

Spacecraft: Cassini

DSS: 43

Monitor File: S79SROC2013\_175\_0316\_43\_MON.ecsv

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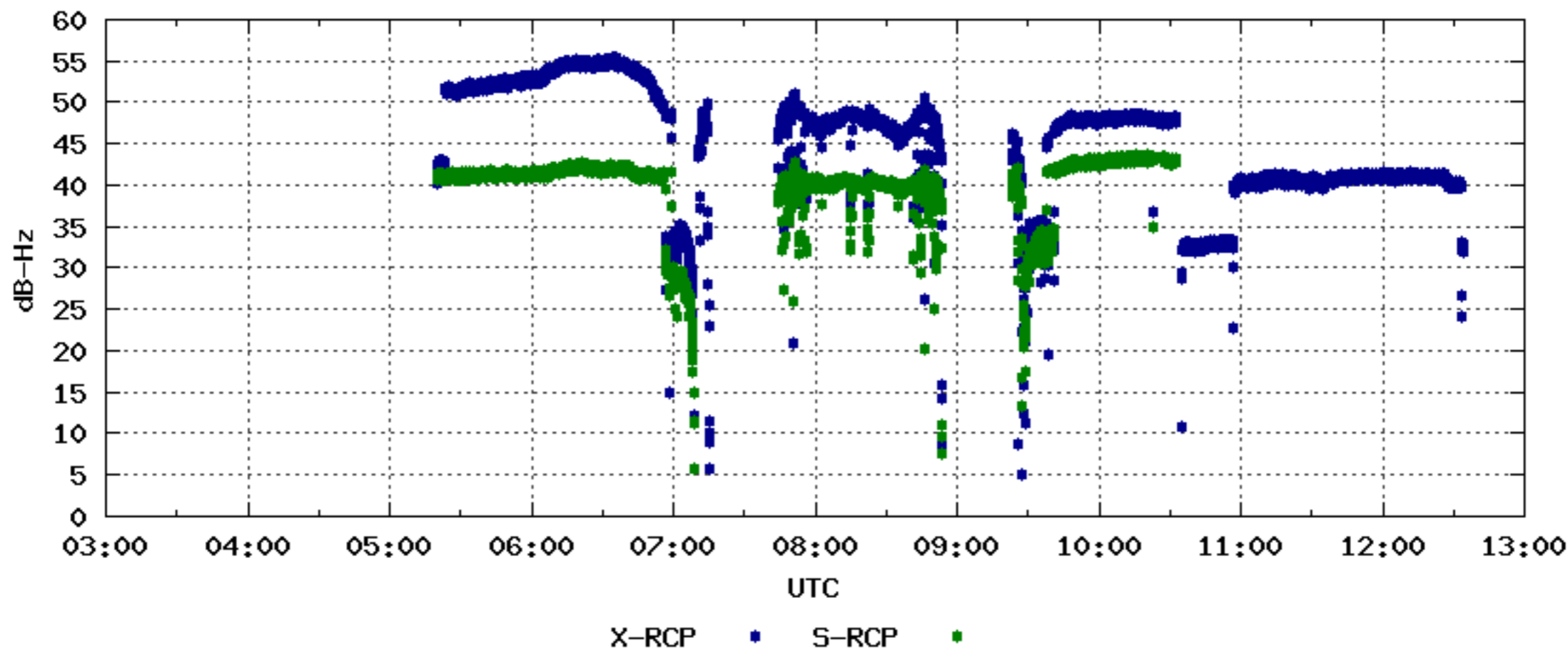
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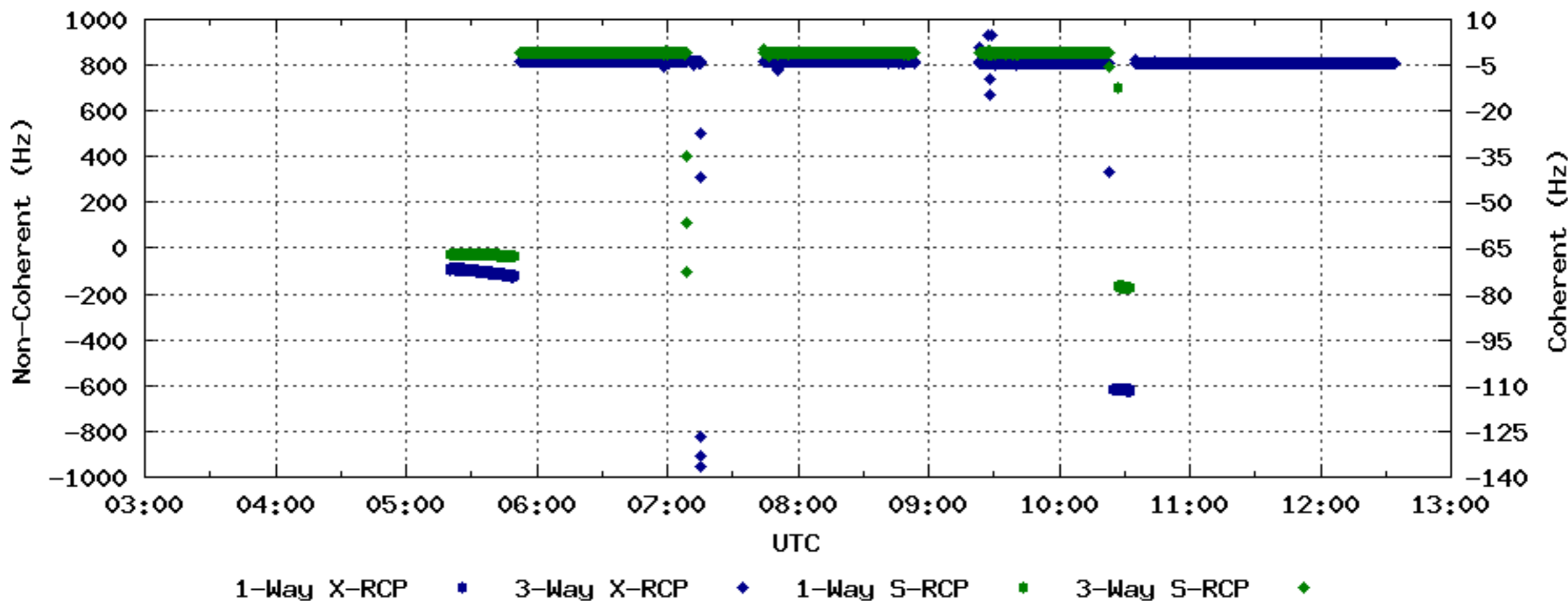
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02. Carrier Power to Noise Spectral Density Ratio ( $P_c/N_o$ ) and Residual Frequency
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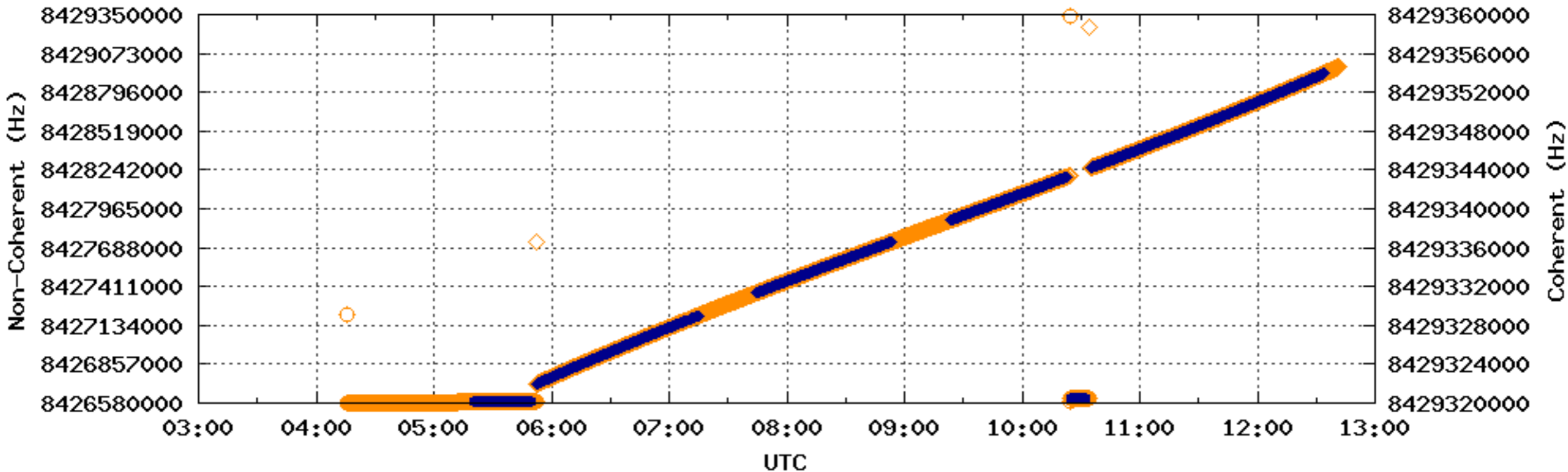
2013/175 D55-43 Carrier Power to Noise Spectral Density Ratio (Pc/No)



2013/175 D55-43 Carrier Frequency Residual (Measured - Predicted)

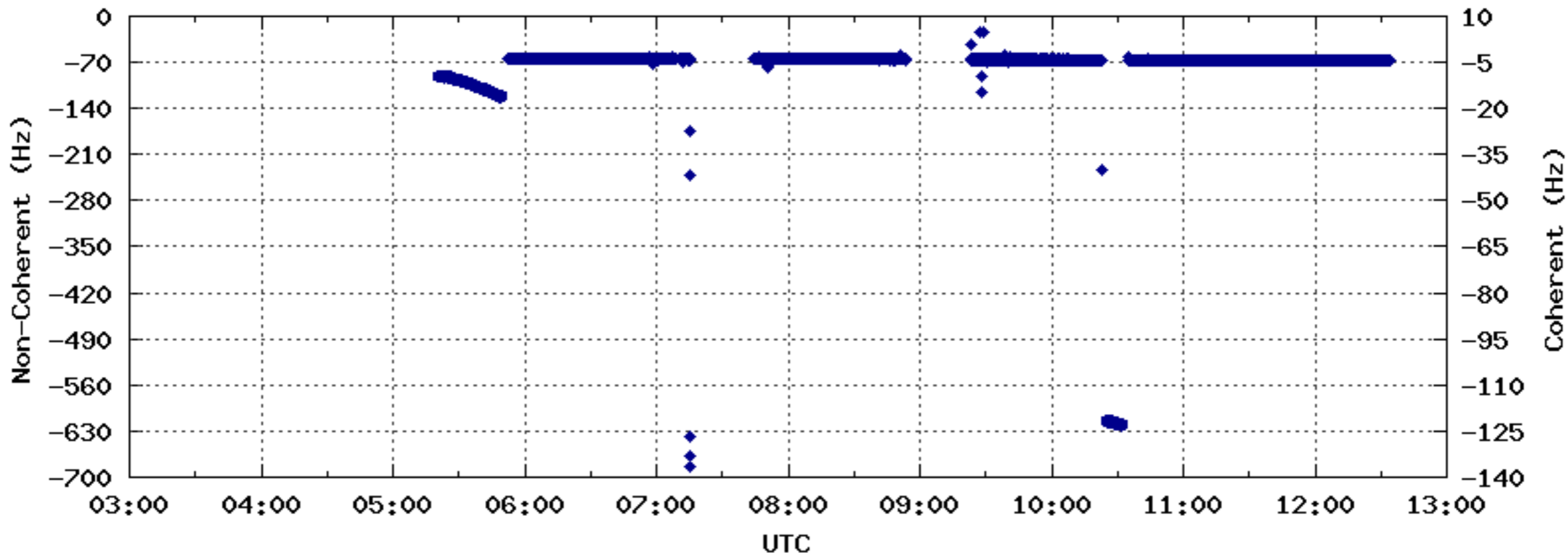


2013/175 DSS-43 X-Band Measured and Predicted Carrier Frequency



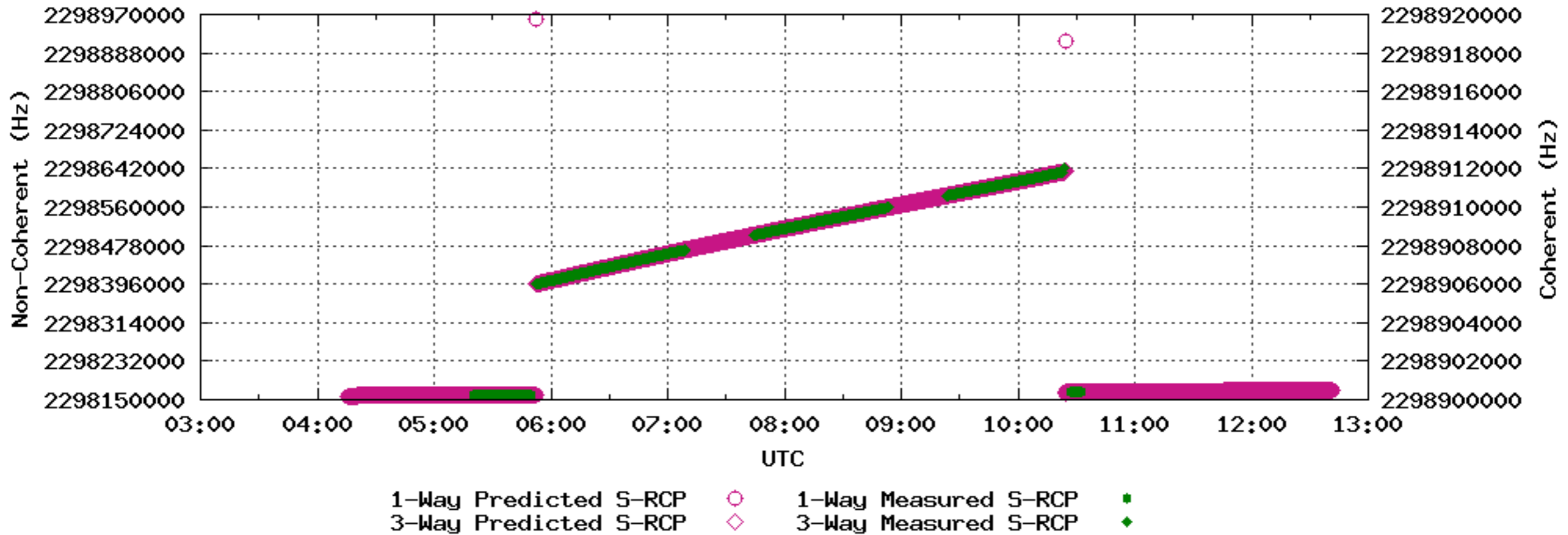
1-Way Predicted X-RCP      ○      1-Way Measured X-RCP      ◆  
 3-Way Predicted X-RCP      ◇      3-Way Measured X-RCP      ◆

2013/175 DSS-43 X-Band Residual Frequency (Measured - Predicted)

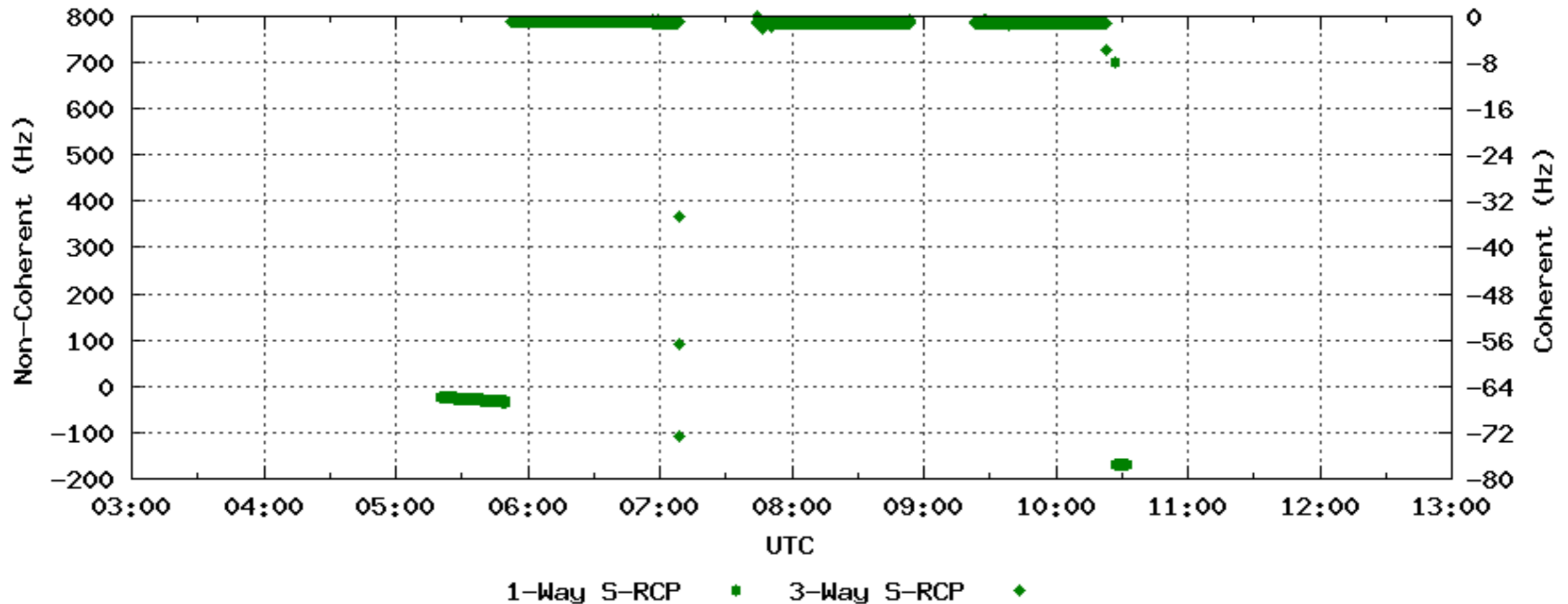


1-Way X-RCP      ◆      3-Way X-RCP      ◆

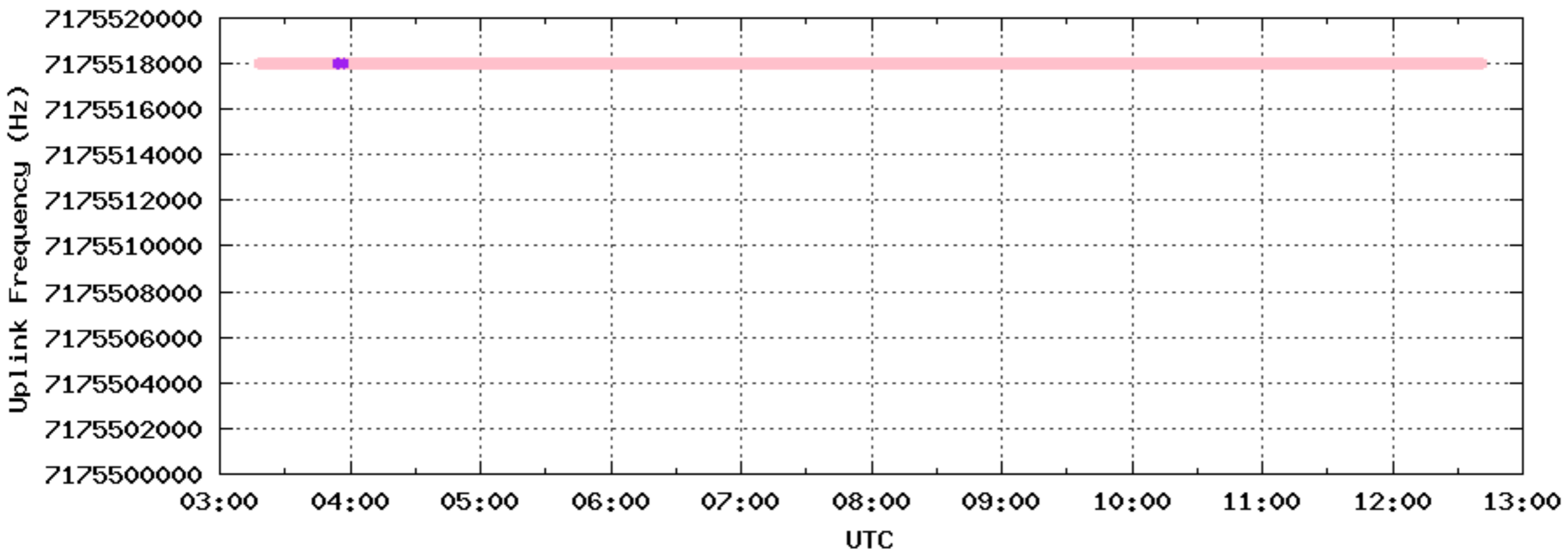
2013/175 DSS-43 S-Band Measured and Predicted Carrier Frequency



2013/175 DSS-43 S-Band Residual Frequency (Measured - Predicted)

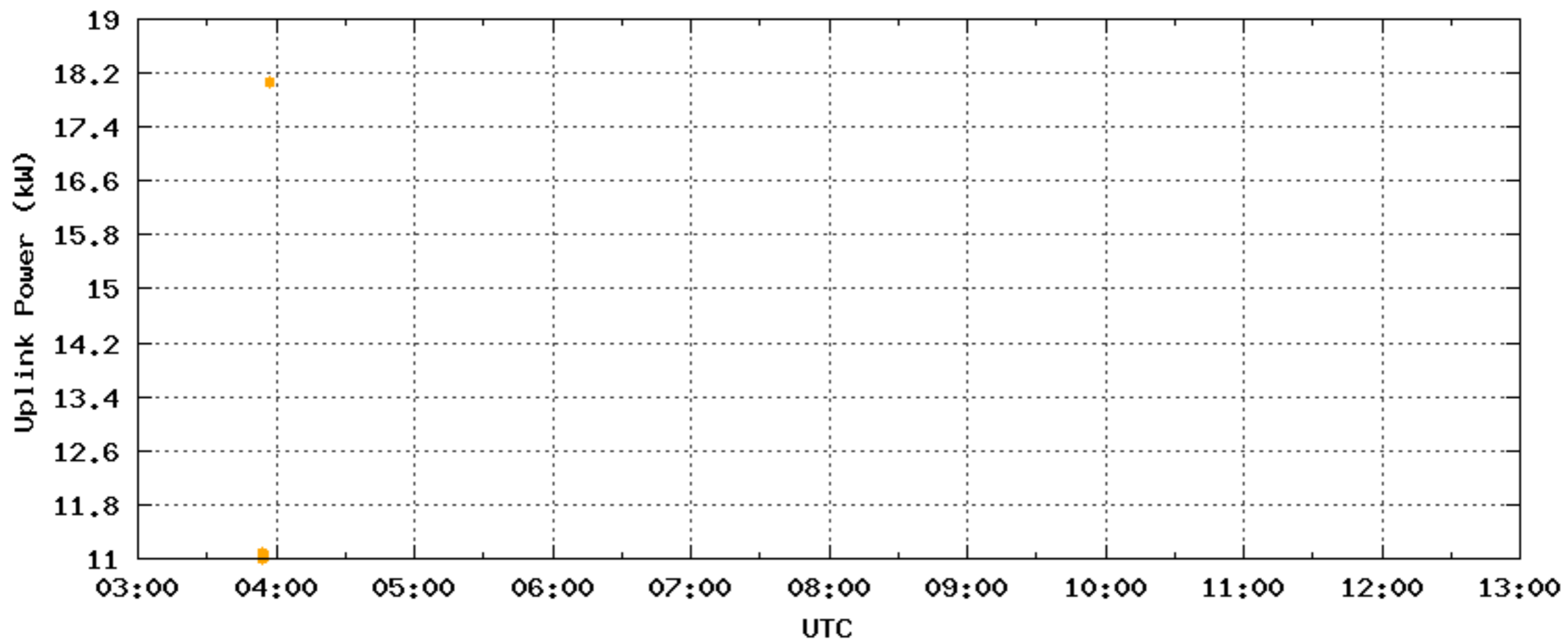


2013/175 DSS-43 Uplink Frequency

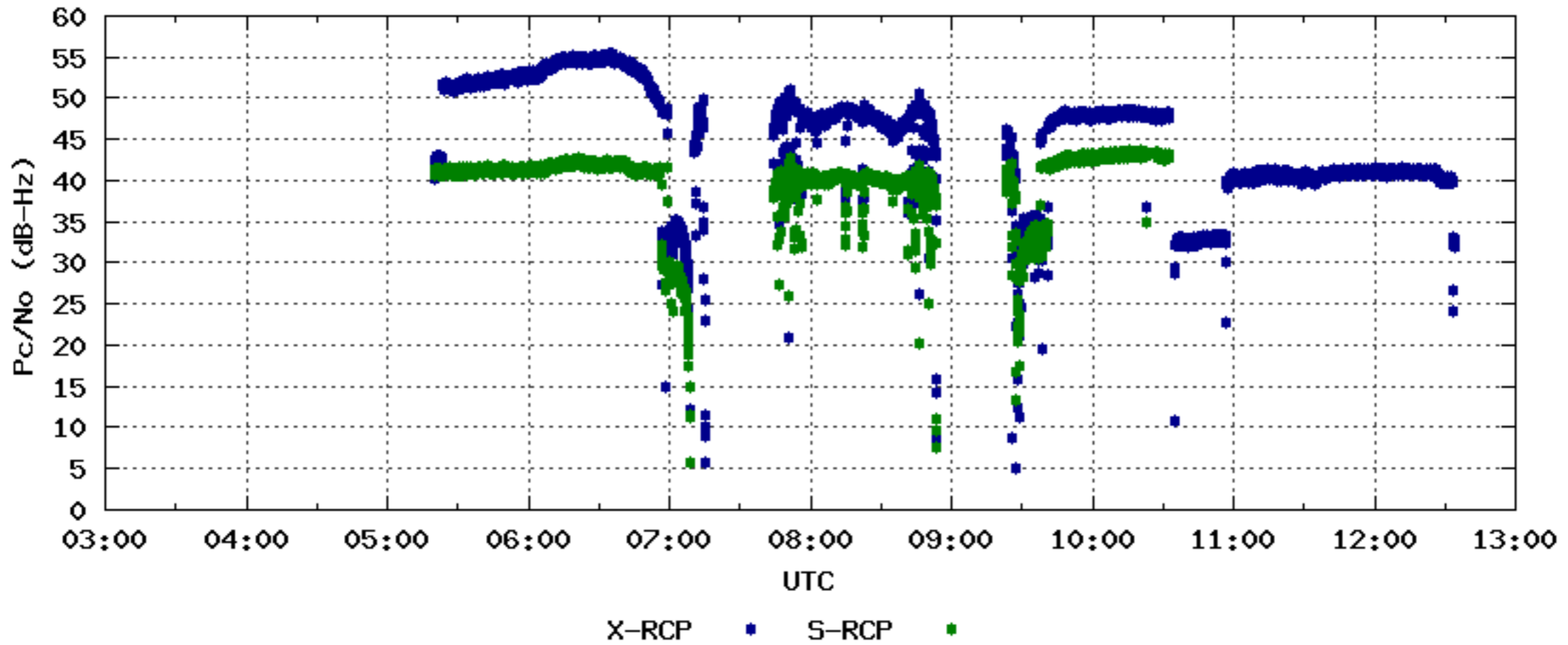


Drive OFF    Drive ON

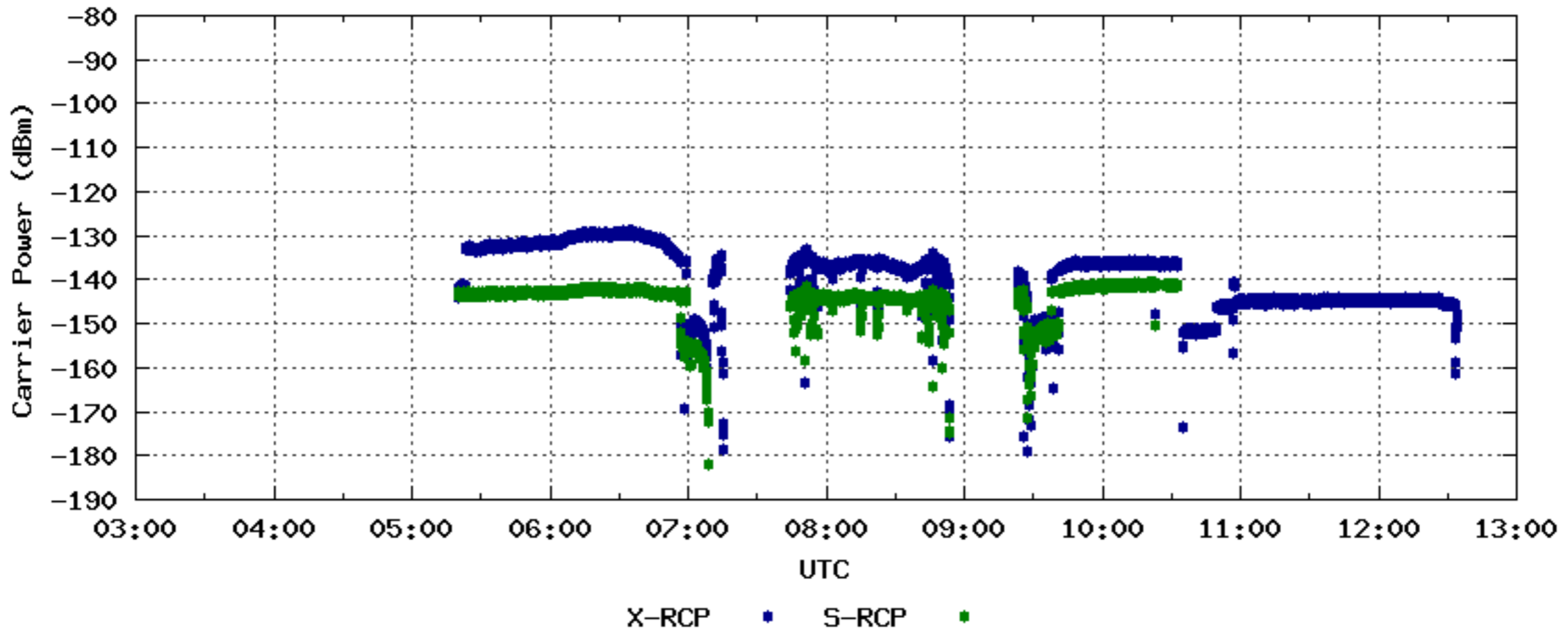
2013/175 DSS-43 Uplink Power (with TXR ON and when > 1)



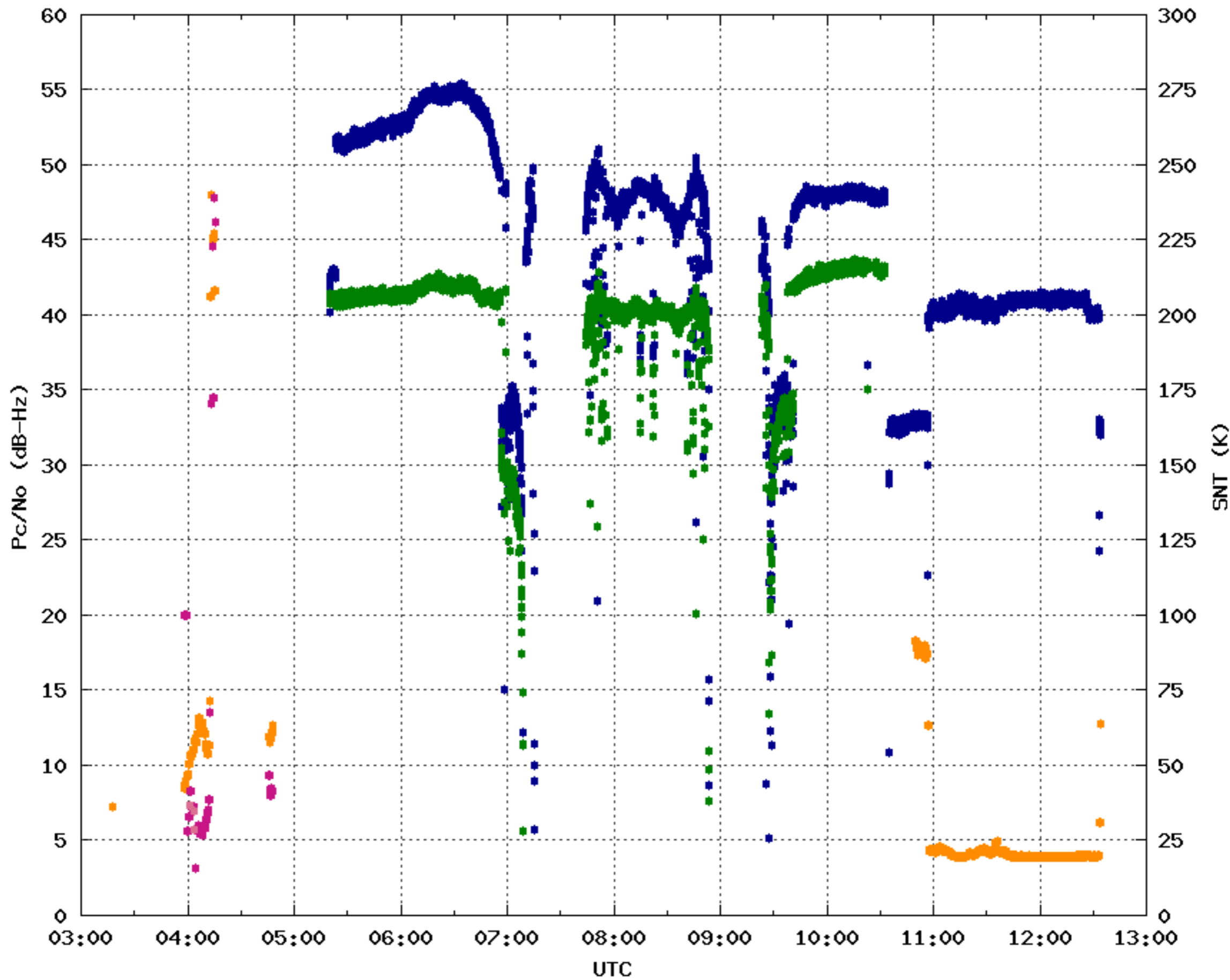
2013/175 D55-43 Carrier Power to Noise Spectral Density Ratio (Pc/No)



2013/175 D55-43 Carrier Power

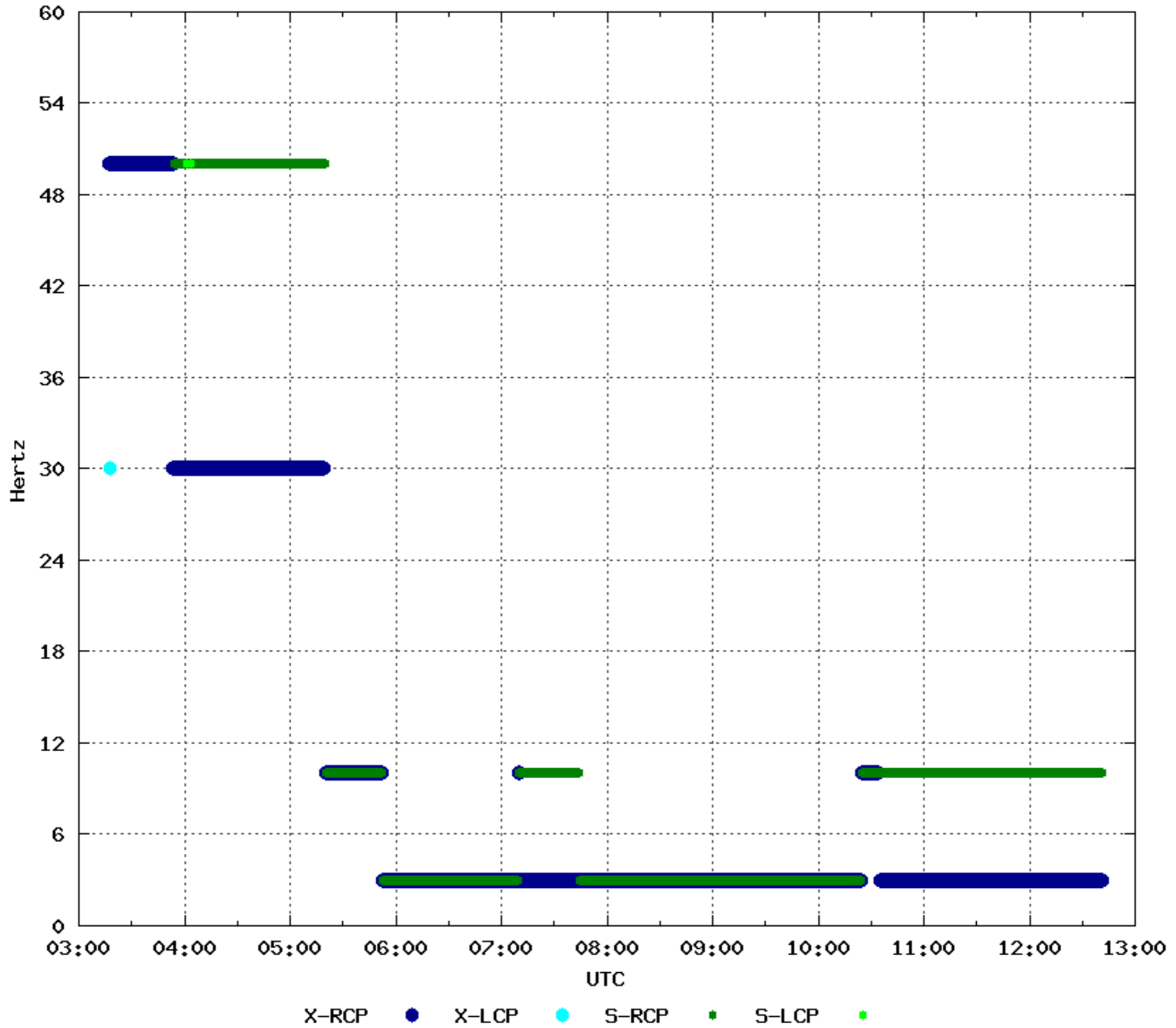


2013/175 D55-43 Carrier Power to Noise Spectral Density Ratio and System Noise Temperature



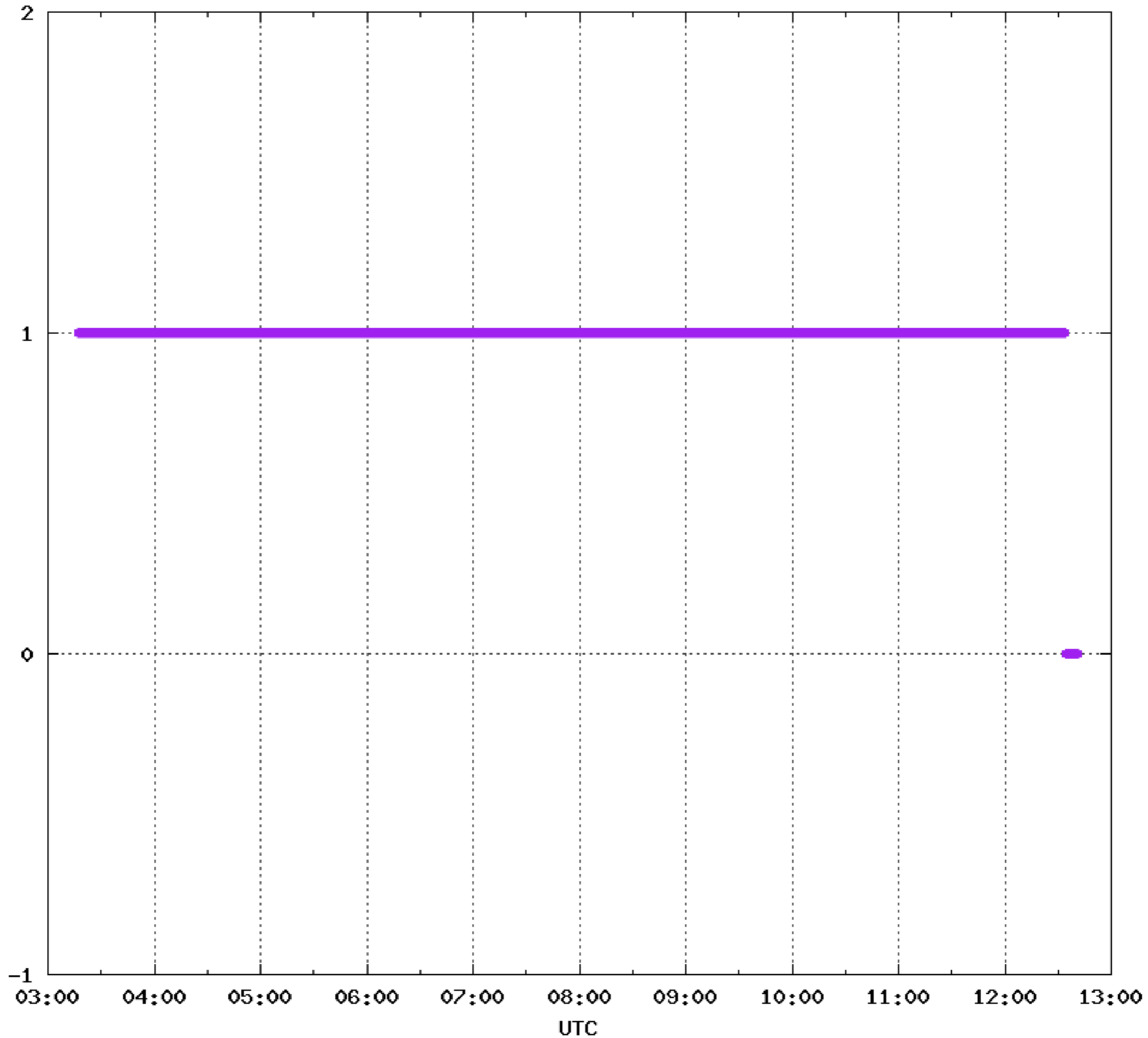
■ Pc/No X-RCP     ■ Pc/No S-RCP     ■ SNT X-RCP     ■ SNT S-RCP  
■ SNT X-RCP     ■ SNT S-RCP     ■ SNT S-LCP     ■ SNT S-LCP

2013/175 DSS-43 Carrier Loop Tracking Bandwidth

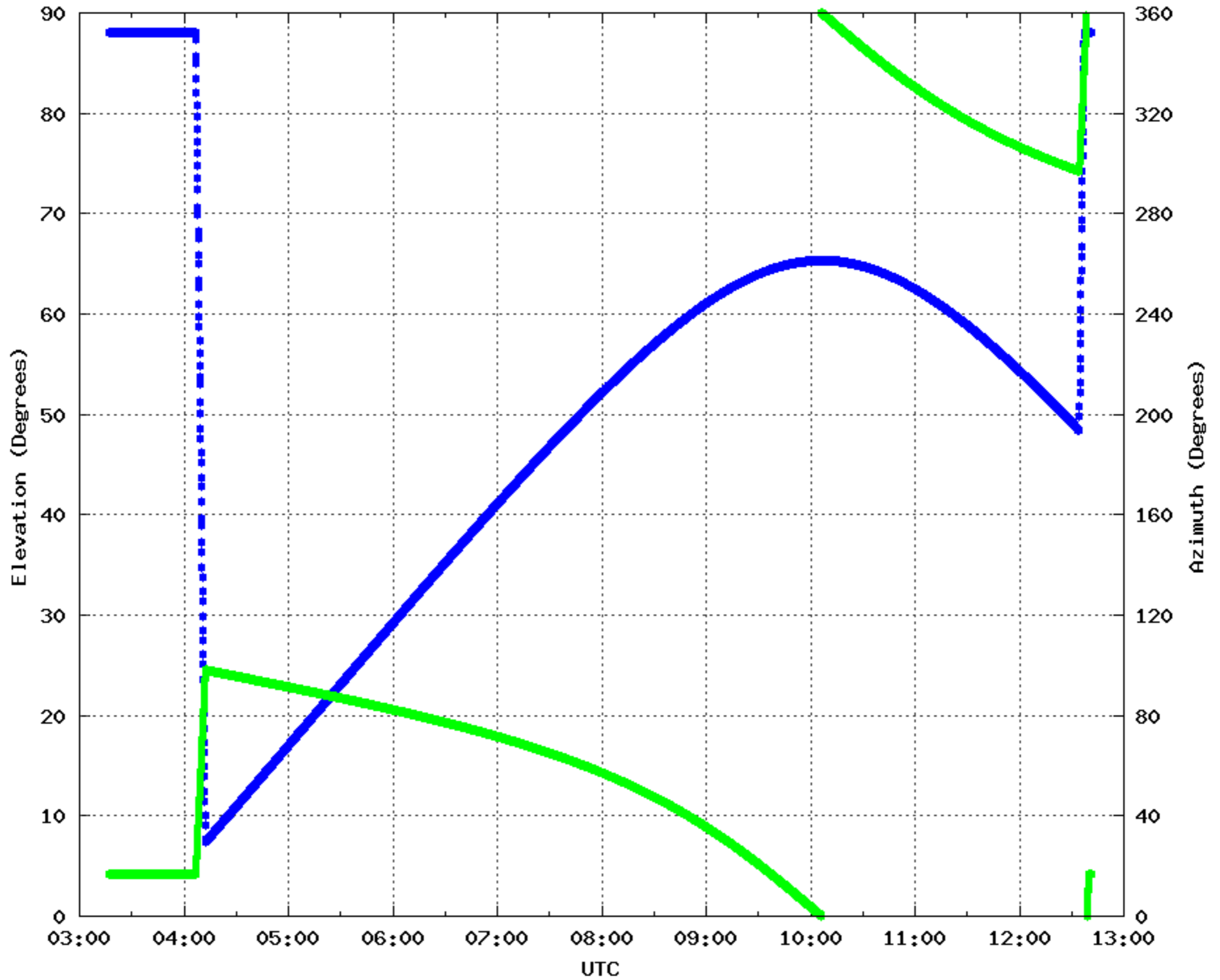




2013/175 D55-43 Subreflector Tracking Status (Tracking = 1; Not Tracking = 0)

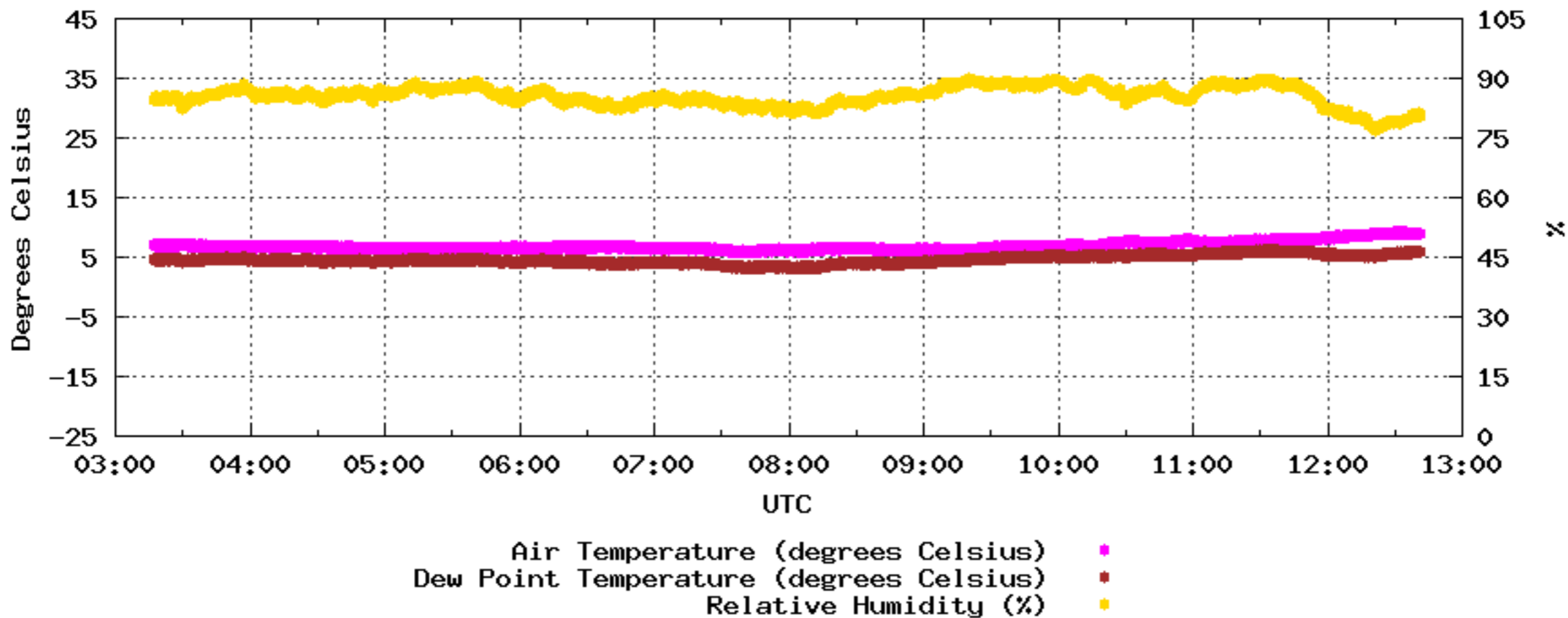


2013/175 DSS-43 Elevation & Azimuth

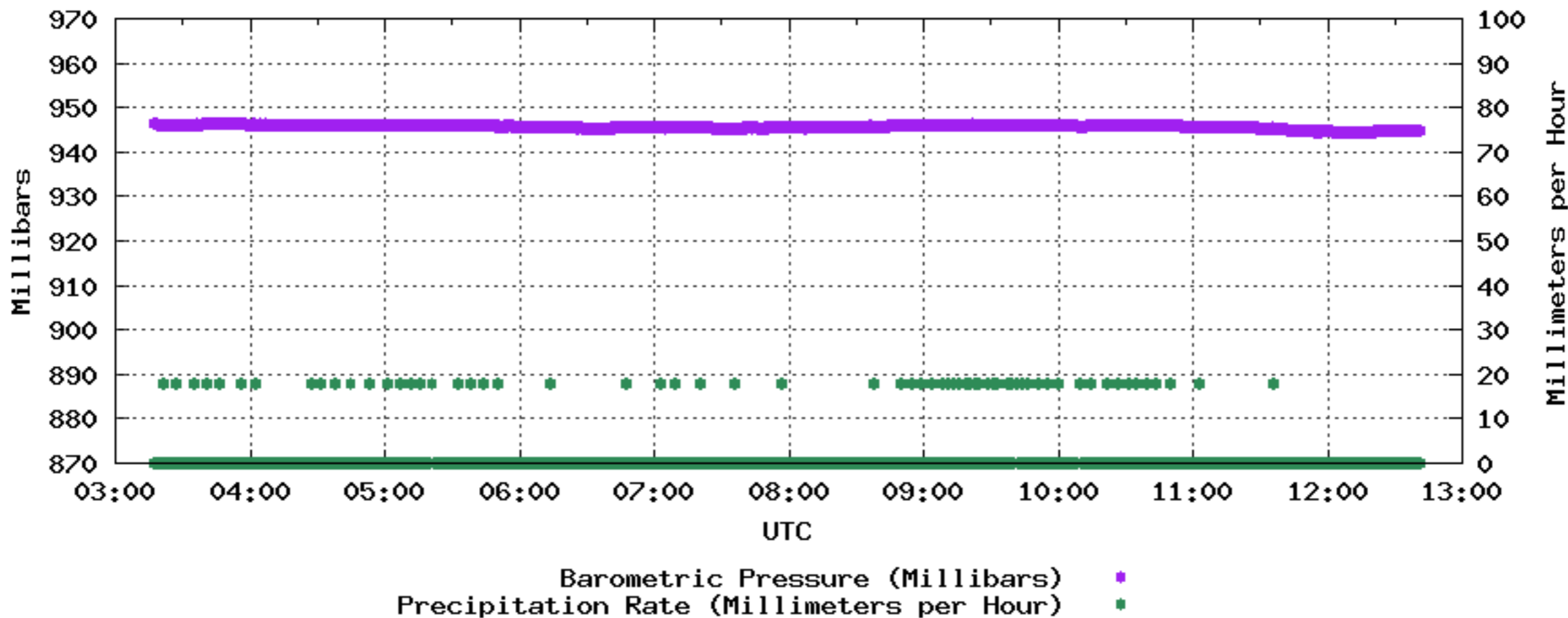


Elevation    ■    Azimuth    ■

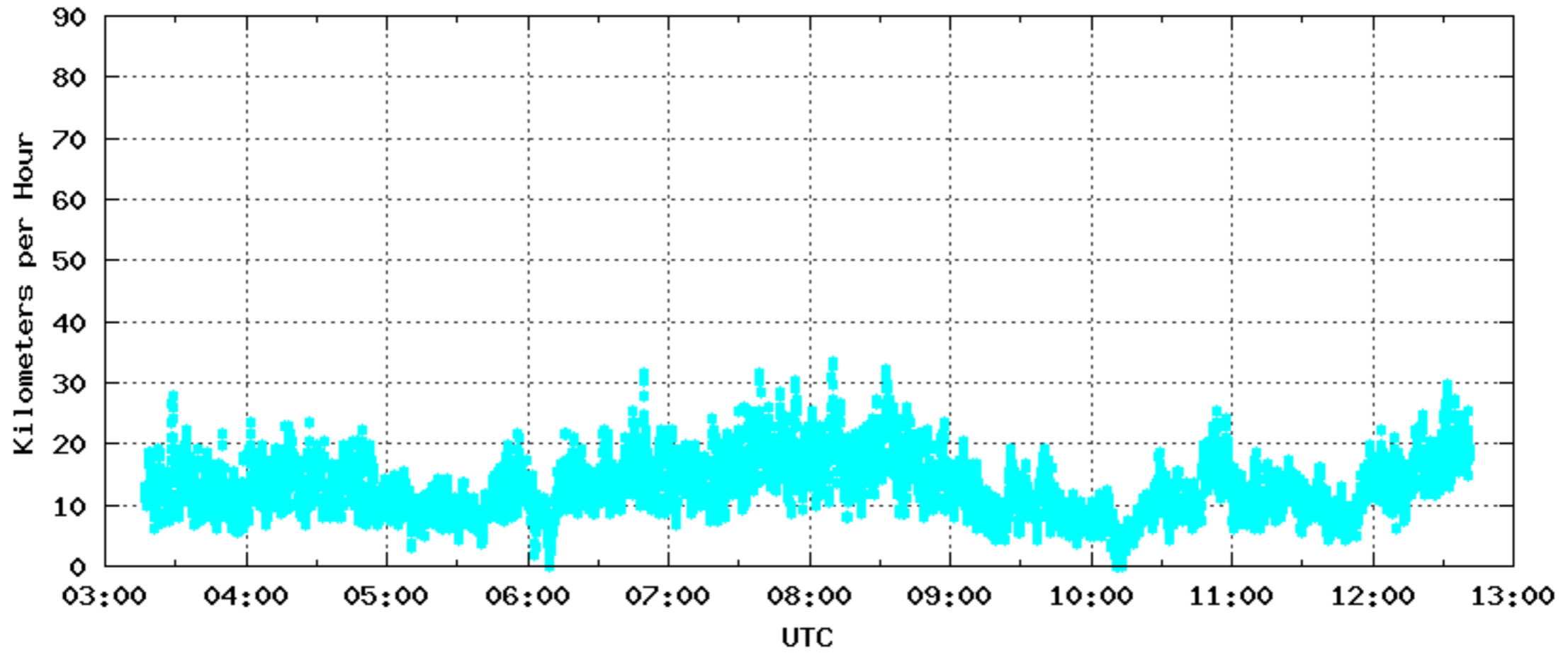
2013/175 D55-43 Air Temperature, Dew Point Temperature, and Relative Humidity



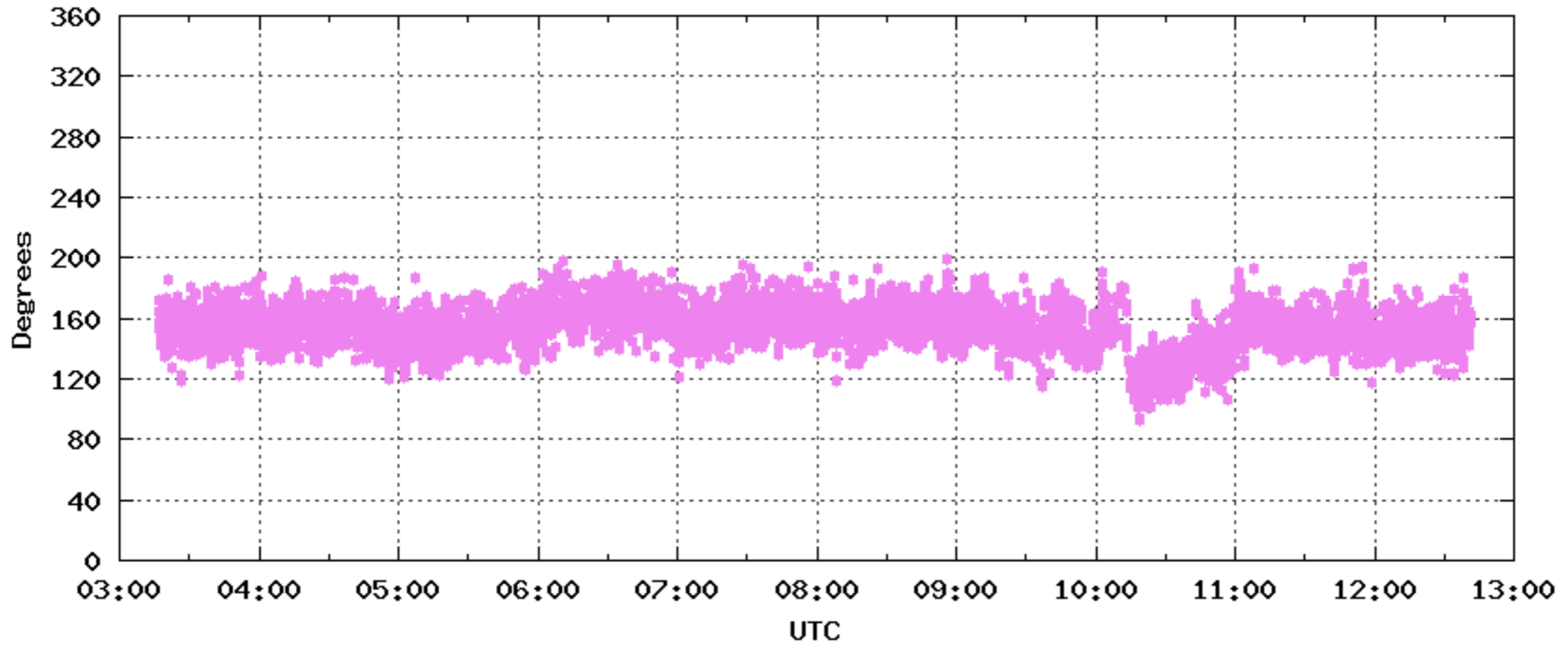
2013/175 D55-43 Barometric Pressure and Precipitation Rate



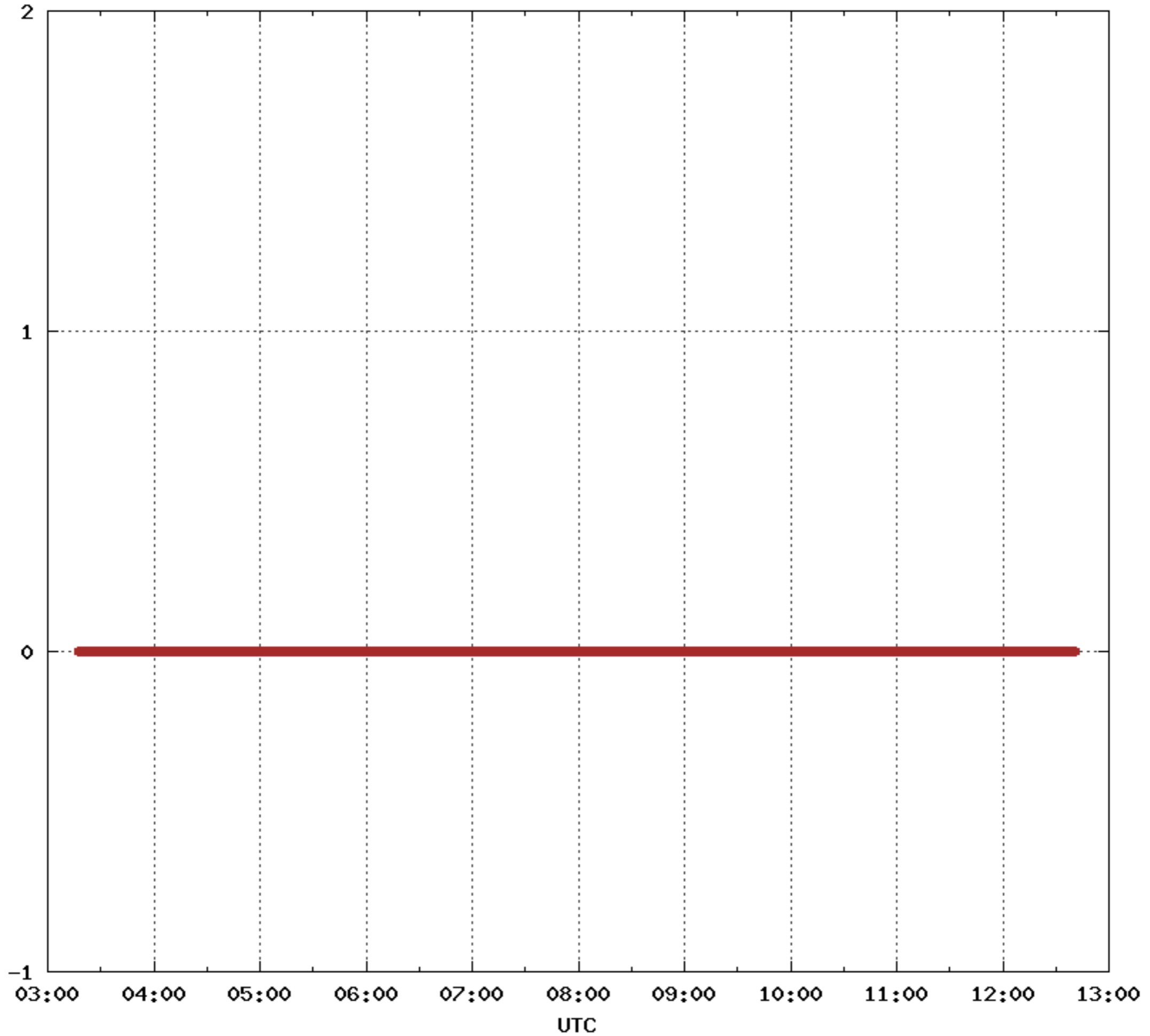
2013/175 DSS-43 Wind Speed



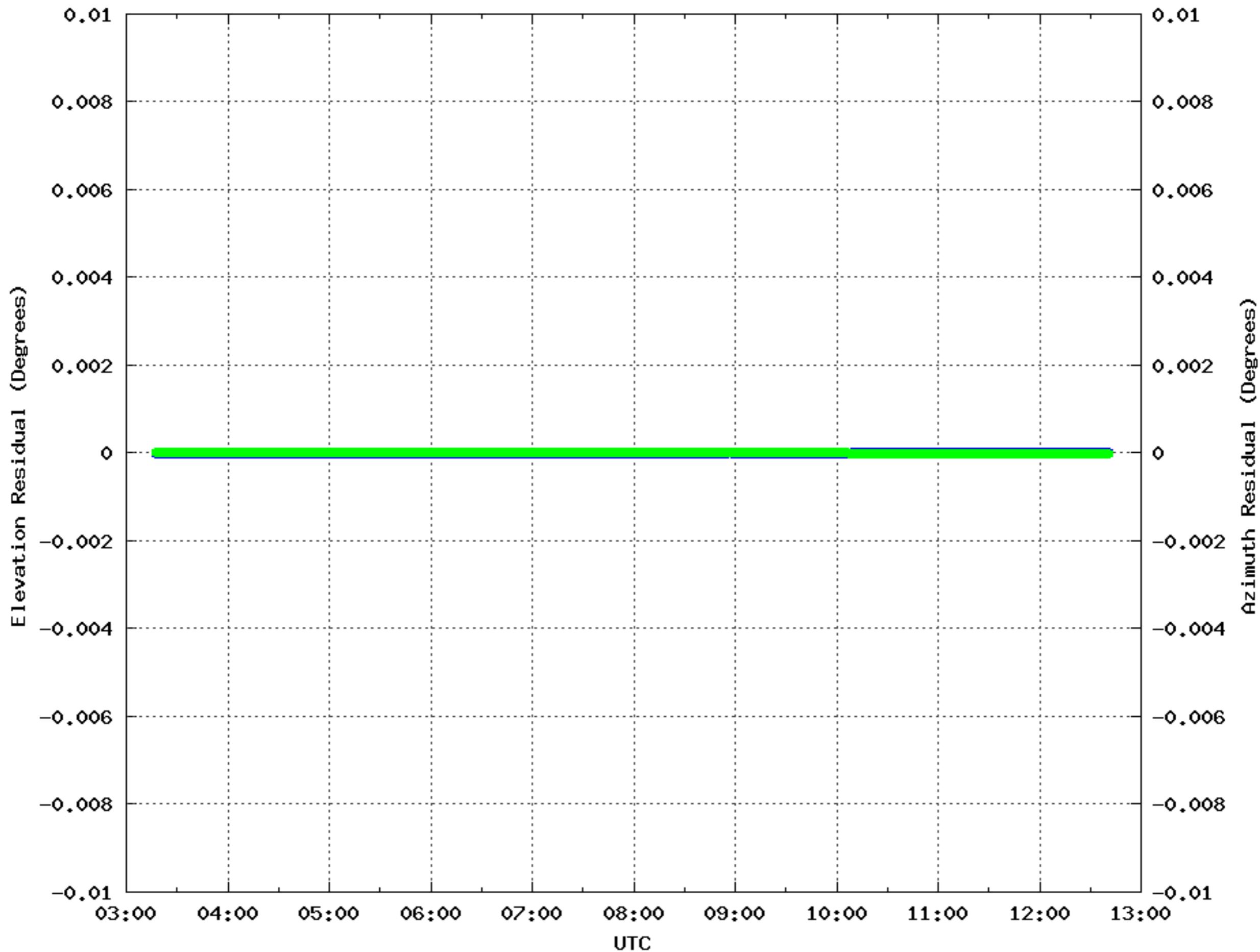
2013/175 DSS-43 Wind Direction



2013/175 D55-43 Conscan Drive Status (ON = 1; OFF = 0)

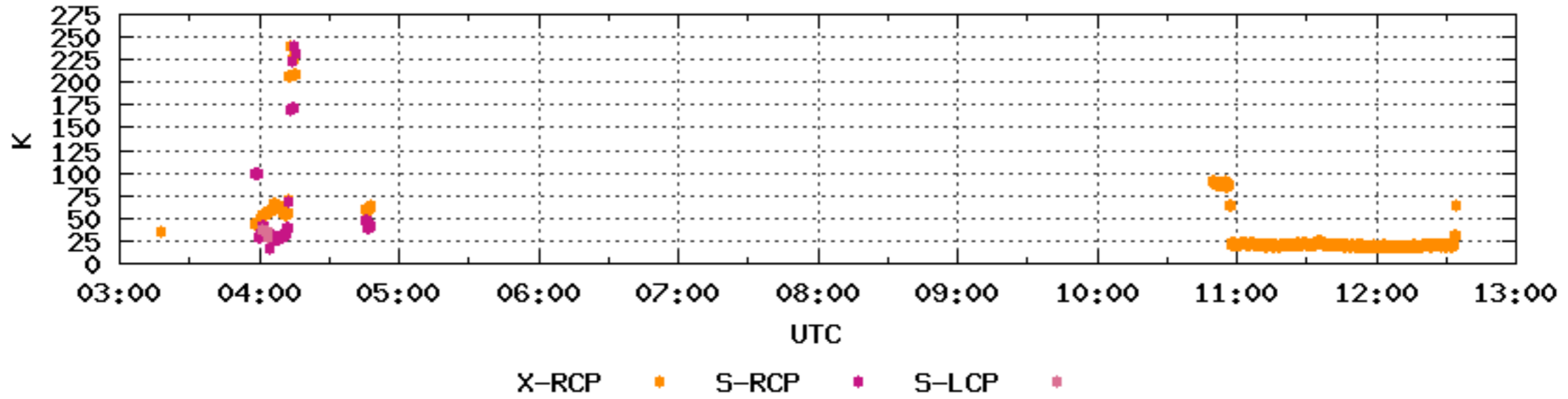


2013/175 D55-43 Elevation & Azimuth Residuals

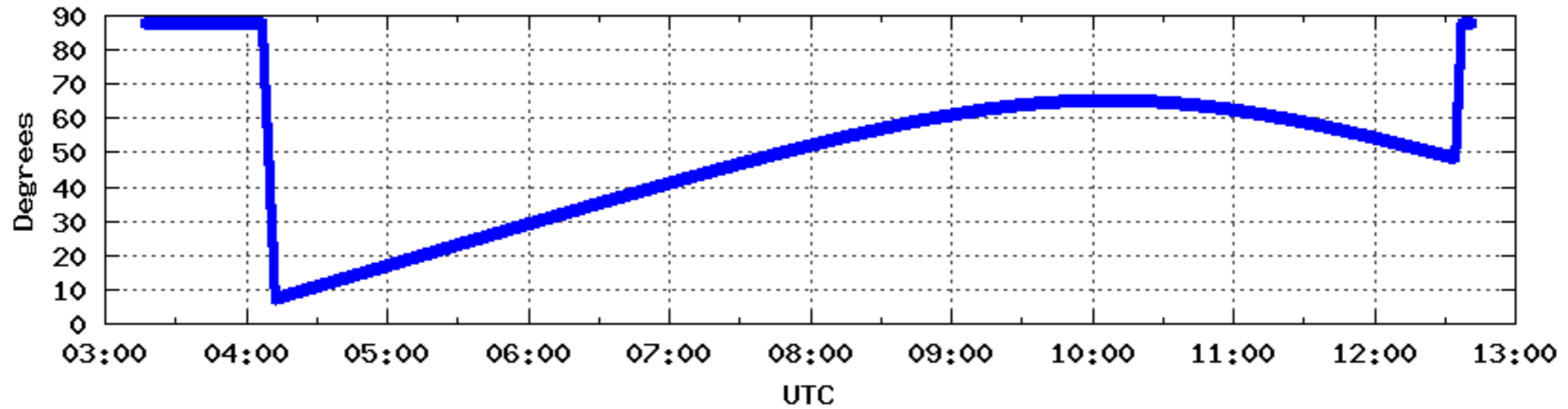


Elevation Residual ■ Azimuth Residual ■

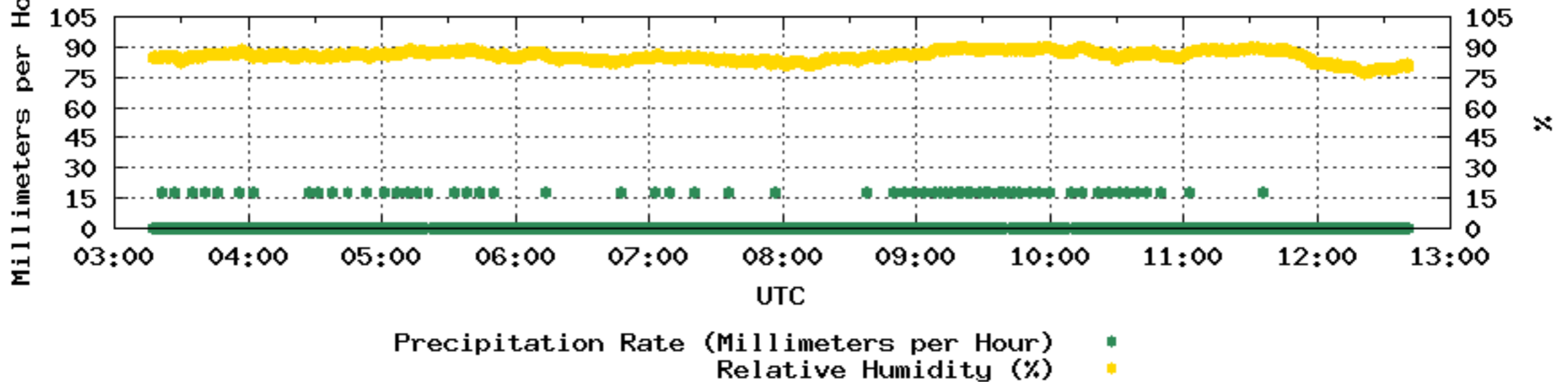
2013/175 DSS-43 System Noise Temperature



2013/175 DSS-43 Elevation Angle



2013/175 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. Azimuth & Elevation

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

#### 11. 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)

## 12. Wind Speed and Direction

Top:

Wind Speed (M-0388)

Bottom:

Wind Direction (M-0391)

## 13. Conscan Drive Status

Conscan Drive Status (M-0308)

## 14. Azimuth & Elevation Residuals

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

## 15. 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)