

POLAR GEOPHYSICAL INSTITUTE
RUSSIAN ACADEMY OF SCIENCES



PGI
GEOPHYSICAL DATA

2017

JANUARY

FEBRUARY

MARCH

MURMANSK, APATITY, RUSSIA

PGI

GEOPHYSICAL DATA

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This bulletin presents the preliminary ground-based optical, geomagnetic and cosmic ray data obtained by Polar Geophysical Institute in the first quarter of 2017. All-sky camera observations are published only for the quarters when observations were carried out. All data are available by request.

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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	386 128
February	415 300
March	419 235

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

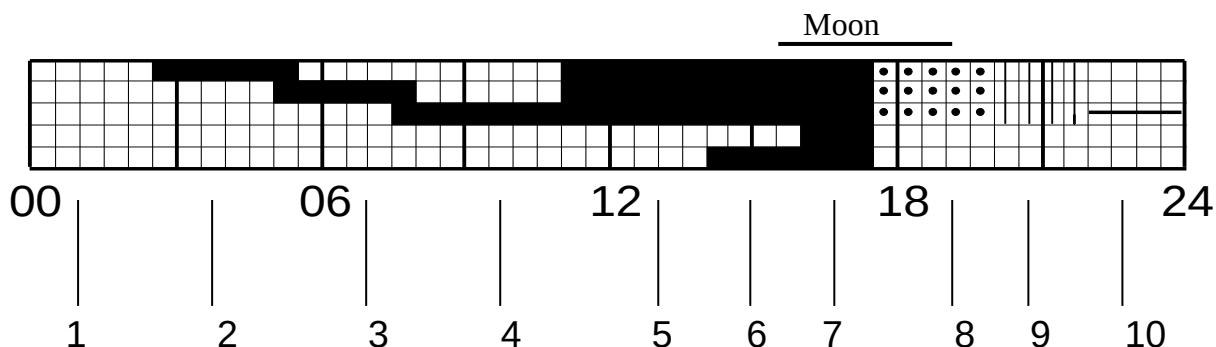
Calendar

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/>

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GEOMAGNETIC K-INDICES, LOVOZERO

January, 2017

Lower limit of K=9 is 1500 nT

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

GEOMAGNETIC K-INDICES, LOVOZERO

February, 2017

Lower limit of K=9 is 1500 nT

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

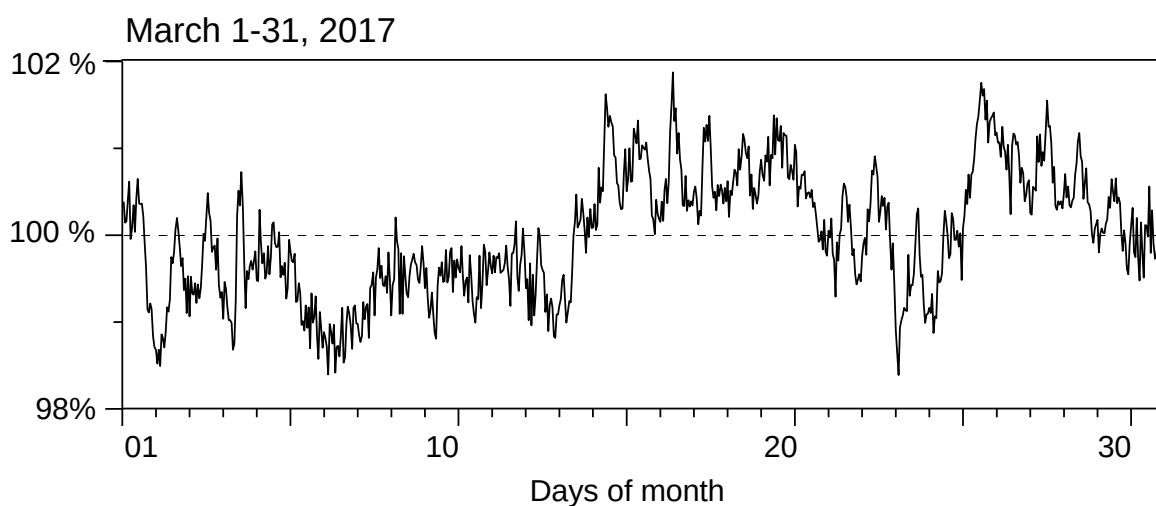
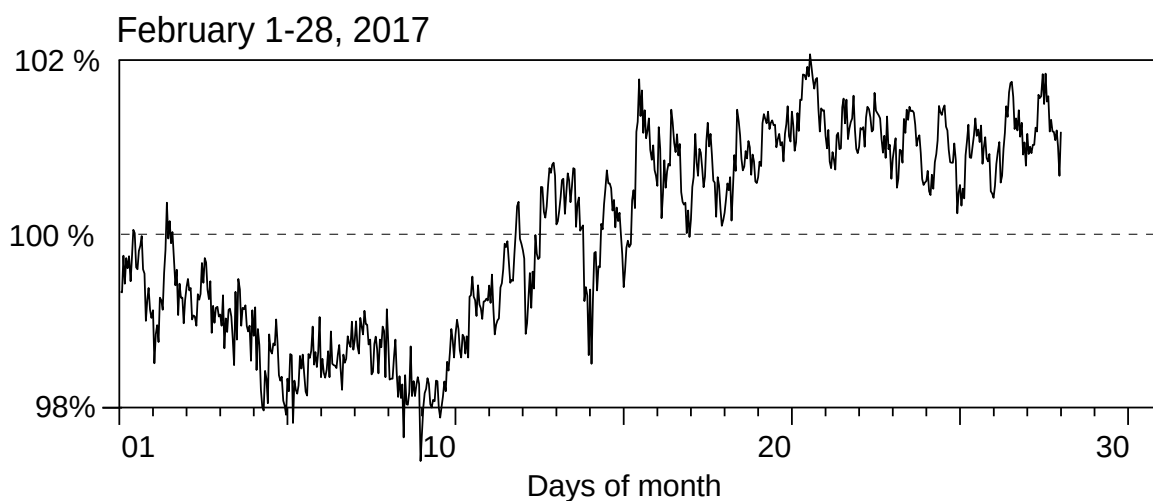
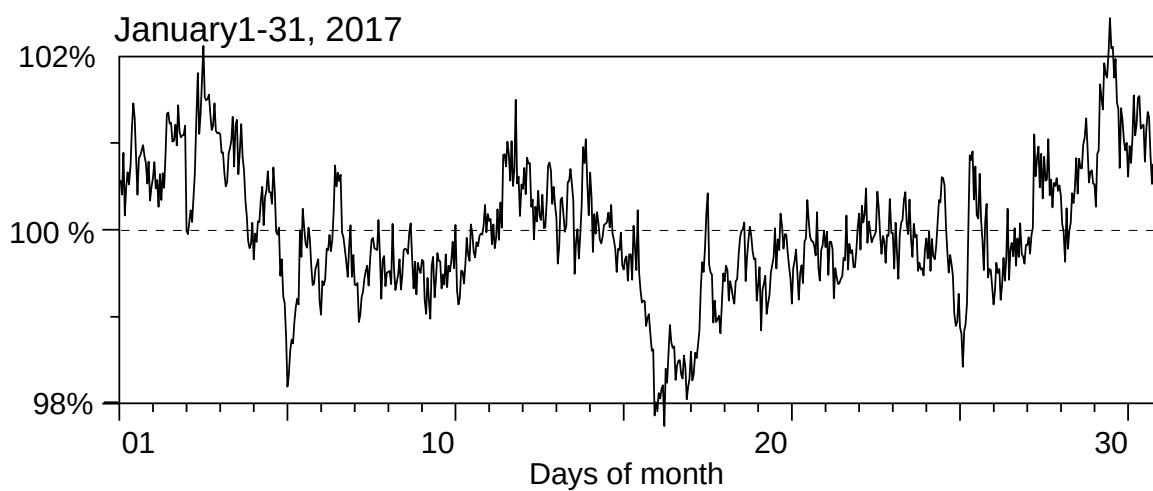
GEOMAGNETIC K-INDICES, LOVOZERO

March, 2017

Lower limit of K=9 is 1500 nT

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

Apatity neutron monitor



ALL – SKY CAMERA OBSERVATIONS

January - March 2017

[illegible]

January 18 - 19

[illegible]

January 20 - 21

[illegible]

January 22 - 23

[illegible]

[illegible]

January 26 - 27

[illegible]

January 27 - 28

[illegible]

January 28 - 29

[illegible]

January 29- 30

[illegible]

January 30 - 31

[illegible]

January 31 – February 01

[illegible]

February 01 - 02

[illegible]

CALENDAR OF TV OBSERVATIONS

February 18 - 19

[illegible]

February 19 - 20

[illegible]

February 20 - 21

[illegible]

February 21 - 22

[illegible]

February 22 - 23

[illegible]

February 23 - 24

[illegible]

February 24 - 25

[illegible]

February 25 - 26

[illegible]

CALENDAR OF TV OBSERVATIONS

February 27 - 28

February 28 - March 01

March 01 - 02

March 02 - 03

March 03 - 04

March 04 - 05

March 05 - 06

March 07 - 08

March 08 - 09

March 09 - 10

March 10 - 11

March 11 - 12

March 12 - 13

March 13 - 14

CALENDAR OF TV OBSERVATIONS

March 15 - 16

March 16 - 17

March 17 - 18

March 18 - 19

March 19 - 20

March 20 - 21

[illegible]

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

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

[illegible]

March 27 - 28																		
UT	14	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05		
LOZ																		
APT																		

[illegible][illegible]

[illegible]

March 31

[illegible]

Apatity ascaplots

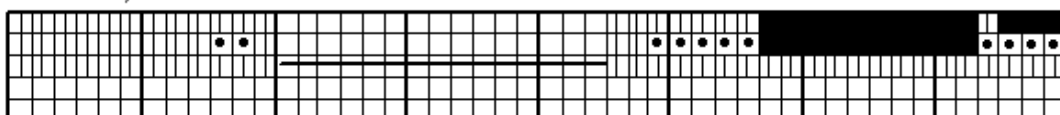
Jan. 01, 2017



Jan. 02, 2017



Jan. 03, 2017



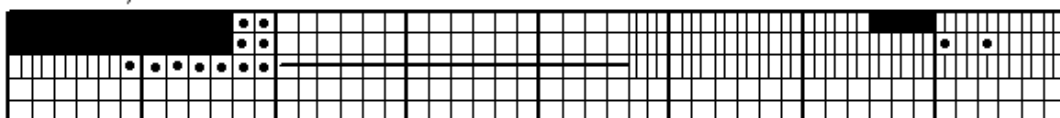
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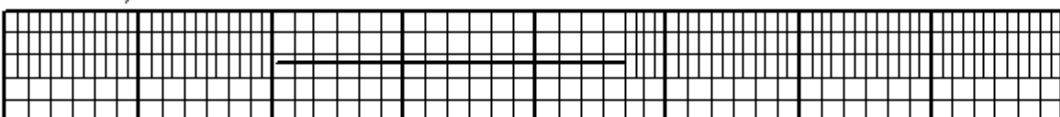
Jan. 05, 2017



Jan. 06, 2017



Jan. 07, 2017



Jan. 08, 2017



Jan. 09, 2017



Jan. 10, 2017



00

06

12

18

24

Universal Time

Apatity ascaplots

Jan. 11, 2017



Jan. 26, 2017



Jan. 29, 2017



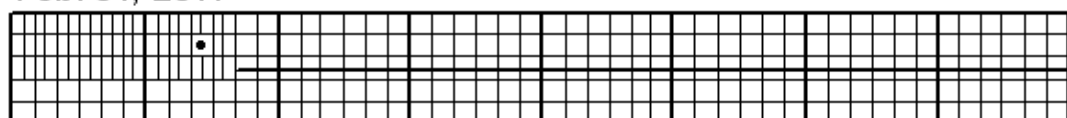
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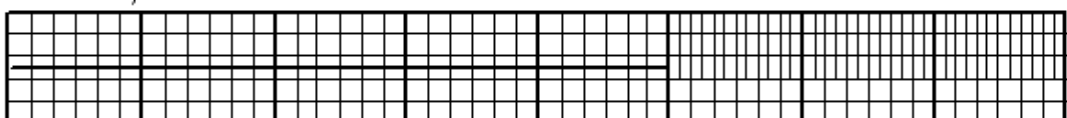
Jan. 31, 2017



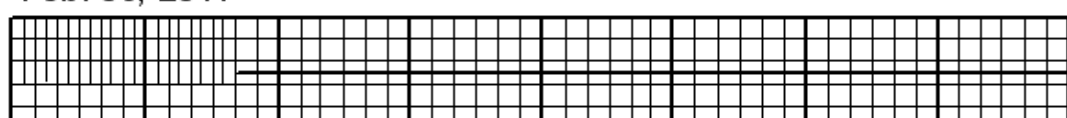
Feb. 01, 2017



Feb. 02, 2017



Feb. 03, 2017



Feb. 04, 2017



Feb. 08, 2017

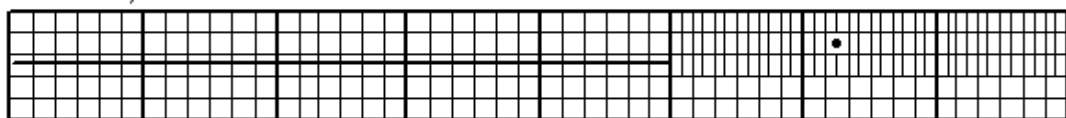


00 06 12 18 24

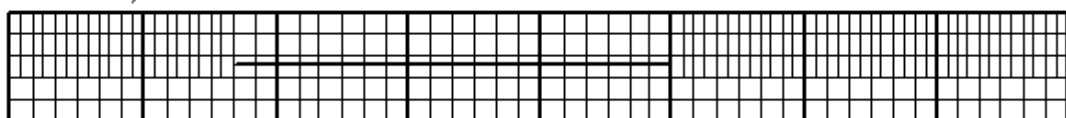
Universal Time

Apatity ascaplots

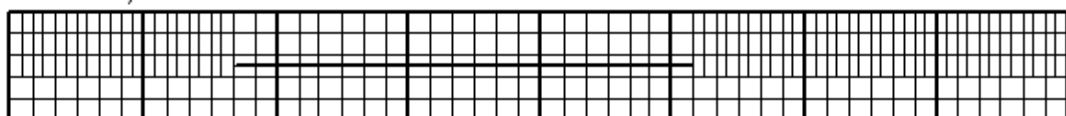
Feb. 10, 2017



Feb. 11, 2017



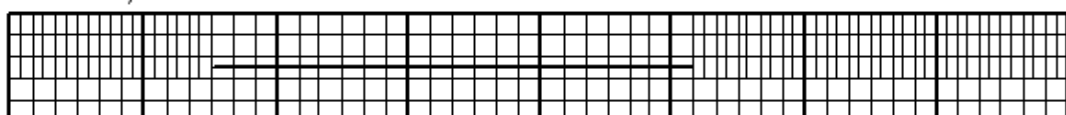
Feb. 12, 2017



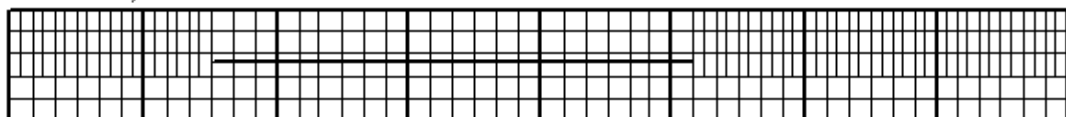
Feb. 13, 2017



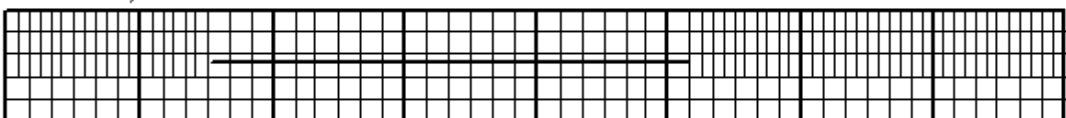
Feb. 14, 2017



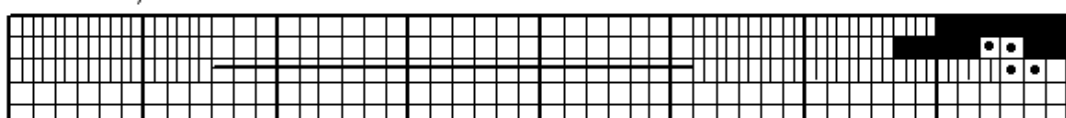
Feb. 15, 2017



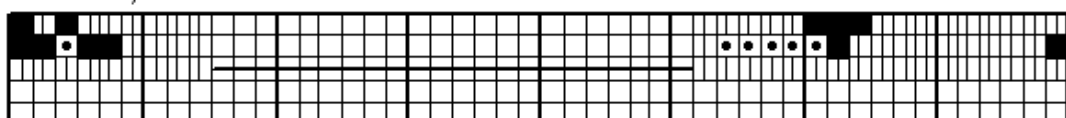
Feb. 16, 2017



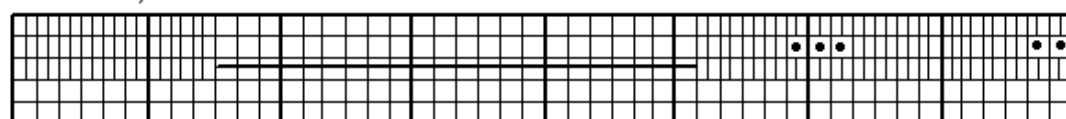
Feb. 17, 2017



Feb. 18, 2017



Feb. 19, 2017

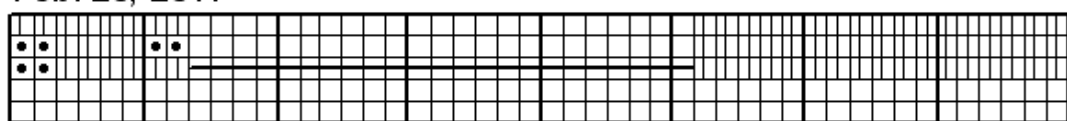


00 06 12 18 24

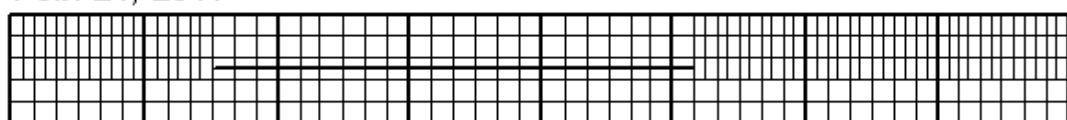
Universal Time

Apatity ascaplots

Feb. 20, 2017



Feb. 21, 2017



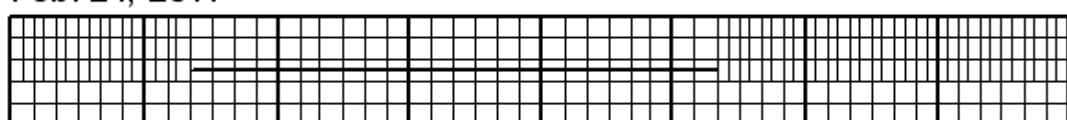
Feb. 22, 2017



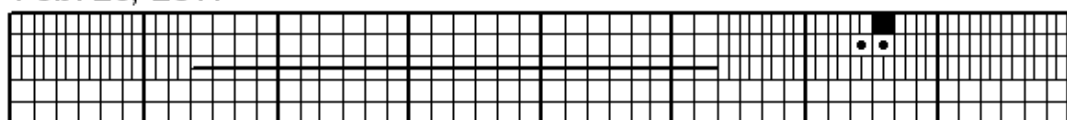
Feb. 23, 2017



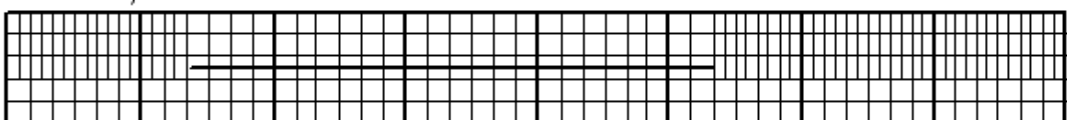
Feb. 24, 2017



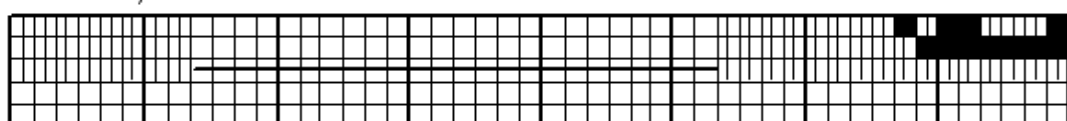
Feb. 25, 2017



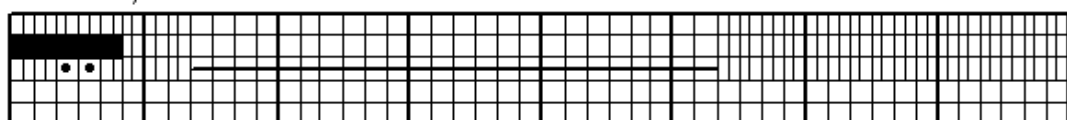
Feb. 26, 2017



Feb. 27, 2017



Feb. 28, 2017



Mar. 01, 2017

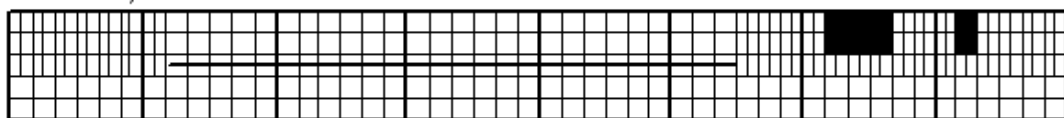


00 06 12 18 24

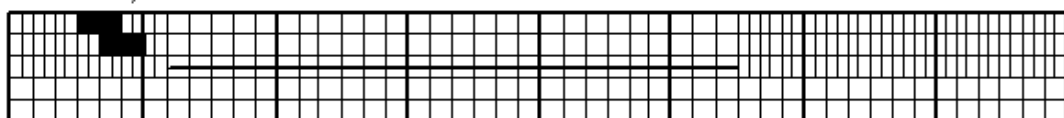
Universal Time

Apatity ascaplots

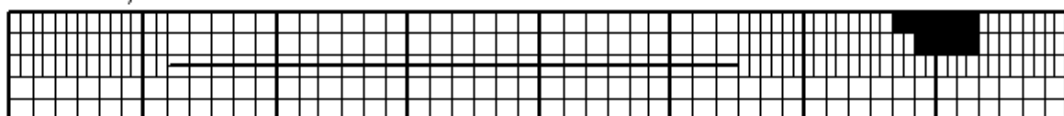
Mar. 02, 2017



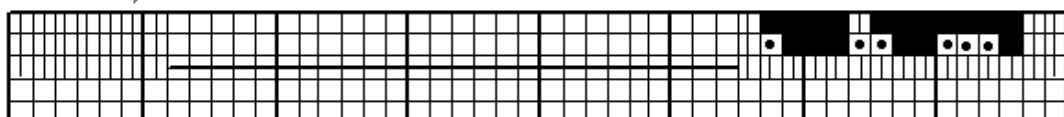
Mar. 03, 2017



Mar. 04, 2017



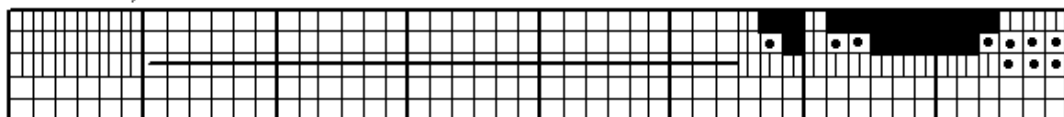
Mar. 05, 2017



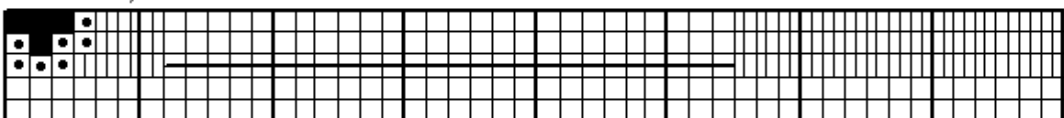
Mar. 06, 2017



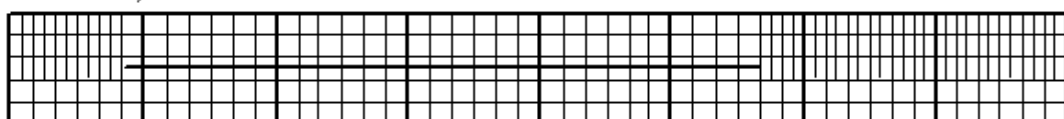
Mar. 07, 2017



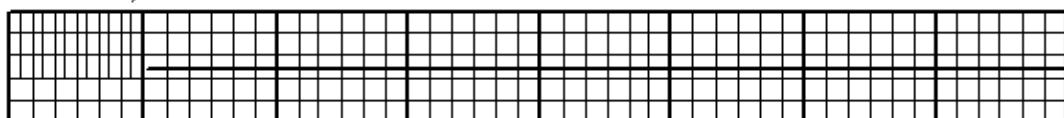
Mar. 08, 2017



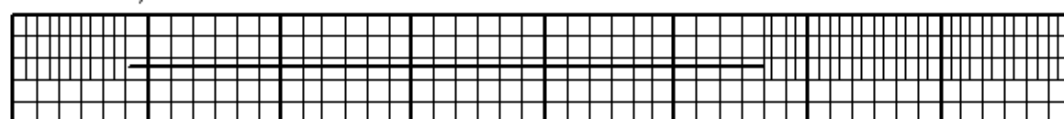
Mar. 09, 2017



Mar. 10, 2017



Mar. 17, 2017

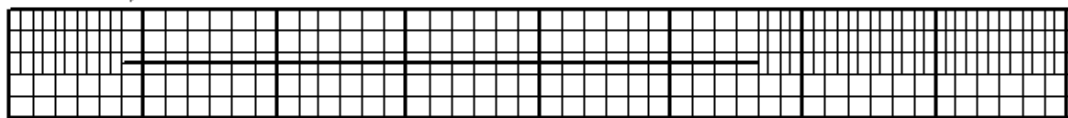


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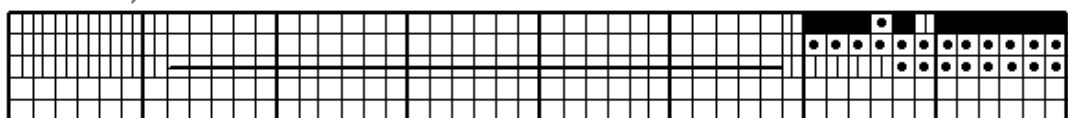
Universal Time

Apatity ascaplots

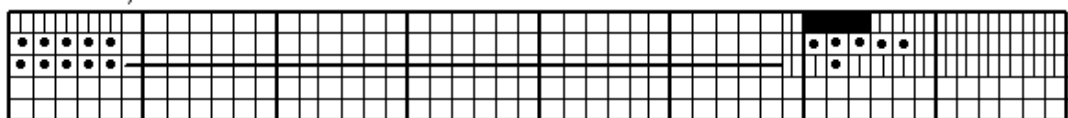
Mar. 18, 2017



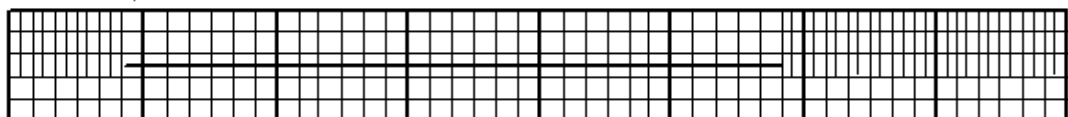
Mar. 19, 2017



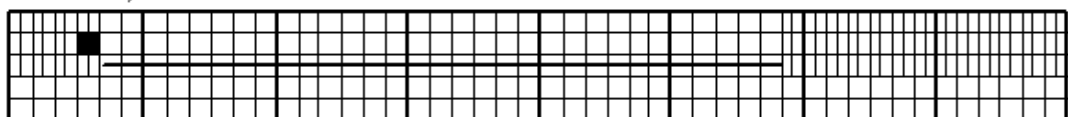
Mar. 20, 2017



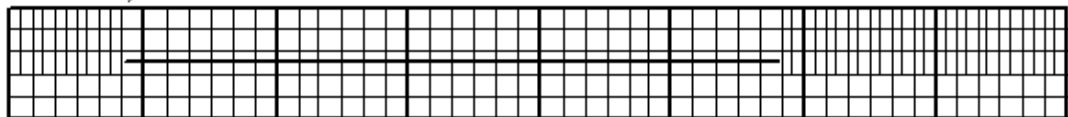
Mar. 21, 2017



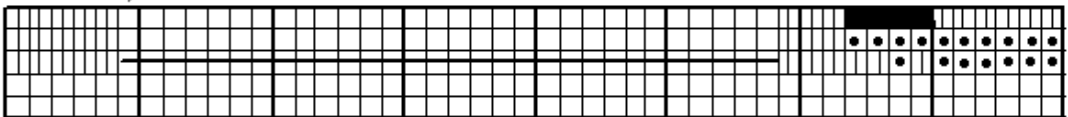
Mar. 22, 2017



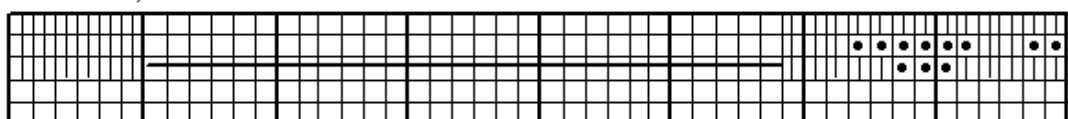
Mar. 23, 2017



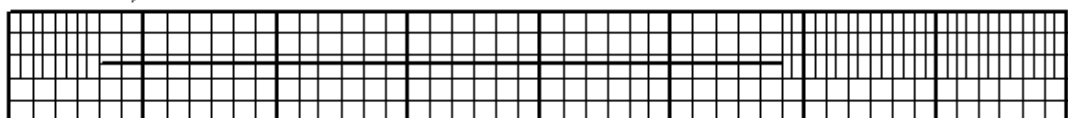
Mar. 24, 2017



Mar. 25, 2017



Mar. 26, 2017



Mar. 27, 2017

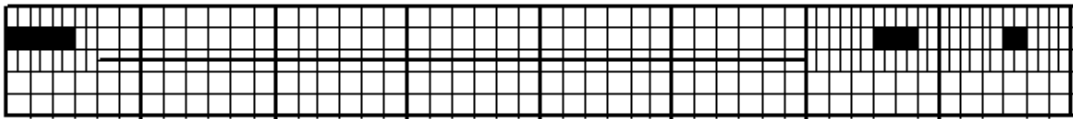


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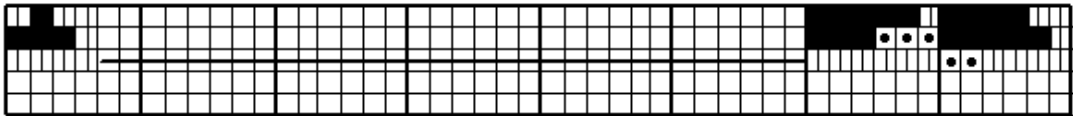
Universal Time

Apatity ascaplots

Mar. 28, 2017



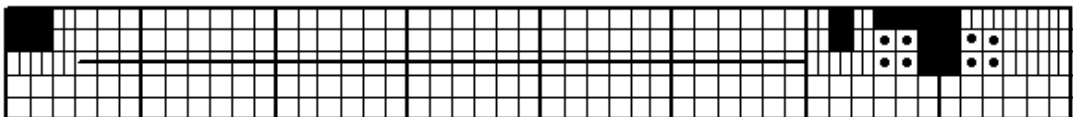
Mar. 29, 2017



Mar. 30, 2017



Mar. 31, 2017



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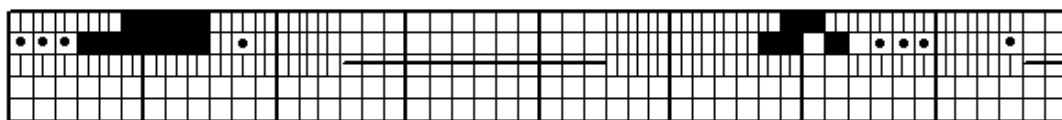
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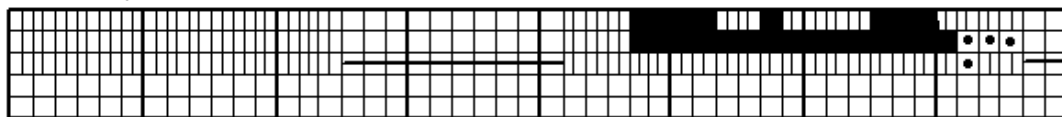
Universal Time

Lovozero ascaplots

Jan. 01, 2017



Jan. 02, 2017



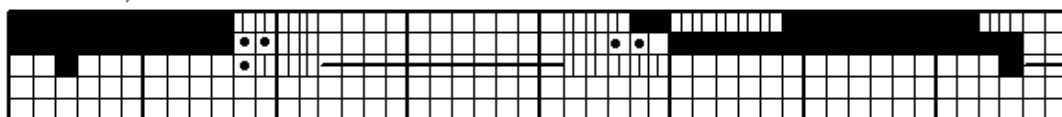
Jan. 03, 2017



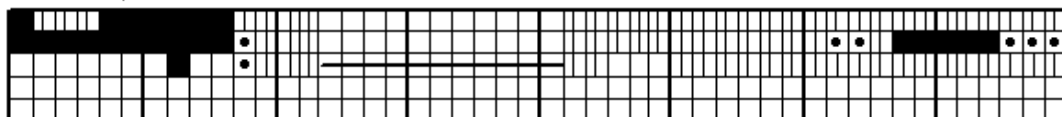
Jan. 04, 2017



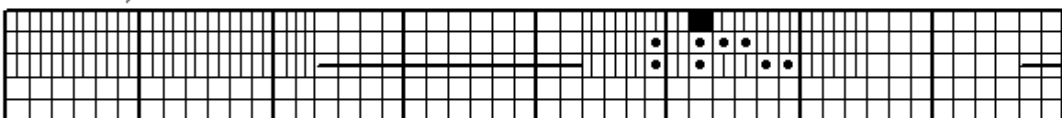
Jan. 05, 2017



Jan. 06, 2017



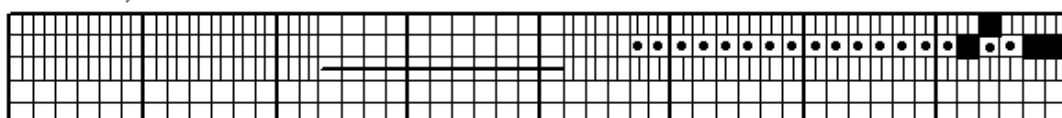
Jan. 07, 2017



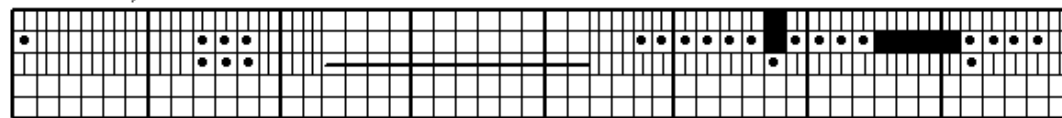
Jan. 08, 2017



Jan. 09, 2017



Jan. 10, 2017

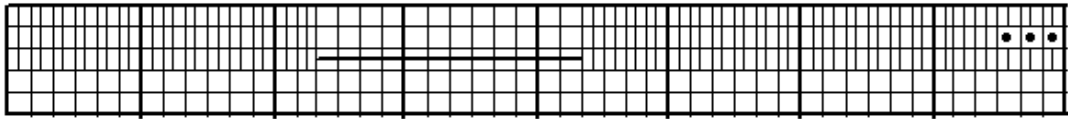


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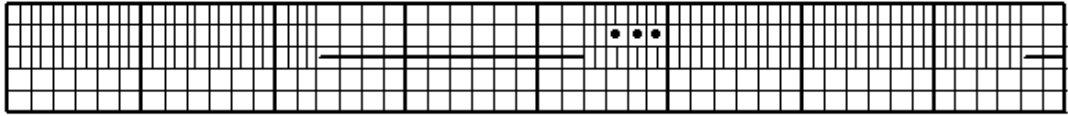
Universal Time

Lovozero ascaplots

Jan. 11, 2017



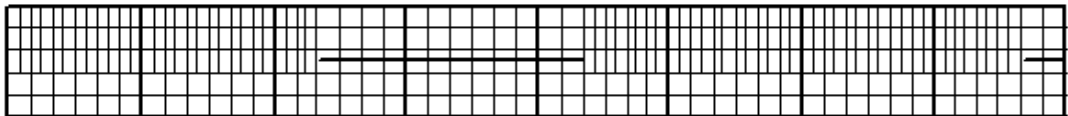
Jan. 12, 2017



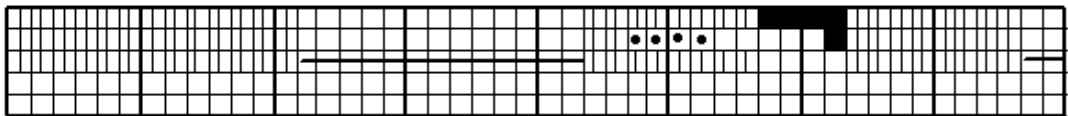
Jan. 13, 2017



Jan. 14, 2017



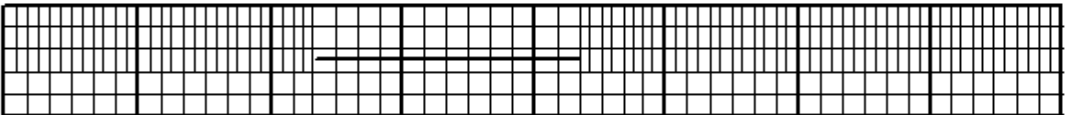
Jan. 15, 2017



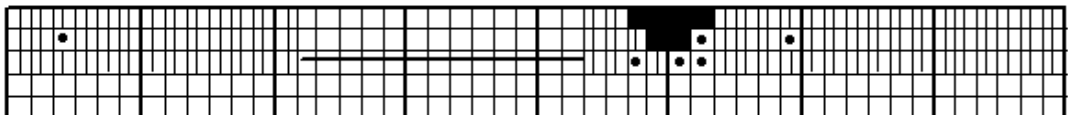
Jan. 16, 2017



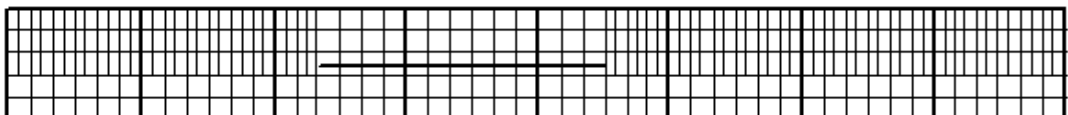
Jan. 17, 2017



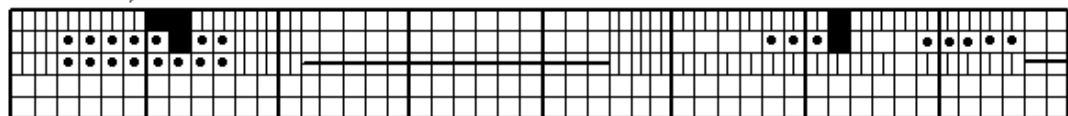
Jan. 18, 2017



Jan. 19, 2017



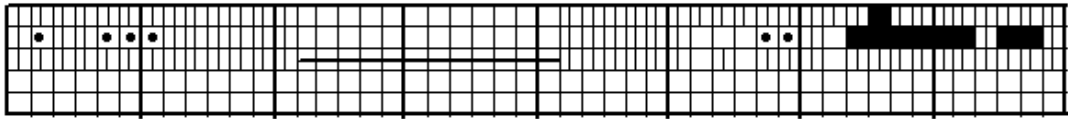
Jan. 20, 2017



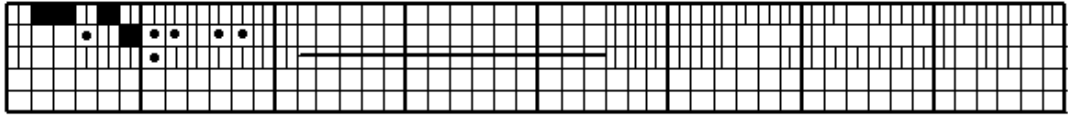
00 06 12 18 24
Universal Time

Lovozero ascaplots

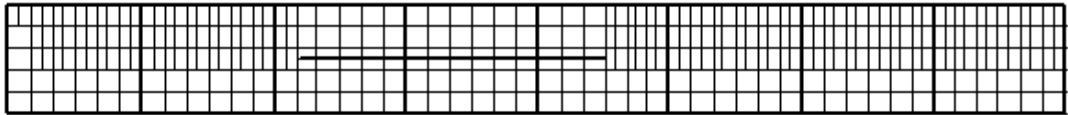
Jan. 21, 2017



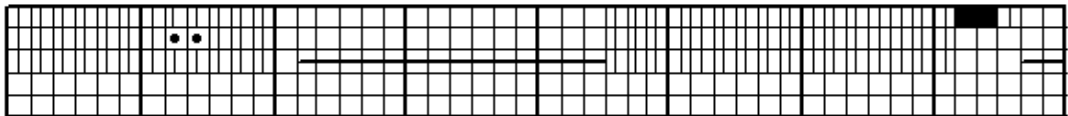
Jan. 22, 2017



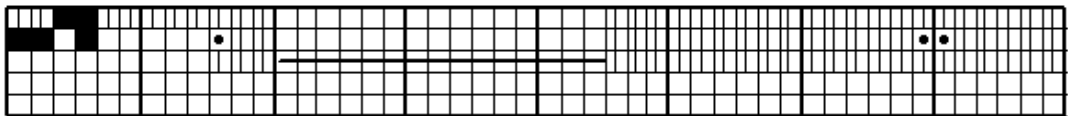
Jan. 23, 2017



Jan. 24, 2017



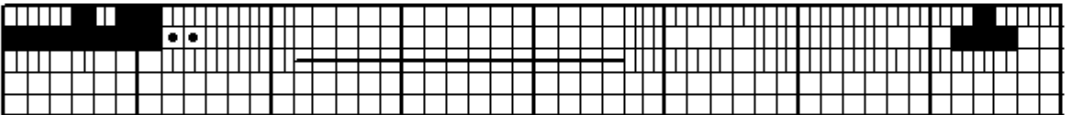
Jan. 25, 2017



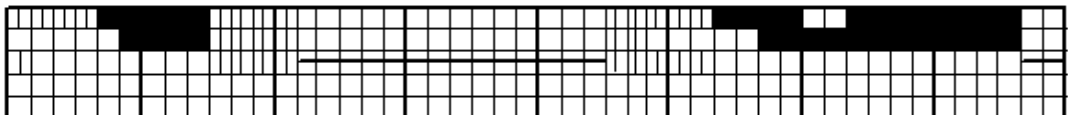
Jan. 26, 2017



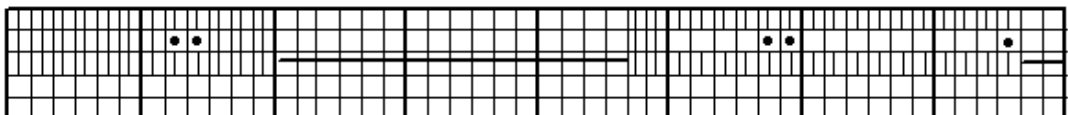
Jan. 27, 2017



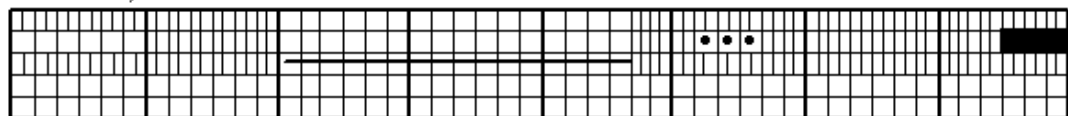
Jan. 28, 2017



Jan. 29, 2017



Jan. 30, 2017

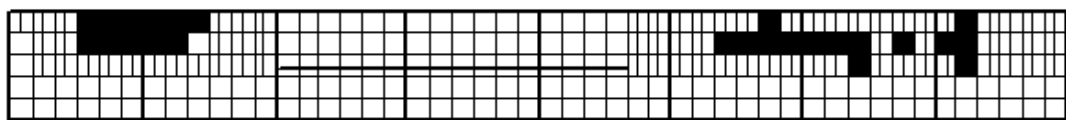


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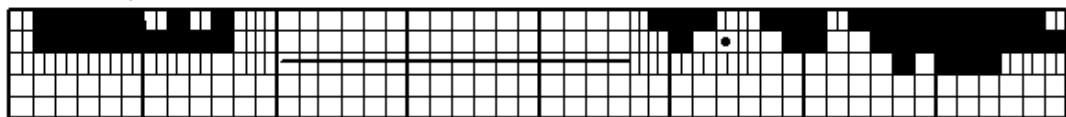
Universal Time

Lovozero ascaplots

Jan. 31, 2017



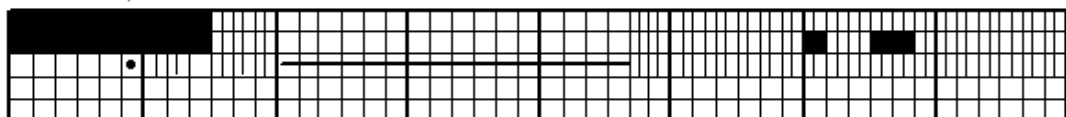
Feb. 01, 2017



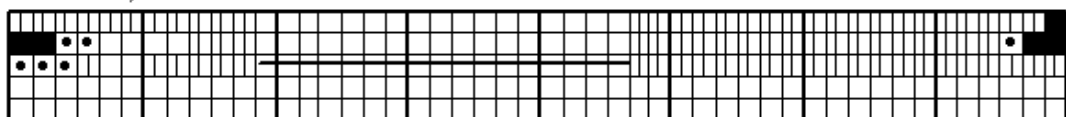
Feb. 02, 2017



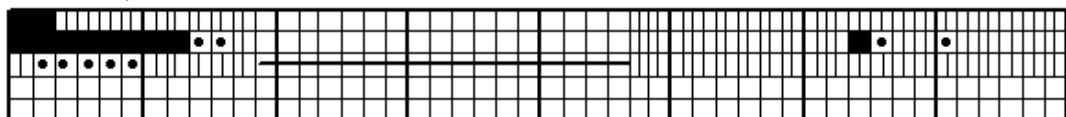
Feb. 03, 2017



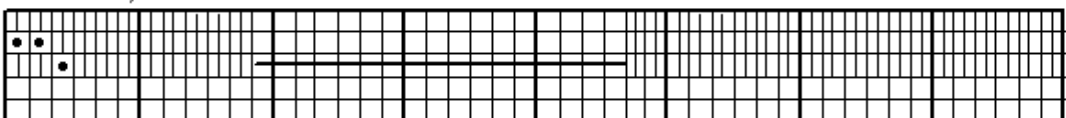
Feb. 04, 2017



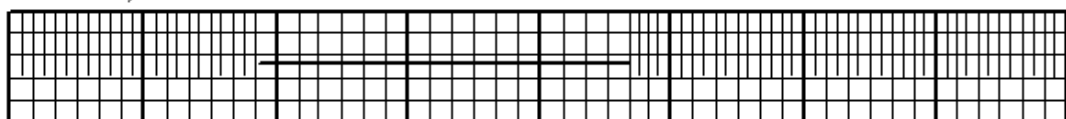
Feb. 05, 2017



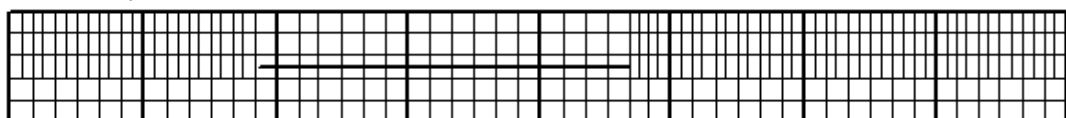
Feb. 06, 2017



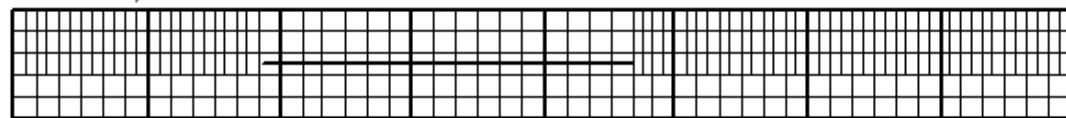
Feb. 07, 2017



Feb. 08, 2017



Feb. 09, 2017



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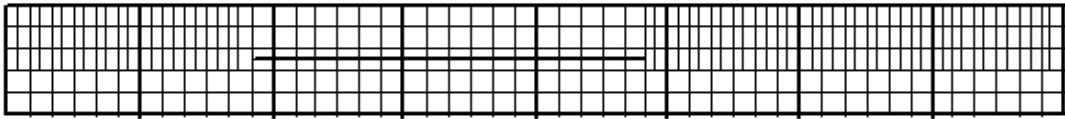
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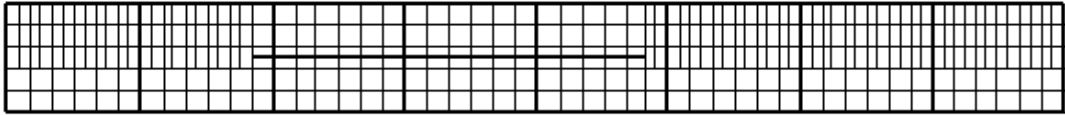
Universal Time

Lovozero ascaplots

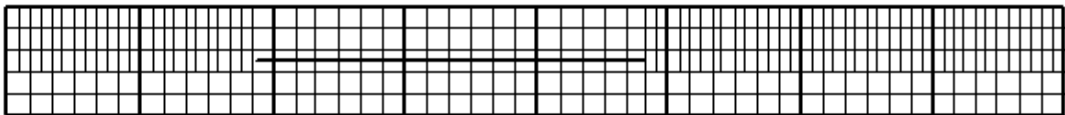
Feb. 10, 2017



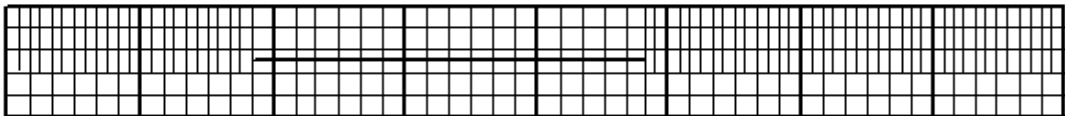
Feb. 11, 2017



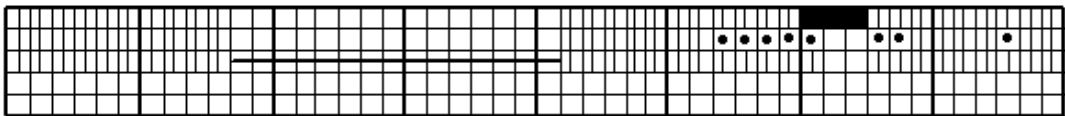
Feb. 12, 2017



Feb. 13, 2017



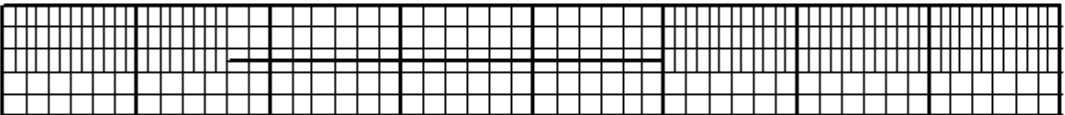
Feb. 14, 2017



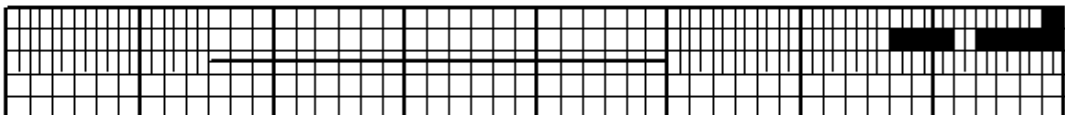
Feb. 15, 2017



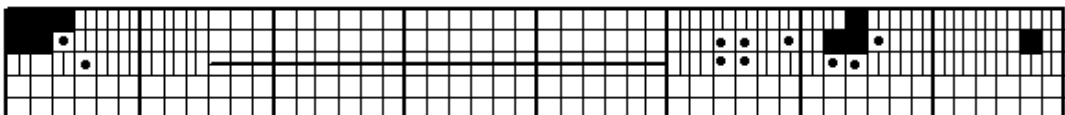
Feb. 16, 2017



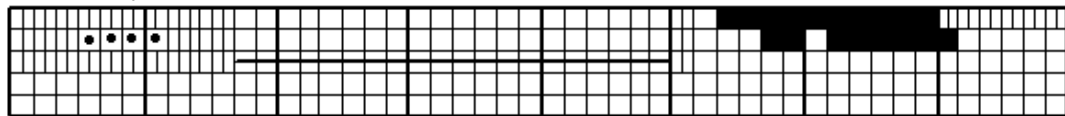
Feb. 17, 2017



Feb. 18, 2017



Feb. 19, 2017

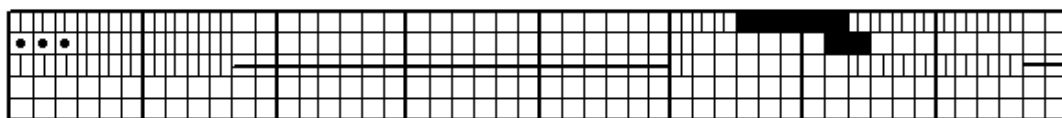


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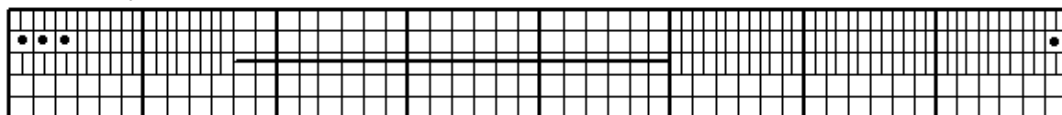
Universal Time

Lovozero ascaplots

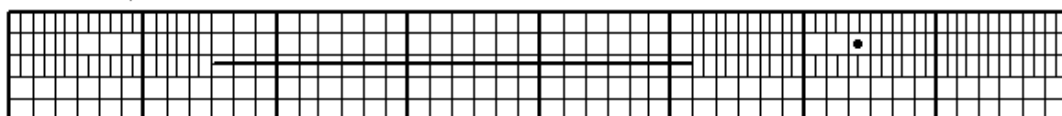
Feb. 20, 2017



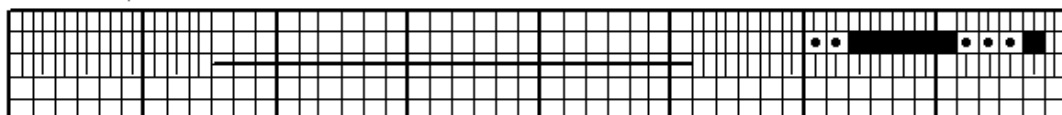
Feb. 21, 2017



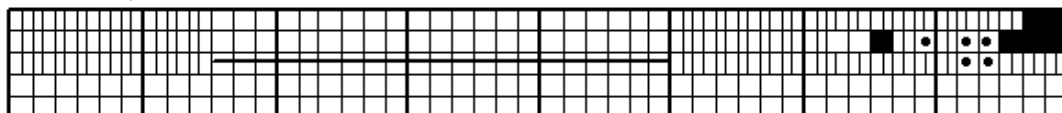
Feb. 22, 2017



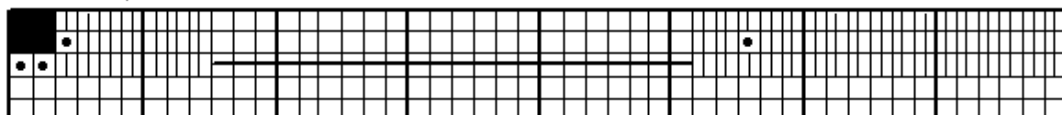
Feb. 23, 2017



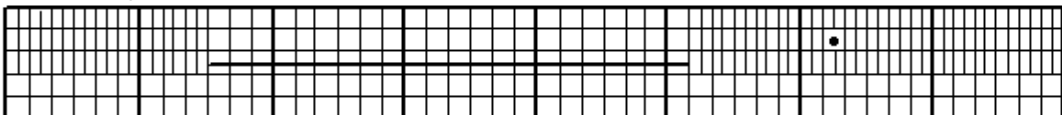
Feb. 24, 2017



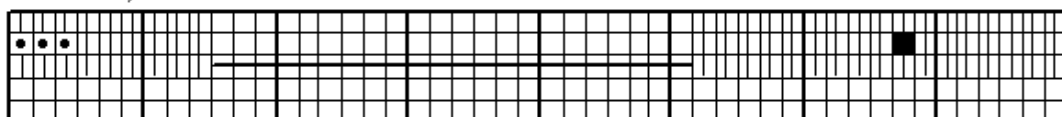
Feb. 25, 2017



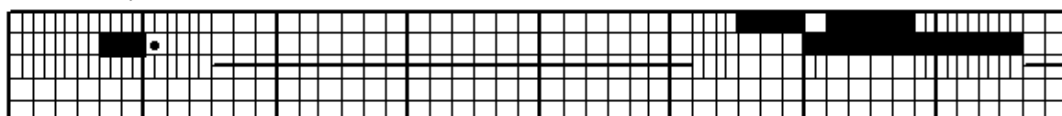
Feb. 26, 2017



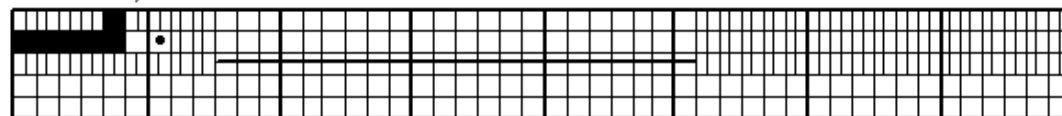
Feb. 27, 2017



Feb. 28, 2017



Mar. 01, 2017

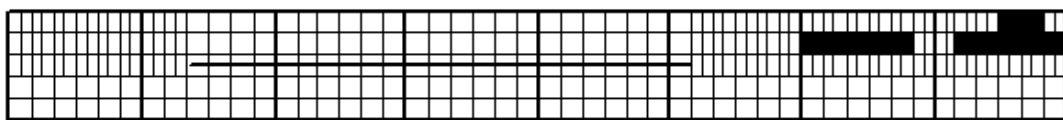


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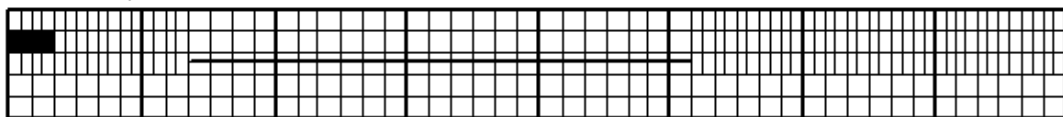
Universal Time

Lovozero ascaplots

Mar. 02, 2017



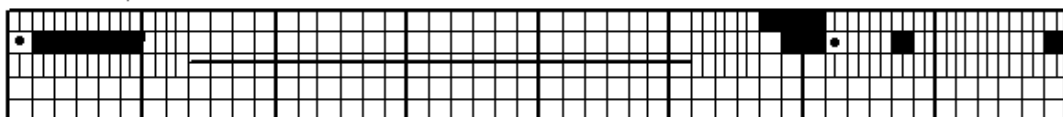
Mar. 03, 2017



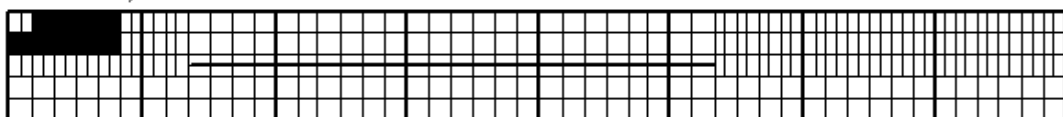
Mar. 04, 2017



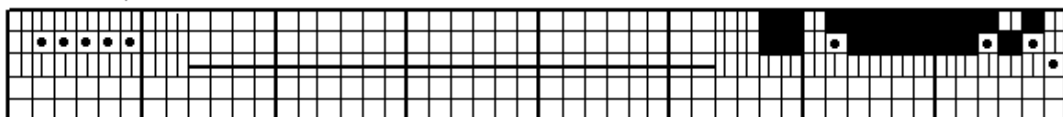
Mar. 05, 2017



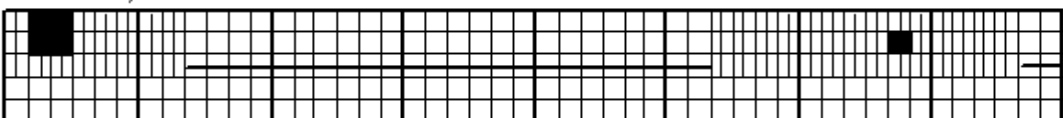
Mar. 06, 2017



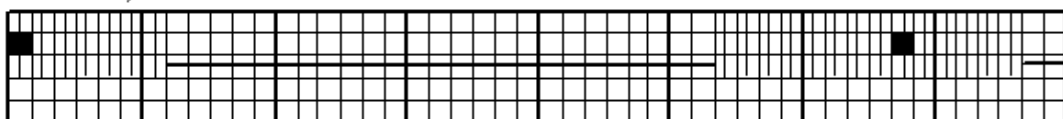
Mar. 07, 2017



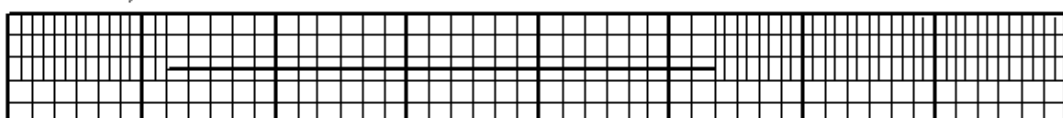
Mar. 08, 2017



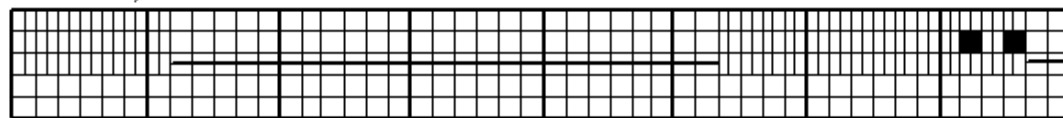
Mar. 09, 2017



Mar. 10, 2017



Mar. 11, 2017

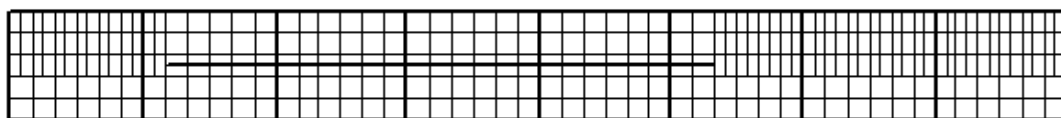


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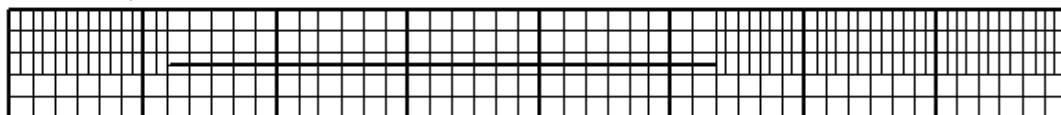
Universal Time

Lovozero ascaplots

Mar. 12, 2017



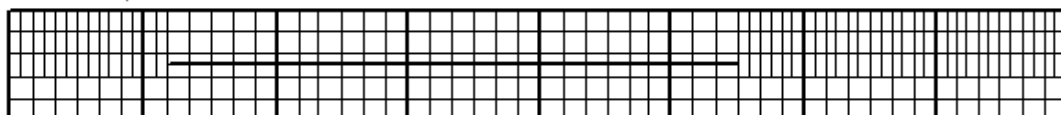
Mar. 13, 2017



Mar. 14, 2017



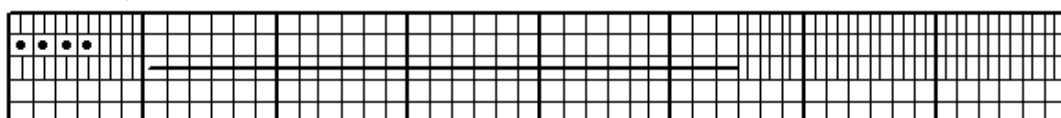
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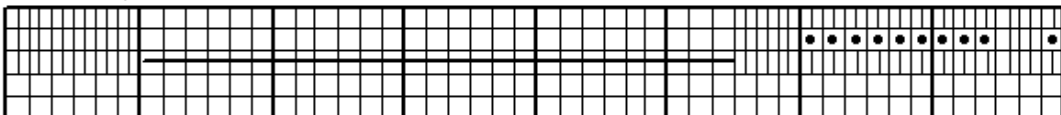
Mar. 16, 2017



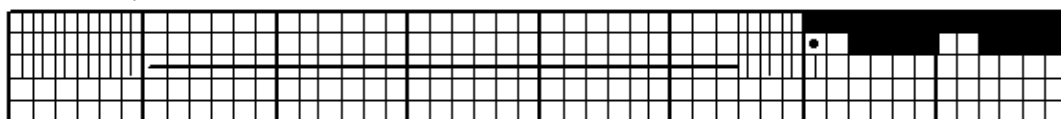
Mar. 17, 2017



Mar. 18, 2017



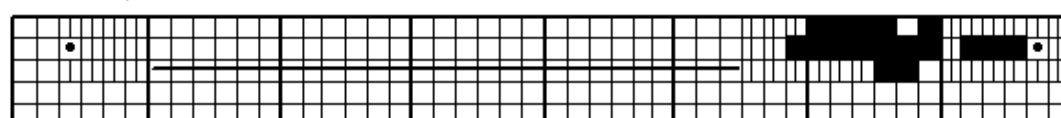
Mar. 19, 2017



Mar. 20, 2017



Mar. 21, 2017



00

06

12

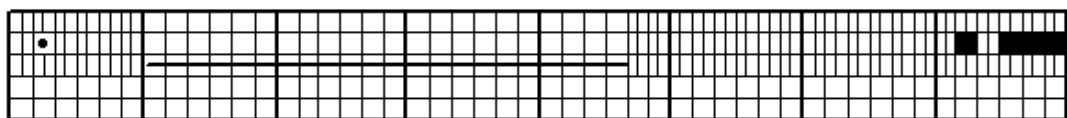
18

24

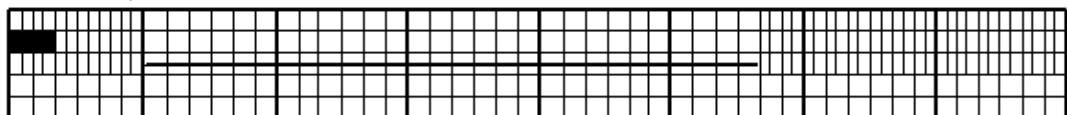
Universal Time

Lovozero ascaplots

Mar. 22, 2017



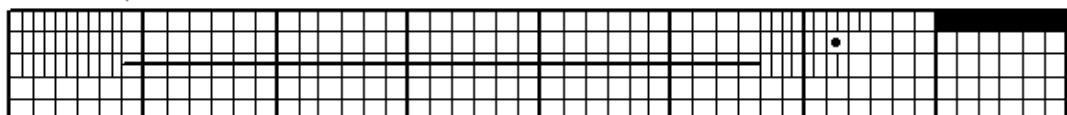
Mar. 23, 2017



Mar. 24, 2017



Mar. 25, 2017



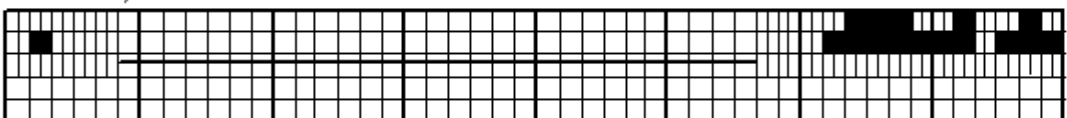
Mar. 26, 2017



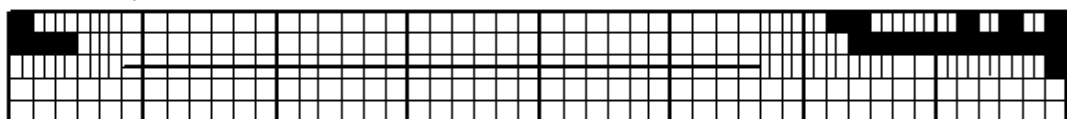
Mar. 27, 2017



Mar. 28, 2017



Mar. 29, 2017



Mar. 30, 2017



Mar. 31, 2017



00

06

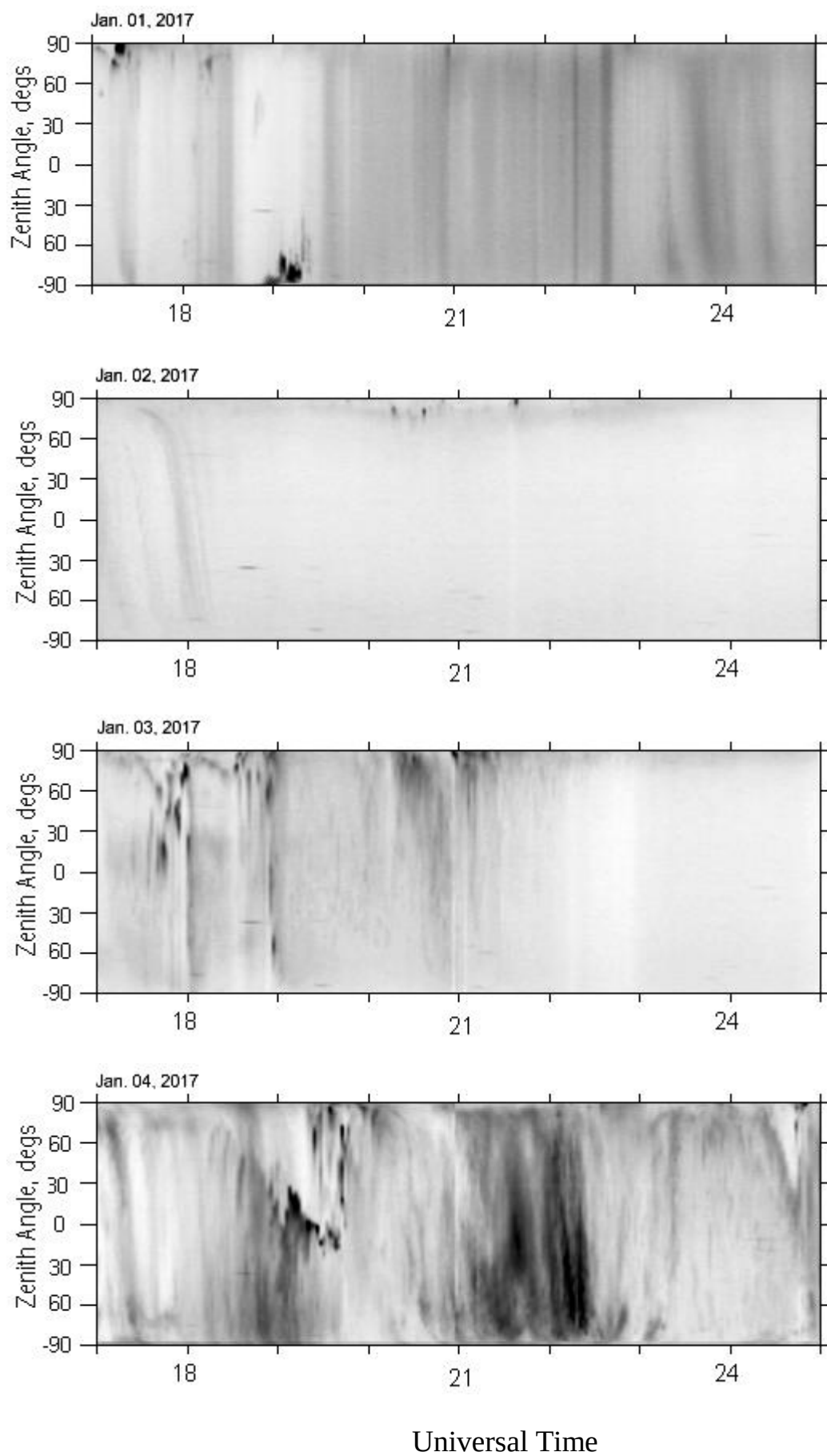
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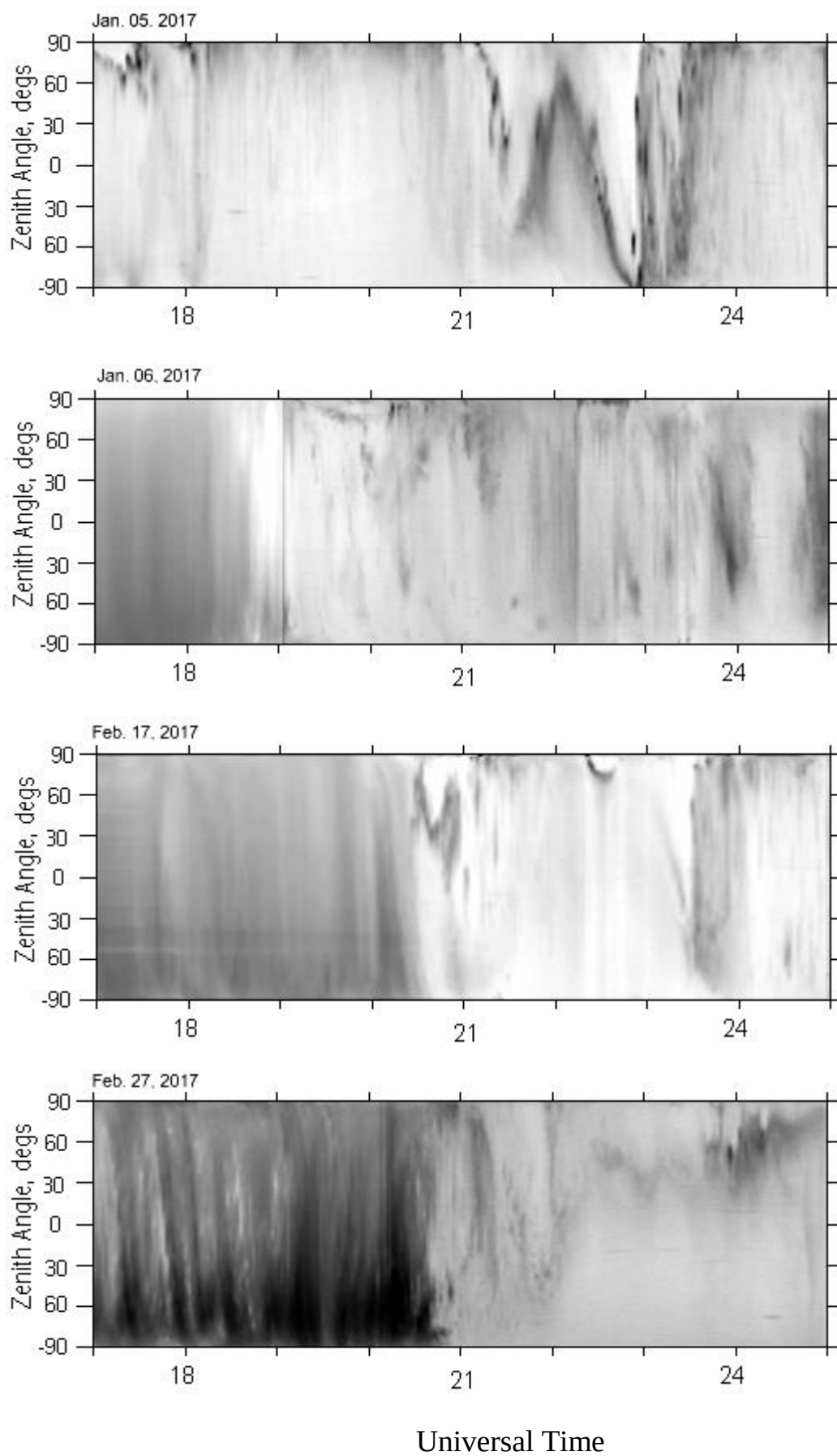
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Universal Time

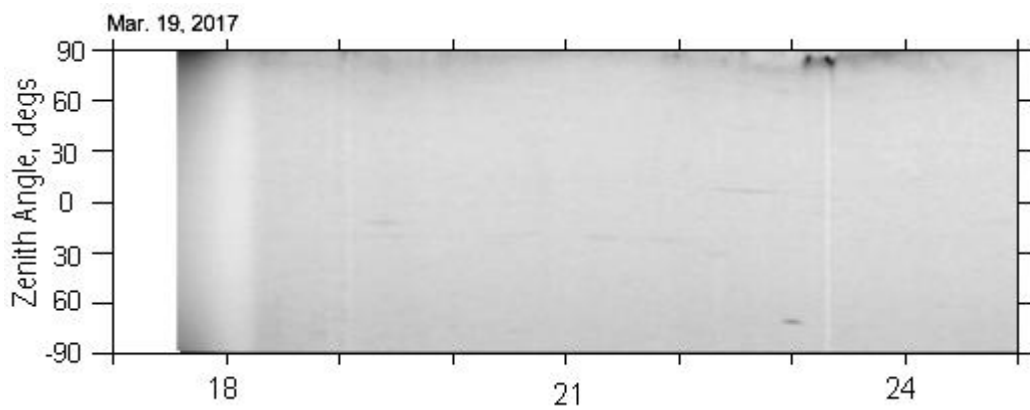
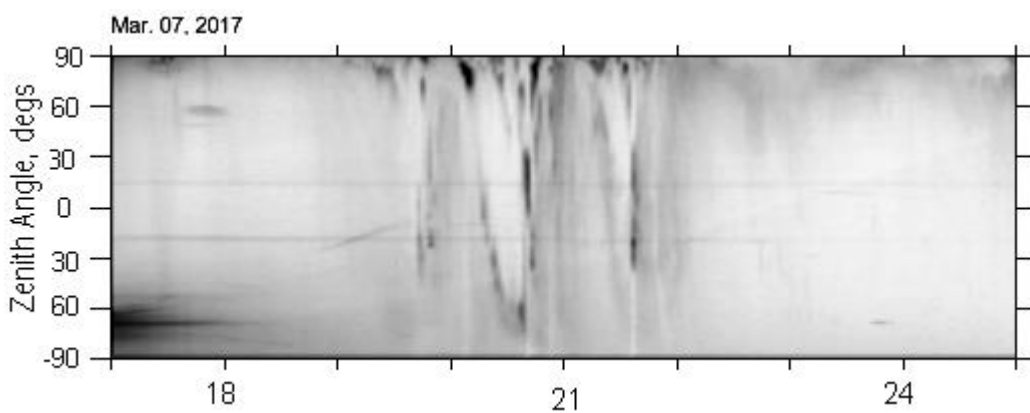
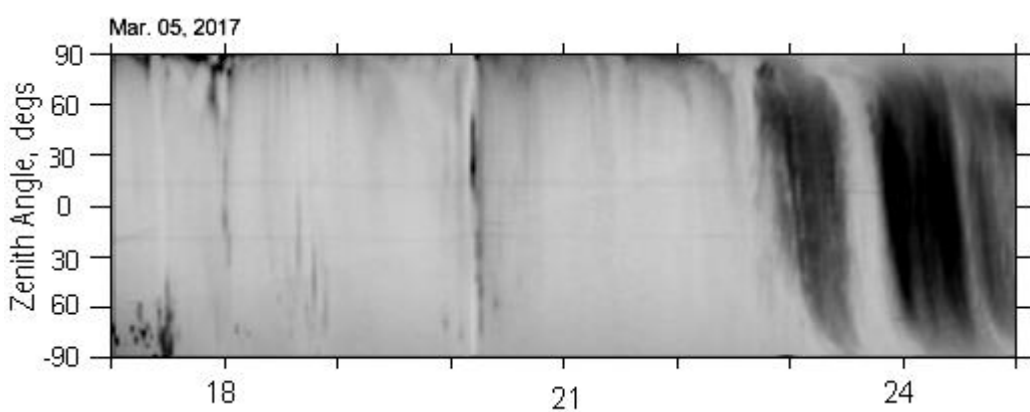
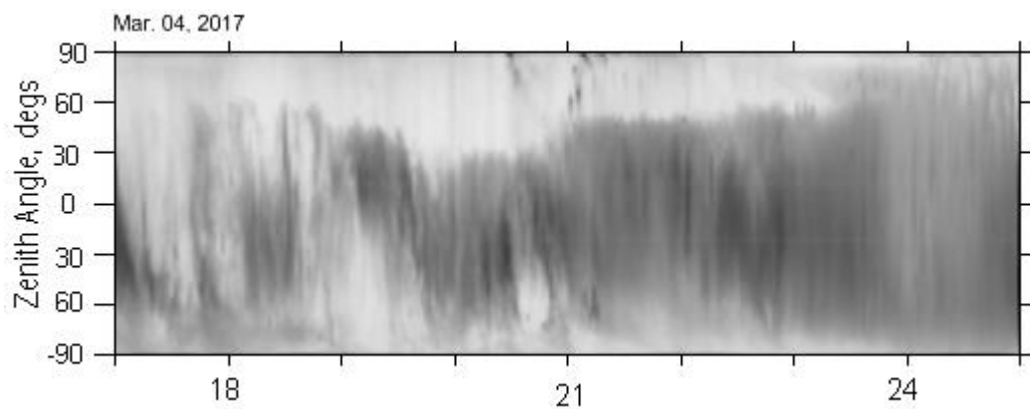
Apatity TV keograms



Apatity TV keograms

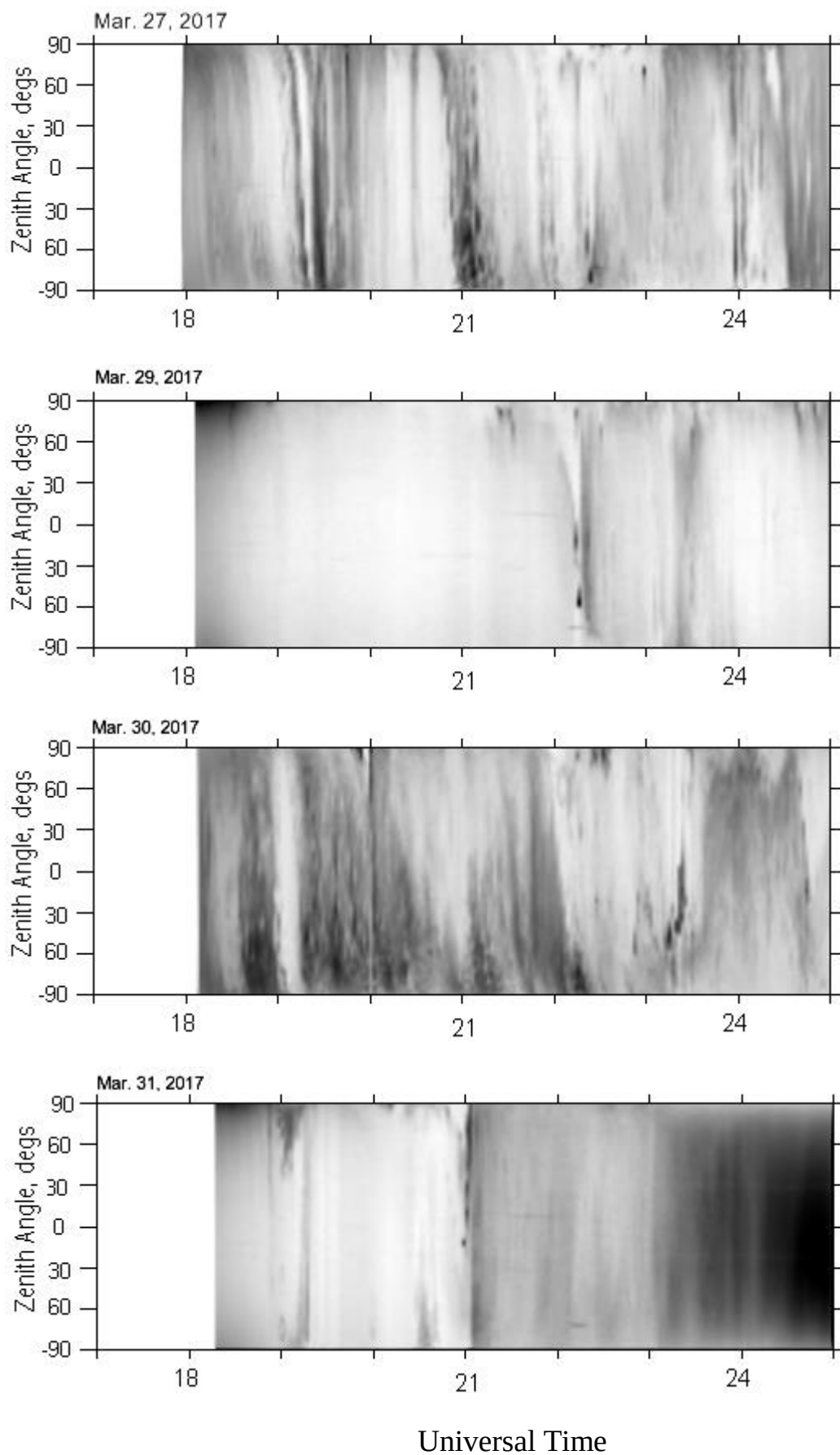


Apatity TV keograms

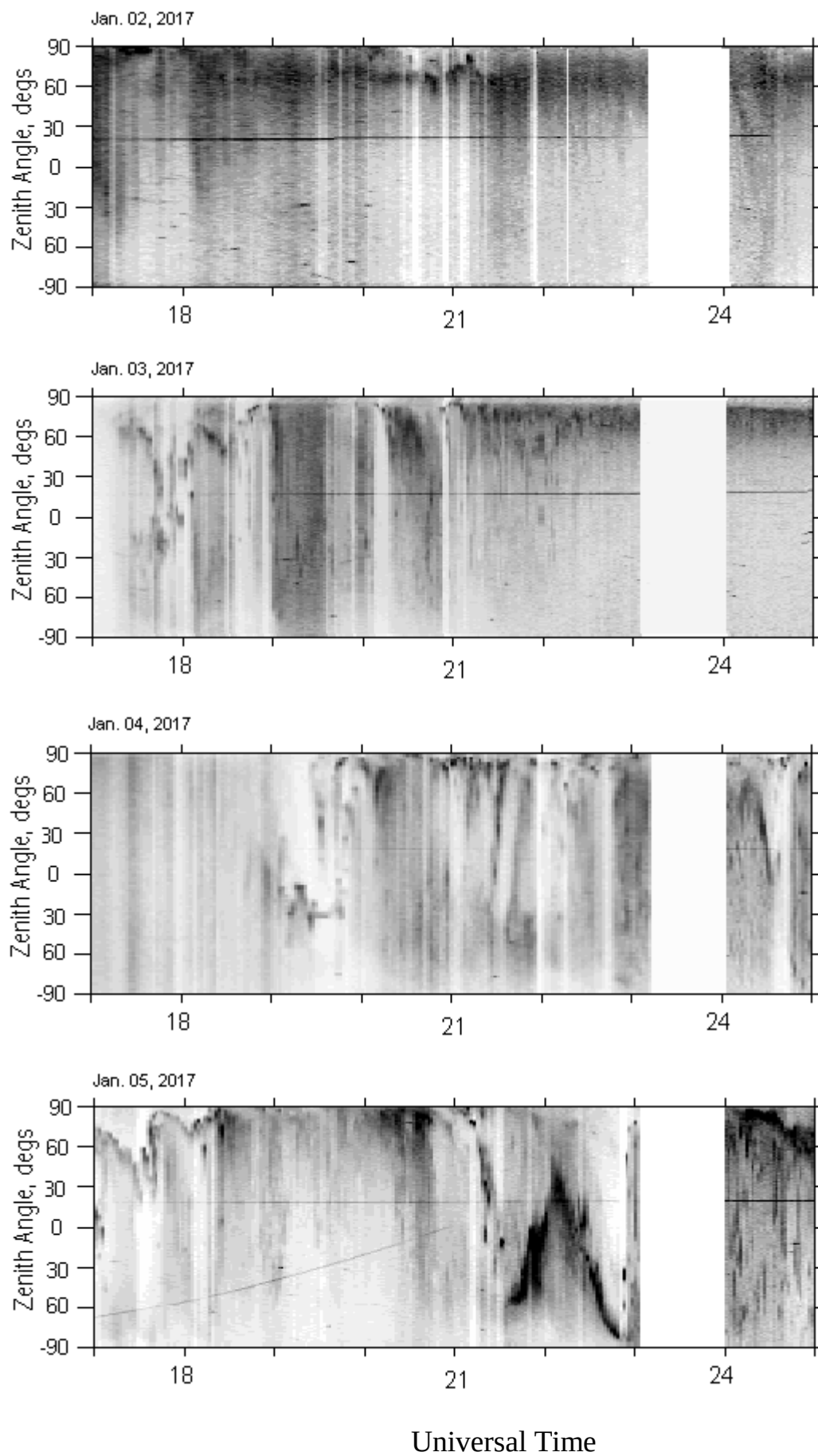


Universal Time

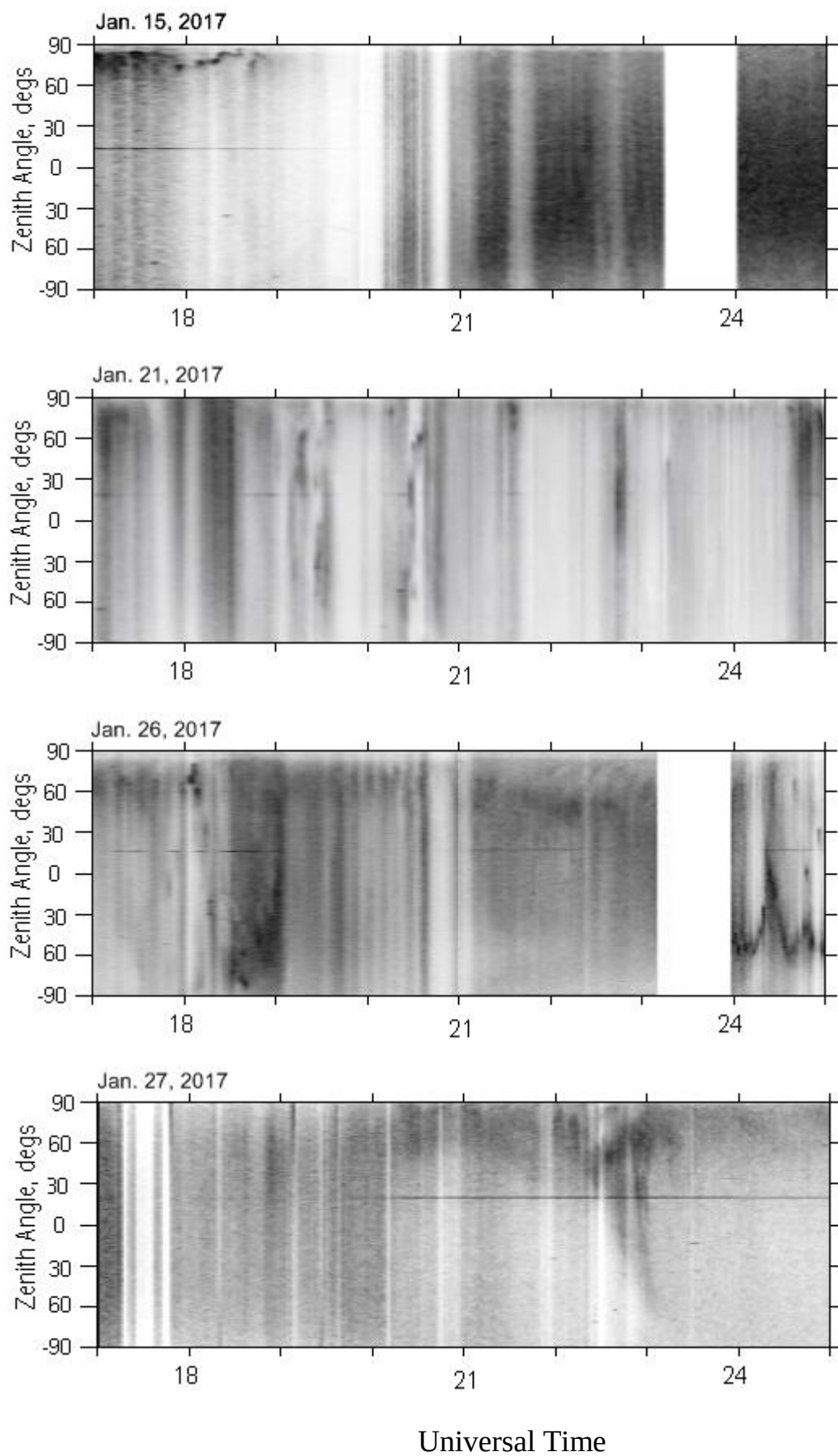
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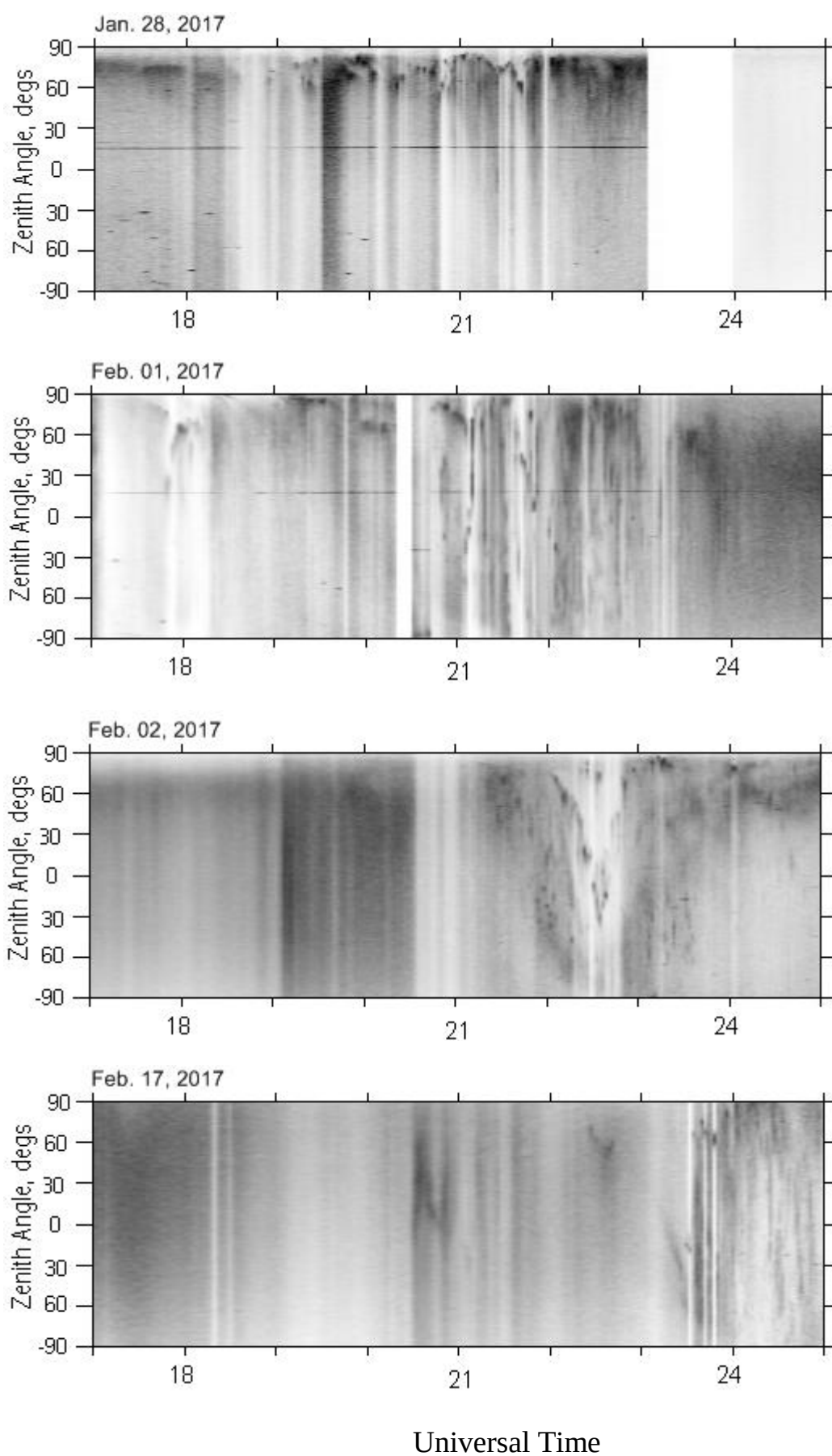
Lovozero TV keograms



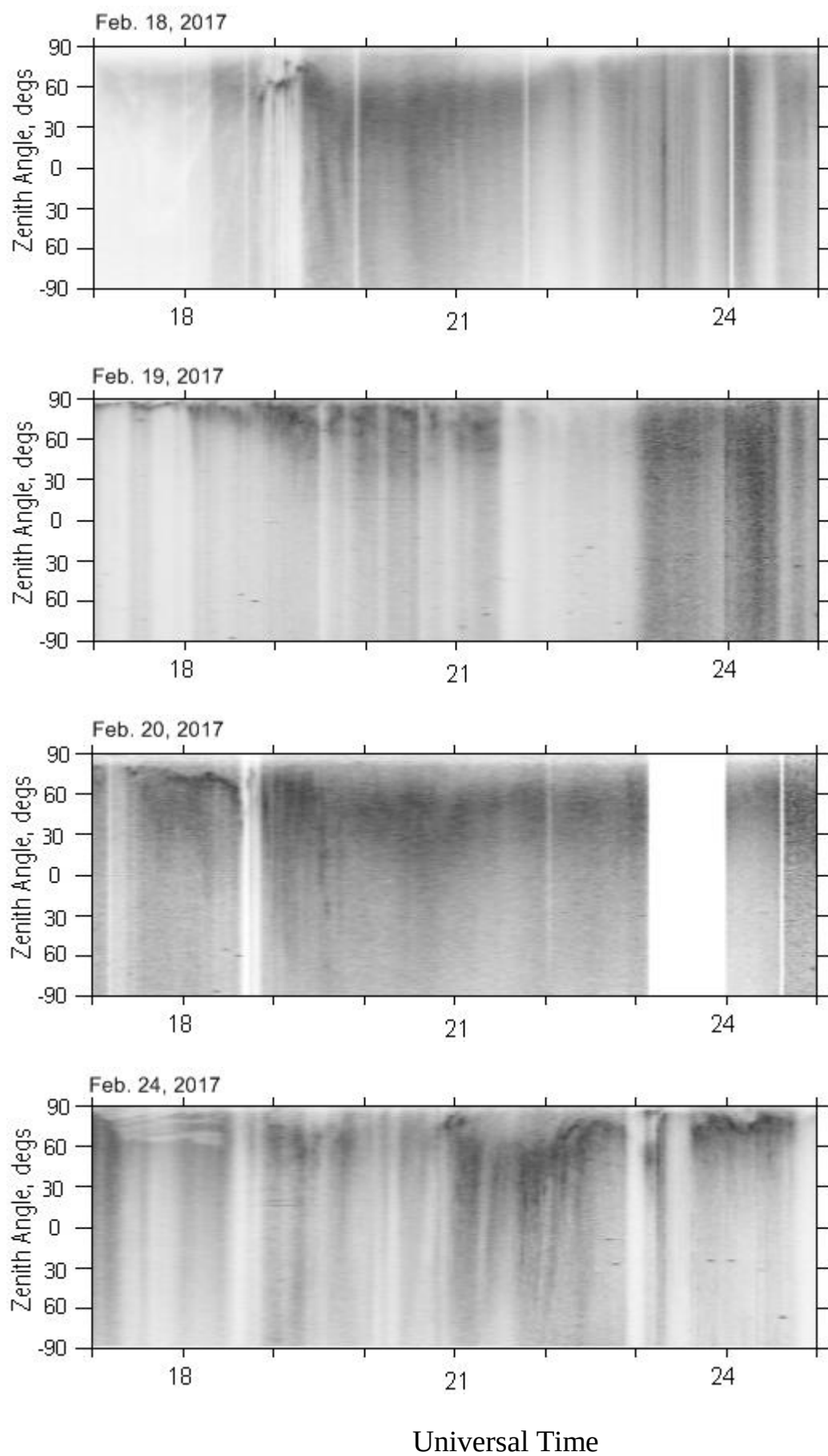
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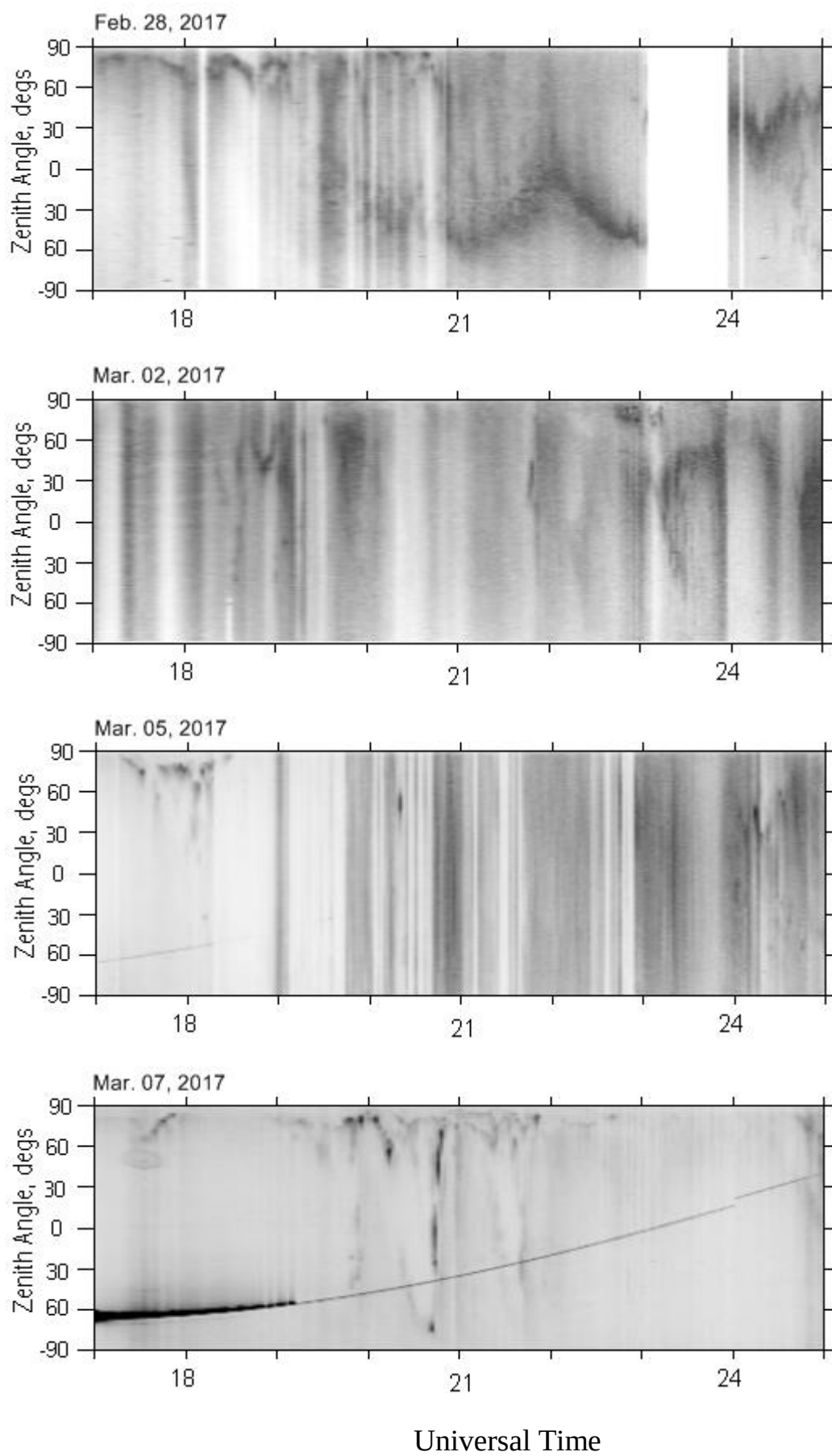
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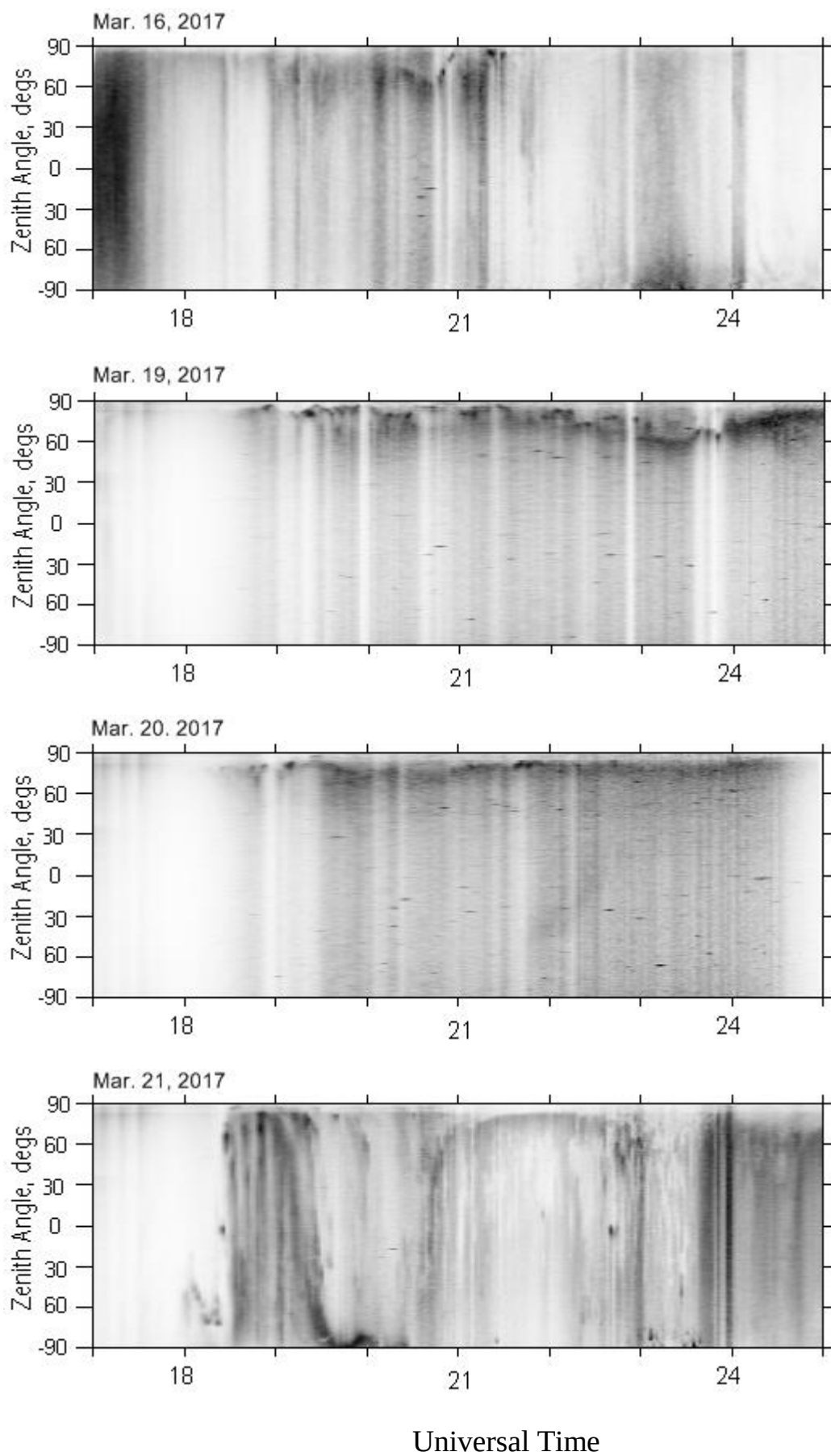
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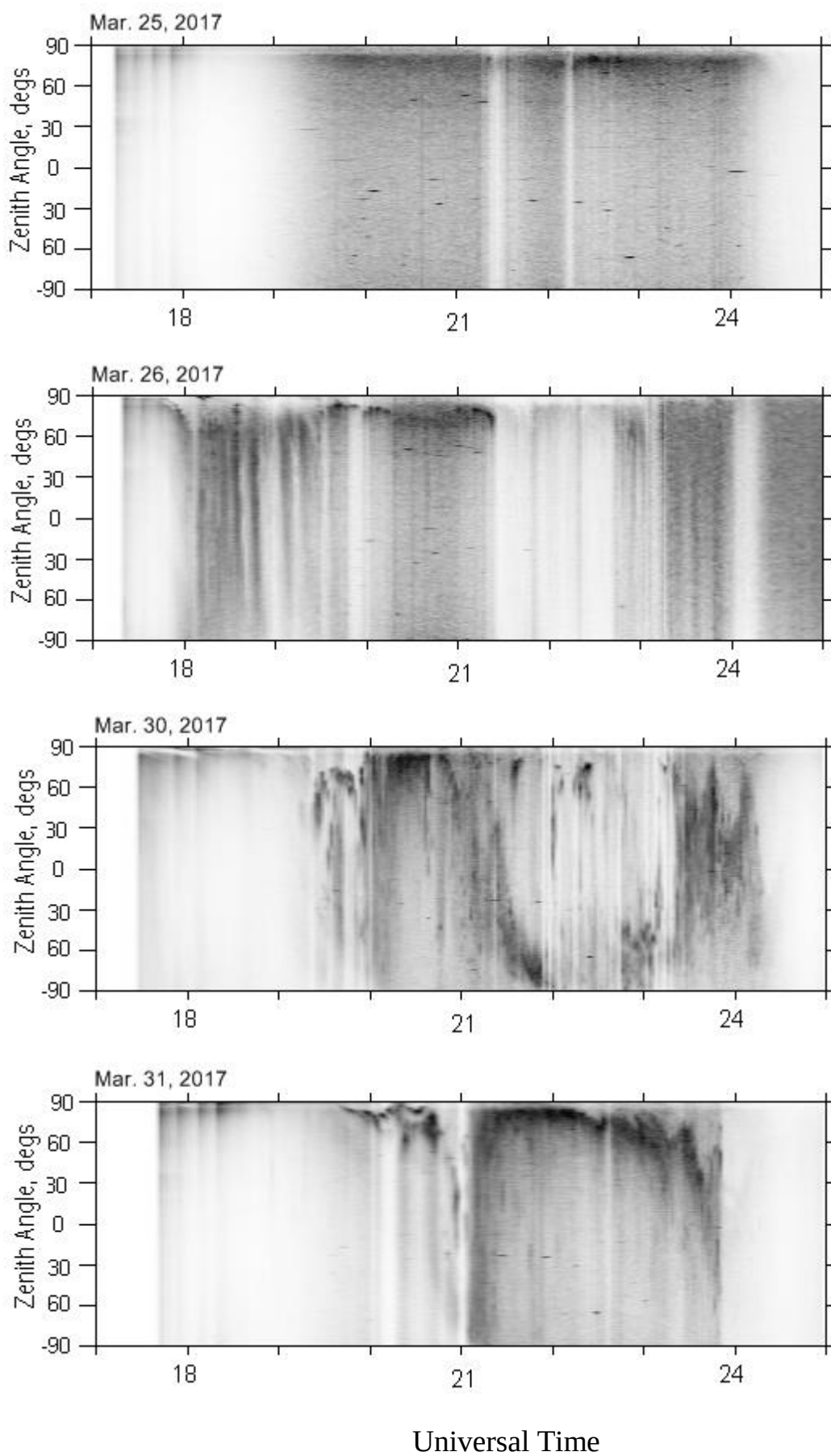
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Lovozero TV keograms



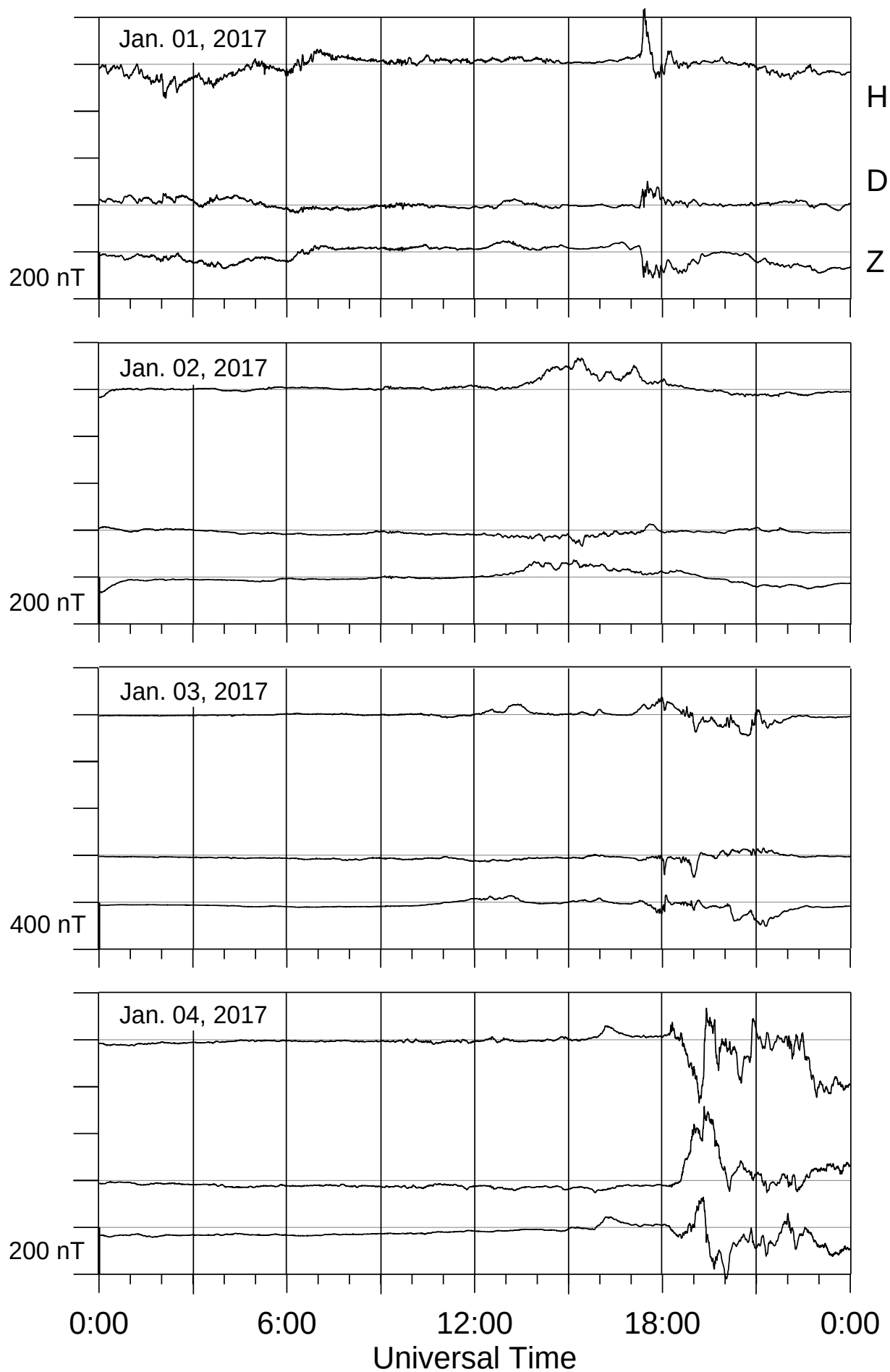
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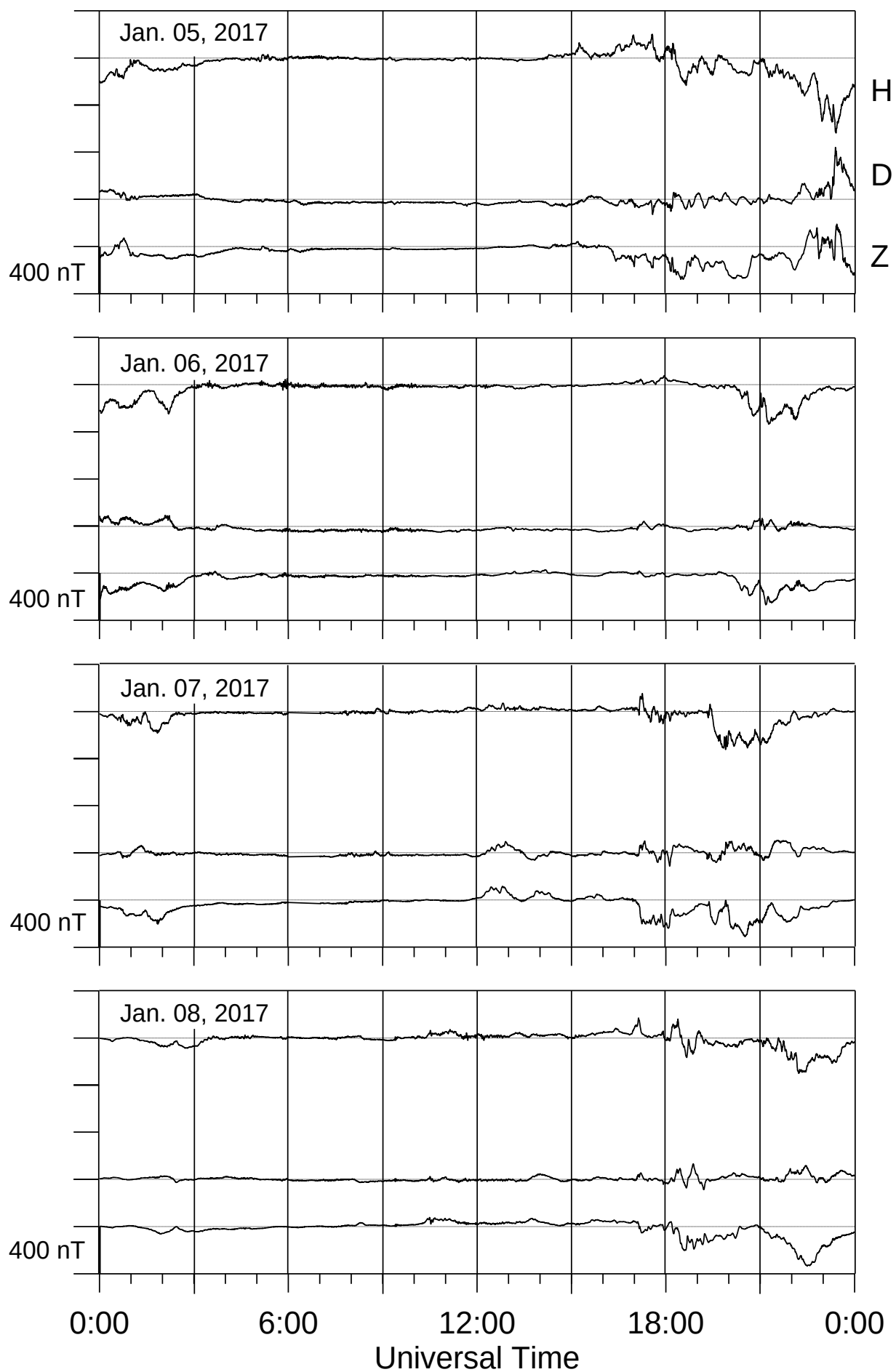
LOVOZERO MAGNETOGRAMS

January - March 2017

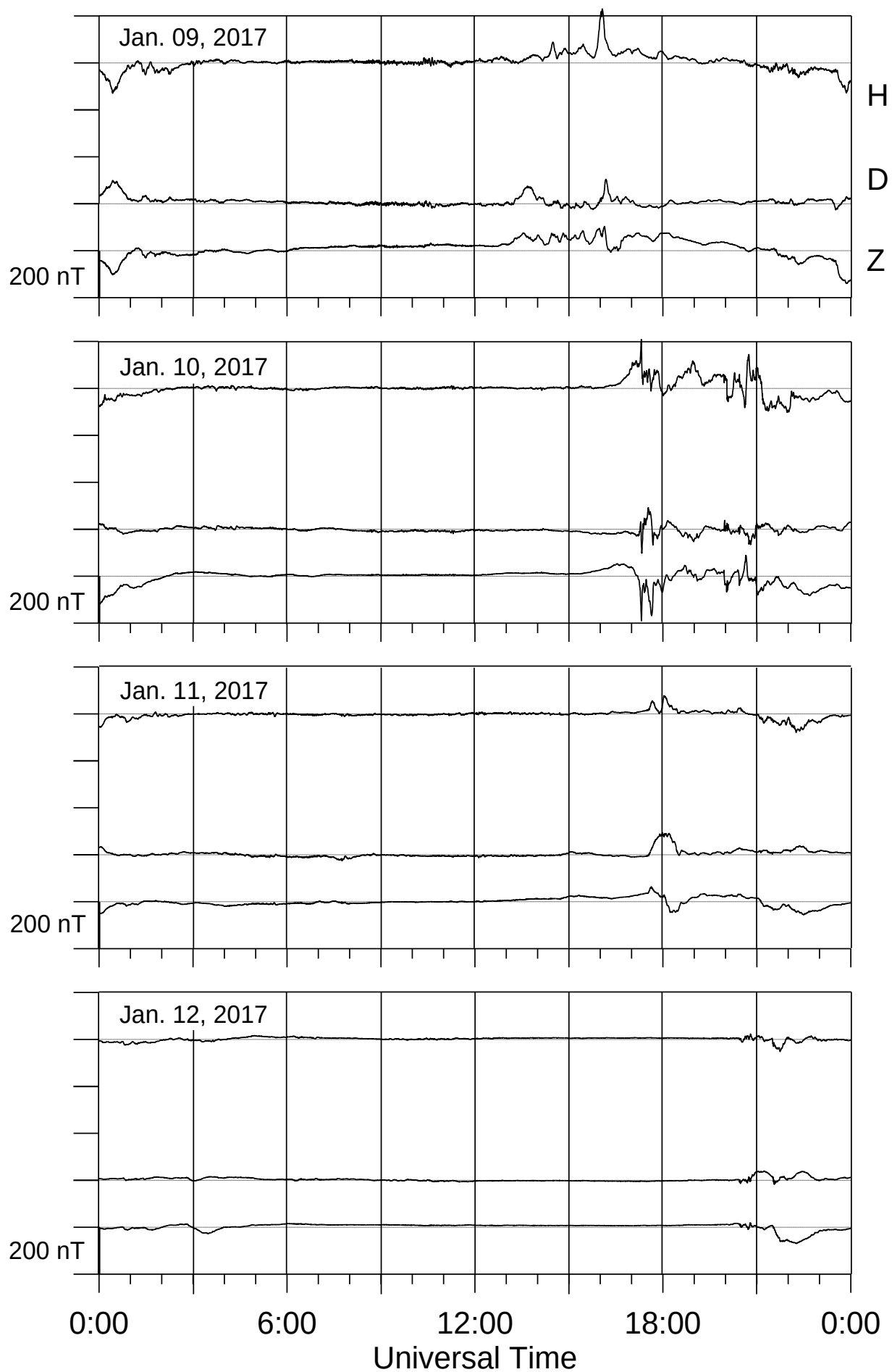
Lovozero magnetometer



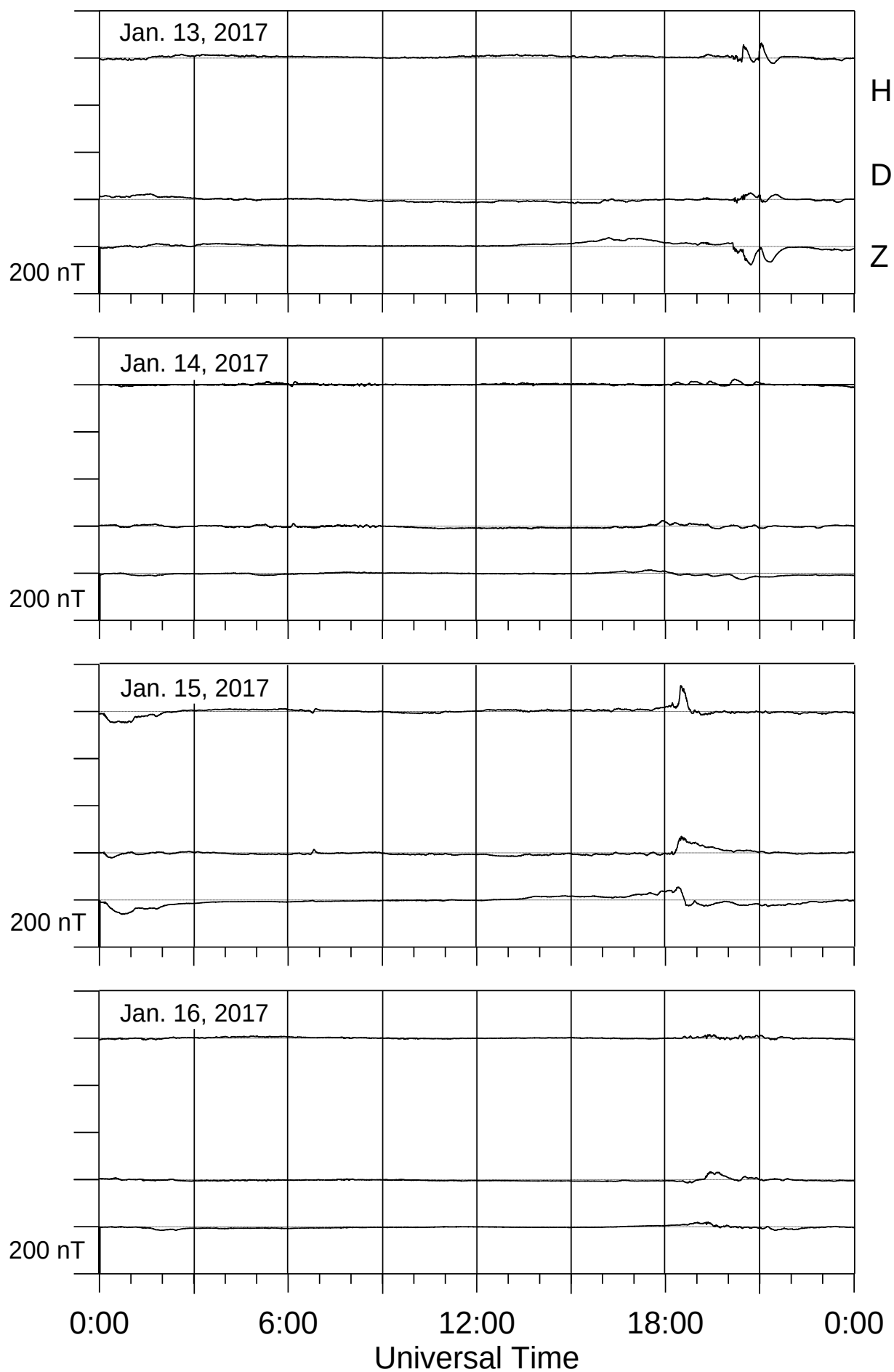
Lovozero magnetometer



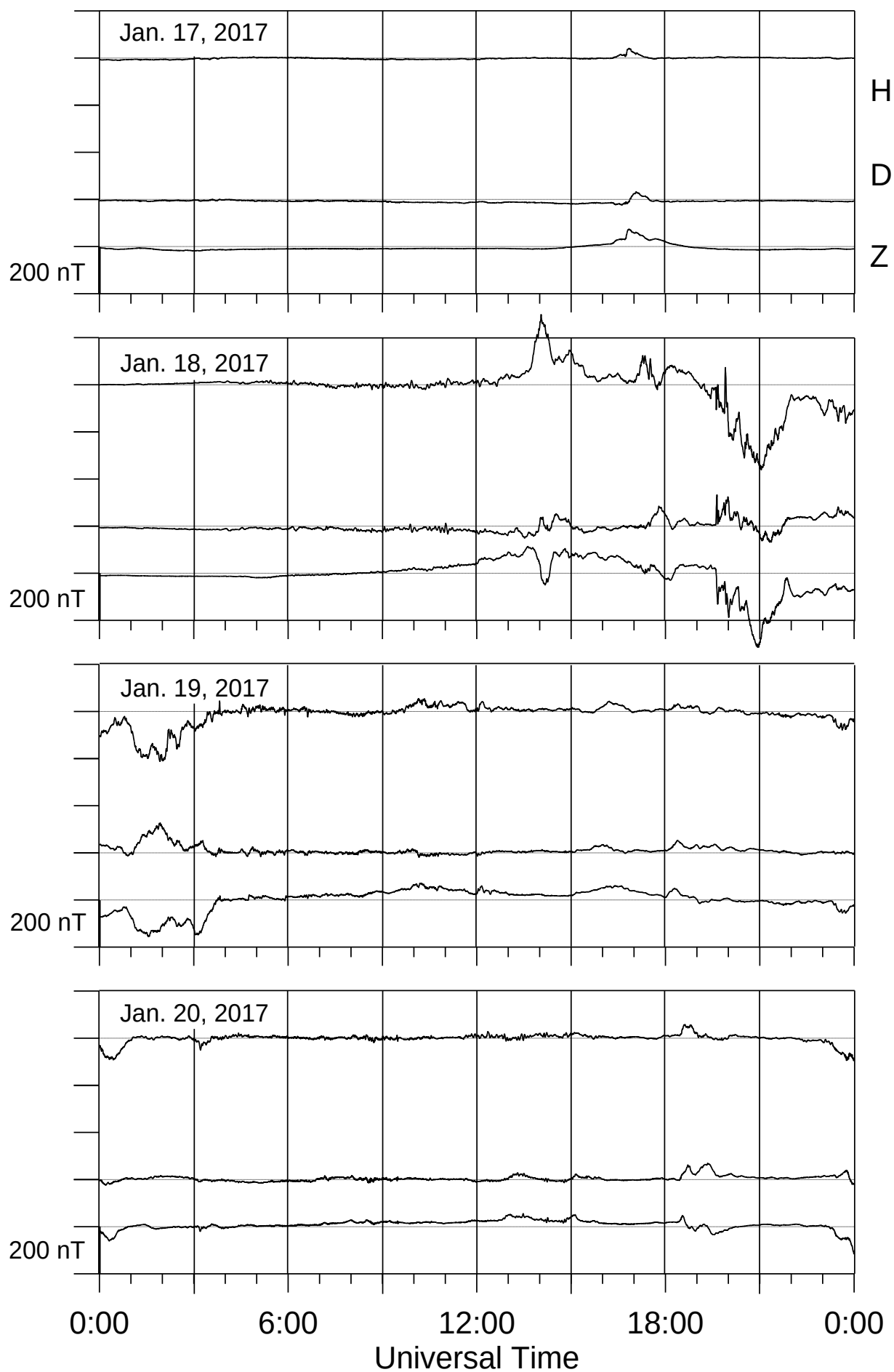
Lovozero magnetometer



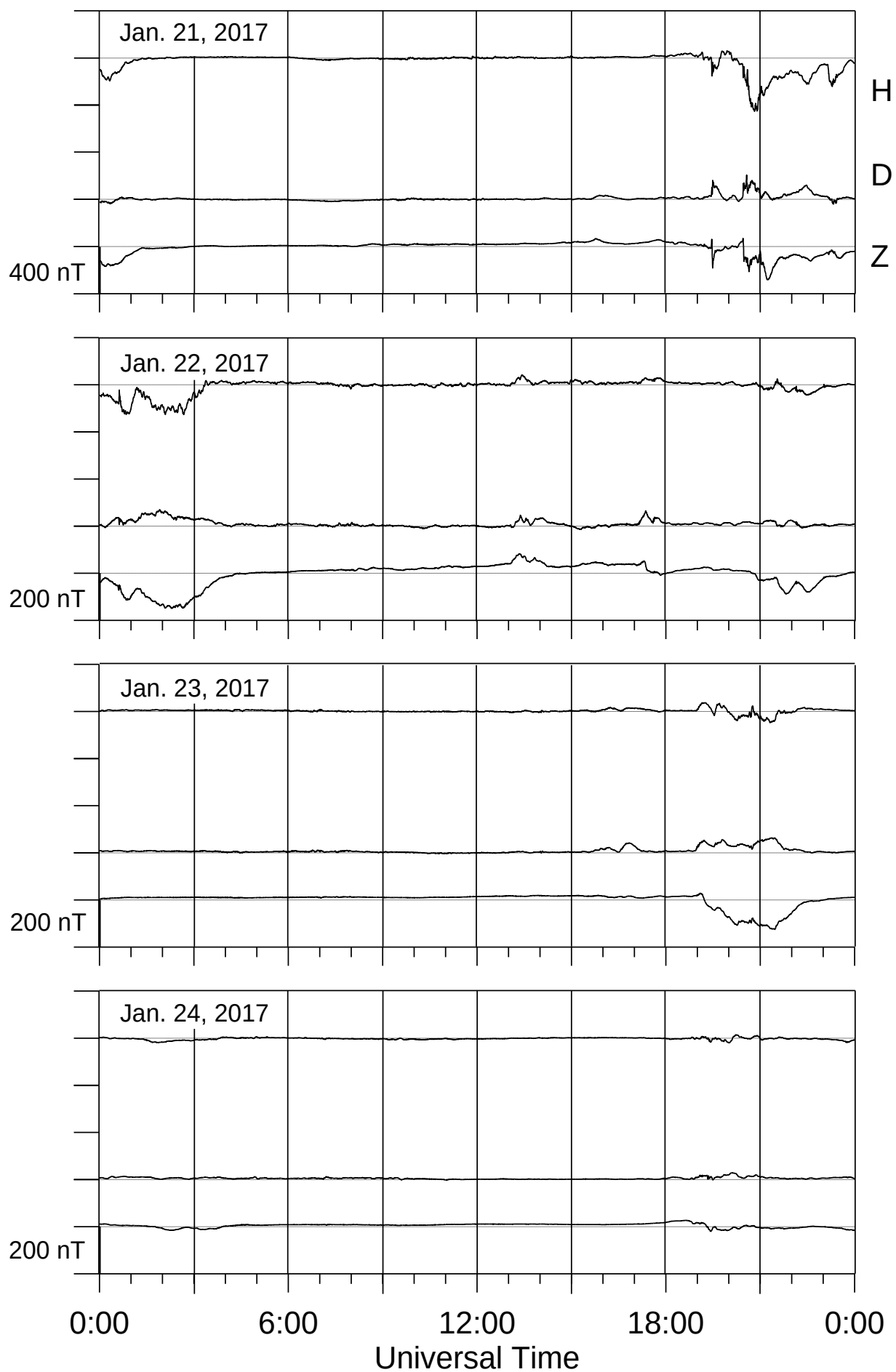
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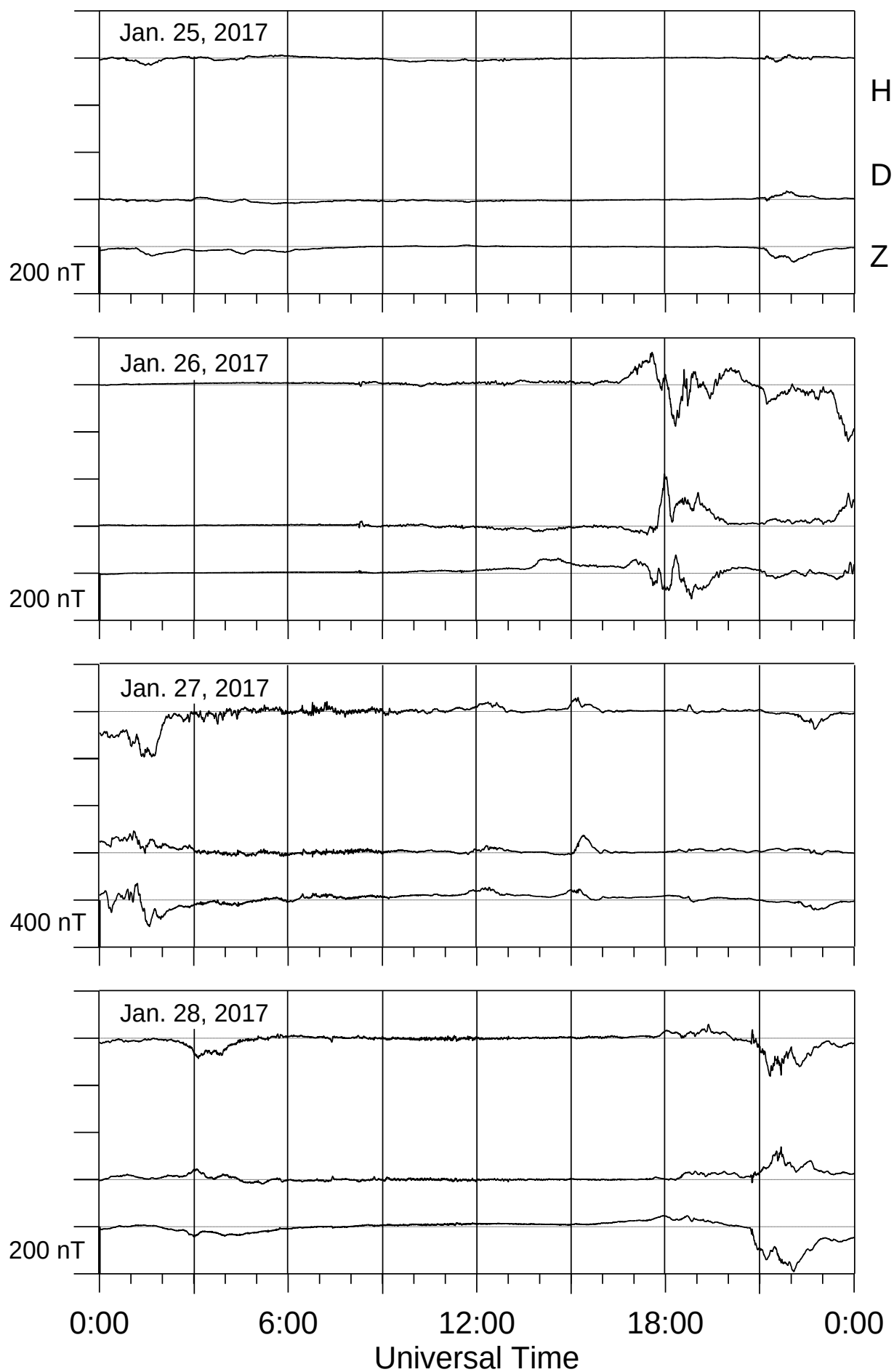
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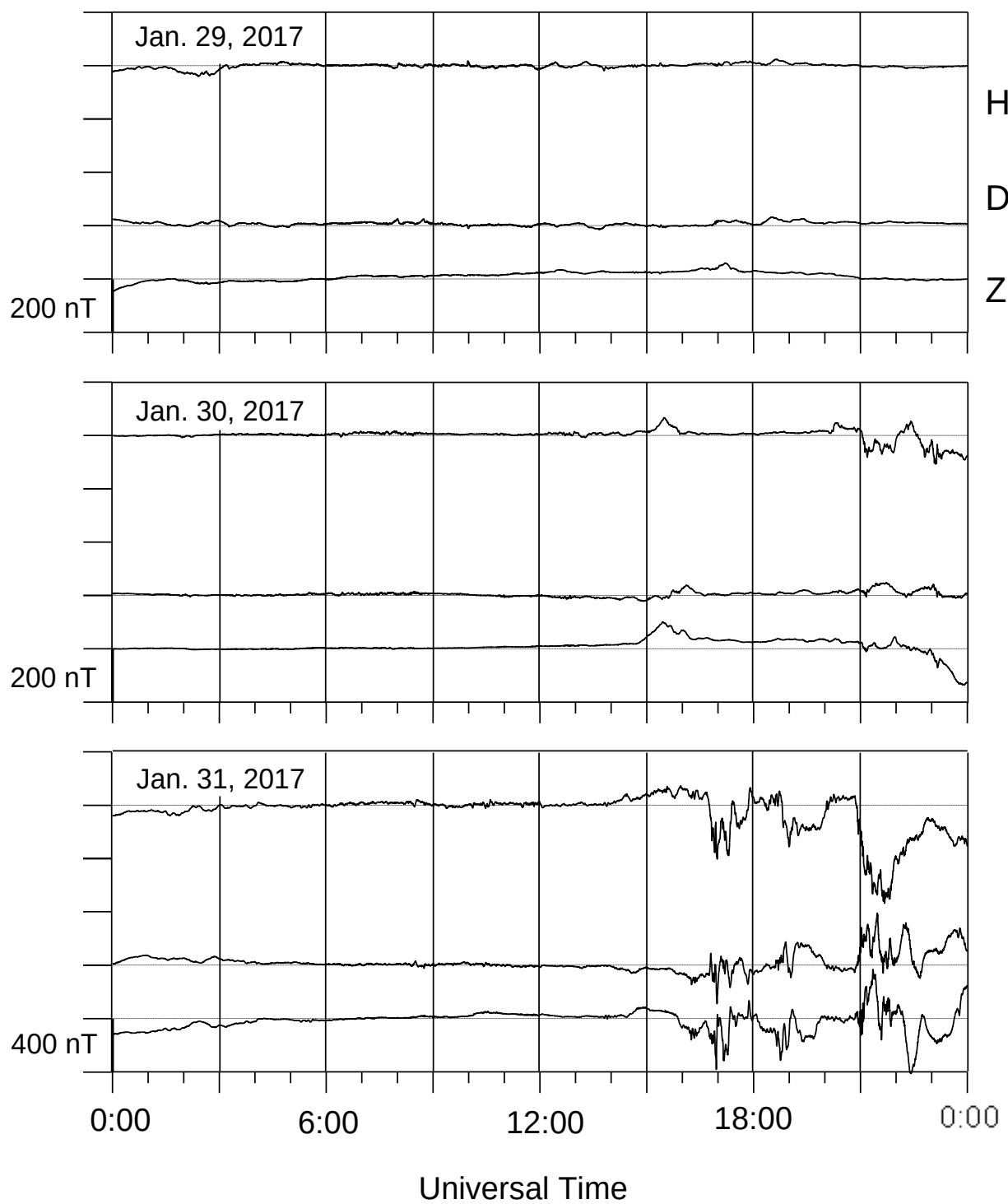
Lovozero magnetometer



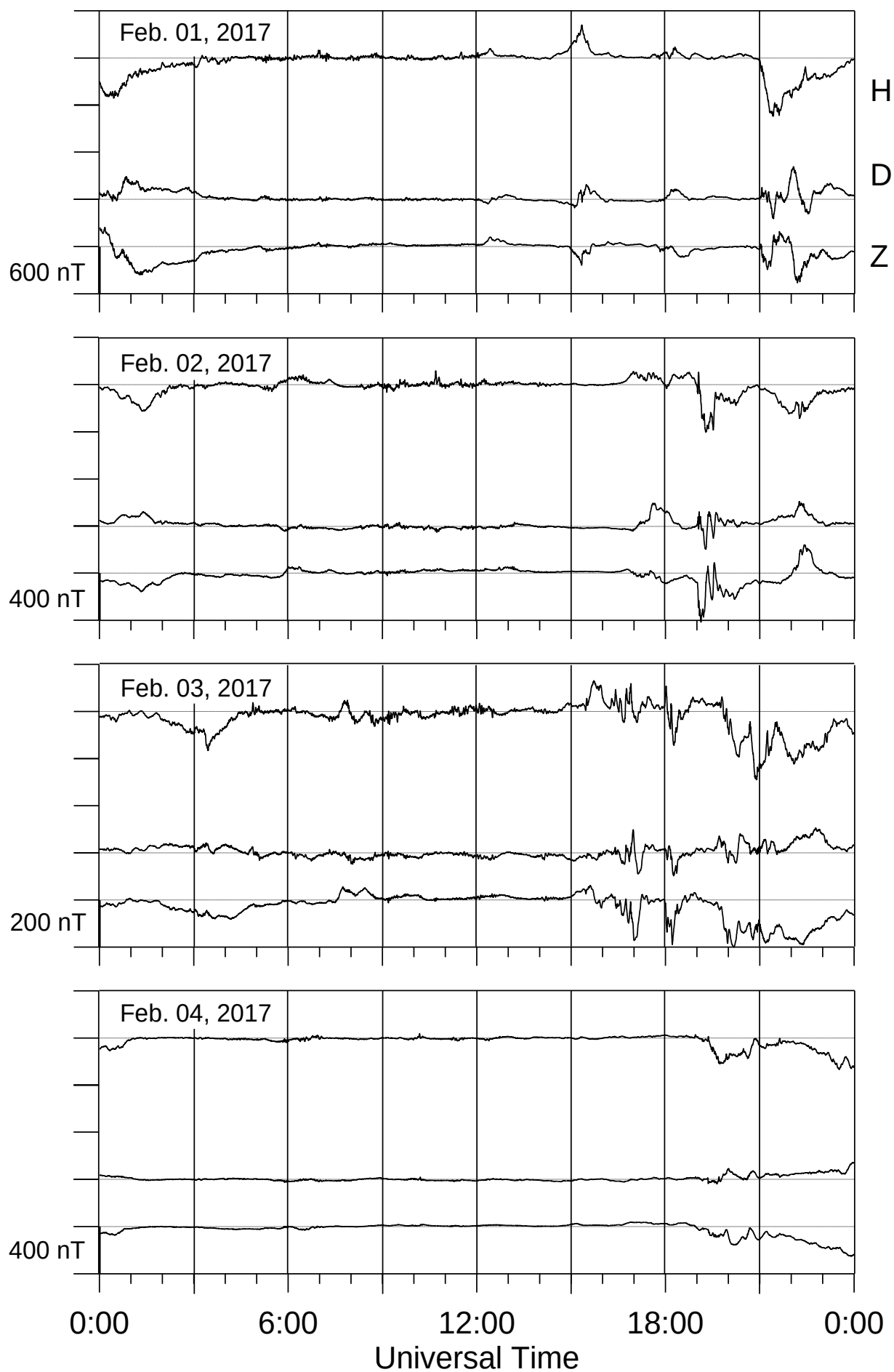
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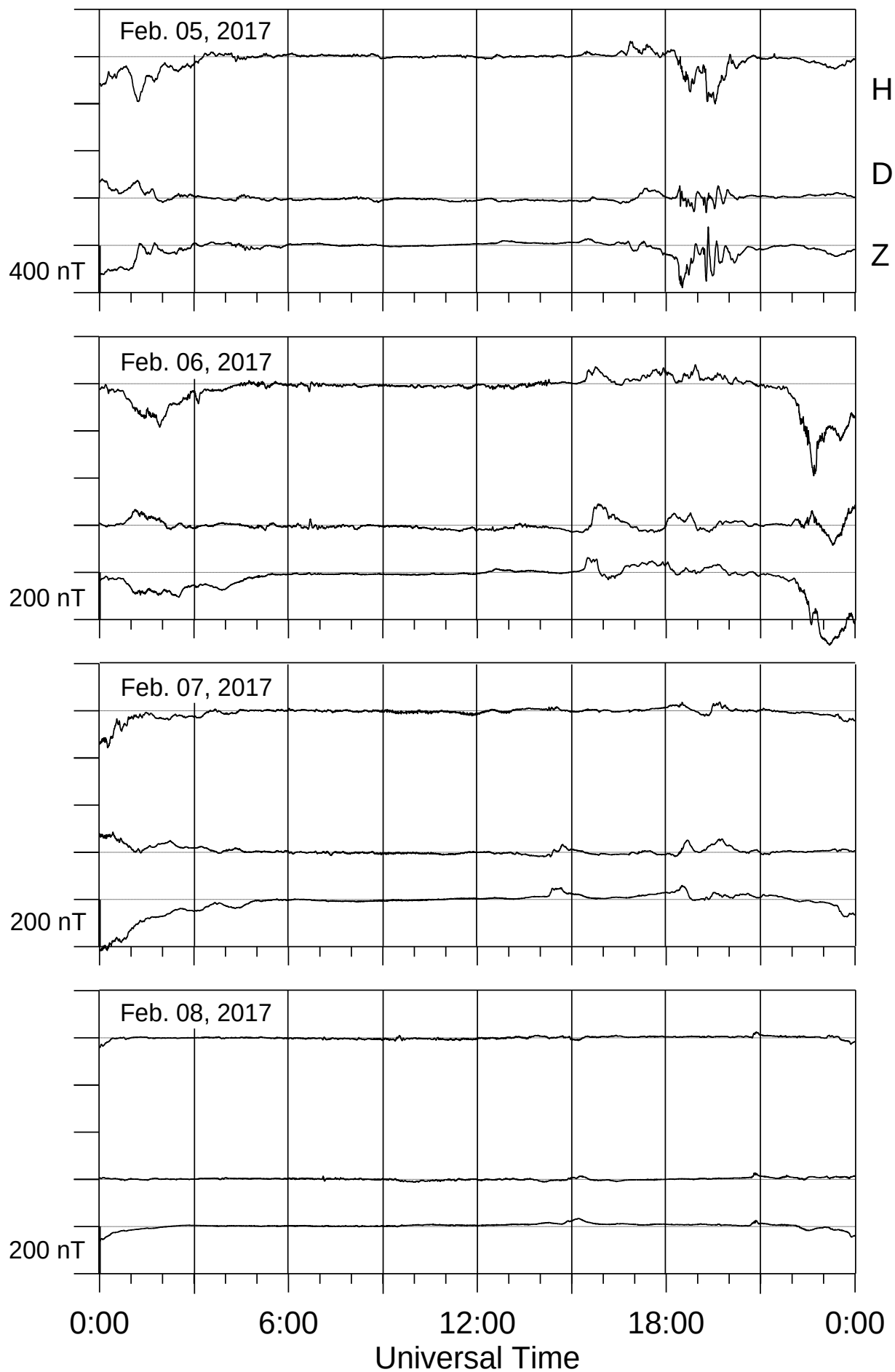
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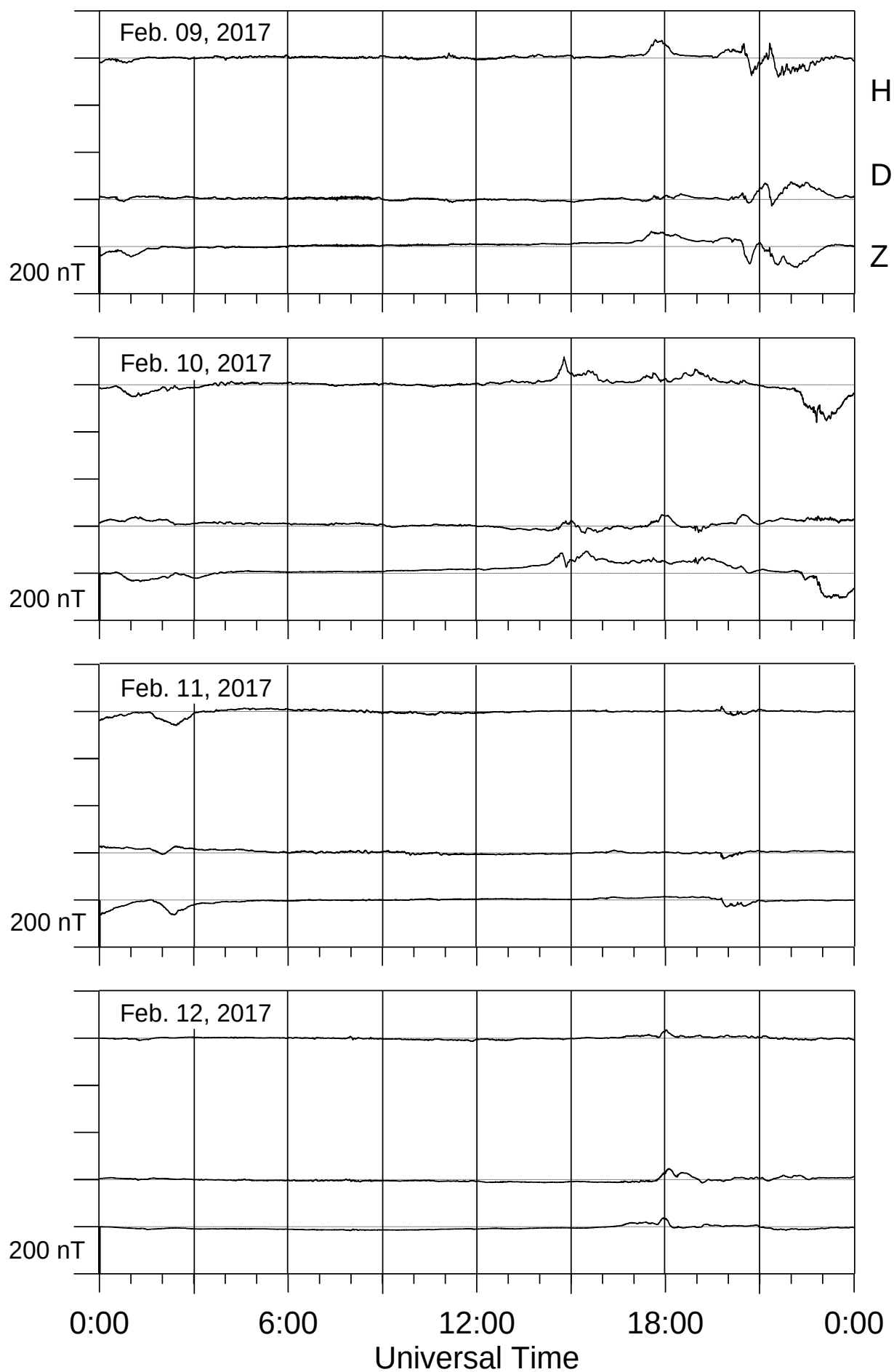
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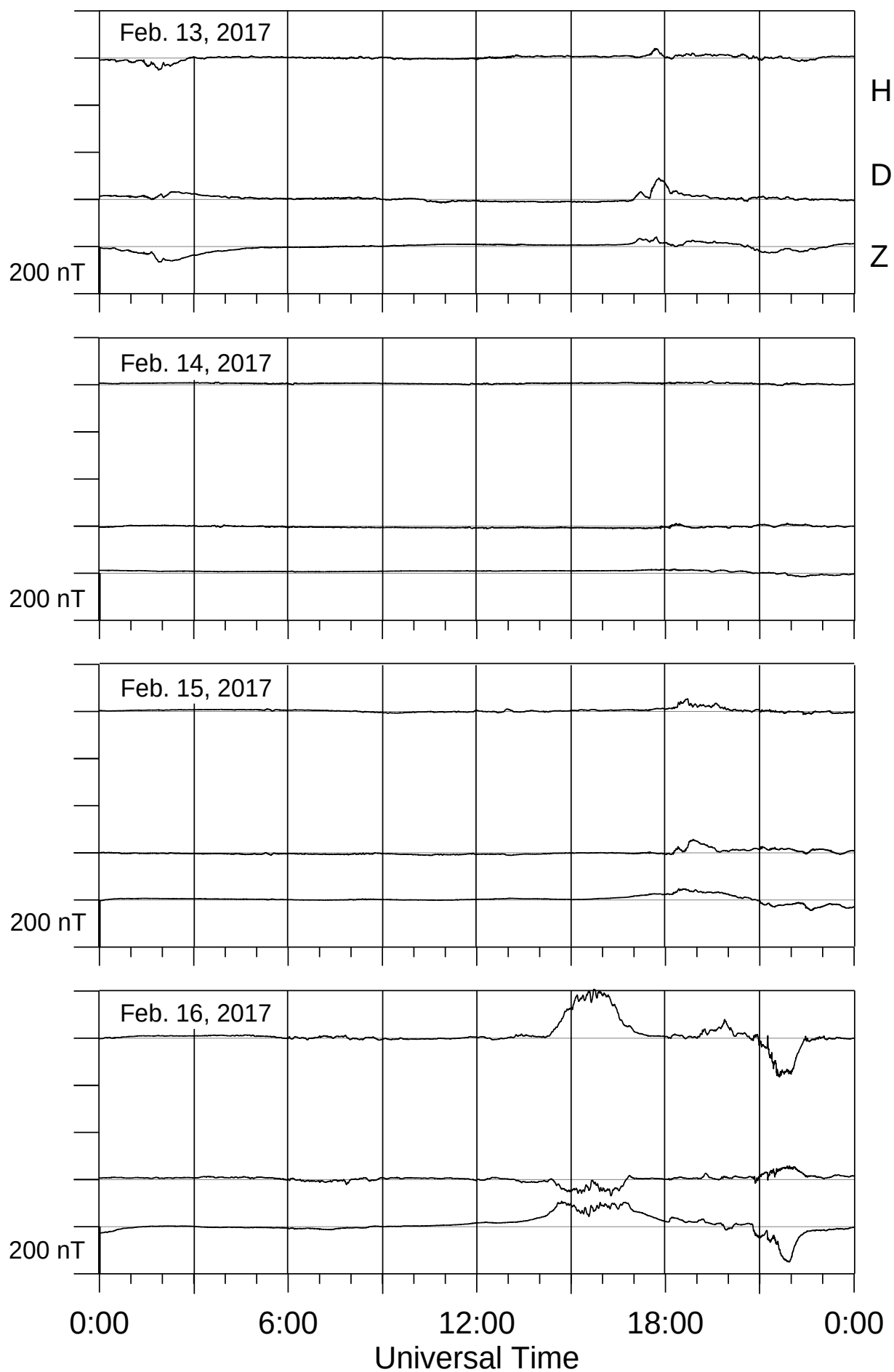
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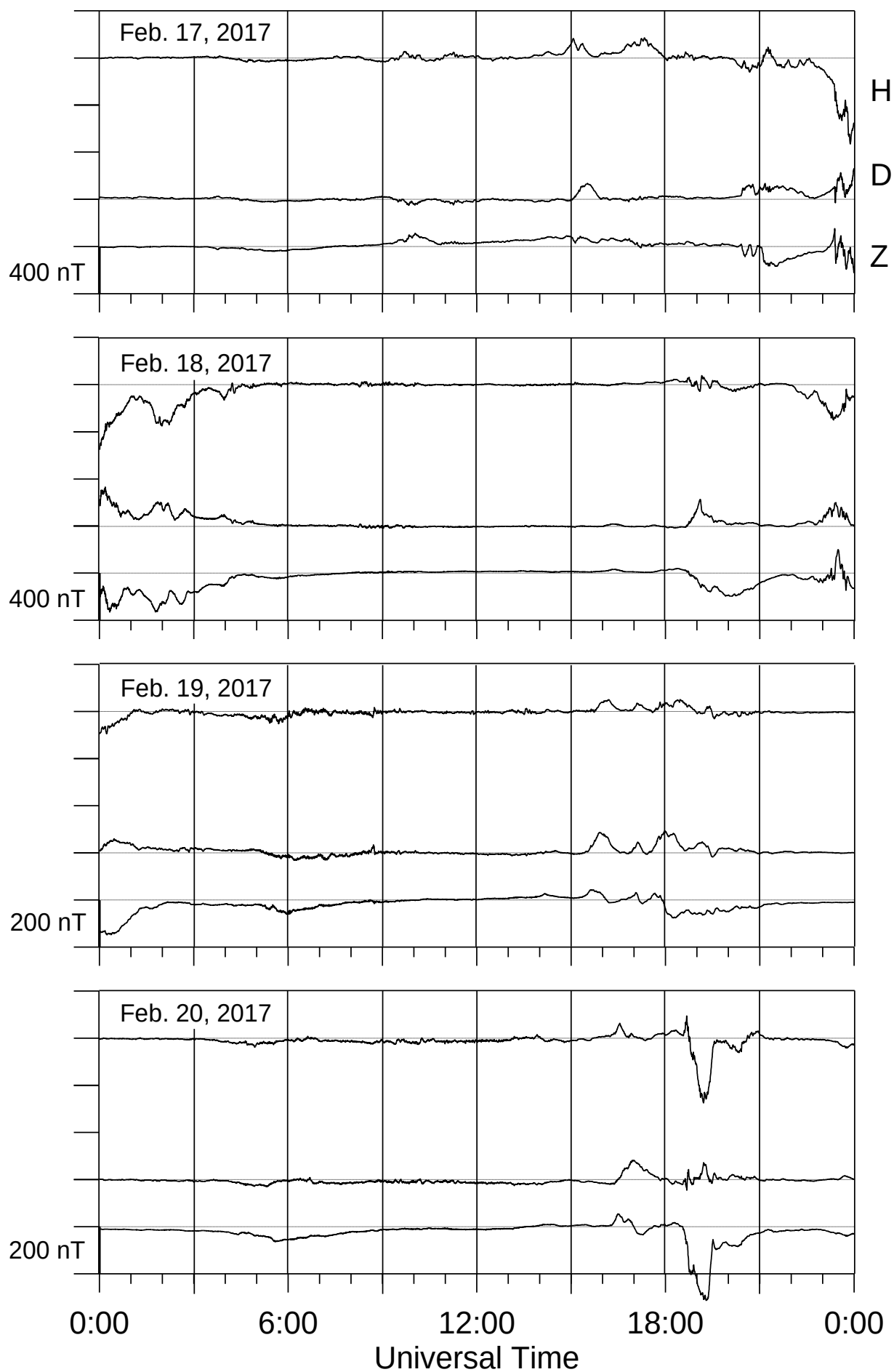
Lovozero magnetometer



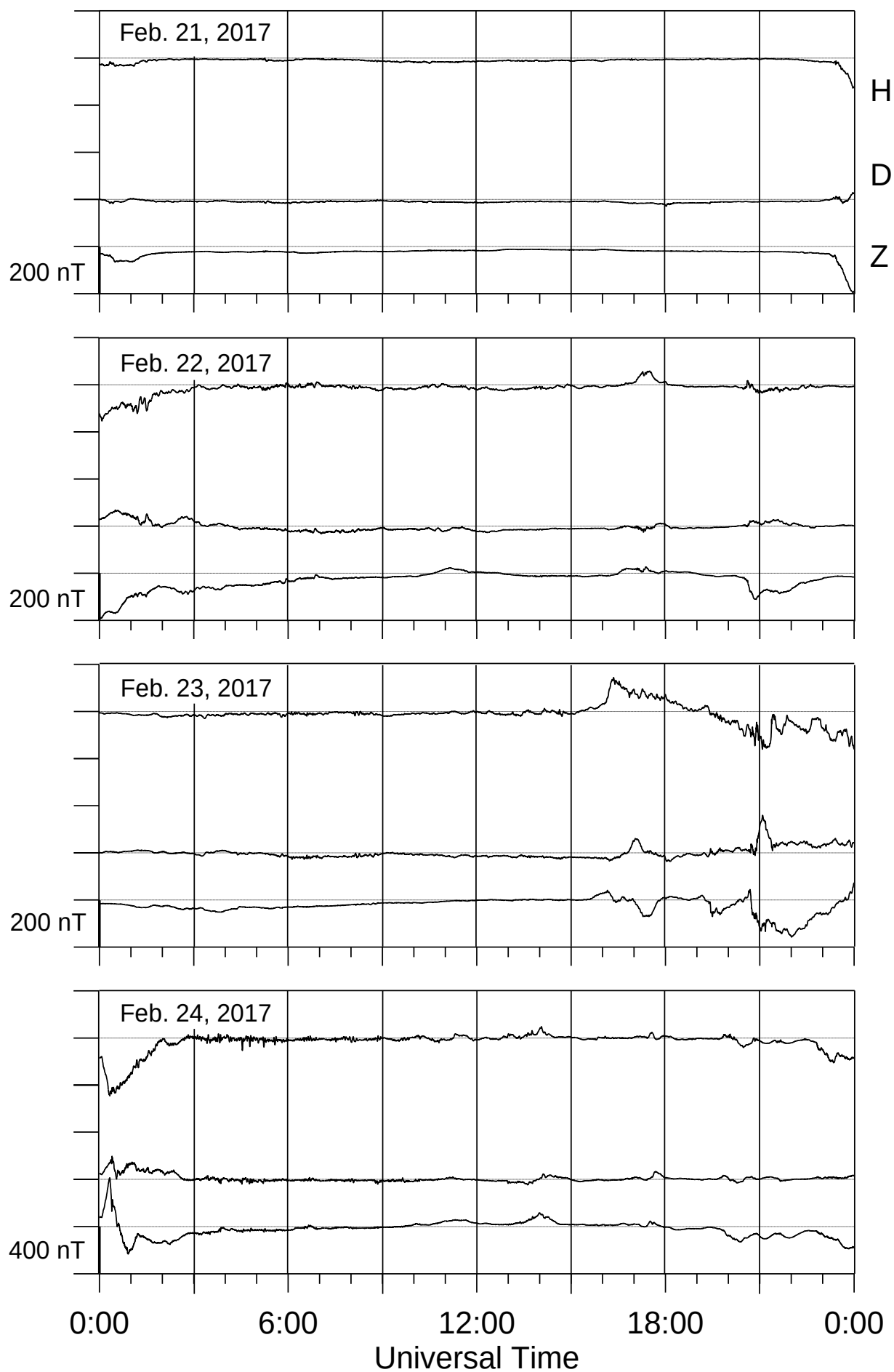
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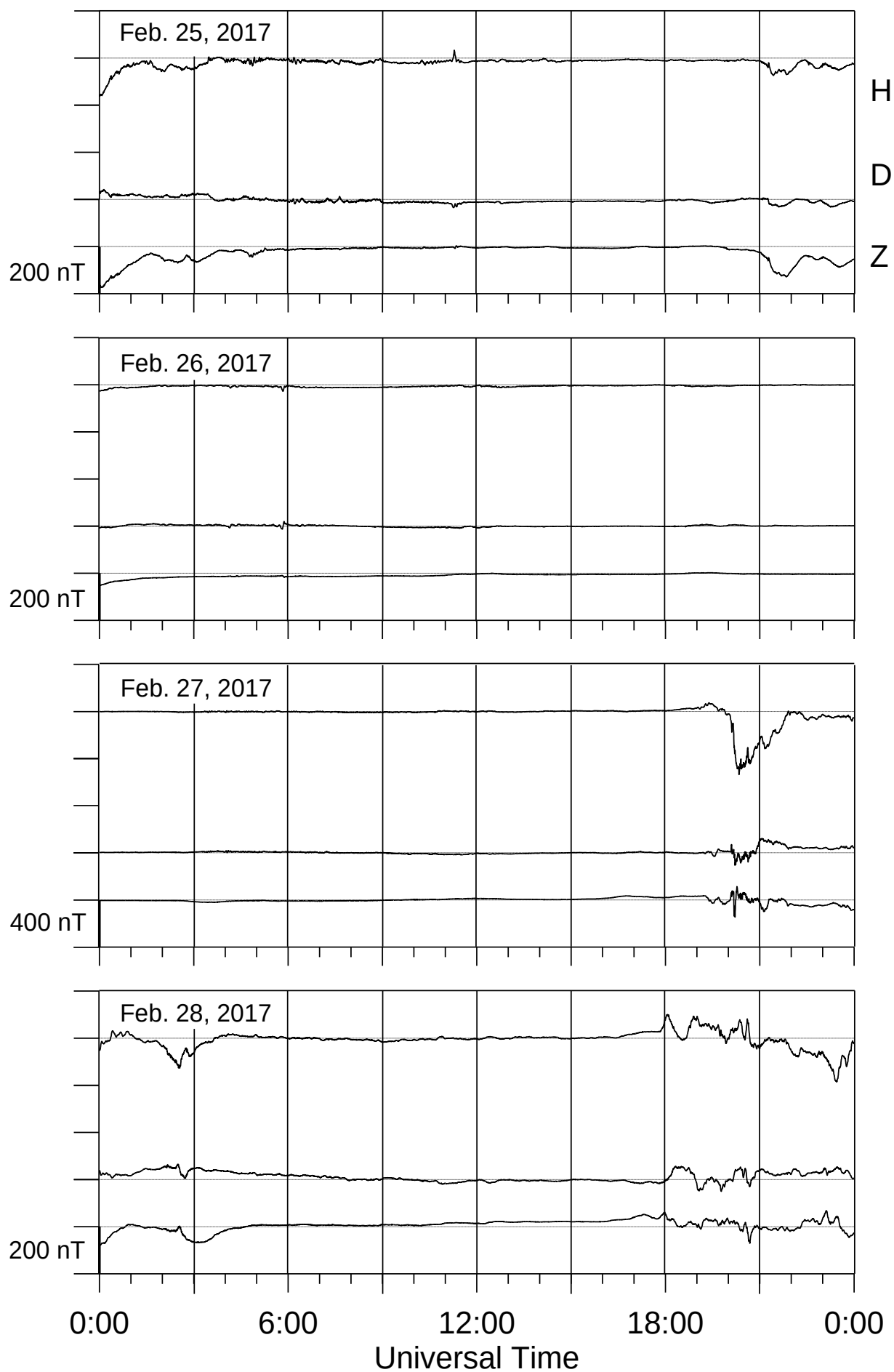
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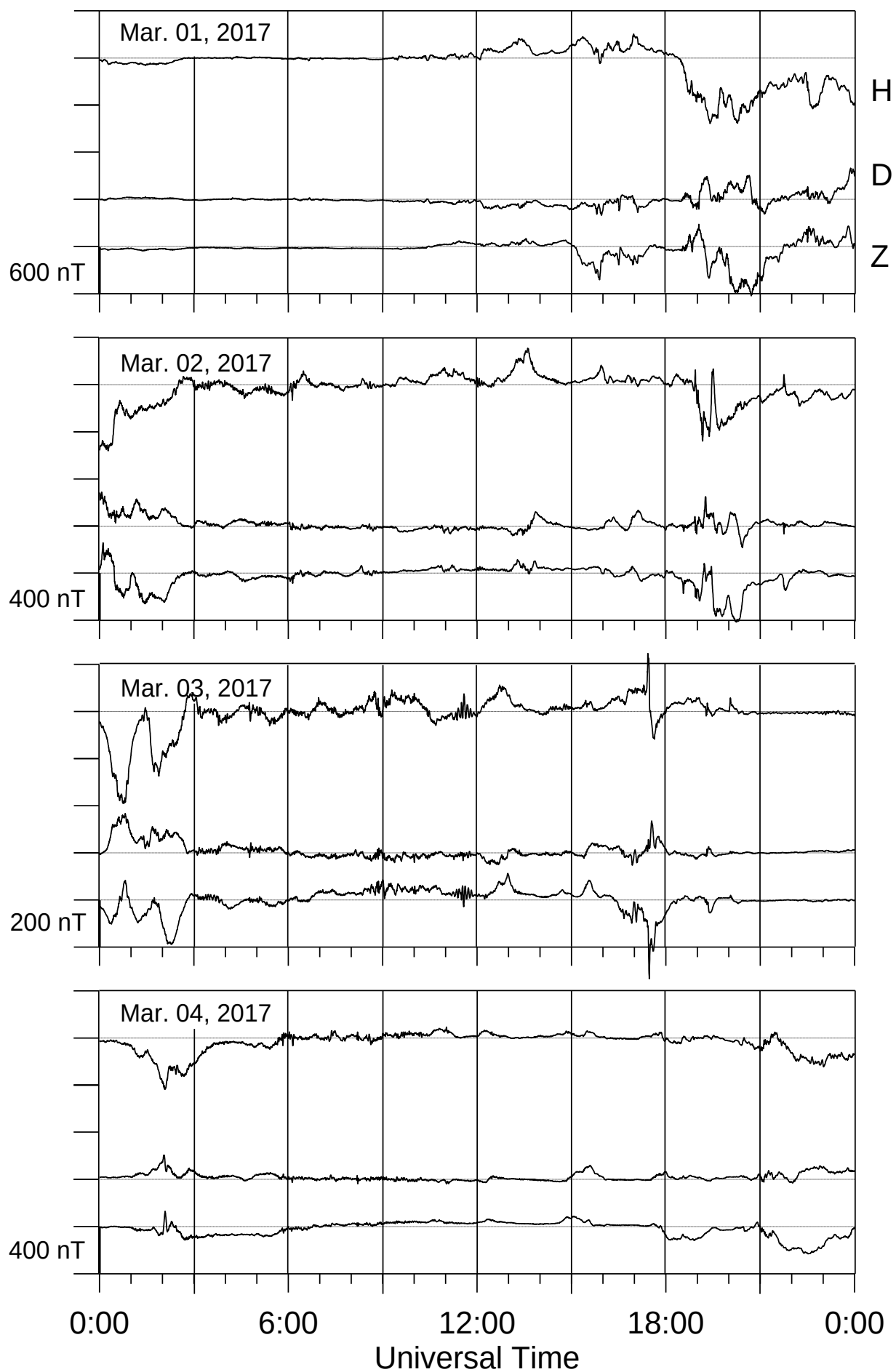
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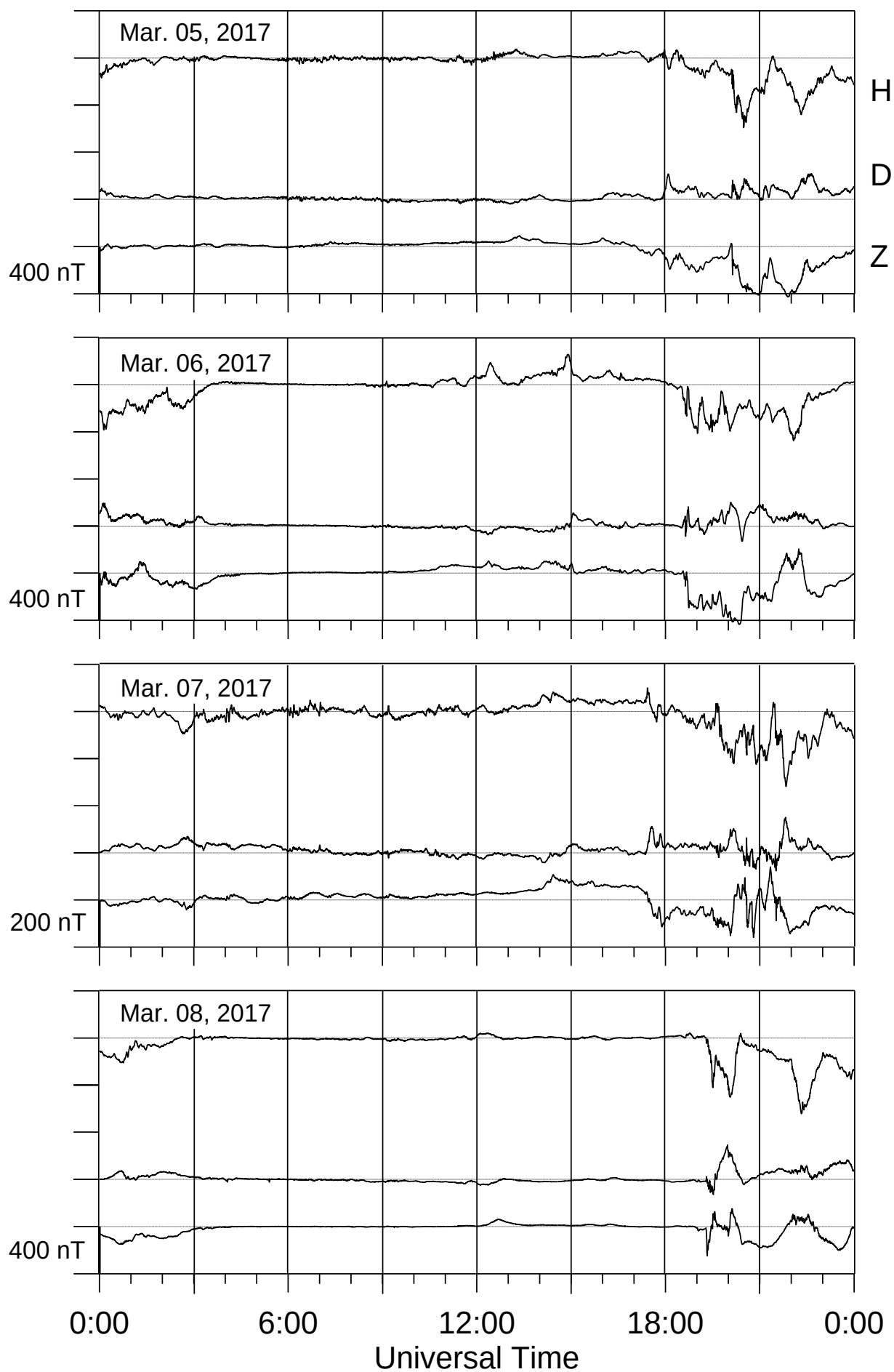
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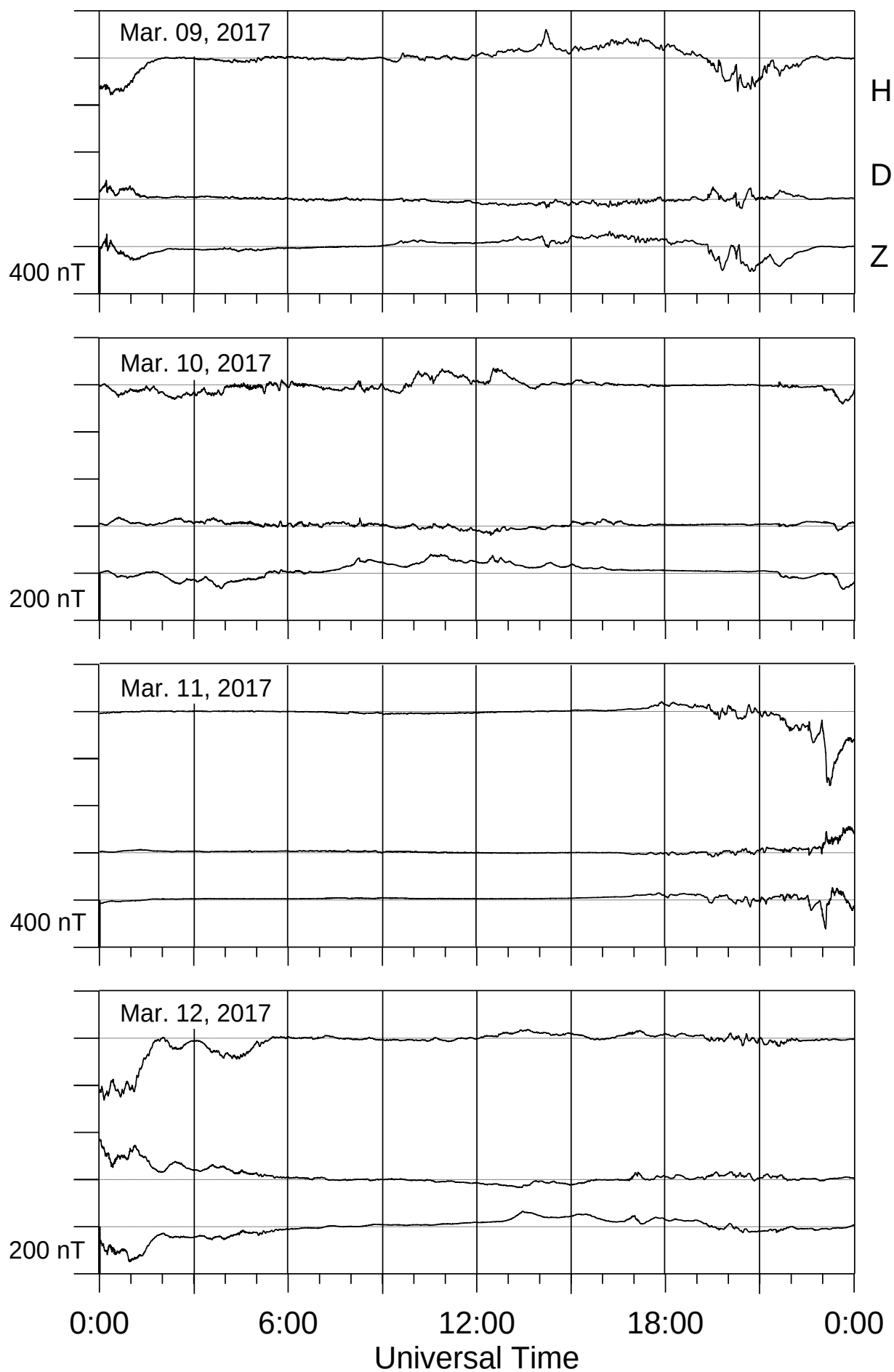
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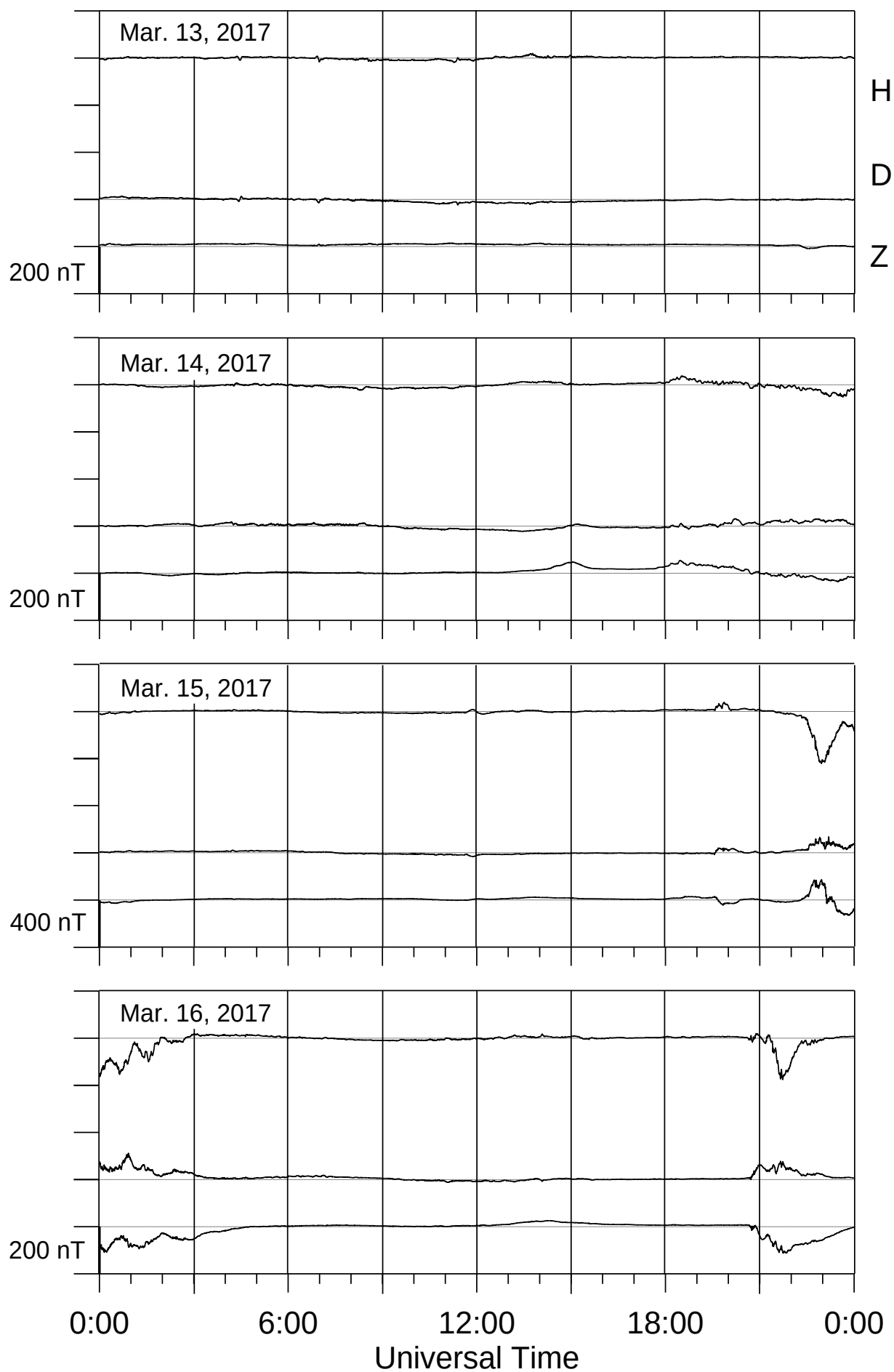
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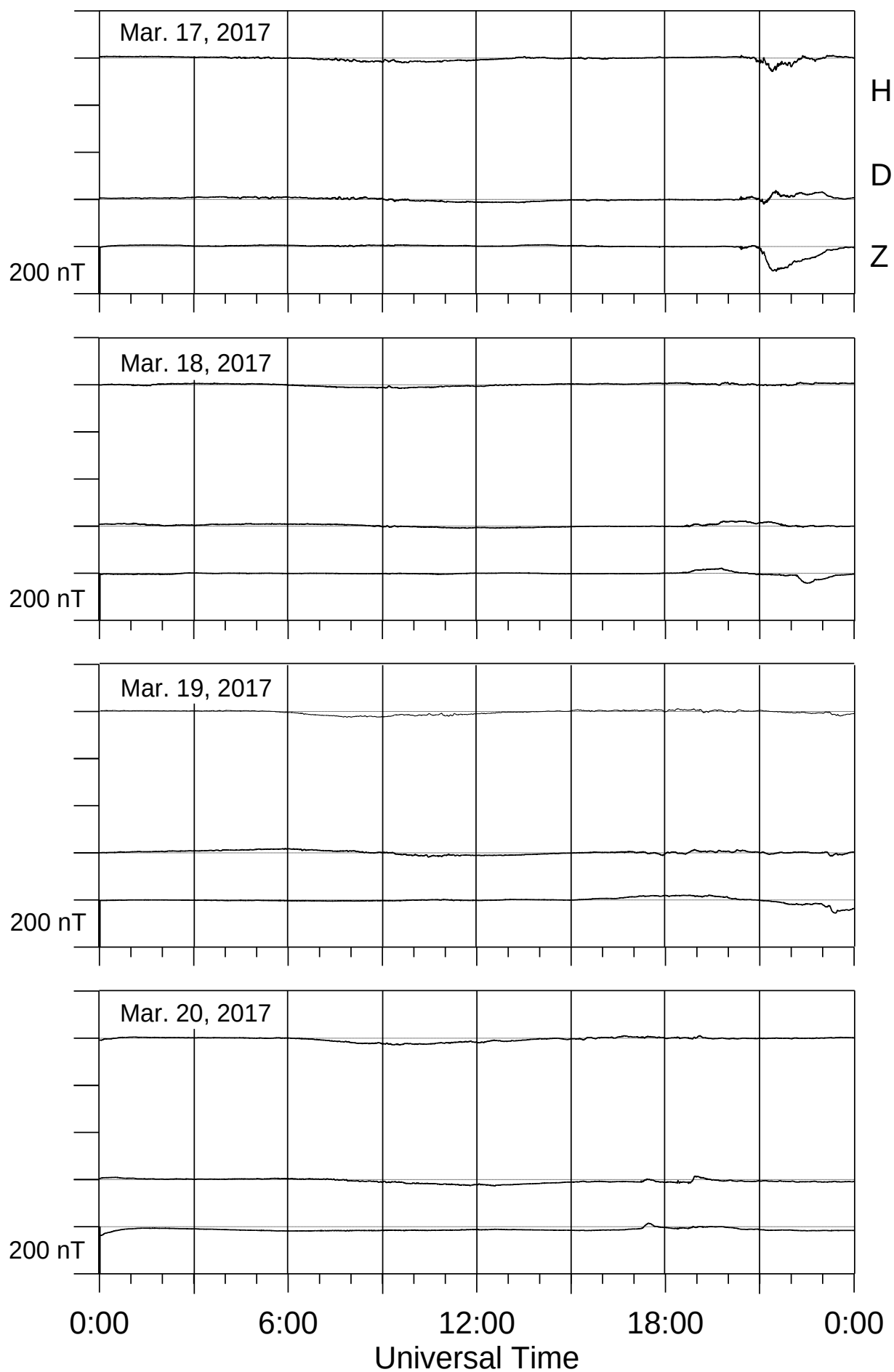
Lovozero magnetometer



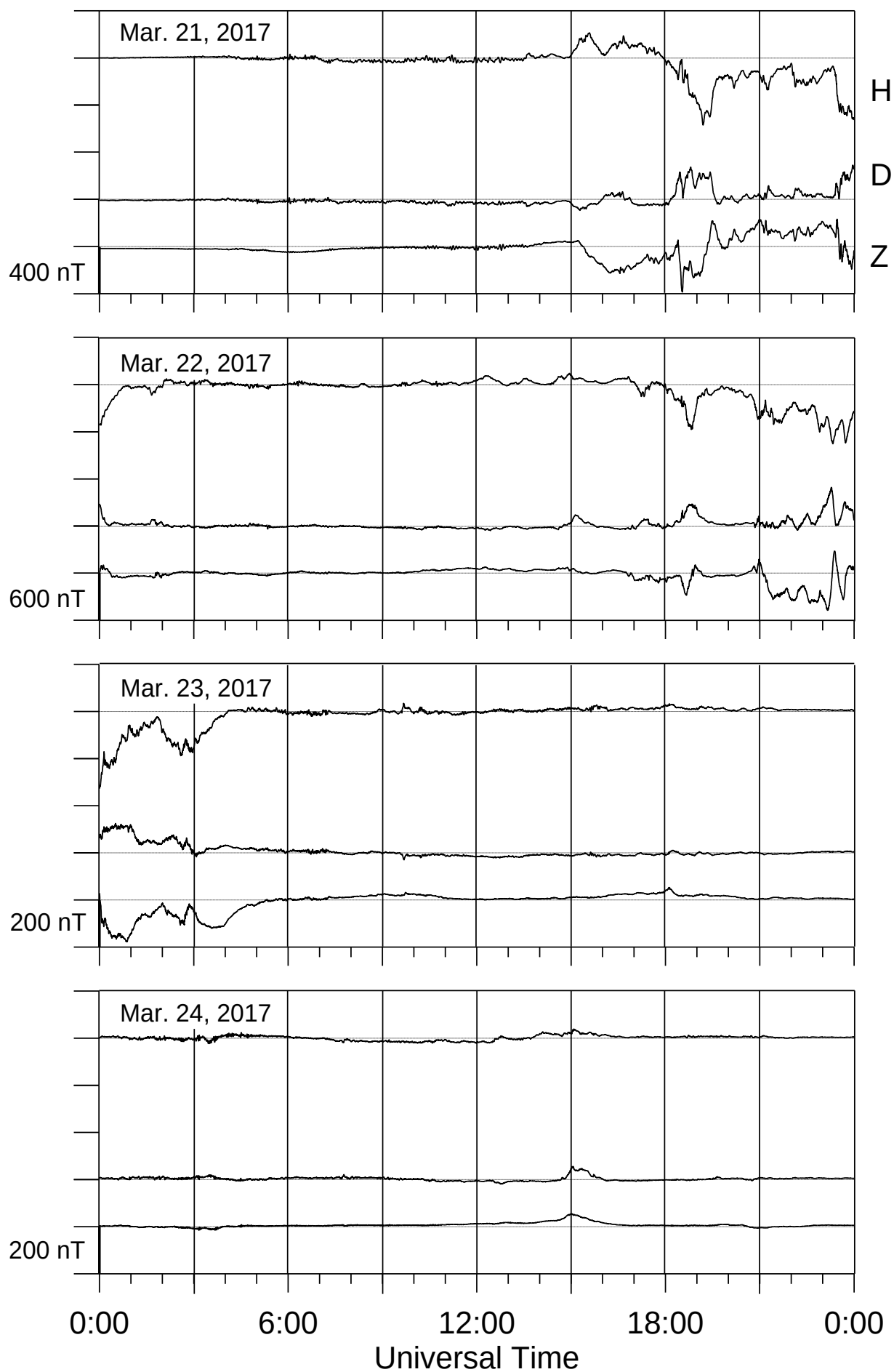
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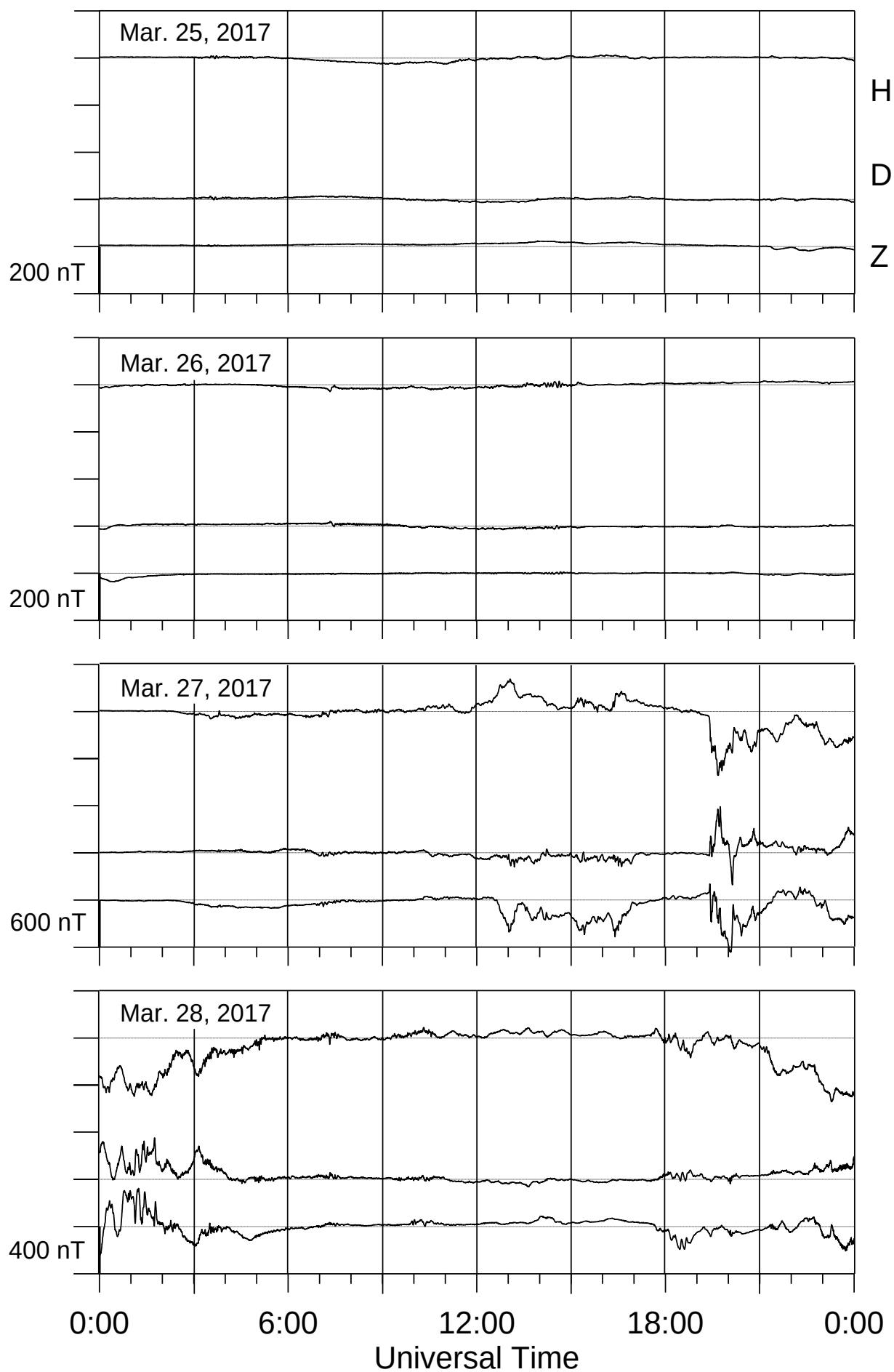
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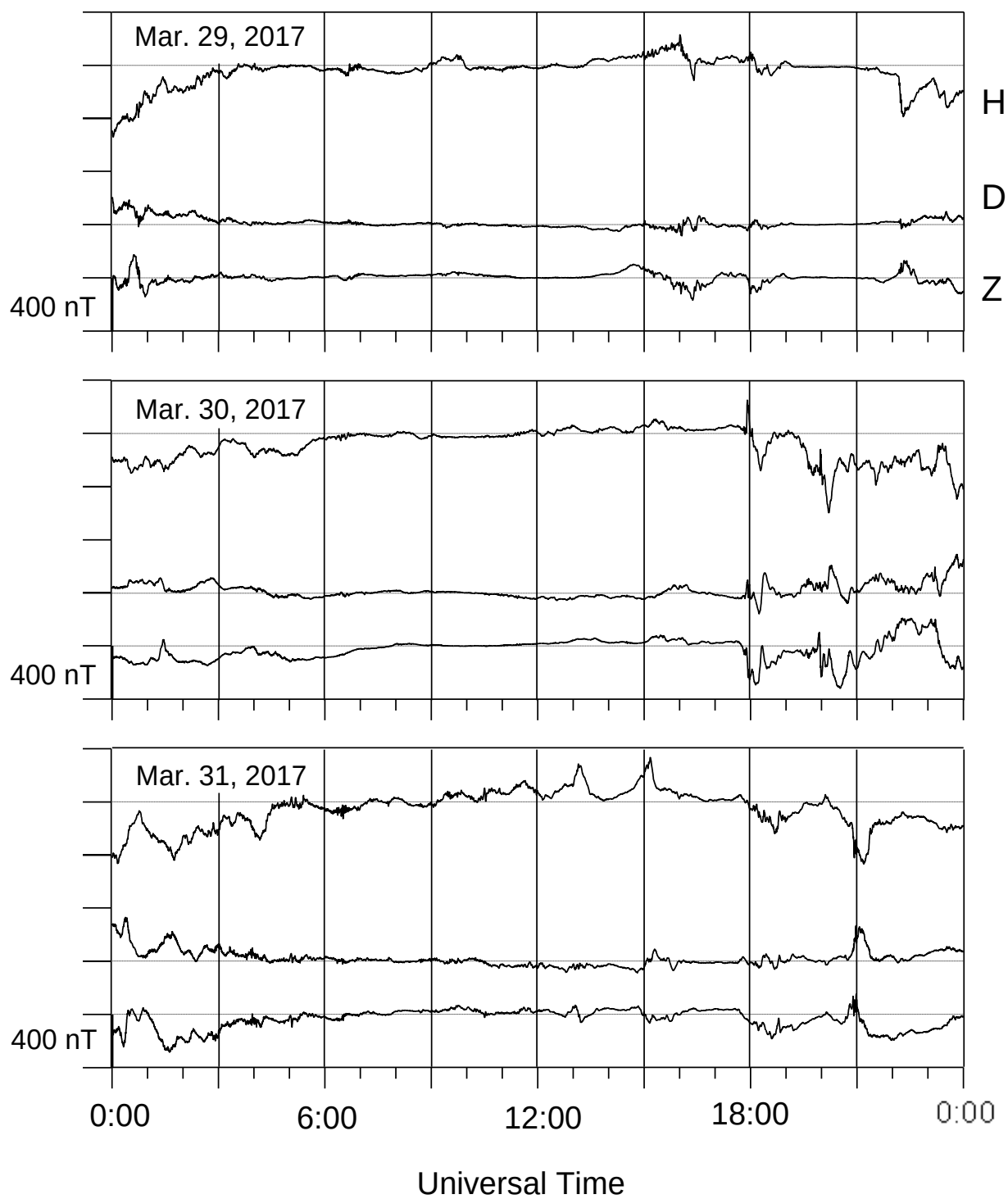
Lovozero magnetometer



Lovozero magnetometer



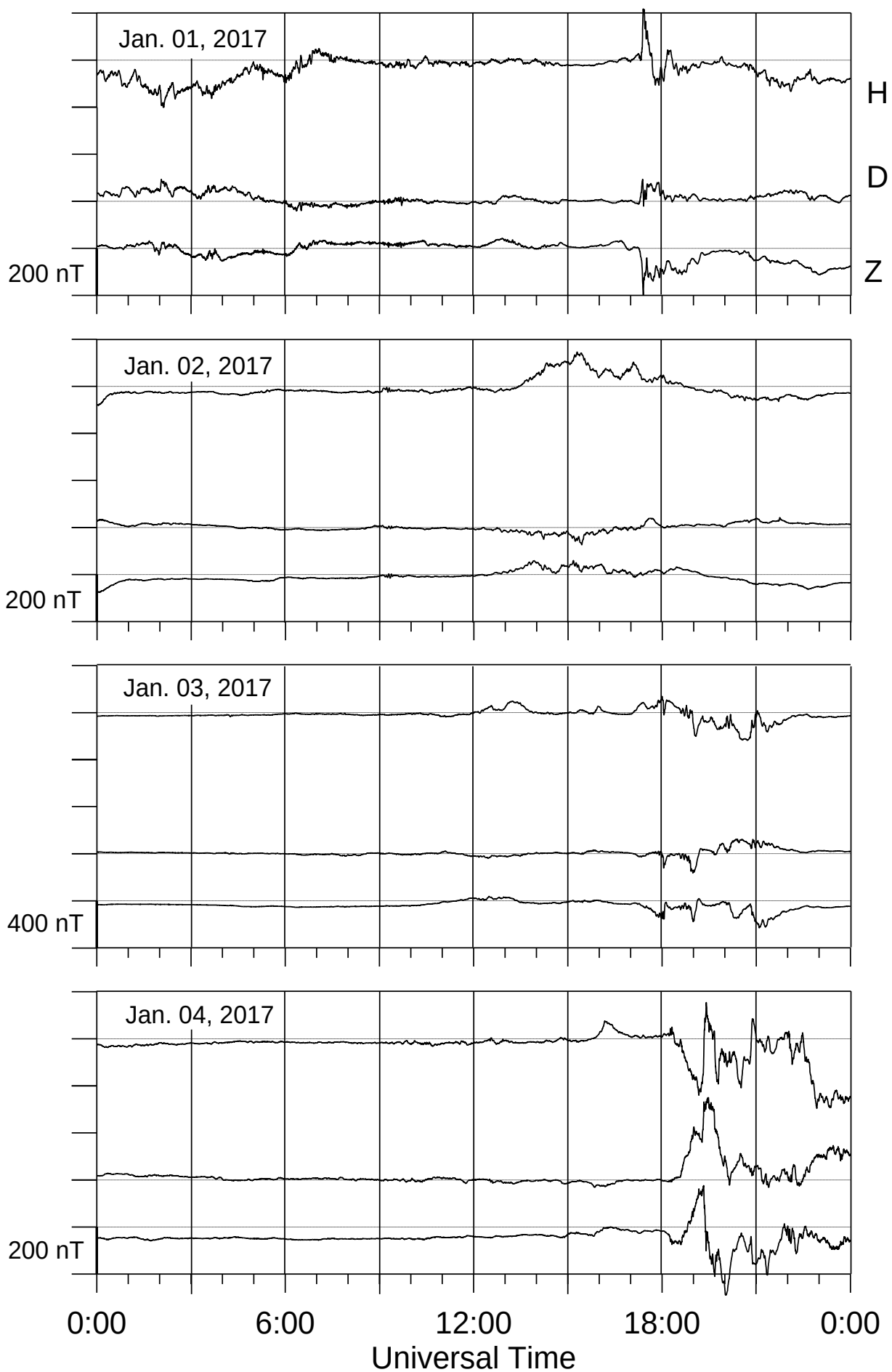
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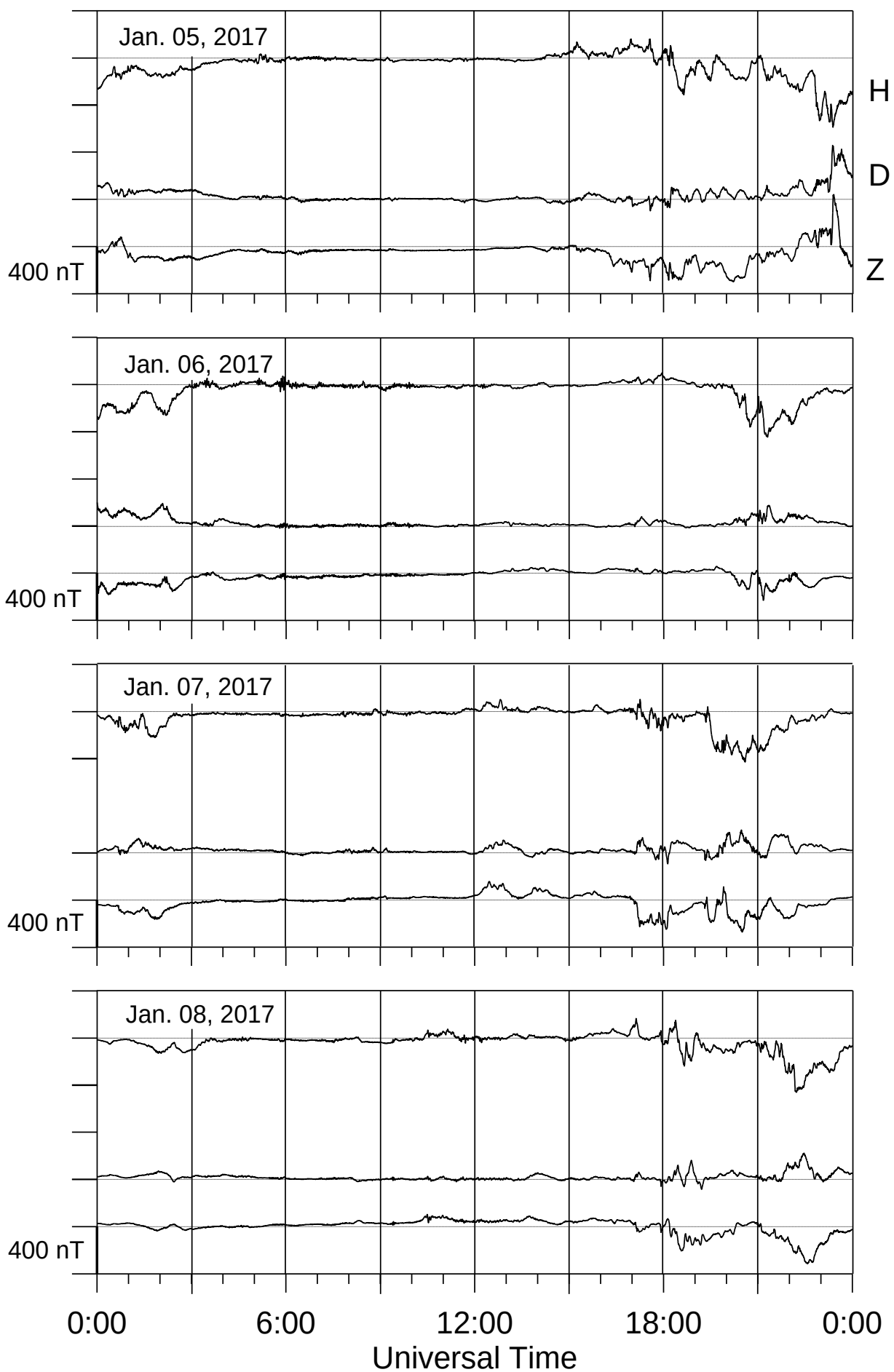
LOPARSKAYA MAGNETOGRAMS

January - March 2017

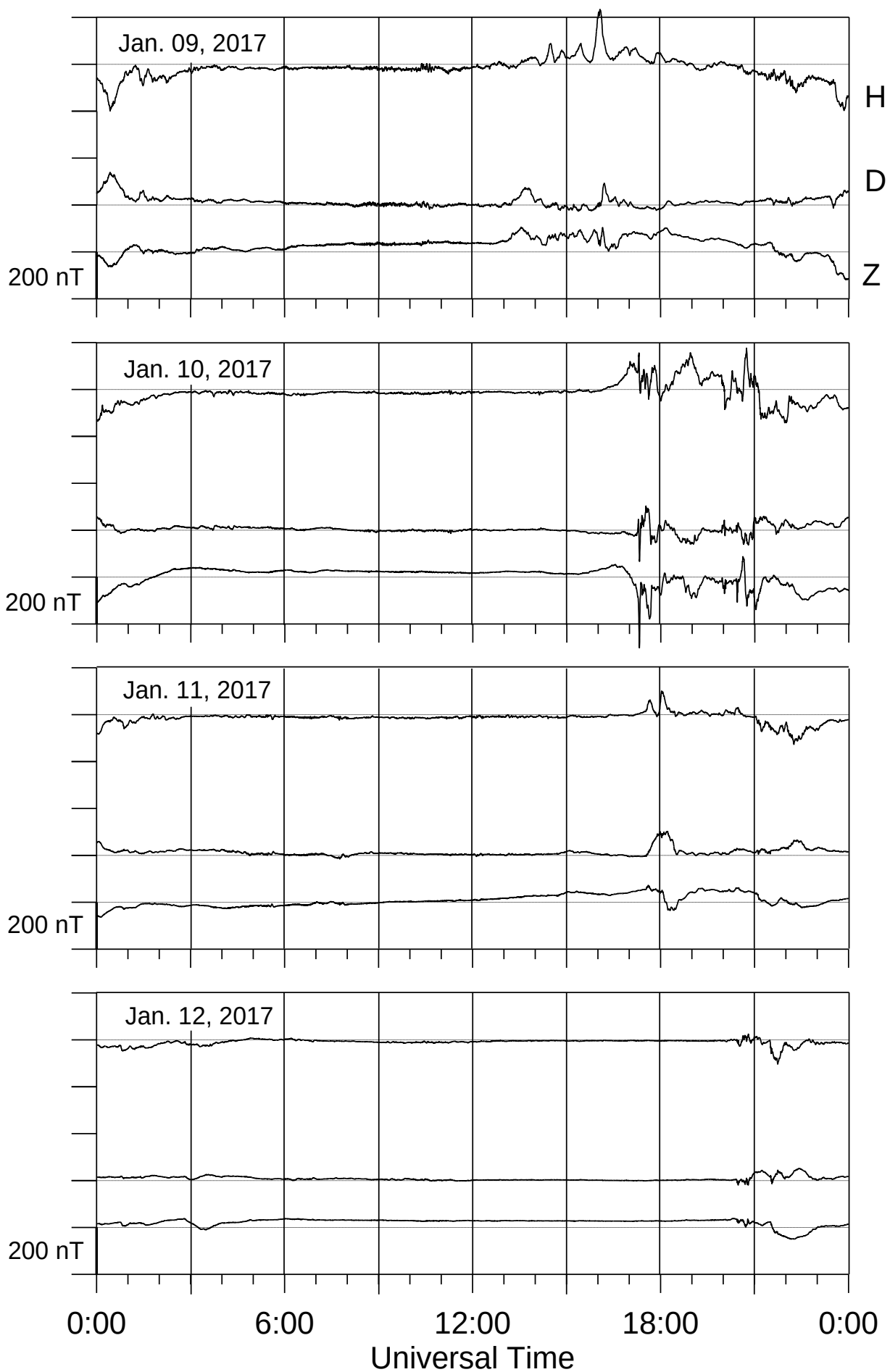
Loparskaya magnetometer



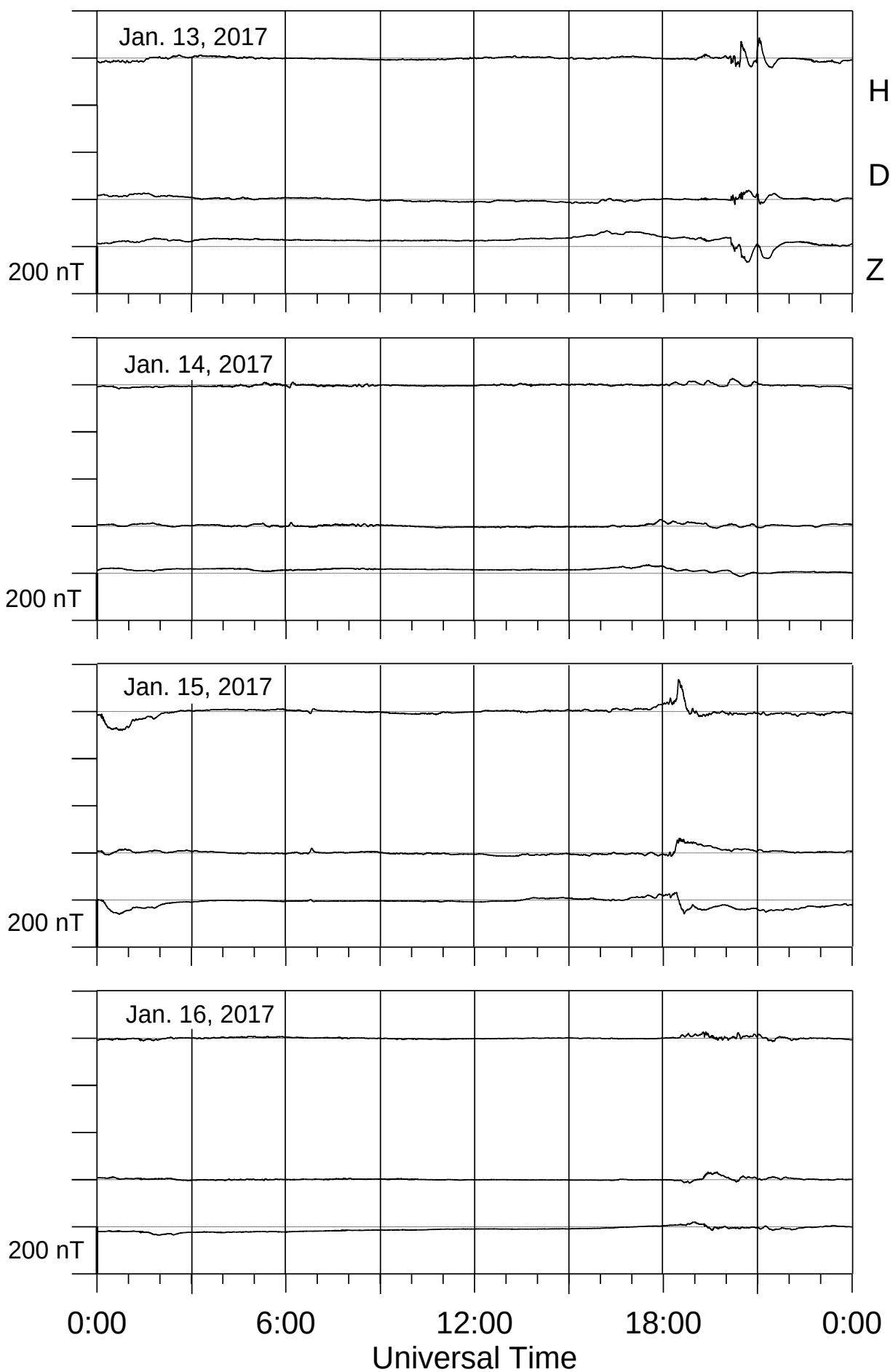
Loparskaya magnetometer



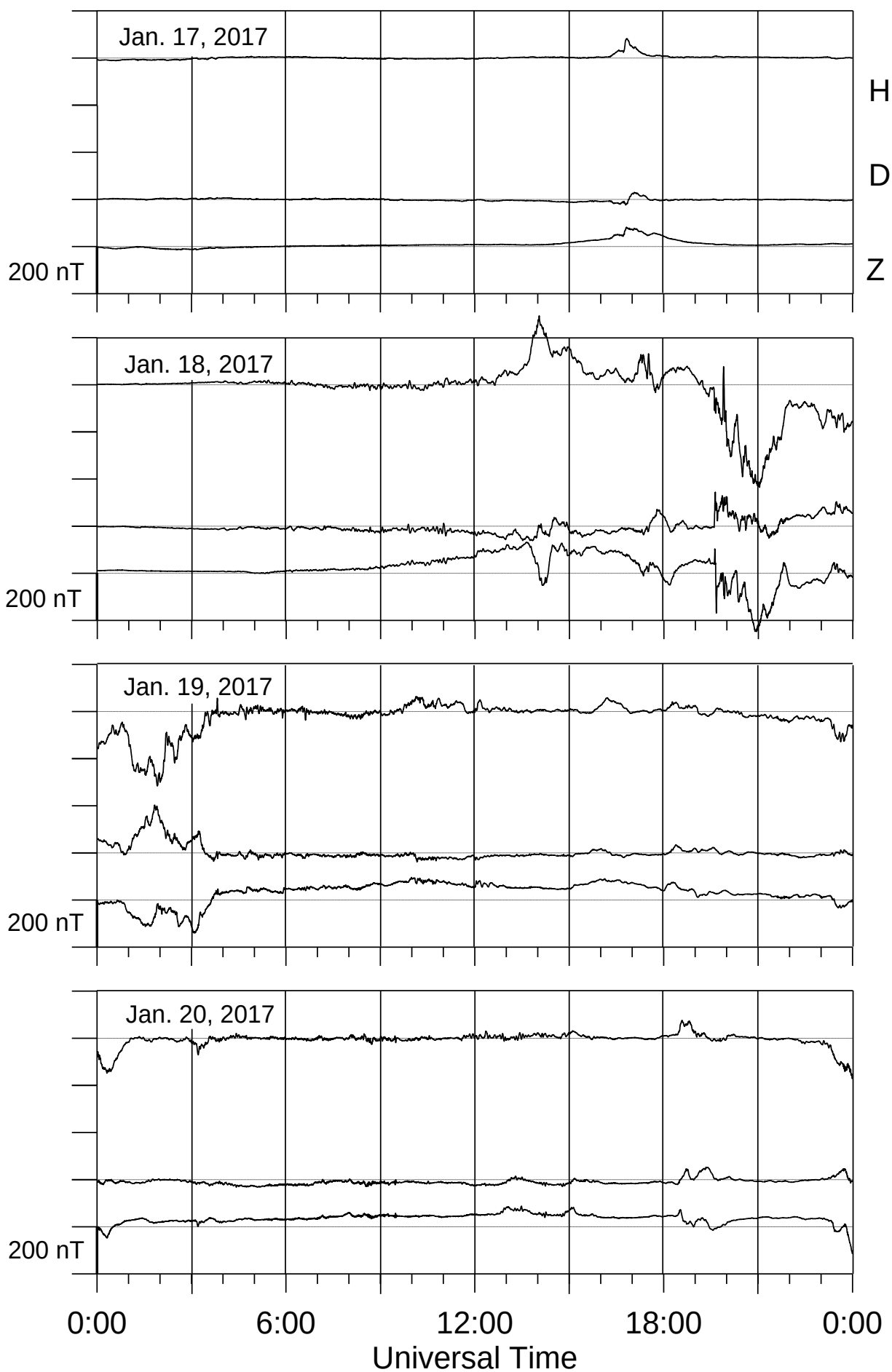
Loparskaya magnetometer



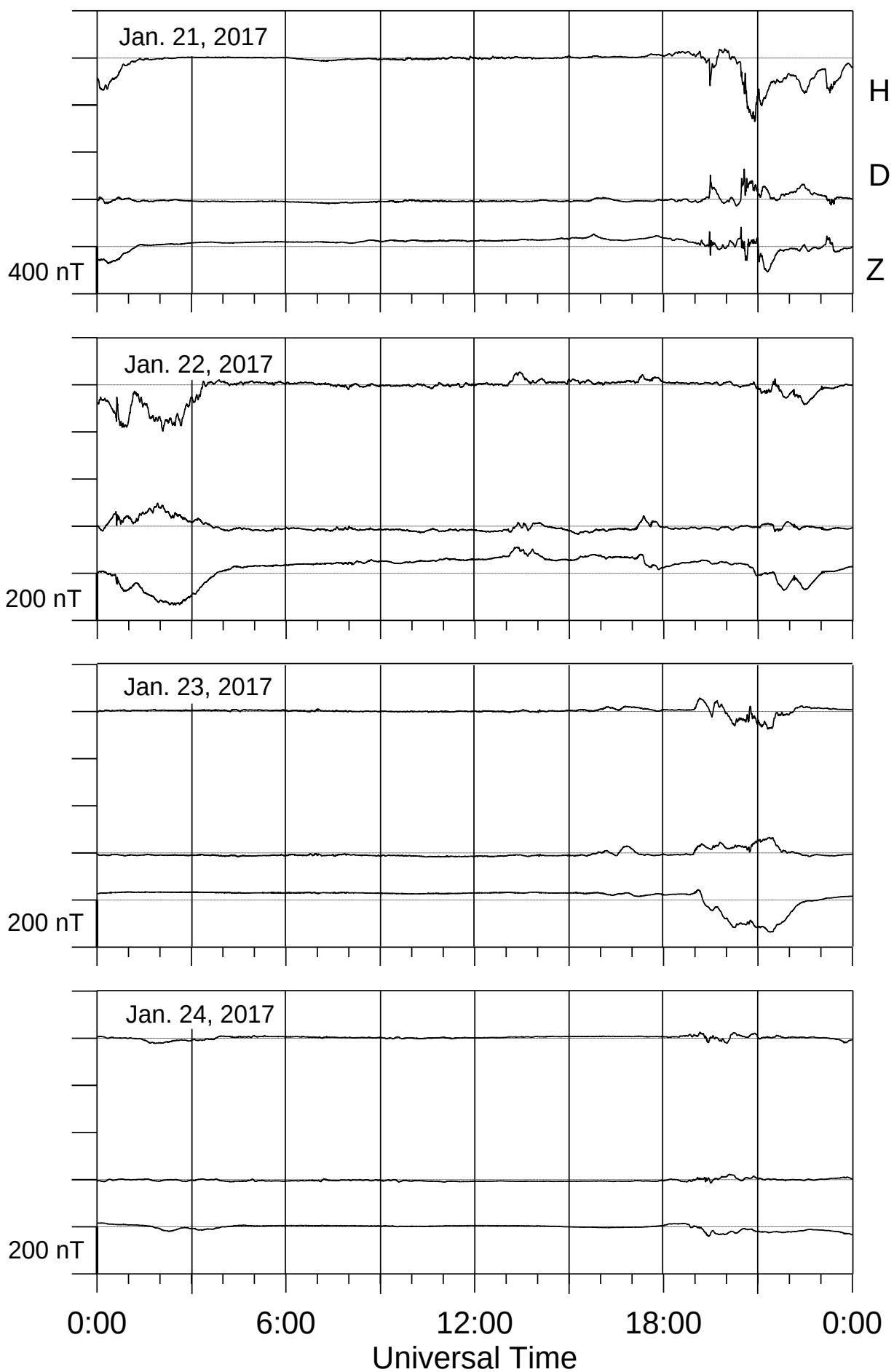
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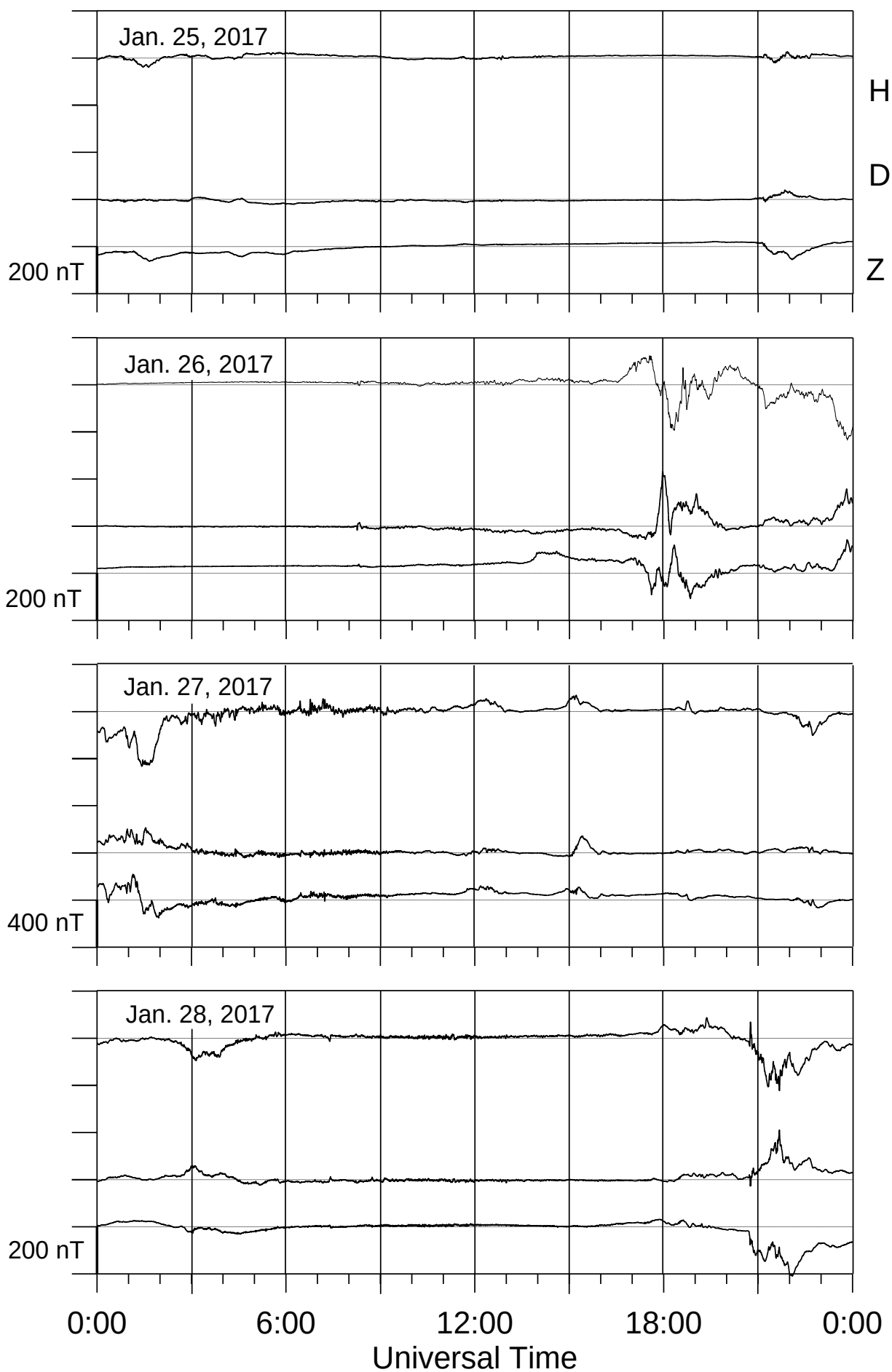
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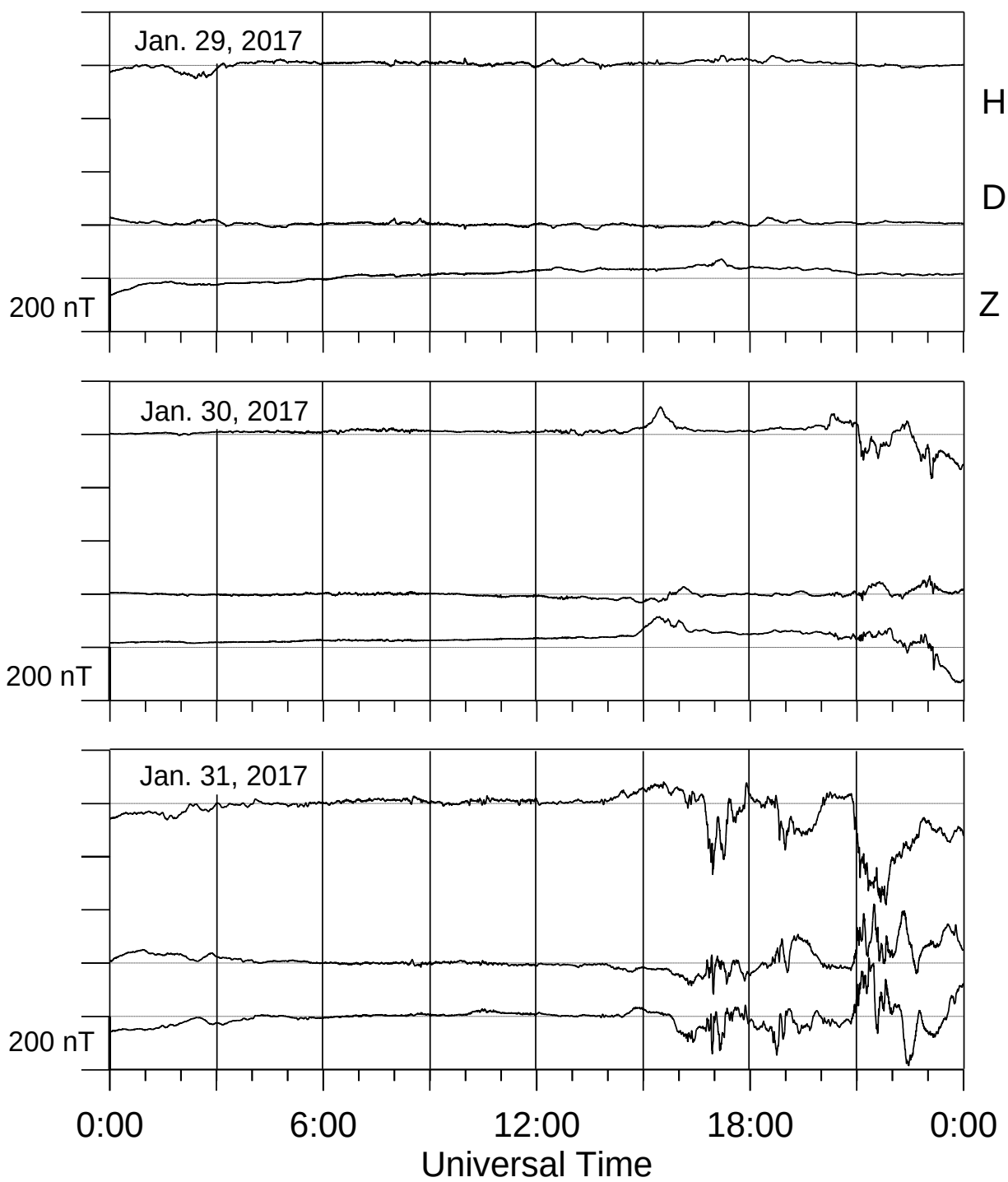
Loparskaya magnetometer



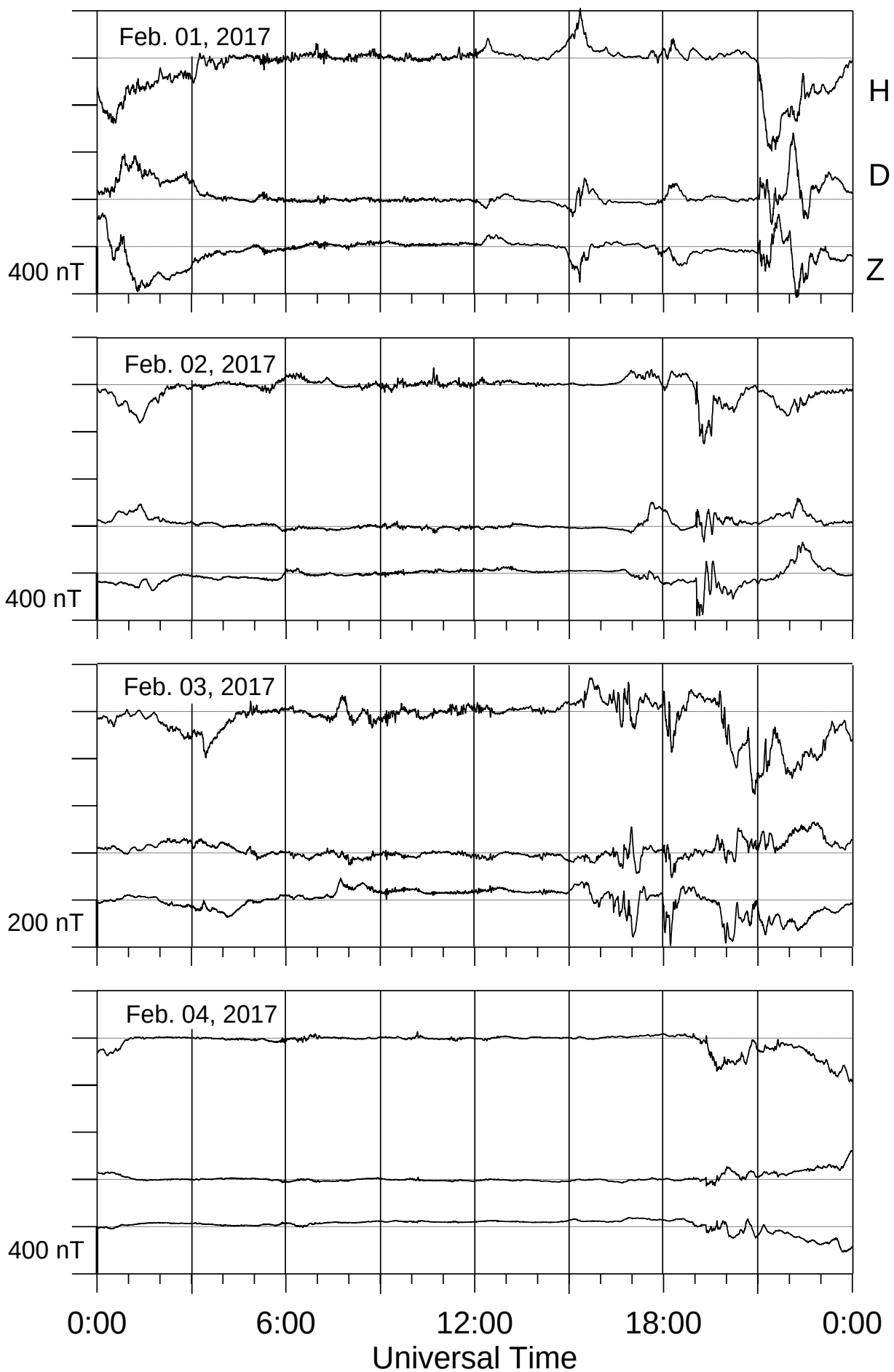
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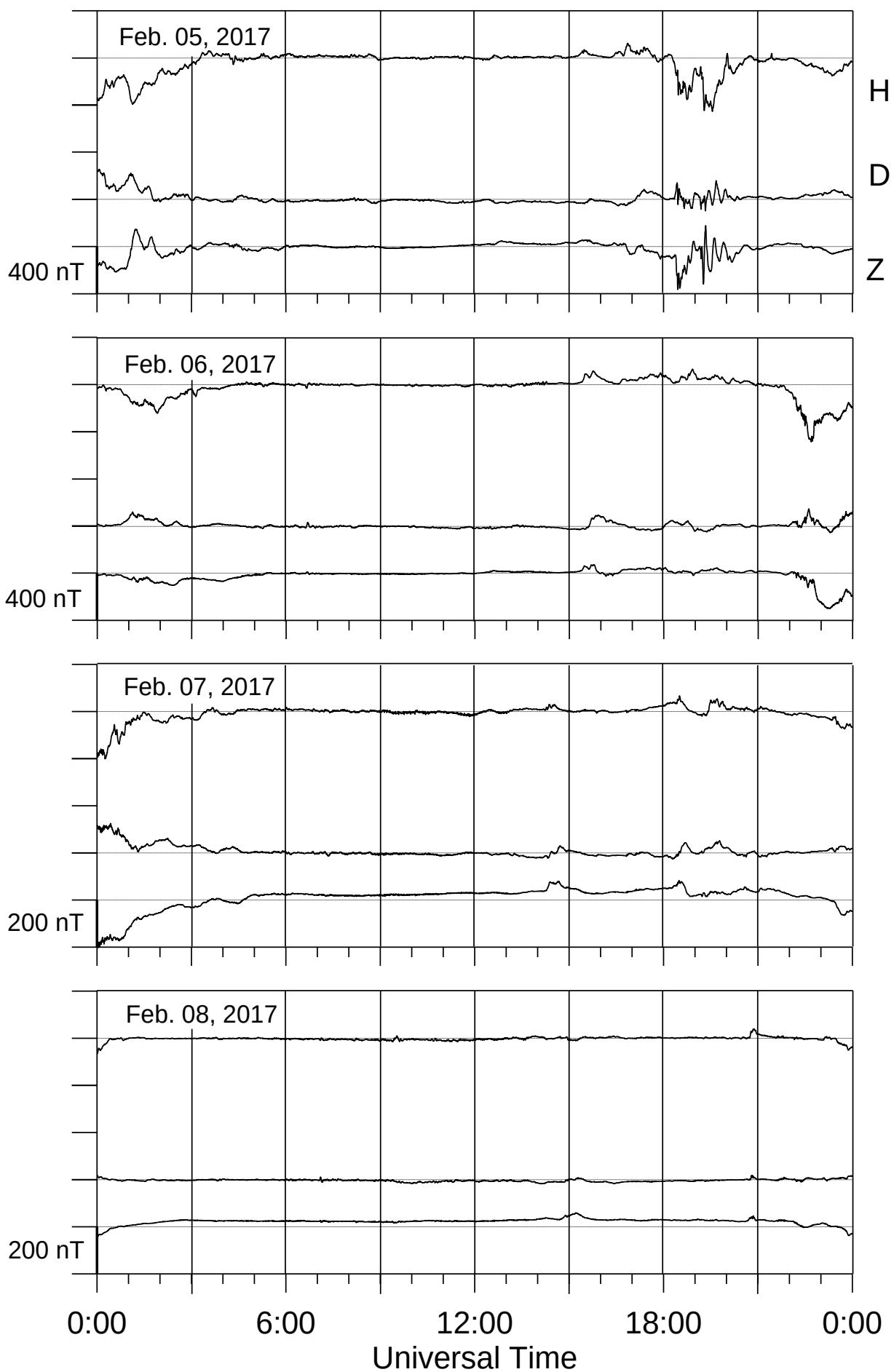
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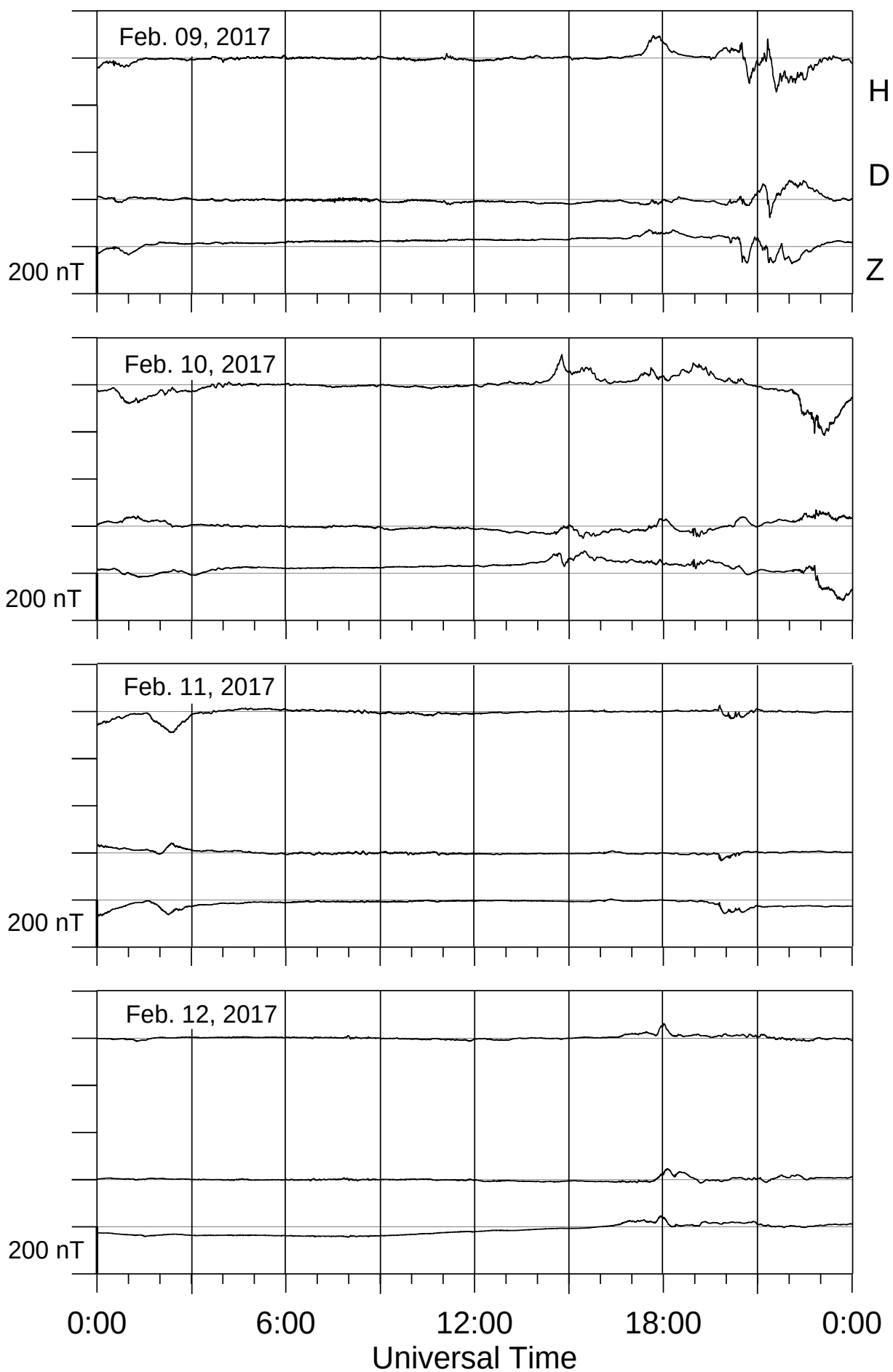
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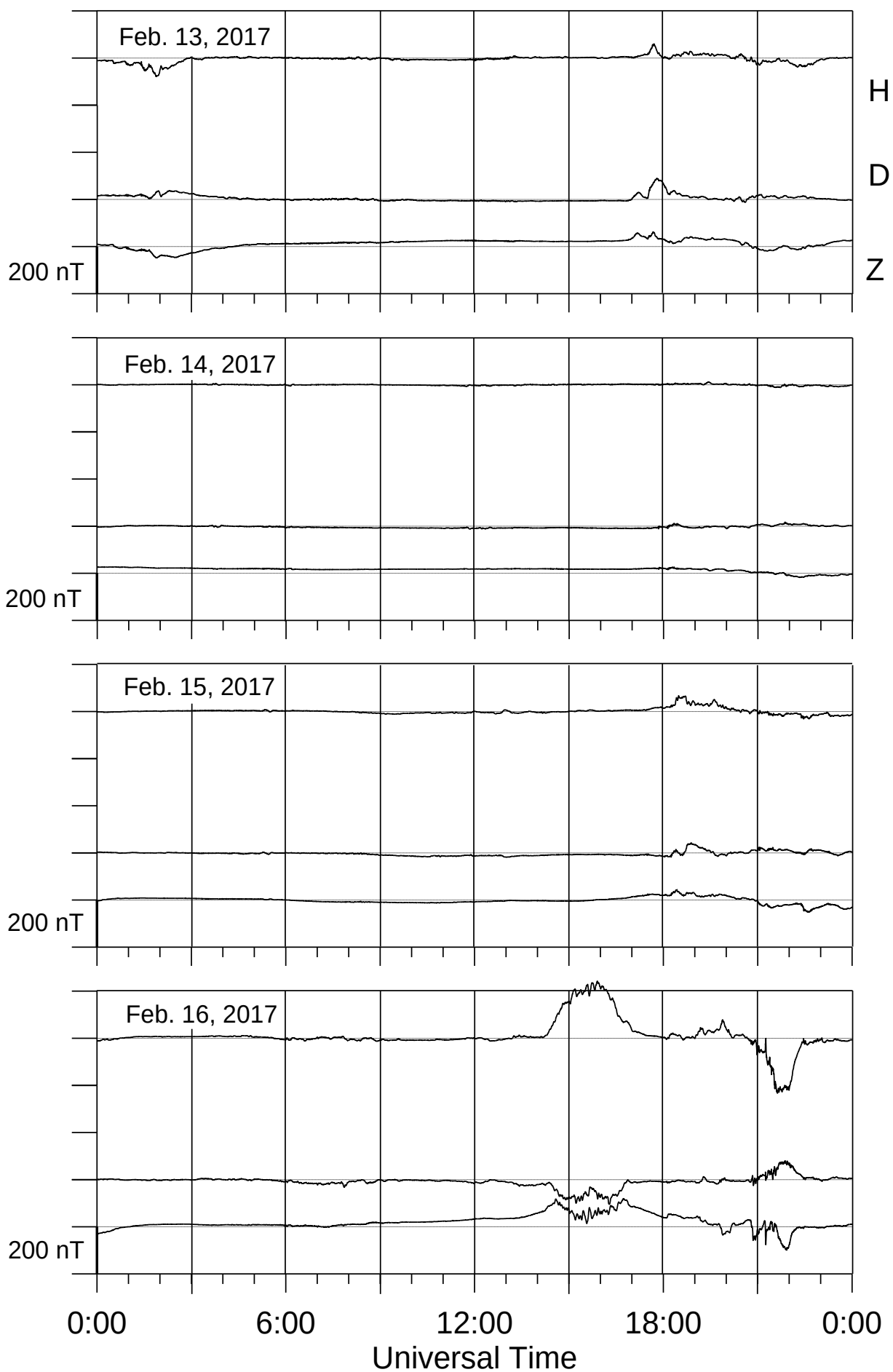
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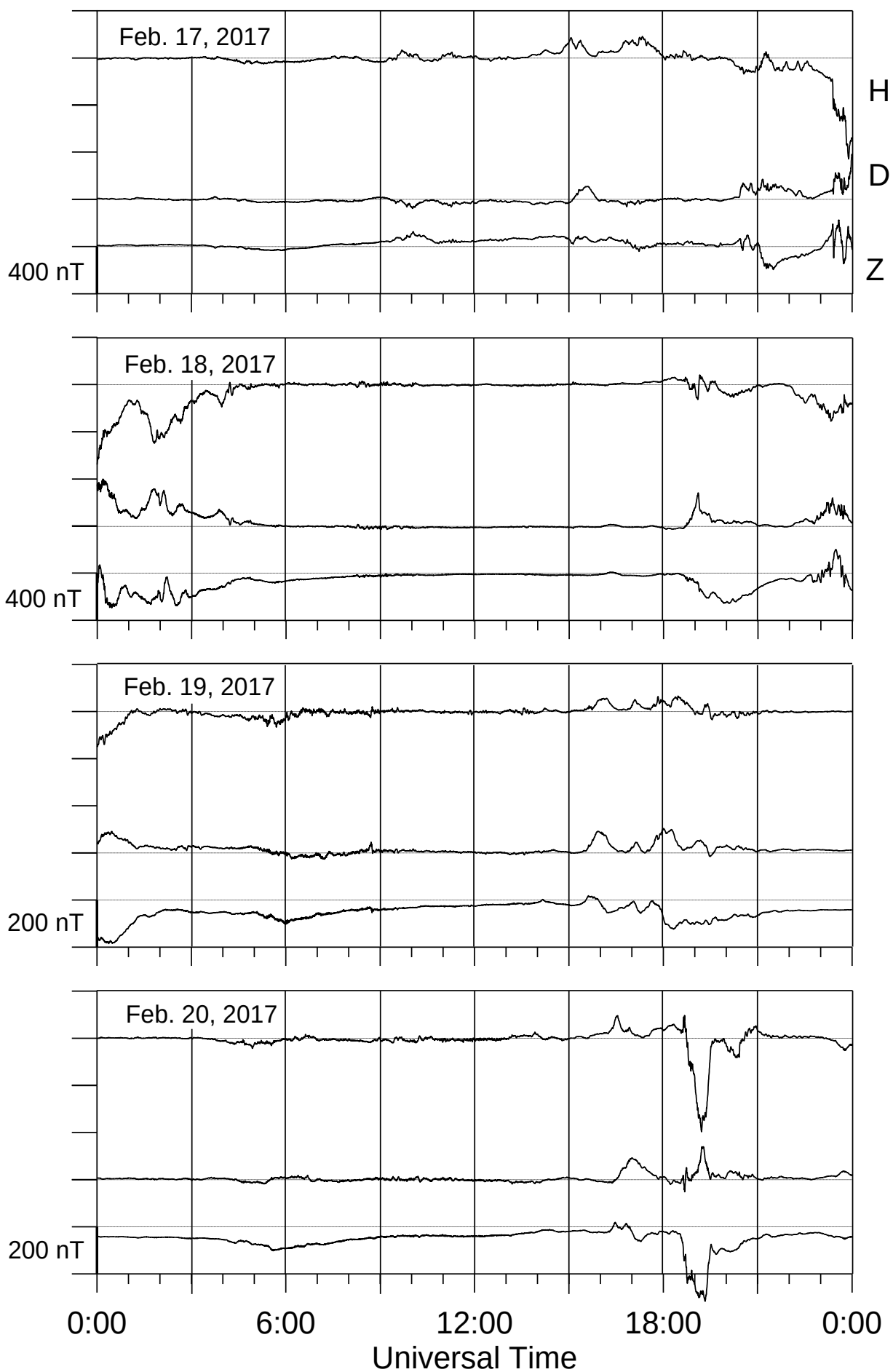
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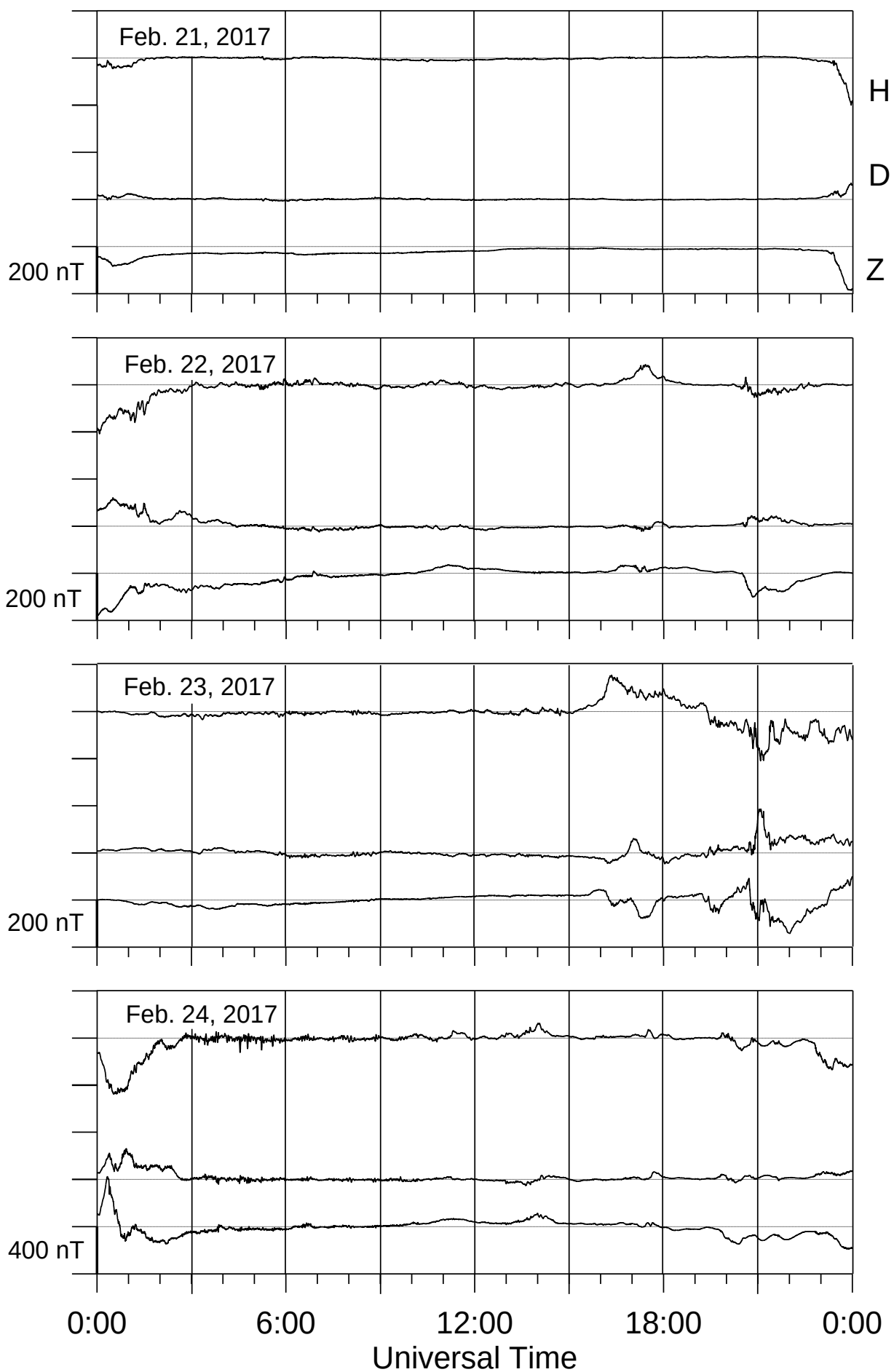
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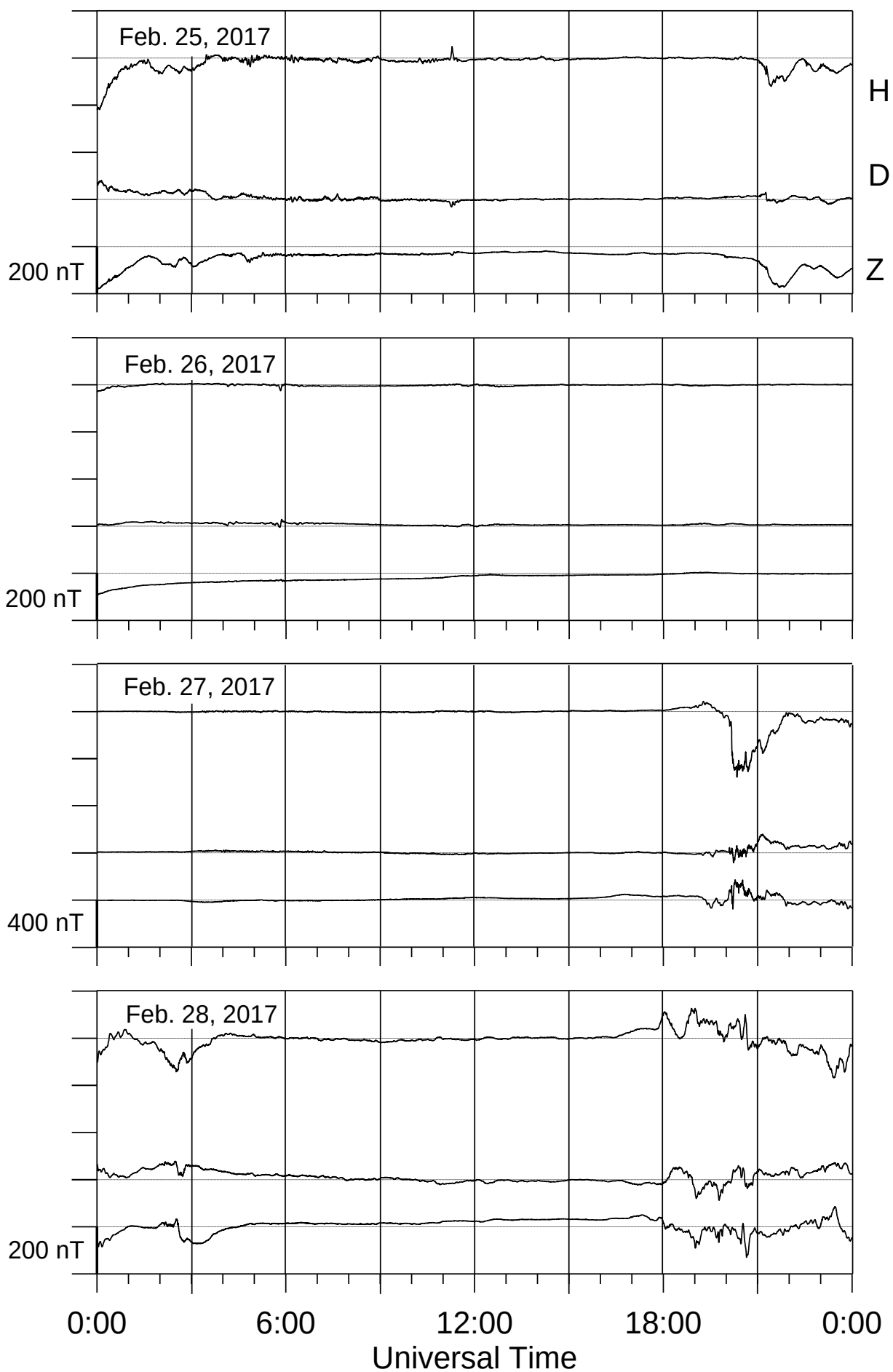
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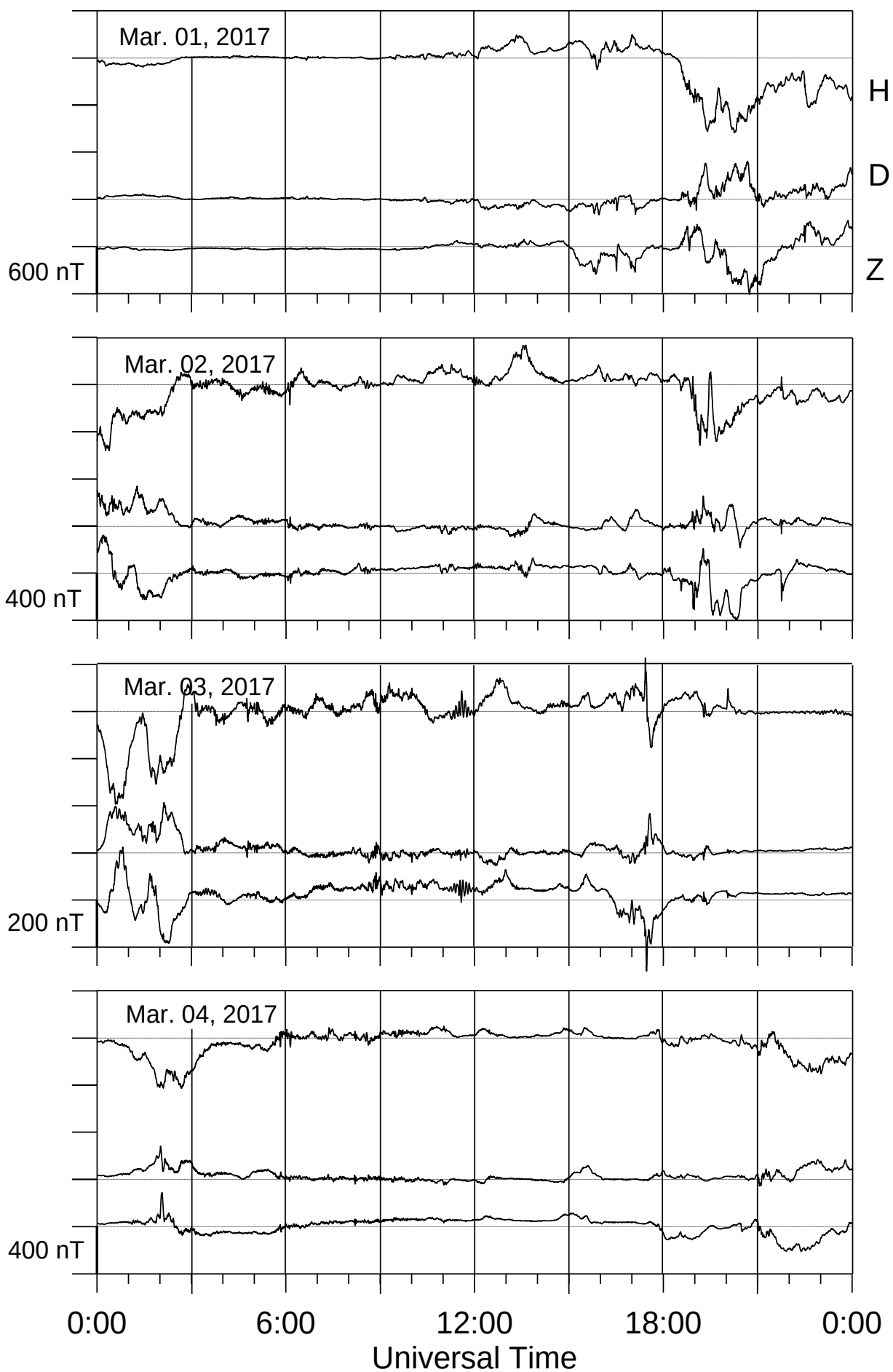
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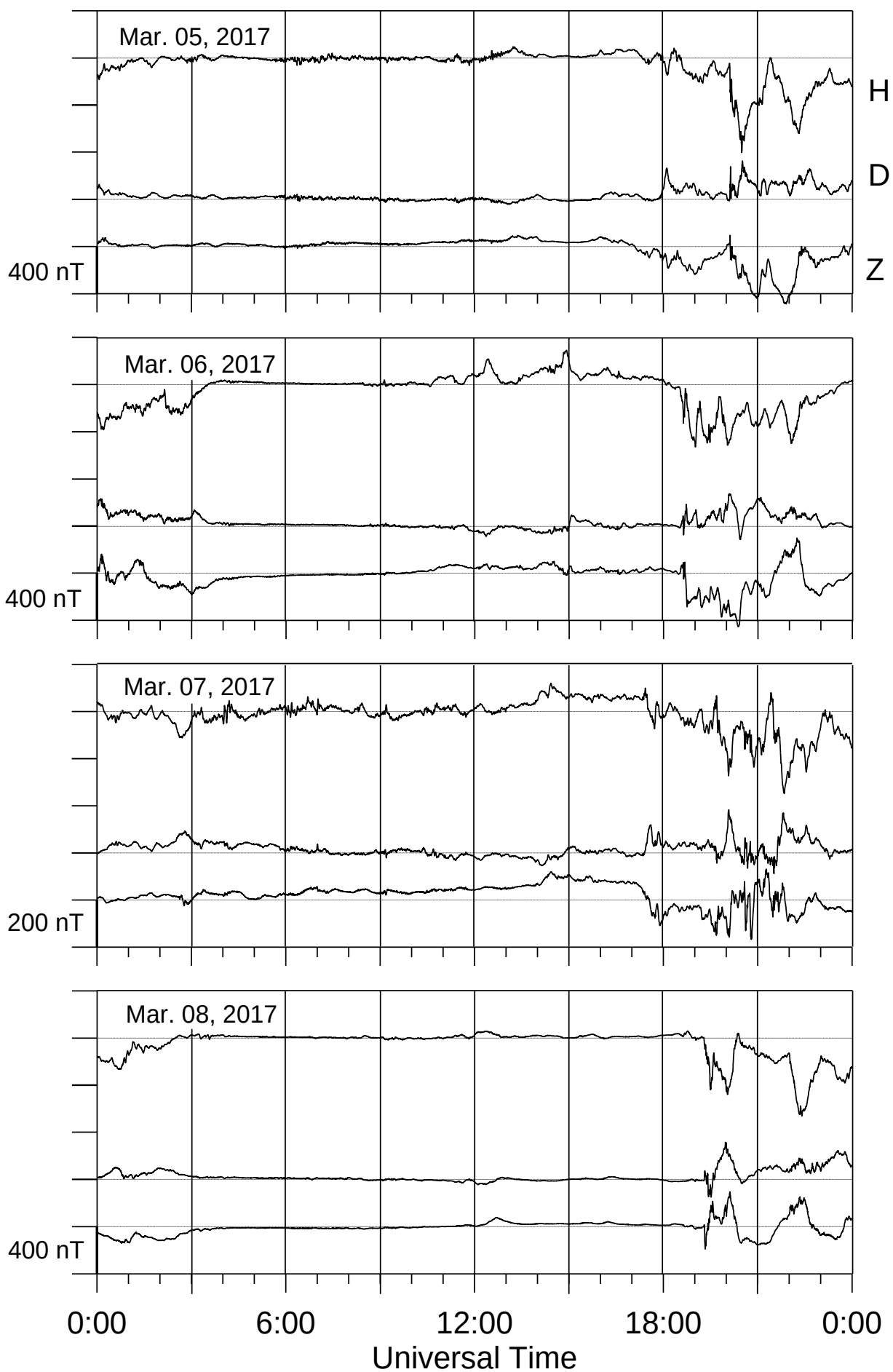
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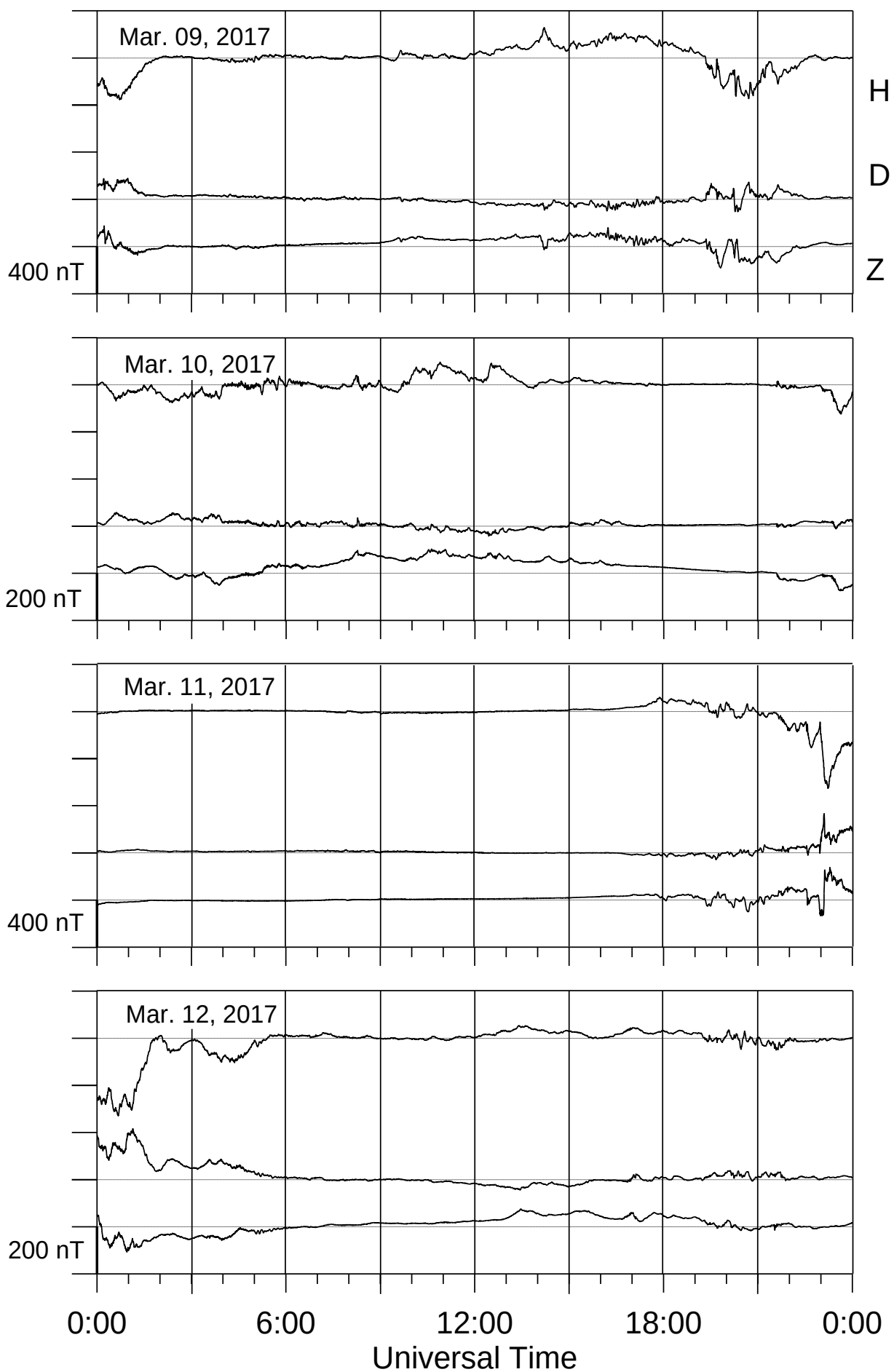
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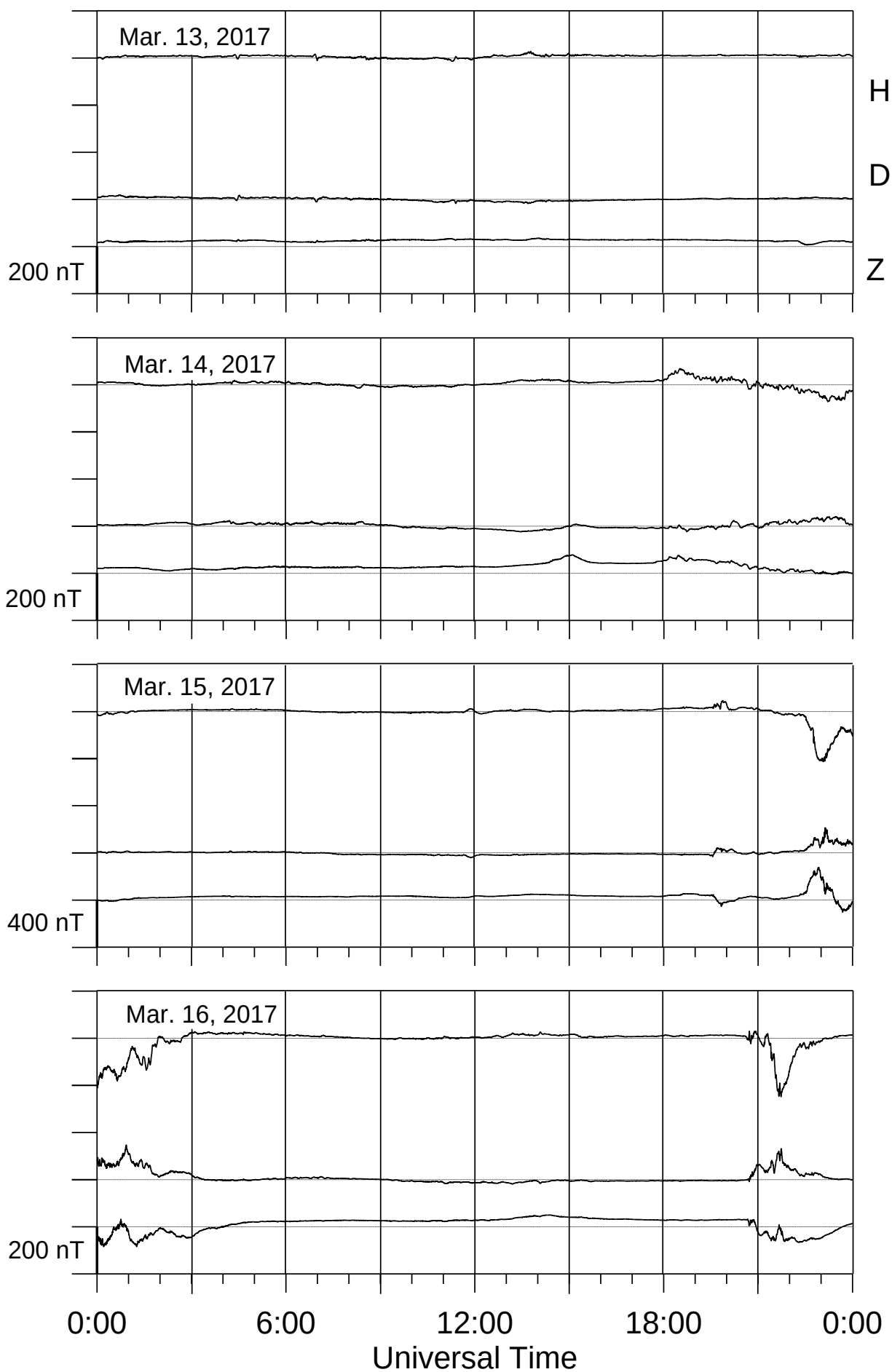
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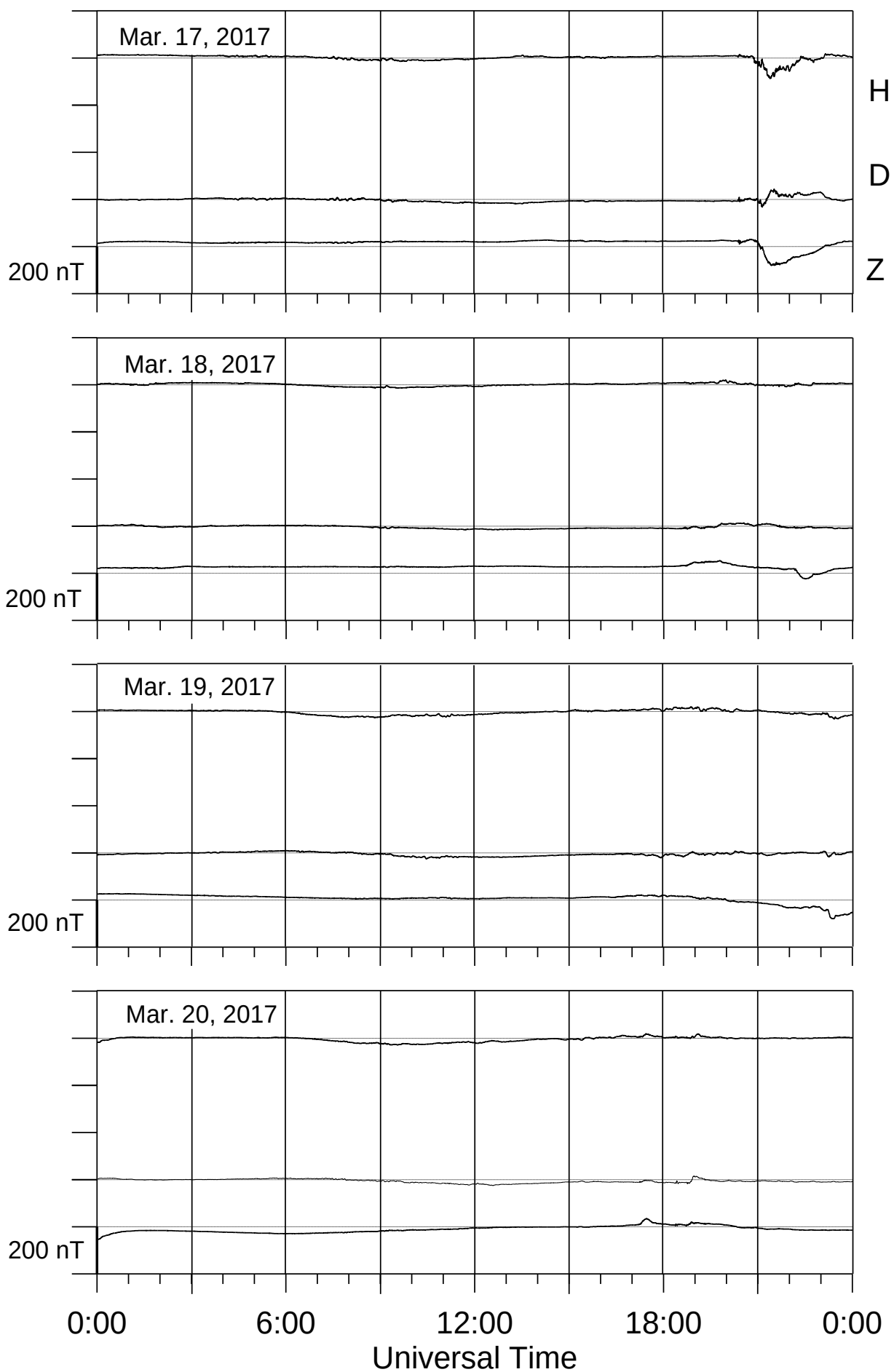
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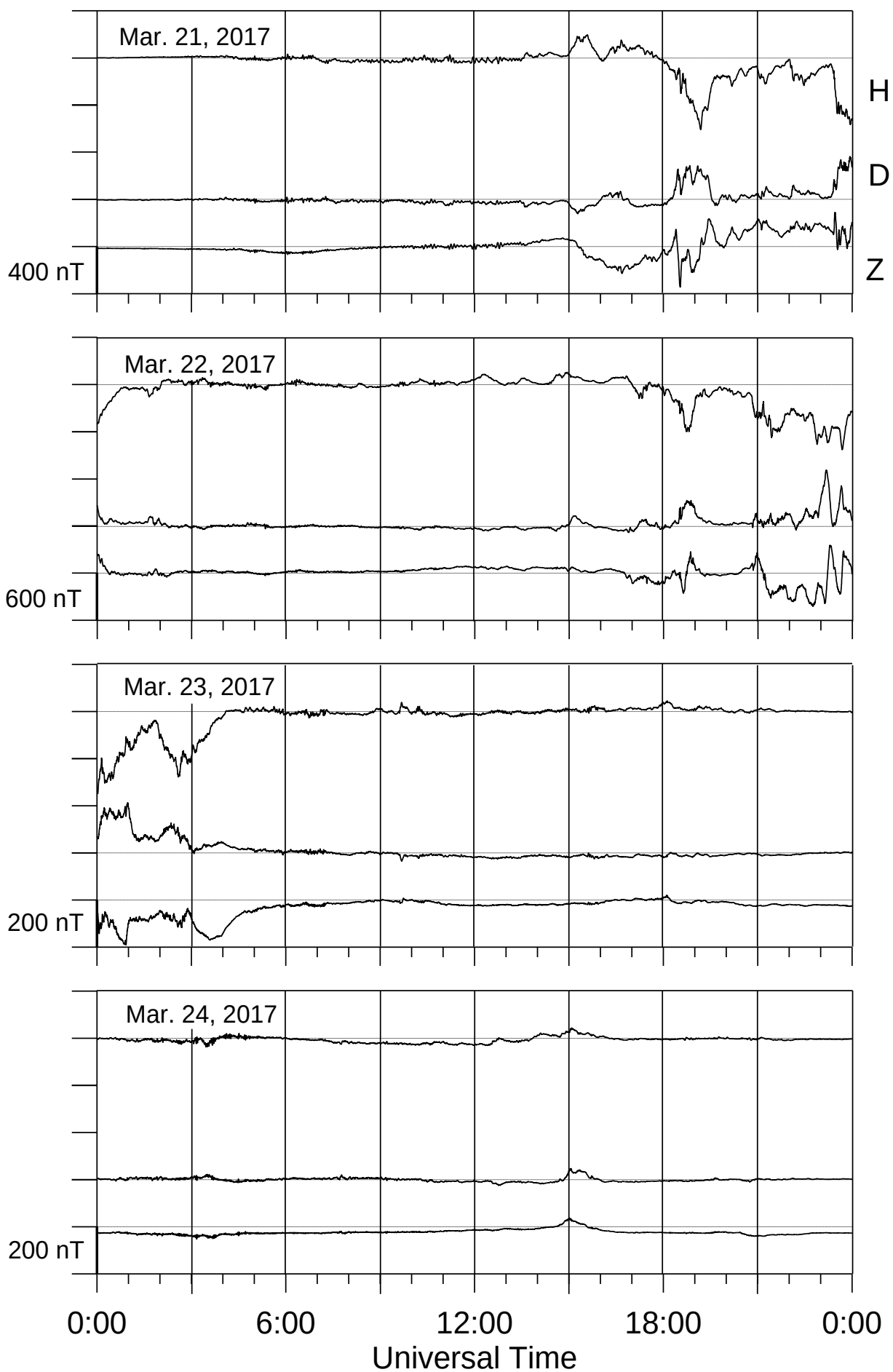
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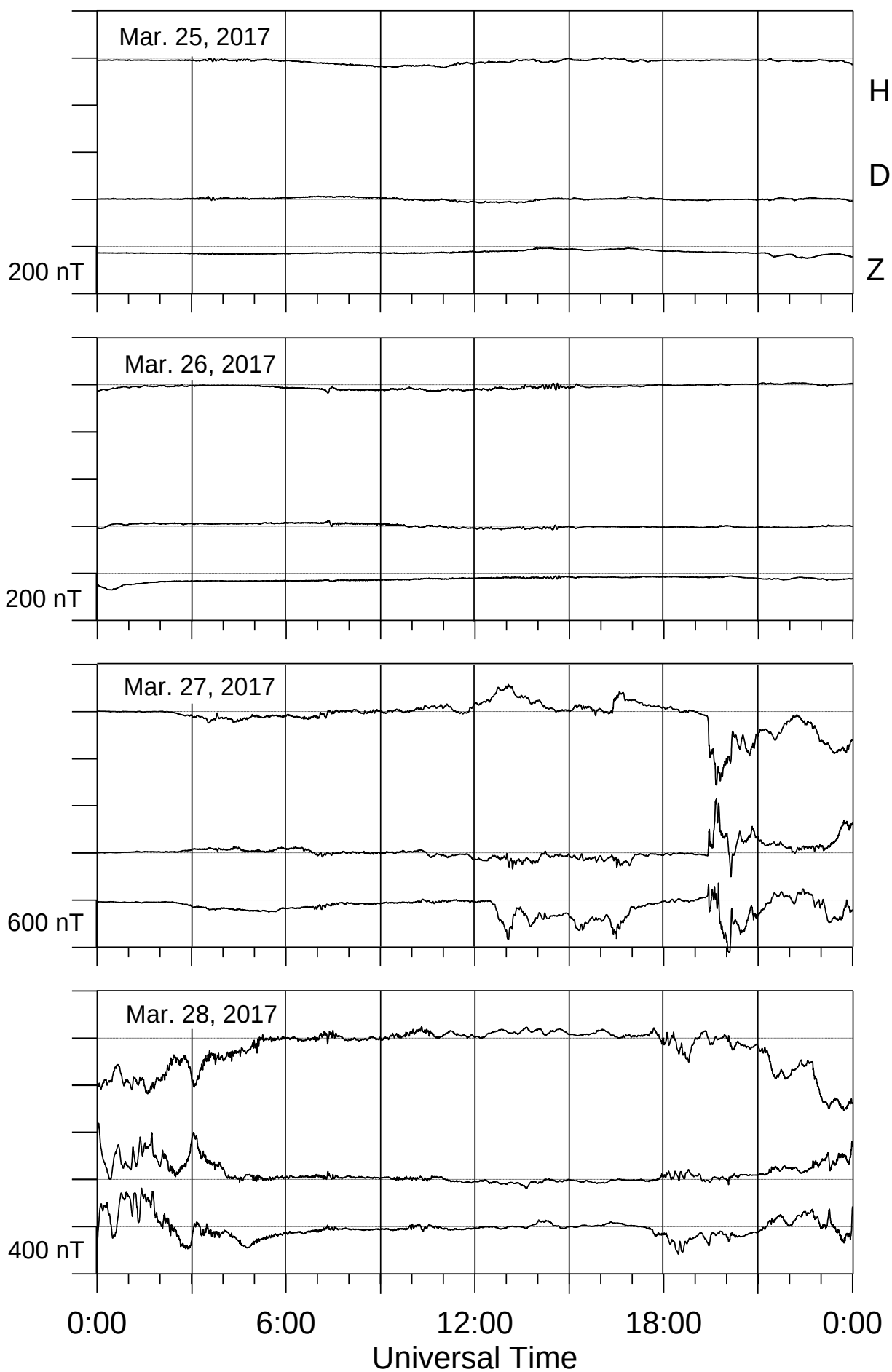
Loparskaya magnetometer



Loparskaya magnetometer



Loparskaya magnetometer



Loparskaya magnetometer

