Kiruna Geophysical Data



Data Summary 17/07-09 (July-September 2017)

Swedish Institute of Space Physics

Kiruna Geophysical Data

Data Summary 17/07-09
July – September 2017

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INTRODUCTION

"Kiruna Geophysical Data" is a collection of results of ground-based more or less continuous measurements of upper atmosphere variables carried out at the Swedish Institute of Space Physics. Our objective with this data summary is to present current geophysical data, related to polar upper atmospheric conditions, to those who require it for their research work.

Coordinates of the Swedish Institute of Space Physics are:

Geogr.		Geomagn. Dipole		Corr. Geomagn.	
Lat.	Long.	Lat.	Long.	Lat.	Long.
67.8°N	20.4°E	65.2°N	116.0°E	64.8°N	104.2°E

The following ground-based measurements of upper atmospheric parameters have been conducted at the Swedish Institute of Space Physics in the period for which data is presented in this report.

	Geomagnetism		Optical aurora		Ionospheric ionization
1.	Geomagnetic digital recording	1.	All-sky camera	1.	Riometer 30.0 MHz
				2.	Riometer 38.2 MHz

In addition the Swedish Institute of Space Physics operates the Ionospheric Observatory at Lycksele (64.7°N, 18.8°E) where it conducts riometer and ionosonde measurements. The Geological Survey of Sweden (SGU) also operates a magnetometer there in collaboration with IRF. That data is not reported in this publication.

Universal time is used in all tables.

Ionosonde data obtained at the Swedish Institute of Space Physics in Kiruna have been published together with ionosonde data from Lycksele and Uppsala in a monthly report "Ionospheric Data Sweden" between January 1990 and March 2000. Copies are available from the Swedish Institute of Space Physics.

Scaled ionosonde parameters from 1965 – 1998 are also available from
`http://www.wdc.rl.ac.uk/wdcc1/ionosondes/data_archive.html`

The most recent data from all instruments are accessible via internet at
`http://www.irf.se/Data`

For more information contact urban.brandstrom@irf.se

GEOMAGNETIC DATA

Magnetograms

The magnetograms reproduced here are plots of data recorded by a three component digital fluxgate magnetometer with a sampling frequency of 1 sample/second.

The scaling is indicated by the tick mark values on the plots. Note that for large disturbances the normal scaling has been reduced. The positive direction of the components are: X north, Y east and Z down, in geographic coordinates.

K-indices

The K-indices give a measure of the amount of disturbance of the geomagnetic field.

A reading of maximum deflection has been made during each 3-hour interval (starting from 00 to 03 UT) of two components X and Y. The Sq + L variation has been compensated for. A detailed description of the determination of K-indices has been given by J. Bartels: The technique of scaling indices K and Q geomagnetic activity. IGY Annals 4, London 1957.

The following scale has been used:

K-indices	Deflection in nT		
0	0	-	15
1	15	-	30
2	30	-	60
3	60	-	120
4	120	-	210
5	210	-	360
6	360	-	600
7	600	-	990
8	990	-	1500
9	1500	and more	

ALL-SKY CAMERA DATA

Digital all-sky camera images are typically recorded in jpeg format at a rate of one frame per minute. The filename of each image contains information about UTC and exposure time. Longer exposure times are used at regular intervals (typically eight minutes). Data might be recorded at higher frame rates during selected periods. More information and image data are available from: `http://www.irf.se/allsky`

Information about available records of all-sky camera data is presented as colour keograms. Keograms are time sequences of poleward to equatorward slices through the centre of all-sky images. The top of the image points poleward, the bottom equatorward. Time is on the horizontal axis (0:00-24:00 UTC). Each page contains keograms for seven days. White areas indicate missing data (e.g. daylight conditions).

IONOSPHERIC ABSORPTION DATA

Ionospheric absorption at 30.0 MHz and 38.2 MHz is recorded by two La Jolla riometers. The riometer records of cosmic noise power are reproduced in this report. The zero power level is at bottom of each panel.

The absorption (in decibels) can be computed from the formula

$$A(dB) = 10\log_{10}\frac{P_o}{P}$$

where P is the received cosmic noise power, P_o the cosmic noise power expected under ionospherically quiet conditions at the same sidereal time.

GEOMAGNETIC K-INDICES, KIRUNA

July 2017

Lower limit of K=7 is 600 nT

Time in UT

Day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	2	3	3	2	4	4	3	2	23
2	3	2	4	4	3	2	3	3	24
3	1	2	1	2	2	2	1	3	14
4	1	1	1	2	1	2	2	2	12
5	2	0	1	2	1	0	1	1	8
6	1	1	2	2	2	3	3	5	19
7	3	3	2	2	2	2	2	2	18
8	2	1	2	2	2	1	1	1	12
9	7	6	3	4	3	5	5	6	39
10	6	5	2	2	2	2	1	3	23
11	2	3	2	2	3	3	2	3	20
12	3	1	2	2	2	1	1	0	12
13	2	1	1	2	2	2	1	2	13
14	1	1	1	2	2	1	0	0	8
15	1	1	1	2	2	1	1	2	11
16	2	1	4	6	7	6	7	6	39
17	5	6	5	4	6	6	2	4	38
18	4	4	3	2	2	1	1	3	20
19	1	1	1	1	2	2	2	2	12
20	2	1	2	2	3	3	4	5	22
21	7	6	3	2	4	4	2	6	34
22	6	3	3	4	3	5	4	6	34
23	6	3	3	3	3	3	5	7	33
24	5	3	3	3	3	3	3	6	29
25	4	2	2	3	3	3	5	6	28
26	6	2	3	2	3	2	2	1	21
27	1	1	2	1	3	2	1	5	16
28	4	1	1	2	3	4	6	2	23
29	1	1	2	2	2	2	1	2	13
30	2	1	1	1	2	1	2	1	11
31	1	1	2	2	2	1	1	2	12
Sum	94	68	68	74	84	79	75	99	

GEOMAGNETIC K-INDICES, KIRUNA

August 2017

Lower limit of K=7 is 600 nT

Time in UT

Day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	2	1	2	2	3	2	0	1	13
2	1	1	2	2	3	2	1	2	14
3	1	1	2	2	3	3	6	6	24
4	3	3	3	4	6	5	5	6	35
5	5	4	3	3	5	4	6	5	35
6	6	3	2	3	3	3	5	5	30
7	2	2	2	3	2	1	1	1	14
8	1	1	2	2	2	2	2	0	12
9	1	1	1	2	2	2	2	2	13
10	1	1	2	2	3	2	1	3	15
11	1	1	2	2	3	2	4	1	16
12	3	4	2	2	2	1	3	4	21
13	5	2	2	2	3	2	3	4	23
14	4	1	1	2	2	2	2	1	15
15	2	1	2	1	0	1	1	3	11
16	2	1	2	1	2	3	3	5	19
17	5	2	3	5	5	5	5	7	37
18	5	4	2	3	5	5	6	5	35
19	7	4	4	5	4	4	6	6	40
20	7	7	4	3	3	4	5	6	39
21	4	3	2	2	2	3	3	5	24
22	7	6	3	3	3	3	5	6	36
23	5	5	3	5	5	7	6	6	42
24	5	3	2	3	3	3	0	0	19
25	1	1	2	2	2	2	3	5	18
26	1	1	1	1	2	2	2	1	11
27	3	1	1	2	3	3	6	5	24
28	3	1	2	1	2	1	1	3	14
29	1	1	1	1	2	3	4	4	17
30	3	3	1	2	2	1	1	0	13
31	1	3	4	5	6	5	7	6	37
Sum	98	73	67	78	93	88	105	114	

GEOMAGNETIC K-INDICES, KIRUNA

September 2017

Lower limit of K=9 is 1500 nT

Time in UT

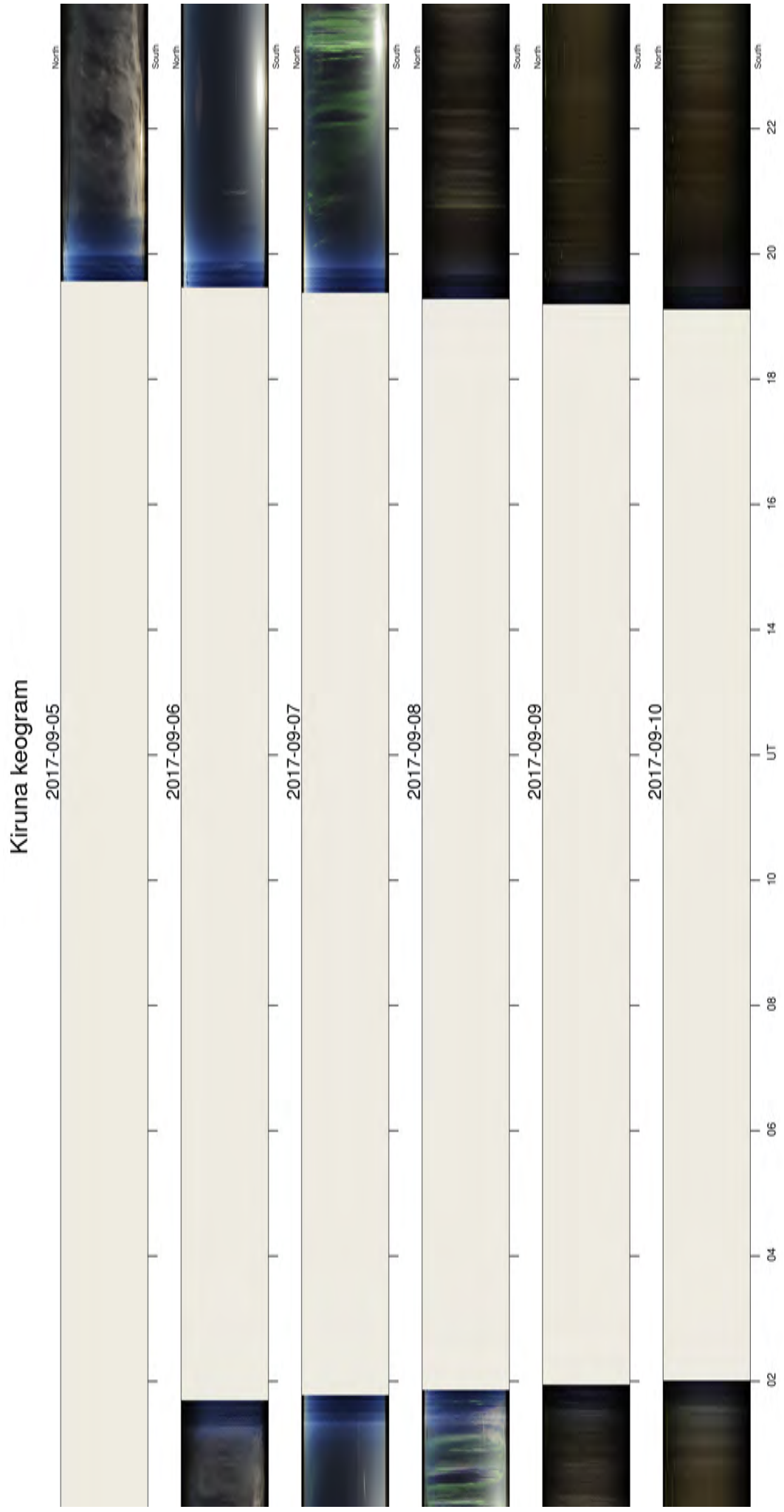
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2	6	6	4	4	3	3	5	6	37
3	5	3	2	3	4	4	1	5	27
4	6	4	2	3	4	3	5	7	34
5	5	4	2	3	2	3	5	2	26
6	1	1	2	3	4	3	0	3	17
7	3	3	3	4	4	3	3	9	32
8	9	7	4	6	7	8	7	7	55
9	5	2	2	2	2	1	1	1	16
10	1	0	1	1	2	2	3	6	16
11	6	3	3	3	4	3	4	6	32
12	3	2	2	3	5	2	6	7	30
13	8	3	4	3	2	2	3	2	27
14	1	1	2	3	4	5	6	7	29
15	6	5	4	4	4	5	7	6	41
16	7	7	4	3	4	6	6	6	43
17	6	4	3	3	6	5	4	3	34
18	6	5	4	4	3	3	4	6	35
19	4	2	1	2	2	3	5	4	23
20	5	4	2	3	3	1	4	2	24
21	1	1	2	2	2	0	5	5	18
22	2	1	1	2	2	4	6	6	24
23	2	1	1	1	2	1	4	3	15
24	1	1	1	2	3	2	4	5	19
25	4	2	1	1	1	1	1	2	13
26	1	1	1	2	1	1	1	2	10
27	5	2	3	5	4	5	7	7	38
28	7	7	6	5	4	5	7	6	47
29	5	3	3	3	3	3	5	5	30
30	3	3	3	3	4	4	3	5	28
Sum	131	91	75	90	100	94	125	147	

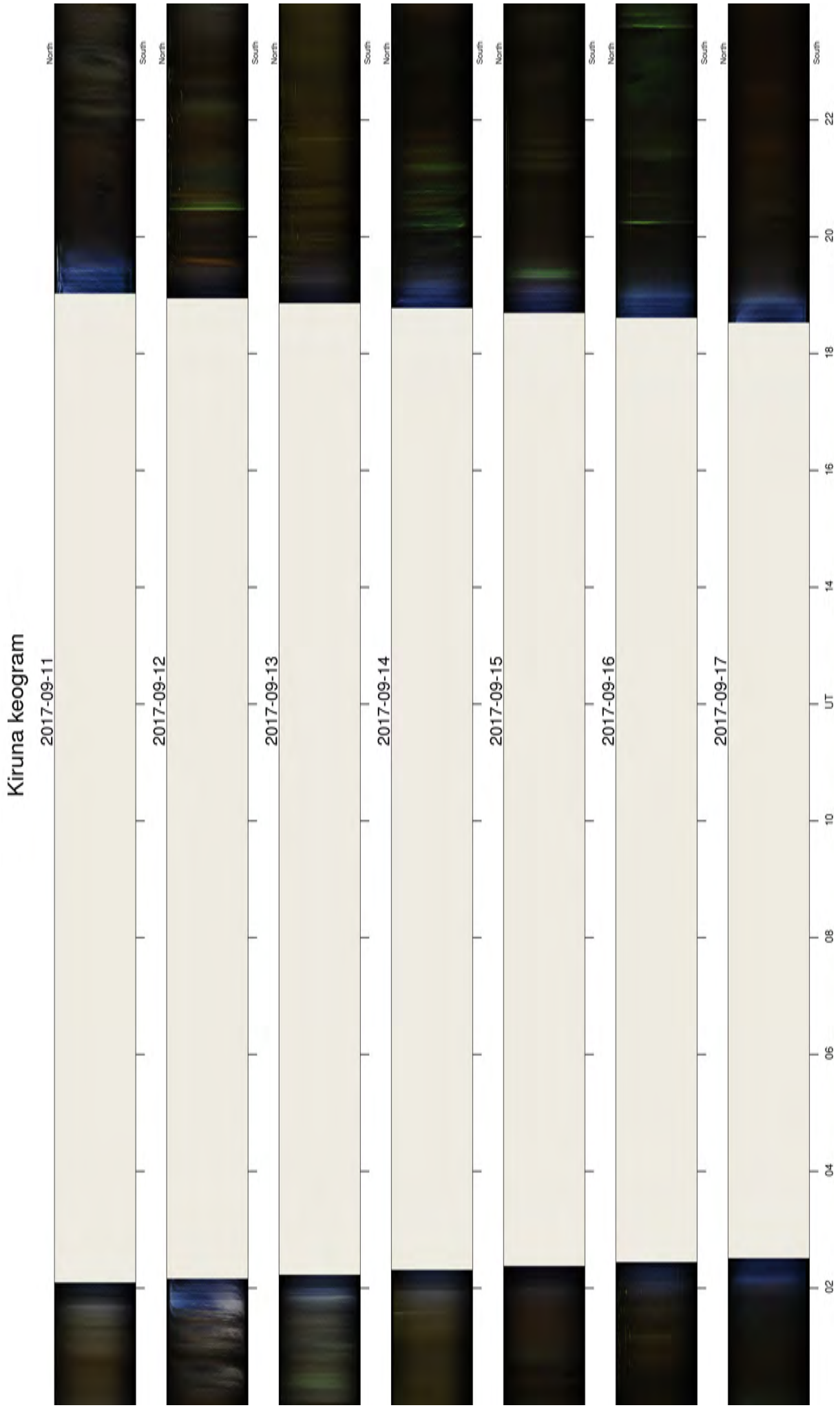
ALL-SKY CAMERA KEOGRAMS

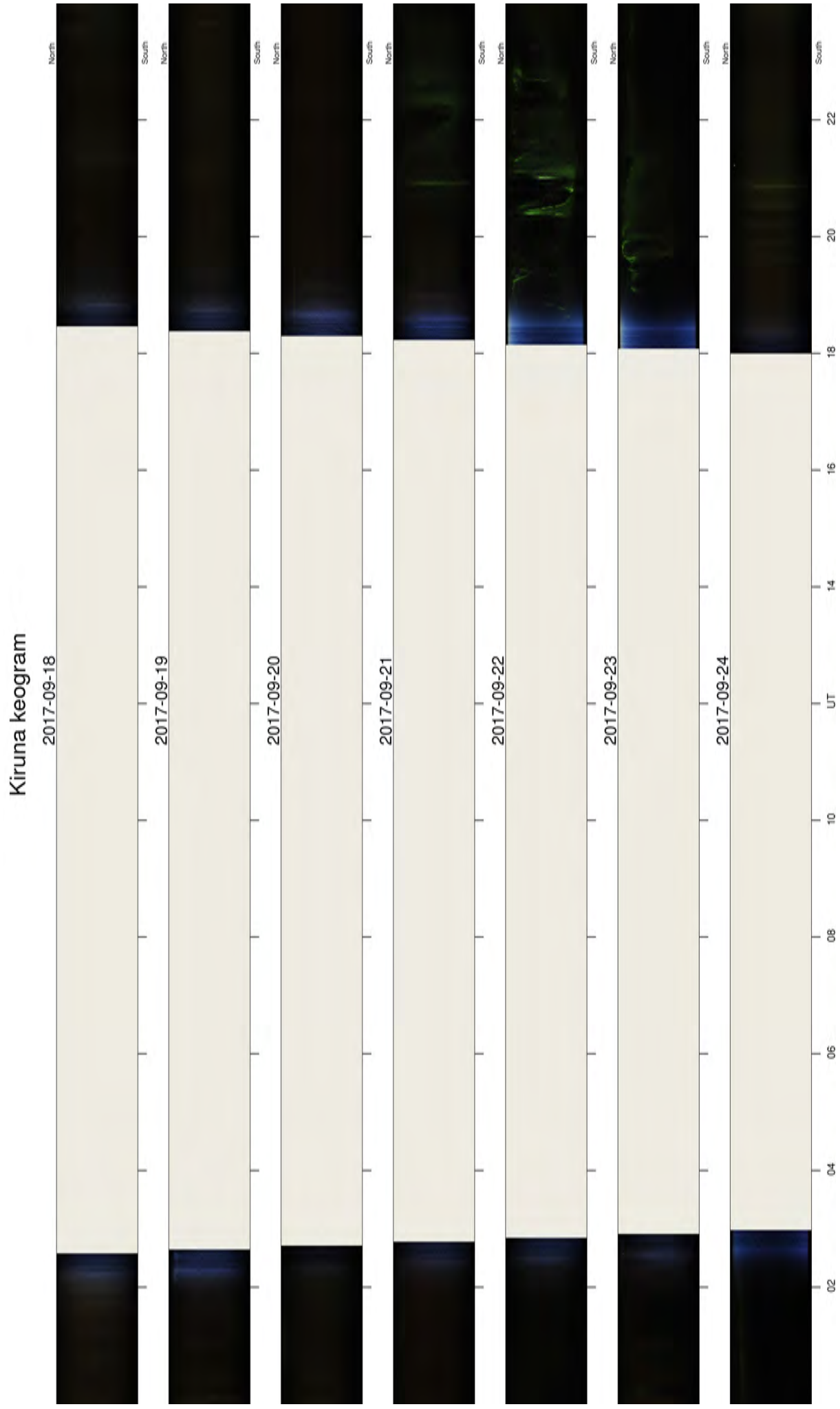
July - September 2017

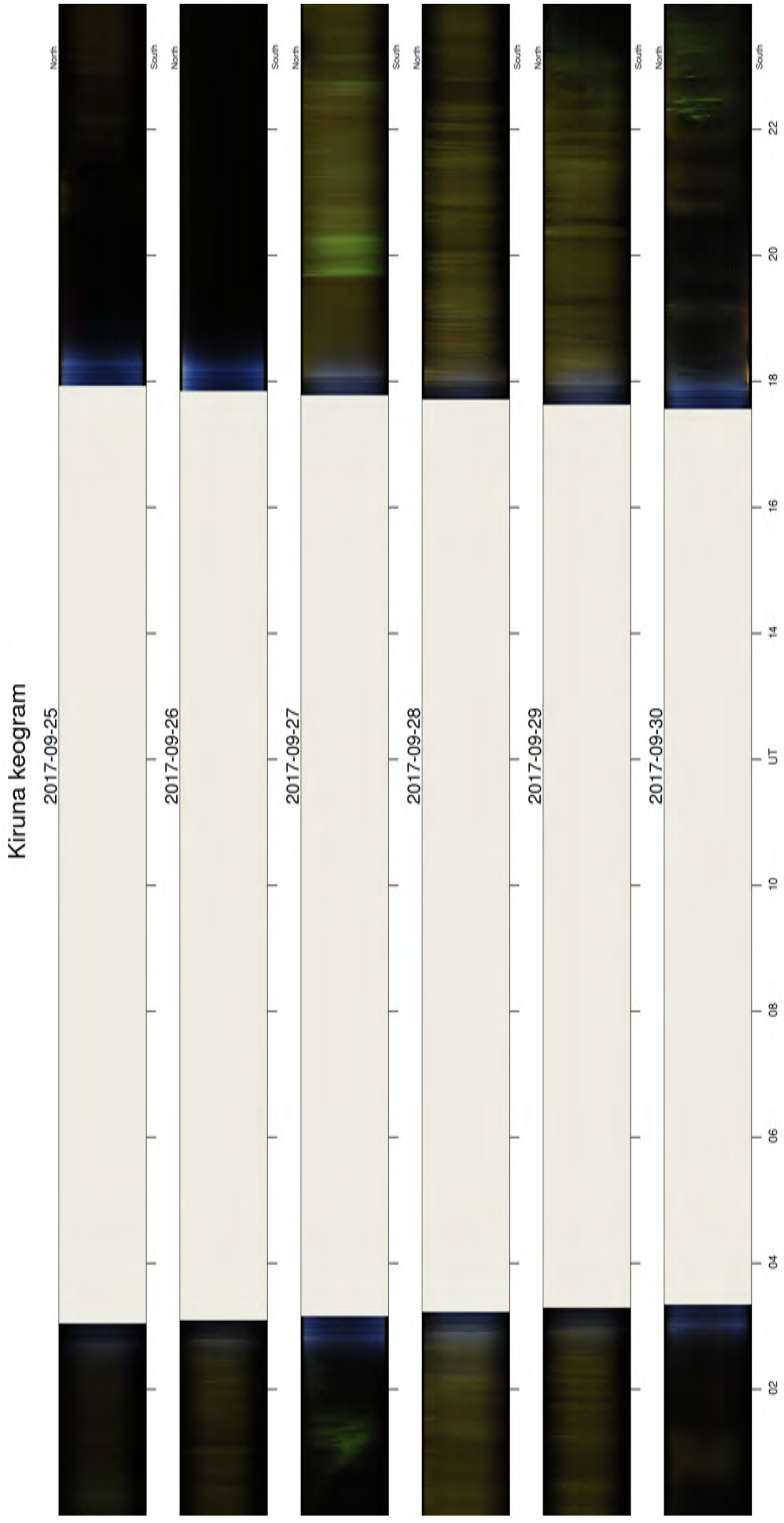
http://www.irf.se/allsky/kgd

All-sky camera closed for season from 24 April to 4 September 2017.


Kiruna keogram
2017-09-05
2017-09-06
2017-09-07
2017-09-08
2017-09-09
2017-09-10
North
South
02
04
06
08
10
UT
14
16
18
20
22


Kiruna keogram
2017-09-11
2017-09-12
2017-09-13
2017-09-14
2017-09-15
2017-09-16
2017-09-17
North
South
02
04
06
08
10
12
14
16
18
20
22
UT


Kiruna keogram
2017-09-18
2017-09-19
2017-09-20
2017-09-21
2017-09-22
2017-09-23
2017-09-24
North
South
02
04
06
08
10
12
14
16
18
20
22
UT

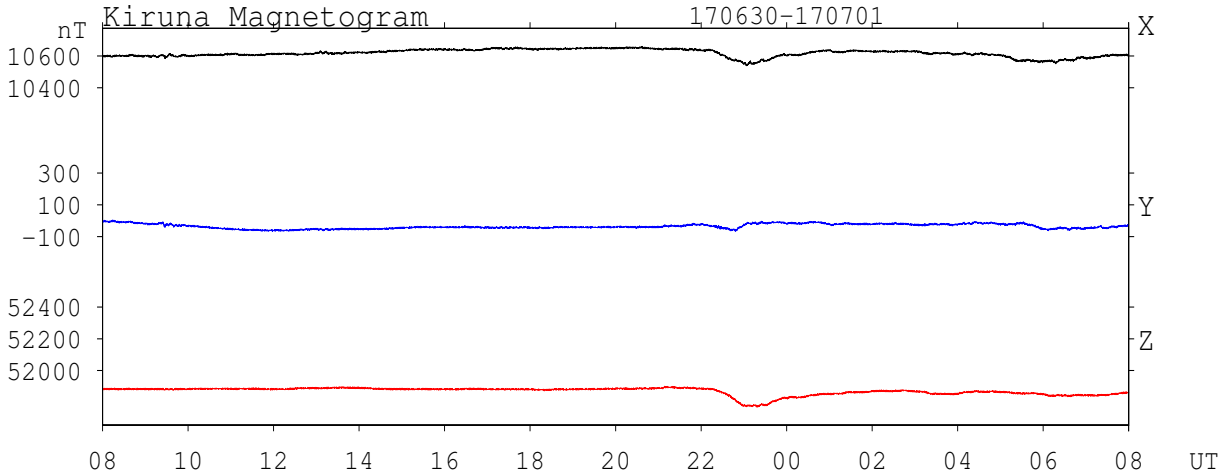

Kiruna keogram
2017-09-25
2017-09-26
2017-09-27
2017-09-28
2017-09-29
2017-09-30
North
South
02
04
06
08
10
12
14
16
18
20
22
UT

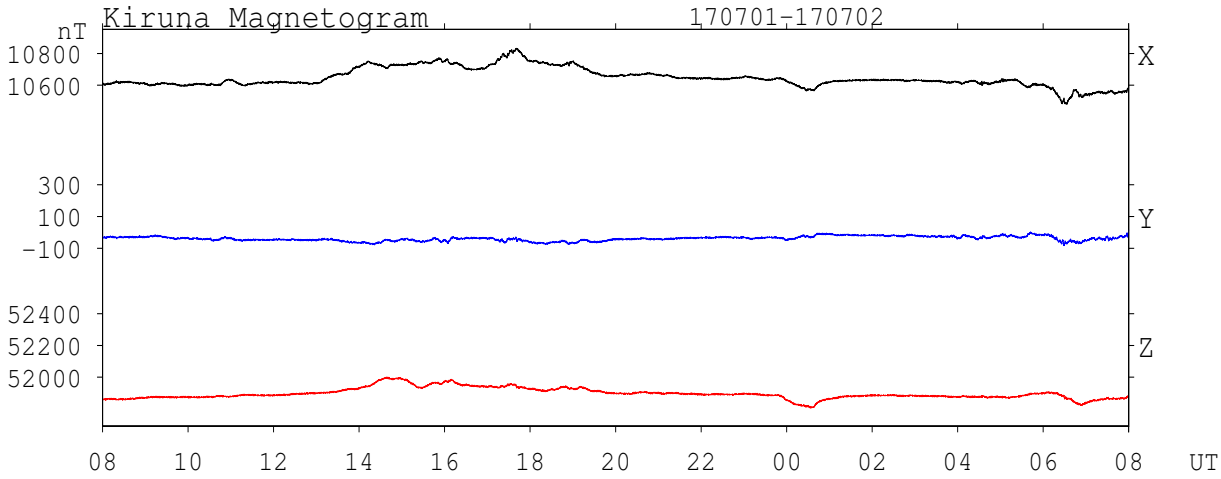
KIRUNA MAGNETOGRAM PLOTS

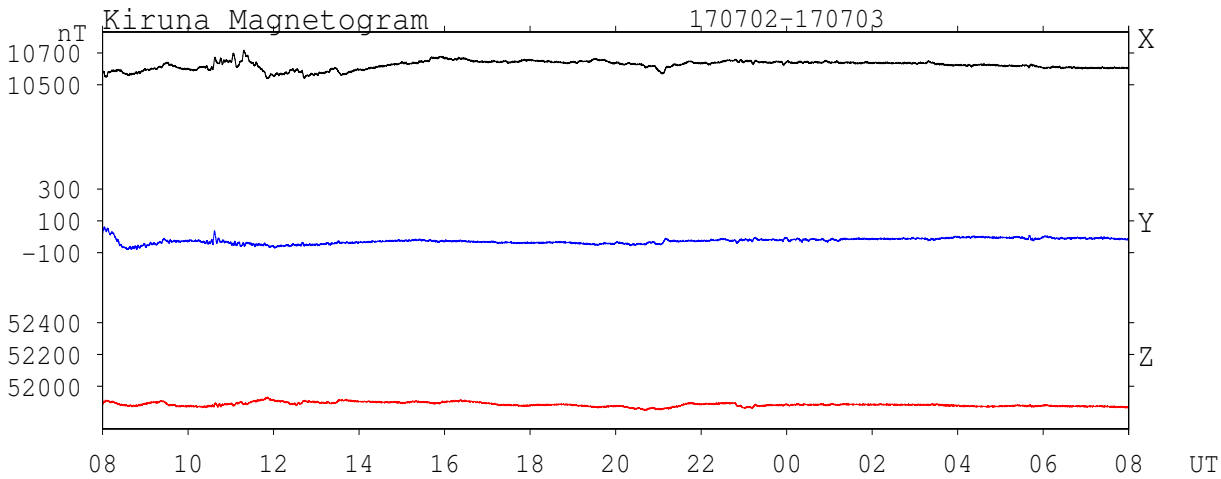
July - September 2017

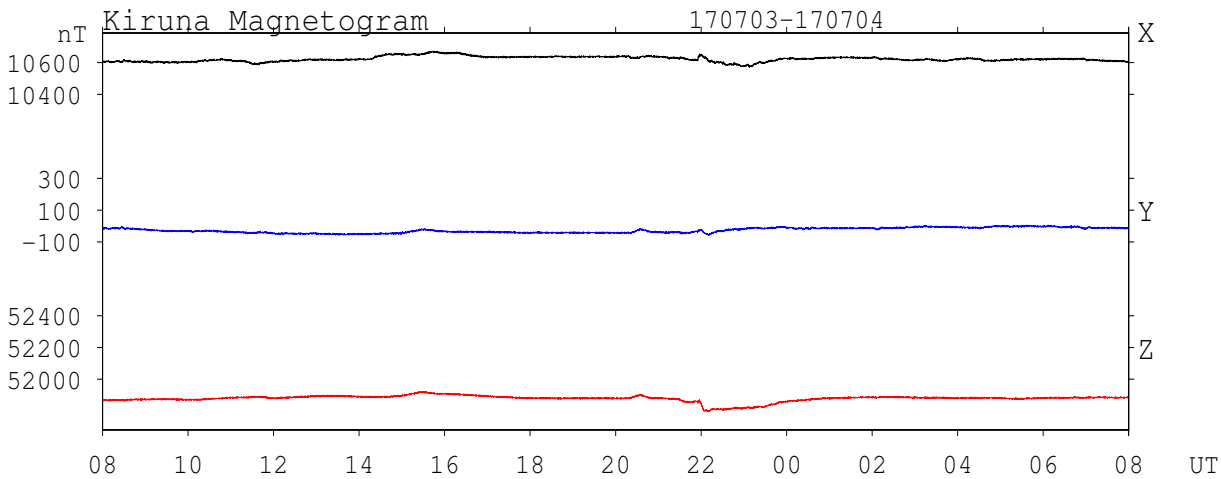
http://www.irf.se/mag

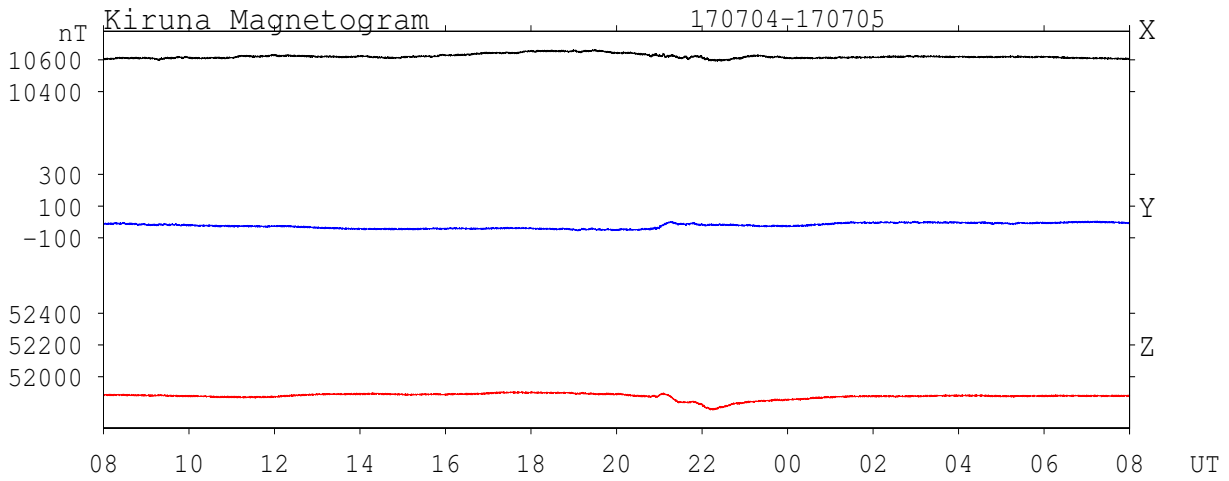
Note on scaling:
Scaling for 170907 is 500 nT instead of 200 nT.
Scaling for 170912 is 300 nT instead of 200 nT.

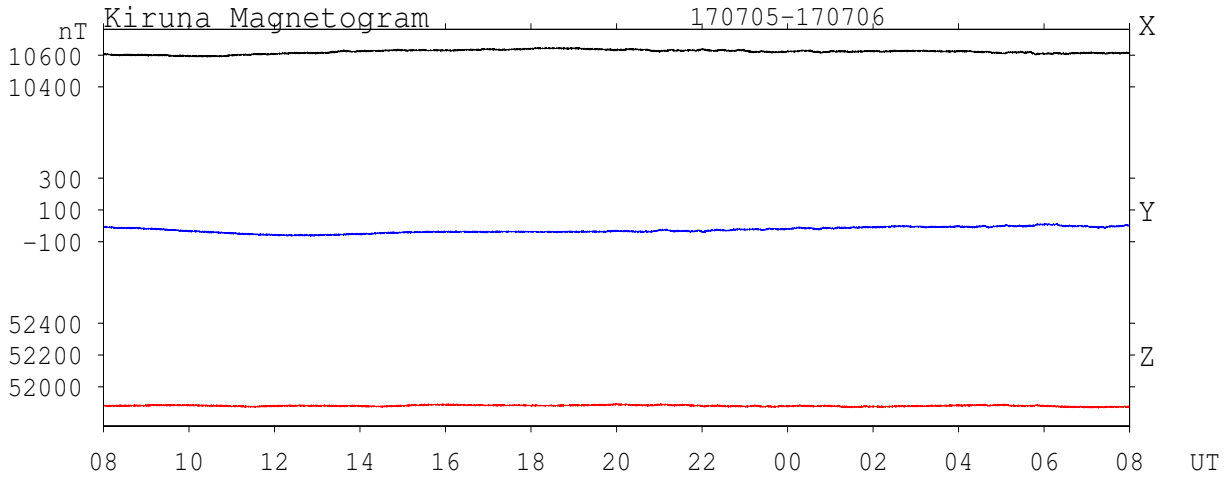

Kiruna Magnetogram
170630-170701
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

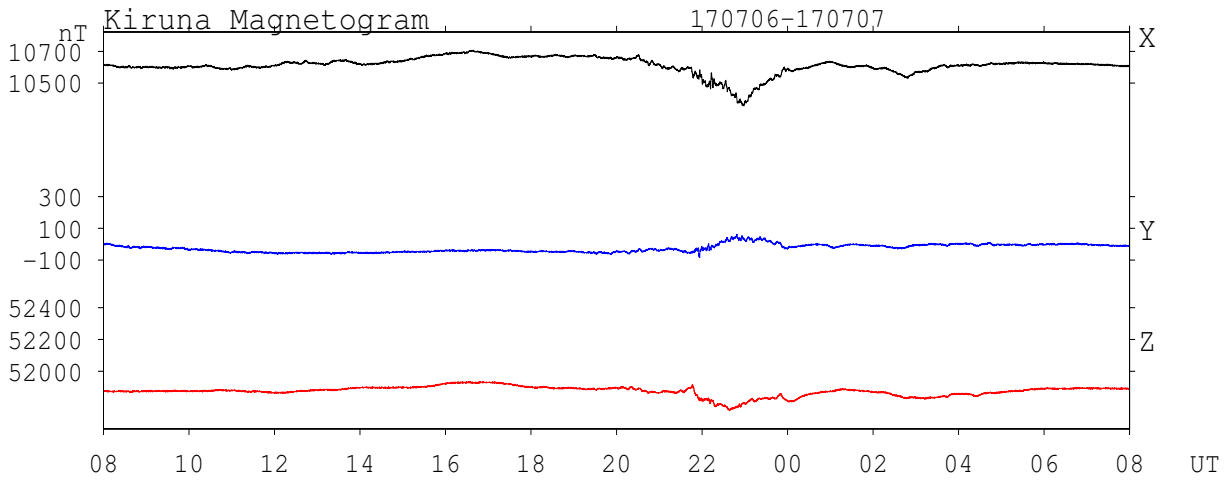

Kiruna Magnetogram
170701-170702
nT
10800
10600
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

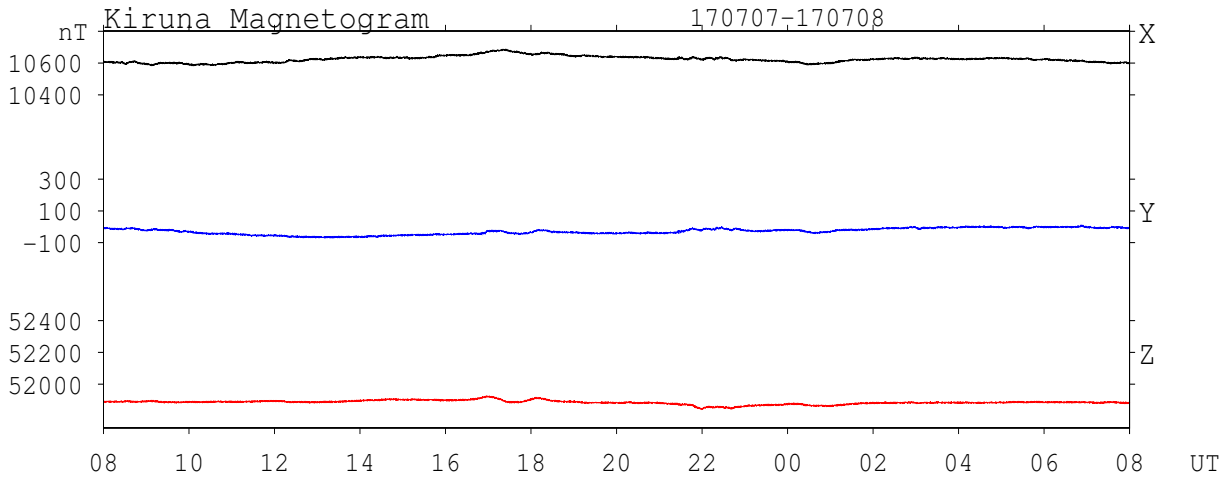

Kiruna Magnetogram
170702-170703
nT
10700
10500
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

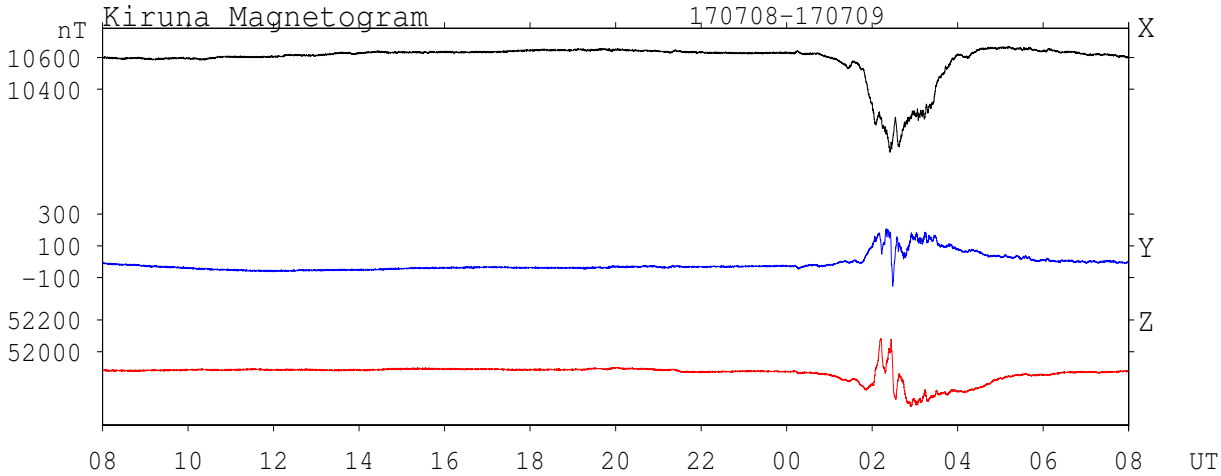

Kiruna Magnetogram
170703-170704
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

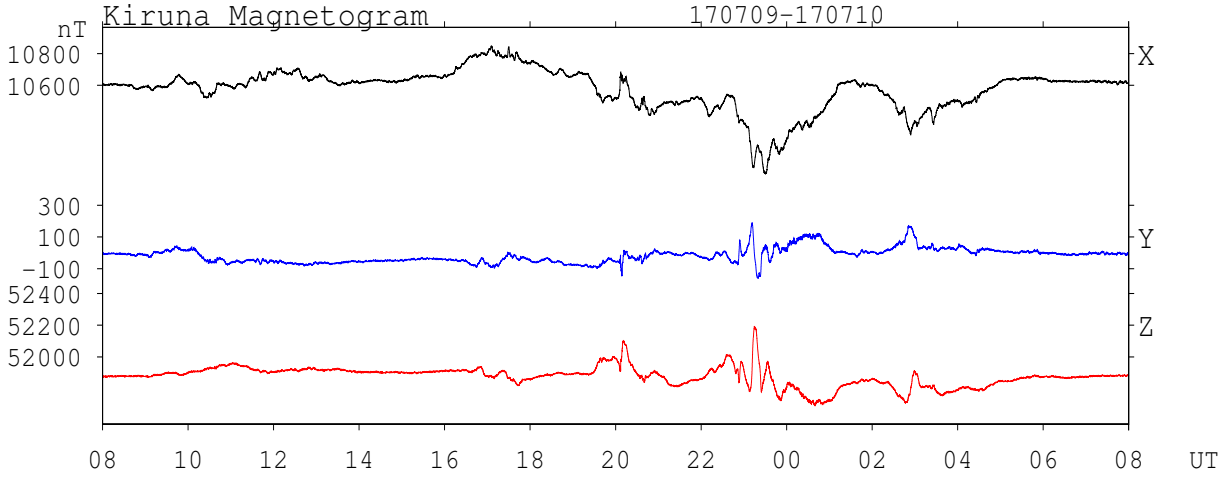

Kiruna Magnetogram
170704-170705
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

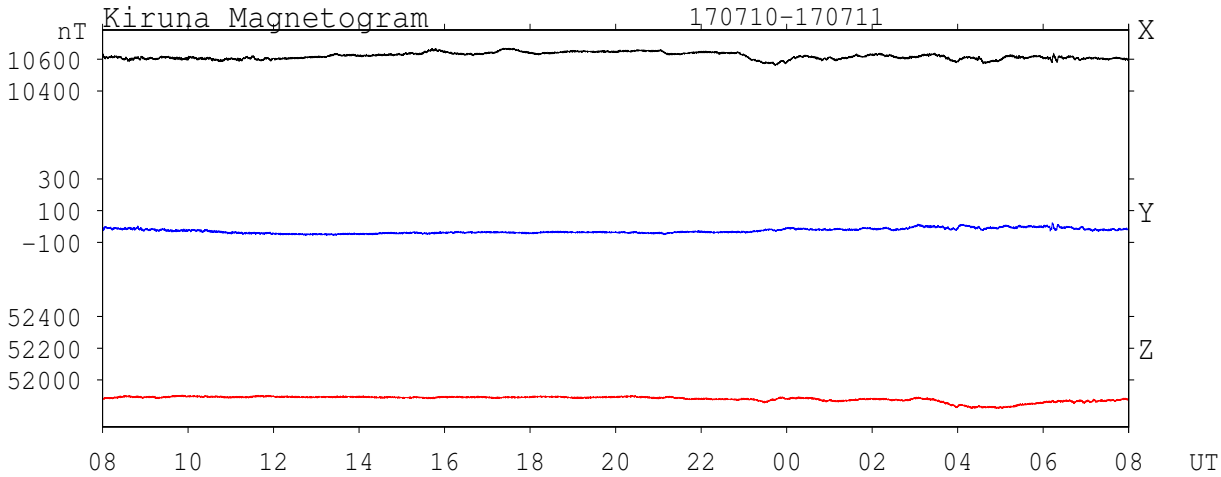

Kiruna Magnetogram
170705-170706
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

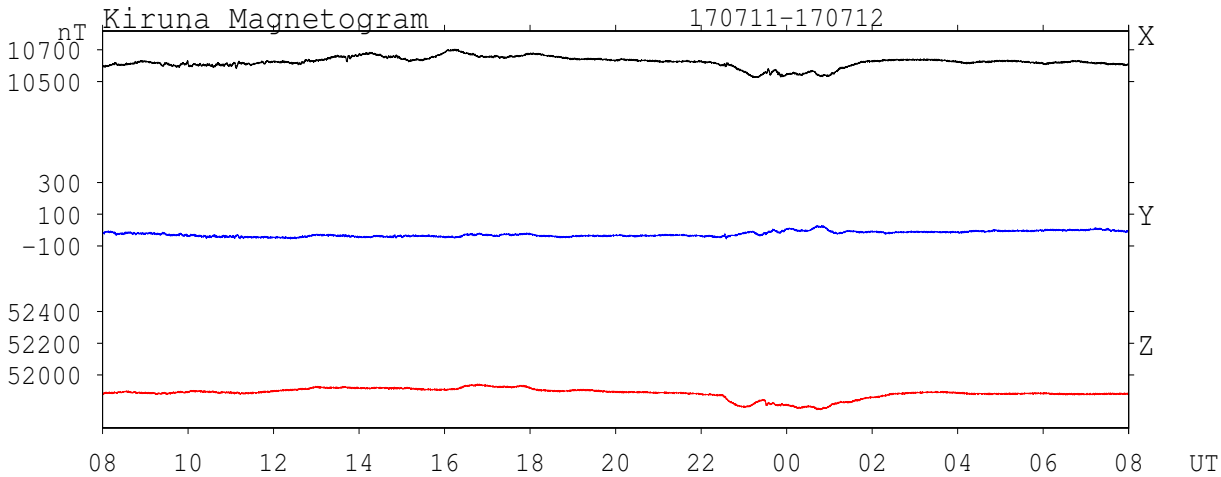

Kiruna Magnetogram
170706-170707
nT
10700
10500
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

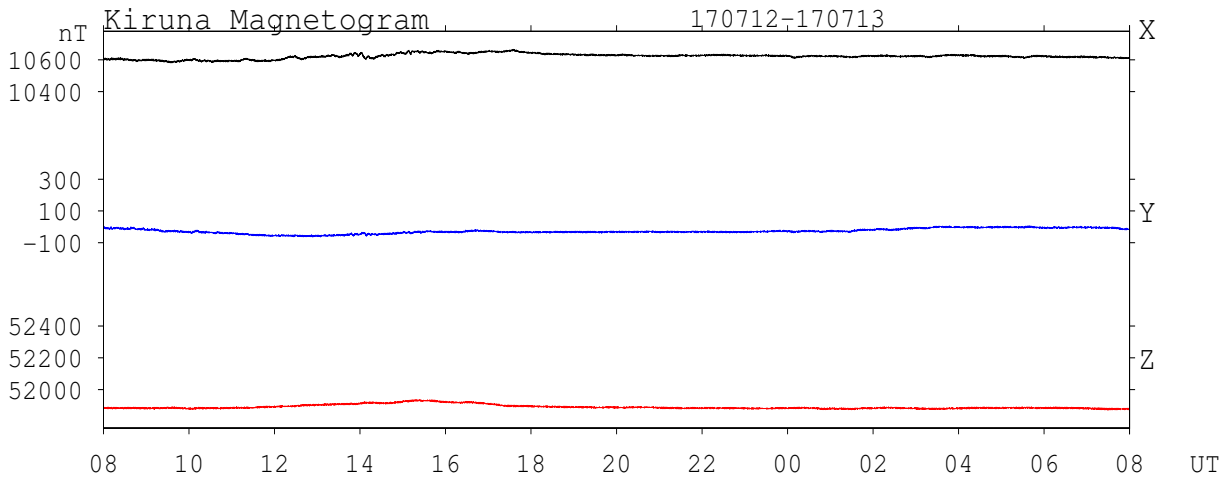

Kiruna Magnetogram
170707-170708
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

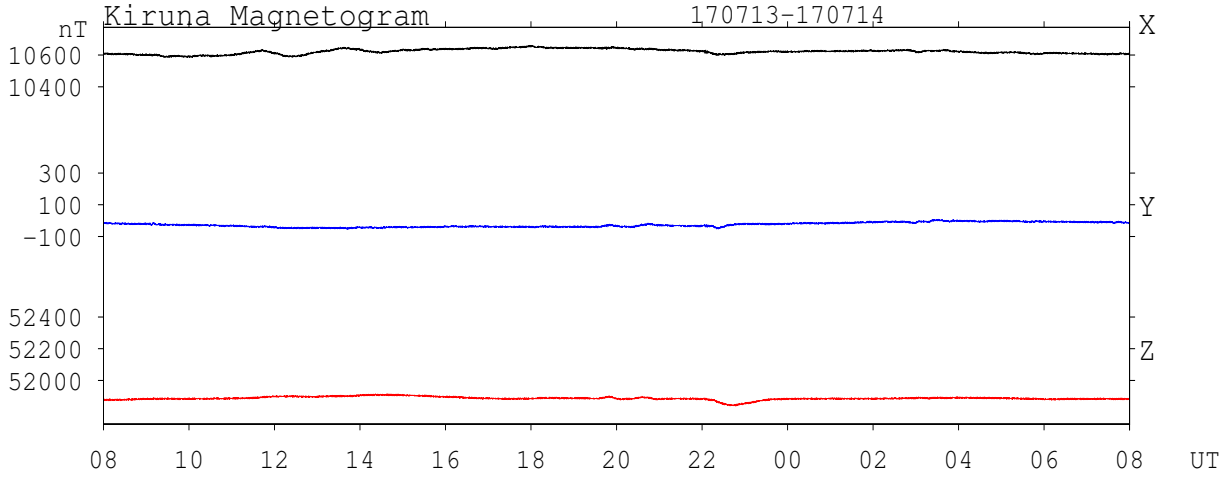

Kiruna Magnetogram
170708-170709
nT
10600
10400
300
100
-100
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

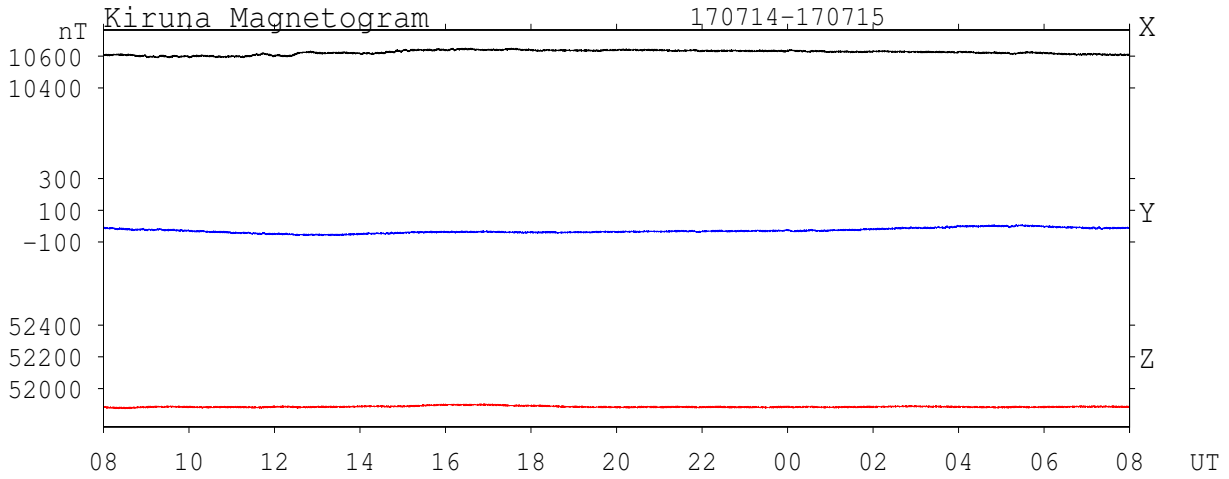

Kiruna Magnetogram
170709-170710
nT
10800
10600
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

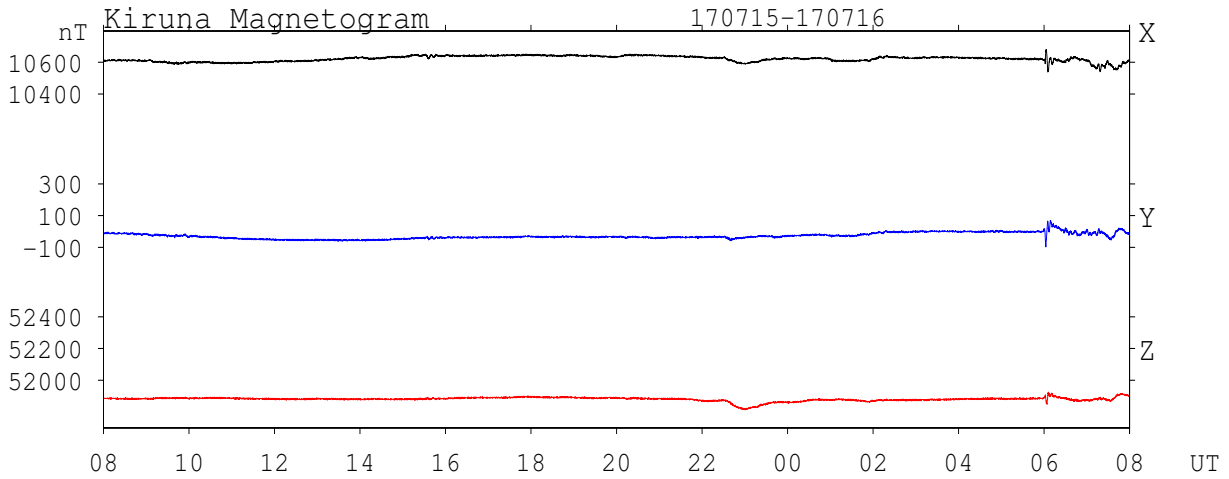

Kiruna Magnetogram
170710-170711
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

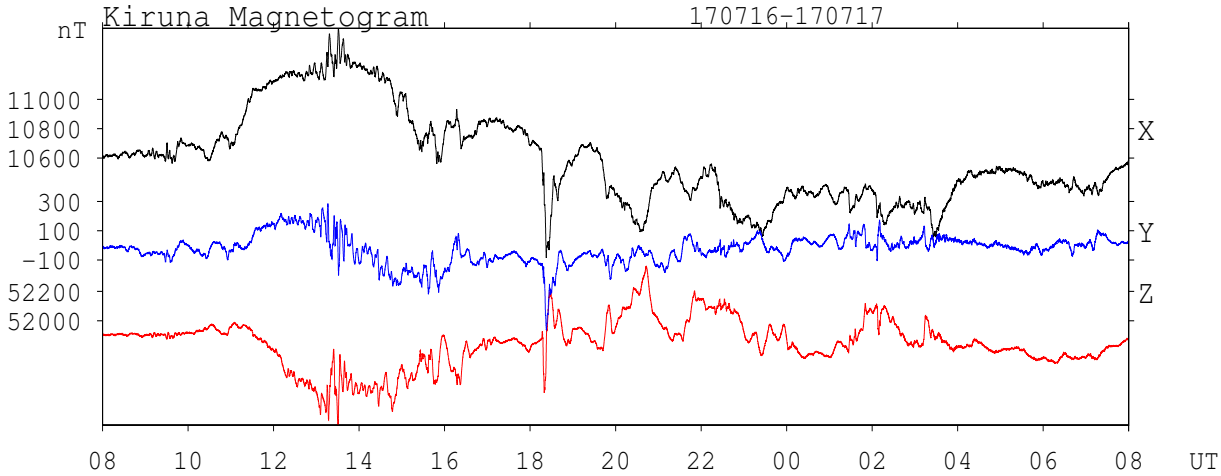

Kiruna Magnetogram
170711-170712
nT
10700
10500
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

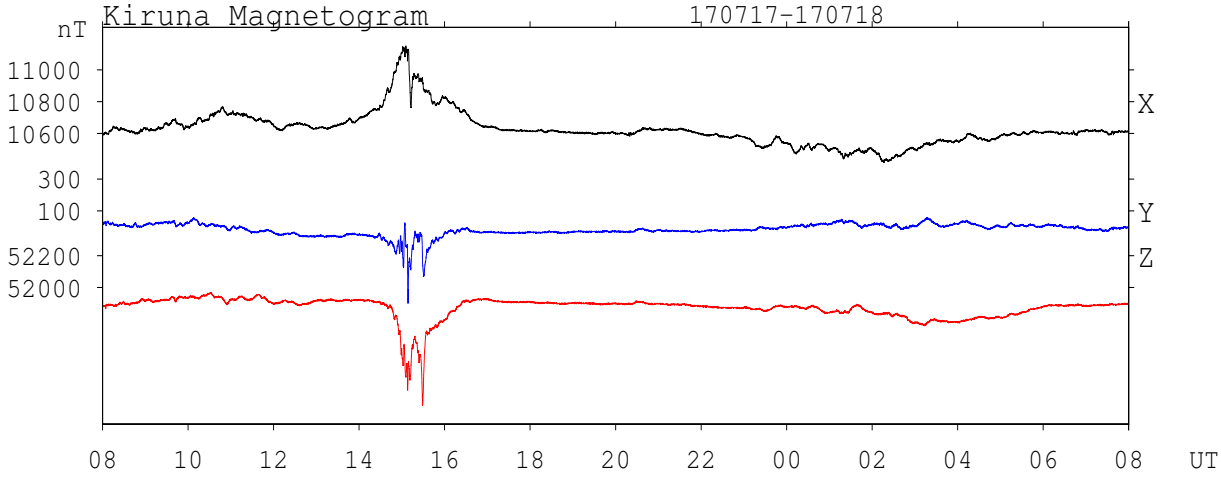

Kiruna Magnetogram
170712-170713
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

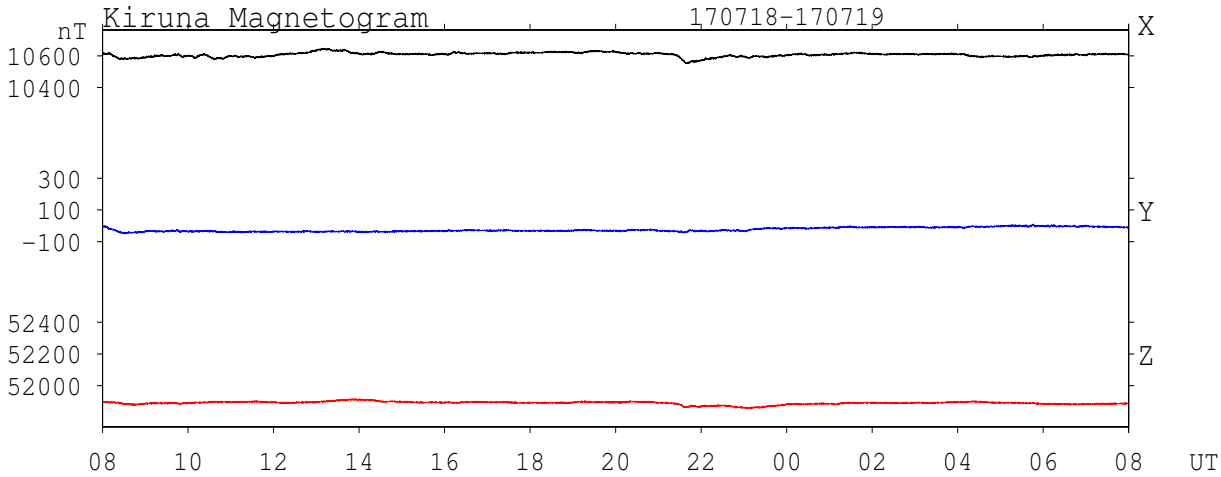

Kiruna Magnetogram
170713-170714
nT
10600
10400
300
100
-100
52400
52200
52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

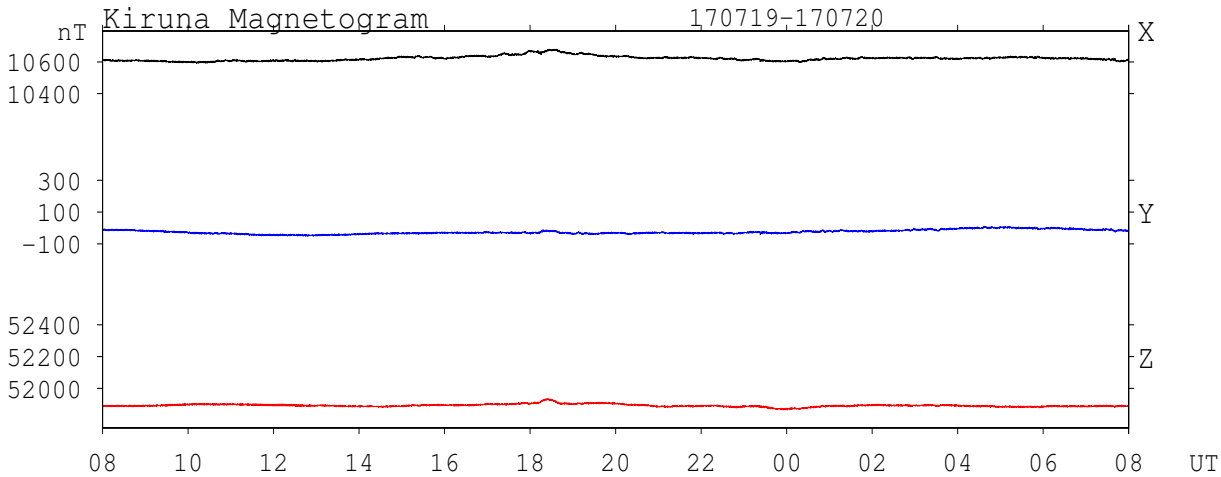

Kiruna Magnetogram
170714-170715
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Z
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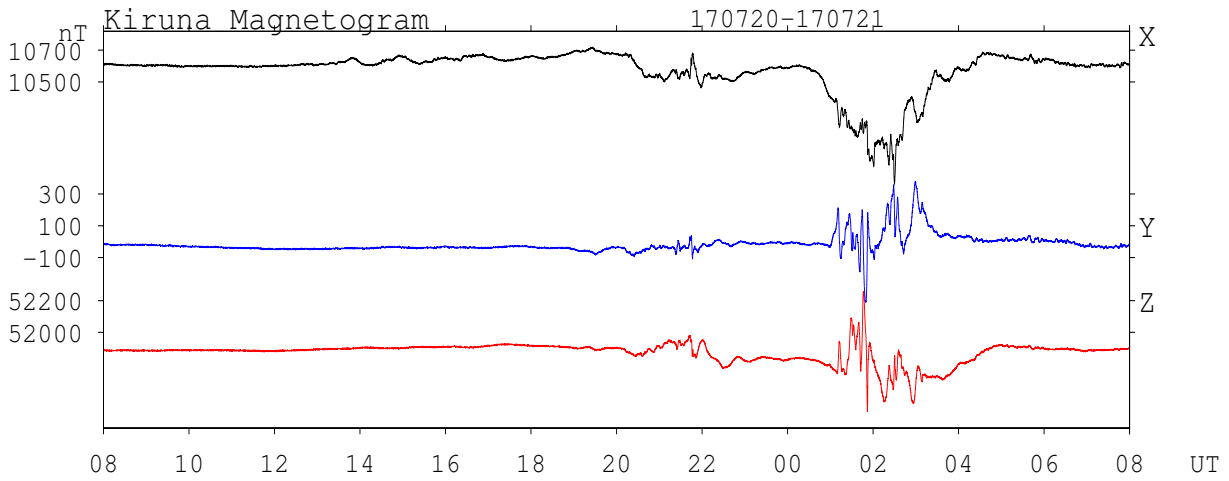

Kiruna Magnetogram
170715-170716
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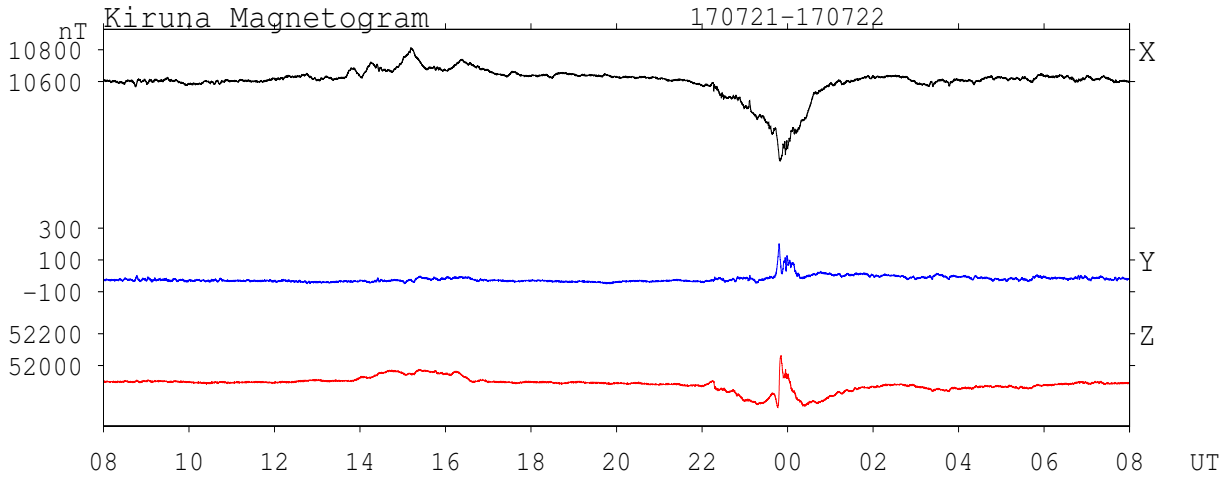

Kiruna Magnetogram
170716-170717
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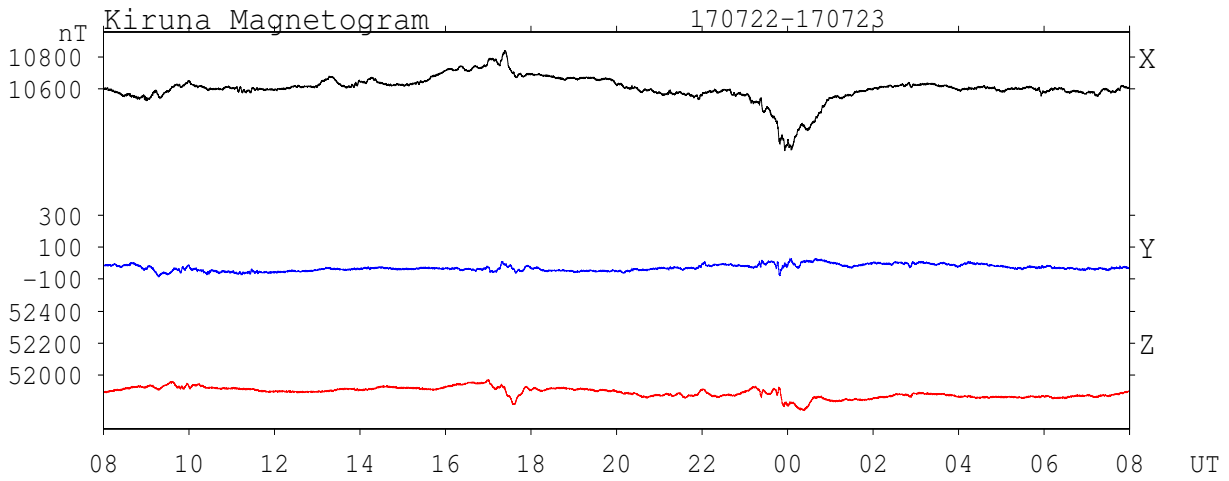

Kiruna Magnetogram
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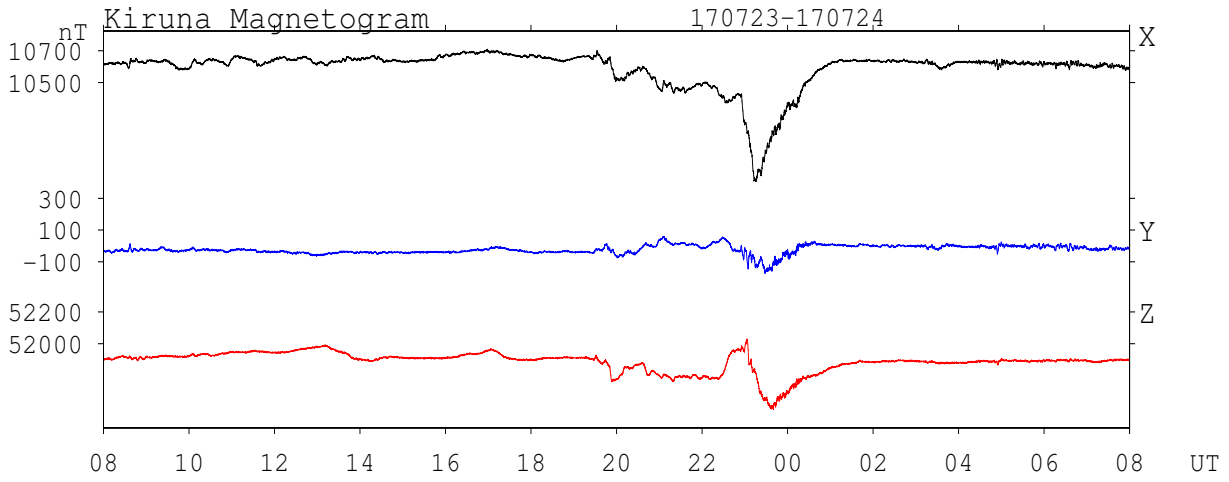

Kiruna Magnetogram
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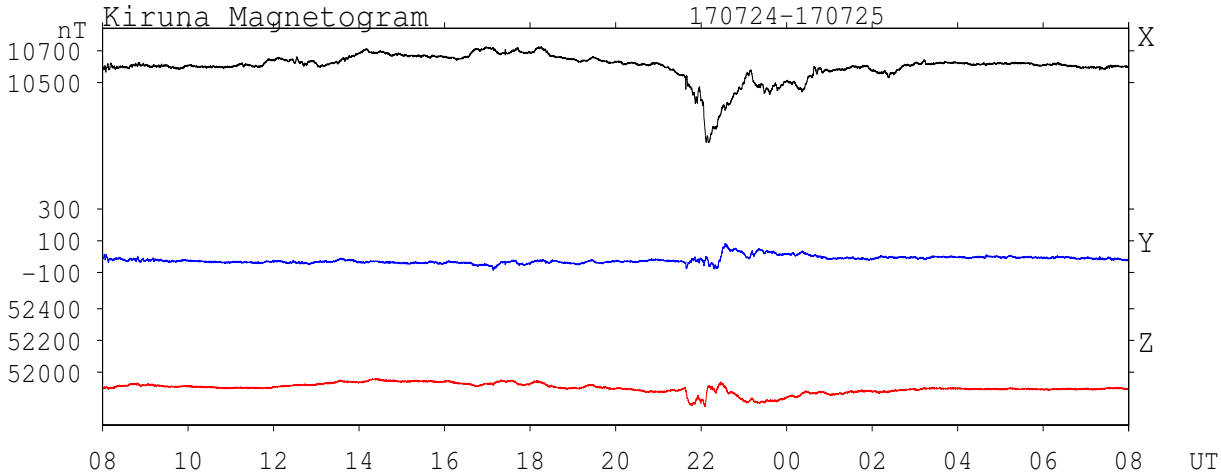

Kiruna Magnetogram
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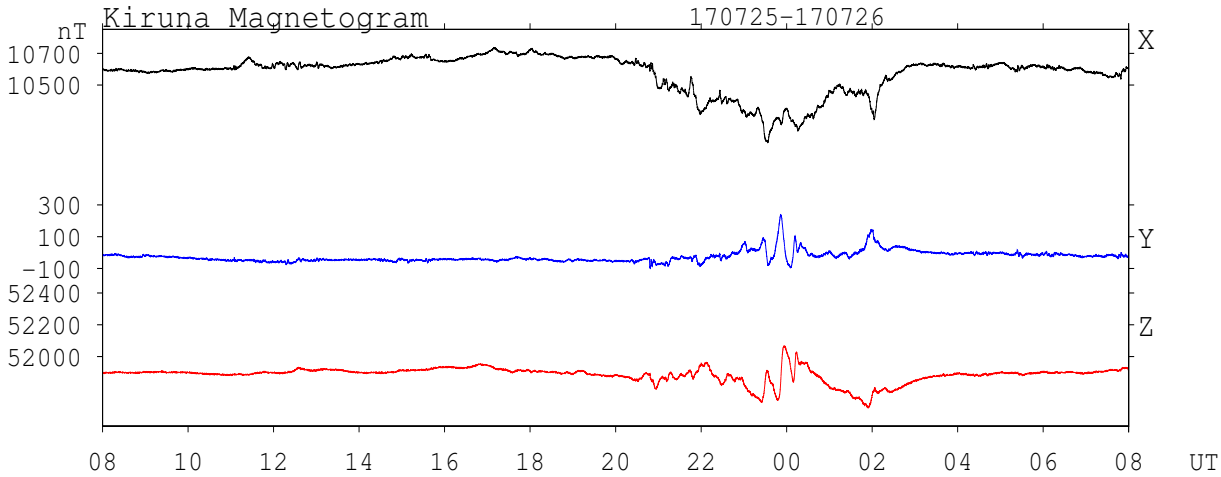

Kiruna Magnetogram
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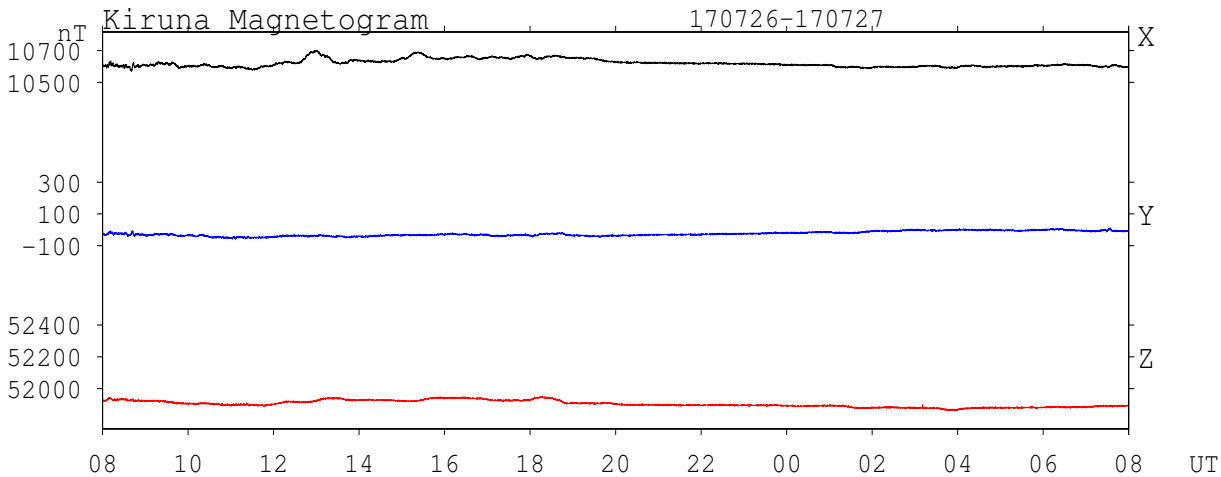

Kiruna Magnetogram
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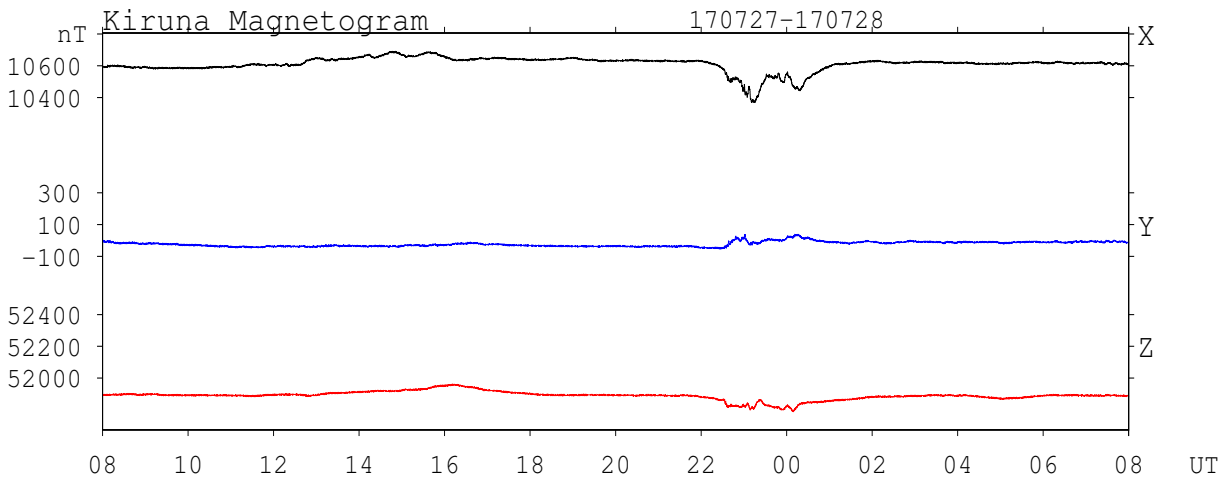

Kiruna Magnetogram
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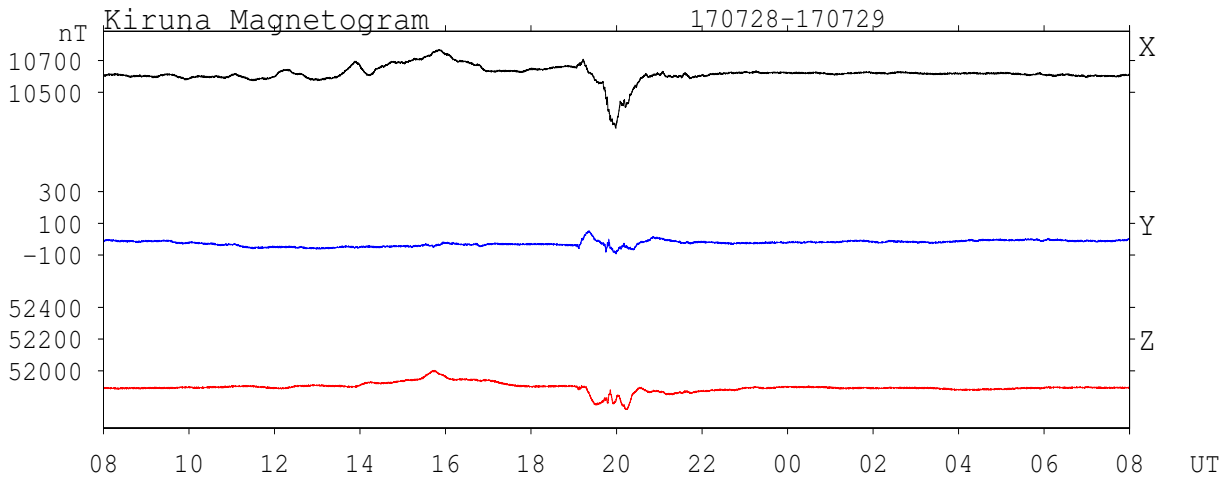

Kiruna Magnetogram
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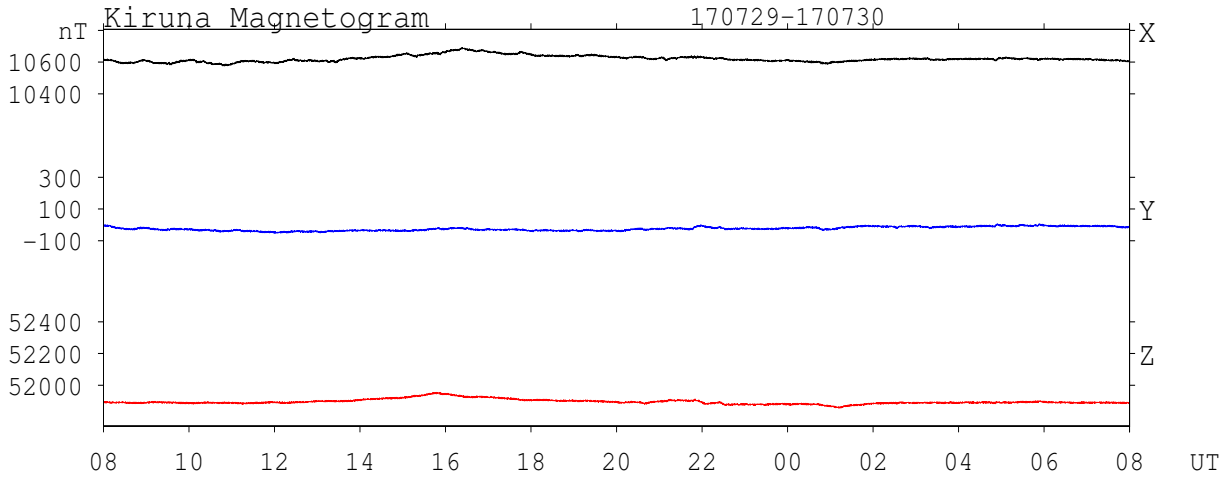

Kiruna Magnetogram
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-100
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Y
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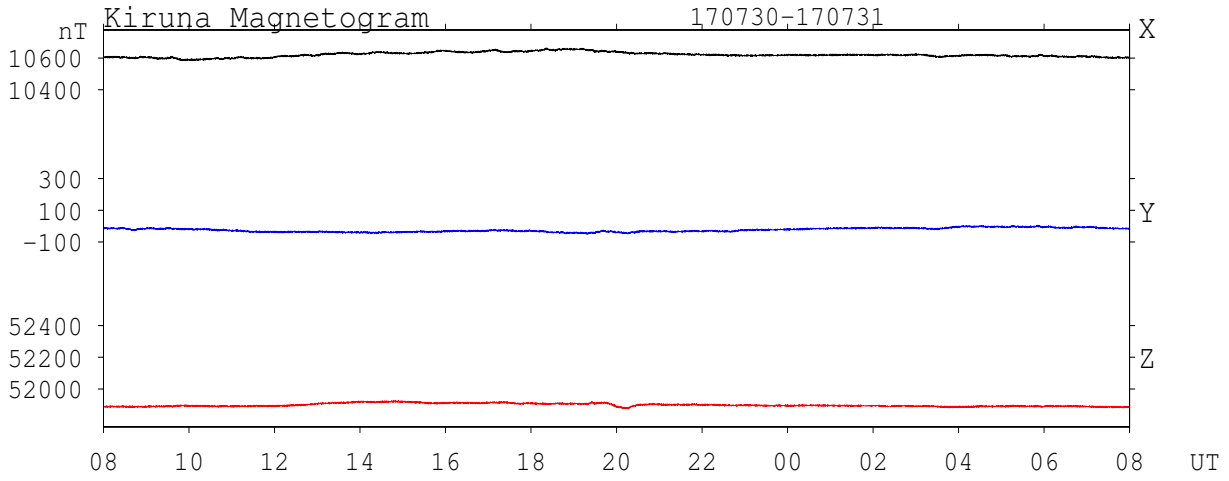

Kiruna Magnetogram
170725-170726
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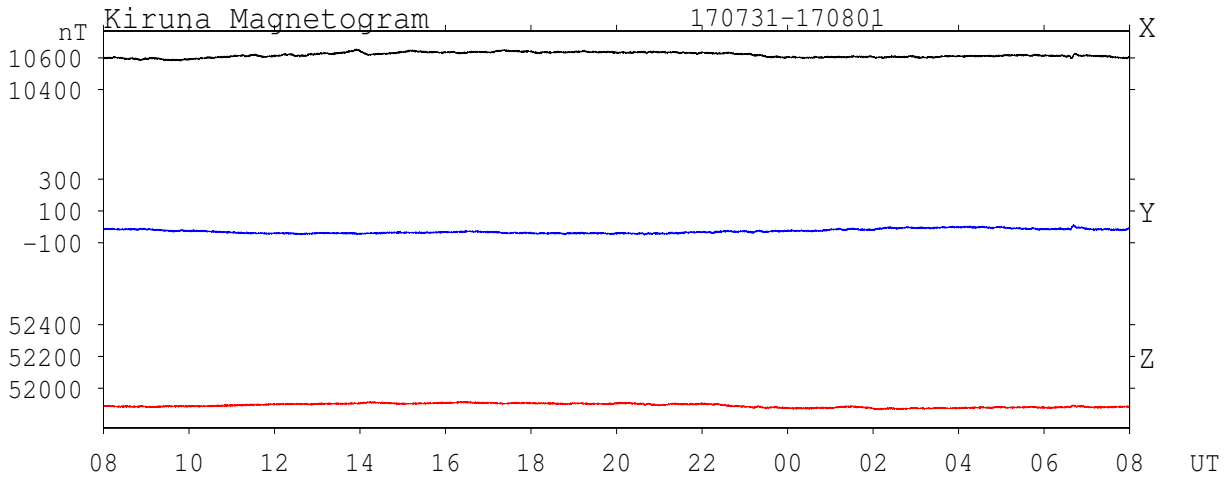

Kiruna Magnetogram
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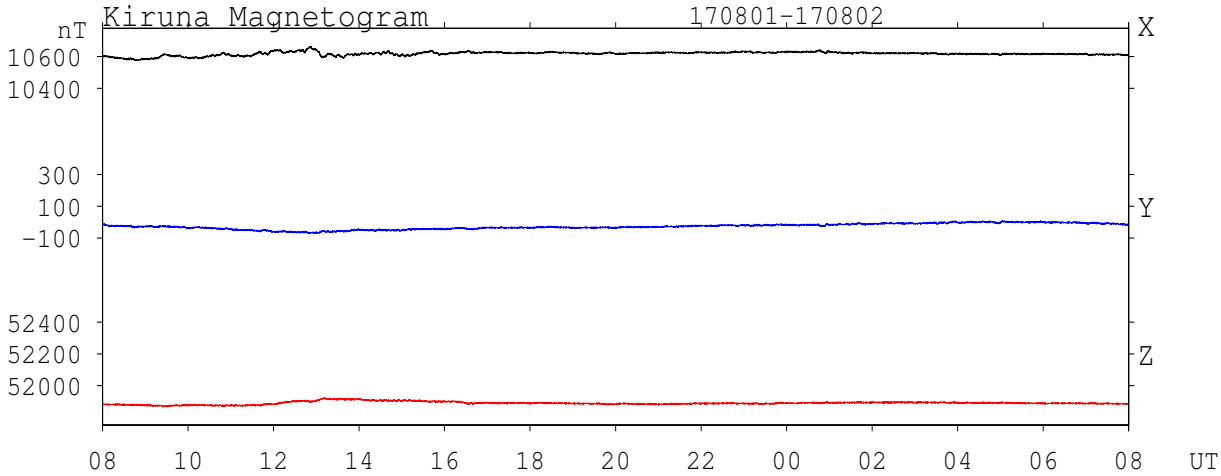

Kiruna Magnetogram
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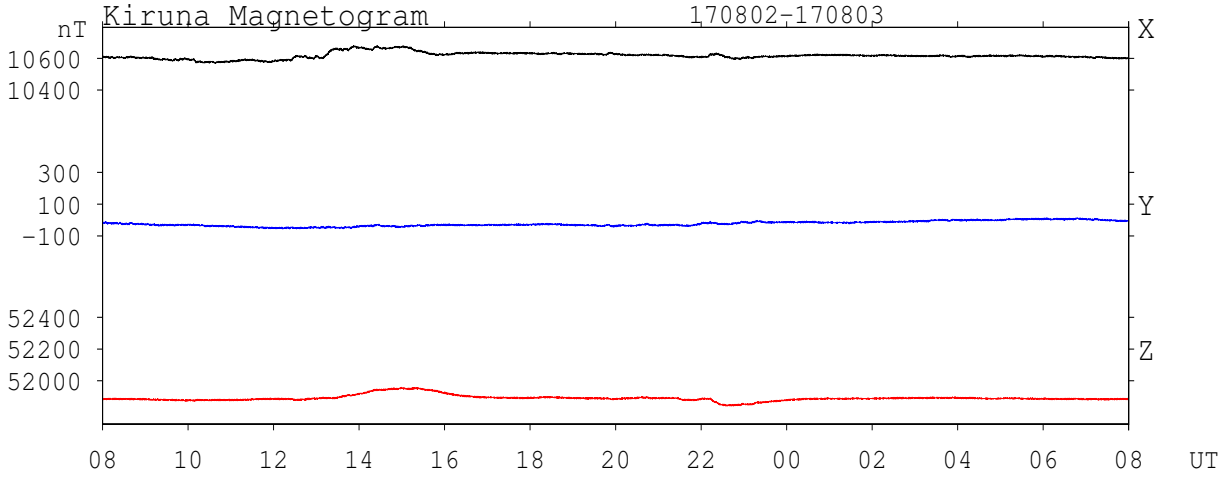

Kiruna Magnetogram
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-100
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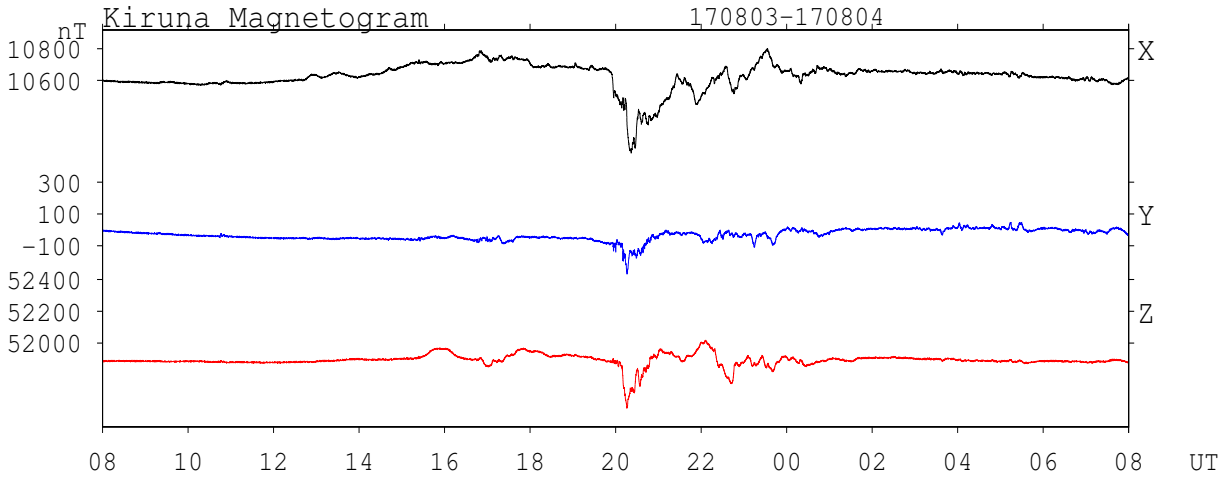

Kiruna Magnetogram
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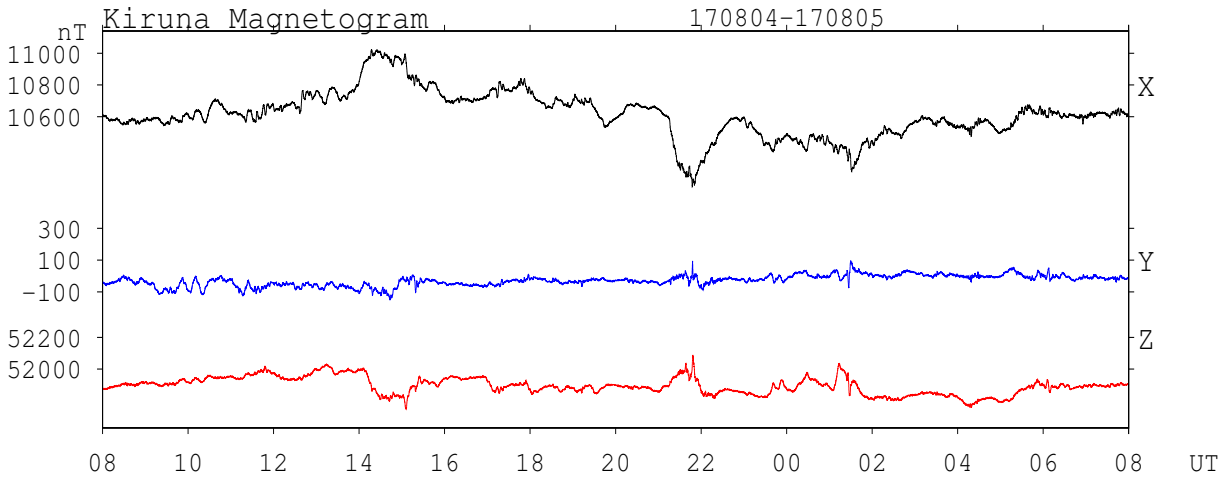

Kiruna Magnetogram
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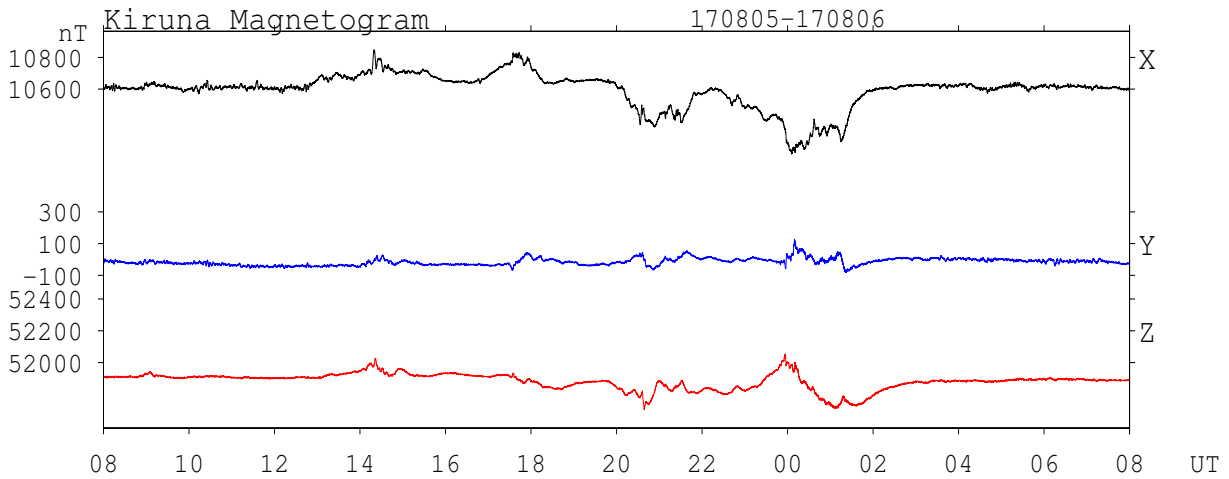

Kiruna Magnetogram
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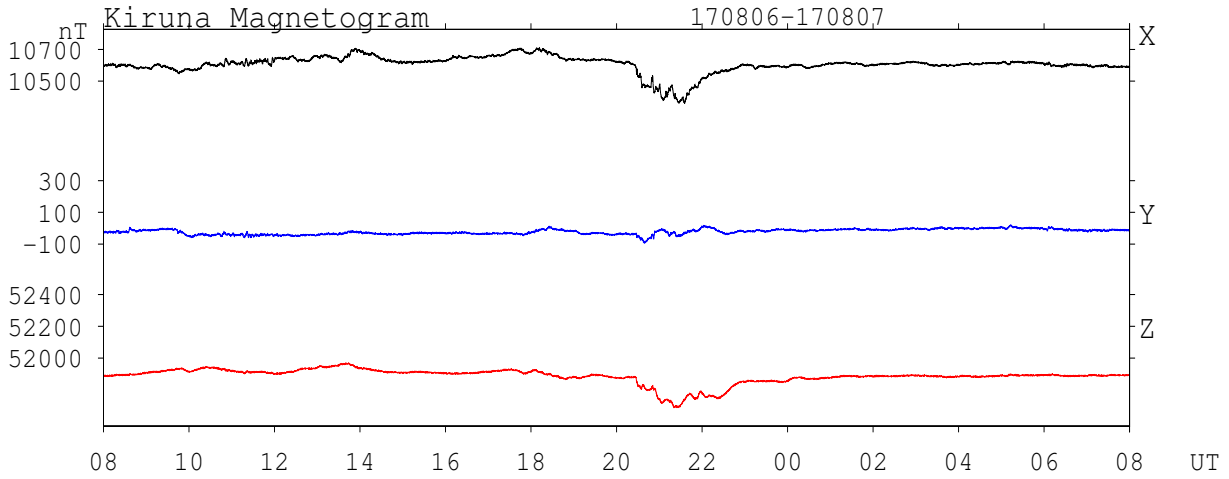

Kiruna Magnetogram
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-100
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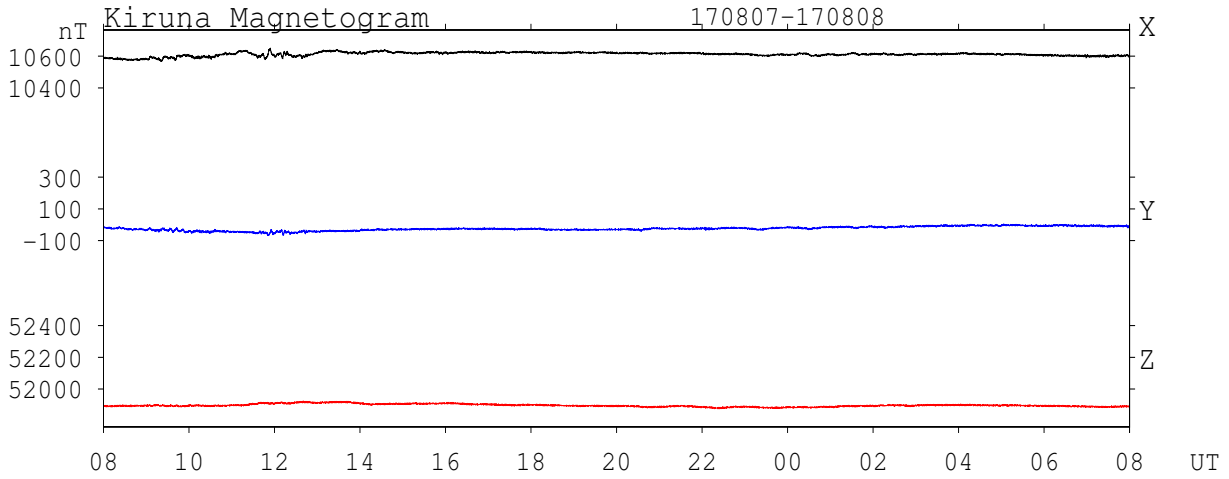

Kiruna Magnetogram
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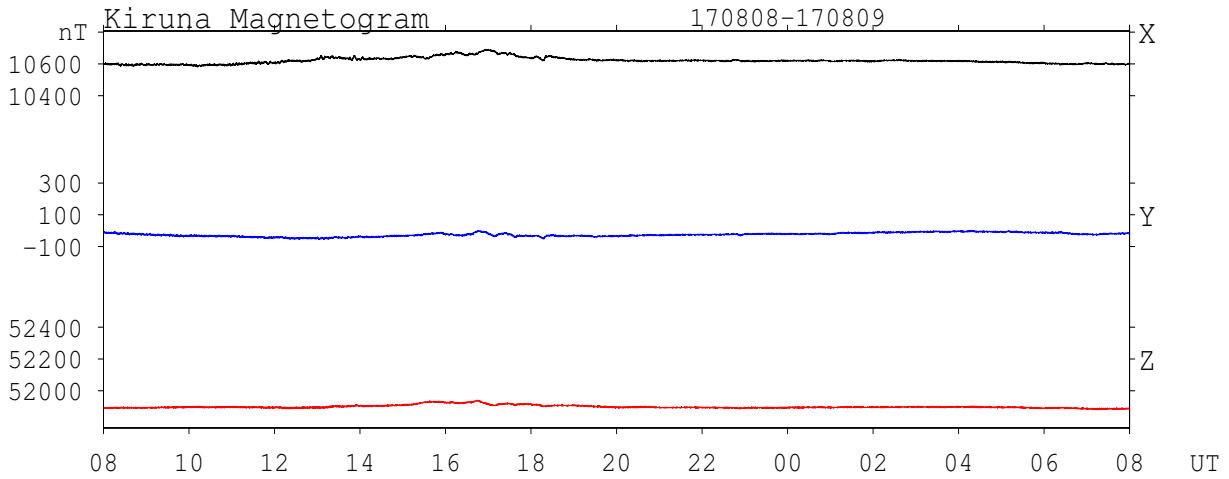

Kiruna Magnetogram
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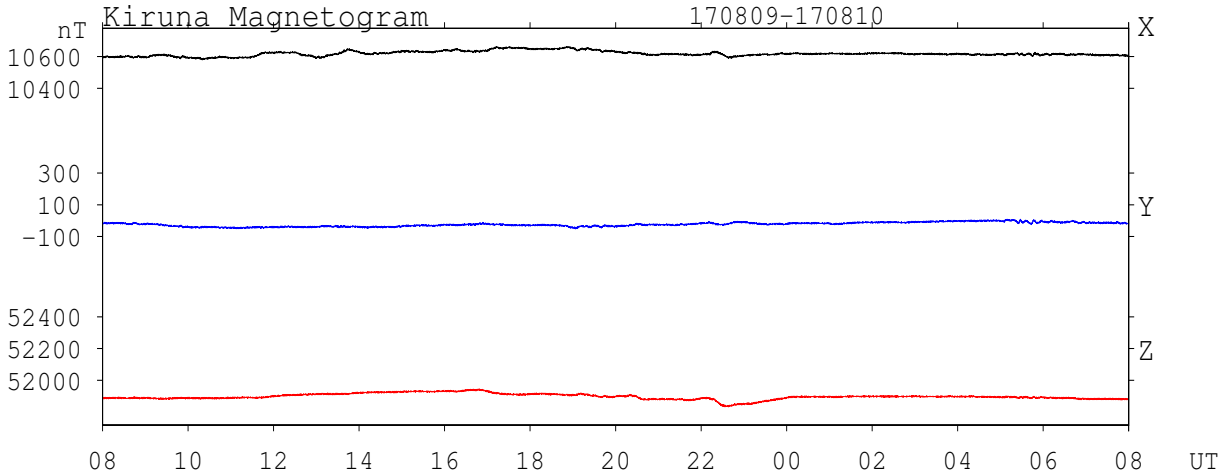

Kiruna Magnetogram
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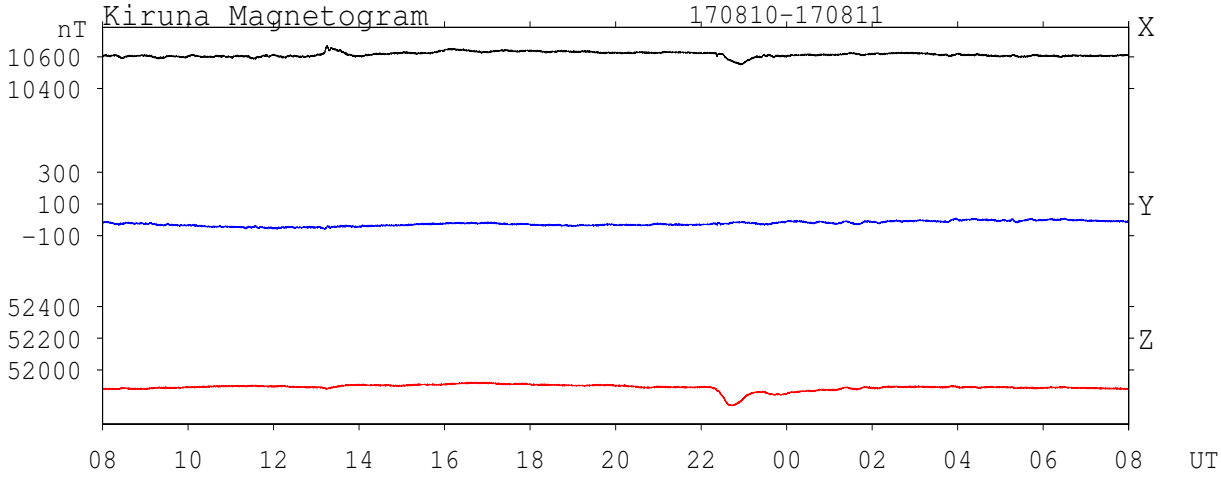

Kiruna Magnetogram
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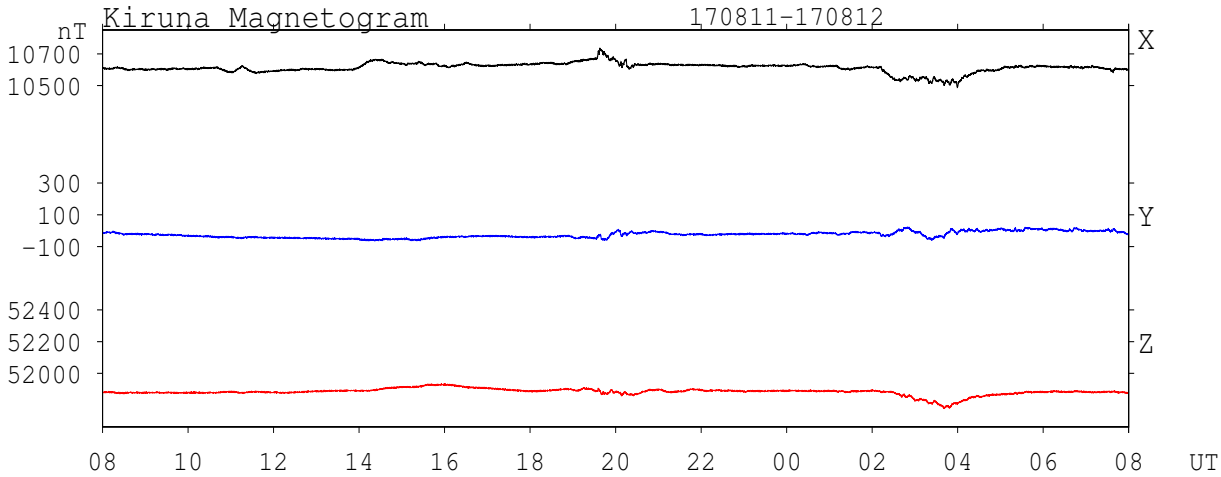

Kiruna Magnetogram
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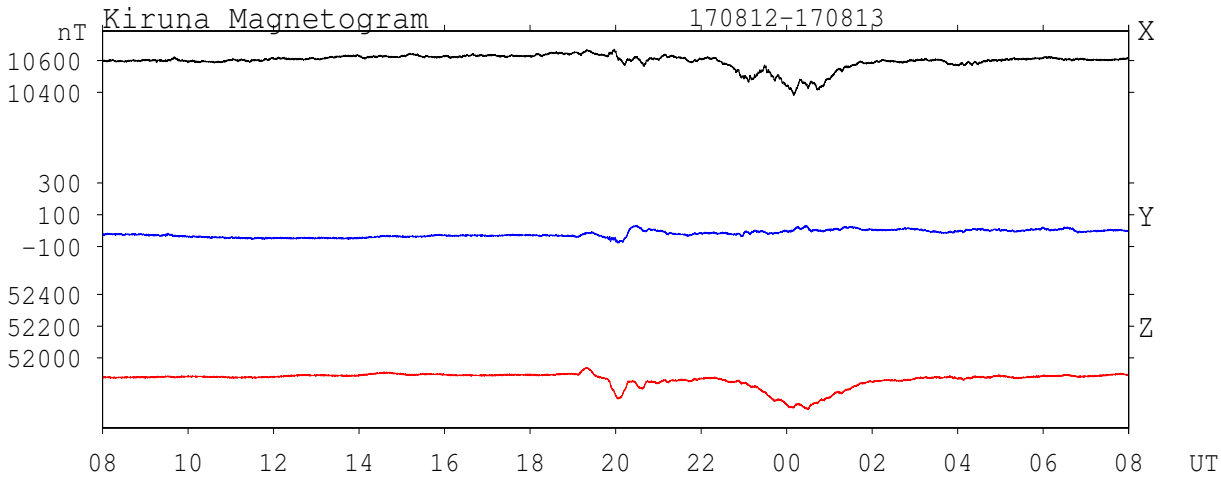

Kiruna Magnetogram
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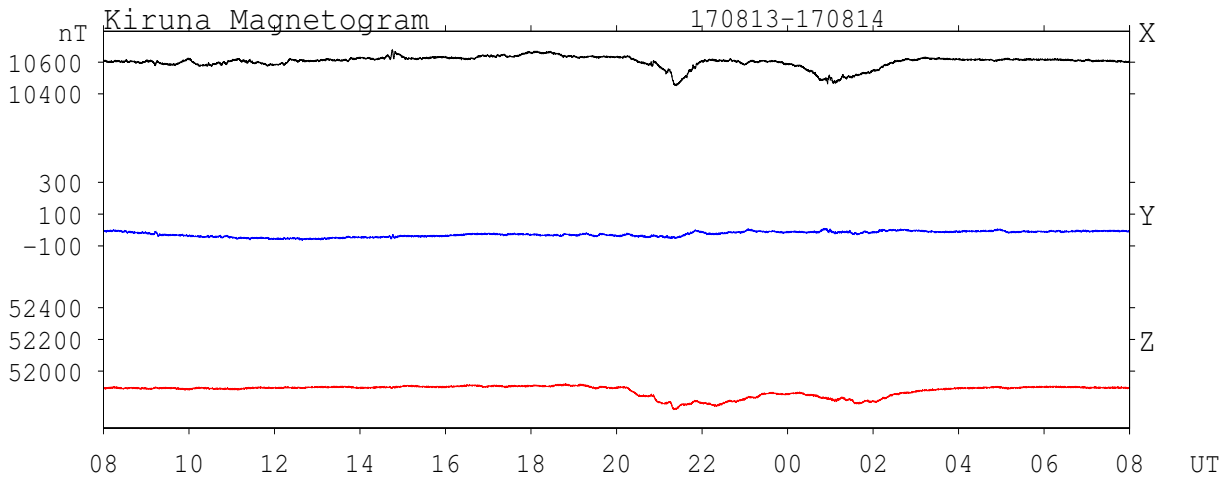

Kiruna Magnetogram
170808-170809
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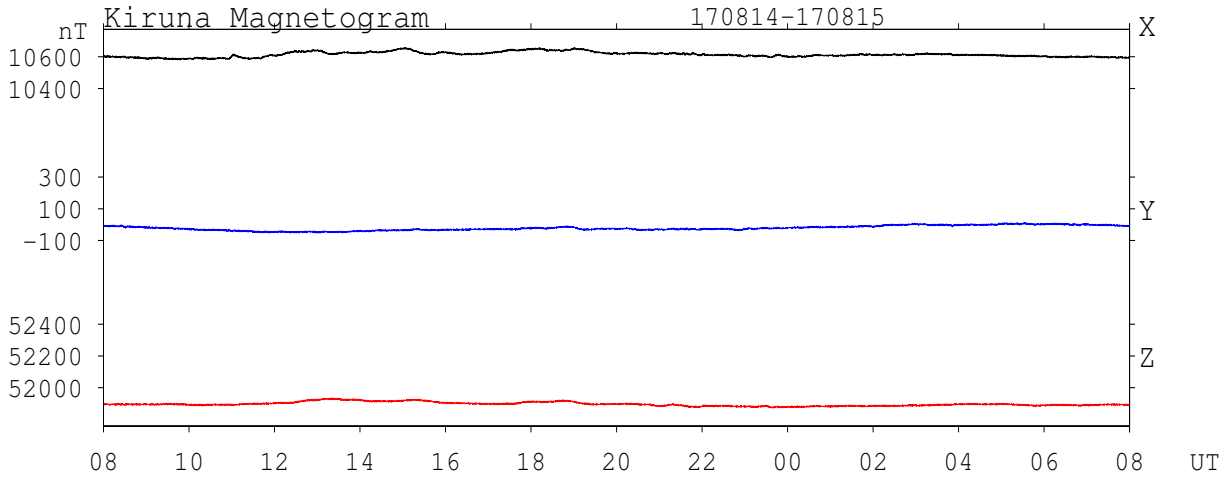

Kiruna Magnetogram
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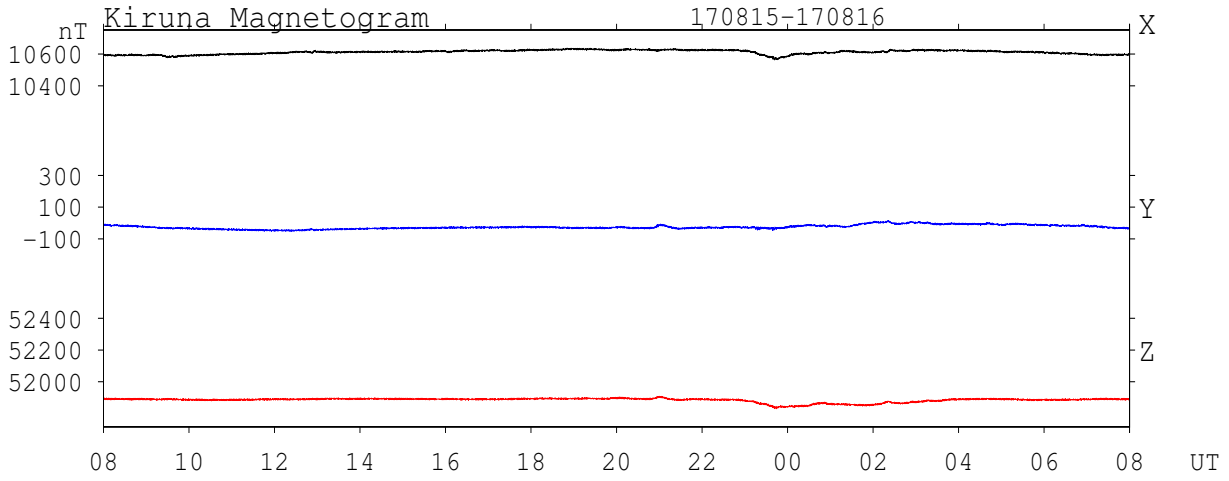

Kiruna Magnetogram
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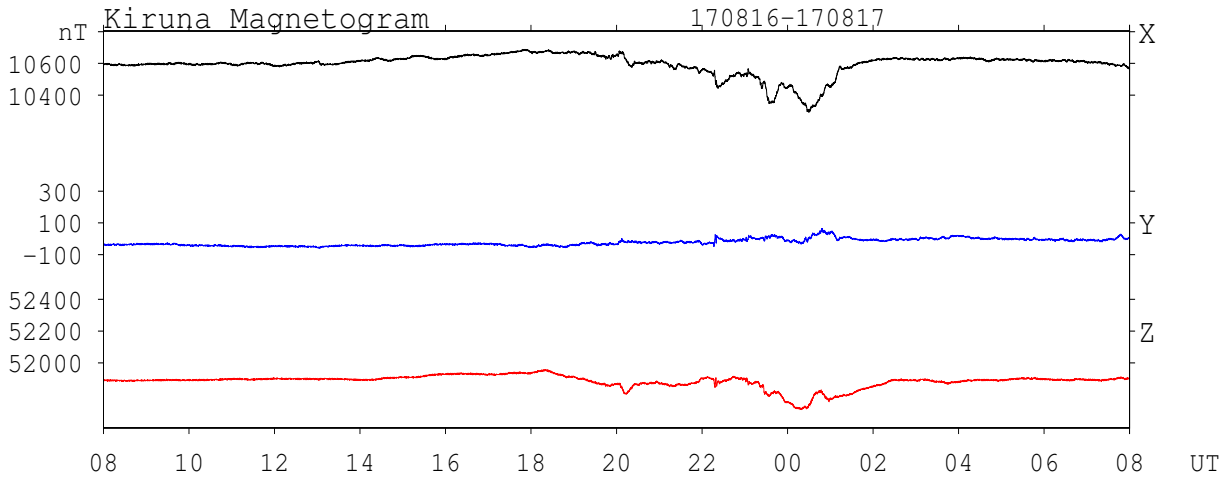

Kiruna Magnetogram
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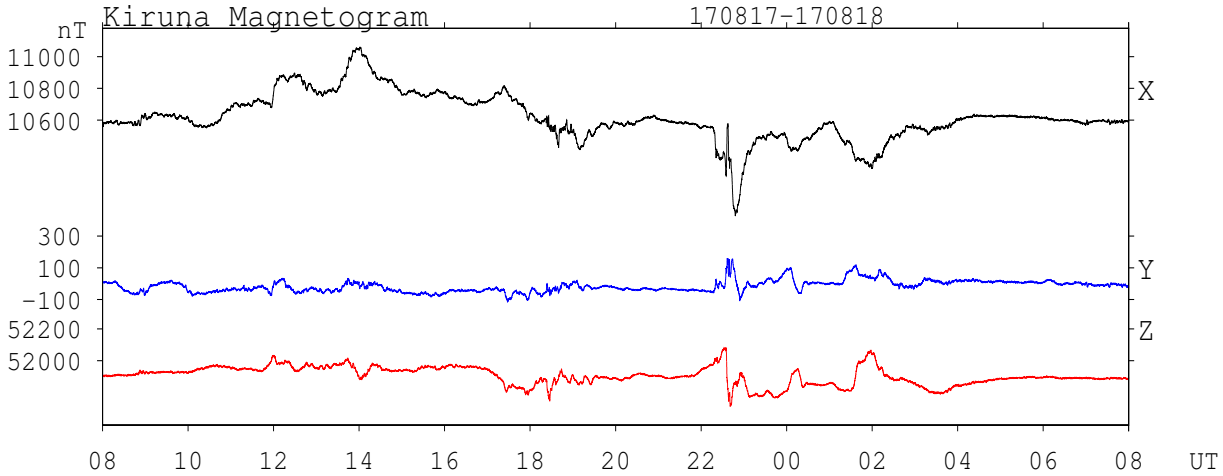

Kiruna Magnetogram
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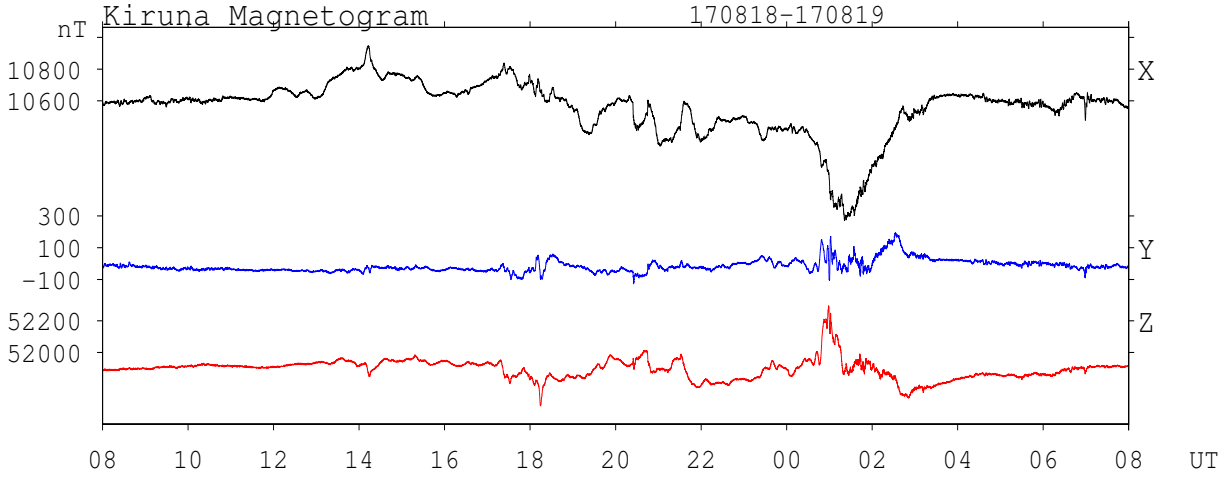

Kiruna Magnetogram
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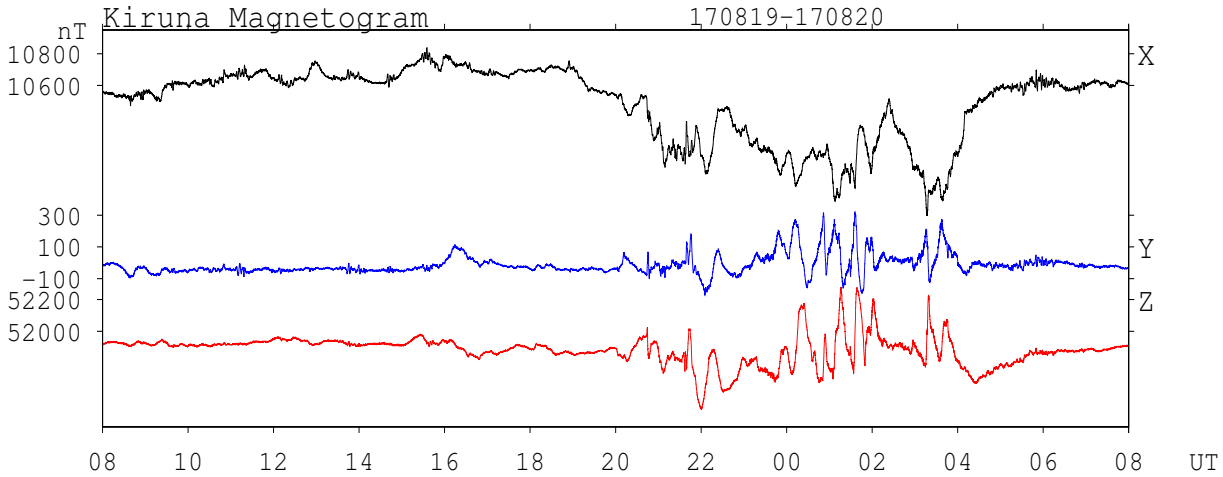

Kiruna Magnetogram
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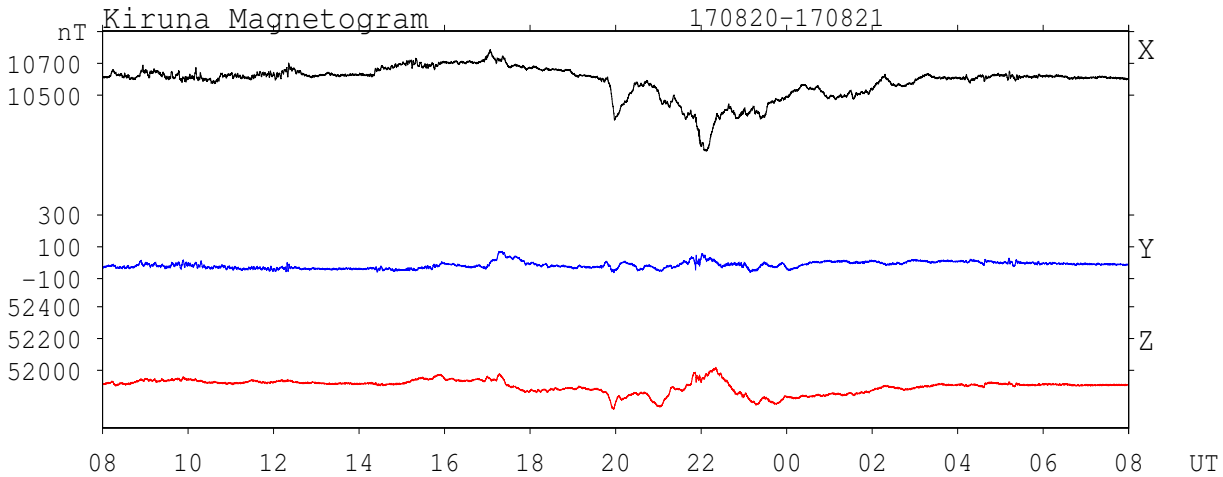

Kiruna Magnetogram
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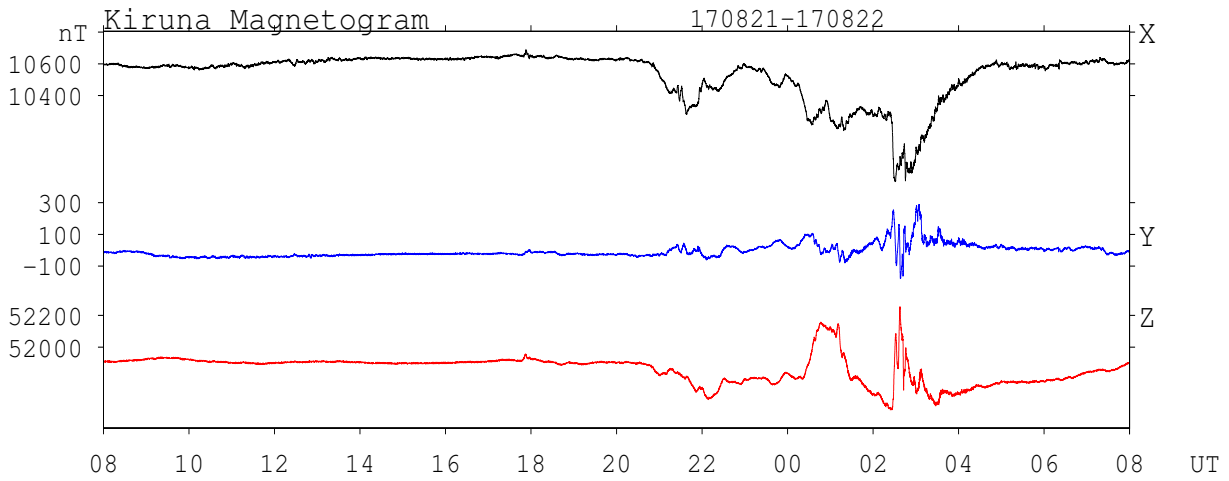

Kiruna Magnetogram
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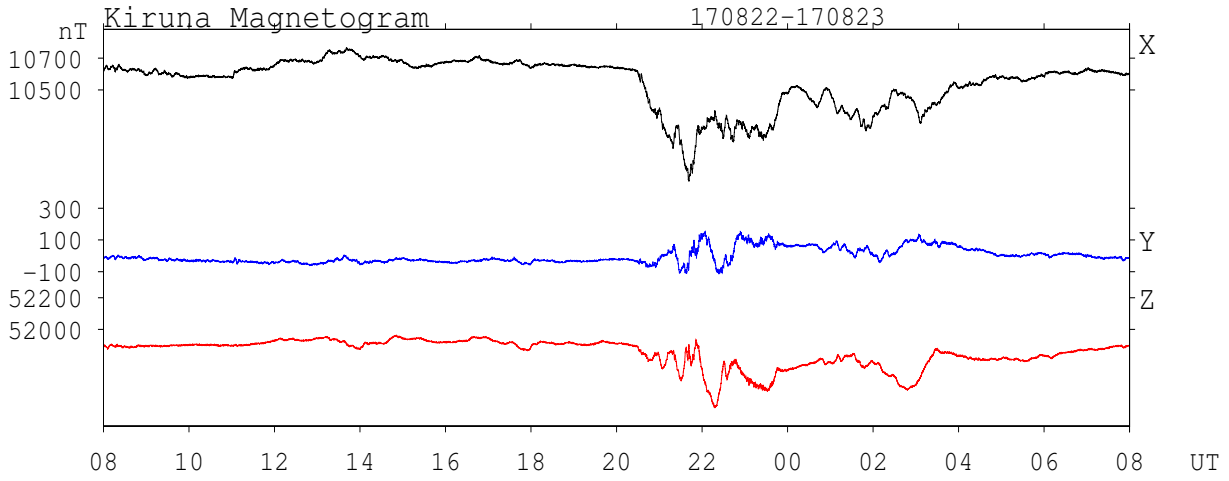

Kiruna Magnetogram
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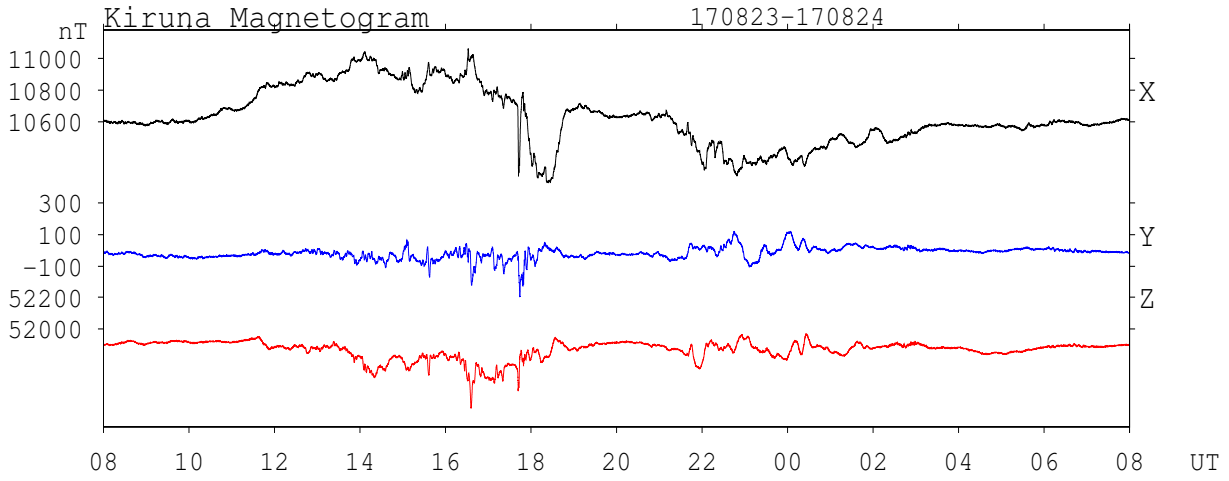

Kiruna Magnetogram
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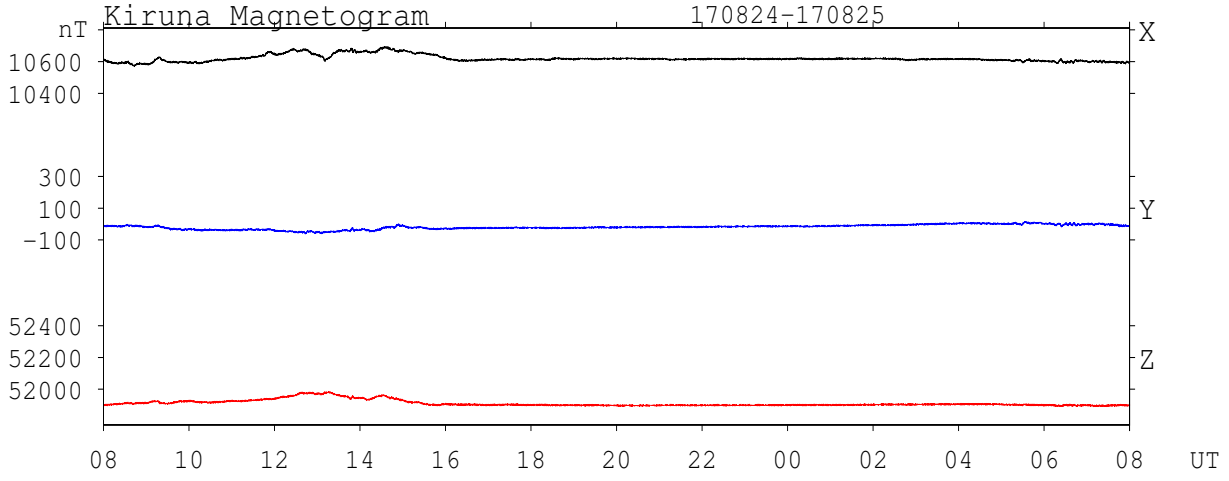

Kiruna Magnetogram
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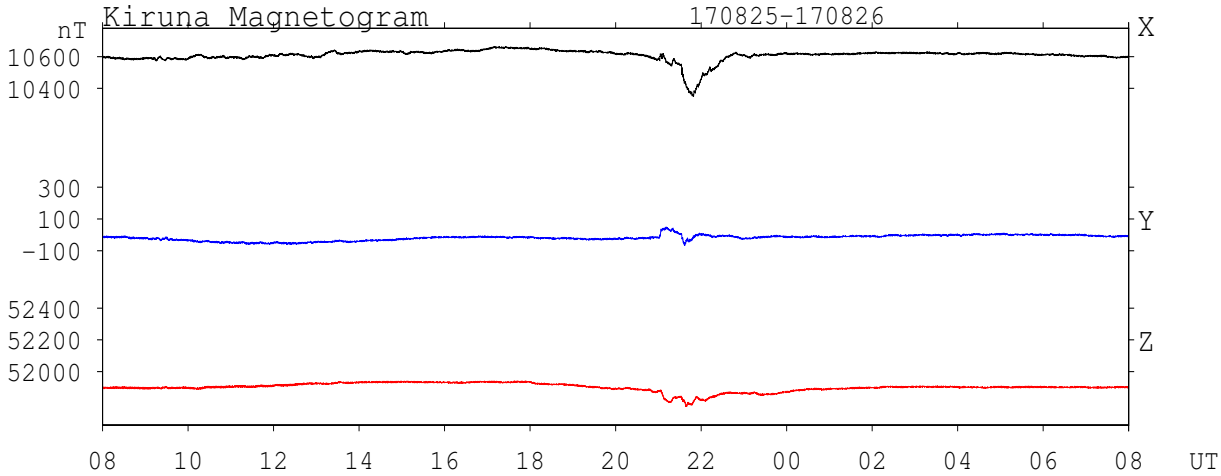

Kiruna Magnetogram
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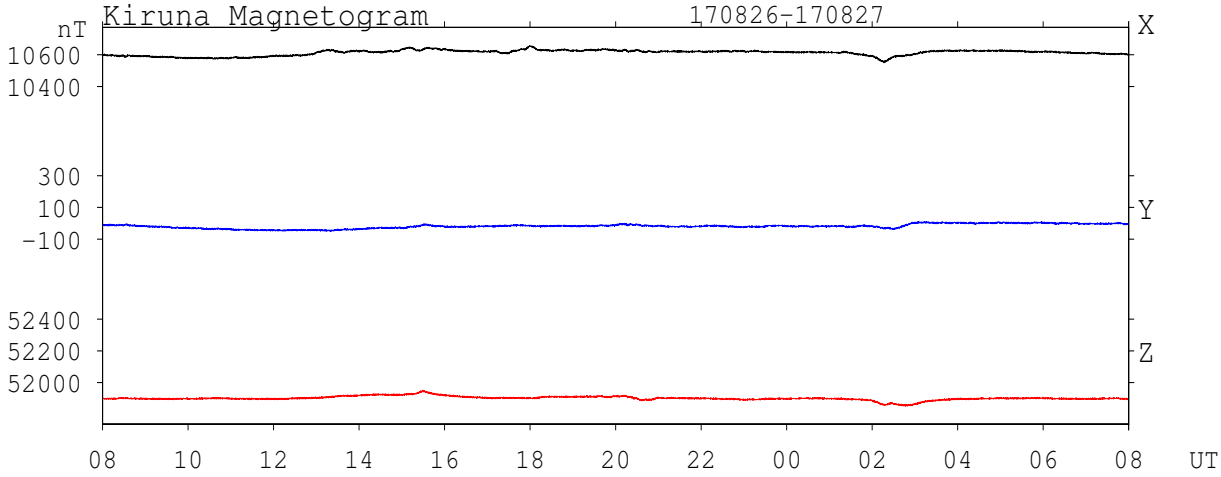

Kiruna Magnetogram
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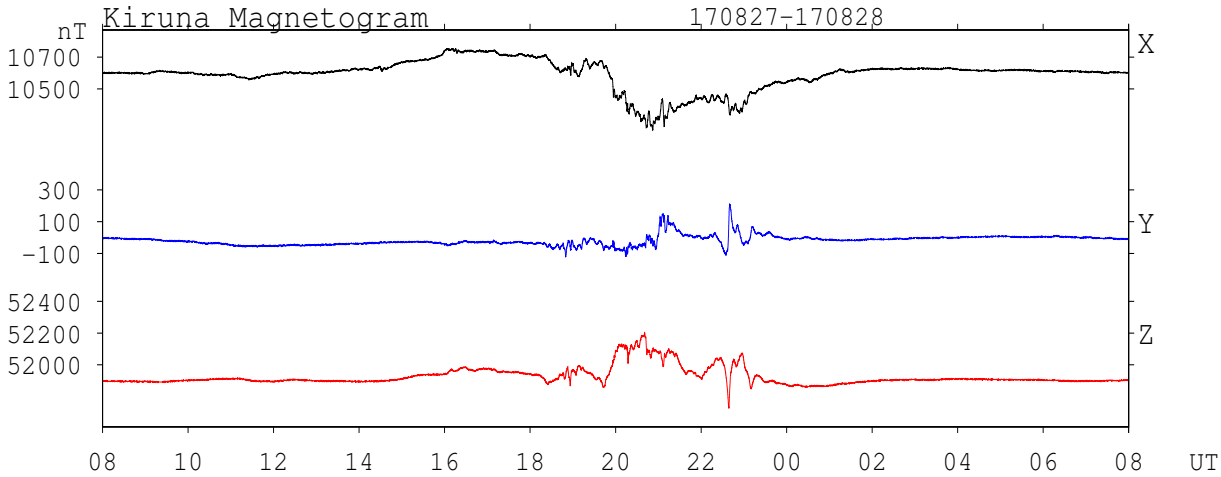

Kiruna Magnetogram
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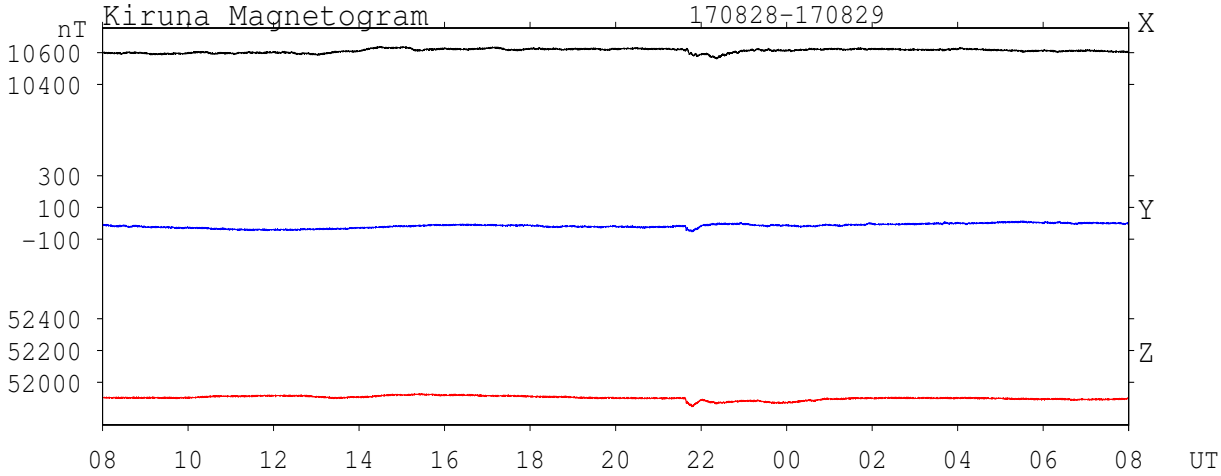

Kiruna Magnetogram
170823-170824
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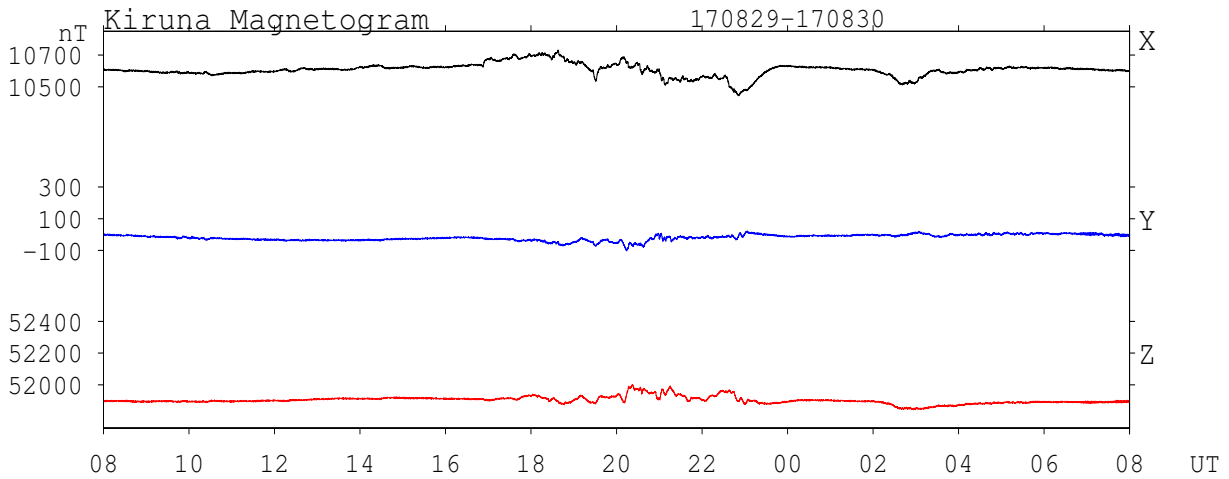

Kiruna Magnetogram
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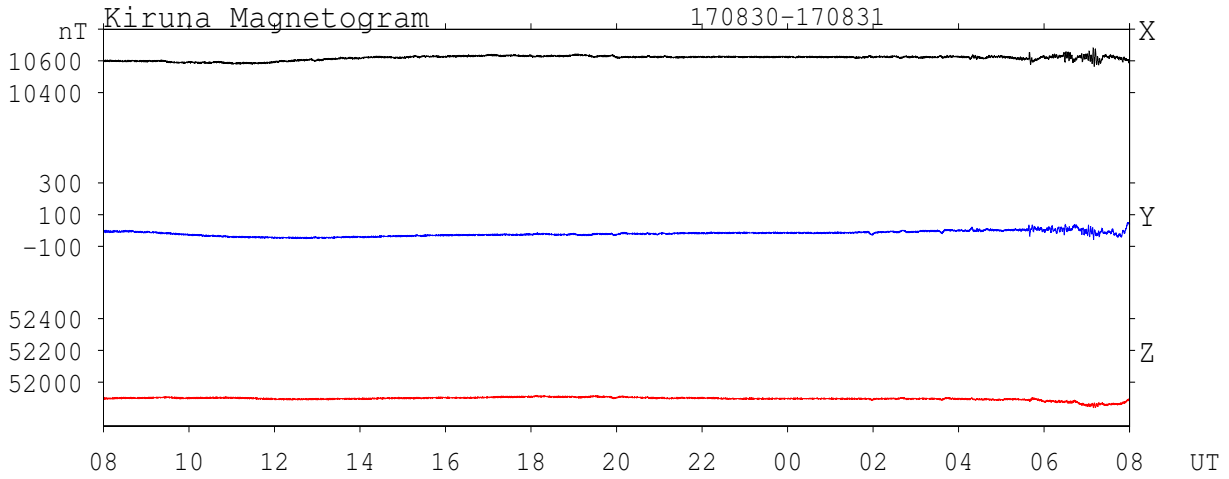

Kiruna Magnetogram
170825-170826
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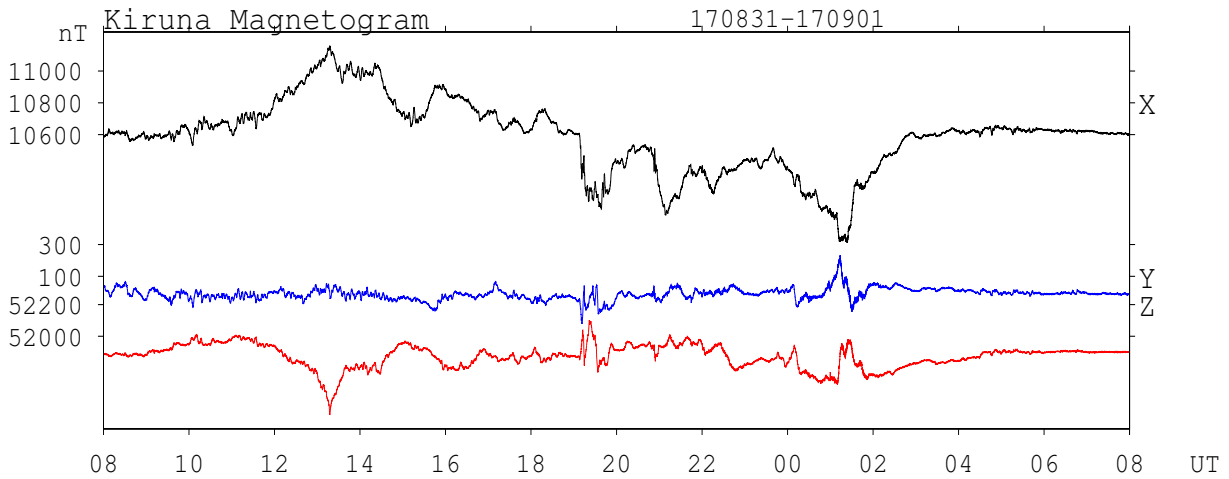

Kiruna Magnetogram
170826-170827
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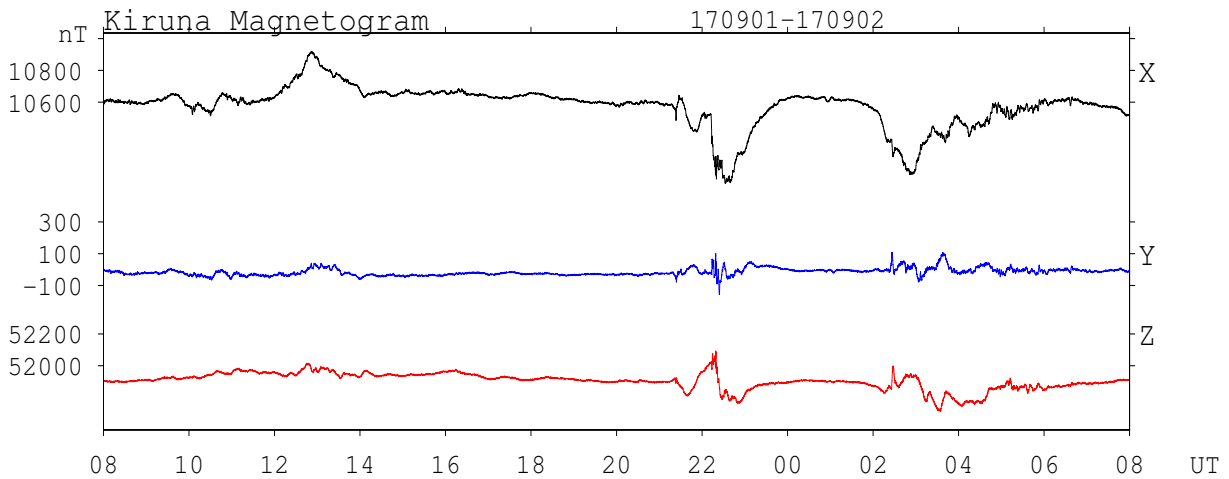

Kiruna Magnetogram
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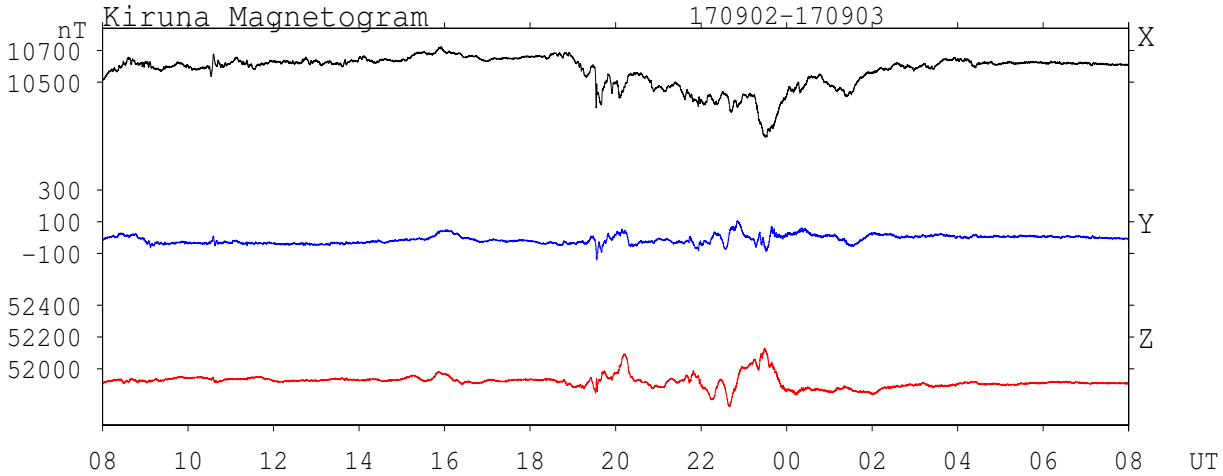

Kiruna Magnetogram
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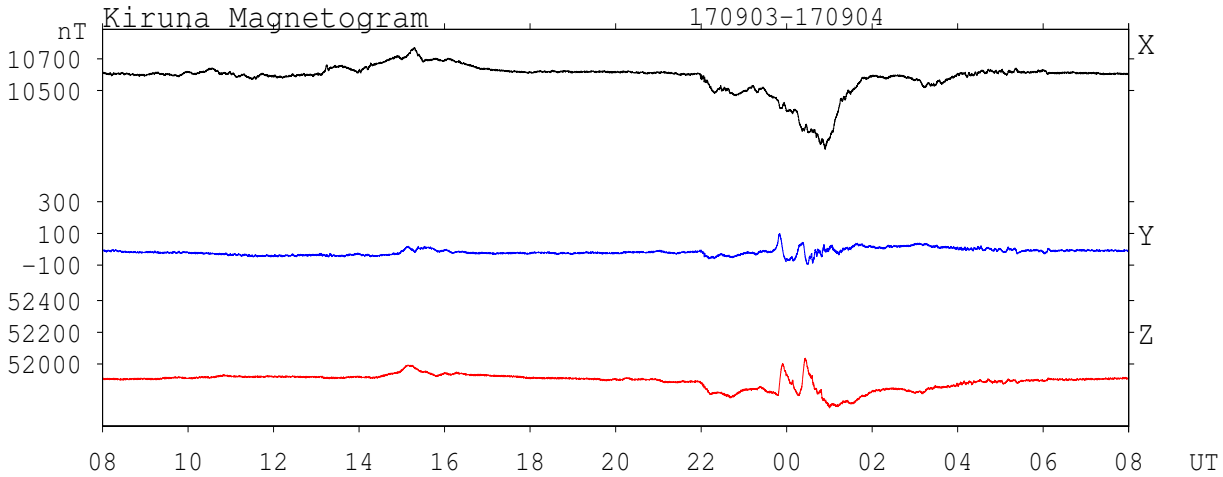

Kiruna Magnetogram
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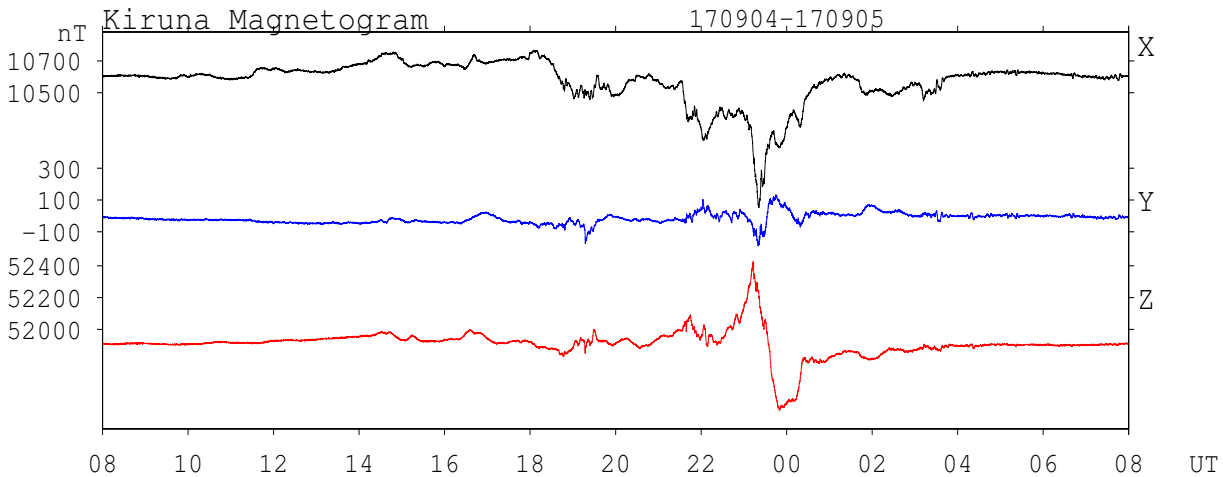

Kiruna Magnetogram
170830-170831
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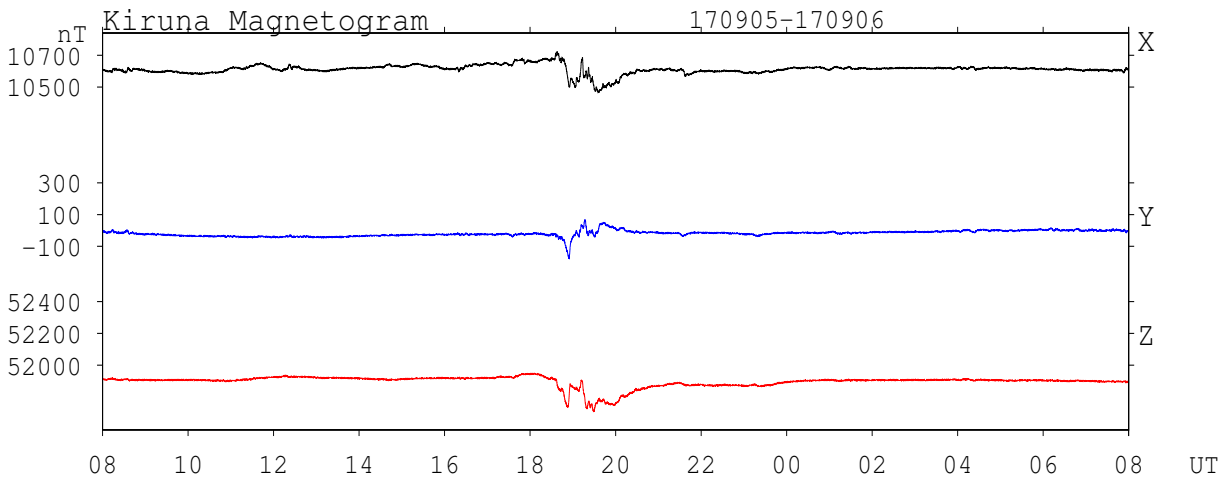

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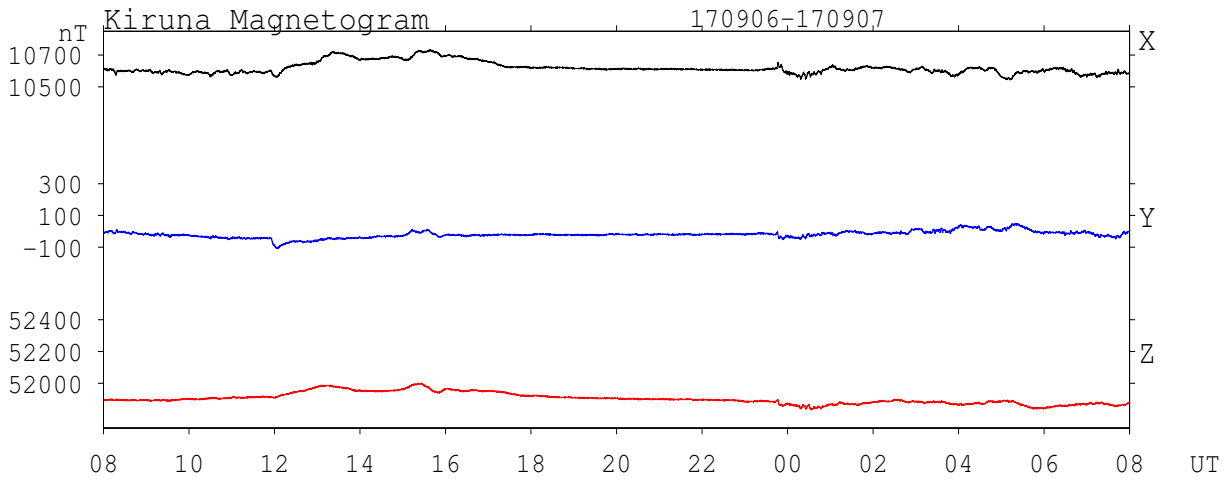

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Y
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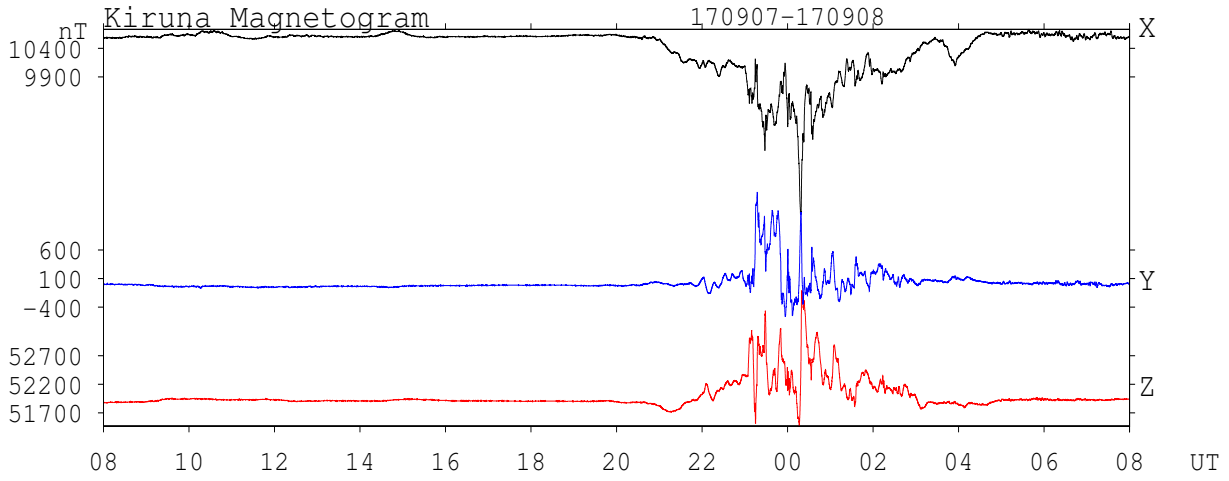

Kiruna Magnetogram
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Y
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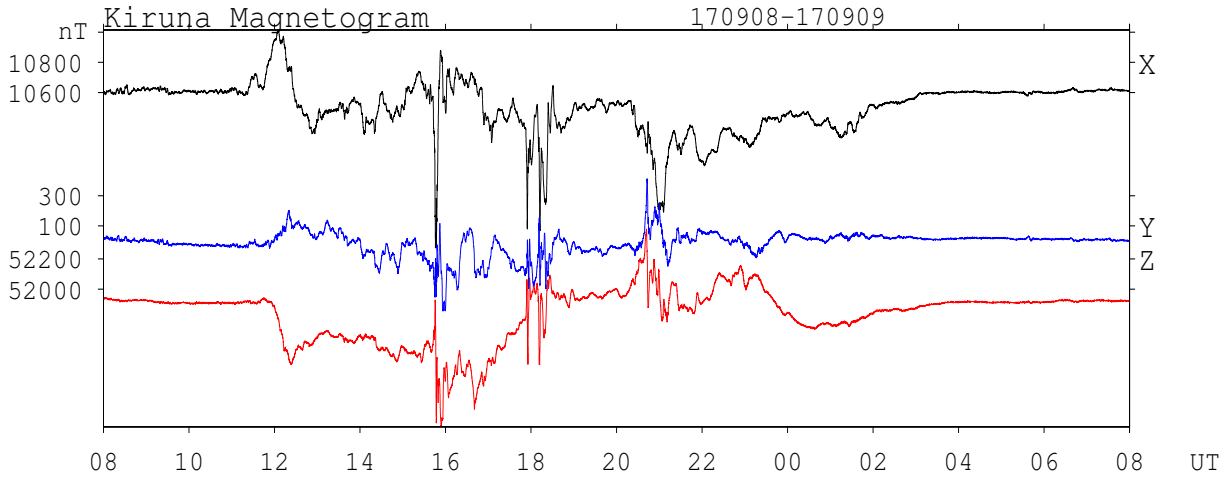

Kiruna Magnetogram
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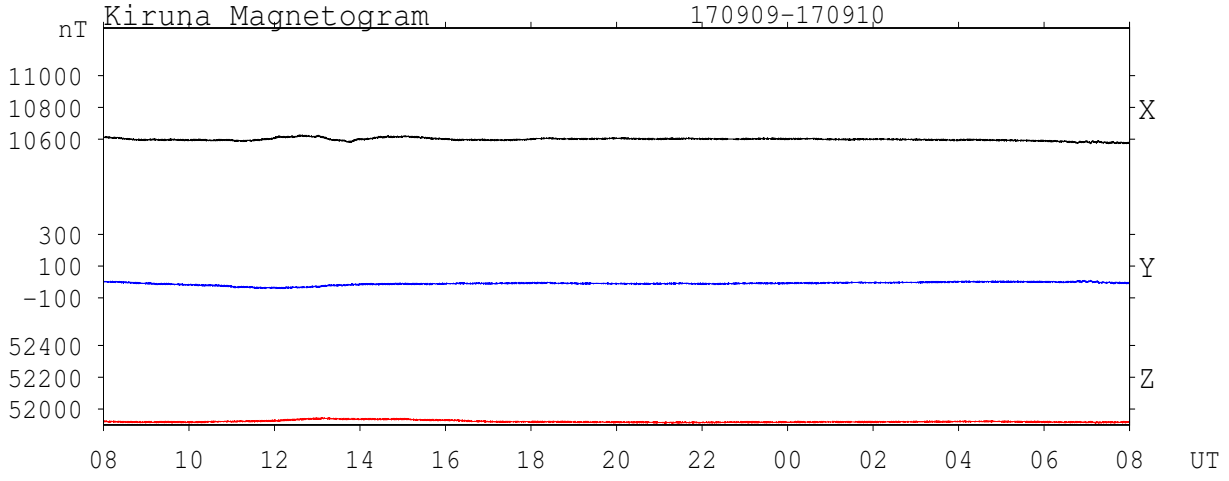

Kiruna Magnetogram
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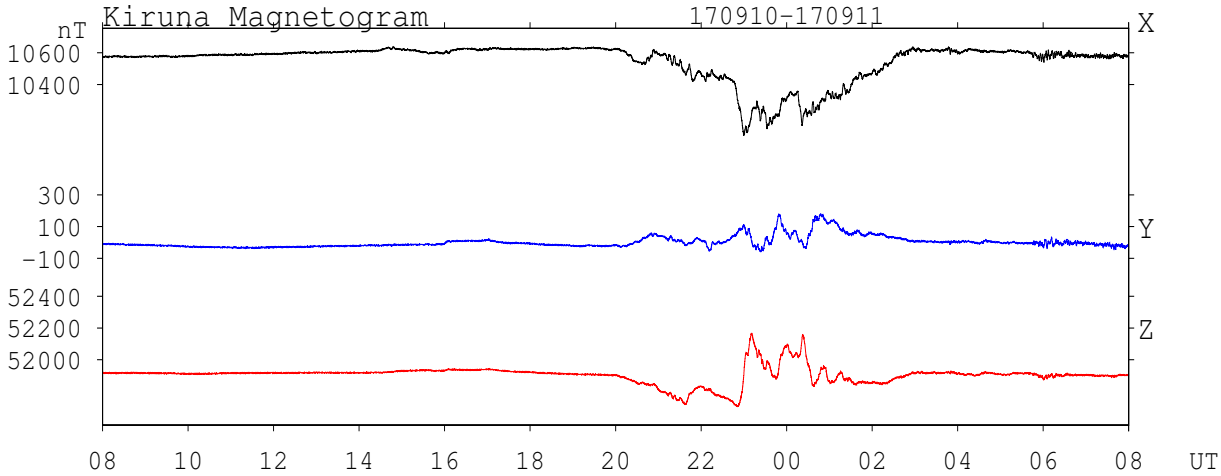

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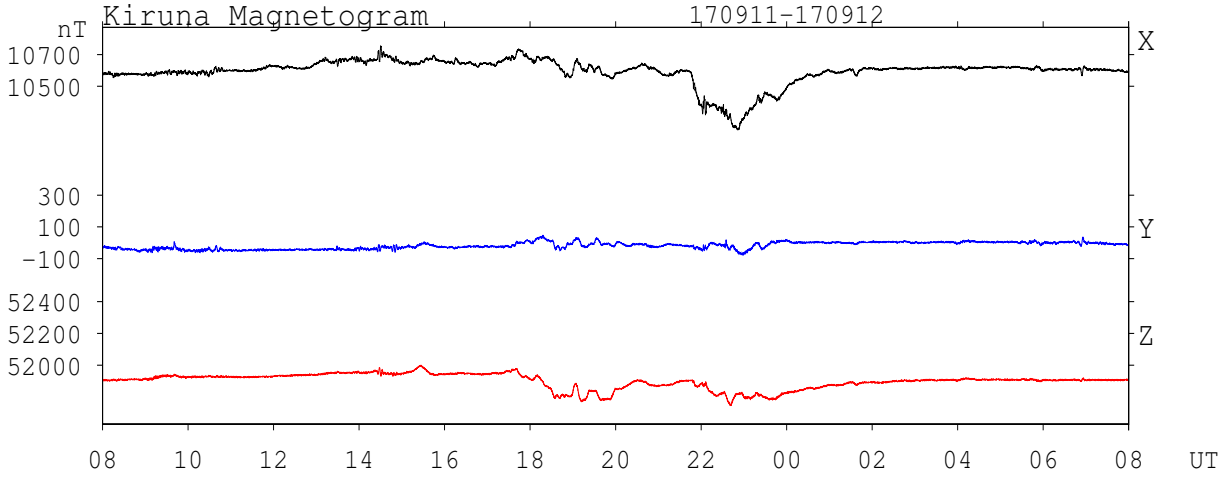

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300
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Y
Z
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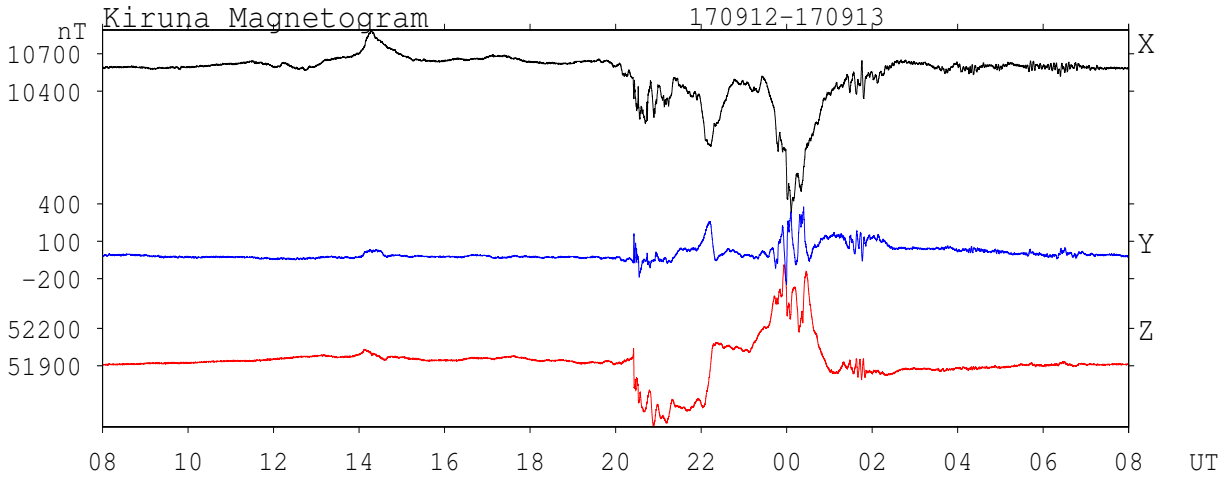

Kiruna Magnetogram
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600
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-400
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52200
51700
X
Y
Z
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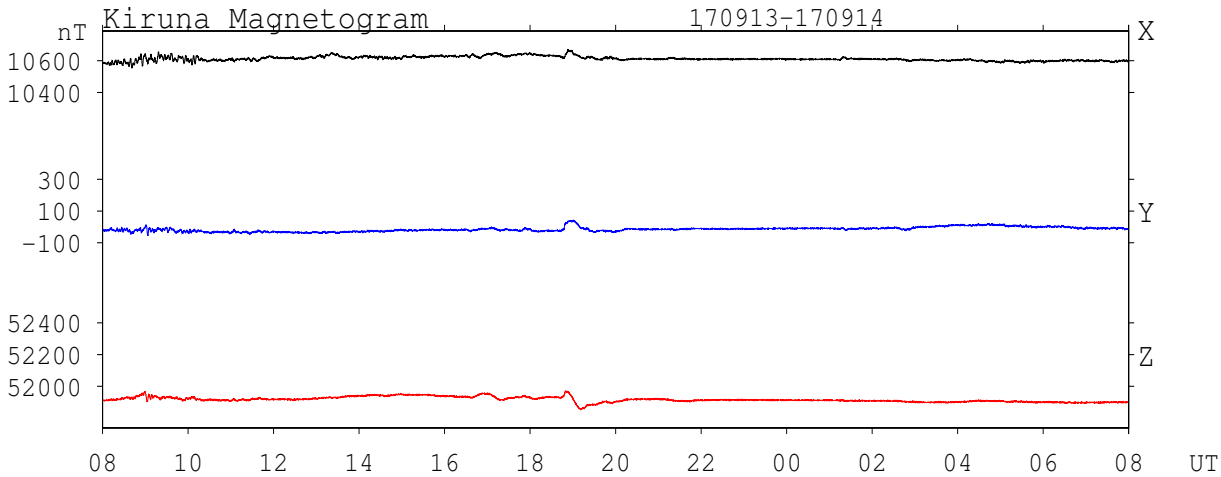

Kiruna Magnetogram
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Z
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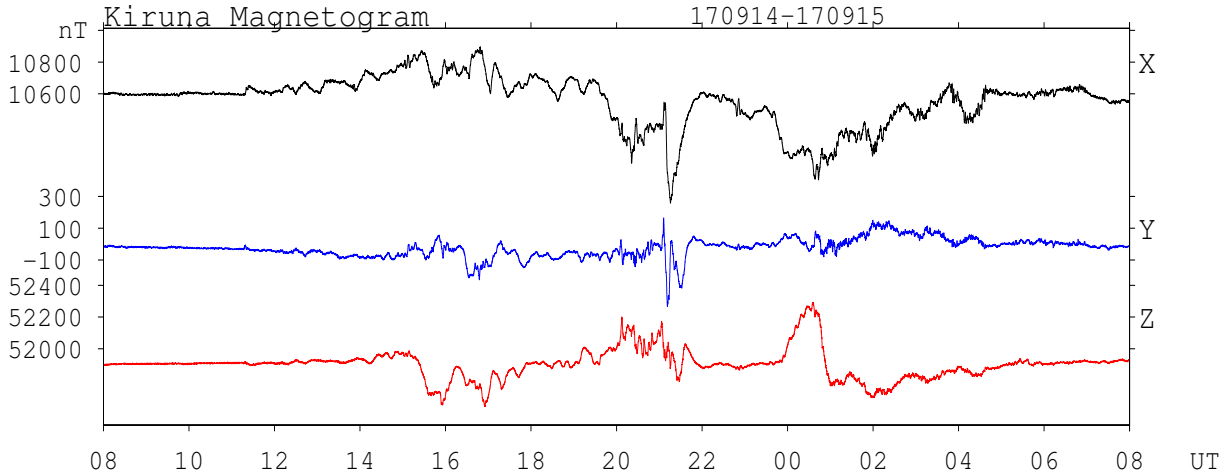

Kiruna Magnetogram
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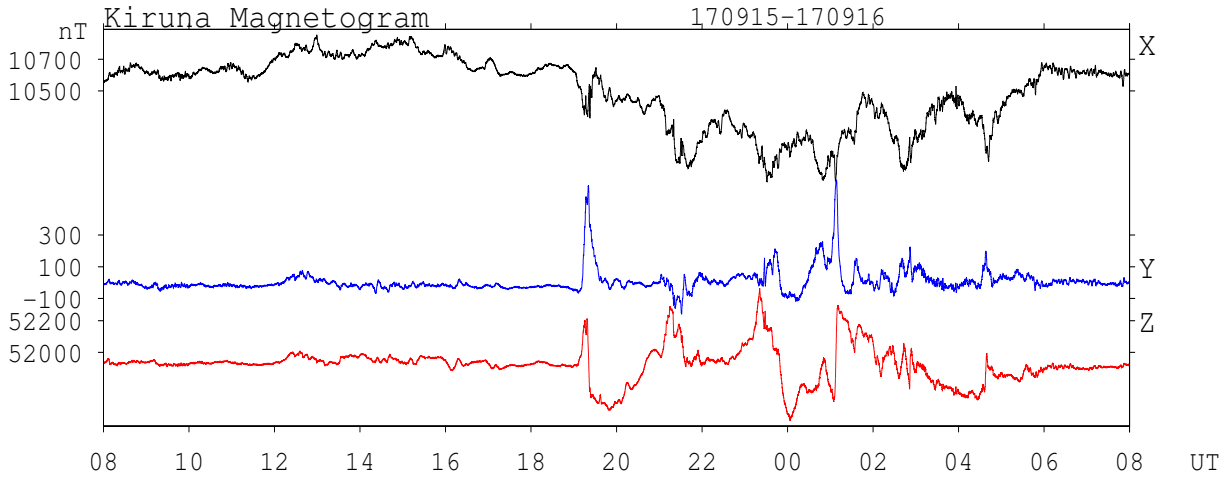

Kiruna Magnetogram
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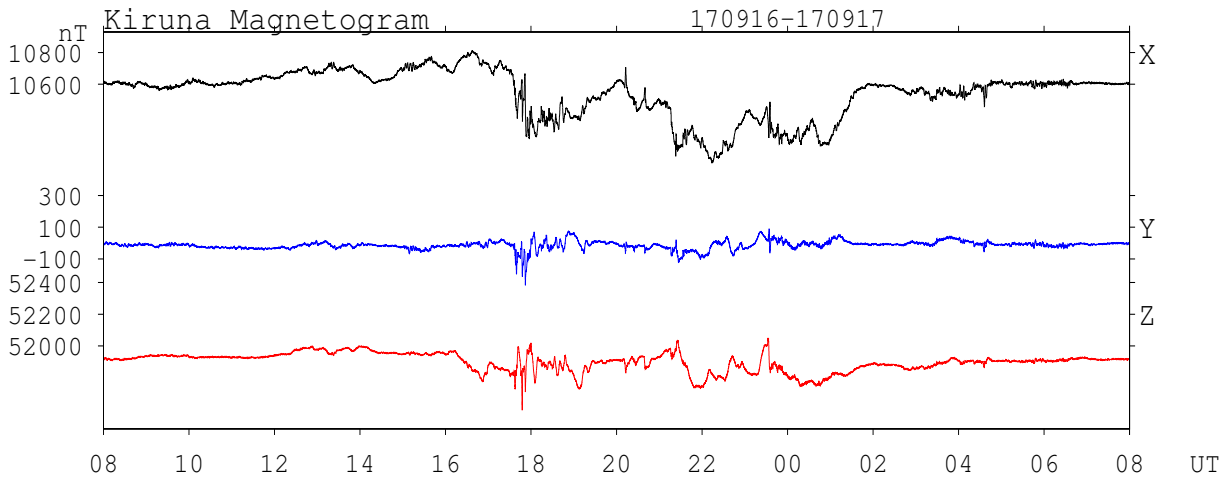

Kiruna Magnetogram
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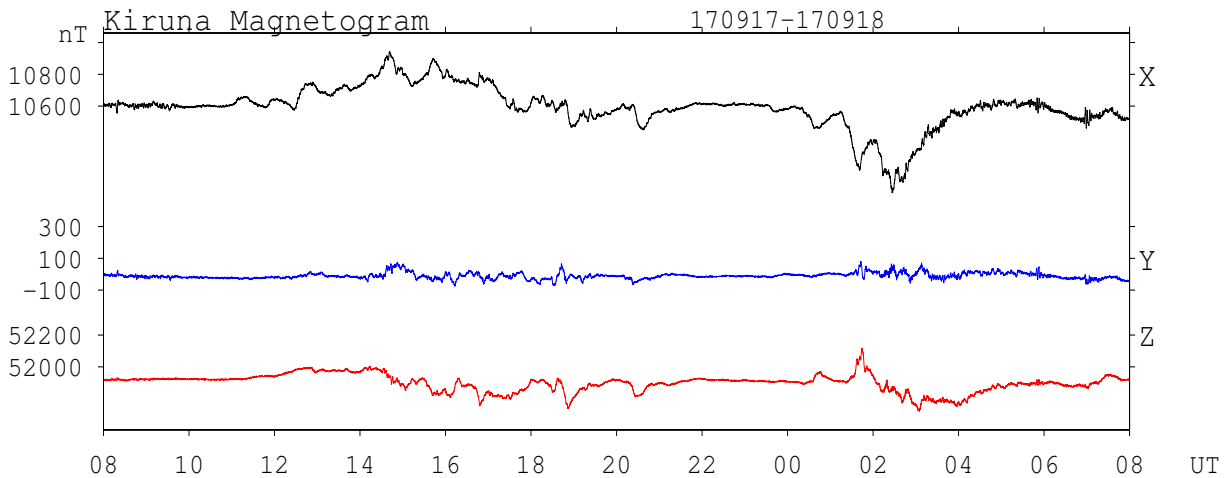

Kiruna Magnetogram
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Y
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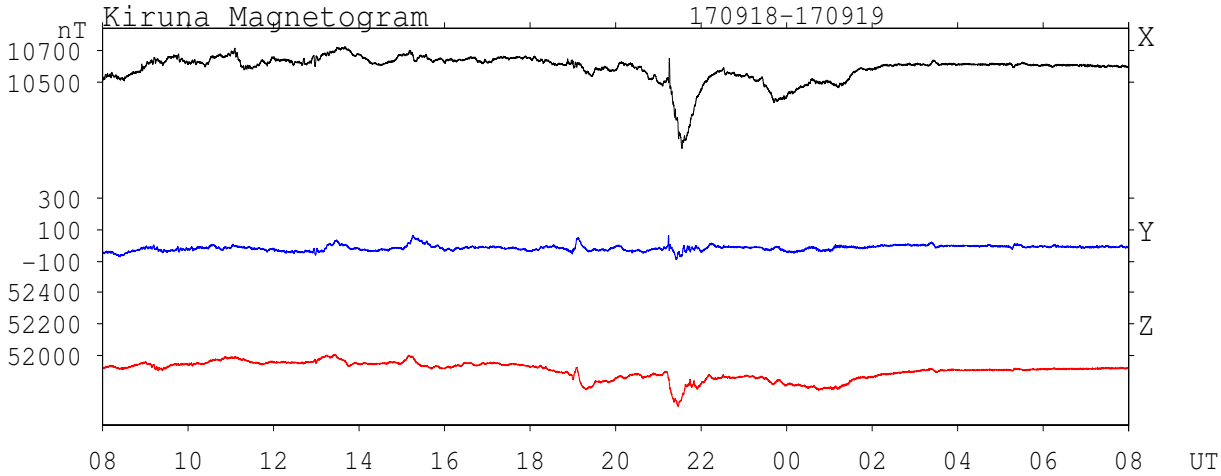

Kiruna Magnetogram
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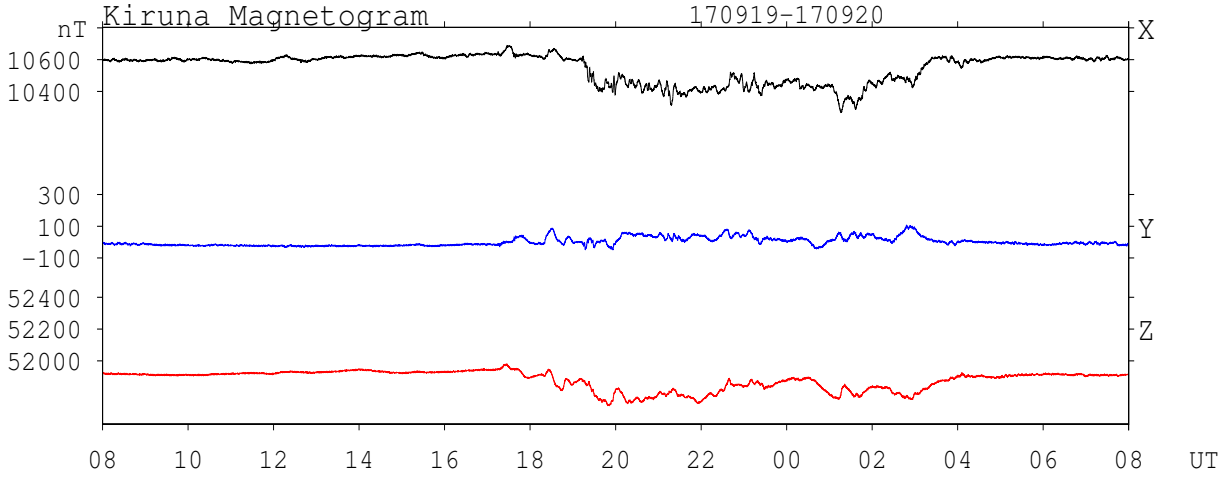

Kiruna Magnetogram
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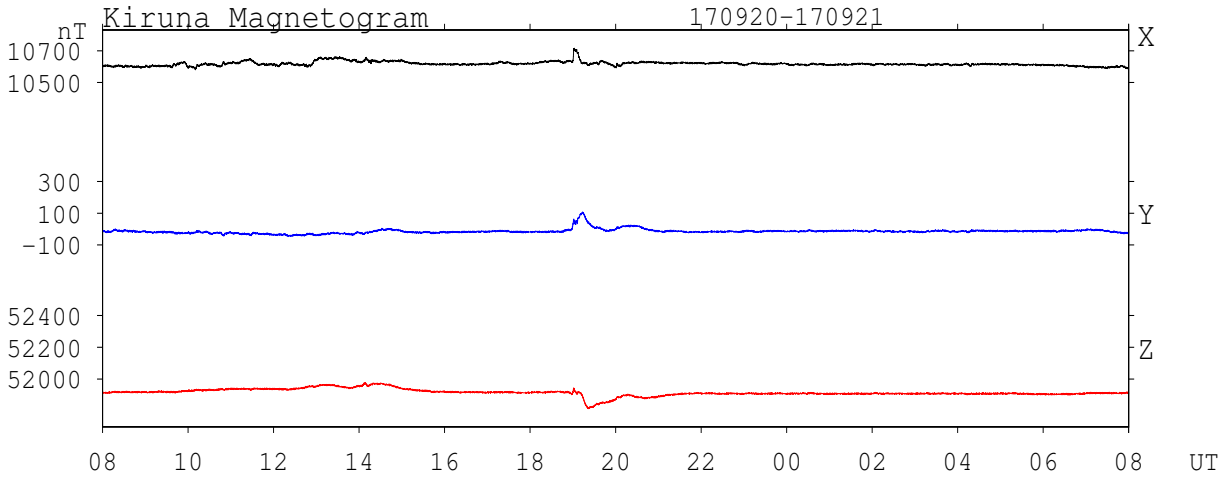

Kiruna Magnetogram
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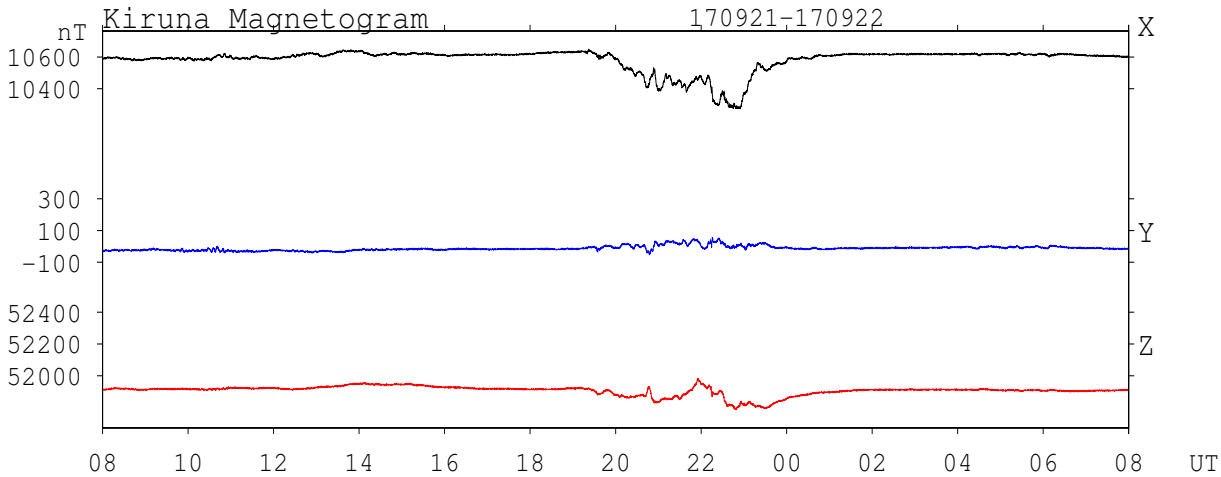

Kiruna Magnetogram
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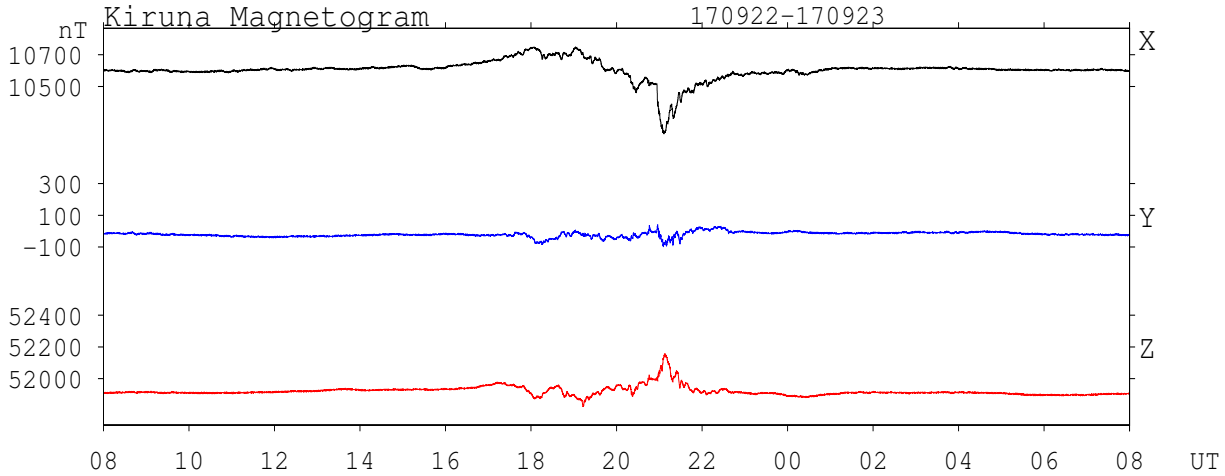

Kiruna Magnetogram
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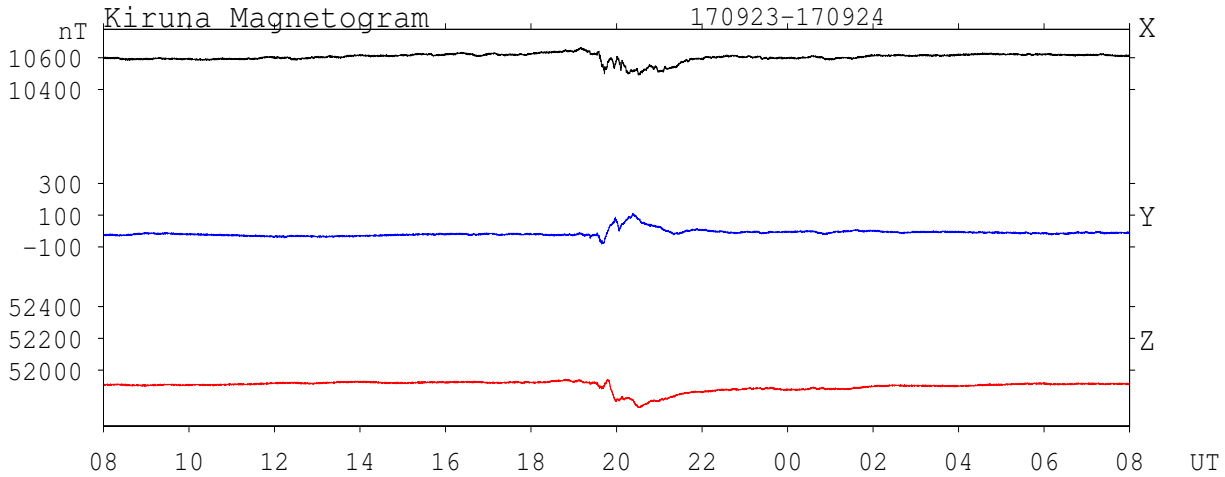

Kiruna Magnetogram
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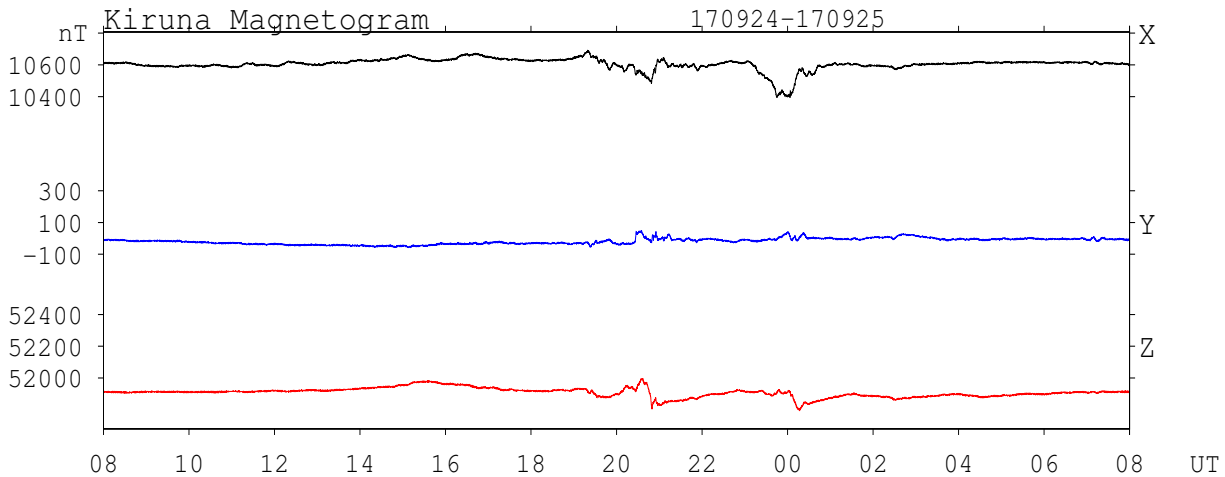

Kiruna Magnetogram
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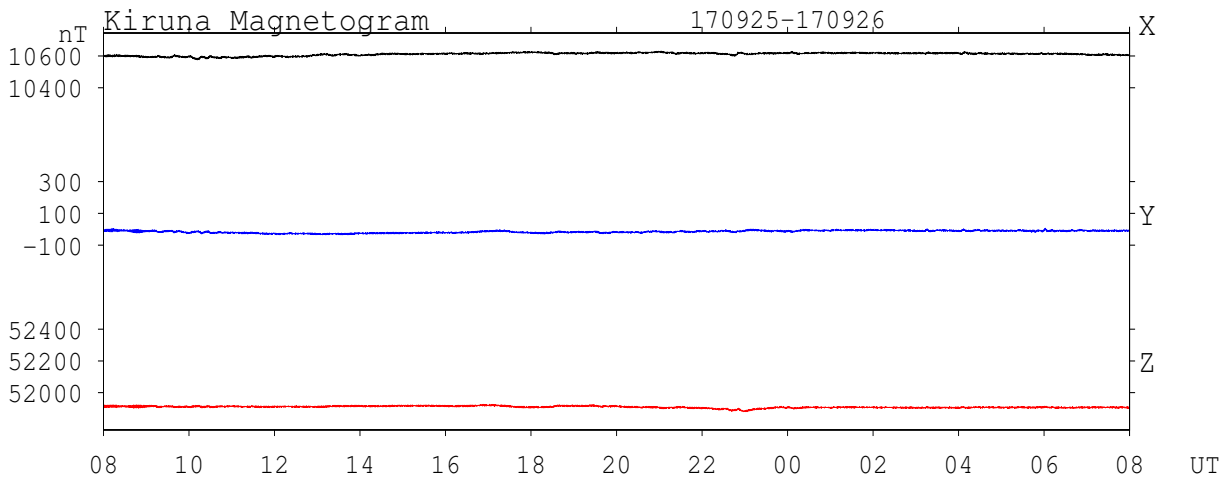

Kiruna Magnetogram
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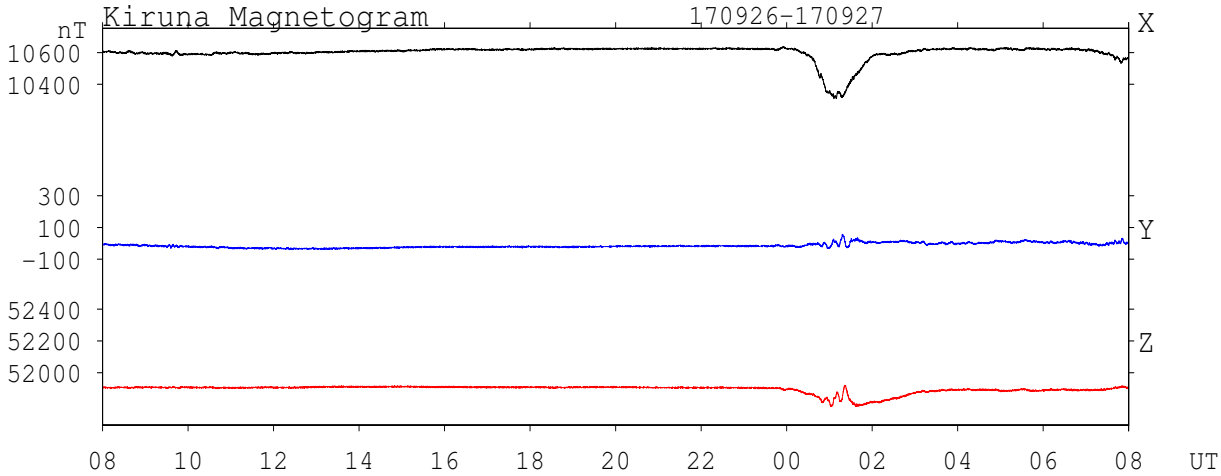

Kiruna Magnetogram
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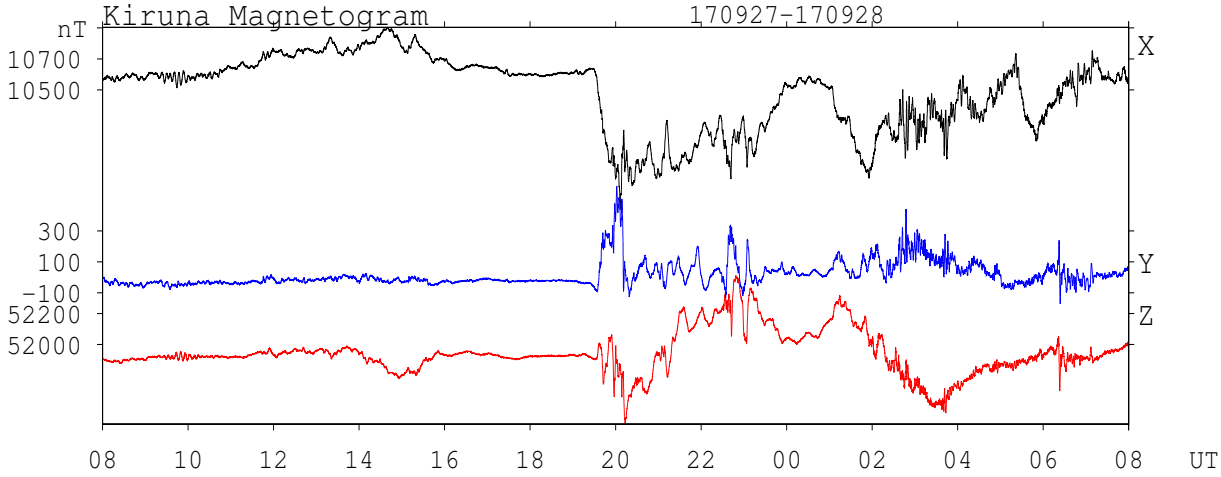

Kiruna Magnetogram
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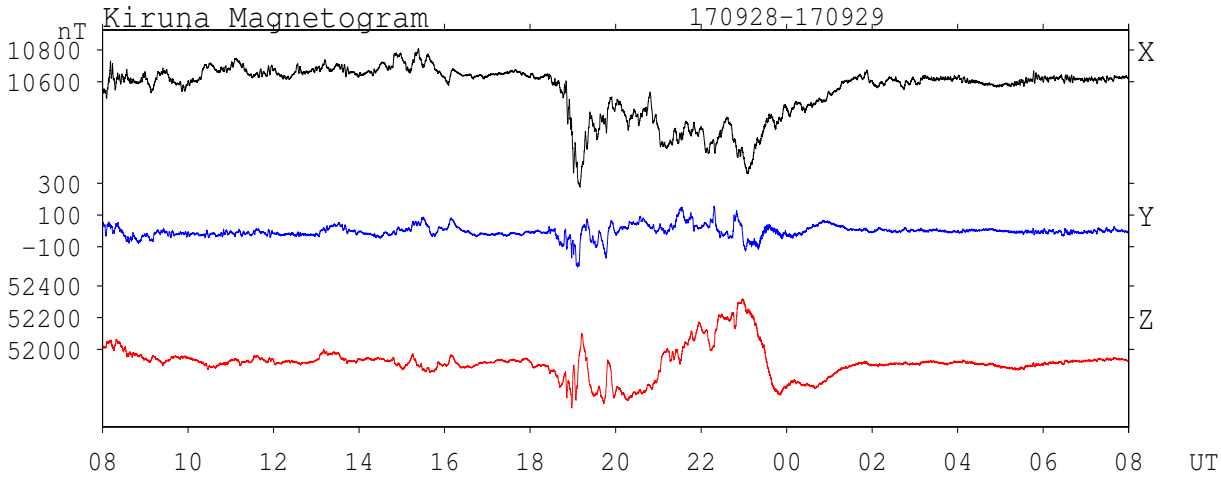

Kiruna Magnetogram
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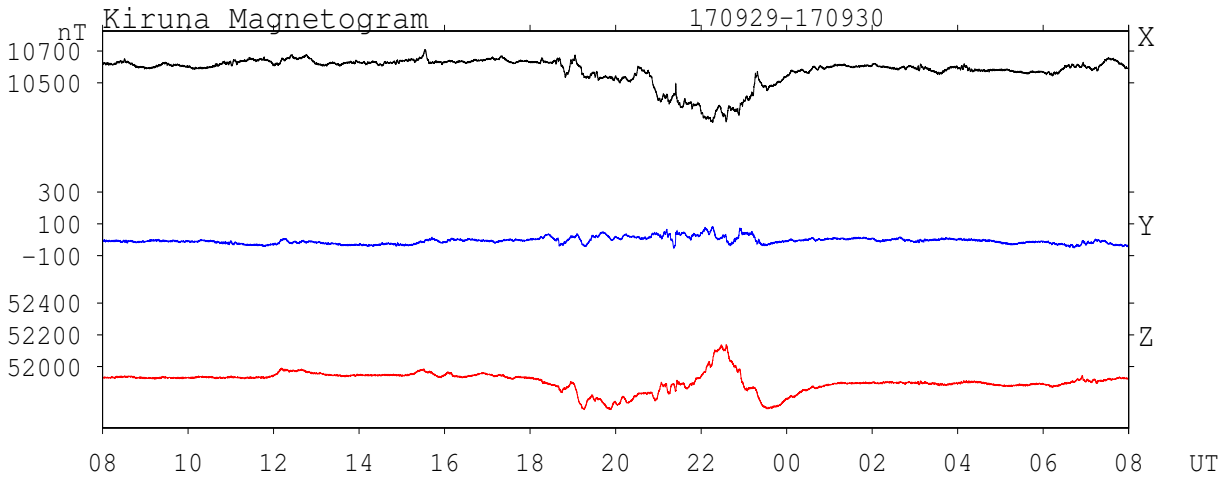

Kiruna Magnetogram
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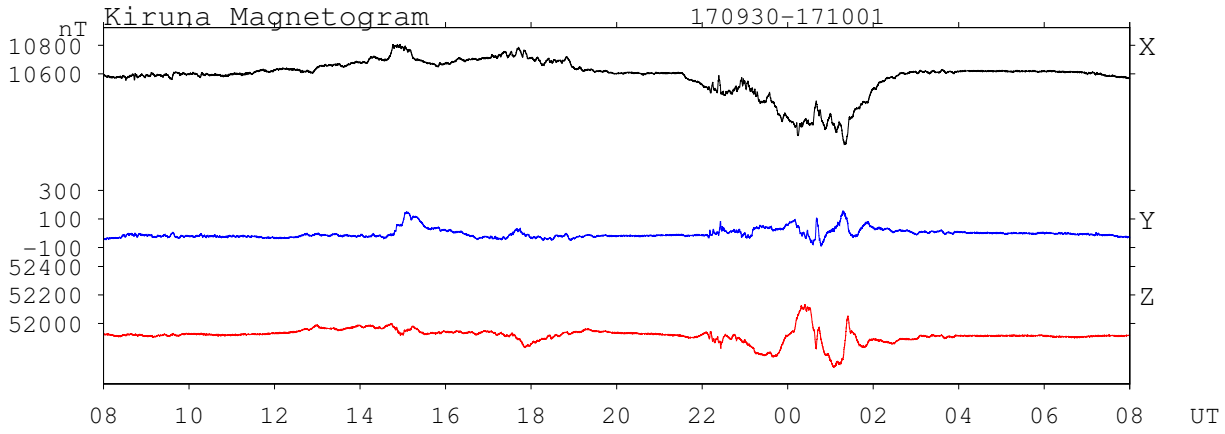

Kiruna Magnetogram
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Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
170926-170927
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52000
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
170927-170928
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10700
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X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
170928-170929
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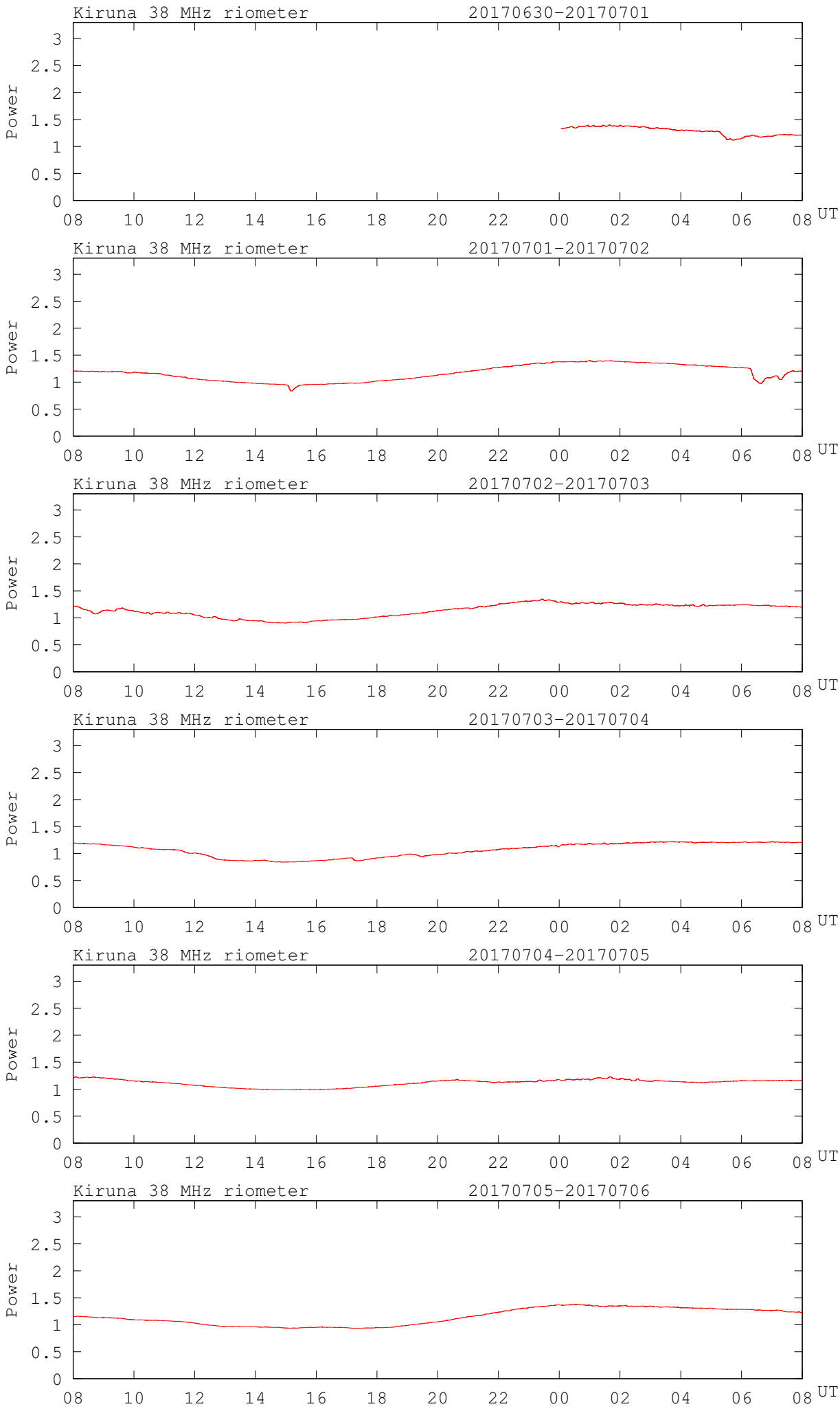

Kiruna Magnetogram
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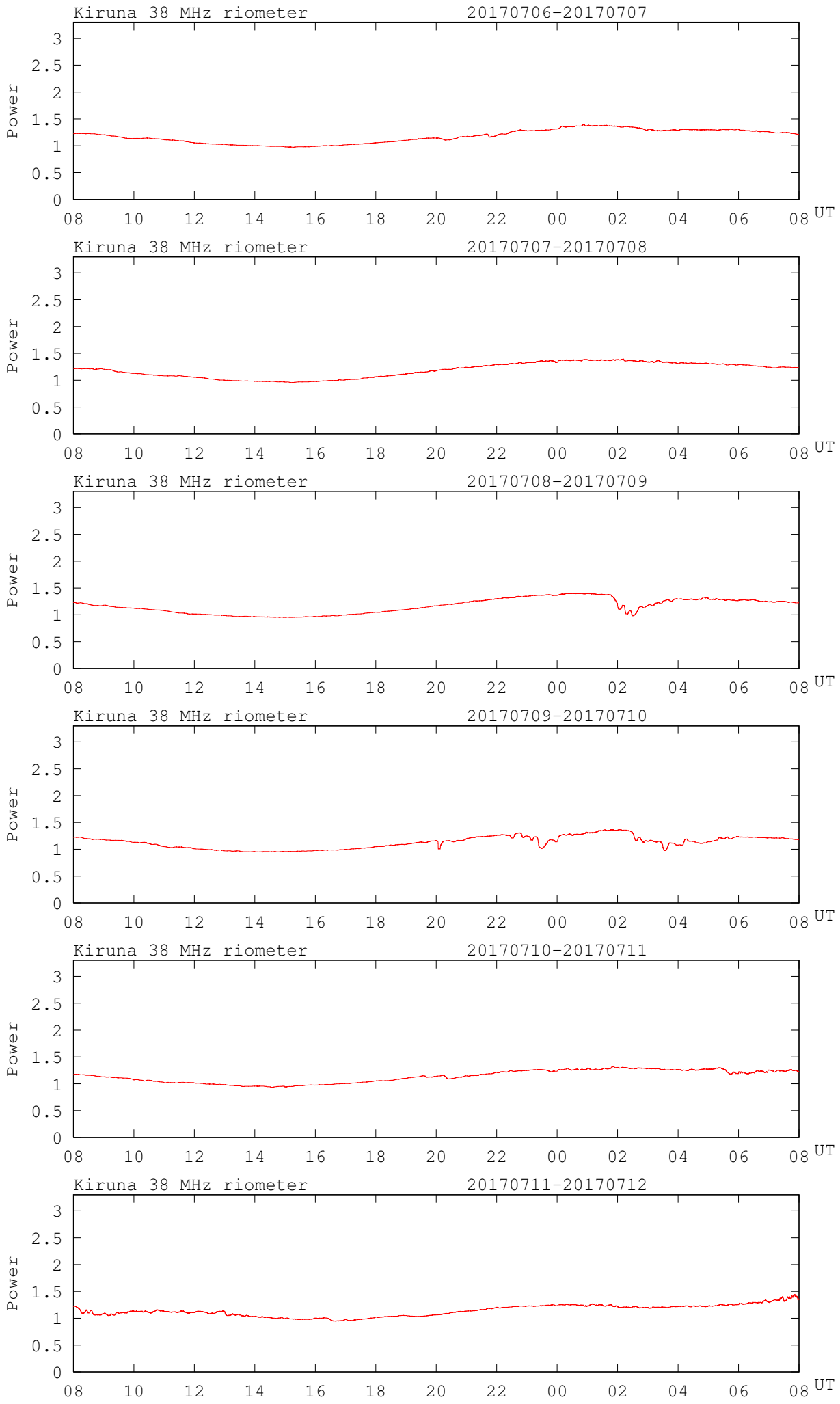

Kiruna Magnetogram
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UT

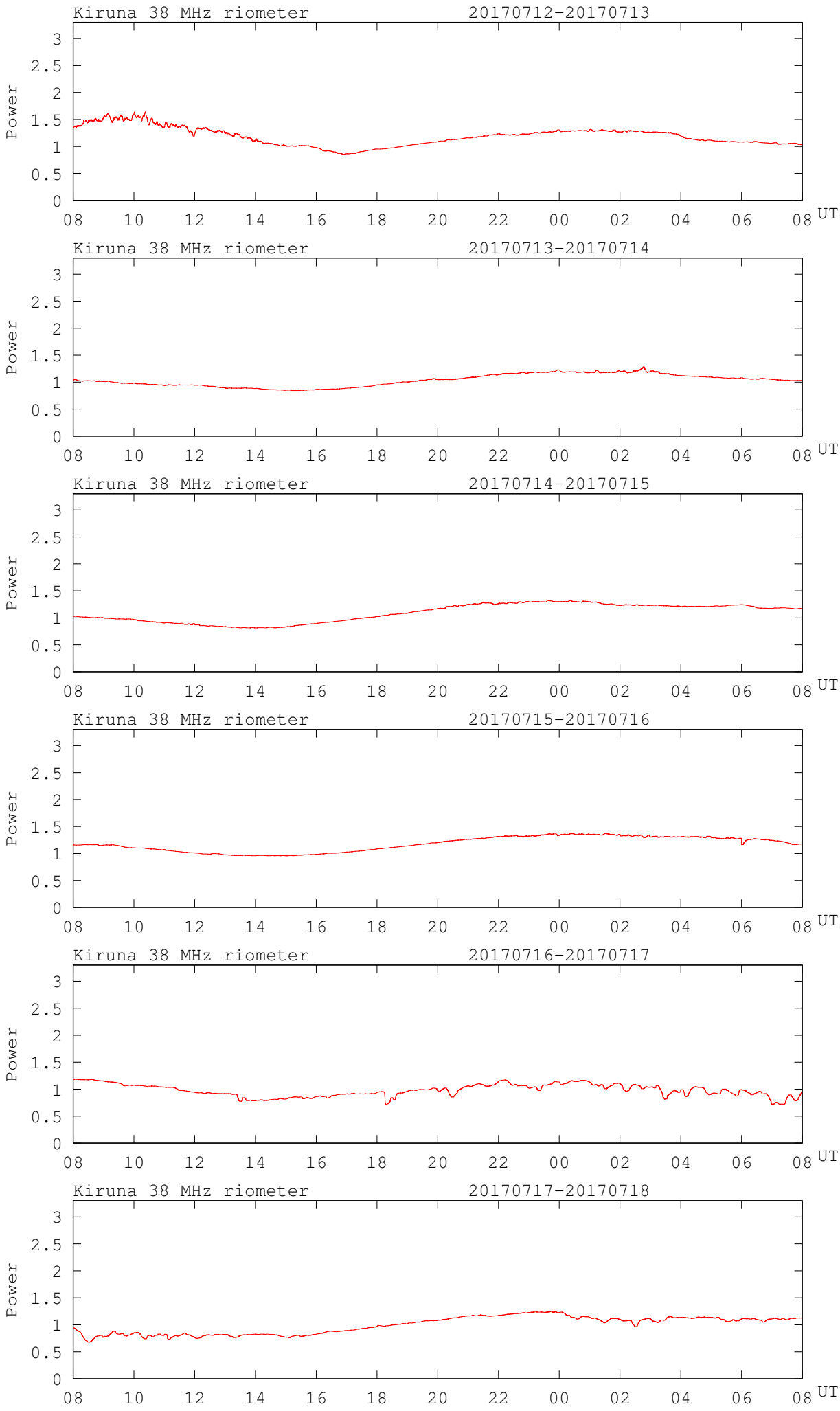
KIRUNA VERTICAL RIOMETER

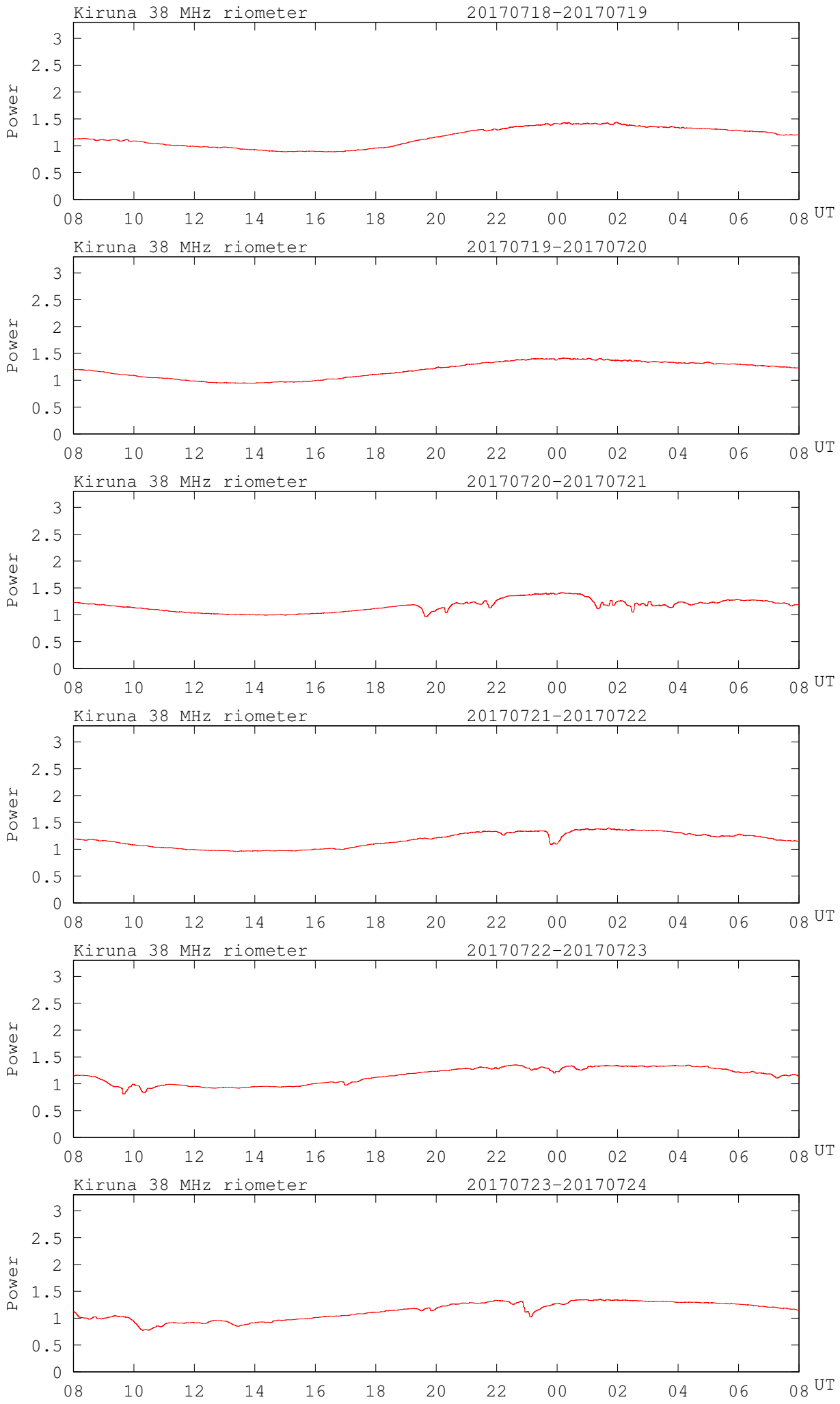
July - September 2017

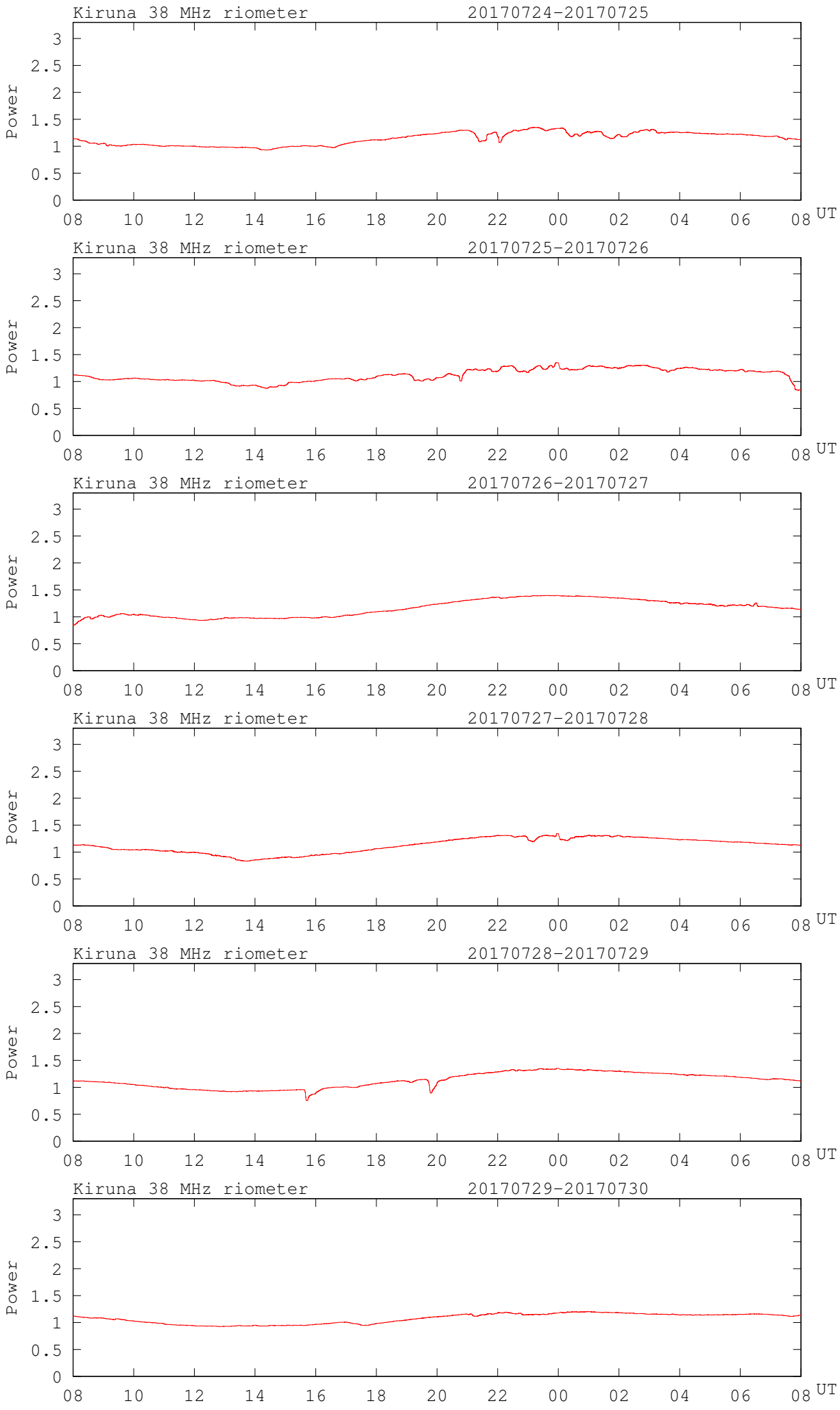
http://www.irf.se/~rio

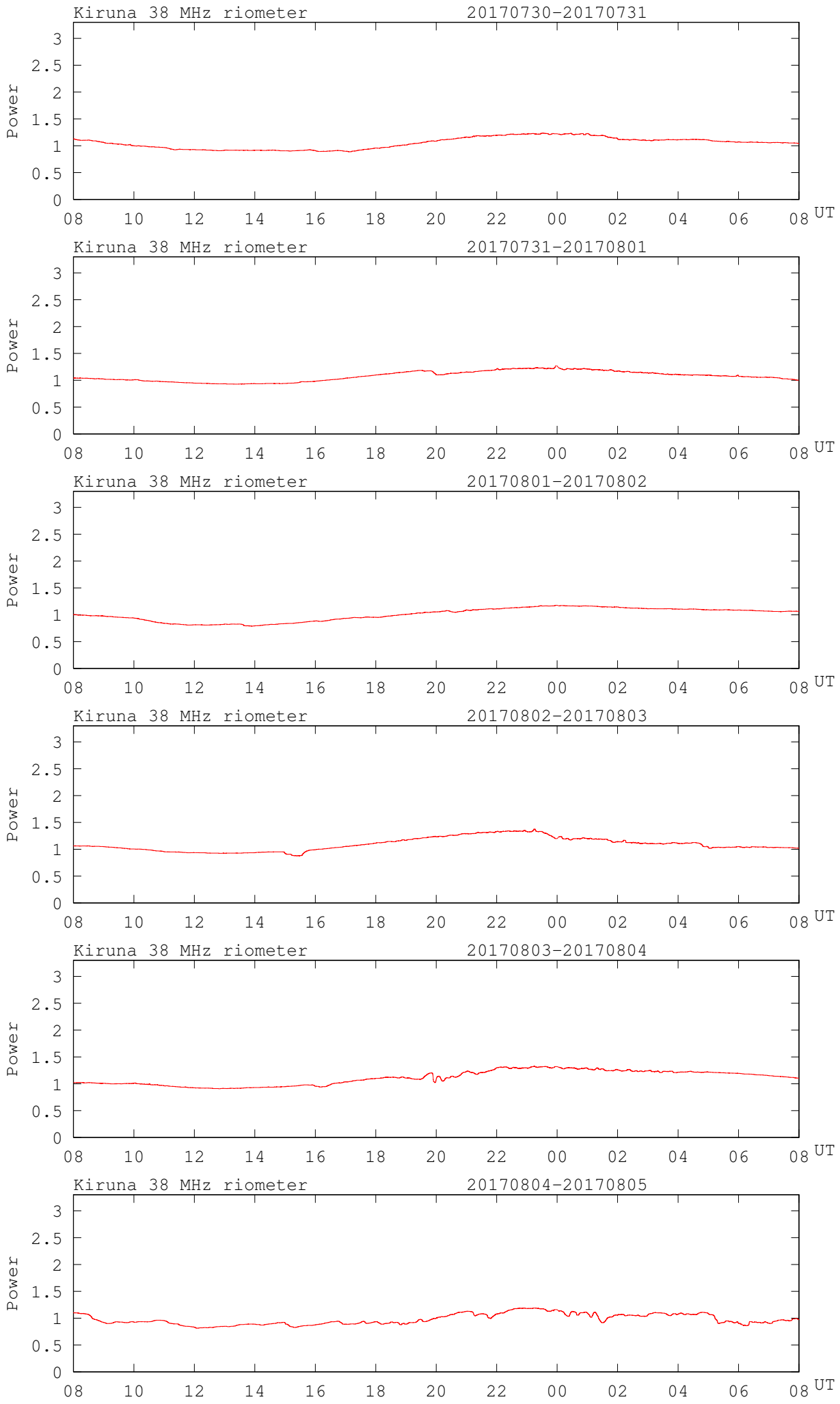

Kiruna 38 MHz riometer 20170630-20170701
Kiruna 38 MHz riometer 20170701-20170702
Kiruna 38 MHz riometer 20170702-20170703
Kiruna 38 MHz riometer 20170703-20170704
Kiruna 38 MHz riometer 20170704-20170705
Kiruna 38 MHz riometer 20170705-20170706
Power
0 0.5 1 1.5 2 2.5 3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

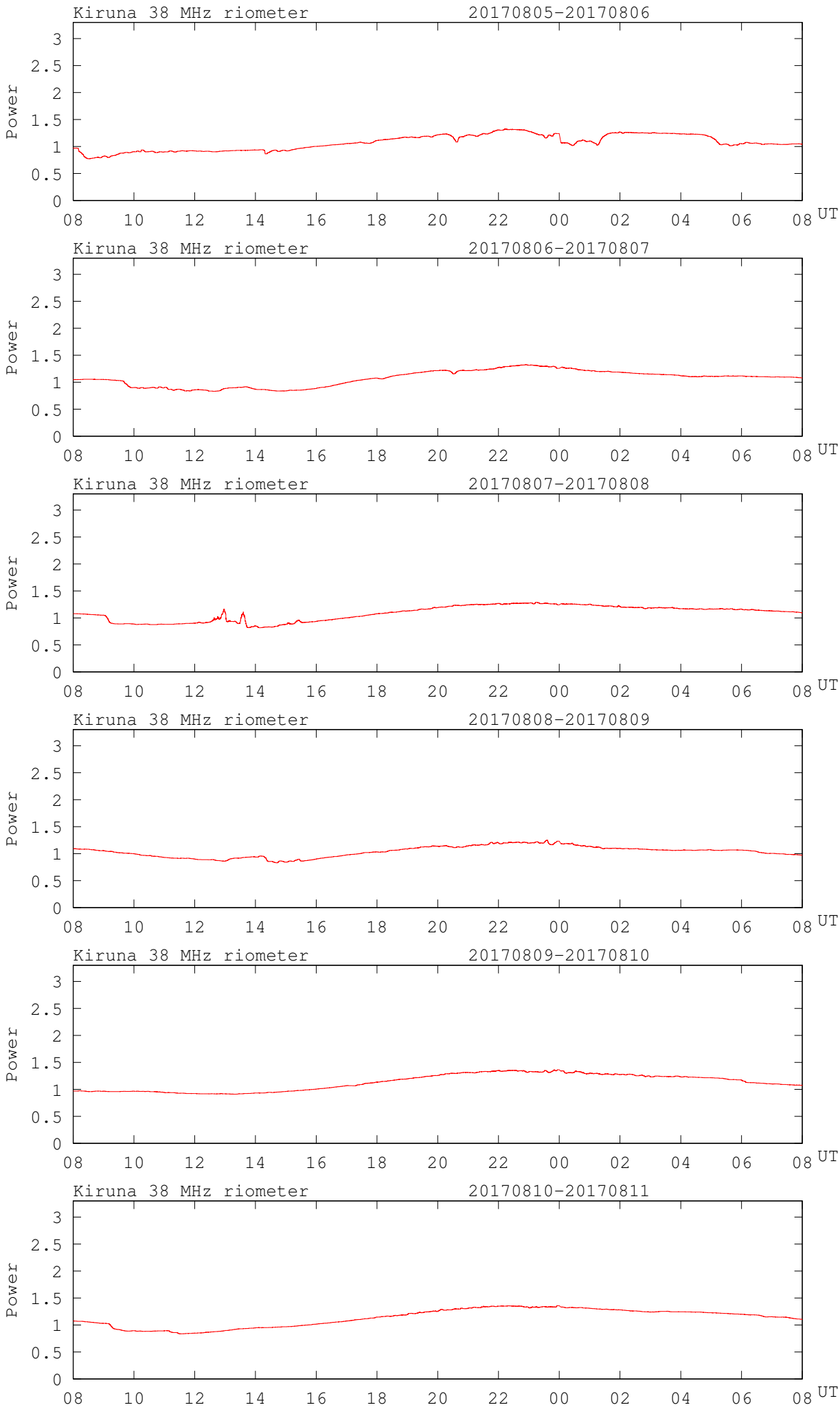

Kiruna 38 MHz riometer 20170706-20170707
Kiruna 38 MHz riometer 20170707-20170708
Kiruna 38 MHz riometer 20170708-20170709
Kiruna 38 MHz riometer 20170709-20170710
Kiruna 38 MHz riometer 20170710-20170711
Kiruna 38 MHz riometer 20170711-20170712
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT

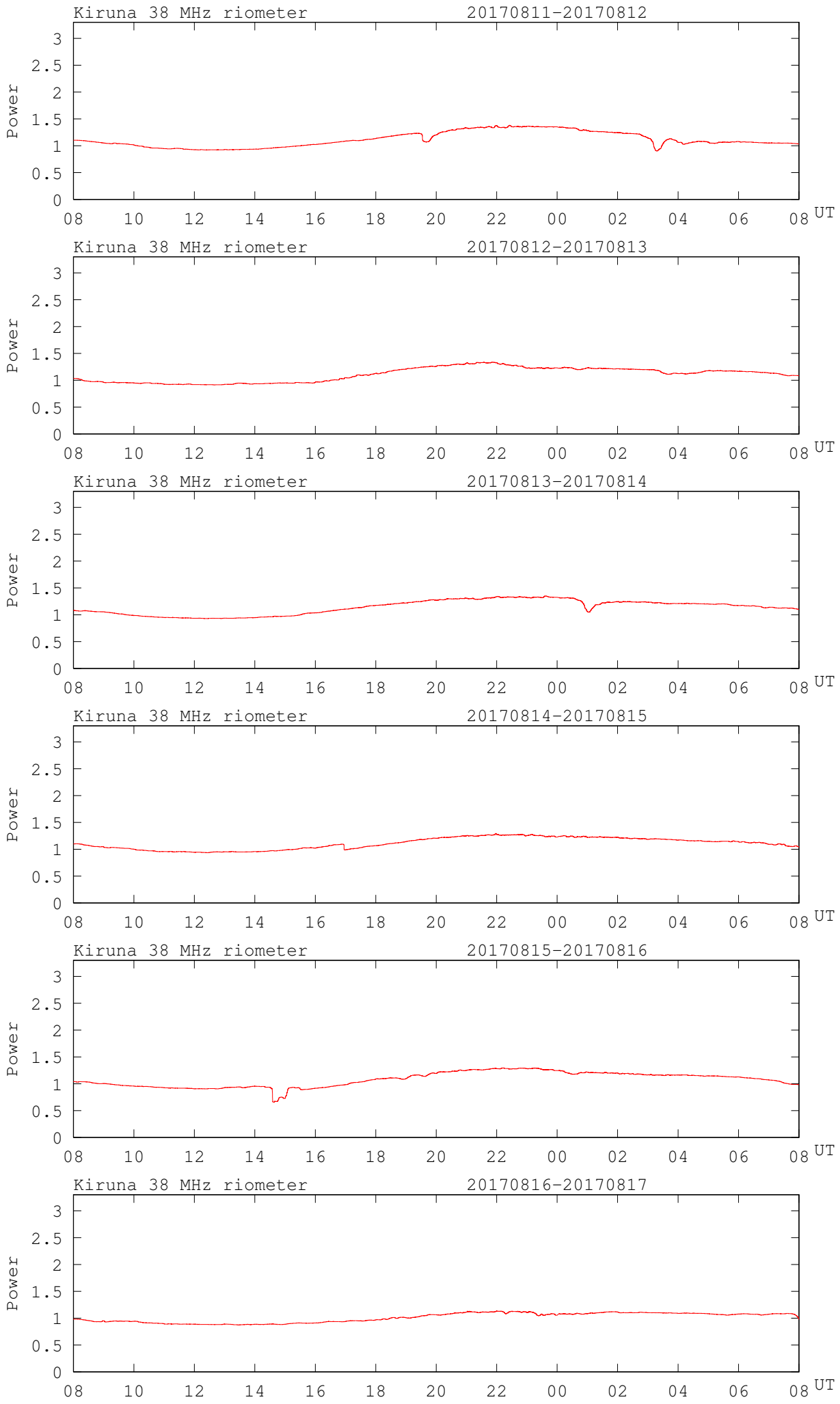

Kiruna 38 MHz riometer 20170712-20170713
Kiruna 38 MHz riometer 20170713-20170714
Kiruna 38 MHz riometer 20170714-20170715
Kiruna 38 MHz riometer 20170715-20170716
Kiruna 38 MHz riometer 20170716-20170717
Kiruna 38 MHz riometer 20170717-20170718
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT

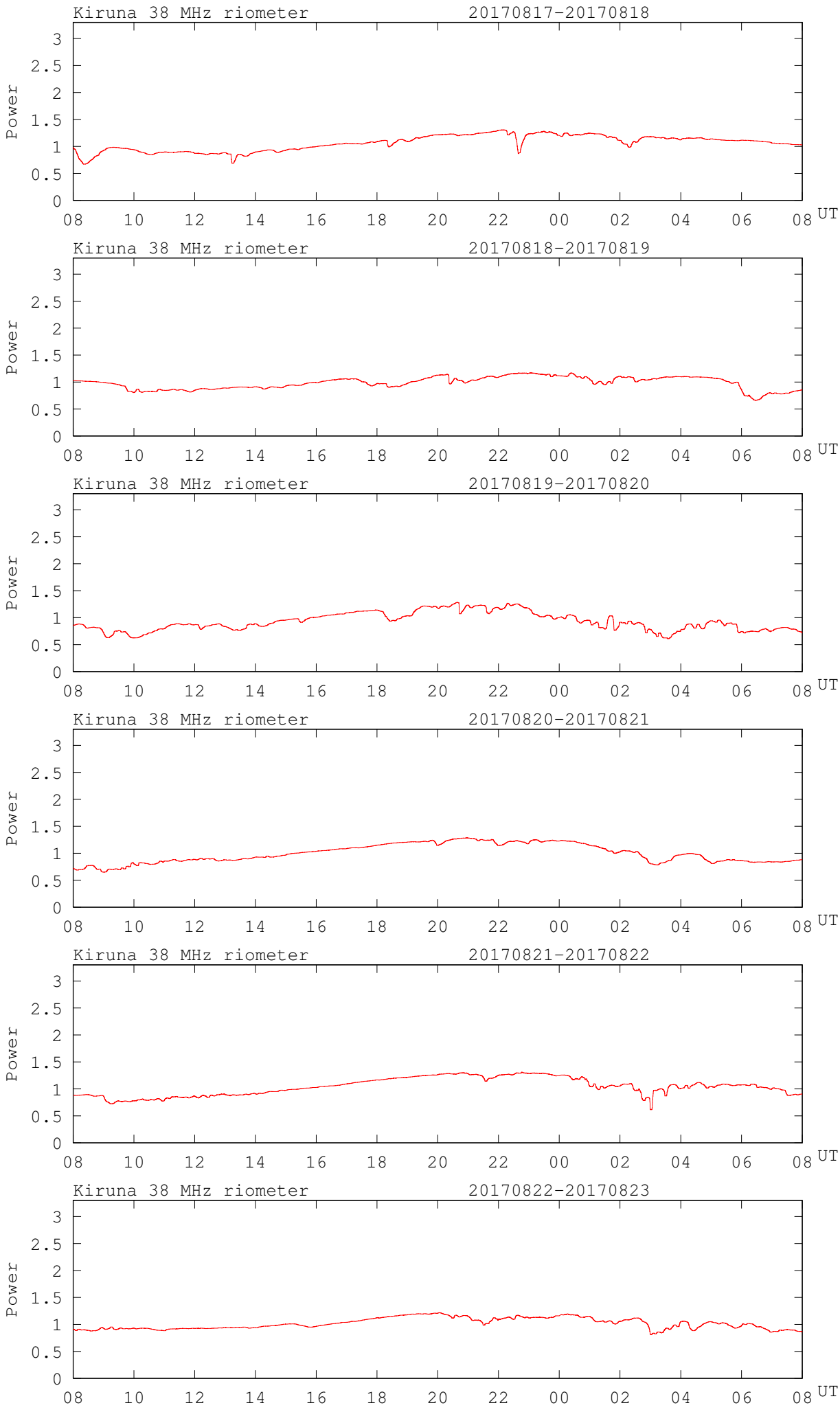

Kiruna 38 MHz riometer 20170718-20170719
Kiruna 38 MHz riometer 20170719-20170720
Kiruna 38 MHz riometer 20170720-20170721
Kiruna 38 MHz riometer 20170721-20170722
Kiruna 38 MHz riometer 20170722-20170723
Kiruna 38 MHz riometer 20170723-20170724
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT

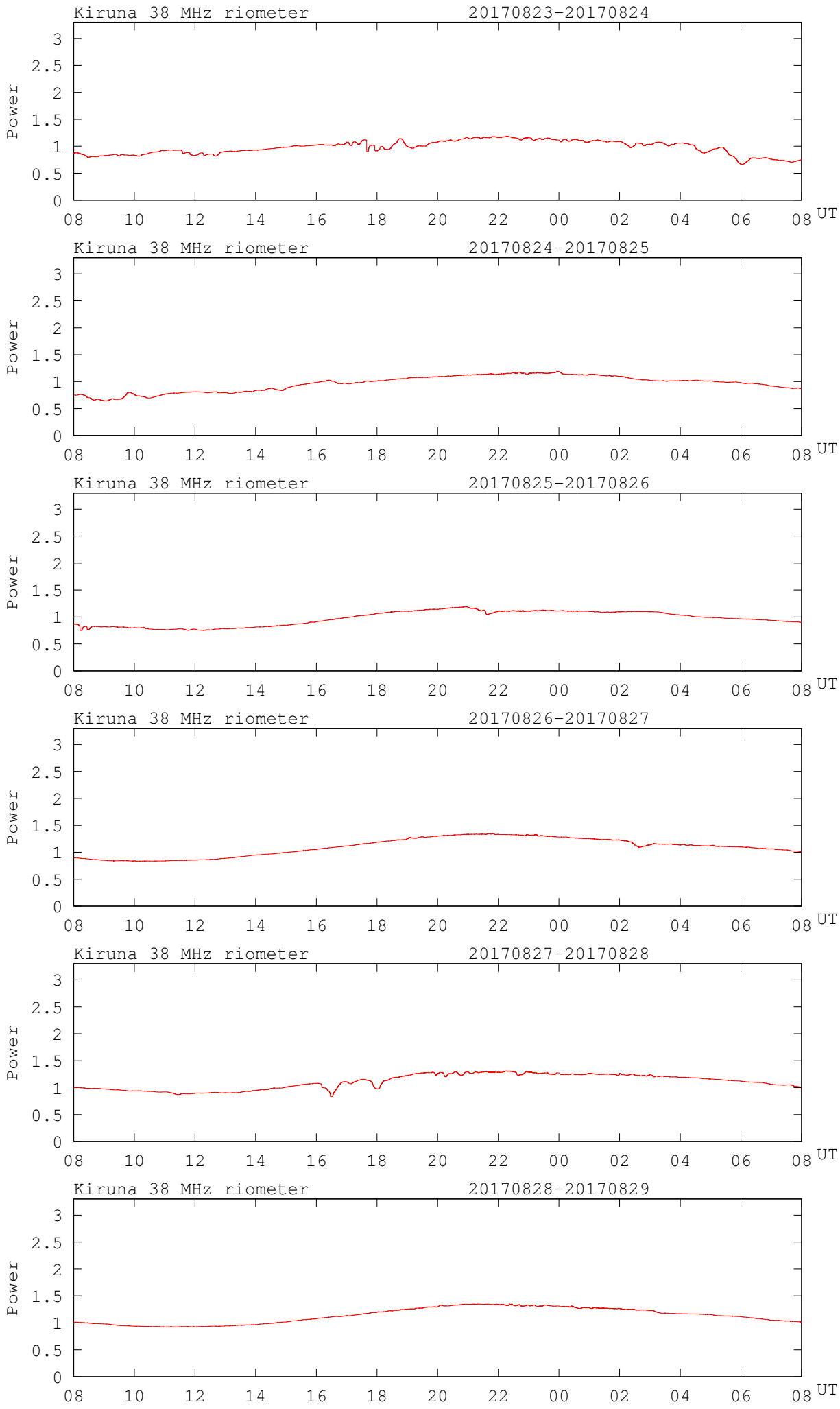

Kiruna 38 MHz riometer 20170724-20170725
Kiruna 38 MHz riometer 20170725-20170726
Kiruna 38 MHz riometer 20170726-20170727
Kiruna 38 MHz riometer 20170727-20170728
Kiruna 38 MHz riometer 20170728-20170729
Kiruna 38 MHz riometer 20170729-20170730
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

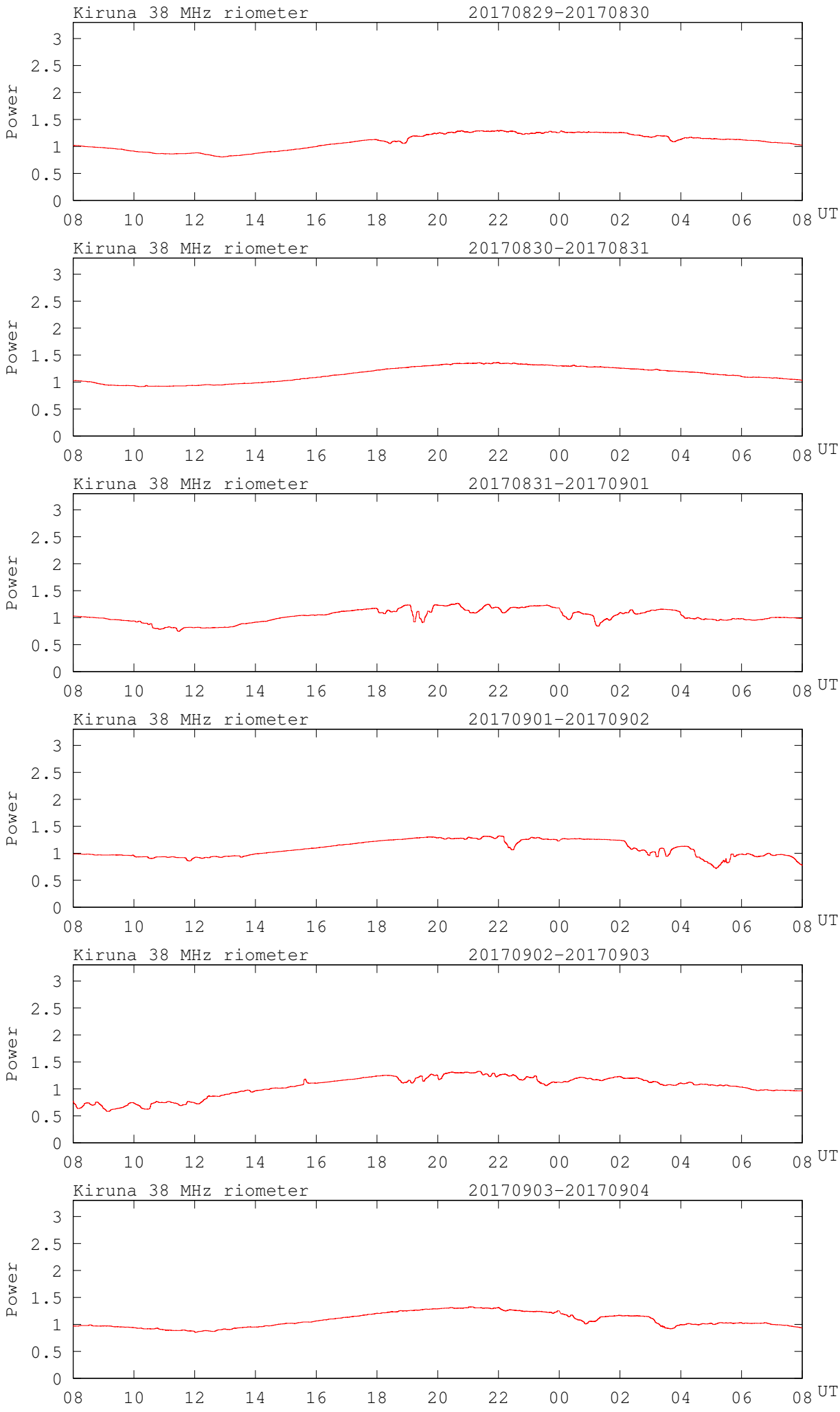

Kiruna 38 MHz riometer 20170730-20170731
Kiruna 38 MHz riometer 20170731-20170801
Kiruna 38 MHz riometer 20170801-20170802
Kiruna 38 MHz riometer 20170802-20170803
Kiruna 38 MHz riometer 20170803-20170804
Kiruna 38 MHz riometer 20170804-20170805
Power
0 0.5 1 1.5 2 2.5 3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

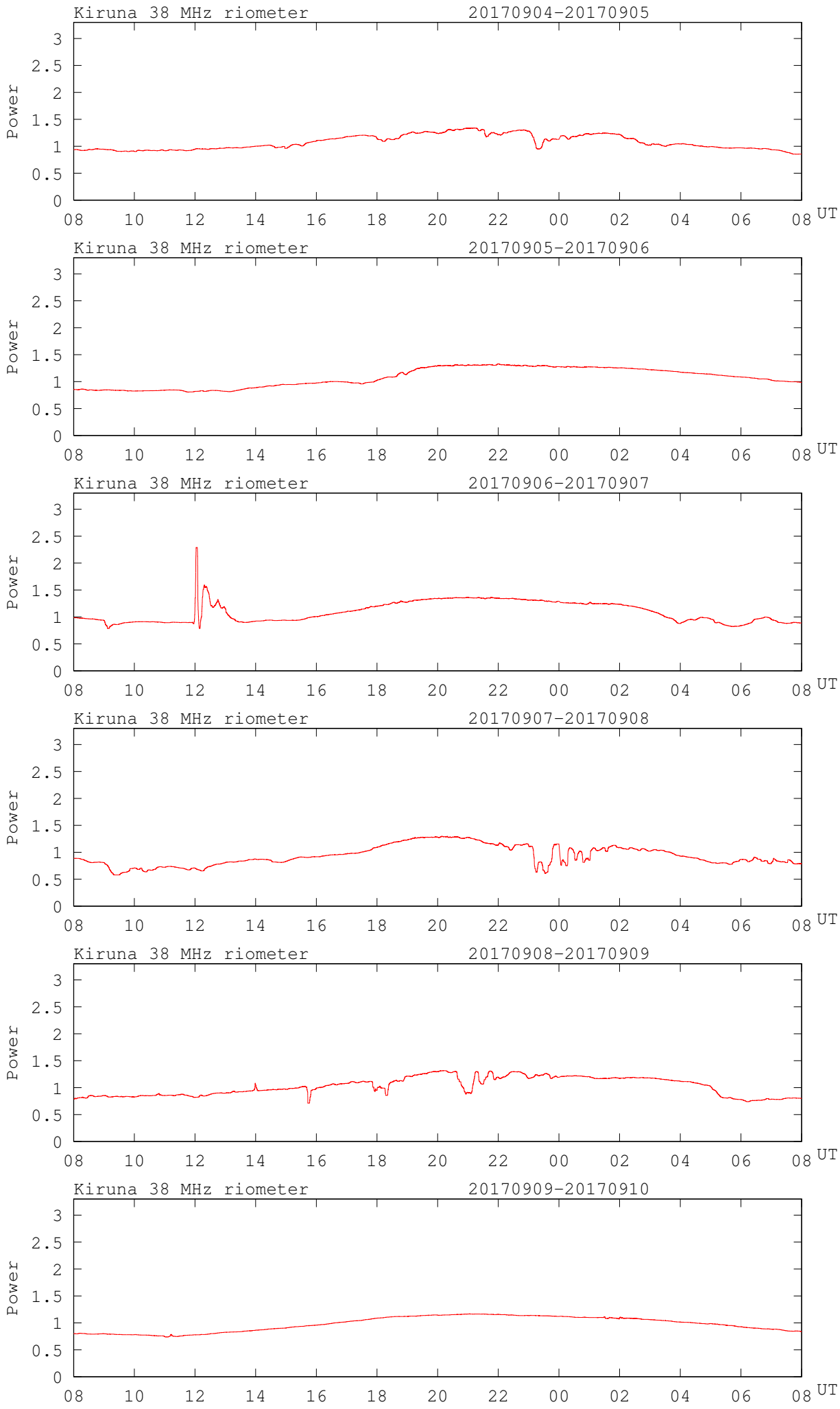

Kiruna 38 MHz riometer 20170805-20170806
Power
UT
Kiruna 38 MHz riometer 20170806-20170807
Power
UT
Kiruna 38 MHz riometer 20170807-20170808
Power
UT
Kiruna 38 MHz riometer 20170808-20170809
Power
UT
Kiruna 38 MHz riometer 20170809-20170810
Power
UT
Kiruna 38 MHz riometer 20170810-20170811
Power
UT
0 0.5 1 1.5 2 2.5 3
08 10 12 14 16 18 20 22 00 02 04 06 08

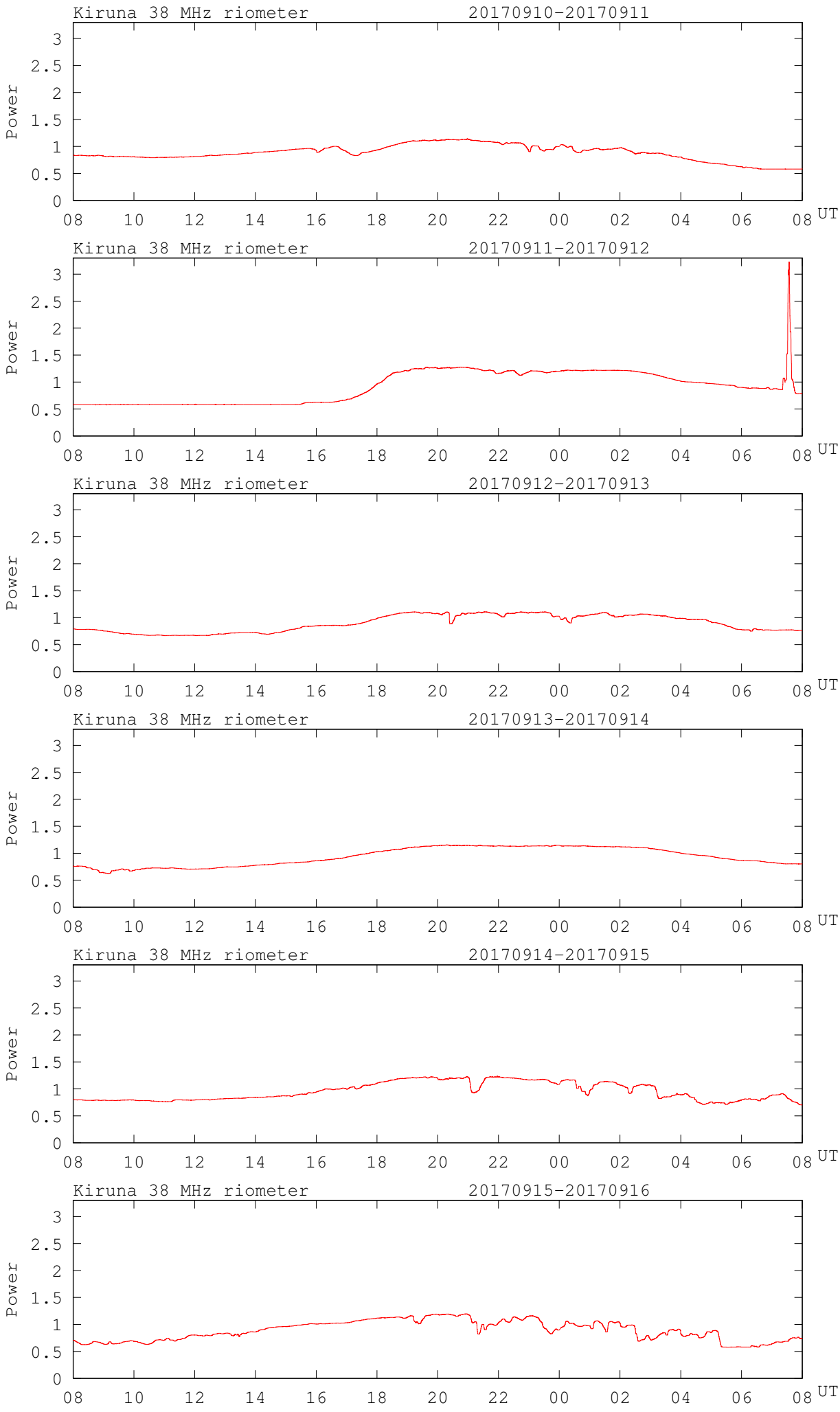

Kiruna 38 MHz riometer 20170811-20170812
Kiruna 38 MHz riometer 20170812-20170813
Kiruna 38 MHz riometer 20170813-20170814
Kiruna 38 MHz riometer 20170814-20170815
Kiruna 38 MHz riometer 20170815-20170816
Kiruna 38 MHz riometer 20170816-20170817
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

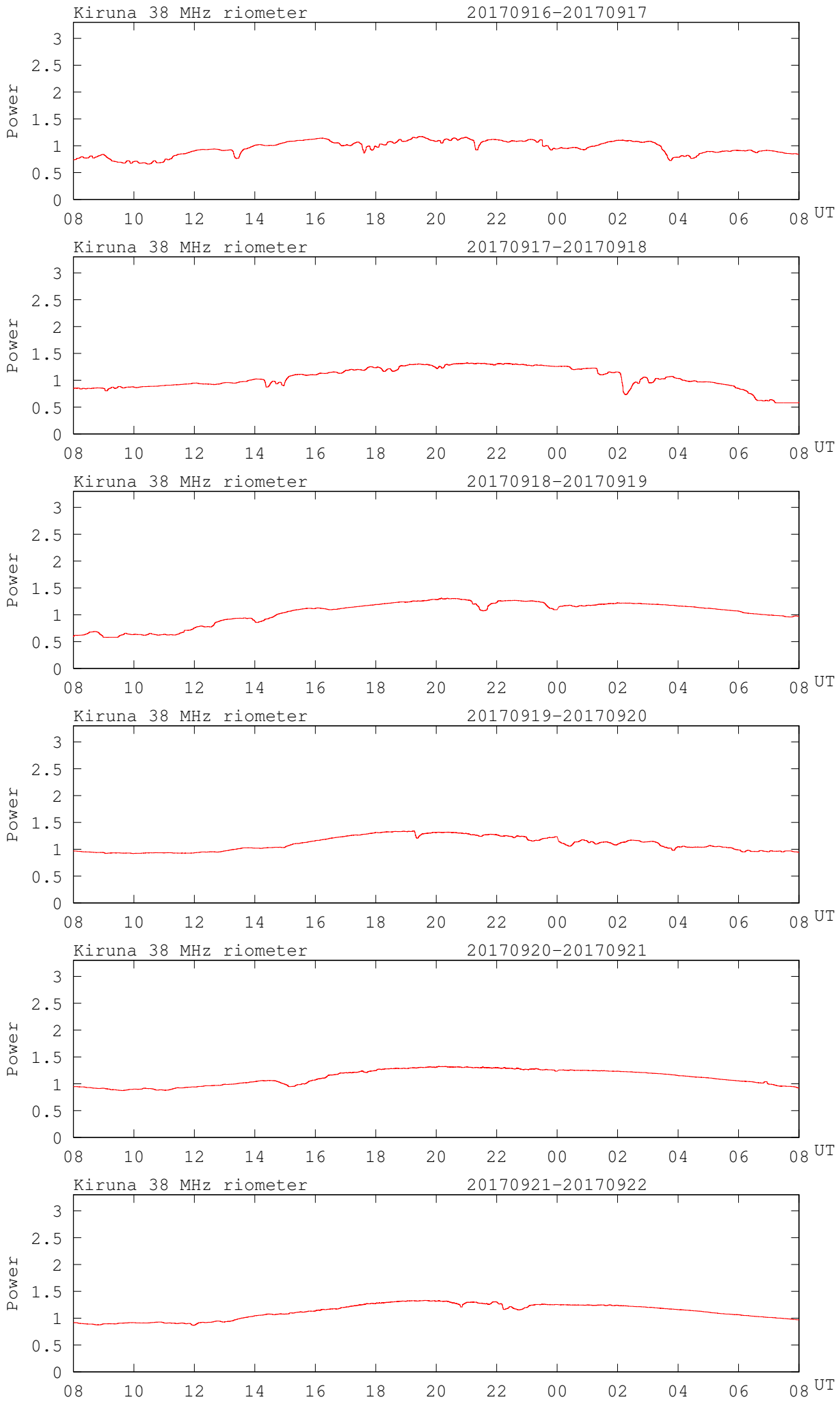

Kiruna 38 MHz riometer 20170817-20170818
Kiruna 38 MHz riometer 20170818-20170819
Kiruna 38 MHz riometer 20170819-20170820
Kiruna 38 MHz riometer 20170820-20170821
Kiruna 38 MHz riometer 20170821-20170822
Kiruna 38 MHz riometer 20170822-20170823
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

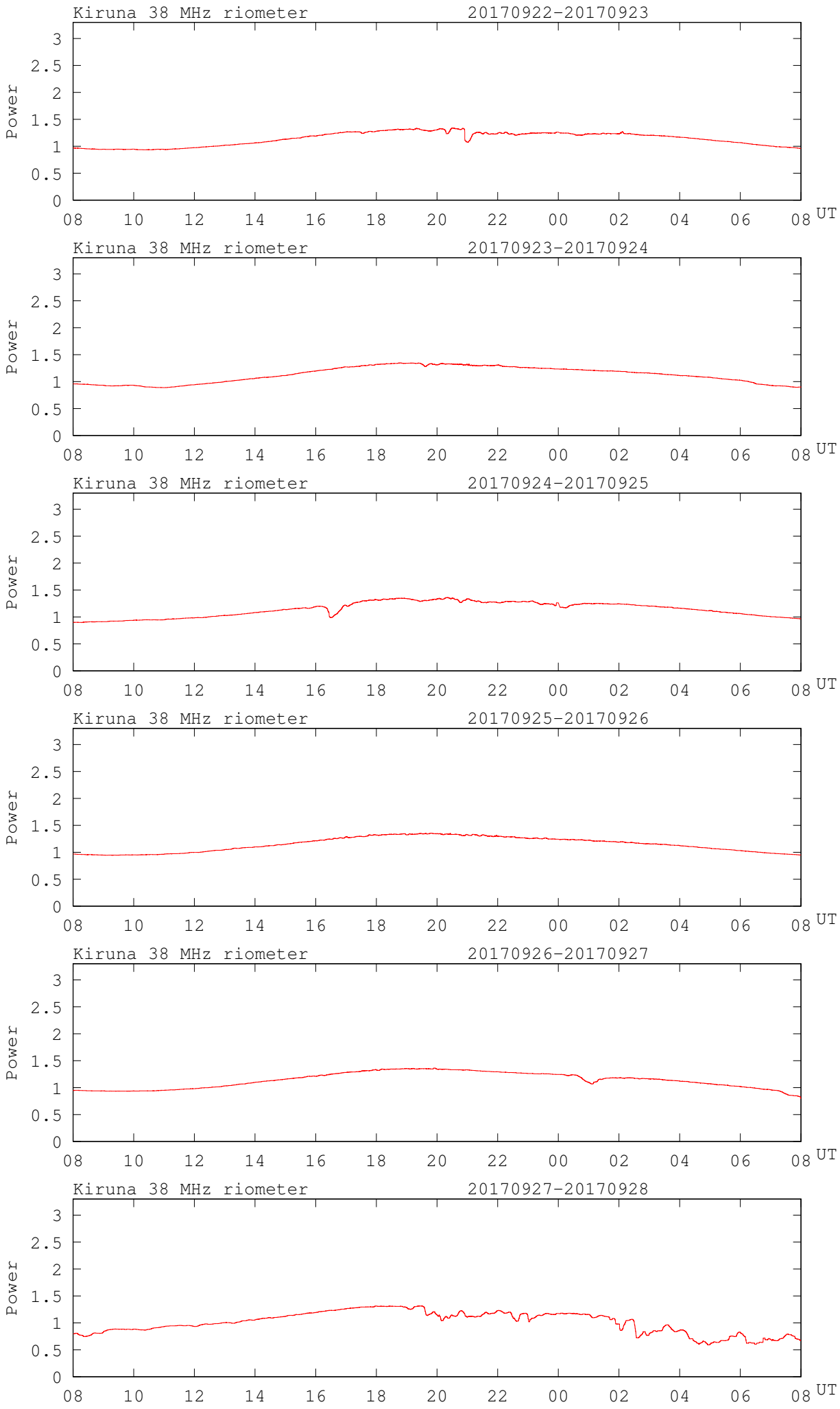

Kiruna 38 MHz riometer 20170823-20170824
Kiruna 38 MHz riometer 20170824-20170825
Kiruna 38 MHz riometer 20170825-20170826
Kiruna 38 MHz riometer 20170826-20170827
Kiruna 38 MHz riometer 20170827-20170828
Kiruna 38 MHz riometer 20170828-20170829
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT

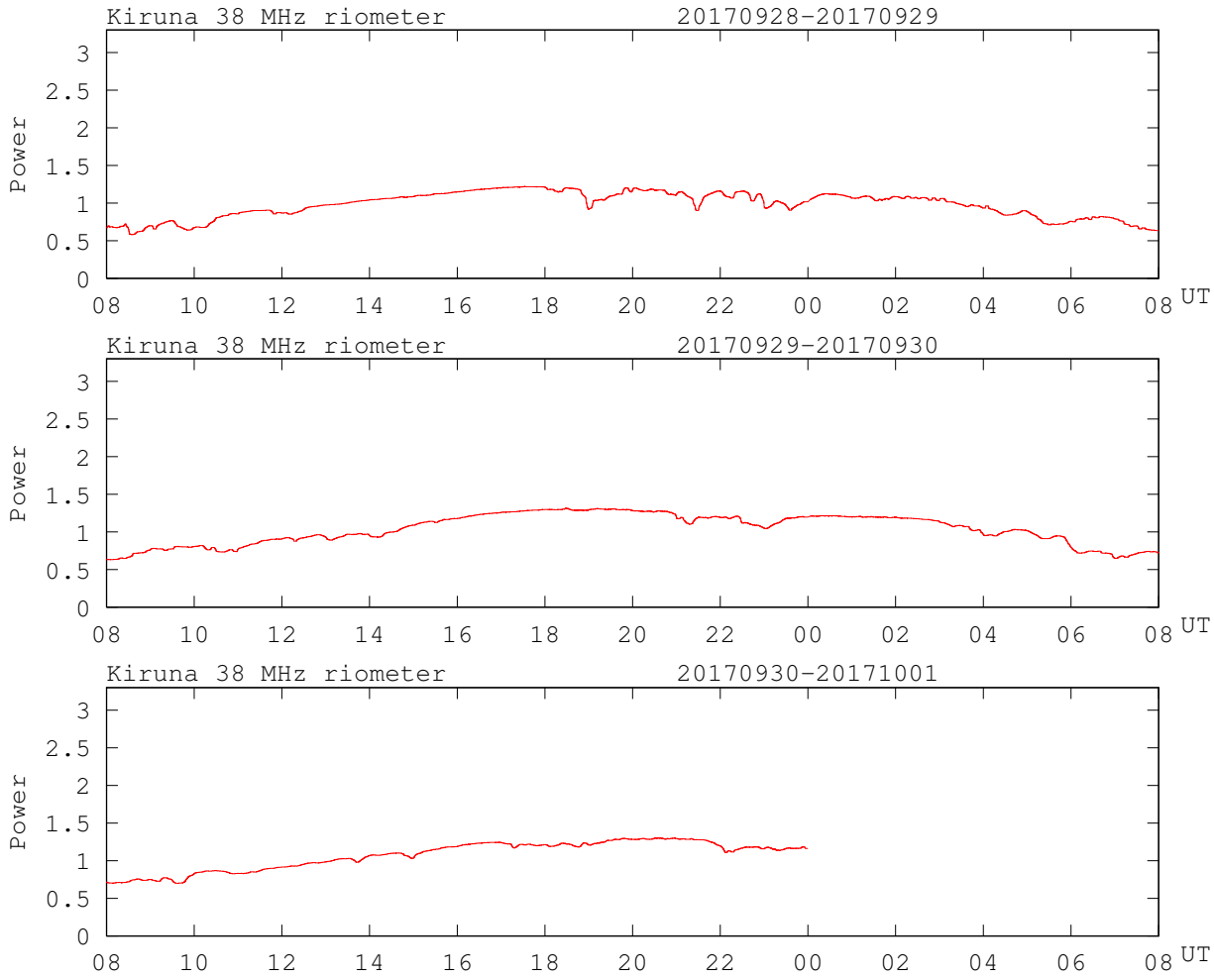

Kiruna 38 MHz riometer 20170829-20170830
Kiruna 38 MHz riometer 20170830-20170831
Kiruna 38 MHz riometer 20170831-20170901
Kiruna 38 MHz riometer 20170901-20170902
Kiruna 38 MHz riometer 20170902-20170903
Kiruna 38 MHz riometer 20170903-20170904
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT


Kiruna 38 MHz riometer 20170904-20170905
Kiruna 38 MHz riometer 20170905-20170906
Kiruna 38 MHz riometer 20170906-20170907
Kiruna 38 MHz riometer 20170907-20170908
Kiruna 38 MHz riometer 20170908-20170909
Kiruna 38 MHz riometer 20170909-20170910
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT


Kiruna 38 MHz riometer 20170910-20170911
Kiruna 38 MHz riometer 20170911-20170912
Kiruna 38 MHz riometer 20170912-20170913
Kiruna 38 MHz riometer 20170913-20170914
Kiruna 38 MHz riometer 20170914-20170915
Kiruna 38 MHz riometer 20170915-20170916
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT


Kiruna 38 MHz riometer 20170916-20170917
Kiruna 38 MHz riometer 20170917-20170918
Kiruna 38 MHz riometer 20170918-20170919
Kiruna 38 MHz riometer 20170919-20170920
Kiruna 38 MHz riometer 20170920-20170921
Kiruna 38 MHz riometer 20170921-20170922
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT


Kiruna 38 MHz riometer 20170922-20170923
Kiruna 38 MHz riometer 20170923-20170924
Kiruna 38 MHz riometer 20170924-20170925
Kiruna 38 MHz riometer 20170925-20170926
Kiruna 38 MHz riometer 20170926-20170927
Kiruna 38 MHz riometer 20170927-20170928
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT


Kiruna 38 MHz riometer
20170928-20170929
Power
3
2.5
2
1.5
1
0.5
0
08
10
12
14
16
18
20
22
00
02
04
06
08
UT
Kiruna 38 MHz riometer
20170929-20170930
Power
UT
Kiruna 38 MHz riometer
20170930-20171001
Power
UT



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