

KIRUNA GEOPHYSICAL DATA

DATA SUMMARY 07/10-12
OCTOBER-DECEMBER 2007



Collected at
SWEDISH INSTITUTE OF SPACE PHYSICS
KIRUNA, SWEDEN

Kiruna Geophysical Data

Data Summary 07/10-12
October – December 2007

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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

The Ionospheric Observatory at Lycksele (64.7°N, 18.8°E) is also operated by the Swedish Institute of Space Physics. Magnetometer, riometer, and ionosonde measurements are conducted there.

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 ingrid.sandahl@irf.se or 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

October 2007

Lower limit of K=9 is 1500 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	1	2	2	2	2	3	17
2	2	1	1	1	1	1	3	6	16
3	5	2	3	3	4	2	6	5	30
4	6	4	2	3	3	3	4	1	26
5	2	2	2	2	2	1	3	2	16
6	1	1	2	1	1	1	0	3	10
7	1	1	1	1	1	1	1	0	7
8	0	0	1	0	0	0	0	2	3
9	0	0	1	1	1	0	1	0	4
10	0	0	1	1	0	1	1	0	4
11	0	0	1	1	0	0	1	0	3
12	0	0	1	1	1	0	2	4	9
13	0	0	1	1	1	0	0	2	5
14	1	1	1	1	2	1	0	1	8
15	2	1	0	1	0	0	0	0	4
16	0	0	0	1	1	2	1	0	5
17	1	0	0	1	0	0	0	0	2
18	0	2	2	3	1	2	4	4	18
19	4	3	2	3	4	4	7	7	34
20	5	4	3	2	1	3	5	2	25
21	0	1	2	1	1	1	3	2	11
22	1	1	1	1	1	4	4	6	19
23	5	2	1	2	2	2	4	2	20
24	1	0	1	1	1	2	1	0	7
25	1	1	1	3	4	6	6	5	27
26	4	3	3	3	4	5	5	4	31
27	3	3	2	3	3	6	4	4	28
28	3	2	1	2	2	4	3	2	19
29	3	1	1	1	3	3	8	6	26
30	5	3	2	2	1	3	2	3	21
31	2	1	1	1	2	2	2	2	13
Sum	60	43	42	50	50	62	83	78	

GEOMAGNETIC K-INDICES, KIRUNA

November 2007

Lower limit of K=9 is 1500 nT

Time in UT

Day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	4	1	1	1	0	1	2	1	11
2	0	0	1	0	0	0	1	1	3
3	0	0	0	0	1	0	1	0	2
4	0	0	0	1	1	3	4	3	12
5	1	0	1	0	0	0	0	1	3
6	0	0	0	0	1	0	0	0	1
7	0	0	0	1	0	0	0	1	2
8	0	0	0	0	0	0	1	1	2
9	1	0	0	1	1	1	0	1	5
10	2	0	1	0	1	1	1	1	7
11	2	0	0	1	1	0	1	2	7
12	1	0	0	0	0	1	2	3	7
13	4	3	1	1	2	2	3	5	21
14	4	3	2	2	2	2	1	3	19
15	2	1	0	1	3	2	5	5	19
16	1	0	1	1	1	2	4	5	15
17	5	1	2	1	0	3	2	1	15
18	1	1	0	0	0	1	0	0	3
19	1	0	0	0	0	0	2	5	8
20	3	1	2	4	6	5	6	6	33
21	4	4	3	3	3	3	2	3	25
22	0	2	2	2	2	5	6	6	25
23	5	4	3	3	3	2	5	4	29
24	3	3	2	2	2	4	5	4	25
25	4	2	3	2	2	4	5	6	28
26	4	3	2	2	2	1	3	3	20
27	1	2	1	1	1	2	3	2	13
28	2	0	1	1	1	3	2	2	12
29	0	0	0	1	1	3	2	1	8
30	0	0	1	0	1	1	2	1	6
Sum	55	31	30	32	38	52	71	77	

GEOMAGNETIC K-INDICES, KIRUNA

December 2007

Lower limit of K=9 is 1500 nT

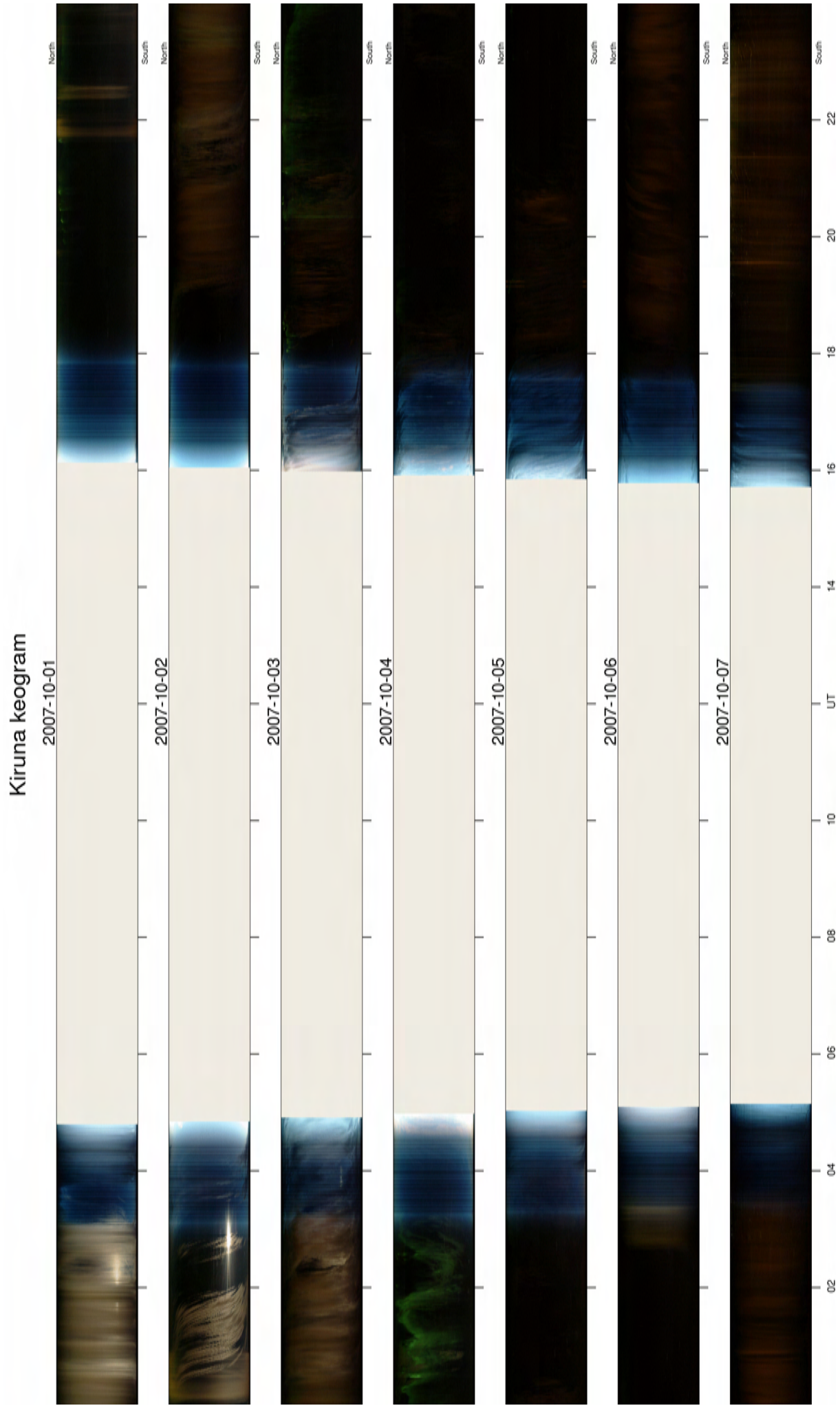
Time in UT

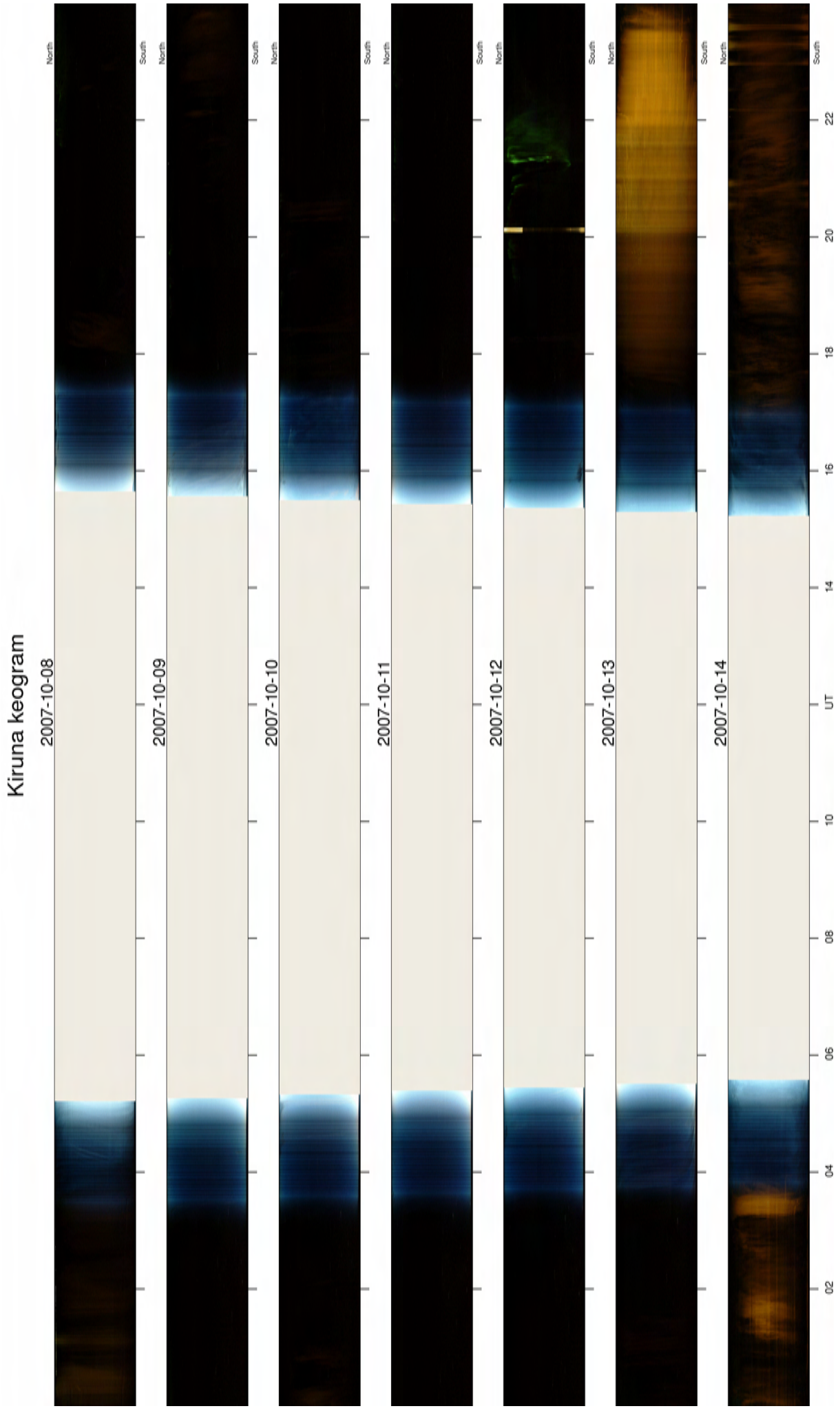
Day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
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2	0	0	1	2	0	0	1	0	4
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	1	0	1	2
5	2	0	1	0	0	0	0	0	3
6	0	1	1	0	2	0	2	1	7
7	0	1	0	0	0	0	1	0	2
8	0	0	0	0	0	0	0	1	1
9	1	0	0	0	1	3	4	2	11
10	0	1	0	1	2	1	4	7	16
11	5	3	2	2	3	5	6	5	31
12	4	5	3	2	2	0	2	4	22
13	3	2	1	1	1	2	3	0	13
14	0	1	1	1	0	1	2	1	7
15	0	0	0	1	0	2	0	1	4
16	1	0	0	0	0	1	1	5	8
17	2	2	2	4	5	5	4	6	30
18	5	3	3	3	3	5	5	5	32
19	3	3	3	2	2	1	3	4	21
20	3	3	2	2	2	6	6	5	29
21	4	2	3	3	2	4	6	2	26
22	1	1	1	1	2	3	6	4	19
23	3	2	2	2	2	2	3	4	20
24	0	0	1	1	0	1	3	3	9
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	1	1
27	1	0	0	0	0	0	0	0	1
28	3	1	1	0	0	0	2	1	8
29	0	0	0	0	0	0	1	2	3
30	1	1	0	1	1	1	1	0	6
31	0	0	0	1	1	1	4	3	10
Sum	45	32	28	30	31	45	70	69	

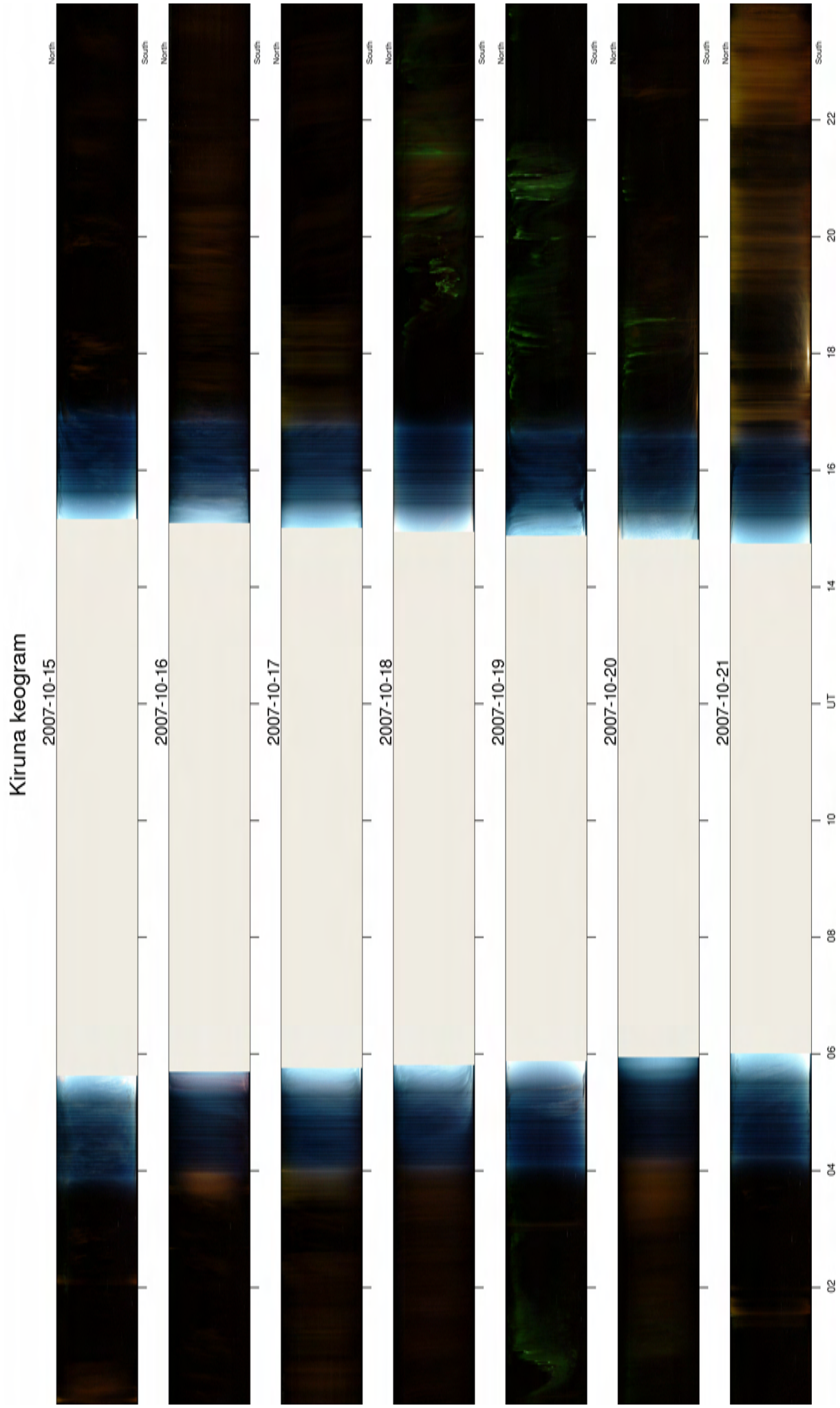
ALL-SKY CAMERA KEOGRAMS

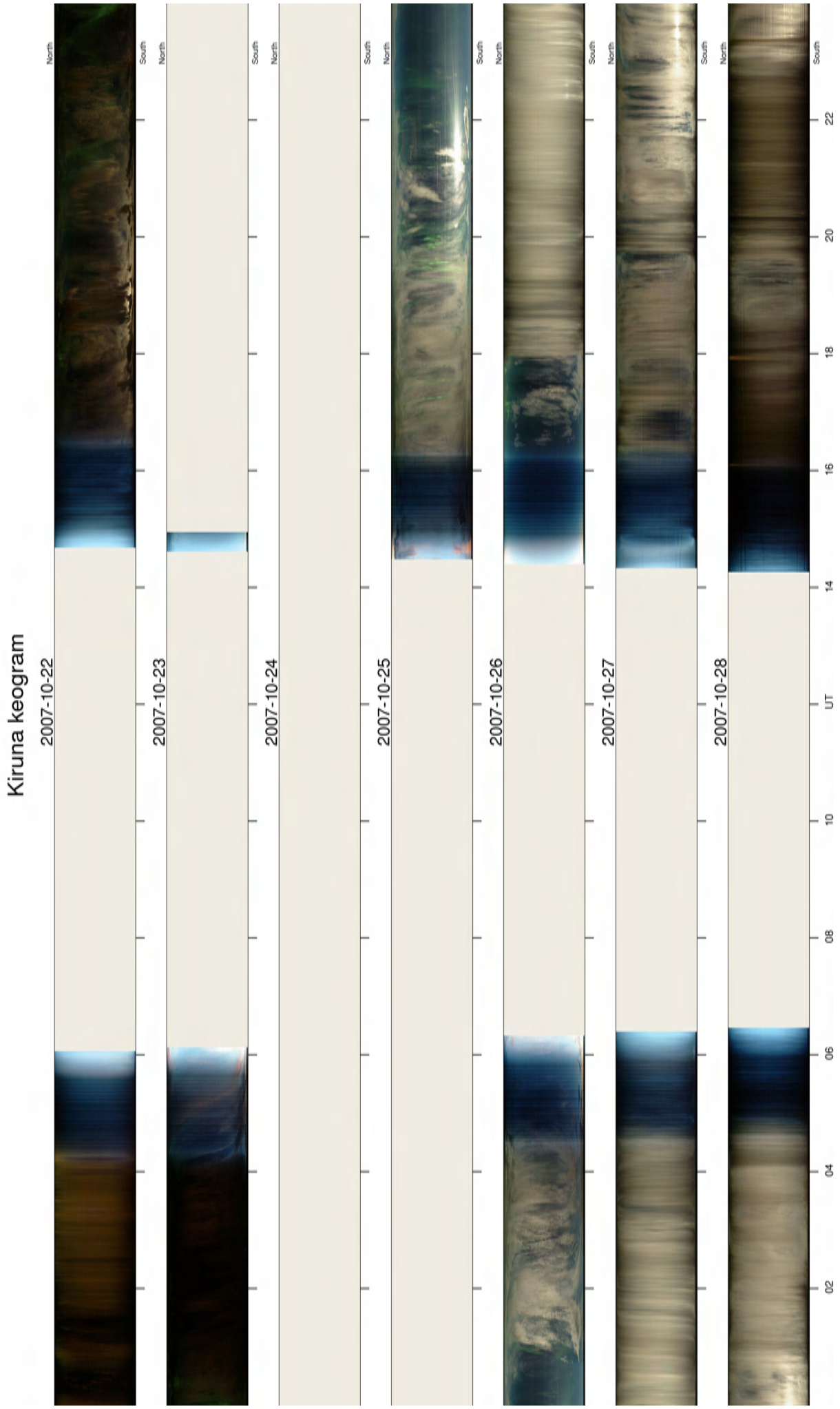
October - December 2007

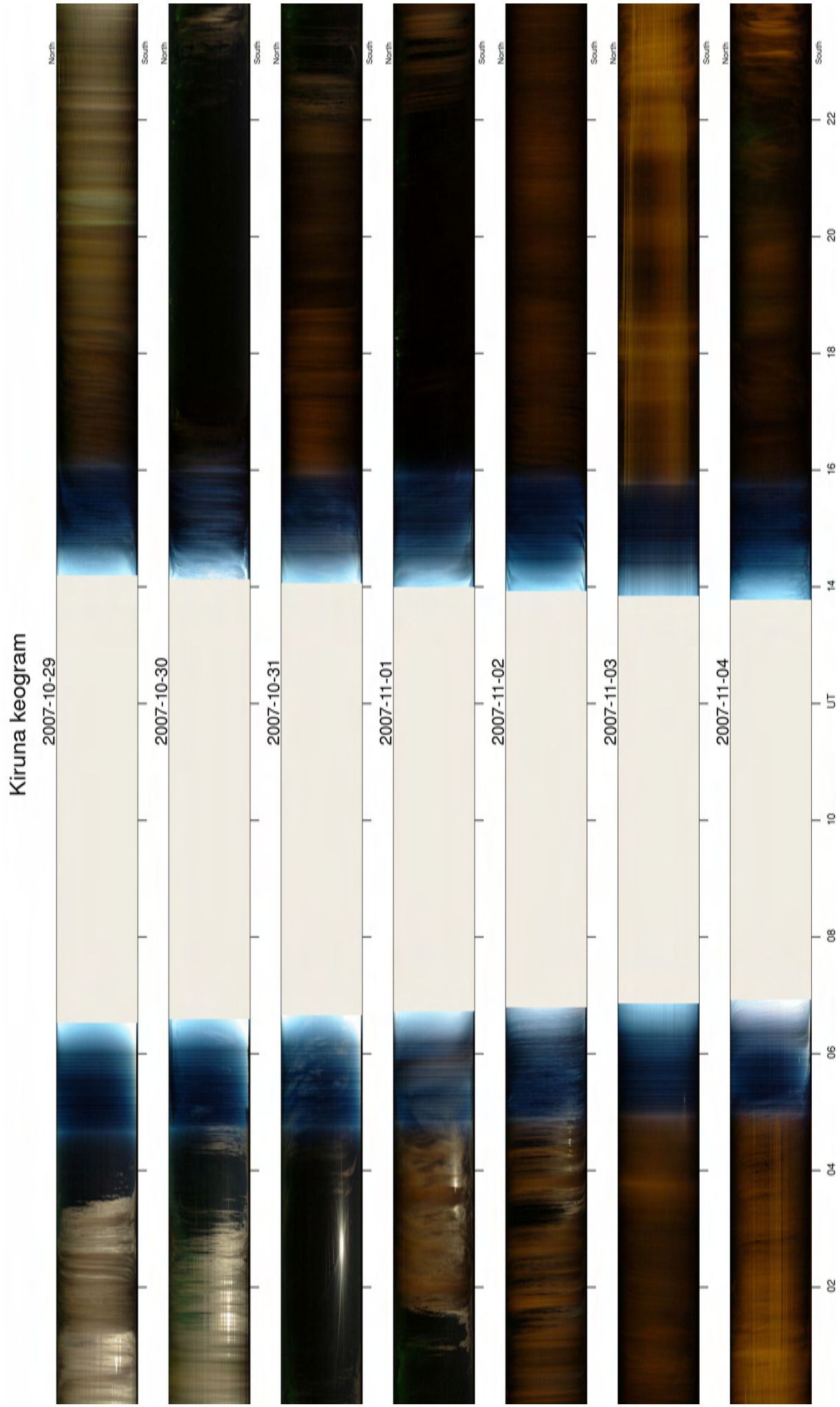
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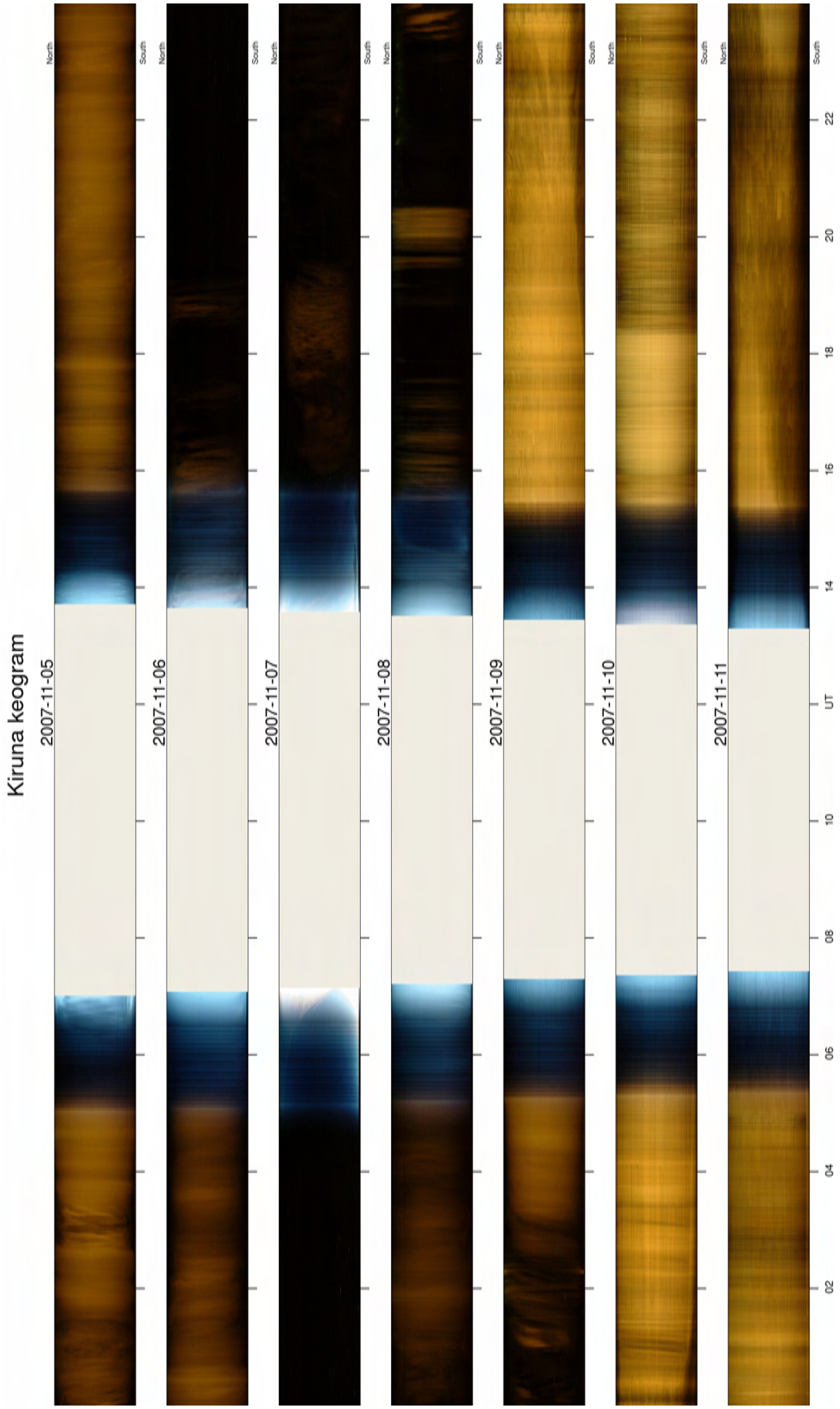

Kiruna keogram
2007-10-01
2007-10-02
2007-10-03
2007-10-04
2007-10-05
2007-10-06
2007-10-07
North
South
02
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08
10
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18
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22
UT

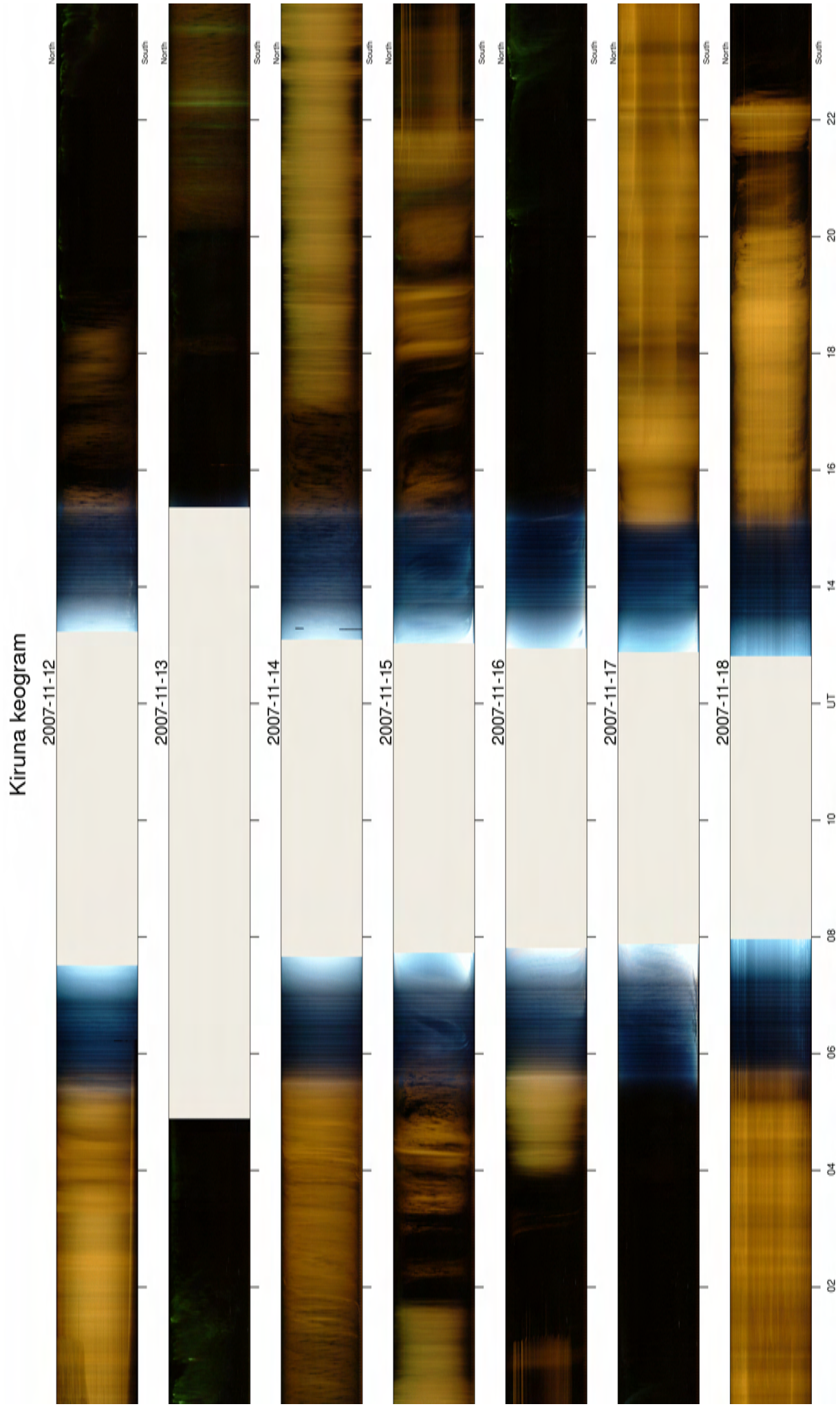

Kiruna keogram
2007-10-08
2007-10-09
2007-10-10
2007-10-11
2007-10-12
2007-10-13
2007-10-14
North
South
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UT

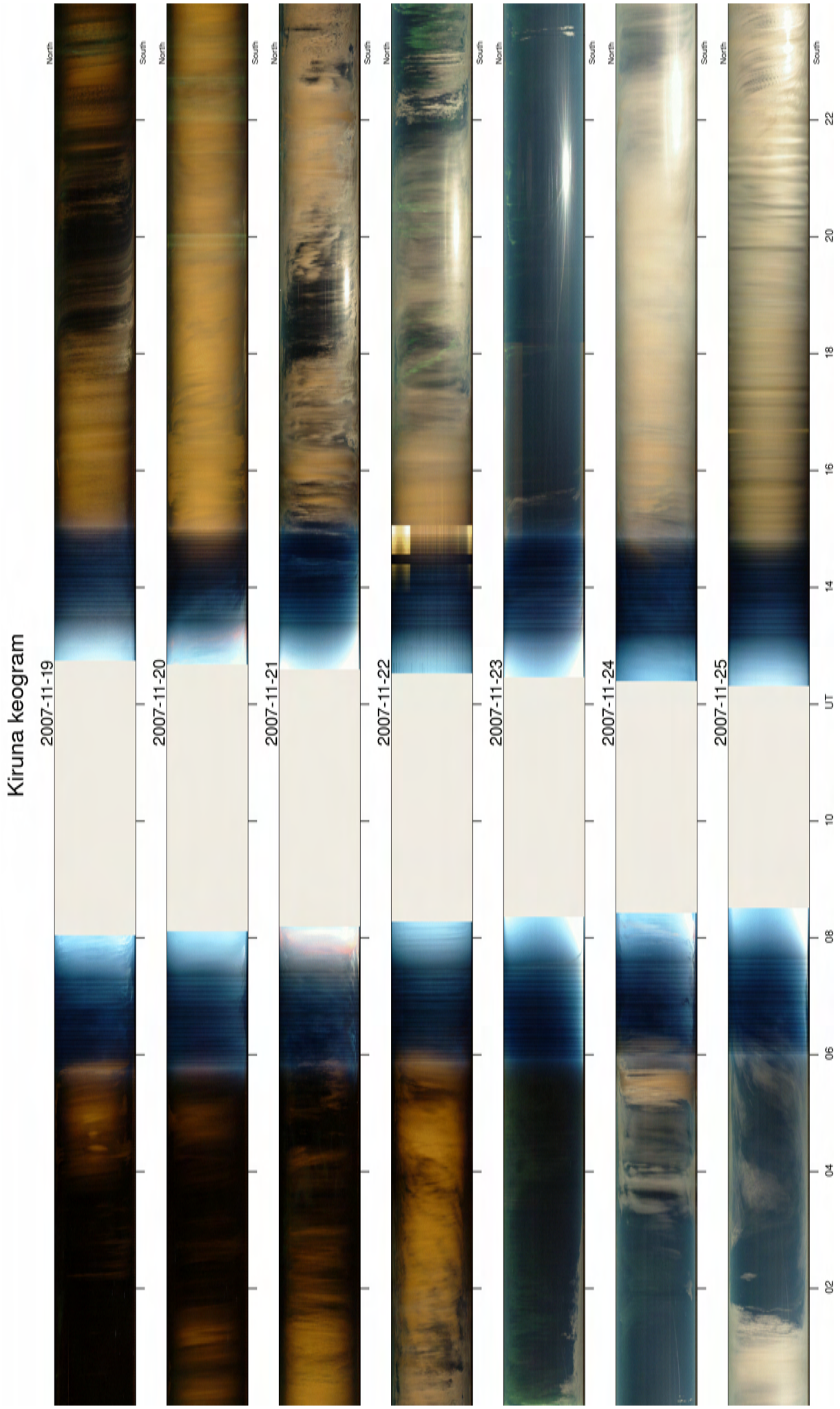

Kiruna keogram
2007-10-15
2007-10-16
2007-10-17
2007-10-18
2007-10-19
2007-10-20
2007-10-21
North
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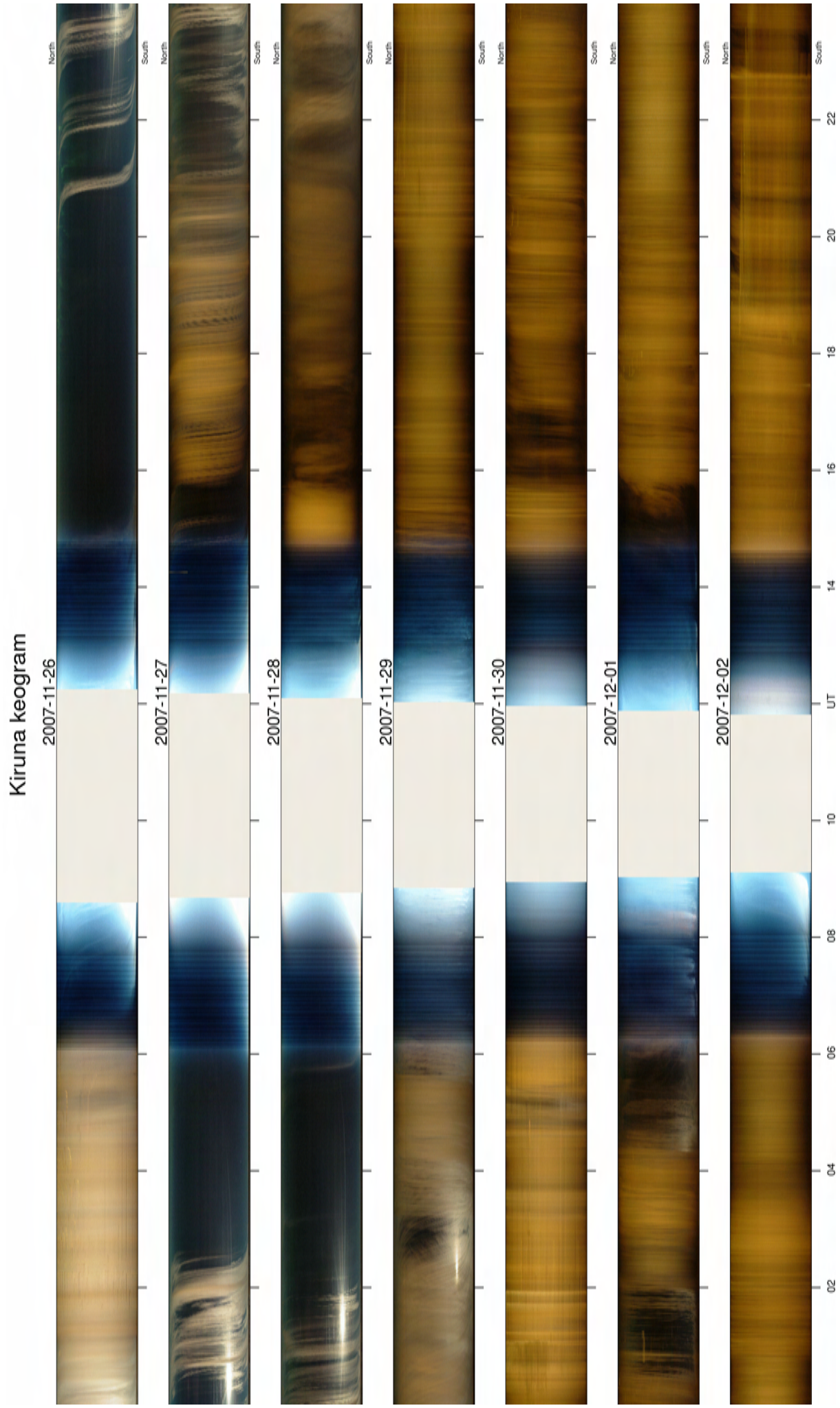

Kiruna keogram
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2007-10-23
2007-10-24
2007-10-25
2007-10-26
2007-10-27
2007-10-28
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UT

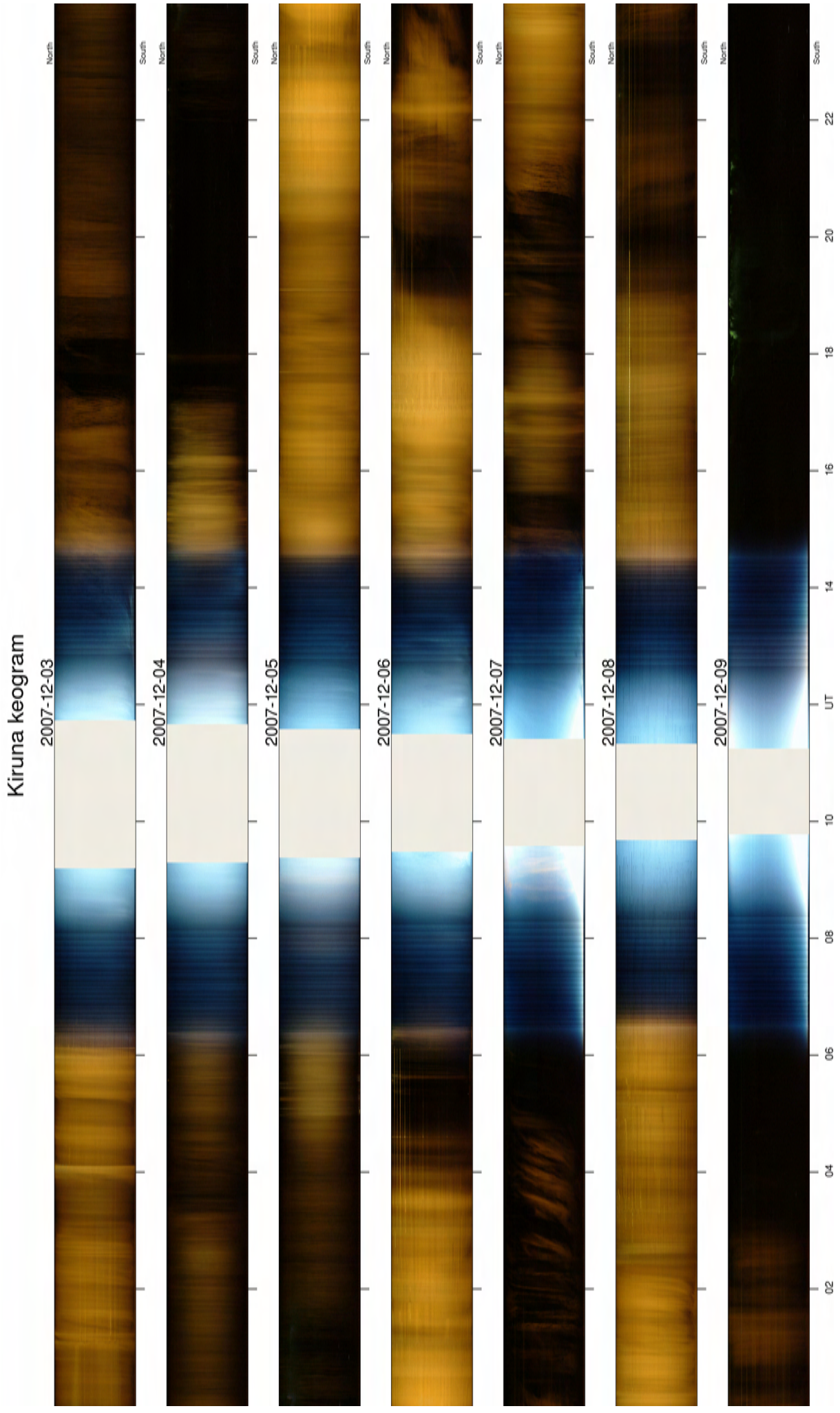

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2007-10-30
2007-10-31
2007-11-01
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2007-11-04
North
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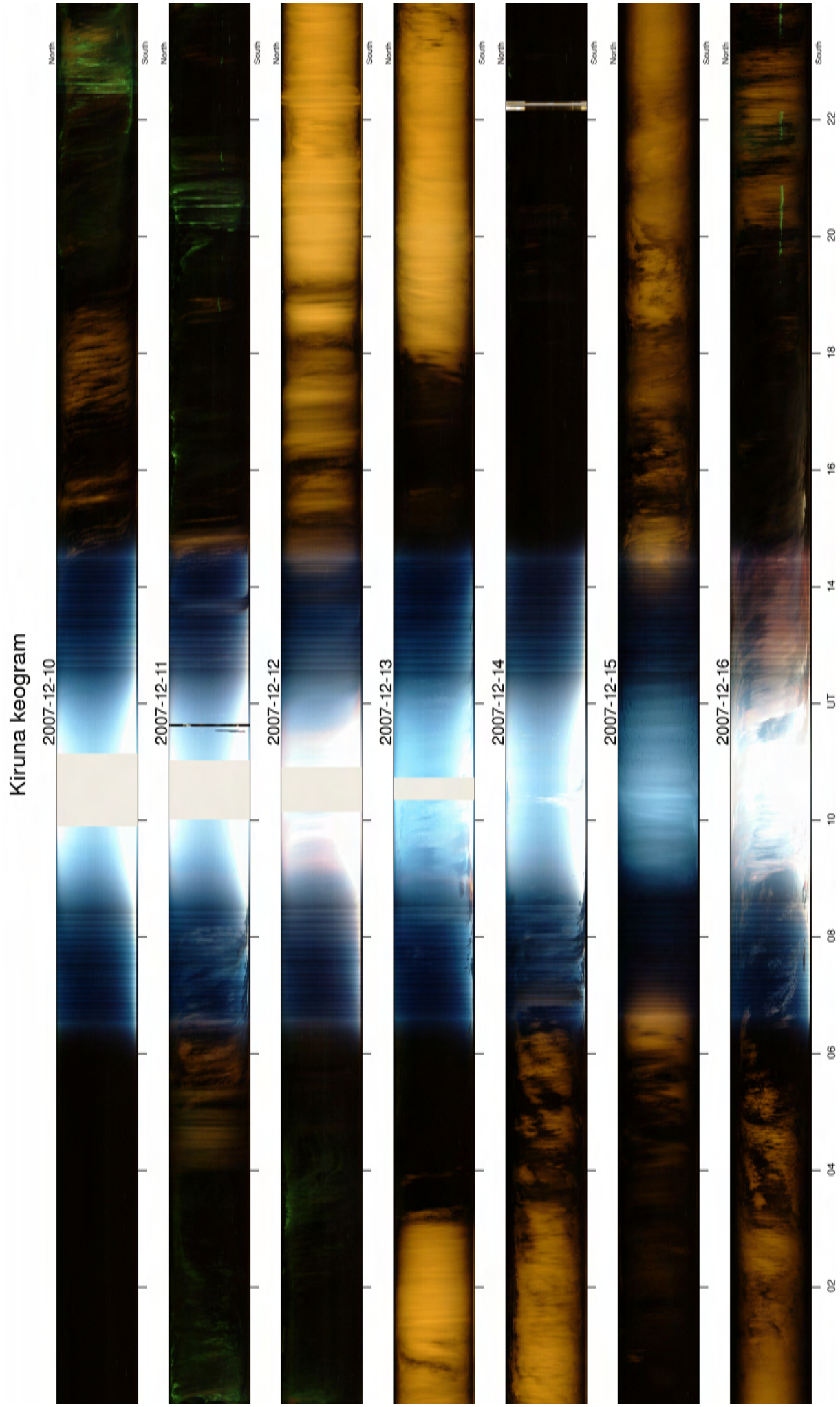

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2007-11-05
2007-11-06
2007-11-07
2007-11-08
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2007-11-10
2007-11-11
North
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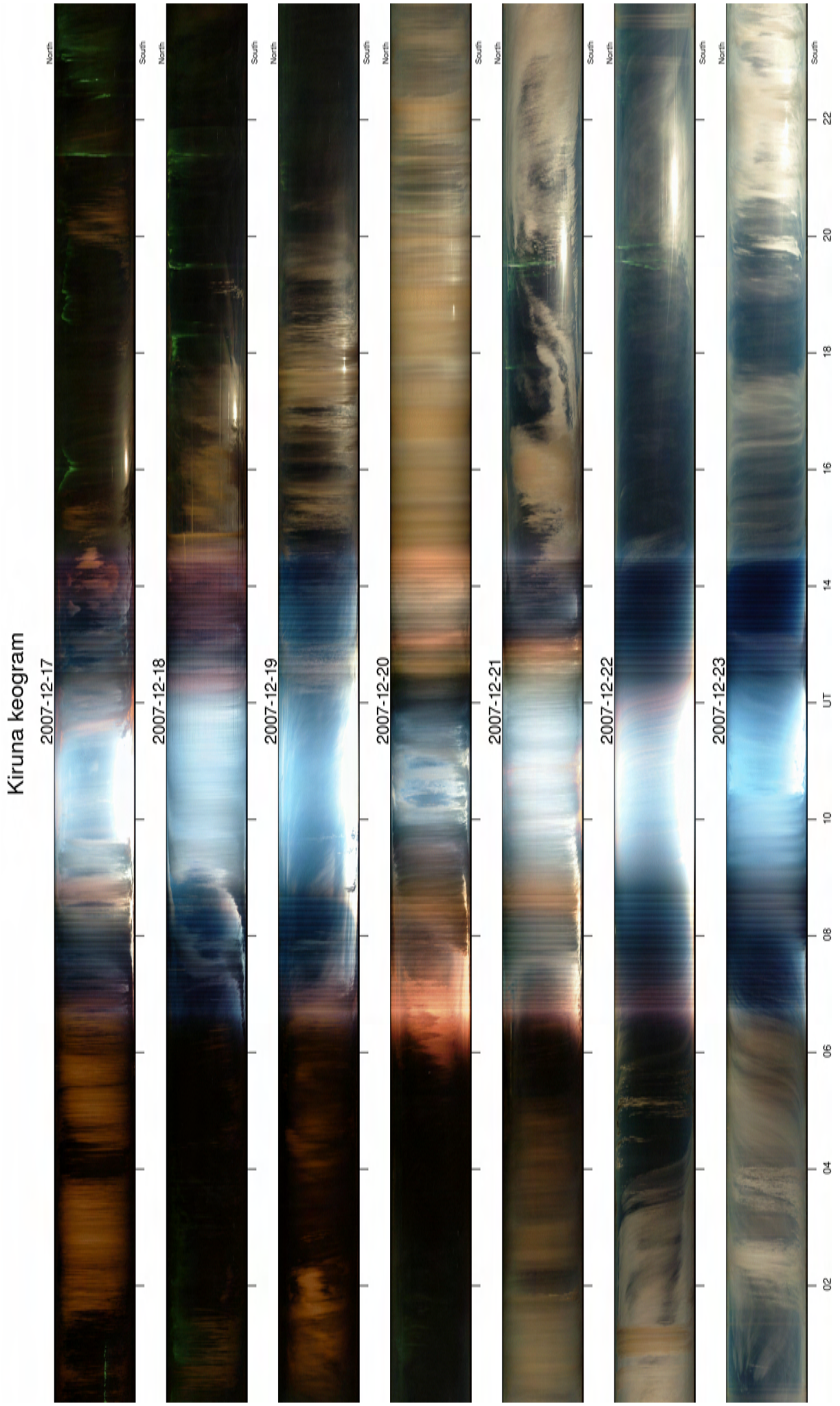

Kiruna keogram
2007-11-12
2007-11-13
2007-11-14
2007-11-15
2007-11-16
2007-11-17
2007-11-18
North
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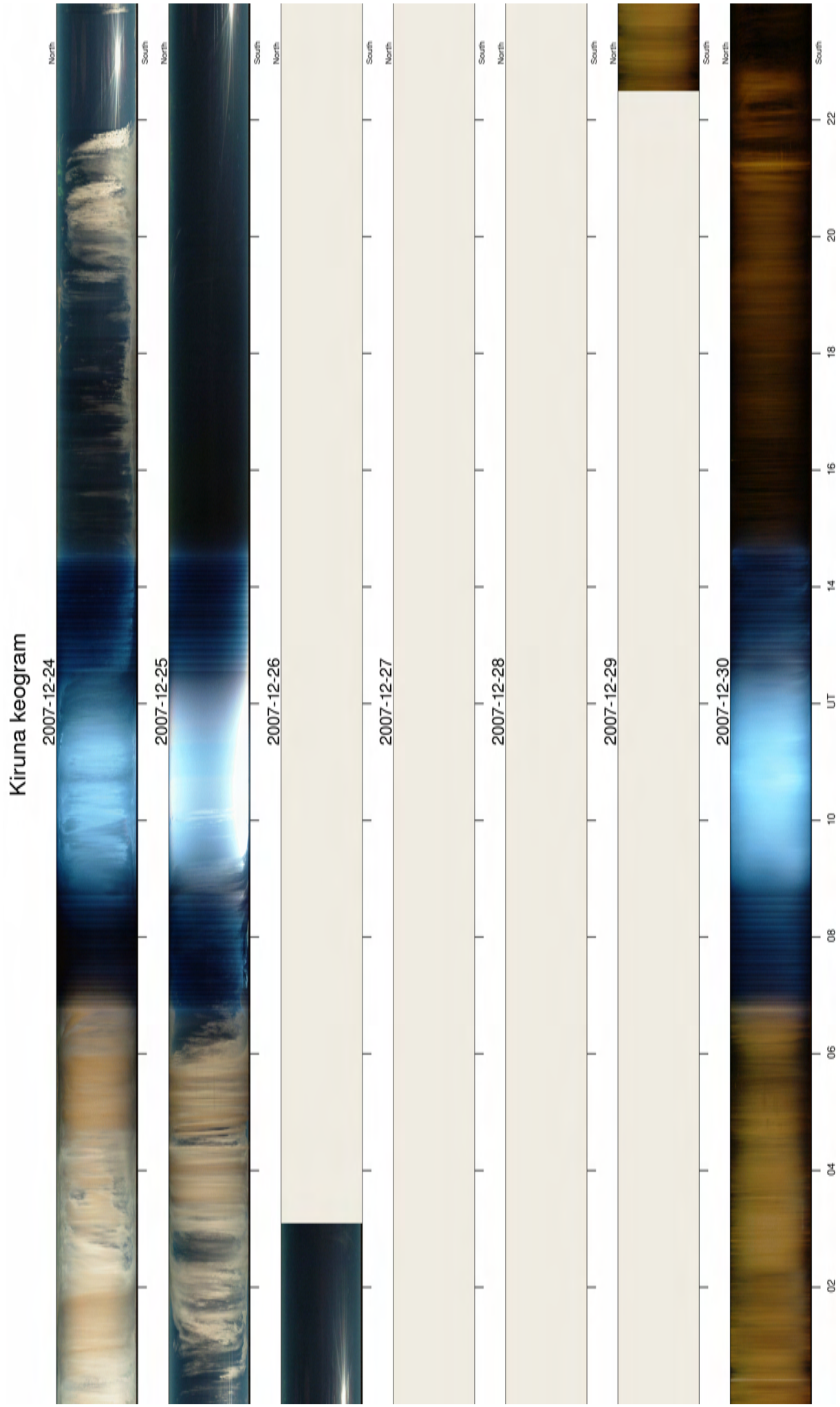

Kiruna keogram
2007-11-19
2007-11-20
2007-11-21
2007-11-22
2007-11-23
2007-11-24
2007-11-25
North
South
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22

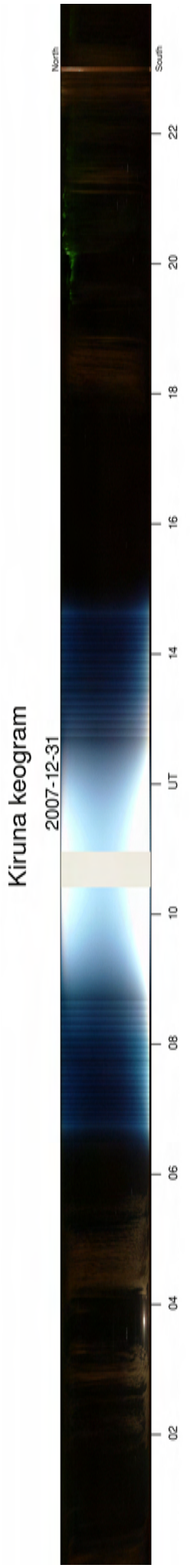

Kiruna keogram
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2007-11-27
2007-11-28
2007-11-29
2007-11-30
2007-12-01
2007-12-02
North
South
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UT


Kiruna keogram
2007-12-03
2007-12-04
2007-12-05
2007-12-06
2007-12-07
2007-12-08
2007-12-09
North
South
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Kiruna keogram
2007-12-10
2007-12-11
2007-12-12
2007-12-13
2007-12-14
2007-12-15
2007-12-16
North
South
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UT


Kiruna keogram
2007-12-17
2007-12-18
2007-12-19
2007-12-20
2007-12-21
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2007-12-23
North
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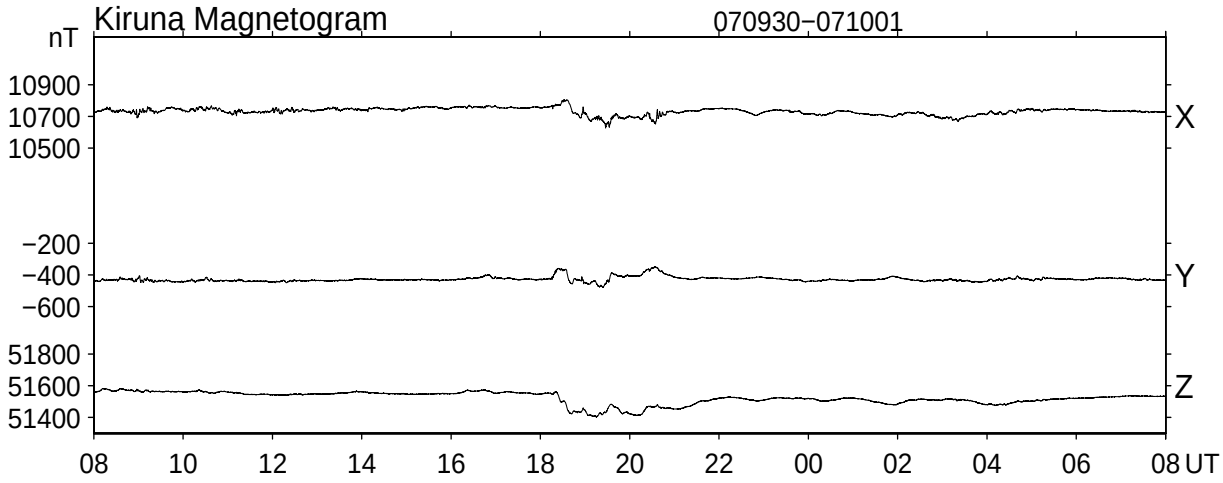

Kiruna keogram
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2007-12-25
2007-12-26
2007-12-27
2007-12-28
2007-12-29
2007-12-30
North
South
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22
UT

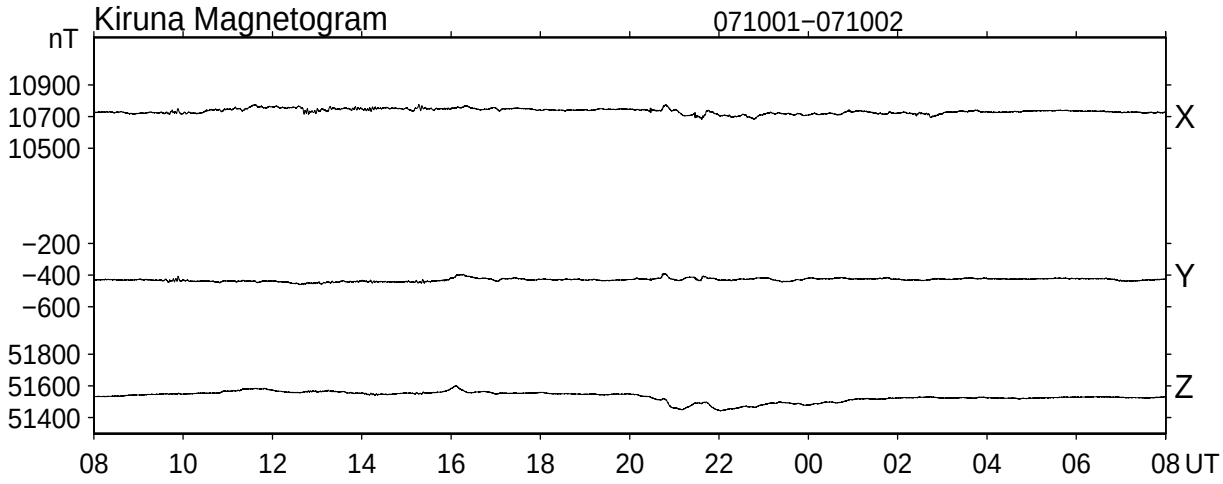

Kiruna keogram
2007-12-31
North
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02
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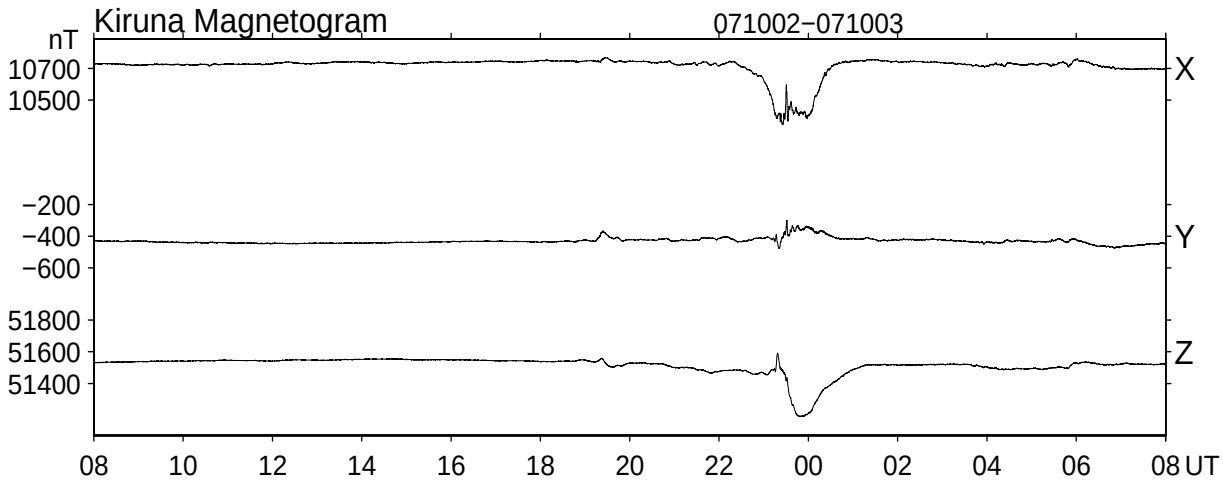
KIRUNA MAGNETOGRAM PLOTS

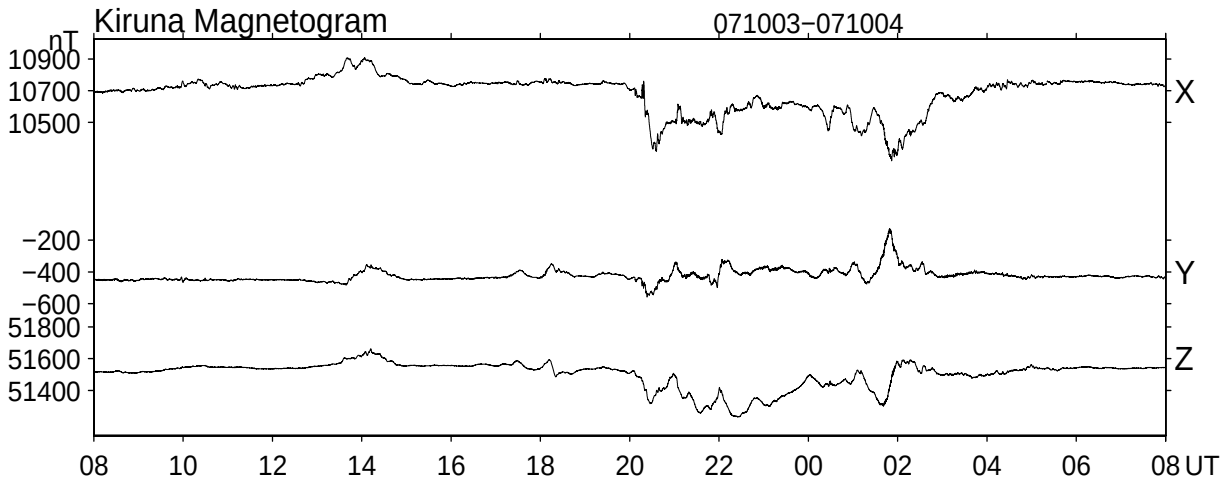
October - December 2007

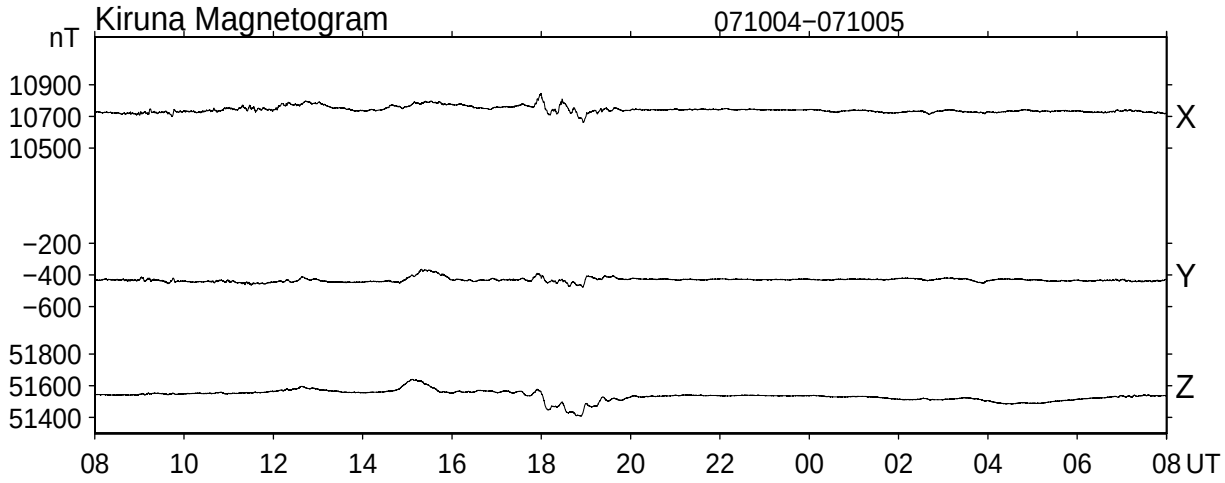
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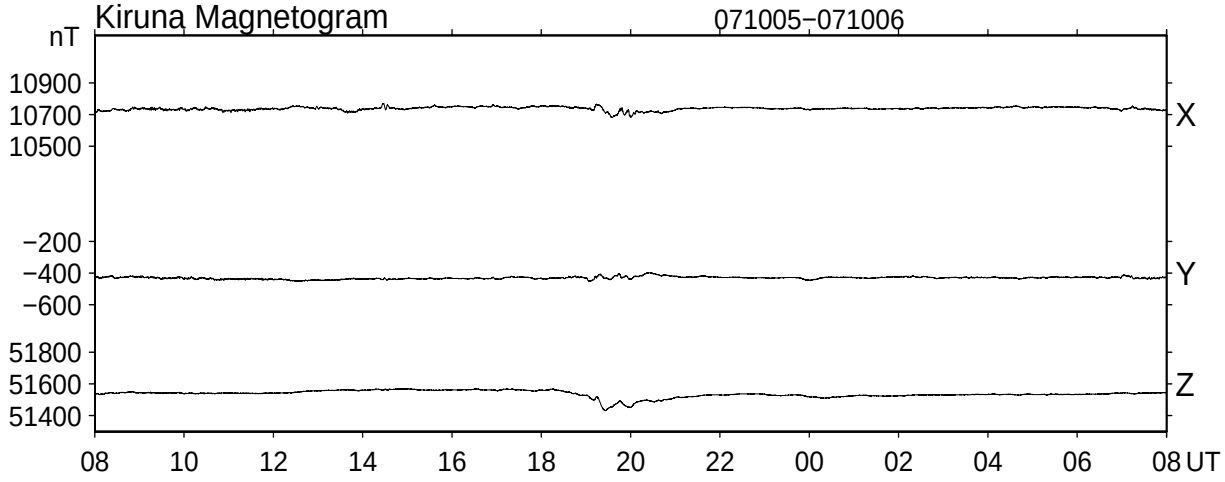

Kiruna Magnetogram
070930−071001
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

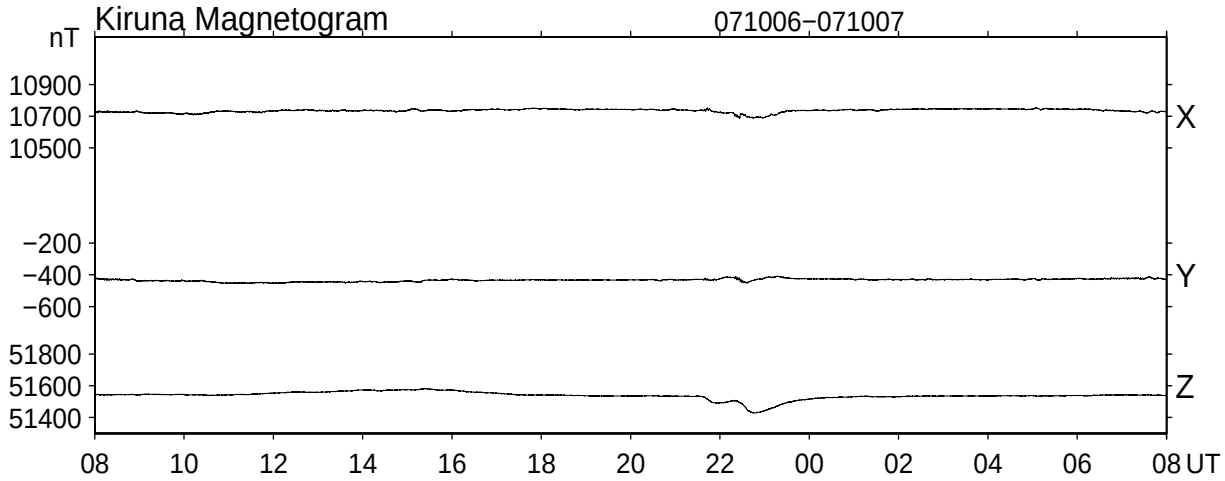

Kiruna Magnetogram
071001−071002
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

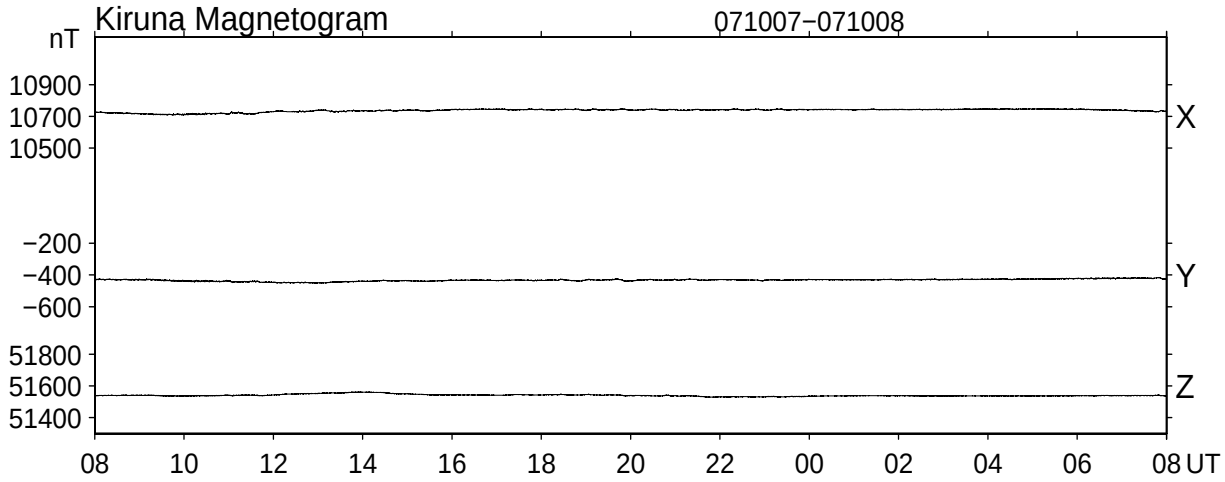

Kiruna Magnetogram
071002−071003
nT
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10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

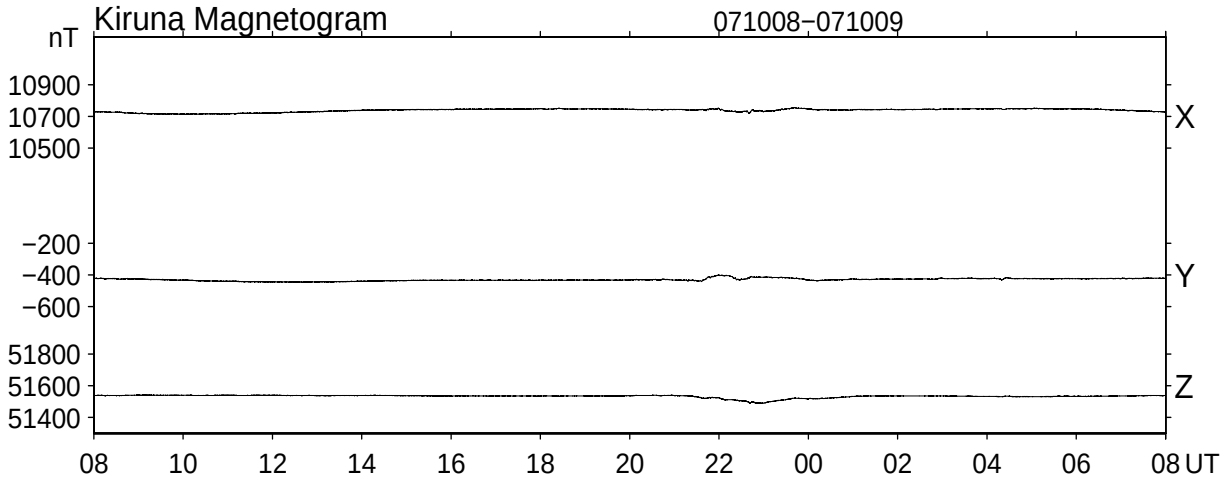

Kiruna Magnetogram
071003−071004
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

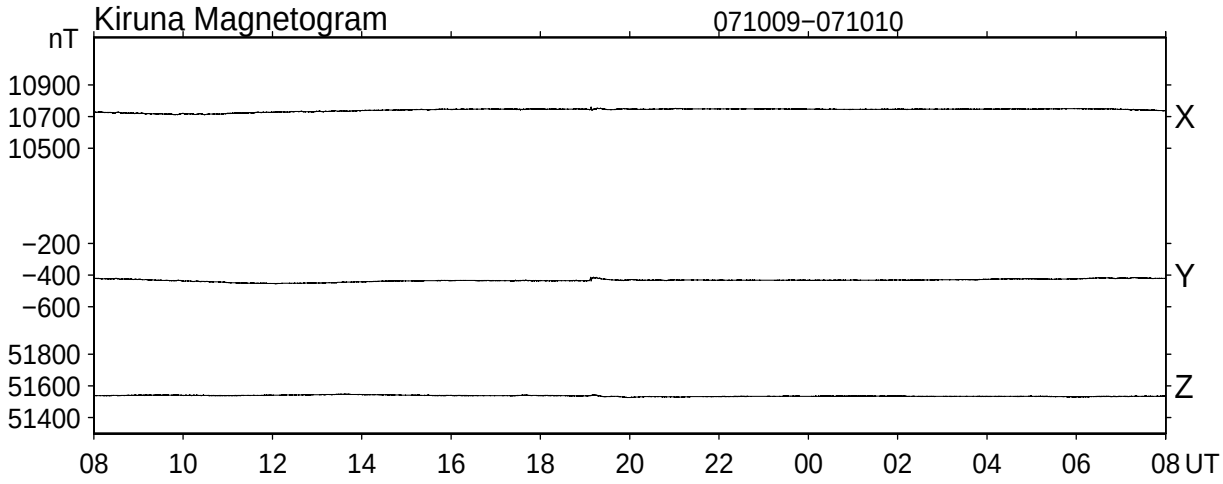

Kiruna Magnetogram
071004−071005
nT
10900
10700
10500
−200
−400
−600
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51600
51400
X
Y
Z
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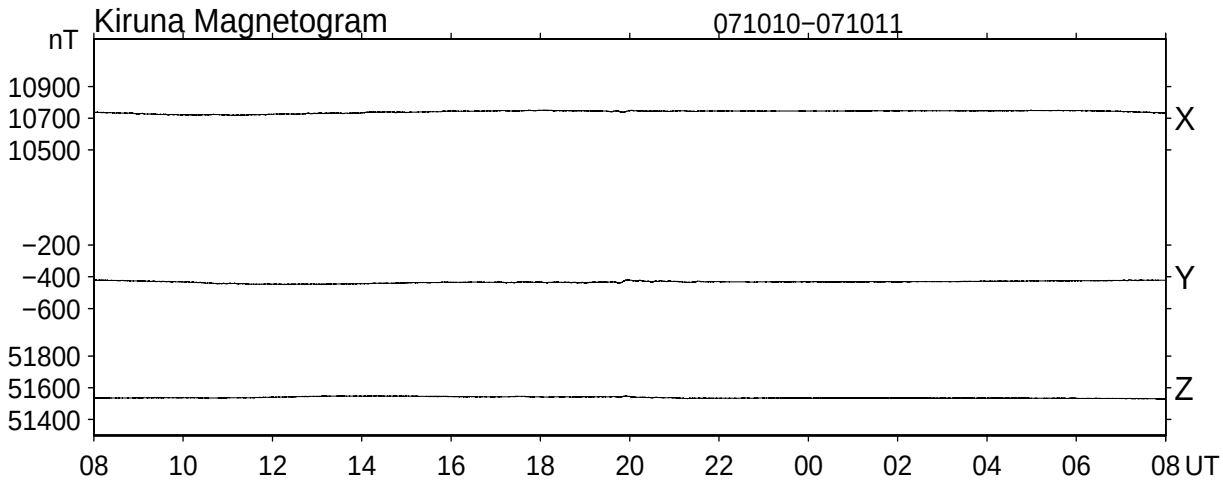

Kiruna Magnetogram
071005−071006
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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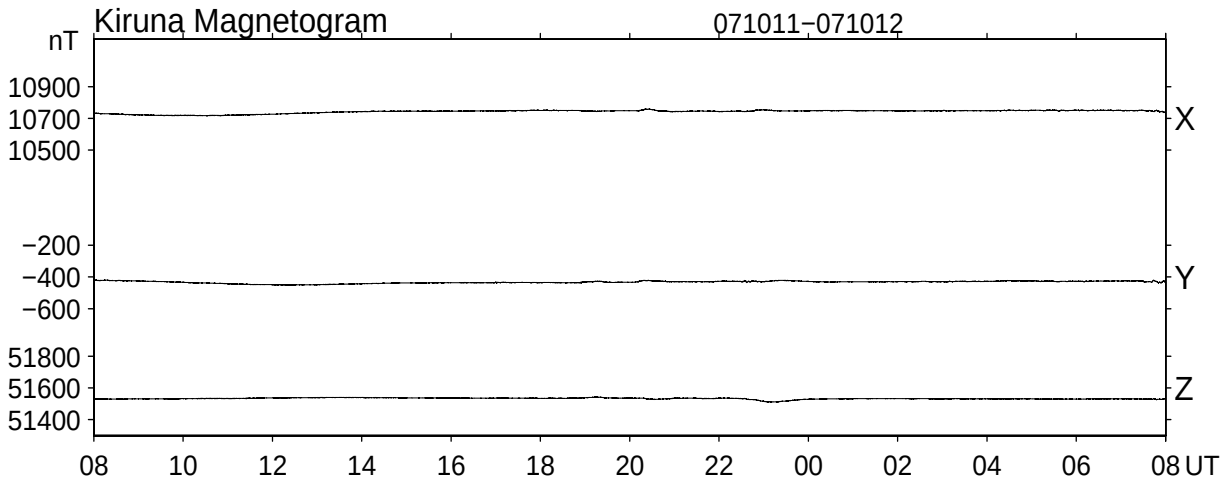

Kiruna Magnetogram
071006−071007
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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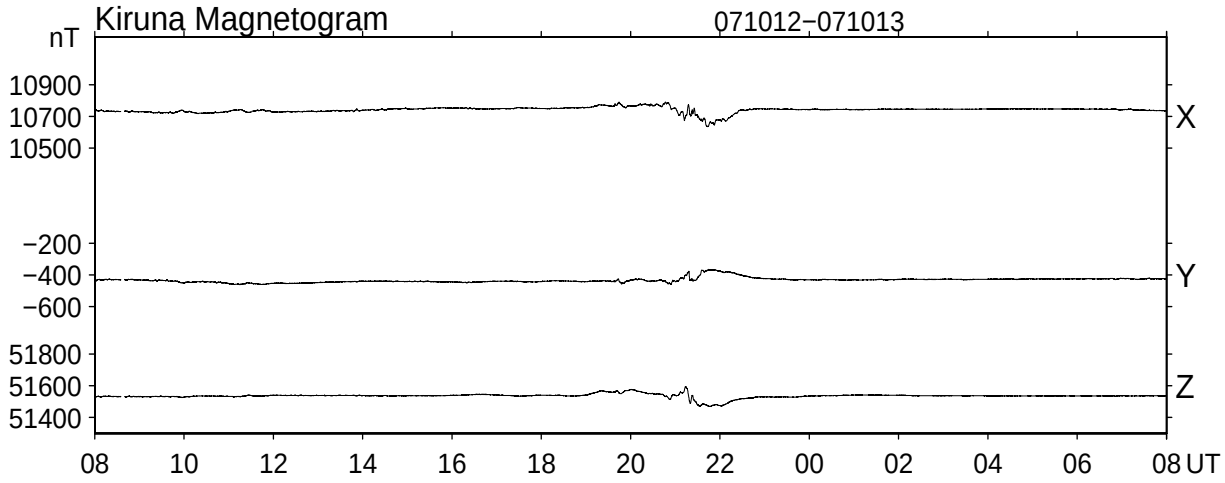

Kiruna Magnetogram
071007−071008
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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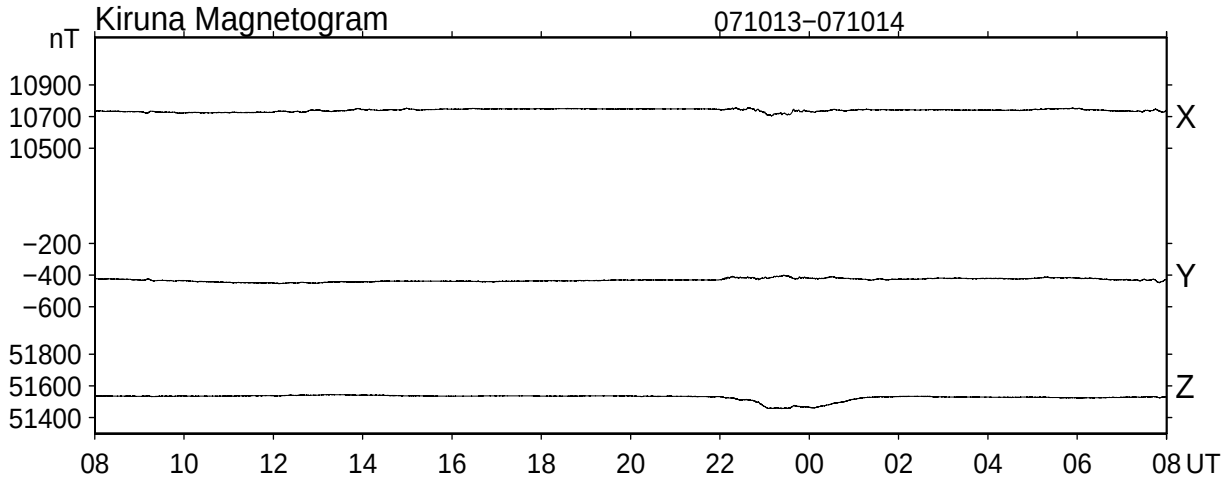

Kiruna Magnetogram
071008−071009
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

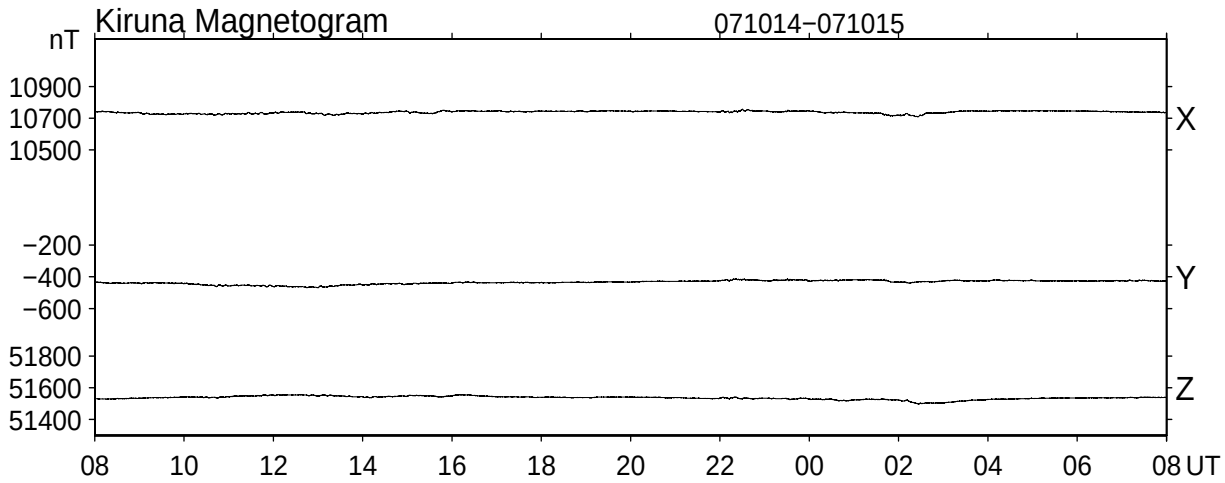

Kiruna Magnetogram
071009−071010
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

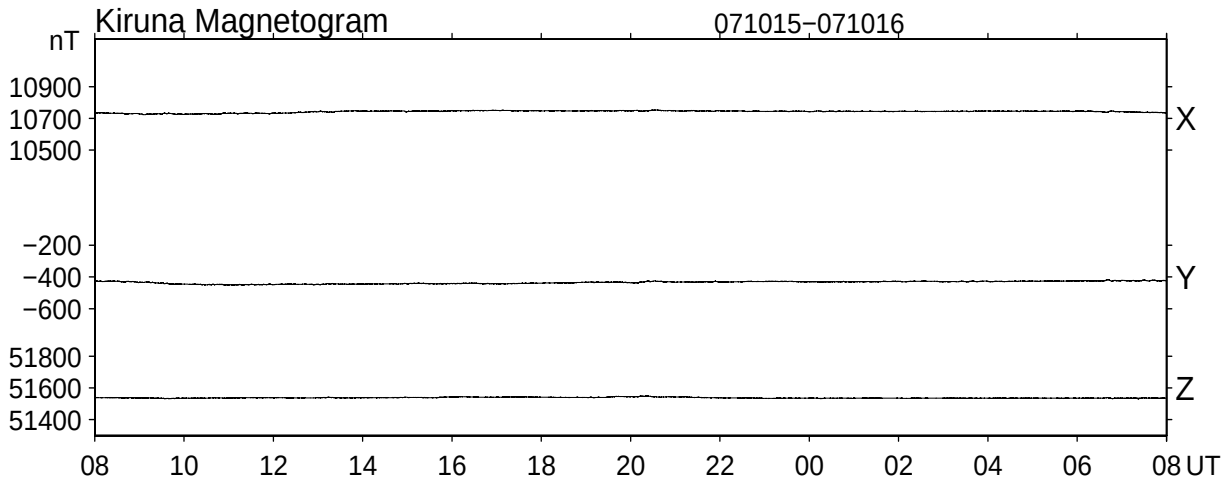

Kiruna Magnetogram
071010−071011
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

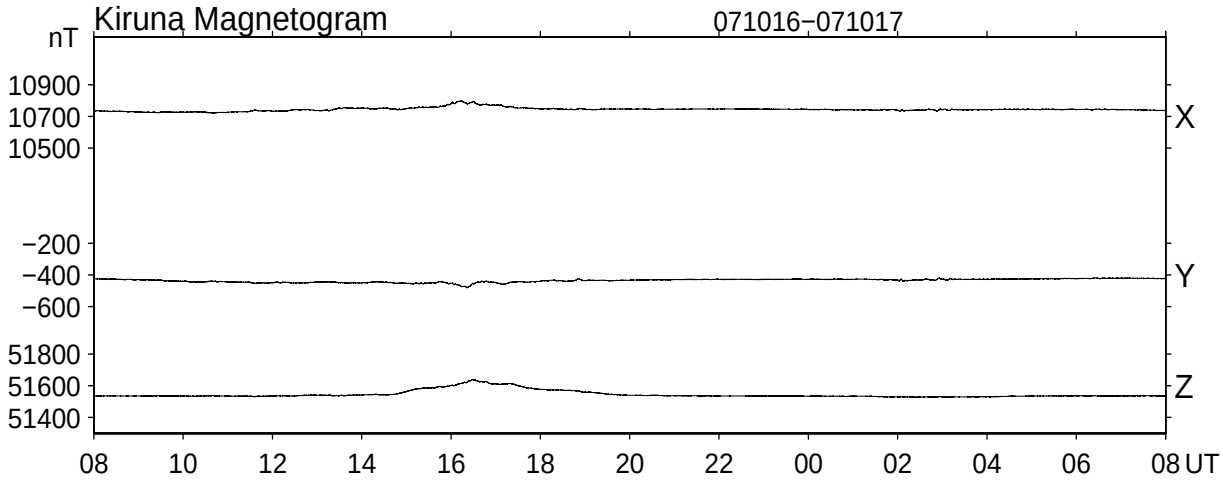

Kiruna Magnetogram
071011−071012
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

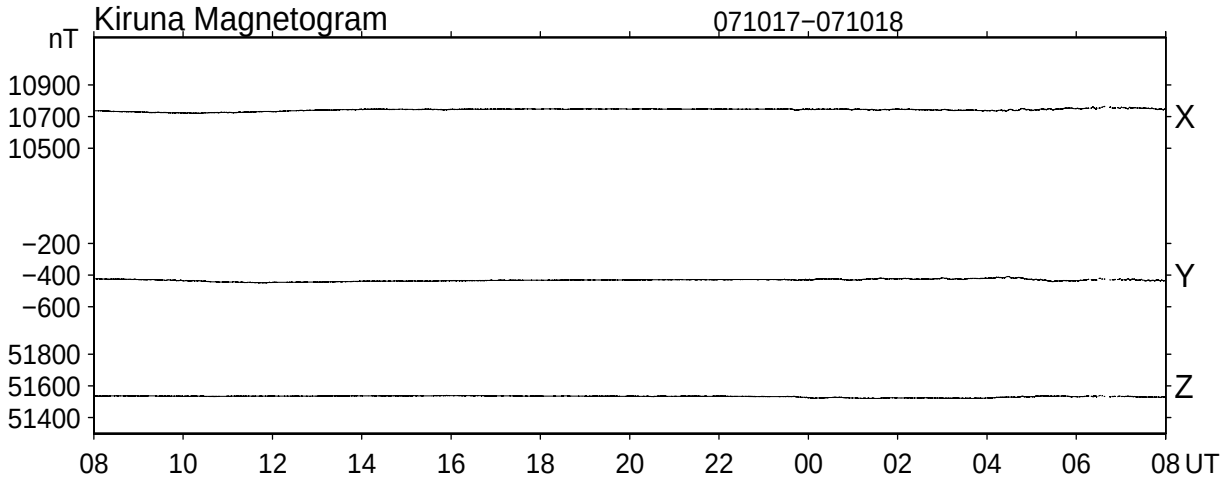

Kiruna Magnetogram
071012−071013
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

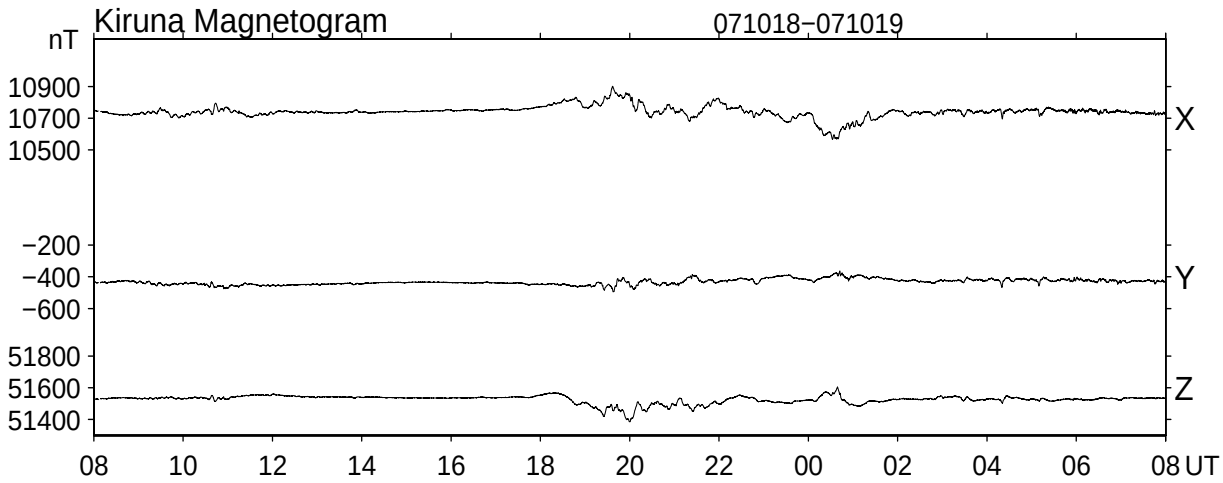

Kiruna Magnetogram
071013−071014
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

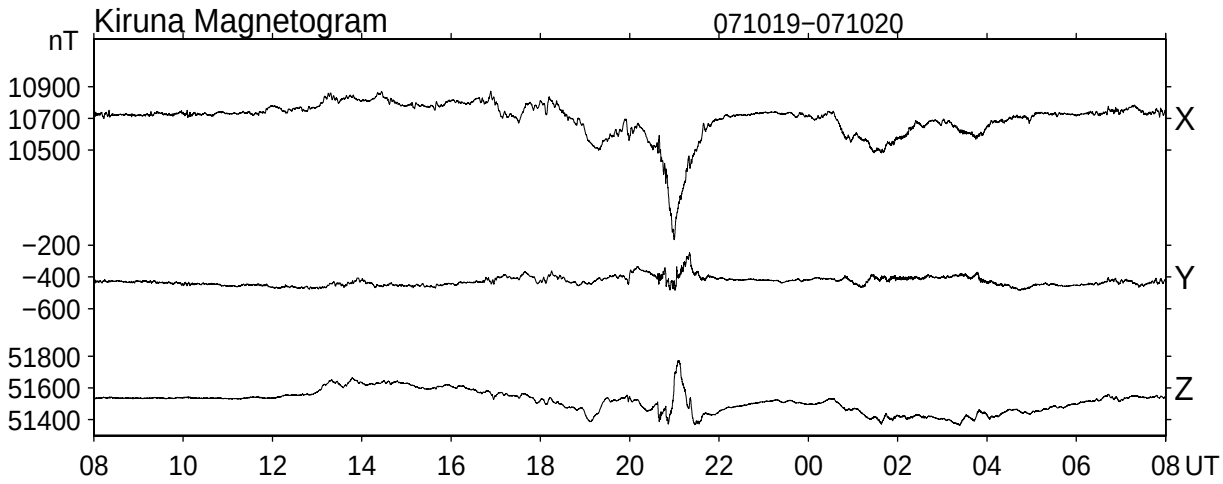

Kiruna Magnetogram
071014−071015
nT
10900
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

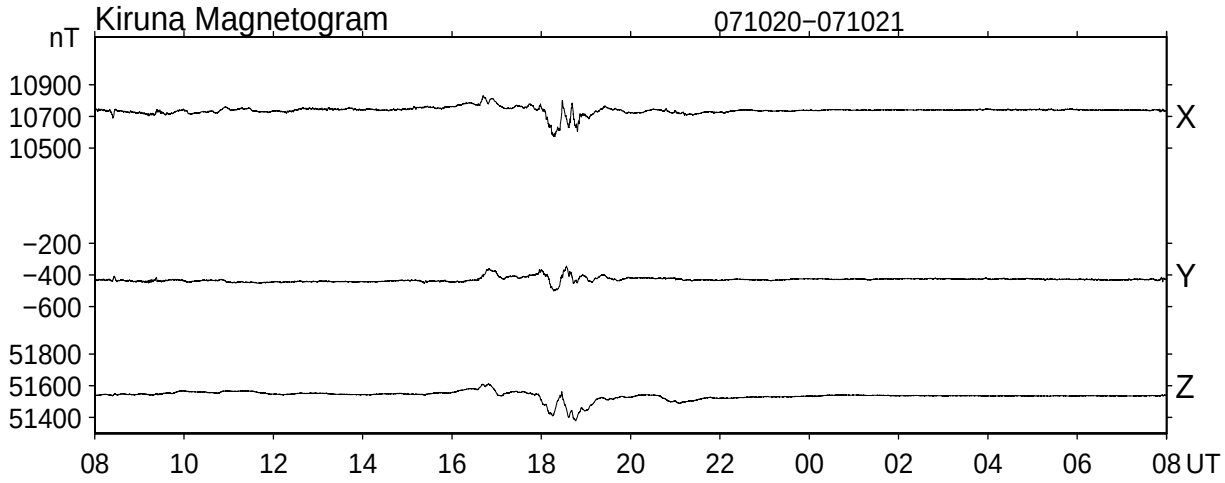

Kiruna Magnetogram
071015−071016
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

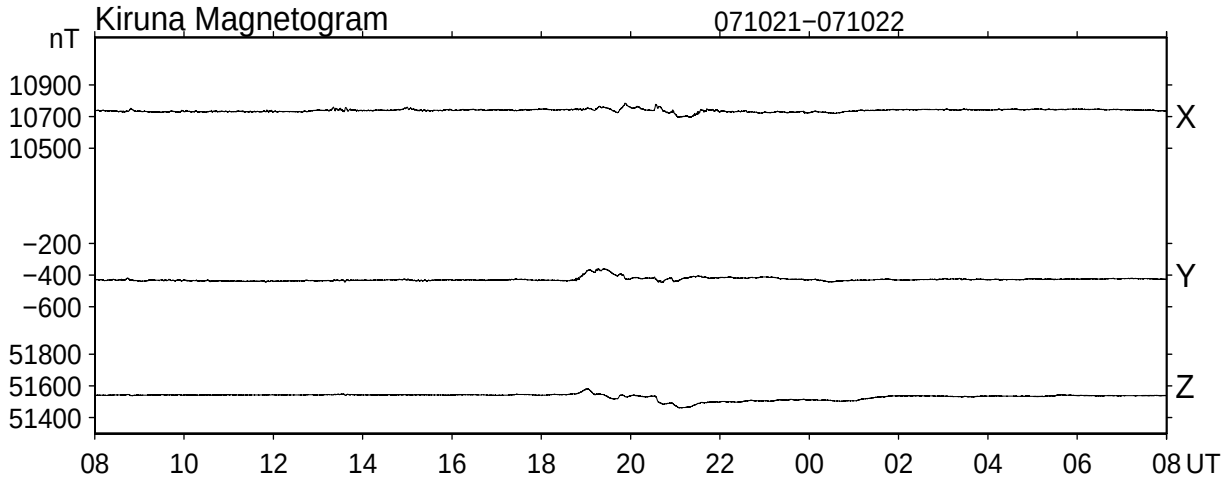

Kiruna Magnetogram
071016−071017
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

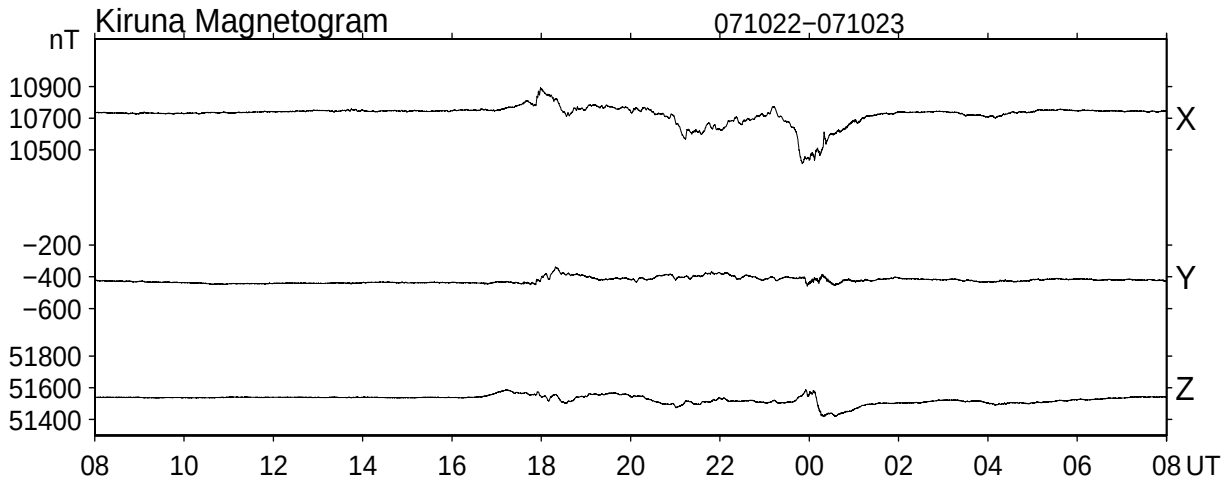

Kiruna Magnetogram
071017−071018
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

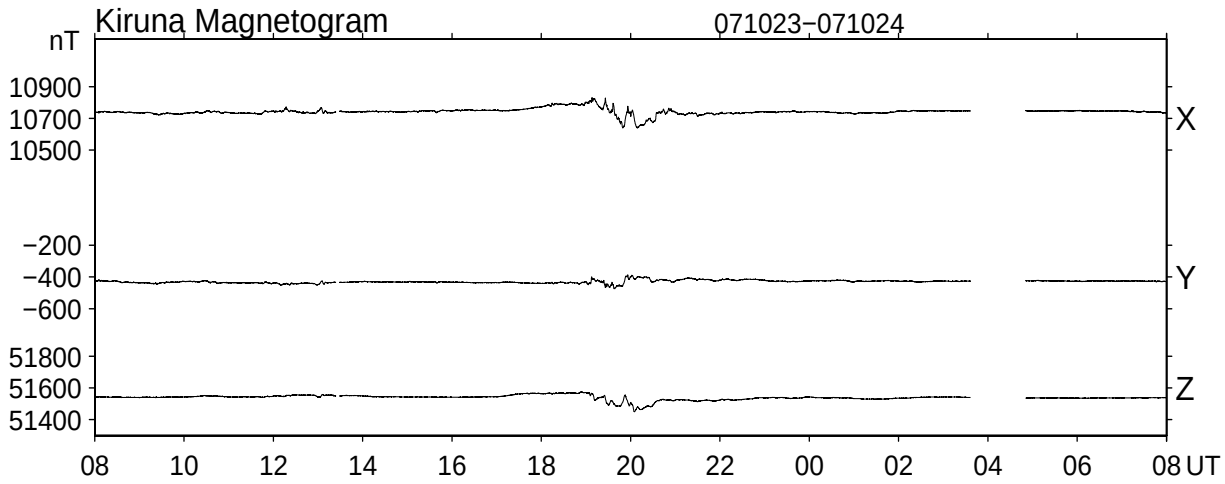

Kiruna Magnetogram
071018−071019
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

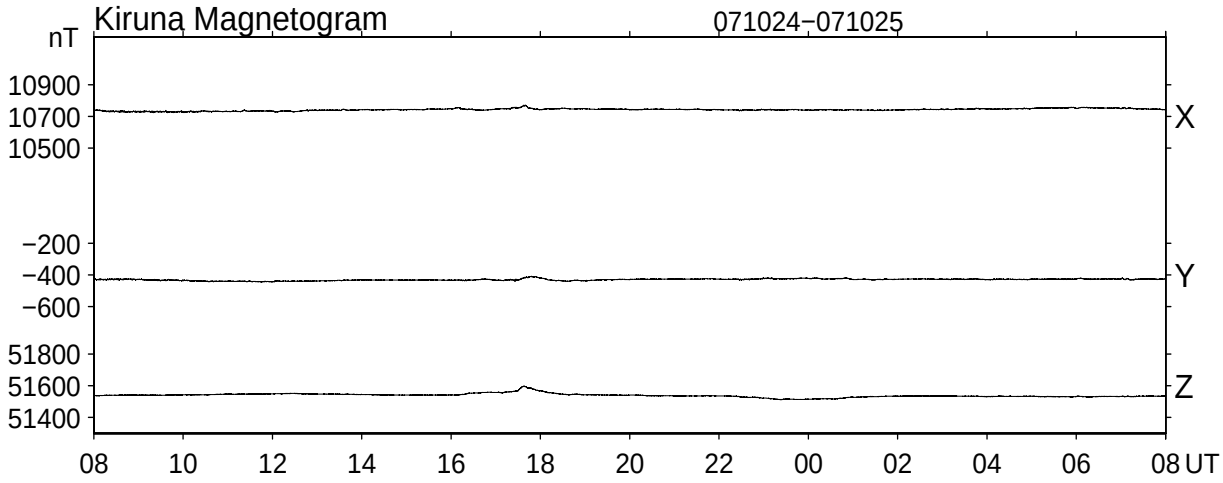

Kiruna Magnetogram
071019−071020
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

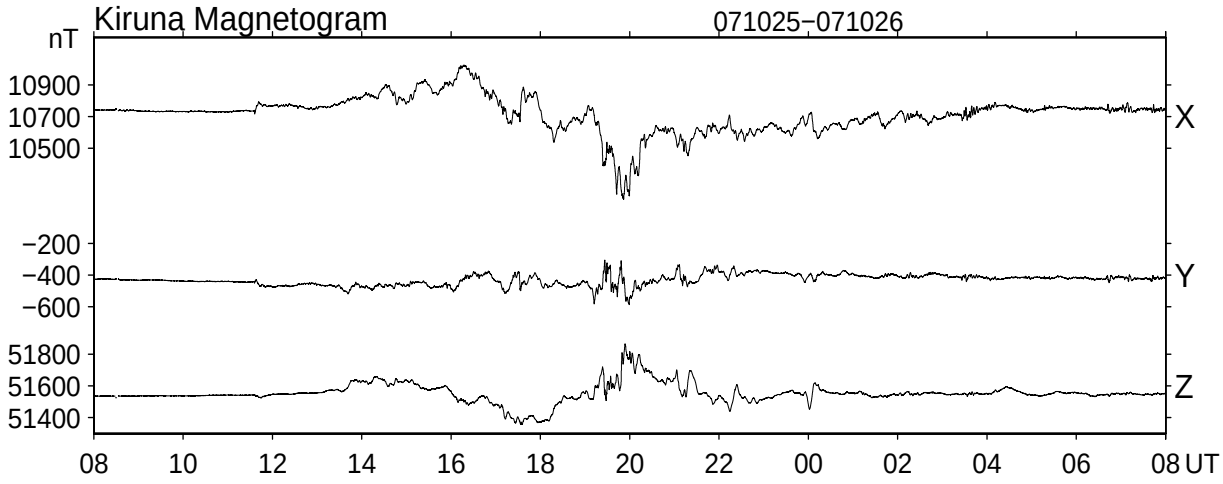

Kiruna Magnetogram
071020−071021
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

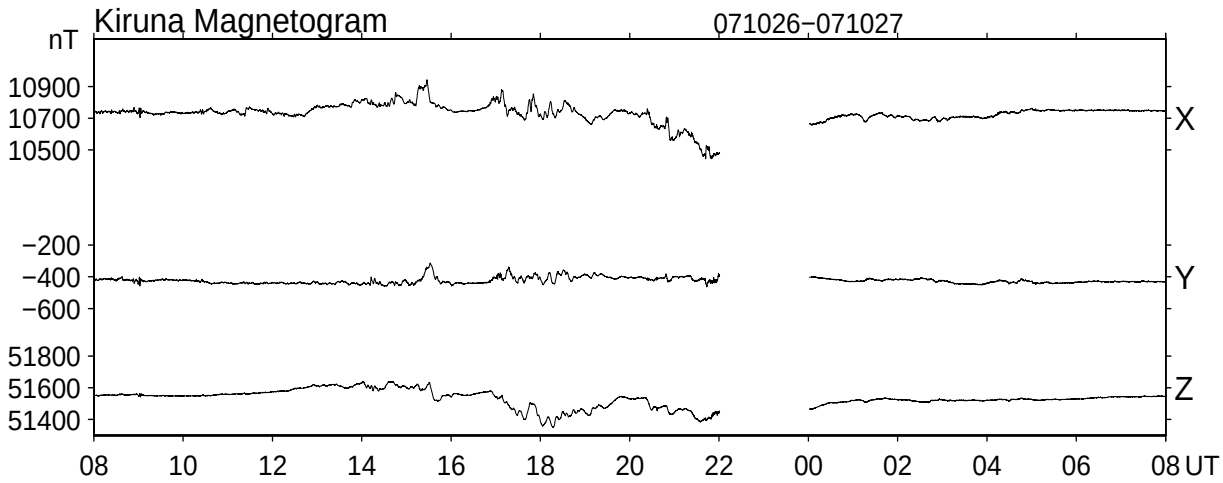

Kiruna Magnetogram
071021−071022
nT
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10700
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−200
−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

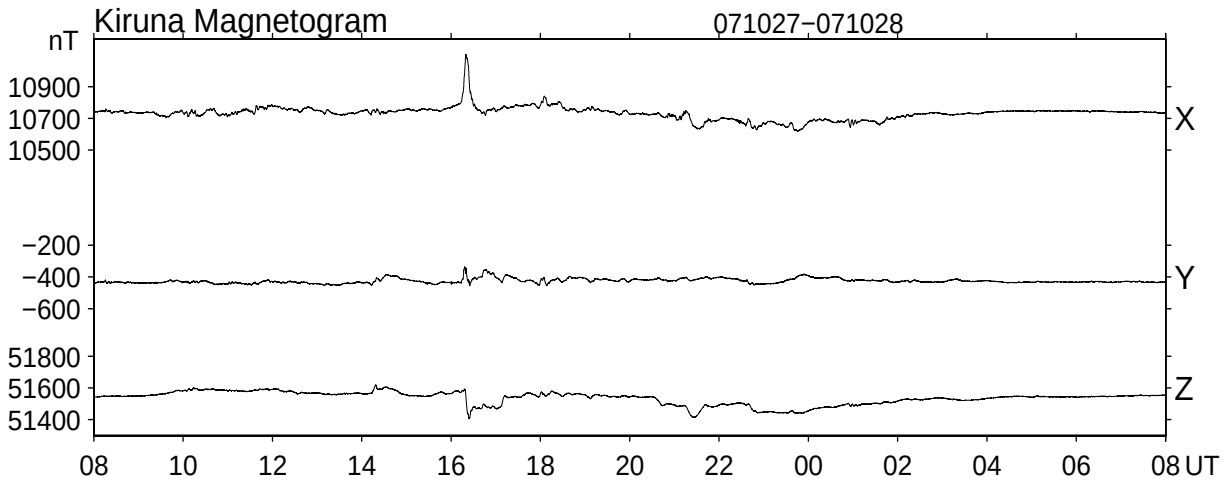

Kiruna Magnetogram
071022−071023
nT
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10700
10500
−200
−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

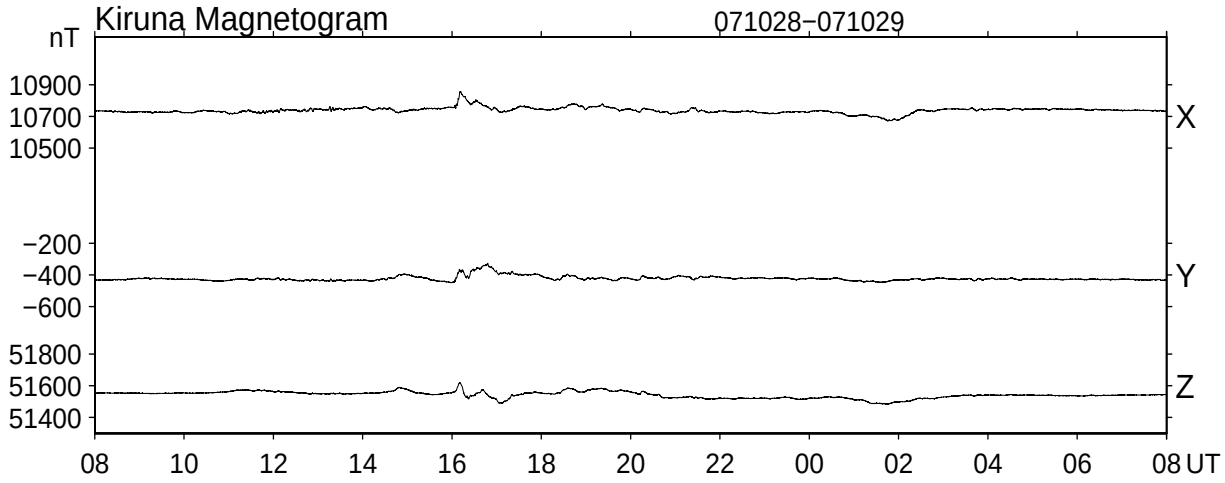

Kiruna Magnetogram
071023−071024
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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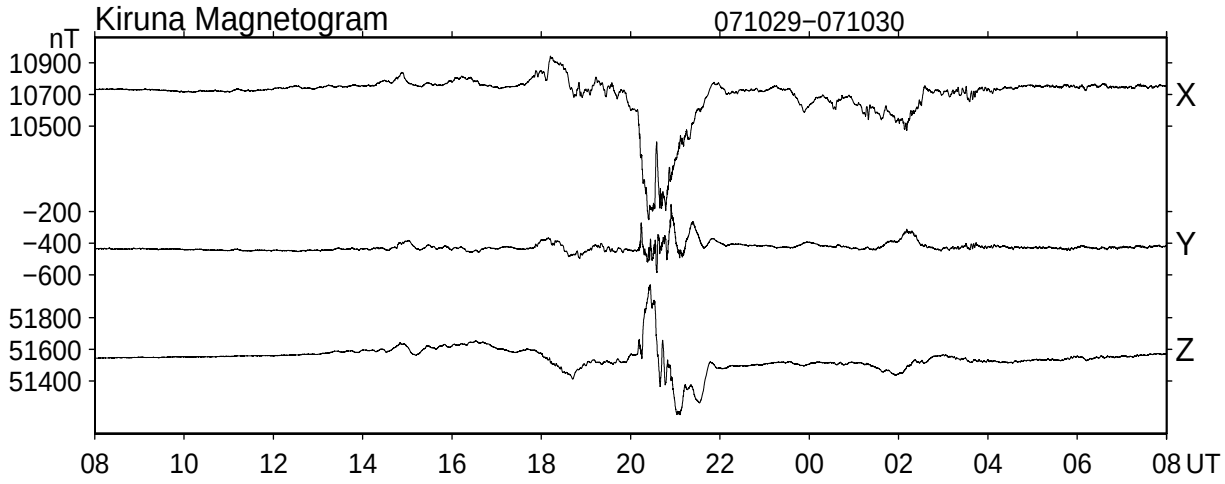

Kiruna Magnetogram
071024−071025
nT
10900
10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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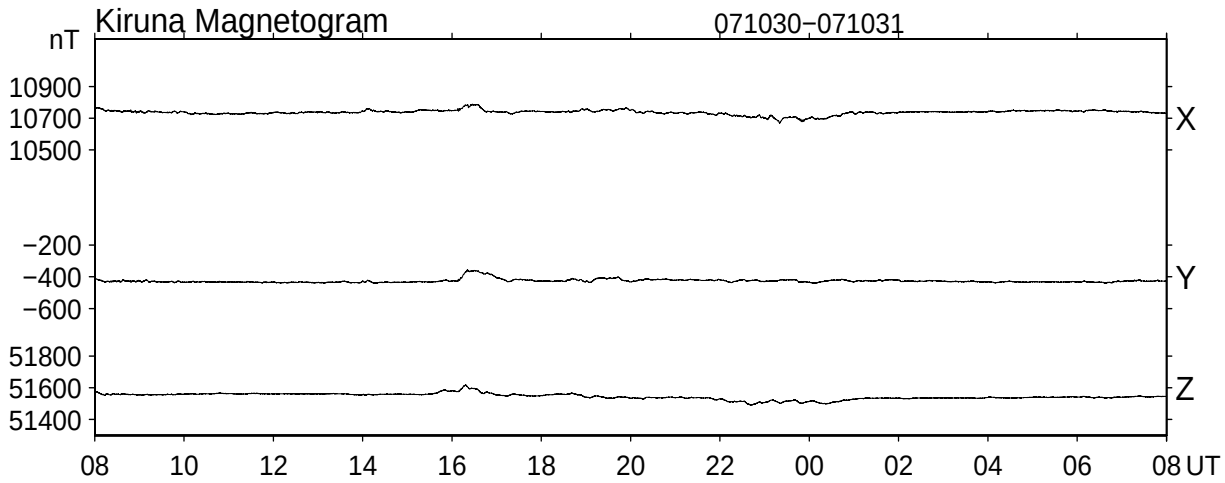

Kiruna Magnetogram
071025−071026
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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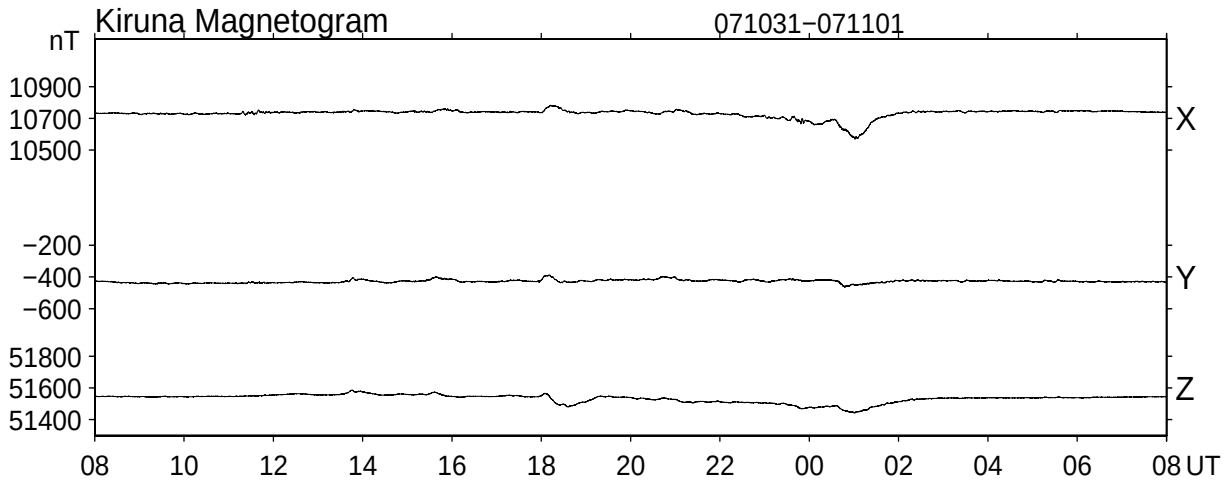

Kiruna Magnetogram
071026−071027
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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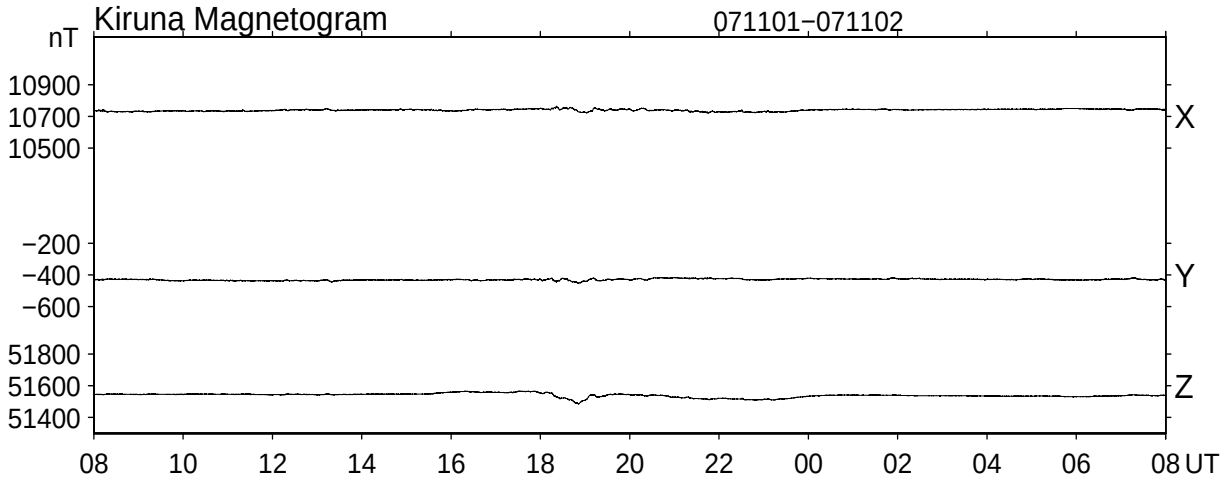

Kiruna Magnetogram
071027−071028
nT
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10700
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−200
−400
−600
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51600
51400
X
Y
Z
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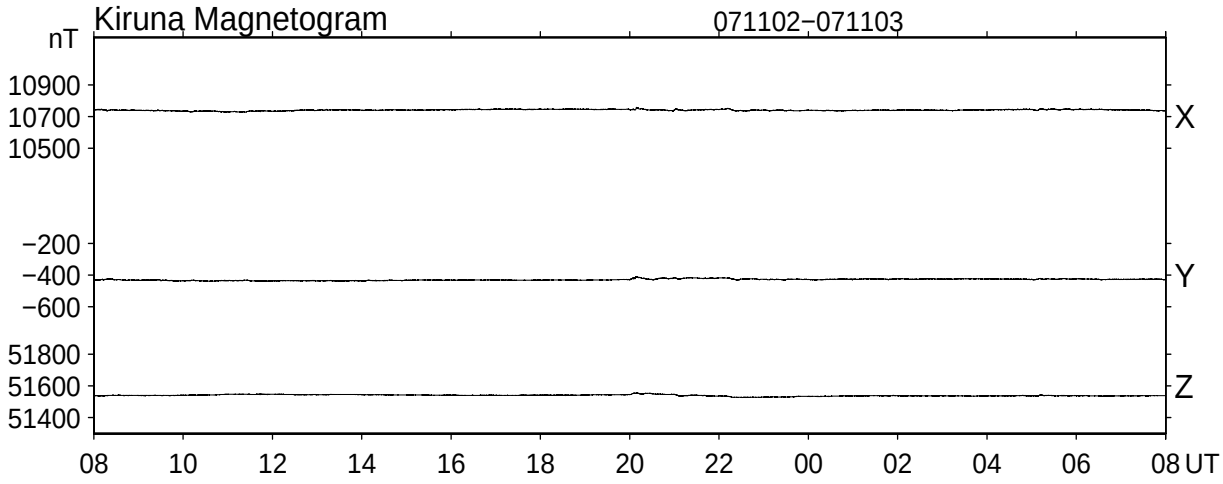

Kiruna Magnetogram
071028−071029
nT
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−200
−400
−600
51800
51600
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X
Y
Z
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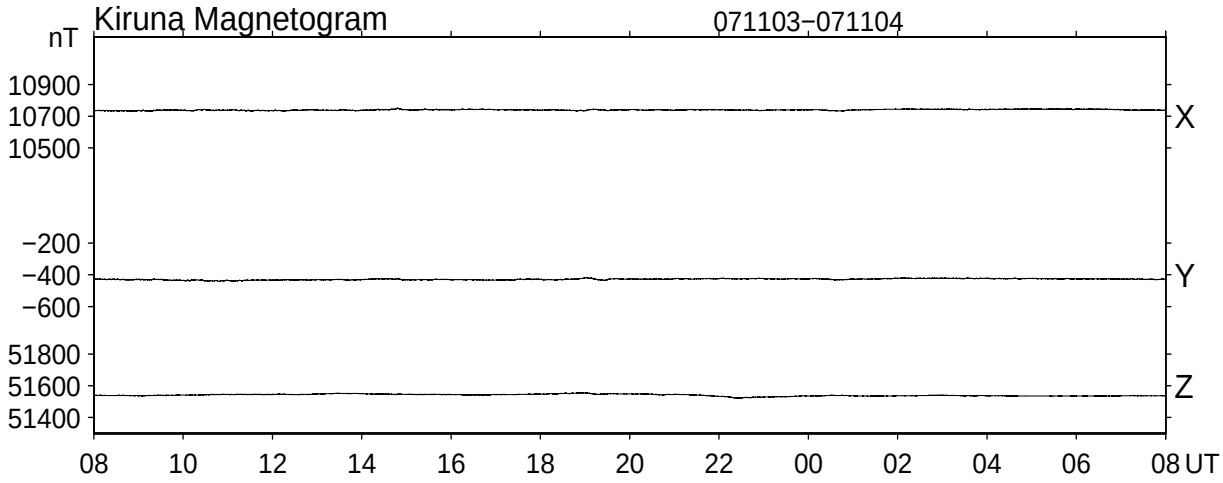

Kiruna Magnetogram
071029−071030
nT
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10700
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−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

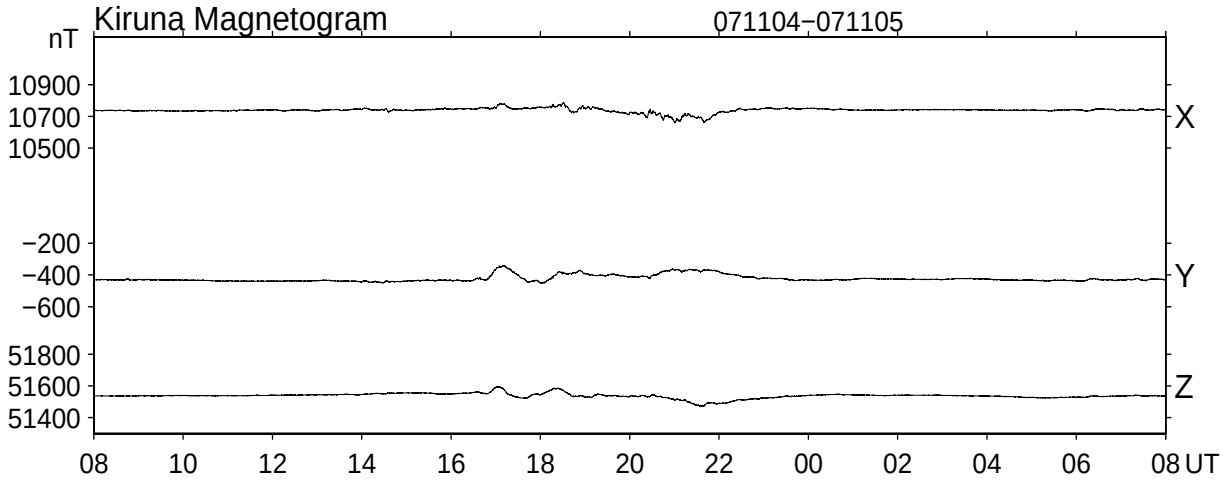

Kiruna Magnetogram
071030−071031
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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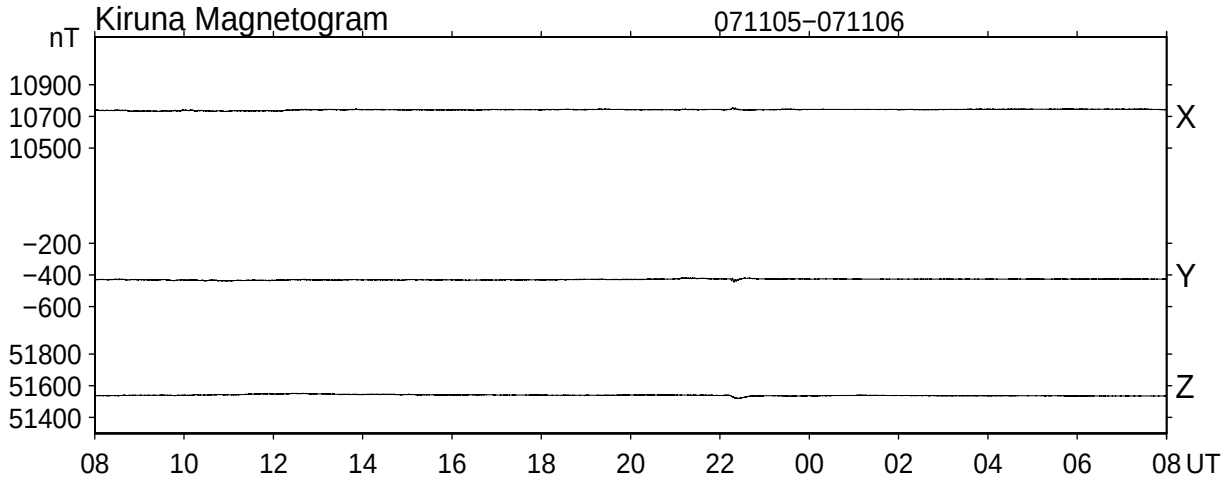

Kiruna Magnetogram
071031−071101
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

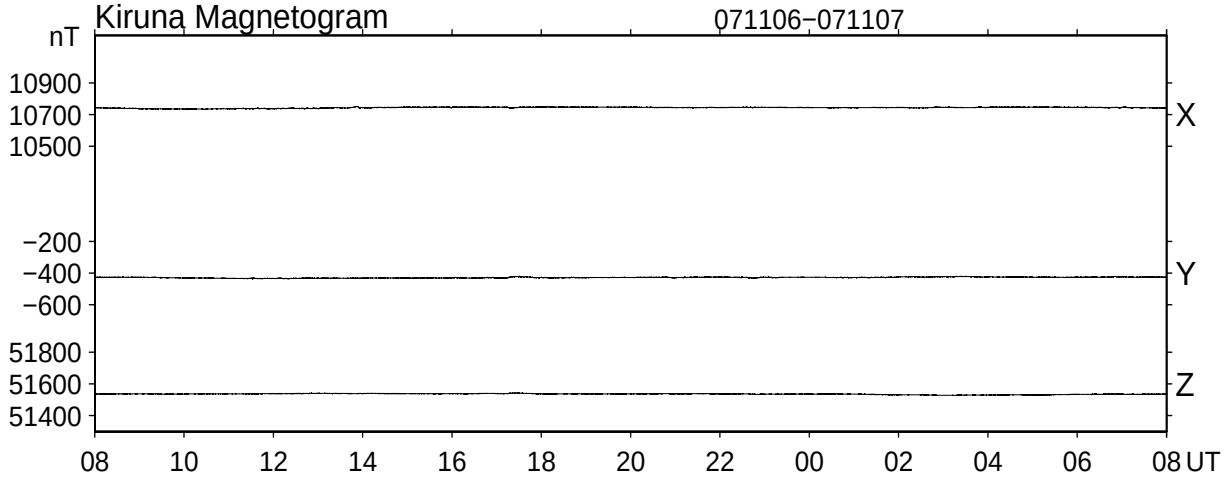

Kiruna Magnetogram
071101–071102
nT
10900
10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

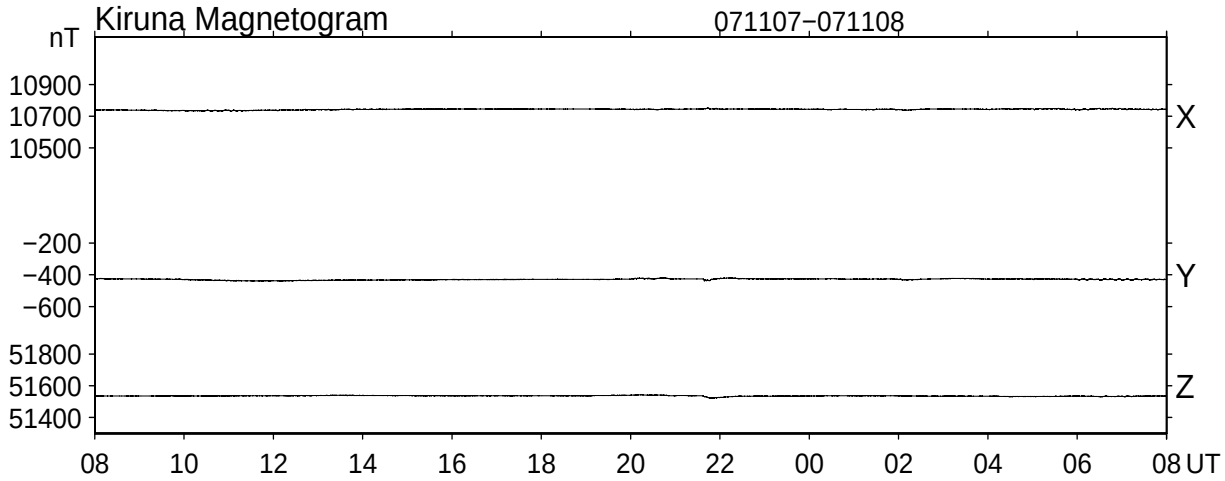

Kiruna Magnetogram
071102–071103
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

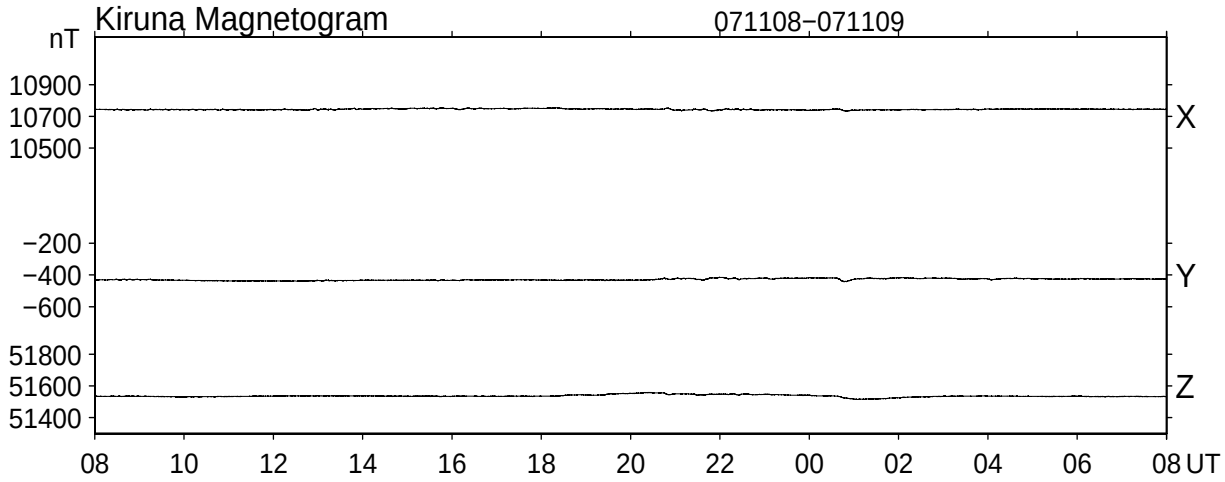

Kiruna Magnetogram
071103–071104
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

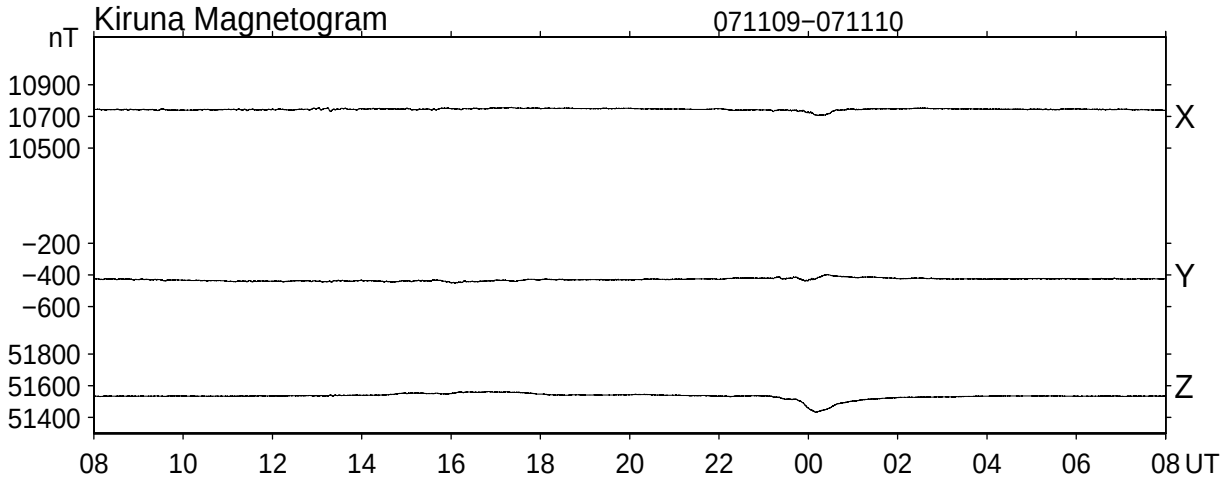

Kiruna Magnetogram
071104–071105
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

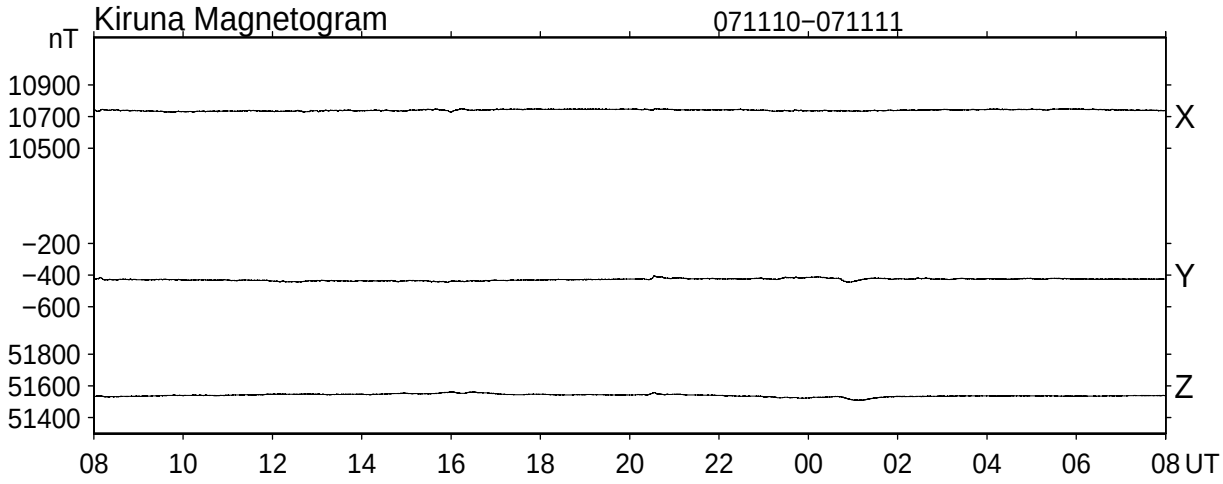

Kiruna Magnetogram
071105−071106
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

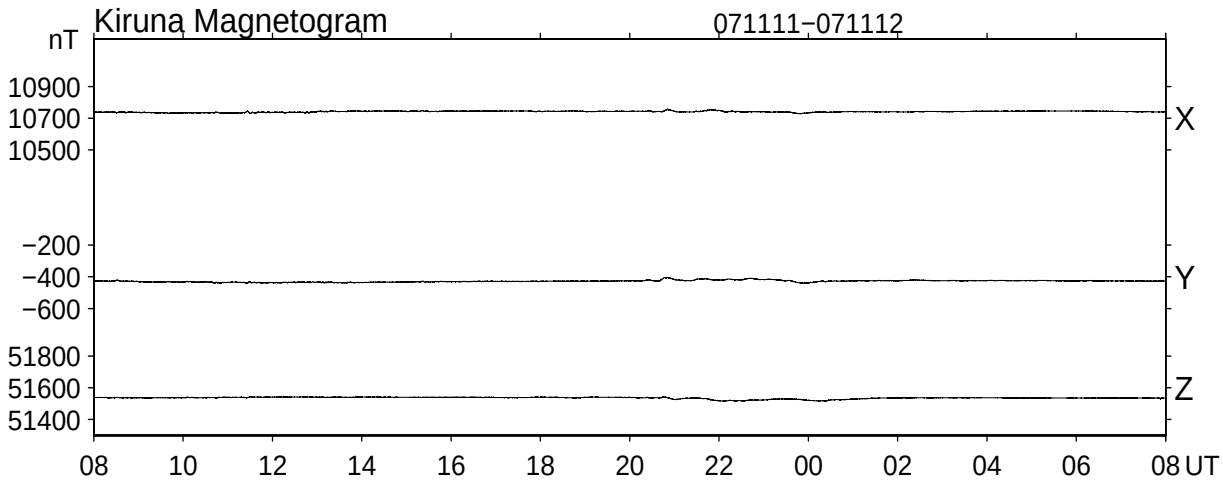

Kiruna Magnetogram
071106−071107
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

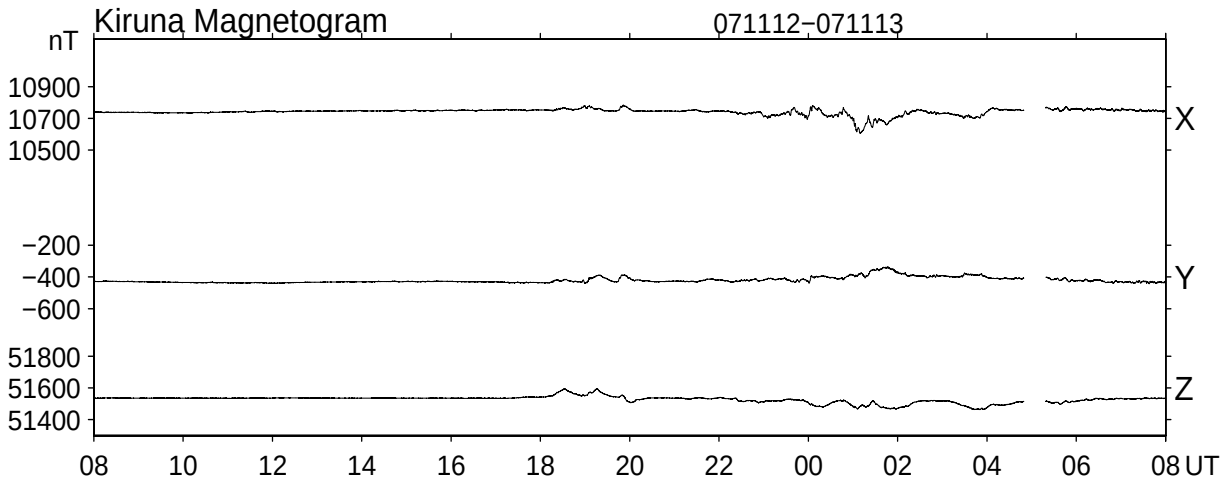

Kiruna Magnetogram
071107−071108
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

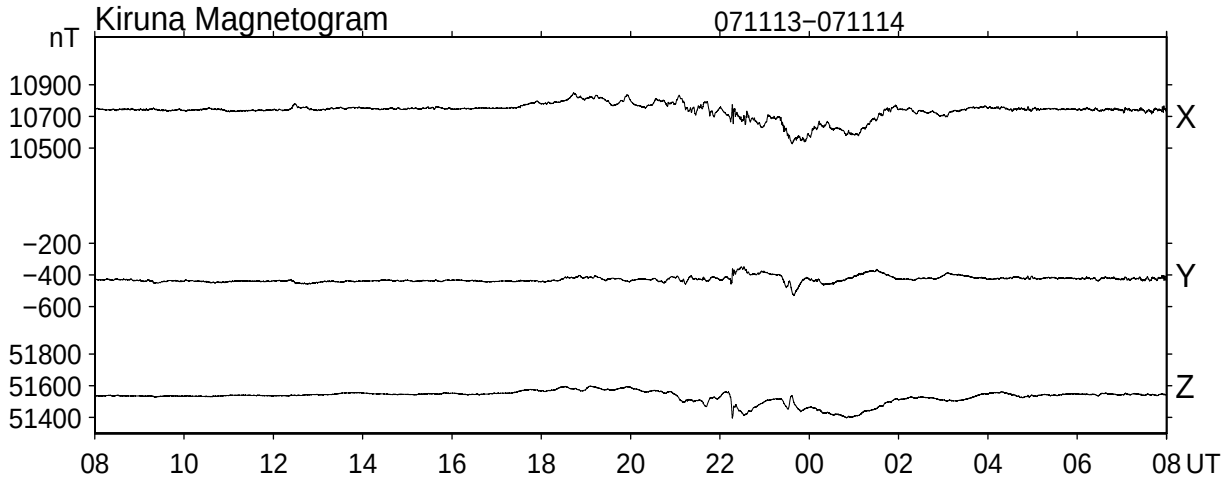

Kiruna Magnetogram
071108−071109
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

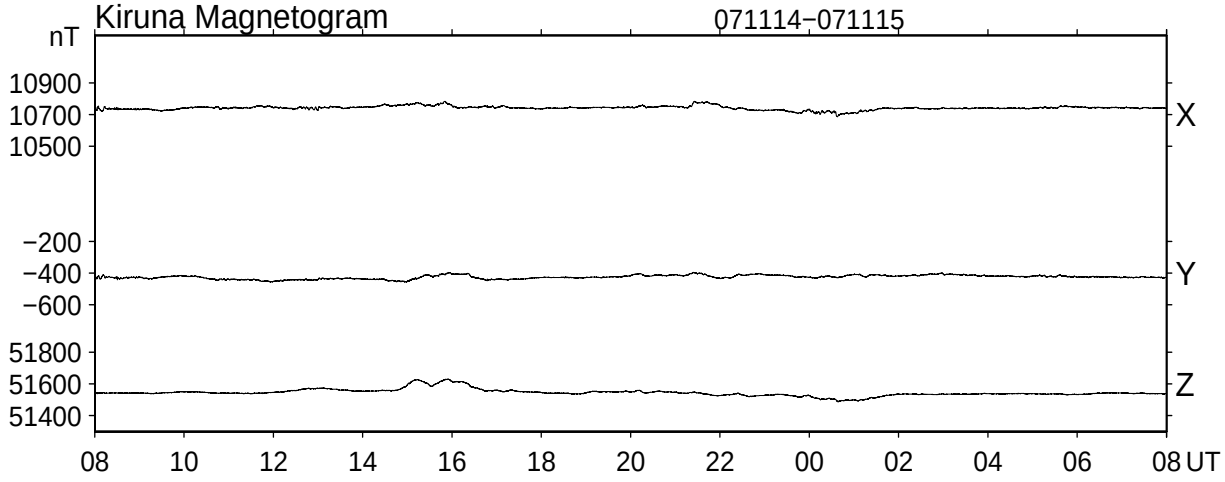

Kiruna Magnetogram
071109−071110
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

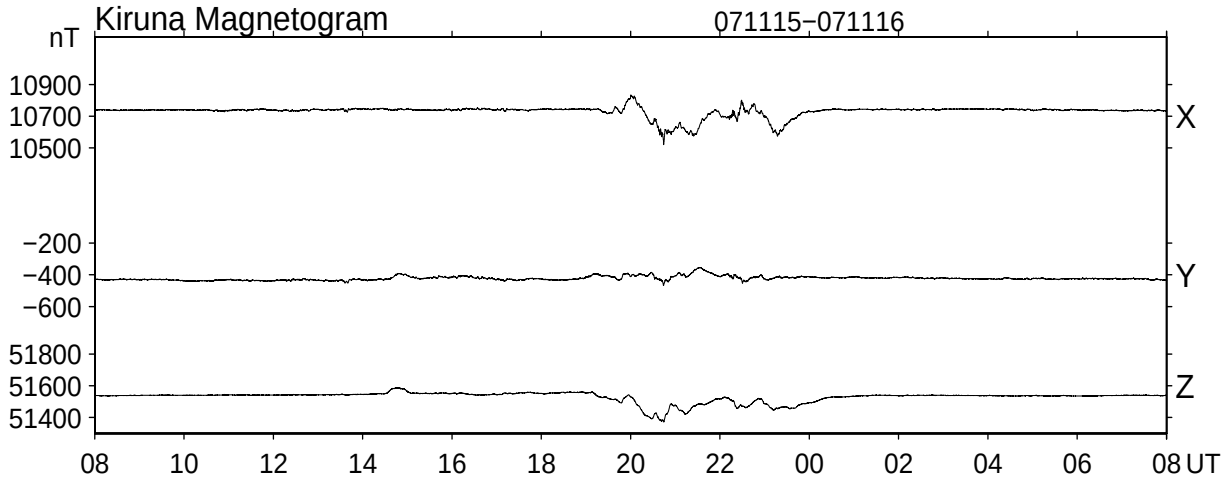

Kiruna Magnetogram
071110−071111
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

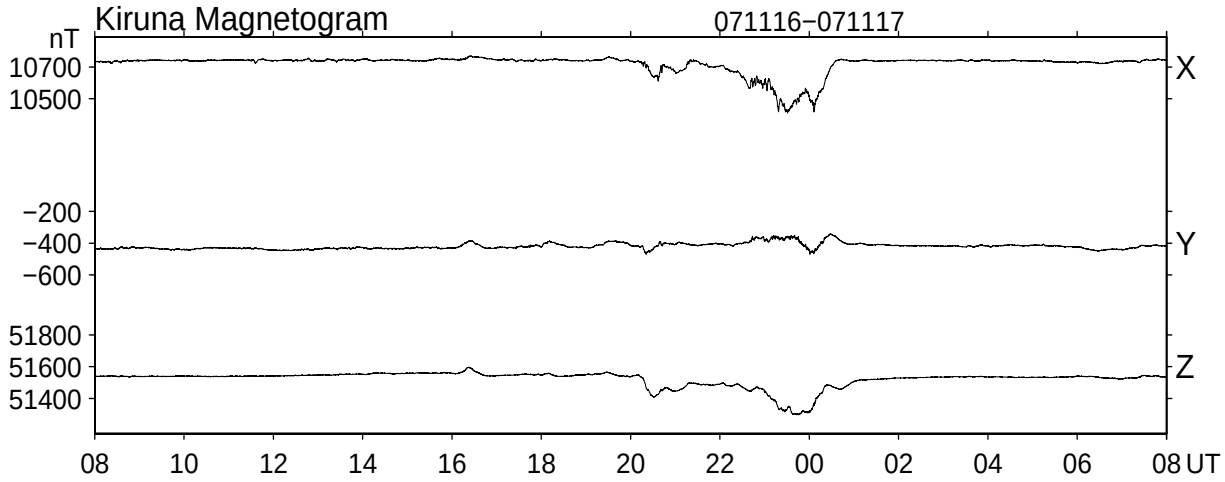

Kiruna Magnetogram
071111−071112
nT
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10700
10500
−200
−400
−600
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51600
51400
X
Y
Z
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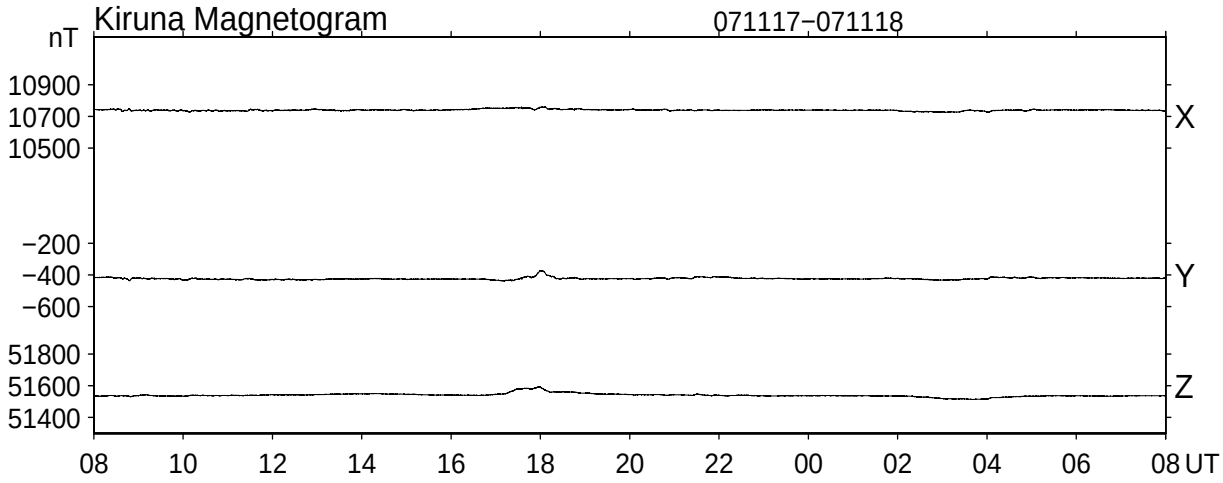

Kiruna Magnetogram
071112−071113
nT
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10700
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−200
−400
−600
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51600
51400
X
Y
Z
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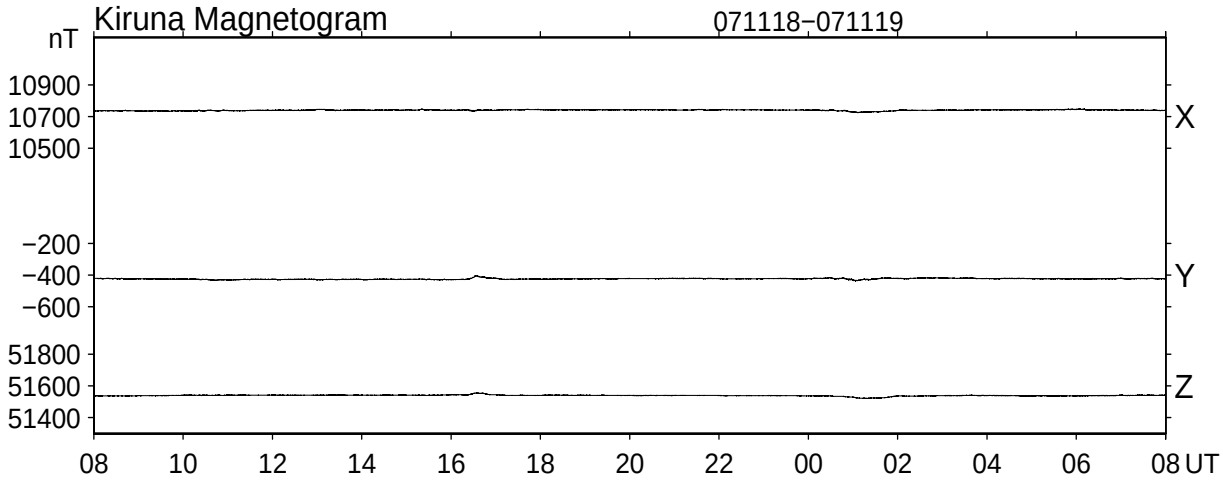

Kiruna Magnetogram
071113−071114
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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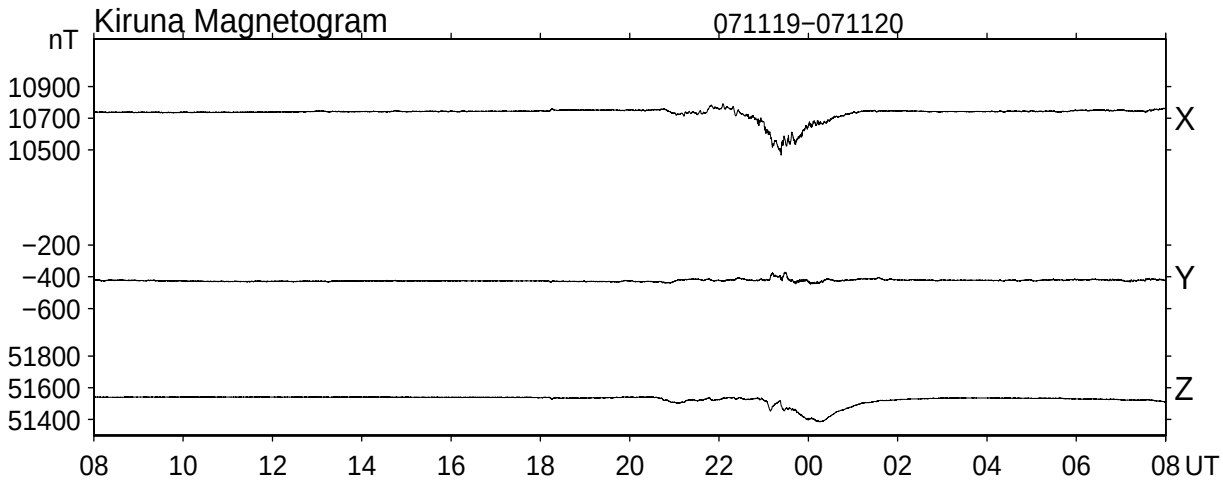

Kiruna Magnetogram
071114−071115
nT
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−200
−400
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51600
51400
X
Y
Z
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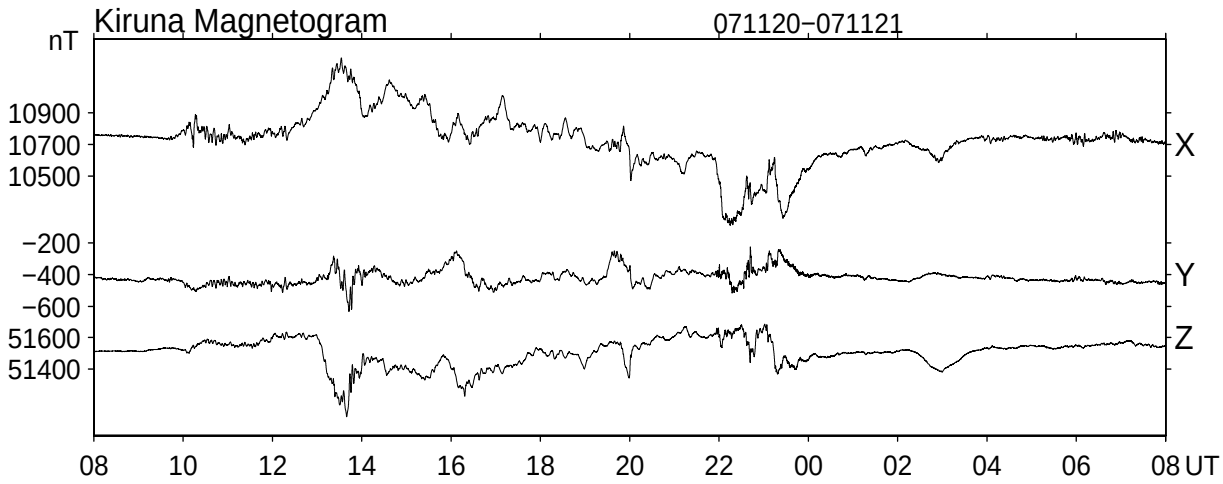

Kiruna Magnetogram
071115−071116
nT
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−200
−400
−600
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51600
51400
X
Y
Z
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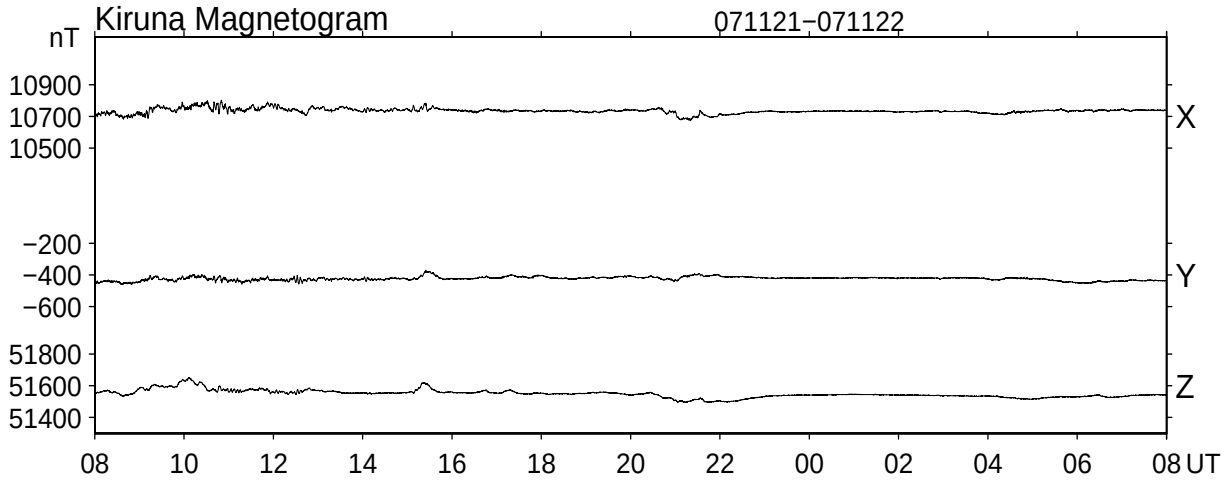

Kiruna Magnetogram
071116−071117
nT
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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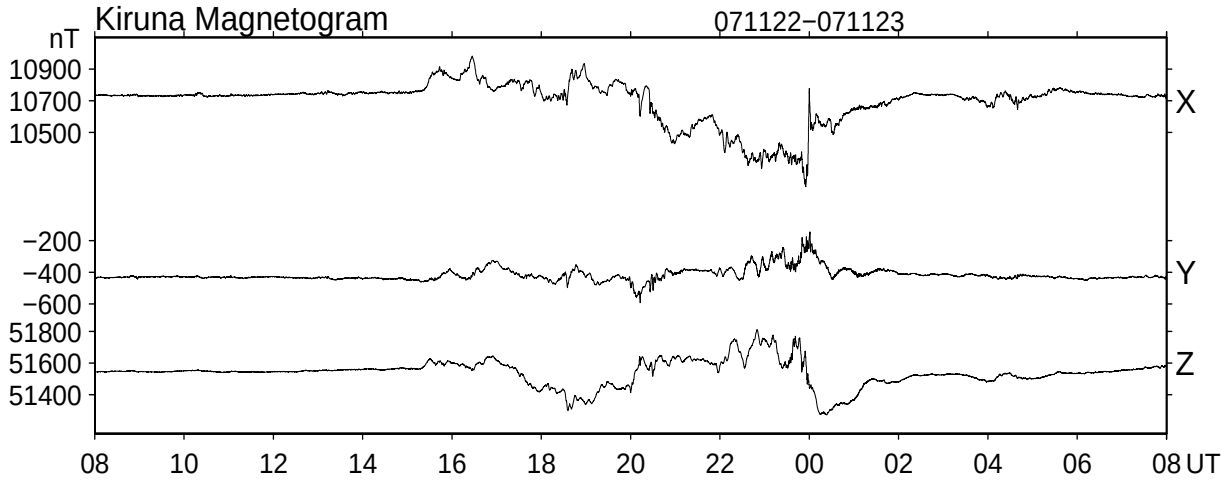

Kiruna Magnetogram
071117−071118
nT
10900
10700
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−200
−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

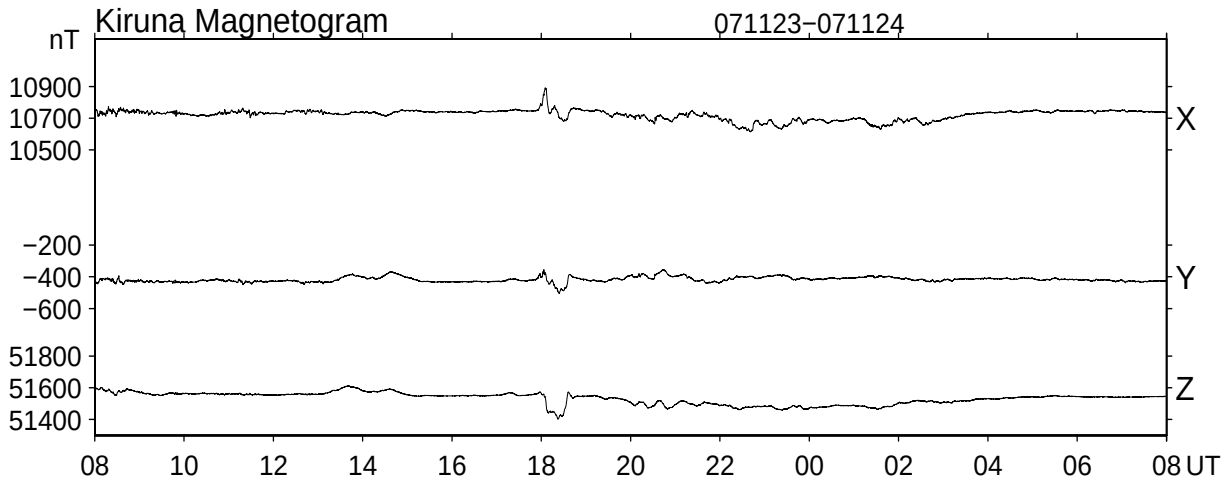

Kiruna Magnetogram
071118−071119
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

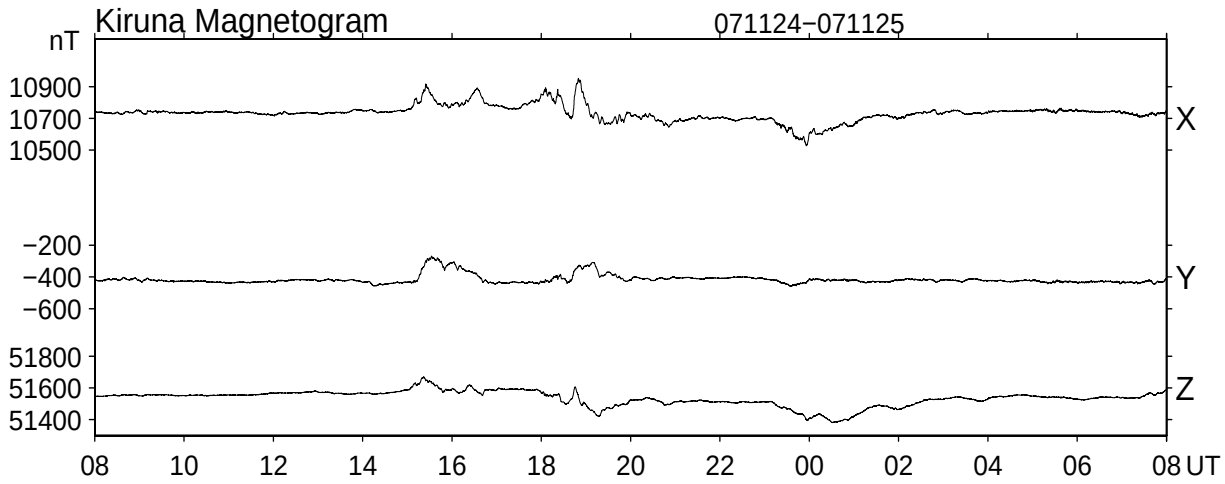

Kiruna Magnetogram
071119−071120
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

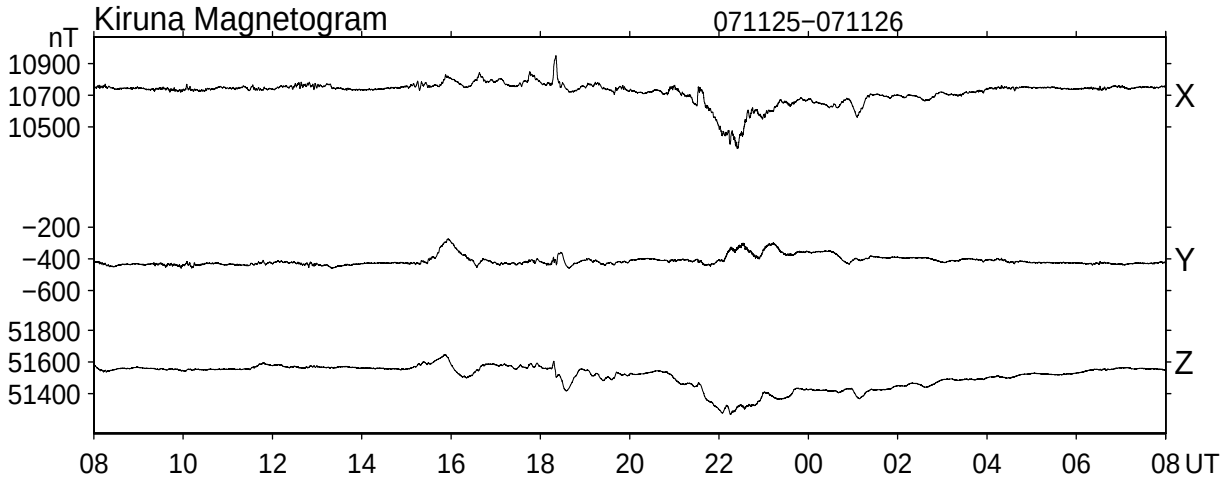

Kiruna Magnetogram
071120−071121
nT
10900
10700
10500
−200
−400
−600
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

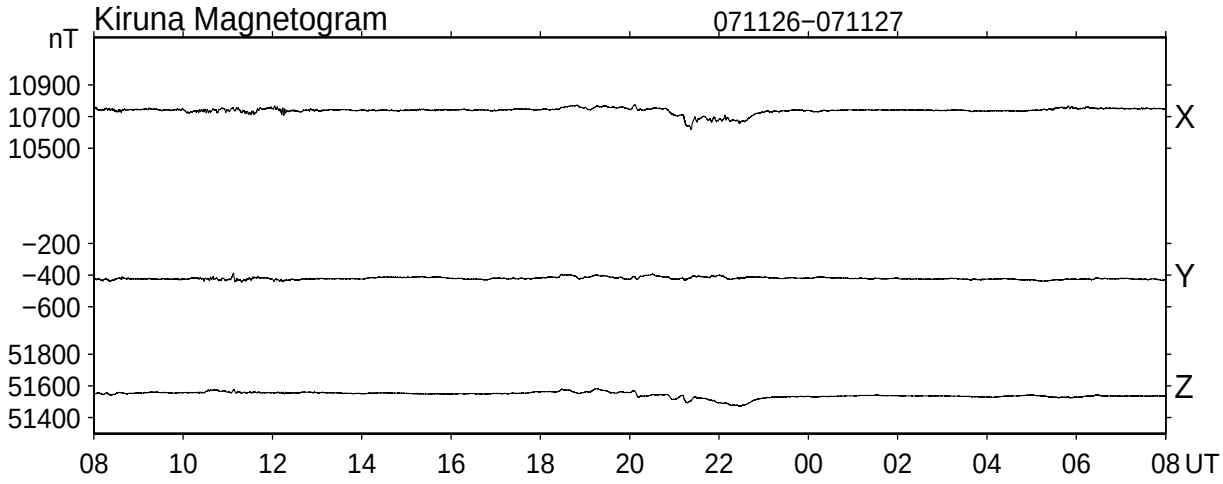

Kiruna Magnetogram
071121−071122
nT
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10700
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−200
−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

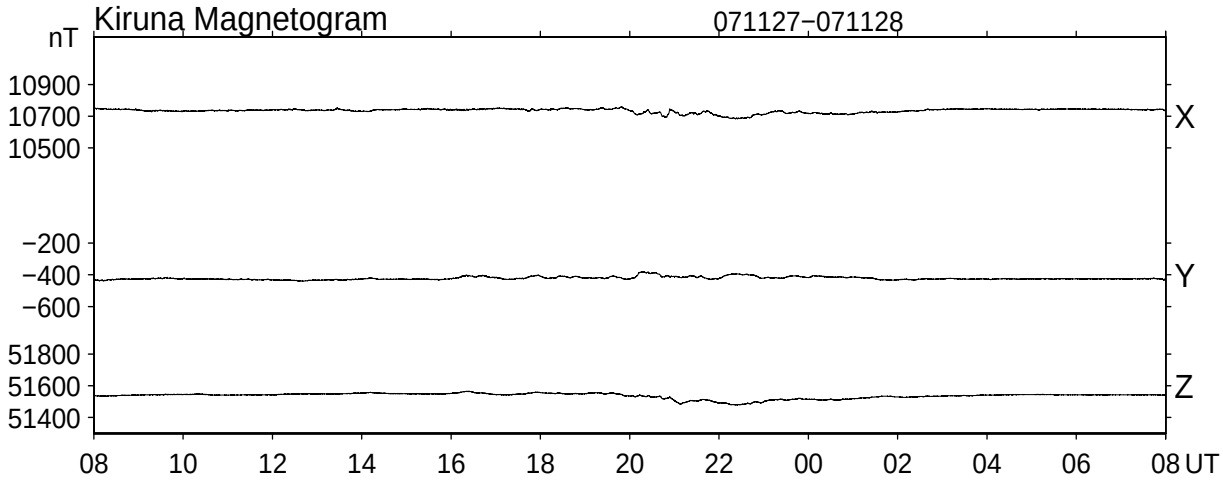

Kiruna Magnetogram
071122−071123
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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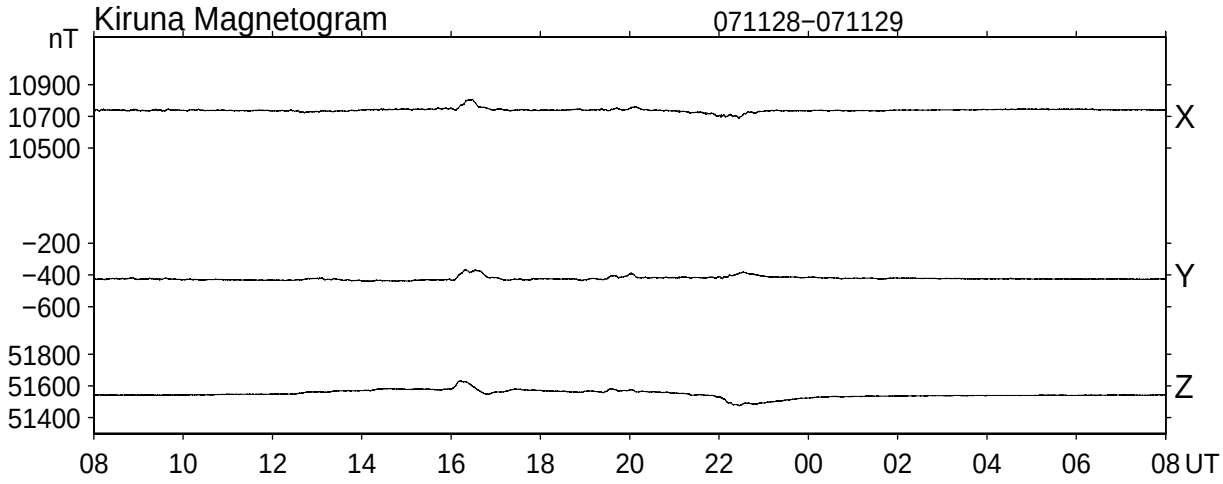

Kiruna Magnetogram
071123−071124
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

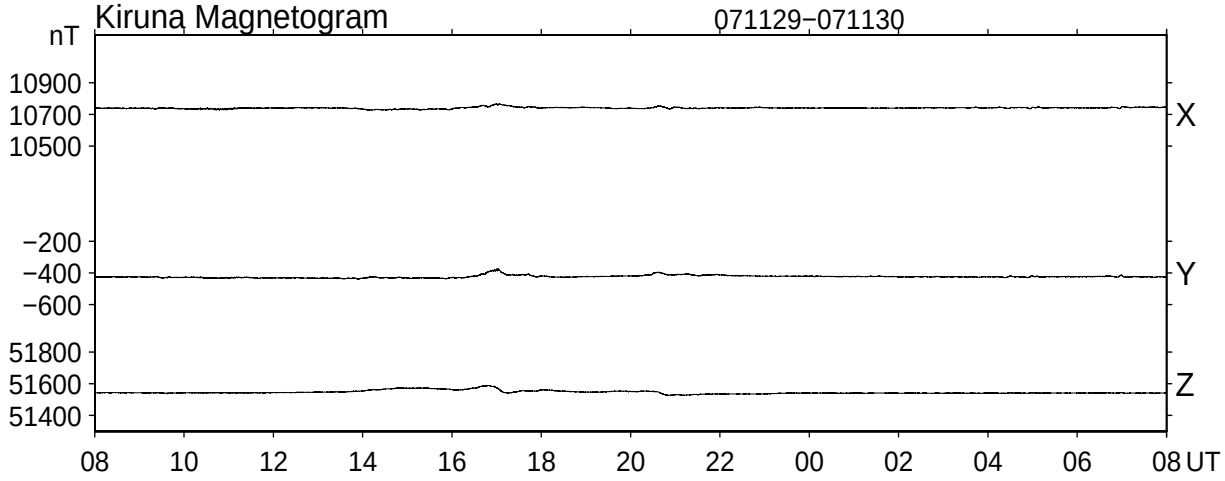

Kiruna Magnetogram
071124−071125
nT
10900
10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

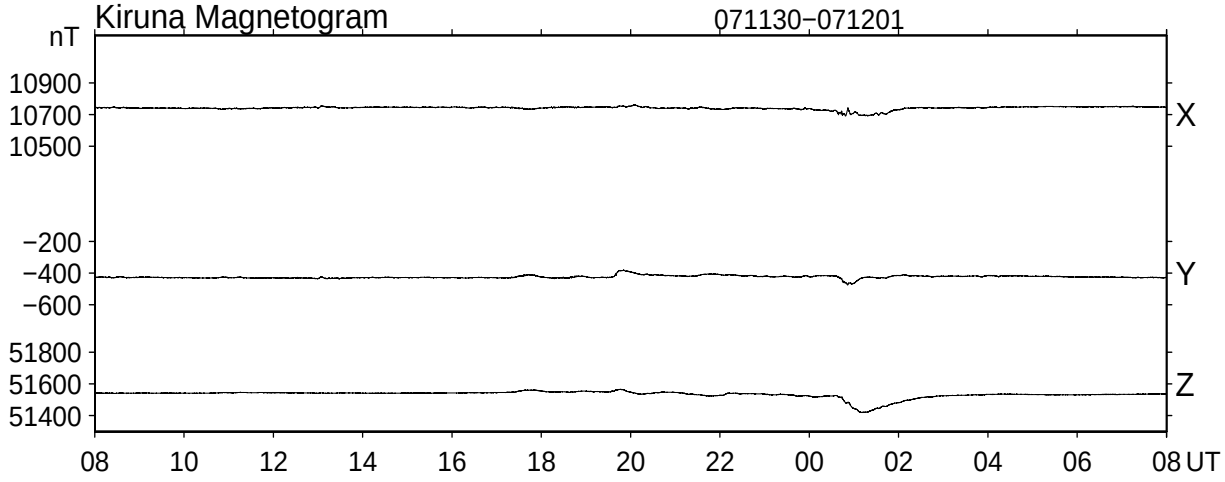

Kiruna Magnetogram
071125−071126
nT
10900
10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

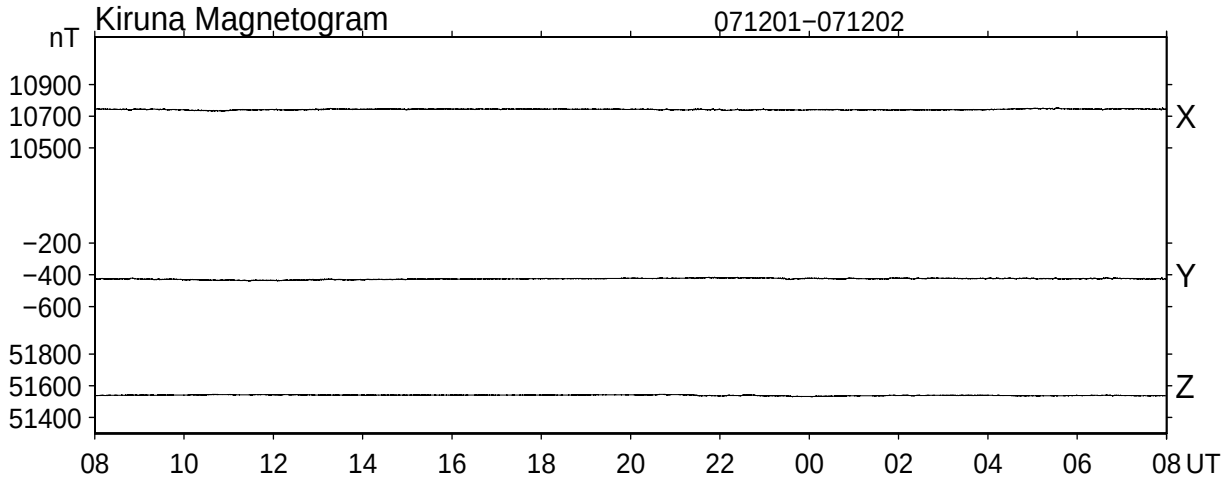

Kiruna Magnetogram
071126−071127
nT
10900
10700
10500
−200
−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

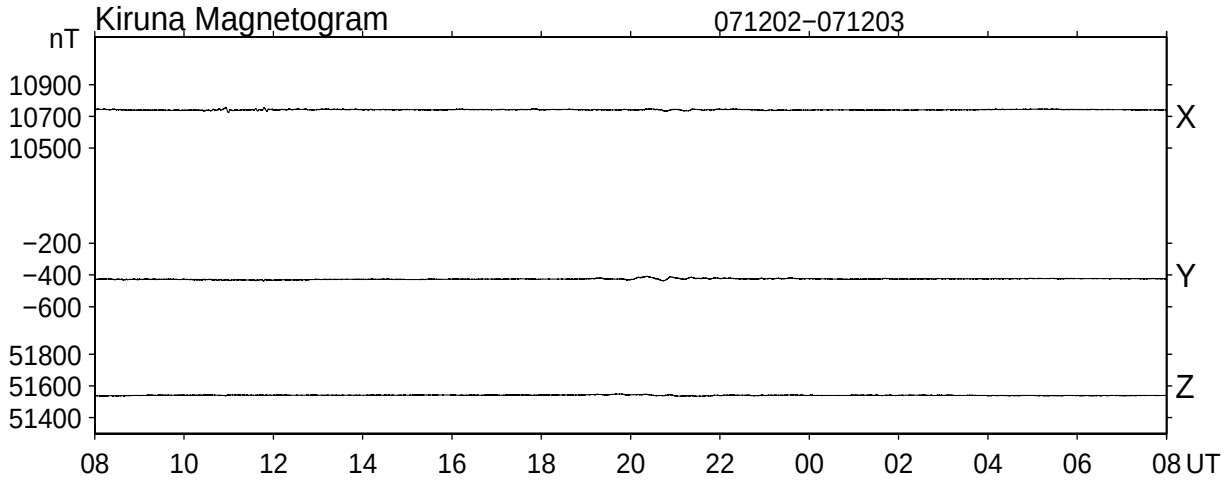

Kiruna Magnetogram
071127−071128
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

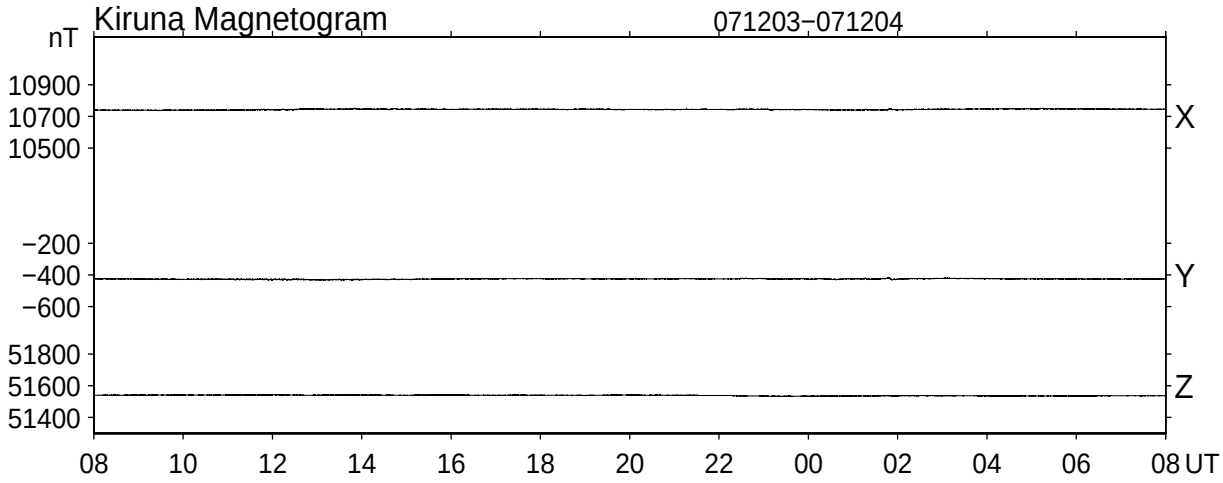

Kiruna Magnetogram
071128−071129
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

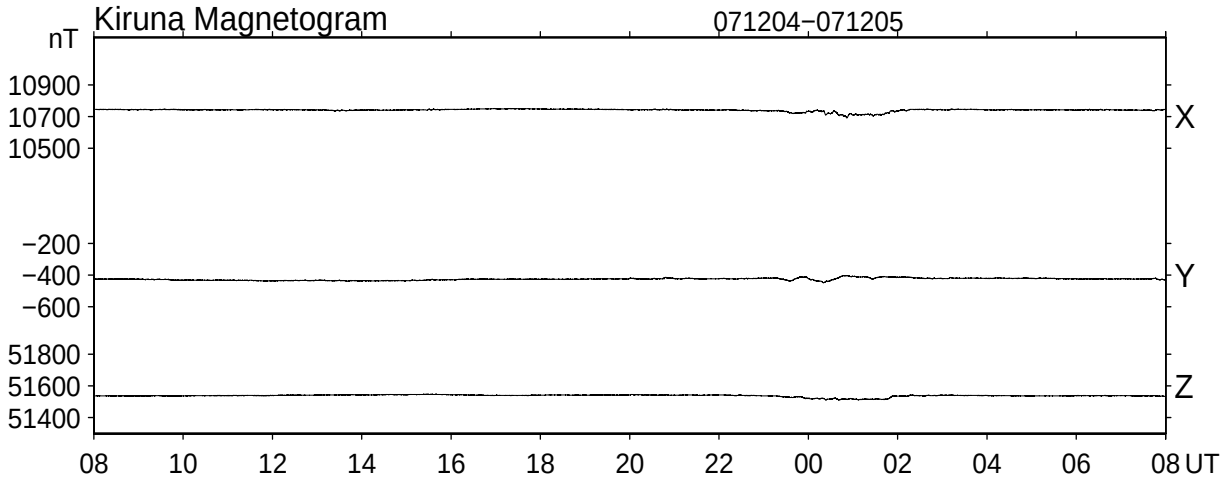

Kiruna Magnetogram
071129−071130
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

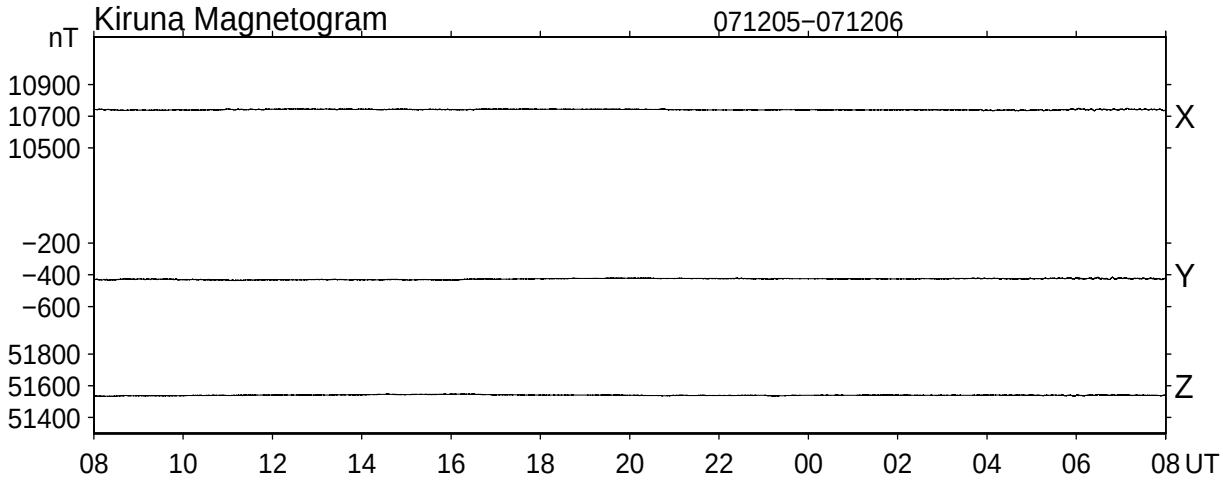

Kiruna Magnetogram
071130−071201
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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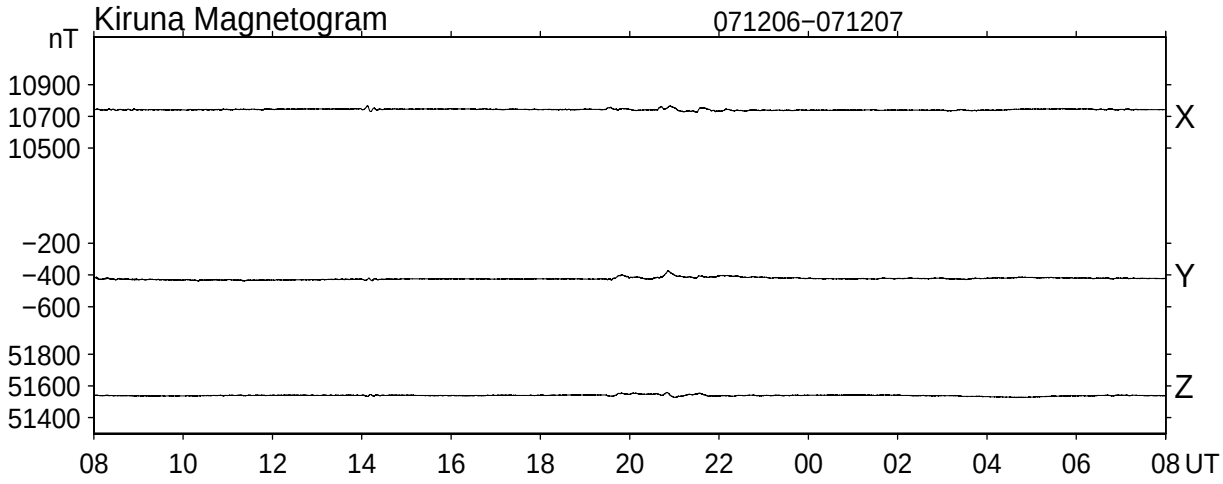

Kiruna Magnetogram
071201−071202
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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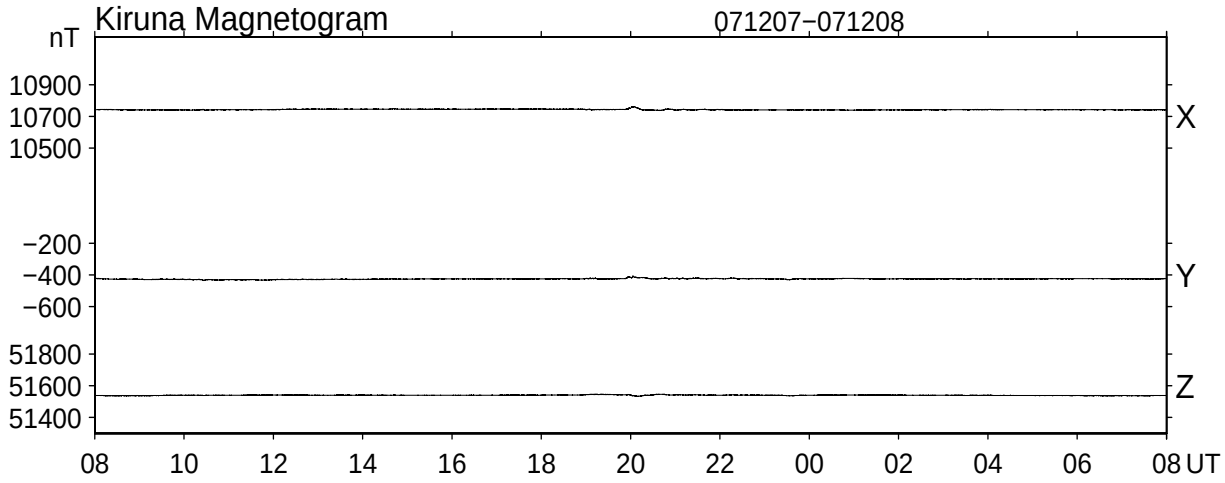

Kiruna Magnetogram
071202−071203
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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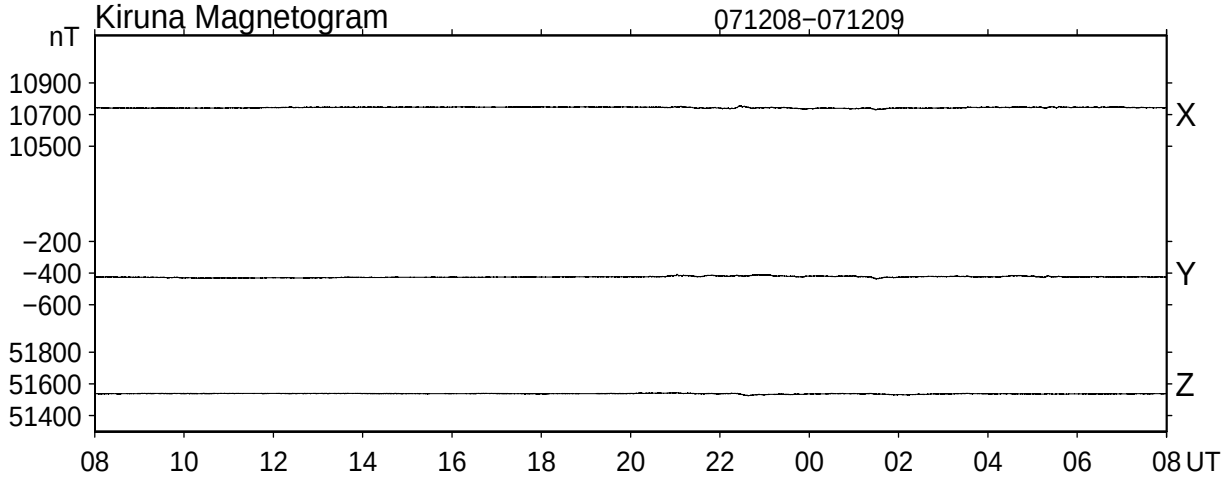

Kiruna Magnetogram
071203−071204
nT
10900
10700
10500
−200
−400
−600
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51600
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Y
Z
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10
12
14
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18
20
22
00
02
04
06
08 UT

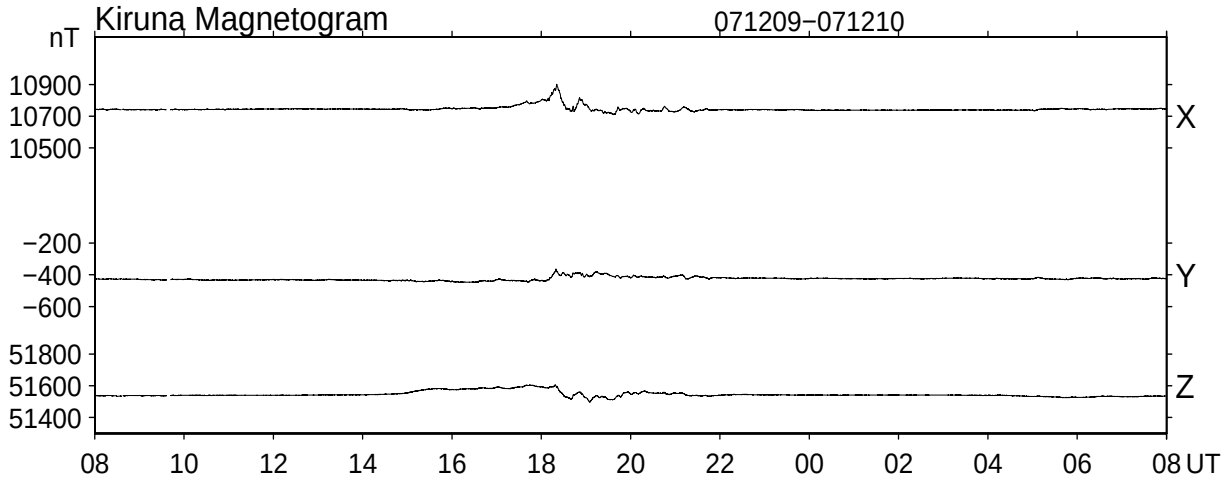

Kiruna Magnetogram
071204−071205
nT
10900
10700
10500
−200
−400
−600
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51600
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22
00
02
04
06
08 UT

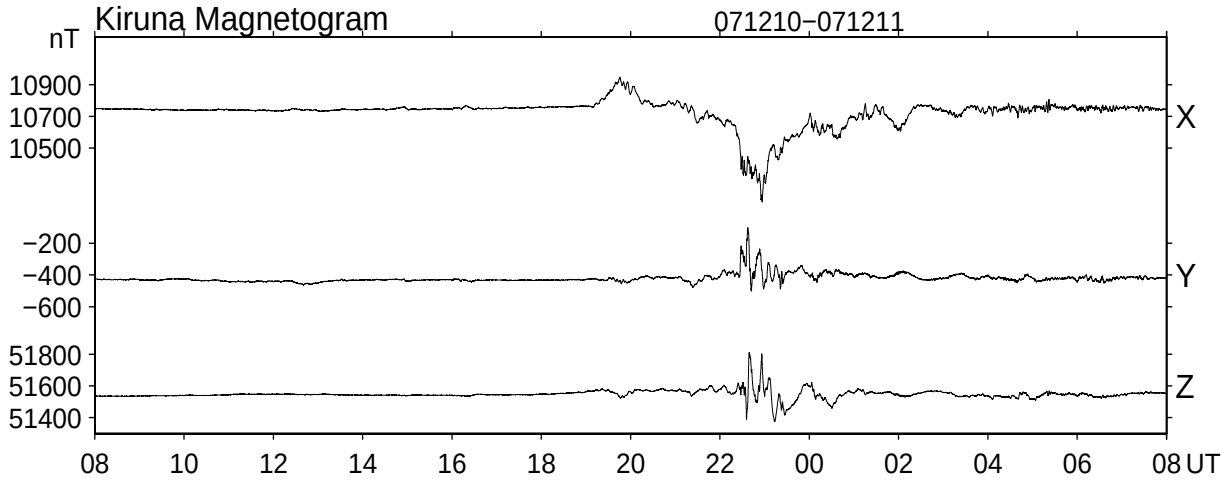

Kiruna Magnetogram
071205−071206
nT
10900
10700
10500
−200
−400
−600
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51600
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22
00
02
04
06
08 UT

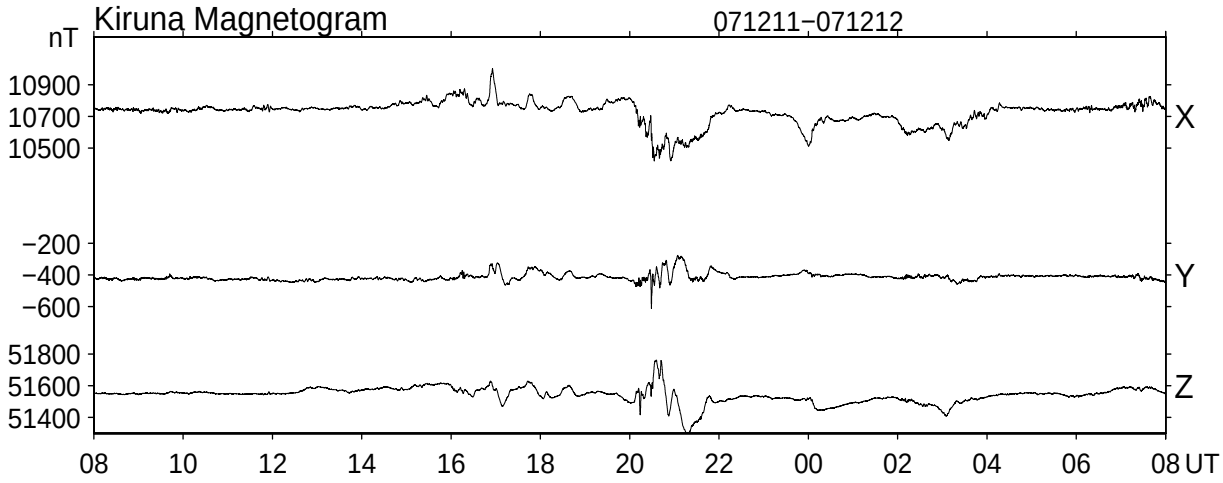

Kiruna Magnetogram
071206−071207
nT
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10700
10500
−200
−400
−600
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51600
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22
00
02
04
06
08 UT

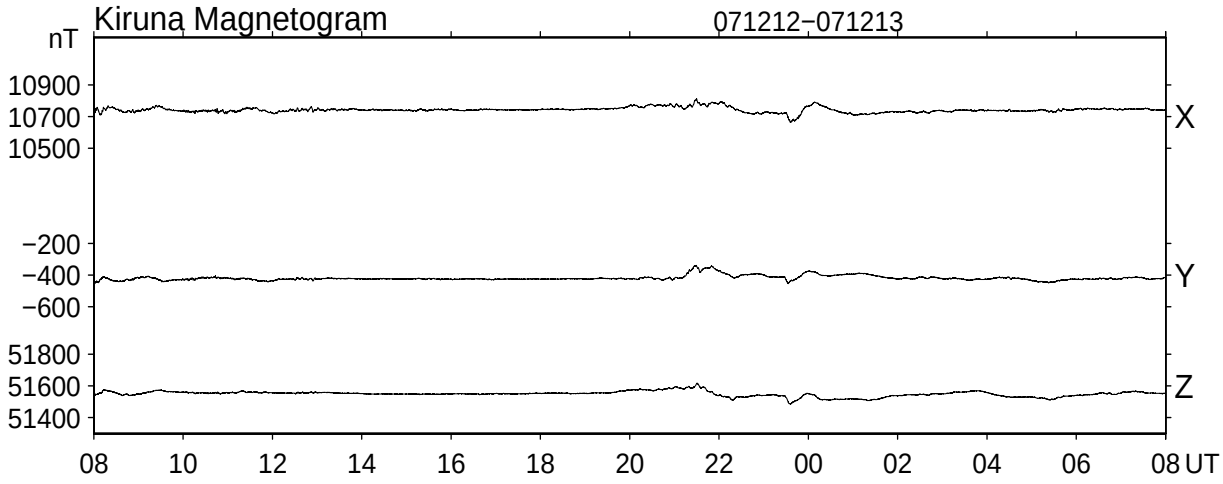

Kiruna Magnetogram
071207−071208
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

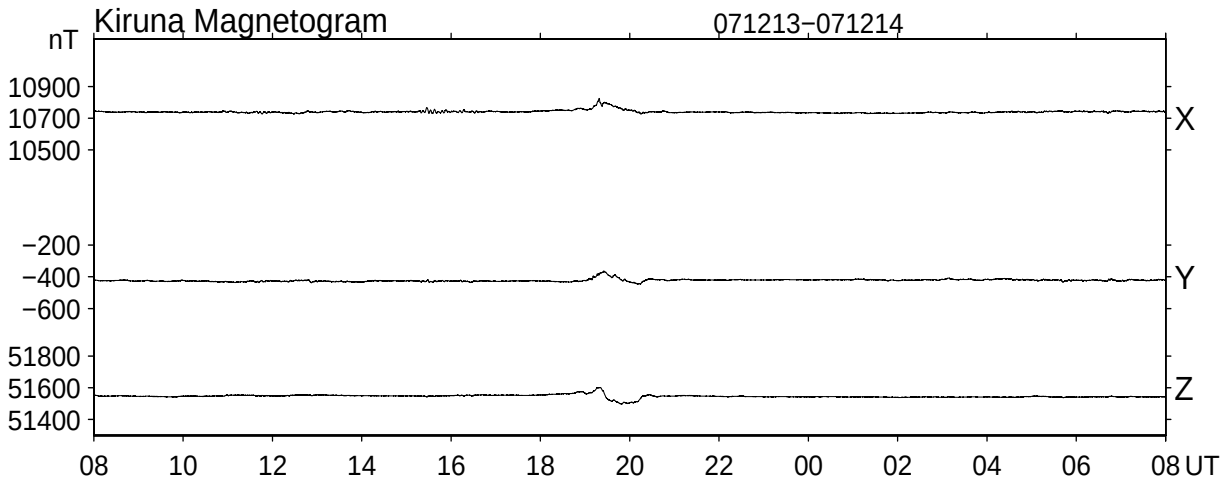

Kiruna Magnetogram
071208−071209
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

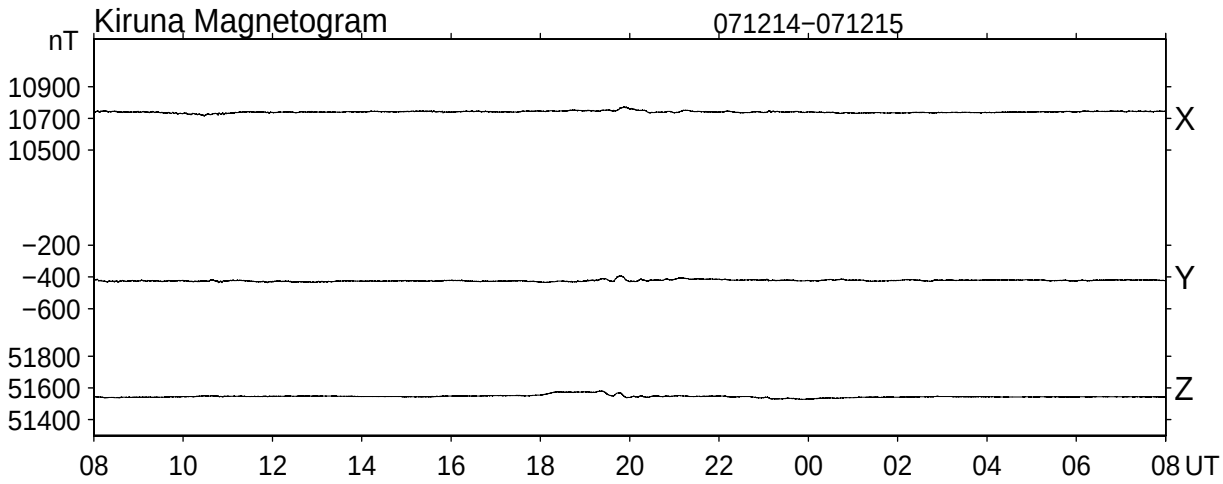

Kiruna Magnetogram
071209−071210
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

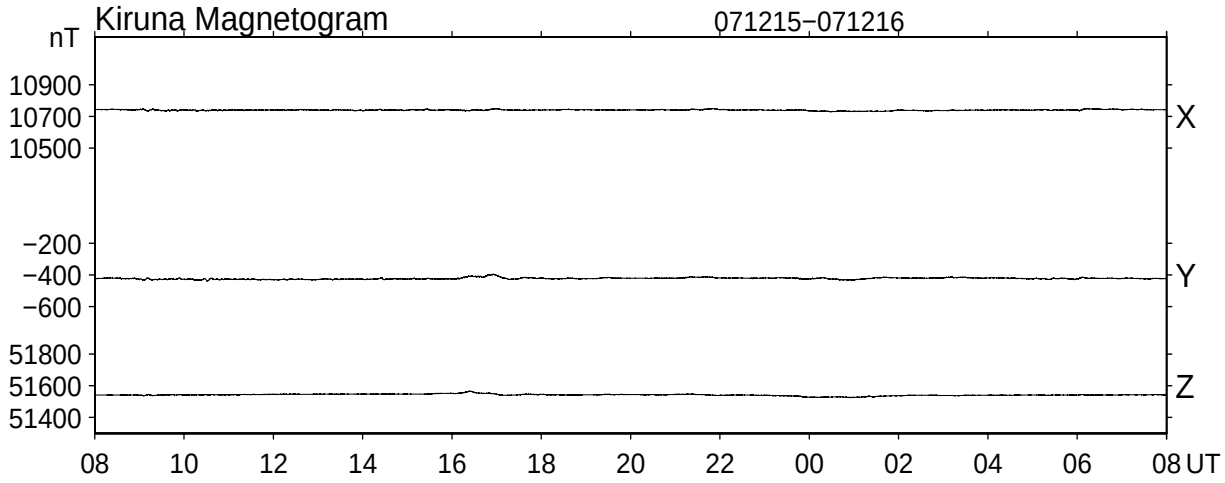

Kiruna Magnetogram
071210−071211
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

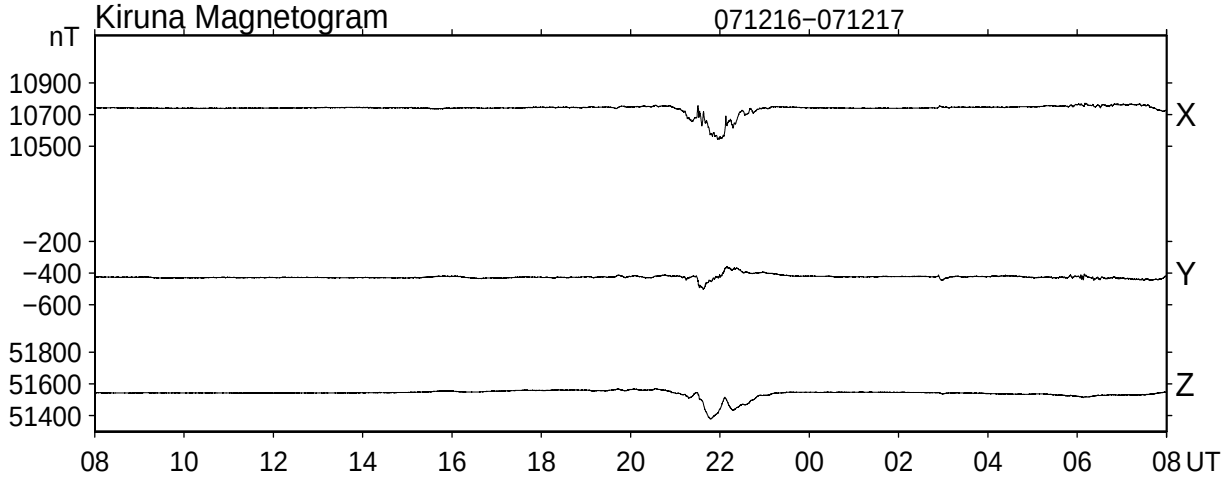

Kiruna Magnetogram
071211−071212
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

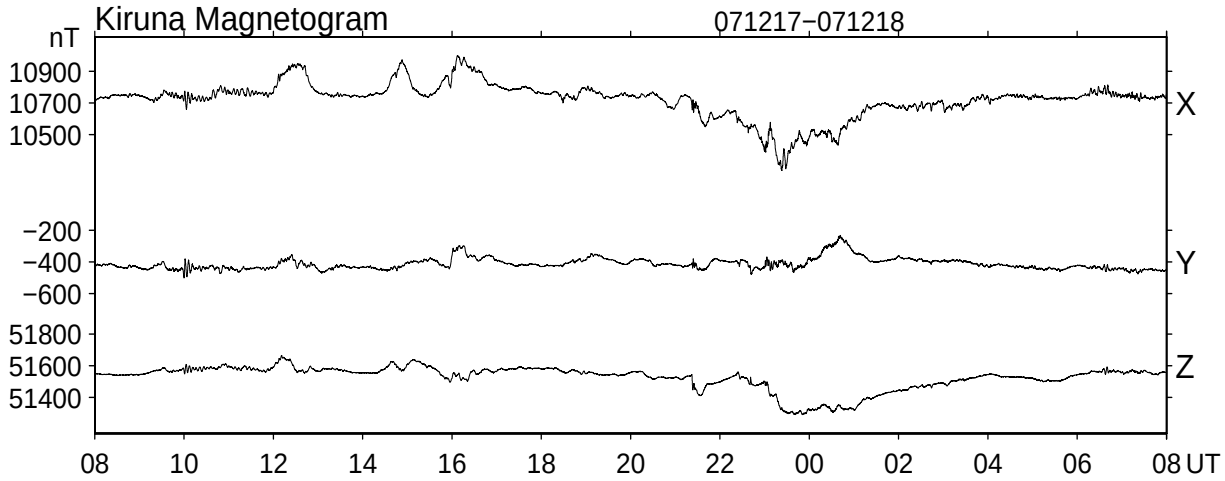

Kiruna Magnetogram
071212−071213
nT
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−200
−400
−600
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51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

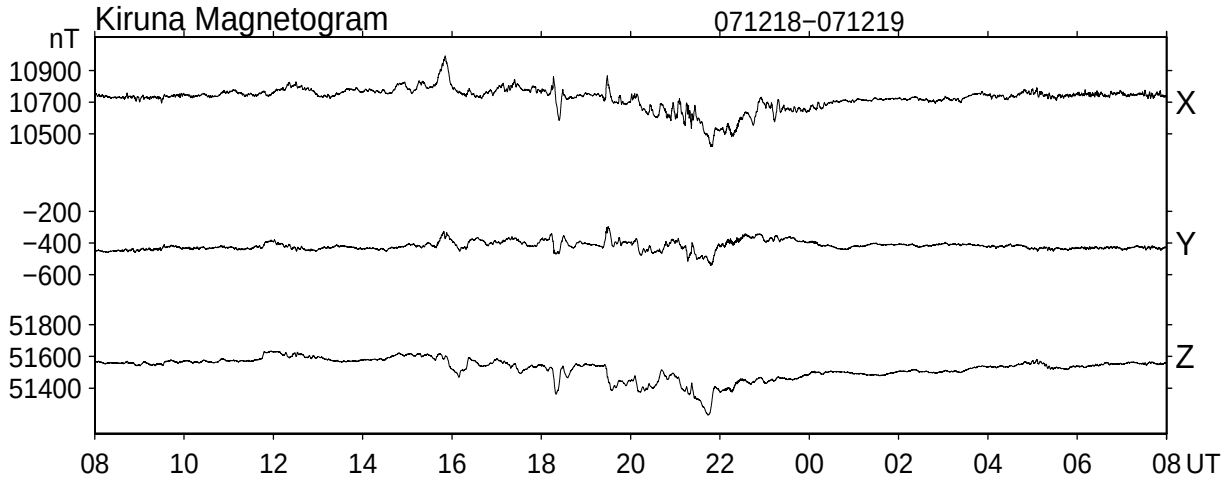

Kiruna Magnetogram
071213−071214
nT
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

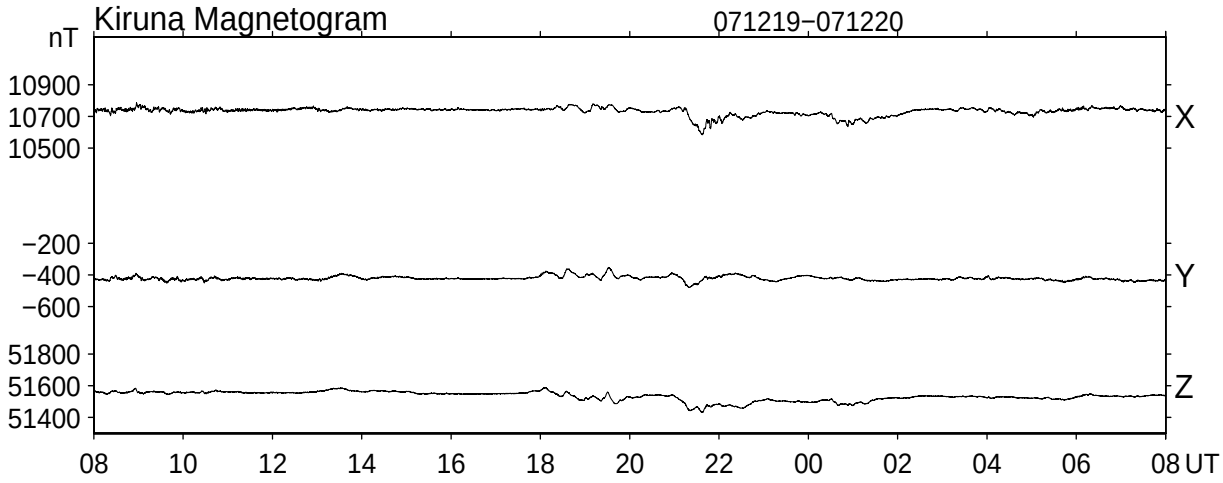

Kiruna Magnetogram
071214−071215
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

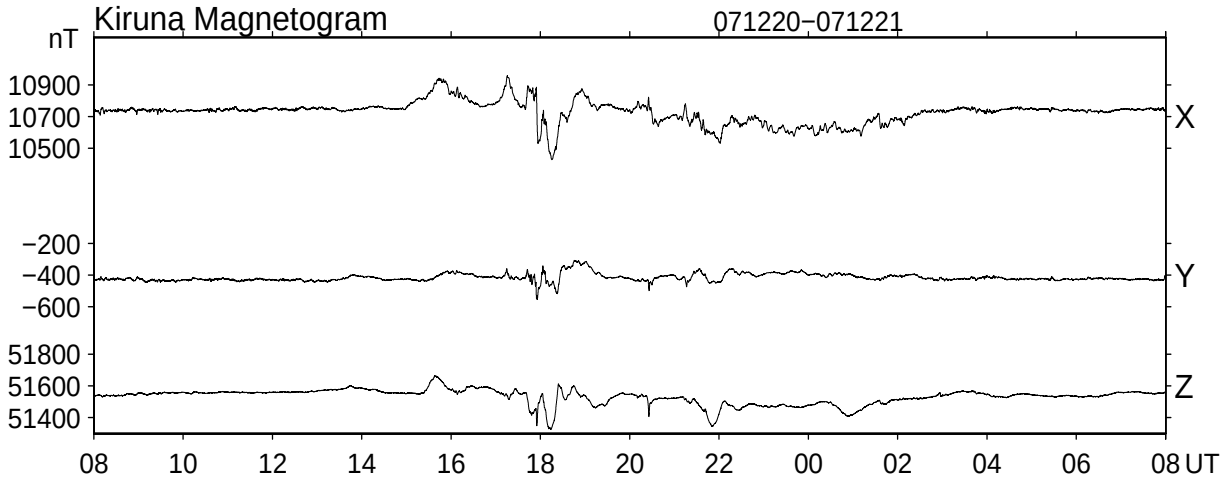

Kiruna Magnetogram
071215−071216
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

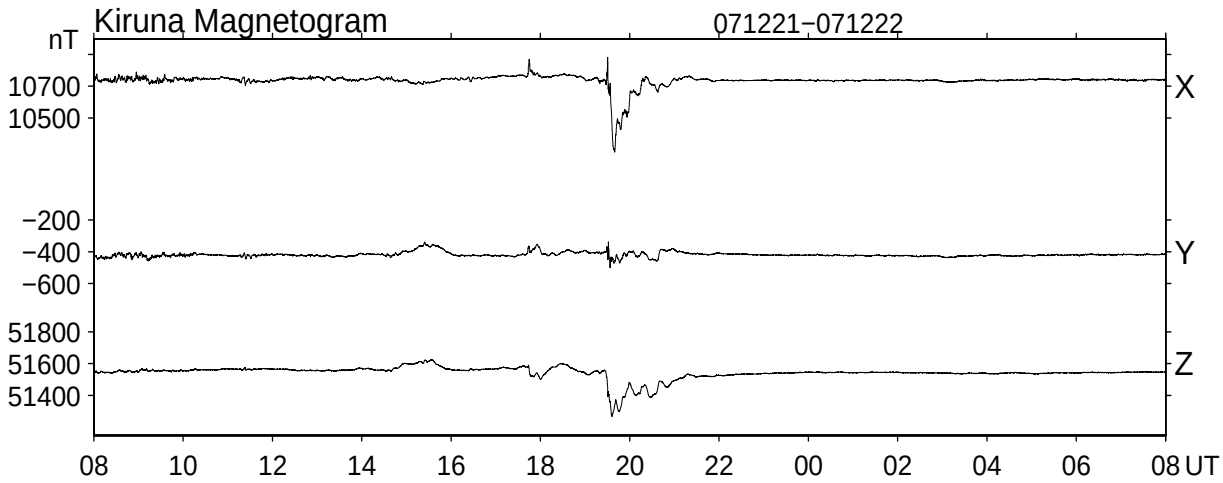

Kiruna Magnetogram
071216−071217
nT
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10700
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−200
−400
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51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

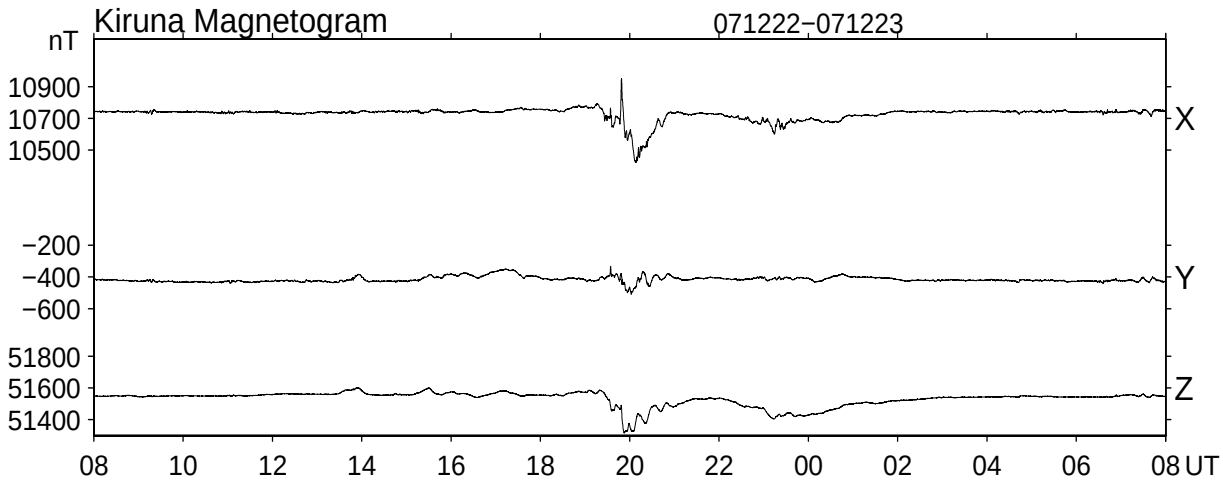

Kiruna Magnetogram
071217−071218
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

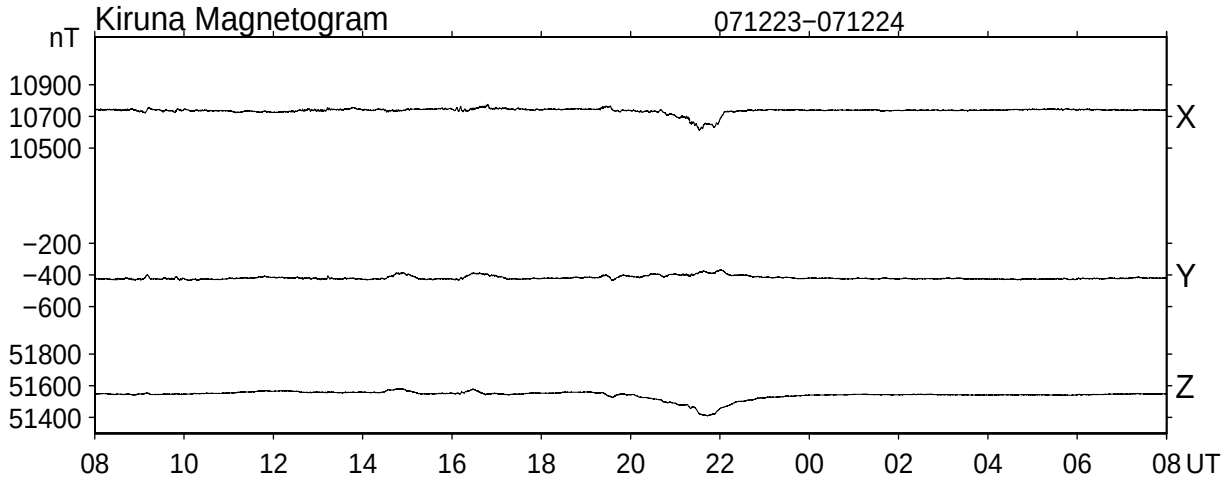

Kiruna Magnetogram
071218−071219
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

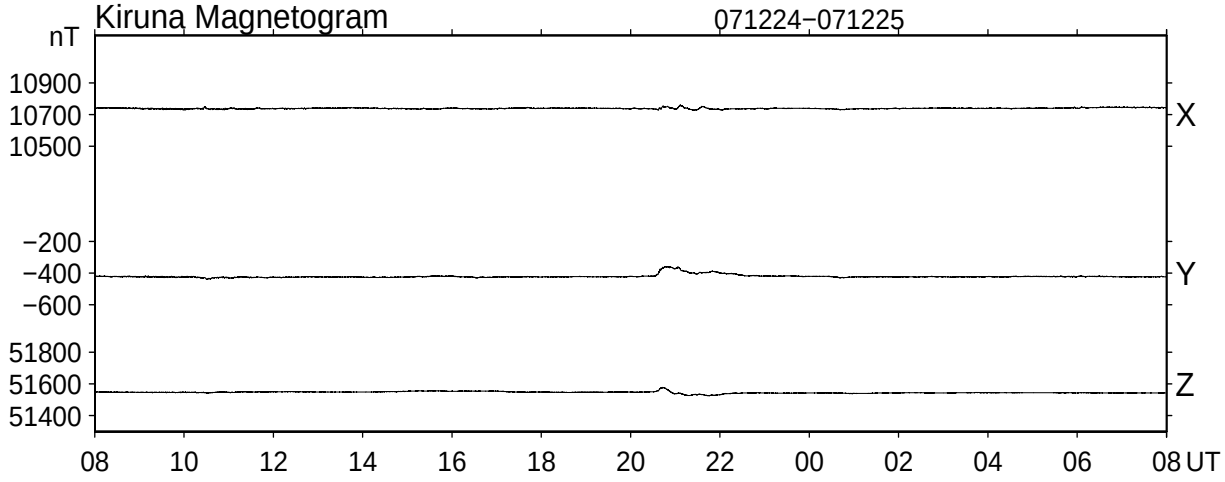

Kiruna Magnetogram
071219−071220
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

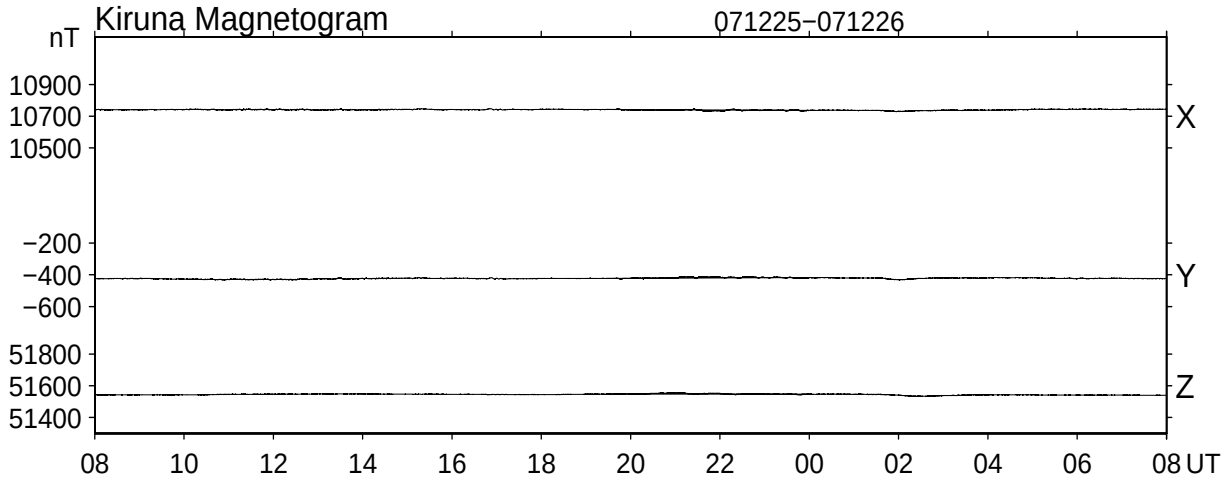

Kiruna Magnetogram
071220−071221
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

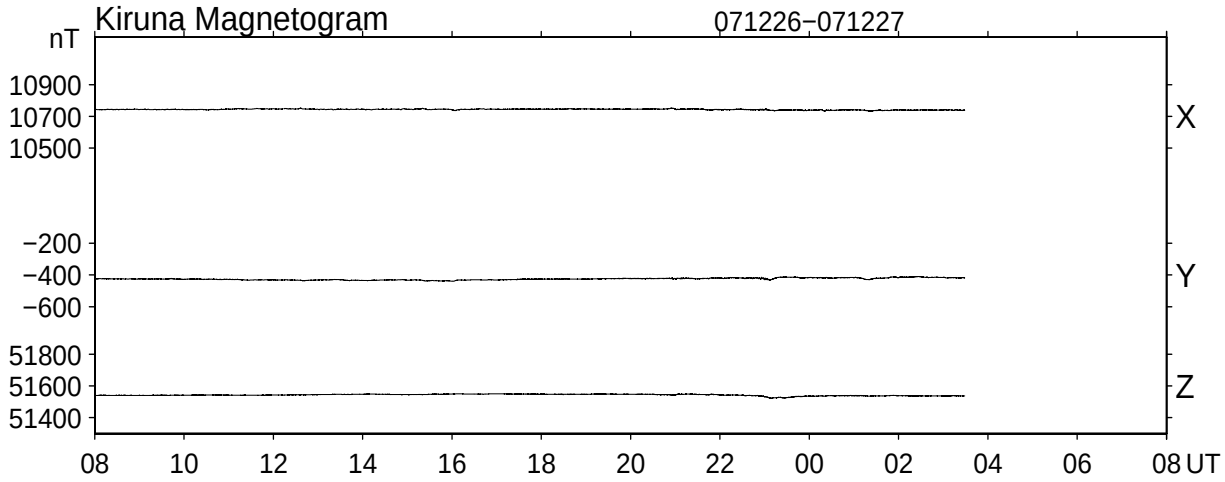

Kiruna Magnetogram
071221−071222
nT
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

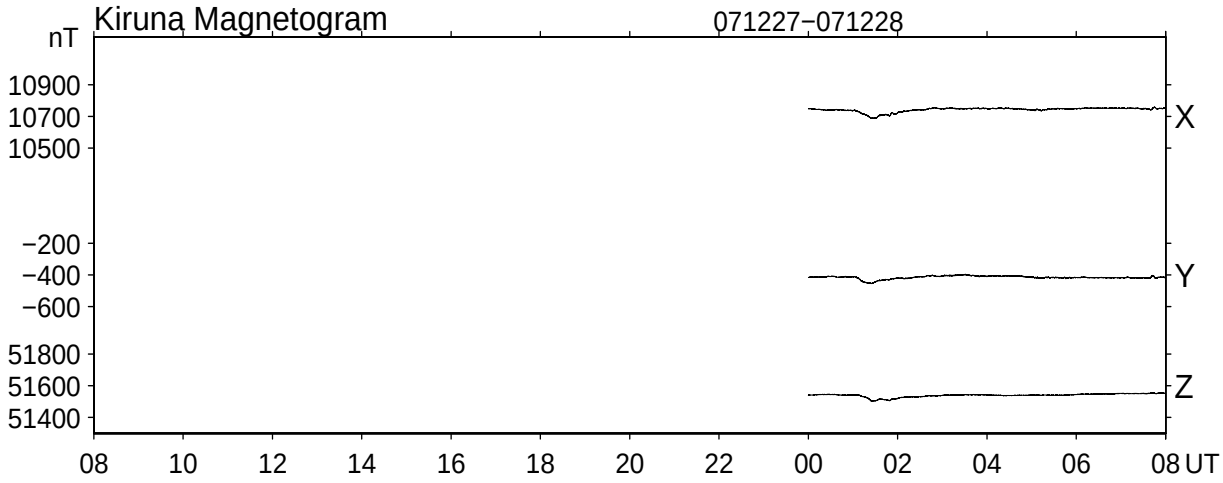

Kiruna Magnetogram
071222−071223
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

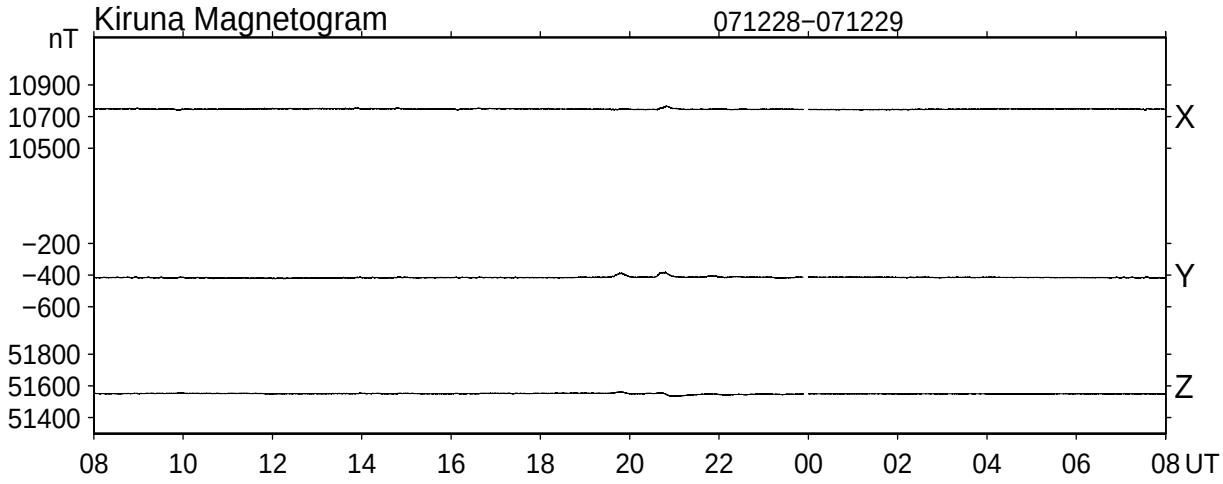

Kiruna Magnetogram
071223–071224
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

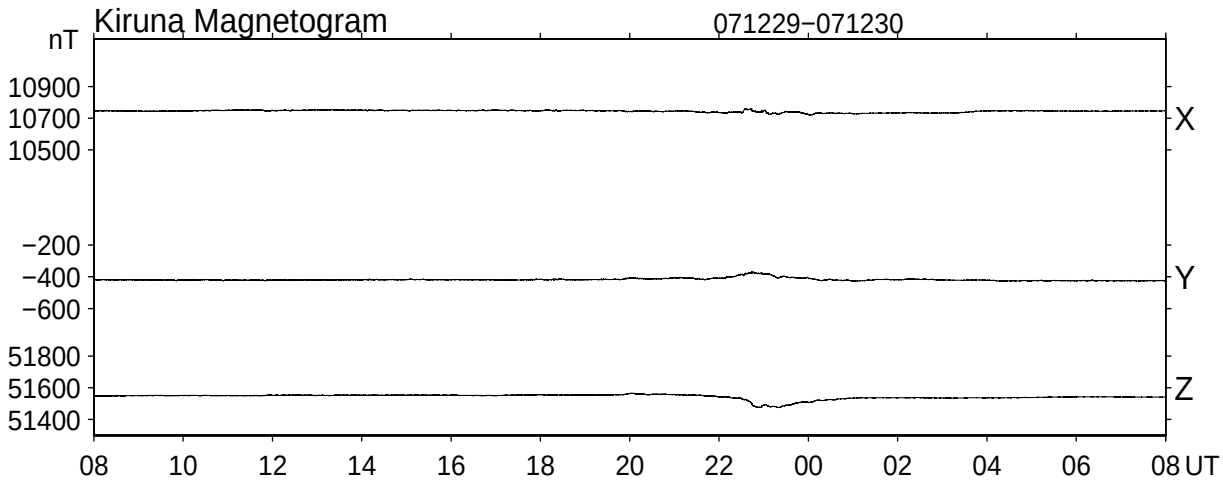

Kiruna Magnetogram
071224–071225
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

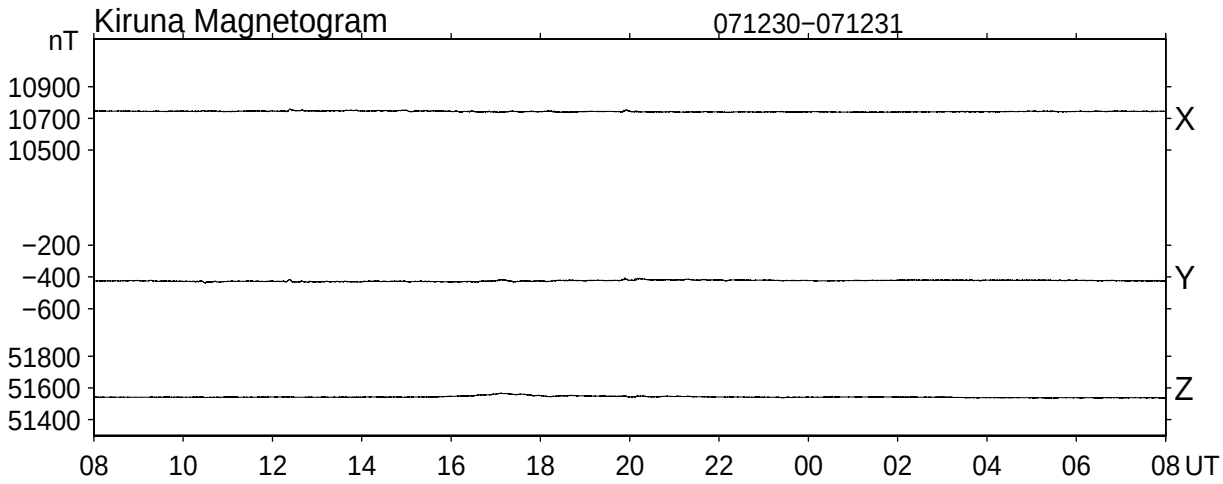

Kiruna Magnetogram
071225–071226
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

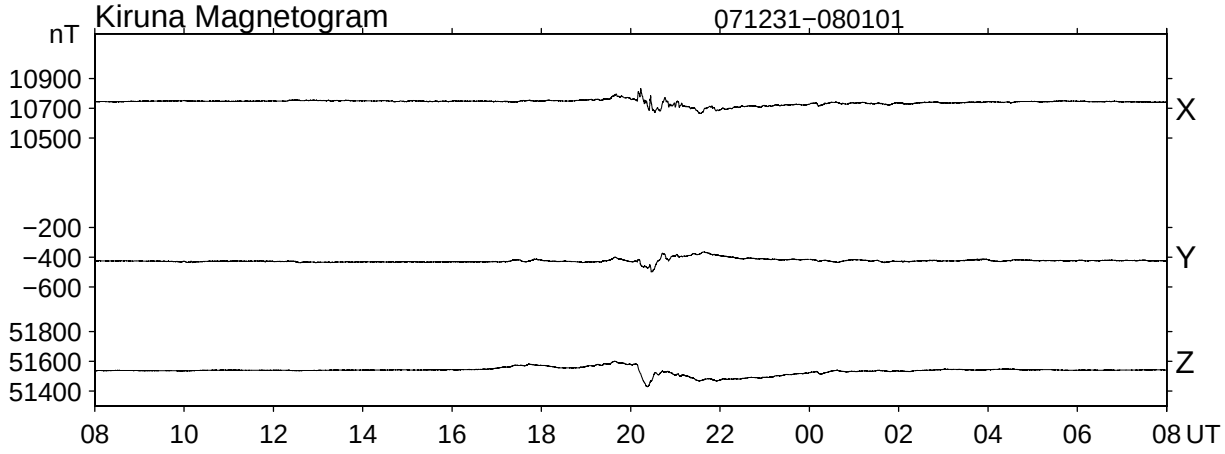

Kiruna Magnetogram
071226–071227
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
071227−071228
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
071228−071229
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
071229−071230
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
071230−071231
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
071231−080101
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08
10
12
14
16
18
20
22
00
02
04
06
08 UT

KIRUNA VERTICAL RIOMETER

October - December 2007

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

Riometer plots are not available in this issue since the riometer had severe technical problems during the period it covers. Riometer plots will appear again from the 2010 January-March issue.



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