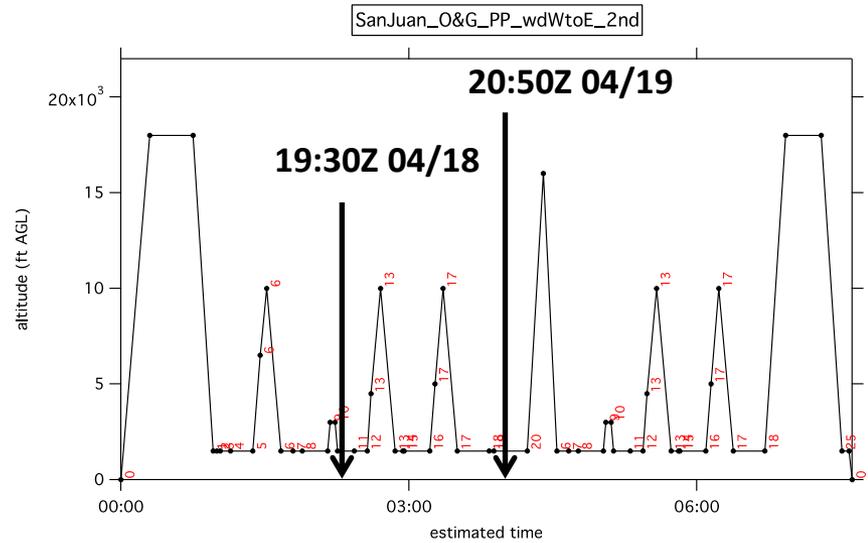
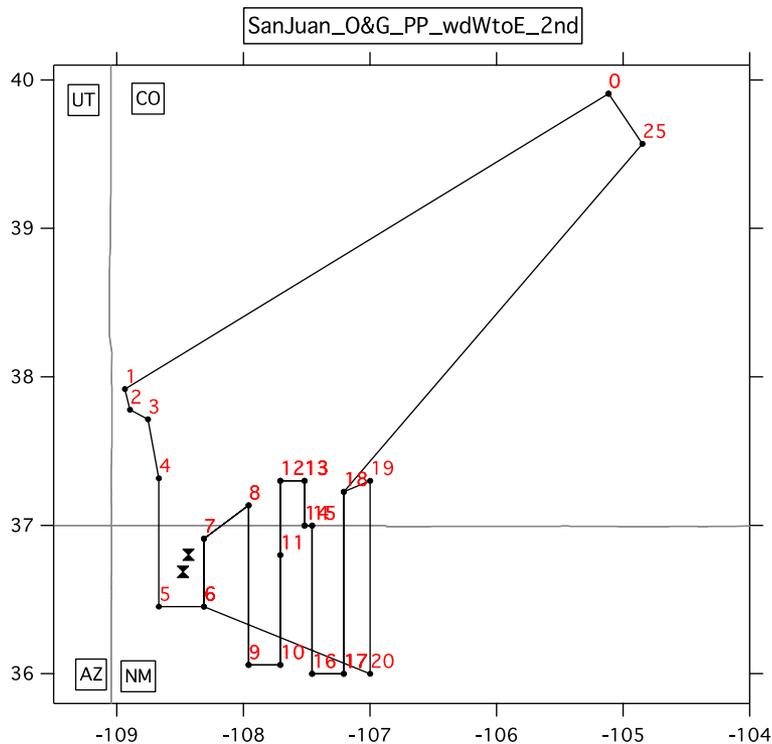


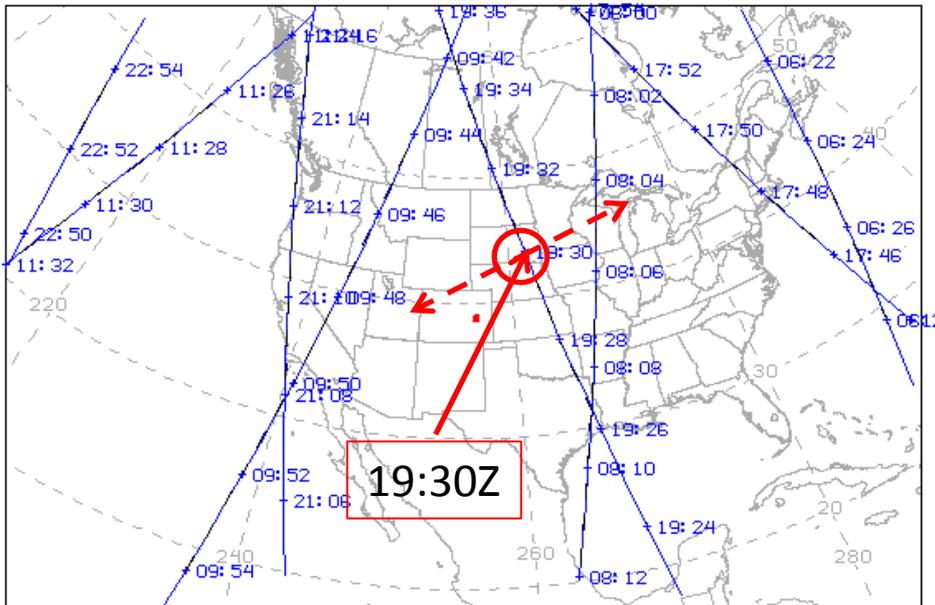
RAQMS 20150417 SONGNEX

54hr FX for 18Z April 18 and 78hr FX for 18Z April 19
(San Juan Basin), 2015

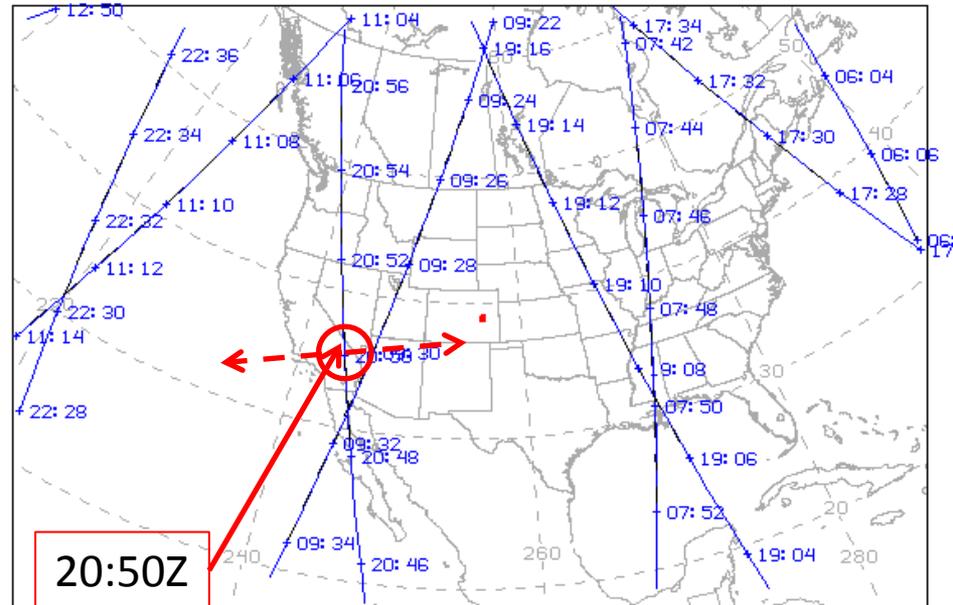


Assuming 11:00am Mountain Take-off

S-NPP (CrIS) overpass on 2015/04/18 and 2015/04/19
 NUCAPS CO₂, O₃, CO, CH₄ Validation Opportunity
Western (18) and Eastern (19) swath edge



NPP 2015/04/18 UTC NPP ORBITAL PREDICT PLOT EPOCH DATE: Apr-16-2015
 ■ lat: 39.749 lon: 255.011 res: 24 km

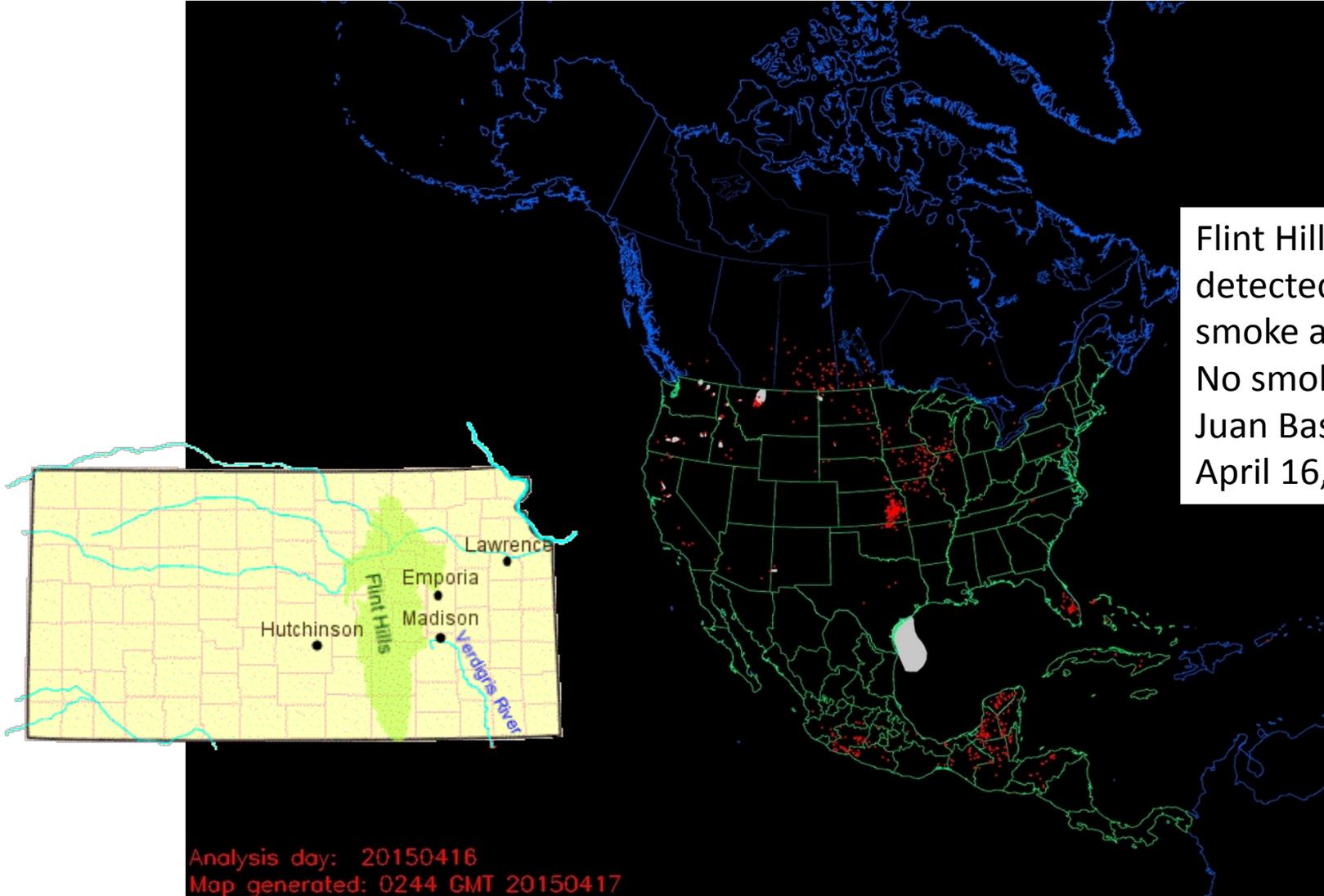


NPP 2015/04/19 UTC NPP ORBITAL PREDICT PLOT EPOCH DATE: Apr-16-2015
 ■ lat: 39.749 lon: 255.011 res: 24 km

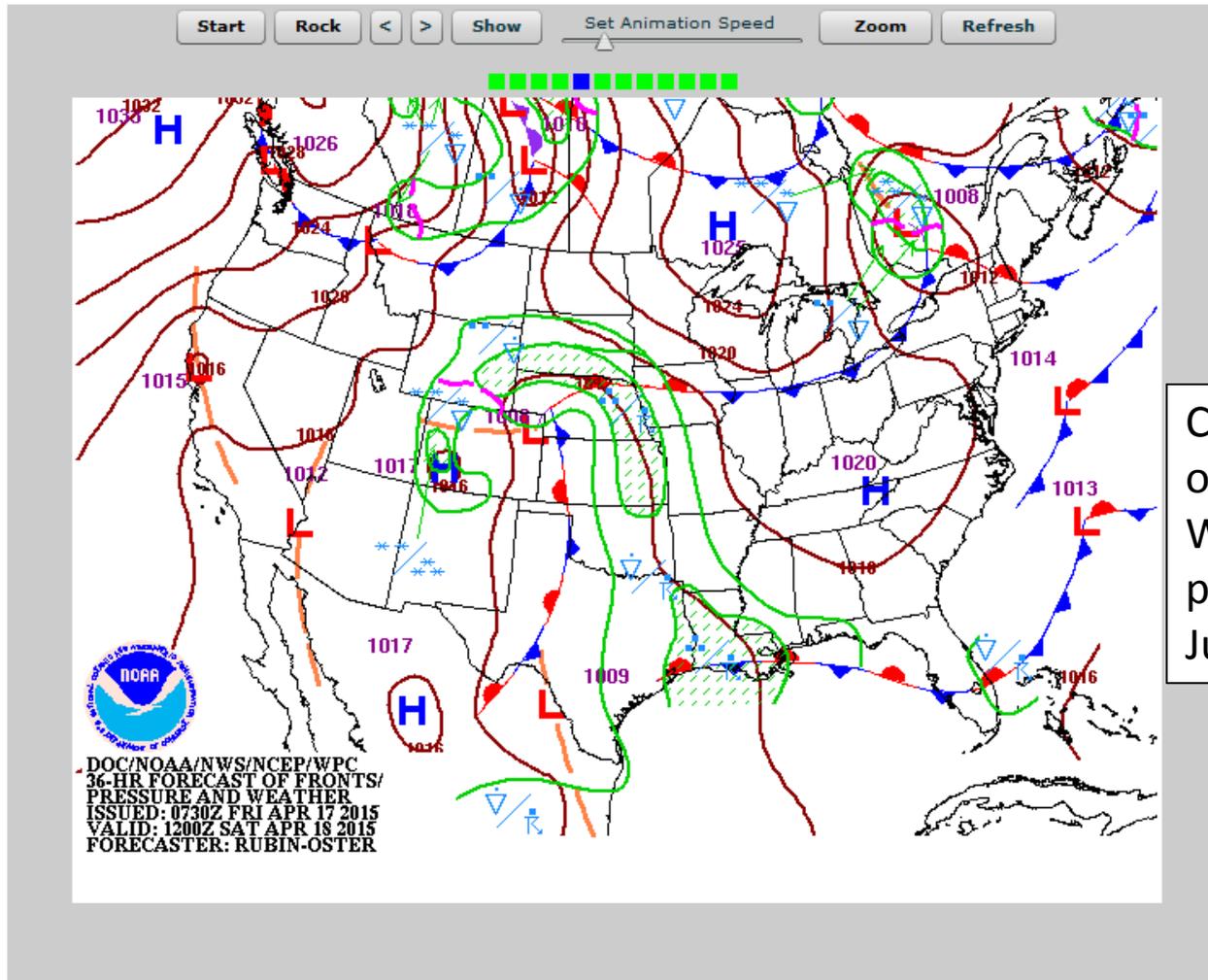
Approximate swath width

NESDIS Hazard Mapping System (HMS)

<http://www.ospo.noaa.gov/data/land/fire/currenthms.jpg>



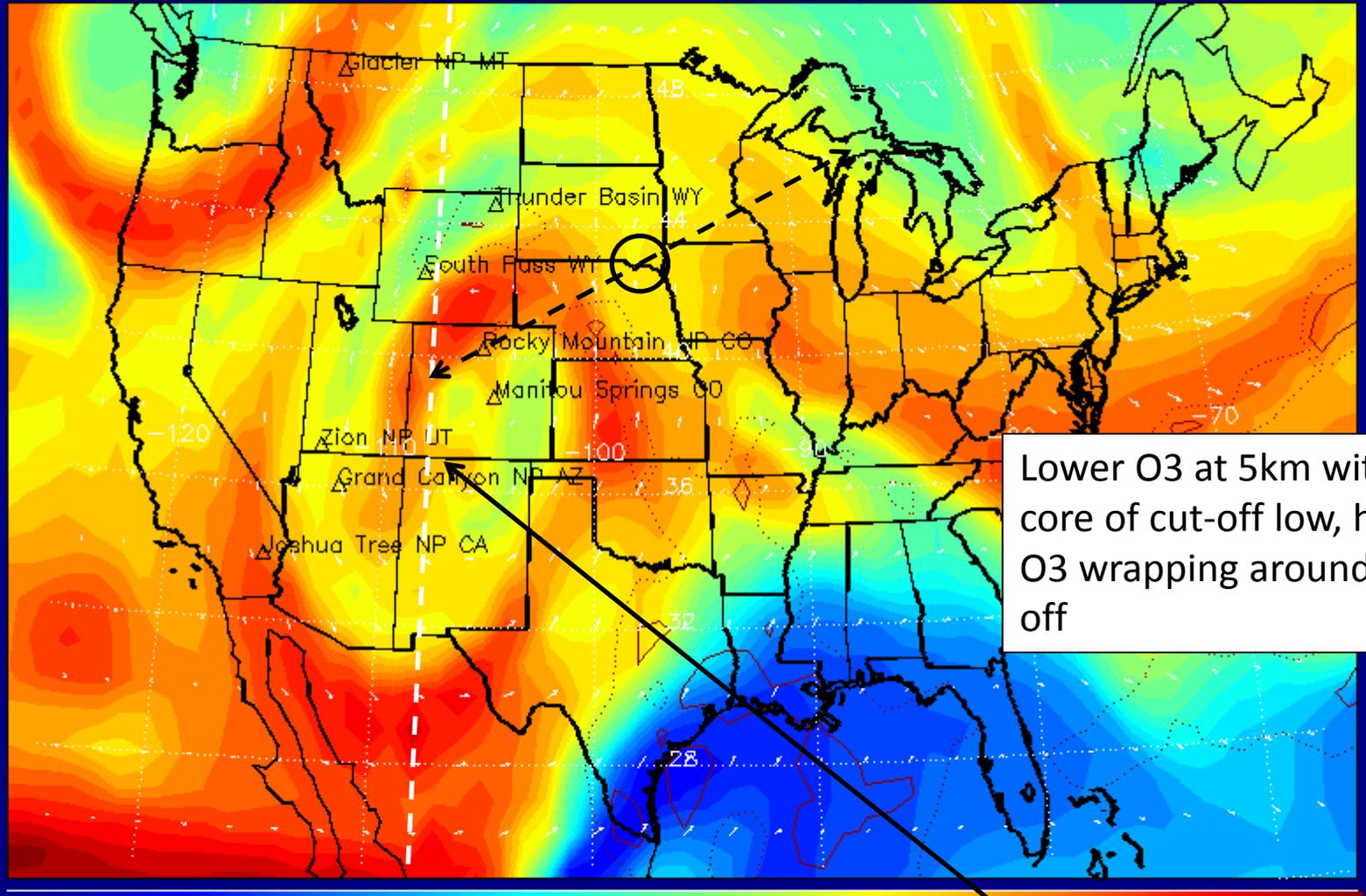
36hr NCEP/WPC forecast valid 12Z 04/18/2015



Cut-off low still over NE CO –
Wrap-around precip over San Juan Basin

05km O₃ 18Z 20150418

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.192871 mm/hr



Lower O₃ at 5km within core of cut-off low, higher O₃ wrapping around cut-off



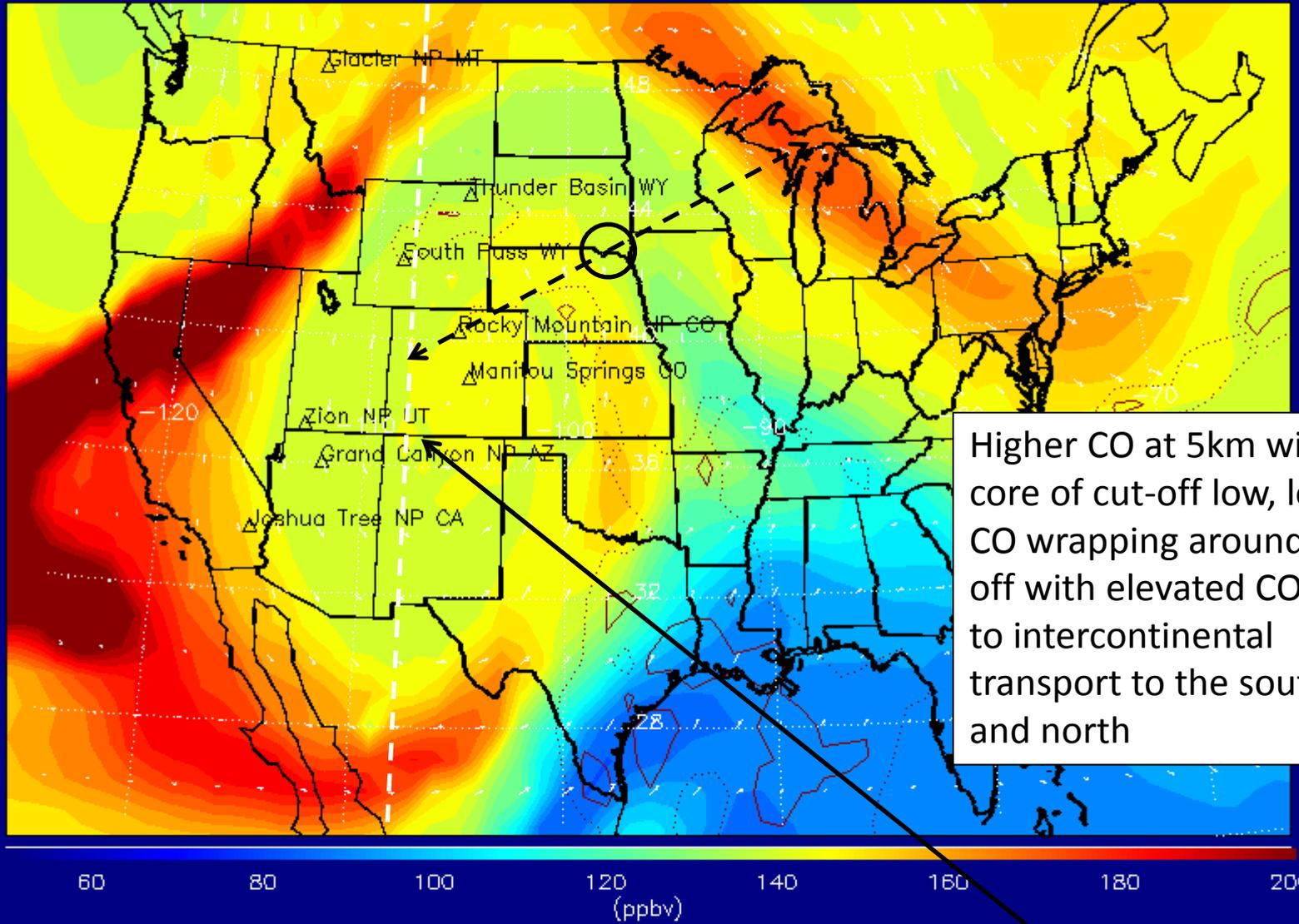
RAQMS₆ 54hr Fx Initialized 12Z 20150416

San Juan Basin on far western edge of swath

Approximate swath width

05km CO 18Z 20150418

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.192871 mm/hr



Higher CO at 5km within core of cut-off low, lower CO wrapping around cut-off with elevated CO due to intercontinental transport to the south and north

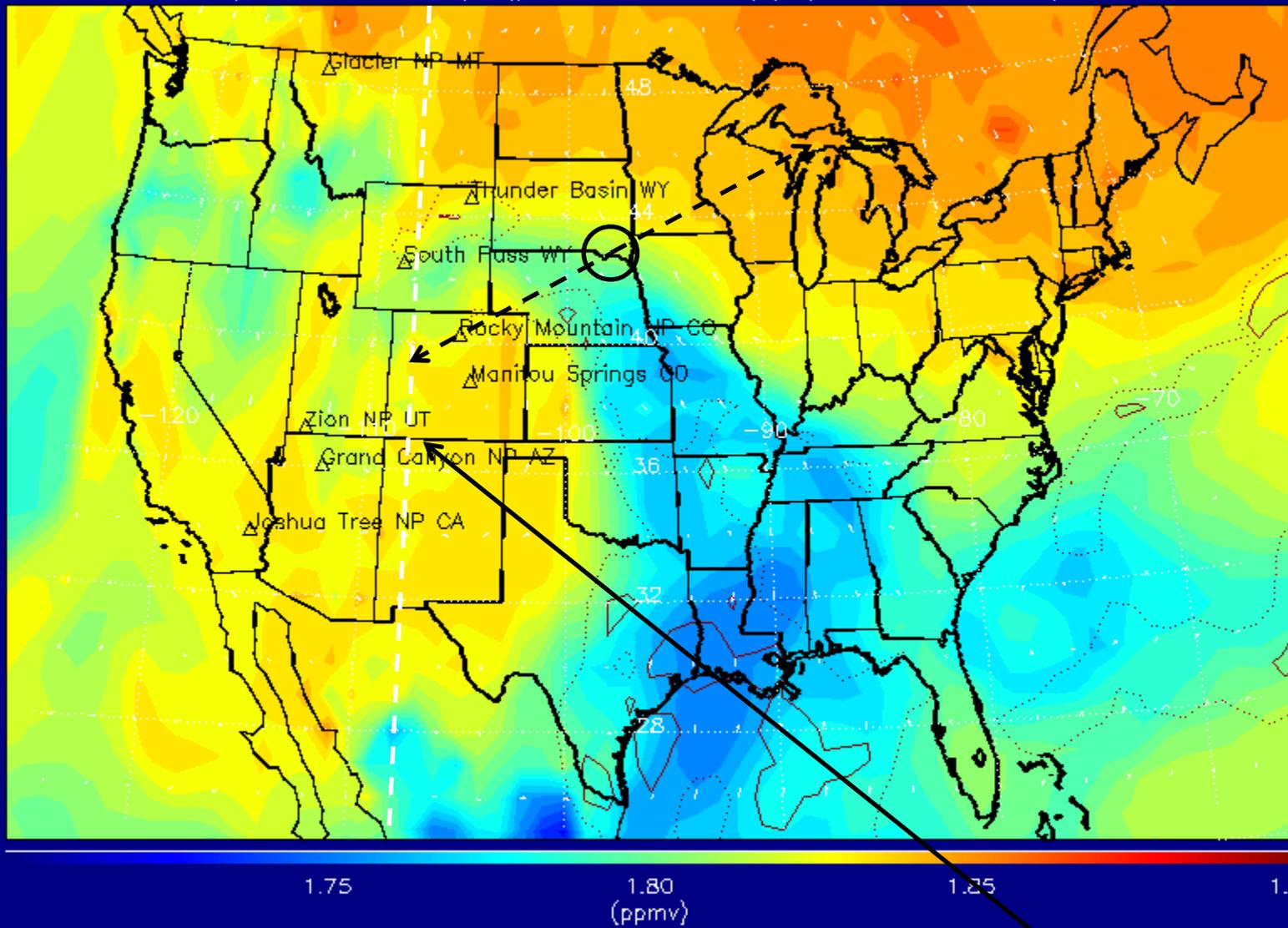
RAQMS₆ 54hr Fx Initialized 12Z 20150416

San Juan Basin on far western edge of swath

Approximate swath width

01km AGL CH4 18Z 20150418

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CFCP=0.192871 mm/hr

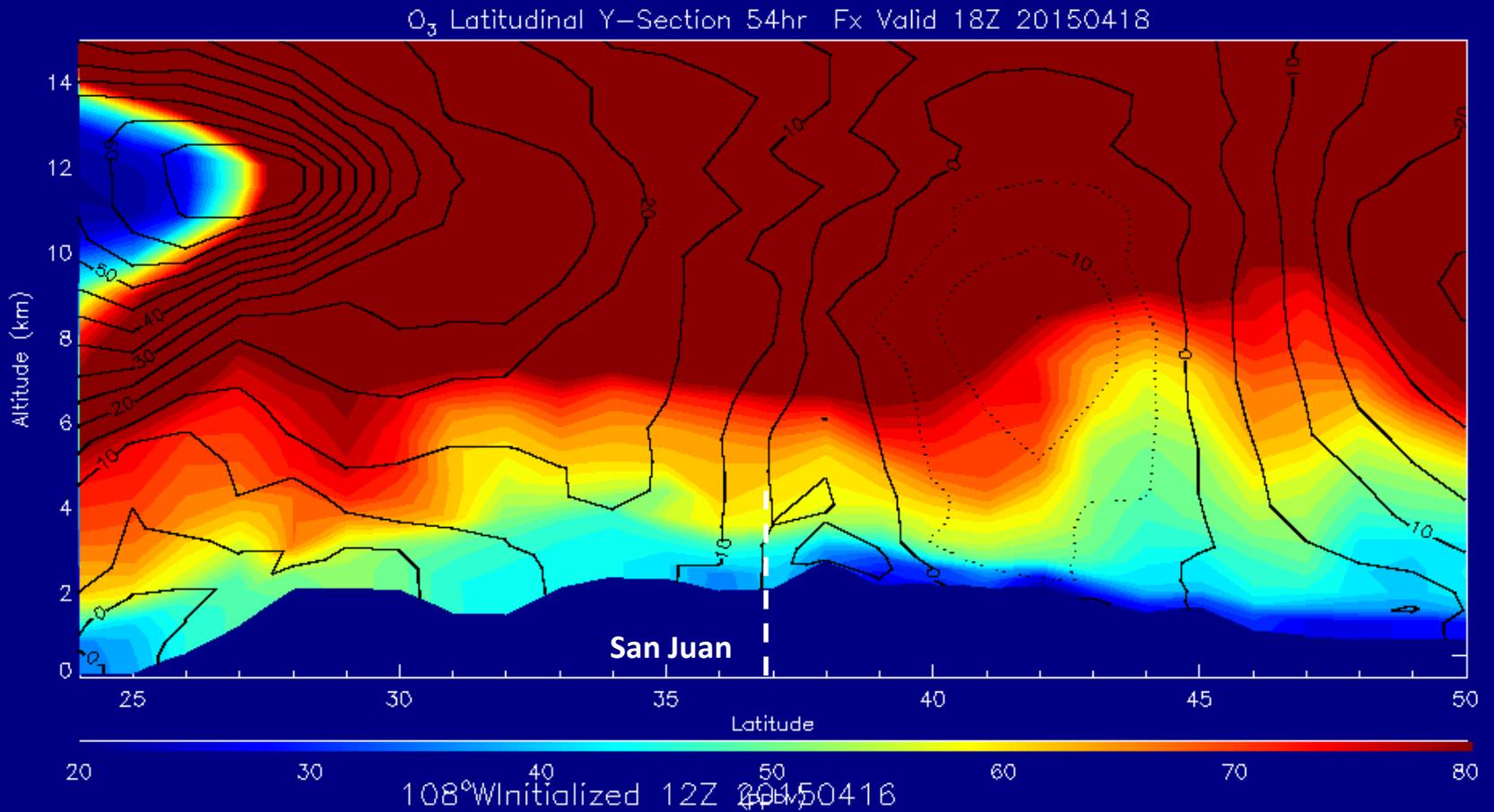


RAQMS₆ 54hr Fx Initialized 12Z 20150416

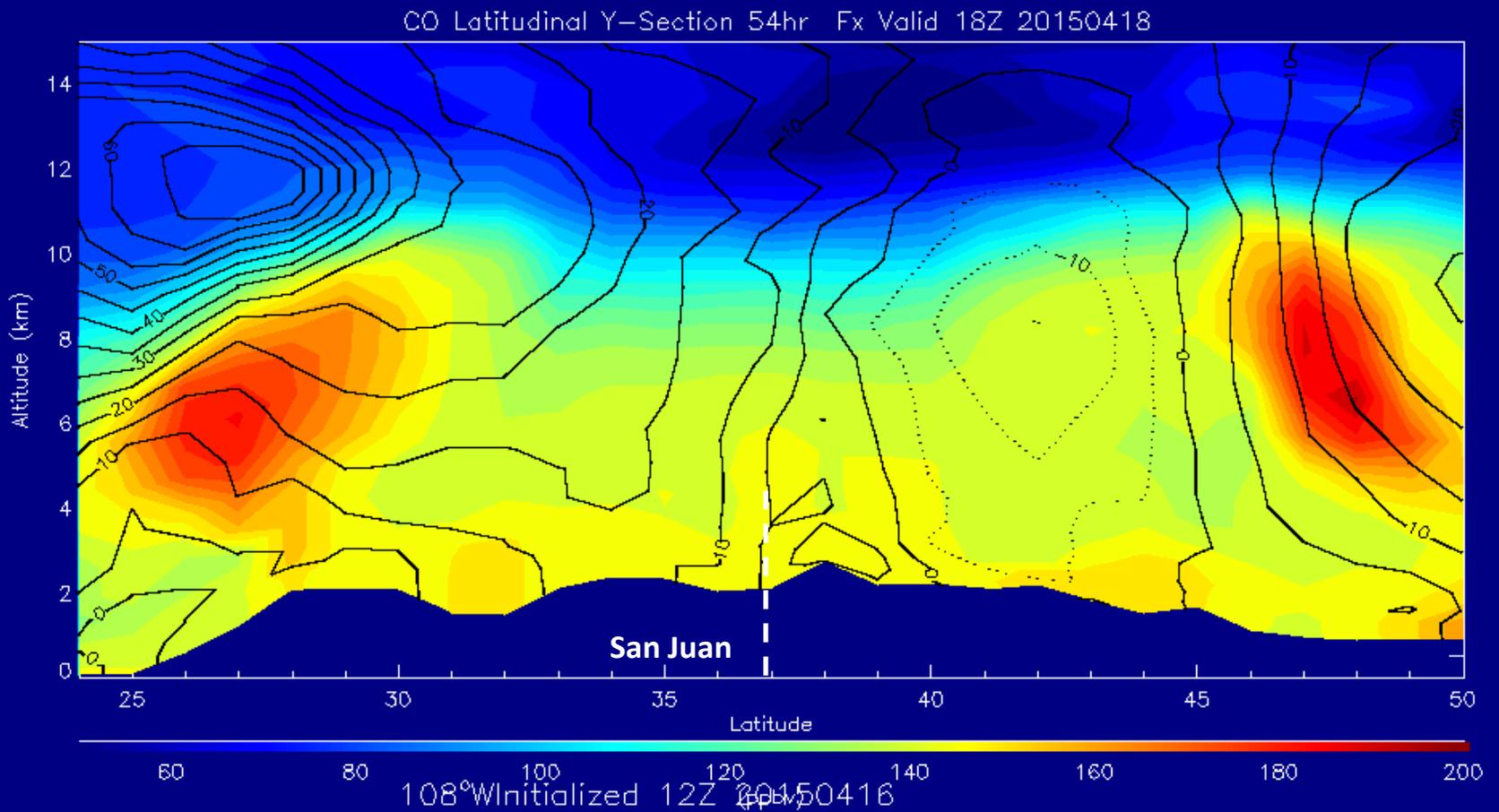
San Juan Basin on far western edge of swath

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

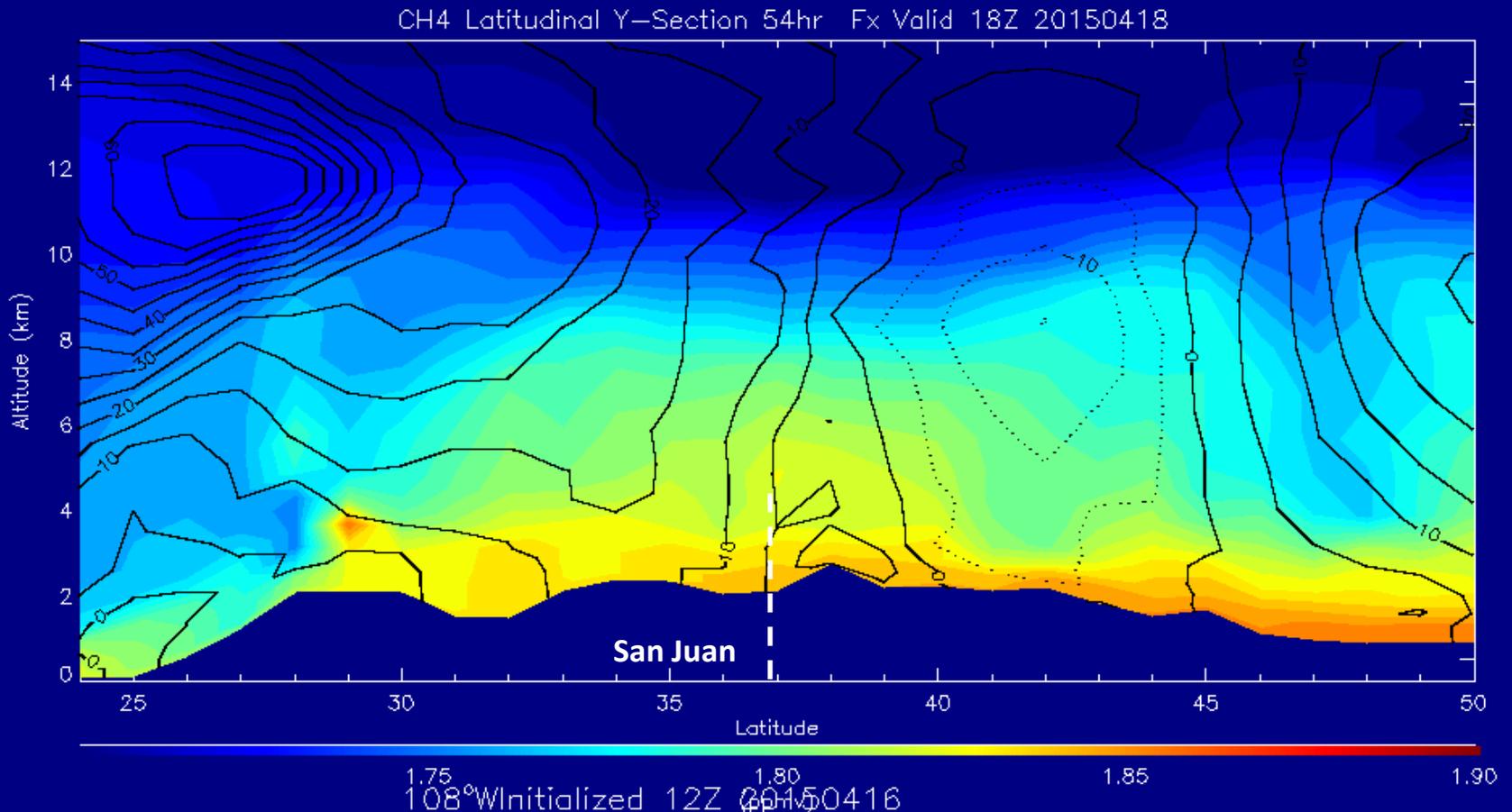
RAQMS 54hr FX O₃ Cross-section at 108W (San Juan Basin)



RAQMS 54hr FX CO Cross-section at 108W (San Juan Basin)

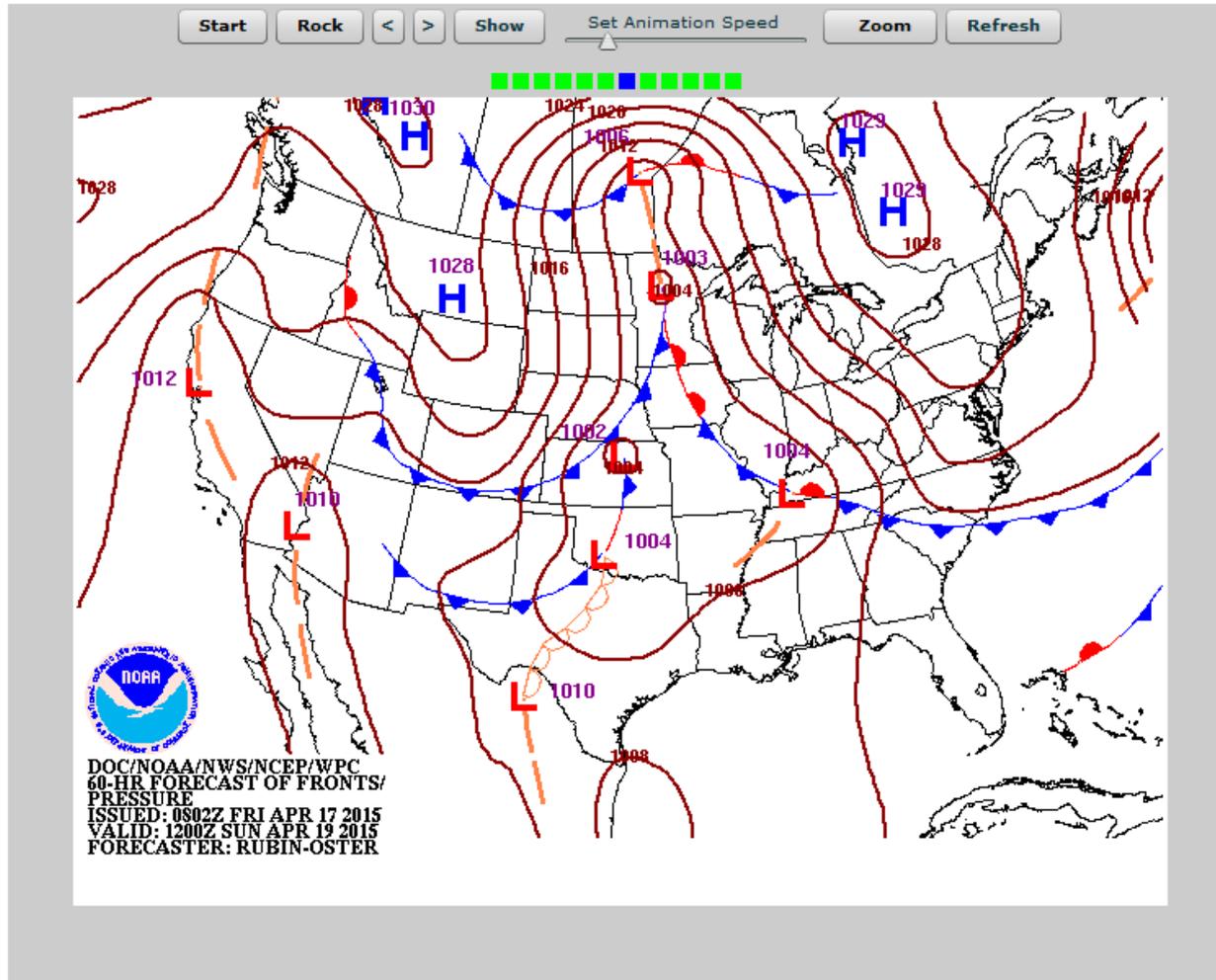


RAQMS 54hr FX CH4 Cross-section at 108W (San Juan Basin)



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

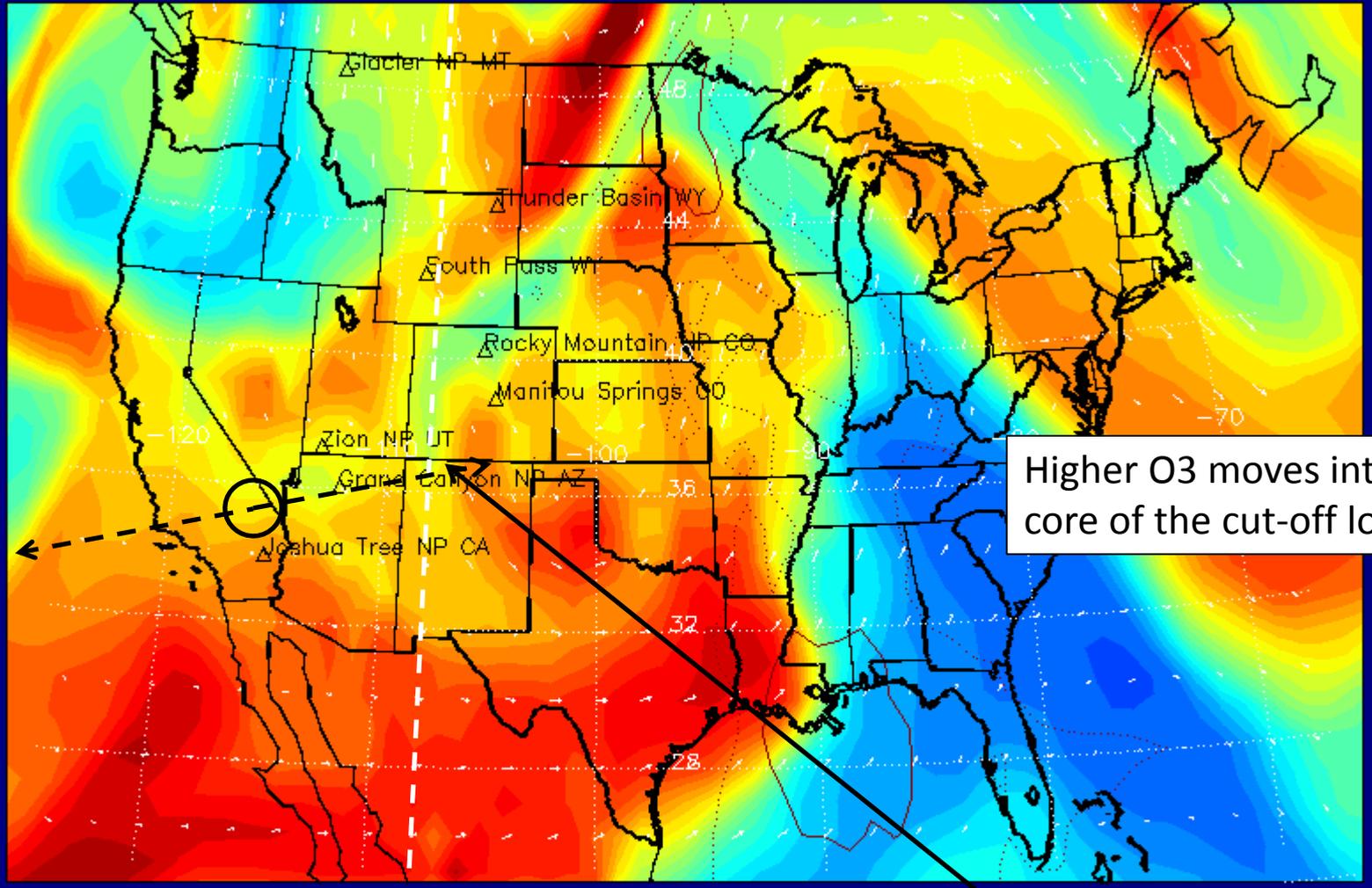
60hr NCEP/WPC forecast valid 12Z 04/19/2015



Cut-off low
moving east
Cold front
north of San
Juan Basin

05km O₃ 18Z 20150419

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.238586 mm/hr



Higher O₃ moves into the core of the cut-off low



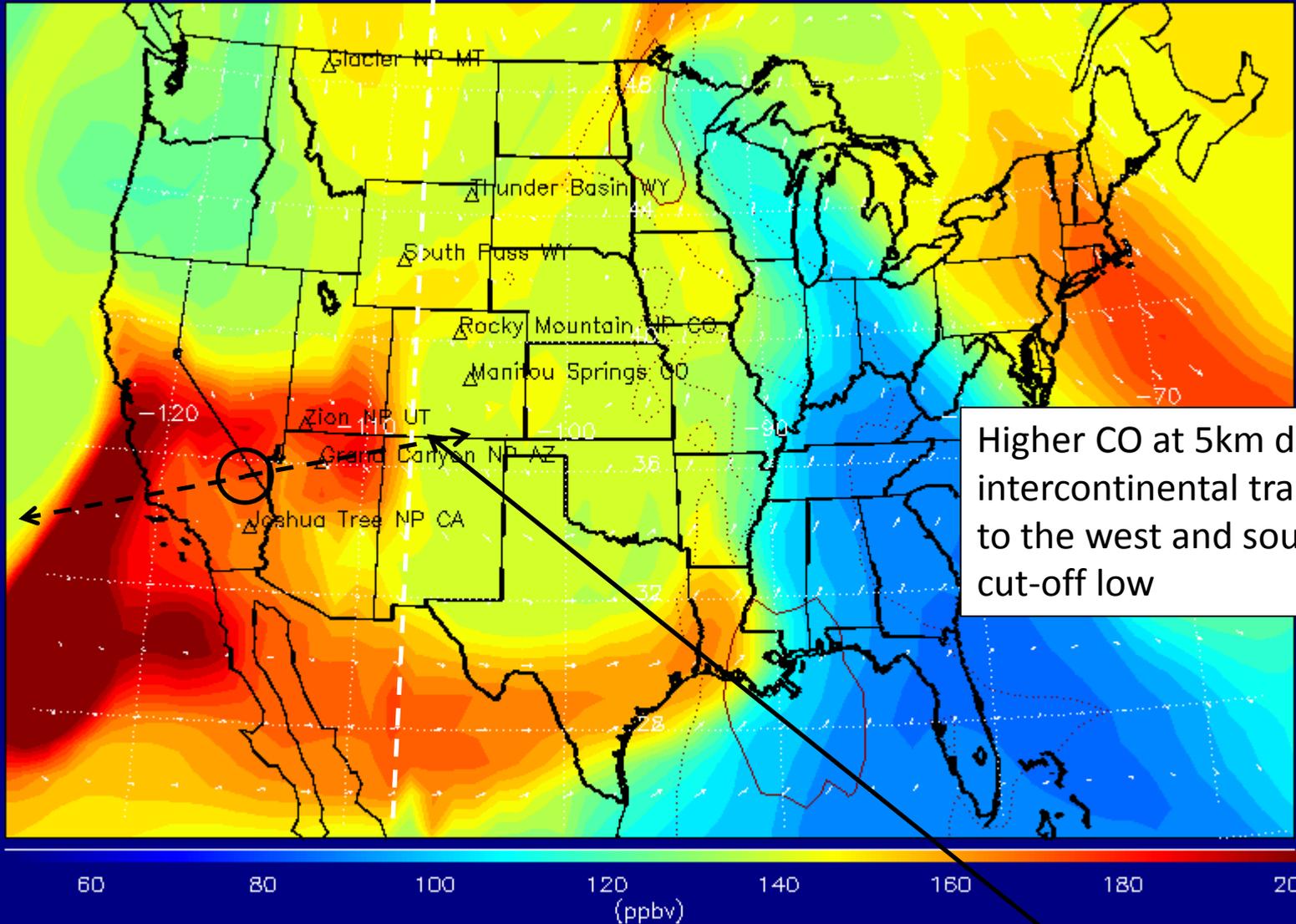
RAQMS₆ 78hr Fx Initialized 12Z 20150416

San Juan Basin on eastern edge of swath

Approximate swath width

05km CO 18Z 20150419

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.238586 mm/hr



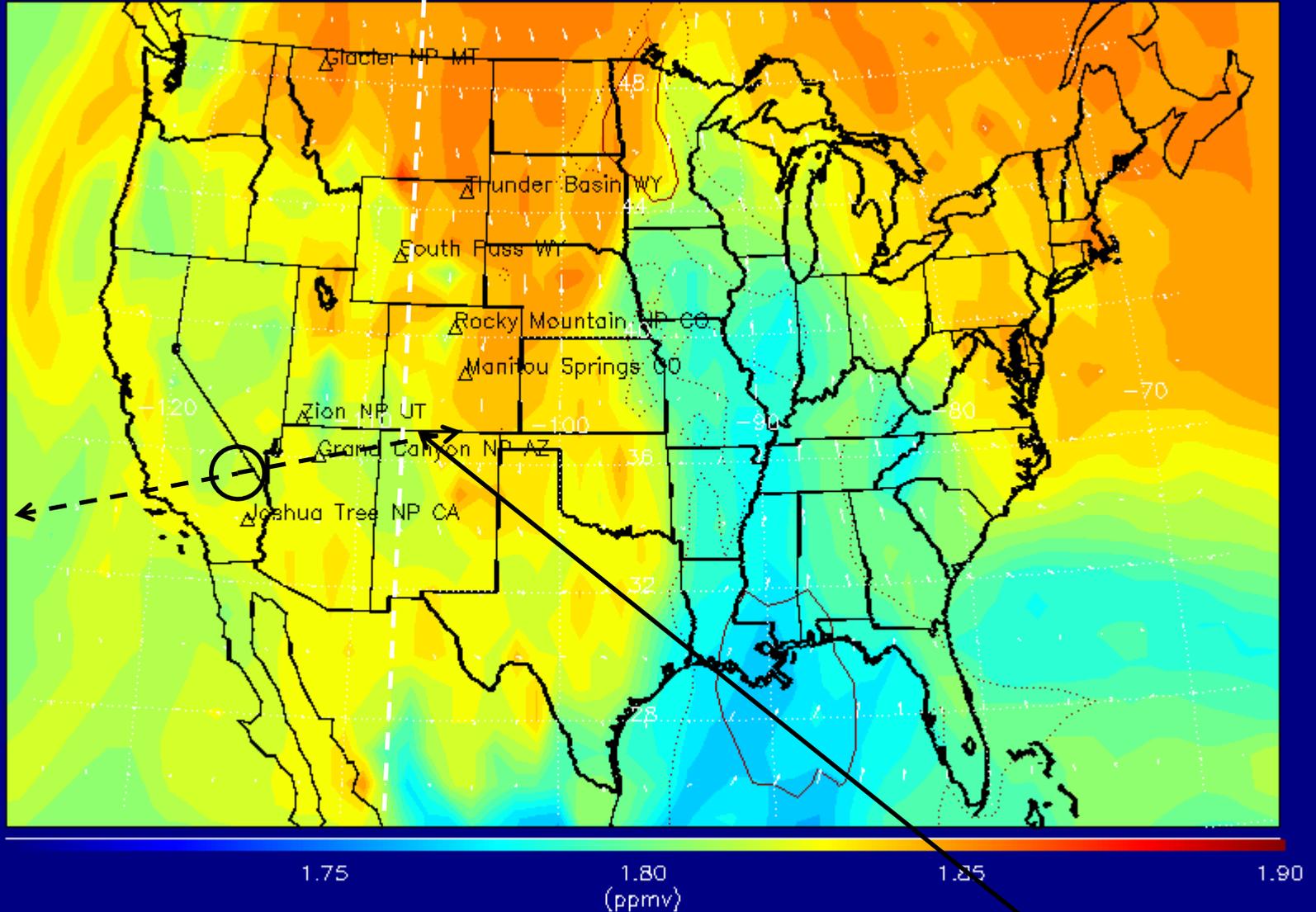
Higher CO at 5km due to intercontinental transport to the west and south of cut-off low

San Juan Basin on eastern edge of swath

Approximate swath width

01km AGL CH4 18Z 20150419

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.238586 mm/hr

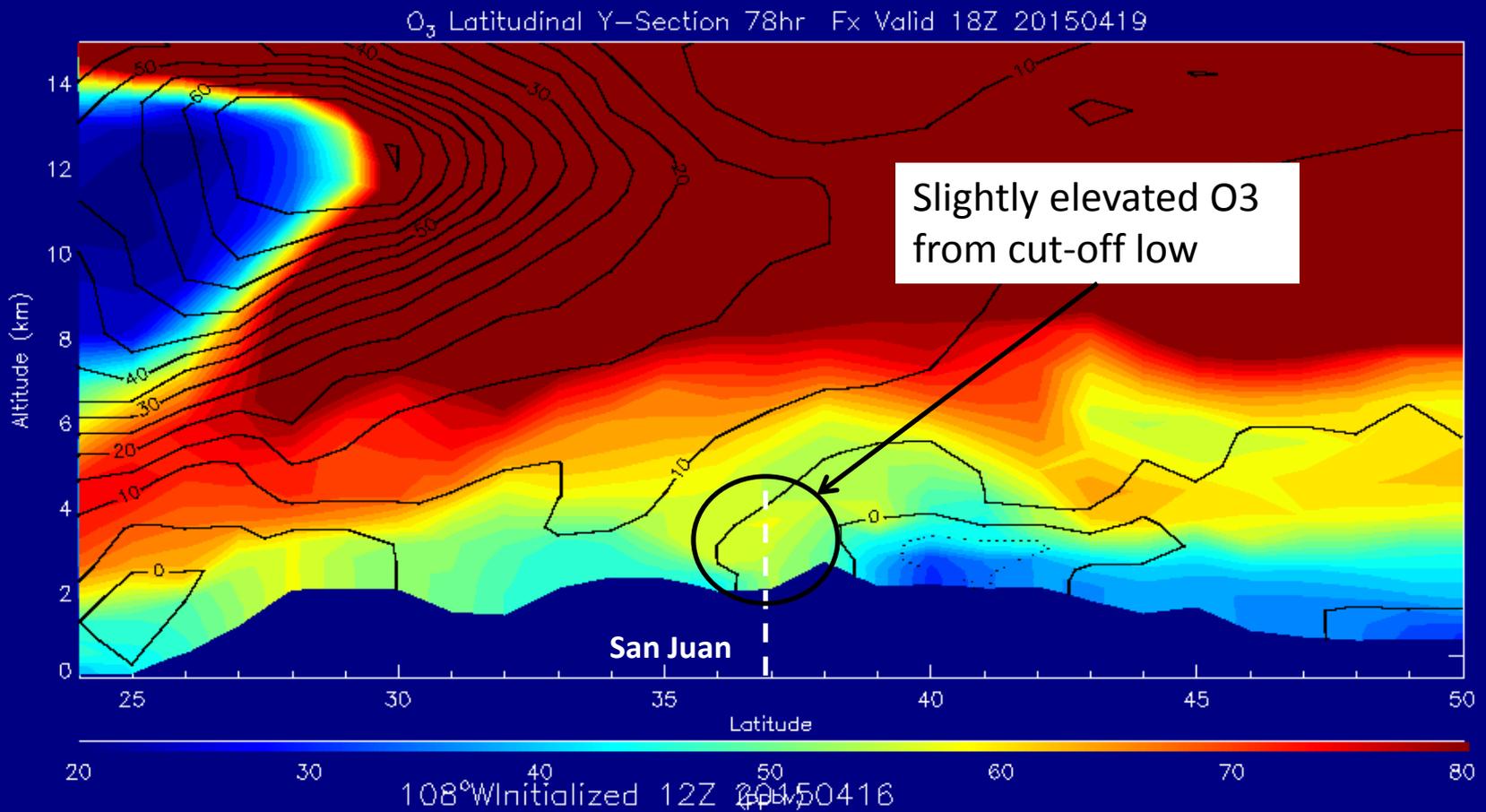


RAQMS₆ 78hr Fx Initialized 12Z 20150416

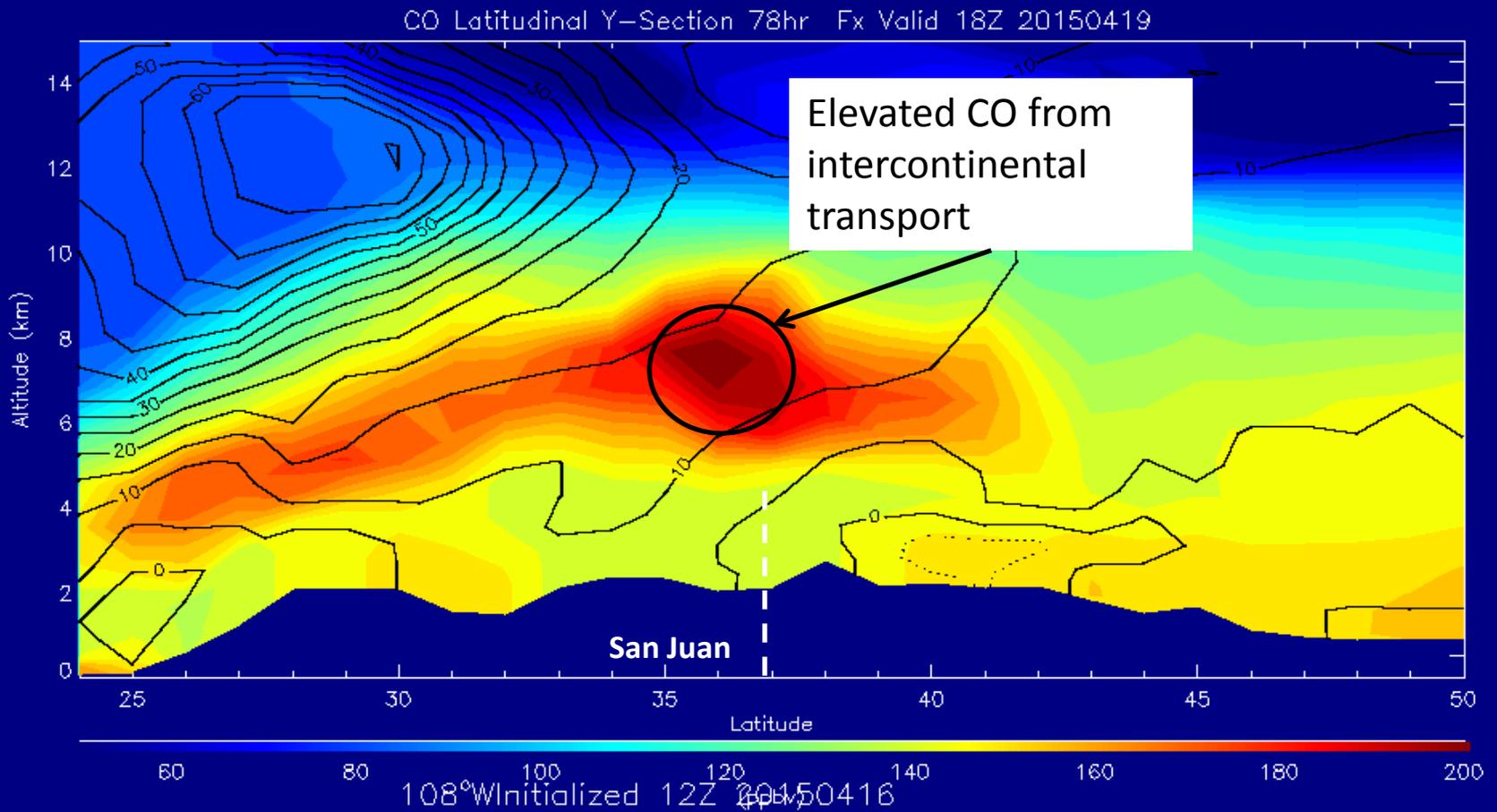
San Juan Basin on eastern edge of swath

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

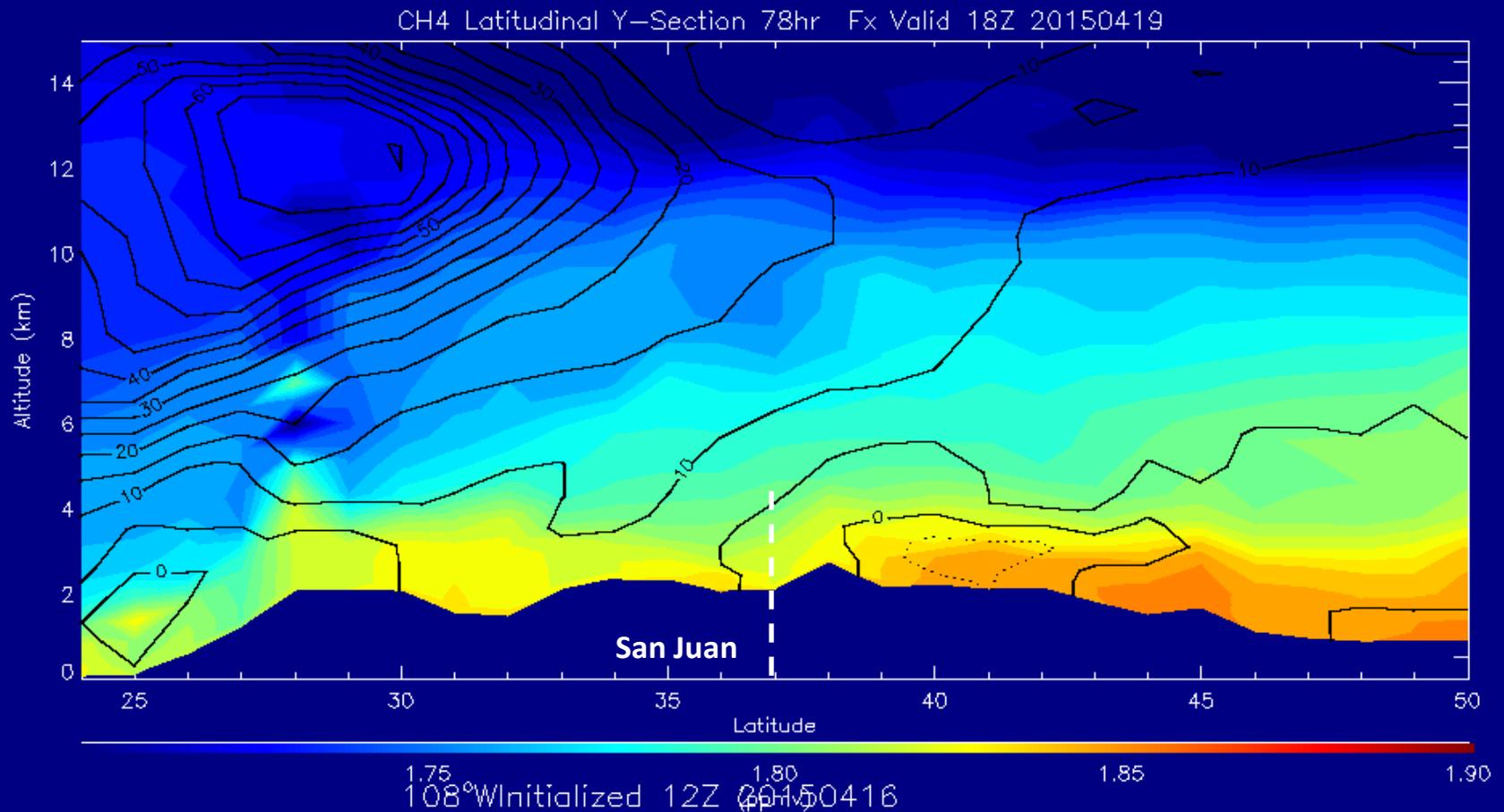
RAQMS 78hr FX O3 Cross-section at 108W (San Juan Basin)



RAQMS 78hr FX CO Cross-section at 108W (San Juan Basin)



RAQMS 78hr FX CH4 Cross-section at 108W (San Juan Basin)



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