

Spacecraft: Cassini

DSS: 43

Monitor File: SC10ORT2017\_258\_0215\_43\_MON.ecsv

APPLICABLE\_START\_TIME = 2017-258T02:15:11.690;

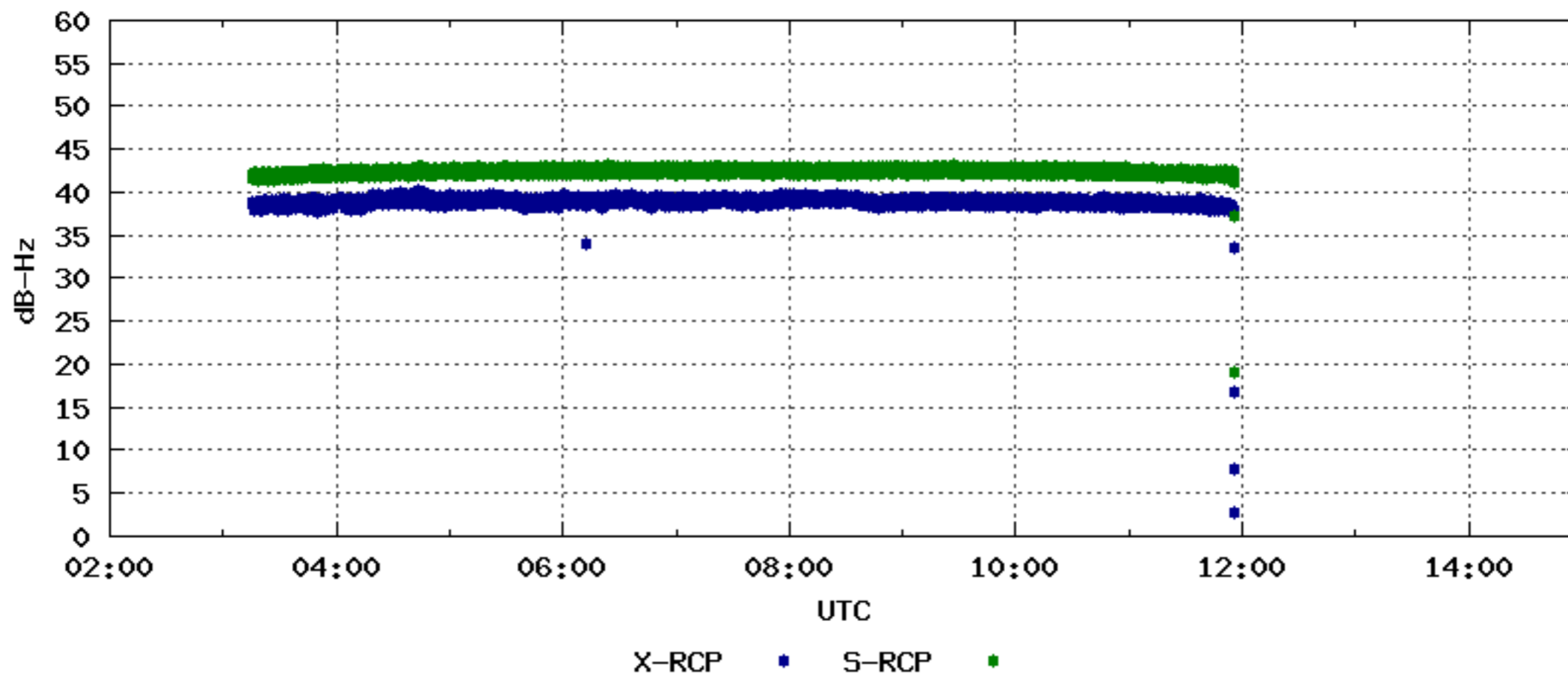
APPLICABLE\_STOP\_TIME = 2017-258T14:25:03.778;

60 minutes omitted from beginning of file

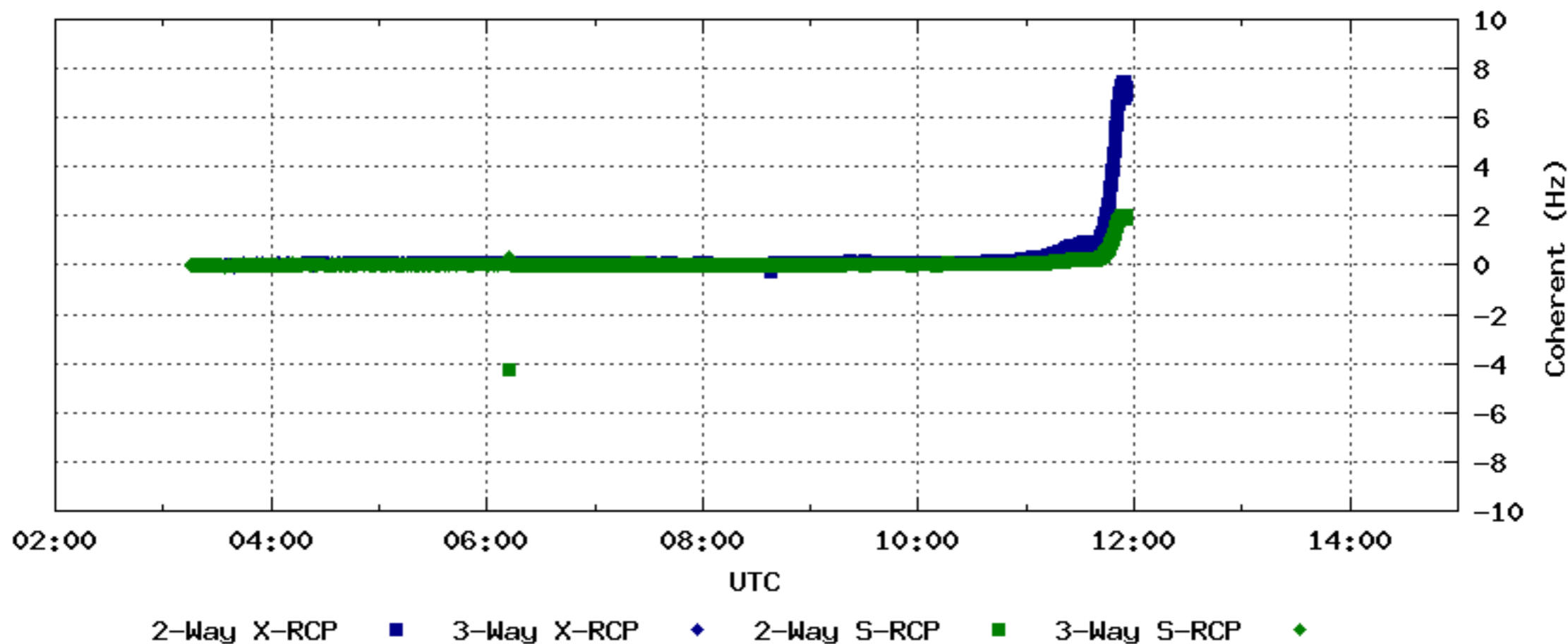
5 minutes omitted from end of file

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. S-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. Subreflector Tracking Status
10. AGC Voltage
11. Azimuth & Elevation
12. Weather: Air Temperature, Dew Point Temperature, Relative Humidity, Precipitation Rate, and Barometric Pressure
13. Wind Speed and Direction
14. Conscan Drive Status
15. Azimuth & Elevation Residuals
16. System Noise Temperature, Elevation, Precipitation Rate, and Relative Humidity
17. Index

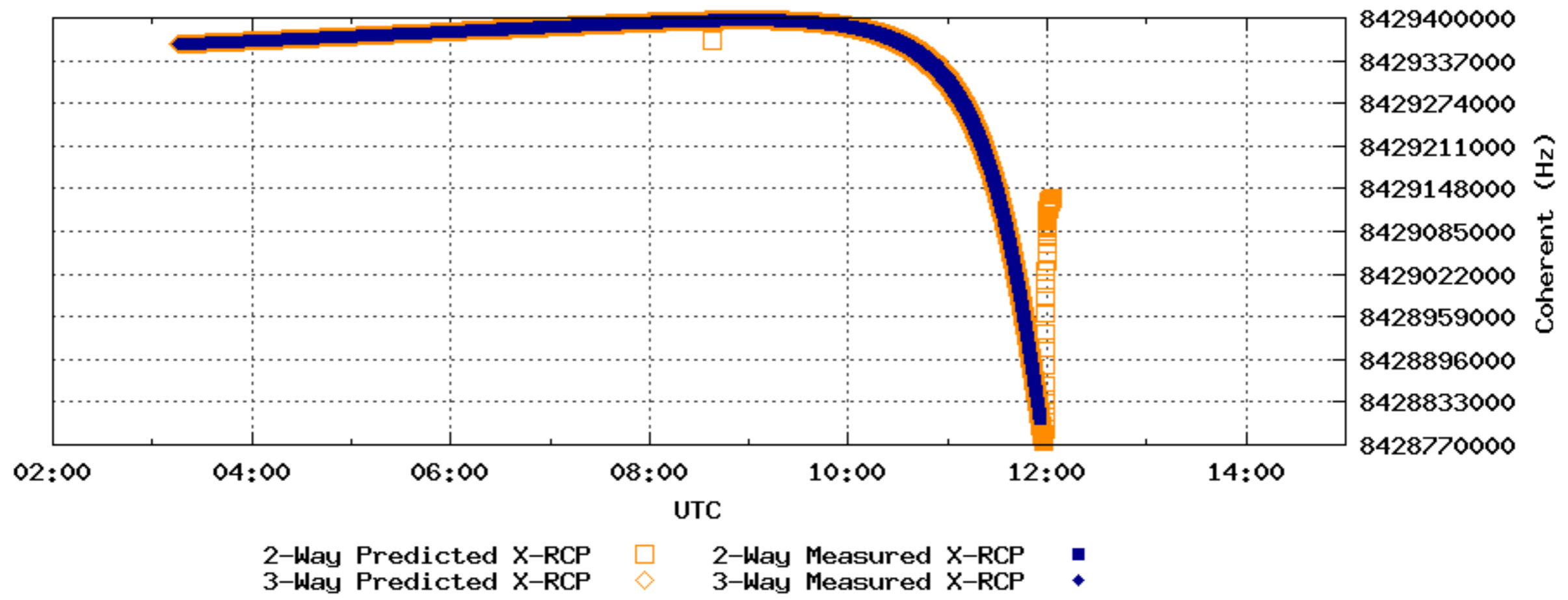
2017/258 D55-43 Carrier Power to Noise Spectral Density Ratio (Pc/No)



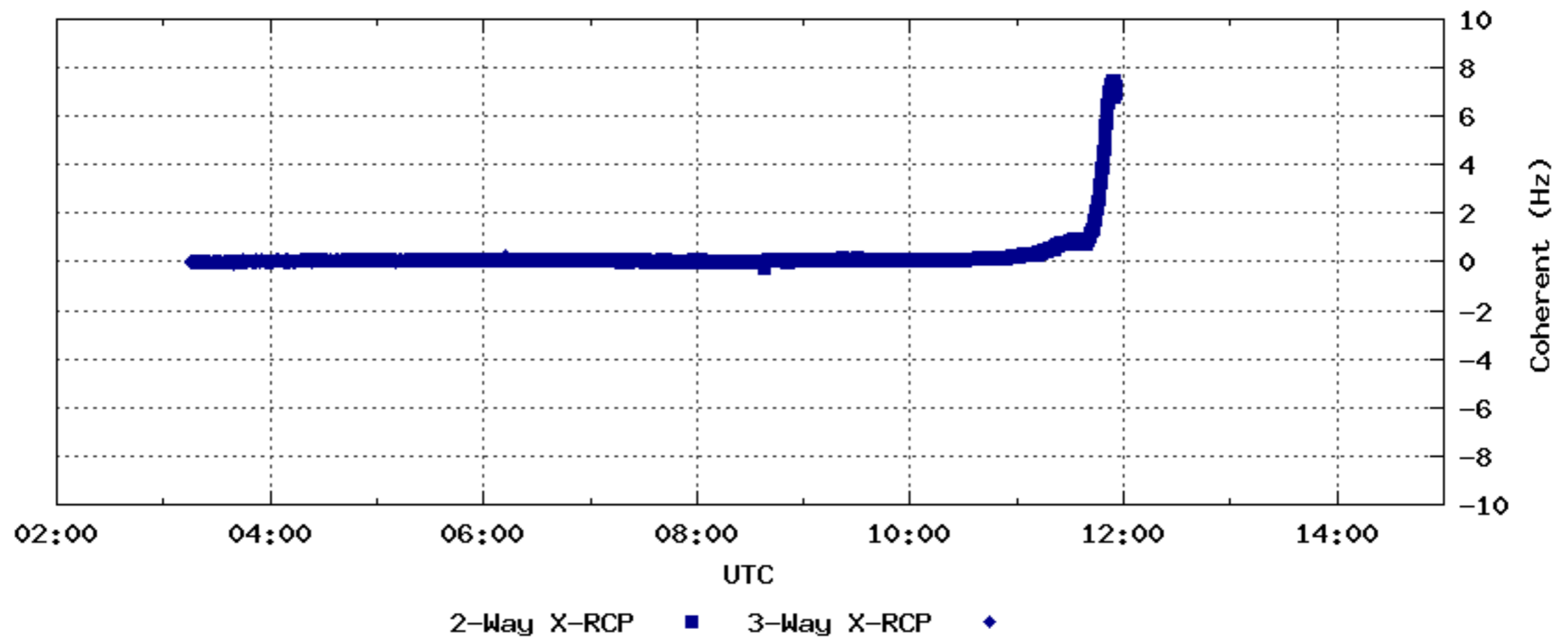
2017/258 D55-43 Carrier Frequency Residual (Measured - Predicted)



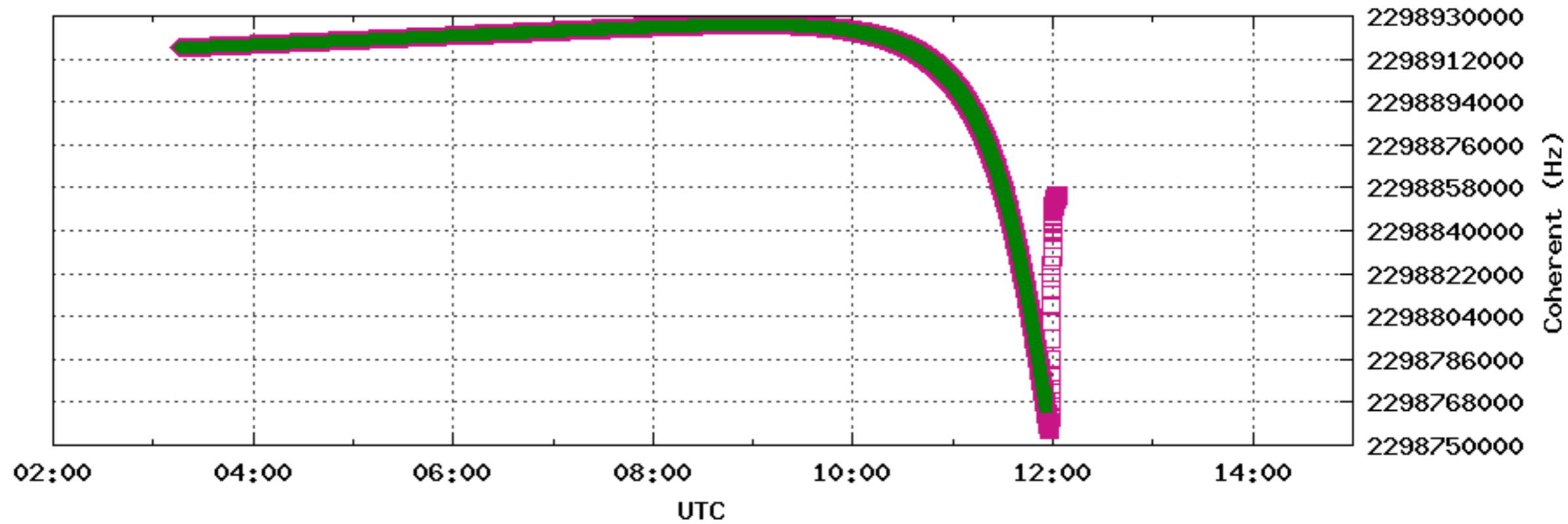
2017/258 DSS-43 X-Band Measured and Predicted Carrier Frequency



2017/258 DSS-43 X-Band Residual Frequency (Measured - Predicted)

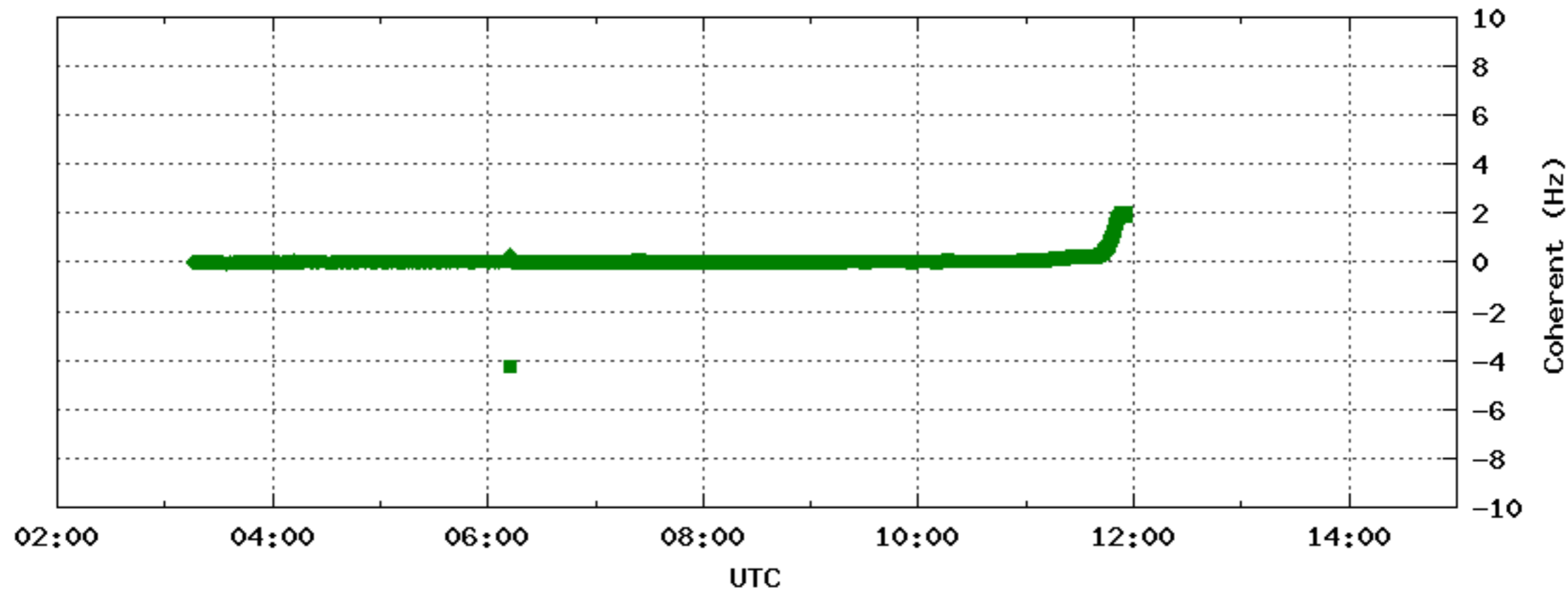


2017/258 DSS-43 S-Band Measured and Predicted Carrier Frequency



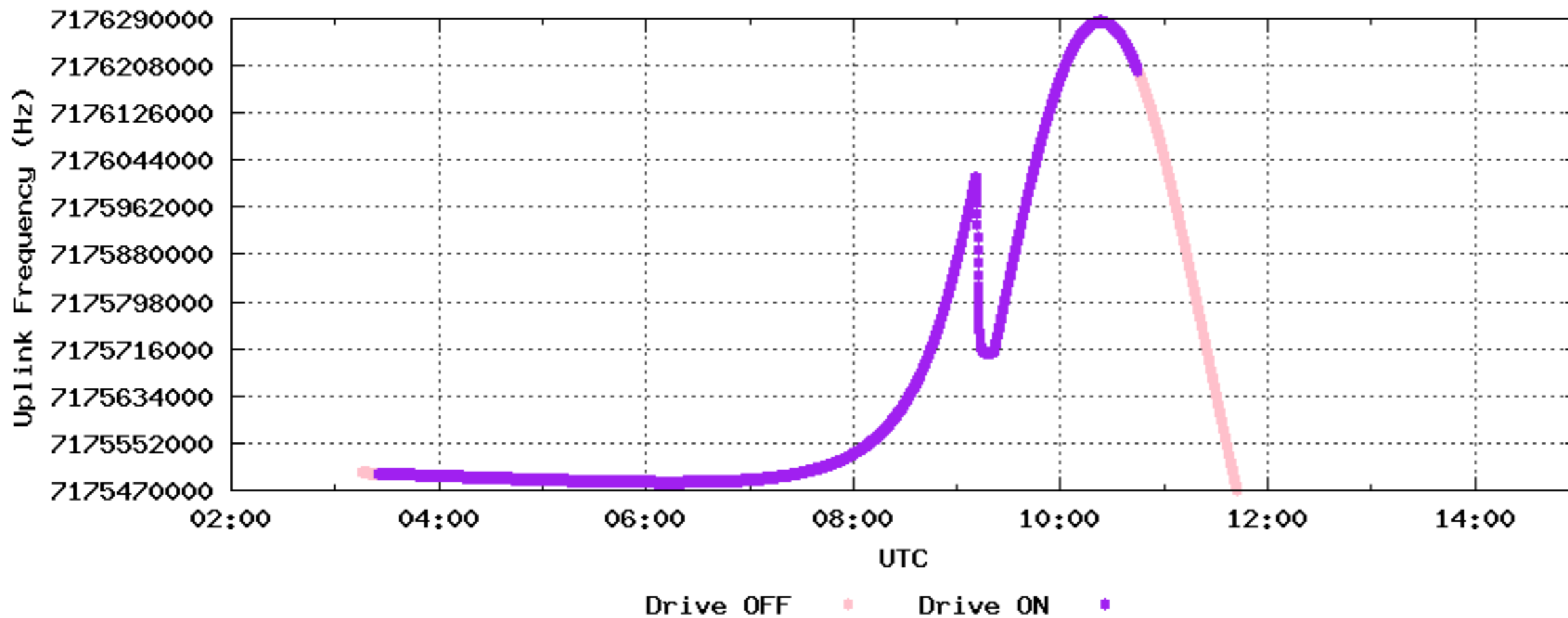
2-Way Predicted S-RCP □    2-Way Measured S-RCP ■  
 3-Way Predicted S-RCP ◇    3-Way Measured S-RCP ◆

2017/258 DSS-43 S-Band Residual Frequency (Measured - Predicted)

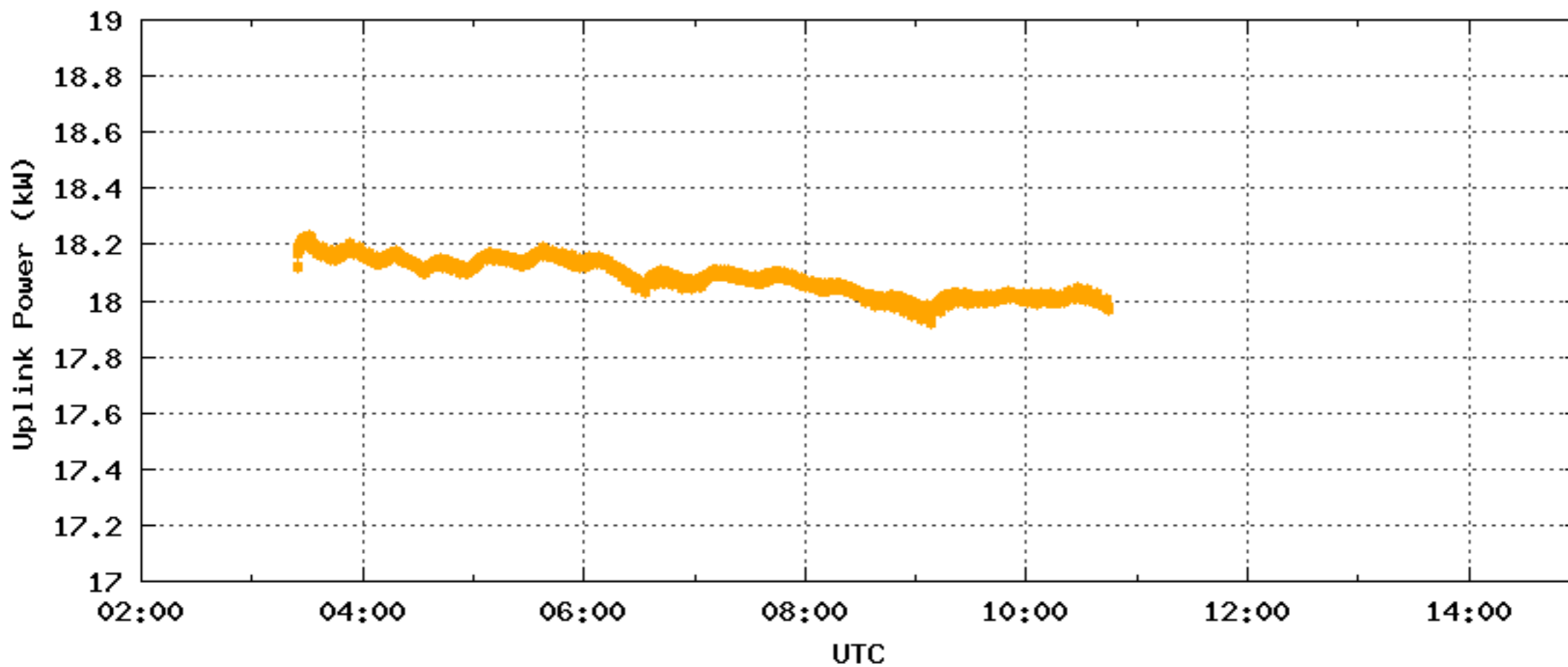


2-Way S-RCP ■    3-Way S-RCP ◆

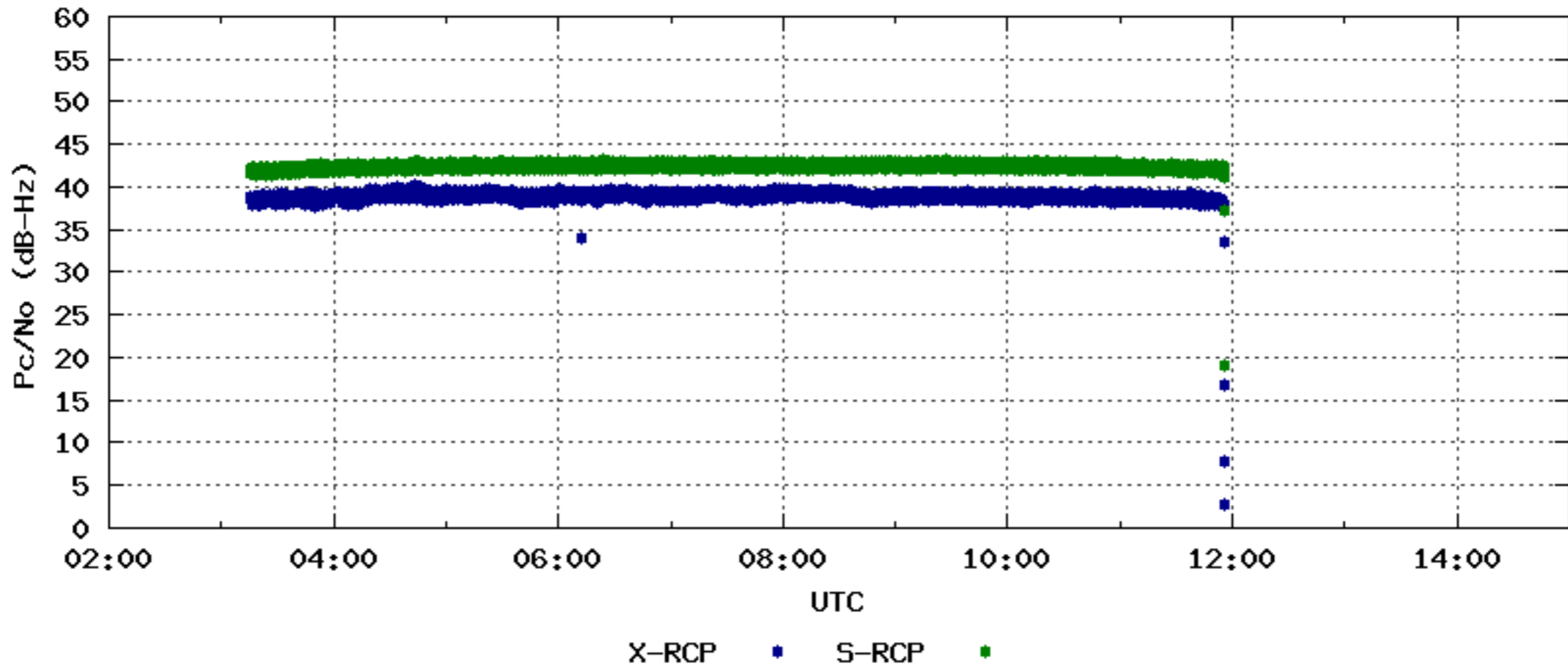
2017/258 DSS-43 Uplink Frequency



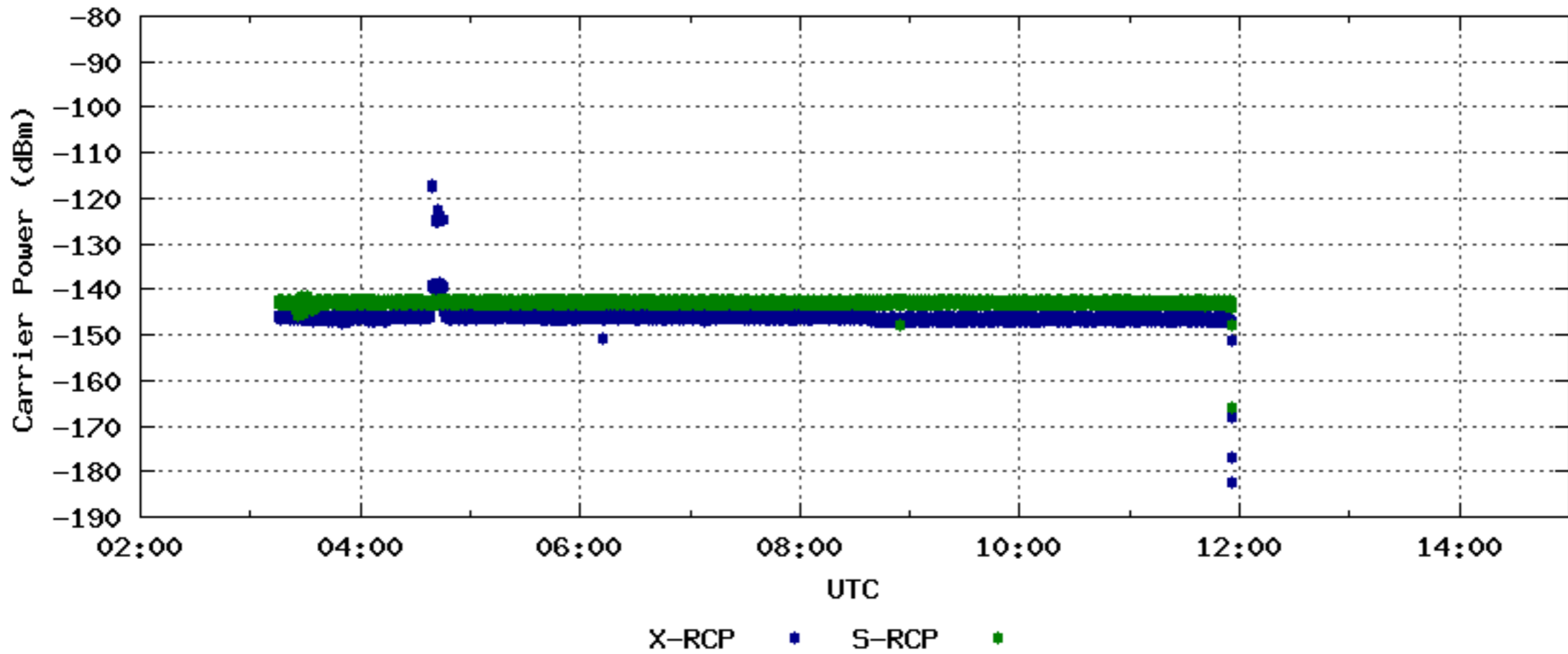
2017/258 DSS-43 Uplink Power (with TXR ON and when > 1)



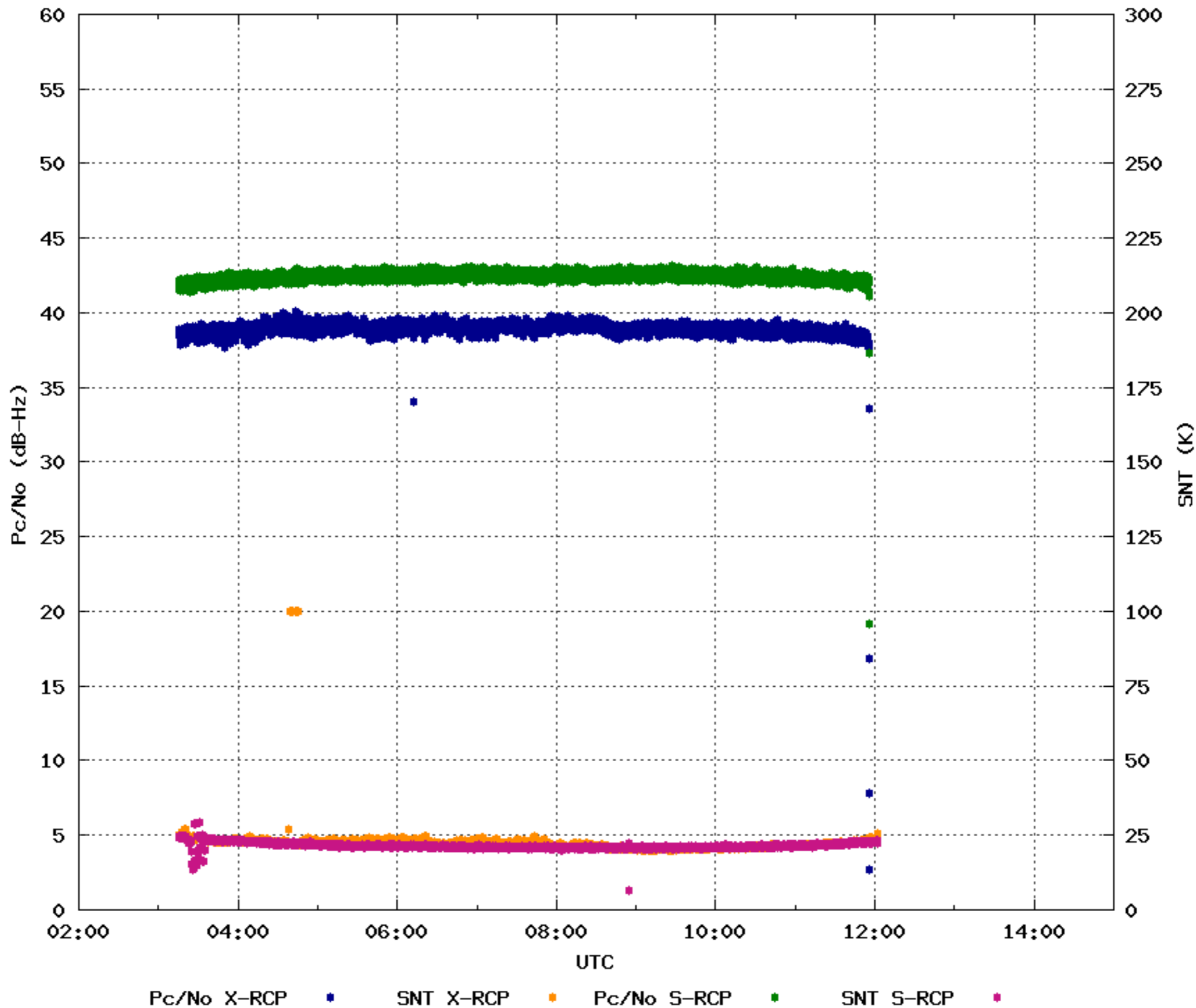
2017/258 D55-43 Carrier Power to Noise Spectral Density Ratio (Pc/No)



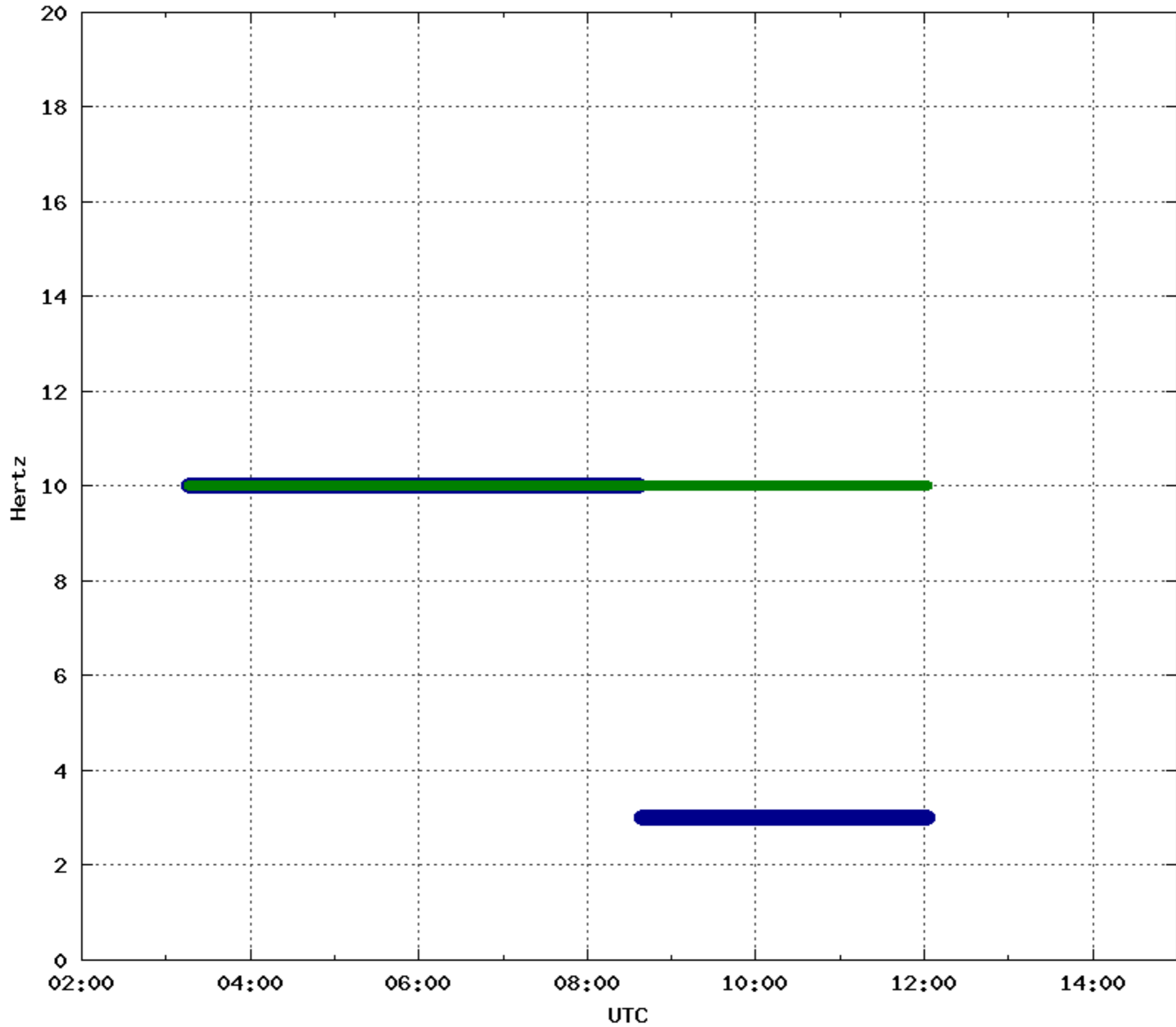
2017/258 D55-43 Carrier Power



2017/258 D55-43 Carrier Power to Noise Spectral Density Ratio and System Noise Temperature



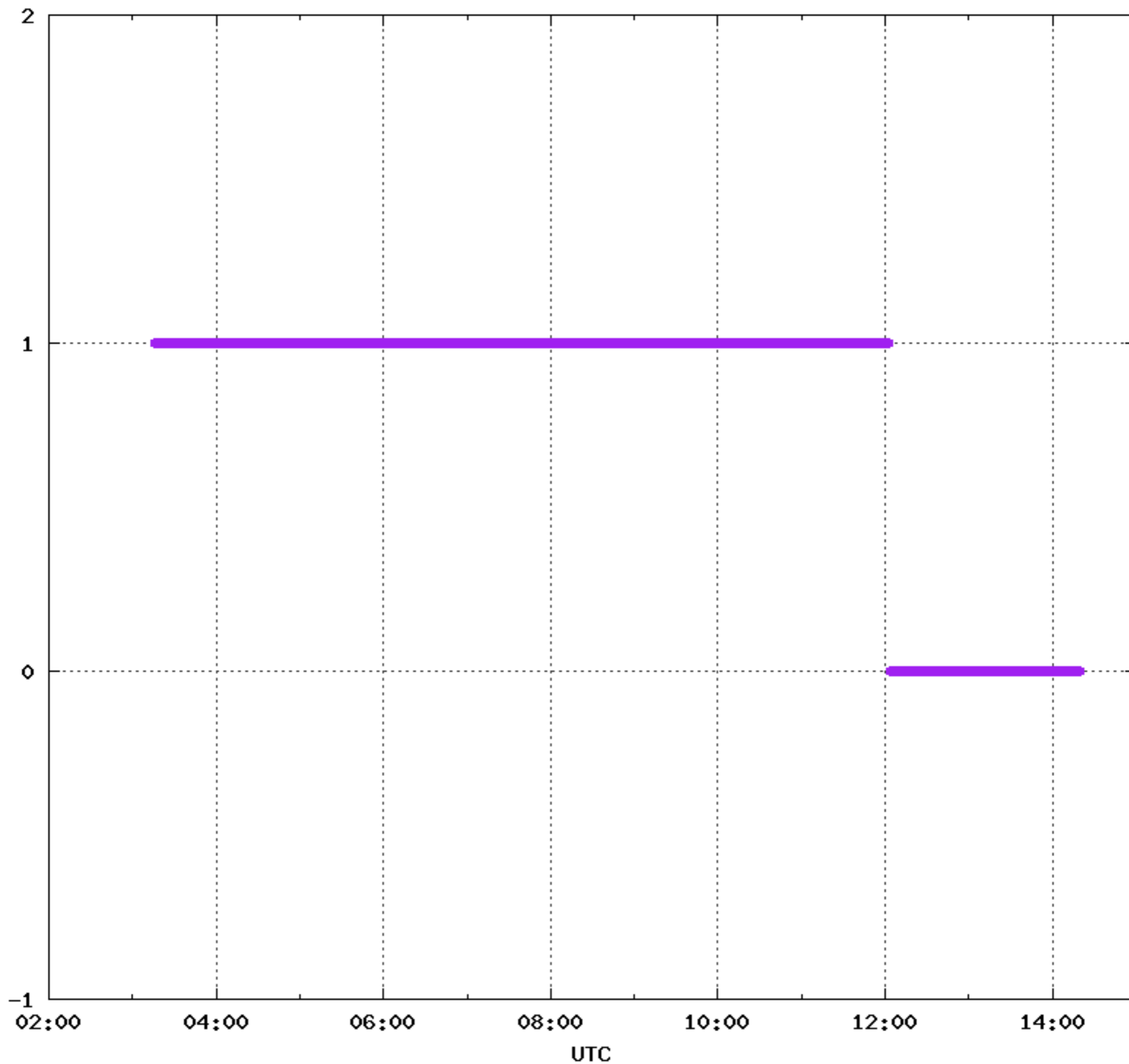
# 2017/258 DSS-43 Carrier Loop Tracking Bandwidth



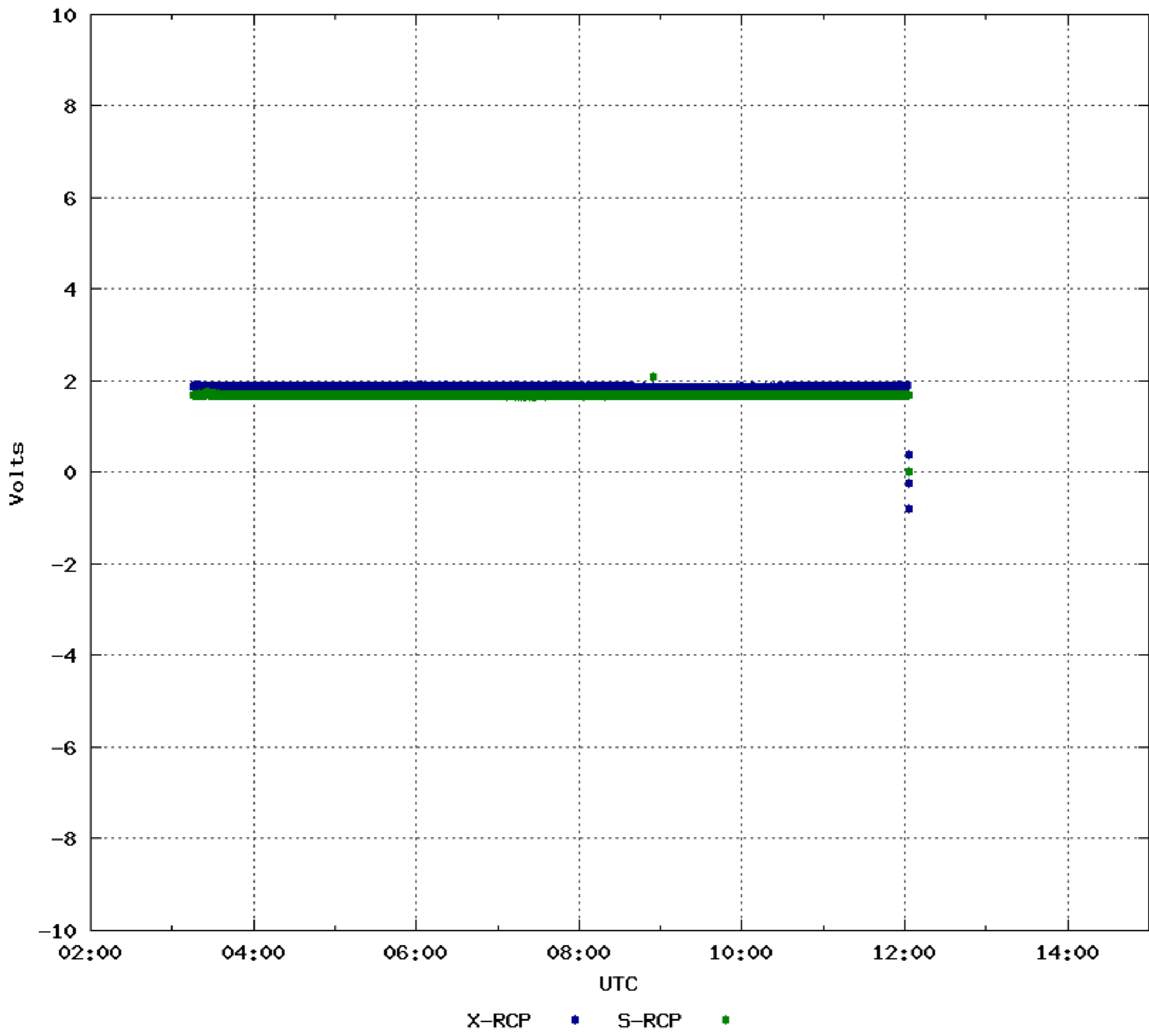
X-RCP ● S-RCP \*



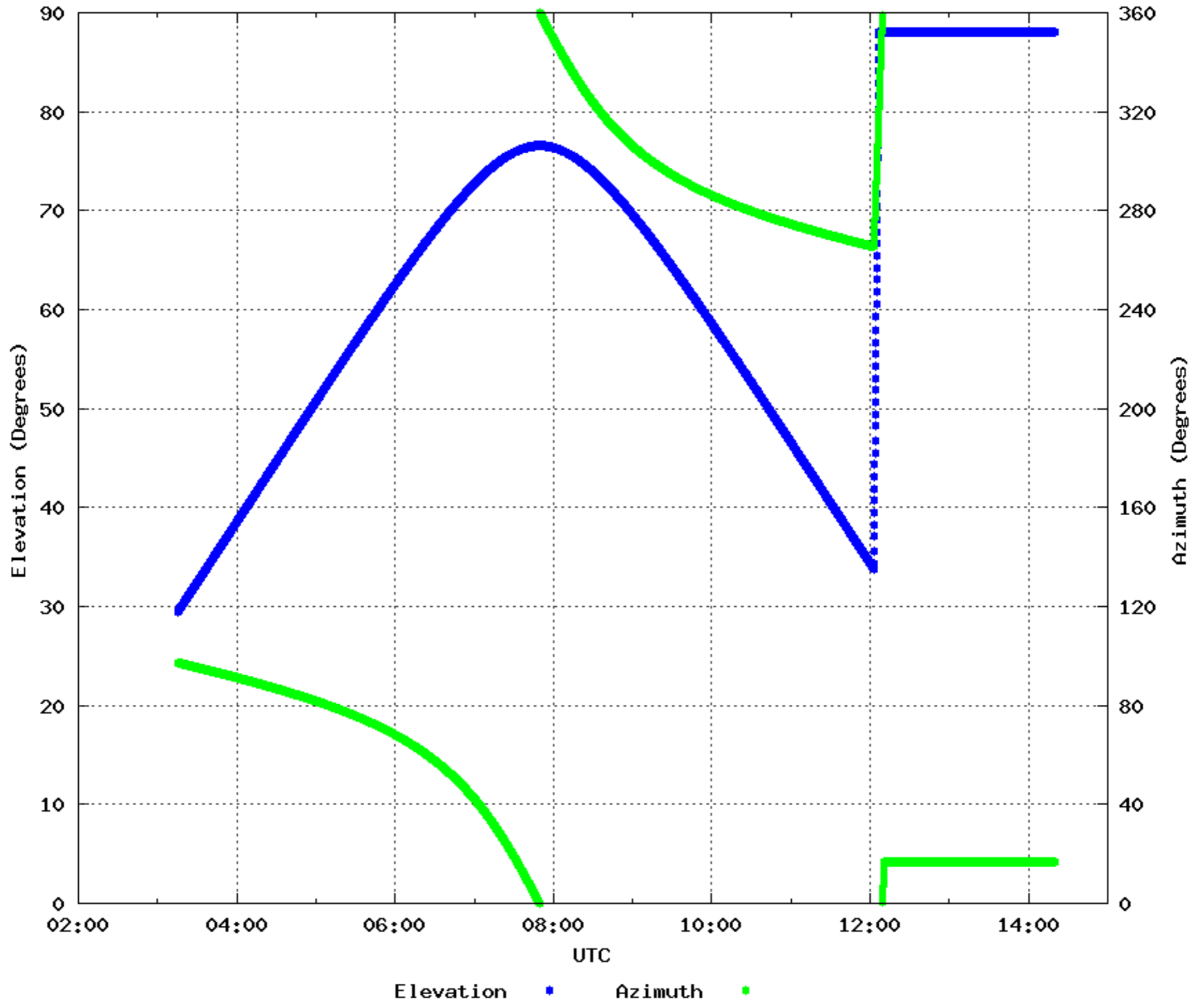
2017/258 D55-43 Subreflector Tracking Status (Tracking = 1; Not Tracking = 0)



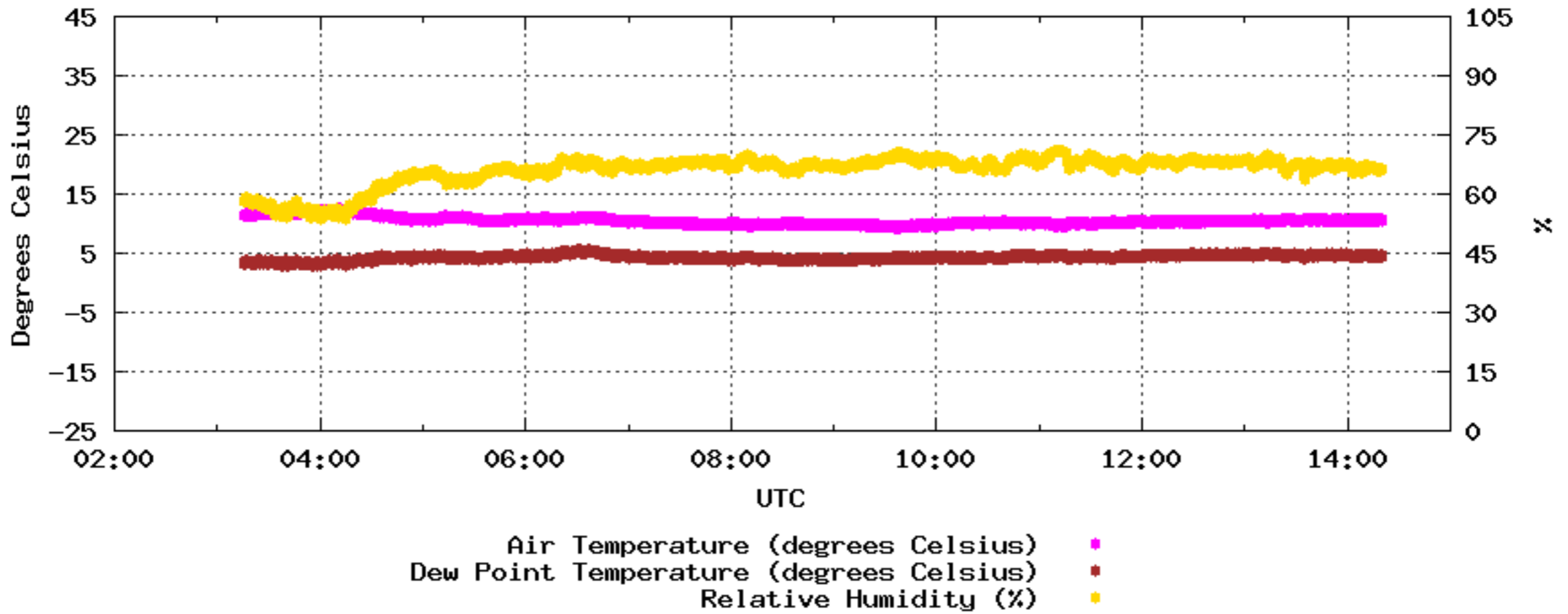
2017/258 DSS-43 Total Power Automatic Gain Control (AGC) Voltage



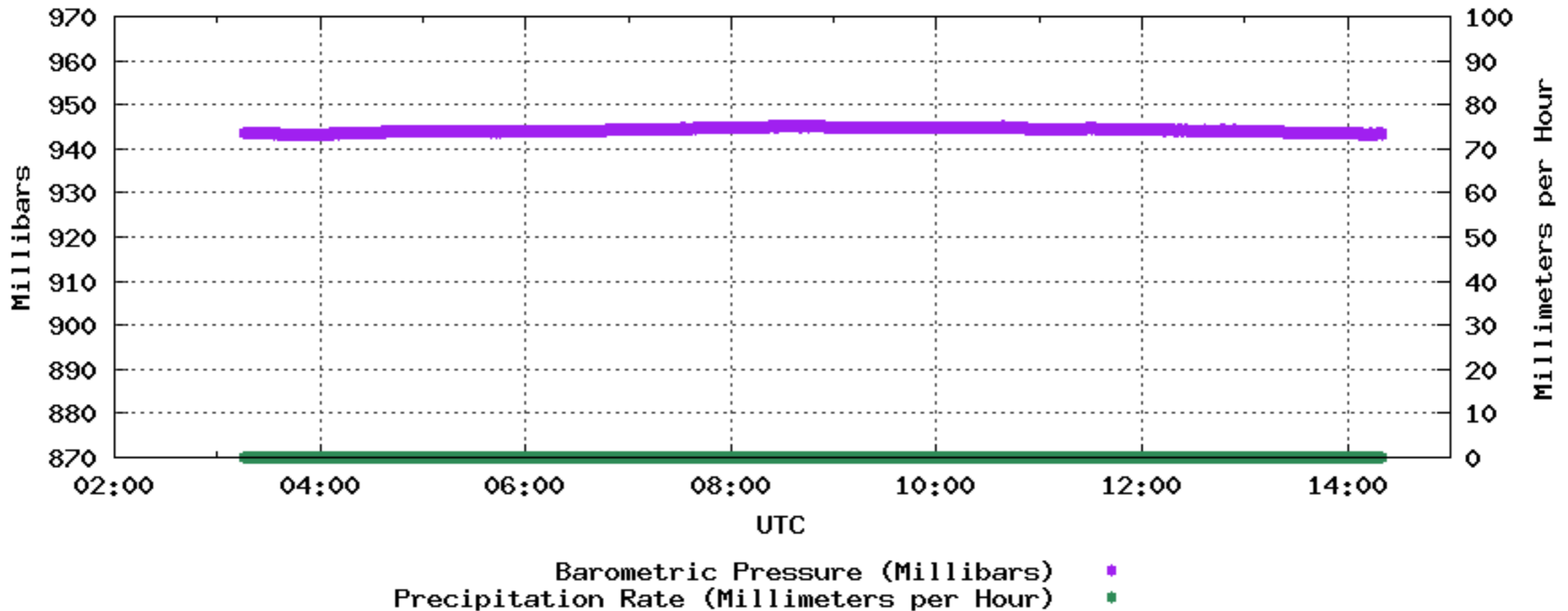
2017/258 DSS-43 Elevation & Azimuth



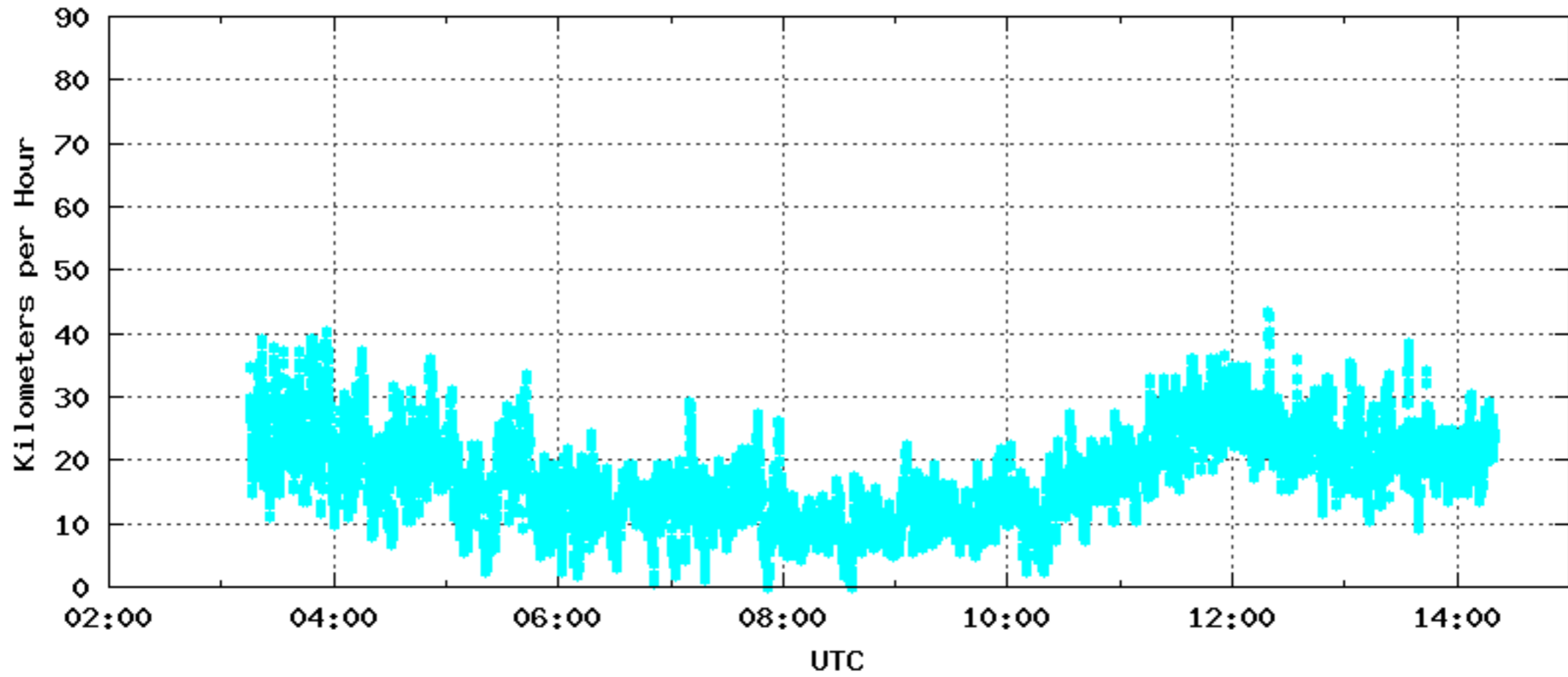
2017/258 D55-43 Air Temperature, Dew Point Temperature, and Relative Humidity



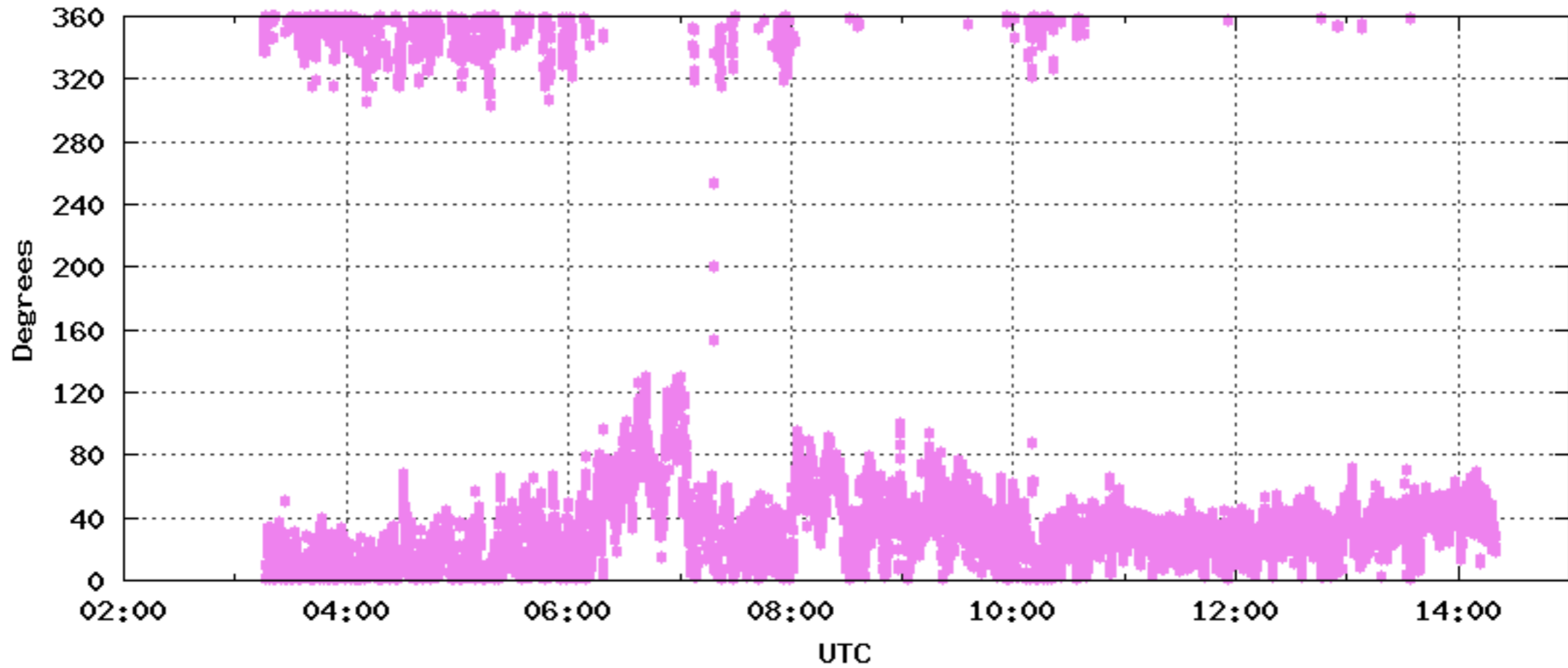
2017/258 D55-43 Barometric Pressure and Precipitation Rate



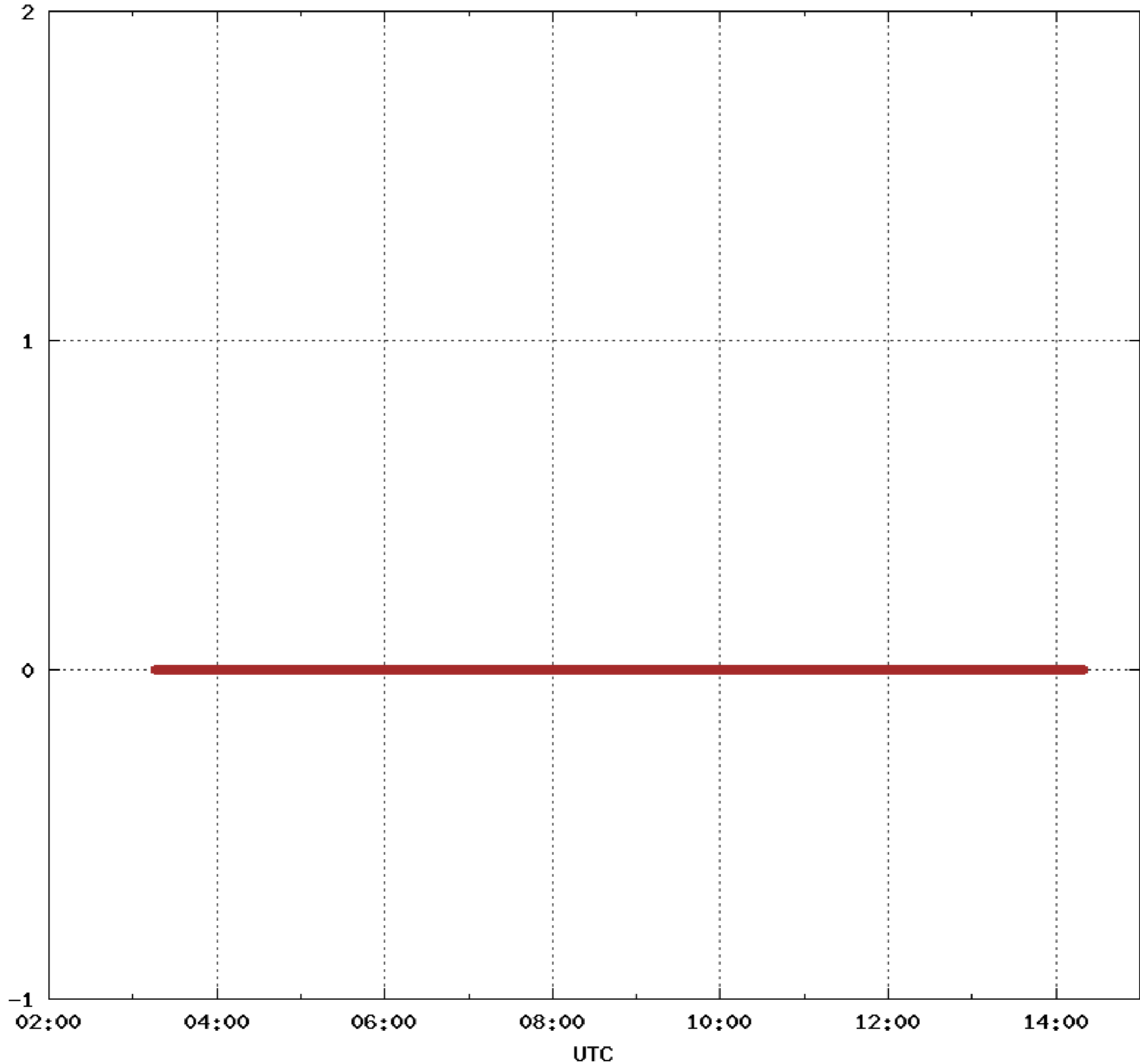
2017/258 DSS-43 Wind Speed



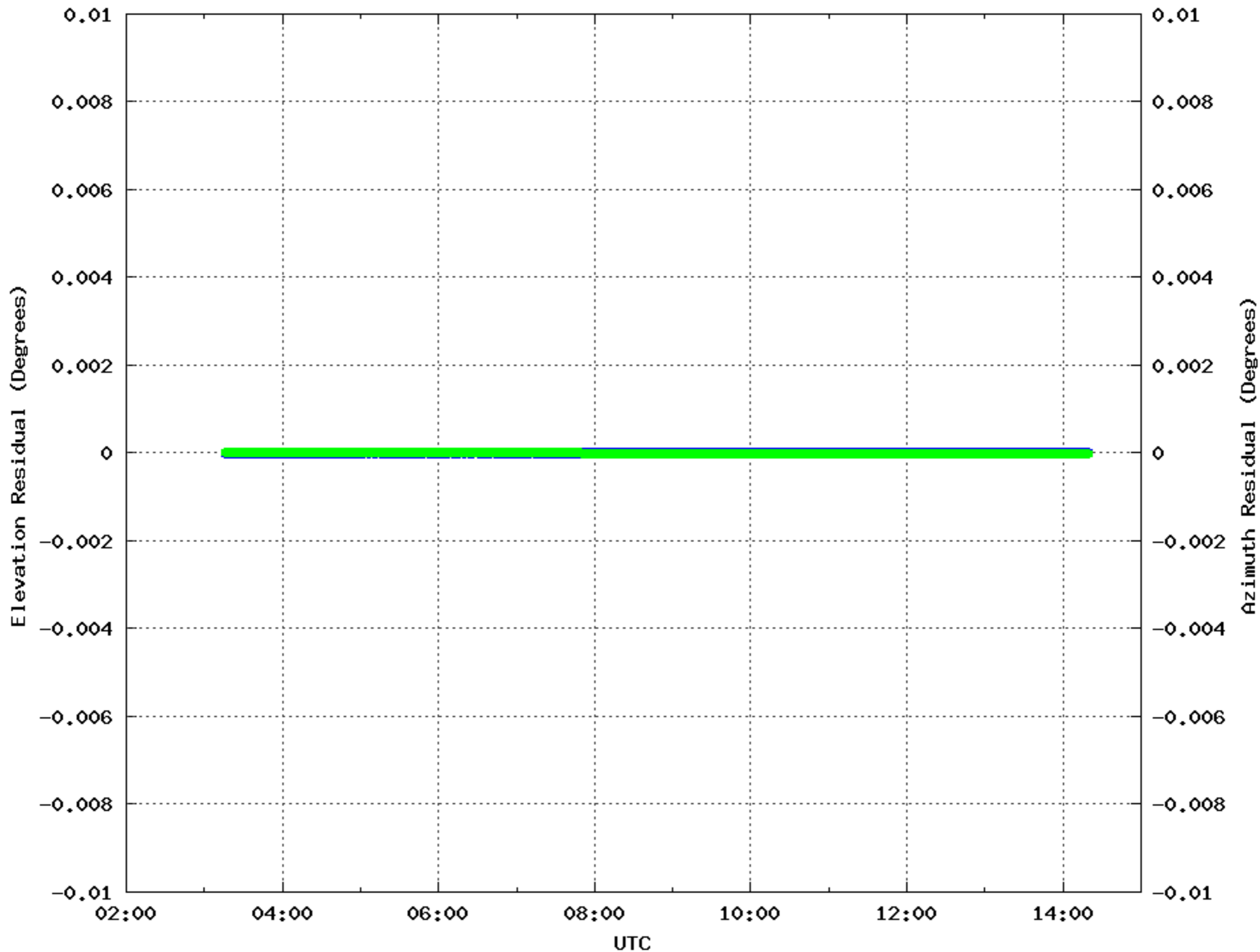
2017/258 DSS-43 Wind Direction



2017/258 D55-43 Conscan Drive Status (ON = 1; OFF = 0)

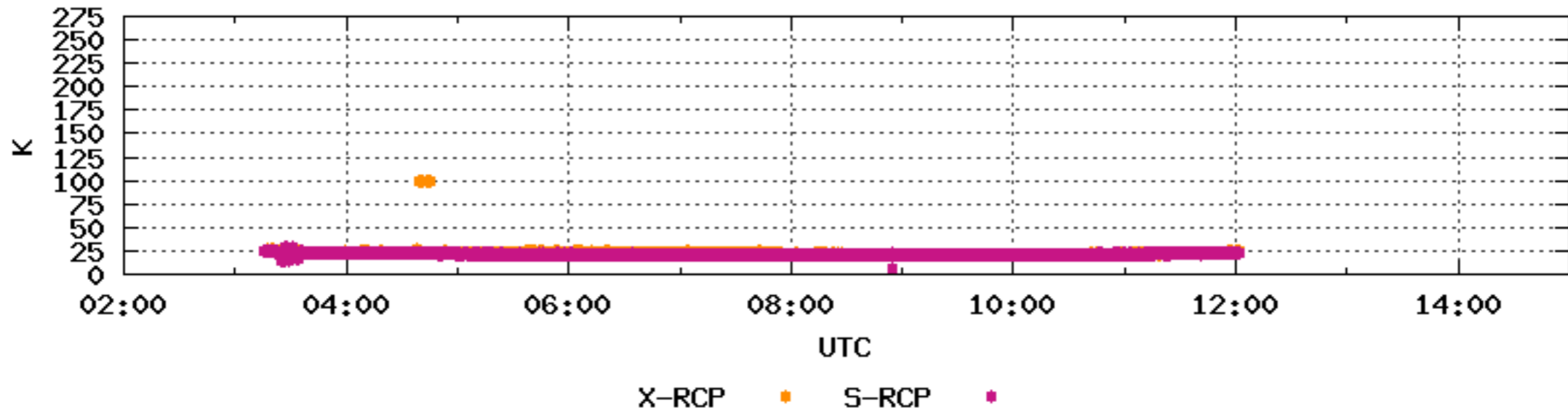


2017/258 D55-43 Elevation & Azimuth Residuals

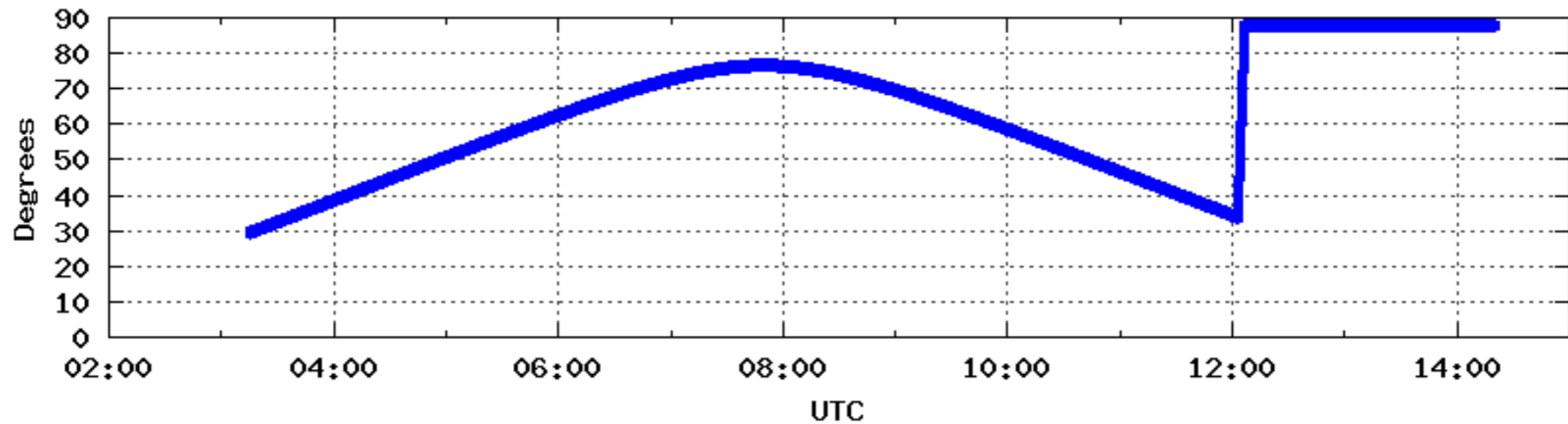


Elevation Residual    ■    Azimuth Residual    ■

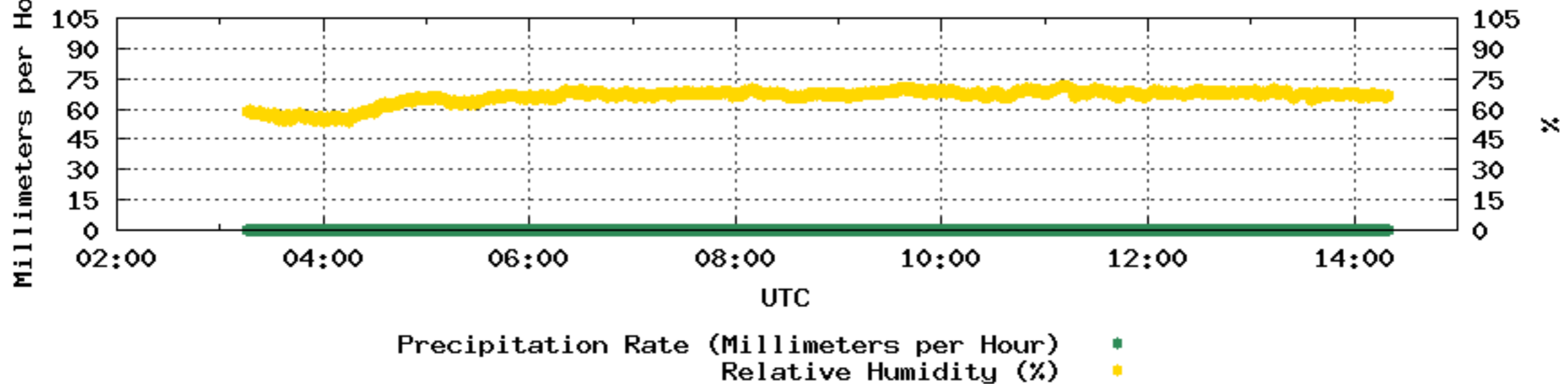
2017/258 DSS-43 System Noise Temperature



2017/258 DSS-43 Elevation Angle



2017/258 DSS-43 Precipitation Rate and Relative Humidity





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

Top:

Carrier 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. S-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 ( $P_c/N_o$ ) and Carrier Power

Top:

Carrier 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:

Carrier 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 ( $P_c/N_o$ ) and System Noise Temperature

Carrier 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. Subreflector Tracking Status

Subreflector Tracking Status (M-0317)

#### 10. AGC Voltage

AGC Voltage (M-1325, M-1825, M-2325, M-2825)  
categorized by Downlink Band (M-1245, M-1745, M-2245, M-2745)  
and Polarization (M-1267, M-1767, M-2267, M-2767)

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

12. Weather: Air Temperature, Dew Point Temperature, Relative Humidity,  
Precipitation Rate, and Barometric Pressure

Top:  
Air Temperature (M-0394)  
Dew Point (M-0397)  
Relative Humidity (M-0409)

Bottom:  
Barometric Pressure (M-0400)  
Precipitation Rate (M-0406)

13. Wind Speed and Direction

Top:  
Wind Speed (M-0388)

Bottom:  
Wind Direction (M-0391)

14. Conscan Drive Status

Conscan Drive Status (M-0308)

15. Azimuth & Elevation Residuals

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

16. 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)