Spacecraft: Cassini
DSS: 34
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APPLICABLE_STOP_TIME = 2005-285T02:14:54.196;
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5 minutes omitted from end of file

02. Carrier Power to Noise Spectral Density Ratio (Pc/No) and Residual Frequency

03. X-Band Measured Carrier Frequency, Predicted Carrier Frequency, and Residual Frequency

04. Ka-Band Measured Carrier Frequency, Predicted Carrier Frequency, and Residual Frequency

05. Uplink Frequency and Power

06. Carrier Power to Noise Spectral Density Ratio (Pc/No) and Carrier Power

07. Carrier Power to Noise Spectral Density Ratio (Pc/No) and System Noise Temperature

08. Carrier Loop Tracking Bandwidth

09. Azimuth & Elevation

10. Conscan Drive Status

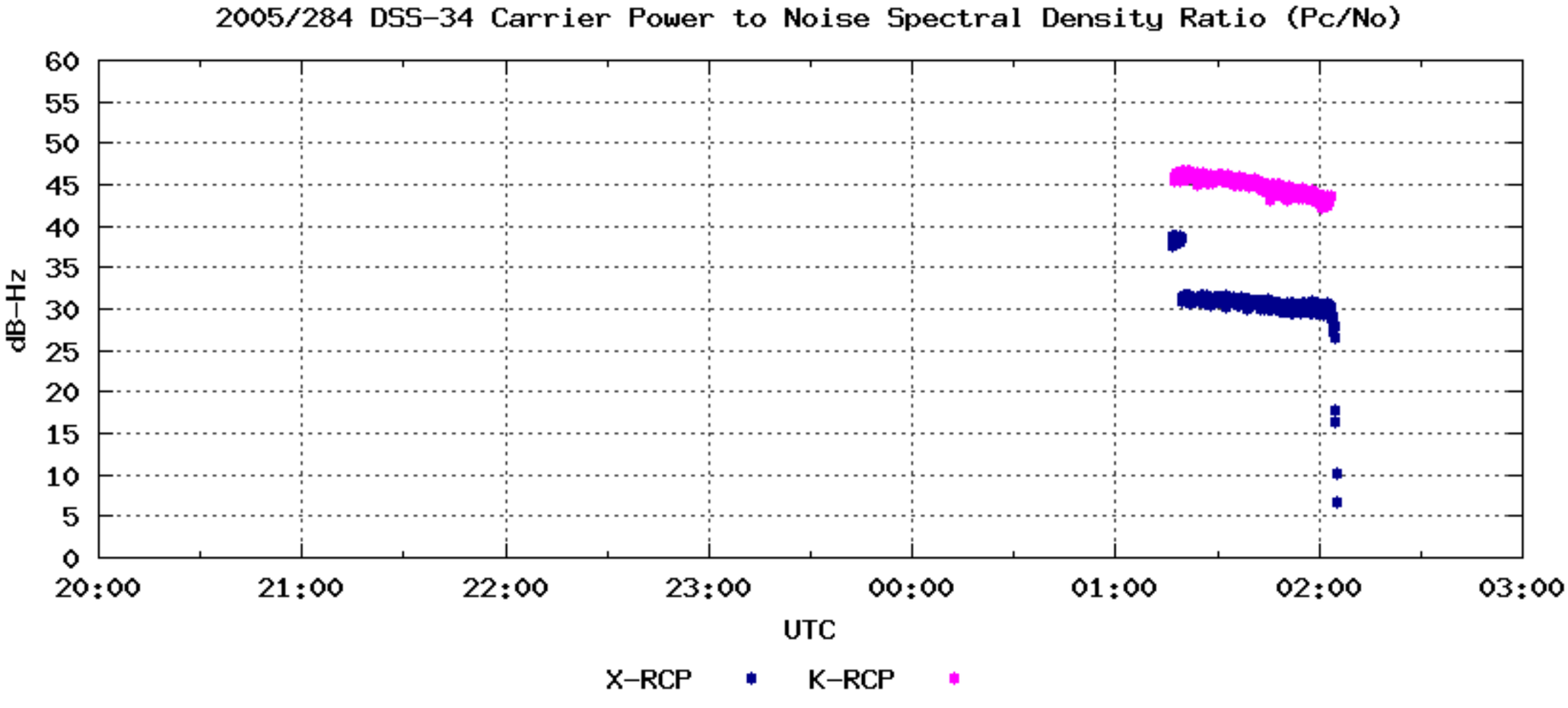
11. Azimuth & Elevation Monopulse Corrections

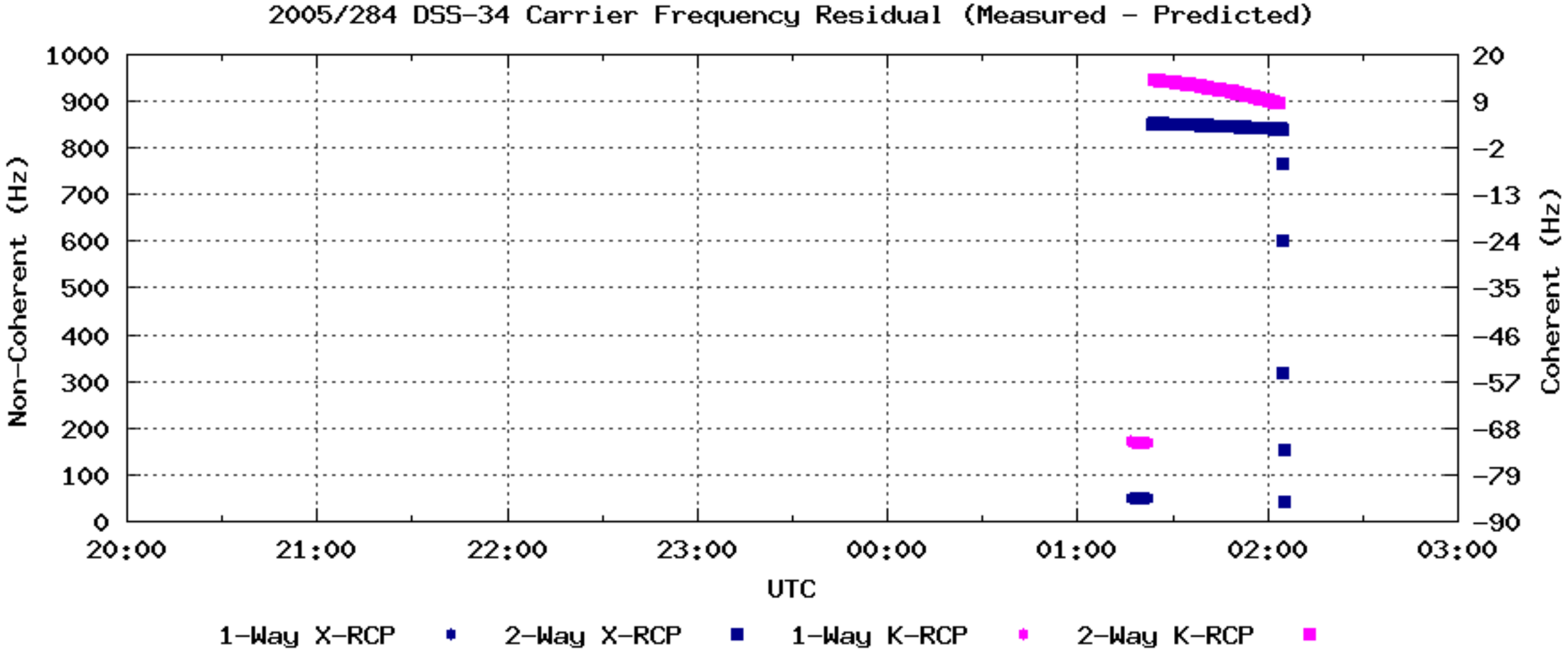
12. Azimuth & Elevation Residuals

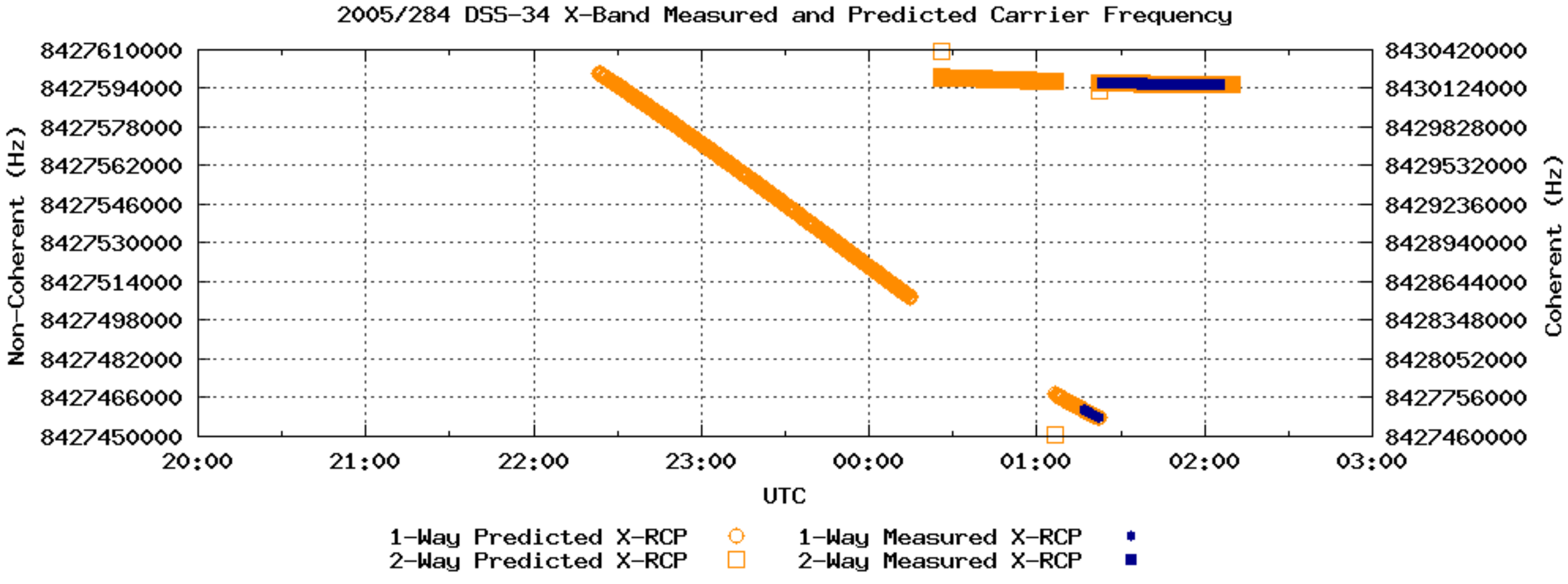
13. System Noise Temperature, Elevation, Precipitation Rate, and Relative Humidity

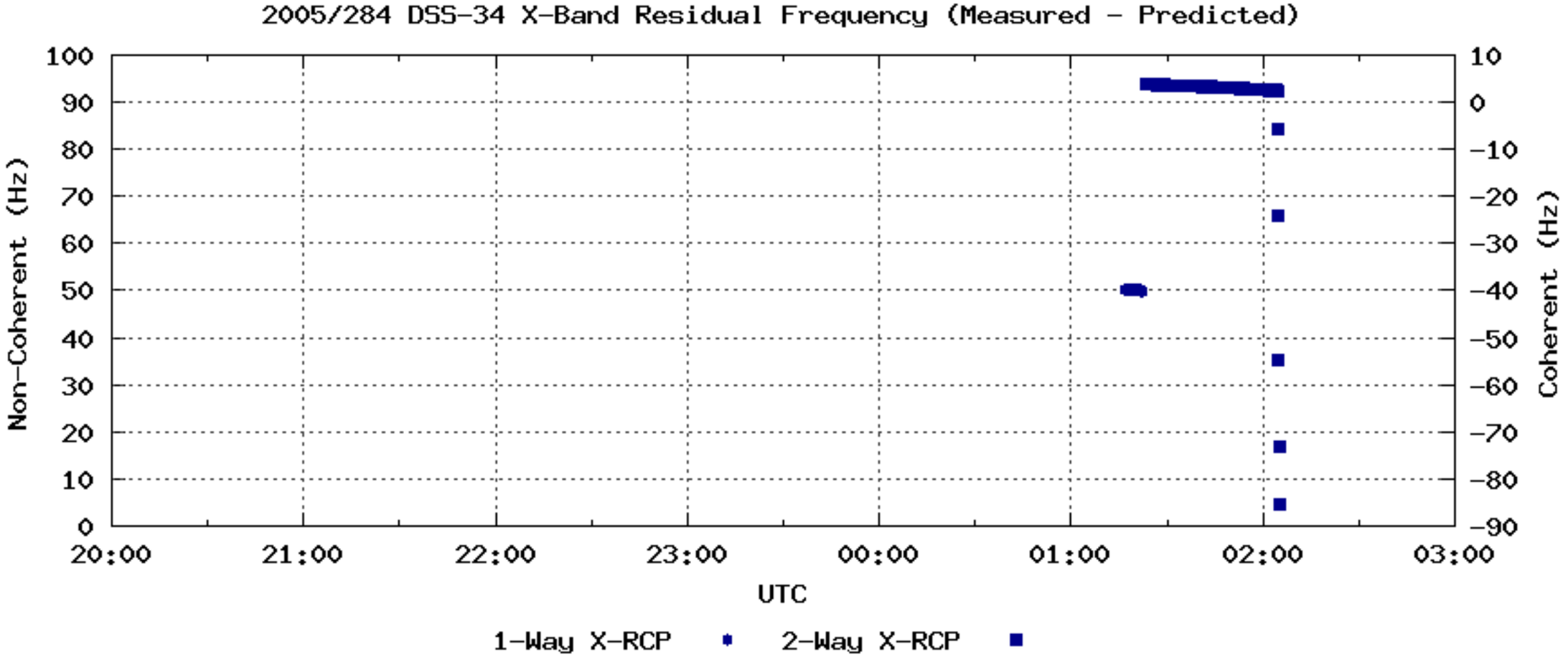
14. Elevation & Azimuth, Elevation & Azimuth Corrections, and Wind Speed and Direction

15. Index

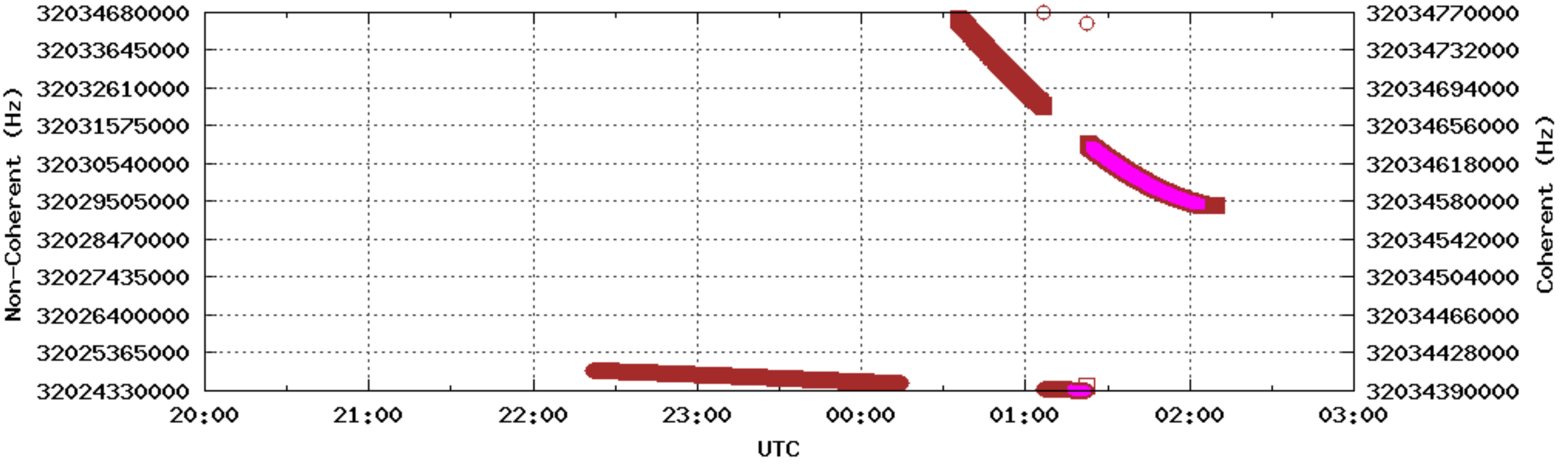

2005/284 DSS-34 Carrier Power to Noise Spectral Density Ratio (Pc/No)
dB-Hz
60
55
50
45
40
35
30
25
20
15
10
5
0
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
X-RCP
K-RCP


2005/284 DSS-34 Carrier Frequency Residual (Measured - Predicted)
Non-Coherent (Hz)
1000
900
800
700
600
500
400
300
200
100
0
Coherent (Hz)
20
9
-2
-13
-24
-35
-46
-57
-68
-79
-90
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
1-Way X-RCP
2-Way X-RCP
1-Way K-RCP
2-Way K-RCP

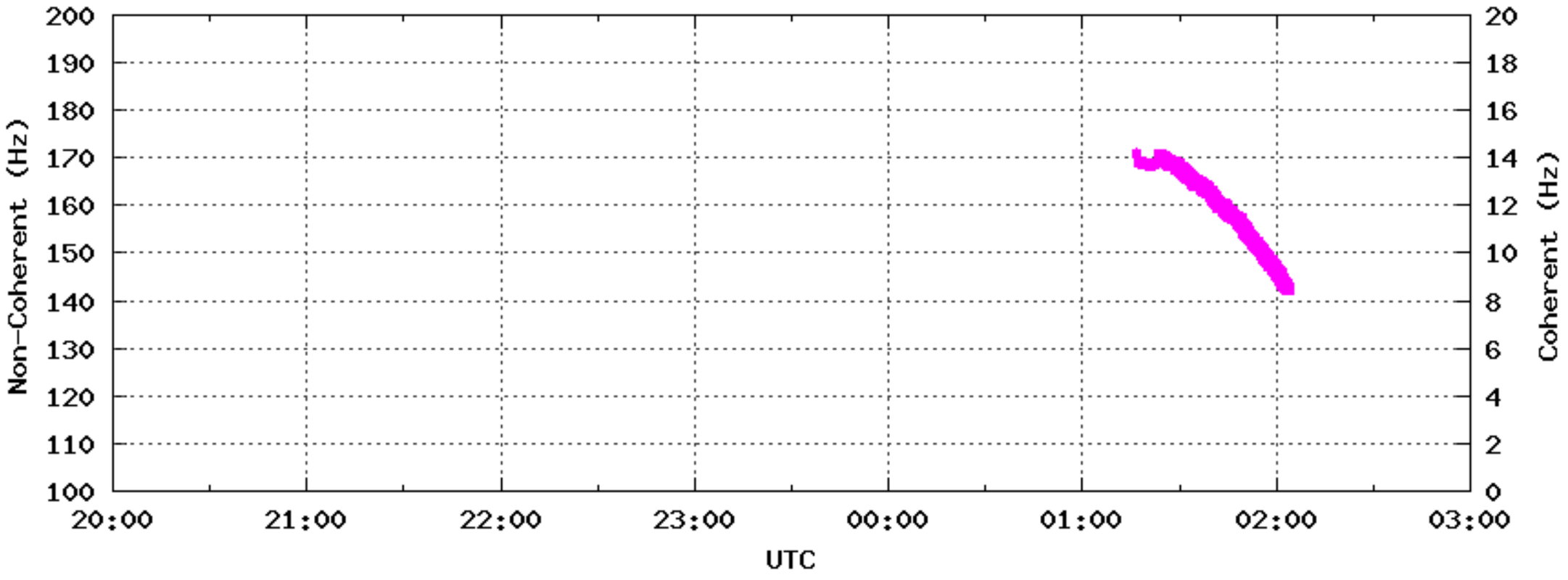

2005/284 DSS-34 X-Band Measured and Predicted Carrier Frequency
Non-Coherent (Hz)
8427610000
8427594000
8427578000
8427562000
8427546000
8427530000
8427514000
8427498000
8427482000
8427466000
8427450000
Coherent (Hz)
8430420000
8430124000
8429828000
8429532000
8429236000
8428940000
8428644000
8428348000
8428052000
8427756000
8427460000
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
1-Way Predicted X-RCP
2-Way Predicted X-RCP
1-Way Measured X-RCP
2-Way Measured X-RCP

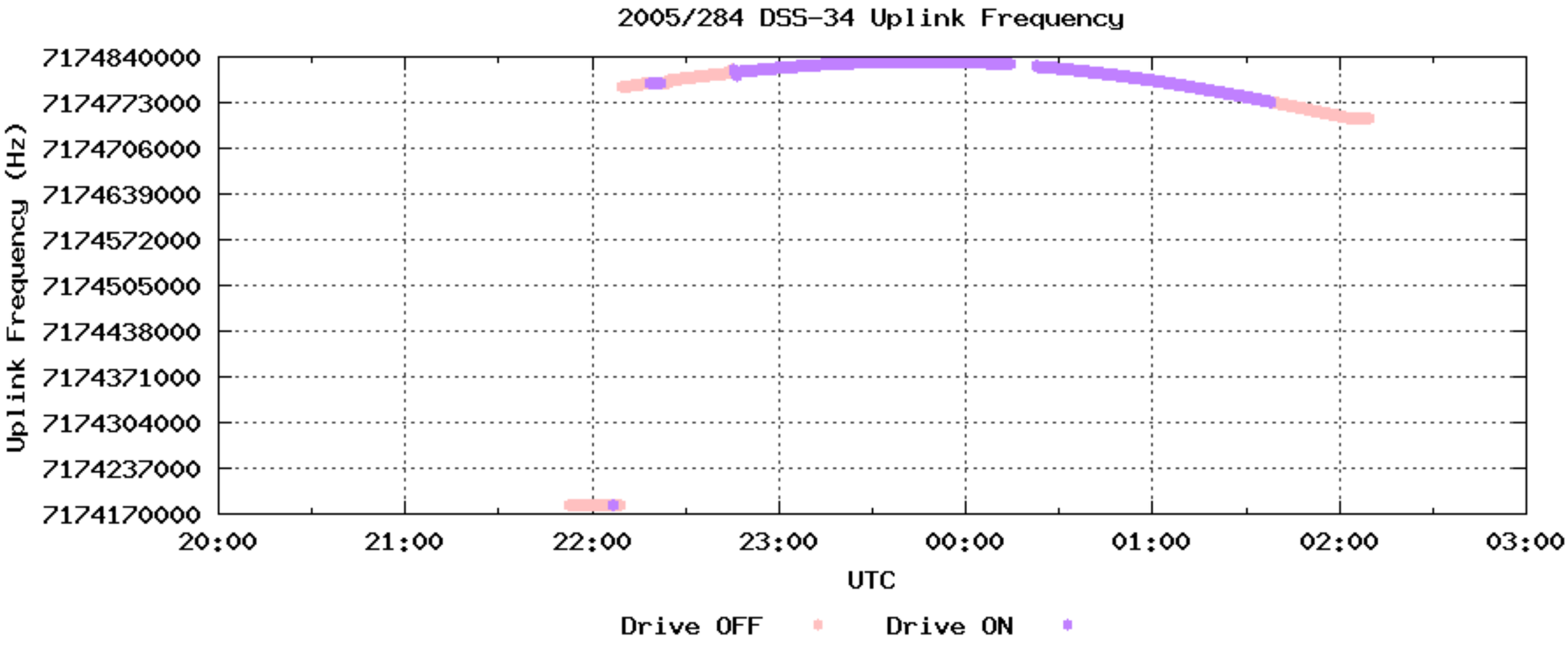

2005/284 DSS-34 X-Band Residual Frequency (Measured - Predicted)
Non-Coherent (Hz)
100
90
80
70
60
50
40
30
20
10
0
Coherent (Hz)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
1-Way X-RCP
2-Way X-RCP

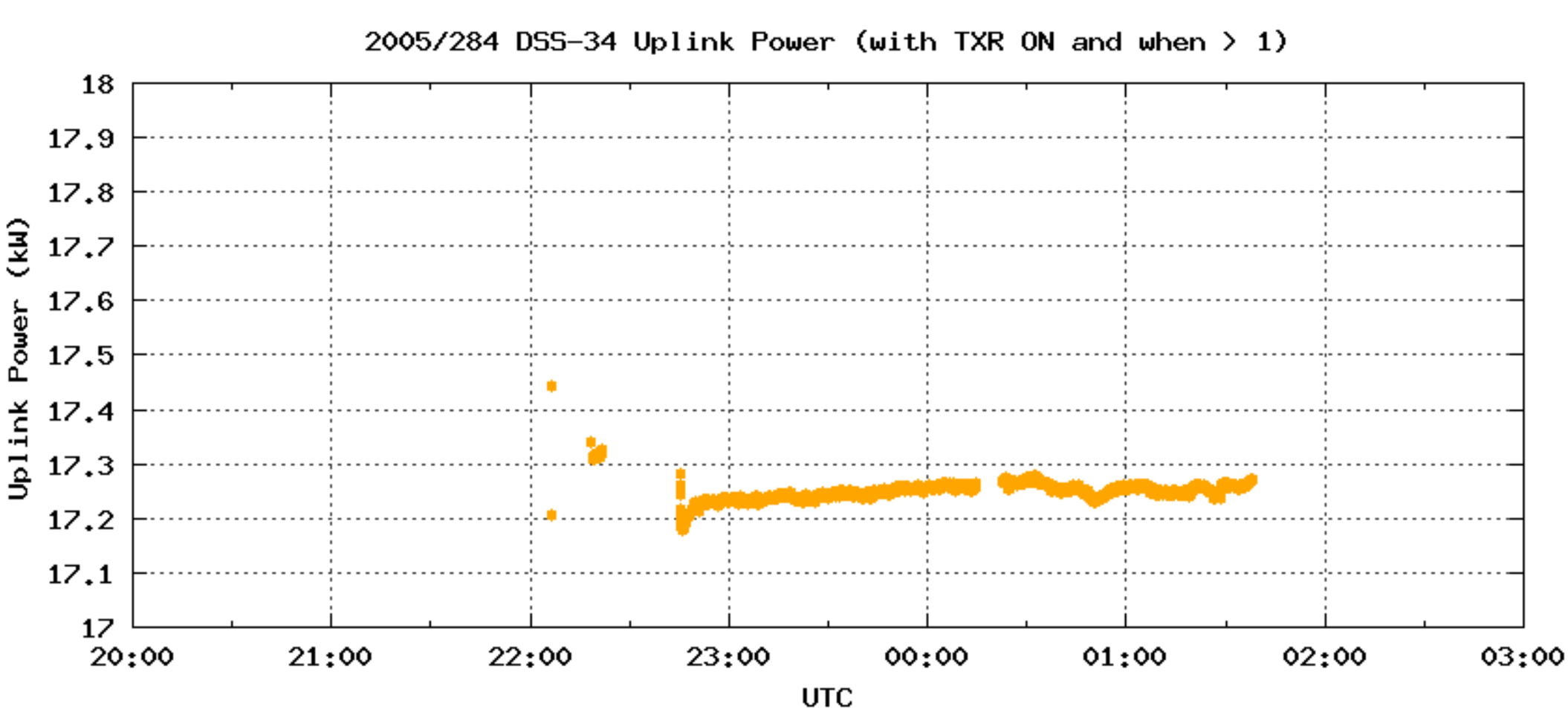
2005/284 DSS-34 K-Band Measured and Predicted Carrier Frequency

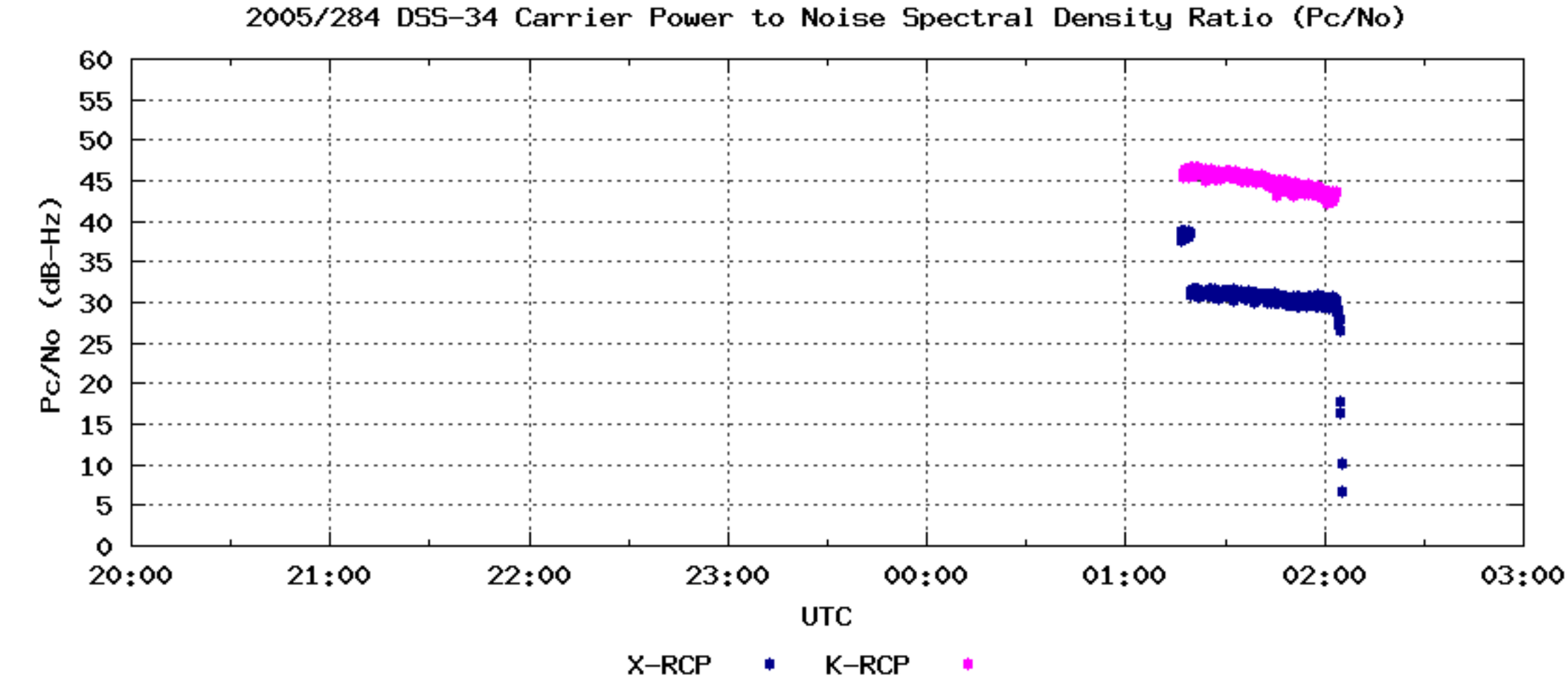


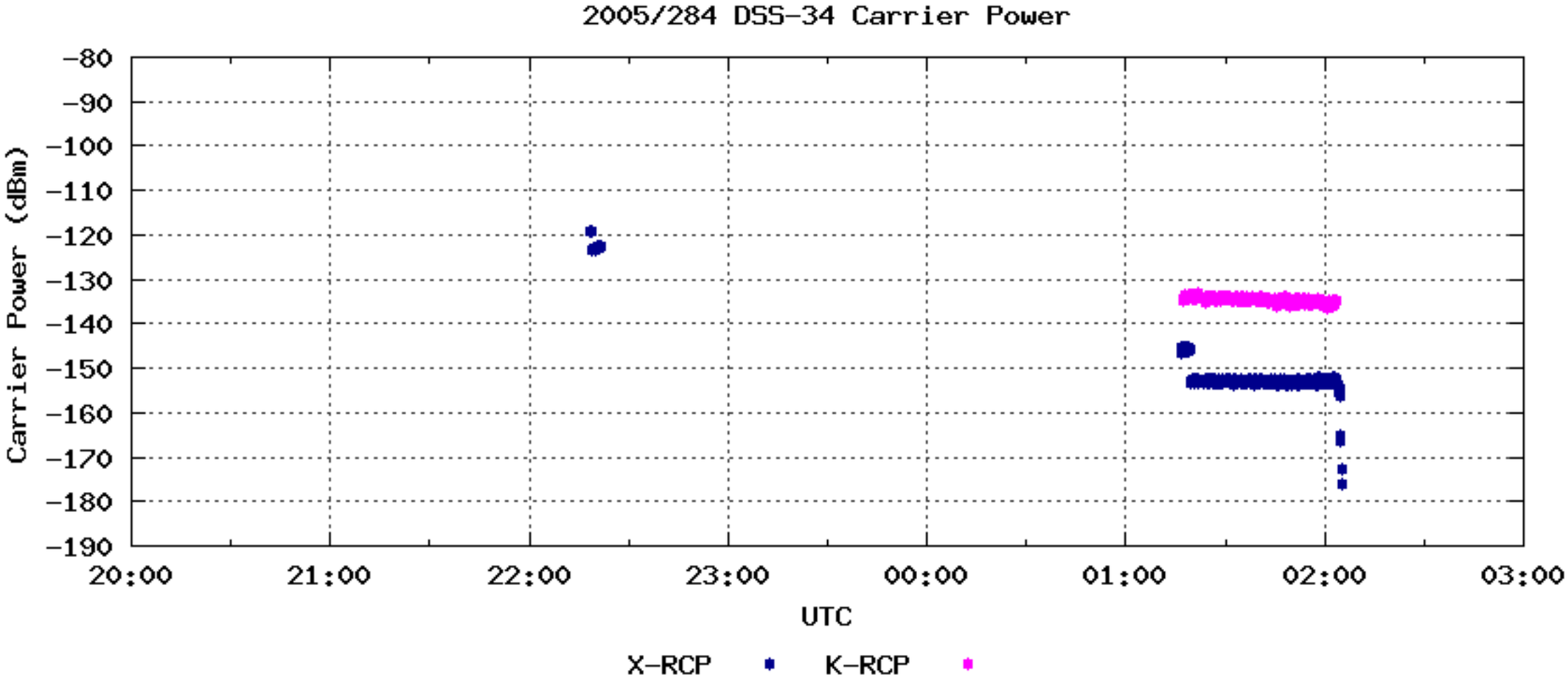
2005/284 DSS-34 K-Band Residual Frequency (Measured - Predicted)



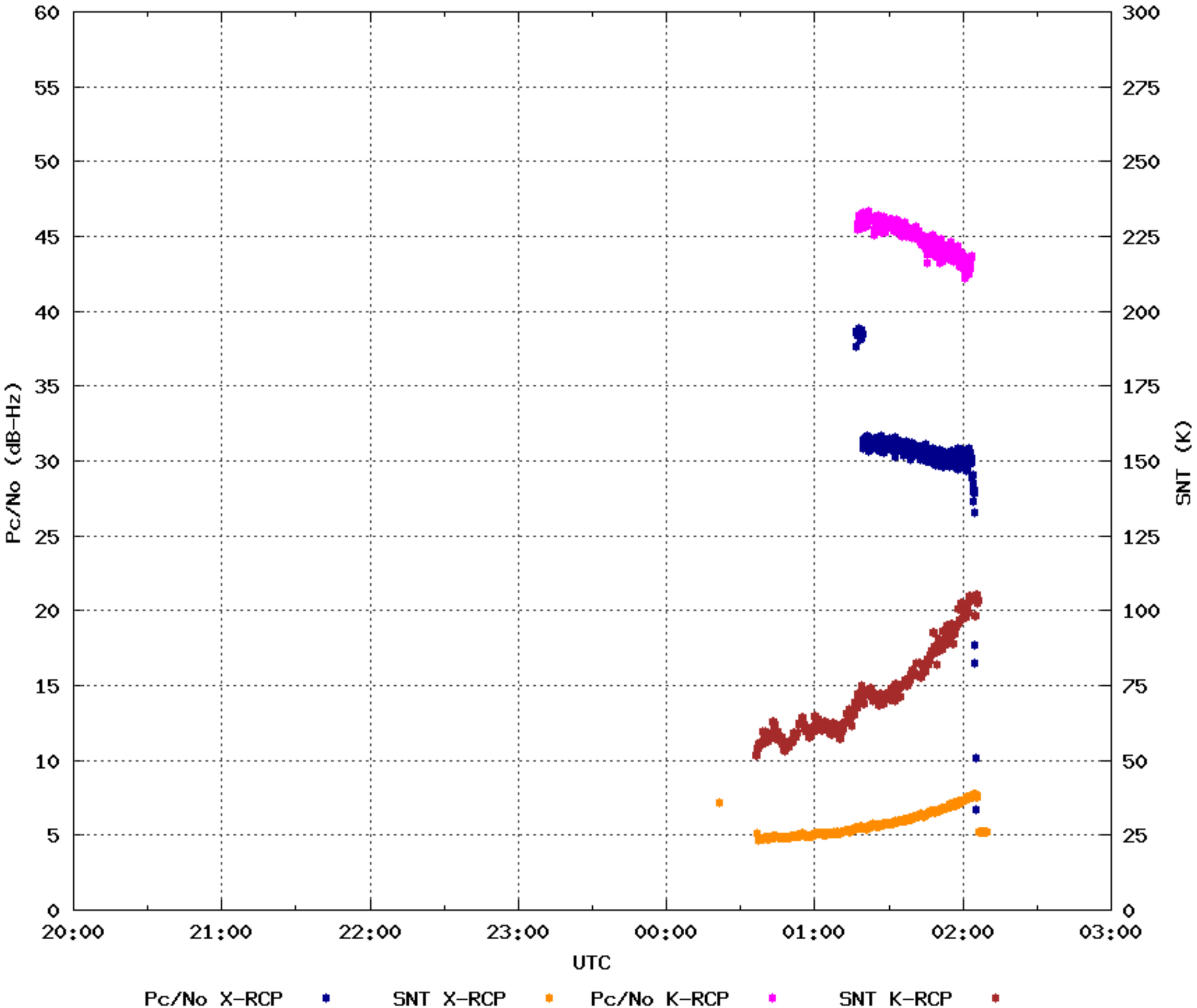

2005/284 DSS-34 Uplink Frequency
Uplink Frequency (Hz)
7174840000
7174773000
7174706000
7174639000
7174572000
7174505000
7174438000
7174371000
7174304000
7174237000
7174170000
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
Drive OFF
Drive ON

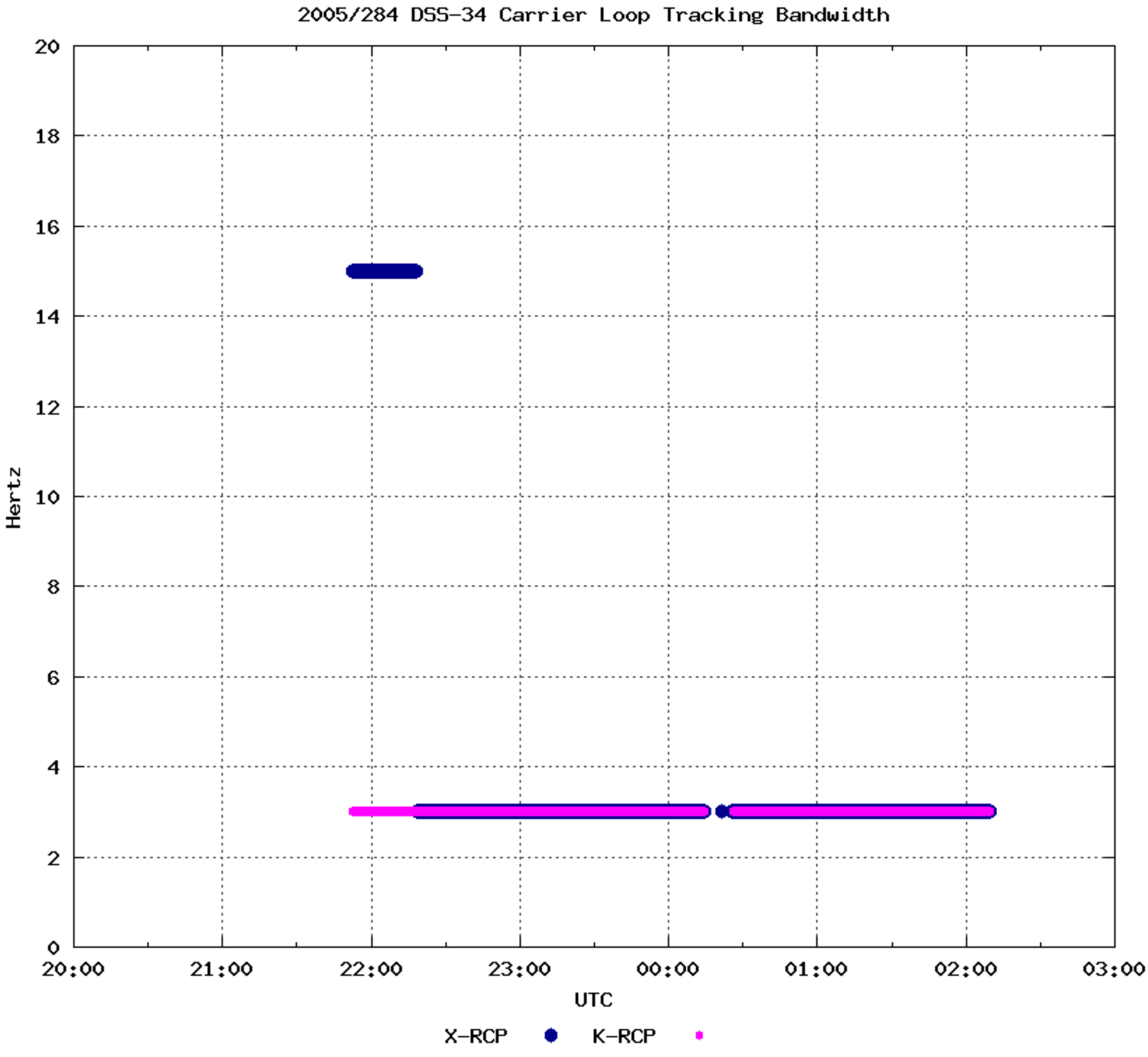

2005/284 DSS-34 Uplink Power (with TXR ON and when > 1)
Uplink Power (kW)
18
17.9
17.8
17.7
17.6
17.5
17.4
17.3
17.2
17.1
17
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC


2005/284 DSS-34 Carrier Power to Noise Spectral Density Ratio (Pc/No)
Pc/No (dB-Hz)
60
55
50
45
40
35
30
25
20
15
10
5
0
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
X-RCP
K-RCP


2005/284 DSS-34 Carrier Power
Carrier Power (dBm)
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
X-RCP
K-RCP

2005/284 DSS-34 Carrier Power to Noise Spectral Density Ratio and System Noise Temperature




2005/284 DSS-34 Carrier Loop Tracking Bandwidth
Hertz
20
18
16
14
12
10
8
6
4
2
0
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
X-RCP
K-RCP

2005/284 DSS-34 Elevation & Azimuth

Elevation (Degrees)

90
80
70
60
50
40
30
20
10
0

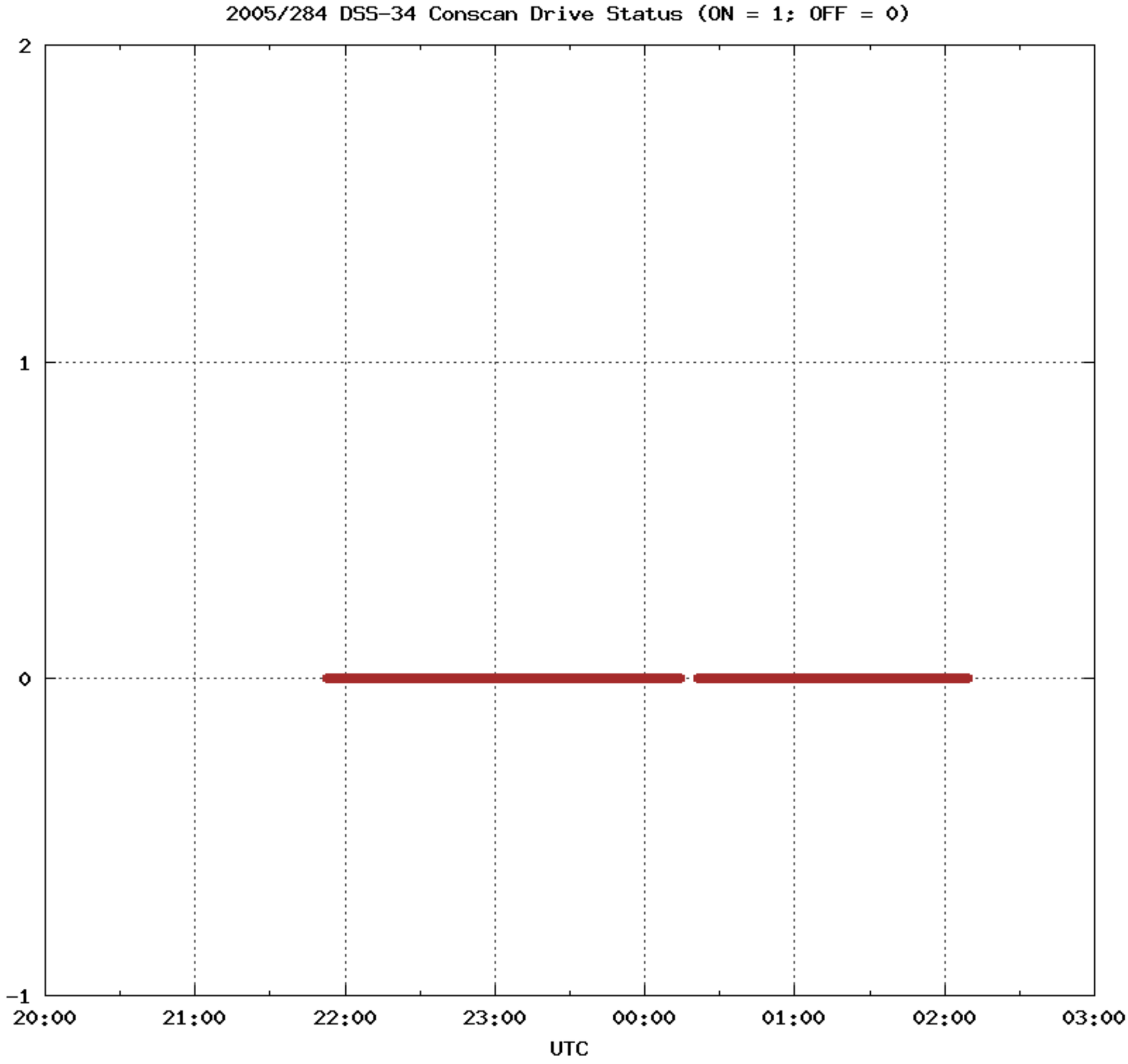
Azimuth (Degrees)

360
320
280
240
200
160
120
80
40
0

20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00

UTC

Elevation
Azimuth


2005/284 DSS-34 Conscan Drive Status (ON = 1; OFF = 0)
2
1
0
−1
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC

2005/284 DSS-34 Monopulse Elevation & Azimuth Corrections

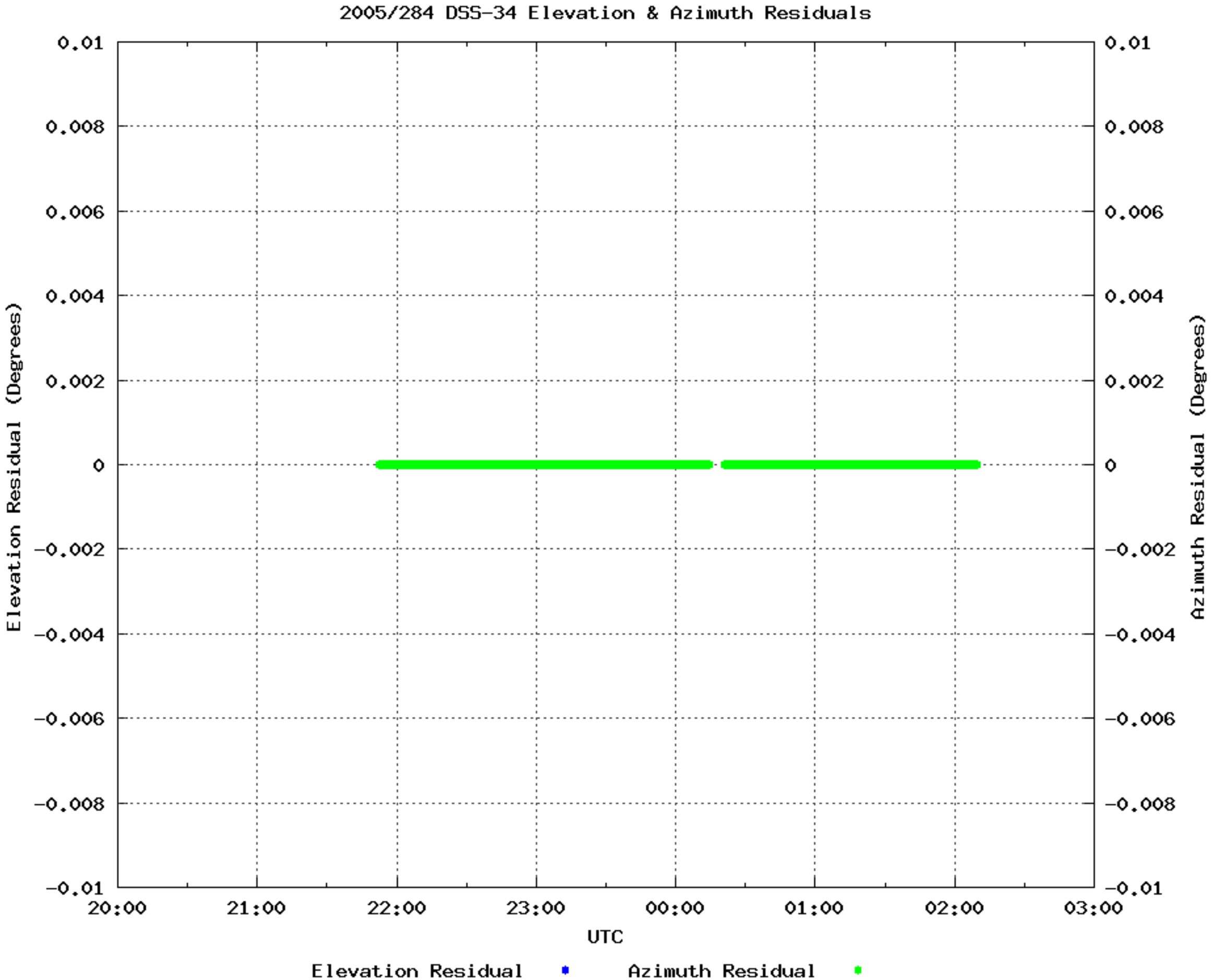
Degrees

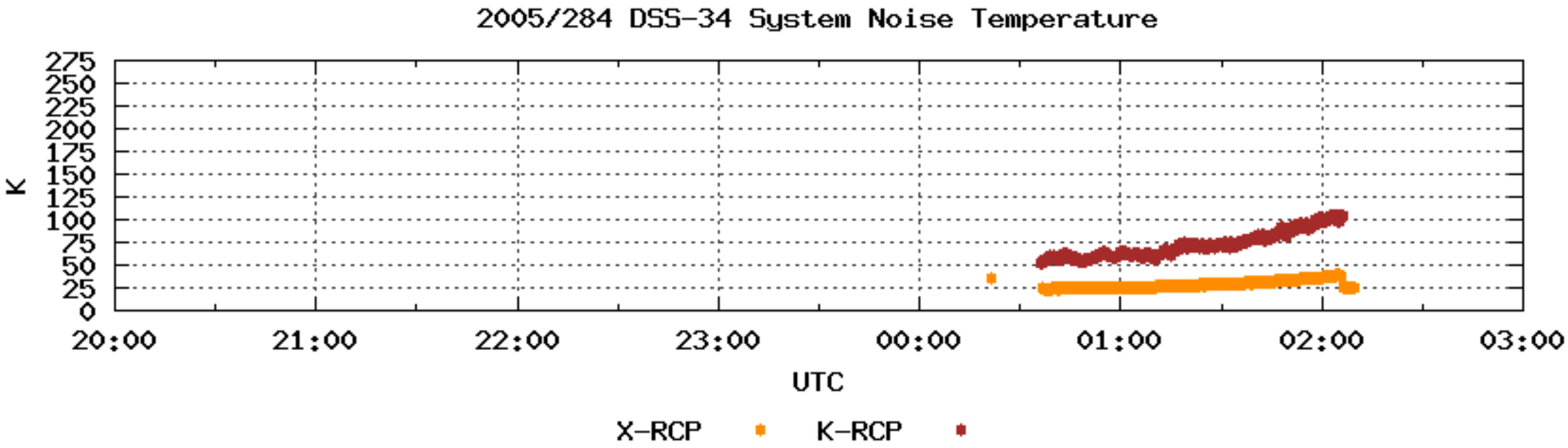
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
-0.1

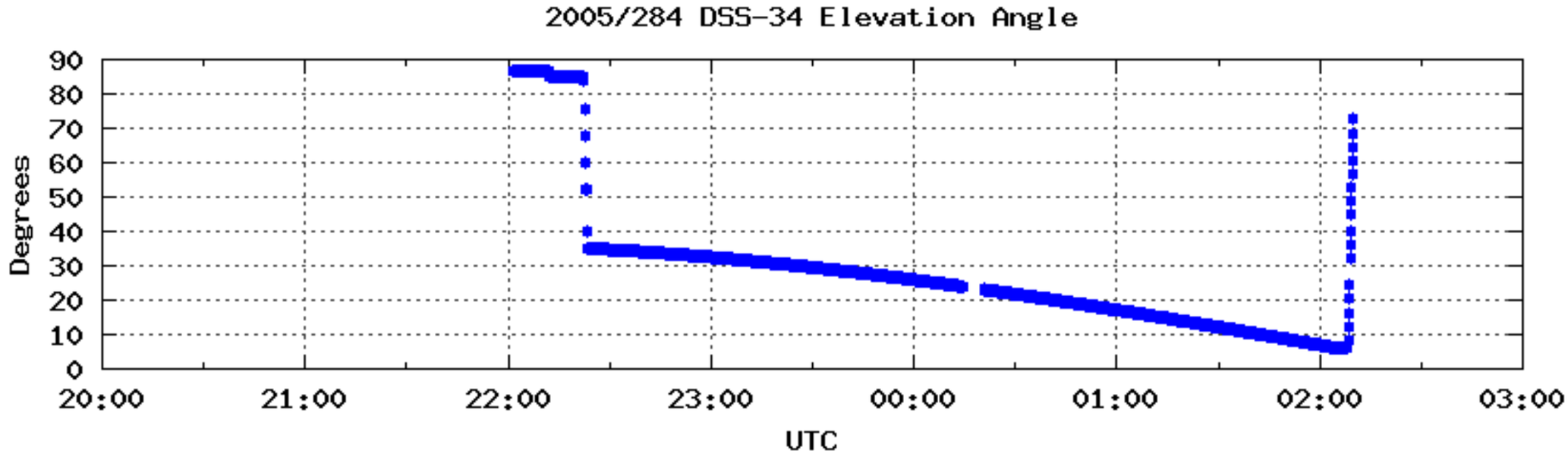
20:00 21:00 22:00 23:00 00:00 01:00 02:00 03:00

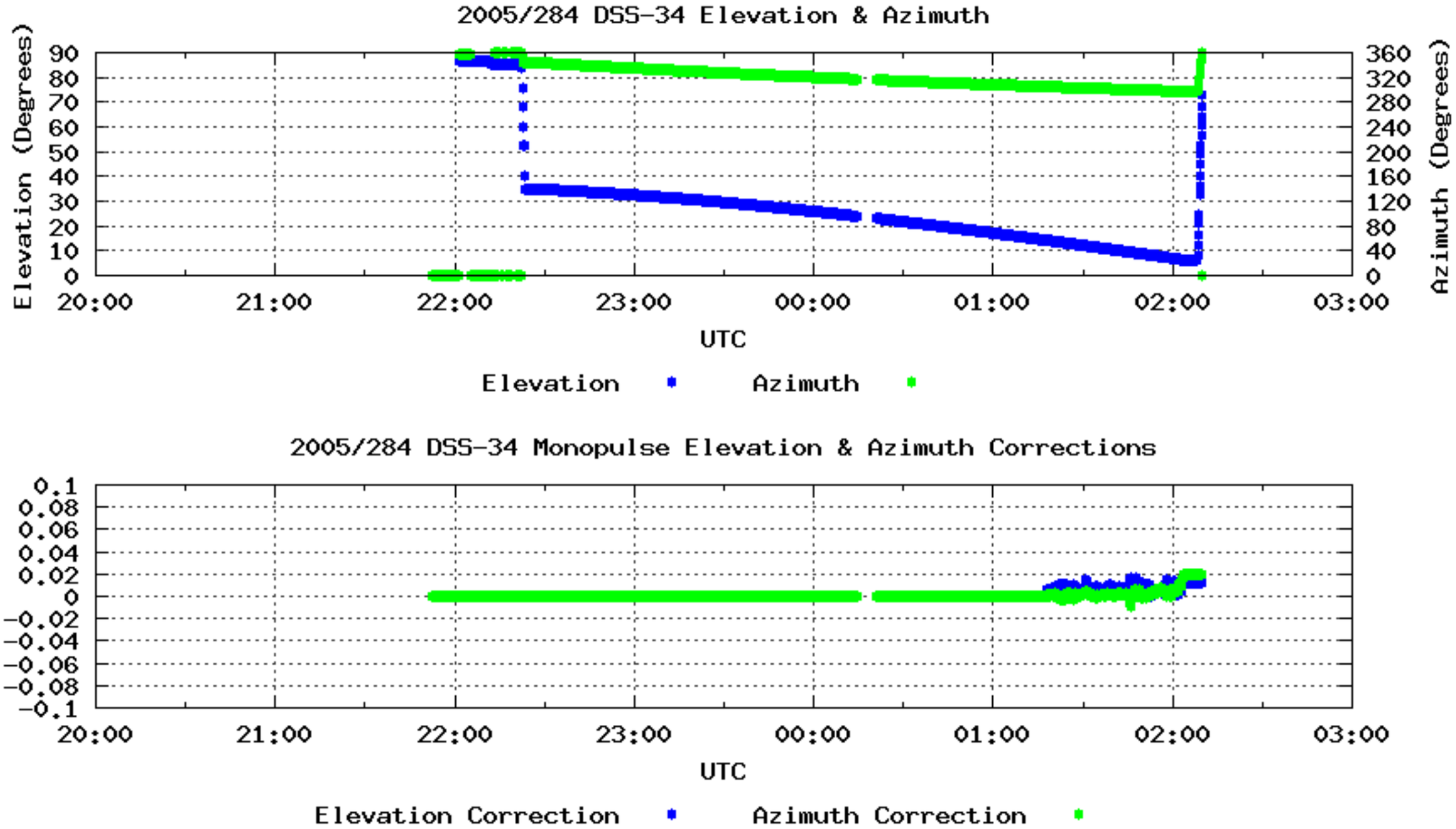
UTC

Elevation Correction Azimuth Correction


2005/284 DSS-34 Elevation & Azimuth Residuals
Elevation Residual (Degrees)
Azimuth Residual (Degrees)
0.01
0.008
0.006
0.004
0.002
0
-0.002
-0.004
-0.006
-0.008
-0.01
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
Elevation Residual
Azimuth Residual


2005/284 DSS-34 System Noise Temperature
K
275
250
225
200
175
150
125
100
75
50
25
0
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
X-RCP
K-RCP


2005/284 DSS-34 Elevation Angle
Degrees
90
80
70
60
50
40
30
20
10
0
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC


2005/284 DSS-34 Elevation & Azimuth
Elevation (Degrees)
90
80
70
60
50
40
30
20
10
0
Azimuth (Degrees)
360
320
280
240
200
160
120
80
40
0
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
Elevation
Azimuth

2005/284 DSS-34 Monopulse Elevation & Azimuth Corrections
Degrees
0.1
0.08
0.06
0.04
0.02
0
−0.02
−0.04
−0.06
−0.08
−0.1
20:00
21:00
22:00
23:00
00:00
01:00
02:00
03:00
UTC
Elevation Correction
Azimuth Correction

02. Carrier Power to Noise Spectral Density Ratio (Pc/No) and Residual Frequency

Top:
Carrer Power to Noise Spectral Density Ratio (M-1315, M-1815, M-2315, M-2815)
   filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
   categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
   and Polarization (M-1267, M-1767, M-2267, M-2767)

Bottom:
Residual Frequency (M-1305, M-1805, M-2305, M-2805)
   filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245, M-1745, M-2245, M-2745)
   and Polarization (M-1267, M-1767, M-2267, M-2767)

03. X-Band - Measured Carrier Frequency, Predicted Carrier Frequency, and Residual Frequency

Top:
Predicted Frequency including Doppler Shift (M-1320, M-1820, M-2320, M-2820)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245, M-1745, M-2245, M-2745)
   and Polarization (M-1267, M-1767, M-2267, M-2767)
Measured Carrier Frequency (M-1304, M-1804, M-2304, M-2804)
   filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245,M-1745,M-2245,M-2745)
   and Polarization (M-1267,M-1767,M-2267,M-2767)

Bottom:
Residual Frequency (M-1305, M-1805, M-2305, M-2805)
   filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245, M-1745, M-2245, M-2745)
   and Polarization (M-1267, M-1767, M-2267, M-2767)

04. Ka-Band - Measured Carrier Frequency, Predicted Carrier Frequency, and Residual Frequency

Top:
Predicted Frequency including Doppler Shift (M-1320, M-1820, M-2320, M-2820)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245, M-1745, M-2245, M-2745)
   and Polarization (M-1267, M-1767, M-2267, M-2767)
Measured Carrier Frequency (M-1304, M-1804, M-2304, M-2804)
   filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245,M-1745,M-2245,M-2745)
   and Polarization (M-1267,M-1767,M-2267,M-2767)

Bottom:
Residual Frequency (M-1305, M-1805, M-2305, M-2805)
   filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
   categorized by Predicts Mode (M-1248, M-1748, M-2248, M-2748)
   and by Downlink Band (M-1245, M-1745, M-2245, M-2745)

and Polarization (M-1267, M-1767, M-2267, M-2767)

05. Uplink Frequency and Power

Top:
Uplink Frequency (M-1049)
filtered by Transmitter Status (M-1070)

Bottom:
Uplink Power (M-1067)
filtered by Transmitter Status (M-1070)

06. Carrier Power to Noise Spectral Density Ratio (Pc/No) and Carrier Power

Top:
Carrer Power to Noise Spectral Density Ratio (M-1315, M-1815, M-2315, M-2815)
filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
and Polarization (M-1267, M-1767, M-2267, M-2767)

Bottom:
Carrer Power (M-1310, M-1810, M-2310, M-2810)
filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
and Polarization (M-1267, M-1767, M-2267, M-2767)

07. Carrier Power to Noise Spectral Density Ratio (Pc/No) and System Noise Temperature

Carrer Power to Noise Spectral Density Ratio (M-1315, M-1815, M-2315, M-2815)
filtered by Carrier Tracking Loop Status (M-1302, M-1802, M-2302, M-2802)
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
and Polarization (M-1267, M-1767, M-2267, M-2767)
System Noise Temperature (M-1318, M-1818, M-2318, M-2818)
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
and Polarization (M-1267, M-1767, M-2267, M-2767)

08. Carrier Loop Tracking Bandwidth

Carrier Loop Tracking Bandwidth (M-1299, M-1799, M-2299, M-2799)
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
and Polarization (M-1267, M-1767, M-2267, M-2767)

09. Azimuth & Elevation
Elevation Angle (M-0304)
Azimuth Angle (M-0305)

10. Conscan Drive Status

Conscan Drive Status (M-0308)

11. Azimuth & Elevation Monopulse Corrections

Elevation Corrections (M-0815)
Azimuth Corrections (M-0814)

12. Azimuth & Elevation Residuals

Elevation Residuals (M-0307)
Azimuth Residuals (M-0306)

13. System Noise Temperature, Elevation, Precipitation Rate, and Relative Humidity

Top:
System Noise Temperature (M-1318, M-1818, M-2318, M-2818)
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)
and Polarization (M-1267, M-1767, M-2267, M-2767)

Middle:
Elevation Angle (M-0304)

Bottom:
Precipitation Rate (M-0406)
Relative Humidity (M-0409)

14. Elevation & Azimuth, Elevation & Azimuth Corrections, and Wind Speed and Direction

Top:
Elevation Angle (M-0304)
Azimuth Angle (M-0305)

Middle:
Elevation Corrections (M-0815)
Azimuth Corrections (M-0814)

Bottom:
Wind Speed (M-0388)
Wind Direction (M-0391)