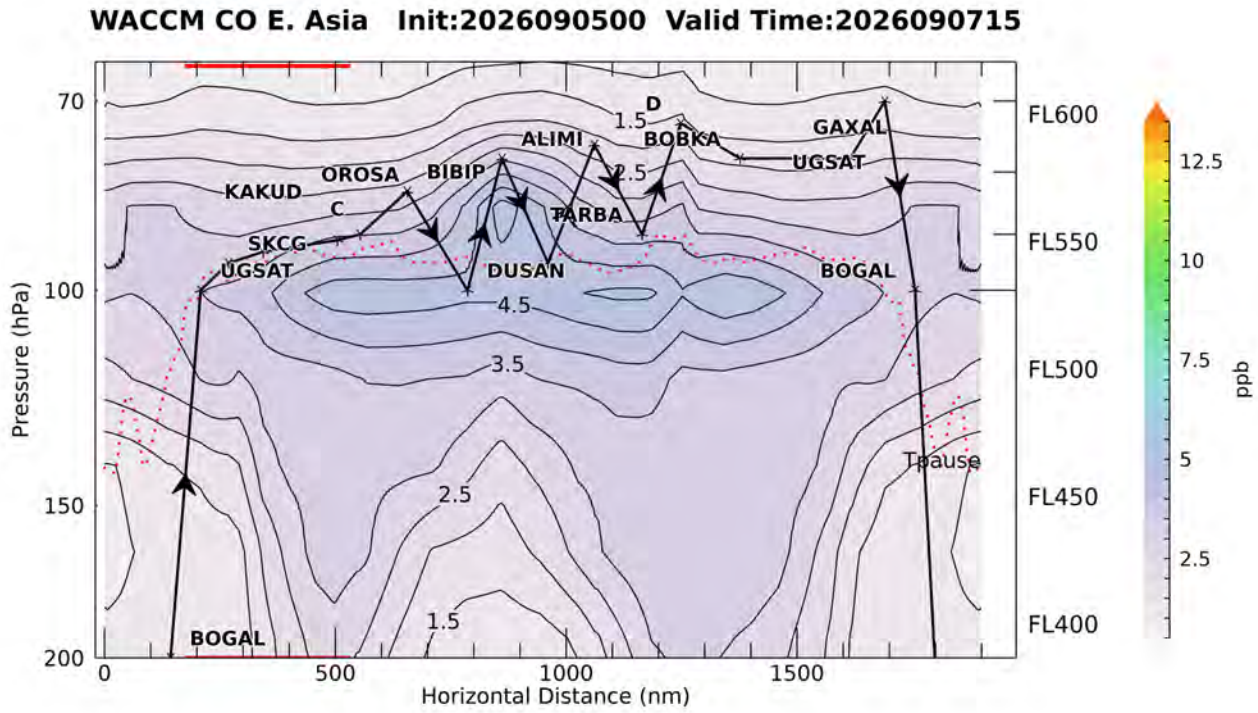
Zoomed in Flight Curtains

GEOS E. Asia CO



GEOS shows ASM layer between 150-70 hPa with peak generally at 70 hPa but no levels between 100 and 70 to specify.

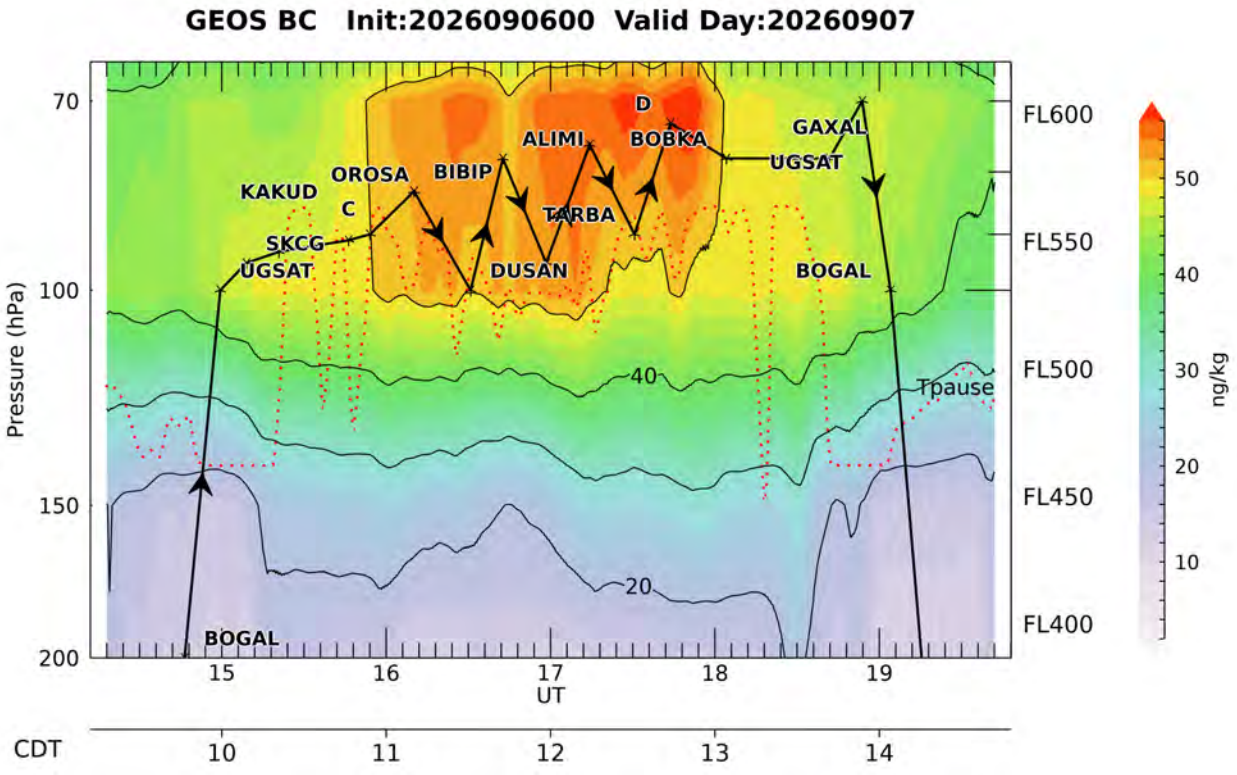
WACCM E. Asia CO



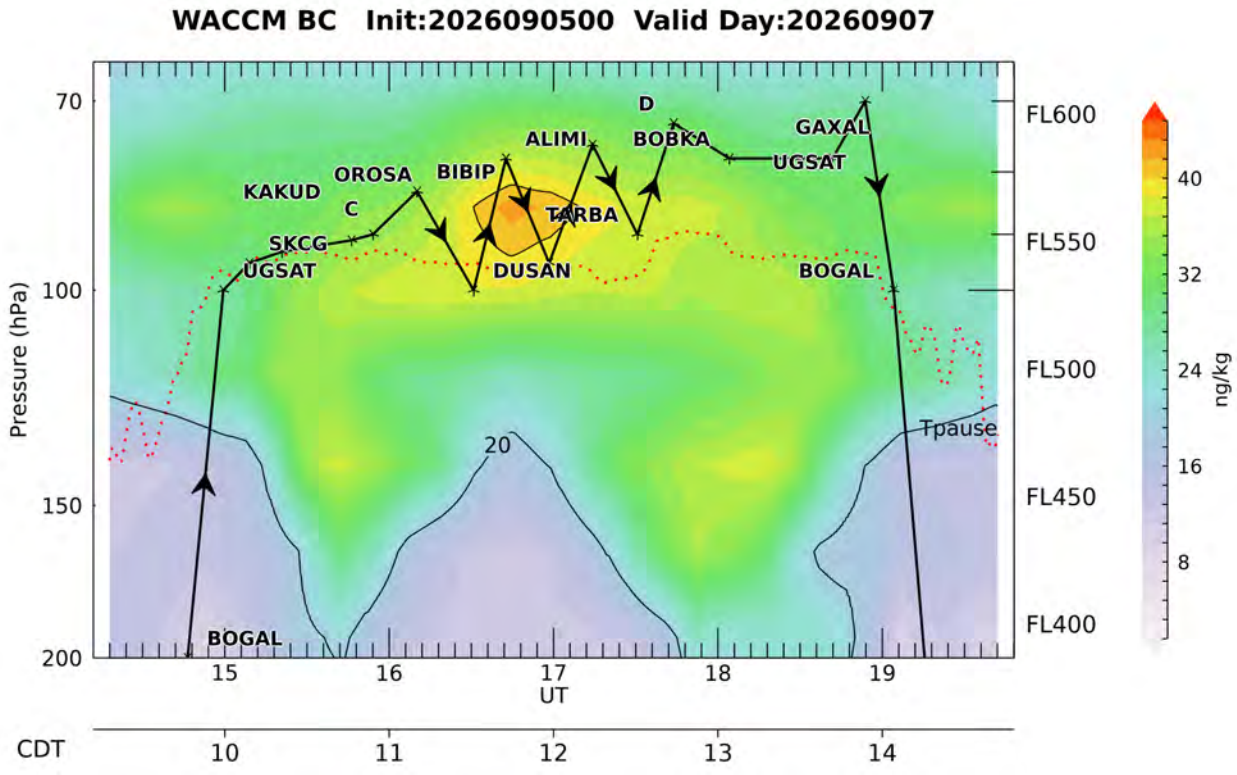
WACCM has the ASM layer from 150-85 hPa and much lower CO amounts but generally similar structure.

Zoomed in Flight Curtains

GEOS BC

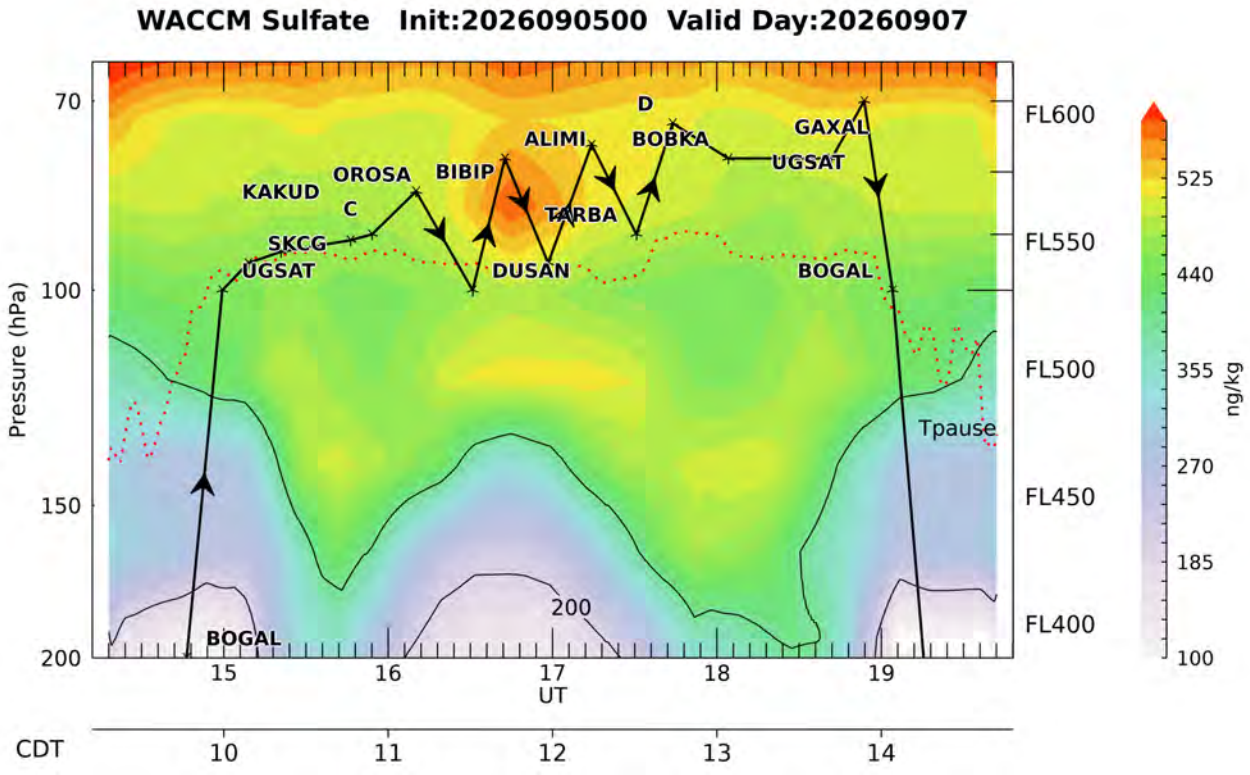


WACCM BC



Zoomed in Flight Curtains

WACCM Sulfate



WACCM POA