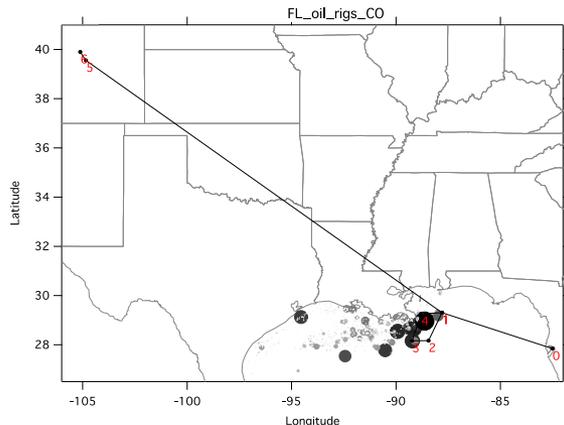
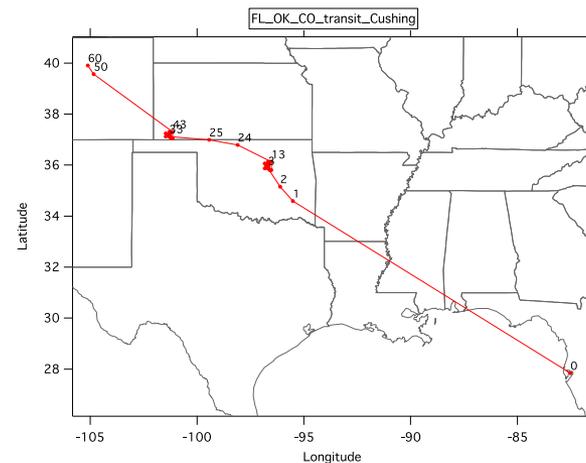


# RAQMS 20150319 SONGNEX 78hr Forecast for 18Z March 21, 2015 Transit Flight 10 AM (14Z) take-off

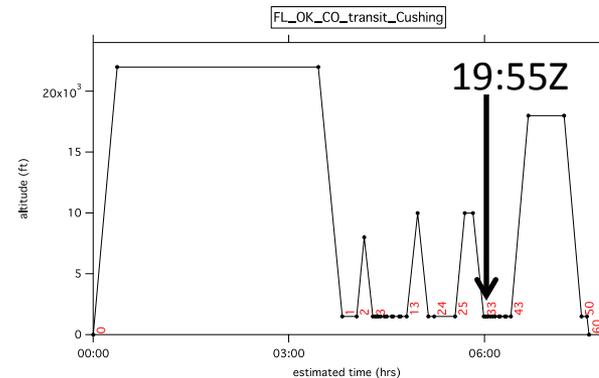
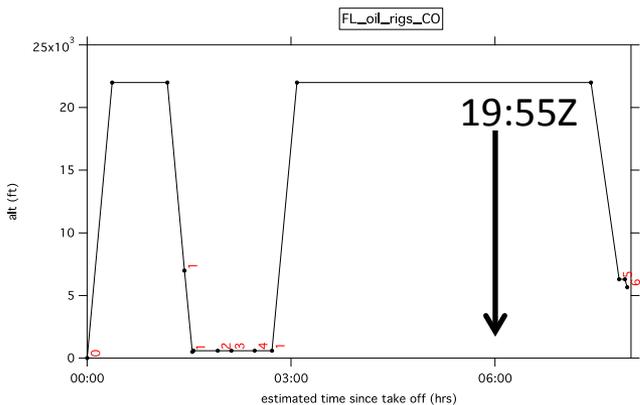


Circles in Gulf indicate locations of platforms scaled by NO<sub>x</sub> emission (2004).  
The platform information is outdated. Pt1 - Pt4 covers the area of the WP3 DWH  
research flights in 2010.

Pt5 (Centennial Airport) to Pt6 (Rocky Mountain Airport) is within the PBL across Denver.



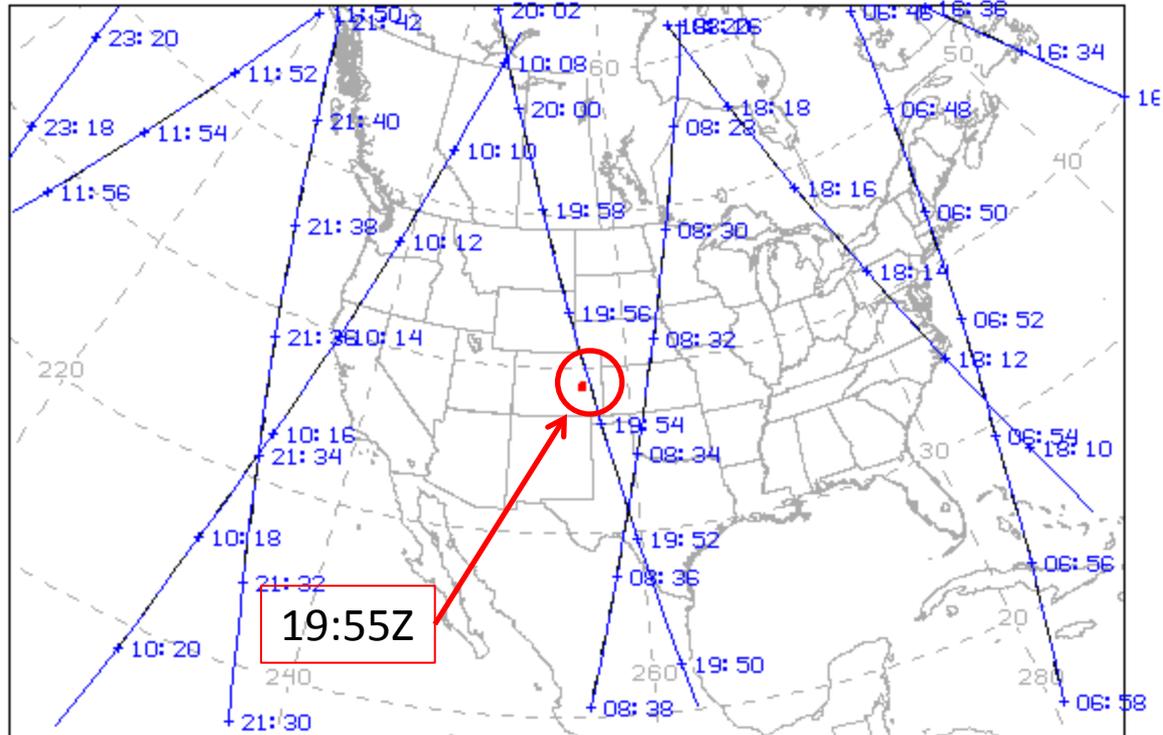
## Tentative Flight Plans



# S-NPP (CrIS) overpass on 2015/03/21

## NUCAPS CO<sub>2</sub>, O<sub>3</sub>, CO, CH<sub>4</sub> Validation Opportunity

S-NPP overpass is just east of Denver (red dot) at 19:55Z (1:55pm Mountain)

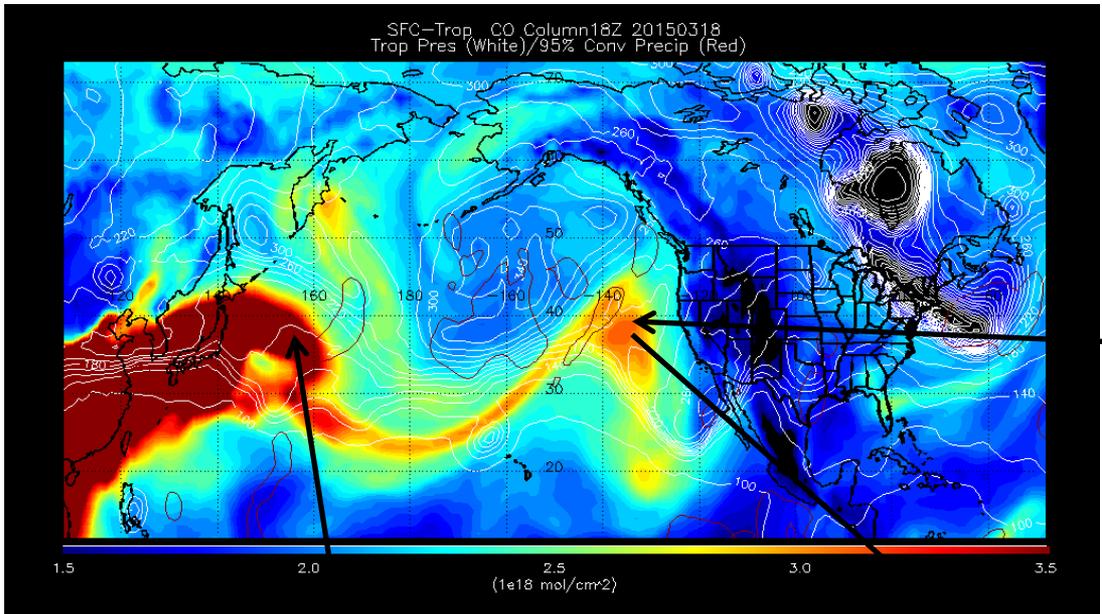


NPP 2015/03/21 UTC

NPP ORBITAL PREDICT PLOT

EPOCH DATE: Mar-17-2015

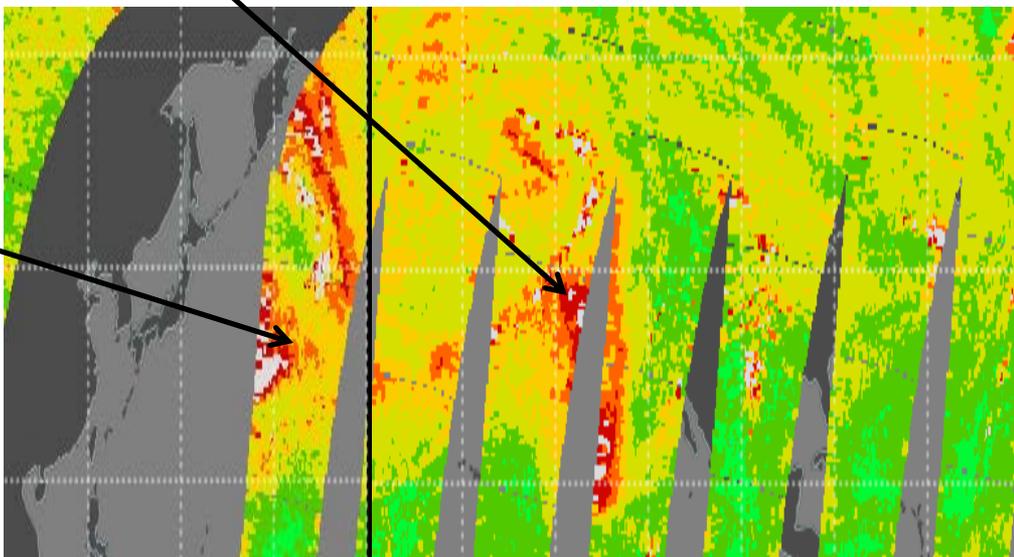
lat: 39.749 lon: 255.011 res: 24 km

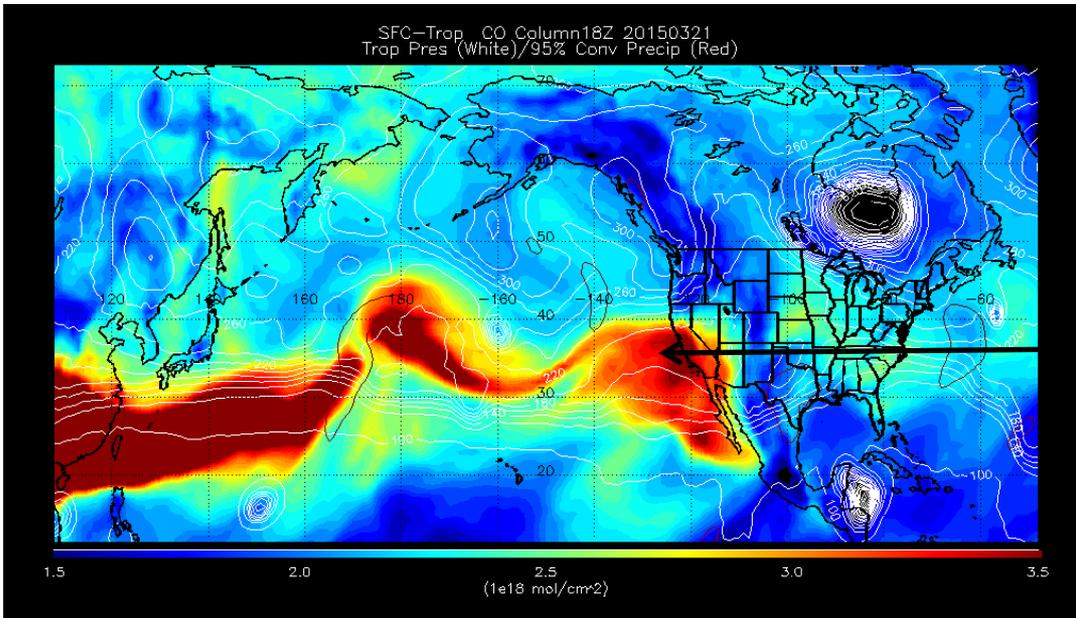


Large CO plume off shore of US associated with Intercontinental pollution transport

CO plume off shore of Asia

AIRS Column CO March 18, 2015

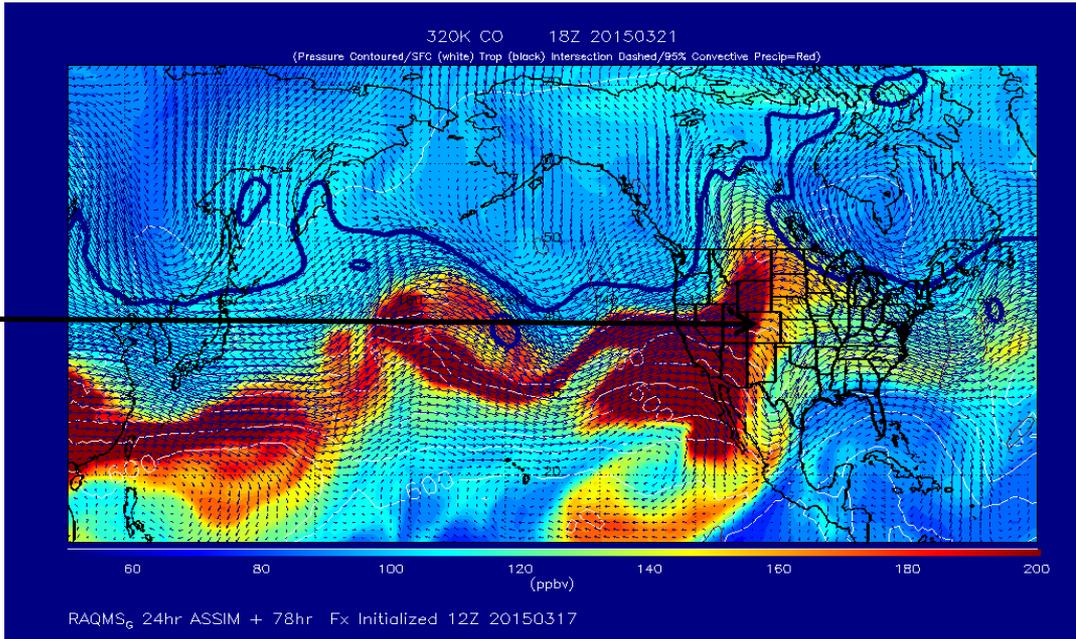




Large CO plume off shore of US associated with Intercontinental pollution transport

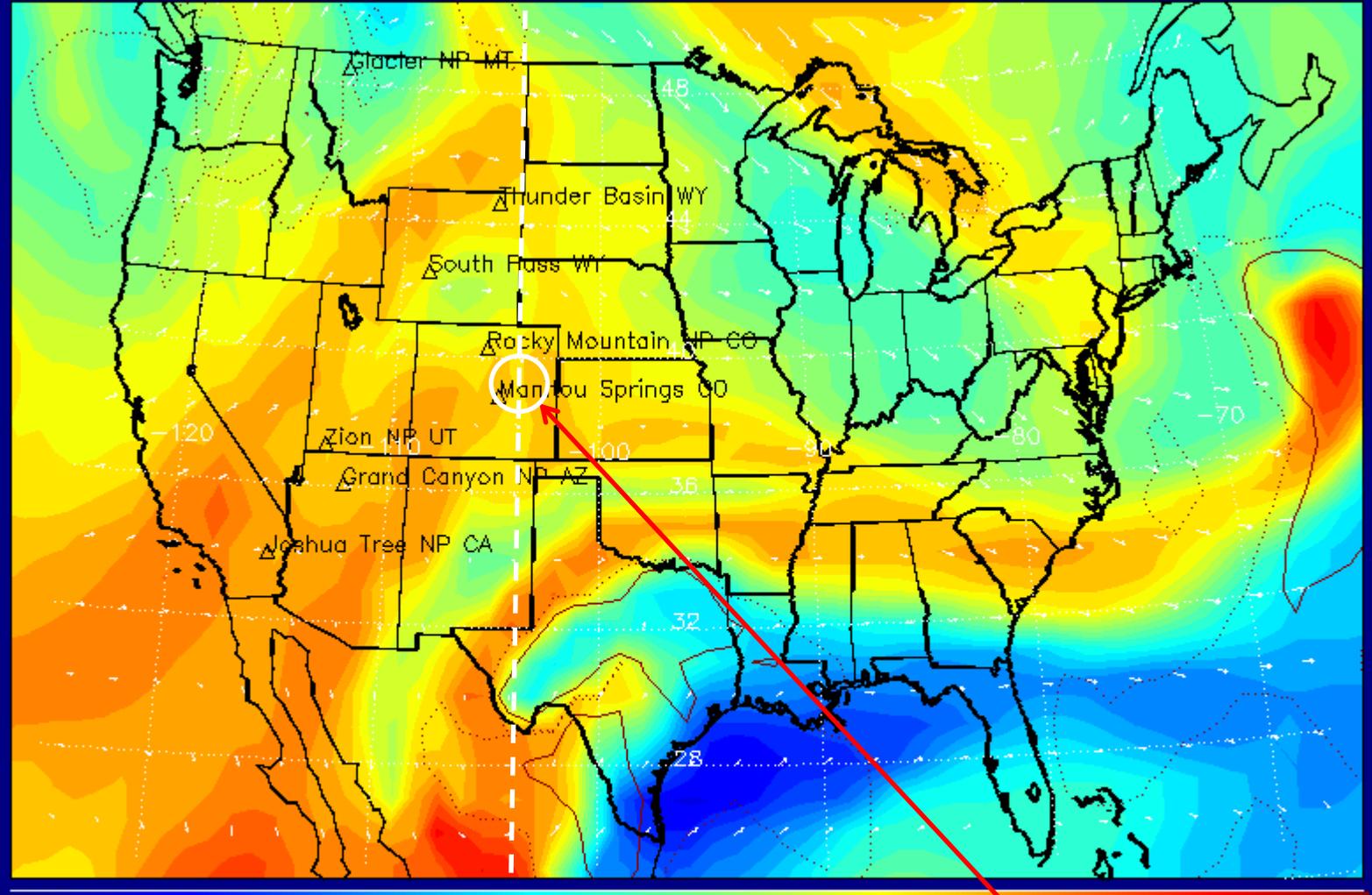
RAQMS 78hr 320K FX valid 18Z March 21, 2015

Leading edge of 320K CO plume over Western Colorado at 18Z on March 21, 2015



05km O<sub>3</sub> 18Z 20150321

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.131429 mm/hr



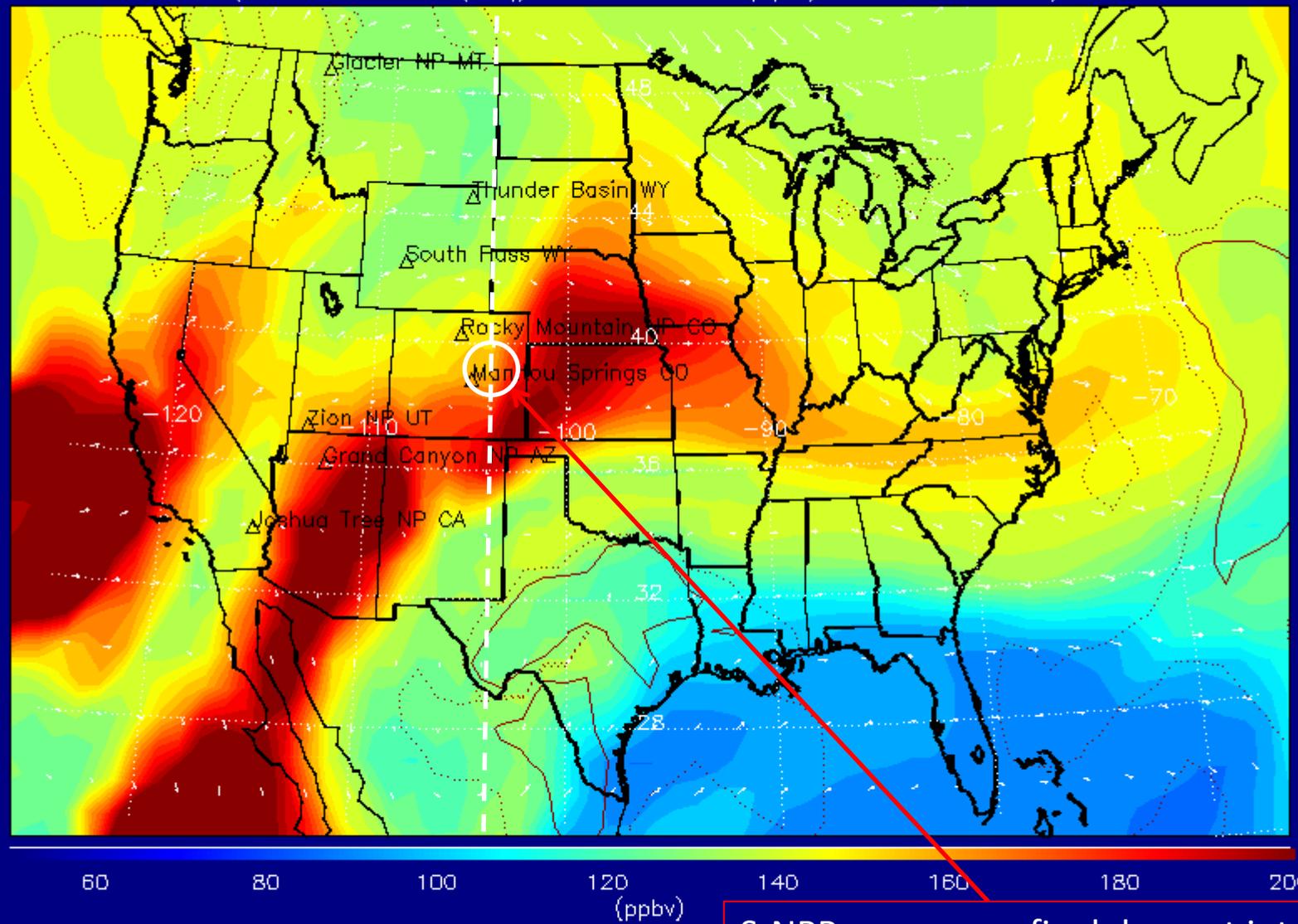
20 30 40 50 (ppbv) 60 70 80

RAQMS<sub>6</sub> 78hr Fx Initialized 12Z 20150318

S-NPP overpass – final descent into Denver

05km CO 18Z 20150321

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.131429 mm/hr

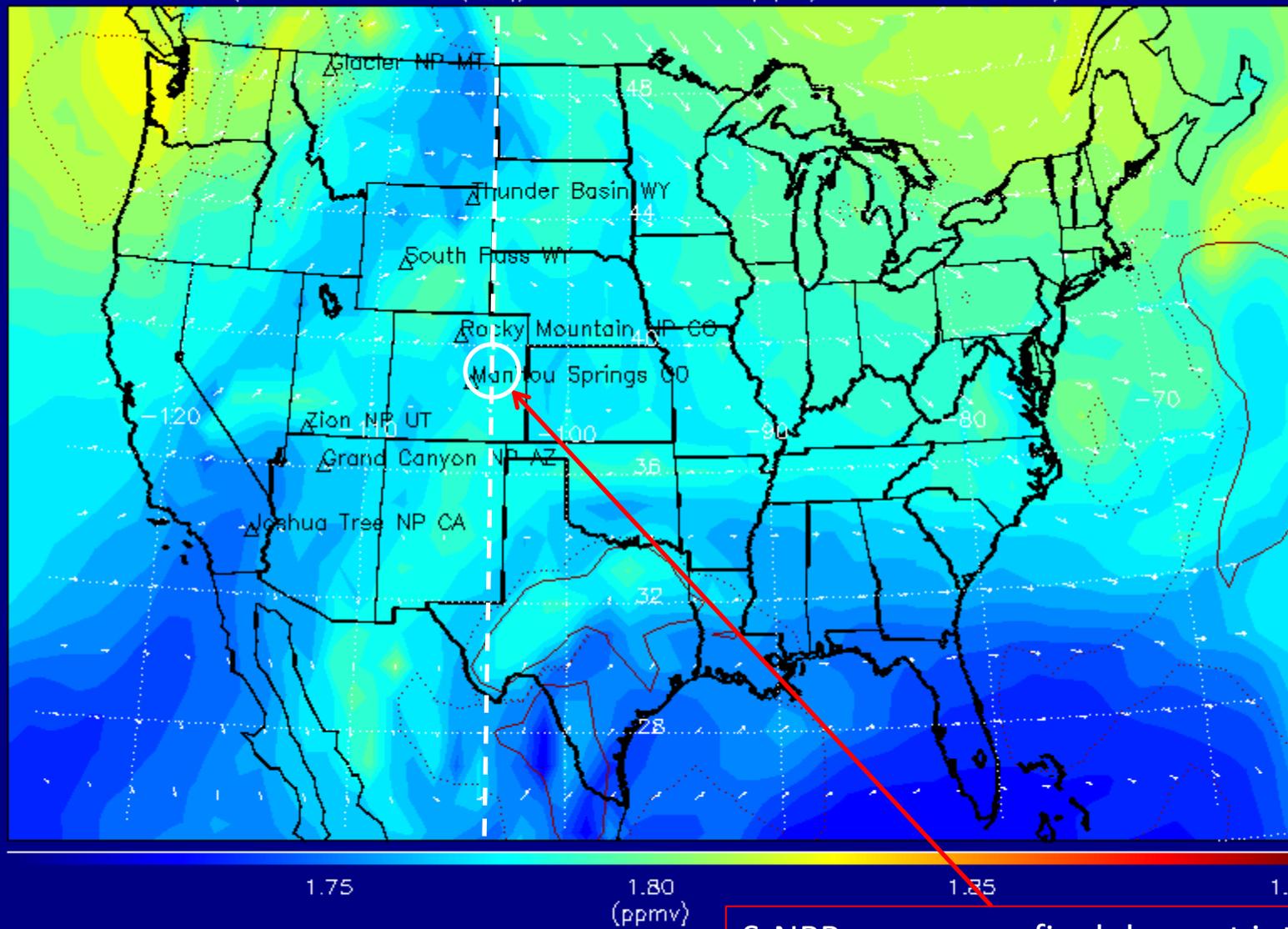


RAQMS<sub>6</sub> 78hr Fx Initialized 12Z 20150318

S-NPP overpass – final descent into Denver

05km CH4 18Z 20150321

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPGP=0.131429 mm/hr

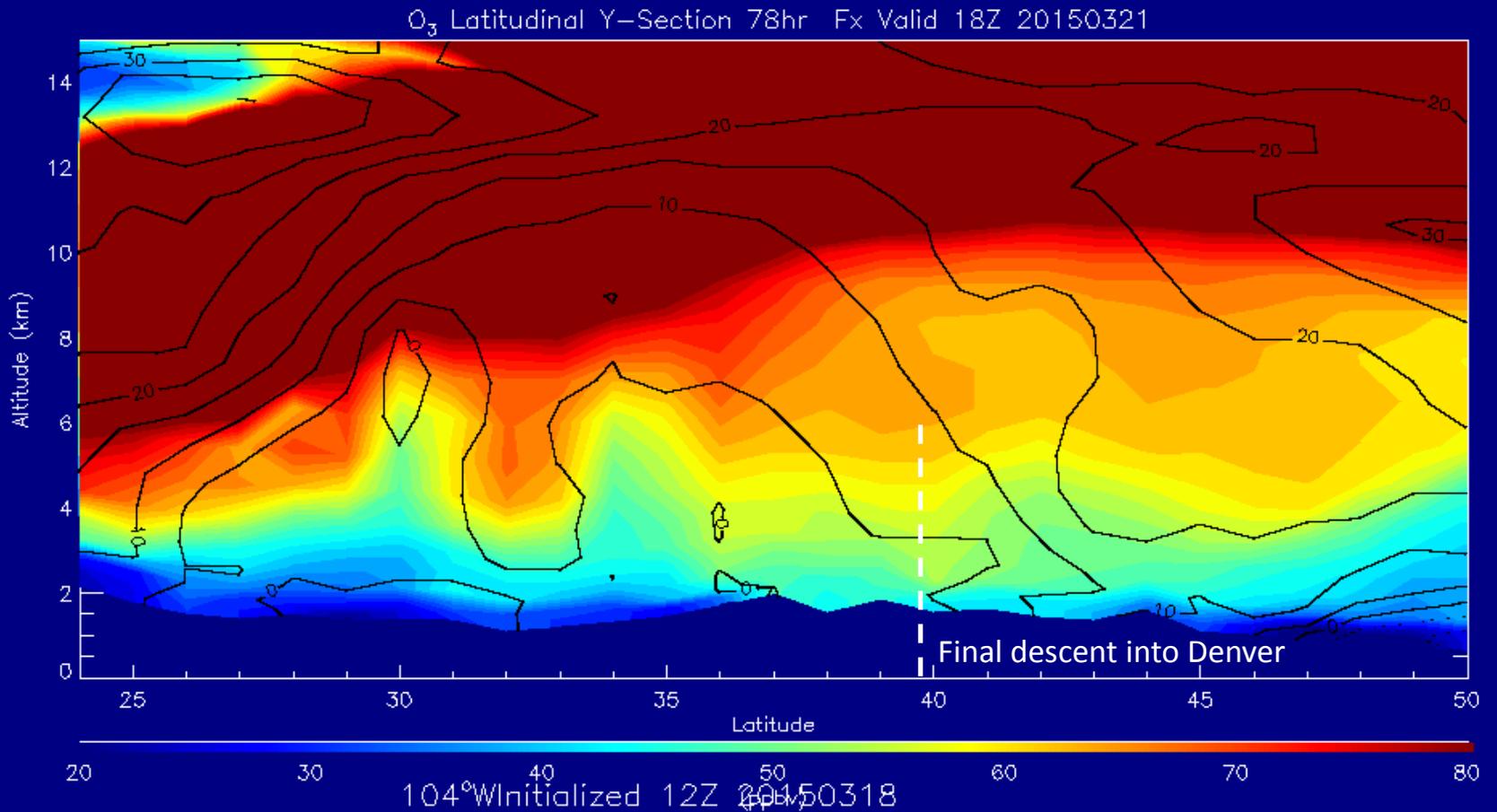


RAQMS<sub>6</sub> 78hr Fx Initialized 12Z 20150318

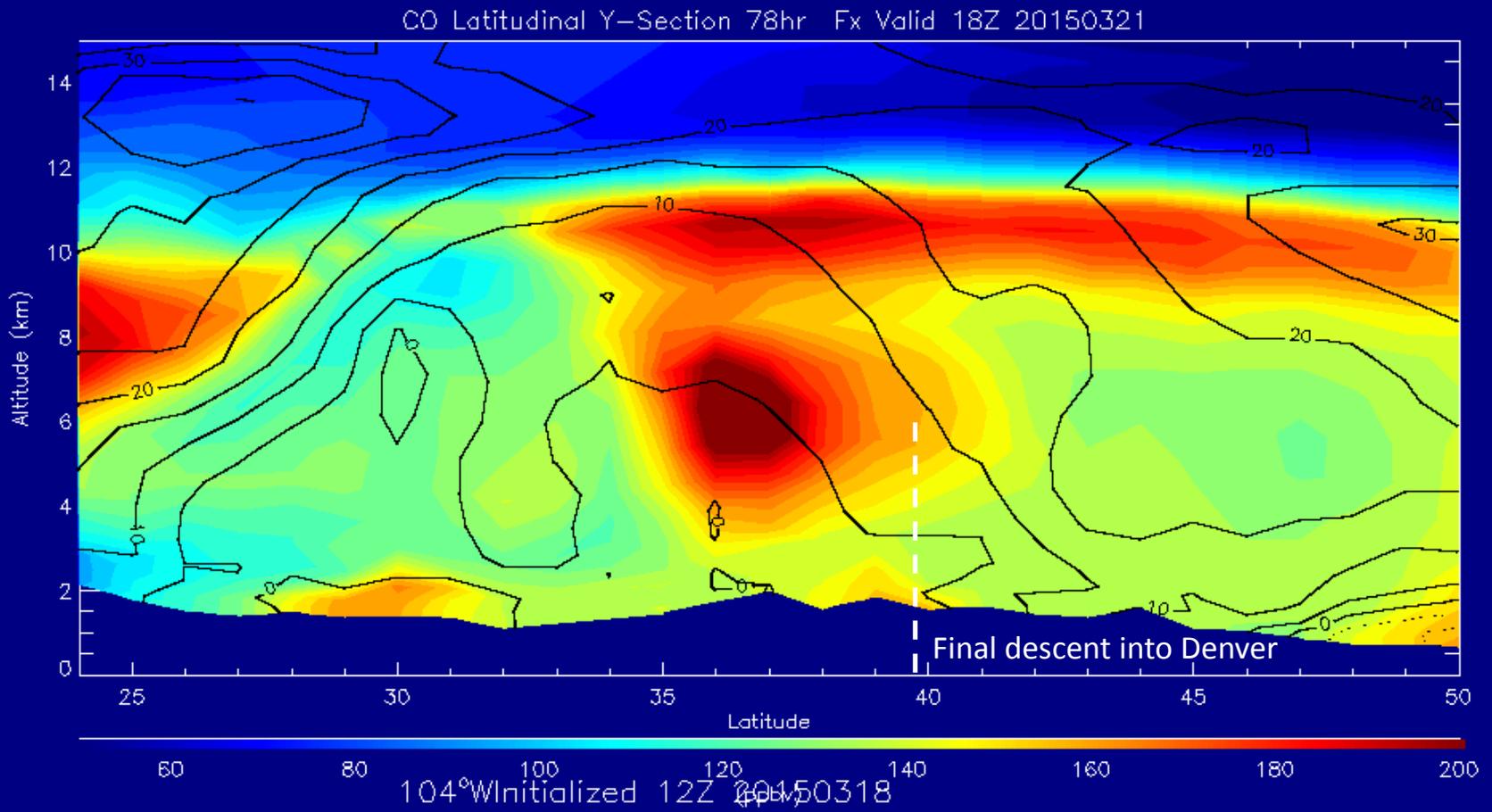
S-NPP overpass – final descent into Denver

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

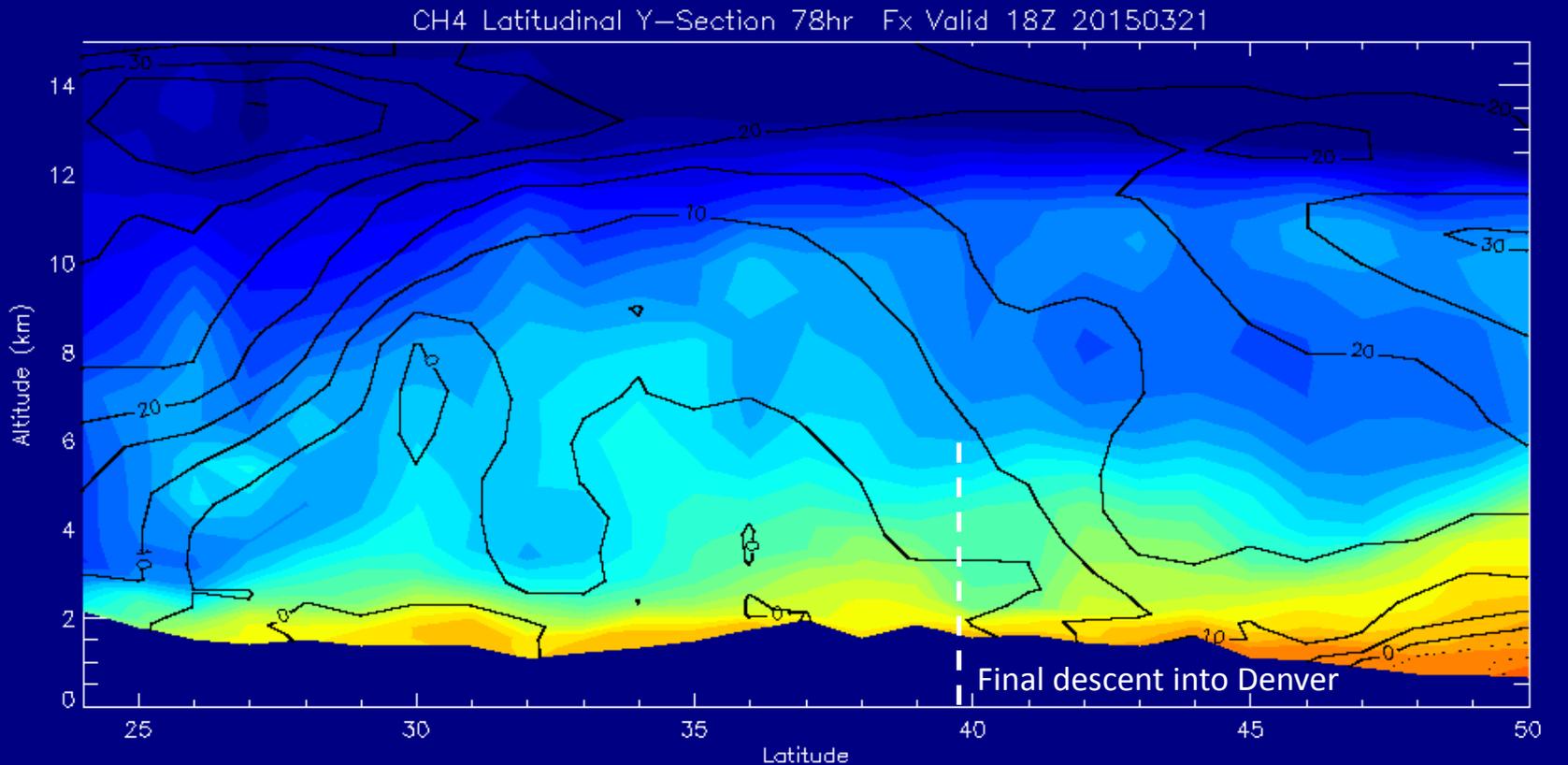
# RAQMS O3 Cross-section at 104W



# RAQMS CO Cross-section at 104W

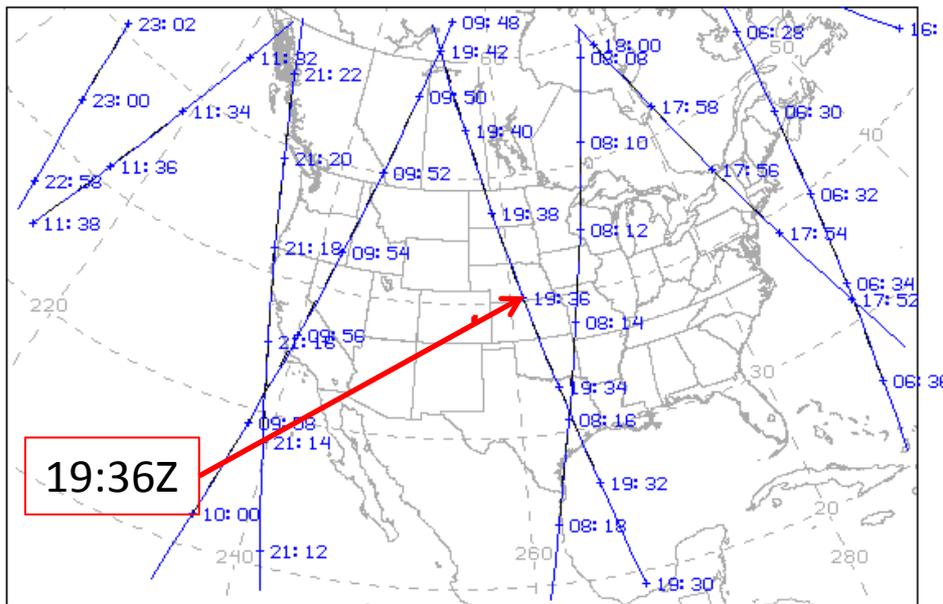


# RAQMS CH4 Cross-section at 104W

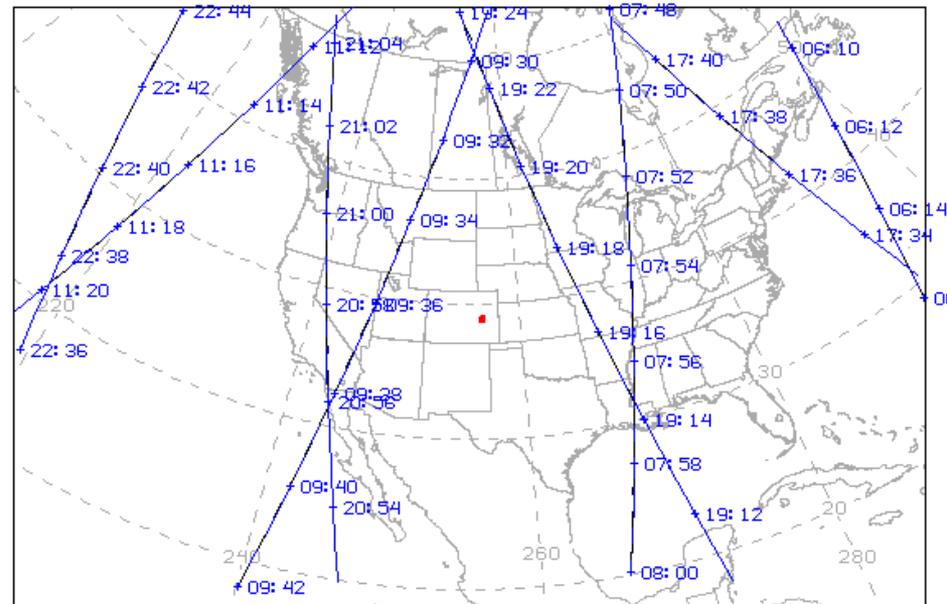


104°W initialized 12Z 20150318

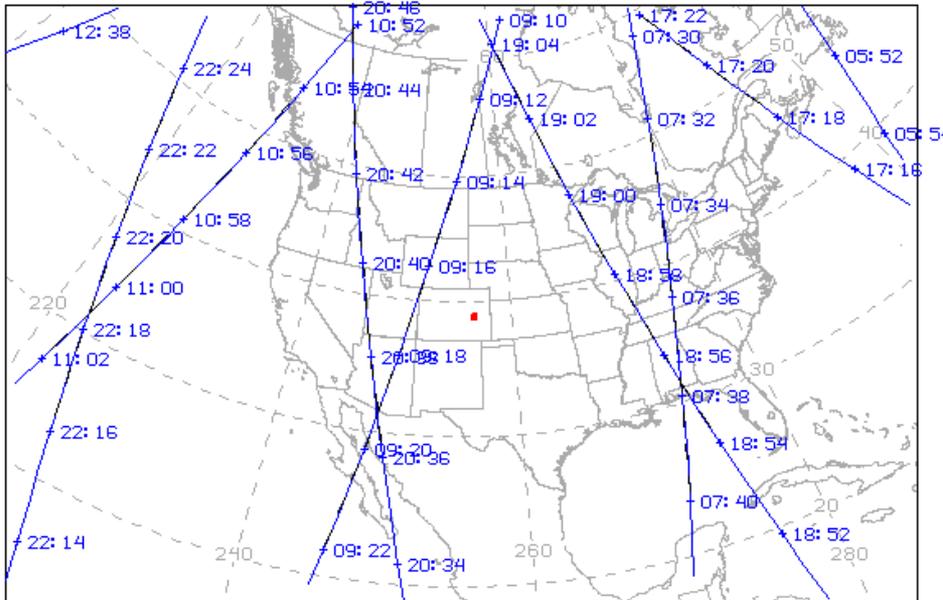
RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias



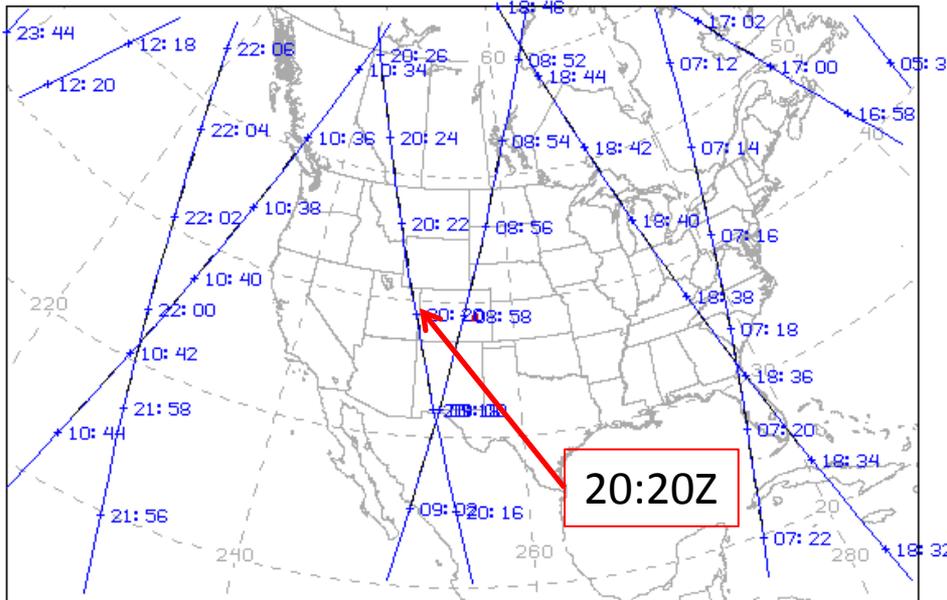
**NPP 2015/03/22 UTC** NPP ORBITAL PREDICT PLOT EPOCH DATE: Mar-20-2015  
 Lat: 39.749 lon: 255.011 res: 24 km



**NPP 2015/03/23 UTC** NPP ORBITAL PREDICT PLOT EPOCH DATE: Mar-20-2015  
 Lat: 39.749 lon: 255.011 res: 24 km



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



**NPP 2015/03/25 UTC** NPP ORBITAL PREDICT PLOT EPOCH DATE: Mar-20-2015  
 Lat: 39.749 lon: 255.011 res: 24 km