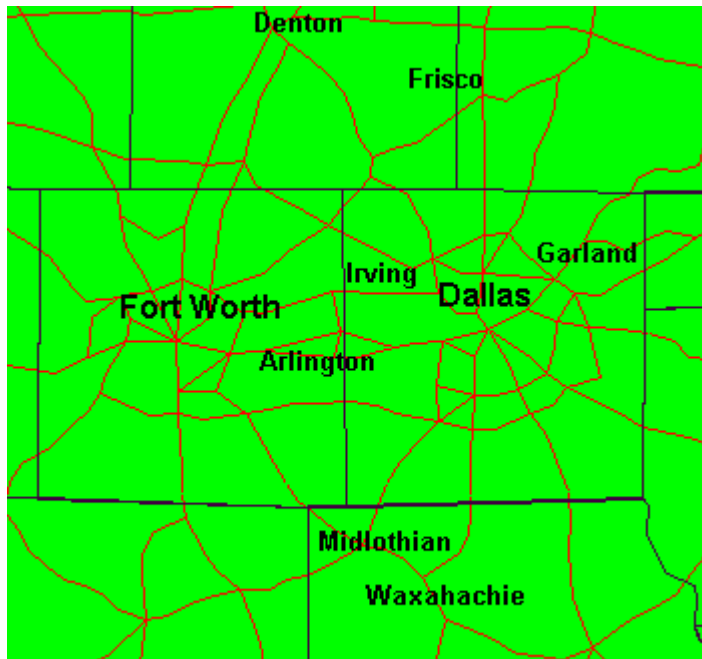
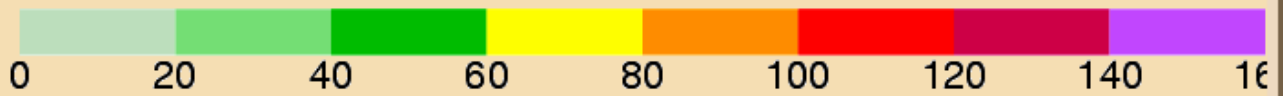
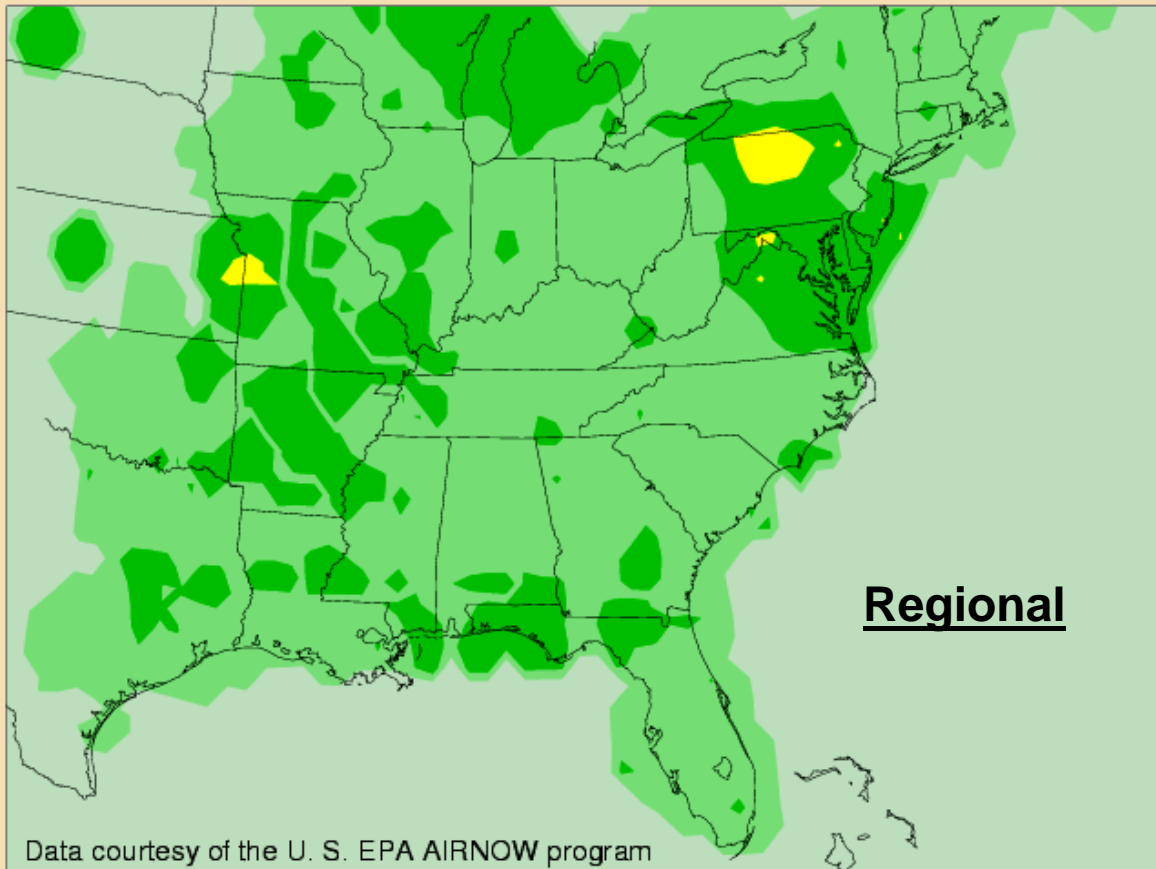



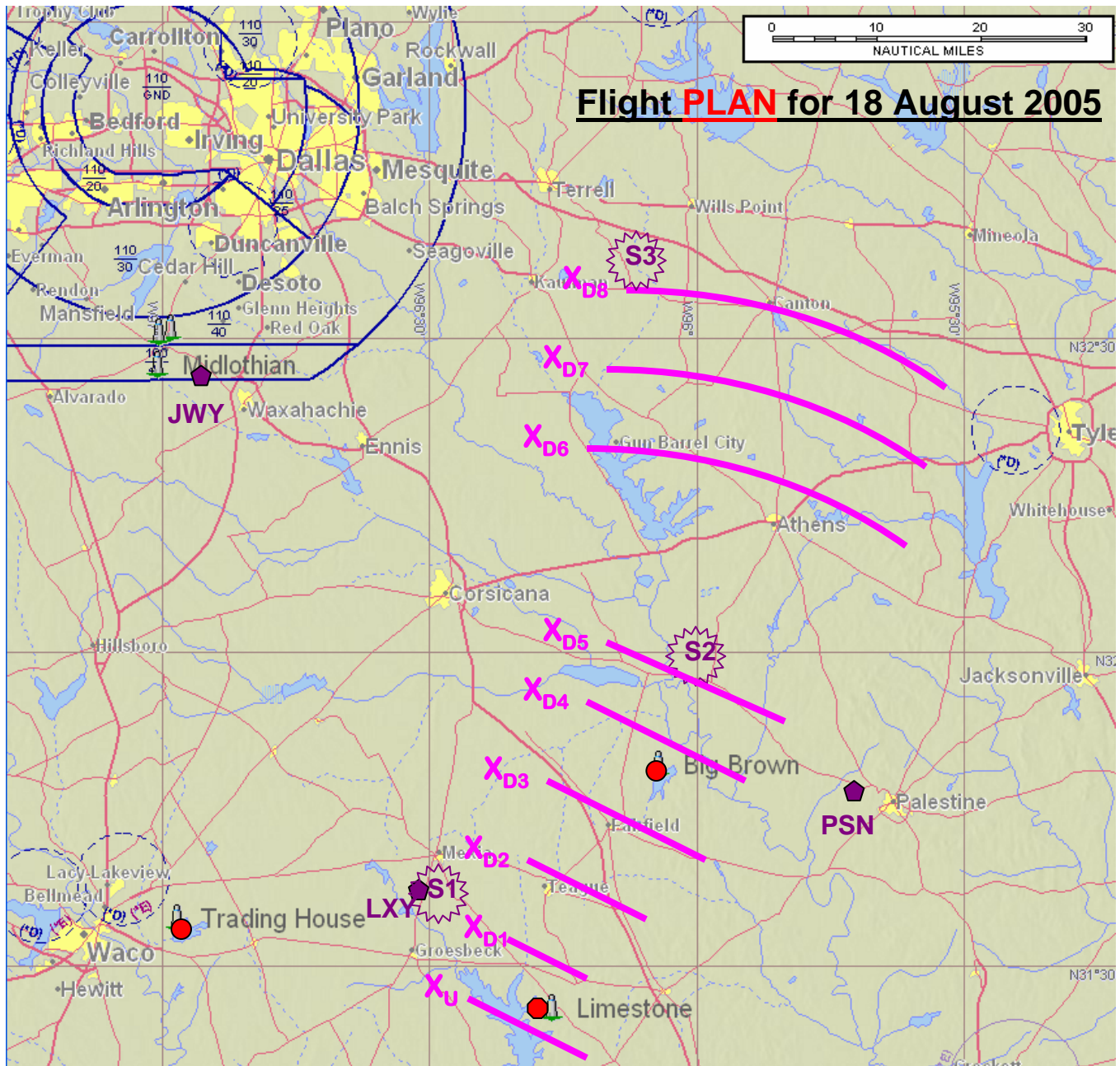
Peak 1-Hour-Average Ozone Concentrations (ppb) Aug 18 2005



Local

 < 60 ppb

August 18, 2005

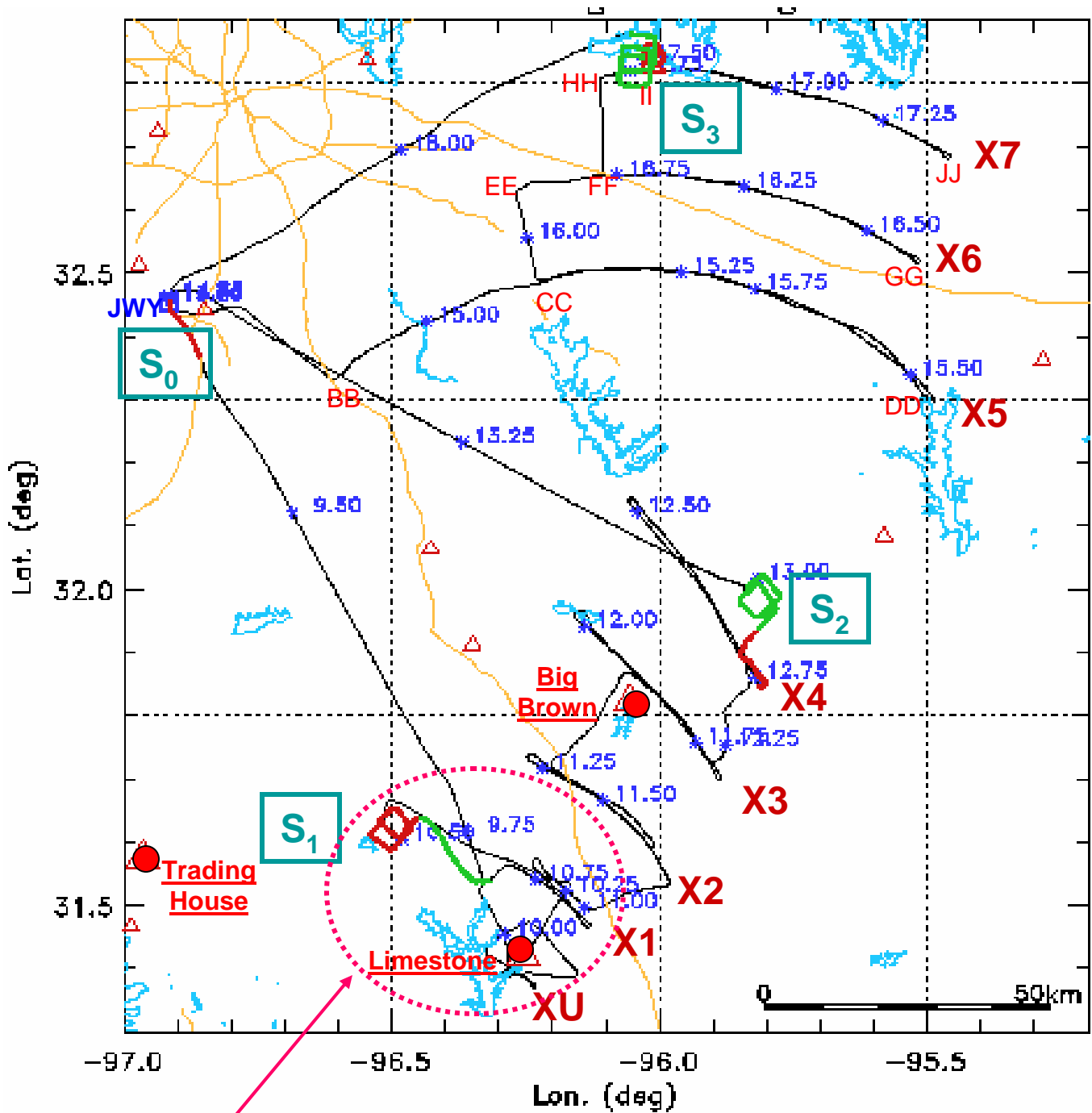


Target Plumes: Limestone (1000 release) and Big Brown (~1130 release)

Assumed WS ~ 16 knots 0900 – 1100, 12 knots thereafter; all heights are above MSL

0915	Take-off		
0915-0950	Ferry to XU (upwind of Limestone)	1200-1230	XD5 , 3T (1500/2500/3500)
0950-1005	Sampling at XU: HC1 2T (~ 10nm long @ 1500', 2500')	1230-1255	S2(Zi+) HC4
1005-1010	Dive ferry to XD1	1255-1320	Ferry to JWY, land
1010-1015	Sampling at XD1 (<5nm downwind of L) 1T(plume height)	1320-1400	Refuel, then take off at 1400
1020-1045	Spiral S1 at LXY (Mexia Airport) HC2	1400-1425	Ferry to XD6 (~3h downwind of BB)
1045-1100	Sampling at XD2 (1/2h, 8nm of XD1) 3T(1500', 2500', 3500')	1425-1500	XD6 , 2T (1500/2500) HC5
1105-1125	Sampling at XD3 (1/2h, 8nm of XD2) 3T(1500', 2500', 3500')	1505-1540	XD7 , 2T (1500/2500)
1130-1155	Sampling at XD4 (<5nm dnwnd of BB) HC3 3T(1500', 2500', 3500') – both plumes	1545-1615	XD8 , 2T (1500/2500)
		1615-1645	S3(Zi+) HC6
		1645-1710	Ferry to JWY and land
			Total Flight time ~ 7h 15 min

NETPS – TVA Twin Otter Flight Track, 18 August 2005



Detail of flight track inside this ellipse is shown in the next slide

Color coding for Spirals

— Ascent

— Descent

Reconstructed Flight of TVA Twin Otter for 18 August 2005

0919 Take-off from JWY
0919 – 0956 Ferry to XU*
0956 – 0959 **Traverse at XU***
0959 – 1010 Circle around Limestone for visual plume observation*
1010 – 1015 **"Dive" ferry thru Limestone** for vertical plume characterization *
1015 – 1026 Ferry to LXY for spiral S1*
1026 – 1041 **S1** : Ascent (red) --- 1026 – 1036:30, Descent (green) --- 1036:30 – 1041*
* See detail in next slide

1043 – 1100 **Sampling at X1 (Limestone and upwind plume = Sandow?)**
1043 – 1049 Traverse 1 (NW → SE) --- 1043-47 Upwind plume (Sandow?); 1047-49 Limestone
1052 – 1055 Traverse 2 (SE → NW)
1057 – 1100 Traverse 3 (NW → SE)
1100 – 1107 Ferry to X2

1107 – 1134 **Sampling at X2 (Limestone and upwind plume = Sandow?)**
1107 – 1116 Traverse 1 (SE → NW)
1117 – 1126 Traverse 2 (NW → SE)
1127 – 1134 Traverse 3 (SE → NW)
1134 – 1139 Ferry to X3

1139 – 1214 **Sampling at X3 (Limestone and upwind plume = Sandow?)**
1139 – 1148 Traverse 1 (NW → SE)
1150 – 1200 Traverse 2 (SE → NW)
1202 – 1214 Traverse 3 (NW → SE)
1214 – 1218 Ferry to X4

1218 - 1245 **Sampling at X4 (Limestone and upwind plume = Sandow?)**
1218 – 1231 Traverse 1 (SE → NW)
1232 – 1245 Traverse 2 (NW → SE)
1245 – 1301 **S2** : Ascent (red) --- 1245 – 1250:30; Descent (green) --- 1250:30 – 1301
1301 – 1329 Ferry to JWY and land

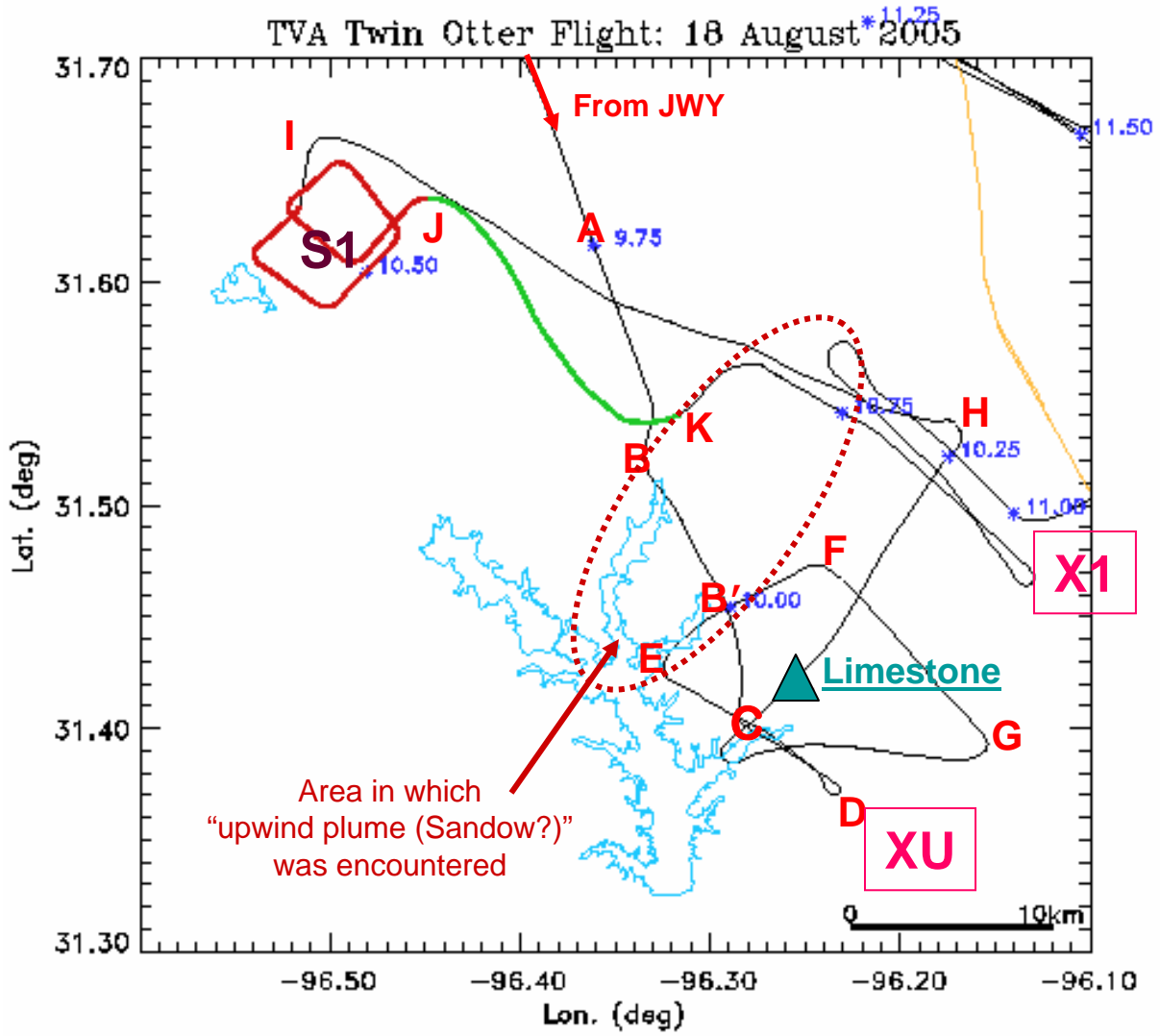
1329 – 1445 Refuel at JWY
1445-1454-1506 (JWY – BB – CC) Ferry to X5

1445 – 1602 **Sampling at X5 (Limestone, upwind plume & Big Brown plumes)**
1506:30-1532 Traverse 1 (CC – DD)
1534 – 1558 Traverse 2 (DD – CC)
1558 – 1602 Ferry to X6 (CC – EE – FF)

1603 – 11645:30 **Sampling at X6 (Limestone, upwind plume & Big Brown plumes)**
1603 – 1626 Traverse 1 (FF – GG)
1627 – 1645:30 Traverse 2 (GG – FF)
1645:30 – 1651 Ferry to X7 (FF – HH - II)

1651 – 1728 **Sampling at X7 (all plumes)**
1651 – 1710 Traverse 1 (II – JJ)
1712 – 1728 Traverse 2 (JJ – II)
1728 – 1749 **Spiral S3** (UP [red] 1728 – 1736); down [green] 1736 – 1749)

1749 – 1812 Ferry to JWY and land



Detail of Flight Sections In the Vicinity of Limestone Plant

Ferry from JWY - A - B - B' - C - D
 0919 - 0945 - 0949 - 0952 - 0954 - 0956

Traverse at XU: D - E (0956 - 0959)

Circle around Limestone: E - F - G - C
 0959 - 1001 - 1006 - 1010

"Dive" ferry from XU to X1: C - H
 through Limestone plume 1010 - 1015

Ferry to spiral S1: H - I (1015 - 1026)

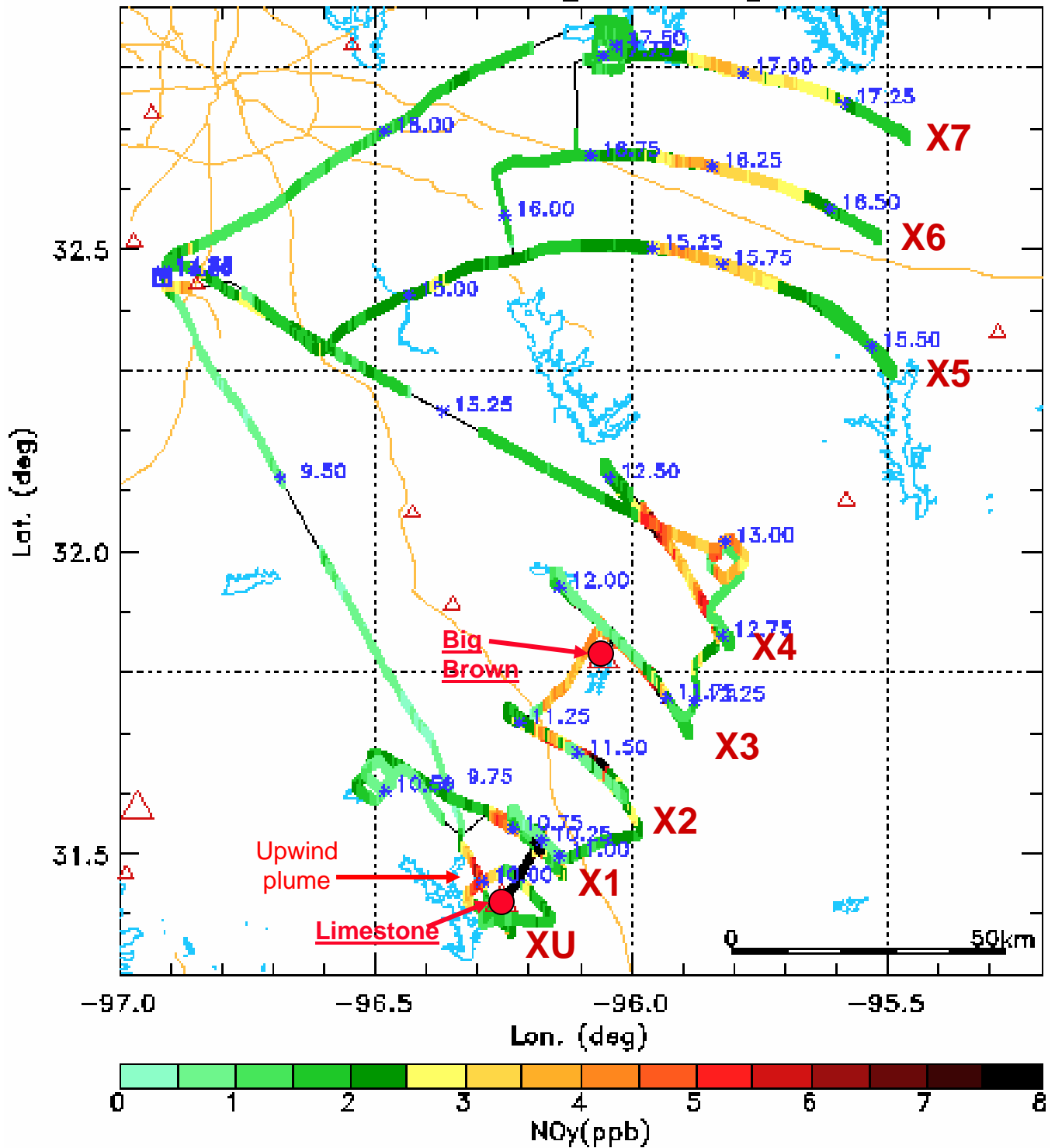
Spiral S1: Ascent IJ (red) --- 1026 - 1036:30
 Descent J-K (green) --- 1036:30 - 1041

Upwind plume detected in area of red ellipse

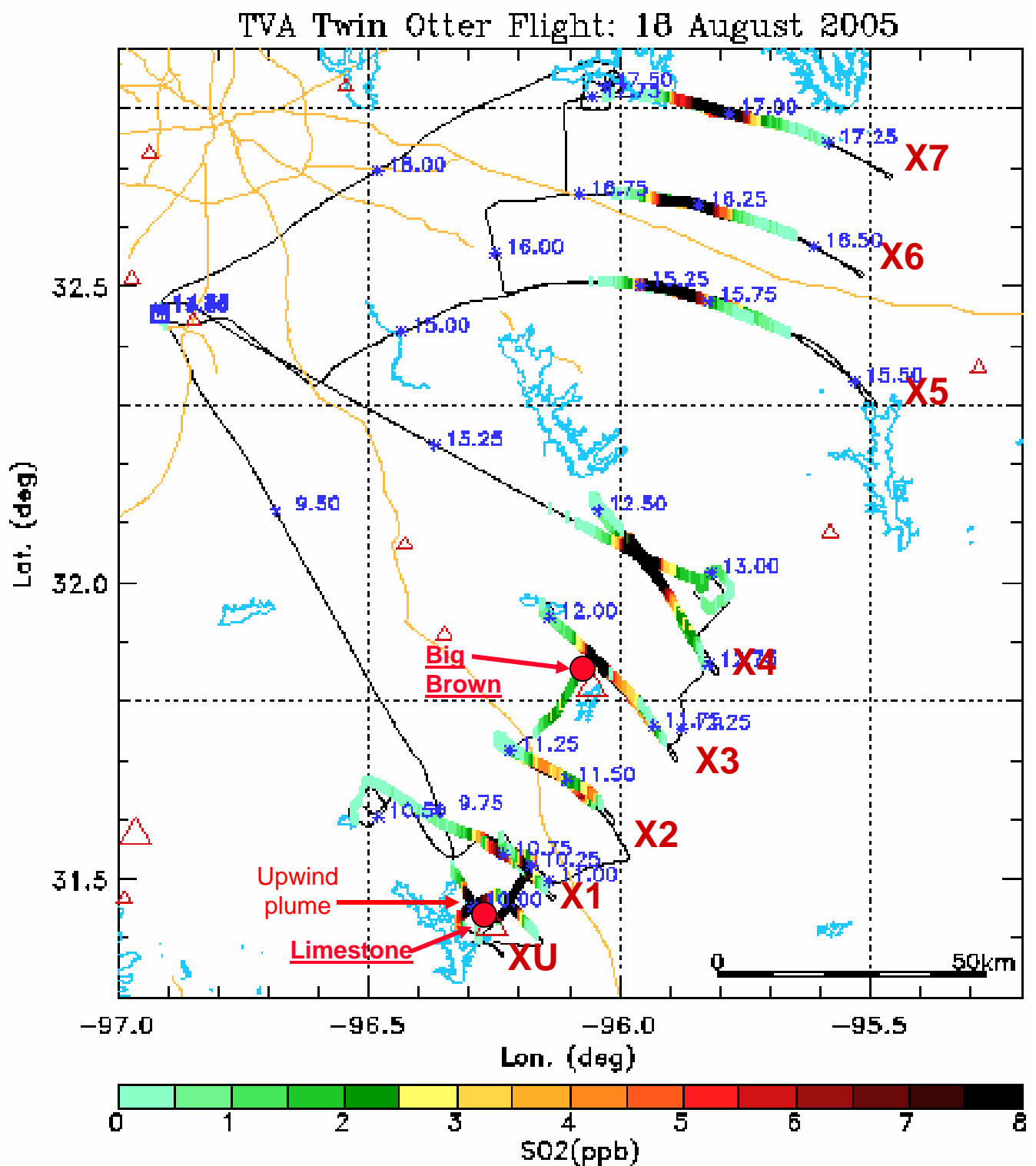
→ Then onto traverses at X1

NO_y along the flight track

TVA Twin Otter Flight: 18 August 2005

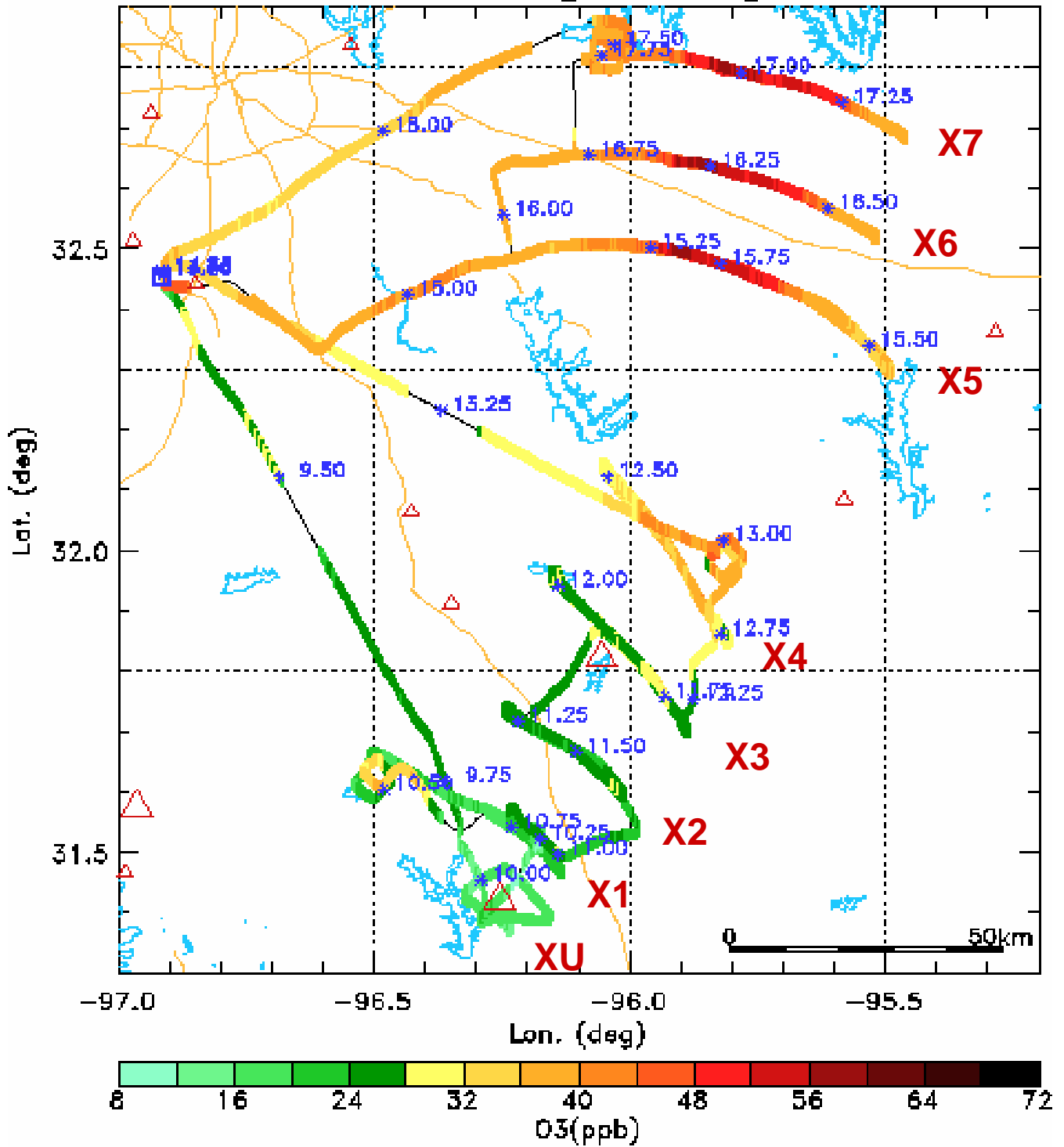


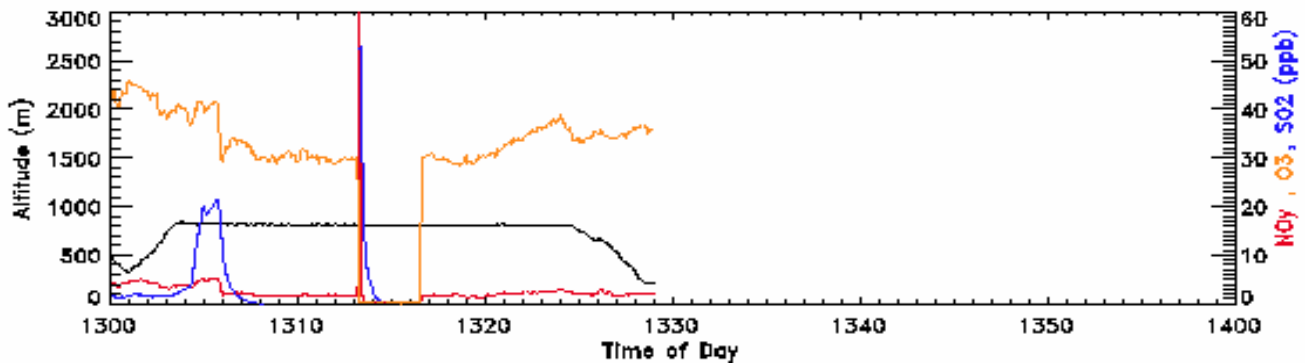
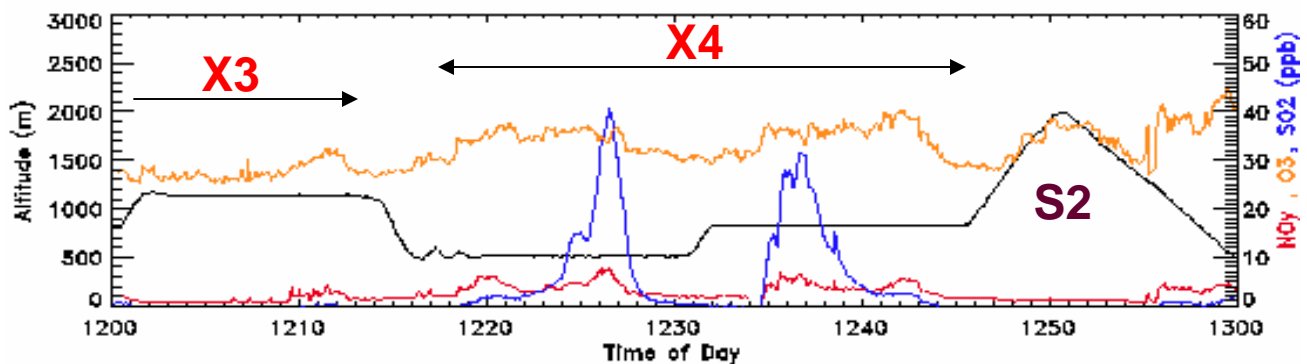
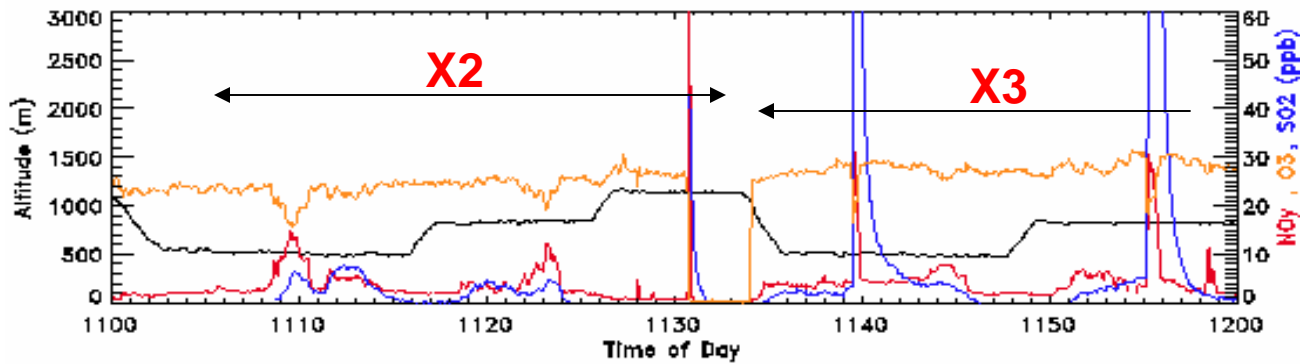
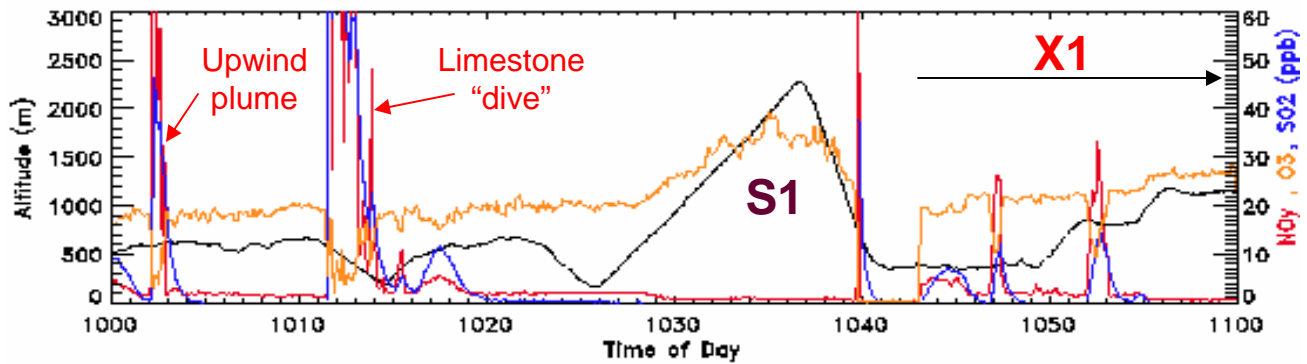
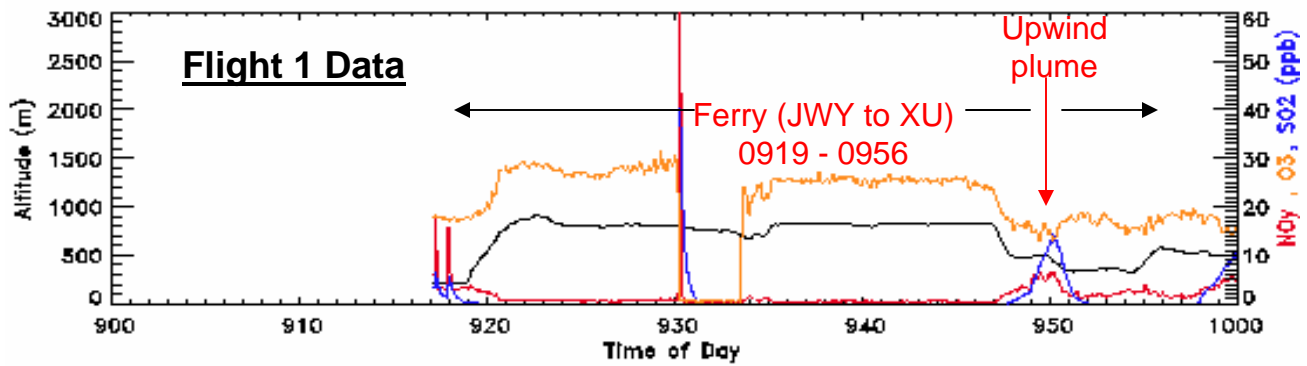
SO₂ along the flight track

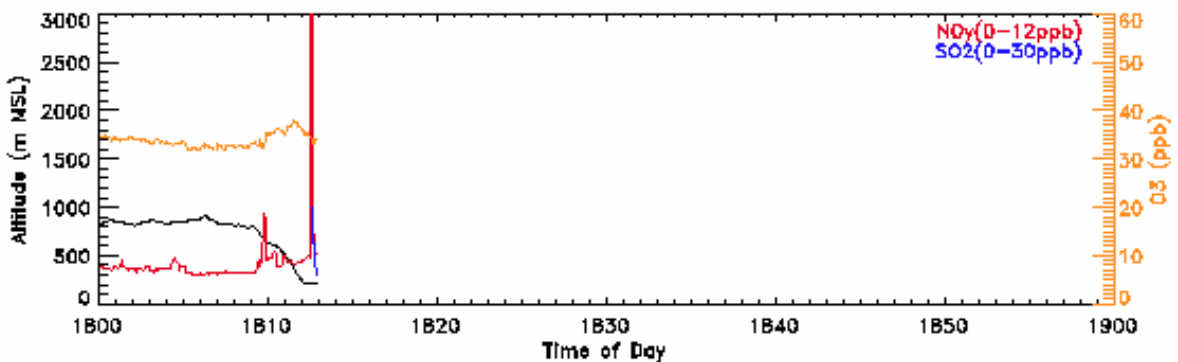
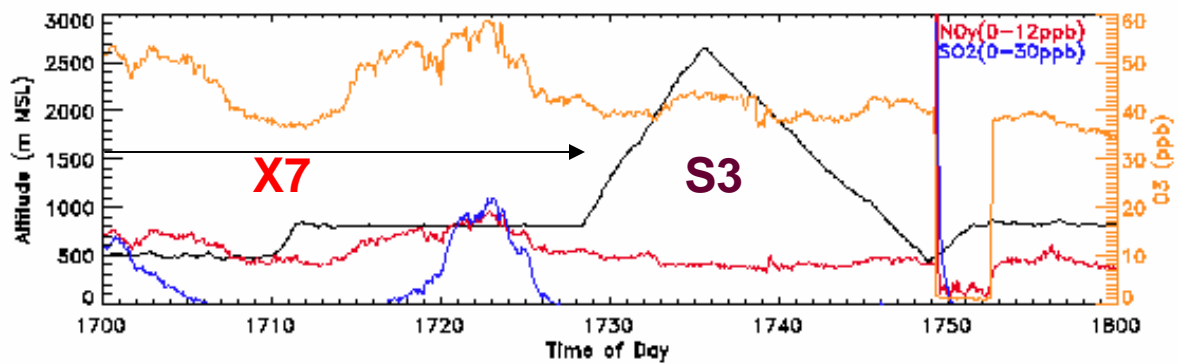
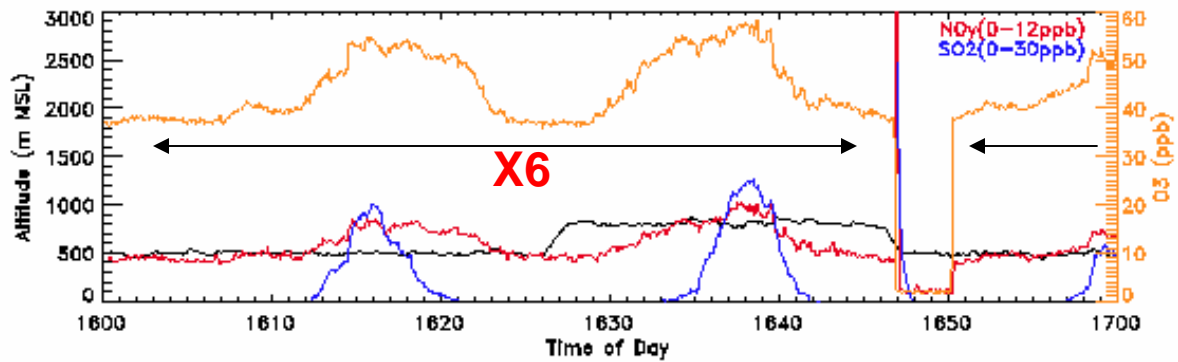
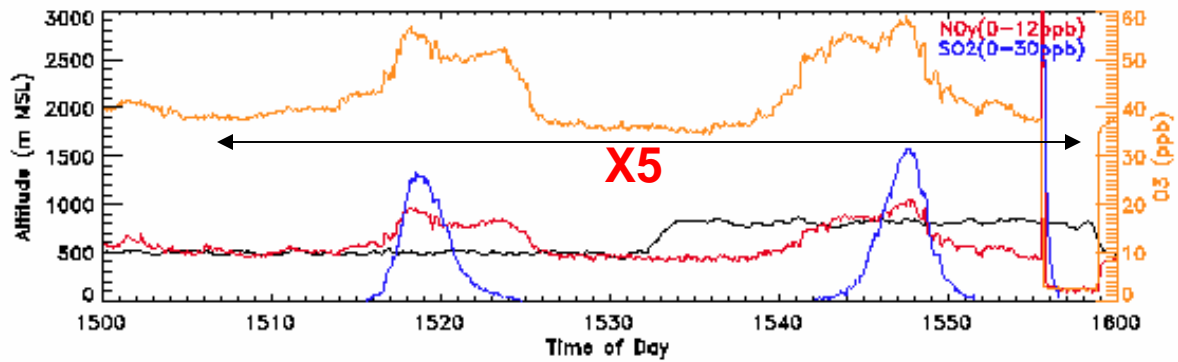
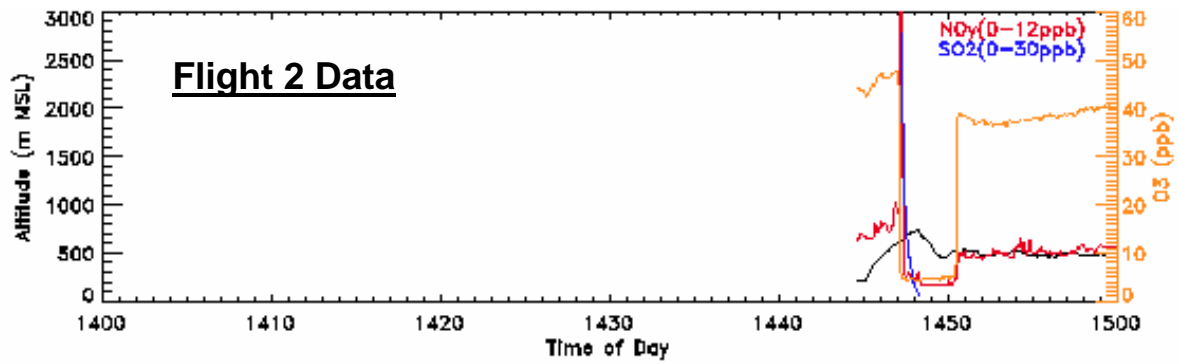


Ozone along the flight track

TVA Twin Otter Flight: 18 August 2005

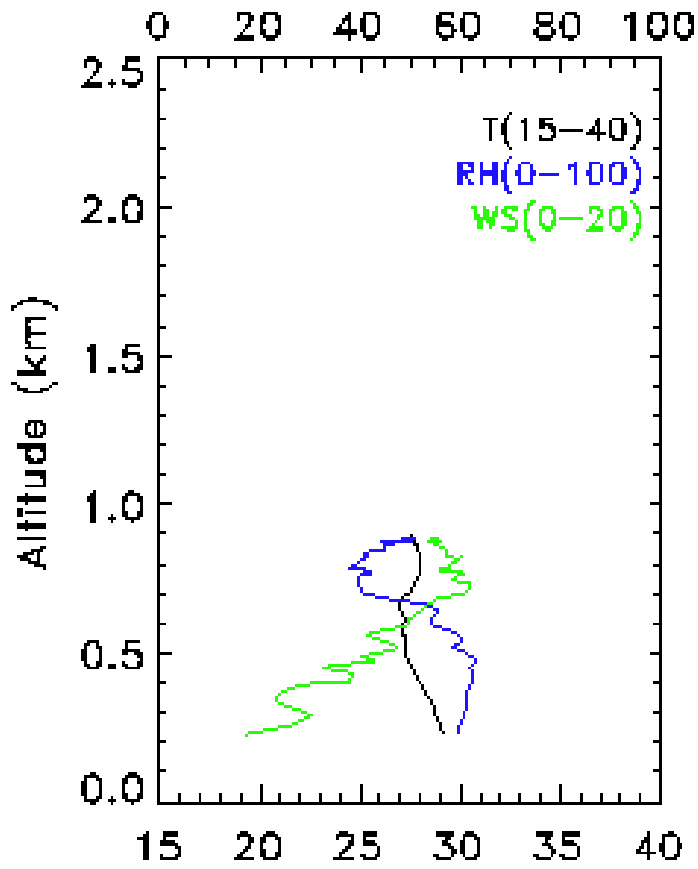




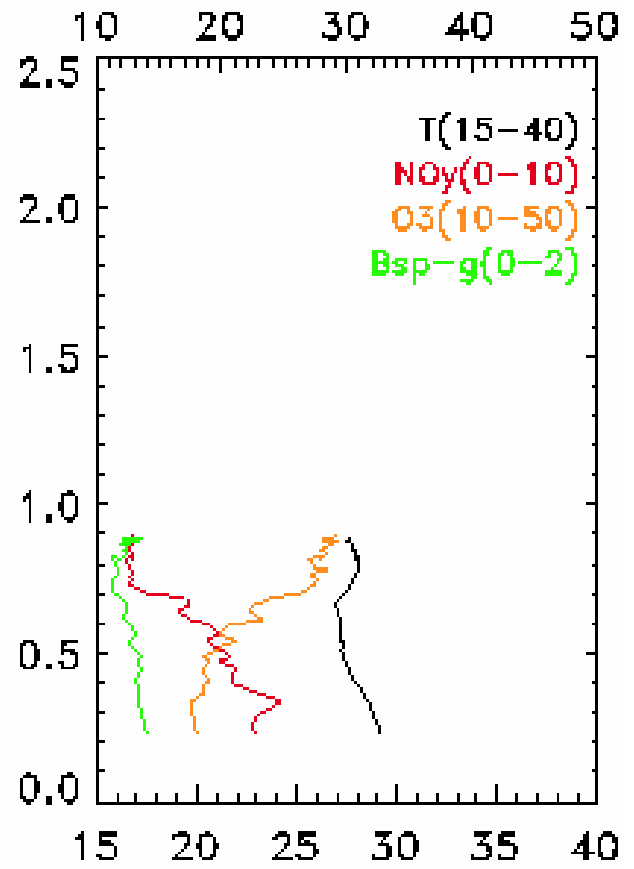


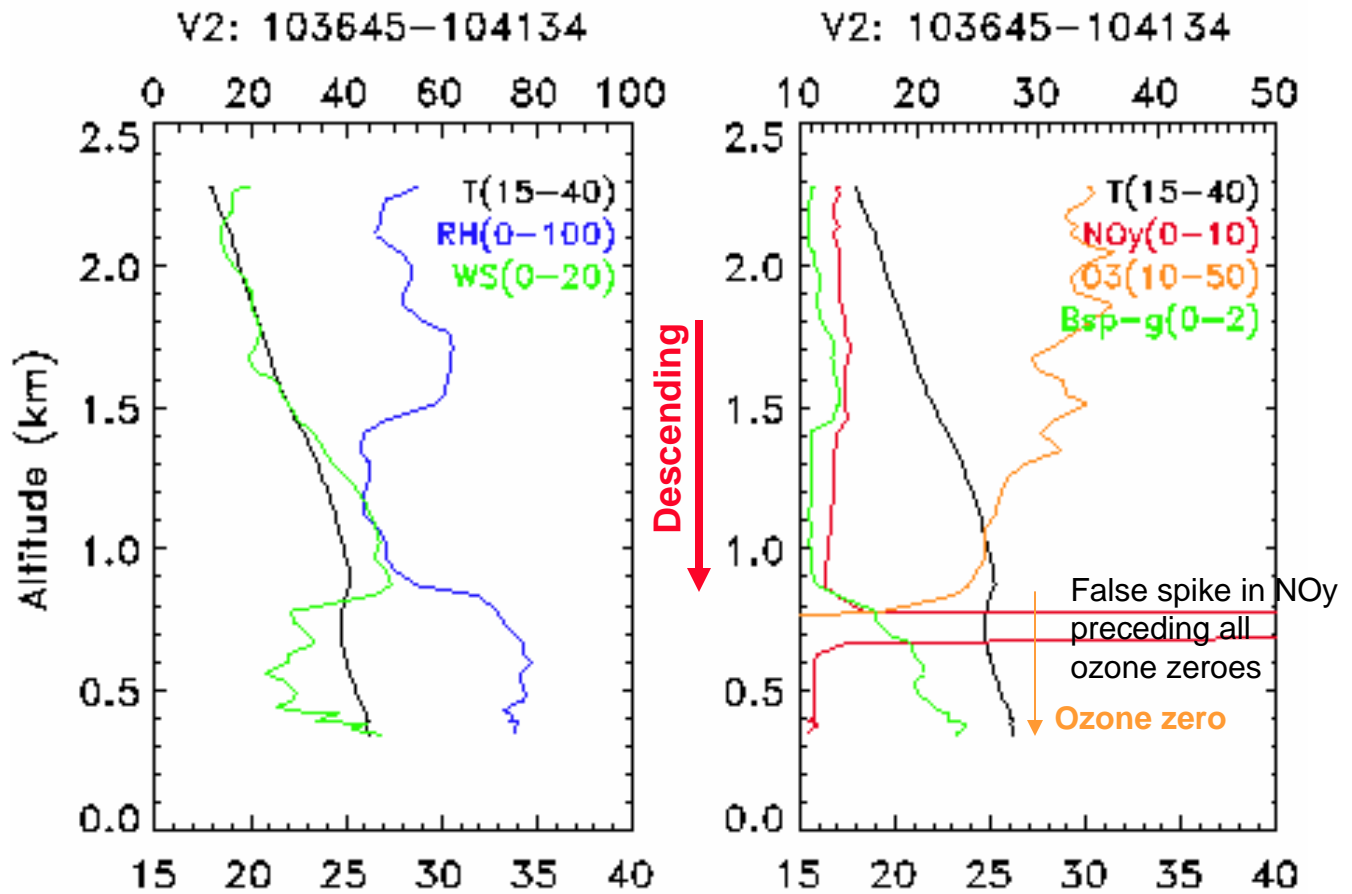
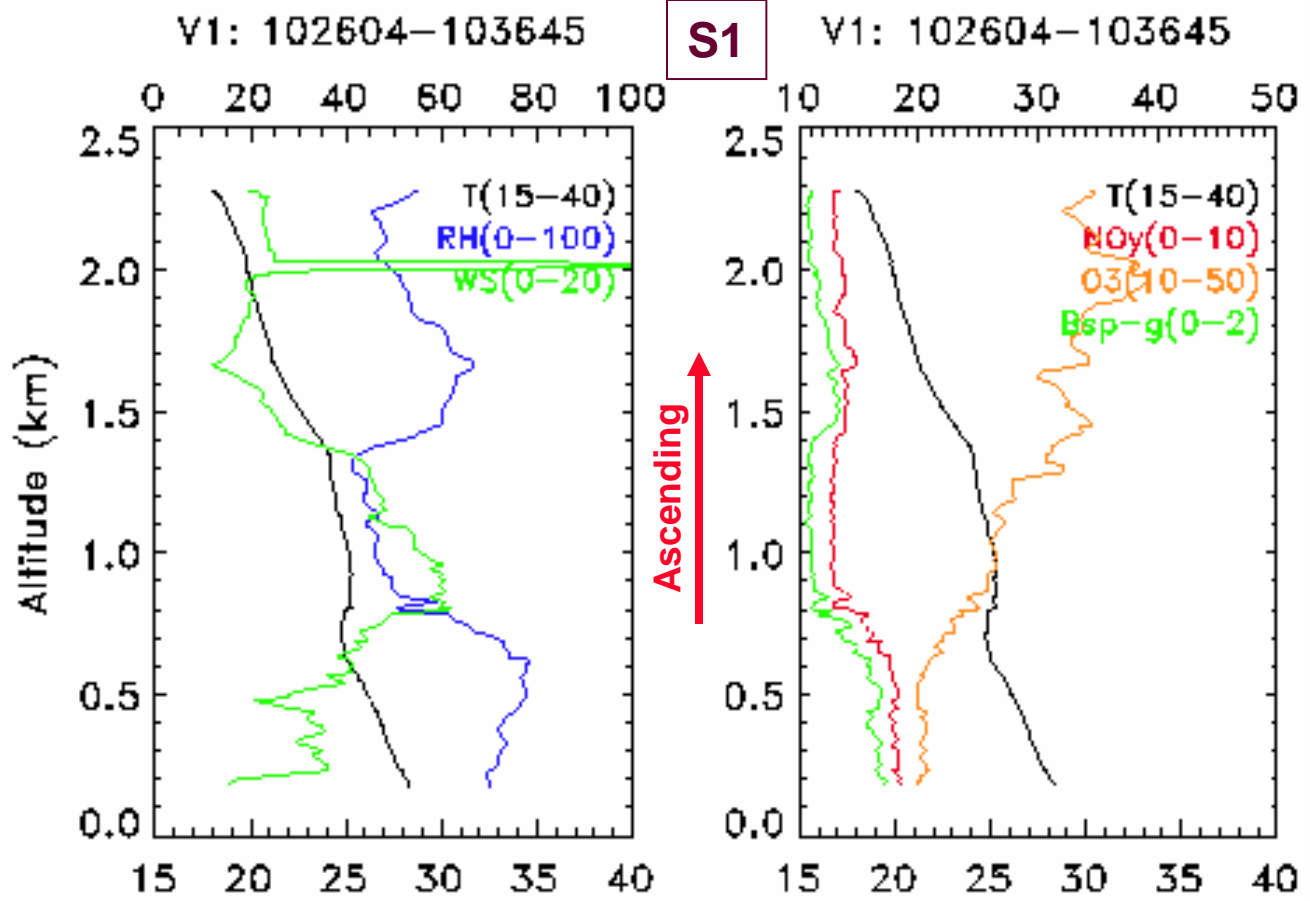
S0

V0: 091859-092229



V0: 091859-092229

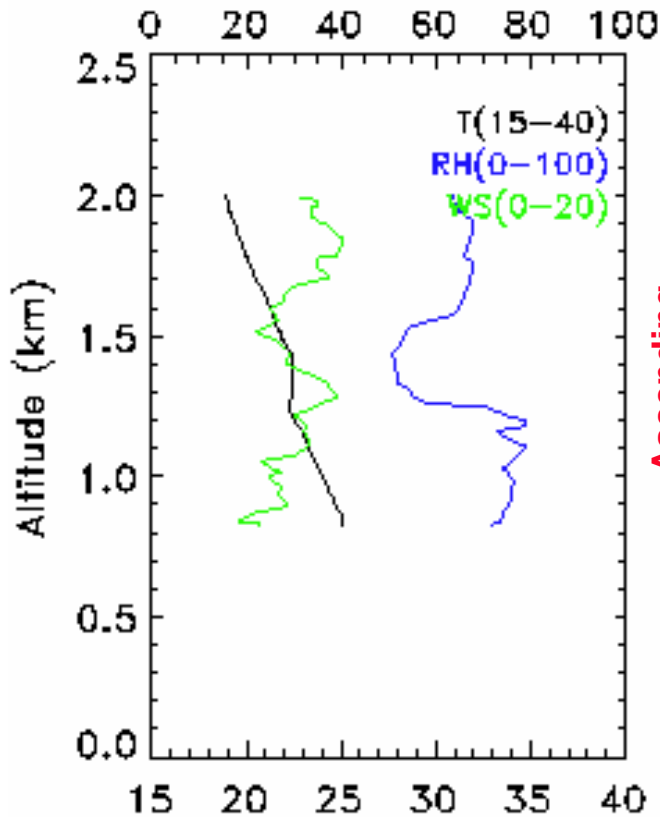




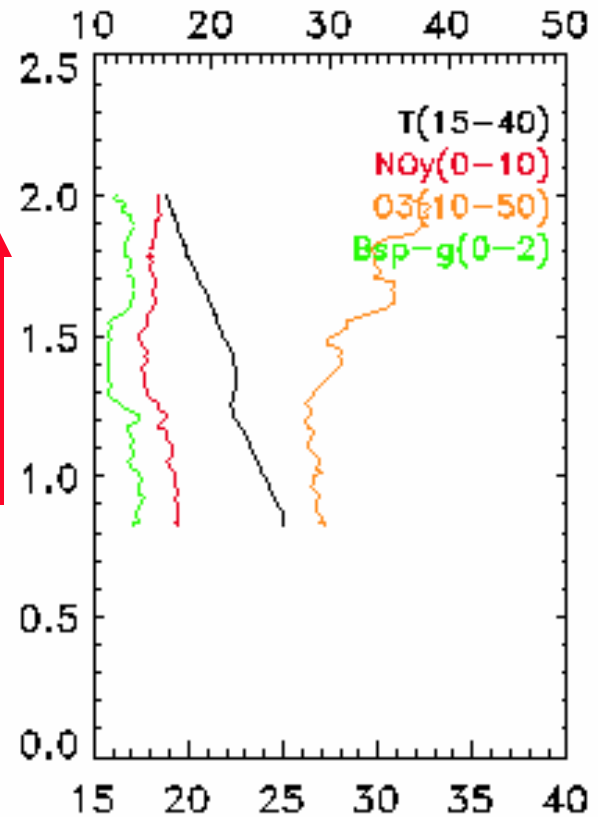
S2

V3: 124534-125044

V3: 124534-125044

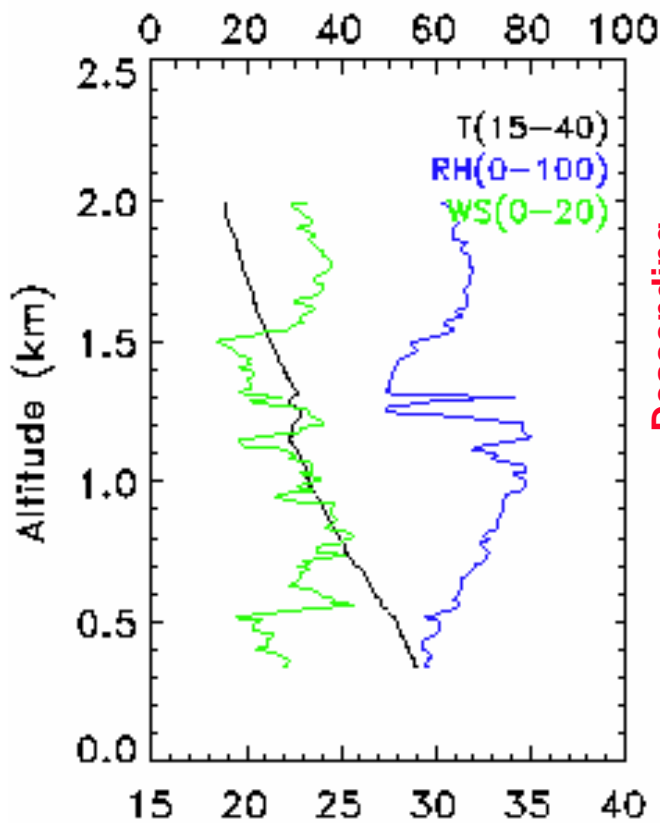


Ascending

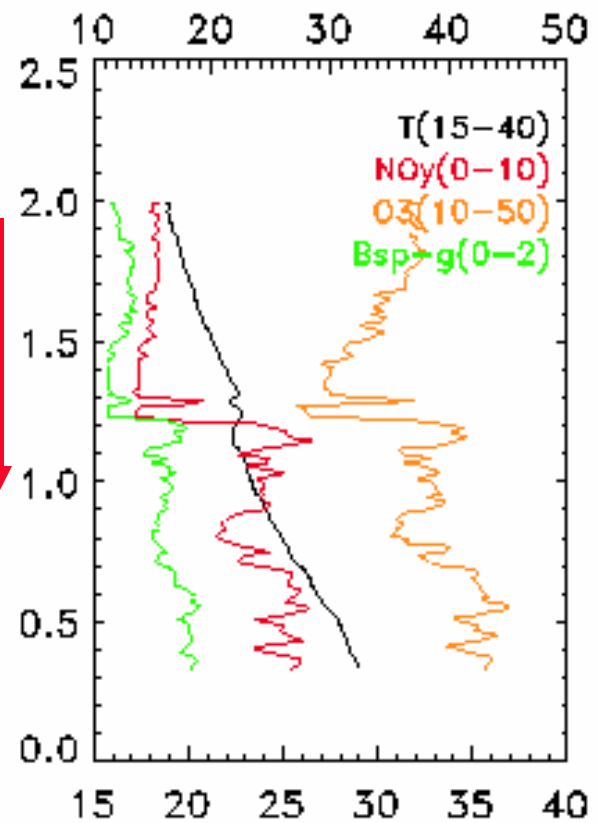


V4: 125044-130059

V4: 125044-130059



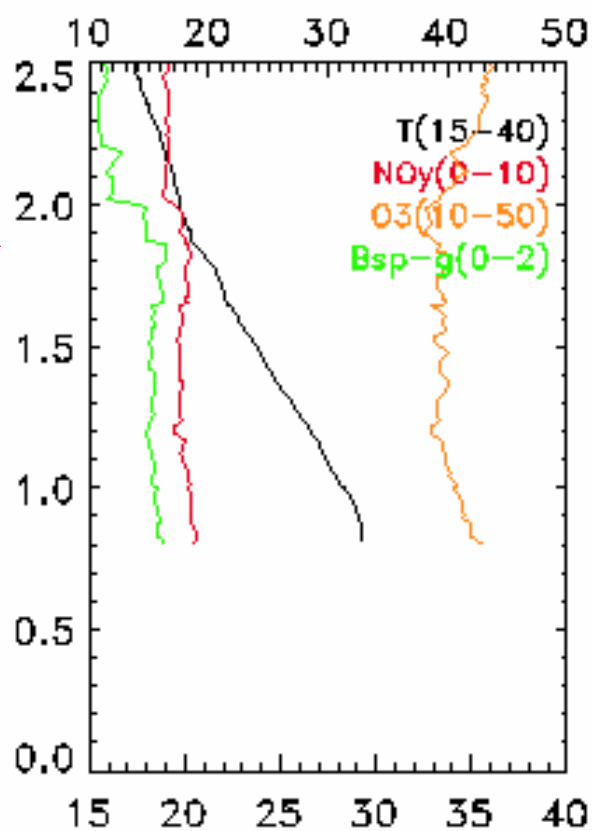
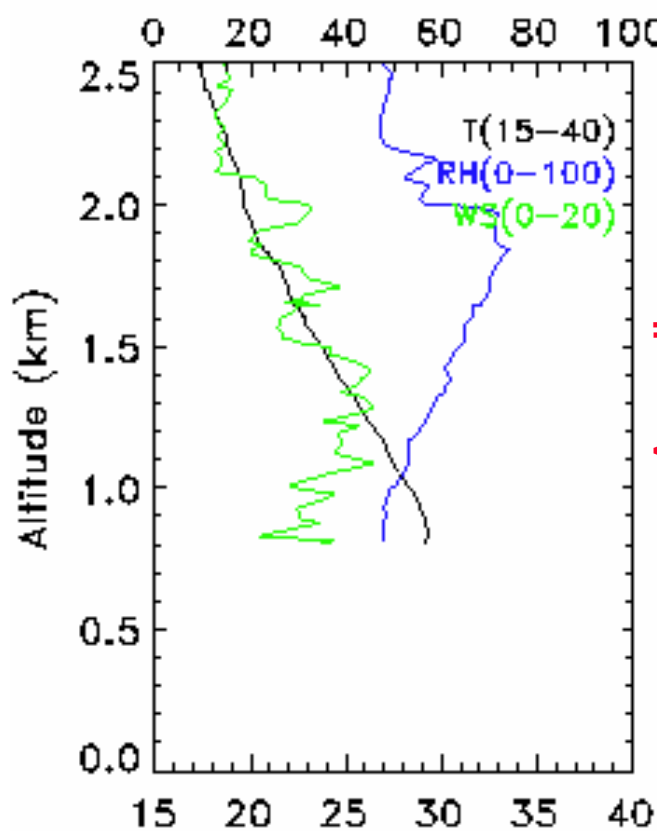
Descending



S3

V5: 172820-173545

V5: 172820-173545



V6: 173550-174854

V6: 173550-174854

