

RUSSIAN ACADEMY OF SCIENCES
KOLA SCIENCE CENTRE



PGI
GEOFYSICAL DATA

2016

JANUARY

FEBRUARY

MARCH

POLAR GEOPHYSICAL INSTITUTE
MURMANSK, APATITY, **RUSSIA**

PGI GEOPHYSICAL DATA

V. VOROBJEV, editor

V. Burnaeva, N. Golubtsova and L. Kogay make-up editors

This bulletin presents the preliminary ground-based optical, geomagnetic and cosmic ray data obtained by Polar Geophysical Institute in the first quarter of 2016. All-sky camera observations are published only for the quarters when observations were carried out. All data are available by request.

CONTENTS:

Data description.....	2
Geomagnetic K-indices	6
Cosmic ray data	9
All-sky camera observations	
Magnetogram plots	

DATA DESCRIPTION

Magnetic data

The magnetograms (H, D, and Z) are plotted as magnetic variations recorded in Loparskaya and Lovozero stations by the three component Bobrov type magnetometer with a sampling frequency of 10 samples per seconds. The instrument has a range ± 2620 nT and a resolution of 5 pT. Magnetic observations are gathered every second and registered in the digital form as the 10-sec averaged data. Digits in the plots at the left hand side denote the scale of the records in nT/div. Timing is provided by the GPS.

Magnetic quiet values for H, D and Z components are shown by dotted line as a daily averaged magnetic activity level for three magnetically quiet days of each month. Quiet days are brand by the symbol Q in tables of geomagnetic K-indices.

Geomagnetic K-indices

The hourly K-indices indicate the level of geomagnetic field disturbance. The maximum deflection of two components H and D from the magnetic quiet value during one hour interval have been recalculated to the value of the local hourly K-index. 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

Cosmic ray data

The 18-NM-64-neutron monitor has been operating in Apatity since 1969. A plot of pressure corrected hourly data (count accumulated during one hour interval) is presented in units of percent with respect to the monthly mean intensity. Mean values are:

January	373 184
February	377 706
March	378 265

The hourly data are sent to WDC-B2 (Moscow) and WDC-C (Japan).

Please visit <http://pgia.ru/lang/en/data/>

All-sky camera observations

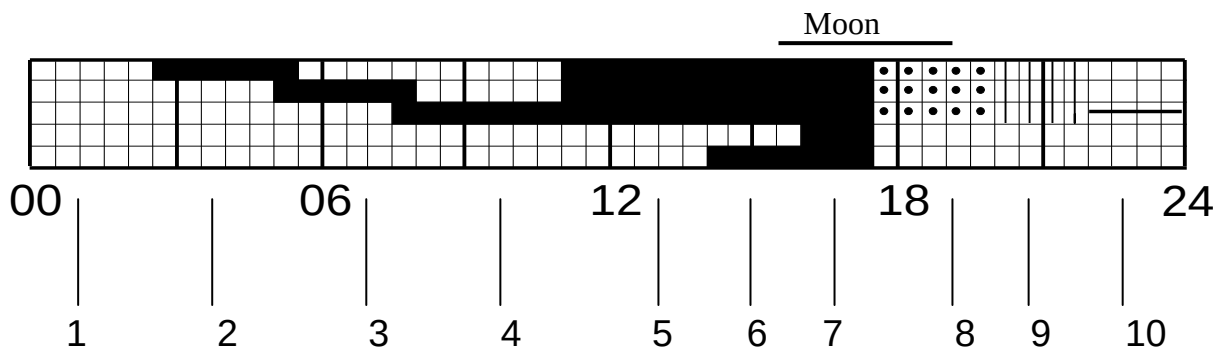
Calendar

Calendar shows the intervals of digital all-sky camera observations in Apatity and Lovozero, which are available during dark periods from 1400 to 0600 UT.

Ascaplots

All-sky camera observations are presented in this bulletin in the form of the standard five lines ascaplot. A detailed description of askaplots interpretation was published in: Annals of International Geophysical Year. V. XX. Part 1. P. 1-5. 1962.

Example of an ascaplot and the legend are given below. Top three lines give information on the existence of aurorae in north, zenith and south ranges of the sky, respectively. The fourth and fifth lines in the standard five lines ascaplot give the zenith range auroral intensity. We do not use all-sky camera observations to form a correct estimate of the auroral intensity.



- 1- no aurora
- 2- aurora present in north range
- 3- weak aurora present in zenith range
- 4- aurora present in south range
- 5- aurorae present in north, zenith and south ranges
- 6- medium aurora in zenith, aurorae present in north and south ranges
- 7- strong aurora in zenith, aurorae present in north and south ranges
- 8- partial cloudiness
- 9- total cloudiness
- 10- no operation

Keograms

Black white keograms show the auroral display along the geomagnetic meridian of station. Here we present a few selected auroral events observed at Lovozero and/or Loparskaya in night-time interval from 17 00 UT to 01 00 UT. Zenith angles are given along the vertical axis. Magnetic north is at the top of the figure.

Coordinates of stations

Stations	Code	Geographic		Corr. Geomagnetic	
		Lat	Long	Lat	Long
<i>Loparskaya</i>	LOP	68.63° N	33.25° E	64.94° N	113.6° E
<i>Lovozero</i>	LOZ	67.97° N	35.02° E	64.17° N	115.3° E
<i>Apatity</i>	APT	67.58° N	33.31° E	63.86° N	113.6° E

Please visit

<http://pgia.ru/lang/en/data/>

Contact information:

	Phon	<i>e-mail</i>
Vyacheslav Vorobjev, Editor	+7-815-55-79-592	<i>vorobjev@pgia.ru</i>
Sergei Chernyakov, head of LOP	+7-815-53-48-339	<i>sergeich@pgi.ru</i>
Valentin Kosolapenko, head of LOZ	+7-815-238-31-382	<i>valkos@pgia.ru</i>

Polar Geophysical Institute
Academgorodok, 26a, APATITY
184209, RUSSIA

GEOMAGNETIC K-INDICES, LOVOZERO
January, 2016
Lower limit of K=9 is 1500 nT

Day	Time, UT								
	03	06	09	12	15	18	21	24	
1	7 7 6	4 3 5	3 1 1	1 1 1	1 1 1	1 1 1	2 2 2	1 1 1	
2	1 1 1	1 1 1	1 2 2	2 2 1	2 1 1	2 1 1	1 1 1	1 1 1	
3	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 2 3	3 3 1	
4	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 2	1 1 1	1 1 1	
5	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 2 2	1 1 1	
6	3 4 2	1 1 1	1 1 1	2 2 2	1 1 1	2 1 1	1 2 3	3 3 2	
7	1 3 3	1 1 2	2 2 2	2 1 1	2 1 2	2 1 1	3 3 1	1 1 1	
8	1 1 1	1 1 1	1 1 1	1 1 1	1 1 3	1 1 1	2 1 1	1 1 1	
9	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	Q
10	2 1 1	1 1 1	1 1 1	1 1 2	2 1 1	1 1 1	1 1 3	3 2 1	
11	1 1 1	1 1 2	1 1 1	1 2 1	1 1 2	2 3 4	4 4 1	3 4 4	
12	3 2 2	2 2 1	1 1 1	1 2 2	2 2 2	2 2 2	2 3 3	4 1 3	
13	4 3 2	2 2 1	1 1 1	1 1 1	2 2 1	2 1 2	3 2 1	1 1 1	
14	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 2 2	2 1 2	2 2 1	
15	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
16	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
17	1 1 1	1 1 1	1 1 1	1 1 1	1 1 2	2 1 1	1 1 1	1 1 1	
18	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	Q
19	5 3 2	1 1 1	1 1 1	1 2 2	1 1 1	1 1 1	1 1 1	1 2 2	
20	2 2 2	2 2 2	2 2 1	2 2 3	3 3 3	4 5 4	3 4 3	3 3 3	
21	3 4 3	1 3 3	3 3 2	2 2 2	2 2 2	3 4 3	2 2 6	5 5 3	
22	4 3 1	1 1 1	1 2 1	1 1 2	2 1 2	2 2 1	1 1 3	2 2 1	
23	1 1 1	1 1 2	1 2 1	1 1 2	2 2 1	1 3 3	1 1 1	1 1 1	
24	2 1 1	1 1 1	1 1 1	1 1 1	1 2 2	3 2 1	5 6 2	1 1 1	
25	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
26	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	Q
27	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
28	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	2 2 1	1 2 1	
29	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
30	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
31	1 1 1	1 1 1	1 1 1	1 1 1	2 2 1	3 3 2	2 3 3	3 5 5	

GEOMAGNETIC K-INDICES, LOVOZERO
February, 2016
Lower limit of K=9 is 1500 nT

Day	Time, UT								
	03	06	09	12	15	18	21	24	
1	5 5 5	3 3 2	1 0 1	1 1 1	1 0 0	0 0 0	0 0 1	0 0 0	
2	0 0 0	0 0 0	0 0 0	1 0 1	1 1 1	1 2 2	3 3 3	3 4 5	
3	6 6 6	5 3 3	2 2 1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
4	0 0 0	0 0 0	0 0 0	0 1 2	1 1 0	1 0 0	0 2 1	0 0 0	Q
5	2 3 1	1 1 1	1 1 1	1 1 1	1 1 1	0 0 2	2 5 4	3 3 3	
6	1 0 0	2 1 0	0 0 0	0 1 1	0 0 0	1 1 2	1 1 4	4 4 3	
7	3 1 0	0 0 0	0 0 0	1 1 1	2 2 2	3 3 3	3 3 4	4 5 5	
8	6 6 6	4 2 2	3 3 1	1 1 1	1 0 1	0 0 0	0 0 1	1 0 0	
9	0 1 0	0 0 0	1 0 0	1 1 2	2 2 1	2 1 0	1 2 2	3 4 2	
10	2 3 4	2 1 0	0 0 1	1 1 0	0 0 0	0 0 1	2 1 1	2 2 2	
11	2 2 2	1 1 0	0 0 0	1 1 1	2 2 3	4 4 2	2 0 3	5 5 5	
12	4 3 3	2 2 2	1 1 1	1 1 2	2 2 1	1 2 3	4 3 3	2 1 1	
13	1 0 0	1 1 1	1 0 0	1 0 0	0 0 0	0 0 0	0 0 0	0 1 0	Q
14	0 0 0	0 1 1	1 1 0	1 0 1	1 0 1	2 3 4	2 1 2	2 1 1	
15	3 2 2	1 1 1	1 1 1	1 0 1	1 1 1	1 0 0	0 2 2	4 7 7	
16	5 5 4	2 2 2	2 1 2	2 2 3	5 5 6	4 6 5	4 5 6	5 6 6	
17	4 5 4	2 2 2	2 2 2	2 2 2	4 4 6	5 3 3	5 4 6	6 6 7	
18	6 3 4	5 3 3	2 2 2	3 2 2	2 2 1	3 3 2	4 3 4	4 6 6	
19	5 3 3	2 2 1	1 1 2	1 1 2	3 3 2	4 4 4	5 4 4	2 2 3	
20	4 3 1	1 0 1	1 1 1	1 1 1	1 0 0	0 0 0	0 1 1	1 2 2	
21	1 1 1	1 1 0	0 0 1	1 1 0	0 0 0	0 1 2	2 2 3	4 3 1	
22	0 0 0	0 0 0	0 0 0	0 1 1	0 0 1	0 0 0	0 0 1	0 0 0	Q
23	0 1 2	0 0 0	0 0 0	1 1 0	0 0 0	1 0 2	3 1 4	5 4 5	
24	4 3 2	1 0 0	0 0 1	1 1 1	2 1 1	1 1 1	1 2 2	1 0 1	
25	3 3 0	0 0 0	1 0 1	1 1 1	1 1 1	1 1 2	2 1 1	1 1 3	
26	5 2 0	1 0 1	1 1 1	1 1 1	1 0 0	0 0 0	0 2 2	0 0 0	
27	0 0 0	0 0 0	1 0 1	1 1 1	1 0 1	0 0 1	0 0 0	1 0 0	
28	0 0 0	0 0 0	0 0 1	1 1 1	1 1 1	0 0 0	0 0 1	1 1 2	
29	2 1 0	0 0 0	0 0 0	1 1 1	1 1 1	1 0 1	0 0 1	1 4 4	

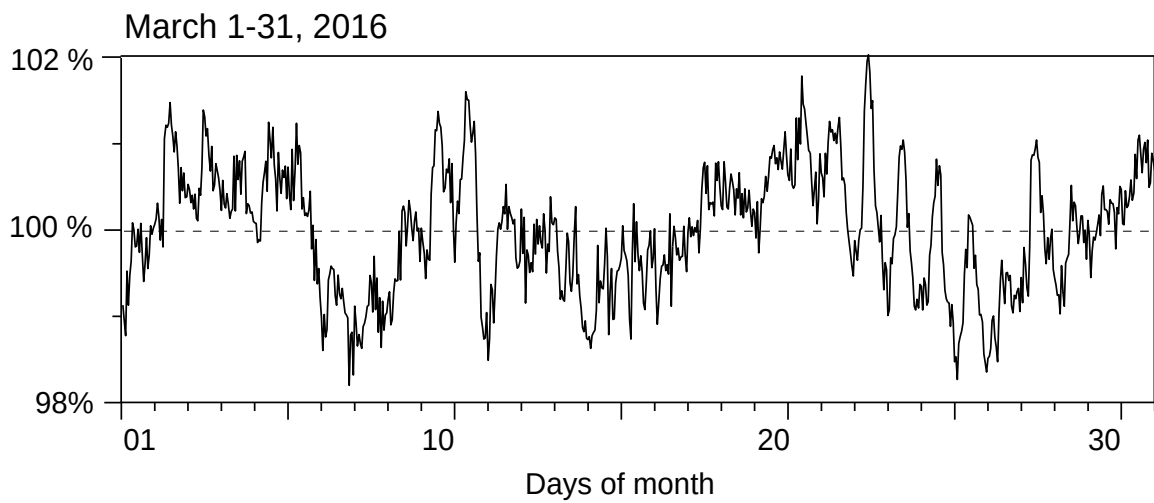
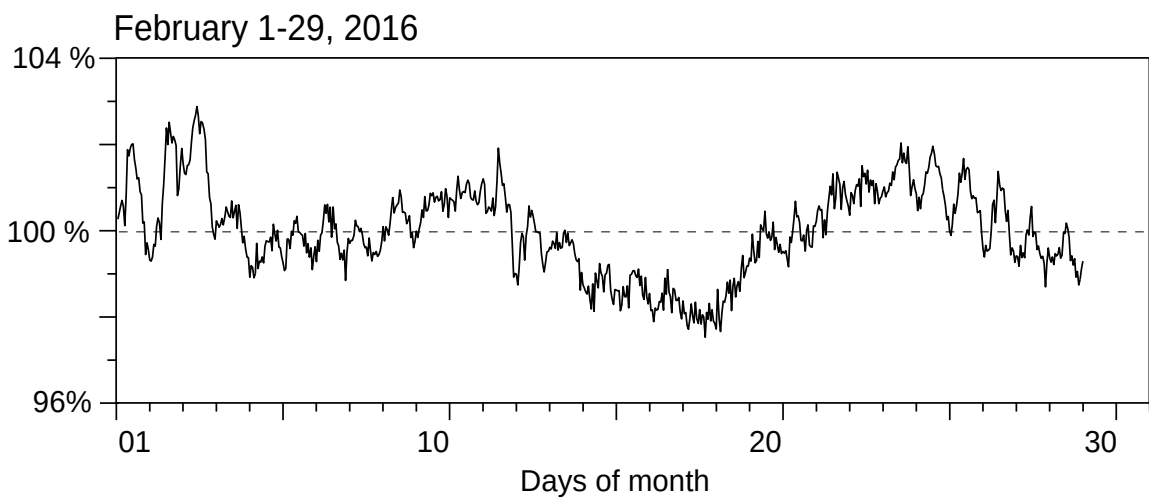
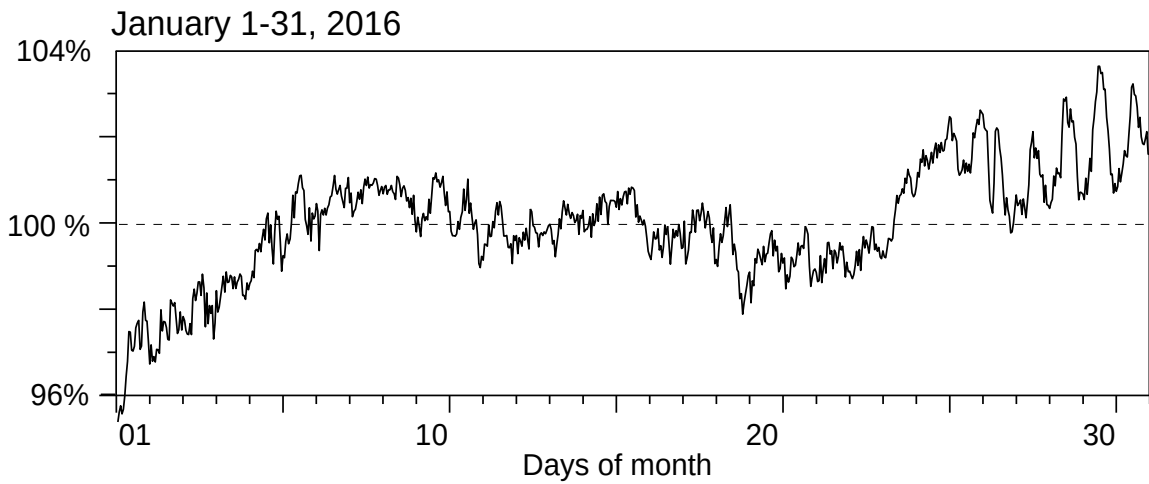
GEOMAGNETIC K-INDICES, LOVOZERO

March, 2016

Lower limit of K=9 is 1500 nT

Day	Time, UT								
	03	06	09	12	15	18	21	24	
1	3 3 2	0 1 0	0 0 1	1 2 2	2 1 1	1 2 2	1 1 1	0 3 5	
2	3 0 0	0 0 0	0 0 1	1 2 2	1 1 2	2 1 3	1 0 0	0 0 0	
3	1 2 1	0 0 1	1 1 1	1 2 1	1 1 1	0 0 0	0 0 0	0 0 2	
4	3 3 2	1 0 0	0 0 1	1 1 1	1 1 0	0 0 0	0 0 0	0 0 0	
5	0 0 0	0 0 0	0 0 1	2 1 2	2 1 1	0 0 0	0 0 0	0 0 0	Q
6	0 0 0	0 0 0	0 0 1	1 1 2	2 2 3	4 6 6	4 5 6	6 7 5	
7	4 4 3	4 4 3	2 2 3	2 1 2	3 3 3	4 4 5	4 6 6	6 6 5	
8	5 4 3	2 2 2	2 2 1	1 1 1	1 2 3	3 2 2	4 3 1	1 1 1	
9	1 1 1	1 1 1	1 1 2	1 1 1	1 2 3	3 0 0	0 3 3	3 4 4	
10	3 1 1	1 2 1	1 0 1	1 1 1	2 1 1	1 1 3	4 4 4	5 4 5	
11	4 2 2	1 2 2	1 2 1	1 1 2	3 4 5	2 1 1	1 3 5	4 1 1	
12	3 3 1	1 1 1	1 2 1	1 1 1	0 0 1	1 2 4	3 2 2	3 2 0	
13	0 0 0	0 0 1	1 1 1	1 1 1	0 0 0	0 0 0	0 0 0	0 0 0	Q
14	0 0 1	1 0 1	0 0 1	1 1 1	1 0 0	0 0 2	2 2 3	5 5 5	
15	4 4 3	4 3 3	3 3 2	2 2 1	1 1 1	1 3 3	4 4 7	6 5 6	
16	6 6 3	2 2 2	2 2 1	2 2 2	4 3 2	1 0 0	3 3 5	6 7 6	
17	5 4 6	5 3 3	3 3 2	2 3 3	3 2 1	1 3 4	3 2 6	5 2 1	
18	1 1 1	1 1 2	2 1 2	2 1 2	3 3 3	2 3 2	3 3 3	4 5 5	
19	3 3 1	2 2 2	2 2 2	4 4 1	1 3 3	2 3 4	3 2 2	2 1 0	
20	0 1 1	2 1 2	2 2 1	1 1 2	1 1 1	4 5 6	6 3 3	3 3 3	
21	2 2 1	0 1 2	2 1 1	2 1 1	1 2 1	1 1 2	2 1 1	2 3 2	
22	0 0 1	0 1 1	1 1 1	2 2 -	1 1 0	0 0 0	0 0 0	2 1 1	
23	0 0 0	0 1 1	1 2 2	1 1 2	1 1 0	0 0 0	1 2 3	2 3 5	
24	3 2 1	0 0 0	1 2 1	1 1 1	1 1 1	0 1 0	1 1 1	0 1 2	
25	5 5 3	1 1 1	1 2 1	2 2 1	0 0 0	1 0 0	0 0 0	0 0 0	
26	0 0 0	0 0 1	1 1 1	1 1 1	1 0 0	0 0 0	1 0 1	1 1 1	Q
27	1 1 1	1 1 1	1 1 1	2 2 2	2 1 2	1 3 4	3 2 0	0 4 2	
28	1 1 1	2 2 2	1 1 1	1 1 1	1 1 2	1 1 1	2 4 4	3 3 2	
29	3 4 4	2 2 2	2 2 1	1 1 2	3 0 0	2 4 4	1 1 1	2 3 3	
30	3 4 3	2 2 2	2 2 1	1 1 3	3 3 1	3 3 3	2 5 5	2 1 2	
31	3 2 2	1 1 1	1 1 1	0 0 0	0 0 1	1 1 2	1 1 1	1 0 0	

Apatity neutron monitor



ALL – SKY CAMERA OBSERVATIONS

January - March 2016

CALENDAR OF TV OBSERVATIONS

February 02 - 03

[illegible]

February 03 - 04

[illegible]

February 04 - 05

[illegible]

February 05 - 06

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

February 06- 07

[illegible]

February 07 - 08

[illegible]

February 08 - 09

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

February 09 - 10

[illegible]

CALENDAR OF TV OBSERVATIONS

February 18 - 19

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

February 19 - 20

[illegible]

February 20 - 21

[illegible]

February 21 - 22

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

February 22- 23

[illegible]

February 23 - 24

[illegible]

February 24 - 25

[illegible]

February 25 - 26

[illegible]

CALENDAR OF TV OBSERVATIONS

February 26 - 27

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

February 27 - 28

[illegible]

February 28 - 29

[illegible]

February 29 – March 01

[illegible]

March 01- 02

[illegible]

March 02 - 03

[illegible]

March 03 - 04

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

March 04 - 05

[illegible]

CALENDAR OF TV OBSERVATIONS

March 05 - 06

[illegible]

March 06 - 07

[illegible]

March 07 - 08

[illegible]

March 08 - 09

[illegible]

March 09- 10

[illegible]

March 10 - 11

[illegible]

March 11 - 12

[illegible]

March 12 - 13

[illegible]

CALENDAR OF TV OBSERVATIONS

March 21 - 22

[illegible]

March 22 - 23

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05		
LOZ																		
APT																		

March 23 - 24

[illegible]

March 24 - 25

UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05
LOZ																
APT																

March 25- 26

[illegible]

March 26 - 27

[illegible]

March 27 - 28

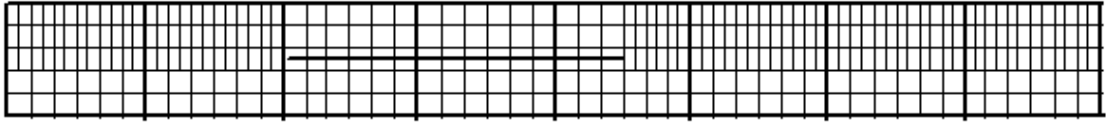
[illegible]

March 28 - 29

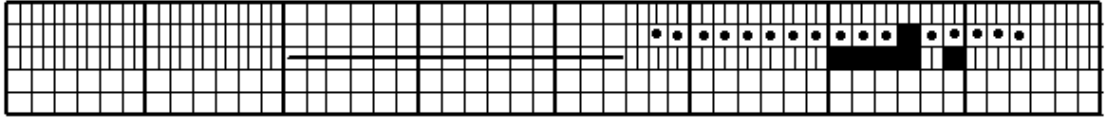
[illegible]

Apatity ascaplots

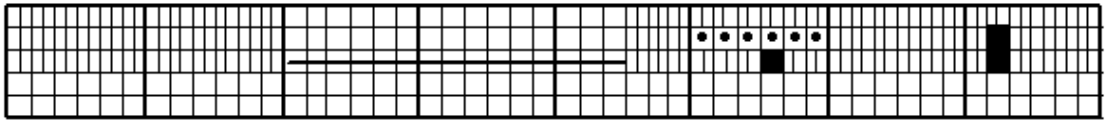
Jan. 01, 2016



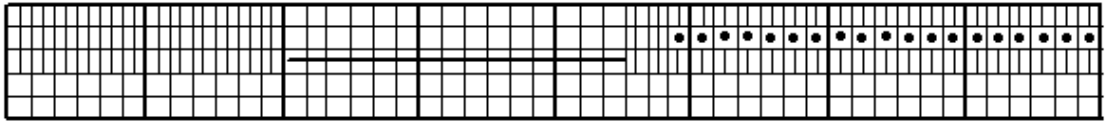
Jan. 02, 2016



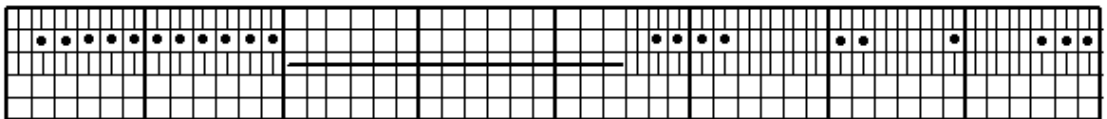
Jan. 03, 2016



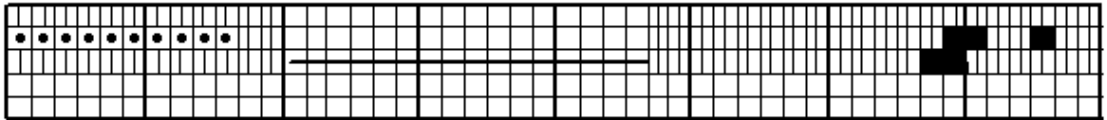
Jan. 04, 2016



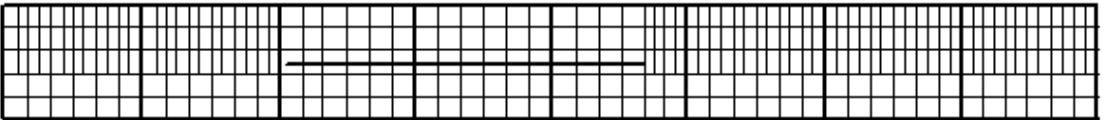
Jan. 05, 2016



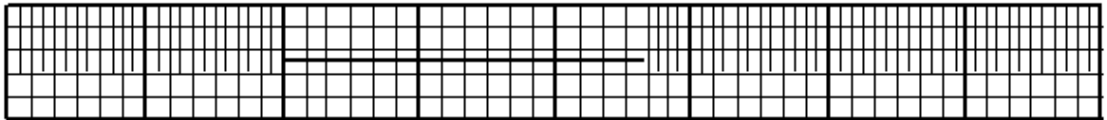
Jan. 06, 2016



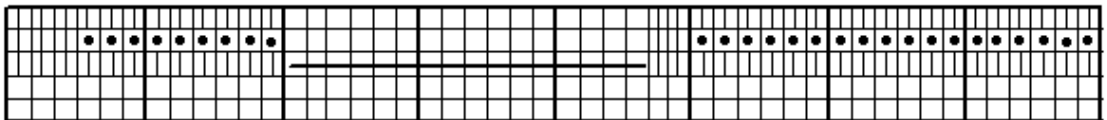
Jan. 07, 2016



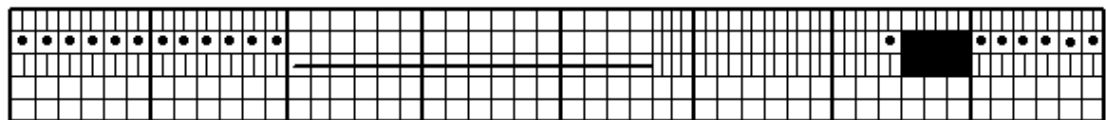
Jan. 08, 2016



Jan. 09, 2016



Jan. 10, 2016



00

06

12

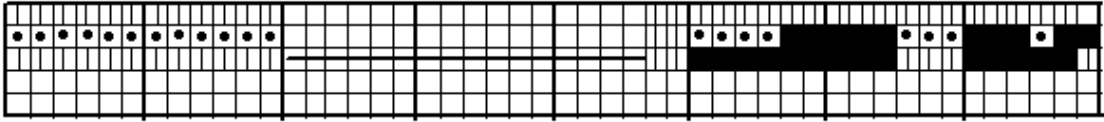
18

24

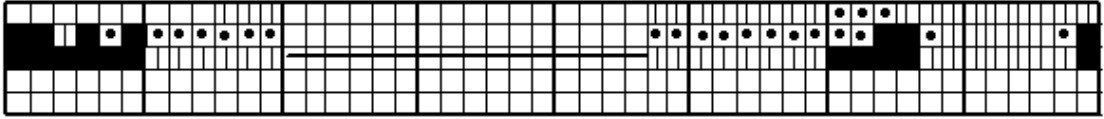
Universal Time

Apatity ascaplots

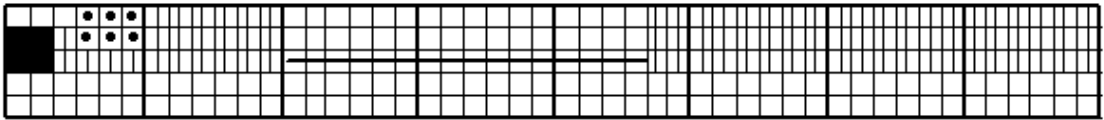
Jan. 11, 2016



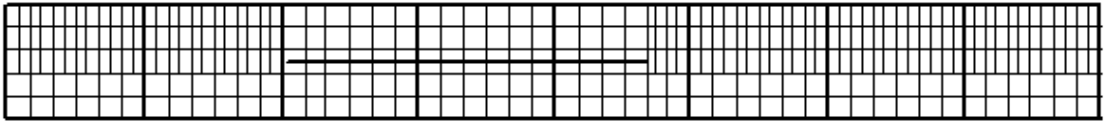
Jan. 12, 2016



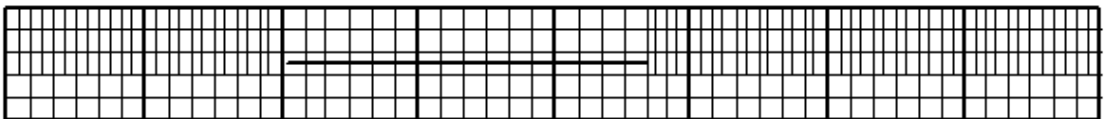
Jan. 13, 2016



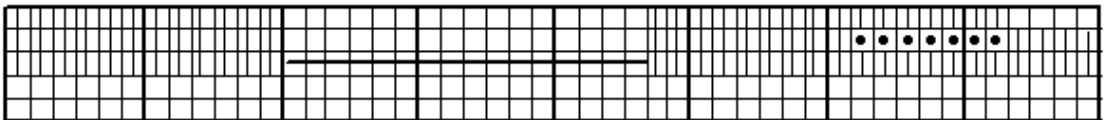
Jan. 14, 2016



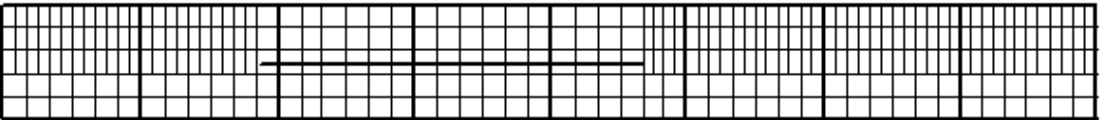
Jan. 15, 2016



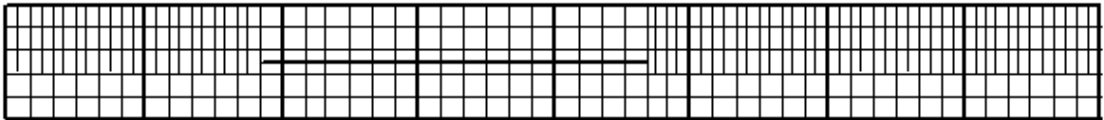
Jan. 16, 2016



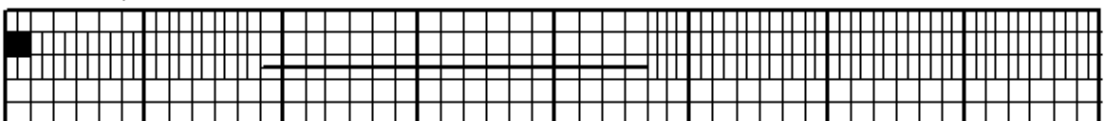
Jan. 17, 2016



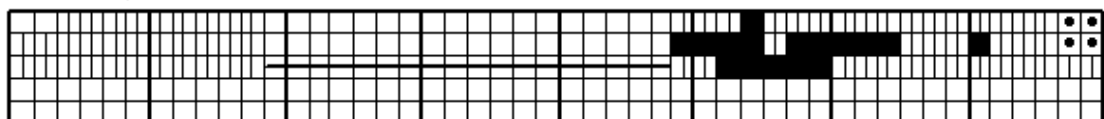
Jan. 18, 2016



Jan. 19, 2016



Jan. 20, 2016



00

06

12

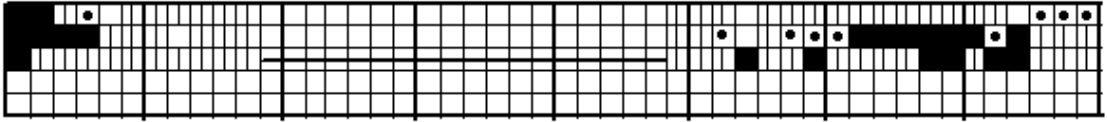
18

24

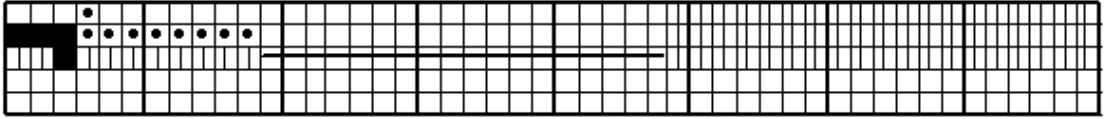
Universal Time

Apatity ascaplots

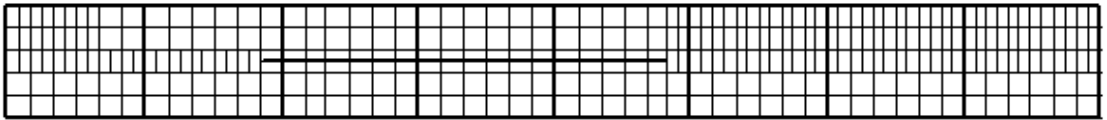
Jan. 21, 2016



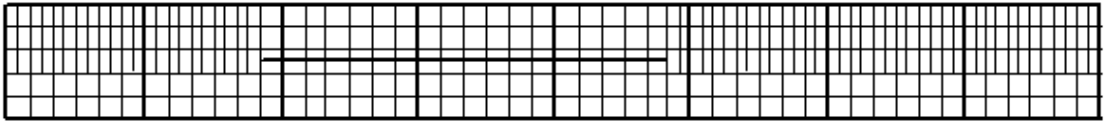
Jan. 22, 2016



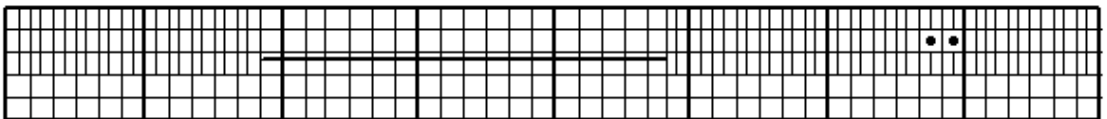
Jan. 23, 2016



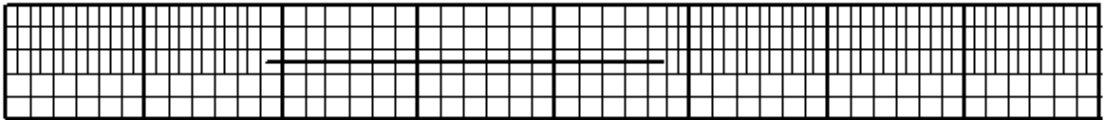
Jan. 24, 2016



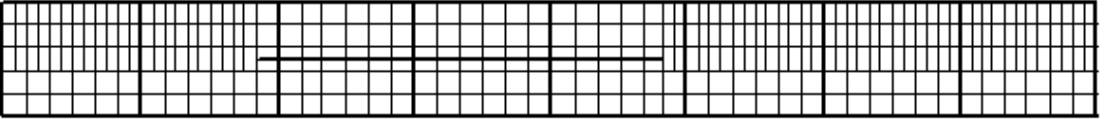
Jan. 25, 2016



Jan. 26, 2016



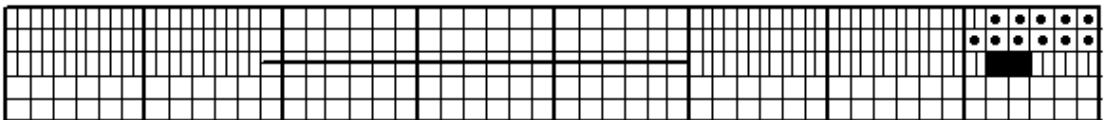
Jan. 27, 2016



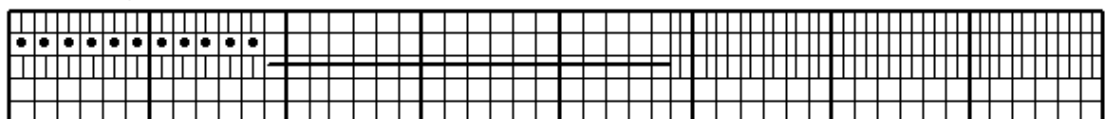
Jan. 28, 2016



Jan. 29, 2016



Jan. 30, 2016



00

06

12

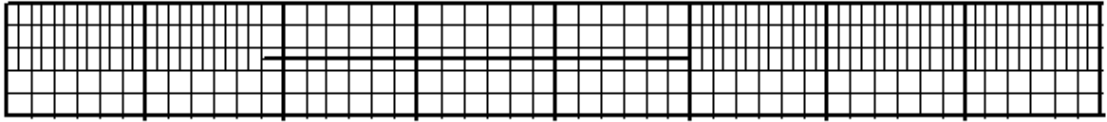
18

24

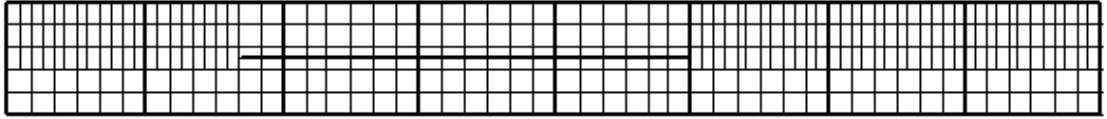
Universal Time

Apatity ascaplots

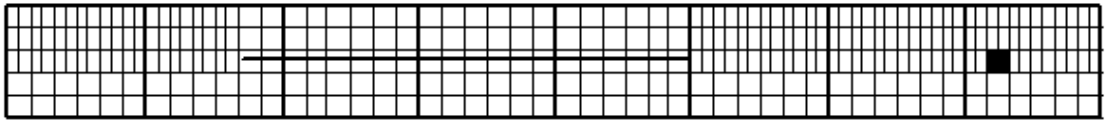
Jan. 31, 2016



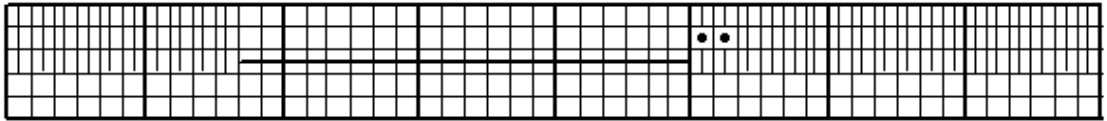
Feb. 01, 2016



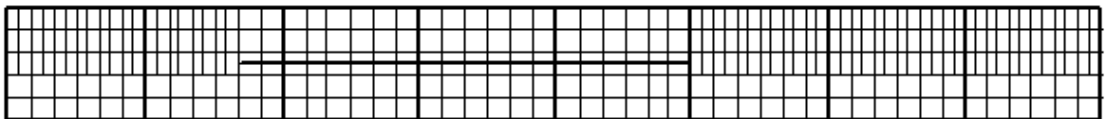
Feb. 02, 2016



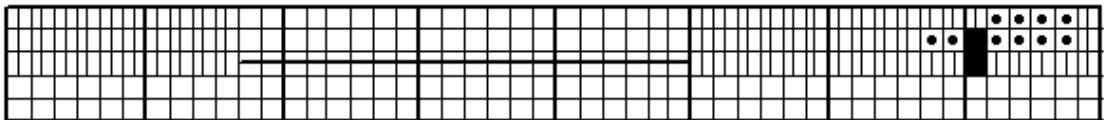
Feb. 03, 2016



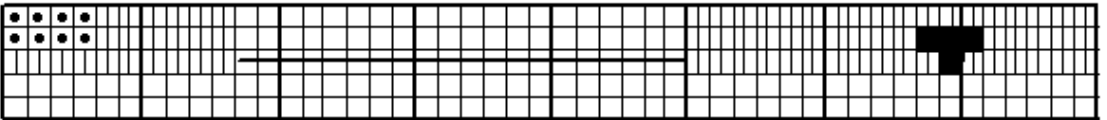
Feb. 04, 2016



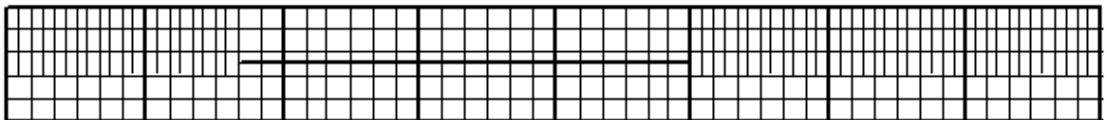
Feb. 05, 2016



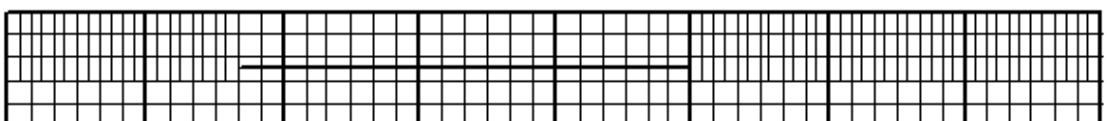
Feb. 06, 2016



Feb. 07, 2016



Feb. 08, 2016



Feb. 09, 2016

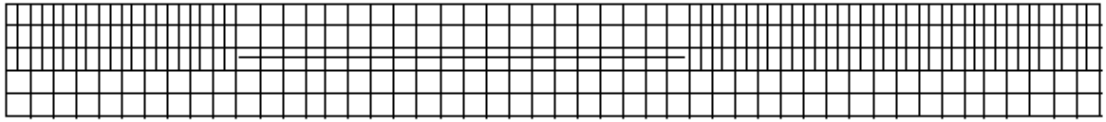


00 06 12 18 24

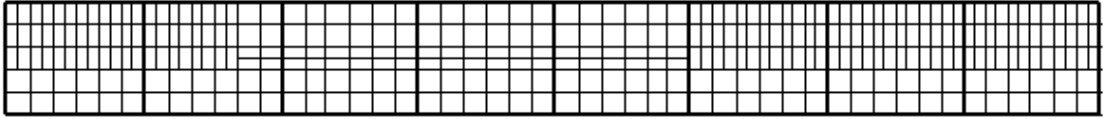
Universal Time

Apatity ascaplots

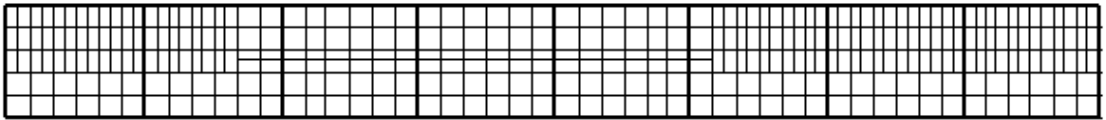
Feb. 10, 2016



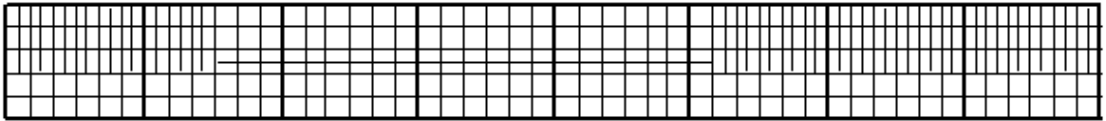
Feb. 11, 2016



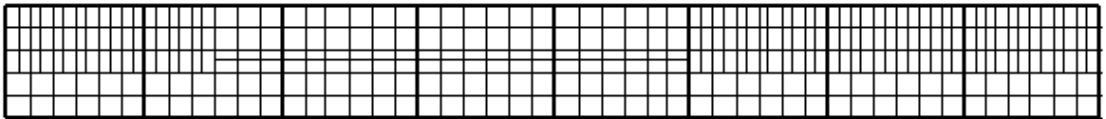
Feb. 12, 2016



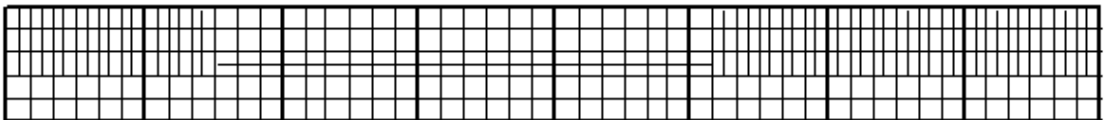
Feb. 13, 2016



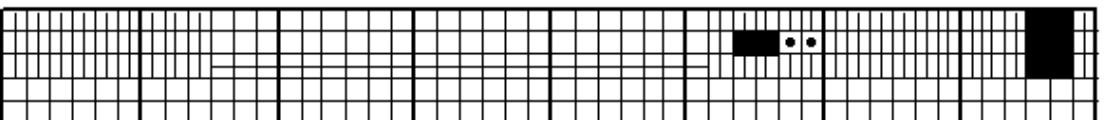
Feb. 14, 2016



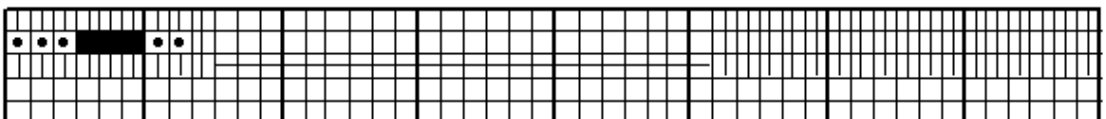
Feb. 15, 2016



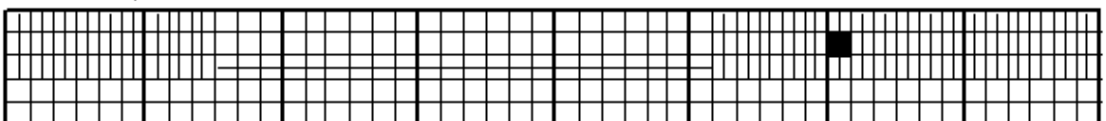
Feb. 16, 2016



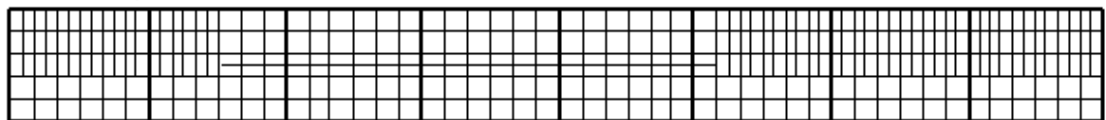
Feb. 17, 2016



Feb. 18, 2016



Feb. 19, 2016



00

06

12

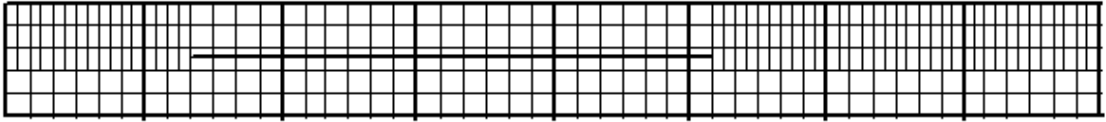
18

24

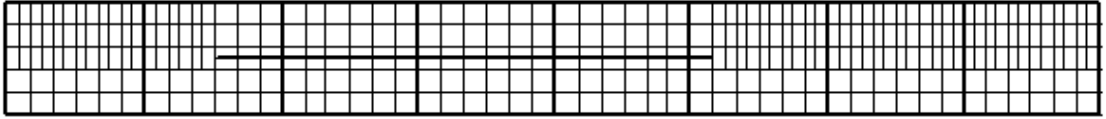
Universal Time

Apatity ascaplots

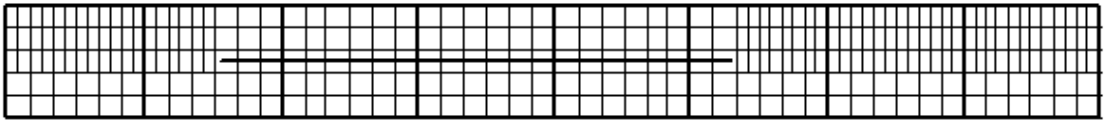
Feb. 20, 2016



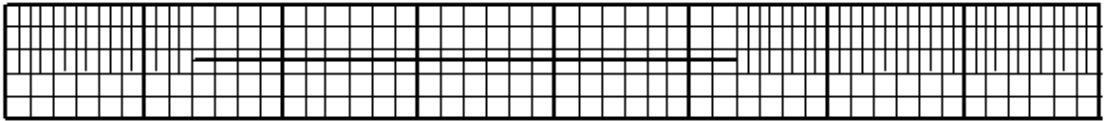
Feb. 21, 2016



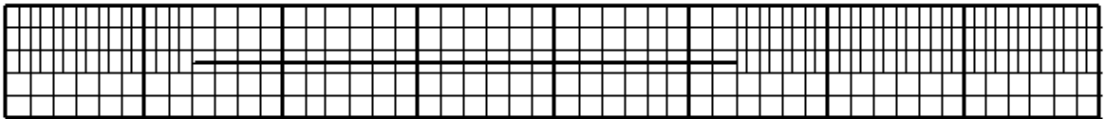
Feb. 22, 2016



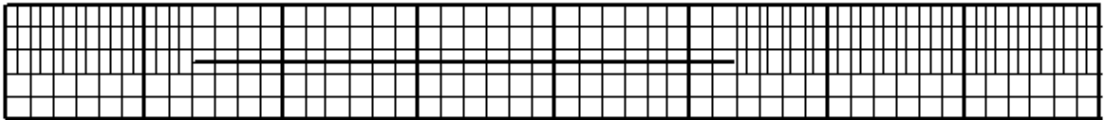
Feb. 23, 2016



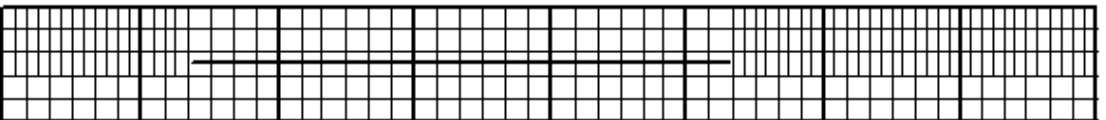
Feb. 24, 2016



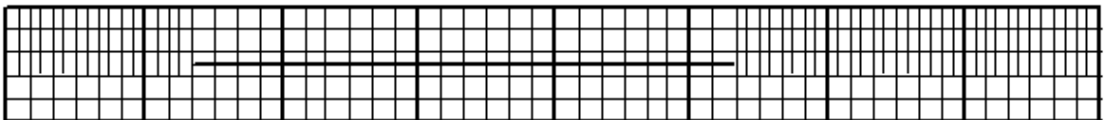
Feb. 25, 2016



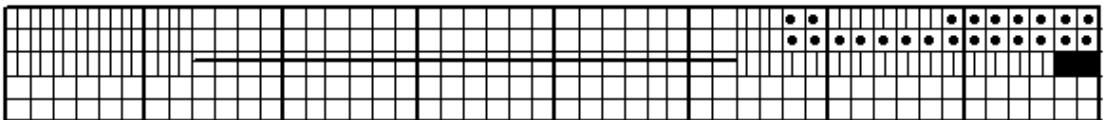
Feb. 26, 2016



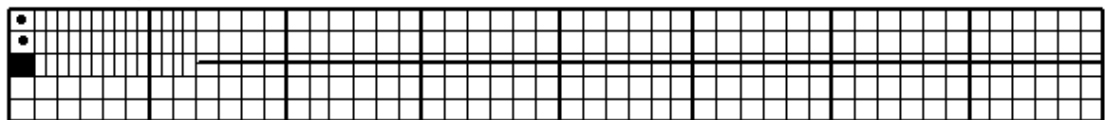
Feb. 27, 2016



Feb. 28, 2016



Feb. 29, 2016



00

06

12

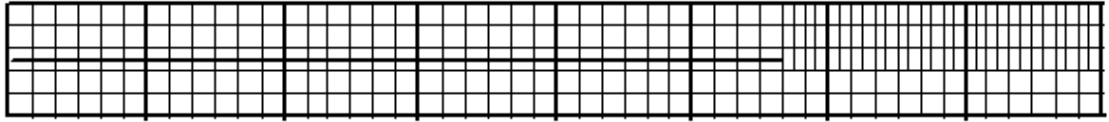
18

24

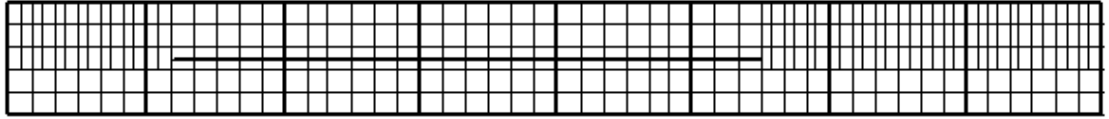
Universal Time

Apatity ascaplots

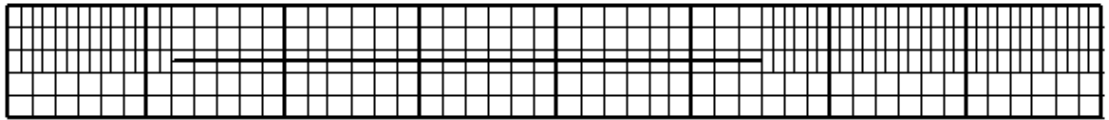
Mar. 01, 2016



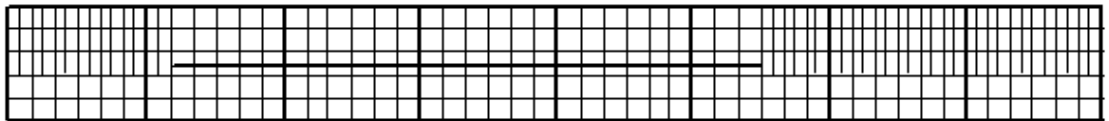
Mar. 02, 2016



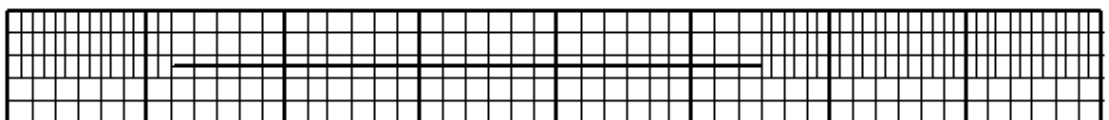
Mar. 03, 2016



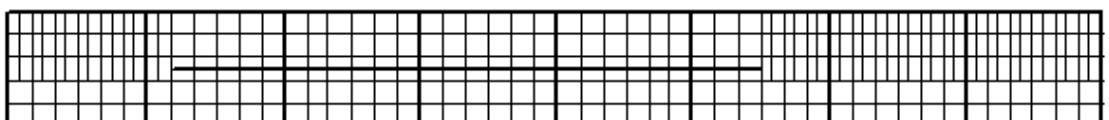
Mar. 04, 2016



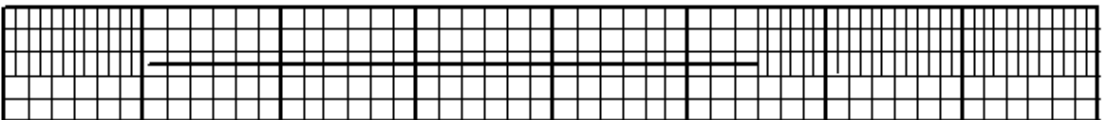
Mar. 05, 2016



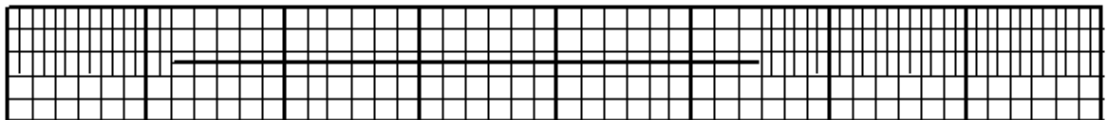
Mar. 06, 2016



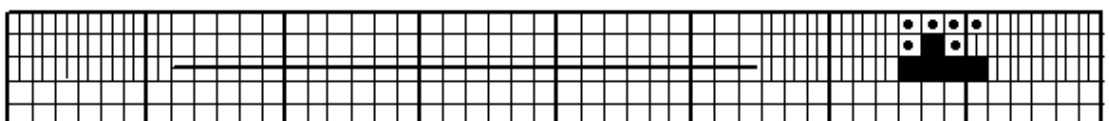
Mar. 07, 2016



Mar. 08, 2016



Mar. 09, 2016



Mar. 10, 2016



00

06

12

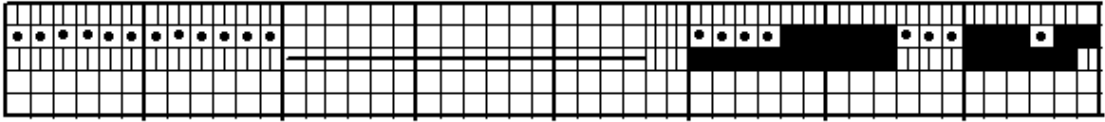
18

24

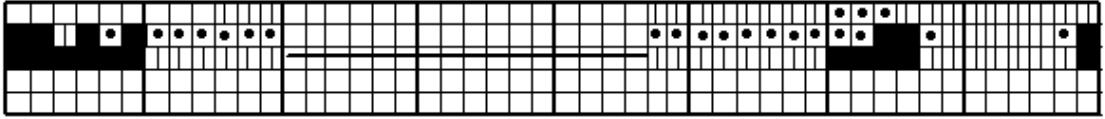
Universal Time

Apatity ascaplots

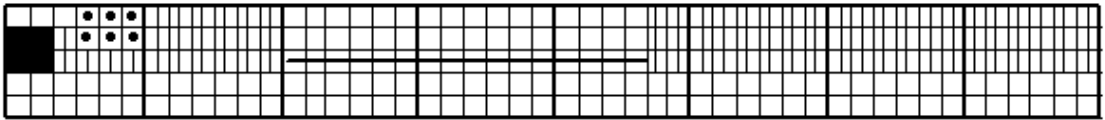
Jan. 11, 2016



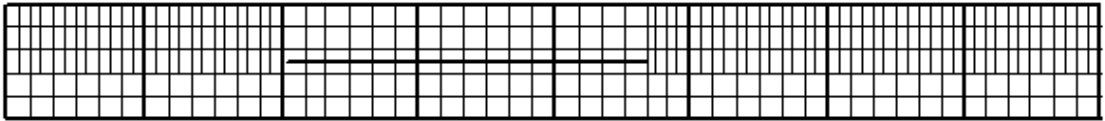
Jan. 12, 2016



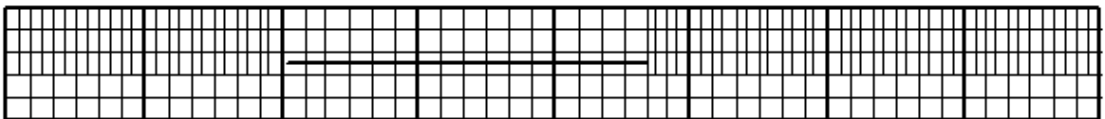
Jan. 13, 2016



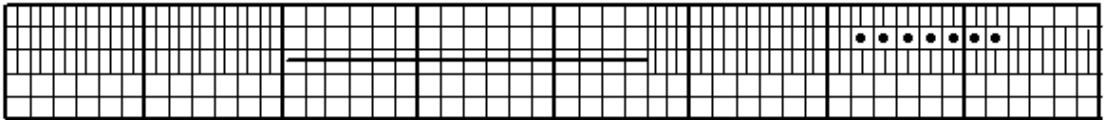
Jan. 14, 2016



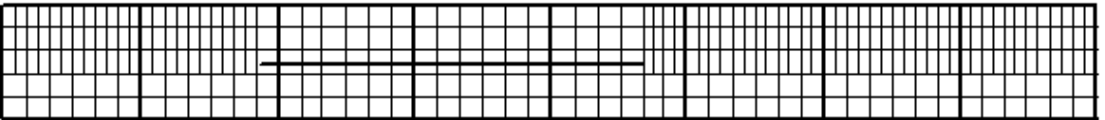
Jan. 15, 2016



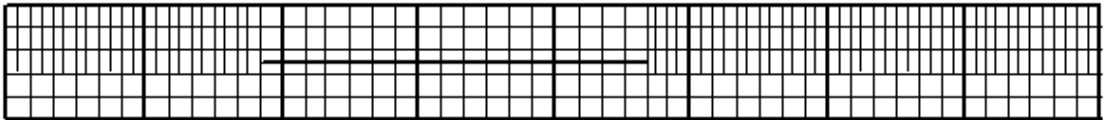
Jan. 16, 2016



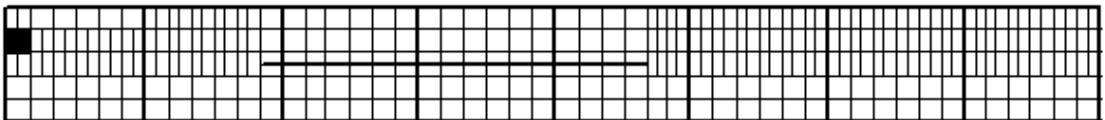
Jan. 17, 2016



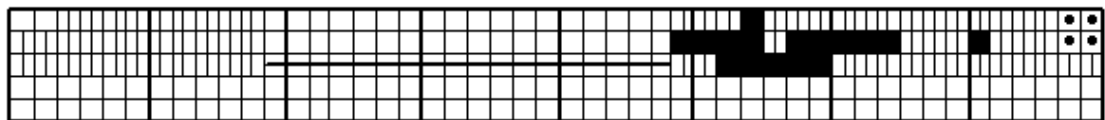
Jan. 18, 2016



Jan. 19, 2016



Jan. 20, 2016

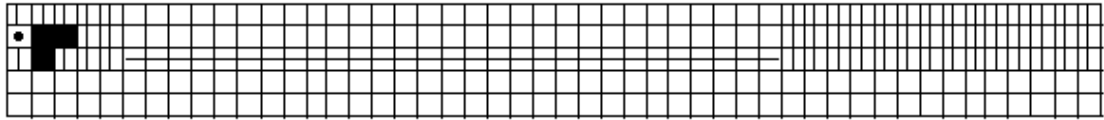


00 06 12 18 24

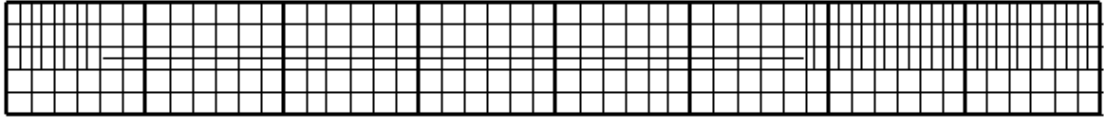
Universal Time

Apatity ascaplots

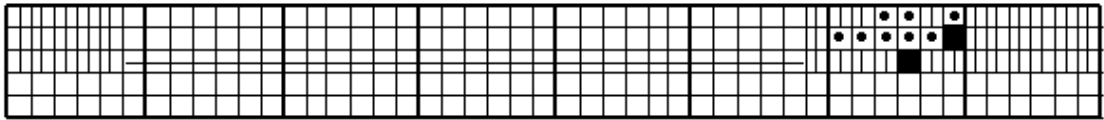
Mar. 21, 2016



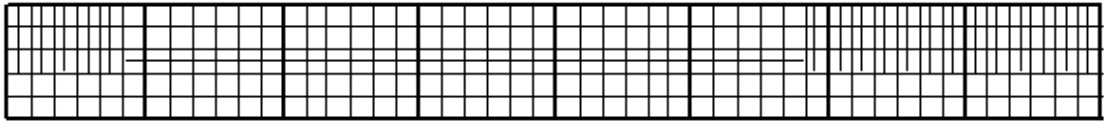
Mar. 22, 2016



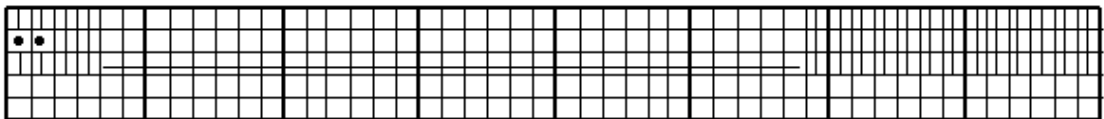
Mar. 23, 2016



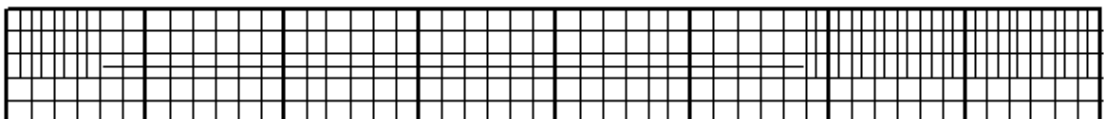
Mar. 24, 2016



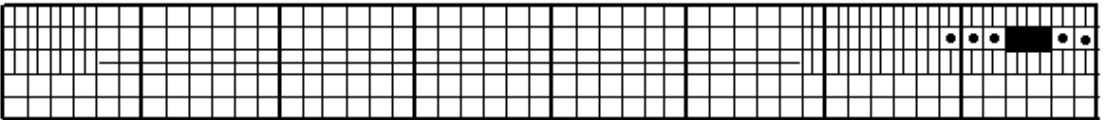
Mar. 25, 2016



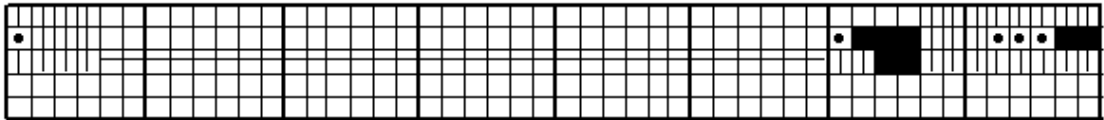
Mar. 26, 2016



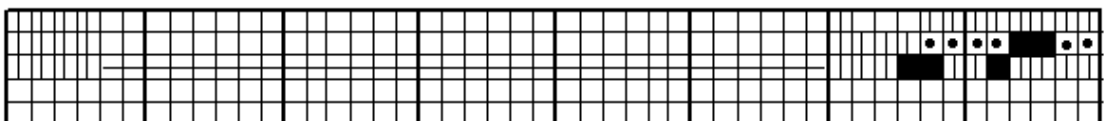
Mar. 27, 2016



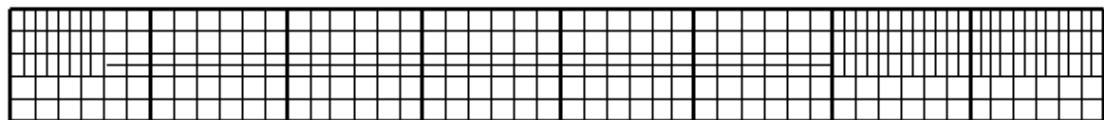
Mar. 28, 2016



Mar. 29, 2016



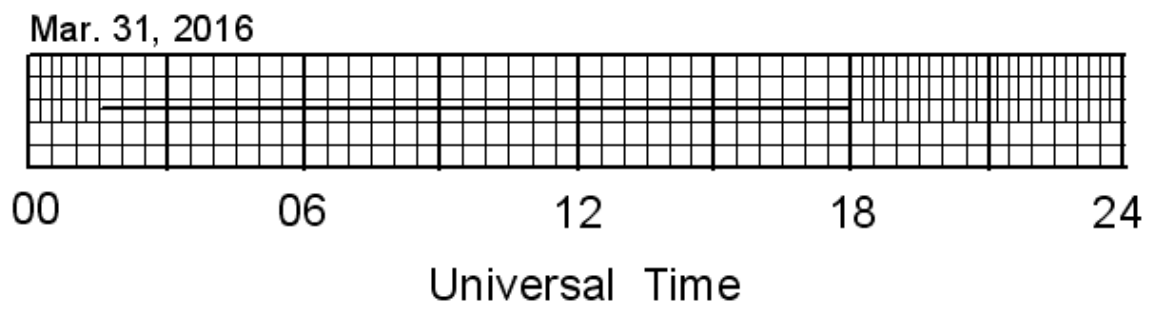
Mar. 30, 2016



00 06 12 18 24

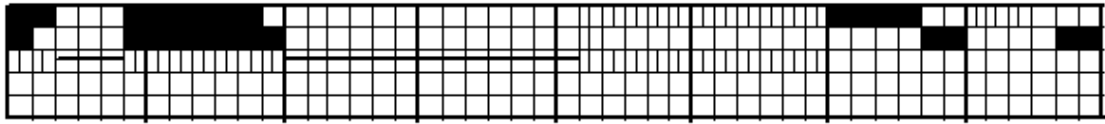
Universal Time

Apatity ascaplots



Lovozero ascaplots

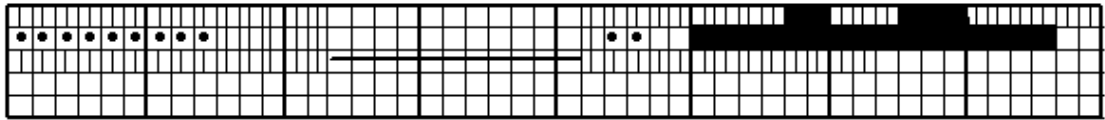
Jan. 01, 2016



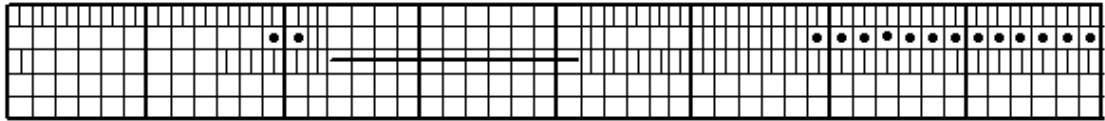
Jan. 02, 2016



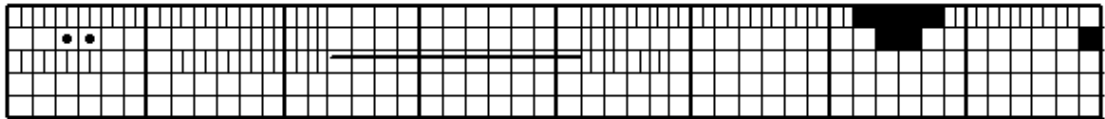
Jan. 03, 2016



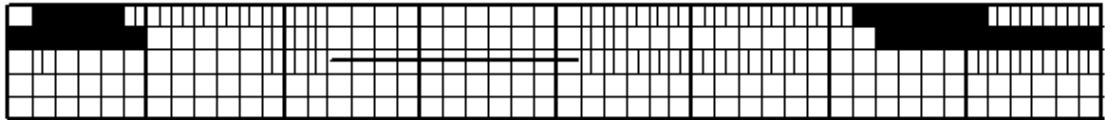
Jan. 04, 2016



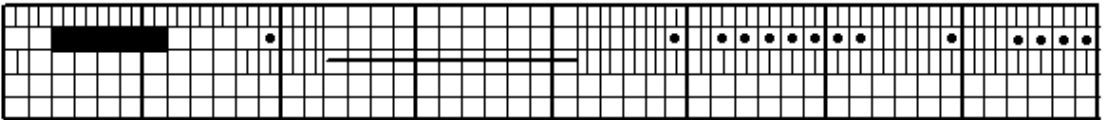
Jan. 05, 2016



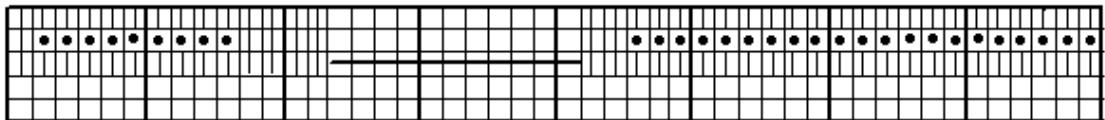
Jan. 06, 2016



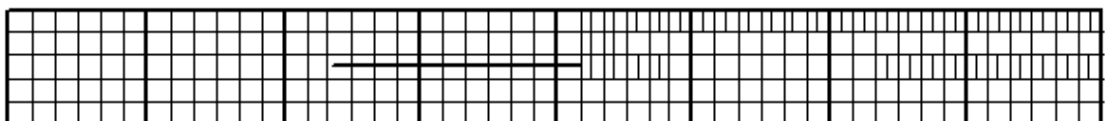
Jan. 07, 2016



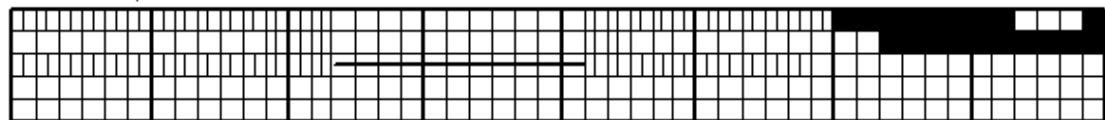
Jan. 08, 2016



Jan. 09, 2016



Jan. 10, 2016

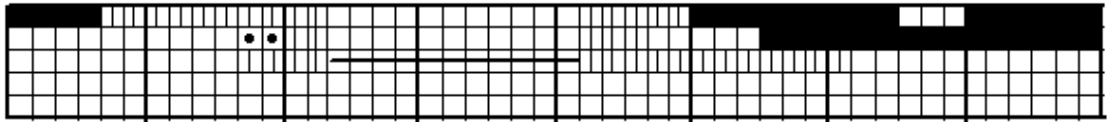


00 06 12 18 24

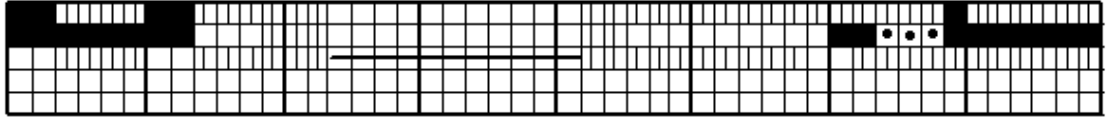
Universal Time

Lovozero ascaplots

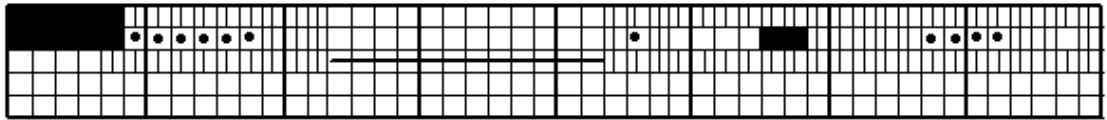
Jan. 11, 2016



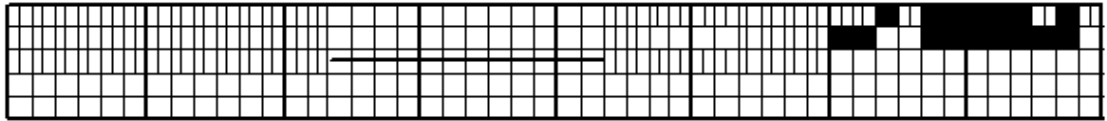
Jan. 12, 2016



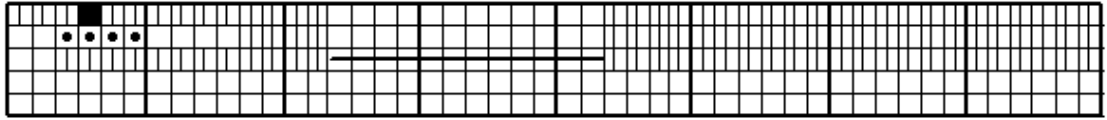
Jan. 13, 2016



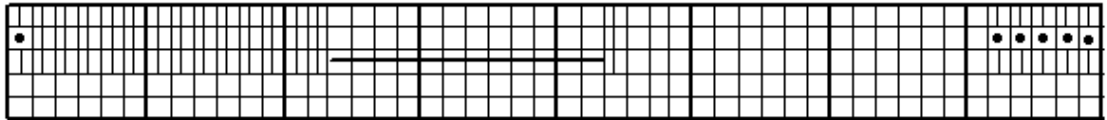
Jan. 14, 2016



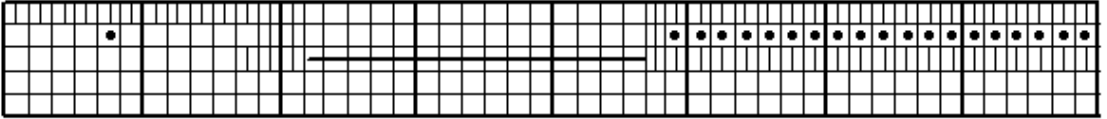
Jan. 15, 2016



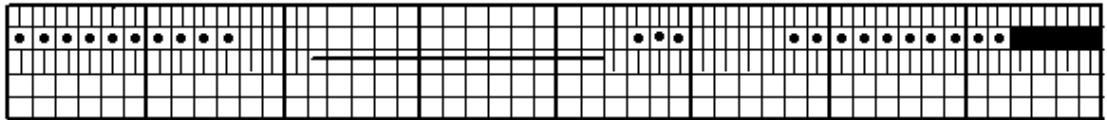
Jan. 16, 2016



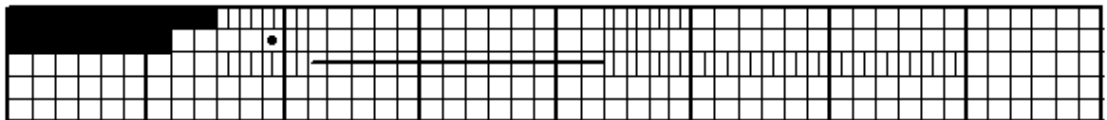
Jan. 17, 2016



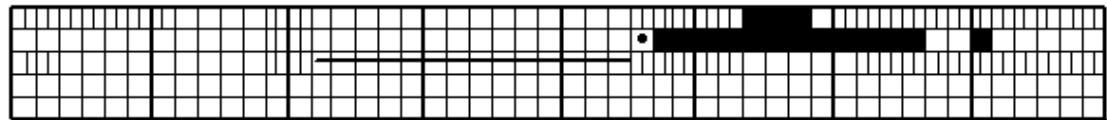
Jan. 18, 2016



Jan. 19, 2016



Jan. 20, 2016

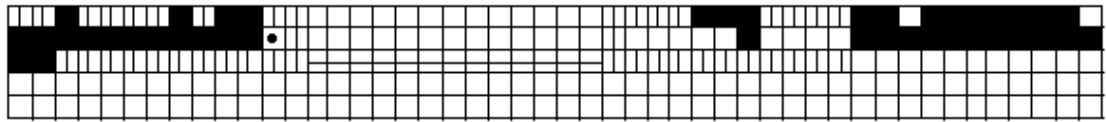


00 06 12 18 24

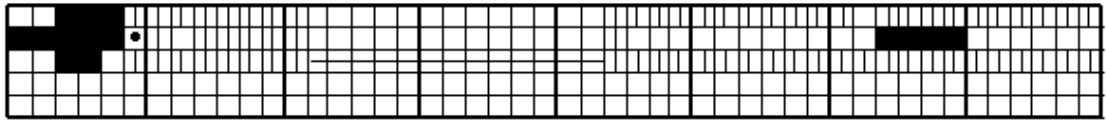
Universal Time

Lovozero ascapiplots

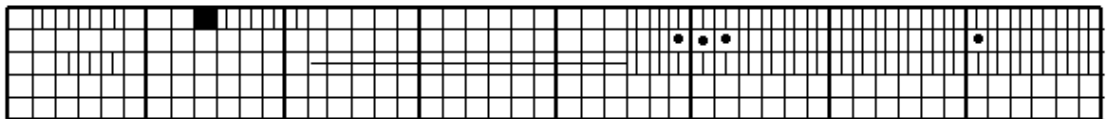
Jan. 21, 2016



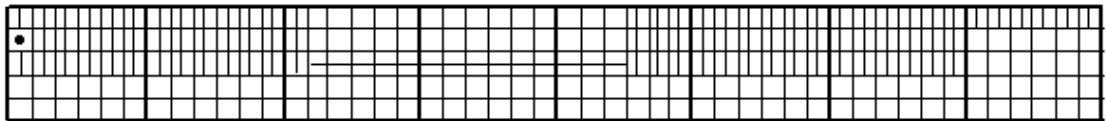
Jan. 22, 2016



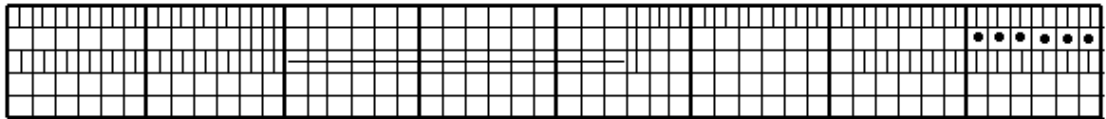
Jan. 23, 2016



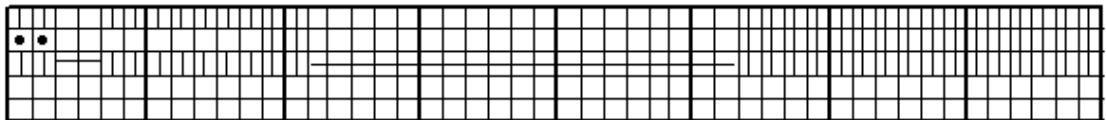
Jan. 24, 2016



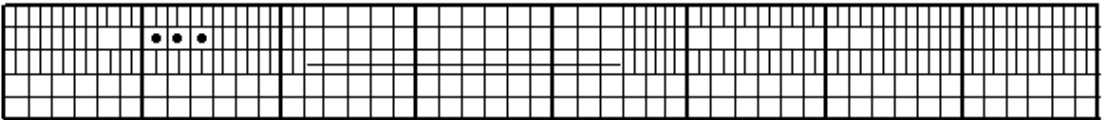
Jan. 25, 2016



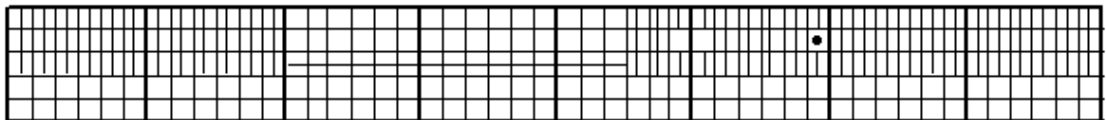
Jan. 26, 2016



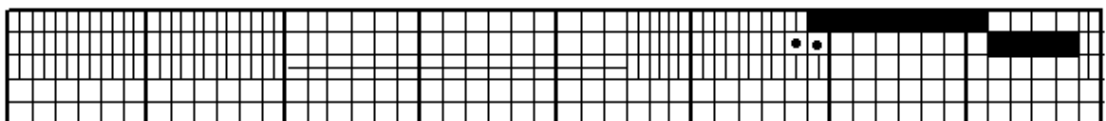
Jan. 27, 2016



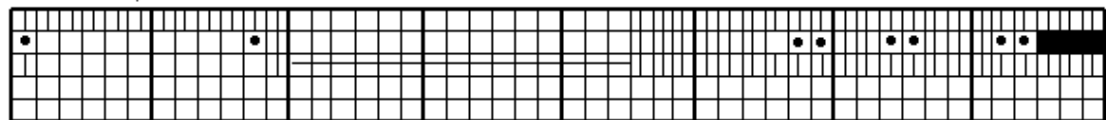
Jan. 28, 2016



Jan. 29, 2016



Jan. 30, 2016



00

06

12

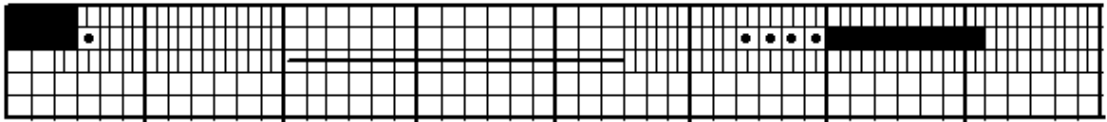
18

24

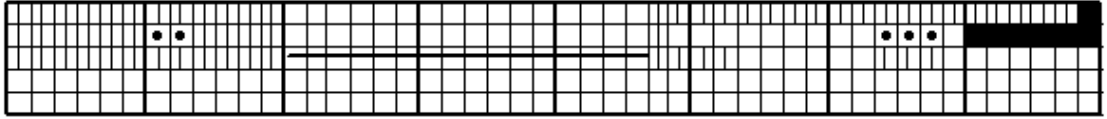
Universal Time

Lovozero ascaplots

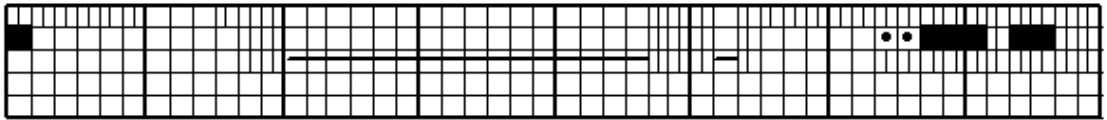
Jan. 31, 2016



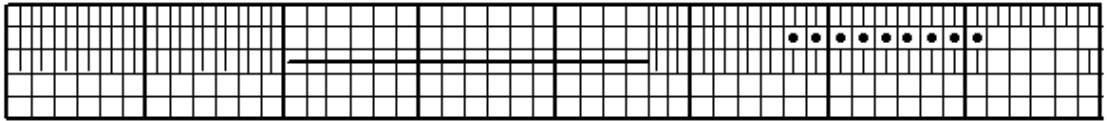
Feb. 01, 2016



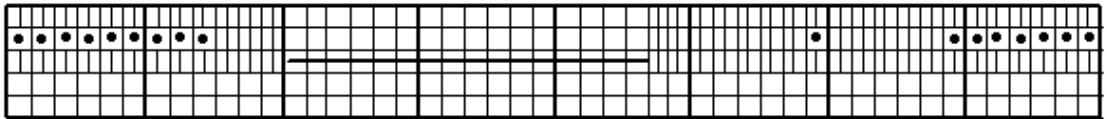
Feb. 02, 2016



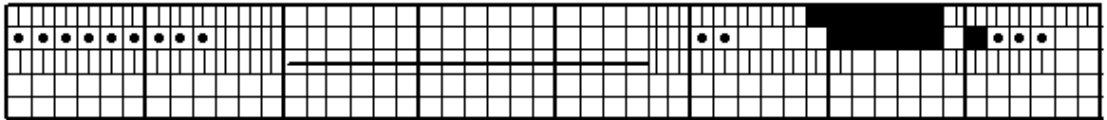
Feb. 03, 2016



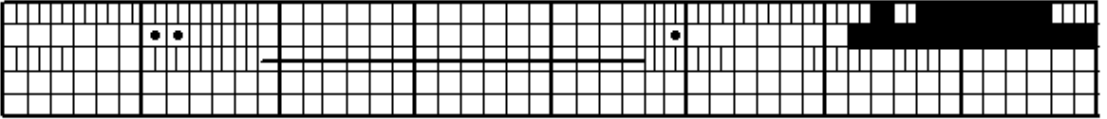
Feb. 04, 2016



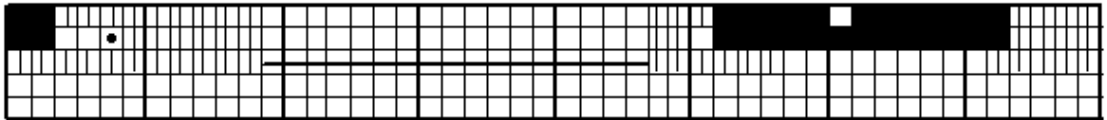
Feb. 05, 2016



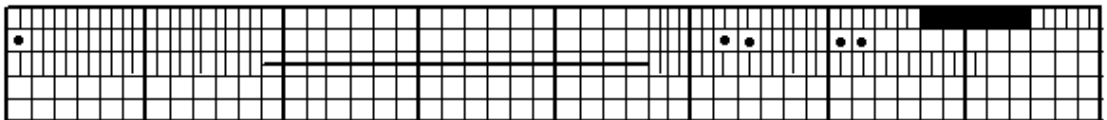
Feb. 06, 2016



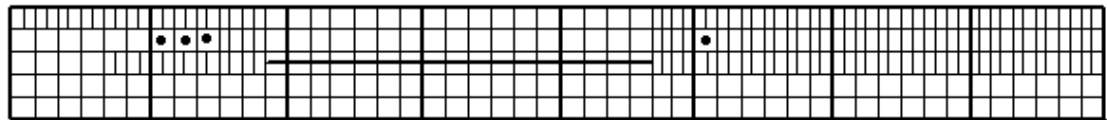
Feb. 07, 2016



Feb. 08, 2016



Feb. 09, 2016

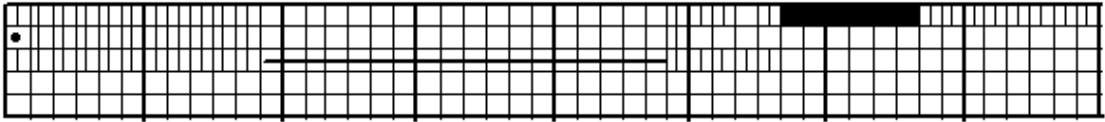


00 06 12 18 24

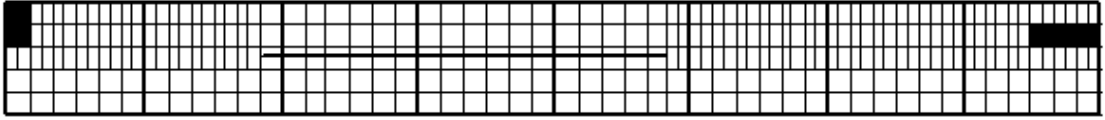
Universal Time

Lovozero ascaplots

Feb. 10, 2016



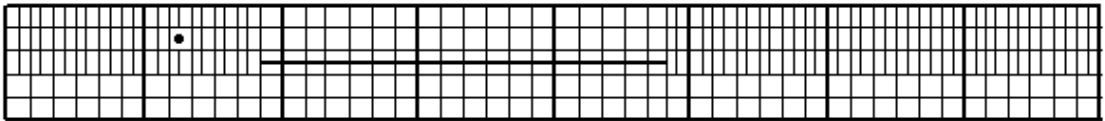
Feb. 11, 2016



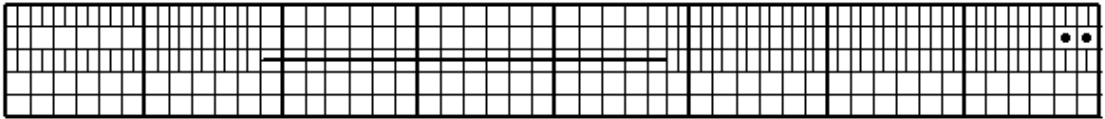
Feb. 12, 2016



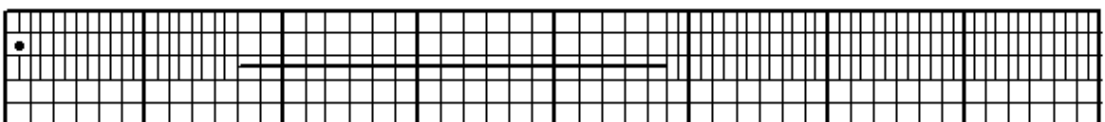
Feb. 13, 2016



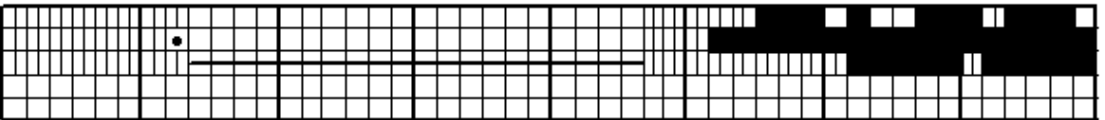
Feb. 14, 2016



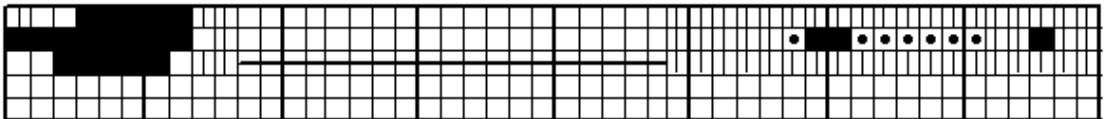
Feb. 15, 2016



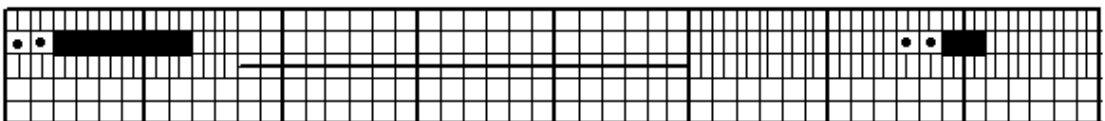
Feb. 16, 2016



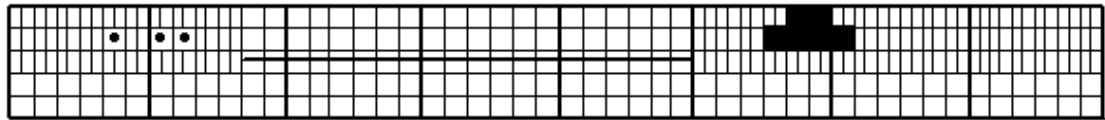
Feb. 17, 2016



Feb. 18, 2016



Feb. 19, 2016

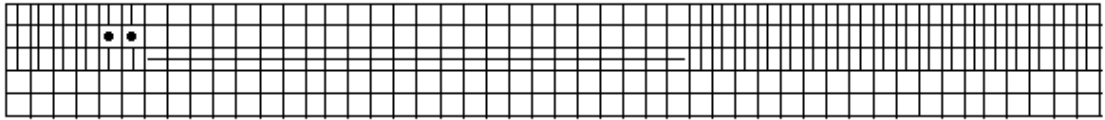


00 06 12 18 24

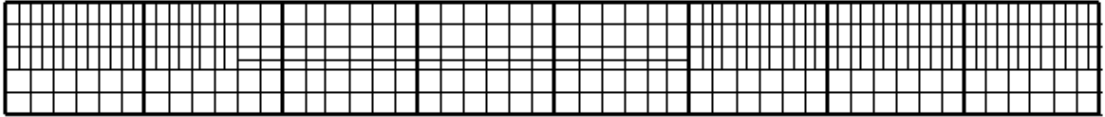
Universal Time

Lovozero ascaplots

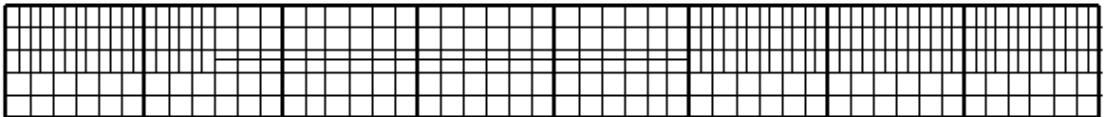
Feb. 20, 2016



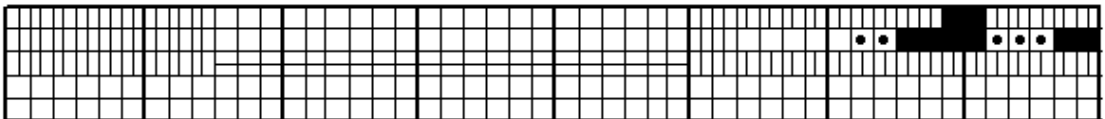
Feb. 21, 2016



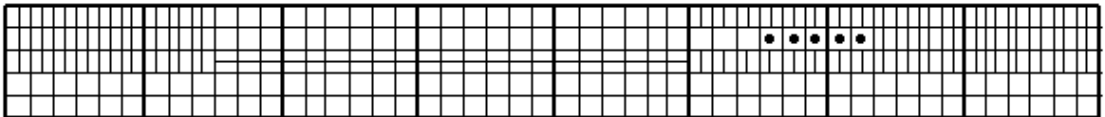
Feb. 22, 2016



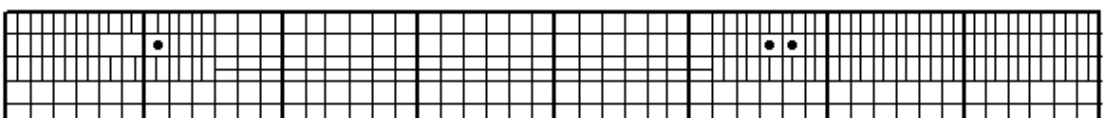
Feb. 23, 2016



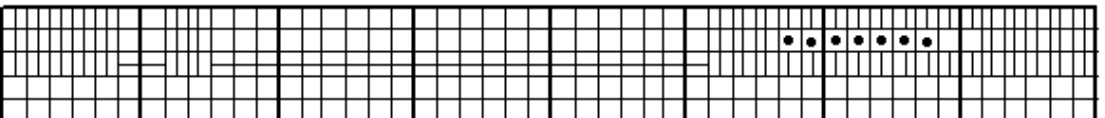
Feb. 24, 2016



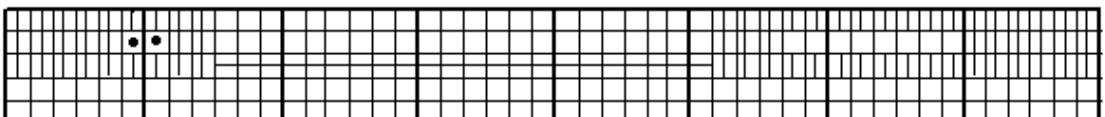
Feb. 25, 2016



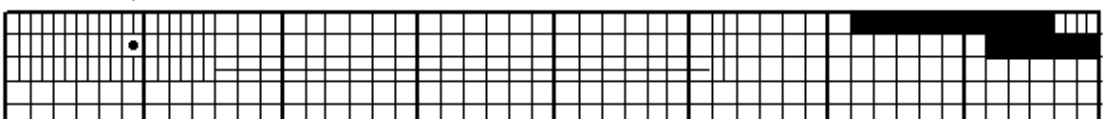
Feb. 26, 2016



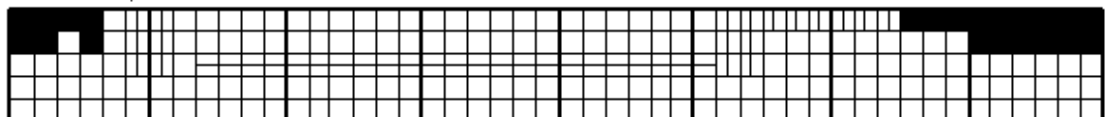
Feb. 27, 2016



Feb. 28, 2016



Feb. 29, 2016

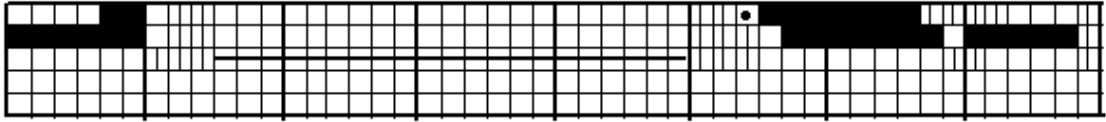


00 06 12 18 24

Universal Time

Lovozero ascaplots

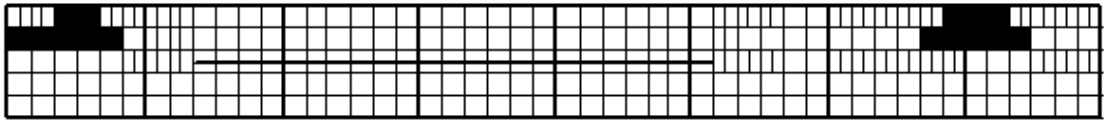
Mar. 01, 2016



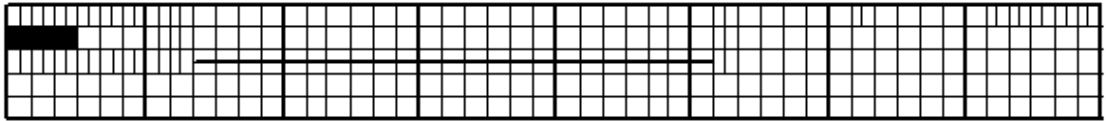
Mar. 02, 2016



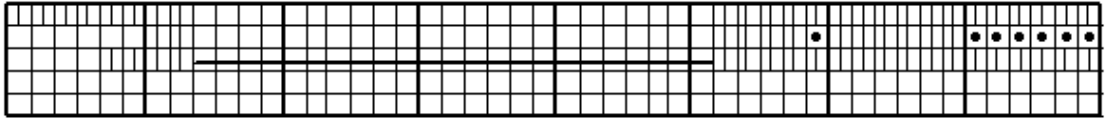
Mar. 03, 2016



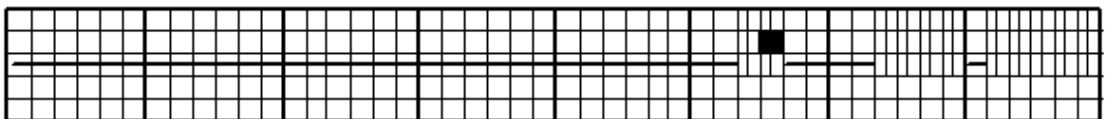
Mar. 04, 2016



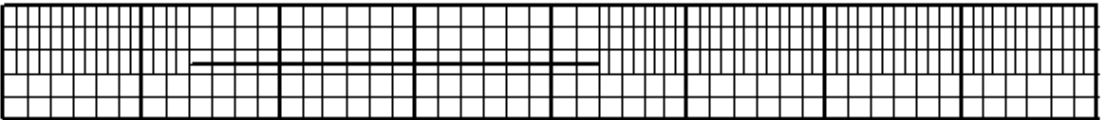
Mar. 05, 2016



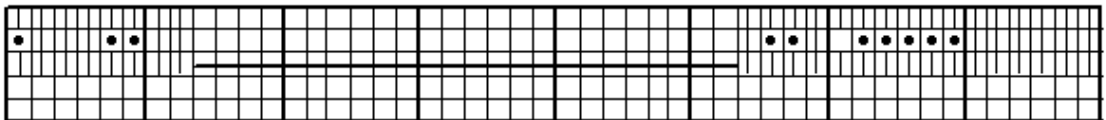
Mar. 06, 2016



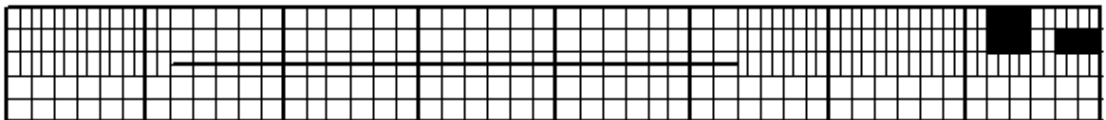
Mar. 07, 2016



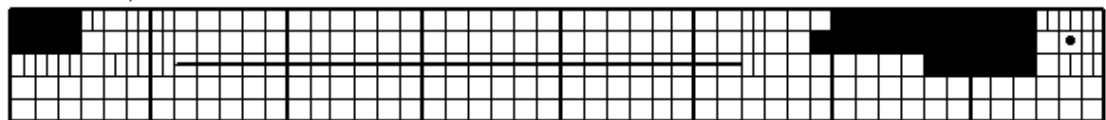
Mar. 08, 2016



Mar. 09, 2016



Mar. 10, 2016

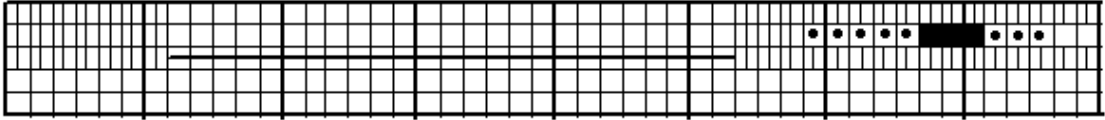


00 06 12 18 24

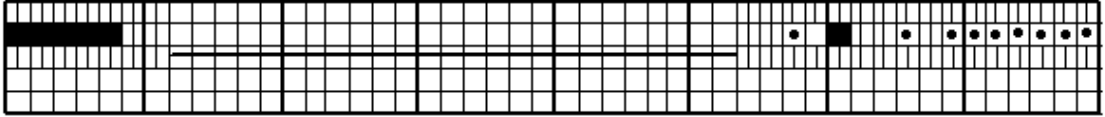
Universal Time

Lovozero ascaplots

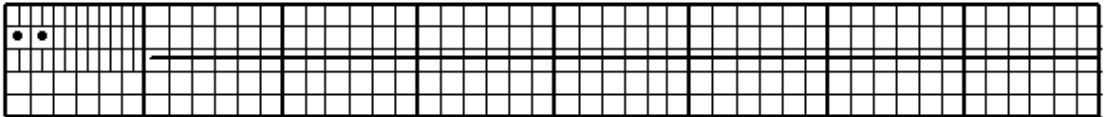
Mar. 11, 2016



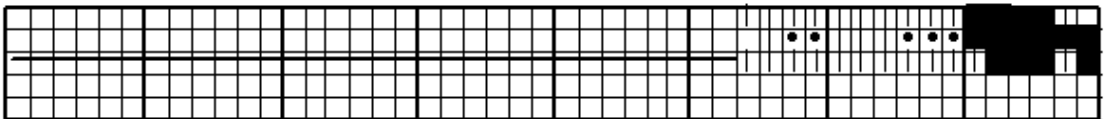
Mar. 12, 2016



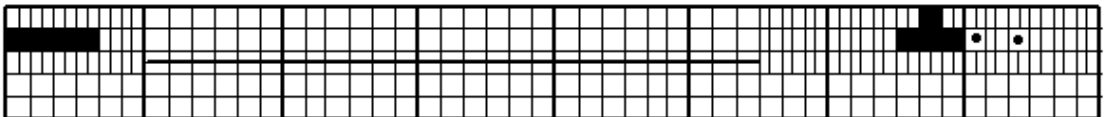
Mar. 13, 2016



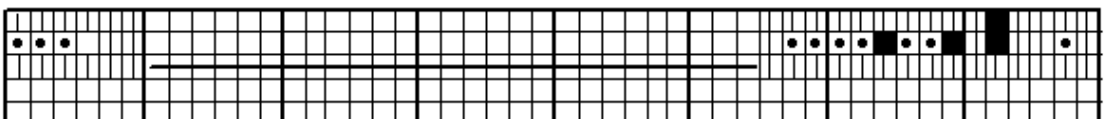
Mar. 16, 2016



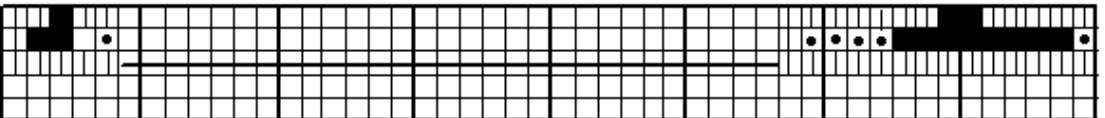
Mar. 17, 2016



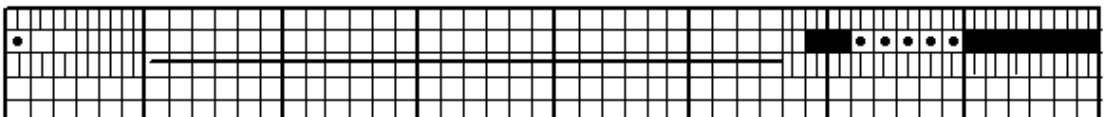
Mar. 18, 2016



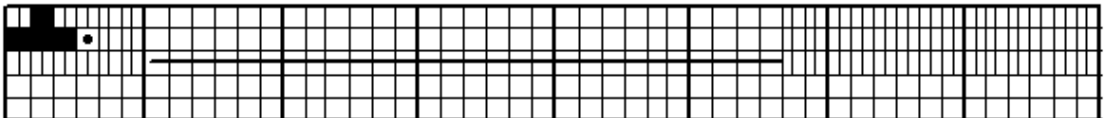
Mar. 19, 2016



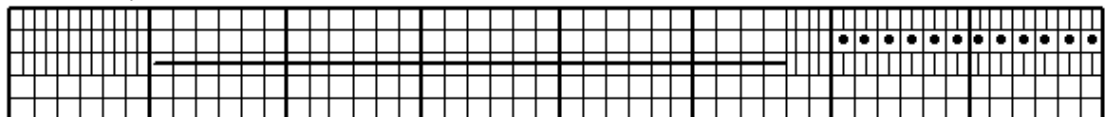
Mar. 20, 2016



Mar. 21, 2016



Mar. 22, 2016



00 06 12 18 24

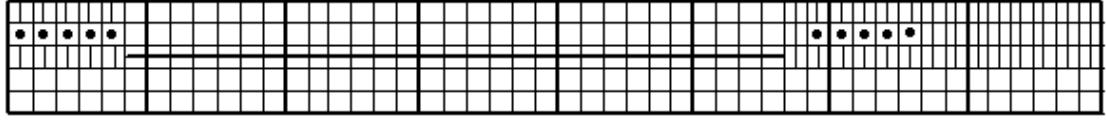
Universal Time

Lovozero ascaplots

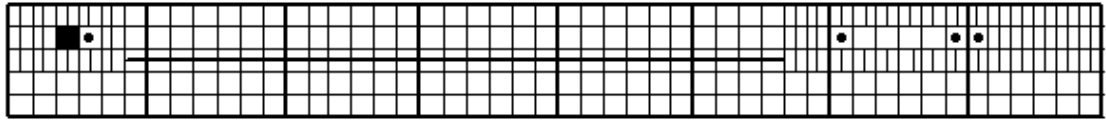
Mar. 23, 2016



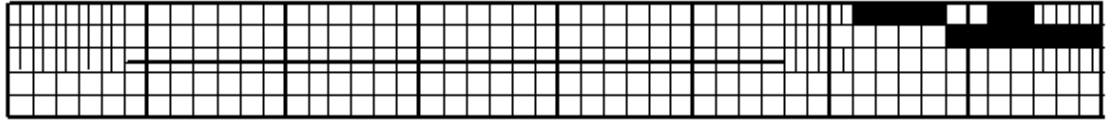
Mar. 24, 2016



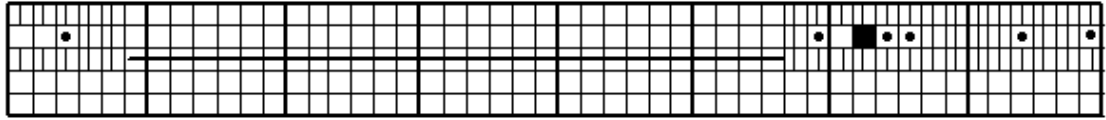
Mar. 25, 2016



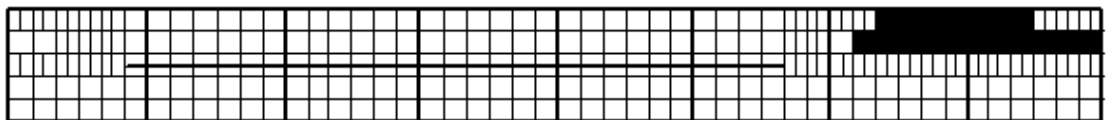
Mar. 26, 2016



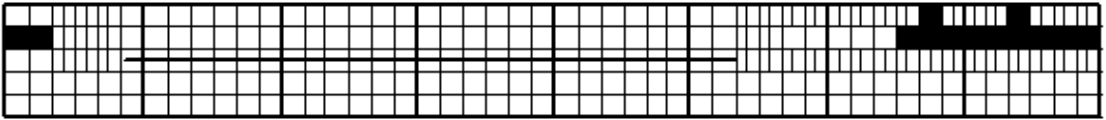
Mar. 27, 2016



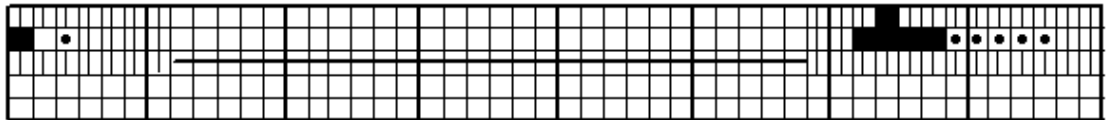
Mar. 28, 2016



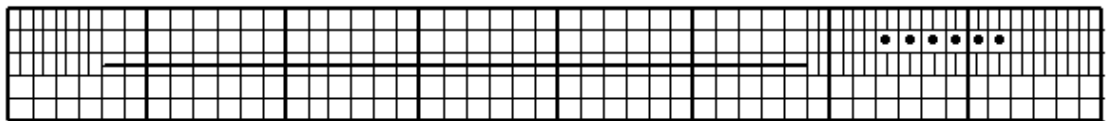
Mar. 29, 2016



Mar. 30, 2016



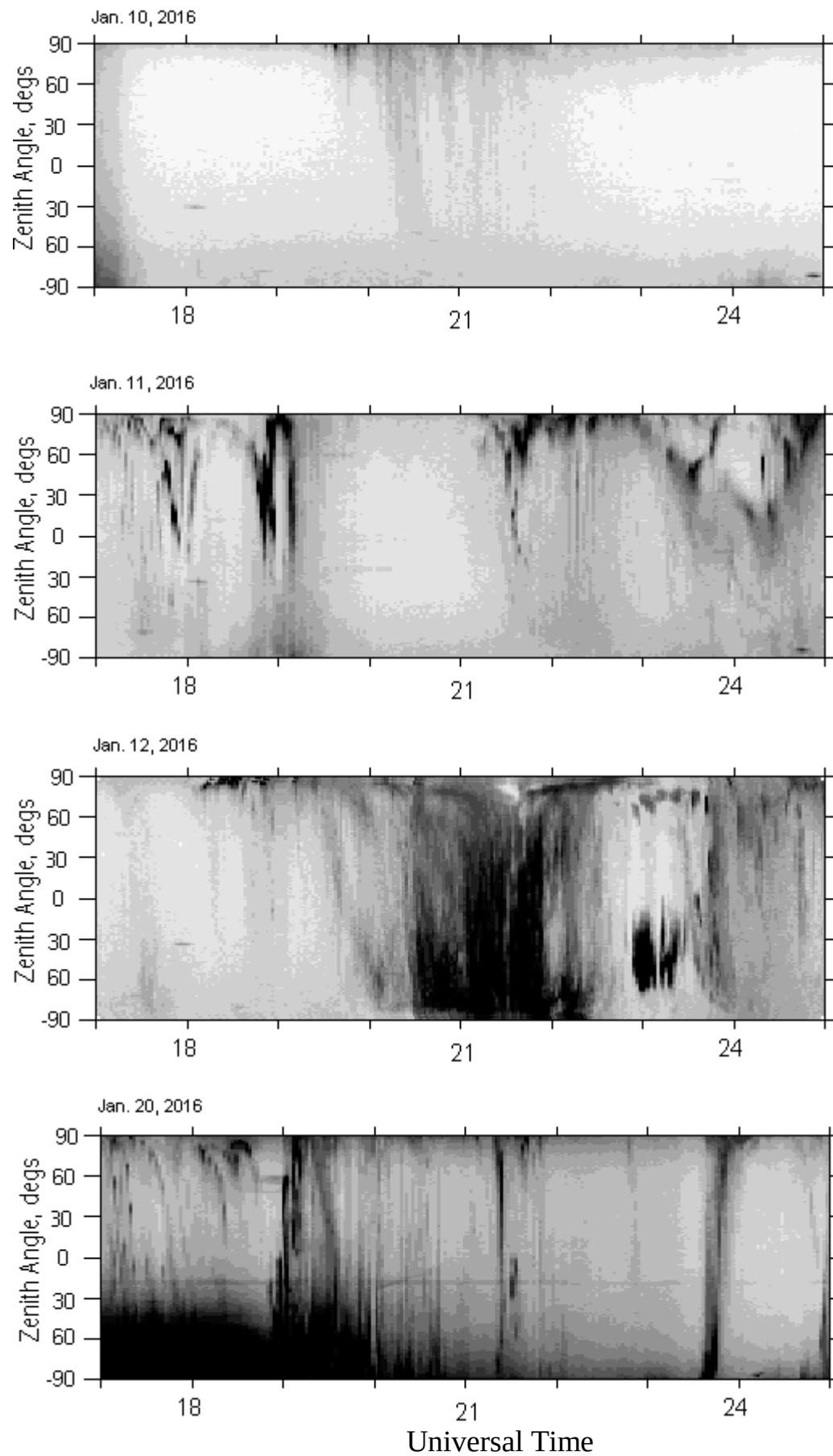
Mar. 31, 2016



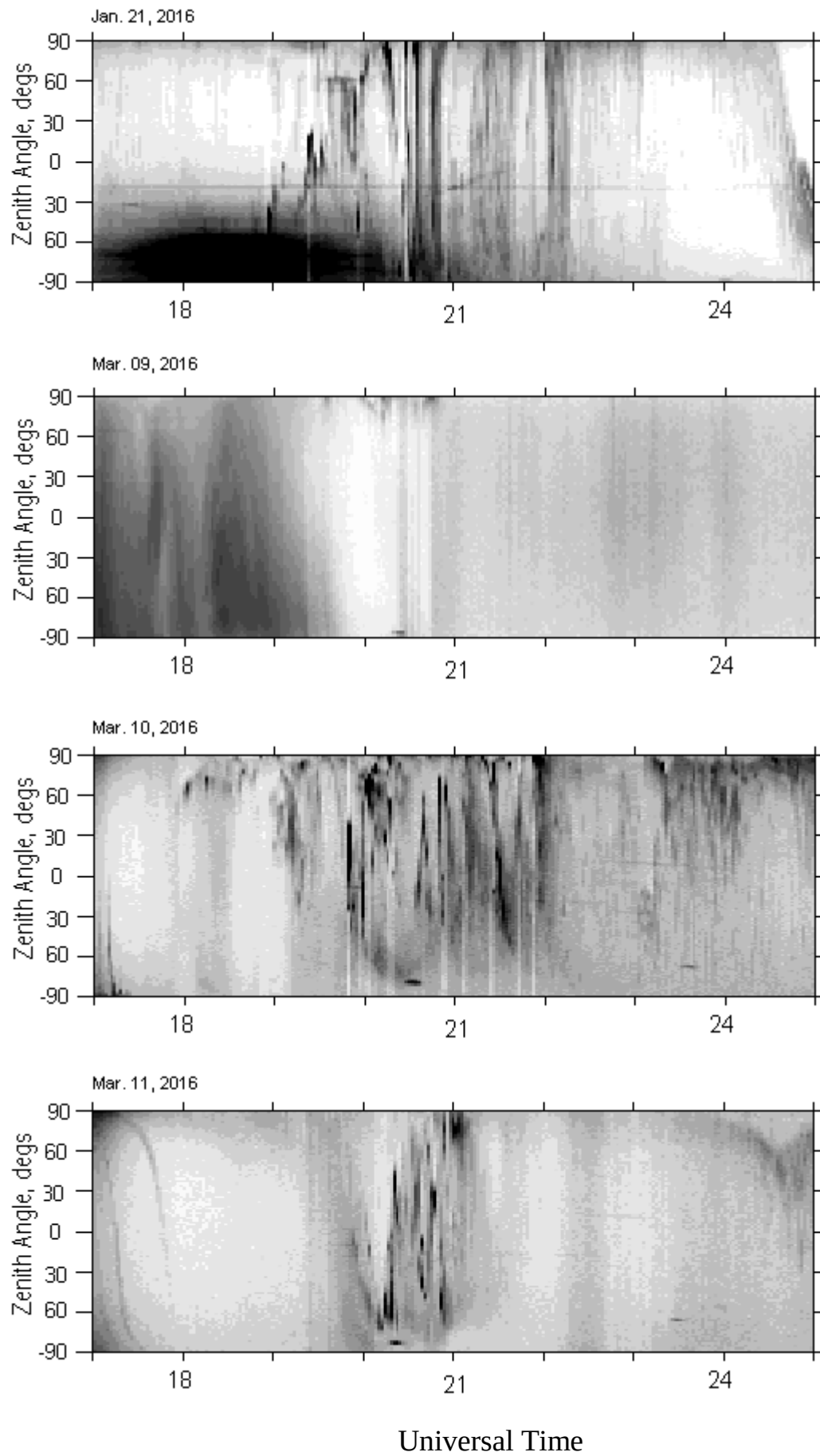
00 06 12 18 24

Universal Time

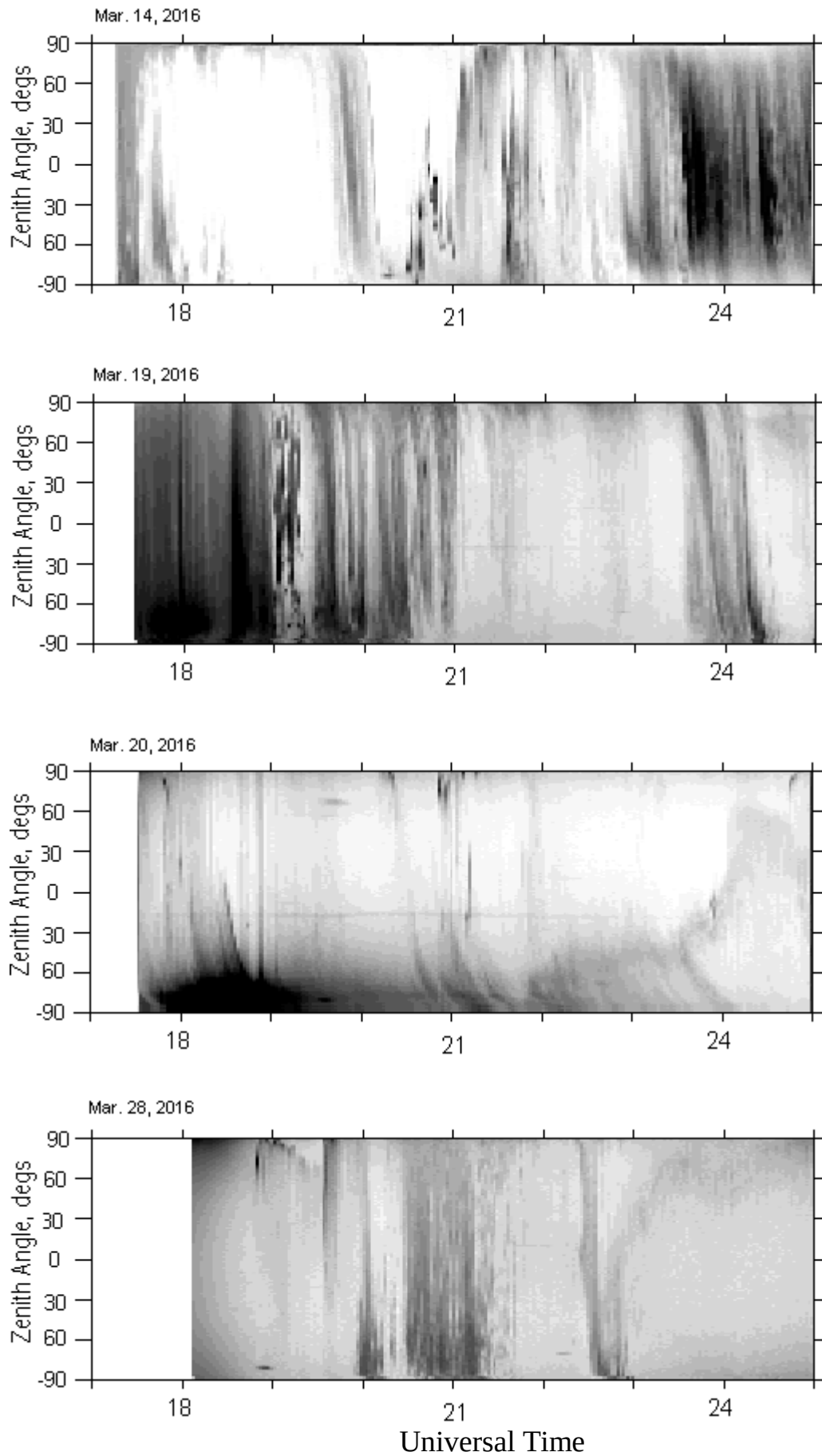
Apatity TV keograms



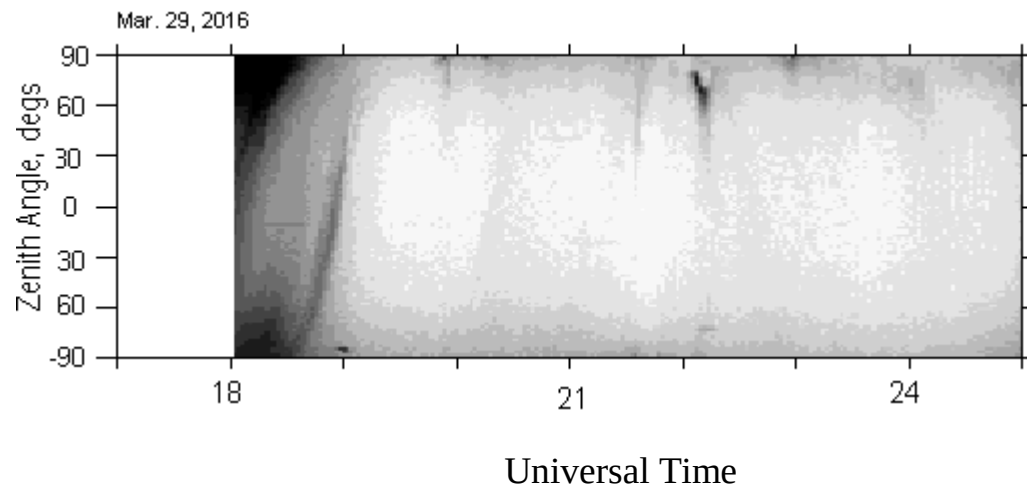
Apatity TV keograms



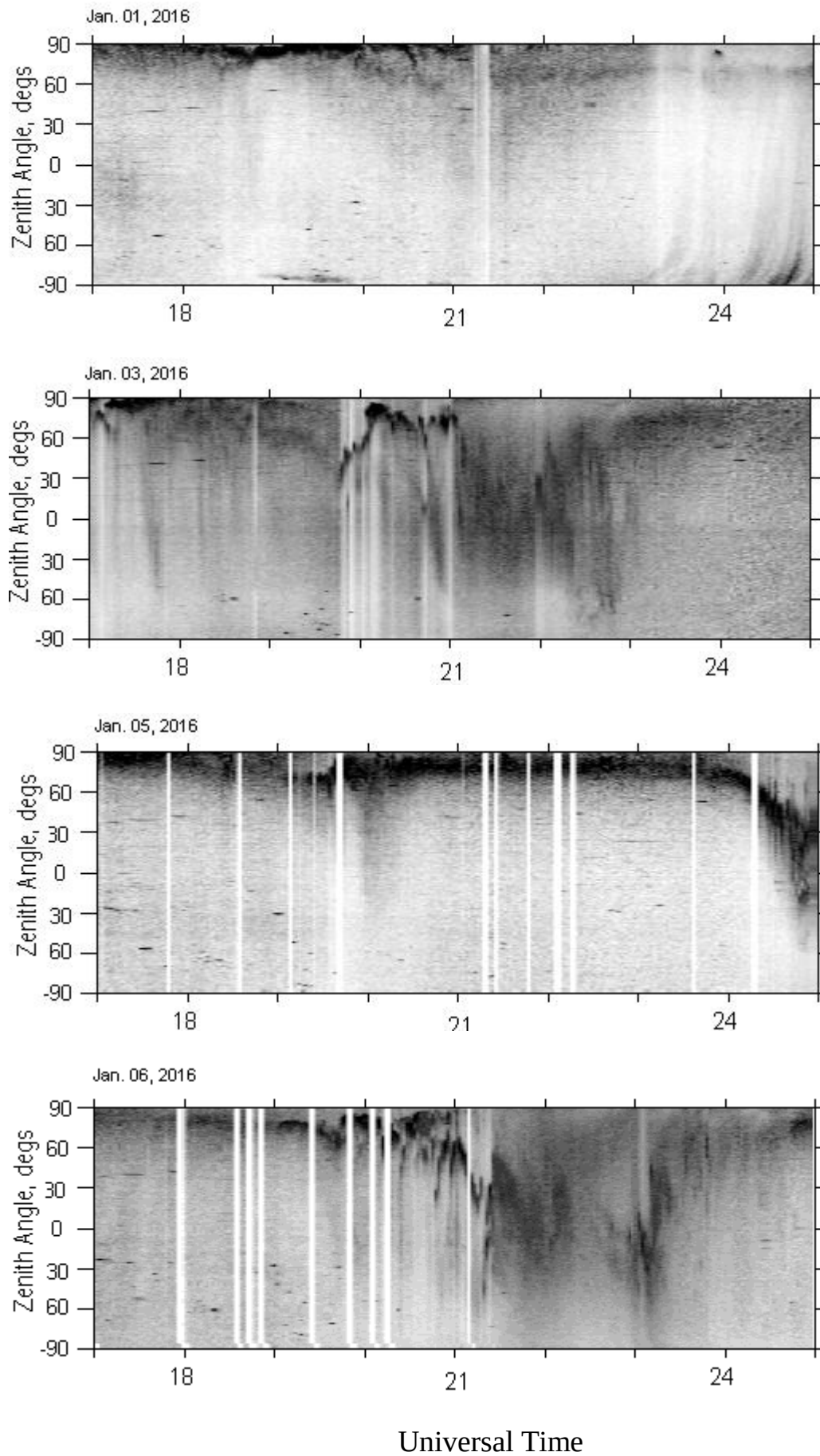
Apatity TV keograms



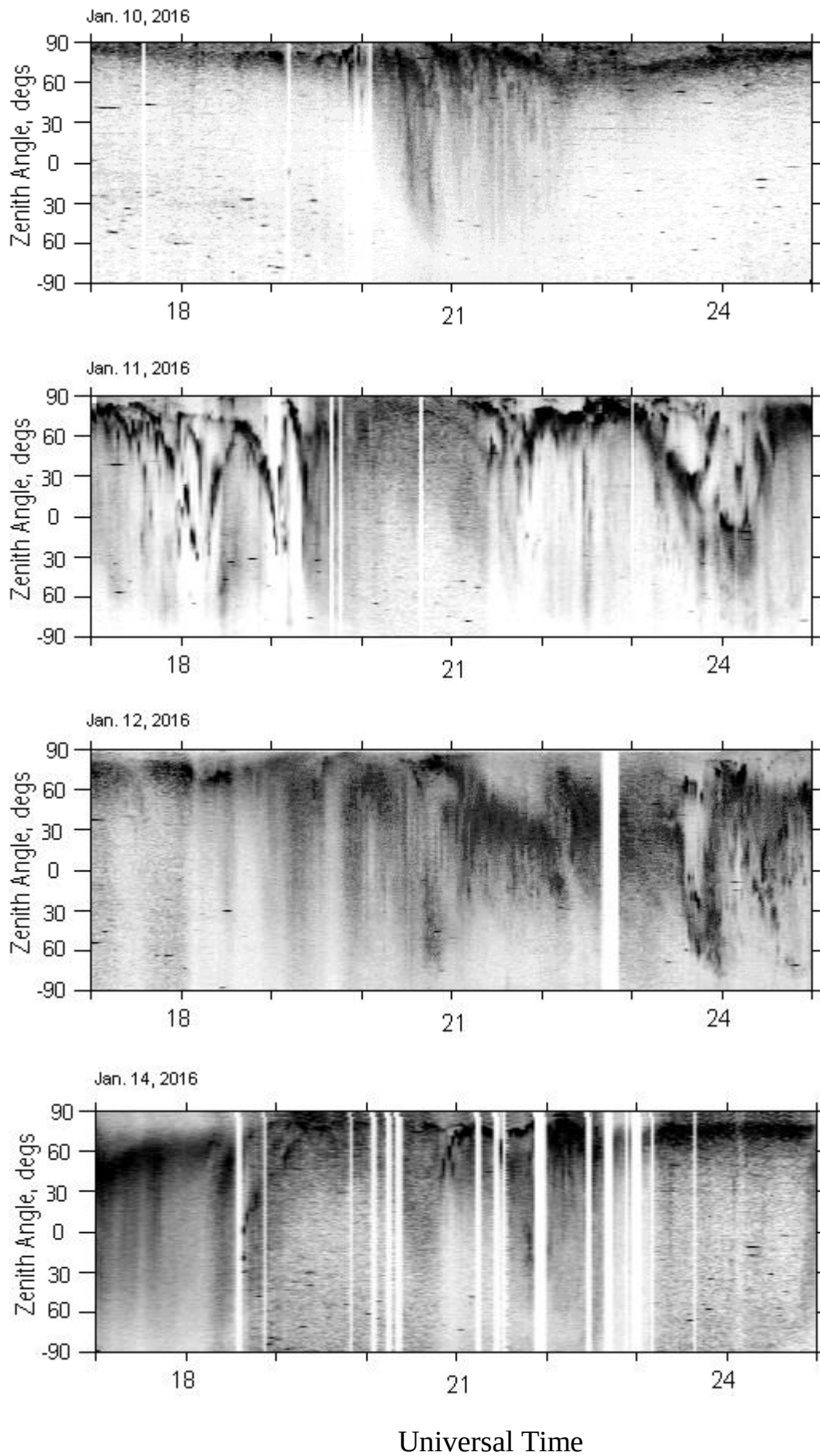
Apatity TV keograms



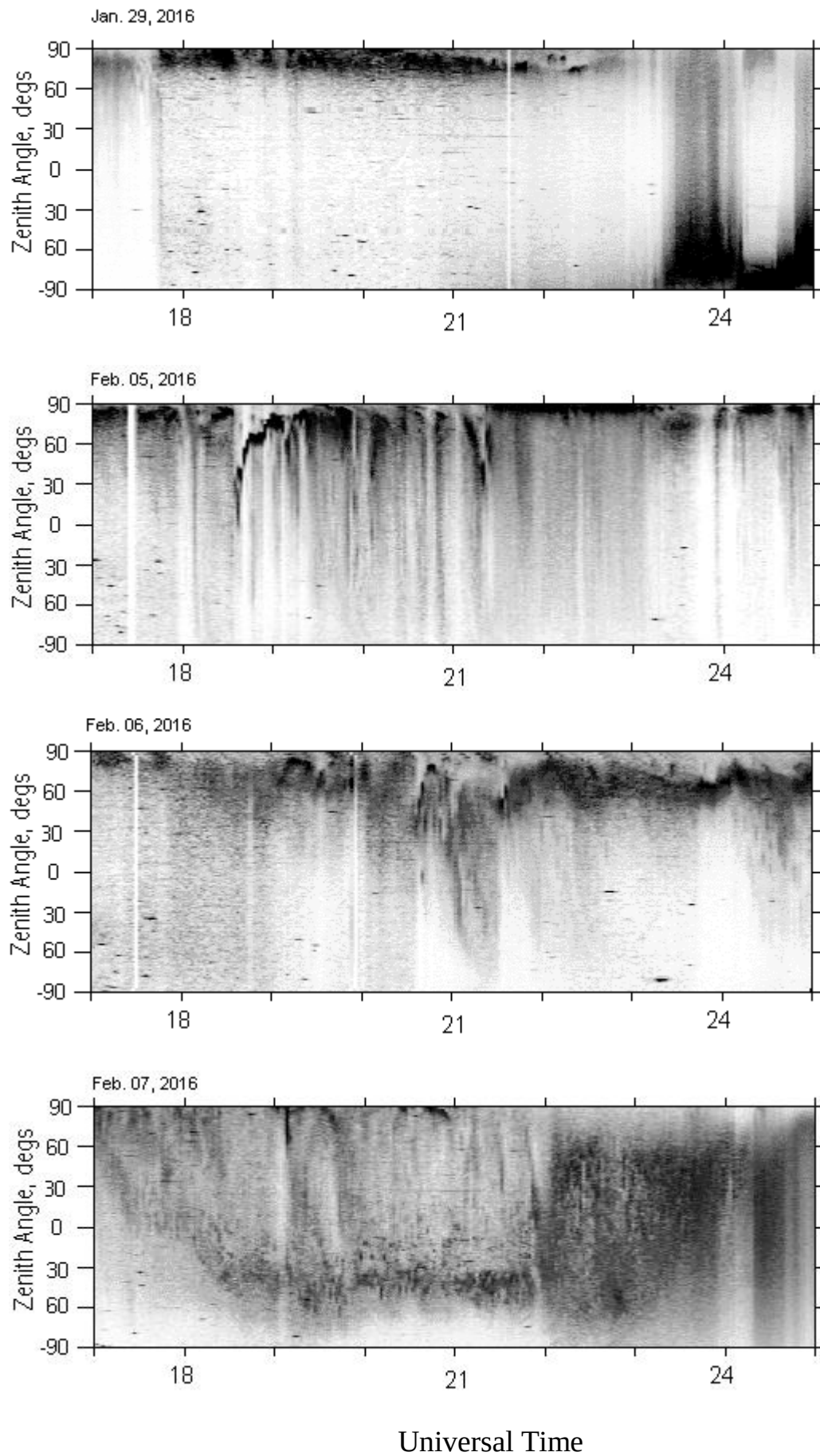
Lovozero TV keograms



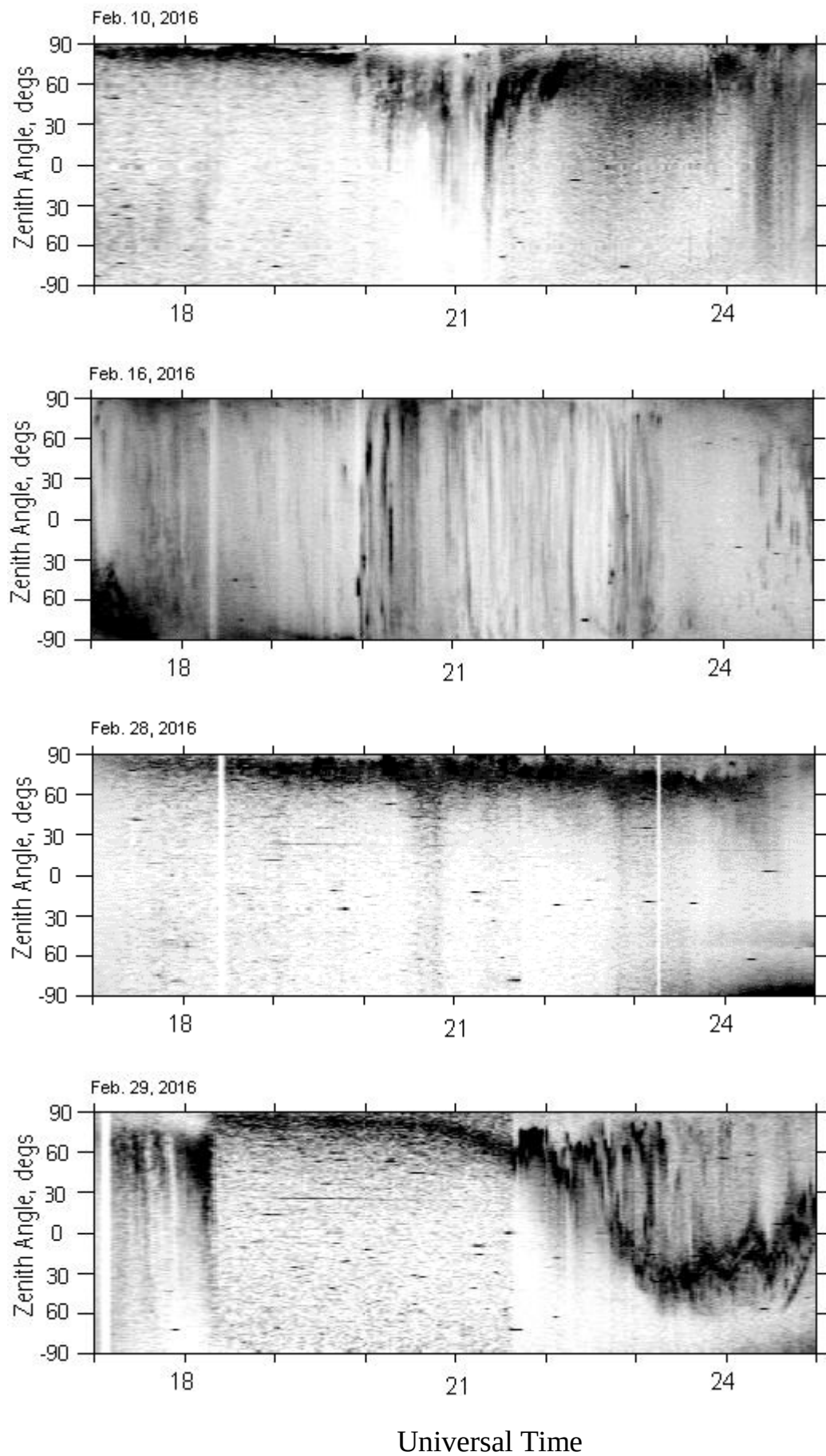
Lovozero TV keograms



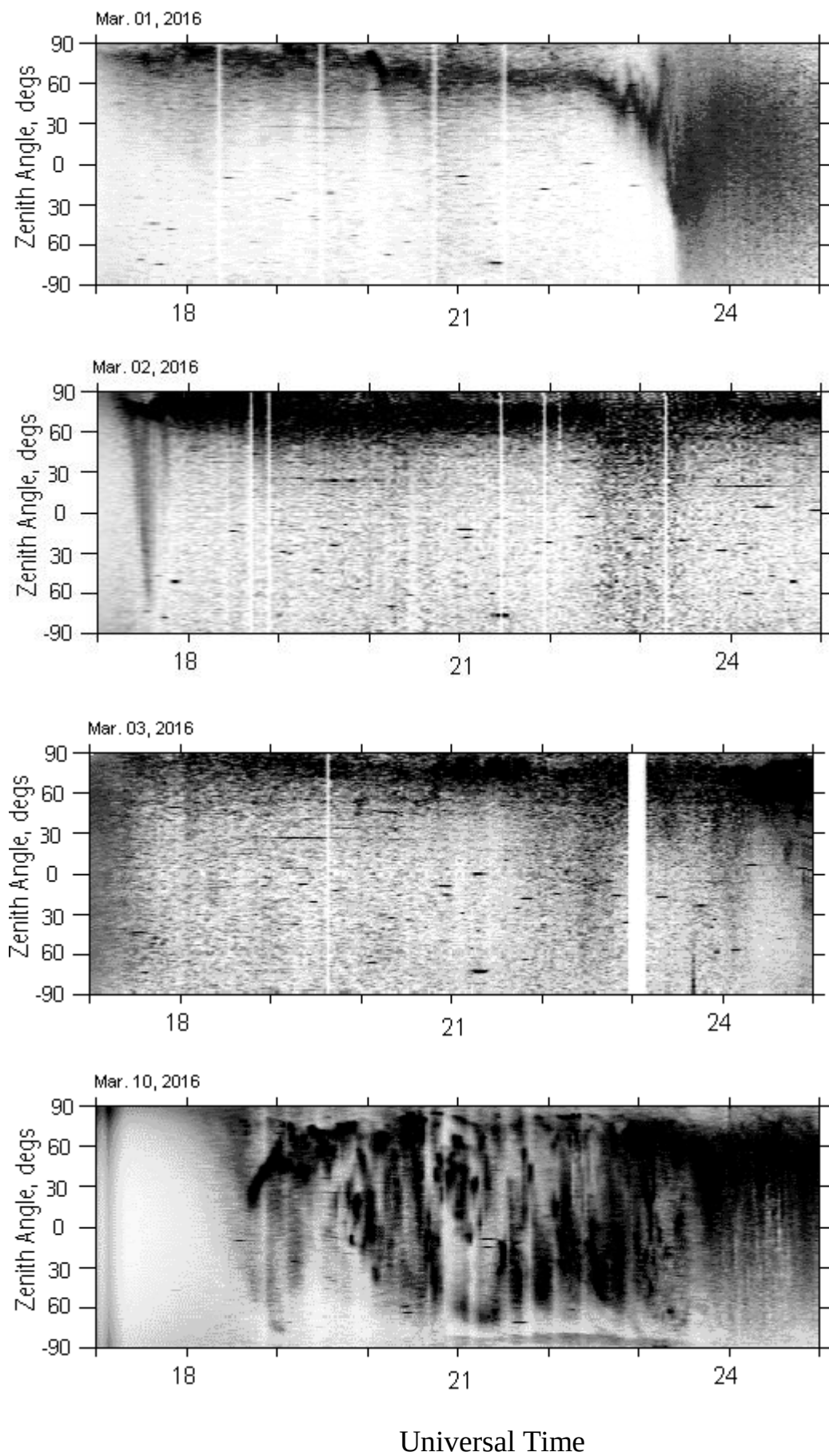
Lovozero TV keograms



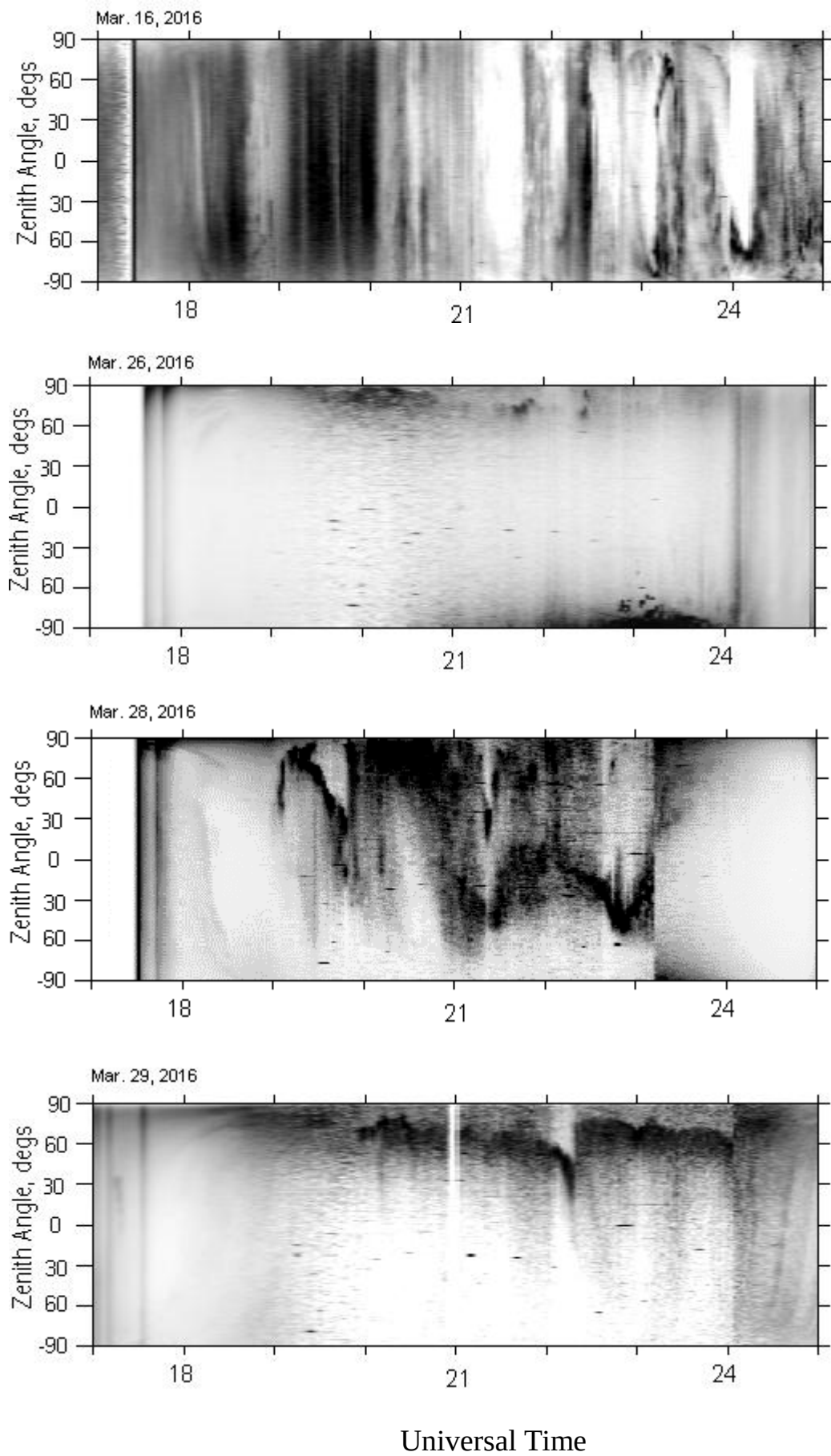
Lovozero TV keograms



Lovozero TV keograms



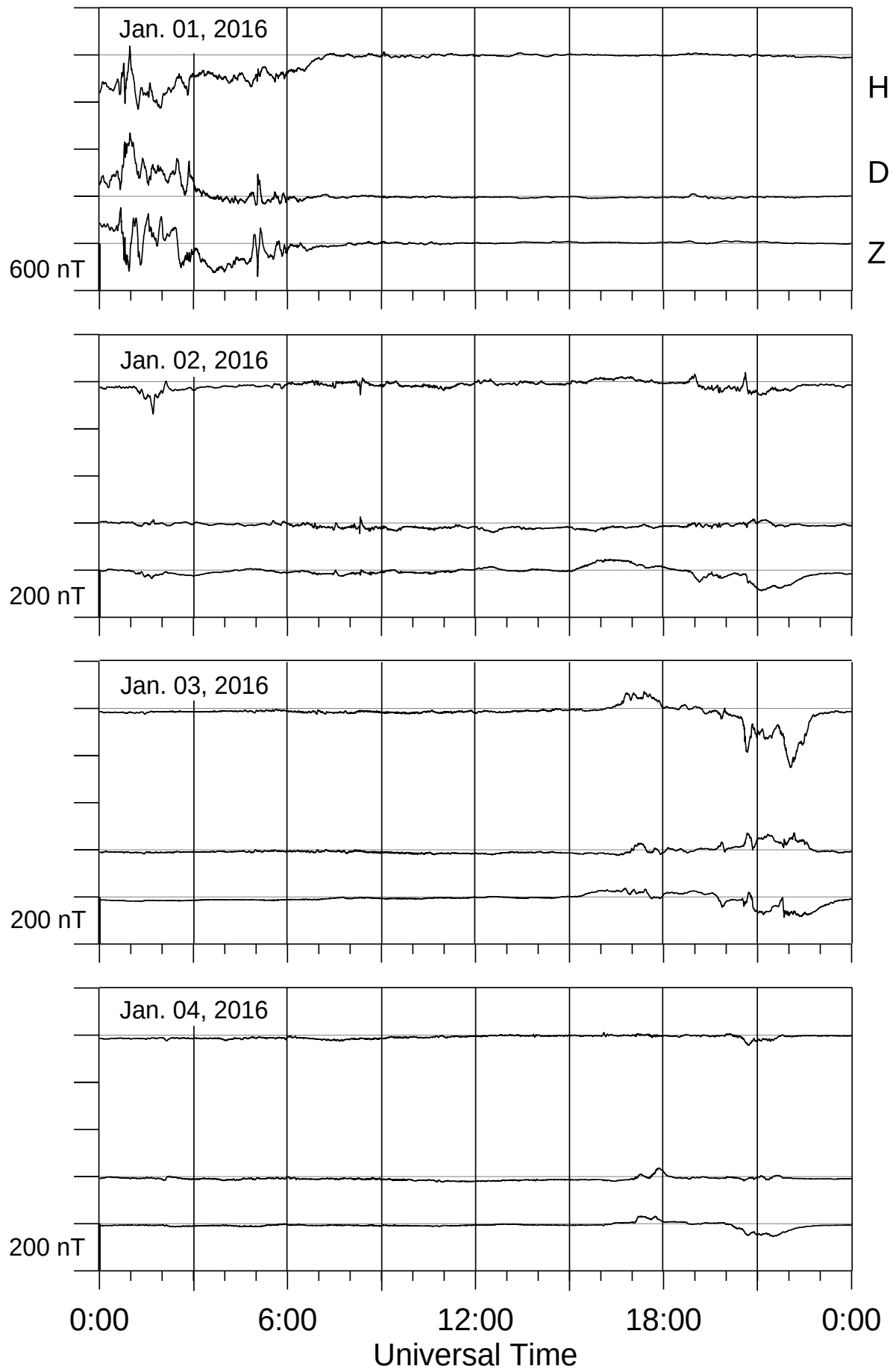
Lovozero TV keograms



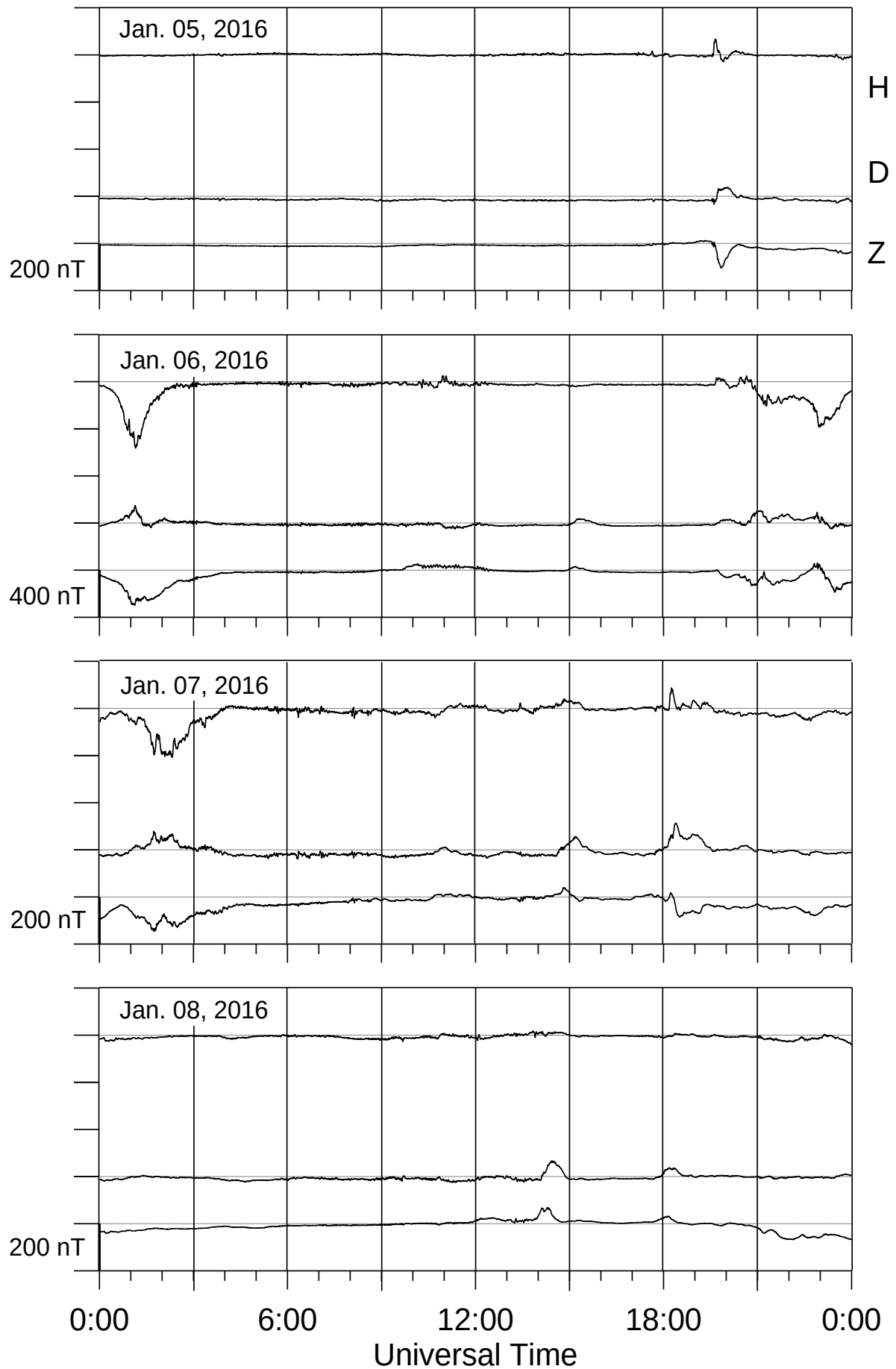
LOVOZERO MAGNETOGRAMS

January - March 2016

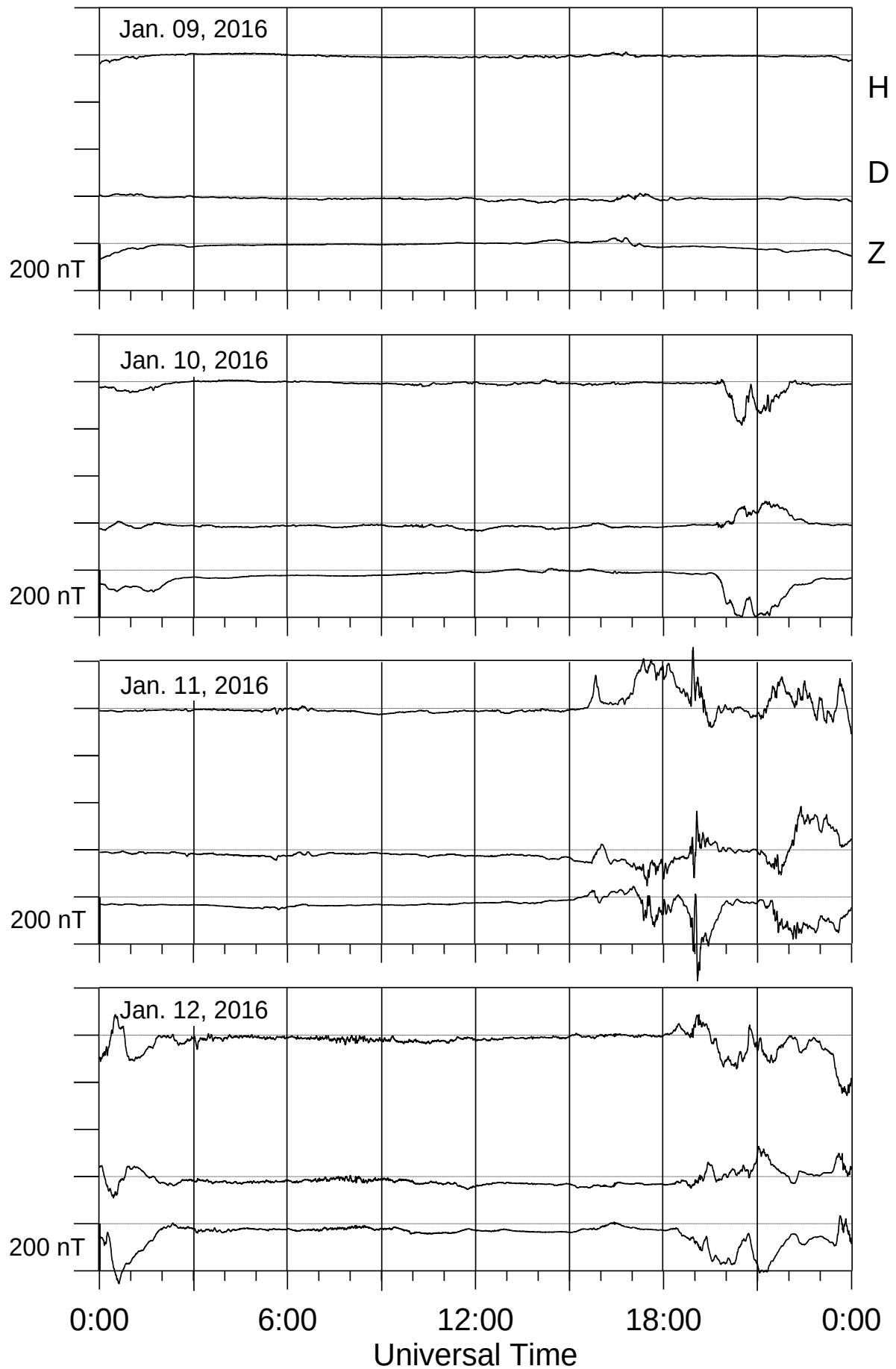
Lovozero magnetometer



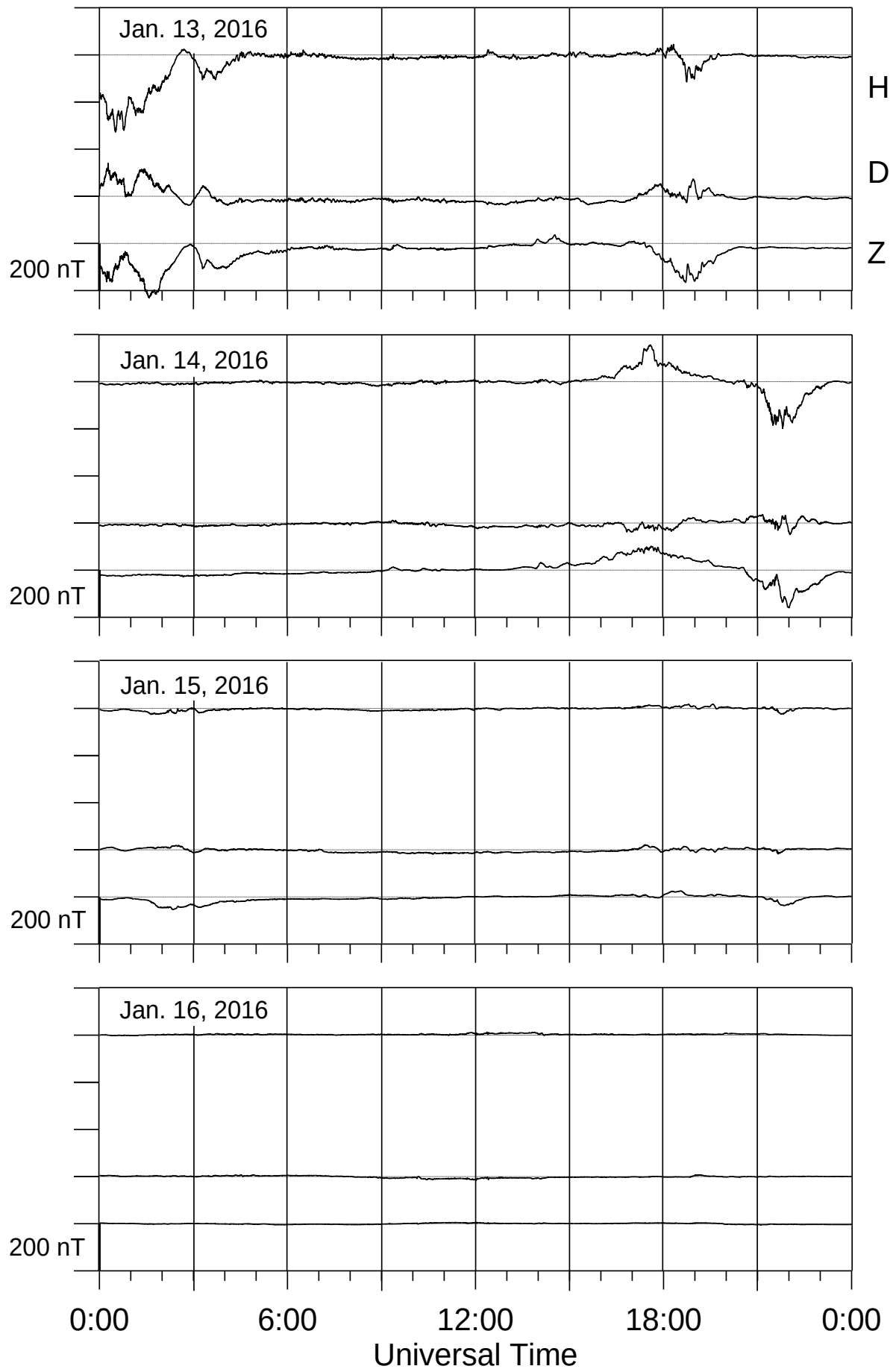
Lovozero magnetometer



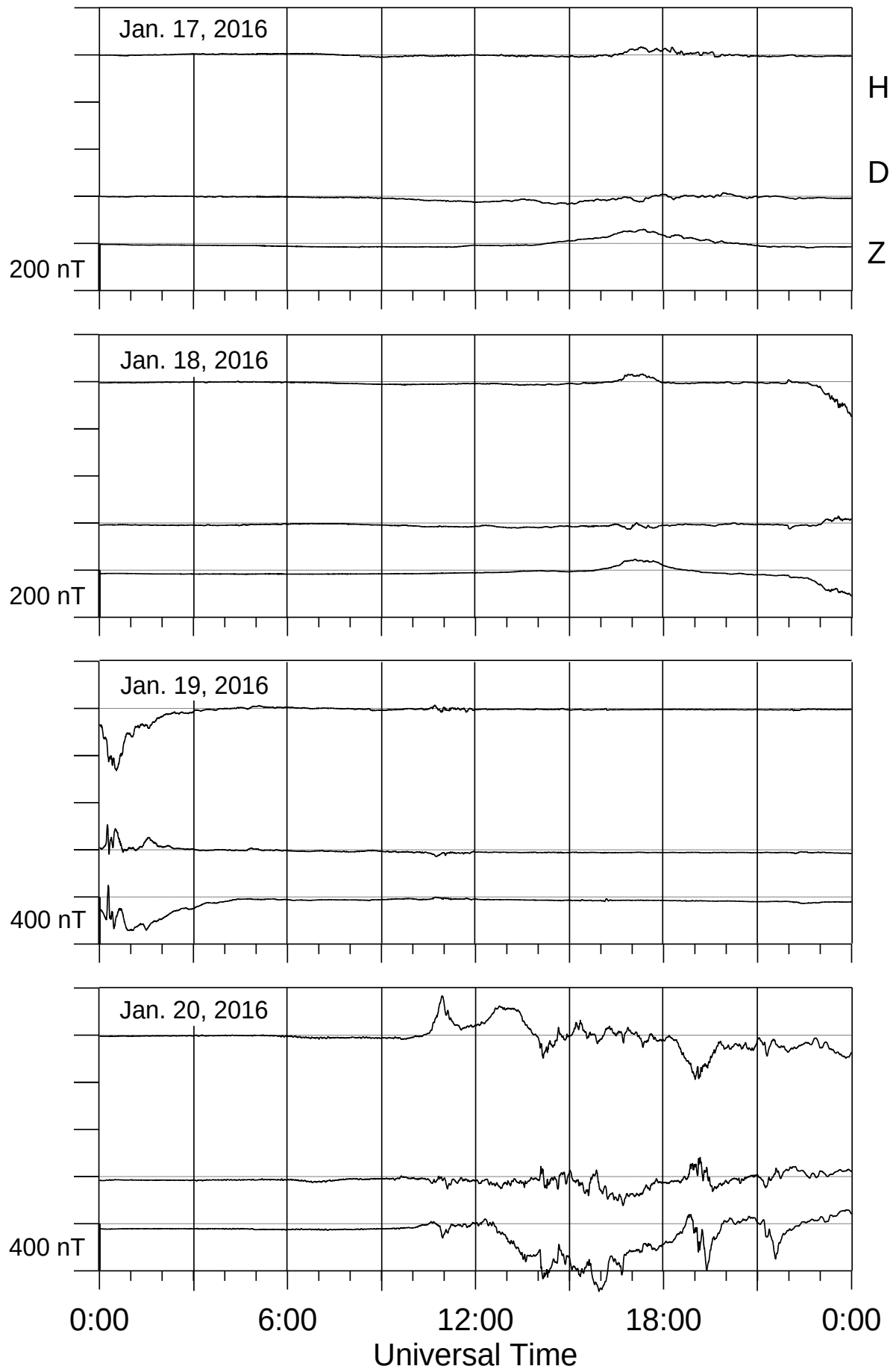
Lovozero magnetometer



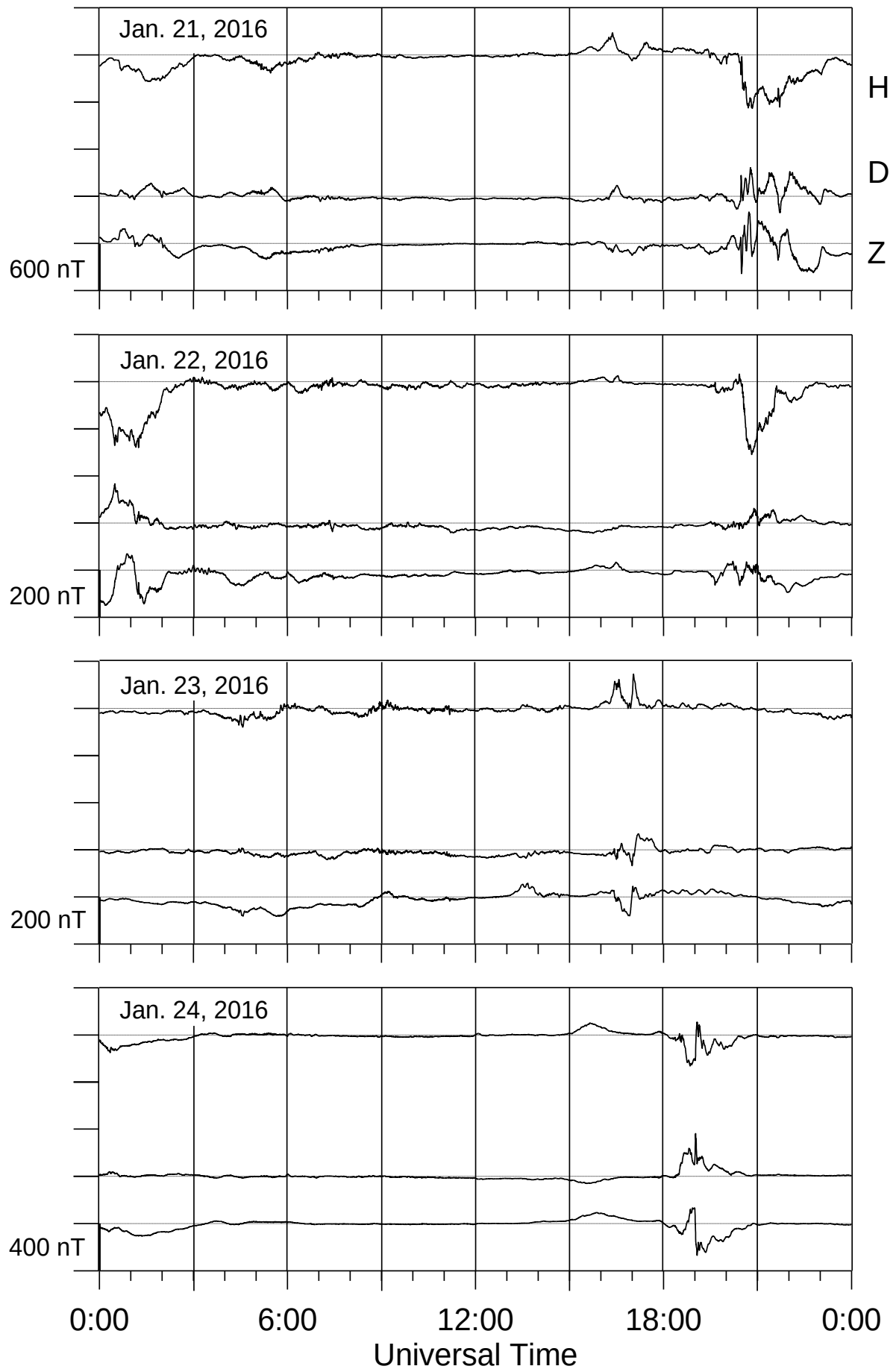
Lovozero magnetometer



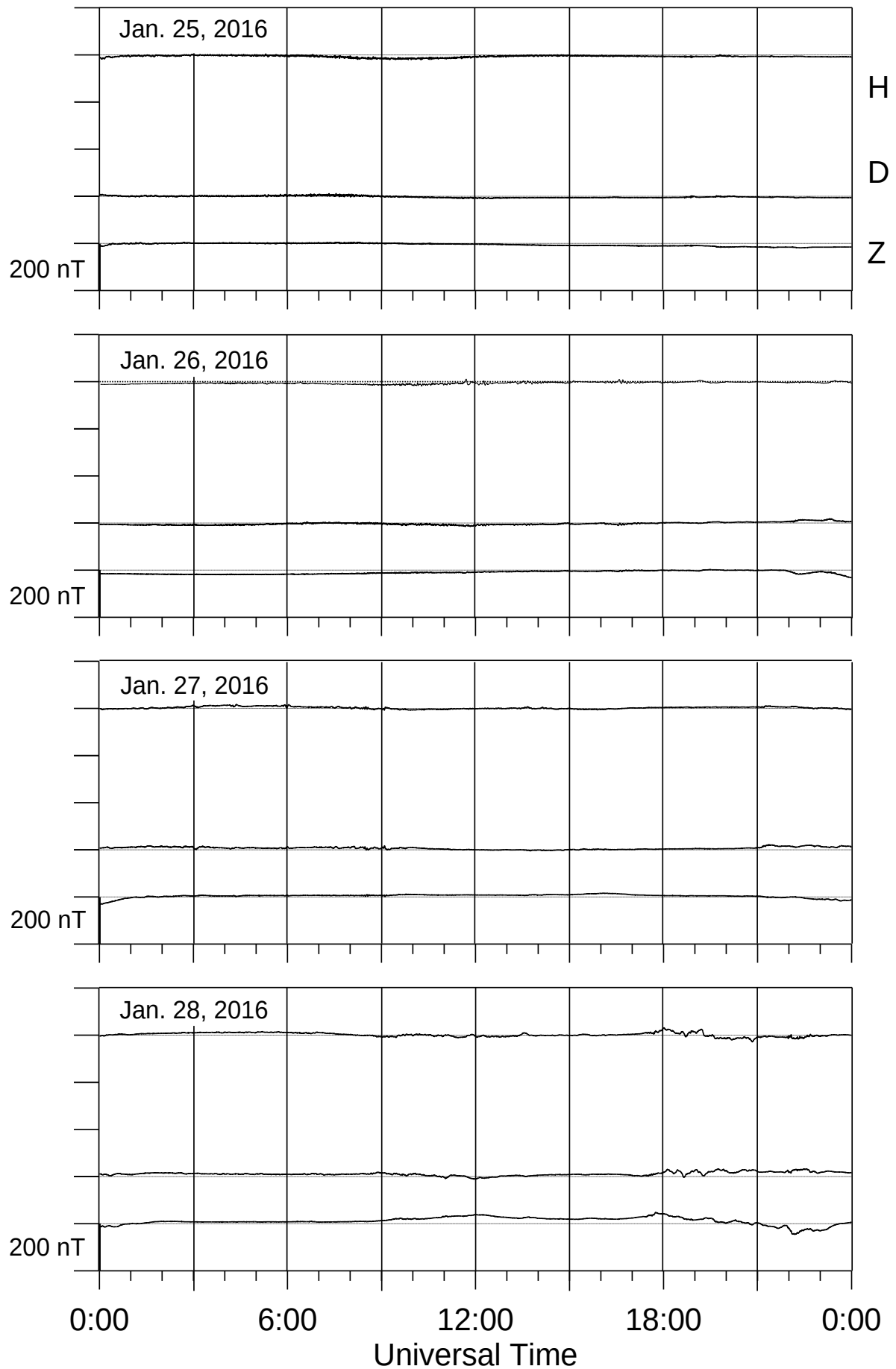
Lovozero magnetometer



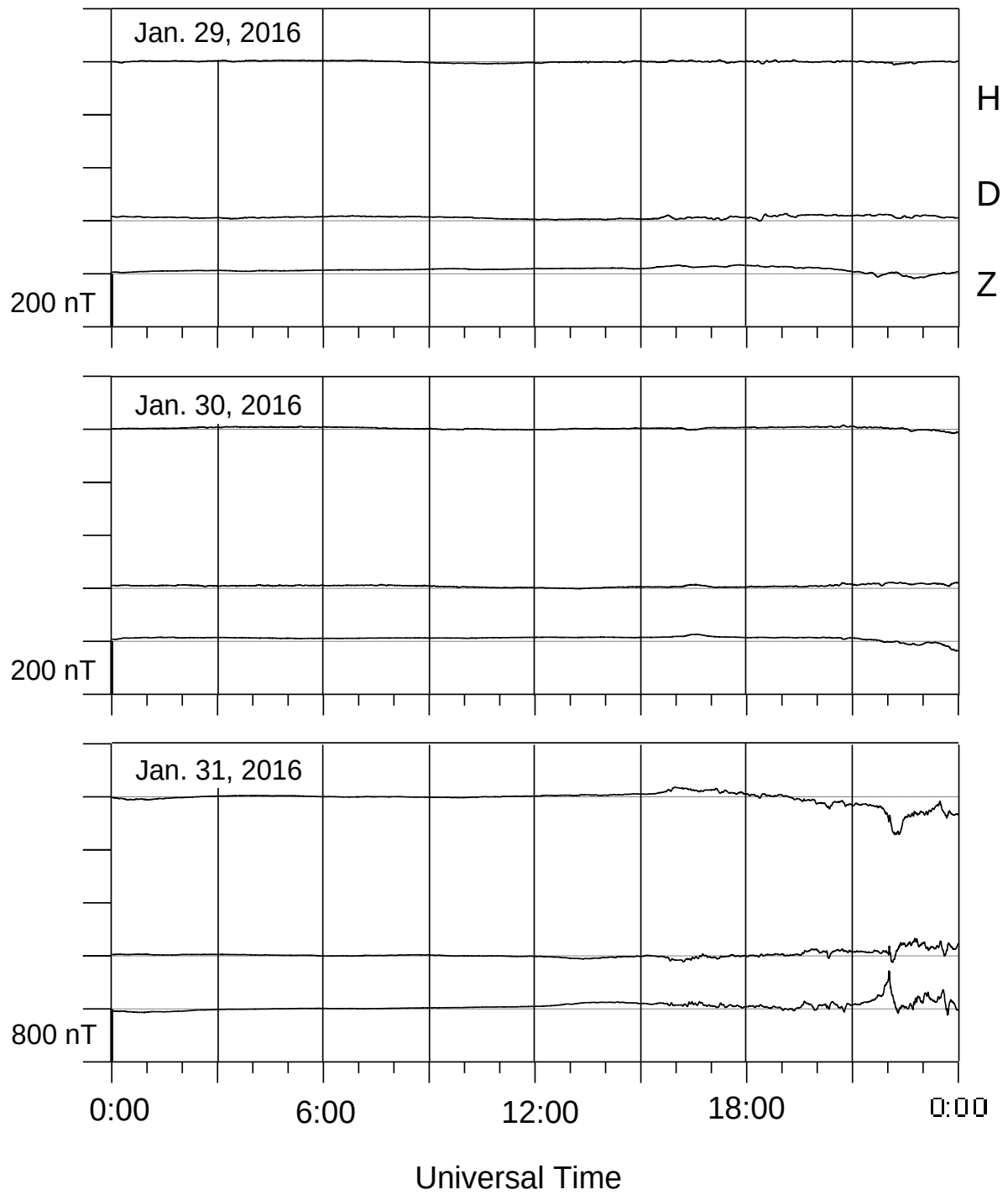
Lovozero magnetometer



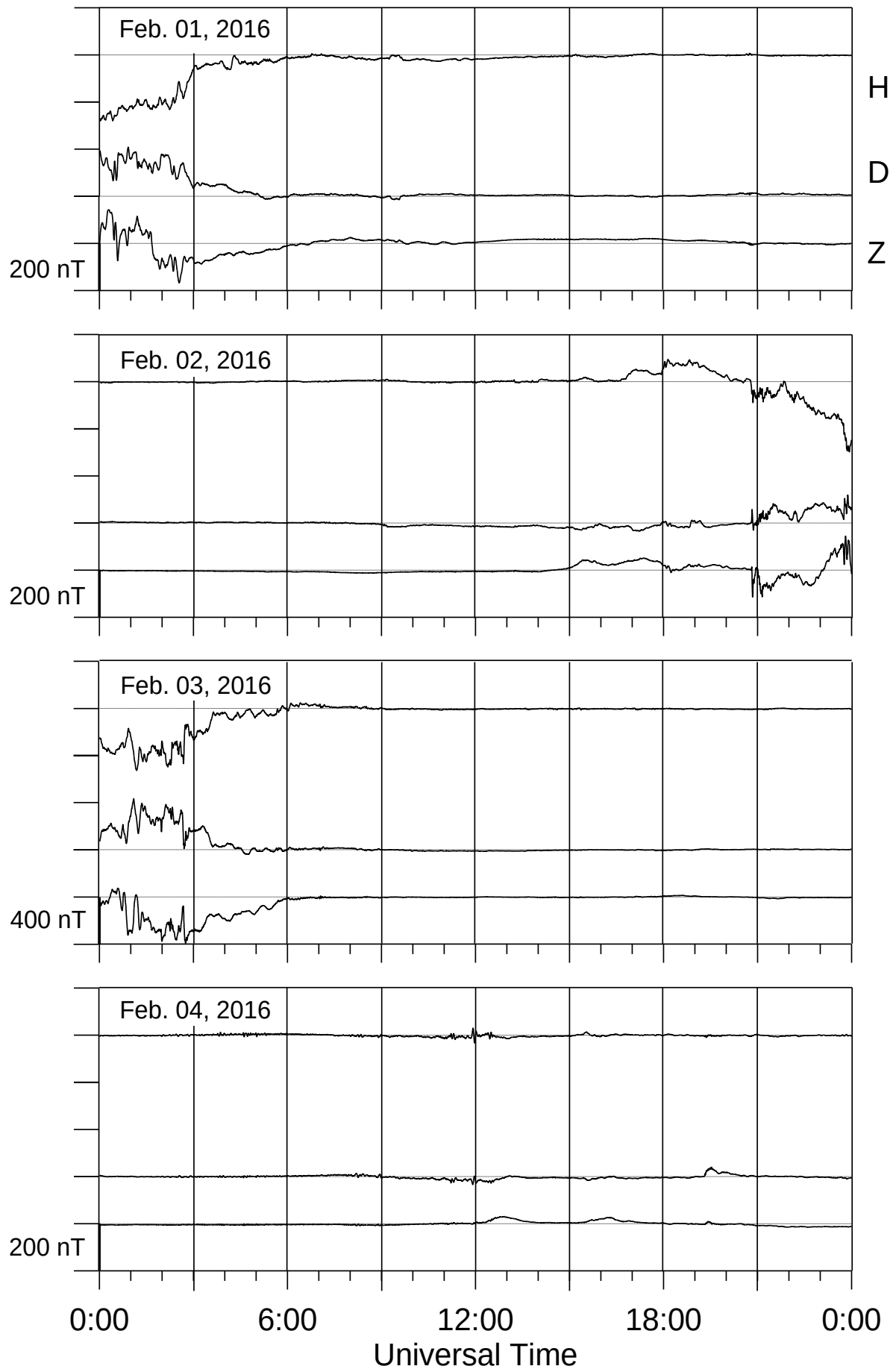
Lovozero magnetometer



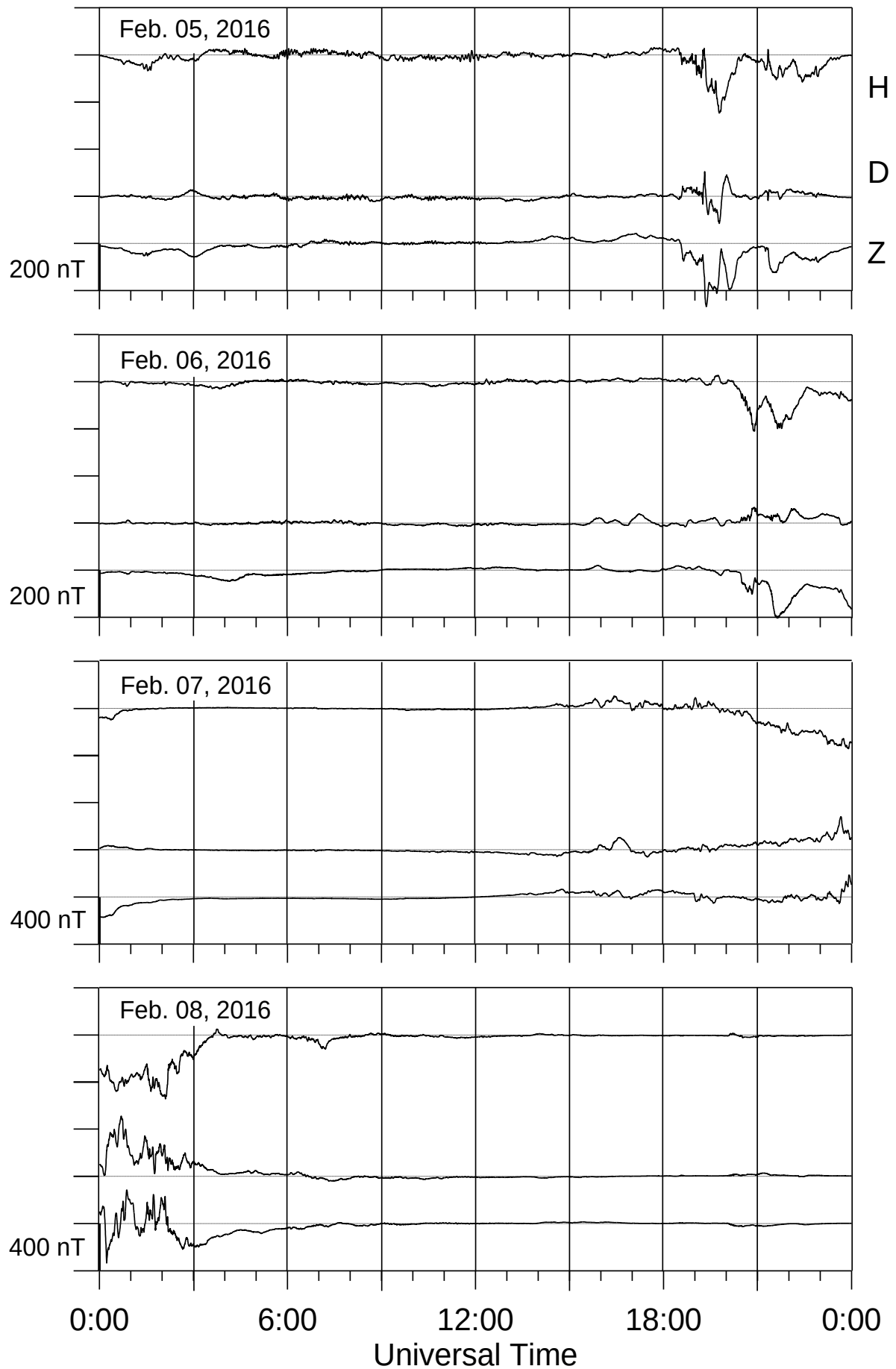
Lovozero magnetometer



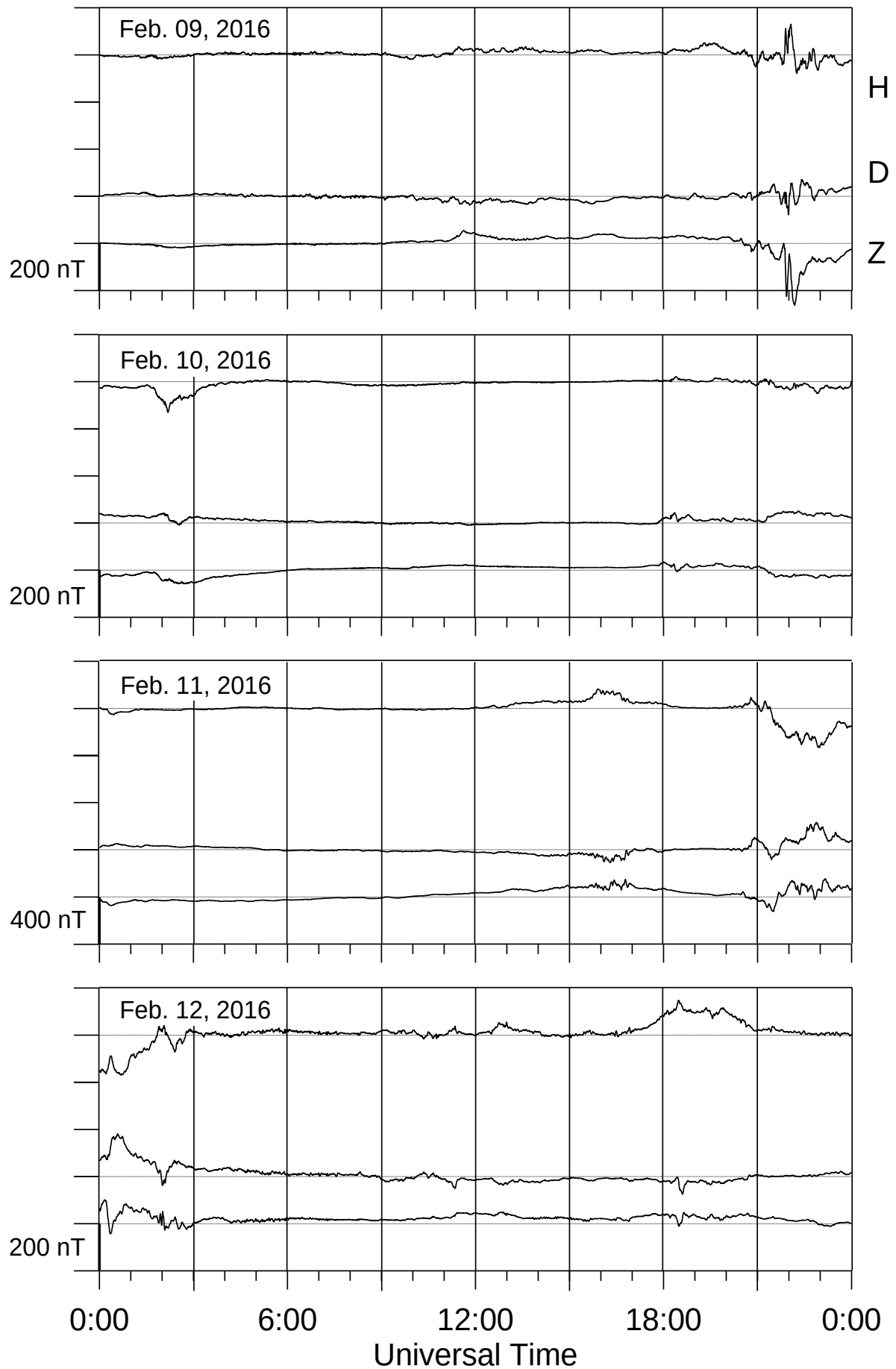
Lovozero magnetometer



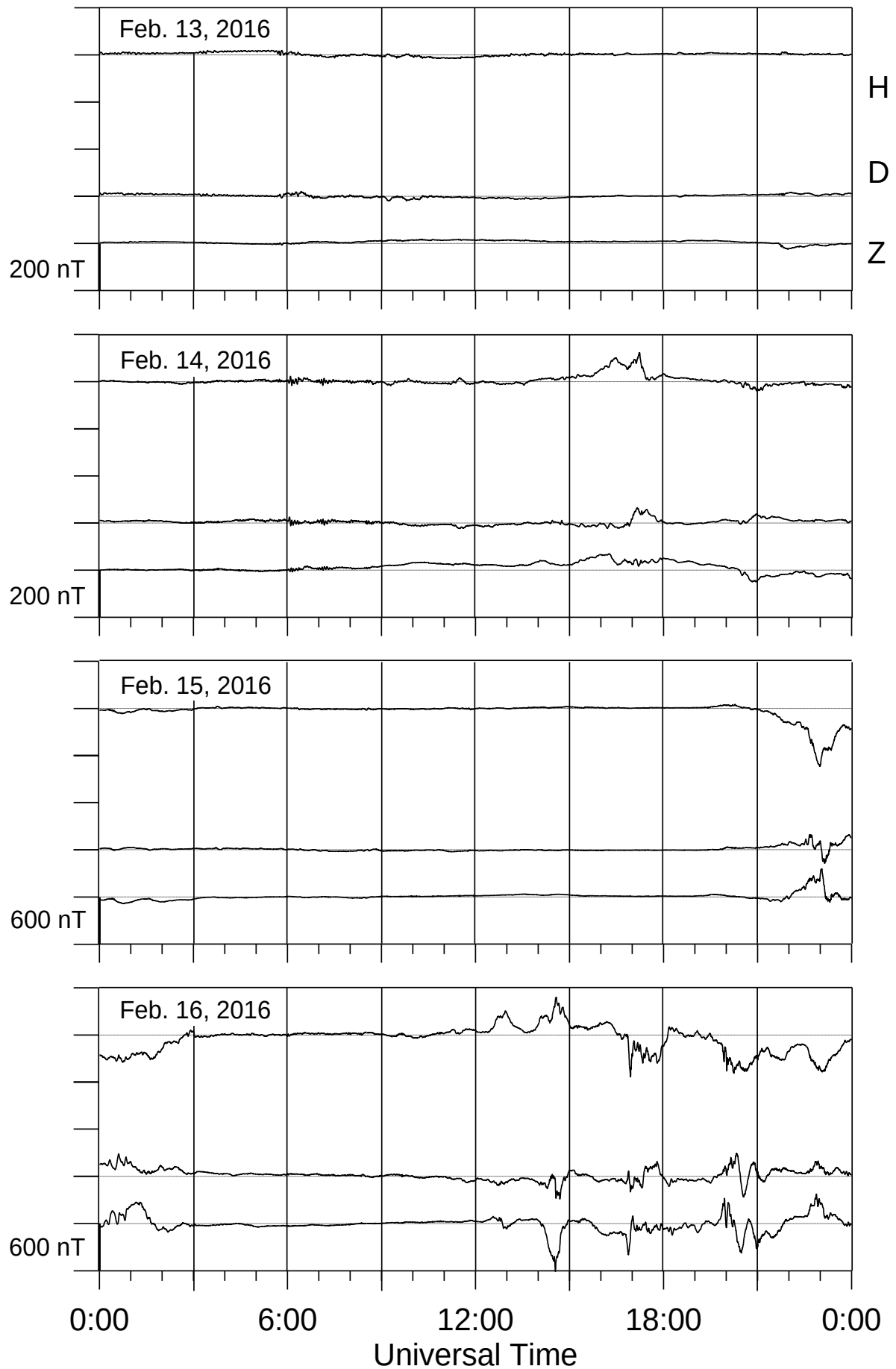
Lovozero magnetometer



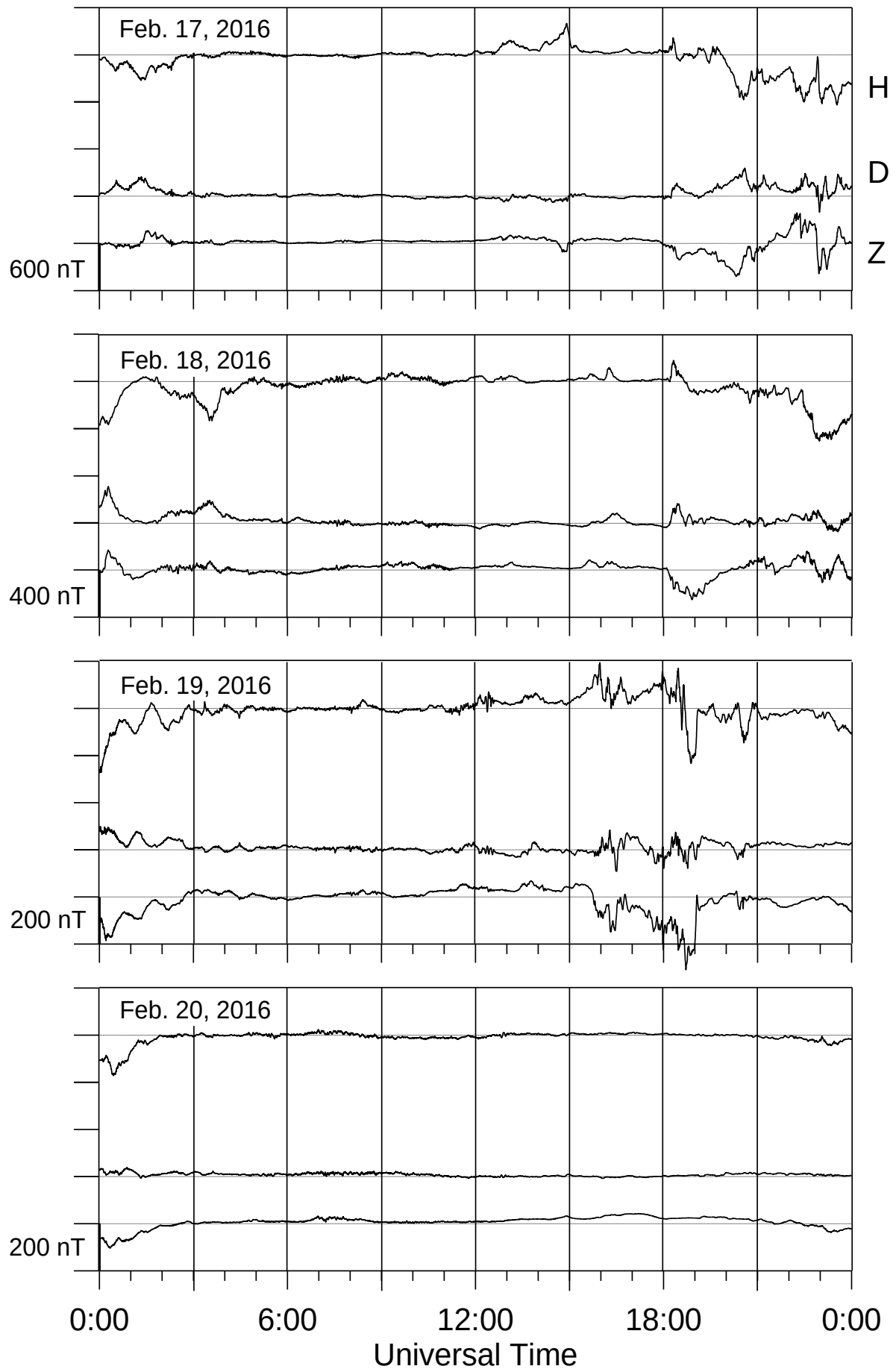
Lovozero magnetometer



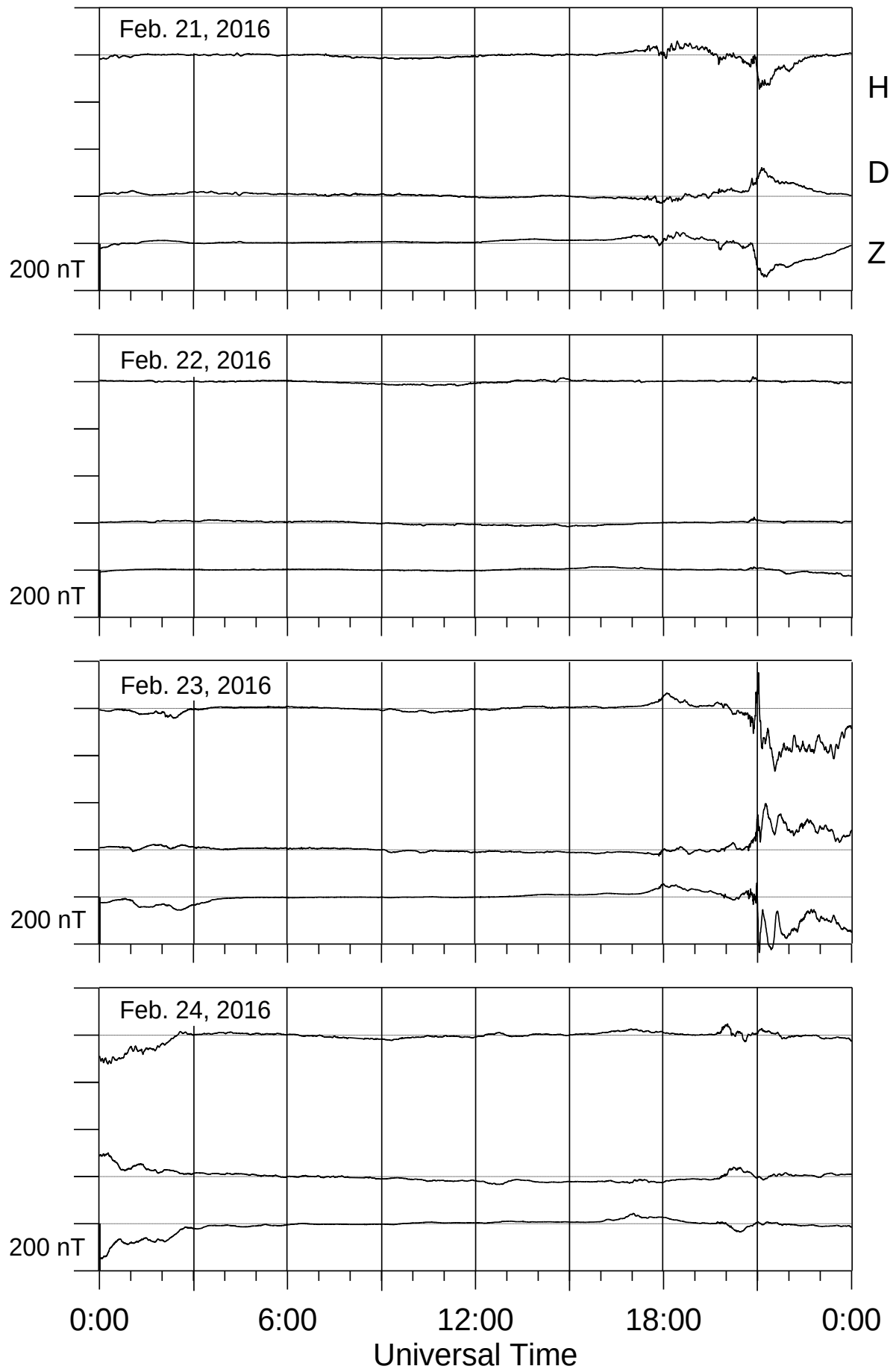
Lovozero magnetometer



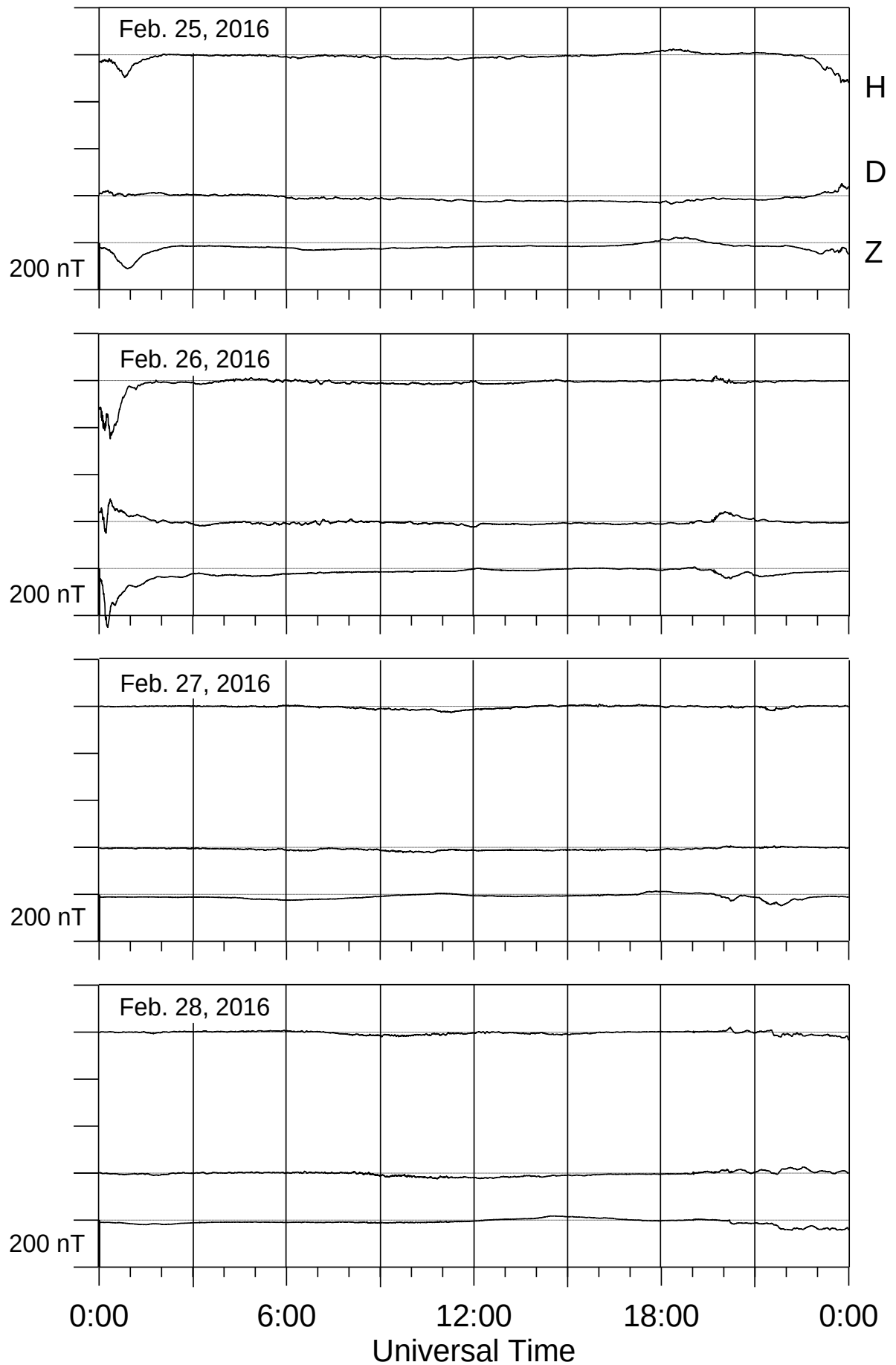
Lovozero magnetometer



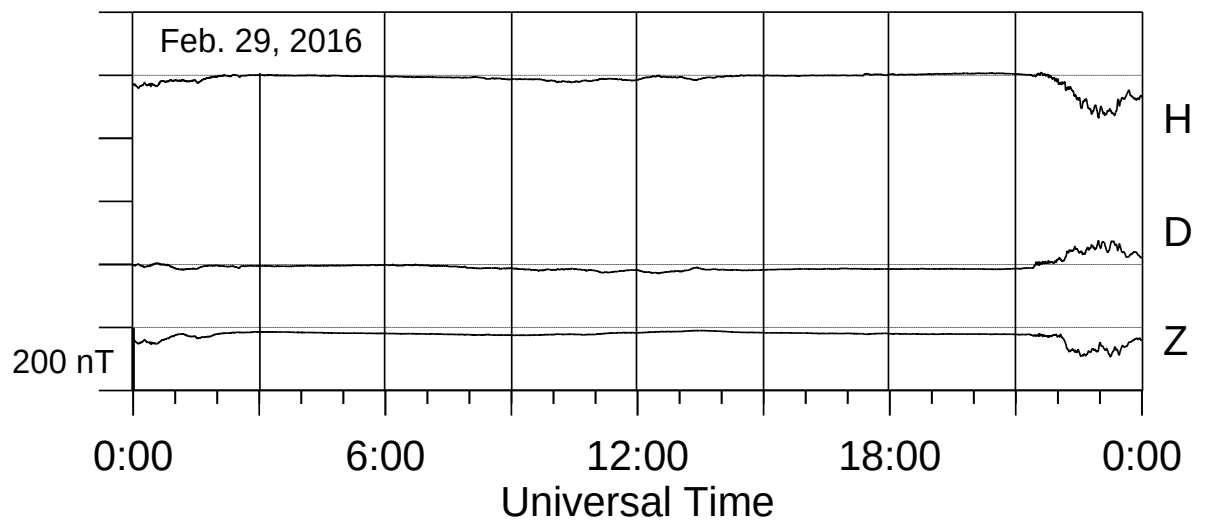
Lovozero magnetometer



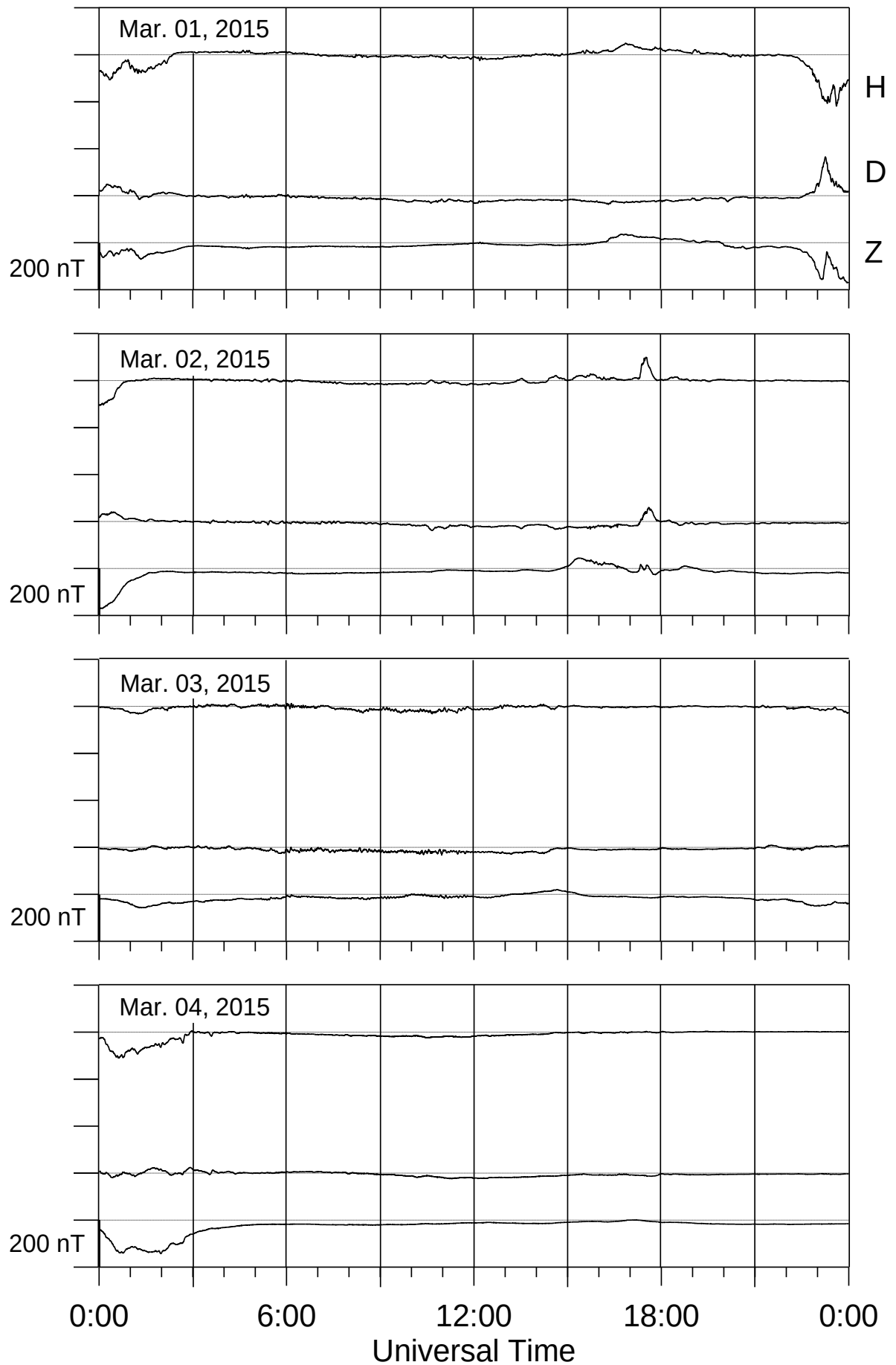
Lovozero magnetometer



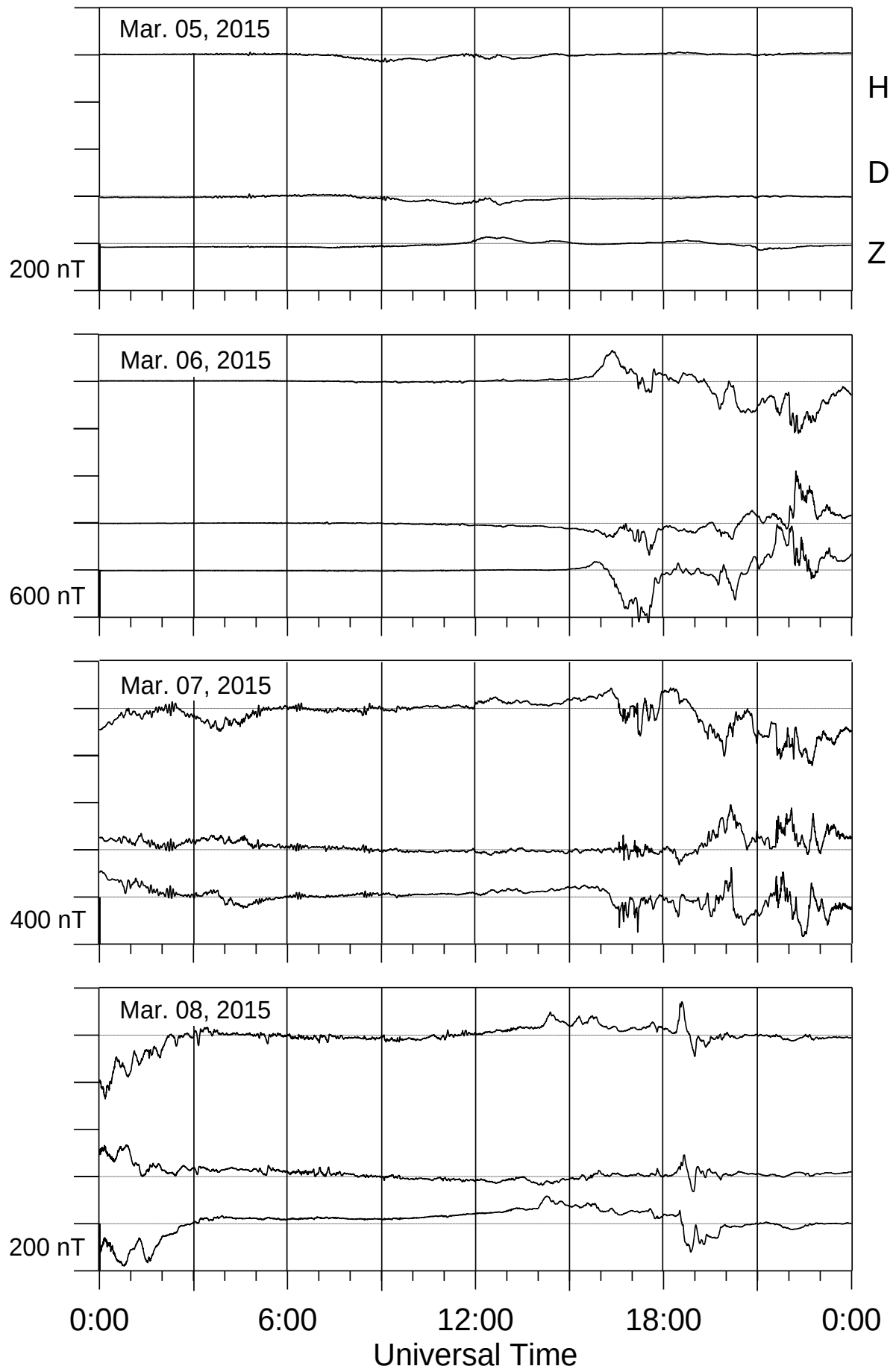
Lovozero magnetometer



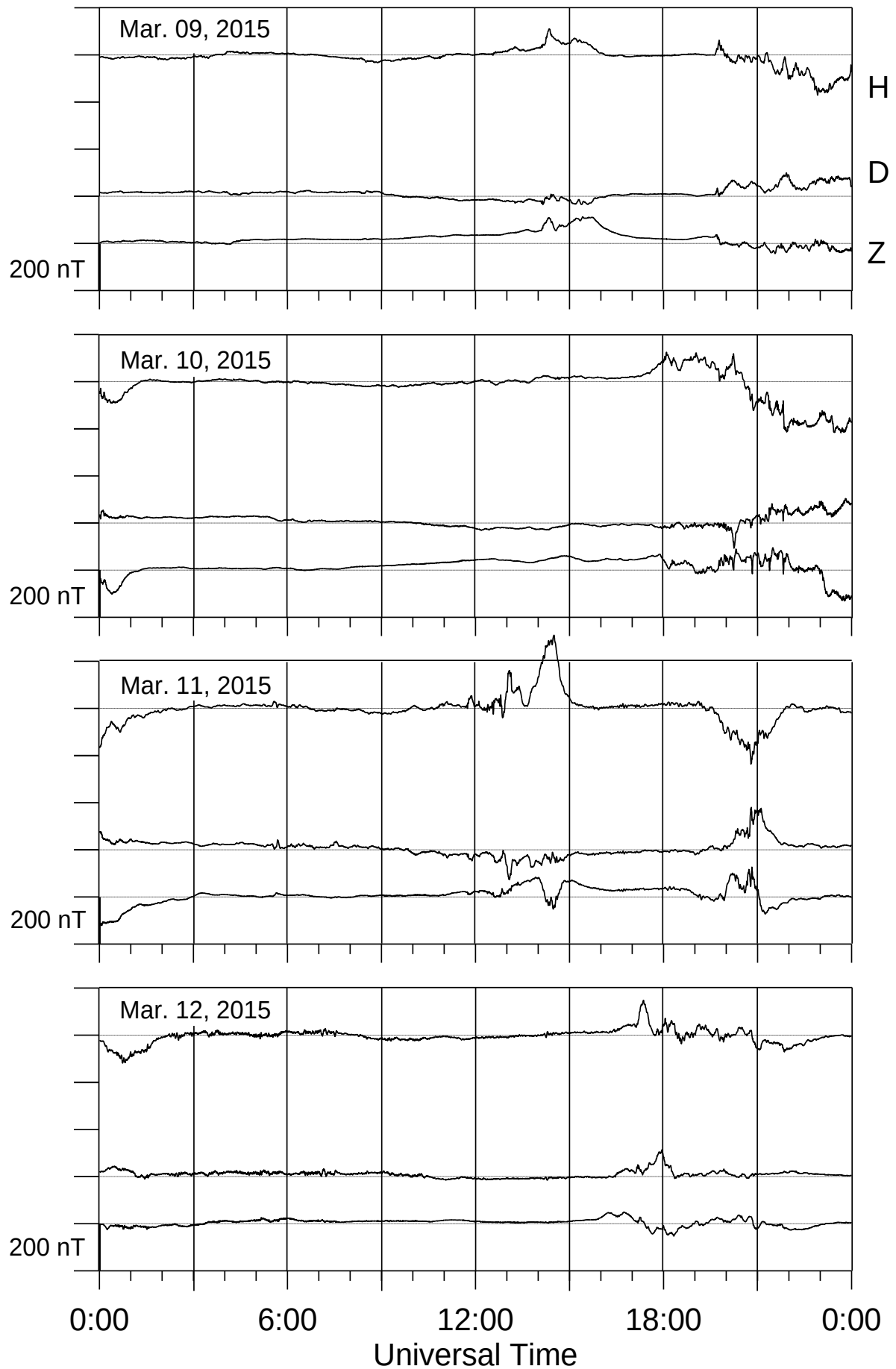
Lovozero magnetometer



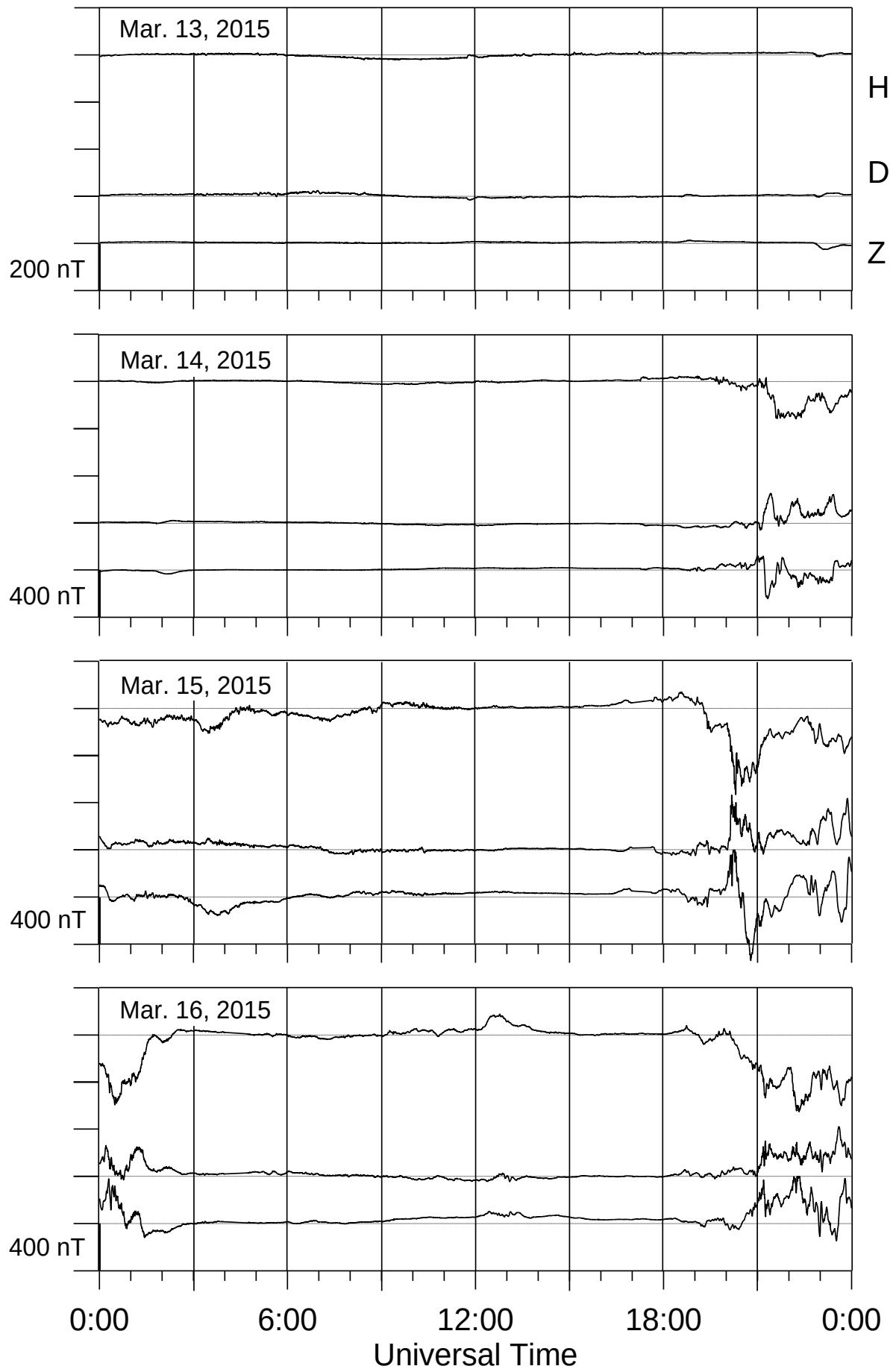
Lovozero magnetometer



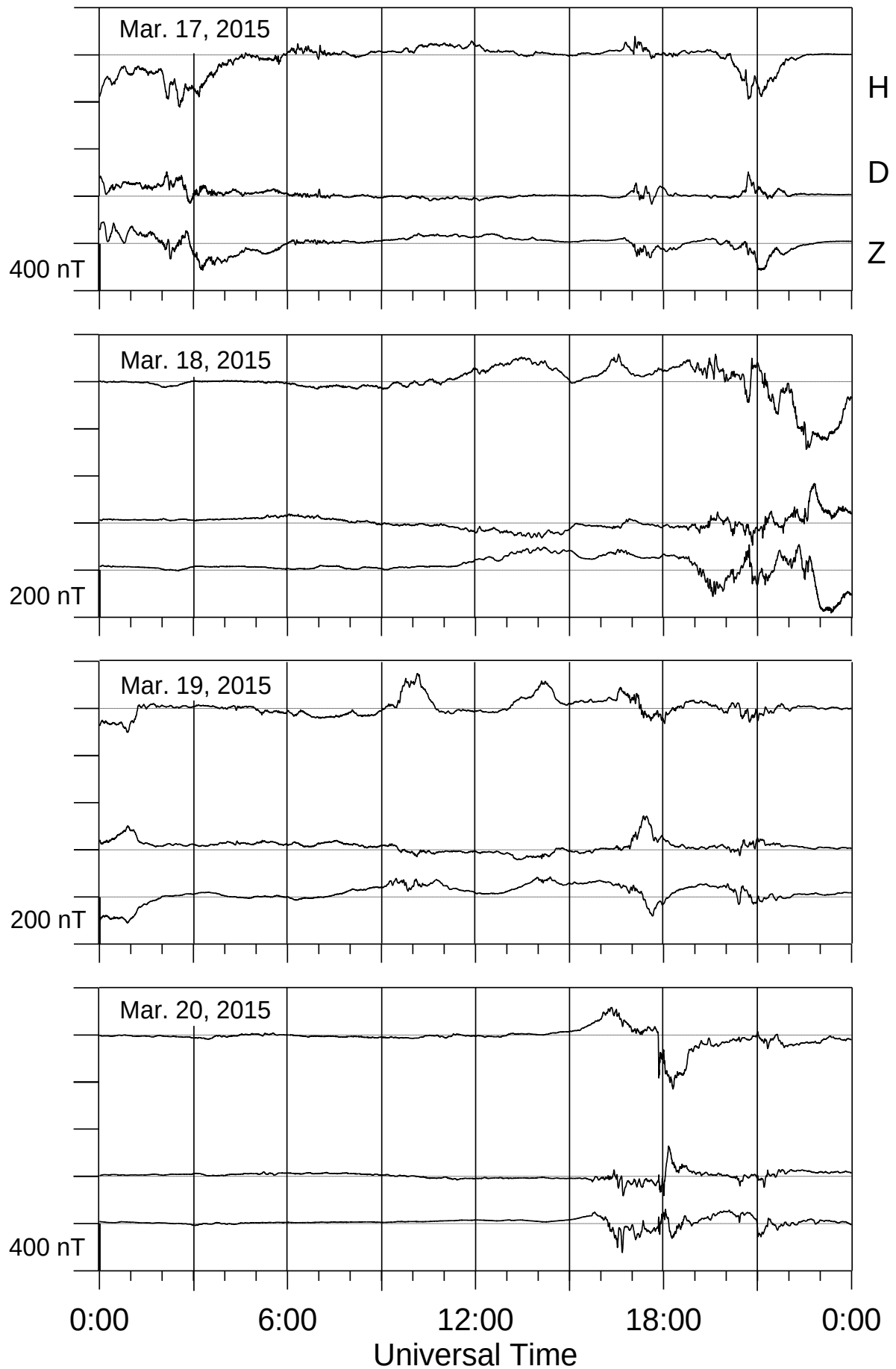
Lovozero magnetometer



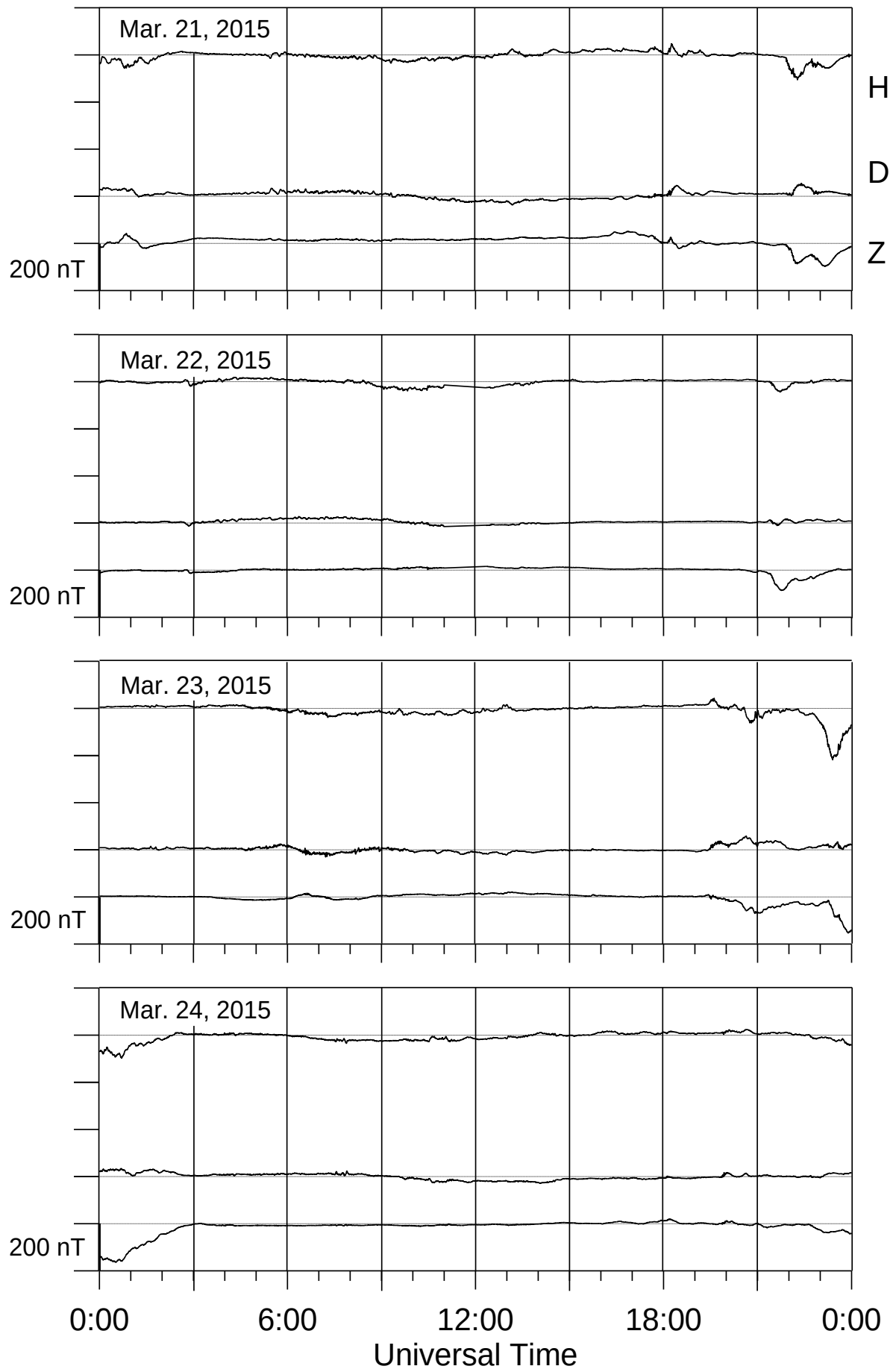
Lovozero magnetometer



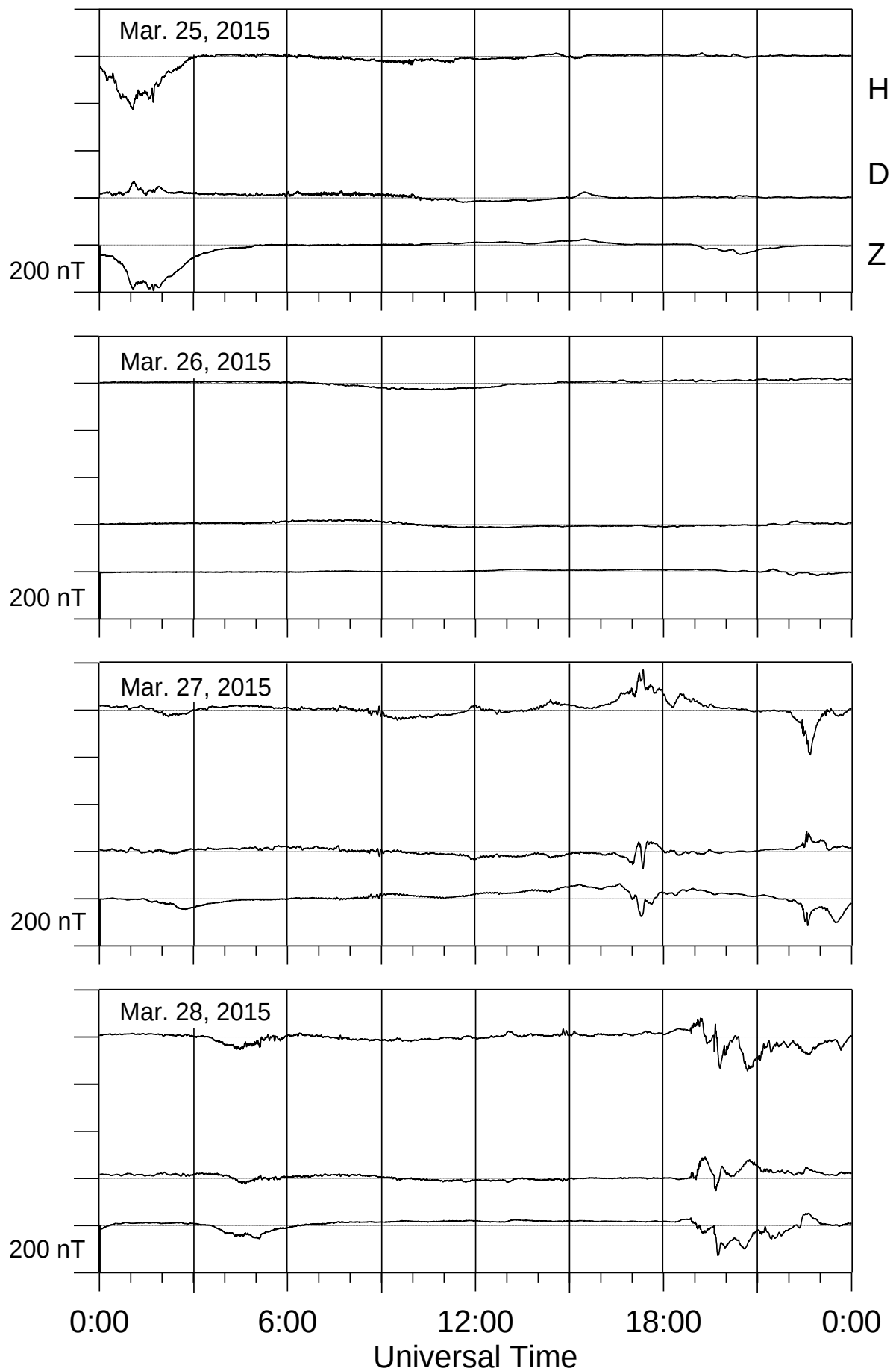
Lovozero magnetometer



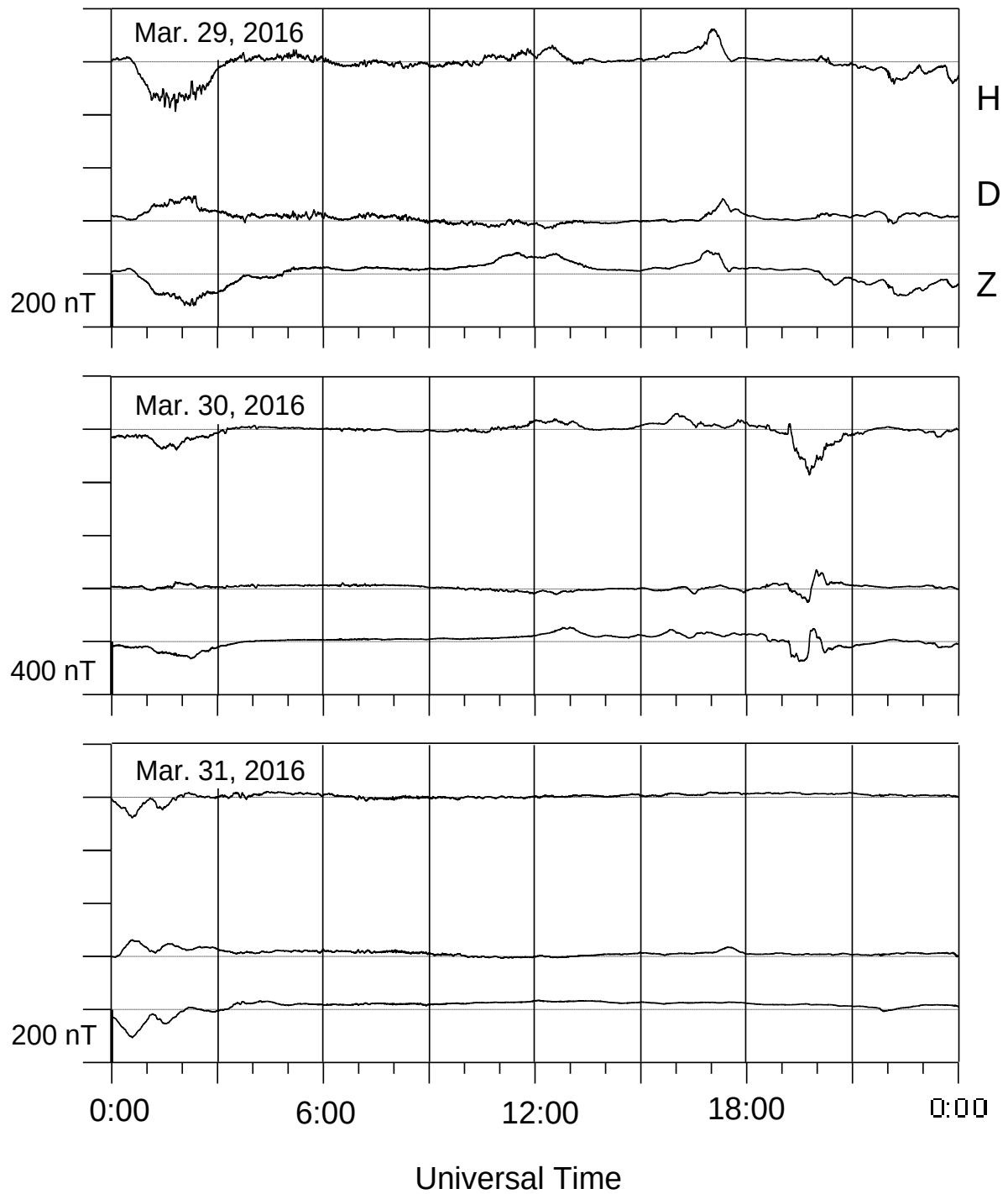
Lovozero magnetometer



Lovozero magnetometer



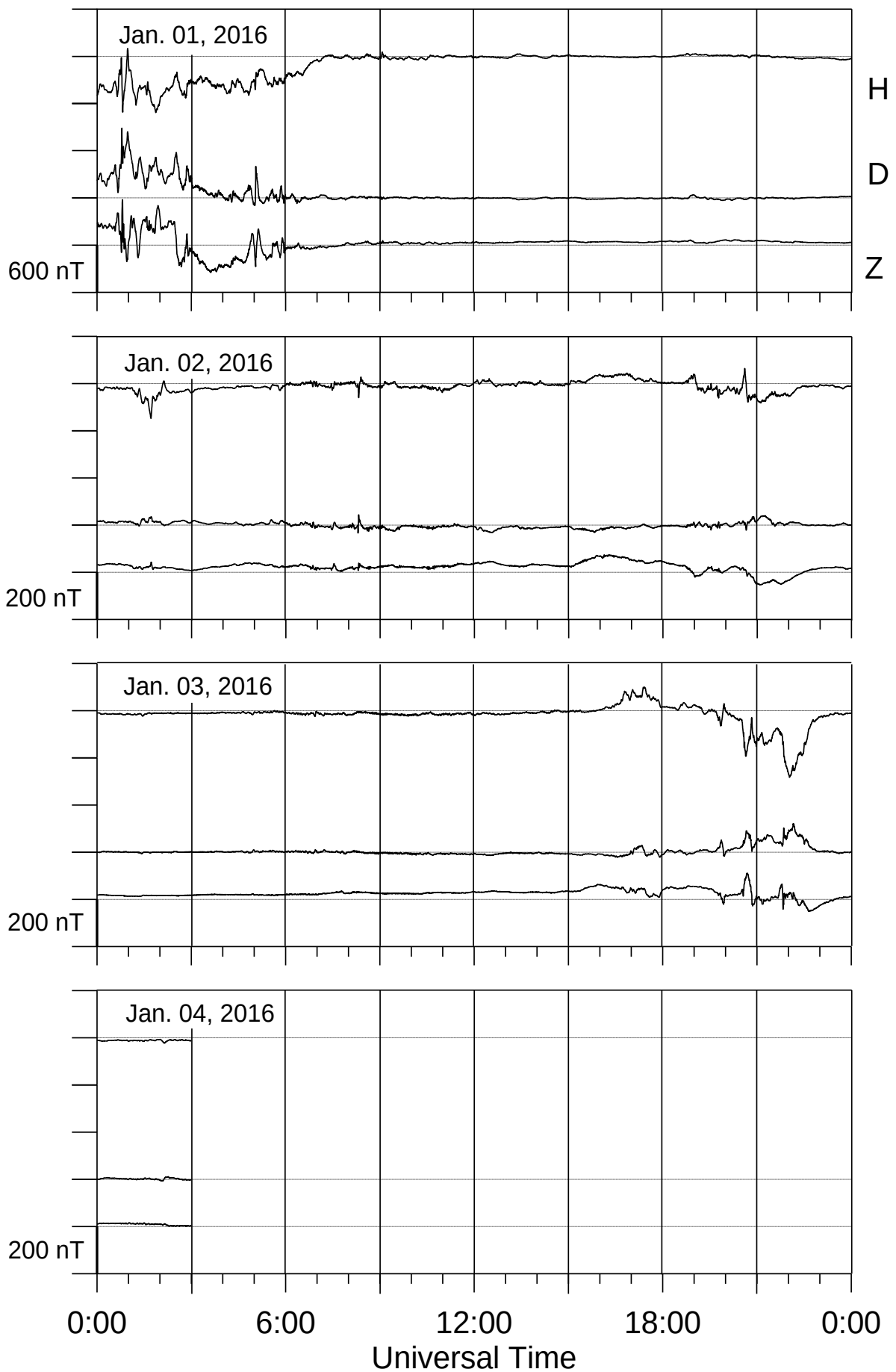
Lovozero magnetometer



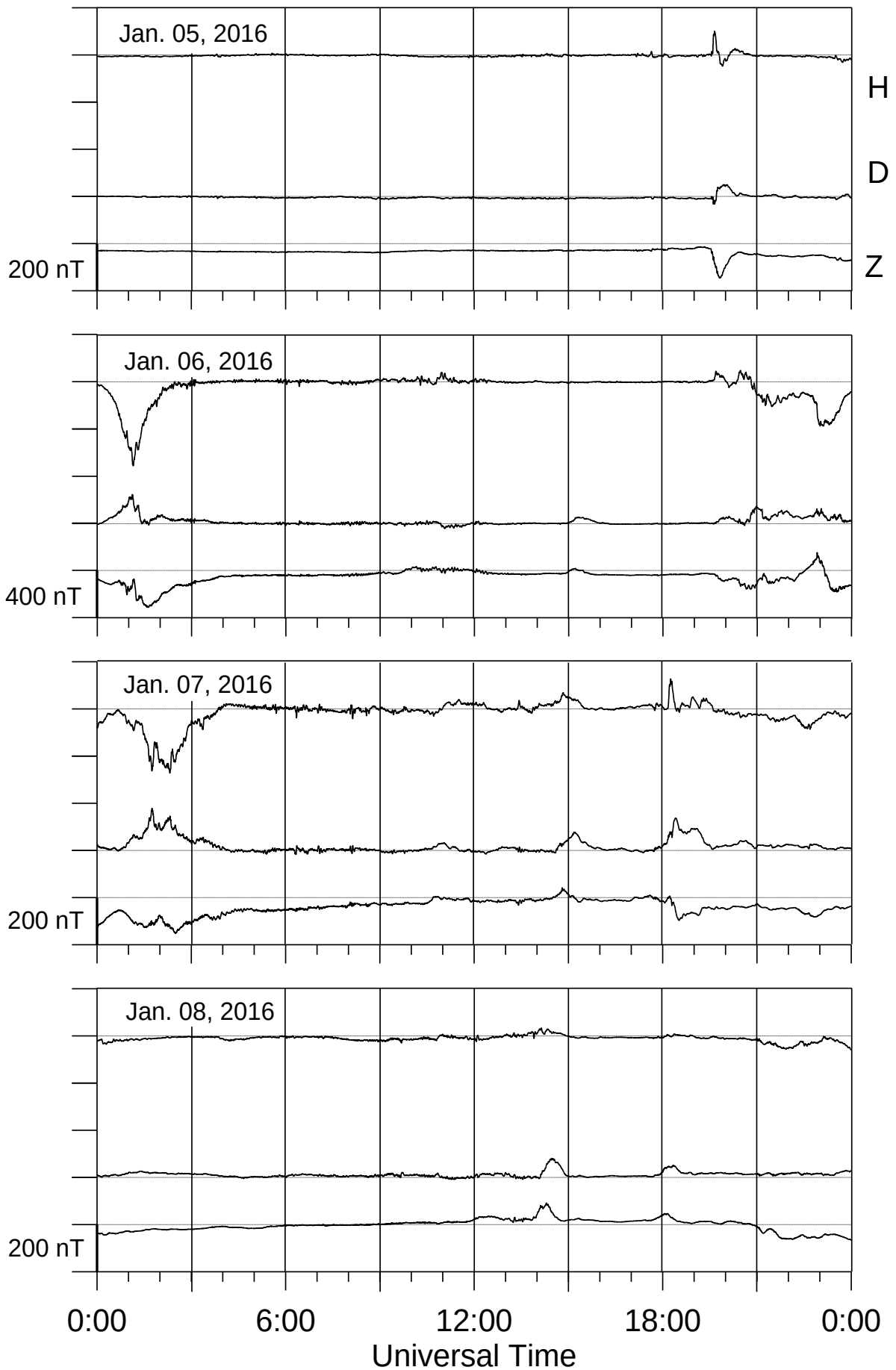
LOPARSKAYA MAGNETOGRAMS

January - March 2016

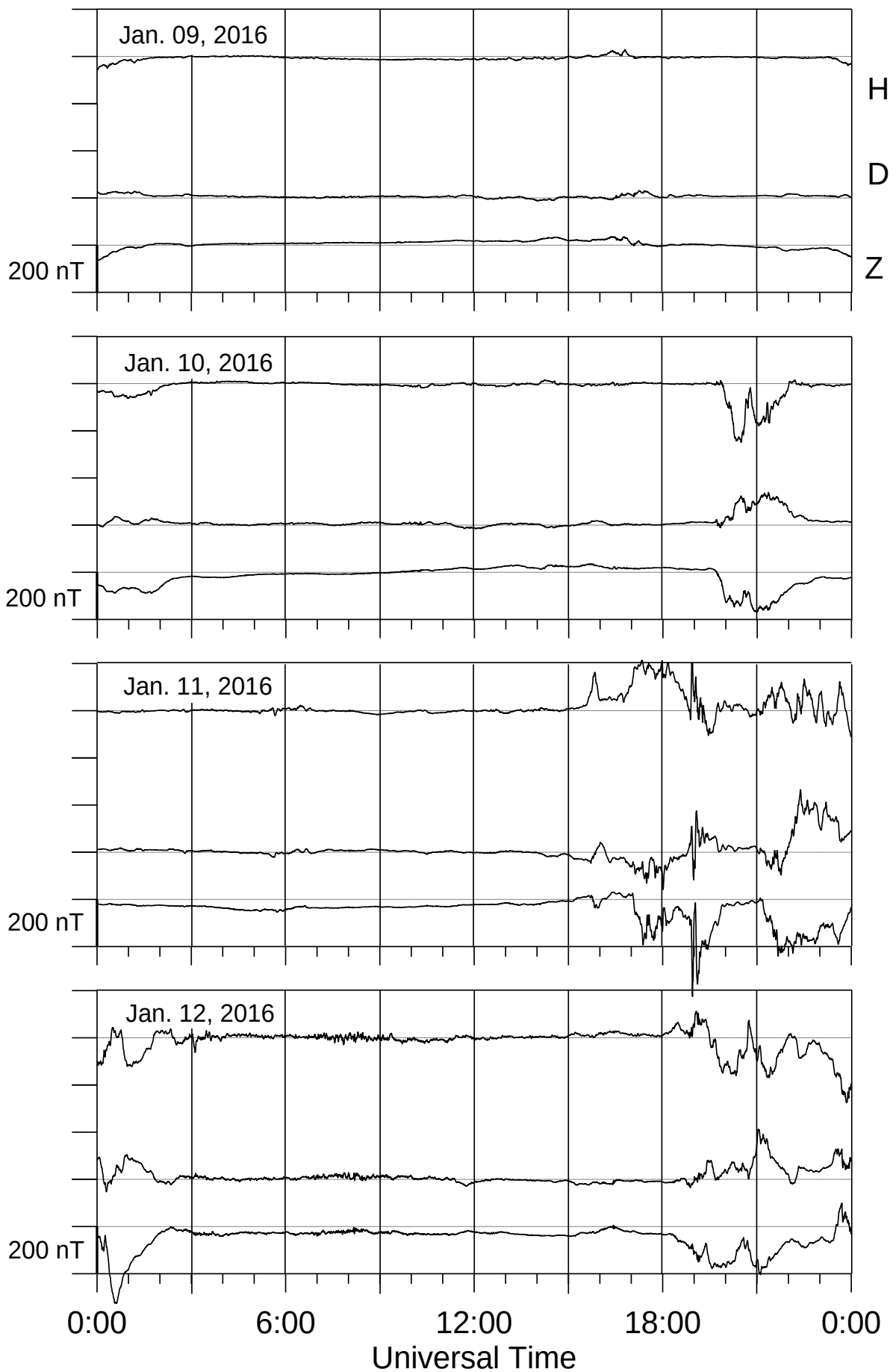
Loparskaya magnetometer



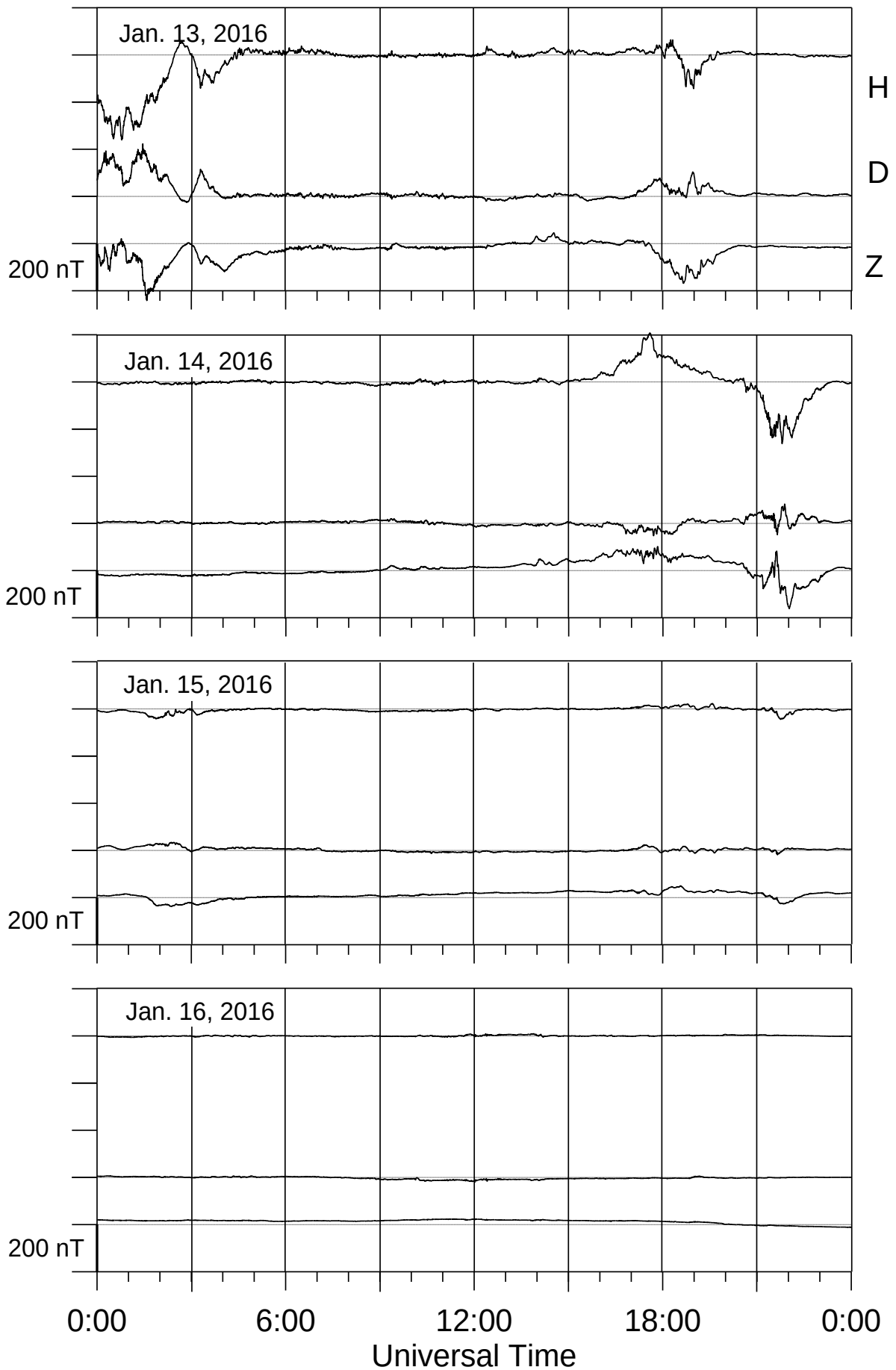
Loparskaya magnetometer



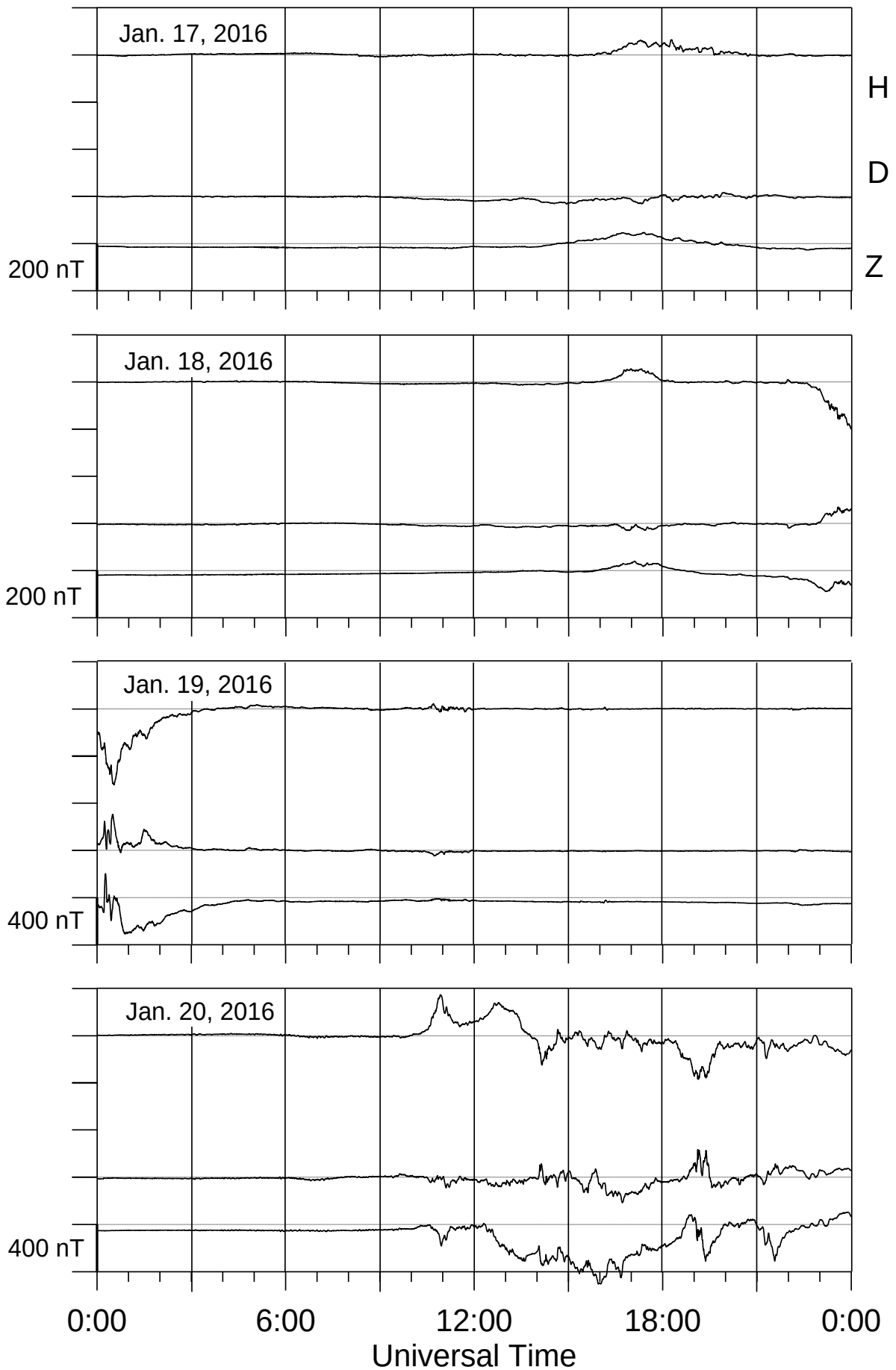
Loparskaya magnetometer



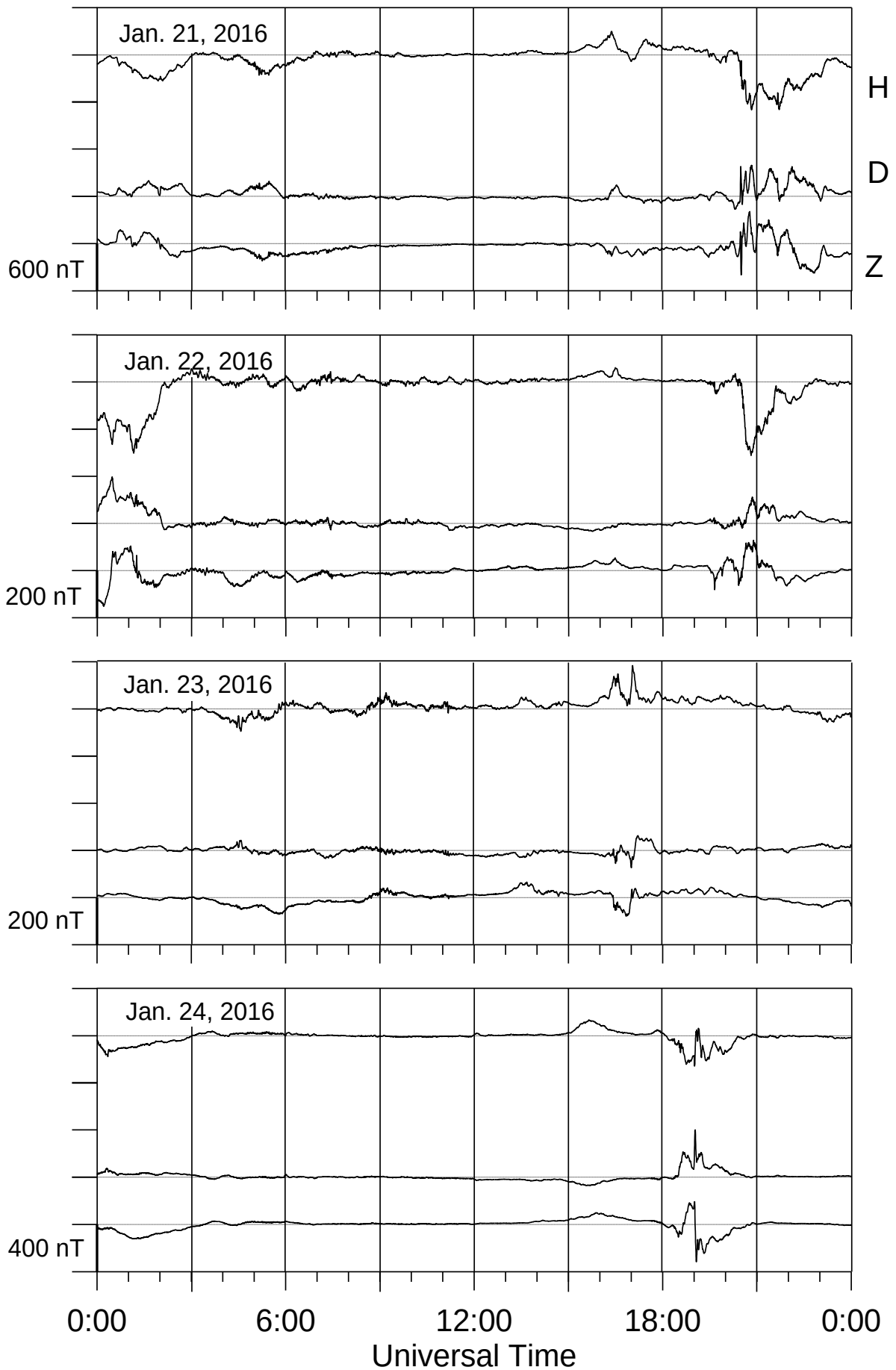
Loparskaya magnetometer



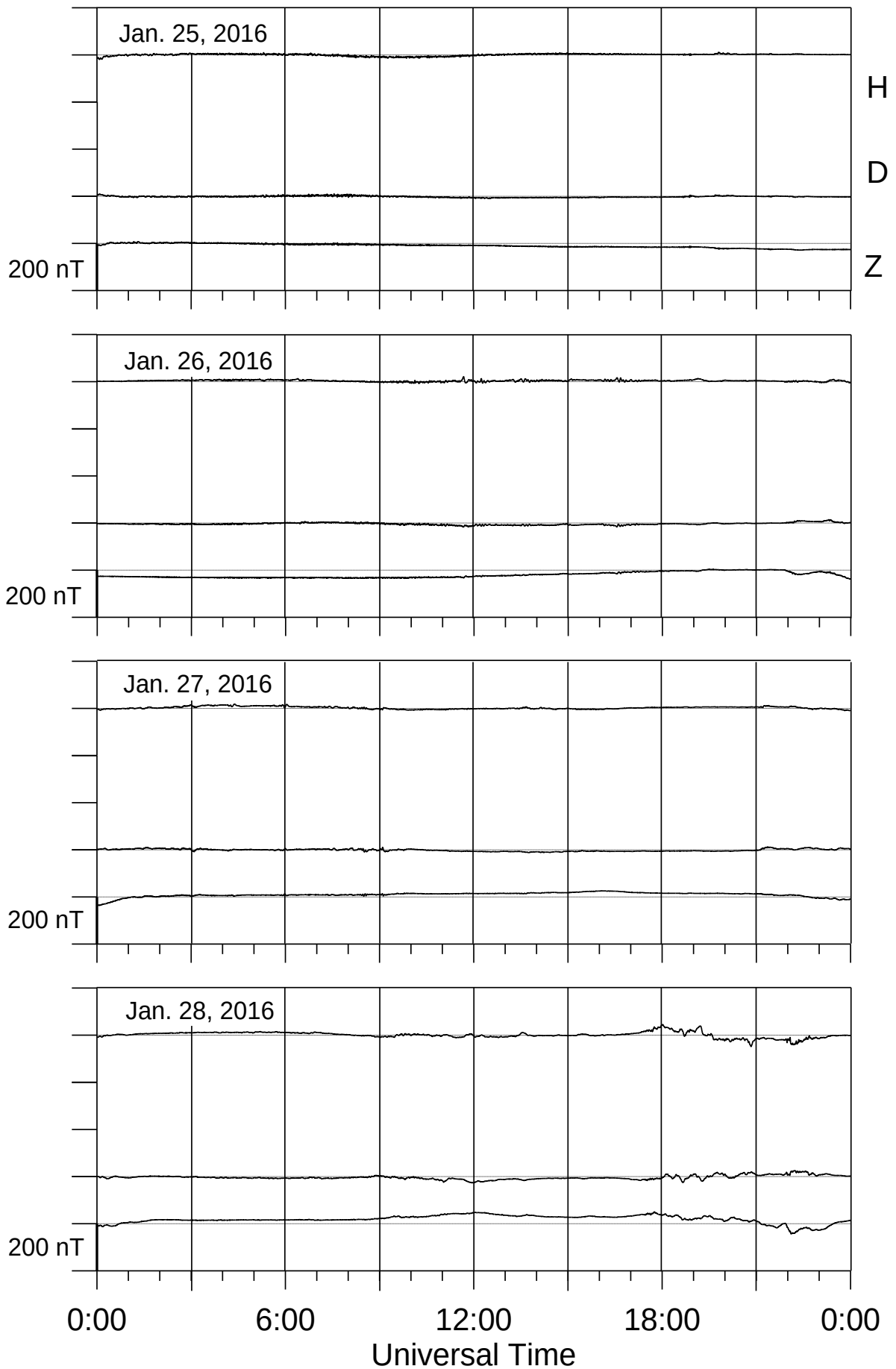
Loparskaya magnetometer



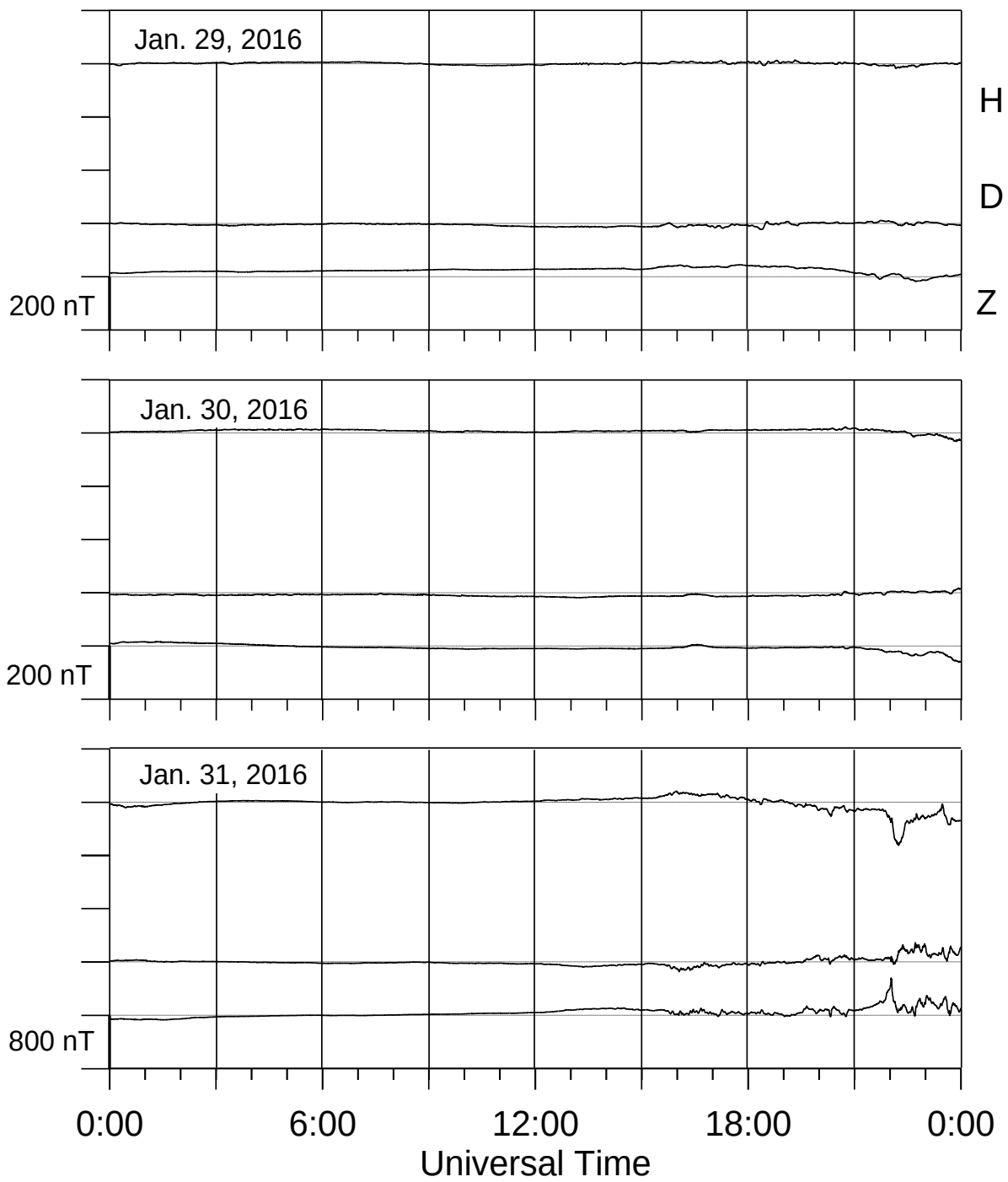
Loparskaya magnetometer



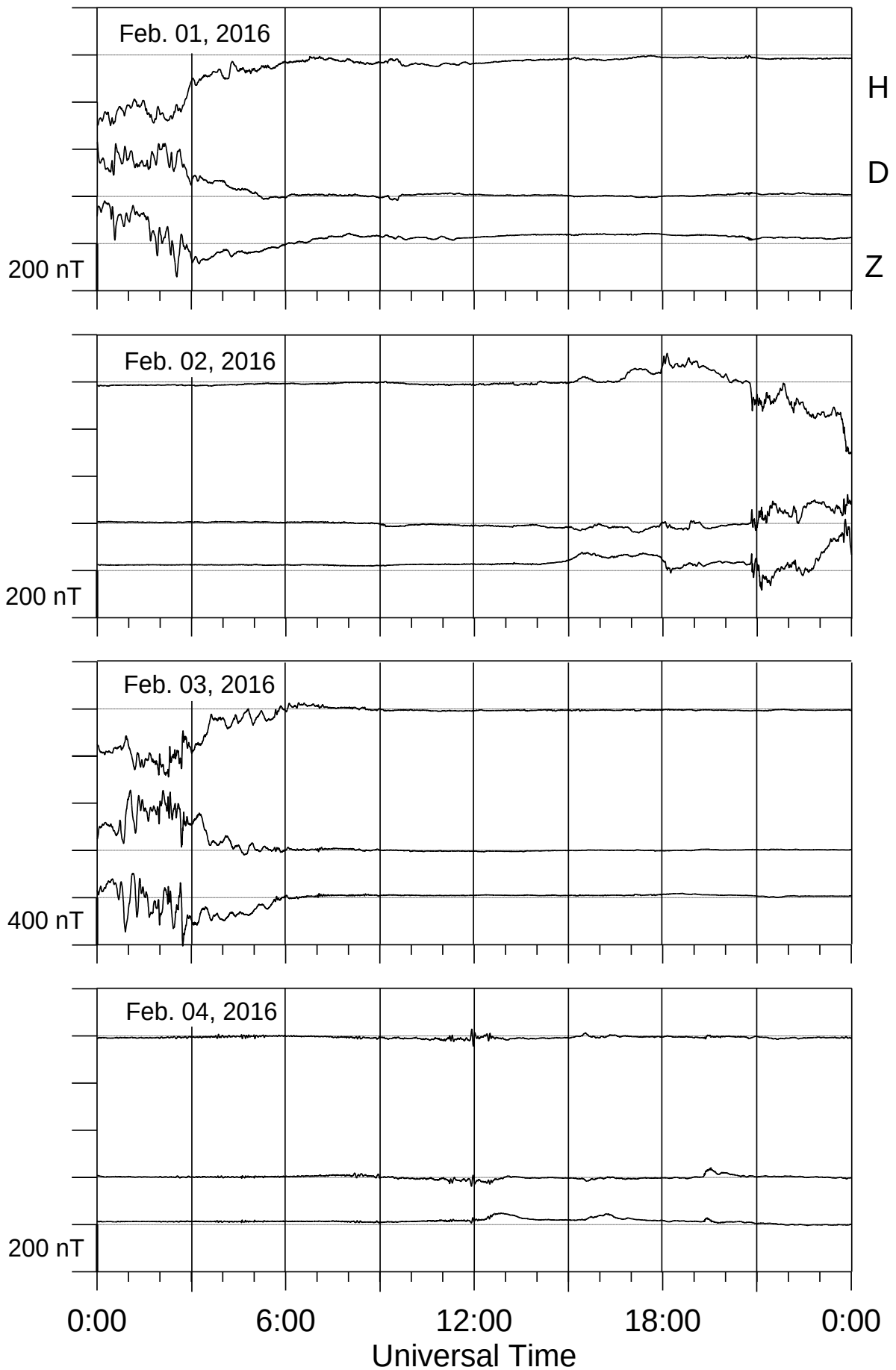
Loparskaya magnetometer



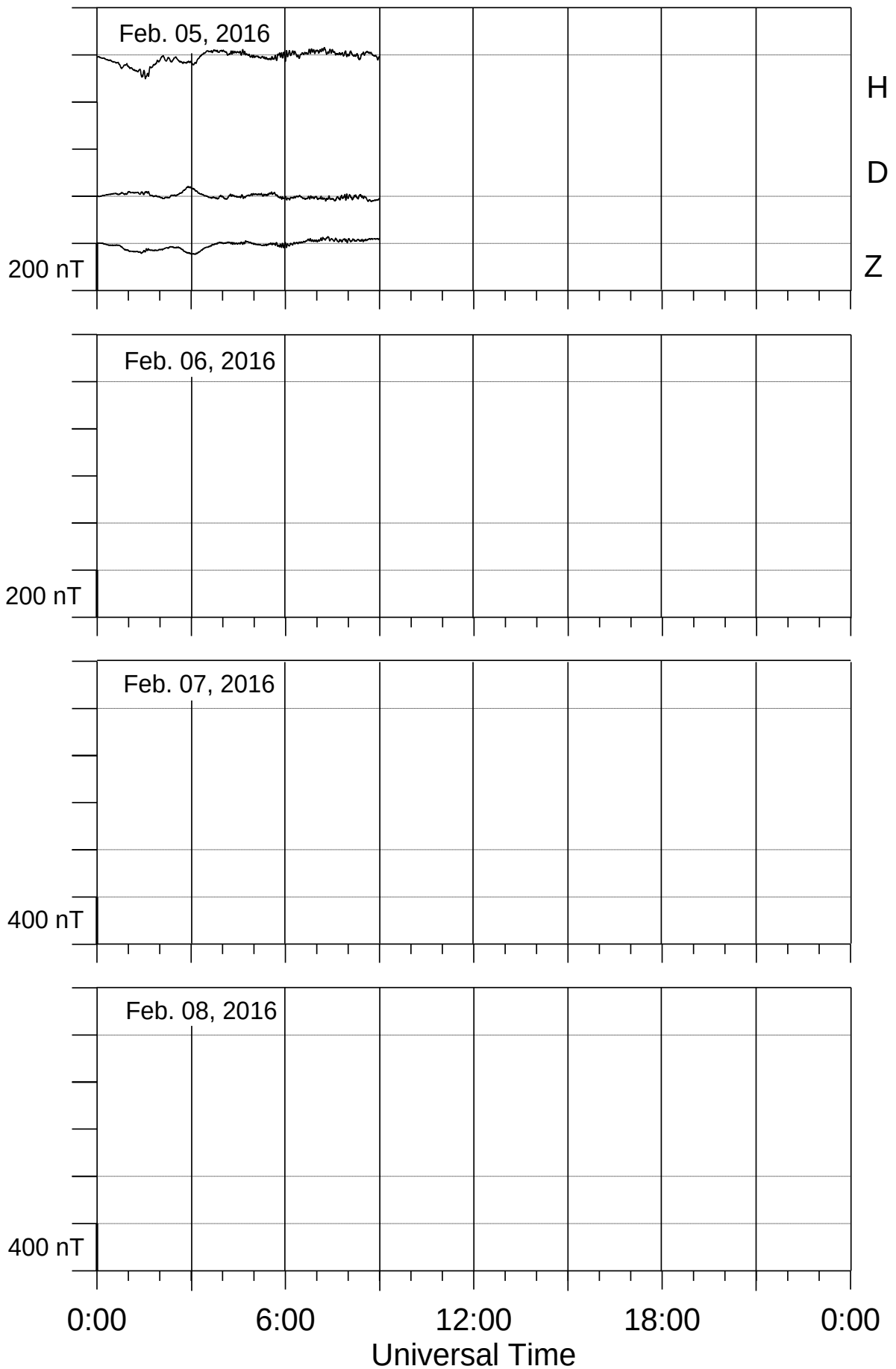
Loparskaya magnetometer



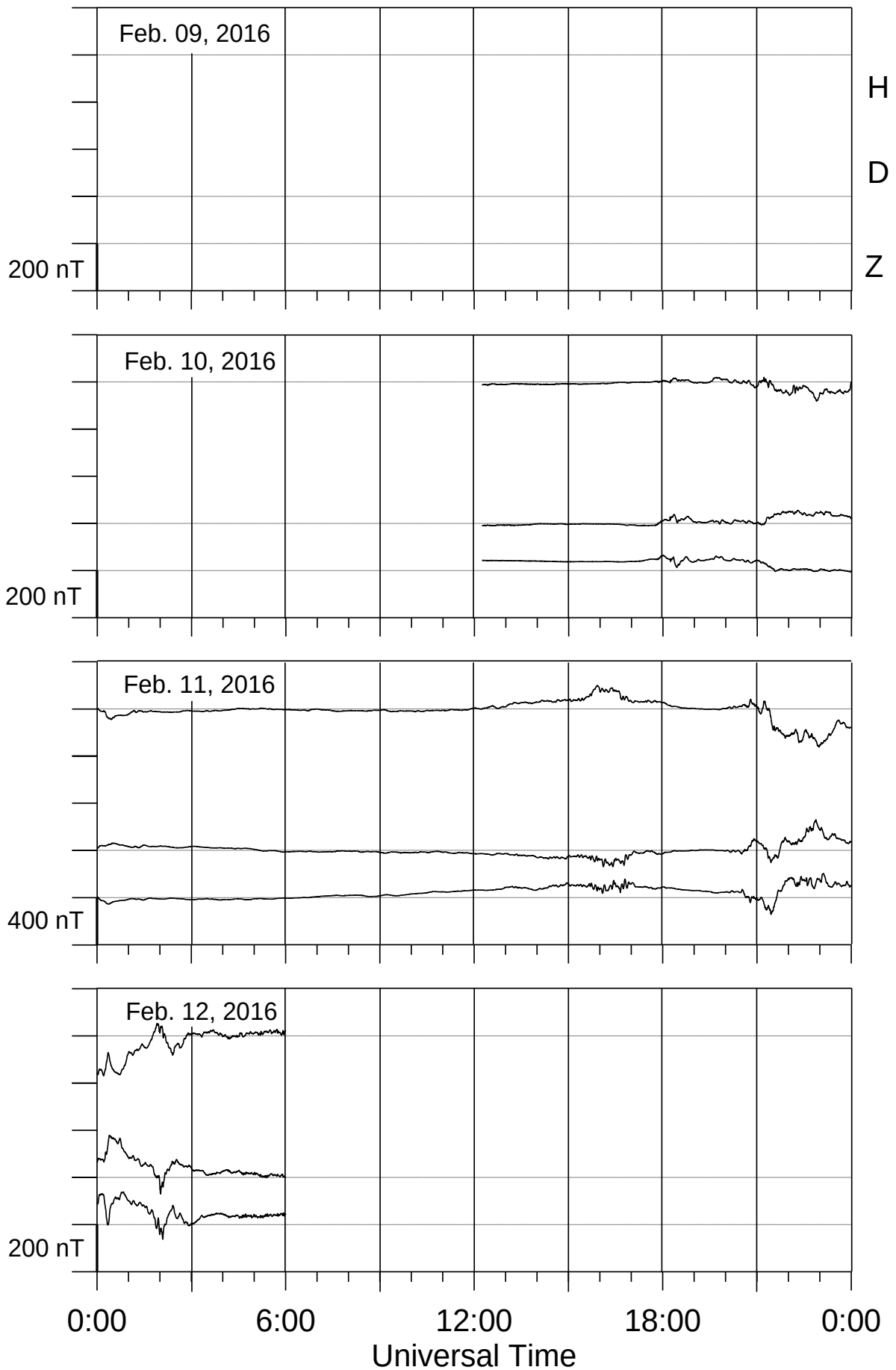
Loparskaya magnetometer



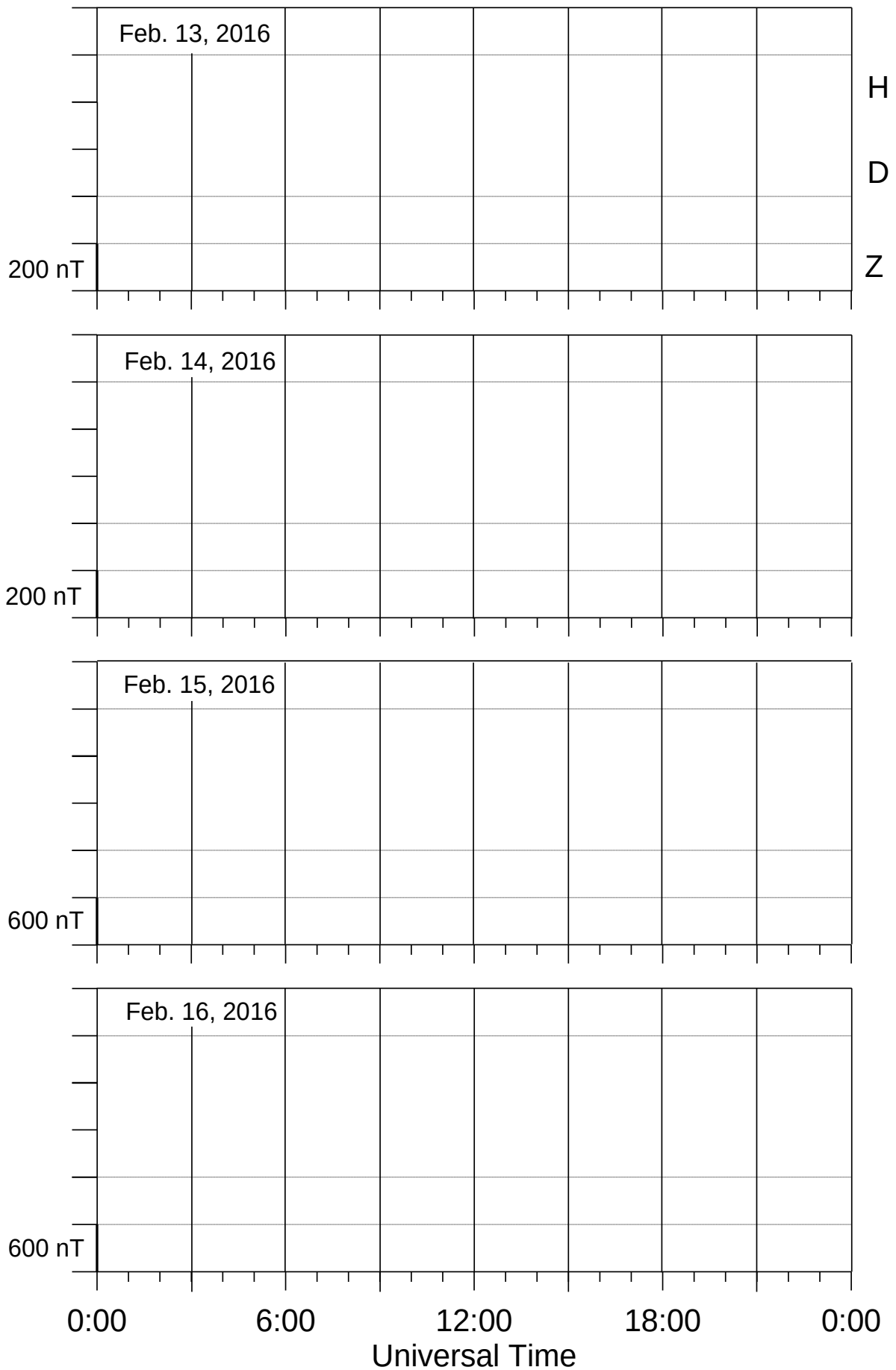
Loparskaya magnetometer



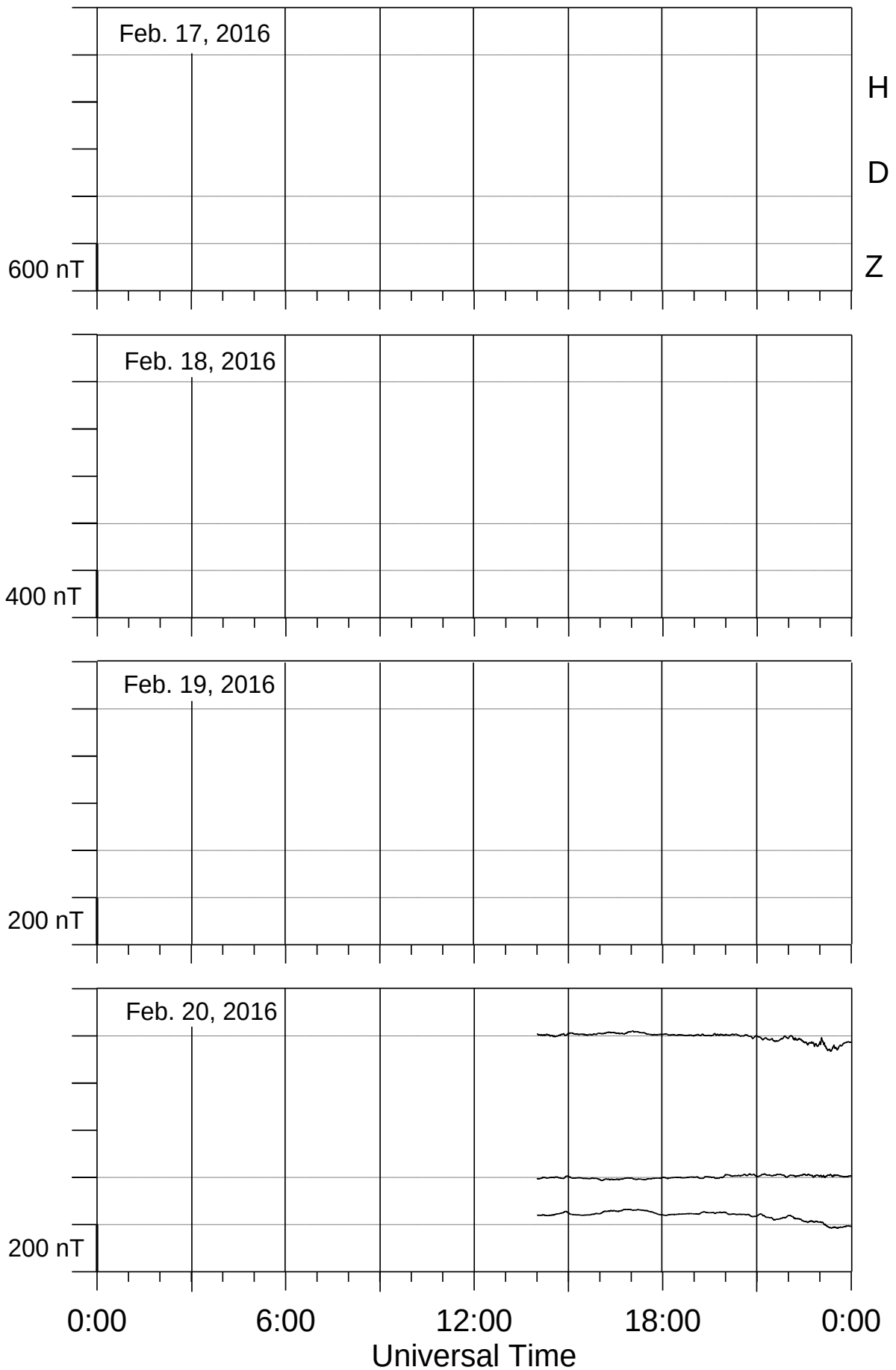
Loparskaya magnetometer



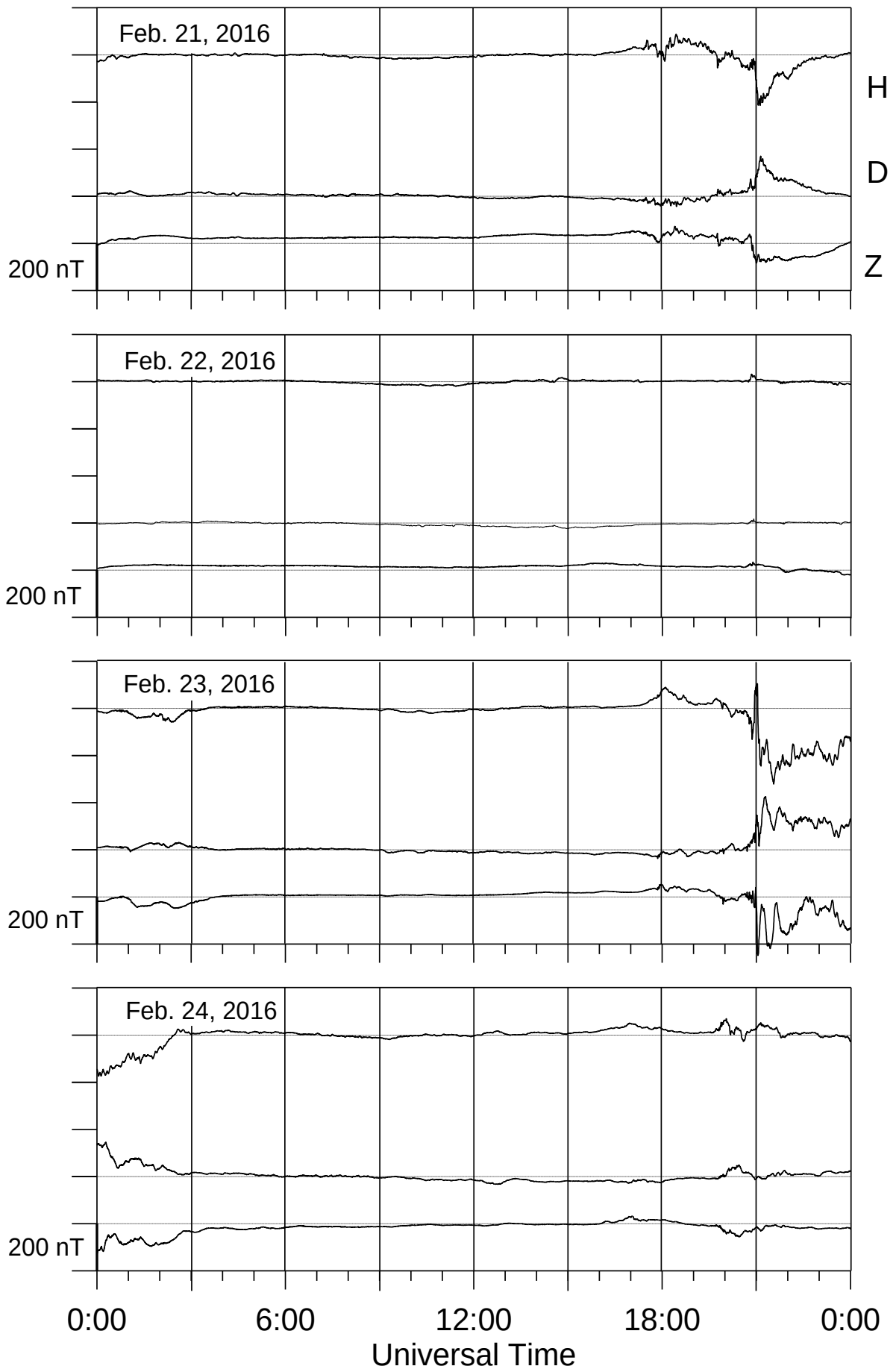
Loparskaya magnetometer



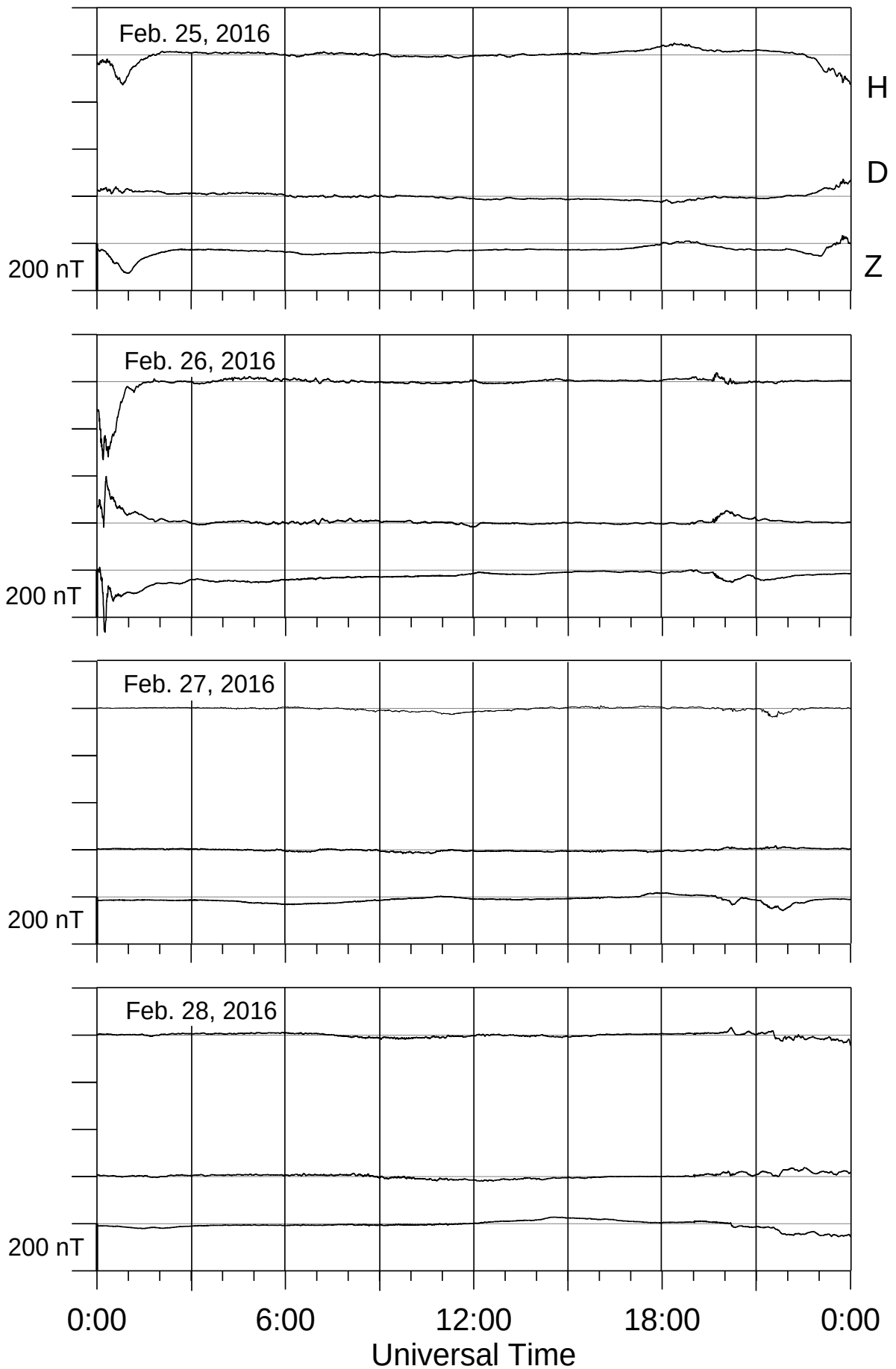
Loparskaya magnetometer



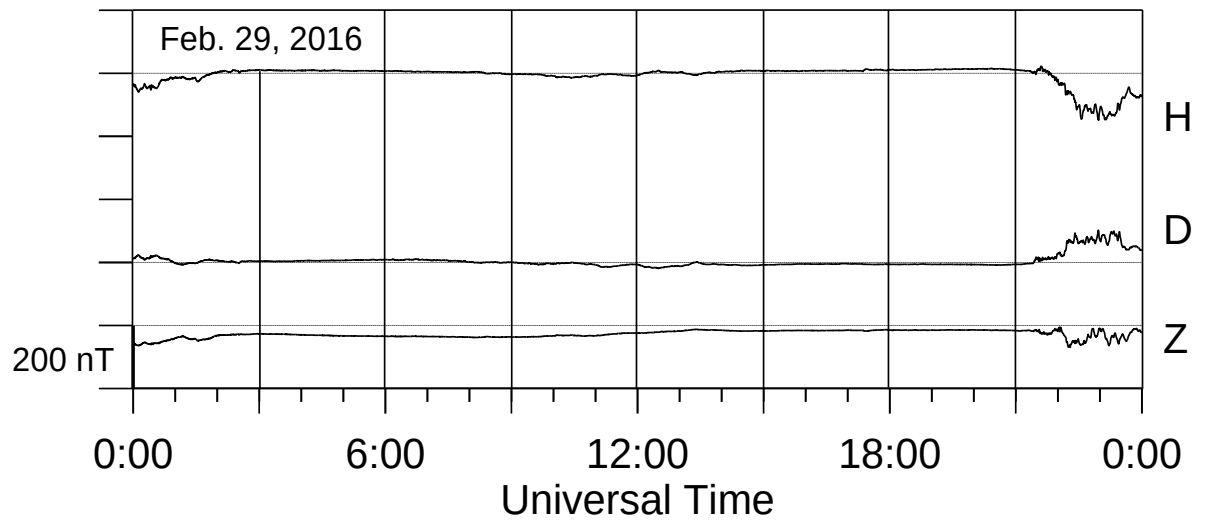
Loparskaya magnetometer



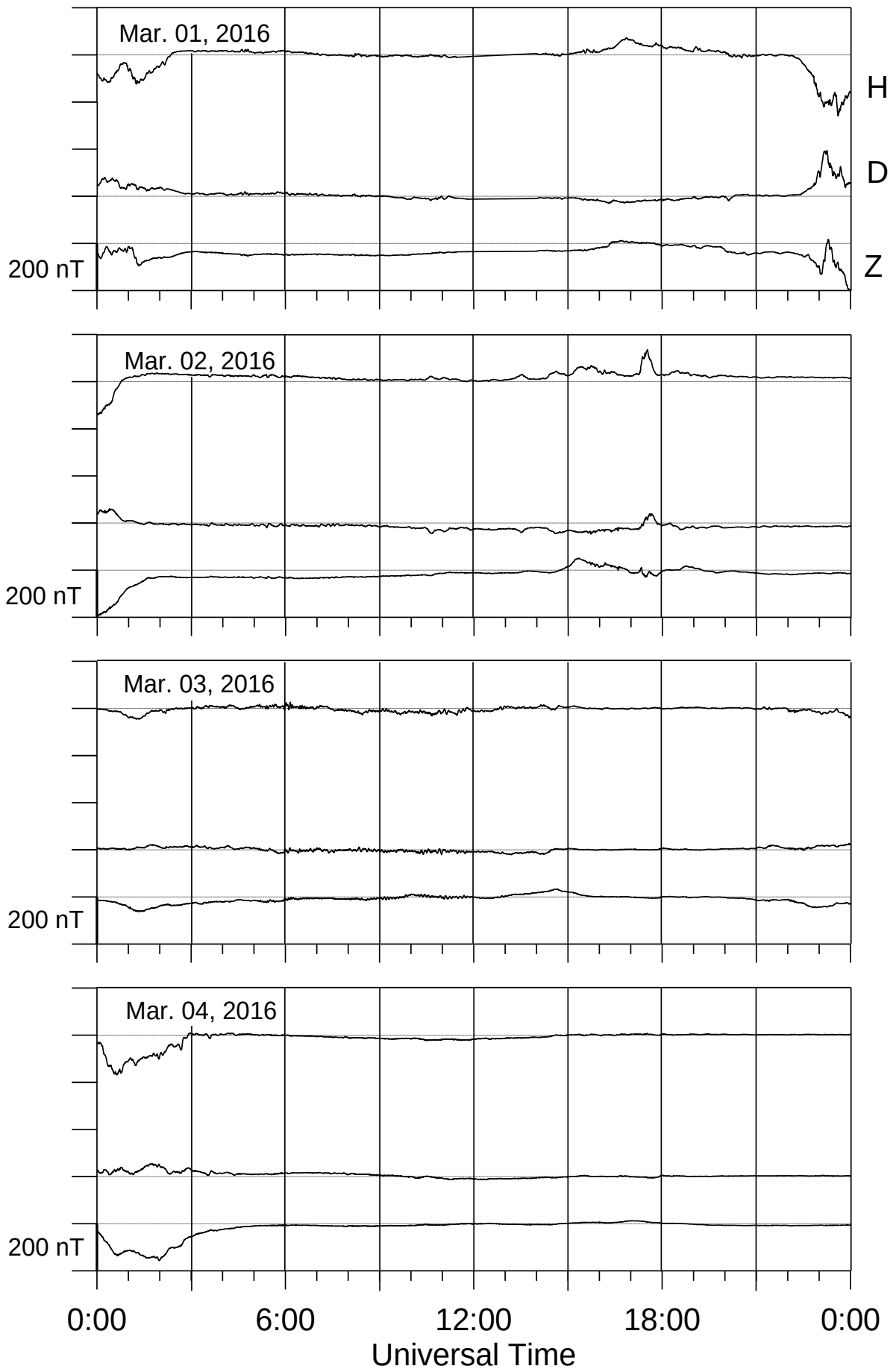
Loparskaya magnetometer



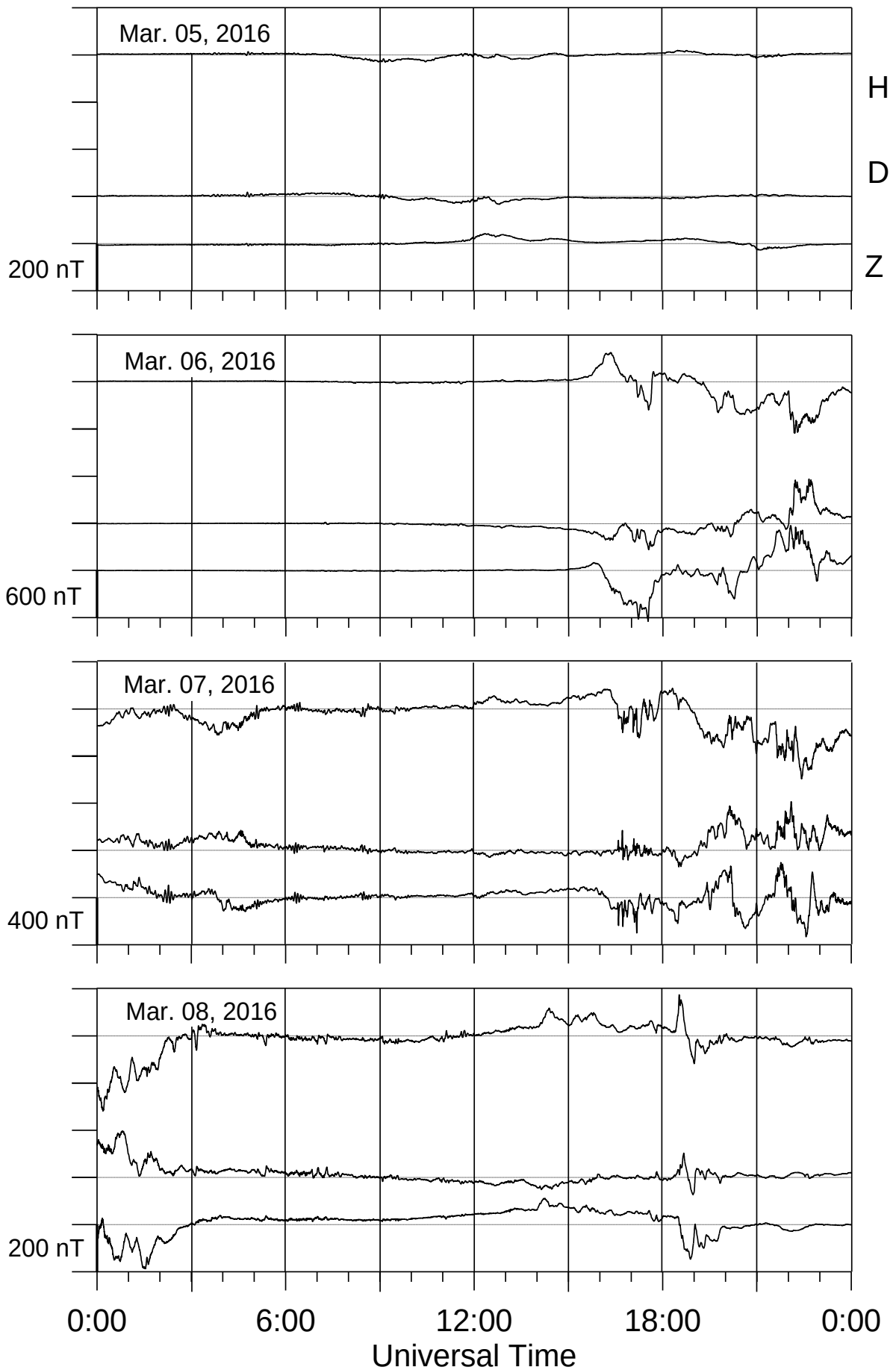
Loparskaya magnetometer



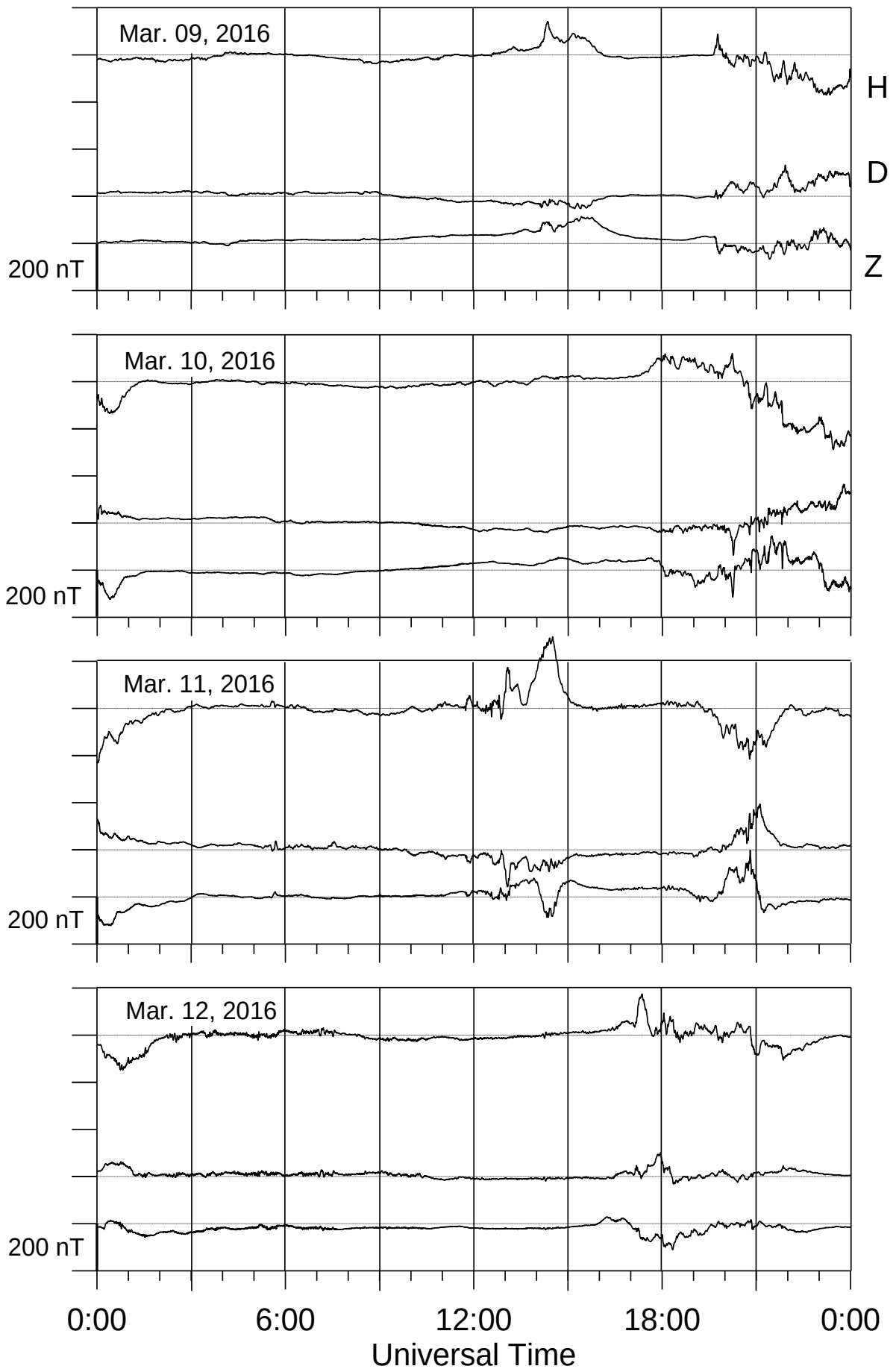
Loparskaya magnetometer



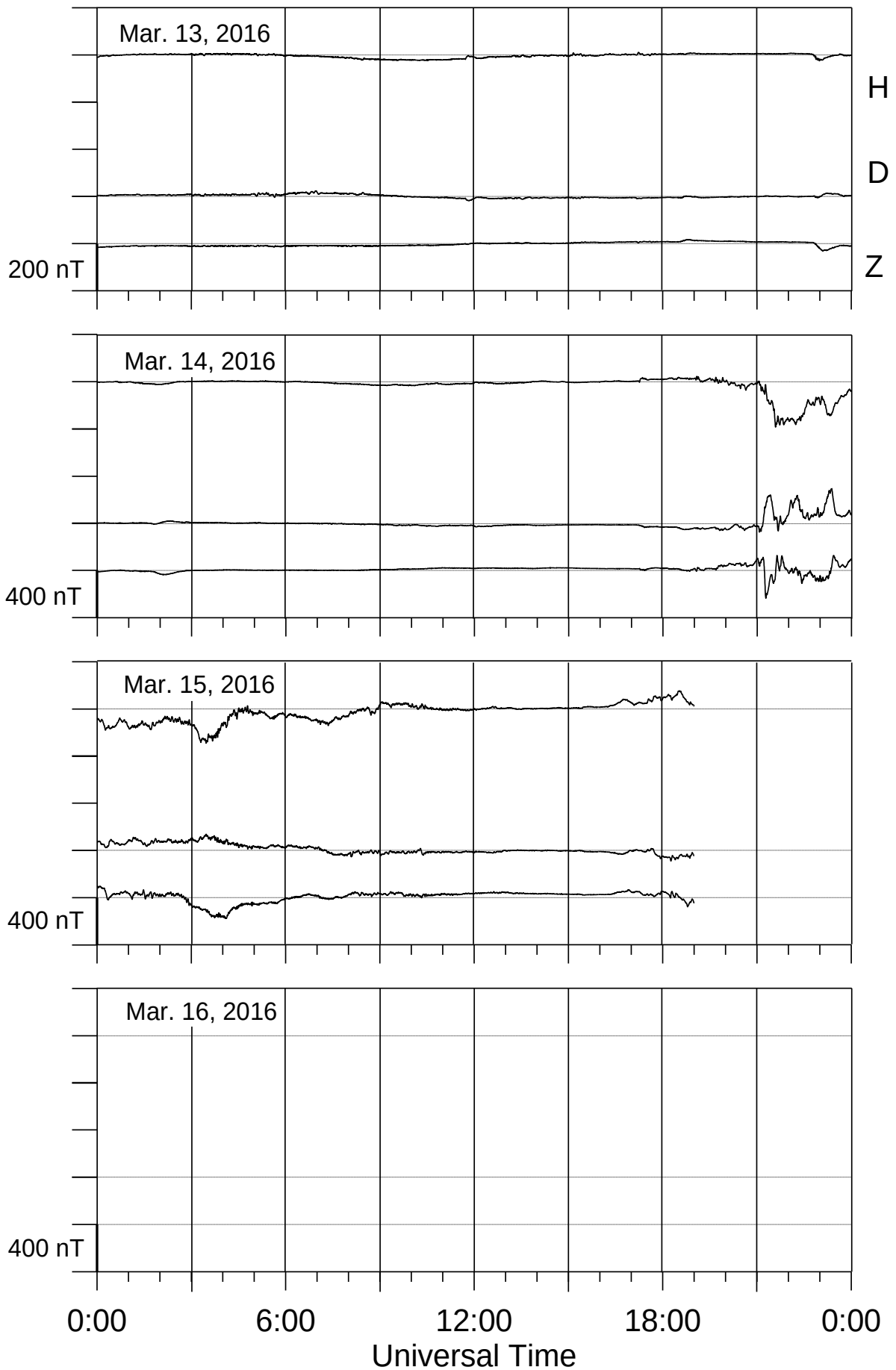
Loparskaya magnetometer



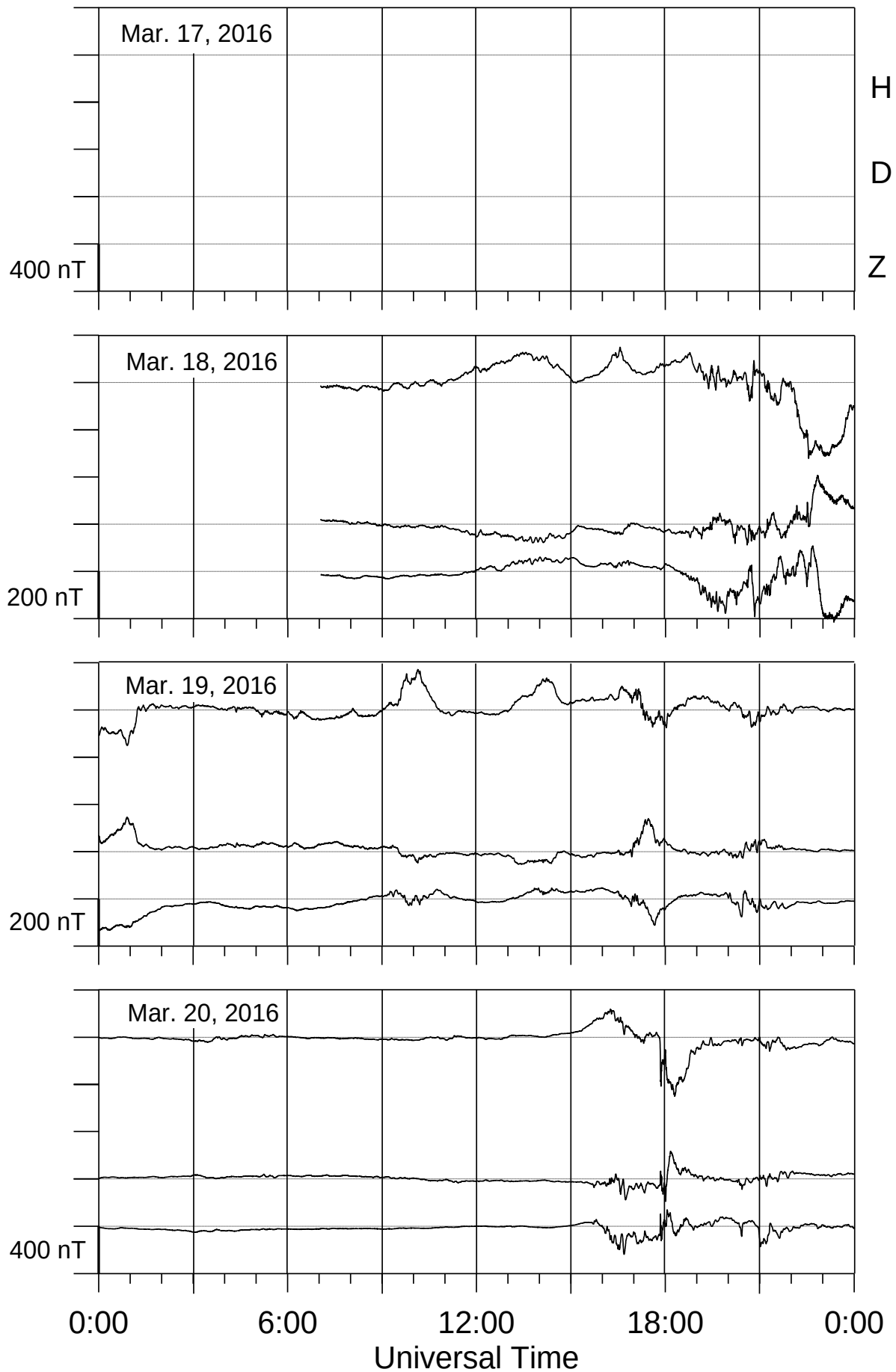
Loparskaya magnetometer



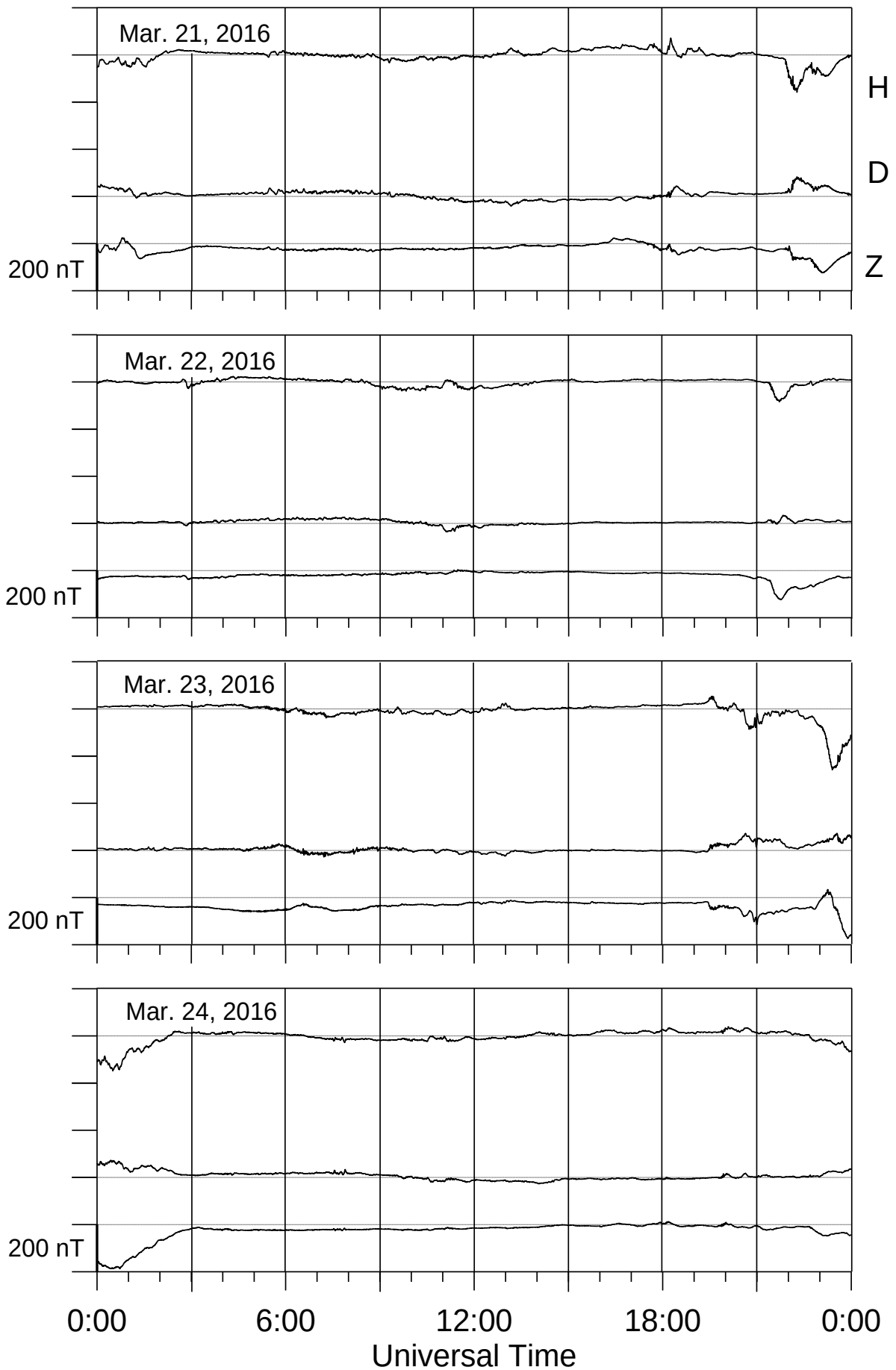
Loparskaya magnetometer



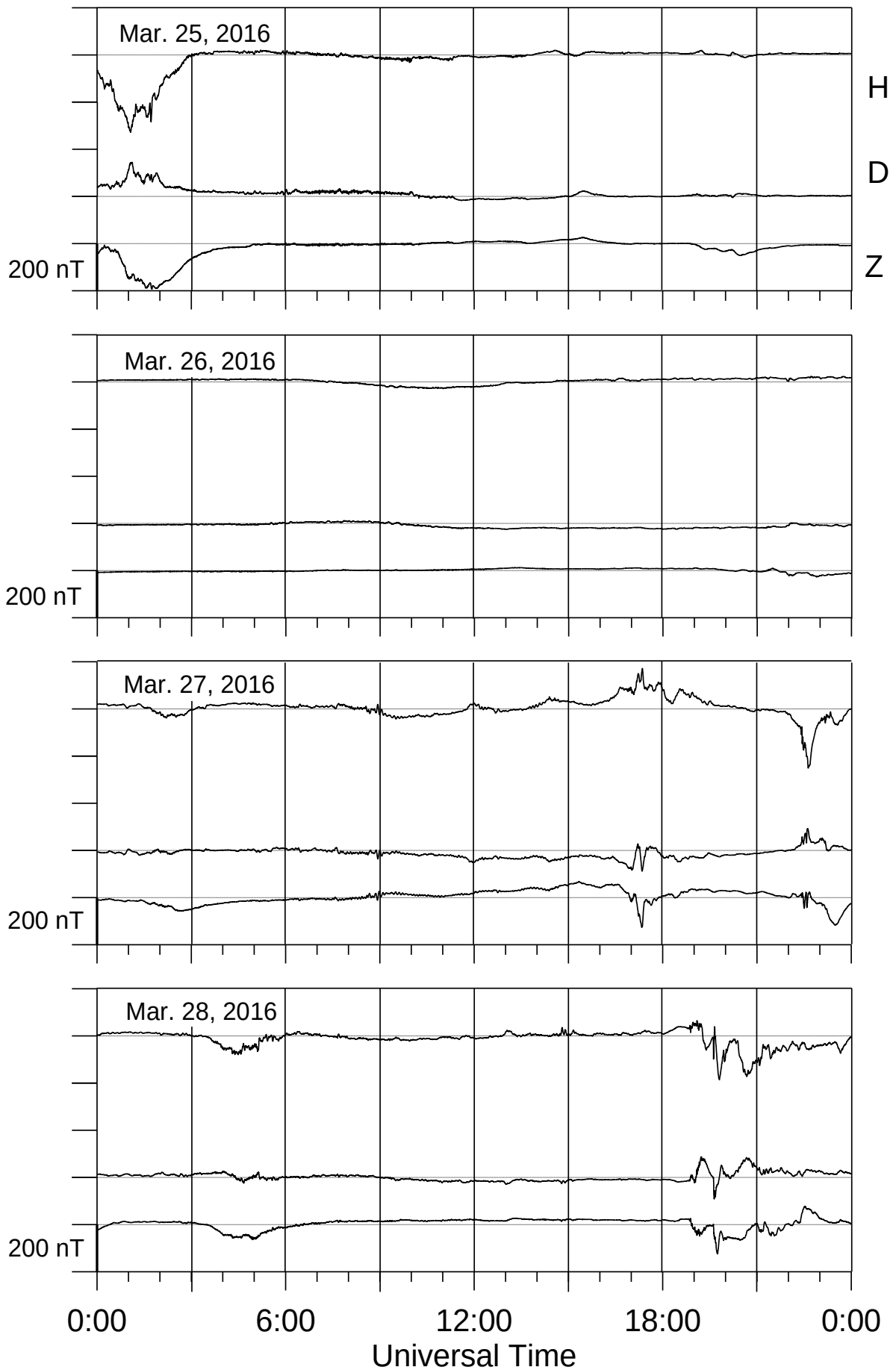
Loparskaya magnetometer



Loparskaya magnetometer



Loparskaya magnetometer



Loparskaya magnetometer

