GEOPHYSICAL OBSERVATORY REPORTS

OF THE GEODETICAL AND GEOPHYSICAL RESEARCH INSTITUTE OF THE HUNGARIAN ACADEMY OF SCIENCES

YEAR

1976

OBSERVATORY OF NAGYCENK

SOPRON
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OBSERVATORY OF NAGYCENK

REPORT ON

I. EARTH CURRENTS
II. GEOMAGNETISM
III. ATMOSPHERIC ELECTRICITY
IV. IONOSPHERE
V. TECHNICAL PAPER

EDITED BY THE DIRECTOR
SOPRON

1977

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Director:

J. SOMOGYI

Felelős kiadó: Dr. Somogyi József

Széchenyi Nyomda Soproni üzeme 77.7840
Felelős vezető: Horváth Imre igazgató

PREFACE

This Report continues the series of Reports on the observation data of the Geophysical Observatory Nagycenk. The first four of them came out in the publication Acta Technica Hungarica; all the others in separate booklets.

Here it is worth noting — to sum it up briefly — that the Reports of 1957—1960 comprise the data of the earth current records only. The geomagnetic data were first given in the Report on 1961. In 1962 the observation network was completed by records of the atmospheric electric potential gradient and the point discharge, so that from 1962 on these data have also been published in the Reports. From 1967 on the measurement data of the ionospheric absorption are given as well. Exchange copies of the Reports may be obtained from the Geodetical and Geophysical Research Institute of the Hungarian Academy of Sciences (H—9401 Sopron, Pf. 5. Hungary).

J. SOMOGYI
Director

I. EARTH CURRENTS

In the present report of the Observatory, six kinds of tables are published in the section earth currents.

The coordinates of the Observatory are:

$= 47°38'$ $= 16°43'$

$\varphi = 47{,}2°$ $\Lambda = 98{,}3°$

All times are given in this part in CET (i. e. GMT + 1h), nearly (—7 min) corresponding to LT.

The tables published are the following:

I. The activity indices T of the general activity for each three hour interval of the local day, as well as the character figures of single frequency bands for whole days K_1—K_5.

The T-scale is linear; its scale corresponds to 1,8 mV/km. The monthly mean T-values are separately given for the North-South and East-West components. The scales for K_1—K_5 are as follows

Frequency band	limits between K-values								
	0—1	1—2	2—3	3—4	4—5	5—6	6—7	7—8	8—9
1. Period 0— 2 min	2	4	7	13	18	23	29	41	54
2. Period 2— 6 min	9	13	18	23	29	34	41	56	90
3. Period 6—12 min	16	22	25	32	38	45	56	83	120
4. Period 12—24 min	34	43	54	70	85	101	124	151	202
5. Period 24—60 min	29	43	67	88	110	131	191	234	339

All these values are given in the table in units of 10^{-5} V/km.

Values in brackets mean extrapolated ones from incomplete material, where the lacking hours have been substituted by the average of recorded hours.

II. Monthly and yearly means, and means for disturbed and quiet days of the amplitudes of the former frequency bands and of the earth current field intensity. D and Q days are the same as in section Geomagnetism. The rows 1—5 contain the average amplitudes of the five bands in 10^{-5} V/km. Row 6 contains the hourly means of the earth current field intensity corrected for long period variations (equally in 10^{-5} V/km).

III. Results of harmonical analysis from monthly means of the earth current field intensity.

IV. Time of special events (common table from magnetic and earth current records).

V. Average amplitudes in 12 pulsation bands. Instead of the graphical representation of world-day averages in previous years, numerical data are presented on the average amplitudes of pulsations for (nearly complete) months. Averages are derived from manually processed earth-current records (6 mm/min) for three-hour intervals of the day. Such averages (expressed in μ V/km) are published for each month and for the full year. As the bands where amplitudes are determined have different bandwiths, amplitudes are comparable in different bands only after a correction for bandwith. Data for the same band are, however, directly comparable. Initial data are estimated amplitudes in half-hour intervals.

VI. Micropulsation indices for the year 1976. The indices have been determined from the occurrence frequency of different period micropulsations, striving at a possibly uniform distribution of days in each of the five possible indices (1—5).

The determination of these indices can be shortly explained as follows: The days are arranged according to the occurrence frequency of each band. Index 1 is attributed to the days with lowest fifth of occurrence frequencies (0 to 20 per cent), index 2 to days with occurrence frequencies in the second lowest fifth (20 to 40 per cent) etc., index 5 to days with highest occurrence frequencies (80 to 100 per cent). It must be reminded that mainly in the lowest and highest bands the uniform distribution could not be achieved due to insufficient occurrence of these bands on the records.

The bands are the following:

P1	0	to	5 sec
P2	5	to	10 sec
P3	10	to	15 sec
P4	15	to	20 sec
P5	20	to	25 sec
P6	25	to	30 sec
P7	30	to	40 sec
P8	40	to	60 sec
P9	60	to	90 sec
P10	90	to	120 sec
P11	2	to	5 min
P12	5	to	10 min

For a detailed description of the method of determination of these indices, see:

L. HOLLÓ, M. TÁTRALLYAY and J. VERŐ: Experimental results with the characterization of geomagnetic micropulsations (Acta Geodaetica, Geophysica et Montanistica Hungarica, 7/1972/155).

Mrs. J. CZUCZOR, L. HOLLÓ, M. TÁTRALLYAY and J. VERŐ took part in the processing and compilation of the data.

Records were taken in the Observatory with three instuments of the types GMG T9/1956 and GMG T14 1961, with small modifications in order to meet the demands of the use in the observatory. A general description of the processing and compilation is found in the report of the Observatory from 1966, in German by A. ÁDÁM, J. VERŐ, A. WALLNER: Tellurische und erdmagnetische Messungen im Observatorium bei Nagycenk. Observatoriumsberichte des Geophysikalischen Forschungslaboratoriums der Ungarischen Akademie der Wissenschaften vom Jahre 1966, Sopron, 1967.

I. *Activity indices T and K_1—K_5*

January

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	11012101	7	4	1	4	1	0
2.	00011102	5	3	0	4	0	0
3.	03134256	24	6	2	4	3	2
4.	21223144	19	6	3	5	2	2
5.	21111121	10	4	0	4	2	2
6.	11112255	18	5	1	5	2	4
7.	42112321	16	4	0	4	2	2
8.	10000012	4	4	1	4	0	0
9.	00000000	0	3	0	4	0	0
10.	01254799	37	5	2	5	3	8
11.	95111234	26	4	0	4	3	6
12.	71122233	21	4	1	4	2	2
13.	32121112	13	5	2	4	1	2
14.	11222222	14	5	1	4	1	2
15.	10101322	10	5	1	4	1	0
16.	12011146	16	5	1	4	1	3
17.	12212134	16	5	2	4	3	2
18.	32211113	14	6	2	4	1	2
19.	01112322	12	5	1	4	2	1
20.	32211153	18	6	3	4	2	2
21.	22343734	28	7	3	4	3	4
22.	36225465	33	6	3	5	3	6
23.	44455652	35	7	3	5	4	6
24.	21354353	26	6	3	4	3	4
25.	22212431	17	5	2	4	2	3
26.	01121101	7	5	1	4	0	1
27.	00121112	8	3	1	4	2	1
28.	10011111	6	3	1	4	1	1
29.	11111001	6	2	0	5	1	0
30.	00101127	12	3	1	4	2	2
31.	32224539	30	5	1	4	3	5

Monthly averages:

T (N)	1,952
T (E)	1,516
K_1	4,709
K_2	1,38
K_3	4,19
K_4	1,806
K_5	2,41

February

Day	T	Sum	K_1	K_2	K_3*	K_4	K_5
1.	33334285	31	7	4	5	2	4
2.	42234473	29	7	3	5	3	5
3.	22223223	18	6	3	4	2	2
4.	21121237	19	6	2	4	1	3
5.	10122322	13	6	2	4	1	2
6.	32210112	12	5	1	4	0	2
7.	10044553	22	4	1	5	1	4
8.	43245955	37	6	3	5	3	6
9.	43334337	30	6	3	5	4	3
10.	63334395	36	6	3	4	3	6
11.	21113324	17	6	2	4	1	3
12.	22343345	26	6	2	4	3	4
13.	82242435	30	6	2	5	2	6
14.	22435412	23	7	3	5	2	2
15.	11122241	14	6	2	4	1	2
16.	10011121	7	5	0	4	0	0
17.	11114245	19	5	2	5	2	2
18.	54556424	35	7	3	6	3	4
19.	23444845	34	7	3	5	3	4
20.	33345343	28	7	3	5	3	3
21.	23234152	22	7	2	5	3	3
22.	42334422	24	7	3	5	3	2
23.	21111100	7	4	1	4	0	0
24.	00111110	5	4	2	4	0	0
25.	01011020	5	4	1	4	0	1
26.	01032213	12	4	2	4	1	2
27.	22126969	37	6	2	5	3	7
28.	43323457	31	5	2	5	3	4
29.	65532255	33	5	2	5	4	5

Monthly averages:

T (N)	2,663
T (E)	2,211
K_1	5,75
K_2	2,206
K_3	4,58
K_4	1,96
K_5	3,13

March

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	52213314	21	6	2	4	1	3
2.	33355499	41	6	2	5	4	7
3.	32234298	33	6	3	5	3	6
4.	33223121	17	5	3	5	2	2
5.	11222217	18	5	2	4	1	2
6.	23343499	37	6	3	5	4	6
7.	33444633	30	5	2	5	2	6
8.	44555255	35	5	2	5	3	6
9.	44335796	41	7	4	5	3	6
10.	45445658	41	6	3	5	3	6
11.	43535263	31	6	2	5	2	2
12.	33323334	24	6	3	5	2	2
13.	31121214	15	5	2	4	1	1
14.	33111111	12	4	1	4	2	2
15.	11212427	20	5	2	6	3	2
16.	32334592	31	8	4	5	4	5
17.	42453345	30	7	4	5	3	3
18.	62232162	24	7	3	4	2	3
19.	22452121	19	6	3	6	3	2
20.	13132411	16	5	2	4	2	1
21.	01224110	11	5	1	4	0	0
22.	00111110	5	4	1	4	0	0
23.	00021132	9	4	2	5	0	1
24.	11001010	4	4	2	4	0	0
25.	10011112	7	3	0	4	1	1
26.	39999999	66	8	6	7	8	7
27.	54544387	40	6	2	6	4	6
28.	32213231	17	5	1	4	3	3
29.	32421103	16	5	1	4	1	2
30.	10126326	21	6	2	4	2	3
31.	30113140	13	4	2	4	1	2

Monthly averages:

T (N)	2,875
T (E)	2,363
K_1	5,48
K_2	2,32
K_3	4,709
K_4	2,25
K_5	3,16

April

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	49999422	48	6	4	7	6	8
2.	21110137	16	3	0	4	2	2
3.	32421488	32	4	1	5	5	4
4.	83457724	40	6	3	5	5	6
5.	33335373	30	5	2	5	3	6
6.	53344542	30	6	2	5	2	6
7.	42238435	31	7	3	4	3	6
8.	72333223	25	6	3	4	2	3
9.	15223244	23	7	2	5	1	2
10.	22124211	15	4	1	4	3	2
11.	33322325	23	7	3	5	3	2
12.	12232112	14	6	2	4	1	1
13.	32213234	20	7	3	5	2	3
14.	12243443	23	6	2	4	2	2
15.	10111111	7	5	2	4	1	0
16.	12211113	12	6	3	5	1	1
17.	11311111	10	3	1	5	2	1
18.	00011010	3	3	1	4	1	0
19.	11111111	8	4	2	4	1	0
20.	00011000	2	2	0	4	0	0
21.	00032112	9	3	0	4	1	1
22.	03543332	23	6	3	5	3	2
23.	31102111	10	4	0	4	2	2
24.	11223142	16	4	1	5	2	2
25.	12211113	12	5	1	4	0	1
26.	10011101	5	4	1	4	0	0
27.	22112123	14	5	2	4	2	1
28.	22111223	14	7	2	5	0	2
29.	02113235	17	5	2	5	2	3
30.	31121110	10	5	2	4	1	2

Monthly averages:

T (N)	2,104
T (E)	1,792
K_1	5,03
K_2	1,80
K_3	4,26
K_4	1,96
K_5	2,36

May

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	21222222	15	6	2	4	1	1
2.	12237499	37	8	4	6	8	4
3.	99699521	50	8	8	8	7	2
4.	11223463	22	3	1	5	2	5
5.	42334132	22	6	2	5	2	1
6.	12121112	11	4	1	4	1	0
7.	31111111	10	4	1	4	1	1
8.	32113312	16	5	1	4	1	2
9.	21111100	7	4	2	4	0	0
10.	01111311	9	3	1	4	0	0
11.	12112133	14	4	1	5	3	2
12.	41121111	12	4	2	4	3	1
13.	11212211	11	4	2	4	1	1
14.	11101100	5	3	1	4	0	0
15.	11001113	8	4	1	4	2	1
16.	22112101	10	3	0	4	2	1
17.	01111011	6	4	1	4	0	0
18.	00001110	3	3	0	4	1	0
19.	00010244	11	4	2	5	2	3
20.	34322263	25	6	3	5	5	4
21.	22112233	16	4	2	5	1	2
22.	13233243	21	6	2	5	2	2
23.	12124331	17	3	0	5	3	2
24.	11311011	9	4	1	4	1	1
25.	32321331	18	5	1	5	3	2
26.	12211211	11	4	2	4	1	1
27.	12211121	11	4	2	4	0	1
28.	22322223	18	5	1	4	2	2
29.	32221246	22	5	2	5	2	3
30.	53123222	20	4	1	4	1	3
31.	11212112	11	5	1	4	1	2

Monthly averages:

T (N)	1,782
T (E)	1,566
K_1	4,48
K_2	1,64
K_3	4,51
K_4	1,90
K_5	1,67

June

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	11111112	9	5	2	4	1	2
2.	22220120	11	6	2	5	1	1
3.	11111145	15	4	2	4	2	3
4.	26432222	23	6	3	5	3	3
5.	22335522	24	7	3	5	3	4
6.	22332312	18	6	3	5	2	2
7.	22235413	22	6	2	5	2	3
8.	33232212	18	5	2	4	2	2
9.	11111000	5	4	1	4	0	0
10.	01112112	9	3	1	4	1	1
11.	45332433	27	5	1	5	3	6
12.	11132310	12	3	0	4	2	2
13.	11210002	7	3	0	4	1	0
14.	02100001	4	5	2	4	0	0
15.	20110012	7	3	2	4	0	0
16.	12111004	10	4	2	4	1	1
17.	21242323	19	5	2	4	3	3
18.	34644322	28	6	3	5	3	3
19.	11111110	7	3	1	4	0	0
20.	11211111	9	4	1	4	0	1
21.	00011010	3	3	0	4	0	0
22.	01101110	5	3	0	4	0	0
23.	11111201	8	3	0	4	0	0
24.	11111973	24	3	0	7	3	2
25.	42313323	21	7	2	5	3	3
26.	12211144	16	7	2	5	1	2
27.	12122211	12	4	0	5	1	3
28.	21111111	9	5	0	4	0	1
29.	11111331	12	3	1	4	0	1
30.	13379234	32	5	3	6	3	4

Monthly averages:

T (N)	1,452
T (E)	1,492
K_1	4,53
K_2	1,43
K_3	4,50
K_4	1,36
K_5	1,76

July

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	35455321	28	8	1	6	3	3
2.	32222211	15	5	0	4	1	2
3.	12123413	17	5	0	4	2	2
4.	22233234	21	6	2	4	1	3
5.	12211211	11	6	2	4	2	2
6.	21211111	10	5	2	4	0	1
7.	13132212	15	4	0	4	1	2
8.	21213524	20	4	1	4	1	4
9.	53313232	22	5	2	4	2	2
10.	11121111	9	3	0	4	1	1
11.	12111111	9	4	1	5	0	1
12.	22111102	10	4	1	4	0	1
13.	12112211	11	3	0	4	1	0
14.	11112100	7	2	0	4	0	1
15.	21221664	24	4	1	5	2	2
16.	43223432	23	6	1	4	2	2
17.	12211112	11	5	2	4	1	0
18.	12211021	10	5	1	4	1	1
19.	31111210	10	4	1	4	0	0
20.	31111211	11	4	1	4	0	0
21.	10001210	5	3	0	4	0	0
22.	11211001	7	3	0	4	1	1
23.	11112111	9	3	0	4	0	0
24.	01011212	8	3	0	4	0	1
25.	32311213	16	3	0	4	1	2
26.	21001011	6	4	0	4	1	0
27.	11122124	14	4	0	4	2	2
28.	42333442	25	5	2	5	3	5
29.	22324433	23	6	3	5	3	3
30.	22456222	25	7	2	5	3	2
31.	11313211	13	5	1	4	3	0

Monthly averages:

T (N)	1,548
T (E)	1,443
K_1	4,45
K_2	0,87
K_3	4,22
K_4	1,22
K_5	1,48

August

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	12211144	16	6	2	4	0	3
2.	22331101	13	6	2	4	1	2
3.	21211412	14	4	1	4	1	1
4.	10111112	8	4	0	4	0	1
5.	21112341	15	6	3	5	1	2
6.	12111121	10	6	1	4	0	1
7.	01112103	9	4	0	4	0	1
8.	21100120	7	6	1	4	0	0
9.	11243122	16	6	1	4	0	2
10.	22112111	11	4	1	4	0	2
11.	11111010	6	3	0	4	0	1
12.	01010111	5	3	0	3	0	0
13.	00002000	2	2	0	4	0	1
14.	01022101	7	2	0	4	0	0
15.	00000001	1	2	0	3	0	0
16.	01012312	10	4	0	4	1	2
17.	31010111	8	5	1	4	0	0
18.	01112211	9	4	2	4	0	0
19.	11322311	14	5	1	4	2	0
20.	21112241	14	5	1	4	0	1
21.	11122122	12	4	0	4	1	0
22.	22111111	10	6	1	4	0	1
23.	21334629	30	5	1	5	2	5
24.	93547642	40	7	2	4	3	5
25.	13323553	25	6	3	4	1	6
26.	34433334	27	6	2	5	2	4
27.	22131252	18	5	1	4	1	2
28.	11213540	17	5	1	4	1	2
29.	11121113	11	5	2	4	0	1
30.	10011112	7	6	1	4	0	1
31.	00112111	7	3	0	4	0	0

Monthly averages:

T (N)	1,460
T (E)	1,290
K_1	4,67
K_2	1,00
K_3	4,03
K_4	0,54
K_5	1,51

September

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	21221231	14	5	1	4	2	1
2.	21454323	24	5	4	4	2	3
3.	11122242	15	6	1	4	3	2
4.	12112405	16	6	2	4	2	2
5.	42222111	15	6	2	4	1	1
6.	22111121	11	5	2	4	1	2
7.	31122113	14	6	2	4	1	1
8.	21012130	10	5	0	4	1	2
9.	12012100	7	3	0	4	0	0
10.	10021113	9	3	0	4	1	1
11.	11111000	5	5	2	4	1	0
12.	22111122	12	4	0	4	0	2
13.	11120013	9	5	1	4	0	0
14.	11123512	16	4	1	4	2	1
15.	12322112	14	6	2	4	1	1
16.	11112221	11	5	2	4	1	0
17.	12122124	15	3	1	4	1	2
18.	35564311	28	5	2	5	3	2
19.	10233444	21	6	2	4	2	4
20.	86458746	48	7	4	5	5	6
21.	32333734	28	6	1	5	3	4
22.	52544433	30	7	2	5	2	3
23.	20134113	15	4	0	4	1	2
24.	21122110	10	6	2	3	0	1
25.	52132593	30	5	0	5	3	3
26.	71333132	23	7	1	4	1	3
27.	33222222	18	6	1	4	2	1
28.	11111102	8	4	0	4	1	1
29.	01154234	20	5	1	5	2	3
30.	11013226	16	7	1	4	1	4

Monthly averages:

T (N)	2,025
T (E)	1,638
K_1	5,23
K_2	1,33
K_3	4,16
K_4	1,53
K_5	1,93

October

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	11233214	17	7	2	5	2	3
2.	34434412	25	7	2	5	3	4
3.	21121211	11	4	1	4	2	2
4.	10043012	11	4	1	4	2	2
5.	43230111	15	3	0	4	1	2
6.	11121004	10	3	0	4	1	1
7.	21113140	13	6	1	4	0	2
8.	00212112	9	5	1	4	0	1
9.	11211121	10	4	1	4	0	1
10.	11111232	12	2	1	5	0	2
11.	31211112	12	4	0	4	0	3
12.	22113356	23	4	0	5	2	3
13.	22122112	13	6	1	4	0	1
14.	10111123	10	5	0	4	1	2
15.	22359975	42	6	3	5	3	7
16.	66464223	33	7	2	5	3	5
17.	22546342	28	6	0	4	3	4
18.	45222334	25	4	0	4	1	4
19.	00112511	11	3	0	4	0	2
20.	41011113	12	4	0	4	0	2
21.	11122121	11	4	0	4	0	2
22.	31111000	7	3	1	4	0	1
23.	12211112	11	4	1	4	1	1
24.	10111115	11	3	0	4	1	2
25.	21021002	8	5	1	4	0	0
26.	10111013	8	4	1	4	0	0
27.	21111133	13	5	1	4	1	1
28.	30111101	8	3	0	4	0	1
29.	01101010	4	4	1	4	0	0
30.	00143244	18	4	1	4	3	3
31.	43566547	40	6	2	4	3	7

Monthly averages:

T (N)	1,810
T (E)	1,431
K_1	4,483
K_2	0,709
K_3	4,193
K_4	1,064
K_5	2,290

November

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	32131112	14	6	2	5	1	2
2.	11011211	8	3	0	4	0	1
3.	21110103	9	4	0	4	0	2
4.	11111003	8	5	1	4	0	1
5.	00011100	3	3	0	4	0	0
6.	00010000	1	3	0	4	0	0
7.	00100001	2	3	0	4	0	0
8.	01000113	6	3	1	4	0	1
9.	22111102	10	4	0	4	1	1
10.	11121226	16	4	1	4	1	3
11.	33243492	30	4	0	4	2	3
12.	63443566	37	7	3	5	3	4
13.	42437693	38	6	2	5	3	6
14.	22224563	26	6	2	4	3	3
15.	22112312	14	3	0	4	1	2
16.	00011100	3	4	0	4	0	0
17.	23121011	11	4	0	4	1	1
18.	21111012	9	4	1	4	1	0
19.	12111113	11	4	0	4	2	1
20.	12132023	14	6	2	4	1	2
21.	01111012	7	4	1	4	1	0
22.	00111111	6	4	0	4	0	0
23.	01101011	5	3	0	4	0	0
24.	00010000	1	2	0	4	0	0
25.	02111221	10	2	0	4	1	1
26.	10101146	14	2	0	4	1	2
27.	13100003	8	2	0	4	0	2
28.	00000010	1	2	0	4	0	1
29.	00110130	6	2	0	4	0	0
30.	22112322	15	4	0	5	1	1

Monthly averages:

T (N)	1,358
T (E)	1,004
K_1	3,566
K_2	0,533
K_3	4,133
K_4	0,766
K_5	1,333

December

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	10112113	10	4	0	4	0	1
2.	11011101	6	4	0	4	0	0
3.	00011111	5	3	0	4	0	0
4.	01333511	17	4	2	4	1	3
5.	21212110	10	7	2	5	1	2
6.	00000111	3	3	0	4	0	0
7.	12113514	18	5	1	4	2	1
8.	45227111	23	3	1	5	3	6
9.	00212334	15	4	0	4	2	3
10.	11122814	20	6	1	4	2	4
11.	32112112	13	5	1	4	1	3
12.	42222361	22	5	2	5	2	5
13.	11112111	9	4	0	4	0	1
14.	11001001	4	4	1	4	0	0
15.	00110000	2	4	0	4	0	1
16.	00002321	8	3	1	4	1	2
17.	11011133	11	5	0	4	2	2
18.	37632215	29	6	2	5	2	4
19.	12112111	10	5	1	4	0	1
20.	11011221	9	7	1	4	0	1
21.	01010211	6	4	0	4	1	0
22.	01111113	9	2	0	4	1	1
23.	12110001	6	5	0	4	1	1
24.	10012031	8	3	0	4	1	1
25.	02113133	14	3	0	4	1	2
26.	11010001	4	4	1	4	0	0
27.	20010242	11	4	1	4	1	2
28.	11010002	5	4	0	4	0	0
29.	89777422	46	5	2	6	4	7
30.	32221256	23	3	0	4	2	5
31.	64211172	24	5	0	4	1	3

Monthly averages:

T (N)	1,448
T (E)	1,165
K_1	4,290
K_2	0,645
K_3	4,193
K_4	1,032
K_5	2,000

II. *Average amplitudes for different periods*

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											January	North
1.	8	10	7	10	11	12	13	20	23	17	19	20
2.	9	5	4	8	5	9	8	15	19	15	14	13
3.	37	34	35	35	36	35	34	35	34	36	36	36
4.	53	45	43	45	46	45	36	39	38	44	45	61
5.	50	76	56	65	38	41	48	33	18	33	23	16
6.	—23	—23	—18	—35	—10	—13	—16	—25	+18	—2	—7	—30
											January	East
1.	8	8	8	8	14	13	15	19	23	22	29	34
2.	6	8	5	3	6	7	9	12	13	16	16	19
3.	30	35	35	35	33	33	33	34	34	35	34	35
4.	37	31	36	35	35	27	33	33	45	31	32	35
5.	59	61	35	46	28	37	35	28	20	25	26	26
6.	—3	—1	+13	—9	—13	—17	—16	—18	+2	+35	+22	+7
											February	North
1.	9	12	14	11	17	16	19	24	27	21	20	21
2.	7	10	11	7	12	10	15	19	24	20	15	21
3.	35	36	33	33	35	36	38	39	41	35	35	39
4.	42	43	58	44	44	50	48	42	48	54	47	53
5.	72	82	69	78	53	39	49	44	17	49	68	57
6.	—22	—10	—6	—27	—6	—12	—17	+3	+24	+19	—25	—27
											February	East
1.	10	9	8	11	13	21	25	30	35	32	32	30
2.	7	4	4	4	6	7	11	15	14	19	17	19
3.	35	32	34	36	33	42	36	34	37	35	34	39
4.	34	45	40	32	39	33	42	39	33	46	40	33
5.	73	42	53	45	55	42	31	48	38	33	44	47
6.	+14	+18	+7	+12	—3	—15	—20	—27	—2	+16	+27	+40

and hourly means of earth current elements

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
20	21	14	14	10	16	11	10	14	11	9	10	13,9
15	17	18	12	9	12	8	8	10	8	6	9	10,7
37	38	36	35	35	38	34	37	36	34	38	34	35,6
41	53	37	46	45	36	34	47	58	53	58	55	45,3
39	39	82	69	78	70	92	64	131	172	118	84	63,9
—37	—6	+19	+22	+30	+16	+6	+15	+60	+60	—2	+1	
Component												
36	30	28	28	19	18	14	12	16	14	12	12	18,3
17	21	12	15	11	6	9	7	12	10	9	9	10,8
33	33	31	31	33	33	35	31	35	33	34	35	33,6
31	27	33	32	33	31	38	49	40	63	43	45	36,6
33	57	57	72	73	82	59	55	136	92	109	87	55,8
+1	+5	—5	+11	+28	+5	—11	—15	—10	—5	—19	+12	
Component												
21	21	21	19	18	17	21	17	15	13	18	12	17,7
21	17	19	17	14	14	19	15	15	14	15	9	15,0
40	40	39	36	39	36	37	35	35	39	39	37	36,9
51	63	58	45	32	40	33	42	55	50	33	64	47,5
80	83	56	64	90	86	125	137	117	144	167	107	80,5
—36	—25	—6	+24	+9	+18	+30	+43	—13	—10	+50	+22	
Component												
37	37	37	37	34	25	24	21	17	19	22	14	24,2
22	22	22	18	12	7	10	11	11	10	17	7	12,3
41	36	34	33	32	35	36	32	37	37	39	32	35,5
45	51	33	37	32	32	49	58	55	47	26	54	40,6
41	50	63	86	81	89	117	118	112	113	180	115	71,5
+12	—5	—3	—1	0	—9	+4	—13	—7	—21	—41	+14	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												March North
1.	11	10	8	12	17	17	22	24	26	26	23	21
2.	13	10	7	12	16	15	21	22	24	20	23	19
3.	35	36	37	37	37	37	35	39	46	40	43	39
4.	48	42	45	53	45	64	62	53	52	59	57	64
5.	93	100	83	68	71	69	65	37	53	35	45	64
6.	+5	+33	+1	+12	−12	−13	+2	+25	+7	−11	−43	−75
												March East
1.	12	11	6	9	10	19	27	29	33	41	37	32
2.	8	6	3	7	8	10	14	16	26	24	26	21
3.	34	35	37	35	36	34	38	38	41	40	42	42
4.	35	46	46	51	44	39	37	31	46	49	34	52
5.	87	63	56	37	42	46	36	45	41	32	45	45
6.	+24	+13	+13	+28	+19	+8	−14	+15	+37	+15	+31	+7
												April North
1.	9	11	11	15	19	19	23	24	19	22	19	11
2.	8	11	10	13	13	18	25	23	19	20	13	13
3.	34	38	36	37	37	39	40	41	39	41	39	38
4.	40	42	38	40	36	55	52	57	59	42	51	71
5.	110	77	77	73	61	42	39	62	37	44	39	49
6.	+5	+2	0	−4	−5	+21	+23	+64	+16	−41	−109	−148
												April East
1.	7	7	8	13	17	19	25	30	28	28	31	31
2.	7	6	5	7	11	8	16	16	17	20	15	20
3.	37	34	34	34	38	35	37	31	32	38	44	35
4.	41	41	45	43	41	32	47	31	38	32	40	46
5.	49	46	50	45	39	62	30	47	28	46	44	35
6.	+14	+10	−8	+8	−8	+2	+16	+31	+66	+53	+15	−19

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
20	20	19	15	15	13	16	15	12	10	11	15	16,6
21	18	20	13	15	14	16	15	13	13	9	11	15,8
39	44	49	35	37	37	38	36	39	37	39	40	38,8
51	53	42	53	60	42	54	42	57	48	56	66	52,8
76	66	84	54	53	70	120	150	168	156	104	175	85,8
—86	—41	+23	+35	+58	+26	+20	+17	—11	+3	+12	+15	
Component												
35	34	35	29	29	24	20	16	14	15	15	16	22,8
22	23	21	17	16	10	8	7	11	13	11	12	14,2
40	38	33	36	35	37	36	35	42	38	37	37	37,3
51	42	71	56	51	53	56	52	73	57	44	49	48.5
44	78	57	52	52	48	120	91	116	133	114	167	68,6
—17	—6	+3	—2	—16	—15	—41	—31	+2	—37	—19	—15	
Component												
16	14	16	15	9	7	11	15	8	11	11	9	14,3
17	13	14	12	6	6	11	14	9	11	11	8	13,3
37	37	39	38	34	35	35	39	38	35	35	35	37,3
64	46	47	52	41	35	38	59	41	59	46	55	48,6
50	64	77	32	46	72	73	85	96	56	109	91	65,0
—121	—61	+17	+63	+52	+63	+46	+39	+11	+24	+38	+2	
Component												
33	31	25	21	19	17	15	13	11	13	14	8	19,3
19	20	16	14	10	10	8	8	9	10	9	5	11,9
37	34	37	35	36	37	37	34	31	34	38	33	35,5
48	43	61	35	43	41	35	48	44	49	50	58	43,0
38	53	33	66	44	65	82	76	88	71	89	66	53,8
—25	—28	—19	—12	—15	—18	—19	—27	—8	+6	—19	+10	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											May	North
1.	10	15	16	19	17	20	21	18	16	16	15	15
2.	12	17	15	24	15	17	17	16	15	21	10	13
3.	44	46	37	43	38	41	35	38	43	42	38	38
4.	49	43	41	34	41	57	48	51	49	46	43	49
5.	65	63	49	48	44	41	46	17	9	17	39	36
6.	+11	+12	−1	−1	+56	+61	+31	+24	−9	−84	−129	−131
											May	East
1.	13	12	10	17	13	19	22	21	27	26	24	27
2.	10	12	10	19	8	8	11	13	15	22	16	16
3.	42	38	37	42	37	39	34	31	35	39	42	39
4.	49	38	38	32	35	40	25	31	30	31	48	44
5.	58	42	38	41	41	29	41	27	24	26	20	46
6.	−2	+8	+8	+2	−3	+15	+27	+32	+38	+26	−19	−24
											June	North
1.	11	11	13	17	19	22	22	22	19	17	14	14
2.	12	10	10	12	18	17	14	13	13	13	9	11
3.	35	37	38	40	41	40	40	39	39	38	42	38
4.	37	55	29	44	37	57	51	46	28	37	44	47
5.	33	39	56	44	44	32	47	22	29	33	23	49
6.	+14	+21	+13	+14	+51	+57	+55	+27	−6	−53	−109	−134
											June	East
1.	10	12	12	16	15	16	19	20	25	28	26	25
2.	8	7	4	8	7	10	13	11	13	19	17	14
3.	36	35	37	39	36	35	35	35	34	36	37	36
4.	34	48	30	28	23	34	19	28	28	34	34	29
5.	36	31	35	40	62	25	32	24	26	26	35	73
6.	−6	+5	−2	−17	−24	0	+33	+57	+59	+45	+23	−6

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
17	13	8	10	9	7	8	11	12	12	13	12	13,8
17	11	7	8	7	7	7	11	14	13	10	13	13,2
44	48	38	37	38	35	34	38	37	38	37	41	39,5
58	57	55	53	48	52	31	30	65	98	48	57	50,1
23	31	39	45	52	34	57	80	60	48	63	61	44,5
—99	—41	+1	+41	+65	+55	+42	+18	+23	+30	+19	+8	
Component												
26	23	23	17	18	13	8	11	16	11	11	10	17,4
21	15	11	16	10	10	6	7	14	11	13	7	12,5
39	39	38	44	37	44	36	37	40	37	41	37	38,5
35	51	57	41	35	47	37	38	36	40	35	41	38,9
33	34	37	40	60	44	62	83	78	73	64	83	46,8
—28	—10	—24	—13	—20	—16	—24	—45	+10	+72	—5	—6	
Component												
11	9	10	7	7	4	7	8	13	11	7	6	12,5
11	7	7	5	4	3	4	7	12	11	8	5	9,8
37	36	37	36	35	33	38	35	36	37	35	37	37,5
41	43	40	41	31	42	51	47	31	46	46	41	42,2
44	50	63	61	58	38	41	62	59	70	63	62	46,8
—104	—65	—34	+31	+38	+28	+25	+16	+16	+38	+31	+26	
Component												
24	23	20	17	17	14	16	12	11	11	10	7	16,9
16	16	13	11	12	13	6	10	10	10	11	5	11,0
36	31	35	36	38	36	38	35	36	37	35	37	35,9
23	38	37	31	46	37	51	47	31	46	46	41	35,1
46	43	58	76	50	62	40	62	59	70	63	62	47,3
—6	—13	—30	—22	—27	—28	—18	—12	—15	—8	+8	+5	

Parameter Hour	0	1	2	3	4	5	6	7	8	9	10	11
											July	North
1.	9	14	16	16	15	23	19	19	17	18	13	14
2	9	6	9	10	10	13	12	12	10	10	9	10
3.	34	35	35	37	37	35	37	38	37	36	37	31
4.	38	34	32	34	28	38	41	49	40	39	45	47
5.	38	80	88	38	32	39	57	26	32	29	23	41
6.	+12	+13	+9	+14	+21	+57	+32	+16	—7	—57	—120	—136
											July	East
1.	10	10	16	15	10	12	17	18	25	27	30	28
2.	5	7	6	5	4	6	5	12	9	13	10	12
3.	35	35	36	32	35	34	35	36	35	34	37	37
4.	28	33	35	30	26	25	26	27	30	28	36	34
5.	37	42	31	31	29	35	34	24	31	28	31	34
6.	—6	+1	+6	+3	—13	+1	+42	+69	+73	+42	+10	—15
											August	North
1.	8	12	10	16	15	20	17	19	17	12	14	15
2.	9	6	11	9	8	14	14	15	17	9	9	10
3.	34	33	35	36	35	35	36	37	37	35	37	36
4.	29	33	24	23	24	36	41	42	35	33	39	40
5.	75	40	58	42	39	29	38	14	19	23	24	44
6.	+8	+10	+2	—13	+14	+45	+41	+39	—3	—75	—142	—142
											August	East
1.	10	10	12	15	17	19	23	25	24	21	28	28
2.	6	6	7	8	6	5	8	12	11	11	15	16
3.	33	33	34	31	34	33	30	33	34	33	32	34
4.	28	20	28	20	17	26	28	28	28	30	29	33
5.	31	37	34	37	31	21	23	23	20	17	28	37
6.	+7	+4	+7	+14	—12	—7	+29	+64	+72	+62	+4	—10

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	10	11	7	7	7	5	9	12	9	8	8	12,5
10	3	5	2	2	2	4	5	8	5	8	5	7,6
41	36	33	37	36	37	35	35	34	34	34	36	35,4
38	43	41	38	41	36	36	38	35	34	41	39	38,5
47	42	52	36	28	59	41	30	56	52	41	50	44,0
—117	—75	—27	+38	+65	+79	+37	+29	+36	+28	+33	+18	
Component												
23	21	24	17	19	17	10	6	13	8	9	10	16,5
15	16	10	9	12	8	9	5	7	6	8	5	8,5
37	37	37	38	34	37	38	35	32	36	36	33	35,5
30	46	38	31	33	39	38	35	39	39	41	37	33,5
46	33	60	51	54	63	38	42	61	45	44	53	40,7
—28	—32	—20	—17	—17	—22	+1	—50	—24	+5	—3	—6	
Component												
10	11	10	8	7	6	9	8	8	7	8	8	11,4
8	8	4	3	3	2	5	4	5	4	5	8	7,9
35	38	36	36	36	35	36	34	36	34	34	36	35,5
34	34	36	32	38	31	30	34	32	37	33	35	33,5
42	39	33	50	22	63	54	80	59	27	66	77	44,0
—118	—57	+29	+65	+92	+75	+33	+32	+13	+18	+16	+19	
Component												
24	23	21	19	15	12	13	14	10	7	12	14	17,3
13	13	9	9	9	11	10	9	3	6	6	12	9,2
35	35	35	35	36	35	37	37	35	35	31	33	33,9
30	30	30	25	33	33	28	32	30	34	31	34	28,5
36	27	31	44	27	59	41	74	57	34	81	51	37,6
—30	—32	—21	—17	—10	—25	—29	—44	—20	+3	—16	+6	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											September	North
1.	12	10	10	14	13	16	23	20	20	22	16	16
2.	10	7	7	8	10	8	18	13	16	11	11	9
3.	35	33	35	35	34	32	35	36	37	34	38	35
4.	40	35	44	44	35	40	45	38	50	43	46	50
5.	49	67	46	20	49	29	38	30	26	39	43	47
6.	—23	+5	+24	+12	—13	+5	+20	+8	—2	—62	—133	—135
											September	East
1.	13	10	13	13	17	16	22	25	34	33	32	34
2.	5	5	7	4	7	7	7	11	16	18	16	17
3.	31	32	33	34	32	33	31	32	34	28	34	34
4.	20	29	25	17	31	34	31	31	33	31	36	43
5.	68	41	43	43	41	34	44	29	27	44	38	38
6.	—8	+1	+24	+2	+2	—10	+29	+49	+62	+52	+16	—5
											October	North
1.	9	9	7	10	10	15	18	21	17	16	17	12
2.	10	8	8	2	3	6	13	17	15	10	12	9
3.	35	36	34	33	35	37	35	38	37	37	37	37
4.	27	37	51	43	37	45	45	39	30	46	41	42
5.	70	63	53	35	58	30	49	39	47	42	59	33
6.	—5	—25	—5	—13	—14	+6	+7	+60	+62	+14	—56	—112
											October	East
1.	11	8	7	10	11	12	21	21	29	25	27	26
2.	8	4	6	3	2	7	5	10	8	12	12	10
3.	31	32	34	34	33	36	35	35	31	34	33	35
4.	21	38	34	32	30	35	27	24	28	33	41	35
5.	54	31	33	41	41	30	31	46	45	41	37	28
6.	+22	+13	—5	—5	—7	—3	0	+20	+33	+42	+49	+10

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	13	13	10	12	12	10	13	10	11	10	5	13,5
11	11	7	9	4	7	9	7	8	7	12	2	9,4
37	38	38	35	35	36	34	32	36	38	37	34	35,4
50	56	49	45	36	38	30	43	45	34	47	43	42,8
69	30	33	49	59	29	71	55	59	116	74	80	50,3
—88	—14	+37	+89	+83	+51	+15	+49	+21	+38	+4	+8	
Component												
31	31	29	26	26	19	14	16	16	16	13	8	21,1
14	16	15	16	14	9	5	6	10	9	9	5	10,3
35	37	34	36	34	32	33	32	34	33	35	35	33,3
40	37	40	28	35	35	37	28	31	43	41	46	33,4
58	46	35	55	64	38	63	66	92	76	62	63	50,3
—38	—34	—20	—6	—15	—17	—23	—18	—30	—11	—2	+4	
Component												
12	14	10	11	6	7	5	6	8	11	9	9	11,3
9	9	5	5	2	5	5	3	6	11	8	7	7,7
37	36	36	37	34	35	34	34	35	37	36	34	35,7
37	56	38	33	28	26	29	31	41	35	35	43	38,0
50	31	72	55	66	67	94	69	70	127	87	66	59,7
—99	—56	+30	+50	+48	+9	+32	+18	+5	+28	+8	+10	
Component												
27	28	24	21	17	13	9	10	11	15	12	9	16,7
13	16	15	11	5	6	5	3	9	7	10	6	8,0
32	32	35	31	34	34	34	35	33	32	34	35	33,4
37	31	40	30	28	28	30	35	37	30	28	28	31,7
45	64	53	53	52	63	57	61	62	116	120	109	54,7
—28	—20	—3	—14	—15	—14	—10	—19	—13	—15	—10	—6	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											November	North
1.	4	5	5	7	8	8	10	17	17	10	12	10
2.	5	2	3	3	4	6	7	9	11	10	7	7
3.	34	35	32	38	36	35	39	34	35	37	37	35
4.	31	31	29	40	35	35	40	33	41	44	46	43
5.	35	34	71	25	37	44	17	31	13	19	26	25
6.	—20	—14	—18	—14	—21	—2	+2	+31	+34	+9	—36	—65
											November	East
1.	5	6	2	6	13	10	13	17	17	17	22	15
2.	4	2	1	1	2	4	8	7	7	10	10	9
3.	30	31	31	32	35	35	34	36	32	34	33	34
4.	25	26	19	27	26	27	29	32	27	32	35	33
5.	29	38	67	38	27	34	22	19	27	20	32	23
6.	—1	+16	+10	—1	—11	—12	—13	+22	+23	+27	+23	+9
											December	North
1.	4	7	6	5	6	6	10	12	20	18	17	15
2.	5	5	5	2	3	3	6	10	10	14	14	12
3.	36	35	37	35	37	37	35	35	35	45	37	38
4.	43	36	23	41	40	39	45	36	33	46	41	41
5.	49	55	91	92	55	39	17	46	39	21	26	33
6.	+2	—5	—28	+5	—21	—14	—14	0	+8	0	—18	—43
											December	East
1.	6	6	8	8	8	13	20	20	23	22	26	23
2.	5	4	2	4	4	4	8	7	6	12	17	12
3.	34	33	35	36	34	34	32	31	31	40	35	34
4.	30	27	40	34	35	33	31	30	36	33	35	32
5.	64	45	43	64	30	27	31	38	17	17	15	30
6.	+14	+10	+1	+9	—1	—3	—8	—16	—1	+21	+15	—1

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	10	11	9	6	9	7	7	7	10	8	7	9,0
10	5	7	7	5	5	4	4	4	10	7	5	6,1
35	36	36	37	36	35	35	37	33	34	34	35	35,4
33	32	26	39	31	29	33	36	31	33	32	39	35,1
22	35	45	40	38	66	71	61	56	61	58	47	40,7
—48	—16	+17	+20	+26	+38	+2	+4	+34	+46	+12	—22	
Component												
18	19	18	16	14	13	11	8	11	15	9	6	12,6
9	6	8	7	8	5	2	4	4	10	6	7	5,9
34	35	35	36	34	34	34	35	35	35	36	35	34,0
24	23	26	31	24	28	46	20	27	31	31	38	28,6
37	36	38	39	38	66	40	86	56	56	50	43	39,2
—7	—6	—5	—5	—5	—22	—25	—19	—4	+1	+1	+4	
Component												
14	11	12	9	9	5	6	6	5	7	4	5	9,2
11	9	9	10	8	8	8	7	7	6	6	6	7,6
37	36	36	35	36	32	34	35	34	35	35	37	36,0
34	41	35	45	34	36	31	37	34	39	39	47	38,2
57	69	41	38	44	102	59	46	67	47	42	58	51,4
—13	+21	+25	+28	+13	+3	—11	+7	+17	+14	+13	+8	
Component												
29	24	26	24	16	12	9	10	12	8	11	10	15,6
11	9	13	13	6	9	3	6	5	6	9	6	7,5
37	34	31	31	34	33	35	33	36	35	37	35	34,2
28	27	30	26	34	34	26	34	39	27	33	36	32,1
39	51	31	44	40	76	63	44	46	60	60	109	45,2
—7	+17	+4	+12	+6	—11	—30	—3	—16	—12	—5	+5	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											Year 1976 North	
1.	9	11	10	13	14	16	18	20	20	18	17	16
2.	9	8	8	9	10	11	14	15	16	14	12	12
3.	36	36	35	37	36	37	37	37	39	38	38	37
4.	40	39	38	41	37	47	46	45	42	44	45	51
5.	62	65	66	52	48	39	42	33	28	32	37	41
6.	—3	+2	—2	—4	+3	+16	+14	+23	+12	—29	—77	—100
											Year 1976 East	
1.	10	9	9	12	13	16	21	23	27	27	29	28
2.	6	6	5	6	6	7	9	12	13	16	16	15
3.	34	34	35	35	35	35	34	34	34	35	37	36
4.	32	35	35	32	32	32	31	30	33	34	37	37
5.	54	43	43	42	39	35	33	33	29	30	33	39
6.	+6	+8	+6	+4	—6	—3	+9	+25	+39	+36	+18	—1

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
15	14	13	11	10	9	10	10	10	10	10	9	13,04
14	11	10	8	7	7	8	8	9	10	9	7	10,25
38	39	38	36	36	35	35	36	36	36	36	36	36,7
44	48	42	44	39	37	36	41	42	47	43	49	43,6
50	48	57	50	53	63	75	77	83	90	83	80	56,4
−80	−36	+11	+42	+48	+39	+23	+24	+18	+26	+19	+10	
Component												
28	27	26	23	20	16	14	12	13	13	12	10	18,3
16	16	14	13	10	8	7	7	9	9	10	7	10,1
36	35	35	35	35	35	36	34	35	35	36	35	35,0
37	37	41	34	35	37	39	40	40	42	37	42	35,9
41	48	46	57	53	63	65	71	80	78	87	84	51,1
−17	−14	−11	−7	−9	−16	−19	−25	−11	−2	−11	+2	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												Quiet days North
1.	5	9	8	9	10	13	14	15	16	14	12	13
2.	4	6	6	7	7	8	10	10	12	9	6	10
3.	34	33	35	36	36	35	35	35	36	36	35	35
4.	34	32	25	28	27	35	36	35	34	33	34	34
5.	27	29	33	30	26	24	20	14	17	12	15	21
6.	+9	+6	+3	0	+3	+20	+19	+24	+11	−38	−84	−102
												Quiet days East
1.	6	6	7	8	8	12	15	15	19	19	21	19
2.	4	4	4	5	4	5	6	6	6	12	13	11
3.	32	31	31	32	33	32	32	33	35	32	32	35
4.	27	27	23	21	23	21	21	24	25	26	27	28
5.	26	20	27	25	23	24	26	21	18	17	20	23
6.	+9	+6	+5	+1	−8	−6	+10	+22	+42	+35	+15	−5
												Disturbed days
1.	11	16	14	22	22	23	25	31	38	32	32	25
2.	16	23	9	32	25	22	22	27	34	38	32	29
3.	52	65	34	61	45	43	40	45	61	52	47	50
4.	68	54	81	86	76	121	90	76	86	95	74	76
5.	112	180	142	94	148	63	104	77	110	74	101	119
6.	+6	−22	−13	−27	−30	−31	−15	+47	+50	+4	−37	−29
												Disturbed days
1.	13	14	7	18	22	25	29	40	45	50	52	50
2.	22	14	4	34	20	20	16	29	32	52	38	29
3.	52	40	40	61	43	50	40	43	50	61	59	58
4.	79	50	56	67	76	74	40	59	68	59	68	70
5.	99	97	122	54	90	92	85	45	70	50	50	76
6.	+33	+1	−17	+1	+36	+10	+3	+52	+46	+45	+22	+12

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
12	12	12	10	7	6	7	8	7	6	7	5	9.9
10	9	7	7	4	5	6	6	7	5	7	6	7.3
36	36	36	35	35	33	34	34	34	34	34	35	34.9
33	30	33	31	28	30	28	31	29	28	28	32	31.2
23	19	17	17	21	21	27	26	28	28	26	30	23.0
−85	−35	−7	+45	+47	+41	+25	+17	+20	+24	+21	+16	
Component												
23	19	20	18	15	11	9	9	9	8	9	8	13.0
10	11	12	10	8	7	6	5	6	5	9	7	7.3
34	34	35	33	33	33	35	32	33	34	35	34	33.1
29	27	27	23	23	29	26	29	27	24	28	26	25.5
24	20	21	25	26	26	29	24	29	35	28	37	24.8
−23	−17	−11	−8	−13	−13	−16	−16	−8	−6	+2	+5	
North Component												
27	25	25	14	14	14	11	14	9	18	14	11	20.3
31	22	27	14	11	18	13	14	9	20	13	9	21.3
58	67	63	40	41	36	40	32	40	41	38	41	47.2
68	68	61	94	76	77	56	41	49	38	65	74	72.9
112	106	194	115	176	112	225	250	329	281	162	292	153.3
−46	−16	+68	+25	+69	+39	+6	−12	−1	−21	−22	+10	
East Component												
45	40	40	34	29	27	23	22	16	23	13	13	28.8
41	36	23	29	11	9	4	9	9	16	5	9	21.3
52	50	36	54	40	59	38	36	38	34	27	38	45.8
63	59	122	86	86	97	113	52	63	41	36	58	68.4
90	131	130	99	131	99	158	157	191	198	272	218	116.8
−30	+6	+11	−5	−39	−3	−59	−29	0	−57	−38	0	

III.

Results of harmonical analysis of the daily variations

	A_1	φ_1	A_2	φ_2	A_3	φ_3	A_4	φ_4	A_5	φ_5	A_6	φ_6
						North Component						
January	23	179	15	234	7	173	17	284	6	48	8	34
February	14	159	14	240	13	96	5	254	12	178	8	230
March	22	127	24	304	29	103	12	301	2	112	5	239
April	40	126	52	289	40	126	15	324	5	205	5	262
May	45	117	55	304	30	152	2	332	2	197	9	49
June	50	98	47	294	28	146	4	270	1	19	4	31
July	52	115	54	294	28	129	6	253	2	303	7	35
August	45	128	60	303	43	135	7	338	2	345	3	59
September	43	143	49	312	32	142	24	322	5	285	1	126
October	17	126	37	271	37	120	23	306	8	157	3	207
November	13	164	24	259	18	135	18	306	5	276	9	14
December	13	181	1	307	13	154	11	312	6	158	3	70
Year	29	129	34	291	26	132	11	307	2	189	2	23
Q	33	122	35	293	27	130	8	311	2	245	3	57
D	17	222	15	297	32	108	12	325	5	207	7	135
						East Component						
January	8	262	7	90	11	50	8	240	2	36	3	32
February	7	303	13	81	16	6	4	157	6	74	5	136
March	21	356	7	66	8	45	9	292	6	93	7	108
April	21	5	15	196	17	88	9	303	3	141	6	160
May	18	35	14	209	12	158	13	302	10	306	13	12
June	23	352	21	190	13	101	7	9	4	266	3	263
July	28	358	18	218	19	101	8	323	9	266	4	282
August	29	1	15	202	21	95	12	308	6	264	3	104
September	25	1	13	212	18	83	10	296	3	245	6	229
October	17	346	12	167	15	59	4	272	8	87	3	300
November	11	349	11	138	8	72	8	296	3	335	1	146
December	5	329	10	70	4	79	5	263	6	99	2	48
Year	16	356	8	177	11	81	7	298	0	357	1	42
Q	14	4	10	183	12	84	6	301	2	156	0	270
D	30	344	3	155	12	96	5	339	14	115	11	103

IV.

Special phenomena
(magnetic and earth current date)
SSC-s

Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	End of Storm
03.	26.	3.30	9	16	—	—	—	+	03.27. 01.00
04.	01.	4.00	14,5	55	+	+	+	—	04.01. 22.00
05.	02.	19.30	16	40 (?)	+	+	+	+	05.03. 21.00
06.	24.	17.30	18	40	+	+	+	—	06.25. 02.30
09.	25.	0.45	3,5	18 (si?)	+	+	+	—	09.26. 02.00
12.	04.	7.30	2,5	12	+	+	+	—	12.04. 24.00
	16.	12.00	2	11 (?)	+	+	+	—	12.16. 20.00
	28.	21.30	4,5	12 (b?)	+	+	+	—	12.29. 21.00
	29.	2.00	5,5	18	+	+	+	—	in storm

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
01.	03.	21.00	9	55	—	+	+	+	tr		
	04.	18.30	5,5	35	—	+	+	+	tr		
		21.45							4,5	+	+
	07.	17.00	5,5	30	—	+	+	+	tr		
	08.	22.15							tr		
	11.	1.15	23,5	170	—	+	+	+			
	12.	0.30	12,5	65	+	+	+	—	tr		
	16.	20.15	9	42	—	+	+	+	3,5	+	+
		22.45	11	40	+	+	+	—	tr		
	18.	0.30	5,5	15	+	+	+	—	2,5	+	+
		21.00	3,5	25	—	+	+	+	tr		
	20.	2.45							3,5	—	—
		18.45							5,5	—	+
		23.15	6,5	45	—	+	+	+	tr		
	21.	16.00	9	80	—	—	—	+			
		20.45	7	50	+	+	+	—	tr		
	22.	20.45	11,5	60	+	+	+	—	tr		
	23.	14.00	11	55	—	—	—	+			
	24.	21.15	8	22	+	+	+	+			
	25.	15.15	8	35	—	—	—	+	tr		
	27.	22.15							2	+	+
		22.30							3,5	+	+
	28.	0.15	2,5	10	+	+	+	—	2,5	+	+
	30.	21.15	8	60	—	+	+	+	3,5	+	+
	31.	22.00	18	115	+	+	+	—	tr		
02.	01.	19.00	9	62	—	+	+	+			
	04.	20.45	7	35	—	+	+	+	tr		
	06.	0.30							2,5	+	+
	08.	2.00	7	45	+	+	+	—			
		16.00	17	75	+	+	+	—			
	09.	23.30	11,5	35	+	+	+	—	tr		
	10.	19.15	14,5	75	—	—	—	+			
		23.30	9	35	+	+	+	—			
	12.	21.45	11	45	+	+	+	+	tr		
	13.	1.30	7	50	+	+	+	—	tr		

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
02.	13.	11.30	5,5	20	+	0	+	−			
		22.15	9	30	+	+	+	−	tr		
	15.	18.45	9	30	−	+	+	+	tr		
		22.00							2	+	+
	18.	22.15	9	35	+	+	+	+	tr		
	20.	18.00	9	35	+	+	+	+	tr		
		22.15	4,5	30	−	+	+	+			
	25.	4.00							2	+	+
	26.	22.30	8	35	+	+	+	−	2,5	+	+
	27.	23.30	11,5	40	+	+	+	−			
	28.	22.15	7	28	+	+	+	+	2,5	+	+
	29.	0.30	8	25	+	+	+	−			
03.	02.	21.00	11,5	85	+	+	+	+	tr		
	03.	18.15	14,5	75	−	−	−	+	tr		
		21.00	10	65	−	+	+	+	tr		
		23.30	11,5	45	+	+	+	−	tr		
	05.	22.30	14,5	85	−	+	+	+	tr		
	06	20.15	20	70	+	+	+	−	tr		
		22.30	16	85	+	+	+	−	tr		
	08.	18.15	9	30	−	+	+	+			
		23.30	9	35	−	+	+	−			
	09.	16.45	14,5	70	−	+	+	+	tr		
		20.00	19	70	+	+	+	+			
		23.00	11	60	+	+	+	+	tr		
	10.	16.30	10	50	−	+	+	+	tr		
		23.15	16	75	+	+	+	−	tr		
	11.	18.00	8	65	−	−	−	+			
	12.	22.30	4,5	35	+	+	+	−	tr		
	14.	3.00	5,5	35	+	−	−	−			
	16.	19.30	11,5	80	−	+	+	+			
	17.	20.00	9	35	−	+	+	+			
		23.30	9	55	+	+	+	−	tr		
	18.	19.45	8	45	−	+	+	+	tr		
	23.	9.45	3,5	12	−	+	+	+	2	+	+

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
03.	23.	23.30							4,5	+	+
	24.	0.00							2	+	+
	25.	0.15							2	+	+
	27.	21.00	8	55	+	+	+	—	tr		
	28.	19.00	5,5	30	—	+	+	+	tr		
	30.	13.45	13,5	25	+	+	+	—			
	31.	0.45	3,5	22	+	+	+	—	2	—	—
		19.15	5,5	30	—	+	+	+	2,5	—	—
04.	02.	21.45	13.5	70	—	+	+	+	tr		
	03.	23.45	16	45	—	—	+	—	tr		
	04.	17.15	11,5	55	—	+	+	+			
	05.	19.00	14.5	65	—	+	+	+	tr		
	06.	0.00	6,5	18	+	+	+	—	tr		
		19.30	8	45	—	+	+	+	tr		
	07.	0.00	4,5	30	+	+	+	—	tr		
		14.30	12,5	65	—	+	—	+			
		20.15	6,5	25	—	+	+	+	tr		
		22.00	11	45	—	+	+	+			
	08.	1.00	12,5	50	+	+	+	—	tr		
	09.	3.15	8	50	+	+	+	—	tr		
		18.15	6,5	35	+	—	+	+	2	+	+
	12.	21.45	3,5	13	—	+	+	+	2,5	+	+
	16.	0.30							2,5	+	+
		22.30	4,5	22	+	+	+	—	2,5	+	+
	17.	21.15							2,5	+	+
	19.	3.30							2,5	+	+
	21.	10.30	5	15	+	+	+	—			
		23.15	4,5	12	+	+	+	—			
	22.	20.00	5,5	25	—	+	+	+	2,5	+	+
	23.	0.00							2,5	+	+
		23.30	3,5	8	—	—	—	+			
	24.	19.30	6,5	22	—	+	+	+	tr		
	25.	21.45	5,5	22	+	+	+	—	3,5	+	+
	26.	23.00							2,5	+	+
	27.	21.00	5,5	30	—	+	+	+	2,5	+	+

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
04.	28.	19.30							2,5	+	+
		22.30	5,5	25	+	+	+	—	2,5	+	+
	29.	22.30	9	55	+	+	+	—	3,5	+	+
05.	01.	1.30	3,5	15	+	0	0	—	2,5	+	+
	04.	18.30	11,5	50	+	+	—	+	tr		
	05.	20.00							2,5	+	+
	06.	22.15							2,5	+	+
	07.	1.30	4,5	25	+	+	+	—	tr		
	08.	0.15	4,5	35	+	+	+	—	3,5	+	+
	12.	23.45	3,5	15	+	+	+	—	tr		
	15.	23.45	7	22	+	+	+	—	tr		
	17.	20.30							3,5	+	+
	19.	21.00							7	—	—
	20.	19.30	12,5	45	—	+	+	+	tr		
	22.	20.00	7	25	—	—	—	+	2	+	+
		21.45	4	30	+	+	+	+	tr		
	23.	17.30	5,5	15	+	+	+	—			
	28.	1.30							2,5	+	+
		21.00	4,5	22	+	+	+	—	2,5	+	+
	29.	1.00	4.5	28	+	+	+	—	2,5	+	+
		20.00	9	22	—	—	—	+			
	30.	0.30	8	45	+	+	+	—	tr		
06.	01.	21.15	3.5	20	+	+	+	—	2.5	+	+
	04.	3.45	12,5	50	+	+	+	—	tr		
	11.	18.30	5,5	18	—	—	—	+			
		21.45	6,5	18	—	—	—	+	tr		
	12.	11.45	7	25	+	+	+	—			
	13.	23.00							2,5	+	+
	14.	21.30							2,5	+	+
	15.	0.00							3,5	+	+
		22.15	4,5	22	—	+	+	+	3,5	+	+
	16.	22.00							3,5	+	+
		22.30							6,5	+	+
	21.	20.45	2,5	12	—	—	—	+			
	23.	22.00							2	+	+

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
06.	25.	20.45	6,5	30	—	+	+	+	2,5	—	—
	26.	19.30							3,5	—	+
		21.30	9	30	+	+	+	—			
	30.	22.15	7	40	+	+	+	+	tr		
07.	03.	16.45	7	35	—	—	—	+	tr		
		22.15	6,5	22	+	+	+	—			
	04.	20.30	8	30	—	+	+	+	3,5	+	+
	06.	2.15	4,5	22	+	+	+	—	2	+	+
	07.	23.30	3,5	14	+	+	+	—	2,5	+	+
	08.	20.45	4.5	40	—	—	+	+	tr		
	09.	0.30	5,5	30	+	+	+	—	2,5	+	+
	15.	20.15	10	70	—	+	+	+	tr		
	17.	23.00							2,5	+	+
	20.	2.30							3,5	+	+
	25.	22.00	4,5	22	—	+	+	+	2,5	+	+
	26.	2.15	4,5	12	—	—	—	+	tr		
	27.	21.15	8	22	—	—	+	+	tr		
08.	01.	19.15	6.5	30	—	+	+	+	2	+	+
		22.15	5.5	45	+	+	+	—	tr		
	03.	23.30							2	+	+
	04.	23.15	3.5	8	+	+	—	+	2	+	+
	07.	22.45	5.5	25	—	+	+	—	tr		
	09.	19.30	4.5	12	—	+	+	+	3.5	+	+
	16.	21.45	4,5	12	—	—	—	+			
	17.	0.15							2,5	+	+
		1.15	3,5	14	+	+	+	—	2	+	+
	19.	0.00							2,5	+	+
		4,45							2,5	+	+
	20.	1.15							2	+	+
		20.30							2,5	+	+
	21.	19.00	3,5	18	—	—	—	+	2	+	+
		23.30	3,5	15	—	+	+	—	tr		
	22.	22.00							2,5	+	+
	23.	22.00	12.5	85	—	+	+	+	tr		
	24.	0.15	18	75	+	+	+	—			

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
08.	24.	16.30	11	50	—	+	+	+			
	25.	18.30	10	45	+	—	+	—			
	26.	19.45	7	30	+	+	+	—	tr		
	27.	19.30	9	50	—	+	+	+			
	28.	17.00	8	45	—	+	+	+	tr		
	29.	21.45	3,5	20	+	+	+	—	2,5	+	+
	30.	23.00	4,5	25	—	+	+	+	tr		
09.	02.	20.30	5,5	22	—	+	+	+	tr		
	03.	19.30	9	45	—	+	+	+	tr		
		22.15	4,5	30	+	+	+	—			
	04.	15.30	7	35	—	+	+	+	tr		
		22.00	6,5	32	—	+	+	+	tr		
	06.	18.15	3,5	13	—	—	—	+	tr		
	07.	1.45	3,5	13	+	+	+	—	2,5	+	+
		22.45	5,5	28	+	+	+	—	3,5	+	+
	08.	20.30	5,5	20	+	+	0	+	tr		
	10.	11.00	3,5	14	+	+	+	—			
		21.15	5,5	18	—	—	—	+			
		22.15	2,5	8	0	+	+	0	2,5	+	+
		23.15	4,5	18	—	—	—	+			
	13.	22.15							3,5	+	+
	18.	6.15	11	45	+	+	+	—	tr		
	21.	21.15	7	35	—	+	+	+	tr		
	22.	0.30	5,5	22	+	+	+	—	tr		
	23.	21.00	5,5	30	—	+	+	+			
	24.	2.15							2,5	+	+
	25.	1.45	5,5	30	+	+	+	—	tr		
		19.45	18	65	—	+	+	—	tr		
	26.	0.30	11	65	+	+	+	—	tr		
		19.00	5,5	24	—	+	+	+	tr		
	29.	21.15	3,5	22	—	+	+	+	2,5	+	+
		22.15	4,5	16	+	+	+	—	2,5	+	+
	30.	22.15	4,5	30	+	+	+	—	2,5	+	+
10.	01.	22.30	8	30	+	+	+	—	2,5	+	+
	05.	2,15	5,5	50	+	0	+	—	3,5	+	+

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
10.	06.	21.15	5,5	35	—	0	—	+	tr		
	07.	19.30	5,5	25	+	+	+	+	tr		
	08.	21.30	3	15	+	+	+	0	2	+	+
	09.	3.15							2	+	+
	10.	17.45	5,5	18	—	+	+	+	tr		
	11.	22.15	5,5	25	+	+	+	+			
	12.	22.30	10	60	—	+	+	+	3,5	+	+
	13.	20.45							2,5	+	+
	15.	17.00	14,5	70	—	+	+	+	tr		
	17.	13.30	12,5	60	—	—	—	+			
	18.	17.45	5,5	28	—	+	+	+	tr		
		20.30	5,5	22	—	+	+	+	tr		
		21.15	6,5	32	—	+	+	+	tr		
	20.	1.30	5,5	30	+	0	+	—			
		22.45	2,5	15	+	+	+	+	tr		
	22.	1.15							2,5	+	+
	23.	0.15							2	+	+
	24.	20.45	9	45	—	+	+	+	tr		
	26.	23.45	4,5	18	+	+	+	—	3,5	+	+
	27.	22.15	4,5	30	+	+	+	+	2,5	+	+
	28.	0.45	5,5	18	+	0	+	—	2,5	+	+
	30.	23.00	7	70	—	+	+	+	tr		
	31.	14.00	14,5	75	—	+	—	+			
		21.45	14,5	65	—	+	+	—	tr		
11.	02.	17.15	2,5	28	—	+	+	+	2	+	+
	03.	1.00	4,5	30	+	+	+	—	tr		
		22.15	6,5	35	—	+	+	—	3,5	+	+
	04.	21.30							3,5	+	+
	05.	10.00	2,5	8	—	—	+	—			
	08.	21.15							4,5	—	+
	09.	22.30	3,5	16	—	+	+	+	tr		
	10.	21.15	7	55	—	+	+	+	2,5	+	+
	11.	18.45	14,5	100	+	+	+	+	tr		
	12.	1.30	10	55	+	—	+	+	tr		
	13.	18.00	20	70	+	+	+	+			
	14.	19.15	11,5	45	—	+	+	+	tr		

		Bays			*Pi-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
11.	17.	5.15	5,5	18	—	—	+	—			
	18.	2.00	2,5	18	+	+	+	—	tr		
		21.00	2,5	22	—	+	+	+	2	+	+
	20.	21.00	6,5	35	+	+	+	—	2,5	+	+
	21.	23.30	3,5	14	+	+	+	—	tr		
	26.	20.30	10	65	—	+	+	+	3,5	+	+
	27.	21.45	5,5	18	—	+	+	+	4,5	+	+
	29.	17.45	6,5	22	—	+	+	+	2	+	+
	30.	17.00	5,5	45	—	—	—	+			
		23.30	4,5	14	+	+	+	—	4,5	+	+
12.	02.	22.15							3,5	+	+
	05.	19.30	4,5	12	—	+	+	+	2	—	+
	08.	3.30	12,5	25	—	—	—	+			
	09.	19.00	7	35	—	—	—	+	tr		
		22.30	9	50	—	+	+	+	3,5	—	+
	10.	16.45	14,5	65	—	+	+	+	tr		
		23.00	7	30	+	+	—	+			
	12.	2.00	7	30	+	+	+	—	2,5	+	+
		18.15	6,5	45	—	+	+	+	tr		
	16.	17.00	5,5	18	+	—	—	—			
	18.	3.30	10	55	—	+	+	+	tr		(ssc?)
		23.00	9	60	+	+	+	—	tr		
	20.	17.45	3,5	12	—	—	—	+	2,5	+	+
	21.	16.30	4,5	18	—	+	—	+	tr		
		22.30							2,5	+	+
	22.	22.15	5,5	15	—	—	—	+			
	23.	23.30	2,5	18	—	+	+	+	2	—	—
	24.	18.30							2,5	+	+
		20.45							6.5	—	+
	25.	20.30	6,5	30	+	+	+	+	tr		
	26.	22.30							2,5	+	+
	27.	19.45	8	50	—	+	+	+	tr		
	29.	3.15	14,5	80	—	—	—	+			
	30.	20.30	12,5	55	—	+	+	+	tr		
		23.30	10	25	+	+	+	—			
	31.	1.00	12	35	—	—	—	+			

Further Pi-traces (earth currents)

Month	Day	CET	Month	Day	CET	Month	Day	CET
01.	02.	10.45	03.	29.	23.45	04.	29.	21.30
		11.45		30.	22.45	05.	01.	2.00
	04.	22.15	04.	01.	1.30			20.45
	15.	19.15		03.	19.00			21.00
		19.45		05.	1.00			21.45
	16.	0.15			1.30		02.	2.45
	17.	3.00			18.45			3.15
	18.	21.45			23.30		05.	2.15
		23.00		07.	19.30		09.	4.45
	27.	23.30		09.	21.15		10.	22.15
	28.	23.45			21.30		13.	0.00
	30.	23.15		10.	1.00		14.	20.30
02.	05.	21.45			1.30		15.	20.45
	12.	20.30		11.	1.00		16.	21.00
	15.	23.30			1.30			22.15
	16.	19.45		13.	23.00			23.00
	18.	0.00			23.30		17.	22.15
	21.	18.45		14.	18.30		18.	14.00
	22.	21.45			21.45		19.	9.30
		22.15		15.	23.00		21.	3.00
		22.30		16.	21.00			19.30
		23.45			21.30			20.15
	23.	0.15			22.00			22.15
		1.45			23.30		22.	3.00
	26.	23.15			23.45		24.	19.00
	27.	21.15		17.	0.00		25.	1.30
	28.	18.15			20.00		26.	2.45
03.	01.	21.00		17.	22.15			3.15
		22.45		19.	9.30			17.30
	12.	19.15			16.45			18.45
		20.15		20.	12.00			19.30
		21.45			12.45		27.	19.30
	13.	21.15			14.15			20.00
	14.	22.45		21.	12.30		30.	20.15
		23.45		24.	19.00		31.	17.30
	15.	0.15		26.	22.30	06.	01.	19.15
		0.45		27.	0.00			20.00
	20.	4.30			4.00			21.00
		20.45			20.30		02.	1.15
	23.	22.30			23.00			18.15
		23.00			23.15			19.15
	27.	23.45		28.	17.45		03.	0.30
	29.	2.30			18.45			1.45

Month	Day	CET
06.	04.	22.30
		22.45
	05.	0.00
	06.	22.30
	08.	21.45
		22.00
	10.	3.45
	11.	0.15
	14.	23.00
	15.	0.45
		20.30
		21.15
		21.30
06.	17.	20.30
	18.	20.45
	19.	22.45
	20.	21.15
	21.	18.45
	23.	3.15
	26.	20.30
	27.	20.00
	28.	1.30
	29.	2.15
		2.45
		20.45
		21.00
07.	01.	22.15
	02.	22.30
	06.	23.15
	08.	0.15
		4.30
	09.	20.45
		23.15
		23.30
	11.	0.30
	12.	0.00
		1.00
		1.45
		22.00
	13.	17.30
	15.	23.00
	16.	20.15
	18.	20.00

Month	Day	CET
07.	18.	23.30
	19.	0.45
		1.15
	20.	17.30
		17.45
		18.15
		19.00
	20.	22.30
	22.	22.30
	24.	0.00
		15.00
		16.15
	26.	14.00
	27.	11.30
	28.	1.15
		19.30
	29.	21.15
08.	01.	21.30
	02.	3.00
		23.15
	03.	21.45
		23.00
	04.	14.30
	05.	1.30
		2.30
		13.45
	06.	20.45
		21.45
	08.	1.45
		18.15
		23.45
	09.	0.15
	10.	3.00
		22.30
	13.	12.00
	16.	4.15
		23.00
	17.	18.00
		18.15
	18.	12.45
	20.	0.30
		19.15
		19.30

Month	Day	CET
08.	20.	23.00
	22.	2.00
		2.45
		7.30
		20.45
	23.	2.15
	24.	23.30
		23.45
	25.	19.30
	26.	22.30
		23.00
	28.	0.45
	29.	22.15
	30.	1.30
		2.15
		19.30
09.	01.	0.00
		0.45
		4.45
		19.30
	02.	0.15
		0.45
	04.	3.15
		22.30
	05.	1.00
	06.	0.30
		3.15
		3.30
		3.45
	07.	1.30
		2.30
		3.15
	08.	1.45
		12.30
	11.	19.45
		21.00
	11.	21.30
		22.00
	12.	0.45
		4.00
		18.00
		21.30
		21.45

Month	Day	CET
09.	12.	22.00
	13.	3.45
		22.00
		23.00
		23.30
	15.	21.15
		23.15
		23.30
	16.	19.15
		20.30
	17.	3.30
		20.00
		21.30
	18.	0.15
		19.45
	19.	16.15
		19.45
		22.45
	20.	21.30
		22.00
	21.	0.30
	22.	20.15
		22.45
	23.	0.15
		20.00
	24.	18.00
	27.	23.30
	28.	22.30
	29.	5.30
10.	02.	2.30
		16.15
		21.00
		21.30
		22.15
	03.	1.00
		1.30
		1.45
	04.	0.15
		22.00
	07.	0.15
		0.45
	09.	19.00
		22.30

Month	Day	CET
10.	09.	23.45
	10.	0.00
		1.00
		2.30
		10.30
		20.30
		21.30
	11.	1.00
		2.00
		20.30
	12.	2.00
		3.30
		19.30
		20.30
	13.	23.30
	14.	0.30
		17.30
	15.	19.45
		20.30
	16.	21.00
	16.	23.00
	17.	20.00
		23.45
	18.	0.00
		2.30
	19.	15.30
	22.	0.00
		0.45
	23.	22.30
		23.00
		23.30
	25.	1.45
		22.15
	27.	2.30
		21.00
	28.	0.00
		20.30
	29.	17.00
	30.	0.30
		20.45
		21.00
		22.30
	31.	18.45

Month	Day	CET
11.	01.	20.45
		21.30
	03.	0.00
		21.30
	04.	21.15
		21.45
		22.30
	07.	23.30
	08.	0.15
		15.15
	09.	1.00
	10.	0.00
		23.45
	11.	0.00
	11.	23.45
	12.	0.15
		23.00
		23.45
	13.	21.45
		22.15
		22.30
		22.45
	15.	1.30
	16.	22.00
	17.	22.30
	18.	20.15
	21.	0.00
	22.	0.45
	23.	20.15
		22.00
		22.45
	25.	0.30
	26.	0.45
		20.15
	30.	22.00
12.	01.	0.30
		21.30
		21.45
		23.15
	03.	0.30
	05.	0.45
	07.	3.30
		21.00

Month	Day	CET
12.	07.	23.15
	10.	21.00
	13.	17.45
	14.	0.45
		1.15
		4.45
		22.15

Month	Day	CET
12.	19.	23.45
	20.	21.15
	21.	15.15
		17.15
	22.	0.15
		4.45
	24.	20.15

Month	Day	CET
12.	25.	4.00
		21.00
	26.	23.15
		23.30
	28.	23.15
	31.	19.30

SI-s

Month	Day	CET (GMT+1 h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy
01.	03.	5.15	4,5	8	—	—	+	—
	07	14.15	2,5	5	—	—	—	+
	25.	6.30	3,5	5	+	—	—	—
02.	07	10.30	5,5	5	+	+	+	—(?)
	17.	13.00	9	14	—	—	—	+
		23.45	9	22	—	—	—	+
	19.	5.00	8	12	+	+	+	—
	29.	2.30	8	17	—	—	—	+
03.	21.	13.00	4,5	8	+	+	+	—
	25.	21.45	4,5	10	—	—	—	+
	26.	0.30	5,5	13	—	—	—	+
	28.	13.15	7	13	+	+	+	—
04.	17.	6.45	6,5	12	+	+	+	—
	27.	18.45	2,5	7	—	—	—	+
		22.45	3,5	9	—	—	—	+
05.	24.	6.45	5,5	8	—	—	—	+
	25.	0.30	4,5	9	—	—	—	+
		14.15	6,5	7	+	+	+	—
	28.	4.30	3,5	8	—	—	—	+(?)
06.	02.	4.15	2,5	8	—	—	—	+
	08.	3.15	5,5	9	+	—	+	—
		11.00	3,5	8	+	+	+	—
	11.	3.30	9	18	+	+	+	—
	20.	13.30	2	5	—	—	—	+
	27.	2.45	4,5	8	+	+	+	+
	29.	10.30	2,5	6	—	—	—	+
		17.30	9	14	—	—	—	+
07.	06.	6.00	4,5	6	—	—	—	+
	07.	10.15	4,5	12	+	+	+	—
	08.	16.00	9	18	—	—	—	+
	11.	5.45	3,5	7	—	—	—	+
	31.	14.00	4,5	12	+	+	+	—
08.	02.	10.15	6,5	14	+	+	+	—
	05.	18.00	8	17	—	—	—	+
	09.	11.45	4,5	12	—	—	—	+
	19.	6.15	4,5	7	—	—	—	+
		11.30	4,5	8	+	+	+	—

Month	Day	CET (GMT+1 h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy
08.	20.	11.15	4,5	10	+	+	+	—
	27.	5.30	2,5	8	+	+	+	—
09.	14.	17.30	10	19	—	—	—	+
	18.	4.45	4,5	10	—	—	—	+
	25.	1.00	6,5	18	—	—	—	+(?)
	29.	10.15	7	22	—	—	—	+
10.	07.	13.15	3,5	12	+	+	+	—
	11.	19.45	3,5	7	—	—	—	+
	12.	15.00	6,5	14	+	+	+	—
	25.	9.45	3,5	8	—	—	—	+
11.	12.	7.45	5,5	14	—	—	—	+
		11.30	7	18	+	+	+	—
	14.	3.45	2,5	7	+	+	+	—
12.	07.	21.30	4,5	12	—	—	—	+
	08.	13.15	9	12	—	+	—	+

		„Needles"			
Month	Day	CET (GMT+1 h)	Amplitude in E(mV/km)	Ex	Ey
01.	04.	7.00	2	—	—
	21.	15.30	2,5	—	+
	27.	7.15	2	+	+
02.	26.	14.45	3,5	—	—
03.	19.	11.30	8	+	+
	24.	14.45	2	+	+
	25.	10.15	2	—	—
	29.	7.30	5,5	—	—
	30.	2.45	2,5	—	—
04.	01.	1.45(?)		(—25	+35 nT)
05.	02.	11.30	3,5	+	+
06.	23.	15.30	4,5	—	—
07.	04.	8.15	2,5	—	+
		9.15	3,5	—	+
	15.	2.30	4,5	+	0
	28.	10.15	2,5	+	+
	29.	17.30	4,5	—	—
08.	09.	18.30	2,5	—	—
	12.	11.15	2	+	+
10.	01.	12.15	3,5	+	+
11.	14.	23.15	5,5	+	+
	20.	9.45	3,5	+	+
12.	01.	23.15	2	—	+
	11.	13.15	2,5	—	—
	12.	7.30	2,5	—	—

Pc 1-events

Month	Day	Duration	Quality
1.	16.	1424 — 1522	C
		2254 — 2330	C
	17.	003 — 032	B
		346 — 412	B
	19.	2231 — 2332	B
	20.	142 — 414	B
		608 — 740	B
	21.	200 — 236	C
		336 — 800	B
		1758 — 1810	C
	22.	2030 — 2106	C
	26.	406 — 621	A
	27.	2232 — 2310	B
	28.	721 — 755	B
	30.	2356 — 2358	C
2.	1.	1653 — 1815	C
		1902 — 1924	A
	3.	2219 — 2238	C
	4.	825 — 906	B
		2113 — 2140	C
	5.	505 — 602	C
	6.	2018 — 2114	B
	7.	549 — 636	B
		1945 — 2014	C
	8.	2114 — 2149	C
	9.	1910 — 2057	B
	11.	305 — 329	A
		2114 — 2145	B
	12.	104 — 127	C
		259 — 341	A
		654 — 750	B
		1736 — 1818	C
		1856 — 1926	C
	13.	137 — 218	C
		1922 — 1938	C
		1945 — 2003	C
	15.	035 — 051	B
		129 — 230	B
		256 — 455	A
	16.	049 — 152	C
	17.	1842 — 2051	C
	18.	428 — 658	B
	24.	2236 — 2311	C
2.	25.	532 — 845	B
		2038 — 2230	C
	25.	2338 —26. 231	C
	26.	2230 —27. 040	C
3.	2.	1600 — 1750	C
		1812 — 1910	B
	3.	1551 — 1814	B
	4.	1818 — 2320	B
	5.	355 — 536	B
		725 — 835	A
		2120 — 2357	B
	6.	136 — 246	A
		1647 — 1810	C
	8.	2045 — 2200	B
	9.	024 — 255	B
	10.	1937 — 2000	C
		2030 — 2116	B
		2145 — 2215	C
		2232 — 2315	B
	11.	1834 — 1936	C
	12.	601 — 638	C
	13.	223 — 437	C
	15.	010 — 300	B
		433 — 526	B
		2132 — 2340	B
	16.	520 — 535	C
		632 — 745	C
		1926 — 2033	C
	18.	2121 — 2210	B
	21.	200 — 400	B
	23.	200 — 400	C
	31.	005 — 040	C
		106 — 145	C
		233 — 430	B
		2230 — 2315	C
4.	1.	240 — 410	C
		550 — 605	C
	2.	1617 — 2100	C
		2135 — 2150	C
		2240 — 2328	C
	3.	307 — 438	C
	4.	1700 — 2100	C
		2230 — 2300	C

Month	Day	Duration		Quality
4.	5.	030 —	115	C
		300 —	400	C
	9.	321 —	435	C
		545 —	630	C
		2220 —	2233	C
		2300 —	2310	C
	10.	013 —	025	C
		225 —	340	B
	11.	525 —	616	B
	12.	240 —	300	C
	27.	2050 —	2300	B
	28.	411 —	451	C
		518 —	540	C
5.	4.	2250 —	2320	B
		2347 —5.	129	B
	5.	300 —	310	B
		320 —	346	C
	6.	225 —	345	B
	7.	554 —	636	B
		745 —	850	B
	12.	010 —	100	C
		216 —	300	B
6.	12.	1915 —	2015	C
		2107 —	2245	B
	12.	2300 —13.	125	B
	13.	135 —	205	C
7.	3.	125 —	153	B
	9.	125 —	200	B
8.	1.	245 —	400	B
	30.	244 —	400	B
9.	11.	436 —	509	B
	17.	2351 —18.	042	C
	22.	000 —	225	C
	23.	054 —	159	B
		211 —	230	C
	25.	204 —	230	B
		1800 —	1821	C
	26.	1831 —	1838	C
		1905 —	1913	C
	27.	303 —	508	B
		532 —	608	B
10.	1.	2250 —	2320	C

Month	Day	Duration		Quality
10.	9.	2235 —	2301	C
		2333 —	2351	C
	15.	1553 —	1614	
		1704 —	1728	
		1910 —	2010	
		2037 —	2054	
	20.	403 —	526	B
		543 —	628	C
	21.	152 —	405	B
	22.	344 —	419	C
		422 —	512	C
		536 —	636	C
	24.	256 —	323	C
		335 —	410	C
		500 —	535	B
		2119 —	2148	C
11.	3.	055 —	145	B
		343 —	405	C
	5.	109 —	210	C
		328 —	342	C
	8.	2156 —	2355	C
	9.	507 —	552	C
	10.	2022 —	2148	C
	15.	2353 —16.	037	C
	16.	2220 —17.	050	B
	18.	318 —	341	C
		2300 —19.	036	C
	19.	043 —	244	B
		454 —	552	C
	20.	354 —	416	C
		447 —	832	B
	25.	120 —	204	C
	26.	2105 —	2154	C
	29.	911 —	227	C
12.	12.	526 —	628	B
	14.	207 —	230	B
		2237 —	2247	C
		2317 —	2341	C
	15.	125 —	303	B
		313 —	337	B
		409 —	532	B
	17.	734 —	813	B

Month	Day	Duration			Quality
12.	21.	121	—	153	B
	22.	229	—	325	C
		400	—	434	
	25.	023	—	038	C
		2128	—	2135	C
	30.	542	—	647	B
		2058	—	2130	C

V.

Average amplitudes in 12 pulsation bands
(monthly averages for 3 hour intervals in μ V/km)

January

LT	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	2	1	14	5	12	14	65	135	89	68	82	130
3— 6	2	0	10	65	75	73	76	88	49	19	131	188
6— 9	1	0	17	188	123	145	160	77	34	13	121	99
9—12	0	0	12	195	279	219	137	72	42	28	164	158
12—15	0	0	1	236	424	228	203	63	75	36	212	56
15—18	2	0	2	49	166	195	161	163	95	57	114	54
18—21	2	3	3	32	48	56	115	138	152	98	103	108
21—24	3	2	5	12	13	15	32	159	211	108	107	183
Average	1	1	8	96	139	117	118	112	107	54	129	123

February

0— 3	0	3	6	17	28	22	61	259	151	36	58	213
3— 6	0	2	25	54	113	103	99	91	34	7	125	203
6— 9	1	0	48	172	243	277	167	101	24	22	163	219
9—12	0	0	19	446	421	269	167	52	48	11	165	197
12—15	5	0	14	336	587	473	249	140	34	25	120	173
15—18	0	0	21	123	436	396	311	159	36	49	67	128
18—21	0	0	9	30	106	121	111	145	147	109	130	134
21—24	0	5	6	9	10	34	75	316	326	68	100	135
Average	0	1	18	147	241	210	155	159	101	41	116	175

March

LT	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	2	4	13	16	54	16	54	189	115	46	143	304
3— 6	2	7	23	61	72	83	87	90	68	31	292	239
6— 9	4	15	41	333	267	270	198	111	68	25	176	136
9—12	3	10	14	484	389	268	320	172	42		209	244
12—15	1	1	7	531	396	256	136	178	59	26	166	192
15—18	1	5	1	162	408	304	230	145	97	47	90	173
18—21	3	0	2	22	116	111	158	174	212	38	96	261
21—24	1	2	4	18	8	26	206	343	247	56	174	254
Average	2	5	13	203	214	167	173	175	114	34	168	225

April

0— 3	1	3	3	15	29	23	97	192	127	61	45	194
2— 6	5	11	27	85	63	56	88	94	88	23	114	340
6— 9	3	16	48	308	255	131	128	65	38	42	95	7
9—12	0	4	29	334	407	161	114	126	48	67	82	184
12—15	0	0	11	234	338	199	128	128	116	64	150	154
15—18	3	1	0	63	184	93	146	180	137	39	120	48
18—21	2	1	0	6	53	49	78	211	236	84	113	180
21—24	4	4	15	21	18	21	44	225	337	115	113	170
Average	2	5	16	132	167	91	103	153	142	62	104	160

May

LT	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	3	3	7	7	8	18	69	126	179	73	120	213
3— 6	1	1	19	59	75	55	68	133	125	51	66	117
6— 9	0	8	31	190	105	108	74	114	65	58	71	72
9—12	0	2	11	238	154	139	132	91	50	28	129	144
12—15	0	2	32	187	181	98	73	40	67	73	191	247
15—18	2	0	1	34	69	80	77	144	143	79	160	322
18—21	3	2	1	11	5	38	49	102	188	150	234	261
21—23	3	3	4	27	4	7	14	68	216	201	150	349
Average	2	3	13	95	76	68	70	102	136	89	140	216

June

0— 3	4	1	6	19	7	23	43	102	233	71	75	173
3— 6	3	3	7	34	25	54	144	148	69	25	78	109
6— 9	0	2	19	154	162	120	138	142	89	19	85	41
9—12	0	5	31	185	140	127	165	86	73	55	256	133
12—15	0	3	13	75	205	105	79	190	95	36	247	121
15—18	2	0	4	19	80	78	95	168	113	80	228	209
18—21	0	1	3	3	17	29	45	87	232	179	249	378
21—23	6	2	1	6	18	18	20	50	173	254	227	270
Average	2	2	10	61	81	69	90	121	135	91	181	180

July

LT	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	2	0	11	20	12	19	44	72	208	129	125	180
3— 6	2	1	6	19	46	50	138	145	85	41	60	70
6— 9	0	0	30	108	86	147	176	158	78	58	117	41
9—12	0	0	4	82	139	178	148	221	107	44	111	189
12—15	2	1	4	53	136	157	157	150	77	123	219	237
15—18	0	0	1	24	62	94	127	170	136	167	185	133
18—21	4	2	0	6	12	19	32	62	238	161	225	203
21—24	3	6	20	13	14	15	21	81	173	220	185	156
Average	2	1	9	40	63	84	105	132	141	118	154	152

August

0— 3	2	0	3	12	26	30	52	112	155	105	131	77
3— 6	3	0	6	41	70	85	64	202	94	37	48	34
6— 9	2	0	4	160	152	183	145	114	64	29	78	11
9—12	1	2	1	150	142	135	170	181	121	20	111	166
12—15	0	0	4	121	114	58	134	210	142	77	162	83
15—18	0	0	0	27	66	87	119	155	188	127	133	163
18—21	0	0	1	2	3	20	42	214	221	187	178	143
21—24	3	2	6	17	4	13	15	189	207	204	125	145
Average	1	1	3	66	72	76	92	172	149	99	121	103

September

LT	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	2	6	15	18	11	25	22	95	159	58	42	81
3— 6	3	3	34	59	30	38	19	28	54	43	24	80
6— 9	3	9	24	118	199	73	10	35	19	23	36	42
9—12	0	3	10	242	153	89	65	78	10	55	100	91
12—15	8	1	13	218	138	99	83	18	23	30	129	99
15—18	4	3	3	39	95	67	104	136	10	39	89	84
18—21	5	2	7	15	73	51	43	101	94	90	39	67
21—24	4	11	12	15	8	10	28	163	89	219	98	107
Average	4	5	15	91	88	59	47	82	57	70	70	81

October

0— 3	2	10	13	35	21	19	12	60	89	130	29	8
3— 6	3	5	16	54	57	23	31	31	12	21	29	57
6— 9	1	7	30	102	211	41	27	50	9	7	8	38
9—12	0	3	21	153	168	61	35	40	13	8	78	103
12—15	3	3	16	89	95	97	58	78	40	48	72	32
15—18	3	3	10	24	52	72	85	109	48	41	15	52
18—21	3	6	10	20	21	25	37	134	59	155	23	44
21—24	6	13	22	23	15	7	38	74	147	223	80	3
Average	3	6	17	62	80	43	40	72	52	80	42	42

November

LT	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	1	3	2	7	13	18	24	65	80	67	30	6
3— 6	1	0	2	11	63	54	55	44	15	10	9	106
6— 9	0	2	11	24	92	88	59	36	9		25	114
9—12	0	2	4	34	89	100	66	57	14	11	66	114
12—15	0	0	6	24	84	103	114	63	31	21	106	46
15—18	1	0	1	12	65	50	75	81	38	49	65	40
18—21	0	1	4	6	30	25	34	77	82	57	110	15
21—24	0	5	8	5	37	12	10	108	205	195	173	3
Average	0	2	5	15	59	57	55	66	59	51	73	55

December

0— 3	0	3	1	5	15	19	20	39	62	37	91	24
3— 6	0	0	1	10	34	46	70	36	19	19	54	96
6— 9	0	0	2	14	45	69	82	69	19	12	102	76
9—12	0	1	2	29	111	100	68	61	22	32	195	160
12—15	0	0	2	23	158	149	125	6	12	21	171	78
15—18	0	0	2	13	94	124	55	93	29	31	85	52
18—21	0	1	3	12	27	35	52	55	32	43	94	104
21—24	0	2	6	17	23	15	13	28	52	112	165	77
Average	0	1	2	15	64	70	60	48	31	39	120	83

Yearly average

Periods

LT	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	2	3	8	15	19	21	46	119	138	74	81	132
3— 6	2	3	15	46	60	60	78	94	59	27	84	134
6— 9	1	5	25	155	161	137	113	89	43	26	89	74
9—12	0	3	13	210	211	152	131	103	50	30	138	156
12—15	1	1	10	173	233	166	127	104	64	49	163	127
15—18	2	1	4	48	146	137	131	142	91	68	113	122
18—21	2	1	4	14	42	48	66	124	157	114	133	157
21—24	3	5	9	15	14	16	42	148	210	166	141	154
Average	2	3	11	84	110	92	92	116	102	69	118	132

VI.

Micropulsation indices for the year 1976.

Activity indices for the micropulsations (P1 to P12) Year 1976.

	January	February	Marc	April
1.	211112454331	111555231124	111354431233	553111145545
2.	111122222441	113455541114	135543441232	111422331435
3.	111543333323	113455511414	313553221134	115532114324
4.	112454334231	121355543111	123433452114	145524441144
5.	112325443432	111455331112	113532544122	534543321142
6.	113533332322	111345554111	122532132124	125555312222
7.	111224521443	112443454243	111553111134	132543451112
8.	111122334452	113543245134	315543322153	111434552112
9.	111111342454	121355451114	122554421132	112553341121
10.	552422235243	115543322125	125544331153	112552321113
11.	235511121355	113544441121	211455341123	225522231111
12.	113222222152	122542232212	115534443114	214323211111
13.	112155423123	112555411212	112323552114	
14.	311355324222	112555511121	112233542242	111433323222
15.	111122541212	111355424312	111432233344	111245544311
16.	113432342234	111132233312	113554211135	111552444411
17.	111355422153	113441234245	112543233143	112331334534
18.	112355542333	115542113223	112555441223	111211355521
19.	111334454221	111453234222	111345441122	111111124553
20.	114543344322	111454531113	111122442424	111211231445
21.	314554222115	111254242221	411112554243	111111311345
22.	115542232134	112435543113	111111555344	143532443353
23.	111354333135	121244353221	111111111312	112554133115
24.	111544331114	111122353343	111111111225	111354214144
25.	111124555212	311311151152	554222354442	121444344321
26.	111354542411	113422234252	125554331143	111354453211
27.	111113224523	113532232323	133543421324	411354345313
28.	111111111453	113222454333		132354134112
29.	111323312354	155511121144	124555223214	111354244322
30.	111111134355		112434335423	111234355112
31.	214521154445		112333454112	

	May	June	July	August
1.	121323554212	111344435142	115522334235	511434553231
2.	155531342223	115344424314	211324454533	114532354313
3.	455311112345	311222255442	312444545322	112332245244
4.	123334454142	212532232235	215453443323	111532155111
5.	235534232135	113543344242	114323453442	111423454342
6.	113311131345	112334544423	212445454211	111123553411
7.	212323443225	211555342212	111223245443	121311355443
8.	115543233115	212333442442	234312444254	111521553531
9.	112433532432	111112355431	114123255514	11253222454
10.	113422222355	112211244352	112323223443	111333145325
11.	212432141445	552212355134	111111353552	111111255221
12.	111534115311	112354311125	213422443552	111122235554
13.	112553211111	311122543353	121112254452	511242222452
14.	111111342241	311112552441	111311211454	111111212355
15.	111111455441	111111134551	132211135554	111211221454
16.	212333331533	112245532444	415543333444	111222354453
17.	111111354552	115521112454	113111555521	311155532432
18.	111111111255	114543334314	111444224422	111342355542
19.	211111241455	111311354442	213345534411	111322244554
20.	325534214215	111111244551	111212553341	111433335553
21.	112522244325	111344423332	111211352541	213233344445
22.	215533322314	111111331454	112222411354	111344255511
23.	113412234145	111211134353	111111244355	215333354454
24.	112422344214	221122224555	111222332453	211555233213
25.	221523124415	215553323224	113433314542	124455442112
26.	111134434523	122134555211	111111455541	121422452112
27.	112122354523	125323325224	222223444533	222345433242
28.	111521233444	111112555311	125544314323	114523352221
29.	511453254214	111112333545	132543545234	112324554121
30.	344534124124	245512214254	114355444131	112222455311
31.	121455323212		113344552133	113321353452

The micropulsation indices for the last four months will be published in the next issue.

Pc 1 indices

	January	February	March	April	May	June
1.	0	4	1	4	1	0
2	0	1	5	5	1	1
3.	0	2	4	3	1	1
4.	0	3	5	5	3	1
5.	0	3	5	4	4	1
6.	0	3	4	1	3	1
7.	0	3	1	1	4	1
8.	0	2	3	1	1	1
9.	0	4	4	4	1	1
10.	0	1	4	3	1	1
11.	0	3	3	3	1	1
12.	0	5	2	2	3	5
13.	0	3	4	1	1	4
14.	0	1	1	1	1	1
15.	0	5	5	1	1	1
16.	3	3	4	1	1	1
17.	3	4	1	1	1	1
18.	1	4	3	1	1	1
19.	3	1	1	1	1	1
20.	5	1	1	0	1	1
21.	5	1	4	0	1	1
22.	2	1	1	0	1	1
23.	1	1	4	0	1	1
24.	1	2	0	0	1	1
25.	1	5	0	0	1	1
26.	4	5	0	0	1	1
27.	2	2	0	4	1	1
28.	2	1	0	3	1	1
29.	1	1	1	1	1	1
30.	2		1	1	1	1
31.	1		5		0	

	July	August	September	October	November	December
1.	1	3	1	2	1	1
2.	1	1	1	1	1	1
3.	2	1	1	1	3	1
4.	1	1	1	1	1	1
5.	1	1	1	1	3	1
6.	1	1	1	1	1	1
7.	1	1	1	1	1	1
8.	1	1	1	1	4	1
9.	2	1	1	3	3	1
10.	1	1	1	1	3	1
11.	1	1	2	1	1	1
12.	1	1	1	1	1	3
13.	1	1	1	1	1	1
14.	1	1	1	1	1	3
15.	1	1	1	4	2	5
16.	1	1	1	1	4	1
17.	1	1	2	1	3	2
18.	1	1	3	1	3	1
19.	1	1	1	1	5	1
20.	1	1	1	4	5	1
21.	1	1	1	4	1	2
22.	1	1	4	4	1	3
23.	1	1	3	1	1	1
24.	1	1	1	4	1	1
25.	1	1	3	1	2	2
26.	1	1	2	1	3	1
27.	1	1	5	1	1	1
28.	1	1	1	1	1	1
29.	1	1	1	1	2	1
30.	1	3	1	1	1	3
31.	1	1		1		1

II. GEOMAGNETISM

Processing of the geomagnetic records of the Observatory near Nagycenk is similar to that of the earth currents. (For details see Á, Wallner: „Über die erdmagnetischen Arbeiten im Observatorium bei Nagycenk und über deren Auswertung" Acta Techn. Hung. T. 47. 431–444; and „Observatoriumsberichte des Geophysikalischen Forschungslaboratoriums der Ungarischen Akademie der Wissenschaften vom Jahre 1966" Sopron, 1967). The following four kinds of tables are published:

I. The activity indices M of the general activity for each three-hour interval. The M-scale is linear, corresponding to 7 nT.

Values in brackets mean extrapolated ones (in the case of incomplete observations).

II. The list of disturbed (D) and quiet (Q) days selected by the follwoing rule: A day is taken as disturbed on the basis of all magnetic and earth current activity indices, if the greatest of the simultaneous character figures decreases only in one of the three hour intervals to 3, in the other intervals they are greater. A day is taken as quiet, if the greatest of all activity indices has not reached 3. Five activity indices (two of the earth currents and three of the magnetism) are always taken into account.

III. Differences of hourly means from monthly averages in nT for all three magnetic elements. The monthly averages are given as absolute values (therefore as minutes of arc in D).

IV. Results of harmonical analysis from the monthly, yearly, Q and D day means of the daily variations.

Times are given throughout in this part in CET. Recording of magnetic variations in the observatory is made with two sets of LaCour-variometers.

The data of the tables were collected by Á. WALLNER.

I.

Three-hour magnetic activity indices (M)

	January M	Sum	February M	Sum	March M	Sum
1.	10001001	3	33136497	36	83224418	32
2.	01000102	4	33124792	31	45337789	46
3.	12229458	33	31112255	20	62226199	36
4.	21212342	17	31011238	19	43112231	17
5.	31211122	13	20111326	16	01142229	21
6.	12111775	25	52201012	13	25231899	39
7.	72111321	18	11093795	35	67344968	47
8.	10020113	8	93336986	47	79857388	55
9.	00110000	2	64327879	46	83348999	53
10.	10236999	39	76134297	39	97555799	56
11.	99211797	45	30122338	22	93316275	36
12.	91121345	26	32222559	30	74453347	37
13.	33121112	14	93233757	39	43011224	17
14.	21223332	18	24113613	21	44121211	16
15.	10001432	11	00123142	13	11214739	28
16.	22011257	20	00001131	6	23323592	29
17.	23311175	23	00014166	18	62352255	30
18.	33321013	16	97233426	36	82141156	28
19.	01112313	12	22235978	38	31232132	17
20.	21101145	15	42344275	31	02012300	8
21.	22254987	39	24155154	27	00022110	6
22.	25118599	40	53022222	18	00001100	2
23.	35228974	40	30111100	7	00021041	8
24.	32253458	32	00000000	0	20000000	2
25.	32013631	19	01111010	5	00011112	6
26.	01011200	5	01033116	15	39999999	66
27.	00210101	5	21115999	37	74324498	41
28.	20111112	9	52122589	34	62201351	20
29.	11312001	9	69511257	36	33321100	13
30.	00101337	15			00015446	20
31.	41229959	41			30013140	12
Monthly means:	$M_H = 2.31$ $M_D = 1.74$ $M_Z = 0.29$		$M_H = 2.88$ $M_D = 2.26$ $M_Z = 0.29$		$M_H = 3.15$ $M_D = 2.48$ $M_Z = 0.35$	

	April M	Sum	May M	Sum	June M	Sum
1.	99999633	57	20111323	13	00021113	8
2.	32111149	22	22139499	39	21230121	12
3.	52631899	43	99999964	64	20001265	16
4.	99768925	55	11344683	30	38234222	26
5.	44342394	33	42122114	17	12228532	25
6.	64444471	34	22021111	10	30121321	13
7.	53438348	38	52021221	15	23332424	23
8.	62121116	20	64112412	21	31122112	13
9.	25112254	22	20000100	3	01110101	5
10.	23323101	15	01001420	8	00121202	8
11.	22113428	25	01123144	16	69643654	43
12.	11312101	10	41111111	11	10042321	13
13.	31112154	18	20111301	9	11101001	5
14.	11124265	22	01101100	4	01101000	3
15.	10001000	2	00021204	9	00011113	7
16.	11112003	9	41112100	10	11121001	7
17.	21222120	12	00011000	2	20185633	28
18.	00101000	2	00011101	4	44954423	35
19.	00111210	6	01001377	19	11011100	5
20.	00111000	3	34331293	28	10021201	7
21.	00122013	9	33022433	20	00011010	3
22.	12542232	21	02314345	22	00110201	5
23.	33102111	12	00067542	24	11101001	5
24.	13323462	24	11121002	8	00111994	25
25.	22310123	14	33222441	21	92324645	35
26.	10011110	5	01121321	11	11111116	13
27.	22211113	13	02121101	8	11024211	12
28.	32212224	18	23322553	25	10111122	9
29.	02013699	30	33121469	29	10121311	10
30.	42121220	14	83135343	29	01299254	32
31.			11112224	14		
Monthly means:	$M_H = 2.30$ $M_D = 1.73$ $M_Z = 0.24$		$M_H = 2.04$ $M_D = 1.23$ $M_Z = 0.25$		$M_H = 1.78$ $M_D = 0.85$ $M_Z = 0.30$	

	July M	Sum	August M	Sum	September M	Sum
1.	26335321	25	01220248	19	21011442	15
2.	42213221	17	23211101	11	33635223	27
3.	01216624	22	11111721	15	21121255	19
4.	11224535	23	21001111	7	14122505	20
5.	11031231	12	10012330	10	62121111	15
6.	33131221	16	02111111	8	21111111	9
7.	16233312	21	01112204	11	22122215	17
8.	41215636	28	10111120	7	21122140	13
9.	53212222	19	21434111	17	12112110	9
10.	01122111	9	33111112	13	10110124	10
11.	10112132	11	11111010	6	11122100	8
12.	11211102	9	00011121	6	22111121	11
13.	01111001	5	01102110	6	10010012	5
14.	11112201	9	01032201	9	21123312	15
15.	01021998	30	00011110	4	23411012	14
16.	53622444	30	01033422	15	11111221	10
17.	21111111	9	31100211	9	11122025	14
18.	01111021	7	11011111	7	35955511	34
19.	21011220	9	10111211	8	10053597	30
20.	11101001	5	11010111	6	98869996	64
21.	11011200	6	10132123	13	52233937	34
22.	10122100	7	52011111	12	52434643	31
23.	11032110	9	01274959	37	20045203	16
24.	00032323	13	92259642	39	21012120	9
25.	33222223	19	23373693	36	82151694	36
26.	20011011	6	33625454	32	92022032	20
27.	12232144	19	21152372	23	22122222	15
28.	42333772	31	11122661	20	11011114	10
29.	23233328	26	01132012	10	01153233	18
30.	32419424	29	10001113	7	01012227	15
31.	20212211	11	10112122	10		
Monthly means:	$M_H = 1.85$ $M_D = 0.95$ $M_Z = 0.29$		$M_H = 1.63$ $M_D = 0.97$ $M_Z = 0.10$		$M_H = 2.12$ $M_D = 1.50$ $M_Z = 0.12$	

	October M	Sum	November M	Sum	December M	Sum
1.	10143215	17	32031002	11	11002115	11
2.	35233602	24	11101321	10	10000001	2
3.	12022300	10	40111216	16	00010010	2
4.	00023011	7	00211002	6	01252822	22
5.	45251120	20	00011100	3	21101111	8
6.	01221104	11	00011000	2	00000001	1
7.	21012160	13	00211100	5	03012124	13
8.	00021113	8	00010217	11	44229101	23
9.	01001021	5	22111013	11	10242647	26
10.	11001223	10	20221459	25	11222948	29
11.	51011215	16	43224793	34	83230212	21
12.	12011259	21	93223566	36	43223481	27
13.	22122102	12	43648995	48	10012111	7
14.	00021025	10	41115793	31	01010000	2
15.	22349966	41	21013433	17	00010000	1
16.	86574235	40	00012110	5	00002331	9
17.	32769354	39	31111011	9	11011175	17
18.	44225335	28	20000013	6	49810119	33
19.	00024821	17	12101213	11	21111110	8
20.	31001023	10	11111024	11	10001211	6
21.	10022131	10	00000002	2	00000210	3
22.	10001000	2	01001011	4	01112132	11
23.	01221110	8	00000000	0	11210001	6
24.	00111115	10	00001000	1	10112111	8
25.	21010000	4	01230432	15	11103132	12
26.	00111002	5	11101238	17	11110001	5
27.	30010134	12	13100003	8	10010161	10
28.	20020111	7	00000010	1	01010002	4
29.	00011000	2	00010220	5	99787922	53
30.	00126459	27	24111542	20	11122379	26
31.	92779949	56			64110061	19
Monthly means:	$M_H = 1.83$ $M_D = 1.33$ $M_Z = 0.20$		$M_H = 1.33$ $M_D = 1.10$ $M_Z = 0.09$		$M_H = 1.54$ $M_D = 1.07$ $M_Z = 0.11$	

II.

Disturbed and quiet days for 1976

	Disturbed days	Quiet days
January	23	1, 2, 9, 26, 27, 28
February	—	24, 25
March	2, 7, 8, 9, 10, 26, 27	22, 24, 25,
April	—	15, 18, 19, 20, 26
May	3	6, 9, 14, 17, 18, 27
June	11	9, 10, 13, 14, 16, 19, 20, 21, 22, 23, 28
July	—	10, 12, 13, 14, 17, 18, 21, 22, 26
August	—	4, 6, 8, 11, 12, 13, 15, 18, 31
September	20	6, 9, 11, 12, 16, 24
October	31	9, 13, 23, 25, 29
November	13	5, 6, 7, 16, 21, 22, 23, 24, 28
December	—	2, 3, 5, 6, 13, 14, 15, 19, 20, 21, 23, 26, 28

III.

Hourly averages of magnetic elements
(H, D, Z)

	0	1	2	3	4	5	6	7	8	9	10	11	12
													January
H	−2,1	−0,2	−0,9	+0.7	+4,1	+7,3	+9,3	+11,7	+10,3	+5,8	+3,1	+1,6	+1,9
D	+9,1	+4,0	+1,3	−4.0	−3,6	−4.8	−5,0	−2,5	+0,8	+0,3	−2,6	−6,4	−11,9
Z	−0,1	−1,0	−1,1	−1,0	−1,2	−1,0	−1,4	−1,6	−2,3	−3,1	−2,6	−3,4	−3,9
													February
H	+3,0	+2,3	+2,1	+0,6	+2,2	+4,0	+7,1	+10,3	+9,1	+6,2	+2,4	−3,2	−7,2
D	+7,3	+4,2	+1,9	−1,4	−3,1	−2,8	−2,1	−0,3	+4,3	+4,7	+0,7	−7,4	−12,1
Z	−0,6	−0,9	−1,7	−1,1	−1,1	−1.1	−1,6	−2,1	−2,0	−2,7	−4,5	−5,1	−3,7
													March
H	+12,4	+6,8	+7,5	+4,3	+3,4	+2,4	+4,1	+1,8	−1,0	−6,3	−8,3	−8,6	−6,5
D	+4,5	+7,6	+5,6	+5,0	+2,6	+0,4	+3,2	+8,1	+10,8	+9,4	+0,7	−10,6	−20,0
Z	−1,3	−2,1	−2,8	−3,1	−2,9	−2,6	−1,4	−0,1	−2,1	−4,0	−6,0	−7,7	−6,9
													April
H	+7,2	+7,9	+8,2	+8,5	+9,6	+7,3	+4,4	−2,8	−11,9	−19,4	−20,0	−14,1	−8,9
D	+7,1	+5,2	+5,3	+5.0	+7,2	+10.5	+12,3	+23,6	+23,4	+15,9	−0,2	−17,3	−29,5
Z	+1,5	+0,9	+0,1	−0,2	−0,5	+0,5	+1,1	+0,4	−2,3	−6,6	−10,2	−12,2	−11,3

13	14	15	16	17	18	19	20	21	22	23	Monthly Average
+0,1	−1,6	−3,0	−7,7	−10,5	−8,8	−6,1	−4,4	−5,2	−2,0	−3,4	21068 nT
−12,2	−8,0	−5,1	−2,7	−0,9	+1,0	+1,3	+10,2	+14,8	+15,4	+11,5	+0°22,2'
−1,6	+1,0	+1,4	+2,4	+3,3	+3,9	+4,2	+3,7	+3,0	+1,7	+0,7	42402 nT
−7,8	−6,8	−9,1	−8,4	−8,4	−6,7	−6,1	−0,8	+1,6	+9,0	+4,6	21079 nT
−14,6	−13,0	−8,8	−3,5	−3,0	+1,1	+6,3	+9,1	+7,1	+12,1	+13,3	+0°22,5'
−2,0	+0,5	+3,3	+3,9	+4,1	+4,4	+4,8	+4.5	+3,2	+1,2	+0,3	42399 nT
−6,0	−8,9	−10,2	−9,8	−8,5	−4,6	+0,3	+4,6	+7,8	+10,5	+12,8	21074 nT
−23,8	−19,7	−13,4	−3,0	−0,7	+2,2	+7,6	+4,3	+5,4	+5,6	+8,2	+0°23,3'
−3,8	+0,7	+6,1	+8,2	+8,1	+6,5	+6,3	+4,9	+3,5	+2,1	+0,4	42401 nT
−4,6	−3,9	−5,0	−3,2	−2,7	+0,1	+3,7	+9,3	+8,0	+11,1	+11,2	21069 nT
−33,2	−28,8	−18,1	−11,5	−5,1	−0,9	+2,8	+3.9	+4,7	+10,1	+7,6	+0°23,4'
−6,6	−1,4	+3,6	+6,1	+7,0	+6,9	+6,3	+5,9	+5,0	+3,6	+2,4	42410 nT

	0	1	2	3	4	5	6	7	8	9	10	11	12
													May
H	+9,4	+6,8	+6,0	+7,1	+4,5	+0,9	−3,8	−7,7	−13,4	−17,0	−12,1	−6,1	−2,2
D	+6,3	+7,9	+8,8	+8,4	+14,9	+22,6	+26,0	+27,0	+21,4	+7,3	−9,5	−23,2	−31,4
Z	+1,5	+0,9	+0,1	+0,5	+1,5	+2,9	+2,7	+1,5	−2,9	−6,6	−10,4	−12,1	−10,5
													June
H	+7,5	+7,2	+5,6	+7,0	+8,5	+8,0	+2,8	−5,7	−14,8	−19,1	−17,1	−12,8	−8,8
D	+5,6	+6,7	+6,1	+7,9	+13,8	+21,3	+27,2	+27,7	+23,0	+14,1	−0,3	−14,7	−25,6
Z	+1,8	+1,6	+1,7	+2,0	+3,0	+2,7	+0,8	+1,1	−0,5	−4,1	−8,8	−11,6	−11,2
													July
H	+8,5	+7,6	+6,2	+5,2	+5,8	+4,7	−0,6	−10,1	−17,3	−20,0	−17,5	−11,8	−6,5
D	+3,3	+5,2	+5,0	+7,6	+11,3	+18,9	+23,6	+24,3	+22,4	+14,4	+1,0	−14,1	−24,4
Z	+1,9	+1,6	+1,3	+2,0	+3,8	+4,8	+3,9	+3,5	+0,8	−3,8	−8,7	−11,4	−13,3
													August
H	+8,3	+7,1	+6,5	+4,7	+5,4	+5,9	+2,0	−7,0	−16,1	−19,8	−17,0	−11,1	−5,9
D	+3,8	+4,7	+4,5	+4,8	+7,9	+15,9	+21,8	+25,9	+20,9	+12,1	−3,9	−20,1	−30,4
Z	+1,4	+1,2	+1,0	+1,1	+2,1	+2,6	+2,5	+2,5	+1,2	−1,5	−3,4	−8,8	−9,0

13	14	15	16	17	18	19	20	21	22	23	Monthly Average
—2,6	—3,4	—3,2	—3,2	—1,2	+1,3	+8,0	+7,9	+8,4	+7,3	+8,3	21082 nT
—34,2	—29,6	—23,0	—12,7	—6,8	—2,6	+1,5	+3,3	+6,0	+6,1	+5,5	+0°23,3'
—8,0	—3,4	+1,3	+4,5	+6,3	+6,4	+5,9	+5,5	+4,8	+4,3	+3,3	42403 nT
—6,4	—4,0	—3,2	—0,1	+1,9	+3,8	+4,8	+8,4	+10,2	+9,1	+7,2	21088 nT
—30,0	—30,4	—23,8	—15,1	—9,1	—6,6	—5,2	—2,4	+1,1	+4,0	+4,7	+0°23,3'
—9,8	—5,1	+0,9	+4,3	+5,5	+6,0	+5,3	+4,4	+3,8	+3,3	+2,9	42402 nT
—2,1	—1,1	—0,6	+0,8	+0,3	+2,8	+7,0	+10,3	+10,2	+9,6	+8,6	21095 nT
—28,8	—26,8	—21,1	—13,4	—7,2	—3,8	—3,2	—1,0	+2,0	+2,2	+2,6	+0°23,2'
—11,6	—7,0	—0,8	+3,0	+5,6	+5,3	+4,7	+4,4	+3,8	+3,4	+2,8	42412 nT
—0,9	—1,9	—2,1	—2,7	—0,5	+1,5	+5,7	+9,8	+7,9	+9,8	+10,4	21092 nT
—31,0	—24,9	—16,0	—8,1	—1,0	+0,6	+1,6	+2,4	+1,7	+3,3	+3,5	+0°23,5'
—6,6	—2,9	—0,3	+2,9	+3,1	+2,8	+2,6	+2,2	+1,8	+1,0	+0,5	42403 nT

	0	1	2	3	4	5	6	7	8	9	10	11	12
													September
H	+7,4	+9,5	+6,5	+4,5	+6,1	+6,2	+4,0	—4,1	—12,5	—15,2	—13,2	**—8,8**	—3,8
D	+3,8	+4,0	+6,9	+8,3	+7,3	+9,2	+14,0	+16,6	+14,5	+7,2	—6,8	**—21,9**	**—30,0**
Z	+0,8	—0,2	—0,2	—0,1	+0,4	+0,5	+0,6	+1,2	+1,7	+0,2	—3,4	**—6,7**	—6,1
													October
H	+5,1	+5,3	+5,0	+6,4	+7,6	+8,4	+8,9	+5,2	—2,3	—6,9	—12,9	—12,6	**—6,3**
D	+6,0	+2,1	+0,1	—0,7	—0,7	—0,2	+1,0	+7,6	+17,0	+15,5	+2,8	—10,1	—19,8
Z	—0,2	—0,4	—0,5	—0,9	—1,0	—0,7	+0,7	+2,4	+1,7	—0,7	—5,3	**—6,4**	—5,3
													November
H	+1,1	+2,8	+1,6	+2,5	+4,8	+6 7	+8,8	+8,4	+3,0	—0,1	—4,4	**—5,2**	—5,5
D	+4,1	+2,1	+0,1	—1,1	—3,0	—2,8	—1,8	+3,0	+8,2	+6,4	—0,7	—9,3	—15,6
Z	+0,1	—0,5	—0,8	—0,8	—0,9	—0,9	—0,8	—0,3	—1,4	—3,2	—4,6	—4,1	**—2,9**
													December
H	—0,1	—0,9	+0,9	+2,2	+3,0	+4,3	+5,7	+6,9	+6,0	+2,3	—0,5	+1,5	+1,8
D	+7,2	+4,4	+0,7	+0,5	—0,7	—1,9	—2,2	—1,0	—0,1	—1,8	—4,5	—9,0	—9,9
Z	—0,1	—0,2	—0,5	—0,9	—1,2	—1,1	—1,2	—1,5	—2,5	—2,7	—2,5	—2,5	—2,0

13	14	15	16	17	18	19	20	21	22	23	Monthly Average
−1,7	−0,8	−4,2	−4,8	−2,8	−0,3	+1,5	+5,2	+6,8	+7,2	+7,3	21089 nT
−28,4	−20,4	−11,9	−2,1	+0,9	+0,6	+3,4	+5,5	+7,3	+6,1	+5,9	+0°24,2'
−3,9	−1,3	+1,4	+2,4	+2,0	+2,0	+1,9	+2,8	+1,7	+1,5	+0,8	42409 nT
−4,8	−7,2	−5,9	−6,2	−3,7	−2,3	−1,4	+1,9	+4,3	+6,1	+8,3	21091 nT
−22,6	−16,8	−8,8	−3,7	−3,5	+0,4	+2,4	+5,3	+9,4	+9,2	+8,1	+0°24,8'
−3,5	+0,1	+2,3	+2,4	+2,4	+2,8	+2,9	+2,7	+2,1	+1,6	+0,8	42421 nT
−5,1	−5,7	−5,5	−6,7	−4,6	−1,6	+1,5	+0,9	+0,7	+0,6	+1,0	21090 nT
−14,7	−9,5	−6,4	−4,5	−0,5	+1,2	+4,1	+6,8	+13,4	+12,3	+8,2	+0°25,5'
−0,1	+2,3	+2,8	+2,7	+2,9	+2,6	+2,2	+1,9	+1,6	+1,3	+0,9	42446 nT
−2,5	−4,9	−6,4	−7,9	−6,3	−2,9	−2,6	−1,5	+0,3	+0,9	+0,7	21090 nT
−9,3	−5,0	−3,4	−0,7	+1,2	+1,1	+2,4	+6,0	+7,0	+9,6	+9,4	+0°26,0'
+0,4	+1,5	+1,7	+2,3	+2,5	+2,4	+2,2	+2,0	+1,7	+1,3	+0,9	42451 nT

	0	1	2	3	4	5	6	7	8	9	10	11	12
													1976 Yearly
H	+5,6	+5,2	+4,6	+4,4	+5,4	+5.5	+4,4	+0,6	—5,0	—9,1	—9,8	—7,6	—4,8
D	+5,7	+4,8	+3,9	+3,3	+4,5	+7,2	+9,8	+13,3	+13,9	+8,8	—1,9	—13,7	—21,7
Z	+0,6	+0,1	—0,3	—0,2	+0,2	+0.5	+0,5	+0,6	—0,9	—3,2	—5,9	—7,7	—7,2
													Quiet
H	+1,0	+1,1	+1,0	+1,5	+2,4	+3,7	+2,7	—0,7	—6,6	—9,8	—10,0	—6,4	—2,0
D	+4,3	+3,8	+3,3	+3,9	+5,5	+9,4	+13,0	+16 2	+16,2	+10 3	—0,8	—12,6	—20,5
Z	+1,9	+1,7	+1,6	+1,7	+2,3	+2,5	+1,7	+1,6	—0,1	—3,1	—5,0	—7,2	—7,1
													Disturbed
H	+30,2	+26,3	+25,1	+31,0	+19,8	+15,1	+13,0	+2,6	+0,4	—14,2	—17,9	—18,5	—19,4
D	+9,1	+8,5	+7,2	+4,3	—0.7	—8,3	—5,7	—1,2	+4,5	+3,1	—8,0	—15,3	—21,5
Z	—6,9	—7,5	—10,6	—11,3	—10,1	—10,2	—8,4	—6,6	—5,2	—6,6	—7,9	—7,8	—4,2

13	14	15	16	17	18	19	20	21	22	23	Monthly Average
means											
—3,7	—4.2	—4.9	—5,0	—3,9	—1,5	+1.4	+4,3	+5,1	+6,6	+6,4	21084 nT
—23,6	—19,4	—13,3	—6,7	—3,0	—0,5	+2,1	+4,4	+6,7	+8,0	+7,4	+0°23,8'
—4,8	—1,2	+2,0	+3,8	+4,4	+4,3	+4,1	+3,7	+3,0	+2,2	+1,4	42413 nT
days											
—0,1	—0,8	—1,6	—1,3	—0,4	+1,3	+3,6	+5,1	+5,8	+5,4	+5,1	21090 nT
—21,4	—17,8	—12,1	—6,7	—2,9	—1,0	—0,1	+1,1	+2,2	+3,2	+3,5	+0°23,7'
—5,6	—2,7	+0,3	+1,9	+2,2	+2,1	+2,1	+2,2	+1,9	+1,6	+1,5	42420 nT
days											
—20,9	—30,2	—25,2	—23,4	—19,4	—12,7	—7,5	—1,5	+10,1	+17,5	+20,1	21062 nT
—24,9	—14,2	—12,5	+5,8	+2,9	+9,8	+13,9	+13,1	+11,0	+8,3	+10,8	+0°24,6'
+0,1	+7,3	+15,2	+17,6	+17,3	+13,6	+12.5	+8,9	+6,6	+3,4	+0,8	42412 nT

IV.

Results of harmonical analysis of the daily variations

	A_1	φ_1	A_2	φ_2	A_3	φ_3	A_4	φ_4	A_5	φ_5	A_6	φ_6
					Horizontal Intensity							
January	7,7	348	1,6	199	2,0	179	1,2	7	0,2	57	0,4	144
February	7,0	32	4,2	186	2,4	133	0,8	271	0,5	240	0,8	275
March	9,7	78	2,5	147	2,1	186	1,2	49	0,5	225	0,4	146
April	11,8	99	3,5	339	4,6	215	1,3	68	0,6	273	0,5	156
May	9,5	114	2,5	33	3,3	256	1,3	80	0,3	350	1,1	145
June	11,2	108	4,1	330	3,6	226	1,4	119	0,8	348	0,4	6
July	11,5	118	3,8	359	4,1	229	1,1	90	0,9	25	0,3	43
August	10,7	112	3,3	1	4,5	224	1,9	84	0,6	19	0,2	247
September	8,5	99	2,9	12	3,7	223	1,9	76	0,8	6	0,7	319
October	8,4	71	2,2	296	3,2	188	1,3	67	1,0	235	0,3	40
November	5,3	43	2,9	250	1,2	188	1,4	40	0,2	66	0,2	216
December	4,6	12	2,1	193	1,1	228	0,8	60	0,9	243	0,5	158
Year	7,0	86	0,9	325	2,6	212	1,1	67	0,3	308	0,1	162
Q	4,9	114	1,4	313	3,2	216	1,1	74	0,5	273	0,1	220
D	2,8	64	2,1	76	0,8	211	1,1	86	1,7	253	1,0	116
					Declination							
January	8,3	112	5,4	175	2,2	107	2,1	248	0,4	351	0,5	358
February	7,7	95	6,2	188	2,8	66	1,3	242	0,9	117	0.5	168
March	9,7	69	7,7	222	5,5	49	1,8	264	0,2	153	0,6	166
April	15,6	50	13,1	226	6,6	76	2,2	272	0,8	176	0,5	153
May	20,0	48	13,9	244	4,6	102	0,7	349	0,5	322	0,6	22
June	19,7	35	12,3	234	4,7	93	0,7	161	0,5	321	0,6	355
July	17,2	35	12,1	235	4,3	83	0,6	237	0,2	0	0,7	340
August	15,0	45	13,5	243	6,4	88	0,8	305	0,3	38	0,5	299
September	13,1	63	11,0	247	5,4	87	2,7	275	0,4	276	0,1	262
October	7,4	71	9,7	212	5,9	66	2,8	260	1,7	154	0,3	310
November	6,8	95	6,8	210	3,0	90	2,9	271	0,6	186	0,6	314
December	6,7	107	2,3	197	2,1	107	1,0	247	0,5	152	0,2	72
Year	11,2	58	8,9	226	4.3	83	1,5	264	0,2	145	0,2	6
Q	10.8	44	8.7	235	4,5	83	1,1	281	0,3	124	0,2	0
D	12,2	107	6,5	226	6,0	45	2,6	289	0,5	173	1,3	121

	A_1	φ_1	A_2	φ_2	A_3	φ_3	A_4	φ_4	A_5	φ_5	A_6	φ_6
					Vertical Intensity							
January	3,0	157	1,4	273	0,2	157	0,3	293	0,3	93	0,2	259
February	3,5	160	2,0	282	0,4	133	0,5	298	0,3	90	0,2	80
March	5,1	166	3,5	280	1,9	111	0,6	279	0,3	345	0,2	164
April	6,1	133	4,5	285	2,1	122	0,6	319	0,1	359	0,1	262
May	6,0	121	4,7	281	1,8	134	0,1	125	0,1	305	0,0	225
June	5,7	112	4,5	280	1,7	96	0,7	253	0,2	177	0,3	103
July	5,8	99	5,4	272	1,9	103	0,5	219	0,1	352	0,2	99
August	3,1	97	3,4	276	1,6	96	0,6	279	0,3	79	0,3	356
September	2,1	117	2,2	268	1,4	109	0,9	291	0,4	129	0,3	57
October	2,2	135	2,4	269	1,6	121	1,0	326	0,2	203	0,2	155
November	2,4	159	1,4	308	1,1	149	0,5	343	0,2	190	0,1	209
December	2,3	163	0,8	313	0,4	162	0,1	340	0,0	134	0,2	286
Year	3,6	132	3,0	279	1,3	117	0,4	293	0,1	110	0,1	108
Q	3,4	99	2,6	286	1,1	113	0,3	283	0,1	46	0,2	103
D	12,7	190	4,2	280	2,5	117	1,1	253	0,2	269	0,3	139

III. ATMOSPHERIC ELECTRICITY

Atmospheric electricity data have been published since 1962. Table I contains the hourly average values of the potential gradient expressed in V/m. Hourly averages have been taken only from hours having a recording period of 30 minutes or more. If values were available only for part of an hour the average is entered in square brackets [ ]. These data have been used in the determination of the monthly and daily means. Values uncertain for some reason are entered in round brackets ( ) and have not been used in calculating the monthly and daily means. Daily means of each day with 24 hours of recording are entered. However, loss of a maximum of one hour's data out of twelve (for example, on account of instrument maintenance or calibration) has not precluded entering this mean value. In hours marked by S the value of the potential gradient exceeded permanently or several times the measuring limits of the equipment making the determination of an hourly average impossible. The directions of the deviations are marked by signs.

Table II gives the hourly means of the quantities of positive and negative charges transported by point-discharge for each month. The values are expressed in 10^{-6} Asec/hour.

All data are presented in universal time GMT).

Tables were compiled by F. MÄRCZ. Both the equipments and the methods of measurement of potential gradient and point-discharge have been described in the paper by P. BENCZE and F. MÄRCZ: „Atmosphärisch-elektrische und ionosphärische Messungen im Observatorium bei Nagycenk", Observatoriumsberichte des Geophysikalischen Forschungslaboratoriums der Ungarischen Akademie der Wissenschaften vom Jahre 1966, Sopron, 1967.

I.

Hourly means of the potential gradient

January

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	—20	0	120	60	+S	+S	—60	+S	10	—10	80	100	130
2.	50	70	60	—70	—90	30	20	30	40	100	90	100	120
3.	—50	—30	—10	10	—20	—50	—10	20	40	50	90	120	±S
4.	100	90	100	100	130	140	120	140	+S	±S	±S	120	140
5.	70	50	50	50	60	100	110	—	—	140	100	100	40
6.	60	60	40	50	50	50	+S	+S	±S	±S	±S	+S	+S
7.	+S	—S	100	100	80	150	120	120	110	30	(130)	+S	+S
8.	50	30	30	0	—60	80	+S	+S	50	190	100	70	+S
9.	—	—	—	—	—	—	—	+S	+S	+S	30	—40	—
10.	—	—	—	—	—	—	100	160	200	200	200	+S	+S
11.	80	70	90	0	—30	—S	—S	—20	50	—60	50	90	70
12.	±S	±S	±S	±S	—S	30	—	—	—	—	—	—	—
13.	—	—	—	—	—	—	—	—	—	—	90	(80)	(70)
14.	0	120	160	60	—S	±S	±S	—120	—80	40	—30	80	230
15.	±S	±S	70	90	+S	90	90	90	80	60	±S	±S	100
16.	160	140	150	150	80	100	—	—	140	140	150	160	170
17.	90	80	40	—30	±S	±S	—S	±S	+S	±S	+S	+S	110
18.	80	80	80	70	90	110	120	150	140	130	120	230	+S
19.	+S	±S	+S	40	70	100	130	+S	—	—	—	—	—
20.	130	110	80	70	70	80	70	100	120	180	+S	+S	170
21.	50	40	50	50	+S	+S	70	100	150	120	110	140	140
22.	60	60	50	50	50	50	40	50	±S	±S	±S	80	70
23.	120	120	80	70	100	70	70	60	70	90	90	130	160
24.	70	100	70	80	100	90	80	100	120	130	90	100	110
25.	120	110	130	140	120	110	80	110	130	150	140	110	120
26.	80	70	50	40	50	50	80	90	—	80	120	110	70
27.	+S	110	90	80	80	100	120	—	140	180	170	130	140
28.	—	—	—	—	—	—	—	—	50	60	60	70	(70)
29.	—140	—120	—140	—70	—190	80	40	—140	150	110	180	200	150
30.	80	80	80	80	70	70	70	70	30	70	70	70	80
31.	40	50	50	20	—20	—20	—40	—	—40	—80	0	—40	—10
Means	58	65	67	50	38	73	68	62	81	91	95	101	116
Number of days	22	23	25	26	21	22	21	18	21	23	22	22	20

13	14	15	16	17	18	19	20	21	22	23	Daily means
100	110	220	160	180	160	160	160	30	30	30	—
120	+S	±S	170	210	+S	140	100	+S	60	30	—
±S	±S	±S	±S	±S	+S	+S	±S	80	90	100	—
+S	—S	100	90	100	±S	±S	±S	±S	90	70	—
60	90	40	50	130	150	120	120	90	60	60	—
+S	+S	+S	+S	+S	±S	±S	±S	(±S)	(±S)	±S	—
210	200	140	150	40	0	20	10	40	30	40	—
+S	+S	+S	+S	+S	—	—	—	—	—	—	—
—	—	—	—	150	+S	+S	160	200	100	80	—
+S	+S	+S	+S	+S	130	170	+S	130	110	100	—
—S	40	50	±S	±S	—S	±S	±S	+S	±S	±S	—
—	—	—	—	—	—	—	—	—	—	—	—
80	140	130	130	160	+S	+S	±S	±S	60	80	—
210	120	120	170	+S	+S	+S	+S	160	130	110	—
160	160	180	200	220	240	240	+S	220	230	200	—
+S	210	200	140	170	150	120	90	110	100	90	—
140	+S	±S	130	130	±S	±S	+S	120	130	100	—
+S	+S	+S	+S	+S	+S	±S	±S	±S	±S	±S	—
—	+S	+S	120	80	120	120	140	150	150	140	—
190	190	170	230	220	230	210	150	80	80	100	—
150	140	150	160	130	130	90	100	90	70	60	—
60	100	100	50	—S	±S	±S	—50	—50	—50	30	—
150	140	130	110	120	—S	±S	±S	+S	100	90	—
130	150	140	140	140	130	130	120	140	130	150	114
150	180	140	140	150	140	130	130	110	90	90	126
90	120	110	90	100	150	140	80	140	150	150	96
150	130	130	150	140	160	150	100	70	100	—	—
(80)	(100)	60	110	140	120	120	70	40	30	—140	—
140	130	130	120	110	120	110	110	110	90	70	56
70	70	70	80	100	80	70	80	60	50	40	70
10	50	100	+S	+S	+S	50	10	20	20	30	—
125	130	124	131	139	138	127	93	97	86	76	
19	19	21	22	21	16	18	18	22	26	25	

February

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	10	20	10	20	20	10	20	|10|	|10|	20	—10	—10	—10
2.	—110	—140	—50	—50	—60	—10	10	20	—	—10	—60	—100	—60
3.	30	—10	20	—20	—90	40	60	|40|	20	40	10	0	30
4.	—50	—50	—10	—30	—20	—10	—10	|—30|	—20	30	30	110	180
5.	80	70	90	110	40	20	—30	|10|	30	40	50	100	100
6.	—110	—150	—90	—40	—100	—20	40	|—10|	—10	40	50	40	10
7.	80	100	120	110	100	100	130	110	110	|160|	180	230	160
8.	100	90	90	90	80	0	—30	—20	|20|	30	60	80	110
9.	70	30	20	20	50	60	50	50	—	140	130	140	180
10.	70	60	60	20	30	70	80	|50|	30	60	90	90	120
11.	30	70	70	—80	—20	—40	±S	—S|	+S	±S	+S	+S	±S
12.	(70)	±S	±S	±S	±S	±S	+S	60	—S	±S	110	70	70
13.	20	—40	—130	—150	—200	—200	|—160	—210	—210	—170	—150	—130	—220
14.	—140	—160	—130	—90	30	—100	—50	|30|	|—150|	—50	30	60	90
15.	70	70	—S	—S	—S	20	10	10	|+S|	±S	+S	90	110
16.	70	70	—30	—260	—100	—110	—	—	—	—	—	—	—
17.	0	—20	—80	—70	20	40	—10	|0|	—	—10	40	90	110
18.	—10	30	—10	20	30	—50	—90	|—70|	40	50	40	40	40
19.	—10	0	10	20	10	—10	10	|—20|	|0|	|90|	90	110	80
20.	60	40	50	40	40	20	—10	—10	—	—30	—20	60	70
21.	0	30	30	80	100	50	110	|20|	—10	—30	10	100	160
22.	90	110	120	130	160	150	80	|—10|	—10	90	120	120	180
23.	160	140	140	120	160	120	150	|140|	—	100	120	160	220
24.	100	100	120	90	90	130	140	|130|	80	130	140	+S	+S
25.	—10	0	90	150	120	70	90	|30|	—20	—30	0	40	90
26.	100	100	100	130	140	170	170	+S	190	|200|	150	120	130
27.	80	70	30	60	90	100	100	|100|	150	(150)	130	160	120
28.	90	90	80	100	80	130	110	|190|	200	170	160	170	120
29.	100	100	100	70	60	50	100	+S	|+S|	+S	190	170	180
Means	35	29	30	22	32	29	41	25	24	46	65	81	91
Number of days	28	28	27	27	27	28	26	25	19	23	26	26	26

13	14	15	16	17	18	19	20	21	22	23	Daily means
—50	—50	—10	—50	—50	0	—20	10	0	—50	—90	—10
—100	—30	—30	10	—70	0	—20	30	60	60	80	—27
40	50	30	—70	—100	—140	—130	—60	10	—50	—70	—13
140	90	140	140	110	160	100	120	150	100	90	61
140	170	70	90	50	40	40	30	—20	—80	—150	45
120	170	110	180	160	100	120	90	30	20	30	33
190	190	210	200	140	60	90	90	80	100	90	130
150	170	170	150	140	120	130	120	130	110	80	90
210	190	200	+S	150	150	50	20	0	—10	80	90
130	—10	80	30	20	20	50	20	110	60	—20	55
—S	—20	—40	0	100	150	150	150	150	130	70	—
80	130	130	130	130	100	120	+S	0	—80	—20	—
—200	—190	—240	—270	—220	—210	—190	—180	—220	—130	—150	—173
100	+S	—80	60	40	60	110	100	110	90	90	2
140	80	+S	150	160	190	200	160	—80	—190	—80	—
40	10	—10	30	100	80	80	130	70	50	60	—
170	160	100	60	10	30	90	0	—10	10	—40	30
60	60	40	50	0	20	50	80	100	40	0	23
—30	50	80	10	—20	0	—10	40	20	0	—10	21
130	120	90	50	30	90	60	50	70	80	30	48
200	210	180	140	120	150	150	140	190	160	140	101
220	200	+S	190	190	210	+S	+S	130	170	210	—
230	250	190	+S	+S	+S	+S	210	170	120	120	—
+S	+S	+S	170	140	170	170	90	40	90	0	—
30	30	40	—20	70	100	90	40	100	110	100	55
130	170	180	+S	+S	150	150	220	+S	170	110	—
+S	160	220	220	200	150	90	120	80	60	70	116
130	120	110	70	70	110	120	110	120	100	100	119
210	+S	170	110	70	70	90	110	110	120	180	—
100	95	82	70	64	76	71	76	61	47	38	
26	26	26	26	27	28	27	27	28	29	29	

March

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	140	90	60	50	70	80	120	180	—	+S	130	130	110
2.	110	90	100	70	90	90	120	|150|	180	150	150	130	120
3.	100	80	70	80	100	130	|160|	|150|	180	200	200	170	200
4.	150	150	150	150	150	180	190	|210|	|160|	180	200	200	220
5.	140	150	130	150	140	130	160	|150|	|160|	120	140	90	100
6.	50	60	50	60	80	90	90	|110|	130	90	90	80	50
7.	50	+S	60	70	50	60	50	80	+S	|+S|	130	120	140
8.	50	50	40	50	40	30	—20	40	—	130	80	40	80
9.	50	50	70	70	80	90	120	|80|	|150|	80	40	20	10
10.	50	50	50	50	50	40	50	100	130	140	120	110	110
11.	80	80	70	70	70	70	80	|110|	150|	160	160	160	160
12.	70	70	70	60	70	80	100	|120|	|200|	180	150	130	160
13.	120	110	100	100	0	—10	80	130	|110	110	130	130	140
14.	—60	—10	40	—20	—50	—30	—50	—50	|—50|	—10	80	110	120
15.	40	50	40	30	40	50	20	40	—	30	20	30	50
16.	30	0	30	50	50	70	50	0|	40|	60	50	100	100
17.	70	80	90	90	110	70	110	|100	|80	100	120	110	120
18.	40	40	30	30	50	50	110	|110|	|80|	80	70	60	100
19.	70	±S	70	60	50	40	100	|90|	+S	—30	120	150	100
20.	20	90	100	90	100	90	90	110|	130	150	120	160	160
21.	±S	—10	50	100	80	70	80	|80|	|80|	90	80	100	100
22.	70	70	90	50	60	70	80	100	—	100	90	100	100
23.	60	60	50	30	30	30	60	—	—	—	—	—	—
24.	—	—	—	—	—	—	—	—	—	—	—	—	—
25.	—	—	—	—	—	—	—	—	—	—	—	—	—
26.	20	30	60	120	50	20	—50	|—50|	0	—20	—60	60	50
27.	60	50	60	50	50	60	80	90	(60)	50	40	90	±S
28.	30	30	20	20	20	20	30	60	80	|80|	70	60	90
29.	40	40	40	40	40	50	60	100	—	90	80	90	100
30.	40	20	30	30	30	60	90	|100|	70	60	30	40	40
31.	40	30	20	30	30	30	70	|70|	+S	100	90	100	100
Means	62	59	63	63	60	62	77	91	108	95	97	103	109
Number of days	28	27	29	29	29	29	29	28	19	26	28	28	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
120	190	150	140	140	130	130	120	90	80	100	—
150	160	120	100	130	180	+S	+S	+S	170	140	—
200	+S	+S	+S	+S	+S	+S	210	200	160	150	—
200	190	180	+S	230	+S	130	150	150	110	150	—
100	80	110	110	90	90	80	80	50	50	40	110
110	80	70	80	60	70	70	70	40	50	50	74
140	130	120	130	120	110	90	90	40	50	50	—
120	90	50	—10	—50	—80	—100	—20	0	10	40	29
90	90	80	120	110	120	90	80	70	60	50	78
100	120	130	160	180	150	130	130	130	130	100	103
180	180	+S	190	210	200	180	150	140	120	100	134
160	150	150	140	120	140	130	150	110	110	130	123
160	190	150	140	90	50	40	50	90	60	—20	94
160	100	90	90	80	40	50	70	50	50	40	35
30	90	50	30	30	80	—S	—S	—S	—S	10	—
100	110	100	100	90	100	90	100	90	50	30	66
120	150	140	80	100	70	60	30	+S	100	70	94
90	140	140	110	100	120	130	120	100	10	+S	83
—S	±S	100	120	100	+S	170	130	100	80	30	—
150	150	150	130	180	190	200	140	100	10	+S	122
100	90	70	60	80	120	140	120	100	80	80	84
100	100	100	100	100	80	60	60	60	60	60	81
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	20	20	20	20	20	30	50	40	30	—
80	80	60	60	60	60	60	60	60	50	50	—
—S	70	100	110	100	90	90	70	60	60	60	—
100	120	100	100	120	140	110	100	90	80	50	72
90	70	70	70	70	70	70	100	90	60	50	69
40	30	30	30	80	60	70	50	30	30	30	47
90	70	60	50	50	30	0	20	70	40	30	53
118	115	99	94	99	95	89	91	83	70	63	
26	26	27	27	28	26	26	27	26	28	27	

April

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	30	30	70	70	100	100	120	90	80	100	100	100	80
2.	40	30	30	20	20	30	30	50	60	60	40	60	50
3.	60	50	40	30	40	60	50	50	60	70	—	—	—
4.	—	—	—	—	—	—	—	—	—	—	—	—	—
5.	—	—	—	—	—	—	—	—	—	80	100	100	100
6.	30	50	50	30	30	30	50	60	70	70	90	100	90
7.	±S	±S	—S	±S	±S	+S	(30)	+S	60	—S	+S	—S	±S
8.	40	30	20	10	—30	—10	—30	0	0	—20	—50	—60	—60
9.	—50	—50	—40	—50	—30	—50	—80	—90	—50	20	70	40	30
10.	—30	—70	—90	—40	—30	10	70	100	110	80	40	30	60
11.	70	50	50	60	50	70	80	100	100	100	100	100	100
12.	60	50	50	30	50	70	60	80	—	110	130	120	130
13.	40	30	—20	—10	—10	0	—30	—40	60	60	60	70	30
14.	60	60	50	40	60	60	20	50	80	110	90	90	90
15.	30	50	40	50	20	20	60	80	130	140	110	120	120
16.	—10	10	30	0	±S	±S	±S	±S	50	70	90	±S	±S
17.	30	40	40	30	40	50	70	70	80	70	80	110	120
18.	40	40	30	30	30	40	50	60	70	70	70	80	70
19.	20	20	30	30	30	30	20	70	80	—	—	—	—
20.	—	—	—	—	—	—	—	70	—	90	70	90	100
21.	30	30	50	40	30	60	(80)	(100)	—	—	—	—	110
22.	30	40	30	30	0	10	±S	±S	0	60	±S	±S	—S
23.	+S	±S	±S	—S	—S	50	30	80	40	70	40	30	70
24.	—30	—30	—30	±S	0	60	—S	+S	—20	—S	—S	—S	—80
25.	110	140	180	150	100	100	110	90	60	60	40	50	±S
26.	80	70	60	40	±S	±S	+S	10	—	70	40	±S	±S
27.	20	—20	—10	10	30	10	10	30	70	90	110	90	110
28.	±S	+S	40	0	20	50	90	110	110	80	100	80	80
29.	100	110	90	80	90	110	120	110	110	100	70	70	80
30.	100	80	80	70	70	70	100	120	120	110	120	110	110
Means	38	35	35	31	31	43	48	59	64	77	74	75	75
Number of days	24	24	25	24	23	24	21	23	24	25	23	21	22

13	14	15	16	17	18	19	20	21	22	23	Daily means
70	60	70	60	70	60	40	70	100	50	60	74
50	50	60	50	40	40	30	30	40	40	50	42
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
60	—S	20	40	50	50	60	100	70	50	30	—
80	70	70	50	70	80	80	70	70	60	50	63
+S	60	40	100	50	100	70	40	50	50	40	—
—80	—20	—30	30	—40	—70	—100	—60	—60	—50	—40	—28
—110	—S	—S	—10	60	80	80	70	50	30	0	—
70	80	100	140	150	140	160	110	100	110	90	62
110	100	110	100	90	80	70	80	80	70	60	83
140	150	150	140	120	50	100	70	40	20	20	84
70	70	60	60	70	70	70	70	60	60	40	41
90	90	90	70	70	60	50	50	30	30	40	64
±S	±S	+S	20	50	70	110	80	60	50	40	—
±S	±S	±S	±S	+S	50	60	70	60	40	40	—
110	110	+S	+S	+S	40	30	20	20	10	30	—
70	70	80	70	60	50	60	40	40	30	20	53
—	—	—	—	—	—	—	—	—	—	—	—
100	110	120	110	120	130	110	70	70	40	50	—
110	100	90	70	50	40	30	20	20	30	20	—
±S	±S	±S	30	±S	+S	±S	+S	±S	±S	30	—
70	80	90	+S	+S	30	60	30	+S	40	30	—
20	70	50	30	40	50	30	0	—S	—S	80	—
±S	20	50	70	80	60	70	80	70	80	70	—
±S	±S	+S	+S	—10	—60	—90	—70	—20	±S	±S	—
100	100	80	80	70	70	80	70	+S	120	70	60
70	70	70	90	70	80	100	90	90	90	100	—
100	100	110	120	110	100	120	160	130	120	100	105
130	120	120	120	100	90	60	50	40	40	40	90
68	79	76	71	67	59	59	54	53	50	45	
21	21	21	23	23	26	26	26	23	24	26	

May

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	30	30	30	40	50	60	100	100	70	80	90	90	90
2.	40	20	20	30	40	50	40	40	50	50	60	50	50
3.	10	10	20	30	—20	30	100	70	—	40	60	70	90
4.	20	30	30	30	30	40	60	80	70	70	40	+S	70
5,	30	40	20	30	30	30	150	90	100	80	40	30	30
6.	10	20	30	30	10	60	70	70	70	60	60	50	60
7.	10	20	30	30	40	70	70	110	110	110	120	120	110
8.	30	30	30	30	30	40	30	40	50	50	50	50	50
9.	20	10	20	20	20	30	30	30	30	40	40	50	50
10.	30	20	20	30	20	30	30	30	—	60	60	60	60
11.	10	10	10	10	10	20	30	40	50	60	50	50	60
12.	10	10	10	10	20	40	40	30	30	30	30	70	10
13.	10	10	10	0	+S	0	±S	0	10	+S	10	20	—50
14.	—	—	—	—	—	—	—	—	50	+S	±S	+S	—30
15.	40	10	10	10	30	40	50	30	30	10	30	50	70
16.	40	40	20	20	20	30	70	50	70	80	70	70	60
17.	—10	—10	10	0	0	10	60	50	—	50	60	60	70
18.	30	40	40	40	50	50	50	50	60	60	70	70	60
19.	0	—10	0	0	0	30	10	20	40	50	40	30	30
20.	—20	—20	—10	—10	10	30	30	40	50	50	70	+S	±S
21.	30	10	10	30	30	50	110	70	50	50	50	90	±S
22.	0	30	10	20	20	30	40	40	50	40	70	80	+S
23.	50	+S	+S	20	40	10	—30	—10	30	—10	10	30	40
24.	60	50	50	50	40	50	50	60	—	60	50	40	70
25.	20	20	10	10	20	10	10	20	40	30	40	40	50
26.	20	10	10	20	20	30	40	20	30	40	—	—	—
27.	—	—	—	—	—	—	—	40	30	0	10	10	20
28.	30	20	20	30	30	50	60	40	50	50	40	40	50
29.	10	20	30	10	20	30	50	70	80	80	70	60	50
30.	40	50	30	60	30	70	70	60	70	70	70	60	10
31.	10	—10	—S	—30	—70	—90	70	—	—	—	70	+S	30
Means	21	18	19	22	20	32	53	48	53	51	53	55	47
Number of days	29	28	27	29	28	29	28	29	26	28	29	26	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
100	120	110	70	70	70	60	40	30	40	30	67
50	30	20	10	20	20	20	0	—30	—20	0	28
70	70	60	50	30	30	30	30	30	20	10	43
+S	±S	±S	+S	—S	±S	±S	+S	—10	—10	20	—
30	40	30	30	30	20	30	30	20	10	10	41
70	80	80	70	40	30	40	30	20	30	20	46
110	110	100	100	100	90	80	60	60	50	50	78
50	60	60	50	30	30	30	30	30	20	20	38
50	50	50	40	30	30	30	30	30	30	30	33
60	60	70	60	20	20	30	20	10	10	10	36
60	70	70	60	30	40	30	10	10	10	10	34
40	10	±S	—	110	90	70	60	40	30	10	—
30	30	50	50	—10	—	—	—	—	—	—	—
—40	—40	10	30	40	40	40	40	30	20	10	—
80	80	80	80	70	50	40	30	30	30	30	42
70	70	80	80	40	30	20	10	10	10	10	45
70	70	70	70	30	30	40	20	10	10	10	34
60	60	50	40	40	40	30	20	20	10	0	43
30	20	30	30	20	10	0	0	—10	—10	—10	15
±S	—S	40	50	50	50	±S	20	20	30	40	—
0	40	40	30	10	20	20	30	50	40	10	38
40	50	50	50	40	20	—100	40	30	20	—10	29
0	110	80	80	—S	70	70	50	50	60	70	—
70	70	80	80	70	60	50	40	20	10	20	52
50	40	50	50	30	10	10	20	10	20	20	26
—	—	—	—	—	—	—	—	—	—	—	—
30	20	20	30	40	20	20	10	10	20	30	—
60	60	60	30	40	30	40	30	20	10	10	38
60	60	70	70	40	40	40	30	20	20	30	44
60	+S	+S	30	20	30	30	20	30	0	20	—
110	80	50	±S	+S	60	60	60	50	40	30	—
53	56	58	53	40	39	32	29	22	19	19	
28	27	27	27	27	28	27	28	29	29	29	

June

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	50	40	40	50	50	50	—	|60|	70	70	70	70
2.	50	50	50	60	50	50	—S	—S	—S	50	140	130	100
3.	20	—20	—S	30	—20	—50	—S	—S	—S	—60	+S	+S	±S
4.	40	40	50	50	50	50	70	|90|	100	80	60	50	40
5.	130	100	80	80	110	130	|120|	100	70	90	80	130	130
6.	80	80	90	100	110	110	|100|	130	170	160	110	120	120
7.	100	90	70	70	90	120	(90)	—	—	170	120	110	110
8.	30	30	20	10	20	10	60	|80|	150	120	140	150	150
9.	70	50	50	50	70	80	80	|120|	120	120	100	110	120
10.	60	70	50	60	70	90	100	|120|	|110|	100	110	100	110
11.	20	20	20	20	40	60	40	|70|	|70|	70	80	70	90
12.	30	20	10	10	20	—10	50	|60|	80	80	70	70	70
13.	0	—10	10	10	20	20	20	40	|50|	70	70	±S	±S
14.	40	30	10	20	20	20	50	90	—	—	—	—	—
15.	—	—	—	—	—	—	—	—	—	—	—	—	—
16.	+S	+S	+S	+S	±S	±S	+S	+S	+S	20	—S	±S	+S
17.	40	30	30	40	50	60	70	|90|	100	110	90	90	100
18.	20	20	20	30	30	40	|50|	—	—	70	60	50	50
19.	20	20	10	10	20	30	50	50	|70|	70	60	70	60
20.	30	20	20	20	30	30	|60|	70	70	70	70	70	70
21.	20	20	20	20	30	60	60	70	—	70	70	110	130
22.	50	40	40	40	50	80	80	|100|	|110|	100	110	120	+S
23.	40	20	40	±S	±S	±S	+S	110	120|	|120|	110	90	90
24.	40	30	10	10	20	30	40	50	90	|120|	120	120	90
25.	40	50	50	50	70	80	60	90	|110|	140	110	90	70
26.	30	30	20	40	50	50	50	60	|60	80	70	80	90
27.	20	10	10	20	30	30	50	40	60|	|90|	70	50	60
28.	10	—	10	10	10	30	50	60	—	|50|	50	60	70
29.	10	10	0	0	10	20	40	|40|	|50|	50	70	100	110
30.	50	40	40	30	40	50	60	|80|	|120|	140	120	120	100
Means	40	35	32	34	42	49	61	79	92	86	90	93	92
Number of days	28	27	27	27	27	27	24	23	21	28	26	25	24

13	14	15	16	17	18	19	20	21	22	23	Daily means
80	80	110	110	90	70	90	70	60	50	50	66
50	40	40	50	50	60	60	30	20	20	40	—
±S	±S	—S	—100	—50	—20	—10	30	40	40	10	—
70	80	90	80	60	70	140	120	120	130	120	77
130	160	200	140	100	90	90	100	120	130	110	113
130	110	110	120	130	110	100	120	90	150	120	115
100	100	80	70	60	40	40	30	20	20	30	—
150	140	140	130	140	120	120	140	90	70	70	95
120	120	110	110	110	110	120	+S	80	70	70	94
110	110	110	90	100	60	50	60	40	30	40	81
100	110	100	100	70	40	—S	±S	70	—10	0	—
70	90	80	70	70	50	30	20	10	0	10	44
±S	+S	+S	±S	±S	—10	—60	10	±S	+S	30	—
—	—	—	—	—	—	—	—	—	—	—	—
+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	—
—20	20	40	30	—30	—30	30	50	60	50	50	—
100	+S	±S	±S	60	40	20	—10	—30	—20	—10	—
50	60	60	60	40	30	30	20	20	20	20	—
50	10	60	50	50	40	40	30	30	30	30	40
±S	—S	30	60	70	40	20	30	30	20	20	—
140	160	130	100	70	50	40	20	30	30	60	66
—S	±S	—S	100	50	40	50	50	50	50	10	—
100	120	130	140	130	70	50	70	60	50	50	—
80	90	90	90	130	130	70	70	50	40	40	69
80	70	70	80	80	50	40	40	30	20	20	66
90	100	90	80	50	30	30	40	40	40	20	55
60	70	60	70	70	50	40	10	10	10	10	42
70	70	80	90	50	40	20	10	10	10	10	—
80	60	—S	—S	70	80	80	50	40	50	40	—
100	110	130	110	100	90	60	50	40	40	50	78
87	90	93	81	71	55	51	48	46	42	40	
24	23	23	25	27	28	27	26	27	27	28	

July

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	50	50	50	50	50	60	70	|70|	—	—	—	—	—
2.	—	—	—	—	—	—	—	—	70	80	90	80	90
3.	40	30	30	30	40	50	(70)	60	50	40	40	50	60
4.	20	10	10	20	40	40	|50|	|50|	60	70	70	90	100
5.	20	10	10	10	20	30	30	30	—	50	60	110	40
6.	10	20	30	50	60	70	100	|110|	|150|	140	120	100	90
7.	30	20	20	30	30	50	60	|70|	100	110	120	110	110
8.	20	10	10	20	20	50	50	|50|	|80|	80	80	70	70
9.	0	0	0	±S	±S	20	30	30	±S	±S	30	30	30
10.	120	110	70	30	40	60	|70|	|50|	90	—S	±S	±S	+S
11.	50	40	30	40	50	60	|60|	|70	70	80	70	70	80
12.	50	50	30	20	40	40	60	90	—	|70|	70	70	60
13.	10	10	10	10	10	20	40	40	|40|	80	90	80	90
14.	30	10	±S	50	+S	—20	+S	30	20	50	40	30	30
15.	30	20	20	20	10	30	30	40	70	|80|	90	80	90
16.	10	0	10	0	10	20	30	40	50	|50|	60	60	60
17.	—10	—10	0	0	10	20	30	|30|	50	50	60	60	70
18.	20	10	10	10	20	30	—10	0	10	30	30	40	40
19.	20	20	30	30	20	20	20	20	—	30	40	50	50
20.	40	30	30	20	30	40	50	50	60	|50|	|50|	50	60
21.	50	30	—S	±S	±S	±S	30	±S	±S	+S	+S	90	100
22.	0	±S	—S	—40	—110	—170	—100	—20	80	|30|	50	30	20
23.	40	40	40	40	50	30	30	20	0	|80|	|20|	+S	30
24.	40	40	30	30	10	10	10	|30|	30	40	50	60	70
25.	60	+S	±S	±S	+S	+S	—S	±S	+S	—30	20	—10	—10
26.	—20	10	—20	30	—50	—90	—10	30	—	10	±S	+S	±S
27.	30	20	30	20	30	30	|40|	|20|	—	—	80	90	90
28.	10	10	10	10	10	10	20	20	50	|60|	60	50	40
29.	±S	20	±S	—S	20	50	70	70	|70	70	70	70	70
30.	20	0	0	0	10	10	20	|30|	—	30	40	40	40
31.	20	20	20	20	20	30	50	|50|	|60|	50	20	20	20
Means	28	23	20	21	19	21	34	42	60	57	60	62	60
Number of days	29	28	25	26	26	28	27	28	21	26	27	27	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
—	—	—	—	—	—	—	—	—	—	—	—
70	100	100	110	110	60	40	50	80	50	40	—
60	80	70	70	50	50	40	40	30	20	30	46
110	120	120	110	50	40	30	20	10	10	10	53
10	20	0	0	10	10	20	120	70	30	10	31
80	90	90	110	100	90	70	50	50	40	30	77
120	120	120	100	50	30	30	20	20	20	10	63
80	80	70	60	40	10	10	10	0	0	0	40
+S	+S	70	±S	+S	±S	±S	+S	±S	±S	70	—
±S	20	20	50	40	10	—10	—20	10	30	40	—
70	80	70	60	50	40	40	30	30	30	40	55
50	70	80	80	40	20	20	0	0	10	0	44
±S	±S	±S	40	20	30	30	40	40	20	20	—
40	50	30	40	50	50	30	30	30	30	30	—
80	80	70	80	70	50	30	20	10	0	10	46
70	70	80	90	50	20	10	10	0	—10	—10	33
70	70	60	70	50	50	40	30	30	30	20	37
50	50	50	50	40	40	30	30	30	30	30	28
50	50	50	50	50	40	30	40	30	40	50	36
70	50	50	50	40	40	50	60	+S	+S	30	—
90	70	50	40	40	50	50	50	±S	+S	+S	—
30	60	80	80	70	70	70	80	110	90	50	—
40	30	0	10	—10	—10	0	10	20	30	20	24
60	50	50	50	50	50	70	90	100	100	70	50
—10	10	—10	0	20	20	30	30	30	30	10	—
60	70	30	30	+S	±S	±S	70	60	50	30	—
90	100	130	±S	±S	30	20	20	20	10	10	—
30	40	20	20	10	20	30	40	60	50	30	30
60	60	70	70	80	100	60	40	40	30	20	—
50	40	30	20	20	20	20	20	20	30	20	23
20	40	+S	±S	±S	±S	+S	+S	80	—20	0	—
59	63	59	57	46	38	33	37	37	29	25	
27	28	28	27	26	27	27	28	27	27	29	

August

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	10	—20	30	+S	±S	±S	—10	110	+S	30	±S	±S	+S
2.	30	30	30	30	20	50	70	70	—	90	80	70	60
3.	20	10	10	10	20	10	10	10	±S	50	70	70	80
4.	20	20	20	20	—S	±S	70	60	—S	—	30	20	±S
5.	20	—50	±S	20	—S	20	20	20	60	70	60	±S	±S
6.	20	20	20	30	30	70	60	60	70	90	70	70	70
7.	20	20	10	10	10	20	20	60	(70)	70	70	70	70
8.	20	20	20	10	+S	70	100	90	100	90	70	70	70
9.	30	20	40	20	20	30	40	30	—	70	40	30	20
10.	10	10	10	10	20	20	20	20	30	40	30	50	30
11.	10	—10	—30	20	60	30	40	50	60	60	50	50	60
12.	—20	—20	—30	—10	10	20	60	70	70	70	70	80	±S
13.	20	20	20	20	20	20	30	40	60	60	70	70	±S
14.	60	30	20	30	30	40	50	100	110	100	90	110	120
15.	40	20	20	20	20	30	50	20	50	70	80	70	40
16.	0	0	0	10	10	20	20	20	—	50	40	40	30
17.	30	20	20	30	20	30	50	70	10	—10	—20	0	30
18.	—40	—40	—40	—40	—30	—10	20	30	90	90	90	80	70
19.	40	50	50	50	40	60	70	80	120	120	100	110	100
20.	60	70	60	50	50	50	70	60	110	130	110	100	110
21.	70	60	60	70	30	—30	—120	70	+S	+S	+S	—S	±S
22.	±S	±S	±S	±S	—40	20	—30	—S	±S	+S	110	90	120
23.	70	50	40	40	50	50	70	80	—	—	—	—	—
24.	—	—	—	—	—	—	—	—	—	—	—	—	—
25.	—	—	—	—	—	—	—	—	—	130	130	120	120
26.	30	30	30	30	40	40	80	90	—	—	—	—	—
27.	30	20	20	20	20	30	70	70	50	50	30	40	40
28.	10	30	30	30	30	50	60	60	60	50	50	50	40
29.	30	30	20	30	30	30	60	60	50	50	40	40	60
30.	30	30	30	20	30	10	—10	30	—	40	10	—10	40
31.	60	80	70	70	70	50	180	160	110	120	100	130	±S
Means	26	20	21	24	24	31	42	60	71	71	64	65	63
Number of days	28	28	27	27	25	27	29	28	17	25	26	25	21

13	14	15	16	17	18	19	20	21	22	23	Daily means
+S	+S	—10	—20	+S	10	40	30	30	40	40	—
60	50	20	20	20	40	60	40	30	20	20	44
70	50	40	60	60	50	30	20	10	10	10	34
±S	+S	—S	±S	30	30	20	20	20	20	20	—
±S	50	+S	±S	+S	10	10	20	20	20	20	—
60	50	40	50	60	50	30	20	30	20	20	46
40	30	30	30	30	30	20	20	10	20	20	32
70	60	50	60	50	40	40	40	40	40	30	54
30	30	20	30	30	20	20	30	20	10	10	28
30	20	20	+S	+S	40	30	30	20	20	20	—
±S	±S	±S	—30	—40	—50	—80	—40	—10	—10	—10	—
±S	60	70	60	40	20	20	30	30	40	20	—
±S	+S	30	70	70	90	70	60	20	60	50	—
120	+S	±S	40	70	100	60	50	50	50	40	—
70	—10	20	30	20	10	10	—10	0	0	—10	28
±S	±S	+S	30	30	30	50	50	60	50	40	—
±S	±S	±S	+S	—40	—60	—70	—40	—40	—40	—30	—
70	50	60	70	50	80	70	70	60	50	40	39
100	70	80	70	70	80	70	70	60	60	60	74
110	90	100	90	90	110	100	100	80	60	60	84
—50	60	40	150	110	100	90	70	100	90	90	—
70	30	40	40	40	50	60	70	70	90	90	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
110	120	120	70	70	50	40	40	30	30	30	—
—	—	—	(60)	60	60	60	50	50	50	30	—
40	50	30	40	40	50	50	50	50	30	30	40
40	50	50	50	50	60	70	50	50	40	30	45
50	50	50	40	40	50	50	50	40	30	30	42
(60)	60	50	60	60	60	60	70	60	50	60	—
±S	—40	±S	±S	±S	+S	±S	60	70	20	—50	—
61	47	45	48	44	43	39	39	37	33	28	
18	21	21	23	25	28	28	29	29	29	29	

September

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	0	—10	30	40	50	±S	10	|50|	'110'	170	160	70	70
2.	40	50	30	20	30	50	+S	'+S'	'120'	90	60	+S	90
3.	50	50	40	50	50	60	60	'+S'	|20|	40	70	50	40
4.	50	50	50	50	60	70	'50'	|—10	—50	50	—30	30	30
5.	—S	—S	—S	0	110	120	'210'	|250'	180	170	170	70	100
6.	50	50	70	70	60	70	80	(60)	—	90	80	70	50
7.	30	30	20	20	20	20	30	40	60	'70'	100	120	130
8.	30	30	30	40	40	40	70	—	'80'	70	70	70	60
9.	20	30	30	40	40	70	70	80	100'	90	100	90	70
10.	30	20	20	20	20	30	30	'40'	60	60	70	60	0
11.	10	20	20	20	10	—100	—20	100	+S	150	140	80	70
12.	50	70	+S	150	120	80	80	120'	100	110	120	110	100
13.	40	20	20	30	20	30	60	70	—	100	70	60	70
14.	60	50	40	40	40	50	40	'40'	'50'	60	60	50	40
15.	60	50	50	50	+S	40	±S	'70|	60	+S	±S	20	20
16.	30	30	30	40	40	30	30	'+S'	'—40|	40	40	50	60
17.	50	50	40	40	50	50	70	|60'	|50'	30	20	30	20
18.	—180	—160	—120	—100	—S	—S	—S	—S	20	120	120	70	40
19.	30	30	30	30	30	40	|50'	50	40	50	70	70	90
20.	80	60	50	70	90	80	90	80	—	90	70	70	70
21.	80	70	70	60	70	110	100	80	—	'100'	100	100	100
22.	30	30	20	30	20	30	30	80	50	|80|	60	70	100
23.	50	50	40	70	60	70	60	70	60	|70|	70	90	90
24.	40	30	30	30	50	50	50	50	|60	70	70	70	90
25.	50	70	70	80	80	80	70	|90|	90	90	100	100	120
26.	80	90	60	50	60	70	|60|	|30|	30	20	30	70	80
27.	50	30	40	20	—20	20	50	50	—	|20|	30	50	60
28.	30	30	20	30	30	0	—10	|60|	40'	30	90	130	110
29.	100	|190'	|50|	|50'	100	110	100	|110'	|90|	|100'	90	90	80
30.	30	50	40	30	10	—10	0	90	'20|	50	120	+S	+S
Means	37	40	33	39	48	49	56	73	58	79	80	72	71
Number of days	29	29	28	30	28	28	27	24	24	29	29	28	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
100	70	±S	±S	±S	—S	50	70	90	50	40	—
90	90	100	90	100	80	60	50	50	50	60	—
10	+S	—90	—40	10	50	80	100	80	60	50	41
—S	±S	±S	±S	±S	±S	±S	±S	±S	±S	—S	—
100	60	70	70	60	80	80	80	90	70	50	—
50	60	60	60	60	70	60	60	50	50	60	—
110	110	150	120	90	90	70	50	50	40	30	67
70	70	60	50	40	30	20	20	10	30	20	46
70	70	60	50	50	50	40	30	40	30	30	56
—10	20	10	10	20	60	40	0	±S	—S	—10	—
40	50	50	40	50	70	50	50	30	40	30	44
100	90	90	80	70	50	30	70	60	20	30	83
90	70	60	50	40	40	40	50	60	50	50	52
50	70	70	60	100	80	90	80	60	50	50	58
130	+S	80	70	80	50	60	50	50	80	50	—
60	60	50	50	50	60	50	60	20	40	50	40
40	10	—50	+S	—S	—30	10	—10	10	—50	—80	—
60	50	10	—10	10	20	30	0	10	30	0	—
80	80	70	80	80	90	120	120	110	90	90	68
40	50	60	60	70	80	90	80	70	80	70	72
100	60	100	90	100	110	70	60	50	40	40	81
110	100	100	70	80	90	90	100	90	70	60	66
90	100	100	70	70	60	80	70	60	50	30	68
100	90	80	70	30	30	20	40	50	50	40	54
110	100	110	90	90	80	70	100	70	90	80	87
70	80	50	40	50	90	80	60	60	50	50	59
30	40	30	50	60	70	90	70	60	40	50	43
110	120	110	110	100	100	100	110	110	110	40	71
80	90	±S	±S	+S	100	90	80	50	30	30	—
130	110	100	110	100	100	100	100	120	90	60	71
76	73	63	61	64	66	64	62	59	51	40	
29	27	27	26	26	28	29	29	28	28	29	

October

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	100	60	40	50	60	80	110	|150|	|80|	90	70	70	30
2.	50	40	70	60	60	60	70	|60|	70	70	60	80	90
3.	40	90	+S	120	130	180	|110|	50	40	50	60	70	80
4.	40	30	40	50	70	70	50	60	—	|70|	110	120	90
5.	80	70	80	90	130	110	130	|50|	|100|	60	40	0	40
6.	80	90	70	50	60	80	90	|70|	|120|	150	150	130	130
7.	90	90	70	120	120	130	150	160	|150|	130	160	200	110
8.	90	110	150	110	+S	+S	+S	+S	|+S|	+S	140	120	+S
9.	60	70	50	80	210	+S	+S	180	|180|	150	110	80	80
10.	70	60	70	+S	+S	+S	+S	+S	|+S|	|90|	80	80	120
11.	150	+S	140	130	80	60	|50|	—	|0|	30	30	50	70
12.	20	60	50	50	50	50	50	50	|50|	80	80	70	80
13.	40	40	40	50	50	40	30	|30|	—	|70|	60	70	70
14.	70	70	60	50	20	40	90	80	—	70	+S	+S	120
15.	60	70	70	70	70	70	70	100	|70|	|100|	100	110	170
16.	20	30	30	30	30	20	20	70	|70|	70	70	70	90
17.	—30	—20	80	70	30	20	10	20	—30	|—160|	—40	0	30
18.	20	20	20	20	—40	10	20	20	—	|20|	30	30	20
19.	—10	—10	—10	—10	—10	20	20	|—10|	|—10|	0	30	30	70
20.	50	40	50	40	50	50	60	|70|	|80|	90	100	70	80
21.	70	70	70	50	70	60	60	|120|	|70|	70	70	50	30
22.	40	30	50	50	50	60	50	|50|	|50|	60	50	60	70
23.	50	40	40	50	40	40	50	40	|40|	|20|	30	40	70
24.	30	50	40	40	50	50	40	30	|—10|	|—30|	—30	40	30
25.	50	50	40	10	30	—50	—20	—10	—	—50	0	10	+S
26.	20	—30	20	—10	30	—10	—40	50	50	—	|—50|	—40	0
27.	30	20	50	50	60	70	50	—20	|—30|	|—40|	—10	0	—10
28.	80	80	70	80	90	150	170	200	|230|	|180|	140	100	70
29.	—30	—40	—30	—50	10	—20	—20	—20	—20	—50	—30	—90	—90
30.	60	10	—40	—10	20	70	—10	—50	|—70|	—70	—20	10	50
31.	50	30	60	70	70	90	100	110	|120|	70	30	40	30
Means	50	44	51	52	58	57	56	61	58	48	54	56	63
Number of days	31	30	30	30	29	28	28	28	24	29	30	30	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
40	70	50	50	30	—20	30	20	10	20	30	55
80	80	70	50	40	50	60	80	70	100	110	68
100	90	80	90	80	80	70	70	70	70	30	80
70	70	70	70	80	70	90	100	80	80	90	73
40	40	60	120	150	170	150	120	110	90	100	89
150	170	170	170	180	130	120	100	80	80	80	113
140	160	150	140	70	40	40	40	10	40	70	108
110	70	90	100	100	80	70	110	60	50	60	—
120	120	110	120	120	130	190	200	180	120	80	—
150	110	110	80	100	140	120	120	+S	+S	120	—
60	50	70	70	60	60	60	70	50	50	50	—
80	70	70	60	70	50	50	40	50	40	40	57
70	70	60	60	50	50	20	20	50	60	70	51
110	100	110	120	120	130	120	90	80	50	50	—
180	110	130	70	50	70	70	60	30	30	30	82
90	40	90	70	—50	—40	10	50	—30	40	20	38
20	30	30	50	50	70	70	30	0	10	—20	13
20	20	20	—10	0	10	10	30	20	—20	—10	12
70	70	70	10	20	40	70	60	60	60	60	29
80	80	70	60	70	70	90	80	90	70	60	69
30	50	90	110	80	80	80	70	70	60	50	68
60	50	50	50	50	50	70	60	70	50	50	53
90	70	70	70	60	50	10	50	60	50	40	49
40	50	60	90	50	30	60	30	40	30	40	35
70	100	130	40	50	10	—10	20	0	20	10	23
10	70	70	110	120	110	100	70	70	80	40	37
—50	—30	80	20	60	70	80	90	90	70	80	33
50	80	20	60	60	60	60	40	20	70	50	92
—60	—20	0	30	50	50	40	0	—20	—30	40	—17
50	50	±S	±S	±S	±S	+S	0	60	60	50	—
40	50	70	80	110	80	110	130	80	50	70	73
68	69	77	74	69	66	70	66	54	52	53	
31	31	30	30	30	30	30	31	30	30	31	

November

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	10	20	30	10	20	40	70	—	|80|	80	110	140
2.	10	70	100	110	120	120	150	|160	|0|	|70|	60	30	80
3.	70	—20	—60	—30	—30	—70	—80	|—40|	|0|	—10|	—60	—10	—10
4.	—20	30	40	50	70	40	—10	—10	50	80	60	80	90
5.	170	190	110	70	130	170	150	100	50|	|100|	|110|	90	100
6.	50	60	40	30	30	60	50	100	|180|	|110|	90	110	80
7.	40	40	—20	—10	0	30	0	—30	|—30|	—20	0	20	30
8.	30	30	30	60	90	80	100	130	—	|150|	150	130	120
9.	40	50	50	50	50	40	50	|50|	|30|	50	40	90	110
10.	40	20	20	20	30	20	10	|40|	|50|	70	100	100	120
11.	50	40	40	30	30	30	50	|30|	|50|	80	90	100	100
12.	—40	30	100	200	190	80	—100	|40|	|10|	|60|	60	80	100
13.	80	100	0	—50	10	10	10	70	|40|	|60|	50	60	50
14.	50	—50	—90	—90	—90	—90	—30	—30	—100	—110	—170	—140	60
15.	40	40	20	±S	—30	0	—50	10	—	70	+S	+S	—30
16.	70	70	70	70	60	60	90	|100	—	|100|	100	90	80
17.	—10	50	60	10	60	30	10	20	70	|70|	50	90	110
18.	100	80	70	100	100	100	70	|110|	|80|	70	50	70	90
19.	110	110	110	90	70	70	70	70	70	|70|	70	70	40
20.	10	—10	—10	—10	20	70	80	90	|80|	|110|	110	80	70
21.	—10	—10	0	—90	—110	—140	—110	—70	—40	20	20	20	40
22.	70	70	70	70	90	70	70	90	—	20	30	40	50
23.	70	70	50	±S	±S	±S	±S	|20|	|0|	±S	±S	±S	±S
24.	60	60	70	60	70	80	100	|150|	|0|	—	90	110	90
25.	±S	+S	+S	120	90	100	160	|200|	|210|	190	210	190	170
26.	±S	—S	130	±S	±S	—10	10	30	40	|50|	0	30	90
27.	40	20	20	60	60	170	+S	+S	|+S|	|+S|	+S	+S	+S
28.	140	90	60	100	60	60	100	60	|80|	120	130	100	120
29.	170	200	+S	+S	130	200	270	+S	—	+S	+S	+S	+S
30.	—10	20	10	—10	—40	0	60	40	|10|	80	90	180	170
Means	52	52	40	40	45	48	47	57	40	67	60	74	84
Number of days	28	28	28	26	28	29	28	28	23	26	25	26	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
120	130	140	120	180	120	130	70	100	90	40	82
70	80	+S	100	110	130	60	60	70	50	30	80
50	60	80	40	30	30	60	30	30	10	30	4
80	110	130	150	150	130	180	220	150	150	140	89
110	130	80	90	130	150	170	130	160	170	100	124
60	50	60	80	90	100	120	130	110	70	60	80
30	60	70	40	40	70	90	±S	20	40	60	25
130	110	90	80	60	70	60	40	30	50	40	81
110	100	60	30	20	30	10	10	—20	0	60	46
110	100	110	110	100	110	100	90	80	70	70	70
80	100	50	40	20	50	30	70	70	100	30	57
110	90	80	130	70	40	100	60	70	70	80	71
60	40	50	90	—140	—90	—170	—210	—130	40	50	3
110	100	80	110	80	70	50	—20	±S	—20	40	—12
30	40	50	20	40	70	90	60	30	50	60	—
100	110	120	110	90	80	80	50	60	10	10	77
110	130	150	90	110	160	130	110	110	110	120	81
110	140	130	120	130	140	120	100	140	140	150	105
30	20	70	40	20	40	20	30	50	—10	0	55
90	100	70	80	—20	—20	—60	—10	—20	—30	—20	35
20	40	20	30	80	100	110	100	80	50	70	9
40	60	70	110	110	120	100	100	80	70	80	73
±S	±S	±S	120	130	100	110	90	70	70	70	—
80	30	±S	±S	40	—10	—20	—170	±S	±S	±S	—
160	130	200	220	210	170	160	150	110	90	+S	—
80	130	120	110	100	110	100	80	80	30	50	—
+S	+S	+S	+S	+S	+S	+S	+S	+S	140	150	—
50	70	120	140	140	90	50	100	80	50	110	93
+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	90	—
160	160	160	150	160	150	120	60	20	10	0	73
85	90	94	94	81	83	75	57	63	60	63	
27	27	25	27	28	28	28	27	26	28	28	

December

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	0	10	—10	30	70	60	50	10	10	20	20	+S	+S
2.	80	90	90	70	50	50	+S	50	50	100	70	70	80
3.	80	110	130	130	130	70	80	40	70	80	50	60	100
4.	50	50	30	+S	50	80	60	+S	+S	70	130	150	90
5.	80	80	80	70	60	70	100	120	140	130	+S	120	110
6.	90	120	130	120	+S	+S	+S	+S	—	40	30	—30	—50
7.	20	—10	—10	40	50	60	20	—20	20	10	—20	—60	—60
8.	80	120	120	110	70	70	120	140	170	+S	+S	210	140
9.	100	70	60	60	80	70	80	120	60	110	170	180	200
10.	80	70	60	80	110	70	80	60	40	90	80	+S	—20
11.	80	60	40	70	70	80	110	120	120	120	120	120	100
12.	20	30	40	40	60	90	30	90	120	100	90	40	50
13.	80	50	60	60	80	70	80	100	—	70	70	70	50
14.	40	40	30	30	50	50	10	30	100	70	70	60	90
15.	50	50	100	90	110	50	130	80	100	120	70	100	150
16.	40	30	40	50	90	70	60	40	90	50	70	80	120
17.	20	30	40	—10	50	120	100	110	110	150	120	60	90
18.	—20	—10	0	0	—10	30	20	—20	—50	—50	—10	20	—20
19.	110	100	40	0	—40	40	40	20	—20	—100	—130	—130	—60
20.	—10	30	20	20	—20	40	40	80	—	50	10	—10	10
21.	10	0	10	—10	20	50	70	40	30	40	30	50	10
22.	—10	—40	30	30	10	30	70	70	0	50	50	100	50
23.	30	0	—20	—10	—10	0	—10	20	—10	—10	—40	20	60
24.	50	60	50	50	50	90	50	40	30	50	70	70	50
25.	0	10	20	40	70	80	50	40	50	70	70	50	70
26.	70	60	50	40	40	50	50	70	0	90	120	+S	10
27.	160	150	110	90	100	100	110	110	—	80	90	140	150
28.	190	160	150	160	150	140	130	120	150	150	180	150	170
29.	+S	150	200	110	170	210	220	120	150	90	80	110	120
30.	—20	—50	—50	—40	—30	—40	—40	—40	—20	—10	0	50	70
31.	180	—	—	—	—	—	—	—	—	—	20	0	30
Means	58	54	55	52	58	67	68	63	60	63	58	66	63
Number of days	30	30	30	29	29	29	28	28	25	29	29	28	30

13	14	15	16	17	18	19	20	21	22	23	Daily means
+S	+S	—S	—S	—S	20	50	120	60	90	70	—
±S	—	—	—	—	—	—	10	50	50	50	—
130	140	180	+S	+S	+S	140	160	120	120	70	—
80	130	130	+S	110	+S	+S	+S	+S	140	+S	—
120	120	130	150	170	150	130	140	130	110	90	113
—40	—30	—70	—60	—40	—40	—40	—50	—40	—30	—10	—
—10	—60	—30	—50	—20	—20	60	—S	±S	170	140	—
120	130	120	120	100	110	120	110	100	80	+S	—
170	+S	190	150	150	150	150	140	160	120	100	124
80	110	10	—10	0	70	130	130	120	90	80	70
90	110	110	90	80	110	120	130	120	80	80	97
80	70	60	170	90	70	40	40	60	80	80	68
+S	70	70	70	80	70	70	80	80	70	40	71
100	130	100	70	100	110	120	90	80	70	50	70
160	110	130	110	100	60	60	110	50	30	30	90
110	120	100	100	70	70	70	—20	—10	—10	40	61
100	110	120	70	90	80	70	120	150	40	—50	79
20	50	120	150	160	130	150	130	20	110	70	41
30	30	50	—10	10	10	20	—10	—20	—40	0	—3
40	120	150	100	60	40	50	50	50	—10	—10	39
—10	—20	—10	0	30	—10	—10	—20	—50	—20	0	10
20	40	20	40	50	70	60	50	60	0	0	35
60	90	120	110	110	50	40	50	40	40	80	34
50	40	40	60	70	70	70	—10	10	30	10	48
150	150	110	140	120	100	120	130	120	110	80	81
100	120	110	110	110	120	70	90	140	150	160	84
+S	210	+S	+S	230	190	160	160	160	130	160	—
170	160	180	170	200	+S	190	200	150	120	210	163
70	70	90	—40	—70	—90	—90	—40	0	—10	—20	70
110	130	—	—	+S	+S	+S	+S	210	160	220	—
110	150	170	170	140	120	30	20	10	—10	—80	—
82	93	93	79	85	70	77	75	73	66	60	
27	28	27	25	27	26	28	28	29	31	39	

II. *Hourly means of the quantities of positive and negative*

Hour GMT / Month		0	1	2	3	4	5	6	7	8	9	10	11
January	+	29	9	2	0	0	1	0	2	10	134	4	6
	—	7	48	3	1	1	1	0	6	11	64	0	0
February	+	0	7	9	1	0	0	0	1	19	0	0	0
	—	0	0	12	1	0	0	0	0	12	1	0	0
March	+	0	0	0	0	0	0	0	0	1	0	0	0
	—	0	0	0	0	0	0	0	0	0	0	0	0
April	+	17	1	0	5	5	3	16	0	0	0	6	29
	—	11	0	0	9	0	0	3	24	0	0	1	10
May	+	0	0	0	0	3	0	0	0	0	0	0	1
	—	0	0	0	0	2	0	0	0	0	0	0	0
June	+	0	0	0	0	15	0	0	0	0	1	0	10
	—	0	0	0	7	2	0	0	0	1	0	0	23
July	+	0	0	57	9	41	0	0	6	9	5	15	2
	—	15	5	3	0	8	0	1	1	10	6	6	10
August	+	9	27	1	8	0	0	0	0	6	8	0	26
	—	8	0	36	55	3	0	0	0	76	4	17	83
September	+	0	0	0	0	1	0	0	0	0	0	0	0
	—	0	0	0	0	5	0	1	0	0	0	0	0
October	+	0	0	0	0	0	0	0	0	0	0	0	0
	—	0	0	0	0	0	0	0	0	0	0	0	0
November	+	0	0	0	8	1	19	4	0	7	0	1	44
	—	0	0	0	9	14	52	4	0	5	3	0	35
December	+	0	0	0	0	0	0	0	0	0	0	0	2
	—	0	0	0	0	0	0	0	0	0	0	0	7

charges transported by point-discharge for each month

12	13	14	15	16	17	18	19	20	21	22	23	Means
16	43	3	2	16	4	19	98	68	12	22	16	21,5
0	7	16	0	1	3	10	95	64	39	32	12	17,5
0	0	0	0	0	0	0	0	0	0	0	0	1,5
0	0	0	0	0	0	0	0	0	0	0	0	1,1
0	0	0	0	0	0	0	0	0	0	0	2	0,1
0	0	0	0	0	0	0	0	0	0	0	0	0
20	53	31	25	41	0	0	7	0	0	14	4	11,5
100	21	105	55	12	3	0	5	0	0	4	11	15,6
26	39	10	13	0	0	26	34	50	11	0	0	8,9
2	3	20	32	0	0	10	49	59	1	0	0	7,4
40	21	28	35	27	0	0	3	2	6	0	0	7 8
36	15	41	40	11	0	0	1	0	1	0	0	7,4
1	1	0	0	13	4	13	20	2	19	3	8	9,5
0	1	30	30	73	15	16	15	15	41	15	14	13,8
65	32	28	30	25	23	10	15	0	0	0	0	13,0
54	152	24	86	65	58	38	3	0	0	0	0	31,8
0	0	6	5	4	5	0	0	0	10	9	0	1,7
0	0	0	13	5	4	0	0	5	0	9	5	1,9
0	0	0	1	0	1	7	0	0	0	0	0	0,4
0	0	0	0	0	1	13	1	0	0	0	0	0,6
4	6	6	0	8	0	0	0	0	0	0	0	4,5
8	4	3	0	0	0	0	0	0	0	0	0	5,7
5	11	88	84	33	35	1	6	0	0	0	0	11,0
0	12	59	50	38	28	52	2	0	0	0	0	10,3

IV. IONOSPHERE

Since the location of transmitter Ceskoslovensko has unfavourably been changed, the absorption measurement at 272 kc/s and the publication of data are suspended from April 1975.

V. TECHNICAL PAPER

PC1-TYPE PULSATIONS RECORDING SYSTEM — DATA PROCESSING

A. Ádám—J. Cz. Miletits—J. Horváth—J. Verő

1. Instrumentation

With the start of receording Pc1-type pulsations in January 1976 after an experimental period of several years the observation of pulsations became quite complete in the Observatory Nagycenk. The lower limit of the distortion-free recorded variations had been till then about 10 sec, due to the transmission of the high-sensitivity galvanometer. Therefore the Pc1-type with periods of 0.2—5 sec could not been correctly investigated. In addition to the transmitted band, the scale value of the instruments was also too low. The magnetic variometers of type MTV—2 with photoamplifiers have a maximum scale value of 0.02 γ/mm, whereas the amplitude of Pc1 signals can be as low as 1 mγ.

At the beginning of the seventies, 2 m long, highsensitivity induction coils have been constructed in cooperation with the Roland Eötvös Geophysical Institute [Ádám and Horváth, 1976], together with the corresponding signal-shaping electronics for the analogous or digital recording of electromagnetic variations in the frequency band 25—0.01 Hz. This system enables the recording of Pc1-type signals with amplitudes of about 0.5 mγ using pen-chart recorders.

The blocks of the measuring system are shown in Fig. 1. The following numbers refer to this figure.

1. Induction coils for the recording of the H and D components.

Main data:

Dimensions of the supermalloy core: 2000 × 30 × 30 mm (0.2 mm thin plates)

Number of windings	500 000
Resistance	2 × 60 k Ω
Inductance	about 140 kHy
Stray capacity	0.5 nF
Eigenfrequency, f_0	about 8 Hz

The help of dr. B. Pataki from the Institute of Metallurgy in the production of the supermalloy eores isgratefully acknowledged.

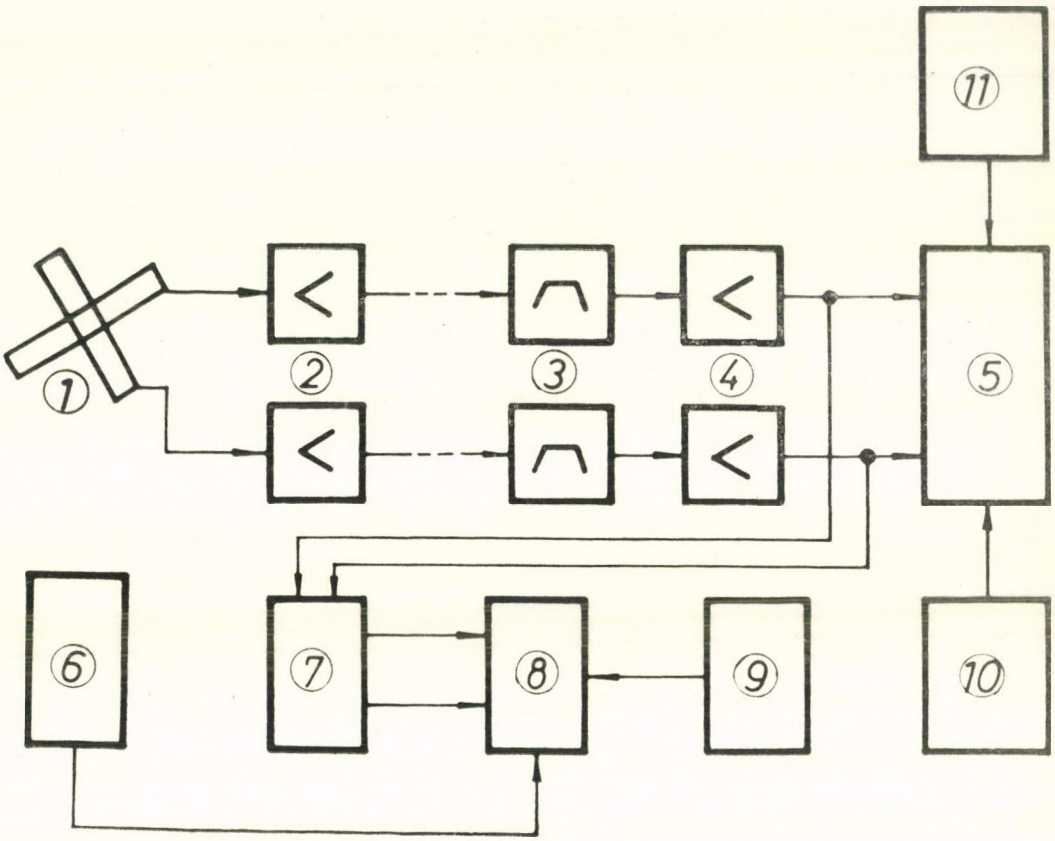

Figure 1.

2. Pre-amplifiers: Their task is to ampllify the signals induced in the coils and then to transmit them through a low impedance to the recording apparatus set up far from it.

3. Band filters: the transmitted band is 0.5—1.5 Hz (see the frequency characteristics in Fig. 2).

4. Amplifiers.

5. Slow-speed analogous recorder: the recording is started and stopped by the switch-clock 10. Recordings are generally carried out between 15.00—08.00 GMT. The interval can be, however, changed e. g. according to the season. At present, hour marks are on the record. The chart speed is 15 mm/min.

6. Switch-clock. It starts and stops the magnetic tape instrument (2 channels). This type of recording is at present running between 22.00—07.00 GMT.

7. Two-channel FM modulator. It transposes the low-frequency (0.5—1.5 Hz) signals to a band 500 Hz — 1.5 kHz recordable with the magnetic tape. In contains also the demodulator for playback.

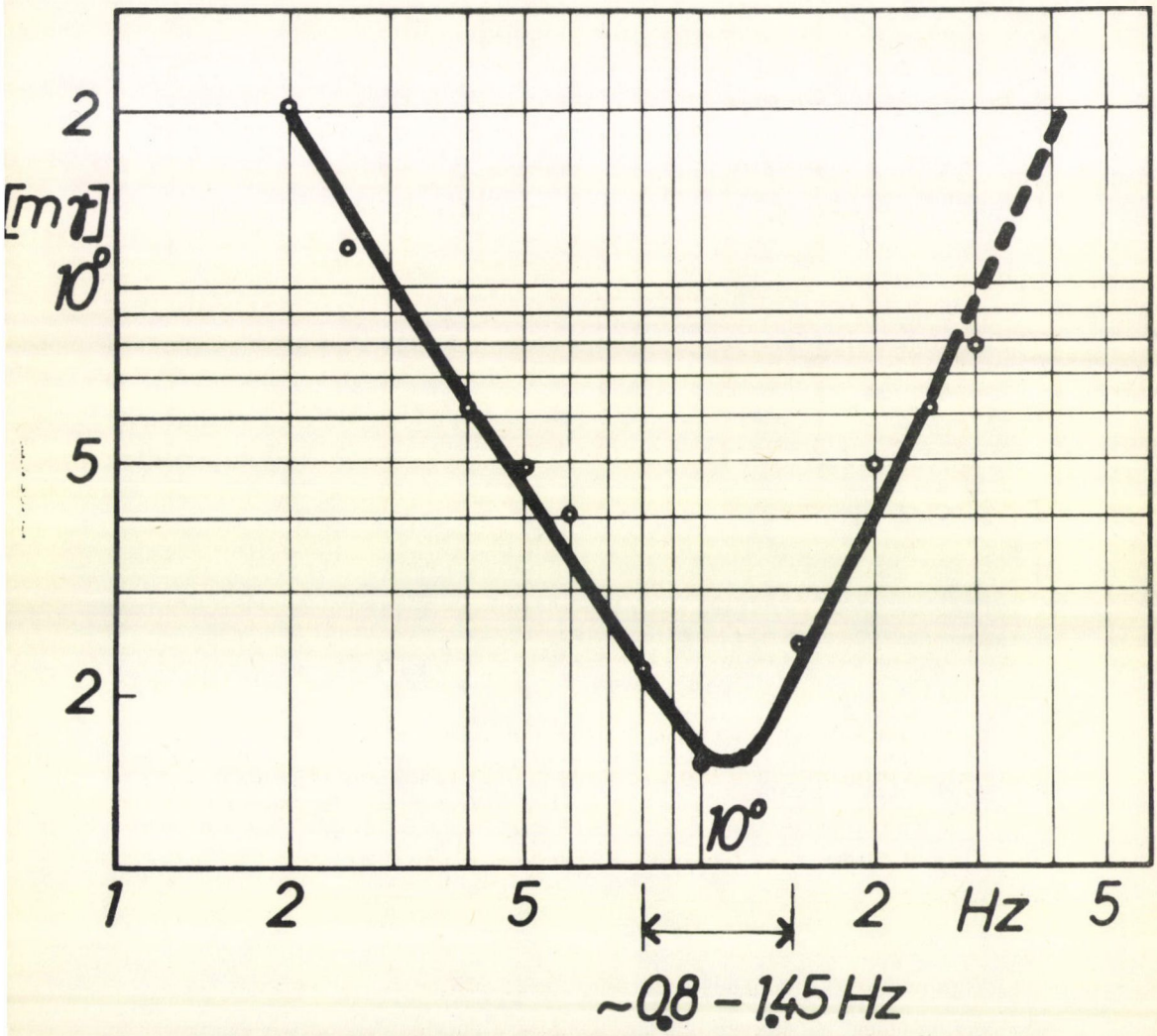

Figure 2.

8. Two-channel magnetic tape instrument. A Philips stereomagnetophon rebuilt to extremely low speed is used at present. The playback is made with 8-fold acceleration. The tape includes in addition to the two recording channels one marker channel containing the time signals

9. Time signal circuit: the sec-signals are given by an RC-generator. For comparisons time signals can be obtained from the impulses of the 4.525 MHz DIZ-time transmitter. A new timing system based on the 77.5 kHz DCF time transmitter is being built, enabling an accurary of 10^{-13} sec.

10. Switch-clock: for the start and stop of the chart recorder.

11. Hourly time signals.

As already mentioned, the chart recorder records the geomagnetic H-component between 15.00—08.00 GMT, and the FM modulated 2-channel magnetic tape both horizontal components between 22.00—07.00 GMT.

2. Data processing.

The year 1976 has been an experimental year for the processing of the Pc1-type pulsations. We had records from 93% of all nights. The processing has been projected using the principles of the characterization of Pc2—5-type pulsations. At first a catalogue has been made containing all Pc1-events (amplitudes and times of occurrence), then daily character figures have been determined.

1. The catalogue contains the data of all Pc 1 events: times of occurrence, amplitudes, and quality. Some typical cases in the classes A, B, C are shown in Fig. 3. The observatory reports contain the duration and quality of Pc1-events.

2. The determination of the character figures (daily Pc1-indices) has been carried out similarly to the determination of Pc2—5 indices in 5 steps. Table I. contains the distribution of the duration of Pc1-events per night. It also contains the limits of the indices. The sense of the indices is therefore:

1 no Pc1
2 Pc1-activity during 1— 40 minutes
3 Pc1-activity during 41—100 minutes
4 Pc1-activity during 101—160 minutes
5 Pc1-activity more than 160 minutes

It should be remarked that in this year 1976, we found that the number of durations between 30 and 300 sec can be well approximated by the formula:

$$n_{(T_n < T)} = 92 \lg T + 132.$$

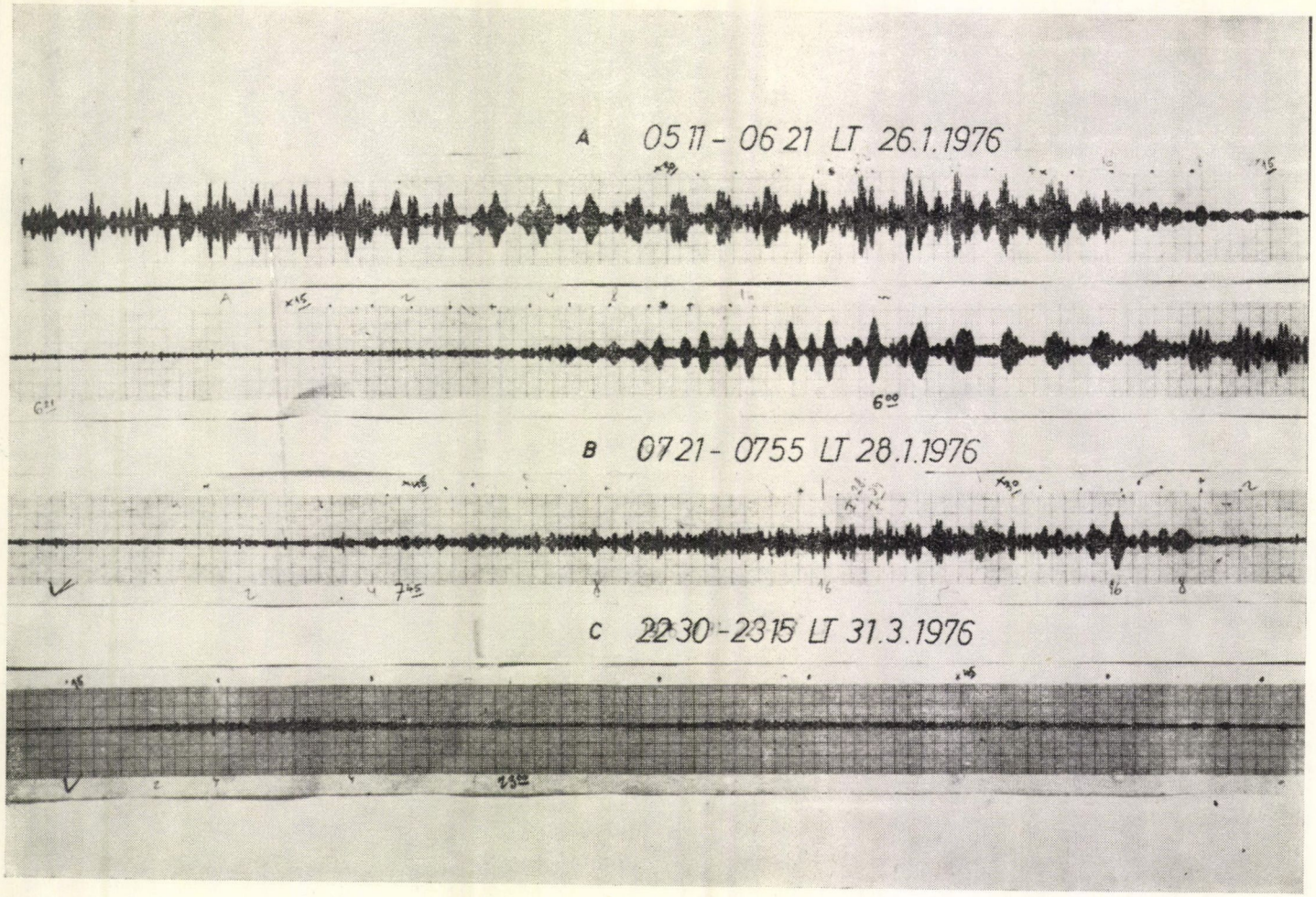
A 0511 - 0621 LT 26.1.1976
B 0721 - 0755 LT 28.1.1976
C 2230 - 2315 LT 31.3.1976

Figure 3.

3. The records on the magnetic tape can be played over a chart recorder of arbitray speed. This enables a detailed study of the fine structure of events, including the comparison of several stations. Figure 4 shows a detail from an event on February 13, 1977. Such records enable the determination of propagation parameters, etc.

An other possibility is the sonagraphic processing. A sonagramme of the same event is shown in Fig. 5. Sonagrammes can be produced from selected events any time during the preservation of the tapes.

Any proposal for cooperation in this field is welcome.

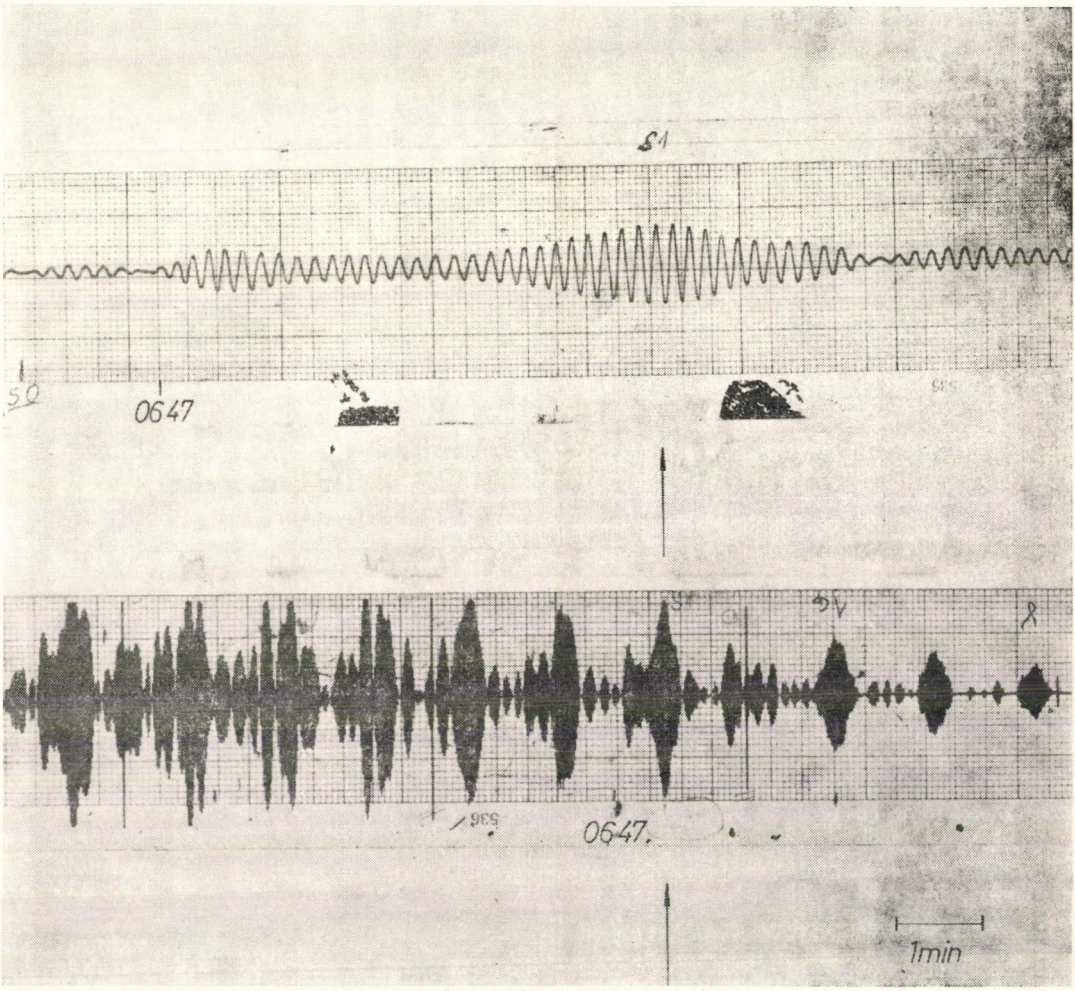

Figure 4.

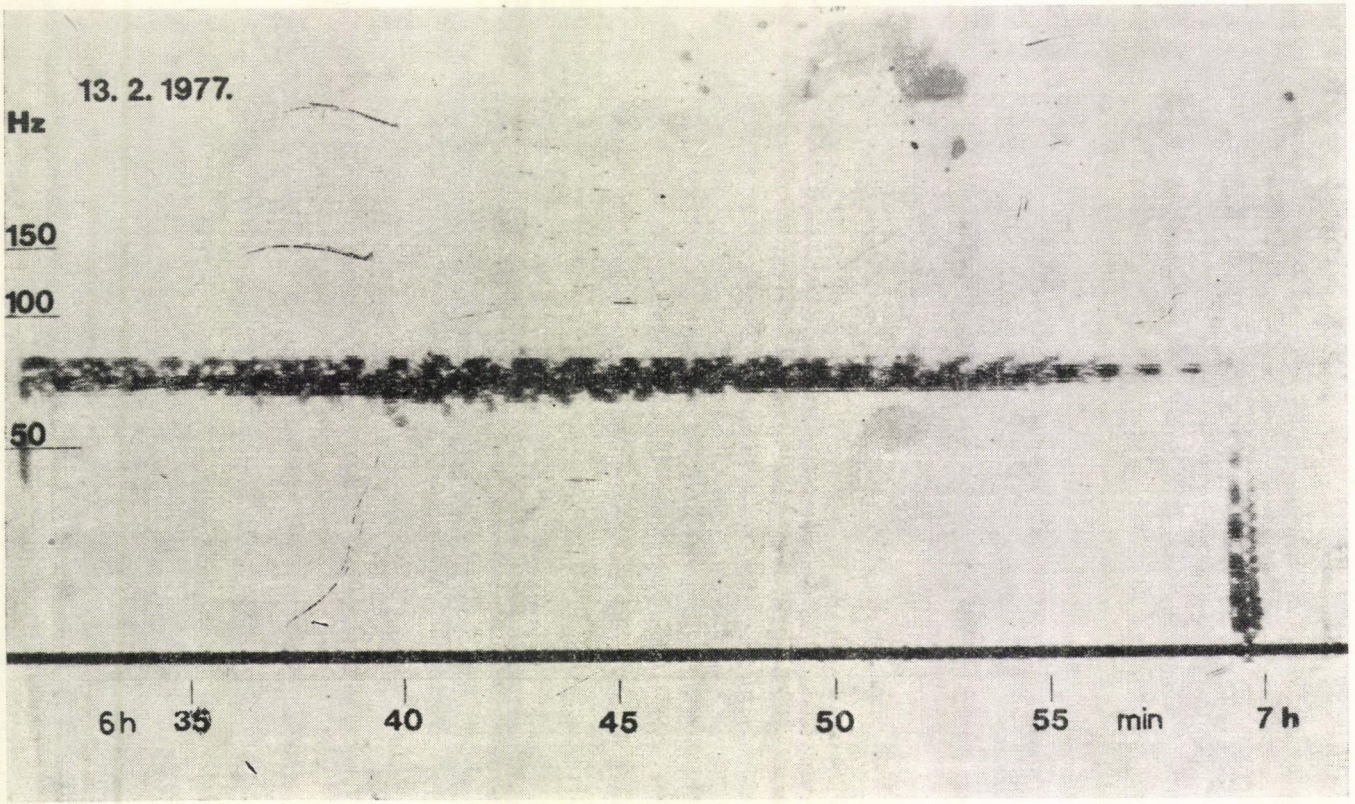

Figure 5.

Table I.

Duration minutes	Number of cases	Character figure
0	223	1
1— 10	2	
11— 20	3	
21— 30	8	2
31— 40	10	
41— 50	5	
51— 60	2	
61— 70	6	3
71— 80	5	
81— 90	5	
91—100	2	
101—110	5	
111—120	3	
121—130	5	4
131—140	4	
141—150	4	
151—160	3	
161—170	3	
171—180	1	
181—190	1	
191—200	2	
201—210	—	
211—220	1	
221—230	4	
231—240	1	5
241—250	1	
251—260	—	
261—270	—	
271—280	2	
281—290	1	
291—300	—	
301—310	2	
311—320	—	

Duration minutes	Number of cases	Character figure
321—330	—	
331—340	1	
341—350	—	
351—360	—	
361—370	—	
371—380	1	
381—390	—	
391—400	—	5
401—410	—	
411—420	—	
421—430	—	
431—440	1	
441—450	—	
451—460	—	
461—470	—	
471—480	1	

REFERENCE

Ádám, A.—Horváth, J.: The development of magnetic sensors in the Geodetical and Geophysical Research Institute of the Hungarian Academy of Sciences Proceedings. 20th Geophysical Symposium, Budapest-Szentendre (15—19. 9. 1975), OMKDK-Technoinform Budapest, 1976.