

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:

$$\begin{aligned} \varphi &= 47^{\circ}38' & \lambda &= 16^{\circ}43' \\ \phi &= 47.2^{\circ} & A &= 98.3^{\circ} \end{aligned}$$

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

The tables published are the following:

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

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

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

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

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

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

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

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

V. Average amplitudes in 12 pulsation bands. Instead of the graphical representation of world-day averages in previous years, numerical data are presented on the average amplitudes of pulsations for (nearly complete) months. Averages are derived from manually processed earth-current records (6 min min) for three-hour intervals of the day. Such averages (expressed in μ V km) are published for each month and for the full year. As the bands where amplitudes are determined have different 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.

VI. Micropulsation indices for the year 1977. The indices have been determined from the occurrence frequency of different period micropulsations, striving at a possibly uniform distribution of days in each of the five possible indices (1—5).

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

The bands are the following:

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

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

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

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

Records were taken in the Observatory with three instruments of the types GMG T9 1956 and GMG T14 1961, with small modifications in order to meet the demands of the use in the observatory. A general description of the processing and compilation is found in the report of the Observatory from 1966 in German by A. ADÁM, 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 second half of the year 1977 are less complete than usual. The experiments with the recording of Pc 1 pulsations were stopped from July 1, 1977, for about 2 years, during which time the final arrangement of the recording apparatus will be installed.

I. Activity indices T and K₁—K₅
January

Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	31233214	19	7	2	5	2	3
2.	31110011	8	3	0	4	1	0
3.	01110123	9	3	0	5	0	1
4.	10122231	12	5	1	4	2	2
5.	31111145	17	5	2	4	1	3
6.	22111224	15	6	2	4	2	2
7.	41111111	11	5	1	4	0	1
8.	11211311	11	4	1	4	0	0
9.	00112121	8	4	1	4	0	0
10.	00111110	5	5	2	4	0	0
11.	00012942	18	5	3	5	1	3
12.	22222131	15	6	2	4	2	1
13.	21212224	16	4	0	4	0	1
14.	22222225	19	4	0	4	2	3
15.	33322422	21	6	2	4	1	3
16.	11111221	10	4	1	4	1	1
17.	00011100	3	3	0	4	0	1
18.	21432100	13	4	1	5	2	2
19.	21110122	10	4	2	4	1	2
20.	62211113	17	4	1	4	1	2
21.	30121110	9	5	1	4	0	1
22.	01001112	6	4	1	4	0	0
23.	31010122	10	4	2	4	1	1
24.	32111121	12	5	0	4	0	1
25.	10112223	12	4	2	4	1	1
26.	11001010	4	4	0	4	0	0
27.	00023110	7	4	0	4	0	0
28.	00011139	15	3	0	4	1	2
29.	53322111	18	3	0	4	2	2
30.	64124723	29	4	1	4	2	3
31.	82124000	17	4	1	4	1	1

Monthly averages:

T (N)	1,360
T (E)	1,141
K ₁	4,35
K ₂	1,03
K ₃	4,13
K ₄	0,87
K ₅	1,39

February							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	01111012	7	3	1	4	0	0
2.	21345333	24	6	2	5	4	2
3.	32222312	17	7	3	4	1	1
4.	51221100	12	6	2	4	1	1
5.	00233303	14	4	2	4	1	1
6.	20222248	22	5	2	4	2	4
7.	33223345	25	5	2	4	1	3
8.	31123554	24	4	2	4	1	5
9.	32336735	32	6	2	5	3	3
10.	31123202	14	5	1	4	2	2
11.	21122223	15	3	0	4	1	1
12.	11011112	8	4	0	4	0	1
13.	11111143	13	4	0	4	0	1
14.	11112125	14	4	0	4	1	2
15.	11011123	10	5	0	4	0	1
16.	21111001	7	2	0	4	0	0
17.	11002023	9	2	0	4	0	1
18.	46412232	24	6	1	4	2	2
19.	11122230	12	6	2	4	1	1
20.	01221124	13	6	2	4	1	1
21.	11222211	12	4	0	4	1	2
22.	11111142	12	5	1	4	0	2
23.	22124444	23	6	1	5	2	3
24.	21124392	24	6	2	4	2	3
25.	22421124	18	7	3	5	2	3
26.	11011112	8	5	2	4	0	2
27.	10001111	5	5	0	4	0	0
28.	31121021	11	4	1	4	0	2
Monthly averages:			T (N)	1,799			
			T (E)	1,509			
			K ₁	4,82			
			K ₂	1,21			
			K ₃	4,14			
			K ₄	1,04			
			K ₅	1,79			

March							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	30122225	17	6	2	4	1	2
2.	00111112	7	4	1	4	0	0
3.	21010011	6	3	0	4	0	0
4.	00112111	7	3	2	3	0	0
5.	00011010	3	2	0	3	0	0
6.	00012212	8	3	1	5	0	1
7.	21001001	5	2	1	4	0	0
8.	02112227	17	5	2	4	1	2
9.	43447568	41	6	2	5	2	5
10.	63433225	28	5	2	5	2	3
11.	22313459	29	5	1	5	2	2
12.	31323286	28	4	1	4	2	3
13.	41111115	15	4	0	4	1	2
14.	23111111	11	4	0	4	1	1
15.	20112100	7	5	1	3	0	0
16.	11111012	8	5	1	4	0	1
17.	11121131	11	3	0	4	0	1
18.	32112111	12	5	0	5	0	1
19.	00000112	4	3	0	4	0	0
20.	52121214	18	4	0	4	2	3
21.	12012144	15	4	0	4	1	2
22.	21221110	10	4	0	4	0	1
23.	11122123	13	3	0	4	1	2
24.	42112313	17	4	1	4	1	2
25.	31112137	19	6	1	4	0	2
26.	45221210	17	4	1	4	1	0
27.	01233011	11	4	0	4	1	0
28.	22112147	20	4	0	4	0	4
29.	25223111	17	6	0	5	0	2
30.	00131121	9	4	1	4	0	0
31.	30111001	7	5	0	4	0	0
Monthly averages:			T (N)	1,633			
			T (E)	1,282			
			K ₁	4,16			
			K ₂	0,67			
			K ₃	4,10			
			K ₄	0,61			
			K ₅	1,35			

April							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	11111100	6	3	1	4	0	0
2.	10011002	5	3	0	4	0	0
3.	63222023	20	7	3	4	2	2
4.	46422225	27	7	3	5	1	5
5.	32222123	17	6	2	4	1	2
6.	52223799	39	7	2	5	3	8
7.	84445499	47	4	0	5	3	5
8.	32344557	33	7	2	5	2	6
9.	32533522	25	5	2	5	3	2
10.	13332442	22	6	1	4	0	2
11.	21212031	12	5	0	4	0	2
12.	31111115	14	5	0	4	0	2
13.	40111113	12	6	1	4	0	0
14.	31121125	16	6	2	4	1	2
15.	22222000	10	3	0	4	2	2
16.	12113574	24	4	0	4	2	3
17.	31111124	14	6	0	4	0	2
18.	10021121	8	4	0	4	0	0
19.	44666442	36	7	2	5	2	6
20.	72333994	40	6	2	5	2	4
21.	11221132	13	5	0	4	0	1
22.	11211021	9	3	0	4	0	1
23.	01112121	9	3	0	4	0	0
24.	20023433	17	4	1	5	2	2
25.	58322111	23	6	0	5	1	4
26.	11111111	8	5	0	4	1	1
27.	11111111	8	4	1	4	1	0
28.	11000113	7	3	0	4	1	0
29.	43543325	29	6	3	5	4	3
30.	22213112	14	6	2	4	1	2
Monthly averages:			Γ (N)	2,117			
			T (E)	1,792			
			K ₁	5,07			
			K ₂	1,00			
			K ₃	4,33			
			K ₄	1,17			
			K ₅	2,30			

May							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	11223226	19	5	0	5	2	2
2.	74439797	50	5	3	5	6	7
3.	53211111	15	2	0	4	2	2
4.	12223792	28	5	2	5	3	3
5.	32111211	12	4	0	4	2	2
6.	12111121	10	4	0	4	1	2
7.	21111002	8	4	0	4	0	0
8.	00101000	2	2	0	4	0	0
9.	11112210	9	3	0	5	1	2
10.	12212212	13	3	0	5	1	2
11.	11122492	22	4	0	5	2	4
12.	25422111	18	4	0	4	3	2
13.	01110033	9	3	0	4	1	2
14.	11211102	9	4	0	4	0	1
15.	41233224	21	4	0	4	1	4
16.	43233244	25	6	0	5	2	4
17.	33232331	20	6	0	5	2	2
18.	22224220	16	6	0	5	1	2
19.	12114210	12	5	0	4	1	0
20.	11112242	14	4	1	4	2	1
21.	11212352	17	4	0	4	0	0
22.	14412352	22	3	0	4	1	1
23.	21110102	8	6	2	4	1	0
24.	22222121	14	5	2	4	1	1
25.	11111211	9	4	1	4	1	0
26.	01100111	5	4	1	4	0	0
27.	11001110	5	3	0	4	0	0
28.	13133121	15	3	1	4	1	0
29.	11001201	6	5	1	4	1	1
30.	12111001	7	4	1	4	1	0
31.	12212211	12	4	2	4	2	1

Monthly averages:

T (N)	1,614
T (E)	1,391
K ₁	4,16
K ₂	0,55
K ₃	4,29
K ₄	1,35
K ₅	1,55

June

Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	13112212	13	5	2	4	2	2
2.	23212224	18	6	2	5	2	2
3.	21102101	8	4	1	4	1	0
4.	32111111	11	4	1	4	2	0
5.	12112100	8	3	1	4	0	1
6.	11111011	7	4	1	4	0	0
7.	11122132	13	4	0	4	1	1
8.	01111223	11	4	1	4	1	1
9.	12211011	9	5	2	4	0	1
10.	23121011	11	5	2	4	0	1
11.	11000001	3	4	1	4	0	0
12.	11000011	4	2	0	4	0	1
13.	01110012	6	2	0	4	0	1
14.	42311112	15	4	1	4	1	3
15.	01110021	6	2	0	4	0	1
16.	01115923	22	4	1	4	2	4
17.	24311212	16	5	1	4	2	2
18.	22221221	14	4	2	4	1	2
19.	31211211	12	4	2	4	1	2
20.	43323111	18	6	2	5	2	0
21.	12212210	11	5	2	4	1	0
22.	12111241	13	5	2	4	1	1
23.	24311221	16	5	2	4	1	1
24.	14321322	18	3	1	4	1	1
25.	21011100	6	4	0	4	1	0
26.	11122100	8	4	1	4	2	1
27.	22112121	12	4	1	4	1	2
28.	01443421	19	4	2	5	2	4
29.	21011211	9	3	0	4	1	1
30.	11111122	10	3	0	4	2	1

Monthly averages:

T (N) 1,300
T (E) 1,112
K₁ 4,03
K₂ 1,13
K₃ 4,10
K₄ 1,03
K₅ 1,23

July							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	21241432	19	3	1	4	1	2
2.	42111231	15	5	1	4	2	2
3.	12112211	11	4	0	4	1	2
4.	12111110	8	3	0	5	1	1
5.	30001210	7	3	0	4	0	1
6.	11149934	32	4	2	4	2	3
7.	93432212	26	6	2	4	3	1
8.	12433322	20	6	0	4	2	2
9.	22222324	19	5	0	4	2	2
10.	53332243	25	6	2	4	2	4
11.	42222121	16	6	2	4	2	3
12.	112 003	(9)	5	1	4	1	0
13.	32212324	19	5	2	5	1	2
14.	24444111	21	7	2	5	3	2
15.	22212122	14	5	2	4	1	2
16.	23345635	31	7	2	5	2	6
17.	44323235	26	6	2	5	2	2
18.	22112201	11	3	0	4	1	1
19.	23223423	21	6	0	4	1	2
20.	43345342	28	7	3	4	3	3
21.	23321322	18	6	2	4	1	1
22.	31221112	13	4	1	4	1	2
23.	22112011	10	6	1	4	1	1
24.	11213122	13	5	0	4	1	2
25.	21111101	8	5	1	4	0	1
26.	01110111	6	5	1	4	1	0
27.	00011102	5	4	2	4	0	0
28.	11011101	6	4	0	4	0	1
29.	97636282	43	6	2	5	3	5
30.	53332111	19	6	0	5	3	4
31.	13221112	13	6	0	4	2	2
Monthly averages:			T (N)	1,955			
			T (E)	1,710			
			K ₁	5,13			
			K ₂	1,10			
			K ₃	4,23			
			K ₄	1,48			
			K ₅	2,00			

August							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	11211201	9	5	0	5	1	1
2.	21111100	7	5	0	4	1	1
3.	21111122	11	5	1	4	2	1
4.	22122132	15	6	1	5	2	1
5.	36877564	46	7	4	6	4	4
6.	53454344	32	7	4	6	3	4
7.	41242333	22	6	2	5	2	2
8.	42413222	20	7	4	5	3	1
9.	53214852	30	7	3	5	4	4
10.	44212222	19	6	1	5	3	3
11.	24234547	31	6	2	5	3	4
12.	12222212	14	6	2	5	2	2
13.	23213114	17	6	1	5	1	2
14.	10124241	15	6	1	4	1	1
15.	11323011	12	6	2	5	1	1
16.	12013313	14	5	0	4	1	3
17.	22254524	26	7	4	5	3	4
18.	42334332	24	8	4	6	3	3
19.	35342134	25	7	3	5	2	3
20.	62222211	18	6	1	5	2	2
21.	21211001	8	5	2	4	1	0
22.	00010013	5	5	0	4	1	0
23.	20022321	12	4	0	5	1	1
24.	11122220	11	4	0	4	1	2
25.	01235932	25	5	1	5	4	4
26.	51225211	19	6	2	4	2	3
27.	12221152	16	6	2	4	3	2
28.	22111111	10	5	1	5	1	1
29.	21111000	6	3	1	4	0	0
30.	10111111	7	4	1	4	0	1
31.	12111100	7	3	0	4	0	0

Monthly averages:

T (N)	2,049
T (E)	1,629
K ₁	5,61
K ₂	1,61
K ₃	4,71
K ₄	1,87
K ₅	1,97

September

Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	11012100	6	4	0	4	0	1
2.	11121232	13	5	1	5	1	2
3.	43112001	12	6	1	5	1	2
4.	11122110	9	5	3	4	1	2
5.	10012001	5	4	1	4	1	0
6.	01112112	9	5	2	4	1	1
7.	00101014	7	4	1	4	1	1
8.	22122013	13	5	1	4	2	2
9.	12111220	10	3	0	4	1	3
10.	33232022	17	4	1	4	2	2
11.	22233261	21	4	0	4	2	4
12.	32001014	10	4	1	4	0	2
13.	21223585	28	7	3	5	2	6
14.	12111111	9	6	1	4	1	2
15.	11231101	10	5	1	4	1	1
16.	00122213	11	6	1	4	2	2
17.	11111201	8	4	1	4	0	2
18.	11122111	10	5	1	4	2	2
19.	00019878	33	4	2	5	3	6
20.	96546589	52	7	2	7	3	8
21.	65688239	47	7	1	6	3	8
22.	96455989	55	7	2	7	8	6
23.	21135665	29	5	2	6	4	6
24.	31211314	16	4	2	4	0	2
25.	11112123	12	5	1	4	1	1
26.	10122443	17	4	2	4	2	3
27.	94542111	27	4	2	5	2	4
28.	11122521	15	4	1	4	1	1
29.	00100010	2	3	0	4	1	0
30.	10123011	9	5	2	5	1	1
Monthly averages:			T (N)	2,058			
			T (E)	1,717			
			K ₁	4,83			
			K ₂	1,30			
			K ₃	4,53			
			K ₄	1,60			
			K ₅	2,77			

October

Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	00011100	3	4	0	4	1	0
2.	30132000	9	4	1	5	1	2
3.	12327320	20	5	2	6	3	2
4.	12112011	9	4	1	4	0	1
5.	22144221	18	5	2	5	0	2
6.	42232222	19	6	2	5	2	1
7.	00111100	4	5	2	4	0	0
8.	10122121	10	3	0	4	2	1
9.	00111001	4	4	1	4	0	0
10.	00004111	7	4	1	4	2	2
11.	22112136	18	4	0	5	2	2
12.	34232312	20	6	3	5	2	2
13.	12234213	18	6	3	5	2	3
14.	10113217	16	4	1	4	2	3
15.	52442243	26	7	2	5	2	5
16.	11111222	11	6	1	4	0	1
17.	21121232	14	4	0	4	2	2
18.	22221166	22	5	2	5	1	4
19.	86334430	31	4	2	5	4	6
20.	00111201	6	3	0	4	1	0
21.	21011112	9	3	0	4	1	1
22.	31324435	25	3	1	4	3	2
23.	12110002	7	3	0	4	0	0
24.	12111010	7	4	1	4	0	0
25.	20010012	6	3	1	5	1	0
26.	01111001	5	3	0	4	0	0
27.	55266699	48	6	3	6	5	7
28.	69733382	41	7	2	5	6	6
29.	11113220	11	6	2	4	1	0
30.	11222661	21	7	3	4	2	2
31.	11112221	11	6	2	4	0	1
Monthly averages:			T (N)	1,815			
			T (E)	1,331			
			K ₁	4,65			
			K ₂	1,32			
			K ₃	4,45			
			K ₄	1,61			
			K ₅	1,87			

November							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	11121112	10	6	1	4	1	0
2.	11211002	8	5	2	4	1	1
3.	00110010	3	4	0	4	0	1
4.	01102531	13	4	2	4	0	1
5.	32100110	8	4	0	4	1	2
6.	10111101	6	3	0	4	1	1
7.	01012001	5	3	1	4	1	1
8.	00001020	3	3	1	4	0	0
9.	10000010	2	3	0	4	1	0
10.	10012321	10	3	1	4	1	2
11.	30112101	9	5	2	4	1	0
12.	15323221	19	4	2	5	2	3
13.	53242912	28	4	1	5	3	4
14.	44255994	42	5	3	5	3	5
15.	82444541	32	5	2	5	3	6
16.	41224232	20	3	0	4	2	3
17.	12121003	10	4	0	4	2	2
18.	10101111	6	2	0	4	1	1
19.	11111022	9	4	0	4	1	0
20.	11011001	5	4	0	4	0	1
21.	31101001	7	6	2	4	1	1
22.	01120000	4	3	0	4	0	0
23.	11010002	5	3	0	4	0	0
24.	00000000	0	2	0	4	0	0
25.	00005264	17	4	2	5	3	3
26.	42111142	16	3	0	5	3	3
27.	91233111	20	6	2	5	2	3
28.	11221101	9	6	2	4	1	1
29.	11100101	5	3	0	4	1	1
30.	22352012	17	4	1	5	2	3
Monthly averages:			T (N)	1,312			
			T (E)	0,929			
			K ₁	3,93			
			K ₂	0,90			
			K ₃	4,27			
			K ₄	1,27			
			K ₅	1,63			

December							
Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	10000124	8	3	0	4	1	0
2.	28645899	51	7	4	6	6	8
3.	11221112	11	6	2	4	1	1
4.	11100256	16	3	0	4	2	4
5.	42221211	15	5	0	4	2	2
6.	30110000	5	4	1	4	1	1
7.	00000000	0	3	0	3	0	0
8.	00000000	0	2	0	3	0	0
9.	00000	(0)	2	0	2	0	0
10.							
11.	45534	(34)	3	0	4	2	6
12.	33313111	16	3	0	4	1	1
13.	321111	(12)	2	0	4	0	0
14.	11210	(8)	3	0	4	1	0
15.	000	(0)	3	0	4	0	0
16.	113	(13)	3	0	4	1	2
17.	34210101	12	2	0	4	1	2
18.	01010000	2	3	0	4	0	0
19.	00000020	2	3	1	3	0	0
20.	00010010	2	3	0	4	0	0
21.	00110103	6	3	0	4	1	0
22.	21000000	3	4	0	4	0	0
23.	20000001	3	3	0	4	1	0
24.	10011111	6	4	0	4	0	0
25.	00002121	6	5	1	4	0	0
26.	21212131	13	5	0	4	0	2
27.	11121100	7	4	0	4	1	0
28.	00101018	10	5	1	3	1	2
29.	31111013	11	4	0	4	1	1
30.	11111112	9	7	1	4	0	1
31.	10021002	6	6	2	3	1	1
Monthly averages:			T (N)	1,106			
			T (E)	0,884			
			K ₁	3,77			
			K ₂	0,43			
			K ₃	3,83			
			K ₄	0,83			
			K ₅	1,13			

II. Average amplitudes for different periods

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	January North											
1.	8	6	7	6	6	8	10	17	20	17	14	15
2.	10	8	5	6	3	5	6	12	18	16	12	12
3.	36	34	36	34	35	37	37	35	35	37	37	33
4.	33	39	41	41	33	35	40	44	30	35	30	47
5.	85	69	62	24	29	27	15	25	24	27	37	21
6.	-25	-15	-6	-8	-2	-9	-11	+1	+19	-13	-30	-57
	January East											
1.	9	8	7	5	5	10	17	23	23	28	24	20
2.	8	8	3	3	2	5	6	10	12	14	15	17
3.	35	36	35	34	34	33	34	35	34	36	34	35
4.	31	27	27	33	34	26	27	31	31	31	37	33
5.	57	47	48	39	23	31	32	23	15	25	17	19
6.	-10	-6	+6	-5	-6	-22	-31	-25	0	+15	+19	0
	February North											
1.	8	8	7	6	6	8	10	15	20	15	16	12
2.	8	8	6	3	8	5	6	14	16	13	11	13
3.	36	35	36	36	37	35	35	37	37	36	35	38
4.	38	33	34	38	37	30	34	38	35	46	44	41
5.	46	66	39	42	32	35	24	28	20	16	36	41
6.	+35	+14	-9	0	-2	-9	-12	-17	-3	-17	-60	-59
	February East											
1.	11	8	5	7	10	12	15	23	27	29	32	32
2.	8	7	3	3	5	4	8	10	14	21	15	17
3.	35	31	33	32	31	33	36	34	33	28	34	33
4.	23	50	33	30	30	27	24	33	29	36	32	25
5.	48	48	30	38	23	30	28	24	25	23	23	31
6.	+17	+18	+12	+8	+7	-6	-20	-12	-9	+25	+12	-4

and hourly means of earth current elements

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
17	15	10	10	11	11	10	9	7	9	6	5	10,6
15	12	10	10	8	9	9	6	7	8	6	6	9,0
35	35	39	37	36	37	36	35	34	34	36	34	35,6
34	37	35	36	31	31	34	34	37	39	37	44	36,5
33	25	17	27	48	55	50	31	52	57	91	56	41,2
-44	-2	+19	+4	+17	+2	+23	+16	+33	+51	+21	+19	
Component												
26	28	23	21	16	14	16	12	11	13	14	9	16,1
16	16	12	13	10	6	6	6	7	8	9	6	9,1
37	34	35	37	35	37	32	34	35	35	37	33	34,8
26	21	29	29	31	34	37	38	34	32	25	35	31,0
26	21	29	29	31	34	37	38	34	32	25	35	31,0
24	40	28	31	44	50	29	37	48	55	93	55	37,9
-14	+1	+3	+12	+17	+17	+2	+12	+5	+1	-13	+19	
Component												
16	14	9	8	6	9	11	8	8	12	6	8	6,1
14	10	7	8	5	6	9	6	7	10	4	5	4,3
35	36	35	35	36	35	36	36	35	35	37	35	35,8
36	50	41	33	35	36	40	39	57	36	40	43	38,9
50	48	42	41	41	56	41	89	73	64	82	57	46,2
-68	-33	+23	+34	+18	+43	+27	+45	+21	+21	+28	-12	
Component												
34	30	26	31	24	23	21	18	14	16	12	13	19,7
21	15	16	15	12	8	8	9	6	7	5	9	10,3
37	36	37	33	35	34	33	36	36	33	37	34	33,9
31	39	44	32	28	27	34	28	37	39	35	23	32,0
39	42	33	35	55	70	59	82	66	56	87	73	44,5
-19	-9	+29	+3	+6	+8	-18	0	-20	-24	--5	0	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	March North											
1.	8	9	10	8	8	9	16	17	14	13	13	15
2.	10	10	9	4	4	5	9	13	10	9	6	10
3.	33	32	33	33	33	34	34	33	36	35	33	38
4.	26	30	28	34	34	24	30	41	39	32	31	42
5.	42	63	41	63	24	42	19	18	17	21	31	24
6.	-6	-17	-11	+5	+1	-6	+19	+45	+37	-8	-79	-126
	March East											
1.	9	10	10	7	6	9	16	20	19	24	24	24
2.	11	6	5	2	2	3	6	8	10	9	11	13
3.	30	29	29	33	33	28	30	34	36	29	34	33
4.	27	31	37	23	25	27	22	28	27	30	38	33
5.	43	41	24	45	25	37	26	17	21	25	21	24
6.	-12	+4	-2	+10	+2	-15	-8	+4	+53	+57	+45	+21
	April North											
1.	9	8	12	16	13	19	19	19	17	18	16	14
2.	10	10	11	8	8	13	16	14	9	14	8	5
3.	36	36	39	37	36	38	37	37	37	35	37	37
4.	39	42	41	29	34	44	47	47	32	34	36	37
5.	83	98	60	86	55	21	29	31	23	26	41	50
6.	+13	+5	+14	+11	+25	+17	+40	+68	+11	-46	-102	-139
	April East											
1.	13	13	14	13	11	14	26	27	26	35	34	31
2.	8	5	7	4	3	5	9	12	11	12	14	19
3.	33	32	32	35	35	36	31	34	35	34	33	34
4.	28	40	37	29	32	21	28	23	17	34	40	27
5.	82.	71	59	41	46	41	36	53	36	31	19	48
6.	+1	+7	+10	+11	+19	+7	+8	+44	+32	+40	+7	-15

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
12	9	8	9	7	9	8	5	8	6	8	8	9,7
8	6	2	6	5	6	8	5	8	5	6	6	7,2
37	34	36	34	34	34	33	35	31	35	37	34	34,2
37	42	37	30	34	25	27	35	26	28	27	37	32,2
39	39	24	24	19	41	62	31	61	60	110	56	40,5
-111	-50	-12	+37	+66	+52	+21	+21	+41	+43	+30	+6	
Component												
26	22	23	22	19	16	8	5	10	13	11	8	15,0
13	9	12	11	7	3	5	5	7	8	8	9	7,6
34	34	34	34	32	31	34	34	32	28	33	31	32,0
32	39	29	33	25	30	25	32	28	30	35	33	30,0
29	33	27	24	28	37	46	45	60	75	77	70	37,5
-18	-17	-33	-12	+10	+4	-11	-24	-14	-29	-32	+16	
Component												
15	10	11	11	8	8	8	13	11	7	9	10	12,4
13	5	6	6	3	7	6	6	10	4	8	7	8,6
37	37	37	37	35	39	34	34	34	36	37	36	36,5
29	47	41	41	33	40	29	41	35	53	52	50	39,7
40	58	31	32	57	45	76	49	95	59	56	146	56,1
-112	-46	+28	+52	+55	+66	+34	+14	-7	+8	-6	-4	
Component												
34	33	28	29	24	17	14	10	14	10	13	16	20,8
17	13	13	8	10	8	5	7	4	6	7	8	9,0
35	34	32	34	34	41	35	37	34	37	35	35	34,5
32	34	32	37	34	47	31	44	43	38	43	38	33,7
35	55	36	39	55	44	100	74	73	100	97	86	56,5
-19	-28	-14	-9	+5	-10	-13	-19	-23	-19	-14	-10	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	May North											
1.	8	10	11	15	16	17	20	18	19	15	13	13
2.	6	8	5	7	8	8	13	14	10	8	7	5
3.	35	36	35	36	35	38	37	39	38	36	37	35
4.	39	33	35	42	42	49	42	46	44	42	32	45
5.	47	73	56	29	26	34	27	31	20	16	39	39
6.	+3	+7	-10	-7	+28	+62	+53	+42	+7	-81	-131	-139
	May East											
1.	8	8	12	12	8	13	18	24	24	23	24	22
2.	5	4	3	5	2	1	8	9	12	12	10	11
3.	34	36	36	33	36	34	34	33	37	32	34	37
4.	31	33	30	36	23	27	30	31	33	26	27	43
5.	54	56	25	26	23	30	20	22	16	27	30	24
6.	-10	+3	+1	-14	-26	+15	+33	+61	+48	+24	-9	-23
	June North											
1.	7	14	14	12	15	16	22	17	17	11	14	13
2.	7	14	13	8	10	16	19	14	16	10	8	9
3.	35	34	37	35	37	36	36	35	36	35	35	37
4.	38	37	35	29	37	45	43	37	48	40	37	35
5.	30	53	55	51	30	41	37	30	16	7	25	43
6.	+22	+10	+20	+29	+51	+70	+65	+26	-2	-50	-107	-146
	June East											
1.	7	11	14	10	11	14	21	23	24	20	25	23
2.	6	10	10	7	7	8	13	13	13	14	16	16
3.	35	34	35	31	36	31	31	30	33	34	35	37
4.	38	37	41	26	28	29	23	31	32	40	29	41
5.	37	50	26	32	24	26	28	28	28	19	34	32
6.	+2	-3	-9	0	-21	+9	+53	+51	+40	+24	-3	-23

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
12	10	9	5	6	8	6	10	6	8	7	9	11,3
10	3	3	3	3	3	6	9	6	9	4	6	6,8
39	36	38	36	37	36	36	37	35	31	34	37	36,1
29	41	46	51	39	35	27	33	46	56	41	41	40,6
42	46	55	45	60	60	98	95	63	56	49	51	48,2
-95	-39	+22	+48	+32	+55	+60	+34	+21	+12	+10	+5	
Component												
23	21	19	17	14	15	10	10	7	8	9	12	15,0
12	8	7	9	8	5	8	6	6	7	4	4	7,3
38	34	37	36	35	37	37	35	38	34	35	37	35,4
41	38	42	42	46	44	30	31	36	34	38	45	35,5
23	37	41	35	58	55	89	95	73	57	45	62	42,6
-10	+5	+15	-14	-22	-28	-35	-26	+6	+1	+6	+4	
Component												
11	7	7	5	3	4	3	4	7	6	6	7	10,0
8	4	4	2	1	3	4	7	7	9	7	7	8,6
35	37	35	35	33	35	34	34	34	35	35	35	35,2
38	44	37	36	33	35	34	32	32	29	29	35	36,3
29	32	51	38	34	30	28	28	32	41	47	62	36,3
-122	-87	-32	+27	+58	+61	+34	+10	+17	+12	+20	+13	
Component												
17	18	14	16	14	10	8	7	9	6	4	8	13,9
13	13	13	9	8	7	8	7	10	8	5	11	10,2
36	35	35	36	32	36	32	34	35	35	36	33	34,2
37	35	32	38	29	46	32	31	35	32	34	42	34,4
23	38	55	29	61	53	41	37	46	40	56	62	37,7
-19	-22	-15	-21	-12	-18	-21	-20	-3	-11	-15	-4	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	July North											
1.	14	16	15	16	17	23	23	24	21	17	16	14
2.	12	12	10	12	11	15	17	17	15	12	11	8
3.	31	33	38	35	37	35	42	38	39	35	35	37
4.	41	46	53	46	35	60	43	37	44	43	40	57
5.	82	82	49	52	64	44	59	44	32	43	45	32
6.	+6	+34	+53	+33	+32	+58	+41	+28	-6	-62	-86	-128
	July East											
1.	22	17	17	22	18	22	23	29	30	24	31	31
2.	11	16	7	4	4	5	11	11	9	12	15	11
3.	35	35	32	37	36	33	37	33	37	35	33	36
4.	38	49	31	38	37	38	38	31	36	45	32	42
5.	58	47	59	43	31	35	30	30	27	24	45	34
6.	0	+6	+8	+27	+11	+12	+22	+50	+52	+42	+15	-5
	August North											
1.	12	16	16	16	19	24	24	24	22	19	19	17
2.	8	12	10	12	12	16	19	19	19	12	12	12
3.	38	39	38	36	37	41	49	45	37	41	38	38
4.	42	34	47	41	48	50	47	48	53	40	56	50
5.	95	70	41	63	46	21	38	26	35	24	26	41
6.	+5	+23	+37	+39	+32	+63	+66	+46	+13	-60	-100	-128
	August East											
1.	15	20	18	17	23	23	28	34	33	34	37	37
2.	8	8	6	6	8	9	10	19	18	16	17	15
3.	37	34	35	36	35	32	36	39	36	38	37	41
4.	30	41	38	35	41	39	39	35	35	34	45	44
5.	74	51	31	42	28	27	27	21	35	20	26	32
6.	0	+20	+26	+21	+20	+29	+48	+52	+93	+60	+27	-20

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	8	10	7	10	6	5	6	6	7	8	11	12,9
10	6	8	3	4	2	2	3	3	7	8	9	9,0
37	38	35	36	35	35	35	36	34	36	35	37	36,0
44	50	39	39	38	41	40	38	27	41	38	42	42,6
35	47	48	40	75	31	42	49	69	69	57	74	52,7
-93	-73	-18	+14	+51	+46	+41	+5	+11	+6	+9	-2	
Component												
29	27	25	22	21	14	13	11	7	12	11	12	20,3
14	12	9	11	7	6	7	4	3	6	6	11	8,8
35	39	34	37	34	37	35	33	33	38	38	35	35,2
40	45	41	43	41	42	38	40	45	33	44	42	39,6
43	47	40	40	63	52	67	76	53	73	43	60	46,6
-17	-10	-21	-15	-31	-44	-29	-42	-9	-12	-9	-2	
Component												
14	15	14	12	9	8	10	12	10	9	8	8	14,9
11	13	9	11	9	7	7	8	7	9	5	6	11,1
42	43	37	39	39	37	36	37	37	39	35	36	38,8
51	44	55	70	44	44	38	45	43	48	52	43	47,2
35	52	42	49	33	45	64	64	83	57	80	82	50,5
-132	-70	-25	+29	+42	+52	+31	+5	+5	+13	+9	+4	
Component												
34	34	32	25	24	20	18	15	15	12	9	12	23,7
14	19	13	15	8	8	5	10	9	7	6	5	10,8
39	39	36	37	33	33	37	34	38	36	34	37	36,1
49	48	50	73	44	39	47	37	45	46	53	42	42,8
16	33	35	66	48	59	64	80	59	59	52	51	43,0
-39	-27	-45	-26	-46	-46	-64	-52	-32	-8	+1	+8	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	September North											
1.	8	10	10	9	14	17	21	22	21	19	16	18
2.	5	7	10	9	8	11	16	13	14	13	12	13
3.	35	37	39	41	38	40	40	46	40	39	40	50
4.	34	49	41	39	41	46	35	46	41	50	50	42
5.	101	88	116	79	58	59	34	14	30	41	43	88
6.	+22	+24	+20	+16	+13	+15	+37	+61	+31	-59	-117	-142
	September East											
1.	10	11	8	9	13	19	22	27	28	29	29	30
2.	6	8	7	5	5	5	10	8	10	14	16	14
3.	35	34	35	38	36	37	38	34	32	35	39	37
4.	44	38	36	38	31	33	26	30	29	31	34	43
5.	76	66	56	55	55	43	44	24	43	35	38	65
6.	+12	+21	+5	+7	+10	+21	+34	+52	+81	+55	+20	-15
	October North											
1.	8	10	9	10	10	13	19	23	21	15	15	15
2.	8	10	6	8	9	13	17	20	16	16	13	10
3.	38	35	37	38	35	37	38	38	36	38	39	37
4.	36	44	35	68	36	37	33	50	55	54	46	60
5.	93	77	73	63	82	48	24	19	19	17	28	52
6.	+12	-2	-14	-21	-16	-9	+23	+59	+79	+30	-61	-117
	October East											
1.	12	10	8	11	10	15	19	21	23	24	26	24
2.	10	6	6	4	3	10	9	13	14	13	16	17
3.	34	35	34	39	33	35	35	33	33	36	38	30
4.	40	39	24	34	30	40	30	31	29	39	41	53
5.	92	64	70	71	58	23	32	33	32	18	31	36
6.	+21	+16	+14	+19	+13	+10	+7	+18	+42	+49	+46	+33

EARTH CURRENTS

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12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
13	12	14	11	11	9	9	7	9	8	8	13	12,9
10	8	13	7	8	8	7	7	9	8	9	12	9,9
38	39	38	37	35	38	31	36	36	38	33	38	38,3
56	66	53	48	40	39	53	77	43	65	41	50	47,7
61	40	62	59	81	92	89	75	133	133	124	125	76,1
-121	-45	+28	+48	+67	+40	+9	+25	+15	+6	+7	-1	
Component												
29	23	30	23	23	18	9	9	14	12	11	16	18,9
14	14	15	11	12	10	5	7	7	10	10	13	9,7
40	36	35	38	35	37	35	36	35	34	37	38	36,2
49	56	53	40	38	27	33	68	41	31	47	50	39,4
52	38	55	49	73	113	131	64	104	137	101	88	66,7
-27	-35	-29	-17	-15	-28	-35	-31	-34	-25	-22	-17	
Component												
17	15	12	12	10	9	11	9	7	8	9	10	12,2
16	15	12	10	7	8	8	3	7	6	8	9	10,6
38	38	39	35	37	35	34	35	34	34	37	35	36,7
45	57	43	41	30	46	37	29	39	46	42	55	44,2
58	31	42	35	51	35	73	67	98	71	55	118	55,2
-121	-56	-9	+35	+30	+34	+8	+14	+30	+25	+48	+2	
Component												
25	24	25	21	19	15	9	6	8	12	14	15	16,5
16	17	15	12	6	8	5	6	8	8	5	8	9,9
38	36	38	39	35	37	37	33	34	34	35	36	35,6
40	42	40	35	32	49	34	41	35	52	54	36	33,5
34	50	39	42	48	37	57	50	103	45	63	97	51,1
-5	-25	-24	-25	-33	-28	-46	-28	-35	-15	-19	-3	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	November North											
1.	7	7	7	8	4	8	10	16	22	17	14	17
2.	6	5	4	4	2	5	7	12	17	14	13	11
3.	37	37	36	35	37	37	37	37	35	37	37	37
4.	40	44	37	40	40	34	37	35	44	44	51	40
5.	89	95	72	43	28	41	31	24	30	20	22	58
6.	-24	-7	-6	-25	-12	-7	+4	+25	+41	+1	-34	-54
	November East											
1.	12	9	6	6	8	15	14	17	23	20	19	22
2.	9	7	3	4	2	5	7	10	10	10	13	13
3.	32	34	36	34	34	36	35	34	35	31	37	33
4.	41	37	33	36	31	29	29	26	46	32	37	37
5.	52	43	54	29	31	24	30	27	14	26	31	35
6.	+11	+15	+12	+3	-12	-15	-6	+3	+38	+39	+39	+25
	December North											
1.	7	6	0	1	3	7	7	9	15	15	11	14
2.	4	3	1	0	3	4	4	7	11	9	6	12
3.	33	31	31	30	34	32	33	35	36	34	36	37
4.	29	37	31	48	27	28	24	36	33	35	37	40
5.	55	66	51	33	29	53	62	9	27	17	18	30
6.	-19	-8	-19	-18	-20	-31	-10	-1	+13	+10	-11	-34
	December East											
1.	9	7	3	7	8	9	13	15	17	19	16	17
2.	9	5	2	2	1	3	8	4	7	8	7	8
3.	29	30	29	28	30	31	30	30	37	35	34	35
4.	26	26	13	28	31	32	35	26	27	28	34	32
5.	51	43	41	22	23	55	24	29	21	18	17	21
6.	-8	-9	+6	-13	-6	-15	0	-61	-49	-13	0	+4

12	13	14	15	16	17	18	19	20	21	22	23	Averages
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Component

16	14	11	10	10	8	7	6	8	8	5	7	10,0
13	8	7	10	7	4	7	6	7	7	6	6	7,9
37	35	36	35	35	35	34	35	38	35	35	37	36,0
41	40	36	29	33	41	50	40	35	34	38	38	39,0
35	37	21	38	74	44	48	58	44	43	41	51	45,3
-56	-17	+9	+28	+17	+27	+20	+13	+22	+19	+17	-1	

Component

22	22	18	11	14	11	11	8	8	8	10	8	13,5
14	12	11	7	8	5	7	6	9	7	8	5	7,9
36	31	36	32	31	35	37	31	40	36	35	35	34,3
28	38	30	29	32	35	36	38	41	32	36	29	34,0
31	20	23	41	64	41	48	53	46	46	50	71	38,7
-4	-19	-8	-1	-16	-23	-43	-13	-4	-14	-5	-2	

Component

14	10	5	6	6	4	4	6	5	8	4	6	7,2
14	8	4	3	2	5	1	5	3	7	4	7	5,2
33	35	32	31	32	35	34	37	35	35	33	36	38,8
35	37	35	28	32	28	27	44	33	42	52	54	35,5
23	18	24	53	23	39	60	36	59	69	80	48	40,8
-34	-15	+14	+15	+10	+26	+16	+30	+44	+24	+11	+8	

Component

25	21	20	25	21	13	10	8	8	11	9	11	13,5
14	14	6	7	4	4	2	6	7	7	8	8	6,4
31	33	29	28	27	3	36	35	34	37	29	36	31,8
33	26	31	27	30	29	35	44	46	30	41	44	31,5
13	19	19	46	37	37	37	26	55	76	92	66	36,9
+8	+10	+24	-2	+13	+28	+24	+43	+20	-21	-21	+21	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	Year 1977 North											
1.	8	10	10	10	11	14	17	18	19	16	15	15
2.	8	9	8	7	7	10	12	14	15	12	10	11
3.	35	35	36	36	36	37	38	38	37	37	36	38
4.	38	38	38	41	37	37	36	41	44	41	41	41
5.	71	75	60	53	42	39	33	38	40	24	33	43
6.	+3	+5	+5	+4	+10	+18	+24	+21	+22	-30	-77	-106
	Year 1977 East											
1.	11	11	10	10	11	15	19	24	25	26	27	20
2.	8	7	5	4	4	5	9	10	12	15	15	16
3.	31	29	30	34	34	33	34	34	35	34	35	35
4.	33	36	33	32	32	31	29	30	31	34	35	30
5.	60	52	44	40	32	33	30	28	26	24	28	33
6.	+2	+8	+8	+6	+1	+3	+12	+21	+35	+35	+18	-2

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
14	12	10	9	8	8	8	8	8	8	7	8	11,1
12	8	7	6	5	6	6	6	7	7	6	7	8,4
37	37	37	35	35	35	34	36	35	35	35	36	36,0
39	46	42	40	35	37	36	41	38	43	41	44	39,7
40	39	39	40	50	48	61	56	72	65	73	77	50,4
-93	-44	+9	+31	+38	+42	+27	+19	+21	+20	+17	+3	
Component												
27	25	23	22	20	15	12	10	10	11	11	13	16,9
16	16	14	11	8	7	6	6	7	7	7	8	9,3
36	35	35	35	33	35	35	34	35	35	35	35	34,2
37	39	38	38	34	37	34	39	39	35	41	40	35,1
30	37	36	40	53	54	61	60	65	68	71	71	44,8
-15	-15	-10	-10	-10	-14	-24	-17	-12	-13	-8	-3	

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	Quiet days North											
1.	7	9	8	9	12	12	15	16	17	15	14	15
2.	7	8	5	5	7	9	10	12	12	10	8	9
3.	34	34	34	35	34	34	35	35	36	35	36	35
4.	32	34	30	31	31	32	33	35	34	33	34	33
5.	27	27	28	26	22	20	19	9	8	13	18	30
6.	+3	+10	+11	+5	+14	+23	+33	+42	+33	-22	-74	-107
	Quiet days East											
1.	8	8	8	9	12	13	17	17	18	19	22	21
2.	8	8	4	5	5	3	5	8	8	8	9	12
3.	32	32	32	32	32	32	32	31	33	32	34	33
4.	24	28	21	26	26	21	26	25	26	32	32	33
5.	33	25	30	24	22	24	20	17	19	17	15	21
6.	+6	+11	+11	+9	-2	+1	+12	+31	+40	+38	+26	-5
	Disturbed days North											
1.	7	16	22	14	20	29	31	36	31	29	25	29
2.	5	7	16	9	9	20	29	23	29	31	23	23
3.	40	43	49	58	41	47	63	67	58	49	43	61
4.	49	67	83	108	68	67	38	61	45	63	72	59
5.	247	290	95	103	76	151	117	54	110	54	52	121
6.	-22	-96	+66	-1	-10	-10	-64	-31	-67	-58	-37	-69
	Disturbed days East											
1.	14	25	18	20	22	31	40	54	38	38	41	47
2.	9	9	5	9	7	23	31	25	31	31	25	20
3.	38	36	38	43	40	47	40	49	45	45	41	41
4.	59	61	59	54	50	58	63	45	40	40	29	49
5.	272	184	121	68	79	92	68	97	72	79	85	72
6.	-55	-8	-4	+57	+62	+44	+50	+48	+64	+17	+3	+29

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
12	10	10	8	6	5	5	5	6	6	5	6	9,7
11	7	5	5	3	2	3	4	6	6	5	6	6,8
35	35	35	34	33	34	33	34	34	33	32	35	34,2
35	36	32	25	28	26	25	24	28	32	33	33	31,1
25	23	22	23	20	17	23	24	27	27	26	30	22,1
-91	-46	+2	+34	+36	+30	+14	+5	+9	+13	+16	+9	
Component												
22	19	20	18	16	11	9	7	7	7	6	8	13,3
11	11	8	9	7	4	5	7	6	7	6	8	7,2
35	33	33	33	31	34	33	32	34	34	33	33	32,6
30	32	29	28	29	28	25	27	28	30	28	31	27,7
16	20	20	20	24	23	26	31	32	29	32	37	24,1
-12	-16	-35	-18	-16	-29	-25	-21	-10	-3	-10	+6	
Component												
27	18	20	18	14	18	7	9	13	4	4	9	18,7
32	16	22	16	11	13	5	7	5	5	3	4	15,1
50	45	41	40	34	43	34	45	38	41	34	38	45,9
58	65	76	92	65	88	58	205	185	176	61	104	83,9
137	133	86	104	178	146	445	149	202	288	313	115	156,9
-37	-3	+7	+57	+55	+119	+77	+17	+81	+23	-5	-15	
Component												
36	31	32	25	25	22	20	23	18	7	16	7	27,0
29	20	25	22	14	9	0	18	11	5	9	2	16,2
41	38	43	41	34	27	47	45	40	43	41	40	41,0
68	61	68	58	65	61	67	106	137	49	61	74	61,7
119	88	74	124	171	227	302	297	103	261	234	108	141,5
+24	-5	+1	-16	-27	-55	-37	-39	-63	-37	-77	+29	

III.

Results of harmonical analysis of the daily variations

	A ₁	q ₁	A ₂	q ₂	A ₃	q ₃	A ₄	q ₄	A ₅	q ₅	A ₆	q ₆
North Component												
January	20	146	15	252	12	168	15	301	7	195	4	335
February	32	140	19	295	14	108	9	316	8	114	2	8
March	33	126	44	274	32	123	21	293	7	259	5	67
April	30	113	54	302	37	124	14	336	5	211	2	275
May	39	119	58	298	33	151	13	27	6	155	3	315
June	50	96	59	296	29	128	6	227	1	61	5	23
July	44	95	51	305	19	115	5	323	6	308	6	327
August	45	89	57	298	28	125	7	311	5	304	5	216
September	37	109	50	303	40	127	22	336	2	261	4	121
October	24	108	39	254	42	115	23	306	6	181	4	21
November	13	156	22	261	18	122	13	313	4	215	3	321
December	20	172	16	232	7	107	12	308	3	133	1	311
Year	30	117	37	290	25	126	12	312	3	175	3	351
Q	27	99	36	290	30	126	13	313	3	211	2	6
D	52	171	35	310	9	320	14	253	11	256	4	231
East Component												
January	11	199	3	106	10	28	8	252	5	128	1	139
February	2	2	10	42	10	53	6	263	9	110	3	302
March	19	330	10	180	22	41	10	233	4	164	5	100
April	20	0	8	261	13	73	6	281	2	203	3	99
May	18	355	12	200	19	150	15	352	4	277	4	326
June	21	1	15	229	14	121	8	16	4	330	0	217
July	32	2	9	187	7	107	10	309	3	212	2	134
August	49	10	15	192	16	104	13	291	3	227	4	4
September	38	359	13	225	20	85	7	323	1	69	5	67
October N	32	356	14	137	12	33	6	238	4	67	2	106
November	16	344	15	135	11	46	9	285	6	40	3	143
December*	21	186	8	11	12	317	8	111	10	98	5	253
Year	18	356	6	187	9	74	6	294	1	90	1	29
Q	22	6	12	176	10	66	6	301	1	318	2	90
D	50	345	10	331	7	229	1	166	9	194	14	156

* disturbed

IV.

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

Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	End of Storm
			E(mV km)	H(gamma)					
03.	27.	07.15	4	13	+	+	+	-	(no storm, only Pc5)
04.	02.	23.00	5	18	+	+	+	-	(03. 14.00)
	06.	14.00	2	8	0	+	+	-	(?)
		17.30	11	18	+	+	+	-	(si?) continues
	07.	19.45	13	40	+	+	+	-	(10. 00.00)
	19.	02.00	5	25	+	+	+	-	(19. 22.00)
05.	04.	05.15	2,5	6	+	+	+	-	(05. 02.00)
	28.	05.30	5	12	-	+	+	+	(no storm)
07.	06.	11.30	9	30	+	+	+	-	(07. 04.00)
	29.	01.30	10	95	+	+	+	-	(29. 17.00)
09.	19.	12.45	8	30	+	+	+	-	(21. 15.00)
	21.	21.45	15	35	+	+	+	-	(23. 00.00)
10.	03.	13.45	10	30	+	+	+	-	(03. 19.15)
	14.	12.45	11	45	+	+	+	-	(15. 03.30)
	27.	00.30	8	30	+	+	+	-	(20. 09.00)
11.	25.	13.30	9	25	+	+	+	-	(26. 07.00)
	26.	18.15	7	22	+	+	+	-	(27. 03.00)
12.	02.	03.15	9	20	+	+	+	-	(03. 00.30)
	04.	15.30	3	7	+	+	+	-	(05. 03.00)

<i>Bays</i>					<i>Pt-s</i>						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
01.	01.	00.30	5	25	—	+	+	+	tr		
		21.45	4	40	—	+	+	+			
	03.	22.30	6	30	+	+	+	—	2,5	+	+
	05.	18.00	6	80	—	0	0	+	3,5	+	+
		22.00	6	65	—	+	+	+	2,5	—	+
	06.	20.30	5	15	—	—	—	+			
	07.	02.15	6	25	+	+	+	—	tr		
	11.	16.15	14	150	+	+	—	+	tr		
	14.	22.00	8	70	+	+	+	—			
	18.	01.00	4	25	+	+	+	+	2	+	+
	20.	00.00	9	65	+	+	+	—	tr		
		23.45	5	35	+	+	+	—	2	+	+
	22.	21.15	4	18	—	+	+	+	2	+	+
	23.	00.00	4	20	+	0	0	—	4	+	+
	24.	23.30							3	+	+
	26.	20.30	5	15	—	+	+	+	2	+	+
	28.	22.00	18	150	+	+	+	—	tr		
	31.	13.00	4	35	0	—	—	—			
02.	01.	23.30	5	22	—	+	+	+	3	+	+
	04.	00.15	5	32	+	+	+	—	3	+	+
	05.	22.30							5	+	+
	06.	02.00							3	+	+
		21.45	17	80	+	+	+	—	tr		
	07.	01.45	8	45	+	+	+	—	tr		
	11.	22.45	3	30	+	+	+	—	3	+	+
	13.	18.45	4	35	—	+	+	+	3		
	14.	20.45	12	50	+	+	+	—	tr		
	17.	01.30	4	12	—	—	—	+			
	18.	05.00	11	55	+	+	+	—	tr		
		21.45	4	22	—	+	+	+	tr		
	19.	19.00	6	22	—	0	—	+	2	+	+
		23.30	5	10	+	+	+	—	3	+	+
	22.	19.45	8	45	—	+	+	+	tr		
	23.	17.15	10	75	—	+	+	+			
		23.15	6	30	+	+	+	—	tr		

EARTH CURRENTS

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		<i>Bays</i>			<i>Pt-s</i>						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
02.	24.	19.30	15	110	-	+	+	+	tr		
		23.45	4	10	-	+	+	-			
	25.	21.45	7	35	+	+	+	-	3	+	+
	28.	00.45	5	35	+	+	+	-	3	+	+
20.15		5	22	-	+	+	+	2	+	+	
03.	01.	22.00	11	55	-	+	+	+	3	+	+
	07.	23.00							2	+	+
	08.	21.30	11	80	-	+	-	+	tr		
	09.	12.15	6	70	+	-	-	-			
		21.45	18	75	+	+	+	-	tr		
	10.	23.45	9	40	+	+	+	-	5	+	+
	11.	21.30	15	55	+	+	+	-	tr		
	12.	20.45	14	40	+	+	+	-	3	+	+
	13.	22.30	6	45	-	+	+	+	tr		
	15.	00.45							3	+	+
	16.	01.15							3	+	+
	18.	01.45	3	30	+	+	+	-	3	+	+
	20.	01.15	5	40	+	+	+	-	tr		
	21.	20.00	7	35	-	+	+	+	tr		
	23.	23.45	5	35	+	+	+	-	tr		
	24.	21.45	5	28	-	+	+	+			
	27.	08.30									
04.	28.	18.30	7	35	-	+	+	+	tr		
		22.30	9	40	+	+	+	-	tr		
	29.	03.15	11	40	+	+	+	-			
	31.	00.30							4	+	+
	01.	02.00							1	+	+
		03.	00.30						5	+	+
		01.30	7	45	+	+	+	-			
		20.30	3	20	-	+	+	+	3	+	+
	04.	03.15	9	40	+	+	+	-	tr		
		21.30	6	45	+	+	+	-	tr		
05.	22.00							4	+	+	
06.	01.15	10	30	-	-	+	-				
	18.00	24	75	+	+	+	+				
08.	01.15	8	45	+	+	+	-	tr			
	21.30	6	35	-	+	+	+				

Pc5 (3mV/km, 5nT)

		<i>Bays</i>		<i>Pt-s</i>								
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV·km)	Ex	Ey	
			E(mV km)	H(gamma)								
04.	08.	23.15	9	35	+	+	+	-	tr			
	09.	17.45	5	40	-	+	+	+	tr			
	11.	23.30	6	30	-	+	+	+	tr			
	12.	23.30	8	50	+	+	+	-	3	+	+	
	13.	22.00							5	+	+	
	14.	00.45							6	+	+	
		01.30							4	+	-	
		23.30	10	30	+	+	+	-	tr			
	16.	20.00	9	60	+	+	+	+	tr			
	17.	22.45							8	+	+	
	20.	00.30	8	55	+	+	+	-	tr			
		17.45	16	95	-	+	+	+	tr			
	21.	19.15	5	25	-	0	+	+	tr			
	26.	00.45							2	+	+	
	27.	19.30							3	+	+	
	28.	02.30							2	+	+	
		16.00							4	-	-	
	29.	22.00	8	30	+	+	+	+	tr			
	65.	01.	21.15	9	25	-	+	+	+	tr		
			22.30	6	18	+	+	+	-			
02.		00.15	6	35	-	+	+	+				
		18.15	22	160	-	+	+	+	tr			
		19.15	10	35	+	+	+	-				
03.		00.30	9	55	+	+	+	-				
07.		21.45	5	25	-	+	+	+	4	+	+	
09.		01.15							3	+	+	
11.		19.30	>18	150	-	+	+	+				
13.		20.30	5	28	-	+	-	+	3	+	+	
		21.15	6	25	+	+	+	-	tr			
14.		22.00	4	22	+	+	+	-	3	+	+	
		22.30							3	+	-	
15.		23.45	6	30	+	+	+	-	tr			
20.		20.30	8	22	+	+	+	-	tr			
21.		23.00	4	14			+	-				
28.		01.15							2	+	+	

		<i>Bays</i>			<i>Pt-s</i>						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
05.	28.	11.30	8	20	-	-	-	+			
	30.	21.15	4	12	-	-	-	+			
06.	02.	23.15	6	30	-	+	+	+	2	+	+
	03.	13.30	5	20	+	+	+	-			
	04.	00.30	5	12	-	-	-	+			
		23.00							2	+	+
	06.	20.45							2	+	+
	07.	20.45							7	-	+
	08.	23.45							6	+	+
	12.	19.45	3	16	-	+	-	+	2	-	-
	13.	23.00	5	18	+	+	+	-			
	14.	01.45	5	35	+	+	+	-	tr		
		22.15	4	12	+	+	+	-	4	+	+
	15.	21.15							3	+	+
	25.	00.30							3	+	+
	26.	01.15							2	+	-
	29.	02.30	4	18	+	+	+	-	3	-	-
	30.	20.45							2	+	+
07.	01.	11.00	9	20	+	+	+	-			
	02.	01.30	5	22	+	+	+	-	4	+	+
	03.	23.15							2	+	+
	05.	00.00	5	24	+	+	+	+	3	-	-
	06.	02.00							3	-	-
	10.	00.30	7	35	+	+	+	-	tr		
	12.	21.00							2	+	+
	13.	20.45	5	25	-	+	+	+	3	+	-
	19.	02.45	4	30	+	+	+	-	2	+	+
	21.	20.45	3	22	+	+	+	-	tr		
	22.	00.45	6	25	+	0	+	-	tr		
	26.	21.00							2	+	+
	27.	23.30							3	+	+
	28.	17.15							3	+	+
	29.	18.45	16	50	+	+	+	-			
	31.	03.30	4	18	+	+	+	-	tr		
		22.30	4	15	+	+	+	+	2	+	+

<i>Bays</i>			<i>Pt-s</i>								
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
08.	05.	15.15	9	45	—	—	—	+	tr		
	06.	07.30							Pc5 (7mV km, 14nT)		
	09.	01.30	6	35	+	+	+	—	tr		
		19.15	8	42	—	—	—	+	tr		
	11.	17.00	8	22	—	—	—	+			
	13.	23.15	5	32	—	+	+	+	tr		
	14.	19.45	5	18	—	+	+	+	2	+	+
	15.	22.30	4	12	+	+	+	—	tr		
	16.	21.15	5	22	+	+	+	—			
	19.	21.45	6	30	—	+	+	+	tr		
	20.	00.15	11	45	+	+	+	—	tr		
	22.	22.30	4	10	+	+	+	—	3	+	+
	23.	00.30	3	16	+	+	+	—	2	+	+
	25.	17.00	15	70	—	+	+	+	tr		
	26.	00.30	8	30	+	+	+	—	tr		
	27.	20.15	8	42	—	+	+	+	tr		
09.	01.	01.00							2	+	+
	02.	02.15							2	—	—
	04.	00.30							3	+	+
	05.	22.00							3	+	+
	06.	22.15	4	15	—	+	+	+	3	+	+
	07.	23.00	5	15	+	+	+	—			
		23.00	8	35	+	+	+	—	tr		
	10.	19.30	5	30	—	+	+	+	tr		
		22.45	6	35	+	+	+	+	tr		
	11.	19.15	11	65	—	+	—	+			
		23.45	5	22	+	+	+	+	4	+	+
	12.	05.00	3	18	+	—	+	—	tr		
		22.15	6	25	+	+	+	+	tr		
	13.	17.30	15	100	—	+	+	+			
		20.15	15	60	—	+	+	+	tr		
	15.	10.45	5	18	—	—	—	+	tr		
	16.	20.45	6	35	—	+	+	+	4	—	—
	18.	21.45							2	+	+
	19.	20.15	16	80	—	+	+	+			

		<i>Bays</i>			<i>Pt-s</i>						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
09.	20.	18.00	15	75	—	+	+	+			
		21.30	22	80	+	+	+	+	tr		
	21.	02.15	11	50	+	—	—	+	tr		
	22.	00.30	20	95	+	+	+	—			
		16.45	20	130	—	+	+	+	tr		
	23.	16.30	14	65	—	+	+	+	tr		
		23.45	7	30	+	+	+	—	tr		
	24.	21.00	6	35	+	+	+	+	tr		
	25.	20.45	5	25	—	0	+	+	tr		
	26.	17.30	6	22	+	+	+	+	tr		
	27.	01.45	20	65	+	+	+	—	tr		
	28.	16.00	8	42	—	+	+	+	tr		
	30.	23.00							3	—	—
10.	02.	00.00							3	+	+
		01.15	5	12	+	+	+	—	5	+	+
	06.	02.45							4	+	+
		03.30							3	+	+
		18.00							2	+	+
	08.	00.15							2	+	+
		19.30	4	8	+	+	+	0			
	10.	12.15	8	22	+	+	+	—			
	11.	00.15	4	15	+	+	+	—	tr		
	12.	17.00	5	28	—	—	—	+			
	14.	22.45	12	50	+	+	+	+	tr		
	15.	02.00	7	35	+	+	+	—	tr		
		20.00	15	30	+	—	+	+	tr		
	16.	19.30	4	15	—	+	+	+			
	18.	19.30	8	80	—	—	—	+	tr		
		22.45	12	55	+	+	+	—	tr		
	19.	00.15	15	45	+	—	—	—			
		16.15	9	22	+	+	+	+			
		20.30	6	30	—	+	+	+			
	20.	17.15	5	22	+	+	+	+	tr		
	22.	01.00	6	35	+	+	+	—	tr		

		<i>Bays</i>			<i>Pt-s</i>						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
10.	22.	17.45	7	30	-	+	+	+	tr		
		22.45	11	45	+	+	+	-	tr		
	23.	21.15	4	25	-	+	+	+	2	+	+
	25.	00.15	3	13	+	+	+	-	4	+	+
		23.15	4	15	+	+	+	-	tr		
	26.	23.30							2	+	+
	27.	23.15	22	100	+	+	+	-	tr		
	28.	20.00	12	42	+	+	+	-	tr		
	30.	17.45	9	52	-	+	-	+	tr		
	11.	01.	22.15	3	10	0	+	+	0	3	+
02.		00.30	3	18	+	+	+	-	2	+	+
05.		01.45	6	45	+	+	+	-	3	+	+
06.		00.30	3	15	+	+	+	-			
		20.30	3	5	-	-	-	0			
07.		22.30	3	12	-	+	+	+	3	+	+
08.		20.15	2	16	-	+	+	+	2	-	-
09.		02.30							2	+	+
		19.15							2	+	+
11.		00.00	5	14	+	+	+	-	4	+	+
13.		00.30	5	40	+	+	+	-			
		16.00	17	135	+	+	+	+	tr		
14.		00.30	5	35	+	+	+	-	tr		
		18.30	14	95	+	+	+	+	tr		
15.		00.30	16	90	+	+	+	-	tr		
16.		00.30	6	40	+	+	+	-	tr		
17.		23.15	5	30	-	+	+	+	tr		
19.		21.30	4	25	-	+	+	+	tr		
21.		01.15	5	22	+	+	+	-	tr		
23.		11.45							2	+	+
	23.00							3	+	+	
25.	19.45							7	+	+	
	23.00	9	30	+	+	+	-				
27.	01.30	16	60	+	+	+	-	tr			
28.	22.45							2	+	+	

		<i>Bays</i>			<i>Pt-s</i>						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV km)	Ex	Ey
			E(mV km)	H(gamma)							
11.	29.	20.00							2	+	+
	30.	21.45	5	18	+	+	+	+	3	+	+
i2.	01.	21.30	6	35	-	+	+	+	3	-	+
	02.	16.15	8	35	+	-	-	-			
		17.30	18	125	-	0	0	+	tr		
	03.	21.30	4	22	+	+	+	+	tr		
	04.	20.30	8	30	-	-	-	+			
		23.00	12	35	-	-	-	+	tr		
	05.	00.30							2	+	+
		01.30	6	30	-	+	+	+	tr		
	06.	01.00	5	25	+	+	+	-	3	+	+
	11.	22.00	8	40	+	+	+	+			
	17.	05.30	8	55	-	+	+	+	tr		
	19.	18.00	4	10	+	+	?	+			
	20.	19.30	4	18	-	+	+	+	tr		
	21.	22.30	5	25	-	+	+	+	3	+	+
	22.	01.00	4	25	+	+	+	-	tr		
	23.	00.30	4	12	+	+	+	-	3	+	+
	26.	20.00	7	30	-	+	+	+	2	+	+
	28.	21.00	14	70	+	+	+	+	6	+	+
	29.	23.45	5	18	0	+	+	+	tr		
	30.	23.15	4	8	+	+	+	0	tr		
	31.	22.00	4	30	-	+	+	+	3	+	+

Further Pt-traces (earth currents)

Month	Day	CET	Month	Day	CET	Month	Day	CET
01.	01.	00.15	02.	18.	18.15	03.	26.	01.30
	02.	00.30			19.15			01.45
	03.	22.15			19.30		27.	23.45
	06.	21.15		20.	00.30		29.	01.45
	09.	20.15			19.30		30.	19.15
		20.30			23.15		31.	23.45
	10.	17.45		21.	22.30	04.	01.	01.30
	17.	09.15		22.	01.45			01.45
	19.	01.45		23.	01.30			03.45
		02.15	03.	01.	01.15			15.30
		19.30		02.	23.45			15.45
		22.30		03.	20.00		02.	01.45
	20.	00.15			22.15			02.30
		00.30			22.45		03.	00.15
	22.	22.45		04.	15.45			02.45
		23.30			22.45			03.30
	23.	01.30		06.	22.45		06.	00.30
		02.00			23.45			00.45
		20.45		07.	00.45		09.	19.45
		22.45			01.45		10.	17.30
	24.	23.15			21.15			20.15
	25.	00.30		08.	03.30			23.45
		21.15		12.	18.00		11.	02.15
	26.	19.30			22.30			18.45
	27.	18.30		13.	01.45		13.	22.30
	30.	16.00			02.15			23.45
02.	02.	22.30			23.15		17.	23.15
		23.30		14.	22.45		18.	01.15
	06.	00.30			23.15			11.00
	07.	23.15		16.	00.00		19.	01.45
		23.30		17.	02.15		20.	21.00
		23.45			02.45		21.	22.00
	10.	22.45		18.	01.30		23.	16.00
		23.00		20.	17.45			20.45
	11.	23.30			21.45			21.30
	12.	20.00		23.	02.15		24.	01.45
		20.45			20.45		26.	18.30
	13.	18.30			23.15			22.00
		24.45		24.	02.30		29.	20.45
	15.	18.15			23.30		30.	13.45
		20.45		25.	00.30			20.45
		22.15			01.15			21.45
	17.	21.45			02.15	05.	02.	01.15

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Month	Day	CET	Month	Day	CET	Month	Day	CET
05.	02.	01.45	07.	04.	22.30	07.	31.	19.15
	05.	21.00		05.	22.15			21.15
		21.30		06.	00.30			21.45
		22.45			01.00	08.	02.	01.45
		23.30			01.30			02.30
	06.	03.30		07.	23.00			03.30
		22.45			23.45		03.	01.30
	07.	00.30		10.	18.45			01.45
		02.30			19.30			02.30
	12.	22.45			19.45			04.30
		23.15		10.	21.45			04.45
	13.	19.45		11.	00.15			14.45
	14.	21.00			00.45		04.	20.30
	15.	02.15			20.15		06.	19.30
		18.45		12.	21.30		07.	00.00
	17.	19.15			22.15		09.	00.15
	21.	23.45			22.45		11.	22.00
	24.	00.15		13.	00.30		12.	20.45
	26.	19.45			00.45			21.30
	28.	03.30			01.00		14.	19.30
06.	01.	19.30		14.	03.45		15.	22.15
	04.	01.00			04.30		20.	21.15
	08.	12.30		17.	20.45		21.	01.30
	09.	19.15			23.30			22.45
		23.45		19.	21.15			23.15
	10.	00.45			21.30		22.	22.15
		22.30		21.	20.15		23.	00.15
	11.	21.15		22.	23.15		25.	20.45
		21.45		23.	23.30		27.	23.15
		23.30		25.	00.30		28.	00.00
	14.	19.30			01.15		29.	01.30
		21.00			01.30			02.45
		21.30			01.45		30.	02.00
	05.	05.30			02.15			02.30
		20.45			06.15			17.45
	19.	01.00			22.15			21.15
	21.	01.30			22.30			21.45
	30.	01.30			22.45		31.	16.30
		21.30		26.	18.30	09.	01.	04.45
07.	01.	01.15		27.	15.30		02.	01.30
	02.	01.45			23.00			18.45
	03.	23.30		28.	01.30			
	04.	22.00			23.45			

Month	Day	CET	Month	Day	CET	Month	Day	CET
09.	03.	01.15	09.	20.	01.00	11.	17.	22.15
		01.45			01.30			22.45
	04.	19.45			02.30		19.	02.00
	05.	00.15	10.	01.	13.00			02.15
		02.15		02.	02.30			20.45
		20.15		04.	20.45		20.	21.45
	06.	22.00		05.	23.15			22.15
	07.	19.30		06.	22.30		20.	23.15
		23.30			22.45		23.	01.00
	08.	21.45		09.	21.30			01.30
		22.15			22.30			13.00
		23.00		10.	22.00		30.	00.15
	10.	00.45			22.30		04.	00.00
		01.15		12.	23.15		06.	21.00
		18.30			23.45			22.15
	12.	04.45		13.	21.30		07.	23.00
		16.30			21.45			23.30
		21.45			22.30		08.	00.30
	14.	01.15		14.	00.30			19.00
		20.15		15.	22.30			21.00
		23.45		16.	23.30		09.	01.30
	15.	22.45		20.	21.45		17.	00.30
	17.	03.15		24.	02.45		22.	21.30
		15.15		31.	18.15		23.	01.00
		16.45			19.30			01.45
		22.15	11.	02.	01.45			22.00
		22.45		03.	18.30		24.	22.45
	18.	21.00		05.	20.15			23.30
		21.15		08.	19.45		26.	00.15
		21.30		09.	01.15			00.45
	19.	00.15			01.30		27.	00.15
		23.45			22.15		28.	01.00
	21.	21.30			22.30		29.	00.00
	22.	19.15		10.	00.30			00.15
	25.	18.00		11.	22.00			23.30
		23.15		13.	00.45		31.	21.30
					01.00			

SI-s

Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy
			E(mV km)	H(gamma)				
01	12.	06.30	5	6	-	+	+	-
	15.	15.00	6	10	-	-	-	+
	18.	07.30	6	18	-	-	-	+
	21.	01.00	4	8	-	-	-	+
	28.	21.15	5	10	-	-	-	+
02.	03.	18.00	7	10	+	+	+	-
	07.	05.45	5	6	-	-	-	+
04.	07.	09.30	5	12	-	-	-	+
		17.00	4	10	-	-	-	+
		21.00	18	50	-	-	-	+
	15.	12.30	5	10	+	+	+	-
	24.	13.30	5	18	-	-	-	+
	27.	23.30	4	7	+	+	-	+
	29.	16.00	5	12	-	-	-	+
05.	01.	10.45	3	7	+	+	+	-
	04.	11.30	5	7	-	-	-	+
		18.15	>27	55	-	-	-	+
	07.	12.30	2	7	+	+	+	-
	10.	05.30	5	10	-	+	-	+
	18.	17.45	4	10	+	+	+	-
	28.	13.30	5	12	-	-	-	+
	29.	15.15	4	7	-	-	-	+
06.	24.	22.45	5	10	-	-	-	+
07.	22.	02.00	3	6	+	+	+	-
	24.	13.45	8	12	-	-	-	+
	31.	11.30	3	7	+	+	+	-
08.	12.	17.00	4	7	+	+	+	-
	21.	06.30	4	6	-	-	-	+
	28.	16.15	3	6	-	-	-	+
09.	08.	10.45	5	8	+	+	+	-
	23.	02.45	5	13	+	+	+	-
	24.	15.45	4	12	+	+	+	-
	27.	00.15	>13	32	-	-	-	+

SI-s

Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy
			E(mV km)	H(gamma)				
09.	27.	01.00	14	22	+	+	+	-
10.	13.	04.30	6	9	-	-	-	+
	27.	06.30	4	7	-	-	-	+
11.	14.	00.00	3	8	+	+	+	-
	22.	11.00	4	10	-	-	-	0 (sfe?)
	30.	08.00	6	8	-	-	+	-
12.	04.	19.30	6	15	+	+	+	-
	27.	11.45	5	12	-	-	-	+

„Needles”

Month	Day	CET (GMT+1h)	Amplitude in E(mV/km)	Ex	Ey
01.	01.	10.30	6	—	—
	19.	00.15	4	+	+
02.	03.	23.30	2	—	—
	05.	16.30	4	+	—
03.	02.	21.30	3	+	0
	12.	08.45	5	+	+
04.	10.	17.30	3	—	—
	16.	20.30	4	+	+
	20.	02.45	3	—	—
05.	10.	23.15	4	—	+
	25.	14.15	3	0	—
		19.30	4	—	—
06.	01.	12.30	3	—	—
	28.	08.00	5	+	—
07.	12.	09.30	3	+	+
	15.	18.15	2	—	—
09.	02.	10.45	4	—	—
		15.15	5	—	—
	06.	12.30	3	—	+
	15.	15.30	?	+	—
	18.	09.15	3	—	—
	23.	07.45	4	—	+
	27.	13.30	4	—	—
11.	04.	17.15	5	—	—
	10.	15.45	4	+	+
		17.15	4	+	+
		14.30	5	+	+

V.

Average amplitudes in 12 pulsation bands

(monthly averages for 3 hour intervals in μ V km)

OBSERVATORY REPORT NAGYCENK

LT	January											300—600 sec
	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	
0—3	0	2	5	19	24	19	19	48	42	101	126	77
3—6	0	0	5	25	49	52	48	19	7	20	49	45
6—9	0	0	6	44	77	58	76	48	18	10	69	116
9—12	0	1	4	69	106	66	72	65	23	9	116	111
12—15	0	0	5	60	133	96	72	48	38	24	73	93
15—18	1	2	1	24	91	121	65	57	19	15	109	40
18—21	0	2	4	23	40	43	40	40	31	68	92	128
21—24	0	3	9	24	21	17	17	39	56	184	98	43
Average	0	1	5	36	67	59	51	46	29	54	91	82

February												
LT	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0—3	0	0	6	24	33	21	32	43	52	130	135	54
3—6	0	0	12	46	66	48	38	16	29	22	79	111
6—9	0	0	12	150	223	133	74	68	26	61	144	139
9—12	0	0	12	148	221	131	73	67	26	61	142	167
12—15	0	0	21	99	179	172	111	109	87	52	121	219
15—18	0	0	15	81	153	145	122	137	35	28	95	96
18—21	0	1	6	30	51	81	67	82	119	192	56	86
21—24	0	1	15	43	41	26	34	65	117	283	179	94
Average	0	0	12	70	107	89	68	75	60	102	115	121

March												
LT	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0—3	0	1	1	16	21	23	58	194	78	86	71	85
3—6	0	0	3	40	53	44	60	56	12	16	59	135
6—9	0	0	8	62	118	131	86	34	33	26	73	133
9—12	0	0	1	53	210	159	97	42	38	61	107	143
12—15	0	0	4	65	204	108	97	66	44	85	228	126
15—18	0	0	5	52	131	111	100	98	31	66	69	110
18—21	0	1	5	13	21	46	82	120	110	77	90	76
21—24	1	0	3	17	20	28	39	269	79	185	132	32
Average	0	0	4	40	97	81	77	110	53	76	104	106

April												
0—3	0	3	3	13	21	40	78	109	129	90	44	225
3—6	0	6	8	29	32	63	41	64	61	10	111	150
6—9	0	1	13	55	55	157	97	56	20	27	155	121
9—12	0	3	4	57	101	205	136	72	29	41	271	304
12—15	0	0	10	48	137	185	145	96	74	6	165	262
15—18	0	7	11	91	79	166	97	110	160	76	106	220
18—21	1	5	10	14	16	33	79	212	80	65	94	191
21—24	2	4	6	15	20	48	122	318	47	42	33	225
Average	1	4	8	33	59	114	100	130	75	44	124	214

May												
LT	Periods											300—600 sec
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	
0— 3	0	0	0	6	13	29	44	92	56	59	51	157
3— 6	0	0	1	18	57	45	106	75	39	10	45	153
6— 9	0	0	2	18	159	250	64	39	11	19	68	60
9—12	0	0	1	21	112	222	106	41	28	29	139	160
12—15	0	1	2	27	123	176	98	54	62	43	230	240
15—18	0	0	3	5	23	91	83	71	68	46	249	190
18—21	0	1	2	9	17	30	64	122	112	42	133	214
21—24	1	1	7	2	6	13	12	152	228	71	127	160
Average	0	0	2	14	67	112	75	78	70	39	131	160

June												
0— 3	0	0	0	7	9	18	43	53	176	61	111	131
3— 6	0	0	0	12	22	73	99	46	39	37	96	93
6— 9	0	0	1	15	135	146	123	80	11	15	64	56
9—12	0	0	0	25	157	184	91	93	41	24	203	90
12—15	0	1	0	10	110	108	73	68	81	39	281	204
15—18	0	0	0	8	31	51	74	43	57	51	254	285
18—21	0	0	1	9	14	21	26	26	119	198	145	122
21—24	0	0	2	5	10	17	15	34	144	116	96	126
Average	0	0	1	12	61	78	68	56	83	67	154	139

LT	July											
	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	0	2	25	14	20	42	170	153	98	159	227
3—6	0	0	1	94	37	60	58	120	18	36	182	167
6—9	0	0	4	137	113	81	101	59	34	14	225	63
9—12	0	0	0	242	120	74	66	100	17	36	183	151
12—15	0	0	1	180	183	52	129	116	8	31	227	265
15—18	0	0	0	55	70	37	127	153	60	72	224	132
18—21	0	0	1	22	20	22	47	135	72	45	172	277
21—24	0	0	1	9	18	16	28	164	171	156	113	232
Average	0	0	1	95	72	45	74	128	68	62	184	192

August												
0—3	0	0	2	39	34	48	137	144	77	22	89	89
3—6	2	0	14	105	86	92	51	30	19	23	141	104
6—9	0	0	20	328	148	132	13	61	0	28	82	123
9—12	0	0	3	360	262	63	64	35	12	49	295	120
12—15	0	0	18	269	140	132	77	54	32	51	233	352
15—18	0	0	0	58	120	110	100	100	16	4	128	237
18—21	0	0	2	17	35	57	57	182	65	20	93	228
21—24	0	0	2	17	25	22	28	180	106	36	48	220
Average	0	0	8	149	106	82	66	98	41	29	139	193

September

LT	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0—3	1	0	11	26	21	17	43	53	37	57	102	207
3—6	2	8	78	52	52	31	69	33	37	52	116	90
6—9	0	2	108	157	195	91	53	6	3	9	83	52
9—12	0	1	43	158	215	152	53	13	17	82	253	85
12—15	0	0	22	224	218	124	101	26	9	33	211	188
15—18	2	0	3	53	79	103	111	52	37	49	237	81
18—21	1	2	2	22	21	39	54	119	82	91	129	112
21—24	0	1	12	29	14	17	30	148	169	133	164	171
Average	1	2	35	90	102	72	64	56	49	63	162	123

October

0—3	0	1	4	22	35	33	30	100	50	115	55	49
3—6	0	1	4	41	59	95	48	43	22	10	74	127
6—9	0	1	10	107	96	57	89	26	11	12	194	78
9—12	0	1	9	82	189	111	111	86	20	58	203	177
12—15	0	1	16	77	120	110	100	79	191	53	140	242
15—18	0	1	13	44	79	87	82	149	33	48	228	80
18—21	0	0	3	21	24	57	80	192	36	39	104	61
21—24	0	1	6	30	32	38	56	209	129	72	79	75
Average	0	1	8	52	77	73	74	113	63	51	133	110

November

LT	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	300—600 sec
0—3	0	1	3	18	19	36	52	85	61	45	18	115
3—6	0	0	14	38	71	55	43	46	14	17	45	113
6—9	1	0	18	54	117	105	62	25	14	22	88	151
9—12	0	1	6	57	115	116	93	41	12	30	120	138
12—15	0	1	3	69	170	86	79	87	45	35	197	36
15—18	0	1	4	49	90	58	113	58	32	33	90	61
18—21	0	0	8	22	17	50	50	86	82	133	75	122
21—24	0	0	4	29	28	29	44	109	100	182	42	70
Average	0	1	7	42	78	66	67	68	46	63	84	100

December

0—3	0	1	6	14	12	3	34	171	78	78	31	19
3—6	0	0	6	19	19	19	86	83	19	8	73	17
6—9	0	2	8	25	25	52	80	93	28	6	46	63
9—12	0	1	4	30	63	101	138	84	41	34	157	103
12—15	0	1	7	101	68	115	117	45	61	64	62	46
15—18	0	3	3	41	60	128	94	95	32	35	67	41
18—21	0	6	9	20	18	41	53	80	19	39	117	145
21—24	0	4	4	19	12	24	56	147	157	159	120	107
Average	0	2	6	33	34	60	82	100	55	54	84	68

LT	Yearly average											300—600 sec
	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—200	
0—3	0	1	4	19	21	26	51	105	82	78	83	120
3—6	0	1	12	43	50	57	62	53	26	22	87	117
6—9	0	1	18	96	125	116	76	50	17	21	109	100
9—12	0	1	7	108	156	132	92	62	25	43	182	145
12—15	0	0	9	102	149	122	100	71	61	43	180	179
15—18	0	2	5	42	85	100	97	94	48	44	154	133
18—21	0	2	4	18	24	63	53	116	77	84	108	147
21—24	0	2	6	20	21	25	40	153	125	135	102	131
Average	0	1	8	56	79	81	72	83	58	59	126	131

VI.

Micro pulsation indices for the year

1977.

*Activity indices for the micropulsations
(P1 to P12)*

1976 September—December

	September	October	November	December
1.	154544435512	111254141423	225245441311	122223454541
2.	23555324233	454334543522	555522234311	111114545522
3.	233445335222	232343355422	253223144221	113223551552
4.	223445454421	555121451532	135331255513	111145544555
5.	213434545125	454531122521	245532213221	112235455322
6.	555422244123	555331114542	211232544421	111234541531
7.	113434424434	243244553511	113533121321	211444332455
8.	115235215522	525443423421	455311245542	112244415355
9.	255311112542	543312445511	132452213543	122353343354
10.	345421233551	555421134541	124353225545	111154555335
11.	213452211524	455521155112	111253355344	123255311155
12.	453532125522	535531125515	112134555445	111134542545
13.	241231553552	114443344211	111255544445	111224542142
14.	555521121455	144323354332	121254353445	111223555241
15.	445552112533	525552222125	112134541142	111124553221
16.	155423432322	223554312125	311245434221	113234442354
17.	355323224521	535541132123	512155444421	112454224542
18.	552423144212	532354241411	111112555311	111355213554
19.	525552222231	335413531121	111355221252	141235542234
20.	325531321134	555432341211	311254545545	111235543531
21.	355542231245	553552111114	111122332311	113233445554
22.	545532243124	355431125121	111125443542	123253232354
23.	555433141224	355442223551	111112555552	143223552334
24.	533222442321	325412124511	112112445511	114444222453
25.	554522333123	544242451531	113223545355	123354434152
26.	552552152223	523432222351	111133445541	112135525341
27.	455412344123	555423243541	113134444433	111134544441
28.	134335312521	545333422542	111114543111	114354112454
29.	135333333524	532422155521	111154422344	155333241255
30.	552225444514	455421144543	111144435552	155443212355
31.		445532124123		124551212234

*Activity indices for the micropulsations
(P1 to P12)*

1977. January—December

	January	February	March	April
1.	131355423245	115553211423	125454213544	114321535452
2.	112334554424	115541233555	115323554524	111353323342
3.	123344334243	115455433424	125443334523	111112125224
4.	132443344553	112245535522	11443333552	111225252134
5.	114554324414	115542422355	112322331552	112343454252
6.	114455422345	125531334553	125322354445	435542344335
7.	111245524234	115552224355	115432223552	255312231555
8.	112334454144	115553123155	123351435554	155212455255
9.	112344334444	115245534355	111454235555	124234533345
10.	113232554433	125443325555	122254552155	255255421335
11.	112452443445	115443322555	115454344555	114135554321
12.	115453334344	124444233521	113344541145	114435444135
13.	112235533523	315543334242	114444344125	111125423111
14.	114555211244	115554214243	114444424544	154412144534
15.	114445523325	135543215521	111354442524	135443123125
16.	111332555432	115543312344	112155554342	235344235435
17.	112244534122	125552112542	113443135552	112323551114
18.	112554111145	114433445355	112551235225	132234533345
19.	112554312552	114454444222	112444314553	135432433555
20.	135434434555	114333455523	115434235353	134425531145
21.	121345543121	113554235545	111514442454	114434554125
22.	133442323541	113445412542	112223553124	513324352322
23.	135533323551	115455314555	315422355532	135222535322
24.	113443324553	112455244534	111355242325	112111123111
25.	113454214443	111244555424	111455342221	122113542125
26.	113323455431	111334552521	111543541435	135424435335
27.	113441235452	114332554322	112532324544	112224313544
28.	154421125554	113354344532	122455254421	154222334542
29.	255531223355		112434554135	154334341455
30.	125553122444		111335434222	111235445324
31.	445541123522		113541344422	

	May	June	July	August
1.	113235545335	115424325555	122331322454	312444333123
2.	111145454335	111145425354	122231222542	112423345222
3.	224422334545	111145515443	111131544142	112112323211
4.	125431224555	111135545533	111111124313	113522113224
5.	122224555335	122323352353	111121325344	114552224455
6.	133322455245	111111455443	112411223555	111445341155
7.	112123555322	111121514454	112133444425	113543232254
8.	111221354222	111222553544	112552225445	115543251335
9.	112222445551	111252255523	111542234155	115532432125
10.	211332254554	111243445352	112532352245	114533333155
11.	113333255554	111112555421	112412455212	113532143345
12.	114145145345	111113435551	111112355511	111455434223
13.	111112555241	122122134554	111412355541	112354325241
14.	111145435222	111134325532	111532234354	111544434342
15.	114255443255	111112542542	111551245342	114424455343
16.	111245524135	112132444455	111543444355	111543134242
17.	111333544215	112355223455	111323552155	313522242445
18.	112144555124	111224525555	111134552432	113552222145
19.	112114454221	113344434254	112531244245	112535513255
20.	113233535425	112255424554	111552341155	111523352144
21.	112123545441	111125554344	111312554354	112213554222
22.	113135534434	111254433555	111522553355	113114554121
23.	124145515434	111344525525	111332443324	515412344511
24.	112245424544	111223455545	111423453443	111531243244
25.	112144414555	121112552555	111211455531	115541131254
26.	111111554542	111135535254	111212554523	111541231124
27.	111222554342	112355324353	122212555524	111552125223
28.	113213124555	112124445355	112312244551	113451251335
29.	112145412244	111134245544	112412344555	113421455141
30.	122254413544	111111242212	113553141244	112423144542
31.	112445114553		211435444232	111242445521

	September	October	November	December
1.	111552312542		111445434221	113211455541
2.	114521344544		112325534512	112323451155
3.	113544422343		112335443221	112221234154
4.	111353322433		125211455552	134221332424
5.	111433541541	111131222544	513353224131	113211132122
6.	112213542543	111232432453	112334324531	111224321423
7.	121433435541	111135344443	112321425522	121223554542
8.	115442425424	111232354551	135211245521	121113534321
9.	111434111544	111115531131	235421234522	111211441521
10.	111113225121	115211111121	132432434554	
11.	111115543345		115552222521	
12.	115421255112	112212132221	111221111425	
13.	112445552244	112524313355	115253121243	
14.	113553432221	115441324525	115453221155	
15.	111352323521	112542321144	114535431325	141111231223
16.	113521533542	113325533212	135223544354	153223435352
17.	425214325542	112222131121	111214543314	121432542335
18.	114413245521	115553221245	123223552141	111135541141
19.	525421224544	113353252554	114254354322	111113552431
20.	155521113455	114313335241	412345513142	152221544241
21.	115541122154	155212355241	112112422111	135412355231
22.	23.5512222355	111532442543		121225542111
23.	115544242145	113145442122		115521445521
24.	125224524253	112123542221	112111421123	155321554452
25.	112435522152	225521235522	111222135554	124333523541
26.	525523324355	114532433441	114332435245	125311123312
27.	115411342555	115513344455	115442524445	113323555323
28.	315411254552	115432344354	111335544511	135431454342
29.		114533331313	113332445422	115521443333
30.		122552421144	225422323553	111124554511
31.		111123554121		112335345524