

RUSSIAN ACADEMY OF SCIENCES
KOLA SCIENCE CENTRE



PGI
GEOPHYSICAL DATA

2009

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JUNE

POLAR GEOPHYSICAL INSTITUTE
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 second quarter of 2009. 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:

April	492 963
May	492 418
June	491 830

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

Please visit <http://pgia.ru>

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 also our Internet pages:

<http://pgia.ru>

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GEOMAGNETIC K-INDICES, LOVOZERO

April, 2009

Lower limit of K=9 is 1500 nT

Day	Time, UT								
	03	06	09	12	15	18	21	24	
1	0 0 0	0 0 0	0 1 1	1 1 1	1 0 0	0 0 0	0 0 1	0 2 2	
2	1 0 0	0 0 0	1 1 1	1 1 1	1 1 1	0 0 0	1 1 1	0 0 0	
3	0 0 0	0 0 0	0 0 1	1 1 1	1 1 0	0 0 1	1 0 0	0 0 0	Q
4	0 0 0	0 0 0	0 1 1	1 1 1	1 1 0	0 0 0	0 0 0	0 0 0	
5	0 0 0	0 1 1	1 1 1	2 1 1	1 1 0	0 0 0	0 0 0	0 0 0	
6	1 0 0	0 1 1	1 1 1	1 2 1	1 1 1	1 1 0	0 0 0	0 0 0	
7	0 0 0	0 0 0	1 1 1	1 1 1	1 1 0	0 0 0	0 0 0	0 0 0	Q
8	0 0 0	0 0 1	1 1 2	2 2 2	1 2 2	0 0 1	1 2 3	2 0 0	
9	0 0 2	1 1 1	2 1 2	2 2 2	1 1 1	3 5 4	3 3 2	3 3 3	
10	1 2 1	2 1 1	1 1 2	2 1 2	1 2 1	1 1 2	4 4 2	0 0 3	
11	4 5 3	1 1 2	1 2 1	1 1 1	1 2 2	3 3 2	1 1 2	3 1 4	
12	4 3 1	1 1 1	1 1 1	1 1 1	1 0 1	0 1 1	1 2 4	3 2 3	
13	3 2 1	1 1 1	1 1 1	1 1 1	0 0 0	0 0 1	1 1 0	0 0 0	
14	0 1 1	1 1 1	1 1 1	1 1 1	1 1 0	0 0 0	0 1 0	0 1 2	
15	2 2 1	1 1 1	1 1 1	1 1 1	1 1 0	0 0 1	0 1 1	1 0 0	
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18	1 1 1	1 1 2	2 2 1	1 1 1	1 1 1	2 2 1	0 0 0	0 1 0	
19	0 0 1	1 1 1	2 1 1	1 1 1	1 0 1	0 0 0	1 1 1	0 1 0	
20	0 1 0	1 1 1	1 0 1	1 1 1	1 0 0	0 1 1	1 0 0	0 0 0	
21	0 1 1	1 1 1	2 1 1	2 2 1	1 1 0	0 0 0	0 0 0	0 0 0	
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24	1 1 1	1 1 1	1 1 1	0 1 1	1 2 2	1 1 2	1 1 1	0 0 1	
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27	1 1 1	1 1 1	1 1 1	1 0 1	1 1 1	0 0 0	1 1 1	0 0 0	
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30	0 1 1	2 1 1	1 1 1	1 1 1	1 0 0	1 1 1	1 0 0	0 0 0	

GEOMAGNETIC K-INDICES, LOVOZERO
May 2009
Lower limit of K=9 is 1500 nT

Day	Time, UT								
	03	06	09	12	15	18	21	24	
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2	0 1 1	1 1 1	1 0 1	1 1 1	2 1 0	0 1 1	1 1 1	1 0 2	
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7	4 2 1	1 2 2	1 1 2	2 2 2	1 1 2	2 2 1	1 1 1	4 4 4	
8	5 5 4	2 1 2	2 2 1	1 1 2	2 2 2	2 1 2	2 2 3	3 3 1	
9	0 0 0	1 1 1	1 1 2	1 2 2	2 2 2	2 2 1	0 0 0	2 1 2	
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12	0 1 1	1 1 1	1 1 1	1 1 1	1 0 1	1 1 1	1 0 1	1 0 0	
13	0 1 1	1 1 1	1 1 2	1 2 2	2 1 0	1 1 1	1 1 0	0 0 0	
14	0 0 1	1 1 1	1 1 1	2 2 2	2 1 0	0 2 3	3 2 3	2 2 2	
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17	0 1 1	1 1 1	1 1 1	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	Q
18	0 1 1	1 1 0	1 0 1	1 1 1	1 1 1	0 1 1	1 1 1	0 0 1	
19	1 1 1	2 1 1	1 1 1	1 1 1	1 1 0	0 0 0	1 1 0	0 0 0	Q
20	0 0 1	1 2 1	1 1 1	2 2 1	1 1 1	1 1 0	1 1 1	1 1 1	
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22	0 1 1	1 1 1	0 1 1	1 2 2	2 2 2	2 2 3	2 1 0	0 0 0	
23	1 1 1	1 1 2	1 1 1	1 1 1	0 1 1	1 2 2	2 1 1	2 2 1	
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26	1 1 1	2 2 1	1 1 0	0 1 1	1 1 1	1 1 1	1 1 1	1 1 1	
27	1 1 1	2 1 1	1 1 1	1 1 0	1 0 1	1 1 1	1 1 1	1 0 0	
28	1 1 1	1 1 2	2 2 2	2 2 2	2 2 1	1 1 1	1 0 0	0 0 1	
29	1 1 2	2 2 1	2 1 1	1 1 1	2 2 2	2 2 1	1 0 0	0 0 0	
30	1 1 2	1 1 1	1 1 1	1 1 1	1 0 0	1 1 2	2 1 1	1 1 1	
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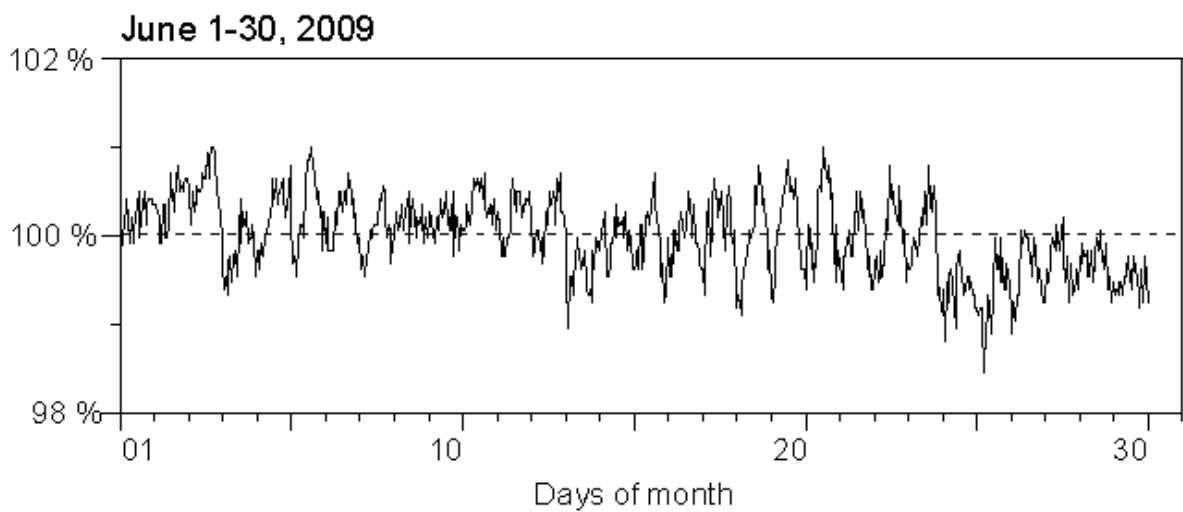
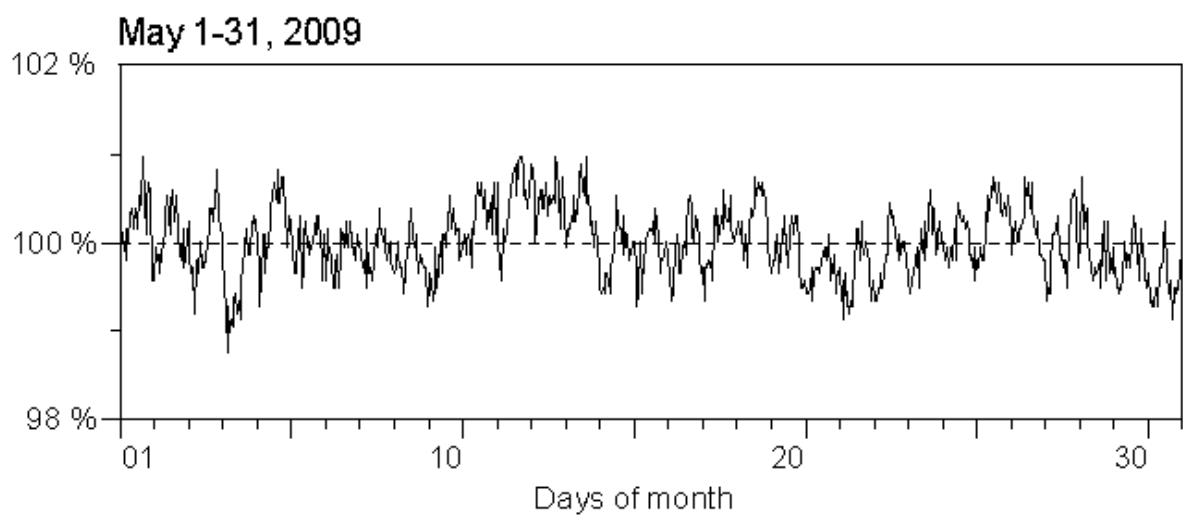
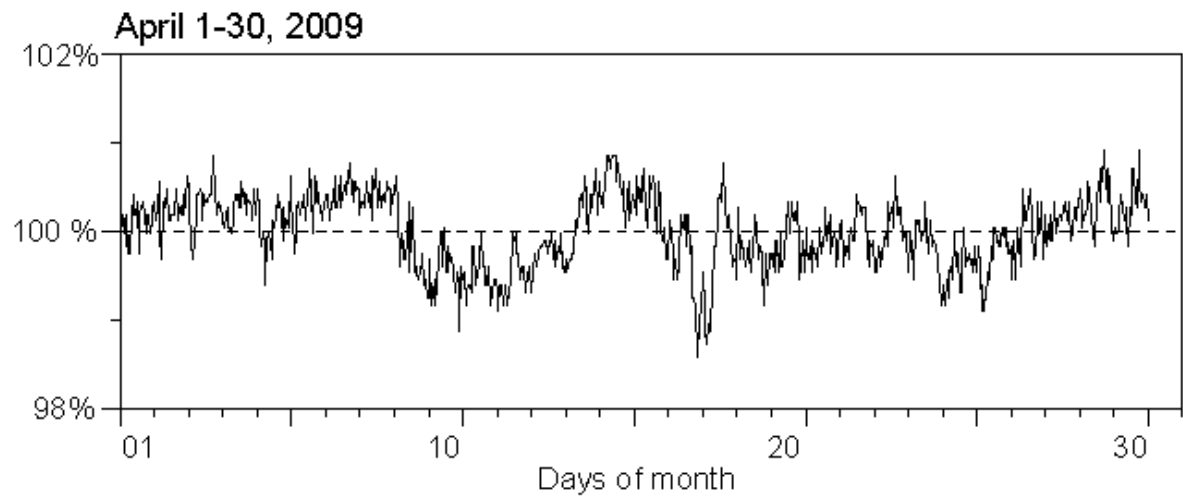
GEOMAGNETIC K-INDICES, LOVOZERO

June, 2009

Lower limit of K=9 is 1500 nT

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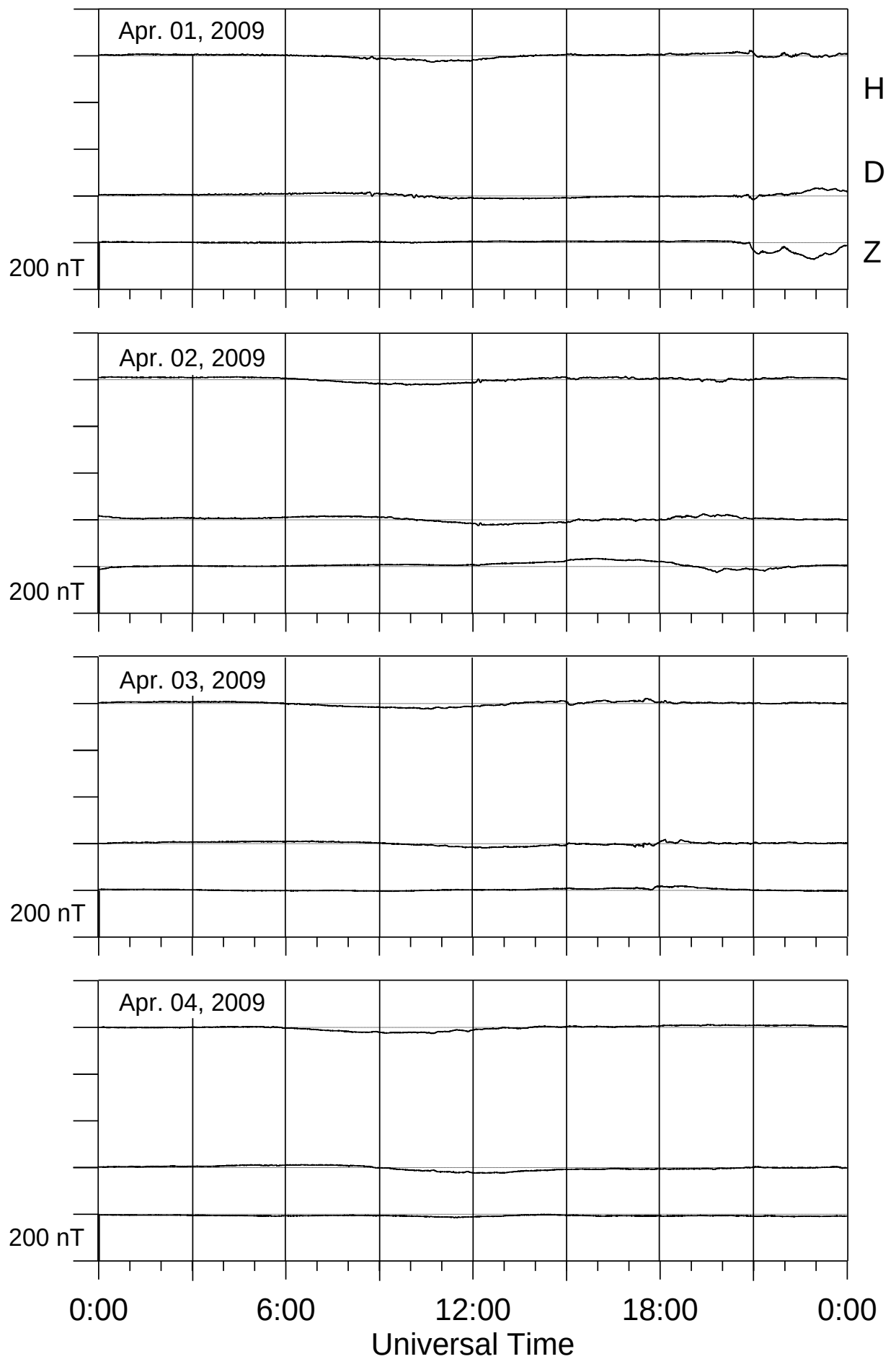
Apatity neutron monitor



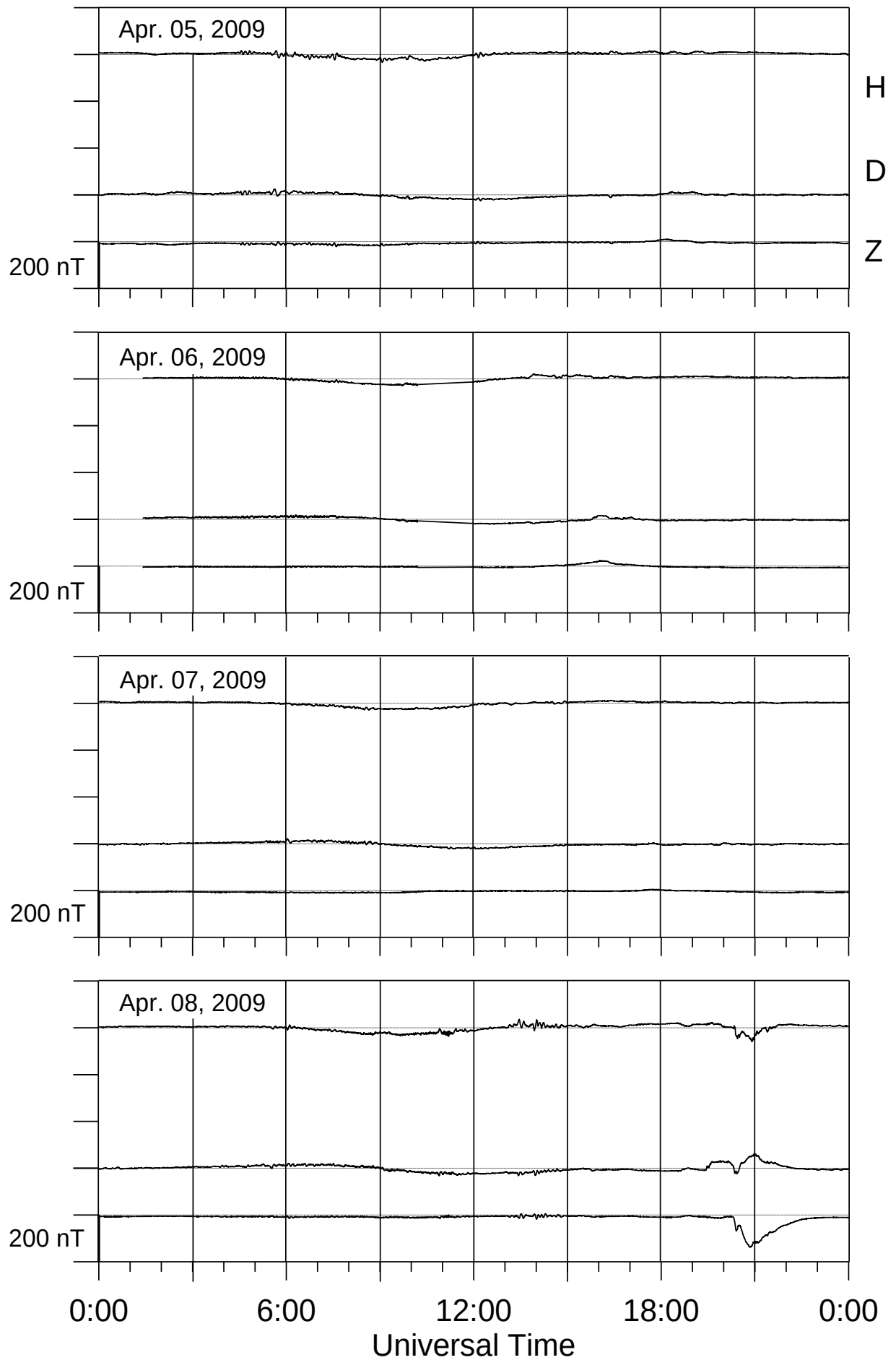
LOVOZERO MAGNETOGRAMS

April - June 2009

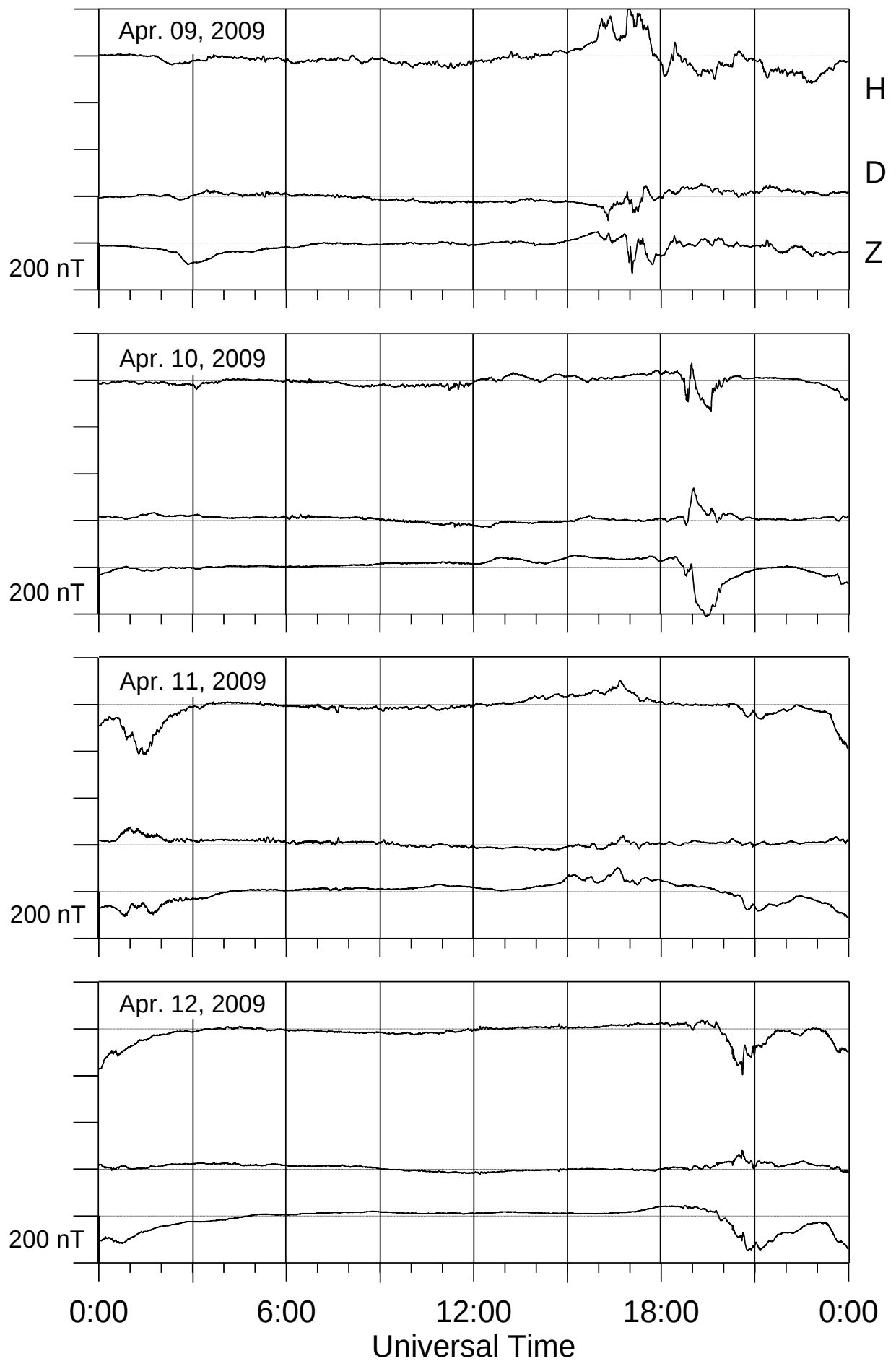
Lovozero magnetometer



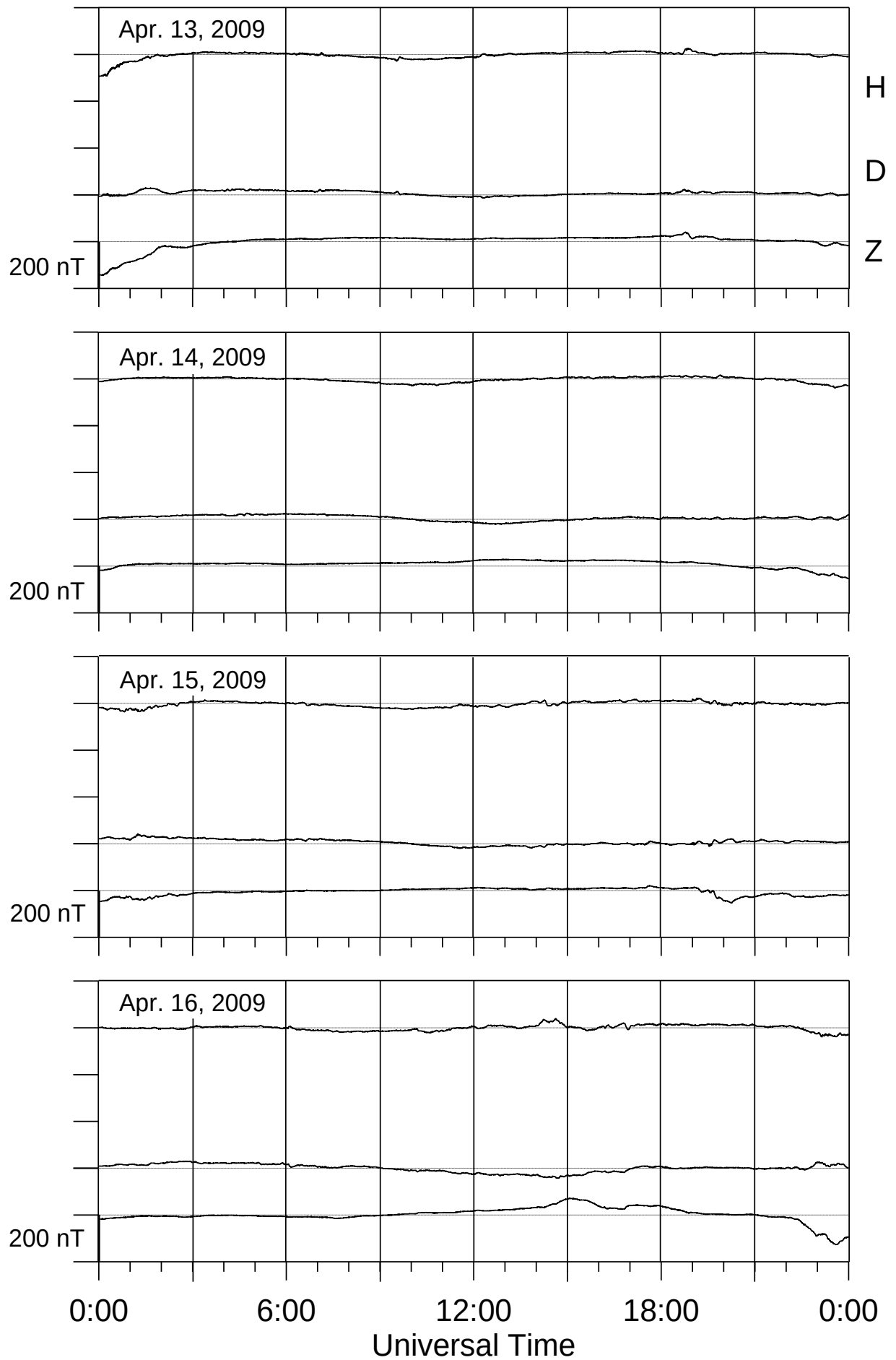
Lovozero magnetometer



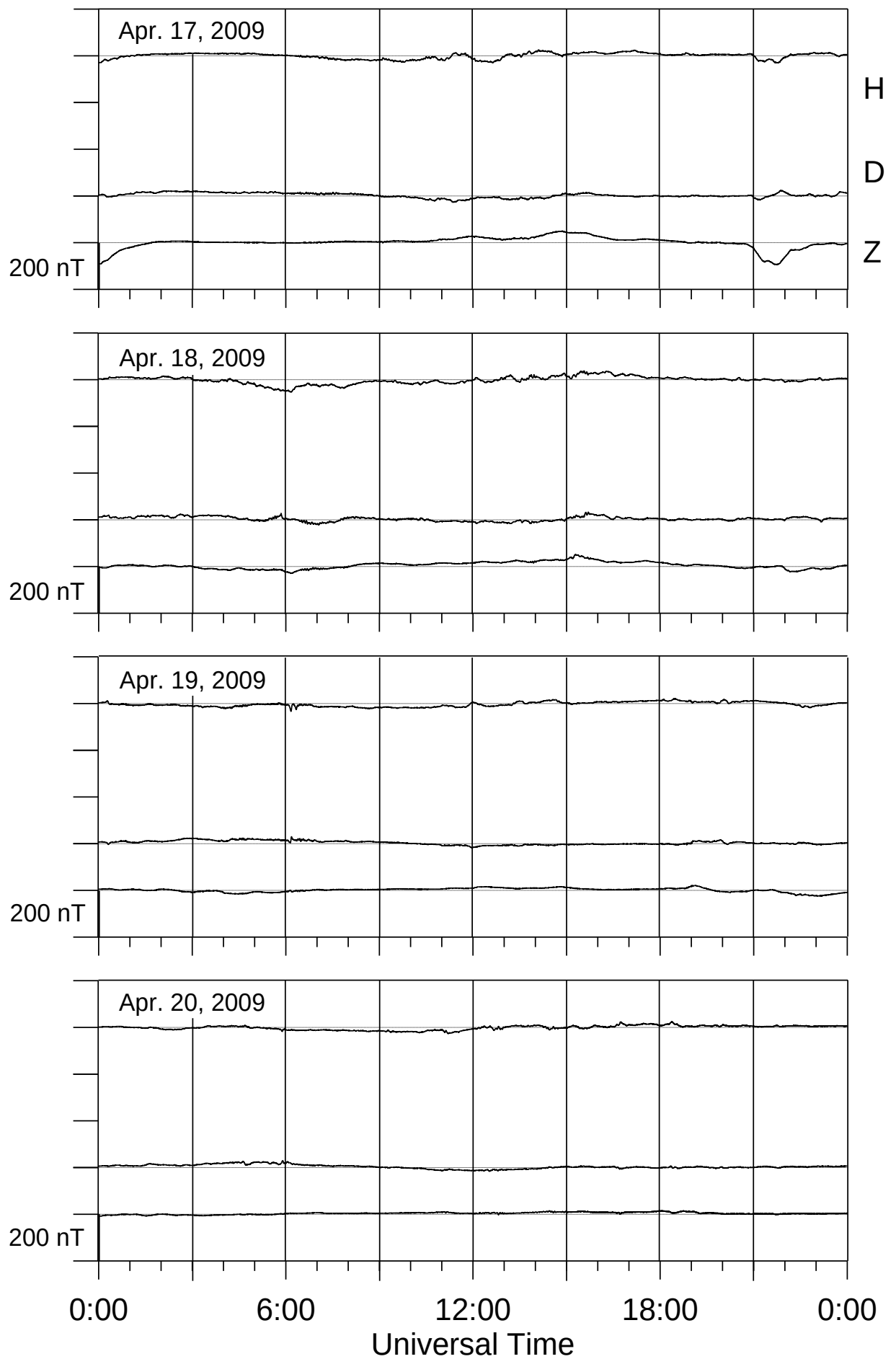
Lovozero magnetometer



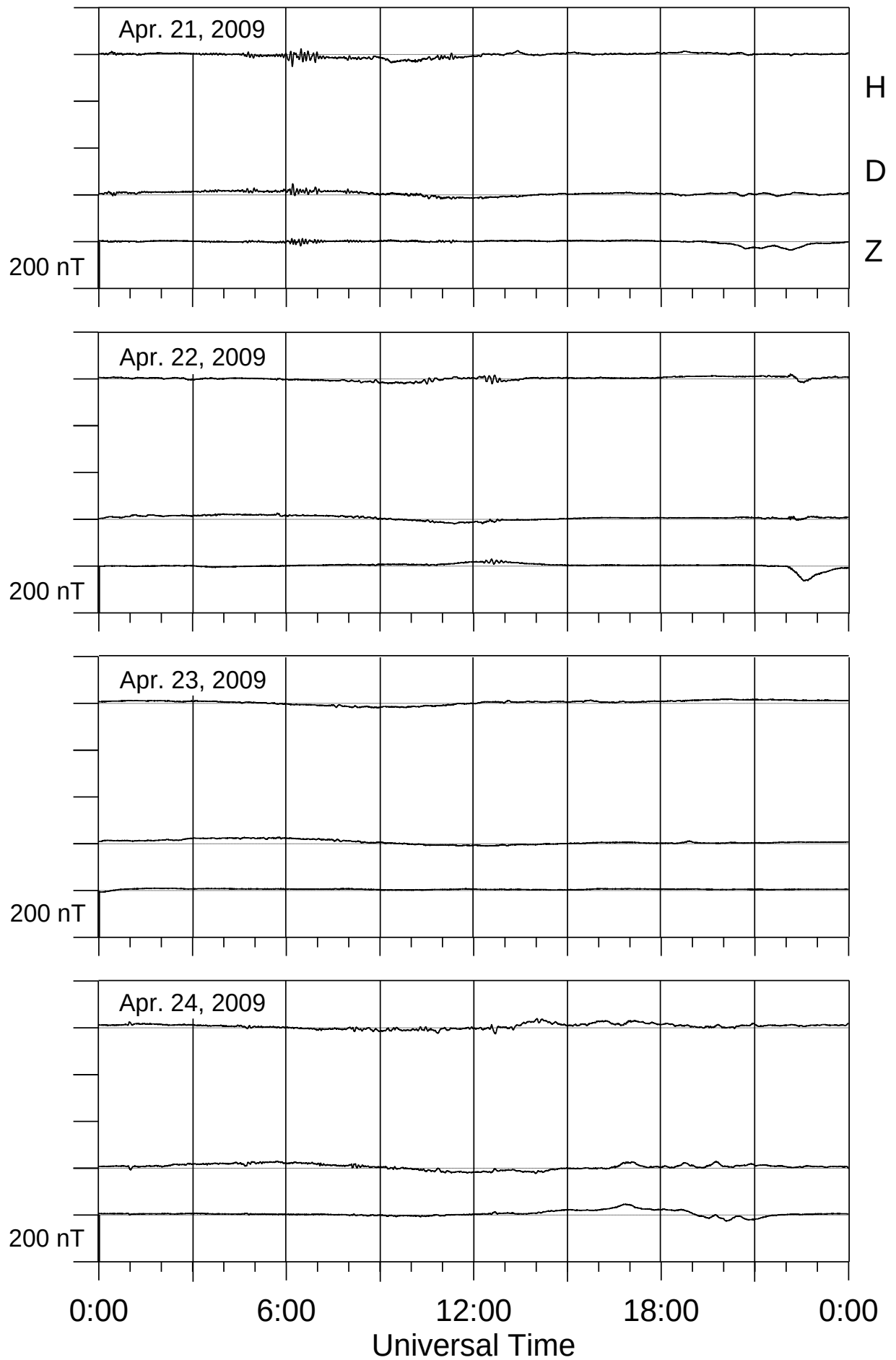
Lovozero magnetometer



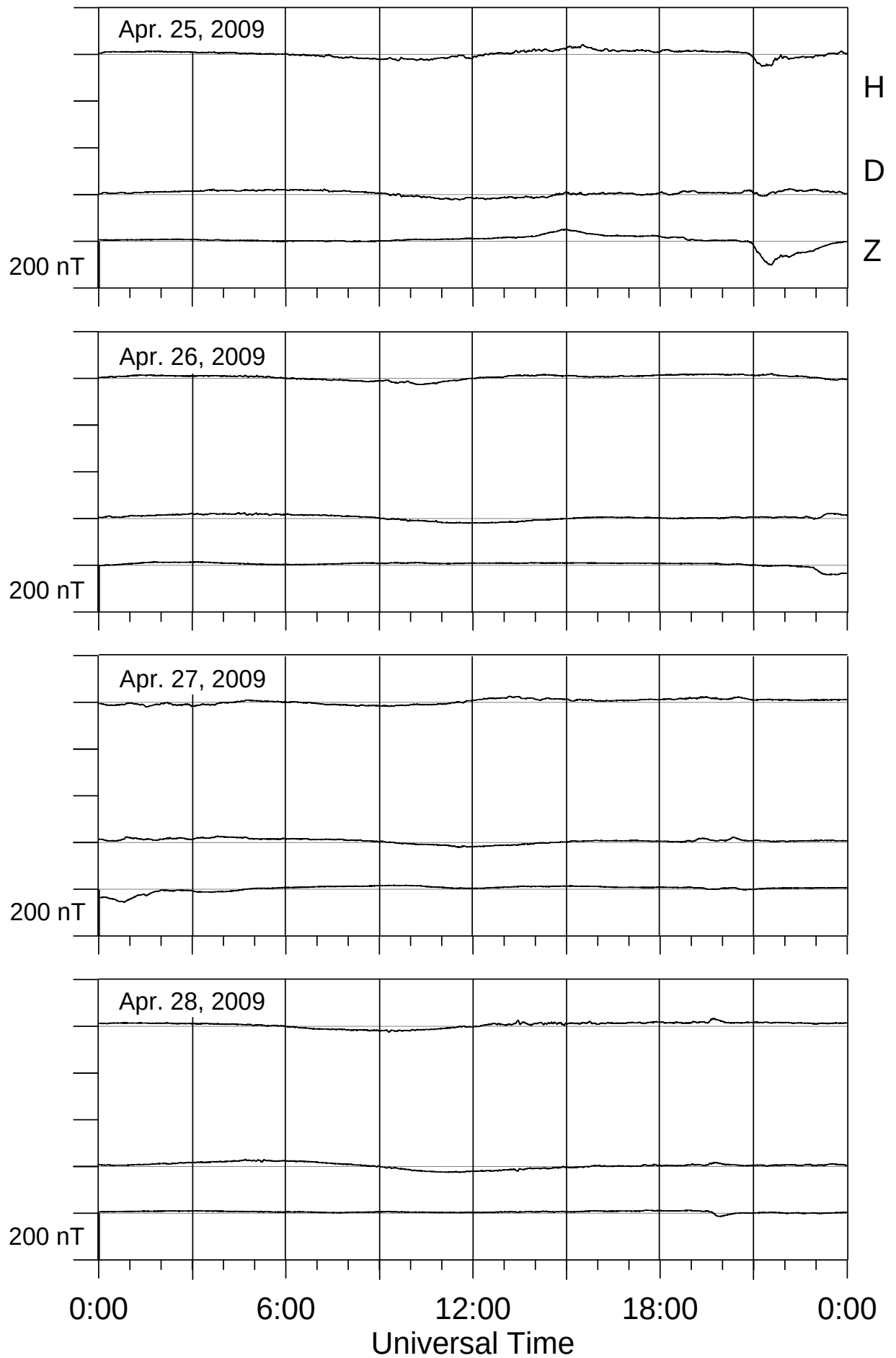
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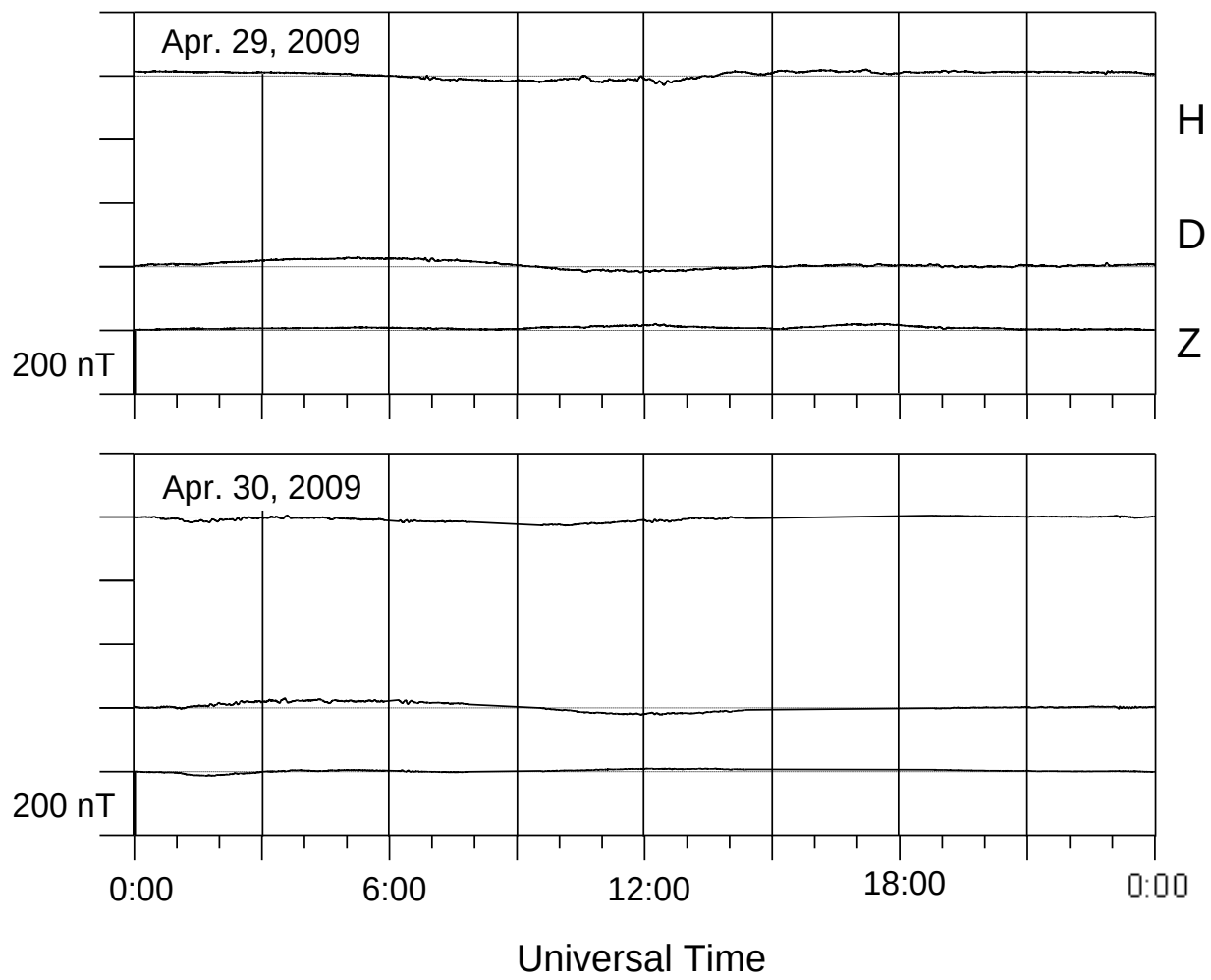
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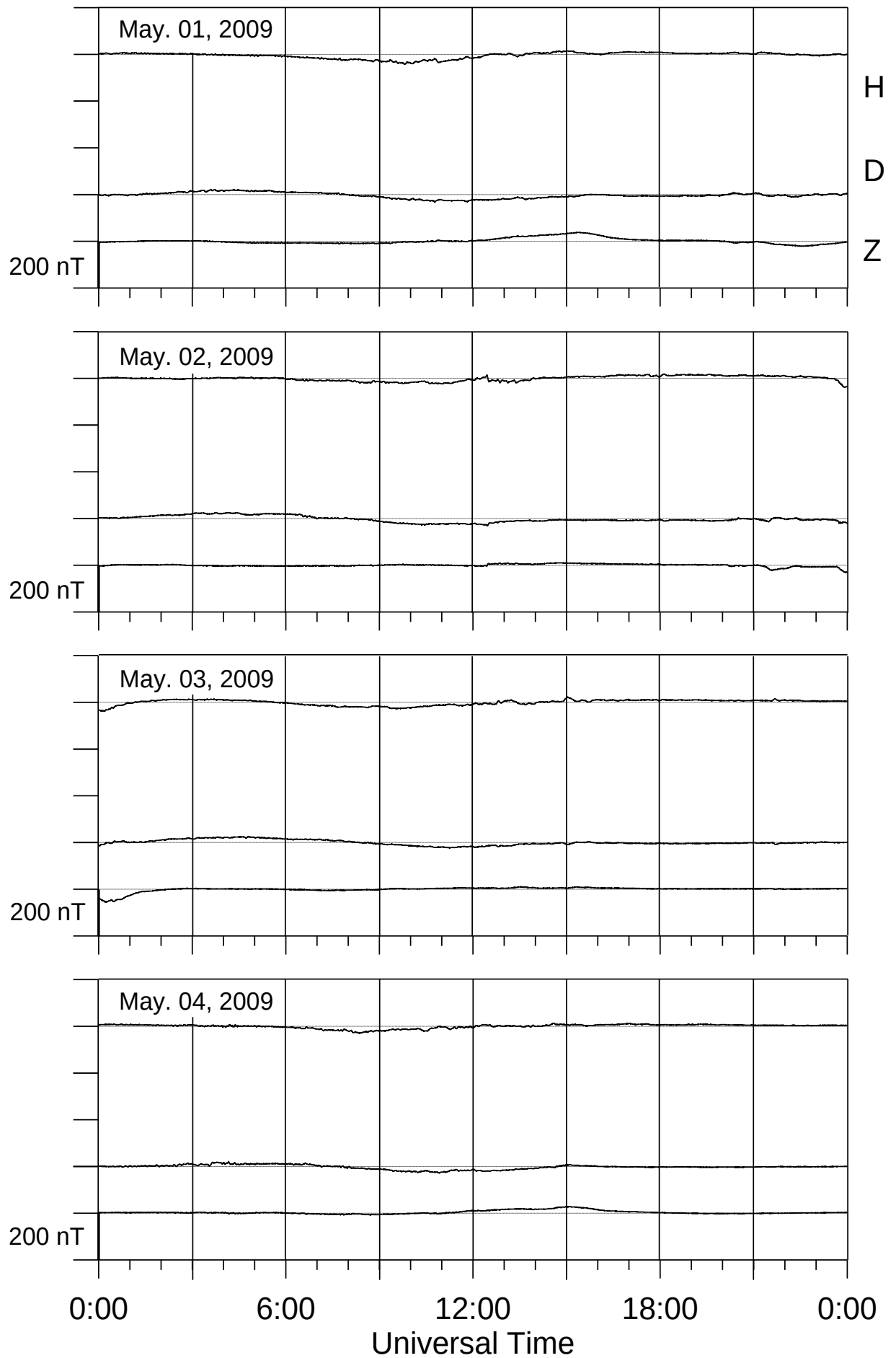
Lovozero magnetometer



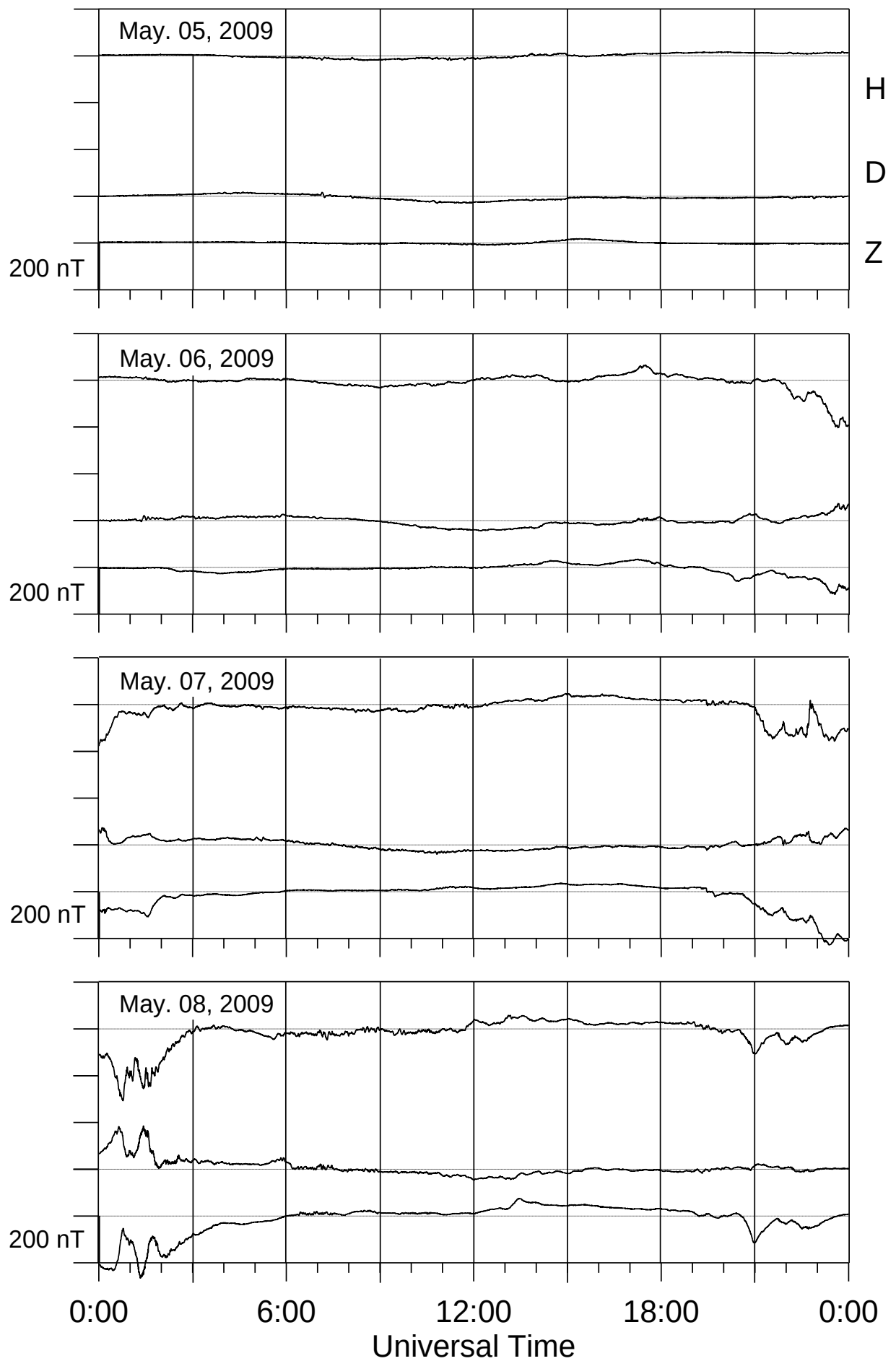
Lovozero magnetometer



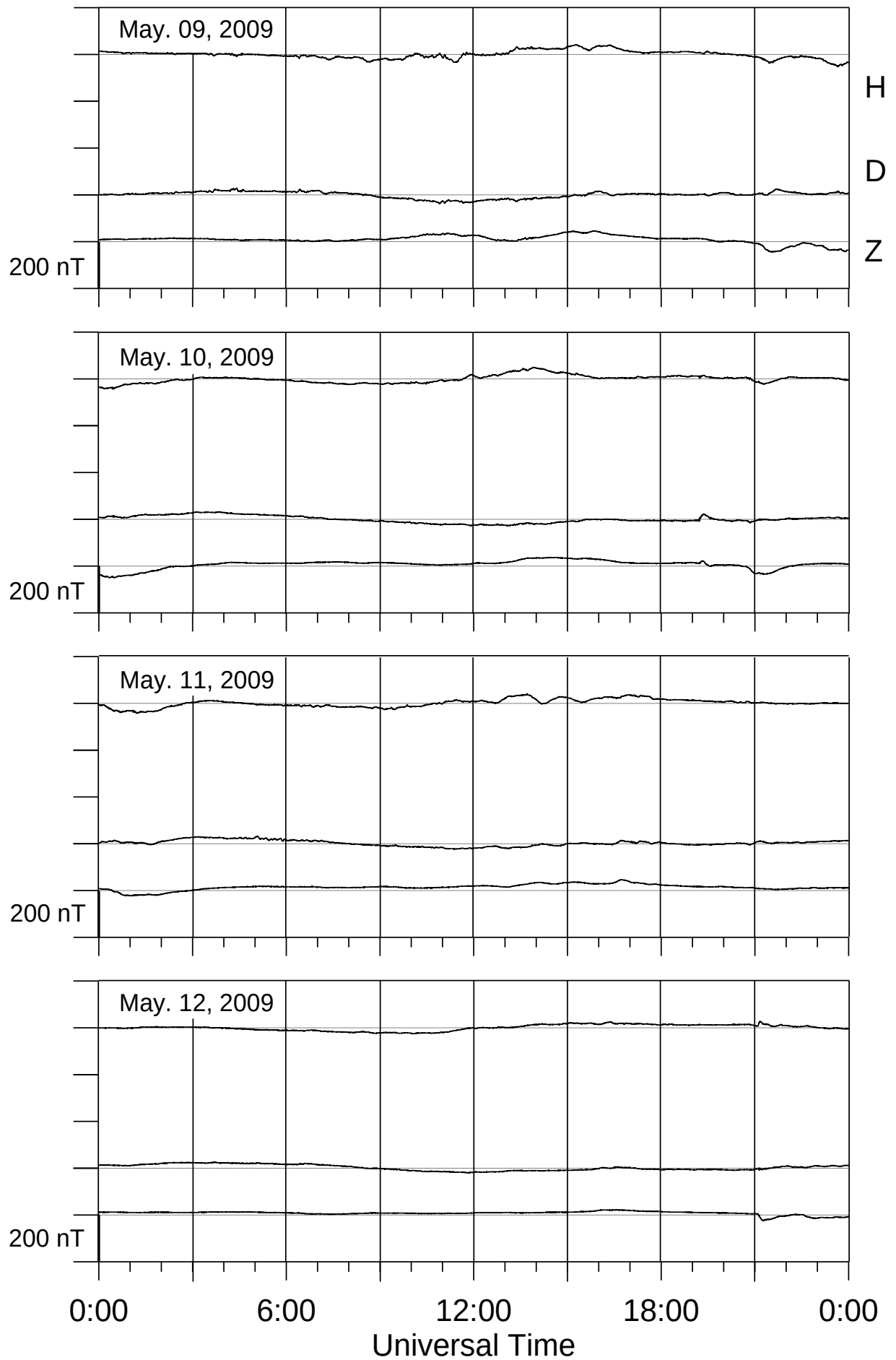
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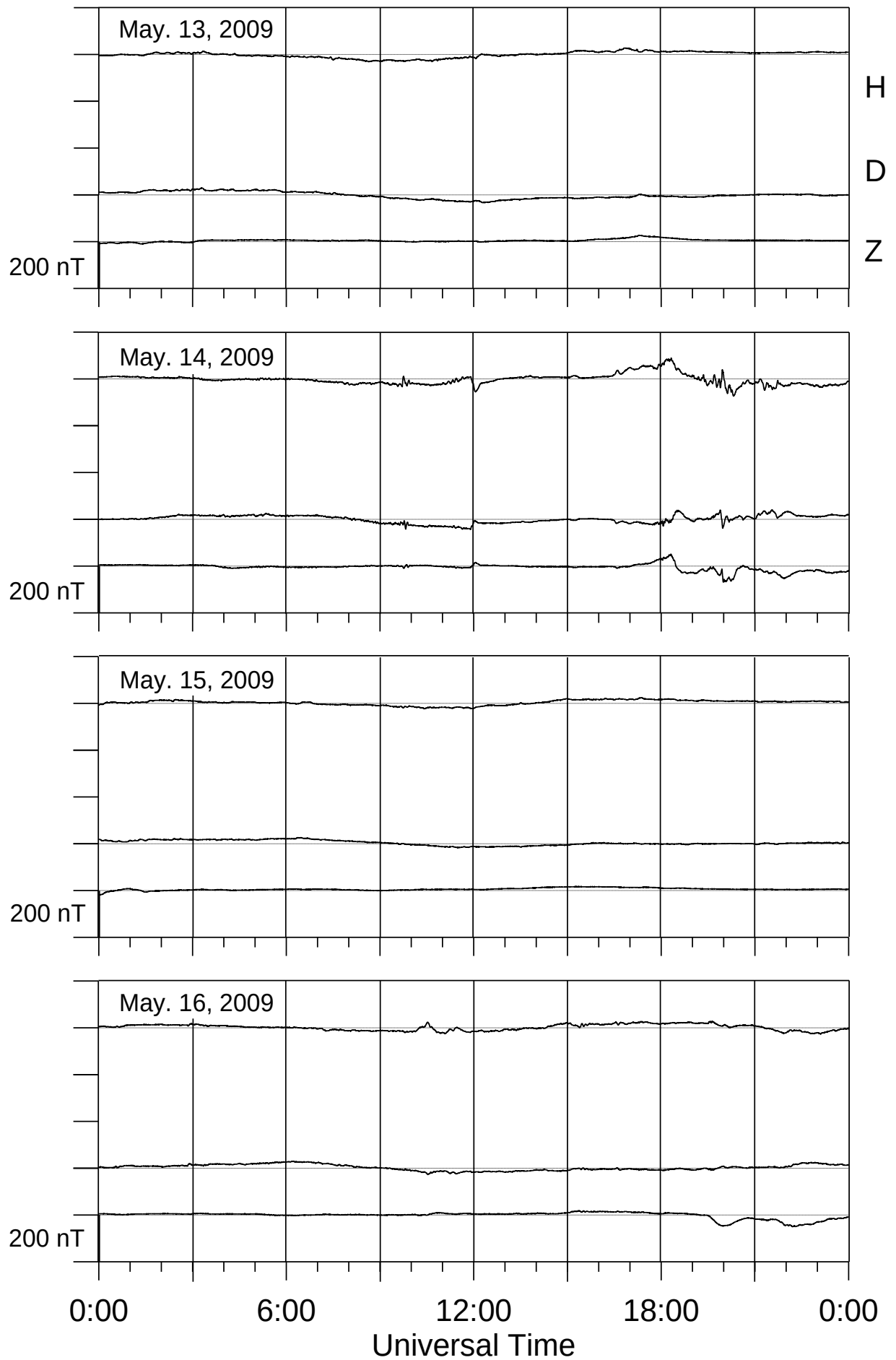
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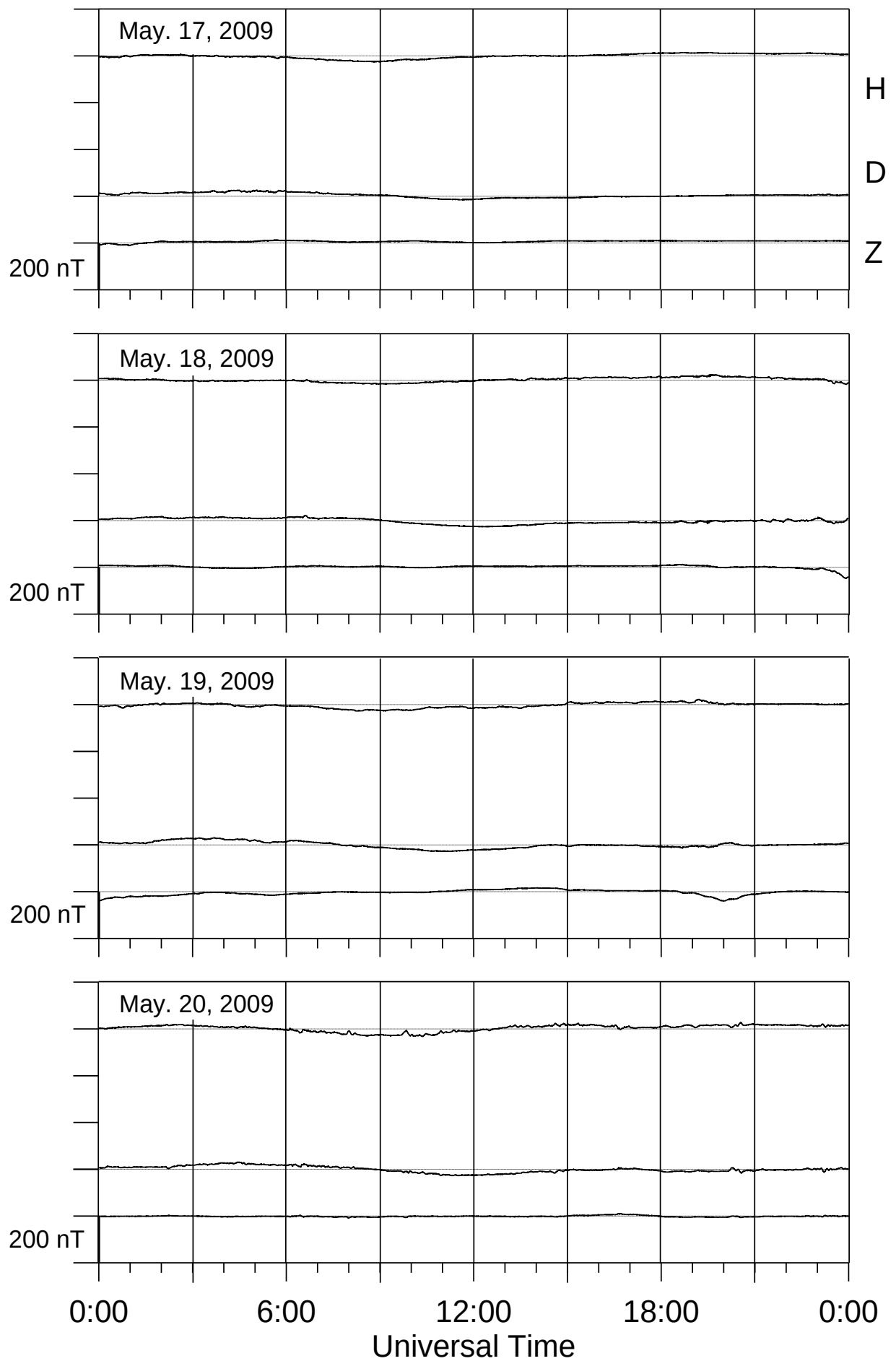
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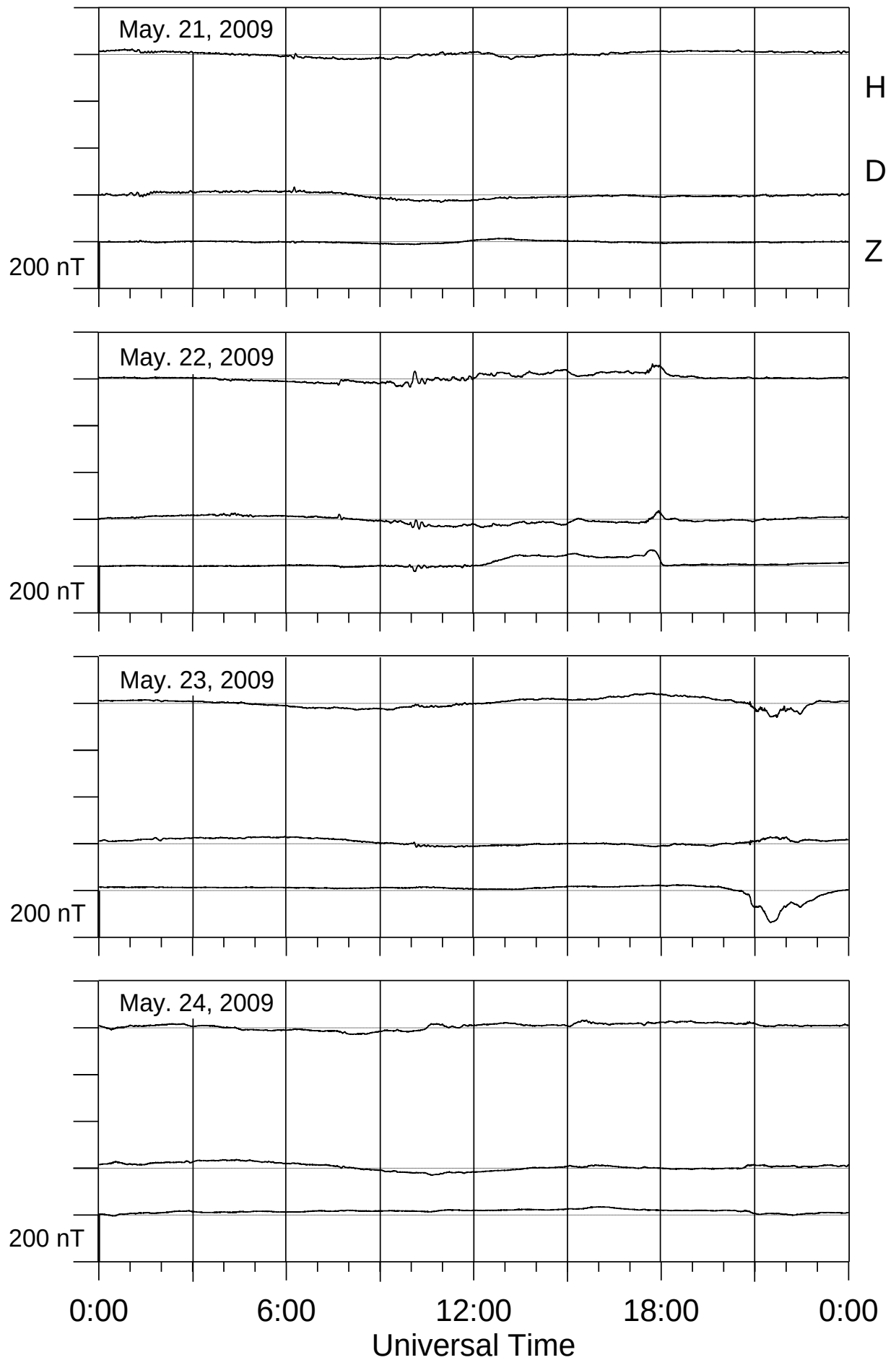
Lovozero magnetometer



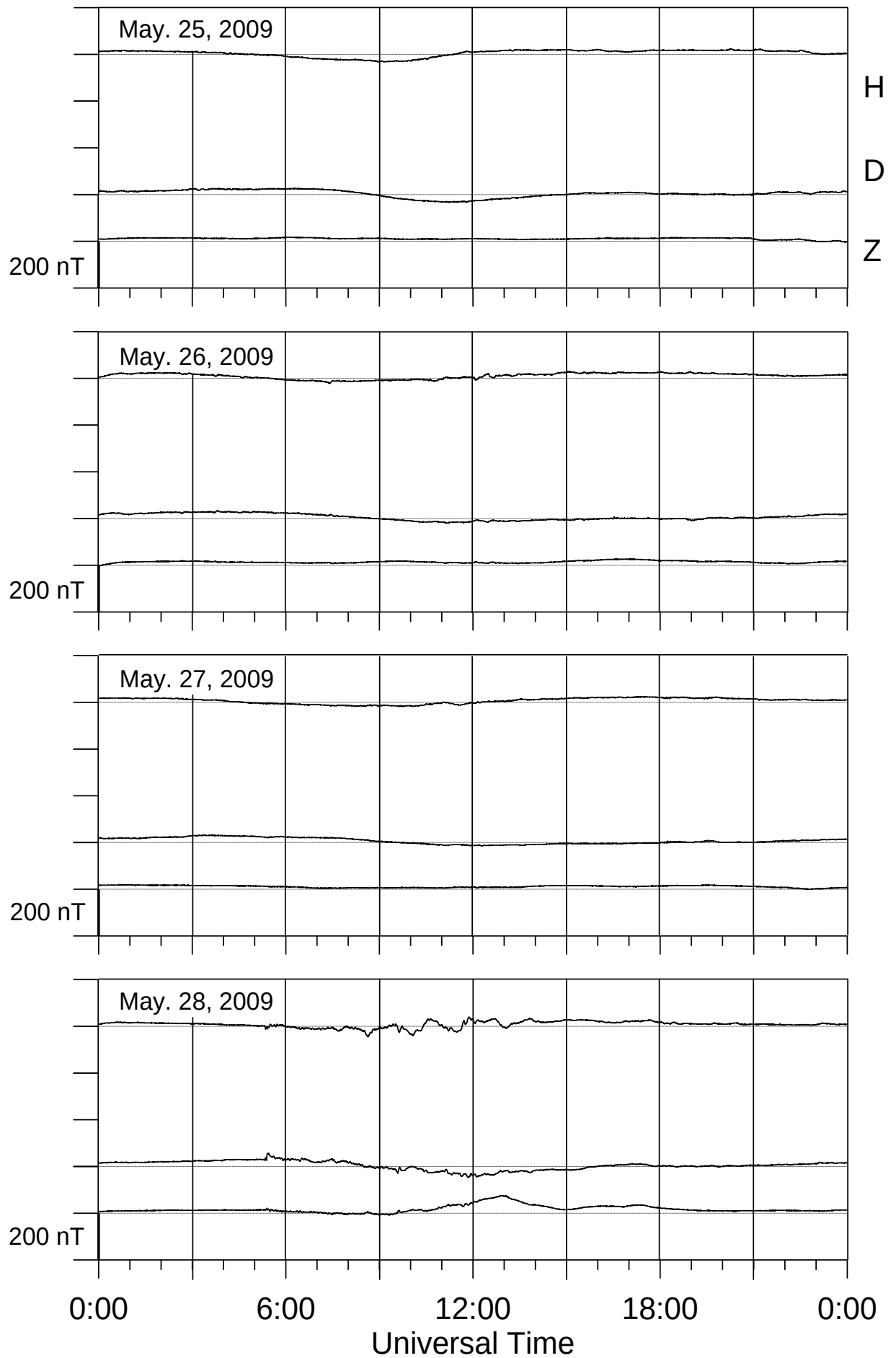
Lovozero magnetometer



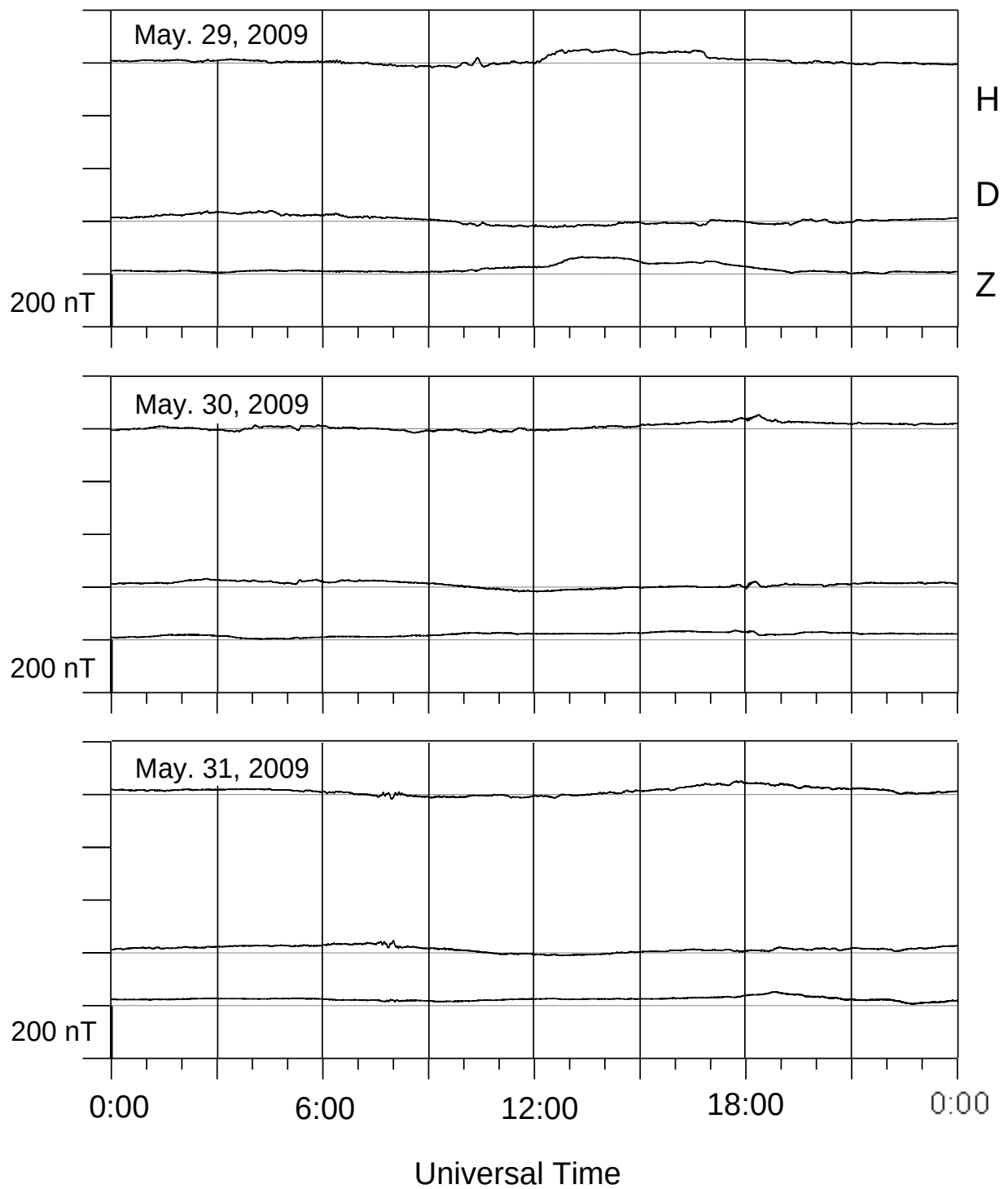
Lovozero magnetometer



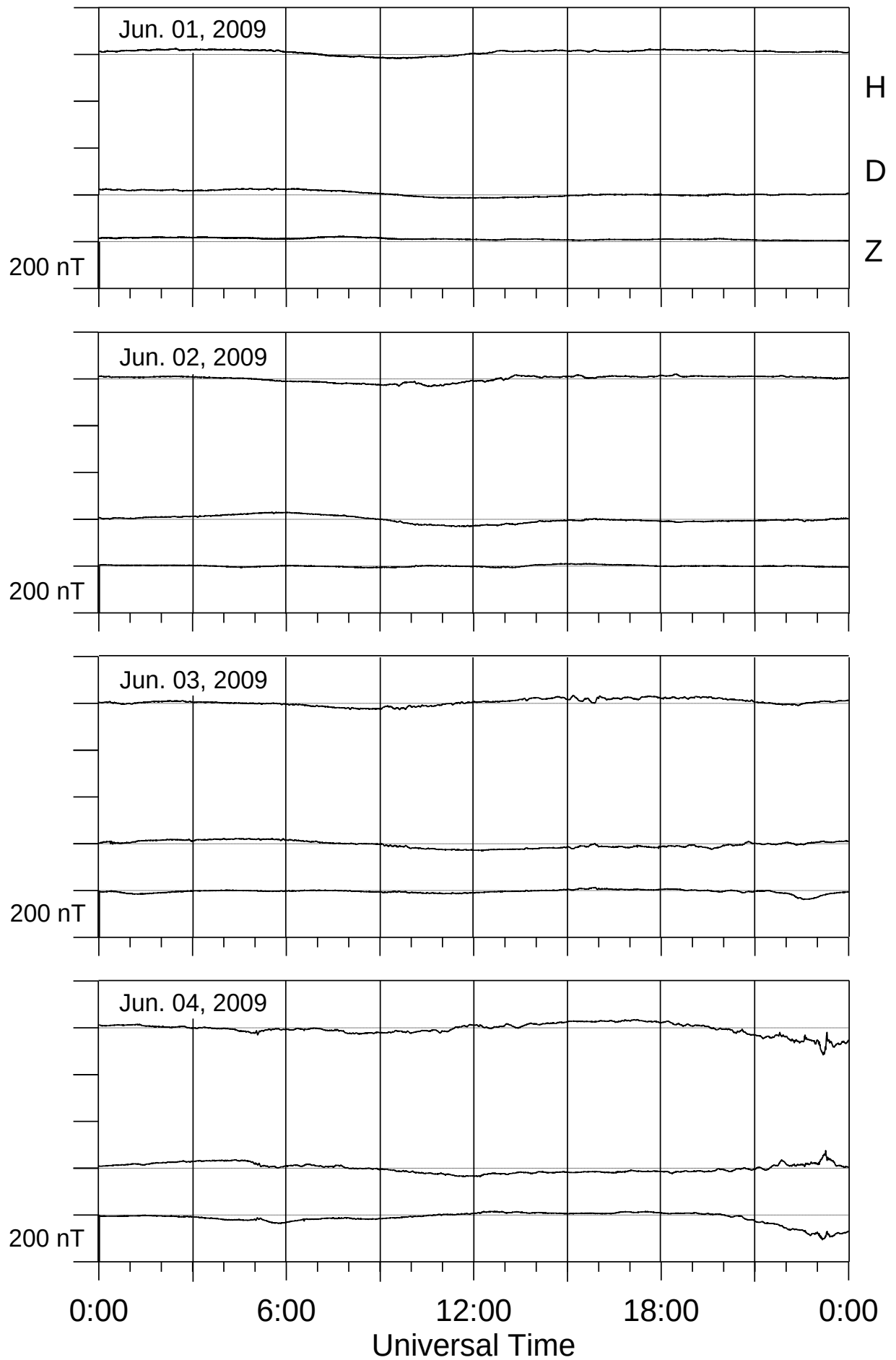
Lovozero magnetometer



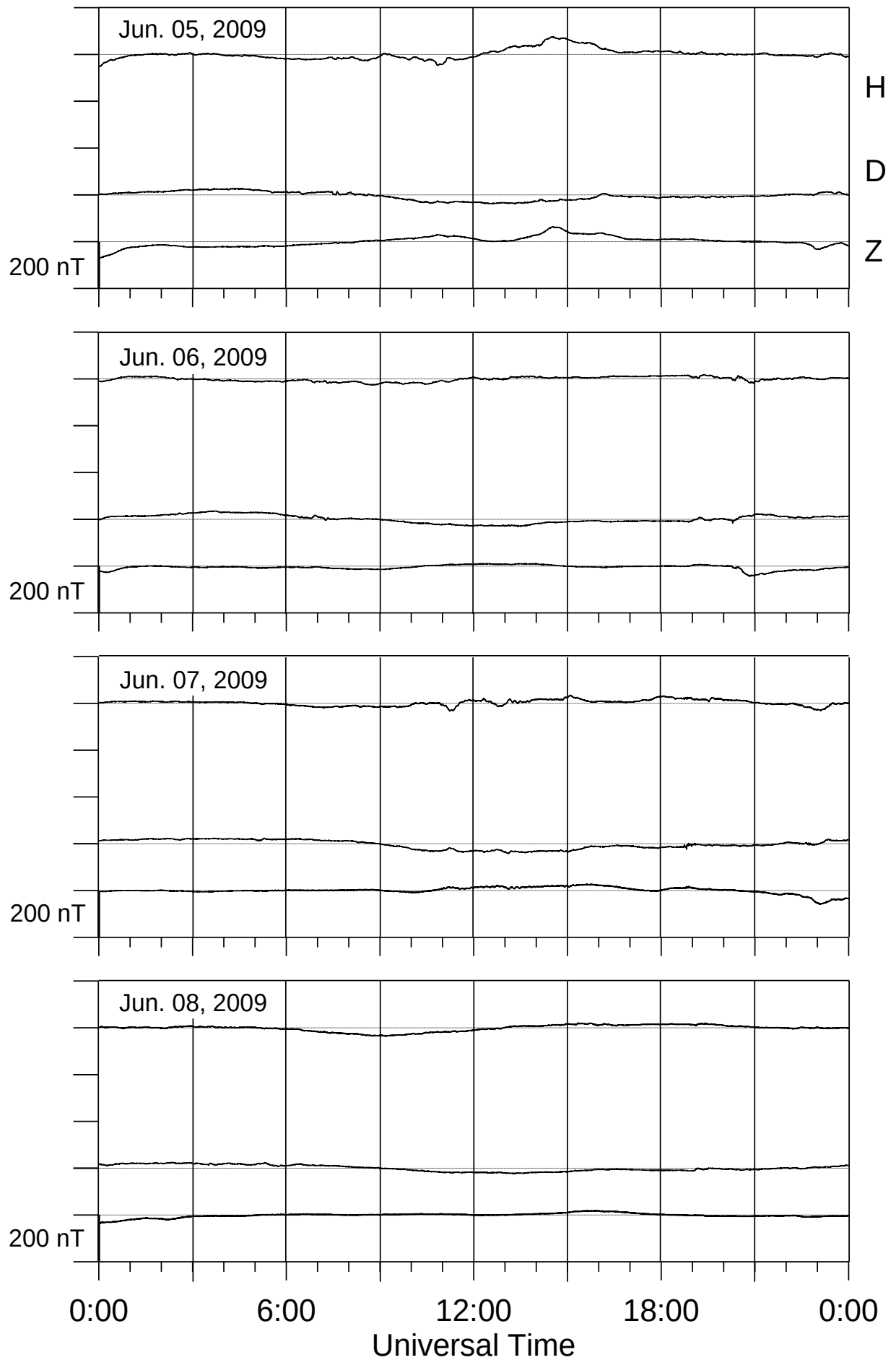
Lovozero magnetometer



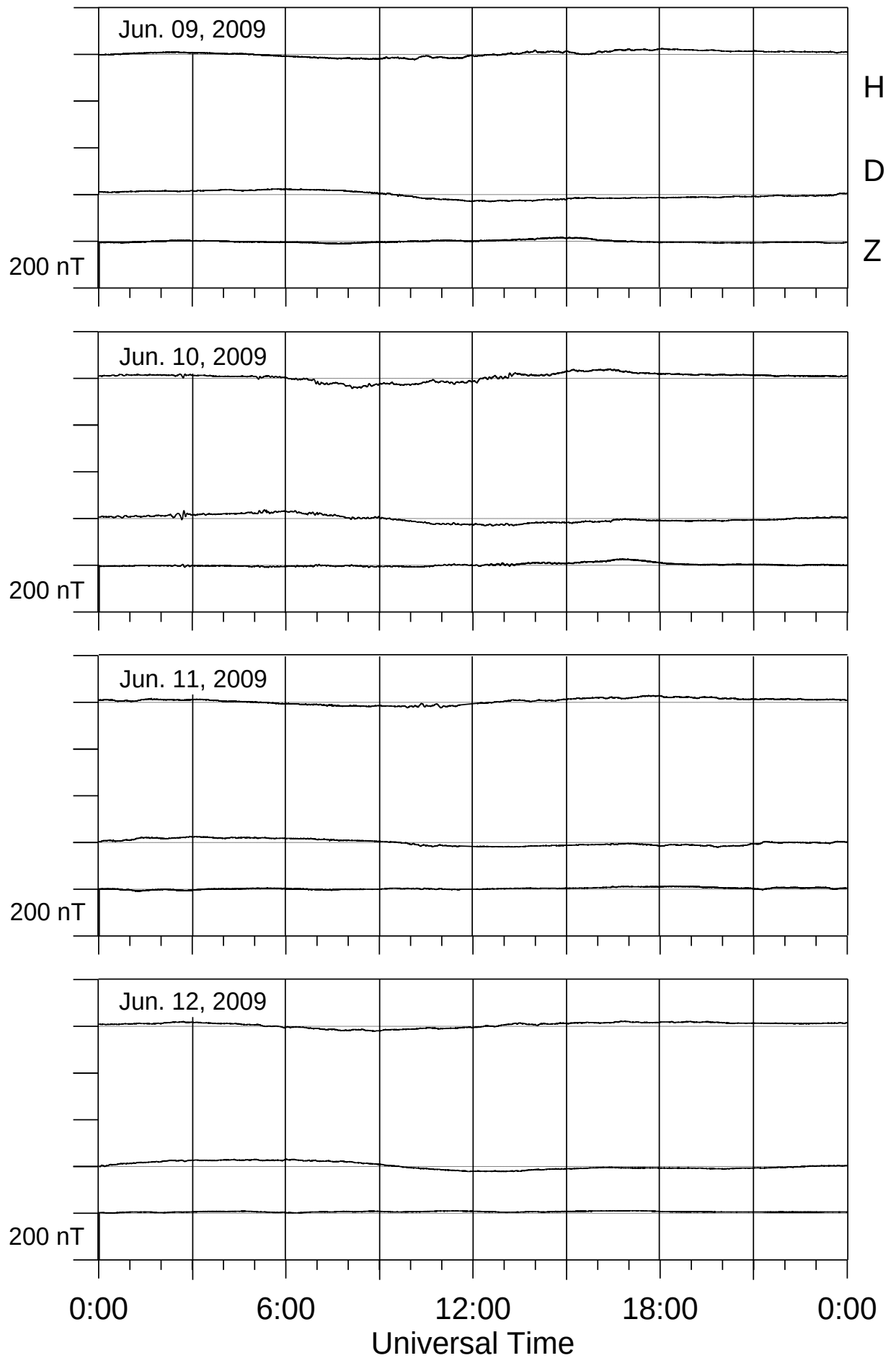
Lovozero magnetometer



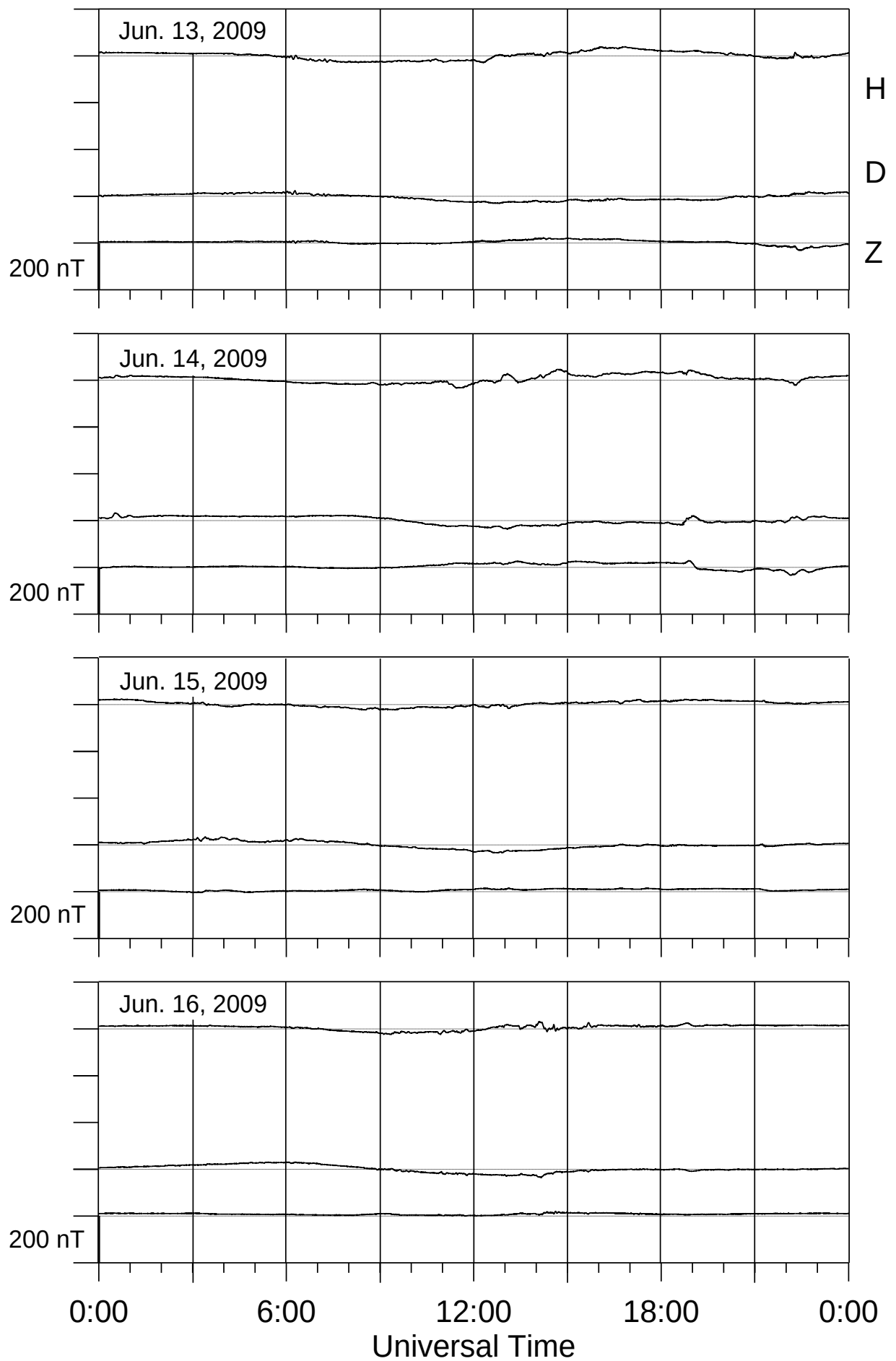
Lovozero magnetometer



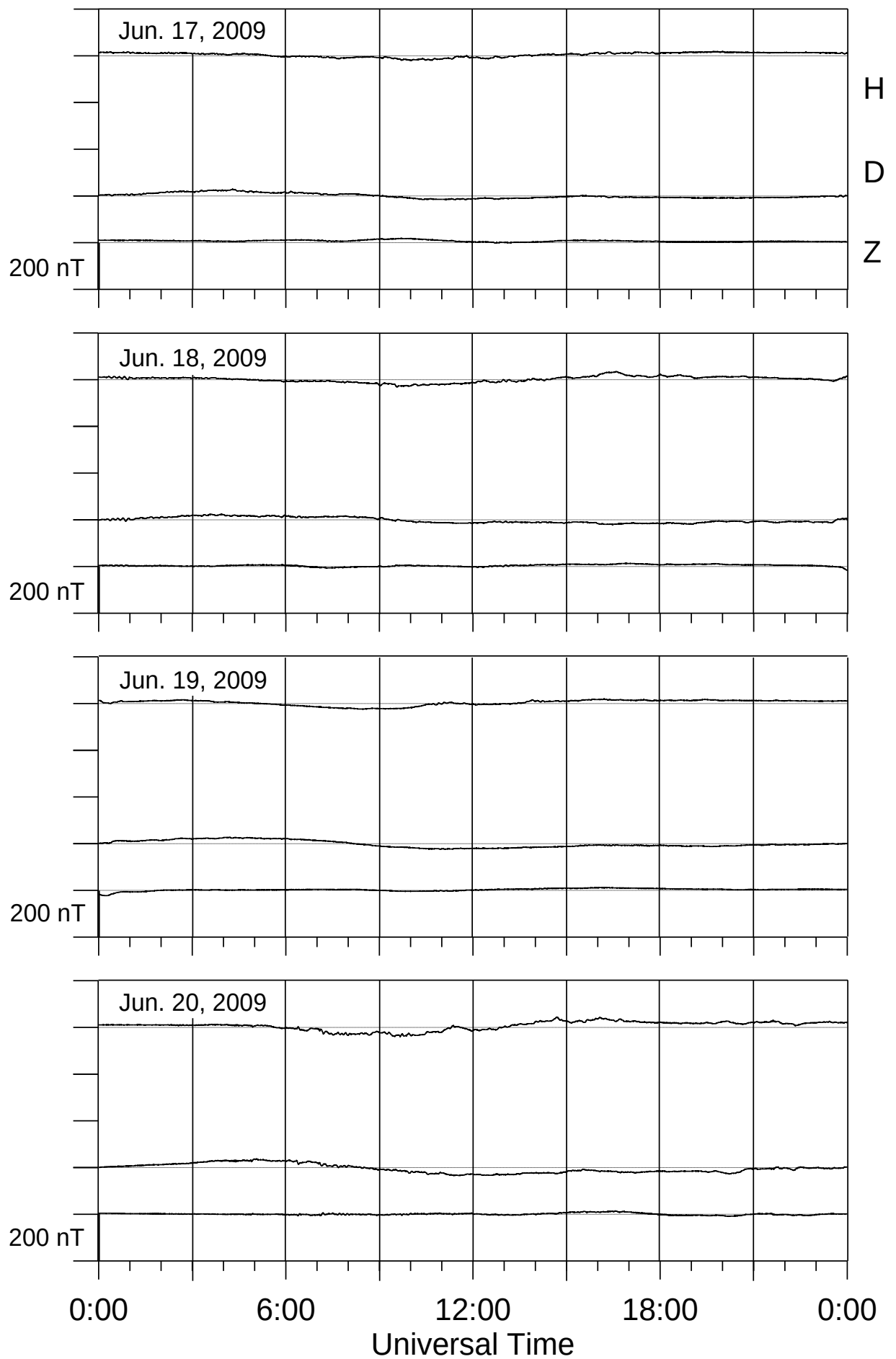
Lovozero magnetometer



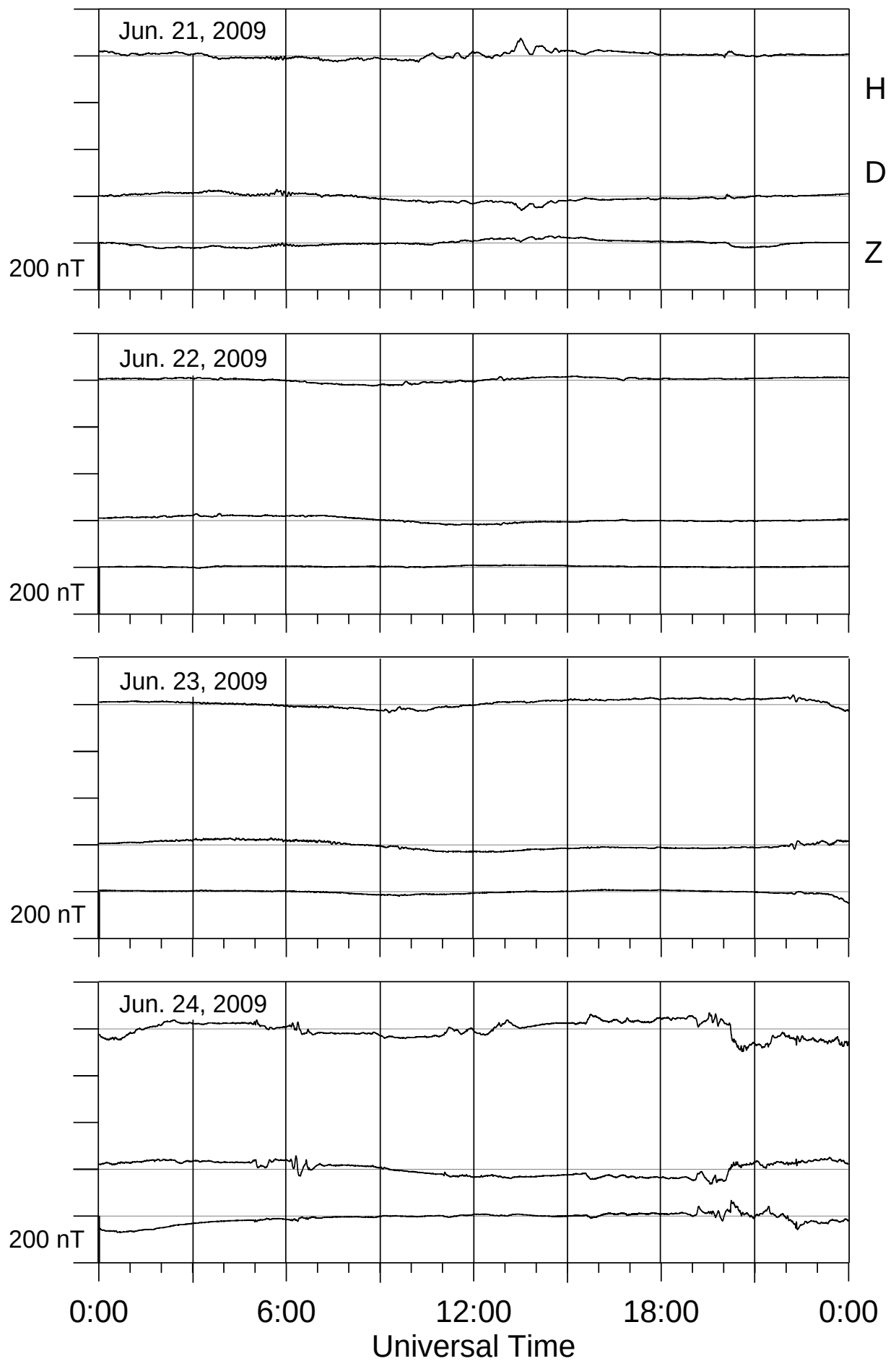
Lovozero magnetometer



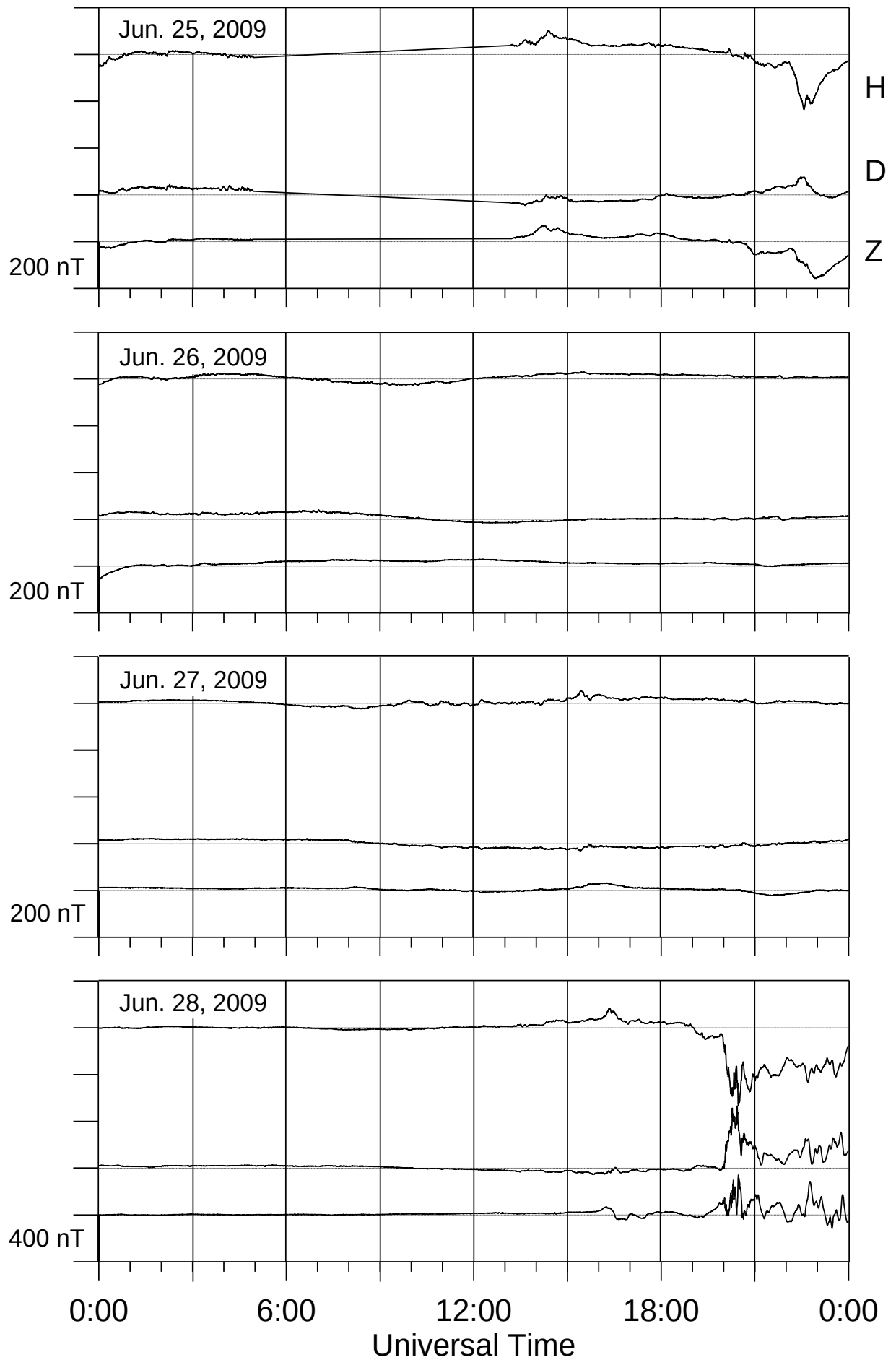
Lovozero magnetometer



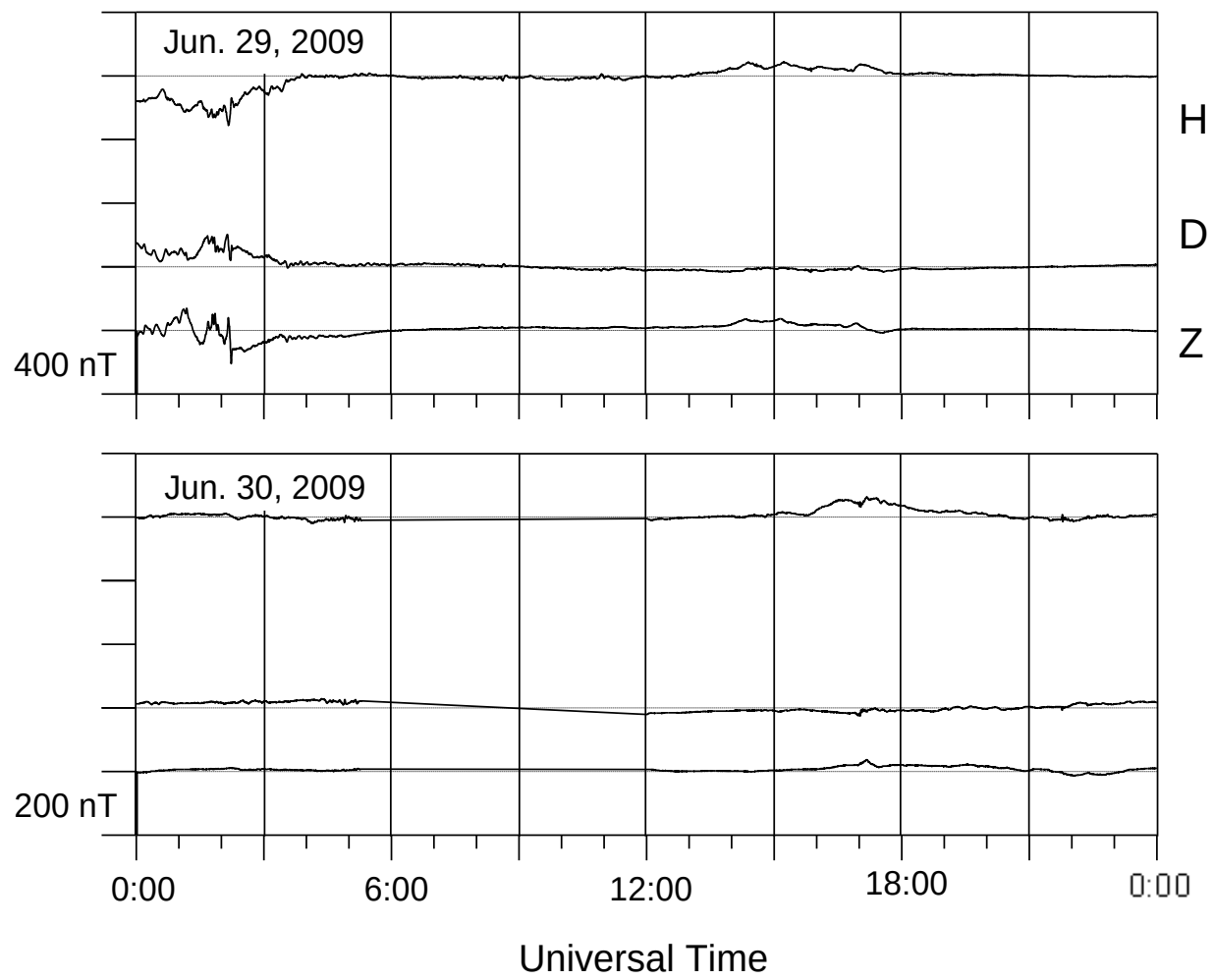
Lovozero magnetometer



Lovozero magnetometer



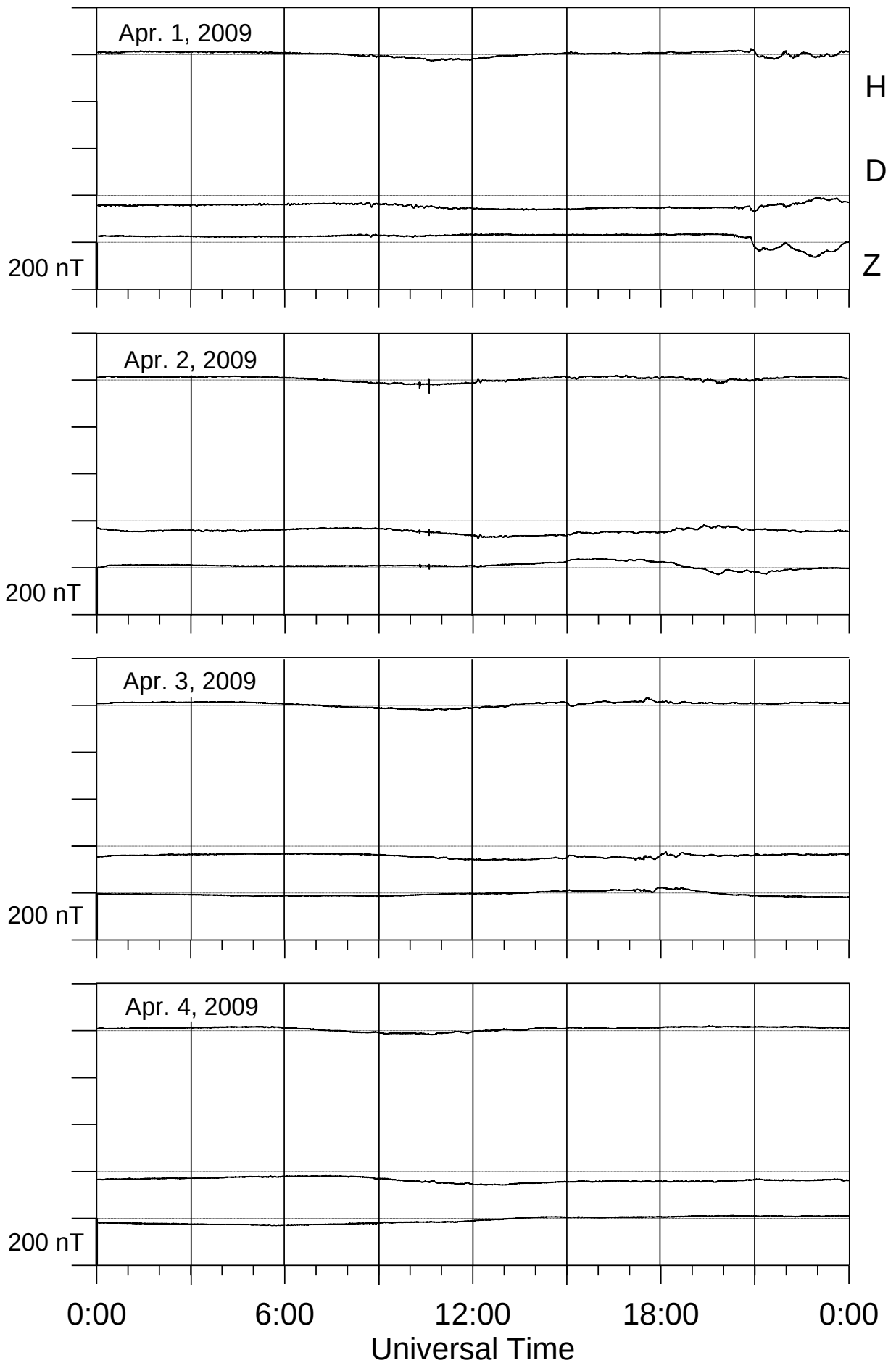
Lovozero magnetometer



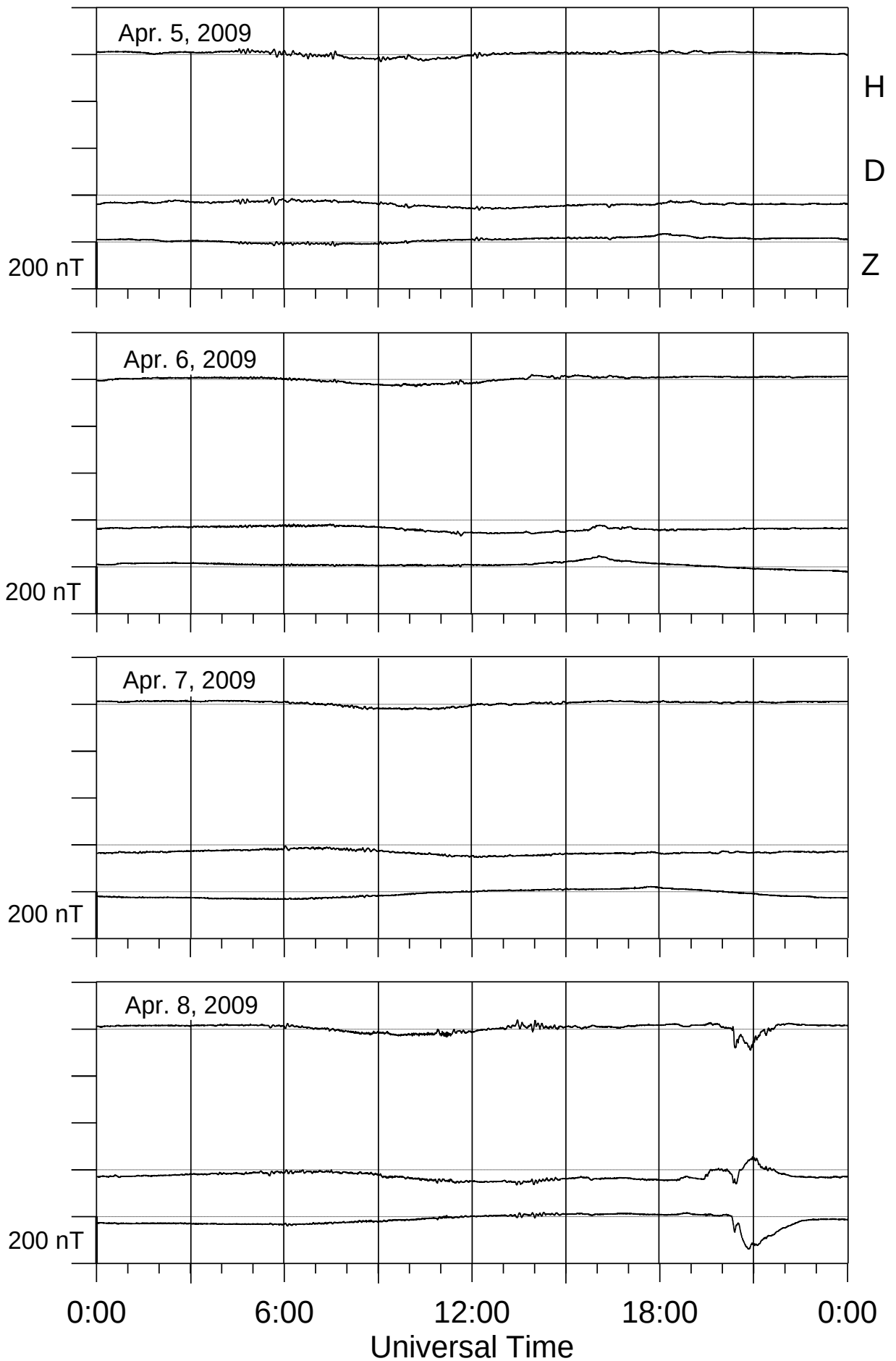
LOPARSKAYA MAGNETOGRAMS

April - June 2009

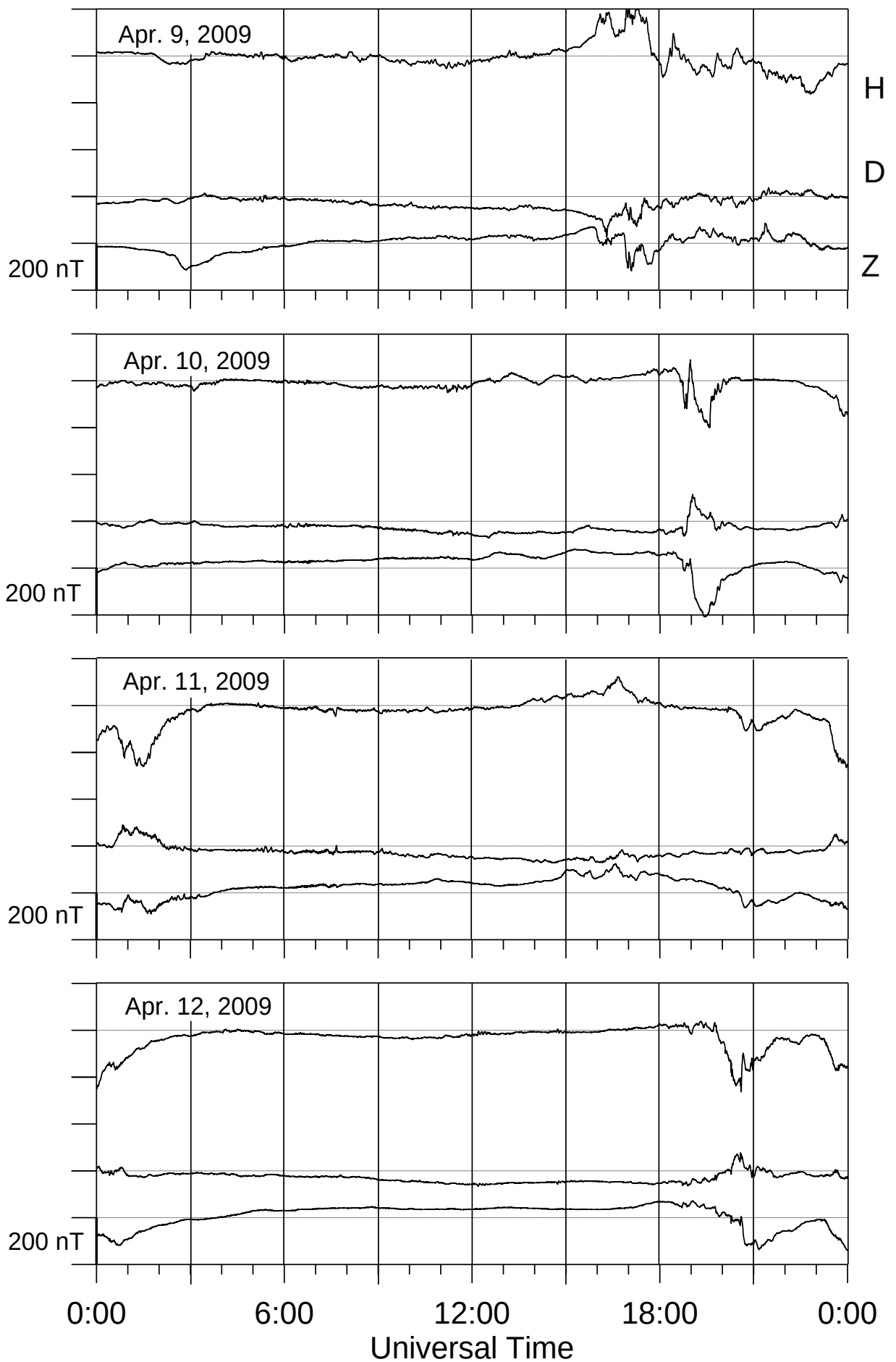
Loparskaya magnetometer



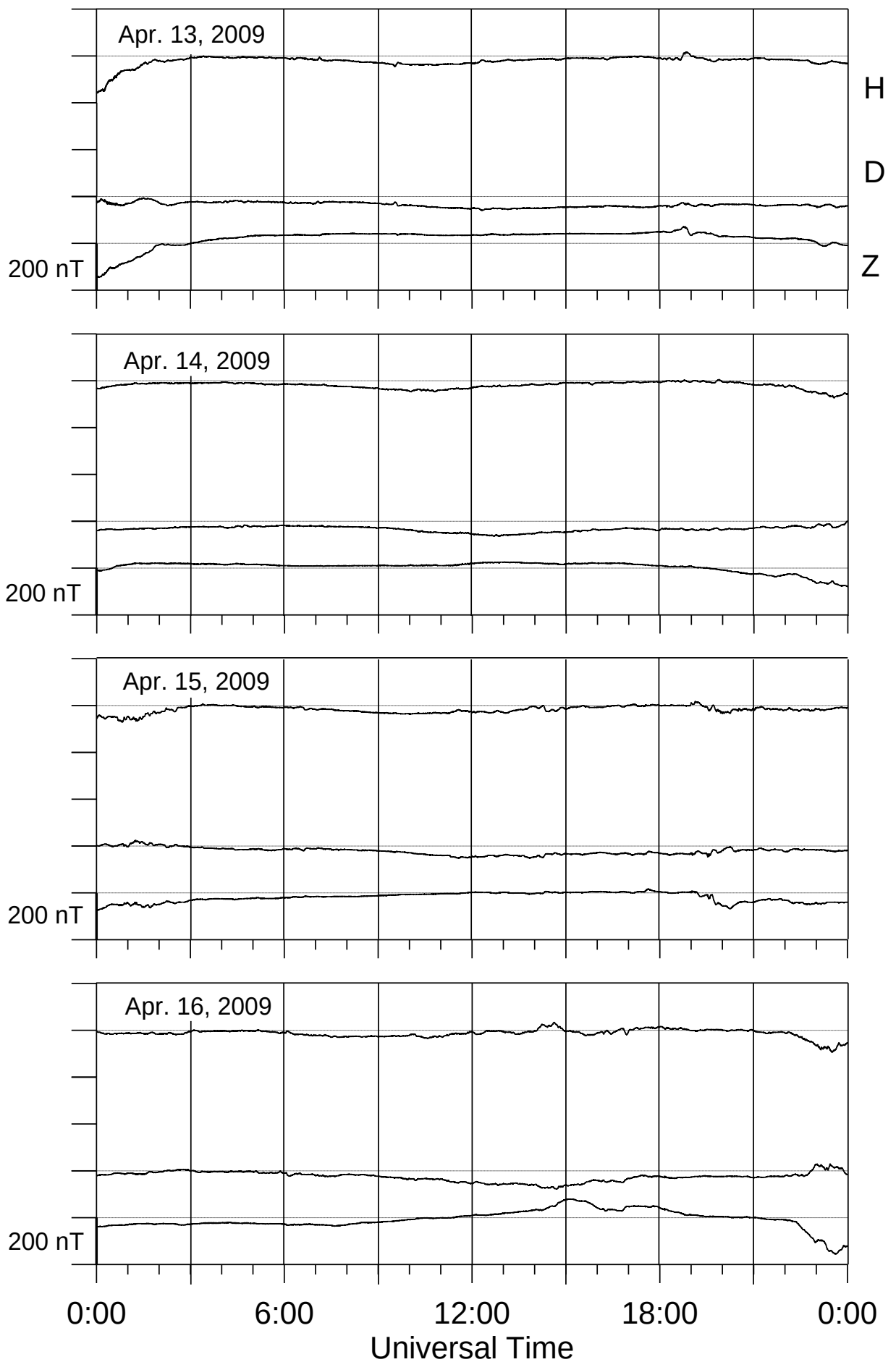
Loparskaya magnetometer



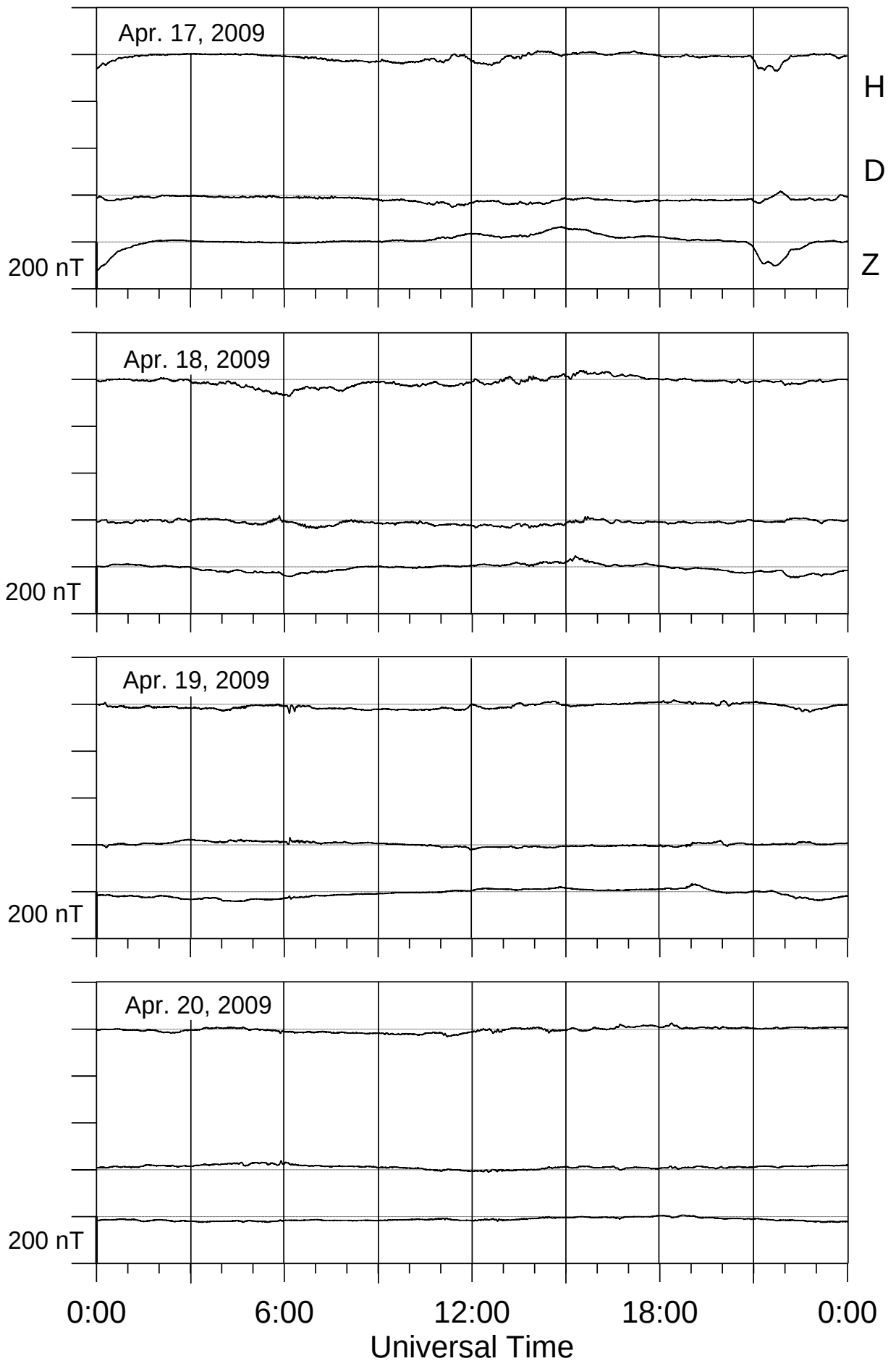
Loparskaya magnetometer



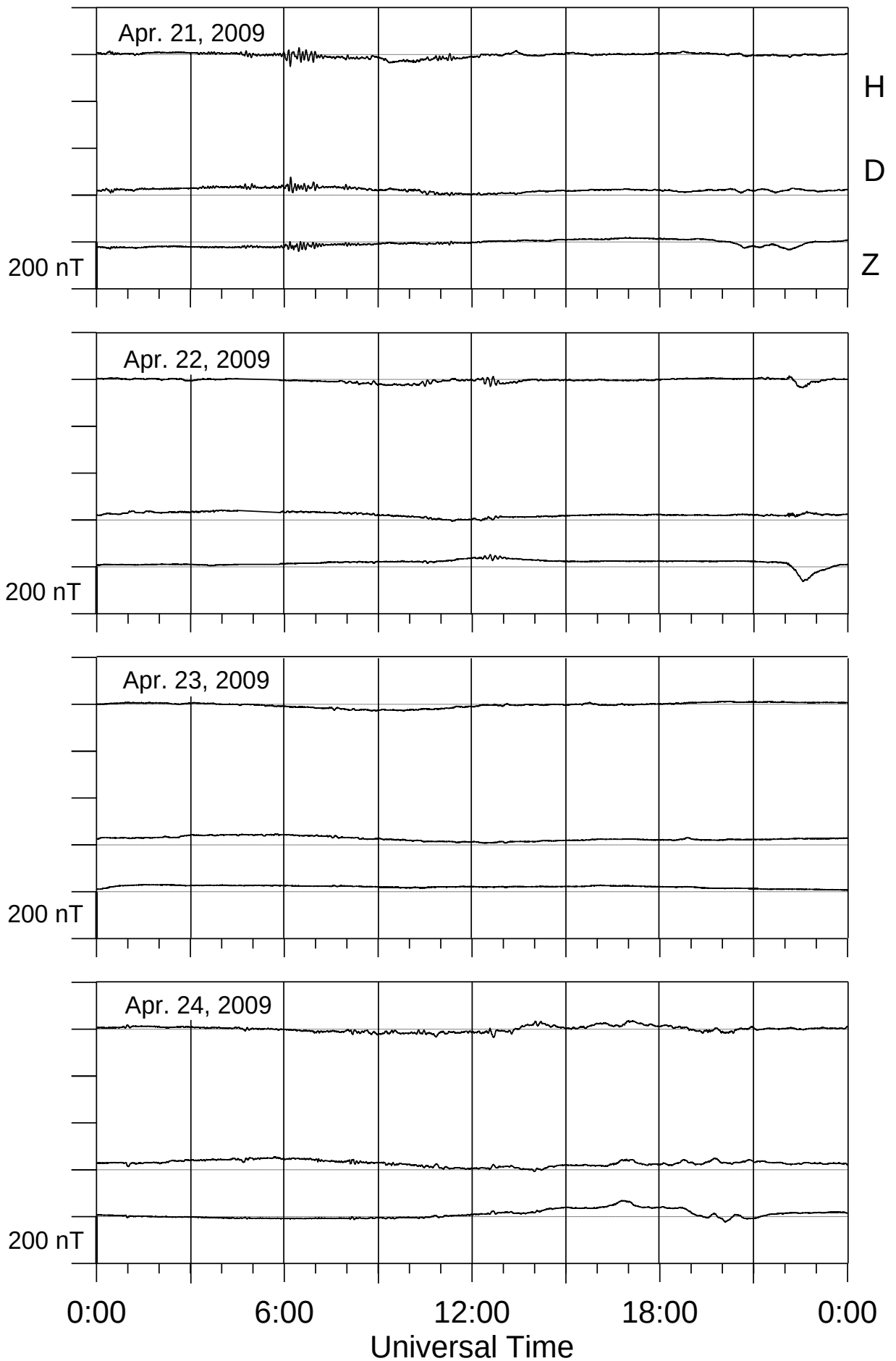
Loparskaya magnetometer



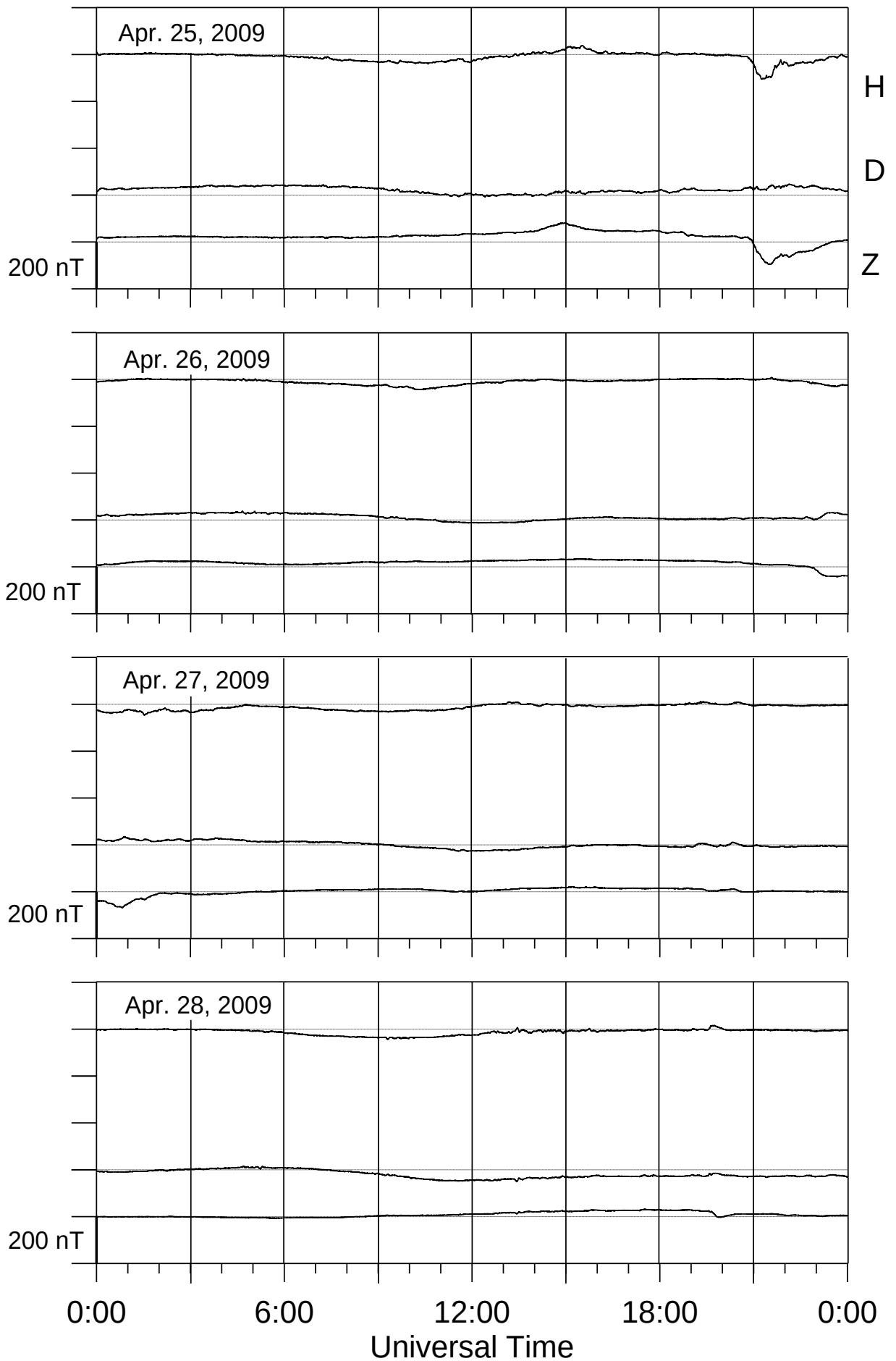
Loparskaya magnetometer



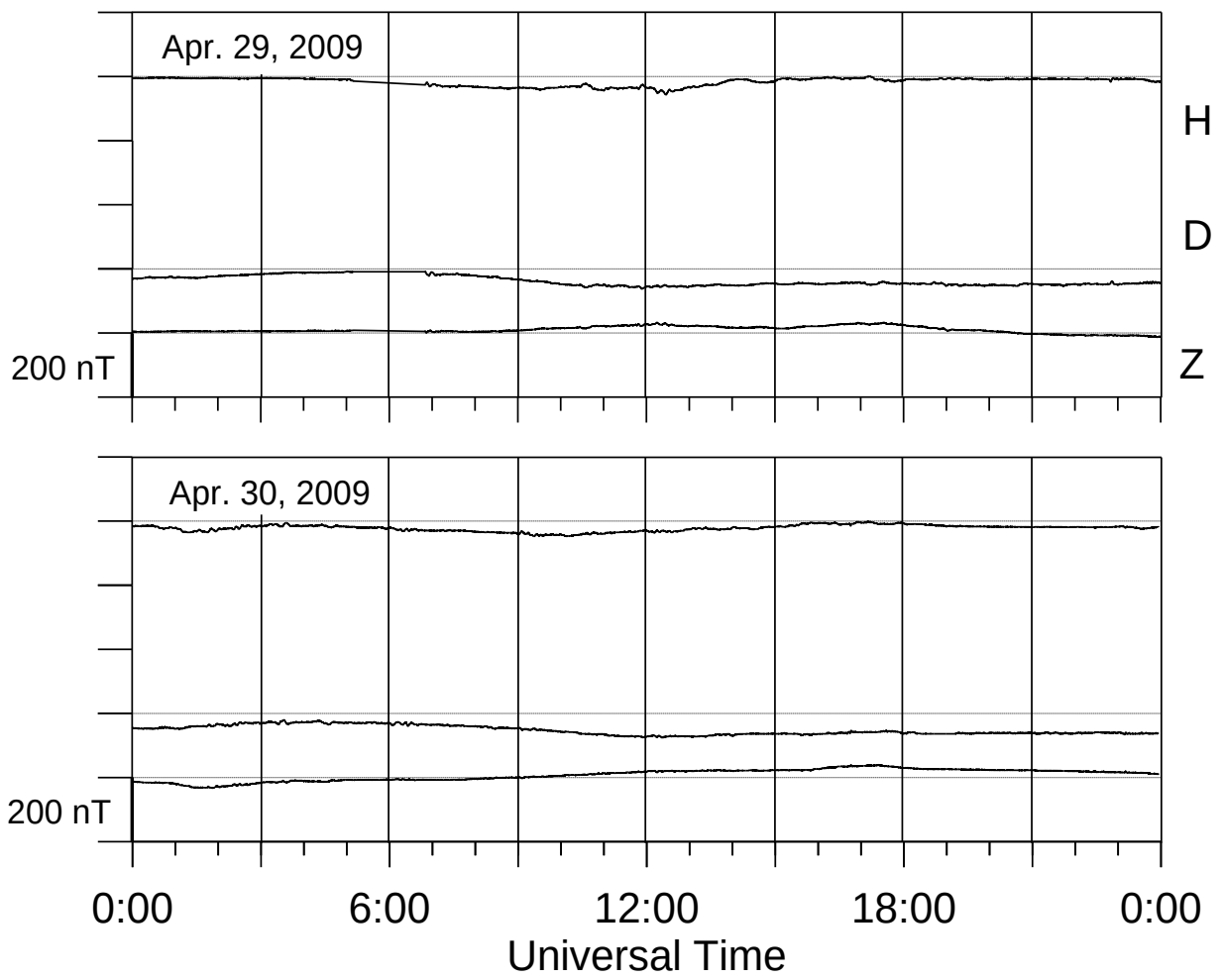
Loparskaya magnetometer



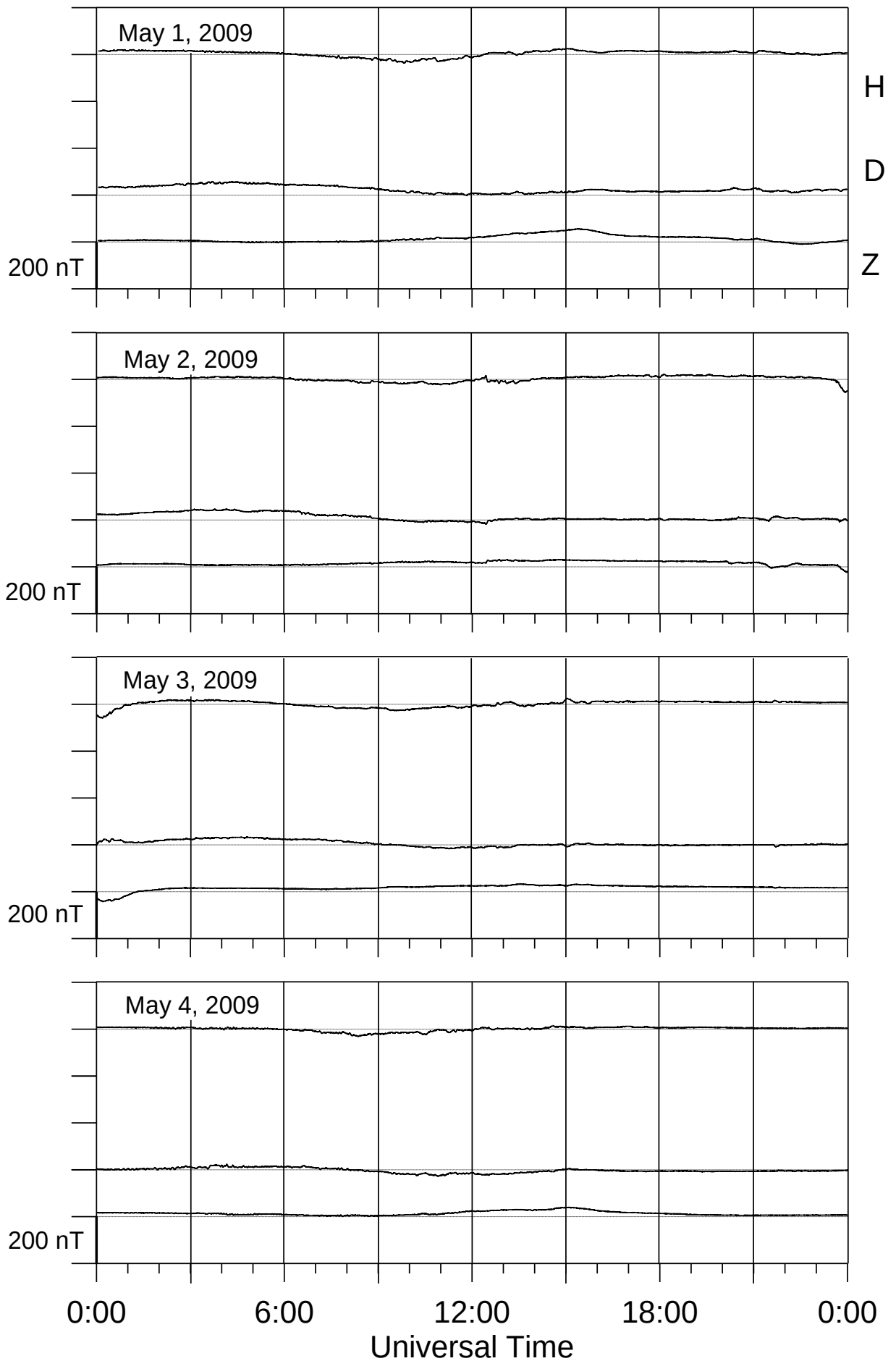
Loparskaya magnetometer



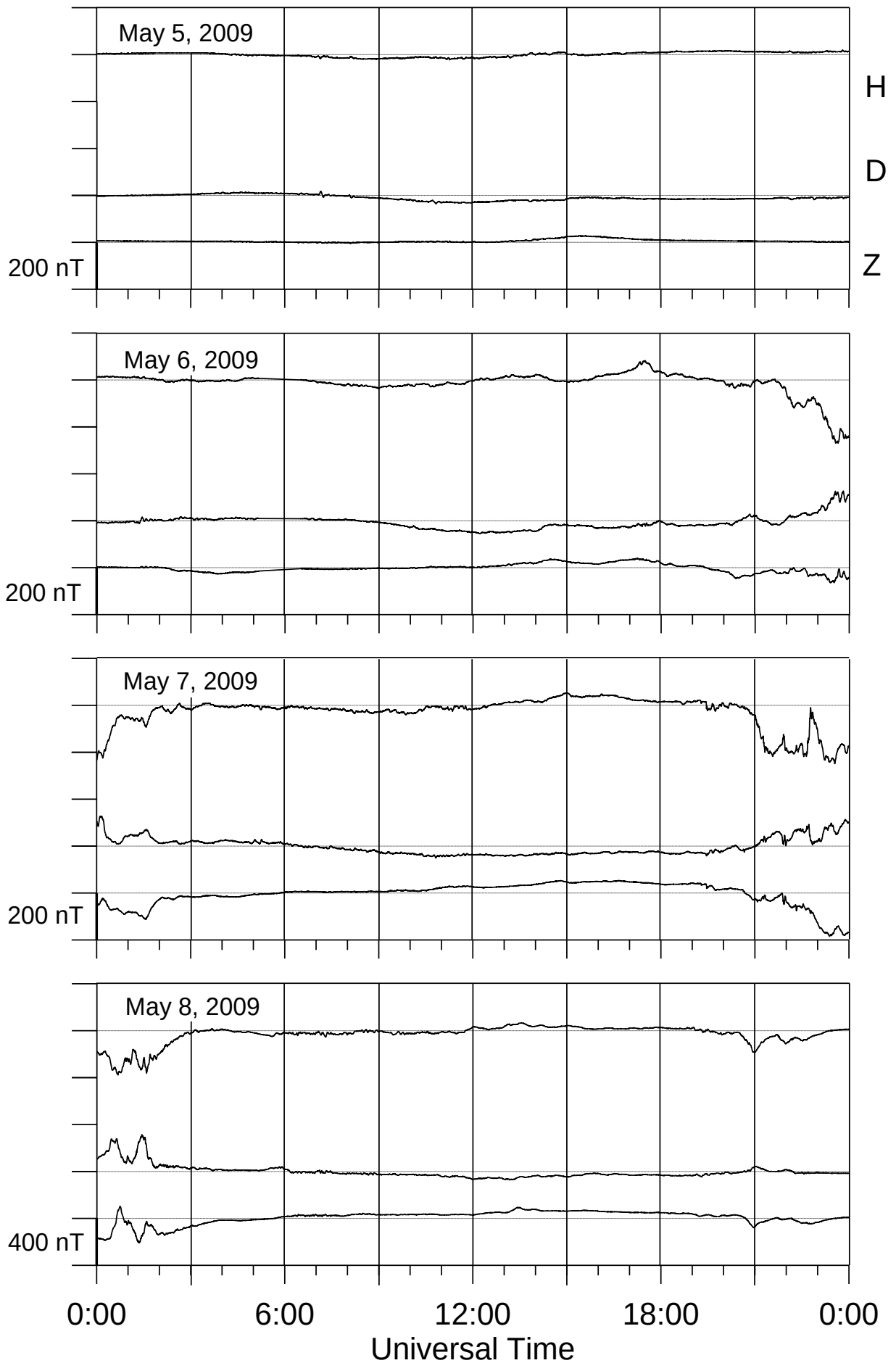
Loparskaya magnetometer



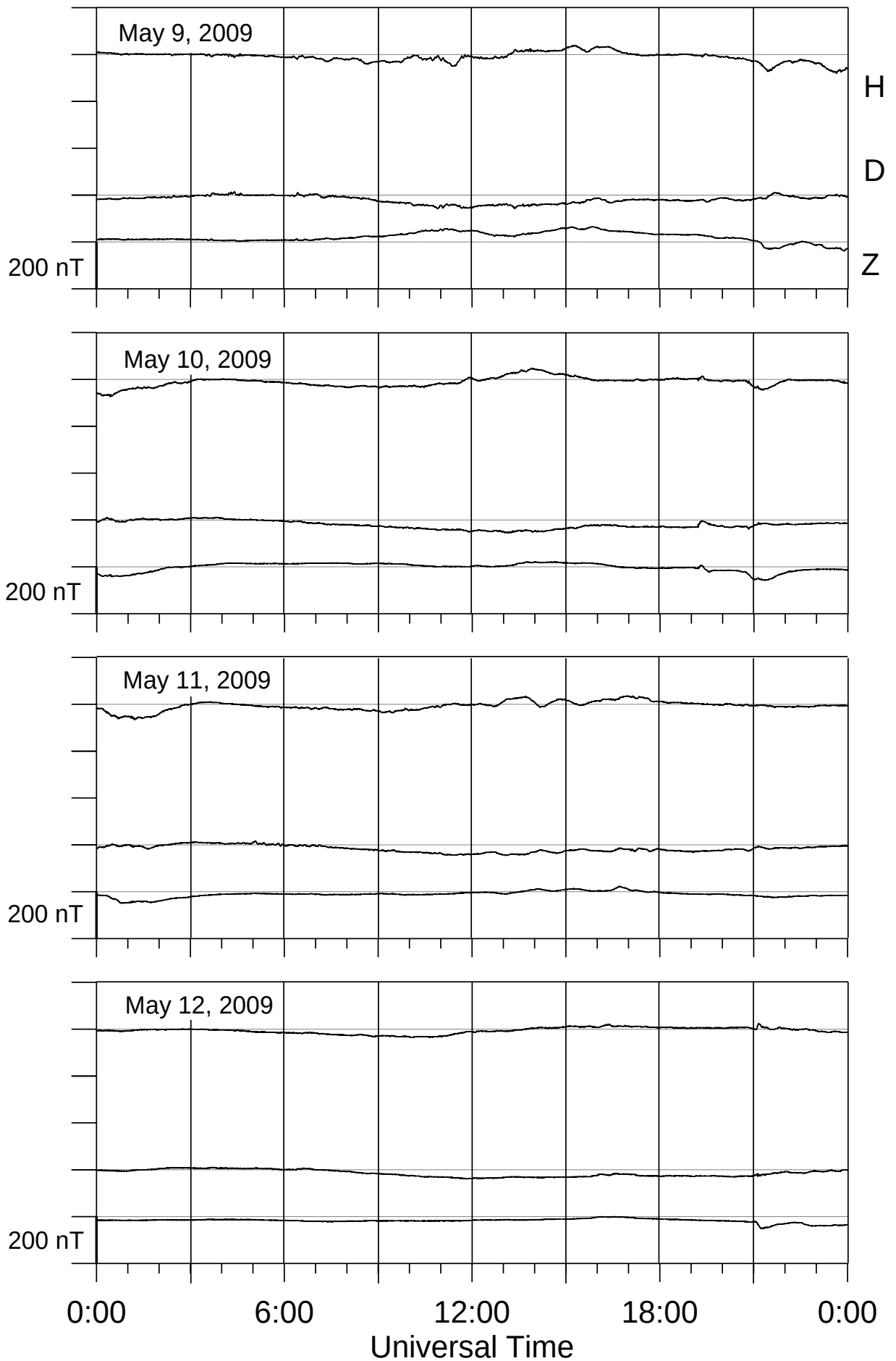
Loparskaya magnetometer



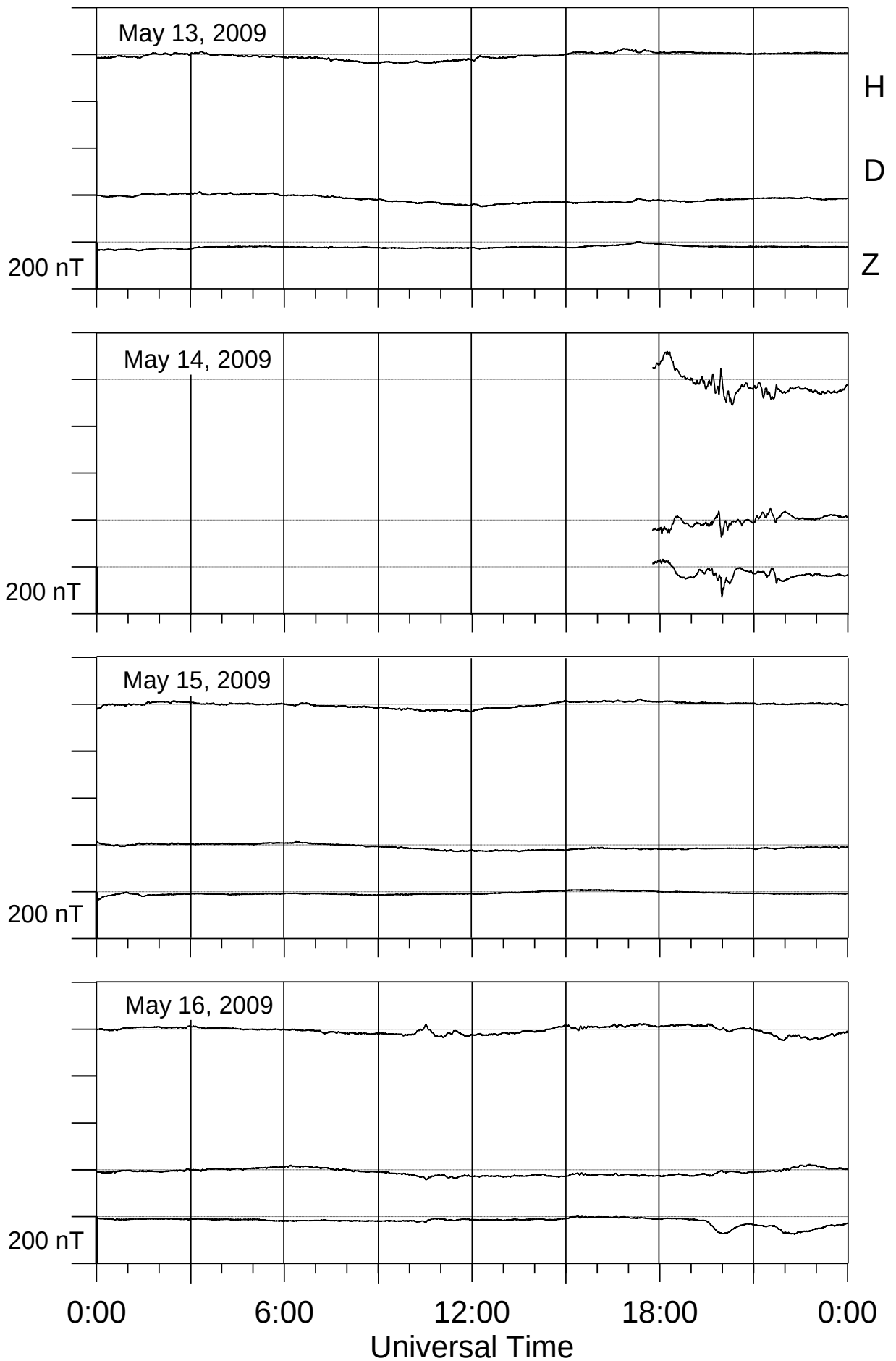
Loparskaya magnetometer



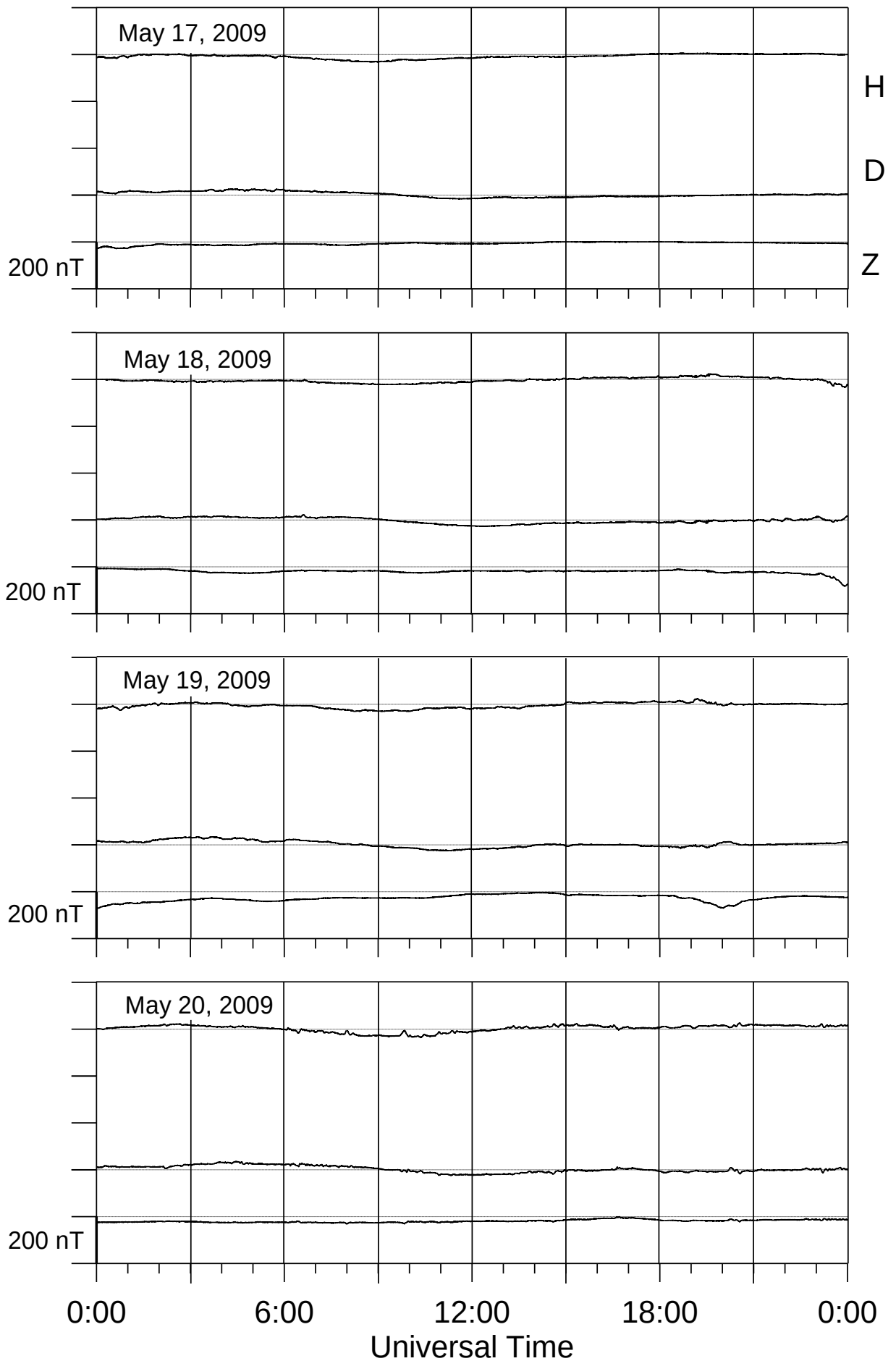
Loparskaya magnetometer



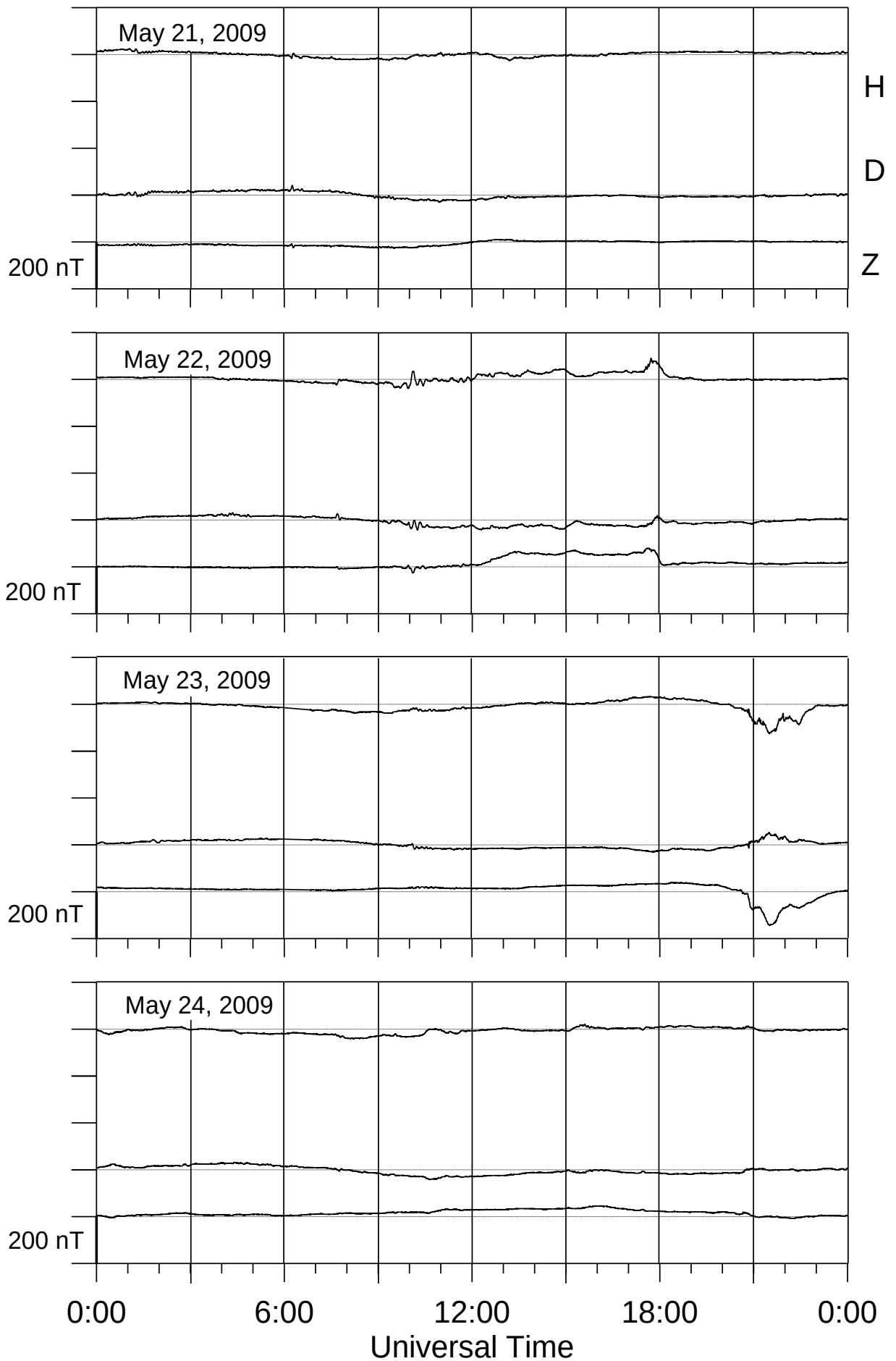
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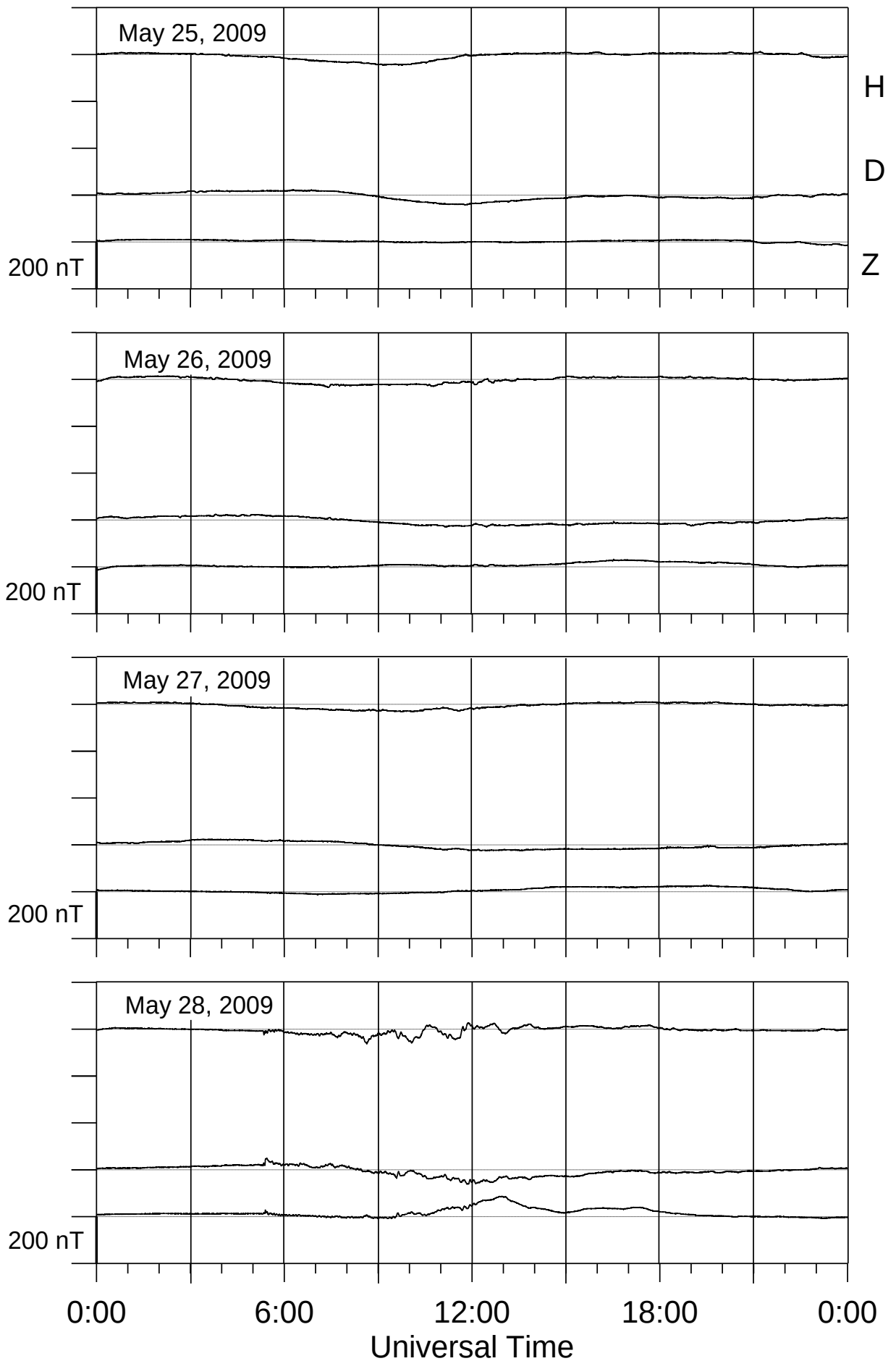
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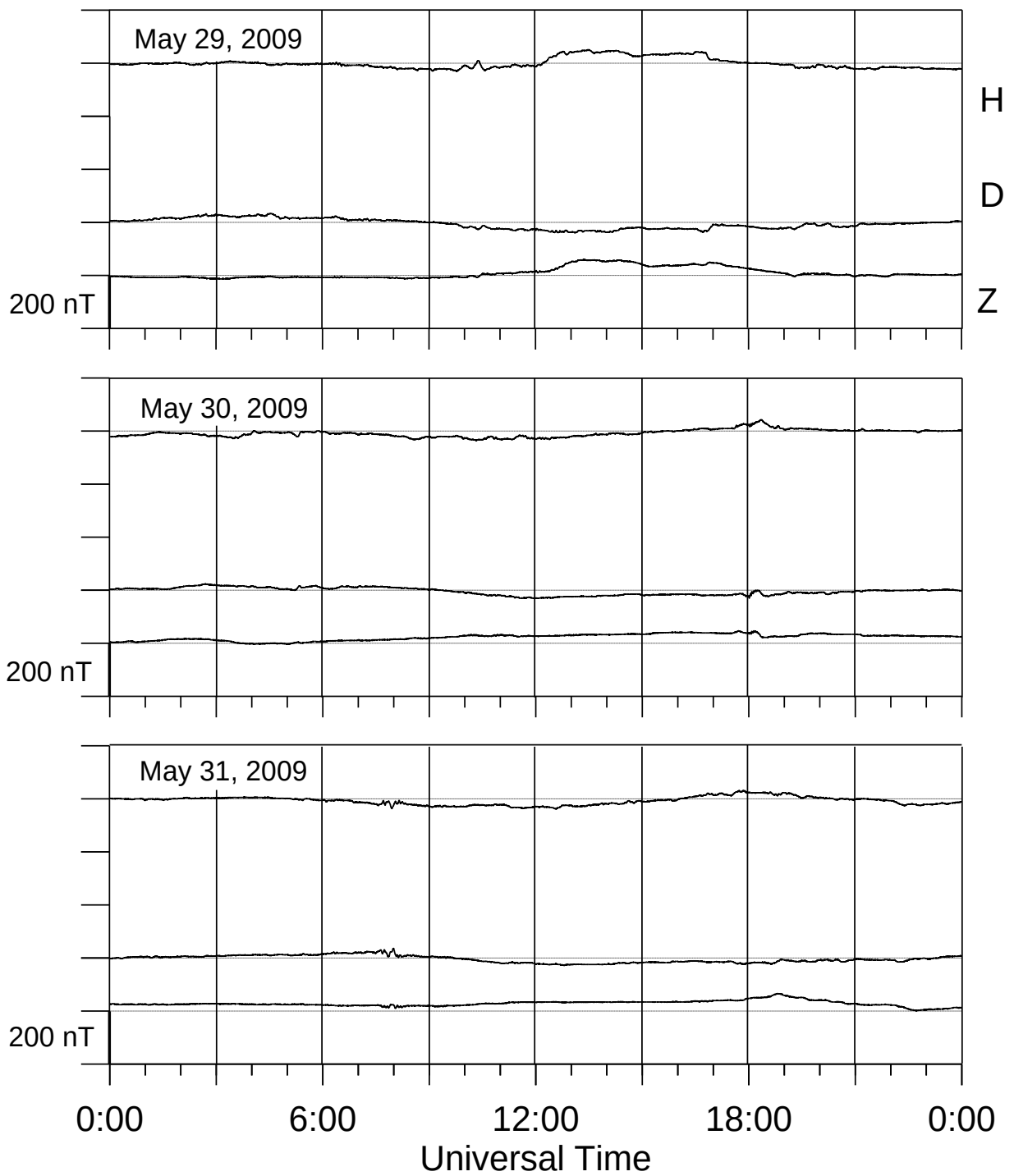
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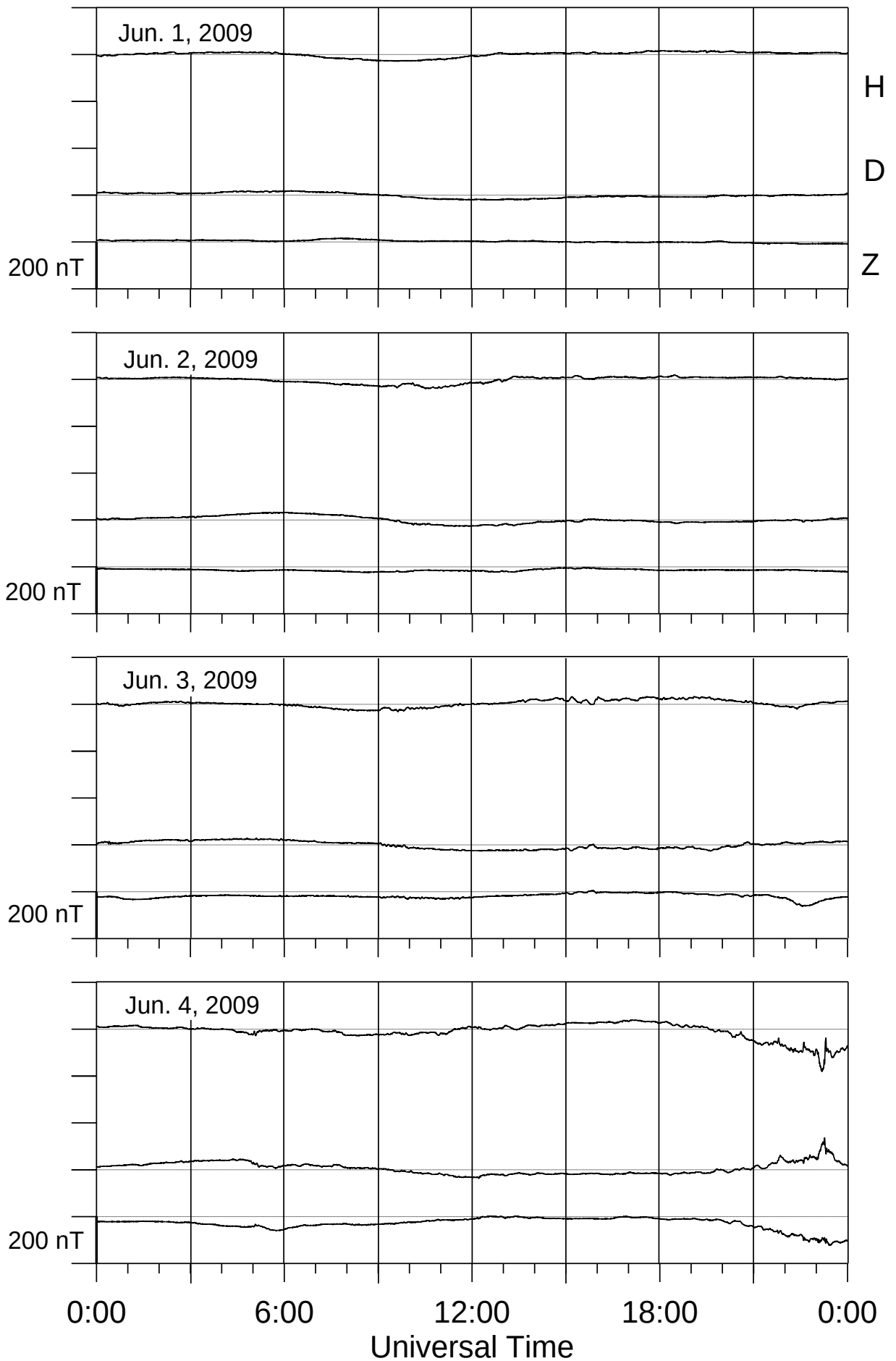
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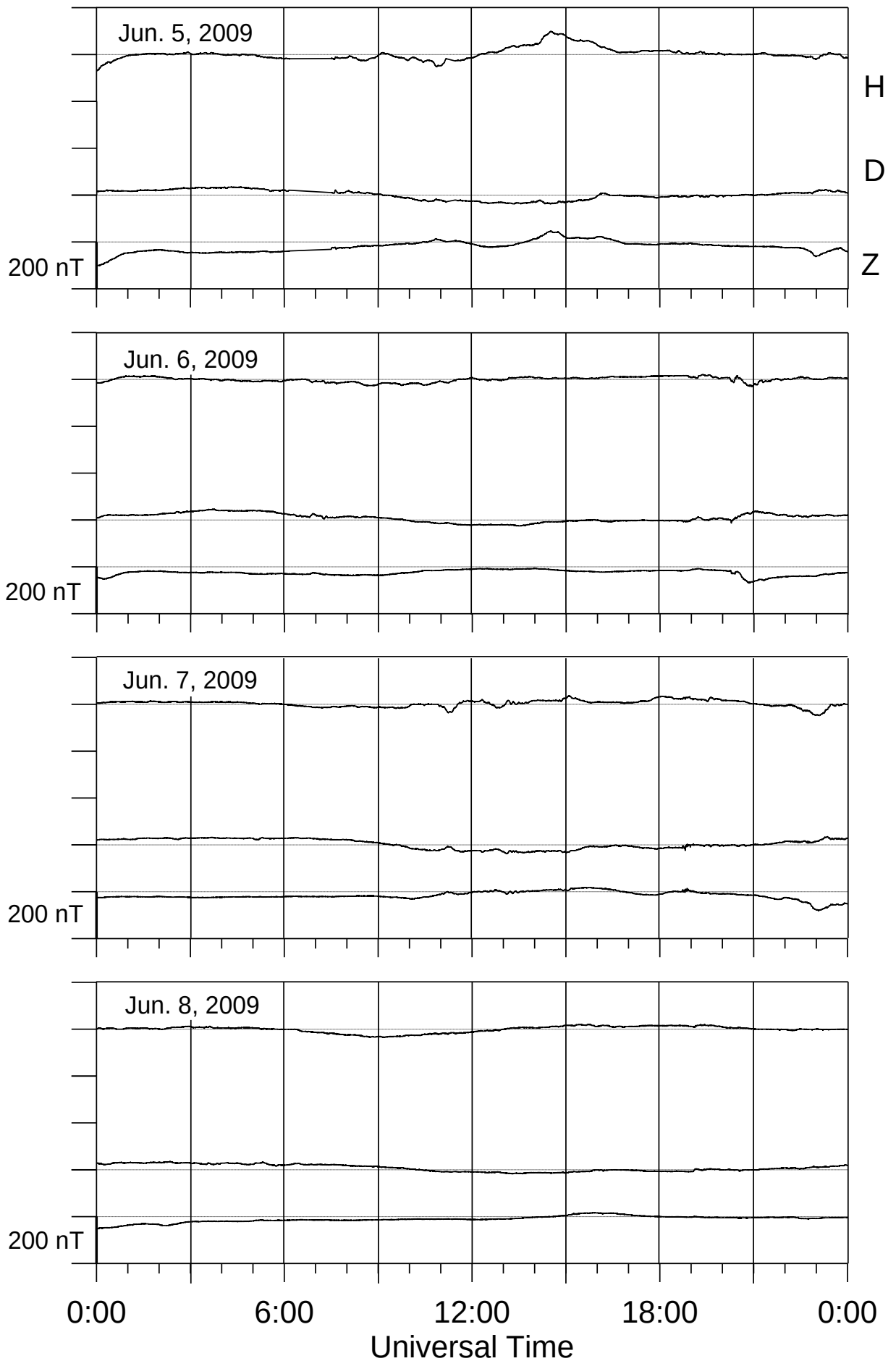
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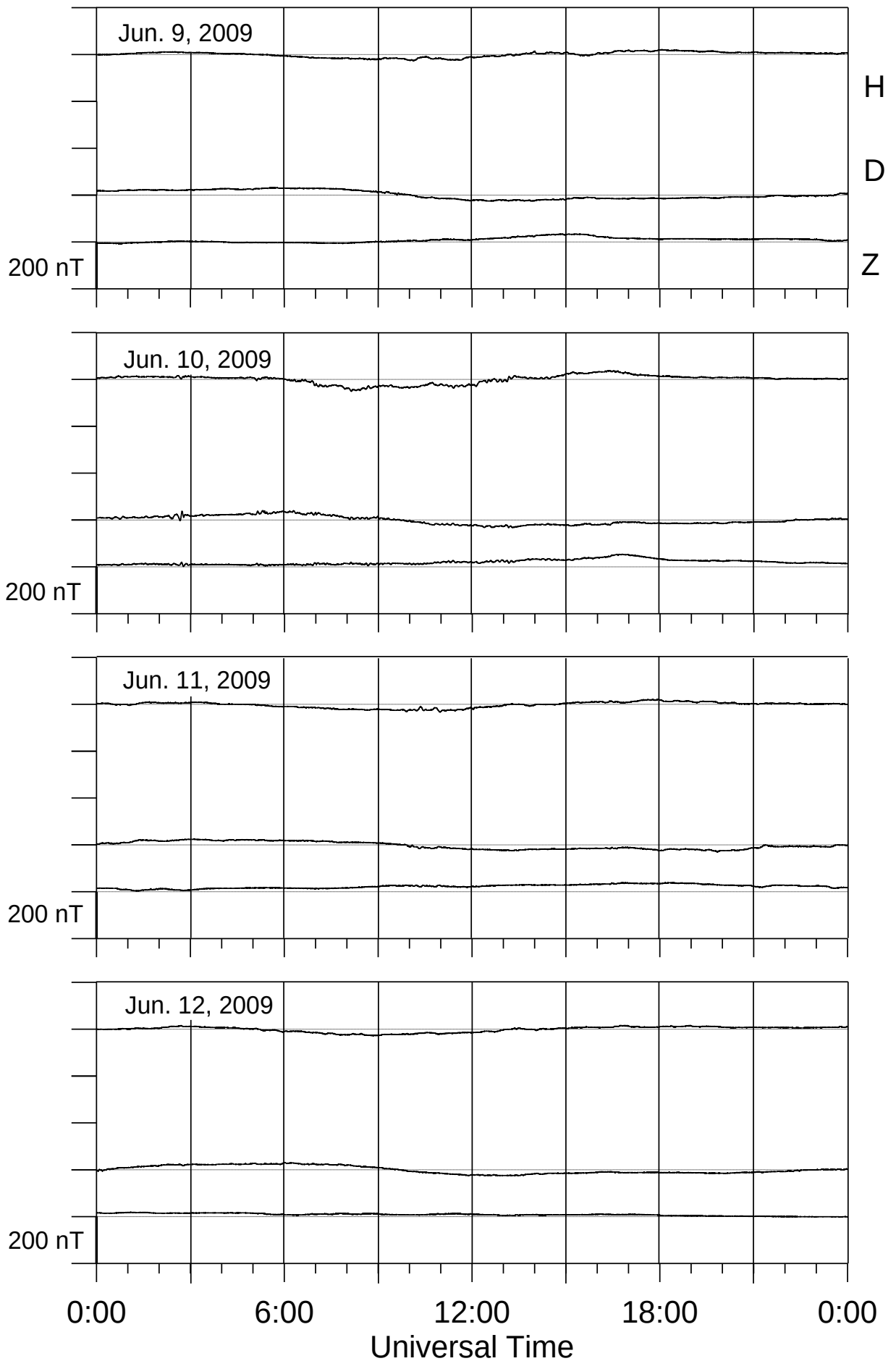
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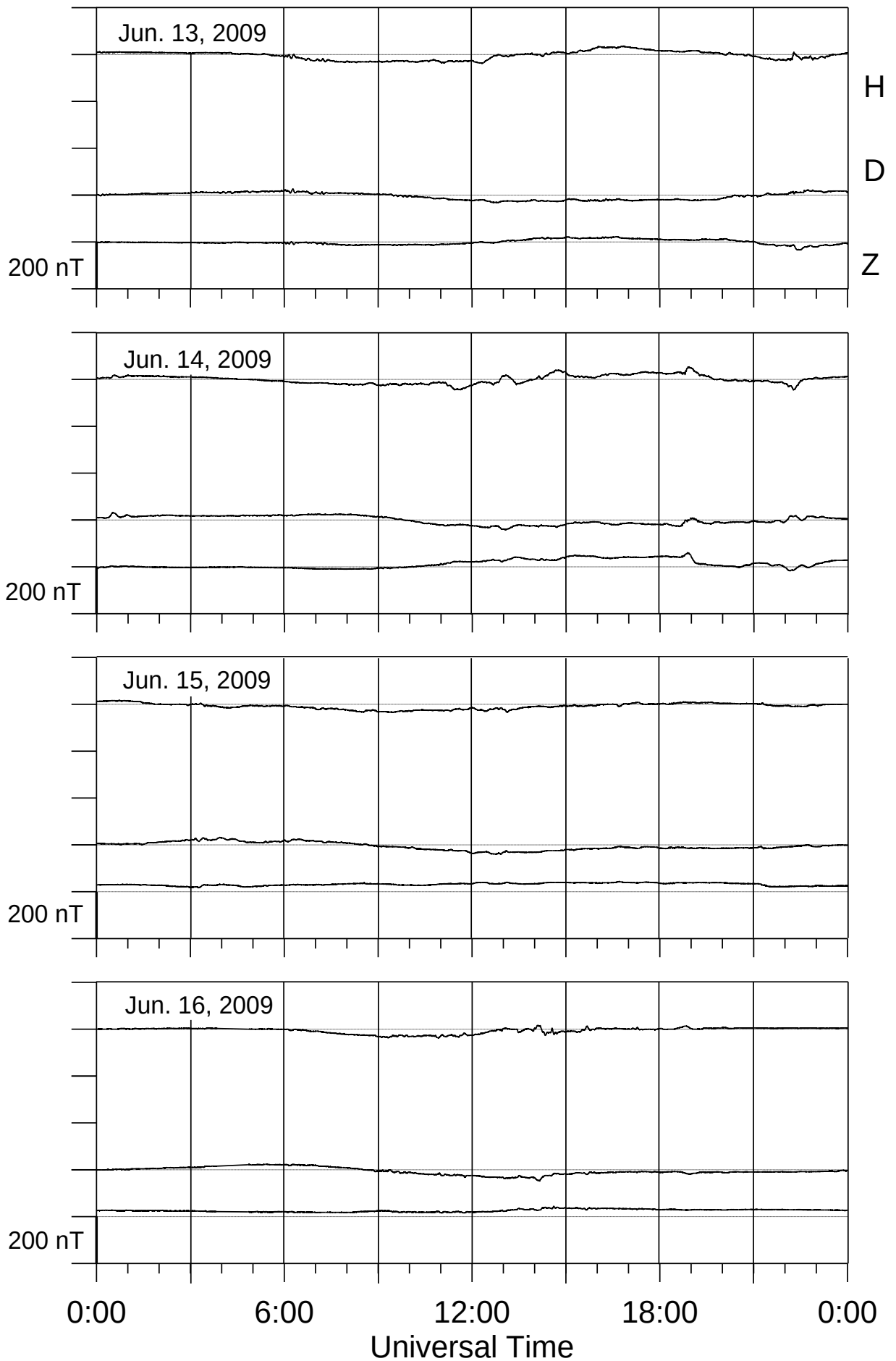
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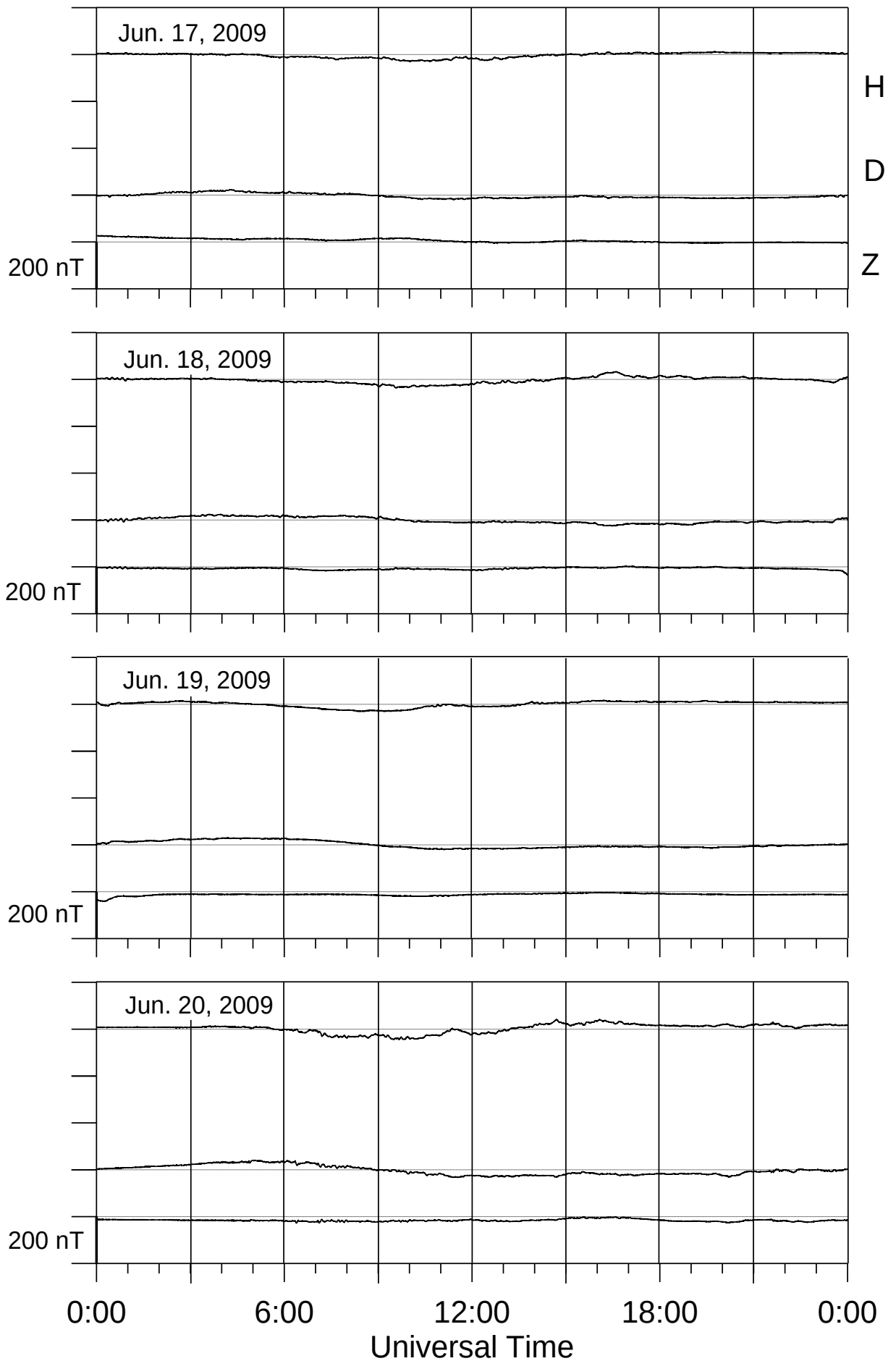
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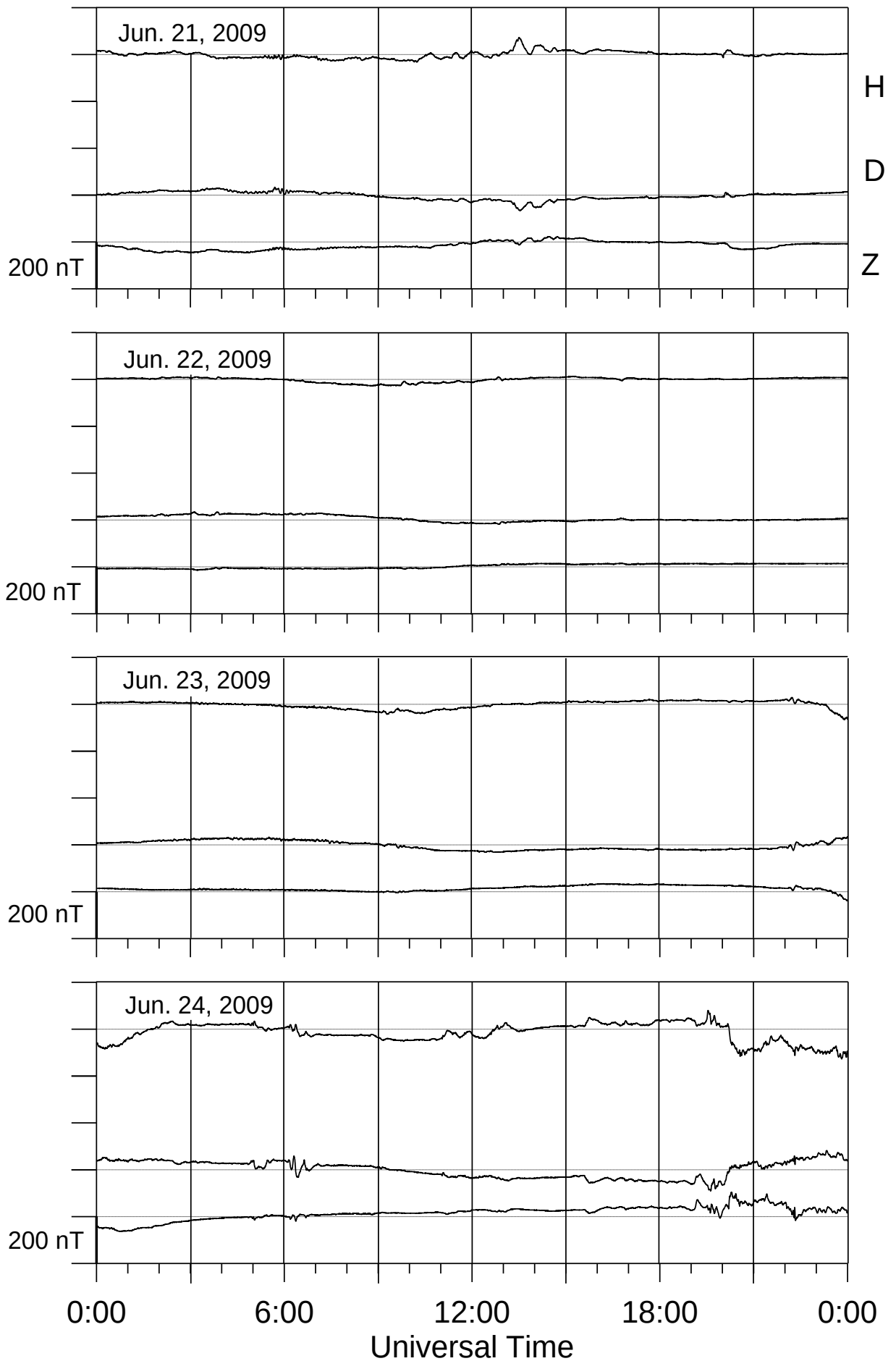
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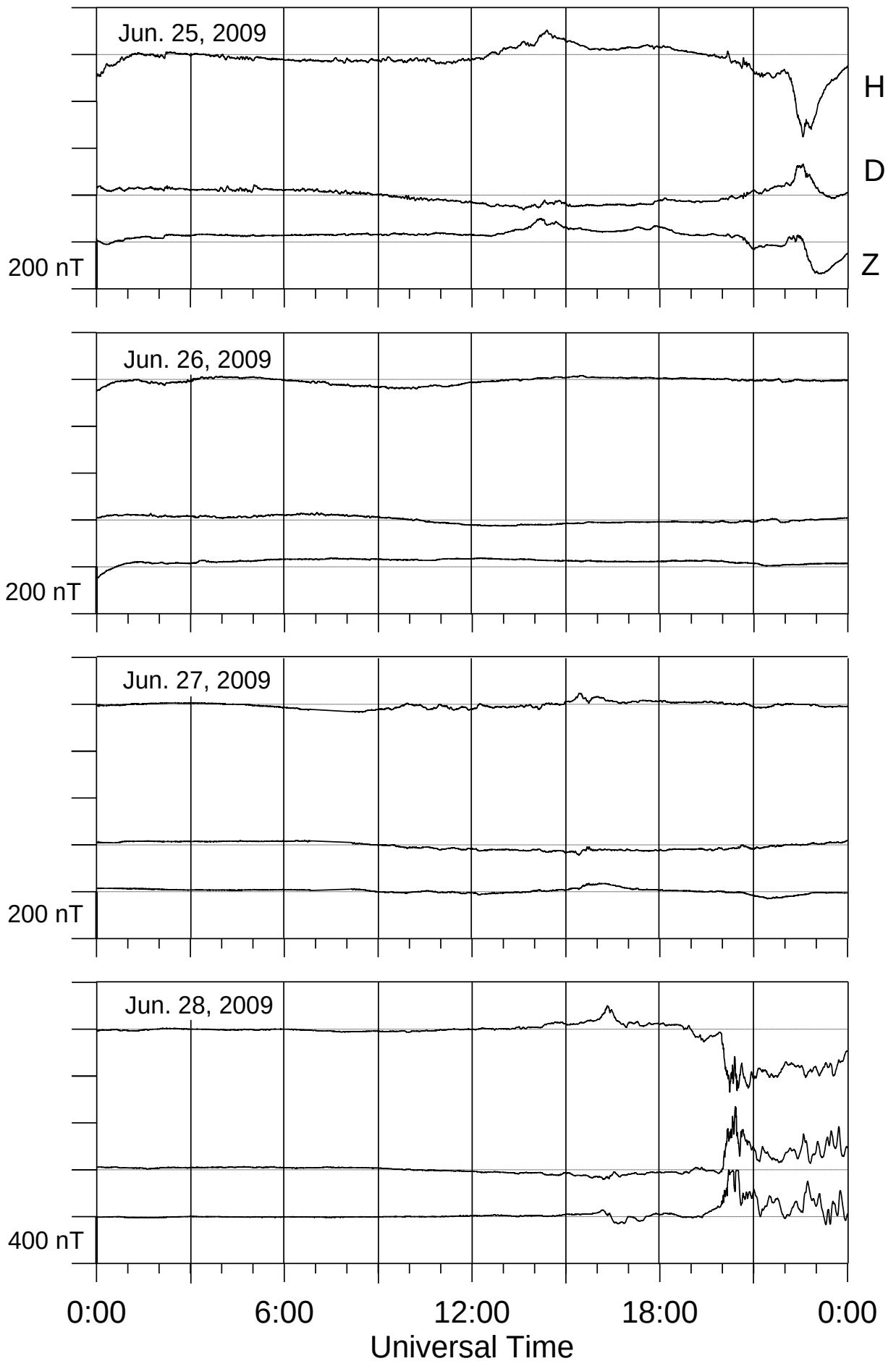
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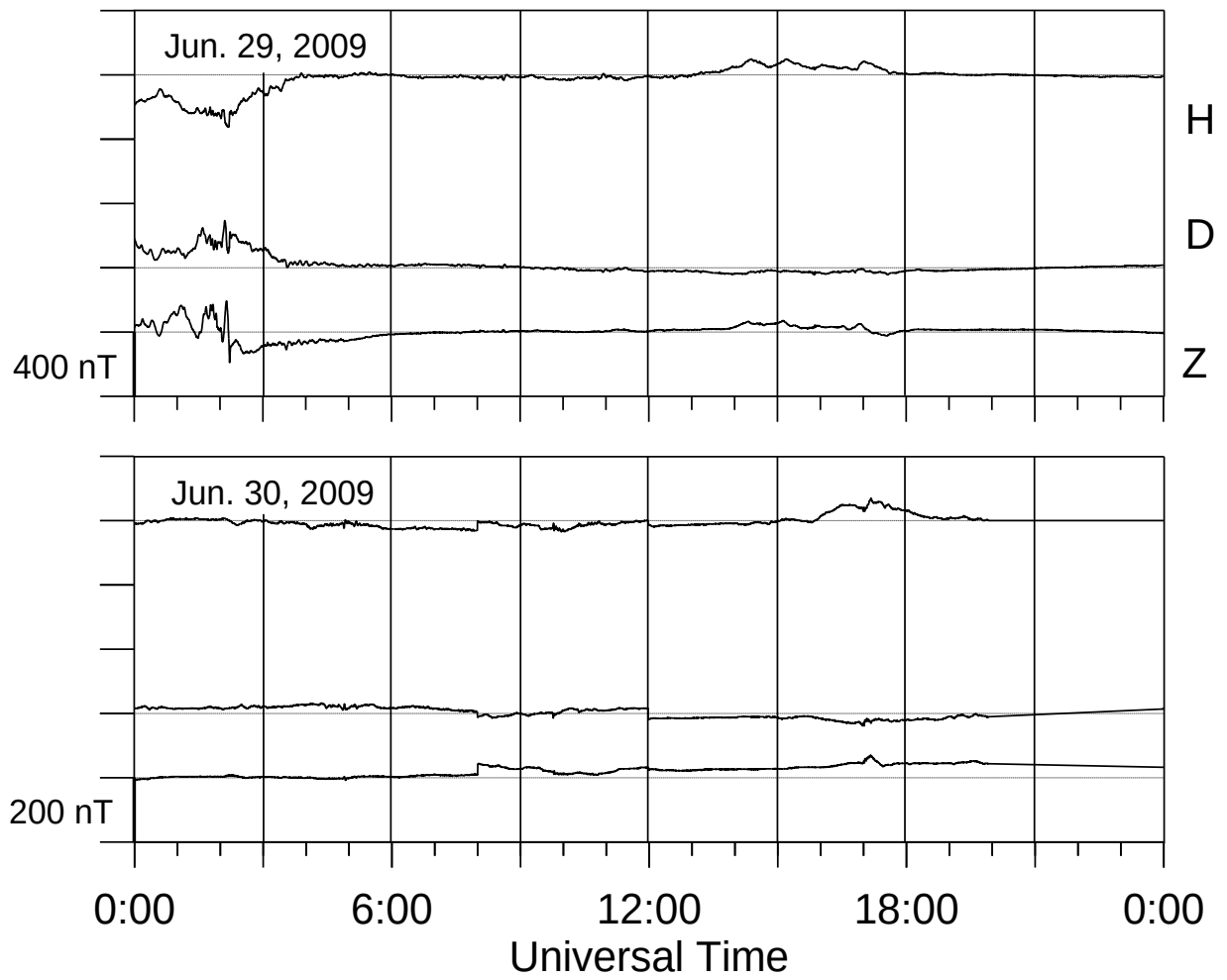
Loparskaya magnetometer



Loparskaya magnetometer

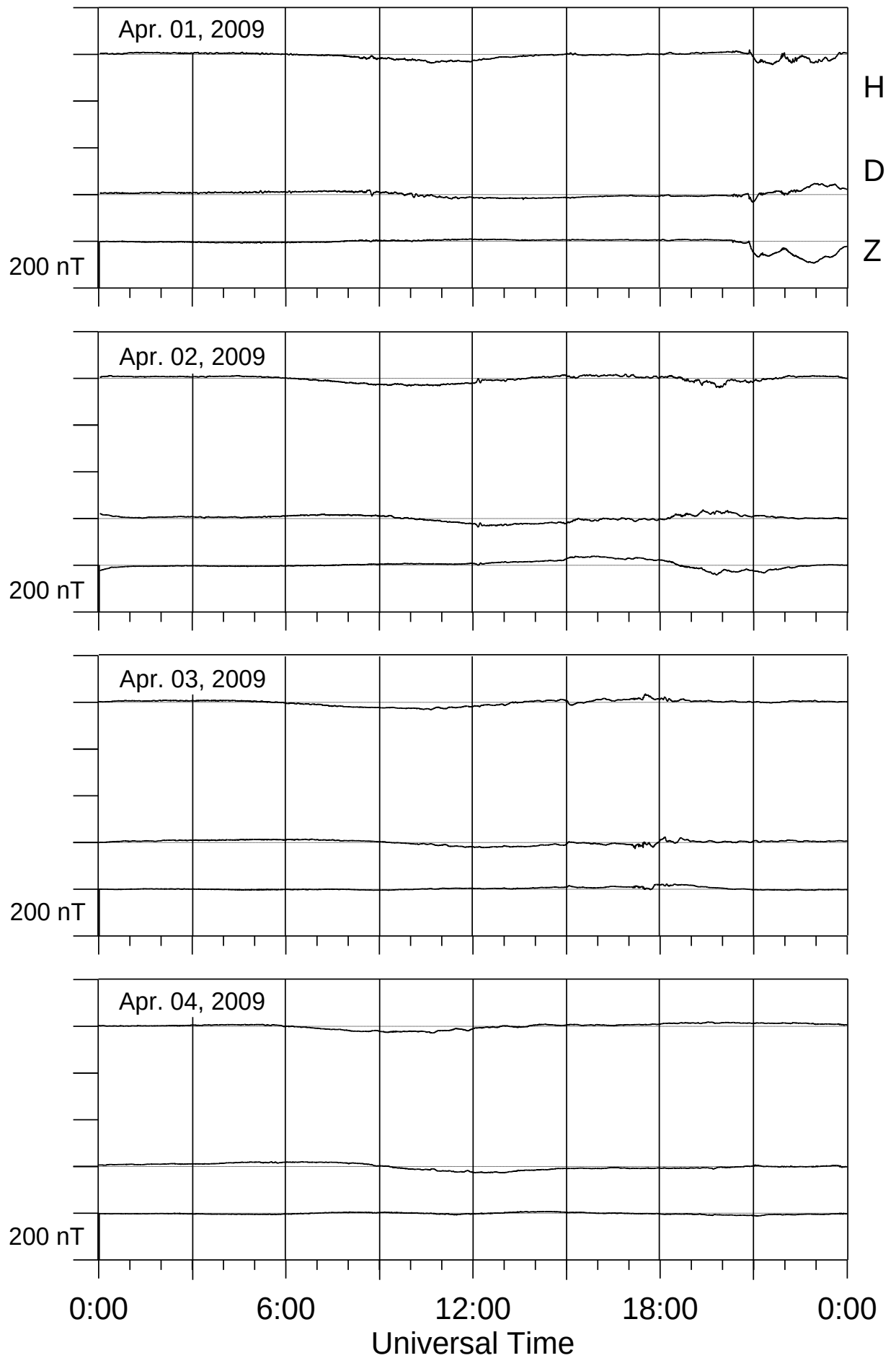


Loparskaya magnetometer

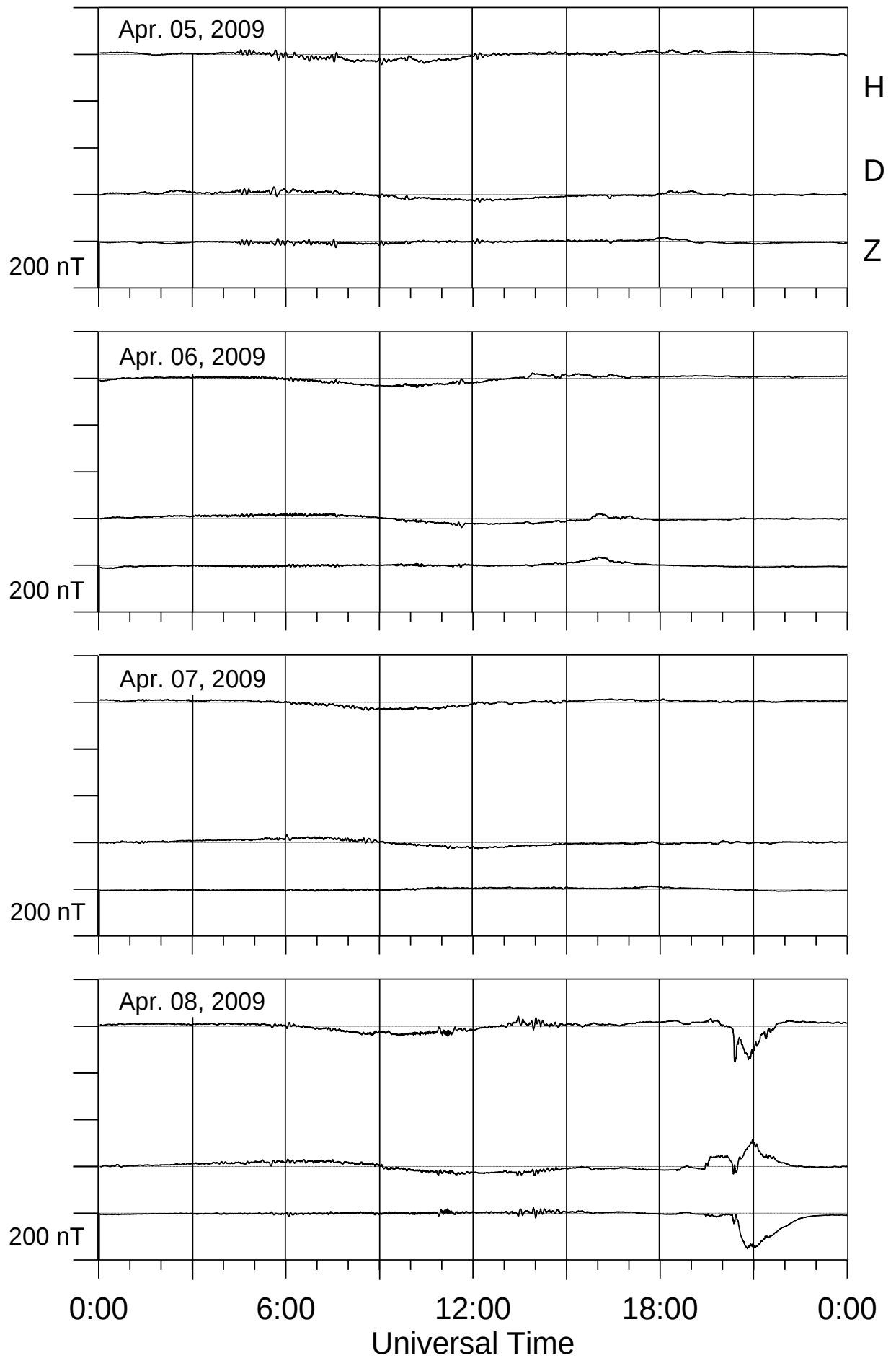


TUMANNY MAGNETOMETER DATA**April - June 2009**

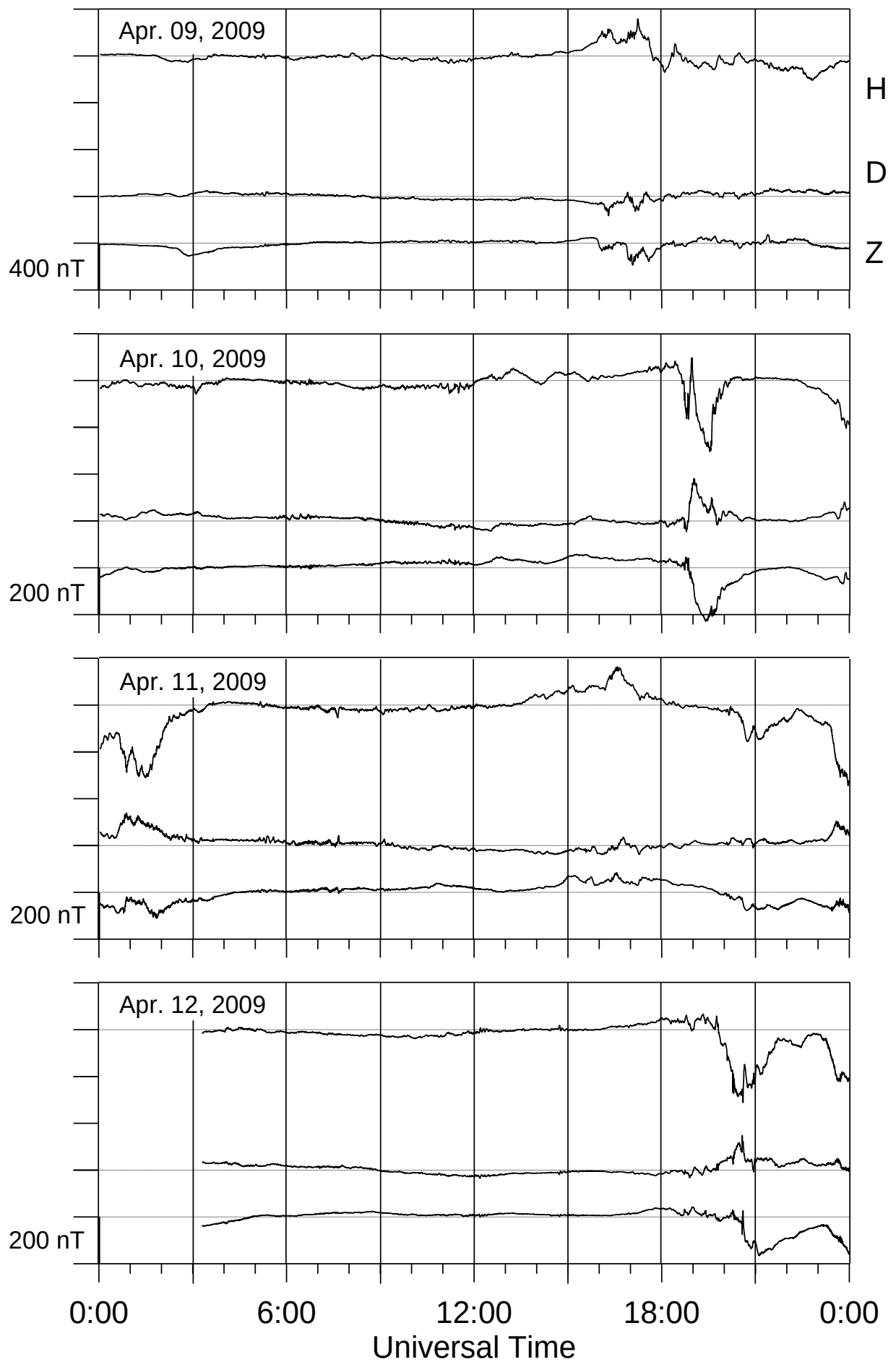
Tumanny magnetometer



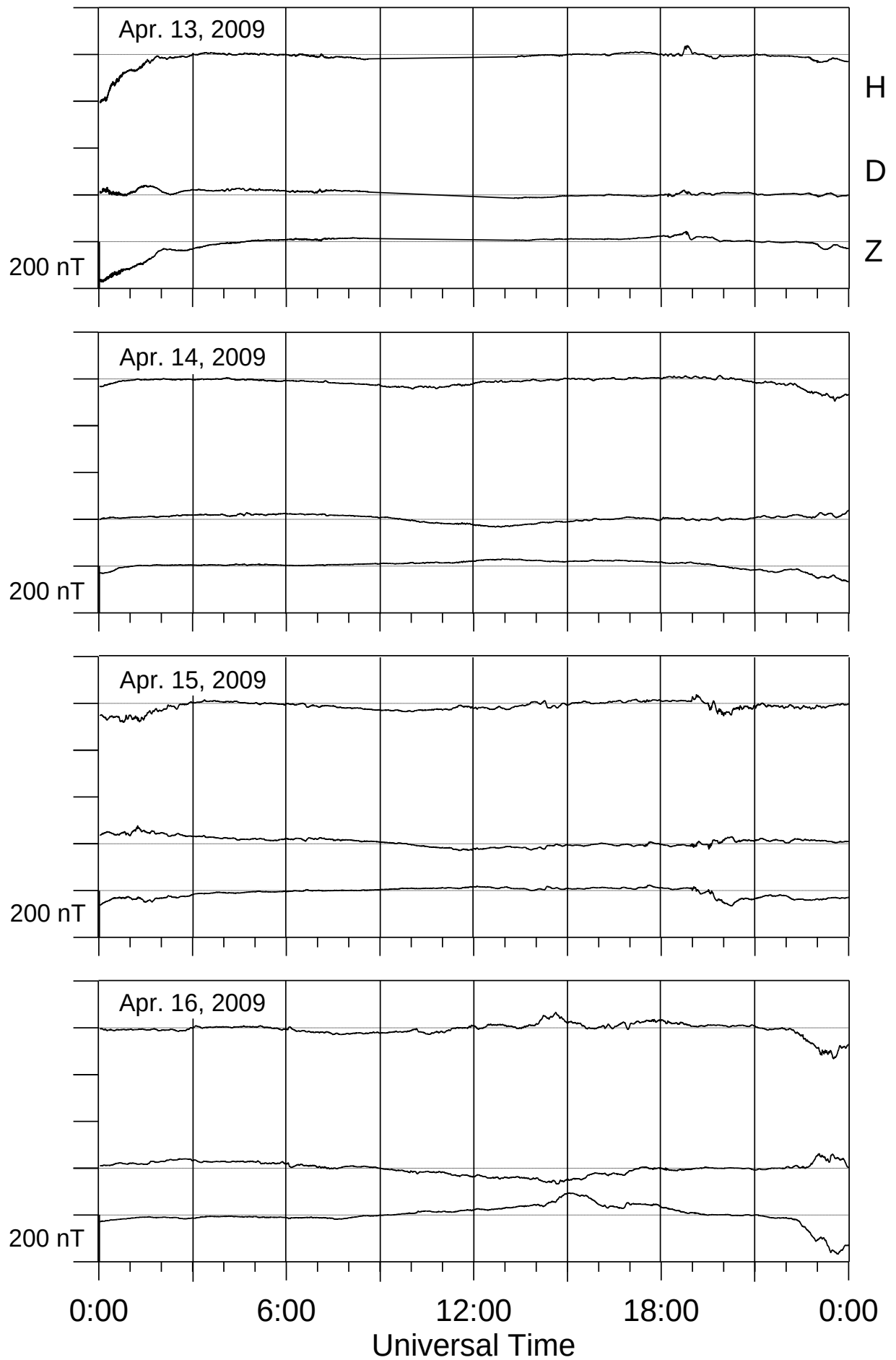
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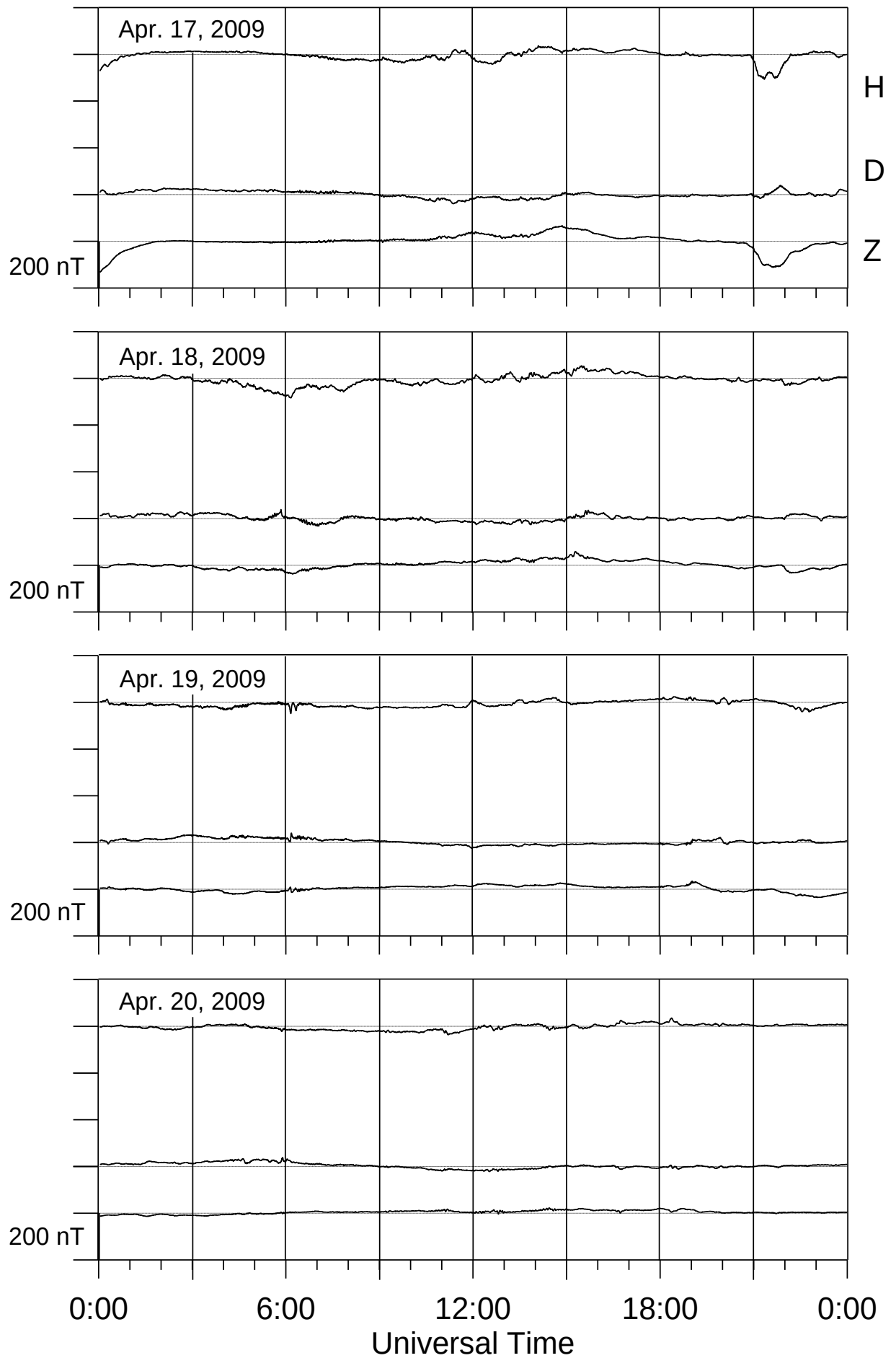
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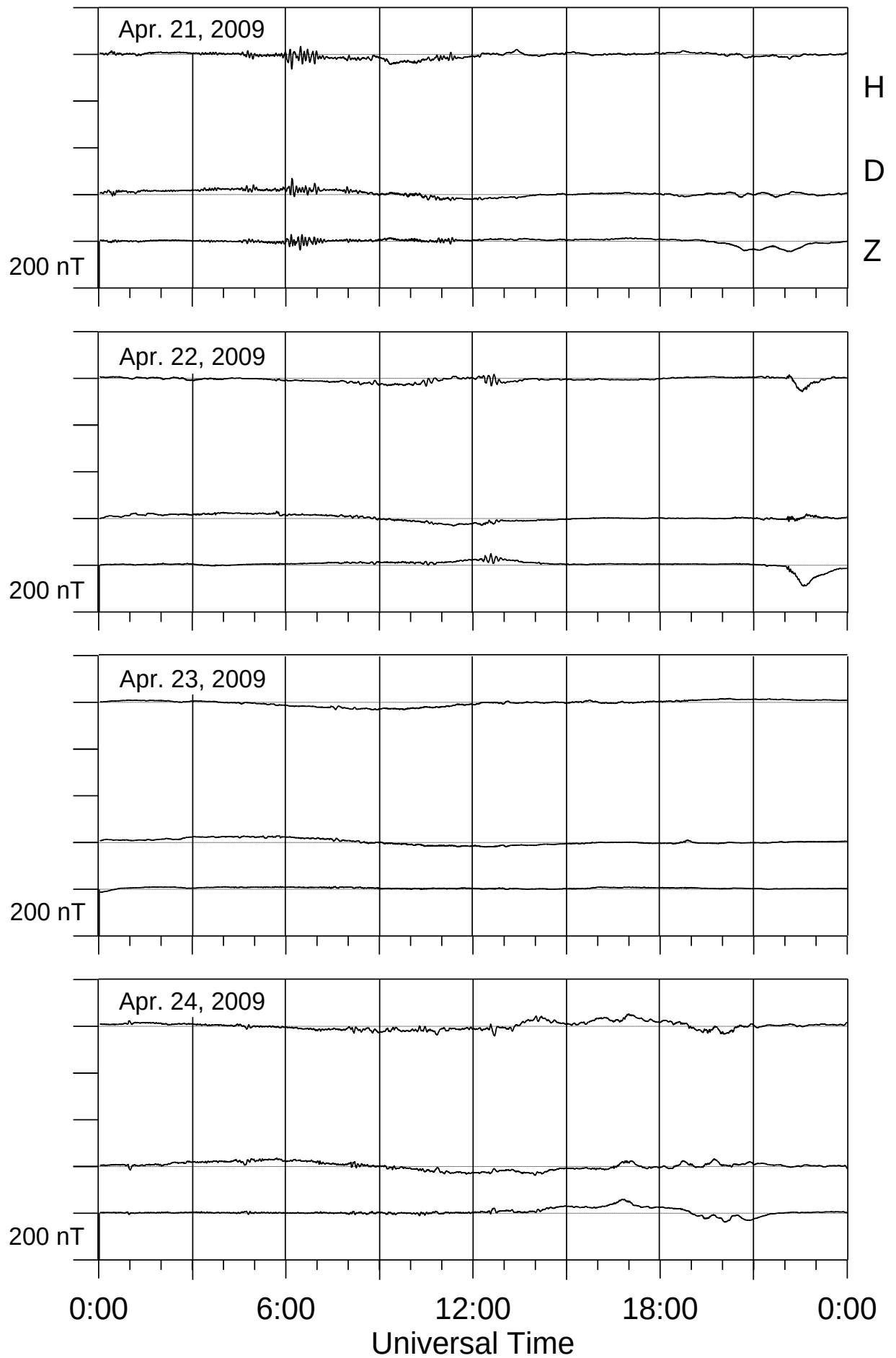
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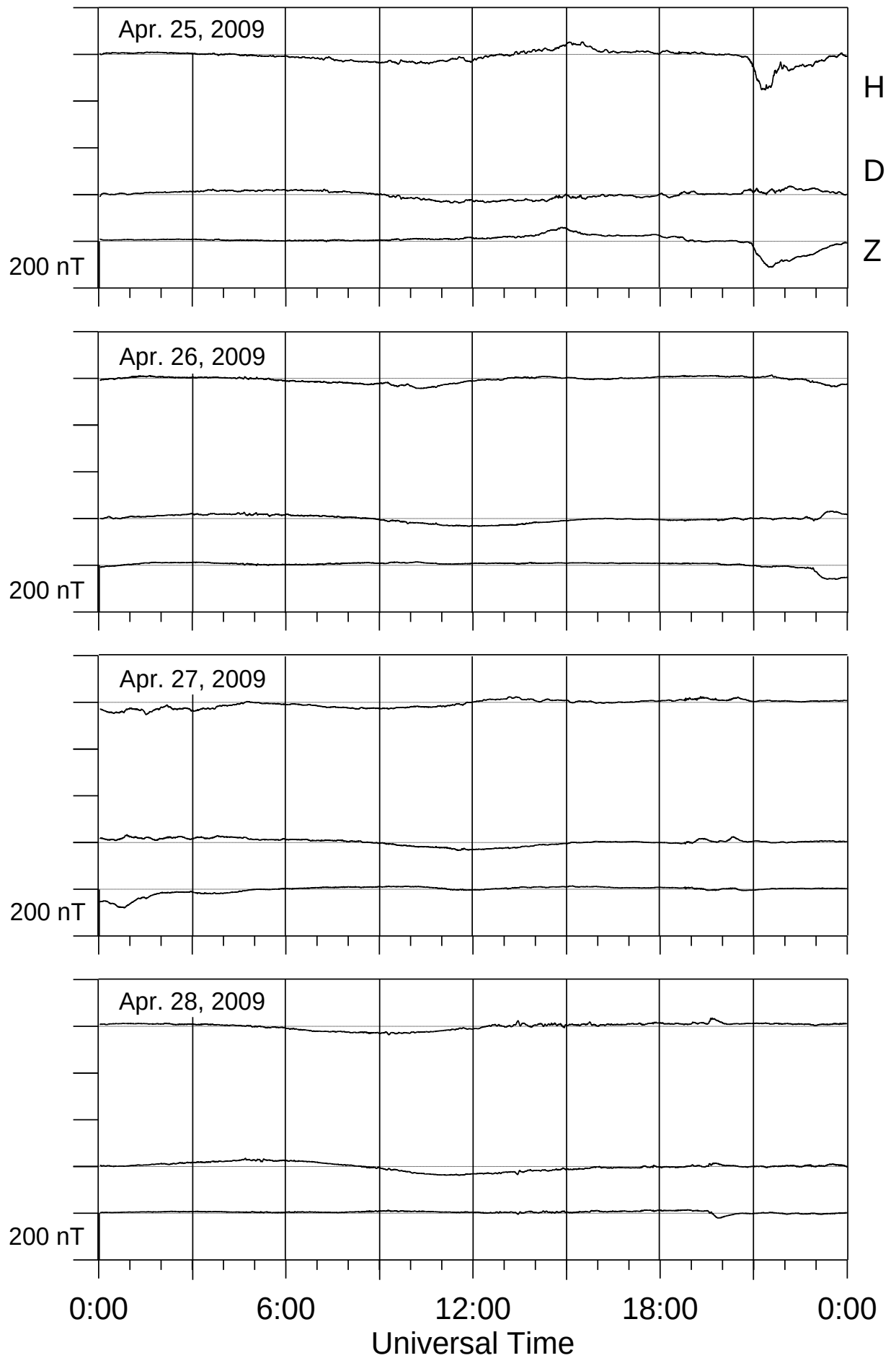
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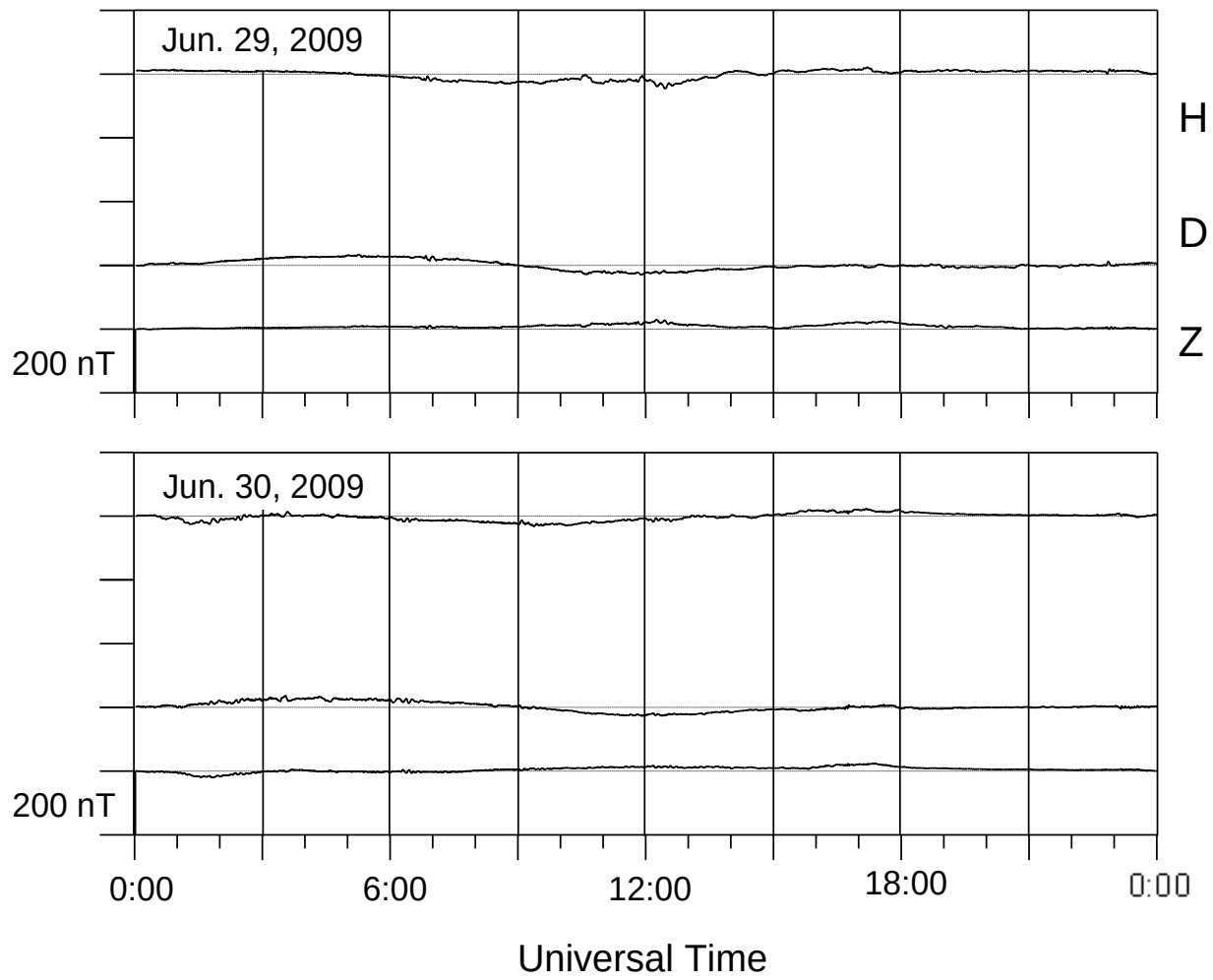
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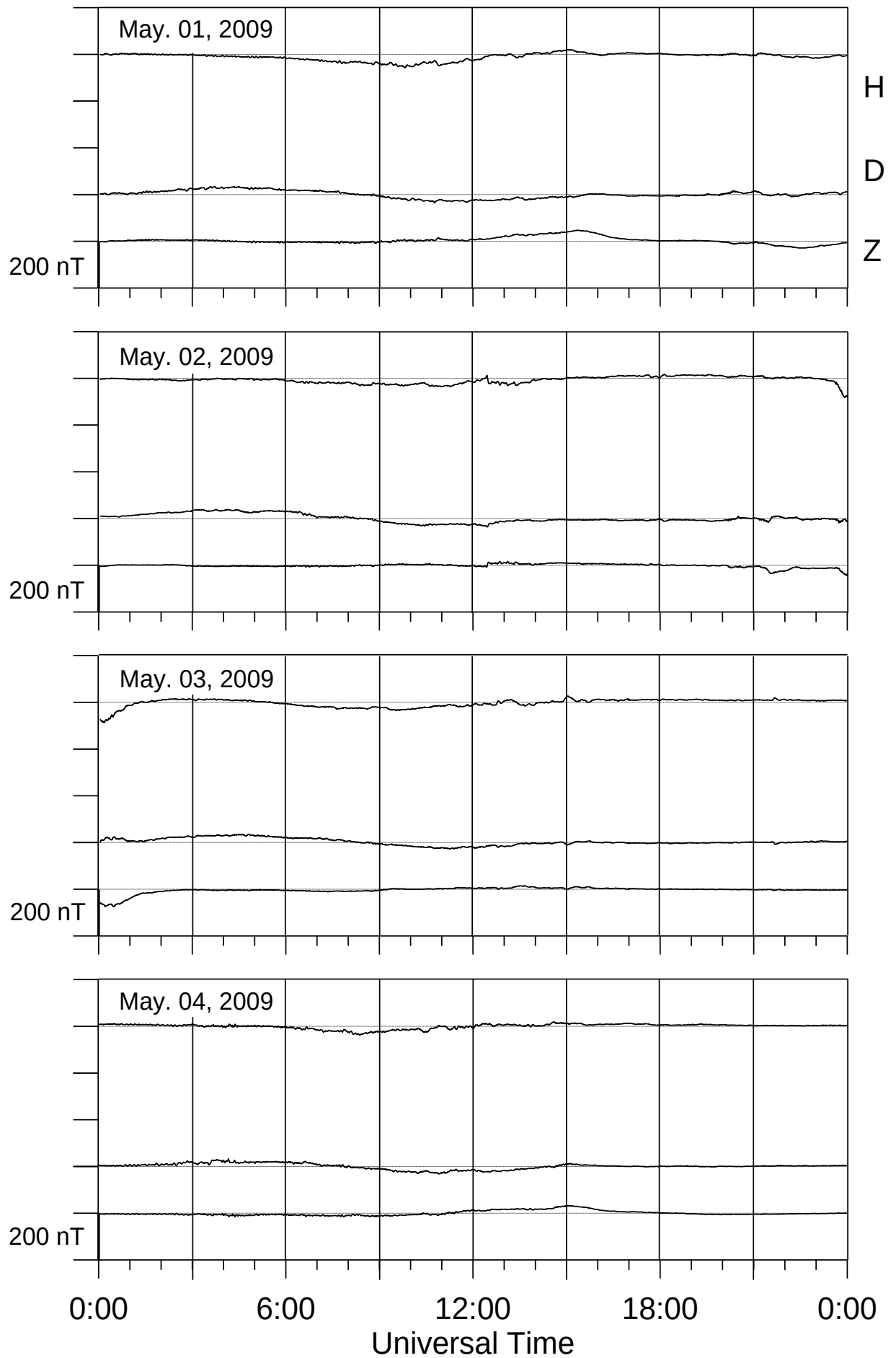
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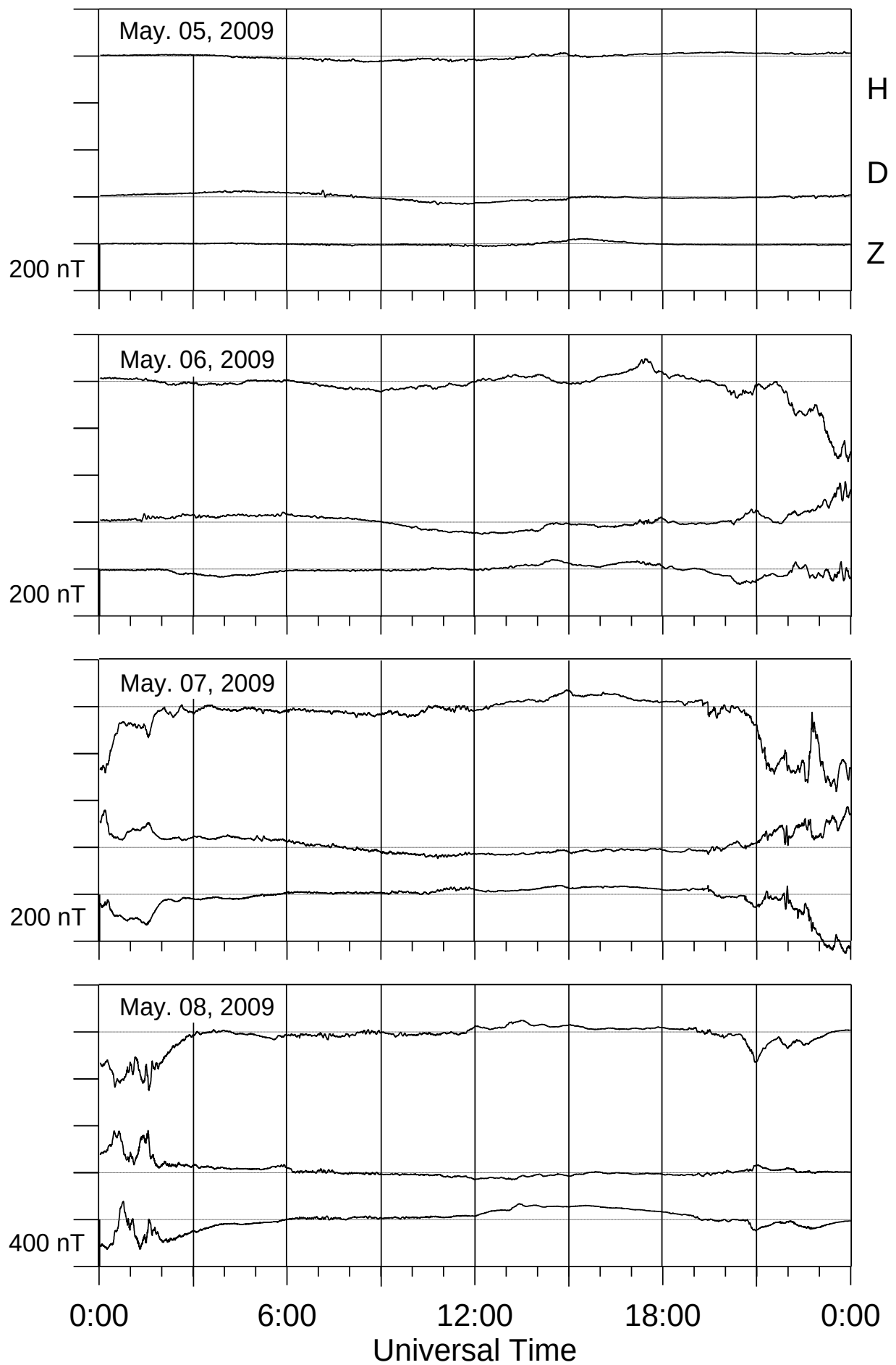
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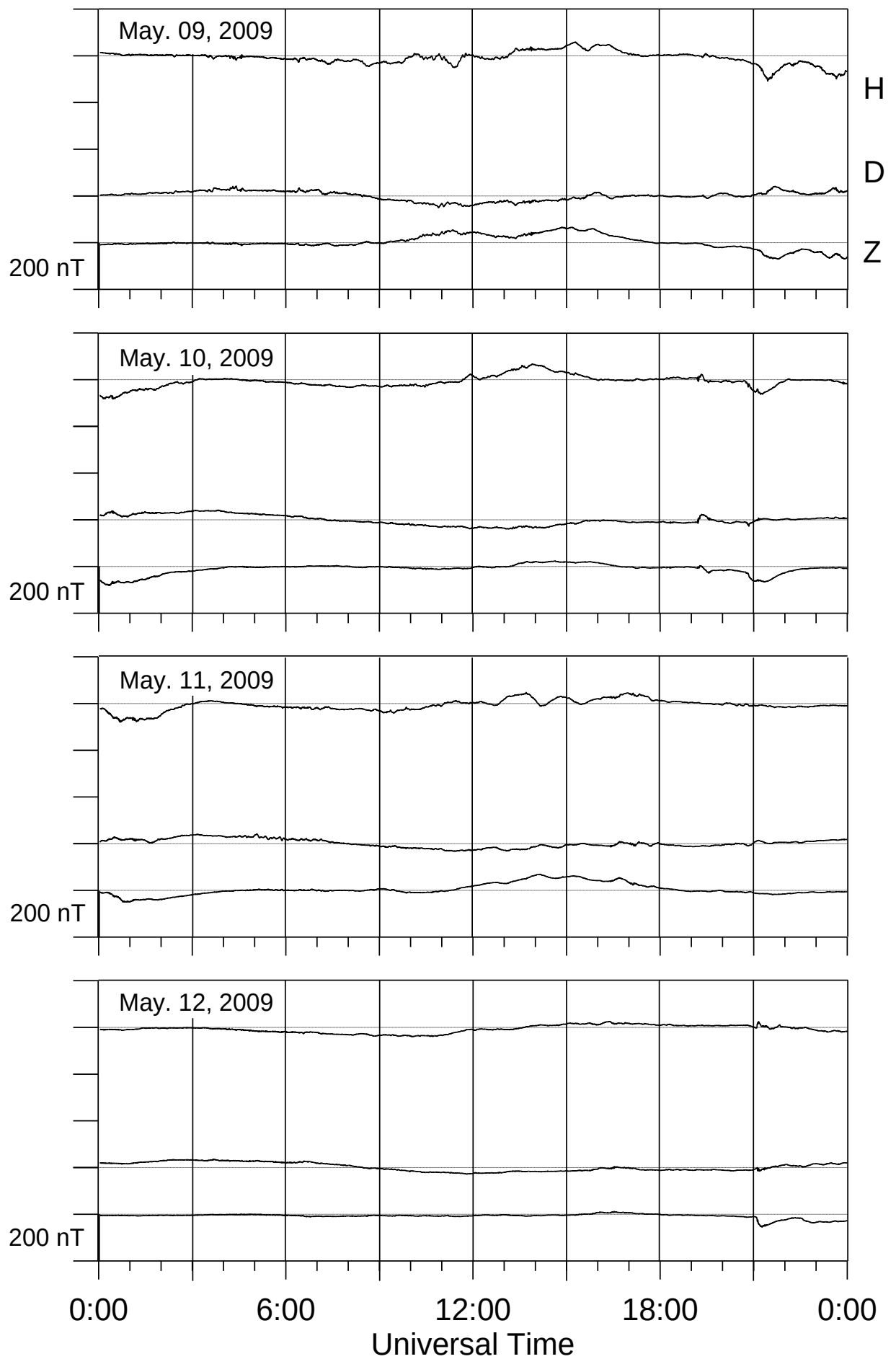
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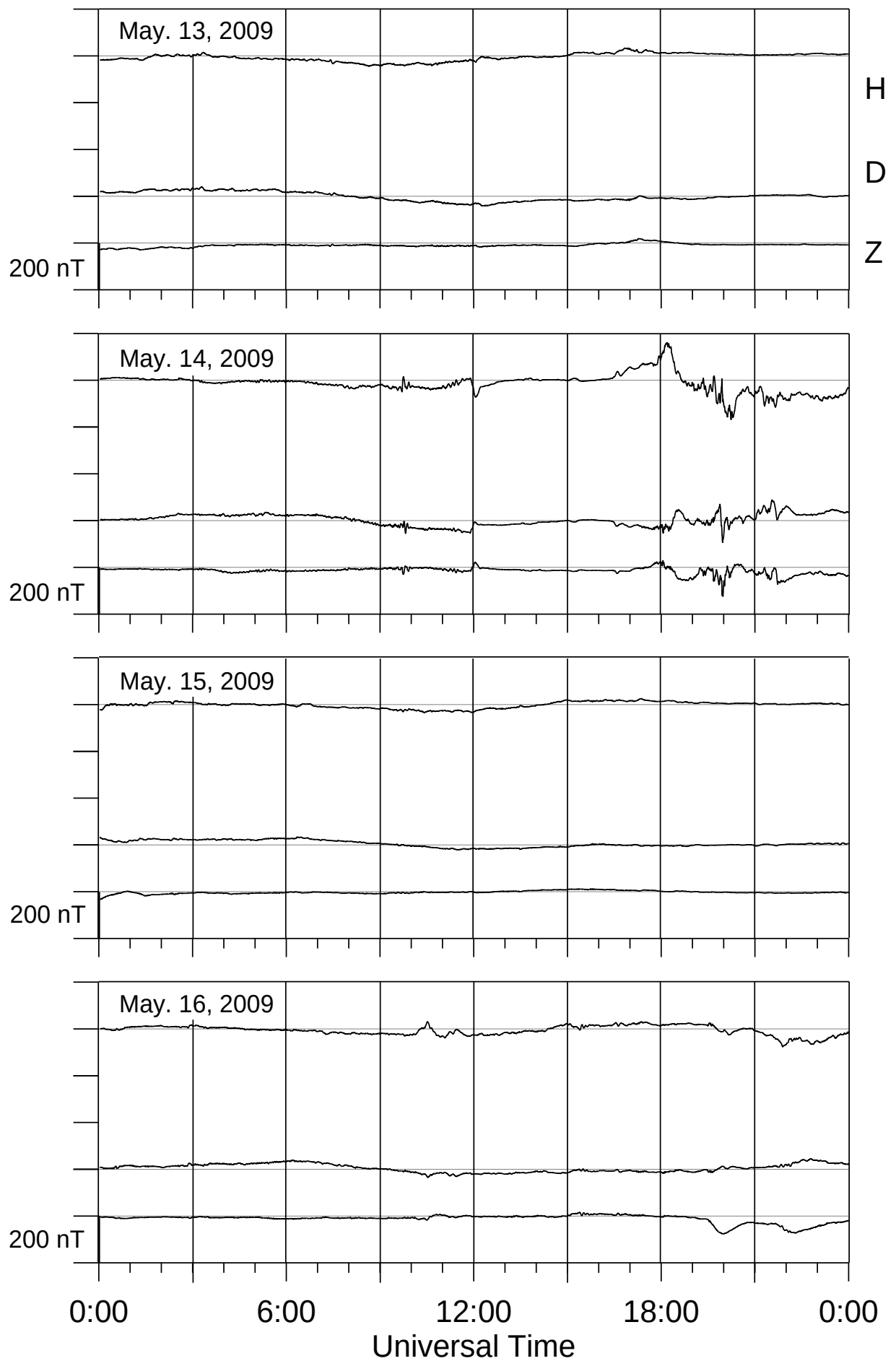
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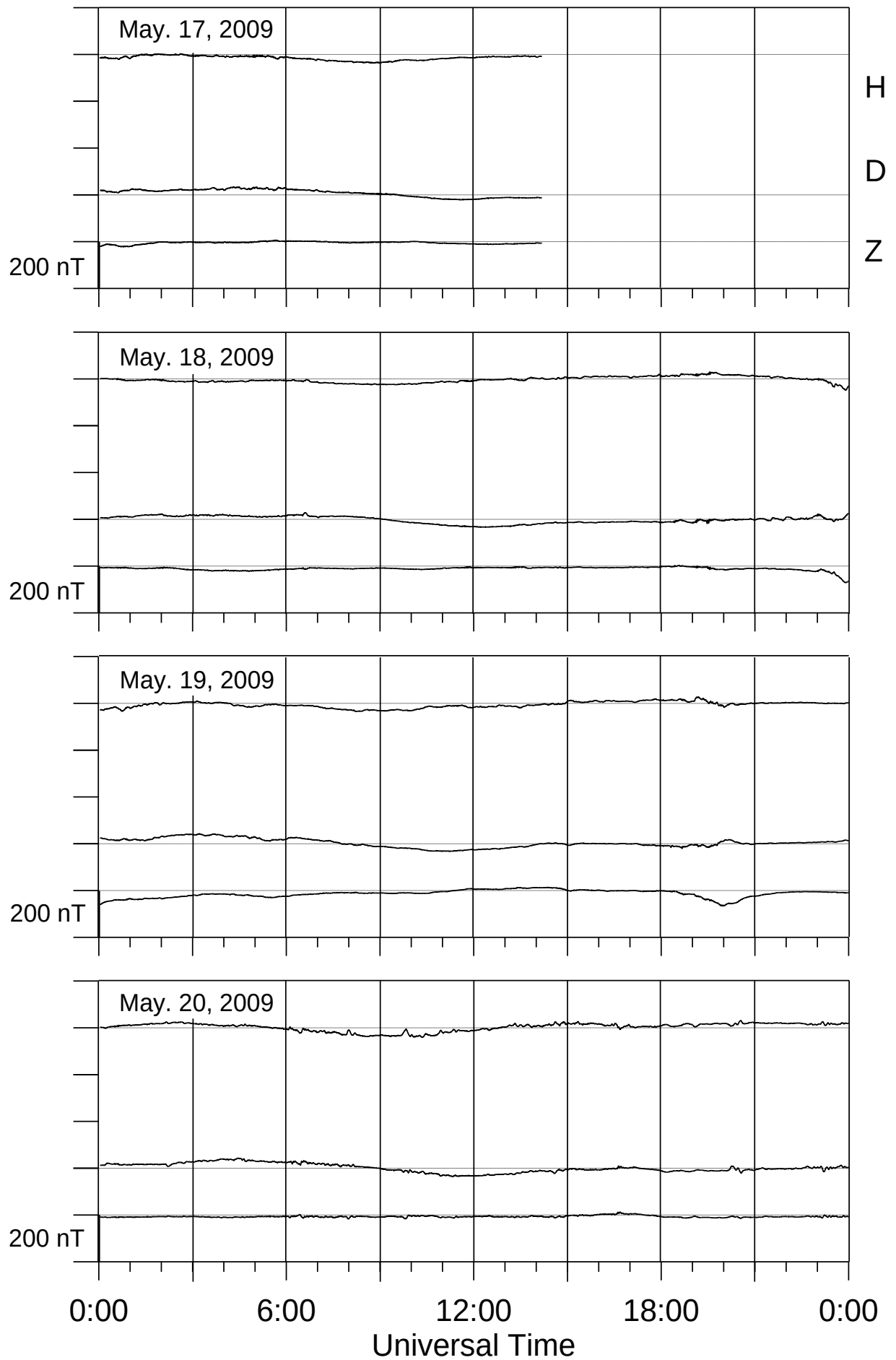
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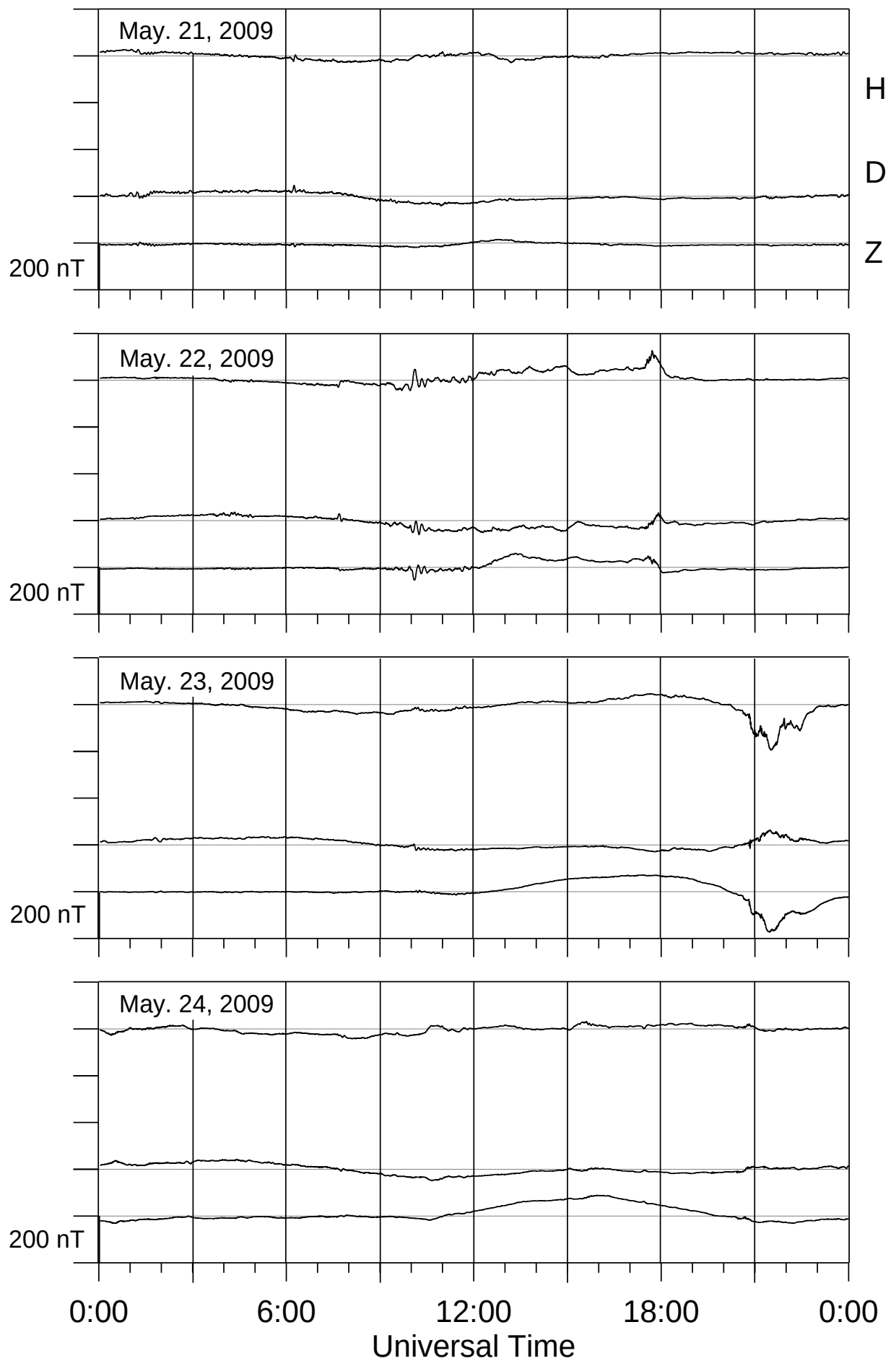
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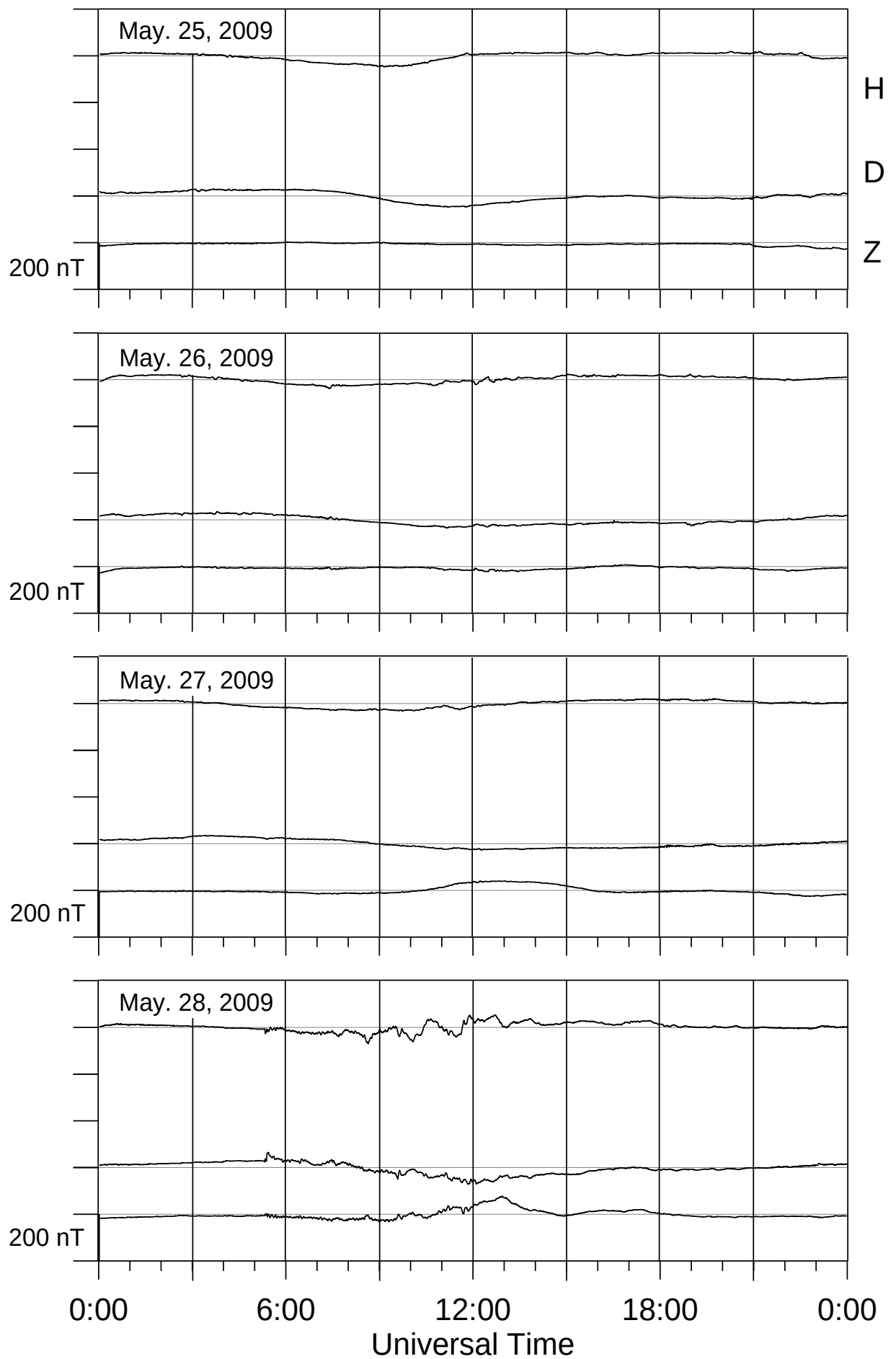
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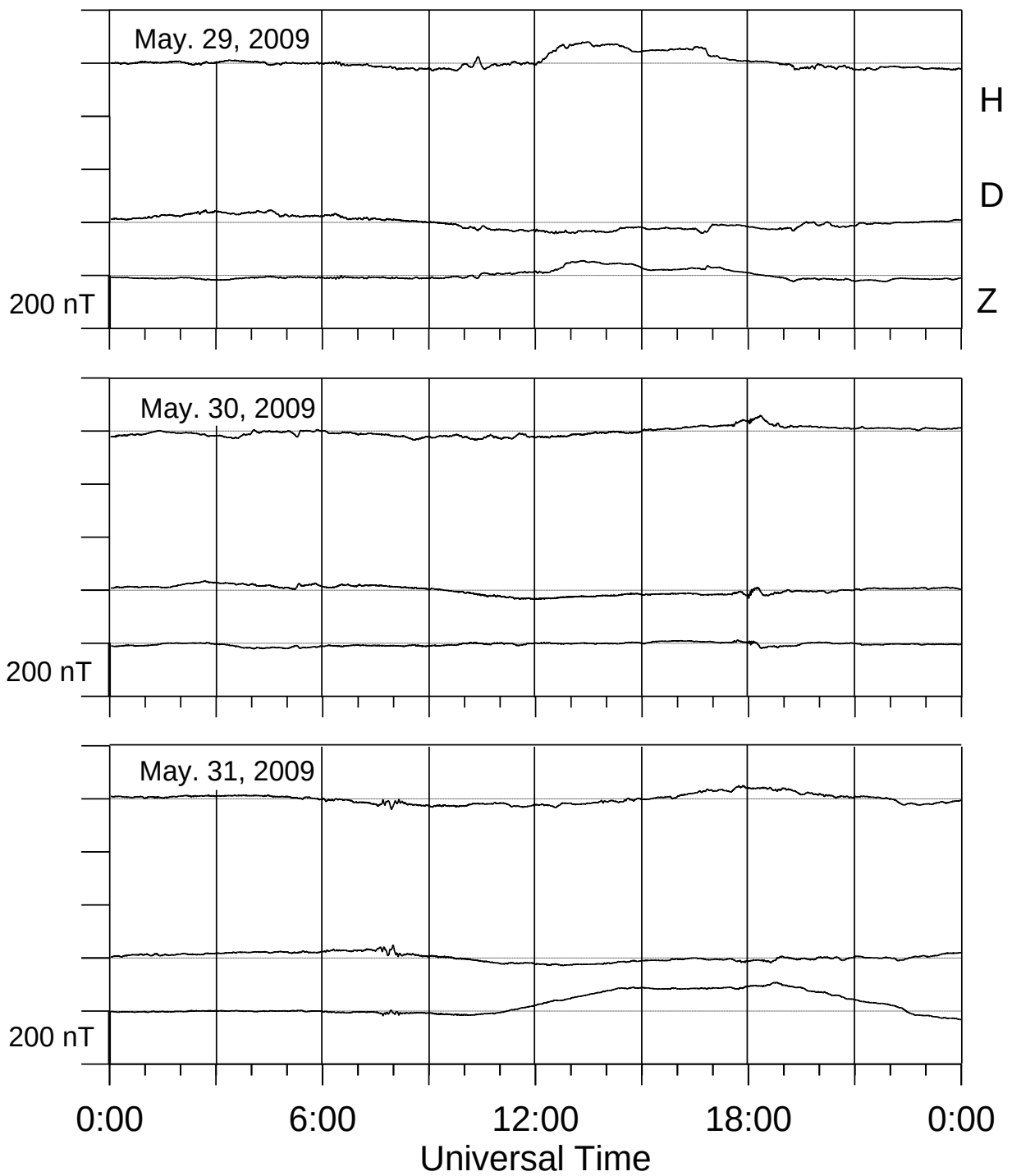
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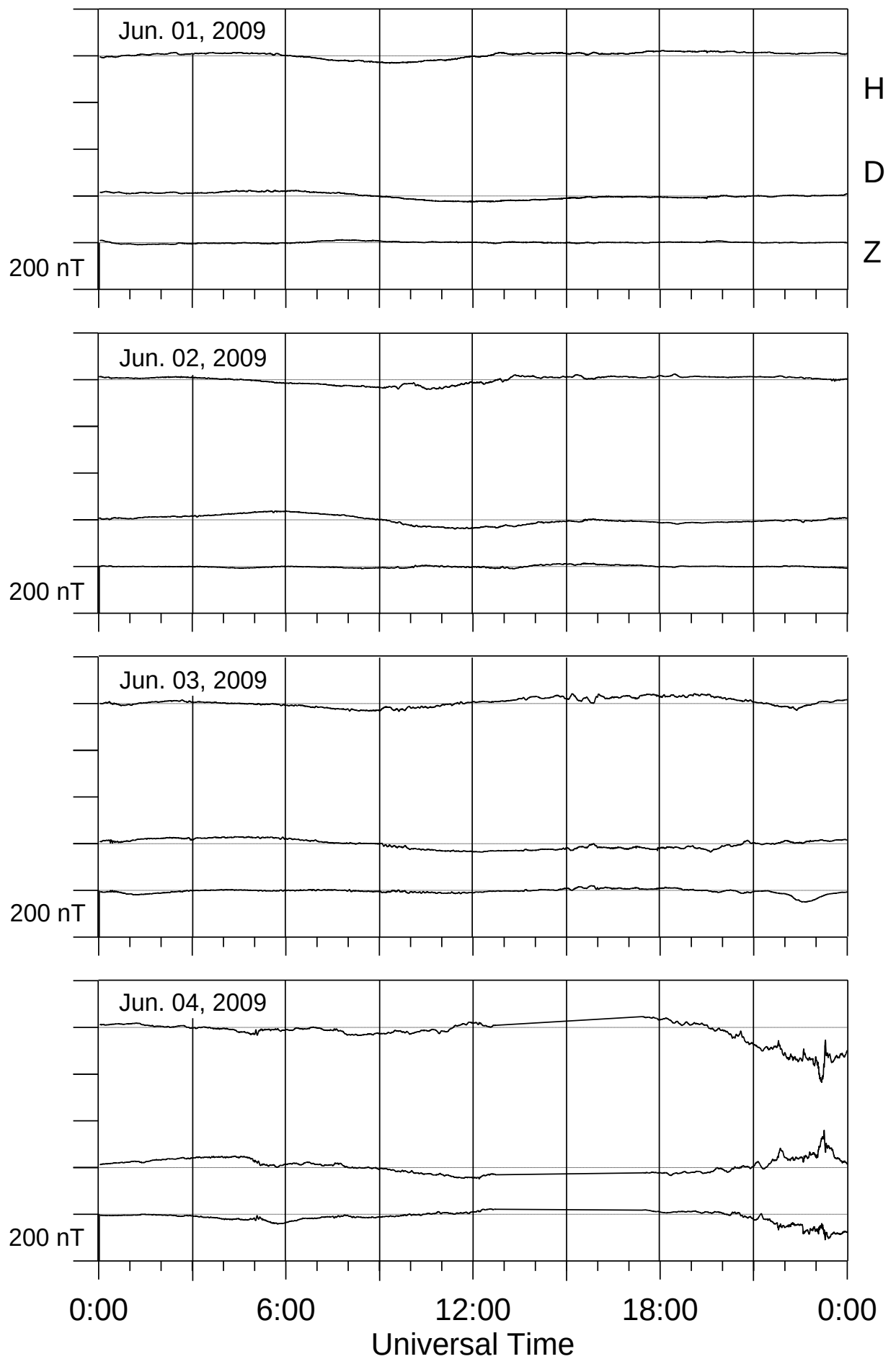
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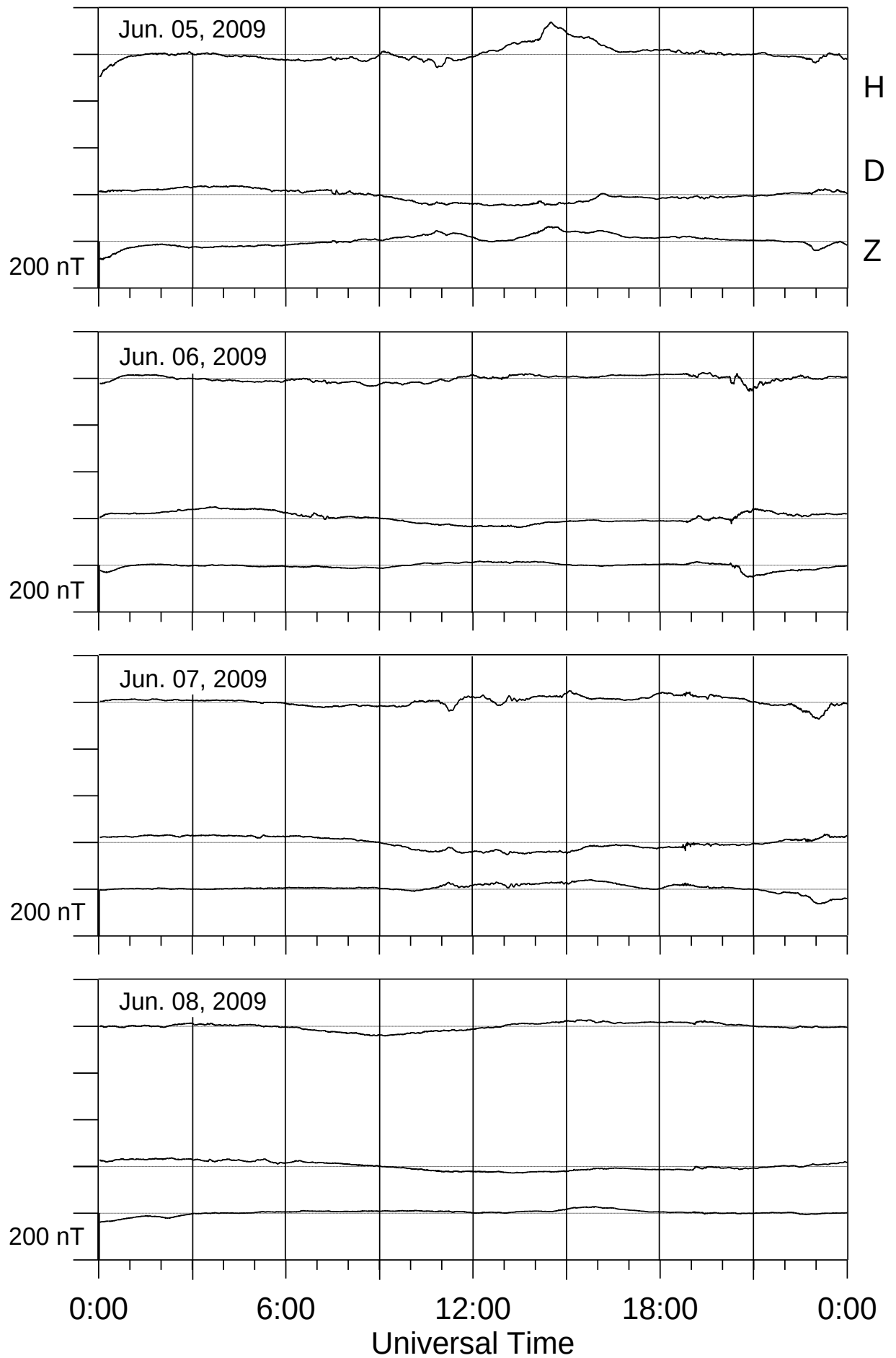
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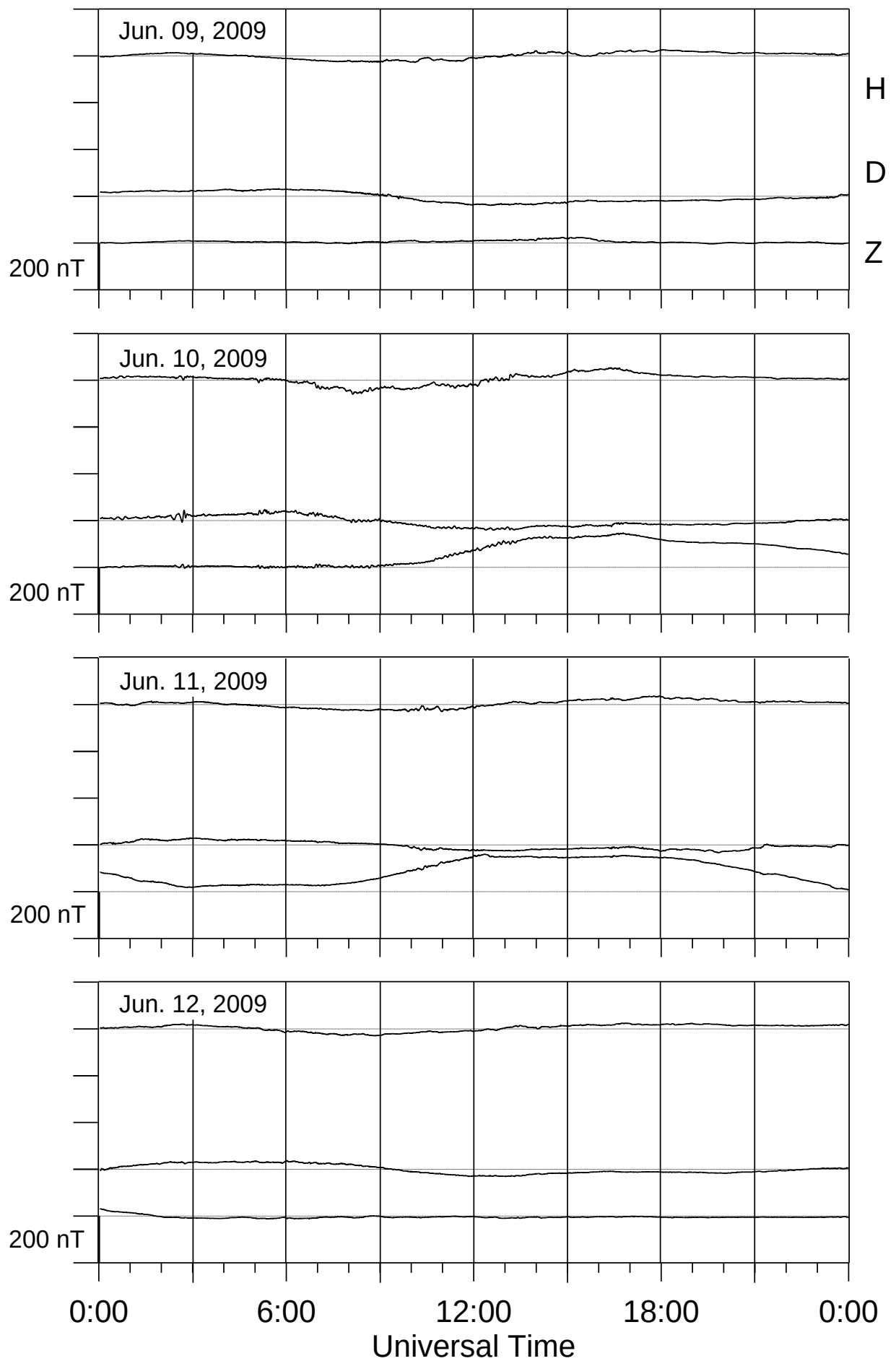
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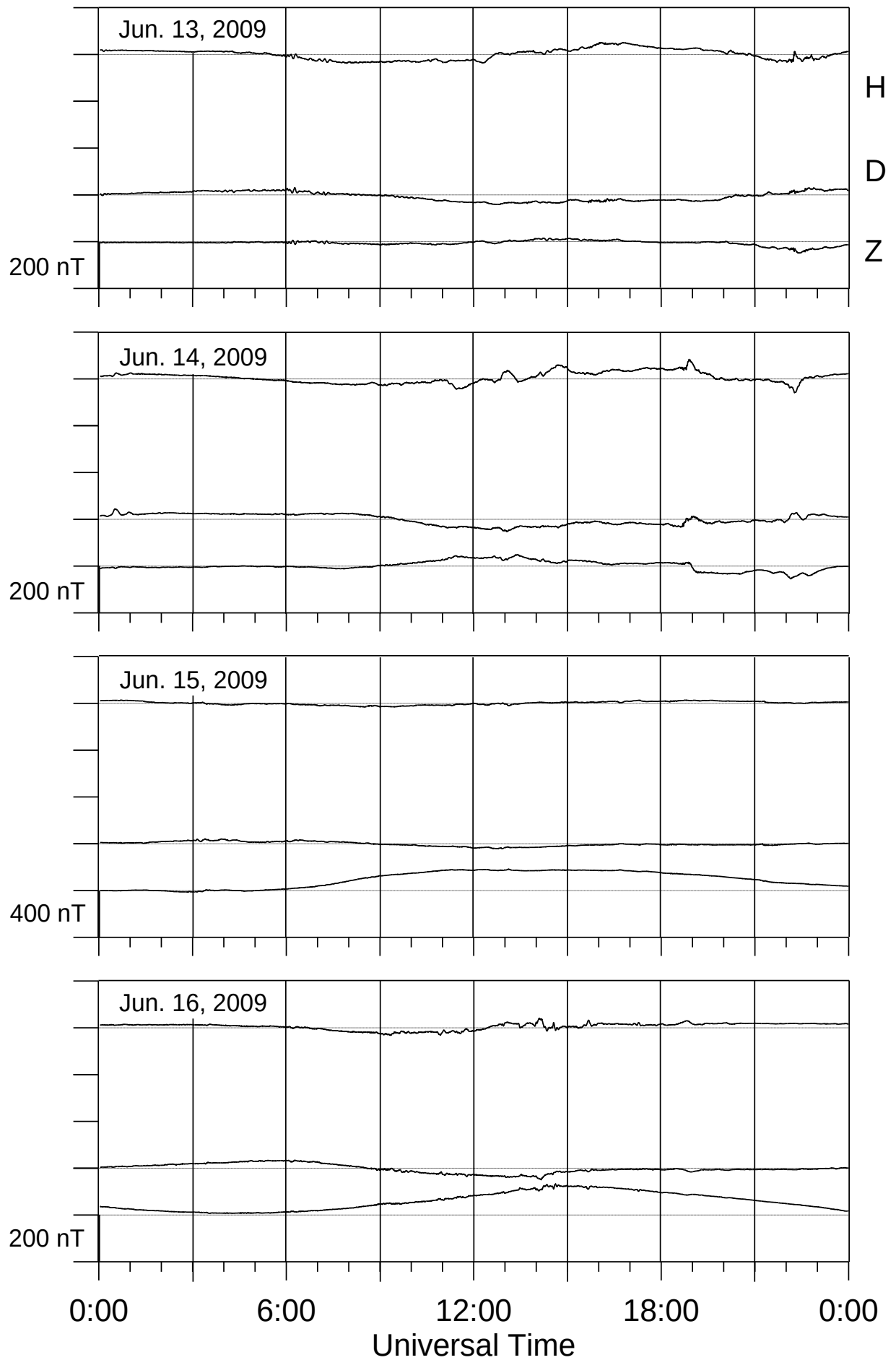
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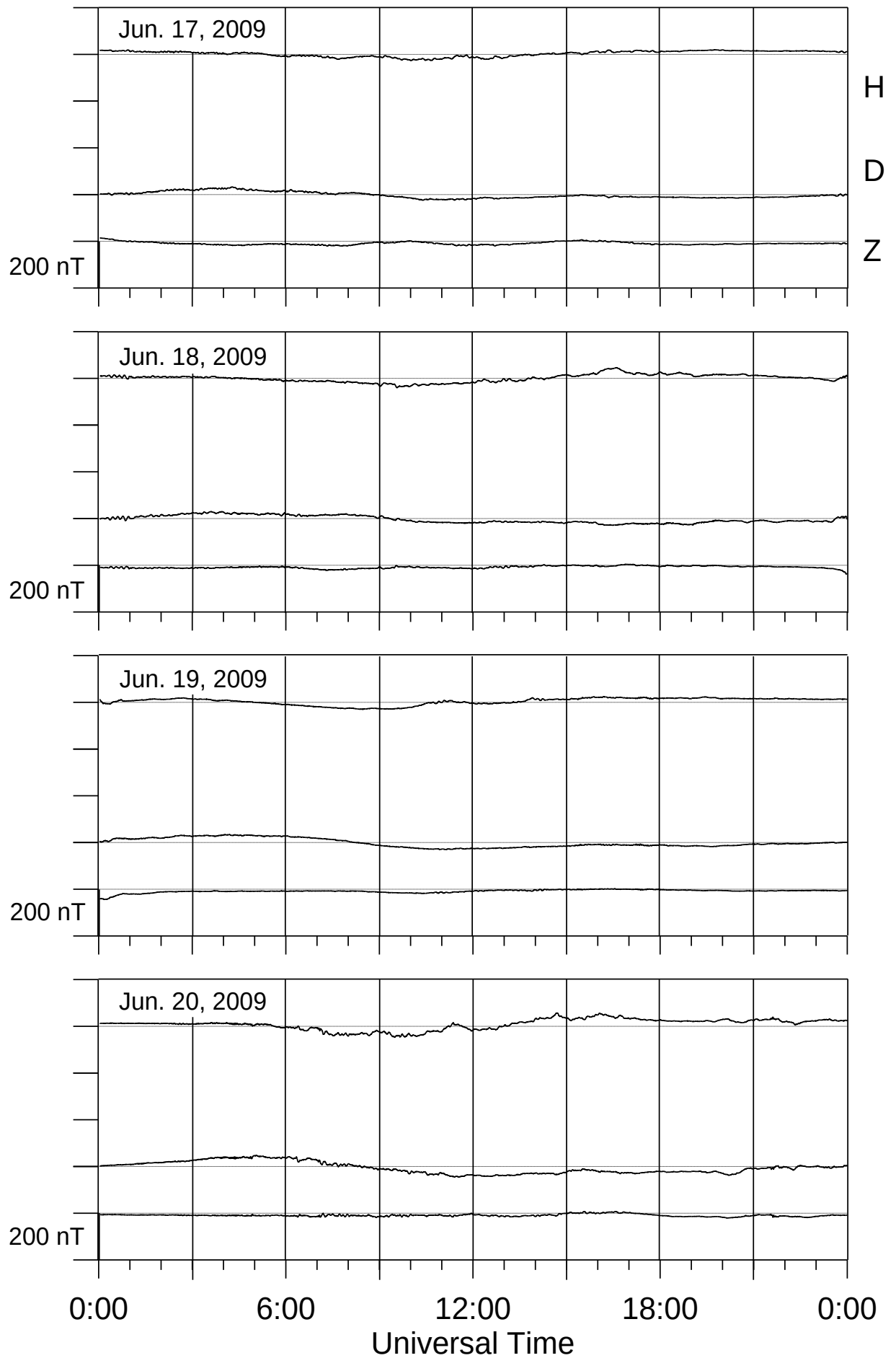
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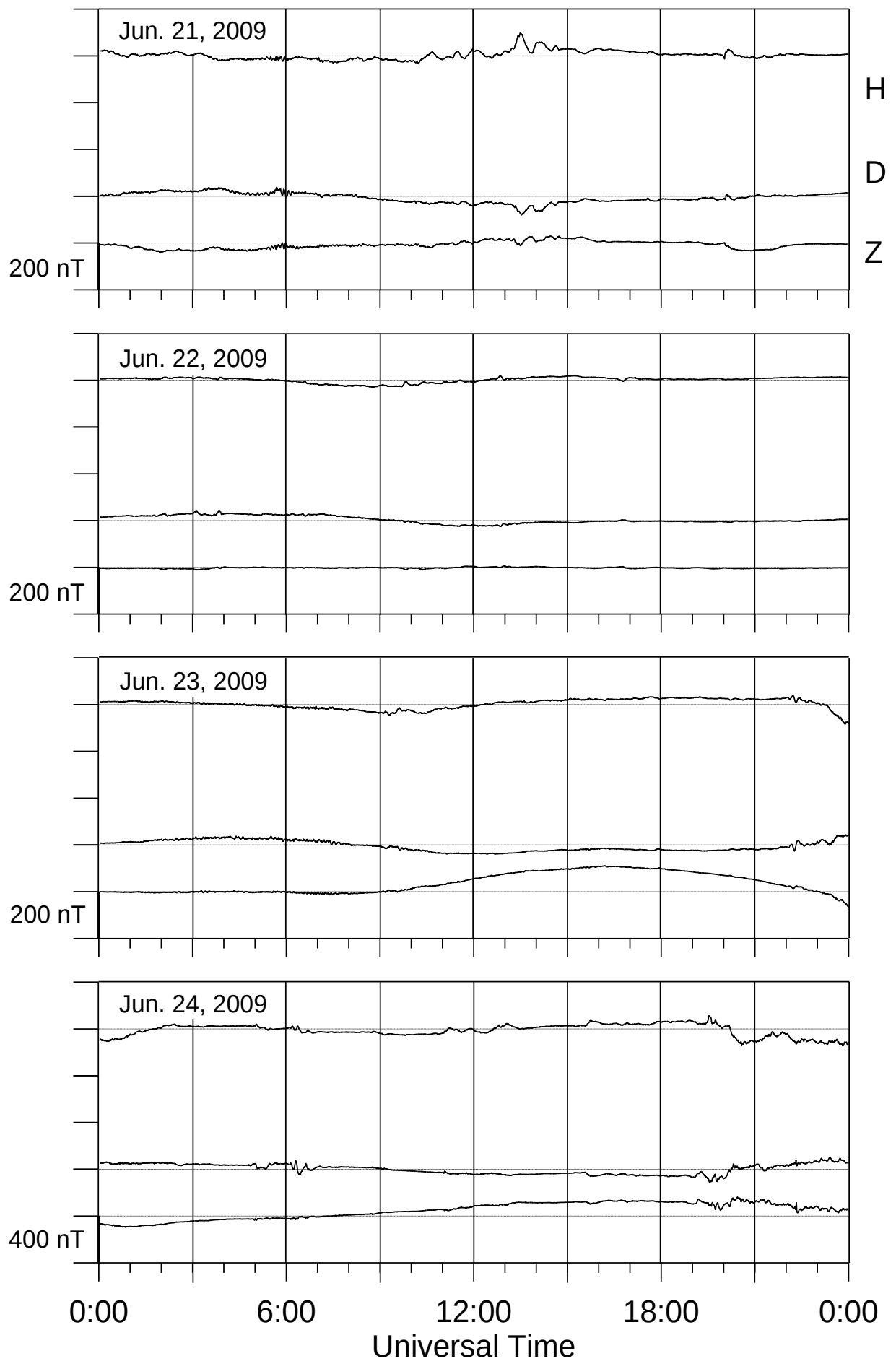


Tumanny magnetometer

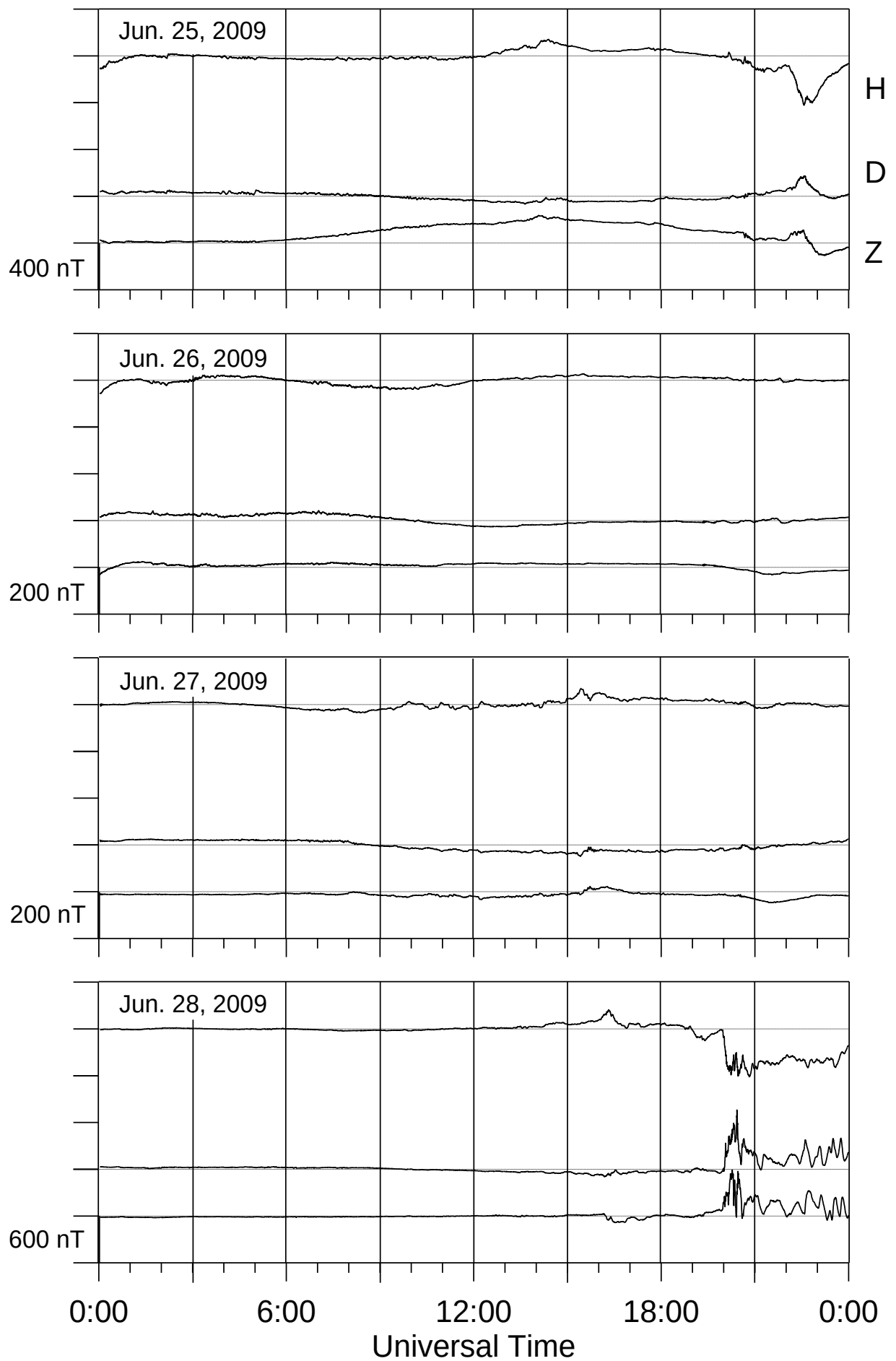


Tumanny magnetometer





Tumanny magnetometer



Tumanny magnetometer

