Kiruna Geophysical Data



Data Summary 16/01-03 (January-March 2016)

Swedish Institute of Space Physics

Kiruna Geophysical Data

Data Summary 16/01-03
January – March 2016

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Printed in Sweden
Swedish Institute of Space Physics
Kiruna 2016

ISSN 0453-9478

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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

January 2016

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	(7)	6	6	3	3	1	2	2	(30)
2	4	2	3	2	2	2	4	3	22
3	0	1	2	1	1	3	5	5	18
4	1	1	1	1	1	2	2	2	11
5	0	1	1	1	1	1	3	2	10
6	7	3	3	4	3	2	4	6	32
7	6	4	3	3	3	3	3	2	27
8	1	2	1	2	3	1	1	2	13
9	2	0	0	0	1	1	0	2	6
10	3	1	0	2	2	1	5	4	18
11	1	2	2	1	2	5	5	6	24
12	5	3	2	2	2	2	5	5	26
13	6	5	2	2	2	3	4	0	24
14	1	2	1	2	1	3	4	4	18
15	2	2	1	1	0	1	2	2	11
16	0	0	0	1	1	0	0	0	2
17	0	0	1	1	1	2	2	0	7
18	0	0	0	0	1	2	1	5	9
19	7	3	2	3	1	1	0	1	18
20	0	1	2	5	5	5	5	5	28
21	6	6	5	3	3	5	7	7	42
22	5	3	3	2	(2)	1	6	5	(27)
23	2	4	3	3	2	4	2	3	23
24	4	3	2	1	2	3	5	2	22
25	1	1	(1)	1	1	0	1	0	(6)
26	0	0	1	1	1	2	1	1	7
27	1	1	1	1	0	0	0	1	5
28	1	0	1	1	1	2	2	1	9
29	0	0	0	1	0	0	1	1	3
30	0	0	0	0	0	0	0	3	3
31	3	2	1	1	2	4	5	6	24
Sum	76	59	51	52	50	62	87	88	

GEOMAGNETIC K-INDICES, KIRUNA

February 2016

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	(5)	4	2	2	(1)	1	1	0	(16)
2	0	0	1	1	1	2	4	6	15
3	6	6	3	1	1	1	0	1	19
4	0	1	1	3	2	1	1	0	9
5	4	3	2	2	2	2	5	4	24
6	2	3	2	1	1	2	4	5	20
7	4	0	0	1	2	4	5	5	21
8	6	5	4	2	2	0	2	1	22
9	2	1	2	2	2	1	3	5	18
10	4	3	1	0	1	0	2	3	14
11	3	2	1	1	3	4	3	6	23
12	5	3	2	3	3	3	3	2	24
13	1	1	2	2	1	1	0	1	9
14	2	1	3	2	2	4	3	3	20
15	3	2	2	1	2	1	2	7	20
16	6	3	3	4	7	6	7	6	42
17	5	3	3	3	6	5	7	7	39
18	6	6	4	3	3	4	6	7	39
19	5	3	3	3	3	4	6	4	31
20	5	2	2	2	2	1	0	2	16
21	1	1	1	1	1	3	4	4	16
22	0	0	0	0	2	1	1	1	5
23	3	1	0	1	1	2	4	6	18
24	4	1	1	1	1	1	3	3	15
25	3	0	1	1	1	1	1	4	12
26	5	2	2	2	1	1	2	1	16
27	0	1	1	1	1	1	1	1	7
28	1	0	1	1	1	1	2	3	10
29	3	0	0	1	1	0	0	4	9
Sum	94	58	50	48	57	58	82	102	

GEOMAGNETIC K-INDICES, KIRUNA

March 2016

Lower limit of K=8 is 990 nT

Time in UT

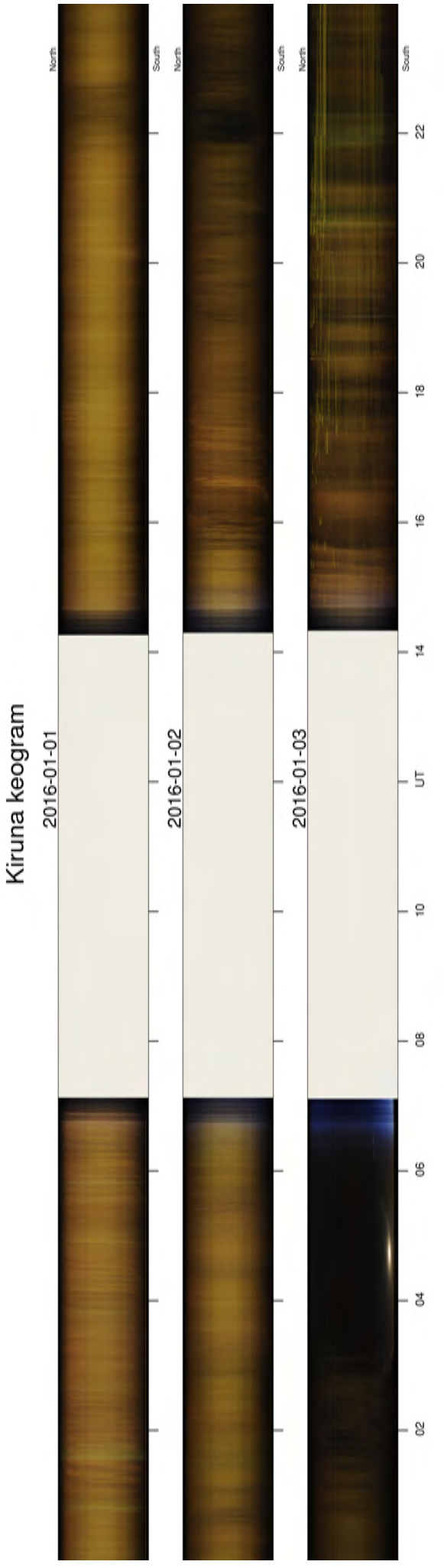
Day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	(5)	1	1	1	2	2	1	5	(18)
2	4	1	1	2	2	3	1	1	15
3	2	2	2	2	2	0	0	2	12
4	4	2	1	1	1	1	0	0	10
5	1	1	2	2	2	1	1	1	11
6	1	1	2	2	2	6	7	7	28
7	4	6	4	3	3	5	6	7	38
8	6	3	3	2	3	3	4	2	26
9	2	2	2	2	3	3	3	5	22
10	4	1	2	2	3	3	4	5	24
11	5	2	2	3	5	2	5	4	28
12	5	2	2	2	2	4	4	3	24
13	1	1	1	1	1	1	0	2	8
14	1	0	2	1	1	2	3	6	16
15	4	5	4	3	2	3	8	6	35
16	7	3	3	3	4	1	5	7	33
17	6	7	4	4	3	4	6	6	40
18	2	2	2	3	3	4	5	6	27
19	5	2	2	4	4	4	4	3	28
20	2	3	1	2	3	7	6	4	28
21	3	2	1	2	2	2	2	4	18
22	2	2	2	2	2	1	0	3	14
23	1	2	3	2	2	2	4	5	21
24	4	1	2	1	2	2	1	3	16
25	6	2	2	2	2	2	1	0	17
26	1	1	2	2	2	1	0	1	10
27	3	2	2	2	3	5	3	4	24
28	1	4	2	1	2	2	5	4	21
29	6	4	2	3	3	4	2	4	28
30	4	3	2	3	3	3	5	3	26
31	4	2	1	1	1	2	0	1	12
Sum	106	72	64	66	75	85	96	114	

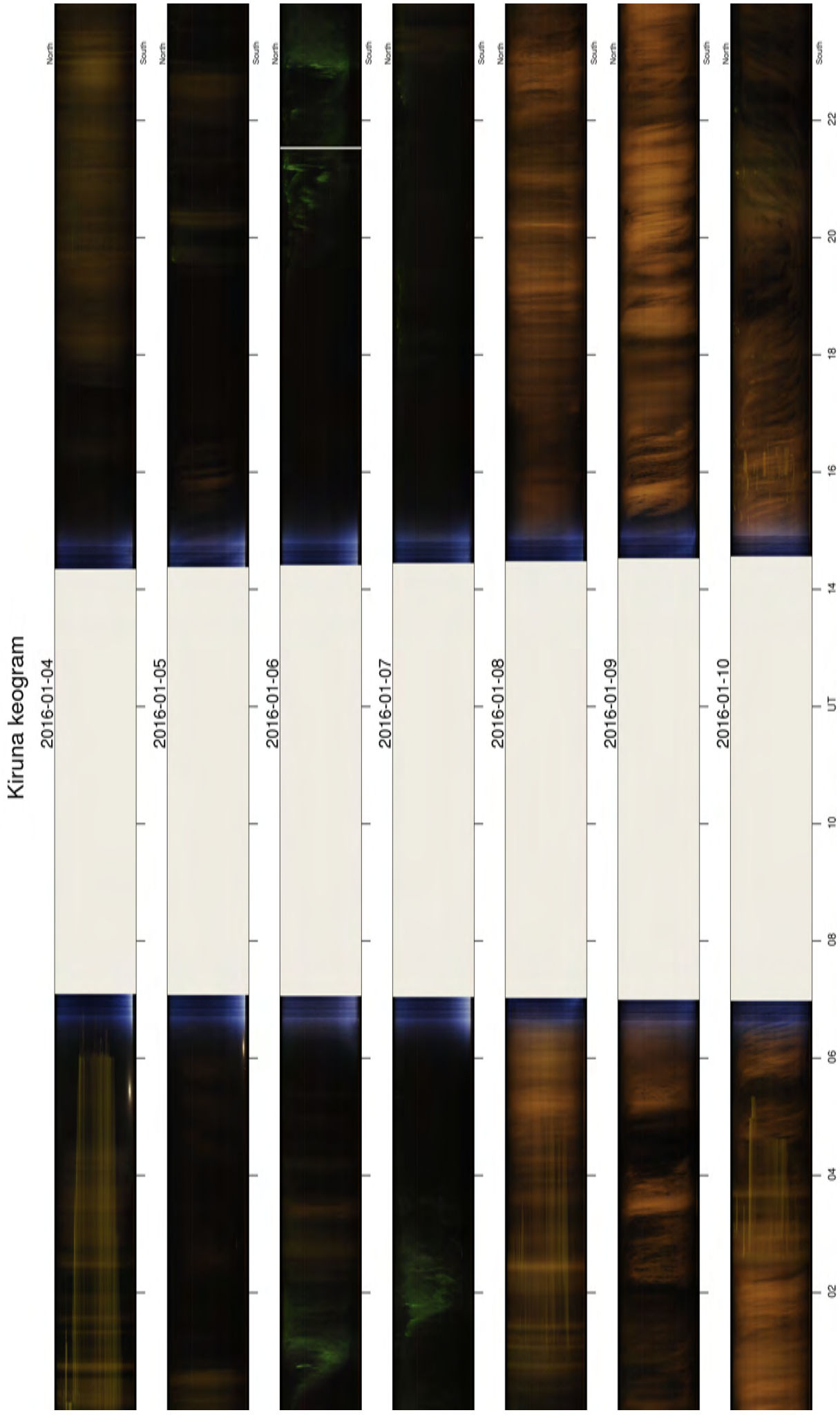
ALL-SKY CAMERA KEOGRAMS

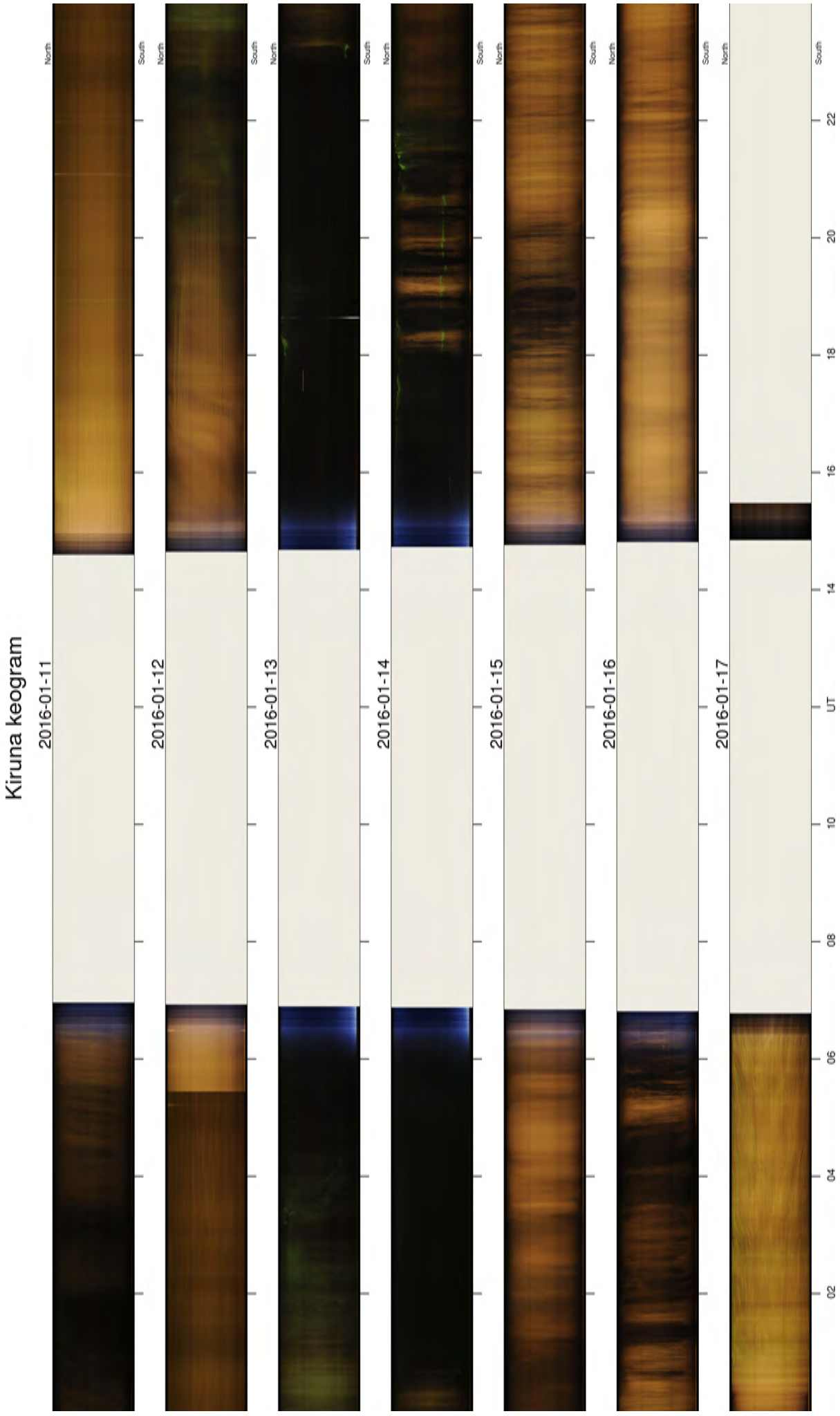
January - March 2016

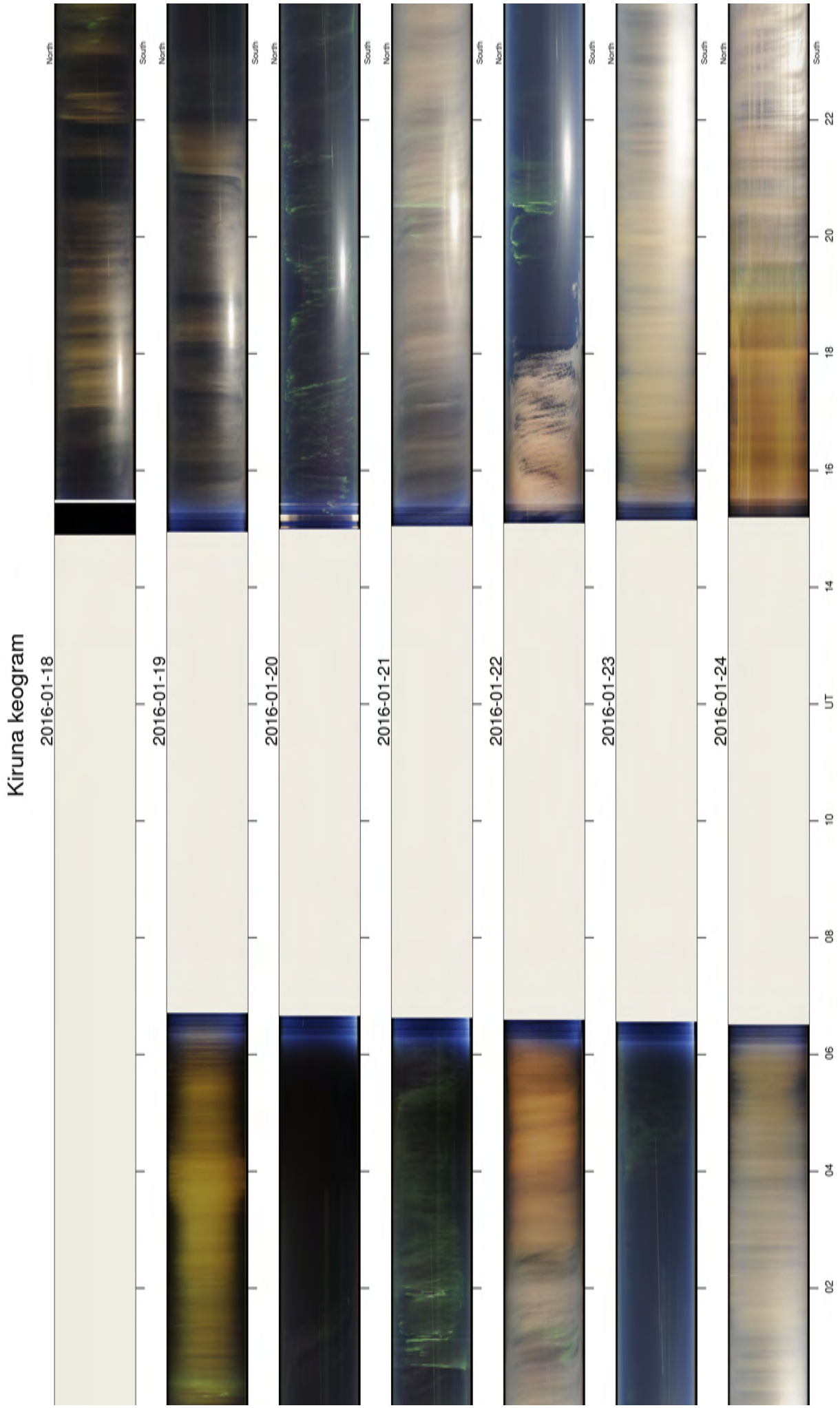
http://www.irf.se/allsky/kgd

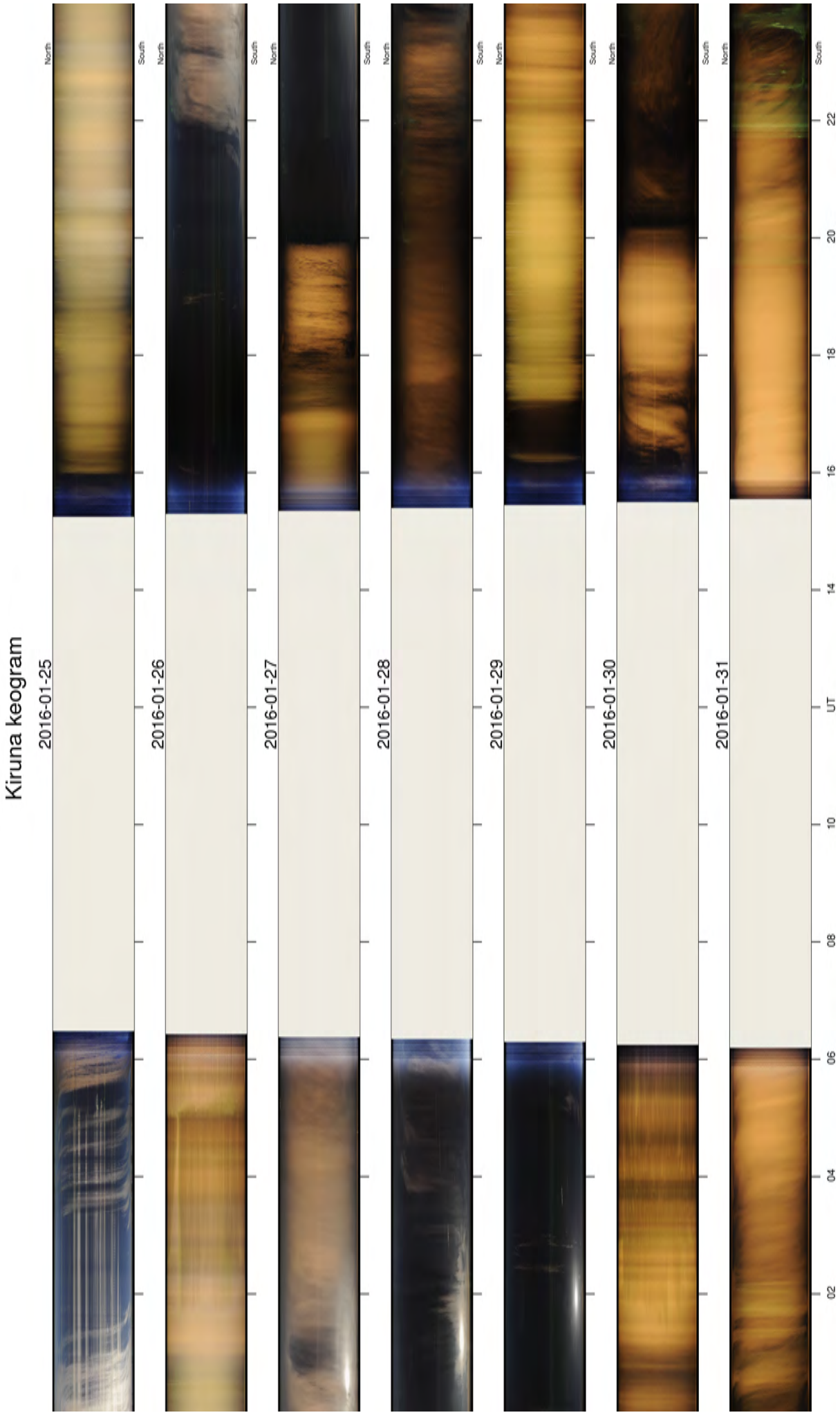
Camera failure 2016-01-17 replaced 2016-01-18.

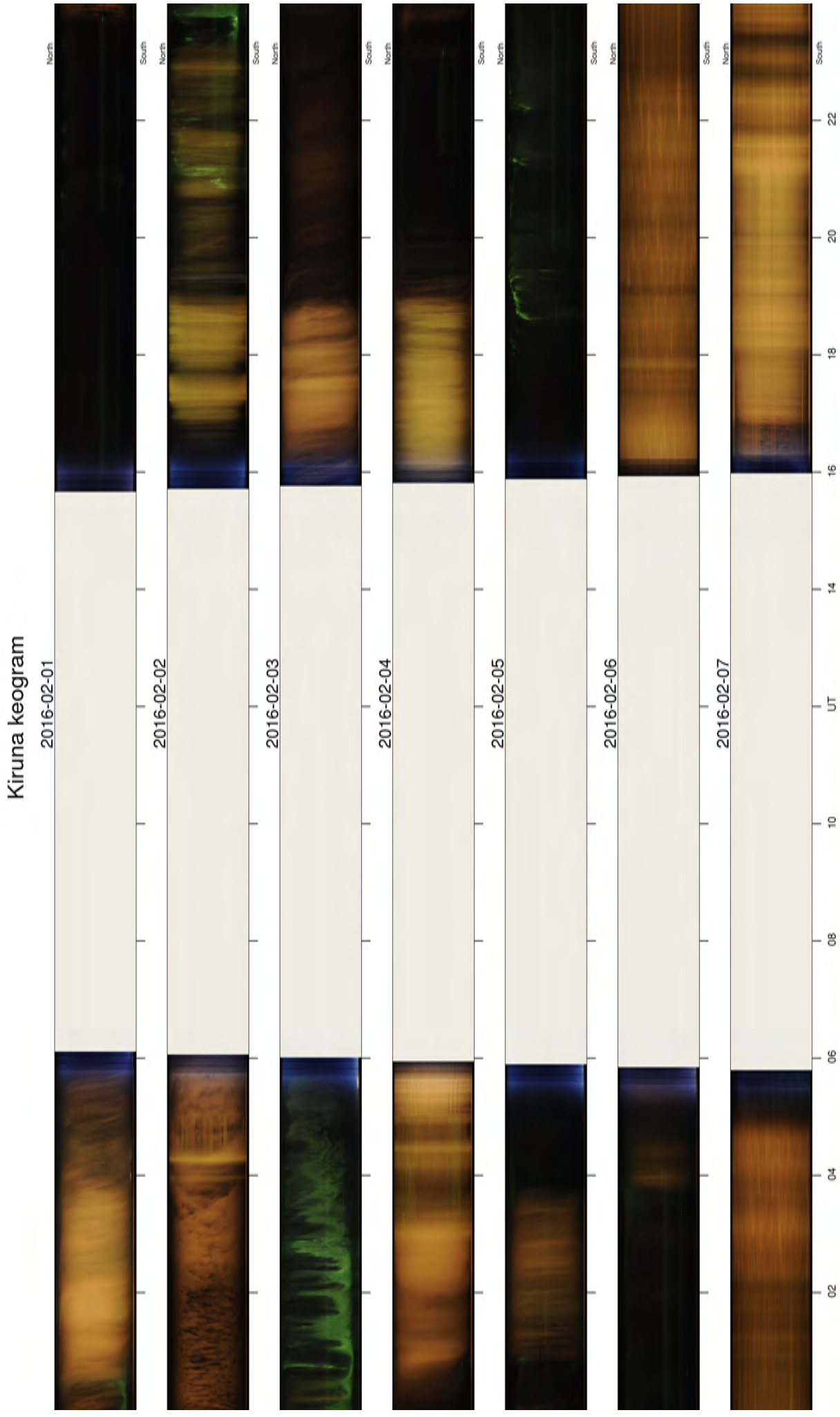

Kiruna keogram
2016-01-01
2016-01-02
2016-01-03
North
South
UT
02
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22

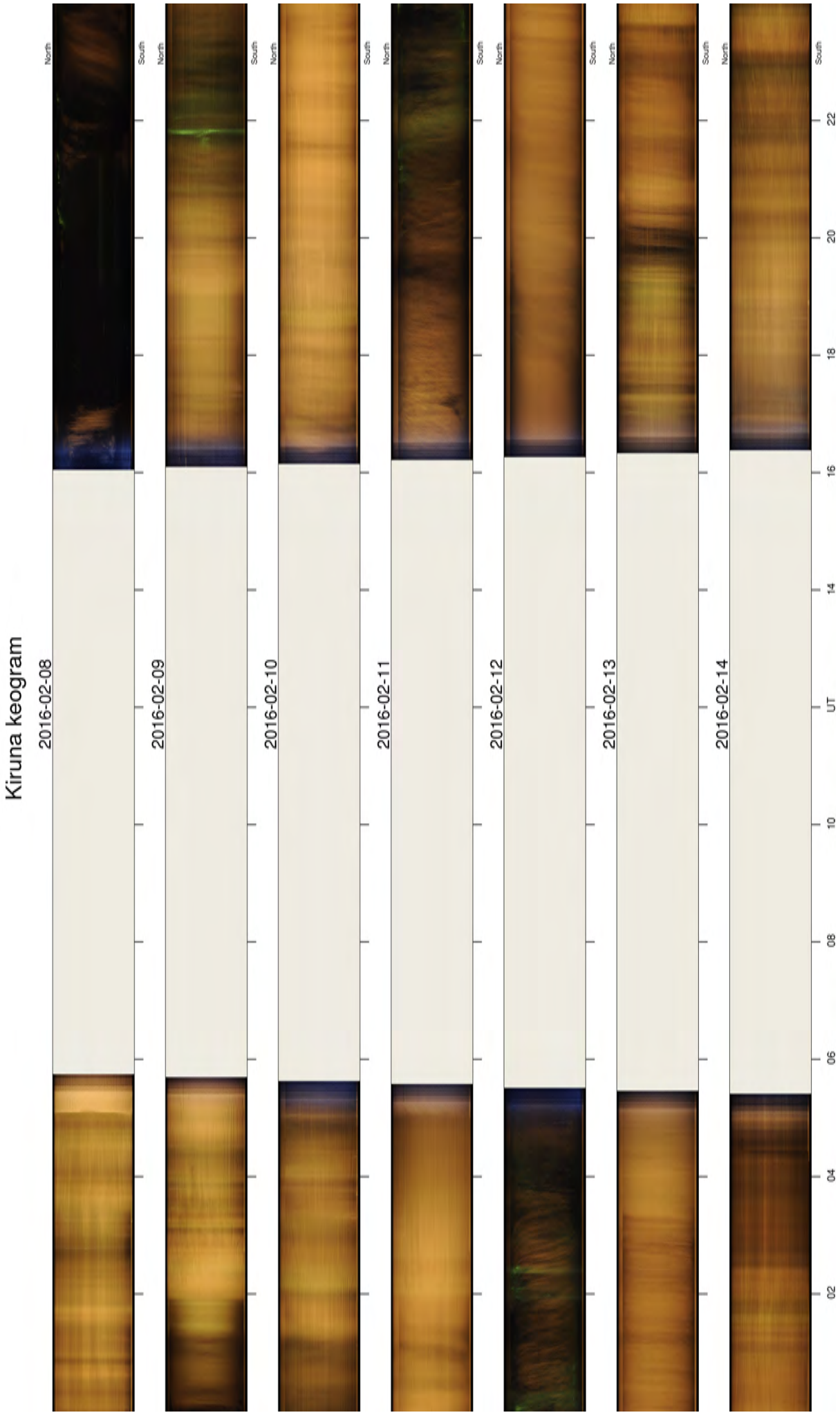

Kiruna keogram
2016-01-04
2016-01-05
2016-01-06
2016-01-07
2016-01-08
2016-01-09
2016-01-10
North
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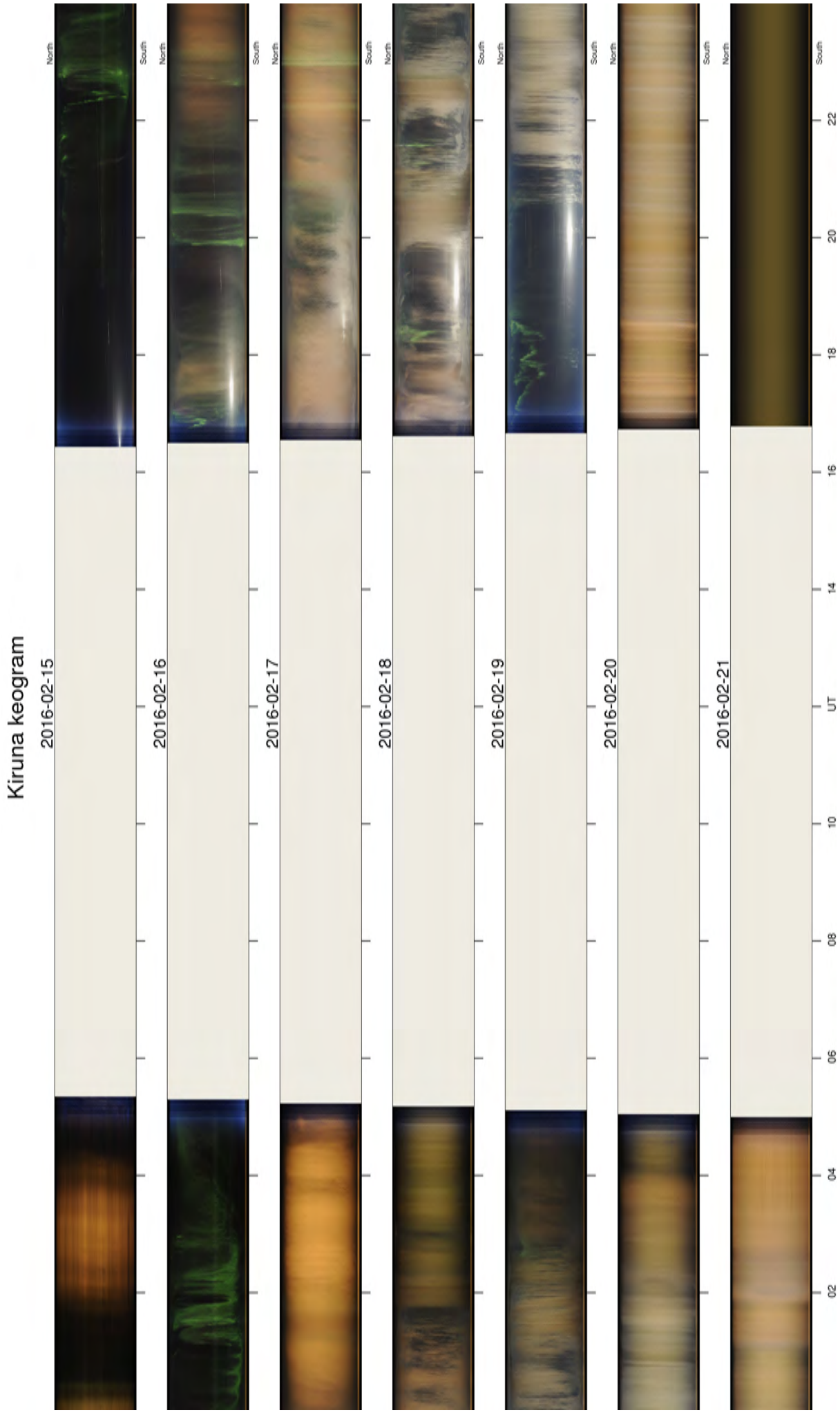

Kiruna keogram
2016-01-11
2016-01-12
2016-01-13
2016-01-14
2016-01-15
2016-01-16
2016-01-17
North
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22
UT

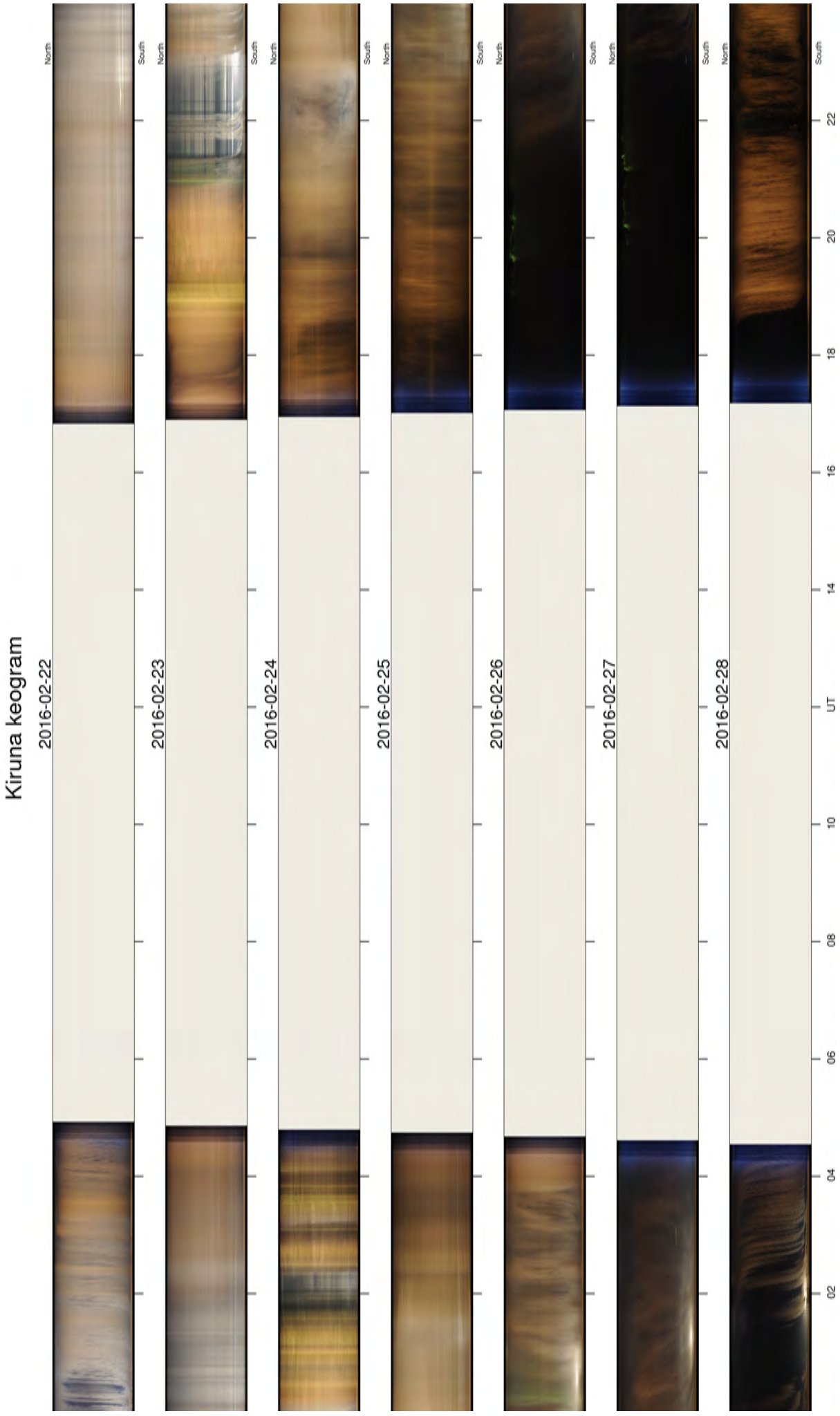

Kiruna keogram
2016-01-18
2016-01-19
2016-01-20
2016-01-21
2016-01-22
2016-01-23
2016-01-24
North
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22
UT

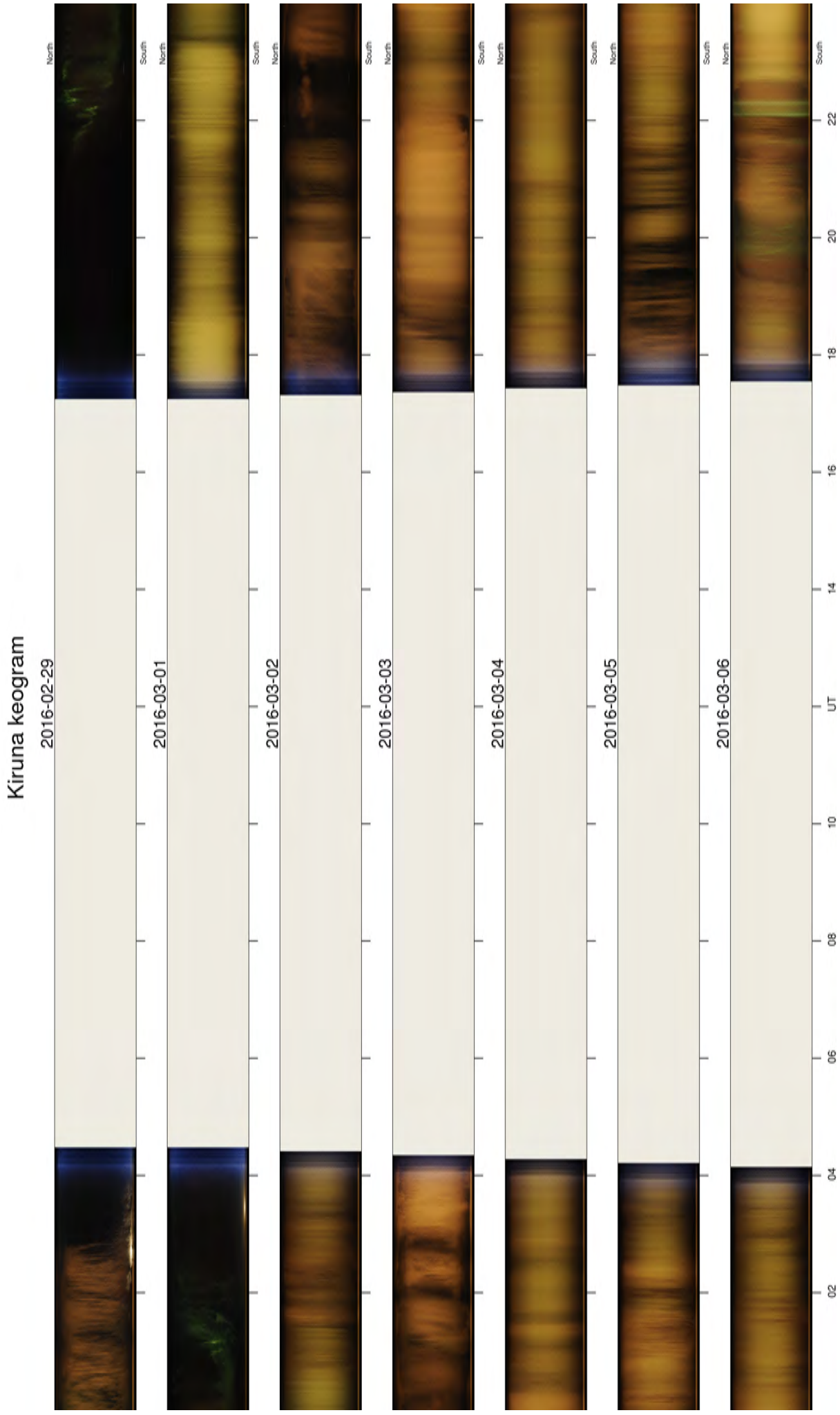

Kiruna keogram
2016-01-25
2016-01-26
2016-01-27
2016-01-28
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2016-01-30
2016-01-31
North
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UT

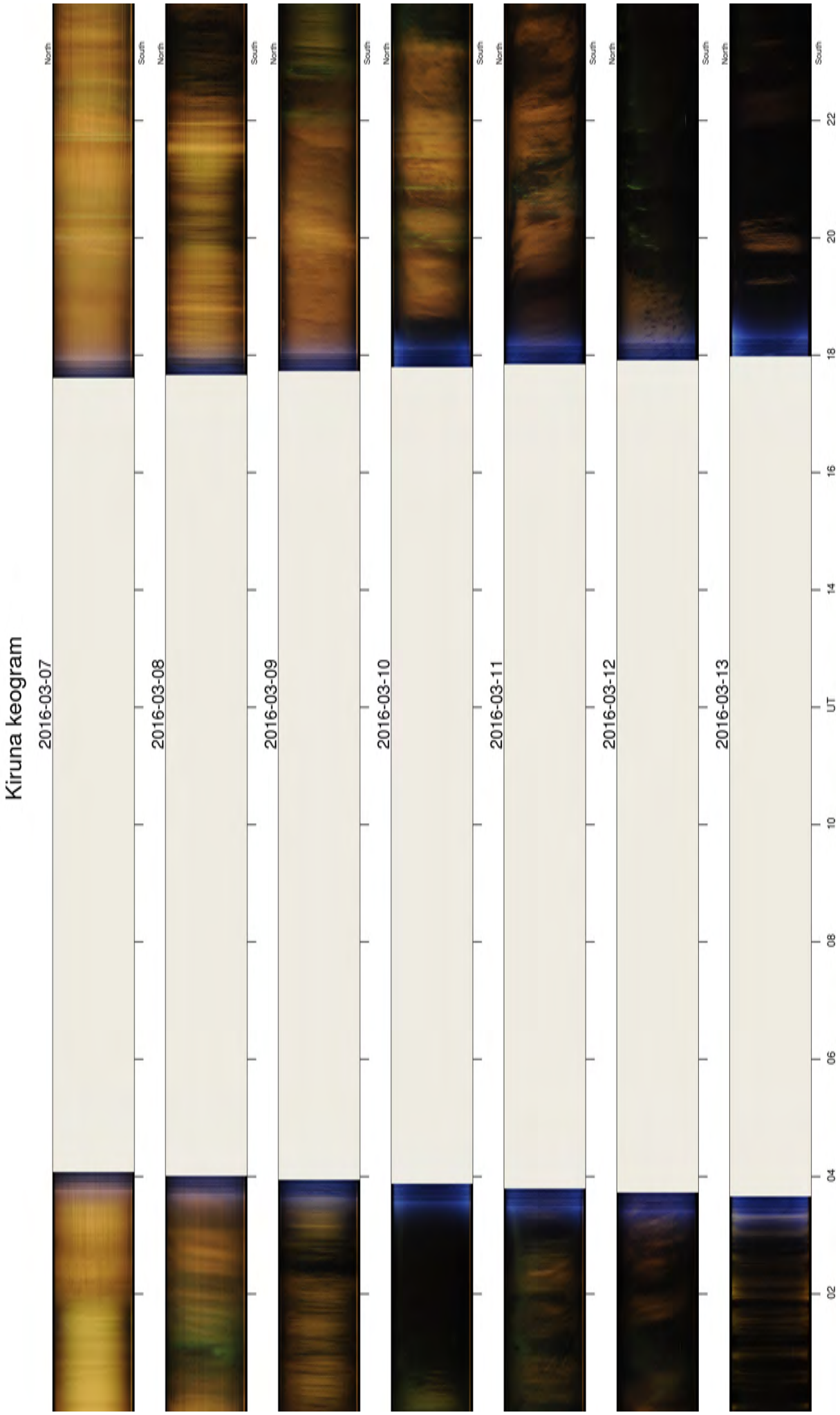

Kiruna keogram
2016-02-01
2016-02-02
2016-02-03
2016-02-04
2016-02-05
2016-02-06
2016-02-07
North
South
02
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UT

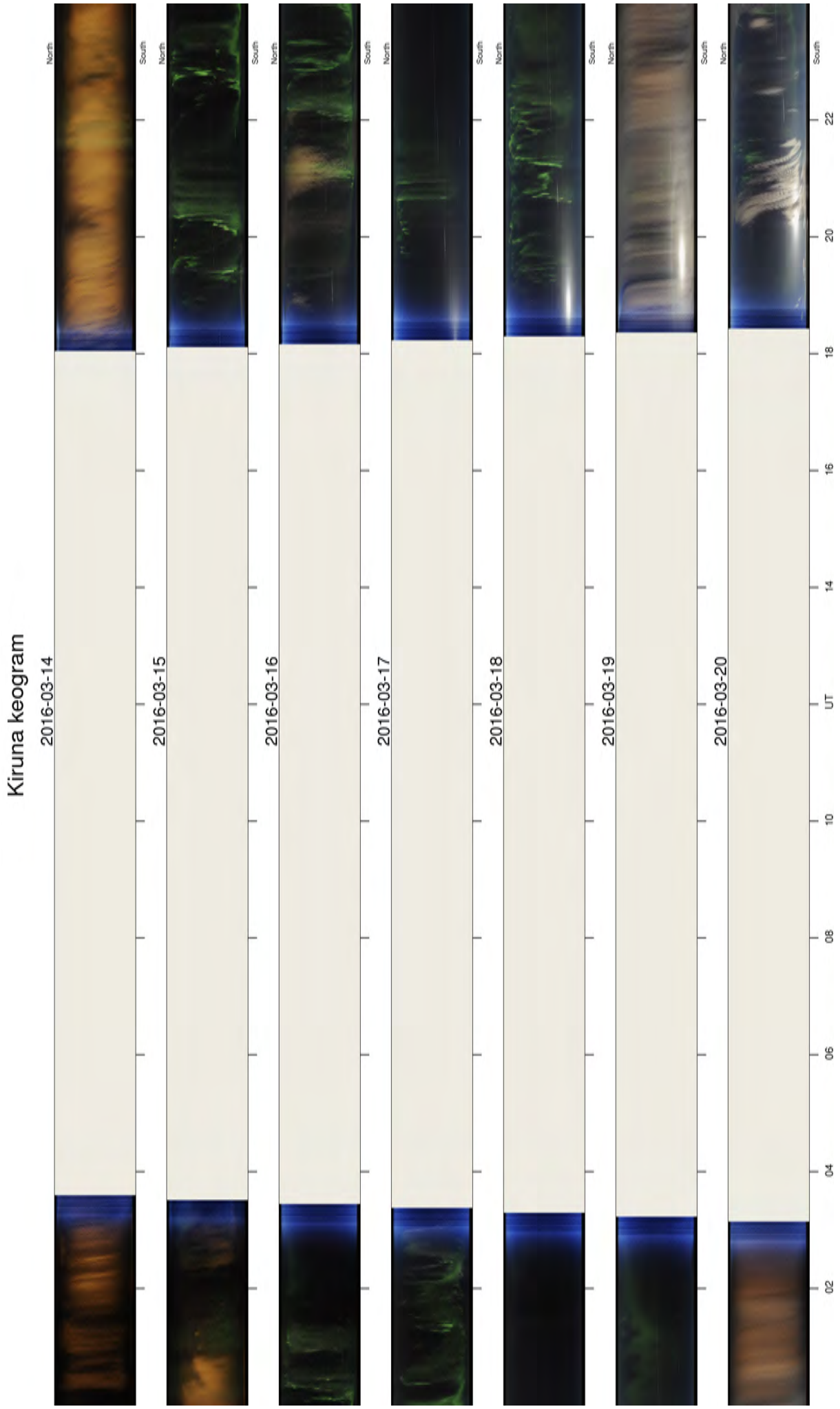

Kiruna keogram
2016-02-08
2016-02-09
2016-02-10
2016-02-11
2016-02-12
2016-02-13
2016-02-14
North
South
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UT


Kiruna keogram
2016-02-15
2016-02-16
2016-02-17
2016-02-18
2016-02-19
2016-02-20
2016-02-21
North
South
02
04
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16
18
20
22
UT

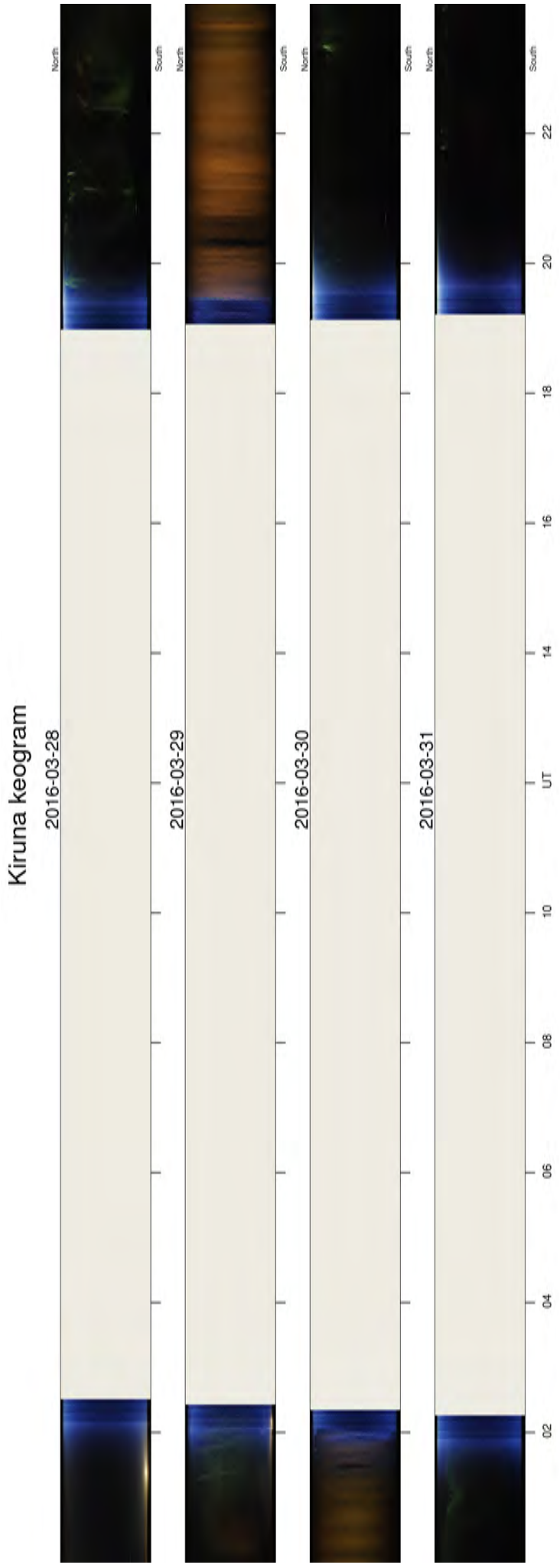

Kiruna keogram
2016-02-22
2016-02-23
2016-02-24
2016-02-25
2016-02-26
2016-02-27
2016-02-28
North
South
02
04
06
08
10
12
14
16
18
20
22
UT


Kiruna keogram
2016-02-29
2016-03-01
2016-03-02
2016-03-03
2016-03-04
2016-03-05
2016-03-06
North
South
02
04
06
08
10
12
14
16
18
20
22
UT


Kiruna keogram
2016-03-07
2016-03-08
2016-03-09
2016-03-10
2016-03-11
2016-03-12
2016-03-13
North
South
02
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22
UT


Kiruna keogram
2016-03-14
2016-03-15
2016-03-16
2016-03-17
2016-03-18
2016-03-19
2016-03-20
North
South
02
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22
UT

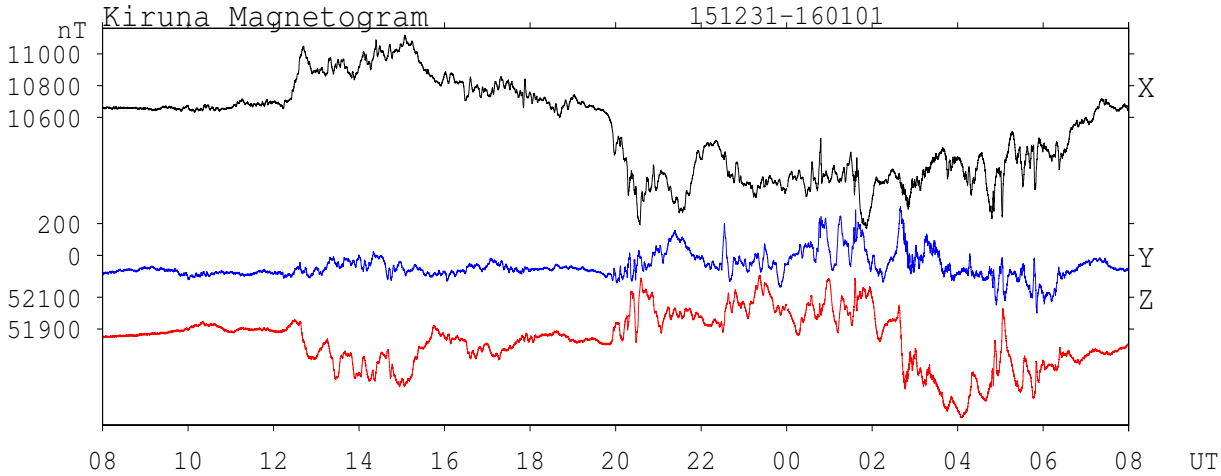

Kiruna keogram
2016-03-21
2016-03-22
2016-03-23
2016-03-24
2016-03-25
2016-03-26
2016-03-27
North
South
02
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20
22
UT

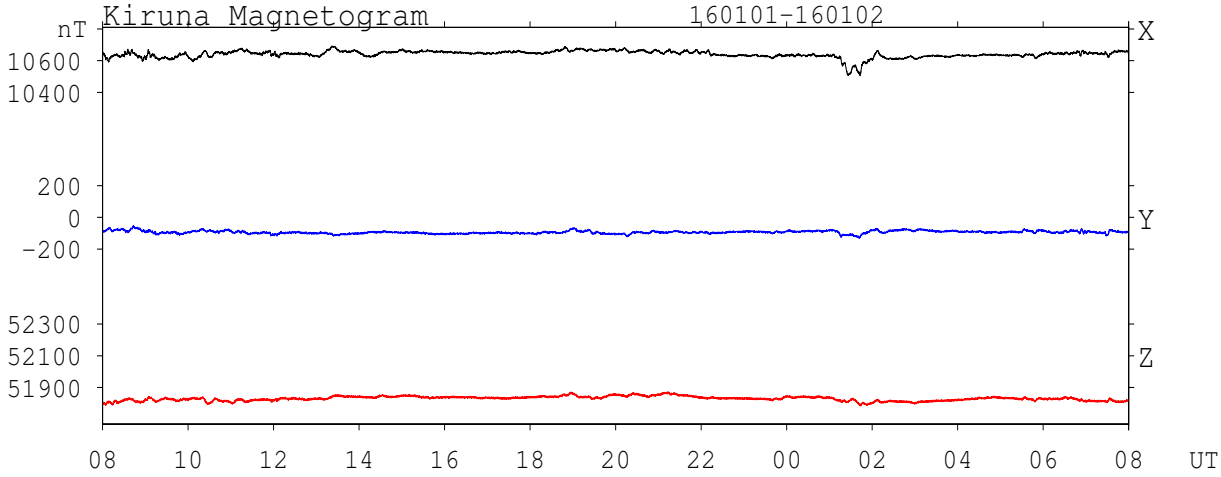

Kiruna keogram
2016-03-28
2016-03-29
2016-03-30
2016-03-31
North
South
02
04
06
08
10
UT
14
16
18
20
22

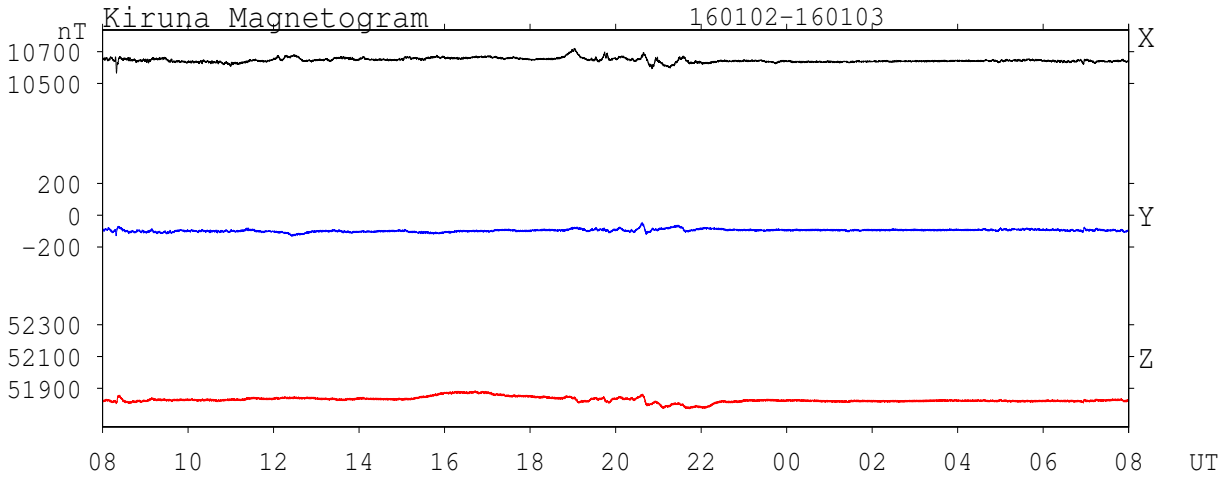
KIRUNA MAGNETOGRAM PLOTS

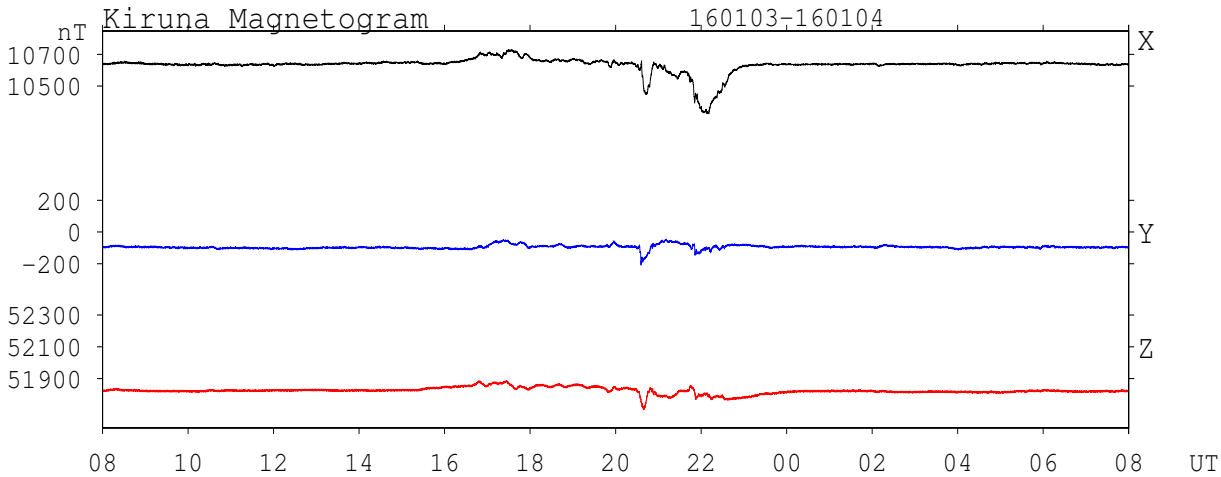
January - March 2016

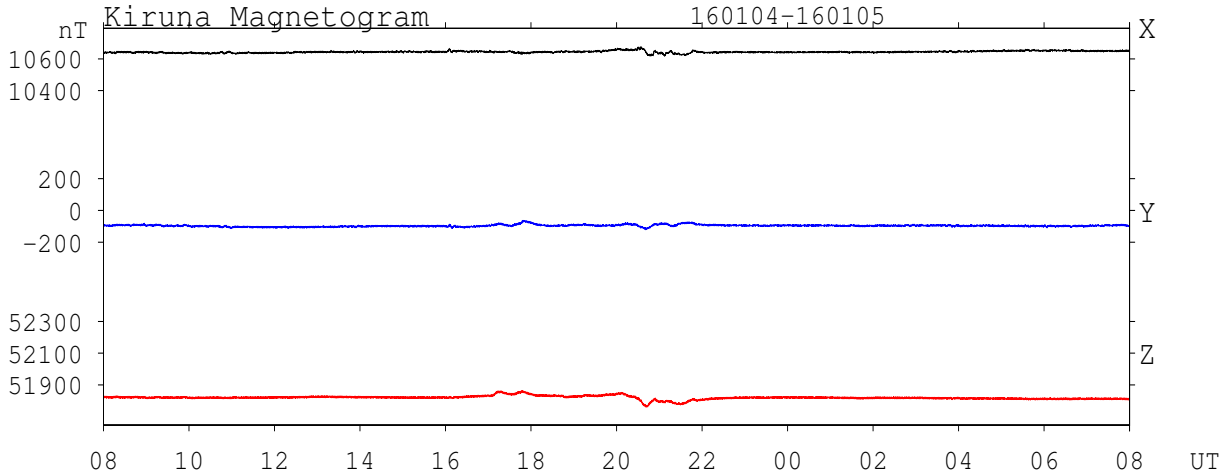
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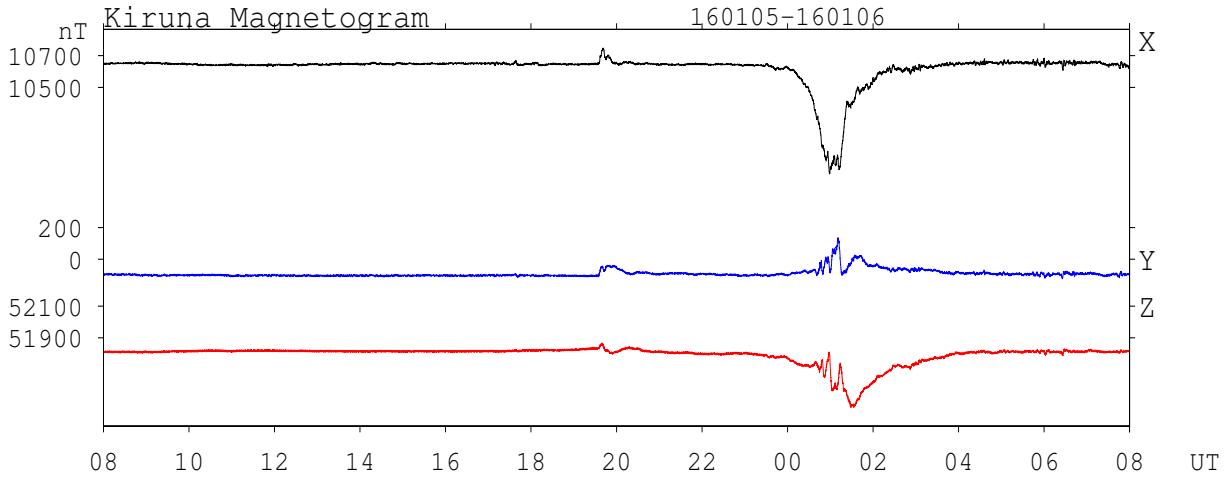

Kiruna Magnetogram
151231-160101
nT
11000
10800
10600
200
0
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

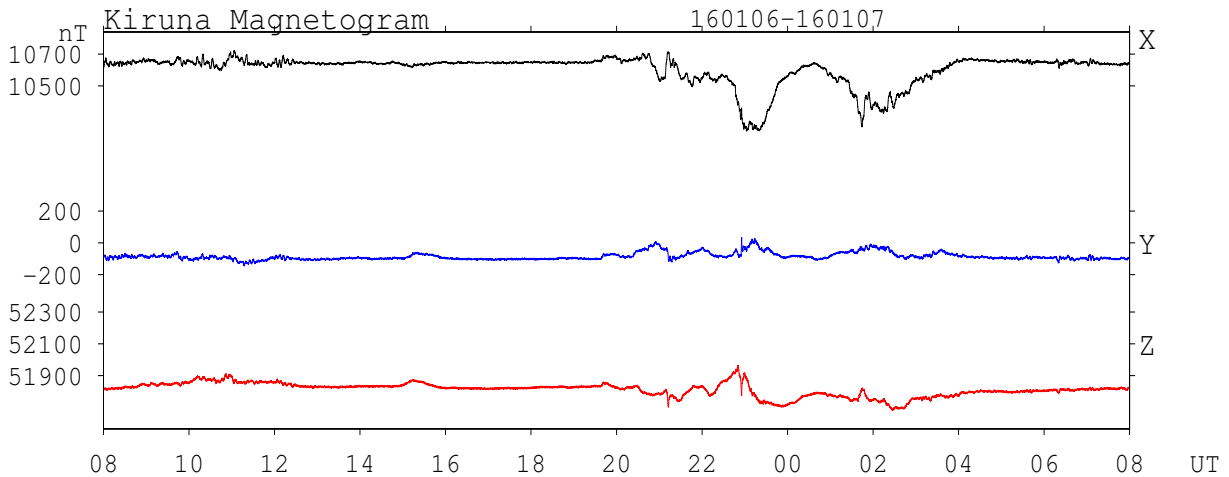

Kiruna Magnetogram
160101-160102
nT
10600
10400
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

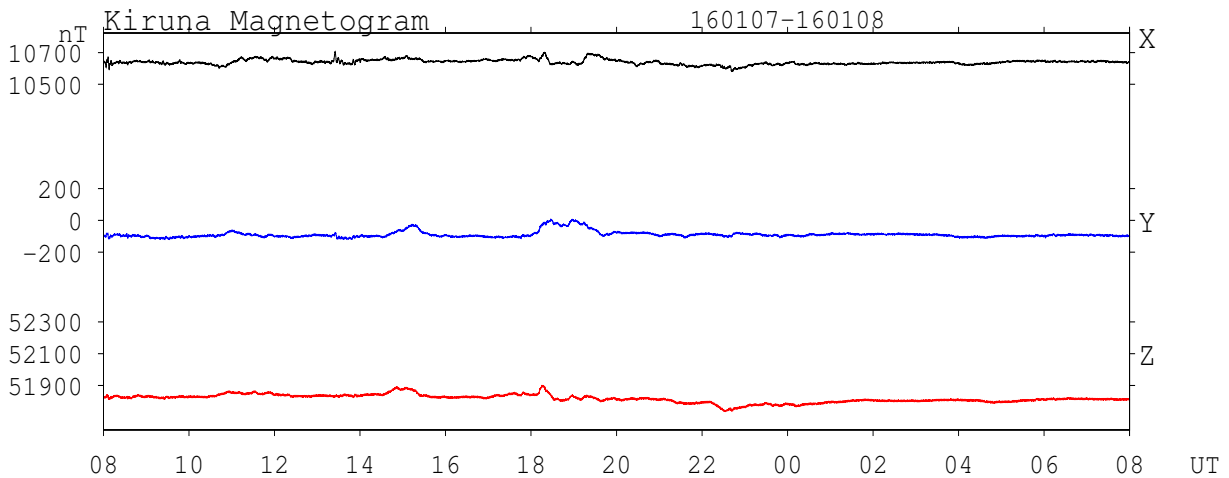

Kiruna Magnetogram
160102-160103
nT
10700
10500
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

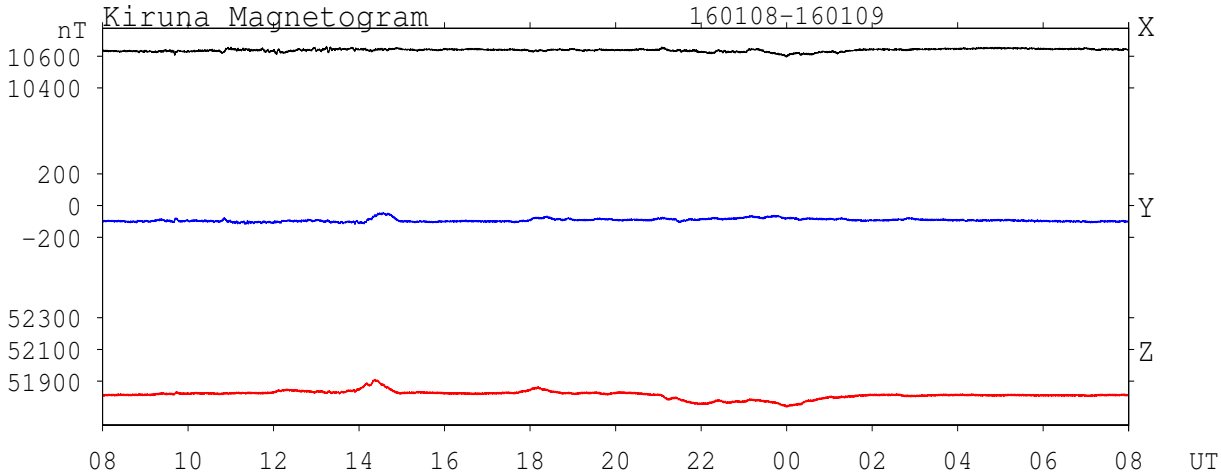

Kiruna Magnetogram
160103-160104
nT
10700
10500
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

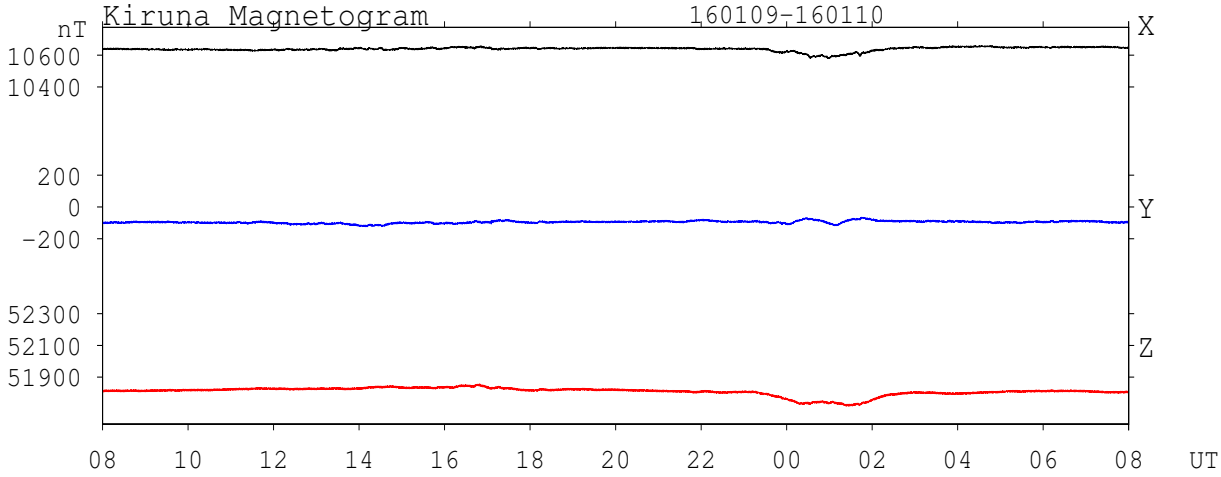

Kiruna Magnetogram
160104-160105
nT
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X
Y
Z
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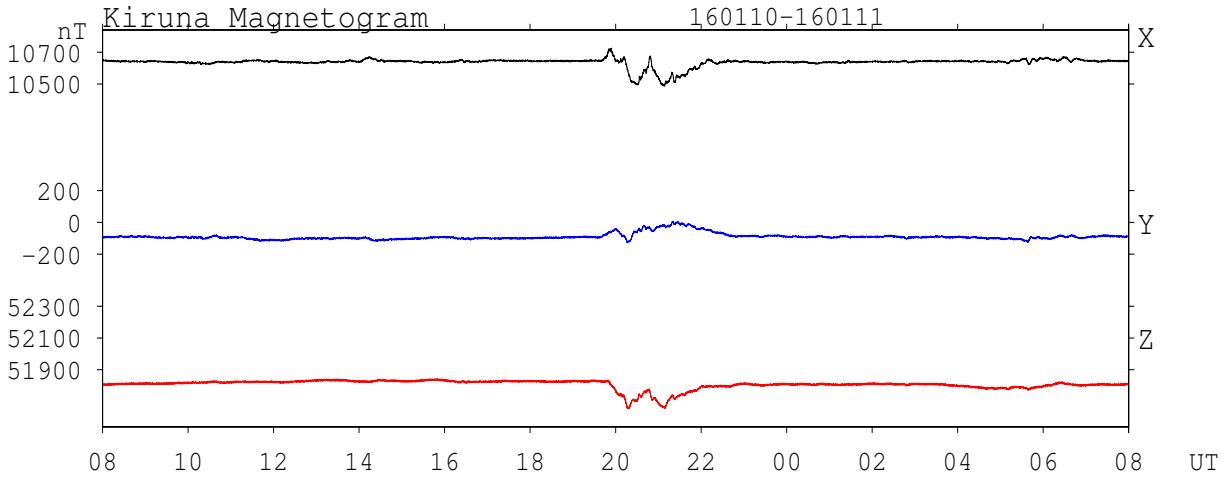

Kiruna Magnetogram
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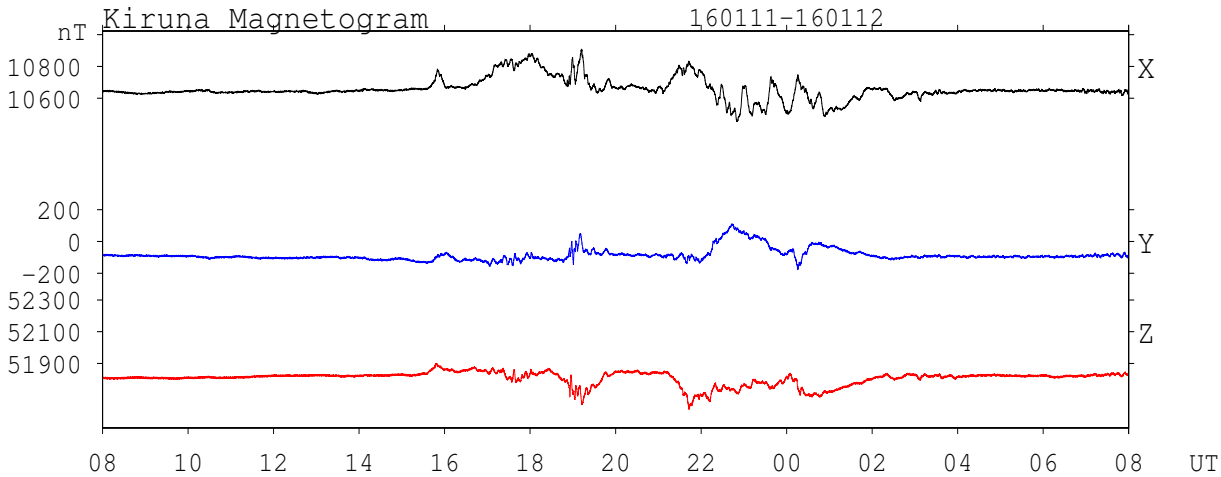

Kiruna Magnetogram
160106-160107
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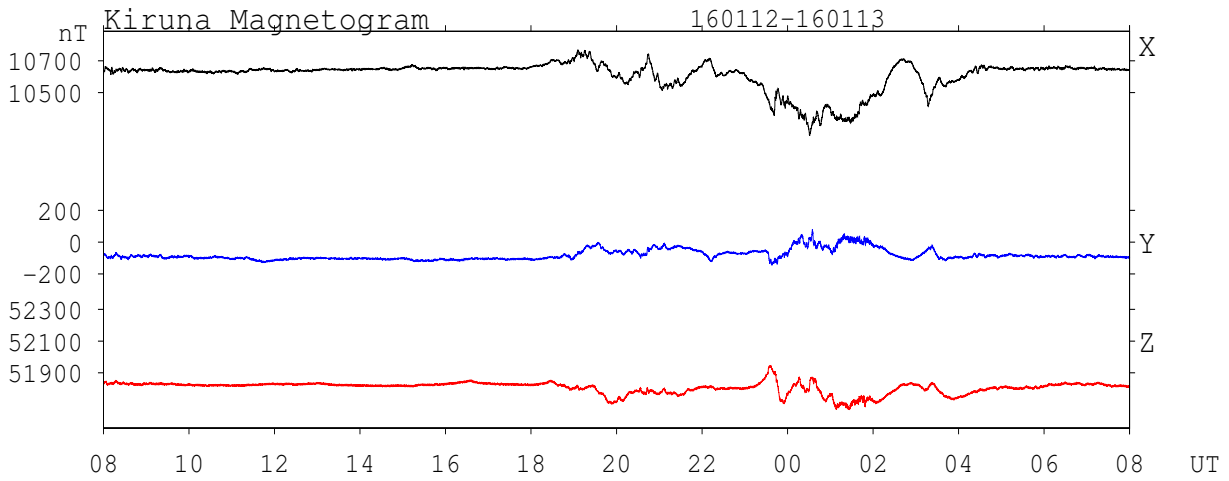

Kiruna Magnetogram
160107-160108
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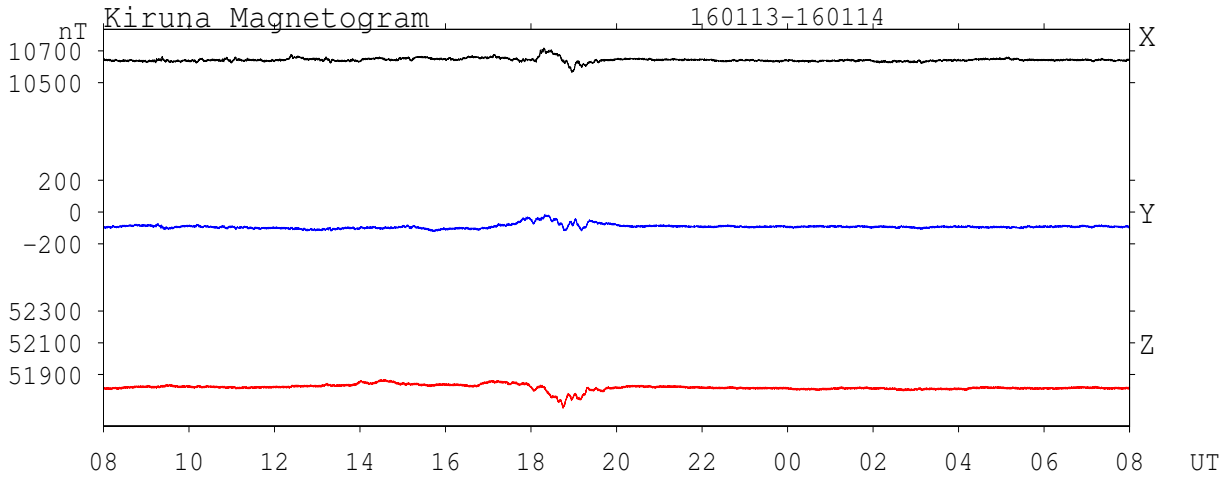

Kiruna Magnetogram
160108-160109
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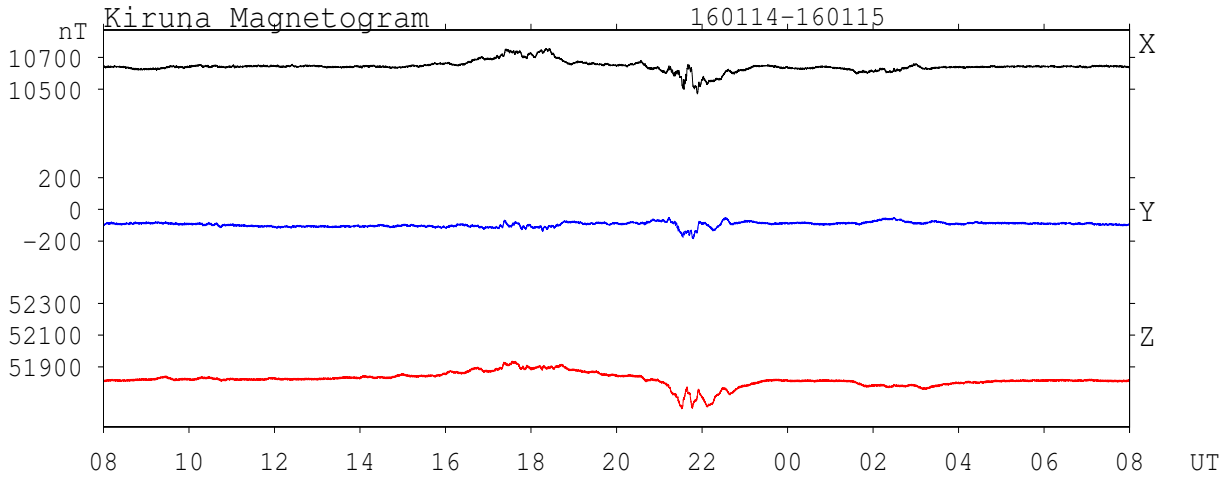

Kiruna Magnetogram
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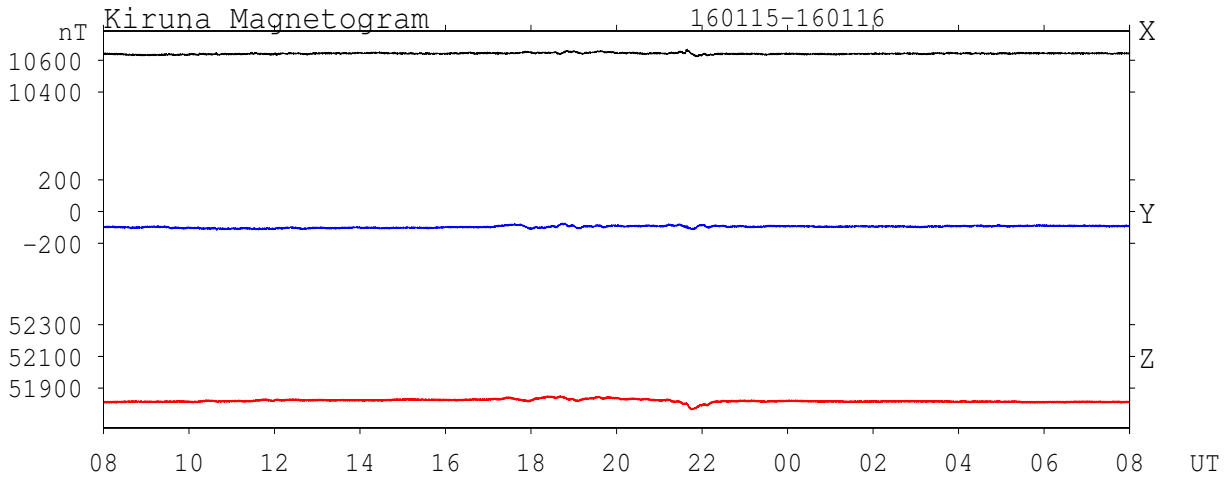

Kiruna Magnetogram
160110-160111
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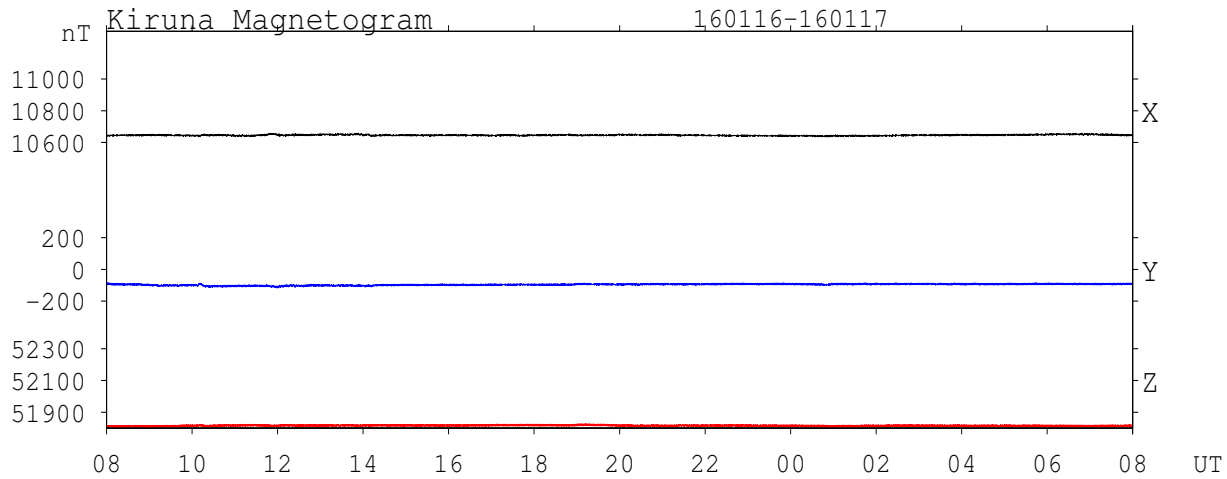

Kiruna Magnetogram
160111-160112
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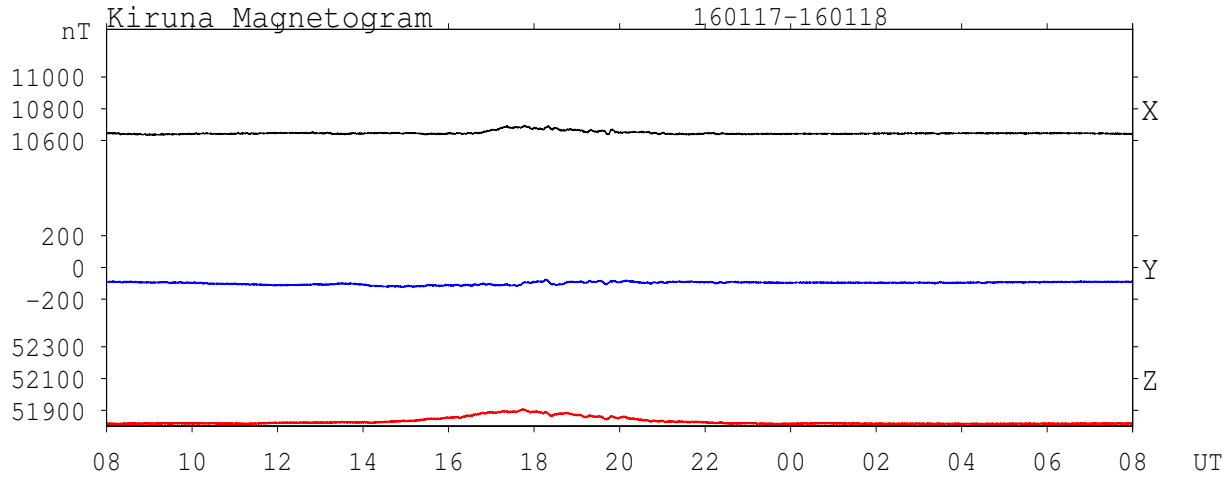

Kiruna Magnetogram
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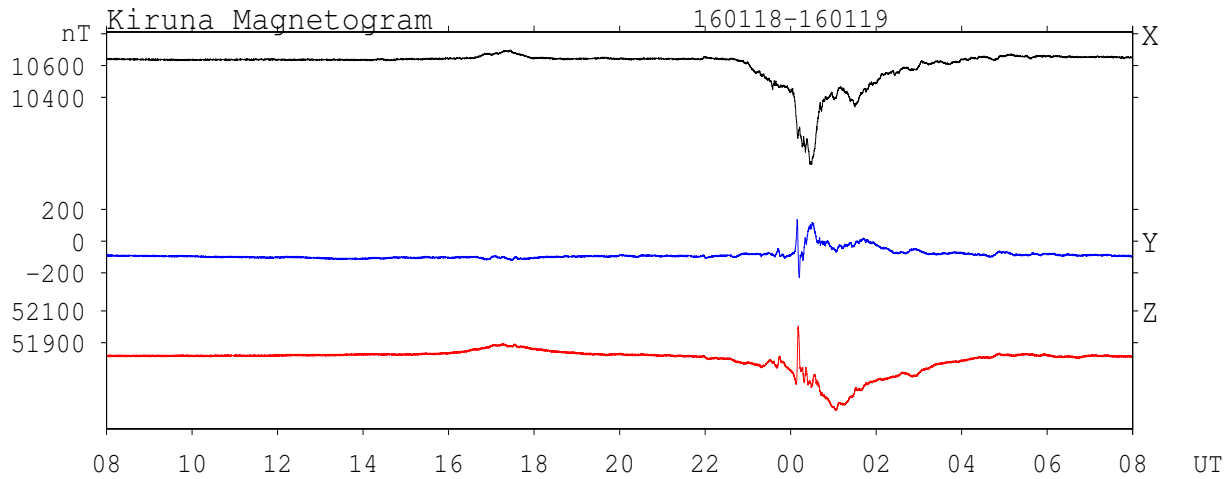

Kiruna Magnetogram
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Y
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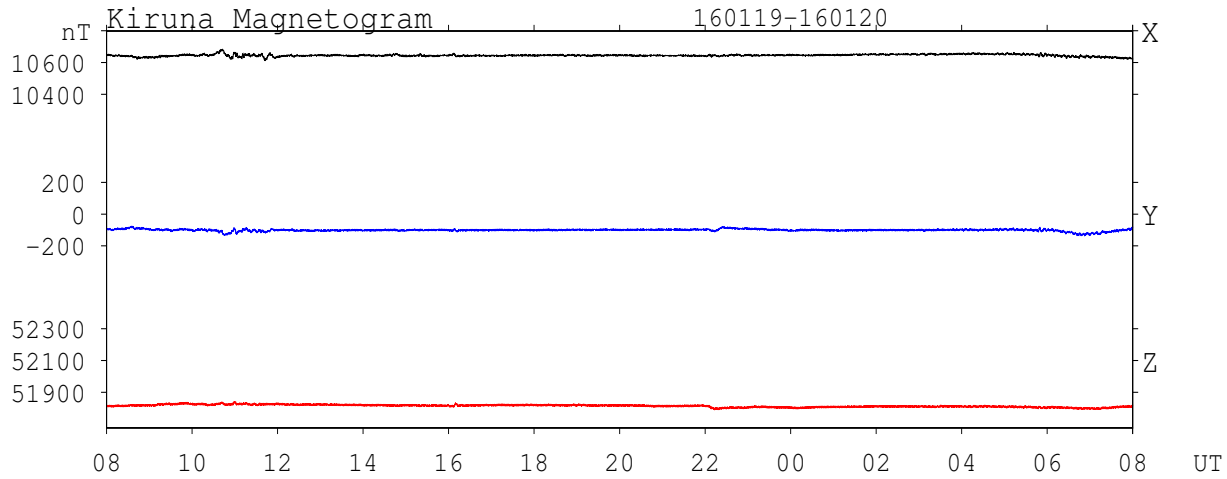

Kiruna Magnetogram
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Y
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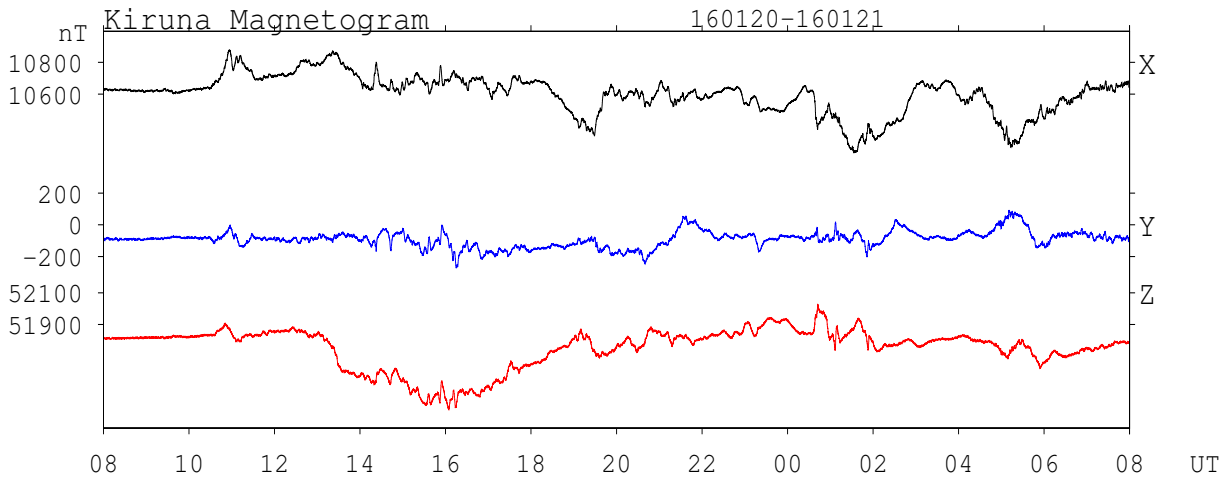

Kiruna Magnetogram
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-200
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Y
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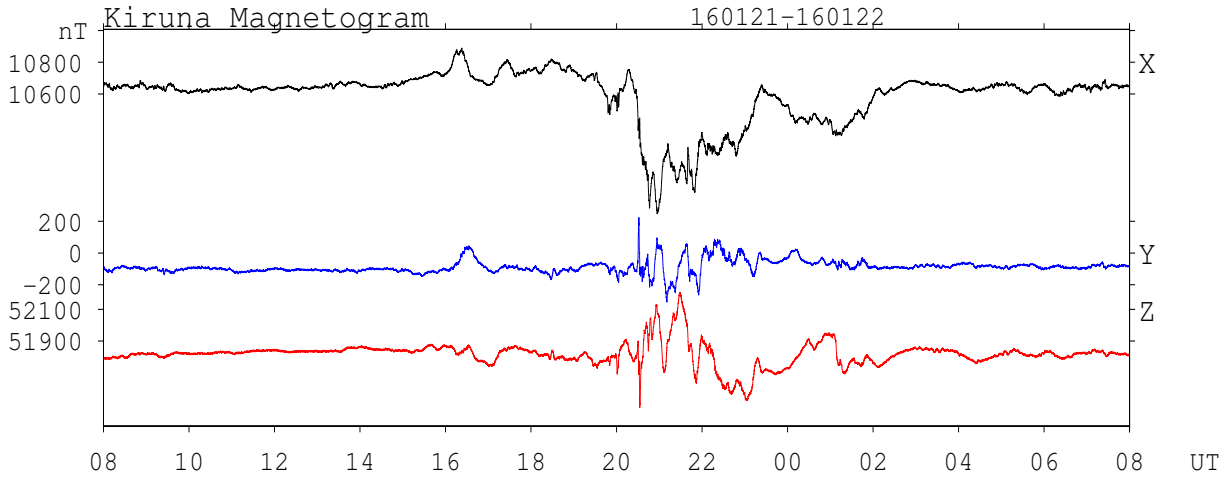

Kiruna Magnetogram
160116-160117
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-200
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52100
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Y
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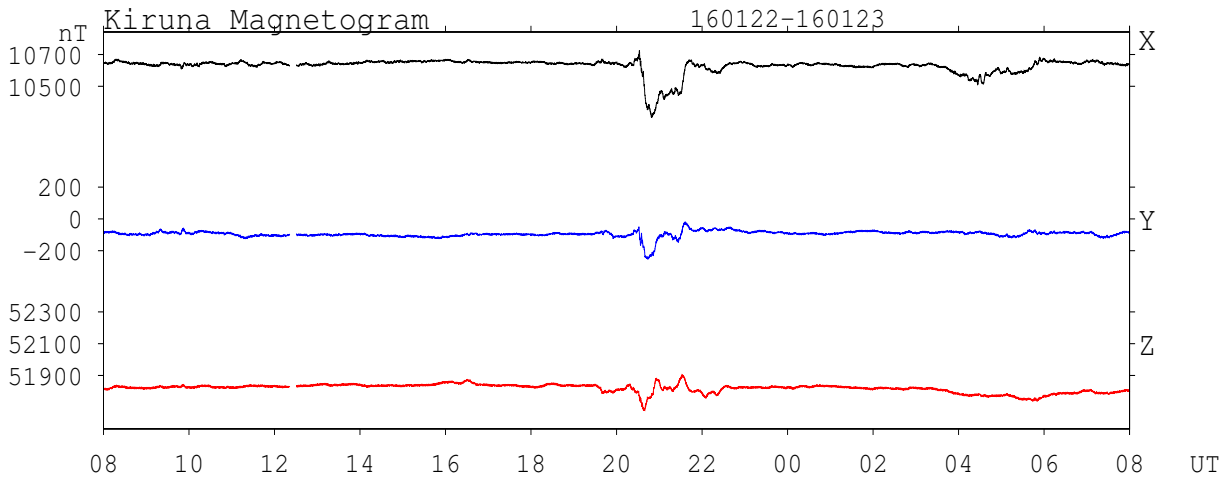

Kiruna Magnetogram
160117-160118
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-200
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Y
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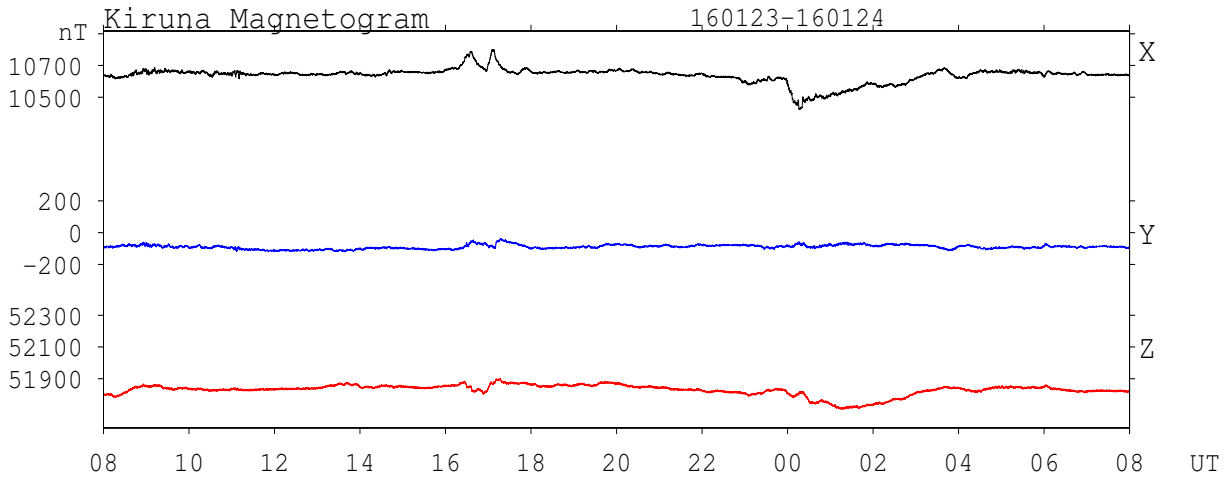

Kiruna Magnetogram
160118-160119
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-200
52100
51900
X
Y
Z
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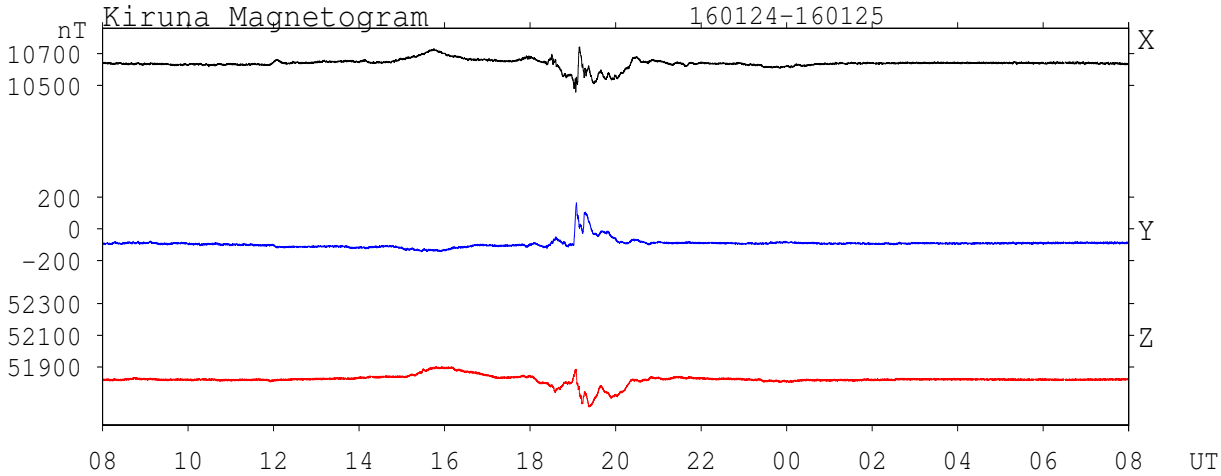

Kiruna Magnetogram
160119-160120
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-200
52300
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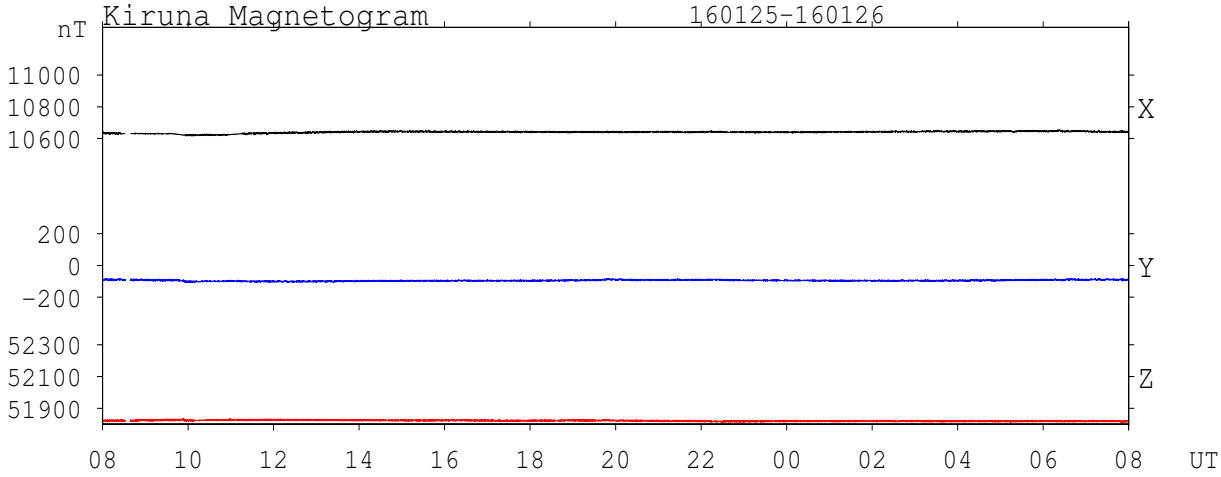

Kiruna Magnetogram
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Y
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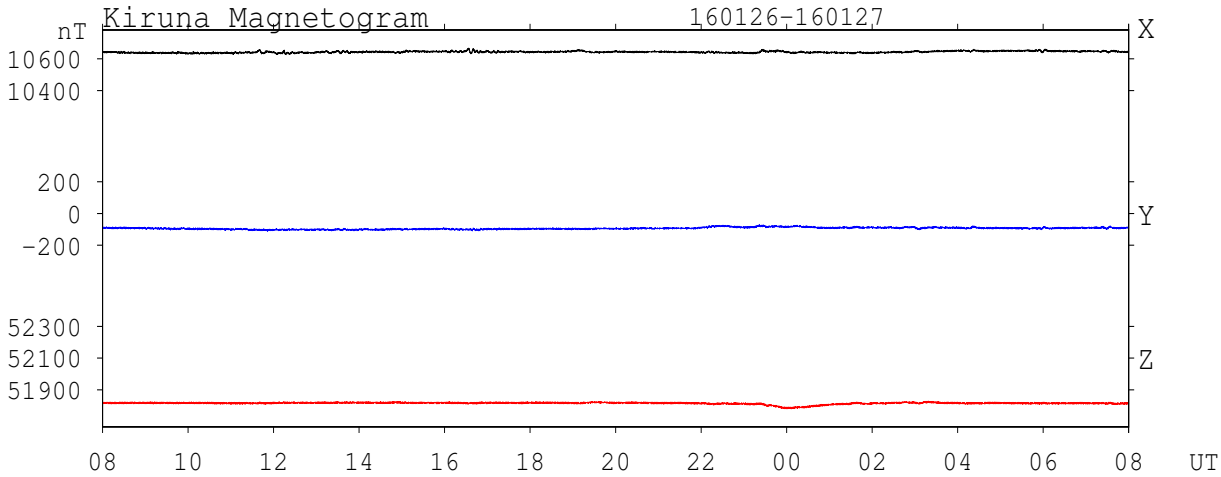

Kiruna Magnetogram
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Y
Z
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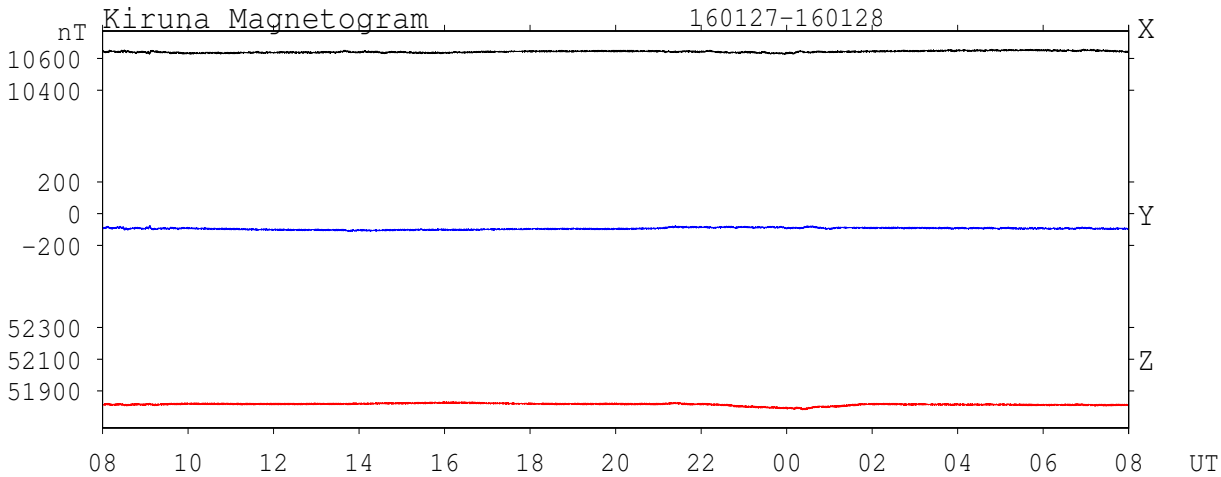

Kiruna Magnetogram
160122-160123
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-200
52300
52100
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X
Y
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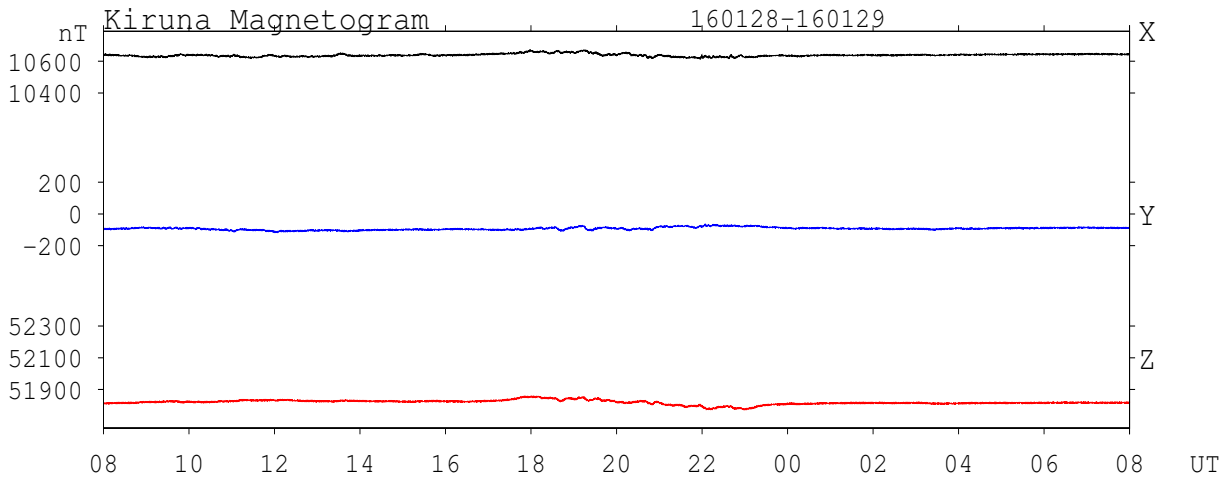

Kiruna Magnetogram
160123-160124
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Y
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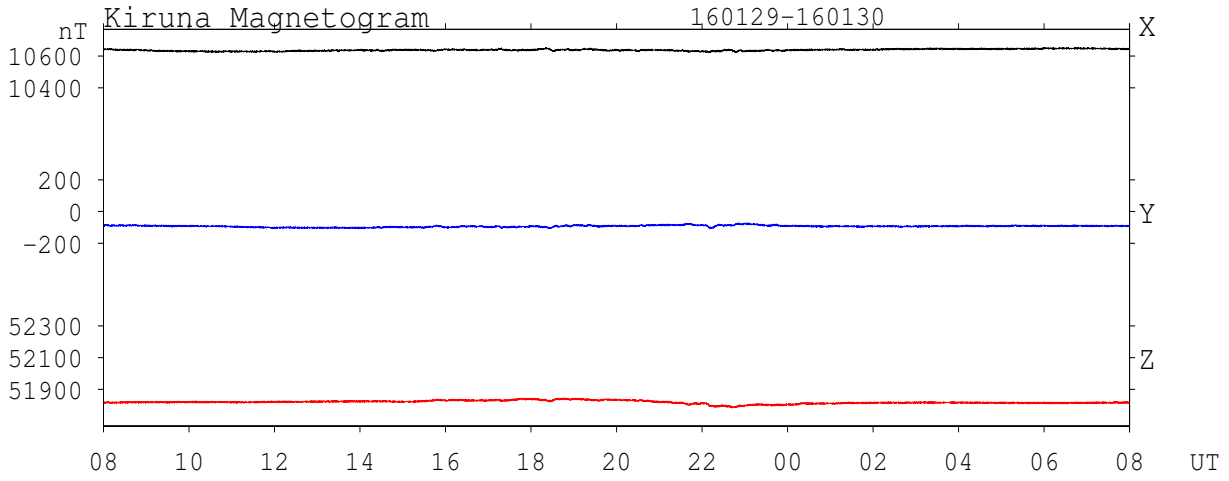

Kiruna Magnetogram
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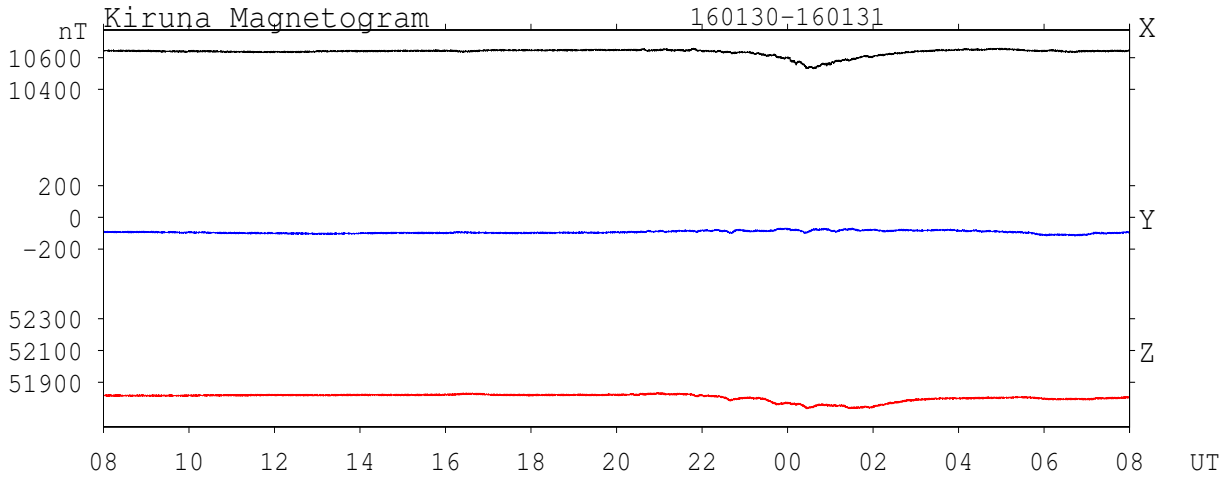

Kiruna Magnetogram
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Y
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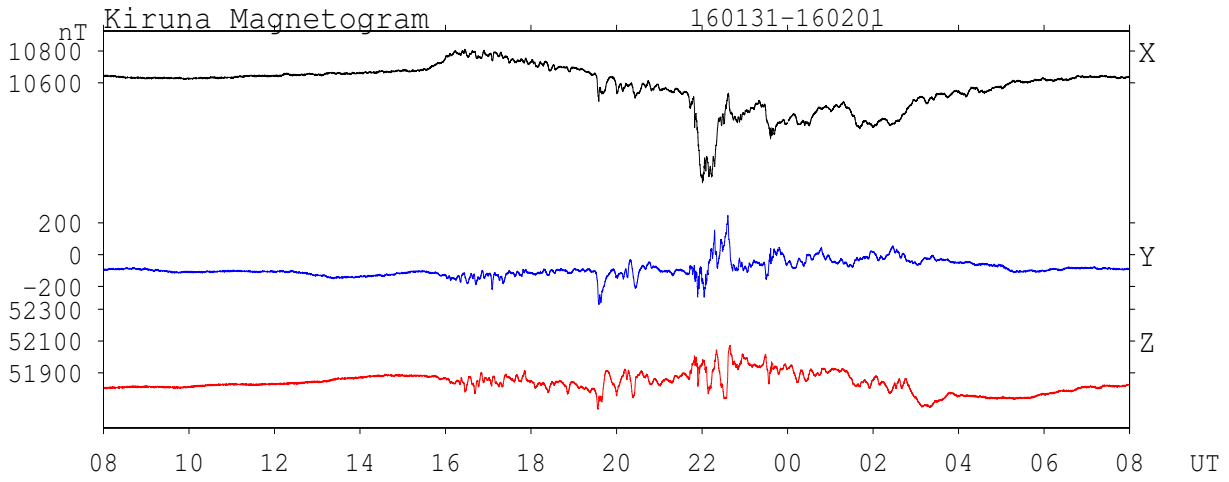

Kiruna Magnetogram
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Y
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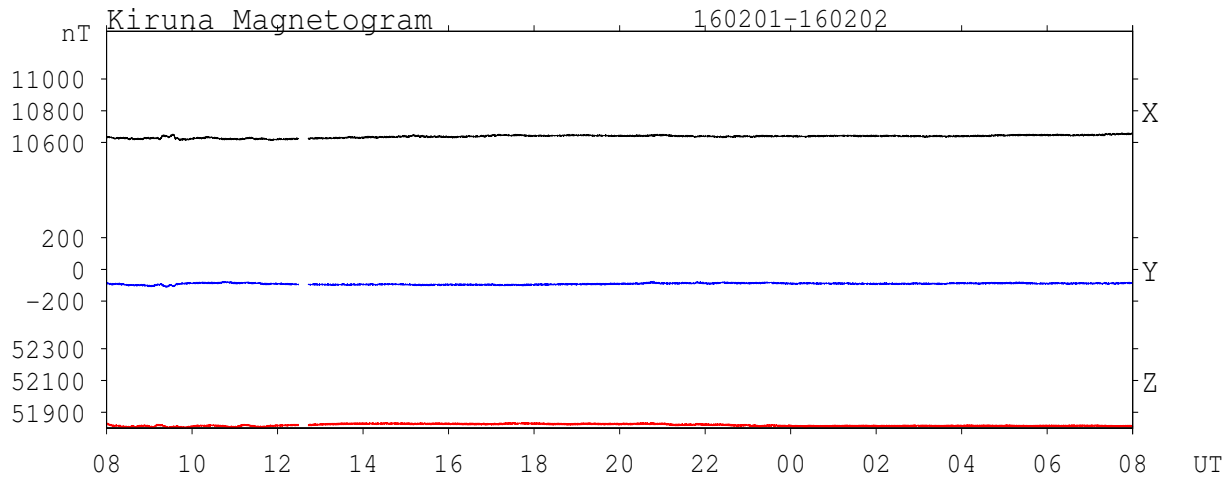

Kiruna Magnetogram
160127-160128
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-200
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Y
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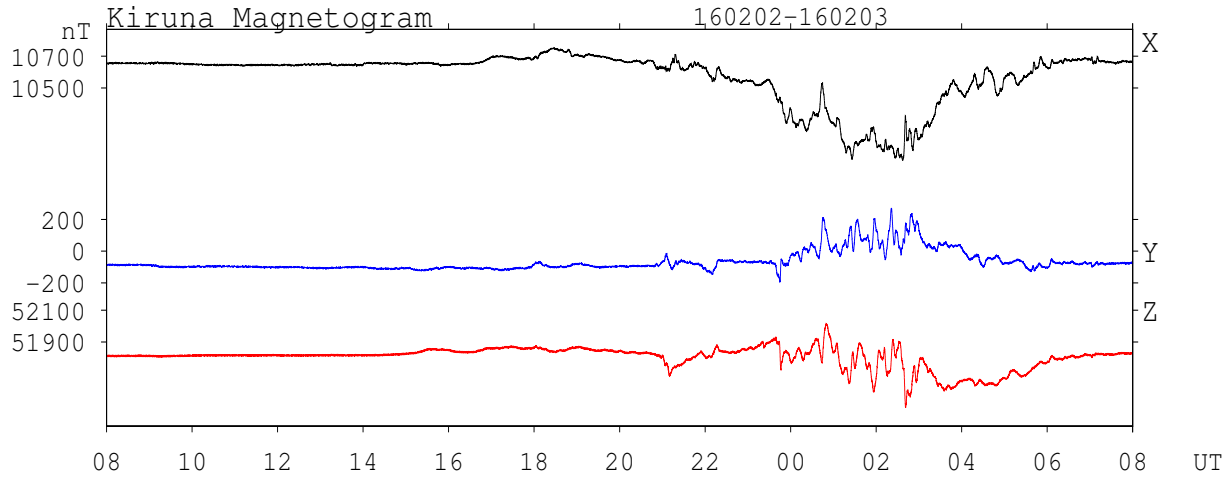

Kiruna Magnetogram
160128-160129
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-200
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Y
Z
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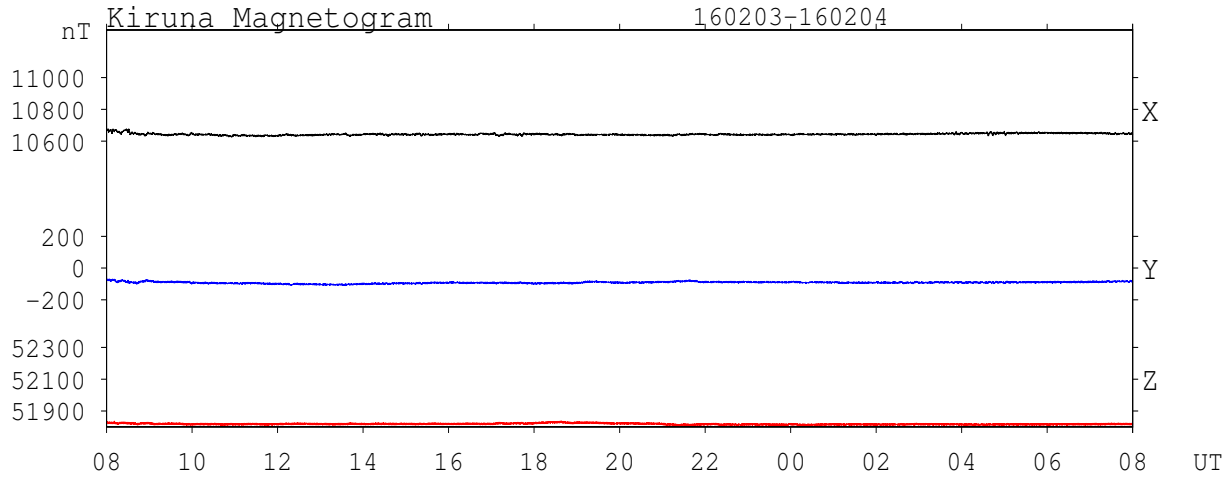

Kiruna Magnetogram
160129-160130
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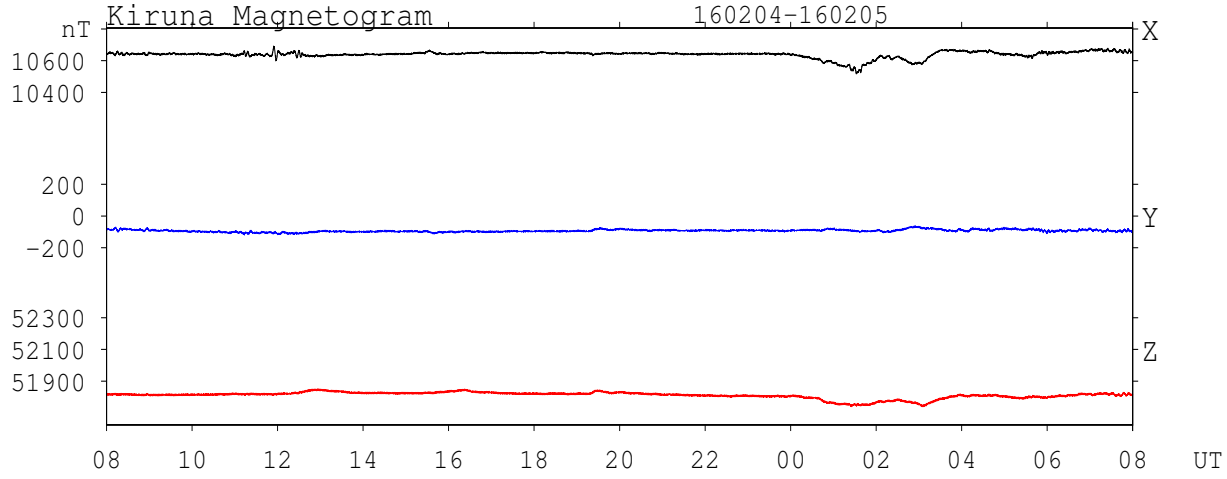

Kiruna Magnetogram
160130-160131
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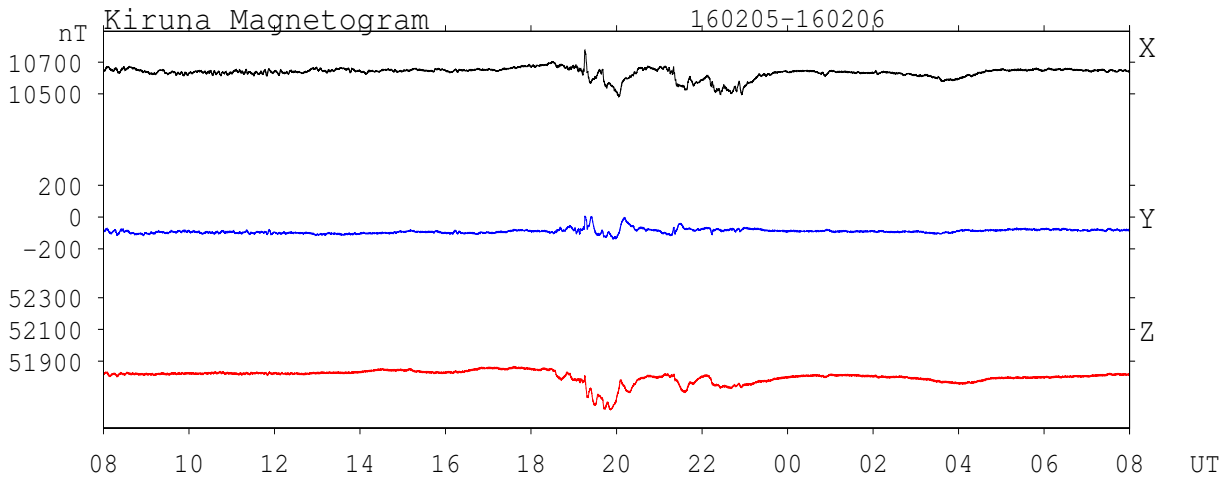

Kiruna Magnetogram
160131-160201
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

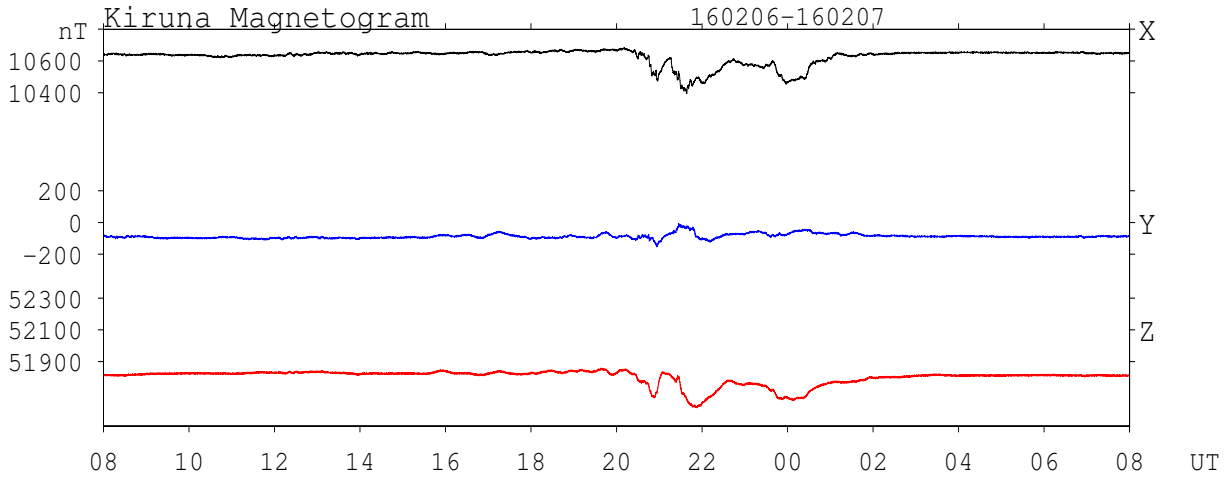

Kiruna Magnetogram
160201-160202
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X
Y
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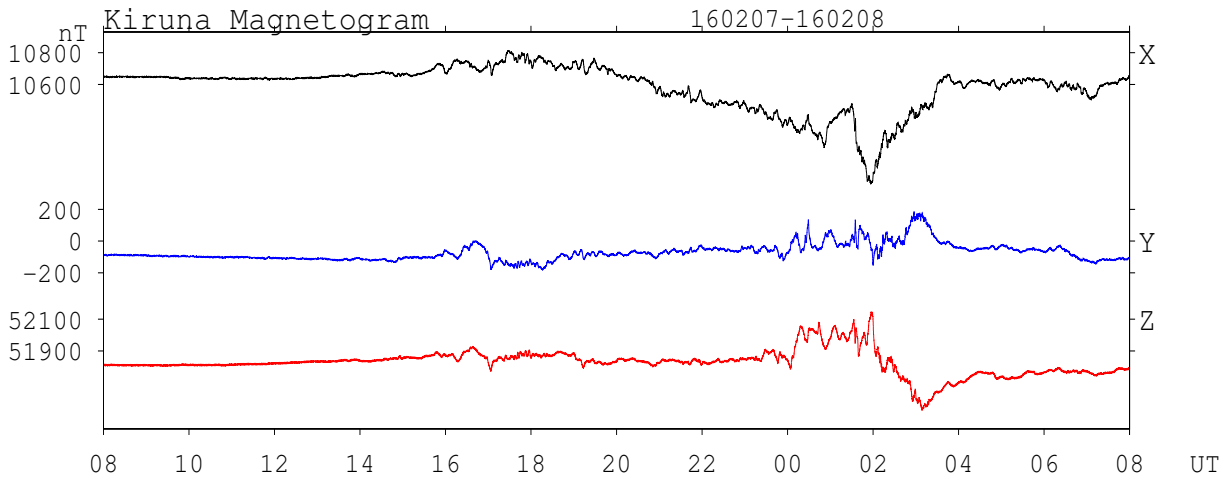

Kiruna Magnetogram
160202-160203
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52100
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X
Y
Z
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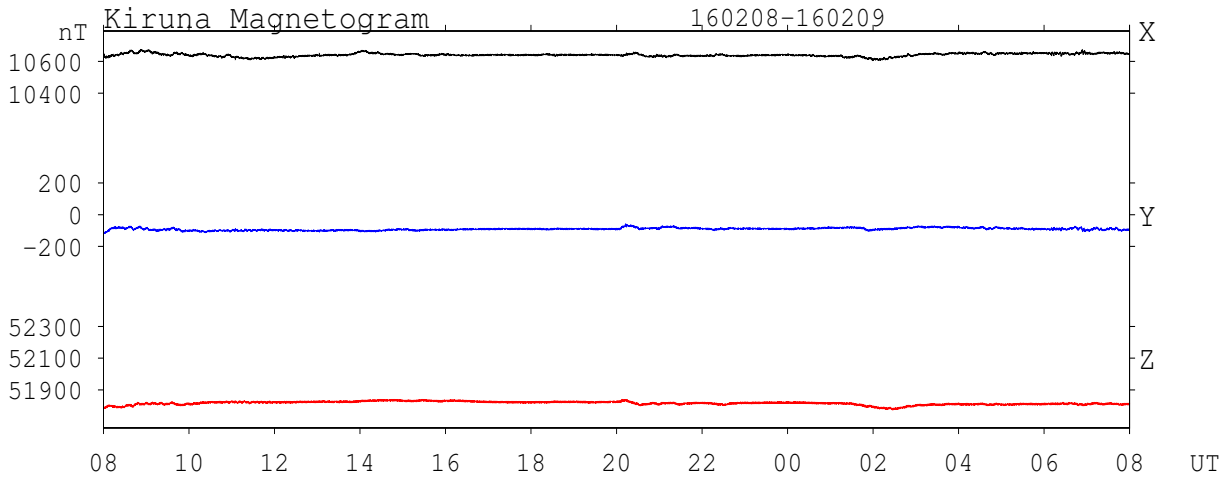

Kiruna Magnetogram
160203-160204
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X
Y
Z
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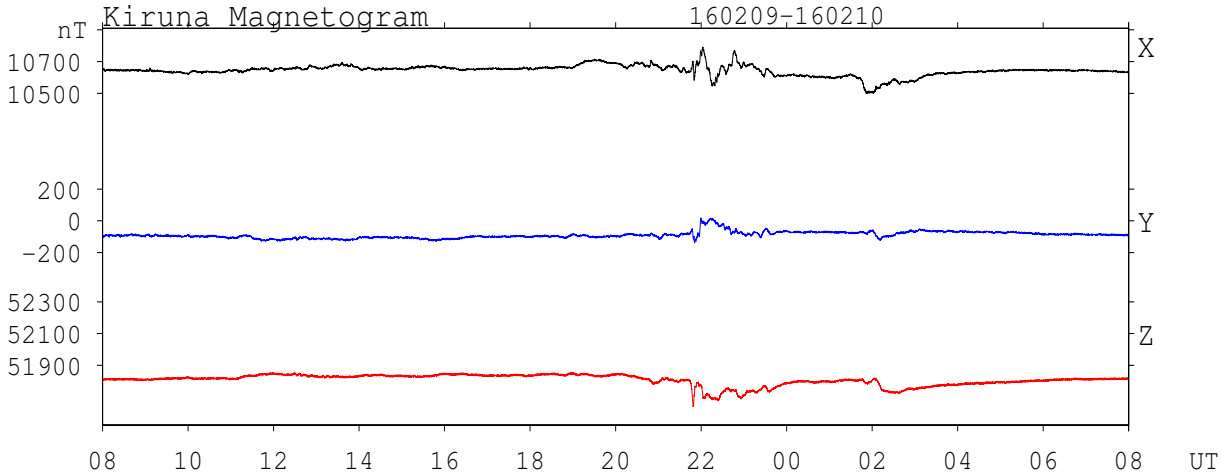

Kiruna Magnetogram
160204-160205
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Y
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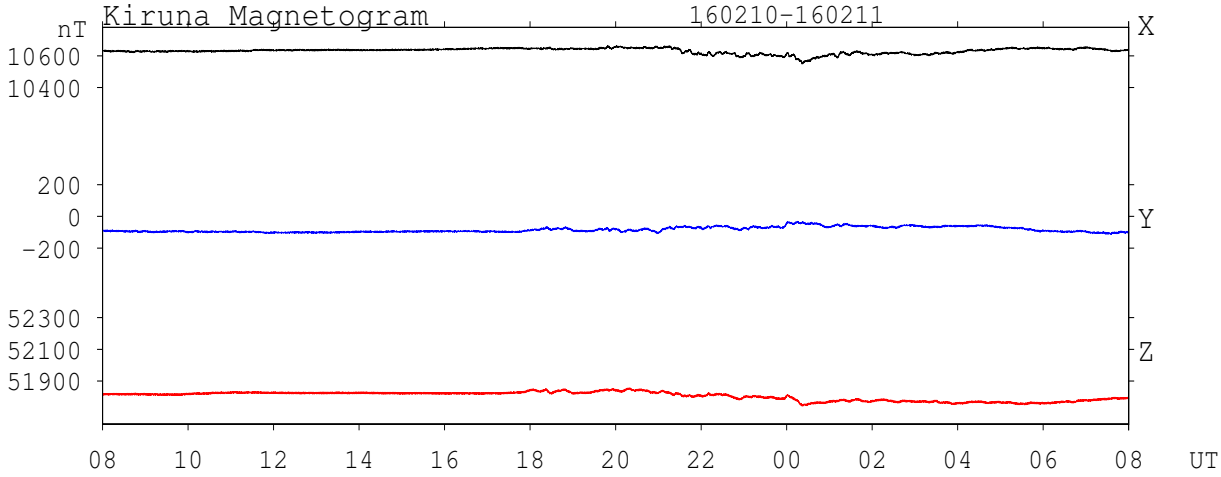

Kiruna Magnetogram
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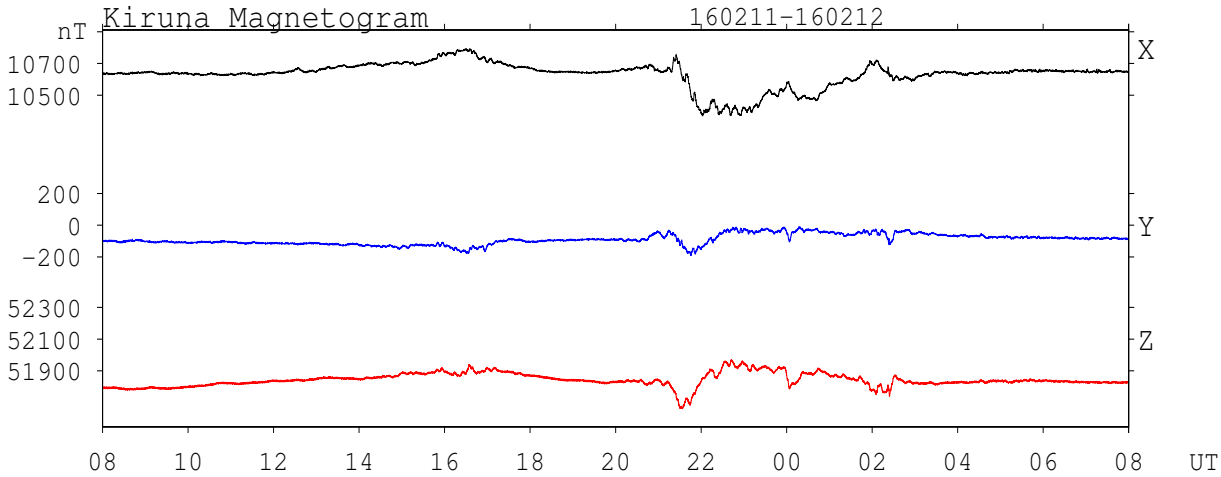

Kiruna Magnetogram
160206-160207
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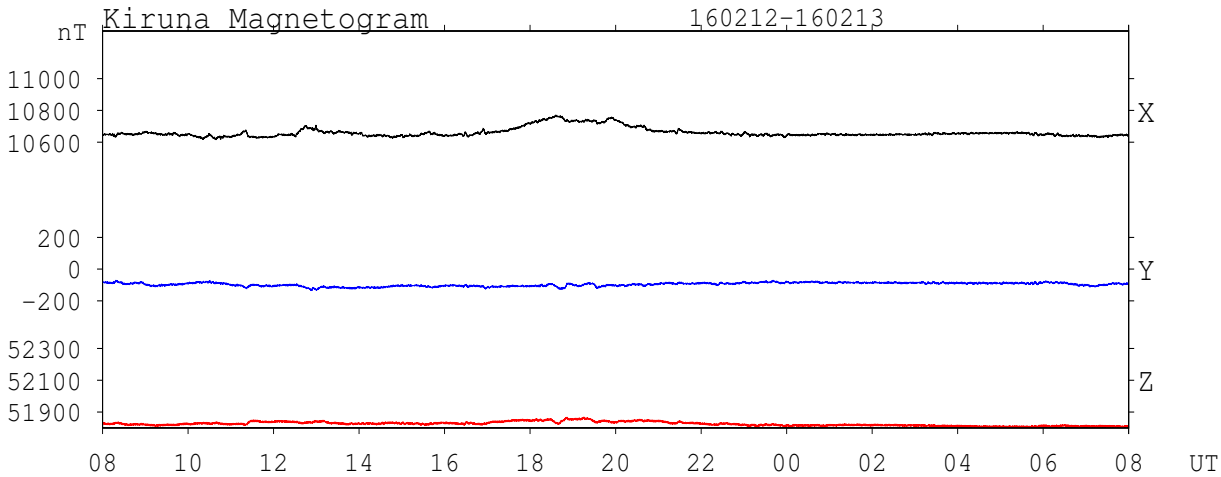

Kiruna Magnetogram
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Y
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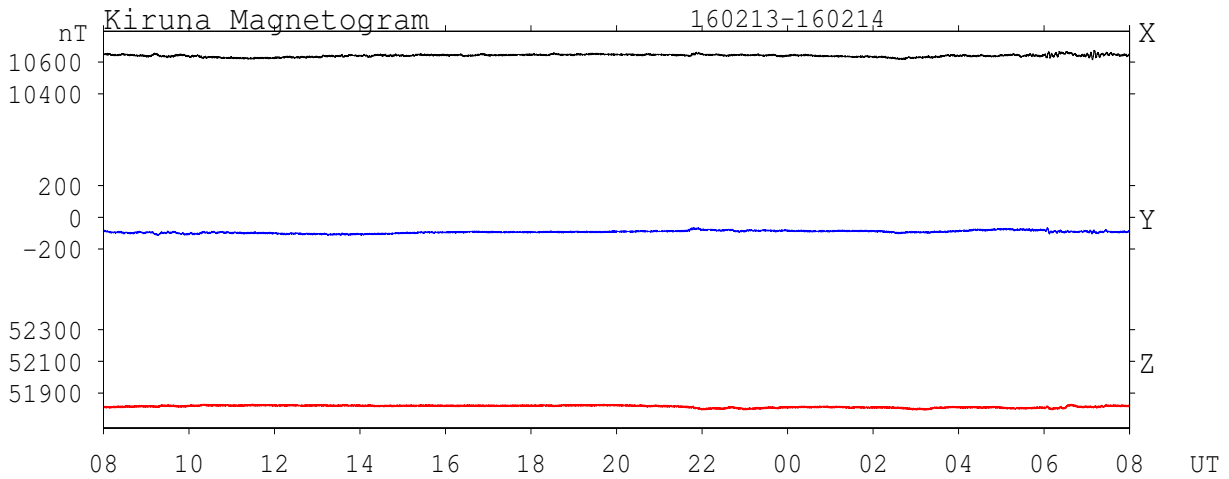

Kiruna Magnetogram
160208-160209
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Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

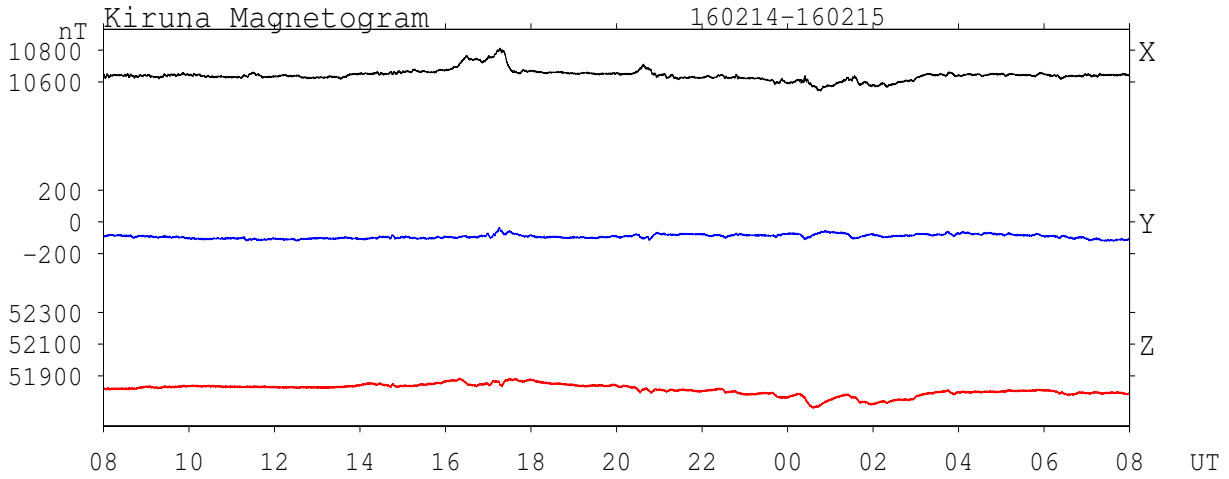

Kiruna Magnetogram
160209-160210
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-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

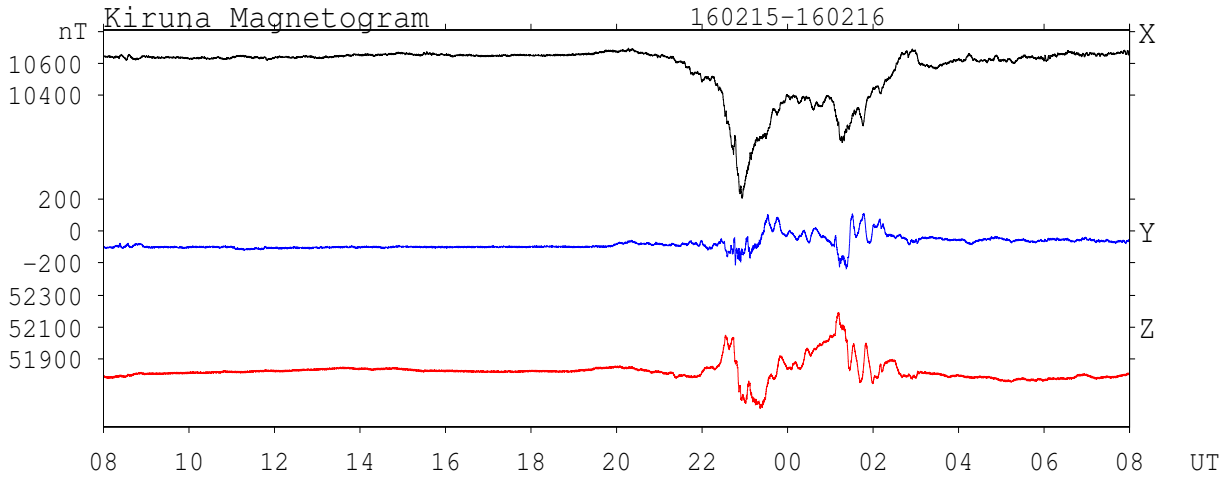

Kiruna Magnetogram
160210-160211
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52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

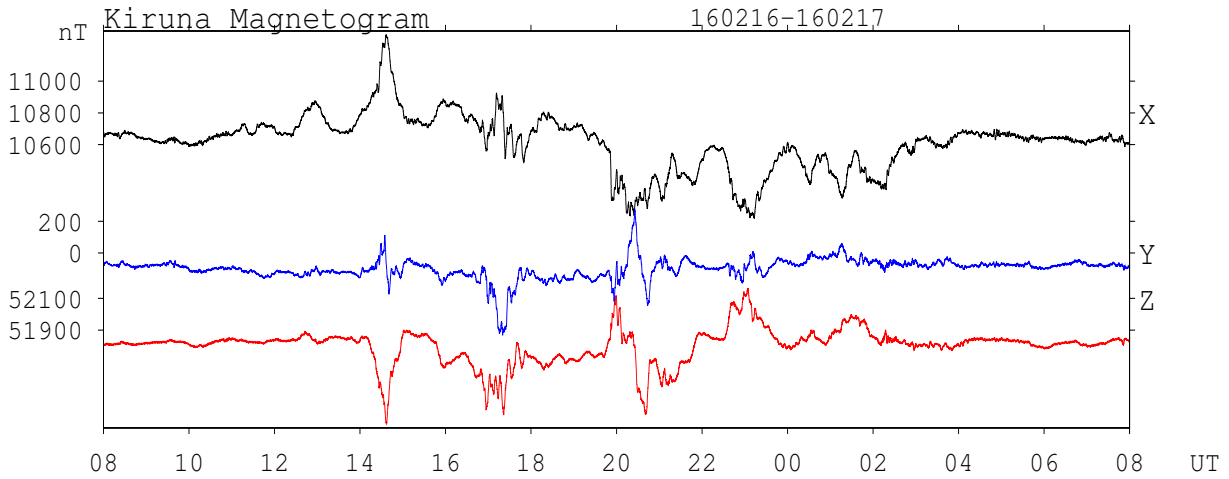

Kiruna Magnetogram
160211-160212
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Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

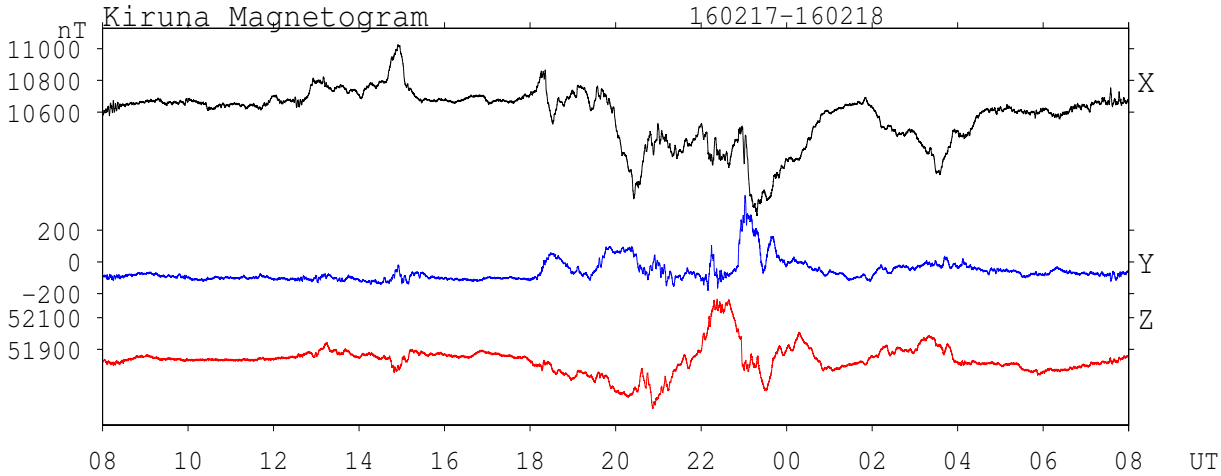

Kiruna Magnetogram
160212-160213
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200
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-200
52300
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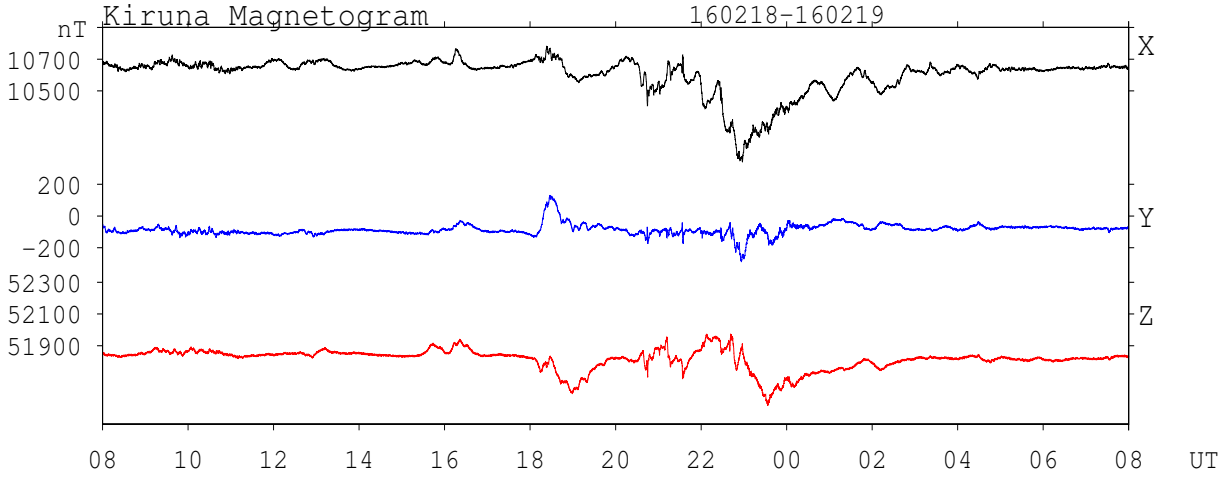

Kiruna Magnetogram
160213-160214
nT
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Y
Z
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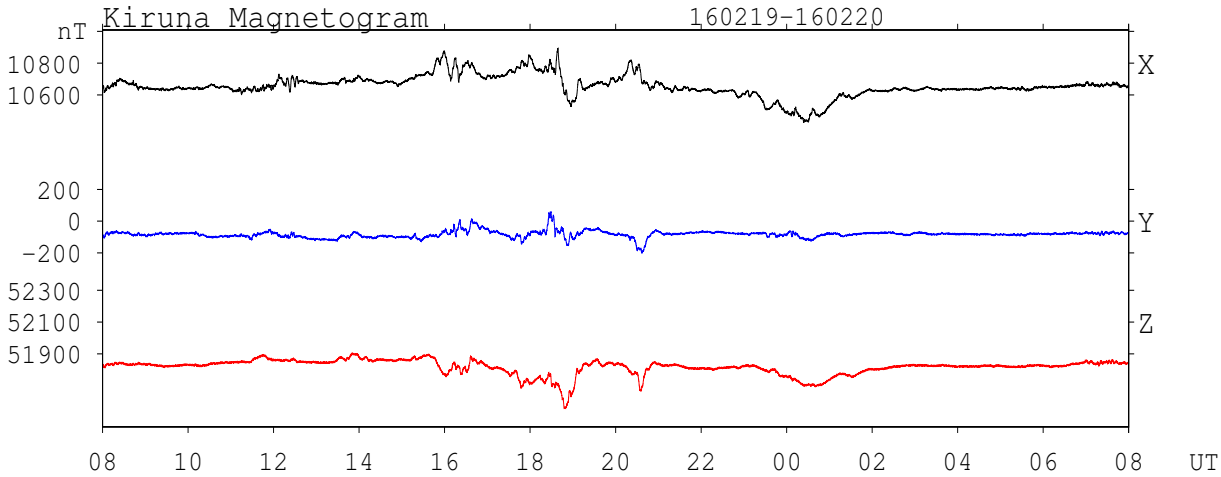

Kiruna Magnetogram
160214-160215
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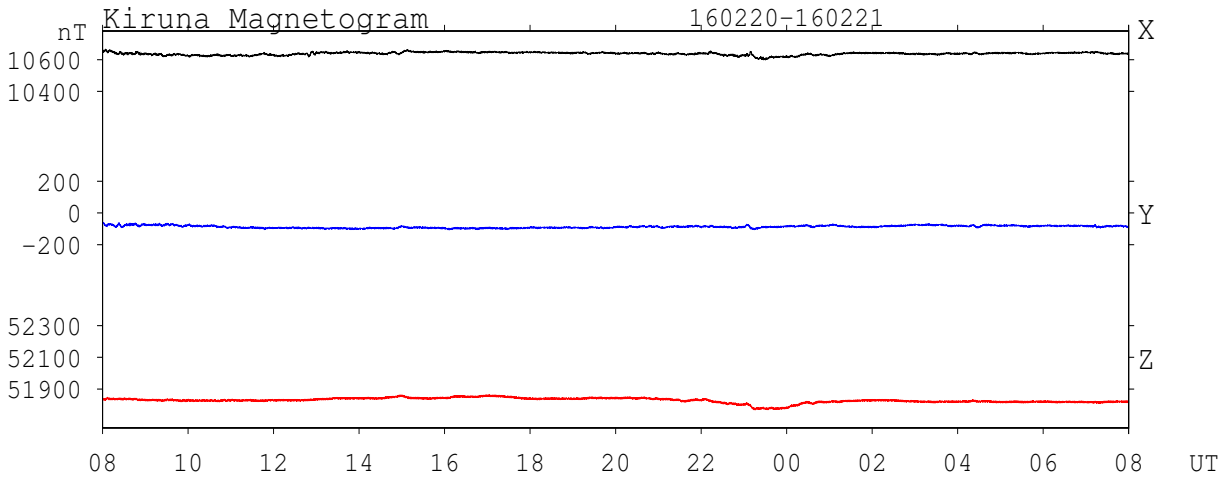

Kiruna Magnetogram
160215-160216
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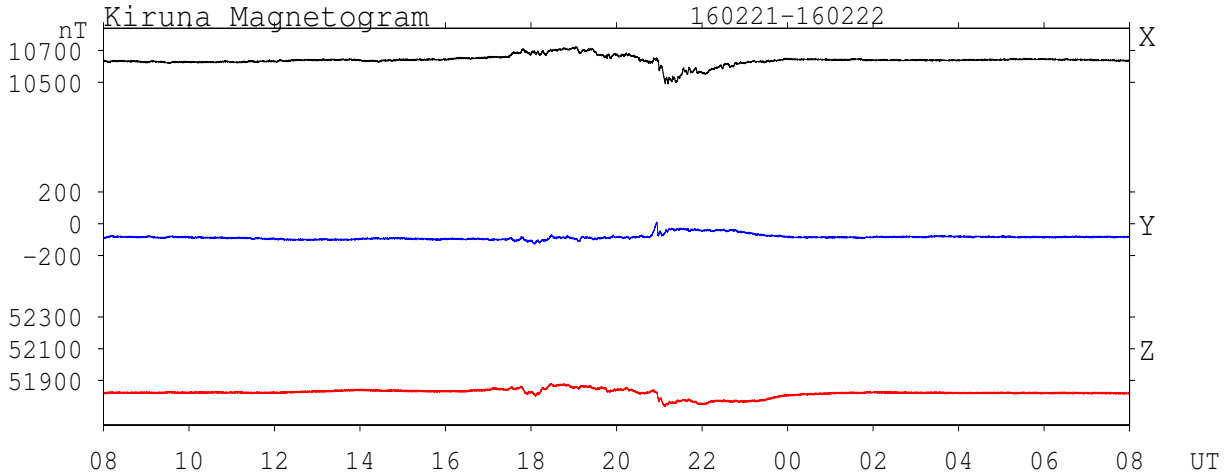

Kiruna Magnetogram
160216-160217
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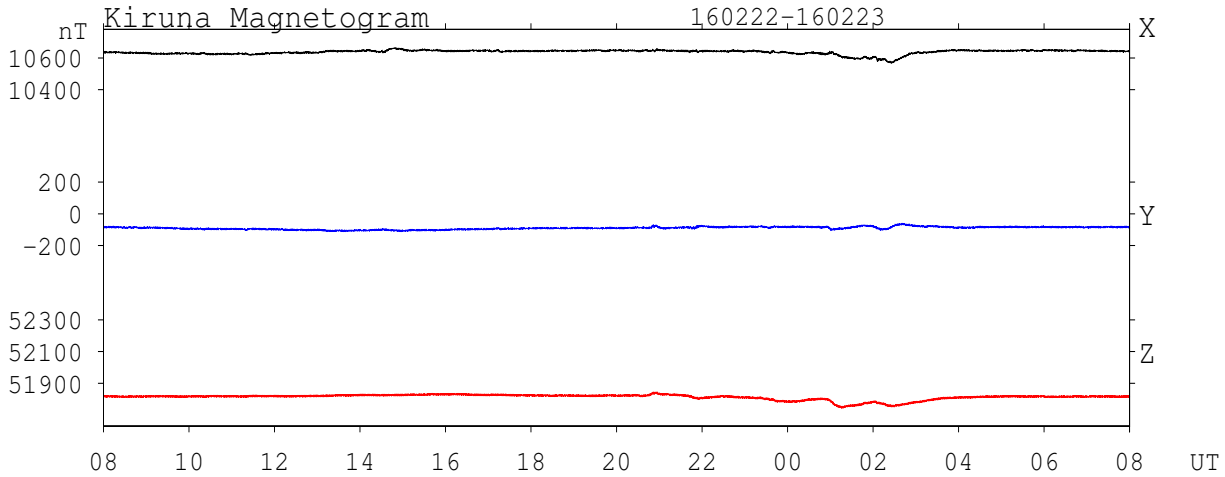

Kiruna Magnetogram
160217-160218
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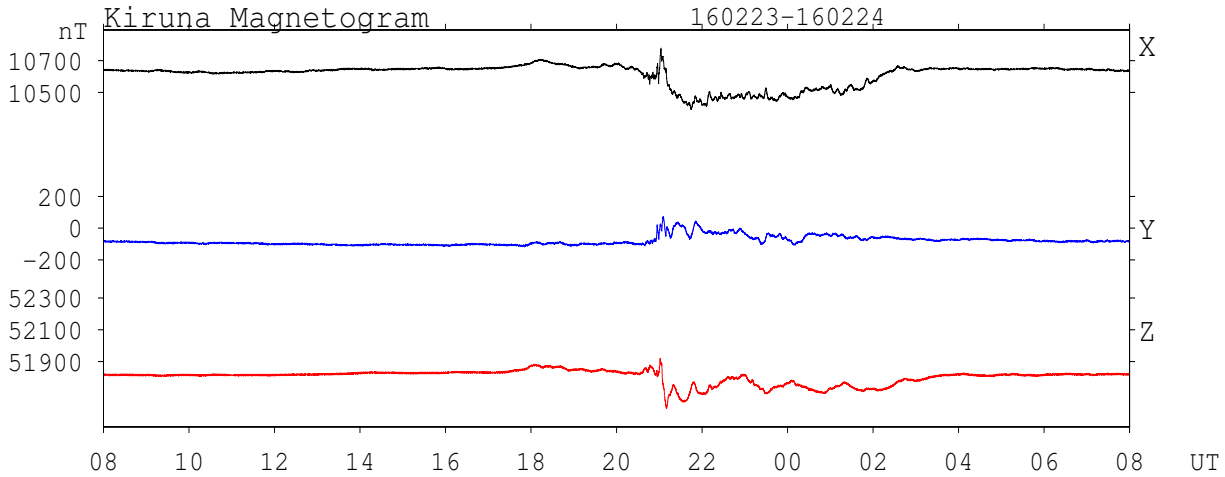

Kiruna Magnetogram
160218-160219
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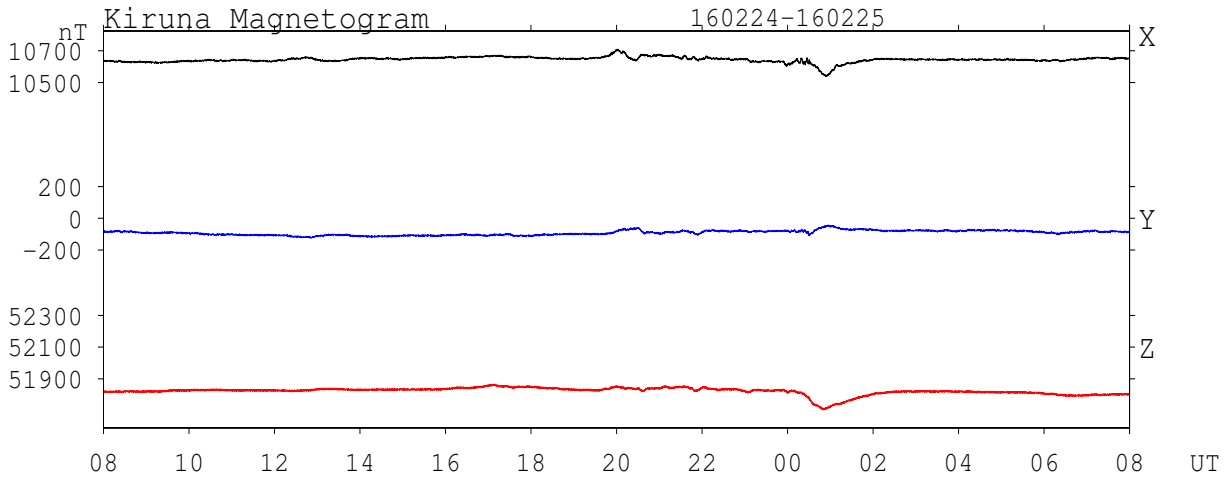

Kiruna Magnetogram
160219-160220
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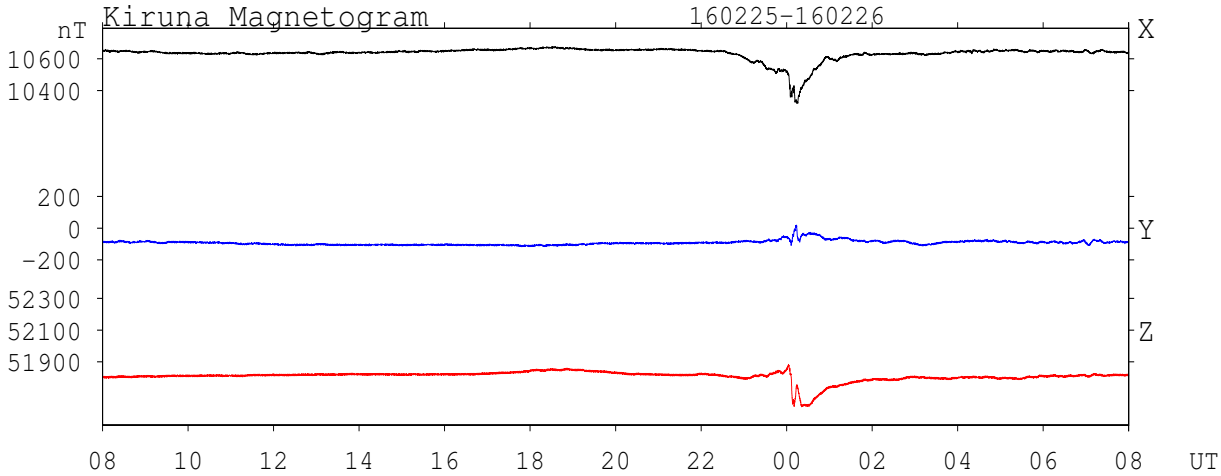

Kiruna Magnetogram
160220-160221
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Y
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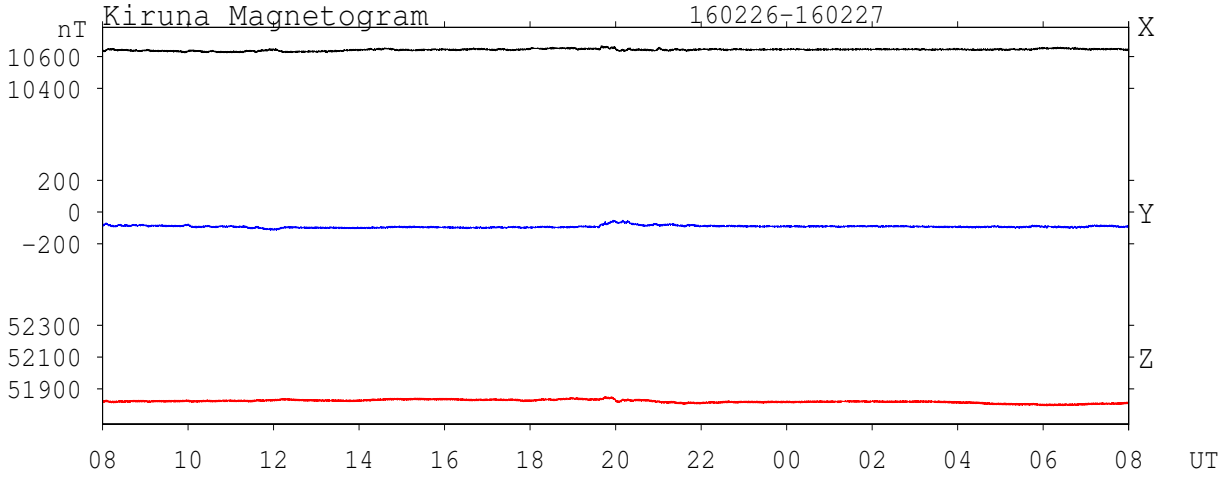

Kiruna Magnetogram
160221-160222
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Y
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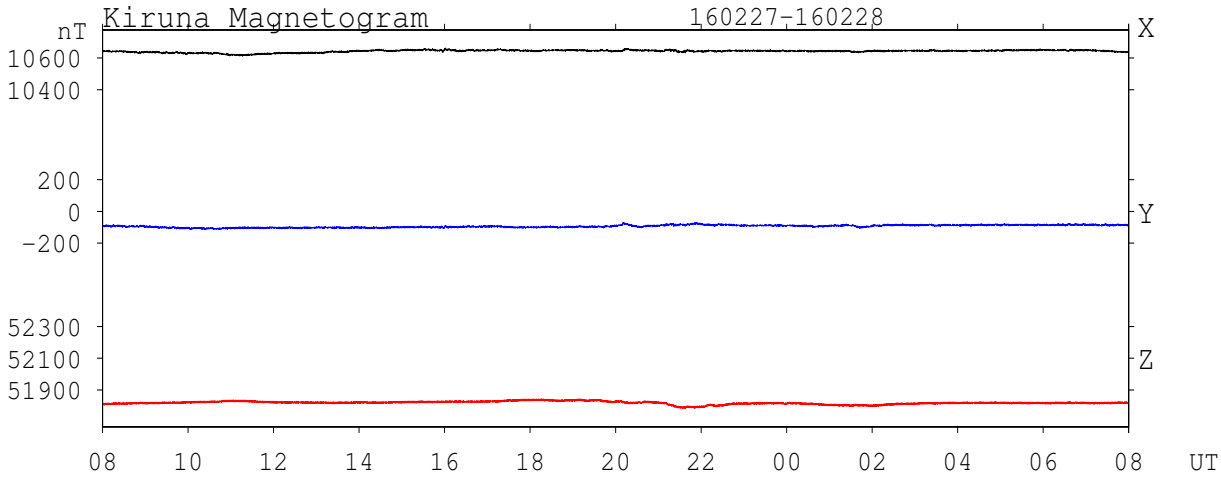

Kiruna Magnetogram
160222-160223
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Y
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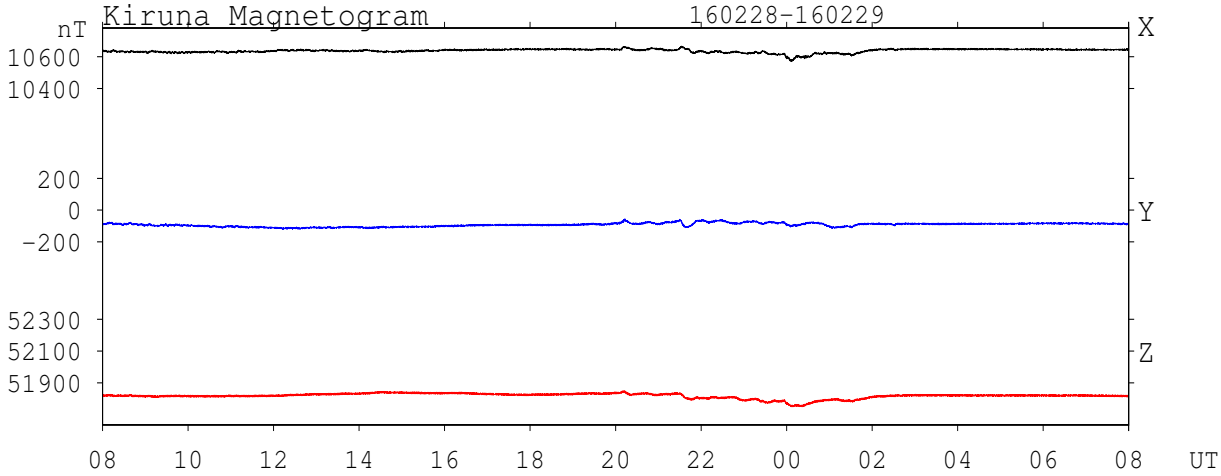

Kiruna Magnetogram
160223-160224
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-200
52300
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X
Y
Z
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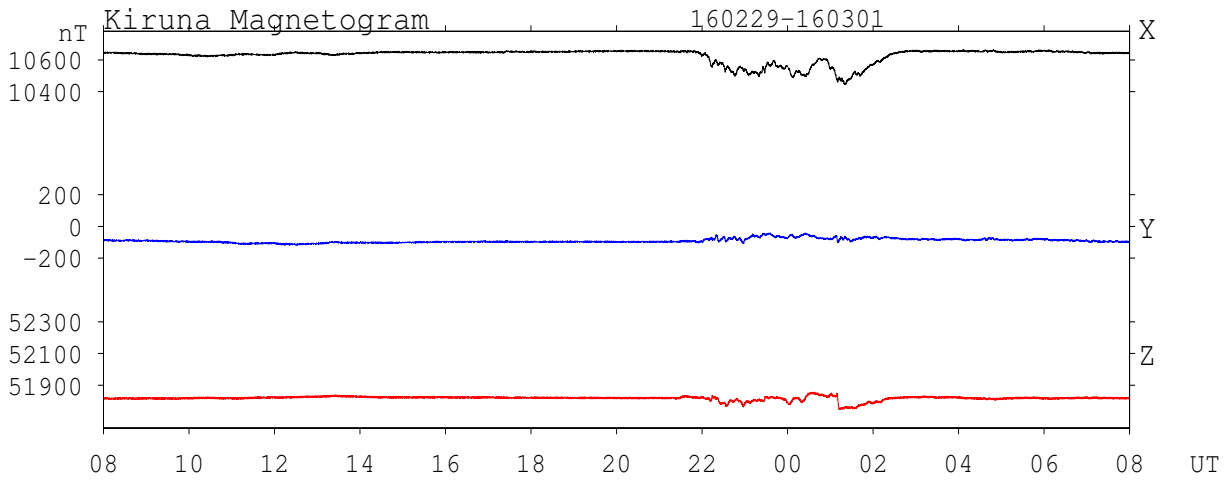

Kiruna Magnetogram
160224-160225
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X
Y
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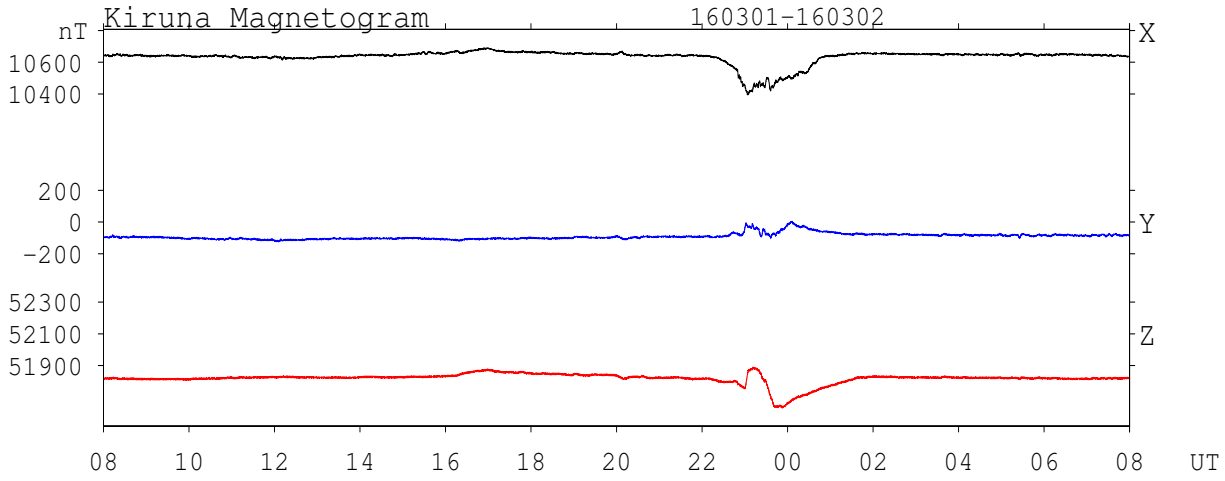

Kiruna Magnetogram
160225-160226
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-200
52300
52100
51900
X
Y
Z
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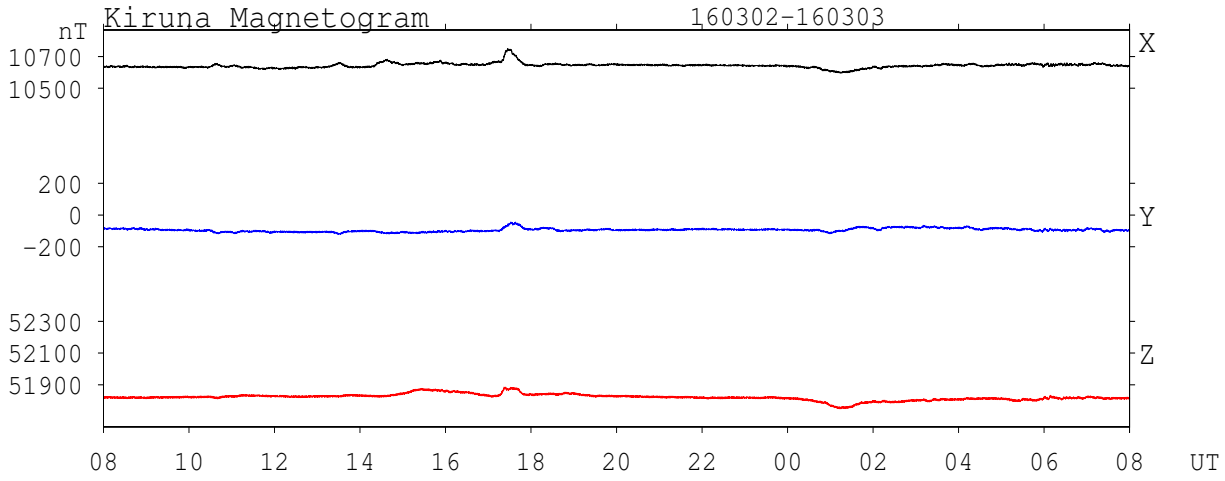

Kiruna Magnetogram
160226-160227
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-200
52300
52100
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X
Y
Z
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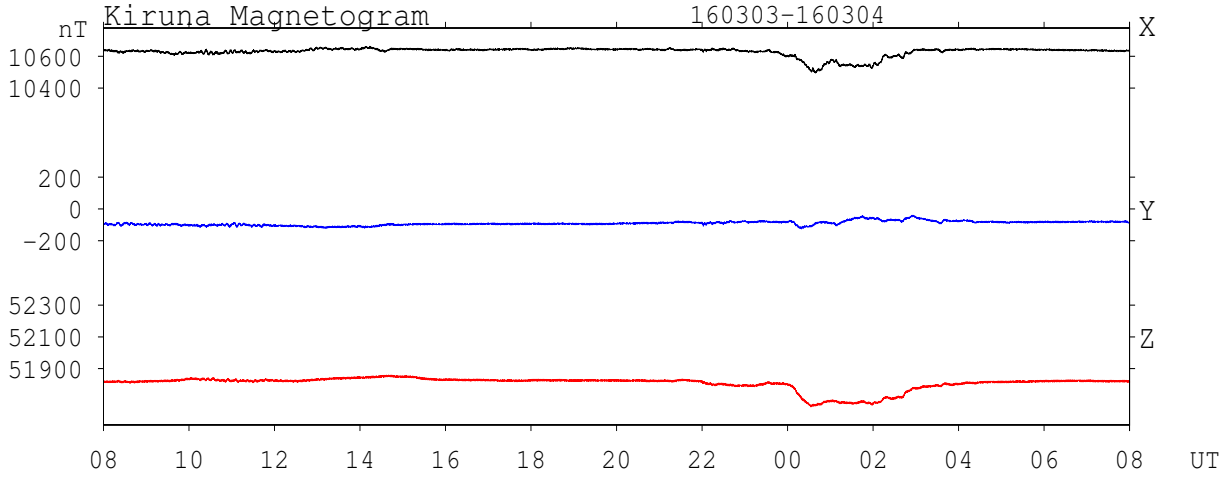

Kiruna Magnetogram
160227-160228
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200
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-200
52300
52100
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X
Y
Z
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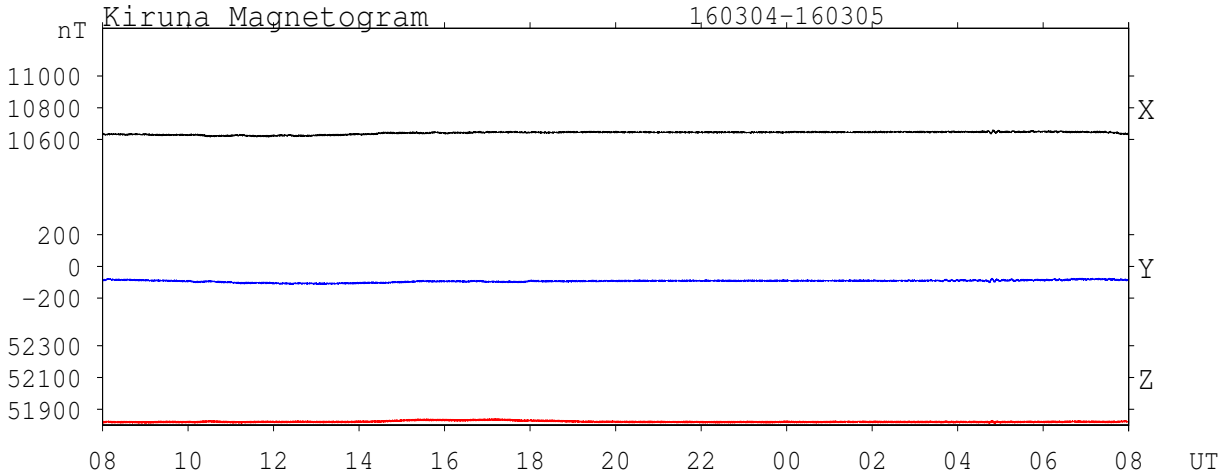

Kiruna Magnetogram
160228-160229
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200
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-200
52300
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X
Y
Z
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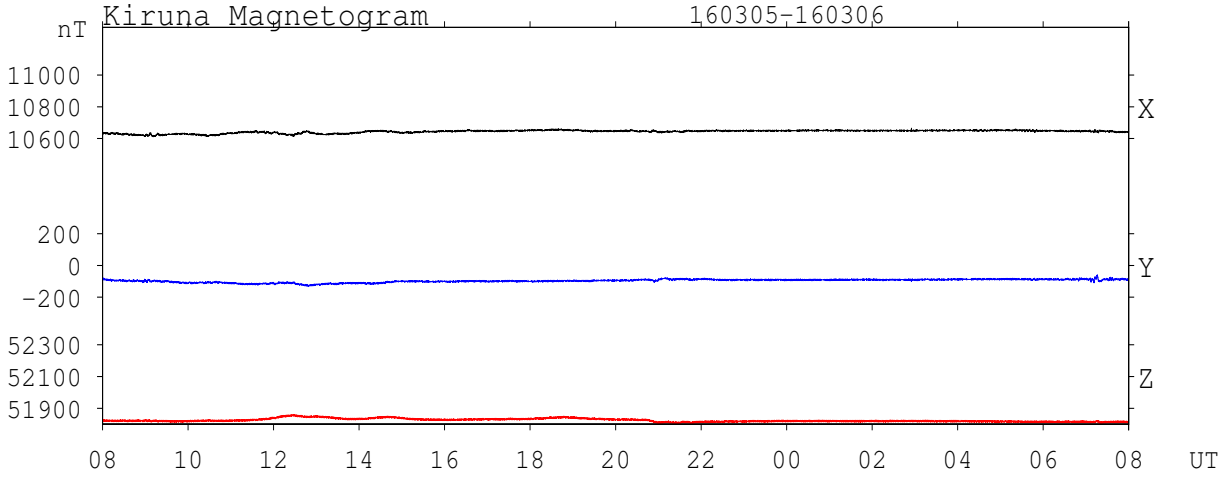

Kiruna Magnetogram
160229-160301
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-200
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X
Y
Z
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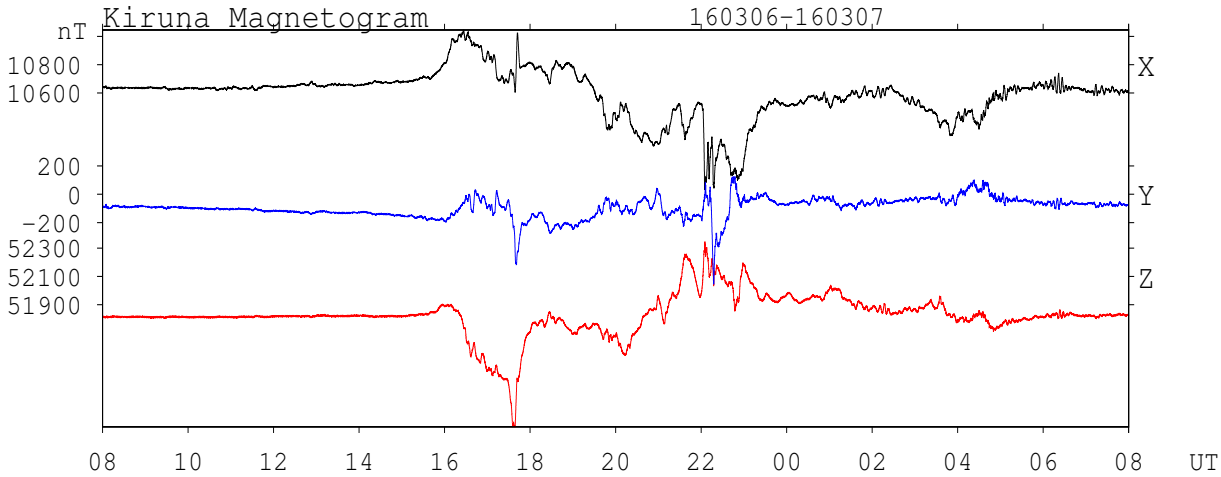

Kiruna Magnetogram
160301-160302
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10600
10400
200
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-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

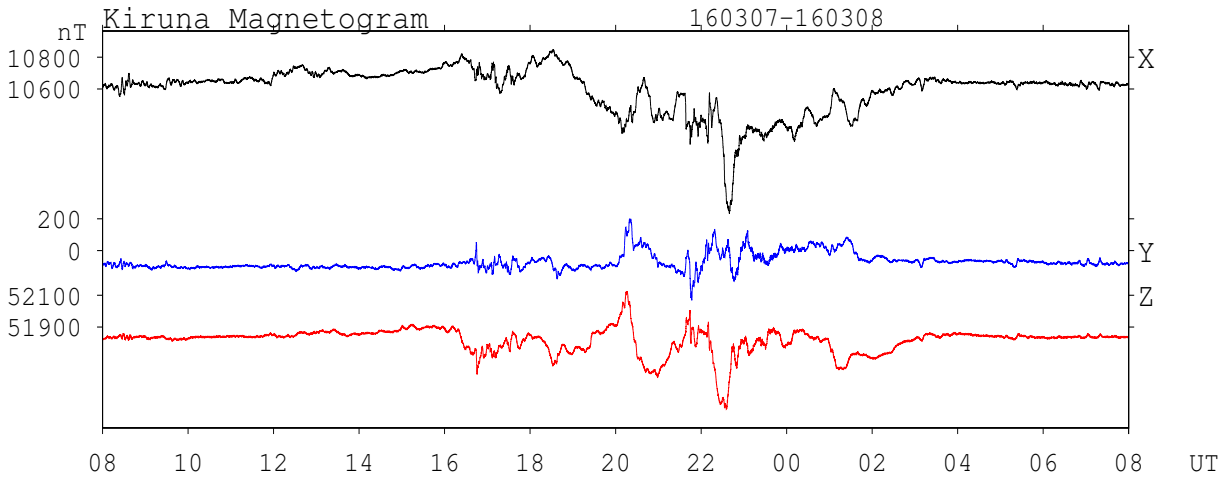

Kiruna Magnetogram
160302-160303
nT
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10500
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

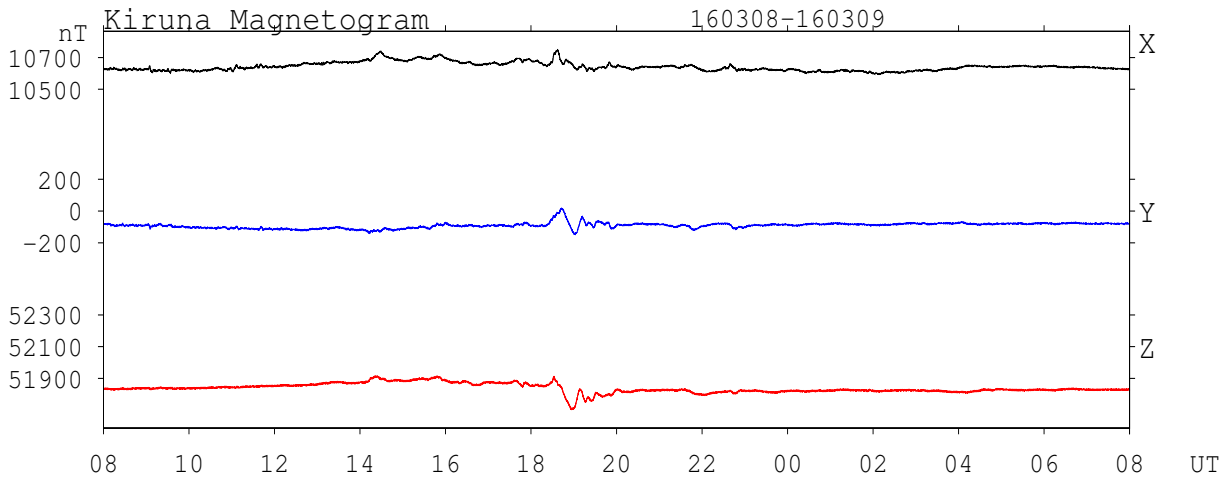

Kiruna Magnetogram
160303-160304
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52300
52100
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X
Y
Z
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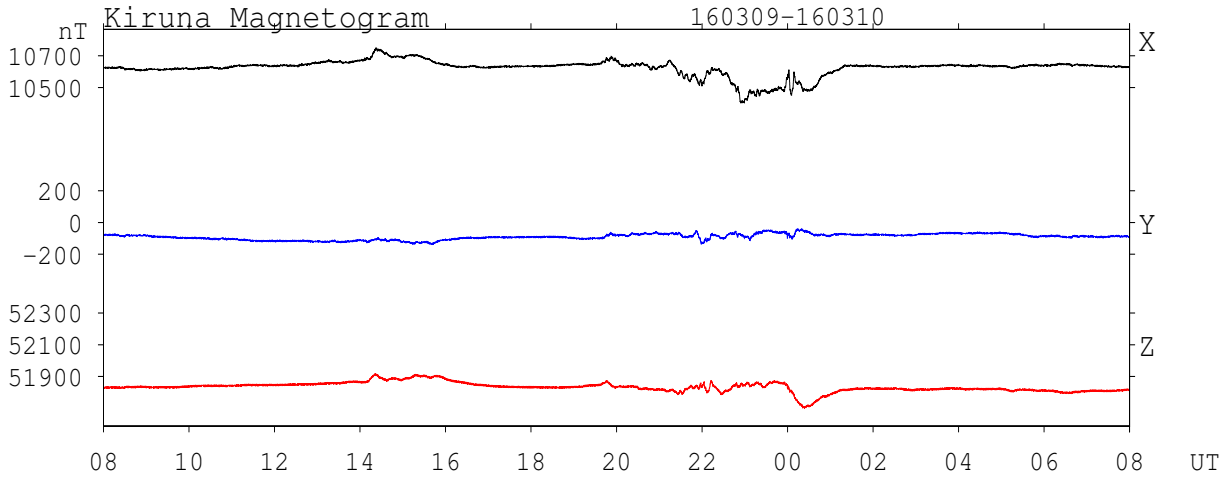

Kiruna Magnetogram
160304-160305
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200
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52300
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X
Y
Z
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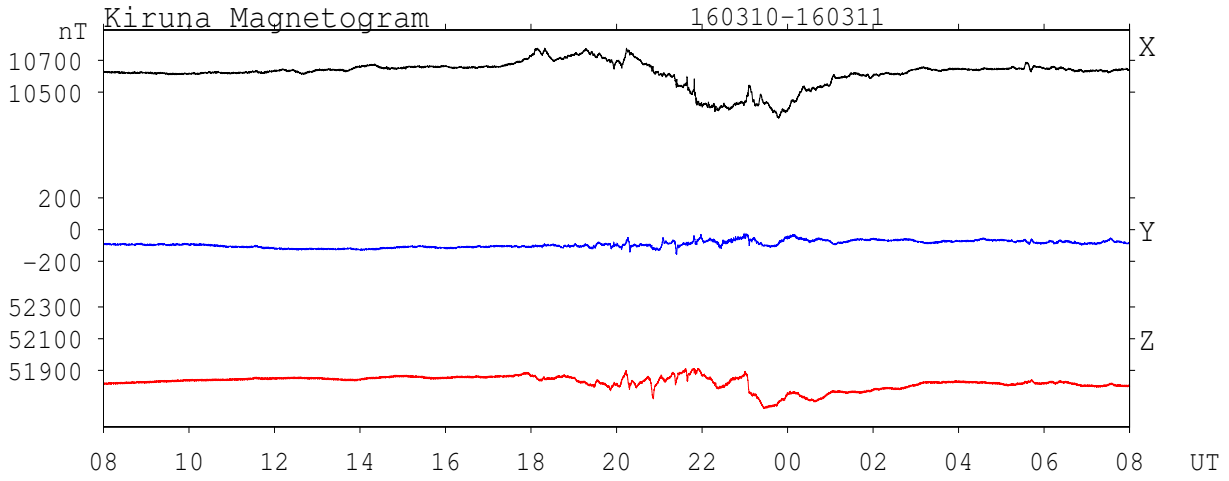

Kiruna Magnetogram
160305-160306
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X
Y
Z
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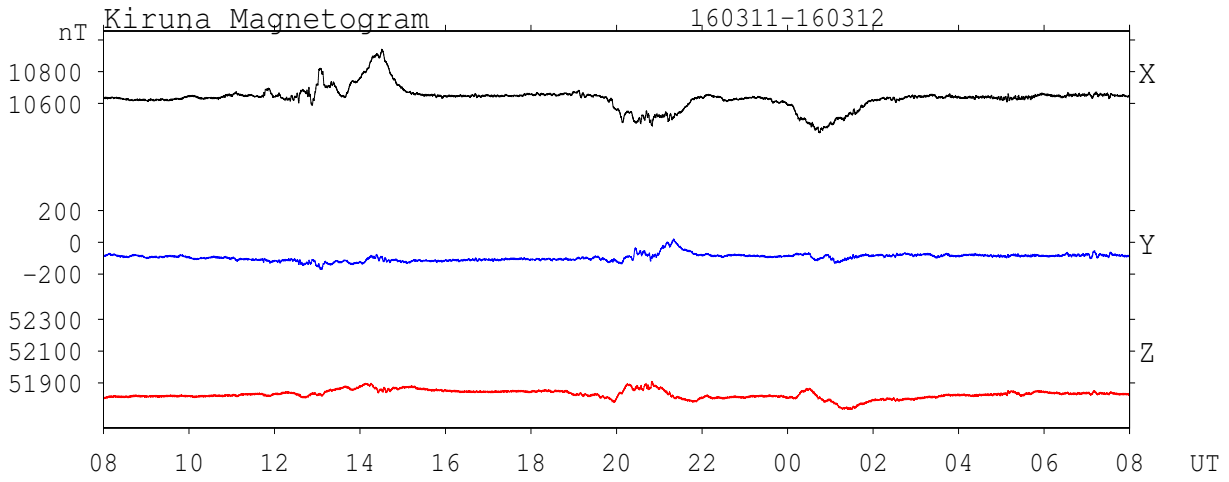

Kiruna Magnetogram
160306-160307
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X
Y
Z
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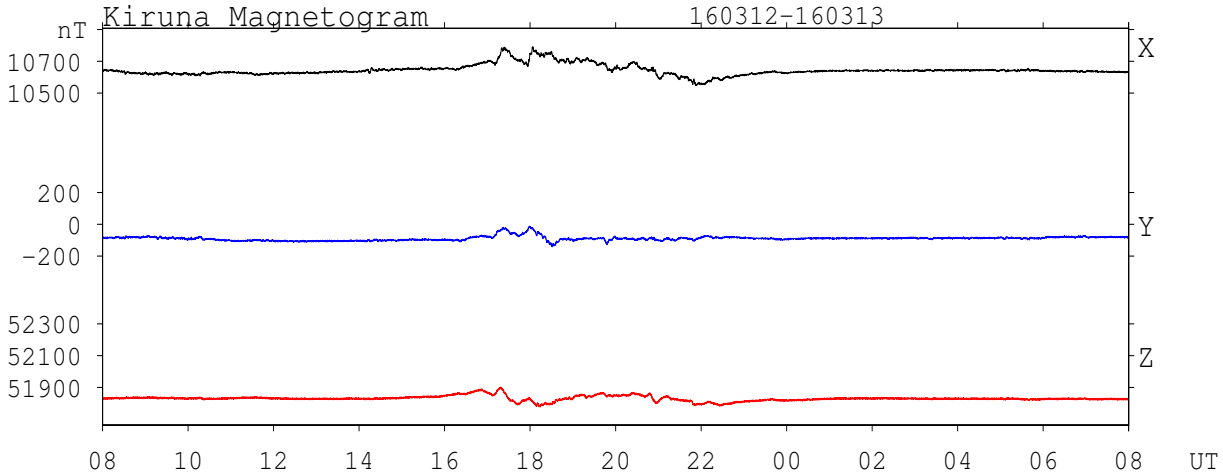

Kiruna Magnetogram
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51900
X
Y
Z
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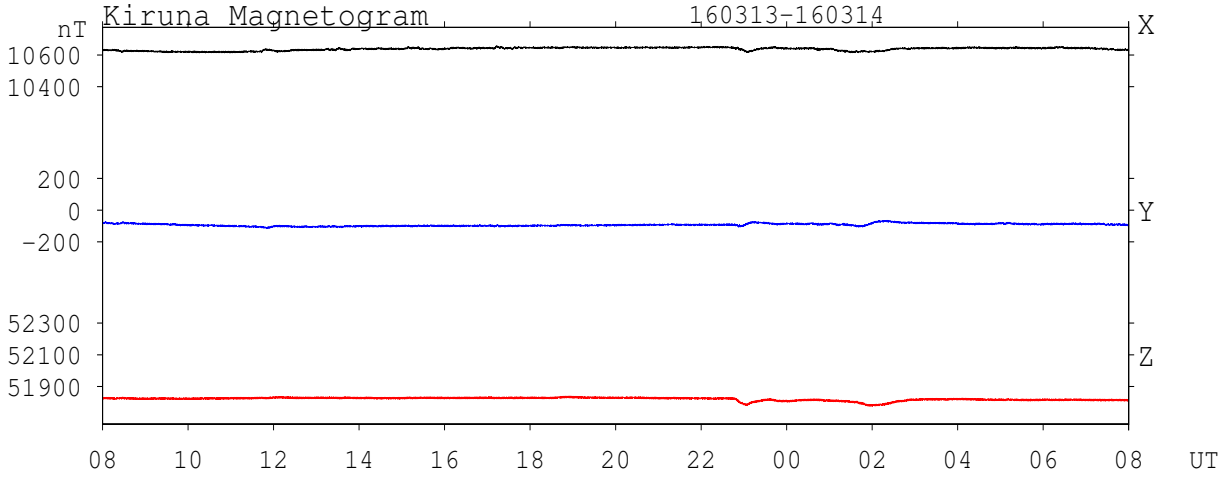

Kiruna Magnetogram
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52300
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Y
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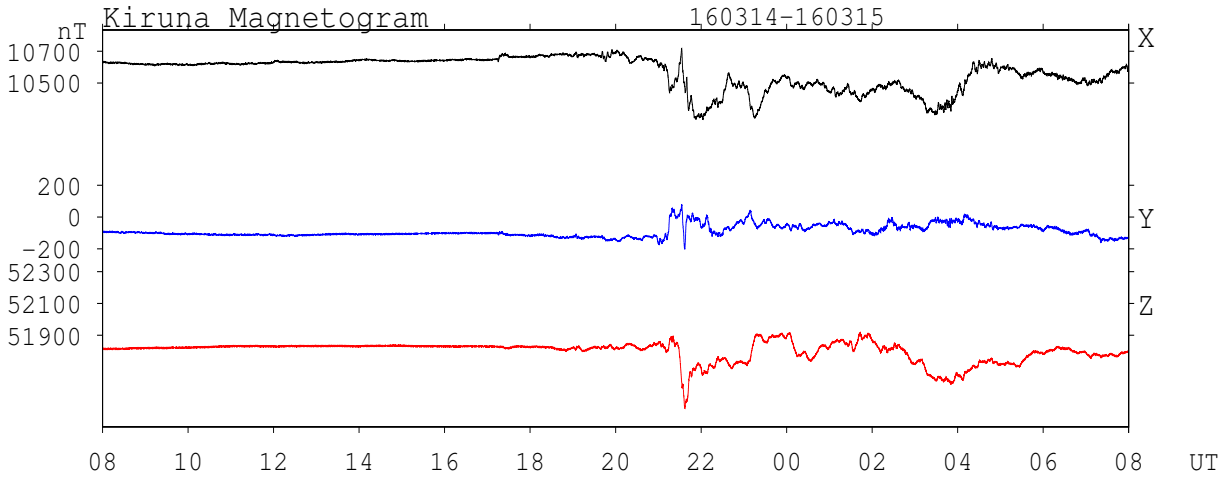

Kiruna Magnetogram
160309-160310
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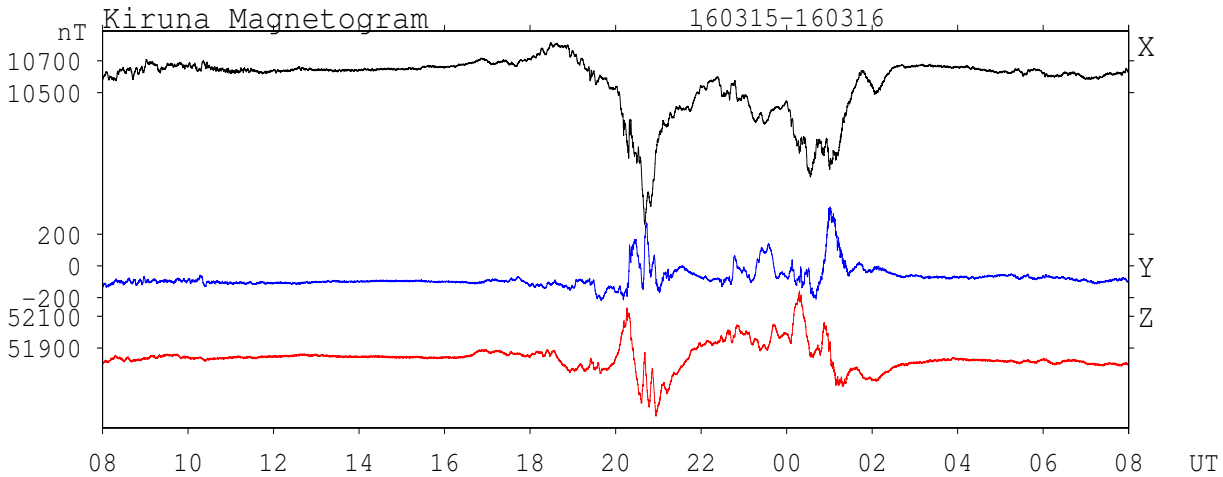

Kiruna Magnetogram
160310-160311
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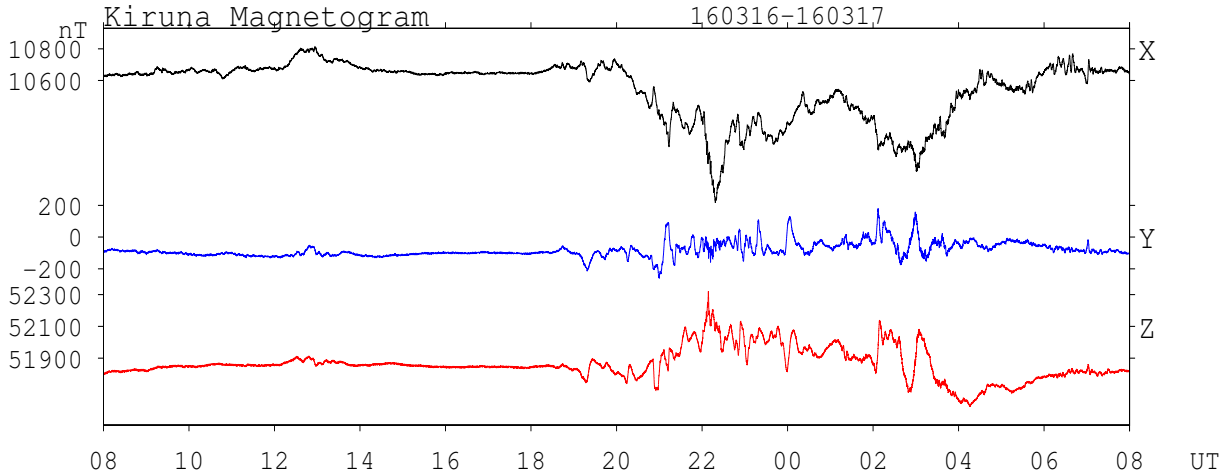

Kiruna Magnetogram
160311-160312
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Y
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

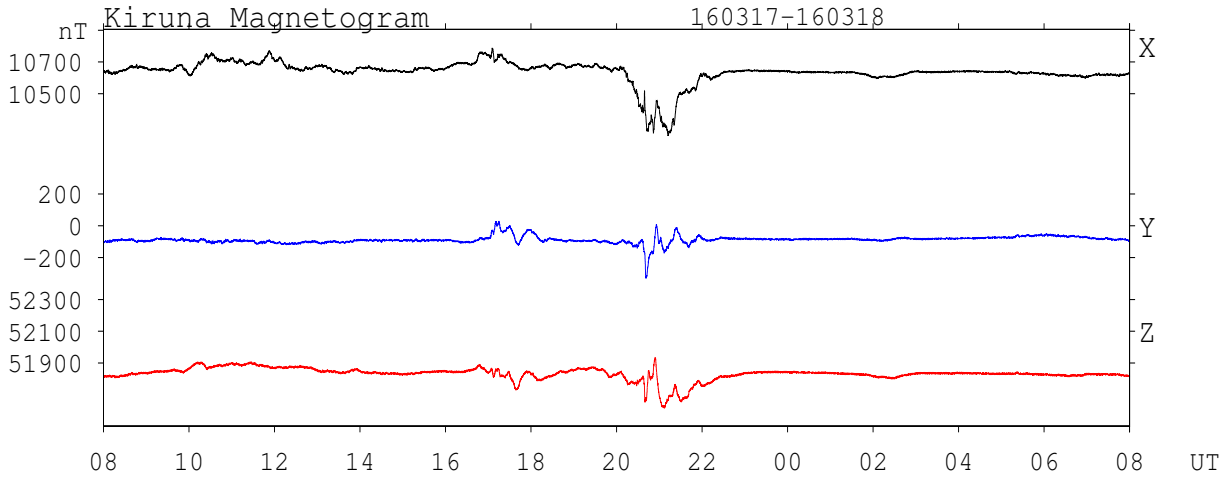

Kiruna Magnetogram
160312-160313
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

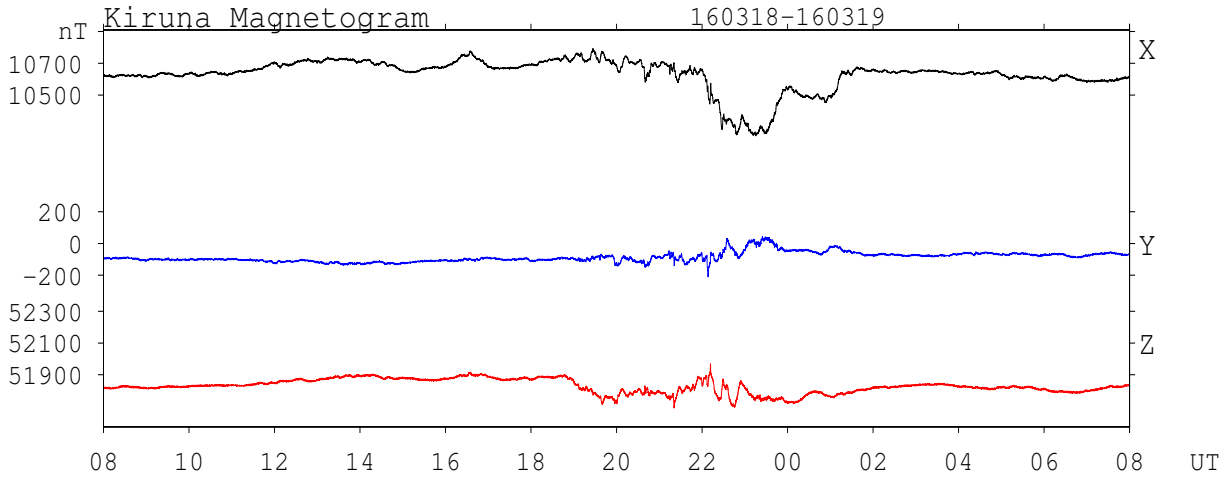

Kiruna Magnetogram
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Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

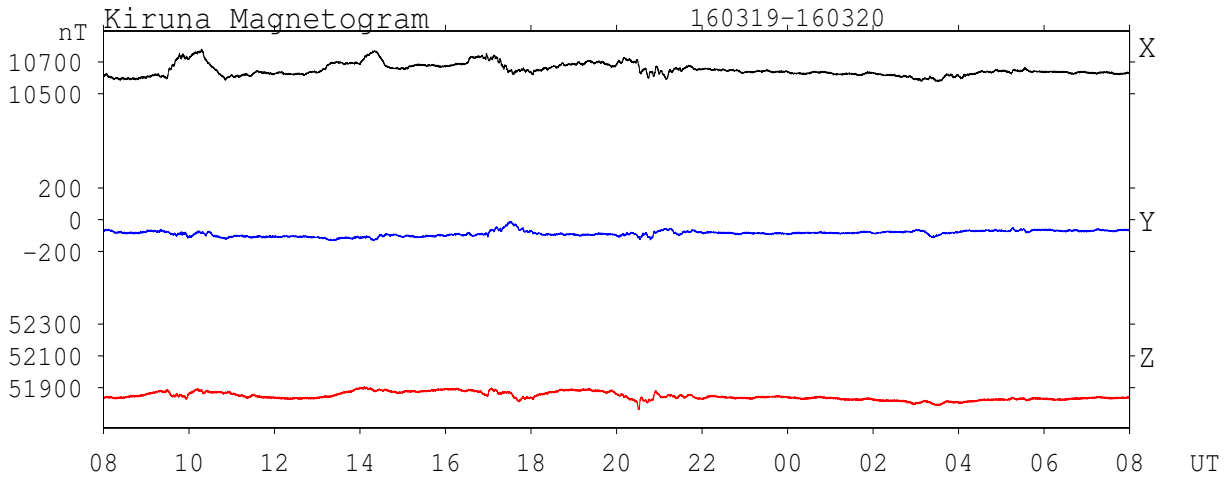

Kiruna Magnetogram
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

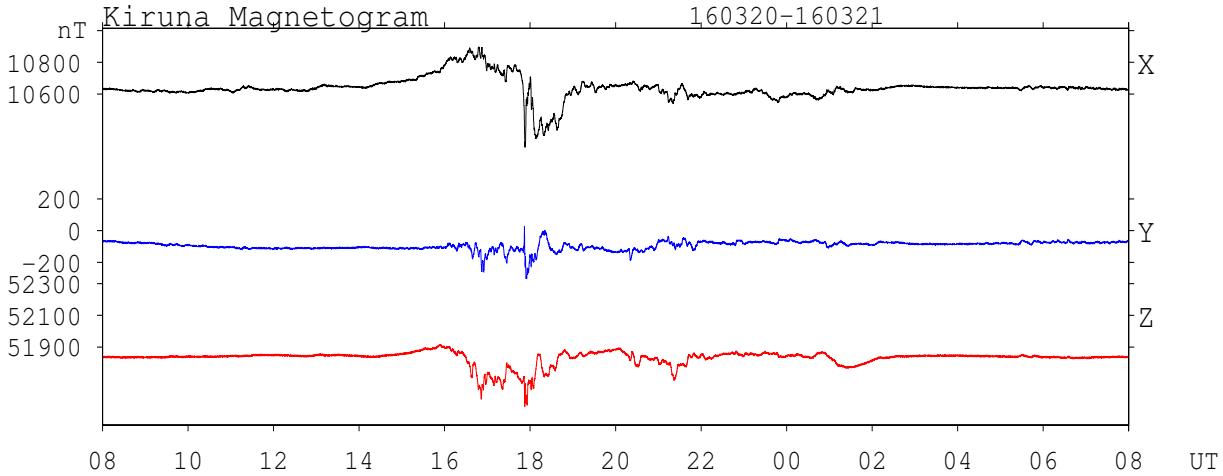

Kiruna Magnetogram
160315-160316
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Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

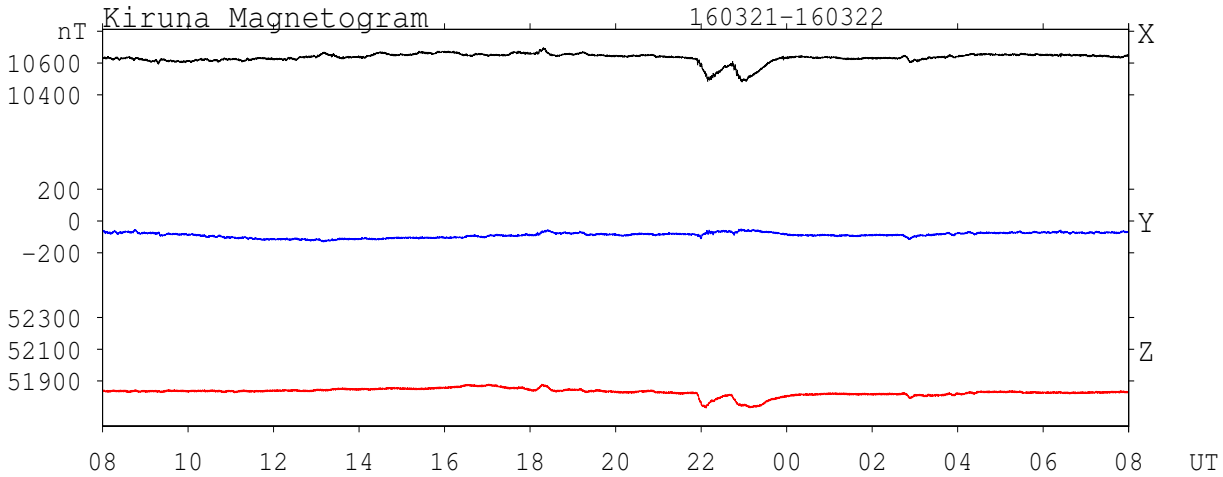

Kiruna Magnetogram
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

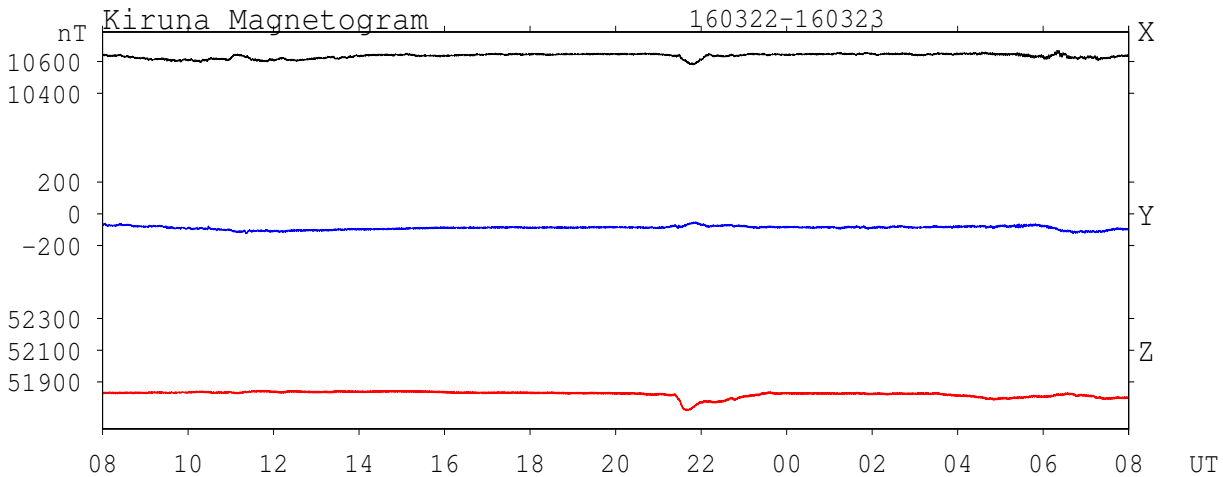

Kiruna Magnetogram
160317-160318
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X
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Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

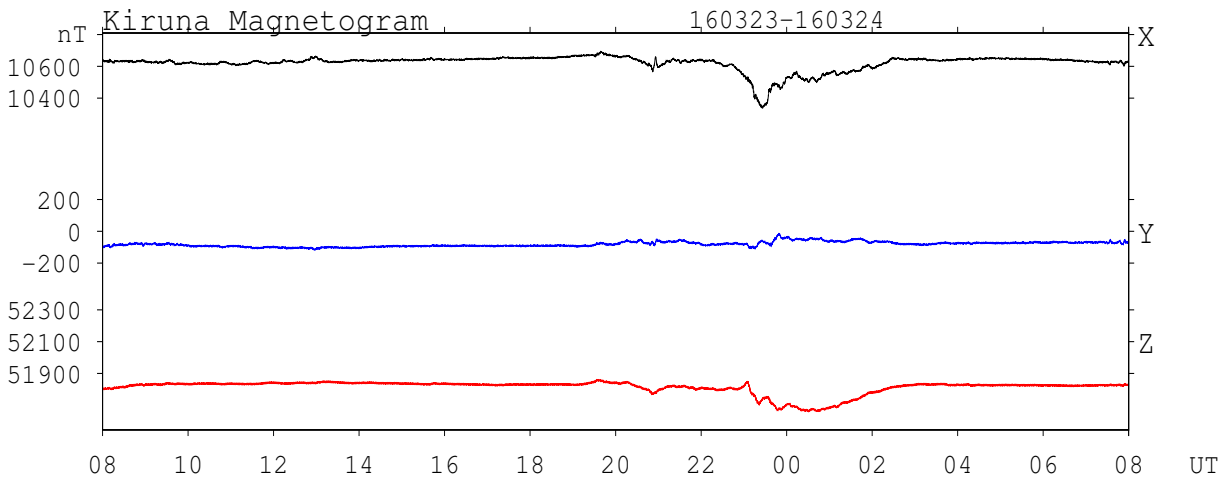

Kiruna Magnetogram
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

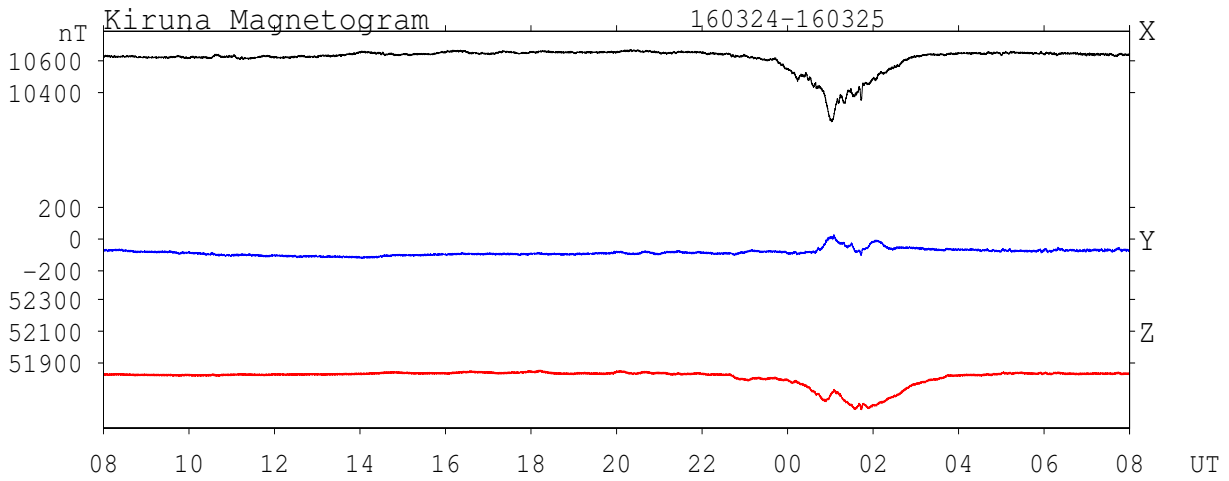

Kiruna Magnetogram
160319-160320
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Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

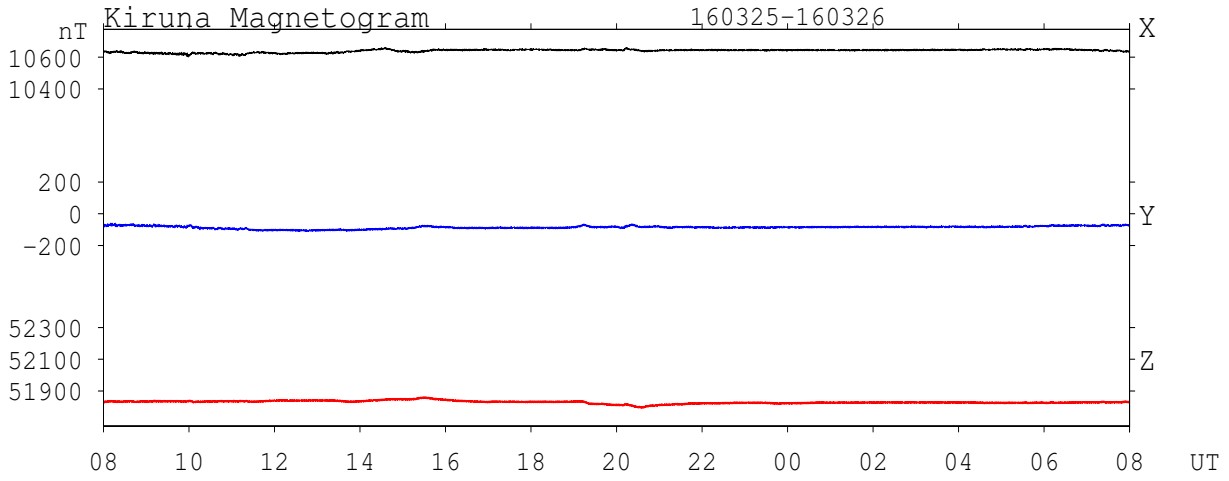

Kiruna Magnetogram
160320-160321
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-200
52300
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X
Y
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT

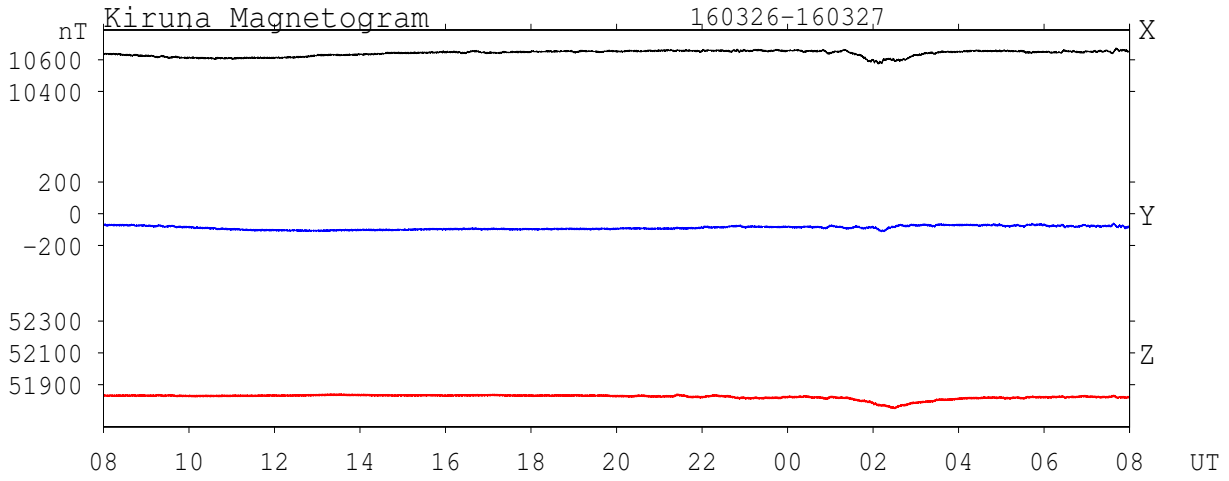

Kiruna Magnetogram
160321-160322
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200
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-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

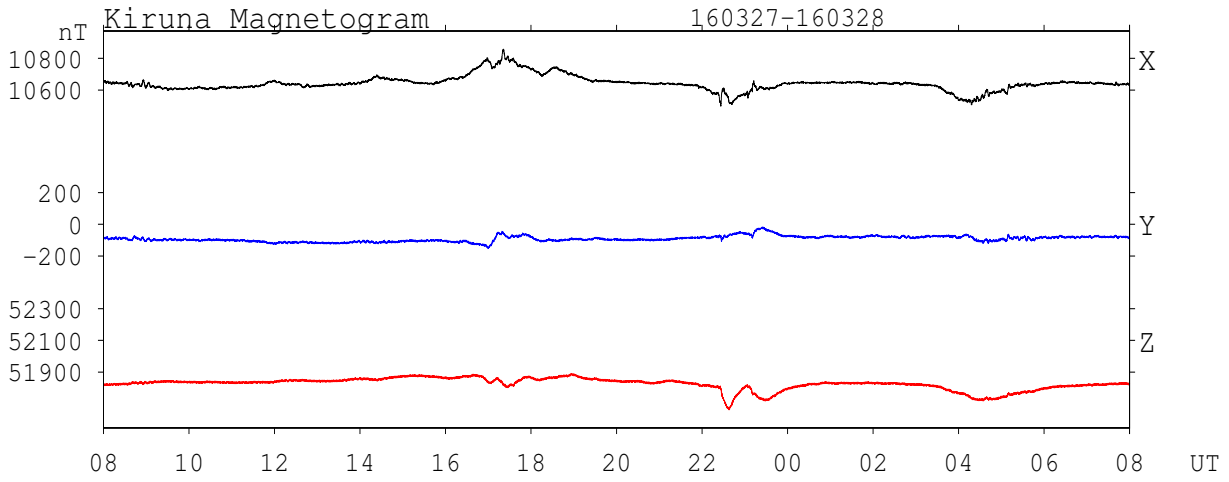

Kiruna Magnetogram
160322-160323
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-200
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X
Y
Z
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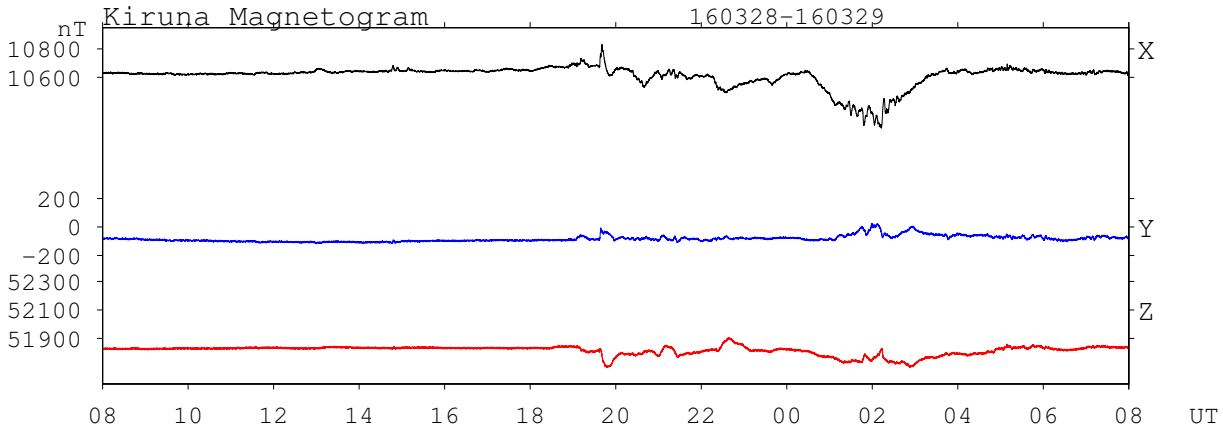

Kiruna Magnetogram
160323-160324
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10600
10400
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

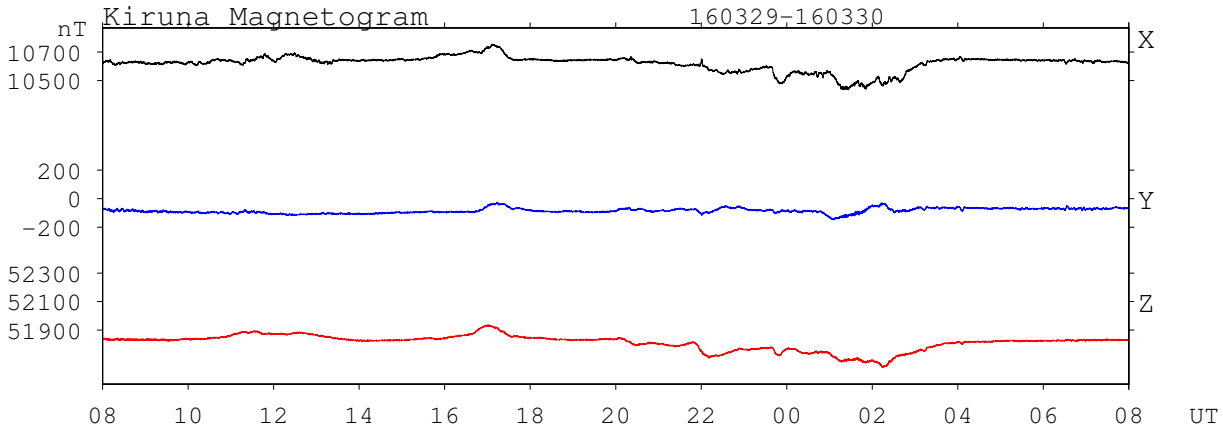

Kiruna Magnetogram
160324-160325
nT
10600
10400
200
0
-200
52300
52100
51900
X
Y
Z
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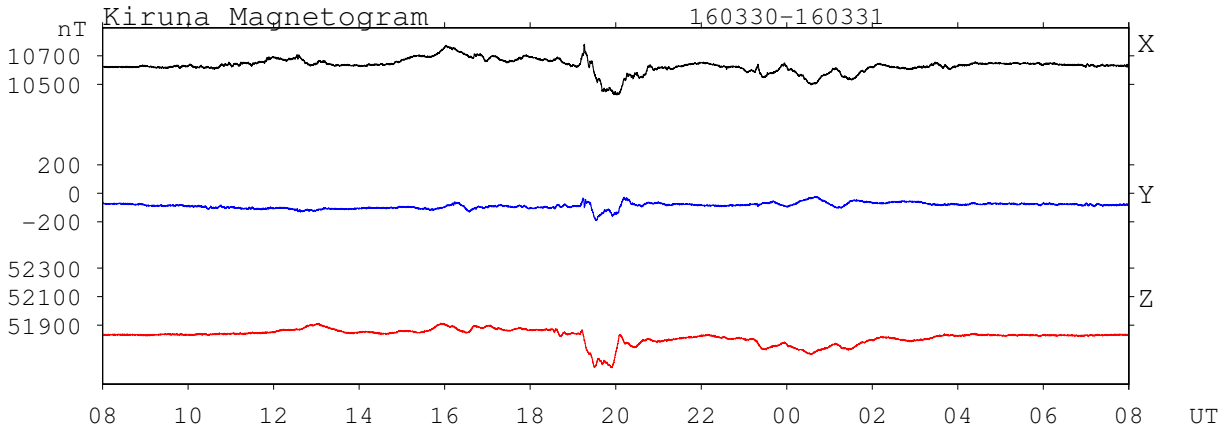

Kiruna Magnetogram
160325-160326
nT
10600
10400
200
0
-200
52300
52100
51900
X
Y
Z
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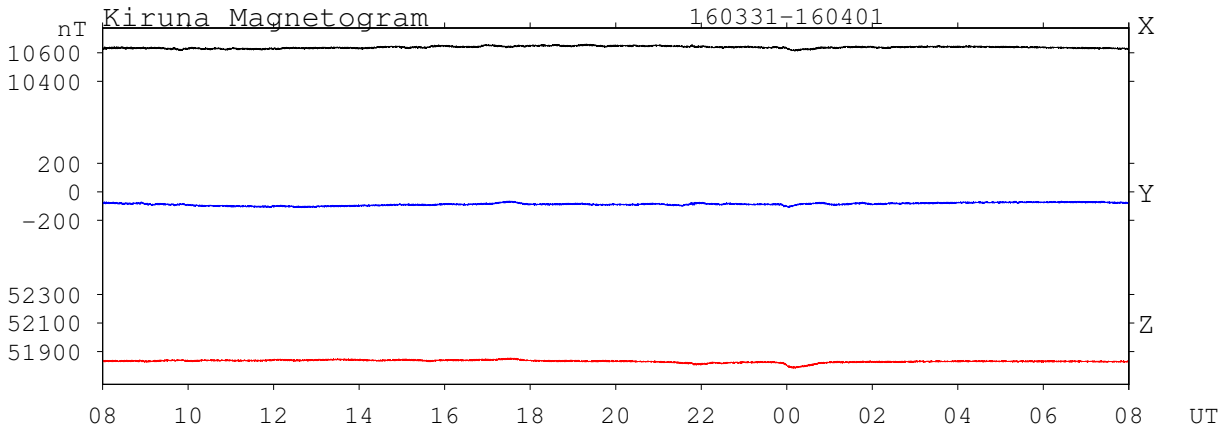

Kiruna Magnetogram
160326-160327
nT
10600
10400
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
160327-160328
nT
10800
10600
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
160328-160329
nT
10800
10600
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
160329-160330
nT
10700
10500
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

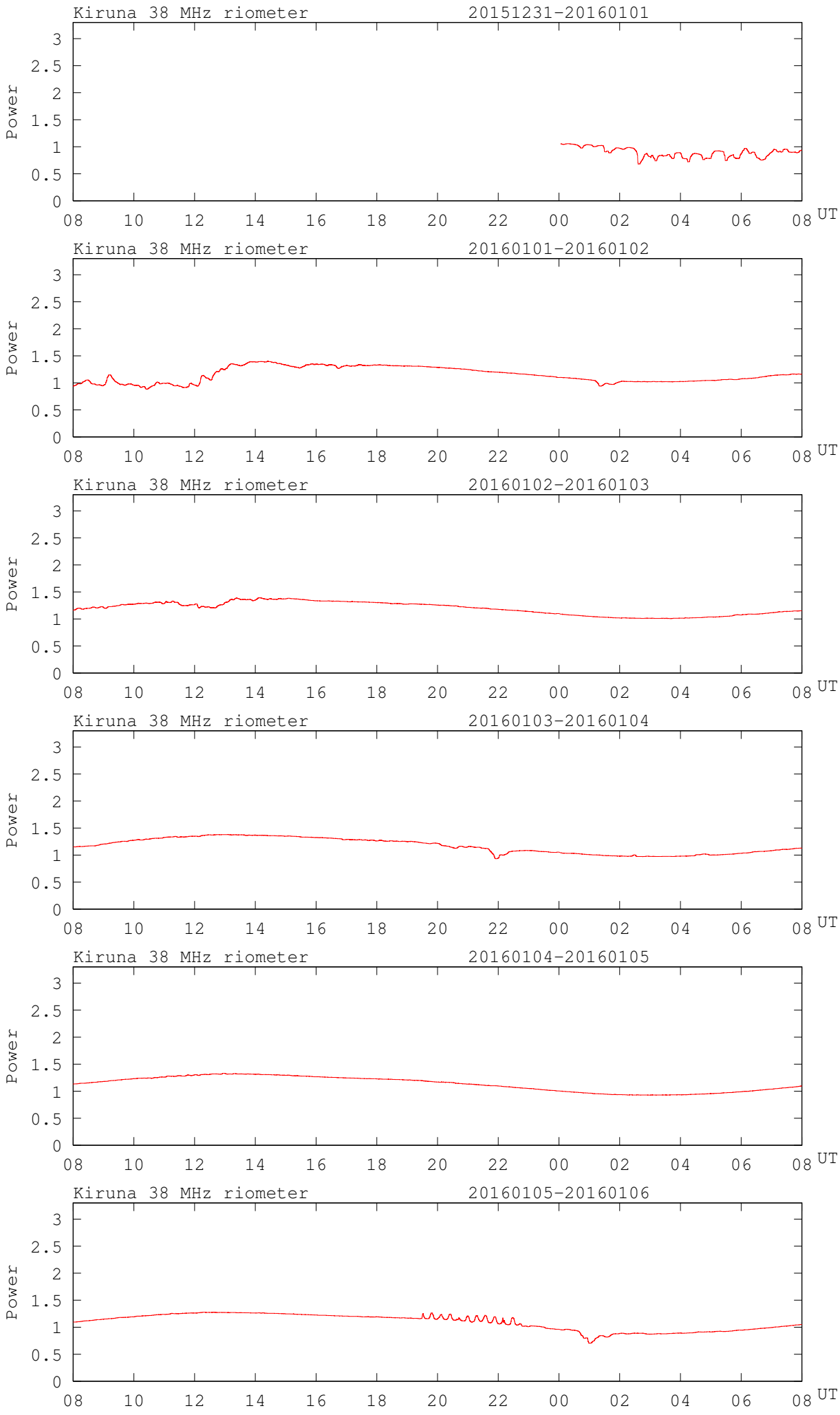

Kiruna Magnetogram
160330-160331
nT
10700
10500
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

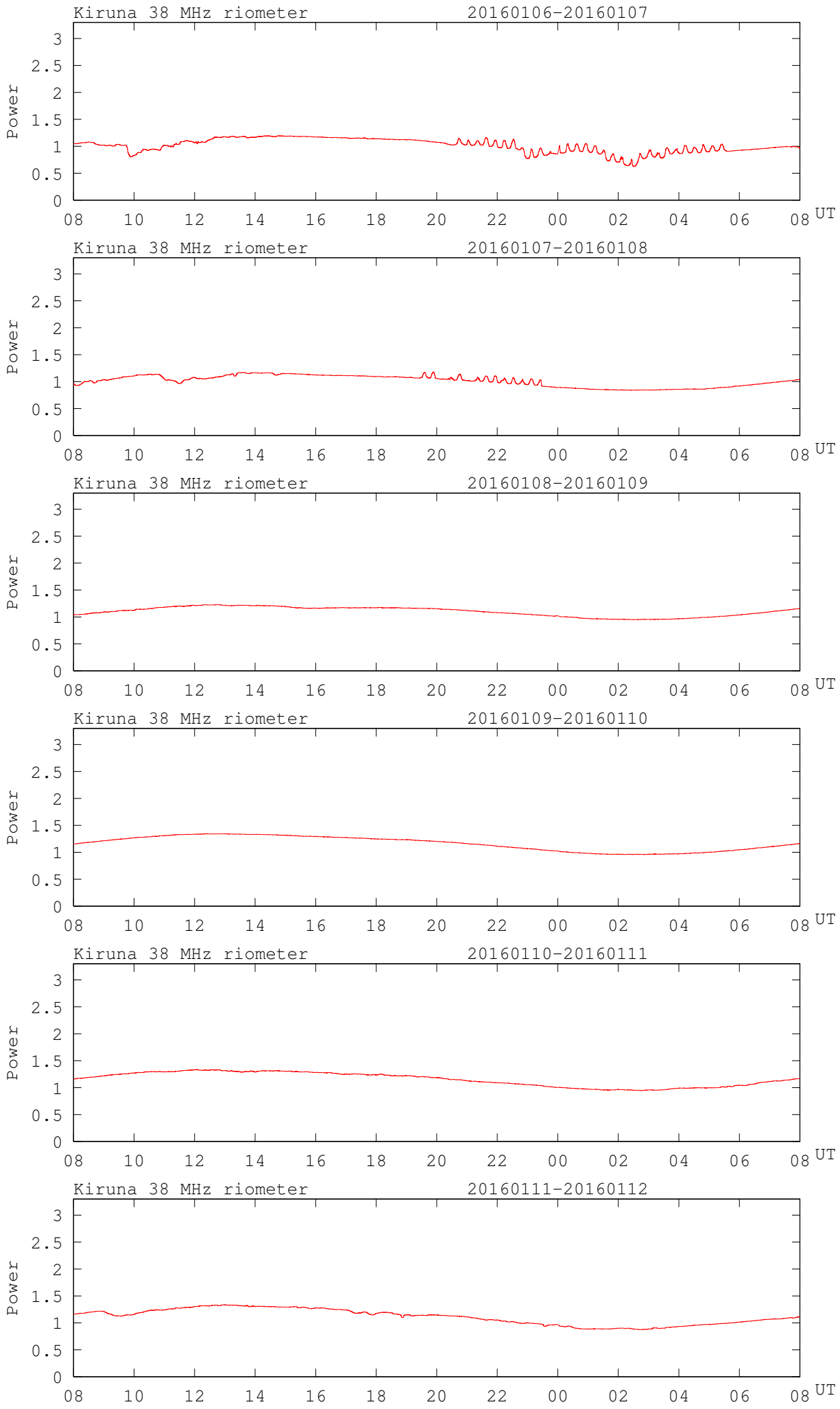

Kiruna Magnetogram
160331-160401
nT
10600
10400
200
0
-200
52300
52100
51900
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

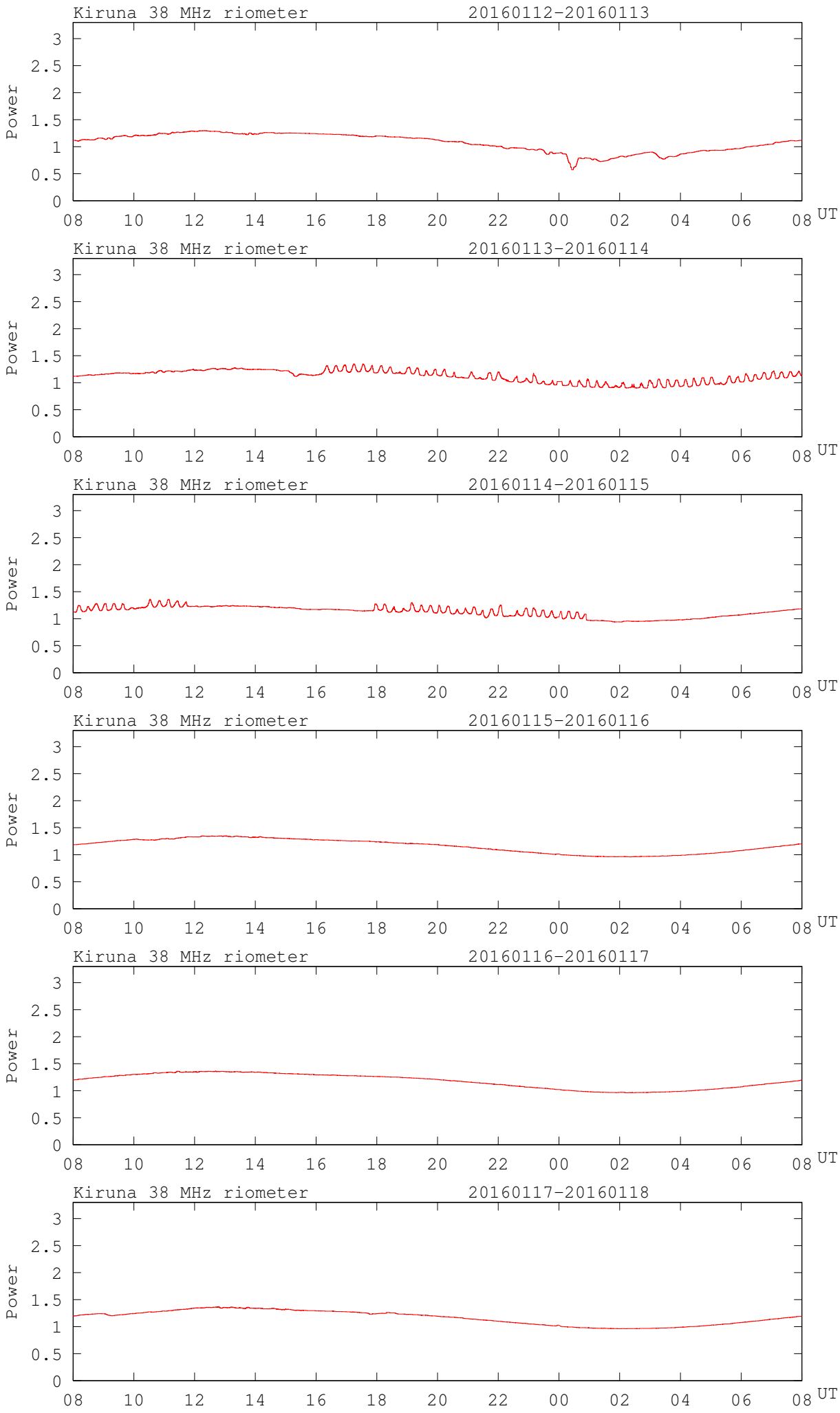
KIRUNA VERTICAL RIOMETER

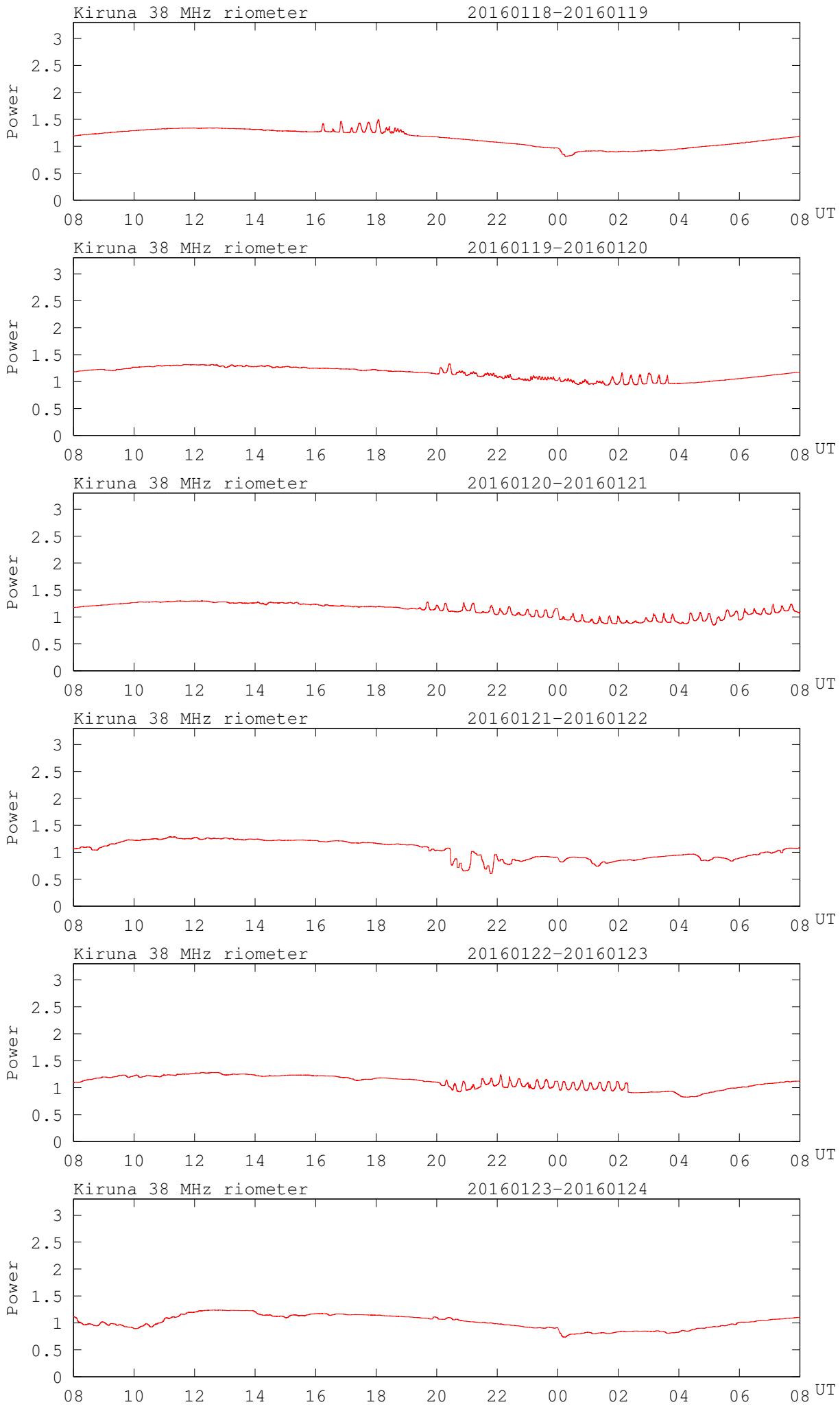
January - March 2016

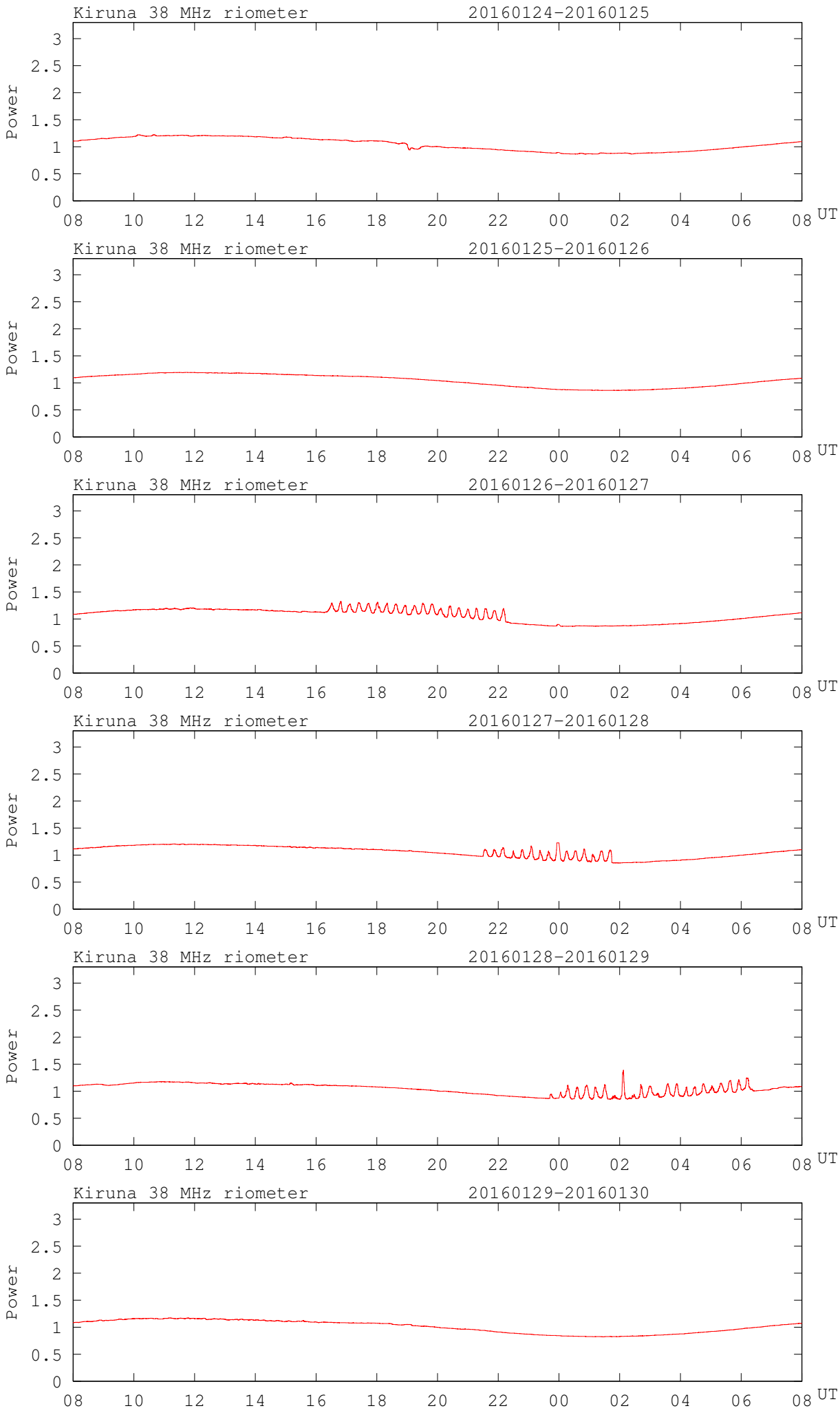
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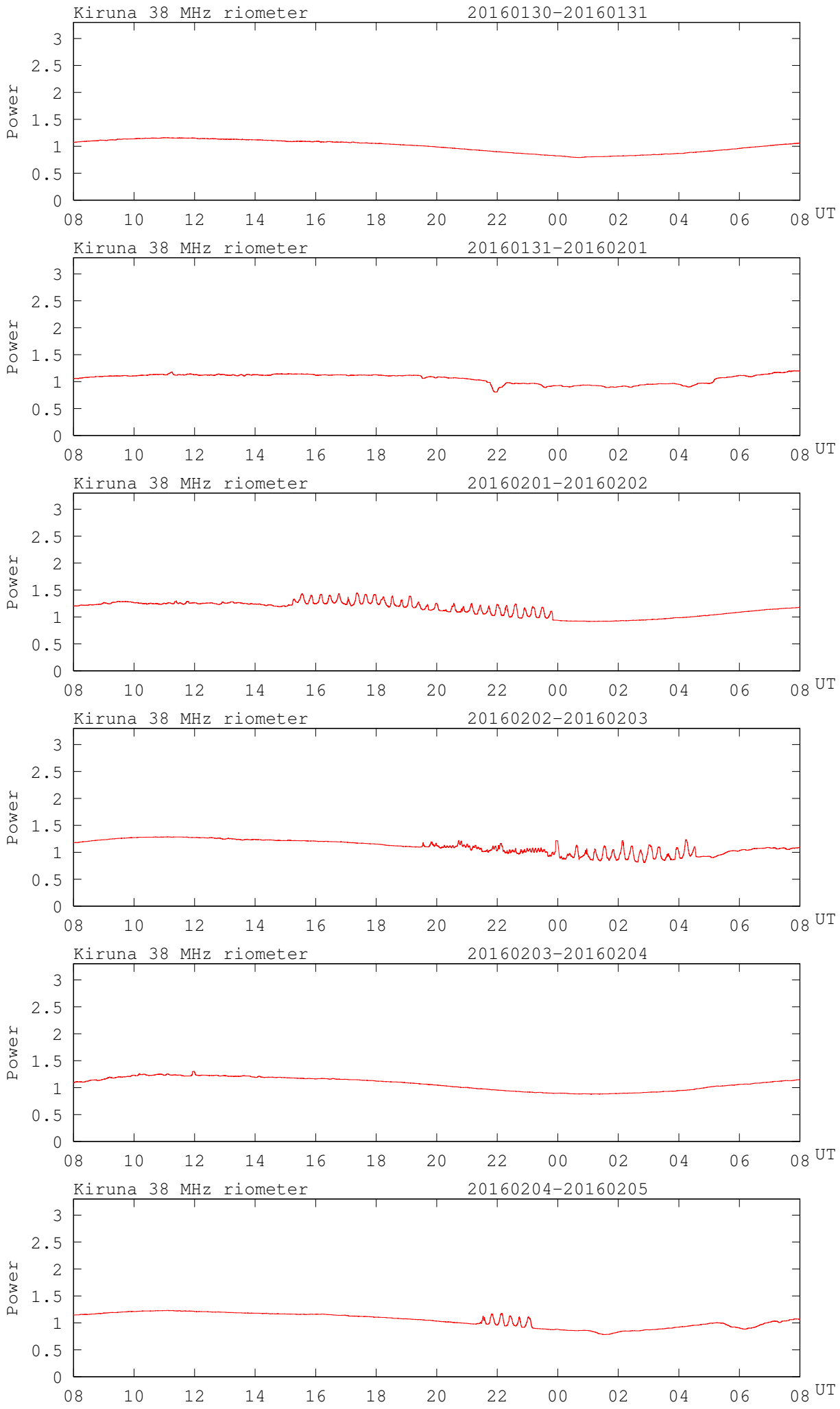

Kiruna 38 MHz riometer 20151231-20160101
Kiruna 38 MHz riometer 20160101-20160102
Kiruna 38 MHz riometer 20160102-20160103
Kiruna 38 MHz riometer 20160103-20160104
Kiruna 38 MHz riometer 20160104-20160105
Kiruna 38 MHz riometer 20160105-20160106
Power
0 0.5 1 1.5 2 2.5 3
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

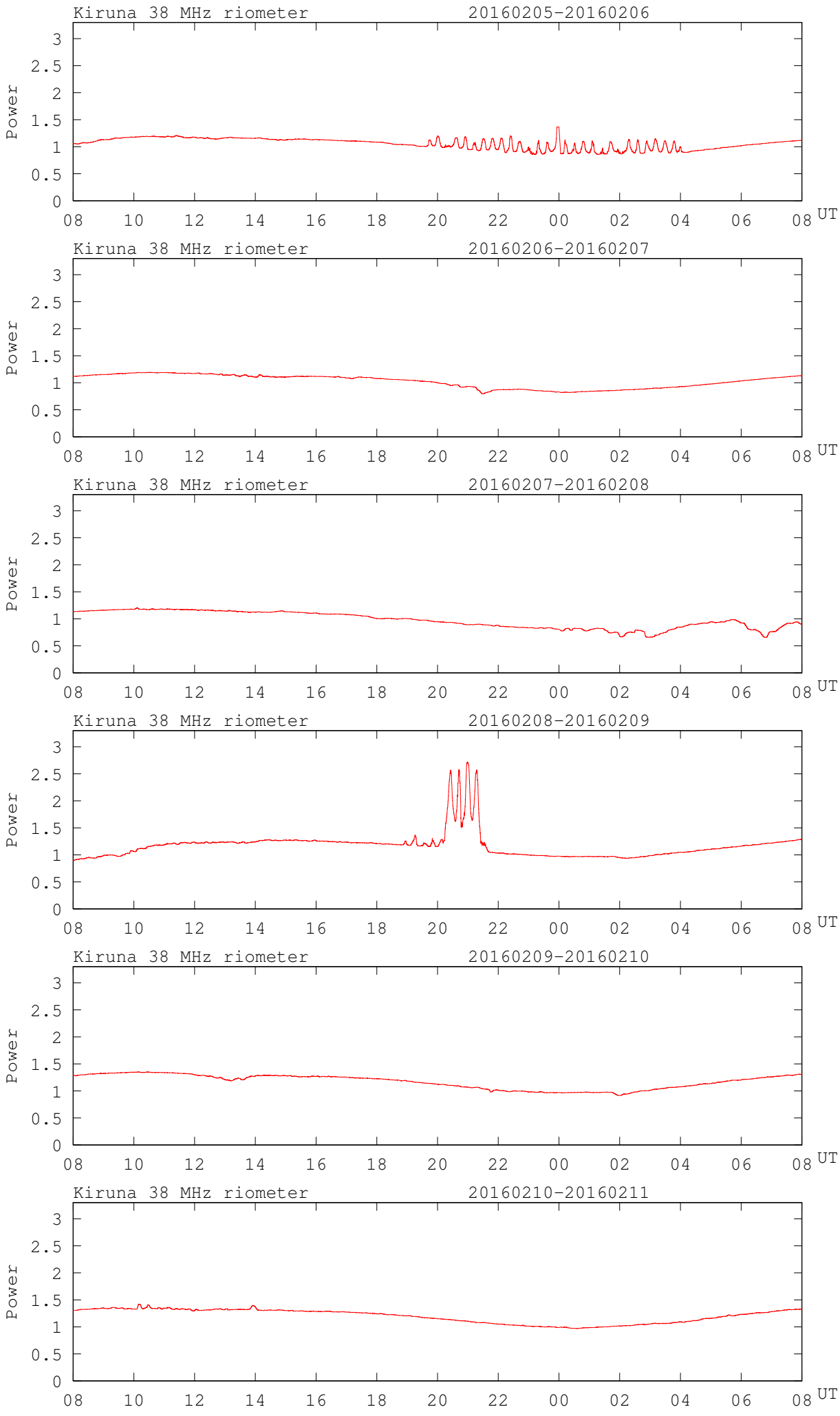

Kiruna 38 MHz riometer 20160106-20160107
Kiruna 38 MHz riometer 20160107-20160108
Kiruna 38 MHz riometer 20160108-20160109
Kiruna 38 MHz riometer 20160109-20160110
Kiruna 38 MHz riometer 20160110-20160111
Kiruna 38 MHz riometer 20160111-20160112
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

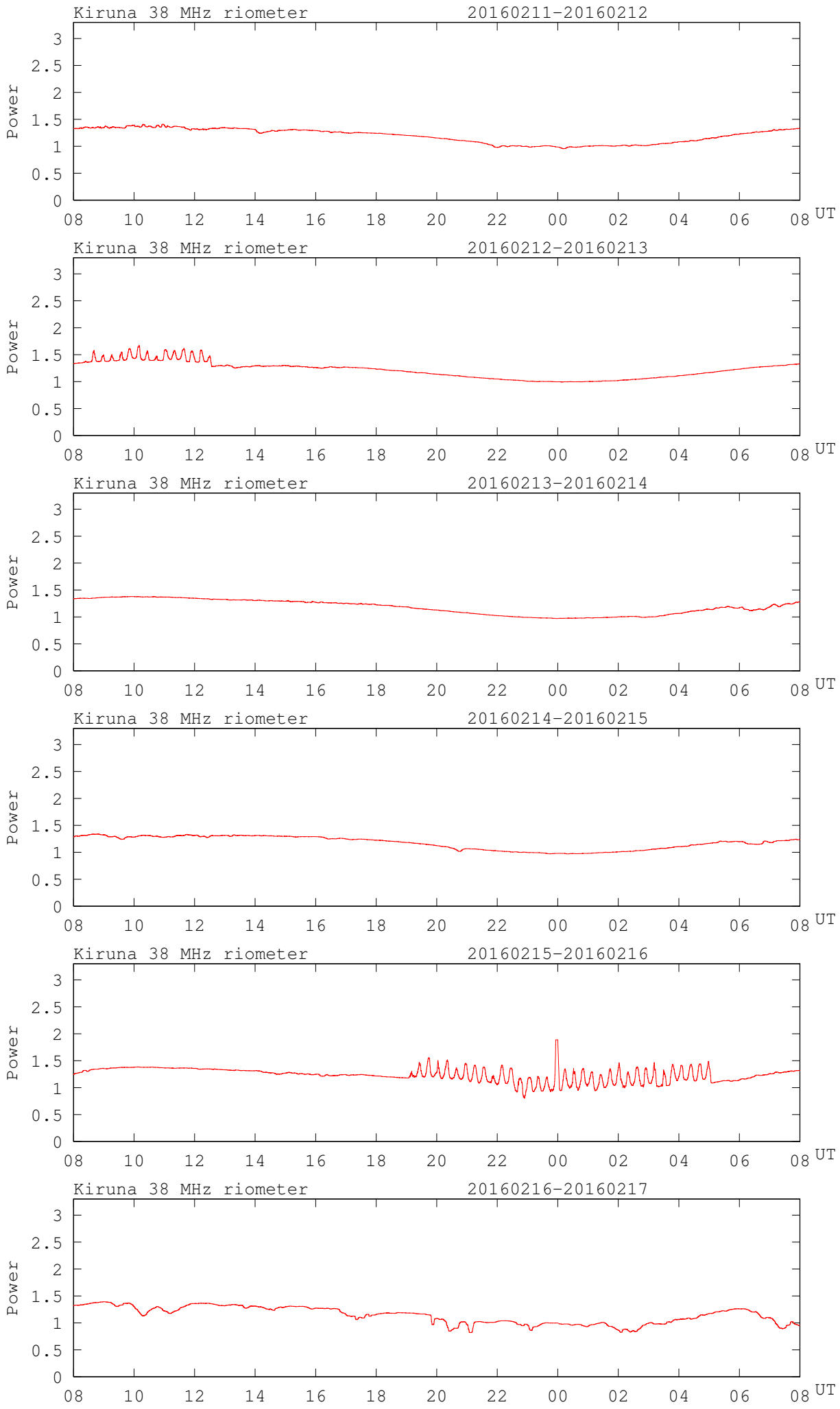

Kiruna 38 MHz riometer 20160112-20160113
Kiruna 38 MHz riometer 20160113-20160114
Kiruna 38 MHz riometer 20160114-20160115
Kiruna 38 MHz riometer 20160115-20160116
Kiruna 38 MHz riometer 20160116-20160117
Kiruna 38 MHz riometer 20160117-20160118
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

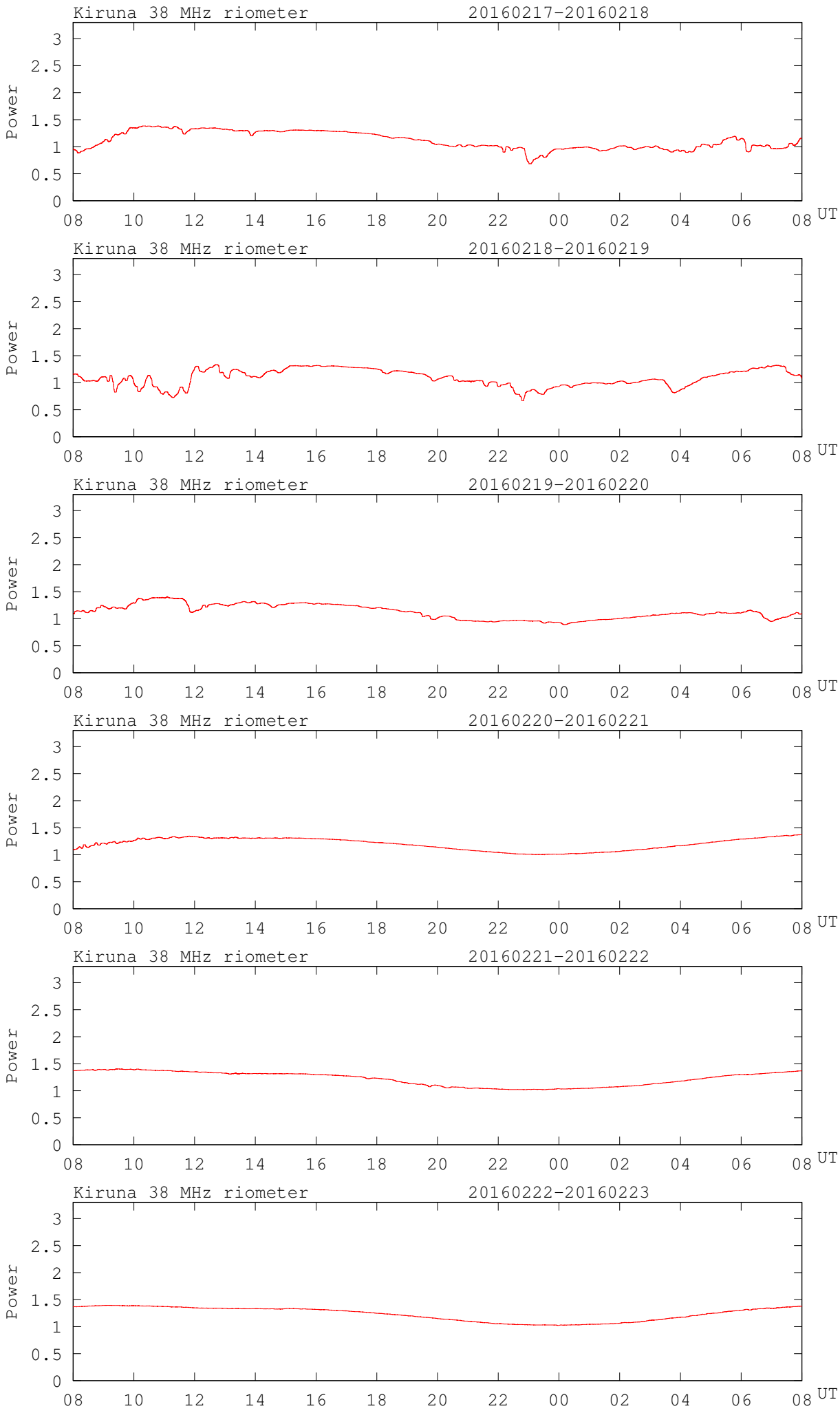

Kiruna 38 MHz riometer 20160118-20160119
Kiruna 38 MHz riometer 20160119-20160120
Kiruna 38 MHz riometer 20160120-20160121
Kiruna 38 MHz riometer 20160121-20160122
Kiruna 38 MHz riometer 20160122-20160123
Kiruna 38 MHz riometer 20160123-20160124
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

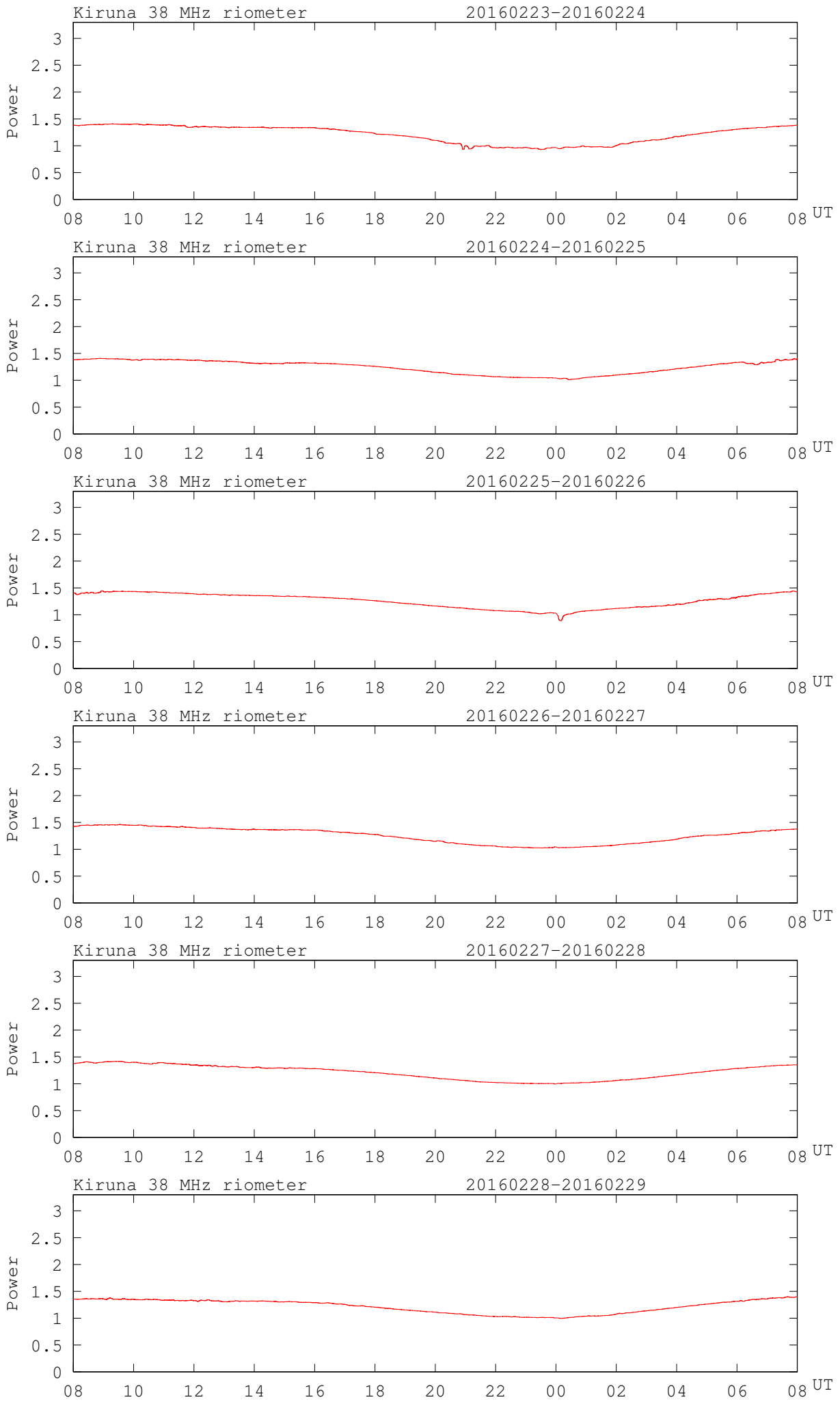

Kiruna 38 MHz riometer 20160124-20160125
Kiruna 38 MHz riometer 20160125-20160126
Kiruna 38 MHz riometer 20160126-20160127
Kiruna 38 MHz riometer 20160127-20160128
Kiruna 38 MHz riometer 20160128-20160129
Kiruna 38 MHz riometer 20160129-20160130
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

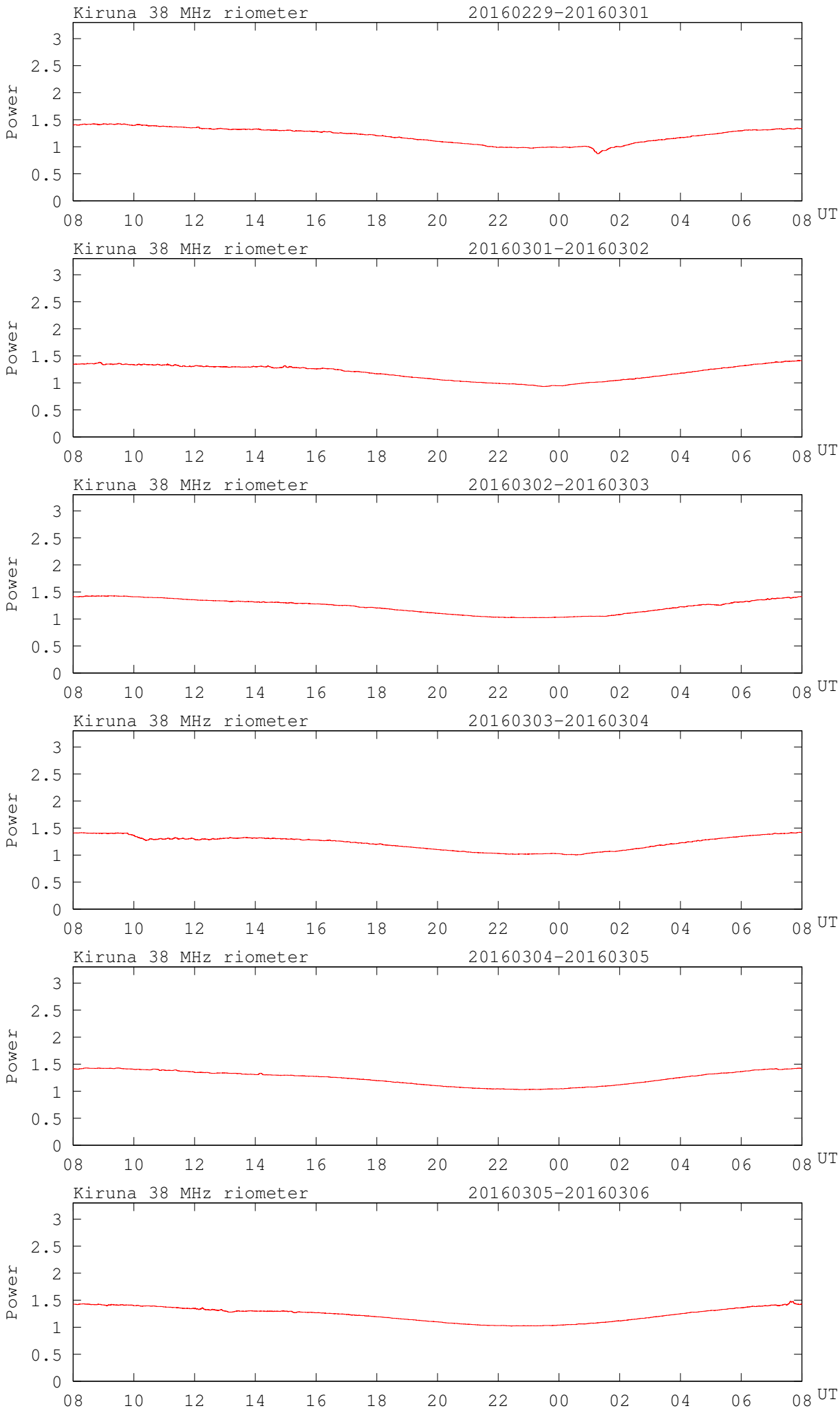

Kiruna 38 MHz riometer 20160130-20160131
Kiruna 38 MHz riometer 20160131-20160201
Kiruna 38 MHz riometer 20160201-20160202
Kiruna 38 MHz riometer 20160202-20160203
Kiruna 38 MHz riometer 20160203-20160204
Kiruna 38 MHz riometer 20160204-20160205
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

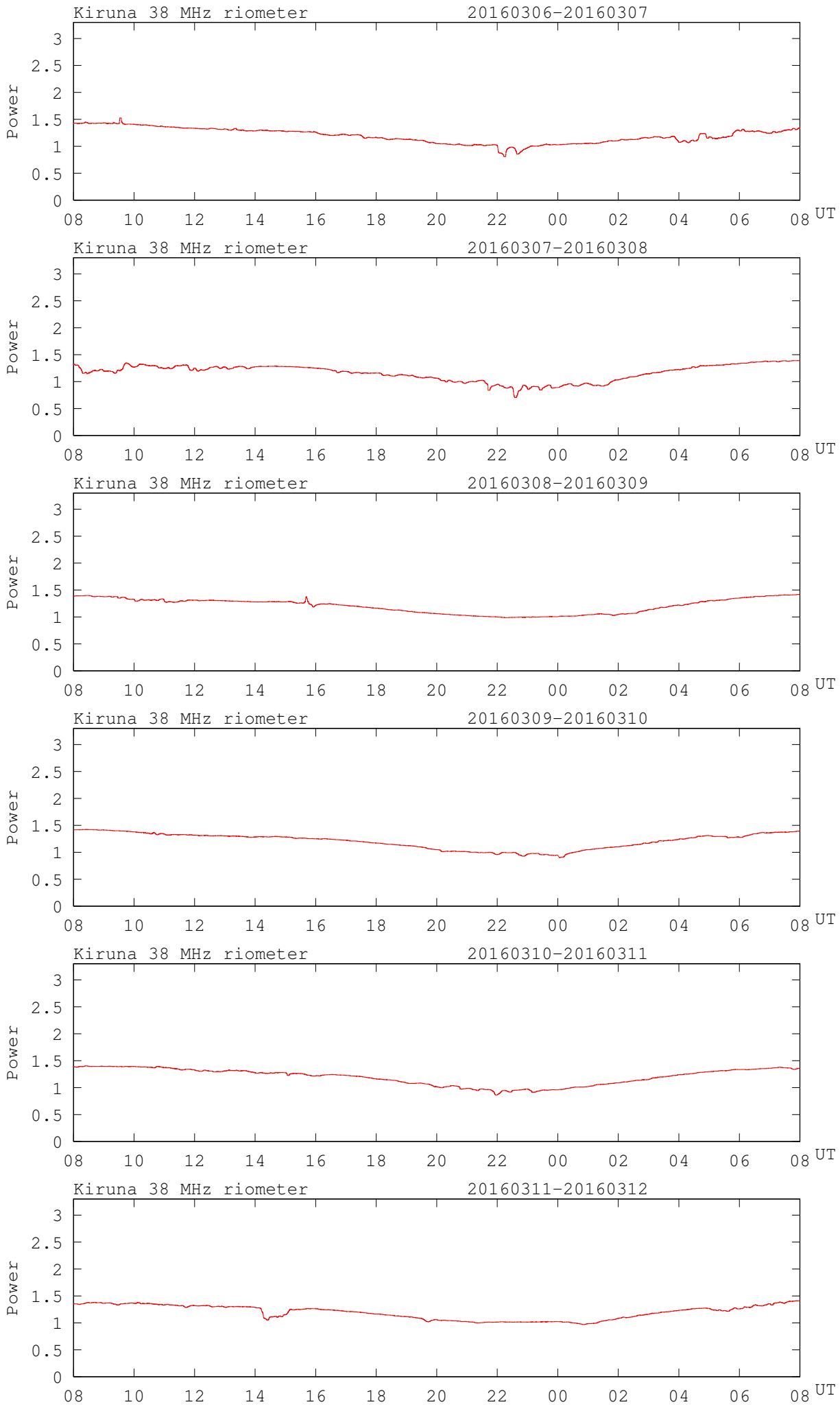

Kiruna 38 MHz riometer
20160205-20160206
Power
UT
Kiruna 38 MHz riometer
20160206-20160207
Power
UT
Kiruna 38 MHz riometer
20160207-20160208
Power
UT
Kiruna 38 MHz riometer
20160208-20160209
Power
UT
Kiruna 38 MHz riometer
20160209-20160210
Power
UT
Kiruna 38 MHz riometer
20160210-20160211
Power
UT

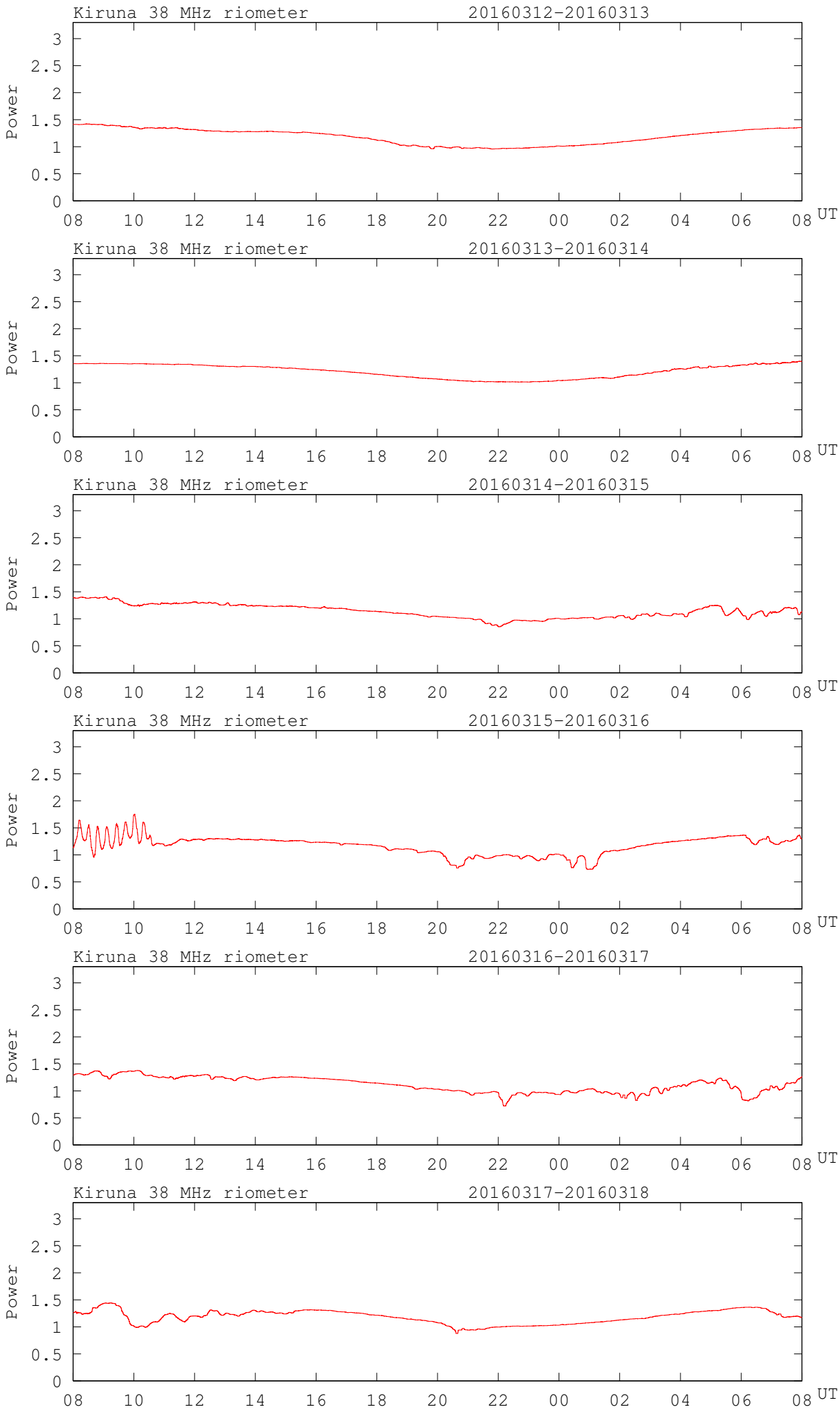

Kiruna 38 MHz riometer 20160211-20160212
Kiruna 38 MHz riometer 20160212-20160213
Kiruna 38 MHz riometer 20160213-20160214
Kiruna 38 MHz riometer 20160214-20160215
Kiruna 38 MHz riometer 20160215-20160216
Kiruna 38 MHz riometer 20160216-20160217
Power
0
0.5
1
1.5
2
2.5
3
08
10
12
14
16
18
20
22
00
02
04
06
08
UT

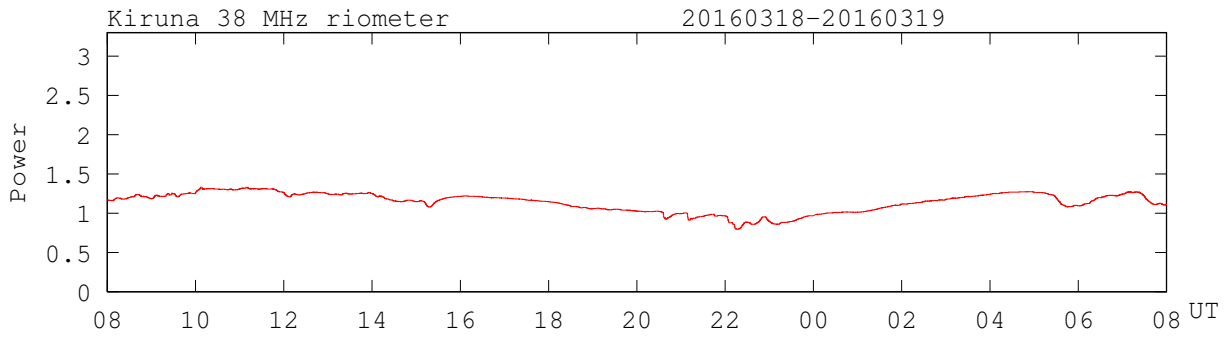

Kiruna 38 MHz riometer 20160217-20160218
Kiruna 38 MHz riometer 20160218-20160219
Kiruna 38 MHz riometer 20160219-20160220
Kiruna 38 MHz riometer 20160220-20160221
Kiruna 38 MHz riometer 20160221-20160222
Kiruna 38 MHz riometer 20160222-20160223
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

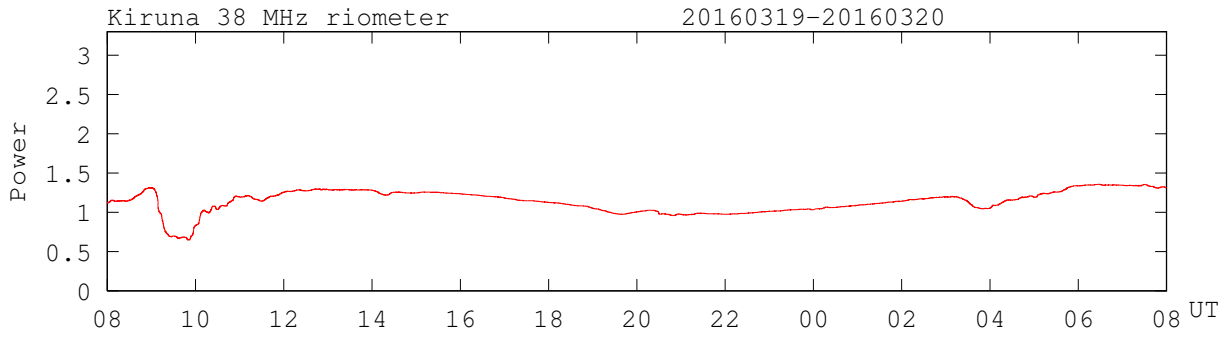

Kiruna 38 MHz riometer 20160223-20160224
Kiruna 38 MHz riometer 20160224-20160225
Kiruna 38 MHz riometer 20160225-20160226
Kiruna 38 MHz riometer 20160226-20160227
Kiruna 38 MHz riometer 20160227-20160228
Kiruna 38 MHz riometer 20160228-20160229
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

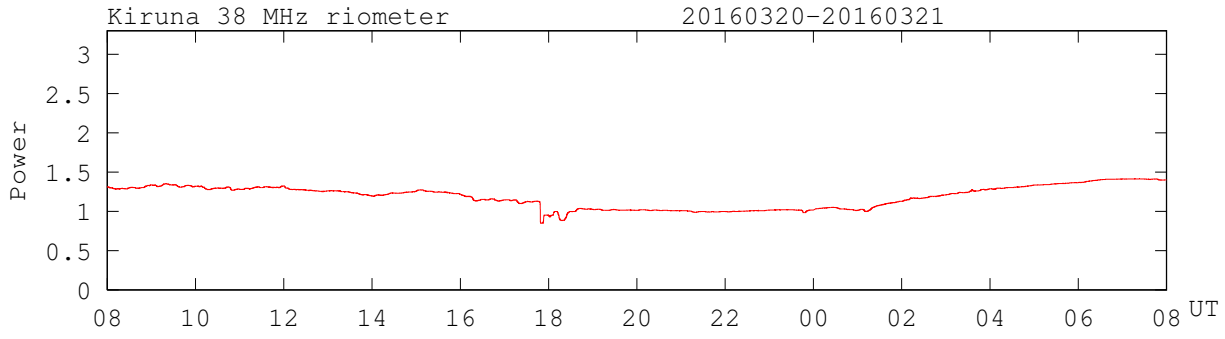

Kiruna 38 MHz riometer 20160229-20160301
Kiruna 38 MHz riometer 20160301-20160302
Kiruna 38 MHz riometer 20160302-20160303
Kiruna 38 MHz riometer 20160303-20160304
Kiruna 38 MHz riometer 20160304-20160305
Kiruna 38 MHz riometer 20160305-20160306
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

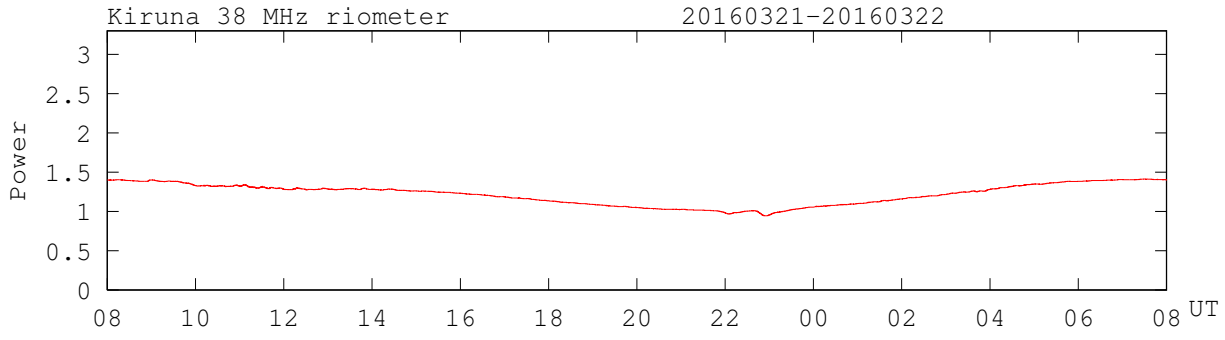

Kiruna 38 MHz riometer 20160306-20160307
Kiruna 38 MHz riometer 20160307-20160308
Kiruna 38 MHz riometer 20160308-20160309
Kiruna 38 MHz riometer 20160309-20160310
Kiruna 38 MHz riometer 20160310-20160311
Kiruna 38 MHz riometer 20160311-20160312
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08
UT

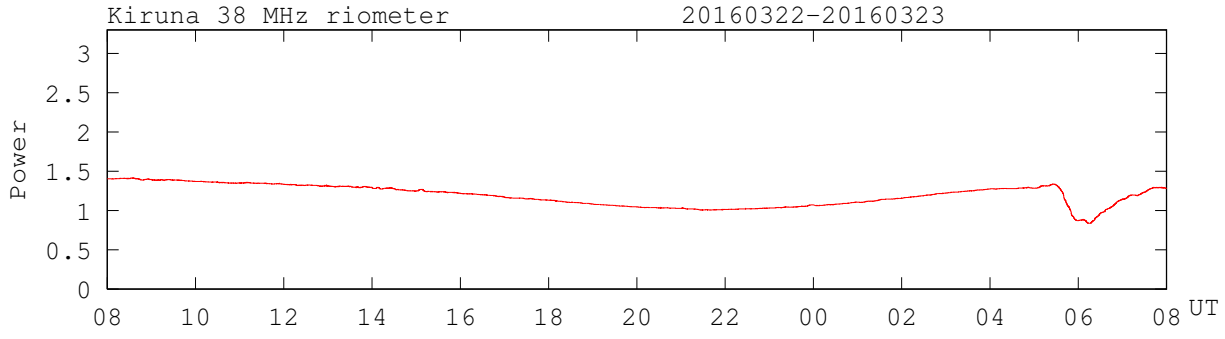

Kiruna 38 MHz riometer 20160312-20160313
Kiruna 38 MHz riometer 20160313-20160314
Kiruna 38 MHz riometer 20160314-20160315
Kiruna 38 MHz riometer 20160315-20160316
Kiruna 38 MHz riometer 20160316-20160317
Kiruna 38 MHz riometer 20160317-20160318
Power
0
0.5
1
1.5
2
2.5
3
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

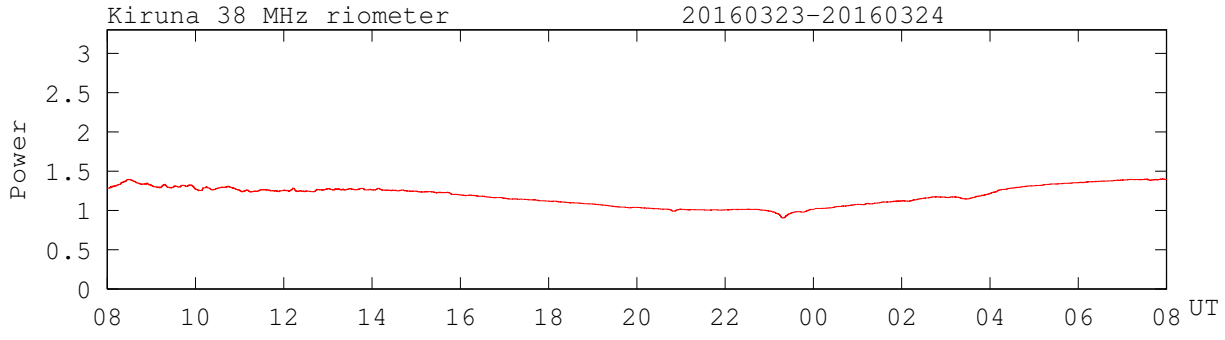

Kiruna 38 MHz riometer
20160318-20160319
Power
UT
08 10 12 14 16 18 20 22 00 02 04 06 08
0 0.5 1 1.5 2 2.5 3

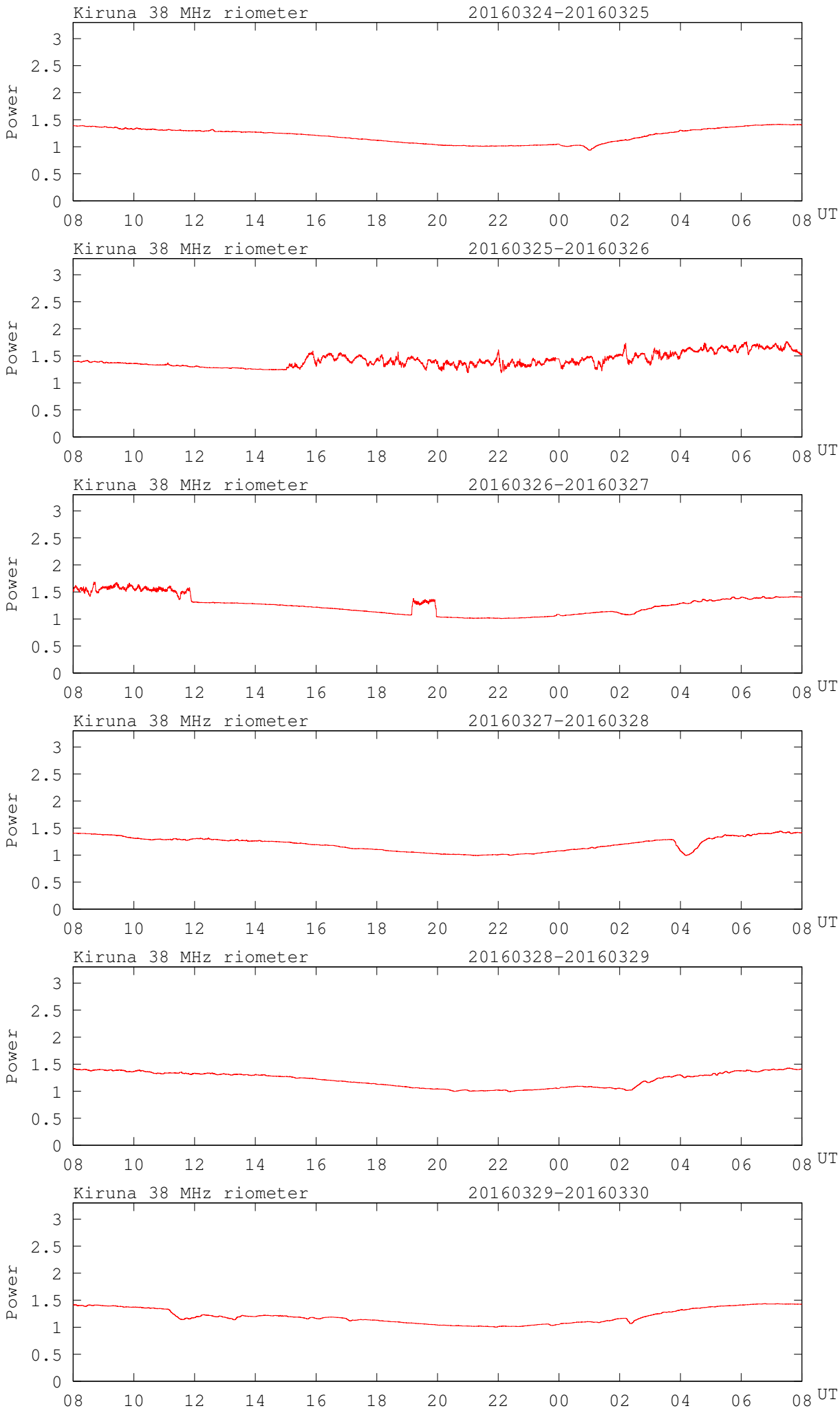

Kiruna 38 MHz riometer
20160319-20160320
Power
UT
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0 0.5 1 1.5 2 2.5 3

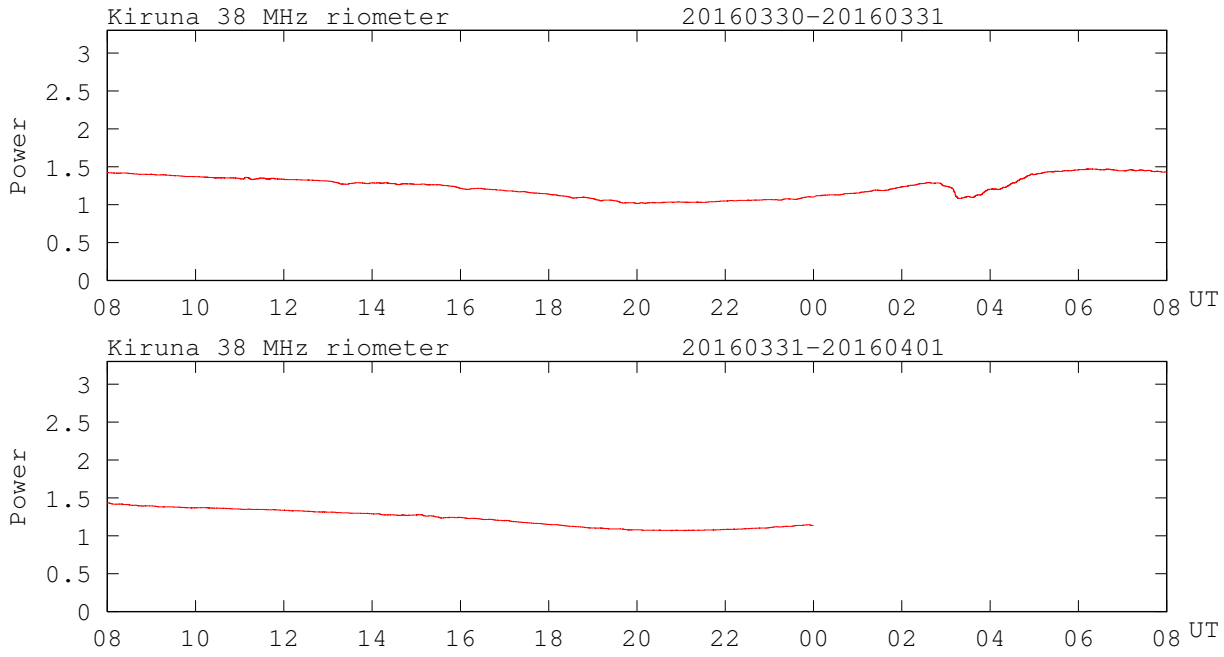

Kiruna 38 MHz riometer
20160320-20160321
Power
UT
08 10 12 14 16 18 20 22 00 02 04 06 08
0 0.5 1 1.5 2 2.5 3


Kiruna 38 MHz riometer
20160321-20160322
Power
UT
08 10 12 14 16 18 20 22 00 02 04 06 08
0 0.5 1 1.5 2 2.5 3


Kiruna 38 MHz riometer
20160322-20160323
Power
UT
08 10 12 14 16 18 20 22 00 02 04 06 08
0 0.5 1 1.5 2 2.5 3


Kiruna 38 MHz riometer
20160323-20160324
Power
UT
08 10 12 14 16 18 20 22 00 02 04 06 08
0 0.5 1 1.5 2 2.5 3


Kiruna 38 MHz riometer 20160324-20160325
Kiruna 38 MHz riometer 20160325-20160326
Kiruna 38 MHz riometer 20160326-20160327
Kiruna 38 MHz riometer 20160327-20160328
Kiruna 38 MHz riometer 20160328-20160329
Kiruna 38 MHz riometer 20160329-20160330
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
20160330-20160331
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
20160331-20160401
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



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