I. EARTH CURRENTS

In the present report of the Observatory, six kinds of tables are published in the section Earth Currents.

The coordinates of the Observatory are:

$$\varphi = 47°38' \qquad \lambda = 16°43'$$

$$\Phi = 47.2° \qquad \Lambda = 98.3°$$

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

The tables published are the following:

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

The T-scale is linear; its scale corresponds to 1.8 mV/km. The monthly mean T-values are seperately given for the North-South and East-West components. The scales for K_1—K_5 are as follows.

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

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

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

II. Monthly and yearly means, and means for disturbed and quiet days of the amplitudes of the former frequency bands and of the earth current field

intensity. D and Q days are the same as in section Geomagnetism. The rows 1—5 contain the average amplitudes of the five bands in 10^{-5} V/km. Row 6 contains the hourly means of the earth current 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).

V. Average amplitudes in 12 pulsation bands. Here numerical data are presented on the average amplitudes of pulsations for (nearly complete) months. Avarages 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 full 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. Initial data are estimated amplitudes in half-hour intervals.

IV. Micropulsation indices for the year 1978. The indices have been determined from the occurrence frequency of different period micropulsations, striving at a possibly uniform distribution of days in each of the five possible indices (1—5).

The determination of these indices can be shortly explained as follows: The days are arranged according to the occurrence frequency of each band. Index 1 bis attributed to the days with lowest fifth of occurrence frequencies (0 to 20 per cent), index 2 to days with occurence 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 Geodaetica, Geophysica et Montanistica Hungarica, 7/1972/155).

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.

Due to renovation works in the Observatory, the data of the year 1978 are less complete than usual. The experiments with the recording of Pc 1 pulsations were suspended on July 1, 1977, during which time the final arrangement of the recording apparatus wil be installed till January 1979. The results of the second half year of 1977 will be published in the next Report.

I. Activity indices T and K_1—K_5

January

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	10111112	8	4	0	4	0	1
2.	12222100	10	2	0	3	1	0
3.	00011117	11	4	1	3	0	3
4.	38659998	57	7	5	7	9	8
5.	95322224	29	2	0	4	3	2
6.	59442362	35	5	2	7	4	6
7.	51101416	19	5	1	3	1	3
8.	65332423	28	4	1	5	2	4
9.	12121755	24	5	1	5	2	6
10.	643 344	(32)	4	1	4	3	4
11.	01011100	4	3	0	4	0	0
12.	01000023	6	3	0	3	0	0
13.	02011012	7	3	0	4	0	0
14.	00000001	1	2	0	3	0	0
15.	01000000	1	1	0	4	0	0
16.	00012221	8	3	0	4	0	1
17.	71011011	12	2	0	4	1	3
18.	36110000	11	2	0	4	0	3
19.	21010101	6	3	0	4	0	1
20.	00000000	0	3	0	4	0	0
21.	00000001	1	5	0	3	0	0
22.	10000000	1	2	0	4	0	0
23.	00000000	0	3	0	3	0	0
24.	00000110	2	2	0	4	0	0
25.	01001264	14	3	1	5	1	2
26.	42211100	11	5	1	4	1	3
27.	11010001	4	2	0	4	0	0
28.	00000224	8	3	0	4	1	2
29.	32345674	34	6	3	5	4	6
30.	34865115	33	7	3	6	6	5
31.	52234342	23	4	0	4	2	5

Monthly averages:		
	T (N)	1.414
	T (E)	1.305
	[illegible]	3.48
	K_2	0.64
	K_3	4.13
	K_4	1.32
	K_5	2.19

February

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	32131131	15	3	0	4	1	2
2.	42122113	16	5	0	4	0	3
3.	21112221	12	4	0	4	1	0
4.	22121211	12	5	0	4	1	1
5.	12422461	22	4	0	4	1	4
6.	11141223	15	3	0	5	2	2
7.	21011012	8	2	0	4	1	0
8.	11112222	12	4	0	4	1	1
9.	10026224	17	3	0	5	2	2
10.	10111020	6	1	0	4	1	0
11.	10010100	3	2	0	4	0	0
12.	00022125	12	2	0	5	0	2
13.	1 20010	(5)	1	0	4	1	1
14.	11011119	15	4	1	4	0	1
15.	69999200	44	8	8	8	7	1
16.	11223122	14	0	0	4	1	3
17.	34010112	12	2	0	4	0	2
18.	21122133	15	4	0	4	2	2
19.	12112112	11	4	0	4	1	0
20.	31211012	11	2	0	4	0	2
21.	11013422	14	3	0	5	2	2
22.	32211346	22	5	1	4	2	3
23.	61321103	17	9	3	4	2	1
24.	11111100	6	3	0	4	0	1
25.	00111093	15	4	1	4	0	1
26.	64468659	48	5	2	5	3	7
27.	33336887	41	6	2	5	2	5
28.	24333499	37	6	2	5	5	7

Monthly averages:

T (N)	2.069
T (E)	1.414
K_1	3.72
K_2	0.71
K_3	4.39
K_4	1.39
K_5	2.00

March

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	22463598	39	7	3	6	4	5
2.	53463242	29	6	2	5	3	4
3.	32333134	22	6	2	4	2	4
4.	11111000	5	1	0	4	0	0
5.	00122111	8	3	0	4	1	2
6.	10125100	10	2	0	4	0	1
7.	11112111	9	3	0	4	1	0
8.	10112944	22	5	0	4	2	3
9.	12321112	13	2	0	4	2	2
10.	00223110	9	2	0	4	1	2
11.	01121101	7	2	0	4	1	0
12.	00110000	2	1	0	4	0	1
13.	21121113	12	2	0	4	0	1
14.	11001113	8	3	0	4	1	0
15.	23311212	15	5	1	5	1	2
16.	45332253	27	6	0	5	3	4
17.	42332435	26	6	1	4	2	4
18.	24232353	24	3	1	5	1	3
19.	21113211	12	4	0	4	3	2
20.	11112212	11	4	0	4	0	2
21.	11111101	7	2	0	4	0	1
22.	10111137	15	2	0	4	1	3
23.	72211100	14	3	0	4	1	1
24.	00101102	5	3	0	4	1	0
25.	40000001	5	2	0	3	0	0
26.	44329797	44	5	2	5	3	6
27.	55755495	45	7	2	5	5	7
28.	73353311	26	5	2	5	1	3
29.	11333211	15	5	3	5	1	1
30.	21112213	13	3	0	4	0	0
31.	00002221	7	5	0	4	0	1

Monthly averages:

T (N)	2.004
T (E)	1.406
K_1	**3.71**
K_2	**0.61**
K_3	**4.29**
K_4	**1.32**
K_5	**2.10**

April

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	**13111111**	**9**	**5**	**2**	**4**	**2**	**0**
2.	22112116	16	4	0	5	1	2
3.	**31443289**	34	6	1	5	3	6
4.	63441369	36	5	0	5	3	6
5.	92311152	24	2	0	5	1	3
6.	**12111011**	8	3	0	4	1	0
7.	**20012101**	7	3	0	4	0	0
8.	10111131	9	3	0	4	1	0
9.	00131011	7	3	0	4	0	1
10.	**00119459**	29	4	2	5	2	2
11.	**98634993**	51	7	3	5	3	5
12.	52442233	25	5	0	5	1	4
13.	22223257	25	6	2	4	1	2
14.	72559683	45	5	1	5	2	6
15.	**32223411**	**18**	**4**	**0**	**4**	**1**	**2**
16.	21111011	8	3	0	4	0	0
17.	10111100	**5**	3	**0**	**4**	0	0
18.	46211143	22	3	0	5	1	3
19.	13656895	43	6	2	5	2	3
20.	**77752212**	**33**	**6**	**2**	**5**	2	3
21.	**21312211**	**13**	**5**	2	4	**0**	**1**
22.	**01213322**	**14**	**5**	**1**	4	**1**	**1**
23.	22122534	21	4	0	4	1	3
24.	55453581	36	5	1	4	3	6
25.	43233121	19	4	0	4	1	3
26.	**22433224**	22	6	1	5	1	3
27.	**21222315**	18	5	1	4	1	3
28.	22112012	11	3	0	4	1	2
29.	**10111012**	**7**	**4**	0	4	1	1
30.	**31199936**	**41**	**7**	**3**	**5**	**5**	**8**

Monthly averages:

T (N)	**2.625**
T (E)	2.146
K_1	4.47
K_2	0.80
K_3	4.43
K_4	1.40
K_5	2.63

May

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	23389599	48	8	7	7	7	6
2.	97986853	55	8	7	8	7	7
3.	86796769	58	7	3	6	6	8
4.	99987521	50	6	3	6	3	7
5.	11101003	7	2	0	4	1	1
6.	01001002	4	3	0	4	1	0
7.	30011122	10	3	0	4	1	0
8.	11112375	21	5	1	5	2	4
9.	97979945	59	9	7	8	8	5
10.	01210106	11	8	2	6	3	0
11.	54731124	27	7	2	5	2	5
12.	31212133	17	4	0	4	3	2
13.	51101102	11	4	0	4	0	2
14.	21110132	11	3	0	4	1	2
15.	10012111	7	3	0	5	1	2
16.	12111111	9	4	0	5	0	2
17.	11111103	9	5	0	4	0	2
18.	11001210	6	3	0	4	1	1
19.	00011000	2	2	0	4	0	0
20.	11111121	9	5	0	4	1	1
21.	03212157	21	6	2	5	3	4
22.	62323243	25	7	1	5	3	4
23.	12101325	15	5	0	4	2	2
24.	65635311	30	7	1	7	5	6
25.	33222111	15	7	3	5	2	2
26.	11111111	8	3	0	4	0	1
27.	11010001	4	3	0	4	0	0
28.	20011210	7	3	0	4	0	2
29.	01001163	12	2	0	5	0	2
30.	73211321	20	4	1	6	4	3
31.	32113110	12	5	0	4	1	2

Monthly averages:

T (N)	2.205
T (E)	1.879
K_1	4.86
K_2	1.29
K_3	4.97
K_4	2.23
K_5	2.75

June

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	02110216	13	4	0	4	1	1
2.	23589999	54	8	7	8	8	4
3.	97564383	45	8	5	7	6	4
4.	43117315	25	5	1	5	4	3
5.	65531263	31	6	1	5	3	6
6.	11012111	8	2	0	4	1	1
7.	11111112	9	2	0	4	1	1
8.	23101200	9	3	0	4	1	1
9.	01101001	4	3	0	4	0	0
10.	11153228	23	7	2	6	6	2
11.	95631101	26	4	2	6	2	3
12.	11112121	10	4	0	4	1	1
13.	12122101	10	4	0	5	1	1
14.	00001010	2	3	0	4	0	0
15.	10112000	5	2	0	4	0	1
16.	01002011	5	3	0	4	0	1
17.	22111111	10	3	0	4	1	1
18.	21122221	13	4	0	4	1	2
19.	32212332	18	4	1	5	3	4
20.	22112111	11	5	0	4	3	2
21.	26223434	26	6	1	5	3	5
22.	23222141	17	7	1	5	3	2
23.	22222233	18	5	0	4	2	4
24.	34322221	19	5	0	4	2	4
25.	13244452	25	7	1	5	3	4
26.	79854447	48	7	2	7	7	5
27.	13212134	17	5	0	4	1	3
28.	21122211	12	5	0	4	1	2
29.	01132149	21	6	0	5	3	3
30.	94543150	31	6	2	5	3	3

Monthly averages:

T (N)	2.125
T (E)	1.816
K_1	4.77
K_2	0.87
K_3	4.73
K_4	2.37
K_5	2.47

July

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	**11122100**	**8**	**5**	**0**	**4**	**0**	**1**
2.	**10121221**	**10**	**4**	**0**	**4**	**0**	**1**
3.	**01021112**	**8**	**4**	**0**	**4**	**1**	**1**
4.	**74366935**	**43**	**6**	**3**	**7**	**8**	**7**
5.	**85744342**	**37**	**5**	**2**	**6**	**5**	**6**
6.	**21 43532**	**(23)**	**3**	**0**	**6**	**5**	**4**
7.	37222321	22	5	0	5	3	4
8.	**22112522**	**17**	**7**	**1**	**5**	**3**	**3**
9.	**21211221**	**12**	**7**	**2**	**4**	**1**	**1**
10.	**12321011**	**11**	**4**	**0**	**4**	**2**	**1**
11.	22133000	11	4	0	4	1	1
12.	00100021	4	4	0	4	0	0
13.	43231411	19	5	0	5	3	5
14.	65435648	41	7	3	7	6	6
15.	44300110	13	4	0	5	1	2
16.	31000101	6	3	0	4	0	0
17.	11010001	4	3	0	4	1	1
18.	15114235	22	7	3	6	5	3
19.	31612311	18	4	0	5	3	2
20.	11111001	6	5	0	4	1	0
21.	11112011	8	3	0	4	0	1
22.	12101111	8	2	0	4	1	1
23.	22100112	9	3	0	4	1	2
24.	11111112	9	3	0	4	0	2
25.	22001124	12	3	0	5	1	2
26.	11111111	8	2	0	5	1	1
27.	00011111	5	4	0	4	0	1
28.	11322100	10	3	0	4	0	2
29.	00001113	6	3	0	4	1	1
30.	20000001	3	5	0	4	0	1
31.	00000000	0	3	0	4	0	0

Monthly averages:

T (N)	**1.456**
T (E)	**1.320**
K_1	**4.20**
K_2	**0.45**
K_3	**4.61**
K_4	**1.74**
K_5	**2.03**

August

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	01001000	2	3	0	4	0	0
2.	00000003	3	2	0	4	0	1
3.	13233333	21	7	2	5	3	2
4.	56533331	29	6	2	5	4	5
5.	13333333	22	5	1	5	2	4
6.	33314221	19	6	0	5	2	4
7.	31110002	8	5	0	4	1	0
8.	11011110	6	4	0	4	1	0
9.	11011011	6	3	0	4	1	0
10.	01011102	6	3	0	4	0	1
11.	21012411	12	4	0	4	1	2
12.	12333223	20	4	1	5	1	3
13.	22223122	16	4	0	4	2	2
14.	21211111	10	5	0	4	1	0
15.	10001111	5	5	0	4	0	0
16.	10001122	7	5	0	4	0	0
17.	10014214	13	4	0	5	2	2
18.	32124285	27	7	2	5	3	5
19.	51133212	18	6	2	5	3	4
20.	11111111	8	6	1	4	0	0
21.	11111104	10	6	1	4	0	2
22.	21111200	8	4	0	4	1	0
23.	00011011	4	3	0	4	0	0
24.	11211111	9	3	0	5	1	1
25.	11134121	14	4	1	4	1	2
26.	11110010	5	5	0	4	1	0
27.	09444693	39	8	4	6	3	4
28.	66999946	58	7	4	7	8	8
29.	64448243	35	7	1	6	3	6
30.	32336359	34	7	0	5	3	6
31.	82647952	43	7	2	6	4	6

Monthly averages:

T (N)	1.879
T (E)	1.706
K_1	4.94
K_2	0.77
K_3	4.61
K_4	1.68
K_5	2.26

September

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	32243233	22	5	1	5	2	3
2.	12324333	21	6	1	5	3	3
3.	23222411	17	5	0	4	2	2
4.	11212112	11	4	0	4	1	1
5.	00111131	8	3	0	4	1	1
6.	33233210	17	4	1	5	3	2
7.	01121121	9	4	1	4	1	0
8.	55313132	23	4	2	5	3	2
9.	26535743	35	7	6	7	3	5
10.	64159621	34	7	0	5	4	2
11.	11023323	15	5	1	5	2	2
12.	13225325	23	6	0	5	2	3
13.	21122111	11	7	0	5	0	2
14.	21111101	8	7	0	4	0	2
15.	00011000	2	4	0	4	0	0
16.	31112112	12	4	1	5	1	2
17.	11232103	13	4	1	4	1	2
18.	20111011	7	3	0	4	0	0
19.	00100000	1	3	0	4	0	0
20.	10010227	13	3	0	5	2	1
21.	13222100	11	4	0	5	1	2
22.	01234121	14	4	0	4	1	3
23.	11123112	12	4	0	4	1	2
24.	11111124	12	4	0	5	2	2
25.	12956965	43	5	2	5	3	6
26.	33654536	35	5	3	7	5	4
27.	75543799	49	7	5	5	3	9
28.	54867369	48	7	4	6	5	7
29.	89799981	60	8	8	9	8	8
30.	17342121	21	4	2	5	3	1

Monthly averages:

T (N)	2.412
T (E)	2.017
K_1	4.90
K_2	1.30
K_3	4.93
K_4	2.10
K_5	2.63

October

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	22323234	21	3	0	4	2	3
2.	11133223	16	2	0	4	0	2
3.	41123111	14	3	0	4	0	2
4.	73323103	22	3	0	4	1	3
5.	31112211	12	3	0	4	1	1
6.	10101212	8	2	0	4	1	0
7.	00121100	5	3	0	4	1	1
8.	00121113	9	4	1	4	1	1
9.	13244145	24	4	0	5	3	3
10.	82444104	27	4	0	5	1	4
11.	01231002	9	4	0	4	0	1
12.	11125813	22	5	1	4	2	2
13.	22232012	14	6	2	4	1	2
14.	11111221	10	6	2	4	0	0
15.	10122211	10	4	1	4	1	0
16.	11112101	8	5	1	4	1	1
17.	01111112	8	3	0	4	1	0
18.	64554274	37	4	2	5	4	6
19.	52255227	30	4	0	5	1	6
20.	11243120	14	4	0	4	1	2
21.	01123333	16	3	0	4	1	2
22.	11222230	13	2	0	4	1	2
23.	01121101	7	2	0	4	1	0
24.	02100021	6	3	0	4	0	1
25.	11153211	15	3	0	4	1	2
26.	11133495	27	4	0	5	2	5
27.	42663112	25	4	1	4	3	3
28.	12332111	14	2	0	4	1	1
29.	22023573	24	4	0	4	1	4
30.	01224953	26	3	1	4	2	4
31.	23112364	22	3	1	4	1	2

Monthly averages:

T (N)	1.952
T (E)	1.348
K_1	3.52
K_2	0.42
K_3	4.16
K_4	1.19
K_5	2.13

November

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	21232112	14	2	0	4	1	1
2.	00144321	15	3	0	4	0	2
3.	22121145	18	4	1	4	1	2
4	31111001	8	3	0	4	1	0
5.	13111100	8	2	0	4	0	1
6.	00001010	2	4	0	4	1	0
7.	00001017	9	4	0	4	0	2
8.	75332231	26	3	0	5	3	3
9.	12232100	11	3	0	4	1	1
10.	11122389	27	6	3	6	4	5
11.	22311127	19	7	3	5	1	2
12.	96999559	61	7	5	7	6	4
13.	63544551	33	4	2	5	3	4
14.	10112441	14	2	0	4	0	2
15.	02010012	6	2	0	4	0	1
16.	11113111	10	5	1	4	1	1
17.	20012010	6	3	0	4	0	0
18.	10010011	4	3	0	4	0	0
19.	32124231	18	3	1	5	3	1
20.	33223549	31	5	2	4	3	6
21.	74532112	25	5	1	5	1	4
22.	32446932	33	5	1	5	2	4
23.	21265333	25	4	1	5	2	2
24.	21212596	28	3	0	4	4	3
25.	42346995	42	5	2	5	6	8
26.	44553765	39	5	2	5	3	6
27.	22234642	25	4	0	5	3	3
28.	11121100	7	3	1	4	0	0
29.	01012210	5	2	0	4	0	1
30.	11000012	5	3	0	4	1	1

Monthly averages:

T (N)	2.317
T (E)	1.579
K_1	3.80
K_2	0.87
K_3	4.50
K_4	1.70
K_5	2.33

December

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	12122111	11	2	0	4	1	1
2.	11100010	4	3	0	4	0	0
3.	11001002	5	2	0	4	0	0
4.	12134233	19	3	0	4	0	2
5.	45221013	18	4	1	4	1	2
6.	11111011	7	3	0	4	0	0
7.	00001000	1	0	0	4	1	0
8.	00000012	3	2	0	4	0	1
9.	00001100	2	3	0	4	0	0
10.	00000000	0	2	0	4	0	0
11.	00000001	1	2	0	4	0	0
12.	00022111	7	2	0	4	1	1
13.	32110011	9	2	0	4	1	1
14.	97785312	42	6	4	6	4	4
15.	36223322	23	4	0	5	2	4
16.	22222283	23	5	2	5	2	2
17.	21212112	12	4	0	4	1	1
18.	89599999	67	6	2	6	5	8
19.	62365424	32	4	0	4	2	6
20.	44335936	37	5	1	4	2	5
21.	22123122	15	3	0	4	0	2
22.	23256343	28	4	1	5	3	5
23.	21111120	9	3	0	4	0	0
24.	11231111	11	4	1	4	0	1
25.	22127911	25	3	0	5	2	5
26.	21132111	12	2	0	4	1	2
27.	33111141	15	1	0	4	2	2
28.	13101292	19	3	0	4	3	4
29.	23134795	34	4	1	5	3	8
30.	56555285	41	6	2	6	5	8
31.	53446231	28	5	2	5	3	3

Monthly averages: **T (N) 2.198**
T (E) 1.472
K_1 3.29
K_2 0.55
K_3 4.39
K_4 1.52
K_5 2.52

II. Average amplitudes for different periods

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												January North
1.	4	4	5	5	3	4	6	11	16	10	9	7
2.	5	5	2	1	2	2	5	9	15	9	9	10
3.	31	33	33	33	36	37	36	39	37	41	36	34
4.	40	31	41	37	42	46	55	42	52	40	46	49
5.	103	67	79	106	77	61	20	30	21	30	26	34
6.	−17	+3	−5	−15	−14	−3	−8	−9	+4	+6	−6	−32
												January East
1.	7	7	7	6	9	9	11	13	15	14	16	20
2.	4	3	2	3	6	3	6	8	9	6	11	9
3.	31	31	29	27	33	30	27	41	32	36	35	32
4.	26	26	33	25	25	30	30	31	36	25	32	29
5.	97	69	43	78	54	41	36	27	34	29	32	35
6.	−3	+4	+8	−2	−4	+3	+1	−6	+12	+16	+21	+23
												February North
1.	5	6	4	3	2	3	5	13	17	12	10	11
2.	5	5	3	3	1	2	4	10	21	24	7	7
3.	37	33	37	36	35	36	35	45	48	46	36	41
4.	43	38	74	37	56	23	47	39	37	42	35	55
5.	57	49	41	61	64	64	17	11	24	32	66	61
6.	+7	+3	+15	+4	−9	−21	−11	+7	+26	+23	−16	−63
												February East
1.	7	8	7	7	7	6	17	18	19	23	21	23
2.	3	4	3	2	3	3	9	8	18	24	8	15
3.	34	39	33	33	38	36	35	47	50	42	35	43
4.	34	30	48	32	26	29	28	29	27	32	34	50
5.	58	55	39	53	51	34	23	19	19	20	35	34
6.	−6	+20	+1	+5	+4	−24	−17	−18	+10	+36	+50	+31

and hourly means of earth current elements

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	10	5	7	8	6	6	2	5	8	8	4	6,8
10	9	3	3	6	7	6	3	4	6	6	2	5,8
34	46	40	33	36	33	33	31	35	30	34	32	**35,1**
37	49	57	65	62	35	24	30	53	32	50	49	44,3
38	38	13	25	44	88	98	75	46	88	105	95	58,5
—25	—2	+28	+30	+27	+28	+20	—18	0	+9	+13	—12	
Component												
18	21	13	13	16	12	11	4	9	10	17	9	11,9
13	13	7	5	6	5	7	2	7	11	15	4	6,8
40	38	28	33	33	31	31	31	33	36	33	30	32.4
34	43	47	46	67	27	34	57	45	44	50	33	**36,4**
30	29	20	27	30	72	55	55	75	62	110	108	51,7
—3	—6	—21	—17	—9	—10	+17	+14	+10	—21	—27	+2	
Component												
9	8	9	5	5	6	3	5	5	5	6	10	6,8
7	7	7	3	5	6	1	3	3	8	5	7	6,3
43	38	37	34	37	36	33	33	33	35	39	37	37,6
49	47	42	46	41	43	40	39	63	49	31	43	44,1
44	29	43	22	39	75	81	62	84	153	75	91	56 2
—61	—49	+1	+13	+43	+29	+24	+21	+1	+27	—5	—7	
Component												
21	23	20	20	17	12	8	7	10	16	16	17	14,4
16	11	8	8	6	5	5	5	7	5	10	7	8,1
43	36	38	35	34	36	37	34	35	32	40	35	37,3
41	29	27	32	32	34	31	35	39	37	35	39	33,7
17	39	33	28	59	59	67	48	66	117	112	82	48,4
—9	+1	—6	—10	—4	—3	+1	—6	—10	—20	—8	—19	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												March North
1.	3	3	3	2	3	9	10	12	15	12	10	8
2.	3	3	3	1	2	5	8	10	13	12	10	8
3.	35	36	37	37	37	38	38	37	38	37	38	37
4.	20	38	42	42	37	39	36	50	51	49	33	51
5.	59	38	34	64	37	41	44	10	42	50	77	61
6.	+28	+31	+38	+8	+13	+9	+13	+55	+27	+15	−52	−84
												March East
1.	6	5	5	3	7	12	16	24	27	23	18	23
2.	2	5	3	5	2	5	8	8	12	13	9	14
3.	34	35	35	34	35	34	33	34	35	35	36	35
4	30	24	35	37	33	30	29	34	34	34	38	35
5.	71	39	34	41	40	34	46	24	27	35	36	35
6.	+10	+7	+10	+18	+2	−5	−17	−2	+30	+45	+52	+25
												April North
1.	4	7	9	8	7	15	17	17	17	15	14	13
2.	3	5	4	5	3	10	13	14	13	10	7	10
3.	41	36	41	37	36	38	37	36	38	37	38	38
4.	59	43	40	39	35	41	34	39	43	38	42	40
5.	65	93	98	76	44	38	53	38	27	37	32	67
6.	+12	+15	+1	−5	+11	+9	+51	+61	+41	−27	−101	−127
												April East
1.	10	10	10	8	8	20	23	26	27	27	25	33
2.	3	2	4	4	4	8	11	11	11	9	10	13
3.	39	36	38	36	37	36	35	35	36	37	39	37
4.	55	31	40	32	41	32	19	23	32	34	41	45
5.	88	86	82	69	33	29	44	26	32	27	22	35
6.	+21	+34	+27	+11	+7	0	+4	+17	+34	+37	+25	+4

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
8	8	8	5	2	1	2	3	3	3	2	7	6,1
6	7	6	3	1	1	1	3	2	3	1	6	4,9
38	36	37	36	37	34	36	38	37	36	38	34	36,5
53	45	38	39	37	34	35	34	44	48	54	37	41,2
44	40	51	46	65	51	96	75	91	98	37	89	55,8
—87	—45	+8	+40	+46	+18	—1	+10	—45	—36	—11	0	
Component												
21	20	21	22	15	17	10	8	6	10	6	10	14,0
12	9	14	5	4	0	2	2	5	8	2	5	6,3
34	38	34	35	33	34	37	36	37	38	38	36	35,3
31	31	36	37	34	27	32	28	60	47	39	29	34,4
37	42	35	52	44	48	82	66	88	66	54	80	48,2
+3	—6	—7	—9	—20	—26	—41	—12	—14	—8	—17	—19	
Component												
9	9	7	8	11	8	7	8	8	7	9	6	10.1
9	5	4	5	5	5	6	8	4	6	9	6	7,0
37	37	38	37	35	38	36	37	36	36	39	38	37,3
35	51	42	44	41	37	35	34	34	50	45	36	40,7
50	31	73	61	83	73	89	78	103	144	107	91	68,8
—129	—77	—17	+31	+58	+59	+56	+24	+9	—1	+25	+20	
Component												
26	22	22	22	18	15	12	8	8	11	12	11	17,1
11	10	14	10	7	4	2	4	6	5	7	6	7,4
38	35	38	38	37	38	37	37	38	38	40	37	37,1
36	42	47	44	39	49	28	38	37	40	45	38	37,8
41	33	47	37	77	75	106	47	82	127	95	92	59,6
—8	—20	—20	—30	—33	—15	—23	—30	—26	—9	—15	+9	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												May North
1.	6	8	11	10	16	13	20	22	21	16	19	13
2.	3	3	9	6	11	13	22	18	18	13	15	9
3.	38	43	39	37	41	51	51	56	49	40	43	42
4.	45	84	44	44	47	55	61	48	57	31	58	77
5.	121	106	103	68	63	84	55	44	52	98	56	68
6.	+21	+23	+16	+24	+14	+62	+61	+11	—13	—62	—120	—136
												May East
1.	15	13	12	13	19	23	34	37	34	36	36	31
2.	10	6	7	6	8	6	17	15	22	15	18	18
3.	42	50	41	44	39	40	36	39	46	34	41	51
4.	49	93	41	29	49	37	44	46	40	41	54	57
5.	127	64	66	51	46	62	45	55	36	49	63	30
6.	+20	+17	+41	+19	+17	+14	+38	+48	+39	+36	—16	—29
												June North
1.	7	9	8	7	16	17	20	21	17	17	16	13
2.	6	6	4	4	10	13	11	18	8	11	12	8
3.	40	44	38	38	41	39	41	52	41	44	41	38
4.	17	67	46	47	42	51	71	61	57	55	62	45
5.	70	77	69	86	79	76	53	42	46	46	44	52
6.	+23	+11	—8	+7	+25	+53	+60	+17	—7	—44	—84	—137
												June East
1.	14	14	11	13	17	19	24	30	25	33	32	32
2.	4	7	2	6	4	7	7	9	13	12	15	10
3.	41	46	35	39	37	37	36	37	39	41	48	40
4.	56	61	48	38	26	36	26	37	44	61	59	53
5.	75	46	55	41	47	46	67	35	31	32	41	50
6.	+16	+17	+18	+7	+5	+19	+47	+55	+49	+31	+8	—18

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
12	9	6	8	10	5	2	5	13	6	11	8	11,2
6	6	5	3	9	3	0	4	7	4	10	7	8,6
39	39	38	37	48	41	36	35	40	38	44	49	42,3
61	63	40	41	46	45	40	39	61	63	62	67	53,3
49	57	82	64	30	53	93	101	61	55	114	127	75,1
—119	—41	+5	+23	+43	+56	+38	+14	+22	+19	+28	+9	
Component												
28	26	26	24	23	16	11	15	16	12	16	10	22,0
10	13	10	11	15	7	3	11	8	5	12	9	11,0
39	39	38	39	44	48	37	42	39	41	49	46	41,8
52	39	43	47	49	49	37	62	37	29	80	71	49,0
53	81	61	62	49	46	84	80	82	100	66	77	63,9
—16	+7	—5	—19	—52	—34	—35	—38	—25	—20	+1	—10	
Component												
10	7	8	8	5	3	5	7	7	7	5	6	10,3
6	2	6	6	4	1	3	4	7	4	4	6	6,8
40	37	41	46	40	38	36	38	43	42	49	37	40,9
43	72	56	49	50	39	35	60	44	47	93	70	53,3
65	47	48	35	46	62	61	80	73	58	66	89	61,4
—112	—78	—12	+26	+62	+59	+62	+40	+16	+4	+7	+9	
Component												
25	25	20	25	14	17	14	15	8	12	14	17	19.6
15	10	9	13	10	4	4	10	5	7	7	8	8,1
40	43	38	44	50	36	38	38	35	60	43	41	40,9
47	45	59	54	37	44	43	53	53	47	89	47	48,4
61	50	39	42	61	75	89	145	78	57	41	98	58,3
—27	—32	—11	—34	—22	—37	—43	—37	—21	—1	+2	+9	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												July North
1.	6	9	7	10	12	17	16	17	14	15	14	8
2.	7	5	3	2	5	13	12	12	8	8	9	5
3.	47	38	37	37	38	47	41	37	37	38	38	38
4.	40	49	41	34	35	51	37	38	53	53	42	52
5.	47	62	72	64	47	47	52	40	13	33	44	36
6.	+14	+5	—1	+18	+27	+57	+44	+13	—35	—69	—113	—135
												July East
1.	9	9	9	11	6	19	21	27	25	29	31	22
2.	6	4	4	1	1	5	11	11	8	13	13	8
3.	47	38	35	38	35	34	38	35	37	38	34	35
4.	44	51	34	48	31	33	30	32	40	47	43	48
5.	68	67	64	26	44	47	41	44	35	47	50	35
6.	+1	+11	+4	+3	—9	+7	+45	+45	+41	+25	—1	—12
												August North
1.	6	8	9	11	15	16	18	20	23	15	12	9
2.	6	5	5	5	8	10	13	12	16	12	8	6
3.	36	38	37	35	38	39	42	42	39	39	39	42
4.	41	50	51	35	39	69	55	37	39	45	43	51
5.	102	69	60	49	48	30	26	49	34	42	51	53
6.	+11	0	+22	+6	+9	+70	+75	+64	—18	—96	—160	—166
												August East
1.	15	10	13	14	19	17	26	30	39	32	32	27
2.	11	3	3	2	5	5	9	13	13	14	5	12
3.	34	34	33	34	34	35	33	36	39	36	35	41
4.	40	41	34	28	29	38	32	28	31	37	45	44
5.	46	45	52	47	50	23	34	34	23	43	41	60
6.	+7	+7	+19	+13	—6	+4	+39	+61	+59	+33	—9	—20

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
4	5	2	4	4	2	2	4	5	5	5	10	8.5
3	3	1	1	4	3	1	3	7	4	4	10	5,4
37	40	39	40	42	36	35	37	38	34	39	37	38.7
41	56	51	47	53	32	37	42	33	46	46	64	44,8
48	64	59	88	42	46	46	38	68	47	58	48	50,4
—112	—64	—4	+53	+87	+90	+49	+21	+12	+8	+14	+22	
Component												
19	19	20	16	13	12	8	6	10	8	10	13	15 5
5	8	8	6	9	5	8	3	9	6	3	9	6,8
37	37	41	41	41	35	39	38	34	38	36	35	37,3
42	50	57	47	38	57	52	48	40	39	52	54	44,1
60	46	46	84	89	41	39	39	62	56	62	51	51,8
—14	—6	—3	—6	—14	—8	—40	—41	—35	—6	+2	+8	
Component												
17	12	7	6	6	6	4	7	6	9	7	8	10,6
11	8	6	3	3	7	2	4	6	9	4	4	7,2
38	41	41	39	38	39	36	38	34	38	36	35	38,3
41	52	72	59	39	37	32	44	51	49	41	40	46.3
92	70	93	60	80	57	57	69	81	66	90	56	61,7
—122	—36	+9	+66	+84	+84	+36	+8	+8	+6	+12	+29	
Component												
24	27	20	16	19	14	8	11	11	17	12	13	19,4
13	10	9	9	8	4	2	3	6	7	7	6	7.6
37	38	40	37	37	39	35	39	34	38	37	36	36.4
43	37	59	59	31	40	45	39	40	45	33	39	38 9
87	66	81	54	126	66	67	60	82	64	75	56	57,6
—15	—24	—29	—10	—28	—14	—31	—30	—19	—10	+1	+3	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												September North
1.	6	7	7	10	17	20	23	19	20	17	11	14
2.	5	5	7	7	20	18	35	22	20	16	8	9
3.	35	37	38	38	43	48	62	42	55	41	43	41
4.	37	34	47	43	62	45	55	70	63	53	62	62
5.	10	88	73	66	29	35	35	26	37	68	61	64
6.	+10	+8	—3	+29	—6	+31	+58	+77	+54	—5	—75	—143
												September East
1.	12	10	12	13	21	24	26	31	38	31	28	29
2.	7	5	5	4	19	13	26	20	22	20	14	17
3.	37	39	37	37	45	38	57	54	53	46	45	38
4.	30	35	41	37	49	49	44	31	47	41	62	40
5.	77	60	55	44	30	53	37	28	53	71	38	47
6.	+11	+11	+12	+12	—9	+12	+22	+48	+52	+43	+19	0
												October North
1.	2	4	2	2	9	8	9	16	12	12	8	8
2.	2	5	1	1	5	7	10	13	10	8	8	6
3.	37	35	35	33	34	37	36	38	38	37	36	30
4.	33	44	38	35	31	41	37	55	50	49	47	37
5.	94	66	44	45	33	32	35	36	38	48	55	93
6.	—5	+10	+5	—12	—19	—14	+17	+63	+77	+27	—81	—137
												October East
1.	5	6	6	6	8	13	13	18	20	21	23	23
2.	1	4	3	3	1	5	8	8	10	12	6	6
3.	34	35	33	35	36	35	37	34	33	34	34	34
4.	34	31	27	28	25	21	35	35	34	35	32	30
5.	82	85	50	35	41	42	40	34	24	30	47	58
6.	+6	+9	+15	+18	+4	—18	—11	+26	+45	+60	+55	+27

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
10	10	10	8	8	7	6	4	6	7	7	8	10,8
6	10	11	8	10	4	2	1	5	5	4	5	10,1
40	46	43	40	39	38	36	35	36	34	37	35	40,9
62	67	63	59	56	55	37	34	32	40	47	34	50,8
59	55	91	62	63	78	116	84	89	90	133	156	73,4
—138	—78	—17	+32	+65	+35	+18	+10	—5	+10	+29	+6	
Component												
31	22	26	21	16	14	11	8	10	13	14	13	19,8
8	15	14	11	13	8	8	4	5	10	12	6	12,1
38	41	44	42	41	35	35	36	37	36	38	37	41,0
49	39	76	41	38	30	60	32	28	68	47	40	43,9
88	61	57	77	82	62	76	83	78	73	73	101	62,8
—15	—28	—28	—17	—3	—23	—28	—36	—12	—8	—18	—17	
Component												
5	11	10	4	3	3	2	2	3	2	6	3	6,1
7	9	9	6	2	2	2	2	3	2	8	3	5,4
36	37	37	35	37	36	36	33	34	33	35	36	35,5
43	44	53	43	35	37	28	34	36	38	33	32	39,6
101	70	51	49	55	42	53	72	111	65	65	77	59,8
—131	—74	+3	+51	+39	+41	+36	+41	+24	+19	+23	—5	
Component												
16	20	16	13	10	6	8	8	5	8	9	8	12,1
6	10	8	4	5	5	3	3	6	5	8	5	5,8
34	36	37	36	35	37	33	36	35	34	35	36	34,9
31	38	40	28	31	25	29	46	36	30	40	29	32,0
51	44	30	49	37	49	56	40	73	91	64	89	51,7
—1	—18	—14	—12	—12	—30	—39	—30	—27	—20	—15	—18	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												November North
1.	2	4	5	5	7	6	3	15	20	14	14	14
2.	2	2	5	5	6	5	7	14	18	13	12	12
3.	38	36	37	38	37	37	36	36	41	38	39	58
4.	50	37	43	44	43	38	34	40	56	43	49	52
5.	62	68	52	31	38	34	25	26	16	24	48	51
6.	—17	—6	—22	—9	—7	—10	—9	+19	+47	+46	—21	—72
												November East
1.	5	3	9	8	12	12	17	20	23	22	25	19
2.	4	1	7	6	7	7	10	10	14	13	16	11
3.	37	34	35	35	36	36	32	35	40	33	38	46
4.	44	29	29	38	34	22	23	29	37	34	38	49
5.	65	58	40	20	29	31	32	23	36	27	24	28
6.	+6	0	+5	+9	—27	—20	—8	+6	+35	+63	+60	+39
												December North
1.	3	5	5	3	5	7	8	10	19	12	8	12
2.	5	4	2	3	5	7	6	6	13	9	5	12
3.	36	38	36	37	38	38	38	35	41	37	37	36
4.	33	39	51	35	52	53	45	41	52	34	64	46
5.	90	49	68	88	69	75	38	32	23	67	31	71
6.	—5	+3	—10	—17	—28	—23	—4	—14	+24	+32	—6	—37
												December East
1.	7	6	3	6	10	11	11	15	20	15	13	18
2.	7	4	3	4	5	8	5	9	10	6	8	10
3.	34	37	34	34	35	35	36	34	33	35	38	35
4.	31	34	42	28	42	49	30	29	39	37	50	44
5.	70	45	45	64	57	44	34	34	22	37	27	33
6.	—6	+2	+12	+8	—3	—14	+7	+5	+22	+35	+45	+26

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	8	9	8	7	4	4	6	7	5	4	6	8,1
13	10	10	8	8	5	4	4	6	4	4	5	7,6
40	38	37	37	34	38	37	37	37	36	35	34	38,0
64	38	53	36	50	43	56	37	56	50	56	43	46.3
34	59	60	58	117	101	62	161	124	97	55	132	63,9
—79	—37	+8	+19	+29	+12	+15	+13	+32	+10	+6	+3	
Component												
23	16	19	13	13	8	8	13	10	10	10	9	13,5
14	10	7	8	9	3	3	10	7	10	5	8	8,3
37	37	35	37	34	37	37	34	36	38	38	35	36,4
33	37	37	44	50	49	35	44	45	34	39	71	38,5
37	56	62	43	156	79	86	104	78	95	65	64	55,8
—7	+16	—7	+6	—26	—7	—22	—33	—41	—24	—14	—8	
Component												
13	12	8	5	2	4	2	3	3	5	2	3	6,7
13	12	5	3	2	4	2	1	4	5	2	3	5,6
39	39	37	36	35	35	35	35	37	37	36	34	36,7
33	40	49	36	36	35	26	50	38	41	40	48	42,3
87	71	42	80	65	82	174	103	84	101	84	57	72,2
—58	—39	—7	+14	+31	+31	+38	+28	+14	+18	+11	0	
Component												
21	20	19	13	10	8	5	6	6	8	5	5	11,0
11	11	12	8	3	5	6	2	6	5	2	3	6,5
37	34	31	33	34	35	32	34	35	35	35	36	34,6
37	34	39	21	34	31	36	41	37	37	35	41	36,5
37	59	35	77	80	76	94	75	70	106	67	48	56,2
+4	—4	—6	—1	—22	—30	—10	—14	—35	—20	—6	+5	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
											Year	1978
1.	5	6	6	6	9	11	14	16	17	14	12	11
2.	4	4	4	4	6	9	12	13	14	12	9	8
3.	37	37	37	36	38	40	41	41	42	40	39	39
4.	38	46	46	39	43	46	47	47	51	44	49	51
5.	81	69	66	67	52	51	38	32	31	48	49	59
6.	+7	+9	+4	+3	+1	+19	+29	+30	+19	−13	−69	−106
											Year	1978
1.	9	8	9	9	12	15	20	24	26	25	25	25
2.	5	4	4	4	5	6	11	11	14	13	11	12
3.	37	38	35	35	37	35	36	38	40	37	38	39
4.	39	41	38	33	34	34	31	32	37	38	44	44
5.	77	60	52	48	44	41	40	32	33	37	38	40
6.	+7	+12	+14	+10	−1	−2	+13	+24	+36	+39	+26	+8

12	13	14	15	16	17	18	19	20	21	22	23	Averages
North Component												
10	9	8	6	6	5	4	5	6	6	6	6	8,5
8	7	6	4	5	4	3	3	5	5	5	5	6,6
38	39	39	37	38	37	35	36	37	36	39	37	38,1
47	52	51	47	46	39	35	40	45	46	50	47	45,5
59	53	59	54	61	67	86	83	85	88	82	92	63,0
—98	—51	0	+33	+51	+45	+33	+23	+7	+8	+13	+6	
East Component												
23	22	20	18	15	12	10	9	9	11	12	11	15,8
11	11	10	8	8	5	4	5	6	7	8	6	7,9
38	38	37	38	38	37	35	36	36	39	39	37	37,2
40	39	47	42	40	39	39	44	41	41	49	44	39,6
50	51	46	52	74	62	75	70	76	84	74	79	55,6
—9	—10	—13	—14	—20	—20	—24	—24	—21	—14	—10	—5	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
												Quiet days
1.	3	4	4	5	8	8	10	11	14	9	8	7
2.	2	3	2	1	3	5	4	5	6	5	5	4
3.	35	34	34	34	35	35	35	35	35	35	35	36
4.	31	29	30	28	30	30	32	33	33	33	32	38
5.	26	25	24	22	19	21	18	13	12	16	22	31
6.	+8	+5	+3	+10	+13	+32	+37	+34	+22	−22	−84	−112
												Quiet days
1.	5	4	3	5	7	9	14	16	18	17	19	17
2.	3	2	1	1	2	2	3	5	4	5	6	5
3.	33	33	32	32	34	32	33	32	31	32	33	33
4.	22	27	23	23	22	21	19	23	28	25	31	29
5.	35	26	25	26	24	21	21	17	18	19	21	25
6.	+10	+11	+11	0	−7	−7	+6	+22	+32	+22	+20	+4
												Disturbed days
1.	6	9	15	12	14	22	43	33	34	29	33	28
2.	7	9	15	11	14	21	52	34	38	29	34	28
3.	52	49	45	43	42	45	70	78	63	57	59	79
4.	64	72	99	72	49	97	122	91	112	69	117	129
5.	247	197	203	184	129	105	111	124	96	146	125	93
6.	+1	+42	+9	+2	+8	+25	+3	−3	+1	−12	−85	−92
												Disturbed days
1.	21	20	27	21	20	30	34	46	47	44	51	47
2.	15	9	14	16	15	23	31	30	41	29	38	43
3.	54	43	44	51	43	39	45	49	67	47	57	62
4.	90	111	54	87	65	67	63	88	78	87	109	119
5.	198	118	209	60	80	83	121	97	64	59	70	35
6.	−18	+10	+15	+53	−6	+11	+35	+31	+50	+65	+18	+23

12	13	14	15	16	17	18	19	20	21	22	23	Averages
North Component												
8	7	4	4	2	3	2	3	3	5	3	5	5,8
6	3	2	2	1	2	1	1	3	4	4	4	3,3
36	35	35	35	35	34	34	35	34	33	34	34	34,7
33	32	31	29	28	28	26	32	33	30	35	31	31,1
29	24	23	21	17	21	30	19	21	21	28	30	22,2
—95	—51	+2	+40	+47	+44	+27	+13	+5	+9	+6	+7	
East Component												
19	17	13	10	8	6	6	4	6	7	7	9	10,3
4	5	6	4	5	3	4	2	5	5	5	7	3,9
35	32	32	34	32	33	33	33	33	34	33	33	32,8
27	29	29	25	27	23	28	27	29	26	28	25	25,7
24	25	21	25	22	28	28	28	27	32	29	37	25,2
—12	—16	—20	—11	—14	—14	—19	—19	—12	+1	+3	+12	
North Component												
18	14	10	17	18	13	5	6	9	6	8	9	17,1
20	18	15	17	25	13	6	5	9	6	5	10	18,4
47	59	55	43	58	50	40	42	41	45	44	42	52,0
111	102	147	112	159	76	75	57	72	81	51	84	92,5
87	162	169	180	166	228	417	327	294	273	370	231	194,3
—96	—50	+11	+10	+89	+50	+27	+30	—13	—9	+14	+40	
East Component												
36	32	33	35	34	30	20	21	21	22	17	14	30,1
27	28	25	21	32	15	8	8	11	14	12	7	21,4
51	59	52	47	63	59	39	46	40	45	46	51	50,8
76	65	138	110	155	118	61	97	123	79	103	60	91,8
63	155	127	159	274	156	302	199	139	215	173	189	139,4
—6	+13	—16	—23	—44	+6	—36	—55	—70	—21	—20	—16	

III.

Results of harmonical analysis of the daily variations

	A_1	φ_1	A_2	φ_2	A_3	φ_3	A_4	φ_4	A_5	φ_5	A_6	φ_6
						North Component						
January	13	196	9	310	12	112	9	270	1	211	10	325
February	16	132	19	272	22	74	16	290	2	168	3	358
March	19	67	30	313	36	96	13	324	5	127	3	199
April	38	108	52	283	41	111	8	342	6	213	2	207
May	48	108	51	303	29	142	6	359	1	137	11	332
June	42	112	56	292	27	118	3	115	9	95	4	337
July	47	122	60	305	31	129	7	183	1	51	3	7
August	47	116	69	307	49	141	9	37	8	282	3	314
September	34	88	51	280	45	116	16	298	4	233	3	252
October	28	118	47	268	43	105	30	117	7	173	2	294
November	13	143	28	251	19	96	21	300	12	130	3	67
December	18	160	19	243	19	70	10	278	4	110	5	317
Year	28	116	39	289	29	113	9	309	3	148	3	321
Q	28	107	43	294	30	123	9	311	3	162	2	20
D	34	121	35	307	30	102	5	250	6	151	5	11
						East Component						
January	6	334	6	195	13	353	5	75	5	83	2	172
February	11	305	9	122	17	8	6	246	4	92	4	307
March	20	337	14	125	12	7	11	275	5	75	3	79
April	25	14	10	129	14	46	3	333	1	177	4	356
May	34	14	1	83	10	131	14	353	6	206	5	320
June	34	16	10	195	15	120	6	330	3	328	2	306
July	24	358	4	193	18	125	3	339	6	279	4	305
August	28	11	11	215	16	107	8	345	8	265	2	159
September	27	358	10	204	14	76	7	309	6	330	4	69
October	28	339	14	136	16	38	12	275	1	14	3	139
November	25	316	17	124	17	46	7	260	3	149	6	277
December	19	333	12	125	9	30	4	249	3	134	8	234
Year	22	353	8	153	10	60	5	307	0	237	1	293
Q	14	11	11	160	10	78	3	286	2	297	1	200
D	39	314	4	104	11	55	4	276	13	236	10	308

IV.
Special phenomena
(magnetic and earth current data)
SSC-s

Month	Day	(GMT+1h) CET	E(mV/km) Amplitude in	H(gamma) Amplitude in	Ex	Ey	Hx	Hy	End of Storm
01.	03.	21.45	7	32	—	+	+	0	1. 5. 06.00
	05.	17.30	4,5	13	+	+	+	—	1. 7. 01.00
	09.	17.30	11,5	42	+	+	+	—	1.10. 04.00
	25.	16.30	5,5	14	+	+	+	—	1.26. 02.00
02.	14.	22.45	18	70	+	+	+	—	2.15. 17.00
	25.	20.30	20	50	+	+	+	—	3. 1. 02.00
03.	08.	15.30	22	92	+	+	+	—	3. 8. 24.00
04.	10.	14.00	18	55	+	+	+	—	4.12. 04.00
	18.	00.15	10	25	+	+	+	—	4.18. 10.00
	30.	10.45	10	18	—	—	—	+	4.30. 24.00
05.	01.	09.30	9	18	—	—	—	+	5. 4. 21.00
		19.30	12	42	+	+	+	—	in storm
	03.	00.15	15,5	38	+	+	+	—(b?)	in storm
	04.	14.45	12.5	35	+	+	+	+(b?)	in storm
	10.	21.00	5,5	22	+	+	+	—	5.11. 12.00
	20.	03.45	2,5	11	+	+	+	—	5.22. 02.00
	29.	19.30	8	45	+	+	+	—	5.30. 06.00
06.	01.	22.30	10	32	+	+	+	—	6. 4. 04.00
	02.	10.15	11	52	—	+	+	+	in storm
	04.	13.00	12	42	+	+	+	—	6. 5. 24.00
	10.	09.30	6,5	38	+	+	+	+	6.11. 11.00
	29.	10.45	4,5	18	+	+	+	—	6.29. 20.00
		22.00	14,4	75	—	—	+	—	6.30. 03.00
07.	04.	00.00	8	65	?	+	+	—	7. 5. 10.00
	13.	01.15	7	32	+	+	+	—	7.13. 11.00
	14.	00.30	14,5	60	+	+	+	—	8.29. 10.00
07.	18	13.45	9	20	+	+	+	—	7.15. 02.00
	27.	03.45	17	50	+	+	+	—	8.19. 03.00
09.	9.	04.00	12.5	28	+	+	+	—	9.10. 03.00
	25.	08.15	15,5	30	+	+	+	—	9.26. 00.00
	29.	04.00	11,5	58	+	+	+	—	10. 9. 12.00
10.	09.	04.15	4,5	8	+	+	+	—	9.29. 19.00
11.	08.	02.45	12,5	32	+	+	+	—	no storm
	12.	02.00	21,5						11.13. 20.00
12.	14.	02.30	12	40	+	+	+	—	12.14. 14.00
	25.	13.15	5,5	12	+	+	+	—	12.25. 18.00

		Bays							*Pt-s*		
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
01.	01.	21.15	3,5	30	—	+	+	+	2	+	+
	02.	21.15							2	+	+
	05.	00.45	17	130	—	+	+	+	tr		
	07.	00.15	8	55	+	+	+	—	tr		
		23.15	12	75	+	+	+	+	tr		
	08.	02.15							tr		
		05.15	9	25	+	—	+	—			
	09.	22.30							tr		
	10.	18.00	7	45	+	—	—	—			
		22.00	8	50	+	+	+	+	tr		
	17.	00.00	11,5	55	+	+	+	—	tr		
		01.00	5,5	30	0	+	+	—	tr		
	18.	03.00	10	35	+	+	+	—	tr		
	19.	22.15							2,5	+	+
	21.	22.15							2,5	+	+
	22.	00.15							3,5	+	+
	26.	00.30	9	70	—	+	+	+	tr		
	29.	18.15	10	80	—	+	+	+	tr		
	30.	22.30	11,5	35	+	+	+	+	tr		
	31.	13.15	7	30	—	—	—	+			
02.	01.	18.15	5,5	38	—	+	—	+			
	02.	00.00	6	35	+	+	+	—	tr		
		22.15	7	30	+	+	+	—			
		23.15	5,5	25	+	+	+	—			
	05.	19.45	12	55	—	—	—	+			
	06.	11.15	6,5(?)	18	+	+	+	—			
		21.30	6	18	+	+	+	—			
	08.	23.15	3	22	—	+	+	+	tr		
	12.	22.30	7	65	?	+	+	+	2		
	13.	03.15	5	25	+	+	+	—	tr		
	14.	02.15							2	+	+
	17.	03.00	9	52	—	+	+	+			
		21.30	3,5	15	—	+	+	+	2	+	+
	18.	18.30	5,5	28	—	+	—	+	tr		
		21.15	12.5	35	—	+	+	+			

		Bays							*Pt-s*		
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
02.	20.	00.30	6	18	+	+	+	—	2,5	+	+
	21.	17.00	6,5	50	—	+	+	+	3,5	+	+
		23.00	4,5	32	—	+	+	+			
	22.	01.00	3,5	18	+	+	+	—	tr		
		02.30	4,5	22	—	+	+	+			
		23.30	11.5	65	+	+	+	—	2		
	23.	22.45							5,5	+	+
	26.	21.45	20	90	—	+	+	+	tr		
	27.	22.30	14,5	70	+	+	+	—	tr		
	28.	20.00	14,5	75	+	+	+	—	tr		
		21.15	22	110	—	+	+	—	tr		
03.	01.	20.15	23,5	89	—	—	+	—	tr		
	09.	08.30	6,5	12	—	—	—	+			
		20.45	5,5	30	—	+	+	+	tr		
	13.	01.30	3,5	17	+	+	+	—	2.5	+	+
	14.	22.30	6,5	22	+	+	+	—			
	16.	18.30	6,5	35	—	+	+	+			
		23.45	9	55	—	+	+	+	tr		
	17.	15.30	9	70	—	—	—	+			
	20.	21.00	4,5	30	—	+	+	+	tr		
		23.30	4,5	22	+	+	+	—	tr		
	22.	02.30	2,5	8	+	+	+	—			
		22.45	14,5	42	+	+	+	—	tr		
	23.	01.00	12	35	+	+	+	—			
	24.	23.45	6	30	+	+	+	—	2,5	+	+
	26.	14.30(?)	18	70	—	—	—	+			
	27.	18.15	20	85	+	+	+	+	tr		
		20.30	16	55	+	+	+	—	tr		
		23.30	17	75	+	+	+	+	tr		
	30.	22.45	3	18	+	+	+	—	tr		
04.	01.	03.00	5.5	30	+	+	+	—			
	02.	22.45	12,5	52	+	+	+	—	tr		
	03.	00.15	7	22	+	+	+	—			
		19.00	15.5	65	+	+	+	—	tr		
		21.15	22	80	+	+	+	—	tr		

		Bays							*Pt-s*		
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
04.	04.	00.30	13	60	±	±	+	—			
		21.00	32,5	160	+	±	+	+	tr		
	05.	00.00	20	90	+	+	+	+	tr		
		20.30	8	30	—	0	+	+	tr		
	11.	02.30	25	115	—	—	—	+			
	13.	23.30	12	65	+	+	+	+			
	14.	13.15	18	40	—	—	—	+			
		20.00	12	95	—	+	+	+	tr		
	18.	18.15	7(si?)	18	—	—	+	+			
	19.	19.30	12	165	—	0	+	+	tr		
	23.	22.45	10	42	—	+	±	±			
	24.	17.30	14,4	50	+	+	+	+	tr		
		18.15	16	75	+	+	+	+	tr		
		23.45	6.5	40	+	+	+	—	tr		
	27.	22.15	9	40	+	+	+	—	tr		
	28.	14.15	6,5	35	+	—	—	—	tr		
		21.00	6,5	18	+	+	+	—			
	30.	23.00	12.5	50	+	+	+	—	tr		
05.	02.	15.15	15,5	80	+	+	+	+	tr		
		18.00	10	45	+	+	+	—			
	05.	22.00	4,5	22	+	+	+	—	tr		
	06.	22.30	2,5	14	—	+	+	+	2	+	+
	07.	01.30	4,5	18	+	+	+	—	tr		
	08.	18.00	9	35	—	—	—	+			
		21.45	8,5	35	—	—	—	+			
	11.	04.15	6,5	40	0	+	+	0			
		19.15	5,5	14	+	+	+	—	2,5	+	+
	12.	20.45	6,5	30	+	+	+	—	tr		
	13.	01.15	9	55	+	+	+	—	tr		
		14.30	3,5	14	+	+	+	—			
		22.30	5.5	30	+	+	+	—	tr		
	14.	20.30	4.5	18	—	+	+	+	2,5	+	+
	17.	23.30	3,5	18	+	+	+	—	2,5	+	+
	20.	01.30							2	+	+
	21.	23.30	10	85	—	+	+	+	tr		
	22.	22.45	7	30	+	+	+	+	tr		

		Bays							*Pt-s*		
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
05.	24.	00.30	8	60	—	+	+	+	tr		
	25.	00.45	4	30	+	+	+	—	tr		
		22.45	3,5	25	+	+	+	—			
	28.	00.00	2,5	14	+	+	+	—	2,5	+	+
	31.	02.30	8	22	—	—	—	+			
		20.45	2,5	12	+	+	+	—			
06.	21.	03.45	7	50	+	—	—	—			
	23.	19.00	8	38	+	+	—	+	tr		
	26.	05.30	25	75	+	0	+	—			
		08.15	11,5	?	—	0					
		12.30	7(ssc?)	18	—	—	—	+			
		21.30	7	60	—	+	+	+	tr		
	29.	22.45	23,5	110	+	—	+	—	tr		
	30.	13.45	8	28	+	+	+	—			
		19.30	10	60	+	+	+	+	tr		
07.	04.	23.45	12	80	+	+	+	+	tr		
	06.	09.30	6	22	—	—	—	+	tr		
		12.00	35(ssc?)	22	+	+	+	—			
	14.	21.30	14,4(si?)	48	—	—	—	+			
	16.	01.45	7	30	+	+	+	—	tr		
	17.	21.00							2	+	+
	18.	23.00	12.5	30	+	+	+	—			
	19.	15.30	7	22	—	—	—	+			
	23.	00.00	3,5	28	+	+	+	+	2	+	+
	24.	20.15							2 5	+	+
	25.	05.30	3,5	12	+	0	0	—			
		20.30							3.5	+	+
		22.00	6,5	32	+	+	+	—	3,5	+	+
	26.	23.00							2	+	+
	27.	20.30							2,5	+	+
		23.30							2	+	+
	29.	23.15							5	+	+
08.	02.	21.30							4,5	+	+
	04.	00.30	6	36	+	—	+	—	tr		
		20.15	4,5	22	—	+	—	+	tr		
	12.	22.00	5,5	32	—	+	+	+	tr		

		Bays							*Pt-s*		
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
08.	15.	18.45							2	+	+
	17.	21.45							5	—	+
	18.	01.45	5,5	30	+	+	+	—	tr		
		19.45	16	105	—	+	+	+	tr		
		22.45	7	45	—	+	+	+	tr		
	21.	22.00	6.5	28	—	—	—	+			
		22.30	4,5	22	—	—	—	+	tr		
	26.	20.15	2,5	7	—	—	—	+	2	+	+
	28.	00.00	9	?	+	+			tr		
		14.15	11,5	40	—	—	+	+			
		22.00	14,5	52	+	—	—	—			
	29.	01.45	7	32	+	—	—	—	2	—	—
		14.15	12	60	—	—	—	+			
		23.30	4.5	22	+	+	+	—	2	+	+
	30.	13.30	7	22	+	+	+	—			
		21.15	18	80	—	+	+	+	tr		
	31.	16.15	20	130	+	+	+	+	tr		
09.	05.	20.00	6.5	18	+	+	+	—			
	08.	01.00	9	55	—	+	+	+	tr		
	09.	20.30	5,5	45	—	+	+	+	tr		
	10.	00.00	4,5	25	+	+	+	—	2,5	+	+
		00.30	11,5	35	+	+	+	—	7	+	+
	16.	00.15							2,5	+	+
		22.30	6,5	14	—	+	+	—	2	+	+
	17.	22.15							2,5	+	+
	20.	20.30							3,5	+	+
		22.00							11,5	+	+
	24.	23.00	6,5	45	—	+	+	+	2		
	27.	17.45	23,5	?	+	+			tr		
		21.30	20	?	+	+			tr		
		23.00	16	?	+	+			tr		
	28.	22.00	10	70	+	+	—	+	tr		
10.	01.	23.00	6,5	42	+	+	+	—	tr		
	02.	21.15	4,5	18	+	+	+	—	tr		
	03.	00.30	8	32	+	+	+	—	tr		
	05.	16.15	3,5	12	—	—	—	+			

		Bays							*Pt-s*		
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
	08.	23.30							4,5	+	+
		23.15	4,5	18	0	+	+	0	2,5	+	+
	09.	00.45	3,5	8	+	+	+	—			
		22.30							3,5(pg)		
	10.	00.45	14,5	68	—	+	+	+	tr		
		22.00	4,5	14	+	+	—	—	tr		
	12.	15.30	9	50	—	+	+	+	tr		
	18.	20.15	14,5	85	—	+	—	+			
	19.	21.15	11	50	+	+	+	+	tr		
	21.	15.00	?	35			—	+	tr		
		22.45	?	45			+	+			
	24.	20.00	4,5	25	—	+	+	+	2,5	+	+
	25.	11.00	8	22	+	+	—	+			
	26.	18.30	8	25	—	—	—	+			
		19.30	14,5	85	—	—	—	+			
		22.30	9	52	—	+	+	+	tr		
	29.	00.00	5,5	40	+	+	+	—	tr		
		18.00	8	45	+	+	+	—	tr		
	30.	16.30	18	45	+	+	+	—	tr		
		20.00	8	45	+	+	+	—	tr		
	31.	21.30	4	50	—	+	+	+			
11.	02.	23.00	3,5	18	—	—	—	+			
	03.	19.15	3,5	65	—	+	+	+	tr		
	04.	23.30	3,5	20	+	+	+	—	2	+	+
	05	03.45	6,5	18	+	+	—	—			
	07.	23.30	11,5	70	—	+	+	+	tr		
	10.	20.00	11,5	72	—	+	—	+	tr		
		22.45	20	90	+	+	+	—	tr		
	11.	21.00	10	55	+	+	+	+	3,5	+	+
	12.	21.30	21,5	100	+	+	+	+	tr		
	14.	16.30	8	42	+	+	+	—	tr		
		20.00	6,5	30	+	+	+	—	tr		
	15.	04.30	4,5	25	—	+	+	+			
	18.	23.00							2	+	+
	19.	00.45	4,5	22	+	+	+	—			
	20.	20.30	13,5	62	—	+	—	+	tr		

		Bays			*Pt-s*						
Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy	E(mV/km)		
11.	20.	23.45	11	65	+	+	+	—	tr		
	21.	00.45	14,5	65	+	+	+	—	tr		
	22.	16.15	20	105	+	+	+	+	tr		
	24.	19.30	20	60	+	+	+	—	tr		
	25.	00.15	6,5	30	—	+	+	+	tr		
	26.	16.00	38	240	+	+	+	+	tr		
		19.00	27	170	+	+	+	+	tr		
		23.00	10	80	—	+	+	+	tr		
		16.00	12,5	45	—	+	+	+	tr		
		20.00	9	50	—	+	+	+	tr		
	27.	16.30	12,5	65	—	+	+	+	tr		
		20.00	8	65	—	+	+	+			
	30.	02.30							2,5	+	+
		22.30	4 5	25	+	+	+	+	tr		
12.	05.	22.30	3,5	32	—	+	+	+	tr		
	08.	21.15	4,5	18	+	+	+	—	tr		
	11.	23.30							2	+	+
	13.	02.30	3.5	32	+	+	+	—	tr		
	14.	09.15	12	65	—	—	—	+			
	15.	03.45	12,5	62	+	+	+	—	tr		
		23.45	3,5	15	+	+	+	—	tr		
	18.	18.00	23,5	125	+	+	+	+	tr		
		21.15	16	75	+	+	+	+	tr		
	19.	00.30	10	60	+	+	+	—	tr		
	20.	16.30	15,5	55	—	+	+	+	tr		
		21.30	13,5	60	+	+	+	—			
	25.	02.30	6,5	30	+	+	+	—			
		15.30	21,5	90	+	+	+	—	tr		
	27.	19.00	6,5	25	+	+	+	+			
	28.	18.45	14,5	60	+	—	—	+	tr		
		19.15	14,5	55	—	+	—	+	tr		
	29.	17.30	10	105	—	—	—	+	tr		
	30.	19.45	14,5	95	—	+	+	+	tr		

Further Pi—traces

Month	Day	CET
01.	01.	18.15
	03.	18.45
	06.	22.45
		23.45
	12.	02.30
		20.45
		21.00
		22.15
	13.	04.15
		21.00
	15.	04.45
	18.	01.15
	19.	01.30
		02.00
		21.45
	25.	02.30
		03.30
	27.	21.15
		22.00
	30.	21.30
		23.30
	31.	20.45
02.	01.	00.15
		23.45
	04.	01.30
	08.	20.30
		20.45
		23.30
	09.	21.30
	11.	01.30
		01.45
	12.	14.45
	18.	23.30
	19.	04.30
		23.45
	20.	20.45
		21.15
	23.	22.30
	25.	01.00
03.	03.	21.45
	07.	00.30
		01.00
		23.15
	13.	**21.15**
	18.	22.30
	21.	**23.45**

Month	Day	CET
03.	22.	21.45
	31.	21.30
04.	07.	00.00
		01.15
		21.15
		23.00
	10.	23.00
	12.	02.00
	15.	00.45
	17.	00.30
	22.	21.15
	26.	00.30
		21.15
		22.15
	27.	13.15
		16.45
	29.	01.30
		19.00
		20.45
		21.30
		23.30
05	07.	15.45
	11.	20.00
		22.45
	17.	14.45
		22.00
		22.15
	18.	22.30
	22.	20.30
		22.00
	27.	23.45
	28.	10.15
		20.30
	29.	00.30
06.	05.	00.00
		23.00
	06.	20.30
	08.	17.30
	09.	18.00
		19.15
		22.15
		23.30
	10.	**01.00**
	11.	00.45
	12.	**19.15**
	13.	**22.30**

Month	Day	CET
06.	14.	**18.45**
	17.	02.30
	18.	**00.30**
		12.30
	19.	17.45
	22.	19.00
	24.	23.15
	27.	19.30
		21.00
	28.	01.30
07.	02.	18.45
		23.00
	03.	19.00
		20.15
	4.	00.15.
	09.	23.15
	11.	21.15
	12.	23.00
	13.	20.30
	14.	06.45
	16.	16.30
		23.00
	18.	00.45
	20.	21.15
	21.	01.15
	24.	18.30
		23.30
	25.	20.45
	27.	21.30
	29.	17.45
		21.45
	30.	00.15
		22.15
	31.	10.15
		19.45
		20.15
08.	01.	19.15
	07.	21.30
		23.30
	09.	03.15
		21.15
	10.	**22.45**
	13.	**21.15**
	15.	**23.00**
		23.30
		23.45

Month	Day	CET
08.	16.	16.15
		21.00
	17.	0.00
	18.	01.30
	20.	17.30
	21.	01.15
		01.45
		03.15
		15.45
		22.45
	22.	23.30
	23.	20.15
		22.45
	24.	12.15
	25.	19.30
	26.	00.00
0.9	04.	01.45
		21.00
	07.	11.45
	11.	00.30
		21.15
		21.30
	12.	23.15
	13.	00.15
	16.	17.30
		19.30
	17.	23.00
		23.45

Month	Day	CET
09.	18.	23.00
	20.	01.15
	21.	17.15
	22.	22.00
	23.	00.00
	24.	04.45
10.	01.	00.30
	04.	00.15
		23.15
	05.	00.15
	06.	17.45
		22.15
		22.30
	07.	22.45
	11.	21.15
		22.00
		23.15
	12.	22.00
	13.	21.15
	16.	01.00
		23.00
	17.	01.15
		20.30
	19.	22.15
	21.	04.00
	23.	21.45
	24.	03.00
11.	01.	19.45
	03.	00.00

Month	Day	CET
11.	03.	23.30
	07.	20.30
	13.	19.15
	15.	20.00
	18.	19.45
	22.	22.00
		22.30
	27.	12.15
	28.	17.15
	30.	20.30
12.	02.	17.30
		23.30
	03.	17.45
		21.15
		21.45
	04.	20.30
	05.	03.30
	12.	01.30
	13.	23.30
	18.	00.15
	20.	16.00
		20.30
		20.45
	21.	21.00
		21.30
	22.	22.15
	28.	02.00
		02.15
		21.30

SI-s

Month	Day	CET (GMT+1 h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy
01.	25.	21.00	12	26	—	—	—	+
02.	01.	11.00	7,5	11	+	+	+	—
	09.	14.15	9(?)	25	—	—	—	+
	12.	09.30	5,5	12	+	+	+	—
	23.	08.15	4,5	10	—	—	—	+
	28.	05.00	5,5	13	+	—	+	—
03.	01.	12.00	5,5	10	+	+	0	+
	02.	20.45	5,5	10	+	0	0	+
	08.	16.15	8	14	—	—	—	+
	17.	05.45	4,5	14	—	—	—	+
	26.	01.15	10(?)	22	+	+	+	—
04.	18.	02.15	4,5	8	—	—	—	+
	22.	15.30	7	15	—	—	—	+
	23.	13.30	3,5	7	+	+	+	—
05	07.	22.45	2,5	12	+	+	+	—
	09.	23.00	8	20	+	+	+	—
		23.30	11,5	28	+	+	+	—
	18.	12.15	2,5	7	+	—	+	—
06.	03.	13.45	7	14	—	—	—	+
	10.	22.15	12	40	+	+	+	—
	21.	23.00	5,5	18	+	+	+	—
	30.	05.30	5,5	13	—	—	—	+
07.	06.	20.30	6,5	12	—	—	—	+
	07.	05.45	14,4	26	+	—	—	—
	11.	11.45	5,5(sfe)	22	+	+	—	+
	18.	05.15	10	18	+	+	+	—
	28.	12.00	3,5	10	+	+	+	—
08.	03.	05.00	6,5	14	—	—	—	+
	14.	20.45	2,5	7	+	+	+	—
	22.	10.15	2,5	6	+	+	+	—
		15,15	4,5	10	+	[illegible]	[illegible]	
09.	02.	16.15	4,5	?	+	+		
	08.	05.15	7	12	—	—	—	+

SI-s

Month	Day	CET (GMT+1 h)	Amplitude in E(mV/km)	H(gamma)	Ex	Ey	Hx	Hy
09.	08.	12.00	4	18	+	+	+	−
		21.00	4,5	16	+	+	+	−
	10.	11.00	9	14	−	−	−	+
		12.45	12,5	30	−	−	−	+
		14.45	18	36	+	+	+	−
	11.	10.00	4,5	?	+	+	+	−
	20.	15.15	4,5	8	+	+	+	−
	26.	02.15	5,5	18	+	+	+	−
10.	02.	10.15	4,5	10	+	+	+	−
	04.	01.45	12.5	32	+	+	+	−
	09.	23.00	6.5	16	−	−	−	+
	17.	05.30	3.5	8	+	+	+	−
	18.	07.45	10	15	+	+	−	−
	19.	14.45	7	14	+	+	+	+
	31.	19.30	8	22	−	−	−	+
11.	07.	21.45	8	25	−	−	−	+
	17.	12.00	5	10	+	−	−	−
	20.	00.15	4.5	12	+	+	+	−
	21.	08.00	11,5	18	+	−	+	−
	22.	12.30	9	15	+	0	0	+
	23.	11.30	11,6	18	+	+	+	−
	24.	07.00	3,5	14	−	−	−	−
	26.	11.15	10	18	−	−	−	+
12.	18.	01.30	11	45	−	−	−	+
		02.00	10	22	−	−	−	+
		05.45	16	45	−	−	−	+
	24.	01.30	2,5	7	+	+	+	−
		09.00	5,5	14	−	−	−	+
	25.	21.45	2,5	10	−	−	−	+

Month	Day	„Needles" CET (GMT+1 h)	Amplitude in E(mV/km)	Ex	Ey
01.	02.	10.45	3,5	—	—
	06.	07.30	8	+	—
		11.45	4,5	—	—
03.	13.	06.30	3,5	—	+
04.	07.	12.15	2,5	—	—
05.	14.	16.30	2	+	+
06.	16.	13.15	2,5	—	—
	19.	17.45	5,5	—	—
	30.	07.00	7	—	+
07.	13.	08.45	3,5	+	+
		09.30	4,5	+	+
	14.	16.15	5,5	+	+
	22.	06.45	3,5	—	—
08.	05.	11.45	5,5	+	—
	17.	10.45	2,5	—	—
	19.	21.00	4 5	+	+
	24.	07.30	3,5	—	+
09.	02.	09.15	4.5	—	+
	03.	16.15	6,5	—	—
	18.	08.15	3,5	—	—
	27.	04.30	8	—	—
	29.	01.15	4,5	+	+
	30.	04.30	7	—	—
11.	03.	16.00	2,5	—	—
	13.	06.45	5,5	+	+
12.	16.	20.15	12,5	+	+

V.

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

January

CET	Periods 1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	0	4	11	18	20	22	29	82	63	32	93	202
3— 6	0	3	28	49	31	49	52	56	0	24	99	224
6— 9	3	9	30	58	37	93	44	51	17	16	251	160
9—12	1	4	22	88	73	54	47	56	22	5	456	185
12—15	1	2	21	80	85	109	43	47	75	124	163	204
15—18	0	6	17	56	47	79	43	42	47	35	174	265
18—21	1	3	14	27	34	30	58	71	75	45	129	265
21—24	0	8	17	35	17	26	45	191	175	96	183	408
Average	1	5	14	51	43	57	45	53	61	48	191	241

February

0— 3	0	1	10	29	19	24	48	54	21	29	217	132
3— 6	0	0	16	99	45	15	7	9	4	108	251	146
6— 9	0	4	18	56	104	91	57	18	7	16	494	318
9—12	0	1	8	60	104	91	94	57	14	20	321	512
12—15	0	2	9	77	248	114	39	32	0	15	269	298
15—18	0	1	9	51	198	81	44	13	15	40	218	231
18—21	0	2	4	27	53	55	44	112	48	36	106	164
21—24	0	2	6	29	17	27	78	289	100	70	102	133
Average	0	1	10	53	98	62	53	73	27	41	244	246

March

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0— 3	0	4	14	34	40	11	28	58	11	11	156	6
3— 6	0	3	30	66	66	28	41	19	6	13	150	234
6— 9	0	0	6	115	231	156	111	19	35	0	398	210
9—12	0	2	2	58	308	214	91	15	0	21	453	220
12—15	0	1	9	89	273	139	63	8	0	17	294	361
15—18	0	2	14	50	173	82	106	25	0	0	194	144
18—21	2	2	2	29	61	48	88	33	13	52	80	98
21—24	0	1	6	17	17	38	132	190	75	126	64	144
Average	0	2	10	57	147	90	82	45	17	30	224	177

April

0— 3	0	10	10	8	14	14	113	119	24	31	89	126
3— 6	0	2	20	28	61	32	36	41	4	24	93	316
6— 9	0	0	4	0	75	208	163	17	17	0	117	104
9—12	0	1	1	49	158	139	177	41	341	0	352	314
12—15	0	0	0	30	303	243	234	0	0	0	366	333
15—18	0	0	20	17	125	215	147	42	0	62	416	334
18—21	3	6	32	25	36	44	150	56	100	53	175	294
21—24	0	6	11	3	19	81	97	589	36	42	69	225
Average	0	3	13	21	99	123	143	125	73	28	220	263

May

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
1— 3	13	35	9	23	12	29	51	50	35	113	299	139
3— 6	9	30	15	92	17	46	38	38	17	30	357	179
6— 9	3	32	26	151	52	167	77	65	44	62	551	25
9—12	2	25	7	81	59	182	107	113	68	74	462	190
12—15	0	8	11	92	39	146	75	67	71	75	403	139
15—18	4	5	6	64	39	52	125	154	85	90	319	146
18—21	11	27	8	29	7	22	36	86	118	31	276	210
21—24	18	34	8	19	4	28	44	114	130	131	287	376
Average	7	24	11	70	29	86	70	86	70	75	371	173

June

1— 3	9	34	24	24	14	26	27	62	105	91	184	181
3— 6	3	44	40	45	27	59	36	44	31	21	205	52
6— 9	0	9	31	100	113	143	55	39	22	23	306	71
9—12	1	12	22	124	115	155	70	56	49	23	186	209
12—15	3	4	26	121	67	116	69	70	46	50	304	299
15—18	4	12	14	69	54	81	54	73	48	24	235	256
18—21	7	15	16	24	27	36	34	66	75	65	150	290
21—24	16	27	14	13	5	14	25	106	129	94	156	416
Average	5	20	23	65	52	78	46	65	63	49	216	222

July

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
1— 3	23	12	9	5	13	15	30	54	52	171	173	133
3— 6	4	20	20	25	9	21	52	53	4	17	160	57
6— 9	0	8	27	100	73	78	38	14	6	13	307	64
9—12	1	21	14	129	84	89	53	26	23	26	104	51
12—15	1	1	15	60	55	57	26	36	95	35	115	43
15—18	0	3	5	39	28	27	48	73	33	46	224	65
18—21	10	4	3	8	15	14	29	36	53	100	183	31
21—24	14	16	7	8	9	10	21	32	152	80	133	84
Average	6	11	13	48	36	40	37	41	51	48	175	66

August

1— 3	33	24	14	25	16	11	39	104	108	105	108	176
3— 6	11	18	28	40	23	68	29	77	34	33	108	251
6— 9	4	18	19	110	117	193	82	106	21	39	81	144
9—12	3	10	13	110	149	172	72	100	51	25	289	236
12—15	10	14	7	99	98	108	60	103	67	36	301	345
15—18	12	14	12	43	49	69	68	81	61	43	255	258
18—21	27	23	8	25	15	41	34	70	130	74	180	164
21—24	34	14	6	17	12	33	35	116	217	161	140	86
Average	17	17	13	59	60	87	53	95	86	64	184	196

Szeptember

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
1— 3	16	6	6	28	13	34	39	72	109	126	93	79
3— 6	8	2	33	81	33	48	34	25	14	34	158	127
6— 9	7	2	17	110	102	176	87	19	0	2	296	36
9—12	5	14	15	16	164	245	78	120	24	41	253	183
12—15	7	12	7	25	112	179	57	78	57	29	289	166
15—18	9	16	14	23	40	81	68	54	66	43	236	189
18—21	25	12	7	20	12	34	28	69	55	58	159	118
21—24	27	4	11	11	17	29	25	239	129	96	216	95
Average	13	9	14	39	61	103	52	84	57	54	212	124

October

1— 3	25	4	3	13	6	27	44	92	56	75	73	90
3— 6	7	4	8	38	39	36	48	59	48	16	114	75
6— 9	2	5	11	40	43	122	90	77	33	22	92	80
9—12	0	4	4	19	40	184	77	106	13	3	119	115
12—15	1	1	13	30	27	161	111	42	41	15	151	57
15—18	2	1	8	16	2	78	72	83	20	9	190	65
18—21	15	5	3	9	11	38	38	88	64	58	130	114
21—24	28	9	4	10	9	20	35	131	128	172	159	88
Average	10	4	7	22	24	82	64	85	51	47	129	85

November

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
1— 3	11	9	3	17	12	27	24	67	75	47	115	118
3— 6	5	3	12	20	29	50	64	44	21	14	167	170
6— 9	16	8	6	24	58	97	108	89	22	48	233	107
9—12	21	28	13	18	47	138	81	67	35	13	154	172
12—15	3	3	1	34	56	182	105	51	18	15	180	141
15—18	3	5	11	15	18	89	72	36	34	33	168	115
18—21	10	11	6	18	22	40	34	70	73	68	172	192
21—24	19	7	3	14	23	31	29	83	168	95	134	136
Average	11	9	7	20	33	87	65	63	56	41	165	144

December

1— 3	11	5	10	27	16	28	35	79	104	76	123	209
3— 6	14	3	10	52	32	34	54	54	29	14	96	236
6— 9	5	10	27	43	42	95	65	47	15	7	251	94
9—12	6	26	24	30	44	111	60	56	28	4	167	156
12—15	1	10	19	57	86	154	59	98	8	46	198	23
15—18	5	9	13	48	50	103	46	68	23	5	102	117
18—21	12	9	15	32	16	22	35	64	36	89	127	54
21—24	10	8	9	16	15	27	30	70	76	63	108	118
Average	8	10	16	38	39	72	48	67	38	37	148	123

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—200	300—600 sec
0— 3	12	12	10	21	16	22	42	74	64	67	144	124
3— 6	5	11	22	53	34	40	41	43	18	29	163	172
6— 9	3	9	18	76	87	135	82	47	20	21	282	118
9—12	3	12	12	65	112	148	84	68	56	21	276	212
12—15	2	5	12	66	121	142	78	53	40	38	253	201
15—18	3	6	12	41	69	86	74	62	36	36	228	182
18—21	10	10	10	23	26	35	51	69	70	61	156	166
21—24	14	11	8	16	14	30	50	179	126	102	146	192
Average	6	10	13	45	60	81	63	73	54	47	207	172

VI.

Micropulsation indices for the year 1978

Activity indices for the micropulsations
(P1 to P12)
1978. January-December

	January	February	March	April
1.	531433433532	145434322424	125254531154	112154524224
2.	345533544445	113554152145	115452331255	115334533125
3.	144422455334	113454342445	125224532254	
4.	455422153555	122552311345	145531211133	112354151255
5.	455321152455	115433242154	125443312522	125351233555
6.	235423341455	125431241253		
7.	225324552243	135441234554		
8.	154443241155	122553343325		
9.	125354532154	115432242554		
10.	114533245154			
11.	113344441233	135423111341		
12.	232225534112	145342124345		
13.	124444223353			
14.	115213542521	112132342355		
15.	152214331121	122433333554	113553213354	
16.	345311444254		115434413255	
17.	115421134355		123354331155	
18.	154342225251		123443432355	
19.	125532324541		112443533143	
20.	125125524421	111432534231	115343532113	
21.	112312555532		343443433221	
22.	125321313553		123451443545	
23.	513124421141		133531222354	
24.	125312411141		125433412255	
25.	115431333454			
26.	115415224242			
27.	125212455311	111334522255		
28.	135422344235	112454323255		122244541242
29.	135532122555			113114543212
30.	135513123255			354223545155
31.	135532242244			

	May	June	July	August
1.	144422125555	542534412553	115431155222	542334222551
2.	352414455554	555414244553	214422454543	553232433452
3.	552414255553	555224345545	112332435524	555542222555
4.	353214144455	443224355555		555424235245
5.	123112432353	353423144355		555434234554
6.	112215533553	255322245554		
7.	113225512353	453113455242		
8.	141234533355	443214555144		
9.	251415521555	143223555211		
10.	12 215555154	435432335555		
11.	132314545355	435334235254		
12.	132314543355	222225544544		511223555441
13.	542515434454	211345345444	345433332453	553424445355
14.	551515235555	112214555412	555332144555	332325355314
15.	454524313551	244424245552	225432443255	211113555511
16.	231515225342	323225424454	342432344454	255412455521
17.	551414355532	115533333542	552523321531	554423445454
18.	552413545522	425512225555	555433134453	554455144555
19.	512313455353		355311235552	551324455345
20.	551514321354	422443335223	132212555222	421215454532
21.	552514455554	555432315455	531413534522	
22.	553533555221	352342353455	522222354354	512442445244
23.	555423345424	355434234554	553123435552	551214555521
24.		454344155153		125422255544
25.		453125332255		543424354554
26.		255212145352		123413355541
27.		245533233343	221223322441	554334445555
28.				554312455555
29.		255521111255		455552424155
30.	555314541254	425422224355	511134544421	535543322255
31.	555522221422		412223454241	535534331155

	September	October	November	December
1.		332225555355	311335125444	252225434215
2.		514324534255	323215554331	112234544341
3.	122314535455	314324444233	521234455324	112225535542
4.		414523245145	111113544341	455134244254
5.		413223555121	311113555121	522335543124
6.		131223555522	111125551122	112232445341
7.		131225453521	311115555334	111125544222
8.		312325454552	555424323355	121114555233
9.	345425344355	422433535555	211135432225	111124552421
10.	333445244535	511325435344	412324454135	133123444551
11.	532344445451	311135543531	223255534324	335212444241
12.	544334435453	322335543245	555313234555	214433225154
13.	321255324242	543425524145	542222255555	115433252254
14.	315553444441	223115545433	111124435321	555421233355
15.	243334544222	111115555335	112223544341	555422254151
16.	524235334552	311211552342	113214554541	355335454324
17.	521335523552	512125314551	125414255543	215534234234
18.	534423254451	555311544554	111225355222	555311255555
19.	155321345351	551113555554	112145434355	324335453354
20.	534222344354	542215554152	535425332555	155424244154
21.	523453133542	122224455322	342335433555	
22	534425123152	111335242244	134454314355	155424344255
23.	311115112333		111215554445	125224551311
24.	514322234241		534214545244	112354554224
25.		4432334451	555312335353	555424544252
26.		535225453453	555334243555	222343253133
27.		554414335553	323224523255	545413355322
28.		423124555241	212314554532	443444435512
29.	555312244454	512215455232	112214554121	455531242253
30.	224112554355	555312245553	235325345511	545545242254
31.		514223455255		255335453135