Polar Vortex Sun Run Flight 050126

Objectives:
Primary:
(1) Validation of MLS, with emphasis on capturing strong trace constituent gradients across the vortex edge.
(2) Validation of OMI, with emphasis on high solar zenith angles.
(3) Validation of measurements of air processed by PSC's.

Secondary:
(1) Survey of middleworld with a very low tropopause.
(2) Validation of TES nitric acid in the lower stratospheric vortex.

INFORMATION ABOUT THE PROPOSED WAY POINTS ON THIS FLIGHT:

Note: this version has a sun run.

PT #	LAT	LON	GMT TIME	SZA	ALT (kft)	DIST (nmi)
Takeoff						
1	43o 05'N	70o 49'W	13:30	77.8	0.0	0.00
(reach altitude)						
2	46o 41'N	71o 38'W	14:01	76.8	32.0	219.06
Join MLS track						
3	59o 18'N	75o 40'W	15:42	80.4	35.0	770.37
MLS near-coincidence						
4	67o 51'N	82o 55'W	16:53	87.0	35.8	547.30
Resolute overpass						
5	74o 43'N	94o 59'W	17:55	93.6	36.5	471.10
SAGE-3 overpass; begin sun run						
6	71o 17'N	100o 22'W	18:27	90.1	37.2	226.17
continue sun run						
7	71o 17'N	87o 43'W	19:00	90.5	37.6	243.07
end sun run						
8	70o 07'N	77o 08'W	19:29	91.6	37.8	220.89
(begin descent)						
9	47o 26'N	71o 21'W	22:29	98.9	38.0	1370.71
Land						
10	43o 05'N	70o 49'W	23:07	104.6	0.0	262.27

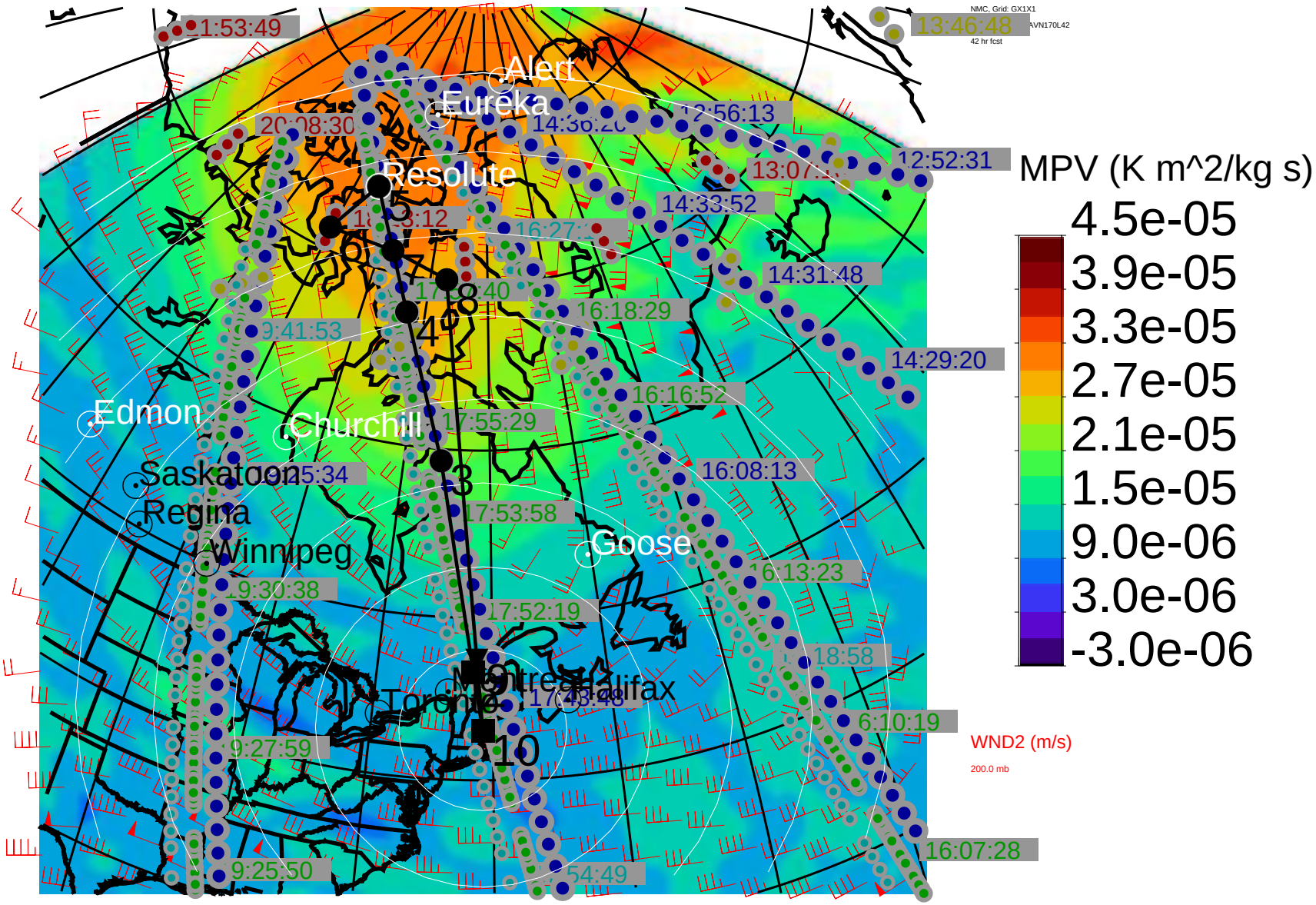
Total flight time: 9 hours 37 minutes

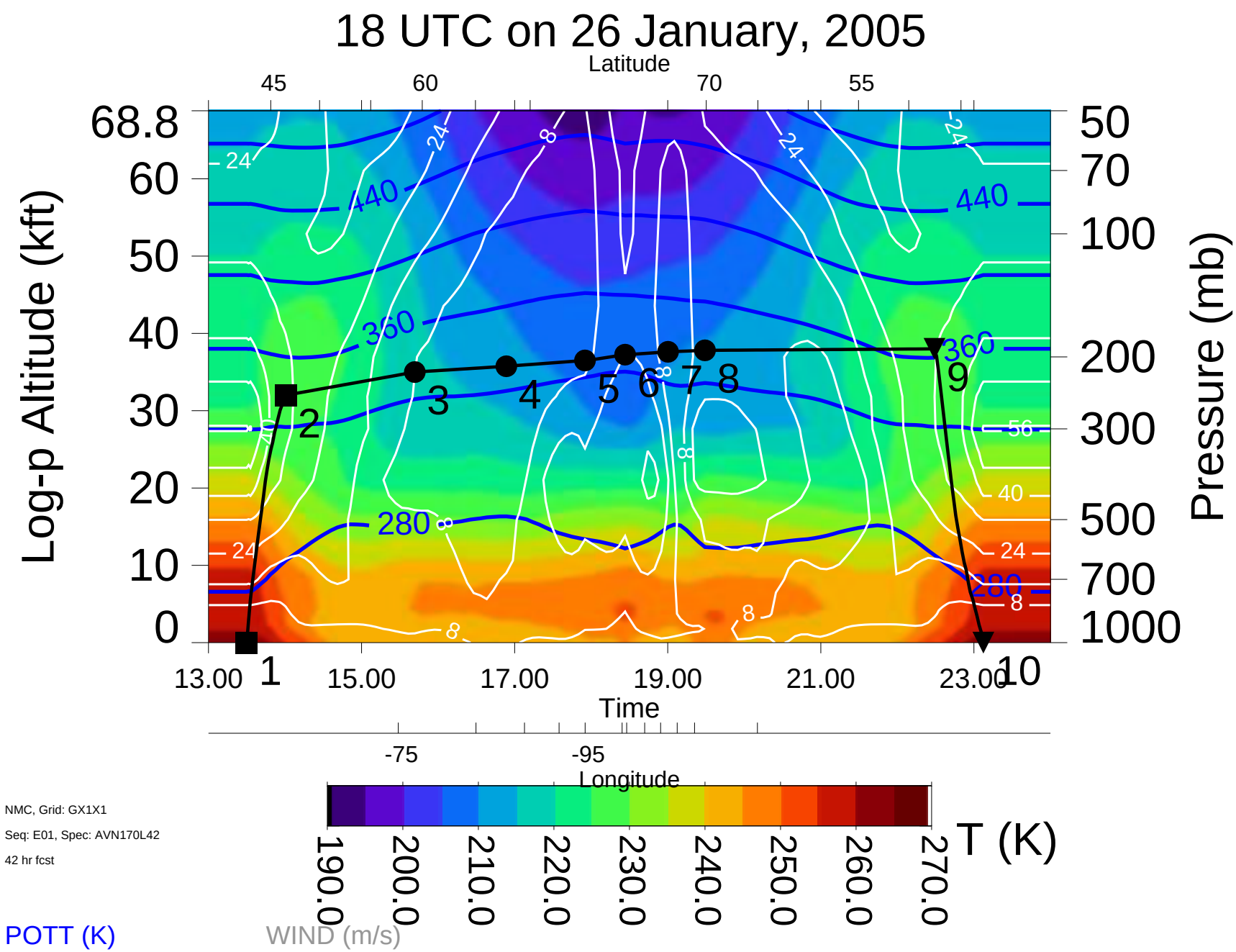
COMMENTS ABOUT THIS FLIGHT:

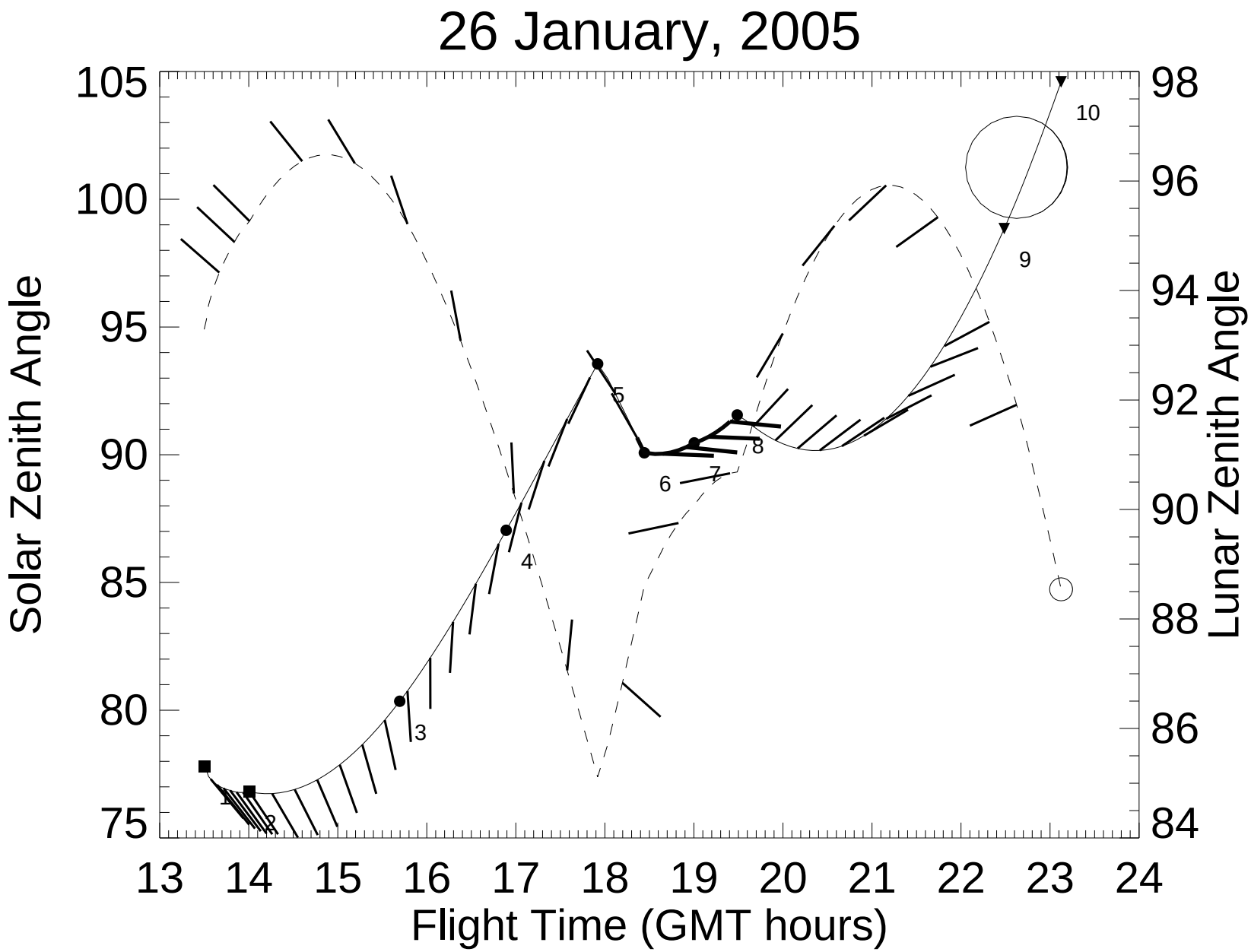
No special maneuvers during this flight

* Denotes a marked point

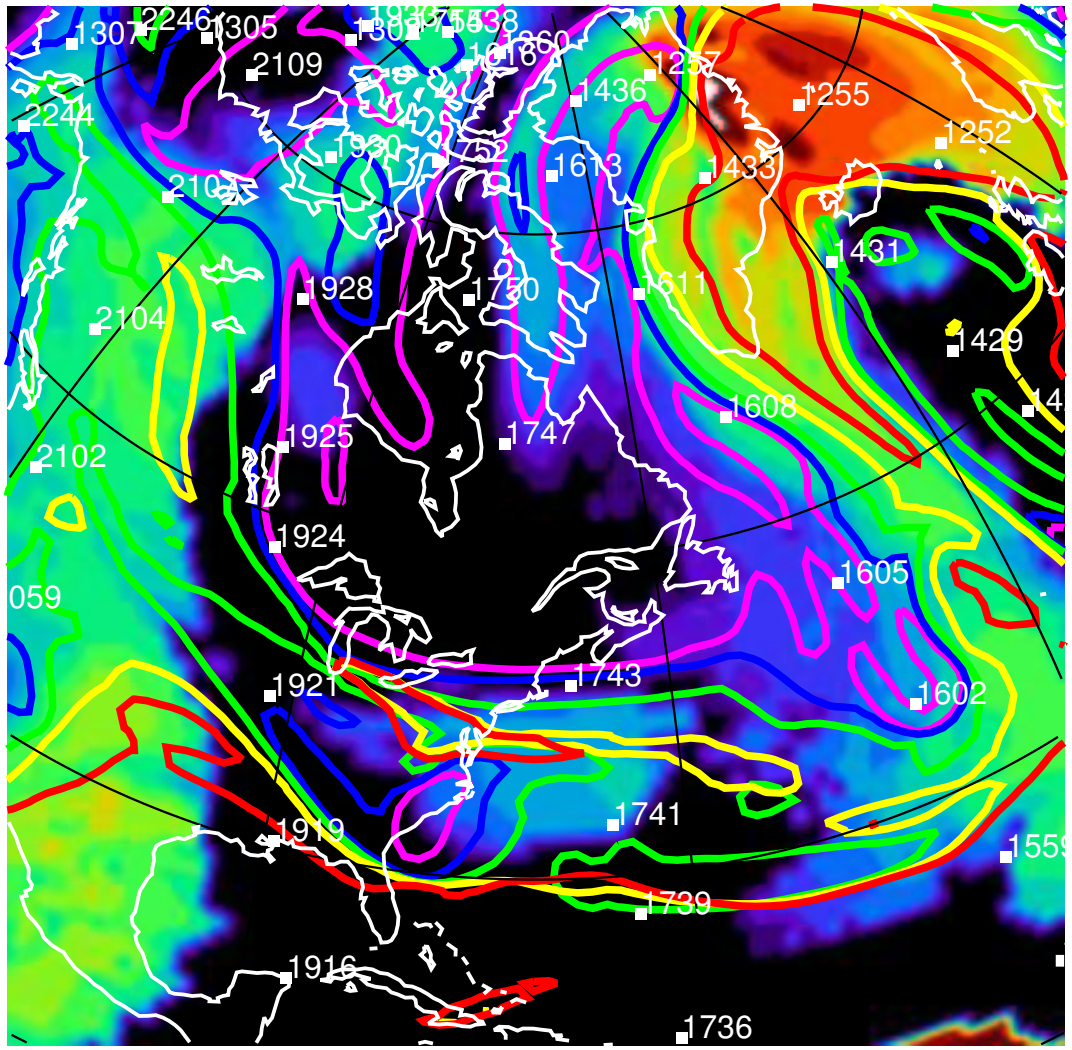
18 UTC on 26 January, 2005 at 460.0 K




18 UTC on 26 January, 2005
Latitude
45
60
70
55
Log-p Altitude (kft)
68.8
60
50
40
30
20
10
0
Pressure (mb)
50
70
100
200
300
500
700
1000
440
360
280
24
8
56
40
1
2
3
4
5
6
7
8
9
10
13.00
15.00
17.00
19.00
21.00
23.00
Time
-75
-95
Longitude
T (K)
190.0
200.0
210.0
220.0
230.0
240.0
250.0
260.0
270.0
NMC, Grid: GX1X1
Seq: E01, Spec: AVN170L42
42 hr fcst
POTT (K)
WIND (m/s)


26 January, 2005
Solar Zenith Angle
Lunar Zenith Angle
Flight Time (GMT hours)
105
100
95
90
85
80
75
98
96
94
92
90
88
86
84
13
14
15
16
17
18
19
20
21
22
23
24
1
2
3
4
5
6
7
8
9
10

18 UTC on 26 January, 2005 at 239.0 mb



NMC, Grid: GG1X1

Seq: E01, Spec: SAVN170L42

30 hr fcst

Cloud Top Alt (kft)

57.0
53.0
49.0
45.0
41.0
37.0
33.0
29.0
25.0

EPV Trop (29kft)
315.0 mb

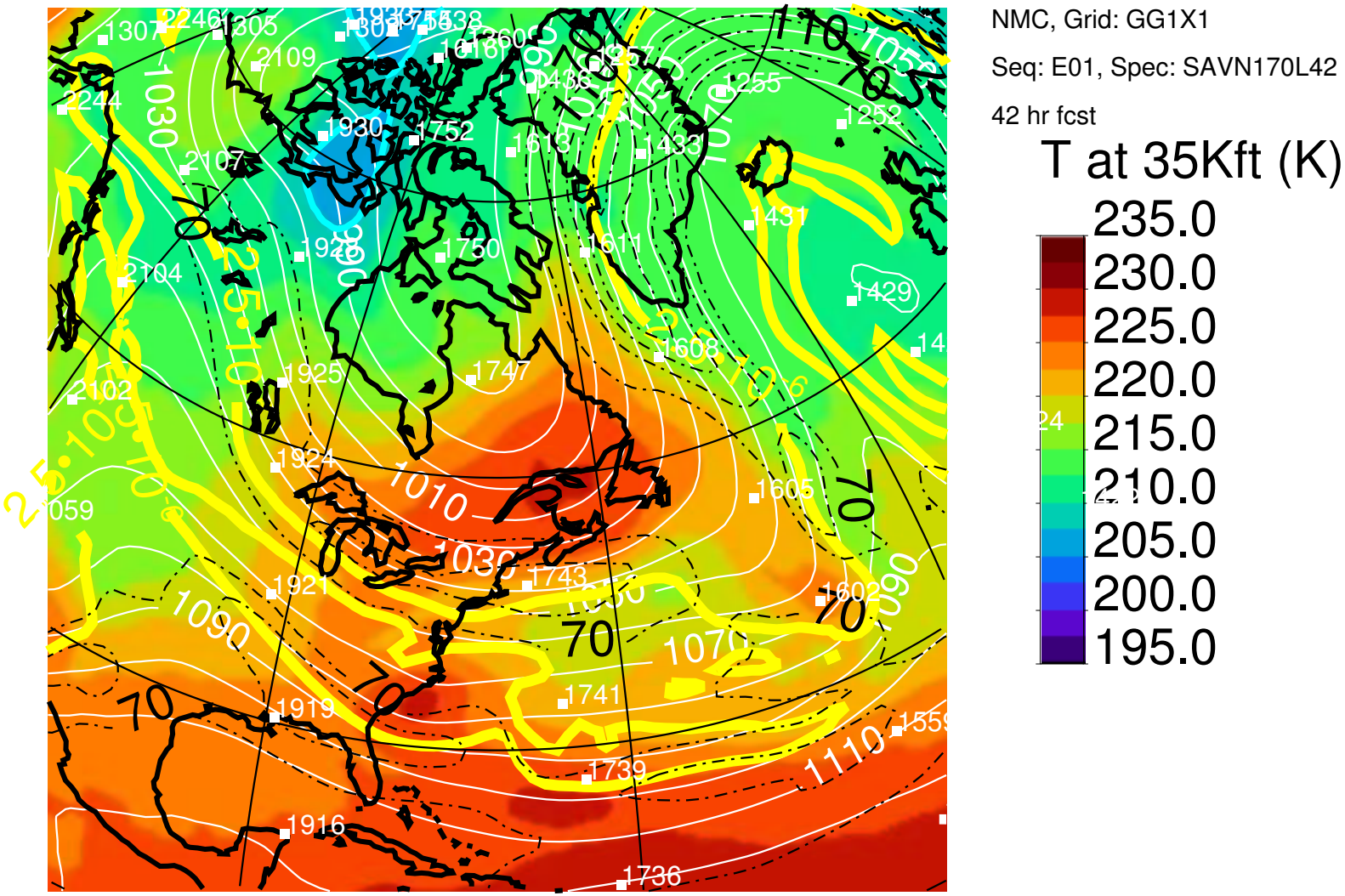
EPV Trop (32kft)
275.0 mb

EPV Trop (35kft)

EPV Trop (38kft)
206.0 mb

EPV Trop (41kft)
179.0 mb

18 UTC on 26 January, 2005 at 238.6 mb



Z (dam) Trop (EPV=2.5) SMR 5, 10, 20 (K) WIND (kts)