

KIRUNA GEOPHYSICAL DATA

DATA SUMMARY 09/01-03
JANUARY-MARCH 2009

Collected at
SWEDISH INSTITUTE OF SPACE PHYSICS
KIRUNA, SWEDEN



Kiruna Geophysical Data

Data Summary 09/01-03
January – March 2009

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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

January 2009

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	1	1	2	2	2	1	3	14
2	1	0	0	0	0	1	3	5	10
3	3	3	2	3	2	2	1	3	19
4	2	0	0	1	1	3	2	1	10
5	1	1	1	1	1	2	2	3	12
6	1	2	0	0	0	1	0	0	4
7	0	1	0	0	0	1	0	1	3
8	0	0	0	1	1	1	0	2	5
9	2	0	0	1	1	1	3	1	9
10	4	2	1	1	0	0	1	2	11
11	1	0	0	0	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0
13	1	1	1	0	0	1	3	2	9
14	1	1	1	2	2	0	3	3	13
15	3	1	1	1	0	2	4	3	15
16	2	2	0	1	0	2	1	0	8
17	0	0	0	0	0	1	2	1	4
18	1	0	0	0	0	0	1	1	3
19	5	3	1	0	1	3	3	3	19
20	4	1	0	1	1	0	3	2	12
21	0	0	0	1	0	2	3	2	8
22	0	0	0	0	1	1	1	0	3
23	0	0	0	0	0	0	0	1	1
24	0	1	0	0	0	0	0	1	2
25	1	0	0	0	1	0	0	2	4
26	4	1	2	2	3	6	1	0	19
27	0	1	0	0	0	1	4	2	8
28	0	0	0	1	0	0	0	2	3
29	0	0	1	1	1	0	1	0	4
30	0	0	0	1	0	0	2	2	5
31	1	1	1	1	2	1	3	2	12
Sum	40	23	13	22	20	34	48	50	

GEOMAGNETIC K-INDICES, KIRUNA

February 2009

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	0	2	1	1	0	0	0	1	5
2	0	0	0	1	1	1	0	0	3
3	0	0	0	1	0	0	1	6	8
4	6	1	1	2	5	6	5	4	30
5	5	1	1	1	1	0	1	4	14
6	3	1	0	1	0	0	0	1	6
7	0	1	0	1	0	0	0	1	3
8	0	0	0	0	0	0	1	1	2
9	2	0	0	1	1	0	0	2	6
10	0	0	0	0	0	0	1	2	3
11	1	0	0	1	1	0	1	1	5
12	0	0	0	1	1	2	0	0	4
13	0	0	0	0	1	1	2	1	5
14	1	1	3	4	5	5	1	6	26
15	4	4	1	2	3	3	3	2	22
16	1	0	1	1	0	3	1	2	9
17	0	0	0	0	0	0	0	1	1
18	2	1	0	1	0	1	2	2	9
19	0	0	0	0	0	1	1	1	3
20	1	1	1	1	1	0	5	3	13
21	1	0	0	1	1	1	0	0	4
22	0	1	1	1	0	0	2	2	7
23	0	0	0	1	2	4	3	4	14
24	4	4	2	1	1	1	1	1	15
25	2	1	1	1	1	0	1	1	8
26	0	1	0	0	0	1	1	1	4
27	1	1	2	4	3	2	3	4	20
28	2	3	3	1	1	0	1	2	13
Sum	36	24	18	30	29	32	37	56	

GEOMAGNETIC K-INDICES, KIRUNA

March 2009

Lower limit of K=9 is 1500 nT

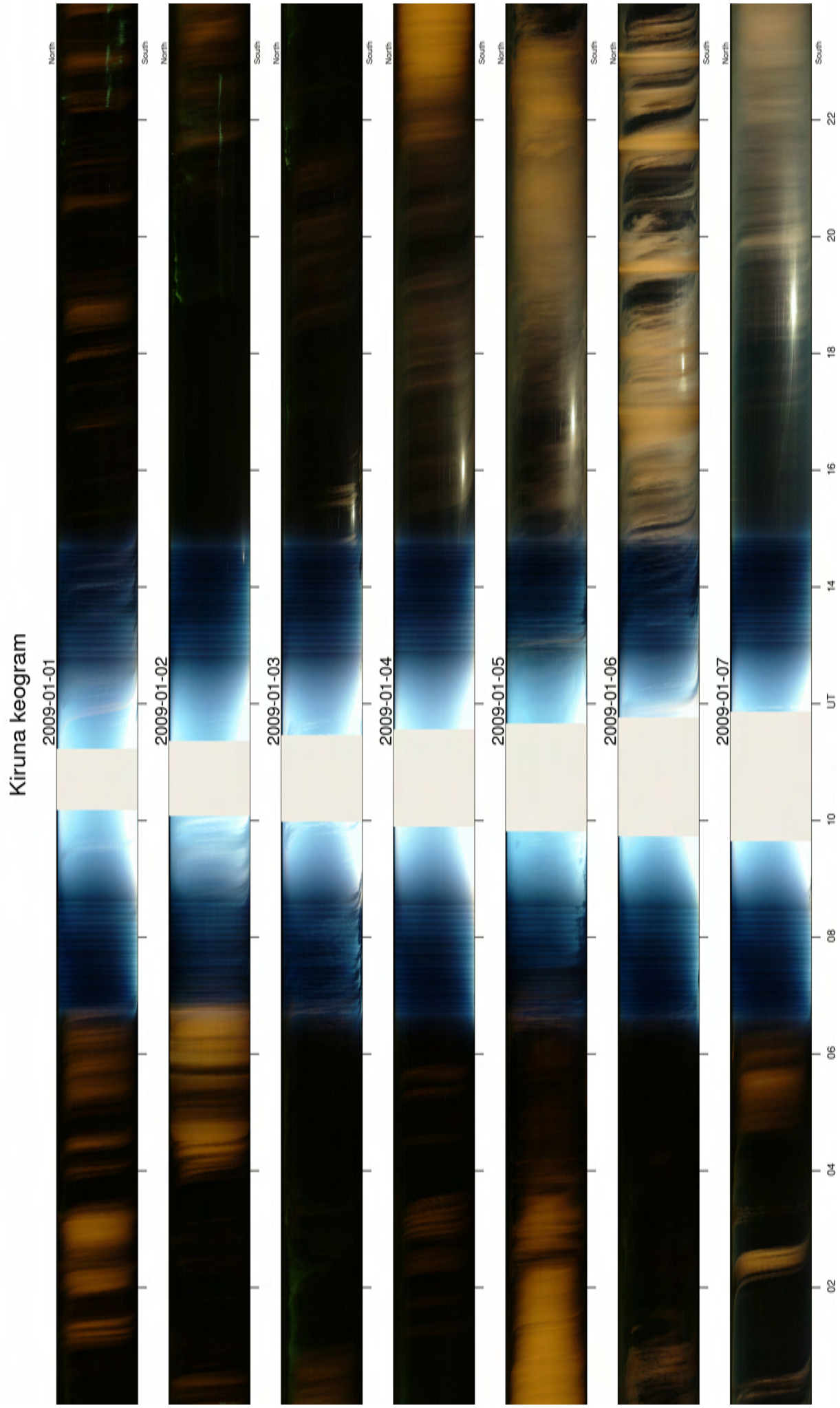
Time in UT

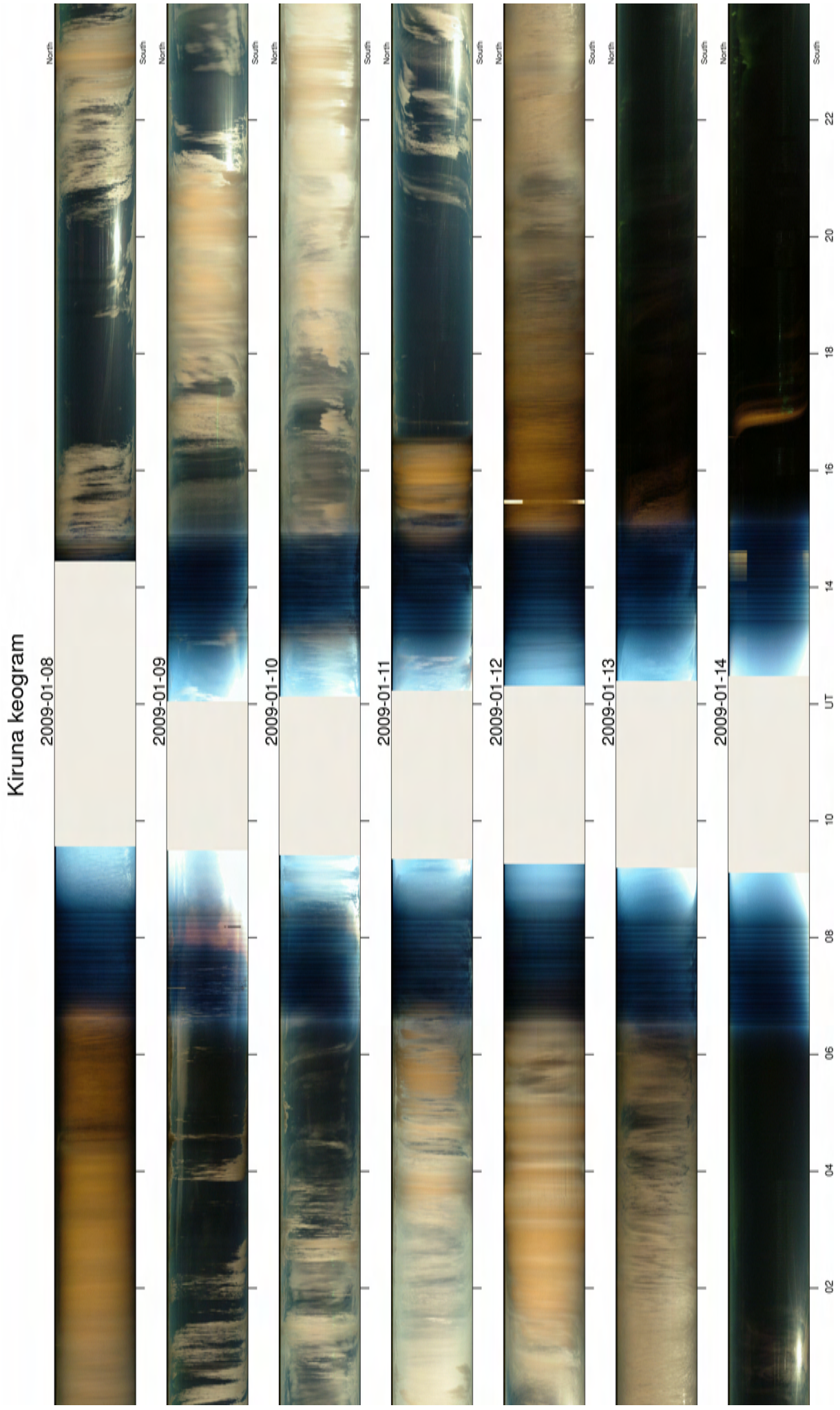
Day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	1	2	1	0	1	1	0	1	7
2	0	0	1	1	0	0	0	0	2
3	0	0	2	2	1	2	4	5	16
4	1	2	1	1	2	1	5	4	17
5	2	2	1	0	0	0	2	2	9
6	2	1	1	1	0	0	0	1	6
7	0	1	1	0	0	0	0	2	4
8	2	1	2	2	2	3	2	1	15
9	0	0	1	1	0	0	1	0	3
10	0	0	1	1	1	1	1	1	6
11	0	0	1	1	0	0	3	4	9
12	4	3	0	1	1	0	1	6	16
13	6	4	3	3	3	4	4	5	32
14	3	1	2	2	2	4	3	5	22
15	4	2	2	1	2	2	0	3	16
16	3	0	1	2	0	2	1	0	9
17	2	0	1	1	1	2	3	3	13
18	0	0	0	1	0	0	1	2	4
19	2	1	1	1	1	0	2	2	10
20	2	0	0	1	0	2	3	2	10
21	0	1	1	2	3	1	6	6	20
22	2	3	1	1	0	0	2	4	13
23	1	0	0	1	0	0	1	0	3
24	0	2	2	1	3	2	2	4	16
25	4	4	2	2	1	1	1	3	18
26	2	2	2	2	2	2	2	3	17
27	1	1	1	1	2	5	5	3	19
28	1	1	1	2	1	1	4	3	14
29	1	0	1	2	1	1	1	1	8
30	1	1	1	2	2	1	2	1	11
31	0	1	1	1	1	1	0	1	6
Sum	47	36	36	40	33	39	62	78	

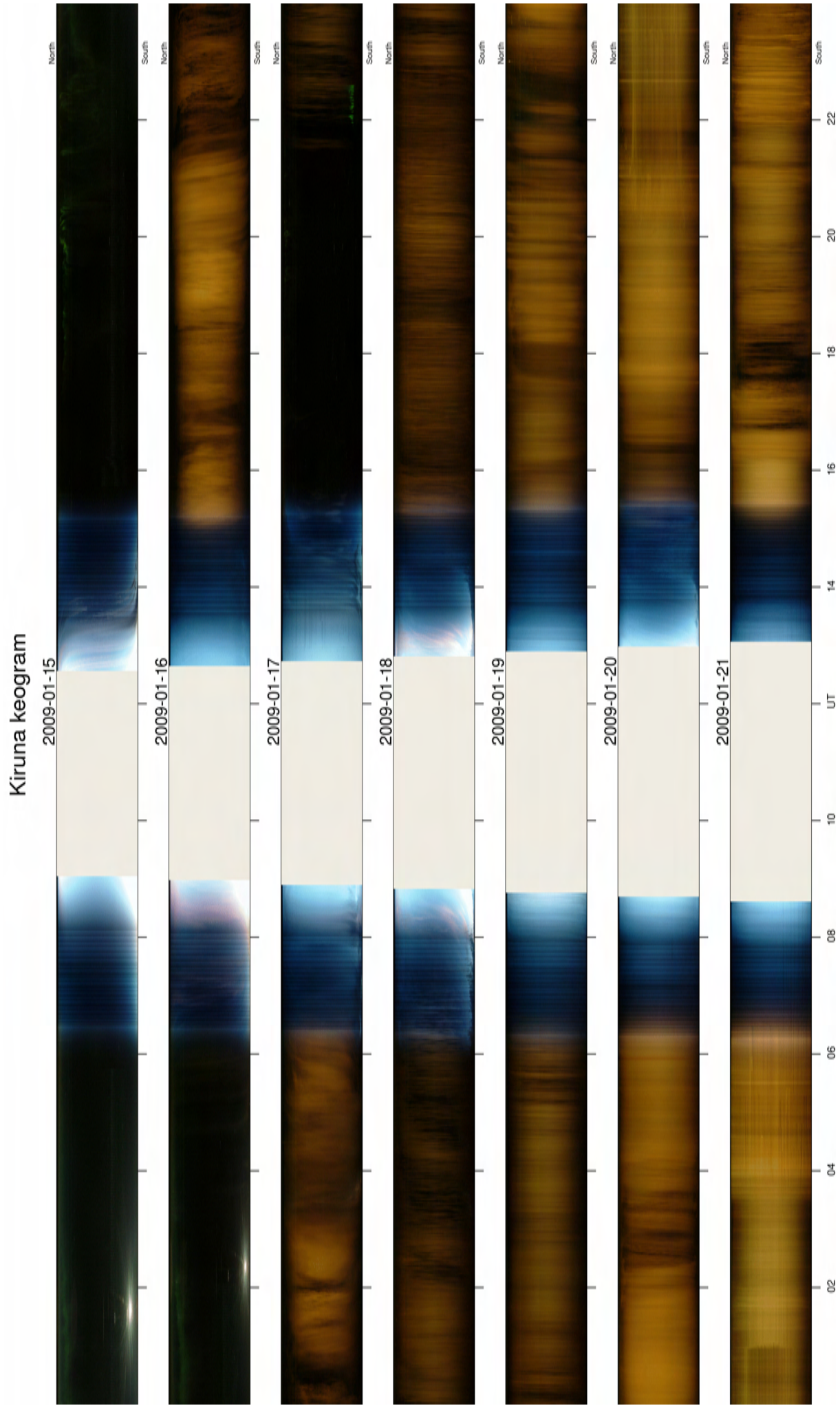
ALL-SKY CAMERA KEOGRAMS

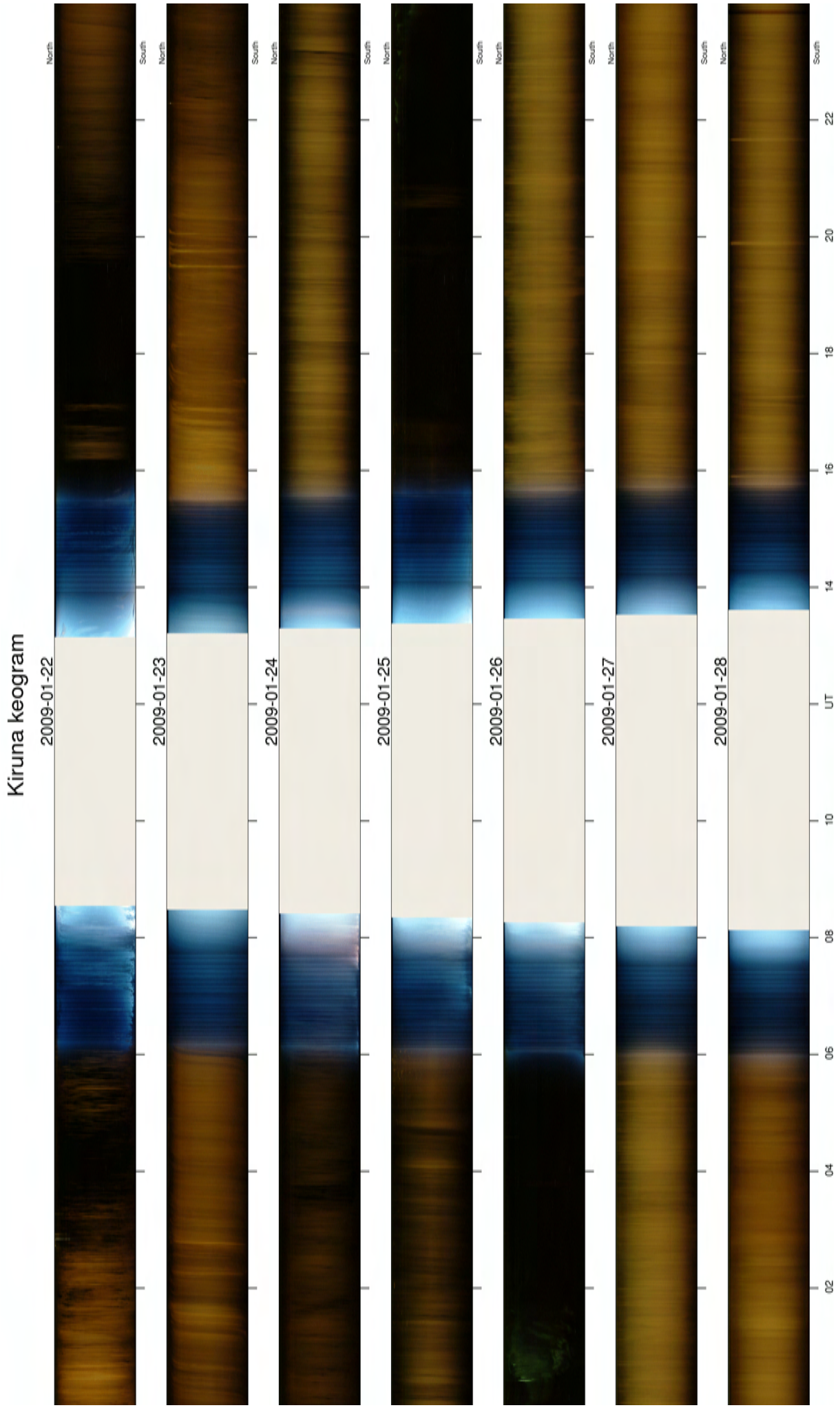
January - March 2009

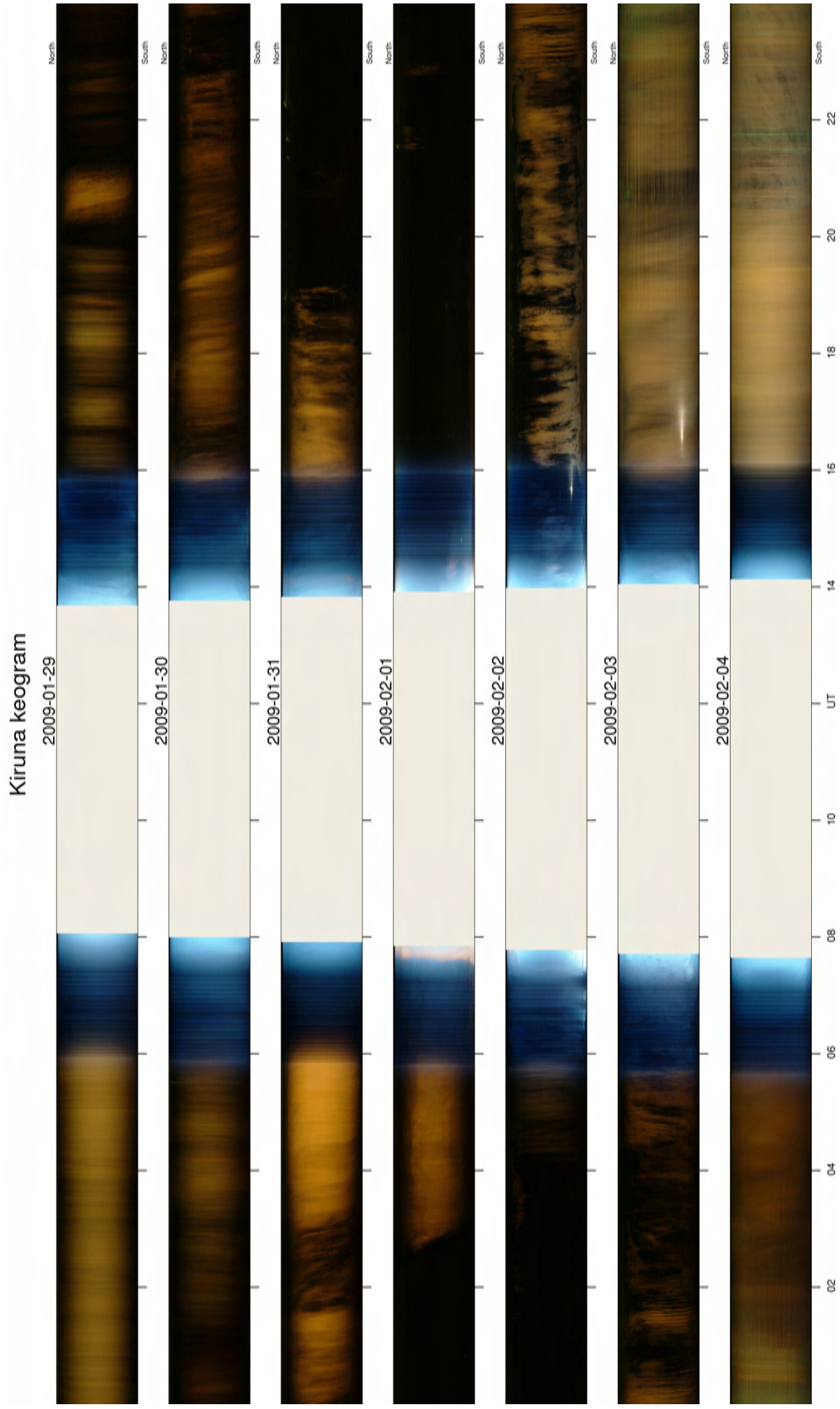
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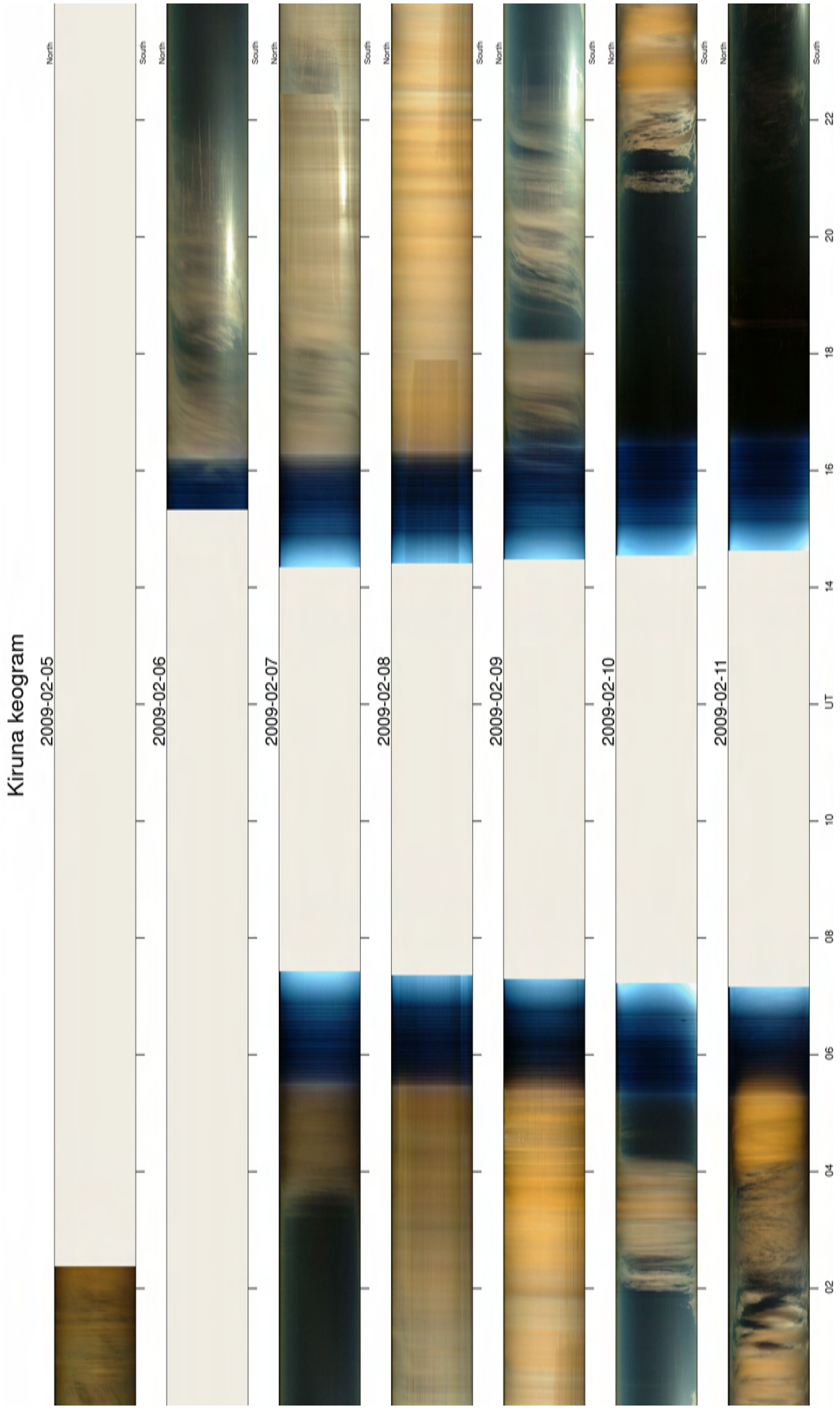

Kiruna keogram
2009-01-01
2009-01-02
2009-01-03
2009-01-04
2009-01-05
2009-01-06
2009-01-07
North
South
02
04
06
08
10
12
14
16
18
20
22
UT

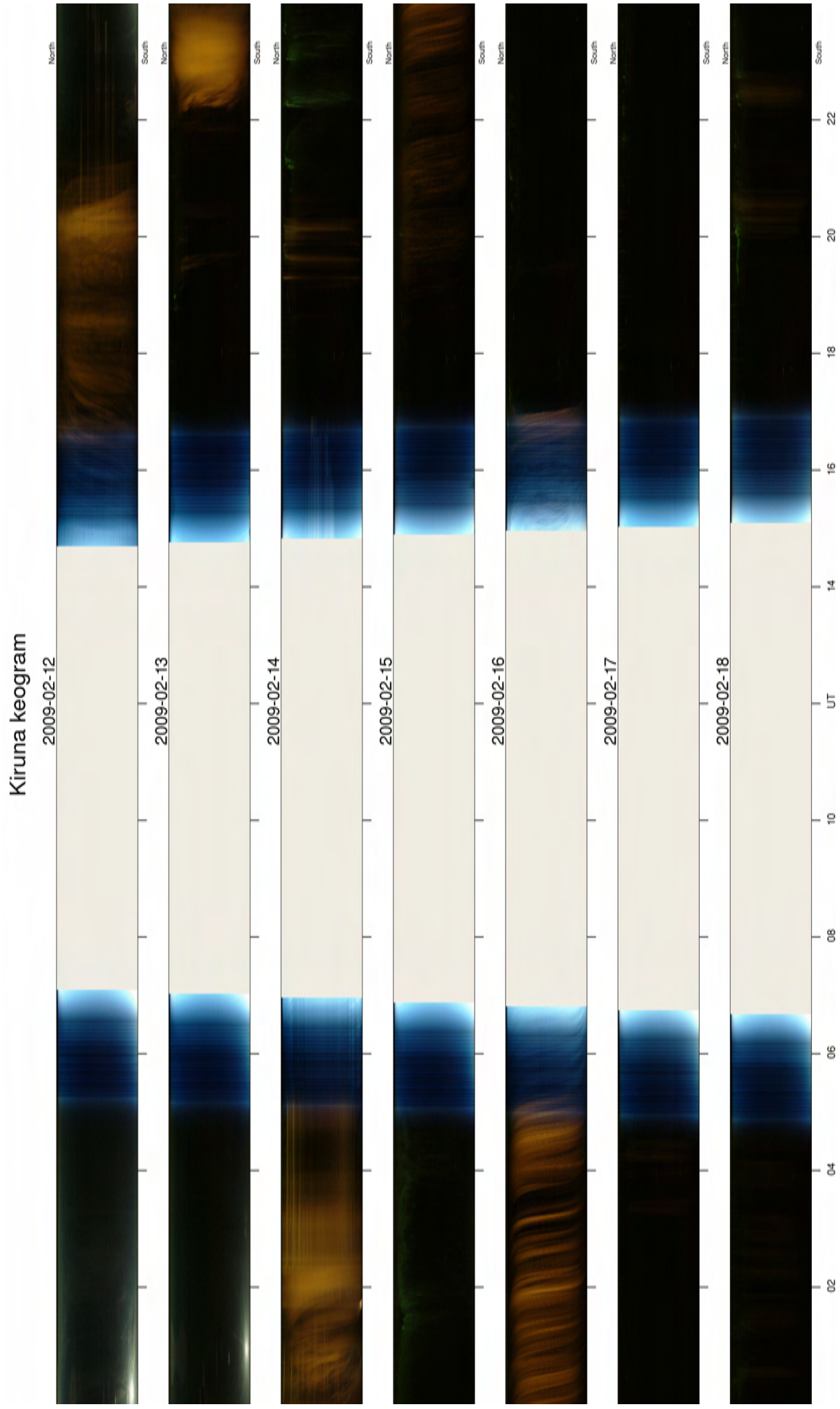

Kiruna keogram
2009-01-08
2009-01-09
2009-01-10
2009-01-11
2009-01-12
2009-01-13
2009-01-14
North
South
02
04
06
08
10
12
14
16
18
20
22
UT

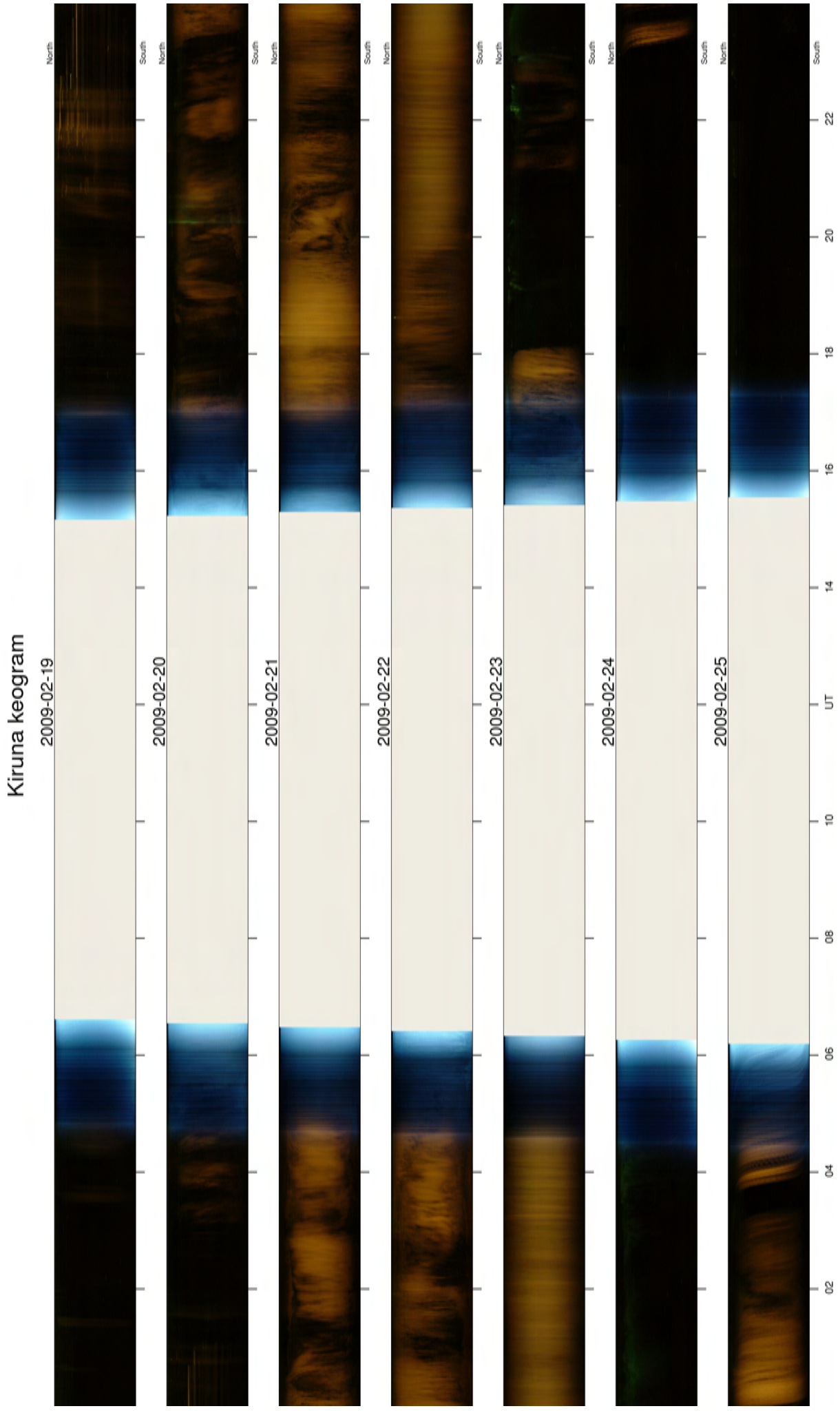

Kiruna keogram
2009-01-15
2009-01-16
2009-01-17
2009-01-18
2009-01-19
2009-01-20
2009-01-21
North
South
02
04
06
08
10
UT
14
16
18
20
22

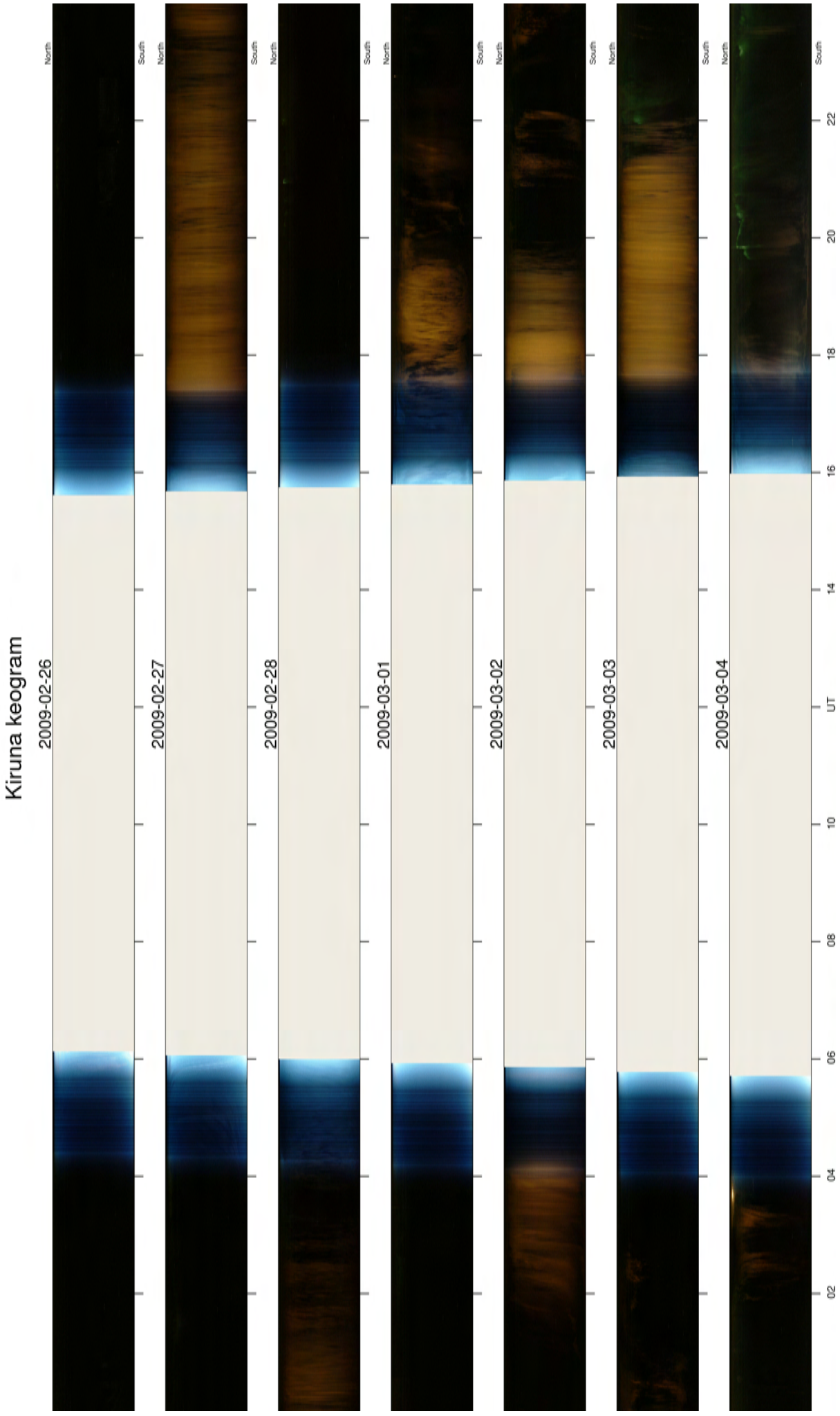

Kiruna keogram
2009-01-22
2009-01-23
2009-01-24
2009-01-25
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2009-01-27
2009-01-28
North
South
02
04
06
08
10
UT
14
16
18
20
22

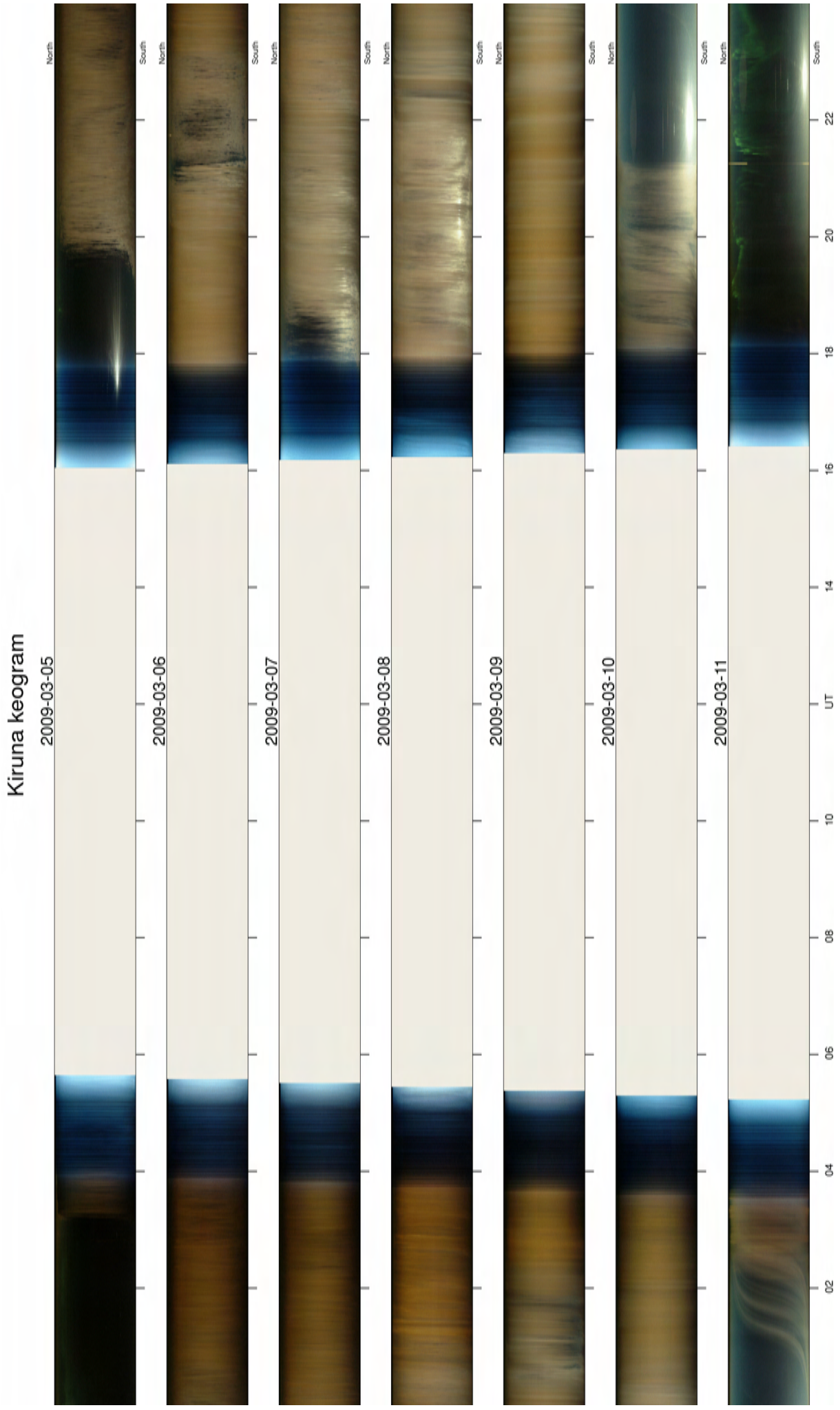

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2009-01-29
2009-01-30
2009-01-31
2009-02-01
2009-02-02
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2009-02-04
North
South
02
04
06
08
10
12
14
16
18
20
22
UT

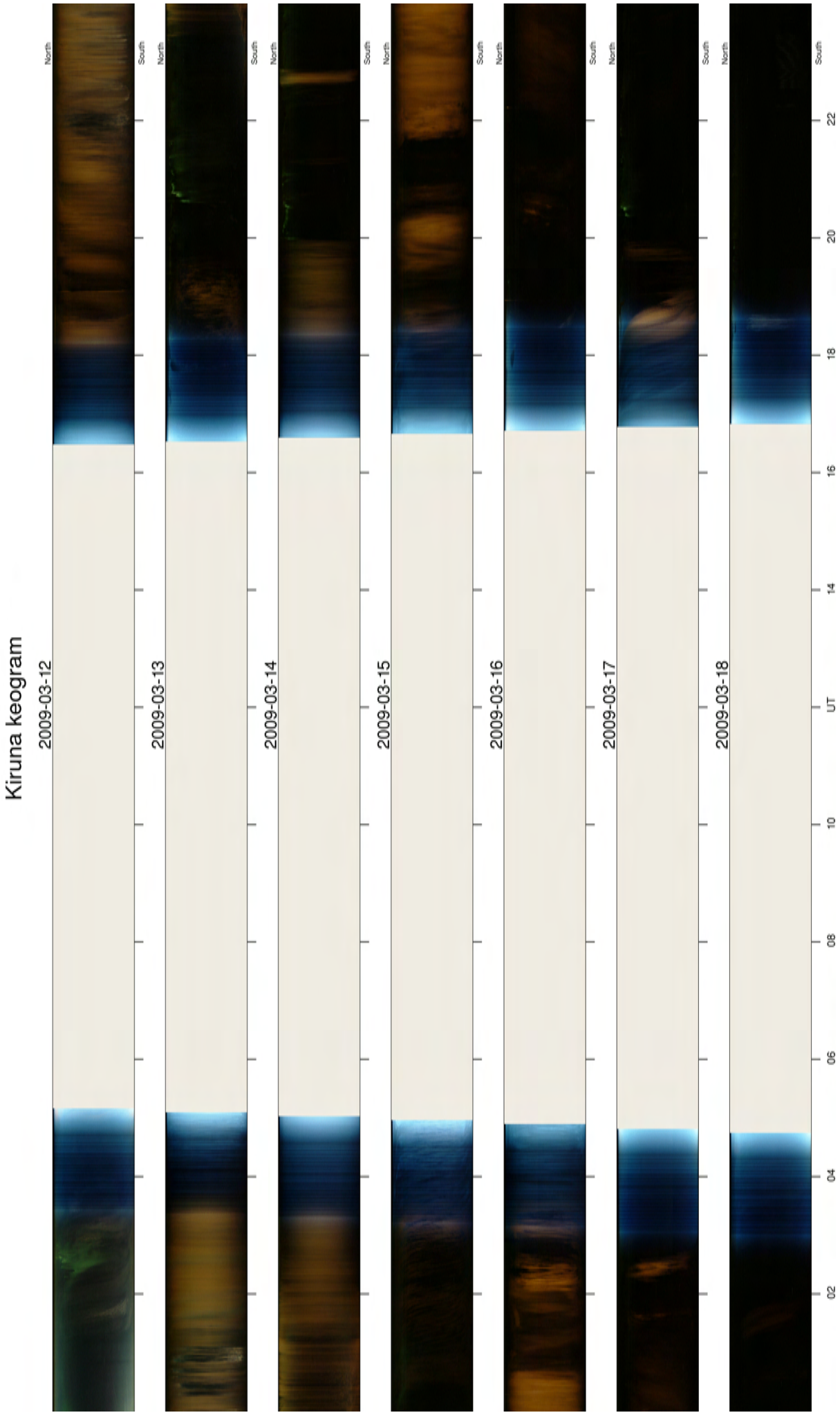

Kiruna keogram
2009-02-05
2009-02-06
2009-02-07
2009-02-08
2009-02-09
2009-02-10
2009-02-11
North
South
02
04
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08
10
12
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18
20
22
UT

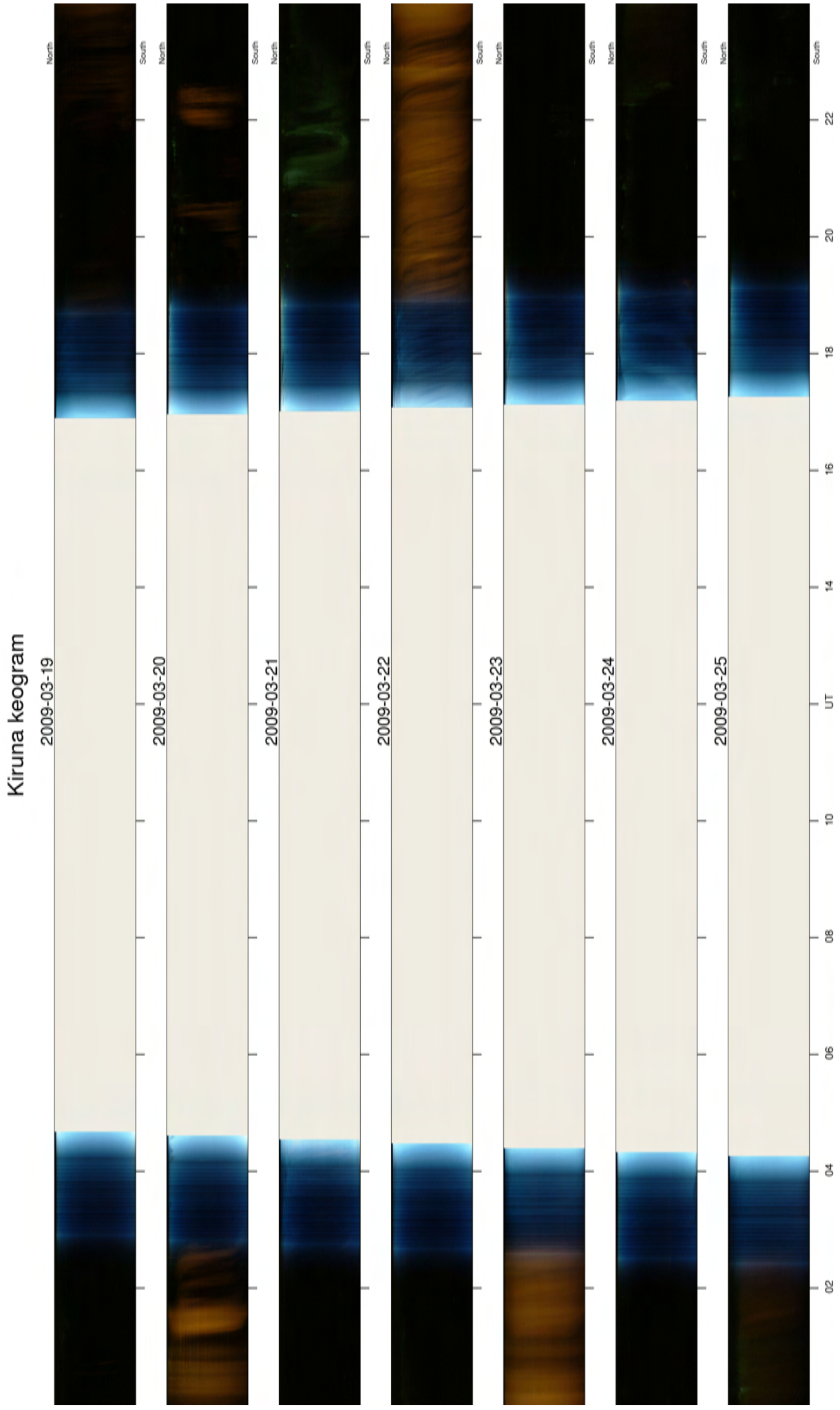

Kiruna keogram
2009-02-12
2009-02-13
2009-02-14
2009-02-15
2009-02-16
2009-02-17
2009-02-18
North
South
02
04
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12
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16
18
20
22
UT

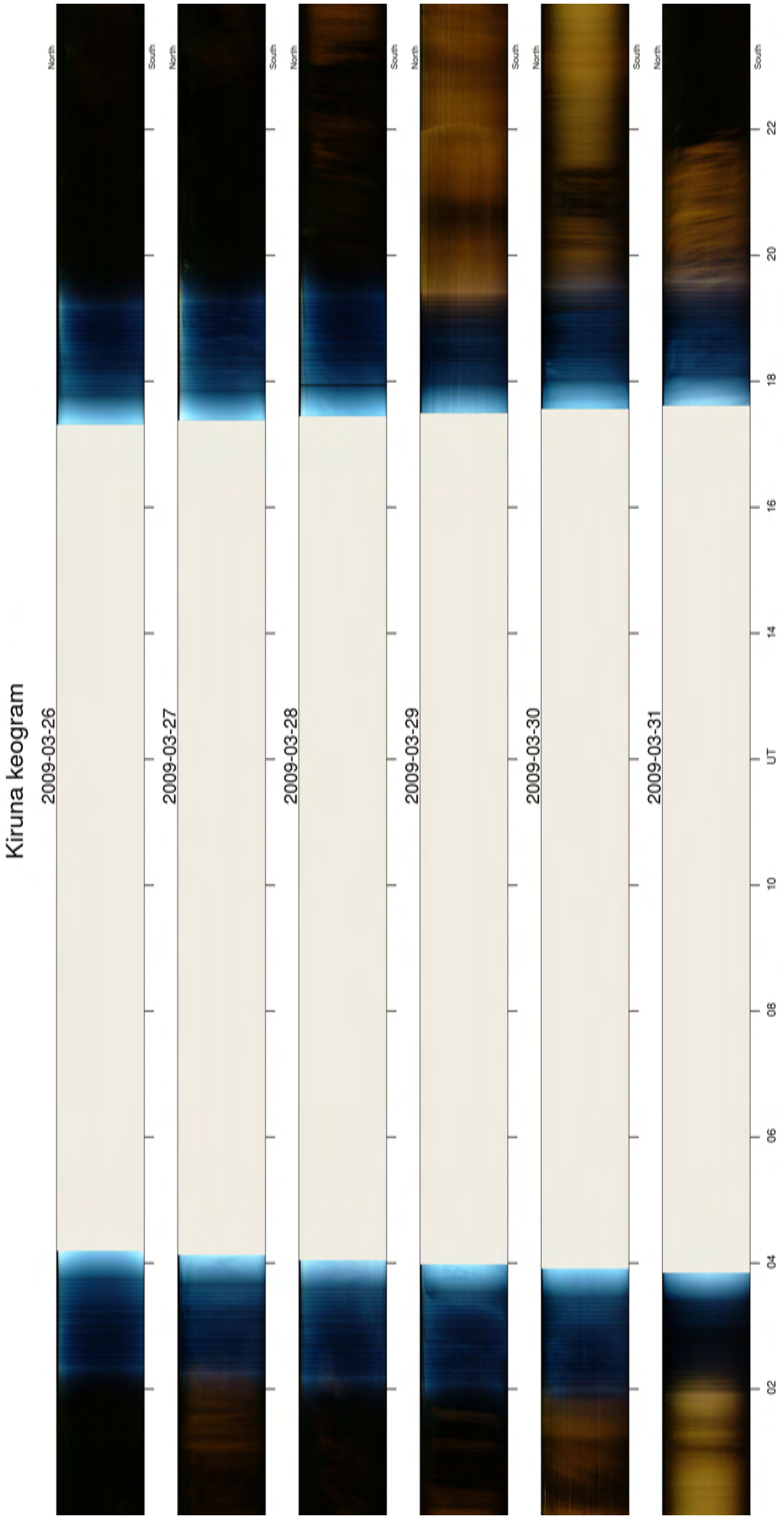

Kiruna keogram
2009-02-19
2009-02-20
2009-02-21
2009-02-22
2009-02-23
2009-02-24
2009-02-25
North
South
02
04
06
08
10
12
14
16
18
20
22
UT


Kiruna keogram
2009-02-26
2009-02-27
2009-02-28
2009-03-01
2009-03-02
2009-03-03
2009-03-04
North
South
02
04
06
08
10
12
14
16
18
20
22
UT


Kiruna keogram
2009-03-05
2009-03-06
2009-03-07
2009-03-08
2009-03-09
2009-03-10
2009-03-11
North
South
02
04
06
08
10
12
14
16
18
20
22
UT


Kiruna keogram
2009-03-12
2009-03-13
2009-03-14
2009-03-15
2009-03-16
2009-03-17
2009-03-18
North
South
02
04
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08
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12
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16
18
20
22
UT

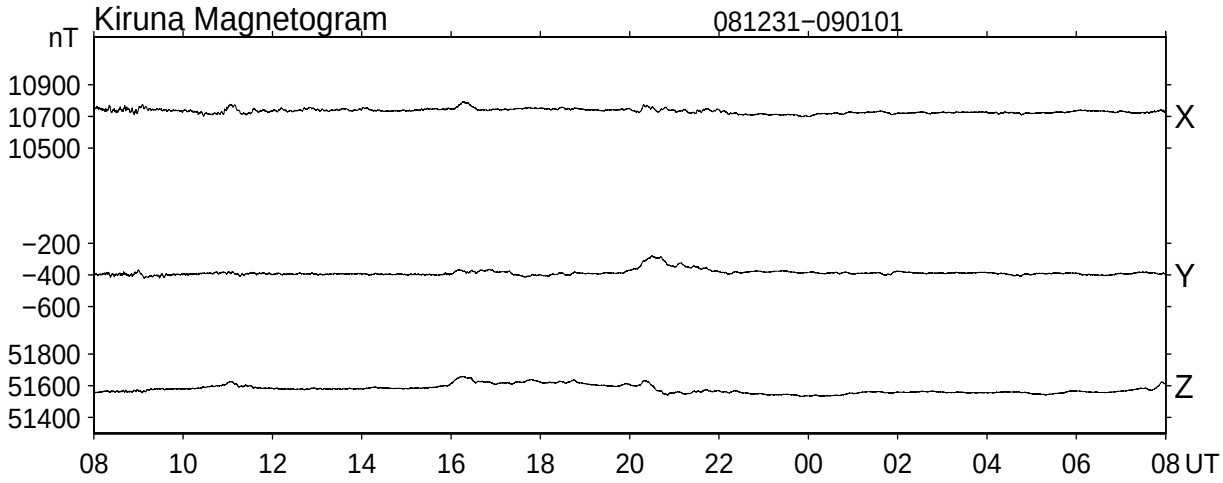

Kiruna keogram
2009-03-19
2009-03-20
2009-03-21
2009-03-22
2009-03-23
2009-03-24
2009-03-25
North
South
02
04
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08
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20
22
UT

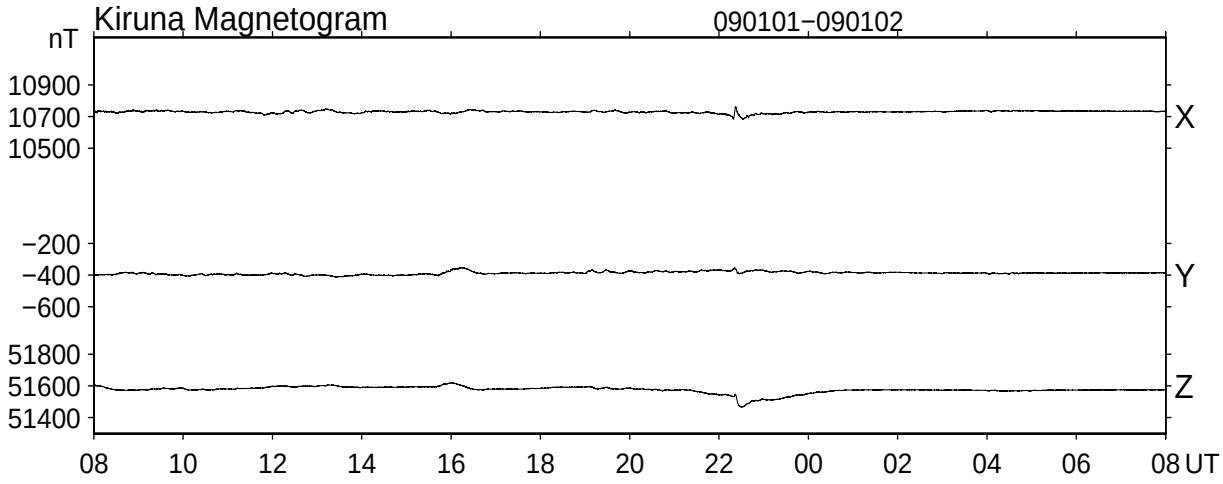

Kiruna keogram
2009-03-26
2009-03-27
2009-03-28
2009-03-29
2009-03-30
2009-03-31
North
South
02
04
06
08
10
UT
14
16
18
20
22

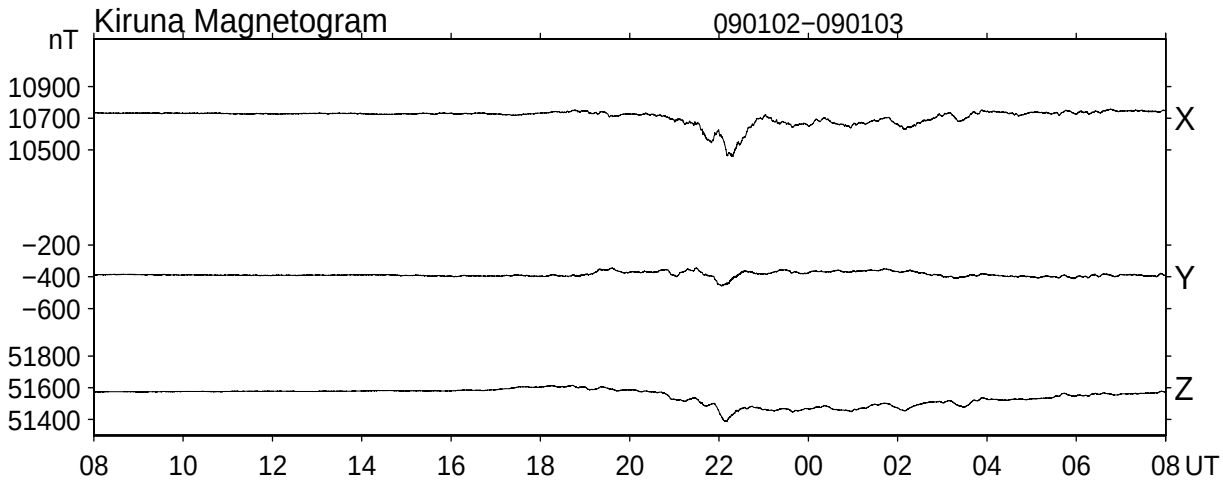
KIRUNA MAGNETOGRAM PLOTS

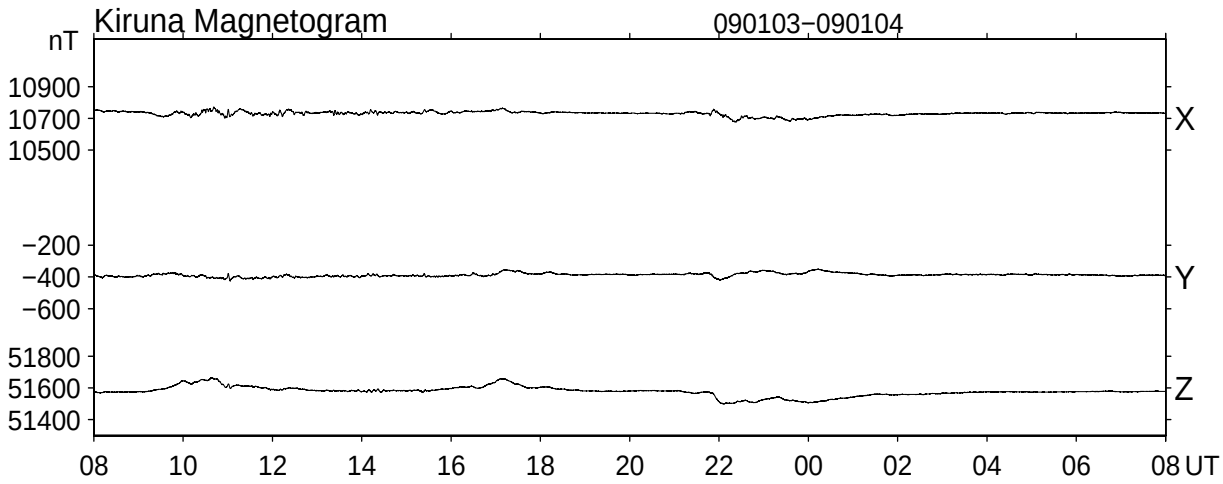
January - March 2009

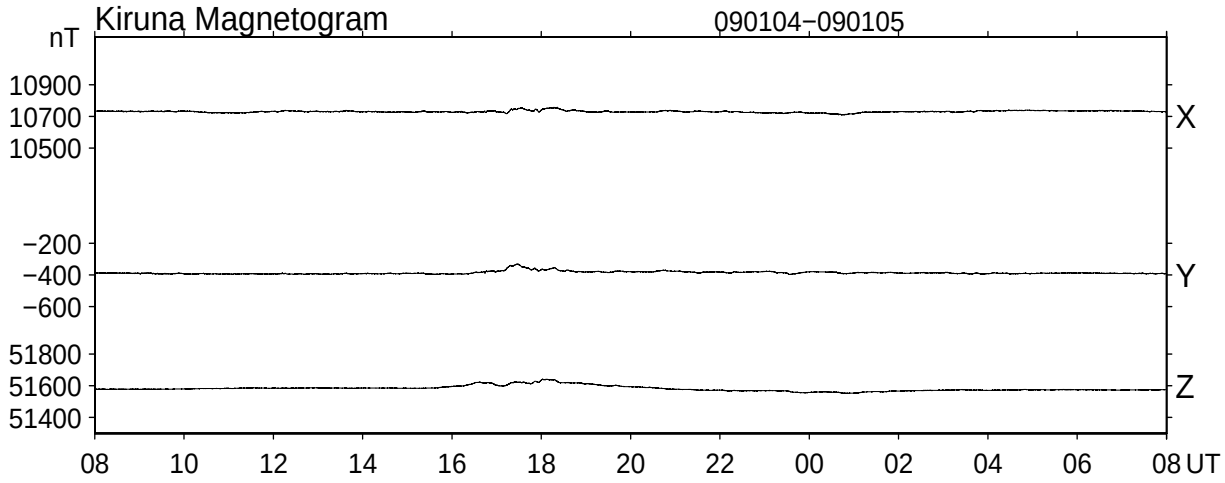
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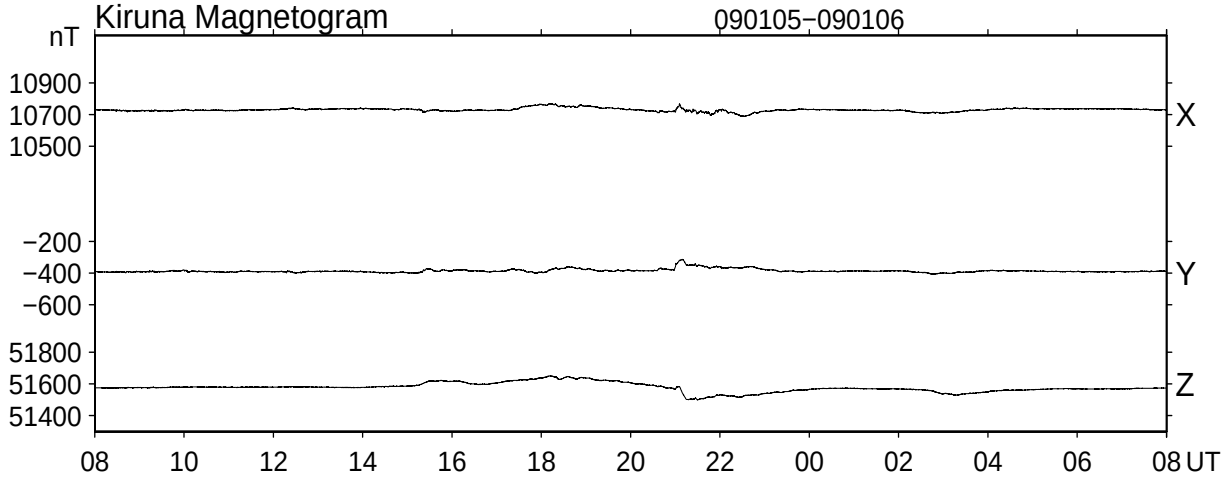

Kiruna Magnetogram
081231−090101
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

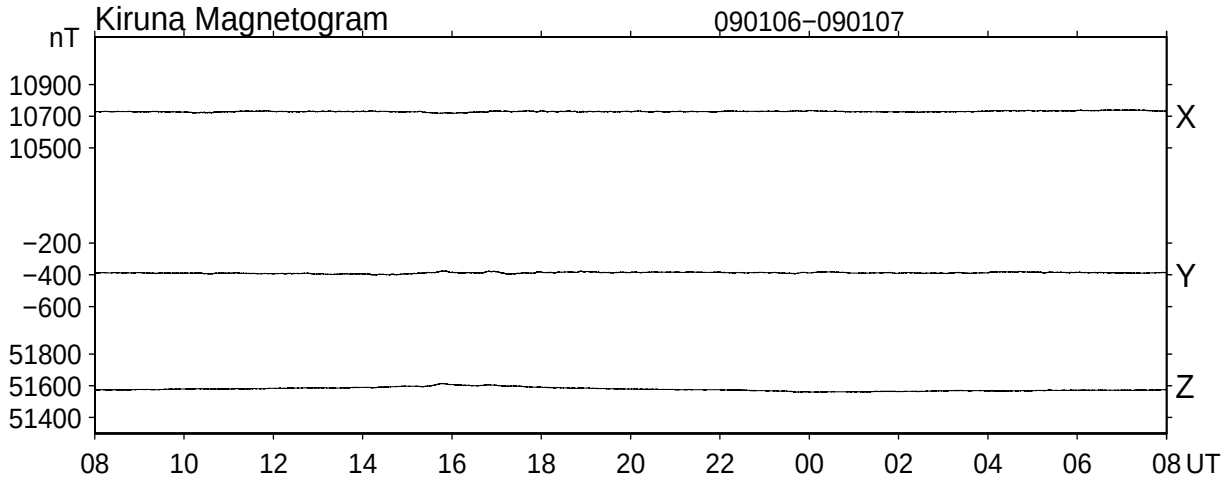

Kiruna Magnetogram
090101−090102
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

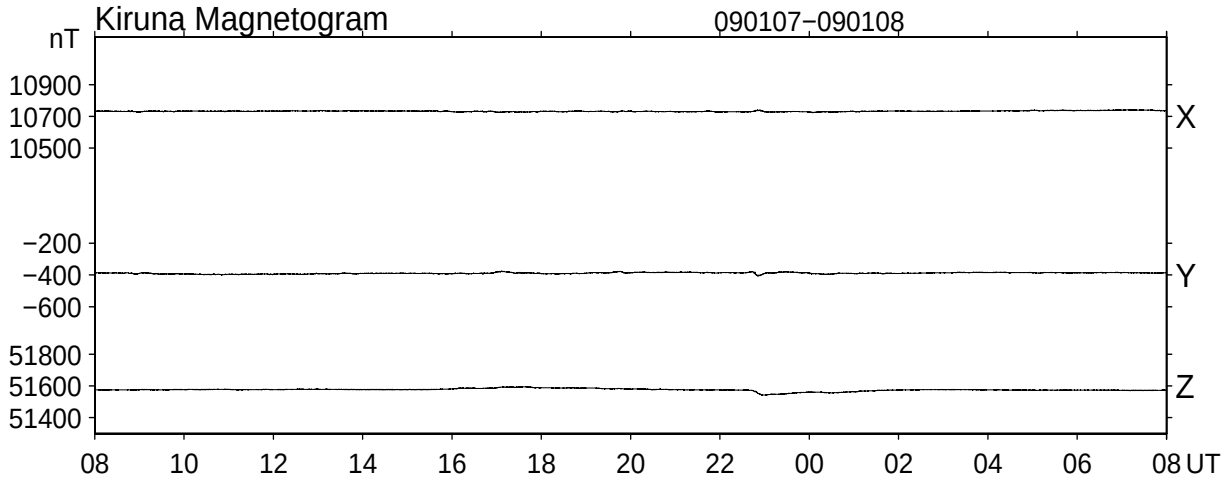

Kiruna Magnetogram
090102−090103
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

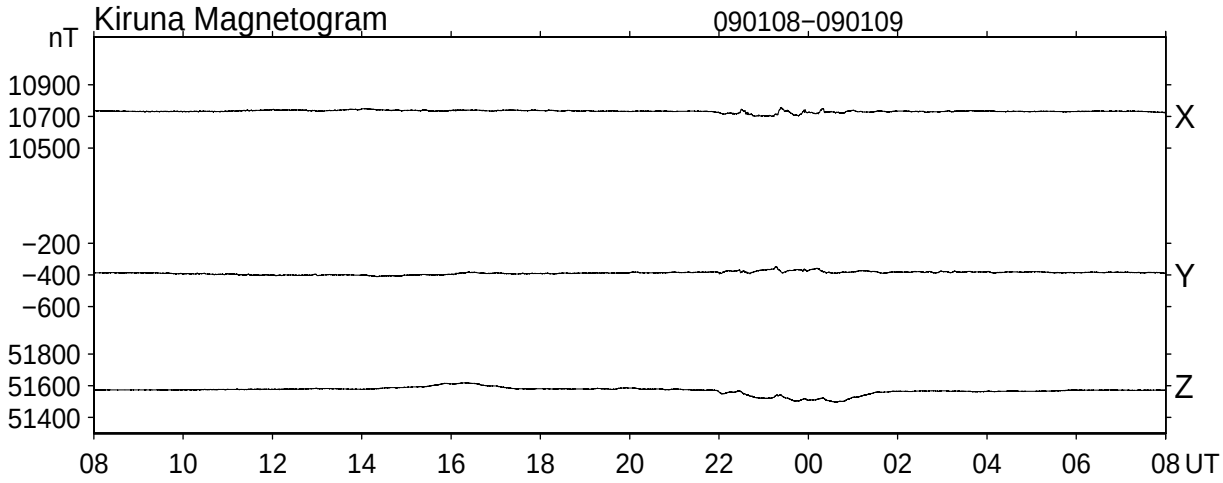

Kiruna Magnetogram
090103−090104
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

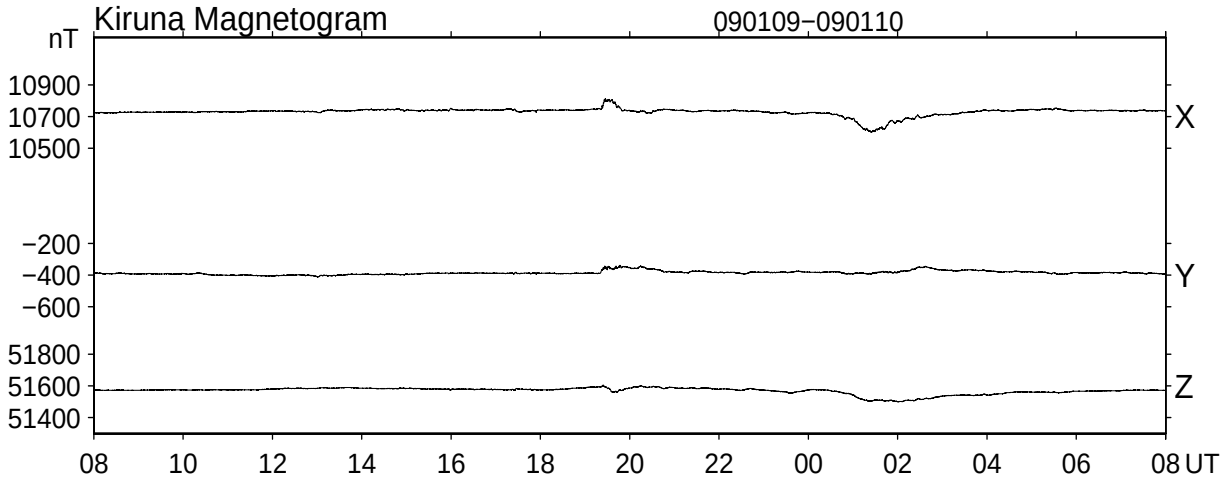

Kiruna Magnetogram
090104−090105
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

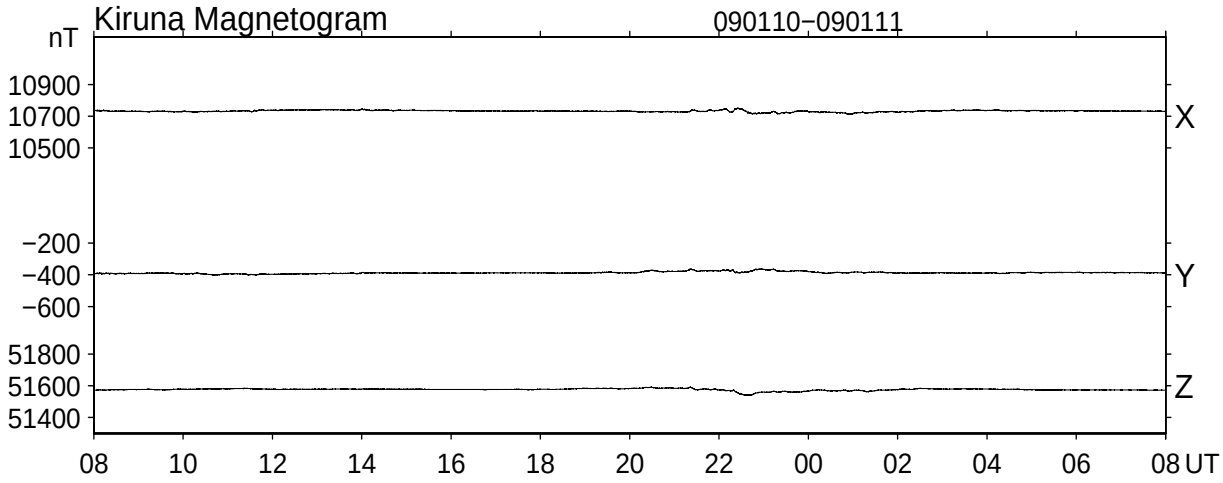

Kiruna Magnetogram
090105−090106
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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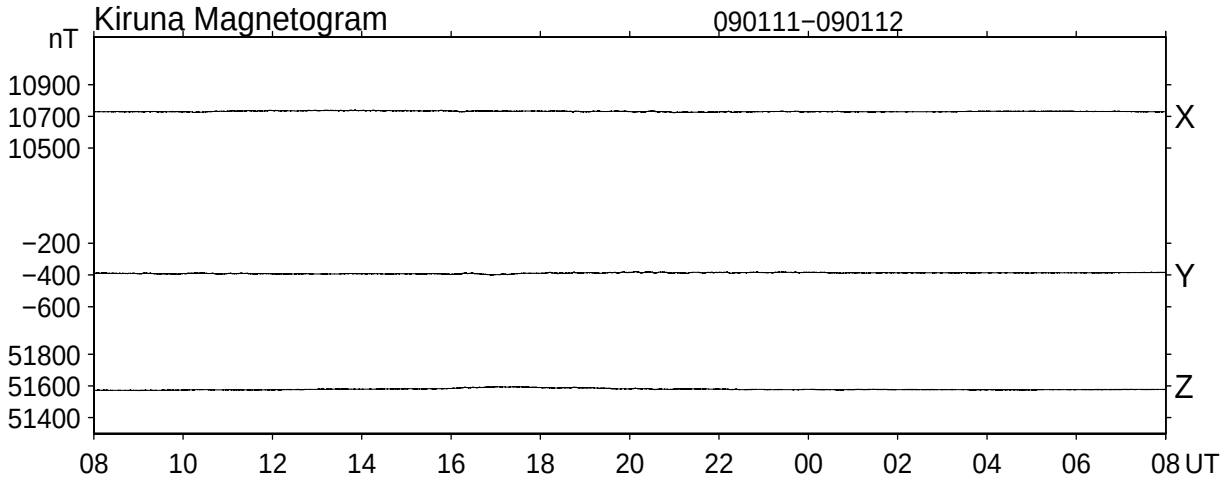

Kiruna Magnetogram
090106−090107
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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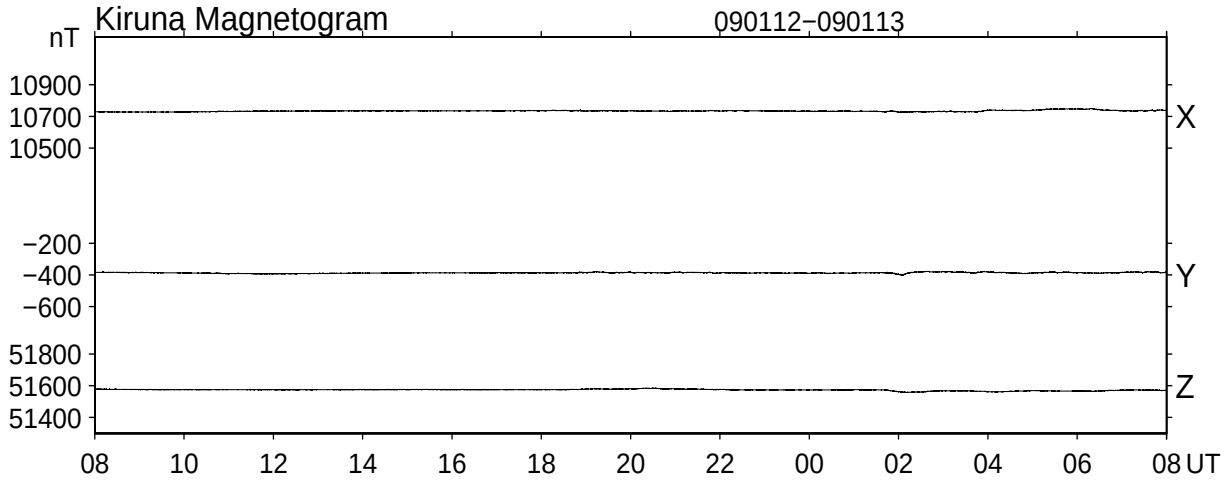

Kiruna Magnetogram
090107−090108
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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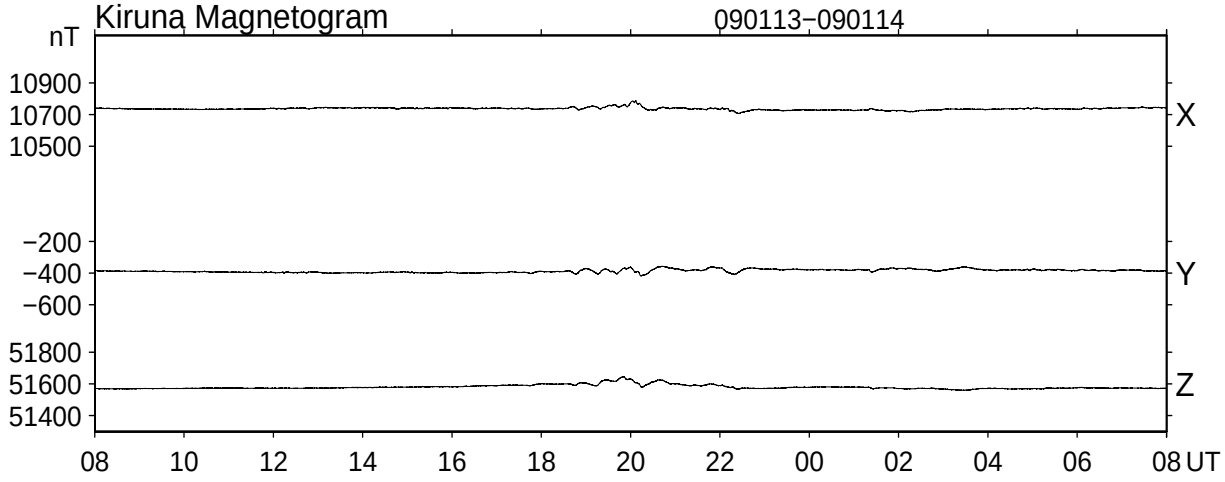

Kiruna Magnetogram
090108−090109
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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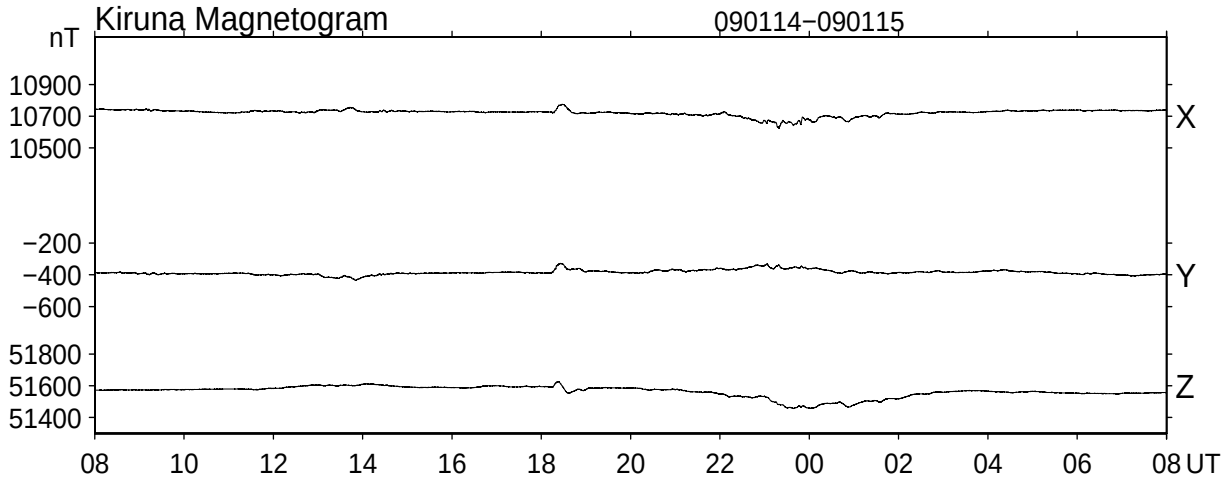

Kiruna Magnetogram
090109−090110
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

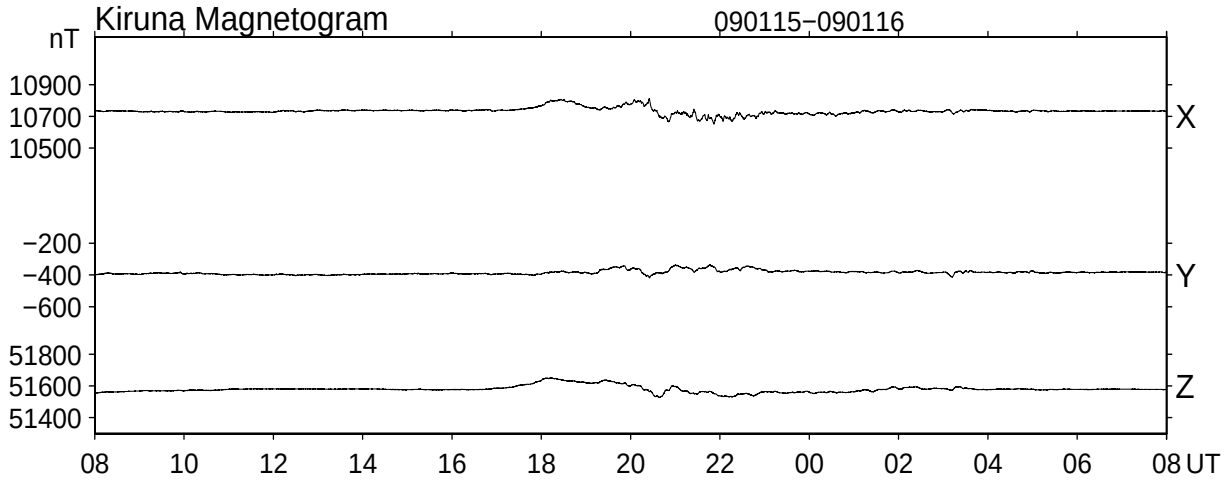

Kiruna Magnetogram
090110−090111
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

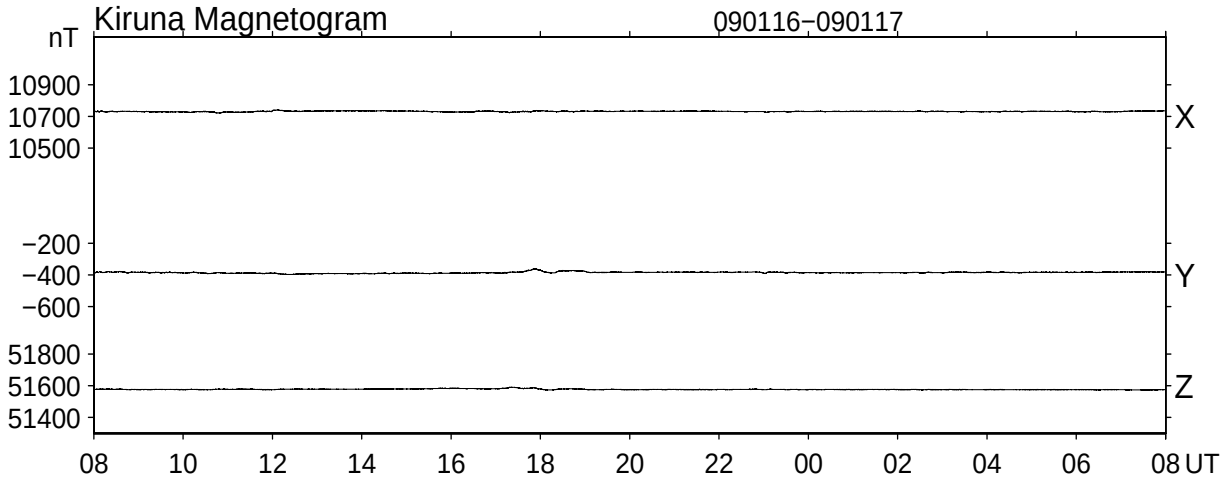

Kiruna Magnetogram
090111−090112
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

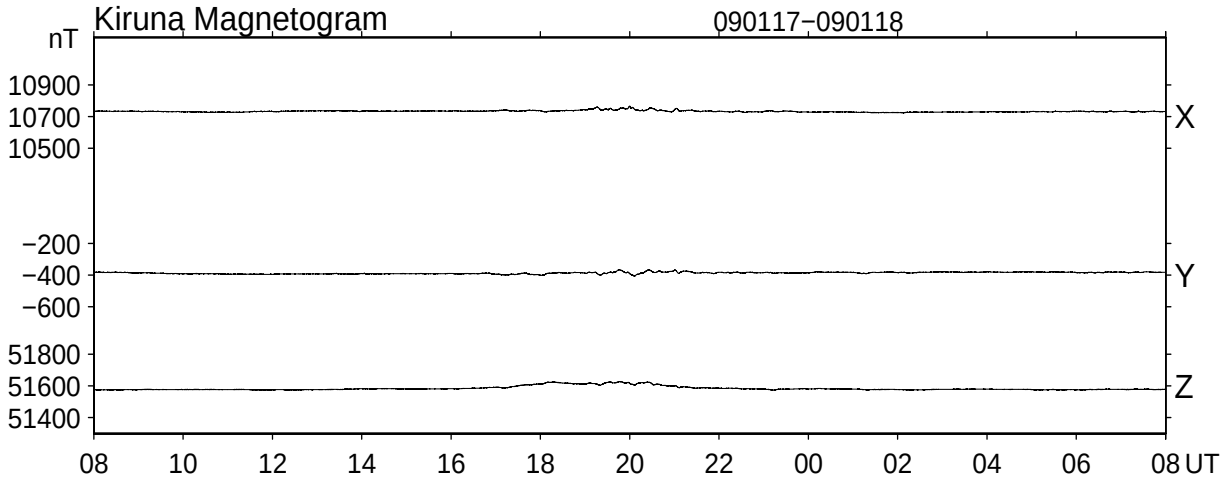

Kiruna Magnetogram
090112−090113
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

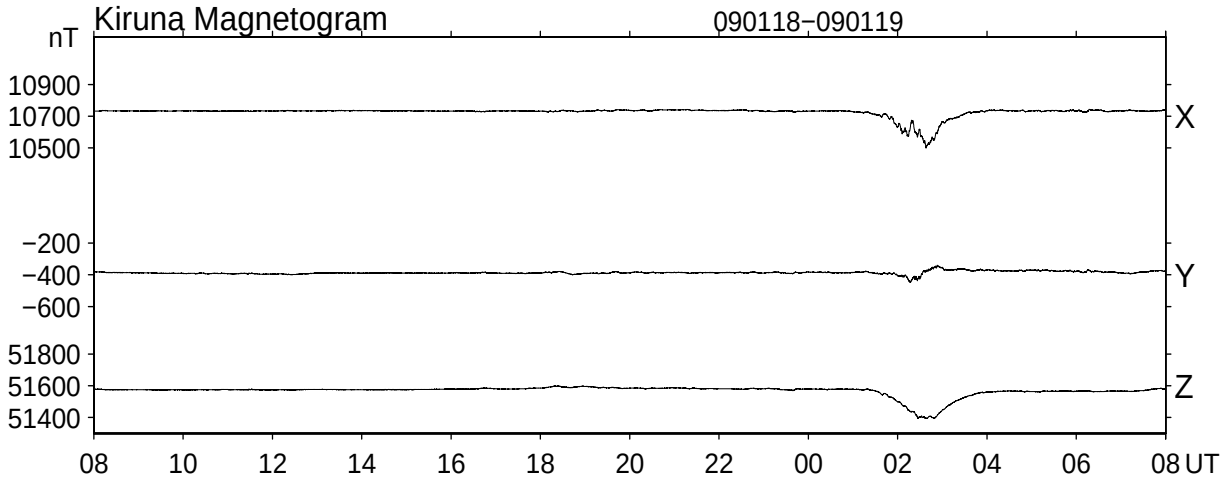

Kiruna Magnetogram
090113−090114
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

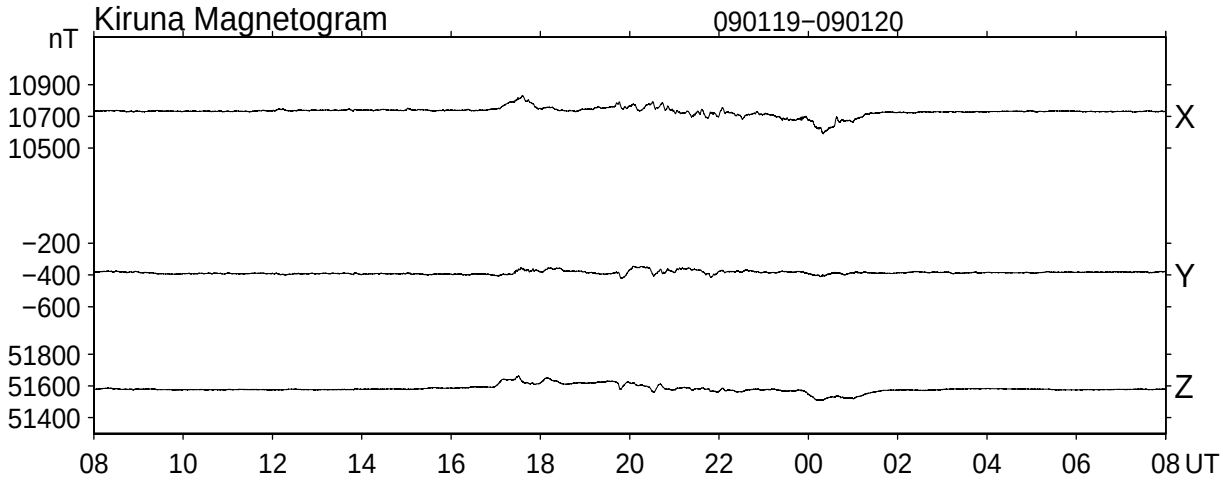

Kiruna Magnetogram
090114−090115
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

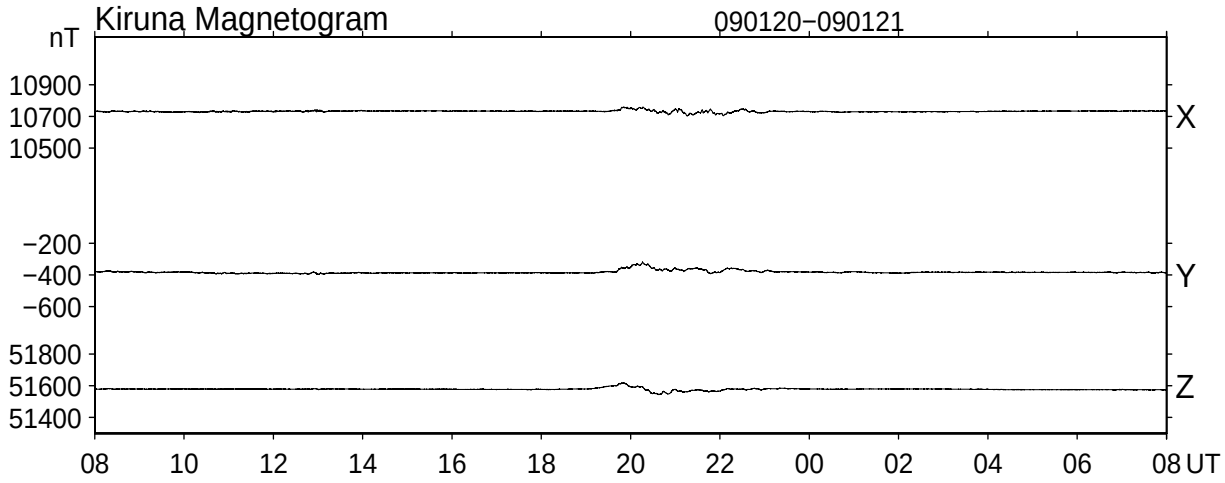

Kiruna Magnetogram
090115−090116
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

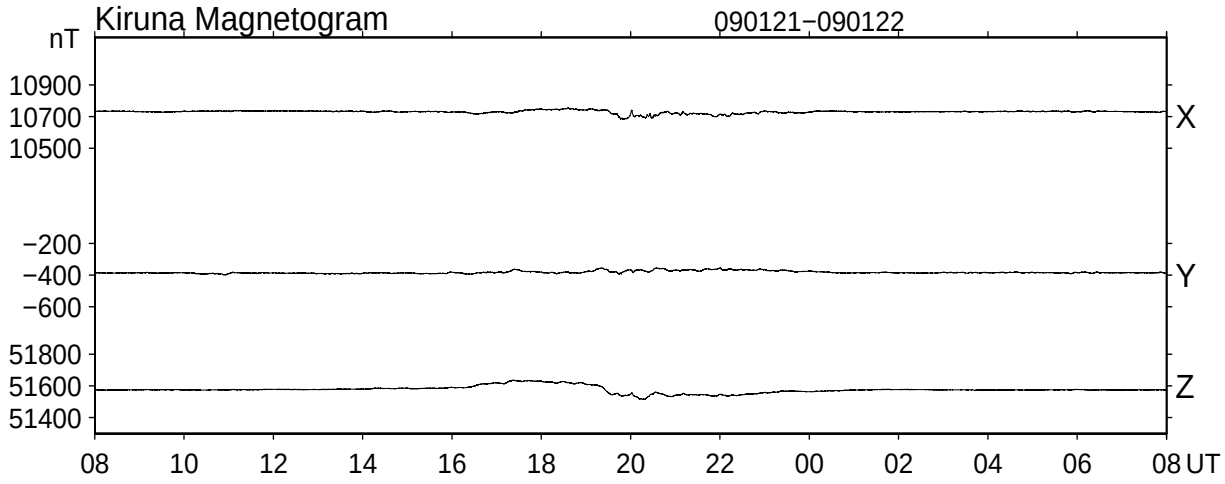

Kiruna Magnetogram
090116−090117
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

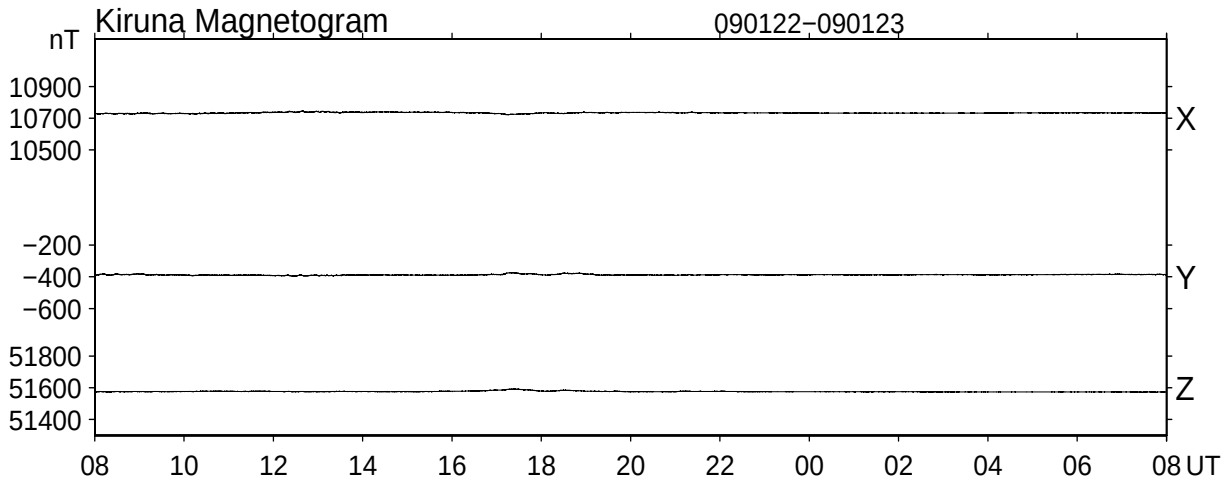

Kiruna Magnetogram
090117−090118
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

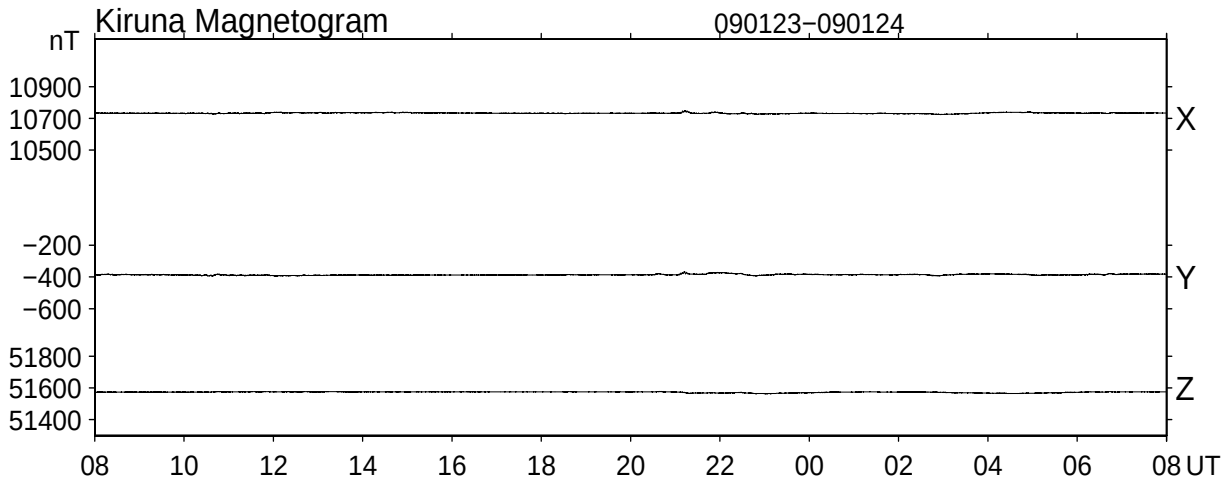

Kiruna Magnetogram
090118−090119
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

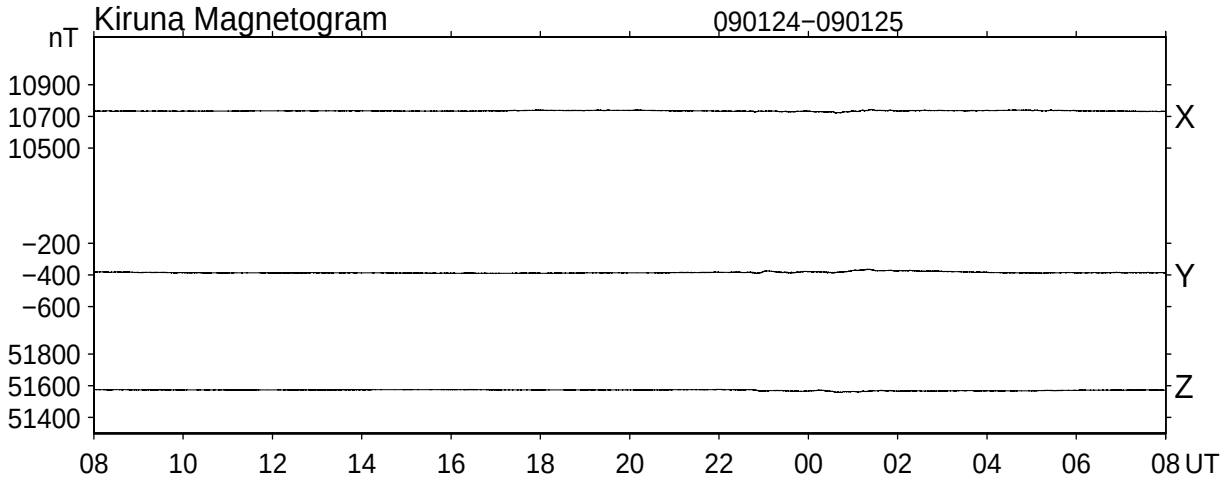

Kiruna Magnetogram
090119−090120
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

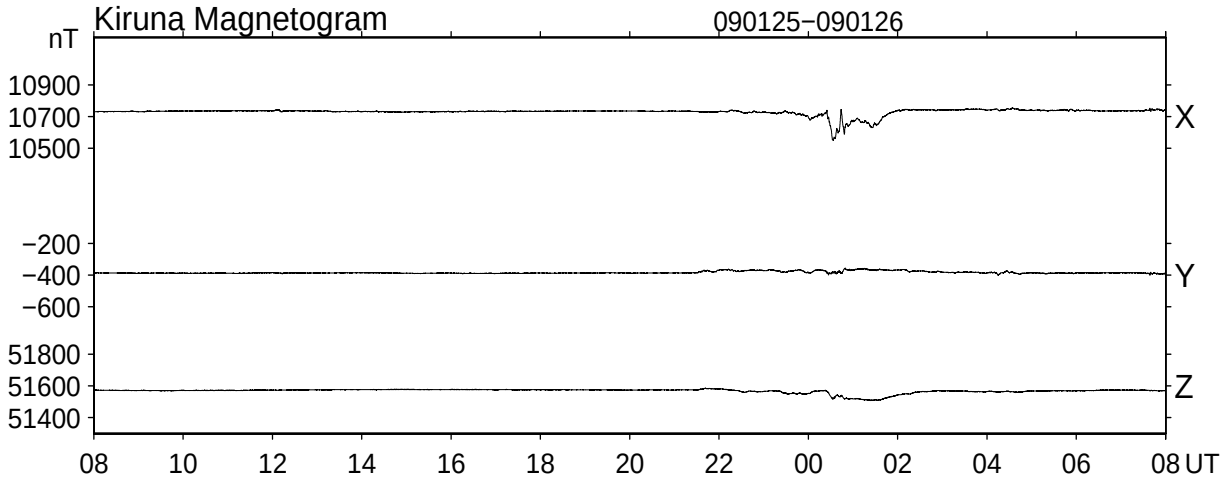

Kiruna Magnetogram
090120−090121
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

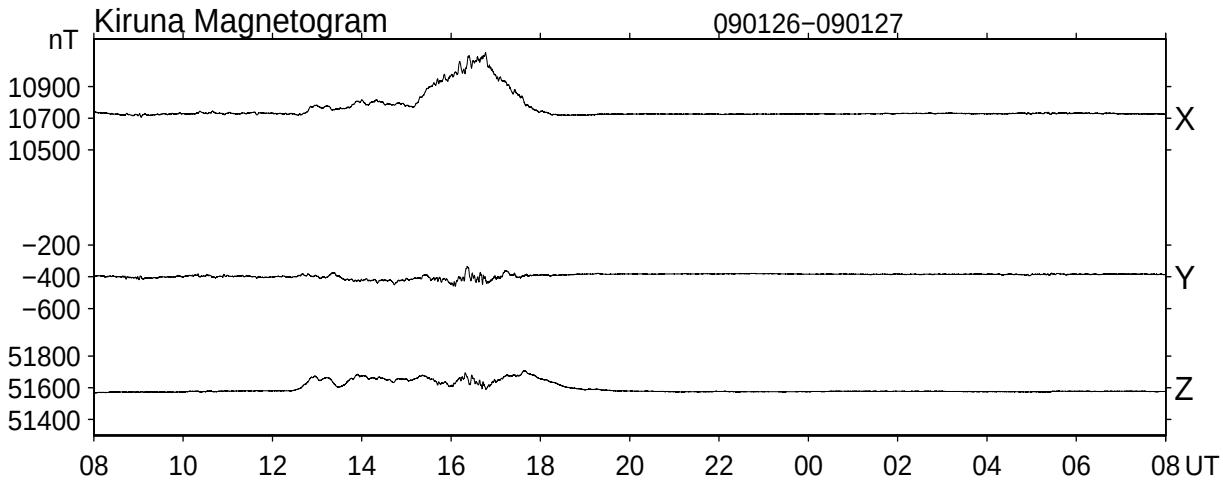

Kiruna Magnetogram
090121−090122
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

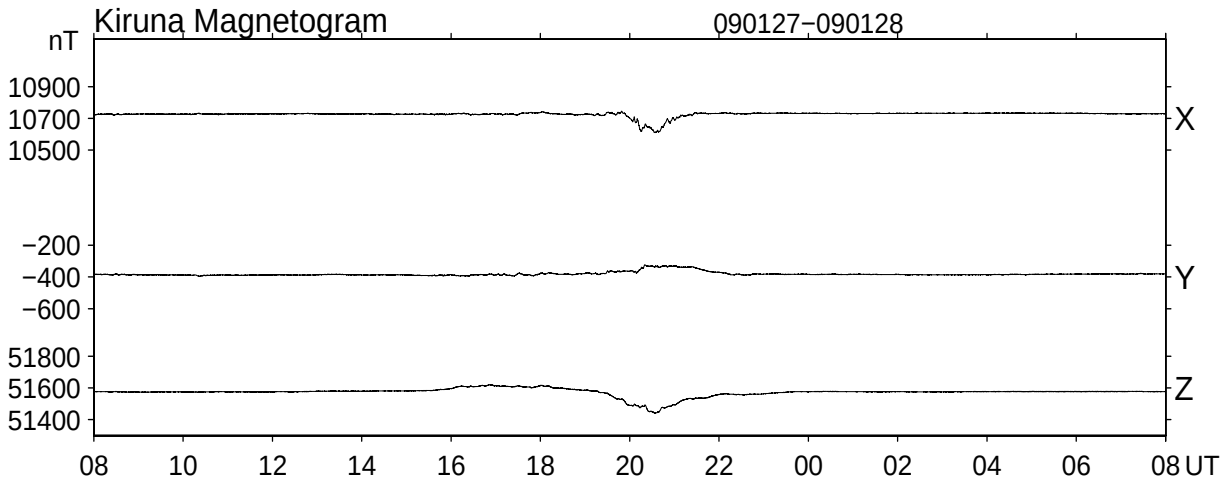

Kiruna Magnetogram
090122−090123
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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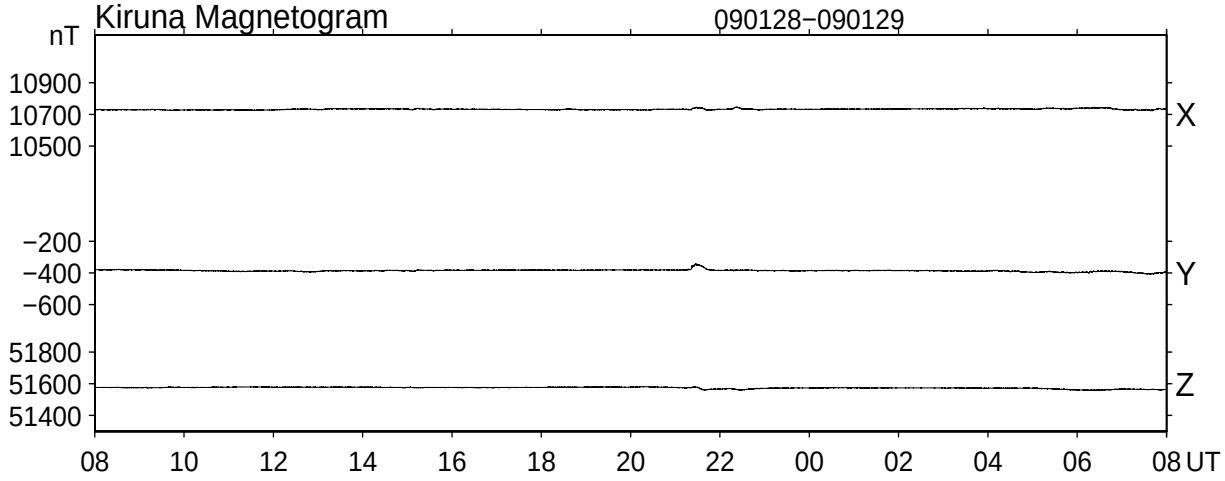

Kiruna Magnetogram
090123−090124
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

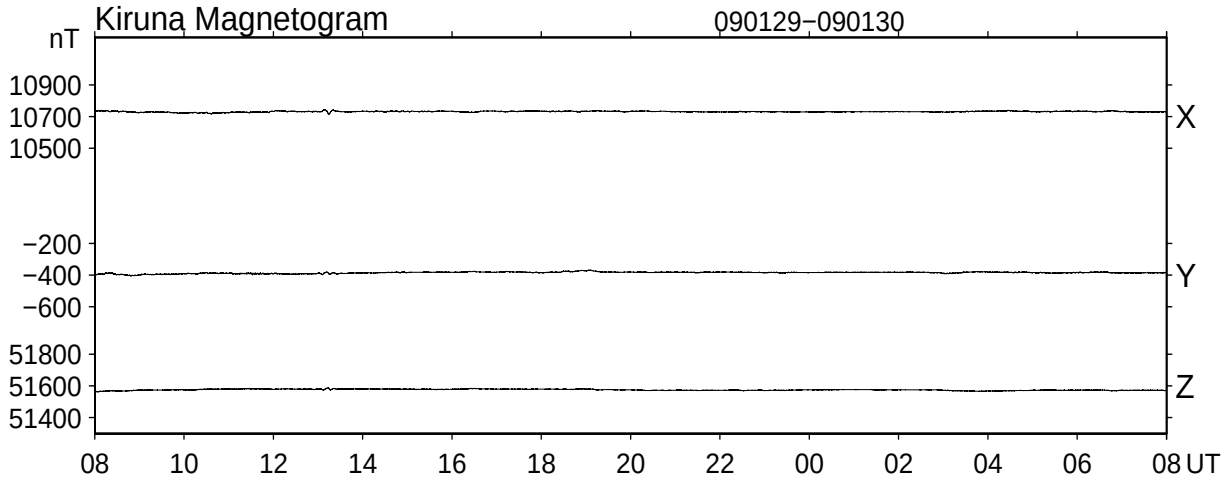

Kiruna Magnetogram
090124−090125
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

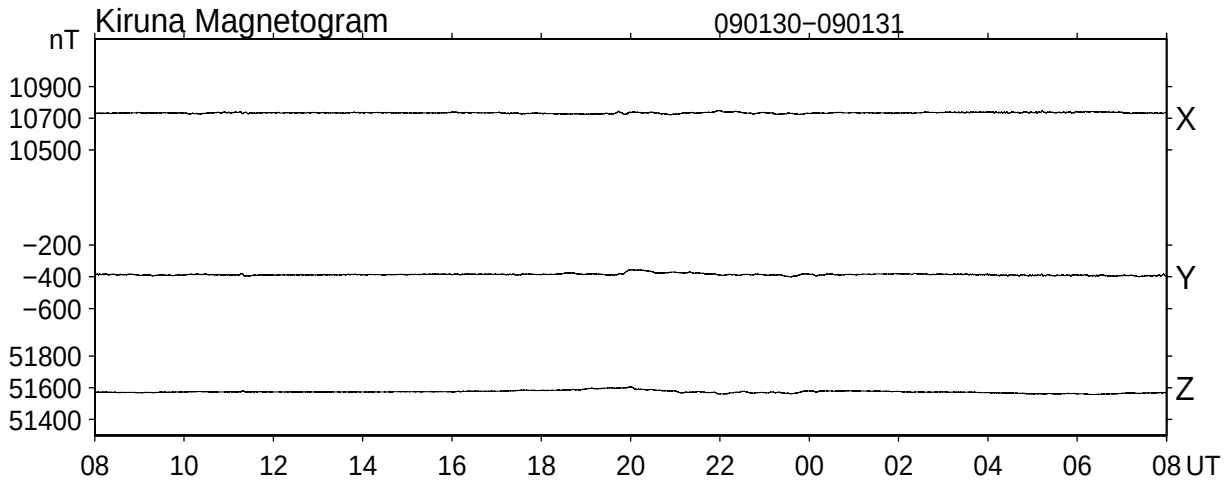

Kiruna Magnetogram
090125−090126
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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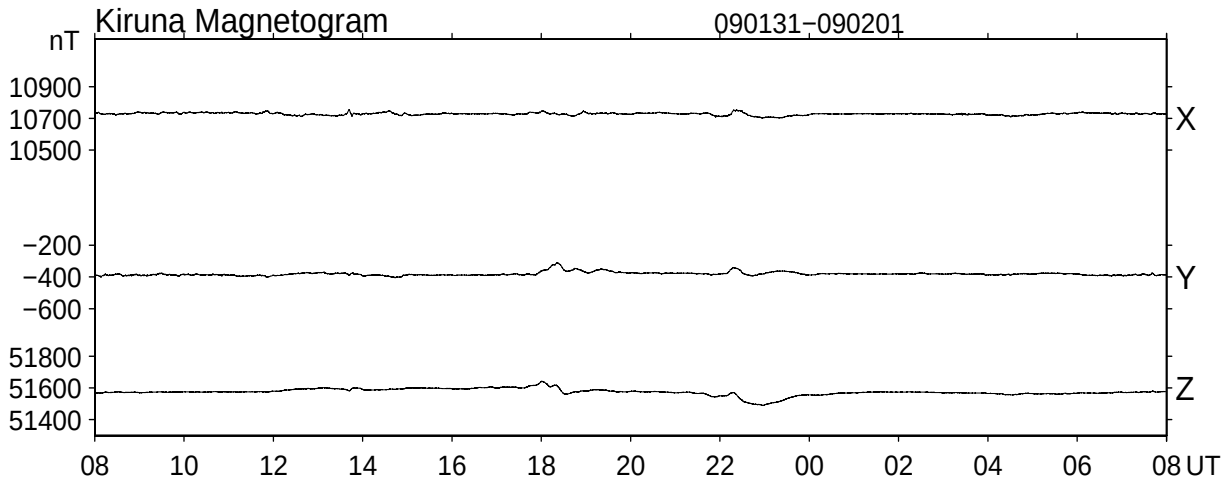

Kiruna Magnetogram
090126−090127
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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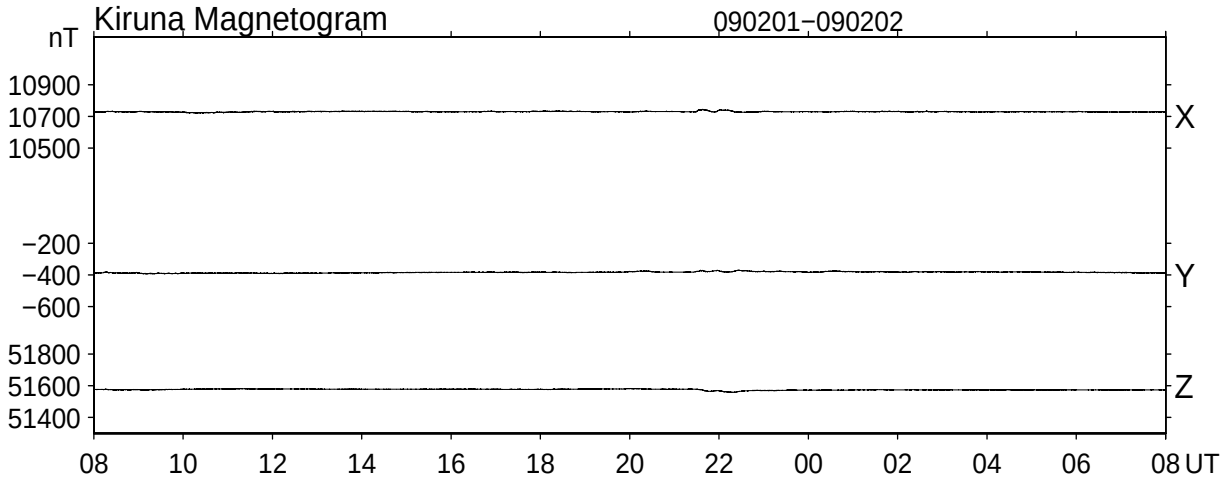

Kiruna Magnetogram
090127−090128
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
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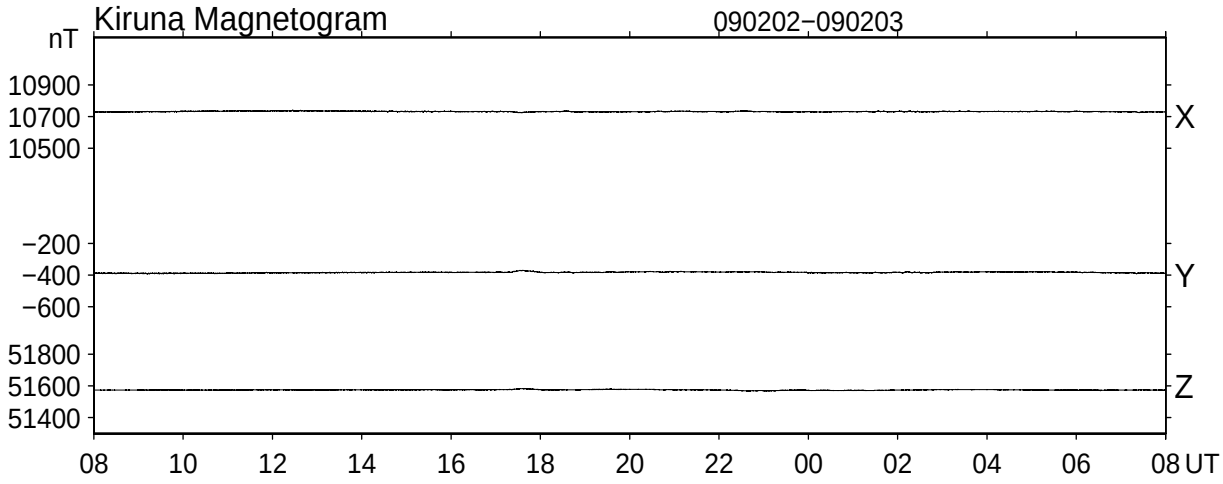

Kiruna Magnetogram
090128–090129
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
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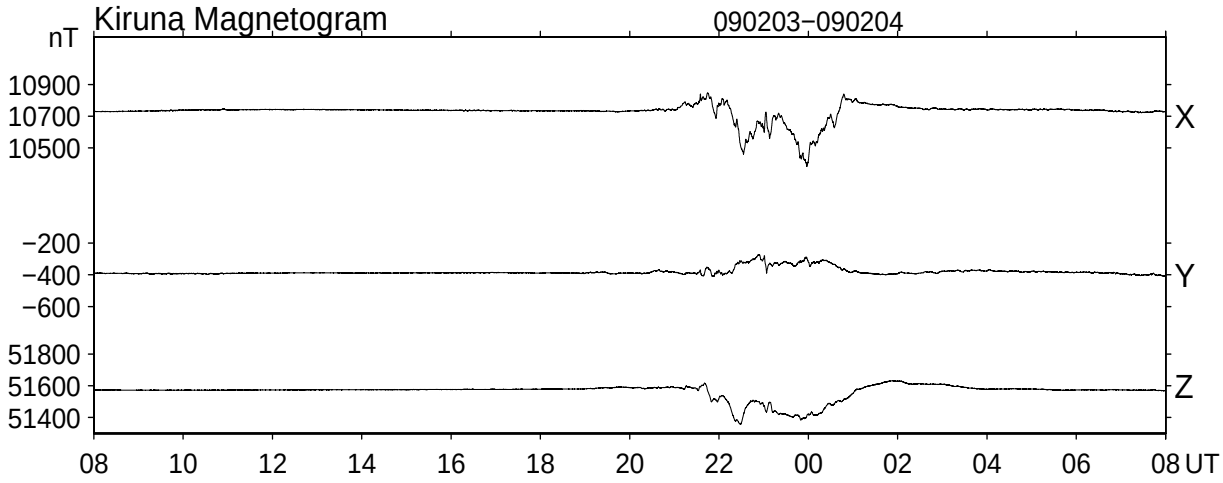

Kiruna Magnetogram
090129–090130
nT
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10700
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−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

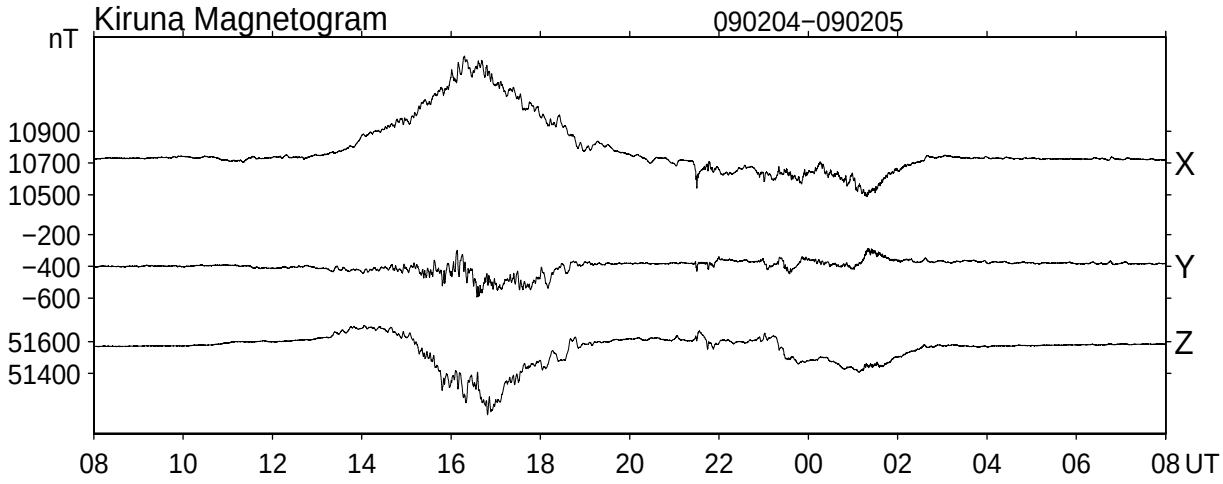

Kiruna Magnetogram
090130–090131
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

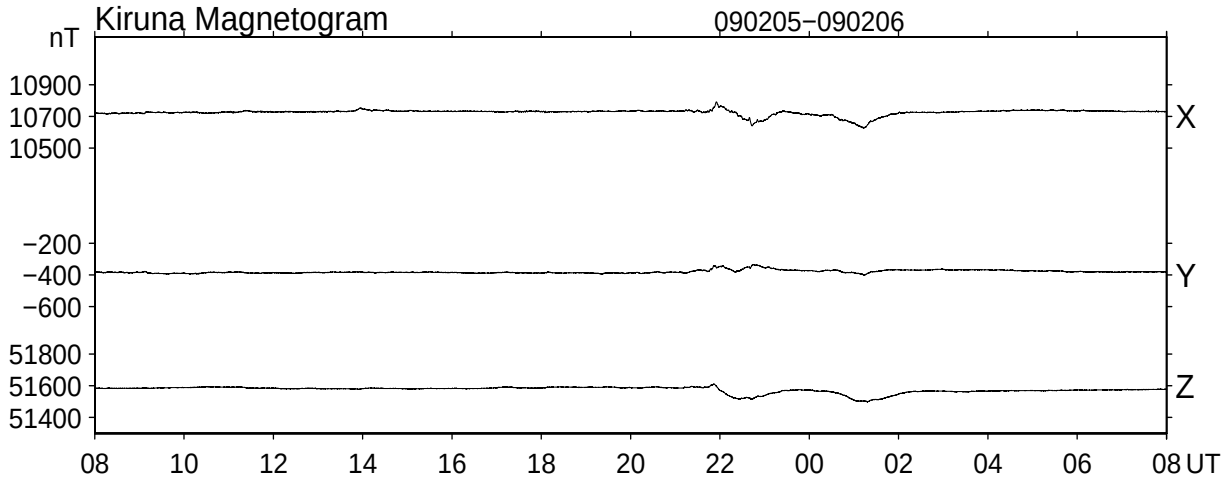

Kiruna Magnetogram
090131–090201
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

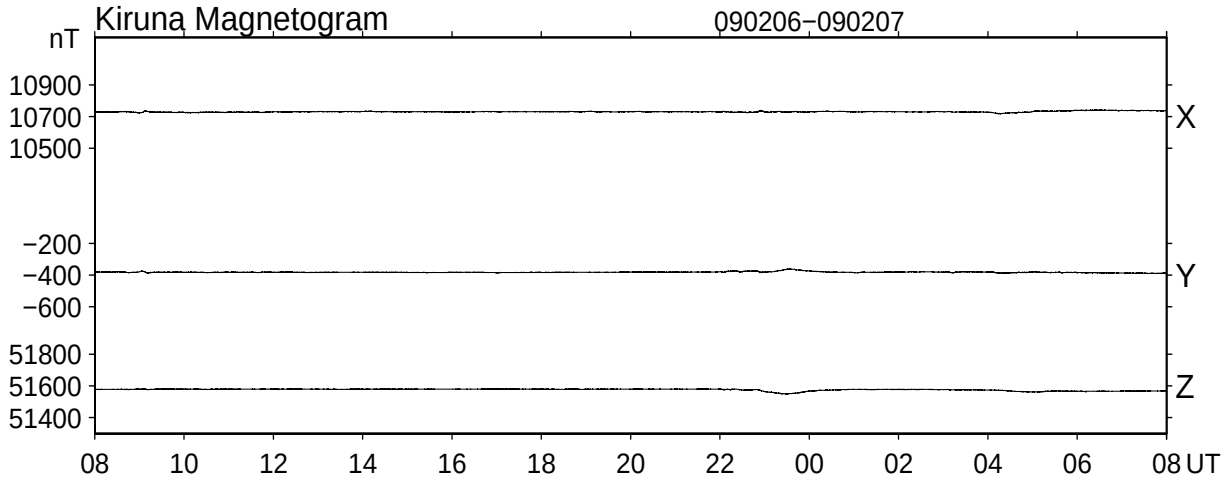

Kiruna Magnetogram
090201−090202
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

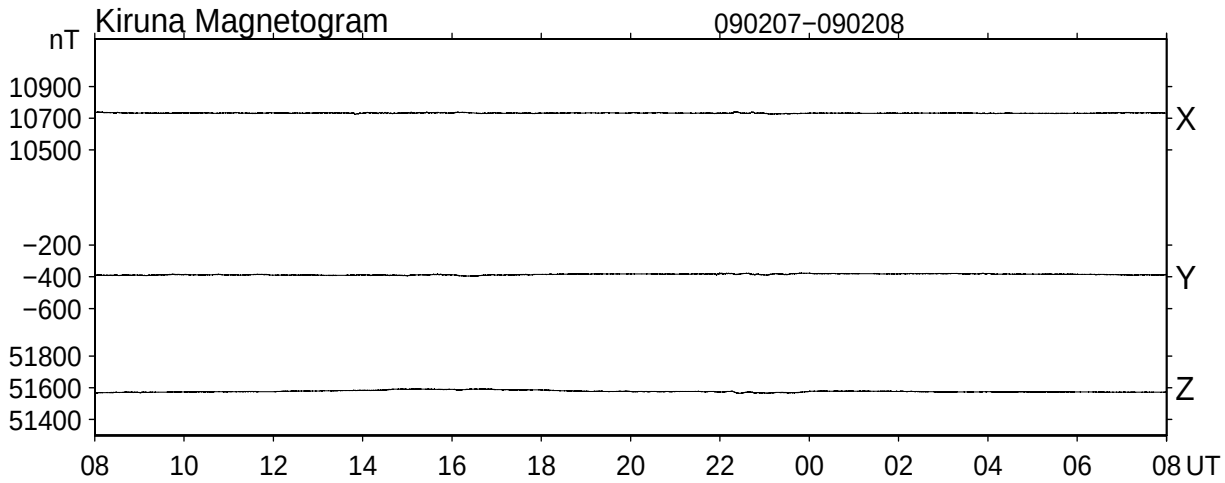

Kiruna Magnetogram
090202−090203
nT
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10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

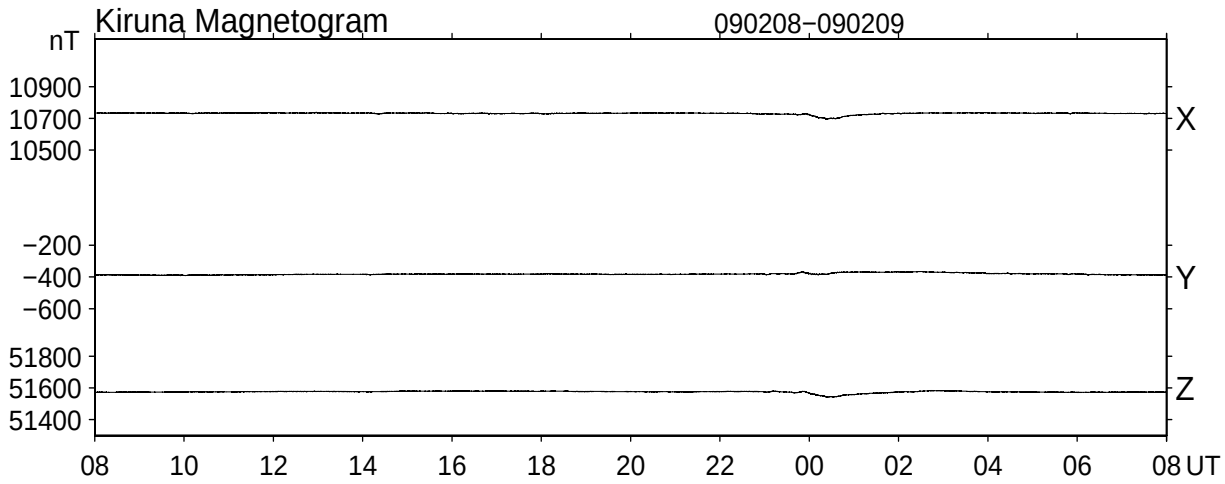

Kiruna Magnetogram
090203−090204
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

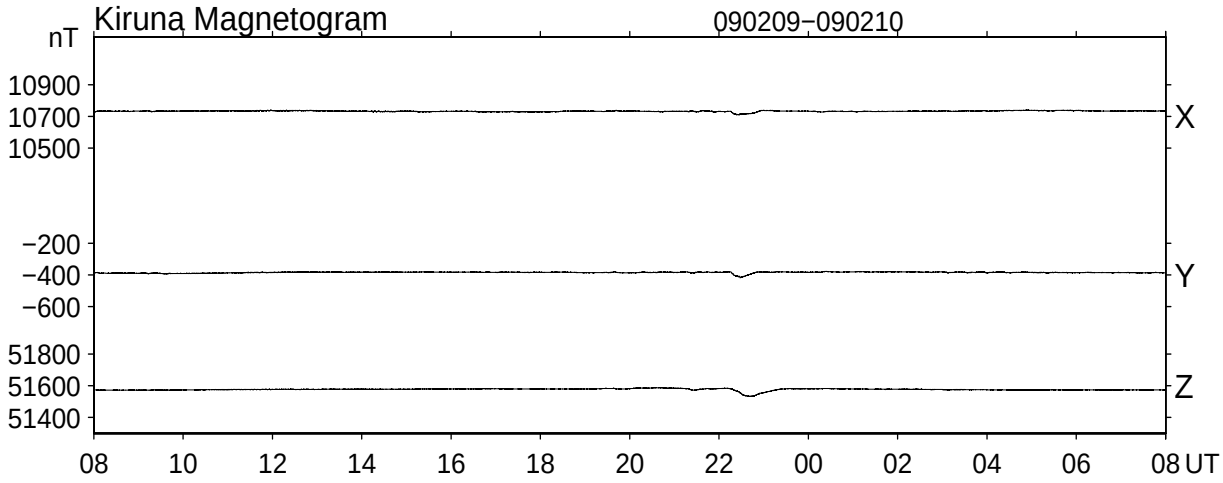

Kiruna Magnetogram
090204−090205
nT
10900
10700
10500
−200
−400
−600
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

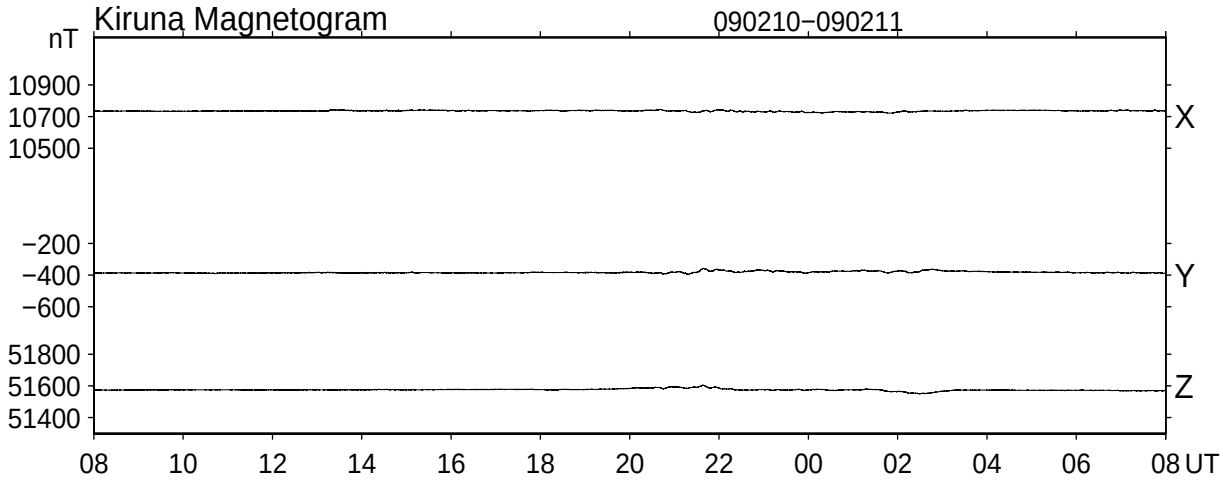

Kiruna Magnetogram
090205−090206
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

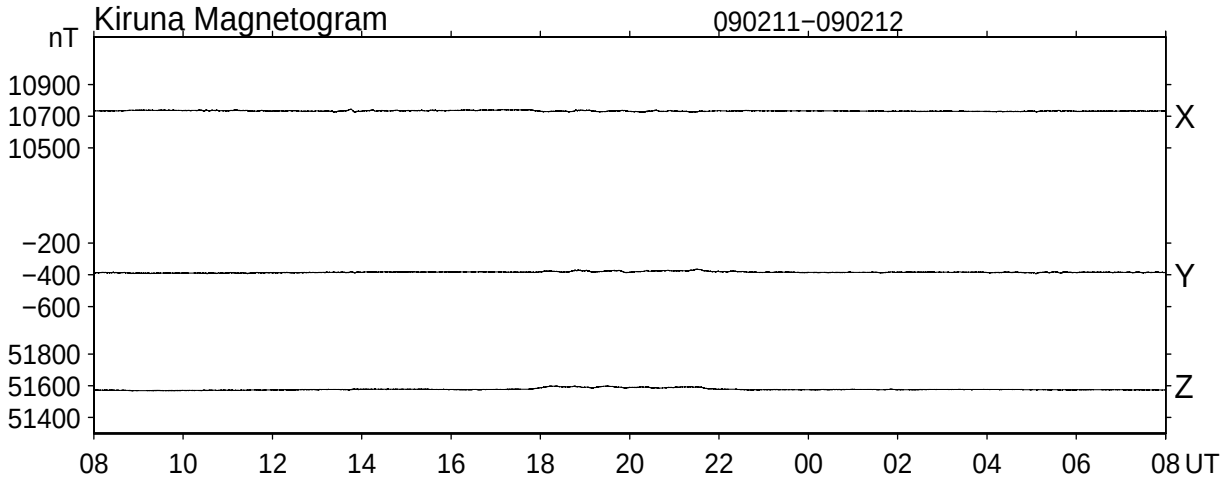

Kiruna Magnetogram
090206−090207
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

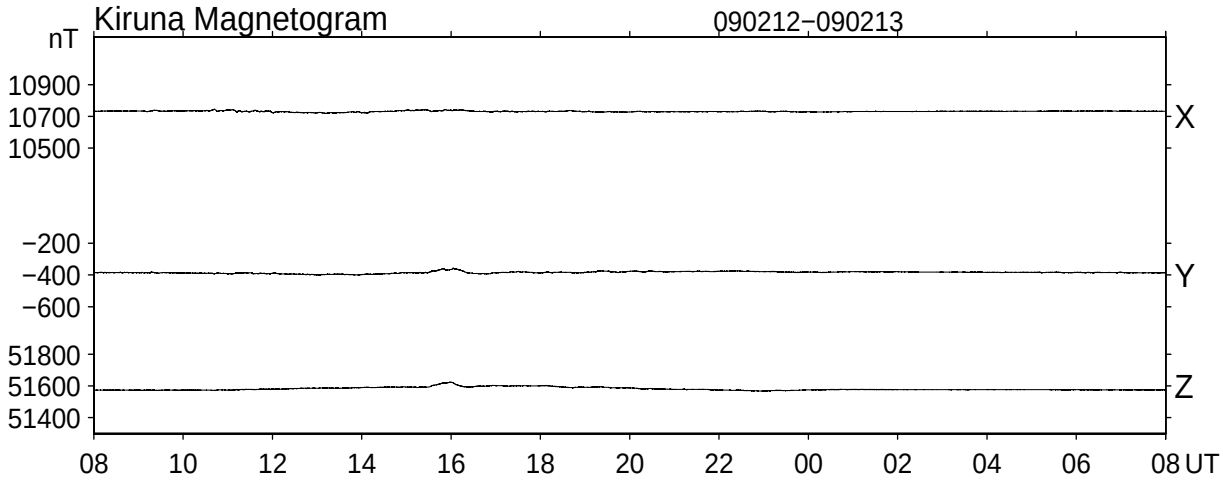

Kiruna Magnetogram
090207−090208
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

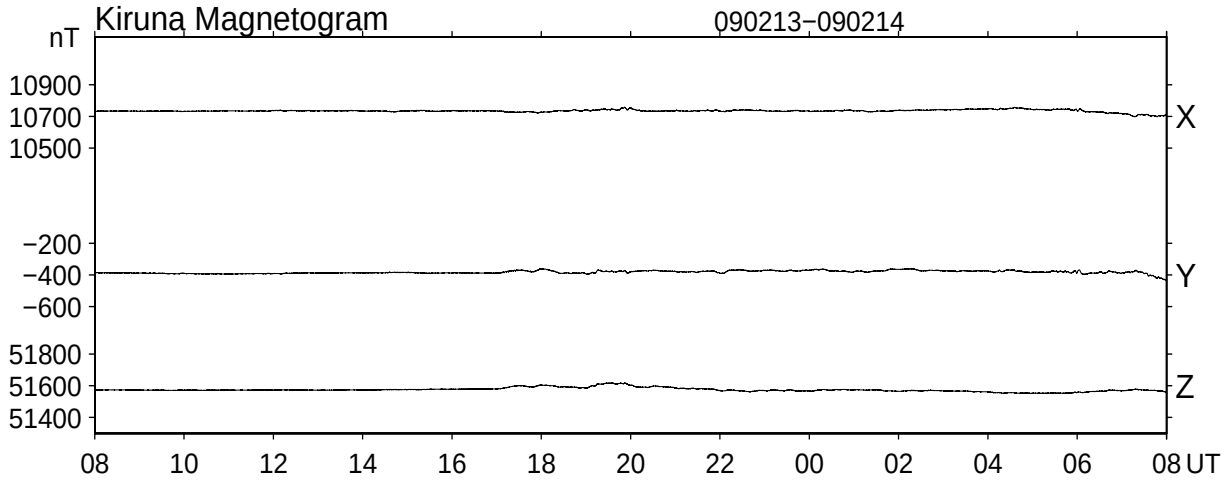

Kiruna Magnetogram
090208−090209
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

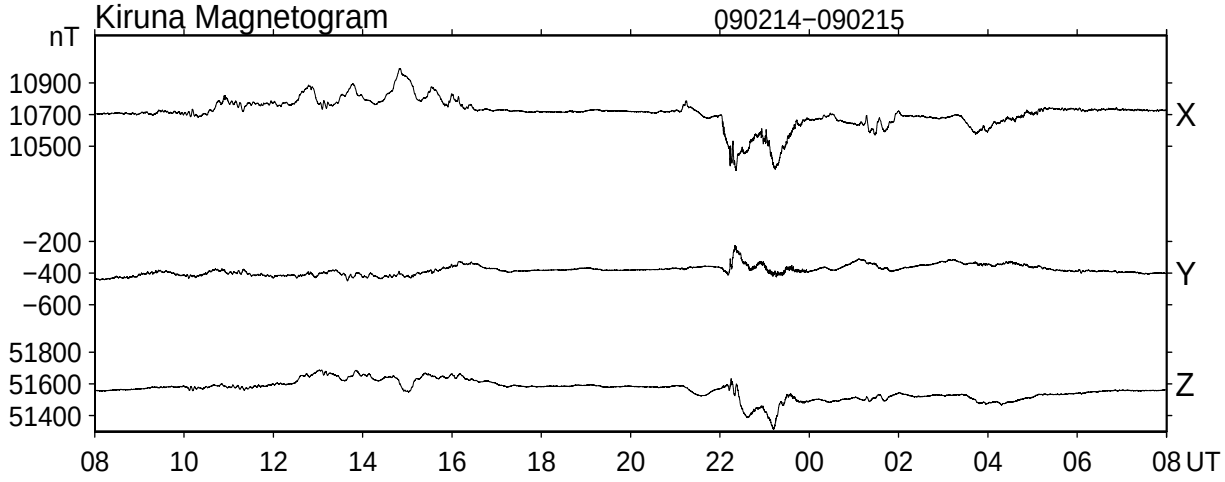

Kiruna Magnetogram
090209−090210
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

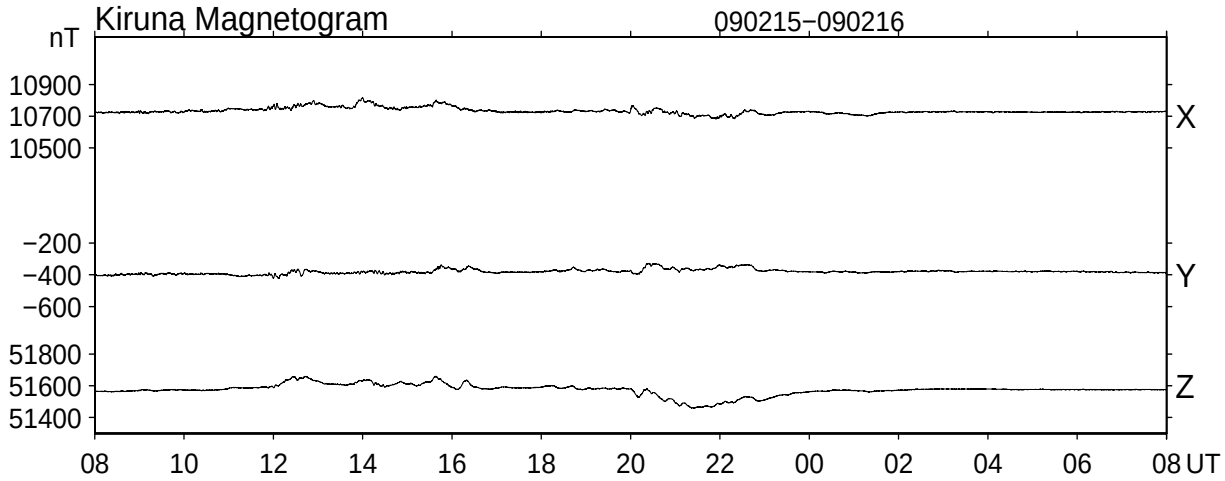

Kiruna Magnetogram
090210−090211
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

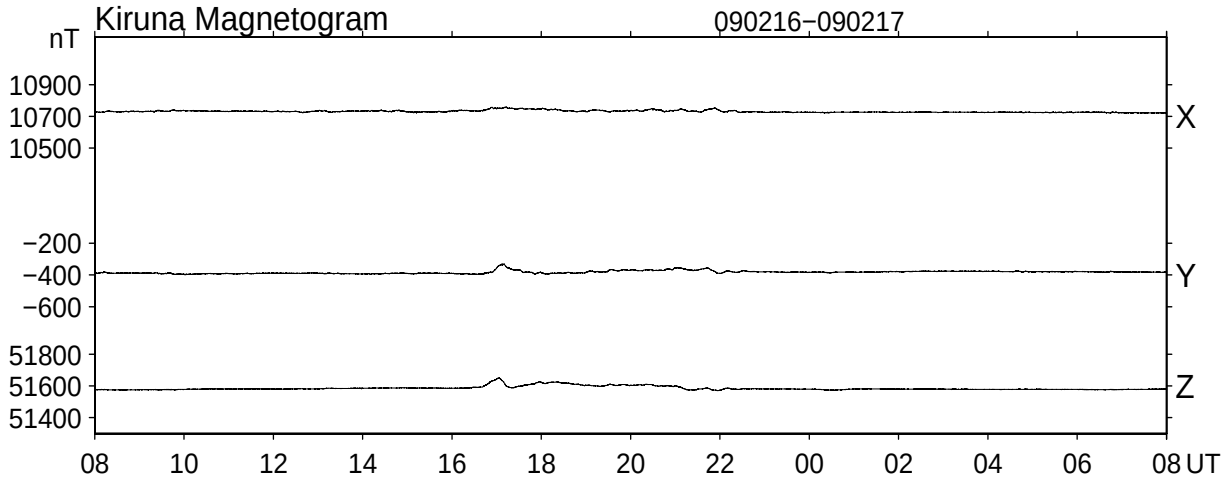

Kiruna Magnetogram
090211−090212
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

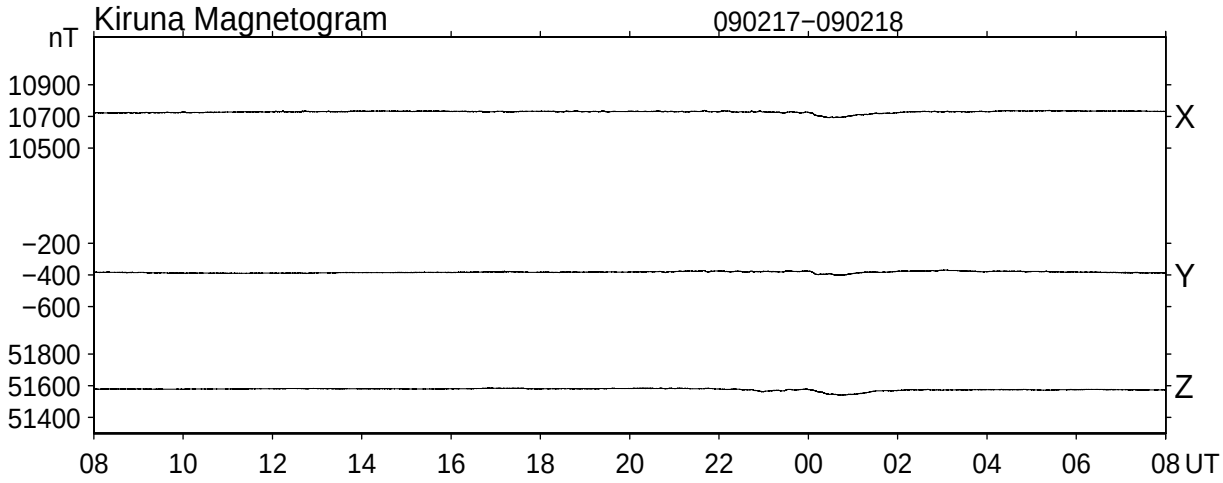

Kiruna Magnetogram
090212−090213
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

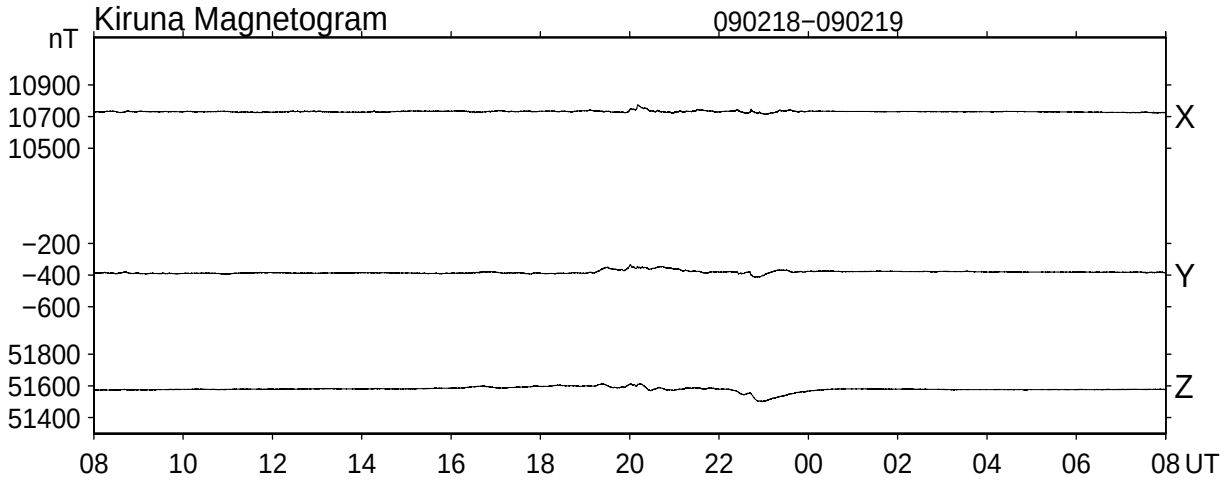

Kiruna Magnetogram
090213−090214
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

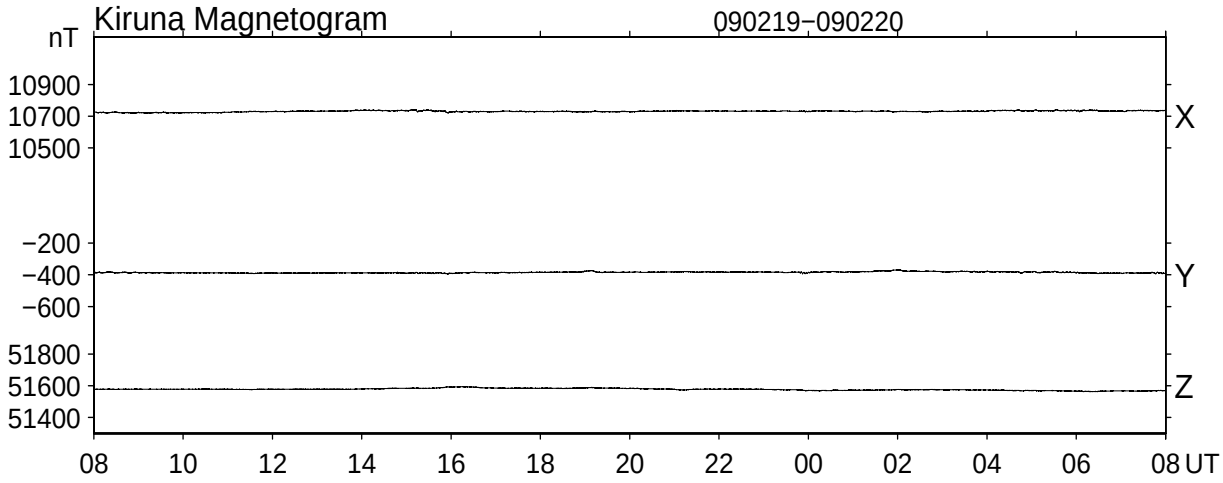

Kiruna Magnetogram
090214−090215
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

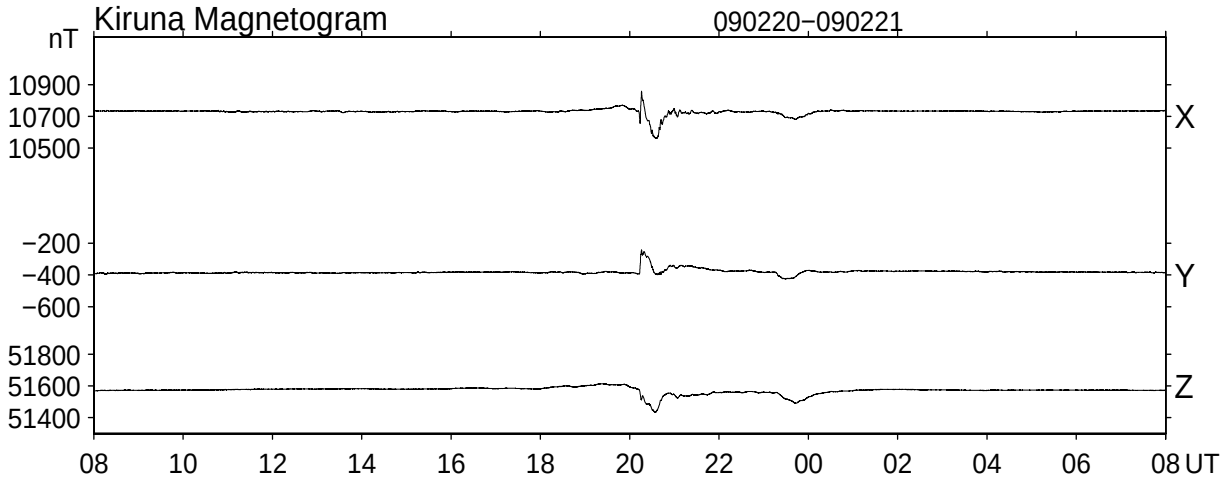

Kiruna Magnetogram
090215−090216
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

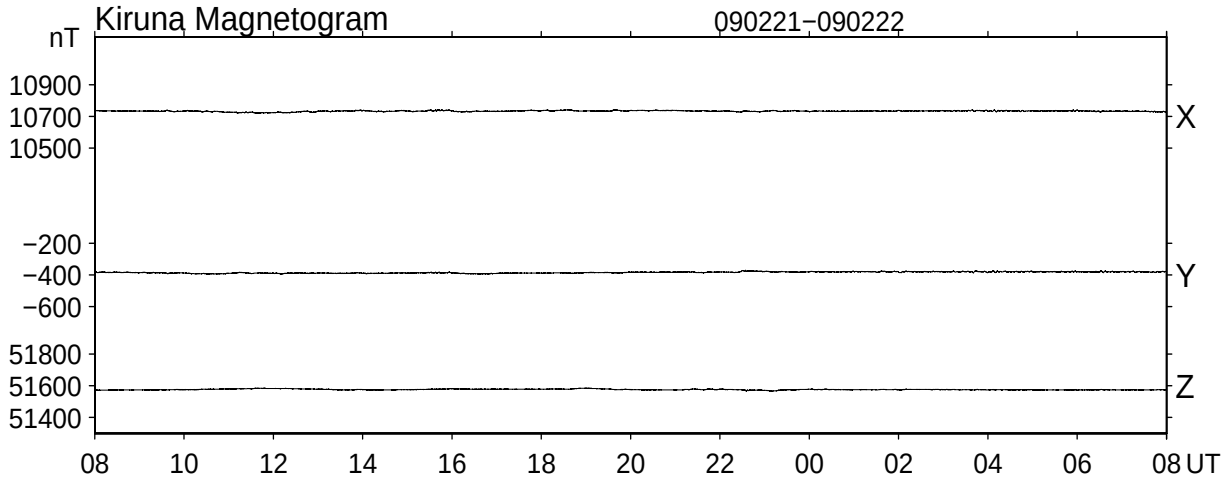

Kiruna Magnetogram
090216−090217
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

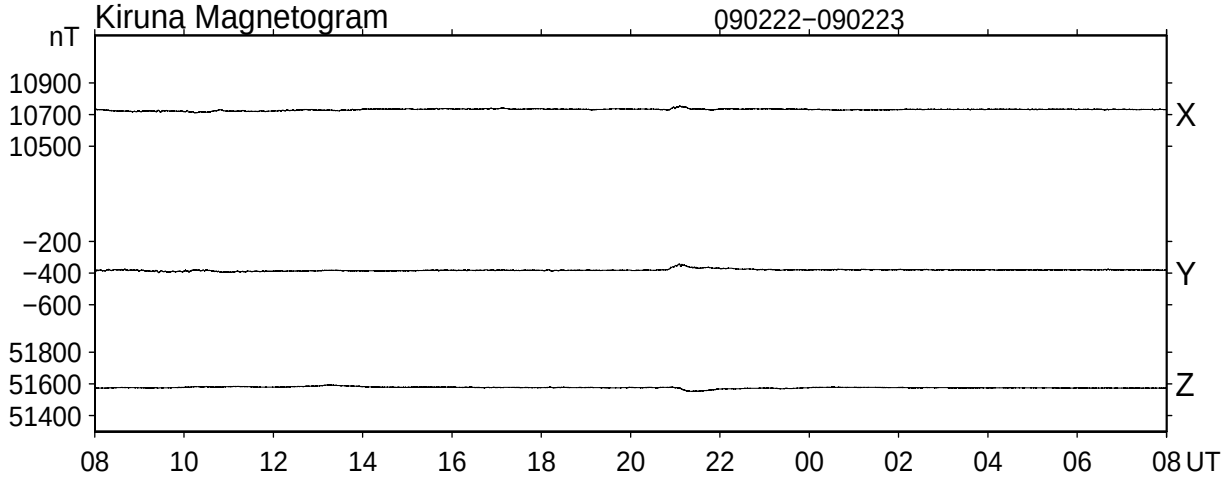

Kiruna Magnetogram
090217−090218
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

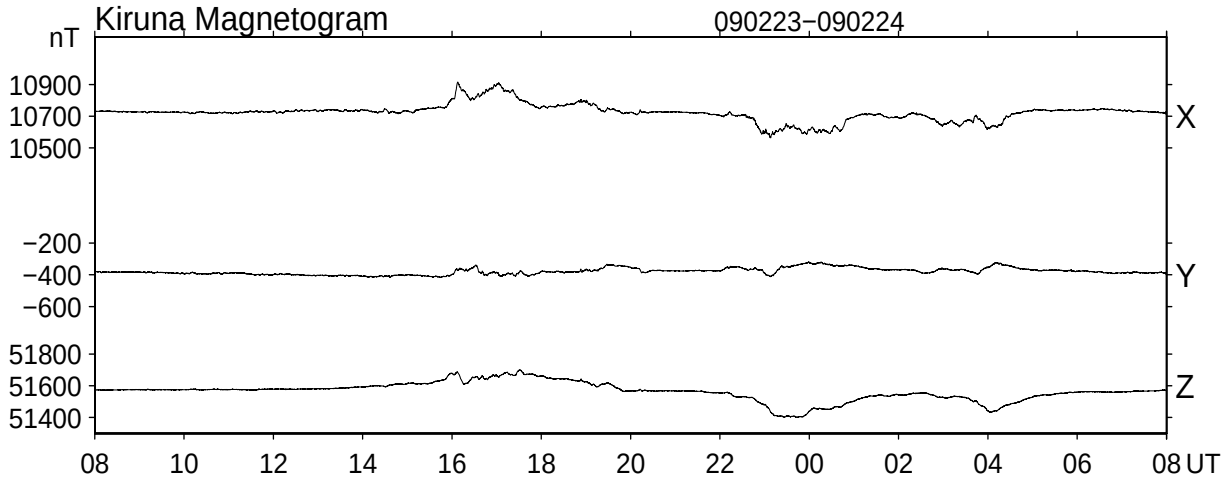

Kiruna Magnetogram
090218−090219
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

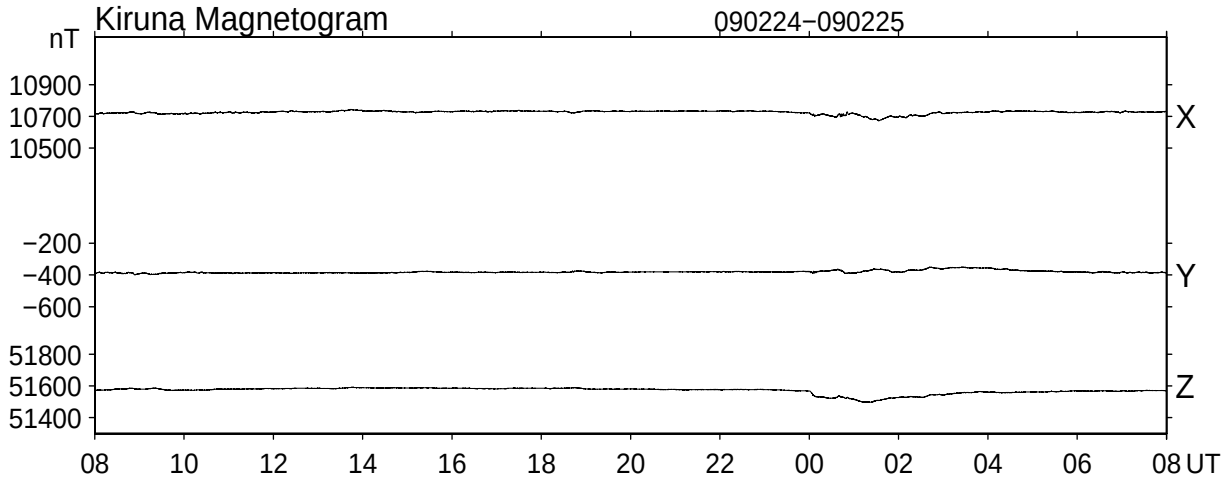

Kiruna Magnetogram
090219−090220
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

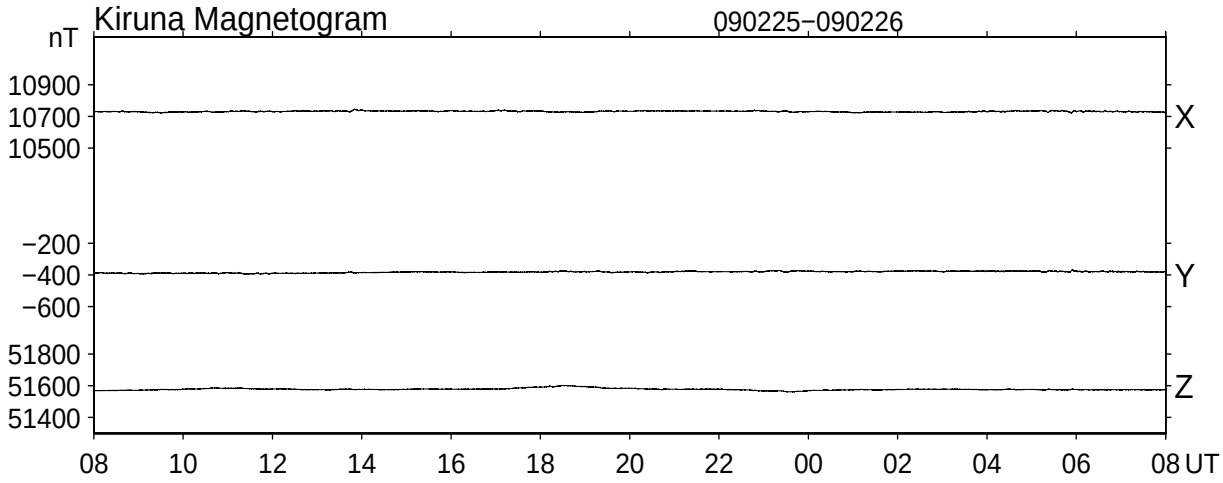

Kiruna Magnetogram
090220−090221
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

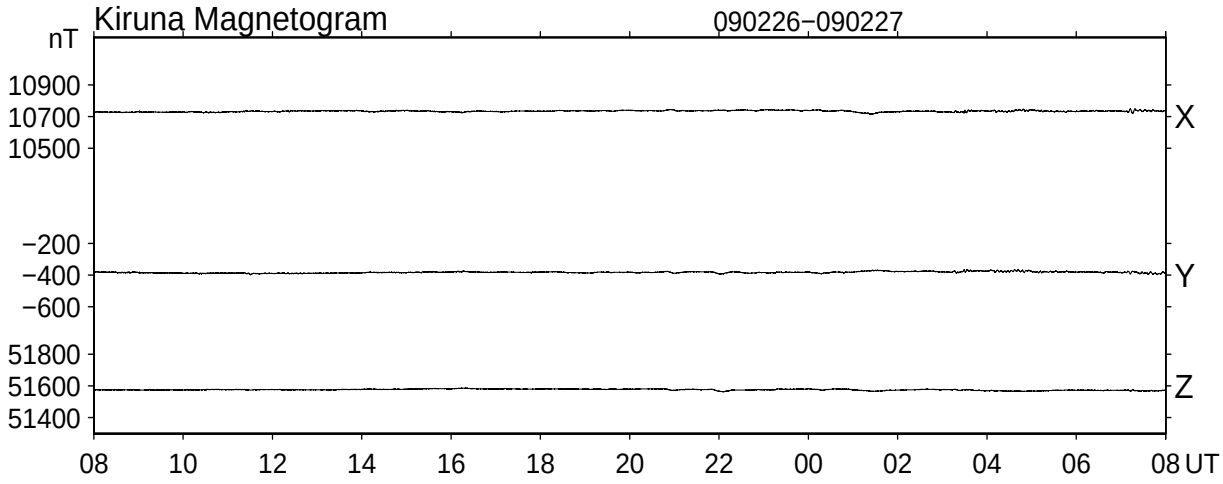

Kiruna Magnetogram
090221−090222
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

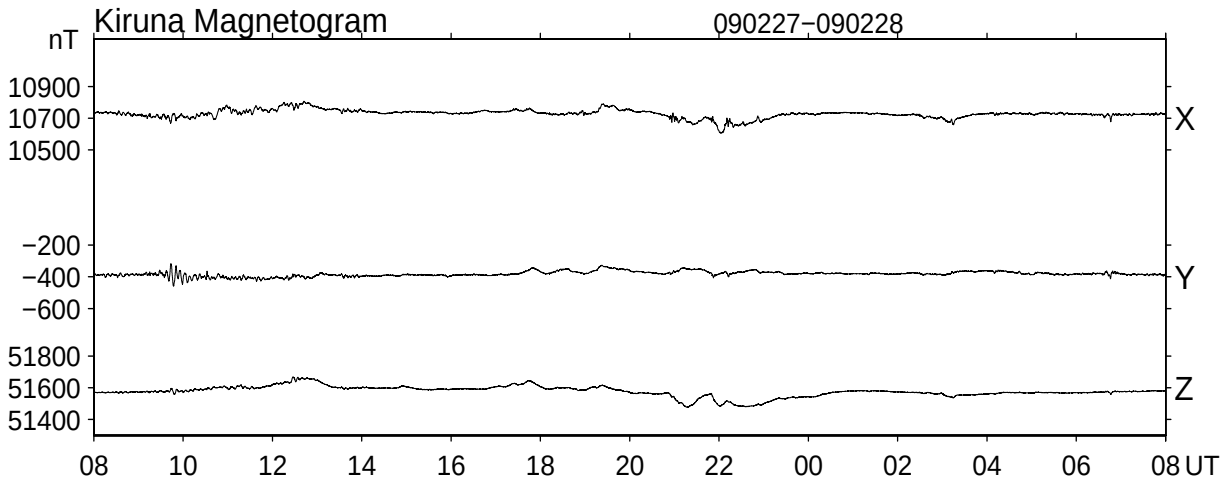

Kiruna Magnetogram
090222−090223
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

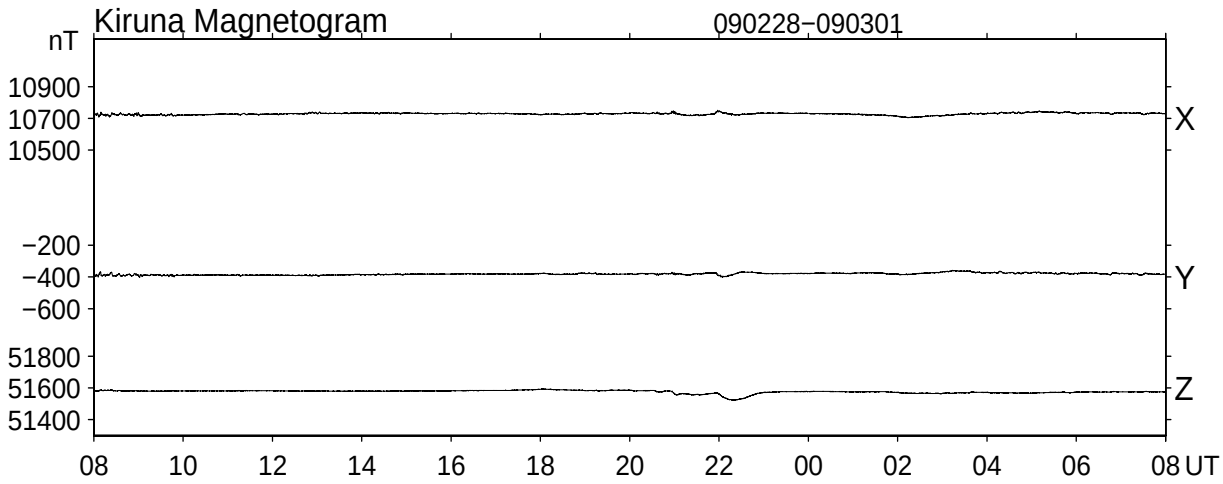

Kiruna Magnetogram
090223−090224
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

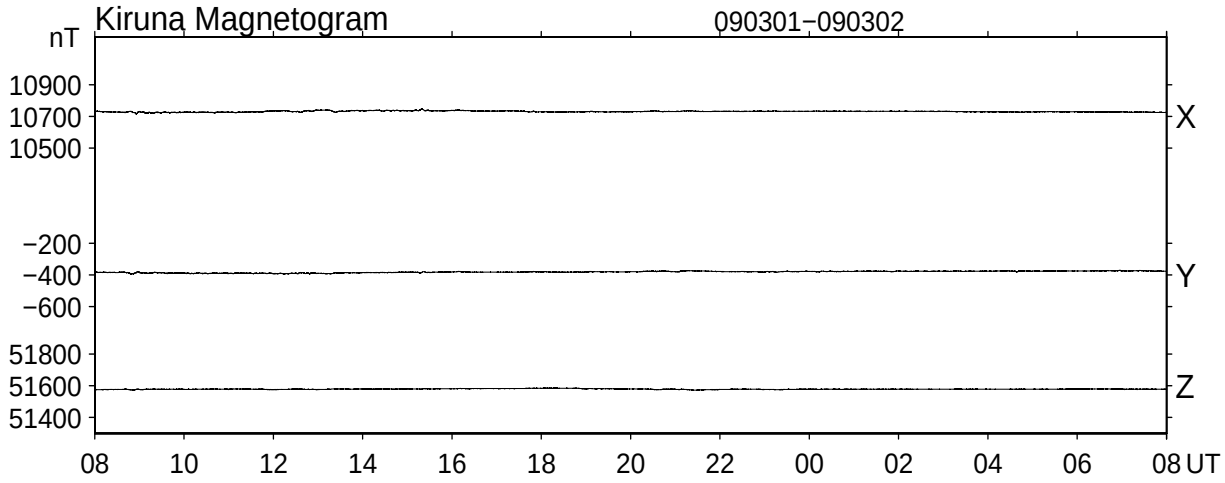

Kiruna Magnetogram
090224−090225
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

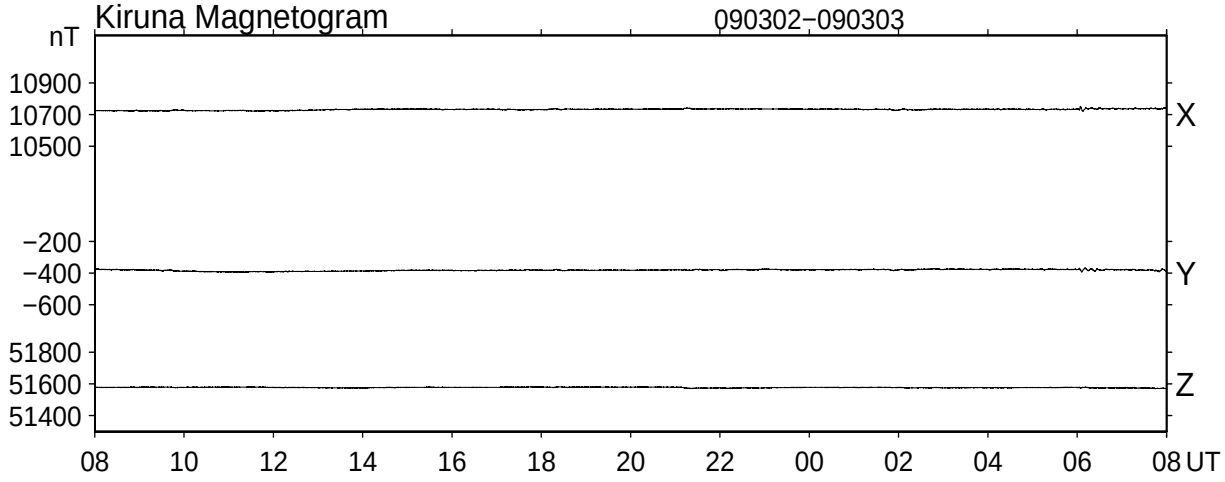

Kiruna Magnetogram
090225−090226
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

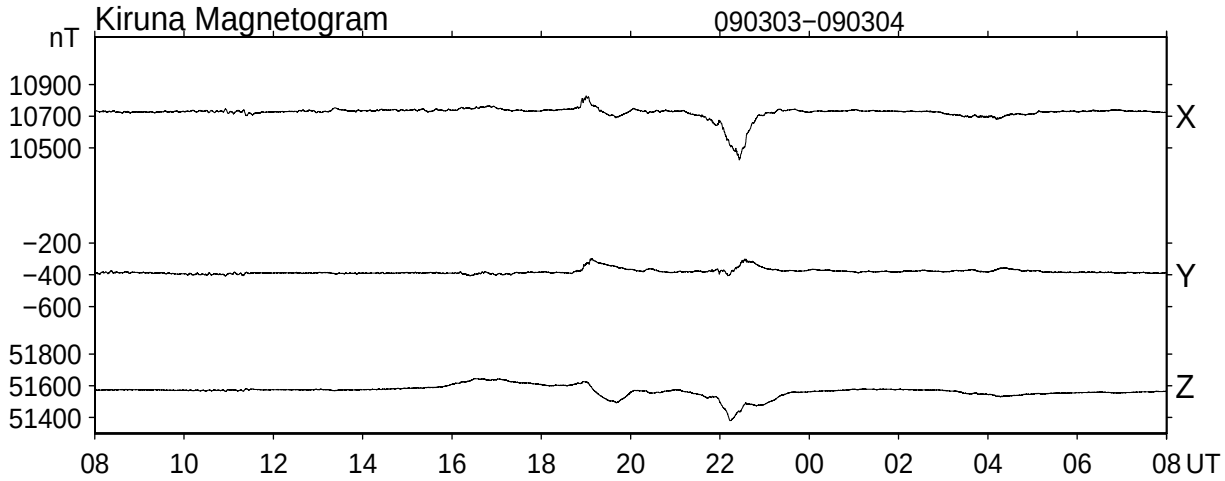

Kiruna Magnetogram
090226−090227
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

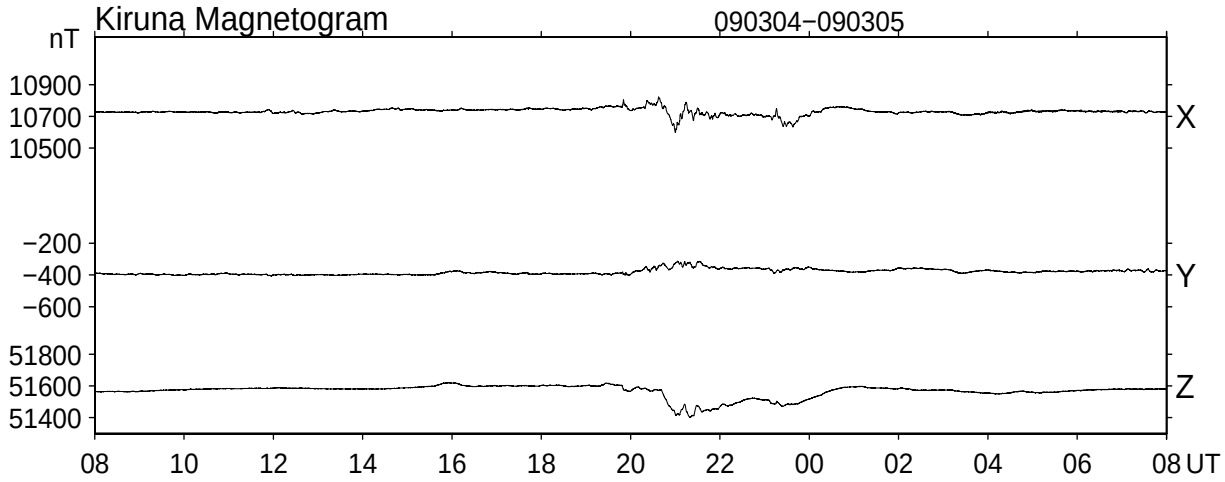

Kiruna Magnetogram
090227−090228
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

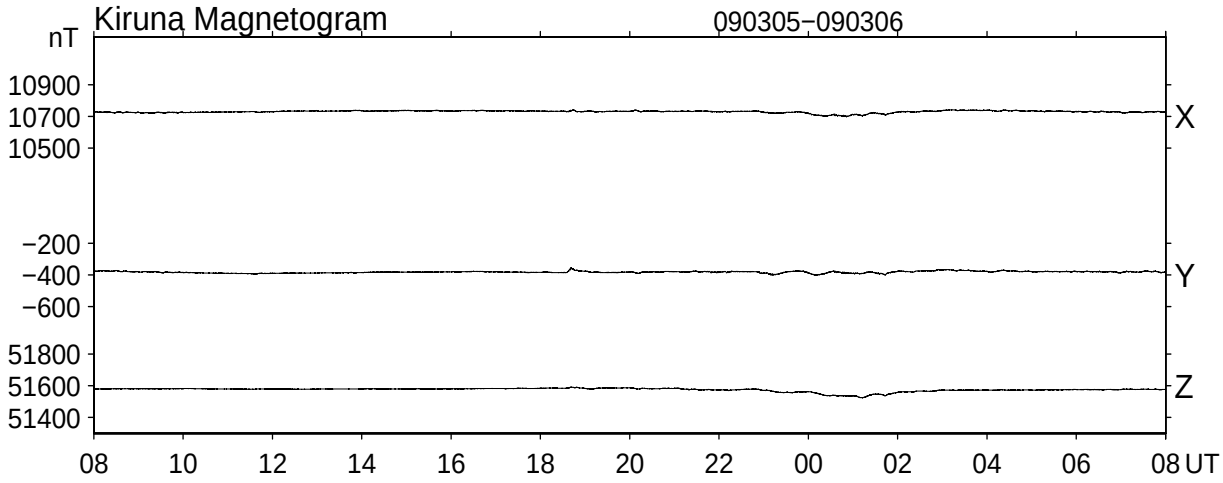

Kiruna Magnetogram
090228−090301
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

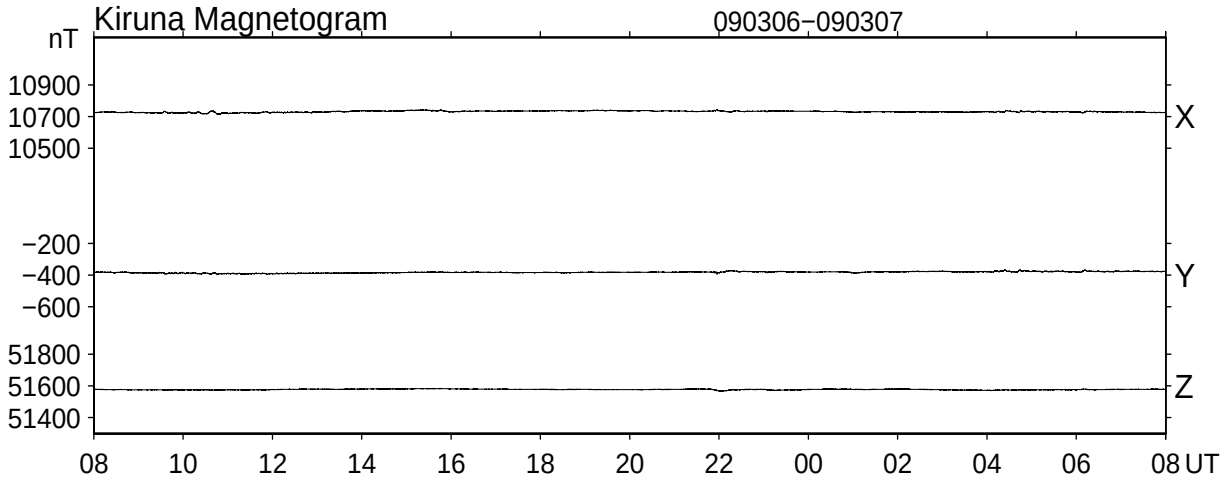

Kiruna Magnetogram
090301−090302
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

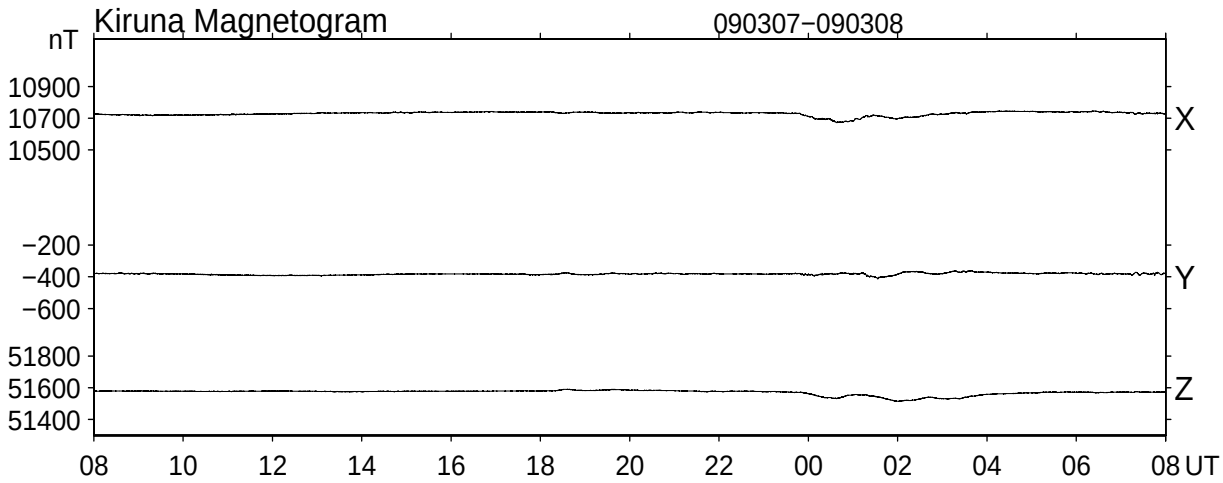

Kiruna Magnetogram
090302−090303
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

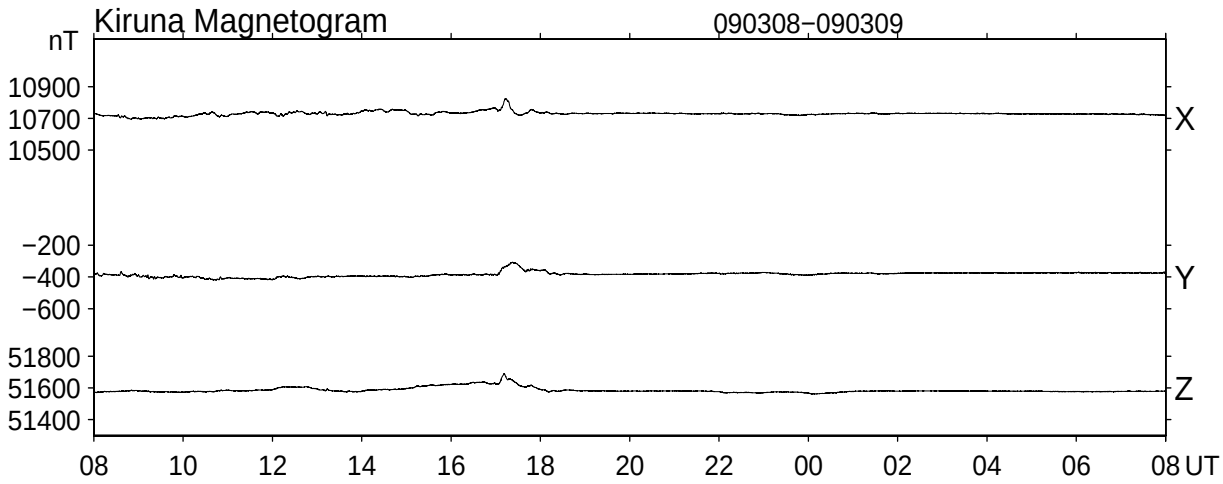

Kiruna Magnetogram
090303−090304
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

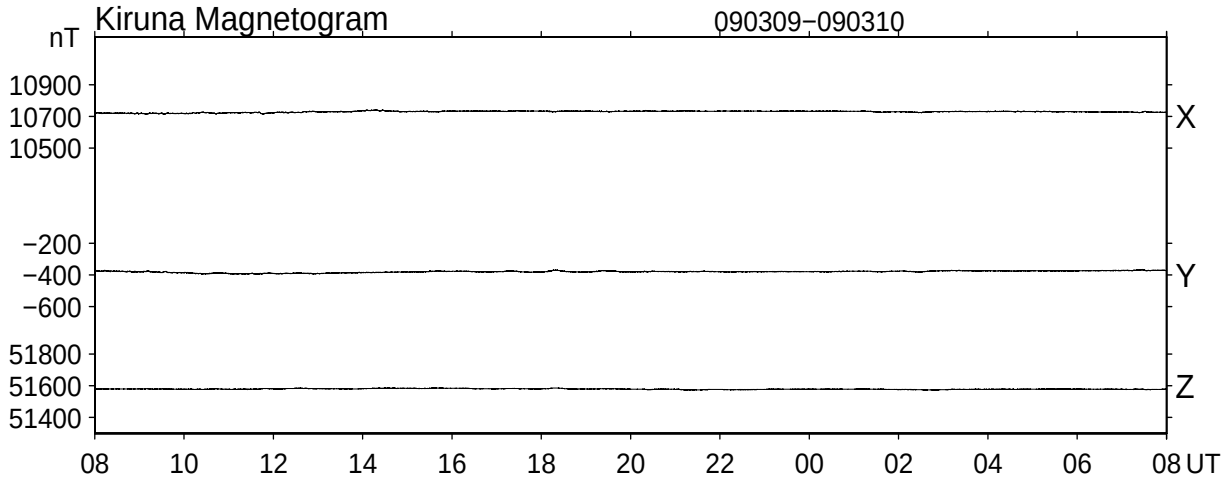

Kiruna Magnetogram
090304−090305
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

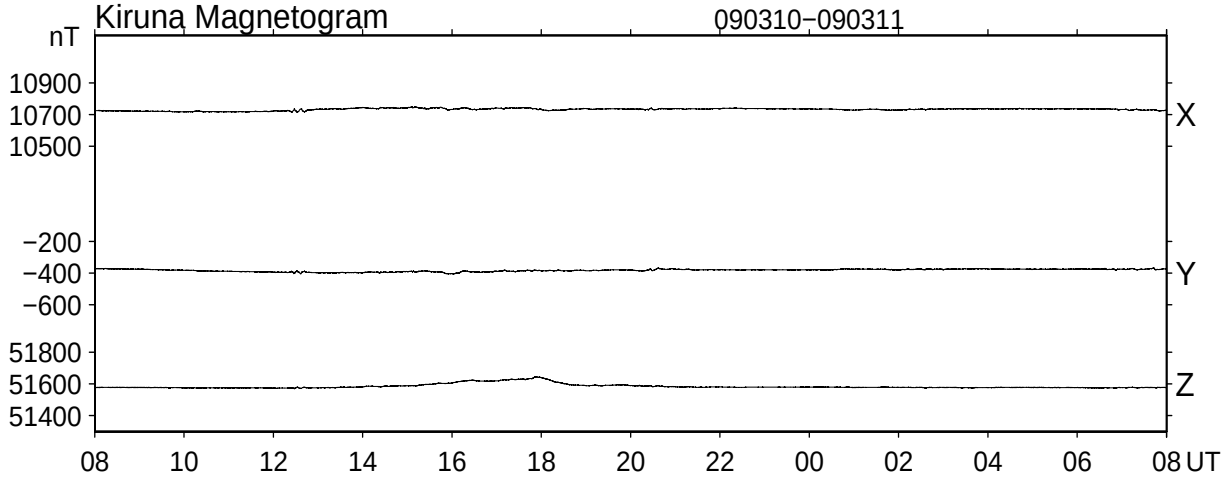

Kiruna Magnetogram
090305−090306
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

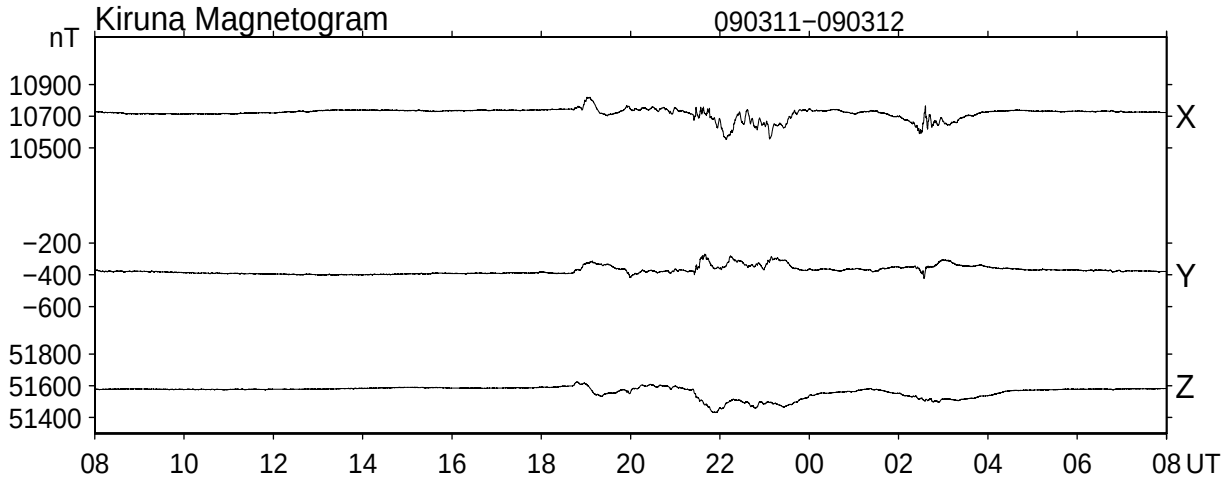

Kiruna Magnetogram
090306−090307
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

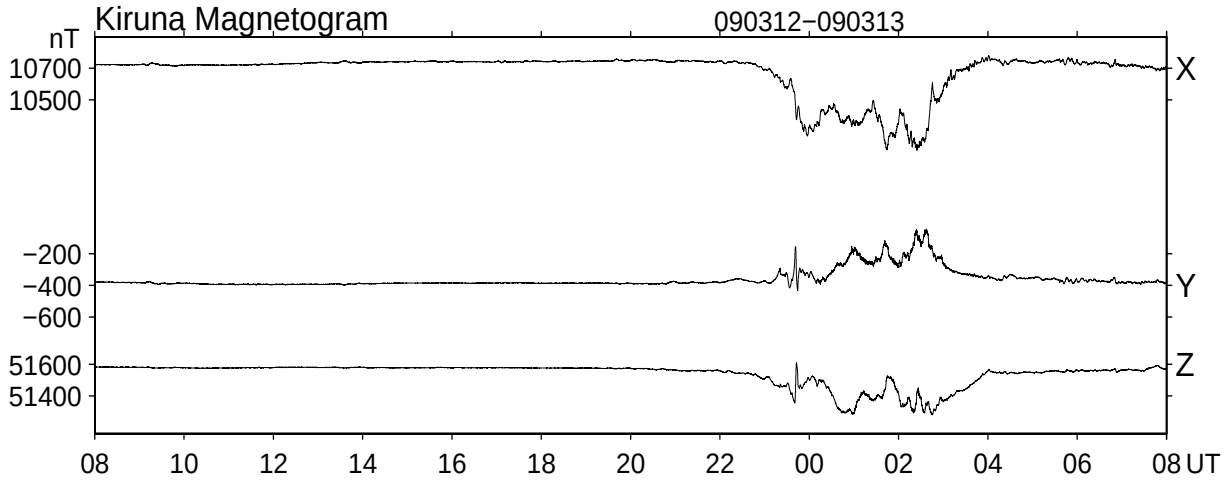

Kiruna Magnetogram
090307−090308
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

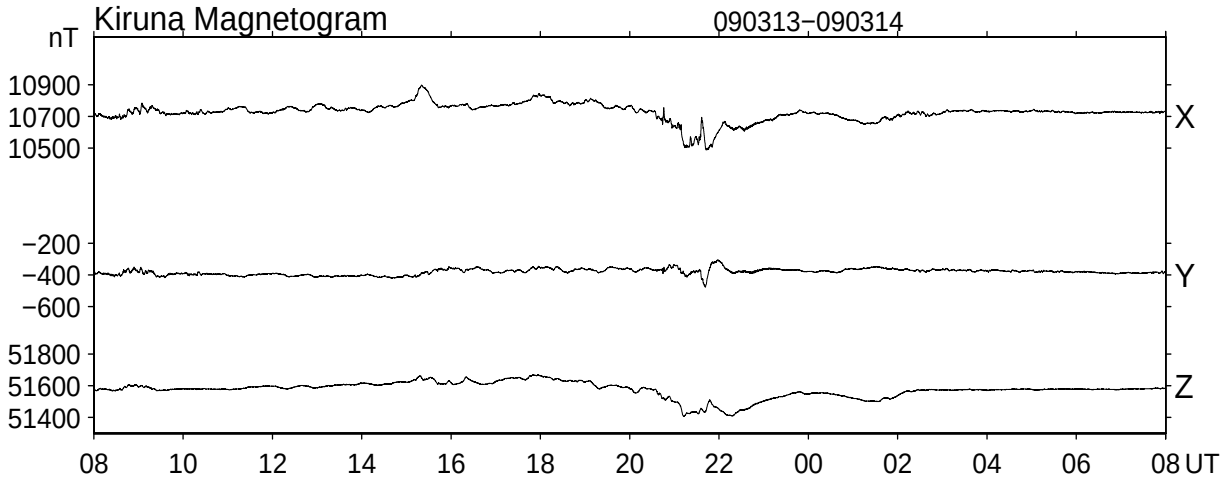

Kiruna Magnetogram
090308−090309
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

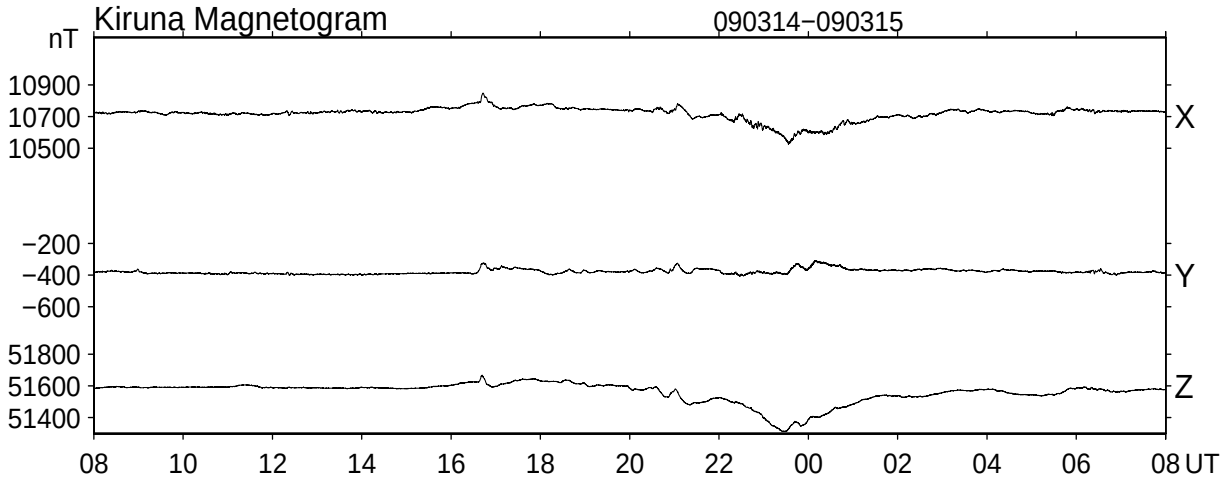

Kiruna Magnetogram
090309−090310
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

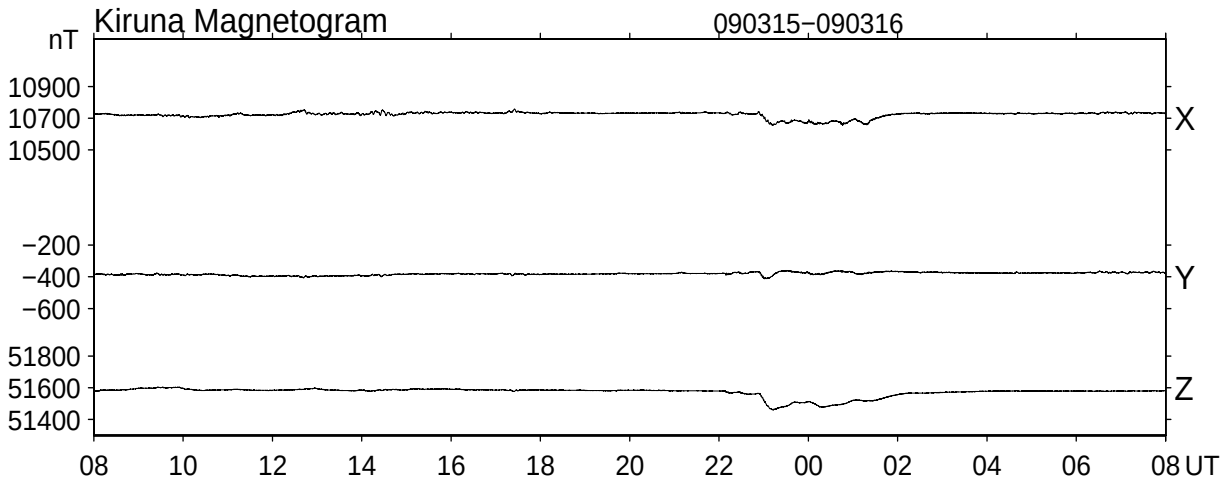

Kiruna Magnetogram
090310−090311
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

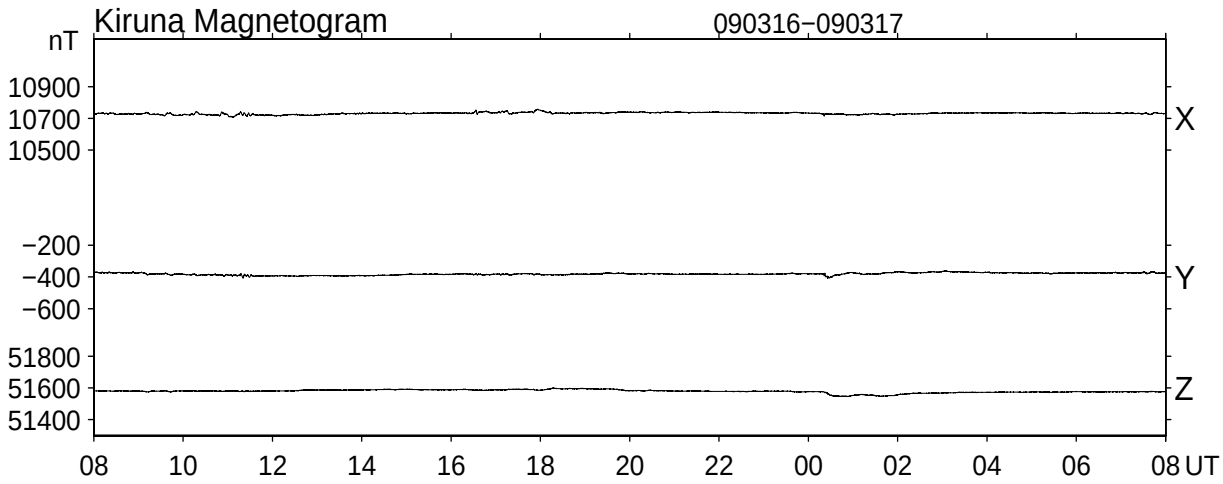

Kiruna Magnetogram
090311−090312
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

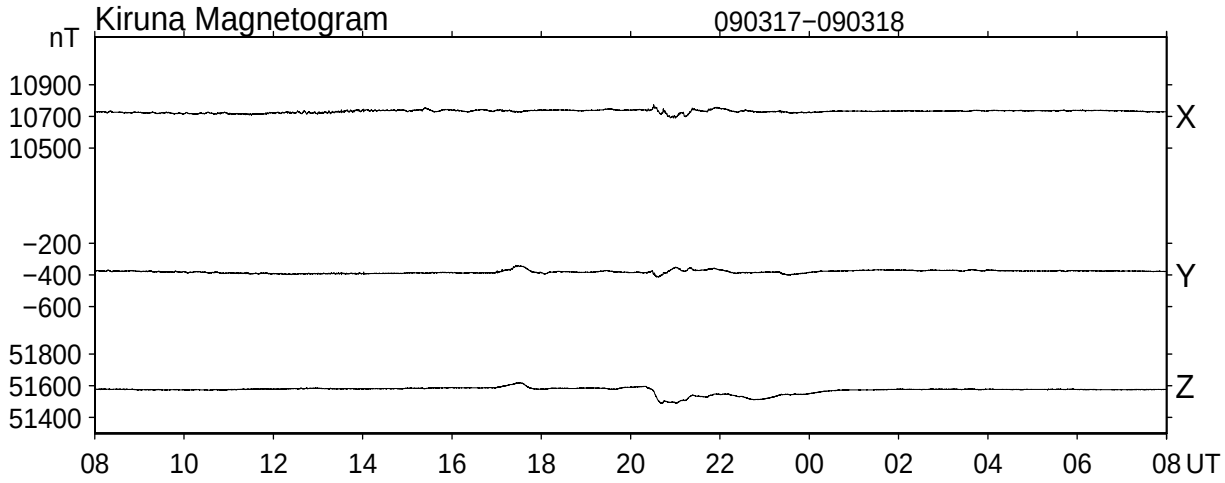

Kiruna Magnetogram
090312−090313
nT
10700
10500
−200
−400
−600
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

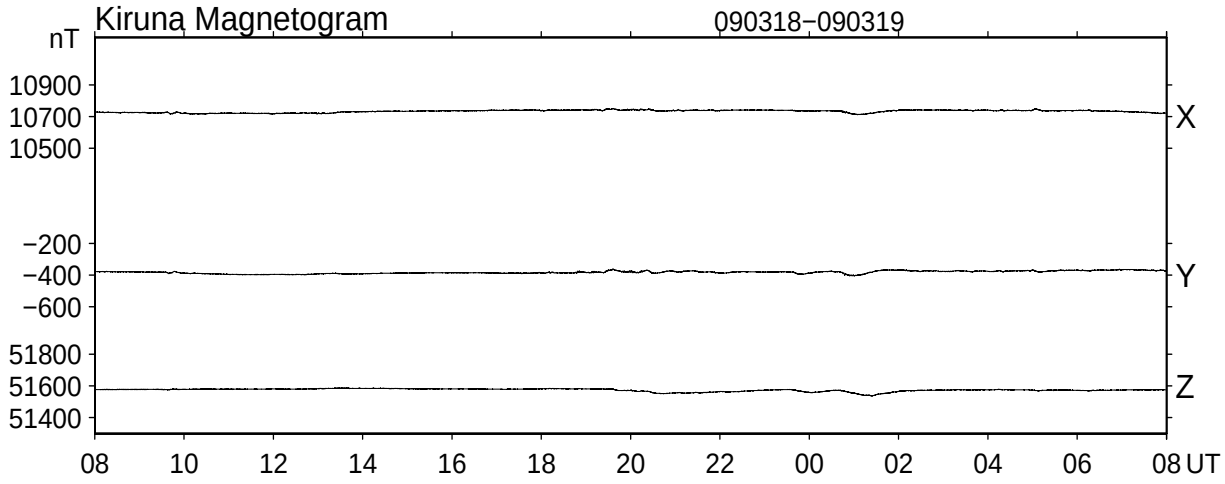

Kiruna Magnetogram
090313−090314
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

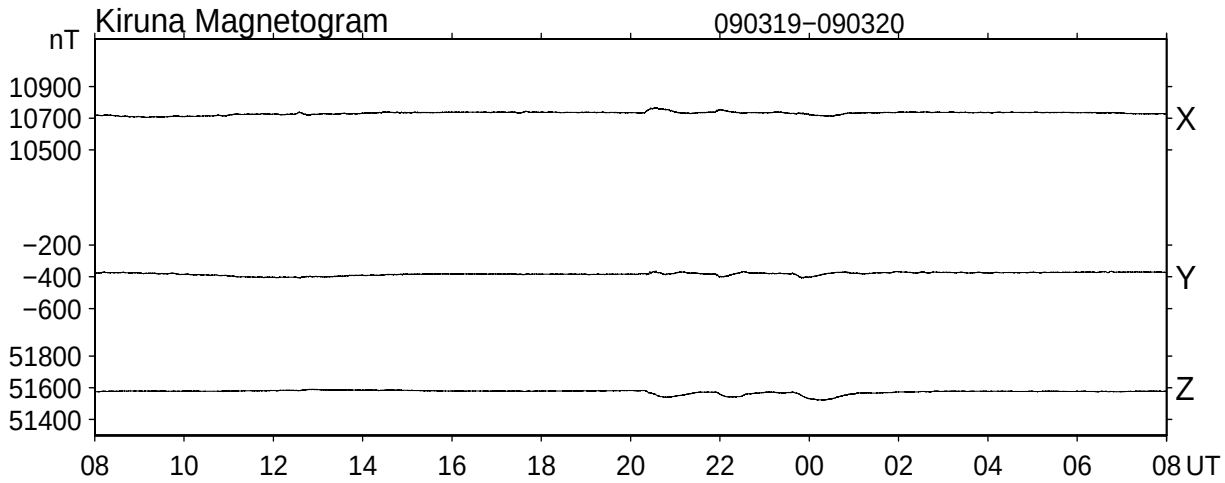

Kiruna Magnetogram
090314−090315
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

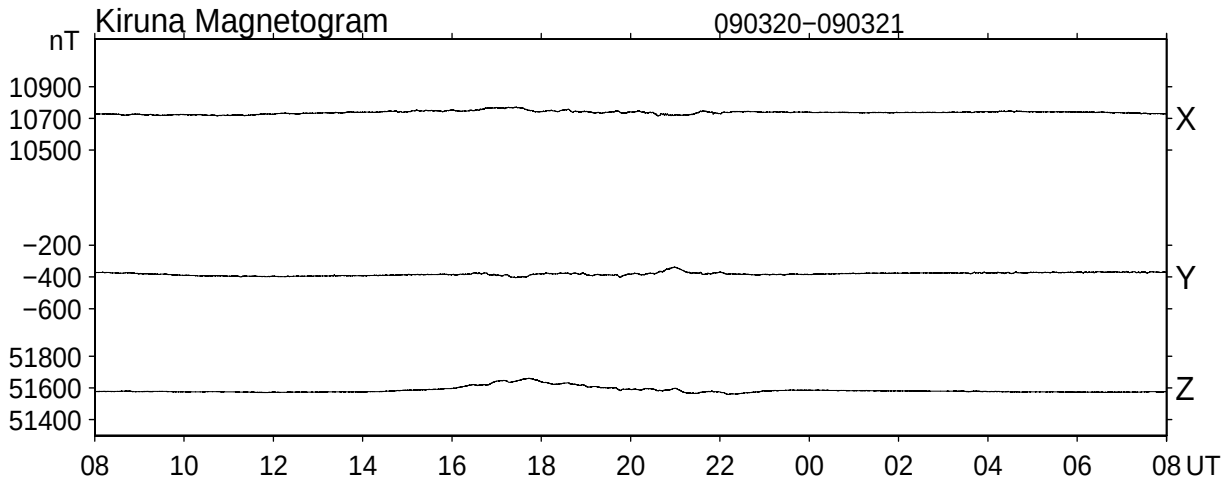

Kiruna Magnetogram
090315−090316
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

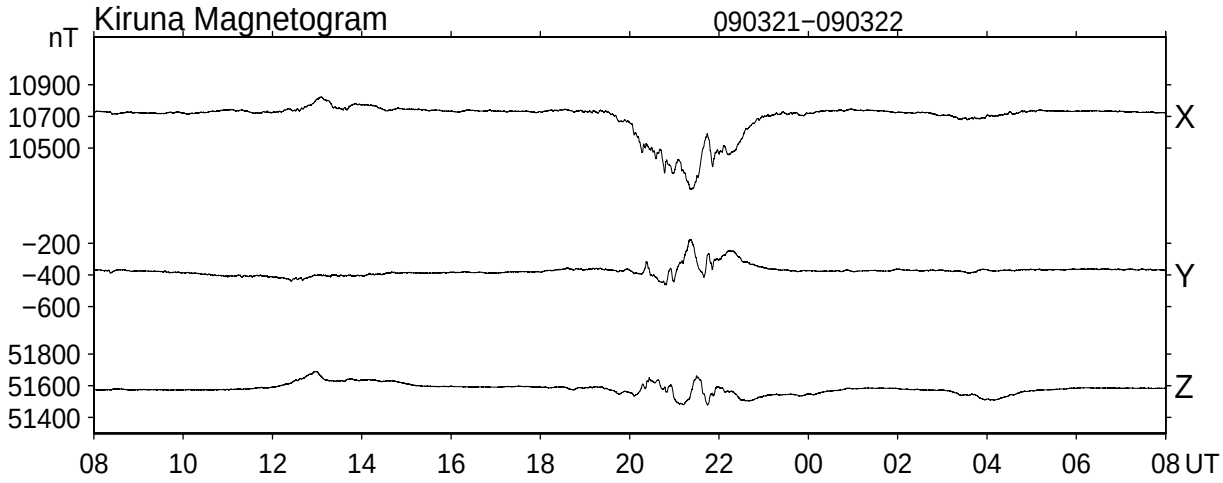

Kiruna Magnetogram
090316−090317
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

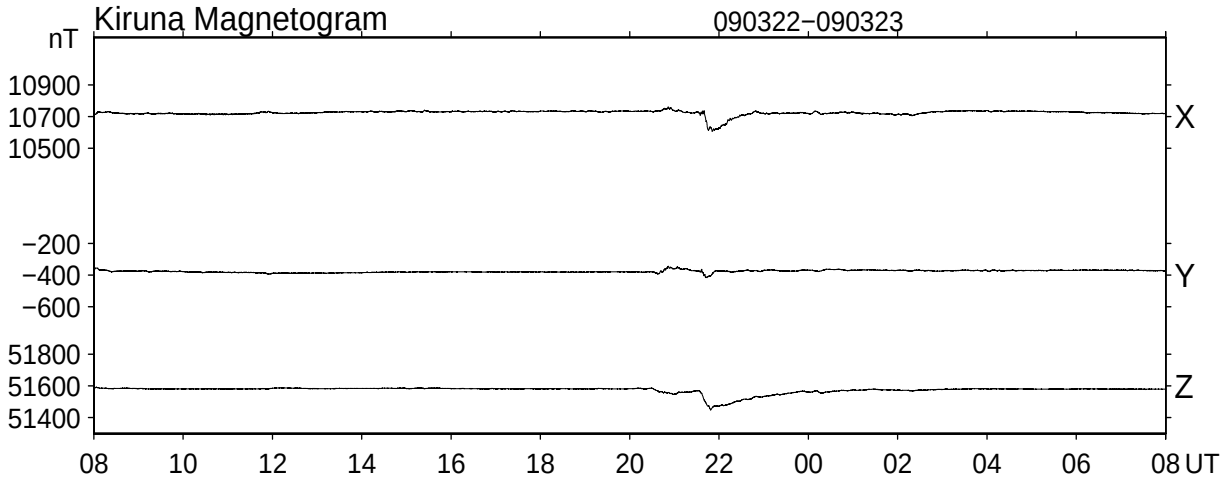

Kiruna Magnetogram
090317−090318
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

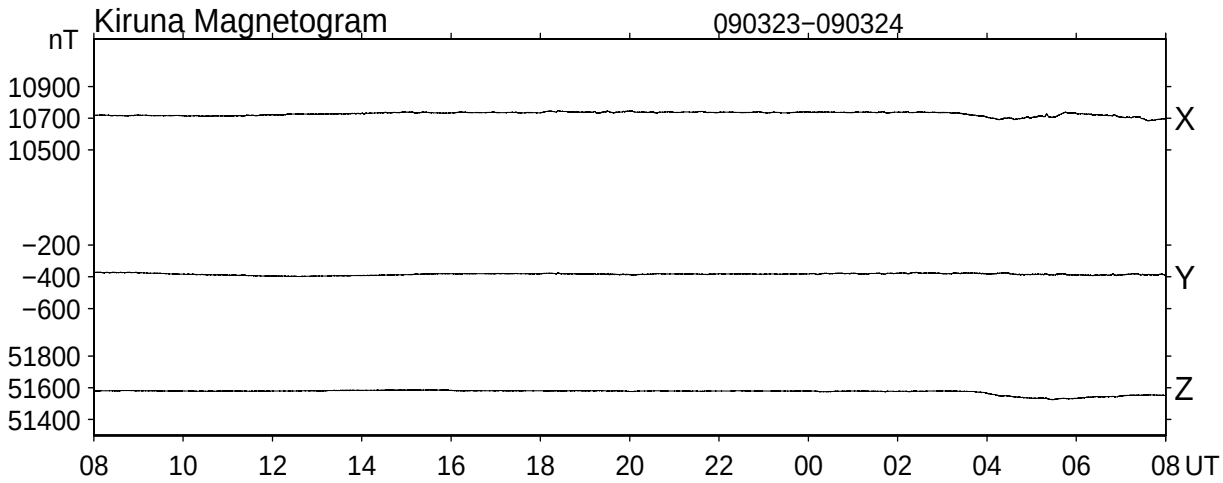

Kiruna Magnetogram
090318−090319
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

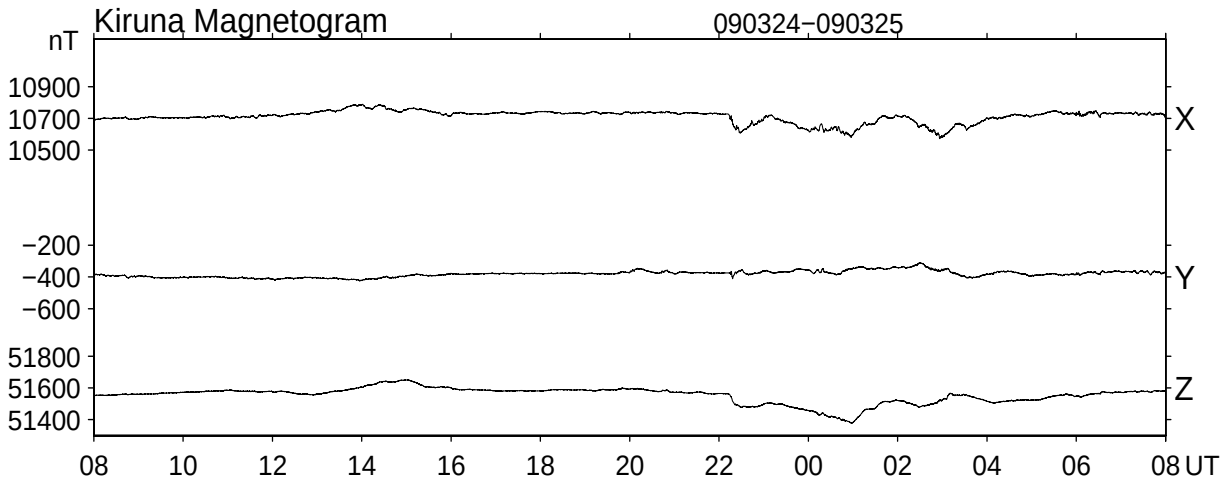

Kiruna Magnetogram
090319−090320
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

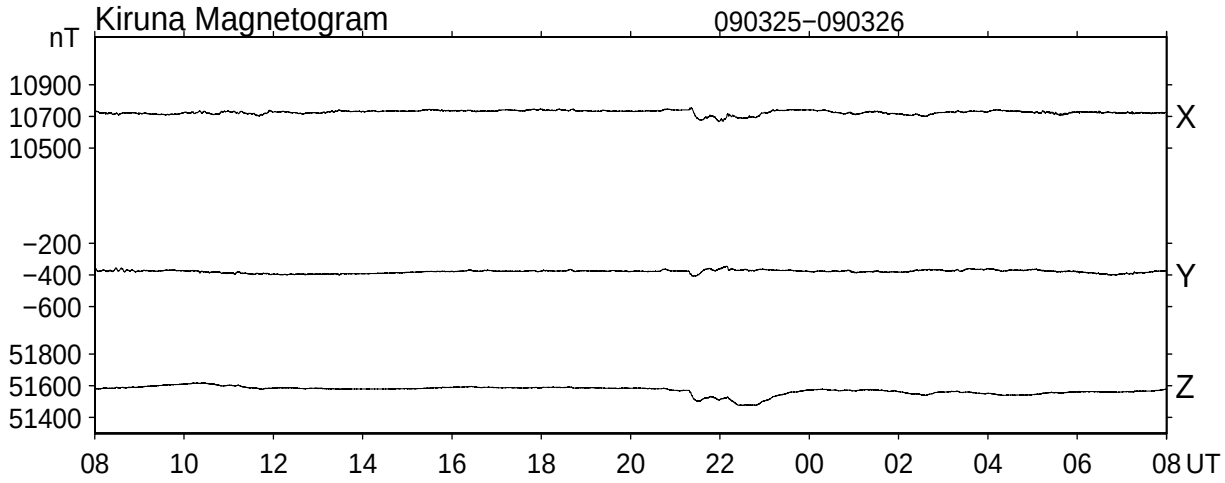

Kiruna Magnetogram
090320−090321
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

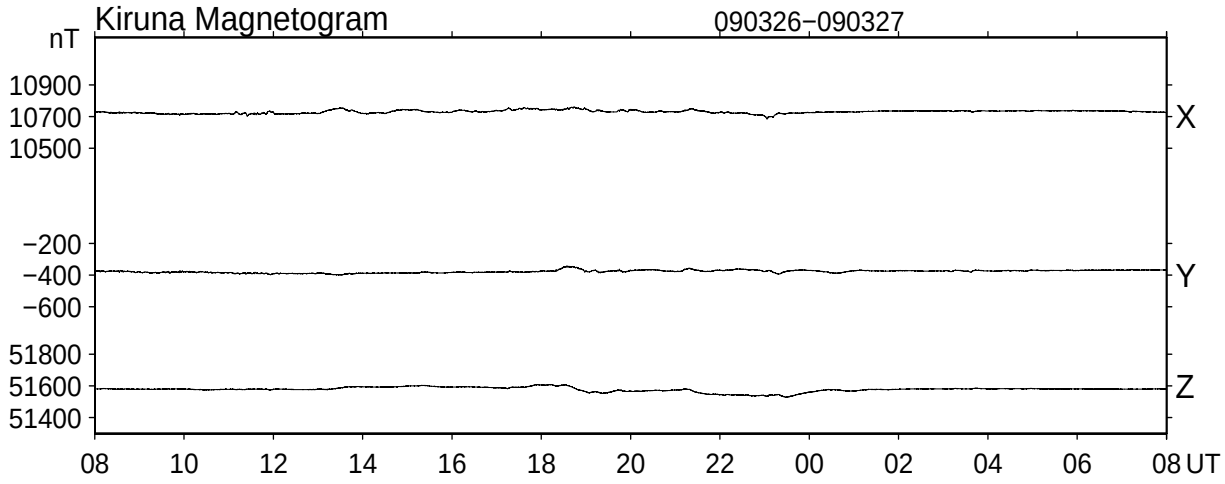

Kiruna Magnetogram
090321−090322
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

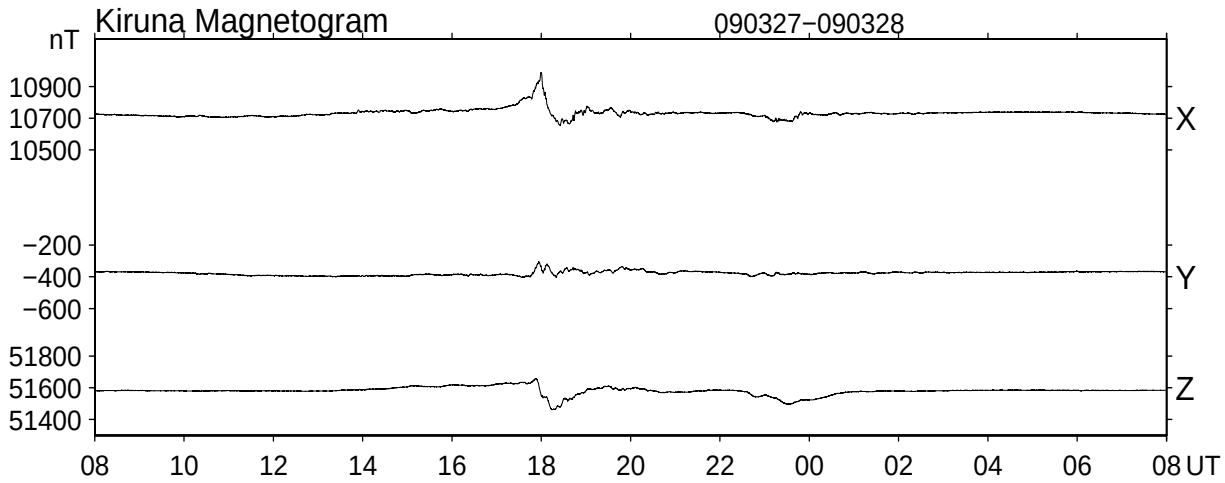

Kiruna Magnetogram
090322−090323
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

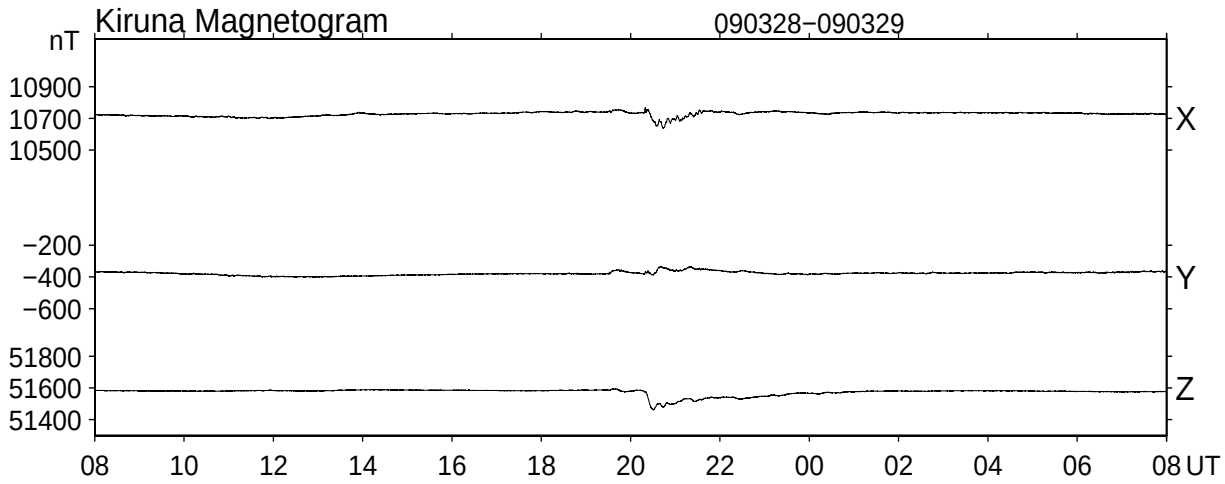

Kiruna Magnetogram
090323−090324
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT

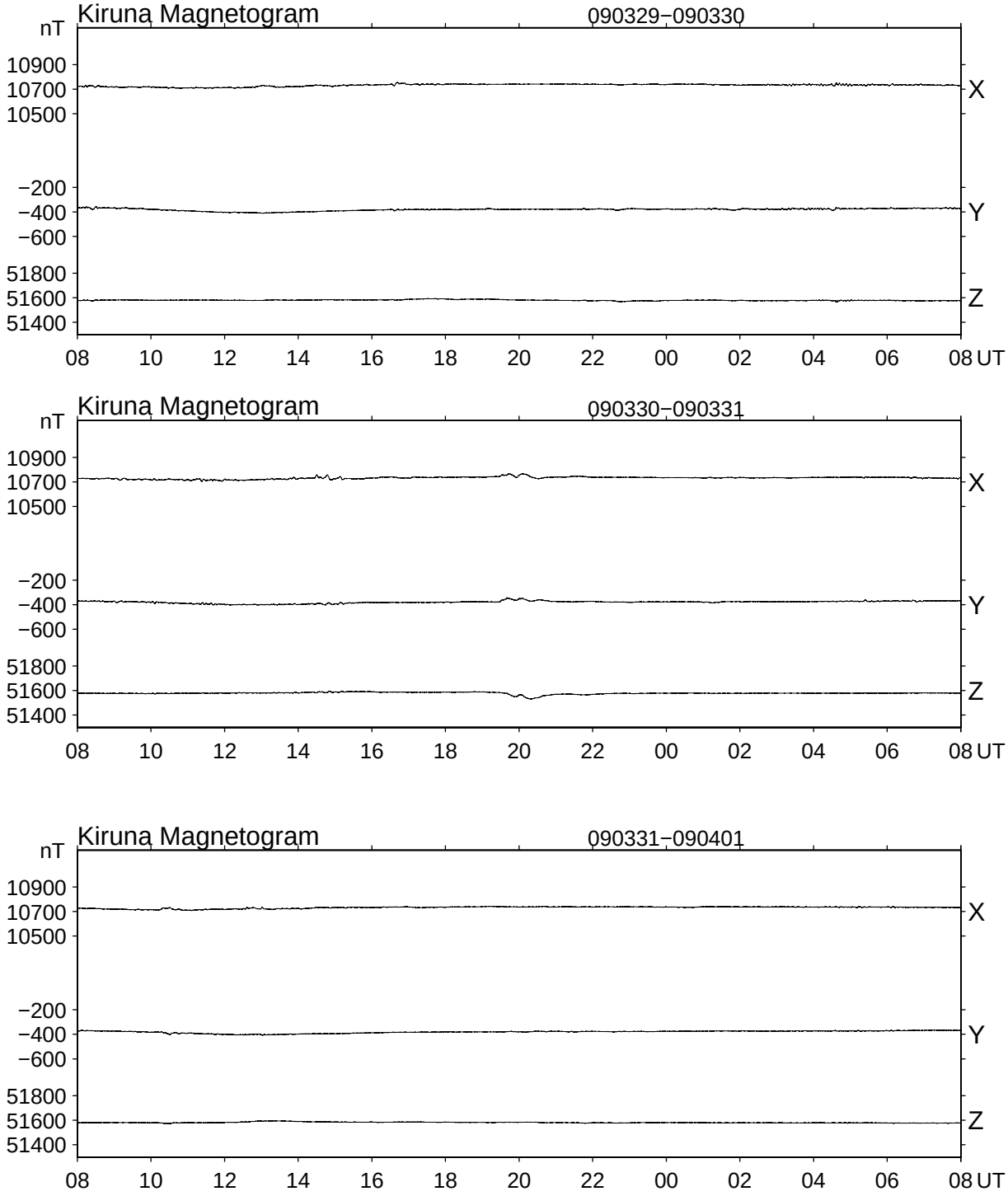

Kiruna Magnetogram
090324−090325
nT
10900
10700
10500
−200
−400
−600
51800
51600
51400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
090325−090326
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
090326−090327
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
090327−090328
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
090328−090329
nT
10900
10700
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08 10 12 14 16 18 20 22 00 02 04 06 08 UT


Kiruna Magnetogram
090329−090330
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10900
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Kiruna Magnetogram
090330−090331
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KIRUNA VERTICAL RIOMETER

January - March 2009

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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