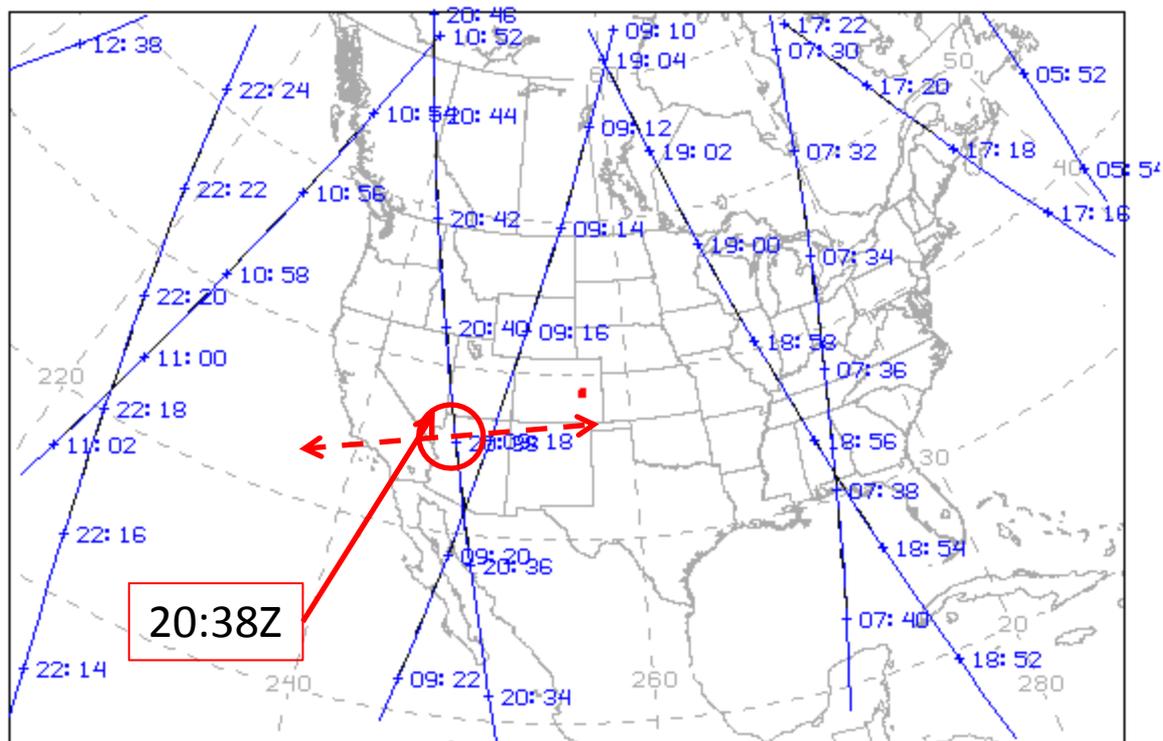


RAQMS 20150323 SONGNEX 54hr Forecast  
for 18Z March 24, 2015  
Science Flight

# S-NPP (CrIS) overpass on 2015/03/24

NUCAPS CO<sub>2</sub>, O<sub>3</sub>, CO, CH<sub>4</sub> Validation Opportunity – **eastern edge of swath**

S-NPP overpass is west of Denver (red dot) at 20:38Z (2:38pm Mountain)

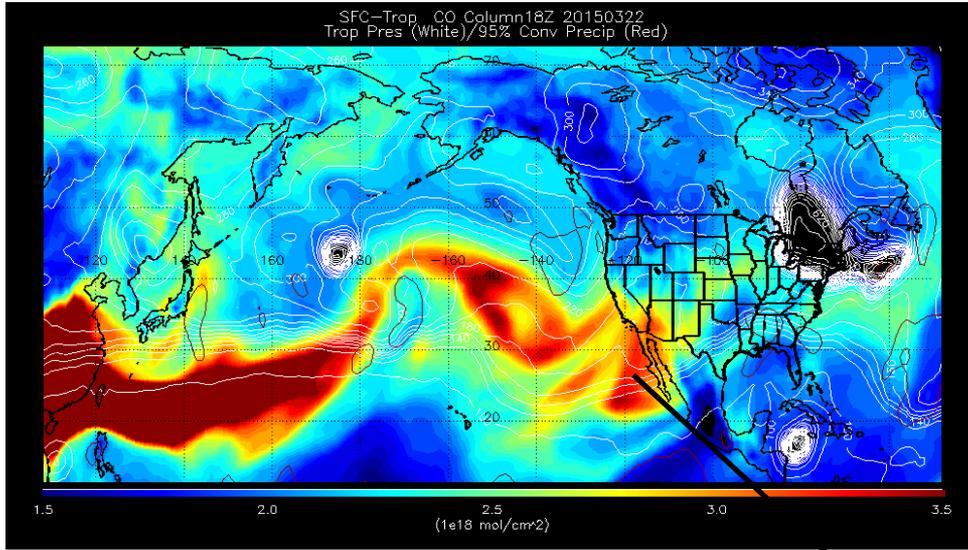


NPP 2015/03/24 UTC      NPP ORBITAL PREDICT PLOT      EPOCH DATE: Mar-20-2015  
■ lat: 39.749 lon: 255.011 res: 24 km

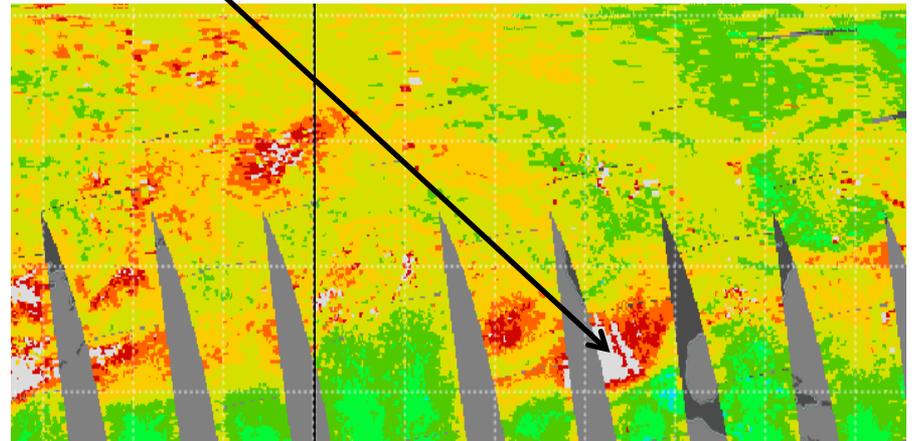
**Approximate swath width**

# RAQMS 6hr CO column FX valid 18Z March 22, 2015

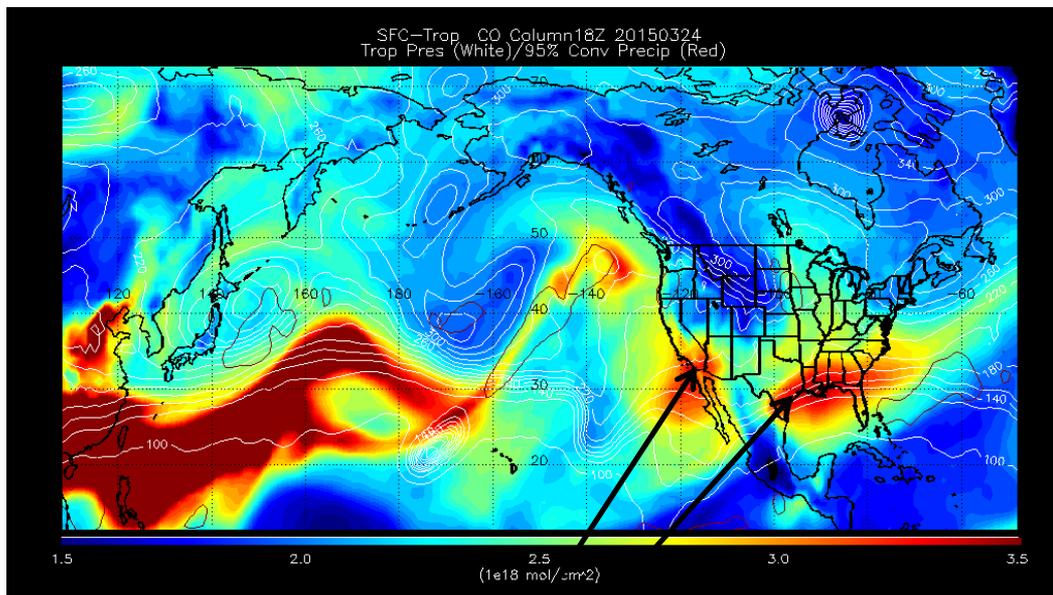
<http://raqms-ops.ssec.wisc.edu/index.php>



# AIRS Column CO March 22, 2015



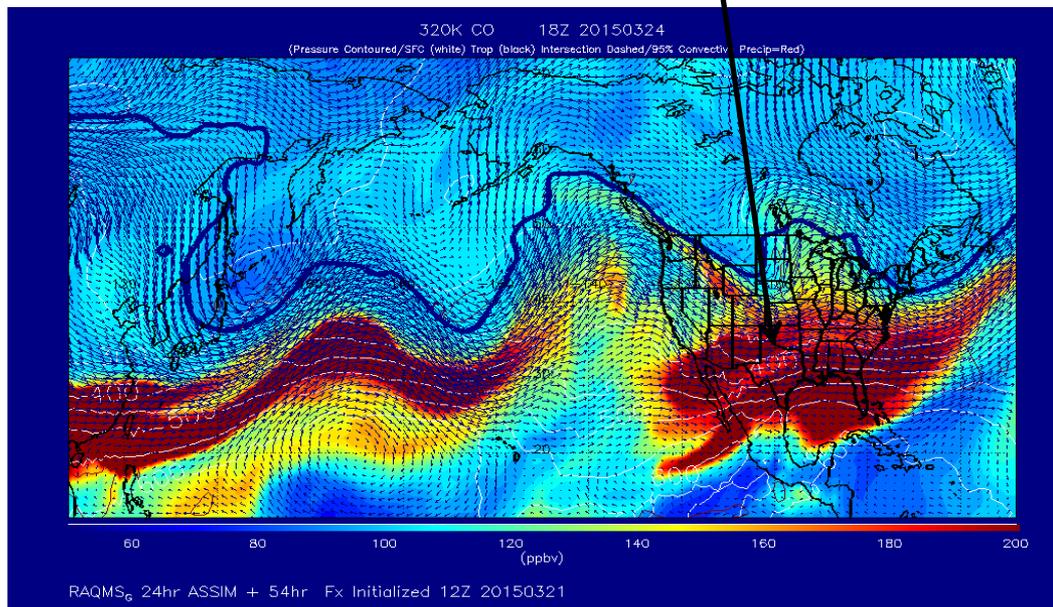
<https://earthdata.nasa.gov/labs/worldview/>



Elevated CO from Intercontinental Transport aloft over southern US at 320K

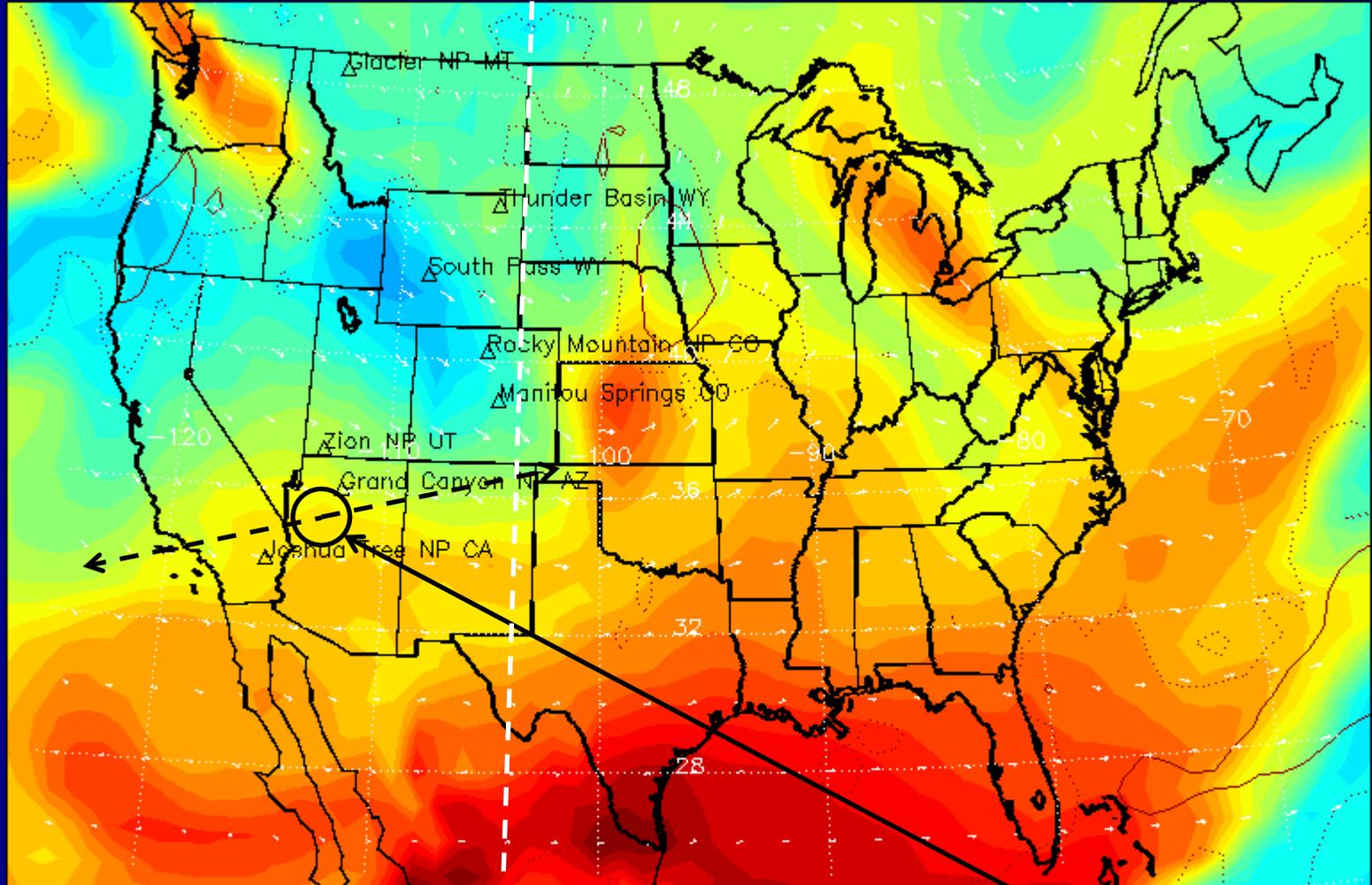
RAQMS 54hr 320K FX valid 18Z March 24, 2015

Largest column amounts are forecasted to be over Gulf Coast and Southern California



05km O<sub>3</sub> 18Z 20150324

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.100016 mm/hr



20 30 40 50 (ppbv) 60 70 80

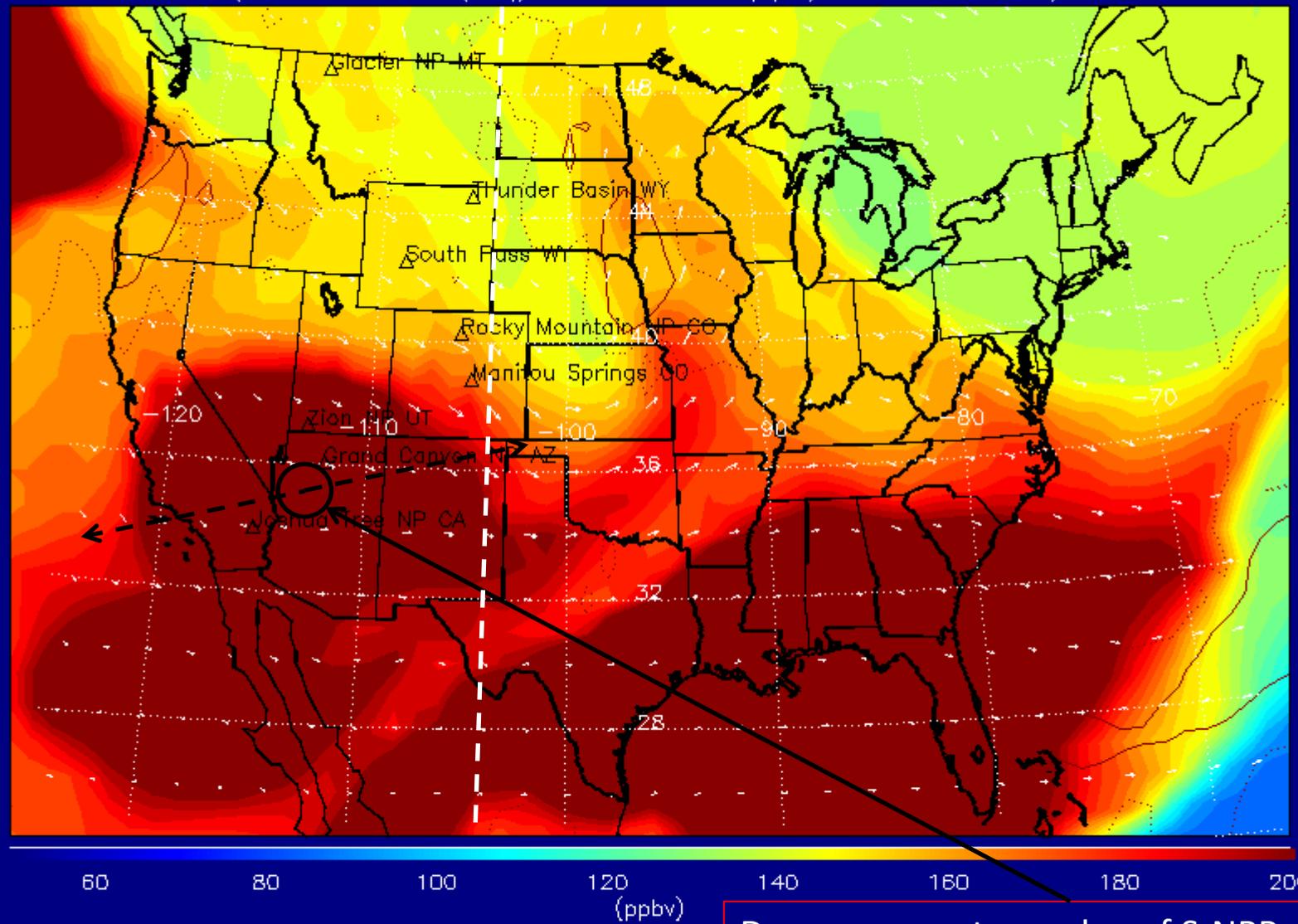
RAQMS<sub>6</sub> 54hr Fx Initialized 12Z 20150322

Denver on eastern edge of S-NPP swath

Approximate swath width

05km CO 18Z 20150324

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.100016 mm/hr



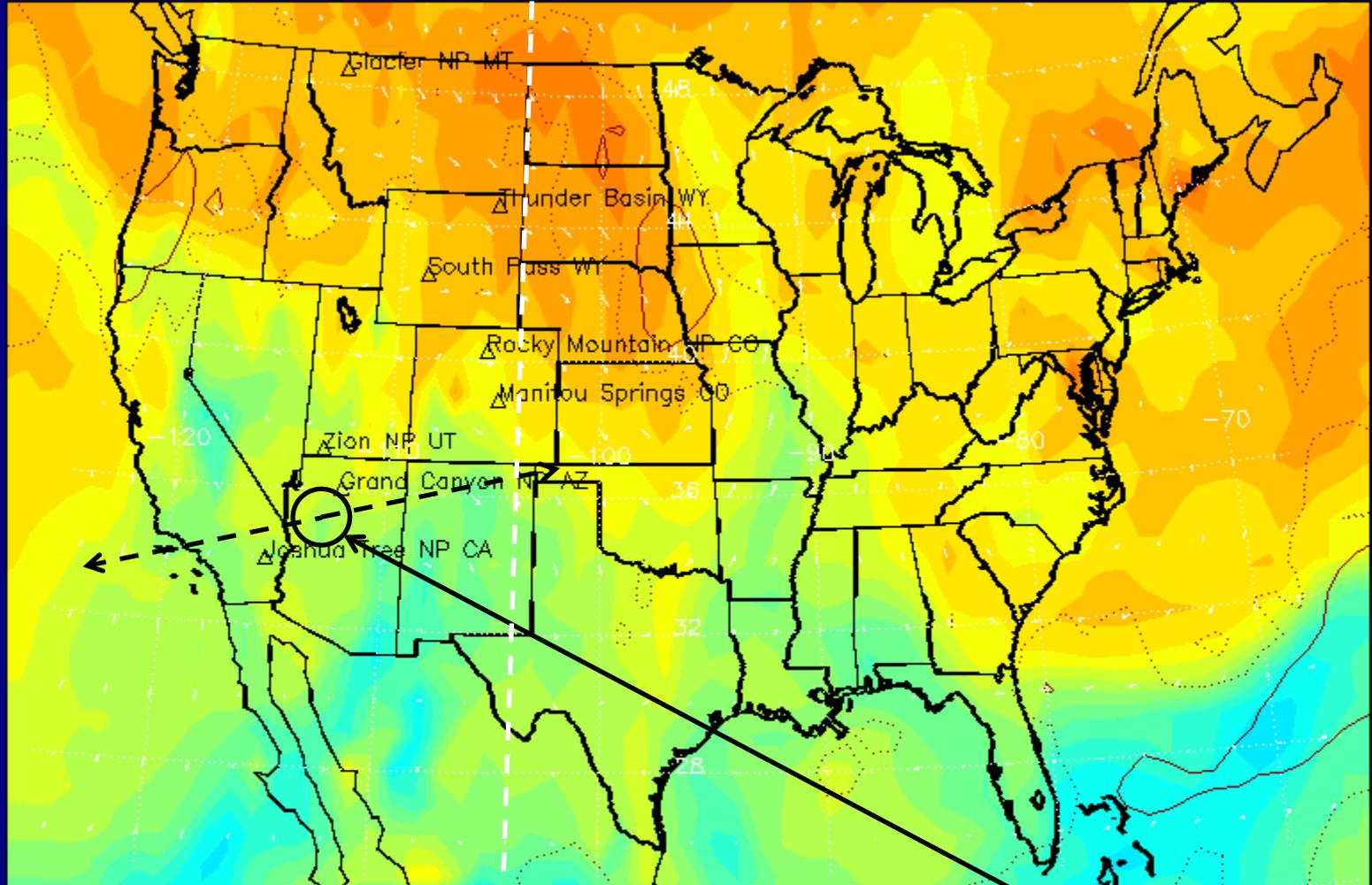
RAQMS<sub>6</sub> 54hr Fx Initialized 12Z 20150322

Denver on eastern edge of S-NPP swath

Approximate swath width

01km AGL CH4 18Z 20150324

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.100016 mm/hr



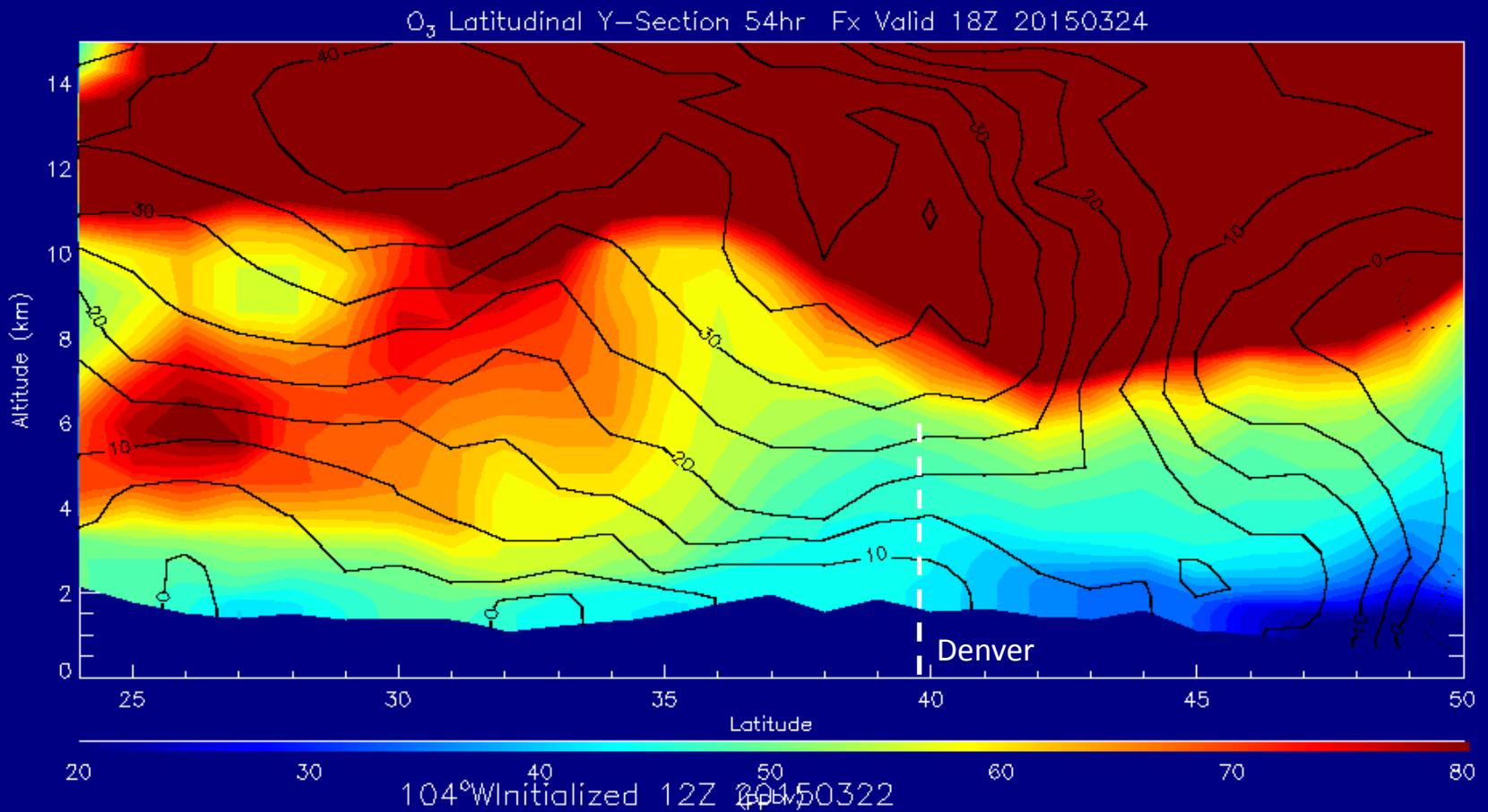
1.75 1.80 (ppmv) 1.85 1.90

RAQMS<sub>6</sub> 54hr Fx Initialized 12Z 20150322

Denver on eastern edge of S-NPP swath

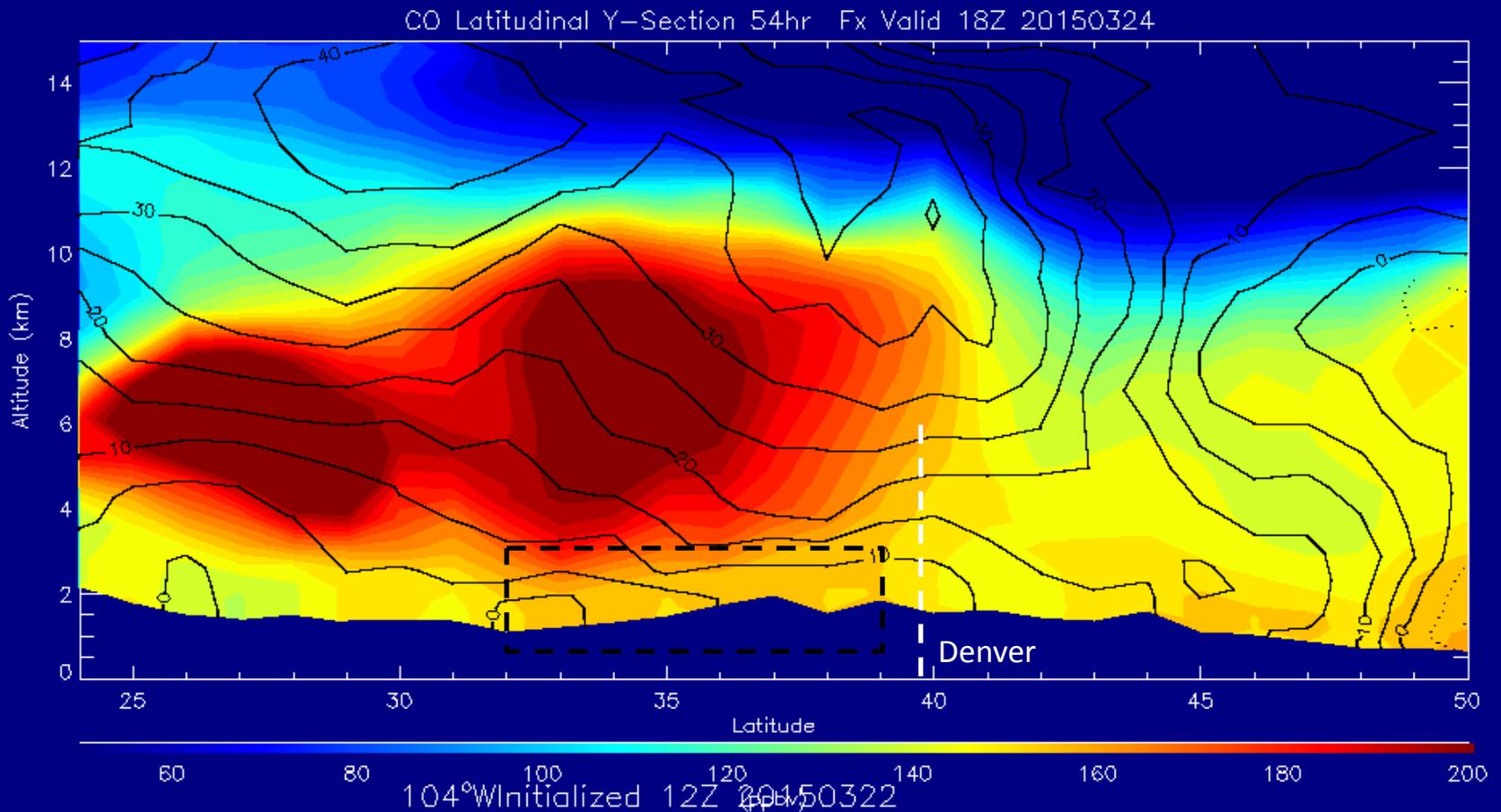
RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias

# RAQMS O3 Cross-section at 104W

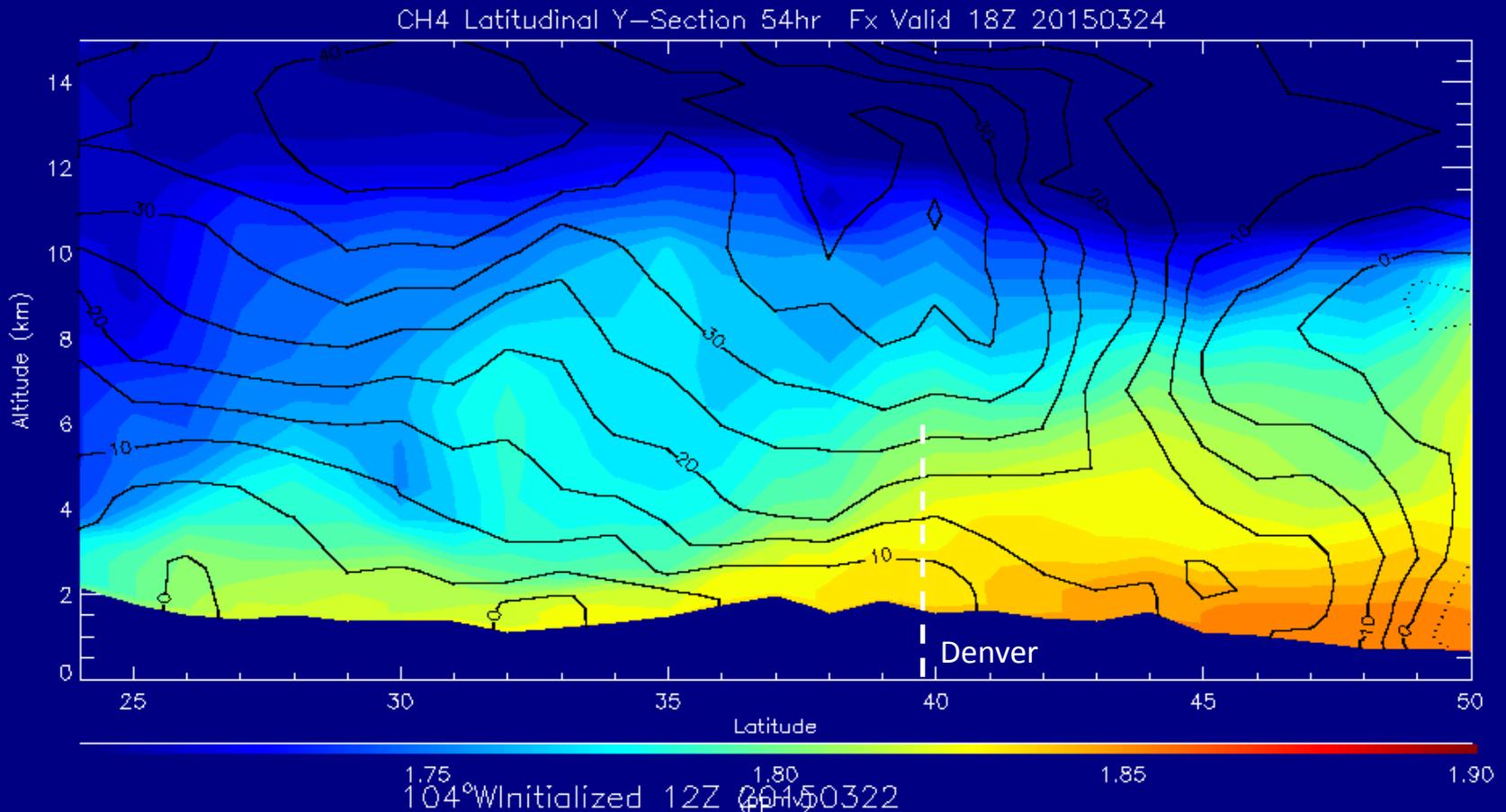


### RAQMS CO Cross-section at 104W

54hr FX has high CO plume above 4km with mixing down into PBL south of Denver – forecasted plume is further south than 78hr FX



# RAQMS CH4 Cross-section at 104W



RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias