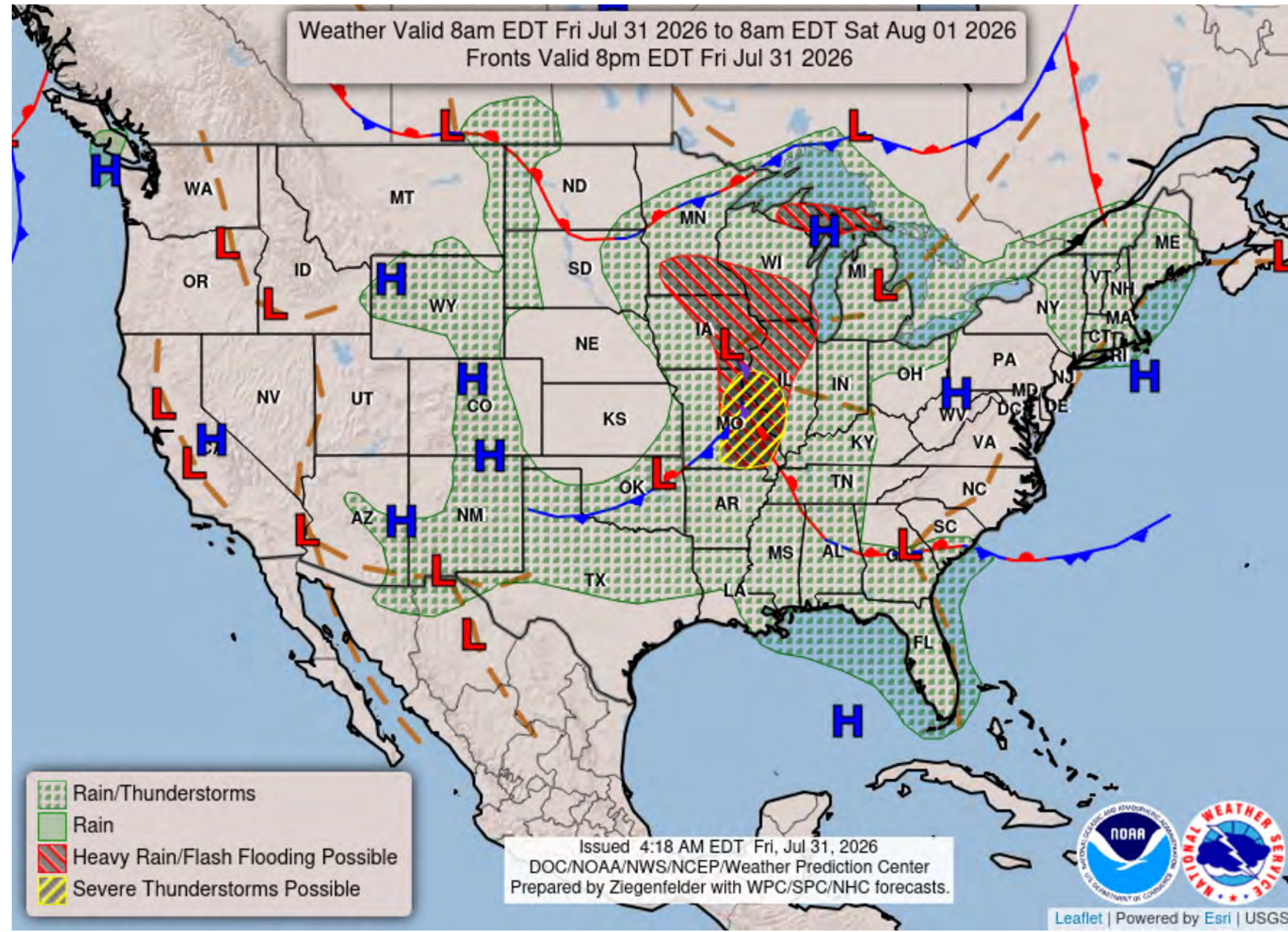


SABRE Forecast Discussion 07/31/2026

Surface Chart for Today

Still hot and dry in Houston, region of thunderstorms staying to the north.

Severe thunderstorms possible in Midwest.

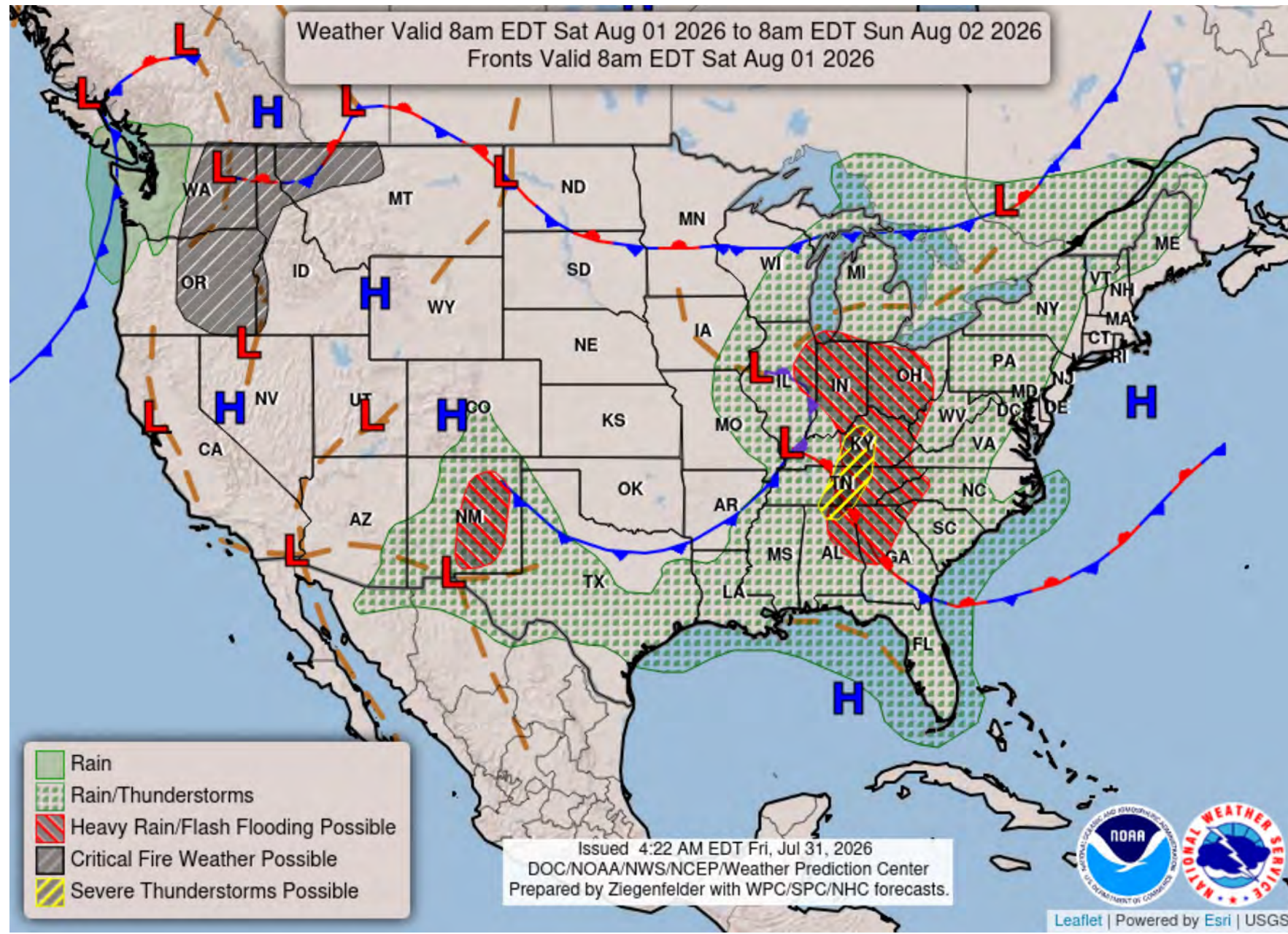


SABRE Forecast Discussion

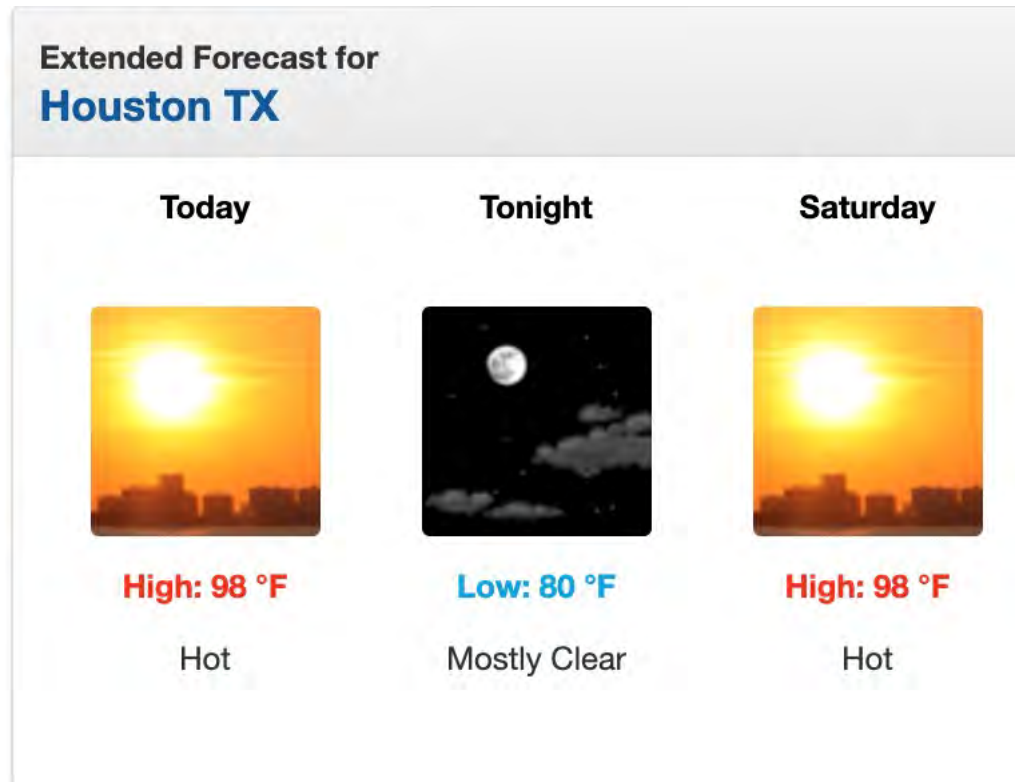
Surface Chart for Saturday 8/1

Front moves south over north TX but won't affect the weather in Houston, still hot and dry.

Region of severe thunderstorms will move east from Great Lakes down to SE US.



Houston Forecast



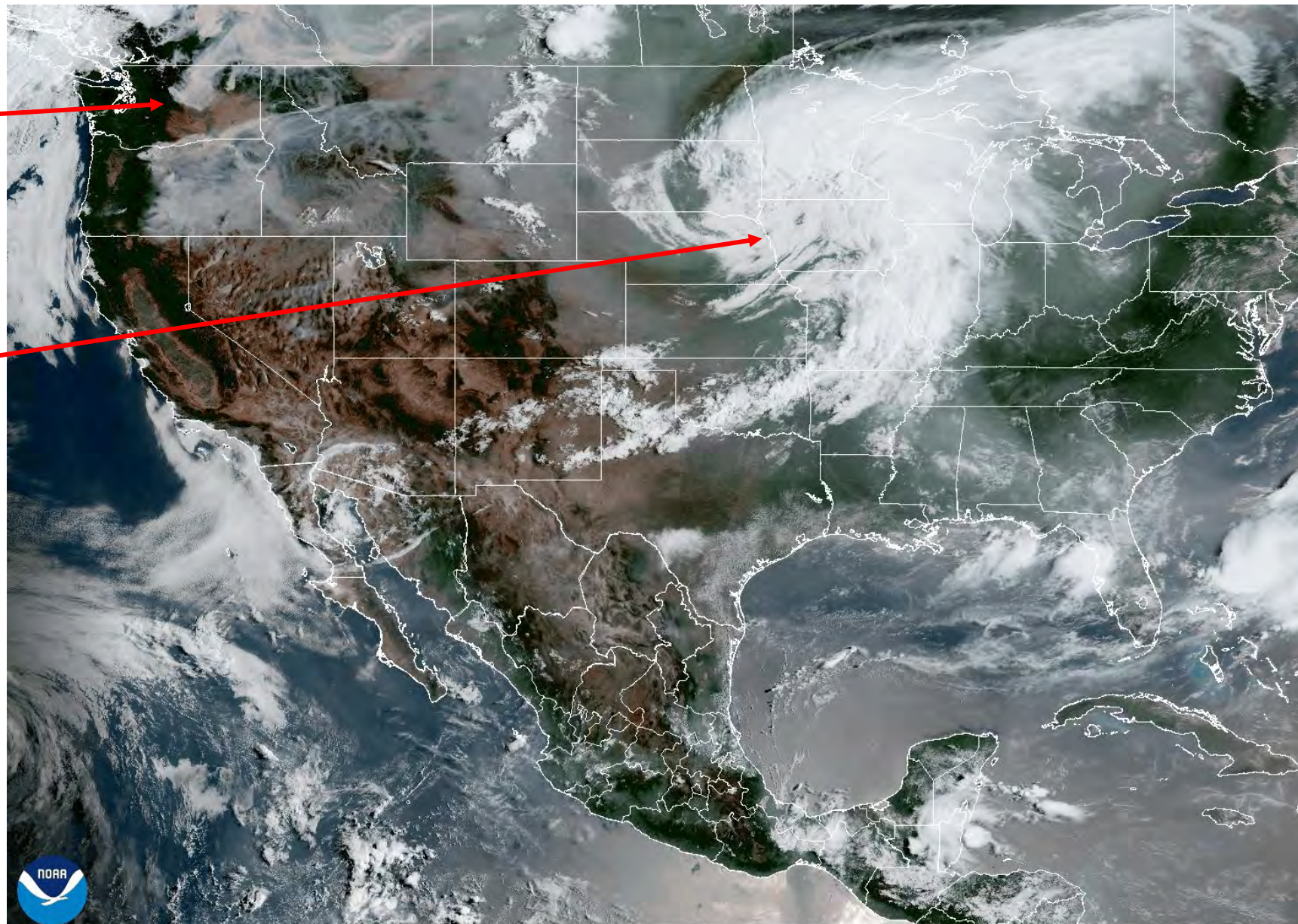
KEFD TAF

```
TAF KEFD 311200Z 3112/0118 21006KT 9999 SCT030 QNH2999INS  
BECMG 3115/3116 22006KT 9999 FEW050 QNH3000INS  
BECMG 0102/0103 20010G20KT 9999 SKC QNH2991INS  
BECMG 0106/0107 21006KT 9999 FEW040 QNH2994INS TX35/3121Z TN26/3112Z
```


Today's Visible Satellite Images

Numerous fires continue in the Pacific NW and Canada with smoke wrapping around NAM that is now shifted further west.

Highly active thunderstorm and cloud region in Midwest.

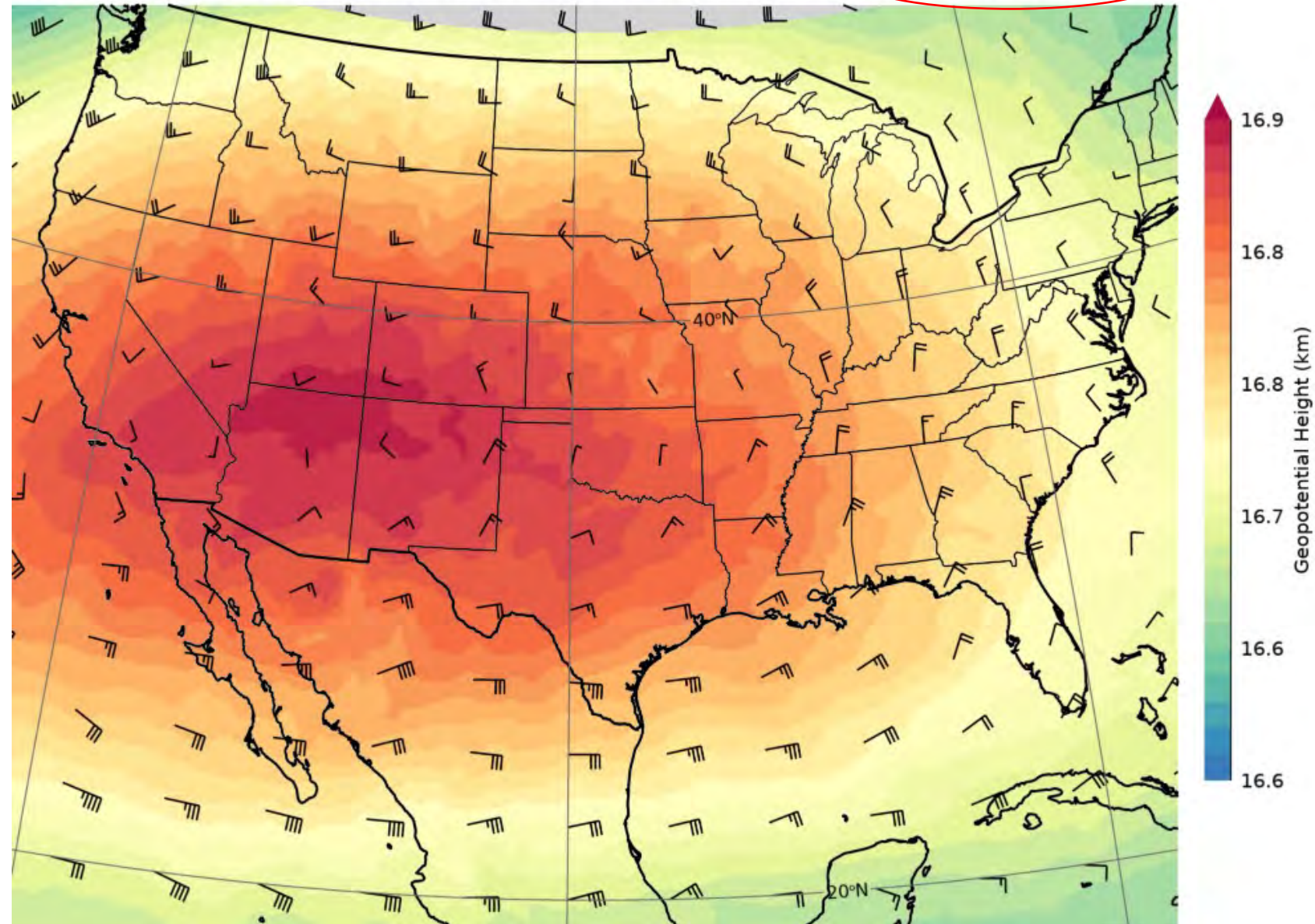


Upper Level Forecasts for Flight on Thursday 08/01

North American Monsoon Circulation

NCEP Geopotential Height 100 hPa Init: 2026073106 Valid: 2026073106

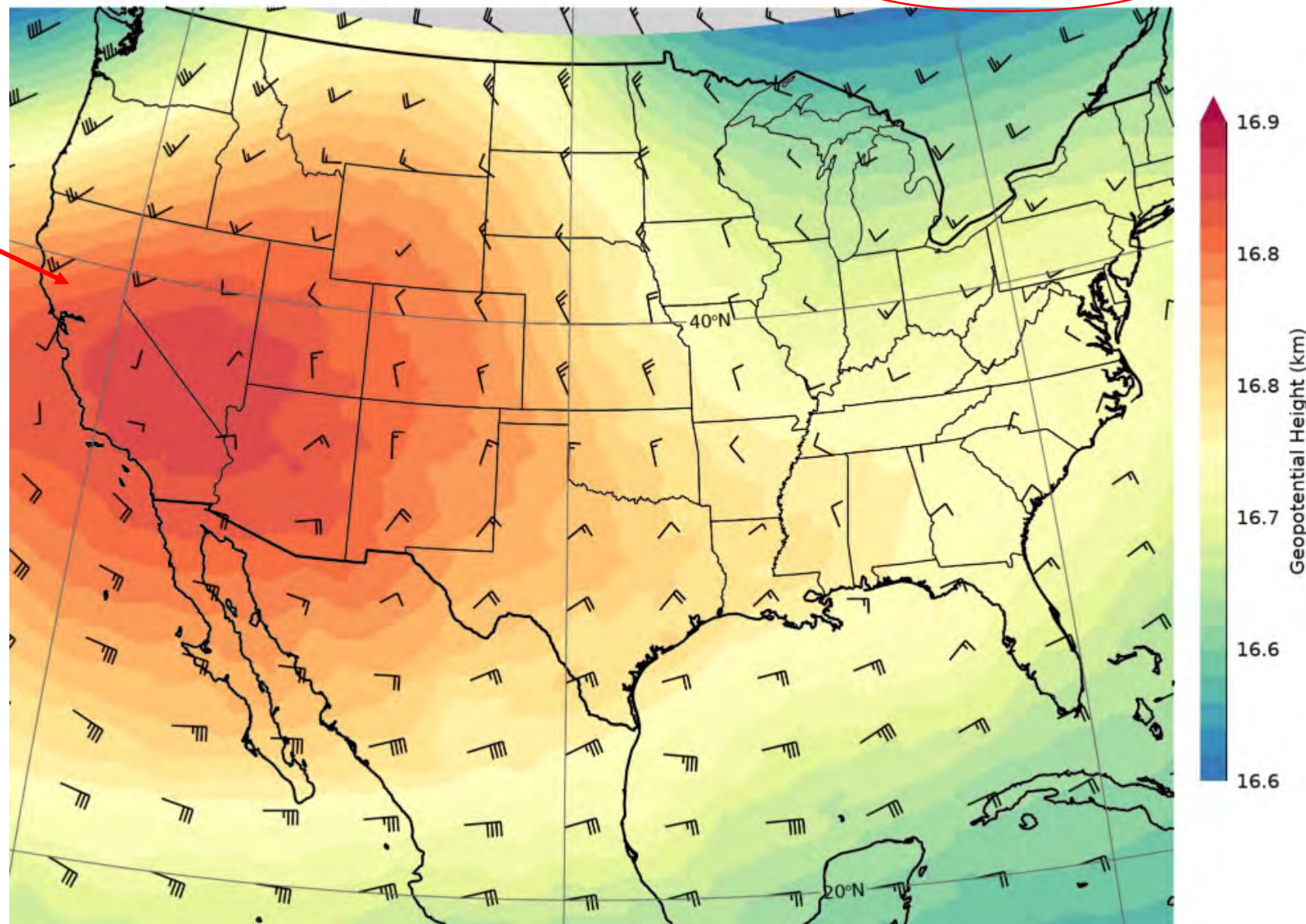
The NAM circulation last night was still centered over broad region of SW US.



North American Monsoon Circulation

NCEP Geopotential Height 100 hPa Init: 2026073106 Valid: 2026080118

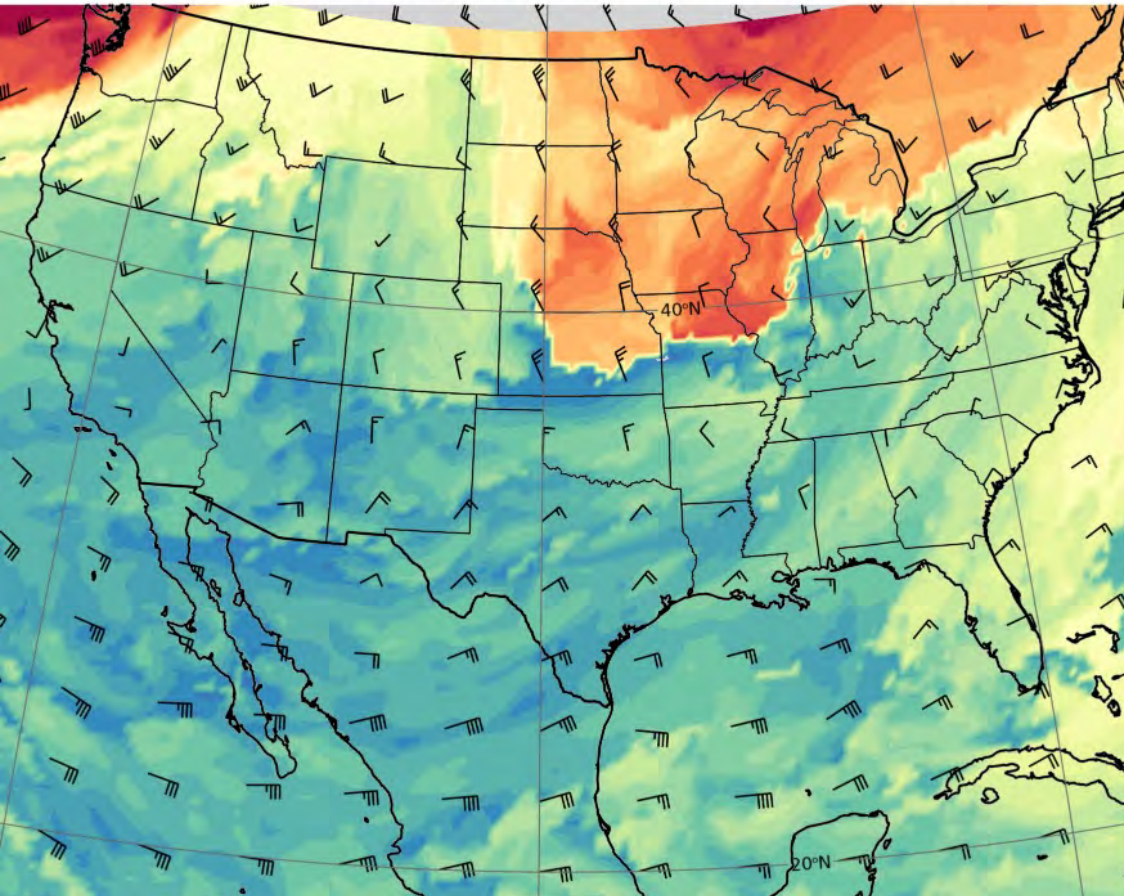
By tomorrow afternoon the circulation will shift to the west centered over CA/NV allowing an upper level trough to move south over the Great Lakes region.



Tropopause

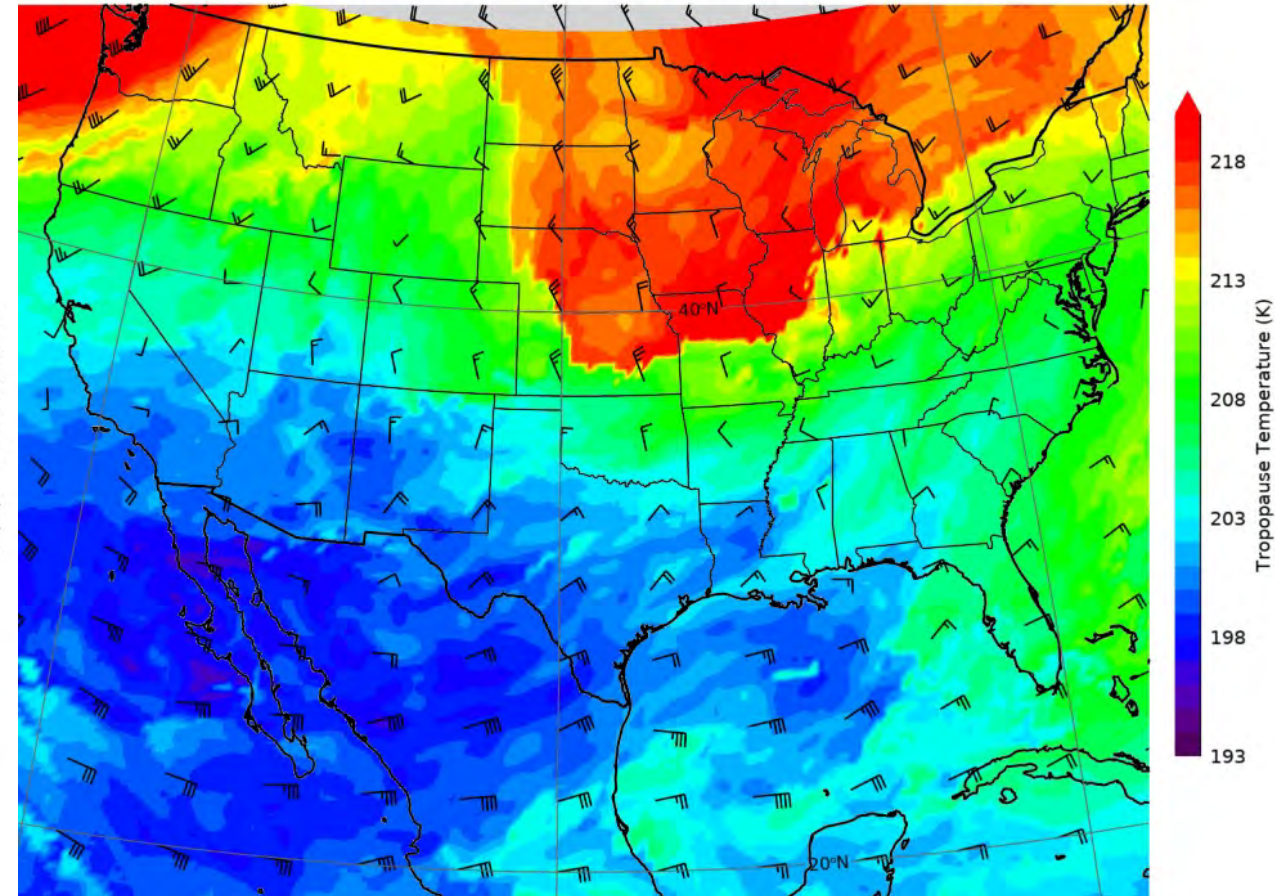
Pressure

NCEP Tropopause Pressure Init: 2026073106 Valid: 2026080118



Temperature

NCEP Tropopause Temperature Init: 2026073106 Valid: 2026080118

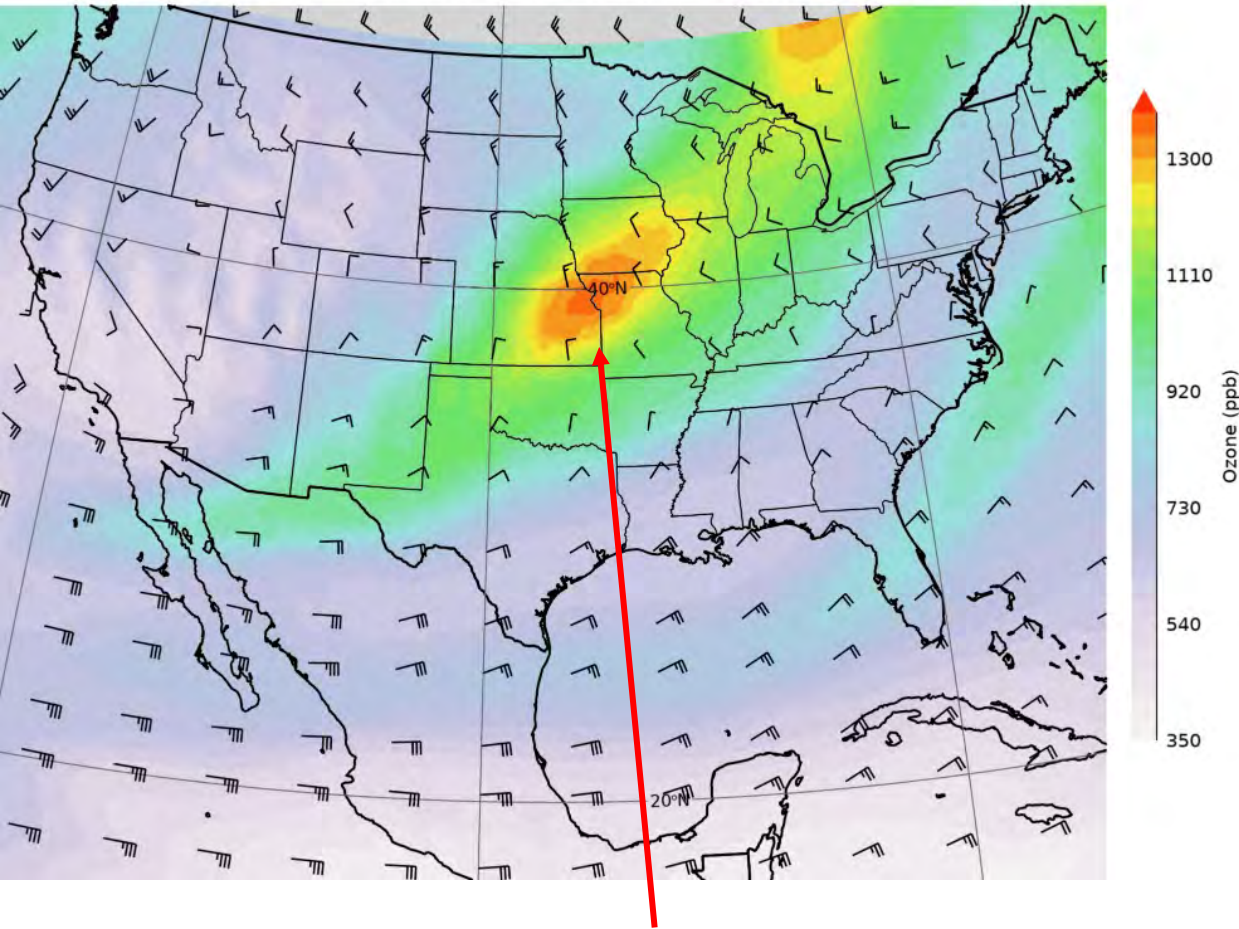


Upper level trough over the north central US is apparent in the tropopause temps and pressures.

Trace Gases

WACCM Ozone

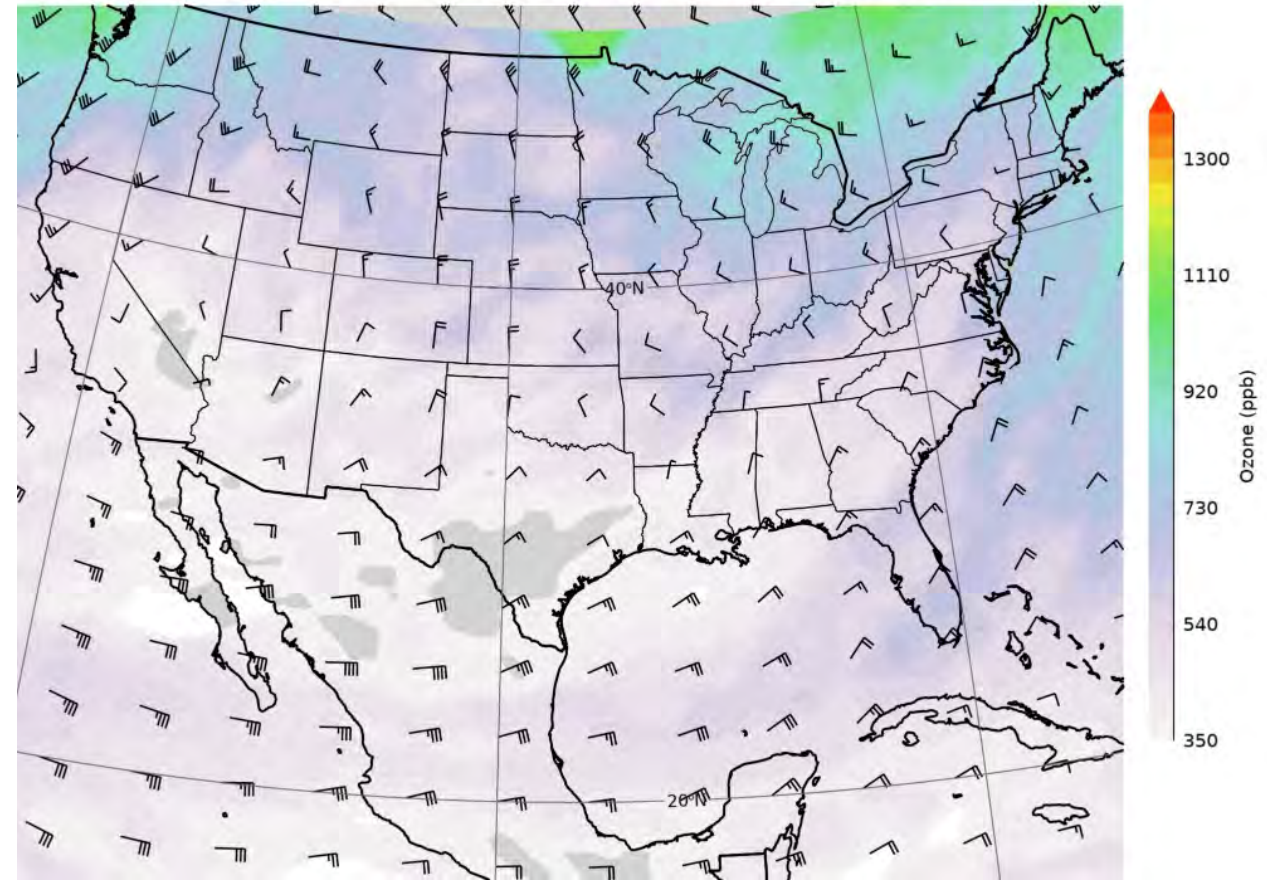
WACCM Ozone 85 hPa Init: 2026072900 Valid: 2026080118



Large contrast between the model forecasts of the trough and the trace gases. High ozone in the trough in WACCM.

GEOS Ozone

GEOS Ozone 85 hPa Init: 2026073009 Valid: 2026080118



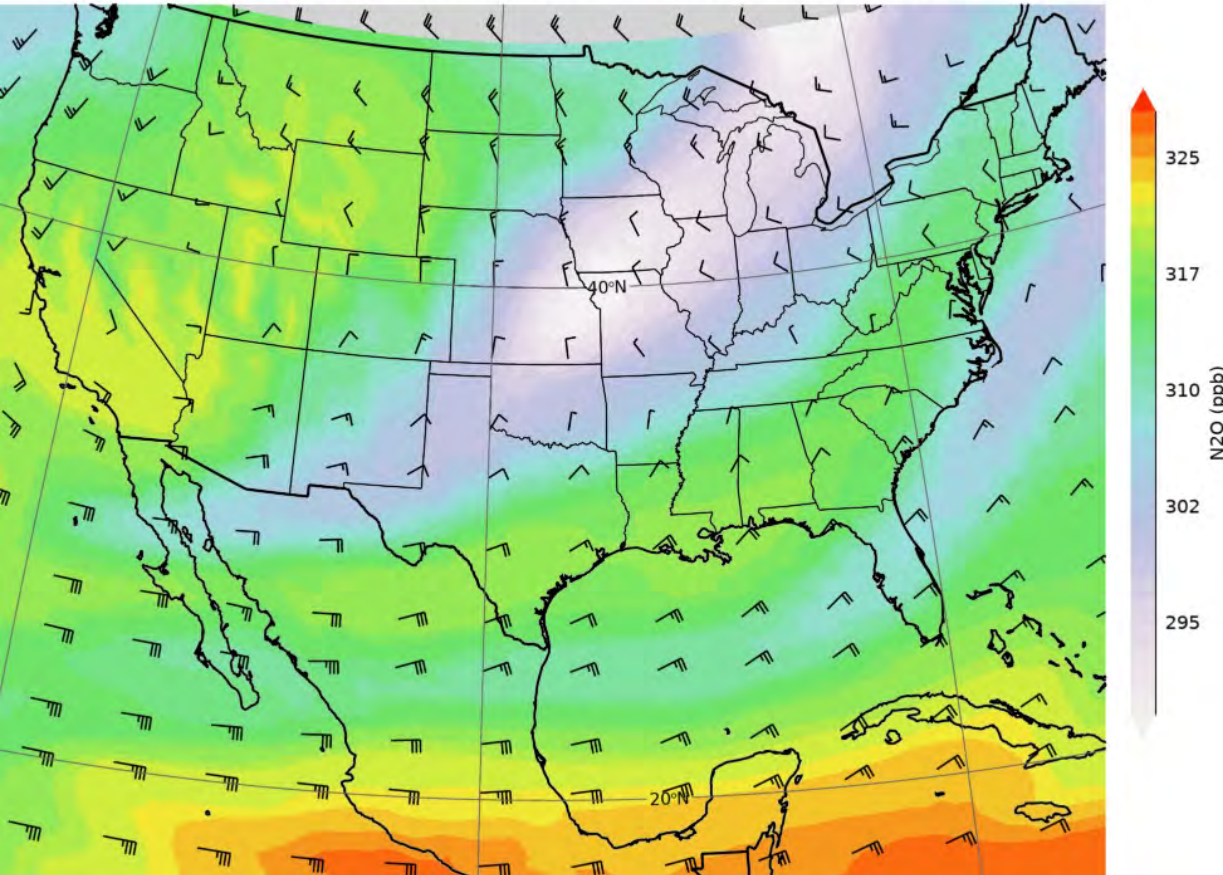
Much less impressive feature in GEOS.

Trace Gases and Aerosols

WACCM N₂O

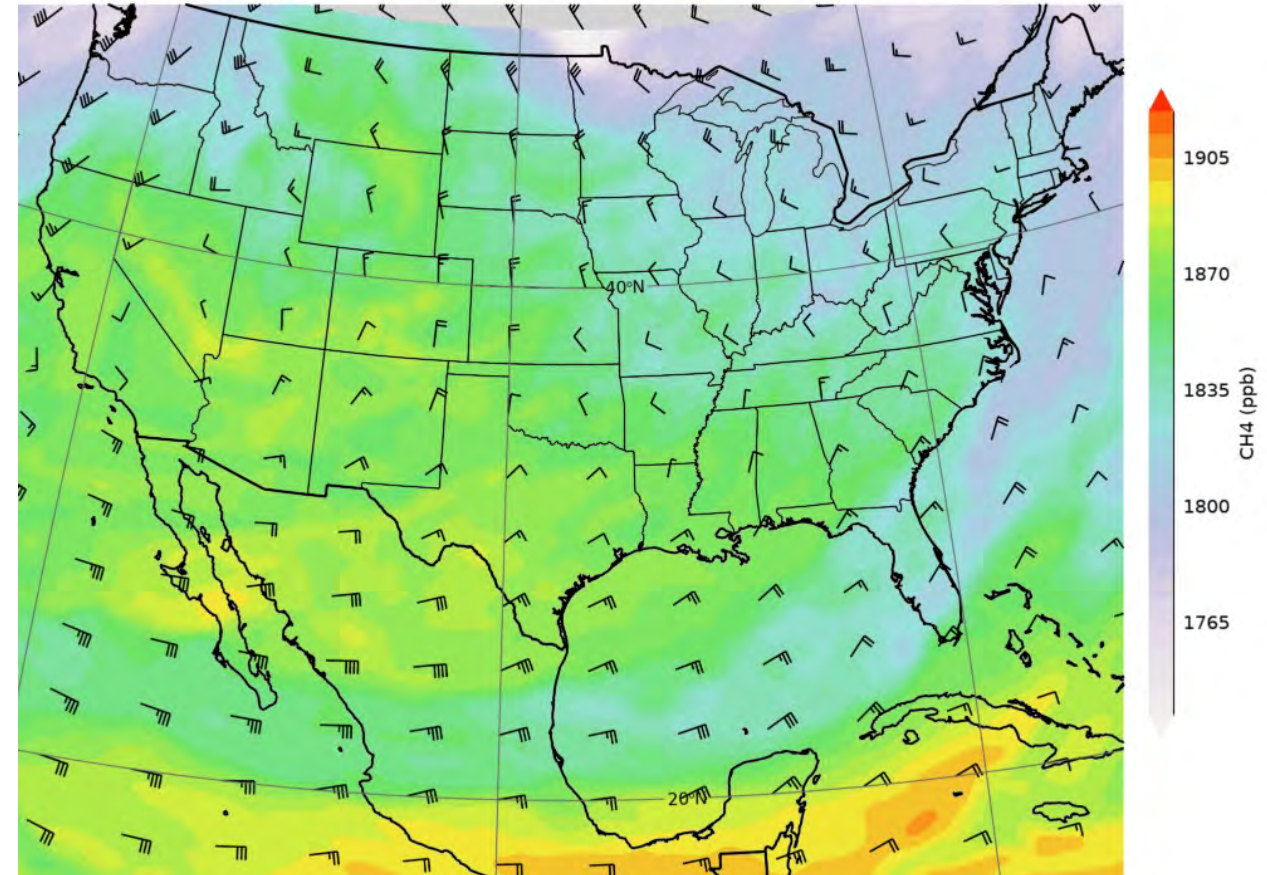
GEOS CH₄

WACCM N₂O 85 hPa Init: 2026072900 Valid: 2026080118



Low WACCM N₂O in the trough

GEOS CH₄ 85 hPa Init: 2026073009 Valid: 2026080118



No similar feature in GEOS CH₄.

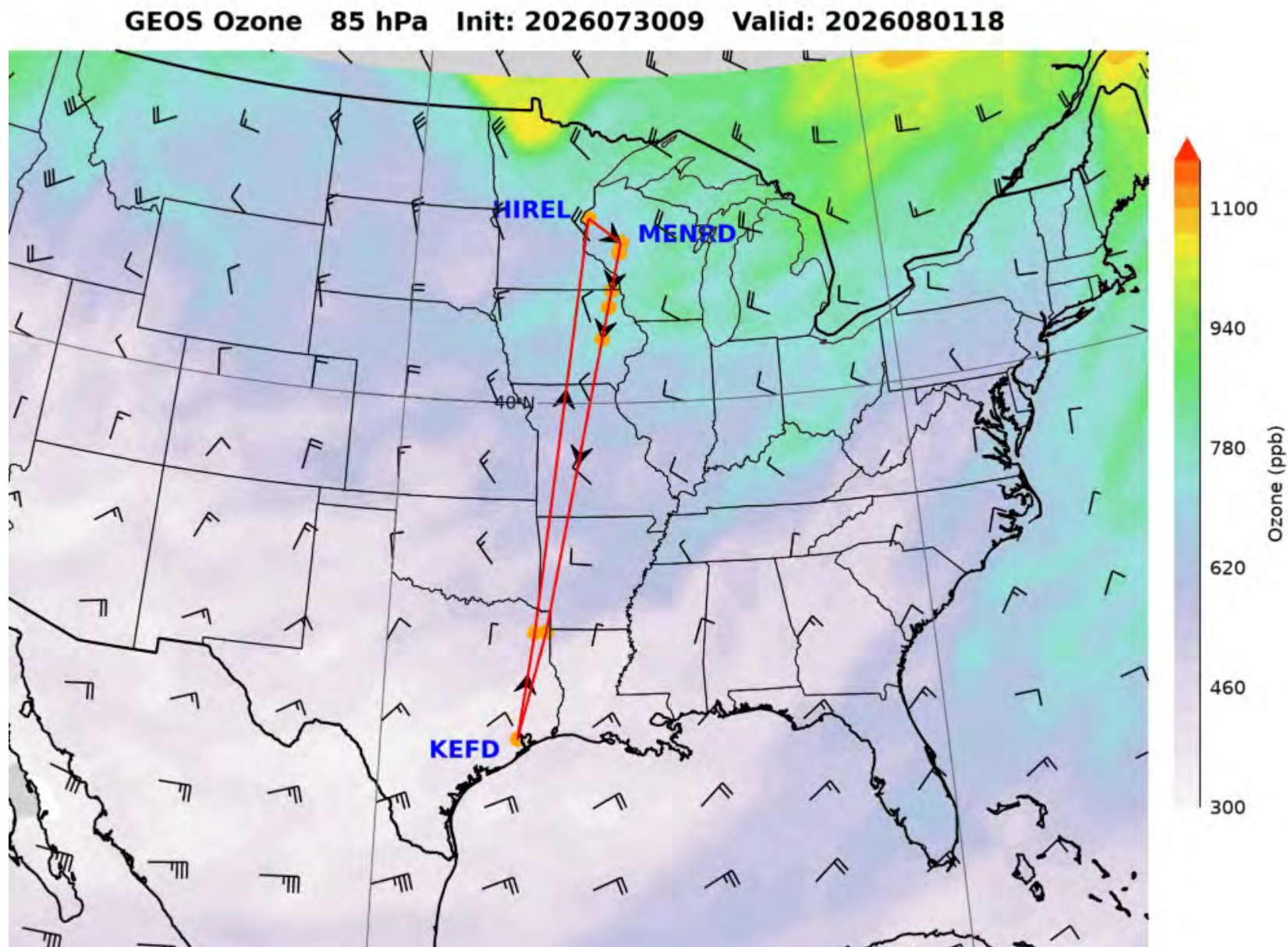
Flight Plan 08/01

North as far as we can go

Flight time ~6 hours

Main goal:

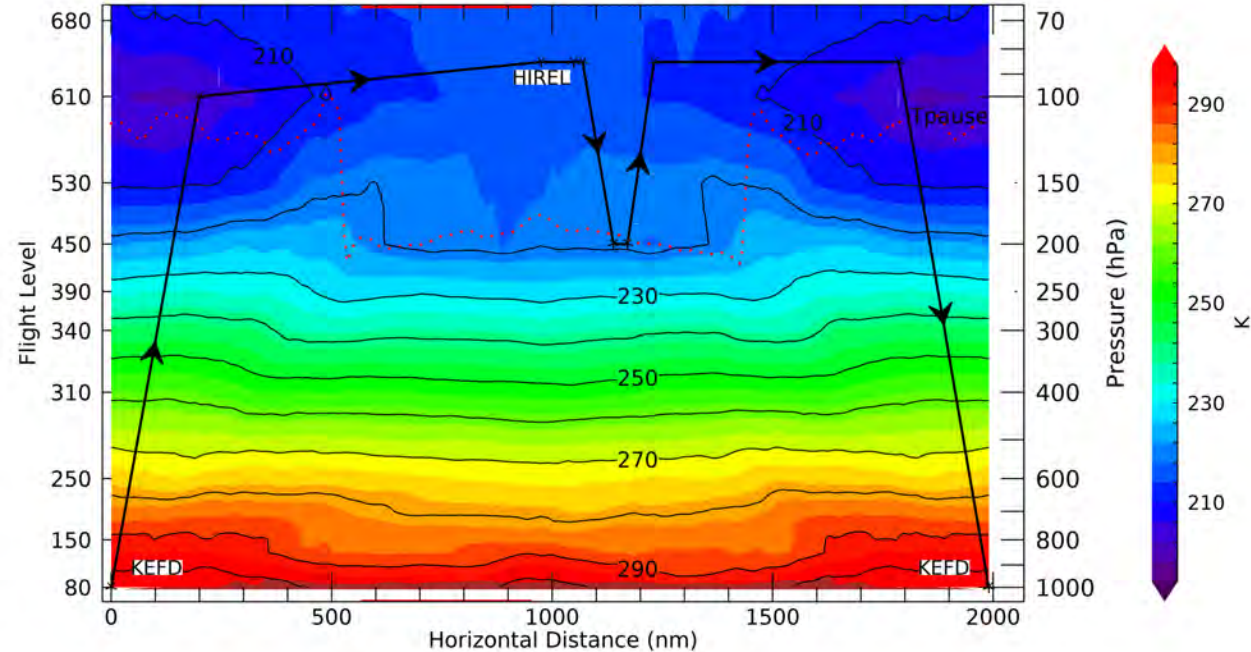
- Sample as deep into the stratosphere as possible based on forecast of upper level trough over eastern US.



Flight Plan Curtains 08/01

Temperature

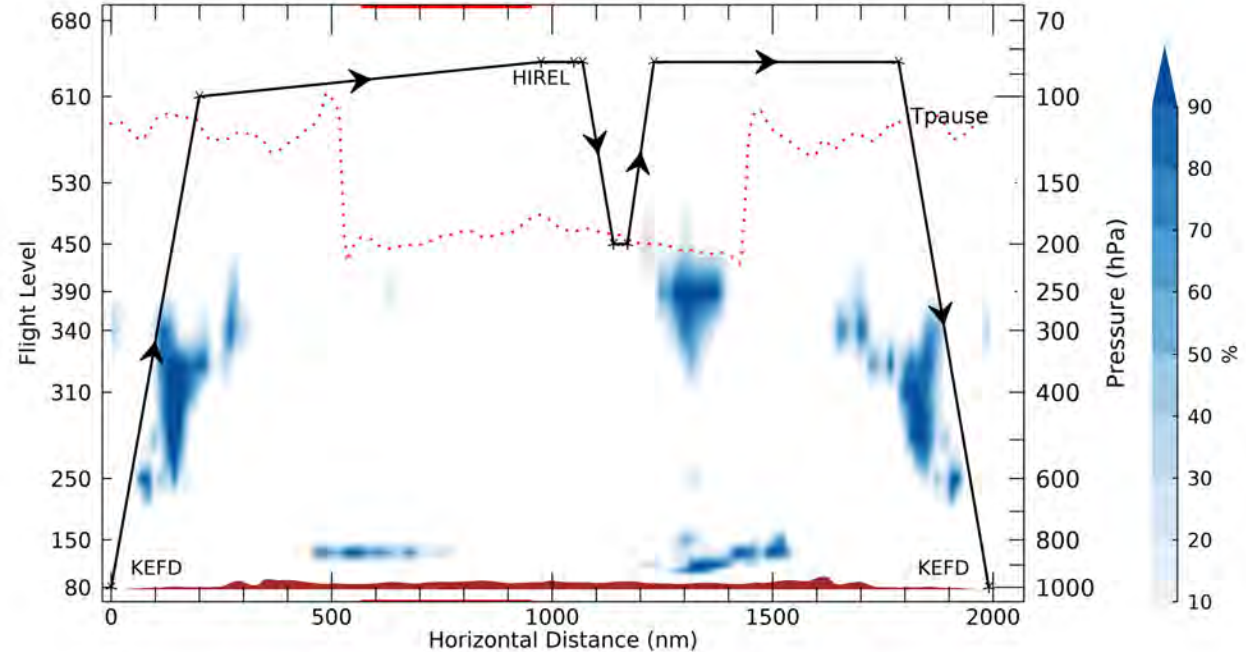
NCEP Temperature Init:2026073106 Valid Time:2026080118



Relatively warm tropopause and lower strat temps in the upper trough (210-220K) that will limit plane max altitude.

Clouds

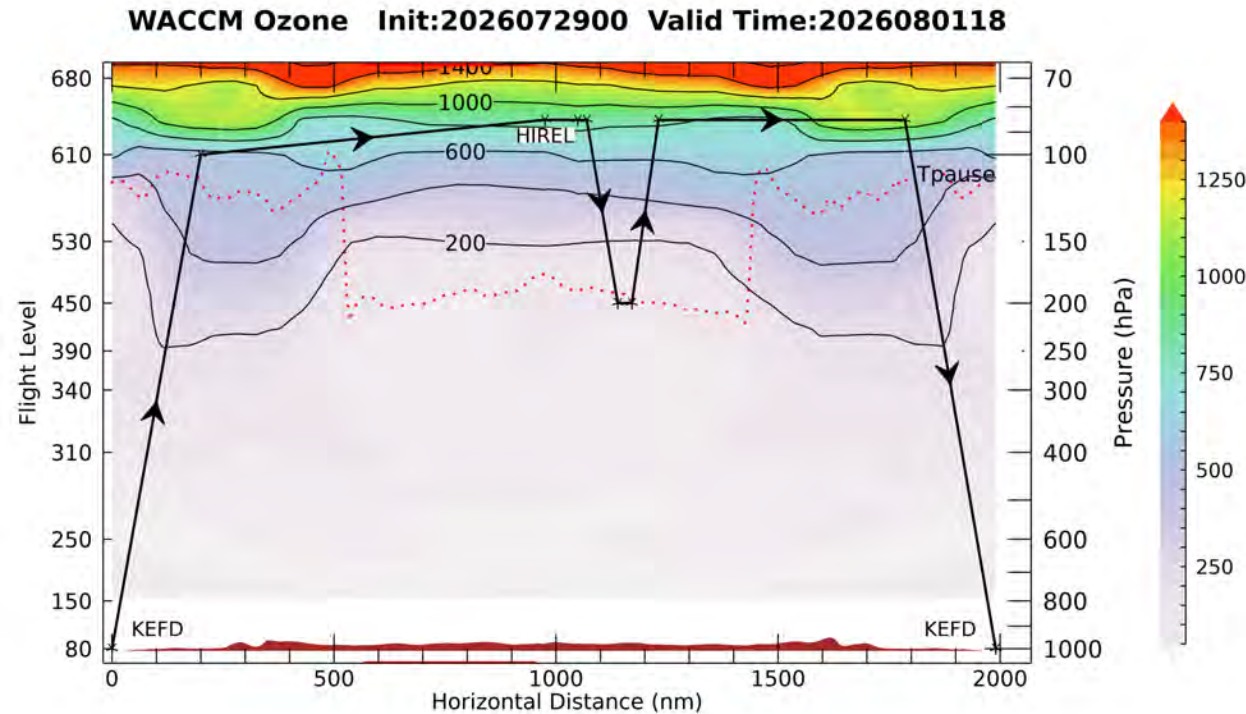
NCEP Cloud Cover Init:2026073106 Valid Time:2026080118



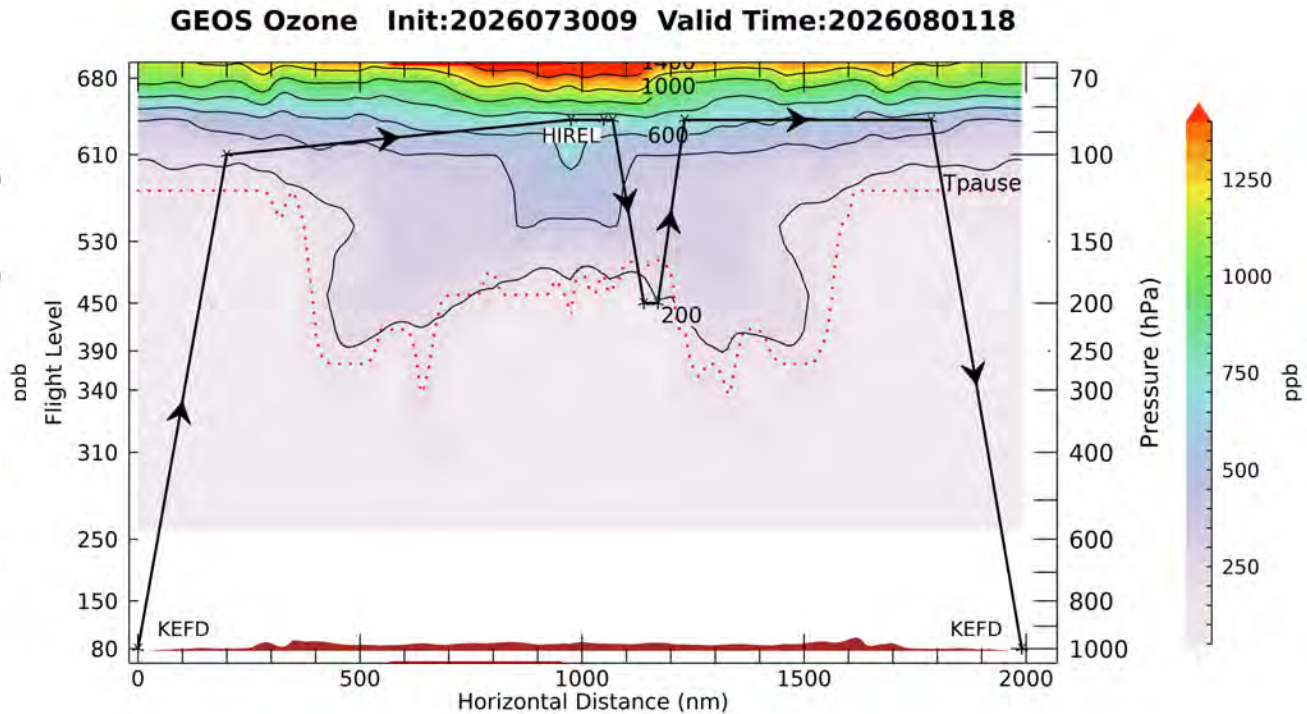
Some clouds on departure and arrival but otherwise above any clouds on rest of flight.

Flight Plan Curtains 08/01

WACCM Ozone



GEOS Ozone



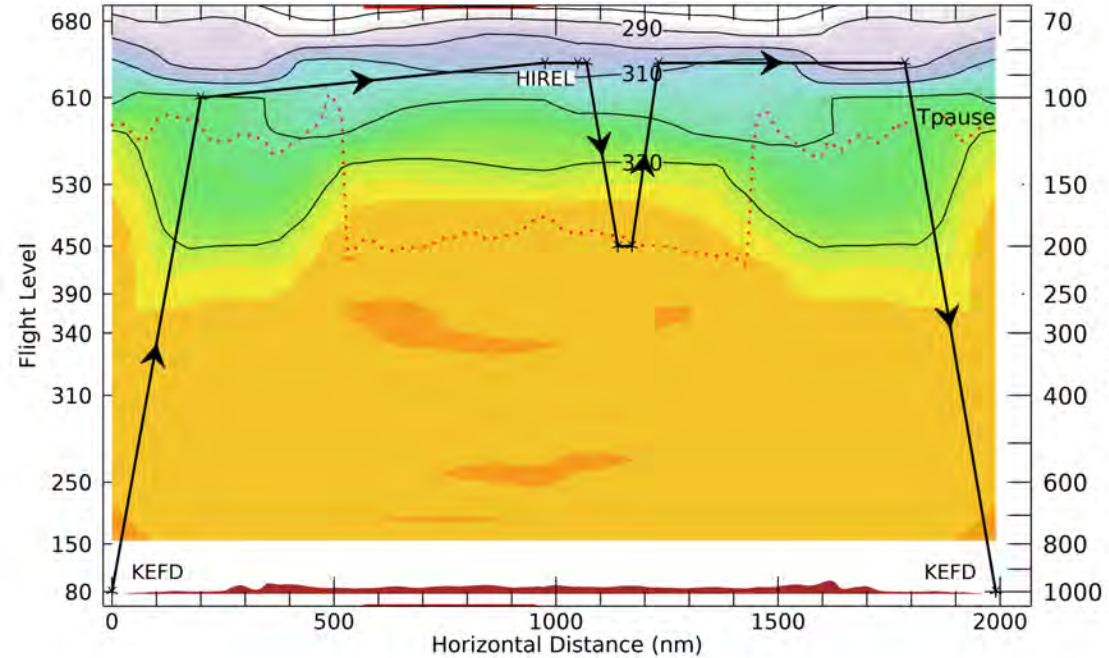
Two model ozone forecasts differ in the position of the trough so also differ in the expected ozone mixing ratios we will sample.

Flight Plan Curtains 08/01

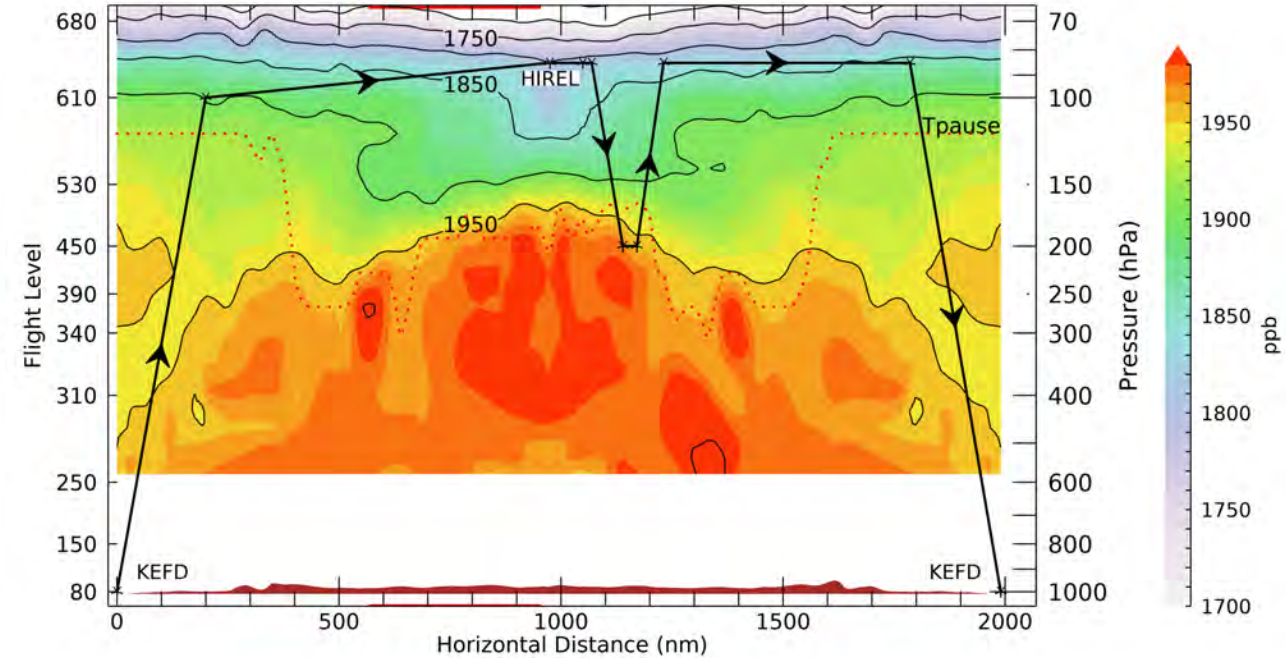
WACCM N₂O

GEOS CH₄

WACCM N₂O Init:2026072900 Valid Time:2026080118



GEOS CH₄ Init:2026073009 Valid Time:2026080118

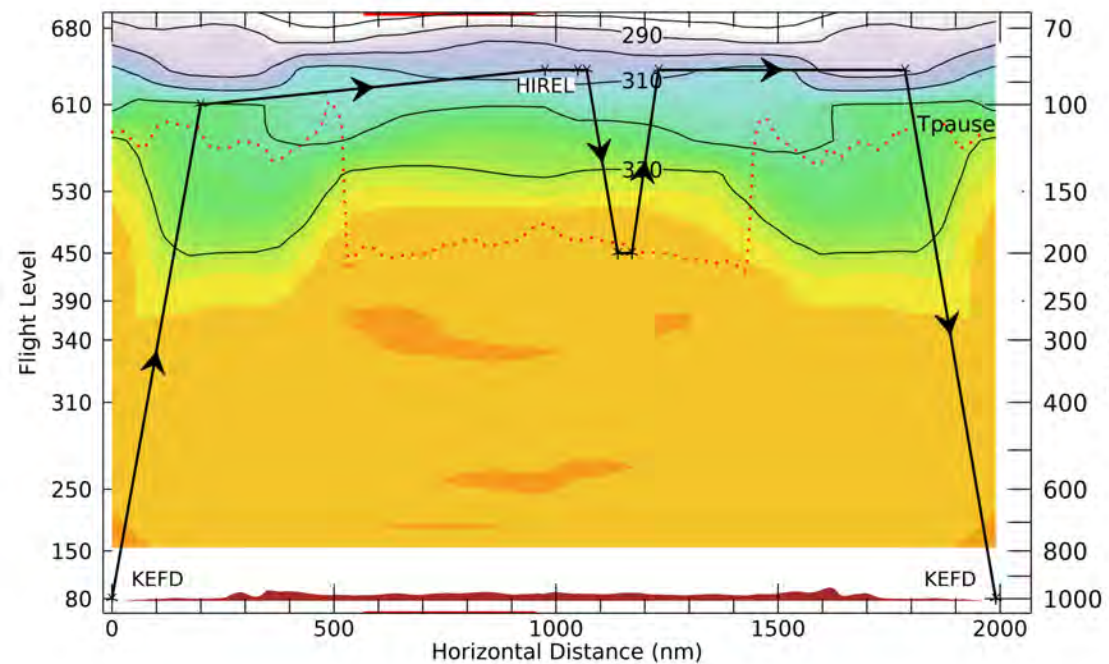


Flight Plan Curtains 08/01

WACCM N₂O

GEOS CO

WACCM N₂O Init:2026072900 Valid Time:2026080118



GEOS CO Init:2026073009 Valid Time:2026080118

