Kiruna Geophysical Data

Data Summary 22/01-03 (January-March 2022)

Swedish Institute of Space Physics

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Data Summary 22/01-03
January – March 2022

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INTRODUCTION

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

Coordinates of the Swedish Institute of Space Physics are:

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

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

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

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

Universal time is used in all tables.

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

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

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

For more information contact urban.brandstrom@irf.se

GEOMAGNETIC DATA

Magnetograms

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

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

K-indices

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

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

The following scale has been used:

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

ALL-SKY CAMERA DATA

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

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

IONOSPHERIC ABSORPTION DATA

Ionospheric absorption at 30 MHz and 38 MHz is extracted from RFsRio1 Wideband Spectral Riometer.

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 2022

Lower limit of K=7 is 600 nT

Time in UT

UT	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	2	5	2	2	1	4	5	3	24
2	3	1	1	2	1	2	5	5	20
3	2	4	3	4	2	1	5	4	25
4	2	3	0	1	1	0	1	2	10
5	0	1	0	0	0	2	1	0	4
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	1	0	2	6	7	16
9	4	2	2	2	2	2	1	5	20
10	4	1	1	0	0	4	5	3	18
11	1	1	1	1	1	3	1	0	9
12	0	0	0	0	1	0	2	1	4
13	1	0	0	1	0	0	2	1	5
14	0	0	0	1	1	5	6	5	18
15	5	5	3	2	3	5	6	6	35
16	5	5	3	2	3	3	6	5	32
17	5	1	1	2	2	4	5	4	24
18	5	3	3	3	4	5	5	6	34
19	6	6	3	3	3	3	5	5	34
20	6	1	1	1	1	1	0	2	13
21	0	0	0	1	3	4	4	5	17
22	4	2	2	1	2	3	5	6	25
23	4	3	2	2	2	2	1	0	16
24	0	0	0	1	1	1	3	5	11
25	3	2	2	2	2	5	5	5	26
26	3	2	2	2	1	3	4	5	22
27	1	0	1	2	2	2	6	4	18
28	2	1	1	1	2	1	2	6	16
29	5	5	2	3	4	0	0	2	21
30	3	1	2	2	2	2	2	5	19
31	4	4	2	3	2	3	3	3	24
Sum	80	59	40	48	49	72	102	110	

GEOMAGNETIC K-INDICES, KIRUNA

February 2022

Lower limit of K=7 is 600 nT

Time in UT

UT	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	2	1	1	1	0	1	1	6	13
2	7	4	1	1	2	5	0	1	21
3	2	4	4	6	4	4	6	4	34
4	5	5	3	5	4	7	7	5	41
5	4	4	2	2	3	4	3	4	26
6	6	4	3	3	3	2	4	5	30
7	3	2	1	2	1	2	3	4	18
8	4	1	1	1	2	2	4	3	18
9	2	1	0	1	1	0	1	3	9
10	4	1	2	2	2	6	7	6	30
11	5	5	3	3	2	3	6	5	32
12	5	4	3	2	3	4	6	6	33
13	5	5	2	2	4	4	5	6	33
14	4	2	1	2	2	3	4	2	20
15	3	2	2	2	1	2	2	1	15
16	1	2	1	2	3	5	4	5	23
17	4	1	1	2	1	0	3	3	15
18	0	0	1	1	1	3	4	5	15
19	4	4	1	2	2	5	3	5	26
20	6	4	3	2	1	3	5	4	28
21	1	1	2	2	4	2	4	6	22
22	5	5	4	4	3	1	3	5	30
23	2	1	2	1	3	4	4	5	22
24	5	4	3	1	1	1	1	3	19
25	3	3	2	2	2	1	1	2	16
26	0	0	1	1	0	0	1	1	4
27	1	1	3	3	2	4	2	2	18
28	2	1	2	2	2	2	3	2	16
Sum	95	72	55	60	59	80	97	109	

GEOMAGNETIC K-INDICES, KIRUNA

March 2022

Lower limit of K=7 is 600 nT

Time in UT

UT	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 24	Sum
1	2	1	2	2	2	2	3	3	17
2	2	0	1	2	1	1	1	1	9
3	1	0	1	2	1	1	3	3	12
4	5	3	1	2	2	3	4	5	25
5	6	2	2	3	5	4	7	6	35
6	6	2	4	3	4	2	3	4	28
7	3	3	2	2	4	4	5	3	26
8	4	3	1	1	1	1	4	5	20
9	5	1	1	2	1	1	1	5	17
10	3	1	1	2	3	5	5	5	25
11	5	4	4	3	3	4	6	6	35
12	6	6	2	2	2	2	2	4	26
13	3	1	1	4	7	7	5	7	35
14	7	2	1	2	2	3	1	3	21
15	1	1	1	2	2	3	3	5	18
16	1	0	0	1	2	3	3	4	14
17	4	1	2	1	1	1	2	2	14
18	3	1	0	1	1	0	1	2	9
19	1	0	1	1	1	0	3	5	12
20	5	4	1	2	1	1	1	5	20
21	4	0	1	1	1	1	1	3	12
22	3	3	2	1	2	2	5	5	23
23	1	1	2	2	2	3	1	1	13
24	5	2	2	3	3	2	1	3	21
25	4	4	1	2	3	3	3	1	21
26	3	1	1	2	2	4	5	3	21
27	3	2	2	3	2	5	5	6	28
28	6	6	1	2	2	1	1	2	21
29	1	1	2	2	2	3	4	4	19
30	0	0	2	2	2	2	5	6	19
31	4	5	3	3	4	4	3	2	28
Sum	107	61	48	63	71	78	97	119	

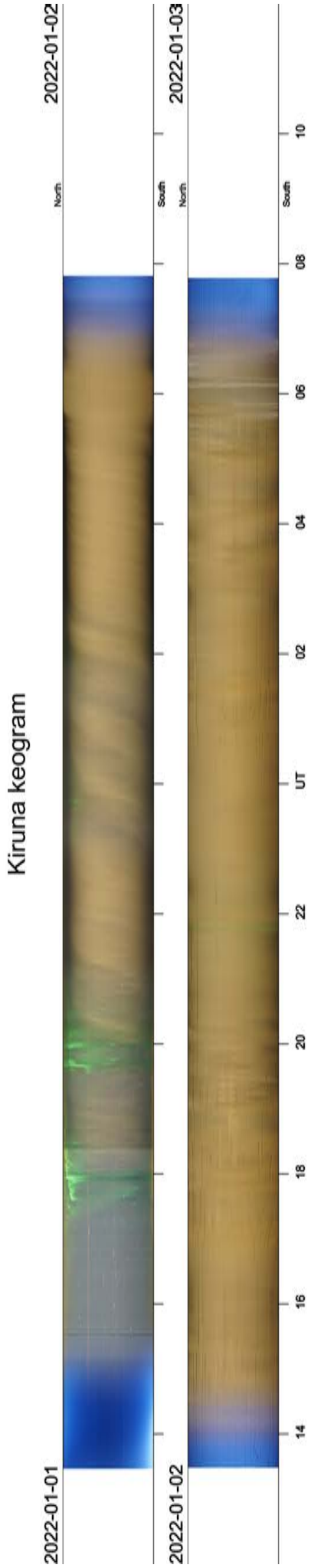
ALL-SKY CAMERA KEOGRAMS

January - March 2022

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

Note.

Camera fault 2022-02-17 – 2022-02-22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2022-01-02
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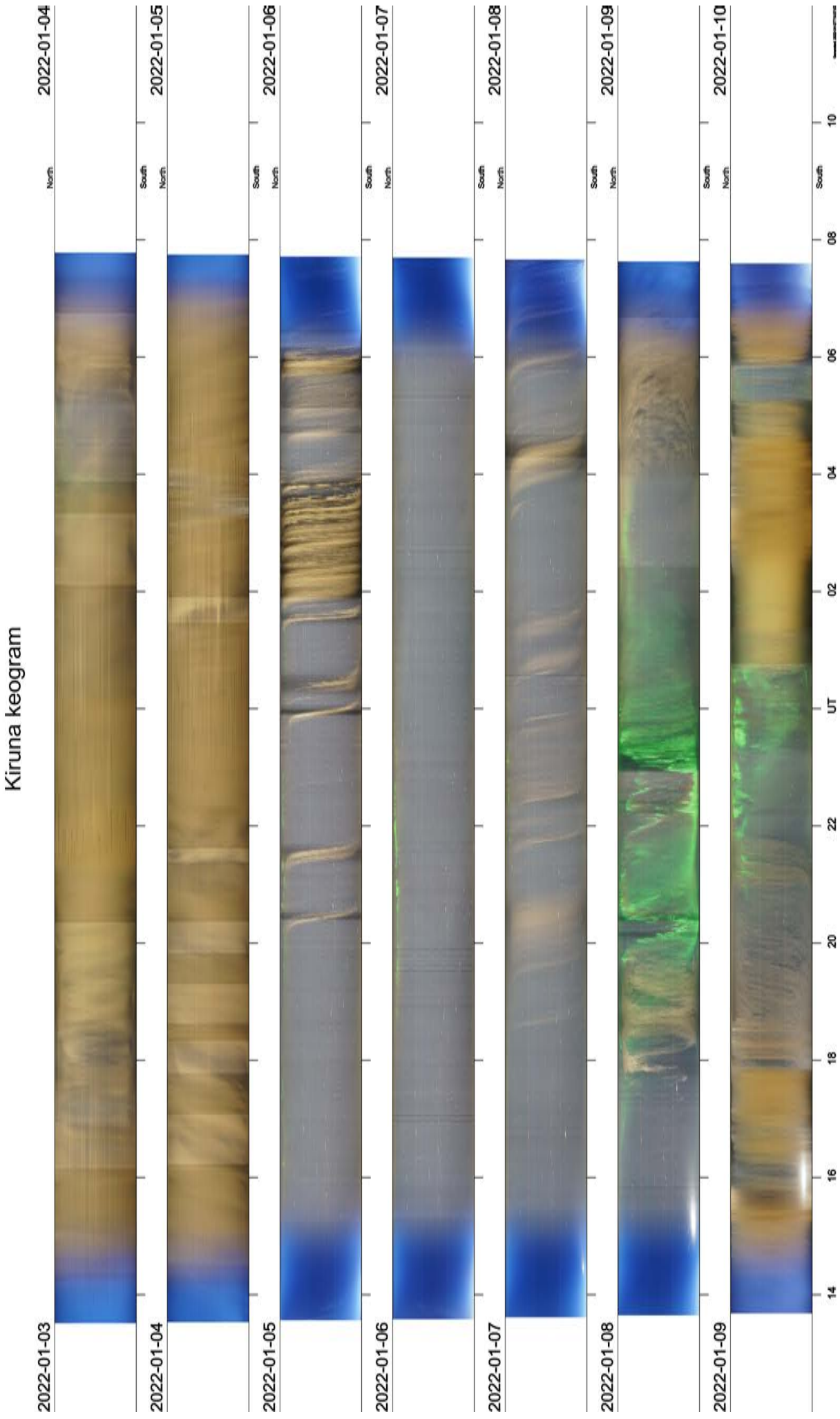
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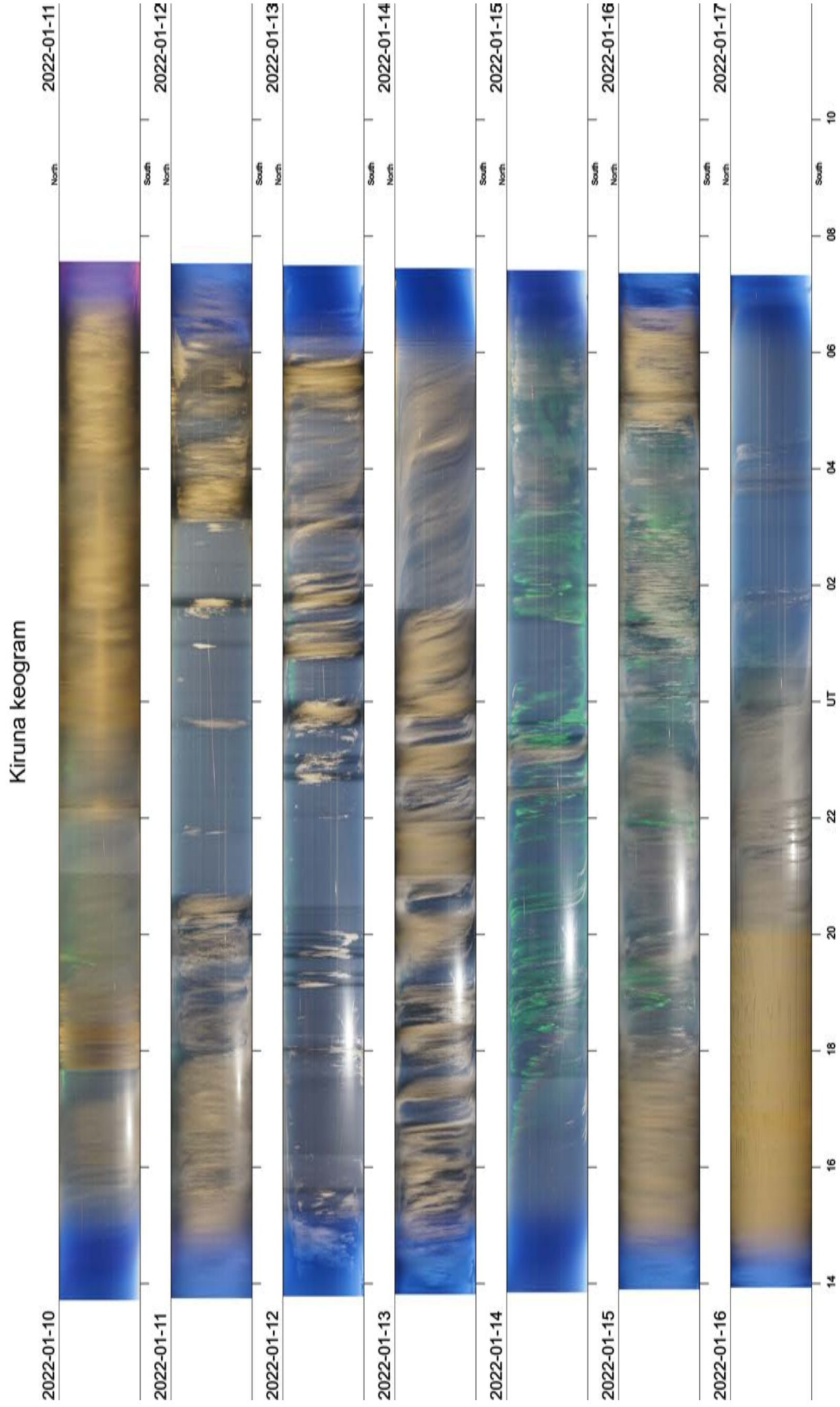
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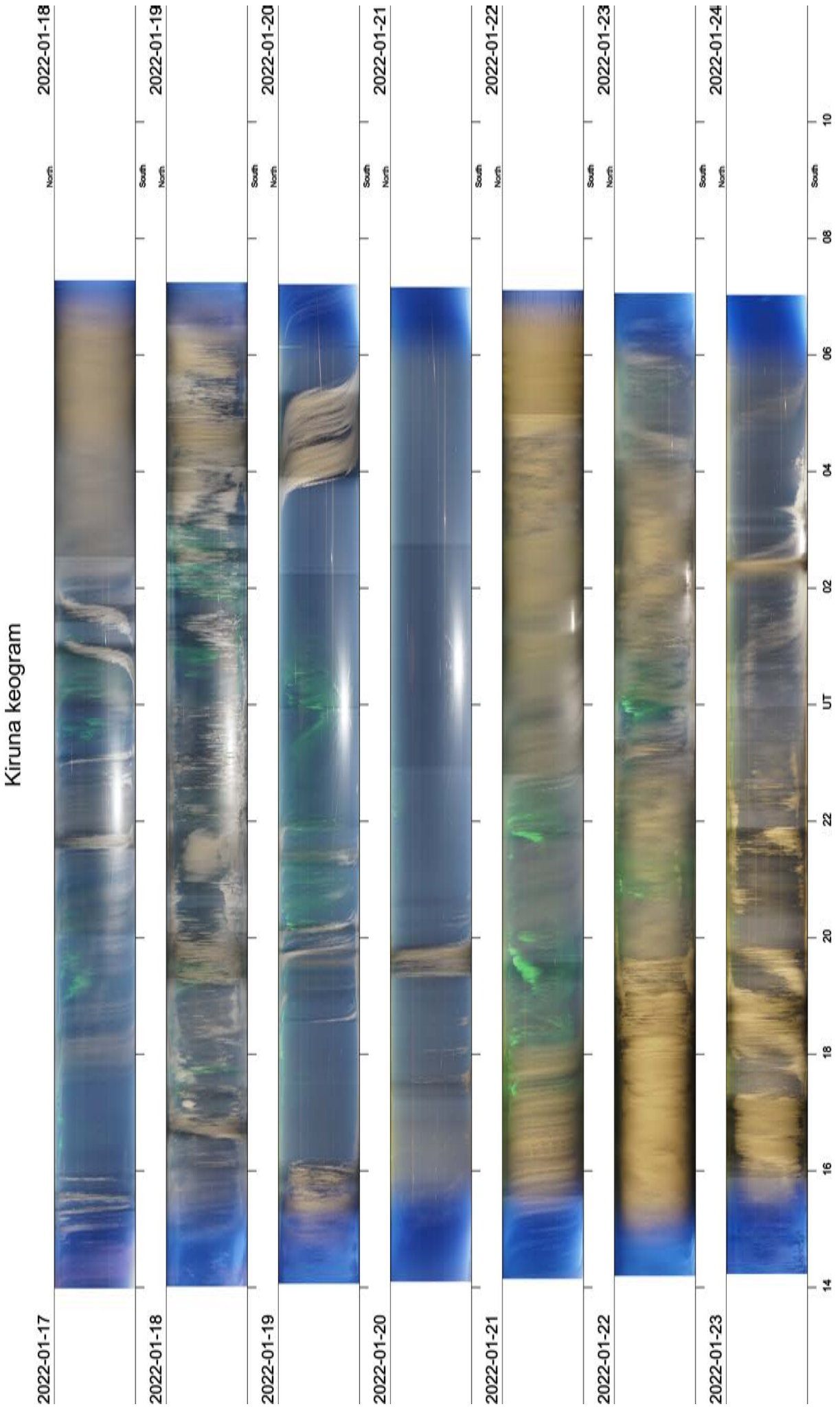
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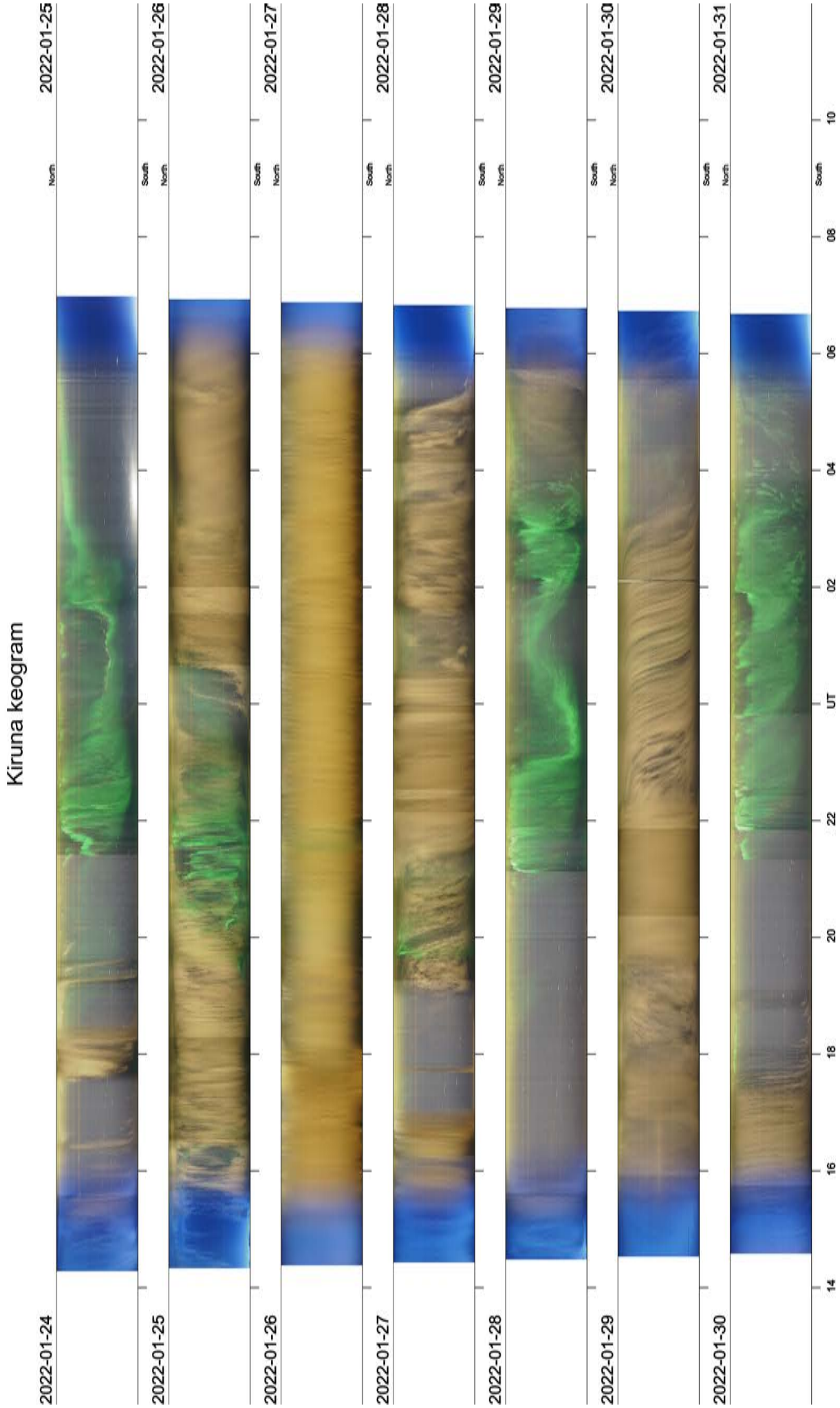
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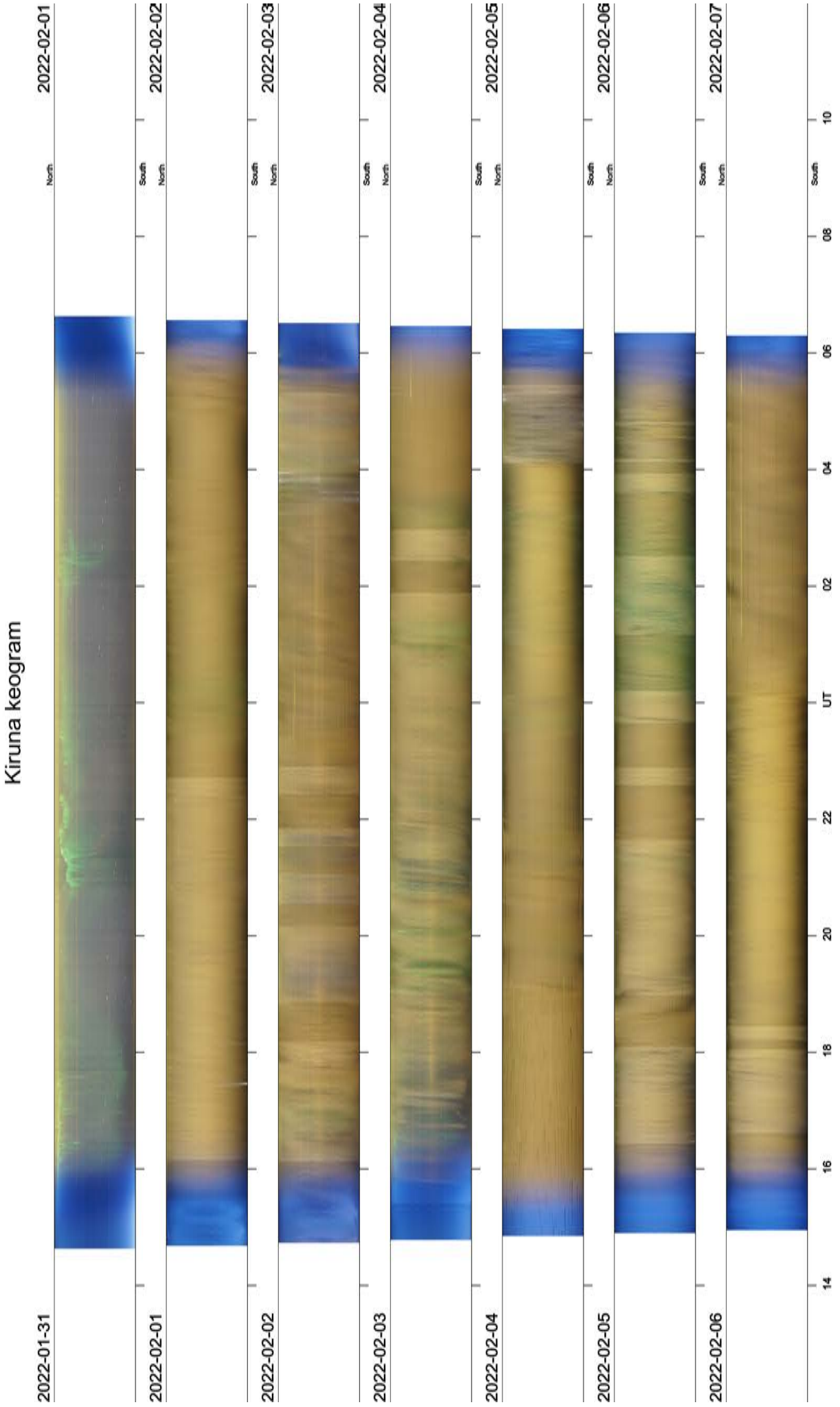
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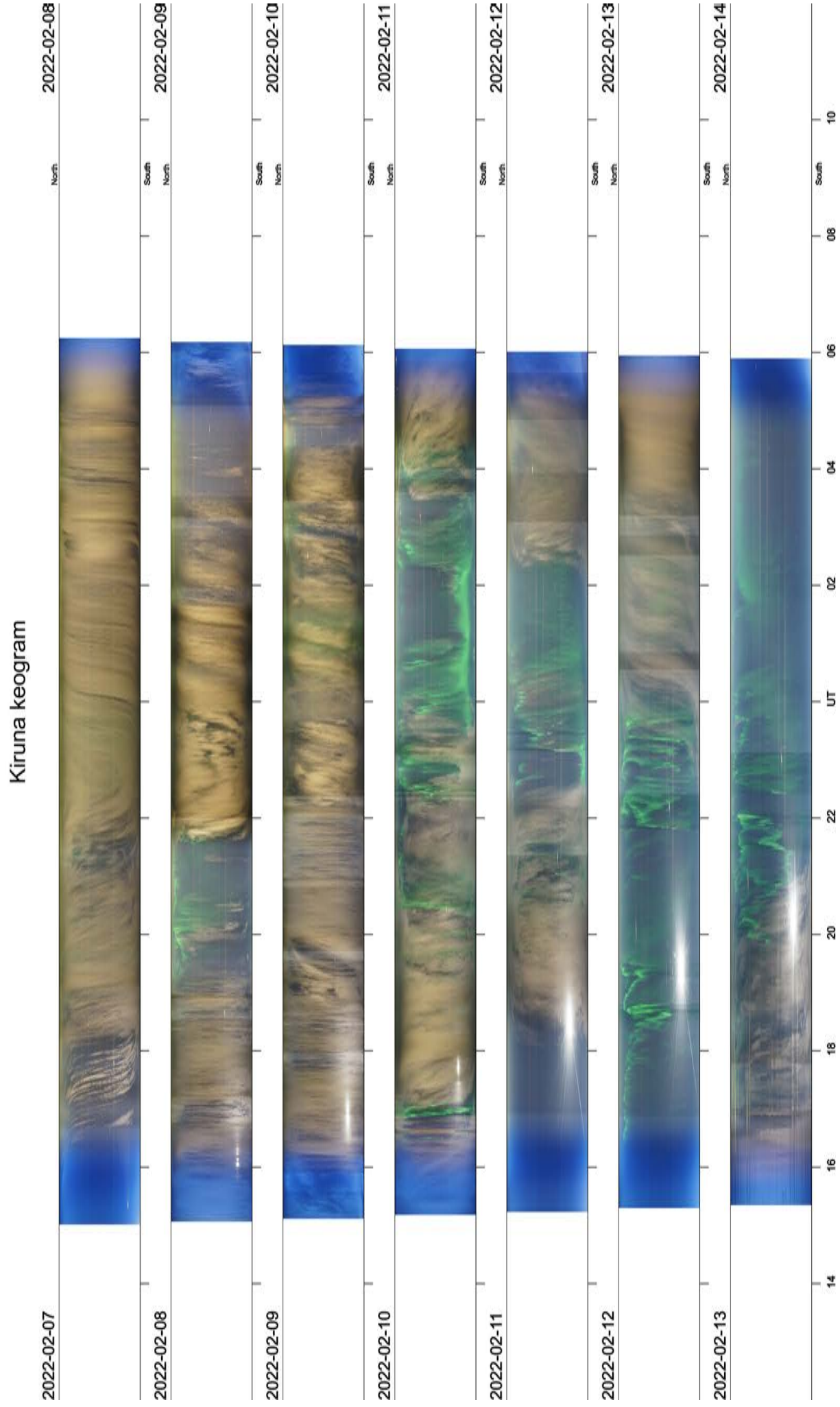
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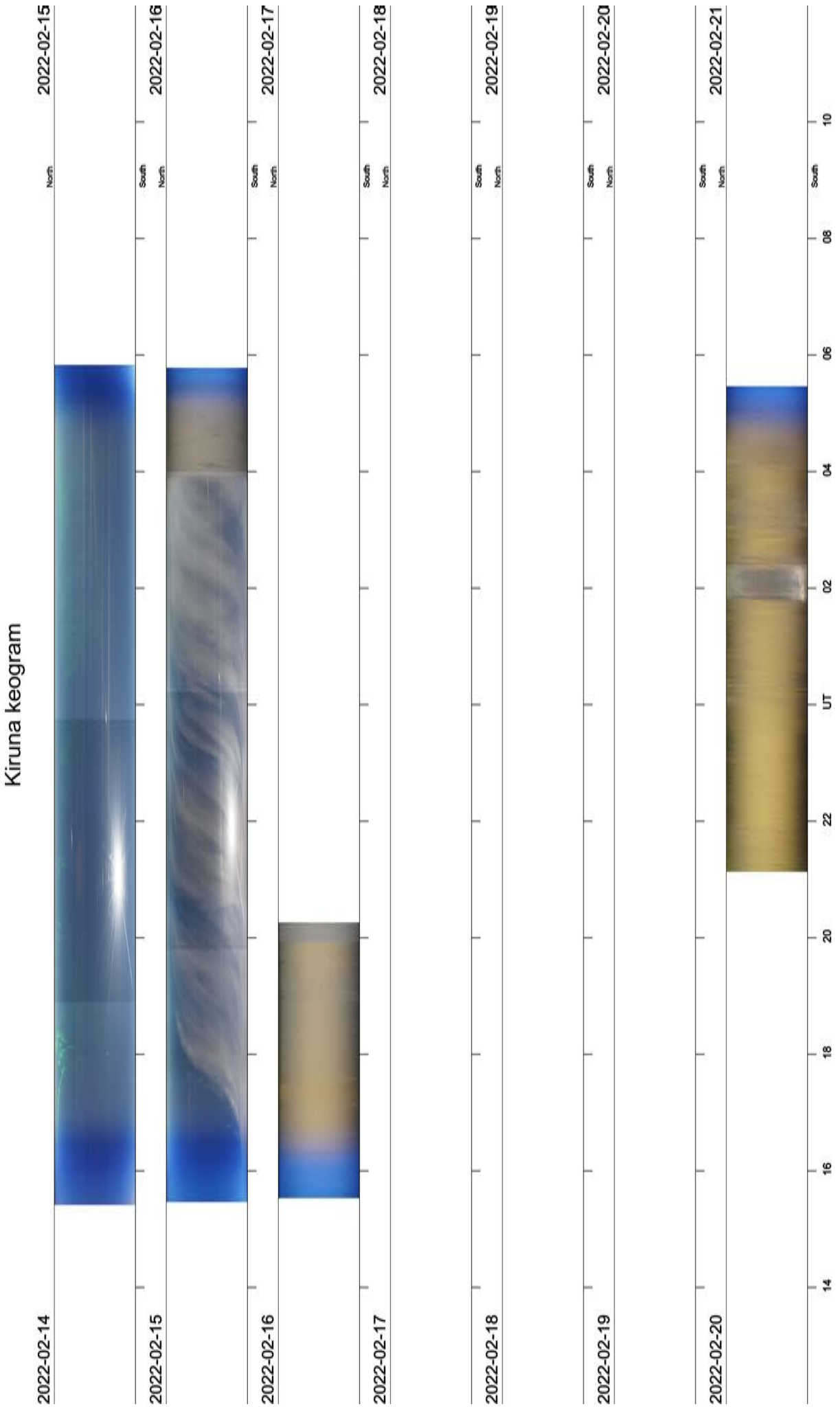
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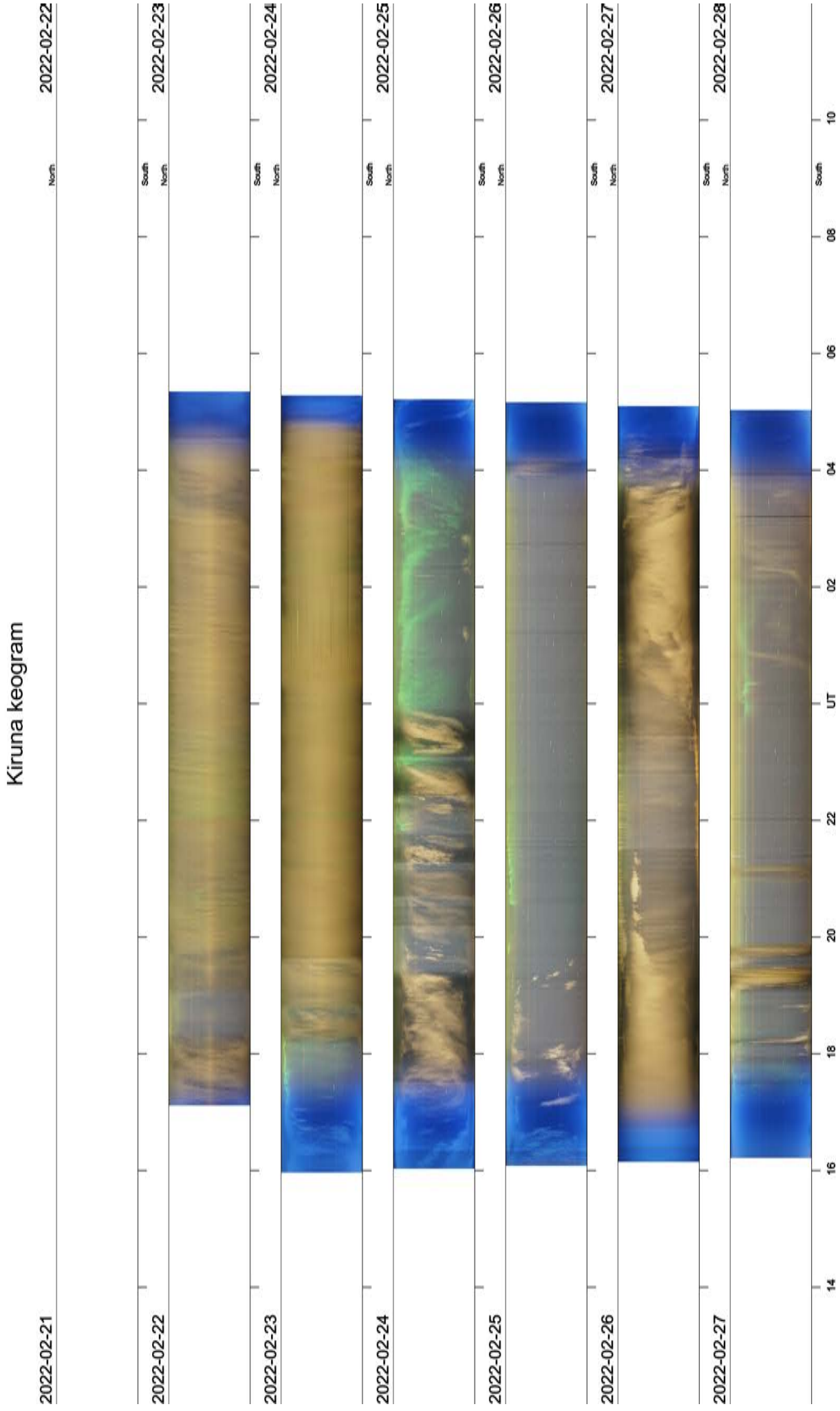
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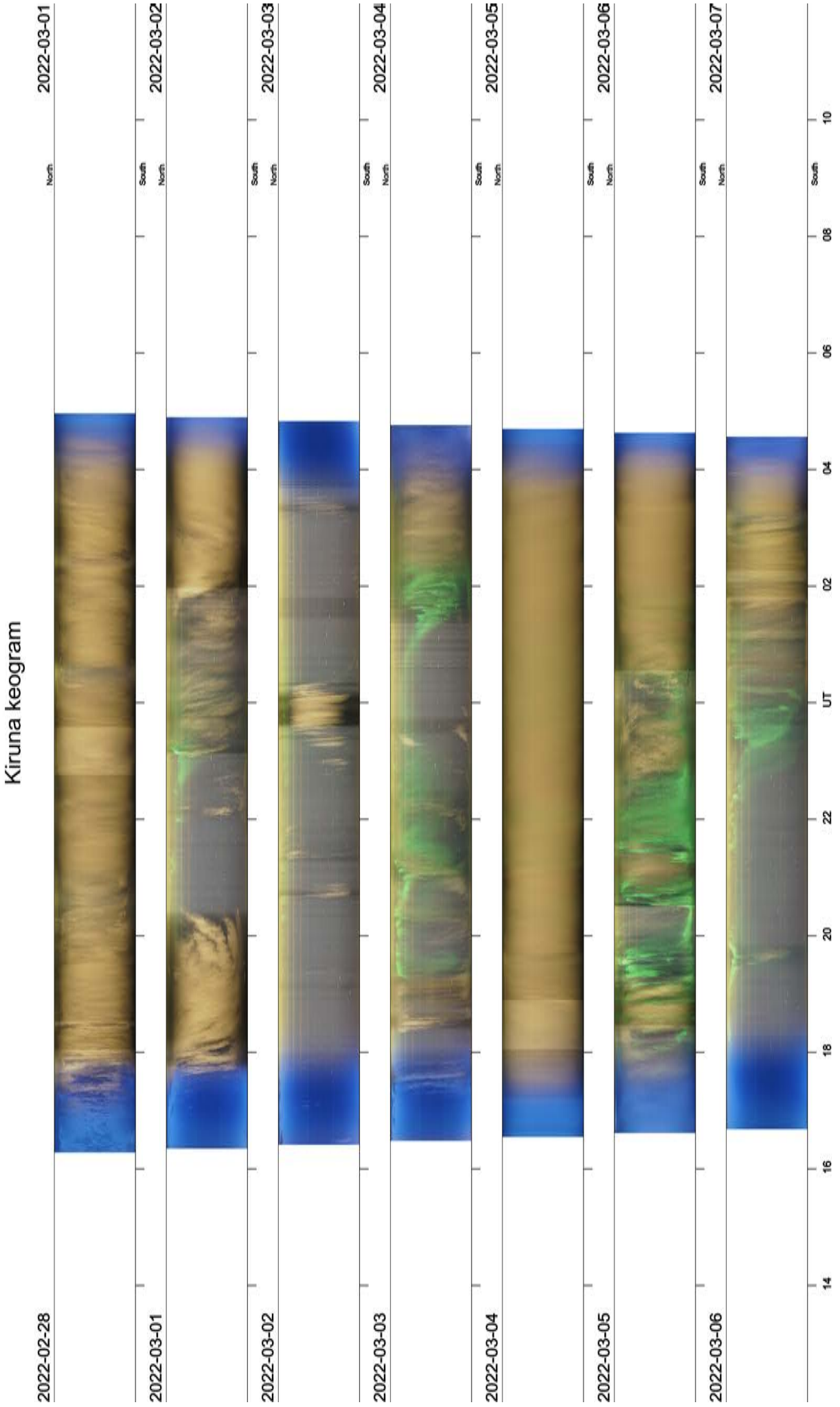
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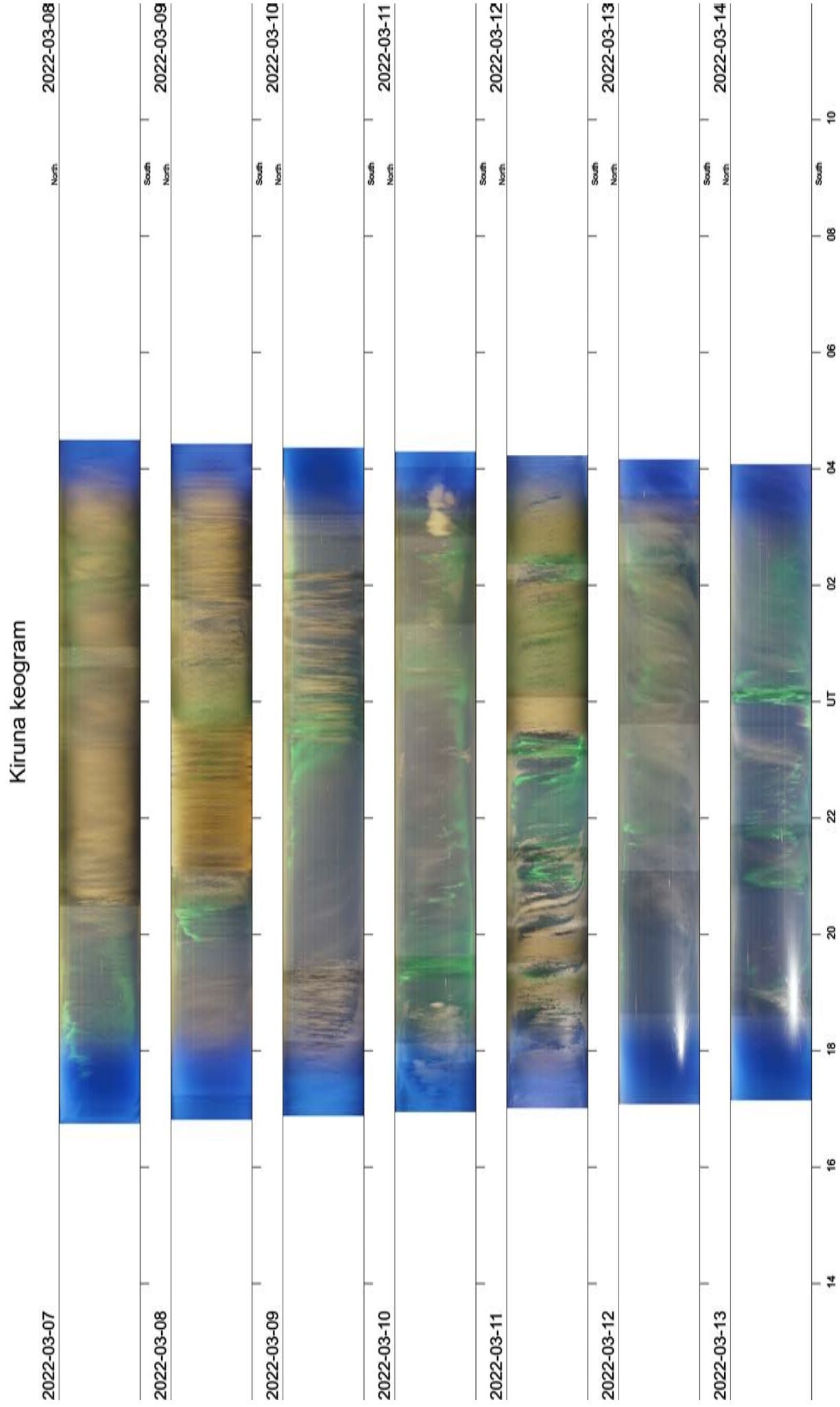
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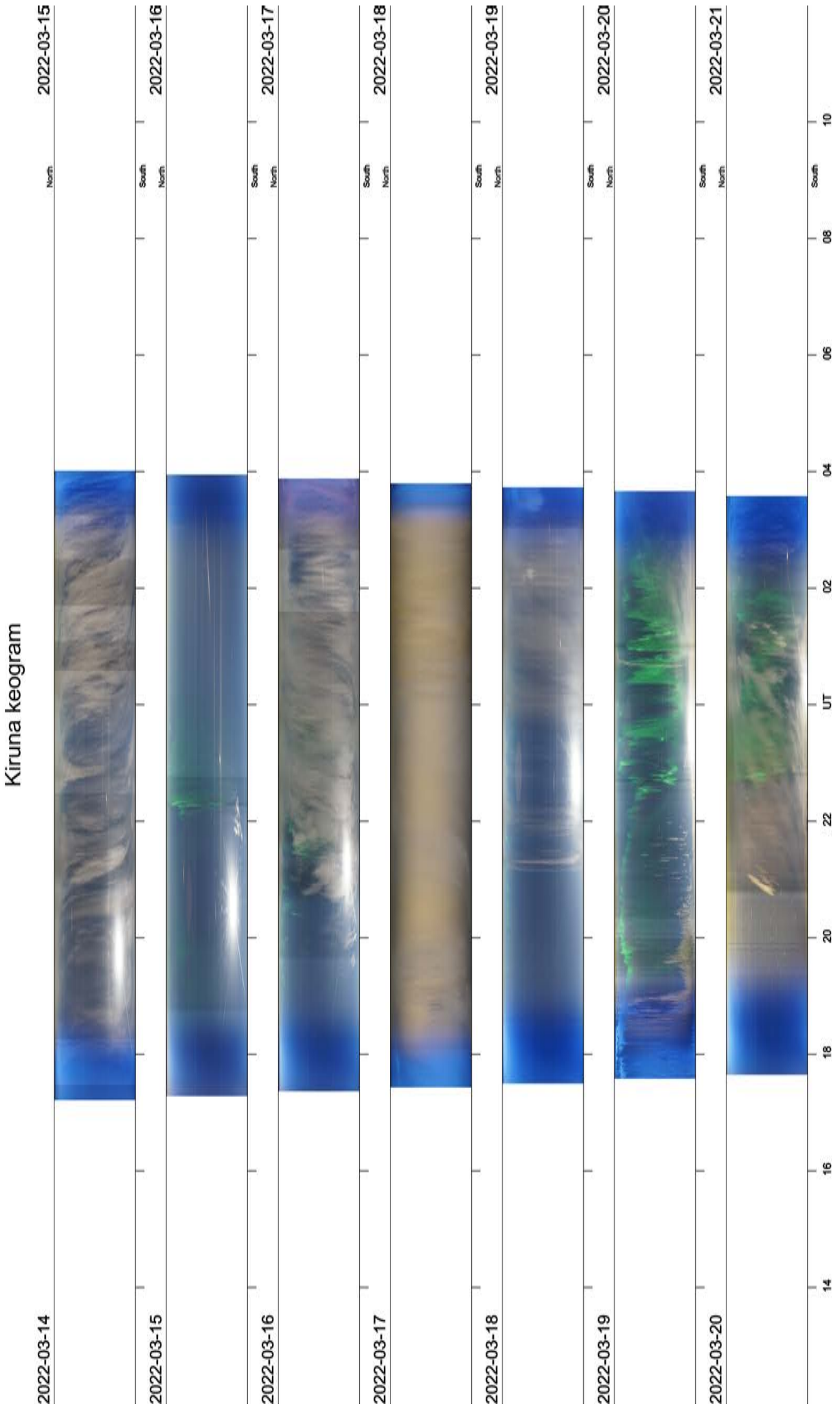
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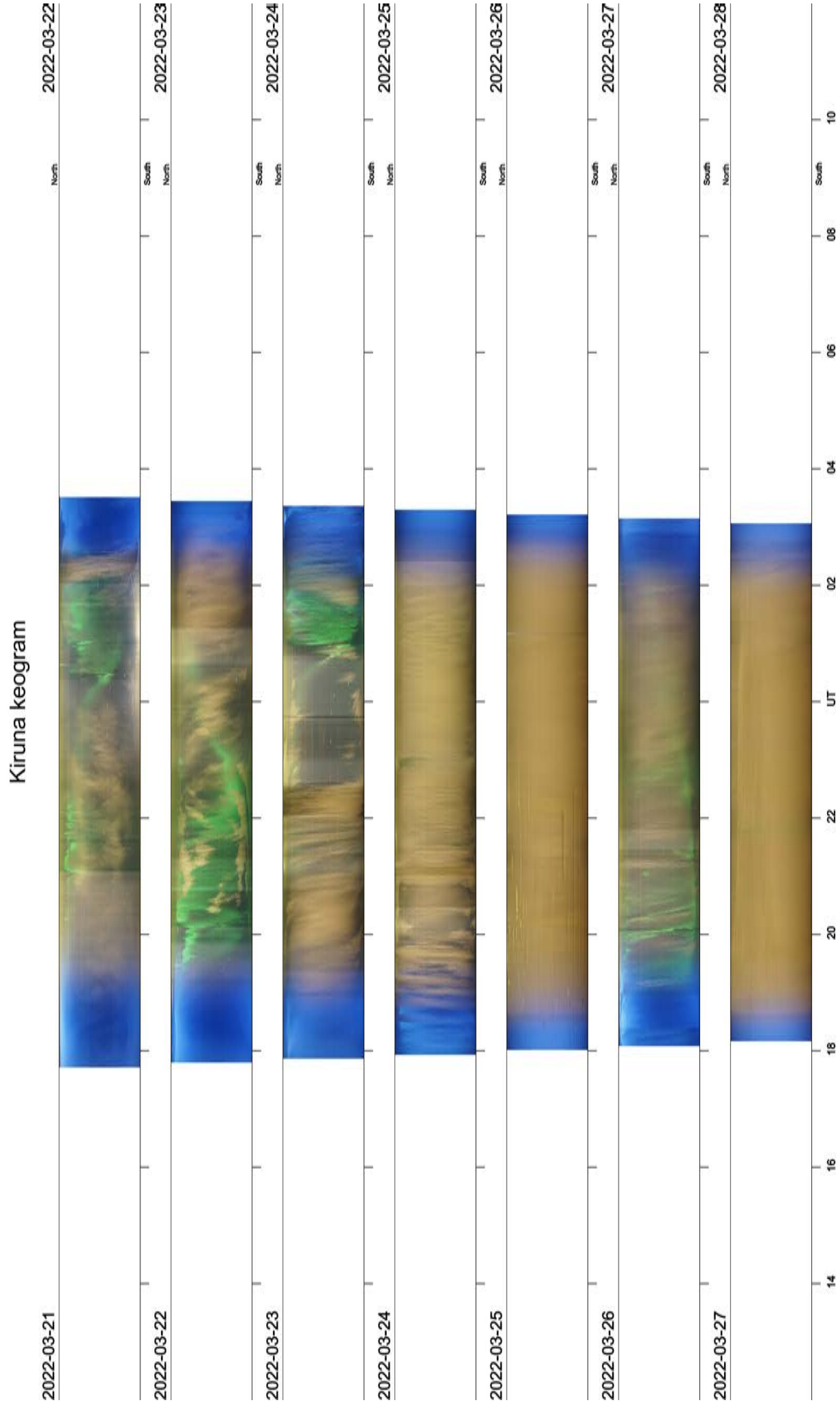
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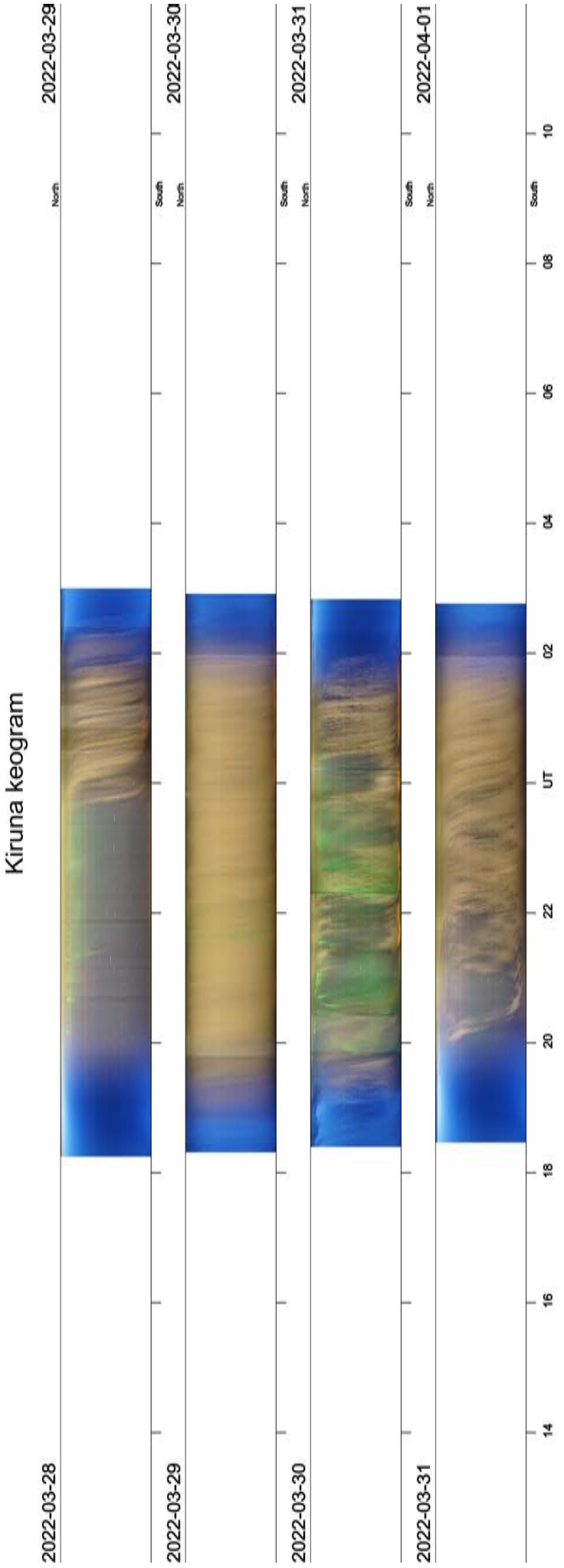
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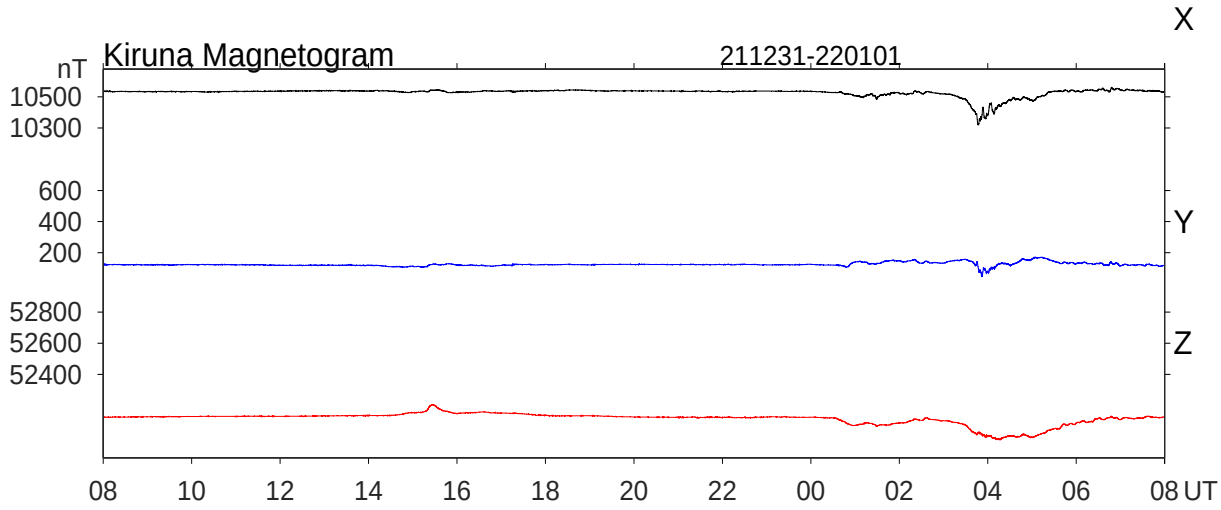
KIRUNA MAGNETOGRAM PLOTS

January - March 2022

https://www.irf.se/mag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211231-220101
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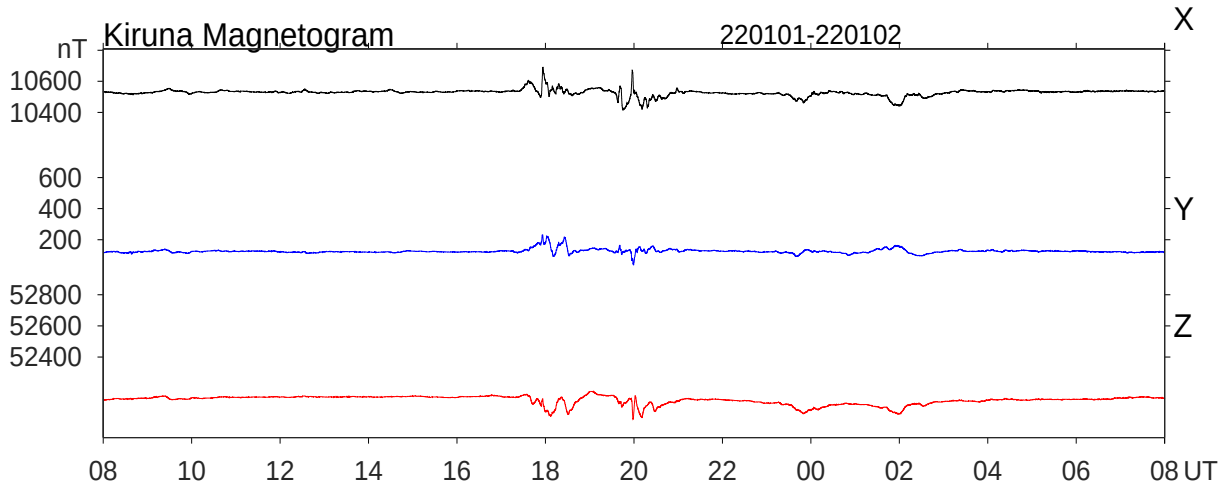
10300
600
400
200
52800
52600
52400
X
Y
Z
08 10 12 14 16 18 20 22 00 02 04 06 08 UT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X
Y
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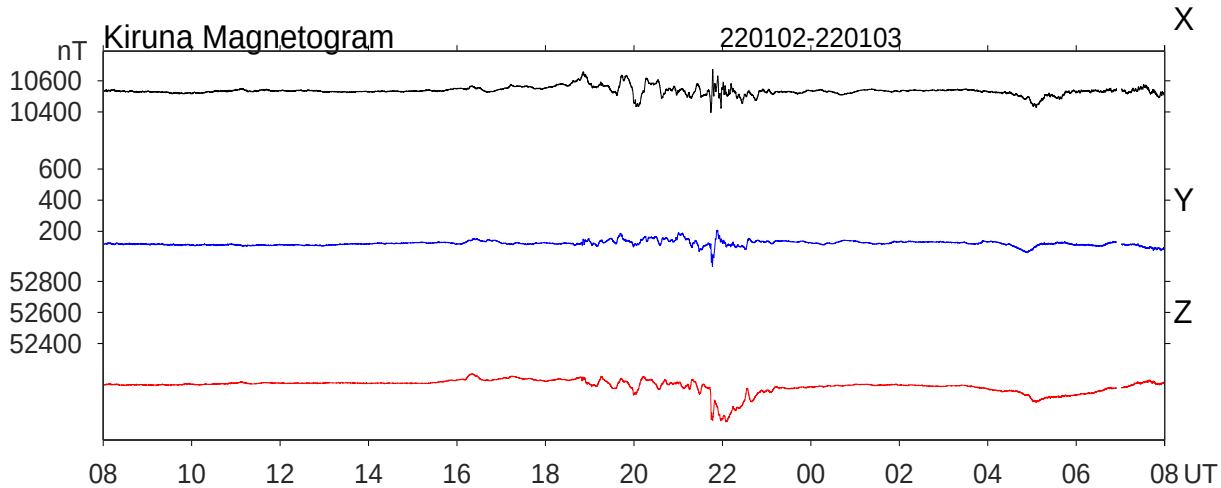
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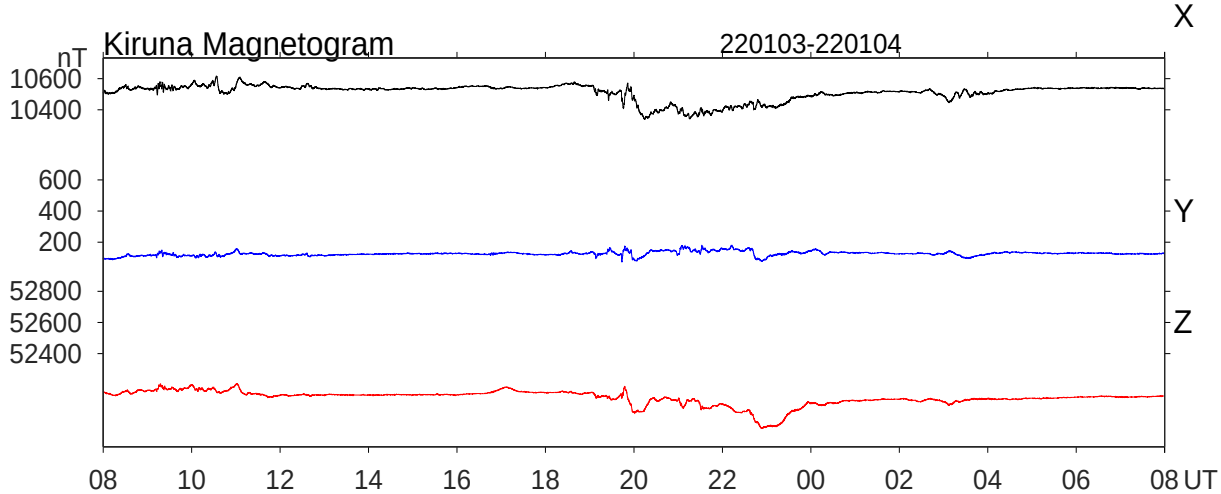
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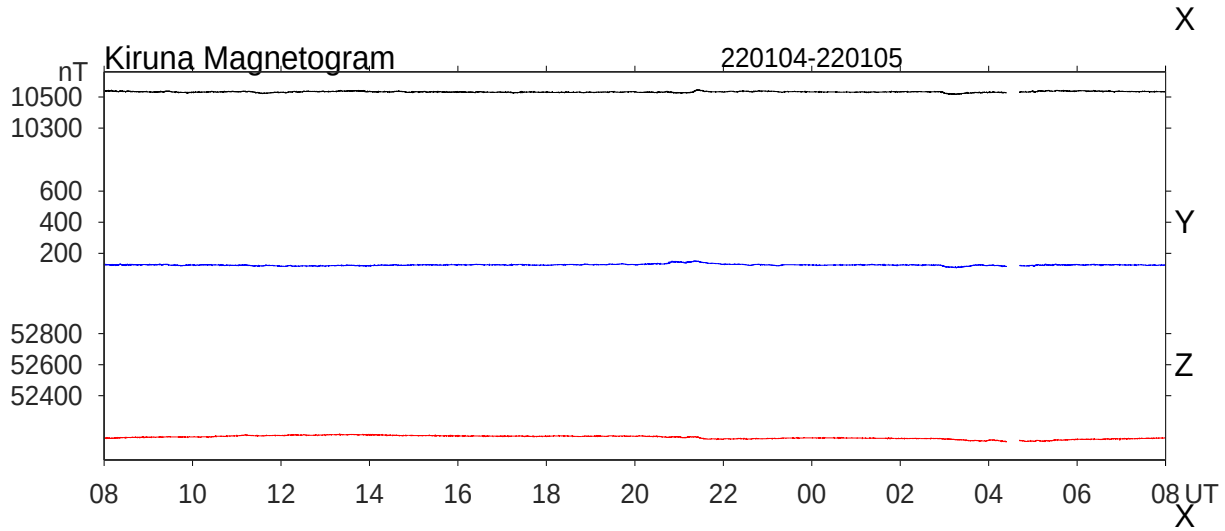
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X
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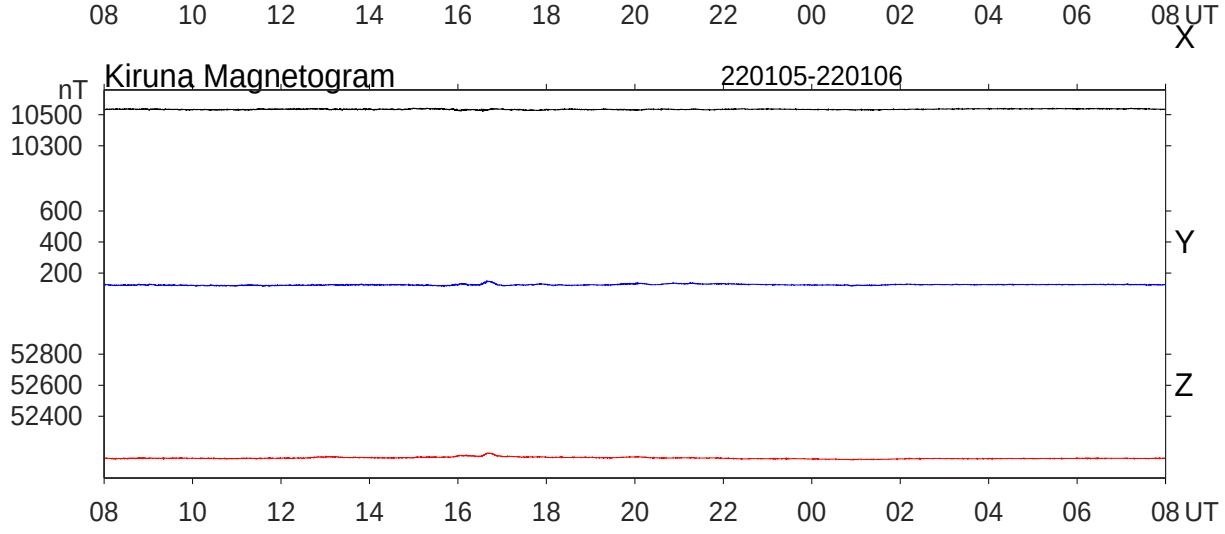
Kiruna Magnetogram
220105-220106
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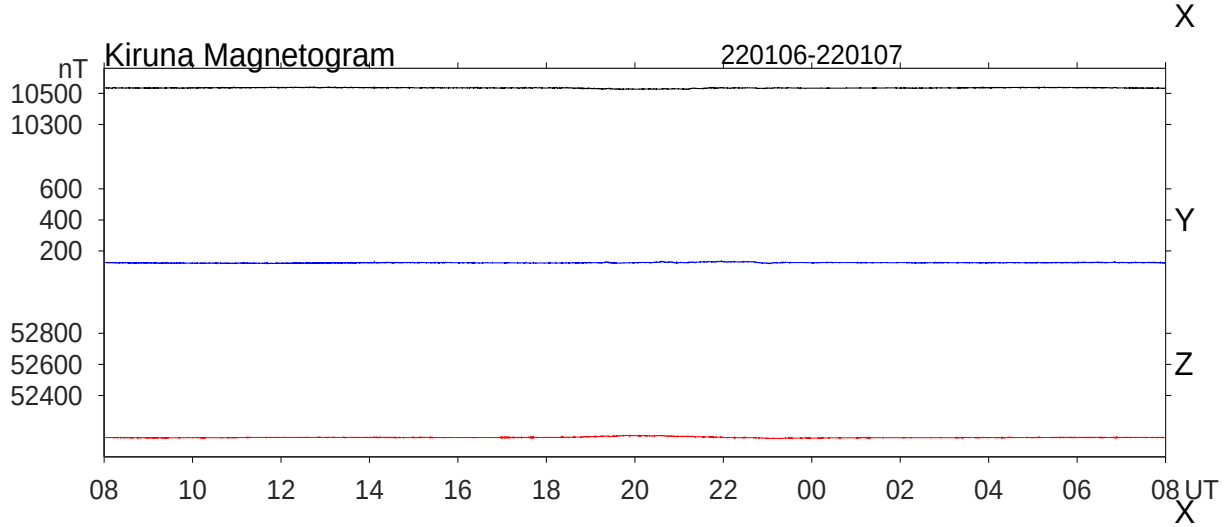
Kiruna Magnetogram
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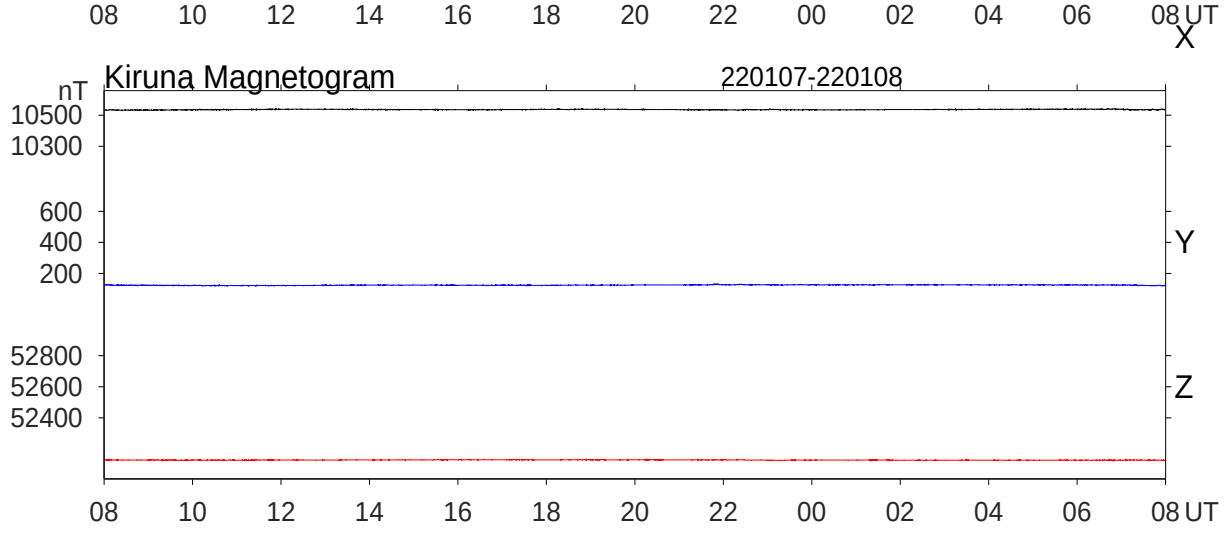
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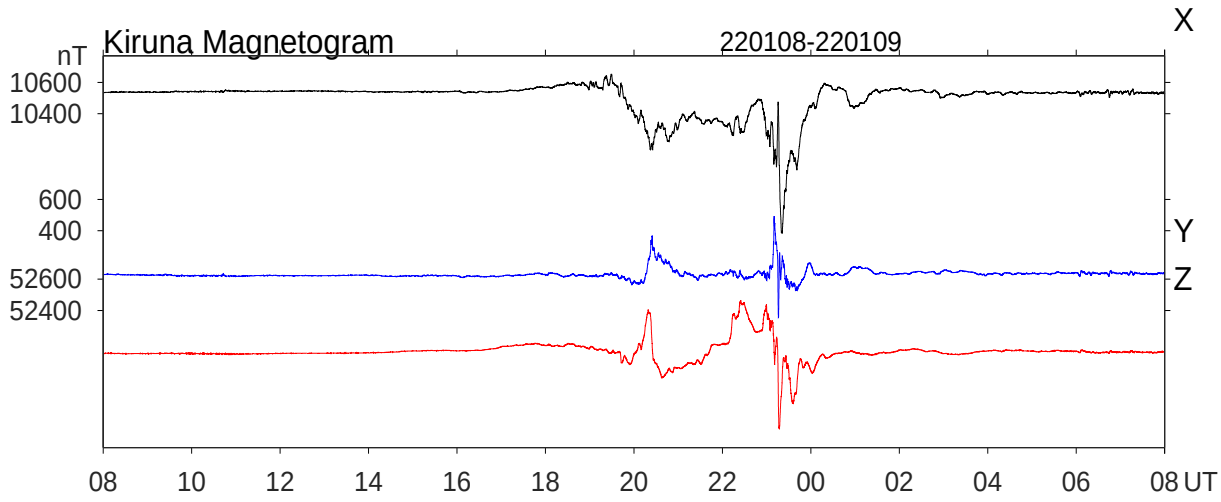
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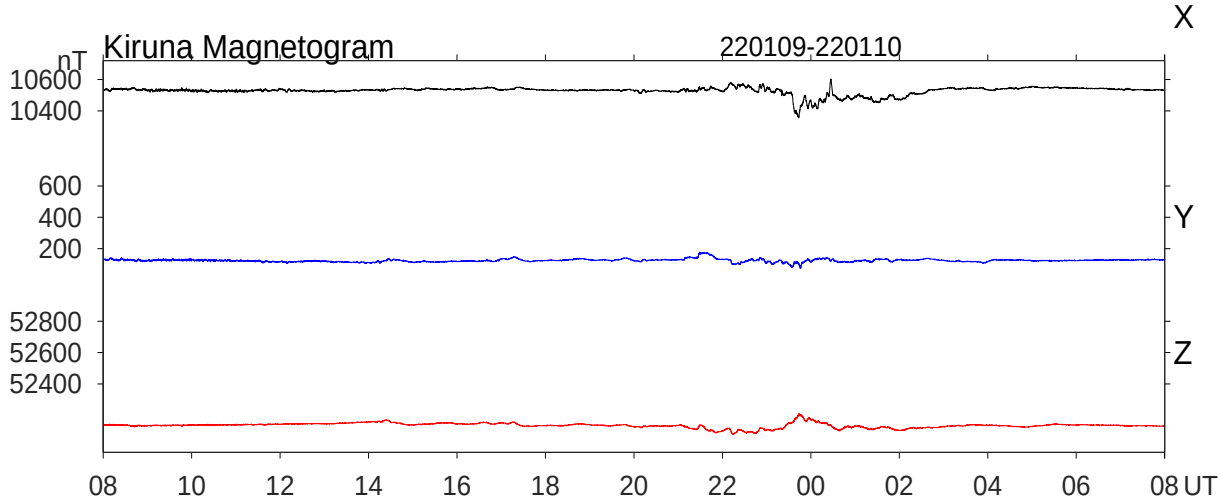
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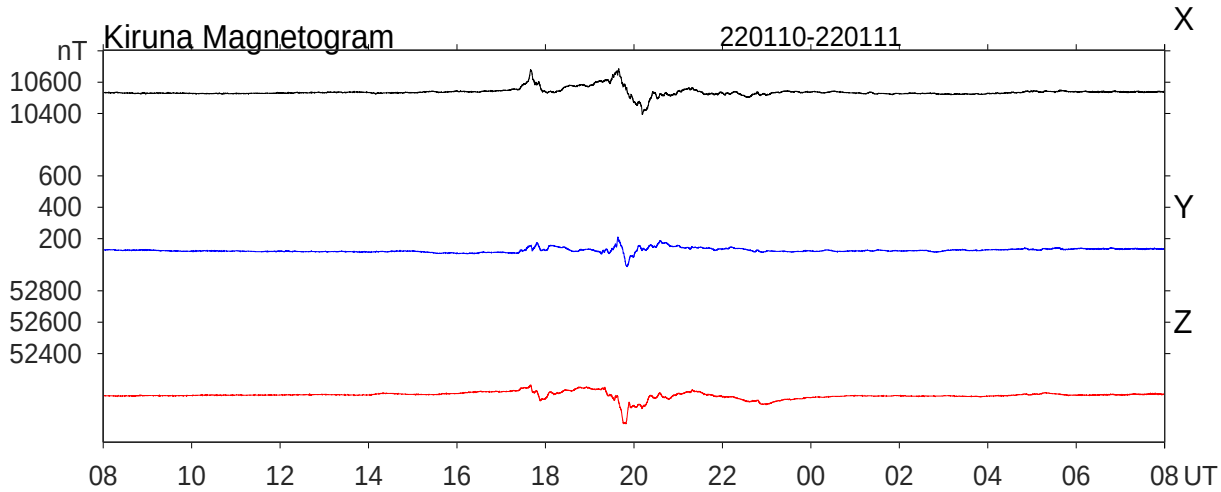
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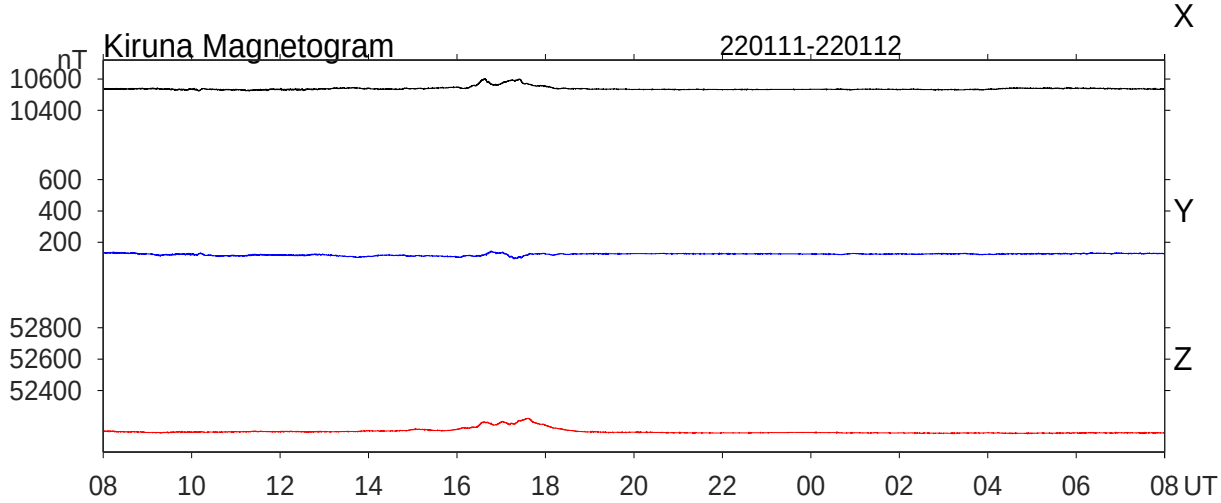
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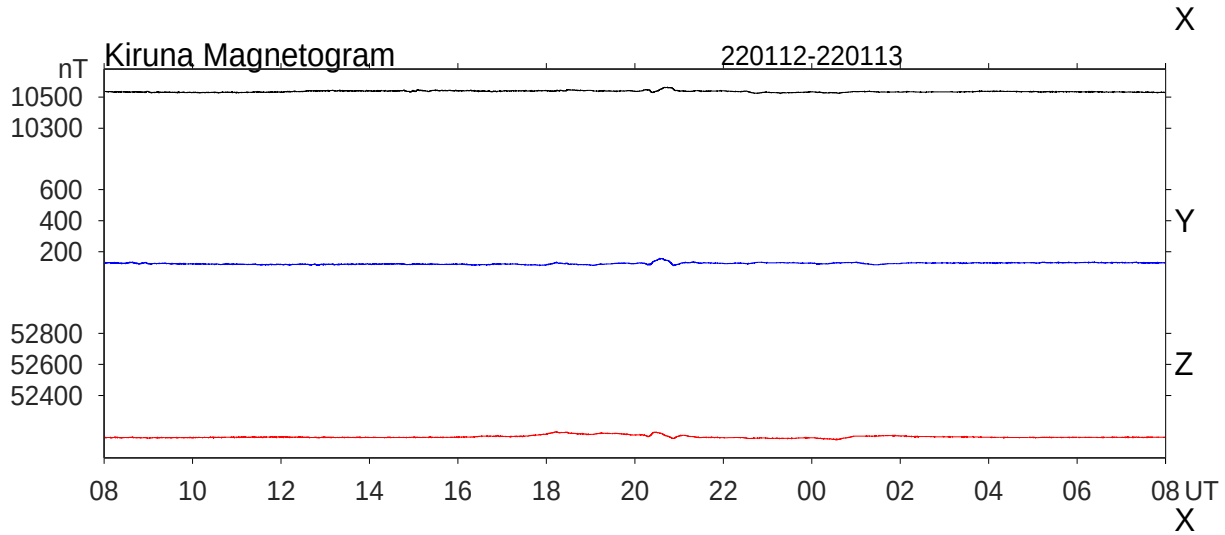
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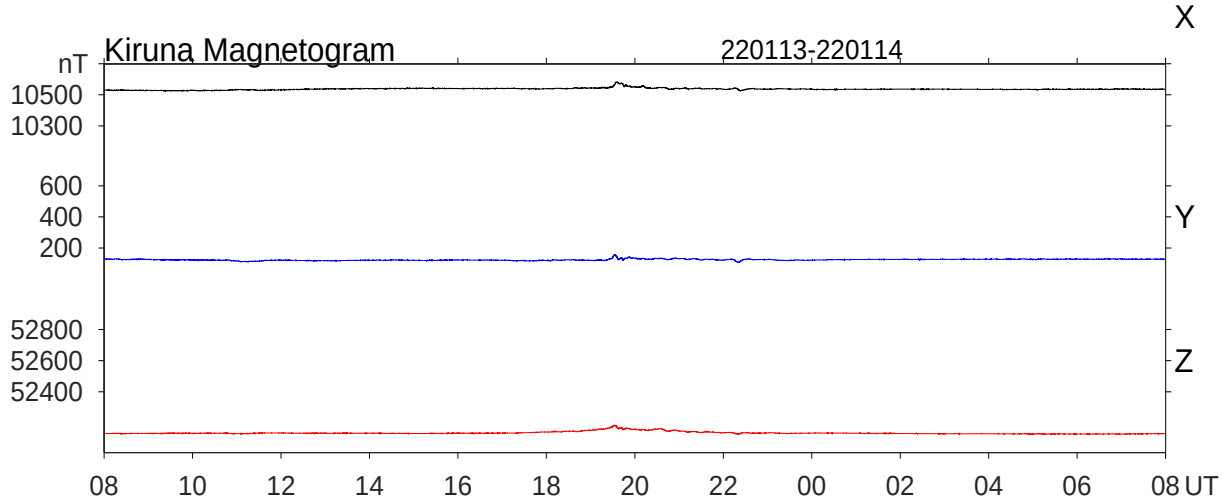
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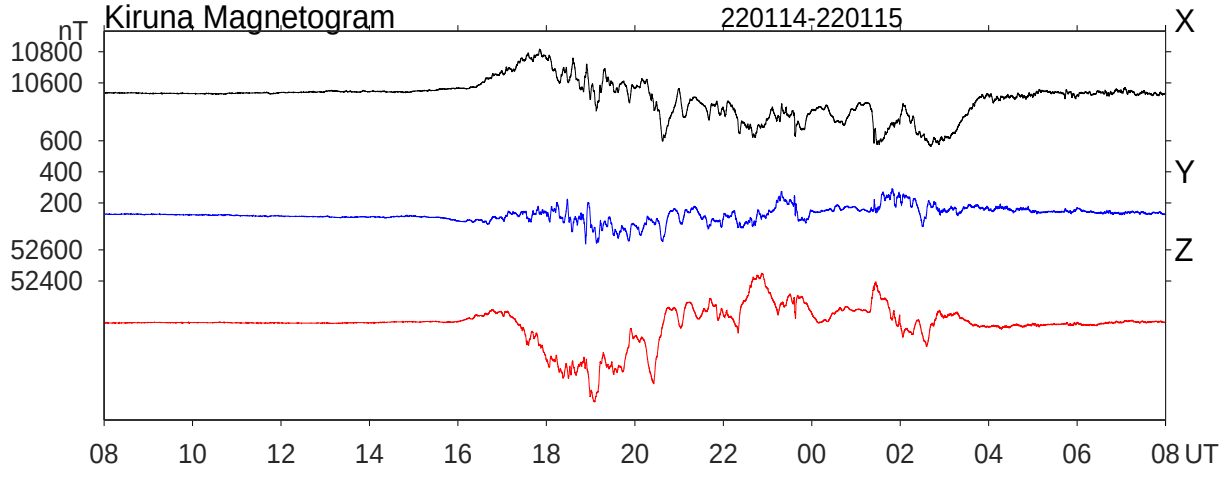
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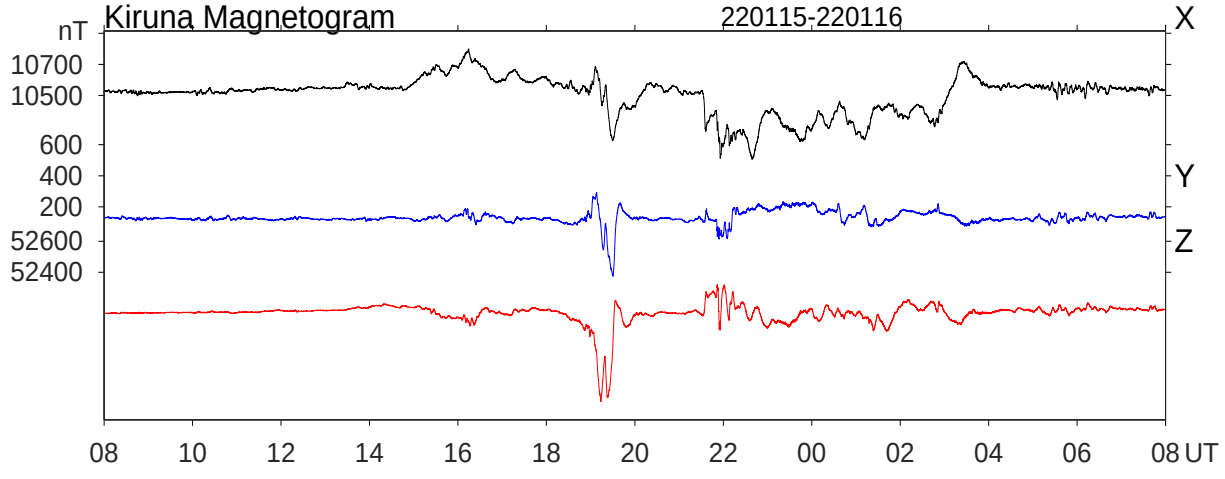
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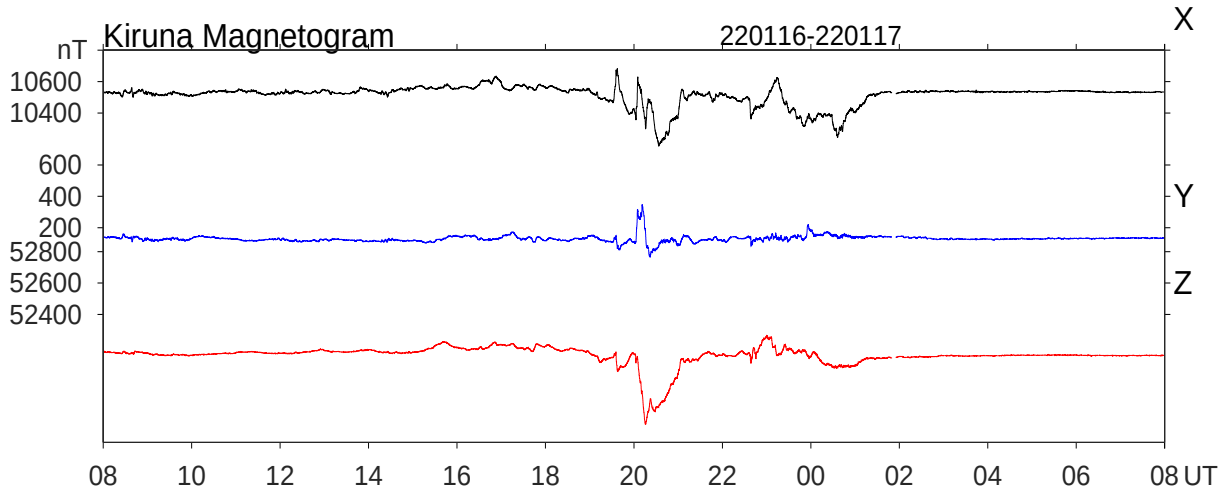
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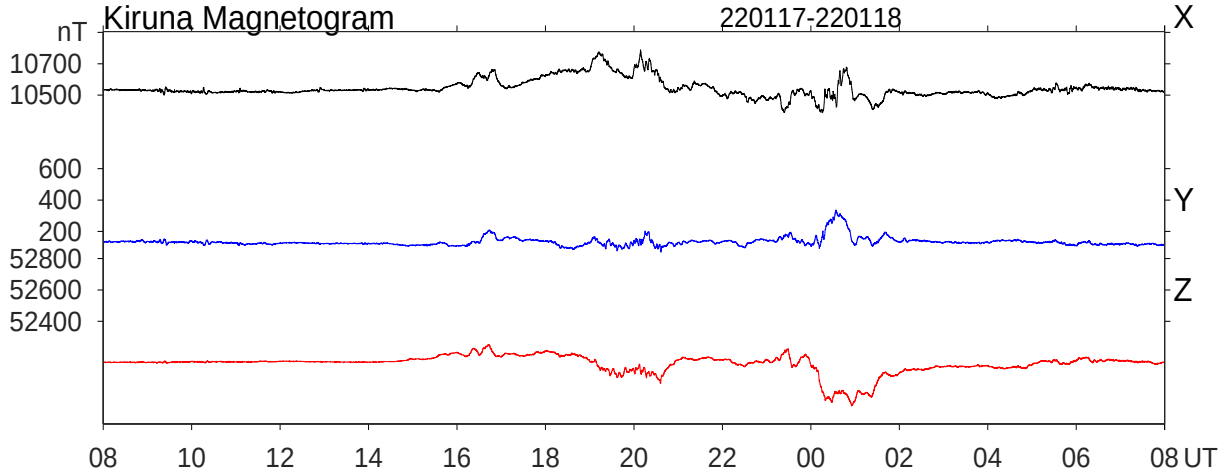
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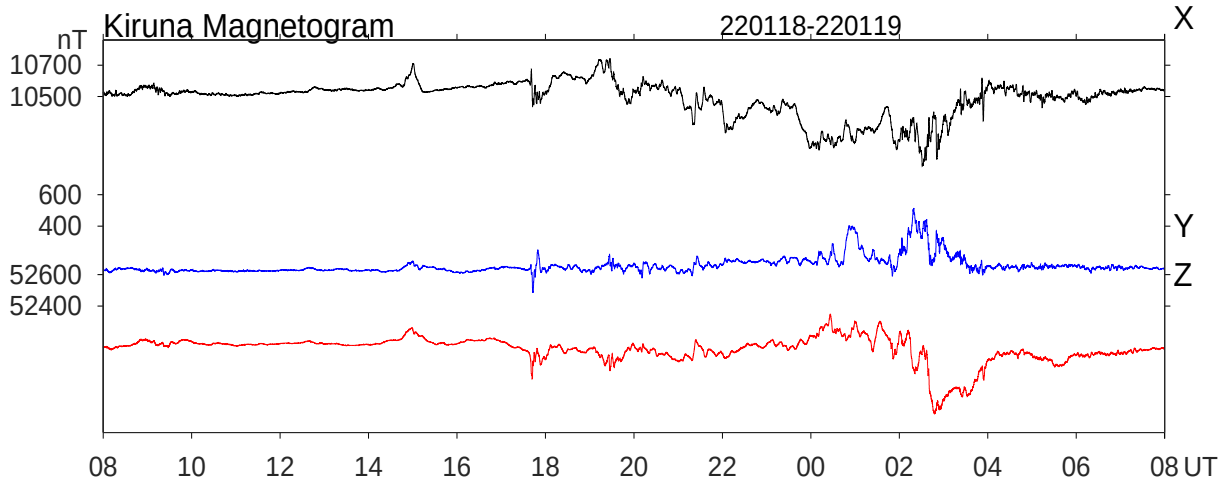
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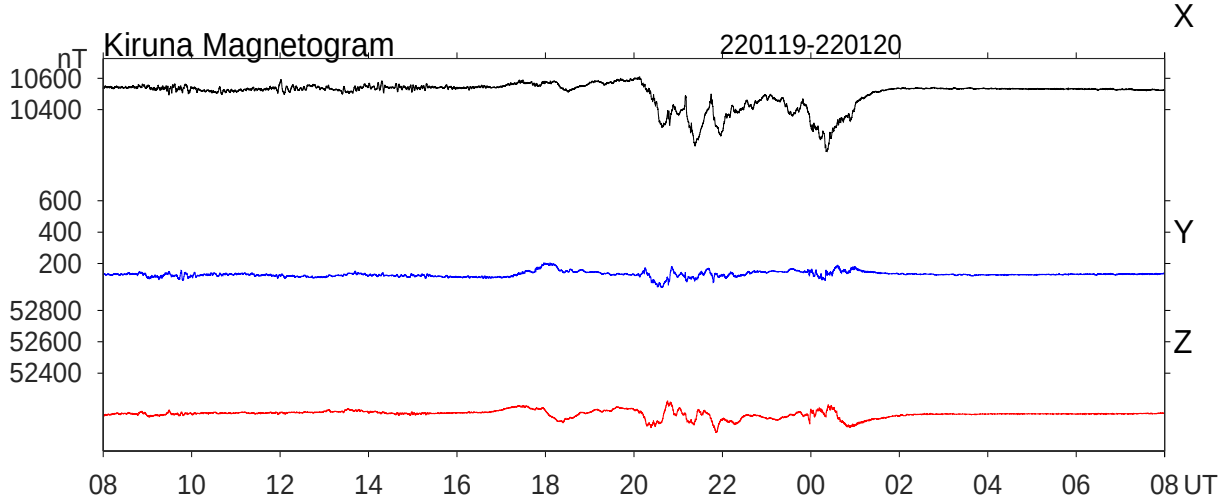
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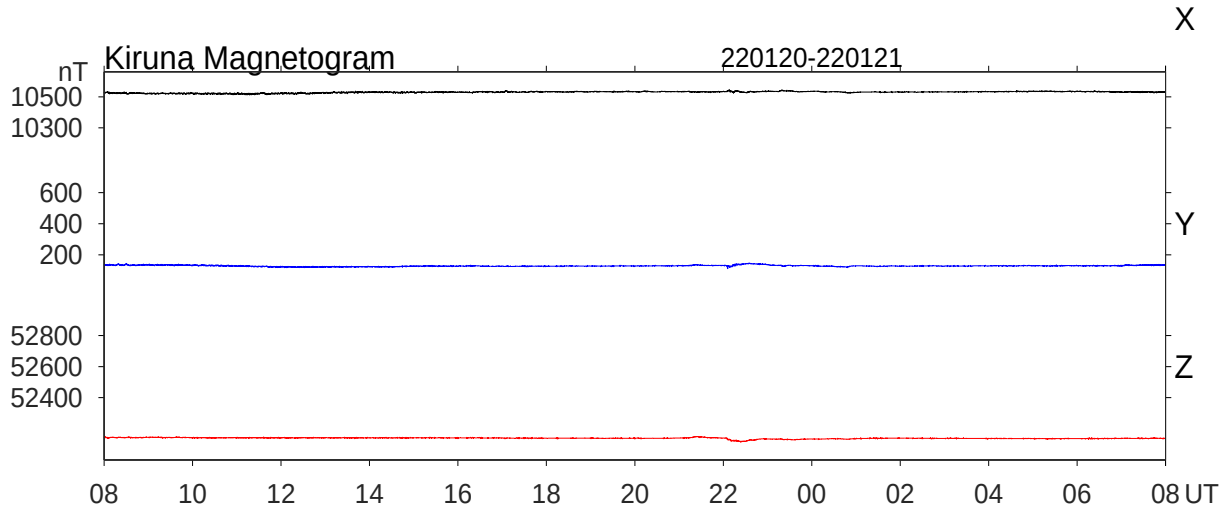
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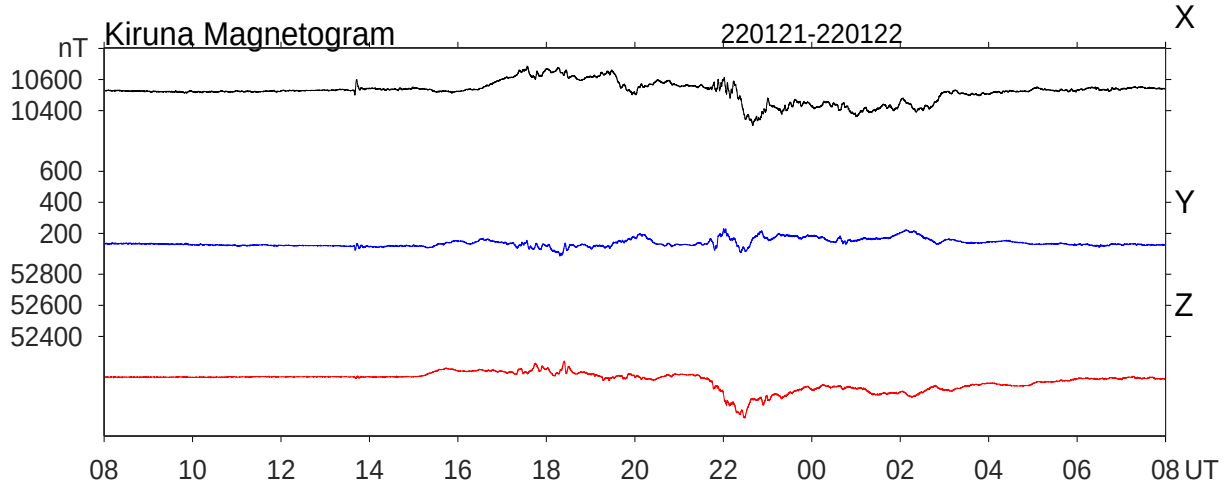
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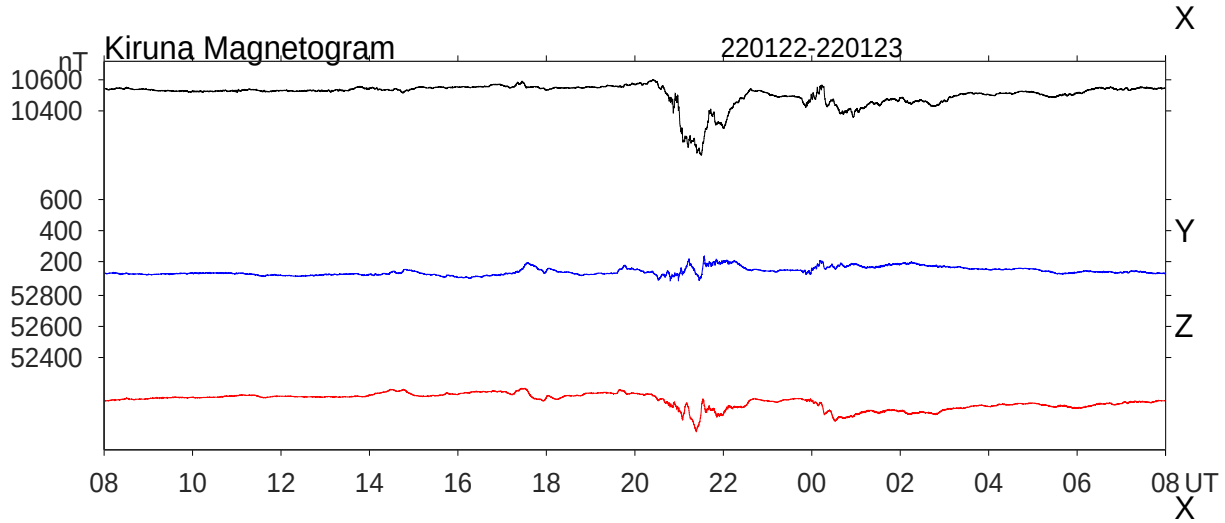
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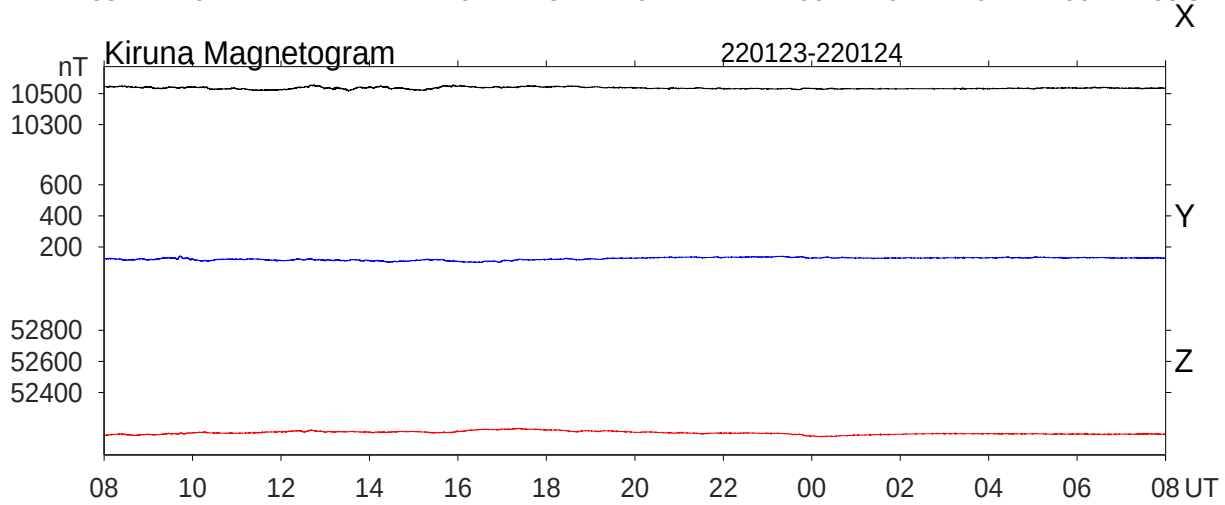
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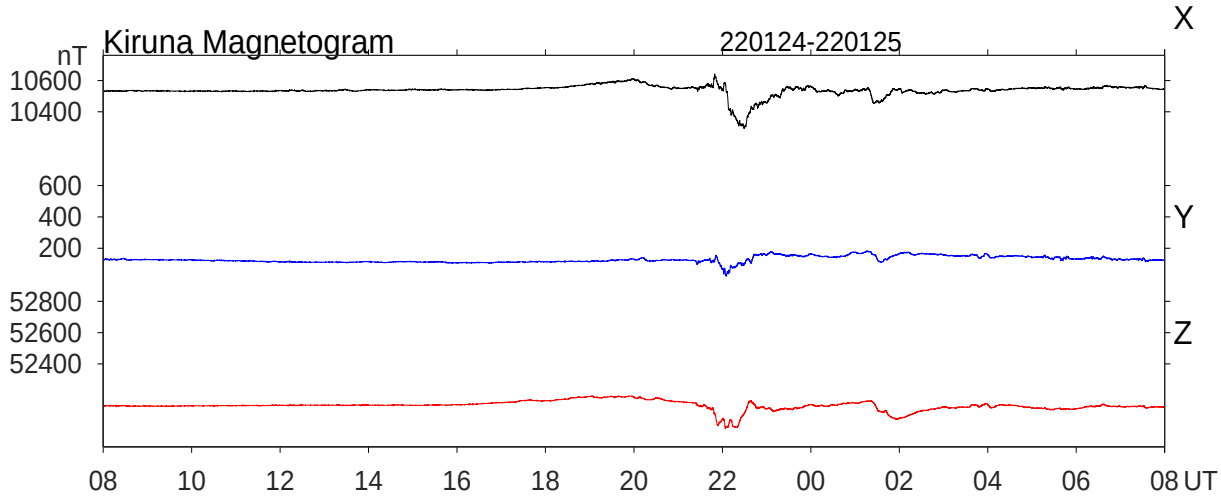
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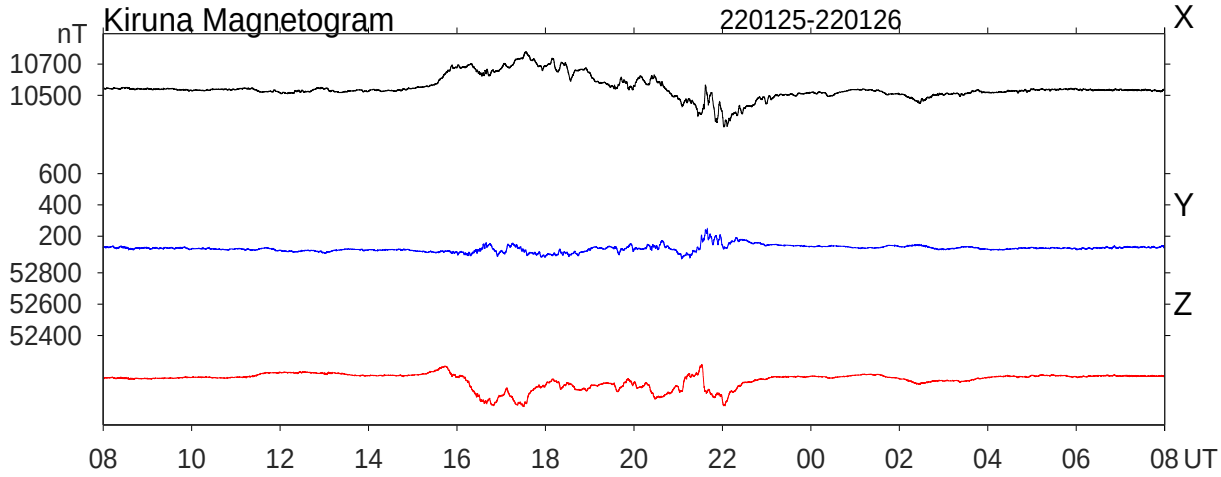
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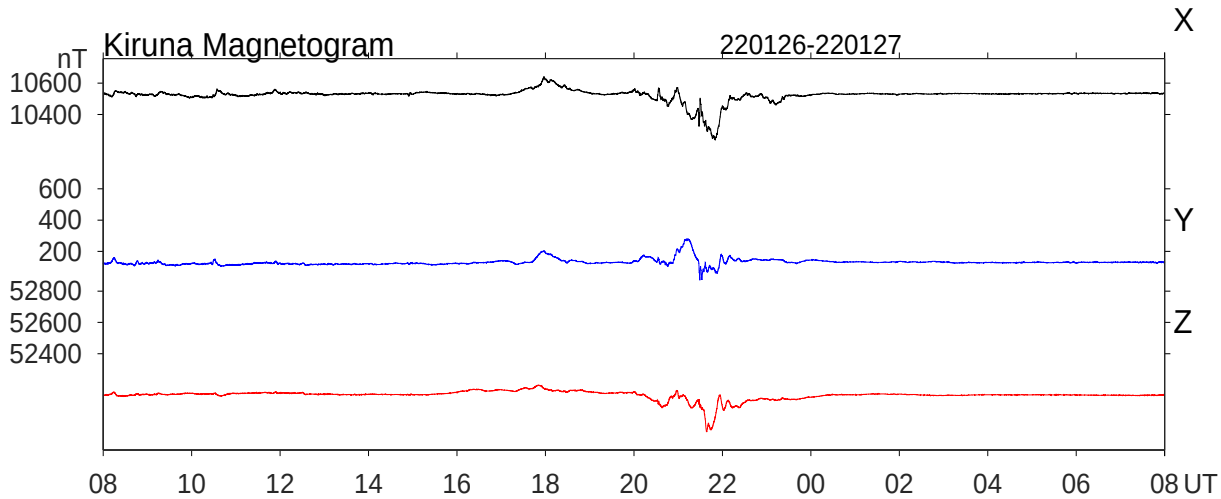
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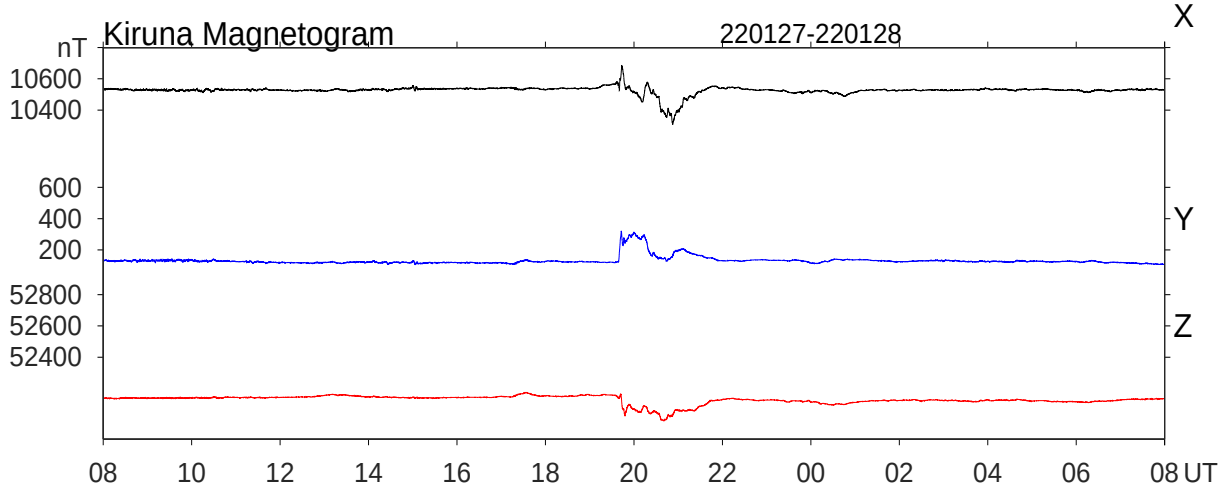
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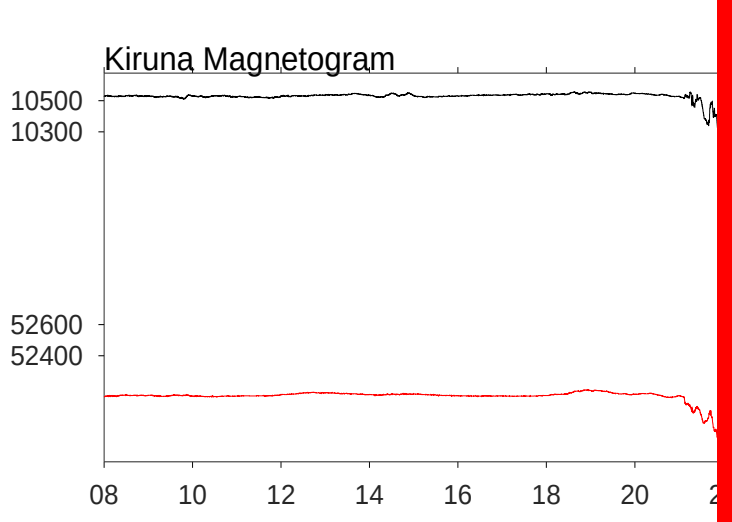
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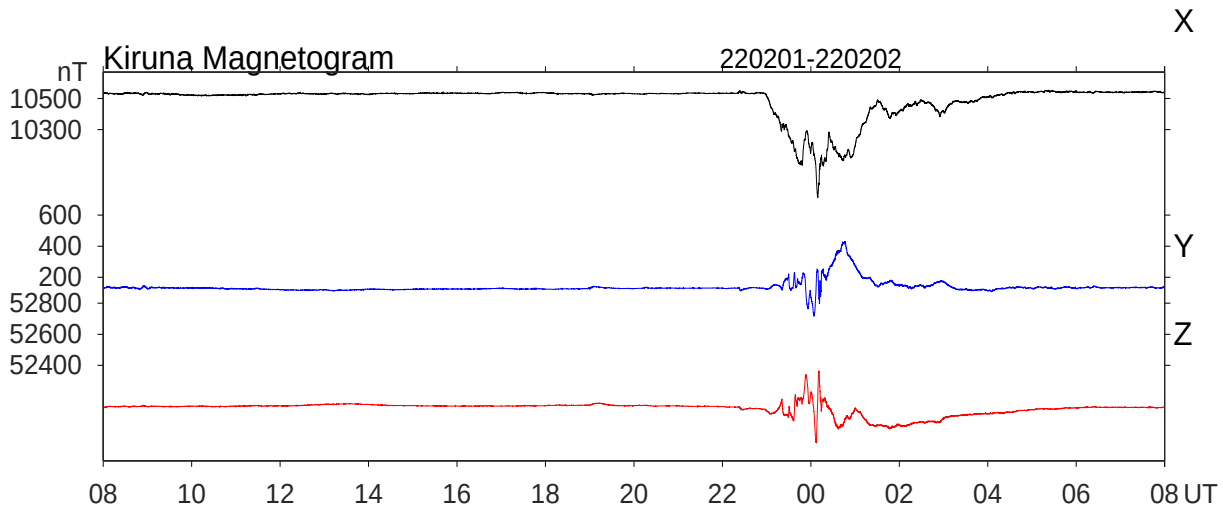
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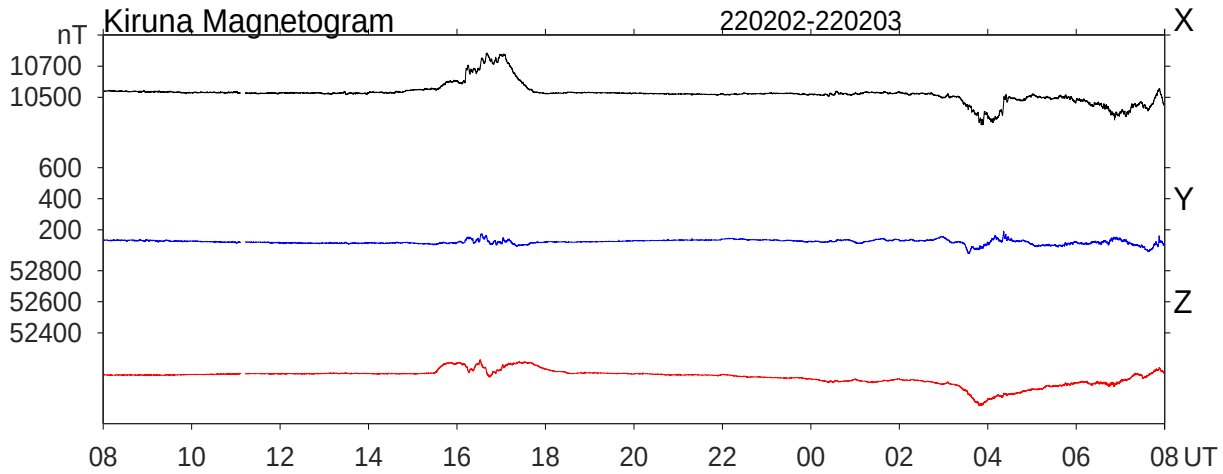
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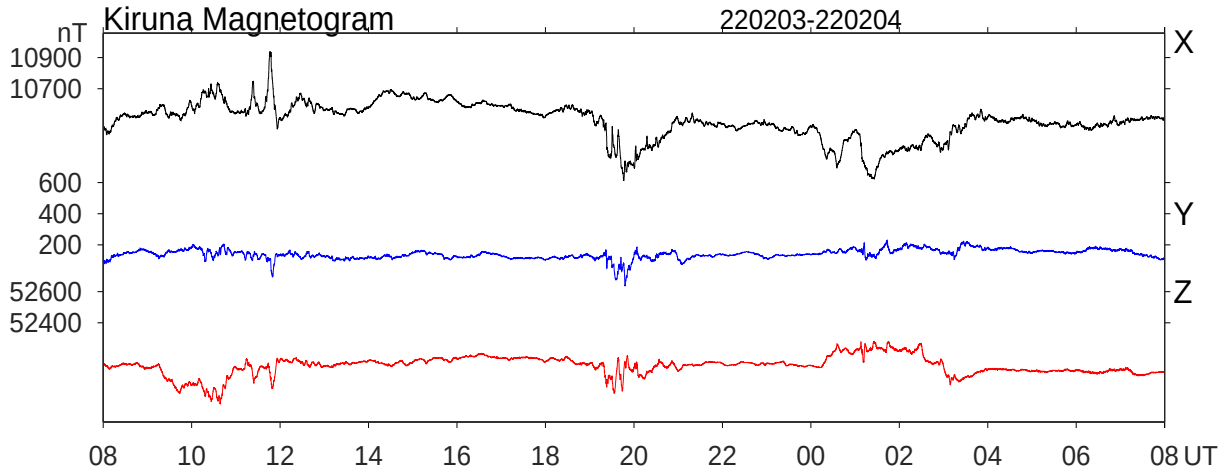
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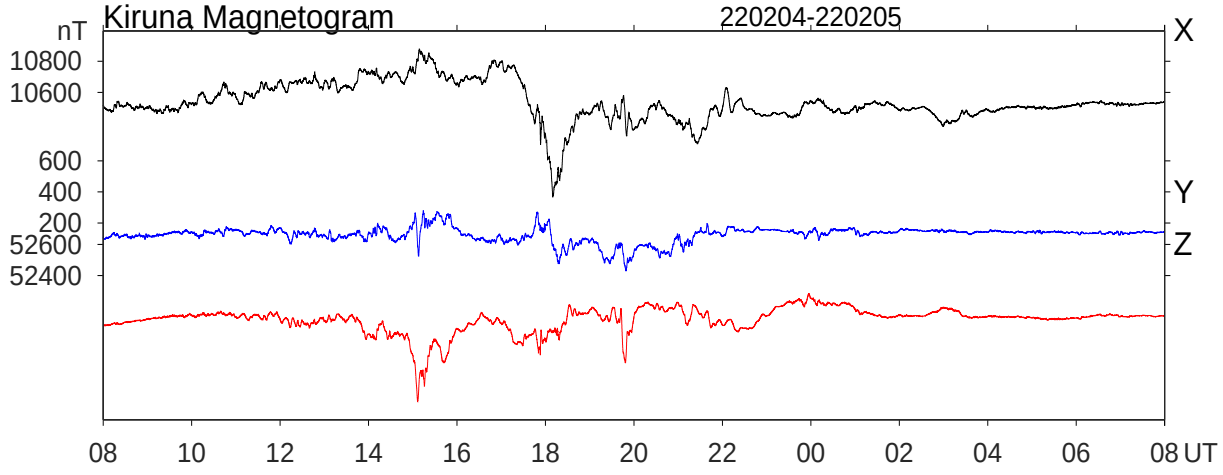
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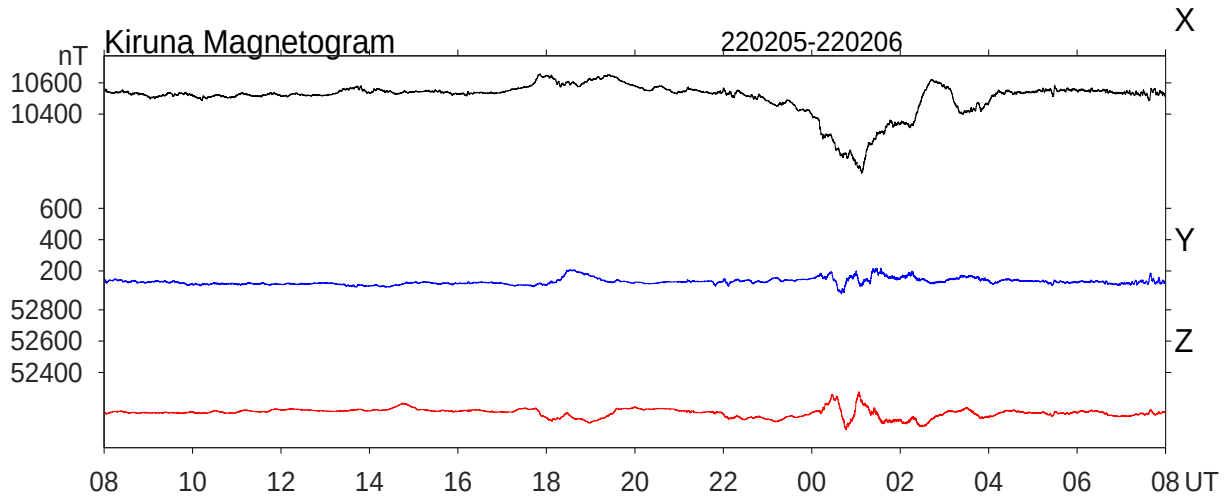
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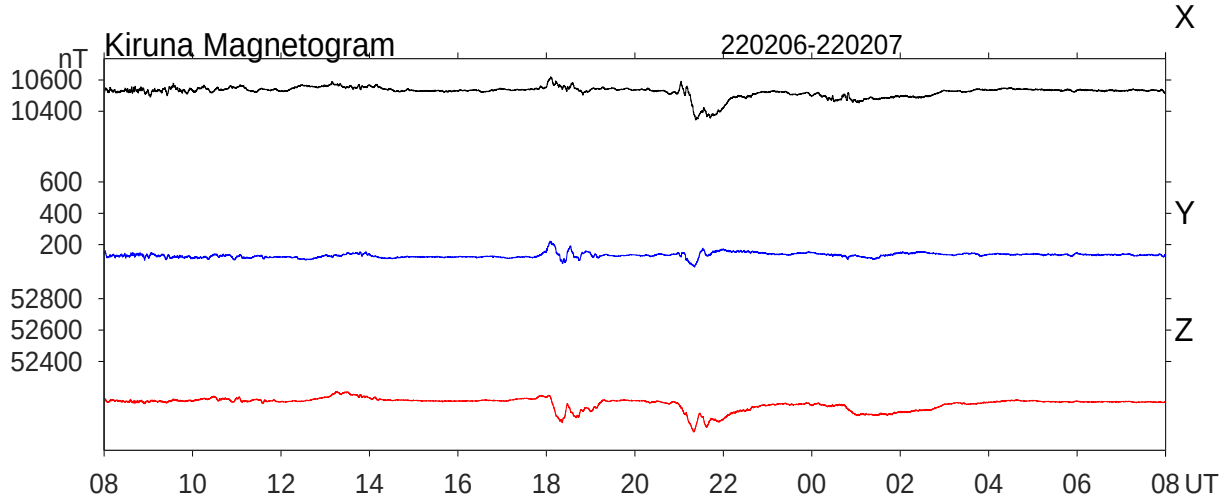
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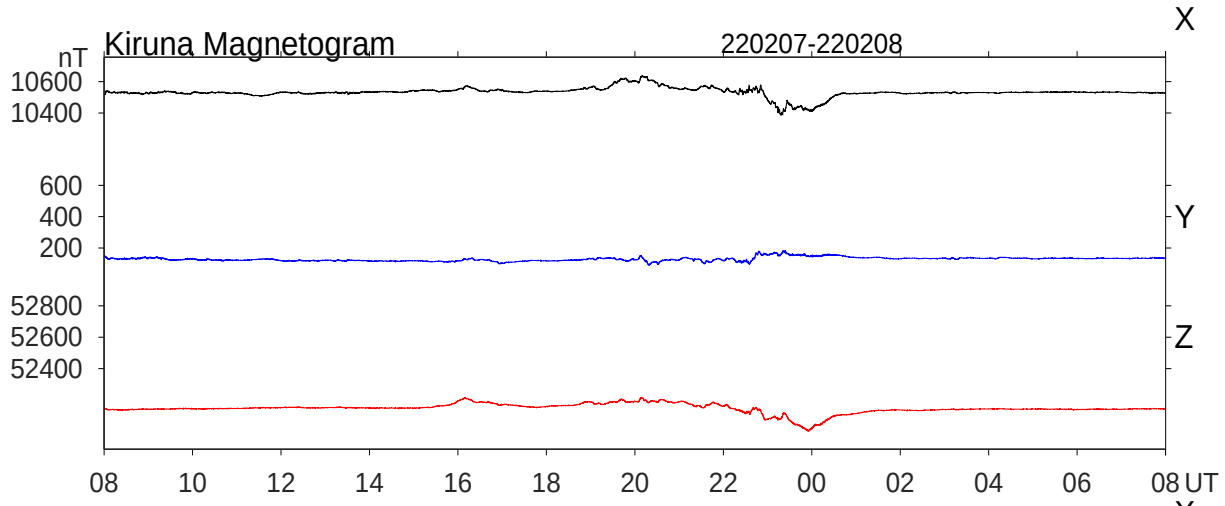
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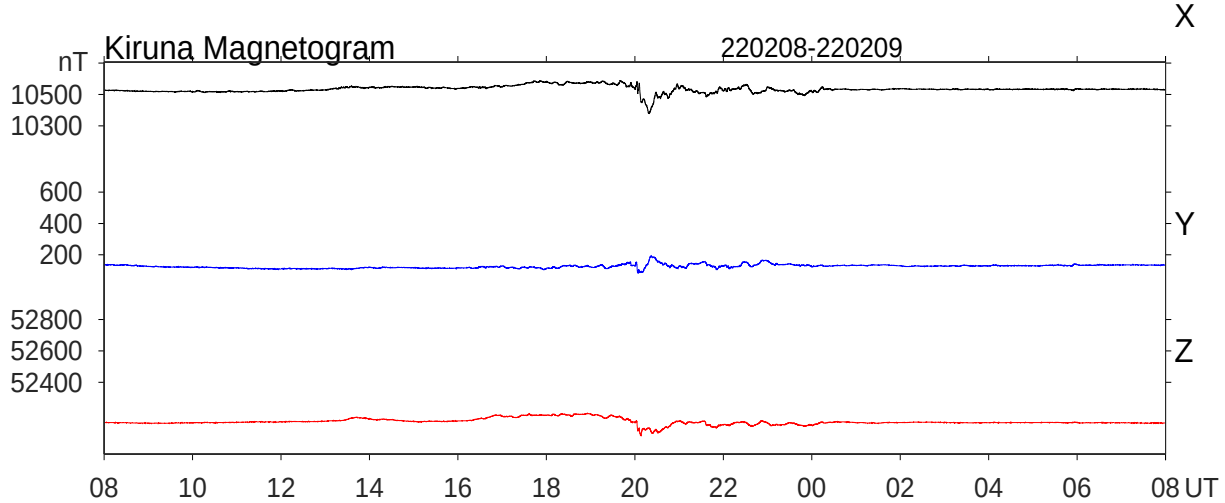
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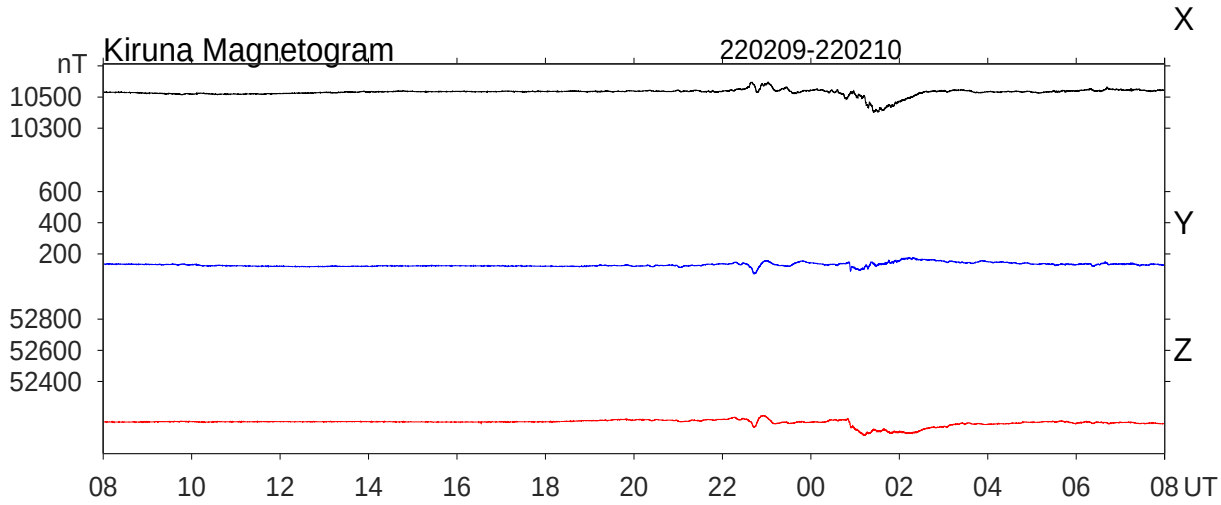
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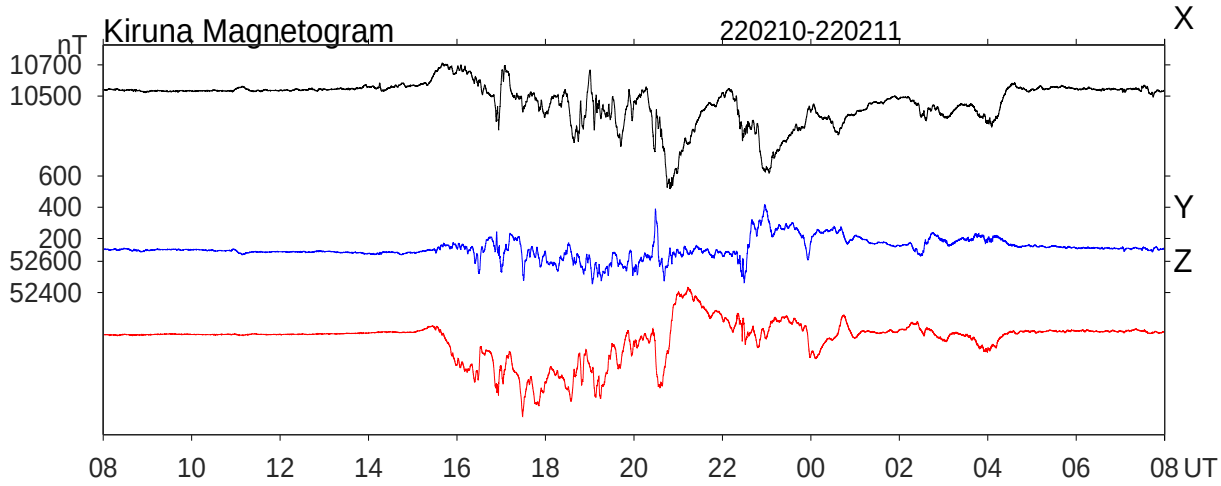
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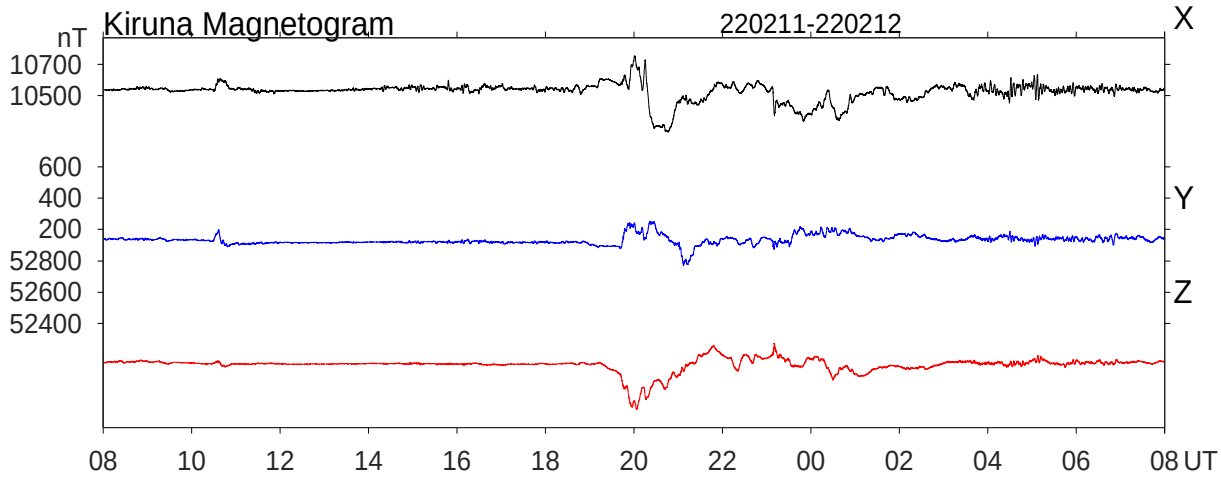
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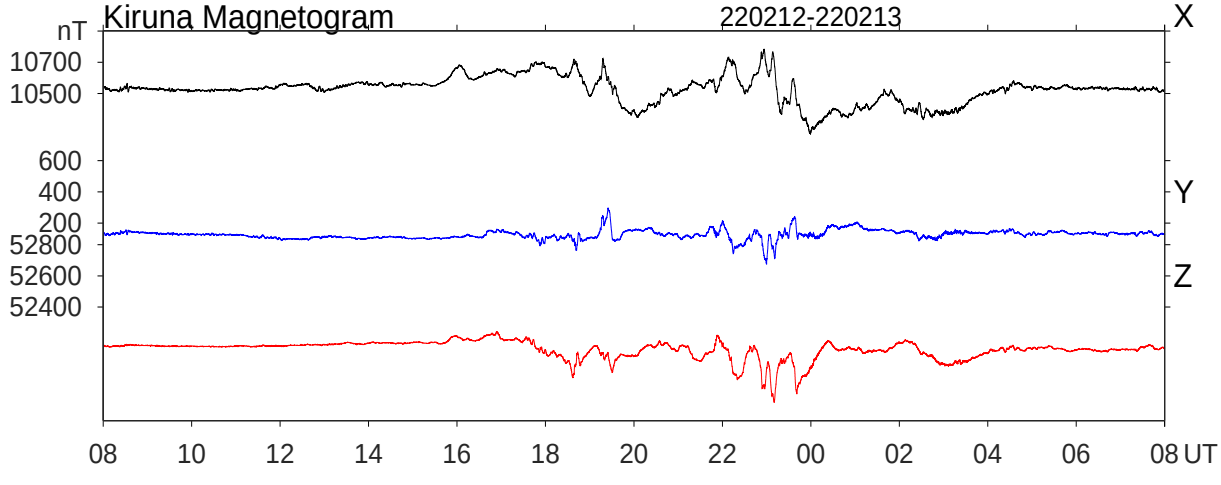
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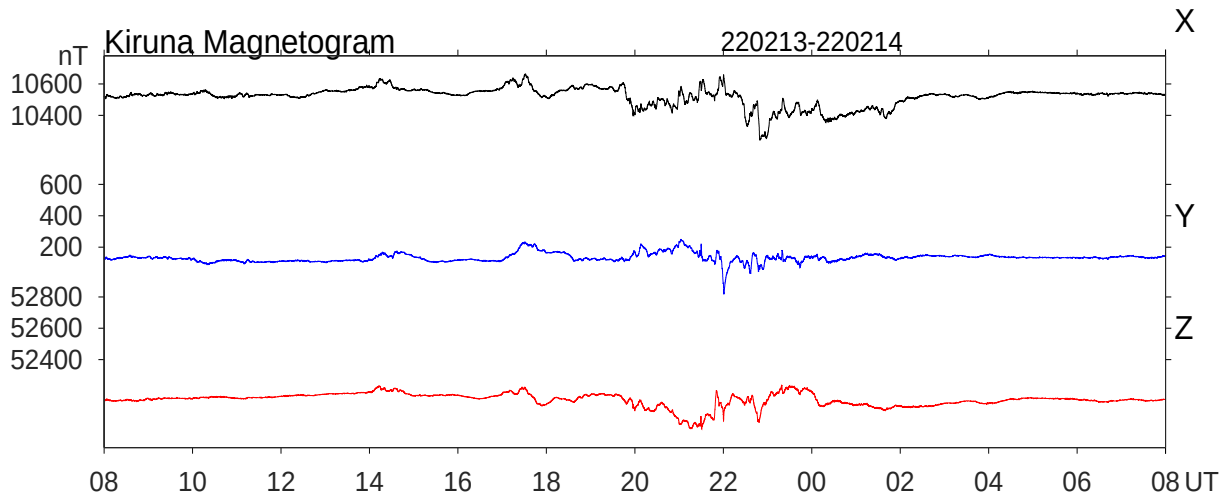
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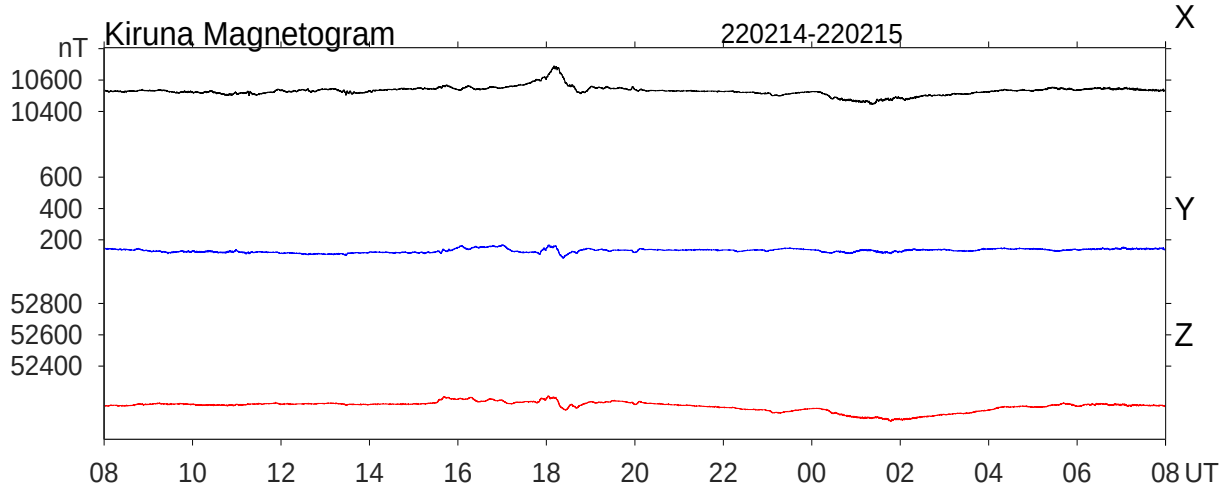
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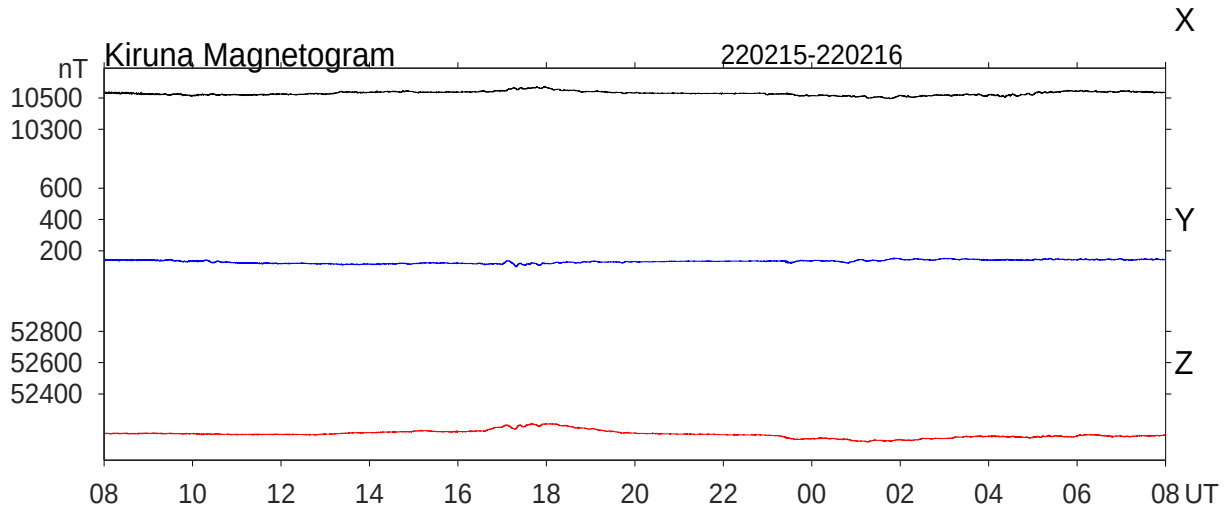
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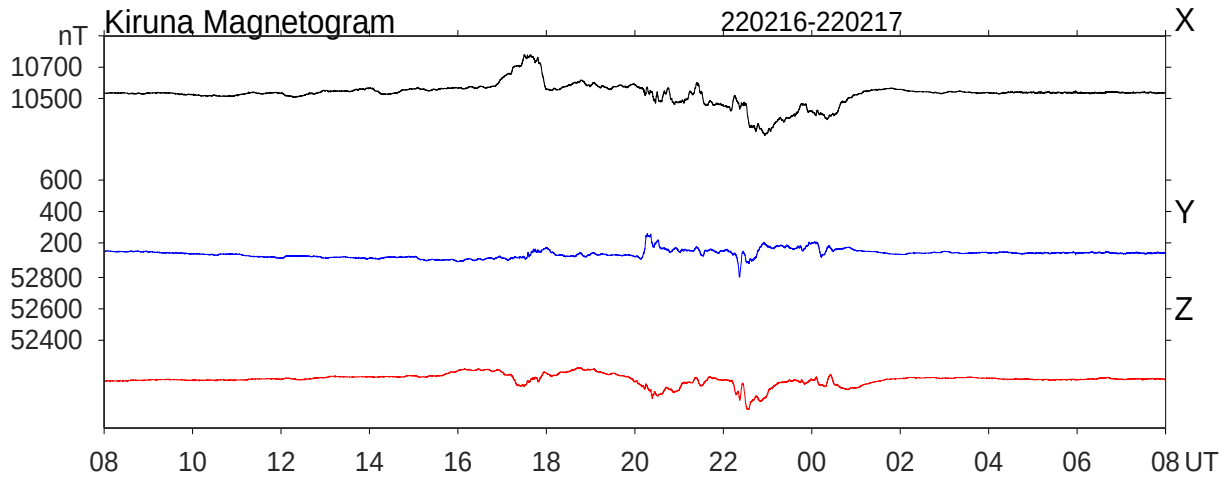
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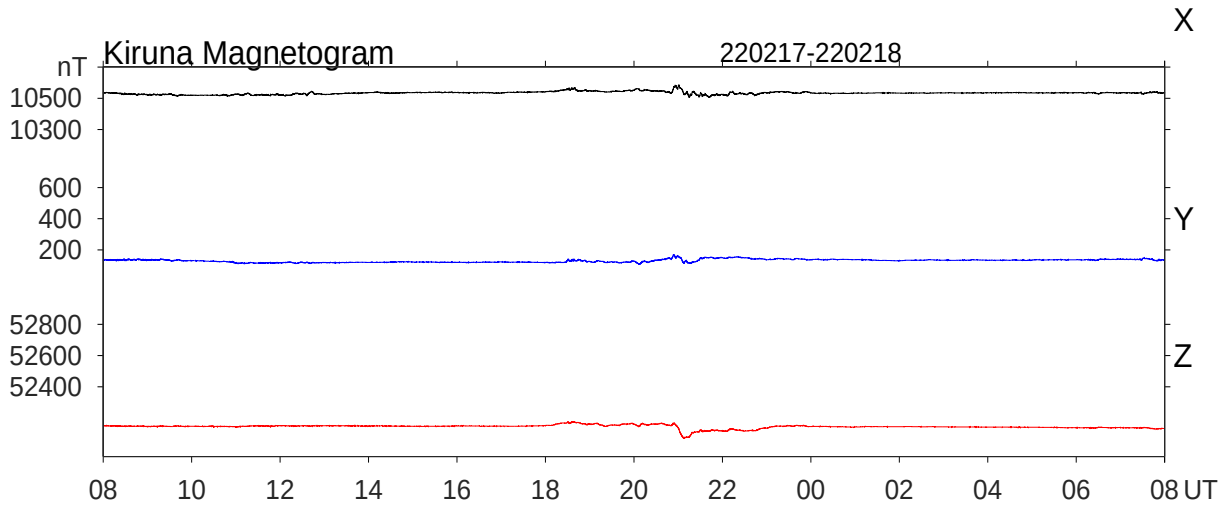
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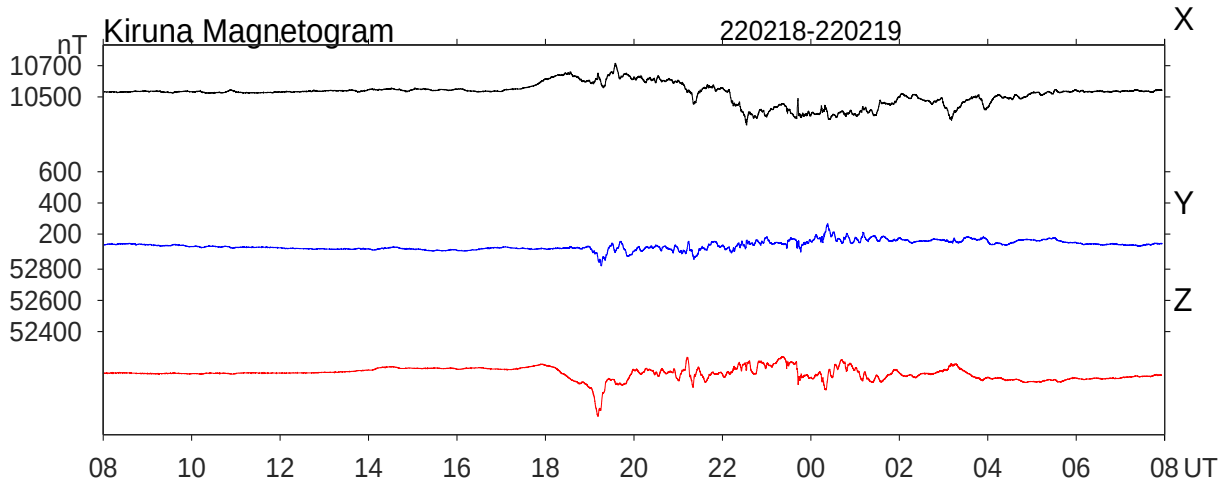
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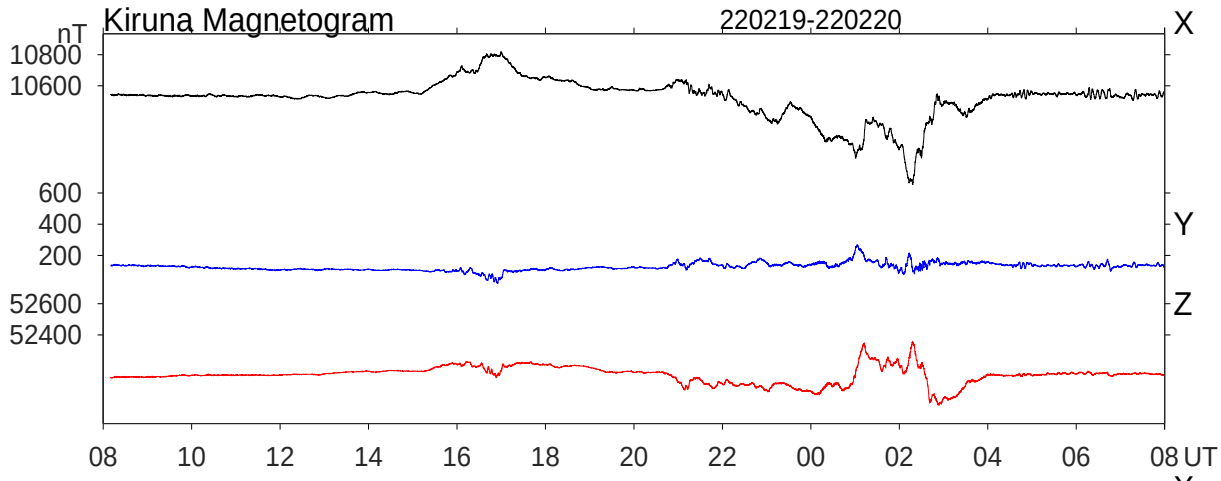
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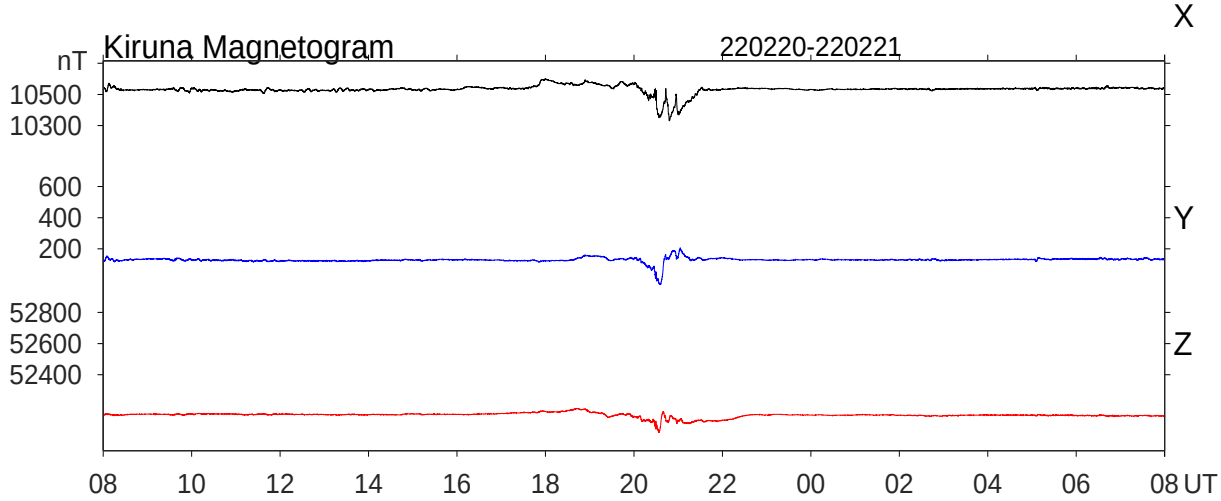
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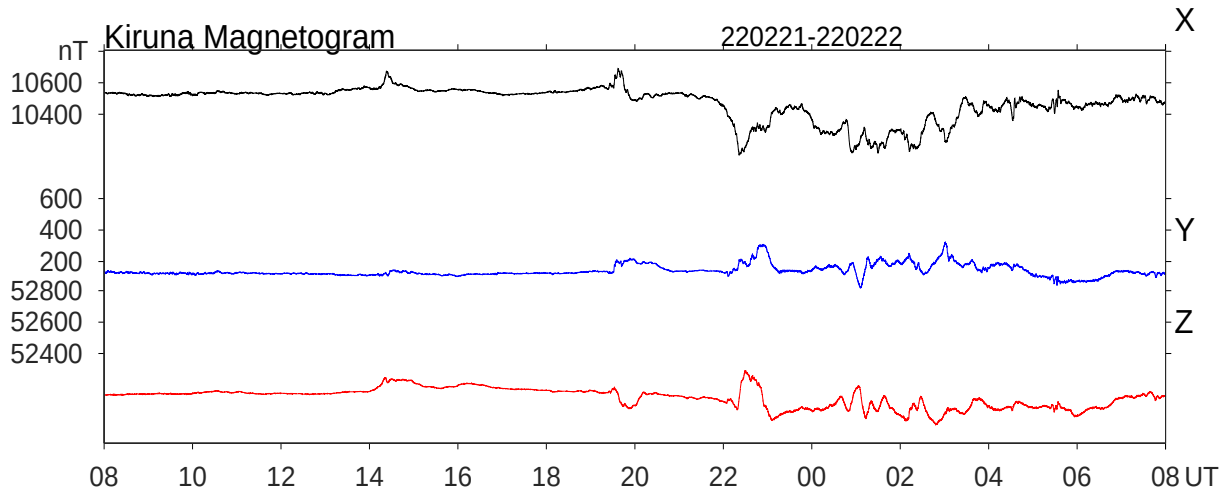
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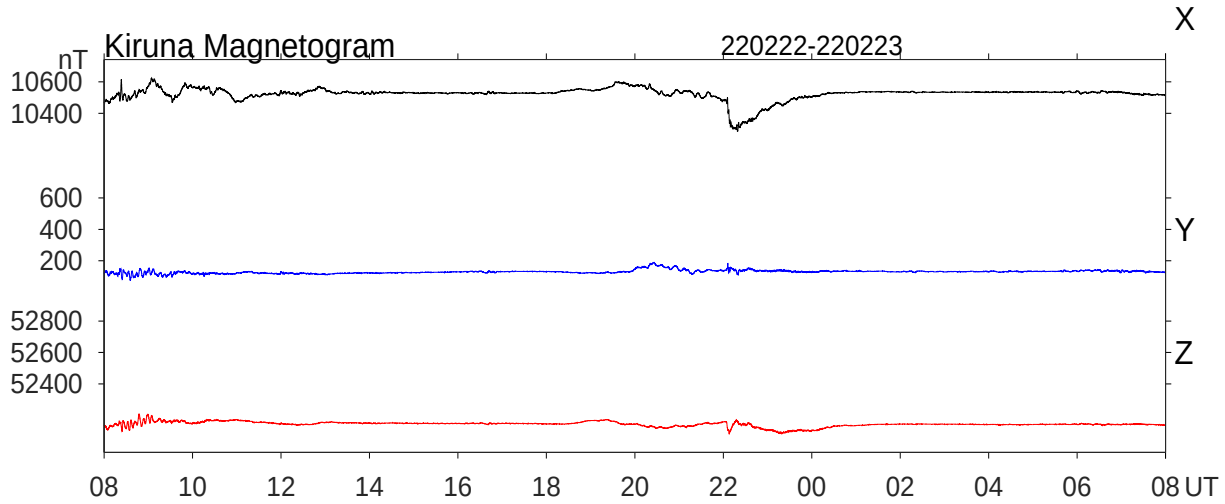
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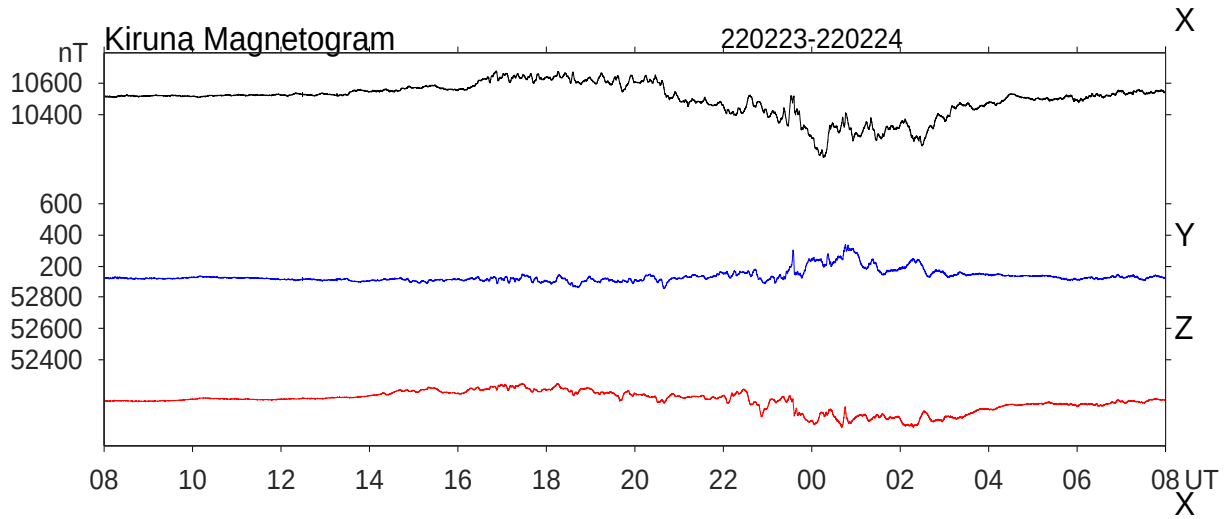
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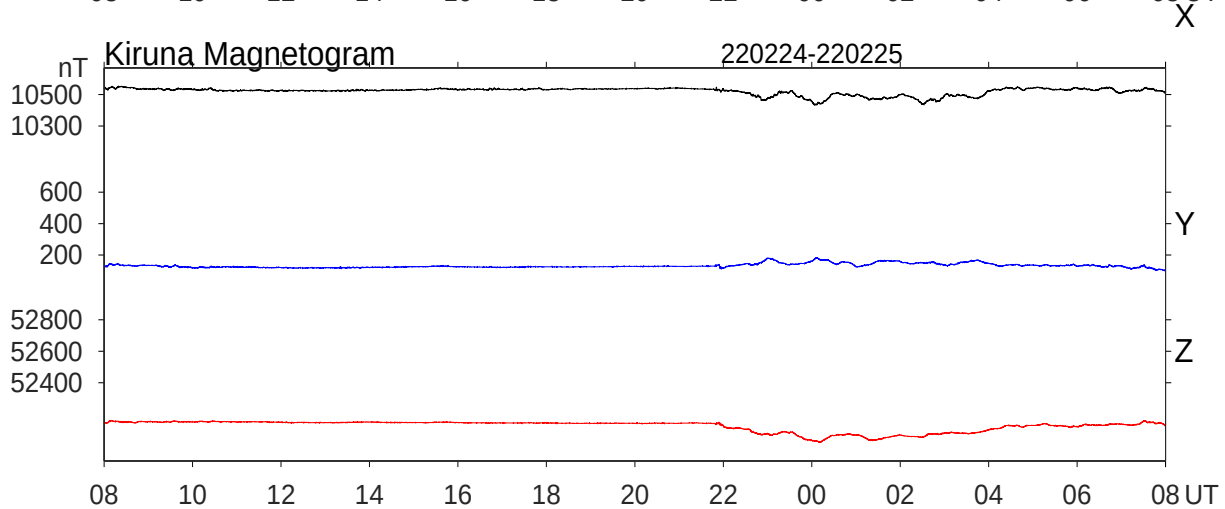
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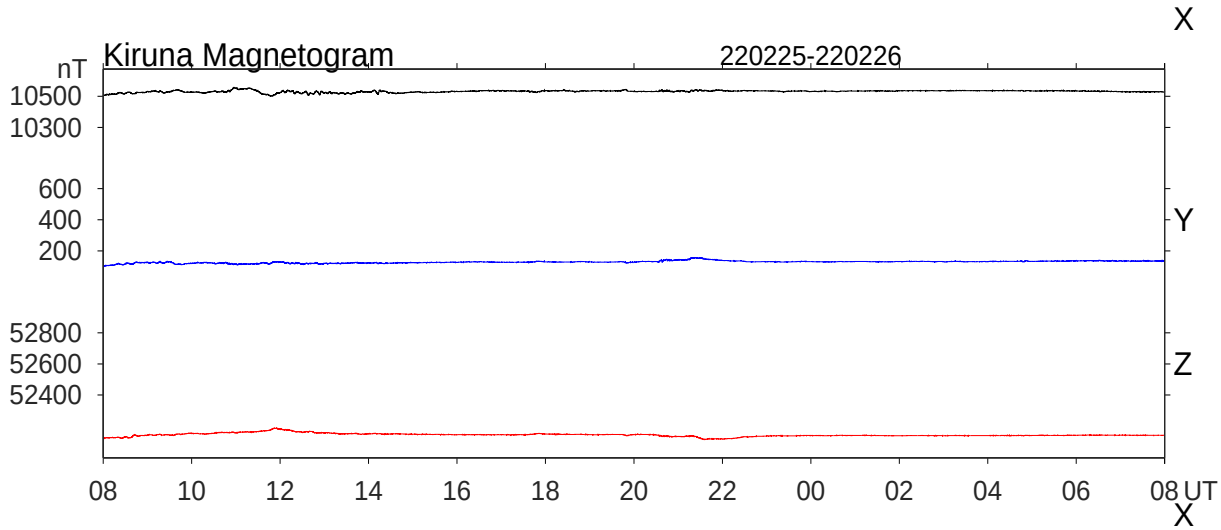
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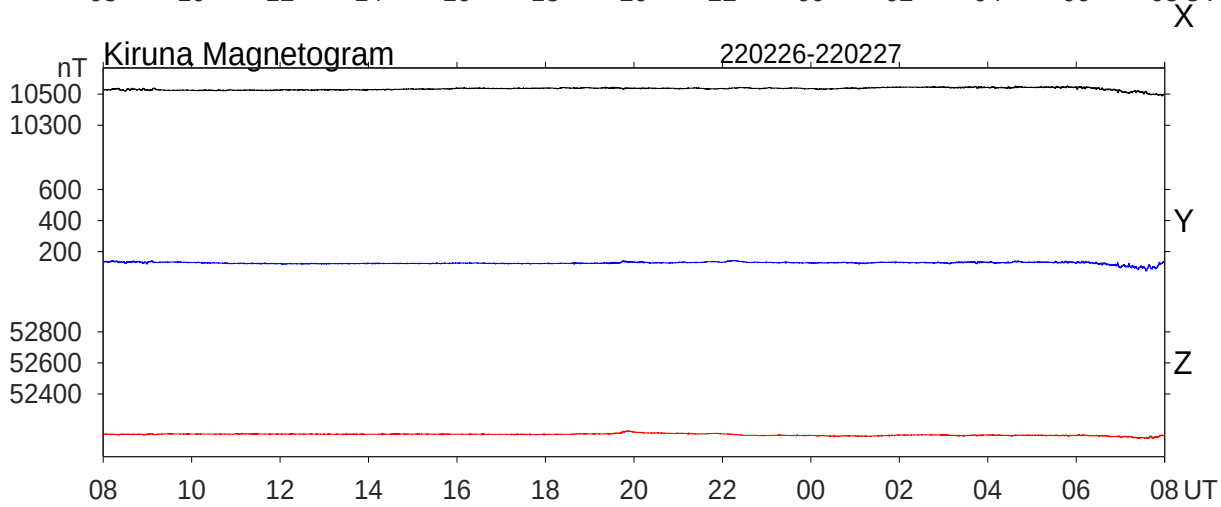
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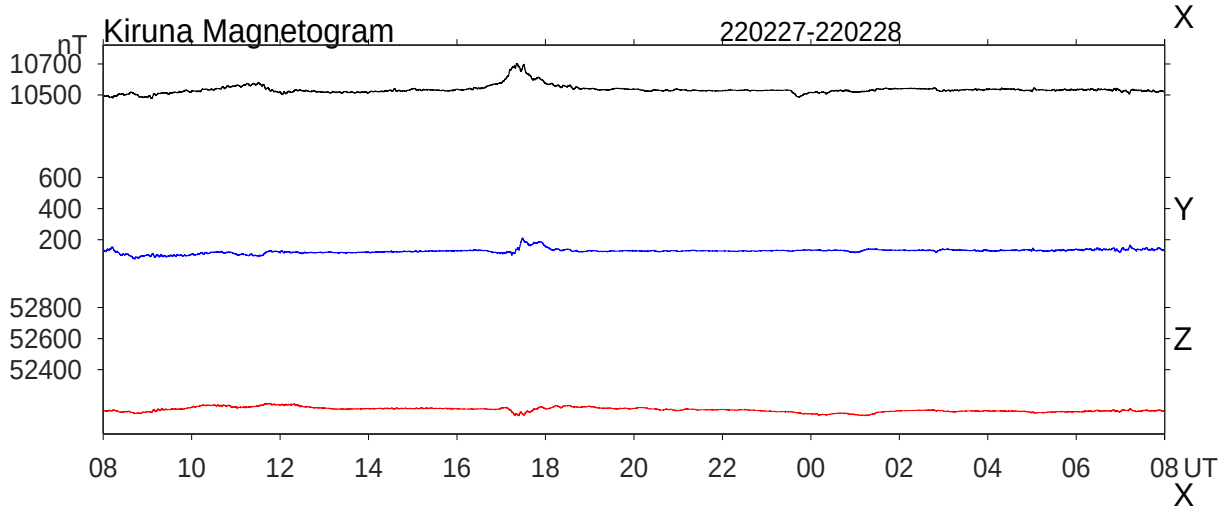
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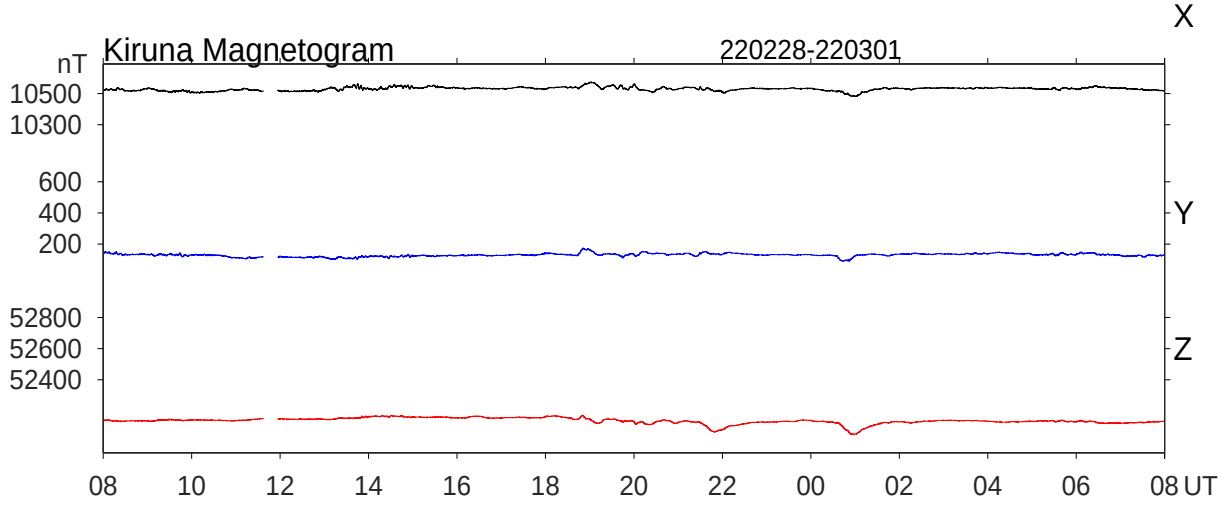
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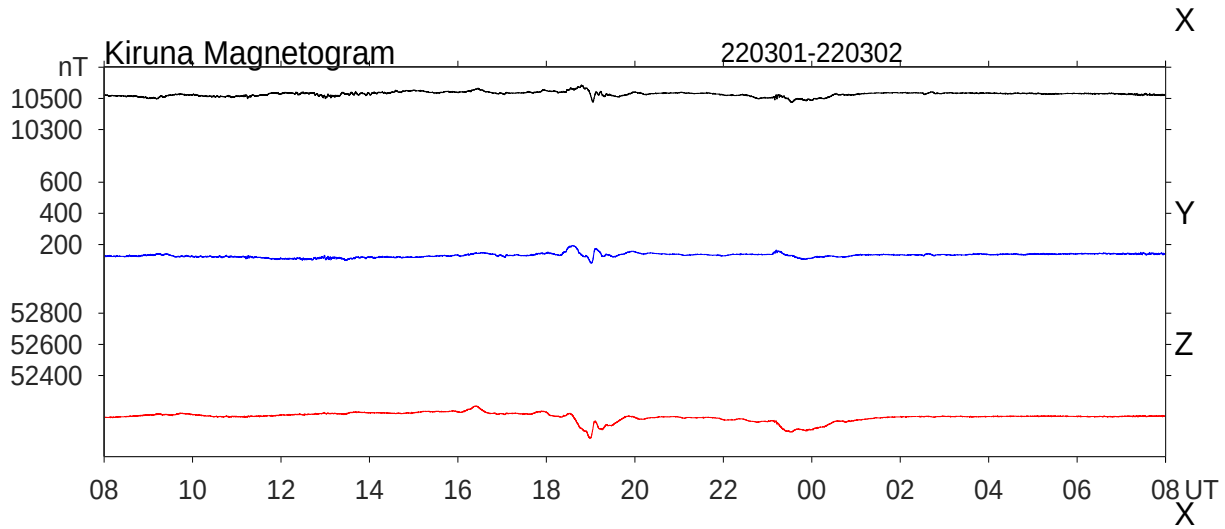
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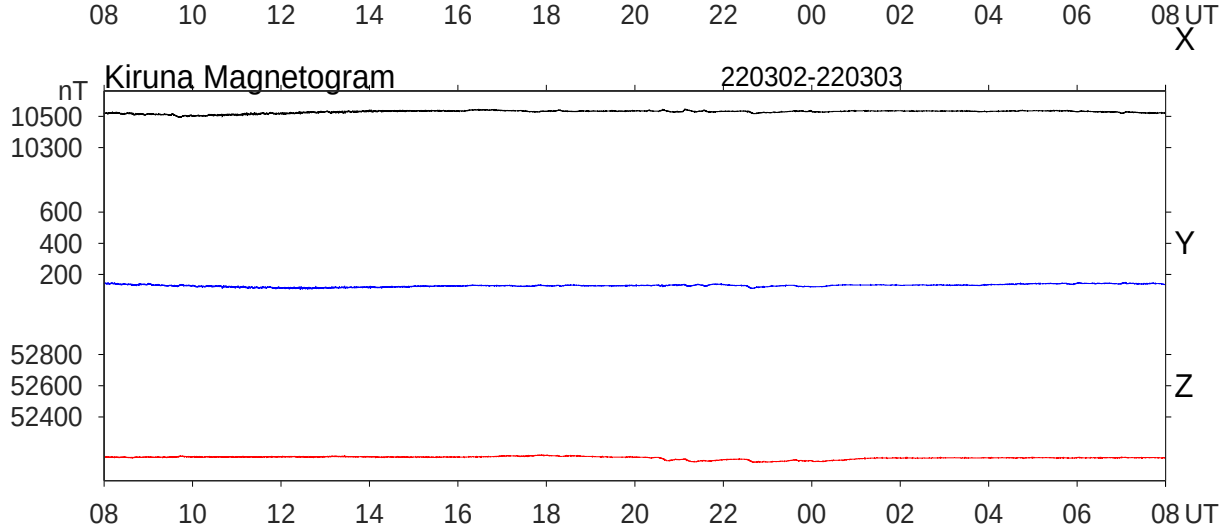
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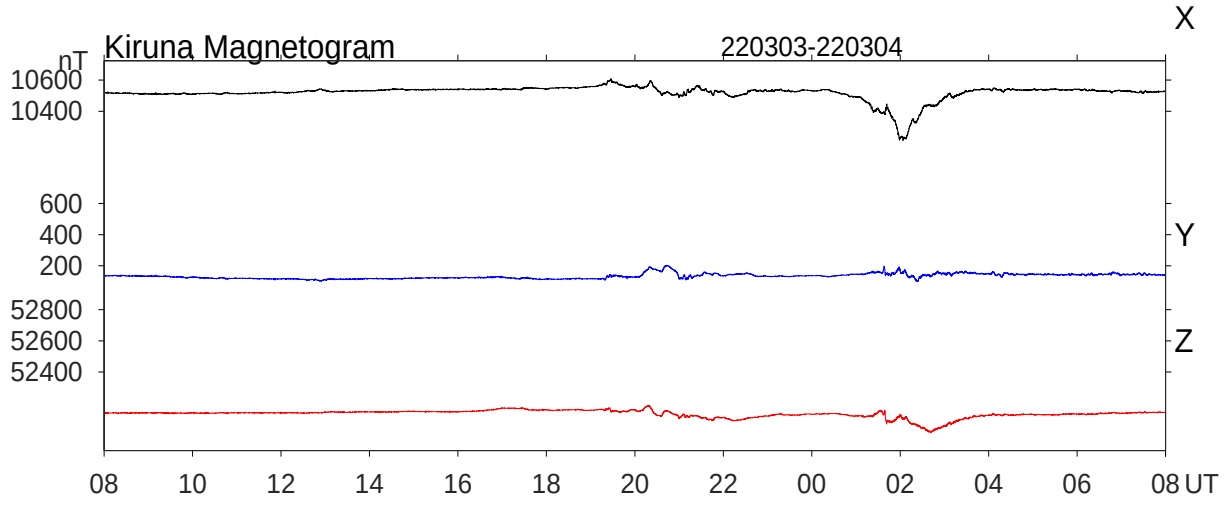
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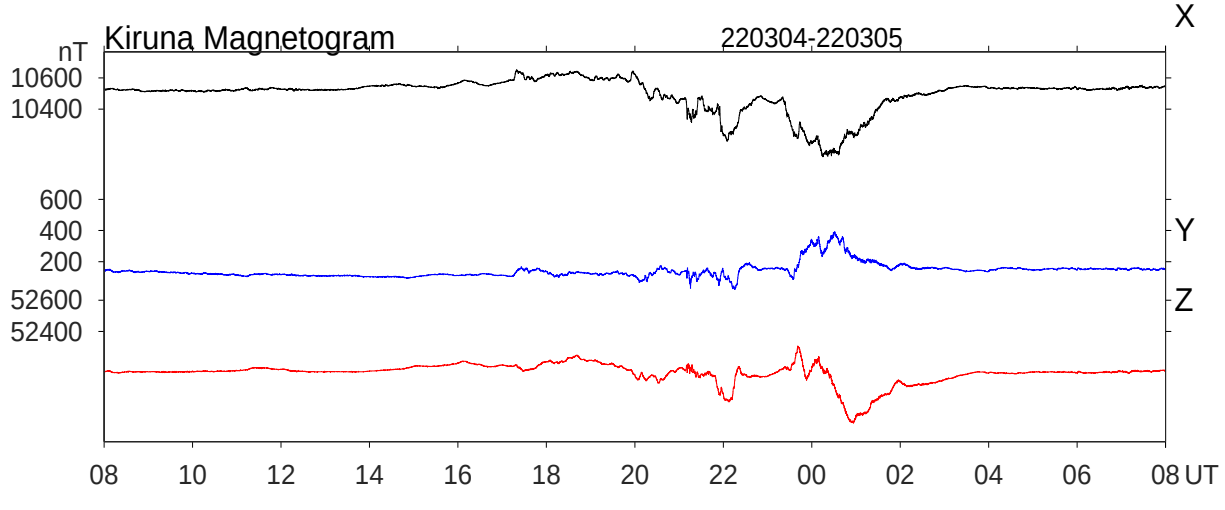
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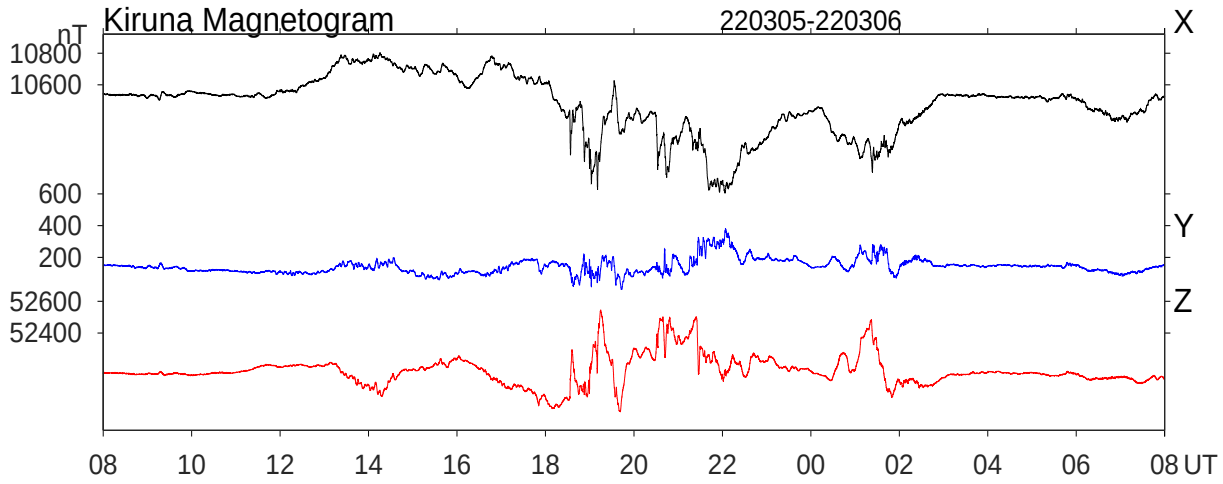
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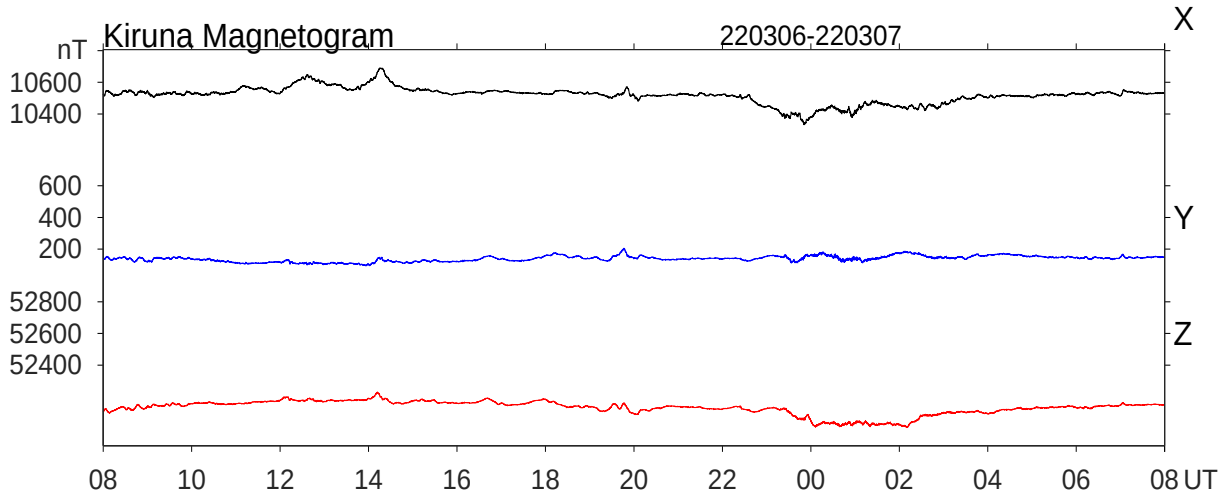
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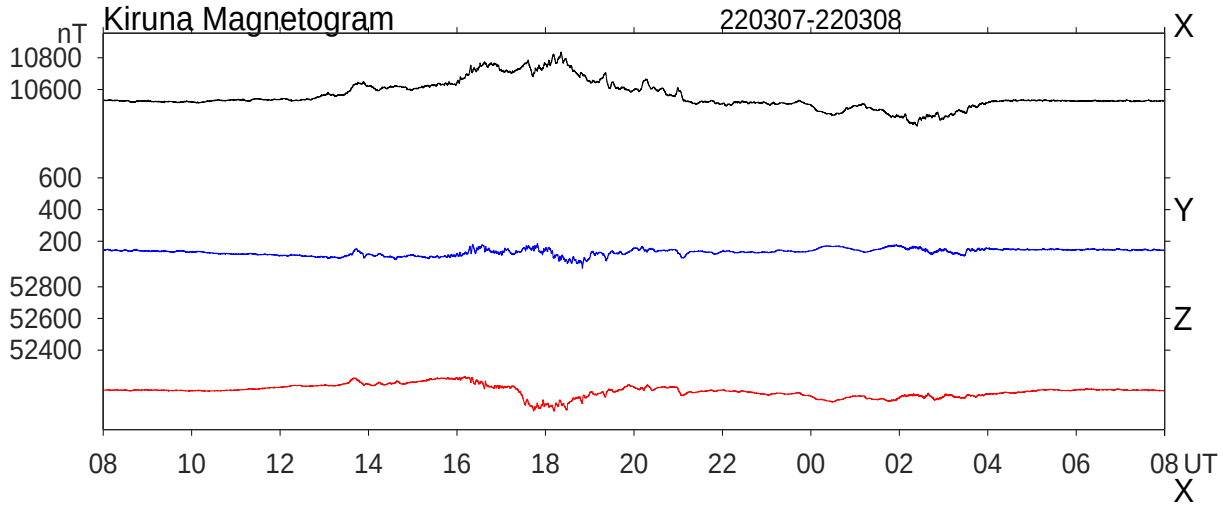
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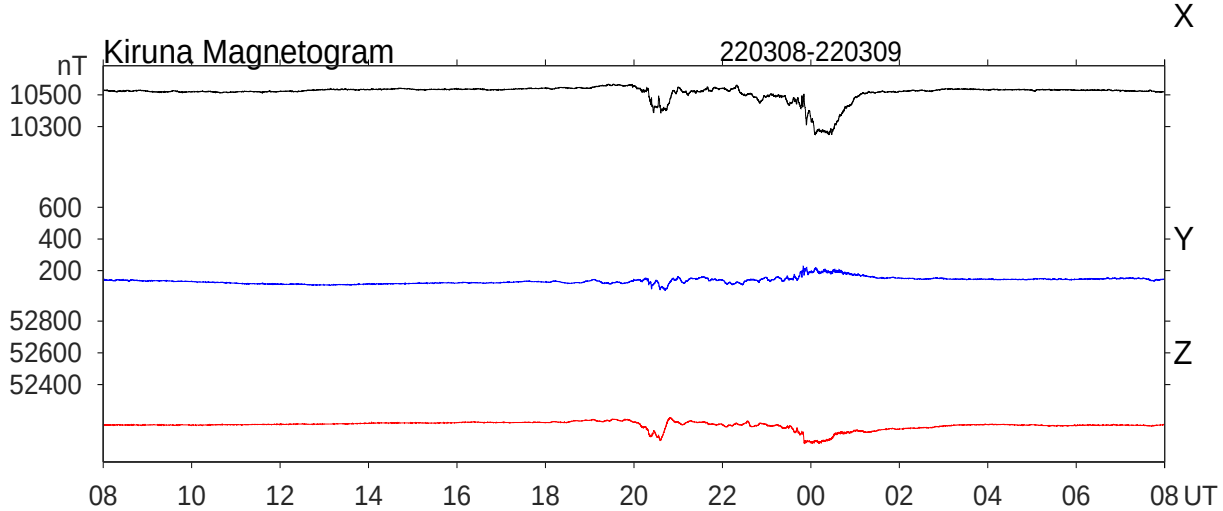
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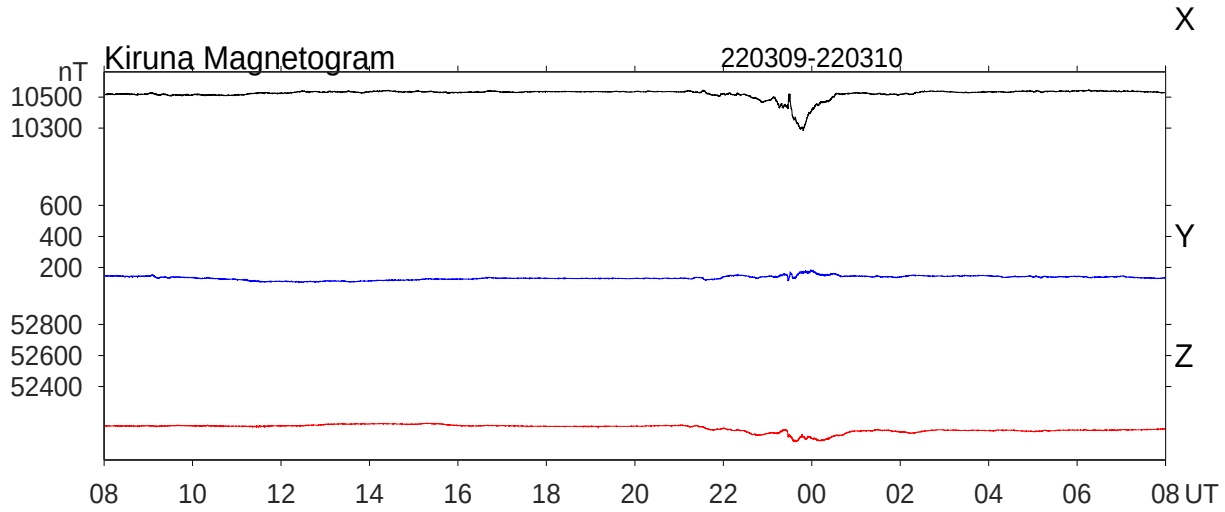
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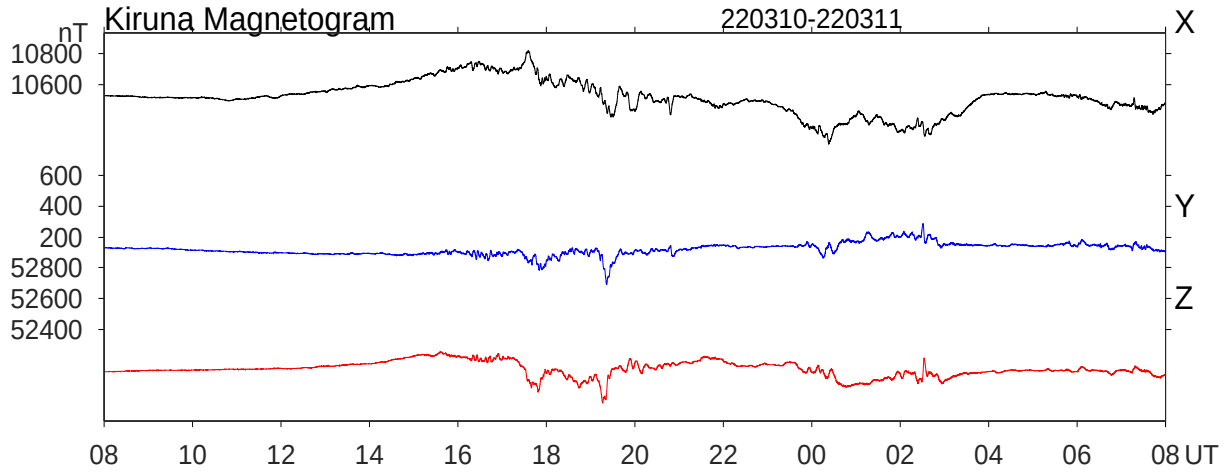
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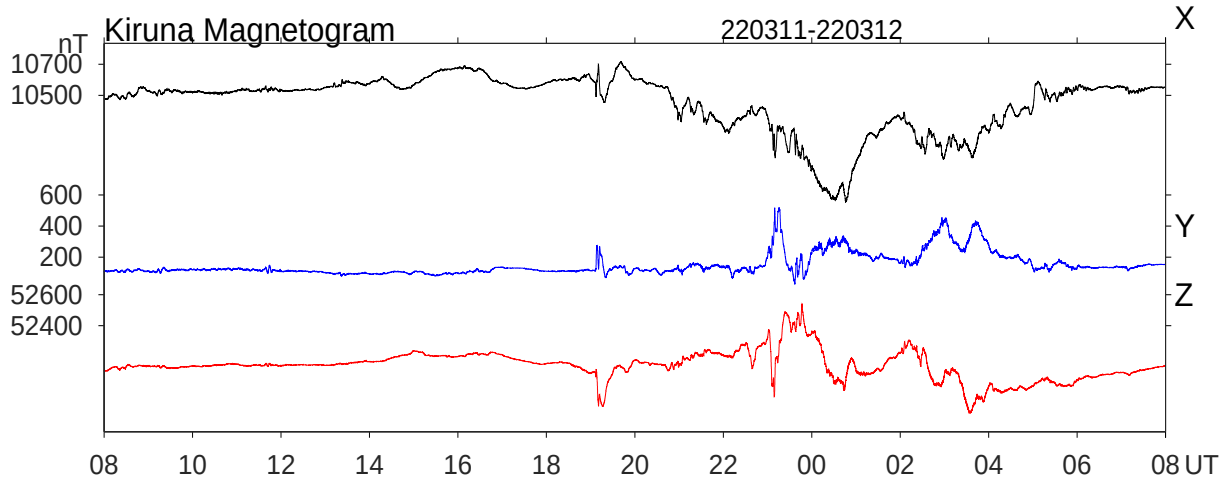
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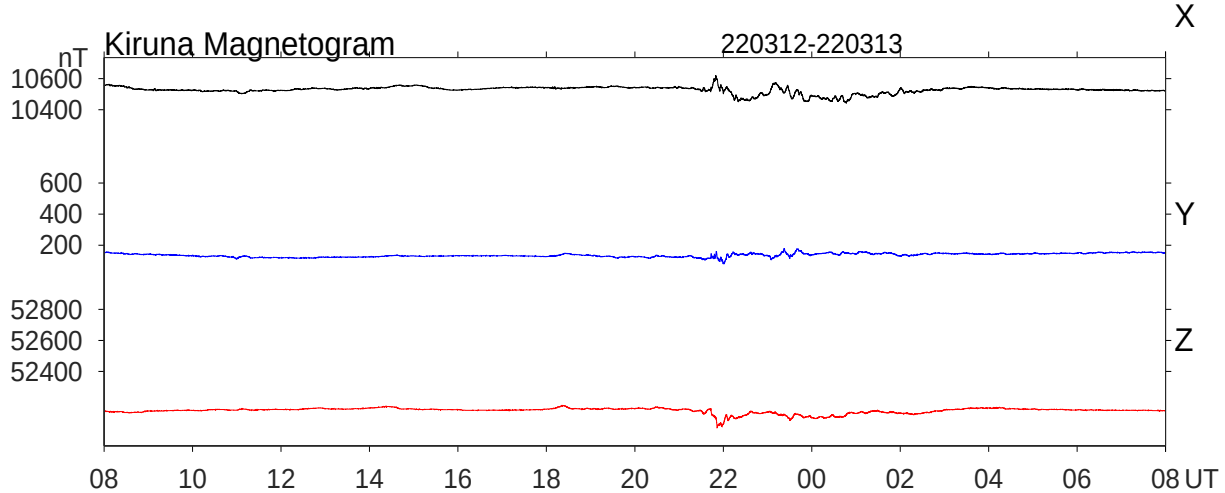
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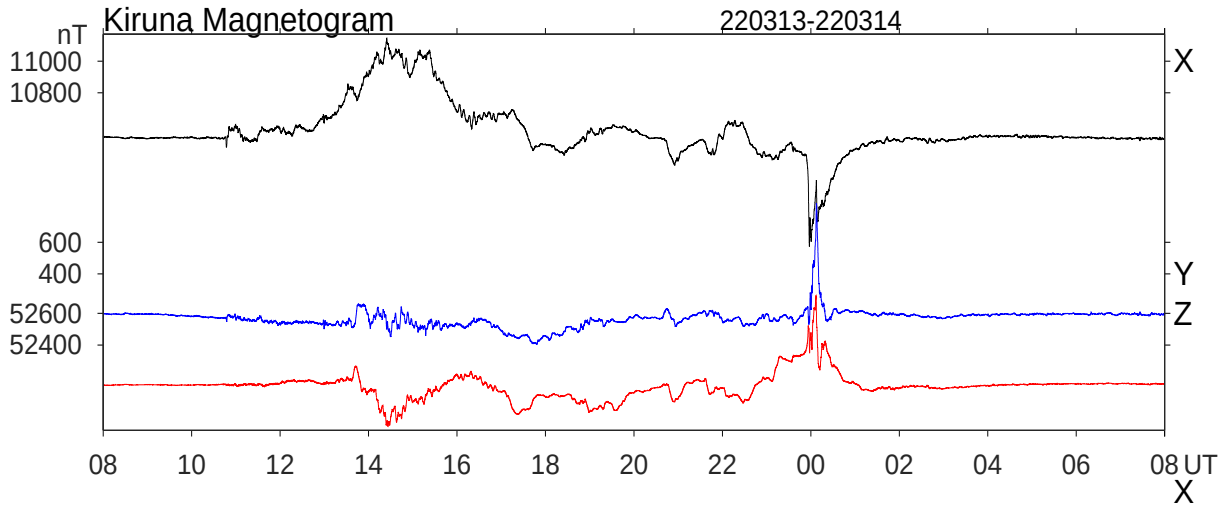
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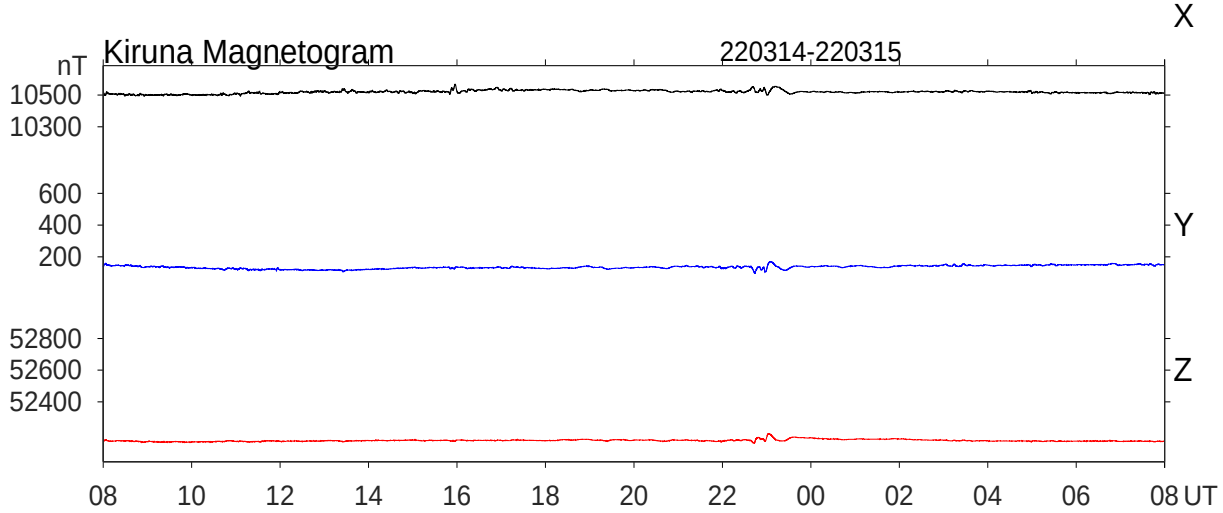
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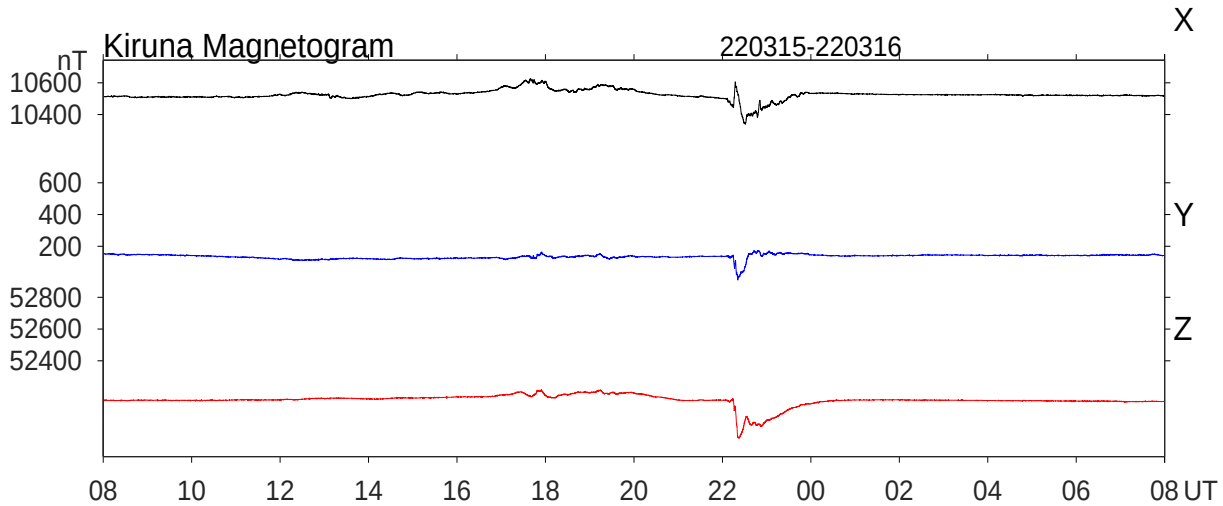
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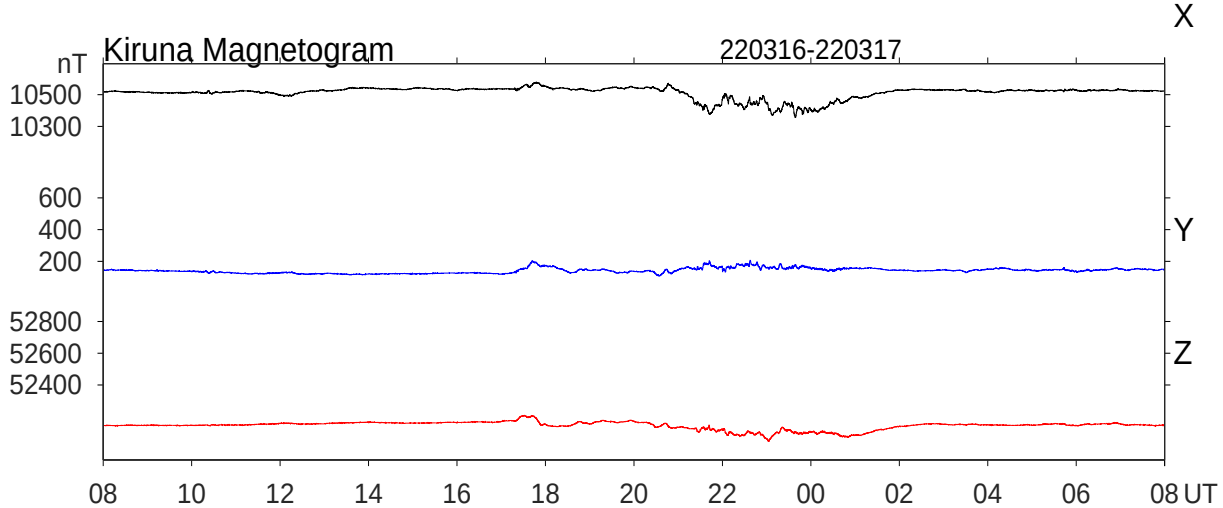
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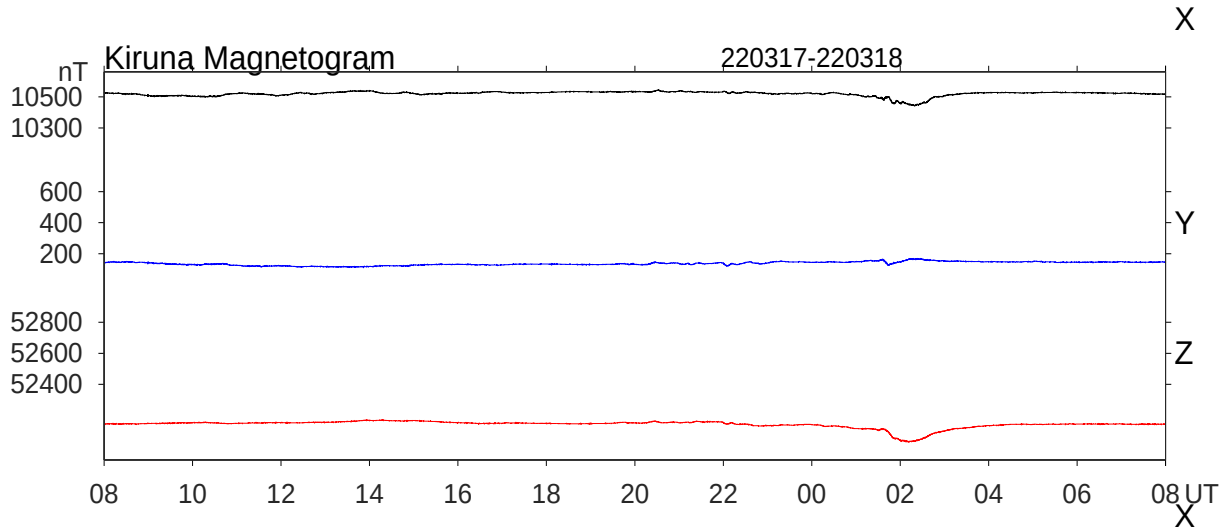
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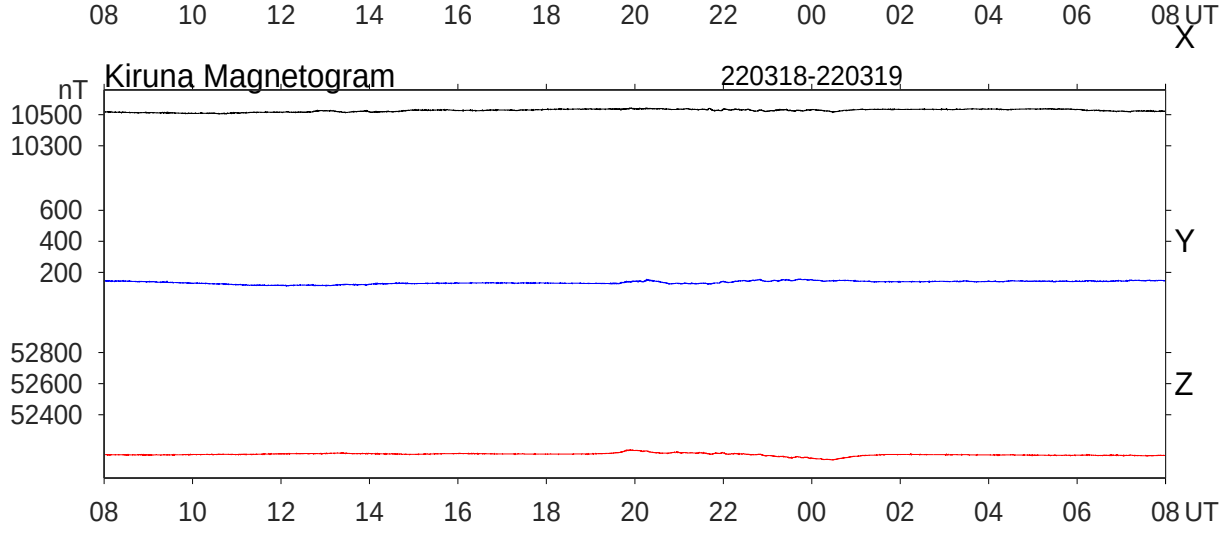
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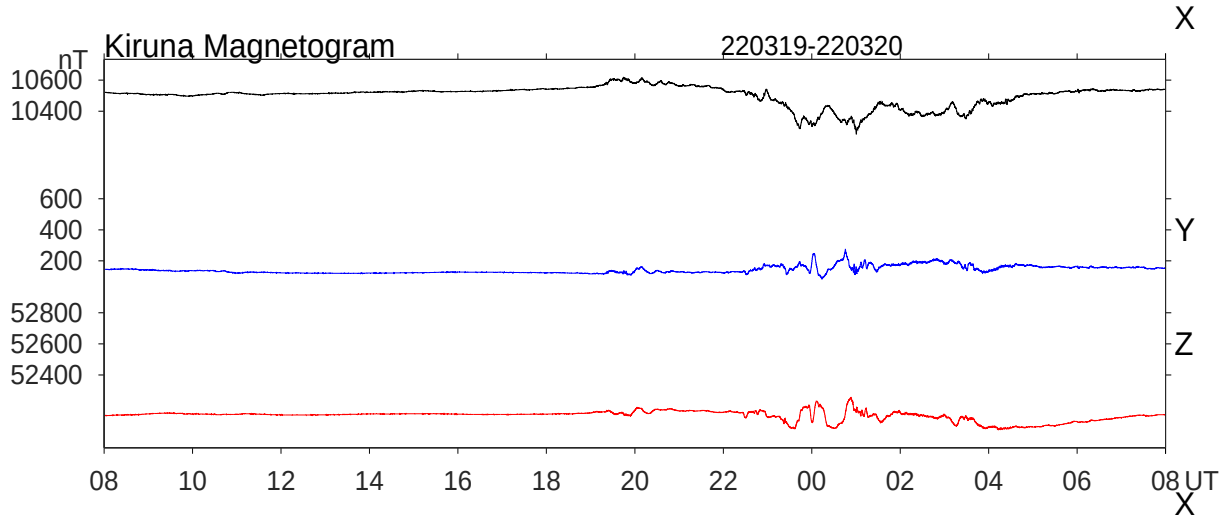
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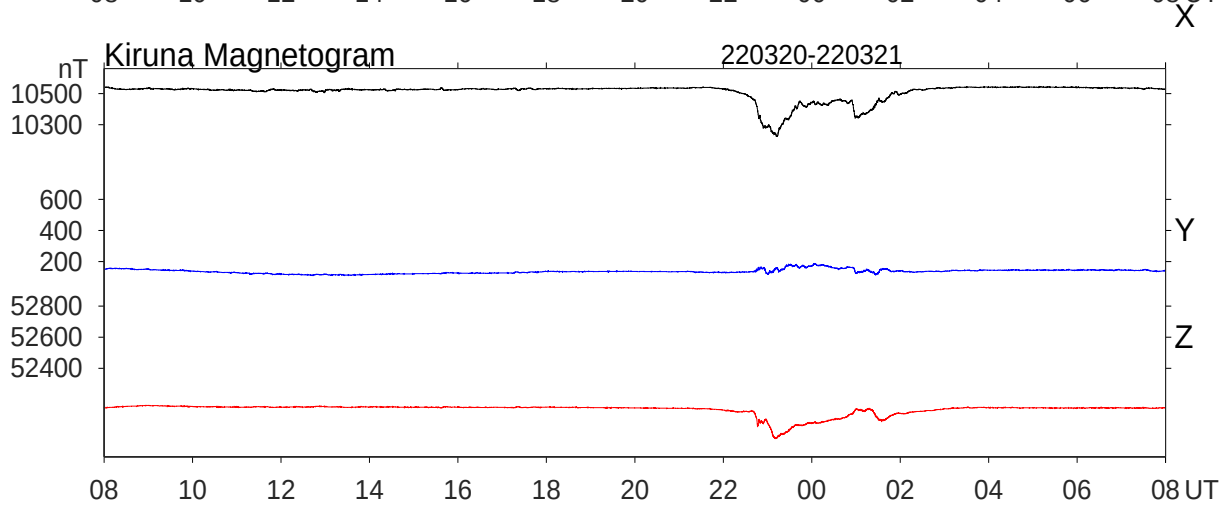
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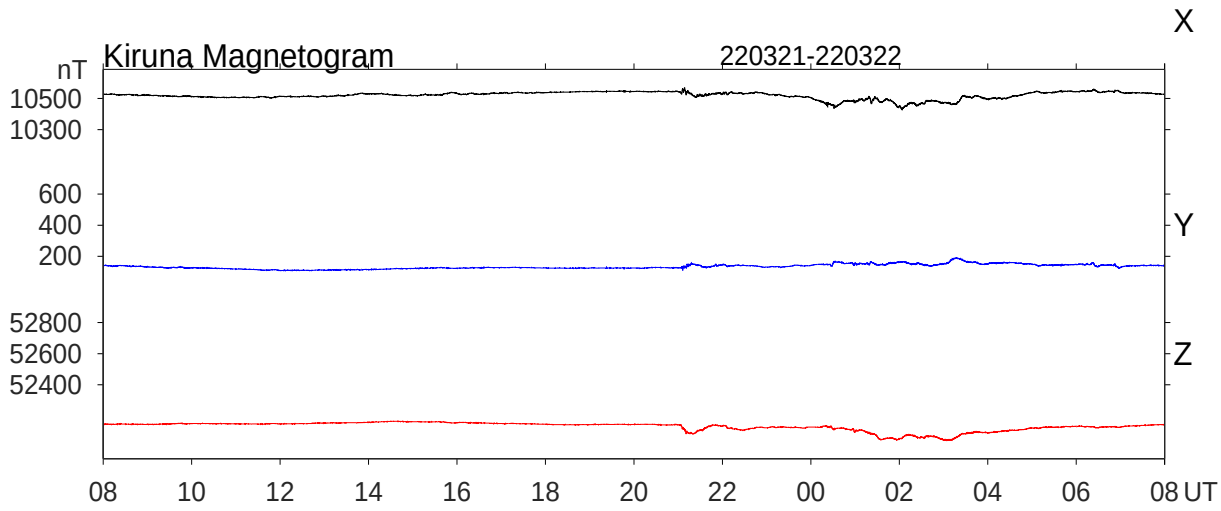
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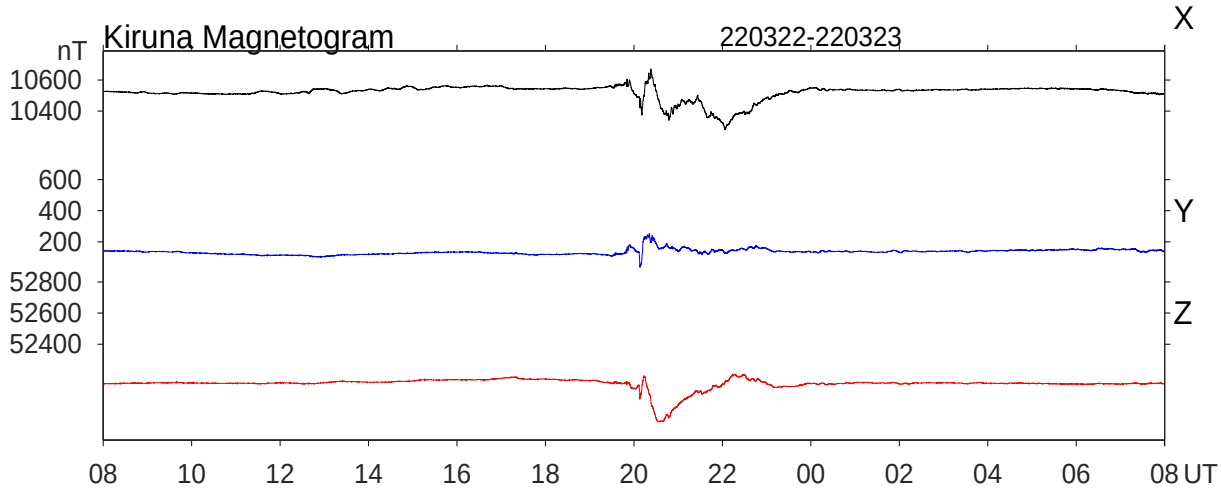
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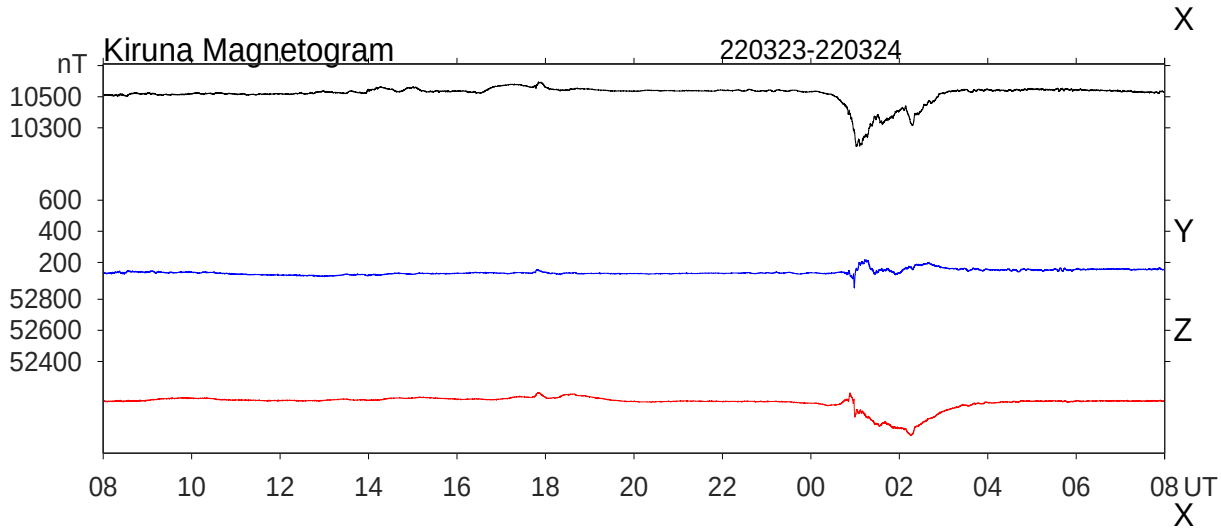
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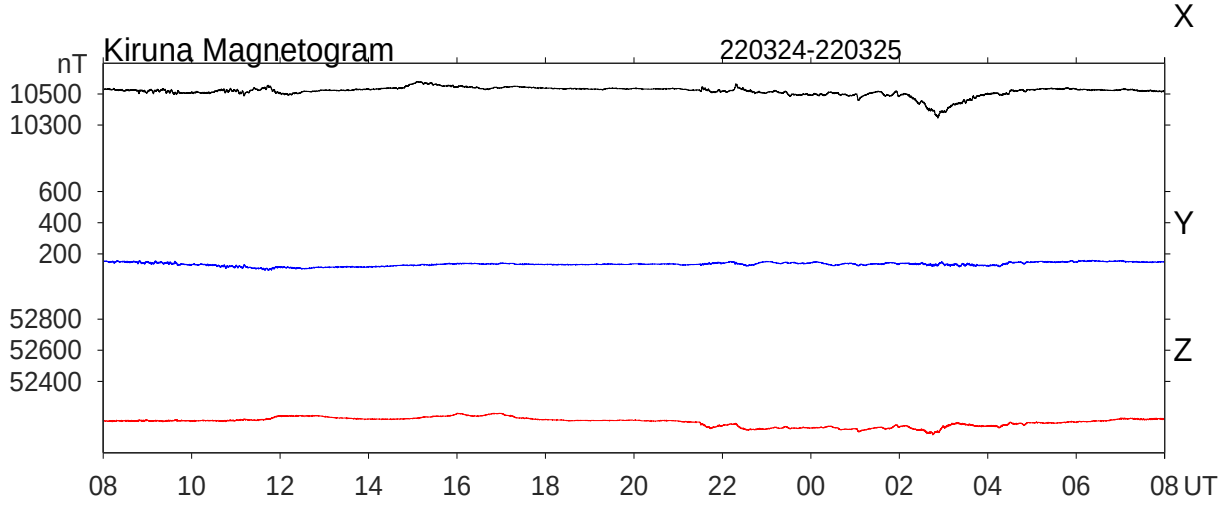
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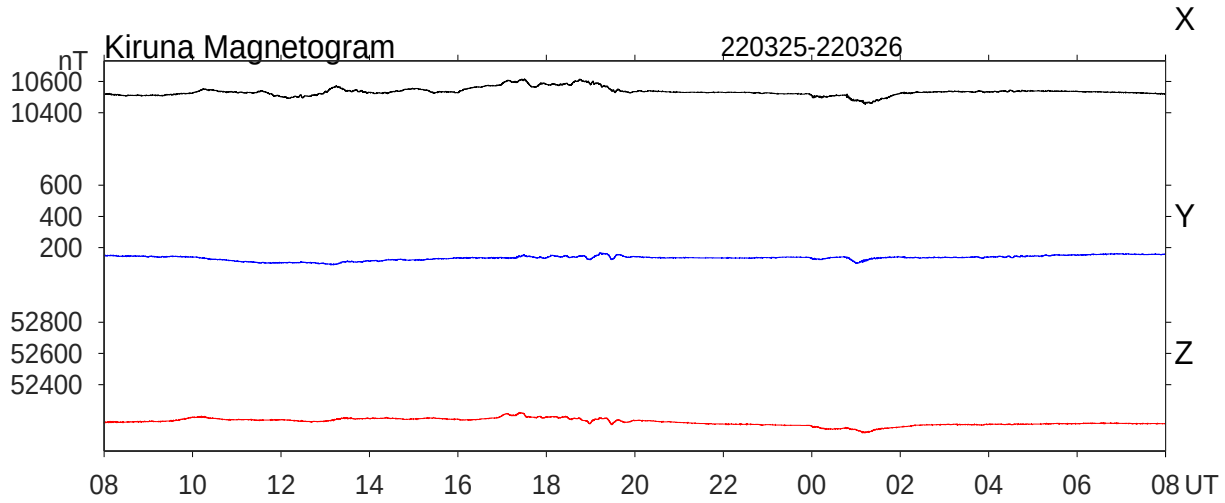
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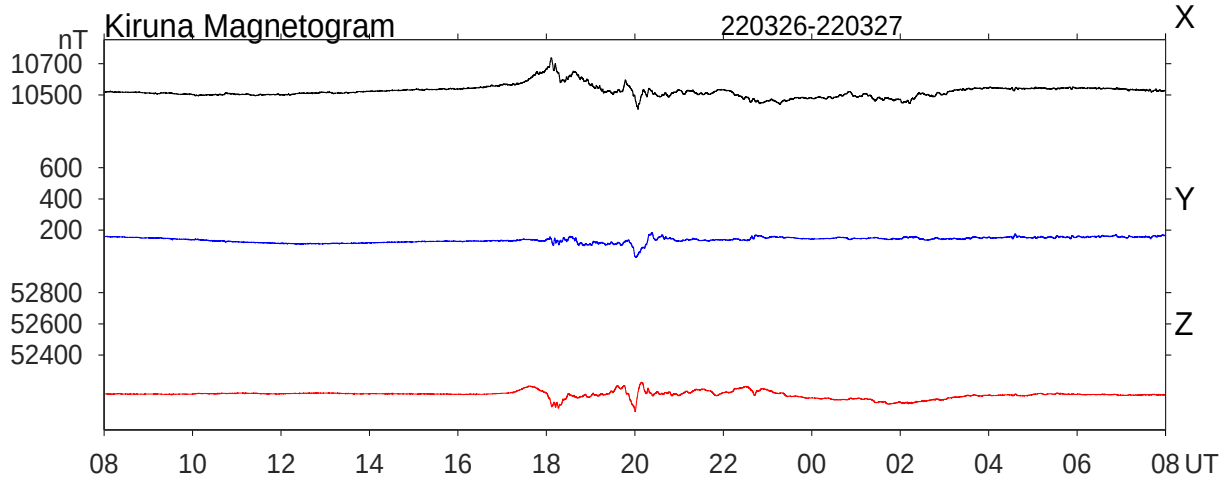
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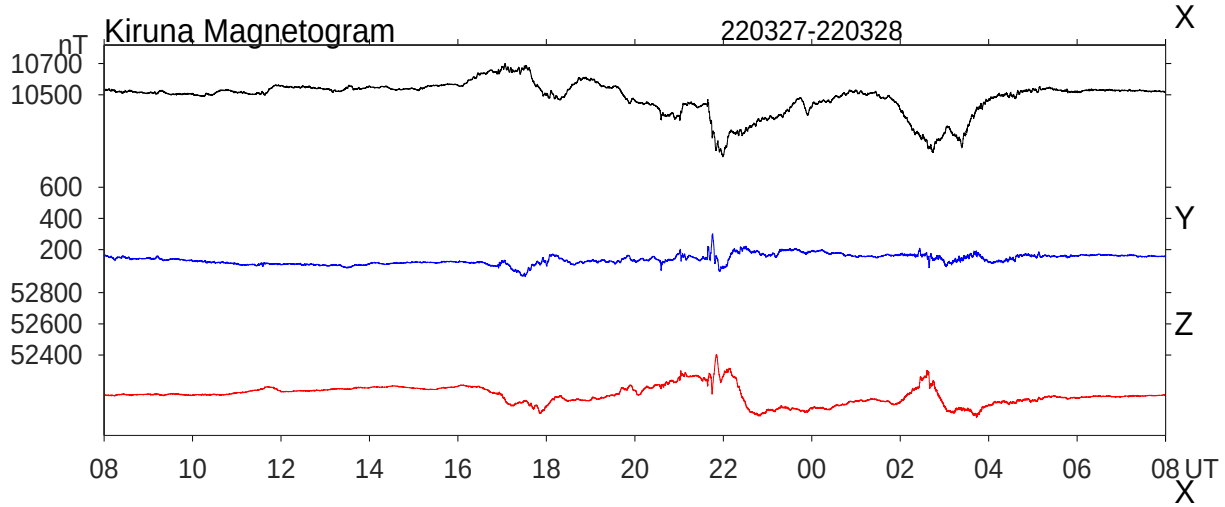
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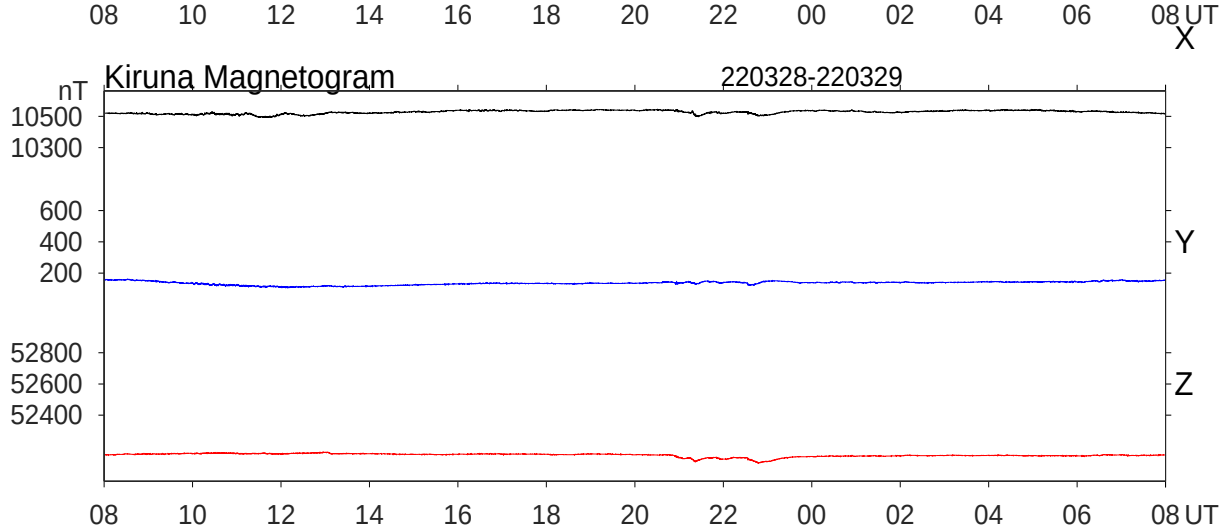
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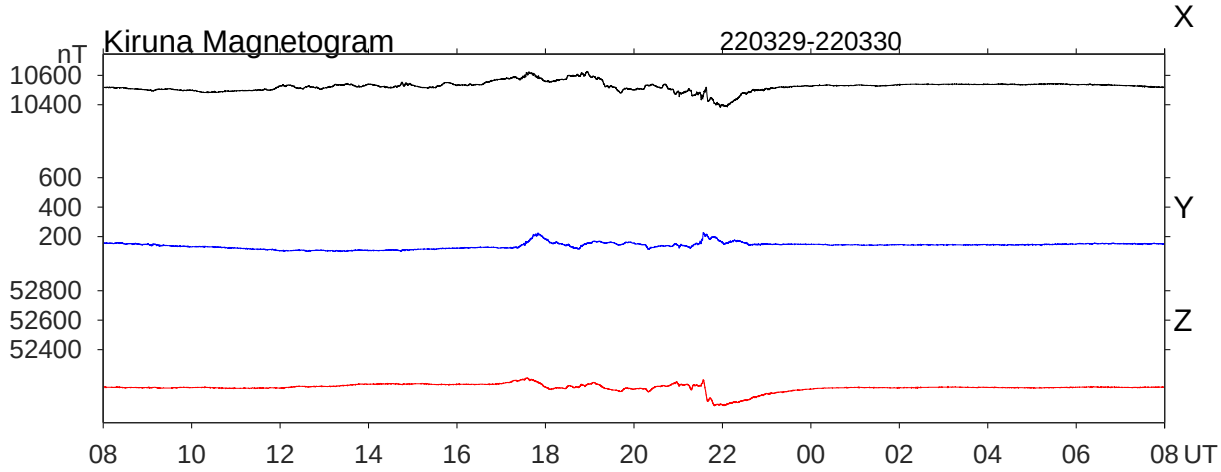
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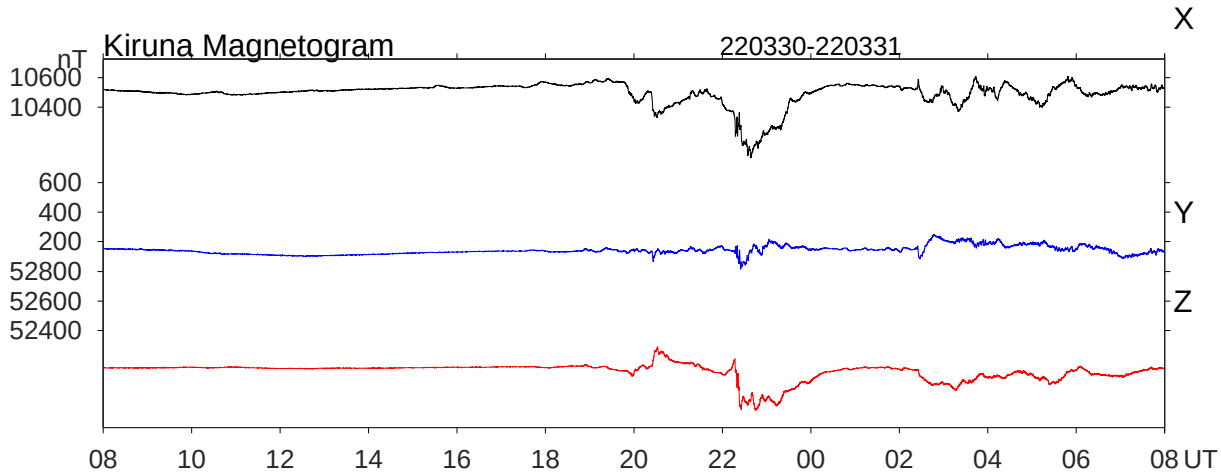
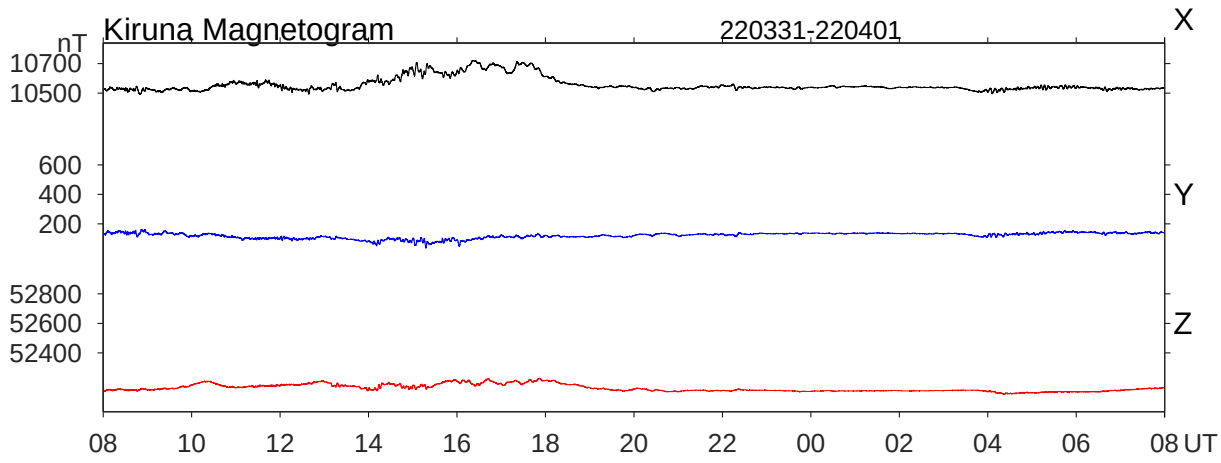
06
08 UT

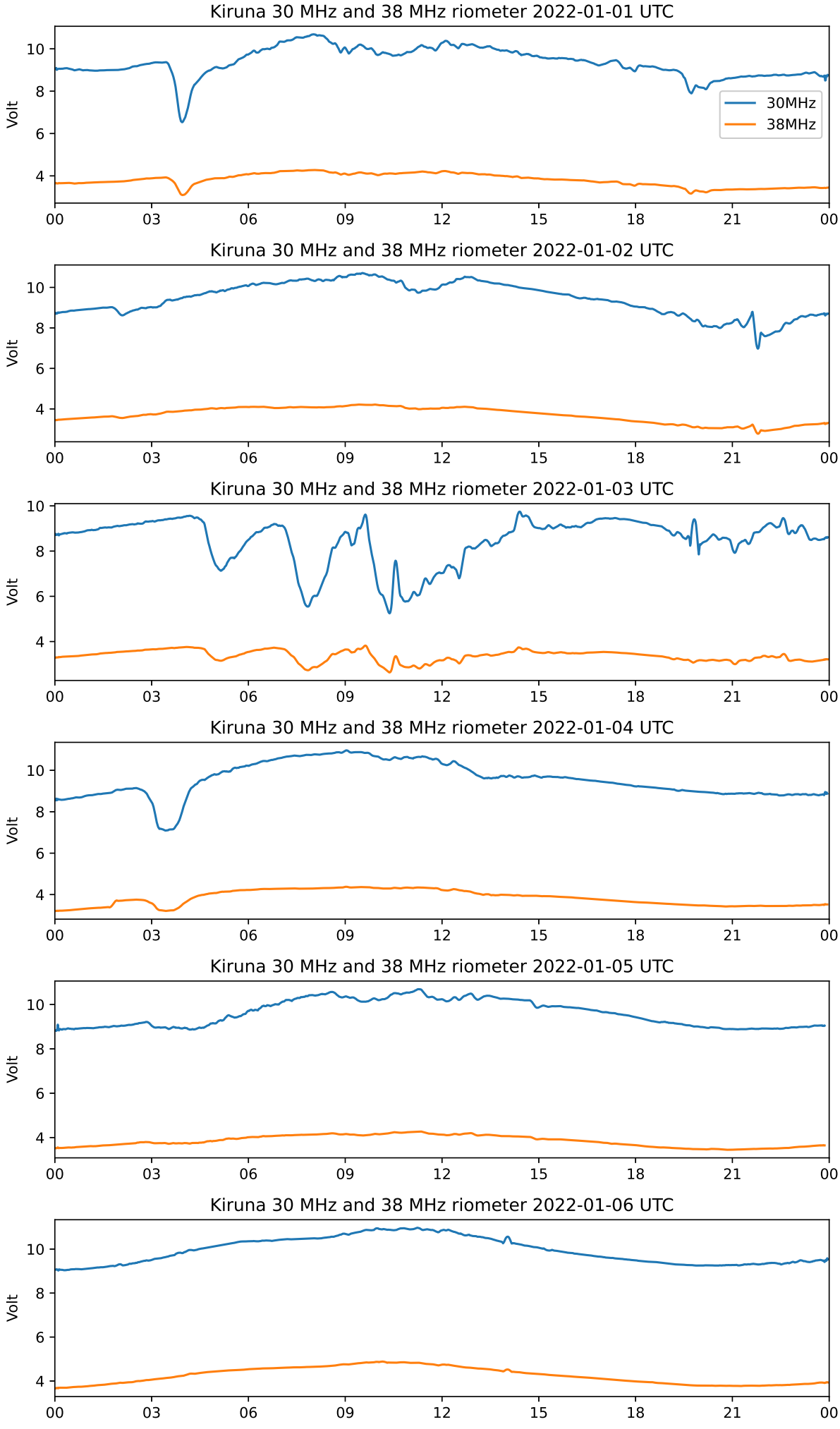

Kiruna Magnetogram
220330-220331
nT
10600
10400
600
400
200
52800
52600
52400
X
Y
Z
08
10
12
14
16
18
20
22
00
02
04
06
08 UT

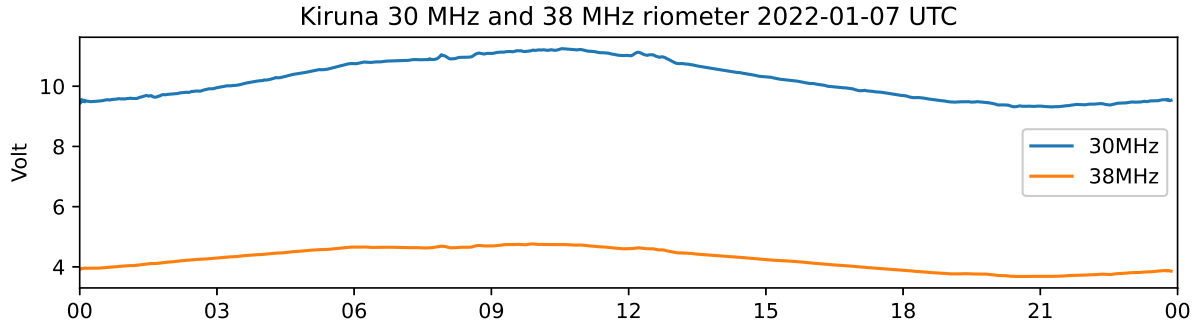

Kiruna Magnetogram
220331-220401
nT
10700
10500
600
400
200
52800
52600
52400
X
Y
Z
08
10
12
14
16
18
20
22
00
02
04
06
08 UT

KIRUNA VERTICAL RIOMETER

January - March 2022

https://www.irf.se/rio


Kiruna 30 MHz and 38 MHz riometer 2022-01-01 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-02 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-03 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-04 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-05 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-06 UTC
Volt
30MHz
38MHz
00
03
06
09
12
15
18
21
00
4
6
8
10


Kiruna 30 MHz and 38 MHz riometer 2022-01-07 UTC
Volt
30MHz
38MHz
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8
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00
03
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18
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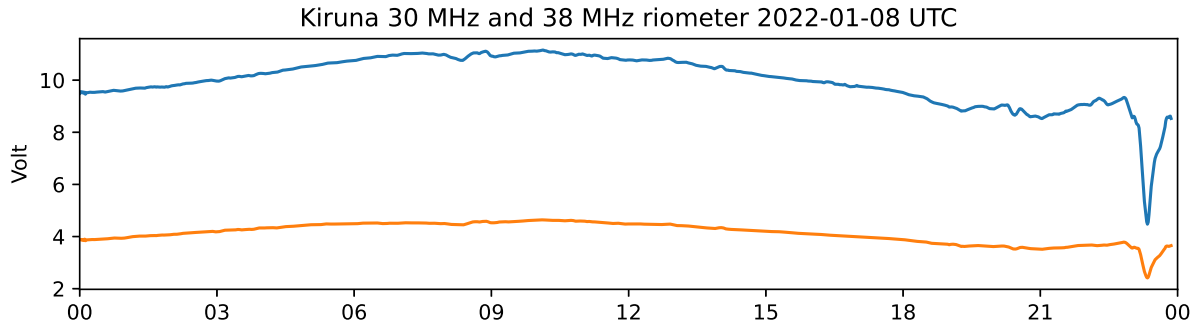
Kiruna 30 MHz and 38 MHz riometer 2022-01-08 UTC
Volt
10
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4
2
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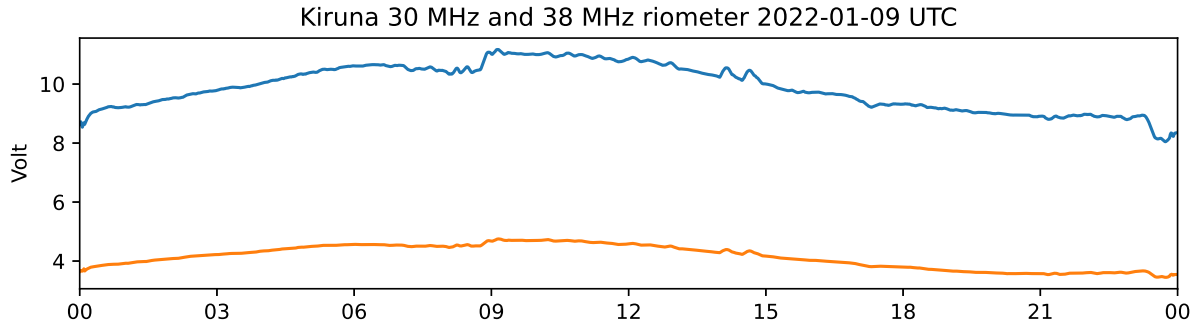
Kiruna 30 MHz and 38 MHz riometer 2022-01-09 UTC
Volt
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03
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21
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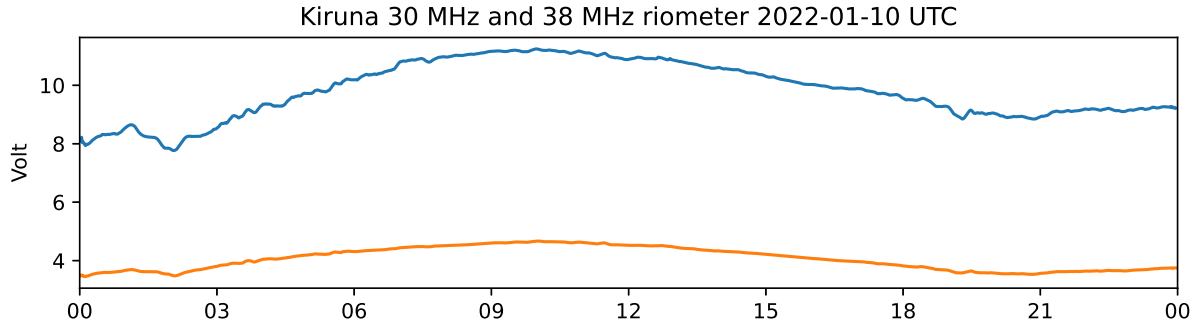
Kiruna 30 MHz and 38 MHz riometer 2022-01-10 UTC
Volt
10
8
6
4
00
03
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09
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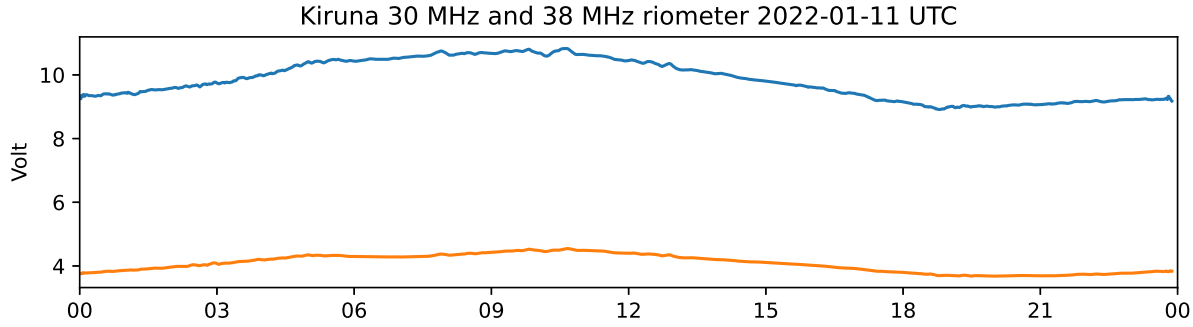
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-01-11 UTC
Volt
10
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6
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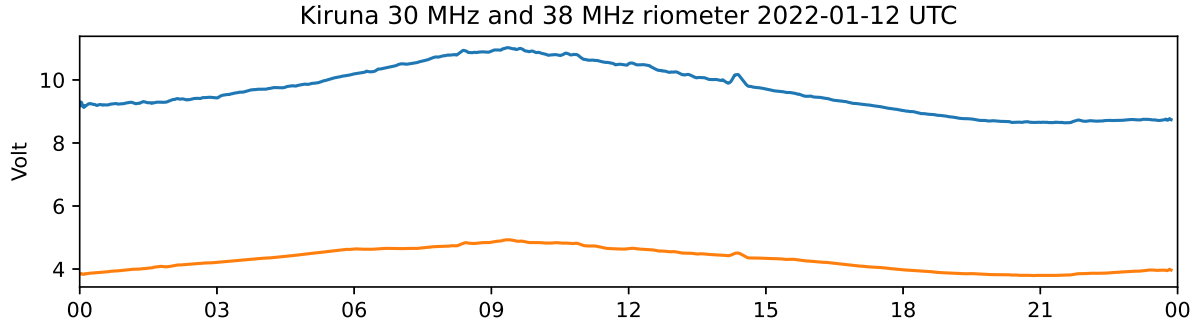
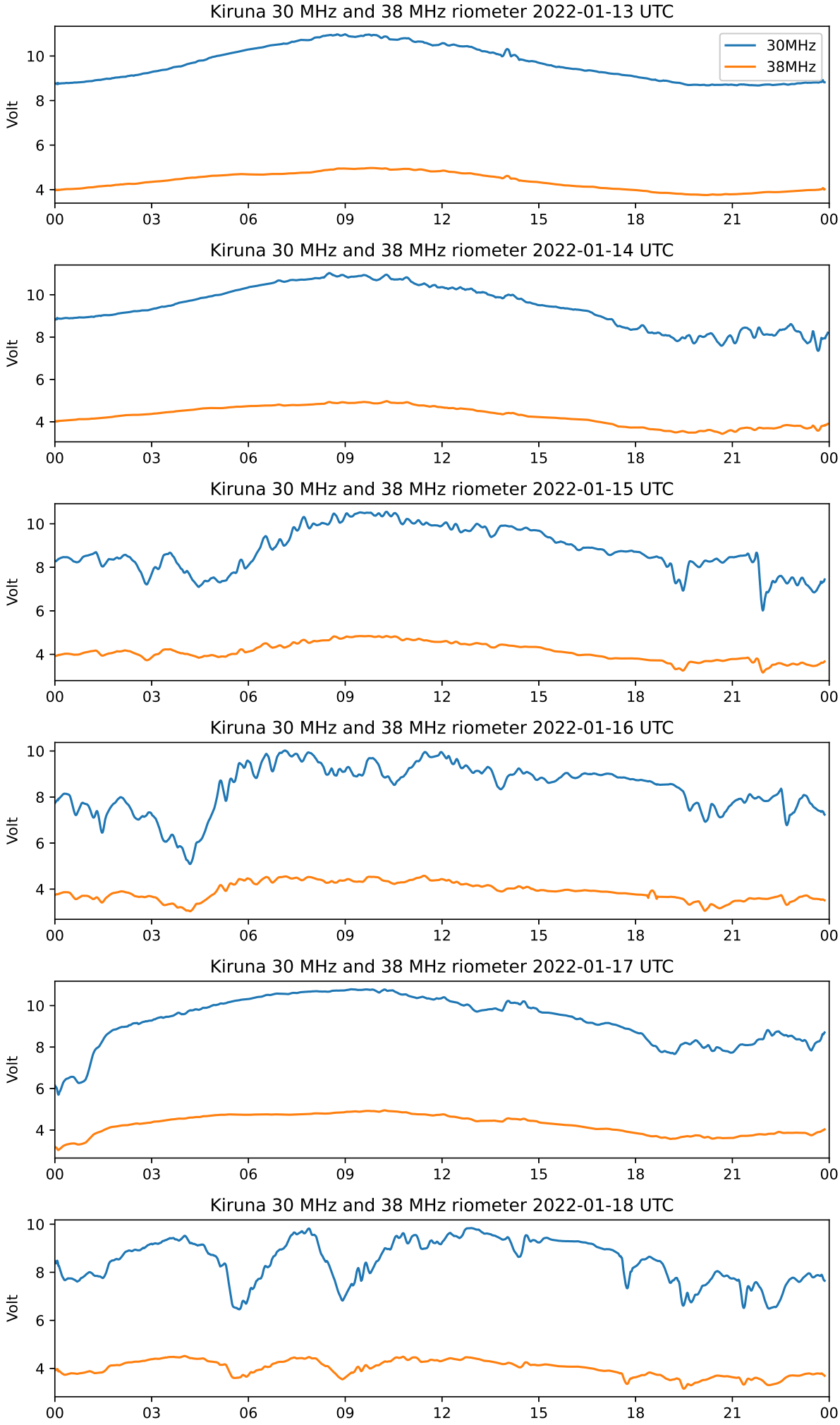
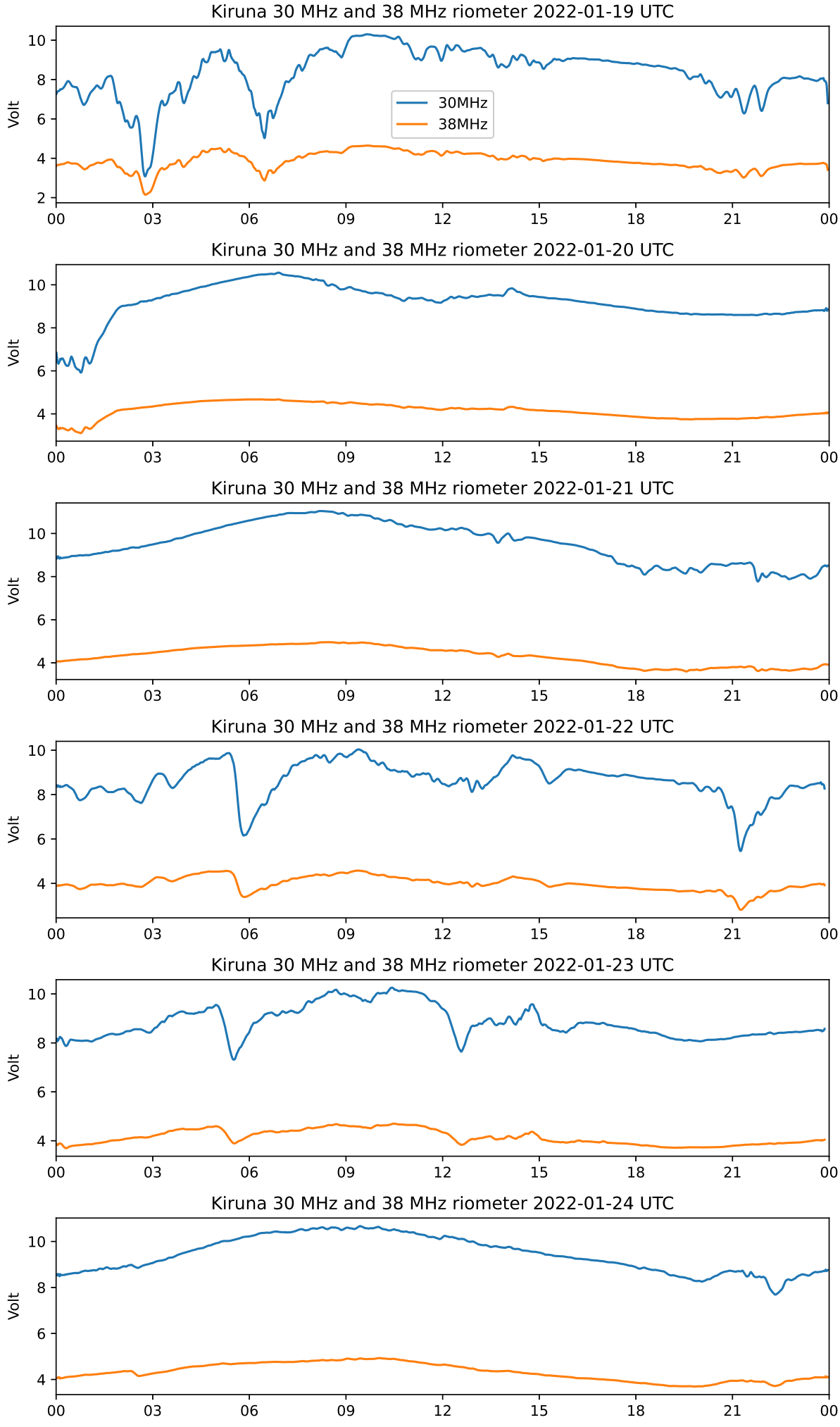
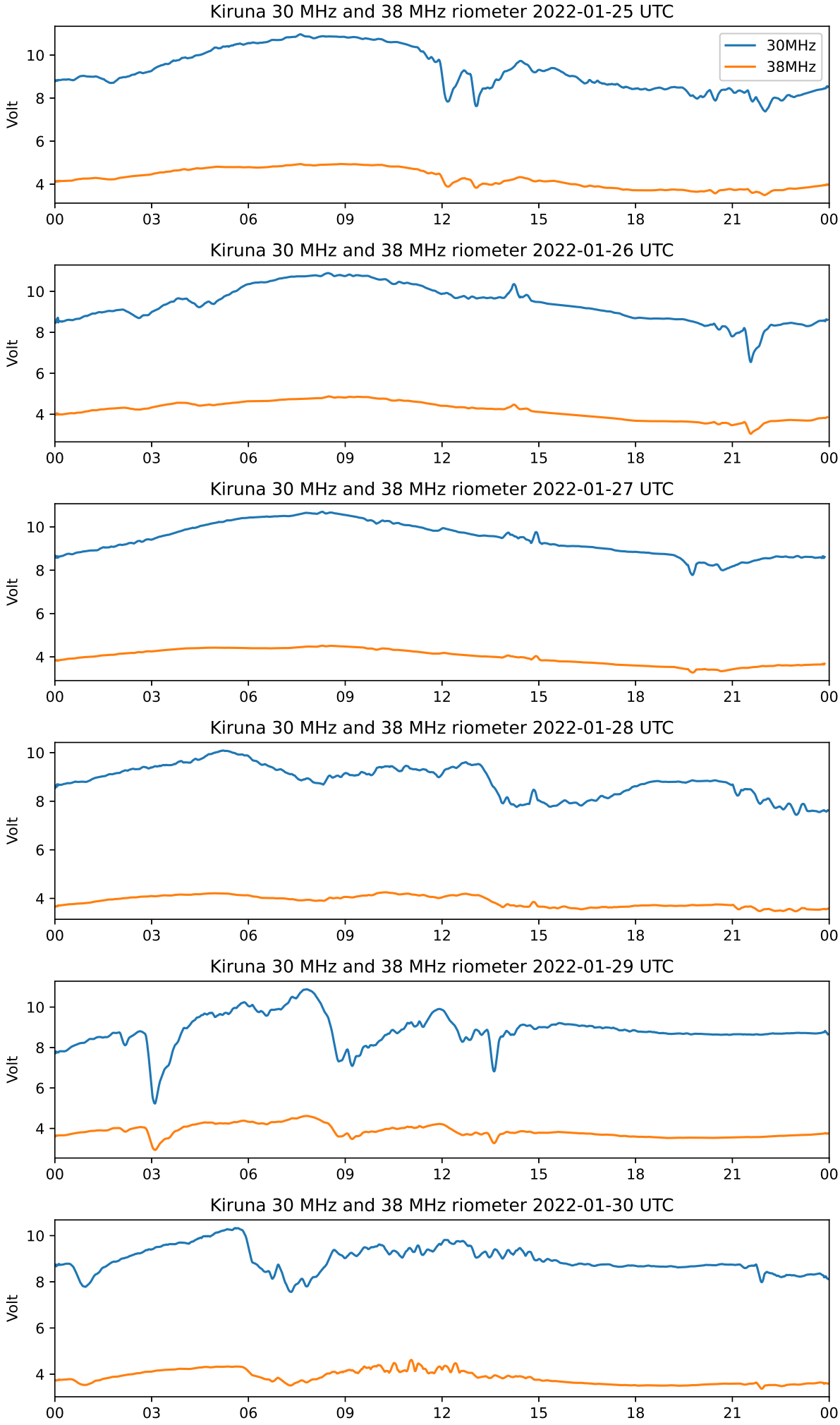
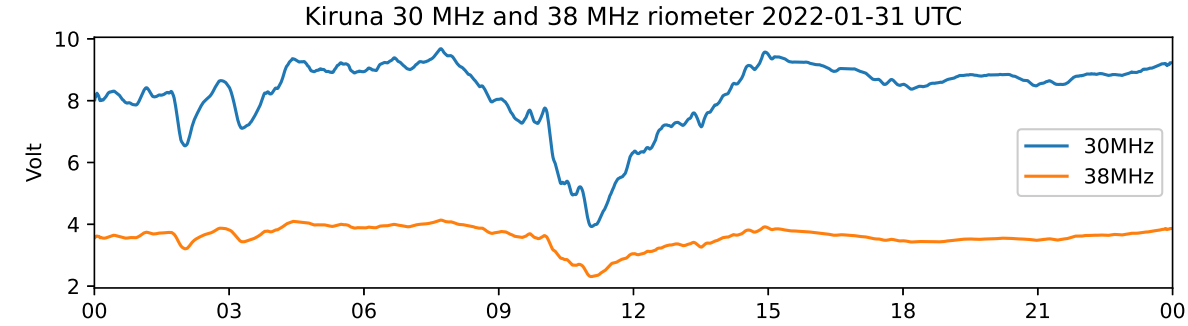
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-01-12 UTC
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-01-13 UTC
30MHz
38MHz
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-14 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-15 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-16 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-17 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-18 UTC
Volt
4
6
8
10
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-01-19 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-20 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-21 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-22 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-23 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-01-24 UTC
Volt
30MHz
38MHz
00
03
06
09
12
15
18
21


Kiruna 30 MHz and 38 MHz riometer 2022-01-25 UTC
30MHz
38MHz
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00
Kiruna 30 MHz and 38 MHz riometer 2022-01-26 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-27 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-28 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-29 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-01-30 UTC
Volt


Kiruna 30 MHz and 38 MHz riometer 2022-01-31 UTC
Volt
30MHz
38MHz
00
03
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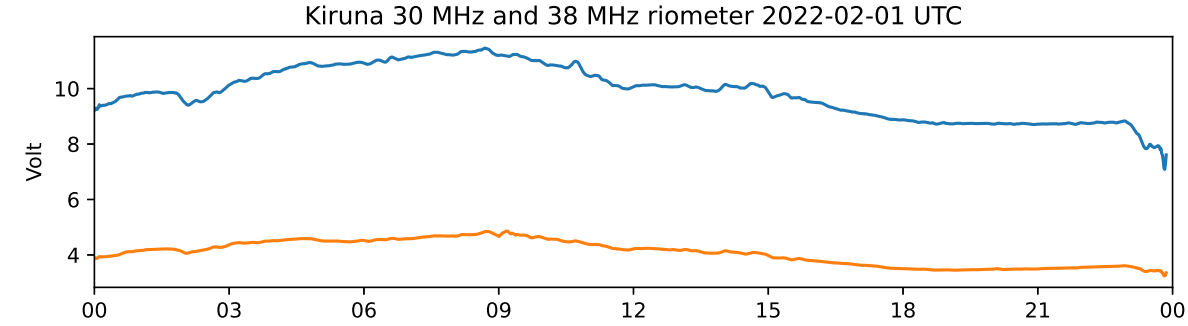
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-01 UTC
Volt
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18
21
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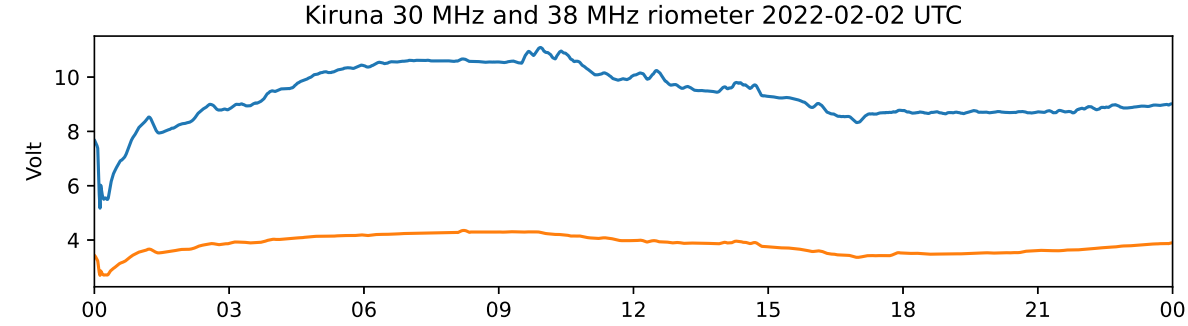
Kiruna 30 MHz and 38 MHz riometer 2022-02-02 UTC
Volt
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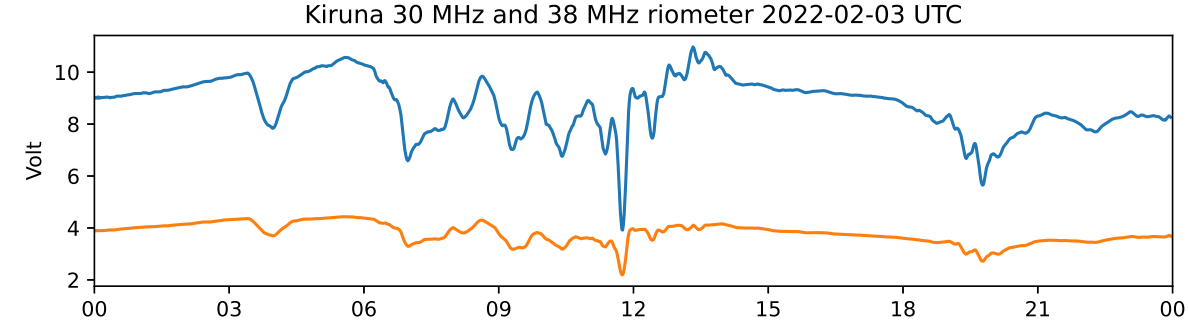
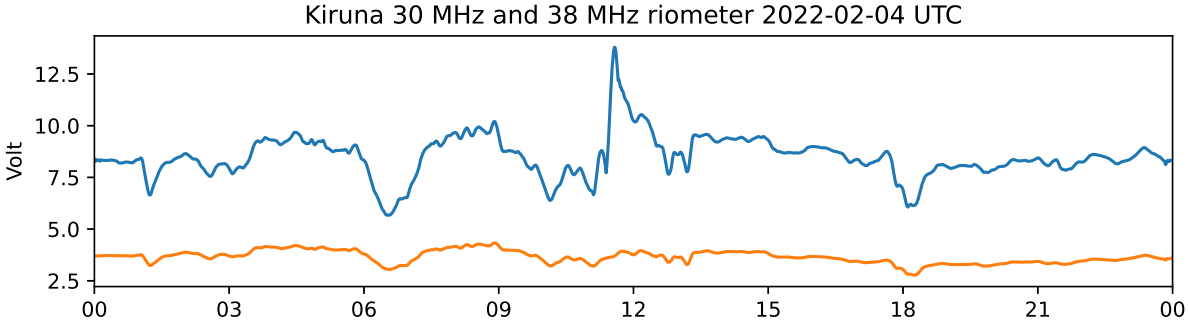
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-03 UTC
Volt
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-04 UTC
Volt
00
03
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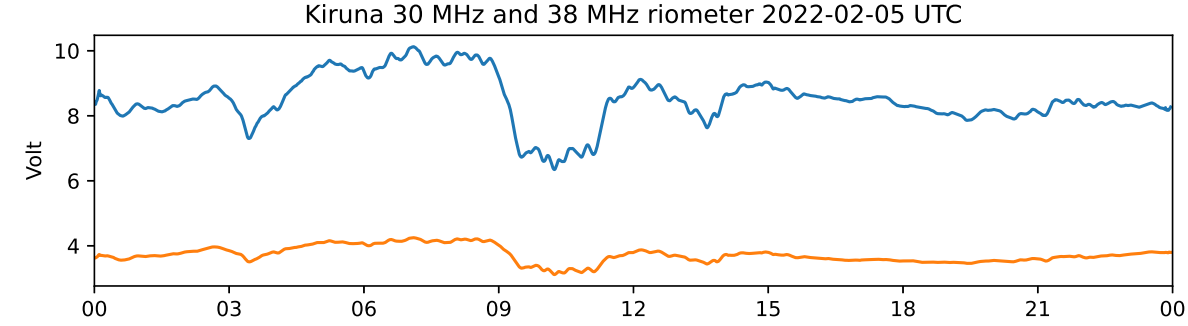
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-05 UTC
Volt
00
03
06
09
12
15
18
21
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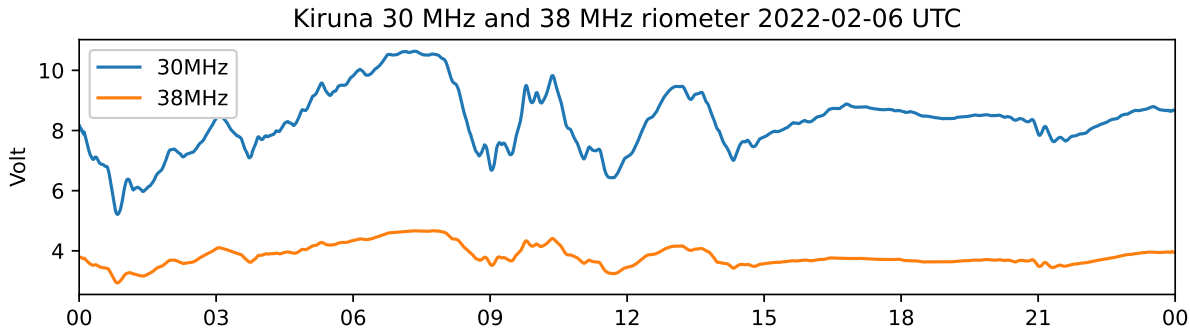
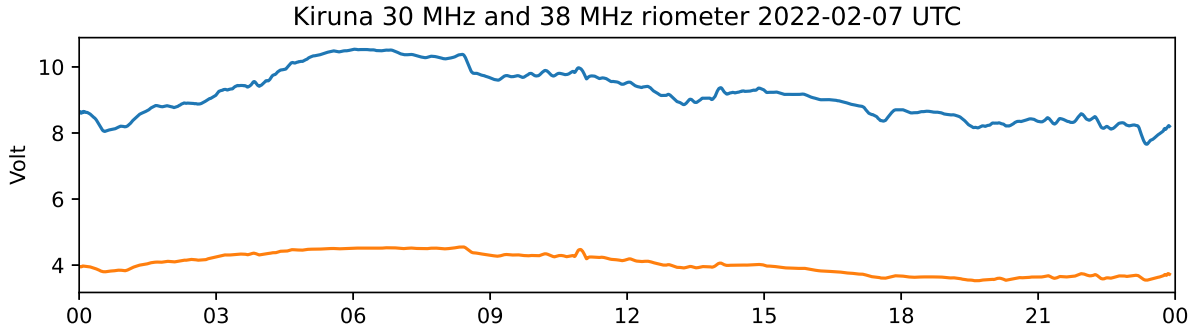
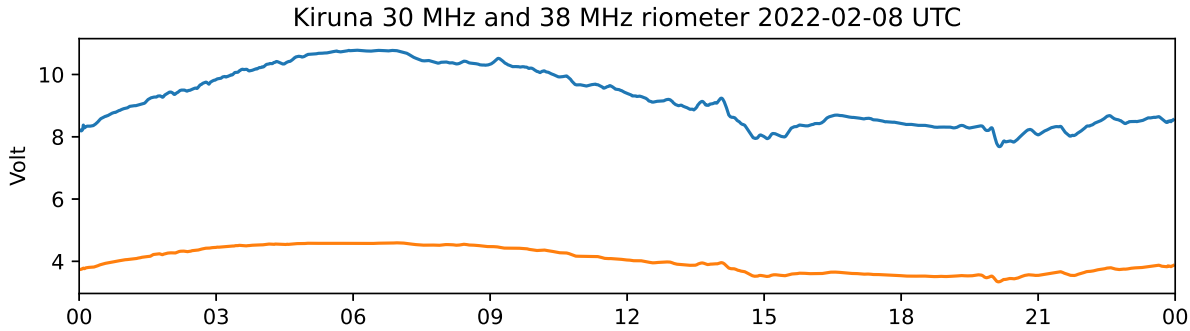
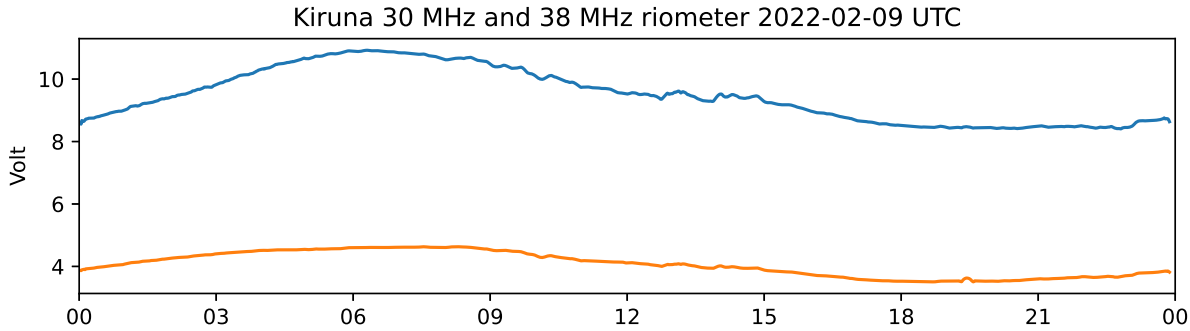
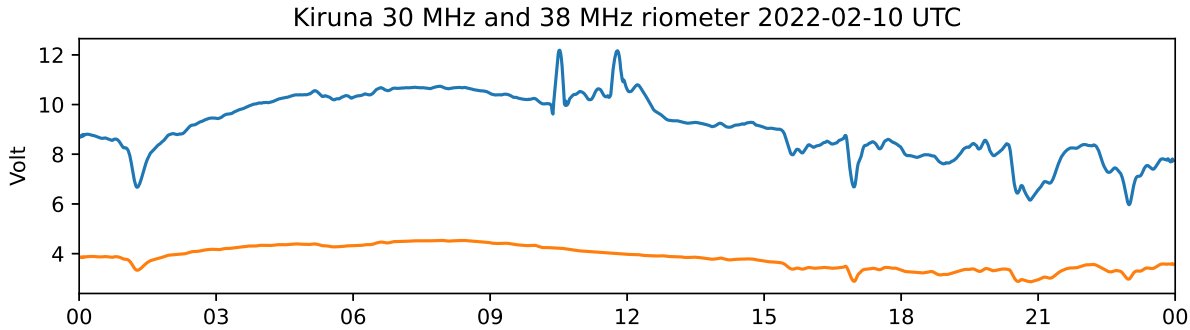
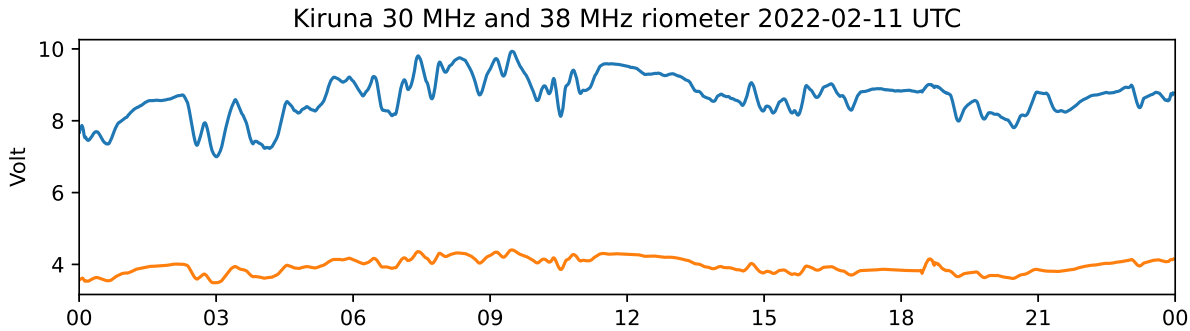

Kiruna 30 MHz and 38 MHz riometer 2022-02-06 UTC
30MHz
38MHz
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00

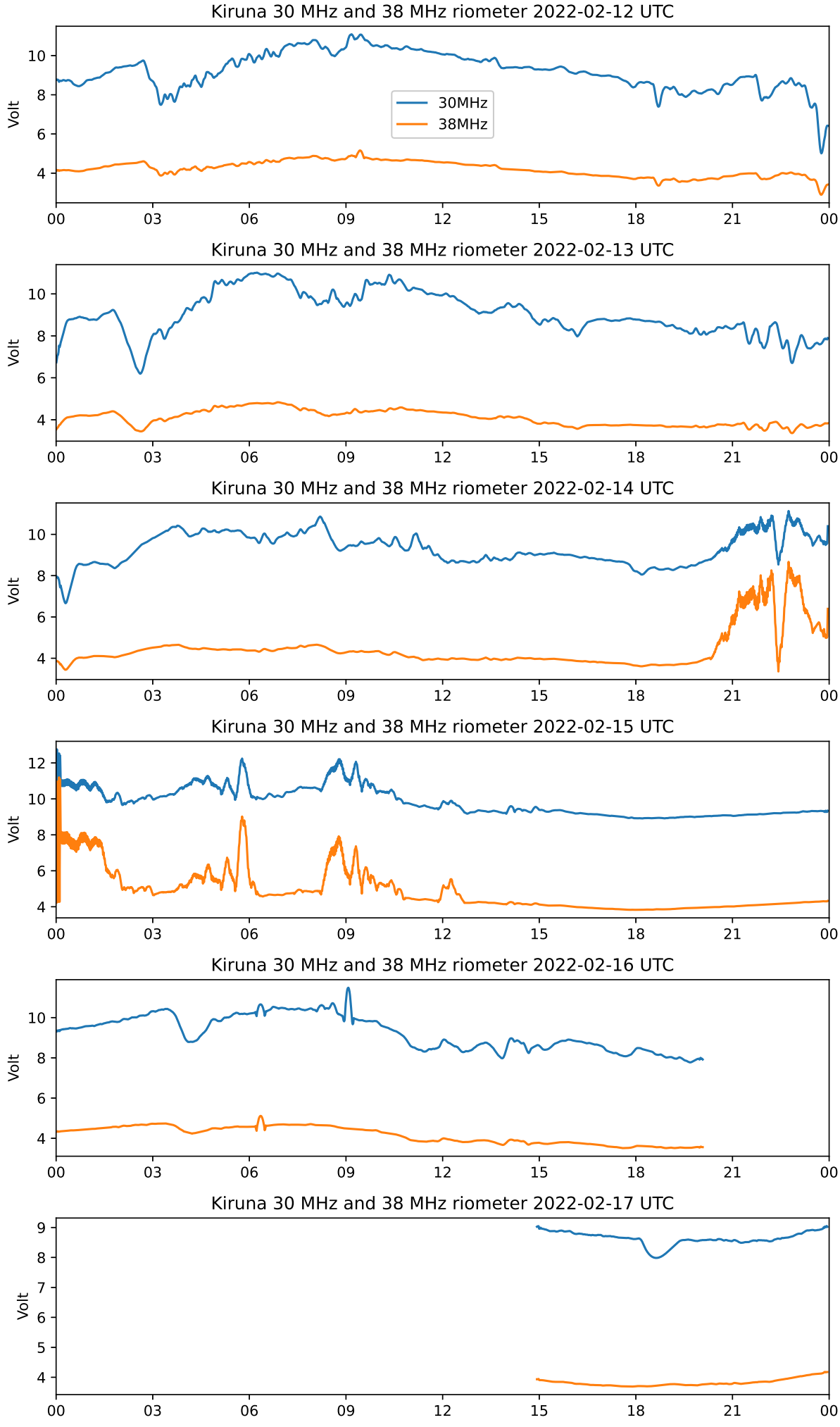

Kiruna 30 MHz and 38 MHz riometer 2022-02-07 UTC
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-08 UTC
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-09 UTC
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-10 UTC
Volt
12
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-11 UTC
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-12 UTC
Volt
30MHz
38MHz
Kiruna 30 MHz and 38 MHz riometer 2022-02-13 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-14 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-15 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-16 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-17 UTC
Volt
00
03
06
09
12
15
18
21
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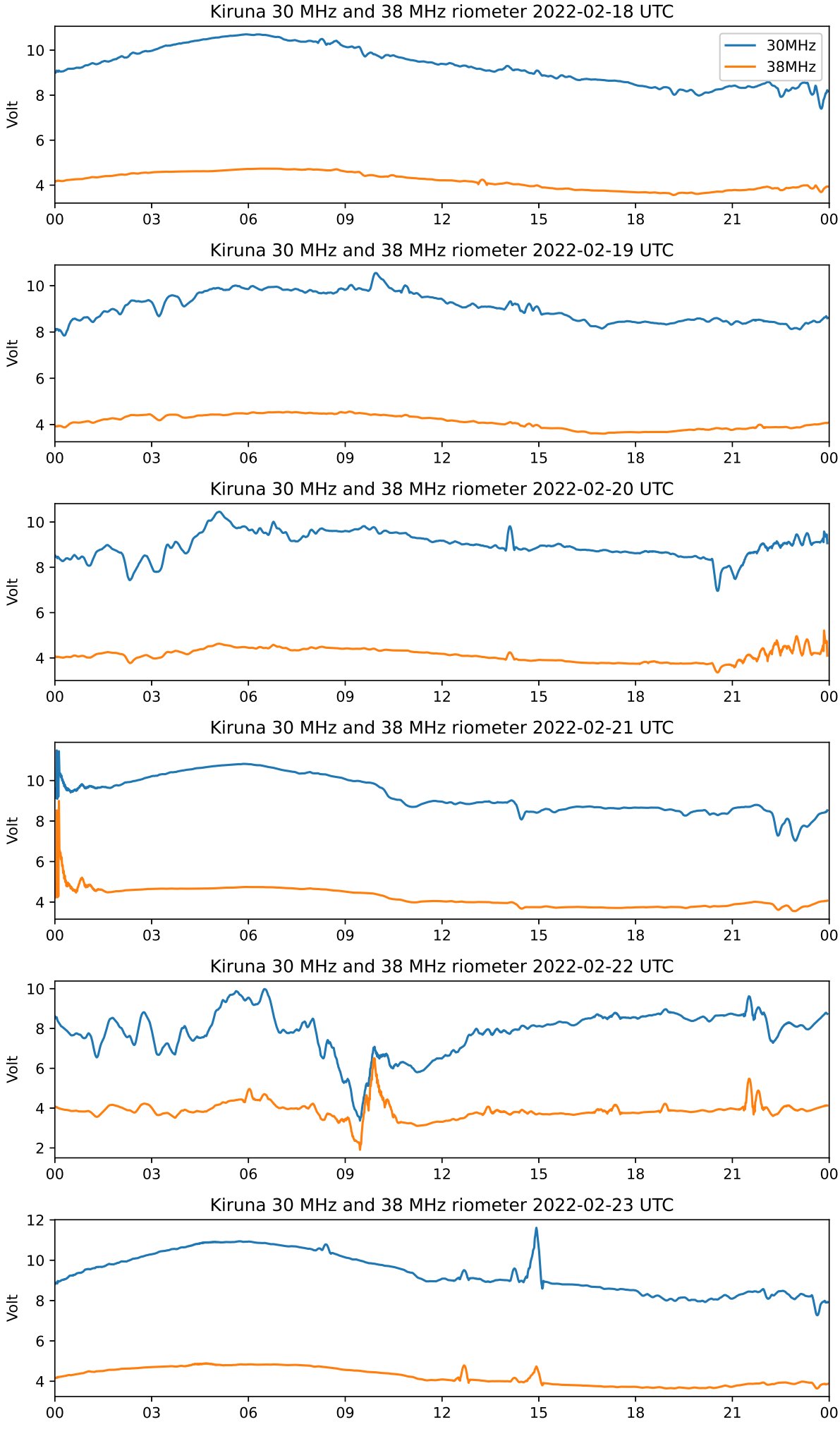
Kiruna 30 MHz and 38 MHz riometer 2022-02-18 UTC
30MHz
38MHz
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-19 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-20 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-21 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-22 UTC
Volt
Kiruna 30 MHz and 38 MHz riometer 2022-02-23 UTC
Volt
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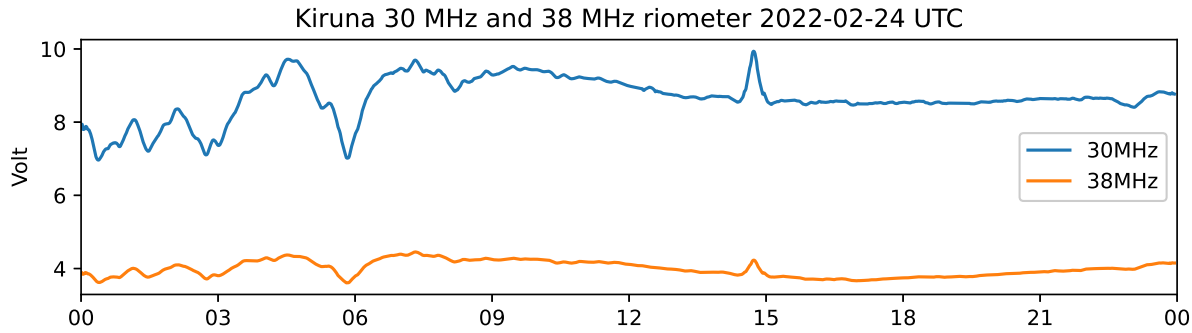
Kiruna 30 MHz and 38 MHz riometer 2022-02-24 UTC
Volt
30MHz
38MHz
00
03
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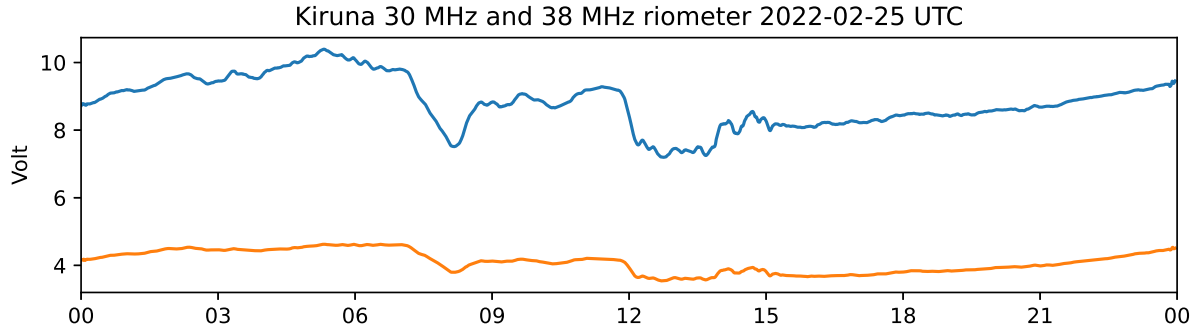
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-02-25 UTC
Volt
00
03
06
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12
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18
21
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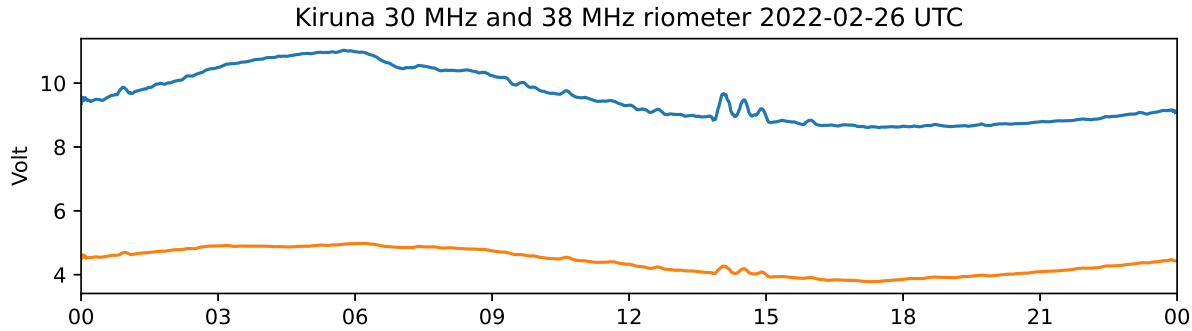
Kiruna 30 MHz and 38 MHz riometer 2022-02-26 UTC
Volt
00
03
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09
12
15
18
21
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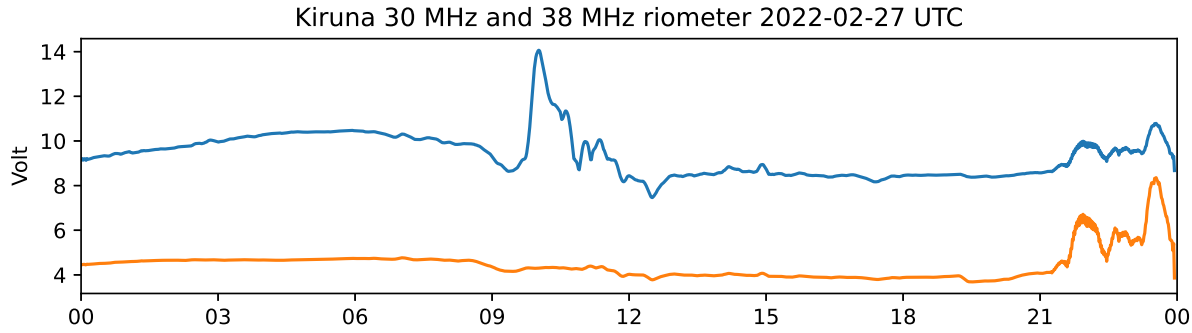
Kiruna 30 MHz and 38 MHz riometer 2022-02-27 UTC
Volt
00
03
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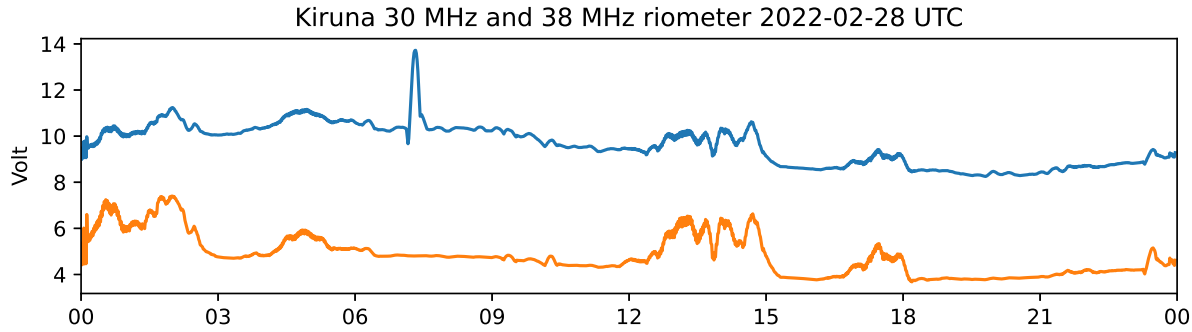
Kiruna 30 MHz and 38 MHz riometer 2022-02-28 UTC
Volt
00
03
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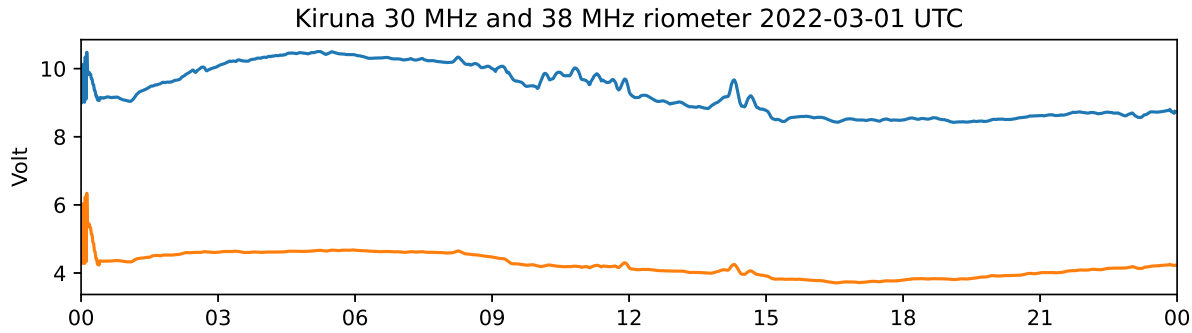
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-01 UTC
Volt
00
03
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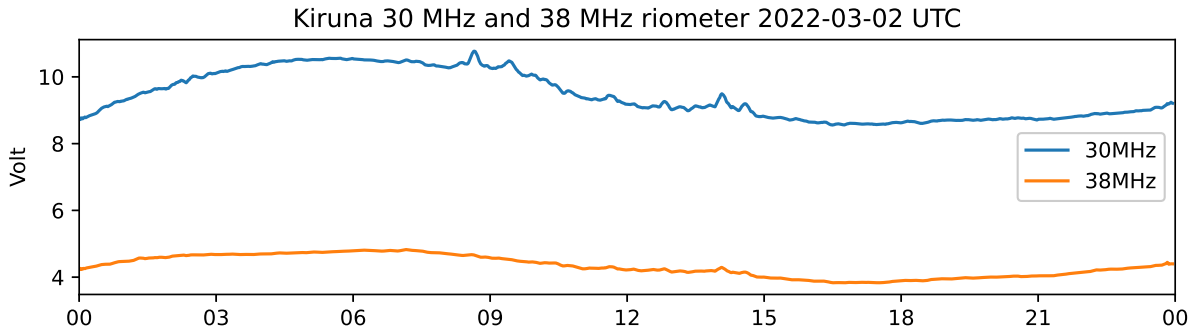
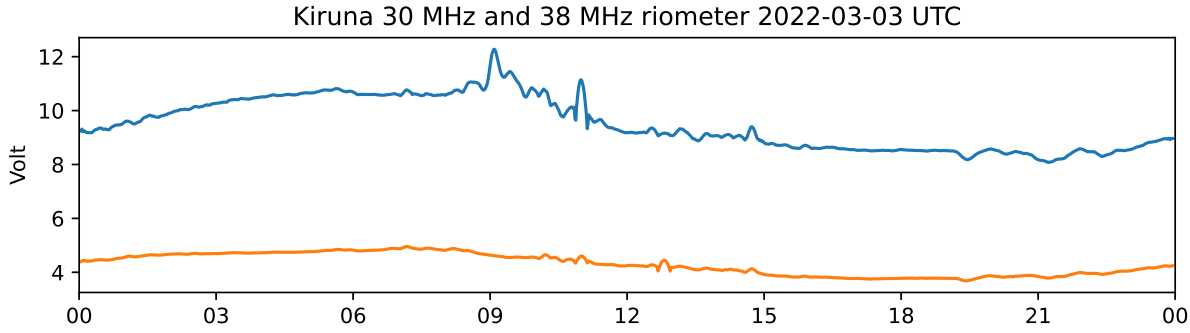
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-02 UTC
Volt
30MHz
38MHz
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-03 UTC
Volt
00
03
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21
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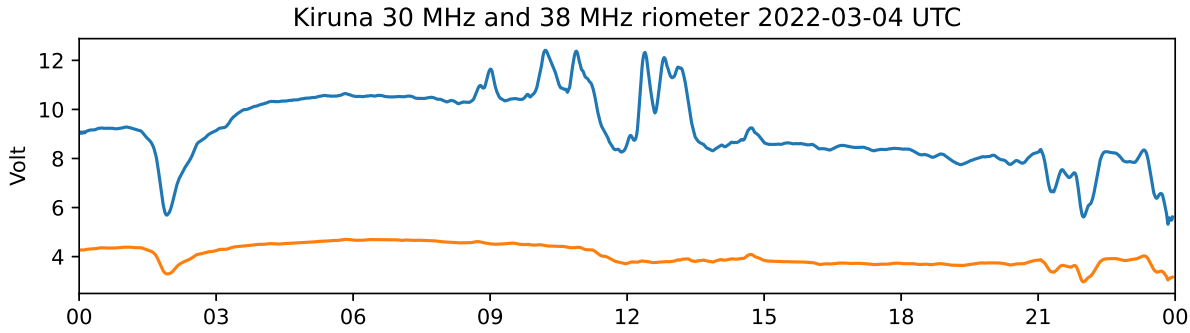
Kiruna 30 MHz and 38 MHz riometer 2022-03-04 UTC
Volt
00
03
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18
21
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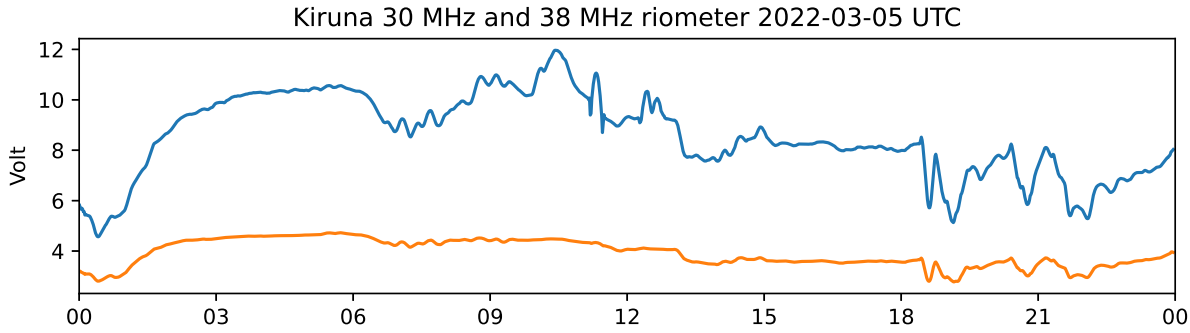
Kiruna 30 MHz and 38 MHz riometer 2022-03-05 UTC
Volt
00
03
06
09
12
15
18
21
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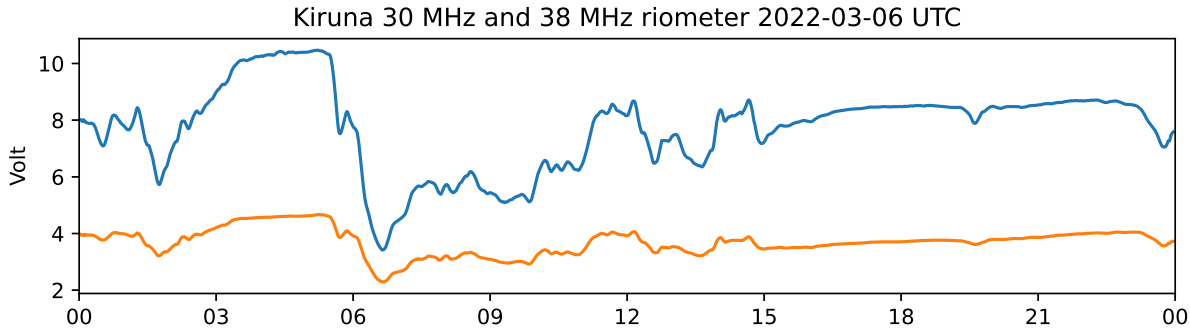
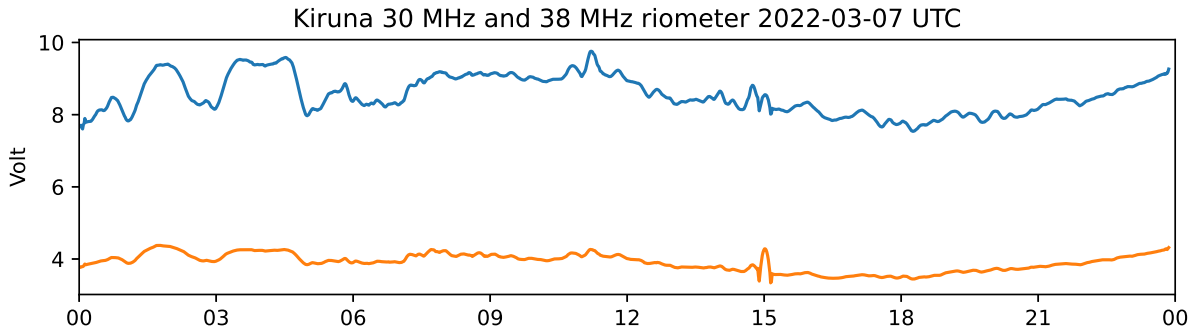

Kiruna 30 MHz and 38 MHz riometer 2022-03-06 UTC
Volt
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-07 UTC
Volt
00
03
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09
12
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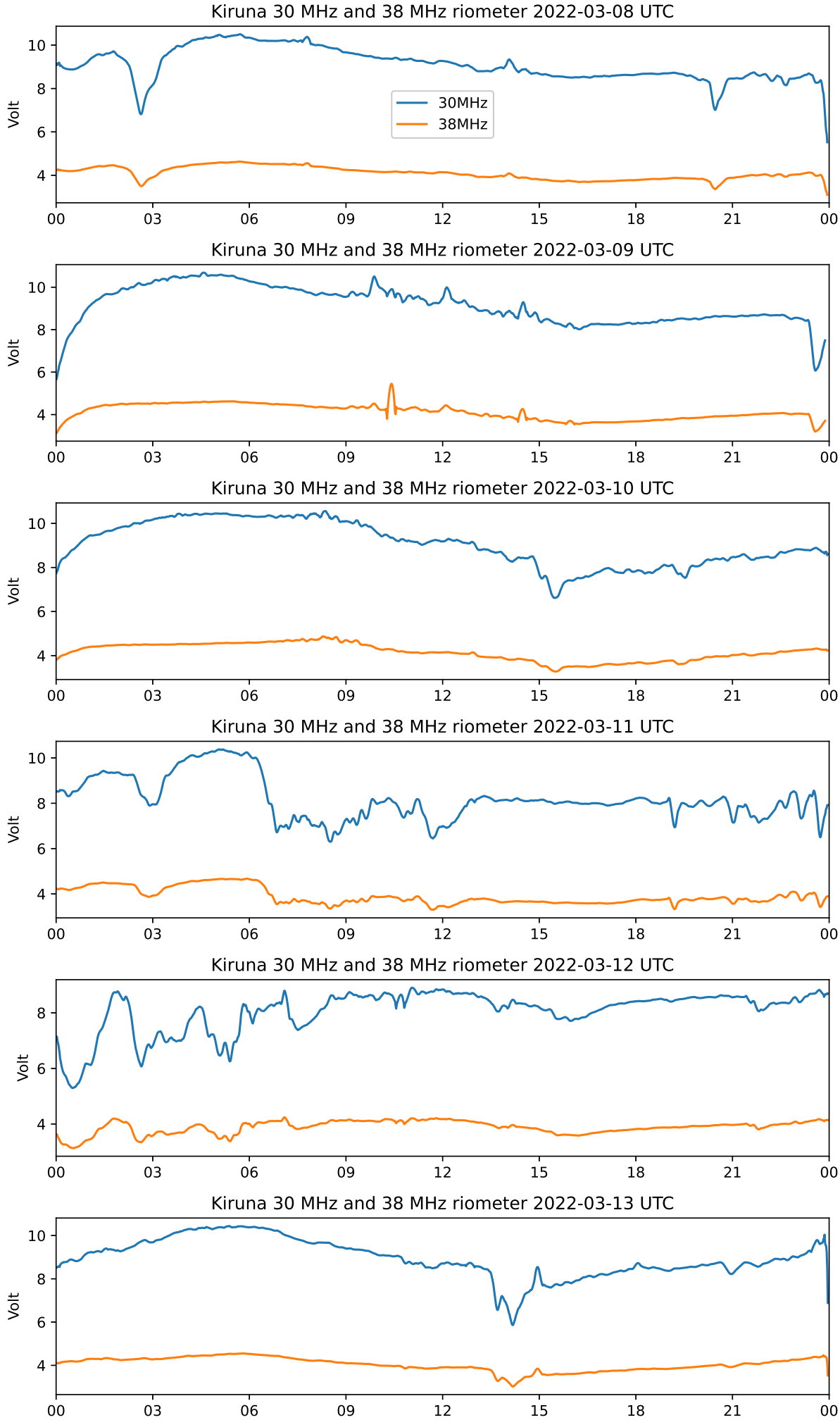
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-08 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-09 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-10 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-11 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-12 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-13 UTC
30MHz
38MHz
Volt
10
8
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4
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03
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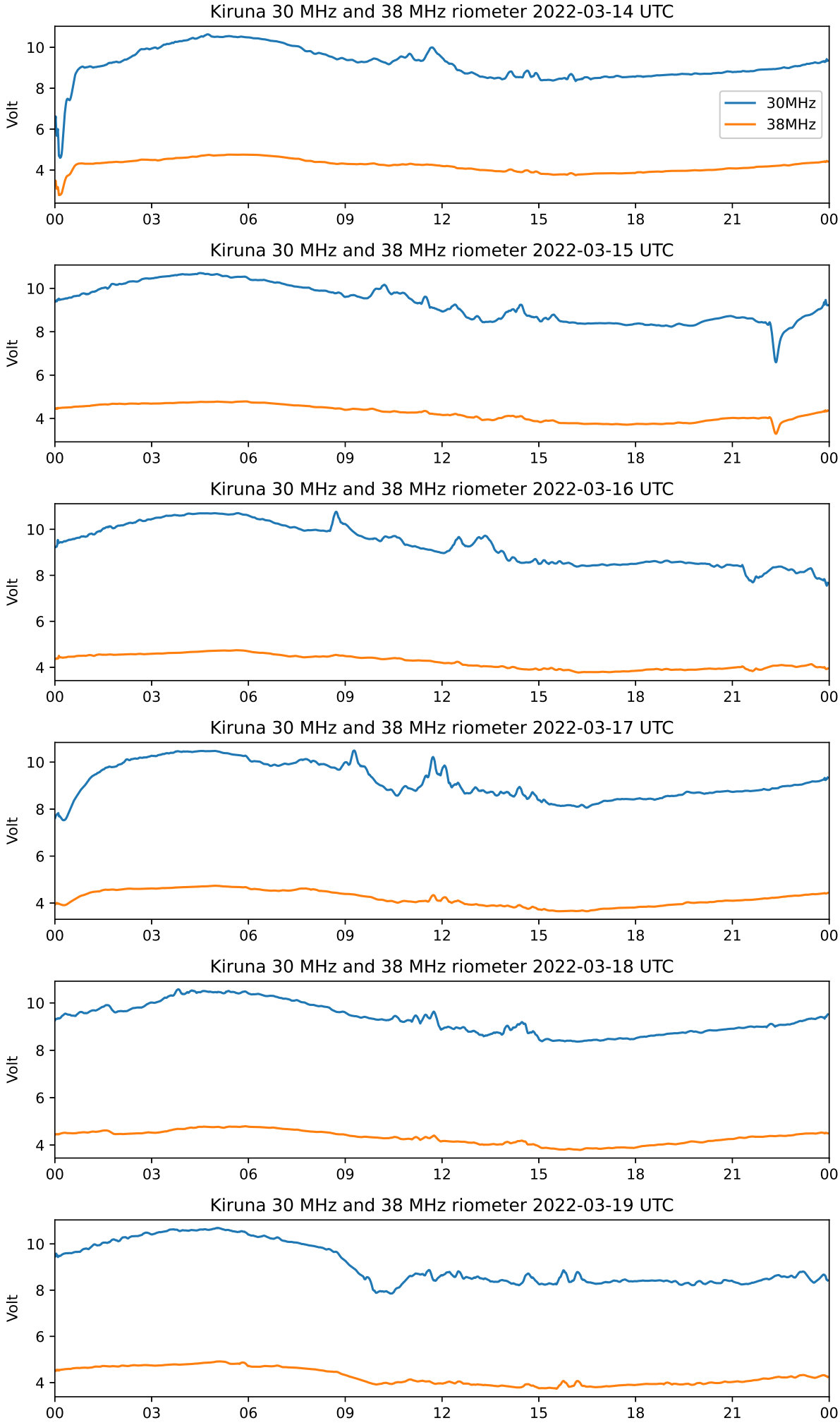
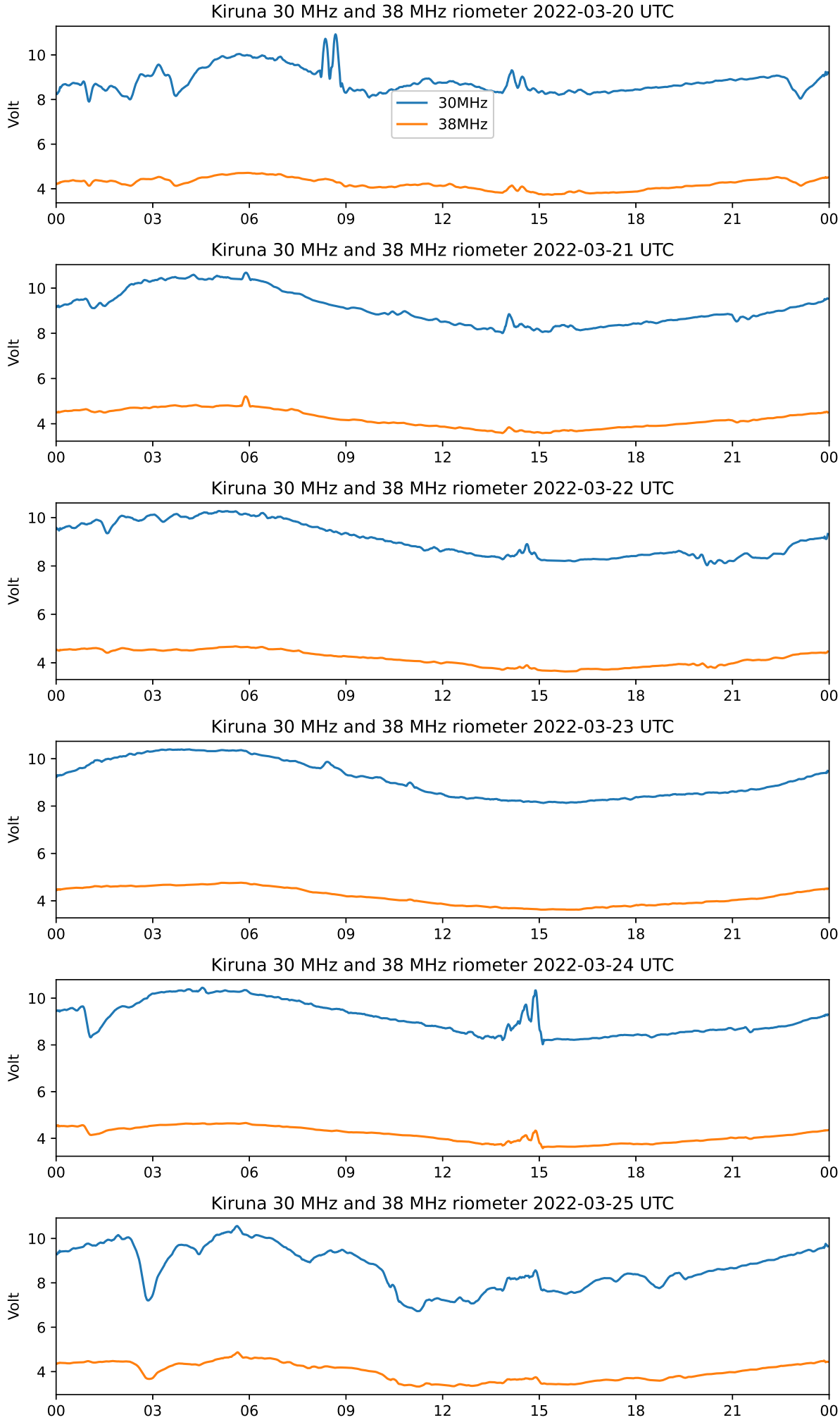
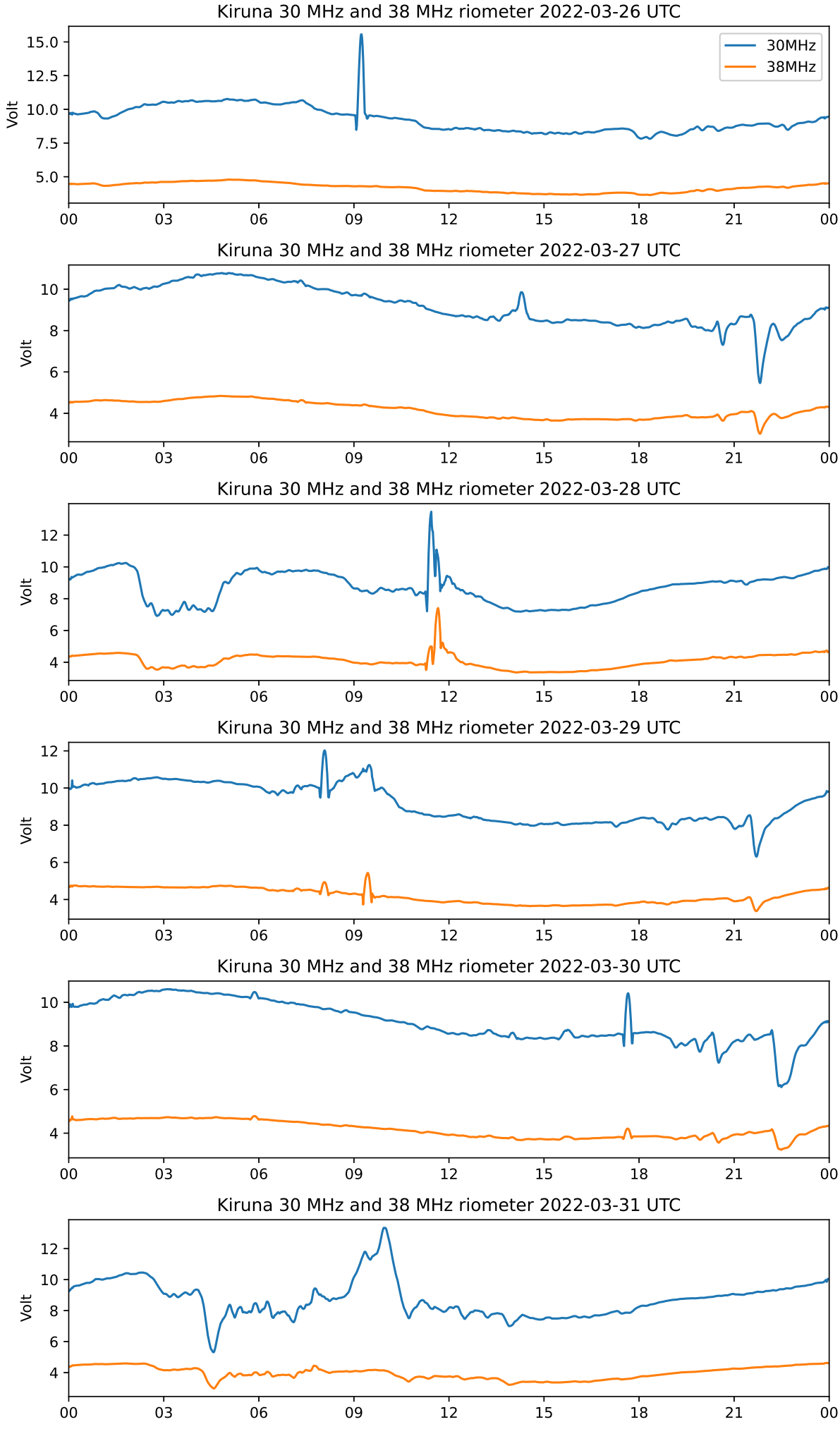
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-14 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-15 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-16 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-17 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-18 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-19 UTC
Volt
30MHz
38MHz
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-20 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-21 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-22 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-23 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-24 UTC
Kiruna 30 MHz and 38 MHz riometer 2022-03-25 UTC
30MHz
38MHz
Volt
10
8
6
4
00
03
06
09
12
15
18
21
00


Kiruna 30 MHz and 38 MHz riometer 2022-03-26 UTC
30MHz
38MHz
Volt
15.0
12.5
10.0
7.5
5.0
00
03
06
09
12
15
18
21
00
Kiruna 30 MHz and 38 MHz riometer 2022-03-27 UTC
Volt
10
8
6
4
Kiruna 30 MHz and 38 MHz riometer 2022-03-28 UTC
Volt
12
10
8
6
4
Kiruna 30 MHz and 38 MHz riometer 2022-03-29 UTC
Volt
12
10
8
6
4
Kiruna 30 MHz and 38 MHz riometer 2022-03-30 UTC
Volt
10
8
6
4
Kiruna 30 MHz and 38 MHz riometer 2022-03-31 UTC
Volt
12
10
8
6
4

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