

I. EARTH CURRENTS

The coordinates of the Observatory are:

$$\begin{aligned} \varphi &= 47^{\circ}38' & \lambda &= 16^{\circ}43' \\ \phi &= 47,2^{\circ} & J &= 98,3^{\circ} \end{aligned}$$

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

The tables published in this part are the following:

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

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

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

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

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

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

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

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

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

V. Average amplitudes in 12 pulsation bands. Here numerical data are presented on the average amplitudes of pulsations for (nearly complete) months. Averages are derived from manually processed earth current records (6 mm/min) for three-hour intervals of the day. Such averages (expressed in $\mu\text{V}\cdot\text{km}$) are published for each month and for the year. As the bands where amplitudes are determined have different bandwidths, amplitudes are comparable in different bands only after a correction for bandwidth. Data for the same band are, however, directly comparable. Basic data are estimated amplitudes in half-hour intervals.

VI. Micropulsation indices for the year 1981. The indices have been determined from the occurrence frequency of different period micropulsations, striving at a possibly uniform distribution of days in each of the five possible indices (1—5) in a basic intervals.

The determination of these indices can be shortly explained as follows: The days are arranged according to the occurrence 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 period bands the uniform distribution could not be achieved due to insufficient occurrence of these bands on the records.

The bands are the following:

P1	0	to	5 sec
P2	5	to	10 sec
P3	10	to	15 sec
P4	15	to	20 sec
P5	20	to	25 sec
P6	25	to	30 sec

P7	30	to	40 sec
P8	40	to	60 sec
P9	60	to	90 sec
P10	90	to	120 sec
P11	2	to	5 min
P12	5	to	10 min

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

L. HOLLÓ, M. TÁTRALLYAY and J. VERŐ: Experimental results with the characterization of geomagnetic micropulsations (*Acta Geod., Geoph. Mont. Hung.* 7 1972 15), and A. ADÁM, J. VERŐ, J. CZ. MILETITS, L. HOLLÓ and A. WALLNER: The geophysical observatory near Nagycenk. I. Electromagnetic measurement and processing of data. (*Acta Geod., Geoph. Mont. Hung.* 16 1981 333).

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

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

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

Records were taken in the Observatory with three instruments of the types GMG T9 1956 and GMG T14 1962, with small modifications in order to meet the demands of the use in the observatory. A general description of the processing and compilation is found in the report of the Observatory from 1966 in German by A. 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.*

I. Activity indices T and K_1-K_5

January

Day	T	Sum	K_1	K_2	K_3	K_4	K_5
1.	13132161	18	3	1	6	2	2
2.	00112432	13	3	0	4	1	3
3.	11222112	11	3	0	4	1	3
4.	32331137	23	3	0	4	1	3
5.	11112121	10	5	1	4	1	2
6.	11212121	11	5	0	4	1	2
7.	11101101	6	5	0	4	1	1
8.	11113131	12	3	0	4	1	2
9.	22011001	7	6	3	5	2	1
10.	00012135	12	4	0	4	1	2
11.	35552322	27	6	2	5	2	5
12.	21010000	4	4	0	3	0	0
13.	10111011	6	3	0	4	1	1
14.	11014100	8	2	0	4	1	1
15.	11111012	8	4	0	4	1	2
16.	32223110	14	4	0	5	2	2
17.	11112112	10	3	0	4	2	2
18.	11101000	4	4	0	4	0	1
19.	00000000	0	3	0	4	0	0
20.	10010001	3	3	0	4	0	0
21.	00000002	2	4	1	4	0	0
22.	10124112	12	3	0	4	2	1
23.	20023223	14	2	0	4	1	1
24.	10112112	9	3	0	4	1	1
25.	11111121	9	5	0	4	1	0
26.	10014121	10	5	0	4	1	1
27.	11023101	9	3	0	4	2	1
28.	31124123	17	3	0	4	2	3
29.	11335221	18	4	0	5	3	2
30.	10012111	7	4	0	4	1	1
31.	16343215	25	5	1	5	3	4

Monthly averages: T (N) 1.335

T (E) 0.766

 K_1 3.78 K_2 0.29 K_3 4.19 K_4 1.23 K_5 1.61

February

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

Monthly averages: T (N) 2.308
 T (E) 1.446
 K₁ 4.14
 K₂ 0.43
 K₃ 4.29
 K₄ 2.11
 K₅ 2.93

March

Day	T	Sum	K ₁	K ₂	K ₃	K ₄	K ₅
1.	31946328	36	4	2	4	6	3
2.	42377331	30	6	1	5	4	5
3.	21211123	13	5	2	4	1	2
4.	12121101	9	4	0	4	0	2
5.	13999997	56	6	4	7	6	5
6.	33646510	28	3	0	4	3	2
7.	33344481	30	5	2	5	3	5
8.	21235100	14	4	0	4	1	0
9.	00111110	5	4	0	4	0	0
10.	11123210	11	5	1	4	2	1
11.	10142110	10	3	0	4	1	2
12.	00122254	16	4	0	4	3	2
13.	32379759	45	6	3	6	7	5
14.	59899647	57	7	6	8	6	6
15.	24423453	26	7	2	5	3	6
16.	22545121	22	7	3	4	1	3
17.	53253423	27	7	3	5	3	4
18.	22824331	25	5	0	4	3	2
19.	21333131	17	6	0	4	2	3
20.	12346200	18	4	1	5	3	2
21.	00122032	10	4	0	4	2	2
22.	01101001	4	3	0	4	0	1
23.	06112000	4	4	0	4	0	0
24.	00011111	5	5	0	4	1	0
25.	22436564	32	5	1	5	4	6
26.	63355435	34	5	1	5	5	5
27.	52423232	23	5	0	4	2	2
28.	21122113	13	5	0	4	0	2
29.	11224331	17	4	0	4	2	4
30.	11133145	19	3	0	4	2	3
31.	44244344	29	6	0	5	3	4

Monthly averages: T (N) 2.722
T (E) 1.806
K₁ 4.84
K₂ 1.03
K₃ 4.55
K₄ 2.55
K₅ 2.87

April

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

Monthly averages: T (N) 3.433

T (E) 2.696

K₁ 6.63

K₂ 3.33

K₃ 5.53

K₄ 3.70

K₅ 3.33

May

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

Monthly averages: T (N) 2.379
T (E) 1.879
K₁ 5.94
K₂ 2.65
K₃ 4.87
K₄ 2.45
K₅ 2.61

June

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

Monthly averages: T (N) 1.692
T (E) 1.458
K₁ 4.70
K₂ 2.10
K₃ 4.37
K₄ 1.73
K₅ 1.83

July

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

Monthly averages: T (N) 2.407
T (E) 2.073
K₁ 5.87
K₂ 3.00
K₃ 4.81
K₄ 2.42
K₅ 3.00

August

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

Monthly averages: T (N) 2.488
T (E) 1.968
K₁ 5.61
K₂ 2.00
K₃ 4.48
K₄ 2.23
K₅ 2.48

September

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

Monthly averages: T (N) 2.171
T (E) 1.512
K₁ 5.40
K₂ 1.80
K₃ 4.43
K₄ 2.07
K₅ 2.17

October

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

Monthly averages: T (N) 3.440
T (E) 2.444
K₁ 5.47
K₂ 2.48
K₃ 5.10
K₄ 3.52
K₅ 3.29

November

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

Monthly averages: T (N) 2.392
T (E) 1.654
K₁ 3.83
K₂ 1.10
K₃ 4.77
K₄ 2.60
K₅ 2.37

December

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

Monthly averages: \bar{T} (N) 1.573
 \bar{T} (E) 1.654
 \bar{K}_1 3.32
 \bar{K}_2 0.48
 \bar{K}_3 4.32
 \bar{K}_4 1.78
 \bar{K}_5 1.65

II. Average amplitudes for different periods

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

and hourly means of earth current elements

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

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

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

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

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

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

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	September North											
1.	7	6	3	8	11	16	18	18	15	14	14	11
2.	12	10	10	11	9	12	19	24	19	14	10	10
3.	37	34	36	39	37	42	41	45	52	32	36	39
4.	52	48	41	46	56	50	64	54	67	56	57	55
5.	70	52	56	61	43	37	41	49	35	61	75	71
6.	+28	+15	+34	+32	+24	+54	+81	+107	+51	-64	-157	-207
	September East											
1.	11	8	7	14	14	28	30	32	36	32	38	34
2.	9	8	5	20	13	15	19	17	16	16	16	19
3.	32	35	31	32	30	42	37	33	32	37	32	31
4.	50	35	49	36	44	38	41	38	51	41	47	44
5.	64	46	45	46	46	33	26	40	33	47	49	43
6.	-11	-6	-5	-12	-6	-6	+23	+88	+104	+75	+29	+6
	October North											
1.	8	6	5	8	9	13	18	23	21	18	17	19
2.	8	10	5	9	11	13	16	25	20	22	19	21
3.	38	45	49	41	38	35	42	45	53	43	45	48
4.	71	68	51	80	59	52	77	77	91	72	89	87
5.	107	75	78	41	90	60	49	37	71	97	73	114
6.	+16	-1	-12	-12	-23	-24	+34	+97	+105	+24	-87	-207
	October East											
1.	12	12	9	14	18	23	33	35	38	37	38	41
2.	12	14	9	10	12	16	21	17	22	24	21	29
3.	36	60	41	44	33	33	34	36	38	42	35	46
4.	77	60	53	55	47	41	51	49	45	67	59	82
5.	77	43	35	34	68	54	37	39	55	33	41	55
6.	+3	+14	+5	+12	-1	-20	-18	+23	+69	+81	+72	+39

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
14	10	13	7	9	7	4	5	4	5	4	4	9.5
16	10	10	7	9	5	7	5	6	8	8	5	10.7
38	37	40	34	34	34	32	32	32	36	32	37	37.0
73	56	64	50	42	38	33	35	35	29	48	54	50.1
50	64	91	70	39	49	42	88	73	107	62	58	60.2
-180	-109	-23	+38	+66	+46	+3	+24	+15	+46	+52	+25	

Component												
35	34	33	29	25	21	10	7	8	10	7	8	21.3
17	20	17	15	11	11	7	6	8	8	12	7	13.0
33	26	33	29	31	23	29	25	34	31	35	32	32.1
38	39	52	45	43	43	38	40	50	39	34	52	42.8
49	47	62	42	35	35	44	79	52	69	68	33	47.2
+3	-34	-39	-36	-27	-19	-41	-40	-26	-18	+1	-5	

Component												
16	15	16	12	7	6	4	6	5	7	6	7	11.3
21	19	14	12	8	10	9	9	6	8	10	10	13.1
49	42	63	48	36	37	37	35	36	35	35	42	42.4
98	87	81	62	88	70	57	87	37	86	84	64	74.0
76	83	64	84	48	98	103	90	140	102	107	118	83.5
-156	-122	-24	+73	+94	+30	+40	+34	+66	+38	+10	+6	

Component												
37	36	37	29	27	19	17	12	17	16	14	16	24.5
23	26	19	20	16	12	9	8	12	11	13	13	16.2
46	49	42	44	31	31	33	33	33	38	38	39	38.9
52	67	55	55	77	51	45	65	45	56	71	63	57.0
45	37	42	52	47	95	122	89	127	117	73	116	63.9
-9	-27	-9	-3	-19	-48	-10	-24	-37	-38	-18	-37	

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

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

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

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

Hour Parameter	0	1	2	3	4	5	6	7	8	9	10	11
	Quiet days North											
1.	5	7	9	8	10	13	14	15	17	14	13	11
2.	5	7	6	5	6	9	8	8	9	7	5	5
3.	33	34	35	34	35	37	35	36	35	35	35	34
4.	41	33	35	37	38	38	42	37	41	40	32	43
5.	35	33	27	32	22	28	24	26	11	17	35	37
6.	+7	+4	+4	+8	+22	+50	+59	+48	+42	-17	-99	-134
	Quiet days East											
1.	6	8	8	9	13	17	19	22	23	21	22	24
2.	8	5	6	7	6	8	10	12	11	12	11	15
3.	34	33	33	28	27	32	30	28	30	33	27	31
4.	31	28	34	29	29	26	29	28	32	33	32	35
5.	27	25	23	24	28	22	23	19	19	15	30	21
6.	-7	-19	-13	-15	-24	-19	-5	+17	+37	+41	+23	+10
	Disturbed days North											
1.	16	15	15	21	23	25	35	34	33	33	27	30
2.	17	26	16	35	28	31	46	57	42	38	49	31
3.	47	59	63	74	58	92	93	105	62	63	63	55
4.	99	111	82	123	83	103	112	149	117	117	126	98
5.	133	141	160	135	194	99	62	64	139	61	93	180
6.	+69	+55	+4	-1	+4	-25	+60	+111	+35	-70	-128	-178
	Disturbed days East											
1.	23	19	27	32	36	39	54	62	63	56	57	55
2.	20	21	22	41	25	42	55	45	39	43	47	46
3.	68	53	60	67	45	105	92	79	64	55	92	63
4.	122	87	130	83	53	110	108	99	91	112	120	91
5.	95	183	67	131	225	69	69	98	104	58	69	154
6.	+14	-5	+5	+2	+29	-10	+28	+63	+43	+31	+21	+14

12	13	14	15	16	17	18	19	20	21	22	23	Averages
Component												
14	12	10	9	7	5	5	4	4	5	6	6	9.3
8	4	3	3	2	2	2	3	2	3	3	4	5.0
36	34	35	35	34	34	32	33	32	33	35	35	34.4
37	34	39	33	34	37	30	33	32	33	36	36	36.3
35	33	21	32	22	23	28	23	20	37	36	36	28.0
-121	-73	-21	+28	+52	+43	+25	+8	+15	+21	+17	+12	

Component												
24	22	22	19	17	12	8	6	4	4	6	8	14.3
12	11	9	8	7	7	4	4	4	5	6	8	8.2
28	32	29	28	32	31	31	31	32	29	32	34	30.6
30	30	32	26	31	28	25	31	32	31	30	32	30.2
28	19	24	32	23	32	29	26	29	39	35	37	26.2
-5	-3	-6	-5	-14	-14	-14	-3	+6	+11	+13	+8	

Component												
30	27	21	25	18	15	9	13	13	14	11	14	21.5
38	38	25	28	14	18	9	13	16	10	15	21	27.5
75	59	88	81	45	45	39	42	44	46	55	58	63.0
85	113	105	83	110	98	87	95	84	118	139	105	105.9
153	96	99	196	129	134	213	218	255	189	145	193	147.2
-180	-63	-49	+62	+107	+32	+77	0	+30	+15	+9	+21	

Component												
50	41	51	45	39	39	31	27	23	23	21	21	38.9
48	39	42	57	33	33	20	19	18	15	21	18	33.7
80	67	119	115	50	54	32	44	43	33	43	59	65.9
117	93	94	104	83	98	82	93	104	105	92	141	100.5
91	69	100	149	153	92	195	247	241	177	124	134	128.9
+3	-9	+1	-43	-11	-54	-22	+11	-38	-12	-19	-41	

III.

Results of harmonical analysis of the daily variations

North Component

	A_1	φ_1	A_2	φ_2	A_3	φ_3	A_4	φ_4	A_5	φ_5	A_6	φ_6
January	20	106	33	232	20	84	22	295	5	89	7	16
February	26	130	26	244	23	131	9	315	5	140	7	240
March	31	129	51	292	54	109	27	299	12	244	9	140
April	50	97	85	284	66	106	22	302	9	291	3	40
May	58	92	86	302	51	140	9	39	6	263	7	344
June	52	89	84	295	42	134	2	174	4	1	8	343
July	72	95	97	301	52	129	4	176	11	324	11	9
August	59	89	98	305	60	144	7	121	9	306	7	326
September	64	92	72	286	56	133	23	312	12	273	3	204
October	38	116	68	265	60	108	39	309	1	71	11	110
November	28	110	50	236	36	113	27	311	11	151	6	328
December	18	123	33	229	20	111	18	289	5	142	8	342
Year	42	100	59	282	43	121	14	305	3	268	3	9
Q	36	94	53	284	35	126	11	296	2	216	5	23
D	51	111	64	288	56	113	21	342	12	296	6	162

East Component

January	12	295	18	122	10	5	8	271	5	142	5	317
February	8	253	10	105	12	25	8	195	3	171	1	336
March	28	297	18	99	14	16	8	249	8	101	2	126
April	29	354	15	164	7	9	8	331	4	250	2	74
May	27	1	17	197	8	159	11	359	0	90	3	360
June	26	358	23	190	16	145	19	5	7	276	4	317
July	34	1	30	212	23	107	17	357	6	328	1	298
August	36	356	34	222	33	106	18	337	6	203	6	132
September	39	346	27	191	21	88	6	322	11	250	7	96
October	34	329	16	153	24	34	14	284	7	108	4	202
November	31	309	21	148	16	28	9	267	3	86	2	63
December	20	307	19	135	15	27	11	248	4	121	5	3
Year	24	336	16	172	11	67	8	315	1	184	1	41
Q	30	343	10	207	3	12	10	360	2	228	6	170
D	8	303	20	172	7	99	7	290	3	182	1	172

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

Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	End of storm
			E(mV.km)	H(gamma)					
01.	29.	08.00	10	22	+	-	+	-	01 29 14 00
02.	06.	09.45	18	23	+	+	+	+	02.07 04 00
	08.	14.45	>18	50	+	+	+	-	02 09.07.00 (si?)
03.	01.	08.30	18	35	-	+	+	+	03.01 24 00
	02.	07.45	>15	30	-	+	+	+	03.02.15 00
	05.	06.30	12.5	60	+	+	+	-	03.06.16 00
	07.	02.45	5.5	18	+	+	+	-	03.07.21.00
	12.	19.30	9	35	+	+	+	-	03.14.23 00
	14.	05.15	7	45	+	+	+	-	(in p ₃)
	25.	18.45	13.5	50	+	+	+	-	(in storm and on storm 03 26.04.00)
04.	07.	20.45	10	32	+	+	+	-	04.08.02.00
	11.	14.45	>18	100	+	+	+	-	04 13 24 00
	15.	11.15	5.5	14	+	+	+	-	04.15.16 00 (?)
	18.	16.00	11	30	+	+	+	-	04.19 22 00
	26.	09.15	12	35	+	+	+	-	04.27 16.00
05.	08.	18.45	9	25	+	+	+	-	05.09 17.00
	09.	01.00	5.5	15	+	+	+	-	(in storm) (?)
	10.	23.00	20	85	+	+	+	-	05.11 15.00
	14.	20.00	11	35	+	+	+	-	05.14 01.00
	15.	03.45	14.5	40	+	+	+	-	05 16.03.00
	16.	06.30	16	40	-	-	-	+	05 16.20.00
	18.	00.00	18	75	+	+	+	-	05.18.21 00
06.	06.	10.00	7	30	+	+	+	-	06.08.03.00
	07.	09.30	16	35	-	+	+	+	in storm
		18.45	>15	120	-	-	-	+	in storm
	29.	07.15	16	22	-	+	-	-	06.29.16.30

SSC-s									
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	End of strom
			E(mV.km)	H(gamma)					
07.	16.	05.45	7	18	+	+	+	-	no storm
	17.	09.00	11	30	-	+	+	+	07.17.16.00
	23.	07.45	25	18	+	+	+	-	07.23.20.00
	25.	06.15	12.5	22	+	+	+	-	07.26.19.00
		14.15	>25	165	+	+	+	-	(in storm)
08.	10.	05.30	14.5	50	+	+	+	-	08.10.17.00
	17.	01.45	23.5	55	+	+	+	-	08.18.20.00
	23.	14.00	14.5	70	+	+	+	-	08.24.03.00
09.	08.	22.45	>14.5	60	+	+	+	-	09.09.02.00
	18.	20.15	16	50	+	+	+	-	09.19.22.00
	19.	02.30	18	45	+	+	+	-	(in storm)
10.	02.	21.30	>14.5	120	-	+	+	-	10.03.17.00
	07.	07.15	14.5	40	+	+	+	-	10.07.13.00
	10.	15.30	12.5	30	+	+	+	-	10.10.22.00
	13.	23.30	14.5	75	+	+	+	-	10.15.16.00
	20.	14.45	>18	50	+	+	+	-	10.21.13.00
	22.	06.30	11	30	+	+	+	-	10.23.16.00
11.	08.	17.30	>18	50	+	+	+	-	11.08.22.00 (in storm)
	11.	13.30	18	65	+	+	+	-	11.12.14.00
	14.	06.30	8	15	+	+	+	-	11.15.04.00
		14.30	6.5	25	+	-	-	-	(in storm)
	16.	21.30	16	35	+	+	+	-	11.18.02.00
	25.	03.30	10	65	+	+	+	-	11.25.18.00
12.	12.	02.45	10	30	+	+	+	-	12.13.01.00
	29.	06.45	7	25	+	+	+	-	12.29.21.00

		Bays			Pi-s						
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
			E(mV km)	H(gamma)							
01.	01.	04.00	6	35	+	+	+	-			
		19.45	13.5	55	+	+	+	+			
	02.	17.00	6	40	-	-	-	+			
		04.	01.00	13.5	35	-	+	+	+	tr	
	21.00		9	60	-	+	+	+	tr		
	10.	21.15	8	40	-	+	+	-	2.5	+	+
	14.	14.15	8	18	-	+	-	+			
	15.	23.45	4.5	25	-	+	+	+	tr		
	16.	03.30	7	35	+	+	+	-			
	21.	21.15	4.5	22	-	+	+	+	3.5	+	+
	26.	13.30	7	25	-	-	-	+	tr		
	28.	01.15	8	30	-	+	+	+	tr		
	31.	04.48	6.5	35	+	+	+	-			
		21.00	5.5	40	-	+	+	+	2	+	+
23.00		6.5	50	+	+	+	-	2.5	+	+	
02.	03.	20.30	11	50	-	+	+	+	tr		
		04.	01.30	3.5	15	+	+	+	-		
	19.15		11	50	-	+	+	+	tr		
	05.	05.45	5.5	30	+	+	+	-			
		23.00	6.5	45	-	+	+	+	tr		
	07.	02.30	25	95	+	+	+	-	tr		
	08.	18.00	11	65	-	-	-	+			
		23.15	14.5	85	-	-	-	+	tr		
	13.	23.30	25	12	+	+	+	-	2.5	+	+
	14.	21.15							2	+	+
	16.	01.30	9	25	-	-	-	+			
		18.00	5.5	25	+	+	+	+	2	+	+
	19.	00.30	5.5	18	+	+	+	-	3.5	+	+
	22.	22.15	14.5	60	-	+	+	+	tr		
23.	01.00	9	30	-	-	-	+				
26.	01.45	9	30	+	+	+	-	tr			

		Bays				Pi-s					
Month	Day	CET (GMT+1h)	Amplitude in E(mV km) H(gamma)		Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
02.	26.	20.30	17	80	+	+	+	-	tr		
		21.15	28	145	+	+	+	-	tr		
	27.	20.45	7	55	-	+	+	+	tr		
		28.	22.00	10	45	-	+	+	+	tr	
03.	01.	23.00	>15	75	+	+	+	+	tr		
		03.	00.15	2	22	+	+	+	-	2	-
		21.15	5.5	22	+	+	+	-	tr		
		21.45	3.5	30	-	+	+	+	tr		
	07.	19.15	14.5	75	+	+	+	-	tr		
	12.	23.15	9	35	-	-	+	+	3.5	+	+
	13.	14.00	>15	55	-	-	-	+			
		21.30	13.5	65	-	+	+	+	tr		
	14.	01.30	6.5	22	+	+	+	-			
		04.00							11 (pg)		
	15.	18.45	9	50	+	+	+	-	tr		
	17.	00.15	7	65	-	+	+	+	tr		
	19.	12.45	6.5	25	+	+	+	-	(si?)		
	21.	22.00	5.5	50	-	+	+	+	tr		
	24.	20.45	3.5	18	+	+	+	-			
	26.	01.00	11	65	-	+	+	+	tr		
		23.30	9	65	+	+	+	-	tr		
	29.	18.15	5.5	35	-	-	-	+	tr		
	30.	18.45	6	35	+	+	+	-			
		22.30	8	40	+	+	+	-	tr		
	31.	21.30	7	30	+	-	-	-			
04.	01.	01.30	7	55	+	+	+	-			
	02.	01.15							5.5 (pg)		
	09.	01.30	3.5	30	+	+	+	-	2	+	+
	10.	22.30							4.5	+	+
	14.	02.30	12	80	+	+	+	-	tr		
	17.	21.45	14.5	30	+	+	+	-	(ssc?)		

		Bays				Pi-s					
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
			E(mV/km)	H(gamma)							
04.	19.	04.30	12	65	+	+	+	-	tr		
	20.	23.00	6.5	45	-	+	+	+	tr		
	22.	19.15	8	55	+	+	+	-			
	25.	22.30	5.5	35	+	+	+	+	tr		
	28.	12.00	5.5	20	+	+	+	-			
05.	09.	21.00							3.5	+	+
	10.	00.45	3.5	18	+	+	+	-	tr		
		22.15	5.5	25	+	+	+	-			
	15.	17.00	9	50	+	+	+	+			
	16.	02.15	6.5	45	+	+	+	-	tr		
		18.30	14.5	70	-	+	+	+	tr		
	18.	20.00	5.5	40	-	+	+	+			
	20.	03.30	6.5	35	+	+	+	-	tr		
		16.00	10	50	+	+	+	+	tr		
		19.30	8	35	+	+	+	-	tr		
		20.30	9	40	+	+	+	-	tr		
		24.	21.45	8	32	-	-	-	+	tr (ssc?)	
	25.	20.15	10	35	-	-	-	+			
22.00		12.5	55	-	-	-	+	tr			
28.		05.15	4.5	35	+	+	+	-			
06.	01.	21.45							2	+	+
	05.	02.15	4.5	30	+	+	+	-	2.5	+	+
		21.30	4.5	10	-	-	-	+			
	06.	00.45	4.5	18	+	+	+	-	2.5	+	+
	08.	02.30	12	65	+	+	+	-	tr		
	13.	00.30							3.5	+	+
	16.	22.30	9	50	-	+	+	+	tr		
	18.	21.00	5.5	30	-	+	+	+			
07.	02.	14.00	11	50	+	+	+	-			
		21.00	9	40	+	+	+	-			
		23.00	7	30	+	+	+	-	3.5	+	+

		Bays				Pi-s						
Month	Day	CET (GMT + 1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey	
			E(mV/km)	H(gamma)								
07.	03.	23.30	9	45	+	+	+	-	2.5	+	+	
	04.	22.15	5.5	30	-	+	+	+	tr			
	05.	00.00	10	35	+	+	+	-	tr			
	07.	19.00	5.5	18	+	+	+	-	(si?)			
	10.	19.15							9	-	+	
	12.	23.30	9	45	+	+	+	+	tr			
	14.	23.30							2.5	+	+	
	16.	16.30	5.5	22	-	-	-	+				
	17.	13.15	12.5	65	+	+	+	-				
		22.30	10	42	-	+	+	+	tr			
	20.	11.15	10	35	+	+	+	-	tr (ssc?)			
	22.	11.30	5.5	25	-	-	-	+				
		22.45	11	55	-	+	+	+	tr			
	23.	11.30	9	60	+	+	+	-				
		18.30	12.5	55	-	-	-	-				
		22.45	9	45	+	+	+	-	2.5	+	+	
	24.	00.45	5.5	14	-	-	+	-				
	25.	02.00	6.5	35	+	+	+	-				
	26.	00.00	>30	250	+	+	+	-	tr			
	27.	01.30	7	65	+	-	-	-				
	28.	04.30							5.5 (pg)			
	68.	01.	23.15	4.5	20	-	+	+	0	tr		
		02.	22.30	11	55	-	+	+	+	tr		
		03.	19.30	7	30	-	+	+	+			
		06.	13.00	6.5	30	+	+	+	-			
		07.	18.30	6.5	40	+	+	+	-	tr		
		09.								2.5	+	+
			20.45	5.5	20	0	+	+	0	3.5	-	-
11.		16.45	9	32	+	+	+	-	tr			
		20.30	7	32	-	-	-	+	tr			
16.	02.00	6.5	22	-	-	-	+					

		Bays			Pi-s						
Month	Day	CET (GMT+1h)	Amplitude E(mV.km)	in H(gamma)	Ex	Ey	Hx	Hy	E(mV.km)	Ex	Ey
08.	16.	18.00	8	55	+	+	+	-	tr		
		21.45	9	45	-	+	+	+	tr		
	21.	21.45	6.5	30	+	+	+	+	tr		
	22.	22.30	5.5	25	-	-	+	-			
	23.	01.30	7	32	+	+	+	-	tr		
		03.00	12.5	55	+	+	+	-			
	24.	17.00	10	70	-	-	+	+	tr		
	25.	00.30	5.5	35	+	+	+	+	tr		
	26.	16.15	7	22	+	+	+	-			
		22.45	5.5	22	-	-	-	+			
	28.	22.45	11	45	+	+	+	-	tr		
	30.	11.30	5	25	+	+	+	-			
		23.15	11	42	+	+	+	-	tr		
	09.	01.	21.30							2.5	+
20.30			4.5	25	-	+	-	+	tr		
05.		03.00	8	35	+	+	+	-	tr		
11.		22.45	5.5	28	-	+	+	+	tr		
12.		14.15	10	25	-	+	-	+	tr		
		18.45	4.5	45	-	+	+	+	tr		
13.		23.30	3.5	16	-	+	+	+	2.5	+	+
14.		23.00	4.5	22	+	+	+	-			
17.		00.30	3.5	16	-	+	+	+	tr		
19.		03.15							6 (pg)		
22.		05.00	5.5	30	+	+	+	-			
		13.45	4.5	15	-	-	-	+			
		21.30	4.5	20	-	+	+	+	2.5	+	+
25.		16.45	5.5	45	-	-	-	+	tr		
26.	09.45	9	35	-	-	-	+				
	14.00	7	45	+	+	+	-				
	18.15	11	55	-	+	+	+	2.5	-	+	
	21.00	11	50	-	-	-	+	2.5	-	+	

		Bays				Pi-s					
Month	Day	CET (GMT+1h)	Amplitude in		Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey
			E(mV km)	H(gamma)							
09.	27.	19.15	20	75	-	+	+	+	tr		
	28.	06.15	5.5	15	+	+	+	-	(si?)		
10.	04.	20.45	5.5	40	-	+	+	+	tr		
	05.	23.30	2.5	18	+	+	+	-	2	+	+
	07.	20.45	14.5	65	-	+	+	+	tr		
		21.45	9	45	-	-	-	-			
	09.	01.15	4.5	35	+	+	+	-	tr		
		20.00	6.5	45	-	+	+	+	tr		
	10.	21.30	16	72	+	+	+	-			
	11.	00.00	7	50	+	+	+	-	tr		
	12.	11.15	5.5	15	-	-	-	+			
	13.	09.00	11	32	+	+	+	-			
		19.30	10	40	-	+	+	+	tr		
	14.	03.30	>16	200	-	-	-	+	tr		
		12.00							5 (pg)		
		23.30	16	85	-	-	-	+	tr		
	16.	06.00							9 (pg)		
	17.	22.15							5.5	-	-
	19.	23.00	11	45	+	+	+	-			
	20.	12.00	14.5	45	+	+	+	-			
		20.00	6.5	45	-	+	+	+	tr		
		21.30	>30	125	-	+	+	+	tr		
		23.30	14.5	55	+	+	+	-	tr		
	22.	22.00	>30	180	+	+	+	-	tr		
	23.	00.30	>22.5	95	-	+	+	+	tr		
	24.	16.45	18	85	+	+	+	+	tr		
		22.45	11	60	+	+	+	-	tr		
	26.	11.45	9	30	-	-	-	+	tr		
	28.	21.00	11	90	-	+	+	+	tr		
	29.	11.30	8	35	+	+	+	-			
		23.15	6.5	35	+	+	+	-	2.5	+	+
11.	03.	10.30	5.5	18	-	-	-	+			

		Bays			Pi-s							
Month	Day	CET (GMT+1h)	Amplitude in E(mV km) H(gamma)		Ex	Ey	Hx	Hy	E(mV/km)	Ex	Ey	
11.	03.	20.15	6.5	30	-	+	+	+	tr			
	04.	15.30	2.5	10	+	+	+	-				
	05.	00.15							2.5	+	+	
		13.15	9	30	-	-	-	+				
	06.	03.15	6.5	25	+	+	+	-	tr			
	08.	11.30	12.5	40	+	+	+	-				
	12.	01.45	18	95	+	+	+	-	tr			
	14.	17.45	14.5	50	+	+	+	-	tr			
	17.	06.00								7 (pg)		
		19.30	11	60	-	+	+	+	tr			
		23.30	8	45	+	+	+	-	tr			
	18.	17.30	7	30	-	-	-	+				
		19.30	12	50	-	+	+	+	tr			
	20.	22.45	5.5	35	-	+	+	+	tr			
	21.	23.00	12.5	60	+	+	+	-	tr			
	23.	18.15	11	60	-	+	-	+	tr			
	24.	00.00	8	50	-	+	+	+	tr			
		14.00	4.5	25	+	+	+	+	tr			
	26.	18.45	4.5	30	-	+	+	+	tr			
	29.	03.00	4.5	25	+	+	+	-	tr			
12.	02.	12.15	?	30	?	?	-	-				
	05.	23.45	5.5	15	+	+	+	0	2.5	+	+	
	07.	22.45	2.5	10	+	+	+	-				
	08.	21.45	9	40	-	+	+	+	tr			
	12.	20.45	13.5	75	-	-	-	+	tr			
		23.15	7	35	-	+	+	+	tr			
	14.	20.45	4.5	12	-	-	-	+				
	15.	21.00	4.5	50	-	-	-	+				
	16.	23.15	4.5	22	-	+	+	+	3.5	+	+	
	17.	21.30	6.5	35	+	+	+	+	2.5	+	+	
	22.	16.45	5.5	18	-	-	-	+	tr			
	24.	23.00	5.5	30	+	+	+	-	tr			
	26.	20.00	3.5	10	-	+	+	+	2.5	+	+	
28.	01.00	7	30	-	+	+	+	tr				
29.	19.00	13.5	65	+	+	+	-	tr				

Further pi-traces

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

Further pi-traces

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

SI-s

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

SI-s

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

SI-s

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

Needles

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

1981
Pc 1-events

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

V.

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

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

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

March

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

April

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

May

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

June

0—3	0	30	14	19	9	17	24	51	115	56	31	131
3—6	1	30	27	40	28	26	30	35	36	9	53	54
6—9	0	10	84	156	74	41	32	34	9	3	169	77
9—12	0	9	39	148	109	64	30	42	32	6	260	87
12—15	0	25	45	100	56	20	8	51	31	6	287	186
15—18	0	28	46	37	23	34	24	23	74	19	230	64
18—21	0	46	18	23	7	6	17	47	130	58	189	72
21—24	0	46	28	5	2	10	18	88	118	77	113	48
Average	0	28	38	63	39	27	23	46	68	30	167	90

July

CET	Periods											
	1—5	5—10	10—15	15—20	20—25	25—30	30—40	40—60	60—90	90—120	120—300	300—600 sec
0— 3	0	53	12	15	9	21	87	115	116	26	147	77
3— 6	0	29	52	65	24	40	28	60	44	15	120	13
6— 9	0	18	54	279	43	7	18	107	54	33	334	171
9—12	0	8	69	165	82	29	40	69	78	11	383	156
12—15	0	18	55	152	115	31	34	39	47	86	401	149
15—18	0	15	55	65	39	35	44	54	40	49	212	284
18—21	0	40	52	17	11	17	15	49	107	44	162	196
21—24	5	60	20	5	8	16	26	107	167	107	118	209
Average	1	30	46	95	41	24	37	75	82	47	235	157

August

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

September

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

October

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

November

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

December

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

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

VI.

Micropulsation indices for the year
1981

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

	January	February	March	April
1.	153334335141	145532114224	155223345241	155215533554
2.	124454333111	255523224435	155423244235	155425331224
3.	115534222122	135225334132	152235335412	155433233141
4.	125522224323	124435332121	155425131113	155325415123
5.	113355223522	555321244541	355211225455	145424424221
6.	211425522211	555312155155	555412534244	155434132241
7.	113145514211	255411333312	155332134454	155113524332
8.	114434424311	355421121154	155345122123	155423225242
9.	112324555511	555412232254	155345212222	155444211211
10.	145425415333	115533111112	155421122451	134225524132
11.	135425225335	133533313241	135413122221	155311133555
12.	111135324211	245254135212	155423225234	155311124555
13.	115442325211	114335434114	155413225555	155311135555
14.	115534212221	112235554111	155322124355	155432124344
15.	122345323512	152324454322	345423214255	155425111341
16.	125445223323	155434132323	154445423325	155324224155
17.	115435442522	143535122322	155434224145	155322134155
18.	125424333222	145532314221	155321142325	155424124245
19.	113324425221	155433233335	155335324412	155411345554
20.	114534123111	155422343244	135534222124	155212333554
21.	113443324411	115244223122	154444112221	155213224555
22.	225451235242	155422124522	133454113221	155222344555
23.	125523324325	155434224154	125225334211	155222235255
24.	155334245541	155223335344	135533122321	155442344152
25.	114245344522	155312145522	155211241551	155354324234
26.	113335333122	155333434221		155414122255
27.	113543224221	155421344342	153115553141	155222244555
28.	155443114132	155235124121	455335335123	155435121344
29.	155434232242		155421244444	155452334151
30.	112435334121		155322235543	155333235423
31.	255534215544		155325235251	

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

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

Pc 1 indices 1981

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

0 = no recording