High Altitude MMIC Sounding Radiometer (HAMSR)
NAMMA Field Campaign
Flight Data Summary—Engineering Data

23 Aug 2006

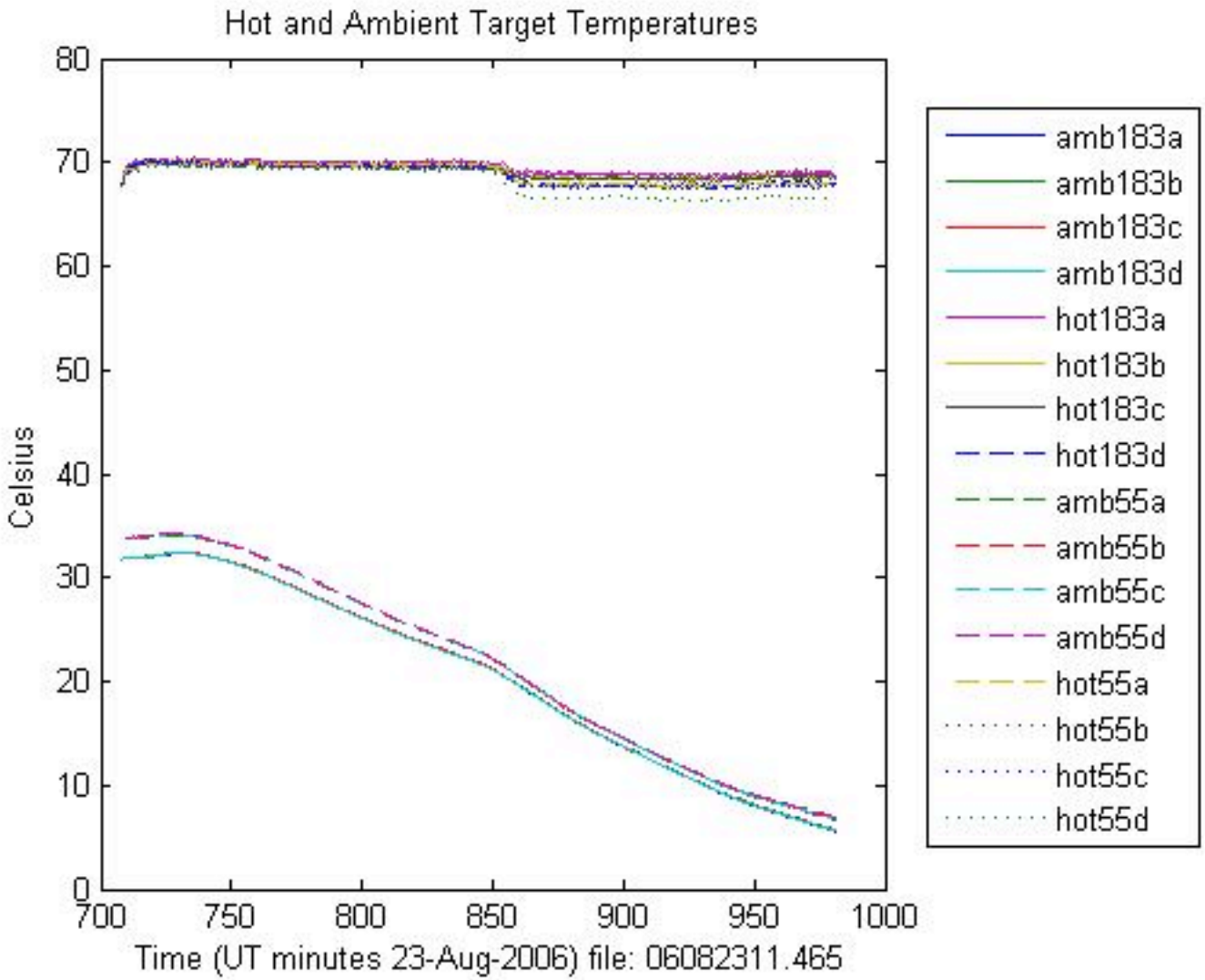
I. High Level Summary

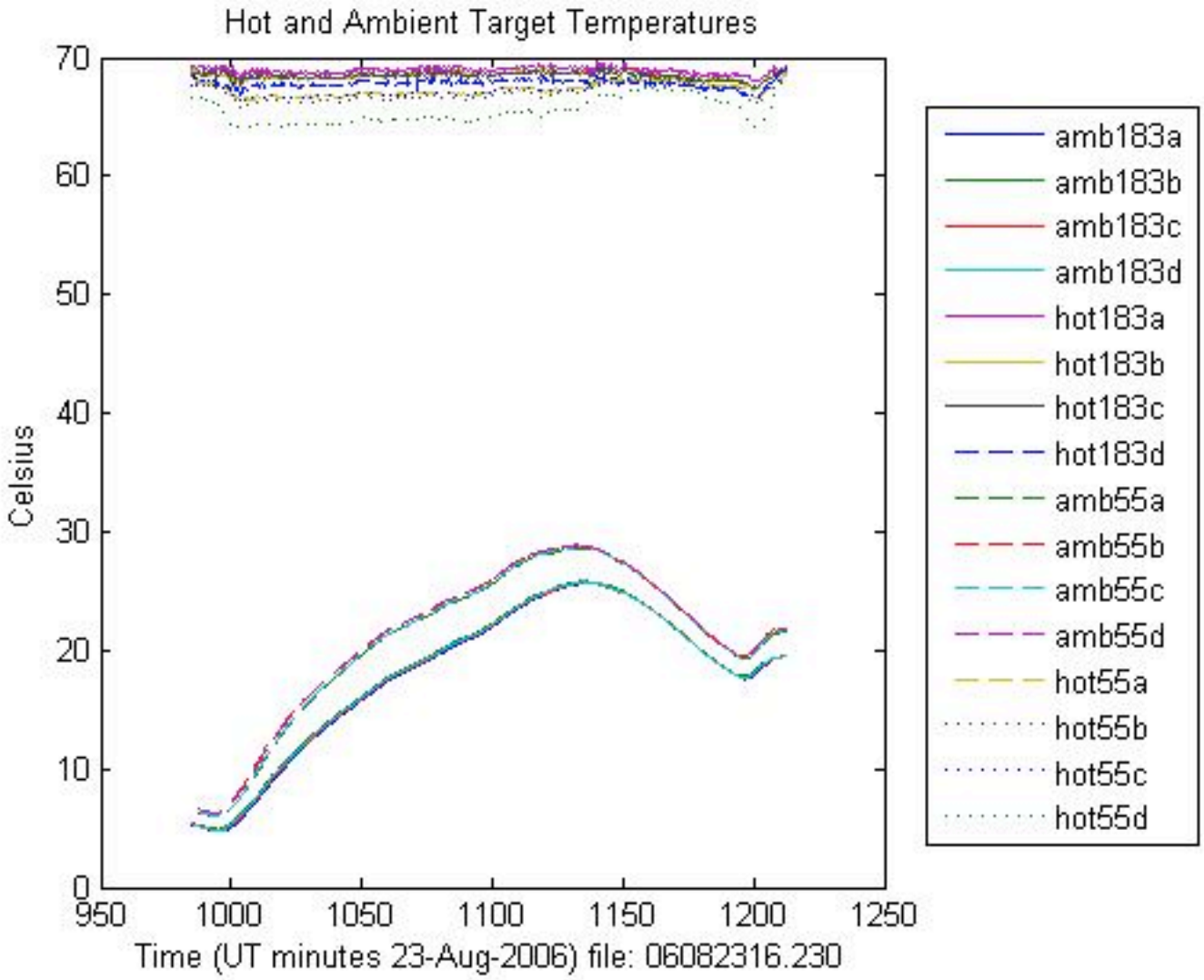
3rd Science flight from Sal. Radome on 118/183 side broke at approx. UT1406 and instrument and cal load temperatures were unstable thereafter.

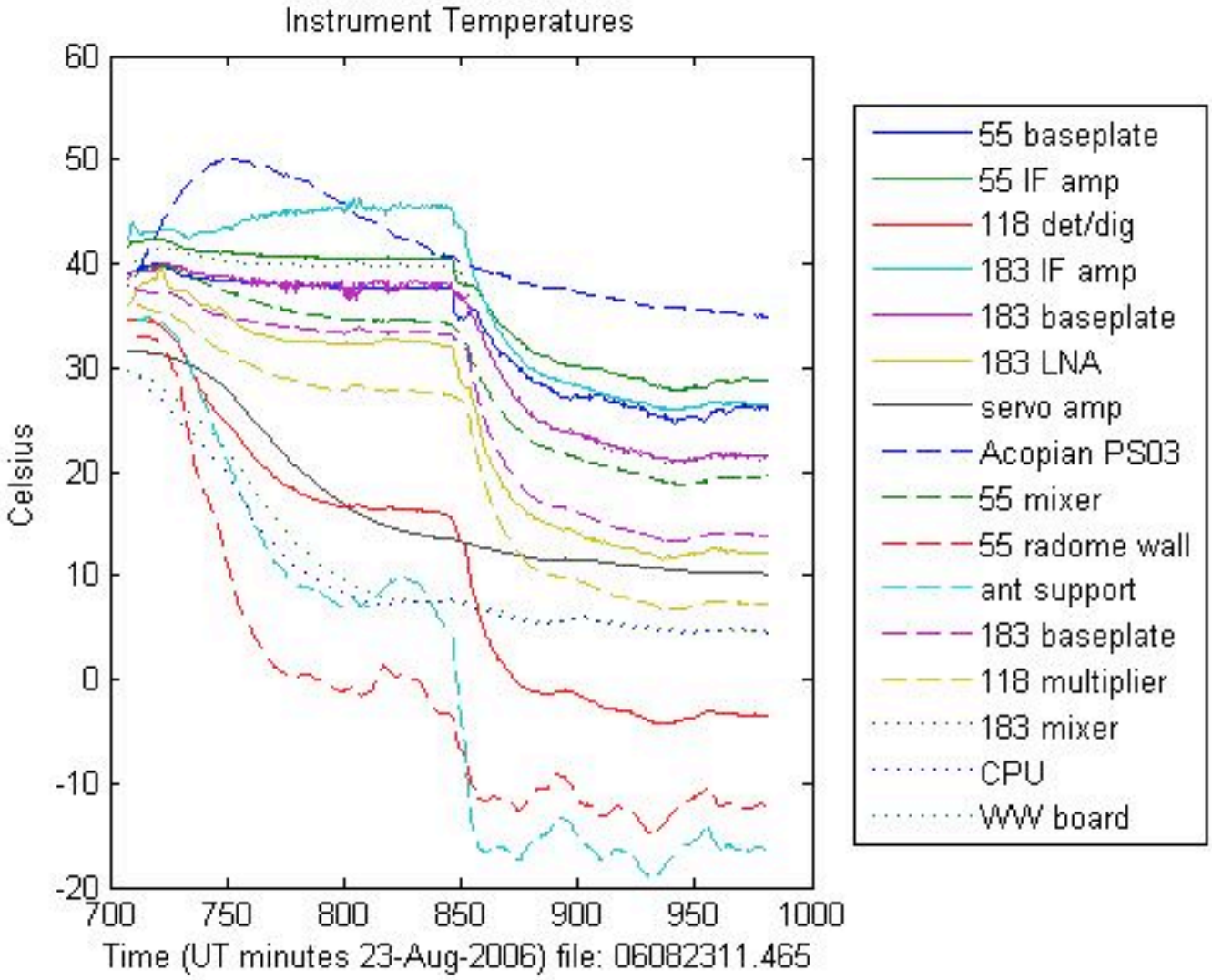
II. Instrument State and Parameters

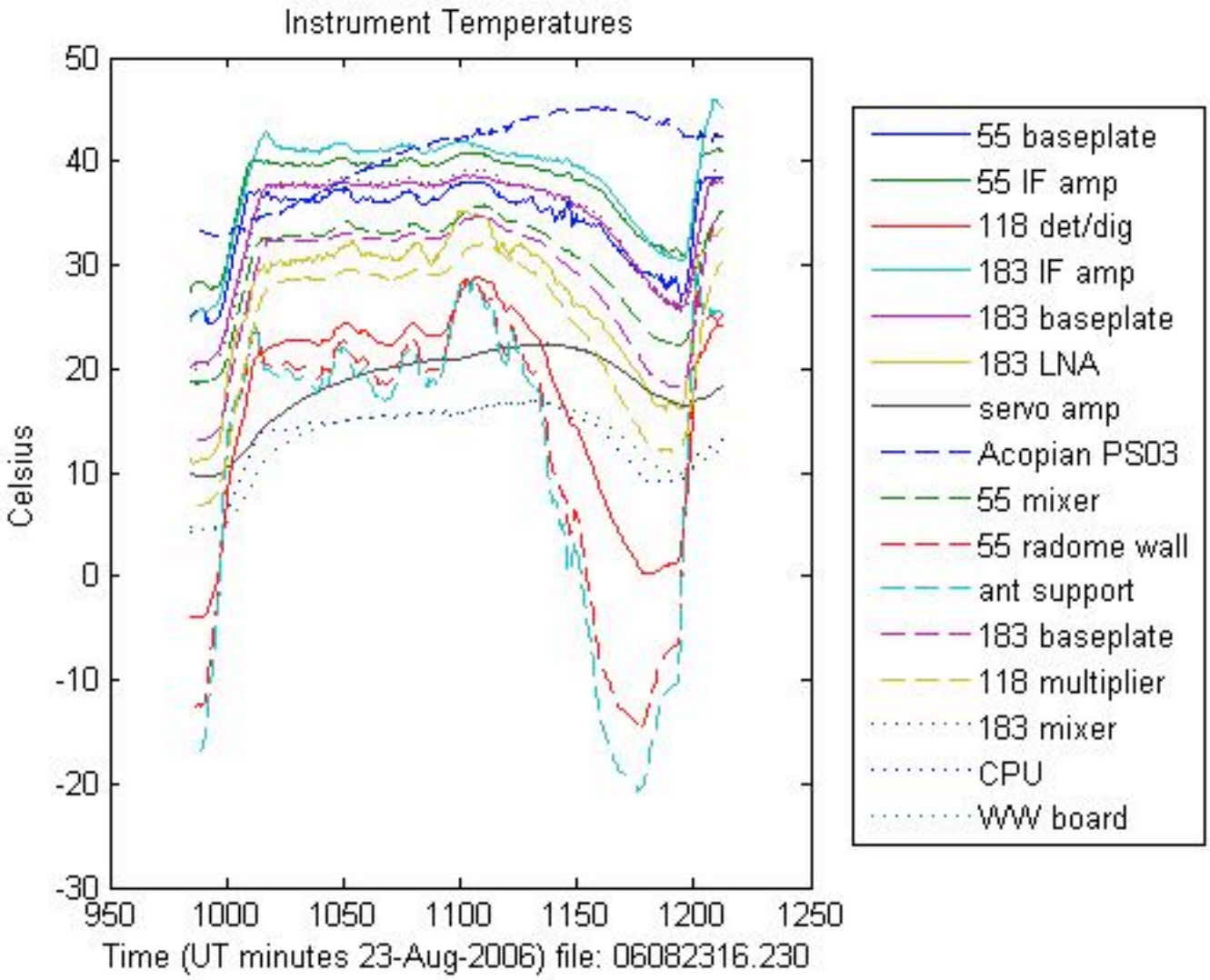
Instrument Power	ON
Fan Power	ON
Take Off Time (UT)	1200
Landing Time (UT)	2008
Drop Sonde Times	
Flight Data File Name	06082311.465, 06082316.230

III. Data

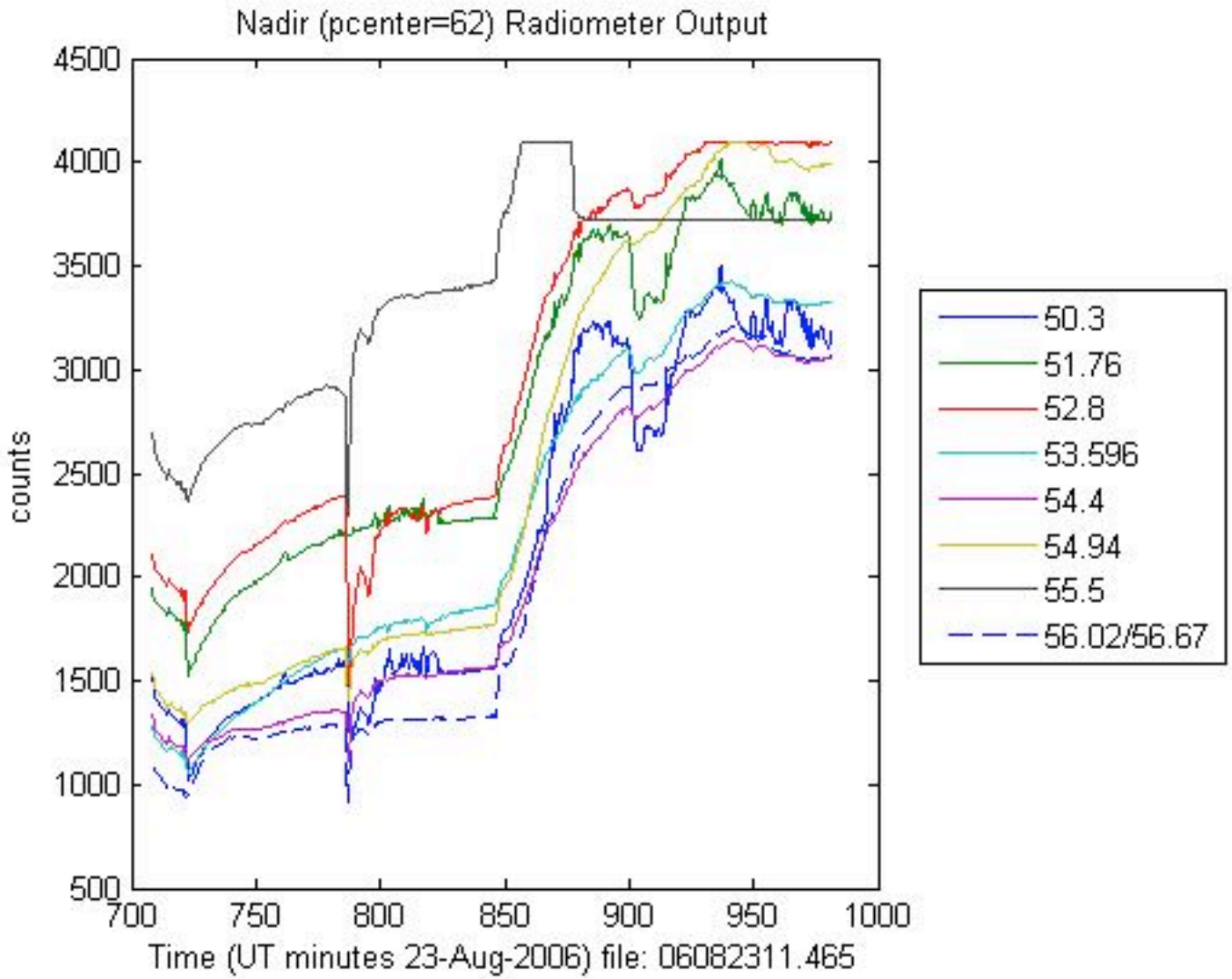

Hot and Ambient Target Temperatures
Celsius
Time (UT minutes 23-Aug-2006) file: 06082311.465
amb183a
amb183b
amb183c
amb183d
hot183a
hot183b
hot183c
hot183d
amb55a
amb55b
amb55c
amb55d
hot55a
hot55b
hot55c
hot55d

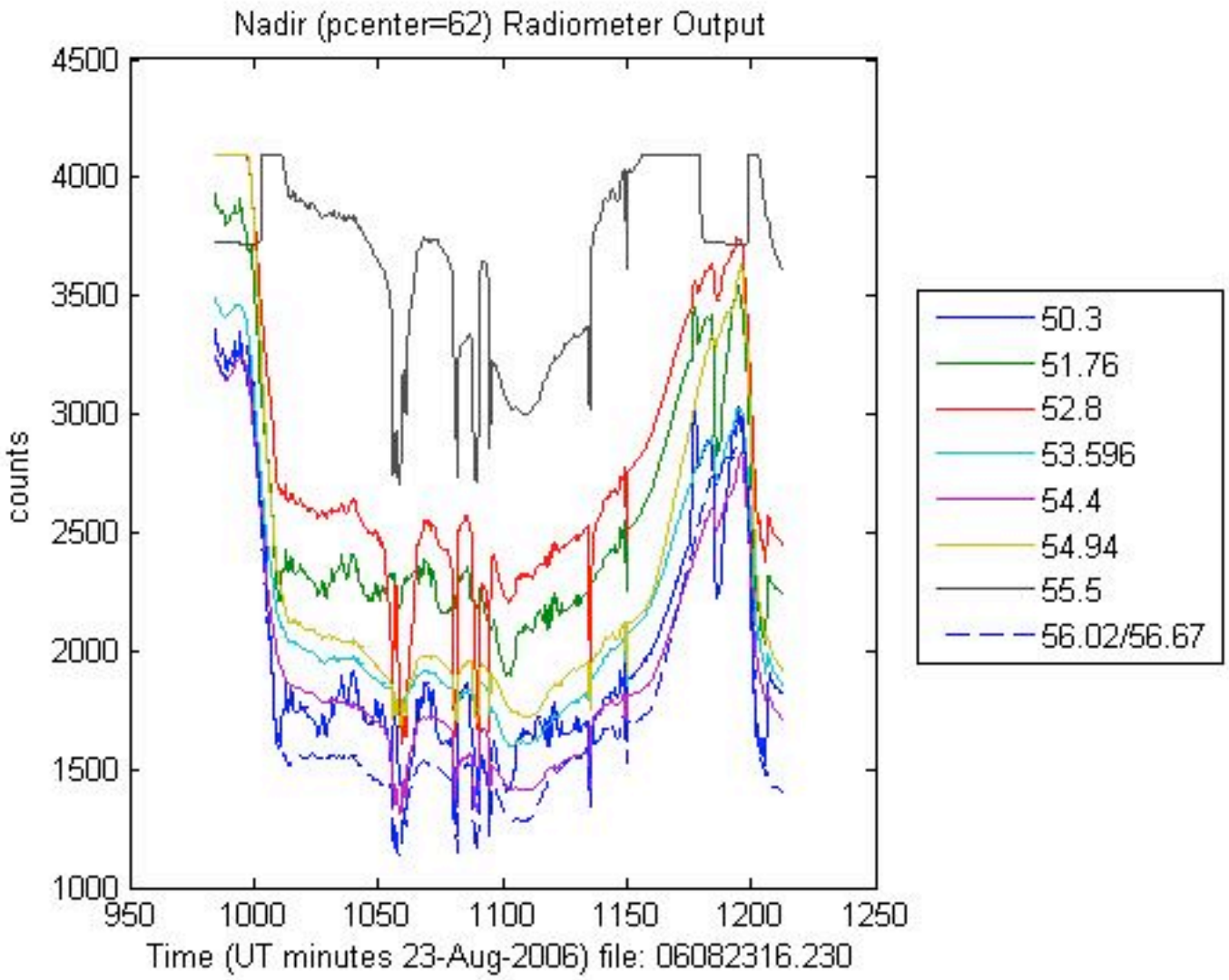

Hot and Ambient Target Temperatures
Celsius
70
60
50
40
30
20
10
0
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
amb183a
amb183b
amb183c
amb183d
hot183a
hot183b
hot183c
hot183d
amb55a
amb55b
amb55c
amb55d
hot55a
hot55b
hot55c
hot55d

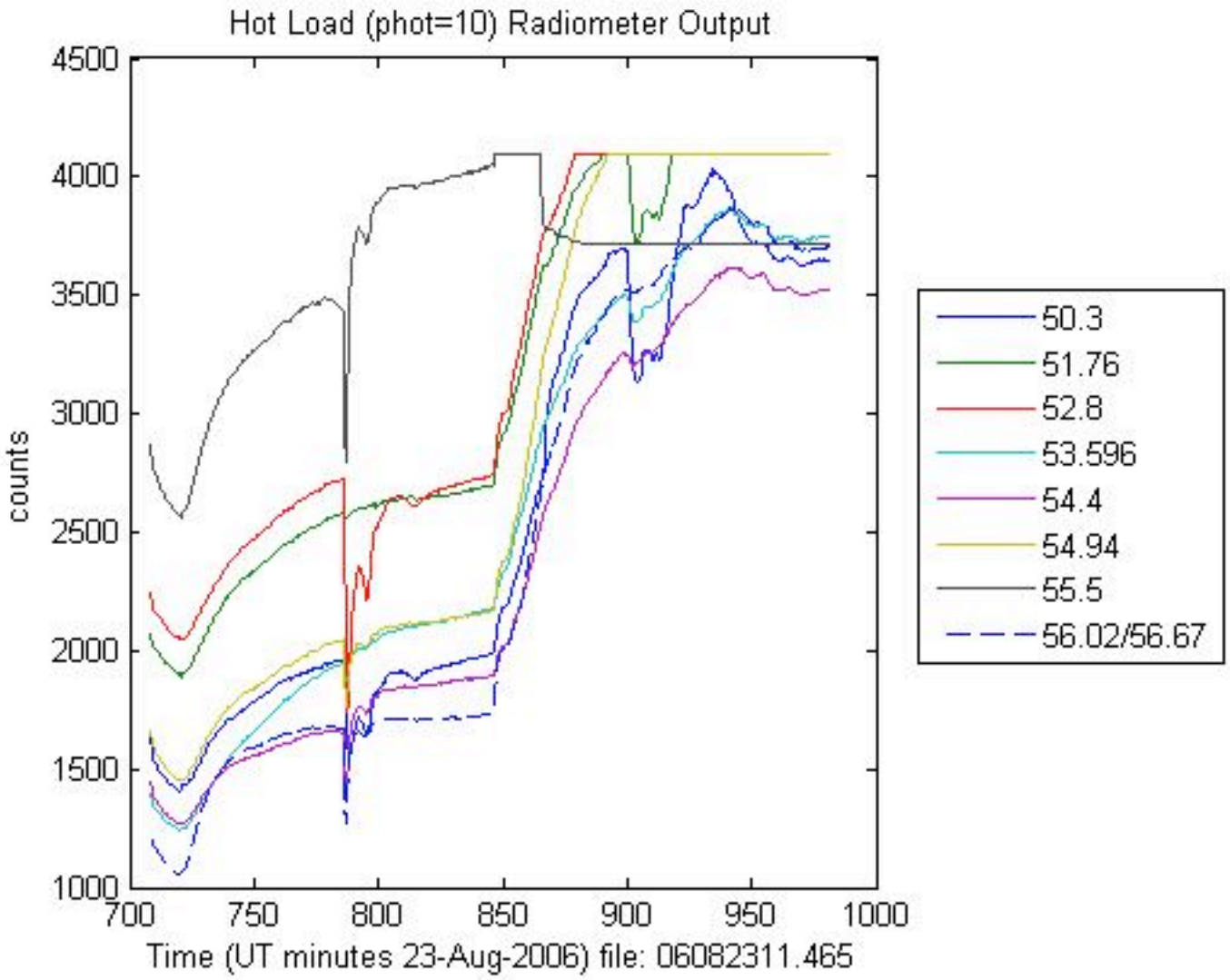

Instrument Temperatures
Celsius
60
50
40
30
20
10
0
-10
-20
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
55 baseplate
55 IF amp
118 det/dig
183 IF amp
183 baseplate
183 LNA
servo amp
Acopian PS03
55 mixer
55 radome wall
ant support
183 baseplate
118 multiplier
183 mixer
CPU
WW board

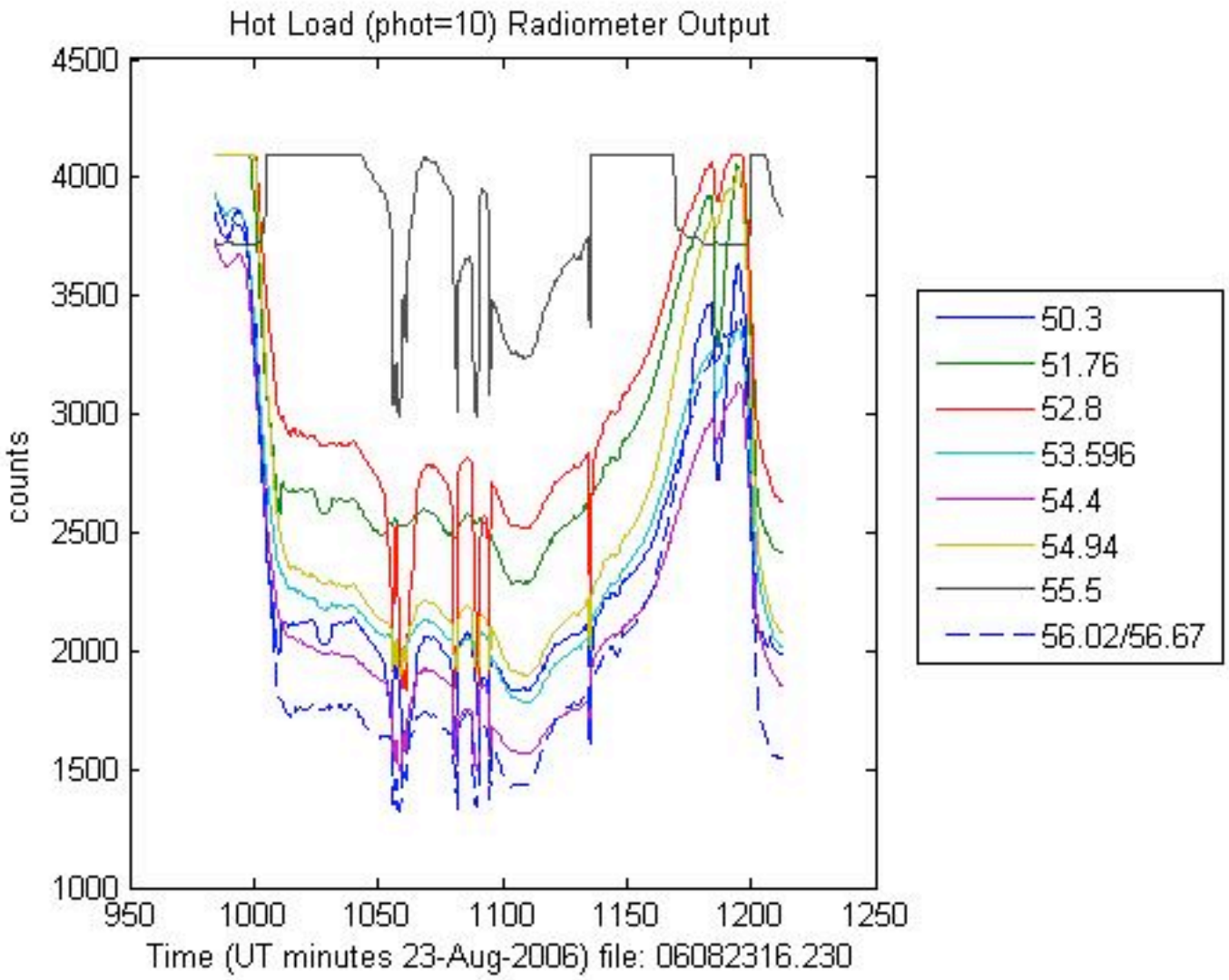

Instrument Temperatures
Celsius
50
40
30
20
10
0
-10
-20
-30
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
55 baseplate
55 IF amp
118 det/dig
183 IF amp
183 baseplate
183 LNA
servo amp
Acopian PS03
55 mixer
55 radome wall
ant support
183 baseplate
118 multiplier
183 mixer
CPU
WW board

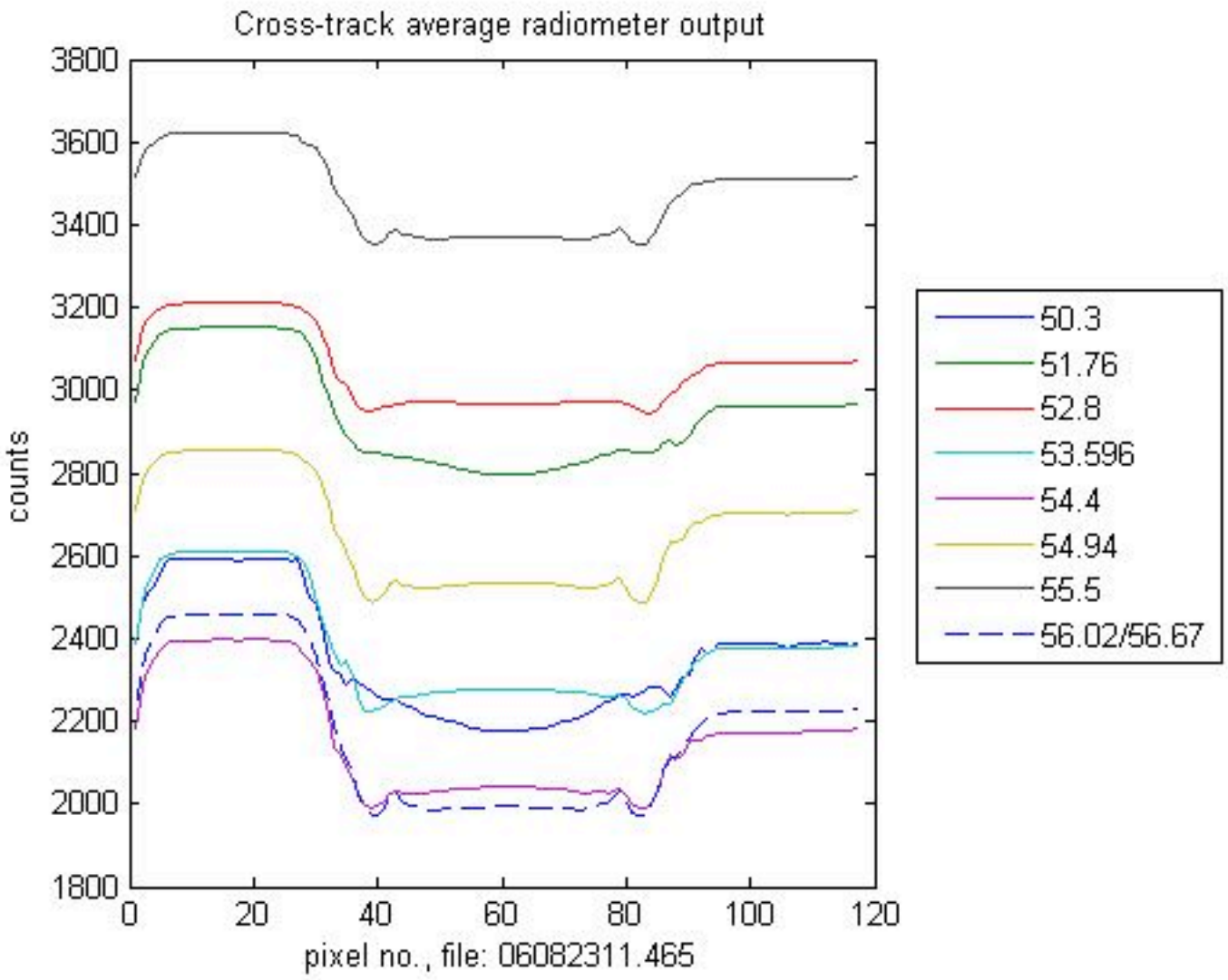
III-b. Digitizer Counts

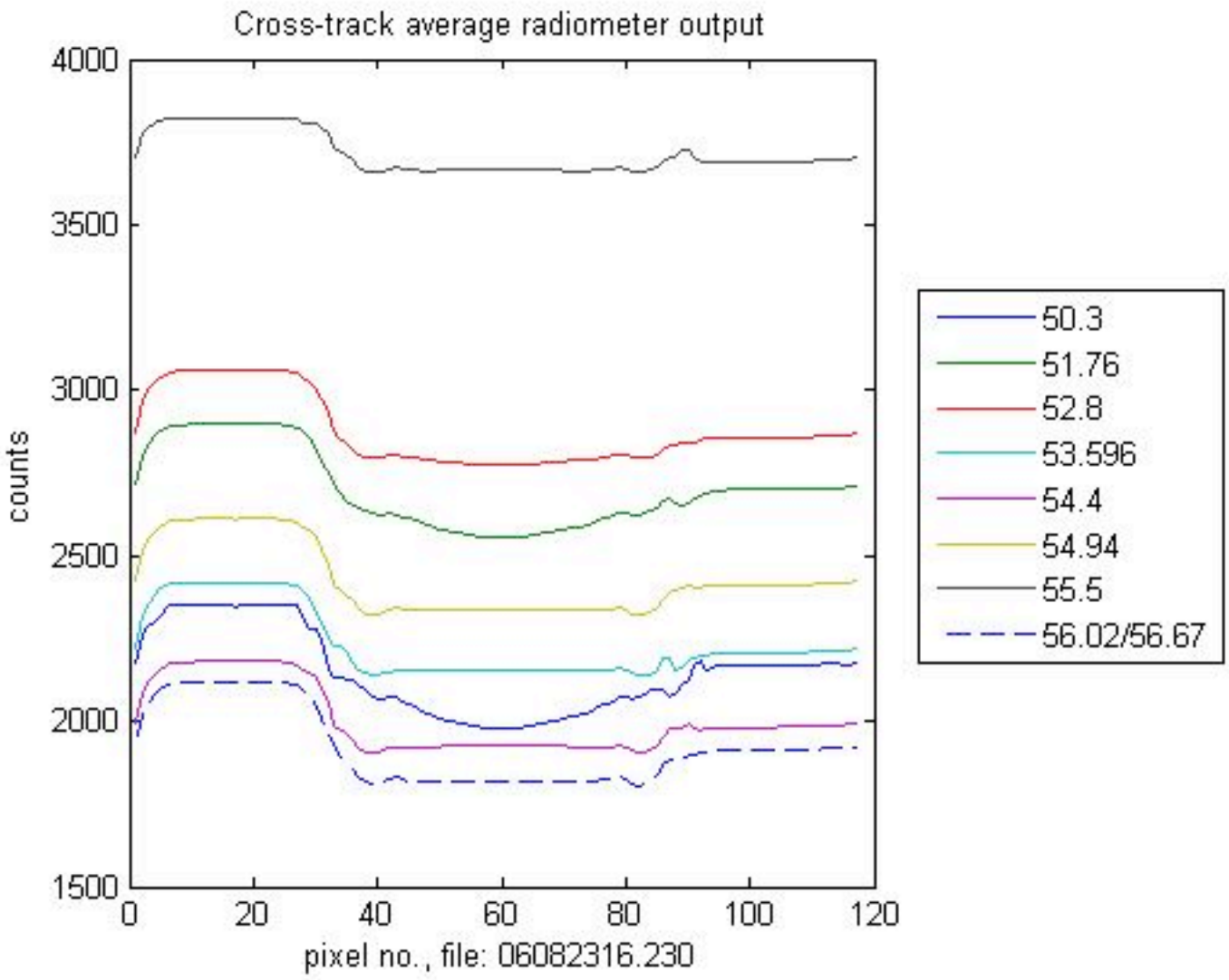


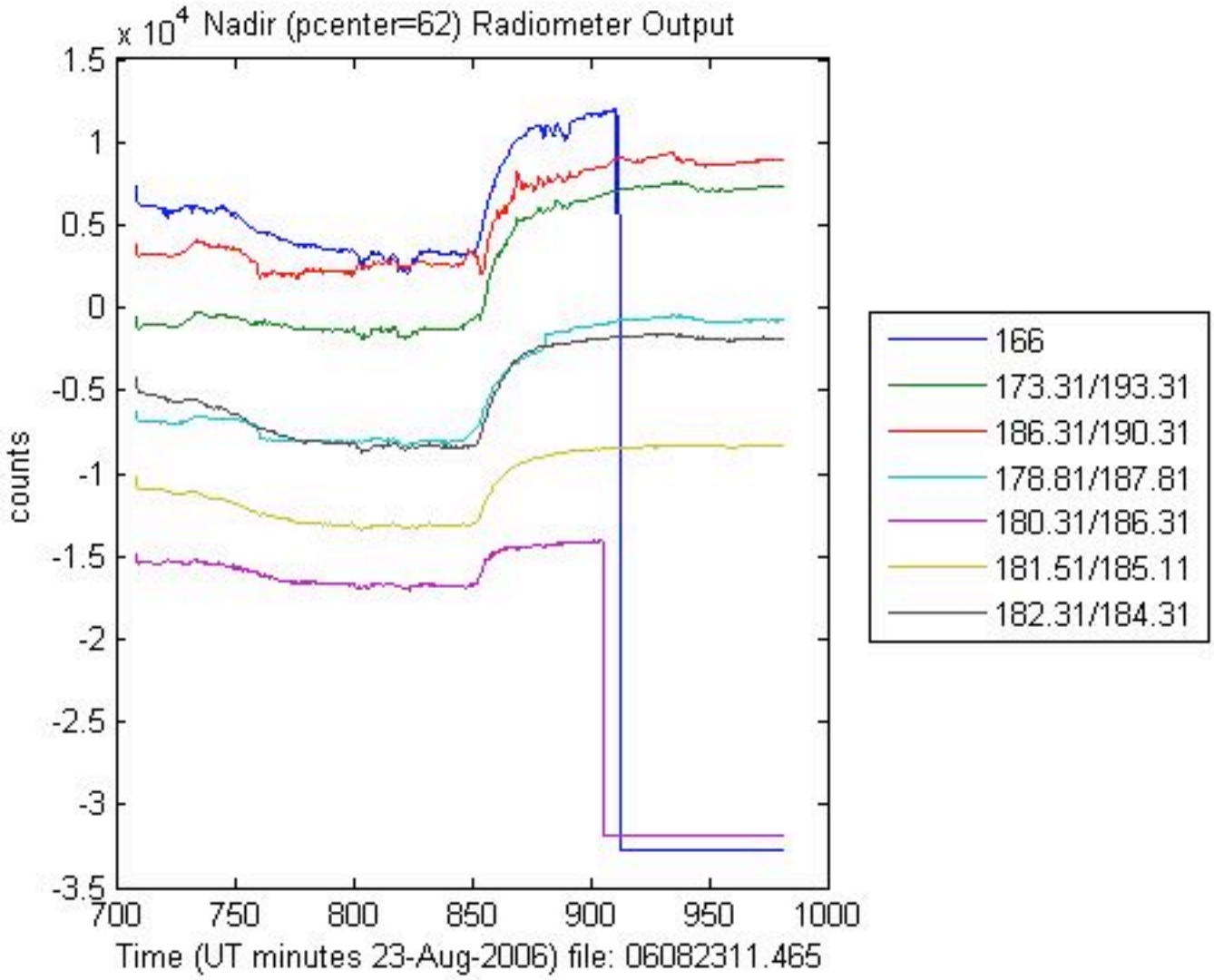

Nadir (pcenter=62) Radiometer Output
counts
4500
4000
3500
3000
2500
2000
1500
1000
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

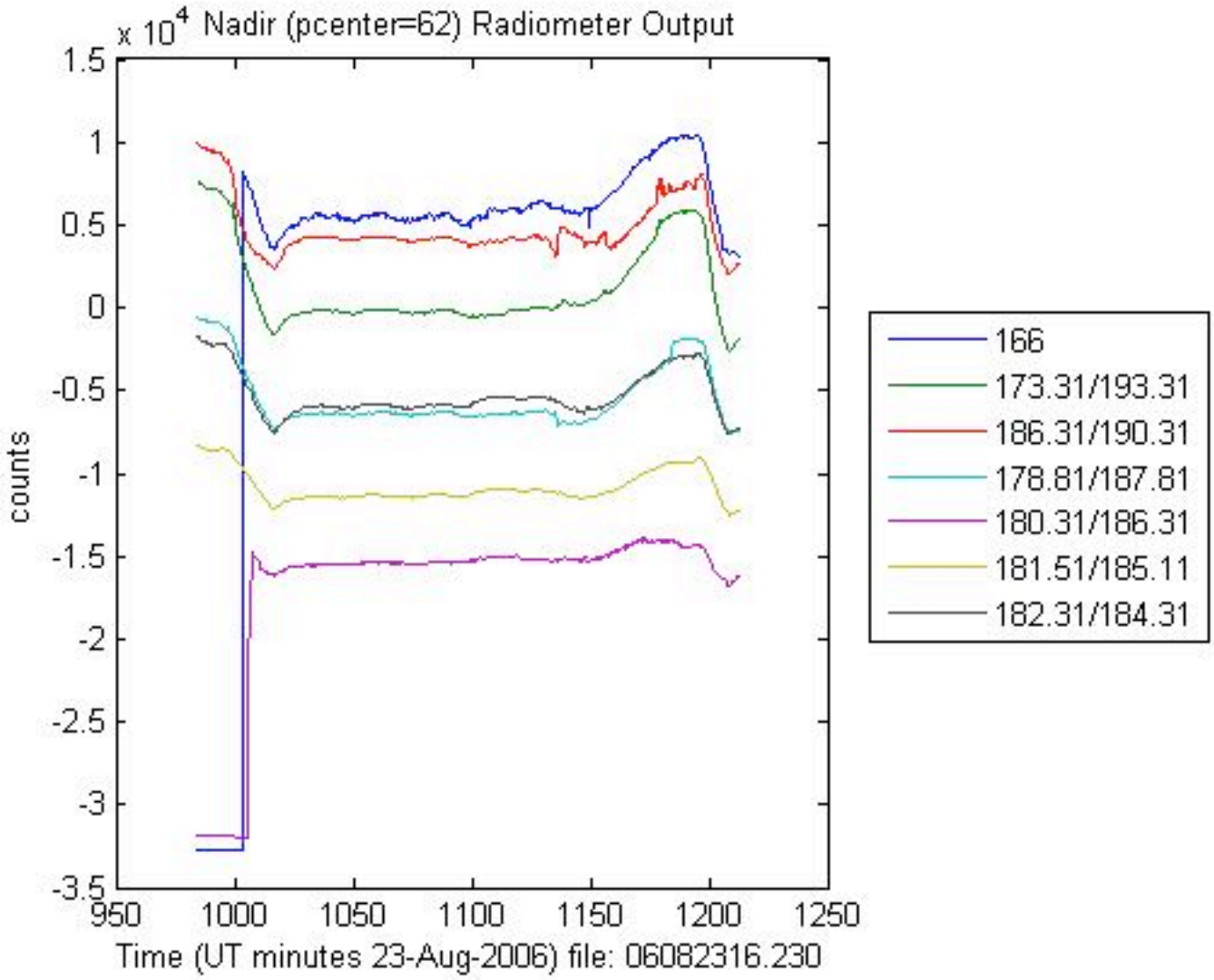

Hot Load (phot=10) Radiometer Output
counts
4500
4000
3500
3000
2500
2000
1500
1000
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

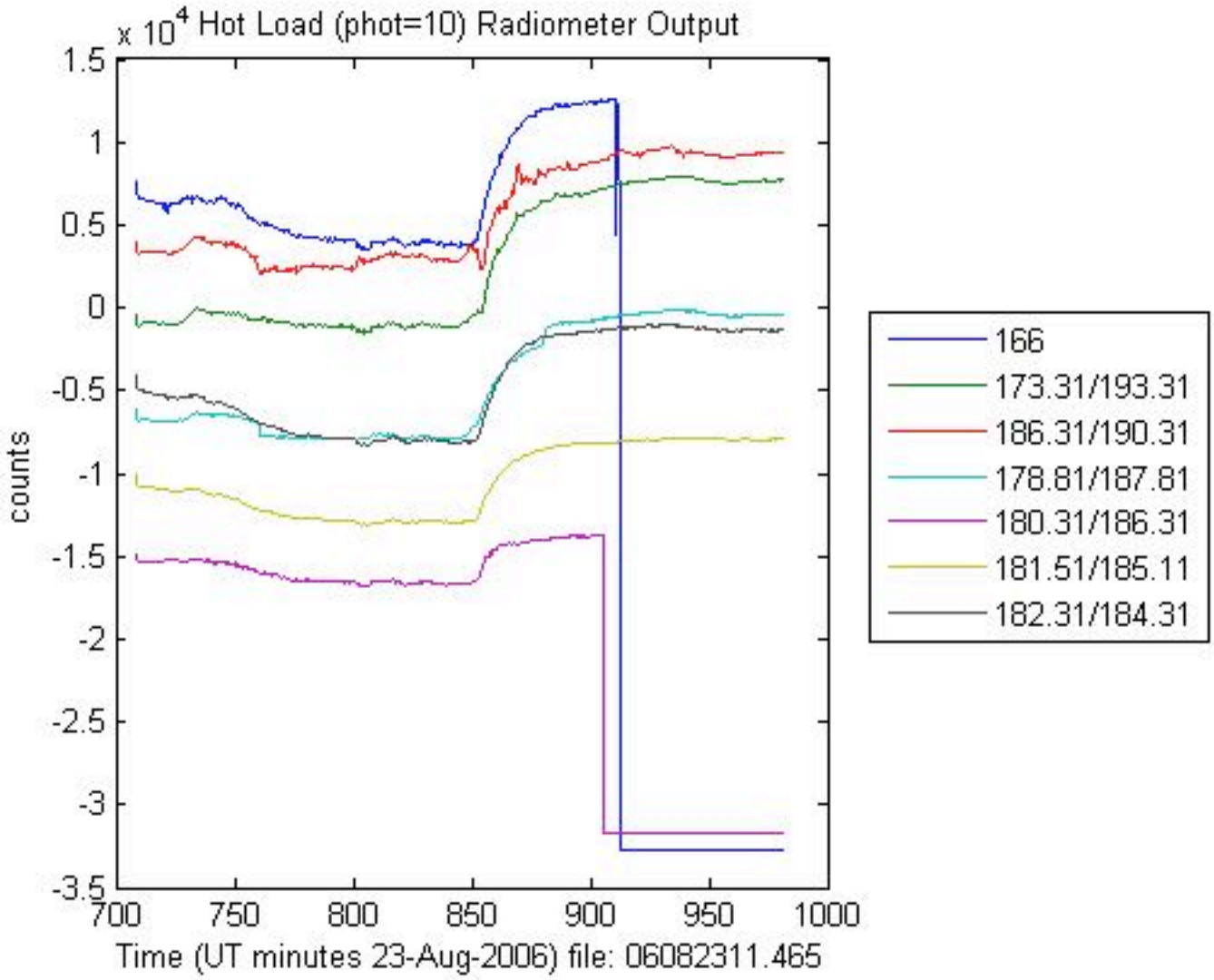

Hot Load (phot=10) Radiometer Output
counts
4500
4000
3500
3000
2500
2000
1500
1000
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

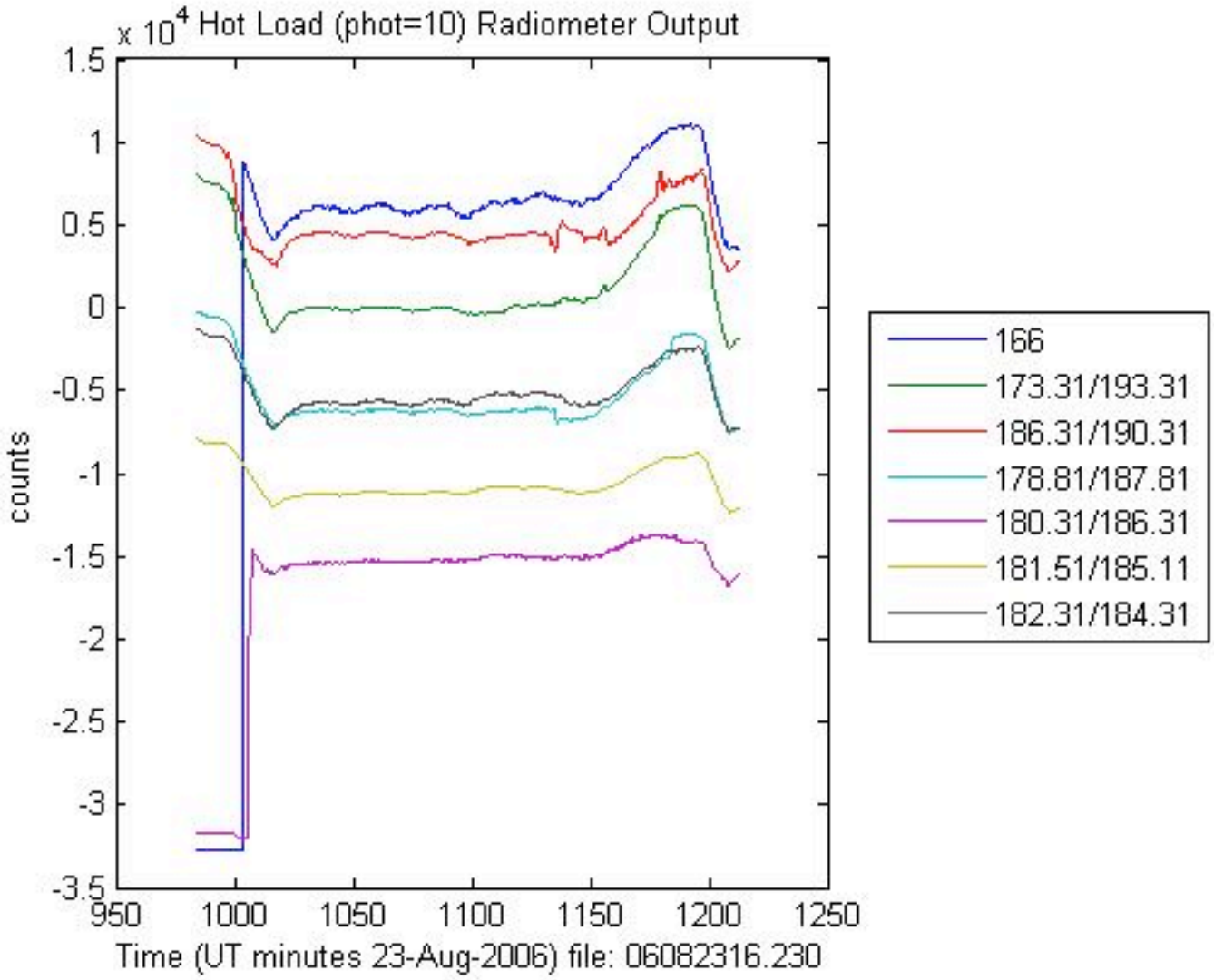

Cross-track average radiometer output
counts
pixel no., file: 06082311.465
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

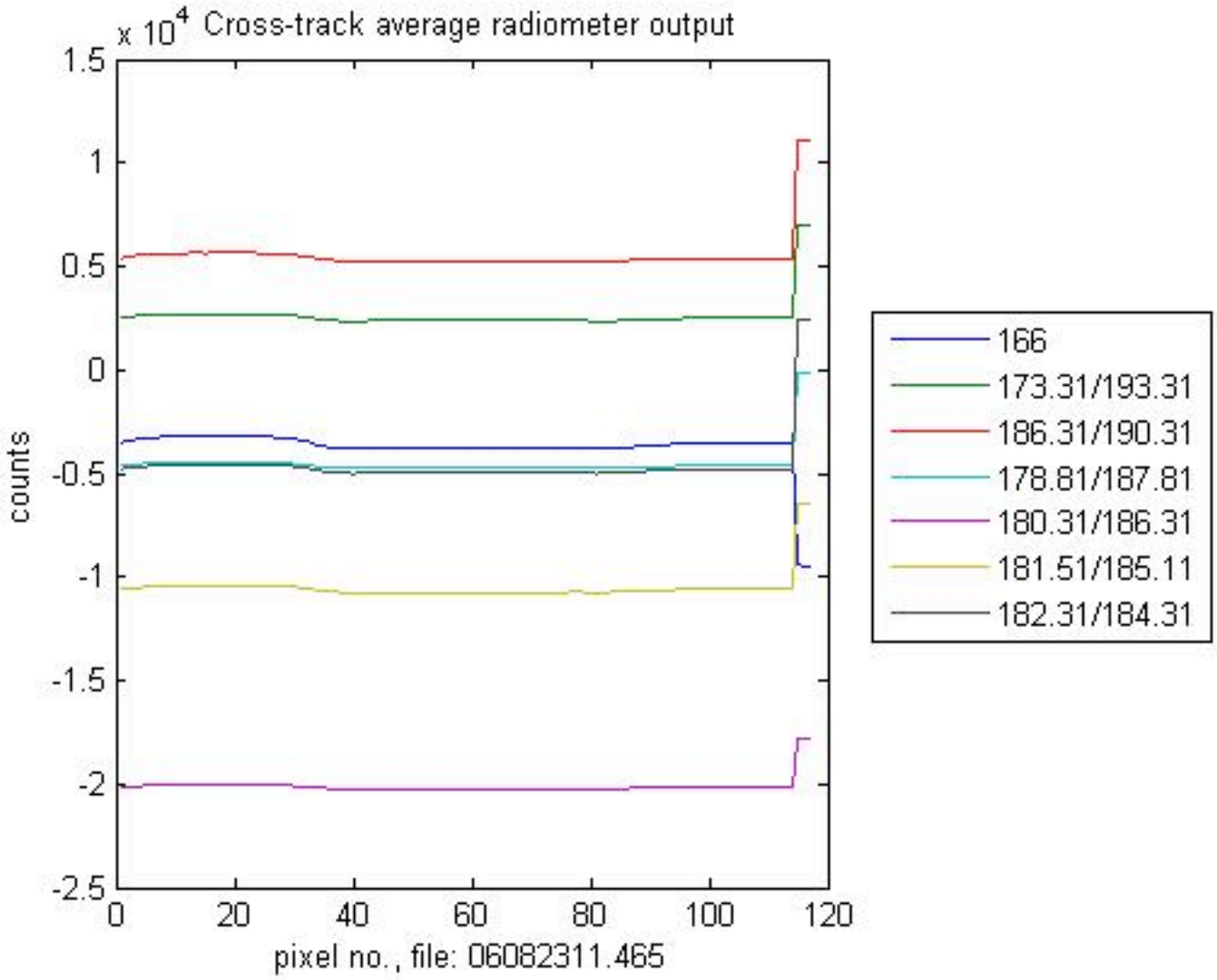

Cross-track average radiometer output
4000
3500
3000
2500
2000
1500
counts
0
20
40
60
80
100
120
pixel no., file: 06082316.230
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

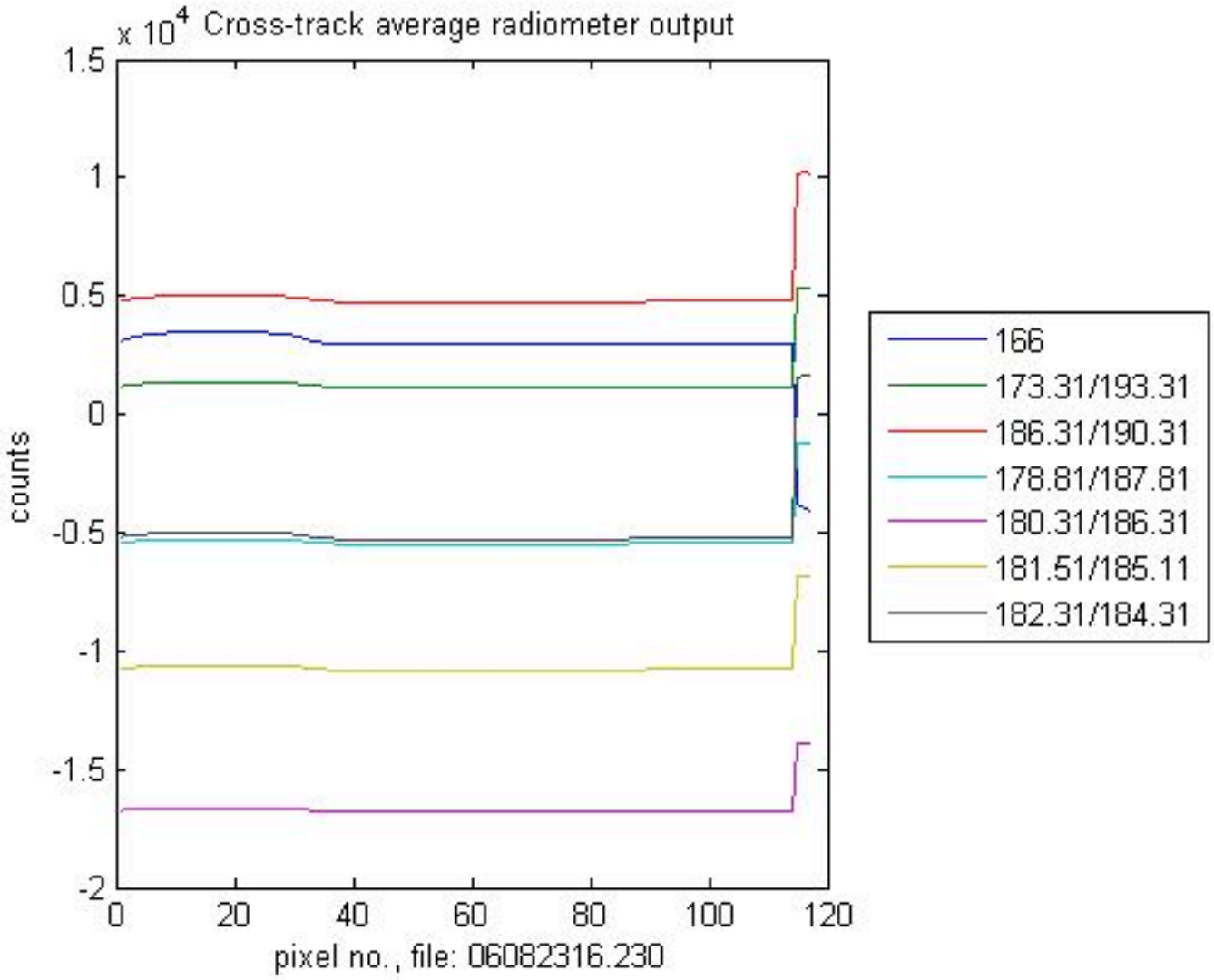

x 10^4 Nadir (pcenter=62) Radiometer Output
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
counts
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31


x 10^4 Nadir (pcenter=62) Radiometer Output
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
counts
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

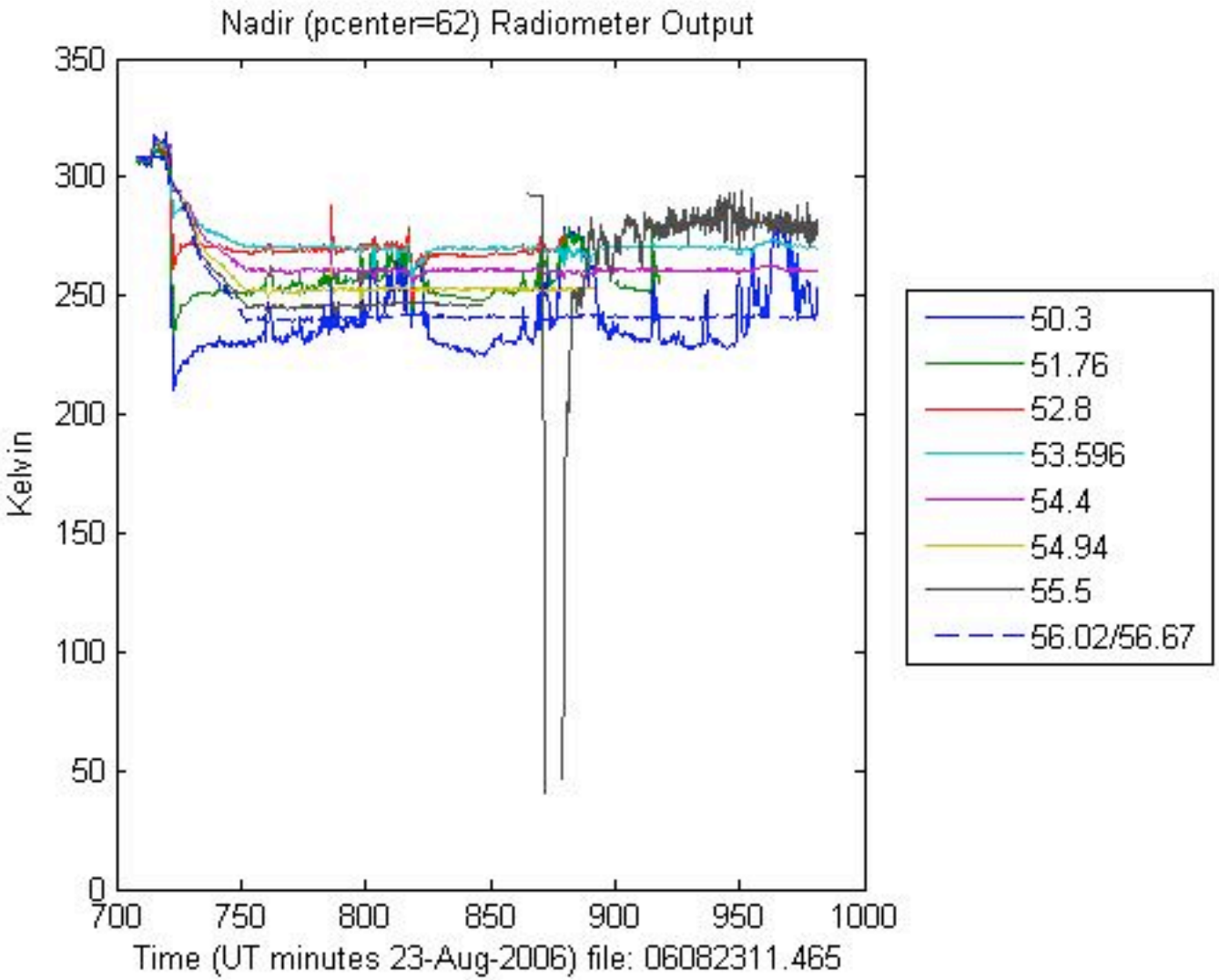

x 10^4 Hot Load (phot=10) Radiometer Output
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
counts
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

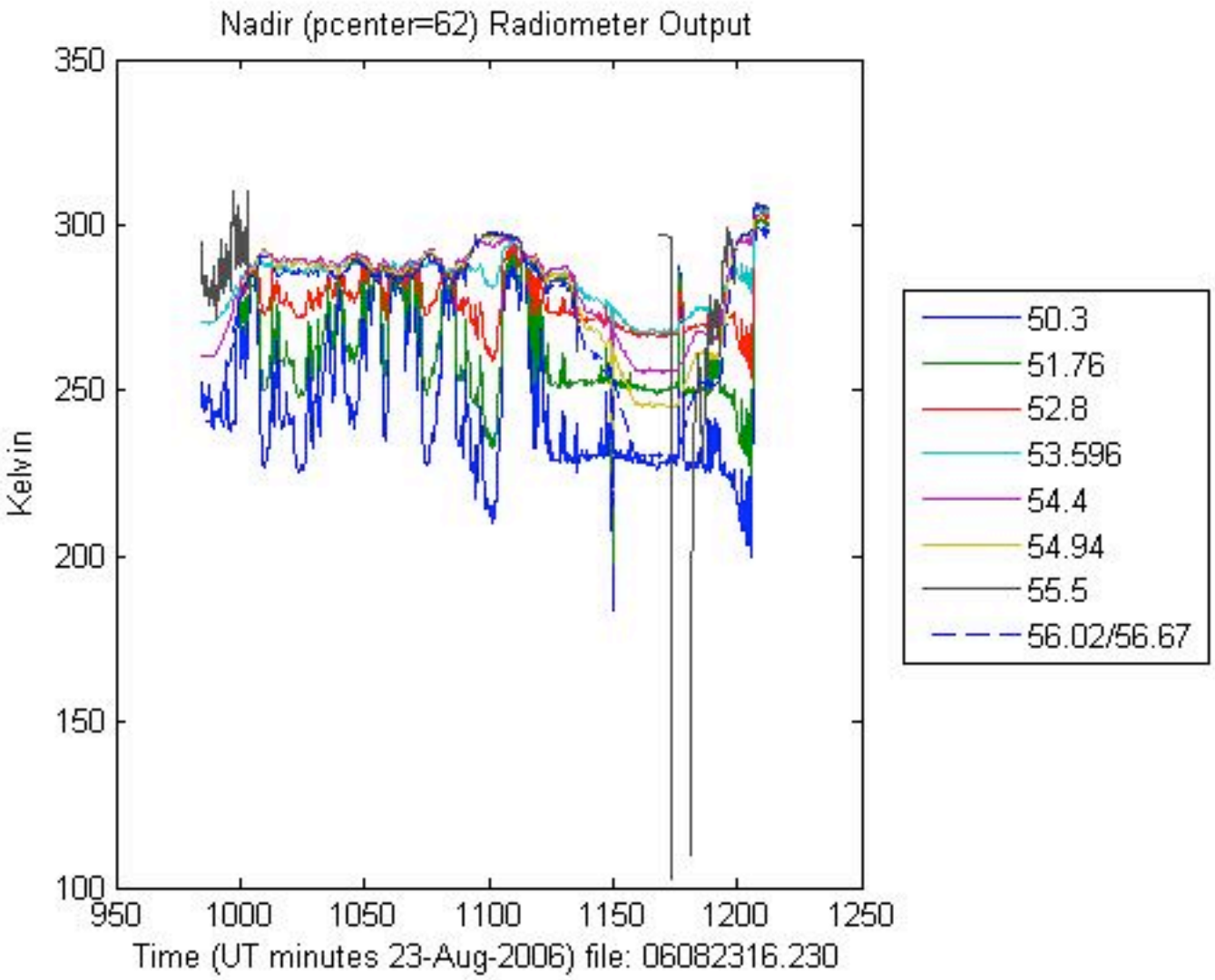

x 10^4 Hot Load (phot=10) Radiometer Output
counts
Time (UT minutes 23-Aug-2006) file: 06082316.230
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

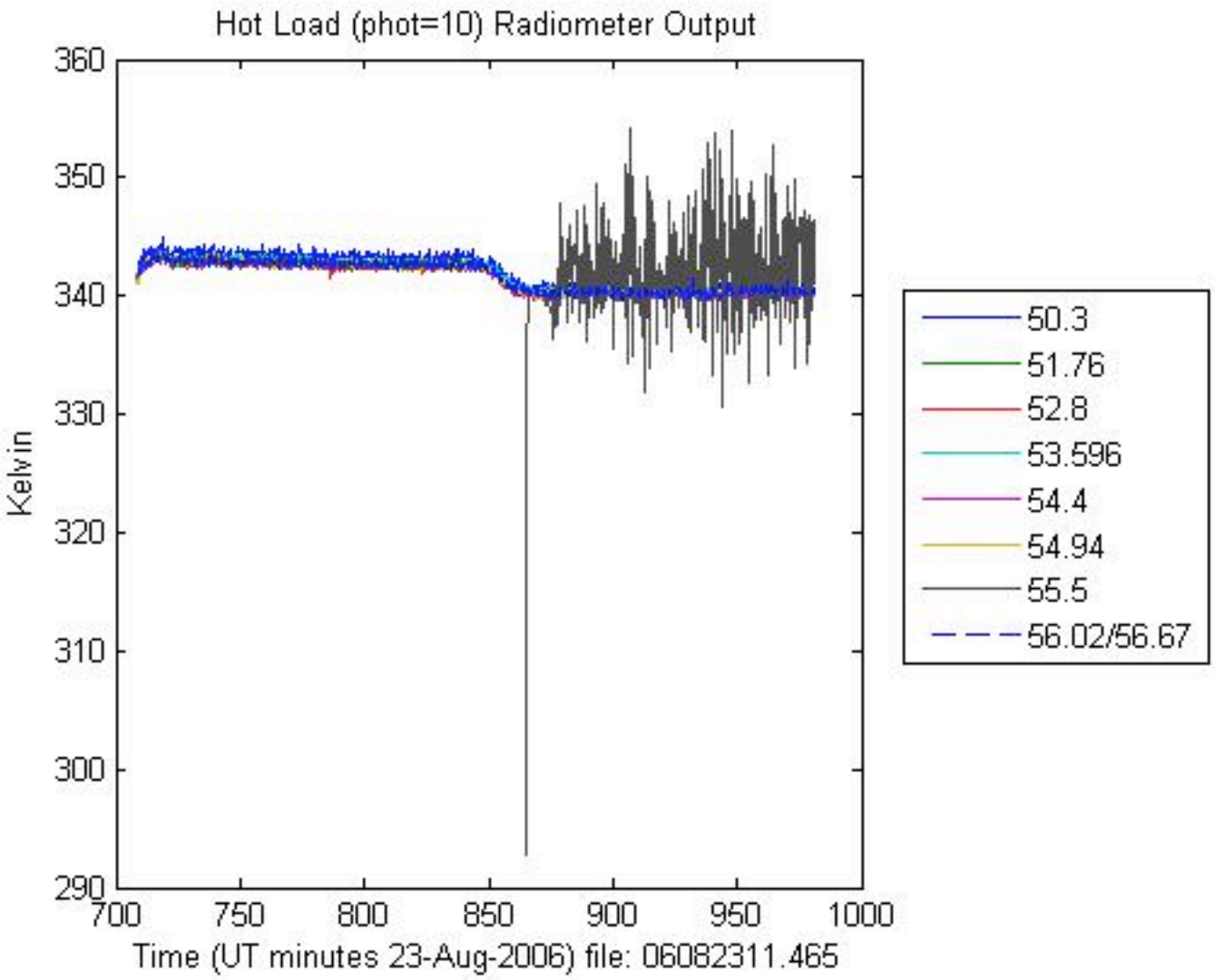

x 10^4 Cross-track average radiometer output
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
counts
0
20
40
60
80
100
120
pixel no., file: 06082311.465
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

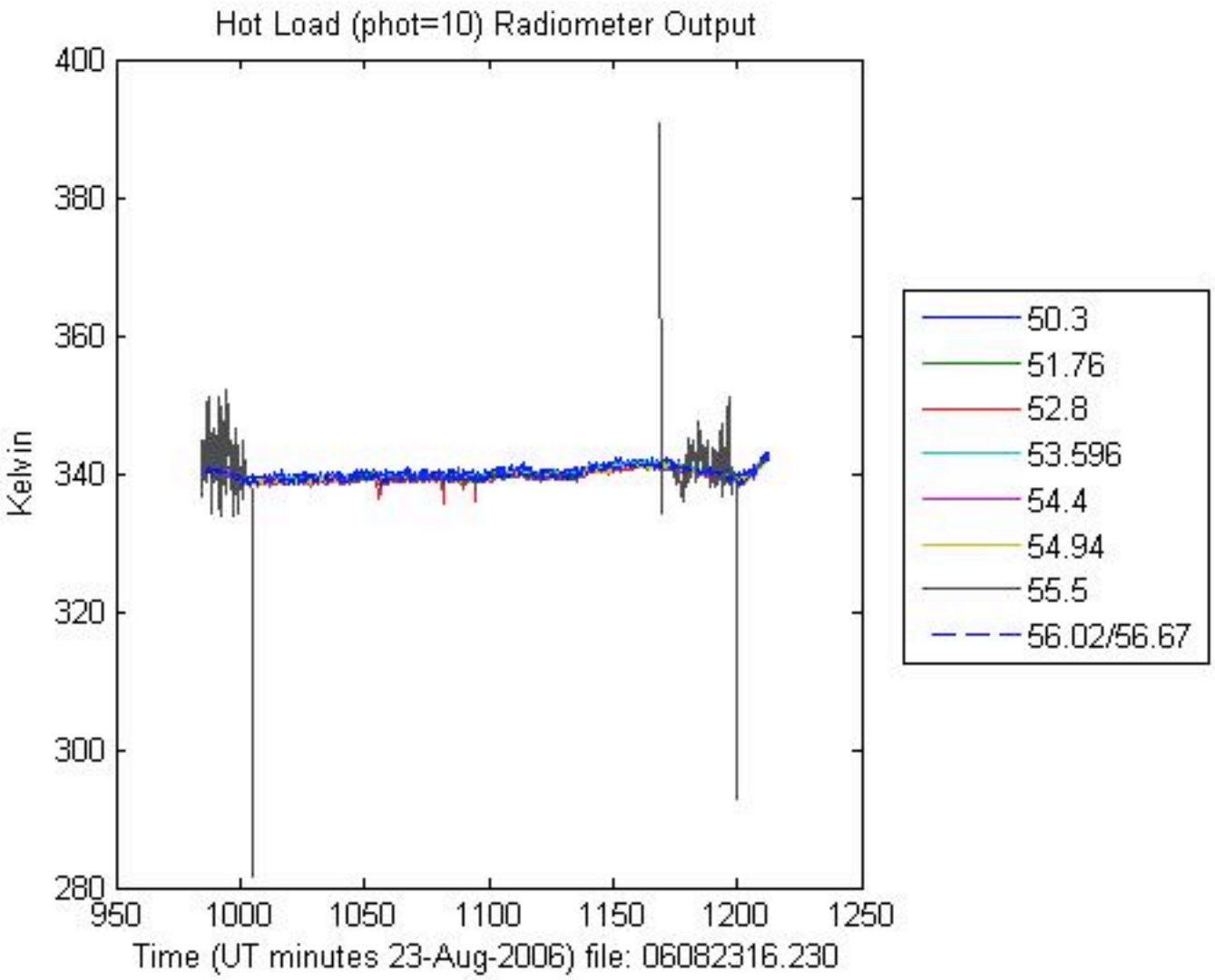

x 10^4 Cross-track average radiometer output
1.5
1
0.5
0
-0.5
-1
-1.5
-2
counts
0
20
40
60
80
100
120
pixel no., file: 06082316.230
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

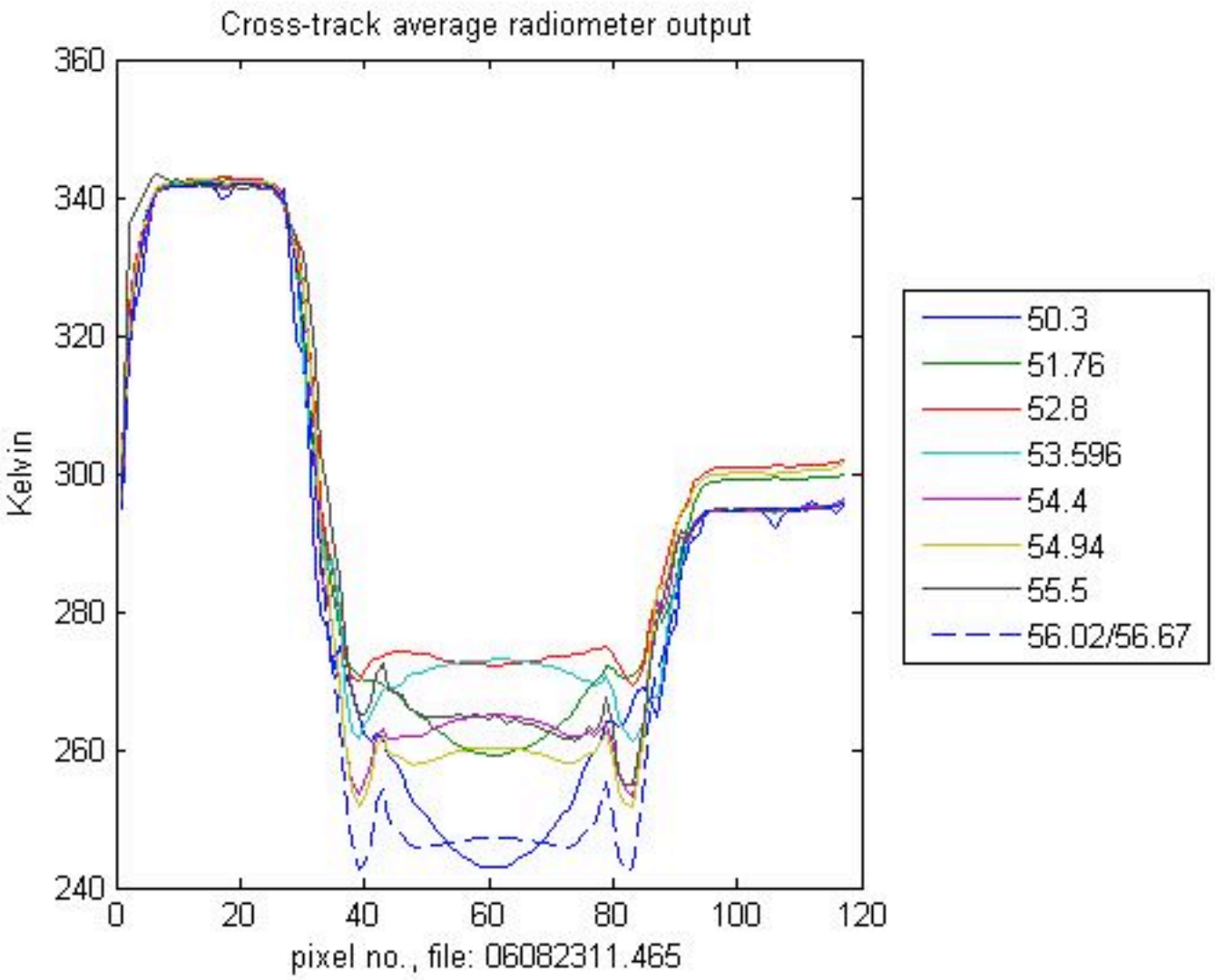
III-c. Calibrated Brightness Temperatures

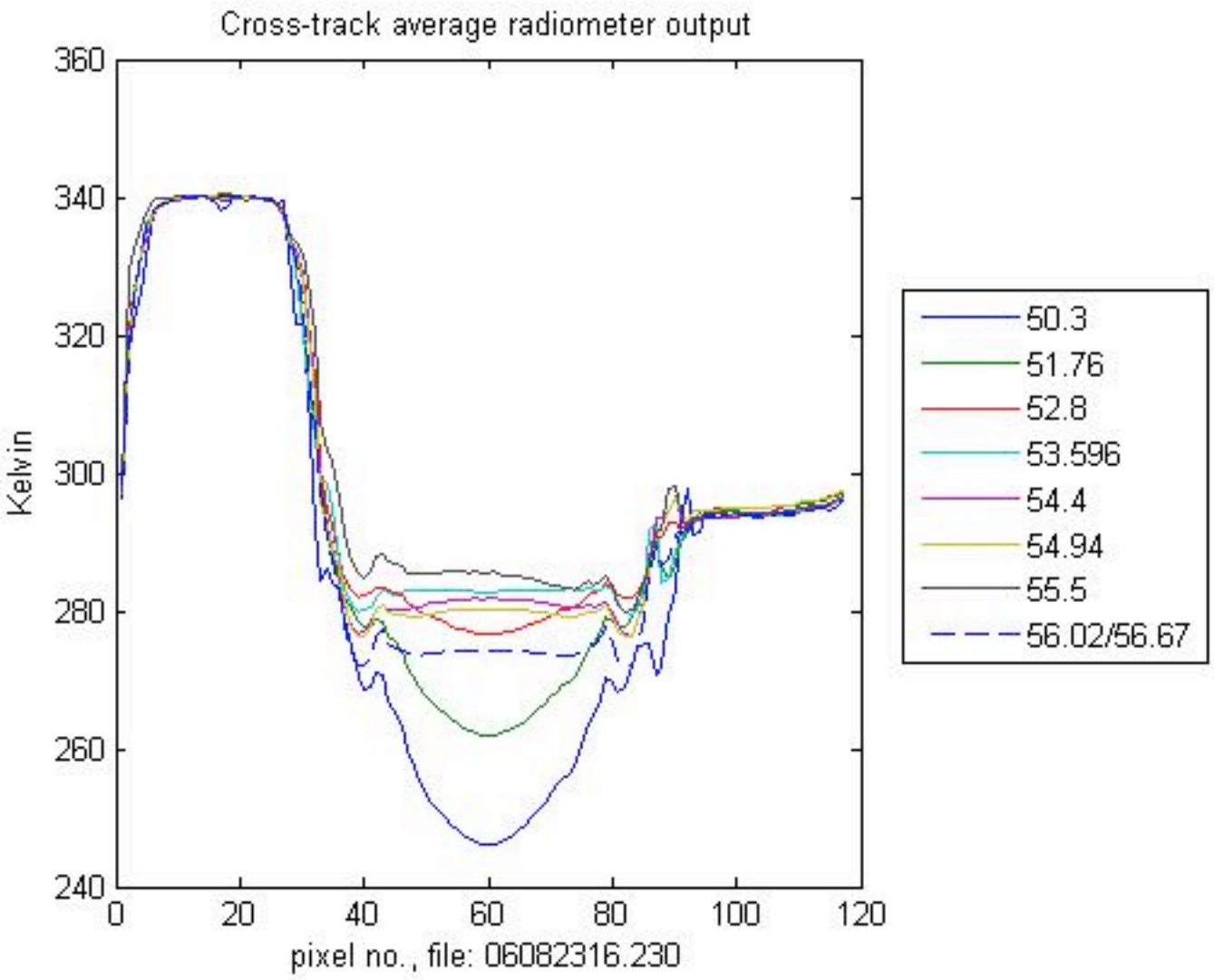


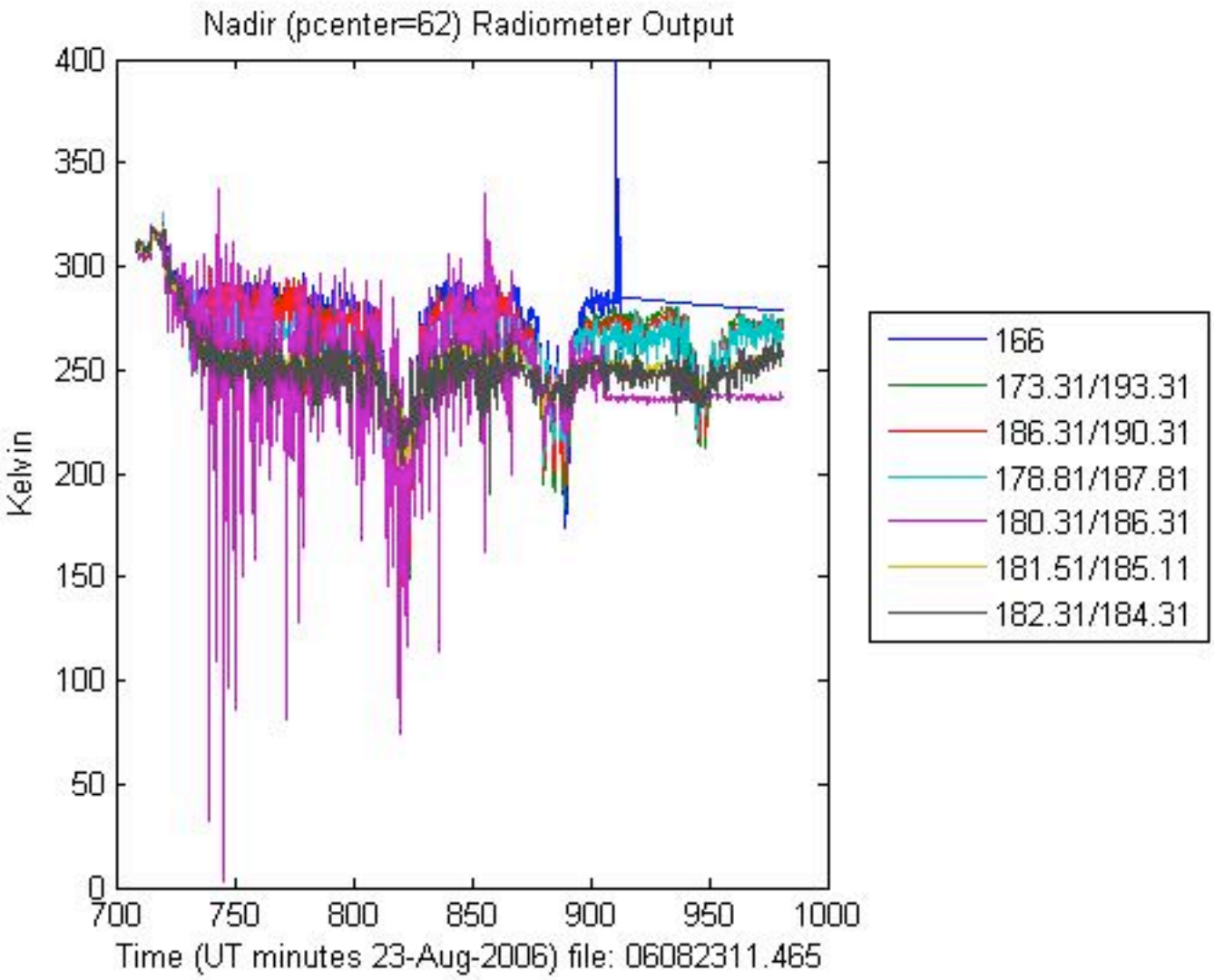

Nadir (pcenter=62) Radiometer Output
Kelvin
350
300
250
200
150
100
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

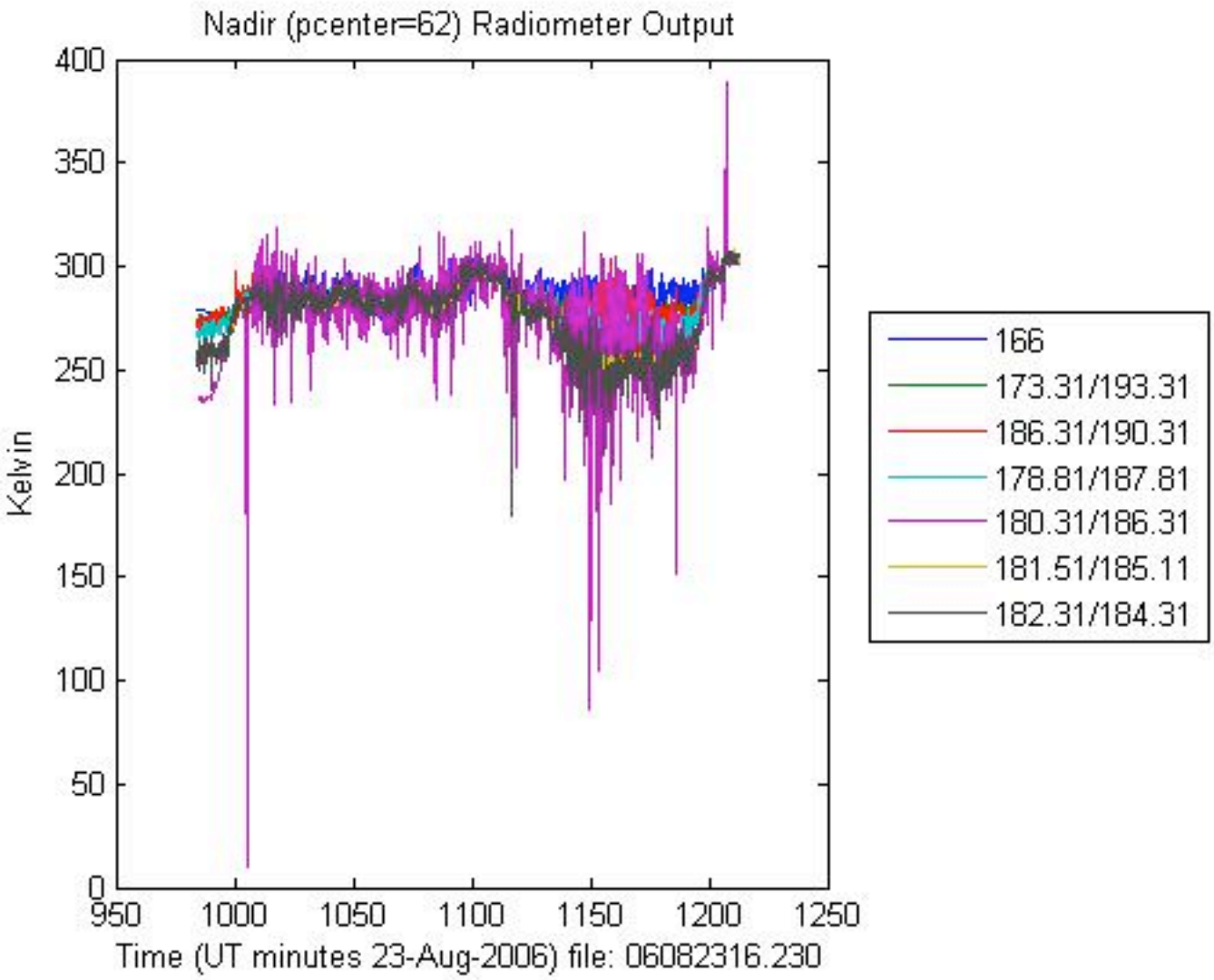

Hot Load (phot=10) Radiometer Output
Kelvin
360
350
340
330
320
310
300
290
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

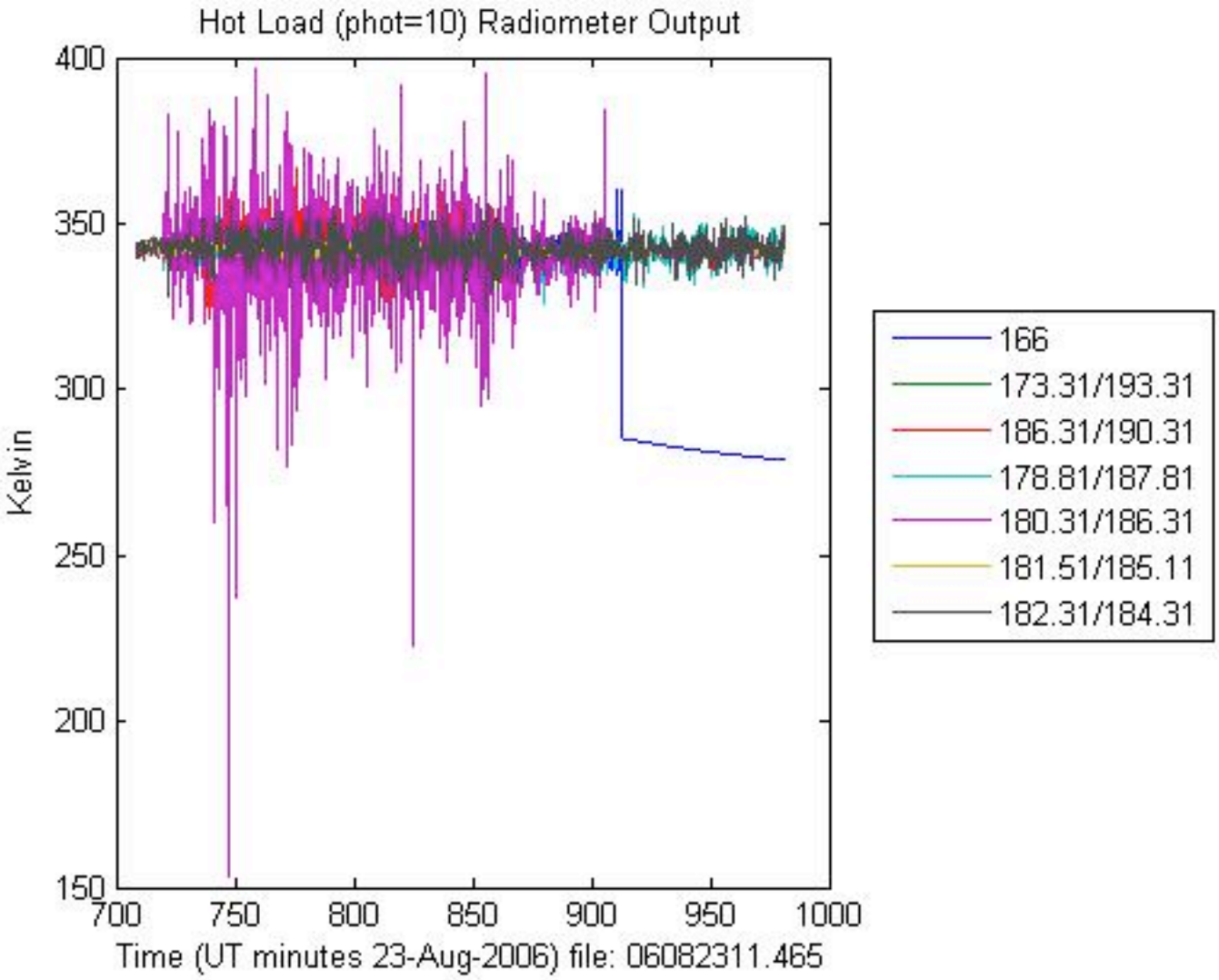

Hot Load (phot=10) Radiometer Output
Kelvin
400
380
360
340
320
300
280
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

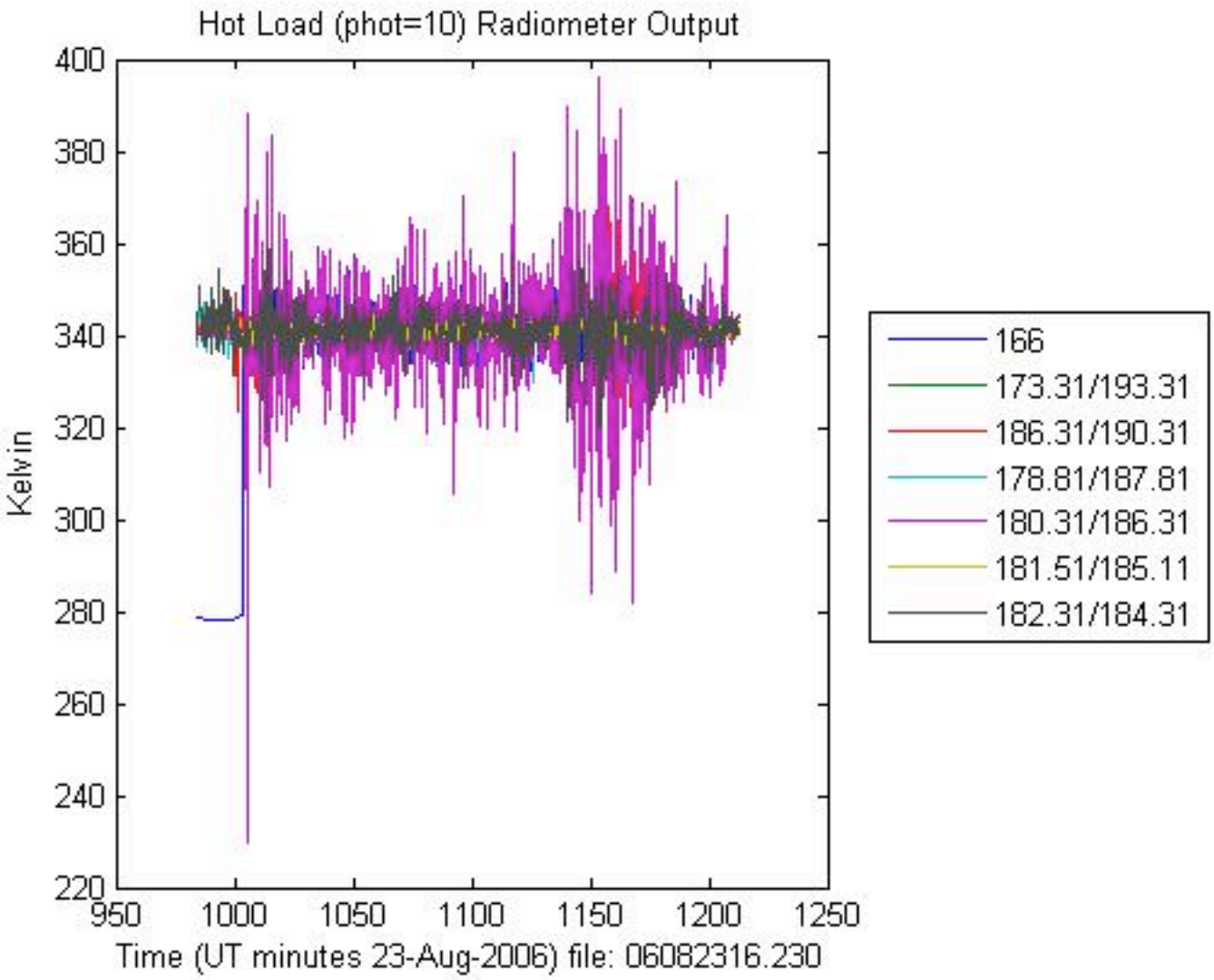

Cross-track average radiometer output
Kelvin
360
340
320
300
280
260
240
0
20
40
60
80
100
120
pixel no., file: 06082311.465
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

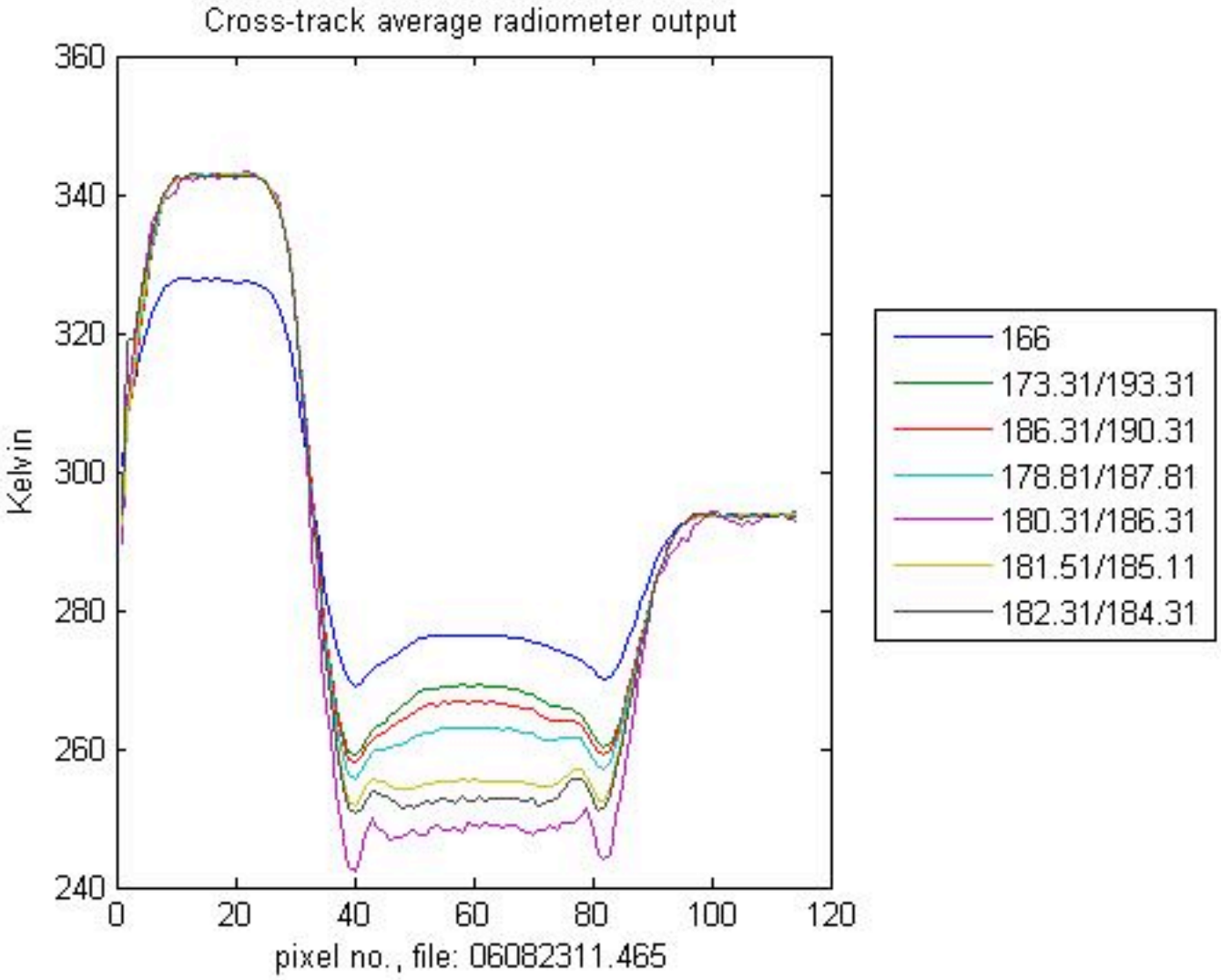

Cross-track average radiometer output
Kelvin
360
340
320
300
280
260
240
0
20
40
60
80
100
120
pixel no., file: 06082316.230
50.3
51.76
52.8
53.596
54.4
54.94
55.5
56.02/56.67

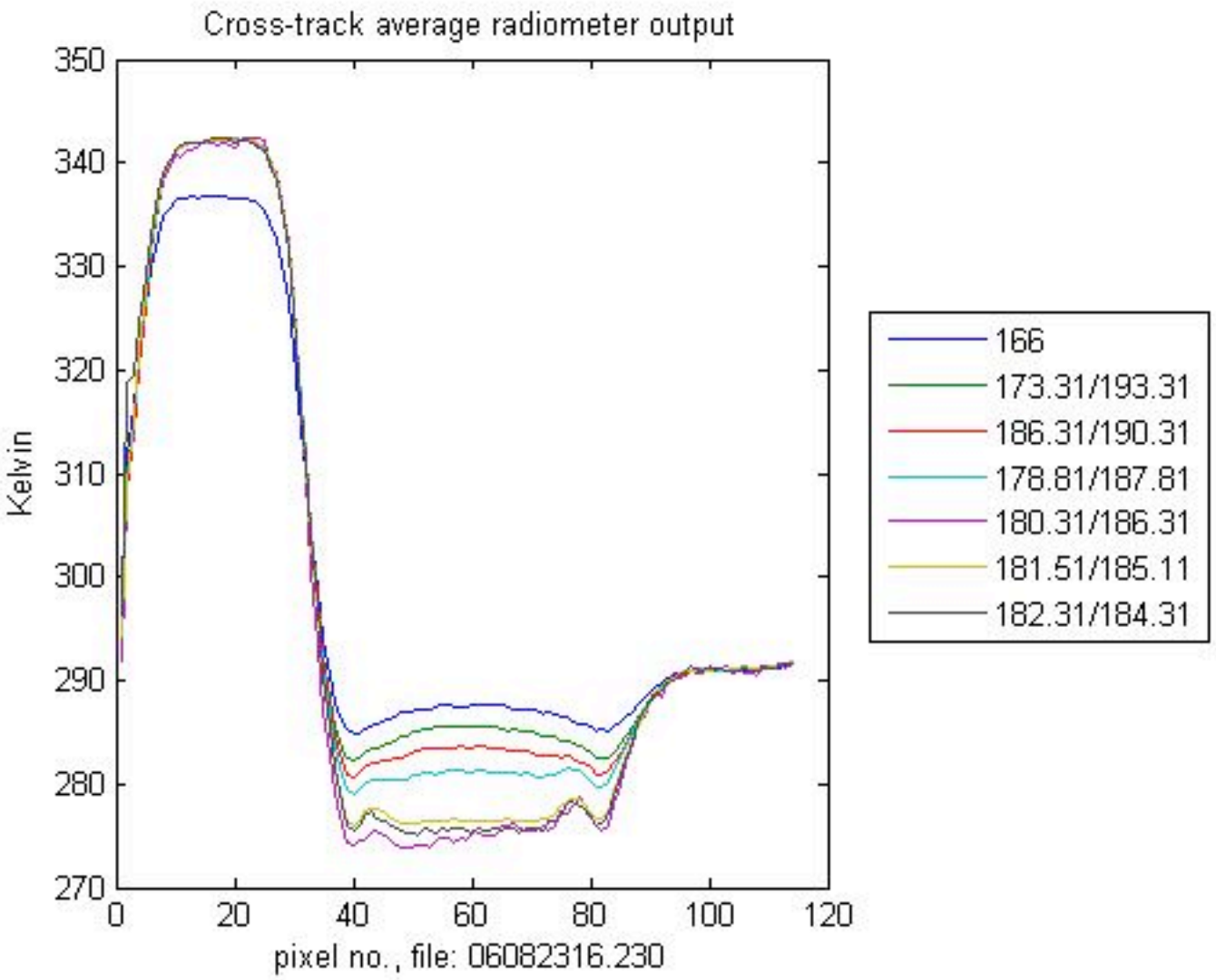

Nadir (pcenter=62) Radiometer Output
Kelvin
400
350
300
250
200
150
100
50
0
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31


Nadir (pcenter=62) Radiometer Output
Kelvin
400
350
300
250
200
150
100
50
0
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

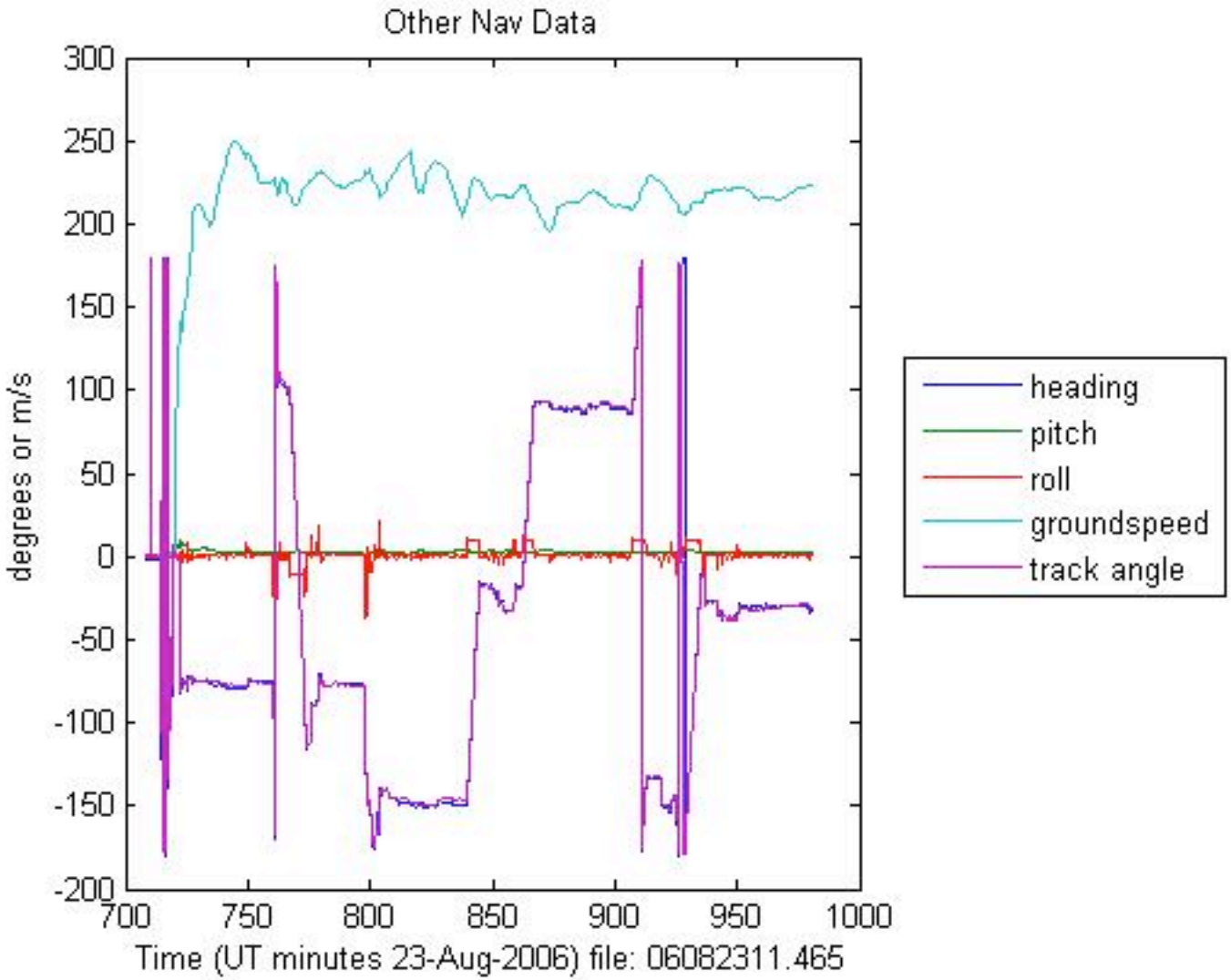

Hot Load (phot=10) Radiometer Output
Kelvin
400
350
300
250
200
150
700
750
800
850
900
950
1000
Time (UT minutes 23-Aug-2006) file: 06082311.465
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

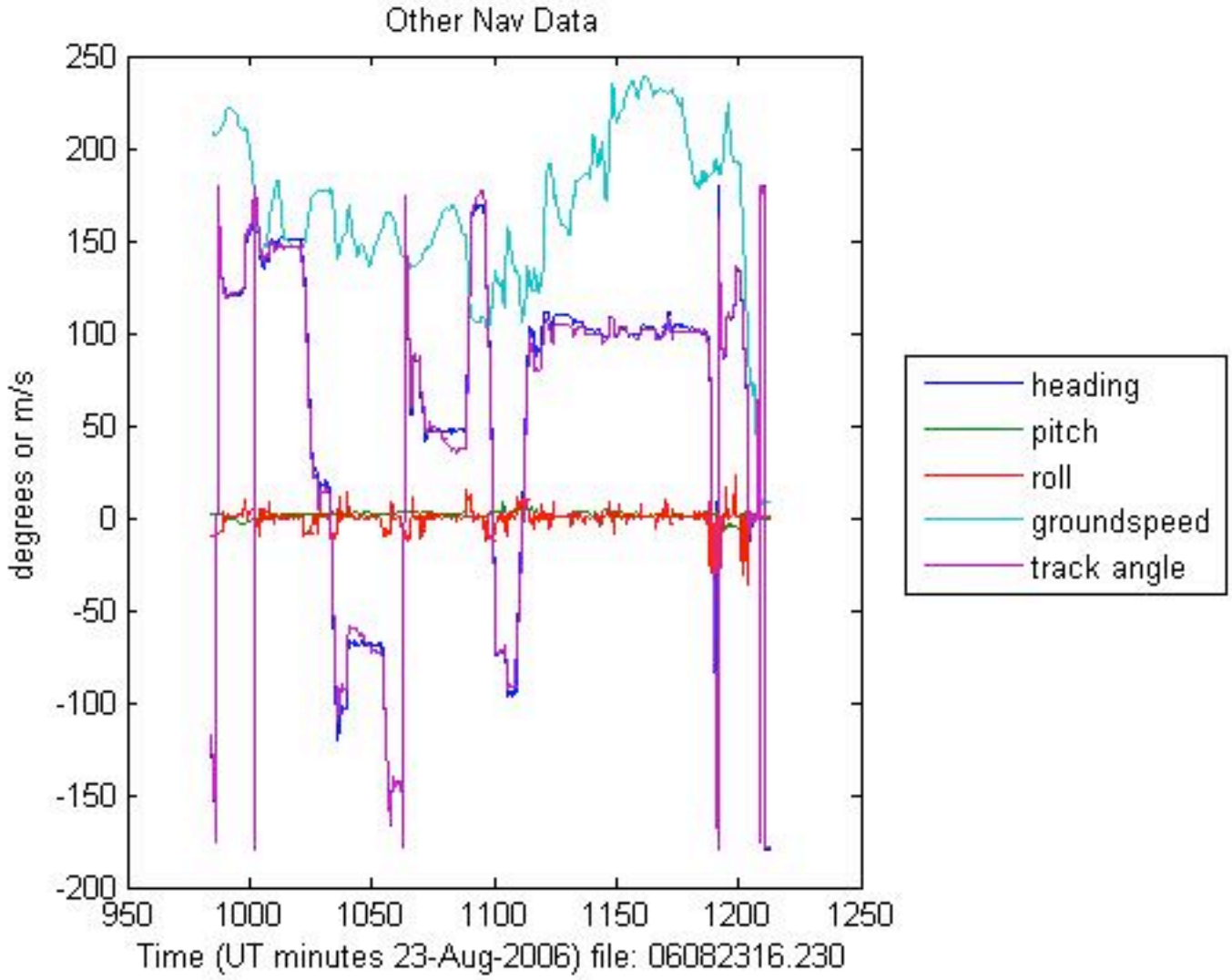

Hot Load (phot=10) Radiometer Output
Kelvin
400
380
360
340
320
300
280
260
240
220
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

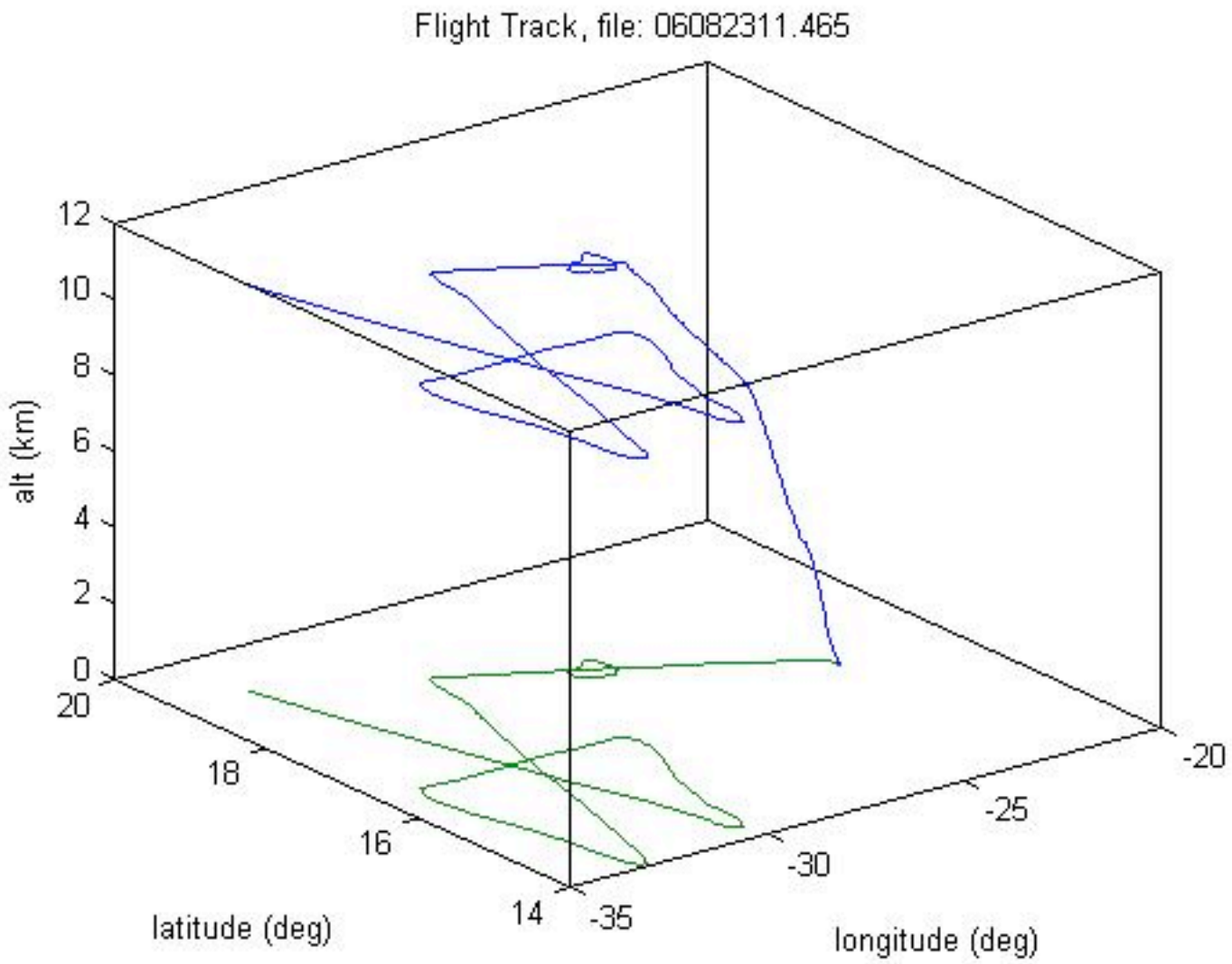

Cross-track average radiometer output
Kelvin
360
340
320
300
280
260
240
0
20
40
60
80
100
120
pixel no., file: 06082311.465
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

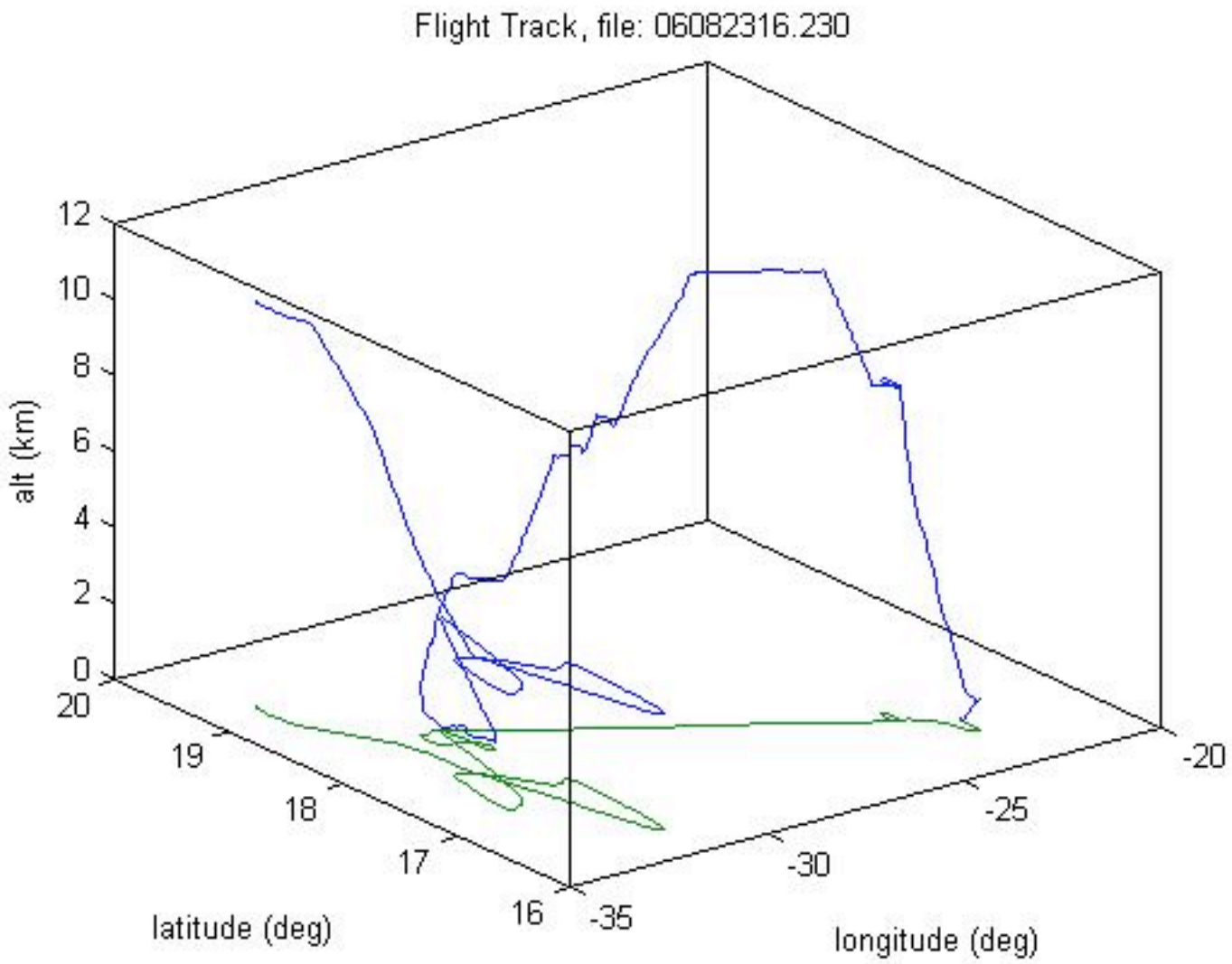

Cross-track average radiometer output
Kelvin
350
340
330
320
310
300
290
280
270
0
20
40
60
80
100
120
pixel no., file: 06082316.230
166
173.31/193.31
186.31/190.31
178.81/187.81
180.31/186.31
181.51/185.11
182.31/184.31

III-d. Flight Nav Data




Other Nav Data
250
200
150
100
50
0
-50
-100
-150
-200
degrees or m/s
950
1000
1050
1100
1150
1200
1250
Time (UT minutes 23-Aug-2006) file: 06082316.230
heading
pitch
roll
groundspeed
track angle


Flight Track, file: 06082311.465
alt (km)
12
10
8
6
4
2
0
20
18
16
14
latitude (deg)
-20
-25
-30
-35
longitude (deg)


Flight Track, file: 06082316.230
alt (km)
12
10
8
6
4
2
0
20
19
18
17
16
latitude (deg)
-35
-30
-25
-20
longitude (deg)