GEOPHYSICAL OBSERVATORY REPORTS

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

YEAR
1981

OBSERVATORY OF NAGYCENK

SOPRON
1982

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OBSERVATORY OF NAGYCENK

REPORT ON

I. EARTH CURRENTS
II. GEOMAGNETISM
III. ATMOSPHERIC ELECTRICITY
IV. IONOSPHERE

EDITED BY THE DIRECTOR
SOPRON

1982

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GEODETIC AND GEOPHYSICAL RESEARCH INSTITUTE OF THE

HUNGARIAN ACADEMY OF SCIENCES

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HU ISSN 0133—450X

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Széchenyi Nyomda Soproni üzeme, 82.7596

Felelős vezető: Nagy Iván igazgató

PREFACE

The present Report of the Nagycenk Observatory is the 25. in the series. The first four were published in the periodical Acta Technica, the other in form of separate booklets.

The reports have contained from the beginning data of the earth current recordings, with emphasis on the characterization of different period variations. This concerns also the geomagnetic recording which has been running since 1961. Since 1976, the recording of Pcl-type pulsations has also been operating with some interruptions.

The observation network was supplemented in 1962 by records of the atmospheric potential gradient and of the point discharge. Ionospheric absorption measurements have been operated [since] 1967.

Exchange copies of these Reports can be obtained from the Geodetic and Geophysical Research Institute of the Hungarian Academy of Sciences (H—9401 Sopron, Pf. 5, Hungary).

J. Somogyi
Director

I. EARTH CURRENTS

The coordinates of the Observatory are:

$\varphi = 47°38'$ $\lambda = 16°43'$

$\phi = 47{,}2°$ $J = 98{,}3°$

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

The tables publisched in this part 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 steps correspond 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 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 scalar intensity corrected for long period variation (equally in 10^{-5} V/km).

III. Results of harmonical analyses from monthly means of the earth current scalar intensity.

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

The catalogue of Pc 1 events contains occurence times, amplitudes and quality. Typical cases for the A, B and C events can be seen in the 1976 Observatory Report.

V. Average amplitudes in 12 pulsation bands. Here 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 μV/km) are published for each month and for the year. As the bands where amplitudes are determined have different bandwidths, amplitudes are comparable in different bands only after a correction for bandwidth. Data for the same band are, however, directly comparable. Basic data are estimated amplitudes in half-hour intervals.

VI. Micropulsation indices for the year 1981. 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) in a basic intervals.

The determination of these indices can be shortly explained as follows: The days are arranged according to the occurrence freuency 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 period 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 Geod., Geoph. Mont. Hung. 7 1972 15), and A. ÁDÁM, J. VERŐ, J. CZ. MILETITS, L. HOLLÓ and Á. WALLNER: The geophysical observatory near Nagycenk. I. Electromagnetic measurement and processing of data. (Acta Geod., Geoph. Mont. Hung. 16 1981 333).

Daily Pc 1 indices are determined on the basis of the duration of the events. The scale of the indices is the following:

0 no record
1 no Pc 1 activity
2 Pc 1 activity during 1— 40 minutes
3 Pc 1 activity during 41—100 minutes
4 Pc 1 activity during 101—160 minutes
5 Pc 1 activity during more than 160 minutes

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

Records were taken in the Observatory with three instruments of the types GMG T9 1956 and GMG T14 1962, 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.	13132161	18	3	1	6	2	2
2.	00112432	13	3	0	4	1	3
3.	11222112	11	3	0	4	1	3
4.	32331137	23	3	0	4	1	3
5.	11112121	10	5	1	4	1	2
6.	11212121	11	5	0	4	1	2
7.	11101101	6	5	0	4	1	1
8.	11113131	12	3	0	4	1	2
9.	22011001	7	6	3	5	2	1
10.	00012135	12	4	0	4	1	2
11.	35552322	27	6	2	5	2	5
12.	21010000	4	4	0	3	0	0
13.	10111011	6	3	0	4	1	1
14.	11014100	8	2	0	4	1	1
15.	11111012	8	4	0	4	1	2
16.	32223110	14	4	0	5	2	2
17.	11112112	10	3	0	4	2	2
18.	11101000	4	4	0	4	0	1
19.	00000000	0	3	0	4	0	0
20.	10010001	3	3	0	4	0	0
21.	00000002	2	4	1	4	0	0
22.	10124112	12	3	0	4	2	1
23.	20023223	14	2	0	4	1	1
24.	10112112	9	3	0	4	1	1
25.	11111121	9	5	0	4	1	0
26.	10014121	10	5	0	4	1	1
27.	11023101	9	3	0	4	2	1
28.	31124123	17	3	0	4	2	3
29.	11335221	18	4	0	5	3	2
30.	10012111	7	4	0	4	1	1
31.	16343215	25	5	1	5	3	4

Monthly averages: T (N) 1.335
T (E) 0.766
K_1 3.78
K_2 0.29
K_3 4.19
K_4 1.23
K_5 1.61

February

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	12443115	21	4	0	4	2	4
2.	33366462	33	5	0	5	3	4
3.	22323134	20	6	1	4	1	3
4.	21011162	14	4	0	4	2	3
5.	11225243	20	4	1	4	2	4
6.	32189999	50	6	3	7	7	6
7.	92222100	18	3	0	4	3	3
8.	00019268	26	3	0	4	1	3
9.	74223111	21	3	0	4	1	3
10.	00000100	1	3	0	4	0	0
11.	00124233	15	4	1	5	2	1
12.	31132111	13	5	0	4	2	2
13.	11123101	10	5	1	4	2	1
14.	00111001	5	5	1	4	0	0
15.	00013343	14	4	0	4	3	3
16.	41225120	17	4	0	5	3	3
17.	11144110	13	5	1	4	2	3
18.	01112211	7	4	0	4	1	2
19.	31111011	9	3	0	4	1	1
20.	10144310	14	3	0	4	3	2
21.	11122001	8	4	0	4	1	0
22.	00021008	11	2	0	4	1	4
23.	53212423	22	5	1	4	3	2
24.	23443576	34	4	0	4	3	6
25.	43253243	26	3	1	4	2	5
26.	42166399	40	4	1	5	3	7
27.	32233455	27	6	0	5	3	5
28.	21422125	19	5	0	4	2	2

Monthly averages:

T (N)	2.308
T (E)	1.446
K_1	4.14
K_2	0.43
K_3	4.29
K_4	2.11
K_5	2.93

March

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	31946328	36	4	2	4	6	3
2.	42377331	30	6	1	5	4	5
3.	21211123	13	5	2	4	1	2
4.	12121101	9	4	0	4	0	2
5.	13999997	56	6	4	7	6	5
6.	33646510	28	3	0	4	3	2
7.	33344481	30	5	2	5	3	5
8.	21235100	14	4	0	4	1	0
9.	00111110	5	4	0	4	0	0
10.	11123210	11	5	1	4	2	1
11.	10142110	10	3	0	4	1	2
12.	00122254	16	4	0	4	3	2
13.	32379759	45	6	3	6	7	5
14.	59899647	57	7	6	8	6	6
15.	24423453	26	7	2	5	3	6
16.	22545121	22	7	3	4	1	3
17.	53253423	27	7	3	5	3	4
18.	22824331	25	5	0	4	3	2
19.	21333131	17	6	0	4	2	3
20.	12346200	18	4	1	5	3	2
21.	00122032	10	4	0	4	2	2
22.	01101001	4	3	0	4	0	1
23.	00112000	4	4	0	4	0	0
24.	00011111	5	5	0	4	1	0
25.	22436564	32	5	1	5	4	6
26.	63355435	34	5	1	5	5	5
27.	52423232	23	5	0	4	2	2
28.	21122113	13	5	0	4	0	2
29.	11224331	17	4	0	4	2	4
30.	11133145	19	3	0	4	2	3
31.	44244344	29	6	0	5	3	4

Monthly averages: T (N) 2.722
T (E) 1.806
K_1 4.84
K_2 1.03
K_3 4.55
K_4 2.55
K_5 2.87

April

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	52324232	23	6	1	4	3	3
2.	10423121	14	5	0	6	2	2
3.	13214333	20	6	2	5	3	3
4.	11223232	16	6	2	4	2	3
5.	00111111	6	4	0	4	1	1
6.	12433110	14	5	2	5	3	2
7.	11223143	17	6	2	5	2	2
8.	11221222	13	4	0	4	2	1
9.	22001101	7	4	0	4	1	2
10.	01132212	12	6	2	4	2	2
11.	10339979	41	7	3	7	3	7
12.	99959999	68	8	8	9	9	8
13.	99999999	72	9	9	9	8	7
14.	83576411	35	7	3	7	4	4
15.	11134212	15	7	2	5	3	1
16.	31344221	20	7	3	6	3	2
17.	12462228	27	5	3	5	3	2
18.	32131634	23	5	3	5	3	2
19.	68649534	45	7	4	7	6	6
20.	16655436	36	7	4	5	3	6
21.	76776446	47	8	6	6	6	5
22.	45635453	35	7	4	5	3	5
23.	44645234	32	8	6	7	5	3
24.	14376442	31	8	5	5	5	2
25.	42343213	22	8	5	5	4	2
26.	22299887	47	9	8	7	5	5
27.	69967424	47	7	4	6	5	6
28.	21334412	20	9	4	5	3	1
29.	63343222	25	7	3	5	2	4
30.	11233011	12	7	2	5	1	1

Monthly averages: T (N) 3.433
T (E) 2.696
K_1 6.63
K_2 3.33
K_3 5.53
K_4 3.70
K_5 3.33

May

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	11434242	21	7	4	5	3	2
2.	22211111	11	8	4	5	1	2
3.	11221101	9	6	2	5	2	1
4.	11120101	7	3	0	4	1	1
5.	00001301	5	4	0	4	0	0
6.	11011010	5	4	0	4	0	1
7.	01111011	6	4	0	4	0	0
8.	01121252	14	4	0	4	2	2
9.	59963323	40	7	7	8	7	6
10.	32222139	24	7	3	5	4	3
11.	98994213	45	7	5	7	6	6
12.	21323323	19	7	2	5	2	2
13.	42421100	14	6	1	5	3	0
14.	12333374	26	5	2	5	3	3
15.	29993436	45	7	6	7	5	8
16.	52966783	46	7	5	5	3	6
17.	13111113	12	6	2	5	2	1
18.	98977442	50	9	8	8	5	6
19.	23532212	20	9	5	5	2	3
20.	44633672	35	8	4	6	4	6
21.	31222223	16	7	4	4	3	1
22.	11111101	7	7	3	4	2	0
23.	12323222	17	5	2	4	2	3
24.	22313326	22	4	1	4	3	4
25.	33362357	32	6	2	4	3	6
26.	41111101	10	2	0	5	1	2
27.	12111111	9	5	2	4	1	1
28.	23213111	14	6	2	4	2	2
29.	22111111	10	6	3	4	1	1
30.	11112112	10	4	1	4	1	1
31.	11112111	9	3	2	4	2	1

Monthly averages:

T (N)	2.379
T (E)	1.879
K_1	5.94
K_2	2.65
K_3	4.87
K_4	2.45
K_5	2.61

June

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	21211121	11	3	1	5	2	2
2.	11112111	9	2	0	4	1	1
3.	12313343	20	5	3	4	3	3
4.	12221111	11	5	2	5	1	2
5.	31112011	10	4	2	4	0	2
6.	21146331	21	4	1	4	1	3
7.	54698799	57	7	4	6	6	6
8.	63521242	25	7	3	5	3	2
9.	12111000	6	7	3	4	1	0
10.	11111110	7	3	1	4	2	2
11.	11001112	7	3	0	4	1	1
12.	02000101	4	3	0	4	0	0
13.	21112010	8	3	2	4	1	0
14.	01110110	5	3	0	4	1	1
15.	01022121	9	4	2	4	2	2
16.	22122433	19	7	3	5	1	3
17.	43212111	15	5	1	4	1	1
18.	22121213	14	4	2	4	2	2
19.	22121211	12	5	2	4	2	1
20.	12123112	13	4	2	5	1	2
21.	12311112	12	6	3	5	2	1
22.	11011223	11	3	1	4	1	1
23.	12111110	8	5	3	4	2	0
24.	12132232	16	5	3	4	2	1
25.	14232434	23	5	3	4	2	3
26.	33333211	19	6	3	5	3	3
27.	32222221	16	6	3	4	2	2
28.	22221120	12	5	3	4	0	2
29.	11965311	27	6	3	5	3	3
30.	23222242	19	6	4	5	3	3

Monthly averages: T (N) 1.692
T (E) 1.458
K_1 4.70
K_2 2.10
K_3 4.37
K_4 1.73
K_5 1.83

July

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	34223323	23	7	4	5	3	5
2.	22446215	27	8	5	5	3	5
3.	22311124	16	8	5	4	2	3
4.	32101214	14	5	3	4	1	2
5.	52122322	19	7	4	4	2	3
6.	34343332	25	7	4	5	3	3
7.	33213331	19	7	3	4	2	3
8.	52221110	14	5	3	4	1	2
9.	12111111	9	4	2	4	1	1
10.	10000051	7	4	1	4	1	1
11.	02153232	18	5	2	5	3	2
12.	24224334	24	8	4	4	1	4
13.	31232121	15	5	2	4	2	1
14.	22112111	11	3	0	4	1	0
15.	11111000	5	3	1	4	1	1
16.	14111311	13	5	3	5	4	5
17.	12177227	29	3	2	5	3	2
18.	62313211	19	5	2	5	0	2
19.	01212221	11	4	3	5	3	4
20.	24249512	29	4	1	5	1	2
21.	33121111	13	6	3	4	2	5
22.	12223426	22	6	4	5	4	6
23.	43647584	41	7	3	4	2	3
24.	21112233	15	9	8	9	8	7
25.	45969999	60	7	7	9	8	7
26.	99999873	63	7	3	6	5	3
27.	54334323	27	7	4	5	3	2
28.	43522312	22	7	2	4	0	1
29.	12011101	7	6	1	4	2	2
30.	12112221	12	6	2	5	2	2
31.	22421123	17	7	2	5	1	4

Monthly averages:

T (N)	2.407
T (E)	2.073
K_1	5.87
K_2	3.00
K_3	4.81
K_4	2.42
K_5	3.00

August

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	22632133	22	7	2	5	1	3
2.	22112326	19	5	1	4	3	2
3.	44432231	23	5	3	5	3	4
4.	23331111	15	6	3	4	3	3
5.	13345232	23	6	2	5	3	3
6.	44223111	18	4	0	4	3	2
7.	01112132	11	5	1	4	1	2
8.	11111001	6	2	0	3	0	0
9.	22101132	12	3	0	4	1	1
10.	38546521	34	5	3	6	4	3
11.	23143435	26	4	2	5	3	3
12.	22316221	19	5	1	4	3	1
13.	23332212	18	7	4	4	2	0
14.	11124112	13	6	2	4	1	2
15.	11111125	13	3	1	4	1	2
16.	32124111	15	4	2	4	1	1
17.	93554434	37	6	2	5	3	3
18.	62424346	31	6	3	5	3	4
19.	33222213	18	7	3	4	2	3
20.	12111121	10	5	2	4	0	2
21.	11223213	15	5	2	3	1	3
22.	13221223	16	6	2	4	2	2
23.	57439936	46	7	2	5	4	6
24.	45233824	31	6	1	4	4	4
25.	52343323	25	8	3	6	3	2
26.	11322322	16	7	2	4	1	2
27.	21225753	27	8	2	4	1	5
28.	36643426	34	9	4	7	4	2
29.	11335312	19	5	1	4	2	3
30.	54333204	24	5	2	4	2	2
31.	37743310	28	7	4	7	4	2

Monthly averages: T (N) 2.488
T (E) 1.968
K_1 5.61
K_2 2.00
K_3 4.48
K_4 2.23
K_5 2.48

September

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	01112111	8	6	2	5	0	0
2.	12423322	19	7	3	4	2	3
3.	13224202	16	7	2	5	2	2
4.	11012123	11	5	2	4	1	2
5.	54344312	26	7	2	5	3	6
6.	31322111	14	7	2	6	3	2
7.	21211211	11	6	2	4	1	0
8.	01220008	13	6	1	4	2	0
9.	22242222	18	6	3	4	3	3
10.	23265321	24	4	1	5	2	2
11.	32433114	21	5	2	5	1	2
12.	11216220	15	3	2	4	3	1
13.	12212211	12	3	1	4	0	1
14.	10124212	13	5	1	4	1	3
15.	21222411	15	5	1	4	2	2
16.	11111302	10	6	1	4	1	1
17.	21101101	7	4	1	3	2	0
18.	10111189	22	7	2	4	2	3
19.	99979558	61	7	7	8	8	4
20.	23322223	19	7	2	4	2	3
21.	21311012	11	6	2	4	1	0
22.	13442002	16	5	1	4	1	2
23.	31012100	8	2	0	4	2	1
24.	11233112	14	3	0	4	2	2
25.	31334421	21	6	2	4	2	3
26.	13368254	32	6	2	5	1	6
27.	53422191	27	5	2	5	2	5
28.	21321111	12	6	2	4	2	1
29.	10127423	20	4	1	4	3	3
30.	12346132	22	6	2	5	3	2

Monthly averages: T (N) 2.171
T (E) 1.512
K_1 5.40
K_2 1.80
K_3 4.43
K_4 2.07
K_5 2.17

October

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	22334311	19	6	1	4	3	2
2.	22223229	24	5	2	5	3	3
3.	22699985	50	8	7	8	7	4
4.	22258233	27	7	2	5	2	3
5.	10152001	10	6	2	4	2	2
6.	00113103	9	7	2	4	1	1
7.	32133387	30	6	1	4	3	5
8.	34844124	30	5	2	5	3	4
9.	53464242	30	7	3	5	4	3
10.	12254977	37	7	3	5	5	6
11.	65766443	41	7	3	5	3	6
12.	32441000	14	4	2	4	2	2
13.	12152159	26	6	2	5	3	3
14.	99664348	49	8	6	9	7	6
15.	44648323	34	6	2	5	4	2
16.	36733111	25	3	0	5	2	2
17.	00499755	39	6	2	5	4	2
18.	31111021	10	3	0	4	2	0
19.	12567345	33	7	3	6	4	3
20.	23359999	49	7	4	6	6	7
21.	54478512	36	7	3	5	3	3
22.	21679899	51	7	4	7	9	5
23.	95662213	34	4	2	5	6	6
24.	00135937	28	5	2	4	2	4
25.	14354221	22	3	1	5	3	2
26.	11744311	22	3	3	5	4	2
27.	11312213	14	7	3	5	3	2
28.	23474247	33	7	3	6	3	6
29.	22352114	20	5	3	4	3	2
30.	22244422	21	6	2	5	2	2
31.	10133111	11	3	1	4	1	2

Monthly averages: T (N) 3.440
T (E) 2.444
K_1 5.47
K_2 2.48
K_3 5.10
K_4 3.52
K_5 3.29

November

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	01132201	10	3	1	4	2	1
2.	01111111	7	3	1	3	0	1
3.	22132113	15	5	2	5	2	3
4.	00111223	10	2	0	3	1	2
5.	32135111	17	3	0	4	4	2
6.	23112112	13	2	1	4	1	3
7.	33234212	20	3	0	4	3	2
8.	13285973	38	5	3	7	6	2
9.	10223001	9	5	2	4	0	2
10	01254112	16	3	1	5	4	2
11.	22319878	40	5	3	6	4	7
12.	98999311	49	5	2	6	6	4
13.	00113103	9	2	0	5	1	1
14.	32458565	38	5	3	7	6	3
15.	67522421	29	3	1	6	3	2
16.	24334219	28	6	2	6	3	2
17.	53565584	41	6	4	7	3	4
18.	44476473	39	5	1	5	3	6
19.	32123531	20	3	0	4	3	3
20.	22133113	16	4	1	5	2	4
21.	21222146	20	4	1	4	2	3
22.	23231100	12	3	0	4	3	1
23.	11136391	25	4	1	5	6	3
24.	40113110	11	3	0	4	1	2
25.	18559522	37	5	3	7	4	3
26.	21122220	12	4	0	4	2	1
27.	10010000	2	4	0	4	1	0
28.	11111101	7	4	0	4	1	1
29.	12011000	5	3	0	4	1	1
30.	00010000	1	3	0	3	0	0

Monthly averages:

T (N)	2.392
T (E)	1.654
K_1	3.83
K_2	1.10
K_3	4.77
K_4	2.60
K_5	2.37

December

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	00112221	9	3	0	4	1	2
2.	22157022	21	2	1	6	3	3
3.	11135232	18	4	0	5	3	1
4.	21435111	18	6	2	5	3	1
5.	30111112	10	3	0	4	1	2
6.	22111100	8	4	0	3	2	0
7.	00010001	2	1	0	3	1	0
8.	01211535	18	1	0	5	2	3
9.	12112212	12	2	0	5	1	2
10.	14212000	10	0	0	4	2	0
11.	02010021	6	2	0	4	2	1
12.	53234749	37	5	0	5	4	6
13.	22232101	13	5	1	4	2	1
14.	10111021	7	0	0	4	1	0
15.	10100013	6	3	0	4	0	0
16.	10211011	7	2	0	4	1	0
17.	10012114	10	3	0	4	0	1
18.	42123311	17	2	0	4	3	3
19.	21112121	11	4	0	4	1	2
20.	01011111	6	4	0	4	2	1
21.	10011111	6	4	0	4	0	1
22.	00111200	5	3	0	4	0	0
23.	01112111	8	4	1	4	0	2
24.	22122122	14	5	0	4	1	3
25.	11112112	10	4	0	4	2	1
26.	11121010	7	3	0	4	2	1
27.	11101122	9	4	0	4	0	1
28.	41111211	12	4	1	4	2	3
29.	14775662	36	6	4	7	5	3
30.	26446342	31	4	2	5	5	3
31.	12345412	22	6	2	5	3	4

Monthly averages:

T (N)	1.573
T (E)	1.654
K_1	3.32
K_2	0.48
K_3	4.32
K_4	1.78
K_5	1.65

II. Average amplitudes for different periods

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											January	North
1.	7	7	6	6	7	7	9	14	19	20	13	16
2.	5	4	2	2	2	3	1	6	11	9	5	7
3.	36	33	35	35	35	35	34	36	35	37	37	35
4.	31	37	37	31	42	37	39	38	38	50	46	55
5.	50	57	32	45	30	49	39	38	40	30	30	48
6.	−5	+4	−2	−9	−21	−3	−3	+15	+62	+48	−11	−67
											January	East
1.	7	6	5	4	11	10	13	17	19	17	16	21
2.	6	3	3	2	3	2	4	3	5	5	3	9
3.	35	30	31	35	33	35	35	35	33	37	32	36
4.	30	24	25	22	29	28	34	30	32	35	36	38
5.	45	45	26	47	43	28	29	21	27	24	22	27
6.	+1	+1	+4	+5	−19	−22	−19	−30	+20	+46	+44	+22
											February	North
1.	3	5	8	6	9	13	13	21	19	17	17	13
2.	3	2	4	3	2	3	5	12	12	7	8	10
3.	33	35	35	33	35	34	35	37	39	35	37	37
4.	37	47	65	42	53	40	42	46	49	59	61	55
5.	64	98	53	65	35	43	30	37	46	40	83	103
6.	+25	−8	−26	−16	−33	+5	+6	+24	+36	−24	−39	−56
											February	East
1.	4	4	6	6	7	15	17	23	20	24	19	24
2.	5	4	2	3	1	3	5	8	6	9	9	9
3.	35	36	36	35	36	35	35	32	37	35	43	38
4.	28	44	40	38	35	30	23	34	29	26	35	53
5.	72	56	76	37	26	25	46	25	29	42	42	41
6.	+2	+13	−17	+9	−13	−17	−27	−18	−7	+29	+28	+20

and hourly means of earth current elements

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
16	15	13	10	9	9	6	6	5	10	6	8	10.0
13	8	6	4	2	2	3	2	3	4	2	5	4.6
38	38	33	35	35	34	33	35	41	32	36	37	35.4
46	55	43	33	32	31	34	34	43	39	38	42	39.4
73	60	50	37	28	50	43	42	49	73	48	69	46.4
−87	−65	−26	+5	+8	+11	+17	+22	+48	+49	+13	−1	
Component												
20	20	21	16	30	10	6	6	7	10	7	9	12.0
13	6	5	2	3	5	3	4	3	8	5	6	4.6
37	37	33	33	35	34	33	35	37	31	35	37	34.3
42	34	37	23	26	30	21	30	36	35	39	35	30.8
24	33	31	30	31	38	43	43	53	72	52	61	36.5
+15	+12	+6	−7	−17	−13	−17	−8	−9	−13	+9	−10	
Component												
13	19	13	12	11	10	8	5	7	6	10	6	11.0
10	12	5	8	6	5	2	5	4	6	6	5	6.0
37	39	36	39	37	35	35	34	35	33	38	36	35.8
80	71	62	52	40	45	40	37	56	45	55	58	51.5
83	71	85	78	49	58	97	132	117	166	91	123	76.9
−89	−44	+15	+10	+9	+9	+40	+15	+39	+31	+37	+33	
Component												
28	26	27	21	18	13	13	7	11	10	13	8	15.1
9	15	9	6	5	4	3	8	5	6	10	6	6.1
35	39	35	34	35	35	36	34	37	36	37	37	35.6
46	40	55	47	31	49	64	40	47	40	47	30	39.6
53	43	34	34	48	37	71	76	66	157	72	100	54.4
+11	−1	−5	0	+9	+13	+3	−10	−15	−19	+10	+1	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
1.	6	7	10	10	12	15	21	23	23	25	17	20
2.	7	3	3	4	6	11	12	14	13	17	17	13
3.	31	36	35	32	37	49	39	40	42	46	51	37
4.	52	43	35	48	45	43	48	77	75	65	63	74
5.	49	66	71	45	52	57	56	52	57	41	68	129
6.	−2	−4	+9	+22	−21	−22	+18	+54	+80	−15	−111	−141
											March	East
1.	8	7	8	5	5	17	27	31	31	34	32	30
2.	4	2	3	1	6	10	14	14	15	14	17	14
3.	38	38	39	33	35	54	35	34	37	45	41	35
4.	33	41	50	38	35	42	37	53	52	45	63	49
5.	54	52	28	39	39	35	48	32	34	28	32	63
6.	+5	−5	−6	+8	−11	−19	−27	−11	+10	+62	+64	+41
											April	North
1.	11	12	15	14	20	25	25	29	30	31	24	25
2.	14	17	12	20	20	22	28	31	28	31	37	19
3.	36	42	40	42	45	59	82	79	51	55	53	49
4.	58	59	58	58	50	77	109	107	73	88	70	72
5.	85	144	104	80	67	49	35	48	73	60	73	129
6.	+22	+28	+20	+14	+11	+27	+85	+97	+83	−15	−138	−195
											April	East
1.	14	12	14	17	28	40	45	59	60	61	59	53
2.	16	13	13	16	18	30	33	34	35	37	34	33
3.	44	38	36	42	35	44	53	53	52	48	44	45
4.	76	44	52	56	36	77	70	60	49	83	63	77
5.	44	115	61	57	100	46	35	33	70	44	59	73
6.	+2	+5	+28	−3	+21	−4	+1	+45	+51	+40	+29	+25

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
21	19	19	17	13	10	12	11	9	8	8	10	14.4
17	15	12	10	9	6	4	3	2	5	3	6	8.8
45	50	42	48	38	39	35	34	34	38	38	39	39.8
78	91	73	65	55	61	41	52	50	50	48	61	58.0
92	129	83	60	75	56	86	121	51	74	85	107	73.4
137	—62	0	+88	+109	+63	+21	+14	+2	+1	+27	+6	
Component												
30	35	28	25	23	16	9	10	7	7	10	10	18.5
16	17	16	13	12	9	6	7	5	2	4	7	9.5
41	41	40	38	42	35	35	35	34	37	34	35	38.0
62	52	58	60	48	56	46	50	48	50	39	53	48.3
47	91	56	55	51	41	73	117	36	56	84	89	53.3
+29	+16	+14	+10	0	—24	—20	—31	—23	—35	—39	—3	
Component												
25	27	21	22	19	17	11	11	10	7	11	10	18.8
24	29	17	16	14	12	5	7	9	6	10	17	18.5
52	51	69	62	42	41	39	35	40	39	37	41	49.2
94	64	92	87	95	67	73	58	44	80	95	90	75.8
98	126	38	145	66	134	94	92	95	99	89	86	87.8
—220	—118	—57	+71	+105	+100	+39	+16	+11	+1	+19	—6	
Component												
51	47	42	44	37	32	26	19	16	14	14	17	34.2
34	35	24	35	24	19	15	11	10	10	11	14	23.1
48	48	70	75	40	59	54	32	39	38	39	52	46.1
76	70	79	100	65	60	65	62	63	86	62	88	67.3
89	54	39	113	70	98	78	80	83	65	81	56	68.4
—1	—7	—21	—39	—43	—30	—35	—14	—19	—2	—11	—17	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												May North
1.	9	11	15	15	20	22	24	30	28	27	22	21
2.	6	7	9	9	16	19	25	35	35	22	19	16
3.	48	37	38	42	39	42	55	59	56	53	48	45
4.	48	74	52	52	46	47	72	80	66	70	55	52
5.	87	49	88	84	62	115	71	60	58	60	55	44
6.	+20	+35	+26	+11	+72	+89	+127	+67	+12	—102	—174	—213
												May East
1.	12	10	16	17	21	34	48	60	52	54	41	46
2.	13	10	12	12	16	20	29	42	37	30	27	28
3.	31	38	34	39	35	32	37	49	59	56	47	42
4.	62	58	59	54	40	39	46	49	69	59	52	42
5.	60	42	45	80	42	53	55	77	35	44	46	51
6.	+3	—2	+9	—15	+1	+17	+46	+42	+55	+38	+7	—21
												June North
1.	7	10	16	14	16	17	19	19	20	16	14	10
2.	9	11	12	14	17	18	18	14	19	17	8	8
3.	36	47	39	38	38	41	40	38	37	36	36	35
4.	56	50	44	41	46	56	34	47	56	43	47	56
5.	41	44	58	31	37	33	50	54	38	46	62	49
6.	+5	+20	0	+27	+58	+107	+114	+63	+13	—77	—129	—179
												June East
1.	7	11	16	16	16	21	26	29	34	38	34	32
2.	7	8	12	11	12	14	20	25	26	27	26	26
3.	36	39	40	31	28	32	34	29	30	31	28	25
4.	38	46	49	36	29	31	31	32	41	36	46	54
5.	47	35	38	29	34	25	29	37	44	49	68	46
6.	—7	+5	—2	—13	—31	—4	+53	+77	+68	+30	+7	—18

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
16	16	13	13	12	10	8	5	10	11	12	7	15.7
12	9	5	6	2	2	2	3	8	5	6	5	11.6
38	39	39	38	36	37	35	37	37	37	37	37	42.1
55	60	42	46	49	48	39	50	54	46	45	49	54.2
62	56	59	64	52	52	77	87	88	86	138	86	71.3
−149	−74	−16	+49	+71	+74	+47	−1	−2	−6	+19	+16	
Component												
42	30	30	24	26	20	13	12	11	12	15	12	27.4
24	21	19	17	16	12	9	8	9	9	12	11	18.4
30	32	30	31	33	30	32	35	32	30	31	37	36.8
46	56	48	53	49	47	45	49	63	49	48	58	51.7
56	39	51	48	72	62	66	46	67	69	74	61	55.9
+6	−8	−24	−13	−50	−40	−33	−5	−8	+5	−1	−9	
Component												
14	13	9	9	5	8	5	6	7	8	10	7	11.6
13	8	7	2	4	4	4	7	5	9	9	7	10.2
37	37	37	34	37	37	36	37	35	37	37	37	37.5
45	52	43	50	43	49	34	47	40	44	50	35	46.2
43	51	52	46	41	51	43	42	51	64	52	61	46.7
−162	−95	−24	+34	+74	+77	+48	+5	0	+14	+4	−1	
Component												
27	26	21	22	19	14	13	8	8	8	12	7	19.4
21	22	18	14	10	11	8	9	6	11	12	5	15.0
28	35	31	32	31	32	31	32	35	29	32	32	31.8
35	53	38	43	41	33	37	51	35	37	45	41	39.9
63	62	61	55	45	45	63	66	69	69	44	43	48.6
−13	+11	−7	−43	−39	−41	−32	−20	+3	+16	+3	−2	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											July	North
1.	13	12	15	15	20	17	21	22	18	16	17	18
2.	18	8	12	15	16	20	19	19	20	13	16	13
3.	41	36	39	46	45	41	40	44	43	39	41	40
4.	51	67	46	50	69	44	53	63	62	57	69	53
5.	70	60	95	60	59	106	53	57	51	35	55	95
6.	+52	+57	+19	+35	+62	+115	+117	+66	−15	−93	−192	−214
											July	East
1.	20	15	20	24	26	28	34	43	41	37	37	38
2.	15	13	17	17	22	19	21	29	28	23	28	30
3.	38	32	33	29	30	28	36	35	41	33	48	45
4.	57	59	66	45	31	39	46	63	59	60	70	50
5.	45	46	45	66	87	54	49	41	40	41	60	113
6.	+30	+10	−5	−13	−34	+3	+63	+106	+77	+66	+6	−20
											August	North
1.	5	10	9	11	16	18	17	17	19	17	17	15
2.	10	12	9	14	13	21	18	19	17	16	15	13
3.	35	36	36	35	36	51	42	48	46	42	41	38
4.	55	44	45	38	51	60	56	74	63	49	61	56
5.	67	74	91	106	59	45	44	44	44	34	38	63
6.	+40	+19	+15	+31	+64	+132	+145	+80	−9	−115	−198	−205
											August	East
1.	13	13	13	17	23	32	38	39	40	37	38	41
2.	12	9	13	10	13	17	20	20	20	18	24	20
3.	37	35	38	33	33	35	35	39	44	41	39	28
4.	57	39	51	39	51	46	48	46	54	46	51	55
5.	41	53	32	63	28	35	22	37	21	28	35	57
6.	+5	−10	−9	−22	−10	−4	+51	+107	+133	+70	−3	−36

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
16	15	12	15	10	12	7	6	6	12	12	10	14.0
17	12	10	14	5	9	6	3	5	11	9	10	12.5
47	39	46	47	41	38	35	37	36	38	48	49	41.5
33	59	53	53	51	55	42	55	49	41	88	61	55.2
96	84	82	78	58	55	89	81	63	88	69	124	73.5
—196	—111	—45	+32	+133	+85	+51	—3	—3	+19	+9	+22	
Component												
39	35	36	31	30	27	22	17	13	15	15	19	27.6
27	24	27	31	27	26	15	14	10	14	18	17	21.3
47	36	49	53	38	45	30	32	33	30	37	38	37.3
59	51	52	55	50	53	37	40	50	59	62	56	52.9
70	89	87	70	71	69	91	121	57	75	66	117	69.6
—49	—31	—24	—46	—24	—31	—42	—12	—7	+2	—20	—4	
Component												
13	14	13	10	6	7	5	5	6	6	9	6	11.3
8	13	10	9	6	9	3	6	8	8	9	9	11.5
38	43	37	37	34	34	31	32	34	34	33	36	37.9
44	61	59	44	44	38	44	37	38	45	59	45	50.4
75	37	38	69	76	86	78	74	82	63	120	73	65.8
—162	—99	—1	+57	+94	+96	+25	—15	—19	—11	+26	+9	
Component												
34	38	39	31	23	19	15	10	8	11	13	13	24.9
20	21	17	15	14	13	8	6	9	10	15	10	14.8
35	36	36	32	35	33	35	31	32	34	32	38	35.3
38	44	50	52	44	39	41	37	55	34	54	76	47.8
67	38	41	67	67	74	68	64	42	54	87	39	48.3
—57	—44	—21	—13	—28	—17	—38	—15	—15	—19	—10	+2	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											September	North
1.	7	6	3	8	11	16	18	18	15	14	14	11
2.	12	10	10	11	9	12	19	24	19	14	10	10
3.	37	34	36	39	37	42	41	45	52	32	36	39
4.	52	48	41	46	56	50	64	54	67	56	57	55
5.	70	52	56	61	43	37	41	49	35	61	75	71
6.	+28	+15	+34	+32	+24	+54	+81	+107	+51	—64	—157	—207
											September	East
1.	11	8	7	14	14	28	30	32	36	32	38	34
2.	9	8	5	20	13	15	19	17	16	16	16	19
3.	32	35	31	32	30	42	37	33	32	37	32	31
4.	50	35	49	36	44	38	41	38	51	41	47	44
5.	64	46	45	46	46	33	26	40	33	47	49	43
6.	—11	—6	—5	—12	—6	—6	+23	+88	+104	+75	+29	+6
											October	North
1.	8	6	5	8	9	13	18	23	21	18	17	19
2.	8	10	5	9	11	13	16	25	20	22	19	21
3.	38	45	49	41	38	35	42	45	53	43	45	48
4.	71	68	51	80	59	52	77	77	91	72	89	87
5.	107	75	78	41	90	60	49	37	71	97	73	114
6.	+16	—1	—12	—12	—23	—24	+34	+97	+105	+24	—87	—207
											October	East
1.	12	12	9	14	18	23	33	35	38	37	38	41
2.	12	14	9	10	12	16	21	17	22	24	21	29
3.	36	60	41	44	33	33	34	36	38	42	35	46
4.	77	60	53	55	47	41	51	49	45	67	59	62
5.	77	43	35	34	68	54	37	39	55	33	41	55
6.	+3	+14	+5	+12	—1	—20	—18	+23	+69	+81	+72	+39

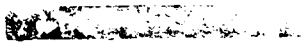
12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
14	10	13	7	9	7	4	5	4	5	4	4	9.5
16	10	10	7	9	5	7	5	6	8	8	5	10.7
38	37	40	34	34	34	32	32	32	36	32	37	37.0
73	56	64	50	42	38	33	35	35	29	48	54	50.1
50	64	91	70	39	49	42	88	73	107	62	58	60.2
−180	−109	−23	+38	+66	+46	+3	+24	+15	+46	+52	+25	
Component												
35	34	33	29	25	21	10	7	8	10	7	8	21.3
17	20	17	15	11	11	7	6	8	8	12	7	13.0
33	26	33	29	31	23	29	25	34	31	35	38	32.1
38	39	52	45	43	43	38	40	50	39	34	52	42.8
49	47	62	42	35	35	44	79	52	69	68	33	47.2
+3	−34	−39	−36	−27	−19	−41	−40	−26	−18	+1	−5	
Component												
16	15	16	12	7	6	4	6	5	7	6	7	11.3
21	19	14	12	8	10	9	9	6	8	10	10	13.1
49	42	63	48	36	37	37	35	36	35	35	42	42.4
98	87	81	62	88	70	57	87	37	86	84	64	74.0
76	83	64	84	48	98	103	90	140	102	107	118	83.5
−156	−122	−24	+73	+94	+30	+40	+34	+66	+38	+10	+6	
Component												
37	36	37	29	27	19	17	12	17	16	14	18	24.5
23	26	19	20	16	12	9	8	12	11	13	13	16.2
46	49	42	44	31	31	33	33	33	38	38	39	38.9
52	67	55	55	77	51	45	65	45	56	71	63	57.0
45	37	42	52	47	95	122	89	127	117	73	116	63.9
−9	−27	−9	−3	−19	−48	−10	−24	−37	−38	−18	−37	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											November	North
1.	5	4	2	4	6	8	11	17	18	13	10	13
2.	7	7	4	6	7	6	12	16	16	11	6	14
3.	34	36	35	37	41	36	36	44	42	37	37	40
4.	37	64	50	44	53	62	44	58	55	62	58	85
5.	94	38	71	90	41	31	43	22	16	41	64	60
6.	—20	+1	—27	—43	—10	—20	+16	+61	+101	+32	—29	—119
											November	East
1.	7	4	7	8	13	16	19	23	22	17	20	23
2.	5	3	4	7	8	12	17	16	11	13	13	13
3.	34	36	35	28	29	31	44	35	34	34	34	34
4.	37	46	41	44	37	38	38	36	41	44	49	35
5.	61	32	47	48	47	31	32	19	16	23	43	49
6.	—29	+2	—10	—13	—11	—15	—24	+10	+68	+60	+75	+52
											December	North
1.	2	2	2	4	4	7	8	10	17	10	10	11
2.	3	3	3	5	4	6	8	9	16	9	9	8
3.	31	36	35	34	35	35	36	35	39	43	37	44
4.	39	44	46	39	55	59	39	47	53	56	53	67
5.	52	56	49	57	38	42	30	21	18	33	39	50
6.	—8	—14	—18	—29	—10	—15	+6	—20	+54	+38	—19	—58
											December	East
1.	6	5	5	5	8	16	11	16	19	15	15	20
2.	5	2	3	6	5	2	8	9	10	10	8	9
3.	31	35	34	35	34	35	39	35	46	39	37	36
4.	30	35	38	35	37	38	37	34	30	37	46	44
5.	52	41	28	33	49	27	20	19	24	11	13	31
6.	—3	+	—8	—8	+1	—33	—17	—15	+33	+69	+57	+41

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
17	17	12	10	5	2	2	2	5	5	4	7	8.3
16	16	10	10	7	2	3	5	3	5	5	7	8.4
64	56	41	41	35	38	41	35	33	34	37	37	39.5
104	79	52	59	49	48	59	60	46	48	49	43	57.0
108	52	95	44	43	67	63	65	74	68	76	112	61.6
—132	—74	+1	+3	+5	+15	+37	+34	+53	+51	+55	+11	
Component												
26	23	23	17	12	10	7	7	5	5	6	8	13.7
21	15	13	10	6	4	5	7	6	4	10	11	9.8
42	35	36	32	35	39	38	37	35	34	34	44	35.4
64	58	53	41	39	38	40	66	49	61	51	62	46.2
53	51	44	32	43	86	78	59	65	29	62	59	46.2
+20	—11	0	—6	—15	—26	—15	—23	—28	—14	—12	—34	
Component												
13	13	10	10	5	2	3	2	3	3	5	6	6.8
10	6	8	6	4	3	5	4	3	5	3	6	6.1
42	37	37	37	35	39	35	35	35	34	34	35	36.5
56	57	44	46	47	44	33	37	37	39	40	42	46.6
73	52	38	52	45	51	59	63	52	71	67	49	48.2
—86	—46	—15	+13	+3	+12	+26	+20	+29	+62	+32	+5	
Component												
22	21	18	18	7	7	4	4	5	8	7	9	11.2
8	6	5	6	5	5	2	5	5	3	8	9	6.0
37	37	37	36	36	35	34	34	34	35	34	37	35.9
39	32	32	42	31	44	39	43	33	41	44	39	37.5
33	21	32	35	42	52	48	48	41	47	48	55	35.4
+4	—2	+4	—16	—8	—8	—25	—22	—21	—10	—5	—14	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
										Year	1981	North
1.	7	8	9	10	12	15	17	20	21	19	16	16
2.	8	8	7	9	10	13	15	19	19	16	14	13
3.	36	38	38	38	39	42	43	46	45	41	42	41
4.	49	54	48	47	52	52	57	64	62	60	61	64
5.	69	68	71	64	51	56	45	43	46	49	60	80
6.	+14	+13	+3	+5	+14	+36	+62	+63	+48	−26	−107	−155
										Year	1981	East
1.	10	9	10	12	16	23	28	34	34	33	32	34
2.	9	8	8	10	11	13	18	20	19	19	19	20
3.	36	38	36	35	33	36	38	37	40	40	37	37
4.	48	44	43	42	38	41	41	44	46	48	51	50
5.	55	50	42	47	51	37	36	35	36	34	42	54
6.	0	+3	−2	−5	−10	−10	+9	+35	+57	+55	+35	+13

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
16	16	14	12	9	8	6	6	6	8	8	7	11.9
15	13	9	9	6	6	5	5	5	6	7	8	10.2
44	42	43	42	37	37	35	35	36	36	37	38	39.6
67	66	59	54	52	50	44	49	44	49	58	54	54.8
77	72	65	69	52	66	73	82	78	89	81	88	66.5
—146	—85	—22	+39	+64	+52	+33	+14	+20	+25	+25	+10	
Component												
33	31	30	26	22	17	13	10	10	10	11	11	20.8
19	19	15	15	12	11	8	8	7	8	11	10	13.2
38	37	39	39	35	36	33	33	35	34	35	39	36.5
50	50	51	51	46	46	43	48	48	49	49	50	46.7
54	50	48	54	52	61	70	74	63	73	68	69	52.3
—4	—10	—11	—18	—22	—24	—26	—19	—17	—12	—8	—12	



Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											Quiet days North	
1.	5	7	9	8	10	13	14	15	17	14	13	11
2.	5	7	6	5	6	9	8	8	9	7	5	5
3.	33	34	35	34	35	37	35	36	35	35	35	34
4.	41	33	35	37	38	38	42	37	41	40	32	43
5.	35	33	27	32	22	28	24	26	11	17	35	37
6.	+7	+4	+4	+8	+22	+50	+59	+48	+42	—17	—99	—134
											Quiet days East	
1.	6	8	8	9	13	17	19	22	23	21	22	24
2.	8	5	6	7	6	8	10	12	11	12	11	15
3.	34	33	33	28	27	32	30	28	30	33	27	31
4.	31	28	34	29	29	26	29	28	32	33	32	35
5.	27	25	23	24	28	22	23	19	19	15	30	21
6.	—7	—19	—13	—15	—24	—19	—5	+17	+37	+41	+23	+10
											Disturbed days North	
1.	16	15	15	21	23	25	35	34	33	33	27	30
2.	17	26	16	35	28	31	46	57	42	38	49	31
3.	47	59	63	74	58	92	93	105	62	63	63	55
4.	99	111	82	123	83	103	112	149	117	117	126	98
5.	183	141	160	135	194	99	62	64	139	61	93	180
6.	+69	+55	+4	—1	+4	—25	+60	+111	+35	—70	—128	—178
											Disturbed days East	
1.	23	19	27	32	36	39	54	62	63	56	57	55
2.	20	21	22	41	25	42	55	45	39	43	47	46
3.	68	53	60	67	45	105	92	79	64	55	92	63
4.	122	87	130	83	53	110	108	99	91	112	120	91
5.	95	183	67	131	225	69	69	98	104	58	69	154
6.	+14	—5	+5	+2	+29	—10	+28	+63	+43	+31	+21	+14

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
14	12	10	9	7	5	5	4	4	5	6	6	9.3
8	4	3	3	2	2	2	3	2	3	3	4	5.0
36	34	35	35	34	34	32	33	32	33	35	35	34.4
37	34	39	33	34	37	30	33	32	33	36	36	36.3
35	33	21	32	22	23	28	23	20	37	36	36	28.0
−121	−73	−21	+28	+52	+43	+25	+8	+15	+21	+17	+12	
Component												
24	22	22	19	17	12	8	6	4	4	6	8	14.3
12	11	9	8	7	7	4	4	4	5	6	8	8.2
28	32	29	28	32	31	31	31	32	29	32	34	30.6
30	30	32	26	31	26	25	31	32	31	30	32	30.2
28	19	24	32	23	32	29	26	29	39	35	37	26.2
−5	−3	−6	−5	−14	−14	−14	−3	+6	+11	+13	+8	
Component												
30	27	21	25	18	15	9	13	13	14	11	14	21.5
38	38	25	28	14	18	9	13	16	10	15	21	27.5
75	59	88	81	45	45	39	42	44	46	55	58	63.0
85	113	105	83	110	98	87	95	84	118	139	105	105.9
153	96	99	196	129	134	213	218	255	189	145	193	147.2
−180	−63	−49	+62	+107	+32	+77	0	+30	+15	+9	+21	
Component												
50	41	51	45	39	39	31	27	23	23	21	21	38.9
48	39	42	57	33	33	20	19	18	15	21	18	33.7
80	67	119	115	50	54	32	44	43	33	43	59	65.9
117	93	94	104	83	98	82	93	104	105	92	141	100.5
91	69	100	149	153	92	195	247	241	177	124	134	128.9
+3	−9	+1	−43	−11	−54	−22	+11	−38	−12	−19	−41	

III.

Results of harmonical analysis of the daily variations

North Component

	A_1	φ_1	A_2	φ_2	A_3	φ_3	A_4	φ_4	A_5	φ_5	A_3	φ_6
January	20	106	33	232	20	84	22	295	5	89	7	16
February	26	130	26	244	23	131	9	315	5	140	7	240
March	31	129	51	292	54	109	27	299	12	244	9	140
April	50	97	85	284	66	106	22	302	9	291	3	40
May	58	92	86	302	51	140	9	39	6	263	7	344
June	52	89	84	295	42	134	2	174	4	1	8	343
July	72	95	97	301	52	129	4	176	11	324	11	9
August	59	89	98	305	60	144	7	121	9	306	7	326
September	64	92	72	286	56	133	23	312	12	273	3	204
October	38	116	68	265	60	108	39	309	1	71	11	110
November	28	110	50	236	36	113	27	311	11	151	6	328
December	18	123	33	229	20	111	18	289	5	142	8	342
Year	42	100	59	282	43	121	14	305	3	268	3	9
Q	36	94	53	284	35	126	11	296	2	216	5	23
D	51	111	64	288	56	113	21	342	12	296	6	162
						East Component						
January	12	295	18	122	10	5	8	271	5	142	5	317
February	8	253	10	105	12	25	8	195	3	171	1	336
March	28	297	18	99	14	16	8	249	8	101	2	126
April	29	354	15	164	7	9	8	331	4	250	2	74
May	27	1	17	197	8	159	11	359	0	90	3	360
June	26	358	23	190	16	145	19	5	7	276	4	317
July	34	1	30	212	23	107	17	357	6	328	1	298
August	36	356	34	222	33	106	18	337	6	203	6	132
September	39	346	27	191	21	88	6	322	11	250	7	96
October	34	329	16	153	24	34	14	284	7	108	4	202
November	31	309	21	148	16	28	9	267	3	86	2	63
December	20	307	19	135	15	27	11	248	4	121	5	3
Year	24	336	16	172	11	67	8	315	1	184	1	41
Q	30	343	10	207	3	12	10	360	2	228	6	170
D	8	303	20	172	7	99	7	290	3	182	1	172

IV.

Special phenomena

(magnetic and earth current data)

SSC-s

Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	End of strom
01.	29.	08.00	10	22	+	—	+	—	01.29.14.00
02.	06.	09.45	18	23	+	+	+	+	02.07.04.00
	08.	14.45	>18	50	+	+	+	—	02.09.07.00 (si?)
03.	01.	08.30	18	35	—	+	+	+	03.01.24.00
	02.	07.45	>15	30	—	+	+	+	03.02.15.00
	05.	06.30	12.5	60	+	+	+	—	03.06.16.00
	07.	02.45	5.5	18	+	+	+	—	03.07.21.0[illegible]
	12.	19.30	9	35	+	+	+	—	03.14.23.00
	14.	05.15	7	45	+	+	+	—	(in pg)
	25.	18.45	13.5	50	+	+	+	—	(in storm and of storm 03.26.04.00)
04.	07.	20.45	10	32	+	+	+	—	04.08.02.00
	11.	14.45	>18	100	+	+	+	—	04.13.24.00
	15.	11.15	5.5	14	+	+	+	—	04.15.16.00 (?)
	18.	16.00	11	30	+	+	+	—	04.19.22.00
	26.	09.15	12	35	+	+	+	—	04.27.16.00
05.	08.	18.45	9	25	+	+	+	—	05.09.17.00
	09.	01.00	5.5	15	+	+	+	—	(in storm) (?)
	10.	23.00	20	85	+	+	+	—	05.11.15.00
	14.	20.00	11	35	+	+	+	—	05.14.01.00
	15.	03.45	14.5	40	+	+	+	—	05.16.03.00
	16.	06.30	16	40	—	—	—	+	05.16.20.00
	18.	00.00	18	75	+	+	+	—	05.18.21.00
06.	06.	10.00	7	30	+	+	+	—	06.08.03.00
	07.	09.30	16	35	—	+	+	+	in storm
		18.45	>15	120	—	—	—	+	in storm
	29.	07.15	16	22	—	+	—	—	06.29.16.30

SSC-s

Month	Day	CET (GMT+1h)	Amplitude in E(mV km)	H(gamma)	Ex	Ey	Hx	Hy	End of strom
07.	16.	05.45	7	18	+	+	+	—	no storm
	17.	09.00	11	30	—	+	+	+	07.17.16.00
	23.	07.45	25	18	+	+	+	—	07.23.20.00
	25.	06.15	12.5	22	+	+	+	—	07.26.19.00
		14.15	>25	165	+	+	+	—	(in storm)
08.	10.	05.30	14.5	50	+	+	+	—	08.10.17.00
	17.	01.45	23.5	55	+	+	+	—	08.18.20.00
	23.	14.00	14.5	70	+	+	+	—	08.24.03.00
09.	08.	22.45	>14.5	60	+	+	+	—	09.09.02.00
	18.	20.15	16	50	+	+	+	—	09.19.22.00
	19.	02.30	18	45	+	+	+	—	(in storm)
10.	02.	21.30	>14.5	120	—	+	+	—	10.03.17.00
	07.	07.15	14.5	40	+	+	+	—	10.07.13.00
	10.	15.30	12.5	30	+	+	+	—	10.10.22.00
	13.	23.30	14.5	75	+	+	+	—	10.15.16.00
	20.	14.45	>18	50	+	+	+	—	10.21.13.00
	22.	06.30	11	30	+	+	+	—	10.23.16.00
11.	08.	17.30	>18	50	+	+	+	—	11.08.23.00 (in storm)
	11.	13.30	18	65	+	+	+	—	11.12.14.00
	14.	06.30	8	15	+	+	+	—	11.15.04.00
		14.30	6.5	25	+	—	—	—	(in storm)
	16.	21.30	16	35	+	+	+	—	11.18.02.00
	25.	03.30	10	65	+	+	+	—	11.25.18.00
12.	12.	02.45	10	30	+	+	+	—	12.13.01.00
	29.	06.45	7	25	+	+	+	—	12.29.21.00

		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.	01.	04.00	6	35	+	+	+	−			
		19.45	13.5	55	+	+	+	+			
	02.	17.00	6	40	−	−	−	+			
	04.	01.00	13.5	35	−	+	+	+	tr		
		21.00	9	60	−	+	+	+	tr		
	10.	21.15	8	40	−	+	+	−	2.5	+	+
	14.	14.15	8	18	−	+	−	+			
	15.	23.45	4.5	25	−	+	+	+	tr		
	16.	03.30	7	35	+	+	+	−			
	21.	21.15	4.5	22	−	+	+	+	3.5	+	+
	26.	13.30	7	25	−	−	−	+	tr		
	28.	01.15	8	30	−	+	+	+	tr		
	31.	04.48	6.5	35	+	+	+	−			
		21.00	5.5	40	−	+	+	+	2	+	+
		23.00	6.5	50	+	+	+	−	2.5	+	+
02.	03.	20.30	11	50	−	+	+	+	tr		
	04.	01.30	3.5	15	+	+	+	−			
		19.15	11	50	−	+	+	+	tr		
	05.	05.45	5.5	30	+	+	+	−			
		23.00	6.5	45	−	+	+	+	tr		
	07.	02.30	25	95	+	+	+	−	tr		
	08.	18.00	11	65	−	−	−	+			
		23.15	14.5	85	−	−	−	+	tr		
	13.	23.30	25	12	+	+	+	−	2.5	+	+
	14.	21.15							2	+	+
	16.	01.30	9	25	−	−	−	+			
		18.00	5.5	25	+	+	+	+	2	+	+
	19.	00.30	5.5	18	+	+	+	−	3.5	+	+
	22.	22.15	14.5	60	−	+	+	+	tr		
	23.	01.00	9	30	−	−	−	+			
	26.	01.45	9	30	+	+	+	−	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.	26.	20.30	17	80	+	+	+	—	tr		
		21.15	28	145	+	+	+	—	tr		
	27.	20.45	7	55	—	+	+	+	tr		
	28.	22.00	10	45	—	+	+	+	tr		
03.	01.	23.00	>15	75	+	+	+	+	tr		
	03.	00.15	2	22	+	+	+	—	2	—	—
		21.15	5.5	22	+	+	+	—	tr		
		21.45	3.5	30	—	+	+	+	tr		
	07.	19.15	14.5	75	+	+	+	—	tr		
	12.	23.15	9	35	—	—	+	+	3.5	+	+
	13.	14.00	>15	55	—	—	—	+			
		21.30	13.5	65	—	+	+	+	tr		
	14.	01.30	6.5	22	+	+	+	—			
		04.00							11 (pg)		
	15.	18.45	9	50	+	+	+	—	tr		
	17.	00.15	7	65	—	+	+	+	tr		
	19.	12.45	6.5	25	+	+	+	—	(si?)		
	21.	22.00	5.5	50	—	+	+	+	tr		
	24.	20.45	3.5	18	+	+	+	—			
	26.	01.00	11	65	—	+	+	+	tr		
		23.30	9	65	+	+	+	—	tr		
	29.	18.15	5.5	35	—	—	—	+	tr		
	30.	18.45	6	35	+	+	+	—			
		22.30	8	40	+	+	+	—	tr		
	31.	21.30	7	30	+	—	—	—			
04.	01.	01.30	7	55	+	+	+	—			
	02.	01.15							5.5 (pg)		
	09.	01.30	3.5	30	+	+	+	—	2	+	+
	10.	22.30							4.5	+	+
	14.	02.30	12	80	+	+	+	—	tr		
	17.	21.45	14.5	30	+	+	+	—	(ssc?)		

		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.	19.	04.30	12	65	+	+	+	−	tr		
	20.	23.00	6.5	45	−	+	+	+	tr		
	22.	19.15	8	55	+	+	+	−			
	25.	22.30	5.5	35	+	+	+	+	tr		
	28.	12.00	5.5	20	+	+	+	−			
05.	09.	21.00							3.5	+	+
	10.	00.45	3.5	18	+	+	+	−	tr		
		22.15	5.5	25	+	+	+	−			
	15.	17.00	9	50	+	+	+	+			
	16.	02.15	6.5	45	+	+	+	−	tr		
		18.30	14.5	70	−	+	+	+	tr		
	18.	20.00	5.5	40	−	+	+	+			
	20.	03.30	6.5	35	+	+	+	−	tr		
		16.00	10	50	+	+	+	+	tr		
		19.30	8	35	+	+	+	−	tr		
		20.30	9	40	+	+	+	−	tr		
	24.	21.45	8	32	−	−	−	+	tr (ssc?)		
	25.	20.15	10	35	−	−	−	+			
		22.00	12.5	55	−	−	−	+	tr		
	28.	05.15	4.5	35	+	+	+	−			
06.	01.	21.45							2	+	+
	05.	02.15	4.5	30	+	+	+	−	2.5	+	+
		21.30	4.5	10	−	−	−	+			
	06.	00.45	4.5	18	+	+	+	−	2.5	+	+
	08.	02.30	12	65	+	+	+	−	tr		
	13.	00.30							3.5	+	+
	16.	22.30	9	50	−	+	+	+	tr		
	18.	21.00	5.5	30	−	+	+	+			
07.	02.	14.00	11	50	+	+	+	−			
		21.00	9	40	+	+	+	−			
		23.00	7	30	+	+	+	−	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
67.	03.	23.30	9	45	+	+	+	—	2.5	+	+
	04.	22.15	5.5	30	—	+	+	+	tr		
	05.	00.00	10	35	+	+	+	—	tr		
	07.	19.00	5.5	18	+	+	+	—	(si?)		
	10.	19.15							9	—	+
	12.	23.30	9	45	+	+	+	+	tr		
	14.	23.30							2.5	+	+
	16.	16.30	5.5	22	—	—	—	+			
	17.	13.15	12.5	65	+	+	+	—			
		22.30	10	42	—	+	+	+	tr		
	20.	11.15	10	35	+	+	+	—	tr (ssc?)		
	22.	11.30	5.5	25	—	—	—	+			
		22.45	11	55	—	+	+	+	tr		
	23.	11.30	9	60	+	+	+	—			
		18.30	12.5	55	—	—	—	—			
		22.45	9	45	+	+	+	—	2.5	+	+
	24.	00.45	5.5	14	—	—	+	—			
	25.	02.00	6.5	35	+	+	+	—			
	26.	00.00	>30	250	+	+	+	—	tr		
	27.	01.30	7	65	+	—	—	—			
	28.	04.30							5.5 (pg)		
68.	01.	23.15	4.5	20	—	+	+	0	tr		
	02.	22.30	11	55	—	+	+	+	tr		
	03.	19.30	7	30	—	+	+	+			
	06.	13.00	6.5	30	+	+	+	—			
	07.	18.30	6.5	40	+	+	+	—	tr		
	09.								2.5	+	+
		20.45	5.5	20	0	+	+	0	3.5	—	—
	11.	16.45	9	32	+	+	+	—	tr		
		20.30	7	32	—	—	—	+	tr		
	16.	02.00	6.5	22	—	—	—	+			

		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.	16.	18.00	8	55	+	+	+	—	tr		
		21.45	9	45	—	+	+	+	tr		
	21.	21.45	6.5	30	+	+	+	+	tr		
	22.	22.30	5.5	25	—	—	+	—			
	23.	01.30	7	32	+	+	+	—	tr		
		03.00	12.5	55	+	+	+	—			
	24.	17.00	10	70	—	—	+	+	tr		
	25.	00.30	5.5	35	+	+	+	+	tr		
	26.	16.15	7	22	+	+	+	—			
		22.45	5.5	22	—	—	—	+			
	28.	22.45	11	45	+	+	+	—	tr		
	30.	11.30	5	25	+	+	+	—			
		23.15	11	42	+	+	+	—	tr		
09.	01.	21.30							2.5	+	+
		20.30	4.5	25	—	+	—	+	tr		
	05.	03.00	8	35	+	+	+	—	tr		
	11.	22.45	5.5	28	—	+	+	+	tr		
	12.	14.15	10	25	—	+	—	+	tr		
		18.45	4.5	45	—	+	+	+	tr		
	13.	23.30	3.5	16	—	+	+	+	2.5	+	+
	14.	23.00	4.5	22	+	+	+	—			
	17.	00.30	3.5	16	—	+	+	+	tr		
	19.	03.15							6 (pg)		
	22.	05.00	5.5	30	+	+	+	—			
		13.45	4.5	15	—	—	—	+			
		21.30	4.5	20	—	+	+	+	2.5	+	+
	25.	16.45	5.5	45	—	—	—	+	tr		
	26.	09.45	9	35	—	—	—	+			
		14.00	7	45	+	+	+	—			
		18.15	11	55	—	+	+	+	2.5	—	+
		21.00	11	50	—	—	—	+	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
09.	27.	19.15	20	75	—	+	+	+	tr		
	28.	06.15	5.5	15	+	+	+	—	(si?)		
10.	04.	20.45	5.5	40	—	+	+	+	tr		
	05.	23.30	2.5	18	+	+	+	—	2	+	+
	07.	20.45	14.5	65	—	+	+	+	tr		
		21.45	9	45	—	—	—	—			
	09.	01.15	4.5	35	+	+	+	—	tr		
		20.00	6.5	45	—	+	+	+	tr		
	10.	21.30	16	72	+	+	+	—			
	11.	00.00	7	50	+	+	+	—	tr		
	12.	11.15	5.5	15	—	—	—	+			
	13.	09.00	11	32	+	+	+	—			
		19.30	10	40	—	+	+	+	tr		
	14.	03.30	>16	200	—	—	—	+	tr		
		12.00							5 (pg)		
		23.30	16	85	—	—	—	+	tr		
	16.	06.00							9 (pg)		
	17.	22.15							5.5	—	—
	19.	23.00	11	45	+	+	+	—			
	20.	12.00	14.5	45	+	+	+	—			
		20.00	6.5	45	—	+	+	+	tr		
		21.30	>30	125	—	+	+	+	tr		
		23.30	14.5	55	+	+	+	—	tr		
	22.	22.00	>30	180	+	+	+	—	tr		
	23.	00.30	>22.5	95	—	+	+	+	tr		
	24.	16.45	18	85	+	+	+	+	tr		
		22.45	11	60	+	+	+	—	tr		
	26.	11.45	9	30	—	—	—	+	tr		
	28.	21.00	11	90	—	+	+	+	tr		
	29.	11.30	8	35	+	+	+	—			
		23.15	6.5	35	+	+	+	—	2.5	+	+
11.	03.	10.30	5.5	18	—	—	—	+			

		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.	03.	20.15	6.5	30	—	+	+	+	tr		
	04.	15.30	2.5	10	+	+	+	—			
	05.	00.15							2.5	+	+
		13.15	9	30	—	—	—	+			
	06.	03.15	6.5	25	+	+	+	—	tr		
	08.	11.30	12.5	40	+	+	+	—			
	12.	01.45	18	95	+	+	+	—	tr		
	14.	17.45	14.5	50	+	+	+	—	tr		
	17.	06.00							7 (pg)		
		19.30	11	60	—	+	+	+	tr		
		23.30	8	45	+	+	+	—	tr		
	18.	17.30	7	30	—	—	—	+			
		19.30	12	50	—	+	+	+	tr		
	20.	22.45	5.5	35	—	+	+	+	tr		
	21.	23.00	12.5	60	+	+	+	—	tr		
	23.	18.15	11	60	—	+	—	+	tr		
	24.	00.00	8	50	—	+	+	+	tr		
		14.00	4.5	25	+	+	+	+	tr		
	26.	18.45	4.5	30	—	+	+	+	tr		
	29.	03.00	4.5	25	+	+	+	—	tr		
12.	02.	12.15	?	30	?	?	—	—			
	05.	23.45	5.5	15	+	+	+	0	2.5	+	+
	07.	22.45	2.5	10	+	+	+	—			
	08.	21.45	9	40	—	+	+	+	tr		
	12.	20.45	13.5	75	—	—	—	+	tr		
		23.15	7	35	—	+	+	+	tr		
	14.	20.45	4.5	12	—	—	—	+			
	15.	21.00	4.5	50	—	—	—	+			
	16.	23.15	4.5	22	—	+	+	+	3.5	+	+
	17.	21.30	6.5	35	+	+	+	+	2.5	+	+
	22.	16.45	5.5	18	—	—	—	+	tr		
	24.	23.00	5.5	30	+	+	+	—	tr		
	26.	20.00	3.5	10	—	+	+	+	2.5	+	+
	28.	01.00	7	30	—	+	+	+	tr		
	29.	19.00	13.5	65	+	+	+	—	tr		

Further pi-traces

Month	Day	CET
01.	05.	20.15
	07.	22.00
	09.	22.15
		23.00
	11.	19.15
		20.15
	12.	00.30
	13.	20.15
	14.	01.15
	17.	02.30
		21.30
	18.	01.15
	20.	00.30
		01.15
	21.	03.30
		19.00
	24.	00.30
	25.	00.45
	26.	21.00
	28.	21.15
	29.	20.15
02.	02.	17.30
	03.	01.00
	06.	20.30
	11.	22.30
		22.45
		23.15
	12.	20.30
	13.	22.30
	15.	03.15
	17.	22.30
	24.	19.30
		21.30
	25.	02.15
		19.45
		22.15
03.	02.	01.45
	03.	02.00
	11.	02.00
	16.	05.15
	17.	03.30
	18.	00.45
		23.45
	19.	00.45
		19.45
	25.	00.15
	26.	02.30
	28.	20.45
		21.15
		22.00
	29.	23.30
	30.	21.30
	31.	00.30
04.	03.	04.45
	06.	23.30
	07.	05.00
	09.	03.00
	10.	23.45
	11.	00.15
		00.45
	15.	21.00
	16.	01.45
	24.	20.00
	29.	00.45
		19.45
05.	03.	03.45
	04.	20.30
	05.	01.00
		21.00
		22.15
	11.	16.00
	26.	00.30
	28.	00.30
	29.	01.45
		02.15
05.	29.	21.30
	30	21.00
		22 00
	31.	02.00
		20.15
06.	03.	19.30
		21.30
		22.15
	05.	22.15
		22.45
	08.	20.45
		21.30
	09.	01.00
	12.	03.15
		10.30
		20.45
	15.	03.00
		20.45
		21.15
		21.45
	16.	00.00
		00.15
		00.45
	19.	22.45
	20.	21.45
	24.	17.00
		18.45
	25.	22.00
	28.	01.45
		18.15
		19.00
07.	03.	20.15
		23.45
	08.	02.15
		02.30
	09.	03.30
	10.	02.00

Further pi-traces

Month	Day	CET
07.	11.	00.45
	13.	20.45
	14.	02.00
		23.45
	15.	00.15
	19.	21.15
	23.	21.30
		21.45
	27.	01.45
		02.15
	28.	00.15
	29.	01.15
		23.00
08.	01.	20.15
		22.15
		22.30
	04.	23.30
	08.	00.30
	07.	23.30
	08.	23.00
	14.	22.30
	19.	01.30
	20.	23.15
	21.	02.30
	21.	06.30
	25.	21.45
	27.	21.30
09.	02.	00.15
		19.45
	03.	00.30
		01.15
		22.30
	04.	22.30
	05.	00.15
	07.	00.30
		00.45
		04.15
09.	08.	21.45
		23.00
	10.	00.30
		01.45
	12.	03.30
		03 45
	14.	00.00
	16.	02.15
		03.45
		23.30
	17.	01.30
		01.45
	20.	20.30
	22.	01.00
		03.15
	23.	00.00
10.	01.	23.30
	05.	01.45
		22.30
	06.	01.45
		16.45
		23.30
		23.45
	11.	22.15
	13.	20.15
	18.	21.45
		22.45
	19.	02.45
	25.	14.30
	27.	00.30
		01.00
		22.15
	31.	00.30
		19.30
		20.30
		22.00
11.	01.	23.30
11.	03.	20 00
	04.	23.15
		23.30
	06.	02.30
	09.	22.30
		23.00
	10.	04.30
	12.	23.30
	13.	23.15
	18.	20.15
		22.45
	19.	01.00
	20.	22.15
	23.	00.30
	25.	22.15
	28.	22.30
	30.	22.15
		22.45
12.	02.	22.30
	04.	00.30
		01.00
		22.15
		23.15
		23.45
	06.	00.30
		01.15
		04.30
		16.30
	07.	01.45
	13.	00.15
	16.	08.45
		22.30
		22.45
	17.	20.45
		21.15
	19.	00.15
		00.45

Further pi-traces

Month	Day	CET
12.	19.	01.00
		18.15
		22.30

Month	Day	CET
12.	23.	01.30
		21.30
	25.	21.15

Month	Day	CET
12.	26.	19.30
	27.	23.45
	28.	00.30
	30.	03.30

SI-s

Month	Day	CET (GMT+1h)	Amplitude in E(mV km)	H(gamma)	Ex	Ey	Hx	Hy	
01.	11.	09.45	9	23	+	+	+	—	
02.	01.	08.45	9	22	+	+	+	—	
	06.	16.45	12.5	30	+	+	+	—	
		19.45	12.5	32	—	—	—	+	
	09.	17.45	2.5	12	+	+	+	—	(b?)
	19.	18.00	2	5	+	+	+	—	
	23.	22.30	6.5	20	+	+	+	—	
	24.	03.30	5.5	12	—	—	—	+	
		04.30	7	16	—	—	—	+	
	28.	07.45	7	22	—	—	—	+	
03.	10.	00.45	2.5	12	+	+	+	—	(?)
	13.	09.15	10	20	—	+	+	+	
	15.	07.30	7	22	—	—	—	+	
	16.	06.45	9	20	—	—	—	+	
		08.30	6.5	16	—	—	—	+	
	18.	07.45	13.5	35	—	—	—	+	
		15.45	7	15	+	+	+	—	
	24.	00.30	1	6	—	—	—	+	
	26.	08.00	5.5	12	—	—	—	+	
	31.	18.15	5.5	14	—	—	—	+	
04.	02.	06.15	4.5	18	—	—	—	+	
	11.	08.30	8	18	—	—	—	+	
	13.	22.00	>24	85	—	—	—	+	
	15.	13.00	7	25	+	+	+	—	
	21.	02.30	3.5	22	+	+	+	—	
05.	04.	09.30	4.5	12	—	—	—	+	
	05.	15.00	6.5	20	+	+	+	—	
	12.	14.45	5.5	15	+	+	+	—	
		20.45	7	45	+	+	+	—	
	13.	14.15	3.2	8	+	+	+	—	
	17.	05.15	5.5	10	—	—	—	+	
	19.	07.00	11	22	+	+	+	—	
	21.	16.30	4.5	8	+	+	+	—	
	24.	06.45	5.5	12	—	—	—	+	
	28.	14.30	7	22	+	+	+	—	

SI-s

Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	
06	26.	11.30	4.5	12	+	+	+	—	
07.	03.	05.30	4.5	12	+	+	+	—	
	04.	16.45	4.5	10	+	+	+	—	(b?)
	07.	04.30	4 5	10	+	+	+	—	
	20.	15.00	20	40	+	+	+	—	
	21.	02.30	4.5	13	—	—	—	+	
	25.	05.00	9	25	—	—	—	+	
	27.	18.30	4.5	10	—	—	—	+	
	31.	08.45	7	15	+	+	+	—	
08.	10.	02.30	4.5	22	—	—	—	+	
	11.	11.45	10	15	—	—	—	+	
	17.	11.45	12	30	—	—	—	+	
		17.30	5.5	15	—	—	—	+	
	18.	00.30	5.5	12	—	—	—	+	(b?)
	28.	03.15	10	25	+	+	+	—	
	29.	23.30	5.5	14	—	—	—	+	
09.	02.	08.00	3.5	12	—	—	—	+	
	03.	04.00	4.5	16	—	—	—	+	
	09.	09.00	7	12	+	+	+	—	
	10.	10.30	9	16	—	—	—	+	(ssc?)
	11.	01.00	4,5	15	—	—	—	+	
		08.30	5.5	12	—	—	—	+	
	15.	16.15	5.5	10	+	+	+	—	
	16.	15.15	3.5	10	+	+	+	—	
	19.	21.00	16	32	+	+	+	—	
10.	03.	20.45	11	28	+	+	+	—	
	13.	03.00	3.5	12	—	—	—	+	
	15.	04.30	10	22	—	—	—	+	
	16.	00.00	7	22	—	—	—	+	
	17.	14.00	12.5	30	—	—	—	+	
		14.30	14.5	35	—	—	—	+	
		17.00	11	30	—	—	—	+	
	20.	14.00	16	45	+	+	+	—	(ssc?)
11.	06.	06.30	3.5	6	+	+	+	—	
	08.	18.00	13.5	28	+	+	+	—	

SI-s

Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy
11.	11.	15.30	12.5	25	+	+	+	—
	12.	17.45	7	15	+	+	+	—
12.	04.	06.45	8	18	—	—	—	+
	10.	12.00	4.5	12	+	+	+	—
	18.	02.15	5.5	12	—	—	—	+

Needles

Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	Ex	Ey
01.	10.	12.15	2	—	—
02.	02.	11.00	4	+	+
	03.	09.00	4.5	+	+
	07.	08.00	2.5	+	+
03.	06.	09.45	3.5	+	+
	15.	17.30	4.5	—	—
	16.	13.30	5.5	+	+
04.	08.	14.30	3.5	+	+
	14.	16.30	3.5	—	—
	16.	09.30	5.5	+	+
	17.	07.00	7	—	+
05.	23.	13.00	4.5	+	+
07.	12.	15.00	2.5	—	—
	24.	18.00	5.5	—	—
08.	04.	10.00	3.5	+	+
	11.	11.45	7	—	—
	16.	14.15	8	+	+
	24.	13.00	3.5	—	—
	27.	13.45	4.5	—	—
	30.	12.30	3.5	+	—
	31.	11.00	5.5	—	—
09.	10.	10.30	3.5	+	—
	15.	09.45	2.5	+	+
		13.15	2.5	+	—
10.	23.	08.30	4.5	+	+
11.	11.	07.45	8	—	—
12.	01.	11.45	2.5	—	—
	03.	13.00	11	+	+
	11.	05.45	4.5	+	+
	12.	06.30	2.5	—	—
	29.	17.30	8	—	—
	30.	19.15	2.5	—	0

1981

Pc 1-events

Month	Day	Duration	Quality
		hour min hour min	
2.	7.	305— 340	C
3.	5.	1855— 1930	A
4.	18.	516— 553	C
10.	14.	2338—15 001	C
	20.	2003— 2039	B
	22.	1632— 1644	C
		1707— 1721	C
		1810— 1857	C
		1921— 2142	C
11.	8.	554— 628	C
	25.	308— 329	C

V.

Average amplitudes in 12 pulsation bands
(monthly averages for 3 hour intervals in μV km)

January

CET	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	0	2	17	35	19	29	28	35	57	66	6	5
3— 6	0	2	2	27	62	79	52	19	14	10	16	25
6— 9	1	5	10	57	61	82	55	13	9	2	50	73
9—12	0	12	34	41	66	100	35	13	26	16	45	40
12—15	0	6	12	42	73	174	40	24	14	16	73	24
15—18	0	1	10	57	57	108	30	24	19	5	20	19
18—21	0	5	14	43	27	40	37	19	92	17	31	33
21—24	2	7	19	25	22	56	32	56	101	97	11	5
Average	0	5	15	41	48	84	39	25	42	29	32	28

February

0— 3	6	38	13	12	17	26	17	60	36	54	42	79
3— 6	0	20	29	45	14	44	22	22	20	18	58	46
6— 9	2	10	28	77	64	75	34	30	6	3	47	71
9—12	3	12	24	52	75	139	29	37	25	15	68	56
12—15	0	7	30	55	66	137	31	32	9	21	149	161
15—18	0	11	33	42	92	72	15	33	12	18	126	119
18—21	4	25	36	29	15	22	51	32	70	21	96	134
21—24	10	34	19	11	13	13	33	86	147	97	78	86
Average	3	20	27	40	45	66	29	42	38	31	83	94

March

CET	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	6	51	10	19	11	25	19	53	58	51	93	178
3— 6	1	21	32	55	61	33	15	29	22	15	154	150
6— 9	0	48	46	67	90	192	30	11	17	50	405	163
9—12	0	46	81	49	64	220	35	39	85	0	158	130
12—15	0	15	34	52	112	167	75	35	22	12	250	206
15—18	2	26	24	47	72	151	36	38	69	33	233	171
18—21	6	51	24	38	25	15	14	36	59	49	116	97
21—24	0	62	31	19	20	7	34	55	123	40	84	120
Average	2	40	35	43	57	101	32	37	57	31	187	152

April

0— 3	0	92	20	20	13	8	17	59	72	81	204	283
3— 6	0	41	52	84	47	17	12	29	22	57	510	241
6— 9	0	15	34	76	139	272	63	56	37	99	337	469
9—12	0	14	55	89	67	318	171	134	82	76	377	104
12—15	0	12	38	76	127	195	177	63	75	121	534	75
15—18	0	10	34	58	90	137	53	44	139	27	333	465
18—21	0	37	57	42	32	32	18	32	37	59	231	272
21—24	0	80	40	13	5	3	9	78	70	82	370	389
Average	0	38	41	57	65	123	65	62	67	75	362	287

May

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	11	49	21	19	13	10	16	51	74	19	339	247
3— 6	2	33	37	68	40	43	17	27	15	24	237	241
6— 9	0	14	43	159	173	142	26	49	55	53	520	172
9—12	1	15	36	76	145	164	63	80	46	22	368	194
12—15	0	8	28	91	75	118	50	48	40	56	280	153
15—18	1	14	26	53	72	61	30	11	64	54	225	164
18—21	7	39	35	31	11	7	9	44	74	29	162	133
21—24	10	57	23	9	2	13	26	96	95	59	182	200
Average	4	29	31	63	66	70	30	42	58	40	289	188

June

0— 3	0	30	14	19	9	17	24	51	115	56	31	131
3— 6	1	30	27	40	28	26	30	35	36	9	53	54
6— 9	0	10	84	156	74	41	32	34	9	3	169	77
9—12	0	9	39	148	109	64	30	42	32	6	260	87
12—15	0	25	45	100	56	20	8	51	31	6	287	186
15—18	0	28	46	37	23	34	24	23	74	19	230	64
18—21	0	46	18	23	7	6	17	47	130	58	189	72
21—24	0	46	28	5	2	10	18	88	118	77	113	48
Average	0	28	38	66	39	27	23	46	68	30	167	90

July

CET	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	0	53	12	15	9	21	87	115	116	26	147	77
3— 6	0	29	52	65	24	40	28	60	44	15	120	13
6— 9	0	18	54	279	43	7	18	107	54	33	334	171
9—12	0	8	69	165	82	29	40	69	78	11	383	156
12—15	0	18	55	152	115	31	34	39	47	38	401	149
15—18	0	15	55	65	39	35	44	54	40	49	212	284
18—21	0	40	52	17	11	17	15	49	107	44	162	196
21—24	5	60	20	5	8	16	26	107	167	107	118	209
Average	1	30	46	95	41	24	37	75	82	47	235	157

August

0— 3	4	38	14	31	23	25	26	88	79	37	80	143
3— 6	3	29	63	169	35	26	9	30	40	12	175	174
6— 9	0	14	51	255	172	165	14	8	19	6	295	158
9—12	0	6	21	134	226	293	27	15	21	11	192	213
12—15	0	9	34	134	95	235	30	16	26	66	449	80
15—18	0	10	38	87	85	69	44	25	97	64	192	87
18—21	0	44	32	47	12	22	34	34	44	38	122	94
21—24	2	56	24	11	10	19	28	75	147	79	104	190
Average	1	26	35	109	82	107	27	36	59	38	201	142

September

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	1	40	14	18	8	36	28	73	67	61	119	104
3— 6	0	18	52	75	55	55	22	27	29	9	171	176
6— 9	0	24	69	56	104	210	44	5	13	8	98	107
9—12	0	11	35	68	63	164	63	11	12	55	142	37
12—15	0	32	39	71	49	301	42	21	12	23	171	49
15—18	0	9	26	52	65	155	38	27	25	8	78	112
18—21	0	32	27	36	18	36	11	51	48	67	95	162
21—24	2	42	19	14	4	18	20	47	113	92	131	241
Average	0	26	35	49	46	134	34	33	40	40	126	124

October

0— 3	2	45	20	13	12	24	31	38	49	82	61	320
3— 6	2	19	30	58	46	54	18	18	16	28	179	367
6— 9	0	14	32	39	77	231	52	23	30	73	469	202
9—12	0	10	62	55	48	173	105	40	47	69	325	406
12—15	0	6	41	61	45	210	81	60	31	65	377	385
15—18	0	15	35	40	60	118	40	16	42	52	255	327
18—21	8	29	17	16	19	52	28	63	59	60	117	314
21—24	2	47	26	11	8	29	29	53	95	163	281	192
Average	2	23	33	37	39	111	48	39	46	74	258	310

November

CET	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	0	25	12	18	14	40	32	36	69	32	61	150
3— 6	0	12	30	33	52	51	21	19	15	3	183	216
6— 9	0	10	32	47	67	87	36	37	12	15	193	167
9—12	0	10	23	41	41	116	46	27	51	44	83	65
12—15	0	23	22	36	33	167	44	22	36	46	271	176
15—18	0	10	29	36	36	76	23	25	18	8	221	162
18—21	0	20	22	34	22	39	13	65	32	58	88	134
21—24	0	18	16	29	8	27	34	64	96	67	86	218
Averages	0	16	23	34	34	75	31	371	41	34	148	161

December

0— 3	2	14	12	18	12	17	23	49	88	106	52	44
— 6	0	6	22	39	30	47	40	33	36	10	48	112
6— 9	1	15	31	35	51	75	36	24	15	24	102	69
9—12	0	12	31	52	53	76	27	19	13	17	171	86
12—15	0	7	22	51	72	140	41	12	14	4	160	126
15—18	1	16	28	27	35	64	23	45	23	16	145	56
18—21	0	17	20	34	28	41	22	25	19	38	111	62
21—24	1	14	30	25	11	17	23	31	140	71	85	41
Average	1	13	21	34	37	60	29	30	44	36	109	75

Yearly average

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	3	40	15	20	13	23	29	59	73	55	103	147
3— 6	1	22	36	63	41	43	24	28	26	18	159	151
6— 9	0	16	42	109	93	132	37	33	23	31	252	158
9—12	0	14	43	81	87	163	56	44	43	29	214	131
12—15	0	14	33	76	77	158	54	35	30	44	284	145
15—18	0	16	33	52	59	102	34	30	51	31	197	164
18—21	2	28	30	33	19	27	22	41	64	40	127	142
21—24	3	44	25	15	9	19	26	70	118	86	137	162
Average	1	16	21	37	33	56	24	28	36	28	123	100

VI.

Micropulsation indices for the year 1981

Activity indices for the micropulsations
(P1 ot P12)
1981. January—December

	January	February	March	April
1.	153334335141	145532114224	155223345241	155215533554
2.	124454333111	255523224435	155423244235	155425331224
3.	115534222122	135225334132	152235335412	155433233141
4.	125522224323	124435332121	155425131113	155325415123
5.	113355223522	555321244541	355211225455	145424424221
6.	211425522211	555312155155	555412534244	155434132241
7.	113145514211	255411333312	155332134454	155113524332
8.	114434424311	355421121154	155345122123	155423225242
9.	112324555511	555412232254	155345212222	155444211211
10.	145425415333	115533111112	155421122451	134225524132
11.	135425225335	133533313241	135413122221	155311133555
12.	111135324211	245254135212	155423225234	155311124555
13.	115442325211	114335434114	155413225555	155311135555
14.	115534212221	112235554111	155322124355	155432124344
15.	122345323512	152324454322	345423214255	155425111341
16.	125445223323	155434132323	154445423325	155324224155
17.	115435442522	143535122322	155434224145	155322134155
18.	125424333222	145532314221	155321142325	155424124245
19.	113324425221	155433233335	155335324412	155411345554
20.	114534123111	155422343244	135534222124	155212333554
21.	113443324411	115244223122	154444112221	155213224555
22.	225451235242	155422124522	133454113221	155222344555
23.	125523324325	155434224154	125225334211	155222235255
24.	155334245541	155222335344	135533122321	155442344152
25.	114245344522	155312145522	155211241551	155354324234
26.	113335333122	155333434221		155414122255
27.	113543224221	155421344342	153115553141	155222244555
28.	155443114132	155235124121	455335335123	155435121344
29.	155434232242		155421244444	155452334151
30.	112435334121		155322235543	155333235423
31.	255534215544		155325235251	

	May	June	July	August
1.	145444113344	155511113455	155531123124	555431135332
2.	145345234131	155311215551	155522125345	155521114241
3.	125324224243	155411225452	153232455312	155434233144
4.	115534112131	155411145132	155422353231	155335332224
5.	135433231253	145311355222	155521144444	255524433254
6.	135433312141	155311355453	155521125155	153432145341
7.	115423122343	155311115355	135511124241	155444234142
8.	155311331155	155123444245	155513233221	145532223331
9.	155411244354	125335144111	355422225431	154524233523
10.	155233325444	155511223254	145433134421	155411225555
11.	455211225255	155421233323	155311134355	155532214454
12.	355432125445	155533112311	115411145131	145542224354
13.	345554124155	135222544421	155411445222	115523131111
14.	155442225155	155222435441	155223544222	111325345414
15.	555211155455	455111324131	125114445322	155431425543
16.	555311245554	154521154354	155332323343	135523345543
17.	255421554224	155433143155	155512223554	155421135355
18.	455321145555	155541214452	155213245453	155521233153
19.	151141115115	155421445241	155522145532	145544132344
20.	355524245345	145522344121	155411125545	154525135144
21.	352235435225	155532214243	155412255544	155225145542
22.	153333453222	155333324344	145522235144	155235134341
23.	455431145542	125533133121	155311145552	155122225455
24.	355311445453	155421335452	155531123223	155422234345
25.	555321245353	155511123454	155211233455	155534225243
26.	355422223322	155511114354	155321134155	245445121224
27.	255422311552	155331335145	155211545445	155523121555
28.	255521124244	155213445421	145311455544	354553114435
29.	255531225321	155312245151	125313554311	255534122354
30.	115535123111	155211145254	155322243543	155421125543
31.	155511223351		545511434241	155335112554

	September	October	November	December
1.	125325114553	155425323445	115435224231	255423234452
2.	255512235444	155425312445	115534114231	355421224442
3.	155434134145	255423224555	143425424412	145422323355
4.	355435324422	251125542223	125423423323	125424333444
5.	155424125554	152125414311	125325225311	143315443321
6.	154425333425	123325344421	155215125532	144115534121
7.	155434245422	155232145541	155313345542	125225131311
8.	153435124212	155424232245	155412144455	155311214555
9.	155424122355	155335134345	122235432121	155421124555
10.	155325224554	155125335355	124325414354	125224434341
11.	155215345541	155312135555	155422122455	135314434441
12.	155425235453	554345222144	155312343545	155412244354
13.	155225335241	155325134455	121345213222	153345221521
14.	135435112242	255211125555	155422243555	135235313242
15.	125345212333	135434121455	155335114355	115334324112
16.	153225445512	135212235555	155425422145	125433444521
17.	151234434421	135234113555	155334214455	125432355424
18.	155225222423	125235333314	155223345445	255421422441
19.	155312123355	155333121555	155325233142	145534234331
20.	145425345225	255212445554	125534232152	123345243111
21.	155334234412	155335225254	134444322223	112543323121
22.	254235234431	155223114555	135415333422	111345322111
23.	155434224221	155313235545	155225335422	115443114241
24.	155324235354	155422333341	155314324111	155534124114
25.	155423224341	155424411452	155421124355	114335243321
26.	155323344554	155421114554	113345321121	115432244421
27.	152235222543	155334431332	111555112111	125434144232
28.	125225524221	155225321255	112535431211	155412115355
29.	155334113344	142215535124	113345422111	155321225555
30.	155522114145	135444233222	115325432121	255212435155
31.		113435333212		125425323425

Pc 1 indices 1981

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

0 = no recording

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 following rule: A day is taken as disturbed on the basis of all magnetic and earth current activity indices, if the greatest of the simultaneous charcter 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 te 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.

Time 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.	36132181	25	12235116	21	42556339	37
2.	01112824	19	43255664	35	33768231	33
3.	22121123	14	21133256	23	20010113	8
4.	63221237	26	20011086	18	23121101	11
5.	11021232	12	41625466	34	13999999	58
6.	11012332	13	53179999	52	22434310	19
7.	12101102	8	98311000	22	23245592	32
8.	11114232	15	00016389	27	21125110	13
9.	22011002	8	98324101	28	00011110	4
10.	00011186	17	00100100	2	11133200	11
11.	47332433	29	00113344	16	01132120	10
12.	21021000	6	71231011	16	00122255	17
13.	00121010	5	00112101	6	51259889	47
14.	10023300	9	00010100	2	77999836	58
15.	00112032	9	00002763	18	35513253	27
16.	35112121	16	32124221	17	31323232	19
17.	01115213	14	10122111	9	94133216	29
18	11100000	3	10012121	8	33412551	24
19.	00010000	1	41111110	10	21123232	16
20.	10011001	4	10133310	12	11144310	15
21.	00110002	4	00112000	4	00134159	23
22.	10012332	12	00011019	12	01122101	8
23.	10013222	11	92112123	21	00123110	8
24.	10112212	10	12223399	31	00112112	8
25.	10001231	8	64334374	34	31536997	43
26.	10013131	10	43154679	39	84235427	35
27.	11014101	9	32233478	32	72334322	26
28.	42224025	21	21221247	21	20132314	16
29.	22434232	22			11343432	21
30.	10012122	9			21222379	28
31.	17464119	33			88235454	39
	$M_H = 1.40$		$M_H = 2.15$		$M_H = 2.60$	
	$M_D = 1.24$		$M_D = 2.06$		$M_D = 2.46$	
	$M_Z = 0.15$		$M_Z = 0.32$		$M_Z = 0.42$	

	April M	Sum	May M	Sum	June M	Sum
1.	93455543	38	11435242	22	10221221	11
2.	20224231	13	21211110	9	11123211	12
3.	23123433	21	11122000	7	12113453	20
4	11223155	20	01111110	6	11101101	6
5.	00112011	6	00211200	6	31113011	11
6.	11433211	16	01111110	6	21159441	27
7.	11133242	17	01212010	7	33689099	56
8.	10123242	15	01122264	18	93411262	28
9.	42113101	13	49954333	40	11111010	6
10.	00113102	8	42222249	27	01111010	5
11.	00149969	38	99997215	51	11111212	10
12.	99949999	67	11222545	22	01011001	4
13.	99999999	72	43312100	14	11112000	6
14.	97666511	41	01264273	25	00110020	4
15.	00234212	14	29944835	44	02223221	14
16.	21265331	23	72979993	55	34224556	31
17.	12462347	29	12121214	14	62312111	17
18.	21222554	23	99985852	55	13122423	18
19.	69368744	47	21544432	25	11123332	16
20.	27948439	46	35934995	47	22322111	14
21.	85677647	50	22221122	14	12312202	13
22.	73434584	38	21222111	12	11012213	11
23.	53744236	34	01534422	21	11111110	7
24.	01345543	25	22233445	25	11054443	22
25.	52323326	26	55175448	39	12143864	29
26.	22299999	51	42211202	14	21235321	19
27.	88969626	54	11221022	11	22122232	16
28.	21123633	21	23525311	22	21542221	19
29.	63254223	27	11111010	6	11947410	27
30.	10224011	11	01111302	9	22112243	17
31.			11122221	12		
	$M_H = 3.43$		$M_H = 2.47$		$M_H = 1.87$	
	$M_D = 3.04$		$M_D = 1.95$		$M_D = 1.28$	
	$M_Z = 0.59$		$M_Z = 0.33$		$M_Z = 0.26$	

	July M	Sum	August M	Sum	September M	Sum
1.	34353534	30	33443243	26	00123211	10
2.	22477405	31	11212637	23	22332642	24
3.	21101035	13	33622331	23	22233211	16
4	71212206	21	24333011	17	11034123	15
5.	52243441	25	12533242	22	74444311	28
6.	33353441	26	44222111	17	31222101	12
7.	23416431	24	01112252	14	10112111	8
8.	32232010	13	11221100	8	02212009	16
9.	01121211	9	22111133	14	42132222	18
10.	10011121	7	27357611	32	21244421	20
11.	12163231	19	12032644	22	42544114	25
12.	23227477	34	22312221	15	11203341	15
13.	61132022	17	23213113	16	12212132	14
14.	21122200	10	20132212	13	10114214	14
15.	01021000	4	20102229	18	11312320	13
16.	22222311	15	82123211	20	02111311	10
17.	12189448	37	82357356	39	21102110	8
18.	91222212	21	85334278	40	10111179	21
19.	11312422	16	12222212	14	96959476	55
20.	13147411	22	12211121	11	21111122	11
21.	12321011	11	11323424	20	30111004	10
22.	12123939	30	13212252	18	34242003	18
23.	33549995	47	89479959	60	31002110	8
24.	21112225	16	64134945	36	11122222	13
25.	63969999	60	61353323	26	32224541	23
26.	99999932	59	01222322	14	04357278	36
27.	87642212	32	21226973	32	82323191	29
28.	32222102	14	42322428	27	21112121	11
29.	01112101	7	12355422	24	11115434	20
30.	11313321	15	57222315	27	22134144	21
31.	12221224	16	45543210	24		
	$M_H = 2.58$		$M_H = 2.44$		$M_H = 2.00$	
	$M_D = 1.90$		$M_D = 2.00$		$M_D = 1.60$	
	$M_Z = 0.45$		$M_Z = 0.33$		$M_Z = 0.18$	

	October M	Sum	November M	Sum	December M	Sum
1.	21222201	12	01136112	15	00012421	10
2	52114239	27	01121111	8	21034124	17
3.	21498996	48	31121042	14	11013132	12
4.	33246265	31	00122123	11	21323121	15
5.	10243102	13	11234322	18	30111123	12
6.	10124212	13	23112222	15	22100110	7
7.	33163599	39	64434313	28	00111112	7
8.	74654125	31	23484952	37	01311977	29
9.	54562444	34	10112001	6	22212127	19
10.	11133689	32	01146123	18	13111100	8
11.	88555654	46	22229989	43	01010012	5
12.	52522100	17	99466210	37	44216679	41
13.	01032259	22	00112004	8	52323210	18
14.	99433479	48	32339797	43	11121021	9
15	53435422	28	74322622	28	10111015	10
16.	34423111	19	24212118	21	10121012	8
17.	00377744	32	52195688	44	10011127	13
18.	41113121	14	62277594	42	61032411	18
19.	12348368	35	51113632	22	21103231	13
20.	54349999	52	31132125	18	01120013	8
21.	98377712	44	31221159	24	11011112	8
22.	40489999	52	32132200	13	00000200	2
23.	93332414	29	21127292	26	01112121	9
24.	00037959	33	71113120	16	22111113	12
25.	14323122	18	19439413	34	02001123	9
26.	10452210	15	31222230	16	21111010	7
27.	21222223	16	00111000	3	11000022	6
28.	33243249	30	21011102	8	51121411	16
29.	22252216	22	02000000	2	04796492	41
30	72133712	26	00010000	1	18659632	40
31.	20132010	9			12374623	28
	$M_{II} = 3.18$		$M_{II} = 2.27$		$M_{II} = 1.58$	
	$M_{I)} = 3.01$		$M_{I)} = 1.97$		$M_{I)} = 1.17$	
	$M_{Z} = 0.45$		$M_{Z} = 0.20$		$M_{Z} = 0.10$	

II.

Disturbed and quiet days for 1981

Disturbed days		Quiet days
January	—	7, 9, 12, 13, 18, 19, 20, 21, 24, 30
February	—	10, 14, 18, 21
March	14	9, 22, 24
April	12, 13, 19, 21, 22	5
May	20, 25	2, 3, 4, 6, 7, 22, 27, 29, 31
June	7	1, 4, 9, 10, 11, 12, 13, 14, 23
July	23, 25, 26	9, 10, 14, 15, 29
August	17, 23	8, 20
September	19	7, 17
October	9, 11, 14, 20	—
November	17, 18	2, 27, 28, 29, 30
December	—	6, 7, 11, 14, 16, 21, 22, 23, 26, 27

III.

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

	0	1	2	3	4	5	6	7	8	9	10	11
							January					
H	+ 2.3	+ 2.6	+ 2.0	+ 3.3	+ 5.7	+ 8.7	+ 8.8	+11.2	+10.6	+ 3.3	— 5.3	— 8.8
D	+ 8.8	+ 7.7	+ 6.4	+ 4.2	+ 1.6	+ 0.7	+ 1.0	+ 3.6	+10.5	+15.3	+ 8.7	— 1.8
Z	+ 1.3	+ 1.2	+ 0.7	+ 0.4	+ 0.1	— 0.2	+ 0.2	— 0.1	— 1.3	— 4.3	— 5.7	— 6.3
							February					
H	+ 1.1	— 1.1	+ 3.8	+ 2.8	+ 4.3	+ 7.7	+11.1	+12.7	+10.0	+ 3.9	+ 0.3	— 4.6
D	+15.4	+12.4	+ 8.7	+ 6.5	+ 3.0	+ 1.7	+ 3.4	+ 6.9	+14.9	+15.1	+ 4.4	— 6.3
Z	+ 2.0	+ 1.6	+ 0.8	+ 0.5	+ 0.4	+ 0.2	— 0.1	+ 0.3	— 0.9	— 3.7	— 6.1	— 7.8
							March					
H	+ 6.6	+ 8.3	+ 8.2	+ 7.4	+ 7.8	+ 8.6	+10.4	+11.1	+ 5.0	— 3.0	— 7.5	— 8.2
D	+ 5.3	+ 5.2	+ 5.7	+10.5	+ 8.8	+ 6.3	+10.4	+18.6	+29.1	+25.9	+ 9.9	—13.0
Z	+ 2.6	+ 1.6	+ 0.8	+ 0.5	+ 1.1	+ 1.5	+ 3.1	+ 5.4	+ 3.4	— 4.2	—13.1	—18.7
							April					
H	+11.2	+10.5	+ 7.1	+ 7.5	+ 5.3	+ 4.1	+ 3.2	— 2.9	— 9.7	—15.7	—16.8	—14.5
D	+ 8.2	+10.8	+12.4	+10.2	+11.7	+12.7	+22.4	+32.1	+39.1	+32.6	+12.2	—14.0
Z	+ 5.0	+ 2.8	+ 0.9	— 0.3	+ 0.2	+ 1.5	+ 3.7	+ 5.0	+ 2.4	— 2.8	—11.4	—21.1
							May					
H	+ 9.0	+ 8.9	+ 6.4	+ 8.0	+ 8.2	+ 3.5	— 1.1	—11.9	—17.4	—17.9	—13.0	— 6.0
D	+ 4.2	+ 7.1	+ 7.5	+ 8.3	+14.8	+23.7	+34.3	+36.9	+32.2	+18.8	— 1.8	—22.5
Z	+ 3.7	+ 3.0	+ 2.7	+ 2.7	+ 4.2	+ 6.0	+ 4.8	+ 2.0	— 1.8	— 8.5	—15.4	—20.5

12	13	14	15	16	17	18	19	20	21	22	23	Monthly Averages
— 9.7	— 7.5	— 9.6	— 8.5	— 5.3	— 4.5	— 2.2	— 1.5	+ 1.3	+ 1.3	+ 0.2	+ 1.9	21 124 nT
—11.9	—18.1	—18.8	—17.1	—11.9	—10.4	— 7.0	— 3.4	+ 2.9	+10.2	+ 9.7	+ 9.1	0°49.3'
— 6.9	— 4.4	— 0.8	+ 2.5	+ 2.6	+ 2.4	+ 3.0	+ 3.6	+ 3.7	+ 3.4	+ 2.9	+ 2.0	42 482 nT
— 3.8	— 4.2	— 4.8	— 6.4	— 7.7	— 8.6	— 9.8	— 5.9	— 1.9	+ 1.8	+ 0.4	— 1.1	21 115 nT
—15.7	—20.3	—21.0	—18.4	—16.5	—16.2	— 7.3	— 5.0	+ 1.9	+ 8.1	+10.1	+14.2	0°50.4'
— 8.0	— 7.1	— 3.8	— 0.3	+ 0.6	+ 2.2	+ 4.7	+ 6.2	+ 6.4	+ 4.8	+ 3.9	+ 3.2	42 483 nT
— 7.5	— 7.4	— 8.9	—12.3	—13.3	—12.4	— 9.8	— 4.3	+ 0.1	+ 4.1	+ 8.2	+ 8.8	21 113 nT
—30.5	—40.7	—37.8	—25.4	—12.9	— 2.6	— 0.2	+ 3.2	+ 4.4	+ 3.9	+ 7.9	+ 8.0	0°50.8'
—18.5	—14.5	— 8.0	— 1.1	+ 6.6	+ 8.6	+ 8.6	+ 8.6	+ 7.9	+ 7.3	+ 5.9	+ 4.6	42 484 nT
—11.7	—12.0	— 8.9	— 6.2	— 4.2	— 2.1	+ 2.4	+ 7.0	+ 9.7	+10.7	+10.9	+15.1	21 110 nT
—39.8	—48.4	—49.9	—38.5	—21.3	— 7.7	— 0.2	+ 0.8	+ 2.2	+ 2.6	+ 5.7	+ 4.1	0°51.3'
—24.3	—19.7	—11.7	— 1.5	+ 6.8	+11.2	+10.9	+10.3	+ 9.5	+ 8.6	+ 7.6	+ 6.4	42 482 nT
— 5.8	— 6.2	— 5.8	— 6.7	— 1.3	+ 1.4	+ 5.0	+ 7.7	+ 8.4	+ 8.8	+ 8.1	+ 9.7	21 121 nT
—36.1	—40.4	—35.1	—26.9	—16.8	— 5.7	+ 0.3	— 0.1	— 1.8	— 1.8	+ 0.8	+ 2.1	0°52.2'
—15.1	—16.8	— 9.4	— 1.4	+ 5.2	+ 8.5	+ 9.4	+ 8.8	+ 8.2	+ 7.4	+ 6.9	+ 5.4	42 488 nT

	0	1	2	3	4	5	6	7	8	9	10	11
						June						
H	+ 6.0	+ 5.0	+ 5.5	+ 6.1	+ 9.1	+ 8.3	+ 0.9	— 9.6	—17.3	—18.0	—14.0	— 7.8
D	+ 1.1	+ 4.0	+ 3.8	+ 7.1	+14.7	+23.5	+33.6	+35.4	+34.8	+23.0	+ 5.2	—13.3
Z	+ 4.0	+ 3.3	+ 5.0	+ 6.0	+ 8.3	+ 7.6	+ 6.4	+ 4.2	+ 0.9	— 5.4	—13.2	—20.3
						July						
H	+ 9.2	+ 4.7	+ 6.6	+ 7.5	+11.5	+12.4	+ 2.9	— 9.9	—19.7	—26.2	—22.9	—15.1
D	+ 2.1	+ 9.8	+ 8.2	+11.4	+16.9	+29.1	+36.8	+39.4	+35.6	+23.1	+ 2.5	—18.5
Z	+ 2.2	+ 1.9	+ 1.7	+ 1.7	+ 3.7	+ 5.1	+ 4.2	+ 2.1	— 1.1	— 5.5	—12.6	—19.0
						August						
H	+ 8.7	+ 8.9	+ 9.9	+11.5	+10.4	+ 9.7	+ 1.5	—11.9	—26.5	—32.2	—24.4	—13.3
D	+ 6.0	+ 6.0	+ 5.9	+ 7.2	+ 13.2	+25.0	+36.9	+39.3	+32.2	+14.7	— 6.0	—24.4
Z	+ 3.4	+ 2.8	+ 2.2	+ 2.1	+ 3.7	+ 5.1	+ 4.7	+ 4.0	+ 0.7	— 5.3	—11.9	—17.2
						Septembe						
H	+ 8.3	+10.3	+ 9.8	+12.0	+11.5	+11.0	+ 6.5	— 1.7	—15.0	—20.5	—20.6	—15.8
D	+ 7.5	+ 7.9	+ 9.7	+11.2	+11.3	+16.8	+24.5	+32.6	+35.2	+22.0	+ 3.6	—17.8
Z	+ 4.2	+ 3.2	+ 2.7	+ 2.0	+ 2.2	+ 3.3	+ 4.8	+ 5.0	+ 3.9	+ 0.3	— 8.4	—14.1
						October						
H	+13.9	+10.7	+ 8.8	+ 8.8	+ 8.7	+11.4	+13.0	+ 9.5	+ 0.8	—10.0	—18.2	—19.1
D	+12.9	+10.7	+ 8.6	+ 7.3	+ 6.4	+ 2.9	+ 7.4	+18.4	+29.0	+27.9	+12.8	—13.1
Z	+ 1.9	+ 0.8	+ 0.9	— 0.2	— 0.7	— 0.5	+ 0.9	+ 3.8	+ 3.5	— 2.2	—10.8	—15.5

12	13	14	15	16	17	18	19	20	21	22	23	Monthly Averages
— 1.9	— 5.2	— 6.1	— 3.5	— 0.1	+ 3.0	+ 5.0	+ 9.0	+ 9.4	+ 6.3	+ 4.9	+ 5.6	21 110 nT
—29.5	—37.6	—36.7	—34.2	—22.4	—11.8	— 4.7	— 0.4	+ 0.8	+ 0.5	+ 1.9	+ 1.2	0 51.6'
—21.1	—19.3	—14.0	— 2.7	+ 5.6	+ 7.7	+ 8.9	+ 7.7	+ 7.1	+ 6.3	+ 3.8	+ 3.2	42 486 nT
— 5.8	— 2.6	— 1.5	+ 2.8	— 1.7	+ 1.8	+ 3.7	+ 6.5	+ 8.1	+ 8.0	+ 9.1	+10.6	21 129 nT
—35.3	—42.7	—42.0	—35.0	—22.0	—11.4	— 1.0	+ 0.1	— 3.2	— 2.3	— 1.3	— 0.3	0°52.7'
—21.9	—19.8	—12.1	+ 1.0	+ 8.1	+11.5	+11.6	+ 9.8	+ 8.4	+ 7.8	+ 6.6	+ 4.6	42 497 nT
— 4.7	+ 1.5	+ 1.5	— 2.2	— 2.4	— 0.8	+ 3.5	+ 7.8	+ 9.8	+10.7	+12.9	+10.1	21 117 nT
—35.7	—41.3	—38.3	—28.1	—15.2	— 2.5	+ 0.6	— 0.3	— 0.9	— 0.5	+ 2.6	+ 3.8	0°52.9'
—19.4	—16.0	— 9.6	— 2.0	+ 7.0	+ 9.6	+ 7.7	+ 6.5	+ 6.8	+ 6.1	+ 5.0	+ 4.0	42 512 nT
—12.2	— 8.1	— 4.5	— 3.6	— 2.8	— 2.2	+ 1.6	+ 5.0	+ 8.6	+ 7.6	+ 7.0	+ 8.0	21 121 nT
—34.0	—39.8	—35.5	—25.4	—16.7	—10.8	— 9.2	— 4.6	— 4.0	+ 1.5	+ 6.3	+ 7.7	0°53.4'
—14.7	—12.0	— 6.6	— 5.0	+ 0.4	+ 2.6	+ 3.5	+ 5.1	+ 5.0	+ 4.9	+ 5.0	+ 2.7	42 514 nT
—18.7	—10.7	— 9.4	—10.8	—11.1	— 4.4	— 3.3	— 0.2	+ 1.6	+ 7.3	+ 8.5	+12.9	21 104 nT
—29.2	—39.4	—33.7	—25.2	—17.0	—11.0	— 7.2	— 2.8	+ 3.8	+ 9.2	+10.7	+10.6	0°55.0'
—14.7	—11.6	— 6.2	+ 0.8	+ 0.6	+ 6.5	+ 7.3	+ 7.6	+ 7.8	+ 6.6	+ 4.7	+ 3.3	42 526 nT

	0	1	2	3	4	5	6	7	8	9	10	11
						November						
H	+ 5.3	+ 5.5	+ 6.2	+ 8.5	+ 10.6	+ 14.3	+16.7	+15.1	+ 8.3	— 3.3	—10.4	—15.4
D	+11.3	+10.5	+ 5.9	+ 1.6	+ 0.3	— 0.6	+ 1.8	+ 6.8	+17.4	+19.2	+10.7	— 5.0
Z	+ 2.5	+ 1.0	+ 0.4	— 0.1	— 1.0	— 1.2	— 1.6	— 0.2	— 0.5	— 3.7	— 8.0	— 9.4
						December						
H	+ 1.6	+ 0.3	+ 0.7	+ 2.5	+ 6.9	+10.7	+12.6	+ 13.8	+11.7	+ 4.6	— 3.8	— 9.6
D	+ 8.7	+ 7.4	+ 3.8	+ 0.8	— 0.1	— 0.4	— 0.1	+ 3.3	+ 9.5	+12.1	+ 5.8	— 2.6
Z	+ 1.9	+ 1.4	+ 1.2	+ 0.8	+ 0.2	— 0.2	— 0.3	— 1.0	— 2.0	— 5.2	— 6.6	— 6.5
						1981 Yearly means						
H	+ 6.9	+ 6.2	+ 6.3	+ 7.2	+ 8.3	+ 9.2	+ 7.2	+ 2.1	— 4.9	—11.2	—13.1	—11.5
D	+ 7.6	+ 8.3	+ 7.2	+ 7.2	+ 8.5	+11.8	+17.7	+22.8	+26.6	+20.8	+ 5.7	—12.7
Z	+ 2.9	+ 2.1	+ 1.7	+ 1.3	+ 1.8	+ 2.3	+ 2.6	+ 2.5	+ 0.6	— 4.2	—10.3	—14.7
						1981 Quiet days						
H	+ 0.1	— 0.1	+ 0.2	+ 1.4	+ 3.3	+ 4.8	+ 4.0	+ 1.1	— 3.7	— 8.6	— 9.5	— 8.6
D	+ 4.3	+ 3.5	+ 3.8	+ 6.4	+ 7.3	+13.0	+18.2	+22.7	+25.3	+21.0	+ 6.9	— 8.9
Z	+ 4.7	+ 4.3	+ 4.0	+ 4.1	+ 5.1	+ 5.8	+ 5.1	+ 4.1	+ 1.4	— 3.7	— 9.1	—12.9
						1981 Disturbed days						
H	+30.4	+22.9	+21.0	+21.3	+14.8	+16.2	+11.5	— 1.0	— 8.8	—14.3	—14.7	—15.3
D	+ 4.1	+14.3	+14.5	+13.8	+16.4	+10.1	+15.4	+24.0	+28.0	+18.0	+ 2.8	—18.1
Z	— 4.1	— 6.4	— 7.9	—11.8	—12.2	—11.0	— 8.7	— 6.3	— 7.0	— 9.7	—14.4	—17.9

12	13	14	15	16	17	18	19	20	21	22	23	Monthly Averages
−15.8	−11.6	−10.8	−10.2	− 8.3	− 6.1	− 4.2	− 1.8	− 0.4	+ 1.1	+ 0.9	+ 5.8	21 109 nT
−19.7	−23.7	−22.1	−19.2	−15.5	−11.3	− 7.2	− 2.3	+ 4.2	+ 9.3	+13.2	+14.4	0°54.8'
− 8.1	− 5.3	− 1.8	+ 1.3	+ 3.0	+ 3.7	+ 4.6	+ 5.5	+ 5.6	+ 5.3	+ 4.8	+ 3.2	42 528 nT
− 9.4	− 7.6	− 8.5	− 7.4	− 7.1	− 7.3	− 4.7	− 1.8	− 0.3	+ 0.6	+ 0.2	+ 1.3	21 121 nT
−11.6	−16.3	−16.6	−13.5	−10.7	− 9.7	− 5.2	− 1.0	+ 3.2	+ 9.7	+12.3	+11.2	0°54.4'
− 6.8	− 4.5	− 1.3	+ 1.9	+ 3.0	+ 3.1	+ 3.6	+ 3.9	+ 3.8	+ 3.7	+ 3.4	+ 2.5	42 522 nT
− 8.9	− 6.8	− 6.4	− 6.3	− 5.4	− 3.5	− 1.1	+ 2.3	+ 4.5	+ 5.7	+ 5.9	+ 7.3	21 119 nT
−27.4	−34.1	−32.3	−25.7	−16.6	− 9.3	− 4.0	− 1.3	+ 1.1	+ 4.2	+ 6.7	+ 7.2	0°52.4'
−15.0	−12.6	− 7.1	− 0.5	+ 4.6	+ 6.5	+ 7.0	+ 7.0	+ 6.8	+ 6.0	+ 5.0	+ 3.7	42 500 nT
− 4.1	− 2.6	− 2.0	− 2.5	− 1.1	+ 0.2	+ 2.4	+ 4.8	+ 5.7	+ 5.2	+ 4.6	+ 5.0	21 131 nT
−21.6	−27.4	−25.9	−20.9	−13.2	− 7.3	− 4.4	− 3.2	− 1.5	− 0.2	+ 0.7	+ 1.4	0°51.7'
−14.4	−12.5	− 8.3	− 2.5	+ 1.4	+ 2.9	+ 3.4	+ 3.4	+ 3.5	+ 3.7	+ 3.4	+ 3.1	42 494 nT
−13.2	−17.5	−13.2	− 7.1	−16.2	− 6.5	− 5.9	− 5.5	− 2.0	− 0.3	− 0.8	+ 4.2	21 094 nT
−38.8	−41.3	−39.0	−33.4	−19.6	−13.3	− 0.9	+ 3.8	+ 7.6	+10.6	+10.2	+10.8	0°54.0'
−16.8	−12.6	− 2.2	+13.8	+20.6	+21.4	+20.3	+19.3	+17.4	+15.0	+11.8	+ 9.4	42 510 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	7.0	38	4.7	245	1.7	132	1.2	355	0.7	217	0.9	54
February	7.5	14	2.8	222	2.5	170	1.5	329	0.9	299	0.2	357
March	10.8	48	2.0	203	3.1	193	1.5	358	1.5	262	0.8	243
April	12.5	101	2.4	287	2.6	220	0.4	53	1.0	293	1.1	219
May	10.6	113	2.8	350	4.4	271	1.8	145	0.8	320	0.7	253
June	9.1	115	4.2	330	4.9	264	2.2	126	1.0	353	0.3	86
July	11.6	114	6.7	340	6.6	228	1.8	123	0.2	218	0.6	232
August	13.5	116	7.1	358	8.2	238	1.9	93	1.2	297	1.6	257
September	12.1	95	5.9	325	4.5	229	0.8	44	1.1	332	0.9	240
October	13.0	71	4.5	277	4.1	174	1.7	17	1.6	239	1.5	280
November	11.3	47	6.1	269	3.1	158	1.5	18	0.7	235	0.4	242
December	7.9	28	5.2	244	2.7	152	1.2	353	0.6	163	0.5	65
Year	8.7	81	3.1	299	3.1	217	0.7	52	0.7	281	0.5	254
Q	4.8	108	2.6	279	2.8	210	0.9	69	0.4	225	0.2	170
D	15.8	61	6.4	342	2.2	289	1.0	7	2.0	345	2.0	279
					Declination							
January	9.7	47	8.3	179	3.1	28	3.6	253	0.5	291	1.2	321
February	13.0	48	8.4	181	3.2	52	3.3	275	0.8	209	0.9	285
March	16.6	44	15.7	220	8.9	45	4.6	247	1.5	198	0.4	142
April	24.1	36	20.4	221	11.0	45	3.0	264	1.3	247	1.1	306
May	22.5	35	18.3	242	7.1	79	0.9	15	0.5	227	1.2	293
June	23.0	28	18.3	229	4.7	70	0.4	29	0.2	192	0.6	321
July	26.0	31	19.3	237	6.5	63	1.0	45	0	337	1.2	207
August	22.3	37	19.4	243	7.4	89	1.3	70	1.6	273	0.7	296
September	22.3	34	15.2	228	7.9	78	3.1	271	1.3	250	0.8	231
October	17.6	42	14.7	205	8.2	53	5.9	265	0.7	211	0.6	312
November	11.8	50	11.1	185	4.8	53	4.1	260	0.5	158	1.4	294
December	8.3	57	8.0	179	2.4	51	2.9	252	0.3	249	0.9	295
Year	17.9	38	13.7	220	6.0	60	2.3	265	0.6	234	0.8	296
Q	15.4	26	11.9	225	5.3	63	1.6	263	0.3	199	0.5	330
D	22.8	50	15.7	222	6.4	43	4.2	283	1.2	220	0.8	255

	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	5.6	128	2.2	284	1.1	132	0.7	298	0.2	2	0.4	208
February	4.8	119	3.0	257	0.5	111	0.7	315	0.1	82	0.4	192
March	8.0	113	7.6	265	3.5	103	1.3	300	0.8	243	0.3	73
April	9.8	113	9.1	259	4.4	89	1.5	265	0.3	269	0.9	297
May	9.6	109	7.7	276	2.0	119	0.4	226	0.7	269	0.3	33
June	9.8	95	9.1	275	2.4	81	1.3	245	0.4	291	0.4	62
July	9.7	113	9.0	271	3.2	87	1.7	224	0.5	349	0.2	290
August	8.2	105	7.7	272	3.0	96	1.0	237	0.6	299	0.4	8
September	6.3	89	5.5	257	2.2	102	1.4	310	0.4	211	0.7	328
October	6.5	120	6.1	262	3.0	99	1.7	305	0.6	245	0.4	92
November	5.1	131	2.7	267	1.3	123	1.1	308	0.5	220	0.1	130
December	4.2	128	2.2	289	0.9	133	0.6	290	0.3	304	0.3	209
Year	7.0	111	5.9	268	2.2	100	0.9	279	0.3	274	0.1	353
Q	6.8	86	5.3	275	1.7	102	0.8	271	0.4	306	0.2	309
D	16.7	163	7.5	258	4.6	103	1.8	237	0.4	333	0.9	162

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 of 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 accunt 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 im 10^{-9} 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. Further informations are given by P. BENCZE and F. MÄRCZ: „The Geophysical Observatory near Nagycenk. II. Atmospheric electric and ionospheric measurements". Acta Geod. Geoph. Mont. Hung. 16, 1981, 353-357.

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.	130	190	160	120	190	180	140	90	130	[90]	+S	±S	—S
2.	90	80	80	70	90	90	70	80	100	120	[120]	110	100
3.	30	30	+S	+S	—20	20	30	40	±S	[80]	90	100	±S
4.	±S	80	70	80	80	80	100	90	110	110	130	[130]	140
5.	90	100	±S	±S	60	70	90	[90]	—	±S	±S	60	+S
6.	60	70	90	90	80	80	100	140	170	140	140	[160]	150
7.	±S	±S	±S	50	70	80	80	90	130	110	[80]	120	70
8.	110	130	130	140	140	130	180	190	230	210	[190]	170	200
9.	160	140	110	100	100	100	140	150	190	[220]	[220]	+S	+S
10.	130	130	130	130	100	180	+S	+S	200	[+S]	210	200	+S
11.	200	150	110	100	100	130	120	120	130	190	[+S]	+S	230
12.	10	40	50	60	50	40	100	[140]	—	190	170	150	170
13.	90	90	80	40	80	60	50	0	—20	—S	±S	±S	±S
14.	50	60	70	90	100	110	130	150	170	170	[140]	120	140
15.	70	70	—90	—40	70	70	90	50	—40	40	[80]	180	+S
16.	80	70	80	60	70	80	80	110	120	130	[90]	80	80
17.	60	50	60	60	60	20	30	80	100	[110]	80	120	100
18.	200	180	200	150	140	160	200	160	40	130	200	200	170
19.	±S	—S	130	40	40	30	20	[—10]	—	—	—	110	130
20.	130	120	—S	80	70	80	90	130	120	120	[100]	80	80
21.	50	40	50	40	40	30	30	30	—	—	—	[70]	70
22.	50	50	50	50	60	60	50	50	60	60	[70]	90	90
23.	50	50	50	50	60	90	70	70	120	[140]	150	160	160
24.	130	150	130	150	130	120	120	120	[130]	150	150	+S	+S
25.	140	90	90	120	110	90	110	120	50	40	[60]	60	100
26.	50	—	—	—	—	—	110	40	—	130	110	80	+S
27.	50	40	50	50	50	60	80	90	100	110	—	(140)	160
28.	130	130	120	130	130	140	150	160	180	140	[130]	150	150
29.	140	150	140	130	140	160	160	170	220	210	[210]	220	200
30.	120	120	110	130	120	120	120	130	220	200	[190]	220	220
31.	150	120	100	100	100	110	110	130	150	110	80	[150]	150
Means	98	97	92	85	87	92	98	100	124	133	133	132	139
Number of days	28	28	26	28	30	30	30	30	25	26	24	25	22

13	14	15	16	17	18	19	20	21	22	23	Daily means
±S	±S	80	40	±S	20	+S	80	90	90	90	—
100	90	80	70	100	110	120	80	30	60	30	86
40	90	130	130	140	100	80	160	190	±S	90	—
190	160	130	130	120	120	100	110	100	110	90	111
+S	40	70	80	90	110	80	80	±S	90	70	—
80	60	120	100	120	120	80	120	80	+S	±S	—
80	90	130	140	140	140	130	130	120	110	110	—
210	200	180	180	160	170	190	180	190	190	180	174
+S	+S	+S	180	170	180	180	190	+S	180	140	—
+S	+S	170	170	210	220	+S	+S	+S	+S	180	—
+S	+S	+S	130	130	170	130	120	50	60	(50)	—
140	130	130	120	120	120	120	130	140	140	130	113
—20	50	140	130	50	50	60	30	30	40	60	—
140	180	170	170	130	100	120	90	110	100	120	122
140	130	70	90	110	120	120	100	80	80	80	73
120	90	100	80	80	70	80	70	70	70	60	84
140	170	180	+S	180	160	200	+S	+S	190	170	—
180	—	—	120	190	180	220	200	170	200	±S	—
140	110	—100	30	60	90	80	60	120	120	130	—
80	+S	100	120	110	100	90	50	30	50	50	90
50	40	50	70	70	40	60	90	60	80	60	—
90	100	100	90	80	90	70	50	50	40	0	65
220	230	220	190	160	150	140	150	150	120	120	128
+S	+S	+S	130	120	150	150	150	150	150	150	—
100	90	90	70	80	90	+S	40	—20	+S	+S	—
—10	50	80	90	100	70	70	80	90	80	70	—
140	130	130	150	150	150	150	140	150	160	140	—
140	140	130	140	180	110	170	180	170	150	140	145
230	+S	+S	200	170	160	180	210	190	150	130	—
+S	+S	190	200	170	170	210	220	220	220	150	—
170	+S	160	180	190	200	180	+S	+S	160	170	—
120	113	117	124	130	124	127	118	108	118	108	
24	21	26	30	30	31	28	28	26	27	27	

February

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	200	130	90	70	60	70	90	140	160	+S	[130]	120	120
2.	80	100	70	60	60	130	150	[170]	—	+S	140	130	130
3.	80	90	90	130	150	160	200	+S	+S	220	[180]	170	180
4.	80	60	70	120	120	100	120	100	120	90	100	100	[120]
5.	90	90	110	110	110	120	120	120	140	120	90	[80]	80
6	70	60	50	50	60	70	90	100	90	100	110	[110]	120
7.	50	30	+S	+S	—	—	—	+S	60	[60]	10	30	40
8.	80	80	50	60	50	70	80	80	110	130	[100]	80	110
9.	50	50	40	30	40	60	70	100	—	120	100	80	60
10.	50	50	60	70	50	70	30	—10	50	70	[80]	90	70
11.	30	50	50	50	80	70	90	120	110	110	100	[100]	90
12.	70	80	90	70	60	80	120	120	120	80	[70]	60	70
13.	70	60	50	60	60	60	70	70	70	80	[80]	90	80
14.	—S	40	40	50	20	—	0	20	[60]	100	120	90	70
15.	70	60	50	60	60	60	70	60	60	70	[70]	60	70
16.	50	50	50	60	70	90	100	—	—	130	160	140	140
17.	80	60	70	50	60	60	70	60	90	80	100	100	[100]
18.	100	80	60	60	70	90	110	120	110	110	90	90	[80]
19.	10	40	20	0	20	0	—10	120	30	70	80	70	[80]
20.	50	40	50	70	80	80	80	120	110	80	30	[40]	30
21.	50	50	50	40	40	30	50	50	40	[40]	40	30	30
22.	130	100	100	110	—S	+S	+S	+S	+S	50	20	40	50
23.	110	140	50	80	160	120	60	60	—	[60]	80	70	70
24.	100	80	70	60	40	50	60	100	90	80	[40]	40	80
25.	100	90	40	40	30	50	50	70	50	40	[80]	60	70
26	30	30	—10	0	30	40	60	60	90	100	110	[120]	110
27.	80	80	60	60	70	80	100	110	100	90	[100]	120	110
28.	60	70	60	50	60	60	70	70	50	[50]	70	70	90
Means	75	69	59	62	66	75	81	89	87	90	89	85	88
Number of days	27	28	27	27	26	25	26	24	22	26	28	28	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
130	120	160	+S	+S	+S	+S	+S	190	120	90	—
110	120	130	160	190	220	220	170	170	170	120	—
160	170	130	150	160	160	+S	150	130	90	90	—
140	100	140	120	100	150	30	±S	+S	110	70	—
70	50	±S	60	90	90	80	80	50	50	60	90
90	90	70	100	130	130	120	50	30	30	10	80
20	10	20	40	60	110	100	130	140	140	120	—
100	110	100	90	110	160	150	90	90	70	70	93
80	80	80	70	60	70	50	50	40	—10	0	60
60	50	70	90	—S	+S	70	30	50	50	0	—
90	110	100	80	30	10	30	50	40	40	50	70
70	70	80	80	80	90	90	90	100	80	80	83
70	60	80	—S	60	50	50	60	60	50	30	64
70	70	60	60	80	90	90	90	90	100	80	—
80	90	90	100	90	80	90	80	70	70	60	72
110	120	130	100	100	90	90	110	120	100	80	—
90	80	90	100	100	100	120	100	100	110	100	86
70	90	40	30	20	0	100	90	70	70	30	74
90	90	100	90	80	80	100	80	60	60	50	59
30	40	50	60	70	70	70	60	70	60	60	63
30	40	40	60	80	80	50	70	+S	130	120	54
100	60	+S	170	90	30	50	120	150	+S	170	—
80	60	80	80	90	100	120	100	110	100	120	91
80	60	50	80	100	100	100	90	100	100	100	77
60	80	90	50	30	80	100	100	110	100	70	68
100	100	110	100	120	120	90	80	70	70	90	76
100	90	80	70	60	80	50	50	50	60	60	80
100	100	100	100	100	100	90	50	50	20	10	69
85	83	87	88	88	94	88	85	89	79	71	
28	28	26	26	26	26	26	26	26	27	28	

March

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	10	10	10	0	—10	0	0	—20	20	40	[60]	80	80
2.	—10	—30	10	—10	0	—10	10	0	—	10	20	20	20
3.	20	60	—10	30	50	120	110	130	120	[40]	60	90	130
4.	70	100	60	60	60	20	30	—10	10	[50]	50	40	40
5.	30	40	30	20	50	70	110	130	140	[130]	110	90	70
6.	60	50	40	30	20	30	30	40	80	100	[90]	100	90
7.	80	100	110	110	100	40	20	60	110	[100]	120	90	80
8.	70	70	70	70	70	70	120	140	140	[140]	130	120	120
9.	0	0	0	0	0	0	10	30	—	80	50	50	50
10.	70	50	30	10	—10	—10	20	40	20	30	[40]	—20	+S
11.	10	10	10	10	10	0	0	20	40	40	[50]	40	80
12.	40	40	30	20	±S	30	70	60	40	[50]	40	50	20
13.	50	50	60	50	40	40	70	70	60	[50]	50	60	70
14.	60	60	50	70	60	60	100	110	70	[80]	70	30	70
15.	50	50	40	40	10	30	40	80	70	[50]	60	50	60
16.	40	80	30	30	60	70	80	[70]	—	70	80	40	60
17.	50	30	30	20	30	30	70	100	80	70	[70]	70	70
18	10	0	0	+S	+S	30	40	30	10	70	[30]	30	60
19.	0	0	—10	—10	—10	10	0	30	70	—40	[—S]	—S	—S
20.	80	70	100	120	80	90	110	120	130	(120)	[110]	120	90
21.	110	120	120	130	110	120	140	140	180	[190]	160	120	100
22.	70	60	60	70	50	80	70	60	90	[90]	90	80	80
23.	30	50	60	60	70	80	90	120	—	[120]	100	100	120
24.	60	50	±S	+S	+S	+S	+S	60	50	[70]	100	70	80
25.	10	+S	±S	—S	±S	20	10	30	20	40	[80]	100	40
26.	100	80	60	40	—10	10	20	40	60	[60]	100	90	80
27.	50	70	40	50	70	80	110	110	80	70	[70]	90	110
28.	50	40	40	40	40	40	60	70	50	60	[60]	60	60
29.	0	10	0	10	10	10	30	20	40	[50]	50	70	70
30.	40	20	20	30	20	30	—	—	—10	—20	—40	—40	—40
31.	40	50	50	10	40	10	—10	20	30	60	[60]	80	70
Means	44	46	39	40	37	40	54	63	67	65	71	66	70
Number of days	31	30	29	28	27	30	29	30	27	30	30	30	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
70	60	60	10	0	20	20	0	—60	—50	—90	13
40	30	30	10	40	60	10	70	40	0	10	16
170	150	90	50	90	120	70	120	90	120	120	89
50	50	50	30	20	30	40	30	30	30	20	40
60	40	30	60	40	60	50	50	80	80	70	68
100	110	90	90	110	120	120	130	130	100	80	81
60	50	50	40	30	70	40	60	60	50	60	70
110	100	100	90	100	150	90	—S	10	40	0	92
70	80	80	80	80	80	70	50	50	60	40	44
—10	—20	—10	—10	—10	—10	30	40	60	40	30	17
110	10	40	50	60	60	50	40	50	30	40	36
30	50	60	70	70	100	60	60	50	50	50	50
60	50	60	70	80	80	80	60	60	50	40	59
90	80	60	30	50	40	120	±S	±S	20	50	—
70	70	70	50	60	70	80	60	40	40	30	53
—20	—30	—30	—10	20	50	70	50	30	30	50	40
60	40	50	50	40	40	30	±S	±S	—S	20	—
30	0	0	0	—10	30	—10	—10	0	0	0	—
—10	80	70	30	80	110	130	120	110	110	100	—
90	80	80	70	50	50	70	90	100	140	120	94
90	50	30	60	90	110	70	70	60	70	80	105
80	80	70	40	60	70	60	60	30	40	30	65
110	80	50	40	50	50	20	10	40	40	50	67
80	70	80	70	80	70	80	60	70	70	70	—
80	40	10	50	80	70	60	80	80	100	100	—
60	60	130	90	90	50	±S	±S	—S	±S	20	—
100	90	90	120	120	120	100	100	80	70	60	85
60	70	60	40	30	30	40	40	30	10	—30	44
50	60	60	60	30	50	50	40	40	30	30	36
—40	—30	30	70	60	30	20	—20	—40	20	40	—
90	80	80	80	80	50	50	50	40	10	30	48
64	56	55	51	57	65	59	56	49	48	43	
31	31	31	31	31	31	30	27	28	29	31	

April

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	20	20	—20	10	40	20	30	40	[50]	80	80	100	100
2.	60	50	50	60	60	60	50	80	100	[80]	[100]	90	100
3.	10	10	10	20	40	40	40	40	[40]	50	50	60	60
4.	40	20	0	10	20	—10	0	10	[30]	50	60	50	50
5.	20	20	10	20	20	10	10	0	30	[40]	40	60	60
6.	30	40	10	10	—10	—50	—	—	50	70	60	70	70
7.	40	30	0	10	—20	—20	20	[60]	80	90	100	90	90
8.	30	20	30	50	50	50	60	80	[70]	80	90	100	110
9.	—	—	—	—	—	—	—	30	[20]	20	60	60	80
10.	40	50	50	40	40	50	80	90	80	[100]	100	100	100
11.	20	20	20	0	0	30	[70]	70	80	90	100	80	60
12.	30	30	30	30	40	40	50	[50]	60	50	50	50	50
13.	30	30	30	30	40	40	[60]	—	70	70	70	60	60
14	—	—	—	—	—	—	—	70	[70]	70	70	70	80
15.	50	60	60	60	70	100	100	110	110	[100]	100	100	110
16.	30	20	30	20	30	30	40	10	10	[20]	30	20	10
17.	30	10	—40	—30	—40	—50	10	70	90	80	[70]	60	60
18.	30	10	—10	0	—30	—10	—40	[—50]	—40	—20	—10	40	50
19.	30	—30	10	—30	20	39	0	20	50	40	40	40	50
20.	40	40	20	40	40	40	50	[50]	60	50	50	50	50
21.	60	40	10	20	0	—20	[—70]	—	40	50	50	60	60
22.	20	20	20	10	20	30	80	70	60	60	[70]	60	60
23.	40	50	30	30	30	30	30	70	70	70	[50]	60	70
24.	10	30	30	30	—30	—30	—40	—20	±S	±S	±S	+S	+S
25.	10	+S	+S	+S	+S	+S	+S	200	70	30	30	30	30
26.	10	—10	20	30	30	10	60	70	60	[80]	50	60	80
27.	30	30	30	30	10	30	+S	—	70	30	30	30	30
28.	40	30	30	30	—30	+S	—	—	—	±S	±S	±S	30
29.	40	30	30	40	30	30	30	30	+S	[70]	30	30	70
30.	30	30	40	30	30	30	20	30	30	[30]	40	30	40
Means	31	26	20	22	19	20	31	51	56	58	59	61	64
Number of days	28	27	27	27	27	26	24	25	27	28	28	28	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
90	70	80	90	80	120	100	90	70	60	60	62
120	120	130	120	120	80	80	40	20	10	20	75
70	70	50	50	60	70	60	50	50	50	40	45
60	50	50	60	40	40	40	40	30	30	30	33
60	70	60	70	80	80	60	40	50	30	—10	39
70	80	90	80	70	60	60	40	0	10	30	—
80	90	90	80	70	60	50	40	40	20	20	50
90	80	90	80	70	50	40	40	40	—	—	—
90	70	70	30	0	0	+S	±S	—20	30	40	—
110	100	90	70	70	70	60	40	40	40	10	68
60	50	50	30	30	30	30	20	20	20	30	42
50	50	50	50	60	50	40	40	40	40	40	45
80	70	60	50	50	—	—	—	—	—	—	—
70	70	70	70	70	80	70	60	90	120	70	—
110	90	80	80	70	60	50	40	40	40	40	76
10	30	30	20	10	—10	40	60	50	40	50	26
50	70	70	80	90	70	70	110	150	80	50	50
40	30	30	20	40	30	50	40	40	20	20	12
50	40	50	30	20	50	50	50	50	50	40	31
50	40	40	30	20	20	10	30	30	—10	+S	37
40	40	30	30	30	30	30	30	20	30	20	27
50	60	50	60	40	50	50	50	50	50	40	47
80	90	70	70	60	40	20	20	30	30	30	49
+S	+S	100	100	80	80	10	+S	+S	+S	+S	—
50	60	50	50	30	30	20	30	10	20	70	—
70	30	30	30	30	30	40	40	40	40	30	40
—S	±S	+S	30	20	10	+S	+S	30	+S	30	—
60	50	70	70	70	—S	20	40	40	40	40	—
30	60	60	60	60	60	60	70	40	30	30	44
50	40	—40	10	30	—30	40	70	30	40	40	29
66	63	60	57	52	47	46	47	40	37	35	
28	28	29	30	30	28	27	26	26	26	26	

May

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1	10	30	0	20	—30	30	30	[10]	20	30	10	—30	—10
2.	100	80	80	90	80	80	70	[100]	110	80	80	90	90
3.	40	40	50	40	40	40	60	40	20	[40]	50	50	50
4.	40	40	30	40	50	70	[40]	—	10	10	—10	—40	20
5.	20	20	20	10	20	40	50	[30]	30	20	20	30	40
6.	20	20	20	20	10	20	20	20	20	[30]	30	20	30
7.	30	30	20	20	20	30	60	70	80	90	[80]	80	100
8.	40	30	20	20	30	—	—	—	—	—	—	—	70
9.	20	20	20	20	30	20	30	40	40	[50]	40	(20)	20
10	20	20	20	20	30	40	30	50	[60]	40	40	30	30
11.	20	30	20	30	30	50	50	—	50	40	40	40	40
12.	30	50	20	40	50	80	80	120	110	[60]	50	40	30
13.	40	40	30	40	50	70	60	80	90	[70]	60	40	50
14.	30	20	20	40	40	40	50	50	70	[80]	90	70	±S
15.	30	30	20	20	30	50	110	[90]	50	50	30	±S	±S
16.	40	40	40	40	30	40	20	30	[40]	—40	40	—S	±S
17.	30	40	40	40	50	30	40	40	40	[30]	30	20	10
18.	20	30	30	30	40	60	(70)	—	[90]	80	80	80	70
19.	30	30	20	20	30	40	40	40	40	[40]	40	40	40
20.	10	20	30	20	10	40	40	50	50	[50]	50	40	40
21.	50	50	40	40	40	60	40	40	30	[20]	10	20	20
22.	10	10	10	0	10	20	20	20	30	[30]	30	30	20
23.	—30	10	80	70	40	30	40	20	[10]	30	40	20	10
24.	0	10	10	10	10	10	20	20	[20]	20	20	40	30
25.	30	20	10	20	20	40	50	—	(30)	20	20	10	0
26.	10	10	10	10	0	—10	10	20	[20]	20	20	20	20
27.	10	—10	—30	—10	10	20	30	30	40	[40]	30	—10	20
28.	40	40	40	40	30	50	50	—60	—160	—10	—20	40	50
29.	10	10	10	20	30	30	70	[80]	60	50	40	40	40
30.	20	20	20	40	40	50	[50]	50	40	40	30	30	—S
31.	—	—	—	—	—	20	[60]	90	70	40	20	20	20
Means	26	28	25	29	29	40	46	45	41	38	36	32	35
Number of days	30	30	30	30	30	30	29	26	29	30	30	27	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
90	80	80	50	±S	—40	70	100	100	100	100	37
70	70	90	70	50	60	50	50	70	70	60	77
60	60	70	60	60	40	50	60	50	50	50	49
—20	—80	20	70	60	20	70	60	50	60	50	29
50	60	40	40	40	40	30	30	20	20	20	31
30	30	40	50	50	70	70	50	50	50	40	34
90	90	100	100	90	110	100	90	70	60	40	69
70	70	50	30	30	40	30	20	20	20	20	—
20	30	20	20	20	20	20	20	20	20	20	25
30	30	30	30	30	30	30	30	30	20	20	31
20	±S	±S	30	±S	±S	±S	30	50	50	50	—
30	30	30	40	50	70	60	50	50	40	40	52
50	50	50	40	50	50	50	50	40	40	40	51
±S	±S	±S	—70	+S	±S	20	20	20	30	40	—
±S	±S	±S	30	40	40	40	40	50	30	30	—
±S	60	70	—S	—S	±S	±S	±S	50	50	40	—
30	30	—S	±S	+S	10	10	—50	30	20	20	—
60	50	50	50	50	40	40	30	40	30	30	—
30	30	—S	—S	20	30	30	20	20	10	10	—
40	20	30	40	40	40	40	30	30	40	40	35
30	30	20	20	10	10	10	10	0	10	10	26
20	30	30	20	20	30	20	20	10	10	—10	18
10	20	30	30	30	30	40	30	10	0	0	25
30	30	40	40	40	20	20	20	30	80	20	25
—10	—10	0	20	30	30	30	30	30	40	30	—
20	30	30	30	30	40	40	50	40	30	30	22
10	20	40	40	40	40	50	60	60	60	50	27
50	40	20	10	10	20	20	10	10	10	10	14
40	40	30	20	20	40	(40)	30	30	30	30	35
—	—	—	—	—	—	—	—	—	—	—	—
20	30	40	40	40	40	40	30	30	30	20	—
36	36	42	35	38	36	40	35	37	37	32	
27	27	25	27	25	27	27	29	30	30	30	

June

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	20	30	30	20	30	40	40	—	[30]	20	30	20	20
2.	20	20	10	10	20	—	—	—	—	—	—	—	—
3.	40	40	30	40	50	—	—	—	—	—	—	—	—
4.	50	50	40	50	60	—	—	—	—	—	—	—	—
5.	50	40	50	40	40	50	50	50	40	[50]	50	40	30
6.	±S	30	30	20	20	20	20	[30]	30	40	30	50	60
7.	30	30	40	40	30	50	40	[40]	50	60	60	70	60
8.	30	10	10	20	30	60	80	—	—	60	40	40	—
9.	—10	0	20	10	—10	0	20	[40]	[30]	20	30	30	20
10.	30	40	30	60	40	40	50	[50]	30	40	+S	±S	100
11.	30	20	20	20	40	80	70	80	90	90	90	80	80
12.	60	60	60	60	70	80	[80]	80	80	70	50	40	30
13.	50	70	30	10	20	80	80	70	[80]	80	60	80	80
14.	50	40	50	40	30	40	50	70	[80]	70	70	60	60
15.	50	30	30	50	60	60	50	—	50	60	80	90	120
16.	30	30	30	20	40	±S	+S	50	±S	+S	50	±S	±S
17.	50	50	40	40	40	50	70	70	60	40	40	40	40
18.	±S	±S	±S	±S	±S	±S	±S	50	100	50	40	60	—60
19.	—60	—10	—10	—10	0	20	40	40	[40]	50	—20	20	30
20.	50	50	50	50	50	60	60	60	[50]	60	50	40	50
21.	40	40	40	40	50	60	120	70	[50]	40	±S	±S	±S
22.	10	10	20	30	40	40	(30)	—	30	40	50	60	60
23.	20	20	20	10	10	20	30	30	[50]	60	30	10	0
24.	±S	±S	±S	±S	120	40	30	30	30	[30]	+S	+S	80
25.	30	20	20	10	20	30	30	[30]	30	30	30	30	30
26.	—	—	—	10	30	40	40	50	[50]	40	30	—30	±S
27.	70	70	70	40	30	80	160	150	[130]	80	50	60	40
28.	30	40	30	30	30	50	40	[30]	40	30	30	30	40
29.	70	50	50	50	50	50	60	—	—	50	40	40	50
30.	80	60	50	50	40	50	50	[50]	50	60	60	60	70
Means	35	35	33	31	37	48	57	55	54	51	45	44	47
Number of days	26	27	27	28	29	25	24	22	24	26	24	23	23

13	14	15	16	17	18	19	20	21	22	23	Daily means
—	—	—	—	—	—	—	40	30	30	20	—
—	40	40	40	50	50	50	50	50	50	40	—
—	—	50	50	50	50	50	50	50	50	50	—
—	50	50	40	40	50	50	50	50	40	50	—
10	20	30	40	40	50	50	—S	±S	—S	—S	—
60	60	70	70	60	50	50	30	30	40	40	41
±S	±S	70	40	50	40	40	40	30	30	20	—
60	—S	±S	50	20	10	70	20	—20	—30	—10	—
40	40	40	40	40	40	30	30	40	50	40	26
60	30	70	40	60	60	70	60	40	30	30	—
[80]	90	80	80	90	100	70	50	50	40	40	65
30	40	40	40	50	70	60	70	50	70	50	58
80	80	90	110	140	160	180	130	110	70	40	83
50	50	50	40	40	40	30	30	30	30	40	48
100	60	60	60	+S	50	50	50	30	20	30	56
40	50	50	50	40	110	140	140	50	50	40	—
30	20	±S	±S	±S	±S	±S	±S	±S	±S	±S	—
60	±S	±S	0	(—90)	—130	—100	10	0	0	—40	—
30	30	10	0	0	30	40	50	50	50	40	19
50	40	±S	—S	50	50	50	40	50	50	40	—
±S	±S	±S	50	30	30	30	20	20	10	20	—
50	40	40	40	40	20	10	20	20	20	20	—
—30	—50	0	30	30	50	60	60	50	60	30	25
50	40	30	40	50	50	40	40	30	30	20	—
—S	±S	+S	0	40	70	50	40	—	—	—	—
±S	±S	±S	10	±S	60	40	70	+S	+S	90	—
40	30	30	30	30	30	30	30	30	30	30	57
40	40	50	50	50	60	70	80	80	80	80	47
40	30	30	40	40	50	50	40	60	70	100	—
60	70	80	30	30	20	40	70	90	80	80	58
47	41	48	41	46	47	50	50	42	40	38	
22	22	22	27	25	28	28	28	26	26	27	

July

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	60	50	40	40	50	70	70	60	[60]	60	60	40	40
2.	40	50	40	40	50	60	[60]	[70]	60	70	70	50	50
3.	50	40	40	50	40	(50)	30	70	[70]	40	70	70	70
4.	40	—S	±S	+S	±S	50	60	[80]	70	50	50	40	50
5.	40	30	30	20	40	40	70	[80]	100	90	80	60	50
6.	20	20	30	30	40	50	—	[40]	50	50	50	50	40
7.	30	30	20	20	20	30	30	[30]	50	50	50	50	40
8.	30	30	30	30	30	30	40	[40]	50	50	70	50	50
9.	30	40	30	30	30	50	60	[80]	80	80	70	—	—
10.	0	0	—10	—10	—10	—	[60]	[70]	70	60	70	60	50
11.	30	30	30	30	30	(30)	[60]	90	80	80	90	100	90
12.	50	30	30	30	30	50	30	40	40	[40]	40	30	30
13.	10	10	20	10	10	(30)	—	(40)	50	50	50	50	40
14.	30	40	50	40	40	±S	—S	±S	—S	70	50	30	20
15.	50	40	40	40	50	[50]	60	70	70	70	50	50	50
16.	10	10	20	10	30	40	70	80	[80]	70	60	40	30
17.	50	40	40	40	40	50	30	20	[30]	0	—20	0	—50
18.	30	20	20	30	40	40	[50]	40	30	30	—10	—10	—20
19.	50	40	±S	+S	20	20	±S	±S	±S	±S	±S	50	90
20.	30	20	10	0	30	50	50	—	30	30	20	10	10
21.	20	—10	—10	30	30	30	30	20	30	[—S]	—S	+S	(50)
22.	20	20	20	30	20	—	—	—	—	—	—	—	—
23.	40	30	40	40	50	50	60	[50]	20	—40	0	10	(10)
24.	40	40	30	30	40	40	40	60	[60]	(70)	70	30	0
25.	10	10	±S	+S	±S	±S	±S	±S	±S	30	20	80	60
26.	40	40	40	40	40	50	50	[50]	50	50	30	40	50
27.	40	40	30	20	30	50	50	—	—	30	30	40	40
28.	40	30	30	40	40	20	30	[60]	80	70	50	50	40
29.	30	30	30	30	30	30	40	50	[60]	40	60	40	50
30.	10	10	20	20	30	40	40	40	[60]	70	60	40	40
31.	10	10	20	—10	30	30	[40]	60	80	100	110	100	100
Means	32	27	27	27	33	43	48	56	58	51	50	45	41
Number of days	31	30	28	28	29	24	25	24	26	27	28	28	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
30	40	40	40	40	40	40	40	40	40	40	47
50	60	50	50	40	40	40	50	50	40	50	51
80	60	50	50	50	50	50	70	50	40	40	54
50	60	50	60	60	50	60	50	50	40	40	—
50	50	70	70	70	70	60	60	50	40	30	56
40	40	40	50	50	60	60	30	30	30	30	40
50	50	60	60	70	60	50	40	30	30	30	41
60	50	50	50	60	70	50	70	50	30	30	46
—	—	40	50	40	20	—10	0	—10	0	10	—
40	50	50	70	60	40	40	30	40	30	30	39
70	60	40	30	30	30	30	30	30	30	30	50
30	30	30	30	30	30	30	30	30	30	20	33
50	50	50	40	50	50	50	40	40	50	40	—
30	40	30	20	40	40	50	60	70	50	50	—
50	40	50	50	50	30	40	30	30	10	10	45
40	30	30	30	40	50	50	50	50	50	40	42
—20	—40	—60	0	20	20	40	40	40	30	30	15
0	10	30	—S	±S	50	50	50	50	50	50	—
50	50	30	±S	±S	±S	20	10	20	20	30	—
10	10	10	20	30	30	30	40	50	40	40	26
50	40	20	20	10	40	40	40	40	30	20	—
—	30	40	+S	±S	+S	0	50	30	40	40	—
—20	0	20	30	30	40	40	40	40	40	40	28
—10	—10	10	20	20	20	30	30	±S	+S	30	—
50	40	40	40	40	40	40	50	50	40	40	—
50	50	40	40	40	40	50	50	60	50	50	45
30	30	30	50	60	50	40	30	30	30	40	—
30	20	20	30	20	40	40	30	30	30	20	37
30	20	30	20	30	30	20	30	30	20	20	33
40	30	20	30	30	40	30	30	30	20	20	33
90	60	40	30	30	40	30	30	40	30	50	48
38	35	34	39	41	42	38	40	39	34	34	
29	30	31	28	28	29	31	31	30	30	31	

August

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	50	50	50	40	70	[70]	50	40	30	30	30	30
2.	30	30	30	30	30	30	30	50	[60]	60	30	30	40
3.	40	30	30	50	60	30	—	—	70	60	70	60	60
4.	30	10	10	20	40	120	130	130	[90]	60	80	80	70
5.	30	40	40	40	40	50	50	50	[50]	40	30	40	40
6.	40	30	30	40	40	50	50	50	[80]	90	80	50	50
7.	30	50	40	30	30	40	40	[30]	40	40	20	20	20
8.	20	10	10	10	20	20	30	30	[40]	40	20	40	40
9.	30	20	20	20	20	40	30	40	[50]	60	60	50	50
10.	—	—	—	—	—	—	—	—	—	80	50	60	50
11.	50	50	50	50	50	50	[70]	70	80	90	80	90	100
12.	30	40	50	50	[50]	50	50	50	60	60	60	50	40
13.	70	50	50	50	50	70	[70]	[90]	90	80	70	70	70
14.	40	30	30	40	50	50	[50]	60	70	80	80	90	90
15.	40	30	40	40	30	30	[40]	40	50	50	50	50	60
16.	20	20	20	20	30	[30]	[50]	30	30	20	30	40	40
17.	—	—	—	—	—	—	—	40	70	40	70	50	40
18.	50	40	50	50	60	70	80	[90]	110	110	90	90	80
19.	40	40	40	40	50	50	[40]	—	—	—	—	60	50
20.	30	20	40	40	50	40	40	50	40	[50]	40	40	40
21.	50	40	30	20	10	0	±S	[±S]	—70	10	20	70	40
22.	30	30	30	40	40	50	70	[80]	80	70	70	70	70
23.	50	20	—S	±S	±S	—S	—S	30	[10]	±S	±S	40	60
24.	20	20	20	30	30	40	—	—	60	30	40	40	60
25.	30	40	40	40	50	40	60	70	70	[80]	70	50	40
26.	50	40	30	40	50	60	70	[70]	60	60	70	60	40
27.	20	20	20	20	20	20	20	20	[20]	20	±S	70	70
28.	30	40	—S	±S	±S	±S	±S	±S	±S	±S	120	[70]	70
29.	20	20	20	20	20	30	50	[40]	[40]	40	30	50	70
30.	20	20	10	20	20	20	20	40	[30]	60	60	70	70
31.	20	20	20	20	30	30	20	—	—	50	50	50	50
Means	34	31	31	34	37	44	51	54	54	56	56	56	55
Number of days	29	29	27	27	27	27	24	24	27	28	28	31	31

13	14	15	16	17	18	19	20	21	22	23	Daily means
40	+S	±S	±S	±S	±S	30	30	30	0	20	—
40	40	40	40	40	40	30	40	40	30	30	37
±S	±S	±S	±S	±S	±S	±S	±S	±S	40	40	—
50	50	30	30	30	40	50	70	70	50	40	58
30	40	40	40	40	40	50	50	50	40	40	42
40	40	40	40	30	40	30	40	30	30	30	45
20	30	20	10	20	30	40	40	30	30	20	30
10	40	40	40	40	50	50	40	40	40	40	32
50	80	—	—	—	—	—	—	—	—	—	—
50	40	40	50	50	50	50	50	50	50	50	—
110	70	—S	30	50	40	40	40	40	50	70	62
40	60	50	50	50	60	50	60	60	50	70	52
60	60	50	50	50	40	40	40	40	50	50	59
80	80	70	50	40	40	40	30	40	40	40	55
60	50	50	50	40	30	20	20	30	20	20	39
40	40	30	20	30	40	40	40	50	50	(40)	33
30	40	40	30	10	20	30	30	40	40	50	—
90	80	70	60	50	50	40	40	50	50	40	66
50	40	40	40	40	40	40	40	30	30	30	—
50	40	30	40	40	40	30	20	30	40	40	38
60	50	10	20	30	30	20	40	40	40	30	—
50	50	50	50	50	50	50	50	50	—20	60	51
70	40	50	50	50	50	50	50	40	40	30	—
±S	±S	+S	30	+S	20	30	40	50	30	30	—
60	40	20	20	20	20	30	20	20	20	40	41
30	20	30	20	30	30	20	20	30	20	20	40
40	±S	60	40	20	20	20	60	50	60	60	35
70	50	40	40	30	30	30	20	20	20	20	—
30	50	70	50	50	50	40	50	40	30	30	39
70	70	70	70	70	40	40	50	50	40	20	45
50	50	40	40	40	70	80	90	100	120	130	—
51	50	43	39	39	39	38	42	43	38	41	
29	27	26	28	27	28	29	29	29	30	29	

September

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	110	70	60	50	60	80	[100]	50	60	10	—S	—40	120
2.	50	50	40	50	80	90	130	[180]	180	+S	150	130	100
3.	40	30	40	40	40	60	70	70	[80]	90	80	90	80
4.	40	40	50	50	50	60	80	90	[70]	70	100	90	80
5.	10	30	40	40	40	50	80	[80]	70	80	90	100	80
6.	50	50	40	40	50	50	60	60	80	[80]	80	90	100
7.	20	20	30	40	50	40	—	—	50	50	50	50	40
8.	40	40	40	40	50	50	50	60	[50]	50	50	50	40
9.	30	30	20	30	20	40	50	50	50	[50]	40	40	40
10.	30	40	30	10	40	40	—40	—50	—70	—	30	40	70
11.	60	40	50	60	40	50	50	[70]	60	70	70	50	50
12.	20	10	20	40	40	60	50	[50]	50	50	50	70	80
13.	40	40	40	40	50	50	60	50	[50]	50	50	50	50
14.	80	+S	20	—10	+S	20	10	0	—	110	110	110	90
15.	50	40	50	40	50	50	50	60	—	—	60	40	30
16.	30	20	30	30	30	30	60	80	[90]	100	100	30	30
17.	±S	±S	±S	±S	±S	100	±S	100	[+S]	110	150	100	80
18.	30	30	30	40	80	100	70	40	[30]	30	30	40	40
19.	100	80	120	110	30	30	[10]	60	90	60	50	70	70
20.	30	30	40	40	60	[90]	[170]	150	110	70	60	60	60
21.	40	50	40	50	50	40	(40)	—	50	50	50	50	50
22.	70	110	70	50	100	80	120	[60]	50	50	50	50	50
23.	50	40	30	40	50	50	50	[60]	80	70	50	40	40
24.	—20	10	30	20	30	40	110	—	[160]	150	140	120	90
25.	±S	±S	+S	10	0	—10	0	[40]	50	50	40	40	50
26.	170	160	120	200	150	70	120	60	70	60	[60]	60	50
27.	50	50	50	40	40	50	50	[60]	60	60	70	60	60
28.	50	50	40	40	40	50	50	60	—	[50]	50	60	50
29.	50	30	40	50	30	10	10	[50]	70	(+S)	(60)	70	70
30.	30	40	30	—50	10	—10	10	0	20	50	[30]	20	0
Means	48	46	44	42	49	50	60	61	66	66	69	61	61
Number of days	28	27	28	29	28	30	27	27	26	26	28	30	30

13	14	15	16	17	18	19	20	21	22	23	Daily means
70	30	40	40	—90	±S	40	20	50	50	40	46
100	80	70	70	60	50	50	50	40	50	50	83
80	100	90	110	100	50	50	50	50	—	—	—
80	90	70	—	—	70	90	80	70	40	30	—
90	80	80	70	60	80	80	70	60	50	60	65
80	80	90	60	50	50	50	40	40	40	40	60
40	50	50	50	50	50	50	50	50	50	50	—
40	40	40	40	50	50	50	50	50	40	30	45
50	50	50	50	40	20	40	40	40	30	30	39
50	50	40	30	40	50	70	120	80	70	140	40
40	40	30	40	40	40	40	40	30	30	20	46
80	80	100	70	60	70	50	50	50	50	40	54
60	70	60	50	50	50	30	+S	±S	60	50	—
70	50	60	60	70	60	60	70	50	50	50	—
40	30	40	40	40	30	60	50	30	30	30	—
30	20	40	70	20	±S	—S	30	30	20	—S	—
70	60	30	30	30	30	30	60	40	30	30	—
30	40	40	40	50	60	60	70	80	70	80	50
100	30	40	60	70	80	80	60	90	60	30	66
60	60	40	60	60	60	50	60	60	40	30	65
50	60	50	50	50	60	60	60	60	60	50	—
40	40	50	50	40	30	40	50	60	50	50	59
30	60	20	—20	±S	±S	±S	30	±S	—40	—10	—
70	50	50	50	40	40	30	30	30	—100	±S	53
+S	—	—	30	60	50	70	50	70	70	90	—
60	60	60	50	50	50	50	40	30	40	50	79
60	60	60	60	60	50	50	50	50	50	50	54
±S	—S	30	30	±S	±S	±S	±S	+S	40	50	—
80	70	60	50	50	60	60	40	30	30	20	—
40	50	50	40	60	60	70	60	60	50	50	32
60	56	53	50	47	52	54	53	51	38	46	
28	28	29	29	27	26	27	28	27	29	27	

October

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	50	50	60	10	30	40	40	[50]	[50]	30	50	50	50
2.	40	20	0	—10	30	0	20	30	20	30	—	40	50
3.	0	—70	—30	—40	—30	—20	10	70	150	[80]	50	70	60
4.	50	50	60	60	50	50	70	100	70	[80]	80	60	50
5.	50	50	60	60	50	40	110	—	—	—	—	80	70
6.	80	60	40	40	60	40	40	90	60	80	[70]	70	80
7.	0	0	0	0	0	10	40	130	80	[70]	60	80	80
8.	60	50	40	40	60	70	80	120	[100]	90	80	60	40
9.	50	40	70	80	80	60	70	90	[80]	[70]	70	80	50
10.	0	30	10	40	60	70	70	60	[80]	50	10	—20	0
11.	—10	10	30	20	40	40	0	—10	[40]	70	50	40	±S
12.	70	50	30	40	50	40	60	—	—	60	60	60	70
13.	60	50	70	70	70	50	50	50	40	30	[40]	±S	30
14.	40	30	40	30	30	40	70	70	[70]	50	50	40	50
15.	40	40	40	40	40	50	60	80	90	80	[60]	50	50
16.	10	30	40	40	40	60	70	80	80	70	80	[80]	80
17.	10	10	—10	—10	—10	0	0	0	—10	10	[20]	30	30
18.	20	—10	0	0	0	—40	—60	—50	10	[30]	50	50	30
19.	30	30	40	10	0	20	40	—	—	70	60	50	70
20.	30	30	20	40	40	40	—	—	—	40	50	60	60
21.	30	40	60	70	70	70	90	80	40	10	30	[50]	[40]
22.	30	80	30	—30	20	30	30	10	20	20	70	80	60
23.	50	70	50	60	70	110	110	120	110	[70]	60	60	60
24.	20	50	40	10	20	30	40	40	[40]	20	30	60	60
25.	—20	30	60	40	60	40	60	60	60	70	[70]	50	50
26.	20	10	30	30	30	40	40	—	—	[40]	50	60	70
27.	80	70	60	70	50	50	60	40	50	70	40	50	50
28.	20	+S	±S	±S	30	30	50	60	80	80	[70]	100	110
29.	50	50	50	40	40	50	80	100	80	[50]	[60]	50	50
30.	60	60	110	+S	+S	+S	+S	+S	+S	100	90	80	[60]
31.	30	50	60	40	20	30	40	50	50	[50]	[70]	90	80
Means	34	35	39	31	37	38	50	61	62	56	56	59	56
Number of days	31	30	30	29	30	30	29	25	25	30	29	30	30

13	14	15	16	17	18	19	20	21	22	23	Daily means
50	70	60	70	80	70	70	70	80	70	20	53
40	40	20	30	50	30	30	30	40	30	20	27
40	30	20	30	10	10	20	10	10	40	50	24
60	50	60	50	70	70	60	50	50	50	60	61
80	80	60	70	80	90	40	40	70	80	80	—
60	70	80	70	60	40	40	80	110	90	100	67
70	40	60	30	±S	—50	80	60	50	60	50	44
40	50	40	30	40	50	50	70	30	20	40	56
70	60	60	40	30	20	20	60	30	0	—20	53
—50	—10	0	—10	—30	—20	—20	—40	—10	10	—10	11
±S	±S	±S	—S	90	80	60	60	60	70	60	—
40	70	40	40	40	30	50	70	50	60	60	—
30	50	70	80	70	70	80	60	50	40	50	55
40	40	30	30	40	50	80	50	40	50	60	47
70	80	90	80	(70)	60	90	100	50	50	30	62
80	70	90	70	70	60	60	40	10	20	20	56
40	40	40	40	60	40	60	70	30	40	30	23
40	60	70	30	80	70	60	80	20	0	30	24
80	80	80	130	140	90	60	40	40	30	30	—
60	50	10	10	10	20	50	60	60	40	50	—
40	50	50	40	40	40	30	30	40	50	40	47
40	+S	60	+S	±S	±S	30	30	60	60	60	—
80	80	120	110	140	140	150	90	80	110	80	—
70	80	80	80	40	50	50	—60	—70	10	30	33
50	50	50	30	20	40	30	50	30	20	30	43
70	60	60	70	70	70	60	70	80	90	110	—
20	10	10	40	60	80	±S	±S	20	50	40	—
90	70	80	120	120	150	120	110	90	110	70	—
50	50	40	30	40	60	50	50	50	100	80	56
50	50	40	40	40	50	50	50	50	60	40	—
70	70	90	120	+S	120	120	90	50	60	40	65
52	55	55	54	58	56	58	52	44	51	46	
30	29	30	29	27	30	30	30	31	31	31	

November

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	50	50	+S	30	30	+S	60	[110]	110	90	70	70
2.	±S	40	30	50	50	50	50	50	50	50	20	[50]	—
3.	20	20	30	30	—100	50	100	110	140	70	30	[20]	50
4.	40	50	50	50	50	60	60	90	60	40	[40]	50	50
5.	40	20	40	50	40	30	30	40	30	30	[50]	50	50
6.	60	50	50	50	40	40	40	60	[70]	70	50	10	—10
7.	30	20	±S	±S	±S	—30	70	±S	—S	—	50	±S	±S
8.	60	50	50	40	40	50	70	80	90	[80]	100	100	90
9.	50	50	40	40	40	40	50	40	—	30	20	20	40
10.	40	40	20	—10	10	50	40	30	40	40	50	50	[30]
11.	60	70	20	0	30	50	70	60	70	80	90	90	[90]
12.	140	+S	+S	+S	60	60	100	110	30	30	50	[60]	50
13.	70	70	50	60	50	50	60	20	40	70	80	80	70
14.	+S	50	50	50	60	60	60	70	+S	±S	[20]	50	70
15.	30	20	30	60	60	50	50	70	100	100	70	60	[60]
16.	—40	—50	—40	—50	—30	—30	—40	—20	—	[10]	10	10	30
17.	20	40	50	40	60	60	60	80	70	60	50	[80]	[120]
18.	60	100	90	120	150	120	140	80	80	90	20	90	[140]
19.	120	160	140	90	80	80	100	80	+S	20	80	80	—20
20.	150	120	+S	140	180	230	+S	+S	180	[120]	[80]	60	60
21.	—	—	—	—	—	—	—	—	—	—	—	—	—
22.	—	—	—	—	—	—	—	—	—	—	—	—	—
23.	—	—	—	—	—	—	—	—	—	140	140	170	150
24.	140	170	140	150	130	90	80	60	90	130	140	130	[150]
25.	40	40	30	40	40	±S	±S	90	100	90	90	[90]	110
26.	70	60	60	70	80	90	100	100	110	100	90	90	90
27.	30	40	30	—50	60	60	140	140	170	70	[—50]	—70	—10
28.	—110	—140	+S	±S	±S	—40	—10	20	70	[180]	150	20	130
29.	100	90	60	+S	—10	40	80	90	80	40	40	60	[90]
30.	90	60	80	40	30	60	80	[80]	—	±S	70	+S	80
Means	54	50	50	48	49	54	66	68	85	74	61	60	70
Number of days	25	26	23	22	25	26	24	25	21	25	28	26	26

13	14	15	16	17	18	19	20	21	22	23	Daily means
40	50	30	50	50	50	60	80	+S	100	±S	—
90	110	90	80	70	70	80	30	+S	10	20	—
70	60	50	60	80	110	100	70	70	60	40	56
50	60	70	50	70	80	80	100	90	70	60	61
30	20	10	20	30	80	110	140	120	60	70	50
10	20	40	50	±S	30	50	70	40	40	50	43
50	±S	50	60	70	110	110	100	70	60	60	—
80	80	80	60	60	60	30	30	50	40	40	63
30	±S	±S	±S	±S	70	0	20	40	40	40	—
40	50	50	50	50	50	50	50	50	50	50	40
110	100	110	160	110	130	130	120	90	90	100	85
40	60	80	90	100	110	70	60	70	70	50	—
60	50	40	50	+S	30	40	40	30	10	+S	—
80	70	60	70	+S	0	40	60	70	70	50	—
20	—20	—10	10	20	20	0	0	—10	—20	—30	31
20	—20	—10	—20	—20	—40	—10	—10	20	30	30	—12
140	120	90	90	+S	150	160	150	80	70	70	83
90	110	140	150	180	230	150	150	250	140	120	125
30	80	110	150	230	310	290	230	150	160	180	127
50	30	20	20	20	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
140	130	90	80	90	130	130	120	120	140	160	—
130	120	100	80	60	60	40	40	+S	±S	60	—
90	110	100	120	90	90	90	80	90	80	80	—
40	30	90	60	20	0	80	80	200	130	40	73
20	80	100	130	130	140	140	110	90	100	60	69
140	120	150	150	140	140	150	130	60	70	90	—
[90]	90	80	90	90	100	100	110	120	100	90	79
70	80	80	50	30	80	70	50	20	50	10	—
66	69	70	74	77	89	87	82	83	70	64	
28	26	27	27	23	27	27	27	24	26	25	

December

Hour GMT / Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	0	—10	0	0	—10	—90	30	80	70	50	0	20	[30]
2.	80	90	70	60	60	70	60	70	60	60	50	[50]	40
3.	0	—20	—10	30	—10	—30	—10	0	—10	20	[—40]	10	10
4.	50	50	50	50	40	50	50	50	50	60	[70]	40	50
5.	40	30	30	50	±S	±S	60	50	±S	70	50	50	±S
6.	±S	60	0	20	0	30	20	30	70	[70]	50	50	70
7.	50	70	60	50	60	70	70	80	—	80	40	70	60
8.	10	—20	—10	60	70	90	70	60	150	130	90	100	[110]
9.	+S	50	—20	70	40	70	80	90	100	100	150	120	[170]
10.	130	90	—50	—20	—10	—30	—70	—50	20	40	[90]	90	100
11.	—20	10	40	—10	—50	—30	—40	[—50]	[—10]	—40	—30	—40	—50
12.	30	60	80	80	70	50	+S	+S	80	90	130	90	[30]
13.	100	90	90	90	80	80	80	120	110	110	[100]	80	90
14.	30	60	30	—10	—50	—10	—40	[—40]	—	10	40	70	80
15.	40	50	70	60	70	80	80	[80]	70	50	70	60	70
16.	50	30	50	120	50	50	50	50	±S	30	[—10]	0	40
17.	—20	—30	10	40	50	60	40	40	50	70	[80]	110	80
18.	—20	10	10	0	10	—10	—30	—20	[—70]	—50	—30	—20	20
19.	70	+S	±S	—S	±S	±S	+S	30	—50	—10	[—20]	±S	±S
20.	—50	—70	—50	—30	—20	0	0	—20	—10	[—10]	—40	0	50
21.	50	60	70	60	70	30	—50	(—50)	—	—	—60	—60	—40
22.	—20	10	—20	—50	—80	10	20	0	[—50]	0	10	70	30
23.	70	50	90	40	10	10	—80	±S	±S	±S	±S	+S	80
24.	—10	20	0	—10	—10	10	10	—50	—70	—50	[—80]	—50	—20
25.	+S	90	±S	±S	±S	±S	±S	—	—	—	—	—	70
26.	30	20	10	20	10	20	30	30	40	30	30	40	50
27.	70	60	80	60	70	60	40	60	60	110	[80]	90	70
28.	—70	—80	—50	—80	—50	—50	—50	(—30)	—	—90	—90	—90	—130
29.	—70	—60	—100	—80	—40	—50	—50	—70	—70	—60	—20	—50	—90
30.	70	40	70	70	80	80	90	100	110	120	150	130	[100]
31.	30	—20	—30	—10	—20	—10	10	—40	—50	[80]	120	80	100
Means	26	26	20	25	18	22	17	26	28	38	34	40	46
Number of days	28	30	29	29	28	28	28	26	23	28	29	28	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
50	30	50	70	90	110	100	100	90	90	90	43
40	50	50	30	0	—40	—60	—30	±S	±S	—30	—
20	10	0	10	30	40	20	30	10	—30	20	4
30	0	30	50	30	—10	20	40	60	40	0	40
±S	—50	40	30	50	—S	50	±S	+S	±S	10	—
50	50	30	60	30	10	50	50	50	60	30	41
70	50	40	60	90	80	40	40	30	20	10	57
70	60	50	70	80	80	80	60	70	60	—20	65
±S	±S	60	60	40	50	60	120	120	120	140	—
100	80	90	130	130	160	180	160	70	80	30	64
—50	—60	—60	—70	—90	—70	—40	—20	0	—10	50	—31
10	—40	—100	—30	40	70	80	90	100	100	110	—
90	90	120	140	140	150	130	120	120	100	70	104
110	70	110	130	130	70	70	60	130	130	70	54
70	80	80	80	110	180	+S	90	80	70	50	76
40	0	—50	—30	—30	—50	—50	—30	30	—30	—10	16
80	60	110	120	110	90	130	120	70	0	—10	61
30	30	—20	30	60	50	20	—40	—50	40	40	0
—S	±S	+S	—150	—90	—60	—90	—60	—50	—50	—60	—
40	80	80	80	90	100	130	110	90	50	50	27
—10	0	30	50	—30	—50	—60	—60	—100	50	20	—
80	100	110	80	70	90	100	80	70	40	70	36
110	130	140	130	70	30	40	30	80	60	—30	—
—20	—20	—80	—60	—60	—S	—S	30	30	70	+S	—
60	80	80	80	70	60	30	20	20	40	30	—
60	50	30	40	40	30	20	20	40	60	60	34
30	—20	—20	—10	10	0	—10	—50	—10	—30	—10	33
—70	—50	10	—50	—30	—40	—100	—60	—50	—70	—70	—
—30	10	0	0	—20	0	—10	—10	—30	10	20	—36
40	—20	—10	—10	0	—10	—30	—50	—30	30	30	48
190	190	140	150	160	120	90	150	180	100	—20	70
46	36	38	42	43	43	34	37	42	41	25	
28	29	30	31	31	29	29	30	29	29	30	

II. Hourly means of the quantities of positive and negative

Hour GMT / Day		0	1	2	3	4	5	6	7	8	9	10	11
January	+	5	2	17	2	0	0	0	0	0	0	4	3
	—	2	7	11	9	0	0	0	0	0	2	3	1
February	+	0	0	0	0	6	0	0	0	0	0	0	0
	—	0	0	0	0	11	0	0	0	0	0	0	0
March	+	0	0	0	1	15	0	0	0	0	0	0	0
	—	0	0	0	0	3	0	0	0	0	0	0	7
April	+	0	0	0	0	0	5	0	0	1	10	49	2
	—	0	0	0	0	0	0	0	0	0	3	50	1
May	+	0	0	0	0	0	0	0	0	0	0	0	1
	—	0	0	0	0	0	0	0	0	0	0	0	2
June	+	63	13	12	6	4	1	1	0	35	0	1	29
	—	31	31	4	6	9	1	0	0	14	0	0	7
July	+	0	0	3	9	0	77	122	158	44	12	10	3
	—	0	0	2	0	44	47	90	188	125	25	15	12
August	+	55	0	0	10	10	7	50	28	37	8	3	0
	—	11	0	6	18	4	19	90	39	12	5	4	0
September	+	27	66	10	3	21	0	0	0	0	0	0	0
	—	49	15	12	3	5	0	0	0	0	0	1	0
October	+	0	3	3	0	0	0	0	0	0	0	0	31
	—	0	0	3	0	0	0	0	0	0	0	0	2
November	+	0	0	4	45	3	1	1	9	0	2	0	9
	—	3	0	7	11	7	0	7	4	0	3	0	2
December	+	2	0	0	0	5	5	0	0	18	1	0	0
	—	2	0	0	0	17	4	0	0	1	0	0	0

charges transported by point-discharge for each month

12	13	14	15	16	17	18	19	20	21	22	23	Means
11	9	4	0	0	3	0	0	0	0	0	2	2.6
6	13	0	0	0	0	0	0	0	0	0	1	2.3
0	0	0	0	0	0	0	0	17	0	0	0	1.0
0	0	0	0	4	0	0	0	6	0	0	0	0.9
1	0	0	0	0	0	0	10	9	2	0	0	1.6
1	0	0	0	0	0	0	14	6	5	1	0	1.5
0	1	4	0	0	0	0	3	0	0	0	0	3.1
0	1	2	0	0	0	0	1	4	0	0	0	2.8
11	3	13	8	16	76	22	32	46	25	0	0	10.5
2	0	51	16	32	25	78	84	98	32	3	0	17.6
48	10	13	40	59	25	30	17	18	24	0	7	19.0
54	43	31	54	15	57	37	31	31	63	50	32	25.0
0	0	0	0	61	68	9	0	0	0	10	0	24.4
0	0	0	0	25	83	0	0	0	0	0	0	27.3
0	23	21	34	124	76	30	2	7	3	0	0	22.0
0	45	53	33	1	16	21	37	27	0	0	0	18.4
0	13	1	0	0	19	12	31	32	10	43	46	13.9
0	1	0	0	0	23	16	16	27	68	34	6	11.5
2	19	19	36	3	3	6	9	1	0	0	0	5.6
1	15	10	25	2	1	13	13	0	0	0	0	3.5
16	0	1	1	0	5	0	0	0	14	1	0	4.7
1	0	3	1	0	0	0	0	0	6	5	0	2.5
3	5	0	0	0	0	0	0	2	1	1	0	1.8
1	1	0	0	0	0	0	0	1	0	2	0	1.2

IV. IONOSPHERE

The following tables give the values of mean ionospheric absorption at oblique incidence (A3) for certain zenith distances of the Sun ($\varkappa$) expressed in decibels (dB). Values for ground sunset (SS) and ground sunrise (SR) are given for periods of 20 minutes centered on the times of $\varkappa = 90°$. Night values have been determined by taking the periods ranging from $\varkappa = 100°$ to 23 00 GMT.

The sky wave of the transmitter Československo (f = 272 kHz) has been recorded since January 1967. The geographical coordinates of the reflection point are 48.4°N, 17.1°E. Because of reconstruction works on the transmitter Československo the absorption measurement at 272 kHz and the publication of data were suspended from April 1975 till September 1978. In the recent issue data of September 1981 are missing for works on the transmitter.

The tables were compiled by F. MÄRCZ. The equipment and the method have been described in the papers 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, as well as by P. BENCZE, J. HORVÁTH and F. MÄRCZ: „A new equipment for the measurement of ionospheric absorption" Geophysical Observatory Report of the Geodetic and Geophysical Research Institute of the Hungarian Academy of Sciences, Year 1975. Observatory of Nagycenk, Sopron, 1976. Further informations are given by P. BENCZE and F. MÄRCZ: „The Geophysical Observatory near Nagycenk. II. Atmospheric electric and ionospheric measurements". Acta Geod. Geoph. Mont. Hung. 16 1981/353-357.

Mean Ionospheric Absorption L' (dB) at Oblique Incidence (A3)
f = 272 kHz
January

Date of the night	SS	Night	SR
1/2	29,2	28,2	37,7
2/3	37,7	22,7	31,7
3/4	37,7	21,4	26,4
4/5	37,7	26,4	28,2
5/6	37,7	23,2	33,2
6/7	33,2	22,2	31,7
7/8	24,4	21,0	35,2
8/9	41,2	22,2	28,2
9/10	29,2	29,2	27,2
10/11	47,2	X	X
11/12	X	X	X
12/13	33,2	X	X
13/14	X	X	X
14/15	37,7	19,5	41,2
15/16	37,7	23,8	35,2
16/17	26,4	22,2	37,7
17/18	29,2	23,8	27,2
18/19	X	19,9	35,2
19/20	37,7	25,0	31,7
20/21	27,2	30,3	41,2
21/22	28,2	23,2	37,7
22/23	27,2	31,7	41,2
23/24	31,7	29,2	37,7
24/25	35,2	25,7	33,2
25/26	37,7	23,8	31,7
26/27	35,2	X	X
27/28	37,7	21,8	X
28/29	29,2	23,2	31,7
29/30	41,2	22,2	21,4
30/31	35,2	17,8	29,2
31/1	35,2	24,4	26,4
Median values	35,2	23,2	31,7

February

Date of the night	SS	Night	SR
1 2	33,2	22,2	27,2
2 3	37,7	24,4	31,7
3 4	24,4	26,4	33,2
4 5	35,2	16,9	28,2
5 6	29,2	18,9	23,2
6 7	24,4	21,8	26,4
7 8	24,4	19,9	23,8
8 9	27,2	18,3	27,2
9 10	31,7	23,8	28,2
10 11	31,7	20,6	29,2
11 12	28,2	20,2	24,4
12 13	41,2	20,6	41,2
13 14	37,7	22,7	29,2
14 15	37,7	25,0	23,2
15 16	35,2	20,2	28,2
16 17	41,2	19,9	31,7
17 18	33,2	22,2	26,4
18 19	29,2	24,4	33,2
19 20	37,7	24,4	28,2
20 21	33,2	23,2	33,2
21 22	33,2	22,2	31,7
22 23	33,2	23,2	35,2
23 24	33,2	18,9	X
24 25	30.3	21,4	21,4
25 26	27,2	19,9	25,0
26/27	27,2	21,4	24,4
27/28	25,7	22,2	25,7
28 1	30,3	21,0	25,0
Median values	32,5	21,4	26,2

March

Date of the night	SS	Night	SR
1 2	33,2	21,4	29.2
2 3	35,2	19.5	22.2
3 4	23,2	23,2	27,2
4 5	24,4	19,2	21.4
5/6	33,2	23.2	28,2
6 7	23,8	18,6	27,2
7/8	31,7	18,1	25.0
8 9	18,9	18,6	24.4
9/10	27,2	20,6	23,8
10 11	29,2	18.6	X
11/12	35,2	19,2	21,0
12/13	26,4	23,2	23,2
13/14	27,2	18,6	23.2
14 15	25.7	19,5	27,2
15 16	27,2	19,5	29,2
16 17	26,4	18,1	23,8
17/18	27,2	16,1	21.8
18 19	35,2	21,4	28.2
19/20	25,0	20,2	31,7
20 21	25,0	17,6	23.8
21 22	26,4	17,8	28,2
22 23	28,2	18,9	24,4
23 24	33,2	17,6	29.2
24,25	33.2	15,7	33,2
25 26	30,3	17,1	23,2
26/27	29,2	15,9	23,8
27 28	23,2	16,7	22.2
28 29	31,7	19,5	23,2
29 30	25,0	17,3	19,2
30/31	25,0	16,7	23.2
31 1	26,4	19,5	28,2
Median values	27,2	18,6	24,1

April

Date of the night	SS	Night	SR
1/2	26,4	21,4	25,7
2/3	30,3	17,3	22,7
3/4	25,7	19,5	22,2
4/5	30,3	15,9	21,8
5/6	33,2	19,5	25,0
6/7	22,2	19,2	24,4
7/8	25,7	23,8	27,2
8/9	41,2	X	X
9/10	29,2	21,0	26,4
10/11	33,2	19,2	23,8
11/12	33,2	19,9	23,8
12/13	29,2	19,2	23,8
13/14	29,2	X	X
14/15	31,7	18,1	37,7
15/16	18,9	16,7	17,3
16/17	18,3	15,9	27,2
17/18	27,2	17,8	33,2
18/19	29,2	19,2	27,2
19/20	29,2	21,4	27,2
20/21	28,2	23,8	23,8
21/22	29,2	17,6	25,7
22/23	29,2	22,7	27,2
23/24	27,2	19,5	23,2
24/25	28,2	21,8	23,2
25/26	29,2	18,1	22,7
26/27	28,2	23,8	24,4
27/28	24,4	21,8	21,0
28/29	28,2	18,9	21,8
29/30	24,4	16,1	21,8
30/1	21,4	25,0	24,4
Median values	28,7	19,7	24,1

May

Date of the night	SS	Night	SR
1 2	29,2	21,4	22,7
2 3	26,4	16,1	28,2
3/4	24,4	22,2	23,8
4/5	31,7	18,6	26,4
5/6	33,2	16,1	21,8
6 7	25.7	19,2	27,2
7/8	35,2	17,1	25,0
8 9	22,2	21,8	26.4
9/10	33,2	23,2	29,2
10 11	41,2	24,4	31.7
11/12	41,2	21,4	23,8
12/13	41,2	25,0	25,0
13/14	21,8	23,2	21,0
14/15	29,2	29,2	35.2
15/16	30,3	25,7	25,0
16 17	41,2	24,4	31.7
17/18	33,2	17,1	21,8
18 19	24,4	24,4	29,2
19/20	25,0	21,0	27,2
20/21	27,2	23,8	29,2
21 22	25,0	25,0	31,7
22 23	27,2	21,0	24,4
23 24	24,4	28,2	30,3
24 25	23,8	26,4	21,8
25/26	X	X	X
26 27	33,2	23,2	X
27 28	23,8	20,6	26,4
28 29	31,7	20,2	26,4
29/30	33,2	18,6	25,7
30 31	X	X	X
31/1	29,2	19,9	25,0
Median values	29,2	21,8	26,4

June

Date of the night	SS	Night	SR
1/2	X	19,9	25,0
2 3	31.7	19,5	29.2
3/4	29,2	25,0	25,0
4 5	25,7	21,8	30,3
5/6	27,2	21,4	27,2
6 7	27,2	22,2	28.2
7/8	33,2	23,8	21.8
8 9	29,2	19,5	23.8
9 10	25,7	20,2	28,2
10 11	21,4	16,9	25,0
11 12	27,2	22,7	25,0
12 13	19,2	22,7	23,2
13/14	23,8	19,9	27,2
14 15	41,2	18,6	23,8
15 16	25,7	22,2	22,7
16 17	28,2	18,6	18 6
17/18	30,3	19,9	23,8
18 19	27,2	21,8	21,8
19 20	25,0	19,5	25,0
20/21	33,2	19,9	28,2
21 22	30,3	20.2	25,0
22/23	25,0	21,4	23,2
23 24	25,0	21.4	35,2
24 25	35.2	22,2	28,2
25 26	X	X	X
26 27	23,2	20,2	25,0
27 28	23,8	20.6	27,2
28 29	22.7	21.0	25,7
29/30	24,4	2 3 2	33,2
30 1	26,4	24,4	29,2
Median values	26,8	21,0	25,0

July

Date of the night	SS	Night	SR
1 2	25.5	19.5	24.4
2 3	21,8	23,8	23.8
3 4	24,4	21,8	23,8
4 5	31,7	24.4	21,4
5 6	21.4	21.4	27,2
6 7	28,2	23,8	29,2
7 8	35,2	19,9	28,2
8 9	27,2	22,2	25,0
9 10	28,2	23.8	31,7
10 11	33,2	(22,7)	X
11 12	29,2	24.4	37,7
12 13	23,8	22,7	29,2
13 14	22,7	21,0	29,2
14 15	33,2	21,4	33,2
15 16	29,2	19,2	31,7
16 17	25,7	21,8	23,8
17 18	30,3	26,4	23,2
18 19	30,3	21,0	31,7
19 20	25,7	21,0	23,8
20 21	33,2	17,6	25,7
21 22	24,4	22,2	27,2
22 23	27,2	23,8	30,3
23 24	29,2	26,4	23,2
24 25	33,2	20,6	22,7
25 26	35,2	23,8	23,8
26 27	33,2	18,9	23,8
27 28	30,3	21.0	29,2
28 29	30,3	X	X
29 30	29,2	17,8	22,7
30 31	22,7	23,8	28,2
31 1	25,7	21,4	23,2
Median values	29,2	21,4	25,7

August

Date of the night	SS	Night	SR
1/2	23,2	20,2	26,4
2 3	22,2	21,0	27,2
3 4	30,3	18,9	25,0
4 5	X	X	X
5 6	22,2	21,0	27,2
6/7	22,2	19,5	25,7
7 8	26,4	22,2	25,7
8 9	30,3	21,8	35,2
9 10	X	X	X
10 11	25,7	20,2	30,3
11 12	28,2	22,2	30.3
12 13	21,4	19,5	28,2
13/14	29,2	22,2	30,3
14 15	28,2	19,5	25,7
15/16	25,7	19,9	33,2
16 17	30,3	21,0	X
17/18	27,2	23,2	31,7
18 19	23,2	21,4	29,2
19 20	25,7	20,2	27,2
20 21	29,2	21,8	30,3
21/22	26,4	21,4	27,2
22 23	23,8	20,2	27,2
23 24	35,2	22,7	31,7
24 25	29,2	21,8	33,2
25/26	28,2	21,8	26,4
26 27	30,3	19,9	28,2
27 28	29,2	22,2	33,2
28 29	31,7	18,6	29,2
29/30	X	X	X
30 31	25,7	18,6	28,2
31 1	33,2	20,6	X
Median values	27,7	21,0	28,2

September

Date of the night	SS	Night	SR

No measurements for technical works on the transmitter

October

Date of the night	SS	Night	SR
1/2	27,2	18.9	20.6
2/3	22,7	17,1	27,2
3/4	X	X	X
4/5	24.4	18,1	27.2
5/6	18,6	23,2	24,4
6/7	25,0	22,7	25,0
7/8	X	X	X
8/9	27,2	16,7	22,7
9/10	28,2	17,3	21,0
10/11	28,2	15,4	22,2
11/12	27,2	18,9	22,7
12/13	26,4	16,3	16,1
13/14	23,8	15,9	19,2
14/15	X	X	X
15/16	21,4	17,6	17,8
16/17	27,2	14,5	24,4
17/18	22,2	18,1	27,2
18/19	31,7	18,6	25,7
19/20	31,7	16,1	23,8
20/21	24,4	25,0	22,7
21/22	21,4	19,5	29,2
22/23	41,2	22,7	28,2
23/24	28,2	18,6	21,4
24/25	35,2	18,1	24,4
25/26	21,4	14,5	23,2
26/27	24,4	17,8	29,2
27/28	23,8	14,6	24,4
28/29	23,8	16,1	25,7
29/30	X	X	23,8
30/31	25,0	18,1	21,4
31/1	22,7	16,7	29,2
Median values	25,0	18,0	24,1

November

Date of the night	SS	Night	SR
1/2	21,8	17,8	29,2
2/3	21,4	21,4	28,2
3/4	29,2	20,2	30,3
4/5	24,4	18,9	29,2
5/6	30,3	21,0	30,3
6/7	23,2	18,6	29,2
7/8	35,2	18,1	21,8
8/9	29,2	17,3	33,2
9/10	27,2	22,7	30,3
10/11	31,7	16,9	25,7
11/12	30,3	18,1	27,2
12/13	27,2	18,1	22,7
13/14	28,2	15,5	26,4
14/15	30,3	X	X
15/16	25,0	18,6	23,8
16/17	26,4	17,3	25,0
17/18	X	20,6	25,7
18/19	22,2	20,6	29,2
19/20	X	22,2	X
20/21	X	X	X
21/22	30,3	21,4	30,3
22/23	30,3	21,4	X
23/24	X	X	30,3
24/25	35,2	25,0	X
25/26	25,7	21,4	26,4
26/27	37,7	19,9	35,2
27/28	47,2	23,2	25,0
28/29	41,2	20,6	33,2
29/30	37,7	24,4	33,2
30/1	31,7	20,2	28,2
Medain values	29,8	20,2	29,2

December

Date of the night	SS	Night	SR
1/2	30,3	22,7	31.7
2 3	29,2	25,7	29,2
3/4	35,2	23,8	X
4/5	35,2	23,8	X
5 6	31,7	21,4	29,2
6 7	25,0	21,4	28,2
7 8	29,2	19,5	30,3
8/9	31,7	18,9	25,0
9 10	25,0	24,4	26,4
10/11	35,2	20,6	30,3
11/12	35,2	21,0	23,8
12/13	21,4	20,6	23,2
13/14	20,2	21,4	18,6
14/15	22,7	19,5	20,6
15/16	25,0	18,6	31,7
16 17	37,7	16,9	31,7
17/18	31,7	18,6	29,2
18 19	33,2	15,7	23,8
19/20	31,7	14,6	20,6
20 21	27,2	18,6	21,4
21/22	X	X	X
22/23	X	X	X
23/24	33,2	X	X
24/25	35,2	X	X
25/26	X	X	X
26/27	41,2	X	X
27/28	X	X	X
28/29	30,3	X	X
29/30	35,2	X	X
30/31	29,2	21,0	35,2
31/1	41,2	18,6	30,3
Median values	31,7	20,6	28,7