Spacecraft: Cassini
DSS: 43
Monitor File: S99SROI2017_110_1025_43_MON.ecsv
APPLICABLE_START_TIME = 2017-110T10:25:32.743;
APPLICABLE_STOP_TIME = 2017-111T00:25:05.610;
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

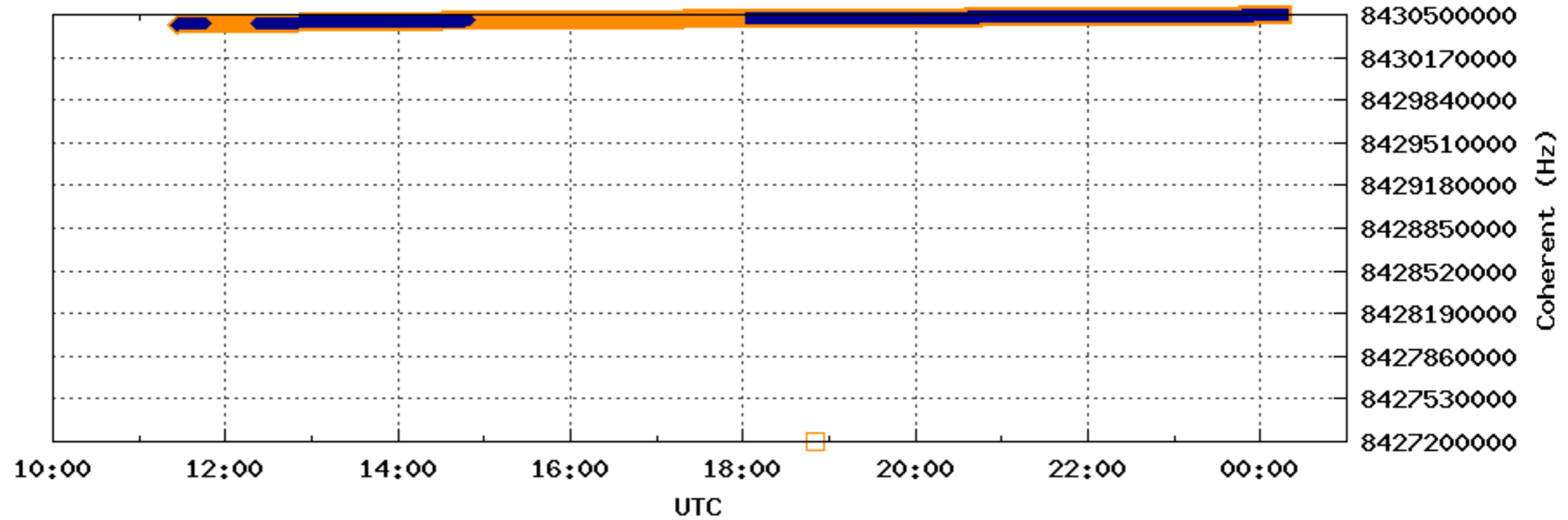15. Azimuth & Elevation Residuals

16. Index

2017/110 DSS-43 Carrier Power to Noise Spectral Density Ratio (Pc/No)

X-RCP ■   S-RCP ●
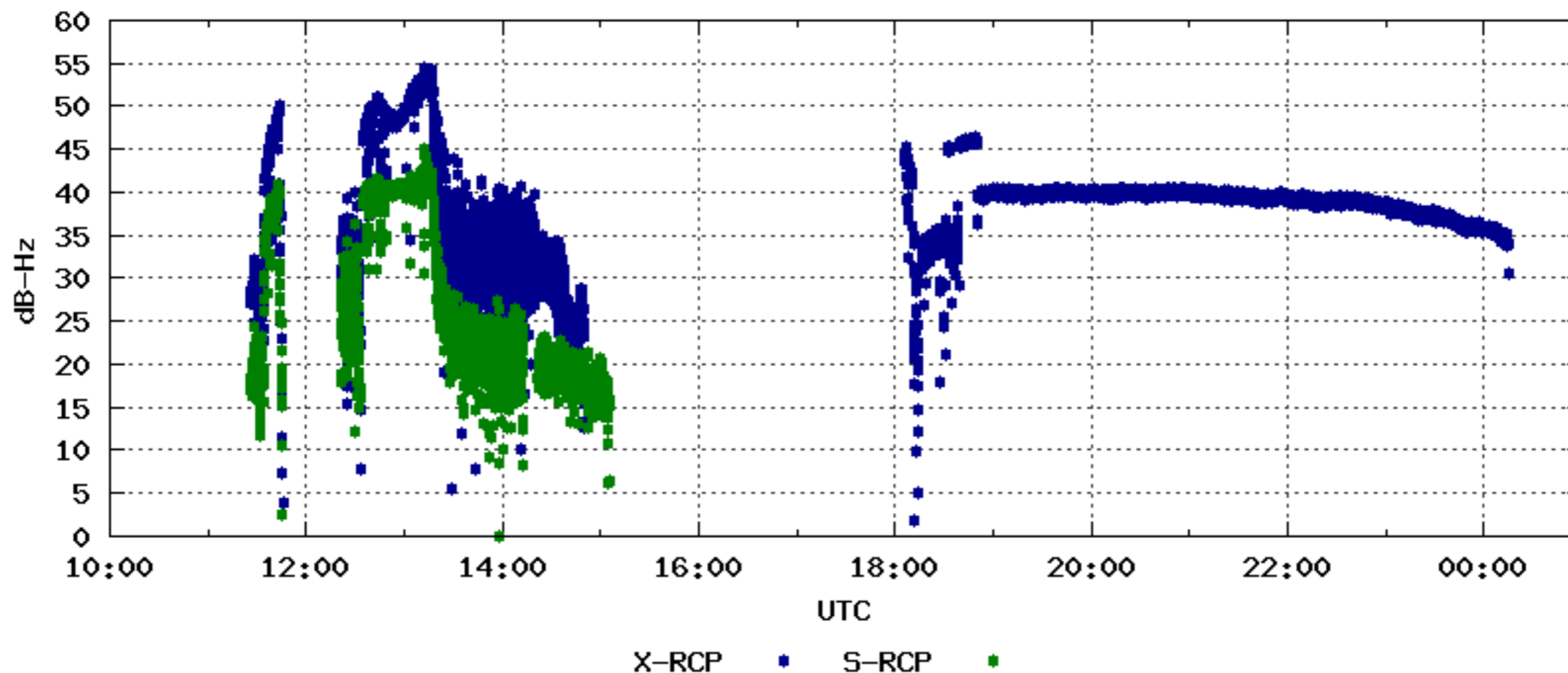
2017/110 DSS-43 Carrier Frequency Residual (Measured − Predicted)

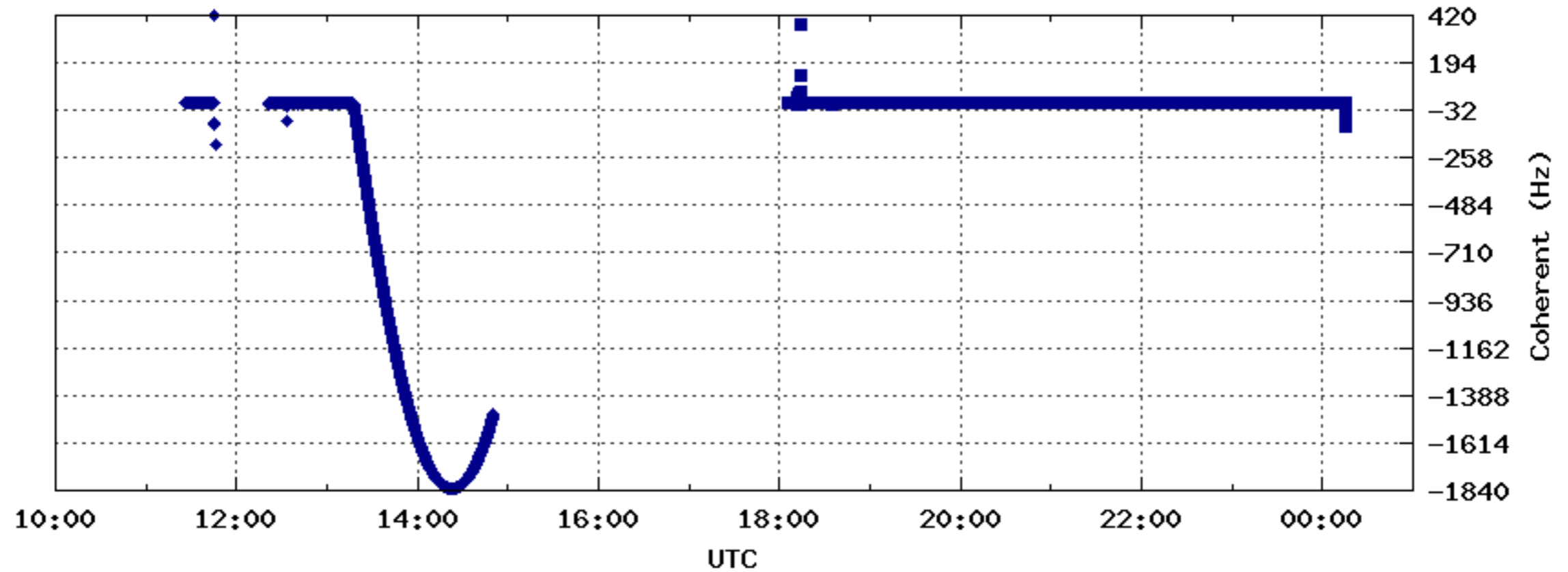2-Way X-RCP ■   3-Way X-RCP ◆   3-Way S-RCP ◆
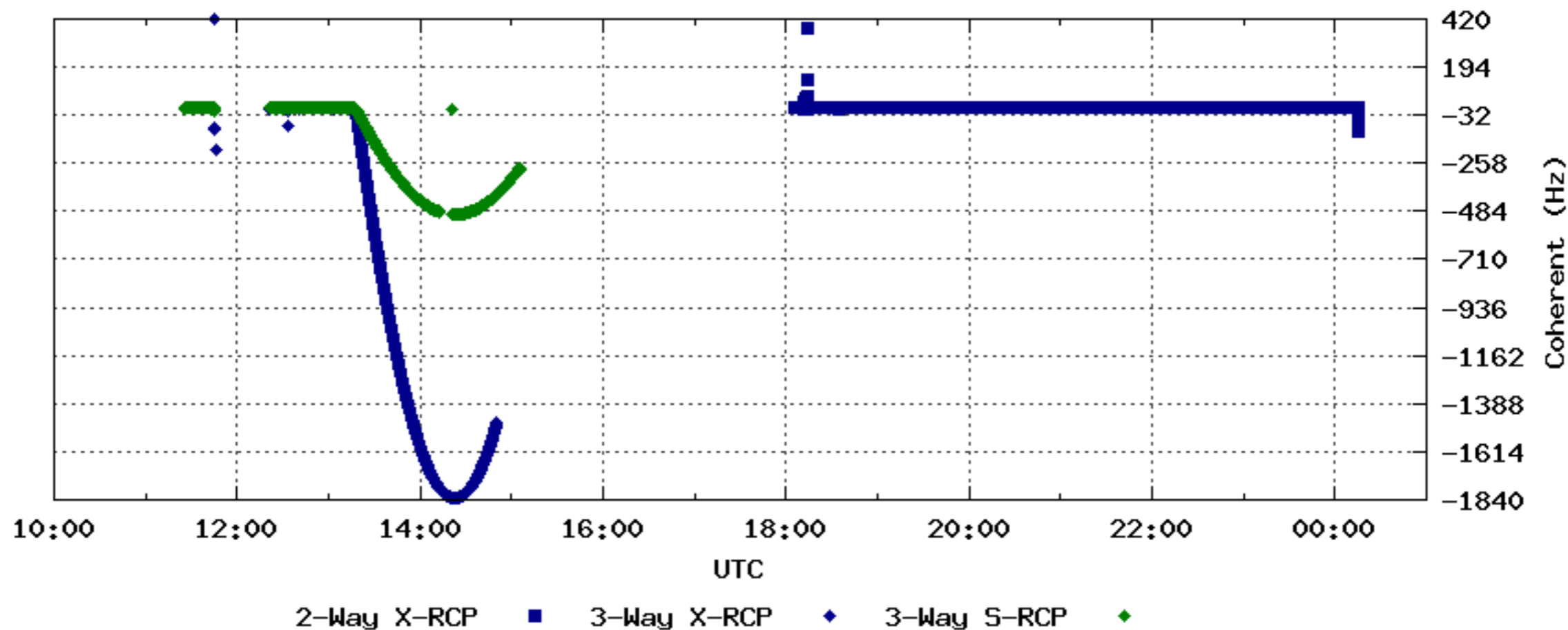
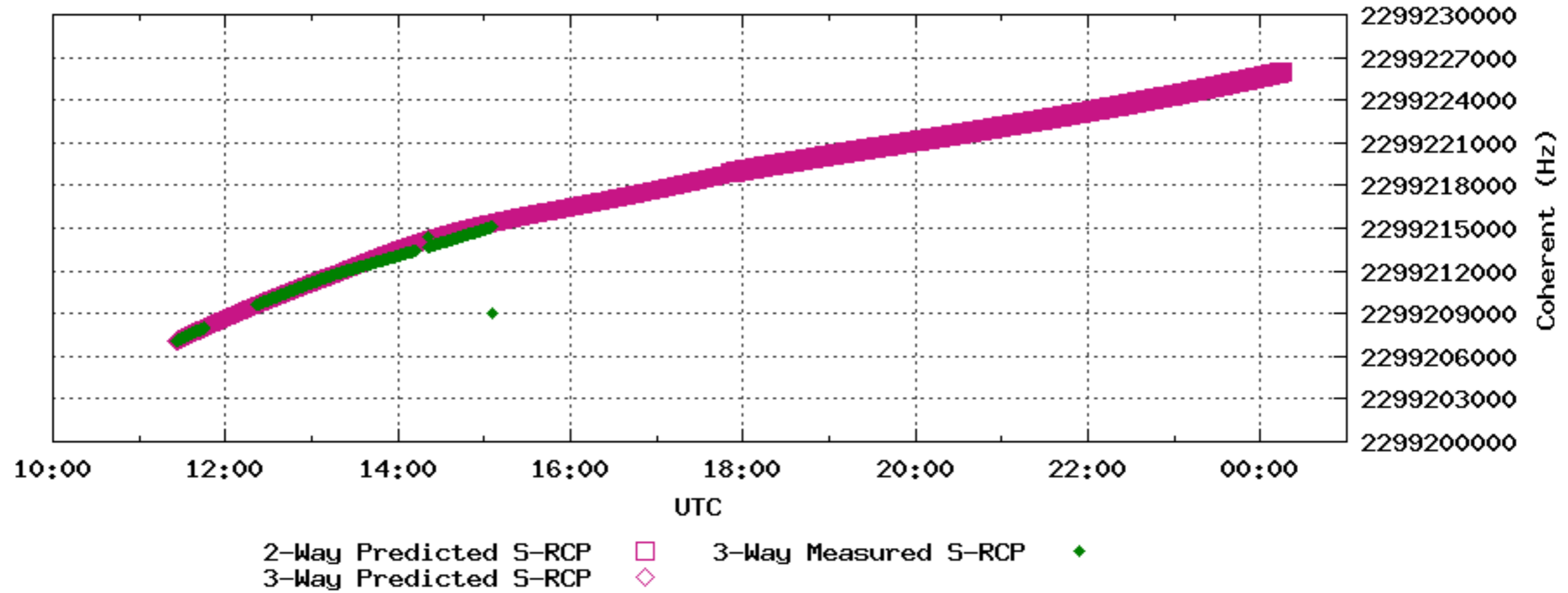# 2017/110 DSS-43 X-Band Measured and Predicted Carrier Frequency

| 2-Way Predicted X-RCP | □ | 2-Way Measured X-RCP | ■ |
| 3-Way Predicted X-RCP | ◇ | 3-Way Measured X-RCP | ◆ |

2017/110 DSS-43 X-Band Residual Frequency (Measured – Predicted)

| 2-Way X-RCP | ■ | 3-Way X-RCP | ◆ |

2017/110 DSS-43 S-Band Measured and Predicted Carrier Frequency

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

2017/110 DSS-43 S-Band Residual Frequency (Measured - Predicted)

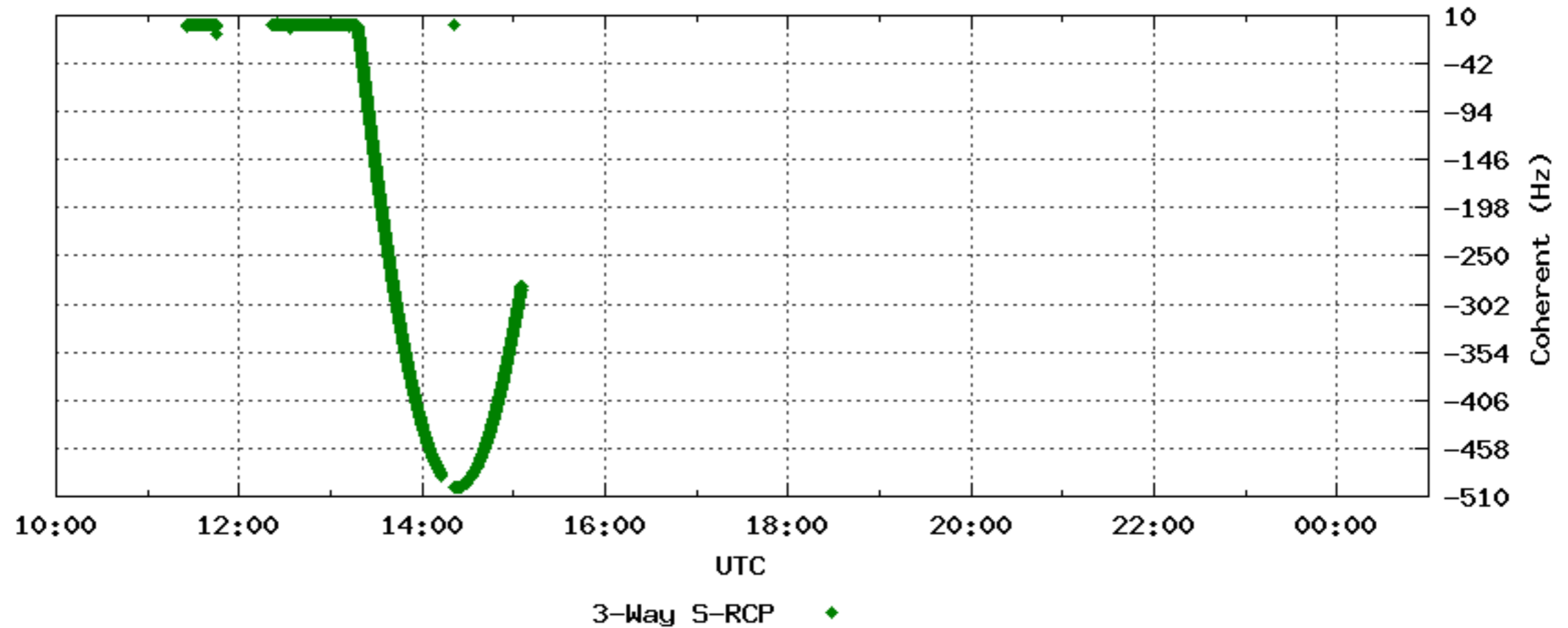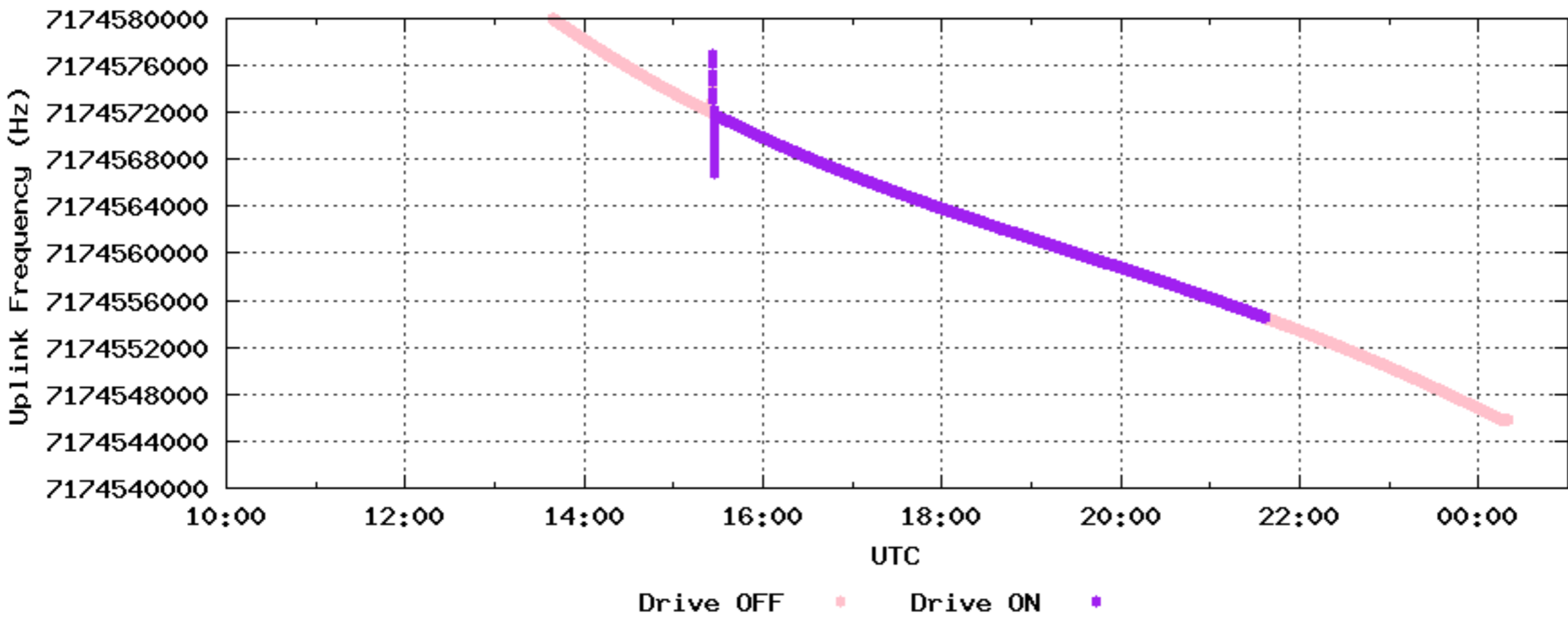3-Way S-RCP   ◆

2017/110 DSS-43 Uplink Frequency

Drive OFF   Drive ON

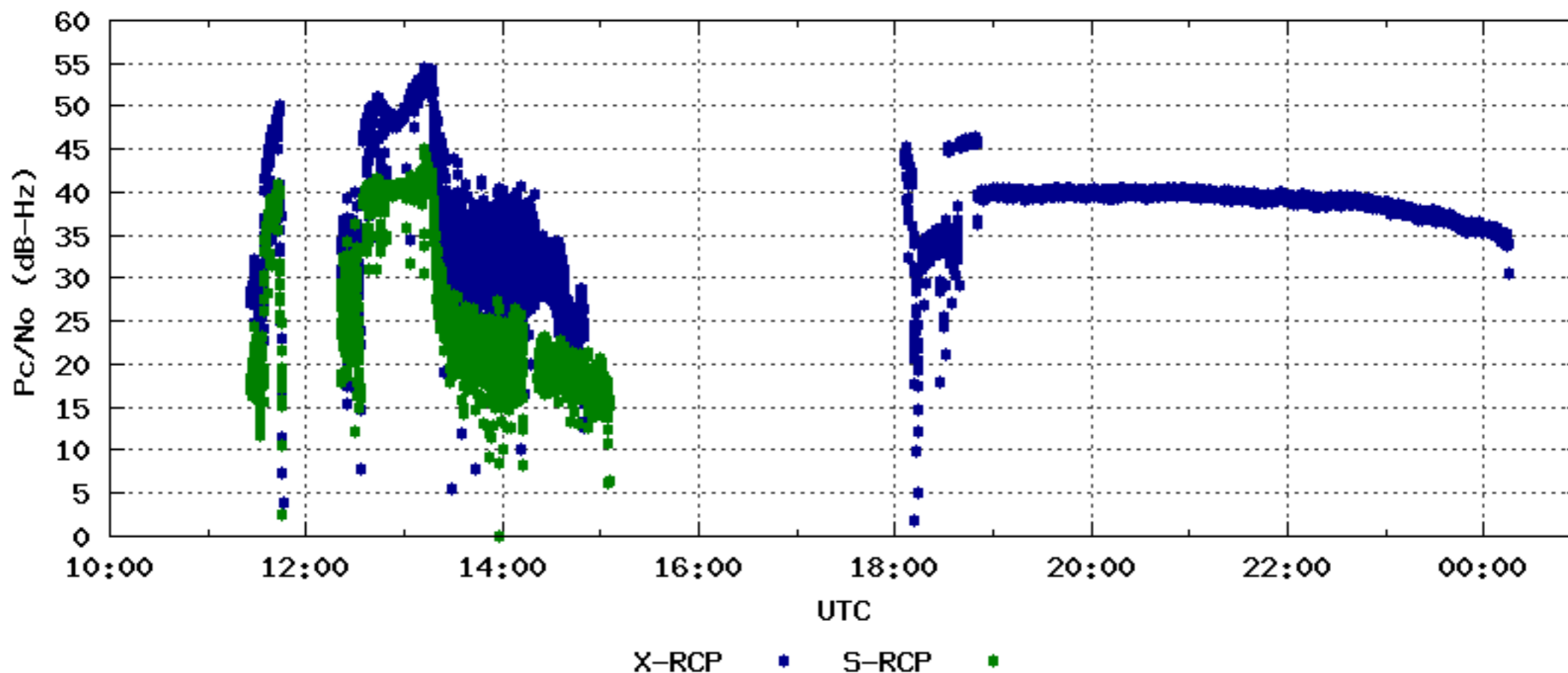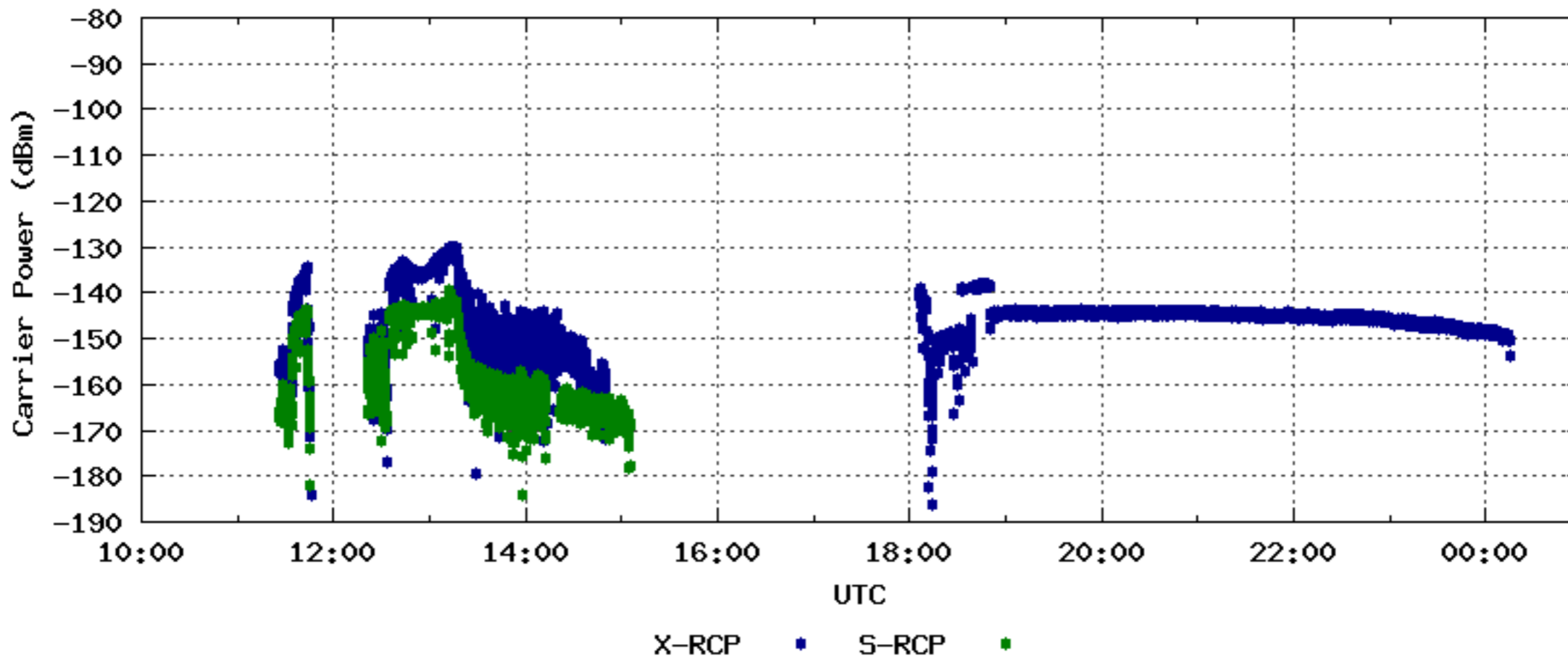2017/110 DSS-43 Uplink Power (with TXR ON and when > 1)
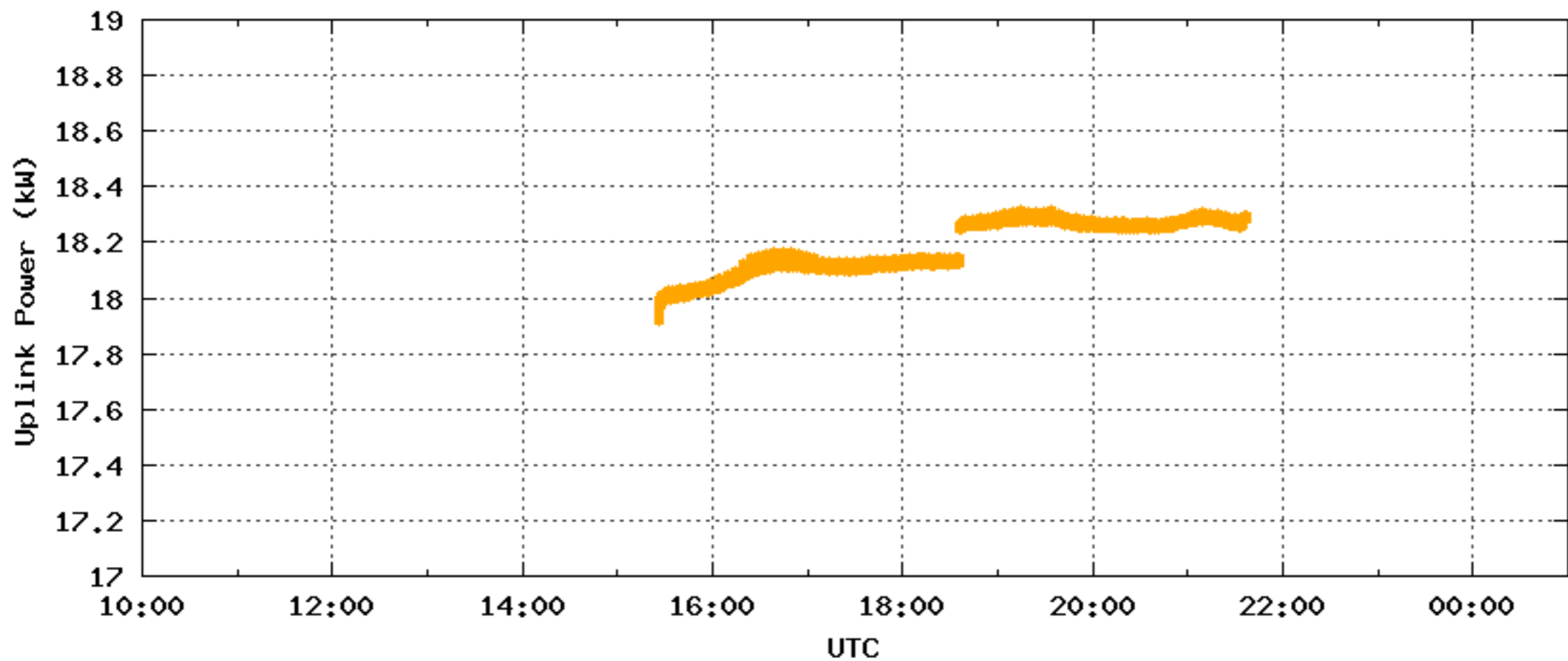
2017/110 DSS-43 Carrier Power to Noise Spectral Density Ratio (Pc/No)

2017/110 DSS-43 Carrier Power

2017/110 DSS-43 Carrier Power to Noise Spectral Density Ratio and System Noise Temperature

Pc/No X-RCP ■   Pc/No S-RCP ■
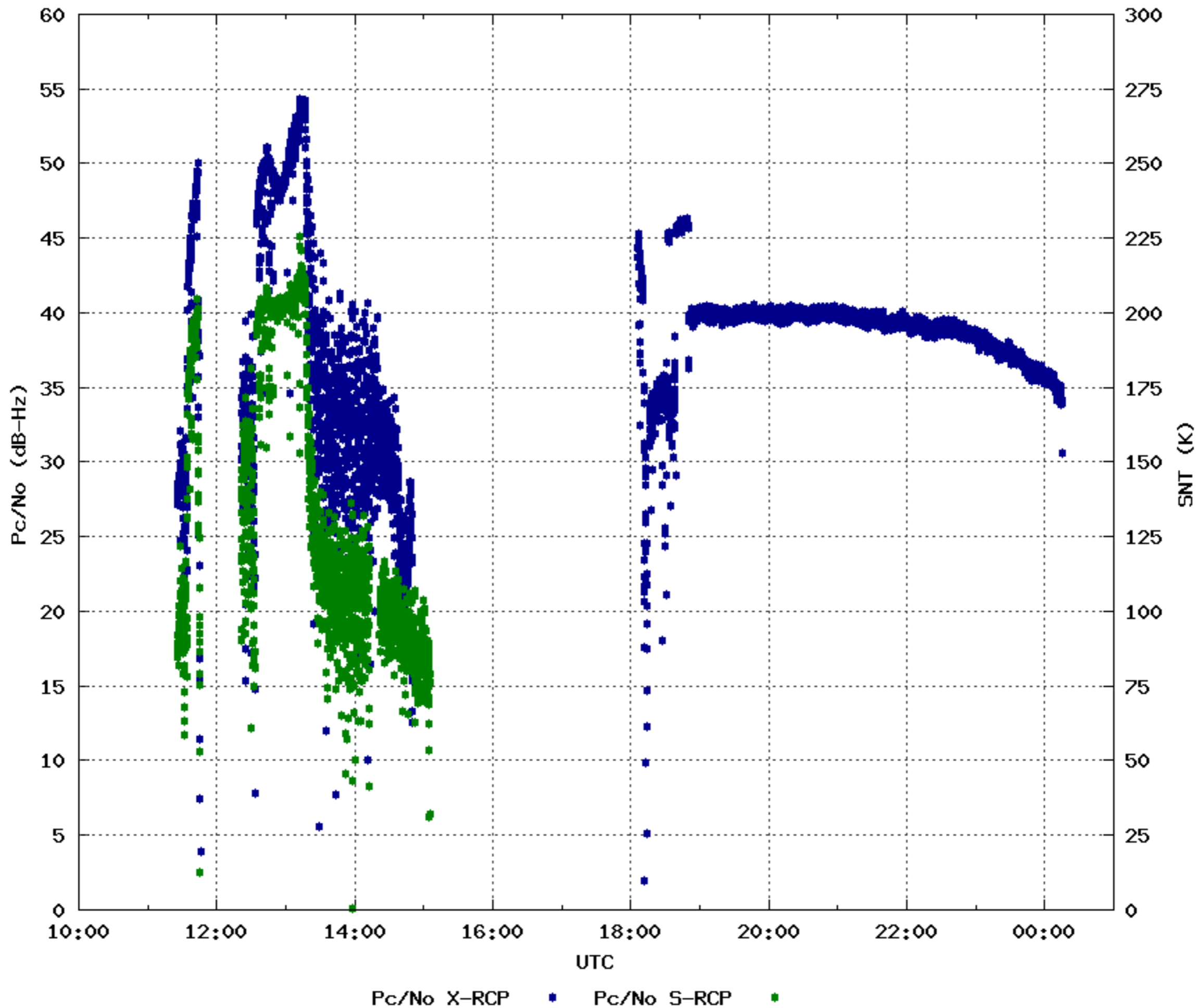
2017/110 DSS-43 Carrier Loop Tracking Bandwidth
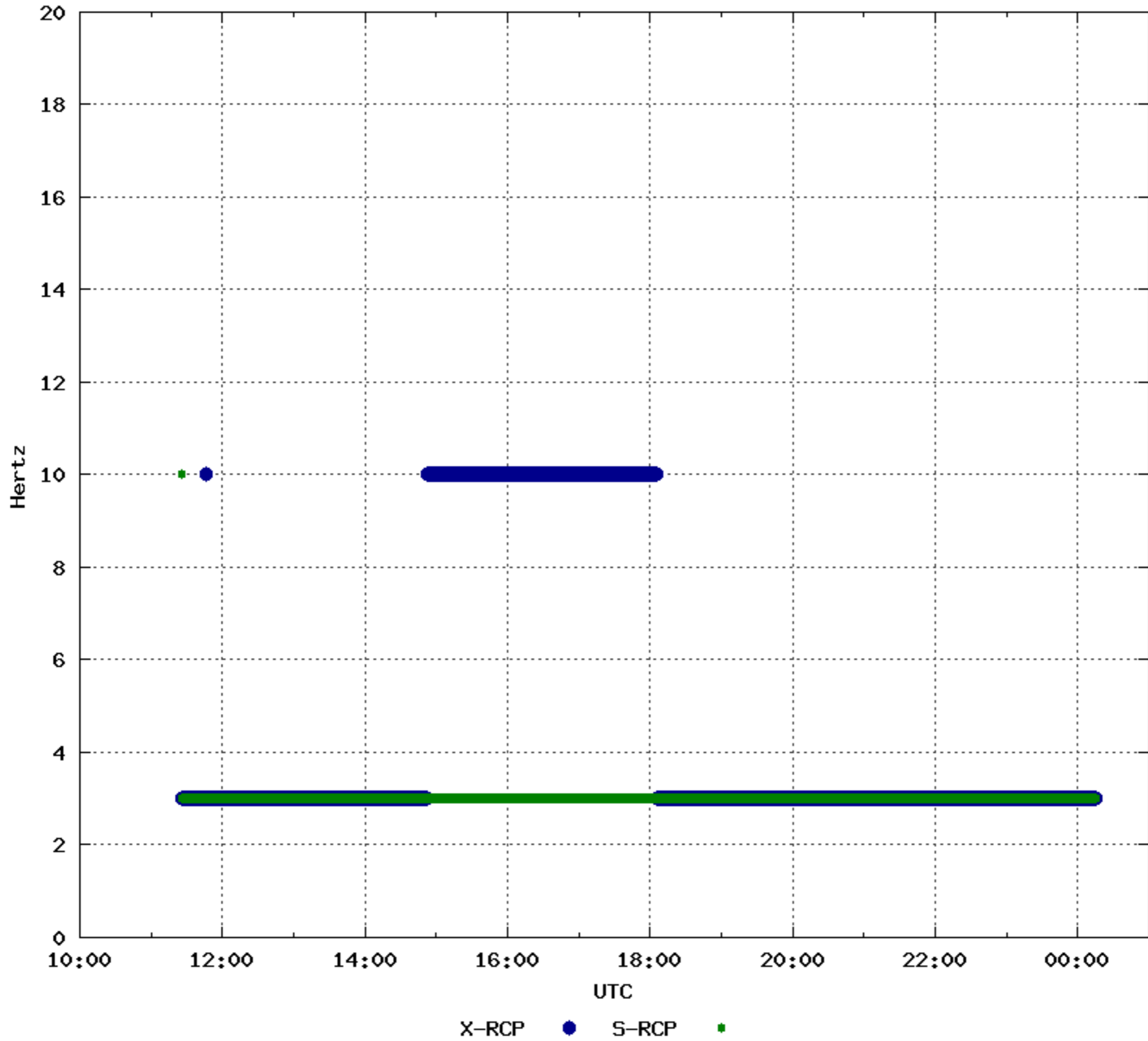
2017/110 DSS-43 Subreflector Tracking Status (Tracking = 1; Not Tracking = 0)
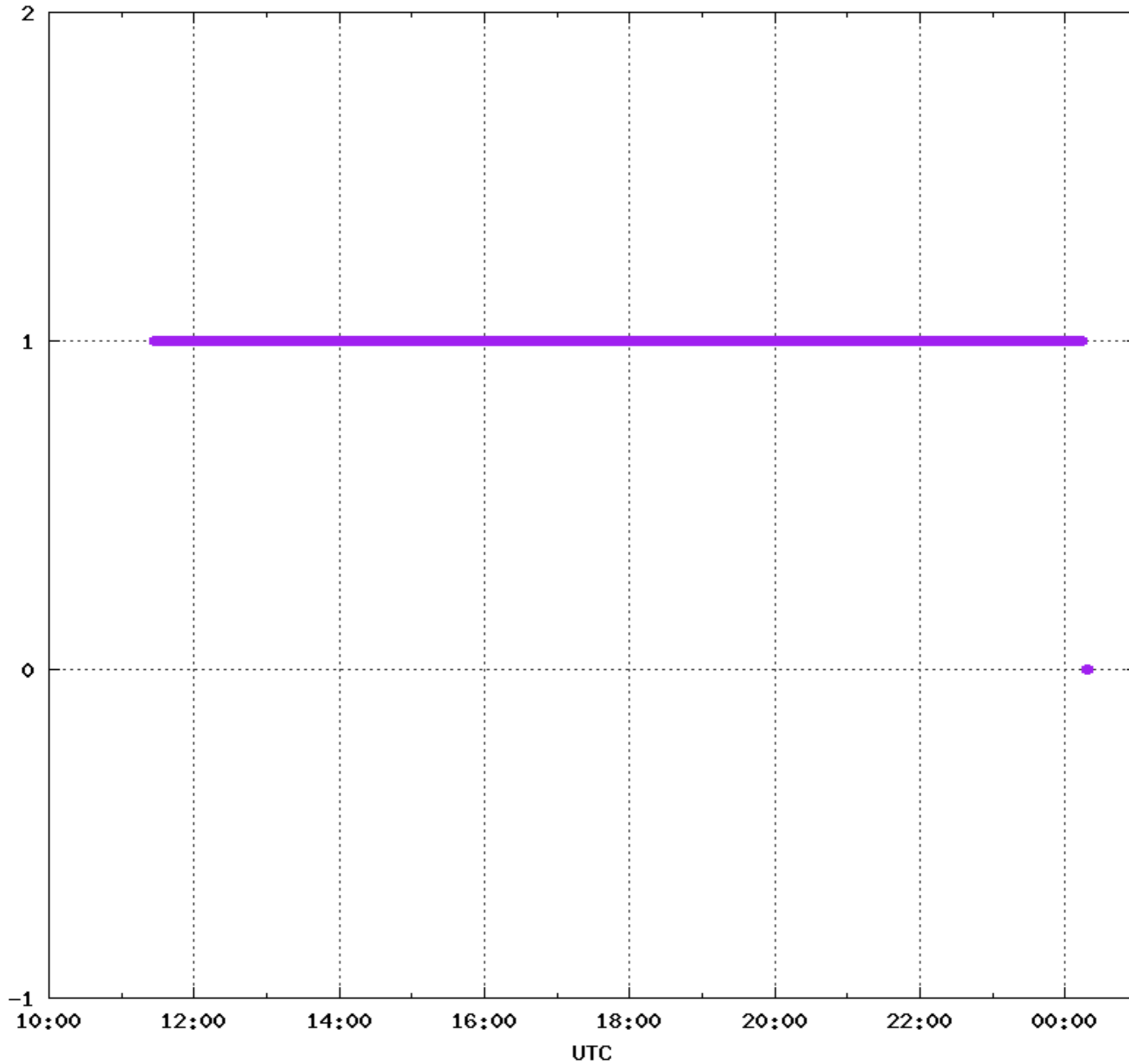
2017/110 DSS-43 Total Power Automatic Gain Control (AGC) Voltage

X-RCP ■   S-RCP ■
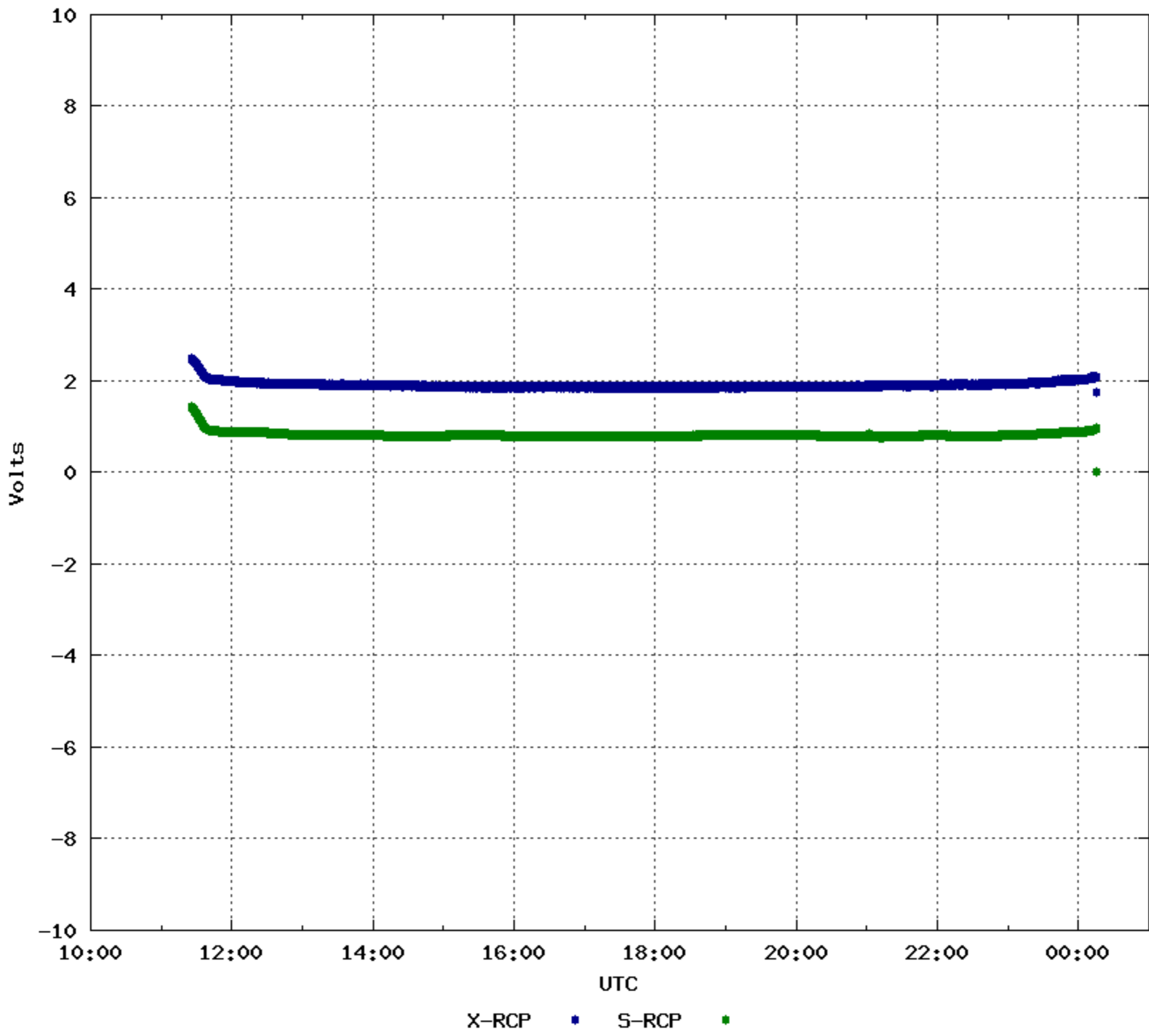
2017/110 DSS-43 Elevation & Azimuth
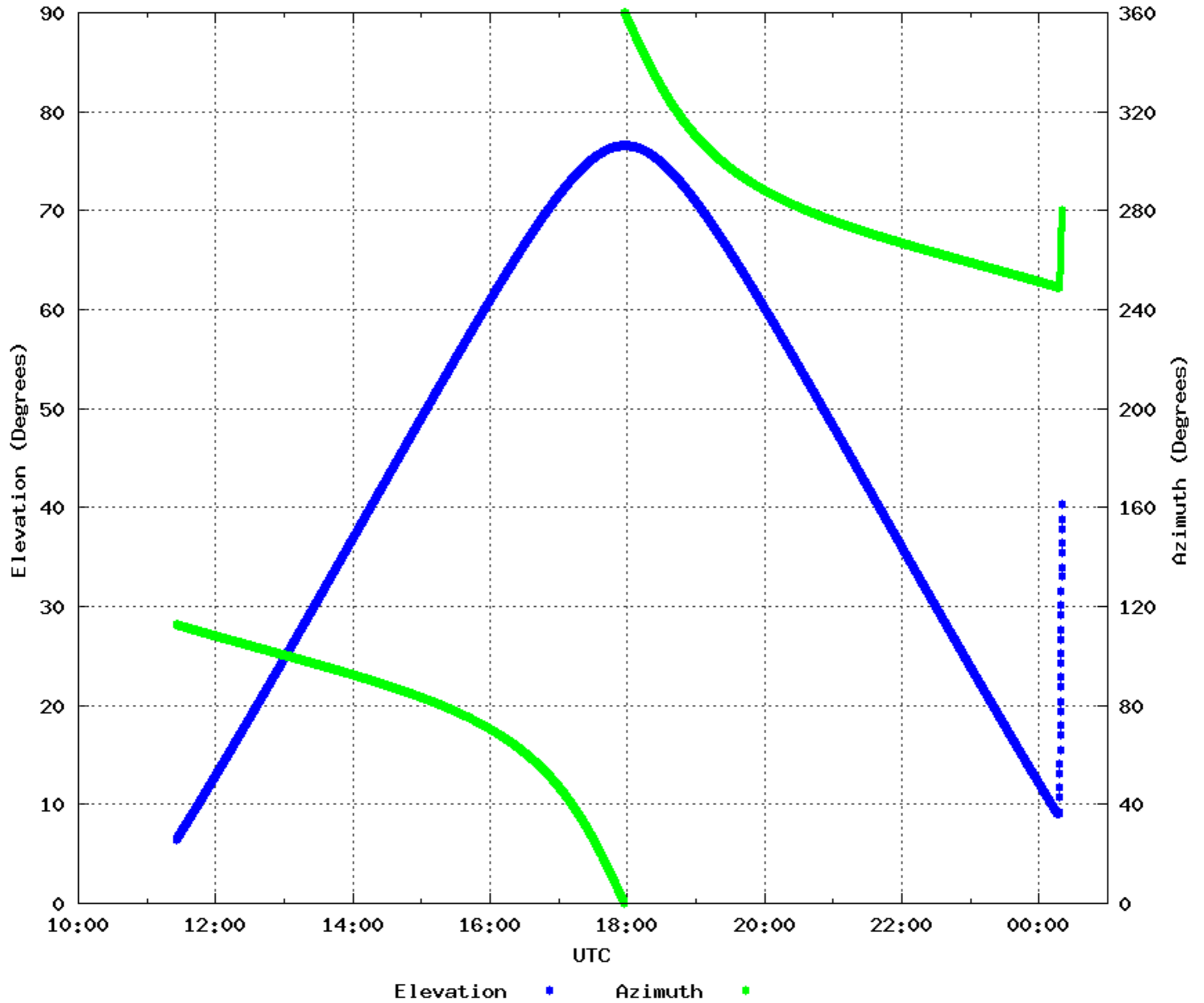
2017/110 DSS-43 Air Temperature, Dew Point Temperature, and Relative Humidity

Air Temperature (degrees Celsius)
Dew Point Temperature (degrees Celsius)
Relative Humidity (%)
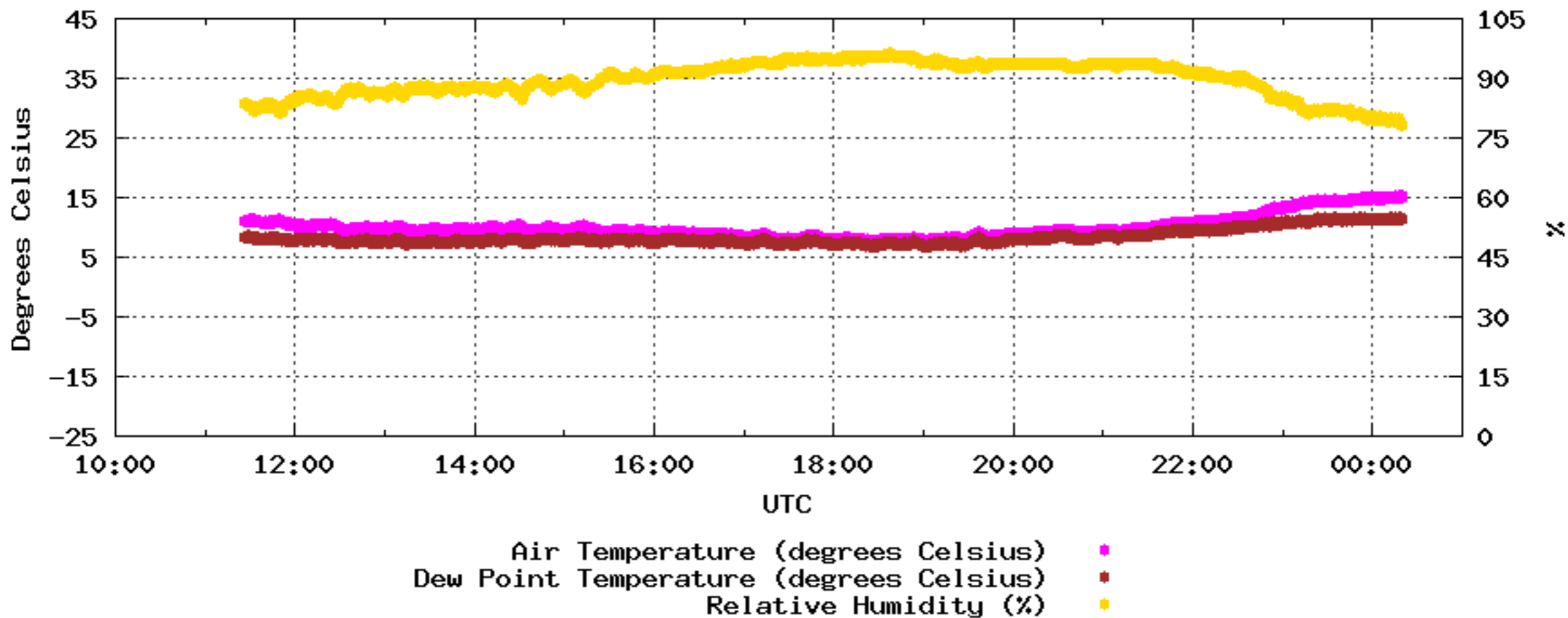
2017/110 DSS-43 Barometric Pressure and Precipitation Rate

Barometric Pressure (Millibars)
Precipitation Rate (Millimeters per Hour)
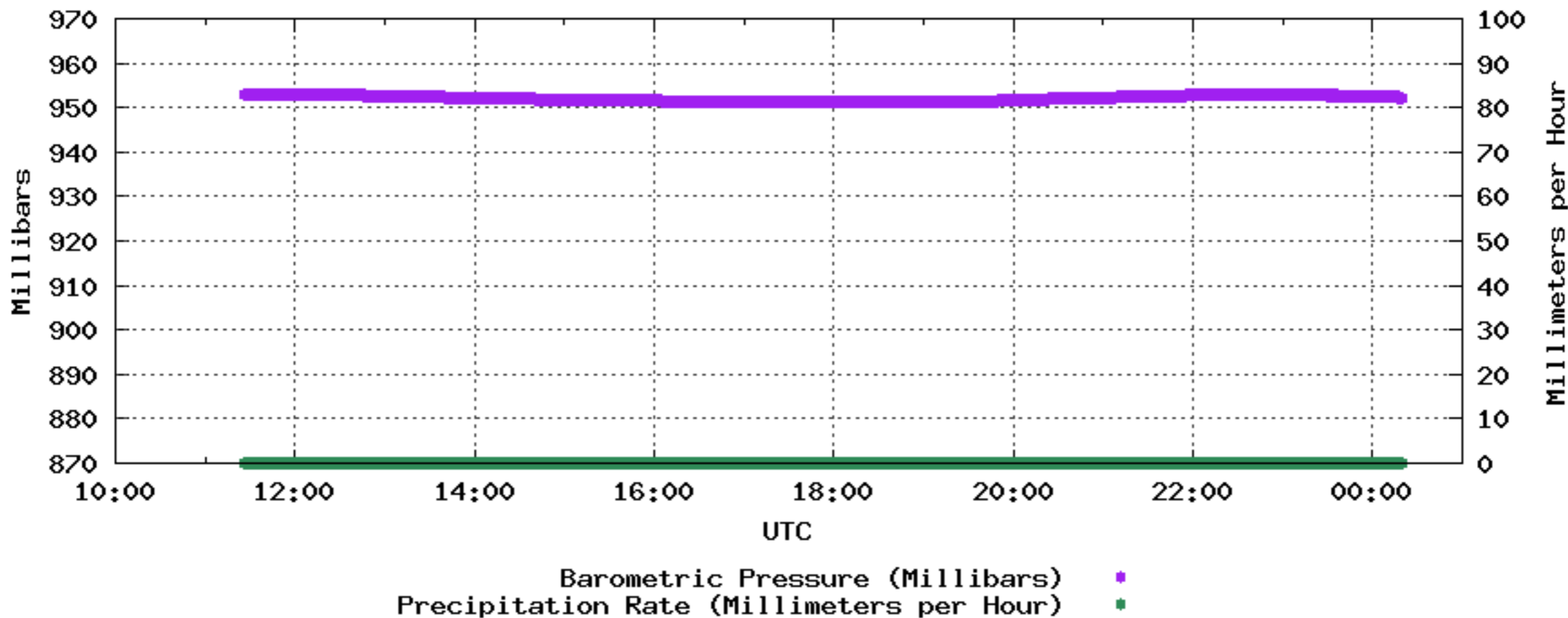
2017/110 DSS-43 Wind Speed
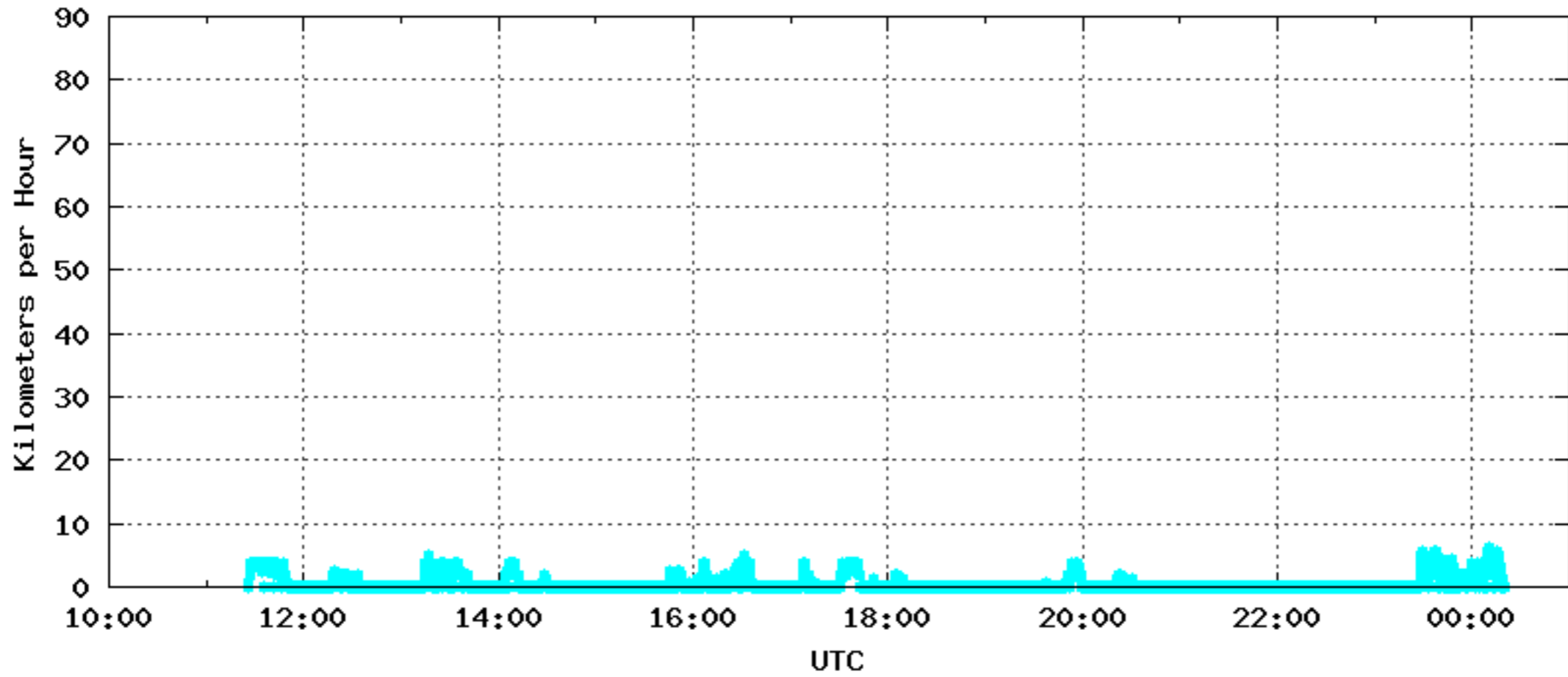
2017/110 DSS-43 Wind Direction
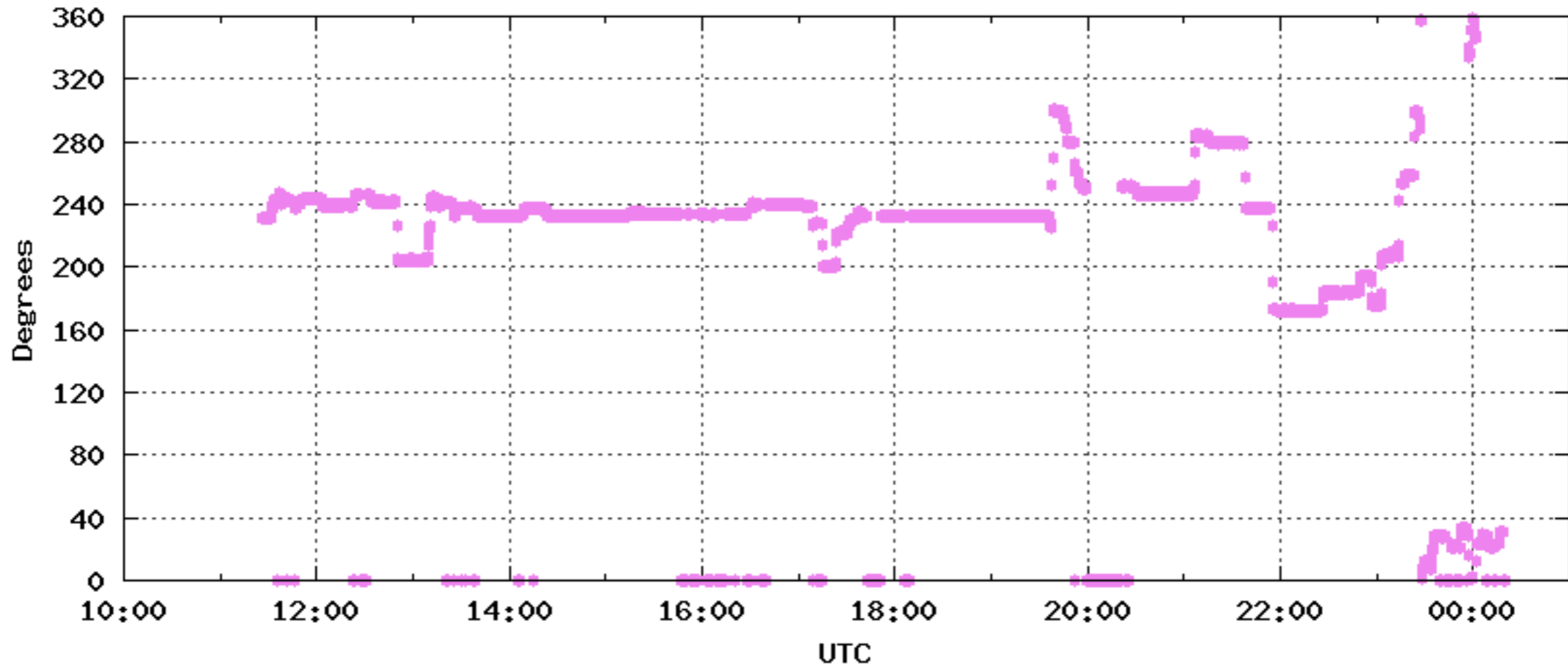
2017/110 DSS-43 Conscan Drive Status (ON = 1; OFF = 0)

2017/110 DSS-43 Elevation & Azimuth Residuals

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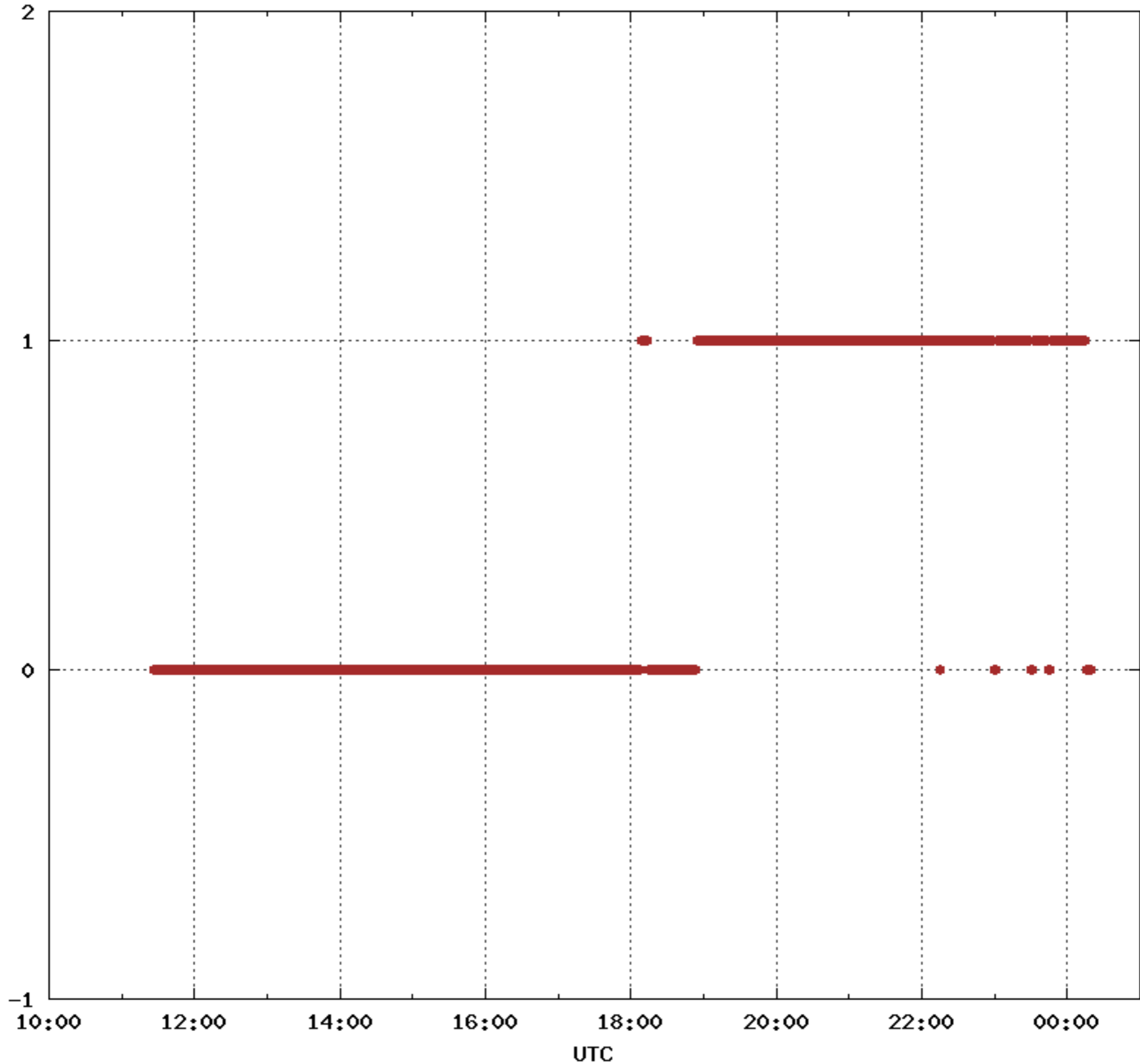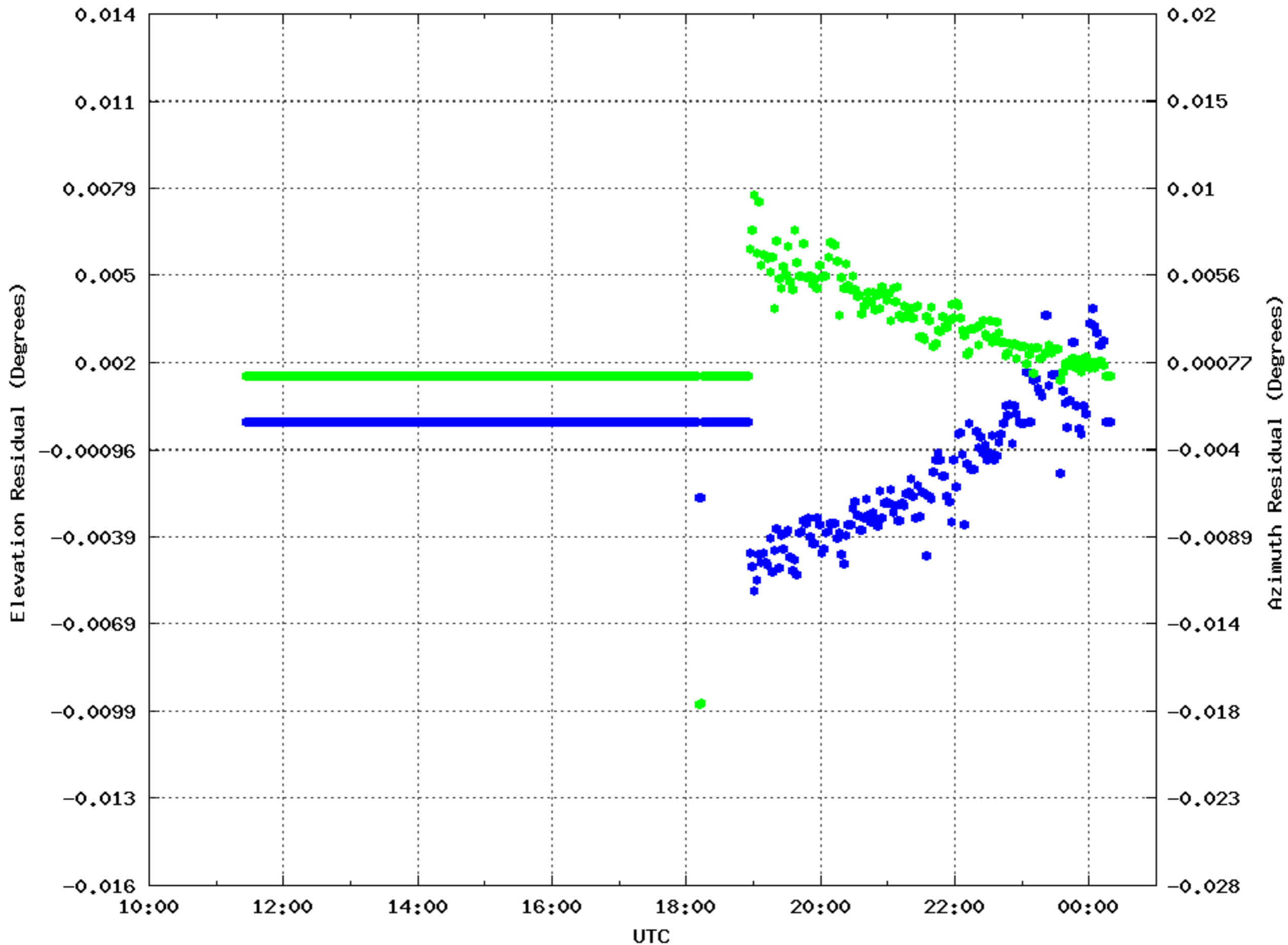   and Polarization (M-1267, M-1767, M-2267, M-2767)

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. 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 (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. 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)