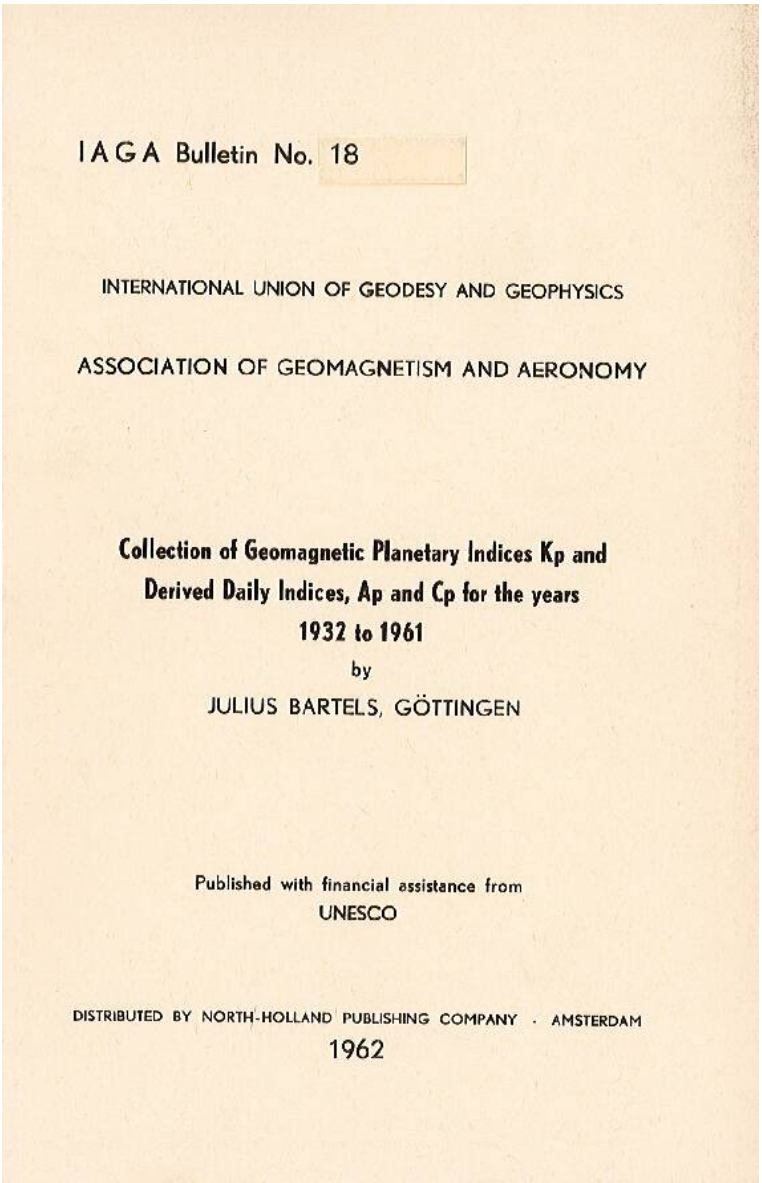

IAGA Bulletin No. 18

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF GEOMAGNETISM AND AERONOMY

Collection of Geomagnetic Planetary Indices Kp and Derived Daily Indices, Ap and Cp for the years 1932 to 1961

by

JULIUS BARTELS, GÖTTINGEN

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UNESCO

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1962

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INTRODUCTION

1. With the completion of a thirty years series of three-hour-range planetary indices, Kp, it was considered appropriate to meet the many demands for a complete re-publication of the tables and diagrams.

2. Definition of Kp: The reader is referred to the References, in particular to three articles that have appeared in the Annals of the International Geophysical Year. For more complete information on the Kp-index and its history, as well as on the use of various geomagnetic measures for the time-variations of solar corpuscular radiation in correlation studies with other geophysical and space phenomena, see References nr. 9 and 10 . We may restrict ourselves here to a short description of the indices tabulated in this volume.

Kp is a measure intended to express the degree of "geomagnetic activity" or disturbance, for the whole planet earth, for intervals of three hours according to Universal Time. It may be used in a coarser scale of 10 steps (0 to 9), or in a finer scale obtained by the affixes - , o , + dividing the nine grades into thirds, so that 2- means 2 minus one third, 2o means 2 exactly, 2+ means 2 plus one third. Thus, Kp is expressed in a scale of 28 steps, ranging from 0o, 0+, 1-, 1o, 1+, 2-, ... to 8-, 8o, 8+, 9-, 9o. This scale has proven to be adequate and well defined; a finer scale (for instance, tenths) would have been too exacting, while the change from one third to the next one means really a noticeable increase of activity, for instance, from 2- to 2o. 0o denotes exceptional quietness, and 9o the most intense storm; both grades occur rarely.

These Kp-indices are given in the tables for each day, the first index for 00 to 03 Universal Time, and the eighth index in each row for 21 - 24 Universal Time. For checking purposes, the sum of the eight indices per day is also given, but readers are warned to use this sum as an index for the whole day; for that purpose, Ap and Cp are better.

3. Definition of Ap: The definition of Kp was chosen so that the whole range of geomagnetic activity from the quietest conditions to the most intense storm could be expressed in a scale that could be expressed by a single digit and an affix, if necessary. This was achieved by a quasi-logarithmic relation between the amplitudes of disturbance in the three-hour interval and the indices K and Kp. In order to obtain a linear scale, Kp should be converted into a three-hourly equivalent planetary amplitude, ap, by means of the following table:

Kp =	0o	0+	1-	1o	1+	2-	2o	2+	3-	3o	3+	4-	4o	4+
ap =	0	2	3	4	5	6	7	9	12	15	18	22	27	32

Kp =	5-	5o	5+	6-	6o	6+	7-	7o	7+	8-	8o	8+	9-	9o
ap =	39	48	56	67	80	94	111	132	154	179	207	236	300	400

At a standard station in about 40° distance from the geomagnetic pole, ap may be conceived as the range of the most disturbed of the three field components expressed in the unit 2 gammas ; in other words, the range in a three-hour interval with Kp = 3+, for instance, is twice 18, or 36 gammas.

Ap is the average of the eight values of ap for a day; it is the daily equivalent

planetary amplitude. It may range between 0 and 400; however, this highest possible value of Ap has never been reached, because even the most intense and prolonged storms have never so far furnished a series of eight consecutive values Kp = 90. The highest value of Ap so far observed was 280 for 1960 November 13.

4. Definition of Cp. An old measure for the activity of a Greenwich day is the international character figure, Ci, ranging from 0.0 (very quiet) to 2.0 (intense storm). The scheme for Ci started in 1906, and the series has been prolonged backwards until 1884. It has been possible to derive, solely from Kp, a quite similar measure, the daily planetary character-figure Cp (between 0.0 and 2.4). It is derived from the daily sum of the eight values ap. The approximate relation is as follows :

Cp =	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Ap =	2	4	5	6	8	9	11	12	14	16	19

Cp =	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
Ap =	22	26	31	37	44	52	63	80	110	160

5. Use of Kp. Since Kp is intended to measure geomagnetic activity for the earth as a whole, it is fit to characterize the variable conditions in the space surrounding the earth, and therefore useful in studies on cosmic rays, or space science, or the effects of solar gas clouds in general. Wherever the local conditions in the ionosphere shall be studied, the local K-indices may be more useful than Kp, except when the study is restricted to a particular time of the day, for instance, in auroral studies. The local K-indices exhibit a systematic diurnal variation, which is not apparent in Kp.

6. Discussion of the whole series. An analysis of the 30 years series of Kp is under way. It was thought, however, better not to wait for the results, but to make the data available for general use.

7. Musical Diagrams. The graphical representation of Kp-indices, arranged in rows of 27 days ("solar rotations"), and known as musical diagrams, shall make the recognition of 27-day recurrence tendencies easier. The small black triangles denote clear storm sudden commencements (ssc); for complete lists of ssc and sudden impulses, we refer to the extensive tables furnished in the Bulletins Nr. 12, of IAGA.

8. Acknowledgments. The series 1932 to 1961 comprises 87664 Kp-indices, as well as 10958 Ap-indices and as many Cp-figures. Nearly a million K-indices are the basis of these data. Our thanks are due to the observatories furnishing the K-indices converted into Kp, namely, in the order of decreasing geomagnetic latitude:
Meanook (Canada), Sitka (Alaska), Lerwick (Shetlands), Eskdalemuir (Scotland), Lovö (Sweden), Rude Skov (Danmark), Wingst (Germany), Witteveen (Netherlands), Hartland (England), Agincourt (Canada), Fredericksburg (Virginia), Amberly (New Zealand).

The author is indebted to the C + K-centre, De Bilt, for compiling the copy from the tables and diagrams published in the Bulletins No. 12 etc. of IATME and IAGA. The work is done under the auspices of the Committee on Characterization of Geomagnetic Disturbances, of the International Association of Geomagnetism and Aeronomy, and of the Permanent Service of Geomagnetic Indices, in the Federation of Astronomical and Geopgysical Services under the International Council of Scientific Unions.

REFERENCES

List of selected papers (by the author, unless otherwise mentioned).

1. 1938: Potsdamer erdmagnetische Kennziffern. Ztschr. f. Geophysik 14, 68-78. This paper introduces the three-hour-range K-index for Potsdam-Niemegk. A series of 14 communications followed; a few of them contain summaries and discussions: Ztschr. f. Geophysik 15, 214-221 (1939); 16, 185-194 (1940); 17, 317-327 (1941/42) deals with the international adoption of the K-index.

2. 1939: International Union of Geodesy and Geophysics. Association of Terrestrial Magnetism and Electricity. Transactions of Washington Meeting, 1939. Edited by A. H. R. Goldie and J. W. Joyce, Edinburgh 1940. Gives, on pp. 27 to 29 and p. 550, the discussion leading to the international introduction of the K-index.

3. 1939 (with N. H. Heck and H. F. Johnston): The three-hour-range index measuring geomagnetic activity. Terrestrial Magnetism 44, 411-454. The present value of that paper consists mainly in the collection of typical magnetograms from seven widely distributed observatories. Some of the parameters introduced in that paper have later been improved upon: Km has been replaced by Kp, and the daily index B has been replaced by Cp and Ap.

4. 1940 (with N. H. Heck and H. F. Johnston): Geomagnetic three-hour-range indices for the years 1938 and 1939. Terrestrial Magnetism 45, 309-337. Discusses local features in K, especially at Huancayo, with its extreme variability in the quiet diurnal variation (Sq + L). The parameters Kr and Kw have later been replaced by Ks and Kp.

5. The International Publications on K-indices are the International Association of Terrestrial Magnetism and Electricity (IATME), since 1954 International Association of Geomagnetism and Aeronomy (IAGA), Bulletins Nos. 12, 12a, ... 12m, distributed by the North-Holland Publishing Company, Amsterdam. They deal with the Years 1940-1946 (No. 12), 1947 (No. 12a), 1948 (No. 12b), 1949 (No. 12c), 1932-33 (No. 12d), 1950 to 1958 (Nos 12e to 12m, respectively). The years 1937 to 1939 are treated in No. 12g, the years 1932 to 1936 in No. 12 l. Complete references to former tables are always given at the end of the recent numbers of the Bulletin.

The Bulletins contain the following papers:

6. 1948: The standardized index, Ks, and the planetary index, Kp. IATME Bulletin No. 12b, pp. 97-120. Since that number 12b is out of print, the article has been reproduced in IAGA Bulletin No. 12 i, for 1954, pp. 88-116. - Definition of Kp.

7. An attempt to standardize the daily international magnetic character-figures (Bull. No. 12e, for 1950, pp. 109-137). This paper introduces Cp.

8. 1960. P. N. Mayaud: Scaling of K-indices for very quiet intervals. (IAGA Bulletin No. 12 l, pp. 269-281).

9. 1961. Geomagnetic activity in the International Geophysical Year, discussed against

the background of previous years. Annals of the Intern. Geoph. Year 11, 48-58. Discusses the ranking of longer intervals, such as months and years, according to frequencies of Kp-indices or to average Ap-values. Monthly averages of Ap range between 6 (July 1944, November 1944, June 1954) or 7 (January 1962!) and 49 (September 1957); annual Ap-averages-range between 10 (1945) and 22 (1951).

10. 1957. The technique of scaling indices K and Q of geomagnetic activity. The geomagnetic measures for the time-variations of solar corpuscular radiation, described for use in correlation studies in other geophysical fields. Annals of the International Geophysical Year 4, 227-236.

11. Current monthly tables and graphs for Kp are mailed from Geophysikalisches Institut, Herzberger Landstr. 180, 34 Göttingen, Germany, about three weeks after the end of each month to a wide circle of interested research workers. Requests should be directed there. - Quarterly tables are distributed by the C + K-Centre, Meteorological Institute, De Bilt (Netherlands), through the Permanent Service of Geomagnetic Indices (Director: J. Veldkamp). Monthly tables of Kp appear also, with a delay of 4 months, in the Journal of Geophysical Research; furthermore, they are published by the National Bureau of Standards, Central Radio Propagation Laboratory, Boulder, Colorado, in their CRPL F-series, Parts B.

Herzberger Landstr. 180
34 Göttingen, Germany
22 April 1962

Julius Bartels,
Chairman,
IAGA Committee Nr. 9

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1932				ap				Sum	Ap	Cp
1	3+3-2+3-	3+3-3+3+	24-	18	12	9	12	18	12	18	18	117	15	0.8
2	4-4-3+4-	3+5-3o5o	30+	22	22	18	22	18	39	15	48	204	26	1.2
3	3+3+3o1o	2+2-3-2o	19+	18	18	15	4	9	6	12	7	89	11	0.6
4	2o0+1o0o	1o1+1+1o	8o	7	2	4	0	4	5	5	4	31	4	0.1
5	0o0o0+1-	0+1+1+2o	6o	0	0	2	3	2	5	5	7	24	3	0.1
6	1+1-0+1o	1+2-1+2-	9+	5	3	2	4	5	6	5	6	36	4	0.2
7	0o1o1+0+	0+1o4o4+	12+	0	4	5	2	2	4	27	32	76	10	0.5
8	1o3+4o4-	3+3o3-5-	26-	4	18	27	22	18	15	12	39	155	19	1.0
9	3o3+3-4-	3+3+3+4-	26+	15	18	12	22	18	18	18	22	143	18	1.0
10	3+2+2o4-	3+4-3o2-	23o	18	9	7	22	18	22	15	6	117	15	0.8
11	3-3+3+3-	3o3o4+3+	26-	12	18	18	12	15	15	32	18	140	18	1.0
12	4o3-3+3o	4-4o2+3o	26o	27	12	18	15	22	27	9	15	145	18	1.0
13	3+2-3-2o	1+2-1-3-	16o	18	6	12	7	5	6	3	12	69	9	0.5
14	4-3-1-2-	2o2o1o3+	17o	22	12	3	6	7	7	4	18	79	10	0.6
15	1+2o4+3+	1o1o3-1+	17o	5	7	32	18	4	4	12	5	87	11	0.6
16	0+2o2-1+	2-3o3-3-	15+	2	7	6	5	6	15	12	12	65	8	0.4
17	2+1o2o0+	1-2+1o1o	11-	9	4	7	2	3	9	4	4	42	5	0.2
18	0o1o1-1-	0+0+1o0o	4o	0	4	3	3	2	2	4	0	18	2	0.0
19	0o0+0o0+	0+0o1o1o	3o	0	2	0	2	2	0	4	4	14	2	0.0
20	1o0+0+1-	1-1+0+1-	5+	4	2	2	3	3	5	2	3	24	3	0.1
21	0o1-0+0+	1-0+1o1-	4o	0	3	2	2	3	2	4	3	19	2	0.0
22	0+1-1-0+	0+0+0o0+	3o	2	3	3	2	2	2	0	2	16	2	0.0
23	1+0o0o1-	1-0+1o1+	5+	5	0	0	3	3	2	4	5	22	3	0.0
24	1-0+2-1+	2-2+2o3+	13+	3	2	6	5	6	9	7	18	56	7	0.4
25	3-4-3-4-	3o4+4+2+	27-	12	22	12	22	15	32	32	9	156	20	1.0
26	2+3o3o3+	2-3-3o5-	24-	9	15	15	18	6	12	15	39	129	16	0.9
27	5o3-3o3-	4-5o4-4-	29+	48	12	15	12	22	48	22	22	201	25	1.2
28	4+3o4-2o	5+3+4+4-	30-	32	15	22	7	56	18	32	22	204	26	1.2
29	4-3-2o2o	2-1-2-2+	17-	22	12	7	7	6	3	6	9	72	9	0.5
30	2-2+1+2o	2o1+1o3o	15-	6	9	5	7	7	5	4	15	58	7	0.4
31	3-3+3o4o	2-4-0+1+	20o	12	18	15	27	6	22	2	5	107	13	0.8

	Kp	Sum	Feb. 1932				ap				Sum	Ap	Cp
1	2+1o0o1-	1-0o1-2-	7o	9	4	0	3	3	0	3	6	28	4	0.1
2	2o1-1-1-	0+0o1+1o	7-	7	3	3	3	2	0	5	4	27	3	0.1
3	1+3+3o4+	4+4+4+5+	30+	5	18	15	32	32	32	32	56	222	28	1.2
4	6-3+4o4+	4+4+4+3-	33o	67	18	27	32	32	32	32	12	252	32	1.3
5	3o3+4o3-	2o3o3o3+	24+	15	18	27	12	7	15	15	18	127	16	0.9
6	3o2+3o3o	3+3o3-3+	24-	15	9	15	15	18	15	12	18	117	15	0.8
7	3-3-2+2+	2-2o3+3+	20+	12	12	9	9	6	7	18	18	91	11	0.7
8	3+2o2o3+	3+4o3+2o	23+	18	7	7	18	18	27	18	7	120	15	0.8
9	3-1-2+3o	3o2+3-3+	20o	12	3	9	15	15	9	12	18	93	12	0.7
10	3o3-4o3o	3-5-4-3+	27o	15	12	27	15	12	39	22	18	160	20	1.0
11	3+2+2-2o	3-5-4-4-	24o	18	9	6	7	12	39	22	22	135	17	0.9
12	3+4o3o3o	3-3+2+4o	26-	18	27	15	15	12	18	9	27	141	18	1.0
13	3+3-2+3o	3o3o2+2+	22o	18	12	9	15	15	15	9	9	102	13	0.7
14	3o3o1-3o	3-2o2o3-	19o	15	15	3	15	12	7	7	12	86	11	0.6
15	3o3-1o1+	1+1o2-1+	13+	15	12	4	5	5	4	6	5	56	7	0.4
16	2-0+0+0+	0+0o0+1-	4o	6	2	2	2	2	0	2	3	19	2	0.0
17	0o1-0o0+	0o0+0o1o	2+	0	3	0	2	0	2	0	4	11	1	0.0
18	0o0o1-1-	0+1-2-2o	6o	0	0	3	3	2	3	6	7	24	3	0.1
19	3-4-3-2o	1+1+2o1+	17o	12	22	12	7	5	5	7	5	75	9	0.5
20	2+4o5-4+	3o3+3o1+	26o	9	27	39	32	15	18	15	5	160	20	1.0
21	1-1-1+3-	3o2o1o1-	12o	3	3	5	12	15	7	4	3	52	6	0.3
22	2-2o4-4-	4+4-3-3-	28+	6	7	22	22	32	22	12	12	135	17	0.9
23	4-2-1o1-	1-2+5+3o	18+	22	6	4	3	3	9	56	15	118	15	0.8
24	3-3-3o4o	3+3-3-2+	23+	12	12	15	27	18	12	12	9	117	15	0.8
25	3+4+3-2o	2+3-3o2o	22+	18	32	12	7	9	12	15	7	112	14	0.8
26	3-2o1o1+	2-2-1o1+	13-	12	7	4	5	6	6	4	5	49	6	0.3
27	1o1o0+1-	0+1-1+0o	5+	4	4	2	3	2	3	5	0	23	3	0.1
28	0o1-1-1o	0+0+0o0o	3o	0	3	3	4	2	2	0	0	14	2	0.0
29	1-1-0+0+	0+0+0+1o	4o	3	3	2	2	2	2	2	4	20	2	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	March 1932				ap				Sum	Ap	Cp
1	1-0+1o1- 1-0o0+1o	5-	3	2	4	3	3	0	2	4	21	3	0.0
2	1+1+1+1+ 2+4-4o5+	21-	5	5	5	5	9	22	27	56	134	17	0.9
3	4o4o4o4o 4+3-4-4o	31-	27	27	27	27	32	12	22	27	201	25	1.2
4	4+4+4-4o 4-3-4o4+	31o	32	32	22	27	22	12	27	32	206	26	1.2
5	5-4-4o3+ 2+4-4o5+	31o	39	22	27	18	9	22	27	56	220	28	1.2
6	4+3+3o4o 3+3+4o3+	29-	32	18	15	27	18	18	27	18	173	22	1.1
7	2+2o2+3o 2+4-3o5o	24-	9	7	9	15	9	22	15	48	134	17	0.9
8	6-5-3o3o 1+3+4-4o	29-	67	39	15	15	5	18	22	27	208	26	1.2
9	4o4o3-2+ 4-4o5o5+	31o	27	27	12	9	22	27	48	56	228	28	1.2
10	5-4o3-4+ 3+5-6o5-	34+	39	27	12	32	18	39	80	39	286	36	1.4
11	6o4+4o3- 2+3-3+3+	29-	80	32	27	12	9	12	18	18	208	26	1.2
12	2+3-2-2+ 3-2-2o1o	16+	9	12	6	9	12	6	7	4	65	8	0.4
13	2-3-1o1o 1o1+2o2o	13-	6	12	4	4	4	5	7	7	49	6	0.3
14	2-3-2o3- 2+2+2o2+	18o	6	12	7	12	9	9	7	9	71	9	0.5
15	2-2o1o1+ 2o1+1-1o	11o	6	7	4	5	7	5	3	4	41	5	0.2
16	0+1o1-1- 1-1o3o1o	8+	2	4	3	3	3	4	15	4	38	5	0.2
17	0+1-0+1- 0+0+2+2-	7-	2	3	2	3	2	2	9	6	29	4	0.1
18	3+3o3o3+ 3+4-5+2+	27+	18	15	15	18	18	22	56	9	171	21	1.1
19	3-3+2-1+ 1+1+2o2-	15+	12	18	6	5	5	5	7	6	64	8	0.4
20	1-1+1o1+ 3-3o3-2+	15o	3	5	4	5	12	15	12	9	65	8	0.4
21	4o4+3+3- 3+3o4+5-	30-	27	32	18	12	18	15	32	39	193	24	1.2
22	4o5-4-4+ 4+4-4-3+	32-	27	39	22	32	32	22	22	18	214	27	1.2
23	4+3o2o2o 2o2+2-2+	20-	32	15	7	7	7	9	6	9	92	12	0.7
24	3+2+2-2- 2+1+1o3-	16+	18	9	6	6	9	5	4	12	69	9	0.5
25	3o1+1-0+ 0+0+1o1o	8o	15	5	3	2	2	2	4	4	37	5	0.2
26	0+0+0+0+ 0+1o1-0+	4-	2	2	2	2	2	4	3	2	19	2	0.0
27	0+0+0o0+ 0+1o3-1+	6+	2	2	0	2	2	4	12	5	29	4	0.1
28	4o4-2+3+ 4-6-7-4o	33+	27	22	9	18	22	67	111	27	303	38	1.4
29	5-5-4-4- 5-5o5o4-	35o	39	39	22	22	39	48	48	22	279	35	1.4
30	4o5o5-3+ 4o5+6-6-	38-	27	48	39	18	27	56	67	67	349	44	1.5
31	6-5o5+5- 4o4+5-3o	37-	67	48	56	39	27	32	39	15	323	40	1.5

	Kp	Sum	April 1932				ap				Sum	Ap	Cp
1	4-4o3o3- 2+4+3o5-	28-	22	27	15	12	9	32	15	39	171	21	1.1
2	6-5o4o4- 4-4-5-5-	35o	67	48	27	22	22	22	39	39	286	36	1.4
3	3+4o2o3o 3o3o5o4+	28-	18	27	7	15	15	15	48	32	177	22	1.1
4	4-4-3o3o 4-3o3o5o	20o	22	22	15	15	22	15	15	48	174	22	1.1
5	4o5o4+3- 3+3+3-4-	29o	27	48	32	12	18	18	12	22	189	24	1.1
6	3+4o3o2o 2o3+3+4-	25-	18	27	15	7	7	18	18	22	132	16	0.9
7	5+4o4+5o 5+3o3+5o	35+	56	27	32	48	56	15	18	48	300	38	1.4
8	5o4-3o3o 3+4-3+2o	27o	48	22	15	15	18	22	18	7	165	21	1.1
9	3+3+2+3o 3-3o3+2+	23+	18	18	9	15	12	15	18	9	114	14	0.8
10	3+3o2+3- 2o1+3o2o	20-	18	15	9	12	7	5	15	7	88	11	0.6
11	2o2o1o0+ 1-1-2o2+	11o	7	7	4	2	3	3	7	9	42	5	0.2
12	3o3-1-1- 1o1+1+1-	11+	15	12	3	3	4	5	5	3	50	6	0.3
13	0+1o1o1o 2-5+5+5+	21o	2	4	4	4	6	56	56	56	188	24	1.1
14	4-5-4-3- 3-3+3o1o	25-	22	39	22	12	12	18	15	4	144	18	1.0
15	4-4o3+3o 3-1+3+2o	23+	22	27	18	15	12	5	18	7	124	16	0.9
16	2-3-2-3o 3-3+1o3-	19-	6	12	6	15	12	18	4	12	85	11	0.6
17	3+1+4-3o 2+3o2o3o	22-	18	5	22	15	9	15	7	15	106	13	0.8
18	4+4o4-3+ 3+4+4o4o	31o	32	27	22	18	18	32	27	27	203	25	1.2
19	3o1-0+0+ 1o1+2o2-	10+	15	3	2	2	4	5	7	6	44	6	0.2
20	1o1o2-1+ 1-0+0+0+	7-	4	4	6	5	3	2	2	2	28	4	0.1
21	0o1-1o1- 1-1-1-0o	4+	0	3	4	3	3	3	3	0	19	2	0.0
22	0o2-2o4- 4-4o2-3o	20-	0	6	7	22	22	27	6	15	105	13	0.8
23	3-3+3+5o 5-4o3+4+	31-	12	18	18	48	39	27	18	32	212	26	1.2
24	4o4o3+5- 3-4-4o5-	31o	27	27	18	39	12	22	27	39	211	26	1.2
25	5-3-4o3+ 3-4o4o4o	29+	39	12	27	18	12	27	27	27	189	24	1.1
26	5-5-4-4- 3o4o4+4o	32o	39	39	22	22	15	27	32	27	223	28	1.2
27	4o4-3+4- 2+2+3+4-	26+	27	22	18	22	9	9	18	22	147	18	1.0
28	3+3+3+2- 3-3o3-3o	23o	18	18	18	6	12	15	12	15	114	14	0.8
29	3-3-2+2o 1+2o3-2+	18o	12	12	9	7	5	7	12	9	73	9	0.5
30	1o3-2o2- 1-2-1o1-	11+	4	12	7	6	3	6	4	3	45	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1932				ap				Sum	Ap	Cp
1	2o2o2-2- 1-1+2-3o	14o	7	7	6	6	3	5	6	15	55	7	0.3
2	3+2-1+2- 3-1+3+5+	21-	18	6	5	6	12	5	18	56	126	16	0.9
3	5-4-4-3+ 2o2o2o2o	23+	39	22	22	18	7	7	7	7	129	16	0.9
4	4-1+2+2o 2o4o5-4+	24+	22	5	9	7	7	27	39	32	148	18	1.0
5	4+2+3-2- 3o4-3o3+	24o	32	9	12	6	15	22	15	18	129	16	0.9
6	3+3+4-3+ 2+2o3-3o	24-	18	18	22	18	9	7	12	15	119	15	0.8
7	2+3+2-1o 0+0+2-1+	12o	9	18	6	4	2	2	6	5	52	6	0.3
8	2-1-1-1- 1-1o2-1+	8+	6	3	3	3	3	4	6	5	33	4	0.1
9	1-0+1-0+ 1-0+1-0+	4o	3	2	3	2	3	2	3	2	20	2	0.0
10	3-1o1+1o 3o1o2+3-	45o	12	4	5	4	15	4	9	12	65	8	0.4
11	3+3o2+3- 3+4-3+2o	24-	18	15	9	12	18	22	18	7	119	15	0.8
12	3-3-3-2- 2+2-2-1+	17-	12	12	12	6	9	6	6	5	68	8	0.5
13	2o3+3-2o 2o2+4-3-	21-	7	18	12	7	7	9	22	12	94	12	0.7
14	3+4-3o2+ 2+3o2-3-	22o	18	22	15	9	9	15	6	12	106	13	0.8
15	3+3-3o3+ 4-3o3+2o	24+	18	12	15	18	22	15	18	7	125	16	0.9
16	2o4o5o3- 3+3o2o2+	24+	7	27	48	12	18	15	7	9	143	18	1.0
17	2+2o2+3o 1o1-1+1+	14o	9	7	9	15	4	3	5	5	57	7	0.4
18	1-2o0+1o 2-1o1o1o	9-	3	7	2	4	6	4	4	4	34	4	0.1
19	1+1o2-1+ 1o0+0+0+	7+	5	4	6	5	4	2	2	2	30	4	0.1
20	0+1-1-1- 1-1-0+1-	5-	2	3	3	3	3	3	2	3	22	3	0.1
21	2-2-3+4- 3+1+2-1+	18o	6	6	18	22	18	5	6	5	86	11	0.6
22	2+1+2o2+ 3o2+1+0+	15o	9	5	7	9	15	9	5	2	61	8	0.4
23	0o0+1-1+ 3o3-3o4+	15+	0	2	3	5	15	12	15	32	84	10	0.6
24	1+3o2-3o 3-1o2-3+	18-	5	15	6	15	12	4	6	18	81	10	0.6
25	4+4+4o2o 2-3o2+3-	24+	32	32	27	7	6	15	9	12	140	18	1.0
26	3o2+3-1+ 2o2o3-3-	19-	15	9	12	5	7	7	12	12	79	10	0.6
27	2o2+2o2o 2-3-2-3+	18-	7	9	7	7	6	12	6	18	72	9	0.5
28	3+4-1o2- 2o2o5-4-	22o	18	22	4	6	7	7	39	22	125	16	0.9
29	2+3o3-4+ 7-7o7-8-	40+	9	15	12	32	111	132	111	179	601	75	1.8
30	7o8o6+3o 3-4-4+3o	38o	132	207	94	15	12	22	32	15	529	66	1.7
31	3-3o2+1o 1+3-3+3o	19+	12	15	9	4	5	12	18	15	90	11	0.6

	Kp	Sum	June 1932				ap				Sum	Ap	Cp
1	2-1-1-1o 1-1-0+2-	7+	6	3	3	4	3	3	2	6	30	4	0.1
2	1o2+1+1- 1-1-2-1+	10-	4	9	5	3	3	3	6	5	38	5	0.2
3	1+1-1o0+ 0+1-1-1-	6-	5	3	4	2	2	3	3	3	25	3	0.1
4	0+1-0+1- 1-0+1-0+	4o	2	3	2	3	3	2	3	2	20	2	0.0
5	1o1o1+1+ 1o1o1o0+	8o	4	4	5	5	4	4	4	2	32	4	0.1
6	0+0+1+1+ 1+2o1+1+	9+	2	2	5	5	5	7	5	5	36	4	0.2
7	1o1+2+3- 2o3+2-3-	17o	4	5	9	12	7	18	6	12	73	9	0.5
8	3+2o3o3+ 4+4o4o4+	28+	18	7	15	18	32	27	27	32	176	22	1.1
9	4+3+3-2+ 3+2o3-3-	23+	32	18	12	9	18	7	12	12	120	15	0.8
10	3o4+3+3+ 3+3-3-4-	26+	15	32	18	18	18	12	12	22	147	18	1.0
11	3o3-1+3+ 3o3o1o2+	20-	15	12	5	18	15	15	4	9	93	12	0.7
12	2o1+2o1o 2-2o2o1+	13+	7	5	7	4	6	7	7	5	48	6	0.3
13	2+2o2-2+ 2o1+1+1+	14+	9	7	6	9	7	5	5	5	53	7	0.3
14	1-1o2-1o 1-1o2-1o	9-	3	4	6	4	3	4	6	4	34	4	0.1
15	0o1-0+0+ 0+0+0+1o	3+	0	3	2	2	2	2	2	4	17	2	0.0
16	1-0+1+1- 1-1o0+1+	6+	3	2	5	3	3	4	2	5	27	3	0.1
17	1-1o1-2- 1o1o1-1o	8-	3	4	3	6	4	4	3	4	31	4	0.1
18	1o1o1+1- 1+1-0o1o	7o	4	4	5	3	5	3	0	4	28	4	0.1
19	1o1-0+1+ 1-1o2+3+	11-	4	3	2	5	3	4	9	18	48	6	0.3
20	2+2-1o3- 3o4o4-1+	20-	9	6	4	12	15	27	22	5	100	12	0.7
21	2-1o1-1- 1o1+2o3o	11+	6	4	3	3	4	5	7	15	47	6	0.3
22	2o4-3o2+ 2o3-3-1o	19+	7	22	15	9	7	12	12	4	88	11	0.6
23	2+2o3-1+ 1+1-1-1o	12o	9	7	12	5	5	3	3	4	48	6	0.3
24	1o0+0+1- 1-1-3-1-	7o	4	2	2	3	3	3	12	3	32	4	0.1
25	1-0+0+0+ 2-2o2-1o	8o	3	2	2	2	6	7	6	4	32	4	0.1
26	2-1+3-3o 2+1+2o1o	15+	6	5	12	15	9	5	7	4	63	8	0.4
27	1+1-1o1- 1o1o1o1-	7+	5	3	4	3	4	4	4	3	30	4	0.1
28	1o1-0+0+ 0+1o1o0+	5o	4	3	2	2	2	4	4	2	23	3	0.1
29	0+0+1+1- 1o1o0+1+	6+	2	2	5	3	4	4	2	5	27	3	0.1
30	1-0o0+0+ 1+2-1o1-	6o	3	0	2	2	5	6	4	3	25	3	0.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1932				ap				Sum	Ap	Cp
1	1-1-0+0+ 1-1-2o1-	6o	3	3	2	2	3	3	7	3	26	3	0.1
2	1-1o1+1o 0+1o0+0o	6-	3	4	5	4	2	4	2	0	24	3	0.1
3	1-1-1o1- 1-0+0+0+	5-	3	3	4	3	3	2	2	2	22	3	0.0
4	1-2-1o1- 3+3-2+2o	14+	3	6	4	3	18	12	9	7	62	8	0.4
5	2+2-1o1o 2-3-4+4o	19-	9	6	4	4	6	12	32	27	100	12	0.7
6	2+4o5o5- 5-3-2o3+	29-	9	27	48	39	39	12	7	18	199	25	1.2
7	3o4o3+3+ 2o2o2o2o	22-	15	27	18	18	7	7	7	7	106	13	0.8
8	3-2o2o3+ 2+3+2+3o	21o	12	7	7	18	9	18	9	15	95	12	0.7
9	2+2-2o3o 2+3-2+3-	19o	9	6	7	15	9	12	9	12	79	10	0.6
10	3o3+2+3- 1+2+2o2+	19+	15	18	9	12	5	9	7	9	84	10	0.6
11	1-1o1-1+ 1+1o1-1o	8-	3	4	3	5	5	4	3	4	31	4	0.1
12	1o2-2-3o 1+1-3-1-	13-	4	6	6	15	5	3	12	3	54	7	0.3
13	1-2-1o0+ 0+0+0o0o	4+	3	6	4	2	2	2	0	0	19	2	0.0
14	0+1-1-1- 1+1-1-1-	6-	2	3	3	3	5	3	3	3	25	3	0.1
15	0+0+1-1- 1-1-0+2-	5+	2	2	3	3	3	3	2	6	24	3	0.1
16	1o2-5-3- 6-2+3-3+	24o	4	6	39	12	67	9	12	18	167	21	1.1
17	3o3o2-2- 2o1-0+1+	14-	15	15	6	6	7	3	2	5	59	7	0.4
18	1-1+1+1- 1o2+2+1-	10+	3	5	5	3	4	9	9	3	41	5	0.2
19	1-1+1+1o 1+2-2o3o	12+	3	5	5	4	5	6	7	15	50	6	0.3
20	1+1o1-1- 1-1-1-2-	7+	5	4	3	3	3	3	3	6	30	4	0.1
21	1+1-1-1+ 2-1o2-2+	11-	5	3	3	5	6	4	6	9	41	5	0.2
22	1+0+1o1- 0+0+3-2+	9o	5	2	4	3	2	2	12	9	39	5	0.2
23	1-1+1+1- 1o1o0+0o	6+	3	5	5	3	4	4	2	0	26	3	0.1
24	0o0+1o0+ 1-1+3-1+	8-	0	2	4	2	3	5	12	5	33	4	0.1
25	1o1-1-0o 1-0+1o1+	6-	4	3	3	0	3	2	4	5	24	3	0.1
26	3-3-2+2- 1-2-1o1o	14-	12	12	9	6	3	6	4	4	56	7	0.4
27	0+1o2o1+ 2-1o0+1+	9o	2	4	7	5	6	4	2	5	35	4	0.2
28	1-1o1o1- 1o0+0+0+	5+	3	4	4	3	4	2	2	2	24	3	0.1
29	1-0o0+1- 1-0+0+0+	3+	3	0	2	3	3	2	2	2	17	2	0.0
30	0+1o1-1- 1+1+2o3-	10o	2	4	3	3	5	5	7	12	41	5	0.2
31	2o2o3-2+ 2-3o2-1+	17-	7	7	12	9	6	15	6	5	67	8	0.5

	Kp	Sum	Aug. 1932				ap				Sum	Ap	Cp
1	2o2-2o2- 2o3o3o3+	19-	7	6	7	6	7	15	15	18	81	10	0.6
2	5-3o3+3- 3o4+4+5-	30o	39	15	18	12	15	32	32	39	202	25	1.2
3	3+2+5-3+ 4-3o4o5-	29o	18	9	39	18	22	15	27	39	187	23	1.1
4	4o3+4-3+ 3-3-1+0o	21o	27	18	22	18	12	12	5	0	114	14	0.8
5	0+3o3o5+ 2o1o3-2+	20-	2	15	15	56	7	4	12	9	120	15	0.8
6	2o2-0+1- 2-1+1+2o	11o	7	6	2	3	6	5	5	7	41	5	0.2
7	1o0+1-0+ 1+1-1o1+	7-	4	2	3	2	5	3	4	5	28	4	0.1
8	2-1+1o1- 1+1-1o0+	8o	6	5	4	3	5	3	4	2	32	4	0.1
9	0+2+3+3o 1-1-0+1o	12-	2	9	18	15	3	3	2	4	56	7	0.4
10	1-0+1o0+ 1-0o0+0o	3+	3	2	4	2	3	0	2	0	16	2	0.0
11	0+1-1-1- 1-1-1-2+	7-	2	3	3	3	3	3	3	9	29	4	0.1
12	3-4o1+2- 2+3+1+2+	19o	12	27	5	6	9	18	5	9	91	11	0.7
13	3-2+4+1+ 2o2o3-3-	20o	12	9	32	5	7	7	12	12	96	12	0.7
14	1o1-3-2o 1+1o1o1+	11o	4	3	12	7	5	4	4	5	44	6	0.2
15	0+1o1-1o 1+1+1o1+	8o	2	4	3	4	5	5	4	5	32	4	0.1
16	1+0+0+1- 1-1-1-0+	5o	5	2	2	3	3	3	3	2	23	3	0.1
17	0+1-1-1o 1-0+1o1+	6o	2	3	3	4	3	2	4	5	26	3	0.1
18	1o1+1-1- 1-0+2-1o	7+	4	5	3	3	3	2	6	4	30	4	0.1
19	0+0+0+0+ 2-0+1-0+	4+	2	2	2	2	6	2	3	2	21	3	0.0
20	0o0+0+1- 1-0+1-1o	4o	0	2	2	3	3	2	3	4	19	2	0.0
21	3-3-3+1+ 3-2+2o2+	19+	12	12	18	5	12	9	7	9	84	10	0.6
22	2+1-2o3o 3o3o3+1+	19-	9	3	7	15	15	15	18	5	87	11	0.6
23	1-2+2o3+ 3-3o1-1o	16-	3	9	7	18	12	15	3	4	71	9	0.5
24	1o0o1-1- 0o0+1-2-	5o	4	0	3	3	0	2	3	6	21	3	0.0
25	1-2-2+1o 1+1o1o2-	11-	3	6	9	4	5	4	4	6	41	5	0.2
26	1+1-1o1- 1+1-1-2o	8+	5	3	4	3	5	3	3	7	33	4	0.1
27	1+3-4+4o 5-5-5-5+	32-	5	12	32	27	39	39	39	56	249	31	1.3
28	7o6+6-5+ 4-5-4+4+	41+	132	94	67	56	22	39	32	32	474	59	1.7
29	4o4o4+4+ 4+4o5+5-	35o	27	27	32	32	32	27	56	39	272	34	1.3
30	4-4-4-4- 4-5-4o4-	31-	22	22	22	22	22	39	27	22	198	25	1.2
31	3o3-3+2+ 2o2-2o2o	19o	15	12	18	9	7	6	7	7	81	10	0.6

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1932				ap				Sum	Ap	Cp
1	3o3-2+2o 3-3o1+3-	20-	15	12	9	7	12	15	5	12	87	11	0.6
2	3o3-2o1+ 2+2o1-2-	16-	15	12	7	5	9	7	3	6	64	8	0.4
3	1-1o1-1- 1o2-2-2-	9o	3	4	3	3	4	6	6	6	35	4	0.2
4	1-1+1o1- 1-1o2o3-	10o	3	5	4	3	3	4	7	12	41	5	0.2
5	1+1-1-1+ 2o4-1o2-	12+	5	3	3	5	7	22	4	6	55	7	0.3
6	2o3o4+4- 6-5o3+4-	31-	7	15	32	22	67	48	18	22	231	29	1.3
7	1-1o1o2+ 1o1-2-3+	12-	3	4	4	9	4	3	6	18	51	6	0.3
8	4o5o3o1+ 1o3-4o3o	24o	27	48	15	5	4	12	27	15	153	19	1.0
9	4+4o2o2o 1+2+2+2+	21-	32	27	7	7	5	9	9	9	105	13	0.8
10	1+1+0+1- 1o1-1o2-	8o	5	5	2	3	4	3	4	6	32	4	0.1
11	2-1+1o1o 1+1-0+1+	9-	6	5	4	4	5	3	2	5	34	4	0.1
12	0+0+1-0+ 1-0+1-2+	6-	2	2	3	2	3	2	3	9	26	3	0.1
13	0+2o1+1o 1o1+1-1+	9o	2	7	5	4	4	5	3	5	35	4	0.2
14	1o2+2o1o 1o2o2-1+	12+	4	9	7	4	4	7	6	5	46	6	0.3
15	1o1o2-1o 1+1-1-2-	9o	4	4	6	4	5	3	3	6	35	4	0.2
16	1-1-1-1+ 1o1-1-0+	6o	3	3	3	5	4	3	3	2	26	3	0.1
17	0o1o1o1- 1o1-1o2-	7o	0	4	4	3	4	3	4	6	28	4	0.1
18	2o1o2o2o 2o4-2-4+	19-	7	4	7	7	7	22	6	32	92	12	0.7
19	4o2+3o4o 3-4-2o3+	25o	27	9	15	27	12	22	7	18	137	17	0.9
20	4o3+4+2+ 2+2+2-2+	23-	27	18	32	9	9	9	6	9	119	15	0.8
21	3-3+3o1+ 1-1-1+2-	15-	12	18	15	5	3	3	5	6	67	8	0.5
22	2o4-2o4- 2+3+3-3+	23o	7	22	7	22	9	18	12	18	115	14	0.8
23	3-3o4-4o 3+5-5+4-	30+	12	15	22	27	18	39	56	22	211	26	1.2
24	4o5-4o4o 4+5+5o4+	36-	27	39	27	27	32	56	48	32	288	36	1.4
25	5-5o5-4o 5+6-4+5-	38+	39	48	39	27	56	67	32	39	347	43	1.5
26	4o4o4o3+ 1+1+3+3+	25-	27	27	27	18	5	5	18	18	145	18	1.0
27	4+3-2+3- 3o3+3-1+	22+	32	12	9	12	15	18	12	5	115	14	0.8
28	1+2o2-2o 2o2-1o1-	12+	5	7	6	7	7	6	4	3	45	6	0.3
29	4o1+1-2+ 2o1o2+2-	15+	27	5	3	9	7	4	9	6	70	9	0.5
30	3-2o3o2o 2o3-1-3+	18+	12	7	15	7	7	12	3	18	81	10	0.6

	Kp	Sum	Oct. 1932				ap				Sum	Ap	Cp
1	3o1+2-1+ 2-1o1-2-	12+	15	5	6	5	6	4	3	6	50	6	0.3
2	1+1o2-3o 4o2o2o2o	17o	5	4	6	15	27	7	7	7	78	10	0.5
3	3+2o3-2o 3o1+0+2-	16+	18	7	12	7	15	5	2	6	72	9	0.5
4	2o2-1+1+ 2o3-1+1+	14-	7	6	5	5	7	12	5	5	52	6	0.3
5	3-2o1o1+ 1+1o2-2o	13o	12	7	4	5	5	4	6	7	50	6	0.3
6	2o1-0+0o 1-0+2-1+	7o	7	3	2	0	3	2	6	5	28	4	0.1
7	3o0+0+0+ 1-1-0+1-	6+	15	2	2	2	3	3	2	3	32	4	0.1
8	1o1+0+0+ 1-1-3-2-	9-	4	5	2	2	3	3	12	6	37	5	0.2
9	2o1+1-1+ 2o4-2+3o	16+	7	5	3	5	7	22	9	15	73	9	0.5
10	3-3+2o1+ 2o4o3o2-	20o	12	18	7	5	7	27	15	6	97	12	0.7
11	2o2o1+1+ 1-1-2+3-	13o	7	7	5	5	3	3	9	12	51	6	0.3
12	3-2-1-1- 1-1o2o2-	11o	12	6	3	3	3	4	7	6	44	6	0.2
13	1+0o1o2- 2o1o1o1-	9-	5	0	4	6	7	4	4	3	33	4	0.1
14	0o0o0o0o 1-1+1-2-	4+	0	0	0	0	3	5	3	6	17	2	0.0
15	2o4o4+5- 5o5+3+4o	33-	7	27	32	39	48	56	18	27	254	32	1.3
16	4o5-4+3+ 2+3-1-1o	23o	27	39	32	18	9	12	3	4	144	18	1.0
17	3o2o3-3- 4-4o4-3o	25-	15	7	12	12	22	27	22	15	132	16	0.9
18	3+1+0+1o 1-2-1-1o	10o	18	5	2	4	3	6	3	4	45	6	0.3
19	1o4-2o1+ 2o1o1-1-	12+	4	22	7	5	7	4	3	3	55	7	0.3
20	1o1o2-3- 4-5-5-6-	25o	4	4	6	12	22	39	39	67	193	24	1.2
21	5-5+4+5- 3o2o2o1-	27-	39	56	32	39	15	7	7	3	198	25	1.2
22	0+1-1+1+ 3-3o4o3o	16+	2	3	5	5	12	15	27	15	84	10	0.6
23	4-3+3-4- 3o5o3+3+	28o	22	18	12	22	15	48	18	18	173	22	1.1
24	1+3-2o3- 4o2-3+3-	20+	5	12	7	12	27	6	18	12	99	12	0.7
25	2-2+2-2o 1+3+2-1-	15-	6	9	6	7	5	18	6	3	60	8	0.4
26	1+2o1-1o 1o1-1+0+	8+	5	7	3	4	4	3	5	2	33	4	0.1
27	2-2+2o4- 4o3+2-2+	21o	6	9	7	22	27	18	6	9	104	13	0.7
28	2o3o1o1- 1-0+0o0o	8-	7	15	4	3	3	2	0	0	34	4	0.1
29	1-1+1-0+ 0+0o1-2+	6+	3	5	3	2	2	0	3	9	27	3	0.1
30	3o4-4-3+ 3-3-2o2o	23o	15	22	22	18	12	12	7	7	115	14	0.8
31	3-2-3-1+ 2+1-1-1+	13+	12	6	12	5	9	3	3	5	55	7	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1932				ap				Sum	Ap	Cp
1	2o5-6-4- 3+2o2-2o	25o	7	39	67	22	18	7	6	7	173	22	1.1
2	3o3o3o3- 2+1-2o1-	17+	15	15	15	12	9	3	7	3	79	10	0.6
3	1-2+3+3- 1o1o1+1o	13+	3	9	18	12	4	4	5	4	59	7	0.4
4	2-3o1+1+ 1-2o2+3o	15+	6	15	5	5	3	7	9	15	65	8	0.4
5	3o3o2+1o 1+2+2-2o	17-	15	15	9	4	5	9	6	7	70	9	0.5
6	2+2o2-1+ 0+0o1o2-	10+	9	7	6	5	2	0	4	6	39	5	0.2
7	2o1-0o1- 1-2+2-1-	9-	7	3	0	3	3	9	6	3	34	4	0.1
8	0+1-1-1o 1-1o2-2-	8-	2	3	3	4	3	4	6	6	31	4	0.1
9	1+1o1o0+ 0+0+1-1-	6-	5	4	4	2	2	2	3	3	25	3	0.1
10	1o1o1-1+ 0+0+1o1-	6+	4	4	3	5	2	2	4	3	27	3	0.1
11	1+1-1+1o 1o1o1+0o	8-	5	3	5	4	4	4	5	0	30	4	0.1
12	1o2-2+2+ 2o3o2o1+	16-	4	6	9	9	7	15	7	5	62	8	0.4
13	2o3o2-2o 2o2+2o2+	17+	7	15	6	7	7	9	7	9	67	8	0.5
14	1+2o4o3+ 4-3o1o4o	22+	5	7	27	18	22	15	4	27	125	16	0.9
15	2o3+2o1- 2o3-3+2o	18o	7	18	7	3	7	12	18	7	79	10	0.6
16	4o5o5-5- 4o4-4o5o	35o	27	48	39	39	27	22	27	48	277	35	1.4
17	2+3-3o3+ 4o3-3o3-	24-	9	12	15	18	27	12	15	12	120	15	0.8
18	2+2o2+2- 2o3o3o3o	19+	9	7	9	6	7	15	15	15	83	10	0.6
19	2+2-2o2o 2o2-2-2+	16-	9	6	7	7	7	6	6	9	57	7	0.4
20	2+1-3-1o 2-3-1o2o	14o	9	3	12	4	6	12	4	7	57	7	0.4
21	1o2-2-1- 0+1o1o1+	9-	4	6	6	3	2	4	4	5	34	4	0.1
22	1-1-2o1o 0o1-1-0o	6-	3	3	7	4	0	3	3	0	23	3	0.1
23	1-1+0+1- 2+0+0o1o	7-	3	5	2	3	9	2	0	4	28	4	0.1
24	0+1-1-0o 0+0+1-0o	3o	2	3	3	0	2	2	3	0	15	2	0.0
25	0o2o2-2- 1+3+2+2+	15-	0	7	6	6	5	18	9	9	60	8	0.4
26	2-1-2o2o 1+1o0+0o	9o	6	3	7	7	5	4	2	0	34	4	0.1
27	0+3-0+0o 1-0+1o1-	6o	2	12	2	0	3	2	4	3	28	4	0.1
28	1-1+2-3- 3-3o1o1-	14-	3	5	6	12	12	15	4	3	60	8	0.4
29	3o2+4-3- 3+3o2o2+	22+	15	9	22	12	18	15	7	9	107	13	0.8
30	3-1+2-2o 0+1o1-0+	10o	12	5	6	7	2	4	3	2	41	5	0.2

	Kp	Sum	Dec. 1932				ap				Sum	Ap	Cp
1	1-1o1+2- 1-2-2o1+	10+	3	4	5	6	3	6	7	5	39	5	0.2
2	2o1+1-1o 0+1o3o2o	11+	7	5	3	4	2	4	15	7	47	6	0.3
3	1o2+1-1+ 0o0o2-2o	9o	4	9	3	5	0	0	6	7	34	4	0.1
4	2+2+1-1+ 1+2o1-1o	12-	9	9	3	5	5	7	3	4	45	6	0.3
5	1+2o1o1- 0+0+1-1o	7+	5	7	4	3	2	2	3	4	30	4	0.1
6	2o1-1+1- 1-0+1o3-	9+	7	3	5	3	3	2	4	12	39	5	0.2
7	2-1+1-0o 0o0o0o0+	4o	6	5	3	0	0	0	0	2	16	2	0.0
8	2-3+4-3- 2o2o3-4+	22+	6	18	22	12	7	7	12	32	116	14	0.8
9	3+3+3+3o 3o3o2o2+	23+	18	18	18	15	15	15	7	9	115	14	0.8
10	3o1+2o2o 3o2+2o2+	18o	15	5	7	7	15	9	7	9	74	9	0.5
11	1-0+1+1o 1+1-1o2-	8o	3	2	5	4	5	3	4	6	32	4	0.1
12	1-2-2o2- 0+0o0+0o	7-	3	6	7	6	2	0	2	0	26	3	0.1
13	0+2-1+1+ 2o3+3-4o	17-	2	6	5	5	7	18	12	27	82	10	0.6
14	3o2+1+4o 5-6-6-5-	31+	15	9	5	27	39	67	67	39	268	34	1.3
15	4+4o4-3- 3-3o4+4+	29o	32	27	22	12	12	15	32	32	184	23	1.1
16	5+3o2+2+ 2+3+4-4-	26o	56	15	9	9	9	18	22	22	160	20	1.0
17	4o3-3-3+ 3+3+4o3-	26o	27	12	12	18	18	18	27	12	144	18	1.0
18	3+3+3o2o 3o1+1+1o	18+	18	18	15	7	15	5	5	4	87	11	0.6
19	2+2o2o2- 3o3o3+2+	20-	9	7	7	6	15	15	18	9	86	11	0.6
20	3-1+1+1+ 0o0+0+0o	7+	12	5	5	5	0	2	2	0	31	4	0.1
21	1+1-1o1- 1-0+0+0o	5o	5	3	4	3	3	2	2	0	22	3	0.0
22	0o1o1-1- 0+1o2-0+	6-	0	4	3	3	2	4	6	2	24	3	0.1
23	0o0+1o1o 1o0o0+1-	4+	0	2	4	4	4	0	2	3	19	2	0.0
24	1+1-0o2o 1o0+1-0o	6o	5	3	0	7	4	2	3	0	24	3	0.1
25	1o0+1+2+ 2+2+3o3-	15+	4	2	5	9	9	9	15	12	65	8	0.4
26	3+3-2o1o 2-2o3-2o	17+	18	12	7	4	6	7	12	7	73	9	0.5
27	4-4-2o2+ 2+2o2o1o	19o	22	22	7	9	9	7	7	4	87	11	0.6
28	1+1o1+1+ 3+3o3o3+	18-	5	4	5	5	18	15	15	18	85	11	0.6
29	2o1o1o1o 1+1+1o1+	10o	7	4	4	4	5	5	4	5	38	5	0.2
30	1+2-2o2- 2o2-2+3o	16-	5	6	7	6	7	6	9	15	61	8	0.4
31	3+3-3+1+ 1+2-3o3+	20o	18	12	18	5	5	6	15	18	97	12	0.7

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1933				ap				Sum	Ap	Cp
1	3-3o2-2+ 3-3o4+3o	23-	12	15	6	9	12	15	32	15	116	14	0.8
2	4-3-3-2+ 2-1+2+3-	19+	22	12	12	9	6	5	9	12	87	11	0.6
3	3-2o1o1o 2-1-1-1o	11-	12	7	4	4	6	3	3	4	43	5	0.2
4	2o0o0o1- 0+1-0+0+	4+	7	0	0	3	2	3	2	2	19	2	0.0
5	0o0o1o1- 0o0+0+0o	2+	0	0	4	3	0	2	2	0	11	1	0.0
6	1o4-4o4- 4o2+2-2o	22+	4	22	27	22	27	9	6	7	124	16	0.9
7	3o3+1o0o 1-3o2+1-	14o	15	18	4	0	3	15	9	3	67	8	0.5
8	1+2+2-2o 1+1-0+2-	11+	5	9	6	7	5	3	2	6	43	5	0.2
9	1o1+1-0+ 1+1+1o1o	8o	4	5	3	2	5	5	4	4	32	4	0.1
10	0+1-0o0+ 0o0+0+0o	2o	2	3	0	2	0	2	2	0	11	1	0.0
11	0o0o1-1o 0+0o0+0o	2+	0	0	3	4	2	0	2	0	11	1	0.0
12	1-0o0o0+ 1+1-1o1o	5o	3	0	0	2	5	3	4	4	21	3	0.0
13	2-0o1o1o 1-0+1o1-	6+	6	0	4	4	3	2	4	3	26	3	0.1
14	2-0o0+0o 0o0+3-3+	8+	6	0	2	0	0	2	12	18	40	5	0.2
15	3o5-5-4o 2o1o2-3+	24+	15	39	39	27	7	4	6	18	155	19	1.0
16	3o3-3-2+ 2o1+0+0o	14+	15	12	12	9	7	5	2	0	62	8	0.4
17	1o1o3-3+ 2-1-0+1-	11+	4	4	12	18	6	3	2	3	52	6	0.3
18	1-1+1-2- 0+0o2-1+	8-	3	5	3	6	2	0	6	5	30	4	0.1
19	0+3-2+2- 3+4+2o2+	19o	2	12	9	6	18	32	7	9	95	12	0.7
20	3o5o4-2- 1-1-0o2-	16+	15	48	22	6	3	3	0	6	103	13	0.7
21	1-0o0+0+ 0+0o1o1o	4-	3	0	2	2	2	0	4	4	17	2	0.0
22	1-3-3o1+ 3-4o4o4o	22+	3	12	15	5	12	27	27	27	128	16	0.9
23	3+3-3-2+ 3-2+4-4o	24-	18	12	12	9	12	9	22	27	121	15	0.9
24	5o3-2+3o 3+2o1+2o	22-	48	12	9	15	18	7	5	7	121	15	0.9
25	4o2+3o2+ 3o3+2+3+	24-	27	9	15	9	15	18	9	18	120	15	0.8
26	4+4-3-3o 3+3o3+3-	26o	32	22	12	15	18	15	18	12	144	18	1.0
27	5-4-3-3o 3-4o4-5o	29+	39	22	12	15	12	27	22	48	197	25	1.2
28	4o4o3-3o 4-4-3+4o	28+	27	27	12	15	22	22	18	27	170	21	1.1
29	3+3-2-2+ 3-3+3-2+	21o	18	12	6	9	12	18	12	9	96	12	0.7
30	3o4o2o3- 1+3-2o3-	20+	15	27	7	12	5	12	7	12	97	12	0.7
31	3o2o2-1+ 2o2+1o1+	15-	15	7	6	5	7	9	4	5	58	7	0.4

	Kp	Sum	Feb. 1933				ap				Sum	Ap	Cp
1	1o0o0+1- 0+0+0+2-	5-	4	0	2	3	2	2	2	6	21	3	0.0
2	2+2+3o2+ 2+3o2+2-	19+	9	9	15	9	9	15	9	6	81	10	0.6
3	1-0+0o1- 1-1o1+3-	7+	3	2	0	3	3	4	5	12	32	4	0.1
4	2-0o0+1+ 1+1+2-1o	9-	6	0	2	5	5	5	6	4	33	4	0.1
5	2+2+2-1- 1-0+0o0+	8+	9	9	6	3	3	2	0	2	34	4	0.1
6	2o2-0+0o 0o0o0+1-	5o	7	6	2	0	0	0	2	3	20	2	0.0
7	1-2+2-3o 2+1+1+1+	14o	3	9	6	15	9	5	5	5	57	7	0.4
8	0o1-1+2- 1o0+2-2-	8+	0	3	5	6	4	2	6	6	32	4	0.1
9	3-3o1o1+ 1-1o2o1+	13o	12	15	4	5	3	4	7	5	55	7	0.3
10	2+2o0+0+ 0+0+0o2-	7+	9	7	2	2	2	2	0	6	30	4	0.1
11	0+0o0o0o 0o1-1o0+	2+	2	0	0	0	0	3	4	2	11	1	0.0
12	1-1-1+2o 2-1o0o0o	7+	3	3	5	7	6	4	0	0	28	3	0.1
13	0o0o0o0o 1-0+0o2-	3-	0	0	0	0	3	2	0	6	11	1	0.0
14	1+2o2o2o 2o1o4-2-	16-	5	7	7	7	7	4	22	6	65	8	0.4
15	2o3+2o3- 2+3+2-2o	19+	7	18	7	12	9	18	6	7	84	10	0.6
16	1-0+1o1- 1-0+0o0+	4o	3	2	4	3	3	2	0	2	19	2	0.0
17	0o0o0o0+ 0o0o0+0o	1-	0	0	0	2	0	0	2	0	4	0	0.0
18	0o0o0o0o 1+1+2-2o	6+	0	0	0	0	5	5	6	7	23	3	0.1
19	3o3-2+4+ 5-4-4+6-	31-	15	12	9	32	39	22	32	67	228	28	1.2
20	6-3-2+4+ 4-3o3-4-	28o	67	12	9	32	22	15	12	22	191	24	1.2
21	4-5+3+3o 5-5+4-5o	34o	22	56	18	15	39	56	22	48	276	34	1.4
22	5+5-4+3o 4-4o5-4+	34o	56	39	32	15	22	27	39	32	262	33	1.3
23	4+4o4+2o 4-5o5-4+	32+	32	27	32	7	22	48	39	32	239	30	1.3
24	4-3+4o5- 4-4+5-5+	34-	22	18	27	39	22	32	39	56	255	32	1.3
25	3o4-3o4- 2+3-4-4+	26+	15	22	15	22	9	12	22	32	149	19	1.0
26	5-4+3+3+ 3o2o3+4+	28+	39	32	18	18	15	7	18	32	179	22	1.1
27	3+3+2+3- 2-1+2-3+	20-	18	18	9	12	6	5	6	18	92	12	0.7
28	3-2o1+1- 0+1-0+2+	10+	12	7	5	3	2	3	2	9	43	5	0.2

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	March 1933				ap				Sum	Ap	Cp
1	2+2o1+2o 2o1+2o2o	15o	9	7	5	7	7	5	7	7	54	7	0.3
2	3-1-1o2- 1+1-2+2o	12+	12	3	4	6	5	3	9	7	49	6	0.3
3	1+2-2o1+ 2o3-2+1+	15-	5	6	7	5	7	12	9	5	56	7	0.4
4	2o2+1+2- 1-0+1+1-	10+	7	9	5	6	3	2	5	3	40	5	0.2
5	0o0+1+1- 0+1o1-0o	4+	0	2	5	3	2	4	3	0	19	2	0.0
6	1o0+1-0+ 2o1o0+0+	6o	4	2	3	2	7	4	2	2	26	3	0.1
7	0o0o0+1- 1o1-1-1+	5-	0	0	2	3	4	3	3	5	20	2	0.0
8	2+0o0+1- 1+1+1-2-	8+	9	0	2	3	5	5	3	6	33	4	0.1
9	2-1o1-0+ 0+0o0+1o	5+	6	4	3	2	2	0	2	4	23	3	0.1
10	2+3-0+1- 1-1o2o2+	12o	9	12	2	3	3	4	7	9	49	6	0.3
11	4+3o1o2- 2+1+1+1o	16o	32	15	4	6	9	5	5	4	80	10	0.6
12	1-2-2+2o 2-1+2o2-	13+	3	6	9	7	6	5	7	6	49	6	0.3
13	1+3o2o3- 2+3o2o1+	18-	5	15	7	12	9	15	7	5	75	9	0.5
14	1+4-3o1+ 2-2o1-0+	14o	5	22	15	5	6	7	3	2	65	8	0.4
15	1-2-2-2- 2o1-0o1-	9o	3	6	6	6	7	3	0	3	34	4	0.1
16	2-1-1-1- 0o0+1o0+	5+	6	3	3	3	0	2	4	2	23	3	0.1
17	0+0o0+1o 2o1o2-1+	8-	2	0	2	4	7	4	6	5	30	4	0.1
18	3+5o4o3- 3-4o3o6+	31o	18	48	27	12	12	27	15	94	253	32	1.3
19	5o3+2-2+ 3-4+5+6-	30+	48	18	6	9	12	32	56	67	248	31	1.3
20	6o4+4-4- 3o5-5+4o	35-	80	32	22	22	15	39	56	27	293	37	1.4
21	3+4+3+5- 3+3+2+5-	29+	18	32	18	39	18	18	9	39	191	24	1.2
22	5+4+3+5- 3+3+4-3-	31-	56	32	18	39	18	18	22	12	215	27	1.2
23	4-5o4-3o 3o5o5-4+	32+	22	48	22	15	15	48	39	32	241	30	1.3
24	4o5+4+3+ 3o5-4o4+	33o	27	56	32	18	15	39	27	32	246	31	1.3
25	3+4o4o3o 2o2+1+2-	22-	18	27	27	15	7	9	5	6	114	14	0.8
26	2-1o3+3- 1-2+1-1+	14-	6	4	18	12	3	9	3	5	60	8	0.4
27	1o2-4-3o 4+4o3o2o	23-	4	6	22	15	32	27	15	7	128	16	0.9
28	3-4o2-2o 3o3+3o4-	23+	12	27	6	7	15	18	15	22	122	15	0.9
29	2+3-3-3+ 2+2+2+3o	21o	9	12	12	18	9	9	9	15	93	12	0.7
30	3o3-2-2o 2-2-1-3-	16o	15	12	6	7	6	6	3	12	67	8	0.5
31	3o3o1o3- 1+1+2+3-	17+	15	15	4	12	5	5	9	12	77	10	0.5

	Kp	Sum	April 1933				ap				Sum	Ap	Cp
1	3-3+2o2o 2-2o2+2+	18+	12	18	7	7	6	7	9	9	75	9	0.5
2	2o2-1+2o 1o1o3o2+	14+	7	6	5	7	4	4	15	9	57	7	0.4
3	2+3+3-4- 4-1+2+2o	21+	9	18	12	22	22	5	9	7	104	13	0.7
4	4+4-3-2o 1o1-2o1+	18-	32	22	12	7	4	3	7	5	92	12	0.7
5	2+2o1o1+ 1+2-1+1+	12+	9	7	4	5	5	6	5	5	46	6	0.3
6	3-2+3-2o 2-2-3-3-	18+	12	9	12	7	6	6	12	12	76	10	0.5
7	2-3o2-3- 3o4o4o3o	23o	6	15	6	12	15	27	27	15	123	15	0.9
8	2+2o3-2- 1+4-3o2+	19o	9	7	12	6	5	22	15	9	85	11	0.6
9	3-2-3o4- 3o3-1o1+	19o	12	6	15	22	15	12	4	5	91	11	0.7
10	1+2+2+2o 3-3o3-0+	17-	5	9	9	7	12	15	12	2	71	9	0.5
11	0+0+2-1+ 1o1o1-1-	7o	2	2	6	5	4	4	3	3	29	4	0.1
12	1-1o0o0+ 0o1-0+0o	3o	3	4	0	2	0	3	2	0	14	2	0.0
13	0+0+0+2- 1-0+1-0+	5-	2	2	2	6	3	2	3	2	22	3	0.0
14	0o0+0+1+ 2o2+2o2o	10+	0	2	2	5	7	9	7	7	39	5	0.2
15	1-4-3-3- 3-3-5-4+	24o	3	22	12	12	12	12	39	32	144	18	1.0
16	3+4o3-3- 3o2+5-4o	27-	18	27	12	12	15	9	39	27	159	20	1.0
17	5-4+3+4- 6-4-3o4-	32o	39	32	18	22	67	22	15	22	237	30	1.3
18	5-5-3+2+ 3o3o3o4-	28-	39	39	18	9	15	15	15	22	172	22	1.1
19	4+3+4-3o 4o3+4o5o	31-	32	18	22	15	27	18	27	48	207	26	1.2
20	2o4o4+3+ 3o3+4+3o	27+	7	27	32	18	15	18	32	15	164	20	1.0
21	4-3+3-3o 2+3-4-6-	27o	22	18	12	15	9	12	22	67	177	22	1.1
22	3+3o4+3o 3+4-4-3+	28-	18	15	32	15	18	22	22	18	160	20	1.0
23	3-4o4+2o 4-2+4-3-	25+	12	27	32	7	22	9	22	12	143	18	1.0
24	3+2+2-1+ 2-2+2o3+	18o	18	9	6	5	6	9	7	18	78	10	0.5
25	2-2o2o2o 3-2+1+2-	16-	6	7	7	7	12	9	5	6	59	7	0.4
26	3+1o2+2- 3-2+3+1+	18o	18	4	9	6	12	9	18	5	81	10	0.6
27	1o2-0+1- 1-0+2+3+	10+	4	6	2	3	3	2	9	18	47	6	0.3
28	4-2o1o1+ 1+1-2-2+	14o	22	7	4	5	5	3	6	9	61	8	0.4
29	2-1-1o1o 1o0+1o1o	8-	6	3	4	4	4	2	4	4	31	4	0.1
30	1-1o1-1o 1+4o5-5+	19-	3	4	3	4	5	27	39	56	141	18	1.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1933				ap				Sum	Ap	Cp
1	3+2o3-3o 7o8-8-7-	40o	18	7	12	15	132	179	179	111	653	82	1.8
2	6+2+3o3- 1+1+2-3o	22-	94	9	15	12	5	5	6	15	161	20	1.0
3	3o3-3+3o 3-2o4-2o	22+	15	12	18	15	12	7	22	7	108	14	0.8
4	3-3o3o2- 2o4-5o1o	22o	12	15	15	6	7	22	48	4	129	16	0.9
5	2-3+3o2- 3o2+3+3+	22-	6	18	15	6	15	9	18	18	105	13	0.8
6	5-4o2+3o 3+2-3-4+	26o	39	27	9	15	18	6	12	32	158	20	1.0
7	4+2o3-2+ 2o1+0+1o	16o	32	7	12	9	7	5	2	4	78	10	0.5
8	1+1+1+1+ 2-2-2-1-	11o	5	5	5	5	6	6	6	3	41	5	0.2
9	0o0+1-1o 1o1-0+0+	4+	0	2	3	4	4	3	2	2	20	2	0.0
10	0+2-2+1+ 1-0+0+0+	7+	2	6	9	5	3	2	2	2	31	4	0.1
11	2-1+1-1- 1o1o1+0o	8-	6	5	3	3	4	4	5	0	30	4	0.1
12	0+1-0o0o 0o0+1-2-	4-	2	3	0	0	0	2	3	6	16	2	0.0
13	1o3o2o2- 2-1-2+3-	15o	4	15	7	6	6	3	9	12	62	8	0.4
14	3+1-1+2o 1o2+4+4o	19o	18	3	5	7	4	9	32	27	105	13	0.8
15	2o4o3o3- 2-2+3-4-	22o	7	27	15	12	6	9	12	22	110	14	0.8
16	3o1o1-1+ 1+2-3o2+	14+	15	4	3	5	5	6	15	9	62	8	0.4
17	3-1-2-2- 2-2+3o4-	17+	12	3	6	6	6	9	15	22	79	10	0.6
18	4o5-4+3+ 3-2o3-2o	26-	27	39	32	18	12	7	12	7	154	19	1.0
19	2o2-2-2o 3-1+3o2+	17-	7	6	6	7	12	5	15	9	67	8	0.5
20	1o2-2-1- 1-1-0+2-	8+	4	6	6	3	3	3	2	6	33	4	0.1
21	2-2-2+1- 1-1-1o2-	10+	6	6	9	3	3	3	4	6	40	5	0.2
22	2o2-2-1o 1+1-1-2o	11o	7	6	6	4	5	3	3	7	41	5	0.2
23	1-1+1+1o 1o1+1-2-	9o	3	5	5	4	4	5	3	6	35	4	0.2
24	0+1o1o1o 1o1-1o1+	7+	2	4	4	4	4	3	4	5	30	4	0.1
25	3-0+0+1- 2-1o2-1+	10-	12	2	2	3	6	4	6	5	40	5	0.2
26	1-0o0+1- 0+0+0o0o	2+	3	0	2	3	2	2	0	0	12	2	0.0
27	0+0+1-0+ 1o2+3o3+	11+	2	2	3	2	4	9	15	18	55	7	0.3
28	4o2o1-1- 1o1o1-1o	11o	27	7	3	3	4	4	3	4	55	7	0.3
29	0+0+2o1+ 2+3o4o4-	17o	2	2	7	5	9	15	27	22	89	11	0.6
30	4o3+3-2+ 3-4-4-3-	25o	27	18	12	9	12	22	22	12	134	17	0.9
31	2o4+4-3- 5o4-2+4-	27+	7	32	22	12	48	22	9	22	174	22	1.1

	Kp	Sum	June 1933				ap				Sum	Ap	Cp
1	4+5o4o2o 3+3-3o2o	26+	32	48	27	7	18	12	15	7	166	21	1.1
2	2o2o2-3- 2o2-2-1o	15-	7	7	6	12	7	6	6	4	55	7	0.3
3	2-1+3-2o 1+2-1+1+	13+	6	5	12	7	5	6	5	5	51	6	0.3
4	2-1-1o1+ 1o1o1-1o	8+	6	3	4	5	4	4	3	4	33	4	0.1
5	2o1-0+0+ 1o0+0+0+	5+	7	3	2	2	4	2	2	2	24	3	0.1
6	0+1-1+0+ 0+0+0+1-	4+	2	3	5	2	2	2	2	3	21	3	0.0
7	1-1+2o1- 1o1o1-1o	8+	3	5	7	3	4	4	3	4	33	4	0.1
8	1o3-2o3o 2-1+4o3+	19o	4	12	7	15	6	5	27	18	94	12	0.7
9	3+3o3+2- 2o2-1-1+	17o	18	15	18	6	7	6	3	5	78	10	0.5
10	2-0+0+1o 2-2o2-1o	10-	6	2	2	4	6	7	6	4	37	5	0.2
11	1-1+1o1o 1+0+1-0+	7-	3	5	4	4	5	2	3	2	28	4	0.1
12	2-2-0o0o 0+1-1o3o	8+	6	6	0	0	2	3	4	15	36	4	0.2
13	5+5+4-3- 4o4-4o6-	34+	56	56	22	12	27	22	27	67	289	36	1.4
14	5o3-3+3- 2o2o2-3-	22o	48	12	18	12	7	7	6	12	122	15	0.9
15	4+3-2-1+ 1o1o1o2o	15o	32	12	6	5	4	4	4	7	74	9	0.5
16	1-1o1+1- 0+1-1o1o	7-	3	4	5	3	2	3	4	4	28	4	0.1
17	1o1+2-1- 2-1o1-1o	9o	4	5	6	3	6	4	3	4	35	4	0.2
18	1-1-2-1o 1-0+1-1+	7o	3	3	6	4	3	2	3	5	29	4	0.1
19	2-2-2o3- 2+1+2-2+	16-	6	6	7	12	9	5	6	9	60	8	0.4
20	4o4+3+3o 3-2+2-3o	24+	27	32	18	15	12	9	6	15	134	17	0.9
21	1+2-2+2- 2o1+1o2+	14-	5	6	9	6	7	5	4	9	51	6	0.3
22	2o2-1-0+ 0+1-1+0o	7o	7	6	3	2	2	3	5	0	28	4	0.1
23	0o0o0o0+ 0+1-1o2+	5-	0	0	0	2	2	3	4	9	20	2	0.0
24	1-1-1o1- 0+1-1-0+	5o	3	3	4	3	2	3	3	2	23	3	0.1
25	0+1o0+2+ 1o3-4o3+	15o	2	4	2	9	4	12	27	18	78	10	0.5
26	2+2+2-2+ 1-1+0+1-	12-	9	9	6	9	3	5	2	3	46	6	0.3
27	0o1-3-3o 4-3+1+2o	17-	0	3	12	15	22	18	5	7	82	10	0.6
28	4-3o3-1+ 4-3o4-3o	24o	22	15	12	5	22	15	22	15	128	16	0.9
29	3o3+2+2+ 2+3o1+2-	19+	15	18	9	9	9	15	5	6	86	11	0.6
30	2o3-1+2o 2-1+1o1+	13+	7	12	5	7	6	5	4	5	51	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1933				ap				Sum	Ap	Cp
1	1o1-1+1o 1o1+2+3+	12o	4	3	5	4	4	5	9	18	52	6	0.3
2	3-2-2o1o 1o1o1o1+	12-	12	6	7	4	4	4	4	5	46	6	0.3
3	3-1+1o1o 1+1+2-1o	11+	12	5	4	4	5	5	6	4	45	6	0.3
4	1+2o1+1o 2o1o2o1o	12-	5	7	5	4	7	4	7	4	43	5	0.2
5	2o2-2-2- 1-1+0+1-	10o	7	6	6	6	3	5	2	3	38	5	0.2
6	1+2o1o2- 1o1o1o0+	9+	5	7	4	6	4	4	4	2	36	4	0.2
7	0o1-1-1o 1-1o0+1+	6-	0	3	3	4	3	4	2	5	24	3	0.1
8	1+1o1-1o 1-1+3o4-	13-	5	4	3	4	3	5	15	22	61	8	0.4
9	4-2o4-5o 4-2o3o1+	24+	22	7	22	48	22	7	15	5	148	18	1.0
10	1+3-2-2+ 1+2-3o3o	17o	5	12	6	9	5	6	15	15	73	9	0.5
11	3+1+2+2+ 3-3o1+2-	18o	18	5	9	9	12	15	5	6	79	10	0.6
12	3o3o2-1o 1+1-1o2-	13+	15	15	6	4	5	3	4	6	58	7	0.4
13	1+1-1-1+ 0+2-0+1o	7+	5	3	3	5	2	6	2	4	30	4	0.1
14	2o1+2-1- 0+0+1-1o	8o	7	5	6	3	2	2	3	4	32	4	0.1
15	1-0+1o0+ 0+1-1-1-	5-	3	2	4	2	2	3	3	3	22	3	0.0
16	0+0+0+1+ 1+1o1+1+	7+	2	2	2	5	5	4	5	5	30	4	0.1
17	1+1+2o2+ 3+2+3-2+	18-	5	5	7	9	18	9	12	9	74	9	0.5
18	3+3o3-3- 2+2o3-1-	19+	18	15	12	12	9	7	12	3	88	11	0.6
19	1-1+2o1- 1+1o1-2-	9+	3	5	7	3	5	4	3	6	36	4	0.2
20	3-2-2-3- 2-1+1-1-	13o	12	6	6	12	6	5	3	3	53	7	0.3
21	1o2o1+1o 1-1-1-0+	8-	4	7	5	4	3	3	3	2	31	4	0.1
22	2+1+1+1- 1+1-1o1o	10-	9	5	5	3	5	3	4	4	38	5	0.2
23	2o1-0+3o 5o4-3+5-	23-	7	3	2	15	48	22	18	39	154	19	1.0
24	4o5-5+4- 4-5+1-1+	29-	27	39	56	22	22	56	3	5	230	29	1.3
25	1o0+2-2+ 3-2o1-2o	13-	4	2	6	9	12	7	3	7	50	6	0.3
26	1-1o2-1- 1o2o1o3o	11o	3	4	6	3	4	7	4	15	46	6	0.3
27	3-3-2o3- 2+1+2o5-	20+	12	12	7	12	9	5	7	39	103	13	0.7
28	1+1+1+2- 1-1-1+1o	9+	5	5	5	6	3	3	5	4	36	4	0.2
29	1o1o0+1o 2o1+1-1-	8o	4	4	2	4	7	5	3	3	32	4	0.1
30	1-1-1o1o 1+0+1-2-	7+	3	3	4	4	5	2	3	6	30	4	0.1
31	1o1-1o1+ 2-1o1+1o	9o	4	3	4	5	6	4	5	4	35	4	0.2

	Kp	Sum	August 1933				ap				Sum	Ap	Cp
1	1-1o0+0+ 0+0+0+1-	4o	3	4	2	2	2	2	2	3	20	2	0.0
2	1-1o0+1o 1-1-0+2-	6+	3	4	2	4	3	3	2	6	27	3	0.1
3	1o1o1-0+ 0+1-0+1-	5o	4	4	3	2	2	3	2	3	23	3	0.1
4	0+0o0+0+ 0+0+1o2-	4+	2	0	2	2	2	2	4	6	20	2	0.0
5	1+2o3-3+ 5+5+7-4-	30+	5	7	12	18	56	56	111	22	287	36	1.4
6	5+5-3+3- 3o3-3o1-	25+	56	39	18	12	15	12	15	3	170	21	1.1
7	2+2o1o1+ 1+1o0+2+	12-	9	7	4	5	5	4	2	9	45	6	0.3
8	2o2-1o1+ 2-2-1-2o	12o	7	6	4	5	6	6	3	7	44	6	0.2
9	1-1-0o1- 1-0+1-1+	5o	3	3	0	3	3	2	3	5	22	3	0.0
10	2-1o1-1- 1-0+0+1-	6o	6	4	3	3	3	2	2	3	26	3	0.1
11	1-1-1+0+ 0o0o0+1-	4o	3	3	5	2	0	0	2	3	18	2	0.0
12	1-0o0o1- 0+1-1+1+	5o	3	0	0	3	2	3	5	5	21	3	0.0
13	1o1-2o3o 3o4-6-5-	24-	4	3	7	15	15	22	67	39	172	22	1.1
14	3+3o3-2o 3-2o1+3-	20-	18	15	12	7	12	7	5	12	88	11	0.6
15	2-2+2+2o 2o2-3+1o	16+	6	9	9	7	7	6	18	4	66	8	0.4
16	2o1+2o0+ 1-1-1+2-	10o	7	5	7	2	3	3	5	6	38	5	0.2
17	2+3-4o2+ 3+2o3-2o	21+	9	12	27	9	18	7	12	7	101	13	0.7
18	2-2+3+2- 2o5-4+4o	24o	6	9	18	6	7	39	32	27	144	18	1.0
19	4o3+4o3- 3-1+2-1+	21o	27	18	27	12	12	5	6	5	112	14	0.8
20	2-2+3-1+ 3-3-4-4+	21+	6	9	12	5	12	12	22	32	110	14	0.8
21	2+3-3o3+ 4-5-4o2o	26-	9	12	15	18	22	39	27	7	149	19	1.0
22	2-1-2+2o 1-0+1o0+	9o	6	3	9	7	3	2	4	2	36	4	0.2
23	0+1o3+3+ 4o3-4-3o	21+	2	4	18	18	27	12	22	15	118	15	0.8
24	2o2o4-4- 2o3+4-3-	23o	7	7	22	22	7	18	22	12	117	15	0.8
25	3+3+3+1+ 1o1-2-1+	16o	18	18	18	5	4	3	6	5	77	10	0.5
26	3o3+2+2- 2+2-1+1o	17-	15	18	9	6	9	6	5	4	72	9	0.5
27	1+2+1+2+ 1o0+1-1+	11-	5	9	5	9	4	2	3	5	42	5	0.2
28	1-1-0+1- 1-1-1o1+	6o	3	3	2	3	3	3	4	5	26	3	0.1
29	1o1-2+1- 1-1-0+0o	6+	4	3	9	3	3	3	2	0	27	3	0.1
30	1+1-1+1- 1-1o0+1-	7-	5	3	5	3	3	4	2	3	28	4	0.1
31	0+0+0o0+ 1-1o0+1+	4+	2	2	0	2	3	4	2	5	20	2	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1933				ap				Sum	Ap	Cp
1	2+2o1o1+ 2o2-2-2o	14o	9	7	4	5	7	6	6	7	51	6	0.3
2	2+2o2+2- 1o2-2-3o	16-	9	7	9	6	4	6	6	15	62	8	0.4
3	2-1+2-1o 1o1o1+1+	10+	6	5	6	4	4	4	5	5	39	5	0.2
4	2-2-2-1+ 2o1-2+1o	12+	6	6	6	5	7	3	9	4	46	6	0.3
5	1o1-1+0+ 0+0+1-1o	6-	4	3	5	2	2	2	3	4	25	3	0.1
6	0o1o2o2- 1-1-1o2-	9-	0	4	7	6	3	3	4	6	33	4	0.1
7	2-2o2o1- 2-2-1-2-	12o	6	7	7	3	6	6	3	6	44	6	0.2
8	3-2o3o2+ 2-1+3-3o	19-	12	7	15	9	6	5	12	15	81	10	0.6
9	3-7-7-6+ 5-4-3+4-	38-	12	111	111	94	39	22	18	22	429	54	1.6
10	4+5-3+3+ 3o3o2o3-	26+	32	39	18	18	15	15	7	12	156	20	1.0
11	3-2o3o2+ 2+2o1o3-	18o	12	7	15	9	9	7	4	12	75	9	0.5
12	3+4o3-3- 2+1+1-1-	18-	18	27	12	12	9	5	3	3	89	11	0.6
13	0o1-1o3- 5-5o6o4-	24-	0	3	4	12	39	48	80	22	208	26	1.2
14	4+2-2+3+ 3o4-5-4-	27-	32	6	9	18	15	22	39	22	163	20	1.0
15	4-6o4-3+ 4+3o2+3o	29+	22	80	22	18	32	15	9	15	213	27	1.2
16	3+3-2o3+ 2-3+3o3+	23-	18	12	7	18	6	18	15	18	112	14	0.8
17	3+2+3-2+ 2-2o3o2o	19+	18	9	12	9	6	7	15	7	83	10	0.6
18	4+4-2+3+ 3-1o1o1+	20-	32	22	9	18	12	4	4	5	106	13	0.8
19	2-2o2+2- 2+4-3-4o	20+	6	7	9	6	9	22	12	27	98	12	0.7
20	4-4-1o1+ 2-3-1+1+	17-	22	22	4	5	6	12	5	5	81	10	0.6
21	3o3+1+2+ 2o1o1+3-	17o	15	18	5	9	7	4	5	12	75	9	0.5
22	3o2o1+2- 2o1+0o2o	13+	15	7	5	6	7	5	0	7	52	6	0.3
23	2+2o3o1o 1o1+1+2o	13o	9	7	15	4	4	5	5	7	56	7	0.4
24	3-2-2o1+ 1+1o1o1o	12o	12	6	7	5	5	4	4	4	47	6	0.3
25	2-2o1+1+ 2+3+3-3o	18-	6	7	5	5	9	18	12	15	77	10	0.5
26	2o1o1o1+ 1+1+1o3+	12+	7	4	4	5	5	5	4	18	52	6	0.3
27	2o3+2-1+ 1+1+2+2-	15o	7	18	6	5	5	5	9	6	61	8	0.4
28	3+2-1+2- 2-0+3+4o	17+	18	6	5	6	6	2	18	27	88	11	0.6
29	3o3-2-1- 1-2+2o1-	14-	15	12	6	3	3	9	7	3	58	7	0.4
30	0+1-1-1+ 2-2+3-2o	12-	2	3	3	5	6	9	12	7	47	6	0.3

	Kp	Sum	Oct. 1933				ap				Sum	Ap	Cp
1	1-1-0+0+ 0+0+1-1o	4+	3	3	2	2	2	2	3	4	21	3	0.0
2	2-2o2o2o 2-0+1-1-	11o	6	7	7	7	6	2	3	3	41	5	0.2
3	1-0+0+0+ 0+1-1-2-	5o	3	2	2	2	2	3	3	6	23	3	0.1
4	2-2+2-1o 1+2+2o3o	15+	6	9	6	4	5	9	7	15	61	8	0.4
5	4+4-3o5- 4-2-2+3+	27-	32	22	15	39	22	6	9	18	163	20	1.0
6	3+4o4-4- 3o2o1+1-	22-	18	27	22	22	15	7	5	3	119	15	0.8
7	4-4o4+5- 3-5-4o3-	31-	22	27	32	39	12	39	27	12	210	26	1.2
8	4-4-4-3+ 2o3o2+2o	24-	22	22	22	18	7	15	9	7	122	15	0.9
9	3o4+3+2+ 2+3-4o4+	26+	15	32	18	9	9	12	27	32	154	19	1.0
10	4+3+3+3+ 2o3+4o3-	26+	32	18	18	18	7	18	27	12	150	19	1.0
11	3o3-3-3- 2o1o2o4-	20-	15	12	12	12	7	4	7	22	91	11	0.7
12	5+5o3+3- 3-1-0+0+	20+	56	48	18	12	12	3	2	2	153	19	1.0
13	0o0+1+3o 5-5-2-4+	20o	0	2	5	15	39	39	6	32	138	17	0.9
14	4+2+3-4o 3+4-4o2+	27-	32	9	12	27	18	22	27	9	156	20	1.0
15	2o3o1o1o 2+2o2o2-	15o	7	15	4	4	9	7	7	6	59	7	0.4
16	2-1+2o2+ 2-2-1+1o	13o	6	5	7	9	6	6	5	4	48	6	0.3
17	1+1-2-1o 1o2-2-2+	11+	5	3	6	4	4	6	6	9	43	5	0.2
18	3o4-5-3+ 4-3o3-2+	26+	15	22	39	18	22	15	12	9	152	19	1.0
19	3o1o1o1- 1-1o1-2-	10-	15	4	4	3	3	4	3	6	42	5	0.2
20	1-1-3-1+ 1o1+1o2o	11-	3	3	12	5	4	5	4	7	43	5	0.2
21	2o0+1o1o 1+1+1-0+	8o	7	2	4	4	5	5	3	2	32	4	0.1
22	0+1+2+2o 1-0+0o1o	8o	2	5	9	7	3	2	0	4	32	4	0.1
23	1-1-1-1o 1-0+0+2+	7-	3	3	3	4	3	2	2	9	29	4	0.1
24	1-1-1+2+ 3o3+3-2+	16+	3	3	5	9	15	18	12	9	74	9	0.5
25	4o4o3o3o 1+3-2o3-	23-	27	27	15	15	5	12	7	12	120	15	0.8
26	2+2-4o1- 2o3-1o4-	18o	9	6	27	3	7	12	4	22	90	11	0.6
27	3o3-2-1- 1-1-0o1-	10o	15	12	6	3	3	3	0	3	45	6	0.3
28	2-1+2-1+ 1+0+1-0+	9-	6	5	6	5	5	2	3	2	34	4	0.1
29	1o2-0+1o 1-0+0+0+	6-	4	6	2	4	3	2	2	2	25	3	0.1
30	1-1+0+1- 1o2o1-0+	7o	3	5	2	3	4	7	3	2	29	4	0.1
31	0+0o0+1o 2-1+1-0o	5+	2	0	2	4	6	5	3	0	22	3	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1933				ap				Sum	Ap	Cp
1	1-2-2o2- 2+1o2-1o	12o	3	6	7	6	9	4	6	4	45	6	0.3
2	1o1-2-3o 1+2+2o1+	13+	4	3	6	15	5	9	7	5	54	7	0.3
3	1o3-1+2- 1+3-4o3-	17+	4	12	5	6	5	12	27	12	83	10	0.6
4	2+3-2o2- 3+3+4o3+	23-	9	12	7	6	18	18	27	18	115	14	0.8
5	1-2o2+2- 2+2+2o3+	17-	3	7	9	6	9	9	7	18	68	8	0.5
6	4-3+3o3- 5o5-4-4-	30-	22	18	15	12	48	39	22	22	198	25	1.2
7	4+3o3o4o 3o4o4+4o	30-	32	15	15	27	15	27	32	27	190	24	1.1
8	5-5-5-4- 4+3o3+4o	32+	39	39	39	22	32	15	18	27	231	29	1.3
9	2+3o3+2+ 2+3-3o3+	22+	9	15	18	9	9	12	15	18	105	13	0.8
10	1+4o2+2+ 2o3-2-2+	19-	5	27	9	9	7	12	6	9	84	10	0.6
11	3+4+3+4o 4-3-3-3-	27-	18	32	18	27	22	12	12	12	153	19	1.0
12	3-2+1+1+ 2-2-2o2o	15o	12	9	5	5	6	6	7	7	57	7	0.4
13	2-1+1+2- 1-2o1o1-	10+	6	5	5	6	3	7	4	3	39	5	0.2
14	0+1o2o1o 0+1+1+1o	8+	2	4	7	4	2	5	5	4	33	4	0.1
15	2-2o1-0+ 1-1+1o1-	8+	6	7	3	2	3	5	4	3	33	4	0.1
16	0+2o2-1o 2-1o1-1o	9+	2	7	6	4	6	4	3	4	36	4	0.2
17	1+0+0+1- 0+1o1o1-	6-	5	2	2	3	2	4	4	3	25	3	0.1
18	2-3-2+2- 2+2-1+1-	14+	6	12	9	6	9	6	5	3	56	7	0.4
19	1+2+1+2- 1o1+1+4-	14o	5	9	5	6	4	5	5	22	61	8	0.4
20	3+1-0o1- 0o0+2o3+	10+	18	3	0	3	0	2	7	18	51	6	0.3
21	4o2-1-2- 2+4-2-3o	19-	27	6	3	6	9	22	6	15	94	12	0.7
22	3o2-2-2- 1o1o2-1-	12+	15	6	6	6	4	4	6	3	50	6	0.3
23	1+4-1o1o 1o2o3-3-	15+	5	22	4	4	4	7	12	12	70	9	0.5
24	1o2o1o1- 0+1o0+0+	7-	4	7	4	3	2	4	2	2	28	4	0.1
25	2-0+0o1- 1-1o2-1o	7o	6	2	0	3	3	4	6	4	28	4	0.1
26	1o1-1-1- 0+0+0+1-	5-	4	3	3	3	2	2	2	3	22	3	0.0
27	1o1+1-1- 1-3-4-3+	14o	4	5	3	3	3	12	22	18	70	9	0.5
28	2o1+4-2+ 3o2-1+0+	16-	7	5	22	9	15	6	5	2	71	9	0.5
29	2-2+1+2- 1+2-1+1o	12+	6	9	5	6	5	6	5	4	46	6	0.3
30	2o1-0o1- 0+0+2o1+	7+	7	3	0	3	2	2	7	5	29	4	0.1

	Kp	Sum	Dec. 1933				ap				Sum	Ap	Cp
1	1+0o1+1o 1-1+0+0o	6o	5	0	5	4	3	5	2	0	24	3	0.1
2	1+2+1-1- 1o1+1+2+	11o	5	9	3	3	4	5	5	9	43	5	0.2
3	2+0+1o4o 4o2o4-3+	21-	9	2	4	27	27	7	22	18	116	14	0.8
4	2o4o4+5- 4+3o3-2o	27o	7	27	32	39	32	15	12	7	171	21	1.1
5	2o4+4o4- 5-4+3+3-	29o	7	32	27	22	39	32	18	12	189	24	1.1
6	4-2+3-2o 2+3-1+2o	19o	22	9	12	7	9	12	5	7	83	10	0.6
7	3-2o3-2o 4o1+3+2-	20-	12	7	12	7	27	5	18	6	94	12	0.7
8	2o0+1-0+ 1+1o1+1+	8+	7	2	3	2	5	4	5	5	33	4	0.1
9	1o0o1-1+ 4o4+4o5-	20o	4	0	3	5	27	32	27	39	137	17	0.9
10	3+2+2o3- 3-4o3+4+	25-	18	9	7	12	12	27	18	32	135	17	0.9
11	2+3-1+1- 1o1+2-1+	12+	9	12	5	3	4	5	6	5	49	6	0.3
12	1+0o0o0+ 0+1+1+1o	6-	5	0	0	2	2	5	5	4	23	3	0.1
13	2+1o0o0o 1o2-1o1-	8-	9	4	0	0	4	6	4	3	30	4	0.1
14	1-0+1-2- 1o0+1o1-	6+	3	2	3	6	4	2	4	3	27	3	0.1
15	0+0+0o1+ 1o1o1+1o	6+	2	2	0	5	4	4	5	4	26	3	0.1
16	1-1-0o1- 1-1+2o1+	7+	3	3	0	3	3	5	7	5	29	4	0.1
17	1o1-1o2- 3-1o1+2-	11o	4	3	4	6	12	4	5	6	44	6	0.2
18	3-3o2-2- 1o1o4-4o	19-	12	15	6	6	4	4	22	27	96	12	0.7
19	4-2+2+2o 2-2-1+1+	16+	22	9	9	7	6	6	5	5	69	9	0.5
20	1+0+0+1o 1o1+2-2o	9o	5	2	2	4	4	5	6	7	35	4	0.2
21	1o0+1+1- 0+0+2o0+	6+	4	2	5	3	2	2	7	2	27	3	0.1
22	0+2o1-1o 1+2-1o2o	10o	2	7	3	4	5	6	4	7	38	5	0.2
23	1-0o0o1o 1-2-1-1o	6-	3	0	0	4	3	6	3	4	23	3	0.1
24	1-0o1-1- 0o1-0+1-	4-	3	0	3	3	0	3	2	3	17	2	0.0
25	0+1o1o1- 0o2-2+1+	8+	2	4	4	3	0	6	9	5	33	4	0.1
26	2o1+2-1o 1o1-2-2o	11+	7	5	6	4	4	3	6	7	42	5	0.2
27	2o1-1-0o 1-2-1+1-	8-	7	3	3	0	3	6	5	3	30	4	0.1
28	1-0o0+0+ 1-1-1o4-	7+	3	0	2	2	3	3	4	22	39	5	0.2
29	4o3-1-0+ 0o1-1o1-	10o	27	12	3	2	0	3	4	3	54	7	0.3
30	0+0o0o0o 0+0+0o1-	2-	2	0	0	0	2	2	0	3	9	1	0.0
31	0+1-0+1- 1-1+1-0o	5-	2	3	2	3	3	5	3	0	21	3	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1934				ap				Sum	Ap	Cp
1	0o0+2o2+ 2+5+5o4+	22-	0	2	7	9	9	56	48	32	163	20	1.0
2	2-4o2o3o 4-3+3-1o	21+	6	27	7	15	22	18	12	4	111	14	0.8
3	0o2o3-2- 1o2-1-1-	10+	0	7	12	6	4	6	3	3	41	5	0.2
4	2+0+0o0o 1-0+0+1-	5-	9	2	0	0	3	2	2	3	21	3	0.0
5	0o2-0+0+ 0+0o1-0o	3+	0	6	2	2	2	0	3	0	15	2	0.0
6	0o0o0o0o 1-1o1-0+	3-	0	0	0	0	3	4	3	2	12	2	0.0
7	1-1-0+0+ 0o1+1+1o	6-	3	3	2	2	0	5	5	4	24	3	0.1
8	1o2+1o1o 1o1o0o1+	9-	4	9	4	4	4	4	0	5	34	4	0.1
9	1o0+0+0o 0+0o0+2-	4o	4	2	2	0	2	0	2	6	18	2	0.0
10	2-1-0+1- 0+1-2-1+	7+	6	3	2	3	2	3	6	5	30	4	0.1
11	3-1o0+1- 1o0+1+1-	8o	12	4	2	3	4	2	5	3	35	4	0.2
12	0+2-1o2- 0+0o0+0o	5+	2	6	4	6	2	0	2	0	22	3	0.0
13	1+0o0+1- 0+0+0+0o	3+	5	0	2	3	2	2	2	0	16	2	0.0
14	1o0+1+2- 1o2o3-4o	14o	4	2	5	6	4	7	12	27	67	8	0.5
15	3-2-1o1o 1-1-3o3-	13+	12	6	4	4	3	3	15	12	59	7	0.4
16	2+3o2o3- 1+1-1+1+	15-	9	15	7	12	5	3	5	5	61	8	0.4
17	0+0+0+1o 1-1+1-1+	6o	2	2	2	4	3	5	3	5	26	3	0.1
18	2o1-1+2o 2-1-3+2+	14o	7	3	5	7	6	3	18	9	58	7	0.4
19	3o2-1+1- 0+0o2-1-	9+	15	6	5	3	2	0	6	3	40	5	0.2
20	2-0+1-2- 3-1-1o0+	9o	6	2	3	6	12	3	4	2	38	5	0.2
21	0+2-3-2- 1+2o1o1-	11+	2	6	12	6	5	7	4	3	45	6	0.3
22	0o0o0o1- 1o1o2-4-	8o	0	0	0	3	4	4	6	22	39	5	0.2
23	3+3o2+2- 1+3-2+3o	20-	18	15	9	6	5	12	9	15	89	11	0.6
24	3-2o2o1- 1-1+2+3o	15-	12	7	7	3	3	5	9	15	61	8	0.4
25	2+1-2+1- 1+2o1+1+	12o	9	3	9	3	5	7	5	5	46	6	0.3
26	1-2-1-2o 1-1+2+3-	12o	3	6	3	7	3	5	9	12	48	6	0.3
27	3-2o1-0+ 1-0o0+1+	8o	12	7	3	2	3	0	2	5	34	4	0.1
28	1-0o0+2- 2o1+1+2o	9+	3	0	2	6	7	5	5	7	35	4	0.2
29	3-4-3o3- 1o2-2o2-	18+	12	22	15	12	4	6	7	6	84	10	0.6
30	3-2+1o1o 1+1-2-2+	13o	12	9	4	4	5	3	6	9	52	6	0.3
31	1+1-2o1+ 1+1o2o1o	11-	5	3	7	5	5	4	7	4	40	5	0.2

	Kp	Sum	Feb. 1934				ap				Sum	Ap	Cp
1	2-2-1o0+ 0+0+1-0o	6o	6	6	4	2	2	2	3	0	25	3	0.1
2	0o0+0+0+ 0+0+3o3+	8o	0	2	2	2	2	2	15	18	43	5	0.2
3	1-1+2-1o 1o1-2-2o	10o	3	5	6	4	4	3	6	7	38	5	0.2
4	3o3o1+1o 2-3+3-3+	19+	15	15	5	4	6	18	12	18	93	12	0.7
5	3-1o1o1o 1o2+3-3o	15-	12	4	4	4	4	9	12	15	64	8	0.4
6	2-0+0o0o 1o0+0+1+	5o	6	2	0	0	4	2	2	5	21	3	0.0
7	2-1-1-1o 1o0+2o1-	8o	6	3	3	4	4	2	7	3	32	4	0.1
8	1-0o0+0+ 0+2o3-3o	9+	3	0	2	2	2	7	12	15	43	5	0.2
9	5o5o4-2+ 3o4+4+1+	29o	48	48	22	9	15	32	32	5	211	26	1.2
10	1-2-0+2+ 4o4-4o1+	18o	3	6	2	9	27	22	27	5	101	13	0.7
11	2o4-1+1o 1+1+2-2o	14+	7	22	5	4	5	5	6	7	61	8	0.4
12	1o2o1o0+ 0o1o2+4-	11+	4	7	4	2	0	4	9	22	52	6	0.3
13	3o2-2-1+ 081-1o3-	12+	15	6	6	5	2	3	4	12	53	7	0.3
14	1+1o1o1- 1-0o0+1-	6-	5	4	4	3	3	0	2	3	24	3	0.1
15	1o1+1o2- 2o3+3o3-	16o	4	5	4	6	7	18	15	12	71	9	0.5
16	1+2-2-1+ 6-5-5o3+	25-	5	6	6	5	67	39	48	18	194	24	1.2
17	3o3+4o3+ 3-3-3+4-	26o	15	18	27	18	12	12	18	22	142	18	1.0
18	3-2o2+3+ 3-4-3+3-	23-	12	7	9	18	12	22	18	12	110	14	0.8
19	1o3-2-1+ 1+2-2-1o	12+	4	12	6	5	5	6	6	4	48	6	0.3
20	2o3-2o2+ 1+1+2-1o	14+	7	12	7	9	5	5	6	4	55	7	0.3
21	1-0+1+1+ 1-1o1+2o	9-	3	2	5	5	3	4	5	7	34	4	0.1
22	3+3+2+1+ 1-1-1-1o	13+	18	18	9	5	3	3	3	4	63	8	0.4
23	1+1-1-0+ 1o1-1o1o	7-	5	3	3	2	4	3	4	4	28	4	0.1
24	0o0+0+1- 2-1+2-3+	9+	0	2	2	3	6	5	6	18	42	5	0.2
25	2o1+1-3o 3o1o1-2o	14-	7	5	3	15	15	4	3	7	59	7	0.4
26	1+1-1o1+ 1-1-0o0+	6o	5	3	4	5	3	3	0	2	25	3	0.1
27	0o0o0+1o 2o2-1+1o	7+	0	0	2	4	7	6	5	4	28	4	0.1
28	1o1-1-1o 1+2o1o0+	8o	4	3	3	4	5	7	4	2	32	4	0.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	March 1934				ap				Sum	Ap	Cp
1	0o1o0+1- 1-1+2o1o	7o	0	4	2	3	3	5	7	4	28	4	0.1
2	2o2-2o4o 4+3-4-3-	23o	7	6	7	27	32	12	22	12	125	16	0.9
3	4-1+1+1+ 2o0+1o0o	11o	22	5	5	5	7	2	4	0	50	6	0.3
4	0o0o0+0+ 2o4o5-6-	17o	0	0	2	2	7	27	39	67	144	18	1.0
5	4o4o6o5- 3-3+4-4+	33-	27	27	80	39	12	18	22	32	257	32	1.3
6	4+3o3+4- 2+3-2+2-	23+	32	15	18	22	9	12	9	6	123	15	0.9
7	3+4-3+4+ 4-4-4-5-	30+	18	22	18	32	22	22	22	39	195	24	1.2
8	3o3-2o1+ 1+1-1+2o	14+	15	12	7	5	5	3	5	7	59	7	0.4
9	2+2-2+1o 1-2+2+3-	15+	9	6	9	4	3	9	9	12	61	8	0.4
10	3o4-3o2+ 2+1o3+2+	21o	15	22	15	9	9	4	18	9	101	13	0.7
11	3-5-1+2o 2o0o4o3o	20-	12	39	5	7	7	0	27	15	112	14	0.8
12	2+2o1o2- 0+1o0+1o	10-	9	7	4	6	2	4	2	4	38	5	0.2
13	1-0o0+1- 0+0+2o1+	6-	3	0	2	3	2	2	7	5	24	3	0.1
14	1-0o0+0+ 1-0+1o1o	4+	3	0	2	2	3	2	4	4	20	2	0.0
15	4-3o2-2o 3-0+0+0+	14o	22	15	6	7	12	2	2	2	68	8	0.5
16	1o1+3-2+ 2o1+3-3o	16+	4	5	12	9	7	5	12	15	69	9	0.5
17	3o2o1o2o 1+1-1o3-	14-	15	7	4	7	5	3	4	12	57	7	0.4
18	3-1o2o2- 1+3o2-3o	16+	12	4	7	6	5	15	6	15	70	9	0.5
19	3-0+1+1+ 2-0+0o1-	8+	12	2	5	5	6	2	0	3	35	4	0.2
20	2-1+1-0+ 0+0+1o1-	6+	6	5	3	2	2	2	4	3	27	3	0.1
21	2-0+1-0+ 1+1o1+1-	7+	6	2	3	2	5	4	5	3	30	4	0.1
22	1-4+2o1o 2o3-4-5o	21+	3	32	7	4	7	12	22	48	135	17	0.9
23	3+3o2o1- 1-2+3+4o	19+	18	15	7	3	3	9	18	27	100	12	0.7
24	1+1+2+1- 0+1o3-5-	14+	5	5	9	3	2	4	12	39	79	10	0.6
25	5+3o2o4- 3-4o3-4-	27o	56	15	7	22	12	27	12	22	173	22	1.1
26	3-0o1-0+ 0+1o3+3o	11+	12	0	3	2	2	4	18	15	56	7	0.4
27	2o1o1-0o 1o2-2+2o	11-	7	4	3	0	4	6	9	7	40	5	0.2
28	0+0o1-2- 2-1o3+4+	13o	2	0	3	6	6	4	18	32	71	9	0.5
29	4o4o3-3- 2o3-1o2+	21+	27	27	12	12	7	12	4	9	110	14	0.8
30	2-2+2o1- 1-0+3-4-	14o	6	9	7	3	3	2	12	22	64	8	0.4
31	3o3o5o4- 5-3-4-3o	29-	15	15	48	22	39	12	22	15	188	24	1.1

	Kp	Sum	April 1934				ap				Sum	Ap	Cp
1	3+4-3+3+ 3+4o4-4-	28+	18	22	18	18	18	27	22	22	165	21	1.1
2	4o3-1+2- 2+1-3-2-	17o	27	12	5	6	9	3	12	6	80	10	0.6
3	1o2-0+1o 2o2o2+2o	12+	4	6	2	4	7	7	9	7	46	6	0.3
4	3o1+2-2- 1+3o4-5o	11-	15	5	6	6	5	15	22	48	122	15	0.9
5	4-2+3-2- 4-5o4-2-	24+	22	9	12	6	22	48	22	6	147	18	1.0
6	3o3+4-3+ 2o2-2o3-	22-	15	18	22	18	7	6	7	12	105	13	0.8
7	3o2+3-1o 1-1-1o0+	12-	15	9	12	4	3	3	4	2	52	6	0.3
8	1-0+1o0+ 1-2o1o2-	8-	3	2	4	2	3	7	4	6	31	4	0.1
9	1o3o0+0+ 1o1+1-0o	8-	4	15	2	2	4	5	3	0	35	4	0.2
10	0+2o1o0o 0o0o0o1+	5-	2	7	4	0	0	0	0	5	18	2	0.0
11	1+0o1-1- 1+1-0o0o	5-	5	0	3	3	5	3	0	0	19	2	0.0
12	1o2o0o1- 1-1o1-0+	6+	4	7	1	3	3	4	3	2	26	3	0.1
13	1o0+0+1+ 1+0+0o0+	5o	4	2	2	5	5	2	0	2	22	3	0.0
14	0+0+1+1o 1-1-1+1+	7o	2	2	5	4	3	3	5	5	29	4	0.1
15	2-1+0+1- 1-0+1-3+	9o	6	5	2	3	3	2	3	18	42	5	0.2
16	3+3+3o3o 3+2+2o2-	22o	18	18	15	15	18	9	7	6	106	13	0.8
17	1+2o1-0+ 0+1-0+0o	6-	5	7	3	2	2	3	2	0	24	3	0.1
18	0o0o0+1- 0o0+0+0+	2o	0	0	2	3	0	2	2	2	11	1	0.0
19	0o0+1o1o 1o2-2-1-	7+	0	2	4	4	4	6	6	3	29	4	0.1
20	2o3+1o1- 1+1+1o1+	12o	7	18	4	3	5	5	4	5	51	6	0.3
21	1o1-1-2- 1o1o1o1o	8o	4	3	3	6	4	4	4	4	32	4	0.1
22	2-1-1+1+ 2+2o1-1+	11+	6	3	5	5	9	7	3	5	43	5	0.2
23	0+1+1o1o 1-0+1-1+	7-	2	5	4	4	3	2	3	5	28	4	0.1
24	1o3-2-3o 0+0+0+1-	10o	4	12	6	15	2	2	2	3	46	6	0.3
25	1o2+2-1o 1-0+2o2o	11o	4	9	6	4	3	2	7	7	42	5	0.2
26	1o0+0+0+ 0+0+2-2-	6o	4	2	2	2	2	2	6	6	26	3	0.1
27	1o1-1o1- 1i1-1+1+	8-	4	3	4	3	4	3	5	5	31	4	0.1
28	2o2-0+0+ 1-0+0o0+	6-	7	6	2	2	3	2	0	2	24	3	0.1
29	0+0o0+0+ 0+0+1-0+	3-	2	0	2	2	2	2	3	2	15	2	0.0
30	0o0+1o1- 1o1o1o1o	6o	0	2	4	3	4	4	4	4	25	3	0.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1934	ap							Sum	Ap	Cp
1	2+2-2+1- 1-0+0o1o	9o	9	6	9	3	3	2	0	4	36	4	0.2
2	3-1o2o1- 2o3-4+5+	21-	12	4	7	3	7	12	32	56	133	17	0.9
3	5-4o4-2- 2-1+2-4o	23-	39	27	22	6	6	5	6	27	138	17	0.9
4	2o0+1o3- 2o0+0o2o	10+	7	2	4	12	7	2	0	7	41	5	0.2
5	1o0+0+1+ 1+2o1+1o	9-	4	2	2	5	5	7	5	4	34	4	0.1
6	1o2o1o1- 1o1o1o2+	10o	4	7	4	3	4	4	4	9	39	5	0.2
7	1o0o0+0+ 1-1-2-1o	6-	4	0	2	2	3	3	6	4	24	3	0.1
8	2o0+1o1- 0+0+0+0+	5+	7	2	4	3	2	2	2	2	24	3	0.1
9	0+0+1o1- 1o1+1-2-	7o	2	2	4	3	4	5	3	6	29	4	0.1
10	2+2-1o0+ 0+1-1+3-	10+	9	6	4	2	2	3	5	12	43	5	0.2
11	1+3-1o1+ 2-1o2+6+	18-	5	12	4	5	6	4	9	94	139	17	0.9
12	5-4-4o1o 1o2-2-3+	21o	39	22	27	4	4	6	6	18	126	16	0.9
13	3-2+2-1o 1+1+1o1-	12o	12	9	6	4	5	5	4	3	48	6	0.3
14	1+1+1-0+ 1-0+1o0+	6o	5	5	3	2	3	2	4	2	26	3	0.1
15	0+0+0+1- 0+0+0+1+	4o	2	2	2	3	2	2	2	5	20	2	0.0
16	0+1-0+1- 0+0+0+0+	3+	2	3	2	3	2	2	2	2	18	2	0.0
17	1-1o0+0+ 0+0+0+2-	5o	3	4	2	2	2	2	2	6	23	3	0.1
18	0+3-3+3o 5+6o4+3+	28+	2	12	18	15	56	80	32	18	233	29	1.3
19	5-2-2o2- 2+2o1-2+	17+	39	6	7	6	9	7	3	9	86	11	0.6
20	1-0+0+0o 0+1+2+1o	6+	3	2	2	0	2	5	9	4	27	3	0.1
21	2o1+1o2o 2-2+3-1+	14+	7	5	4	7	6	9	12	5	55	7	0.3
22	1o1o3-3- 3-2-1+2o	15o	4	4	12	12	12	6	5	7	62	8	0.4
23	2o1+3-1- 0+2o2o1o	12o	7	5	12	3	2	7	7	4	47	6	0.3
24	1-0+0+0+ 0+2o3-2+	9o	3	2	2	2	2	7	12	9	39	5	0.2
25	1o0o1-1- 1o3-3o3-	12-	4	0	3	3	4	12	15	12	53	7	0.3
26	2+1+1-1+ 1-0+1-1-	8o	9	5	3	5	3	2	3	3	33	4	0.1
27	0o0+0+0+ 0+1-0+1-	3o	0	2	2	2	2	3	2	3	16	2	0.0
28	0o0o0+0o 0o0o0o0o	0+	0	0	2	0	0	0	0	0	2	0	0.0
29	0o0o0+0+ 1-1-1o0+	3+	0	0	2	2	3	3	4	2	16	2	0.0
30	1o2-0+0o 1o1-1+2-	8-	4	6	2	0	4	3	5	6	30	4	0.1
31	1o0+0+1- 1-0+0+0+	4o	4	2	2	3	3	2	2	2	20	2	0.0

	Kp	Sum	June 1934	ap							Sum	Ap	Cp
1	0+1-0+0+ 0+0+1o1o	4-	2	3	2	2	2	2	4	4	21	3	0.0
2	0o0o0o0+ 0+1-0+1o	3-	0	0	0	2	2	3	2	4	13	2	0.0
3	0o0+0o1- 0+0+0+1+	3+	0	2	0	3	2	2	2	5	16	2	0.0
4	1-0+0+0+ 2-2-4-2+	11o	3	2	2	2	6	6	22	9	52	6	0.3
5	4-3+2-3- 4o4-3o3+	25+	22	18	6	12	27	22	15	18	140	18	1.0
6	5-3o3o2+ 1o4-1+1+	20+	39	15	15	9	4	22	5	5	114	14	0.8
7	2o1+2-1- 2-0+1-1-	9o	7	5	6	3	6	2	3	3	35	4	0.2
8	1-0o0+1o 2o3o4-3+	14o	3	0	2	4	7	15	22	18	71	9	0.5
9	3o3o2o2- 2o1o2-2-	16o	15	15	7	6	7	4	6	6	66	8	0.4
10	1+1+1-0+ 1-1-1o1o	7o	5	5	3	2	3	3	4	4	29	4	0.1
11	1-0+0+1- 2+3o4-2+	13+	3	2	2	3	9	15	22	9	65	8	0.4
12	4+4-1+1+ 2o2+2-1-	17+	32	22	5	5	7	9	6	3	89	11	0.6
13	1-1+1o1o 1+0+0+0+	6+	3	5	4	4	5	2	2	2	27	3	0.1
14	0+0+0+0o 1o1o2o4-	9-	2	2	2	0	4	4	7	22	43	5	0.2
15	4-3+3o1o 0+1-0+1-	13o	22	18	15	4	2	3	2	3	69	9	0.5
16	1-0+1-1o 1-1+2+1o	8o	3	2	3	4	3	5	9	4	33	4	0.1
17	1-2o0+0+ 0+1-2-2+	8+	3	7	2	2	2	3	6	9	34	4	0.1
18	1-1o2-2- 2o4-2+3o	16o	3	4	6	6	7	22	9	15	72	9	0.5
19	1+1-2-1+ 1-1-0+0+	7o	5	3	6	5	3	3	2	2	29	4	0.1
20	0o2+1o0+ 1-1o2o2-	9o	0	9	4	2	3	4	7	6	35	4	0.2
21	0+0+0o0o 0+0o0+1-	2o	2	2	0	0	2	0	2	3	11	1	0.0
22	0+0+0+0+ 0o0+0+1-	3-	2	2	2	2	0	2	2	3	15	2	0.0
23	1-0+0+0+ 0+1-2o2-	6+	3	2	2	2	2	3	7	6	27	3	0.1
24	0+1+1+1- 0+0+0+0o	5-	2	5	5	3	2	2	2	0	21	3	0.0
25	1-0+1o0+ 0+0+0+0o	3+	3	2	4	2	2	2	2	0	17	2	0.0
26	0+0+0+0+ 0+0+0o0o	2o	2	2	2	2	2	2	0	0	12	2	0.0
27	0o0+0o0+ 1o3-3+2o	10-	0	2	0	2	4	12	18	7	45	6	0.3
28	2-1-1-1o 1o1o1o2o	9o	6	3	3	4	4	4	4	7	35	4	0.2
29	2+2-0o0+ 1-1-0+0+	6+	9	6	0	2	3	3	2	2	27	3	0.1
30	0+0+0o1o 1o1o0o0+	3+	2	2	0	4	3	3	0	2	16	2	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1934				ap				Sum	Ap	Cp
1	2o3+0+0+ 1-1-1+1o	10-	7	18	2	2	3	3	5	4	44	6	0.2
2	2-1o2-1- 1-0+0o0o	6o	6	4	6	3	3	2	0	0	24	3	0.1
3	1o0+0+4o 5+4-3+2+	20+	4	2	2	27	56	22	18	9	140	18	1.0
4	3o2+2+2+ 2+1+1+2+	17+	15	9	9	9	9	5	5	9	70	9	0.5
5	2o3+3o1+ 2-1+1o1o	15-	7	18	15	5	6	5	4	4	64	8	0.4
6	2o2+1-0+ 1-2o1o1-	10-	7	9	3	2	3	7	4	3	38	5	0.2
7	2o2o1-1o 1o1+1-1-	9+	7	7	3	4	4	5	3	3	36	4	0.2
8	1-2-1-1+ 0+0+1+2-	8o	3	6	3	5	2	2	5	6	32	4	0.1
9	2-2+2o1o 1+1-1+1o	11+	6	9	7	4	5	3	5	4	43	5	0.2
10	1+0+1-0+ 0+0+0+1-	4+	5	2	3	2	2	2	2	3	21	3	0.0
11	0+1o0+0+ 0+2o3-1-	8-	2	4	2	2	2	7	12	3	34	4	0.1
12	1+2-0+0+ 1o1-1+1o	8-	5	6	2	2	4	3	5	4	31	4	0.1
13	0+1-1o1o 1+1+1+0+	7+	2	3	4	4	5	5	5	2	30	4	0.1
14	1-1+0+1- 1o2-4o2o	12-	3	5	2	3	4	6	27	7	57	7	0.4
15	3+2o2o1- 1o2-0+1-	12-	18	7	7	3	4	6	2	3	50	6	0.3
16	3-3o2o1+ 1o1+2+1-	14+	12	15	7	5	4	5	9	3	60	8	0.4
17	0o0+0+1- 0+1o2-2+	7-	0	2	2	3	2	4	6	9	28	4	0.1
18	1+1+0+1- 1+1o1-1o	8-	5	5	2	3	5	4	3	4	31	4	0.1
19	1-1+0+1+ 0+0+1-1-	6-	3	5	2	5	2	2	3	3	25	3	0.1
20	1-0+1-0+ 1+1+1o0+	6o	3	2	3	2	5	5	4	2	26	3	0.1
21	1+0+0o0+ 0+0+0+2-	5-	5	2	0	2	2	2	2	6	21	3	0.0
22	1-0+0+1- 0+0o0o0+	3-	3	2	2	3	2	0	0	2	14	2	0.0
23	0o0+1o1- 0+0o0o1-	3o	0	2	4	3	2	0	0	3	14	2	0.0
24	0o0+1o1o 1o2o1+1o	8-	0	2	4	4	4	7	5	4	30	4	0.1
25	0+1-1+1- 1o1-0+3-	8-	2	3	5	3	4	3	2	12	34	4	0.1
26	1+1o0+0+ 1o0+1-1-	6-	5	4	2	2	4	2	3	3	25	3	0.1
27	1+1o1o0+ 1-0o1-0+	5+	5	4	4	2	3	0	3	2	23	3	0.1
28	0+0o0o0+ 0+1-1-1o	3+	2	0	0	2	2	3	3	4	16	2	0.0
29	2o2+2-2+ 3-2-2o2-	16+	7	9	6	9	12	6	7	6	62	8	0.4
30	1-5-6-5o 5+3+1+3o	29o	3	39	67	48	56	18	5	15	251	31	1.3
31	3o2-1+2- 1+4-3-2-	17o	15	6	5	6	5	22	12	6	77	10	0.5

	Kp	Sum	Aug. 1934				ap				Sum	Ap	Cp
1	4o3o4-3+ 3-1+1o1+	20+	27	15	22	18	12	5	4	5	108	14	0.8
2	2-2-3-2+ 2+2-2o1+	16-	6	6	12	9	9	6	7	5	60	8	0.4
3	3-4-1+4+ 4-4o4o3-	26+	12	22	5	32	22	27	27	12	159	20	1.0
4	2+2+4-1+ 2o2o4-4o	21+	9	9	22	5	7	7	22	27	108	14	0.8
5	4o3+1o2- 2-1-1-2o	15o	27	18	4	6	6	3	3	7	74	9	0.5
6	3-2-3+2- 2-1o0+2o	14+	12	6	18	6	6	4	2	7	61	8	0.4
7	1o1+1o3o 2o1-1+1o	11+	4	5	4	15	7	3	5	4	47	6	0.3
8	0+1o1-2- 2-1o1-3-	10-	2	4	3	6	6	4	3	12	40	5	0.2
9	1+1o0o0+ 0+1-1o0+	5o	5	4	0	2	2	3	4	2	22	3	0.0
10	1+2o3-0+ 0+1-0+2-	9+	5	7	12	2	2	3	2	6	39	5	0.2
11	2+2+2o2o 0+1-0+1-	11-	9	9	7	7	2	3	2	3	42	5	0.2
12	1-0+0+0+ 0+2o4-4+	12o	3	2	2	2	2	7	22	32	72	9	0.5
13	3+1o1+1o 2o2+1o3-	15-	18	4	5	4	7	9	4	12	63	8	0.4
14	1-1+1o1- 2o2o2+3+	13+	3	5	4	3	7	7	9	18	56	7	0.4
15	1o2-2o1- 1o1o2o3-	12o	4	6	7	3	4	4	7	12	47	6	0.3
16	3-1-1-1o 1+1-1o2-	10-	12	3	3	4	5	3	4	6	40	5	0.2
17	3-2-1+1+ 2-2+3-3o	17-	12	6	5	5	6	9	12	15	70	9	0.5
18	3-2+1+2o 0+1o3-3o	15+	12	9	5	7	2	4	12	15	66	8	0.4
19	2+3o1o1o 2o3+2+2o	17o	9	15	4	4	7	18	9	7	73	9	0.5
20	1-0o0+1o 0+1-1+1+	6-	3	0	2	4	2	3	5	5	24	3	0.1
21	0+1+2o2- 2-1o1+1-	10o	2	5	7	6	6	4	5	3	38	5	0.2
22	2o2-3o2+ 3+3-2-0+	17o	7	6	15	9	18	12	6	2	75	9	0.5
23	0+0o0+0+ 0+0+2+2+	6+	2	0	2	2	2	2	9	9	28	4	0.1
24	1-1o1-0+ 0+0+0o1-	4o	3	4	3	2	2	2	0	3	19	2	0.0
25	1-0+0o0+ 0o1-1+1+	5-	3	2	0	2	0	3	5	5	20	2	0.0
26	2o2-1-2o 4-3o3+4o	20+	7	6	3	7	22	15	18	27	105	13	0.8
27	4o5o4-2- 2+3-3+4-	26+	27	48	22	6	9	12	18	22	164	20	1.0
28	4+4o4+4o 3+3-2-4-	28o	32	27	32	27	18	12	6	22	176	22	1.1
29	3-4o5-4o 3-2o4o3+	27+	12	27	39	27	12	7	27	18	169	21	1.1
30	2+3+3+3+ 3-2+3-3o	23o	9	18	18	18	12	9	12	15	111	14	0.8
31	3-1-2-3- 3-1+2-3+	17-	12	3	6	12	12	5	6	18	74	9	0.5

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1934				ap				Sum	Ap	Cp
1	2+1o3-2o 3-2+2-3+	18o	9	4	12	7	12	9	6	18	77	10	0.5
2	2+4o4-1+ 4-4+4-3+	26+	9	27	22	5	22	32	22	18	157	20	1.0
3	4o3-3o4- 2+3-2+2+	23o	27	12	15	22	9	12	9	9	115	14	0.8
4	2+2-1o2o 2o3o3-2+	17o	9	6	4	7	7	15	12	9	69	9	0.5
5	0o1+1o2- 1-1-0+1o	7-	0	5	4	6	3	3	2	4	27	3	0.1
6	2-0o1o2o 1-1o2-2+	10+	6	0	4	7	3	4	6	9	39	5	0.2
7	4-3-0+2- 1-1-1o0+	11o	22	12	2	6	3	3	4	2	54	7	0.3
8	3-0+1o1o 1+2+2o1-	11+	12	2	4	4	5	9	7	3	46	6	0.3
9	0+1o0+0+ 0o0+1o1+	5-	2	4	2	2	0	2	4	5	21	3	0.0
10	0o1o0+0+ 1-0o0+1o	4-	0	4	2	2	3	0	2	4	17	2	0.0
11	1+0+1+1+ 2-1-3o2o	12-	5	2	5	5	6	3	15	7	48	6	0.3
12	3-3o3-2o 1-1o2o1o	15o	12	15	12	7	3	4	7	4	64	8	0.4
13	1o1-0+0+ 1-0+0o1-	4o	4	3	2	2	3	2	0	3	19	2	0.0
14	0+0+1o1- 1o1-0+0+	5-	2	2	4	3	4	3	2	2	22	3	0.0
15	1-0+0+1- 0+1o1+1+	6o	3	2	2	3	2	4	5	5	26	3	0.1
16	2-3+2-3- 3o3o2+2o	20-	6	18	6	12	15	15	9	7	88	11	0.6
17	4-2o3o4- 3+2+1+1o	20+	22	7	15	22	18	9	5	4	102	13	0.7
18	1+2o1o2+ 1o0o0+1+	9+	5	7	4	9	4	0	2	5	36	4	0.2
19	1o0o0+1- 1o3+2o3+	12-	4	0	2	3	4	18	7	18	56	7	0.4
20	3o1-3o2+ 1+3o2-2-	17-	15	3	15	9	5	15	6	6	74	9	0.5
21	1-1o0+0o 1-1+2+3-	9o	3	4	2	0	3	5	9	12	38	5	0.2
22	5o3o1-1o 2-2-1+0+	15-	48	15	3	4	6	6	5	2	89	11	0.6
23	2-1+0+1+ 1-1o0+0o	7-	6	5	2	5	3	4	2	0	27	3	0.1
24	1+3o5-5- 4o3o4-5+	30-	5	15	39	39	27	15	22	56	218	27	1.2
25	5-6+5o5- 5o6-6o3o	40+	39	94	48	39	48	67	80	15	430	54	1.6
26	3-1-1-2o 3-2o3+4o	18o	12	3	3	7	12	7	18	27	89	11	0.6
27	3-4o4o2o 3o5-4o3-	27o	12	27	27	7	15	39	27	12	166	21	1.1
28	3-1-3-3o 3+2-2+0+	17-	12	3	12	15	18	6	9	2	77	10	0.5
29	1-1o1-1o 2-2o2+2-	11o	3	4	3	4	6	7	9	6	42	5	0.2
30	3o3o3+1+ 2+1+4+2o	21-	15	15	18	5	9	5	32	7	106	13	0.8

	Kp	Sum	Oct. 1934				ap				Sum	Ap	Cp
1	1-2o2+1+ 2-1o1+2o	12+	3	7	9	5	6	4	5	7	46	6	0.3
2	2-2o2-2- 2-1-1o0+	11-	6	7	6	6	6	3	4	2	40	5	0.2
3	0+1-0+2- 1+1-0o0o	5o	2	3	2	6	5	3	0	0	21	3	0.0
4	0o1+1-1- 2-1o1-2-	8-	0	5	3	3	6	4	3	6	30	4	0.1
5	1-0o1+1o 1+2-2-0+	8o	3	0	5	4	5	6	6	2	31	4	0.1
6	0o1-1o1+ 1o1o1-2+	8o	0	3	4	5	4	4	3	9	32	4	0.1
7	1o1-0+0+ 2o2o1+1+	9o	4	3	2	2	7	7	5	5	35	4	0.2
8	0o0+0+1o 1o0o0o1-	3+	0	2	2	4	4	0	0	3	15	2	0.0
9	0o0o1+0+ 0o0o0o0o	2-	0	0	5	2	0	0	0	0	7	1	0.0
10	0o0o0+0+ 0+0o0+0+	2-	0	0	2	2	2	0	2	2	10	1	0.0
11	0o0o0+1- 0+0o0o0+	2-	0	0	2	3	2	0	0	2	9	1	0.0
12	3o2+1-2- 1o0+1+3-	13o	15	9	3	6	4	2	5	12	56	7	0.4
13	3o4-3o1+ 1o2-3-3-	19o	15	22	15	5	4	6	12	12	91	11	0.7
14	2o3-2+2- 0+1-0+1-	11-	7	12	9	6	2	3	2	3	44	6	0.2
15	1-2-2+1+ 2o4o4-3+	19o	3	6	9	5	7	27	22	18	97	12	0.7
16	1-0o1-2o 1o0+0+0+	5+	3	0	3	7	4	2	2	2	23	3	0.1
17	3-2o1+1- 0o0+2-2o	11-	12	7	5	3	0	2	6	7	42	5	0.2
18	3+1o0+1o 0o0+1-0o	7-	18	4	2	4	0	2	3	0	33	4	0.1
19	0o0o0+0o 0o0o0+0o	1-	0	0	2	0	0	0	2	0	4	0	0.0
20	0o1-0+0+ 1o1+3+3+	10+	0	3	2	2	4	5	18	18	52	6	0.3
21	3-2o1o1+ 1-1+2o1o	12o	12	7	4	5	3	5	7	4	47	6	0.3
22	3-3+2-1+ 1o1-1+1-	13-	12	18	6	5	4	3	5	3	56	7	0.4
23	2-1-1o0+ 0o0o0o2-	5+	6	3	4	2	0	0	0	6	21	3	0.0
24	3-5o5-4+ 4o4o2+1+	28+	12	48	39	32	27	27	9	5	199	25	1.2
25	3+3o3-2o 3-5-3+2+	24o	18	15	12	7	12	39	18	9	130	16	0.9
26	3+3+2o3+ 4o3o3-1o	23-	18	18	7	18	27	15	12	4	119	15	0.8
27	3-2+1+2o 2+2-1-2-	15-	12	9	5	7	9	6	3	6	57	7	0.4
28	1o3o2o0+ 2o2o0o0+	11-	4	15	7	2	7	7	0	2	44	6	0.2
29	1-0+1o0+ 1-0o0+1-	4o	3	2	4	2	3	0	2	3	19	2	0.0
30	1o0+1+0+ 0+1+0o1-	5+	4	2	5	2	2	5	0	3	23	3	0.1
31	0o1-1o1o 0+1o1-0+	5o	0	3	4	4	2	4	3	2	22	3	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1934				ap				Sum	Ap	Cp
1	0o0o0+0+ 0+0o1-0o	2-	0	0	2	2	2	0	3	0	9	1	0.0
2	1+0+0o0+ 0o0+1-0+	3+	5	2	0	2	0	2	3	2	16	2	0.0
3	0o0+1-1o 1-0+2+2o	7+	0	2	3	4	3	2	9	7	30	4	0.1
4	0o3-0+0+ 0+1-1-1o	6o	0	12	2	2	2	3	3	4	28	4	0.1
5	0+0+0+1+ 1+2-2-2-	9-	2	2	2	5	5	6	6	6	34	4	0.1
6	2-1-0+1- 0+1-0o0+	5-	6	3	2	3	2	3	0	2	21	3	0.0
7	1-3-2+5- 4-5-4+4+	27+	3	12	9	39	22	39	32	32	188	24	1.1
8	3o3o3-4o 3o3+2-2+	23o	15	15	12	27	15	18	6	9	117	15	0.8
9	3o4-3o2o 1o1-2o1o	16+	15	22	15	7	4	3	7	4	77	10	0.5
10	2-2o1+0+ 1+1+1o1-	10-	6	7	5	2	5	5	4	3	37	5	0.2
11	1-1o1+1o 0+1+1+1o	8o	3	4	5	4	2	5	5	4	32	4	0.1
12	1o1-1o1o 0+1o2o1-	8-	4	3	4	4	2	4	7	3	31	4	0.1
13	0o0o0+1o 2-2-2-3+	10-	0	0	2	4	6	6	6	18	42	5	0.2
14	2-3+1+1- 1-1+0o1-	10-	6	18	5	3	3	5	0	3	43	5	0.2
15	0o0o0+1o 1-1o1-1o	5-	0	0	2	4	3	4	3	4	20	2	0.0
16	1+0+2-1o 0+0+0+0o	5+	5	2	6	4	2	2	2	0	23	3	0.1
17	0+2o2-0+ 1-0+0o2+	8-	2	7	6	2	3	2	0	9	31	4	0.1
18	3-3-0+0o 0o0+1-1+	8o	12	12	2	0	0	2	3	5	36	4	0.2
19	3-3-1-0+ 1+0+0o0o	8o	12	12	3	2	5	2	0	0	36	4	0.2
20	0o0o0+0o 0o0+1-0+	2-	0	0	2	0	0	2	3	2	9	1	0.0
21	1-0+0+1- 0+1-0o0o	3o	3	2	2	3	2	3	0	0	15	2	0.0
22	0o0o0o0+ 0o0o0o0+	1-	0	0	0	2	0	0	0	2	4	0	0.0
23	1+0+0+0o 0o0o0+0o	2+	5	2	2	0	0	0	2	0	11	1	0.0
24	0o0o0+0o 0+3o4-2+	10-	0	0	2	0	2	15	22	9	50	6	0.3
25	3+2+2o3o 3-2o1-0+	16+	18	9	7	15	12	7	3	2	73	9	0.5
26	2o0+1o0o 0o0o0+0+	4o	7	2	4	0	0	0	2	2	17	2	0.0
27	2-0+1+0+ 0+0+1-1o	6o	6	2	5	2	2	2	3	4	26	3	0.1
28	2-2-1o1o 1o1-2-3-	11+	6	6	4	4	4	3	6	12	45	6	0.3
29	0+1o1+0+ 1+2o2-0+	8+	2	4	5	2	5	7	6	2	33	4	0.1
30	1-0+0+0+ 0o0o0o0o	2-	3	2	2	2	0	0	0	0	9	1	0.0

	Kp	Sum	Dec. 1934				ap				Sum	Ap	Cp
1	0o3-2-4- 3-3o2o2o	18-	0	12	6	22	12	15	7	7	81	10	0.6
2	2o4+2-1+ 1+0o0+0+	11+	7	32	6	5	5	0	2	2	59	7	0.4
3	2-3o2+2- 2-1+1+5o	18o	6	15	9	6	6	5	5	48	100	12	0.7
4	6+5+6o3+ 5-3+2o2+	33+	94	56	80	18	39	18	7	9	321	40	1.5
5	3o4-3-2- 2-3o3+1o	20o	15	22	12	6	6	15	18	4	98	12	0.7
6	1-1-2o1- 1-1o0+1-	7-	3	3	7	3	3	4	2	3	28	4	0.1
7	0+3-3o2o 1+1o2+1o	14-	2	12	15	7	5	4	9	4	58	7	0.4
8	1+2o2-1o 1-1+1o1o	10o	5	7	6	4	3	5	4	4	38	5	0.2
9	1-1o0+1- 1-1+1o1o	7-	3	4	2	3	3	5	4	4	28	4	0.1
10	1-0+1-0+ 0+0+1+1o	5o	3	2	3	2	2	2	5	4	23	3	0.1
11	0o1+0o2o 2-2+2o0+	10-	0	5	0	7	6	9	7	2	36	4	0.2
12	0o0+0o0o 2-1+0+1-	4+	0	2	0	0	6	5	2	3	18	2	0.0
13	0o1o0o1- 1-0+0+1+	4+	0	4	0	3	3	2	2	5	19	2	0.0
14	0o0o0o0o 0o1o2o3-	6-	0	0	0	0	0	4	7	12	23	3	0.1
15	2o3o2o2o 2o1+2o0o	14+	7	15	7	7	7	5	7	0	55	7	0.3
16	1+0o0o0+ 0o0o0o0o	2-	5	0	0	2	0	0	0	0	7	1	0.0
17	0o0o0+0+ 0o0o0+1-	2-	0	0	2	2	0	0	2	3	9	1	0.0
18	0o0o1o0+ 0+0+1-3o	6-	0	0	4	2	2	2	3	15	28	4	0.1
19	3o2+2-0+ 1-0o1+1o	10+	15	9	6	2	3	0	5	4	44	6	0.2
20	3o1+0o0o 1o0o1-0+	6+	15	5	0	0	4	0	3	2	29	4	0.1
21	2o1o1+2+ 4-3o3o1o	17+	7	4	5	9	22	15	15	4	81	10	0.6
22	2o3-2+1+ 1o1-0+3-	13o	7	12	9	5	4	3	2	12	54	7	0.3
23	1+1-0o0o 0o0o0o0+	2+	5	3	0	0	0	0	0	2	10	1	0.0
24	1-3-1+2o 2-4o2+3-	17+	3	12	5	7	6	27	9	12	81	10	0.6
25	5-2o2o2- 3-2+3+3o	22-	39	7	7	6	12	9	18	15	113	14	0.8
26	2+4-1o2- 2-1-0o1-	12-	9	22	4	6	6	3	0	3	53	7	0.3
27	1-0o0o0+ 0o1+1o0+	4-	3	0	0	2	0	5	4	2	16	2	0.0
28	2-2o0+1o 0+1+1-0+	8-	6	7	2	4	2	5	3	2	31	4	0.1
29	1-1+2o2+ 4-5-6-5-	25o	3	5	7	9	22	39	67	39	191	24	1.2
30	5-4-3o4- 5-4o4+3o	31o	39	22	15	22	39	27	32	15	211	26	1.2
31	4-5-1o1- 1o2o3o3o	19o	22	39	4	3	4	7	15	15	109	14	0.8

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1935				ap				Sum	Ap	Cp
1	1+2o5-4- 2-1-2+2o	18+	5	7	39	22	6	3	9	7	98	12	0.7
2	4-3o1+4o 2-2+2-0+	18o	22	15	5	27	6	9	6	2	92	12	0.7
3	2+1+3-3+ 3+1+2+3o	20-	9	5	12	18	18	5	9	15	91	11	0.7
4	4o1o3+2o 2-2+3-2o	19o	27	4	18	7	6	9	12	7	90	11	0.6
5	1+1o2-1+ 0+0+2-1+	9o	5	4	6	5	2	2	6	5	35	4	0.2
6	0o0o1-1- 0o0o0o1-	2o	0	0	3	3	0	0	0	3	9	1	0.0
7	1-0+1+1- 0+0+2-1o	6+	3	2	5	3	2	2	6	4	27	3	0.1
8	0o1-0o0+ 2-0+1o2-	6-	0	3	0	2	6	2	4	6	23	3	0.1
9	1+0o1-0+ 0o0o0+1o	4-	5	0	3	2	0	0	2	4	16	2	0.0
10	1-2-1o0o 1-1o1o2-	8-	3	6	4	0	3	4	4	6	30	4	0.1
11	4-2-1+1o 2-1+0+1+	12+	22	6	5	4	6	5	2	5	55	7	0.3
12	2-0+0o0+ 1o1-1+3+	9-	6	2	6	2	4	3	5	18	40	5	0.2
13	3o2o2o0+ 1o1-1+1o	11+	15	7	7	2	4	3	5	4	47	6	0.3
14	0o1o1-1- 0+0o0o3-	5+	0	4	3	?	2	0	0	12	24	3	0.1
15	3-2-2o2o 2+3-1-1+	15+	12	6	7	7	9	12	3	5	61	8	0.4
16	0+0+0o0+ 1-1-1+3o	7-	2	2	0	2	3	3	5	15	32	4	0.1
17	5+3+4+5- 4+3+1o4-	30o	56	18	32	39	32	18	4	22	221	28	1.2
18	4o3o2o2- 3o3o3+3o	23o	27	15	7	6	15	15	18	15	118	15	0.8
19	3-1-2o2o 1+1+2-1o	13-	12	3	7	7	5	5	6	4	49	6	0.3
20	3o2o3o0+ 0o0o1o2-	11o	15	7	15	2	0	0	4	6	49	6	0.3
21	1+1+3-2o 1o0+3o4-	15+	5	5	12	7	4	2	15	22	72	9	0.5
22	4-3o2+2- 1-2+1o3-	17+	22	15	9	6	3	9	4	12	80	10	0.6
23	4o4-3-3o 3+2+3+4-	26o	27	22	12	15	18	9	18	22	143	18	1.0
24	2+2+2+3+ 2o3+4-4-	23o	9	9	9	18	7	18	22	22	114	14	0.8
25	4-2o2-2o 1+1o2o2+	16o	22	7	6	7	5	4	7	9	67	8	0.5
26	4o2o2-1+ 1+3-0+2-	15o	27	7	6	5	5	12	2	6	70	9	0.5
27	0+1-0o1- 3+2+5-4+	16+	2	3	0	3	18	9	39	32	106	13	0.8
28	5+4o4-3- 3-1-1o2o	22o	56	27	22	12	12	3	4	7	143	18	1.0
29	3o0o1+0o 0o0o0o0+	5-	15	0	5	0	0	0	0	2	22	3	0.0
30	0o0o3-2+ 3+0+1+2-	12-	0	0	12	9	18	2	5	6	52	6	0.3
31	3-2o5-4o 2-0o1-0+	16o	12	7	39	27	6	0	3	2	96	12	0.7

	Kp	Sum	Feb. 1935				ap				Sum	Ap	Cp
1	1+2o2o3o 2-4-3o4-	20+	5	7	7	15	6	22	15	22	99	12	0.7
2	4-5+4o3o 3+3+4o2+	29o	22	56	27	15	18	18	27	9	192	24	1.2
3	0+0+3o4o 5-2-2o2-	18-	2	2	15	27	39	6	7	6	104	13	0.7
4	2o1o1+2- 1-1-1+0+	9o	7	4	5	6	3	3	5	2	35	4	0.2
5	1+1o1-1o 0+1-0o2+	7+	5	4	3	4	2	3	0	9	30	4	0.1
6	2-2-1+1- 0+0+0o1-	7-	6	6	5	3	2	2	0	3	27	3	0.1
7	1-1-1o1- 2o2-2-3o	11+	3	3	4	3	7	6	6	15	47	6	0.3
8	3+2o1+1+ 2o3-2o2-	16+	18	7	5	5	7	12	7	6	67	8	0.5
9	2o2-2o1+ 1+1-1+1o	11+	7	6	7	5	5	3	5	4	42	5	0.2
10	2o1-2-2- 1+3o0+1-	11+	7	3	6	6	5	15	2	3	47	6	0.3
11	0o2o1-0o 0o0o0+1-	4-	0	7	3	0	0	0	2	3	15	2	0.0
12	3-1+2-1+ 1o1-0+1-	10-	12	5	6	5	4	3	2	3	40	5	0.2
13	2+3o3+4- 4-4o5-6o	31-	9	15	18	22	22	27	39	80	232	29	1.3
14	5o5-4o4+ 4o3o3-2+	30o	48	39	27	32	27	15	12	9	209	26	1.2
15	3+3+2+2- 1+3o3-2+	20o	18	18	9	6	5	15	12	9	92	12	0.7
16	1+0+2+2+ 2+3+3+2-	17o	5	2	9	9	9	18	18	6	76	10	0.5
17	3+3o2o1o 0+1-2o2o	14+	18	15	7	4	2	3	7	7	63	8	0.4
18	4-2+2o2o 0+1o3+3o	18-	22	9	7	7	2	4	18	15	84	10	0.6
19	1+2+0+1- 0+1-2-0+	8-	5	9	2	3	2	3	6	2	32	4	0.1
20	1-2+2-2o 2-2o2+2+	15o	3	9	6	7	6	7	9	9	56	7	0.4
21	4o3-3-4+ 3-3+3o3o	26-	27	12	12	32	12	18	15	15	143	18	1.0
22	3+3o1+2o 1-0+1+0+	12+	18	15	5	7	3	2	5	2	57	7	0.4
23	2-3-2o1+ 2-1+2+3+	16+	6	12	7	5	6	5	9	18	68	8	0.5
24	2+0o1o3o 3+3-3-3o	18o	9	0	4	15	18	12	12	15	85	11	0.6
25	4-2+3o3+ 3o1+1-1-	18o	22	9	15	18	15	5	3	3	90	11	0.6
26	2+4+2+2+ 4-4o2o2+	23+	9	32	9	9	22	27	7	9	24	16	0.9
27	1o0+1-1o 1o0+0o0o	4+	4	2	3	4	4	2	0	0	19	2	0.0
28	0o0+0+0+ 1o1o0+0+	4-	0	2	2	2	4	4	2	2	18	2	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	March 1935				ap				Sum	Ap	Cp
1	0o1-3o4o 4+2+3+1o	19-	0	3	15	27	32	9	18	4	108	14	0.8
2	1+1+3+3o 4-3o1o1o	18-	5	5	18	15	22	15	4	4	88	11	0.6
3	3o2o2-1- 2-3-4-2+	18-	15	7	6	3	6	12	22	9	80	10	0.6
4	3+1o1+1o 2-1-0o0+	9+	18	4	5	4	6	3	0	2	42	5	0.2
5	0o1o1-0+ 1-1o1+3+	8+	0	4	3	2	3	4	5	18	39	5	0.2
6	2o1o1o1- 0o1-2-1o	8o	7	4	4	3	0	3	6	4	31	4	0.1
7	1o1-0+1- 1-1o1o3-	8o	4	3	2	3	3	4	4	12	35	4	0.2
8	2o2o1+1o 1-1-1+2+	11+	7	7	5	4	3	3	5	9	43	5	0.2
9	2+2o0+1- 2o2-0+1o	10+	9	7	2	3	7	6	2	4	40	5	0.2
10	1o1+1-1+ 2-1-1+1o	9o	4	5	3	5	6	3	5	4	35	4	0.2
11	2-2o1+2o 3-2+2o0+	14+	6	7	5	7	12	9	7	2	55	7	0.3
12	1o1o1+0o 0o0+1-2+	7-	4	4	5	0	0	2	3	9	27	3	0.1
13	4-4o2+4- 4-4+5o1-	27+	22	27	9	22	22	32	48	3	185	23	1.1
14	3-3-5+5o 5+6o5-4+	36o	12	12	56	48	56	80	39	32	335	42	1.5
15	5-5-5-4- 5-4+3+3o	33o	39	39	39	22	39	32	18	15	243	30	1.3
16	4-3-3-2+ 3o4-3+4-	25o	22	12	12	9	15	22	18	22	132	16	0.9
17	2+3+3-2o 3-2-2o4-	20+	9	18	12	7	12	6	7	22	93	12	0.7
18	4-1o1-1- 1+2+2+2+	14+	22	4	3	3	5	9	9	9	64	8	0.4
19	3+1+1+2- 0+1-3-2-	13o	18	5	5	6	2	3	12	6	57	7	0.4
20	3-2o1o1- 3-3-3-2+	17-	12	7	4	3	12	12	12	9	71	9	0.5
21	2o3-3o2o 3o4o3+3+	23+	7	12	15	7	15	27	18	18	119	15	0.8
22	4+2o2o0+ 0o0o0+1o	10o	32	7	7	2	0	0	2	4	54	7	0.3
23	2+2-0o0+ 1-1o1o3-	10-	9	6	0	2	3	4	4	12	40	5	0.2
24	4+4+1+2- 2o2o3+2+	21+	32	32	5	6	7	7	18	9	116	14	0.8
25	2o2+2+2- 2+1+0+1+	14-	7	9	9	6	9	5	2	5	52	6	0.3
26	2-2o1o1o 1-1o1+1+	10o	6	7	4	4	3	4	5	5	38	5	0.2
27	2o3o1o1- 1-1-1o1-	10-	7	15	4	3	3	3	4	3	42	5	0.2
28	1-0o0o1+ 1-0+0o1o	4o	3	0	0	5	3	2	0	4	17	2	0.0
29	1+0+1-0o 0o0o0o1o	3+	5	2	3	0	0	0	0	4	14	2	0.0
30	0o0+0+1o 5-4o3+3o	17-	0	2	2	4	39	27	18	15	107	13	0.8
31	1o3-2o3- 2-2o1-0o	13-	4	12	7	12	6	7	3	0	51	6	0.3

	Kp	Sum	April 1935				ap				Sum	Ap	Cp
1	0o0o0o0+ 0o0o1o0o	1+	0	0	0	2	0	0	4	0	6	1	0.0
2	0o0+0+0+ 0o0o0+0o	1+	0	2	2	2	0	0	2	0	8	1	0.0
3	0o0o0+1- 1o1-0+0o	3o	0	0	2	3	4	3	2	0	14	2	0.0
4	1+1o1-1- 1-1o1-2o	8o	5	4	3	3	3	4	3	7	32	4	0.1
5	0o1-0+1o 1-0+0+1o	4+	0	3	2	4	3	2	2	4	20	2	0.0
6	1-0o1-0o 0o0o0o0o	1+	3	0	3	0	0	0	0	0	6	1	0.0
7	0o0o0+0+ 1-0o0+0+	2o	0	0	2	2	3	0	2	2	11	1	0.0
8	1-2+2o2- 2o3-1-2-	14o	3	9	7	6	7	12	3	6	53	7	0.3
9	4-5o4o3- 2o2o0o0+	20-	22	48	27	12	7	7	0	2	125	16	0.9
10	1+1o1o4o 4+5o5-5-	26o	5	4	4	27	32	48	39	39	198	25	1.2
11	6-4+5-6- 5+5+5-5o	41-	67	32	39	67	56	56	39	48	404	50	1.6
12	4o4+4o4- 4o5-3o5-	32+	27	32	27	22	27	39	15	39	228	28	1.2
13	5o5-3o3o 4-4o3+3o	30-	48	39	15	15	22	27	18	15	199	25	1.2
14	3-2+2-2- 2-1+1+2-	14+	12	9	6	6	6	5	5	6	55	7	0.3
15	3-3o1+1o 1-1+1-1o	12-	12	15	5	4	3	5	3	4	51	6	0.3
16	1o1o3o2o 1-2+2o4-	16-	4	4	15	7	3	9	7	22	71	9	0.5
17	3o3o1+1+ 1-2-1o1o	13o	15	15	5	5	3	6	4	4	57	7	0.4
18	1o4+3-2o 2o1+2o3-	18o	4	32	12	7	7	5	7	12	86	11	0.6
19	2o0o1-2o 2o1o1+1+	10+	7	0	3	7	7	4	5	5	38	5	0.2
20	3-0o0+1+ 0o0+0+1o	6o	12	0	2	5	0	2	2	4	27	3	0.1
21	2-2-0+0o 0+0+1+0+	6o	6	6	2	0	2	2	5	2	25	3	0.1
22	0o0+0+0+ 1-1-1o1o	4+	0	2	2	2	3	3	4	4	20	2	0.0
23	1-1-1o2o 2o0+2-3-	11o	3	3	4	7	7	2	6	12	44	6	0.2
24	3o2-0o0+ 1+1o2-1+	10+	15	6	0	2	5	4	6	5	43	5	0.2
25	1+3-1o0+ 1-1-0+0+	7+	5	12	4	2	3	3	2	2	33	4	0.1
26	0o0+2-1- 0+0+0o1o	4+	0	2	6	3	2	2	0	4	19	2	0.0
27	2-0+0+0+ 1-0o0o0+	4-	6	2	2	2	3	0	0	2	17	2	0.0
28	1-0+0o0o 0+0o0o0o	1+	3	2	0	0	2	0	0	0	7	1	0.0
29	0o0+0+0+ 0o0o0o0+	1+	0	2	2	2	0	0	0	2	8	1	0.0
30	0+0o2-2- 1-2o0+0+	7o	2	0	6	6	3	7	2	2	28	4	0.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1935				ap				Sum	Ap	Cp
1	0o0+0+1o 6-5o4-6+	22+	0	2	2	4	67	48	22	94	239	30	1.3
2	5-4o1+2+ 1-1o1-1-	15+	39	27	5	9	3	4	3	3	93	12	0.7
3	1-1+1-1o 3o1o0+0+	8+	3	5	3	4	15	4	2	2	38	5	0.2
4	0+0+0+1- 0+1-1-1+	5-	2	2	2	3	2	3	3	5	22	3	0.0
5	1+0o0o0o 0+0+0+0+	3-	5	0	0	0	2	2	2	2	13	2	0.0
6	1o0+0o1- 0+0o0o0+	3-	4	2	0	3	2	0	0	2	13	2	0.0
7	1o0+0o0+ 1-0+0+0+	3+	4	2	0	2	3	2	2	2	17	2	0.0
8	1-1-0o0+ 0+0o0o0o	2o	3	3	0	2	2	0	0	0	10	1	0.0
9	0o0o0+0+ 0o1-0o0+	2-	0	0	2	2	0	3	0	2	9	1	0.0
10	0+1-1-0+ 2+4o4-3+	15+	2	3	3	2	9	27	22	18	86	11	0.6
11	4o3-2-3o 2+2-2o3+	21-	27	12	6	15	9	6	7	18	100	12	0.7
12	3+4-3-1o 2-1o1-4o	18o	18	22	12	4	6	4	3	27	96	12	0.7
13	2+2+2o2- 1o1o2-2-	14-	9	9	7	6	4	4	6	6	51	6	0.3
14	3-2-1+1o 0+0+0o0o	7+	12	6	5	4	2	2	0	0	31	4	0.1
15	0o0o0+0+ 1-1-3-3-	7+	0	0	2	2	3	3	12	12	34	4	0.1
16	3-3-4o4- 3-2-1-2-	20-	12	12	27	22	12	6	3	6	100	12	0.7
17	2-0+0o0o 1-0+0o0+	3+	6	2	0	0	3	2	0	2	15	2	0.0
18	0+1-0o0+ 1o0+3o3-	8+	2	3	0	2	4	2	15	12	40	5	0.2
19	3-1o0+1+ 1-1o1-2o	10-	12	4	2	5	3	4	3	7	40	5	0.2
20	2+5o5-2+ 2+2-1+2o	22-	9	48	39	9	9	6	5	7	132	16	0.9
21	1+1-0+0+ 1+1+2o3o	10+	5	3	2	2	5	5	7	15	44	6	0.2
22	3o3-2-1- 1+1-1+1o	12+	15	12	6	3	5	3	5	4	53	7	0.3
23	1-0+0o0+ 0+1o1-1o	4+	3	2	0	2	2	4	3	4	20	2	0.0
24	1-0o0+0o 1-0o0o0+	2o	3	0	2	0	3	0	0	2	10	1	0.0
25	1o0o0o0+ 1+0+1-0+	4o	4	0	0	2	5	2	3	2	18	2	0.0
26	1o1+1-1o 1+1-1+1+	9-	4	5	3	4	5	3	5	5	34	4	0.1
27	0o0+1-2- 1+1o1o2-	8-	0	2	3	6	5	4	4	6	30	4	0.1
28	0+1-1-0+ 1o1-0o0+	4o	2	3	3	2	4	3	0	2	19	2	0.0
29	1-1+1+1- 1o1+1o0+	8-	3	5	5	3	4	5	4	2	31	4	0.1
30	1-1+2o2+ 3-1+1+3-	14+	3	5	7	9	12	5	5	12	58	7	0.4
31	1o2+1o0+ 1-1o1o1-	8o	4	9	4	2	3	4	4	3	33	4	0.1

	Kp	Sum	June 1935				ap				Sum	Ap	Cp
1	1o2-0+1- 0+1-0+0o	5o	4	6	2	3	2	3	2	0	22	3	0.0
2	0o1-1-0+ 1-0+1-0+	4-	0	3	3	2	3	2	3	2	18	2	0.0
3	0+0+1o0+ 1-1-0+1-	4+	2	2	4	2	3	3	2	3	24	3	0.0
4	2-2+1+2- 2o3-3o3-	17+	6	9	5	6	7	12	15	12	72	9	0.5
5	1-1o2-1o 2-3o2-1+	12o	3	4	6	4	6	15	6	5	49	6	0.3
6	1+2-1+1+ 1o0+1+2+	11-	5	6	5	5	4	2	5	9	41	5	0.2
7	1-1+3-2o 4o5+4+6+	27-	3	5	12	7	27	56	32	94	236	30	1.3
8	5+5-5-5- 3+3o3+2+	31+	56	39	39	39	18	15	18	9	233	29	1.3
9	3-2-3+5- 5o4o4o4+	30-	12	6	18	39	48	27	27	32	209	26	1.2
10	3o3-3o4o 4o4+5-3o	29-	15	12	15	27	27	32	39	15	182	23	1.1
11	2-3-0+1- 5-5-4+2+	21+	6	12	2	3	39	39	32	9	142	18	1.0
12	1o0+1-1o 1o2o2+3o	11+	4	2	3	4	4	7	9	15	48	6	0.3
13	2+2o1-2+ 1+1o2-2o	13+	9	7	3	9	5	4	6	7	50	6	0.3
14	3-1+1-1+ 0+0+0+1-	8-	12	5	3	5	2	2	2	3	34	4	0.1
15	0+0o0o0+ 0o0+0+1-	2o	2	0	0	2	0	2	2	3	11	1	0.0
16	0+0+0+1- 0+0+1+1+	5o	2	2	2	3	2	2	5	5	23	3	0.1
17	2-1o1-1- 1-2o3-3o	12+	6	4	3	3	3	7	12	15	53	7	0.3
18	3-4-3o3o 5-4o6+4+	32-	12	22	15	15	39	27	94	32	256	32	1.3
19	4-3o1-4- 3+2+3-3o	22+	22	15	5	22	18	9	12	15	118	15	0.8
20	2o3o2+1o 0+1o3-3o	15+	7	15	9	4	2	4	12	15	68	8	0.5
21	3-2-0+1- 2o2o1+1-	11+	12	6	2	3	7	7	5	3	45	6	0.3
22	0+1+1-1- 1-0+0+0+	5-	2	5	3	3	3	2	2	2	22	3	0.0
23	1-1+1-1- 1o1-0+1o	6+	3	5	3	3	4	3	2	4	27	3	0.1
24	1-1o0+1- 0+1-0+1o	5o	3	4	2	3	2	3	2	4	23	3	0.1
25	0+0+0o0+ 0+0+1o1+	4o	2	2	0	2	2	2	4	5	19	2	0.0
26	1+0+1o1o 0+0+0+0+	5o	5	2	4	4	2	2	2	2	23	3	0.1
27	3-1o1o1- 0+1o1o0+	8o	12	4	4	3	2	4	4	2	35	4	0.2
28	1+2-2-1+ 2+1+3-3-	15o	5	6	6	5	9	5	12	12	60	8	0.4
29	3o2-0+2o 1o2-2+3-	15-	15	6	2	7	4	6	9	12	61	8	0.4
30	3-2+1+2- 2o2-3-1o	15+	12	9	5	6	7	6	12	4	61	8	0.4

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1935				ap				Sum	Ap	Cp
1	1+1+1-1o 2-1+1-1-	9-	5	5	3	4	6	5	3	3	34	4	0.1
2	2-2+1-1+ 2-1o1+1o	11o	6	9	3	5	6	4	5	4	42	5	0.2
3	1+0o1-1- 0+0+1-1-	5-	5	0	3	3	2	2	3	3	21	3	0.0
4	0+0+1-1o 1-1-1o1o	6-	2	2	3	4	3	3	4	4	25	3	0.1
5	0+0+0+0+ 1o0+0+0+	3+	2	2	2	2	4	2	2	2	18	2	0.0
6	0o0+0+0o 1-0+1o1+	4o	0	2	2	0	3	2	4	5	18	2	0.0
7	0o0+0+0+ 1-1-1-4o	7o	0	2	2	2	3	3	3	27	42	5	0.2
8	3-2+5o3+ 5-2o2-2o	24-	12	9	48	18	39	7	6	7	146	18	1.0
9	2+3o2-2- 2+2o1-3-	16+	9	15	6	6	9	7	3	12	67	8	0.5
10	1+0o1-0+ 0+0+1o2-	6-	5	0	3	2	2	2	4	6	24	3	0.1
11	0+0+2+3+ 2+2o1-0+	12-	2	2	9	18	9	7	3	2	52	6	0.3
12	1o2o2-1- 1-1-1o1o	9-	4	7	6	3	3	3	4	4	34	4	0.1
13	0+1o1+0+ 1o1-1o1+	7o	2	4	5	2	4	3	4	5	29	4	0.1
14	2o1-2o1+ 2o4+2+3-	17+	7	3	7	5	7	32	9	12	82	10	0.6
15	1+1+2o1- 2o2o1o1-	11o	5	5	7	3	7	7	4	3	41	5	0.2
16	1+1o2o0+ 1o2-1-1o	9o	5	4	7	2	4	6	3	4	35	4	0.2
17	1-0+0+0+ 0+0+0+0+	3o	3	2	2	2	2	2	2	2	17	2	0.0
18	1+0+0+0o 1-0+1o1+	5+	5	2	2	0	3	2	4	5	23	3	0.1
19	3-3+2+1+ 1+1+1+2o	16-	12	18	9	5	5	5	5	7	66	8	0.4
20	2-0+0+1+ 1o1o1-1-	7o	6	2	2	5	4	4	3	3	29	4	0.1
21	1-1o1+1- 1-1-2o1o	8o	3	4	5	3	3	3	7	4	32	4	0.1
22	2o2+3+2+ 2o2o1+4-	19o	7	9	18	9	7	7	5	22	84	10	0.6
23	3o2+1o2- 2+2-0+1o	13+	15	9	4	6	9	6	2	4	55	7	0.3
24	2o2o3+3+ 3o2-5-5o	25o	7	7	18	18	15	6	39	48	158	20	1.0
25	5-5+4+5- 4o4-4-3o	33+	39	56	32	39	27	22	22	15	252	32	1.3
26	3-2-0o1- 0+1o2-1o	9o	12	6	0	3	2	4	6	4	37	5	0.2
27	3-2+1+1- 1o1o1o2+	12+	12	9	5	3	4	4	4	9	50	6	0.3
28	0+1o1o2- 1o0+1+2-	8+	2	4	4	6	4	2	5	6	33	4	0.1
29	1+2+2o1o 2-1o2+1+	13o	5	9	7	4	6	4	9	5	49	6	0.3
30	1+1+0+0+ 0+0+0+0+	5-	5	5	2	2	2	2	2	2	22	3	0.0
31	1-1o0+1- 1o1o1+2+	8+	3	4	2	3	4	4	5	9	34	4	0.1

	Kp	Sum	Aug. 1935				ap				Sum	Ap	Cp
1	3-1o2-2- 2o2-1o1+	13o	12	4	6	6	7	6	4	5	50	6	0.3
2	1-0o0+1+ 2+0+0+1-	6o	3	0	2	5	9	2	2	3	26	3	0.1
3	1-1-0o1- 0+0+0+0+	3+	3	3	0	3	2	2	2	2	17	2	0.0
4	0o0+0+1- 1-1-1+1-	5-	0	2	2	3	3	3	5	3	21	3	0.0
5	1+0+0+1o 1-1-3-2o	9o	5	2	2	4	3	3	12	7	38	5	0.2
6	2o1-1+1+ 2+2+2o2+	14+	7	3	5	5	9	9	7	9	54	7	0.3
7	3+1o1+1+ 0+1-0+1-	9o	18	4	5	5	2	3	2	3	42	5	0.2
8	1-0+1-0+ 1+1-0+2o	6+	3	2	3	2	5	3	2	7	27	3	0.1
9	1+1o1+1o 0+0+1o2-	8o	5	4	5	4	2	2	4	6	32	4	0.1
10	2-2-1-1o 0+1-1o2o	9o	6	6	3	4	2	3	4	7	35	4	0.2
11	0+0o1-1o 1-1o1-0+	5-	2	0	3	4	3	4	3	2	21	3	0.0
12	0+0+1o1- 0+0+0+0+	4-	2	2	4	3	2	2	2	2	19	2	0.0
13	0+0+1-1- 2-0+1o2-	7-	2	2	3	3	6	2	4	6	28	4	0.1
14	1-0+0+0+ 0o0+0o0o	2o	3	2	2	2	0	2	0	0	11	1	0.0
15	0+0+0+0+ 2-1+1-2-	7-	2	2	2	2	6	5	3	6	28	4	0.1
16	1o1-1o2o 1o1o3o1o	11-	4	3	4	7	4	4	15	4	45	[illegible]	0.3
17	1-0+0o0+ 0o0+0+1o	3o	3	2	0	2	0	2	2	4	15	2	0.0
18	0+0o1-0+ 1-0+0+0+	3o	2	0	3	2	3	2	2	2	16	2	0.0
19	0+1o2o2+ 3-1+2o3-	14o	2	4	7	9	12	5	7	12	58	7	0.4
20	2o3o3o2- 2+2-2-3o	18+	7	15	15	6	9	6	6	15	79	10	0.6
21	3+3+3-3- 2-2o1+3-	20-	18	18	12	12	6	7	5	12	90	11	0.6
22	3o1-1+3o 2+1+2+3-	17-	15	3	5	15	9	5	9	12	73	9	0.5
23	3+2+4-3- 2o1o2-2o	19-	18	9	22	12	7	4	6	7	85	11	0.6
24	2+0+1-1o 2-1o2-3-	11+	9	2	3	4	6	4	6	12	46	6	0.3
25	4-2+3o2- 1-0+1-0+	13-	22	9	5	6	3	2	3	2	62	8	0.4
26	1-2-0+1o 1-1-1o0+	6+	3	6	2	4	3	3	4	2	27	3	0.1
27	1-1-0+0+ 2-3-5o4-	15o	3	3	2	2	6	12	48	22	98	12	0.7
28	2+2-2o1+ 2-3-3-1o	15+	9	6	7	5	6	12	12	4	61	8	0.4
29	1-2+0+0+ 1+1-1-1+	8-	3	9	2	2	5	3	3	5	32	4	0.1
30	2o2o3-1+ 1-1+0+1+	12-	7	7	12	5	3	5	2	5	46	6	0.3
31	2+3-2o1o 1o1+1-3o	14o	9	12	7	4	4	5	3	15	59	7	0.4

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1935				ap				Sum	Ap	Cp
1	4+4o1o1- 1-0+0+0+	12-	32	27	4	3	3	2	2	2	75	9	0.5
2	0o0+0+0+ 1-0+0+0o	2+	0	2	2	2	3	2	2	0	13	2	0.0
3	0+2-1o1+ 1o0+0+1o	7o	2	6	4	5	4	2	2	4	29	4	0.1
4	1o1-0+1o 1-1+4o4-	13-	4	3	2	4	3	5	27	22	70	9	0.5
5	2+3o1o1o 1-1-2-1+	12-	9	15	4	4	3	3	6	5	49	6	0.3
6	1o1-1o1+ 2-1o1-1o	8+	4	3	4	5	6	4	3	4	33	4	0.1
7	3-3o1-1o 3o2o1-1+	14+	12	15	3	4	15	7	3	5	64	8	0.4
8	2+1+1+1- 1-0+1-0o	7+	9	5	5	3	3	2	3	0	30	4	0.1
9	1-2o1+0+ 0+0+3o3-	11-	3	7	5	2	2	2	15	12	48	6	0.3
10	2+3-1+3+ 2o2o4+3+	21+	9	12	5	18	7	7	32	18	108	14	0.8
11	4o4+5-3o 6+6-5+6-	39o	27	32	39	15	94	67	56	67	397	50	1.6
12	6o6-4+0+ 0+1o1+1-	20-	80	67	32	2	2	4	5	3	195	24	1.2
13	1o2-0+1- 0+1-0+1o	6o	4	6	2	3	2	3	2	4	26	3	0.1
14	1o0+1o0+ 1-0+2+2o	8o	4	2	4	2	3	2	9	7	33	4	0.1
15	2o1-3-2- 3-3-2o3o	17+	7	3	12	6	12	12	7	15	74	9	0.5
16	2+4-3o2- 3o3-2+3o	22-	9	22	15	6	15	12	9	15	103	13	0.7
17	5o4-4o2+ 4o4-3o3-	28+	48	22	27	9	27	22	15	12	182	23	1.1
18	4+4-5-4- 4+2-1-3o	26o	32	22	39	22	32	6	3	15	171	21	1.1
19	3-4o4-2+ 1+1o3+3+	22-	12	27	22	9	5	4	18	18	115	14	0.8
20	3o2+1+2o 0+0+0o0o	9+	15	9	5	7	2	2	0	0	40	5	0.2
21	1-0+0+0+ 1-1-0+1-	4o	3	2	2	2	3	3	2	3	20	2	0.0
22	0+0+0+0o 0o0+1-1-	3-	2	2	2	0	0	2	3	3	14	2	0.0
23	1+2-4-4- 6-5-4o4+	29o	5	6	22	22	67	39	27	32	220	28	1.2
24	5o4o1+3- 2o3-3-3-	23o	48	27	5	12	7	12	12	12	135	17	0.9
25	4o6o6o6o 4+4+3+3+	37+	27	80	80	80	32	32	18	18	367	46	1.5
26	3o5-4+2+ 3+3-1o1+	23-	15	39	32	9	18	12	4	5	134	17	0.9
27	3-3o3+2+ 3-1o1o2+	18+	12	15	18	9	12	4	4	9	83	10	0.6
28	3o3-3-2+ 3-2+1+1-	18-	15	12	12	9	12	9	5	3	77	10	0.5
29	3o2-1+2- 2-1-1+3-	14o	15	6	5	6	6	3	5	12	58	7	0.4
30	1-3-2+3o 4-4+3o5-	24+	3	12	9	15	22	32	15	39	147	18	1.0

	Kp	Sum	Oct. 1935				ap				Sum	Ap	Cp
1	2+4-4+2+ 0+0+3-2+	18+	9	22	32	9	2	2	12	9	97	12	0.7
2	0o0+1o0o 0o2o3-4-	10-	0	2	4	0	0	7	12	22	47	6	0.3
3	2o0o0+0+ 0o0o0o1-	3+	7	0	2	2	0	0	0	3	14	2	0.0
4	1-0+0+1- 1-1o2o1-	6+	3	2	2	3	3	4	7	3	27	3	0.1
5	2-1-0+0+ 0+0o0o0o	3+	6	3	2	2	2	0	0	0	15	2	0.0
6	0o0o0o0o 0o0o0o1o	1o	0	0	0	0	0	0	0	4	4	0	0.0
7	3+1-1o4- 3-1o2+2+	17o	18	3	4	22	12	4	9	9	81	10	0.6
8	1-0+0+1- 2+2o2-2+	10+	3	2	2	3	9	7	6	9	41	5	0.2
9	2+0+0+2- 1o1o1-1-	8o	9	2	2	6	4	4	3	3	33	4	0.1
10	2o2o1-0+ 2-3+3-3o	16-	7	7	3	2	6	18	12	15	70	9	0.5
11	0+2-0+1- 3+4+4-2o	16+	2	6	2	3	18	32	22	7	92	12	0.7
12	4-1o0+1- 0+1o0o0o	7o	22	4	2	3	2	4	0	0	37	5	0.2
13	2-2-0+1o 0+1-1-0+	7-	6	6	2	4	2	3	3	2	28	4	0.1
14	2o4-4-3- 2+1-1+2-	18o	7	22	22	12	9	3	5	6	86	11	0.6
15	4o4-1+3- 4o3+4-3o	26-	27	22	5	12	27	18	22	15	148	18	1.0
16	2+5-3o2+ 3o3+3o1-	22+	9	39	15	9	15	18	15	3	123	15	0.9
17	1+3-2o3o 3+3o2+3o	21-	5	12	7	15	18	15	9	15	96	12	0.7
18	5-3+3+2- 1o1+2+2-	19+	39	18	18	6	4	5	9	6	105	13	0.8
19	2+2o2-2- 2-0+3-2+	15-	9	7	6	6	6	2	12	9	57	7	0.4
20	2o2o2-6o 5+5o5-5-	31+	7	7	6	80	56	48	39	39	282	35	1.4
21	2o4o5-4o 4-5+5o5o	34-	7	27	39	27	22	56	48	48	274	34	1.4
22	5-5-3-3+ 4o2o3o2-	26o	39	39	12	18	27	7	15	6	163	20	1.0
23	3o3-2o1+ 0+0+1o1-	11+	15	12	7	5	2	2	4	3	50	6	0.3
24	1o1+5+6o 6o6o3-1+	30-	4	5	56	80	80	80	12	5	322	40	1.5
25	3o2+2o1o 1-1o3+5-	18o	15	9	7	4	3	4	18	39	99	12	0.7
26	4-2+1-0+ 0+0+0o0+	8o	22	9	3	2	2	2	0	2	42	5	0.2
27	3-3+3+3+ 4-4o4-5+	29+	12	18	18	18	22	27	22	56	193	24	1.2
28	4-2+2+3o 3-4-4o2o	24-	22	9	9	15	12	22	27	7	123	15	0.9
29	2+2o1+2+ 1+3+1+0+	14+	9	7	5	9	5	18	5	2	60	8	0.4
30	2+3+4-2+ 3o3+2-1o	21-	9	18	22	9	15	18	6	4	101	13	0.7
31	2o4-3+4o 4o4o4-2o	27-	7	22	18	27	27	27	22	7	157	20	1.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1935				ap				Sum	Ap	Cp
1	2-3+2+3-	1+1+1-1o	14+	6	18	9	12	5	5	3	4	62	8	0.4
2	2+3o2+2o	2+3o3o4-	22-	9	15	9	7	9	15	15	22	101	13	0.7
3	4+3-2+1o	1o3o2+2+	19o	32	12	9	4	4	15	9	9	94	12	0.7
4	2-1-0+1-	1-0o0o0+	4+	6	3	2	3	3	0	0	2	19	2	0.0
5	3-1+2o2o	3-4+5-5-	24+	12	5	7	7	12	32	39	39	153	19	1.0
6	4-4o4+3-	1o0o0o0+	16o	22	27	32	12	4	0	0	2	99	12	0.7
7	1-1-1o1-	1-0o2-1-	6o	3	3	4	3	3	0	6	3	25	3	0.1
8	2-2o1+1+	2-2o1+1-	12o	6	7	5	5	6	7	5	3	44	6	0.2
9	0o0o0+2+	1-0o1+2-	6+	0	0	2	9	3	0	5	6	25	3	0.1
10	1-0+0+0+	0o0+0+0o	2+	3	2	2	2	0	2	2	0	13	2	0.0
11	0+0+1+1+	1+2-3-2+	11+	2	2	5	5	5	6	12	9	46	6	0.3
12	3-4o4o4o	4+4+3o4+	31-	12	27	27	27	32	32	15	32	204	26	1.2
13	5-3o2o3-	3+4-3-3+	25+	39	15	7	12	18	22	12	18	143	18	1.0
14	3-3+5-2+	2+3+4+4+	27+	12	18	39	9	9	18	32	32	169	21	1.1
15	2o2o2-0+	0+0o0o0o	6+	7	7	6	2	2	0	0	0	24	3	0.1
16	0o0o1-1o	0+1o2+2+	8-	0	0	3	4	2	4	9	9	31	4	0.1
17	2o1o1-1+	0+0+1o0o	7-	7	4	3	5	2	2	4	0	27	3	0.1
18	0+1o0o0+	1o2+2-4-	10+	2	4	0	2	4	9	6	22	49	6	0.3
19	3o3-3o3o	2-2+1o3-	19+	15	12	15	15	6	9	4	12	88	11	0.6
20	1o1+2+2+	3+4o2o2+	19-	4	5	9	9	18	27	7	9	88	11	0.6
21	1-2+2+2+	2-2o0o0o	11+	3	9	9	9	6	7	0	0	43	5	0.2
22	0o0o0+1-	1-2-2o2o	7+	0	0	2	3	3	6	7	7	28	4	0.1
23	2-1o2-1o	0+1o0o0o	7-	6	4	6	4	2	4	0	0	26	3	0.1
24	0o0+2-0+	1-0+1+1o	6-	0	2	6	2	3	2	5	4	24	3	0.1
25	1+0o1-0o	0o0+0o0+	3-	5	0	3	0	0	2	0	2	12	2	0.0
26	1+0o0o0o	0o0o1-0+	2+	5	0	0	0	0	0	3	2	10	1	0.0
27	0+0o1o0+	1o3+4+1o	11+	2	0	4	2	4	18	32	4	66	8	0.4
28	0+1-2-1+	2-1+1o0+	8+	2	3	6	5	6	5	4	2	33	4	0.1
29	1-2-1-2-	0+1+4-4-	14-	3	6	3	6	2	5	22	22	69	9	0.5
30	2+4+4+3+	3-3+3+4-	27+	9	32	32	18	12	18	18	22	161	20	1.0

	Kp	Sum	Dec. 1935				ap				Sum	Ap	Cp
1	2o3o4+3o	3o4o3-4o	26o	7	15	32	15	15	27	12	27	150	19	1.0
2	4-3o3-3o	4+1+0+3+	22-	22	15	12	15	32	5	2	18	121	15	0.9
3	5-3+1o0+	2-4-3-1o	18+	39	18	4	2	6	22	12	4	107	13	0.8
4	2-1-0+0+	1-1o0+1-	6-	6	3	2	2	3	4	2	3	25	3	0.1
5	1o0o0o0+	0o1o1+2-	5+	4	0	0	2	0	4	5	6	21	3	0.0
6	0o0o0+1o	1o0+1-1o	4+	0	0	2	4	4	2	3	4	19	2	0.0
7	0+1o0+2o	2+2-3-2+	13-	2	4	2	7	9	6	12	9	51	6	0.3
8	3-2-2-1+	0+1+2-1+	12o	12	6	6	5	2	5	6	5	47	6	0.3
9	2-1o0+1o	1-0+2-3+	10o	6	4	2	4	3	2	6	18	45	6	0.3
10	3+1+1-1o	0+2o1-1-	10c	18	5	3	4	2	7	3	3	45	6	0.3
11	0+1o1-1+	1+1-0+3+	9o	2	4	3	5	5	3	2	18	42	5	0.2
12	1+1o2o1o	1+2+3-2-	13+	5	4	7	4	5	9	12	6	52	6	0.3
13	3o3o3+2+	3+2+1o0+	19-	15	15	18	9	18	9	4	2	90	11	0.6
14	0o1-0+3-	4-4-5-5-	20+	0	3	2	12	22	22	39	39	139	17	0.9
15	4+5-4-3+	4-3o3o2-	27+	32	39	22	18	22	15	15	6	169	21	1.1
16	2+3-4o4o	4-4-3-3+	26+	9	12	27	27	22	22	12	18	149	19	1.0
17	2+3-2-3-	3-1o0+2+	16-	9	12	6	12	12	4	2	9	66	8	0.4
18	1-2o2o2-	1+2o3-3-	15o	3	7	7	6	5	7	12	12	59	7	0.4
19	3-1+1o1o	2+1o1-2-	12-	12	5	4	4	9	4	3	6	47	6	0.3
20	2o0+1-1-	2-2-1+1o	9+	7	2	3	3	6	6	5	4	36	4	0.2
21	0+0o1+2-	0+1o1o1+	7o	2	0	5	6	2	4	4	5	28	4	0.1
22	1+0o0+1-	0o0+0o0o	3-	5	0	2	3	0	2	0	0	12	2	0.0
23	0o0o0o0o	0o0o0o0o	0o	0	0	0	0	0	0	0	0	0	0	0.0
24	0o0+0+0+	1-0+1o3+	6+	0	2	2	2	3	2	4	18	33	4	0.1
25	3+1o2-2+	2+2o3o2o	18-	18	4	6	9	9	7	15	7	75	9	0.5
26	3+3+4-2o	3-3+3-4+	25+	18	18	22	7	12	18	12	32	139	17	0.9
27	4-4+4-4-	2+2+3-3+	26o	22	32	22	22	9	9	12	18	146	18	1.0
28	5-4o4-5o	3o1+3+4-	29-	39	27	22	48	15	5	18	22	196	24	1.2
29	4o2+1+1+	3-2+3-3+	20o	27	9	5	5	12	9	12	18	97	12	0.7
30	3+1+2o2+	1-1+3o2o	16o	18	5	7	9	3	5	15	7	69	9	0.5
31	1+0+1o2-	1+3-1+2+	12o	5	2	4	6	5	12	5	9	48	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1936				ap				Sum	Ap	Cp
1	3o1+0+1-	1-1-1o1-	8+	15	5	2	3	3	3	4	3	38	5	0.2
2	1+0+0+0+	1-1o1-1o	6-	5	2	2	2	3	4	3	4	25	3	0.1
3	1-0+0o0+	0+1-1+0+	4o	3	2	0	2	2	3	5	2	19	2	0.0
4	1o0o0o0o	0o0+1o0+	3-	4	0	0	0	0	2	4	2	12	2	0.0
5	1-0+2+2o	0o0+0o0o	6-	3	2	9	7	0	2	0	0	23	3	0.1
6	0o0+0o0+	0+0+1o0o	2+	0	2	0	2	2	2	4	0	12	2	0.0
7	0o1-0o0+	0o1-1-0+	3-	0	3	0	2	0	3	3	2	13	2	0.0
8	0o2+3o2+	3o2+2-3o	18-	0	9	15	9	15	9	6	15	78	10	0.5
9	3o3o3-2+	1o2o3o3o	20o	15	15	12	9	4	7	15	15	92	12	0.7
10	2+2o2o3o	4-3o4-2-	21+	9	7	7	15	22	15	22	6	103	13	0.7
11	2-1o2-2+	3-2o2-0+	13+	6	4	6	9	12	7	6	2	52	6	0.3
12	3+4-2+3o	4-2+3o2+	24-	18	22	9	15	22	9	15	9	119	15	0.8
13	4o3-3-3-	3o3+3+2+	24o	27	12	12	12	15	18	18	9	123	15	0.9
14	3-3-2+2o	1+2o1+2o	16+	12	12	9	7	5	7	5	7	64	8	0.4
15	2o3-2+2-	1o1+1o2-	14-	7	12	9	6	4	5	4	6	53	7	0.3
16	1o0+0o2-	0+0+0o1o	5-	4	2	0	6	2	2	0	4	20	2	0.0
17	2o3-1+1o	0o0o0+1o	8+	7	12	5	4	0	0	2	4	34	4	0.1
18	1+4+2+4-	4-4o4-3-	26-	5	32	9	22	22	27	22	12	151	19	1.0
19	2+2o2+1+	2+2o3o1+	17-	9	7	9	5	9	7	15	5	66	8	0.4
20	1+0+1o1-	0+1-3o3o	10+	5	2	4	3	2	3	15	15	49	6	0.3
21	2o2+0+0+	1+2-3+4-	45o	7	9	2	2	5	6	18	22	71	9	0.5
22	3+2+2o2+	3-2o2+3o	20o	18	9	7	9	12	7	9	15	86	11	0.6
23	3-3+3-2o	0+0+1-1+	13+	12	18	12	7	2	2	3	5	61	8	0.4
24	4-2o1o2+	1+3+4+5o	23o	22	7	4	9	5	18	32	48	145	18	1.0
25	4+4+3+4-	4-4-2-2-	26+	32	32	18	22	22	22	6	6	160	20	1.0
26	4o3-4o4-	3+4-2+5-	28+	27	12	27	22	18	22	9	39	176	22	1.1
27	2+3o2o2-	2+2o1+3+	18o	9	15	7	6	9	7	5	18	76	10	0.5
28	4o4o4-1+	3-1o2o1-	19+	27	27	22	5	12	4	7	3	107	13	0.8
29	1-0+1-1-	0+2+3o3-	11-	3	2	3	3	2	9	15	12	49	6	0.3
30	2+3-2+3-	2+2+2o2+	19o	9	12	9	12	9	9	7	9	76	10	0.5
31	3+1o2-2-	1o2-2+2+	15o	18	4	6	6	4	6	9	9	62	8	0.4

	Kp	Sum	Feb. 1936				ap				Sum	Ap	Cp
1	2+2-0+0+	1-0+1o1o	8-	9	6	2	2	3	2	4	4	32	4	0.1
2	1-0+1-1-	0+3o3+3o	12o	3	2	3	3	2	15	18	15	61	8	0.4
3	2+3o3o2+	1-1-2o2-	16-	9	15	15	9	3	3	7	6	67	8	0.5
4	2o3-4-3-	2o1+1+1-	16+	7	12	22	12	7	5	5	3	73	9	0.5
5	1-1o2-1+	2o1o0+1-	9-	3	4	6	5	7	4	2	3	34	4	0.1
6	2-0+1+1o	1-1o0o0+	6+	6	2	5	4	3	4	0	2	26	3	0.1
7	0o0+2-1-	1o1o1+1-	7-	0	2	6	3	4	4	5	3	27	3	0.1
8	1+0o1o1+	1-1o1o2o	8+	5	0	4	5	3	4	4	7	32	4	0.1
9	2-5-2+3-	3+3o3o4o	25-	6	39	9	12	18	15	15	27	141	18	1.0
10	4-3o3-3+	2+4-3+4-	26-	22	15	12	18	9	22	18	22	138	17	0.9
11	3o3+2o3-	2o1-1-1+	16-	15	18	7	12	7	3	3	5	70	9	0.5
12	0+1-1+1-	3-0+0+0o	6+	2	3	5	3	12	2	2	0	29	4	0.1
13	0o0+1+0+	0+0o0o0+	3-	0	2	5	2	2	0	0	2	13	2	0.0
14	1o1-1-3-	2o4o3-2o	16-	4	3	3	12	7	27	12	7	75	9	0.5
15	4-2+1o1+	3-3+2-2-	18-	22	9	4	5	12	18	6	6	82	10	0.6
16	3o1+1+5o	5+4o4o4o	28o	15	5	5	48	56	27	27	27	210	26	1.2
17	4o4-3o3+	4-4+5o3o	30o	27	22	15	18	22	32	48	15	199	25	1.2
18	2+2o1+1o	2-2+1+1o	13o	9	7	5	4	6	9	5	4	49	6	0.3
19	2+2+3o3+	3o4o5o5+	28+	9	9	15	18	15	27	48	56	197	25	1.2
20	4o2-1-1-	3-3+2-2-	18-	22	9	4	5	12	18	6	6	82	10	0.6
21	4-3+3+3-	4o4-4o3+	28o	22	18	18	12	27	22	27	18	164	20	1.0
22	4+4o4-3+	4o3+3-4o	29+	32	27	22	18	27	18	12	27	183	23	1.1
23	2+2+2o2+	4-2+4-4o	23-	9	9	7	9	22	9	22	27	114	14	0.8
24	3o2o1-2+	2+1+1+2+	15+	15	7	3	9	9	5	5	9	62	8	0.4
25	3-1+1o1o	3-3-3-3-	17-	12	5	4	4	12	12	12	12	73	9	0.5
26	3-2+2o3o	3-3+4o3+	23+	12	9	7	15	12	18	27	18	118	15	0.8
27	4o3+3o3+	3+2+2o2-	23o	27	18	15	18	18	9	7	6	118	15	0.8
28	1o2-0+1-	1-0o0+1-	5+	4	6	2	3	3	0	2	3	23	3	0.1
29	0+0o1-2+	1+3-1+3-	11+	2	0	3	9	5	12	5	12	48	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	March 1936				ap				Sum	Ap	Cp
1	1-2-2o2- 1-0+0+0o	7+	3	6	7	6	3	2	2	0	29	4	0.1
2	0o0o1o0+ 0+0o0+2o	4o	0	0	4	2	2	0	2	7	17	2	0.0
3	0+0+0+0o 0o0+0o0+	2-	2	2	2	0	0	2	0	2	10	1	0.0
4	0o0o0+0+ 1o0+0o0+	2+	0	0	2	2	4	2	0	2	12	2	0.0
5	3o1o1o1o 2-2o1o1o	12-	15	4	4	4	6	7	4	4	48	6	0.3
6	1-1-1o2o 1o2-2+3-	12o	3	3	4	7	4	6	9	12	48	6	0.3
7	1+1o1o1- 1+0+0o0+	6o	5	4	4	3	5	2	0	2	25	3	0.1
8	1-2-2-3- 3-4-1+2+	17-	3	6	6	12	12	22	5	9	75	9	0.5
9	2-2-1-2- 3-2+3+1+	15+	6	6	3	6	12	9	18	5	65	8	0.4
10	1o2o2-2o 2-1+1-1-	11o	4	7	6	7	6	5	3	3	41	5	0.2
11	0o0+0+0+ 0+0o0+0o	2-	0	2	2	2	2	0	2	0	10	1	0.0
12	0o0o0+1+ 1-1-0o0+	3+	0	0	2	5	3	3	0	2	15	2	0.0
13	0o0+2-1- 1+1o1o0o	6o	0	2	6	3	5	4	4	0	24	3	0.1
14	0o1+2o1- 0+1o1-1o	7o	0	5	7	3	2	4	3	4	28	4	0.1
15	2+2+3-1+ 1-2-1-2o	14-	9	9	12	5	3	6	3	7	54	7	0.3
16	1+2+1o0o 0+1-1o1o	8-	5	9	4	0	2	3	4	4	31	2	0.1
17	3-2-1-1- 1o2+3-3+	15o	12	6	3	3	4	9	12	18	67	8	0.5
18	3+2+2+2o 2o1o3-4-	19+	18	9	9	7	7	4	12	22	88	11	0.6
19	3+2+2o1+ 1+0+3+2+	16+	18	9	7	5	5	2	18	9	73	9	0.5
20	3-4+3+3o 3+3-2+4o	26-	12	32	18	15	18	12	9	27	143	18	1.0
21	4+4+4o4+ 3-3-4-3+	29+	32	32	27	32	12	12	22	18	187	23	1.1
22	5-3o1o2- 2+2+4-2+	21o	39	15	4	6	9	9	22	9	113	14	0.8
23	2-5-4+4- 3o4-4+2o	27+	6	39	32	22	15	22	32	7	175	22	1.1
24	3+4+4+3o 4o3+5-5-	32-	18	32	32	15	27	18	39	39	220	28	1.2
25	5o4-2+3+ 3-2o2-4+	25o	48	22	9	18	12	7	6	32	154	19	1.0
26	5o3+3-2o 1+1+3o4-	22+	48	18	12	7	5	5	15	22	132	16	0.9
27	3-3-2+2o 3-3-4-3o	22-	12	12	9	7	12	12	22	15	101	13	0.7
28	4+3o1+1o 1+1-1+1+	14+	32	15	5	4	5	3	5	5	74	9	0.5
29	3o4-2+2- 2-1-1-1o	15-	15	22	9	6	6	3	3	4	68	8	0.5
30	1+2o2-1o 0+0o0o1o	7+	5	7	6	4	2	0	0	4	28	4	0.1
31	3-1o3-2+ 2-2-1+1o	14+	12	4	12	9	6	6	5	4	58	7	0.4

	Kp	Sum	April 1936				ap				Sum	Ap	Cp
1	1o1-1+3- 3-4-4o2+	18+	4	3	5	12	12	22	27	9	94	12	0.7
2	3-2o1+1- 1-2-2+5-	16o	12	7	5	3	3	6	9	39	84	10	0.6
3	1-2+2o1+ 2o3+5-4o	20+	3	9	7	5	7	18	39	27	115	14	0.8
4	3+3o3+1+ 1-0+0+0+	13-	18	15	18	5	3	2	2	2	65	8	0.4
5	0o1o1-1o 1-1-0+0o	4+	0	4	3	4	3	3	2	0	19	2	0.0
6	0+1-1+1o 1+1o1-0+	7-	2	3	5	4	5	4	3	2	28	4	0.1
7	1-1-1-2- 2+2+1o0o	9+	3	3	3	6	9	9	4	0	37	5	0.2
8	0o2+4o2+ 4-2+2o2-	18+	0	9	27	9	22	9	7	6	89	11	0.6
9	1-0+2-1+ 1+1-2-1-	8+	3	2	6	5	5	3	6	3	33	4	0.1
10	0o1-1+2- 1+1o1-0+	7o	0	3	5	6	5	4	3	2	28	4	0.1
11	2+1o2+2o 1o1o3-2o	14+	9	4	9	7	4	4	12	7	56	7	0.4
12	3o2+1o3- 3-3o3-4o	21+	15	9	4	12	12	15	12	27	106	13	0.8
13	3-3+3-3- 3o4o3+2+	24o	12	18	12	12	15	27	18	9	123	15	0.9
14	2-1o3-3- 0+1o4-3+	16+	6	4	12	12	2	4	22	18	80	10	0.6
15	1-2+5-4- 3+4+4-3o	26-	3	9	39	22	18	32	22	15	160	20	1.0
16	4o3o1+0+ 1o1-2-1o	13o	27	15	5	2	4	3	6	4	66	8	0.4
17	3-1+2o2- 1o2+3-5+	19o	12	5	7	6	4	9	12	56	111	14	0.8
18	6-6+4+2o 3o4-5+4o	34+	67	94	32	7	15	22	56	27	320	40	1.4
19	4-4+4-4- 4-5-4-6+	34-	22	32	22	22	22	39	22	94	275	34	1.4
20	5o4+3o2+ 4o4o5o5+	33o	48	32	15	9	27	27	48	56	262	33	1.3
21	5-4o4+4o 4o4o5o7o	37o	39	27	32	27	27	27	48	132	359	45	1.5
22	6o5+4+4+ 6-5-5-5+	40+	80	56	32	32	67	39	39	56	401	50	1.6
23	4o5-4-3+ 5-5o4+4o	34-	27	39	22	18	39	48	32	27	252	32	1.3
24	3-3o3o2- 2o2o2o3o	19+	12	15	15	6	7	7	7	15	84	10	0.6
25	4-2o1o2o 3-1+1-2+	16-	22	7	4	7	12	5	3	9	69	9	0.5
26	1o2-1o1+ 1o1o1-0+	8o	4	6	4	5	4	4	3	2	32	4	0.1
27	0o0+0+1- 1-1+2+1-	6+	0	2	2	3	3	5	9	3	27	3	0.1
28	0+3o2-1+ 2-2-2o2+	14o	2	15	6	5	6	6	7	9	56	7	0.4
29	1-2o0+1- 1o0o0o0o	5-	3	7	2	3	4	0	0	0	19	2	0.0
30	1-2+3o2+ 1+1+1-2o	14-	3	9	15	9	5	5	3	7	56	7	0.4

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1936				ap				Sum	Ap	Cp
1	4-3-2-2- 1+1-0o0o	12-	22	12	6	6	5	3	0	0	54	7	0.3
2	2-2o1o1o 2-1-0+1-	9o	6	7	4	4	6	3	2	3	35	4	0.2
3	1o2o1-0+ 0+0+0+1o	6o	4	7	3	2	2	2	2	4	26	3	0.1
4	2-2o2o2o 5-4o5-4o	25o	6	7	7	7	39	27	39	27	159	20	1.0
5	2o1+1+1o 1-2o1+1-	10+	7	5	5	4	3	7	5	3	39	5	0.2
6	1o0+0+0+ 1-1o1-0+	5-	4	2	2	2	3	4	3	2	22	3	0.0
7	0o0+1-2- 1o1o0+1-	6-	0	2	3	6	4	4	2	3	24	3	0.1
8	0+0+1o2- 0+0+0+0o	4+	2	2	4	6	2	2	2	0	20	2	0.0
9	0o0+0o0+ 0+0+0o0o	1+	0	2	0	2	2	2	0	0	8	1	0.0
10	0o0o1+2+ 3+4o5+3o	19+	0	0	5	9	18	27	56	15	130	16	0.9
11	3+2o3-4o 4o3-2-2-	22o	18	7	12	27	27	12	6	6	115	14	0.8
12	2+3+4o3+ 3+3o5+5-	29+	9	18	27	18	18	15	56	39	200	25	1.2
13	3+3-1+1+ 0+1o1-2o	13-	18	12	5	5	2	4	3	7	56	7	0.4
14	1o2-2o2+ 3+3o3+3-	19+	4	6	7	9	18	15	18	12	89	11	0.6
15	3+3-3o3- 1-2o3-3-	20-	18	12	15	12	3	7	12	12	91	11	0.7
16	4o4o3+4- 4+3+3+4o	30o	27	27	18	22	32	18	18	27	189	24	1.1
17	3o3-3o2o 2-1o3-3-	19-	15	12	15	7	6	4	12	12	83	10	0.6
18	5-2+5-4- 3o3-5-5-	30+	39	9	39	22	15	12	39	39	214	27	1.2
19	3+4+4o3o 4o3+4+4o	30+	18	32	27	15	27	18	32	27	196	24	1.2
20	3-3-3+3+ 3+4-3+3-	25o	12	12	18	18	18	22	18	12	130	16	0.9
21	2-3-3+1o 1+2o2+3-	17o	6	12	18	4	5	7	9	12	73	9	0.5
22	2+2-1o1+ 2-2-1-2-	12o	9	6	4	5	6	6	3	6	45	6	0.3
23	2-1o0o1- 1-1o0+1-	6-	6	4	0	3	3	3	2	3	24	3	0.1
24	0o0+0+0o 0o0o0o0o	1-	0	2	2	0	0	0	0	0	4	0	0.0
25	0o0+0o0+ 1o1o2+2-	7-	0	2	0	2	4	4	9	6	27	3	0.1
26	2o1+1+2o 3+2+3-2o	17o	7	5	5	7	18	9	12	7	70	9	0.5
27	1-1+2+2+ 1-2-1o3o	13o	3	5	9	9	3	6	4	15	54	7	0.3
28	3-1+1o0+ 2-3-2-1o	12+	12	5	4	2	6	12	6	4	51	6	0.3
29	1o1-2-5- 5o3o2+4-	22o	4	3	6	39	48	15	9	22	146	18	1.0
30	2-2-2-1- 1+3o3-4+	17o	6	6	6	3	5	15	12	32	85	11	0.6
31	5-4-1o1- 1-1-1+1-	13+	39	22	4	3	3	3	5	3	82	10	0.6

	Kp	Sum	June 1936				ap				Sum	Ap	Cp
1	1-1+2o3+ 3o4o5-3+	22+	3	5	7	18	15	27	39	18	132	16	0.9
2	2+4-3-4- 3+4+5o4o	29o	9	22	12	22	18	32	48	27	190	24	1.1
3	3-3+3-2- 1+3-2-3o	19o	12	18	12	6	5	12	6	15	86	11	0.6
4	2-1o1o2o 2+2-1o2-	12+	6	4	4	7	9	6	4	6	46	6	0.3
5	1-1o2-1+ 1o0+1-0+	7o	3	4	6	5	4	2	3	2	29	4	0.1
6	1-0+0+0o 0+0+0+0+	3-	3	2	2	0	2	2	2	2	15	2	0.0
7	0o0+1-2- 1+1+2+1+	9o	0	2	3	6	5	5	9	5	35	4	0.2
8	3-1+2-1+ 2o4-4-5-	21o	12	5	6	5	7	22	22	39	118	15	0.8
9	3o5-5o5- 5+6o4o4-	36+	15	39	48	39	56	80	27	22	326	41	1.5
10	2+4-3o3- 4-4-3+3+	26-	9	22	15	12	22	22	18	18	138	17	0.9
11	3+2o1-2o 3-2o1+2o	16o	18	7	3	7	12	7	5	7	66	8	0.4
12	2+2+3-1+ 1o1+2-2+	15o	9	9	12	5	4	5	6	9	59	7	0.4
13	2+3-2-1+ 2+3-3+3o	19+	9	12	6	5	9	12	18	15	86	11	0.6
14	3o3-4-2+ 1+3+3-4-	23-	15	12	22	9	5	18	12	22	115	14	0.8
15	4o4+4o3o 3-3+3o3o	27+	27	32	27	15	12	18	15	15	161	20	1.0
16	3-3+3o3- 3o2o3+2+	22+	12	18	15	12	15	7	18	9	106	13	0.8
17	3-2-2o1- 2-1+1o2-	13-	12	6	7	3	6	5	4	6	49	6	0.3
18	2-1-1-2- 2o2+4o5o	18o	6	3	3	6	7	9	27	48	109	14	0.8
19	6-7+7-6- 5+5o3+3o	42o	67	154	111	67	56	48	18	15	536	67	1.7
20	3+4-4-2o 2-2-1+1-	18o	18	22	22	7	6	6	5	3	89	11	0.6
21	0+1+1+1o 2-1+1o1o	9o	2	5	5	4	6	5	4	4	35	4	0.2
22	1-1+1o1+ 2-2+1+1-	10+	3	5	4	5	6	9	5	3	40	5	0.2
23	1-0+0+1- 1-0+0+1o	4+	3	2	2	3	3	2	2	4	21	3	0.0
24	1-1-0+0+ 2o3-3o2+	12o	3	3	2	2	7	12	15	9	53	7	0.3
25	3-2o0+0+ 0o0+1-0+	7-	12	7	2	2	0	2	3	2	30	4	0.1
26	0o1o1o2- 2o3+3o3o	15o	0	4	4	6	7	18	15	15	69	9	0.5
27	3o2-1+1- 0+0o0o1-	8-	15	6	5	3	2	0	0	3	34	4	0.1
28	2+1-1-0+ 0+0+0+1-	6-	9	3	3	2	2	2	2	3	26	3	0.1
29	1o0+0+0+ 0+1-1+1-	5o	4	2	2	2	2	3	5	3	23	3	0.1
30	1o0+0o0o 1o0+1o1o	5-	4	2	0	0	4	2	4	4	20	2	0.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1936				ap				Sum	Ap	Cp
1	1-1-0+1- 1-1-1o1+	6o	3	3	2	3	3	3	4	5	26	3	0.1
2	3o4-4+5- 5+5+4+2+	33o	15	22	32	39	56	56	32	9	261	33	1.3
3	4+1+2o1+ 1+1o1o0+	13-	32	5	7	5	5	4	4	2	64	8	0.4
4	0o0+1-1+ 1-1o2-2o	8-	0	2	3	5	3	4	6	7	30	4	0.1
5	3o3+3+4+ 2+3o2+2+	24o	15	18	18	32	9	15	9	9	125	16	0.9
6	4o2o3o5o 6-4+3o5-	32-	27	7	15	48	67	32	15	39	250	31	1.3
7	4-3+2o4- 2+2+2-1+	20+	22	18	7	22	9	9	6	5	98	12	0.7
8	3o3-2-2o 2o1+3-2+	18-	15	12	6	7	7	5	12	9	73	9	0.5
9	0+0+1o1- 1-1+3-2o	9o	2	2	4	3	3	5	12	7	38	5	0.2
10	2+3+3+2+ 3+5-5+5-	29+	9	18	18	9	18	39	56	39	206	26	1.2
11	5o4o4o5- 4-5o4+3-	33+	48	27	27	39	22	48	32	12	255	32	1.3
12	3-2-2-2- 1+2o3o4o	18o	12	6	6	6	5	7	15	27	84	10	0.6
13	3o3+2+2+ 2o3o3o1-	20-	15	18	9	9	7	15	15	3	91	11	0.7
14	1-1o1-0+ 1-1+1+1-	7-	3	4	3	2	3	5	5	3	28	4	0.1
15	1o2-2-1- 1-1-1o2-	9o	4	6	6	3	3	3	4	6	35	4	0.2
16	4-4-3-1- 1o1+3-2-	17+	22	22	12	3	4	5	12	6	86	11	0.6
17	3+2+1o2+ 2o2+4-4o	21o	18	9	4	9	7	9	22	27	105	13	0.8
18	4-3o1+1+ 2o1+2o2o	17-	22	15	5	5	7	5	7	7	73	9	0.5
19	3-1+1+1+ 2o1o1o2-	12+	12	5	5	5	7	4	4	6	48	6	0.3
20	2+1+2o1+ 2o3-1o0+	13o	9	5	7	5	7	12	4	2	51	6	0.3
21	0+0+1o0+ 0+1-1o1-	5-	2	2	4	2	2	3	4	3	22	3	0.0
22	0+1o1o1o 0+1-0+1+	6o	2	4	4	4	2	3	2	5	26	3	0.1
23	0o0+0o0+ 0+0+0o0o	1+	0	2	0	2	2	2	0	0	8	1	0.0
24	0+0+1o1- 1o0+1-0+	5-	2	2	4	3	4	2	3	2	22	3	0.0
25	1+2-0+2- 2o1o1-2+	11o	5	6	2	6	7	4	3	9	42	5	0.2
26	2o0+1+1o 0+0+0o0+	6-	7	2	5	4	2	2	0	2	24	3	0.1
27	0+0+1o1- 2o2o2-1+	9+	2	2	4	3	7	7	6	5	36	4	0.2
28	3+3o1o1+ 1+1o2-1-	13+	18	15	4	5	5	4	6	3	60	8	0.4
29	0o1-3-4- 6-6o4-3+	26-	0	3	12	22	67	80	22	18	224	28	1.2
30	4-3+3-2- 1-0o0+0+	13-	22	18	12	6	3	0	2	2	65	8	0.4
31	0o0o1+3+ 1+3-2o3-	13+	0	0	5	18	5	12	7	12	59	7	0.4

	Kp	Sum	Aug. 1936				ap				Sum	Ap	Cp
1	4o3-3-1o 1-1-1o1-	13+	27	12	12	4	3	3	4	3	68	8	0.5
2	2o1+2-1- 0+1o1o2+	10+	7	5	6	3	2	4	4	9	40	5	0.2
3	1+1-0o0o 2-1-2-3-	9-	5	3	0	0	6	3	6	12	35	4	0.2
4	3-2+1-1+ 1-0+1-1o	10-	12	9	3	5	3	2	3	4	41	5	0.2
5	1+1+1+2o 2+3-2o2-	15-	5	5	5	7	9	12	7	6	56	7	0.4
6	3o3o3+1o 1o1+2-0+	15-	15	15	18	4	4	5	6	2	69	9	0.5
7	0o0+0o0+ 0o0o1-1o	2+	0	2	0	2	0	0	3	4	11	1	0.0
8	1o1-1o0+ 1o2+4o3+	14-	4	3	4	2	4	9	27	18	71	9	0.5
9	3-3-1o2- 1+2o2o2+	16-	12	12	4	6	5	7	7	9	62	8	0.4
10	2-2+3o2o 3+2o1+0+	16o	6	9	15	7	18	7	5	2	69	9	0.5
11	0+0+1-1o 0+0+1-0+	4o	2	2	3	4	2	2	3	2	20	2	0.0
12	0+0+0o1- 2+1+1o2+	8+	2	2	0	3	9	5	4	9	34	4	0.1
13	1-2-2+2- 1o0+1-1-	9o	3	6	9	6	4	2	3	3	36	4	0.2
14	1-0o0o0+ 2o1+1-1o	6o	3	0	0	2	7	5	3	4	24	3	0.1
15	1+1+2+1o 1-0+1-2-	9+	5	5	9	4	3	2	3	6	37	5	0.2
16	2o0+1-0+ 0+1-1-1-	6-	7	2	3	2	2	3	3	3	25	3	0.1
17	2-1-0o0+ 0+0+0+1+	5o	6	3	0	2	2	2	2	5	22	3	0.0
18	1o1-0o0+ 0+0o0o0o	2+	4	3	0	2	2	0	0	0	11	1	0.0
19	0o0+0o1- 1o1+0+0o	4-	0	2	0	3	4	5	2	0	16	2	0.0
20	0+1-0o1+ 1+2-2-2o	9o	2	3	0	5	5	6	6	7	34	4	0.1
21	2o0+1+1o 1o0+0+0+	7-	7	2	5	4	4	2	2	2	28	4	0.1
22	1-0o2o1- 1-1-1o0o	6-	3	0	7	3	3	3	4	0	23	3	0.1
23	0o0+0o0+ 0+0+1-1-	3-	0	2	0	2	2	2	3	3	14	2	0.0
24	0+0+0o0+ 1o1-1-1-	4o	2	2	0	2	4	3	3	3	19	2	0.0
25	1-1-0+0+ 1o2-2o2o	9-	3	3	2	2	4	6	7	7	34	4	0.1
26	2+0o0+1o 1o0+0+0+	6-	9	0	2	4	4	2	2	2	25	3	0.1
27	1o1-1o3- 3-1+2-2-	13-	4	3	4	12	12	5	6	6	52	6	0.3
28	2-2+2o1+ 1-1-1+1+	11+	6	9	7	5	3	3	5	5	43	5	0.2
29	1o1-0+0+ 0o0+1o3o	7-	4	3	2	2	0	2	4	15	32	4	0.1
30	4o4+2o1- 1+4-4+2+	23-	27	32	7	3	5	22	32	9	137	17	0.9
31	2+3+2o1+ 1-1-2-0+	12+	9	18	7	5	3	3	6	2	53	7	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1936				ap				Sum	Ap	Cp
1	1o0+1-0+ 0+0+1o1o	5o	4	2	3	2	2	2	4	4	23	3	0.1
2	2o2o0+2o 2o1-0+0o	9+	7	7	2	7	7	3	2	0	35	4	0.2
3	0o0+0+1o 1-1-0+1-	4o	0	2	2	4	3	3	2	3	19	2	0.0
4	2-2+1+2o 0+1o2-2+	13-	6	9	5	7	2	4	6	9	48	6	0.3
5	2-2o1+1- 0+1o1+1+	10-	6	7	5	3	2	4	5	5	37	5	0.2
6	2o2+0+0+ 0o0+0o1-	6o	7	9	2	2	0	2	0	3	25	3	0.1
7	0o0o0+0+ 0+0o0o0o	1o	0	0	2	2	2	0	0	0	6	1	0.0
8	0+1-2o2- 1+1+1o1-	9o	2	3	7	6	5	5	4	3	35	4	0.2
9	2+1-2+3- 3-2+1+1-	15o	9	3	9	12	12	9	5	3	62	8	0.4
10	1+3-0+3- 2o1+1+1+	13o	5	12	2	12	7	5	5	5	53	7	0.3
11	2-2o2+4- 3o4-2+2-	20+	6	7	9	22	15	22	9	6	96	12	0.7
12	1+3o0+0+ 0+1o1+2o	10-	5	15	2	2	2	4	5	7	42	5	0.2
13	0+1-0+0o 0o0o0o0o	1+	2	3	2	0	0	0	0	0	7	1	0.0
14	1-1-0+1+ 1-1-0+0+	5o	3	3	2	5	3	3	2	2	23	3	0.1
15	1o1+1-1+ 1+1o1-1-	8o	4	5	3	5	5	4	3	3	32	4	0.1
16	0o0o0o0+ 0+0o0o0o	1-	0	0	0	2	2	0	0	0	4	0	0.0
17	0+1-0+0+ 0+0o0o2o	4o	2	3	2	2	2	0	0	7	18	2	0.0
18	0o1-2-2+ 1+1+2-2-	11-	0	3	6	9	5	5	6	6	40	5	0.2
19	0o1-0o0+ 0+0+0o1-	2+	0	3	0	2	2	2	0	3	12	2	0.0
20	1-0+0+0+ 0+1+0+0o	4-	3	2	2	2	2	5	2	0	18	2	0.0
21	0o0+1+2o 2-0o0+2o	8-	0	2	5	7	6	0	2	7	29	4	0.1
22	1+1+1+2- 0+1-1o3o	11-	5	5	5	6	2	3	4	15	45	6	0.3
23	2o3o4-3- 2o2o0+0+	16o	7	15	22	12	7	7	2	2	74	9	0.5
24	1o2-2-1o 1o1-0+1-	8o	4	6	6	4	4	3	2	3	32	4	0.1
25	0+0+0o0o 0o0o0o1o	2-	2	2	0	0	0	0	0	4	8	1	0.0
26	3o3o4+3o 4o3o3o3o	26+	15	15	32	15	27	15	15	15	149	19	1.0
27	1-0o2-3- 2o2-1o0+	10o	3	0	6	12	7	6	4	2	40	5	0.2
28	0+0+0+3- 3-0+1+2+	10+	2	2	2	12	12	2	5	9	46	6	0.3
29	3-3-2o3- 3o2+2o2-	19o	12	12	7	12	15	9	7	6	80	10	0.6
30	1o0o0+0o 0+0o1-1+	4-	4	0	2	0	2	0	3	5	16	2	0.0

	Kp	Sum	Oct. 1936				ap				Sum	Ap	Cp
1	3-2o2o1+ 1o1-2-2+	14-	12	7	7	5	4	3	6	9	53	7	0.3
2	1-0o0+0+ 0+1o0+1-	4-	3	0	2	2	2	4	2	3	18	2	0.0
3	1-1-1-1o 1-0+0o0+	4+	3	3	3	4	3	2	0	2	20	2	0.0
4	1-0o0+0+ 0+0o0+1+	3+	3	0	2	2	2	0	2	5	16	2	0.0
5	1-1o1+1o 2o2-3o3-	13+	3	4	5	4	7	6	15	12	56	7	0.4
6	3-4-3-3- 1o1+2-4o	20-	12	22	12	12	4	5	6	27	100	12	0.7
7	2o1-3o2+ 3-2-4-3+	19+	7	3	15	9	12	6	22	18	92	12	0.7
8	3+4+3-2- 2-2+3o0+	19+	18	32	12	6	6	9	15	2	100	12	0.7
9	1-2o3o4- 3o3-4-2+	21o	3	7	15	22	15	12	22	9	105	13	0.8
10	4+6-5-5- 2o2o2o0+	26-	32	67	39	39	7	7	7	2	200	25	1.2
11	0+0+0+1- 2o1o1-1-	6o	2	2	2	3	7	4	3	3	26	3	0.1
12	0+0o1+1o 0o0o0+0o	3o	2	0	5	4	0	0	2	0	13	2	0.0
13	0o1o0+1- 1-1+0o1-	5-	0	4	2	3	3	5	0	3	20	2	0.0
14	0o0o1-1+ 2+3-1o1-	9-	0	0	3	5	9	12	4	3	36	4	0.2
15	3+4-2+1+ 1o1-2o3-	17o	18	22	9	5	4	3	7	12	80	10	0.6
16	2o2o2+1+ 1-4+6-6-	24o	7	7	9	5	3	32	67	67	197	25	1.2
17	6-6+5o4o 3+1+3-1+	30-	67	94	48	27	18	5	12	5	276	34	1.4
18	2-2o3+4- 1+1o0o0o	13o	6	7	18	22	5	4	0	0	62	8	0.4
19	0o0+1-1+ 1+2-2+2o	10-	0	2	3	5	5	6	9	7	37	5	0.2
20	4+3-1-1+ 2o3-1+0+	15+	32	12	3	5	7	12	5	2	78	10	0.5
21	2o1-1o1o 1-0+0o0o	6-	7	3	4	4	3	2	0	0	23	3	0.1
22	0o0o0o0o 1-0+0+0+	2-	0	0	0	0	3	2	2	2	9	1	0.0
23	0o1-0+0+ 1+1o3+3o	10o	0	3	2	2	5	4	18	15	49	6	0.3
24	2+2o1o3- 4-5+4o3-	24-	9	7	4	12	22	56	27	12	149	19	1.0
25	2-1-2-1+ 2-2-0o0o	9-	6	3	6	5	6	6	0	0	32	4	0.1
26	1-0+1-2- 2-0+0+0o	6-	3	2	3	6	6	2	2	0	24	3	0.1
27	0o0o0+0o 0o0o0+0o	1-	0	0	2	0	0	0	2	0	4	0	0.0
28	0+1-1-1+ 1-1-0o0o	4+	2	3	3	5	3	3	0	0	19	2	0.0
29	0+1o1+1- 1o1+1-2-	9o	2	4	5	3	4	5	3	6	32	4	0.1
30	1o2-0o1- 0+0+0+0o	4+	4	6	0	3	2	2	2	0	19	2	0.0
31	4-2o4+5+ 5+4-1o1o	26+	22	7	32	56	56	22	4	4	203	25	1.2

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1936				ap				Sum	Ap	Cp
1	0+0o0+1- 1o1-1o1o	5o	2	0	2	3	4	3	4	4	22	3	0.1
2	0o0+1-0+ 3o1-1+1+	8-	0	2	3	2	15	3	5	5	35	4	0.2
3	2-4o3+3+ 3-3o5+3o	26+	6	27	18	18	12	15	56	15	167	21	1.1
4	4+5o3o1+ 1+1+0o1o	17+	32	48	15	5	5	5	0	4	114	14	0.8
5	4+3o3-3- 1+0+1-2-	17-	32	15	12	12	5	2	3	6	87	11	0.6
6	2-2-2-3- 2o2o1o3o	16-	6	6	6	12	7	7	4	15	63	8	0.4
7	2o1o2o2o 2+2o3-3+	17+	7	4	7	7	9	7	12	18	71	9	0.5
8	2+1+2-1o 1o3-2o3+	15+	9	5	6	4	4	12	7	18	65	8	0.4
9	5-5-2+1- 0+1o0o0+	14o	39	39	9	3	2	4	0	2	98	12	0.7
10	1+2o2o1o 1+3o2o2-	14+	5	7	7	4	5	15	7	6	56	7	0.4
11	1+3-3+3- 3+5-4-5-	26+	5	12	18	12	18	39	22	39	165	21	1.1
12	2+4-1-0+ 1+1+1+0o	11o	9	22	3	2	5	5	5	0	51	6	0.3
13	0o0o0+0o 0o0o0o0+	1-	0	0	2	0	0	0	0	2	4	0	0.0
14	2o1-0+1+ 0+1+1o0+	7+	7	3	2	5	2	5	4	2	30	4	0.1
15	1+2-4-3- 4-4-3-4-	23o	5	6	22	12	22	22	12	22	123	15	0.9
16	2o3+3o3o 4-3o3-3o	24-	7	18	15	15	22	15	12	15	119	15	0.8
17	2-1+2+1o 2o2+2+3-	16-	6	5	9	4	7	9	9	12	61	8	0.4
18	3+3o4-3o 3o3+2+3+	25o	18	15	22	15	15	18	9	18	130	16	0.9
19	2+3o2+2o 3o2o2+2o	19o	9	15	9	7	15	7	9	7	78	10	0.5
20	2-2+3o2+ 2o1+1-1o	14+	6	9	15	9	7	5	3	4	58	7	0.4
21	1+0+0+1- 2+0o1-1+	7o	5	2	2	3	9	0	3	5	29	4	0.1
22	1+1-1o0+ 0+0o0o0o	4-	5	3	4	2	2	0	0	0	16	2	0.0
23	0o1o0+0+ 0o0+0+0o	2+	0	4	2	2	0	2	2	0	12	2	0.0
24	0o1-0o1o 0+1-0+0o	3o	0	3	0	4	2	3	2	0	14	2	0.0
25	1-0+1-0+ 0o0o0o0o	2o	3	2	3	2	0	0	0	0	10	1	0.0
26	0+0+1-1- 1-2o3o1-	8+	2	2	3	3	3	7	15	3	38	5	0.2
27	1+0o0+0+ 0o0+0o0o	2+	5	0	2	2	0	2	0	0	11	1	0.0
28	0o0o0o0+ 1-1o0o5-	7-	0	0	0	2	3	4	0	39	48	6	0.3
29	5+7o7o6+ 4o3-3+2+	38o	56	132	132	94	27	12	18	9	480	60	1.7
30	1+1+1-2- 2o2+2-1o	12o	5	5	3	6	7	9	6	4	45	6	0.3

	Kp	Sum	Dec. 1936				ap				Sum	Ap	Cp
1	2o2+2+2- 2o2-2o2-	16-	7	9	9	6	7	6	7	6	57	7	0.4
2	1+2o2+1+ 0o0+1+3-	11+	5	7	9	5	0	2	5	12	45	6	0.3
3	2-3-1+1+ 1+2o2o2-	14o	6	12	5	5	5	7	7	6	53	7	0.3
4	2o3+2o3- 3-3-2-1o	18o	7	18	7	12	12	12	6	4	78	10	0.5
5	3-1+1+2- 1+2-2o3o	15o	12	5	5	6	5	6	7	15	61	8	0.4
6	2+1+1-2o 2-3-2o2-	14+	9	5	3	7	6	12	7	6	55	7	0.3
7	2o1-0+0+ 1-2+3-1-	10-	7	3	2	2	3	9	12	3	41	5	0.2
8	2-1+0+0+ 0o1-1+0o	6-	6	5	2	2	0	3	5	0	23	3	0.1
9	0o0o0+0+ 1+1-0+0+	3+	0	0	2	2	5	3	2	2	16	2	0.0
10	0+1o0+0+ 0+0+0o0o	3-	2	4	2	2	2	2	0	0	14	2	0.0
11	1-0+1+1+ 0+0+1-0+	5+	3	2	5	5	2	2	3	2	24	3	0.1
12	1-1-1o1o 3-2+1+1+	11o	3	3	4	4	12	9	5	5	45	6	0.3
13	3-3-1-2- 1-1+2o3-	14+	12	12	3	6	3	5	7	12	60	8	0.4
14	1+3o2o2- 2+2o0+0o	13-	5	15	7	6	9	7	2	0	51	6	0.3
15	0o0o1-1- 2-0+0+0+	4o	0	0	3	3	6	2	2	2	18	2	0.0
16	0o0o0o0o 0+1o1+1o	4-	0	0	0	0	2	4	5	4	15	2	0.0
17	0o1-0+0+ 1-1-1o0+	4o	0	3	2	2	3	3	4	2	19	2	0.0
18	2-0o1-0+ 2o0+1-0+	6o	6	0	3	2	7	2	3	2	25	3	0.1
19	0o0o0+1- 0+0o0o0o	1+	0	0	2	3	2	0	0	0	7	1	0.0
20	0o0+0+1+ 1+0+1+2-	7-	0	2	2	5	5	2	5	6	27	3	0.1
21	2o2-1o2- 2+2+1+2o	14+	7	6	4	6	9	9	5	7	53	7	0.3
22	1-0o0o0o 0+1-0o1-	2+	3	0	0	0	2	3	0	3	11	1	0.0
23	1+1-1-2- 1-1o1-0+	7o	5	3	3	6	3	4	3	2	29	4	0.1
24	1o1-0o0o 0o0o0o0o	2-	4	3	0	0	0	0	0	0	7	1	0.0
25	0o0o0o0+ 0+1-1-0o	2o	0	0	0	2	2	3	3	0	10	1	0.0
26	0o0+1-0o 0+0+0+0o	2o	0	2	3	0	2	2	2	0	11	1	0.0
27	0o3o2o2o 3-3-3-4-	19-	0	15	7	7	12	12	12	22	87	11	0.6
28	5o6-5+5o 5-5-2-2o	34o	48	67	56	48	39	39	6	7	310	39	1.4
29	1-2-2-2+ 2-1+1o1-	11o	3	6	6	9	6	5	4	3	42	5	0.2
30	0o0o0+1- 0+1-2-1+	5o	0	0	2	3	2	3	6	5	21	3	0.0
31	0o1o0+1o 1-1-1-1o	5+	0	4	2	4	3	3	3	4	23	3	0.1

Geomagnetic planetary three-hour-range indices Kp.

	January 1937			February 1937			March 1937		
E	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	1o0+0+0+	1-0+0+0o	3+	3o3-3-2+	2-1+1o0+	15o	3o2-3o4-	3-2+4o6-	26o
2	0o1-0+2o	1o0+2+4o	11-	0o0+1+1+	1o1o1-4o	10-	4+4o5-3-	3+4-4-2o	28+
3	3-4-1+2o	2-1-0o1-	13-	6+6o6-4o	3o5-7-3+	40-	2o1-0+0+	0+0o0+0o	4o
4	2o3o2+2o	1o1+2-1-	14o	3o2+2o3+	3+2+3+3-	22+	0+1-1+1-	3o1-0+2-	9-
5	0+2-2-0+	0+1o1+0+	7o	3+4-4-2-	2+3-4-4o	25o	2o4-4o6-	5+4+3+4+	33-
6	1+2-1o1-	1o0+0+1-	7o	3-4-2o4-	3-2+3o3o	23o	4-2o1o1+	1+0o1-1+	11+
7	1+1+2-1+	2-3o6-4+	20+	2+3-3-2+	2+1+1+2o	17o	0o0+0+0+	1-1-1o0+	4-
8	4-1+1-1-	0+0+1o1o	9o	0+1-2-1o	1-1o1+2+	9o	0o0+1-1-	0o0o1o1-	3+
9	1+2+3o4o	3o2+4-4+	24o	3+2o3-3-	4o4o4+4+	27+	3-3o1o1+	1+1+2-2-	14o
10	3+3-3o4-	4o3o3+4+	27+	3o3o3-2+	4o2+3-3o	23o	2-1+1o1+	2-2-1o1o	11-
11	3-3o3o2o	2o2+2o4o	21o	3o3+3+2-	3-2+3o2o	21+	1o1-0+1-	0+1o1+1+	7-
12	2+2o2o2-	3-3+2+2+	19-	2o1+2+2o	2o3o3o4o	20-	0o0o0+0+	0o0o0o0+	1o
13	4-3+3-2o	2o1-2-2-	18-	1o1+3o3-	4o3o3o4-	22-	0o1+1o0+	1-2-2-5o	12-
14	2-1-2-2o	1-0+1-1+	9o	3+2+2-1+	0+2o3+4o	18+	5o5o3-3o	1+3o2o2-	24-
15	0+0o0+1-	1-0+0o0+	3-	4-2o2o2o	2+2o3o2+	19+	3o3o4o5-	6-3+2-1+	27-
16	1+1o1o1o	1-0+0o0o	5+	4-2+2+3o	3-3o1+2o	20+	2+1-1o0+	1-2-2+2o	11o
17	0+0+1-2o	1o0+1o2-	7+	1+2o2-3-	3+3-2+2+	18+	3o3-2o2o	1o1o2o3o	17-
18	1o1o1-0+	1-1-0+1-	5+	3-2+1o2-	2+1+4-4o	19o	1+2-2+1+	1-1+1-2+	12-
19	0+0o0o1-	1-1-1o1+	5-	4+3o4-4-	4+5+4o3o	31+	2-1-1+1-	0+0+1o1+	7+
20	1-0o0o0+	2-3-3o2-	10o	2+3o2o3o	3-3+3-2-	21-	1+2o1-1-	1-1-1-2-	8+
21	2+2o2-3-	3+3+4-4o	23o	1+4-2o2-	3-2+4-3-	20o	0o1-1-0+	1-2+2o3-	9+
22	2+1o1+1o	1+0+1o0+	9-	1o1+3-3o	3+3-1+2-	17o	3o3+3-4o	4+3+3+4o	28o
23	1-1-1-0+	1-0+1o0+	5-	2o1o1o0+	1o1-1-1+	8o	3+4-2o2o	3+2-1+0+	18-
24	0o0+1-1-	1o0o0o1-	3+	1o2o4-3-	2-1o1-1+	14o	2o2-2-1+	1+2-3-3o	15+
25	0+0+1-1-	1o0o0o0o	3o	2+3-3-3-	1+1o1o0+	14o	1+0+2+3+	1+1-1o1o	11+
26	0o0o2-1+	0+0+0+0+	4+	0+2o2+2+	2+1o0+0+	11o	1o0+2-2-	2+1+3+4o	16-
27	0+1o4-4o	4o2+3o2+	21-	3-3+1+2+	2o1+1+1-	15o	4+4+3+4o	5o4+4-4-	33-
28	3-3+2+2+	3-2o3o3-	21o	2o1o2o2o	2+2o2o2-	15o	5-5-4+3o	2+2-2-3o	25+
29	3+3o2+2-	2-0+1-1o	14o				3-3-2-1-	1o0o1-2+	12-
30	0+1-2-2o	3-4+3-2o	16+				2o3-2-1-	2o2o4o1+	16+
31	1-0+1o2-	1o1-0+0o	6-				2+5+7+5+	4-5-5-5o	38+

	April 1937			May 1937			June 1937		
E	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	3-1+1+1+	2-1+2+3-	15-	4+5-3o3o	2+2o3o3-	25o	3o3+3-2+	2o1+3-1-	18o
2	3o4-3o4+	2o3+5o4-	28o	2+2+2-0+	1o2-2-2o	13o	2o2-1+2o	2o2+1+2o	15-
3	4-5o4o4-	4-3o4-4-	30+	1+2-2+1+	0+3o3-3-	15+	3+1o2-1+	1o1o1-1o	11o
4	3-2o2+2o	2+1o2+2o	17-	3-3o1+1+	1-3o5-5-	21+	1o1o1o1+	3o3-2+2+	15-
5	1+2o1-1o	1+2-1o0+	9+	7-6+7o5+	5o6-1+1+	39-	3-3-2+3-	3o3-4+5+	26-
6	1+2-1+1+	2o1o0+1-	10-	2-2-0o0o	1-0o0+0+	5-	5+5o6-5o	5-5o3o3+	37o
7	1-1-1o1o	1-2+1+2o	10-	1-1+0o1o	1+1+1o1-	7+	3o1+2-2+	3-3-2+3-	19-
8	1-1o0+1-	1-0+0o1-	4+	1-0o1o1o	0+1-1o2+	7o	2o2-2-2-	1+1+2o3+	15o
9	1+0+0+0o	0+0o0o0o	2+	2-2o2-3o	4+3o3o4o	23-	3-1+1o2-	1+1-1-1-	10o
10	0o0o0+0+	0+0+0+1+	3o	3+3+2o2-	3-1+3-3-	20-	0+4o3+2o	1o1o1o2+	15o
11	4-3+2o1+	1-2o2-0+	15o	4o4-2o2+	2o3-1o0+	18o	2+2-2o1+	2o1o1-0+	11+
12	0+1-2+2o	4+4+5-4o	23-	1+3-1+1-	1o1o1o1o	10o	0+0+0o1-	1-1-2-1o	5+
13	4-1-3-2o	2-1+2+2+	17-	0+2-3-1-	1+2o1o2-	11+	1o3-3o4+	5o4-3-2-	24o
14	0+2o1+0+	0+0o1o1+	7-	1-2-3-2+	3-3+3o2+	19-	3-3o4-1o	2o1+2-3-	18o
15	0+1o1o1-	1+2o2o1-	9o	3o3o2+1o	2+2+2-2o	18-	2+2-3+2-	2o1-1o2o	15-
16	0+0+1-2+	1+1o1-1o	8-	4o2o2+1+	2+2+2+3-	19+	4-3+2o1+	2o3-3o3-	21-
17	1o2-1+1o	1o1+3o2o	12+	2-1+1+1o	1o2-1+1-	10o	4o3o3+3o	3o2o3o2+	24-
18	4o3o2o3-	2+2-2-3-	20o	0o1o2-1o	1o2-2-2-	10-	3-2o3o2o	3-3-2+2o	19+
19	2o2+2-2-	2a2o3+4-	19-	1o2+3+3-	2+1+1o0+	14+	2-2o1+1o	0+1o2-1+	10+
20	3o3o2+2o	2o1+1+1o	16o	0o0+1o1+	1o0+1-1-	5+	3+4+4+2o	3+3o5o4o	29+
21	4o4-3+3-	2o2-1o1o	19+	0o0+1-1-	1+4o3-2-	11+	4-3+2-1-	0+2-3o2+	17-
22	1-0+2-0+	1+1+1o2o	9-	0o0+1-3o	2-2-2-1-	10-	3-1+2-4+	4o3+4-3+	24+
23	1+1o1o0+	1+1+3o2-	11o	1o2o3-1o	2-2-2o1+	13+	2+2-1+1o	2+1+1-1+	12o
24	2-2+2o3-	4o5-5+8o	31-	1o0+1-1-	1o1o3-2+	10-	2o2+3+2o	4-4o4-2+	23+
25	7o4-4-2-	1o6o7+7+	38-	3o4o3-3+	2+3-3+4-	25o	3o3+2o3-	2+2+2-2+	20-
26	6-5-3+2+	2o5o7-8+	38o	4o5-4-2-	2-2o3o2+	23o	2o1+1+1+	0+0+0+0o	7o
27	7o6o4o2+	2o2-6+7o	36+	2+2o3-3o	4o3+5o5+	28-	2+3+3-4o	4+5+5+5-	32o
28	7o8o8o7+	7-7-5o5+	54o	5-5+4o5-	6-5-6-6-	40+	3o3o3+4-	2+2+2-2+	22-
29	2+2o4-3+	4-4-4o4-	26+	5+5-4+4+	2-2+3o4-	29+	3+2+2-2-	2o2-1-2o	15+
30	3+4o3+4o	3+3o4-4-	28+	3-3o2+2o	2+2o2+3-	19+	2-2o2-1-	1o0+3-2-	12-
31				4-3+1o1-	0+1+2+3o	16-			

Geomagnetic planetary three-hour-range indices Kp.

	July 1937									August 1937									September 1937								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3o	2o	2+	2-	3+	1+	3-	2o	18+	2+	2o	2-	2-	2+	2+	3o		17o	1+	1+	2o	2-	3o	4-	2+	3+	19-
2	2-	2o	1+	1-	1-	2o	2+	2o	13-	4o	6o	6+	5o	6-	5-	3+	3o	38o	2+	1o	1-	1-	1-	0+	0+	0o	6o
3	1+	2-	3-	1+	1-	0o	0o	1+	9o	2o	2+	3o	2+	3o	2o	3-	5+	23-	1o	1+	2-	2-	1-	0+	0+	1+	8+
4	2-	1o	0+	1-	2-	1-	1o	1+	8+	6+	4o	4+	3+	2o	2o	3o	1o	26o	1+	3o	3-	1o	2-	1+	2-	1+	14o
5	3-	3-	2-	2+	3-	3-	2+	2+	19+	4-	1+	1+	1+	1o	2-	2+	2o	14+	4-	3+	3-	2+	2o	1-	1o	1o	17-
6	4-	0+	1o	3+	4-	4-	3o	3+	22o	2o	2+	2o	2-	2-	2+	4-		18o	1+	2-	1o	1+	2+	2+	2-		13+
7	4-	3+	4o	2+	2o	2o	2+	2o	22-	3o	3o	3-	3o	2+	1+	2-	1+	18+	2-	2-	2o	2o	1+	1+	2-	1+	13o
8	1-	1-	1-	1+	1+	1+	2-	1+	9o	1+	3-	1+	1o	0+	0+	0+	0+	8-	1+	1o	0+	1o	1o	1+	2o	1+	9+
9	1o	2o	1+	2+	5o	3o	2o	4o	21-	1-	1+	1+	1+	1+	2-	1o	1o	10-	1o	2+	1+	1o	1-	1+	1-	2-	10o
10	5o	4o	3-	1+	1-	0+	0o	1-	15-	1-	2o	1+	1+	1-	1+	1+	0+	9o	1+	2o	2-	1+	1o	2+	4+	6o	20o
11	1-	1+	1o	1o	3+	4-	3+	4o	18+	1-	1-	1-	1+	0+	1-	2-	2+	8+	6-	6-	4+	3+	3+	3o	2-	1+	28+
12	4o	2o	2-	1o	0+	0+	1o	0+	11-	2-	2-	2-	0+	1-	1-	2-	1-	9o	0+	1o	1-	1+	1-	0+	1o	1+	7-
13	0+	1o	0+	1-	2o	1-	1o	4-	10-	1+	2-	1o	0+	1-	1o	1-	1-	7+	2+	2-	3+	3-	2+	2o	3o		19+
14	2+	3+	4+	4o	5o	5+	5o	2+	32-	1+	1-	2-	0+	0+	0+	2-	3-	9o	2o	4-	3+	4o	2o	2-	2-	2o	20+
15	3o	3-	3-	2+	2o	3o	3o	2+	21o	3-	3o	3-	1+	2o	1-	1-	1o	14o	3+	2+	2+	2o	2-	0+	1o	1+	14+
16	1+	2-	1-	1o	2+	3-	2-	1+	13-	0+	0+	1-	1o	0+	0+	0+	1o	4+	1-	2+	3+	2o	1+	2o	3o	2o	17-
17	2+	2+	3o	1-	1o	1+	2o	2o	15-	1-	1+	1-	1+	1o	1o	0+	1o	7+	2+	4o	3o	2-	2+	2o	3o	1o	19+
18	1o	1-	0+	0+	1o	1+	2+	3-	10-	1+	1-	1+	1-	1-	1-	2-	0+	7+	3-	3-	1-	1-	0+	3o	3-	3+	16o
19	1o	1o	1+	1o	4o	4+	6o	3o	22-	1+	1-	1o	0+	1-	2+	1o	2o	9+	4-	3o	0+	1-	2o	0+	1o	0+	11+
20	4o	5o	4-	3+	2+	2o	2+	3o	26-	1+	0o	1o	0+	0+	1o	2-	1-	6+	0+	0o	0+	0+	1-	0+	1-	3-	5+
21	3-	2+	3-	3-	3-	1+	2+	3-	19+	2-	2-	2-	1+	1-	1-	0+	2+	10+	4o	3o	1-	0+	1-	0+	2-	2+	13o
22	4o	4+	6-	5o	3+	3o	4+	5-	34+	1+	6o	8o	8-	6-	3o	4+	2+	38+	1+	1-	1+	3-	2o	2-	1+	1+	12+
23	3o	3+	3o	3o	3-	4+	5-	4o	28o	3-	1o	2-	1-	1+	1-	1o	1o	10o	2+	2-	1+	2o	1+	1+	2-	3o	15-
24	6o	5+	3-	3+	3o	3-	4o	4-	33-	1-	0+	0+	0+	0+	0+	1-	0+	3+	3o	4+	4-	2o	2o	1+	1-	2-	19-
25	5-	4+	3-	3-	4-	4-	4o	3o	29-	0o	1+	1-	0o	1-	0+	1+	0+	5-	2o	2-	1-	1-	0+	1-	0+	1o	7+
26	3o	3o	3o	2o	3o	3-	1o	1-	18+	2-	2-	2o	1+	1+	1o	2o	2-	13-	1+	1-	3o	3-	2+	2+	1o	1+	15-
27	1+	1o	2-	1+	1+	1+	1+	1+	11-	2+	3+	2+	2-	2+	4+	3+	4-	23+	3o	1+	3+	2-	2-	2o	2o	0+	15+
28	2-	1+	2-	1-	1-	1-	1o	1o	9-	3o	2o	2o	4-	4o	2o	1o	2o	20-	0+	2o	2+	1+	2-	1+	1+	1o	11+
29	0+	1o	0+	0+	0+	1o	1+	2-	6+	3o	4-	2-	2+	0+	1-	1-	1o	13+	1+	1o	1-	1-	0+	0+	0o	0o	4+
30	1o	1o	2o	1o	2+	2+	1o	1-	11+	2o	1-	1o	0+	0o	0+	0o	0o	4+	0o	0+	1-	2-	4o	5+	7-	6o	25-
31	0+	0+	1o	1-	1o	2+	2-	2o	9+	1o	0+	1-	1+	1o	0+	0+	1o	6o									

	October 1937									November 1937									December 1937								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5+	4+	5o	3+	3-	3+	4+	3o	31+	0o	0o	1-	1o	1+	1o	1+	1+	7-	5o	4+	4+	3o	3-	2+	3-	0+	25-
2	3o	2o	3+	2o	1-	0+	1-	0o	12o	3+	3o	2+	3-	1-	1+	2+	2o	18-	3o	4-	4o	3-	2-	1+	1o	1+	19-
3	2+	3-	2o	4-	4+	4o	4+	5+	29-	2o	1+	3-	1o	0o	0+	1-	0+	8+	2-	2o	3-	1+	2+	0+	2-	2-	14-
4	7o	7+	8-	4o	3+	4-	3o	3+	39+	0o	0+	2o	1-	1+	1-	0o	0o	5o	2o	2-	1+	2-	1-	0+	1-	1-	9o
5	2+	1+	1+	1o	3o	3-	1o	2+	15o	0o	2-	2o	1o	1-	1-	1o	0+	7+	0o	0+	1-	0+	1-	2-	2o	1-	6+
6	2o	2+	2o	3+	3o	3-	2+	1+	19o	0+	0+	1o	1o	1-	0+	0+	1-	5+	2o	3o	0+	2+	2+	2-	2-	2+	16-
7	3-	4o	4o	3-	4o	4-	4-	4+	29o	1+	2+	2-	2-	1+	3-	3o	3+	17+	2o	3-	3+	3o	2o	4-	4-	2o	22+
8	6-	7-	5o	3+	2+	5-	2+	2-	32-	5-	3+	2+	2+	2+	3o	3+	4-	25o	3-	3o	2-	2-	3o	3+	2+	2+	20o
9	0+	1+	3+	4-	6+	6-	6-	4+	31+	3o	3o	4-	3o	4+	3-	1o	2o	23-	3-	3-	1-	1+	1o	2-	2+	2+	15-
10	5-	5-	6o	6-	4o	3-	2+	4o	34o	1+	1+	1o	1+	2+	2+	0o	1o	11-	3-	2+	2o	2-	3+	2+	2+	3-	19+
11	3-	3o	3+	4o	7o	6o	5+	4o	35+	1o	2o	2-	4-	2+	2-	3+	3-	18+	3o	4o	4-	3o	3+	2-	2o	2-	22+
12	3+	2-	4+	5o	3o	2-	5+	5+	30-	3o	3-	2o	3-	1+	1+	3-	2+	18o	3-	2-	1o	0+	0+	1-	1o	0+	8q
13	4-	3-	3+	3+	4-	3o	1-	0+	21-	1-	2-	2-	1+	0+	2o	2+	1o	11o	0+	1-	1+	2o	0+	0+	1-	1-	6+
14	1+	5-	4-	3o	2o	2-	2-	1-	19-	2-	2+	1o	2o	2o	1o	0o	0+	10+	0+	1-	1+	0o	0+	1-	0o	0+	4-
15	1o	2o	4o	4+	4o	3-	5o	2o	25o	0o	0o	0o	1-	0+	0o	1-	0o	2-	0o	0o	0+	2-	2-	1-	1-	0o	5o
16	2-	0+	3o	2+	2o	2o	2-		15+	0+	0o	0o	0o	0o	0o	0o	0o	0+	2-	1+	0o	0o	0o	0o	0+	0+	4-
17	2-	2o	1+	1-	0+	1o	1o	2-	10-	1-	1o	2+	1o	2o	2o	2-		12-	0o	0+	0o	1+	1-	2o	0+	1-	5+
18	3-	2-	2-	2+	1+	0o	1-	1+	12-	3o	5-	3+	5-	4+	4o	4+	4+	33-	1+	3o	3-	3+	3+	5-	4+	4-	26+
19	1-	1-	1-	2+	2+	1o	2+	1-	11-	3-	2o	4-	5-	5-	4+	3o	3-	28-	4-	3o	4+	4o	3o	4+	4+	3-	29+
20	0+	0+	0+	0o	1o	0o	0o	0o	2o	2+	3o	4o	4-	4+	4o	2o	2+	26-	3-	4-	3-	3o	3o	4o	4-	2+	25o
21	0+	0+	2o	2+	2o	2o	2o	2+	13+	2+	3o	2+	3-	3+	2o	3o	3-	21+	2+	2o	1+	0+	0+	2+	2+	2+	13+
22	1o	2o	2+	3-	3+	2+	3+	4-	21+	3-	3+	3+	5o	4-	4o	4o	3o	29o	2o	2+	4-	3-	3o	2o	2-	2-	19o
23	3+	3+	4+	4o	4-	4+	4-	6+	33o	3+	4-	4-	4-	4o	4o	4-	3+	29+	3-	2+	4-	4+	6+	6-	5o	1+	31+
24	6+	2+	3+	4+	5-	4o	4-	4o	33-	3-	4-	4o	3o	4o	2o	3+	2+	25o	1+	1-	1o	0+	1o	4o	5-	3+	16+
25	3+	3o	3o	2+	4-	3+	2o	2+	23o	2+	0o	2+	2-	1+	1+	2o	2-	13-	2-	2+	3o	3+	3-	0+	1o	3-	17o
26	3+	5o	5o	4o	3o	4o	4o	4-	32o	1+	2-	2-	0+	0o	1+	0o	1+	8-	3o	4o	3+	4-	4-	2+	1-	1-	21+
27	3-	4-	4o	4o	4+	4-	3-	3o	28o	0+	0o	0+	1-	1+	2-	3o	3+	11-	2-	1+	2-	1o	0o	0o	0o	0o	6-
28	3o	3-	3+	3o	2+	3o	3o	4o	24+	2+	4-	4o	3+	4o	3+	3-	3+	27-	0o	1-	1+	1-	2-	1o	0o	1o	6-
29	2+	2+	2+	1o	1+	3-	2-	2-	15+	4-	2o	3-	4+	4o	4+	6-	3+	30o	2o	1+	0+	0o	0+	0+	1-		5+
30	3-	1-	2-	1o	0+	0o	1o	1-	8o	2+	4-	3o	4-	4o	5-	5+	5o	32-	0+	0o	1-	2+	2o	1o	0+	1+	8o
31	2-	1-	1+	1+	2-	0+	2-	1-	9+										1+	1+	1-	0+	3o	3o	3+	3+	16+

Geomagnetic planetary three-hour-range indices Kp.

	January 1938									February 1938									March 1938								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3o	3-	1+	2+	1+	2-	2+	3-	17+	2o	2+	2-	2+	4o	2+	3-	4o	21+	4+	4+	3+	3+	4+	4o	5o	3+	32o
2	2o	2+	3-	3-	3+	3-	2+	2o	19o	3+	3o	3o	3+	3o	2+	2o	2o	22o	3+	2o	3-	2+	2o	1+	1o	2o	17-
3	3o	1+	2-	2-	3o	2+	3+	1o	17+	3+	3-	3+	3o	3+	4o	3-	3-	25o	3-	3o	2o	1+	1o	1o	1o	1o	13o
4	2+	3-	2+	3+	5+	4+	5o	4+	30-	3o	2o	2+	2o	3+	4-	3o	3-	22o	0+	1+	2o	1o	1o	2o	3-	3+	14-
5	4-	3+	3o	4-	1-	0+	0o	0+	15o	3o	3-	2o	3-	3-	2-	2o	0+	17o	3o	2+	5-	3+	5+	6-	5+	4-	33+
6	0+	0+	1+	2o	3-	5-	3o	2+	17-	2+	7-	6+	4o	4-	5+	5+	4+	38o	5o	4-	4o	3+	2-	2o	3o	3+	26o
7	4-	3o	2-	2-	3o	4+	4+	5-	26+	4o	4o	3+	3o	5o	4+	3-	3-	29o	3-	1+	3-	2o	3o	2+	2-	1o	17-
8	5-	5+	4-	2+	1o	0o	1o	4-	22-	2o	2o	3-	3+	3+	6o	o+	5+	31o	2-	2+	2-	1+	1-	1o	0+	2o	11o
9	5-	3+	2+	1+	2-	1o	1o	0+	16-	3+	6-	4+	4+	4+	5-	4-	3o	33+	1-	2-	1o	1-	0+	1o	2+		8+
10	2-	2+	1-	1o	1+	0o	1o	0+	8+	4+	6o	6-	4-	4+	1+	1-	2+	28+	1+	1o	0+	1-	1o	0+	0+	0+	5+
11	1+	1-	1+	1o	1o	2o	1+	1-	9+	4o	5+	6-	4+	2o	3o	2o	1o	27+	0o	1o	1+	1o	0+	1o	1+	3-	9-
12	1-	1o	3o	2o	1+	3o	4-	5o	20-	1-	2-	3+	3o	3o	2-	1+	3-	17+	3+	4o	3o	3o	4-	4-	1+	2-	24-
13	5+	6-	5-	4o	3-	3o	3-	2-	30-	3+	2+	3o	4-	3+	3-	3+	3+	25o	1o	2o	1o	1o	1-	1+	1-	1-	2-	9o
14	1o	2o	3+	2-	3+	2-	2-	2-	16+	3+	4o	5o	5o	6-	6-	4+	2o	35o	2+	4-	3+	3+	3-	2o	2+	2+	22o
15	2o	2o	3o	2o	2o	1+	3o	3-	18o	0+	1o	2o	1o	1-	1-	1-	1+	8-	3+	3+	2+	3-	3+	1+	2-	1o	19o
16	1+	2-	3-	2+	3+	4o	3+	8-	26+	2-	1-	2+	2o	1o	1-	1-	2-	11-	0+	0+	0+	2-	0+	1o	1o	2-	7-
17	7-	6+	7-	6+	8+	8-	5-	6+	53o	1-	0o	2+	2-	2-	0+	1o	2-	9+	2+	2o	2-	2-	1+	2o	0+	1-	12o
18	4o	5-	3+	3o	4o	5+	5-	5o	34o	1+	3o	2+	2o	3-	2o	1-	2-	16-	1o	0+	1o	1-	0+	0+	0+	0+	4+
19	4-	3+	4-	4-	4o	5o	4o	2+	30-	2-	0+	1-	0+	0+	0o	0+	1o	5-	0o	0+	1o	1-	0+	0o	0o	0o	2+
20	2o	4o	4o	4-	4o	4o	5-	4-	30o	0o	1o	2o	1o	1-	2o	1-	0o	1+	8-	0o	0o	0+	0+	0+	0+	1o	3-
21	3+	5-	6-	5-	5o	4o	3+	5o	36-	1-	1-	1+	3o	0+	0o	0o	0o	6o	1o	0+	0+	1+	3-	2-	2-	4+	13+
22	6-	7+	8+	8+	7-	7o	5+	4+	53o	0o	0o	0+	1-	1-	1-	1o	2-	5o	4-	5o	0o	5o	5+	4o	4+	5+	39-
23	3o	3o	3o	3+	2+	2+	3+	4+	25-	3o	3o	3+	2+	4-	3+	3-	3o	24+	6-	5o	5-	6-	2+	4-	6o	6o	39o
24	3+	4-	3+	3o	3-	3-	3-	3o	24+	2o	2+	3o	2o	2+	1+	2o	2+	17+	6+	6+	6o	5-	3-	2-	2o	3-	32+
25	4o	3-	2-	5-	6o	7+	9-	8+	43+	2-	1-	2o	4o	3+	4+	4o	2-	22-	2+	2+	3-	3+	3o	2+	3o	4+	23+
26	8+	6+	4+	5-	4o	4+	4o	2o	38o	2o	2o	1o	3-	3-	2o	3+	3-	18+	6+	4-	1+	4-	4-	3+	3o	3-	28-
27	2-	1+	3o	2o	3-	4-	3+	3-	20+	2o	2o	1+	2o	3o	3o	3o	4-	20-	4o	2-	2-	1-	1-	0+	2-	1o	12-
28	2-	2o	2-	2o	3+	1+	3o	3o	18o	4o	3-	3+	3+	3-	2+	4+	4o	27+	2-	2o	1-	1-	1o	0+	0+	2-	8+
29	2-	4-	2+	3+	1o	1-	4-	5-	21o										1+	0+	1+	2o	2+	3+	4+	1o	16o
30	3o	2-	1+	1+	1o	0+	3-	3-	14o										1o	2o	2-	1o	0+	6+	0o	0o	6+
31	3-	2+	3+	4o	3+	4+	6o	6o	32o										0o	0o	1o	1o	1-	0+	1o	1o	5o

	April 1938									May 1938									June 1938								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1o	0o	1-	2o	1+	2+	2+	1+	11o	1-	1-	1o	1o	0+	0+	2o	2+	8+	2o	1o	3-	1+	2-	1-	1+	2-	12+
2	0+	0+	1-	1o	0+	0+	2o	2o	7o	2o	2+	2o	2o	3-	1+	1o	2-	19o	2-	1+	1+	2-	3-	3o	4+	3o	21o
3	2+	1o	1o	2+	3-	3-	2o	2-	16-	2-	4-	3o	3o	3-	2o	3+	4o	24o	4o	1+	1o	1+	1-	0+	1o	2-	11+
4	2o	3o	2o	3-	3o	2o	1o	1o	17-	4o	o-	4-	2o	4+	7o	5o	3+	35o	2o	2+	1o	2-	0+	1-	0+	1-	9o
5	0+	1o	1+	0+	0+	0o	0+	4-	4-	4o	4o	1o	2o	2-	4o	4o	4o	25-	3-	3-	2o	2+	1+	1+	2-	0+	14+
6	3-	3+	5+	4o	2+	2-	3+	4o	27-	3-	3+	3o	3-	3o	3-	1+	1-	19+	2-	1-	1+	1-	2o	2+	2-	1o	11+
7	4+	5-	3o	3+	4-	3-	2-	2+	26-	1-	0+	1+	1+	1o	3o	0+	0+	8+	1o	1+	1o	1-	1+	1o	1+	4+	12o
8	2o	2o	2o	3-	2o	2+	2o	2+	17+	1o	2-	1+	1-	2o	1+	1+	2-	11o	4-	3-	3-	4+	4-	4+	3-	4-	34-
9	1+	1o	2-	3o	4+	2+	3+	2+	19+	1o	0+	0+	1-	1+	1+	2-	3o	10-	2o	2+	3o	1-	2o	2+	1+	2+	16o
10	2+	2-	2-	3o	3o	3o	1o	1o	17o	3+	2+	2o	1o	2o	2-	1o	1+	15-	1+	2o	2+	3o	3o	4-	4o	3-	22o
11	1-	2-	2o	3+	3o	5-	3+	4-	22+	3-	3-	2o	2+	2o	8-	9-	9-	37-	3+	3o	3o	3o	3o	3o	4-	o	26o
12	2-	2+	3-	3o	3o	1+	4-	3o	21-	7+	7-	6+	4o	4+	5-	5-	7-	45-	4+	4+	4o	4-	2+	4o	5+	5-	33-
13	2+	2-	2+	4+	5o	5o	4o	7-	31+	6+	2-	1-	1o	2+	1o	1o	3-	17-	4-	5o	5o	4o	4-	4-	3-	3+	31o
14	6-	6+	7o	5o	5+	4+	4+	3+	41+	3o	3+	3+	5+	6-	4+	4-	6+	39o	0+	1+	1+	1-	1-	0+	0+	1+	6+
15	5-	4-	3o	4-	3+	3+	2+	3-	27-	5+	5+	3o	3-	3o	3+	2-	3o	27+	2-	1-	0o	0+	0+	0+	1o	1o	5+
16	3+	7o	9o	3o	8-	6-	4+	5+	50+	3-	4-	4-	3-	3-	3o	3+	3-	24+	0o	0+	2+	2+	3-	2+	2+	2o	14+
17	2o	3-	3+	4-	4o	4+	4o	2o	28-	4-	3+	3o	3-	2o	2+	3+	2o	22+	2o	2-	1+	0+	1o	1o	3-	1+	11+
18	4-	3o	4-	3o	2+	3+	4-	3+	26o	2-	3o	3-	2-	1o	1-	1o	1-	12+	1+	1o	2+	1+	1+	1o	1o	2-	11o
19	4-	2+	2o	2+	2o	3-	3o	2+	20+	1+	1o	1o	1-	1+	2o	1+	2-	10+	1o	1o	1-	0+	1+	3-	1-	1-	8+
20	2+	2-	1+	1o	2+	2-	2-	2-	14-	1+	1-	0+	0+	1+	1-	1-	2-	7o	1o	1-	1-	0+	1-	1-	1o	2+	7+
21	2+	2o	2o	2-	1+	2o	2+	2o	16-	1o	1+	2+	2o	2-	1+	0+	1o	11o	3o	3-	3+	4-	3+	2-	2-	2-	21o
22	3o	3+	1+	2-	3-	3+	4o	3o	22+	1+	1+	1+	1+	2-	3-	2-	1+	13-	2-	3-	3-	2o	1o	1-	1-	1-	12o
23	4-	3+	5-	5o	5o	6-	5-	5+	37-	1o	1o	1-	0+	0+	1-	1-	1-	5+	0o	0+	0o	0o	0o	0o	0+	0o	1-
24	4-	3+	3-	3+	2+	2o	2+	2-	21+	0+	1-	1-	2o	3+	5-	4-	4+	26-	0o	0+	1+	1+	2-	1o	2-	1+	9-
25	3+	4o	3o	3+	3+	3-	3+	3o	26o	3o	3o	2o	2-	2-	1+	2o	3o	18-	2-	1o	1-	1-	2o	1-	1-	1+	9-
26	2+	1o	2-	3o	3o	2o	1-	1+	15o	1+	2+	2-	1-	1-	0o	1+	1-	9-	1o	1+	2-	1+	1+	1o	1+	1+	10o
27	1+	2o	1o	1o	2-	1+	1+	1+	11-	1o	2o	1+	1o	1+	2+	3-	2o	14-	1+	1+	1o	2o	1o	1-	1o	1+	10-
28	1o	1+	0+	1o	1-	1+	0+	0o	6o	1+	2-	5-	2+	3o	3o	3+	3-	22o	1-	0+	0+	1-	0+	0+	2-	1+	6-
29	2o	2o	1o	0+	4o	5-	4o	3o	7+	3o	4o	5-	4o	6o	6-	3+	4o	35-	1+	1-	2o	0o	1o	2-	4o	2-	12+
30	0o	0+	1-	1o	2o	2o	1o	1o	3o	3-	1+	4-	3o	4-	1o	2+	2o	20-	2-	2+	2+	2-	2+	2o	1o	1+	14o
31										2-	1+	2+	2-	1-	1o	2o	2o	13-									

Geomagnetic planetary three-hour-range indices Kp.

	July 1938			August 1938			September 1938		
D	1 2 3 4 5 6 7 8	Sum		1 2 3 4 5 6 7 8	Sum		1 2 3 4 5 6 7 8	Sum	
1	2+4+4o4o 4-3o3o5-	29o		1+1+3+3o 3-3-3+5-	24+		1+2-2o1o 1-1+1+1+	11-	
2	3o4+4-3- 3-2o1+1-	20+		4+6o3o2o 2+3o4-3-	29o		1-1-1o2o 2o1o1-2o	10o	
3	0+2+2o1- 1o1-0+0o	7+		4o2o2-0+ 0o3-2+7+	20+		2+2+3-3o 2+2+1+2o	13+	
4	1+2o2o2o 5+5o3-6o	29+		5+5-7-6- 4o4+4-5o	39+		1o1o1+2- 2-3-1+3o	14-	
5	4+4o2o2o 3-2+3-1+	23+		5o5o4-2o 4+4o4+3o	31+		3-3-2-2+ 4-4-1o0+	18o	
6	3-4-3-3- 3o3o2o0+	20o		3o3+3-2+ 1+3-3-2+	20+		0o1-1-2o 2o1-1-2o	9-	
7	1o2-2-0+ 1+1+1+2o	11-		1+3o3-1+ 3o4-2+1+	19-		2o3-2-2- 1+3+2o1-	15+	
8	2o2o2o2- 2o1+1o1-	13-		1-2-2-2- 1+1-2o2-	11+		2+2o2-2o 2o2o2+1o	15+	
9	2-1-2-1o 0+2-4-4+	15o		1+1-1+0+ 2-0+1o1+	8o		0o1-2+2+ 3-3-3-2-	15o	
10	5-4-4-3- 3o5-5+4-	31+		1+3+3o2+ 3-3-2o2+	20-		2-2o2+3- 3-2-2-2-	16+	
11	4-3-1+1- 0+0+1o0+	10+		3o3+4o5+ 6o6-4o4-	35o		2o3o1o2+ 2+2-2+2+	17o	
12	1o1+1o1o 2+1+1-1o	10-		3-3o3-2+ 2o2o3-2o	19+		3-3o3-1o 2o2-2+3-	18o	
13	1-1+1+2- 2+2o4-5-	18-		3o3o2+1- 1o0+1+1-	12+		2-4+2+2o 1o2o5o5+	24-	
14	5+4+2o2+ 3o2+3+2+	25o		1-1-0+0+ 2o1o1+1+	8-		5o6+2+2o 4-6o6-6-	37-	
15	2+3+5o4+ 6+6+7o7-	41+		0+0+0+1- 0o1-1-0+	3+		6+7-7-7- 7+6+6+4+	51-	
16	5o3o3+5o 4+3+5o3+	32+		0+0+0+0+ 0+0+0+0+	3-		4o3o2o1+ 2-2o3o3+	20+	
17	2o3-3+1o 0+1-1+0+	12-		0+0+1o1o 2-2o1o1o	8+		3o4o2+1+ 2+3-1+0o	17o	
18	0o1-1-1o 1+2-1+2-	8+		2-1-0+0+ 1-1-1o1-	6o		2o2-2o2- 2-1+0o2-	12o	
19	3o1+2+2+ 2o1o1+1o	14+		0+1+1-1- 1-1+1+1o	7+		1+1-1+1- 0+1o1+2-	8+	
20	1+2-2+1o 1o2o1+2o	13-		1-1-1-1- 0+0+1-0+	4+		3-1+2+1+ 2o1+0+0+	12-	
21	2+1+2-2- 2-1+1+1+	13-		0+1-1o1o 2+2+3o2-	12+		0+1o2o1+ 1+2-3-3o	13+	
22	1-2-2-1+ 1o2+1o1-	10+		1+2o0+1- 5o4+4+3o	21o		2+3+3+4- 3-2o1o0+	19-	
23	1o2-2-1- 1+2o2-2+	12+		4-4-4-5o 5o3o3-2-	29+		2o4o3o2- 1+1+1o1+	16-	
24	2-1-1o1o 1+1o1+2-	10-		1+1-1o2- 2o2-4-4o	16o		0+0+0+1o 1o1-1-2-	6o	
25	2o0+0+0+ 0+1-0+0o	4+		4o2+2-1- 1o1+2+1o	14+		0+1-1-1+ 1o1+1+2+	9o	
26	0o0+1o1- 1+1o1-0+	5+		1o1o2-1o 1o0+1+1+	9-		3+3-5+5+ 5-5-5o5-	36-	
27	0+1+1+1- 1o1o1-1+	8-		1o1-1o2- 1-1-1-1o	7+		3-3-4o3o 3o3o3o7o	28+	
28	0o1-1-0+ 1-1o0+0+	4o		1-1-1o1o 1o3o3o2+	13-		8-7o5o4- 4o3+3+2o	36o	
29	0o1-1+2+ 3-2o3-3+	15o		2+2o3o2o 1o1+4-2+	18-		2o4-4+4o 3+2+2o2o	24-	
30	4-0o6-5+ 5o3o5-4+	38-		3o4o2o2+ 2+2-2+1o	19-		1+2o1+4- 5-3o7-5o	28-	
31	3+1+1o1+ 1-0+1-0+	9o		2o3-2-2- 2-0+0+0+	11-				

	October 1938			November 1938			December 1938		
D	1 2 3 4 5 6 7 8	Sum		1 2 3 4 5 6 7 8	Sum		1 2 3 4 5 6 7 8	Sum	
1	5-7+5-4+ 2o3-4-4o	34+		1+1o1-2- 3o1+1o1-	11-		0+0o0o0+ 0o0o1o1o	3-	
2	4-4-3-3- 3+3+3o3+	26-		0+1-1o2- 2+2+1-1o	10o		1o1-2-3- 3+3+5-5o	22+	
3	4-3+2+2o 1o3+3+4o	23o		1-1-1o2- 1-1o2-1+	9-		5o4+4-3o 3+4o4+4o	32-	
4	2+3o1+3o 4-1+2-1-	17o		1+1+1+2- 1+1+2o1o	11+		4o4-1+1+ 0+1o2o1o	15-	
5	0o0+1o1o 0+0o0+0+	3+		1o1o1-1o 1o2o1o0+	8o		1+3-2-3o 4-2+1-1-	16o	
6	0o2+3-2+ 2+2-2o0+	14-		2-2-2-2o 2-1+2-1+	13o		2o2o2o2- 1o1+2o2-	14-	
7	0o2+5-5- 7o7o7o5+	38o		1-1o2+2- 1-1-2+2-	11o		2-1o0o1- 1o2-2o1-	9-	
8	6-7o7-5+ 5-4o4-2+	39+		2-4o5o4- 4o5-5+5-	29o		1-0+0+1- 0o1-0+0o	3o	
9	3o2-4-3+ 1+2o2o3o	20o		5o4o4o4o 4o5o4+4o	34+		1o2o2-2+ 2-3o3-3o	17+	
10	3+3o1+2- 3-2-2+3o	19o		4+3o2o1+ 1o0+1o1o	14o		2+3-3-3+ 4o5+6-4+	30+	
11	3o3+3-2+ 3-2o2o0o	18o		1-1o1o1- 1+1o1+1o	8o		3-3-3o3- 1+2+2-2-	18o	
12	0+1-2-1o 1-0+2-2-	8o		1o1-1o0+ 0+0o0o0o	3+		2-2+3-2+ 3o2o1+1+	17-	
13	0o0+1o1- 0+1-2o2-	7-		1+1-1+1- 1-0+0o0+	5+		2+3-2+2+ 2o2-3+2+	19o	
14	1o1-1-0+ 0+0o0o1-	4-		1-0+1-1- 2o3-3+3+	14-		2+2-2-2+ 2o2+3+2+	18o	
15	0+0+1+2- 2-0+1+1+	8+		3o2o1+1- 1-1-1+3o	13-		2o2+3-1+ 2-1o1o1+	13+	
16	2o2o2-3o 4-3-2+3+	21-		1+1+2o2- 2o1+1-3-	13o		1o1+3o3o 3-4o5+5-	25o	
17	3o1-1+3- 2o2o1-0o	12+		2o3-2o3+ 5o5o4-4o	28-		5o5-5-4- 3+4-4-4o	33-	
18	0+1o2-2- 1-1+2o2+	11o		2+2+3-3+ 3o1+3-2o	20-		5-3o4o4+ 5o6-5-4-	35o	
19	3-3+2o2- 2+2-2o3-	18+		3-2o2+3+ 2-1o2-1+	16o		3-4-4o3- 4-4+3+3+	28-	
20	2+4o4-3- 3-2+3+2-	23-		2-2-3o3o 3o2+2-1+	18-		3+3+2+2+ 3-3o3+3+	24-	
21	2-2o1+3- 3-1+2-2-	15o		2-1+3-4o 4+4o4o4-	26-		2-2o3o3+ 3+1o1o2-	17o	
22	0+1-2o2o 2o1+3-2-	13-		3-4+4-2+ 3-2o1+2o	21o		3+4o5-5- 4o2+2+2o	27+	
23	1+3o4o4o 3+3+3-4-	25+		3o3o4-2+ 3o3o2o3+	23+		3-2o1o1+ 2o0+1o2-	12o	
24	3-3+3o3+ 4+4+3o5-	29-		2o3+3+3o 3+4-4-3o	25+		2o1o2-1- 1-0+1+1o	9-	
25	5+4+4o5- 5-3o4o5-	35-		3+3o3-3+ 2+3+2-2-	21+		2-0o1-2- 2o1-0+0+	7+	
26	3+4-4o4o 5o5o4o5o	34o		3o3+4+4o 3+3+2+3-	26+		1+1-0+0+ 0+0+1-0o	4o	
27	5-4o5o5- 5-4+4o3o	34+		3-3-2-2+ 2o1o1-1+	14+		0+0+0+0+ 0+0+1-2-	4+	
28	4o4o3+3+ 5-4-4-2-	28+		1-1+2+2o 2o1+1+1o	12o		2o1+0+2- 3-2o1+2-	13o	
29	3-2+3+1+ 1-3-3-2o	18-		2o2o2o1- 0+1+1o2o	11+		0+1o1+2o 1-0+0+1+	7+	
30	4-1+1+1o 0+0+0+0o	8+		2+0o1-1o 0+1-1-0o	6-		1+1+0+1- 1o2+1+1+	10-	
31	1-2o1-1- 1-0+0+1o	6+					2-0+1+1- 0+0+0o1o	6-	

Geomagnetic planetary three-hour-range indices Kp.

	January 1939		February 1939		March 1939	
E	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum
1	1o1-1+1o 1o1oOo1-	7-	2o1o1o2- 3o3o4o4o	20-	3-3-3o4- 4-4o3+5o	28o
2	0+2-1+2o 2-1-1o1-	9+	5-4-3-2o 2+3+4o4o	27-	5+6-4-4o 3+1+2o2+	28-
3	2-2-1+1o 1+0+0+0+	8o	2+3+2+2+ 2o2-3-3+	20o	2+4-3+3+ 3+4-3-5-	27o
4	OoloOo0+ Oo1-1o1+	5+	3-3-2+4- 3-1-1+1+	17+	5o5o4-3o 4-3-4o4+	31+
5	2-3+2-2o 3-2+2+3+	19+	2-2o2o3- 2+2o4o4-	20+	3+2o2o3o 2+3o4-3+	23-
6	2o1+1o2- 2-2+3-3-	15+	3o4o4+5+ 5+5+5+5o	38-	3o3o3+3+ 3o3+3-3-	24+
7	2+2-1+3- 2-2-3-2+	16+	5-5-3+3+ 4o3-3o2o	28-	3+3-1-1+ 1+1o1o2+	14-
8	3o3+2-2- 1+1+3+2+	18o	2o1o1-1+ 2-1+2o3o	13o	3o4+4-3o 2o2-3o2-	22+
9	2+3-4-3o 2-2-2o3o	20o	2o2-1o3- 2+2+3+4-	19o	3-4-5o4- 3o3-3o2-	25+
10	2o3+2o2+ 3o2o2+2o	19o	3+3+2o2o 3+4-3o3-	23+	3+2+2-1+ 3o2o2o3o	19-
11	2o2o2-2- 2o2o3-3o	17o	4+5-3-3o 2o1-1o0+	19-	1o2-3+3o 2+4o2o3o	20+
12	2o2o2o1o 2+1o1o1+	13-	1-0+1-0+ 1o1-0o0o	4-	3+3o2+3- 2o3o3+3o	23-
13	1o1+0o1o 2-1+0o1+	8-	0+0o1-0+ 0+1o2+3o	8o	2+1+3-3+ 2+1-0o1-	13+
14	3+3-1+2+ 3o3o1o4-	20+	2-1+3-2- 2o2-2+1+	15-	1-1+2o3+ 3-2+1o2o	15+
15	1o3o2+2+ 2-2-1-1-	13+	3+3+3-2+ 3+3o2o1+	21+	1-3-3o3+ 3-4+3-3-	22o
16	1+0o1-2- 1o2o3o3-	12+	2+4o4-2+ 3+3+2o3o	24o	4+4+4-4o 4-3o3+3+	30-
17	4+4o3-3+ 3+1+2+2+	24-	2-3o3+3o 3+4-3+2+	24-	4-4o4-1o 2o2+3o1o	21-
18	3-3o3+1o 1o1-0+2+	14+	3o1+4-2+ 2o3o2-3+	20+	2+1+1+2o 1-1-0o0+	9-
19	1o1+2-1+ 1o1-2-3-	11+	3-3+3+2+ 3o2-3o2-	21o	0+1-1o0+ 0+0+2+2o	7+
20	3o3+3o2+ 0+1+2+2-	17+	2o3o1-1- 1+3-1+1+	13o	4o4-1+1+ 1+2+0+1-	15o
21	2+2-2o2o 4-3+4-1+	20o	1+2+0o1- 0o0o0o0o	4+	0+3-5-5o 3-3o5-1+	24+
22	1o2o2o1+ 2-2-4-4o	17+	0o0o1+2- 1+1o1+1-	7+	3o4+4o4o 4o4+4o4-	31+
23	3-3+2+3o 3o2o2-1o	19o	3-2o1-1o 2+1o2o3-	14+	4+4-3-4- 3o4o3o4+	29-
24	1o3+3o1+ 1+0+1-2o	13o	3-4-2o3- 3+6o7o7+	35-	2+2+3-2o 3o2o2-3o	19o
25	2+2+2o2- 1+0o1-1o	11+	7+6-7-6o 6-5o4o4+	45-	2-3-2o2- 2-1-1o3o	14+
26	0o0o0+1- 1-0o0o0o	2-	2-2-1o1- 1-1+1+3-	11o	3o3-2+2+ 2-2-3+3+	20+
27	0o0o0+0o 0+0+0o0o	1o	1-1-1-1- 2+1+1-1-	8-	4+4o3-3o 1+3-5+5o	28+
28	0o1-0+1- 1o2o2o2o	9-	1o2o2o2- 2o4o2+3-	18-	4-4o3+4- 5+6+6+7-	39+
29	3o1+0+1- 0o0o0+1o	7-			6-6+6o6o 6-5+6-5+	46o
30	1o1+2-1o 1+1-1-1-	8+			4+4o4-3+ 3+4+5+5o	33+
31	0+3-1o2+ 1+1-0+0+	9o			4+4+2+3+ 3o3o3o4o	27+

	April 1939		May 1939		June 1939	
E	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum
1	4o5-4o3o 3+4o5-4+	32o	2o1+3+6o 7-5-6+6+	37-	2o2-1+1+ 4-5-4-3-	21o
2	4-4o2o2+ 3o3+3+4+	26o	6o5+6+5- 4+4+4-4o	39-	4o5-3+3o 4-4o3+3o	29o
3	3-3+4o3+ 3-2+3o3o	24+	5-4-4+4- 3-3+4-3o	29o	3-3o3+4- 4-3o3-2+	24+
4	3+3+3o2o 2-2o5o4o	24+	3-2+2-3- 1o2+2-1o	15+	3+4-3+3- 4o4-3-2+	26-
5	4o4+4-3+ 4o2o2o1+	25-	2o3+3+3o 2+3+6o5o	28+	2+3o3+3- 3+3-1+2+	21o
6	1-3o4-2- 2-1o1+0+	13+	4o3+3+4- 6-5o5-6o	36-	2o2+2o1o 1o1+1o2-	12+
7	1o1+2o1+ 2-2+1o1-	11+	7-6o6-5o 4o4o3+4o	39-	2-1o1+1- 2-1+1-0+	9-
8	1o2+2o1+ 2o2+4o3o	18o	6-4+5o4- 5-3o4o4-	34o	2-2-1+1- 2-1+1+0+	10o
9	3+2+2o2o 3o3o4-3+	23-	4o6-4-4+ 3+4-2o2+	29o	1-1+1o1o 1o0+0o2o	7+
10	5+4+5o4+ 5o4o5-5+	38o	2+2o2o1+ 2-4-2o1o	16o	3o3o1+2- 2+1+1-1o	14+
11	5o3+3+5- 3o5-4+4o	32+	2-2o1+3o 2+1-1o0+	12+	1o1+2-2+ 2-1-1o2o	12-
12	3+5-4-3+ 3+1+2o3-	24+	1o2-2-1+ 2o1+1+2-	12o	2-2o2-1o 2-1o0+2-	11o
13	3-2o4o2- 2+2-2o1+	18-	0+2-3+2+ 3o2-1+2+	16o	3-3-2+2o 2+3+4-4o	23o
14	2+3-2-2+ 2+3-2+2+	19-	1-1o2-1- 2-1+2-1+	10o	6-5+7-7o 5-4+4-4o	41+
15	1o2o2-2- 2-1o1o1o	11o	2o3-3o2o 3o2+2-2+	19o	3o3o3-2o 3o2+2o3o	21o
16	1-1o1o1- 0+0+0+3o	7+	3+5-5o4o 3-2-2o2-	25o	4+5-5+7- 3o3o2o1+	30+
17	6-7+8o7- 8-7+7-6+	56-	2o2-2+2o 2o3-4o3+	20o	1+1o1-0+ 1-1o2o3+	10+
18	2+2+6o4o 6-5+5o5-	35+	3+3o2o2o 2+3-2-3+	20+	3+4-3+3+ 4-3+3+4o	28o
19	4o4o5-3- 6-7-5o4o	37-	3+4o3+1+ 1-1+3-3+	20o	4-4o4o3o 3+3+2+4o	28-
20	4+4o5o4- 4-4+3+3o	31+	4o5-4-3o 2+2+2-2+	24o	4+4-4-3- 3+2o2o2+	24o
21	4o4-4o3+ 4-4+4-3+	30o	2+2-2-2+ 3+4+4+4+	24+	4-4o4o3o 3o3+4o3o	28o
22	4o3oO+2- 4-4o5-3+	25-	5-4o5-5- 3o3+2+5+	32o	3-4-3+2+ 1+2+2o2+	20o
23	4-7o8-6+ 6+7-6o4-	47+	3+4-4o3o 3-3+5-5+	30o	3+3o2+3+ 3o2+3o3o	23+
24	3+2+2o2+ 1+7o9-7+	34+	5+5o3o2- 3o4o5-4+	31o	3+3o2o1+ 2o2-1+3-	17+
25	7+5+5+5- 5+5o5-5-	42+	4+5-3o3o 3-5o4o5-	31+	2-2o2-1- 2-1o1o2-	11+
26	4+3o1oO+ 1o2-1o1+	14-	4+4o4-3o 3o4o3+3-	28o	2+3-2o2o 1+2-5-4o	21-
27	1-1-1o1+ 1-2o1-6o	13o	3o3o2-2o 1+1o3o4o	19o	3+3+3+5- 3+3+2-2o	25o
28	4+4o3o2o 3-2+3-3+	24+	5+4+4+3o 2o1o2o4-	26-	1o2o2-2o 3+4o4-4+	22o
29	2+4-3o3+ 3-3o3o3-	24-	4+5-5+4+ 5-4o4+3+	35o	3o5o4o4- 4o4+2o2o	28o
30	2o1-1o1- 2+3-4-1+	14+	1+2-2-3- 2o1-1-1o	12-	4-3-3+4o 3o3-3-3+	25+
31			2-2+2+1o 0+0+1+3-	12o		

Geomagnetic planetary three-hour-range indices Kp.

	July 1939		August 1939		September 1939	
E	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum
1	2+2o3+4- 3-2-2-2+	20-	2+2+1+1- 1-1o1-1o	10o	0+1o1o1- 1-2-0+0o	6-
2	3-3o3+2o 2+2+2+2+	20+	1-1o1+0+ 0o0o0+0o	4-	1o2-2-1o 1+2o2o5-	19+
3	3+4o4o5o 7-5o6-3o	37-	0o0o0+0+ 1-0+0+1-	3-	0o6o5-5- 3o3+3+4o	35o
4	3+3o2o2+ 4+5+6+7-	33+	0+1o0+1o 1-1o1-1o	6o	3-3-1o2- 2-1o1o0o	12-
5	5+6+6+7- 7-7+6+5-	50-	1-1o1o1o 1-1o1o2-	8o	0o1o1-0+ 0+0+1+2+	6+
6	5-5-3+4- 1o1-1-1+	20o	1o1-1-1- 0+1-0+1-	5o	3-2-2+1+ 1+1o3-3o	16o
7	1o0+0+0+ 1o0+1o0+	5-	1+1-1-1o 1+1-1-0+	7-	3o3-2+2o 2o1o1o1+	15+
8	1o0+0o1- 1+2-3o1+	9+	1+1-0o0+ 0+1+3-1o	8-	2-2-1o3o 1o1+1+2-	13-
9	3-1o0+1- 1-1-0+1-	7o	0o0+0+1+ 0+0o1-0+	3+	3+4-5+4o 4o3+3+3+	30+
10	2o1+1o0+ 1-1-1-0+	7o	0o1+1+5- 3-3+3+2+	19o	3+4o3+2o 4o3-4-2-	25-
11	0+1o1-2+ 5-3o4-1o	17-	2o1+1+0+ 3-3+3o3-	20-	3-2+3-1- 2-1+2-1o	14o
12	1-1+1+3- 4+5-3o3-	21-	6o8-7+7- 5o4-5-6-	47-	4-3+3+3- 2-1+2o3+	21+
13	2-2-1+0+ 1o1+2o2-	11o	6o5+4-4- 3+4+4-3+	33+	2+1+1-2+ 2o1+1o3-	14-
14	2o3o5o5- 5+4+3-5-	32-	3-4-3+2- 1o1o1-1-	15-	3+3o2-3+ 2+3-2-2+	20+
15	4o3-3-3- 3-2o2o3-	21+	1-1-1-0+ 1o3-1+2-	9o	2+1+1o1+ 1+1+1+3-	16-
16	3-3+3+3+ 3+5-5+4o	30o	1+3-3+4- 7+8-5-6-	36+	3-1+1o1+ 2+2-2o2-	14o
17	4o3+4+3- 3-3o2+3+	26-	5o5-4-3o 3-3o2-1o	25-	3-5+5o4- 5-6o7o5o	39+
18	3o3o2+2o 2o3-2+2-	19o	1+1+1-2- 2-2o1+2+	12+	3+3-1+2+ 2o2-1-0+	14+
19	2+2o2+2- 2-2-2+5o	19o	1o2-3-2o 2+5-1+1-	16+	2+4-4+4+ 4+5+4+5o	34-
20	4+6-5o5- 6o5o4o4+	39o	1+2o2o1+ 2-1+2+2o	14o	5o5+5o5- 3+4-4-3-	33+
21	3-2+0+5o 7+4+3o3+	28+	1+1+1o2+ 2+1+1+4o	15o	3-3o2+3- 2+2o3-2+	20o
22	4+5-3o4- 4-3+2+3-	28-	8-8-5-5o 7+7o7+8-	54+	2+3-3-3+ 2+3+2o3-	21+
23	4o2+3-1+ 2o2o1+1-	16+	8-7+7-7- 6o4o4o4-	46o	1+0+1+1+ 0+1-1o2o	8+
24	2+1+2+1+ 3+2o3-2+	18-	4o2o3+3o 3+2+1+2o	21+	2-3+2+2- 2-0+1+1-	13o
25	2+4o5-3o 2o2-1+1-	20-	3+3+2o2+ 2+1+2-2o	18+	1o1+1+3o 2+3-2+3o	17o
26	1+6-6-5- 4+4+3+3+	33-	1o1+2-2+ 2o1o1+2o	13-	5-5+3o4- 2+2+4o3-	28o
27	3-3+3o2- 3-3o2o3+	22-	3-2+1+2+ 3o2o2o2+	18o	1+1+1-0+ 0+1+3o2+	11-
28	2o2-3+2+ 2-2+2o2+	18-	1o1o1+3- 2-1+1o1+	11+	2+1o2-1- 1o1o1o0o	9-
29	2-2-2o2+ 1+2-2-1-	13o	3o2-1-1+ 1-0+1o0o	9-	0o0+1o1o 0+1o1-1o	5+
30	1+2-1+1o 0+1+0+0+	9-	0o1-1o1+ 2o3o2+2-	12o	1-1-2-3o 1o1+3+3o	15-
31	1+2o2+1o 1+1o2-2o	13-	0+0+0o0+ 1-2-2-1o	6o		

	October 1939		November 1939		December 1939	
E	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum
1	3+2o1o1- 2-3-2+2o	16-	2+2-2+3- 2o2o3o1+	17+	2o3o4-2+ 2-1o2+2-	18-
2	1-1o2-1- 1o1+2-2o	10o	1+3-2o2- 2-1o1+1-	12+	2-1+3-1+ 1-1+2+3-	14o
3	3-2o4-4+ 5+5-6-6-	34o	2o2-2o2o 2+1+2-2o	15o	1+2-2o1o 0+1-1+3+	12-
4	7+7+4-3o 4o3-3+2-	33o	3-1+2o2o 1o1-1o1+	12o	3+3o2-0+ 1-0o0+1o	9+
5	3-3-2o4- 3+2o4+2o	23-	1+1-1+3o 1+1+2-0+	11o	1o1o1-1- 2+4-3+3+	16o
6	4+6+5o4- 3o3o4-3-	32-	1-1+1+1+ 1+1+2+3-	12+	4-2o2o1+ 2o1o5+5+	23-
7	2o1o1-2- 3-4-5-4-	20o	2+2-2-2- 1-2+2o1+	14-	6-6o5+4o 5o5-4o4o	39-
8	3+3o2-1- 2-1+3o3-	17+	1-1-1o1o 2o0+1+0+	7+	3+5-5-3+ 4-5+4o4-	33-
9	4-3o7-3+ 5+3-3o1+	29o	1-2+2o2- 1-1o1-1-	10-	4+2+3+3+ 4-3o4-2-	25+
10	1-1o1+1+ 2o1o0+2+	10o	1o2o1-1- 1-1o1+1-	8o	2-2+2o2o 3o2+2o3-	18o
11	3-3o1+2- 2+1o3+3+	19-	2-2+1-1- 0+1o2o2+	11o	3o2o3-2o 2-1o1+2-	15+
12	3o2-1-0+ 0+1-0+1-	8-	4-1+1-3+ 3o2+2-2o	18o	3-2-1+2- 1o3-2+3+	17-
13	5o6-6+4o 4-6-8-8o	46o	4o5+5o5+ 5+4o5-4+	38o	2+3-2o1+ 2o2-0o0o	12o
14	5+6o7-7- 6o6o5o4-	45+	5-4o3o3o 3-3o3-4o	27o	2o0+1+1- 1-1-0+1-	7-
15	7-8o7-3+ 3+5-4o3o	40-	3o2+3-2- 2o3o3-1o	18+	2o3-2+1+ 2-3-2o2o	17-
16	4-4o4o3o 4+6-5o5-	34+	2o1o1+1- 1o2-1+1-	10-	1+2-1-1o 1o3-1+5-	14+
17	4o5+5-4o 4-5o5o4-	35+	1-0+1+1+ 1o1o2o1+	9o	3o1+2-2- 1-1o1o1o	11+
18	4o4-4o4o 4-4+5-4-	32o	1-1+2o2- 1-1-1-1-	8+	2-1o1-0+ 0o0+0o0+	4+
19	4o5-4o5- 3-3o4-2+	29o	0+0+0+2o 3o3+3o2o	14+	0o1+0+0+ 0o0o0o0o	2o
20	2+2-2+2+ 0+1-1-0o	10+	3+3-2o1o 0+0+2-2-	13o	0+0o0+0o 1-1o2o2-	6o
21	0+2+3o2o 3o2o3+4-	20-	1o1+2o2o 2o1-1-0o	10-	2o3o4+4- 4o3+3o3o	26+
22	2+1+2o1- 1o1o3+3-	14+	0o0+0+0o 0+0+0o1o	2+	5-4-4-3- 5-4o3+3+	30o
23	0+2o3o3o 4o4+2+3-	22-	0+1o1+1o 1-0+1-1-	6o	2o4-3o3- 1+2-1+3-	18+
24	4-2+2o1o 1-1-1+1-	12+	1-1+0+1- 3-2-3-3+	13+	3o3o3o3- 2+2+2+3-	21+
25	2-2o2o1+ 2+1-1-0o	11-	3+5-4o3- 3-3o4o5o	29+	3+3-2o1+ 2o1o2-2o	16o
26	1-1-2o1+ 1-1-3o2o	11o	3+4-3+4- 3o2o3+2o	24+	2-3-2o2- 1o0+1o1+	12-
27	1-1o1-1o 1o2o0+1-	7+	1+3+2o2+ 2-1+2o1o	15o	2-3o3-3o 2+3o4-2o	21+
28	0+1o2+3o 3-1o2o3-	15o	1-3o2-2o 2+1o2-0+	13-	2o2o2o2+ 2+2o3o3-	18+
29	3+3+2+2- 2-1+2+1+	17+	1+1+2-2+ 2-2o1+2+	14o	3+3-2o2+ 2o3o3-2+	20+
30	3o2+1+1+ 2o2-2-2+	16-	1-3-2-1+ 1+1+2-2o	13-	3o2o1+2- 1+2+1o1o	14-
31	3o2o2o1+ 2o1+1+1-	14-			1o2o1o1o 1-0o0+0o	6o

Average planetary amplitudes Ap, unit 2γ, for each day, 1937-39.

	1937									1937			1938			1938		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	2	8	22	7	18	10	10	8	11	29	3	20	9	13	28	5	4	6
2	7	6	22	22	6	7	6	48	3	7	10	12	10	13	9	4	7	16
3	7	56	2	25	8	6	4	16	4	25	4	7	10	16	7	8	16	7
4	7	13	5	8	17	8	4	26	7	71	2	4	27	13	7	9	44	4
5	4	17	33	4	65	20	10	8	10	8	4	3	10	9	35	2	19	7
6	4	14	6	5	2	42	15	9	6	10	3	8	11	51	20	22	12	5
7	18	8	2	5	4	10	13	10	6	23	10	14	21	24	9	19	5	8
8	6	4	2	2	4	8	4	4	4	38	17	11	20	36	5	8	5	31
9	17	21	7	1	15	5	15	5	5	42	15	8	11	32	4	12	5	8
10	20	14	5	2	11	10	12	4	18	38	5	10	4	31	3	9	8	14
11	12	12	4	9	11	5	13	4	28	46	10	14	4	27	4	16	105	18
12	10	12	1	19	5	3	7	4	3	30	10	4	15	10	16	12	76	30
13	10	14	9	9	6	19	6	4	10	14	5	3	29	16	4	36	17	27
14	4	12	20	3	10	10	31	5	12	13	5	2	9	39	13	60	40	3
15	2	10	24	4	9	8	12	8	8	20	1	2	9	4	11	19	24	3
16	3	12	5	4	11	12	6	3	9	8	0	2	34	5	4	135	16	7
17	4	10	9	6	5	15	7	4	12	5	6	3	120	4	6	21	14	6
18	3	12	6	12	4	10	5	4	10	6	29	20	34	8	3	18	7	5
19	2	38	4	10	8	5	21	5	7	5	22	23	24	3	1	11	5	4
20	6	12	4	8	3	25	19	3	3	1	18	17	25	4	2	6	4	4
21	15	12	5	12	7	10	10	5	8	6	12	6	38	4	9	7	5	13
22	4	10	21	4	5	18	35	74	6	13	23	10	130	3	46	14	6	6
23	3	4	11	6	6	6	22	5	7	33	22	36	16	16	52	41	3	0
24	2	8	8	45	5	15	34	2	12	34	17	13	16	8	43	13	16	4
25	2	8	6	72	17	11	23	2	4	14	6	10	105	16	15	18	10	4
26	2	6	10	67	16	4	11	6	8	29	4	15	62	10	26	8	4	5
27	14	8	29	61	24	31	5	15	8	21	6	3	12	11	7	5	7	5
28	12	7	20	130	50	13	4	12	5	16	19	3	10	20	4	3	15	3
29	8		6	19	26	8	3	8	2	8	27	3	15		10	4	38	7
30	10		9	21	10	6	6	2	36	4	30	4	8		3	4	12	6
31	3		53		10		5	3		4		10	34		3		6	

	1938			1938			1939									1939		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	23	19	5	45	6	2	3	13	22	28	56	15	11	5	3	8	9	10
2	14	27	5	17	5	18	4	20	26	18	48	23	11	2	10	5	6	7
3	4	27	9	15	4	28	4	11	20	16	23	16	45	2	40	38	7	6
4	35	50	7	10	5	10	3	10	28	18	8	18	43	3	6	51	6	5
5	17	29	11	2	4	9	11	12	14	18	27	12	94	4	3	15	6	10
6	12	12	4	7	6	6	8	43	15	8	40	6	17	3	8	32	6	20
7	5	11	8	67	5	4	8	22	8	5	51	4	3	4	8	14	6	46
8	6	5	7	58	24	2	10	6	15	10	34	5	5	4	6	10	4	30
9	10	4	8	12	33	9	12	11	19	14	26	4	4	2	26	32	5	18
10	28	11	8	11	9	29	10	15	10	42	8	8	4	13	17	5	4	9
11	6	39	8	10	4	10	8	14	13	30	6	6	12	16	7	11	5	8
12	5	10	10	4	2	8	6	2	14	17	6	5	15	88	13	4	11	9
13	12	7	21	3	3	10	4	5	7	10	9	14	5	34	7	89	43	6
14	19	4	49	2	8	9	12	7	8	9	5	61	31	9	12	74	20	4
15	67	2	100	4	7	6	7	13	14	5	10	12	13	5	6	68	10	8
16	31	2	12	12	6	22	6	16	23	4	20	35	26	62	7	35	5	10
17	7	4	10	6	24	30	16	15	14	135	12	6	18	20	55	36	4	6
18	4	3	5	5	11	36	8	12	4	42	12	20	10	6	8	27	4	2
19	7	4	4	10	8	20	6	12	4	45	13	20	12	11	33	24	8	1
20	6	3	6	14	10	15	10	7	10	27	17	16	47	6	33	5	7	3
21	6	6	7	7	20	10	12	2	22	24	18	21	36	9	11	12	4	19
22	5	18	12	6	13	22	10	3	26	20	30	11	21	135	12	8	2	25
23	6	28	9	18	14	6	11	7	22	92	26	14	9	89	4	15	3	10
24	5	10	3	23	17	4	7	55	10	79	30	9	9	13	7	7	8	12
25	2	8	4	34	13	4	5	73	7	61	28	5	14	10	9	5	25	8
26	3	4	38	33	19	2	1	6	12	9	21	14	35	6	24	6	16	6
27	4	4	30	33	7	3	1	4	26	14	12	18	13	9	6	4	8	13
28	2	7	56	22	6	6	4	10	56	16	22	15	9	6	4	8	6	9
29	8	10	16	10	5	4	4		71	15	34	23	6	5	3	10	6	11
30	45	11	32	5	3	5	4		32	8	6	17	5	6	9	8	6	7
31	5	5		3		3	5		20		6		6	3		7		3

PLANETARY CHARACTER FIGURES Cp, DAILY VALUES
(multiplied by 10), 1937–39

	1937												1938						1938					
	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De
1	0	4	11	4	10	6	6	5	6	13	1	10	5	8	12	2	1	3	11	10	2	15	3	0
2	3	3	11	11	3	3	3	16	1	3	5	7	6	7	5	1	4	9	8	12	2	9	2	10
3	4	16	0	12	4	3	2	9	1	12	2	3	5	9	3	4	9	4	1	12	5	9	1	12
4	4	8	2	4	9	4	1	12	4	18	0	2	12	8	4	5	15	2	14	16	4	6	2	5
5	1	9	13	2	17	10	6	4	6	4	1	1	6	5	14	0	10	4	9	13	6	0	1	5
6	1	8	3	2	0	15	9	5	3	6	0	4	7	16	10	11	7	2	7	3	3	3	3	3
7	10	5	0	2	1	6	8	6	3	11	5	8	11	12	5	10	2	4	2	6	1	17	2	1
8	3	2	0	0	1	4	2	1	2	14	9	6	10	14	2	4	2	13	3	8	4	17	12	0
9	9	11	4	0	9	2	9	2	2	15	9	4	6	13	1	7	2	4	6	4	2	7	13	5
10	10	8	2	0	6	5	7	2	10	14	2	6	1	13	1	5	4	8	6	4	6	6	8	13
11	7	7	1	5	6	2	7	1	12	15	6	8	2	12	2	9	19	10	3	2	1	7	6	4
12	5	7	0	10	2	1	3	2	1	13	5	2	8	6	9	7	18	13	3	1	6	8	2	1
13	6	8	5	5	3	10	3	1	6	8	2	1	13	9	2	14	9	12	2	1	6	3	10	2
14	2	7	10	1	6	6	13	2	7	7	2	0	5	14	7	17	15	1	1	2	4	11	11	2
15	0	6	12	2	5	4	7	4	4	10	0	0	5	1	6	10	12	1	1	2	4	11	11	2
16	0	7	2	1	6	7	3	0	5	4	0	0	14	2	1	19	9	4	1	2	4	0	11	2
17	1	5	5	3	2	9	4	1	7	2	2	0	19	2	3	11	8	3	1	2	4	0	11	2
18	1	7	3	7	2	6	2	1	5	3	13	10	13	4	0	10	3	2	1	2	4	0	11	2
19	0	12	1	6	4	2	11	2	4	2	11	11	12	0	0	6	2	2	1	2	4	0	11	2
20	2	7	1	5	1	12	10	1	1	0	10	9	12	1	0	3	1	1	1	2	4	0	11	2
21	8	7	2	7	4	6	6	2	5	3	7	3	14	1	5	4	2	7	1	2	4	0	11	2
22	2	5	11	1	2	10	14	18	3	8	11	6	19	0	15	8	3	3	1	2	4	0	11	2
23	0	1	6	3	3	3	11	2	4	13	11	14	9	9	16	15	1	0	1	2	4	0	11	2
24	0	4	4	15	2	9	13	0	7	13	9	7	9	5	15	7	9	1	1	2	4	0	11	2
25	0	4	3	18	9	6	11	0	1	8	3	5	19	9	8	10	5	1	1	2	4	0	11	2
26	0	2	5	17	9	1	6	3	4	13	1	8	17	6	12	4	2	2	1	2	4	0	11	2
27	8	4	13	17	12	13	2	9	4	11	3	0	7	6	4	2	3	2	1	2	4	0	11	2
28	7	3	10	19	16	7	1	7	2	9	10	1	6	10	1	1	8	1	1	2	4	0	11	2
29	4		3	10	12	4	1	4	0	4	12	1	9		6	1	14	4	1	2	4	0	11	2
30	6		5	11	6	3	2	0	14	1	13	1	4		1	1	7	3	1	2	4	0	11	2
31	1		16		5		2	1		2		6	14		0		3		1	2	4		11	

	1938						1939												1939					
	Jl	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Je
1	11	10	2	15	3	0	1	8	11	12	16	8	6	2	1	4	5	5	1	2	3	4	5	6
2	8	12	2	9	2	10	2	10	12	10	16	11	6	0	5	2	3	4	2	3	4	5	6	7
3	1	12	5	9	1	12	1	6	10	9	11	9	15	0	14	14	3	3	3	4	5	6	7	8
4	14	16	4	6	2	5	0	6	12	10	4	10	15	1	3	16	3	2	4	5	6	7	8	9
5	9	13	6	0	1	5	6	7	8	10	12	7	19	1	1	8	3	6	5	6	7	8	9	10
6	7	7	1	3	3	3	4	15	9	4	14	3	9	1	5	13	3	10	6	7	8	9	10	11
7	2	6	4	17	2	1	4	11	4	2	16	1	0	1	4	8	3	15	7	8	9	10	11	12
8	3	2	4	17	12	0	6	3	8	6	13	2	2	1	3	6	1	13	8	9	10	11	12	13
9	6	1	4	7	13	5	7	6	10	8	12	1	1	0	12	13	2	10	9	10	11	12	13	14
10	12	6	4	6	5	13	6	8	6	15	5	4	1	8	9	2	1	5	10	11	12	13	14	15
11	3	14	5	6	1	5	5	8	7	13	3	2	7	9	4	6	2	4	11	12	13	14	15	16
12	2	6	5	1	0	5	3	0	8	9	2	2	9	18	8	2	6	5	12	13	14	15	16	17
13	7	4	11	1	1	6	1	2	4	6	5	8	2	13	3	18	15	3	13	14	15	16	17	18
14	10	1	16	0	4	5	7	4	4	5	2	17	13	5	7	18	10	1	14	15	16	17	18	19
15	17	0	19	1	4	3	3	7	8	2	6	7	7	2	3	17	6	4	15	16	17	18	19	20
16	13	0	7	7	3	11	3	9	11	2	10	14	12	17	3	14	2	5	16	17	18	19	20	21
17	3	1	6	3	11	13	9	9	8	19	7	3	10	10	16	14	2	3	17	18	19	20	21	22
18	1	1	2	2	6	14	5	7	1	15	7	10	6	3	4	12	1	0	18	19	20	21	22	23
19	4	1	1	5	5	10	3	7	1	15	8	10	7	6	13	11	5	0	19	20	21	22	23	24
20	3	0	3	8	5	8	6	3	5	12	9	9	15	3	13	2	4	1	20	21	22	23	24	25
21	3	3	4	4	10	5	7	0	11	11	10	11	14	5	6	7	2	10	21	22	23	24	25	26
22	2	10	7	3	8	11	6	1	12	10	13	7	11	19	7	4	0	12	22	23	24	25	26	27
23	3	12	5	10	8	3	6	4	11	19	12	8	5	18	1	8	1	6	23	24	25	26	27	28
24	2	6	1	11	9	1	4	16	6	18	13	5	5	8	3	4	4	7	24	25	26	27	28	29
25	0	5	2	14	7	1	2	18	4	17	12	2	8	6	5	2	12	4	25	26	27	28	29	30
26	1	1	14	13	10	0	0	2	7	5	11	8	14	3	11	3	9	3	26	27	28	29	30	31
27	1	1	13	13	4	0	0	1	12	8	7	10	7	5	3	1	4	7	27	28	29	30	31	
28	0	4	16	11	3	3	1	6	16	9	11	9	5	3	1	4	3	5	28	29	30	31		
29	4	5	9	5	2	1	1		18	8	14	11	3	2	1	5	3	6	29	30	31			
30	15	6	13	2	1	2	1		13	4	3	9	2	3	5	4	3	3	30	31				
31	2	2		1		1	2		10		3		3	1		3		1						

Geomagnetic planetary three-hour-range indices Kp

	January 1940			February 1940			Marsh 1940		
E	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	2+2+2-2o	2+2o3-3+	19-	5-4o5-4+	5-5o5o5-	37o	1o3o3-2o	2o1+1o0+	13+
2	4-4o3-2+	3-1+1-3+	21-	4o3o4o3o	3o3o3+3-	26o	1+2-1o1+	1-1+1o1+	10-
3	2o4-4-3+	5+8-5o4o	35-	3o1+2+3-	3+4+3+4-	24o	2-2+2o2-	1o2-2-3-	15-
4	3o2+2o3+	4+5o4+4+	29-	1-1o1o1-	1-4o2+3-	13o	0+1-0+0+	2-0+1-2+	7-
5	3-5o2-1o	0+1o2o3-	16+	3-1o1+2+	3+3o2-3+	19-	1+2-1+1+	1o0o0+0+	7+
6	3+4-3-3+	3+4o4+3o	28-	3o2-2+3-	3o2o4-4-	22o	0o0+0+0+	0+1o1o1+	5-
7	4-2o3-2+	4o3o3o5o	26-	4+2+2o2o	3+2+2+2o	21-	1+2o0+1-	1+0+1o1+	8+
8	3o4+3o1-	2o2o2o3-	20-	3o3-2+3-	1+2-3o3-	19+	2+3-2+1+	1o0+3+4+	18-
9	2o1-1+2-	3-3+5-2+	19-	3o4-2o2-	1o2-0+2+	16-	5+6+4-2+	2o2+2+2o	26+
10	2o2+1+2+	6-5+5-4o	28-	2o2-1o1-	1-2-3-3-	13o	2o2o2o2-	1+1o1+1o	12+
11	3o4o4-4-	3-3o5-4+	29o	2o1-1+2+	2+1+3o3+	16+	1o1-0+0+	1-1o1-0+	5o
12	3+4+5o3o	4-4-4-5-	31+	3+4o2+2+	4-4o2+2-	24-	0o0+0+1-	1-3+4o5o	14+
13	2+3o3-2o	2-1o1o0+	14o	3-2o2o1+	3o1+3+2+	18o	4-3o2+2+	2-2o1-2+	18o
14	0o0o0+2-	1-1-1+2-	6+	2o2-1o3-	2o0+1-1+	12-	2-3o3+3o	1o2-2+2o	18o
15	3+3-1-1+	1+1-1-1+	12o	3-1o2o3o	3o1o2-1o	15+	0+0o0o1-	1-0o0o0o	2-
16	2-2o3+2+	3+3o3+2+	21+	2o2o1+2+	1+3-2+2o	16o	1-1-2-1o	1+1-3-2o	11-
17	3+3+3+2o	5o4-4-3+	28-	0+1o2-2+	2-2o1-0+	10o	1+0+1-1-	0o0o0o0o	3o
18	3-3-3+4-	5-7-6o3-	32+	0o1-1-0+	0o1-1o0+	4-	0o0+0+0o	0o0o0+0+	1+
19	3o1+2-2o	2o2+2o2-	16o	0+0+0o1o	0+1-1-1+	5-	2-3-3o3-	3-5-5-4-	26-
20	1o2o2-1+	2+2+3-1+	15-	5o4+4-2o	3-3o3+3-	27-	5-4+4-4o	4o3+4o4o	32o
21	1-0+1-1o	1o1+1-0+	6o	4+4o3-3o	4-4-2-2-	25-	3+4-2o1+	2o2+2o2+	19o
22	0+1o1o2o	1o3+3o1+	13o	3+3+4o2+	2+2+2-2+	22-	3+3-2-1+	1o1o3+3o	17+
23	0+0+2o2+	2o1o2+2+	13-	2+3o2+1+	2-1o3o4-	18+	1o3-5o6o	4o4+5o7+	35+
24	3-3+2+2+	3-3o4o3o	23+	4+3o3o3-	2+3-2-4+	24o	6+6o5o4+	8o9o9o8+	56o
25	3+4-3+2-	4o3-1+2o	22o	4+4+5-5-	5o5o5-3-	35+	9-8+8+8o	7o5-7-8o	60-
26	0+0o0o0+	0+1-1+2-	5-	2o1o1+1o	2-2+4-2+	15+	7+6o5-3-	2+4-6+3-	36-
27	2-2+3-1-	1-1o1-1o	11-	2o4-2-1+	2o0+1-1-	12+	5+5o3+4+	3-4-3+4+	32o
28	1+0+1-0o	0o0+1-1+	5-	1o2o1o2o	1+1o1+3-	12+	5+4o3o3o	3o2+3o3o	27-
29	1+1o1-1o	3-4-3+3-	16+	2-3-3-3-	3o4-2+1+	20o	3-2-2+5o	5o8+8o8+	41+
30	4-4-3o4-	3o3+3+3o	27-				9-8+8+8o	7+8-7o6-	61o
31	3o3+4-3+	5-4+5o5-	32o				7o5+5-8+	8o8-6o6+	53+

	April 1940			May 1940			June 1940		
E	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	7-6+6-7-	4+5o5-4-	43o	2o1o2-1o	2o2o3o2-	14+	1-0+1+1-	1o1-1+2-	8-
2	2+2+2o2-	2o3+7o6o	27-	2-2+1+1-	1-2-1-0+	9+	1+3-2o1o	3-3-1+2o	16-
3	8o8o7o5-	5-5o6+4-	47+	2-1+2+1+	1+1-1-1o	10+	1-1-1-1o	3o2o2-2o	12-
4	3+2+3o4-	3-3o3o3o	24o	2+1o2-0+	0+1-0+2-	8+	2o1-0+0+	1o1-0+1-	6o
5	3-3+2o2o	1o2+2+2o	18-	2-1+2-2o	1+1-2-1o	11+	1o1o3-2o	2o2-2o4o	16+
6	3+3+2+1+	1-0+3-1o	15o	0+0+0+0o	0+0+0o0o	2-	4+5+5o5-	4+4-4-4+	35+
7	1-0o0+0+	1o0+2-1-	5o	1o2+2+1+	1o1+1+1o	12-	5o5+4o4+	4o3-3+5-	33+
8	0+0+1o1o	1-2-1-0+	6o	2-2o0+0+	1+1-1-1o	8o	4+3o3o3-	3-3o4+4-	27-
9	1o0+0+1-	0+1-0+0+	4o	2+4-2-2-	3o3-1+1+	18-	2-3o3+4-	2o3o4-3o	23+
10	1-0+0+0+	0+0o0+0+	3-	1o3-3-3-	3-3o4-4-	22o	3o2-3-1-	1-0o1-2-	11o
11	0+1-1-1+	2+2+1-1-	9o	4-4-3o2o	3-2o3o2o	22o	2-0+1-1o	1o1+0+2-	8o
12	1-1+1o1+	1o1-0+1-	7o	3o4-4o2+	3-3-3-4-	25-	1o0+0+1-	2-1+2o2-	9o
13	2+3-2o3o	3+3+2-1+	20-	3o2+2-2-	2+2+4-3-	20-	0+0+0+0+	1-1o1+2+	7-
14	2-3+4-3-	2o3-1+2-	19o	3o3+3+2+	3-3-2+2o	22-	1o2+3+3-	5-6o6-6+	32o
15	2o3-3-3o	4o4+3o3o	25-	2-3+3-2+	3-3+4-3+	23o	5-5o4+4o	4-4-3-1+	29+
16	3+4o3o2+	2-2-3o3o	22o	3+1-0o1-	1o1o1+1+	9+	4-2+4-3o	2o2-3o3-	22o
17	3o3+3-1o	1o1+1+1-	14+	2o2+2o3-	2-2+3+2+	19-	3o3+3+3o	3o3+3-2o	24-
18	1+1+2-1-	1o0+0+1+	8o	4o5-6-5-	6-3o3-2o	32+	2o4o5o3+	2o1+2+2-	22-
19	2+2o1+1-	2-3-1+0+	12+	3+2-2+2+	1o2+2-3o	18-	2o3o3o2+	3+3o1+2-	20-
20	0+2+3+2-	3-2+3-2o	17+	2o2+1+1+	3+4-2+0+	17-	1o1+1-1-	1o1o1o1-	7+
21	4-3o3-2+	2-2-2o3+	20+	1+4+1o0+	0+1o2o2o	12+	1+2o1+1o	1o0+1-0+	8o
22	3o4o5-3-	3o4o2o1+	25-	4+6-6-5-	3o3-2+2-	30o	0+1o0+3+	3+2o1+2+	14o
23	3o1o1-0+	3o1o2o3-	14-	2-2+2-2-	1-5o5+3-	21o	4-2-1o1o	1o1o2o2o	13+
24	4-1o1-2-	3o2+1o1o	14+	3o7o6-8-	6+5-6-4+	44+	3+3+3+2o	3o2+4-4-	25-
25	5-8o4o2-	2+5o7-7-	39o	4o3o1o1-	1+3+3o2+	19-	5-7o5+7+	8+8-7+5+	53o
26	7o5+5-3+	4-4-5-3+	36-	3-4o3+3-	2+4o4+5+	29-	5-3+2+2+	1o6-4+3+	27o
27	4-3-2o2-	2+3-2o2-	19-	6-4o2+3-	1+2+3-4o	25o	3-2+2-2+	2+2+1o1-	15+
28	3-1+1+2o	2+3-1+3-	16+	3-4+3+3+	3o2+2+2+	24-	2+1-0+1o	1-3o2+1-	11o
29	4o3+2+2-	2o2-1+1-	17o	3o2o2-1+	1+2+2+1+	15+	0+1+1-0+	1+1o3o2-	10-
30	1-2-2-3o	3o3o3+3-	19o	0+0o0+1-	1-1-1+2-	6-	4+4-1-1+	2o3-2+2-	19-
31				1+1-1-0+	1-0+0o0+	4+			

Geomagnetic planetary three-hour-range indices Kp (continued)

	July 1940									August 1940									September 1940								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4-	2+	1o	1-	1+	1o	2+	0+	13-	4+	3-	1-	1+	1o	2-	2o	3o	17-	4o	4-	4-	4o	5o	4-	2-	1-	26+
2	1-	1-	1-	1-	1-	1o	1+	1o	7-	1o	1-	1+	2-	1+	2o	5+	2o	15+	0+	1+	2o	3-	3-	3o	3+	3-	18o
3	2-	2o	3-	2-	3-	2+	3+	5o	21+	2o	3+	4+	4+	6+	6-	4-	2+	32o	4o	4o	4-	3+	4-	4-	3+	4-	29+
4	5-	4-	4-	3o	2o	3-	3o	5o	28-	3+	2o	3o	2+	1-	1+	2o	1+	16o	4+	3-	3-	4-	2o	2+	2+	4-	24-
5	4o	2+	3o	2o	3+	2o	4-	4-	24o	2o	3-	1o	3o	3o	2+	2+	3+	20-	3+	3+	2+	3-	2o	2o	3-	1+	20-
6	3+	3o	3-	2o	3+	2+	3+	2+	22+	3o	3-	3+	3o	3-	3o	4-	4o	25+	2+	2+	2-	2+	2+	1+	1o	3o	16+
7	2-	1-	1+	1+	2+	2o	2+	1+	13o	2+	1+	2+	3+	3o	4o	4-	1o	21o	4+	5+	5-	4+	3+	4-	1+	4+	31+
8	1+	1o	0+	0+	1+	1o	1o	3+	10-	3o	2+	3+	3o	2+	1+	1-	2o	18o	3+	2+	2o	4o	4-	4-	2-	2o	23-
9	3-	3+	3-	2-	3o	3-	3+	3+	23-	2o	3o	4+	5+	5-	4+	6+	4o	34o	4-	4o	3-	3o	2+	3o	4-	3o	25+
10	4o	4+	5o	4+	4o	3+	3-	4o	32-	2o	1o	2+	3-	2+	3o	1+	1o	16-	2-	1+	1o	0o	0o	0o	0+	1-	5o
11	3o	4-	2+	2-	1+	1+	2-	2o	17o	3o	3-	3o	3+	3o	3+	4-	3+	25+	0+	0o	0+	1+	1+	2-	1o	1-	7-
12	2o	2+	1o	1o	1-	1-	2-	1-	10o	2+	3+	3o	2o	2o	3-	2-	2o	19o	1+	1-	1o	1o	1o	1-	1o	1-	7+
13	1+	2-	3-	7-	8-	6o	5-	4+	35o	3-	2+	2o	2-	1+	2-	1o	1+	14o	0+	0+	0+	0+	1+	2o	1+	0+	6+
14	3+	5-	4o	4-	3o	3+	2+	3o	27+	1+	3-	3-	2+	2+	1o	1-	2-	15-	2o	3-	1o	1-	2o	3o	5+	3+	20o
15	3+	3+	2+	2o	3+	3o	3o	2+	23-	1+	0+	1o	0+	1-	0+	0+	0+	5-	1+	4-	3o	2+	3-	2+	3o	1+	20-
16	3-	2+	2o	2o	2-	2+	2-	2o	17-	0+	0+	2o	0+	0+	1o	0+	5o	10	2+	2o	1o	4o	4+	2o	1-	17+
17	2-	1+	1+	1-	1o	2-	0+	0+	8+	1-	0+	0+	0+	0+	1-	1o	1+	5o	0+	0+	0+	1o	0+	0+	1-	1+	5-
18	0+	1-	0o	1-	0+	0o	0+	1+	4-	1-	0+	1o	1+	2+	4o	4-	4-	17o	0+	0+	1o	1-	0+	1-	2-	1+	6+
19	1+	1o	0+	0+	1o	1o	2-	2+	9o	2-	0+	1o	1o	2+	3+	3o	3-	15+	1+	1-	1-	1-	1o	0+	0+	0+	5+
20	1o	1o	1o	0+	1-	1-	2-	2o	8+	3o	4-	3-	2+	2+	2+	1o	1o	19+	0+	1o	2-	2+	4-	3+	2+	2+	17o
21	2o	1o	2-	3o	2o	2+	2+	3-	17o	2o	2o	1-	2-	2+	1+	1+	2o	13+	2+	2+	3-	4o	4-	3o	1+	1+	21-
22	2-	3o	5-	3-	3o	3-	2+	2o	22o	2+	1o	1+	2-	2-	3+	3+	2-	16+	0+	0+	2-	3o	3o	2-	2+	1+	14-
23	2+	2-	1o	1o	2o	2-	1+	2+	13+	2+	2o	1+	1-	1o	1-	2o	1o	11o	1-	0o	0o	0+	1o	0+	0+	1-	3+
24	2o	3+	3-	3o	2-	2o	1+	3-	19-	0+	0o	0+	0+	0+	0+	0o	2o	1o	1-	1+	0o	0+	0o	0+	1o	3-	6+
25	3-	3-	3o	3-	1+	2o	1o	1+	17-	0o	0o	0o	0o	1-	1o	2+	3-	7-	3o	4o	4-	4-	3-	4o	4-	4o	29-
26	3-	2o	1+	1o	1o	0+	0+	1o	10-	2+	2+	1o	3-	3o	2+	4o	6-	23+	2-	0o	0+	1-	1-	7-	8-	5o	23-
27	1-	1-	1-	0+	1-	1o	1-	1-	5+	4-	4+	3-	2-	1+	3-	2-	3-	21-	7-	6-	3+	3o	3o	4+	5+	5o	36+
28	2-	1o	1+	3-	2-	1o	1-	1+	11+	3o	4-	3-	2o	1+	2o	2o	2o	19-	4+	6-	6-	5-	4-	5o	5o	3o	37o
29	1o	2o	1o	1o	1+	1+	4o	3+	15o	3+	2-	2o	2+	3+	1o	1o	1+	16o	3-	3-	2o	2+	3o	2o	3-	2-	19o
30	2+	3+	2+	3-	4-	4-	5-	3o	26-	1+	0+	0o	1-	1o	1o	2o	2o	8+	2-	1-	0+	0+	1o	1+	4o	3o	12+
31	4-	3+	3+	3+	3-	2+	3+	3-	25-	2o	1o	1o	1+	2-	1+	1+	4-	13+									

	October 1940									November 1940									December 1940								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4+	4+	3o	3+	4+	5+	7o	2o	34-	1+	3o	4+	4-	3-	1+	2-	0o	18o	2+	4-	3-	3o	2+	2o	3o	3+	22+
2	2o	1+	3-	3-	3+	4o	3-	3-	21+	1-	2+	3+	2+	1o	0+	0o	1o	11o	4-	4-	3-	5o	3+	4o	3+	4+	30o
3	2-	3+	4o	3o	3o	3+	5-	3-	26-	3-	3+	3+	4-	3-	2-	2o	2o	21+	4-	2+	1+	4o	3+	4-	2+	4o	25-
4	4+	4o	1o	1-	1o	2o	1o	1-	15-	5-	4-	3+	2o	4+	5-	4+	4o	29o	2o	3o	3-	2+	3+	3+	1+	2+	21+
5	3-	3+	2-	1+	2+	2-	1-	0+	14o	4-	4+	4-	4-	3-	2-	3-	1o	23+	3-	3+	3-	2-	1+	1+	2o	2-	17-
6	1+	1+	1+	3-	3+	3+	2-	4o	19o	3-	3-	2+	2+	1+	1+	2o	1+	16o	2o	2o	1o	2-	0+	1o	2-	1o	11-
7	4o	4+	6-	5-	6-	5+	7o	6-	42+	2-	2+	3o	4-	3o	1-	1+	1o	16o	2-	1-	1+	1-	0o	0+	0o	0o	4o
8	5+	7-	6-	4o	3o	4o	5-	5o	38+	2-	1+	1+	1o	1o	1-	1-	1-	8+	0o	0o	0o	0o	0o	0+	1-	0o	1o
9	4o	2-	1+	2o	1o	1-	2-	1+	14-	1o	3o	3+	2+	4-	3o	2o	1+	20-	1+	3-	3+	3o	4-	2-	1+	2+	19+
10	0o	0+	1o	2+	2+	1o	3o	3-	13-	1o	1+	1-	1-	0o	0o	0+	0+	4+	2-	3+	2-	2+	1+	4-	3-	2o	19-
11	3-	3o	2-	1o	2+	1+	1-	3-	15+	0+	0o	1-	0o	0o	0+	0o	2o	3+	2-	2-	2-	2-	0+	2-	2-	4o	14+
12	3+	2+	1+	3-	2o	2o	1+	3o	18o	2+	0+	2+	5-	3+	3+	4o	5+	26-	3+	2o	3-	2o	2+	3+	2o	2o	20-
13	1+	1o	1o	0+	1o	0+	0+	0+	6-	7-	7-	6+	3+	4-	3+	2+	2o	34+	4o	3-	2+	3+	1+	2-	2+	2-	19+
14	0+	0o	0o	0+	1-	0+	1o	1-	3+	3+	3+	3-	3-	3+	2+	3-	4o	24+	3-	2-	2o	3o	4-	4+	4+	4-	25+
15	2-	3-	3o	4+	3-	3-	3-	2o	22-	3-	3+	3o	3-	1+	2o	2+	3o	20+	2+	2-	1o	1o	3+	3+	3+	4o	20o
16	1+	1-	3o	2o	1+	3-	4o	1o	16o	4o	3-	1-	1+	2-	4+	4-	3+	22-	3o	3-	2+	4-	2+	2+	2-	1+	19+
17	2o	2-	0+	0+	1+	1-	1o	3-	10o	2-	1o	0+	1-	2-	4o	5-	4o	18o	1+	1+	1-	1o	3o	2-	2+	3-	14o
18	3-	2+	4o	2o	2o	2-	3o	3-	20+	3-	1o	2o	2-	2-	0+	1-	2-	12-	3o	2o	1o	2o	2o	1+	1-	1-	13-
19	3-	3+	4-	4-	3+	2o	4-	3+	26-	2o	1o	2+	3-	2o	1o	1+	4-	14-	2o	1o	1-	1+	2-	0+	1o	2+	10+
20	3-	3-	2o	2o	1o	1-	2-	4-	16+	0+	0+	1+	1o	1+	2+	2o	4+	13o	3o	3+	4-	5+	6-	6o	5o	5o	37o
21	3-	2-	3o	4o	2+	3+	4-	4-	24+	5-	3+	5-	4o	3+	2-	2o	4+	28o	4o	6-	5-	4+	4o	4-	4o	3+	34-
22	2+	3+	5-	4-	1o	2o	1o	1o	22-	4-	5o	5+	5o	4o	2-	4+	5-	34-	4-	3o	4-	4-	5o	4o	2o	2+	27+
23	0+	0+	0+	0+	0o	0+	0o	2o	2o	3+	4+	5+	5o	4-	1+	3-	1+	27o	3o	1+	2o	3-	4-	4+	4-	24+	
24	0+	0+	0+	0+	0+	0+	0+	0o	2+	1-	1o	2+	0+	1o	1o	2-	3-	11-	3-	3-	2o	1+	2o	2-	3o	3o	18+
25	1-	0+	1-	2-	3-	3o	4o	5-	18-	2+	1+	3-	5o	6+	6-	4o	4o	31+	2-	3o	4+	3o	3-	3+	2+	3-	23o
26	3o	2+	3o	4o	5-	5+	5-	4o	31o	5o	5-	5o	4o	3+	3+	2o	1o	28+	1o	3+	2+	4-	2+	1o	3+	2+	19+
27	3+	3+	3o	3+	3+	3-	2+		25-	2+	1o	2o	2-	3+	3o	2+	2+	18o	2+	3o	2o	2+	4+	3o	1+	2-	20o
28	3o	3+	2+	3-	2+	2o	4o	2-	21+	0+	1o	1o	1+	2-	1+	1o	3+	11o	2o	2+	2+	3-	2+	1o	4-	5-	21o
29	1-	4o	2-	1+	1+	1-	1-	0o	10+	3-	5o	5-	5-	5+	5-	4o	5o	36o	5-	4+	3o	3o	2-	3+	4-	3+	27o
30	3-	2+	1+	1-	1-	0+	1o	1+	10+	4o	3+	2+	3+	3o	3+	3-	3-	25-	2+	5-	6+	4o	4-	4o	4+	3+	33-
31	3-	2-	2o	2+	2-	2o	1+	0+	14o										5-	4-	4-	3-	4o	4o	3+	2-	28-

Geomagnetic planetary three-hour-range indices Kp (continued)

	January 1941									February 1941									March 1941								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1o	3-	2+	1-	3+	4+	4o	4-	22o	0o	0+	1o	1+	2+	2+	2o	1o	10+	3o	6+	8o	8o	9-	9o	9-	7o	59-
2	3-	2-	1o	1+	3-	2+	1-	1+	14-	1-	1o	1+	2-	2-	1-	3o	3o	13o	5+	4o	5-	5-	3+	5-	4o	4+	35o
3	1o	1-	1+	1o	1+	1-	2o	3+	11+	3o	4+	5-	4+	3+	3-	3+	3+	29o	4-	4-	3o	4+	4o	5+	4+	2-	30o
4	3+	3+	2o	2o	0+	1+	1-	0o	13o	3o	3-	2+	3-	3o	2-	2+	1+	19o	5-	4+	4+	5+	5-	5o	3o	5+	37-
5	0o	0+	1o	2-	1-	2+	2-	1o	9-	2+	2+	3+	3-	3o	3o	4o	4+	24+	5-	5+	4-	3+	5+	4o	4+	5o	36-
6	4-	5o	5o	3o	2-	2o	3-	1+	24+	5-	4o	4+	4o	3+	3+	3+	3o	30o	4-	3+	4-	4-	2+	4-	4-	1+	25+
7	2-	2o	2+	2o	1o	4+	4-	2+	19+	4+	5+	4+	4-	4o	4o	4-	4-	33o	3o	2+	2o	3-	1+	3-	4+	4+	23-
8	3-	2+	2+	2-	1+	1o	2-	3+	16+	4o	4-	3+	3+	3o	3+	3+	3o	27o	4o	3+	1o	2+	3-	2+	3o	4-	22+
9	2+	3o	3+	3+	4-	3+	3o	2-	24-	3o	4o	4o	2o	2-	2+	4o	3o	24-	4o	3-	3o	2-	1o	2o	3+	4-	21+
10	3+	2o	2o	1+	3-	2+	2+	3-	19-	3+	2+	3o	3-	2o	2-	2o	3-	20-	3+	4-	2o	1+	1o	1+	2o	1+	16o
11	3o	2+	1+	3-	3o	2-	3o	3-	20-	2o	1+	2o	1o	1+	2-	3-	1+	13+	3o	2+	1+	1+	2o	1+	4-	5o	20o
12	2+	2+	2o	1o	2+	2-	2-	2o	15+	1+	1o	1+	2o	2-	1o	1+	2-	11+	2-	1+	0+	2o	4-	3o	2+	4-	18o
13	3+	1+	2-	1+	0+	1-	2o	2+	13o	4-	2+	4-	4o	5o	4+	4o	4+	31+	3o	3o	2o	2-	1-	3o	4-	4o	21o
14	1+	1-	1o	1-	0+	0+	1-	2+	7+	5-	4o	4+	5o	3o	4-	2+	3-	30-	6+	6o	6+	7o	6-	4+	5+	6o	47o
15	2o	2o	3-	2-	1+	1o	1-	0+	12-	4+	5+	4-	4+	4o	4-	4-	2+	31+	3-	4-	5-	5-	3o	3o	4-	4-	29o
16	1+	1o	2-	2+	3-	4-	2-	2o	16+	4-	4o	1o	1+	1+	2-	3-	4+	20o	3+	3-	1+	1+	2-	1o	1+	0o	13-
17	6-	3o	4+	4-	5o	6-	4+	5+	37o	3o	4-	4o	5-	3+	3-	3+	3-	27+	1o	2+	2o	1o	2o	1o	1+	2-	12+
18	4o	4+	4o	4o	3-	4+	5+	5-	33+	2o	2o	2-	3-	2+	1+	3-	1o	16-	3o	1-	1o	1-	0+	1+	1+	4-	12o
19	4+	4-	4-	3+	4o	4o	3-	4o	30-	1-	0+	1-	2-	2-	4-	2o	1o	12-	2-	2-	2o	4+	5+	4+	4o	4-	27o
20	4-	3o	3-	3-	2+	1o	2+	4-	21+	1-	1+	2o	3-	3o	2o	4-	4-	19o	5-	4-	4+	4o	4+	5+	4-	4-	34+
21	2+	3+	1-	0+	0+	1-	2o	2-	11+	4o	3+	2o	3o	5o	6-	5-	5+	33o	4o	4o	4o	4o	4o	4o	6o	4-	34-
22	1o	2o	2o	1+	1o	1+	3+	3o	15o	4-	5o	3+	5-	5-	6-	5+	5-	37o	5-	5+	4o	4+	4+	5+	4+	4-	37o
23	3+	2o	3+	3+	4o	4+	4+	4o	29-	4o	4-	4+	3+	5-	5-	6-	5o	35+	2o	3-	3o	3o	3o	5-	3+	5o	27-
24	3+	4-	4+	4o	6-	5o	4o	4o	34o	3+	3+	3+	4o	3+	5o	3+	4-	29+	3-	2o	2-	2+	2-	3o	3o	3o	19+
25	3+	5-	4o	5-	3+	4o	3+	4-	31o	3+	3o	3o	3+	4-	3+	4-	4o	27+	2-	2+	2o	3o	2-	1+	3o	2o	17o
26	5o	3o	4-	4-	3o	3o	4o	2o	29o	3+	4-	3o	4o	3o	3-	3-	0+	23-	2-	2o	2-	1o	0+	0+	1o	1-	9-
27	2+	2+	3o	4-	4o	4o	4-	4-	27-	0+	0+	1-	1o	1-	2+	2-	1o	8o	0o	0o	0+	1o	1-	0+	1o	1+	5-
28	3+	2+	1+	3o	3o	2+	4-	2+	21+	3o	2+	1+	4-	2o	2o	1+	2o	18-	5-	4o	3+	6-	6o	6+	6+	5+	42-
29	2+	1+	1+	2o	1+	2-	1-	3-	13+										5-	4+	4-	3+	4o	5-	6+	6-	37-
30	3o	4-	2o	2o	3-	3-	3+	3-	22o										5o	5o	5+	4o	5-	7o	7+	8-	46o
31	2-	1o	3-	1o	1o	0+	1-	0+	9-										8-	7-	6-	7o	5+	4o	3+	3+	43o

	April 1941									May 1941									June 1941								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3-	2o	0+	2o	1+	2-	1o	3-	14-	0o	0o	0+	2-	2+	3-	3o	3-	13-	3-	3o	3o	2-	2-	1o	1+	2-	16o
2	3o	2+	2+	2-	3o	2o	2-	3+	19+	2-	2+	2-	1-	2-	2-	1+	2o	13o	2-	1o	0+	0o	0+	1-	0o	0+	4+
3	4-	4+	2-	2-	2o	3o	3o	3-	22o	2o	3-	2o	1o	1-	2+	2-	1o	13+	1o	0o	1o	2-	1o	1-	1-	0o	6o
4	2+	2o	2+	2-	0+	0+	1-	2o	12-	1-	3o	4+	4o	2o	1+	1+	2o	19-	1o	1o	1-	0+	0+	1o	1-	1o	6o
5	1+	2o	2+	1o	1-	2-	1-	2+	12o	2+	1-	2o	2-	2o	2-	1o	0+	12-	1o	1-	1+	1o	1-	1+	1o	1+	8+
6	3-	3+	2-	1o	1+	1+	1+	3o	16-	1-	2-	2+	3+	3-	1+	3-	1-	15+	1-	1o	0+	3+	2+	1o	1+	1-	11-
7	0+	1-	2-	3+	3o	3-	4o	4+	20o	1+	3o	2o	0o	0+	1o	1o	2-	10+	1-	0+	1+	1o	2-	1+	0+	1-	7+
8	4o	2-	1+	2o	2+	2o	2+	3-	18+	0o	0+	0+	2+	2+	2o	3+	2+	13o	0+	0+	2o	2+	1+	2-	0+	0+	9-
9	3+	5-	4-	3o	4-	3+	2-	1+	25-	3-	3+	3+	2+	2-	1o	2-	3-	19-	0+	1-	1+	4-	3-	1+	2-	2+	14o
10	2o	3o	5-	3-	5o	4+	5o	29+		4-	2+	2+	2+	2+	2o	1+	2o	18+	3-	2o	4o	4-	6o	5+	3o	4o	31-
11	4-	4-	5o	4+	3o	3o	3o	3-	28+	3o	1o	1o	1o	2-	1+	0+	1-	9+	6-	3+	3o	3-	2-	3+	4+	2+	26+
12	4-	5o	4-	4-	3+	2+	2-	2-	25o	1o	2o	1o	1-	1o	1o	2+	2+	11+	2+	o2	2-	2-	3-	3o	3-	2-	19-
13	4o	1+	1+	1o	1o	1o	1-	1+	12-	3o	2+	2+	2o	3-	3-	1o	1-	17-	1-	3+	5+	6o	5+	4-	4+	5o	34-
14	1+	2+	2-	1-	0+	0+	0+	0o	7o	1o	1+	1-	2-	2-	2o	1o	3-	12o	5-	4+	4-	1+	3-	1o	2+	4-	24-
15	0o	0+	0+	1+	2o	2o	2-	3o	11-	3o	1+	1+	2-	0+	2-	2o	2o	13+	4-	4+	4+	4+	3+	3-	3+	2o	28o
16	4o	1+	0+	4o	4-	1+	1o	1-	16+	4-	2o	3+	4-	4o	4-	1o	2o	23+	1+	1-	1+	1-	1-	1-	1-	1o	7o
17	1o	2o	2o	2+	2+	3-	1+	2-	15+	1o	5o	5+	4+	4o	2+	2o	3o	27o	1o	1+	2o	3-	3-	3+	5+	4o	22+
18	4o	2-	1+	3-	4-	2-	3-	5o	23-	2-	3o	1+	1o	1o	2+	3-	3o	16o	4+	4o	3-	2-	2o	3o	3-	1-	21o
19	3o	6+	6+	4o	4-	4o	3-	3+	34o	3-	2+	1-	0+	0+	1-	1+	0+	9-	0+	1-	1-	2o	2o	2+	3o	3o	14o
20	3o	2o	3+	2o	3o	2o	3+	2-	22-	1-	1-	0+	1o	1-	1+	0+	2o	7o	3+	4-	5+	3o	3-	3o	3o	4-	28-
21	3+	3-	2+	1+	3-	2-	3o	1-	18-	2o	2-	3-	2+	1+	4o	5-	5o	24-	3+	3-	3+	2o	2+	2o	2+	2-	20-
22	0o	2+	2+	0+	1+	2-	2-	2o	12-	5o	5-	3-	4o	4o	3o	5o	4+	33-	2+	1o	3o	3-	2+	1+	2+	3-	18-
23	0+	0+	0+	1+	1o	1o	1o	7o	3o	3-	3+	4o	4-	2+	4+	5o	28+	2-	1+	1-	1+	1+	1+	1o	2o	11-	
24	1-	1+	5o	7-	6+	6+	6+	5+	38o	3+	4o	4o	3o	3-	2+	4o	3o	26+	1o	o+	1o	2+	2+	2+	3o	15-	
25	6-	6o	5+	5-	3-	5-	4-	3+	36o	4+	3o	3-	3-	2+	2+	3o	4o	24+	2-	1o	o+	o+	1+	o+	2-	3-	9+
26	3+	4o	3-	5+	2o	2-	1+	3-	23o	3o	2-	2+	3-	3+	2-	2+	2o	20-	3+	1+	1+	1o	1o	1o	3-	3+	15o
27	2o	1-	2-	1o	o+	1+	1o	1o	9o	2o	2-	2-	1+	1+	2-	2+	2o	14o	2+	3+	3+	2+	2+	1o	2-	1o	17+
28	2+	3+	2-	2+	2+	4-	4+	4+	24+	2-	2o	3o	2o	2o	2-	1+	3+	17o	3-	1+	1+	2o	2o	2-	2o	2o	15o
29	5+	4-	3+	2-	1-	o+	o+	1o	16-	3-	3+	3+	2-	2-	1+	2o	1+	17+	3o	2o	2+	2o	2-	1+	1+	1o	15-
30	1+	2o	1-	o+	o+	1-	o+	o+	6-	3o	1+	1-	1o	2o	2+	3-	1+	14+	1o	1o	2-	2-	2-	1-	2+	1+	11-
31										4o	3-	2-	1+	2o	2+	3+	2-	19o									

Geomagnetic planetary three-hour-range indices Kp (continued)

	July 1941									August 1941									September 1941								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3+	3+	2+	2-	1o	1-	1-	2o	15o	1o	1-	2+	2o	2-	1+	3o	3o	15o	3-	3o	3+	3+	2+	4o	3+	3o	25o
2	3o	3-	3o	1o	1+	1-	1-	1-	13o	5-	4+	5-	5o	5+	5o	3+	3o	35+	3o	2-	4o	3o	2o	3-	3o	3o	22+
3	2o	1+	0+	1o	3-	4-	2-	2+	15o	2+	4-	3o	2o	2-	3o	2-	3o	20+	3o	1+	1+	1o	0+	1-	1o	1o	10-
4	1o	5-	4o	3o	2+	3o	5+	5-	28o	5o	7o	6o	6o	8+	7-	6+	7-	52-	1o	1o	1o	0+	0+	1-	1o	1+	7-
5	6+	6+	9-	9-	9o	9-	7-	8-	62o	6o	4o	3-	2+	2+	3o	4-	3+	27+	0+	1o	1-	1o	0+	0+	0+	0+	4+
6	3-	2o	3+	4+	6+	6-	6-	5-	35-	2+	3-	4-	3+	3-	4o	3+	6-	28-	0+	0+	0+	1-	1-	1o	1+	1-	5+
7	7o	7-	6-	4-	2+	4+	5-	3+	38-	5-	3+	3o	3o	2-	3-	2+	3o	24-	0+	3+	3o	3o	5o	3o	4o	3+	25o
8	1+	2+	4o	3o	4-	3o	3+	1o	22-	2o	2-	2-	1+	1-	1-	2-	1o	11-	3-	2+	3-	2o	1+	1o	2+	2+	17-
9	1-	1o	1-	2+	3o	3-	4o	4+	19-	0+	1-	1o	1-	1o	0+	0+	1o	5+	3o	2o	2o	2-	1o	1o	2-	4o	16+
10	4-	3o	3o	2-	2+	3o	5-	5o	26+	1+	0+	0o	0+	0o	0o	0+	2o	4+	3o	2o	2-	0+	0+	1o	2-	1o	11o
11	3-	2+	3o	2+	1+	0+	1o	0+	13+	3-	1+	2+	2o	2-	2-	3-	2o	16+	2o	2+	1+	2-	3o	1+	1o	2+	15o
12	1+	1-	3+	2+	4-	1-	1+	1+	15-	2o	2-	1+	1+	2o	1+	1o	2+	13o	2o	2o	1o	1+	1-	0+	0o	0o	7+
13	1+	0+	1o	2o	1o	1-	1-	1-	8-	2o	2o	2o	2o	2+	2-	1+	2o	15o	0o	0o	2-	2+	6-	5+	4-	4+	23o
14	0+	1o	1+	0+	0+	0+	1o	3-	7+	2-	3-	2o	2o	1-	1o	1o	1o	1-	11o	5-	4o	5-	3-	3o	3o	3o	4+	29+
15	1-	1-	1+	2-	2+	1o	1o	1+	10o	2+	1-	1-	1o	1o	0+	0+	0o	6+	4o	4o	3+	3-	3+	3o	5+	5-	30+
16	2-	3o	2o	3-	3o	3o	3-	2+	20+	0+	0o	0+	1+	2-	0+	1o	0+	5+	6-	4o	2o	2+	2+	2-	3+	3+	25-
17	3+	2+	3-	1+	1+	2o	2-	2-	16+	2-	1+	0o	0+	0+	1o	1o	1o	6-	3-	2o	3o	1+	3-	3o	2+	1o	18o
18	3-	1o	1+	1+	2-	1+	2o	1+	13-	1-	0o	1-	1o	1o	2-	2+	2+	10-	2o	7-	8+	9-	9-	9-	9-	9-	60+
19	3-	2+	1-	1-	1o	1+	2-	2+	13-	4-	3+	3+	4o	3+	3o	2+	3-	26-	9-	9o	9-	7+	4o	5o	7+	4o	54o
20	1+	2o	3-	2o	2o	2o	3o	3-	18-	2-	1-	2-	0+	0+	1-	0+	1+	7o	5+	4+	4o	6+	5+	3o	2o	1+	32-
21	3+	5o	6o	6o	3o	3o	5-	3-	34-	2o	2-	2-	2-	1+	3-	3+	2-	16o	3-	6o	4+	4+	4+	5o	1o	1-	28+
22	4o	4o	3-	3-	3+	4o	1+	3+	25+	1+	0+	0o	1o	1-	0+	2o	1+	7o	1o	2-	2+	1o	1-	1-	1-	1o	9o
23	3+	3o	4-	4-	3-	2-	2-	3+	23o	1-	0+	1o	0+	0+	1-	1-	2-	6-	1-	1-	3-	2o	4-	5-	3o	2o	19+
24	3-	3o	2-	2o	2+	2o	3-	2-	18o	1+	2+	3-	3o	2-	2-	2o	2o	17-	4-	4-	3+	3o	4-	3o	4+	6-	30+
25	2+	3o	3+	2+	2+	1+	1+	1o	17o	1+	1o	1+	2-	1o	2+	4-	3o	15+	5+	3o	4o	3-	4-	2+	4o	2-	27-
26	0+	1-	1o	0+	1o	1-	1-	1+	6o	4o	2o	2+	3-	4o	4-	5-	2-	27o	1+	1o	1-	1+	1-	0+	1o	1+	8-
27	0+	1-	1-	0+	1-	0+	0+	2-	5o	6-	5o	6-	6o	6o	4+	5-	5+	43-	3-	3o	3+	2+	2o	3+	2o	2-	20+
28	1o	1-	1-	1+	1+	0+	1o	1-	7o	4+	4-	5-	5o	4-	2+	2+	2+	28+	2o	2+	1+	1o	1o	2-	3+	3+	15+
29	1o	1o	1-	1-	1o	1-	0+	2-	7o	3-	4o	4-	5+	4+	5-	4o	5-	33+	2o	5-	3-	4-	3-	3+	3-	3+	25o
30	1o	1o	2-	1+	1-	0+	1-	2o	9-	5+	5o	4-	3-	4o	2+	3+	2+	29-	4-	2o	2+	3+	2o	2o	3+	2o	21-
31	2-	1-	1-	1-	1o	1o	2o	3+	11o	2+	3-	3-	2o	3-	2+	3-	3o	20+									

	October 1941									November 1941									December 1941								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2-	2o	2-	1+	1o	1o	1o	1-	10+	8-	7+	7o	5-	5+	5+	3-	1o	41o	3o	3o	6-	7-	8-	7o	5o	6+	44+
2	1-	1o	1-	0+	1-	1-	3o	3-	10-	1o	0+	0+	1-	0+	1+	2o	2+	8+	5-	6o	5-	3+	3o	3+	2+	1o	28+
3	2+	1+	1+	1o	0+	1-	1-	1-	8+	2+	2o	1-	1-	1o	2o	0+	2+	11+	1o	2o	0+	1-	1-	3-	4-	4-	15-
4	1o	0+	0+	1o	1-	1-	1-	2+	7o	2+	3-	2-	1+	1-	0+	1-	2-	11+	4-	3o	2+	4-	3o	2o	4-	3o	24+
5	2+	2o	3-	2+	1+	1o	1-	1-	13o	1o	1+	1+	1+	1+	4-	4+	5-	19o	1-	2-	2o	1+	2-	3-	4-	3+	17o
6	1+	1-	1+	1+	2-	2-	1o	1+	10+	3+	4o	5o	5+	5+	5o	5-		38-	3o	3+	2+	2o	2o	2+	1o	2-	18-
7	2-	1+	1-	0+	0+	1o	1-	1o	7o	4o	3-	3o	3o	3o	3+	3o	3-	25-	2o	3-	2+	2+	1+	1o	2-	2-	15o
8	3+	3+	2-	1-	1-	3o	2+	2-	17-	4-	4o	4o	3o	4-	3+	4-	1+	27-	1+	2-	1+	1o	2o	2-	2o	3o	14o
9	1-	3-	1o	1-	3-	1o	2-	2-	12o	2o	2+	2o	3+	4-	4o	2o	2-	21o	1o	1-	2-	2+	3-	2-	1+	3-	14o
10	0+	1-	1o	1-	1+	2o	3+	2+	12-	3-	3-	2-	3+	5-	5-	4-	4o	27+	2o	2o	2-	1o	2o	2o	0+	1-	12-
11	3o	3o	4o	4+	4+	5-	6-	7-	36-	5-	4+	3-	4+	2o	4-	3o	2+	27o	0+	1o	0+	1o	1o	0+	0+	0o	4+
12	6o	5-	4o	3-	2o	3o	1+	2+	26o	1+	3-	3+	1o	1o	2-	3-	3o	17-	0+	1+	0+	1o	2-	2-	1o	1-	8o
13	3-	3o	3o	2+	1o	2o	2+	1+	18-	1+	2-	2-	2+	1+	2o	2-	2o	14o	1+	1o	2o	2-	3-	3o	3o	2o	17-
14	1+	2+	1o	3-	4-	4o	1+	2o	18+	1o	2-	1+	2-	1-	1+	1+	2-	11-	4+	4+	3-	4o	4-	3+	4o	4+	31-
15	3o	3+	4-	3o	2+	3-	3+	3-	24o	1-	0o	0+	1-	1-	1o	1o		5o	2+	3-	3-	1+	2+	2-	1o	3o	17o
16	2o	4o	3-	1o	3-	3o	3+	4-	22+	1o	2-	1o	1-	0+	1o	2-	3-	10o	3+	5o	3-	2-	1o	1+	1o	1+	17+
17	1-	0+	2+	2o	1+	1+	1-	1o	10-	4-	4o	5-	4o	4+	5o	5-	5-	35o	2-	2o	2+	3-	1o	3-	3-	4-	19-
18	0+	1+	2o	2-	1o	1o	1+	1o	10-	2+	3-	5-	4-	3+	4-	4o	3o	27+	2o	3o	4o	3+	3-	2+	2-	2o	21o
19	3o	2+	3o	2-	2+	4-	2-	1+	19o	6-	3o	3-	3-	3o	2o	2-	3o	24-	2-	1+	2-	1+	1+	1+	1+	1+	11+
20	1o	2o	3o	1+	1-	1o	2-	1+	12o	3o	2-	3-	2o	1o	1-	2o	2o	15o	2o	0+	1-	1o	1o	2-	1o	1-	8+
21	2+	2+	1+	0+	0o	0+	1o	8o		3+	3o	2o	2-	2+	1+	2o	3-	18+	0+	1-	1-	1-	0+	0+	1-	2-	5+
22	2o	2o	2-	2o	3+	6-	6+	5+	28+	3-	1o	2-	2-	2o	3+	4o	4+	21-	1o	1-	1-	1-	1-	2-	1+	1o	8-
23	2o	3+	2+	2-	2+	3-	3+	4o	22-	4-	5-	3o	3-	2+	2+	1+	2+	22+	1+	2o	1-	1o	2+	3o	2o	3o	15+
24	4-	2+	2+	2o	2-	3o	4+	3o	22+	2o	2-	1o	2-	0+	0+	2o	2o	11o	2o	2-	1-	2+	3-	2-	2+	1+	15-
25	2+	3+	1o	1-	1-	1o	1-	10+		1-	1o	2+	1-	1o	1o	2+	1+	10+	0+	1o	2o	1+	1o	1-	0+	1-	7+
26	1-	1+	2-	3o	2o	1o	3o	3+	16o	0+	2-	1+	1-	2-	0+	1-	0+	7o	1-	3-	2-	1+	2-	2-	1o	3+	14o
27	3-	2-	2o	2o	1+	0+	1-	2-	12+	0+	3+	3+	2+	3-	2o	1o	1+	16+	4o	3+	2-	2-	2o	2o	2-	3+	20-
28	1-	1o	1+	2-	1+	2o	3-	2o	13-	4+	6o	6+	6-	3-	4-	6+	4-	39-	3o	3o	2-	1+	1+	1o	1+	3-	15+
29	3o	1o	1-	1o	1o	1o	2o	2-	11+	2o	3-	2o	2o	1-	1+	1o	15-		4-	2o	2+	2o	1+	3-	2-	3-	18+
30	2-	3o	2-	1+	2o	2-	1+	2-	14+	1+	1-	1-	1+	1+	2+	2+	2o	12o	2-	1o	1-	1-	2-	3-	2+	3-	13+
31	3o	6-	4+	3-	3o	4+	6+	7-	36o										2+	1-	0+	0+	0+	3-	2o	1+	10o

Geomagnetic planetary three-hour-range indices Kp (continued)

	January 1942									February 1942									March 1942								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	0+	1-	1o	1o	0+	1-	1o	1o	6o	0+	1-	1-	1-	2+	1+	1+	1+	9-	3+	3-	8o	8o	7+	6-	7-	7-	48+
2	1o	2o	3-	2o	3+	3+	4-	3-	21-	2+	3-	4o	4-	4o	3+	1+	1+	23-	7+	6o	3+	3+	5-	4o	3+	1+	33+
3	4-	4o	3+	3-	3o	3+	2o	3-	25-	3-	3o	3-	1o	1-	1o	1+	1-	13o	4-	4+	5o	6-	5o	6o	3+	3+	36+
4	2+	5o	3-	2+	4+	4-	4-	5-	29-	0o	0+	2-	1o	1+	1o	1+	2-	8+	3+	3+	3+	4-	2o	4o	3+	2+	25+
5	3-	4+	4-	4+	3-	3+	4-	3o	28-	1o	4o	3o	4+	4-	3+	5o	2+	27-	2-	5-	5-	3o	3+	7-	7o	5+	36+
6	2-	3-	2+	3o	2o	3o	4-	3o	21+	4+	5-	3o	5o	4o	5-	4+	4+	34+	4+	5+	4+	4o	3+	3-	1-	2+	27o
7	3-	4o	2-	3+	3+	2-	2-	1-	19o	4o	3o	2-	3o	2-	1o	O+	1o	16-	3-	2+	3+	4+	3o	3o	4o	4-	26+
8	1+	O+	1-	O+	1-	1o	O+	3-	7+	1-	1+	1o	1+	1-	1o	O+	2-	8o	6+	6-	4-	3o	3o	4-	5+	4-	34+
9	1+	2-	1-	O+	O+	1+	2o	2o	10-	1+	1-	1+	2-	2-	1o	O+	1-	9-	6+	6+	4-	3o	3+	4o	3+	5-	35-
10	3-	3-	2o	2-	3-	3o	2o	2+	19o	O+	1-	2-	1+	3o	3+	3-	2+	15+	3-	3+	2-	3+	3-	4o	4-	1o	22+
11	3-	1+	2+	2o	3o	2-	2o	2-	17-	2+	1+	2+	1o	2o	2+	3-	3o	17o	4-	5-	2+	2-	O+	O+	1-	1+	15o
12	2o	2-	2+	2+	2-	2o	3+	2+	18-	2-	2-	1-	1o	O+	O+	1o	O+	7-	2o	2-	1+	1+	1-	1-	1-	2o	10+
13	1o	1-	1+	1o	2+	2o	2o	1-	11o	3o	3-	1o	1-	1+	1o	1o	1-	11+	4+	4+	3-	5-	5+	3+	5-	4+	32-
14	1-	1-	1-	1-	O+	1-	1o	3-	7+	0o	O+	1-	2+	2o	2+	1+	3o	12o	3o	3o	5+	5o	4o	4o	2+	4-	30+
15	1o	1-	3-	2o	3-	3-	1o	2-	14+	3+	3+	4-	3-	3+	2o	3+	2o	24-	3o	2-	1+	3o	4o	3-	3-	1+	20-
16	2-	1+	2-	2o	3-	3-	3o	2+	17+	3o	2+	3-	3-	3o	2o	2-	3+	21-	2-	1-	2-	1o	1-	1o	2o	1-	9+
17	4-	3o	5-	5-	2+	2-	1+	1+	23-	3o	3+	2+	2+	1o	1-	1+	1o	15o	3o	3o	3o	2o	1-	1o	2o	2-	16+
18	4+	4-	3+	3o	2+	2o	3o	4+	26o	2+	2o	1+	1-	O+	1-	O+	O+	8o	O+	O+	2+	3+	3o	4+	3o	4-	20o
19	4-	5+	3o	3-	1+	2-	1o	2o	21-	0o	O+	O+	O+	2-	1-	2-	1+	6+	2+	3o	3-	3o	3o	4+	4o	4+	27-
20	3o	1o	1o	2-	1-	1o	1-	1+	10+	1-	3-	2-	2+	2o	2+	2+	2o	16o	5+	4+	3+	2+	1o	2-	2-	O+	20o
21	0o	O+	1o	1+	1o	1-	1+	1o	7-	3-	4-	3o	1+	3o	1o	1o	1o	17-	3o	3+	5-	4+	3o	4+	4-	3o	29+
22	O+	3-	2-	1+	3+	2+	2+	2+	16+	3-	2+	2o	2-	1+	2-	2+	2o	16o	4+	4-	4-	3+	2+	2o	3-	3-	25-
23	2o	3-	2-	1+	2-	2o	1-	1-	13-	4o	3o	2o	1o	5+	5+	6o	6-	32+	3o	3-	1o	2-	3-	3o	3+	3+	21-
24	1-	O+	1o	2-	2-	O+	1-	2-	8-	6-	4o	5o	4+	3-	2+	2-	3+	29o	2-	3o	2o	3o	3-	2o	O+	1-	15+
25	1-	O+	O+	2+	2-	1o	2o	2-	10o	3+	2+	1+	2o	2+	3-	4o	5-	23-	1+	2-	1+	2+	3-	2-	O+	O+	12-
26	1+	2o	1o	2-	1+	O+	O+	1-	9-	3-	2o	2-	1o	1o	O+	1+	2-	12-	O+	1-	3+	5o	5+	5+	3-	2-	24+
27	O+	O+	1+	2+	1-	2-	1+	1+	9+	1o	2-	1-	1o	1o	3o	3+	3o	15-	2o	4-	1o	1+	1o	1o	2+	2o	14+
28	3o	4-	3o	2+	2+	1+	2-	1+	19-	3o	3o	2o	3+	3+	6o	6-	3-	3-	29-	1+	1+	1+	1-	1o	1o	1o	O+	8o
29	1-	1o	O+	1-	1o	1o	2-	2-	8o											1+	3+	2+	3-	5-	4-	2-	2-	21+
30	2-	2-	1+	1+	2o	2-	1o	1o	12o											1+	2o	2+	2-	3+	4o	3o	2o	20-
31	1-	1-	1o	1o	O+	O+	O+	1+	5o											1-	2+	2o	3-	2o	1+	2+	3+	17-

	April 1942									May 1942									June 1942								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3-	3+	2+	2o	3o	2o	2-	1-	18-	3-	4-	4-	3-	2+	2o	1-	1o	19-	1+	1o	1o	1-	1-	1-	2-	O+	7+
2	2-	3-	4-	4+	5o	4o	4o	4+	30-	O+	2+	3-	3o	3-	3o	2o	3-	19-	0o	O+	O+	O+	1-	O+	O+	O+	3-
3	4o	6o	4o	3o	4-	2+	4o	4+	31+	3o	3-	2+	2o	1+	1-	1-	2o	15-	1-	O+	2-	2+	3+	3o	2+	2+	16o
4	3o	4+	6+	7-	5-	6+	7+	3+	42o	1o	1o	2-	1+	2+	4-	5-	4o	20-	2o	O+	1o	1-	O+	1-	1o	2-	8-
5	3+	3+	1o	3o	3+	2+	1-	1+	18+	6-	4-	3o	2+	2-	1+	1o	3-	21+	2+	1+	2o	1+	1+	2+	O+	1o	12o
6	2o	3o	1-	1o	1o	1-	1-	2-	11-	2o	3o	2-	1+	1+	2-	1+	O+	13-	2-	1+	2o	2+	1+	1-	O+	1-	10+
7	1-	1+	1-	1-	1+	1-	O+	1+	7o	O+	1o	2-	2o	1o	1-	1o	1-	8+	1o	1+	1+	1o	1o	O+	O+	O+	7-
8	5-	5-	4+	4-	4-	4+	3o	2o	30+	1-	1o	1o	O+	1-	1-	1o	1+	2-	8-	2+	1o	1-	O+	2-	1o	1-	O+	8+
9	2+	2+	2+	3-	3o	2+	1+	2+	19-	1-	O+	1+	1o	O+	O+	O+	1-	5o	O+	O+	2-	O+	O+	O+	O+	O+	O+	3o
10	O+	1o	O+	1-	1-	1o	1+	3+	9-	2-	2-	1-	1o	O+	2-	1-	2+	13o	O-	1-	O+	O+	O+	1-	O+	1-	4-
11	5+	6-	6-	5-	5+	4+	2+	2o	35+	3o	2-	2-	1o	1o	1o	1-	O+	10+	2-	2o	3o	3+	5-	5-	4+	3o	27-
12	1-	1o	1o	2+	2o	2+	2o	2-	13o	O+	O+	O+	1-	1o	1+	1+	1o	6+	3+	2+	2+	3+	2+	3o	3-	2o	21+
13	3o	2-	3-	3-	5-	4-	4o	5o	27+	1o	1o	1-	O+	O+	1-	O+	1+	6-	3+	3-	2o	3o	2+	4-	4+	4-	25o
14	6+	5-	3o	4o	3o	4-	2-	1o	27+	2o	4+	5o	4-	3o	3-	2-	1-	23o	3o	3o	4-	3-	3+	2o	3-	2o	22+
15	1-	1o	1+	1+	1o	1-	1+	1+	9-	1-	2+	2o	2o	1+	1o	3-	2o	14o	2-	2+	2o	1o	O+	1-	1-	1o	10-
16	2+	4o	4o	3-	3-	2+	4o	4+	26+	1-	1o	1o	2-	1+	1o	3+	1+	11+	2-	1o	1+	1+	2-	2o	4-	1+	14o
17	6+	6o	5+	5+	4o	4+	3-	3o	37o	2o	1+	1o	1+	1-	1+	2-	2-	11o	2-	2o	3-	3o	3o	2+	2o	1o	18-
18	4-	4o	4o	4o	5+	4+	5-	4+	34+	2o	1-	1o	2o	1-	1o	1o	2+	11-	3+	2+	2+	3o	1o	1+	1-	O+	14+
19	4-	3+	3-	4-	3-	2o	3-	2o	23-	1-	1o	2-	1-	O+	1-	1-	1-	6+	2+	1+	1+	3-	4o	5-	3o	3+	23-
20	3o	2o	1o	2-	3+	3o	2-	1o	17-	O+	1-	2-	1+	1+	3+	3-	3+	15-	2o	3o	3o	2+	2+	2o	1+	1+	17+
21	1o	1-	1-	Oo	1+	2-	2-	O+	7+	4o	2o	1-	1+	2+	2+	2o	2+	17o	2-	3-	2-	1-	1+	O+	O+	O+	9o
22	2-	1o	O+	O+	1-	1o	O+	Oo	5+	1+	2-	4+	2o	1+	2o	4+	3o	20o	Oo	1-	1-	1-	1o	1-	O+	1o	5o
23	O+	2+	3o	4o	5+	5+	4+	3+	28o	3o	2-	2-	1-	1+	2+	2-	2+	16-	1-	1-	1+	1+	2o	2o	2o	2o	12o
24	2-	3+	2+	3-	2o	2-	1+	1-	16-	1o	2o	1o	1o	1+	2-	1+	2+	12-	3+	3-	2+	1+	2o	2o	1o	2o	17-
25	O+	O+	1-	O+	1-	O+	1+	1-	4o	3-	1-	1-	1o	2-	1-	1-	O+	8+	2+	2+	2+	1-	1-	1+	2-	2-	13o
26	1-	2-	1+	1-	1-	1-	O+	1-	7-	O+	O+	O+	1o	1o	O+	1-	1-	5-	1o	2-	1o	1+	1o	2-	1+	1+	10+
27	1-	1-	1+	2o	3+	3+	4-	4o	18o	Oo	1o	1+	4-	3+	4-	5-	4-	21+	1+	2o	1o	1-	1o	1o	1-	1o	9-
28	6o	3+	2+	2o	2o	1o	1-	3-	20o	2o	5o	4+	3-	2+	2-	2o	3-	23-	1-	1o	3-	2+	3+	3+	2+	3-	18+
29	2-	1+	2-	O+	O+	1-	O+	2+	9-	2o	2o	1+	1+	1o	1+	1o	1o	11+	3+	3o	3-	2o	2+	2+	3+	3-	21+
30	1o	1-	2-	2o	4o	3-	3o	2+	17+	3-	1+	2-	1+	1-	O+	2-	1o	11-	3+	4+	4+	2+	2+	2-	3-	3o	24o
31										1-	1-	1+	1o	O+	1-	O+	1-	6-									

Geomagnetic planetary three-hour-range indices Kp (continued)

	July 1942									August 1942									September 1942								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2+	4−	4o	3+	2o	2o	2+	2−	21+	2o	2+	1o	O+	1o	O+	1o	2o	10o	1+	1o	1−	3−	3+	4−	3−	1+	17−
2	1−	1+	1o	O+	1−	1+	2o	2−	9o	1o	1o	1+	1+	2o	2o	2o	2o	13o	3o	3o	5o	3o	2−	1o	2+	4o	23o
3	1+	1−	1+	1o	2−	O+	O+	O+	7o	3o	2o	2o	2o	2−	1+	2−	1+	15o	2o	2o	2o	3−	1o	1−	1−	O+	11+
4	Oo	O+	O+	1o	O+	Oo	Oo	O+	2+	1o	2−	2−	1o	O+	1−	1+	1−	8+	1+	1+	2o	3−	2+	3−	2+	1o	16−
5	O+	O+	2−	1+	2o	1+	1+	1+	10−	2−	1o	1−	1−	2−	1−	2o	2+	11−	1+	3+	2−	2o	2o	3−	3−	2−	17+
6	2o	1o	2−	1+	2−	2+	1+	3−	14o	1o	1−	1+	2o	3+	4+	3o	3o	19−	3−	3−	4o	4−	5−	4+	3+	5o	30+
7	2−	O+	2−	1−	2+	2−	2o	2+	13−	4−	2+	4+	4−	2o	2−	3+	4−	25−	2o	3o	3o	2+	2o	3+	1+	3−	20−
8	3+	3+	4+	5+	5o	3o	5o	4−	33o	1+	1−	1+	1−	1−	O+	O+	1−	6o	3o	3−	3−	2o	2−	2o	1+	1−	16o
9	4o	2+	1o	1+	2o	3−	3o	3−	19o	O+	1−	1+	2+	2+	1+	2−	1+	11+	O+	2o	2o	3−	1+	1o	1+	1−	11+
10	2+	3−	2−	1o	1+	2o	1+	3+	16−	2+	3−	3+	2+	4−	5o	5+	3+	28o	2+	3+	2+	1+	2+	1o	1o	1+	15o
11	5−	5o	6−	5−	5+	6o	4+	3+	39o	2+	3o	3o	3o	2+	1−	O+	1o	16−	2o	2+	1+	2+	4o	4o	5−	6o	27−
12	2o	3+	3−	5−	3o	3o	4−	2−	24o	3−	2+	3o	3o	2−	1+	2+	2+	19−	5o	6−	7−	6o	4−	5−	5−	4o	40+
13	3o	3−	2+	2−	1+	2+	2o	1+	17−	3−	1o	O+	O+	O+	O+	2−	7o	4−	4−	3o	4o	2+	3+	4o	5o	29o	
14	2o	2+	2+	2+	3−	3+	3o	3+	21+	2−	1o	1+	2−	1o	O+	O+	1−	8o	5−	4o	3+	4−	3o	4o	5o	5o	33o
15	2o	3−	4−	4−	4−	5−	5+	5o	31−	O+	O+	1−	1+	1o	2−	4+	4−	13+	4o	5−	4o	4+	4−	4o	4o	2o	31−
16	4−	3−	3o	3+	3−	2+	3o	3+	24o	4+	5o	4−	2+	2+	3+	7−	4+	32o	4−	5−	3+	3o	3−	3+	3−	5o	28+
17	4−	3+	2+	3o	2o	2−	1+	1o	18+	3+	3o	3o	3+	4−	4o	3o	4o	27+	4o	3o	4−	5+	4+	5+	4o	5−	34+
18	2−	1−	2−	2+	1−	1−	1−	1o	9+	3o	3−	4o	4+	4o	3o	4−	3+	28o	4−	4−	3−	3o	3+	4+	5o	4+	31−
19	2−	1−	1−	1+	2o	1+	O+	1+	9+	3+	3o	4o	4+	4o	4−	4+	5−	31+	4−	4o	4o	4+	4o	4o	3o	4−	31−
20	1o	2−	3+	4o	3+	2−	4−	4−	22+	4o	5+	3−	4−	3+	2o	3+	2+	25−	3o	3+	2+	4+	5+	3+	3+	4+	29+
21	5−	3+	3o	2+	2−	2−	2o	3−	21+	2o	3−	2+	2o	3+	2o	2o	2+	19−	5−	5−	5o	5+	5−	5−	4+	3−	36o
22	2+	1+	2−	2o	3−	1o	1+	2−	14o	3+	4−	3−	2+	1o	2−	1o	4o	20−	3o	5−	3+	4−	4−	3+	2o	4o	28−
23	3−	1+	2+	1−	2−	3−	3o	2o	16+	5−	4+	3o	4−	5o	6o	5+	5o	37o	3+	2o	2+	2+	1o	1−	1+	2o	15o
24	2o	3−	2−	1−	1o	2−	3−	2+	15−	3+	4−	2o	2o	3−	4−	5−	4o	26o	3+	1+	2−	1o	2−	1o	1+	2o	13+
25	3+	4−	3+	3+	4+	3+	4o	4+	30−	3−	5o	4+	3−	3−	3−	3−	3o	26−	2o	2o	1−	1−	1+	1o	1o	2−	10+
26	2o	1o	2−	1−	2o	1+	1+	5−	15−	2+	3+	3−	3−	2+	2o	4−	3o	22o	2−	1o	O+	2−	1+	3o	1+	2o	12+
27	4+	4−	4o	4−	4o	4−	4+	4o	32−	3+	3−	3+	3+	3−	2+	1+	O+	19+	1o	2o	2o	1+	2o	2o	2o	3o	15o
28	3o	4o	3o	3−	3−	2+	3o	2+	23o	1−	1+	2o	1+	1−	1−	O+	1−	8−	2o	1+	1o	1o	2+	1+	1o	1+	11+
29	3+	2+	3−	2o	1o	1+	1+	3−	17−	Oo	O+	1o	1o	1+	O+	1+	1+	7−	1+	1o	1o	2o	2−	1o	1o	O+	9+
30	3+	2+	2+	3−	2+	2o	3−	2+	20o	1−	1o	1o	1+	2−	2+	3+	1o	12+	O+	1−	2−	2+	1o	1−	1+	1o	9o
31	3+	2+	2−	2o	2−	1+	1o	2−	15o	2+	2o	2o	2+	4−	2o	1o	1o	16+									

	October 1942									November 1942									December 1942								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	O+	O+	O+	O+	O+	1−	1−	2−	5−	2+	3−	4−	3+	2+	3o	1+	1+	20o	2o	O+	1−	1o	1o	1+	3o	3−	12o
2	3−	3−	3−	5−	6+	6o	7−	4o	36−	3o	3+	3−	3+	2+	4−	3o	2o	23+	3o	1o	1−	O+	O+	1o	1o	1o	8o
3	5+	6+	5−	4+	5−	5+	4+	4−	39−	2o	2o	2−	2o	3−	3o	2+	2−	17+	2o	O+	Oo	O+	O+	1o	1+	3o	8+
4	4−	5−	4+	4−	4+	5+	3o	4o	33o	1o	2+	4o	4+	2+	1o	2+	2+	20−	3+	2+	3−	1+	4−	4−	1+	2−	20o
5	4−	4+	4o	3o	4+	3o	3−	2+	27+	2−	1−	2o	1−	1o	1−	2+	3+	12+	2+	2−	O+	1o	1−	1+	1o	Oo	8+
6	2+	2+	2o	2−	O+	O+	1+	2+	13−	3+	3−	1o	1o	O+	2−	1−	2o	13−	Oo	Oo	Oo	1−	1o	1−	2−	2o	6o
7	4+	3+	3+	2−	3+	3o	1+	2+	23−	2+	3−	3−	2o	3−	2o	1+	2−	17+	2−	2−	1−	2+	3o	3+	3o	3+	19o
8	2+	3−	1−	1o	2−	1+	3+	1+	14+	2o	3−	3o	3+	3+	2+	4−	3o	23+	3−	2−	3−	1o	3o	3+	4o	4o	22+
9	3o	3−	2−	1o	1+	1+	1+	O+	13−	3−	1+	O+	1o	1o	2o	2−	2o	12o	2−	3+	1+	2+	3+	5−	4o	5+	26o
10	O+	1o	2o	2+	2o	2o	2−	2+	14−	2−	1−	2+	2−	4o	3−	2+	3−	18o	5+	5−	4o	3o	2o	2o	3o	3+	27+
11	1o	1−	1−	2−	2o	2o	5−	3o	16−	3+	3−	3−	2+	3o	2−	4−	3o	22+	1+	4o	2+	3−	4o	2o	2+	4o	23−
12	4+	4o	3+	6o	5o	4+	4−	4o	35−	3−	3+	3o	1o	2+	2+	2+	3−	20−	3+	2o	3o	3o	3+	2+	2−	3−	21+
13	4+	4−	3−	3+	4+	6o	4+	4+	33o	3−	2+	2o	2+	4−	3+	3o	3−	22o	2+	Oo	1−	1−	2+	1o	1o	1o	9−
14	4o	3+	3+	3+	5o	5+	5−	5o	34o	3o	3o	3+	3−	2o	3o	4o	3+	24+	2−	2o	2−	2o	2o	3−	2−	2−	15+
15	3−	5−	4+	3−	3+	3+	5−	5−	30+	4+	2+	1−	1−	1+	2+	3−	3+	18−	2−	2o	1−	O+	1+	2−	2+	1+	11+
16	5−	3o	3o	3−	4+	3+	4+	2+	28−	4−	1+	1+	1−	1−	O+	2o	2−	12−	2o	3−	2+	1+	1o	2+	2−	2o	15+
17	3+	4o	3−	2o	2o	3−	3+	3−	23−	1+	2o	2−	2o	2+	2−	2−	2+	15o	Oo	1−	1−	1o	1−	1+	1−	1+	6+
18	2o	3o	3o	3o	3−	5−	4+	3+	26o	3o	2−	3o	3−	2+	3−	3o	2−	20o	1+	1+	1−	O+	O+	1−	O+	O+	5o
19	5o	4+	4+	4+	4+	5+	4−	2+	34−	1−	2−	2+	2+	1o	1+	2o	2−	13o	1−	1o	1+	1+	O+	Oo	O+	1o	6o
20	4−	3+	2−	3+	5−	5−	2o	1−	24o	2+	3+	2o	4−	2+	3−	4o	3−	23o	3o	2+	1−	1o	3o	3o	3−	4−	16+
21	1o	1+	1+	1−	2+	4−	1+	1+	13o	2+	2+	3+	3−	2+	1+	2+	2o	19−	4o	5o	4−	5−	5o	4+	4−	4o	34+
22	1+	2−	1−	1o	2−	1−	1o	1−	9−	1o	O+	2−	1o	1−	2o	1+	1+	9+	4+	4+	3o	4o	3−	1+	2+	1o	23o
23	1o	1−	2−	2o	2o	1o	1o	1o	10+	2o	2−	2−	2−	3o	4o	3o	5+	22+	2−	3+	5−	5o	5o	5−	4+	3o	32−
24	1−	1o	O+	O+	1o	1o	1o	1−	6−	6+	7−	6−	7−	4+	3+	5o	3o	41o	2+	3−	3+	4−	4o	4−	2+	4−	26−
25	2o	4−	4−	3o	3+	2−	1+	1o	20−	4+	5−	4−	4+	4−	4+	4o	5o	34o	4+	2+	2+	2+	3o	3−	2+	3−	22o
26	2+	3o	2o	1o	1−	1−	2o	3−	14+	5−	6−	3−	4o	5−	4+	5o	4o	35+	3o	5−	4o	3o	4−	4o	4−	4o	30o
27	3+	2o	3−	1o	1o	2o	1+	2−	15o	3−	2o	3o	4+	3−	2o	3+	3o	23o	2o	3−	1+	1o	1+	1o	1o	2o	12+
28	1−	1−	1−	3−	5o	7−	7o	7o	30+	3−	3−	3o	4−	4o	5−	4o	5−	29+	1+	2+	1−	1−	2o	1+	1o	O+	10−
29	5+	6−	7+	6o	5+	5+	6+	6o	47+	4+	3−	2+	3+	3+	4−	3o	2+	25o	O+	1o	O+	1o	1+	2−	1o	1o	8−
30	5o	5−	5−	4+	4+	5+	4−	4o	37o	1+	2o	3−	2−	3o	2o	2−	1+	16−	1−	O+	O+	O+	Oo	Oo	1−	O+	2+
31	4+	4−	4o	5−	5o	4−	4o	4−	33o										1+	O+	O+	O+	Oo	Oo	Oo	O+	3−

Ap — 1940 — Unit 2γ

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	10	39	7	66	7	4	7	10	22	40	12	13
2	13	18	5	34	5	8	4	12	10	13	6	25
3	47	16	7	98	5	6	15	35	22	19	13	17
4	24	8	4	15	4	3	22	9	16	10	24	13
5	12	11	4	9	5	9	16	11	11	8	16	9
6	20	14	3	9	1	35	13	17	8	12	8	5
7	19	12	4	3	6	32	6	14	30	61	10	2
8	12	11	11	3	4	19	6	10	15	49	4	1
9	12	9	27	2	10	15	14	38	17	8	12	12
10	27	7	6	2	14	6	28	8	2	7	2	11
11	23	9	3	5	13	4	9	17	3	8	2	8
12	27	16	13	4	16	4	5	10	4	10	22	11
13	7	10	10	11	11	4	58	7	3	3	49	12
14	3	6	10	11	12	40	20	8	15	2	16	18
15	7	8	1	17	14	26	14	3	12	14	12	13
16	12	8	5	14	5	14	8	3	12	10	16	11
17	21	5	2	8	10	15	4	3	3	5	14	7
18	38	2	1	4	34	16	2	12	3	12	6	6
19	8	3	20	6	10	11	4	9	3	17	7	5
20	7	21	27	9	10	4	4	11	10	9	8	44
21	3	18	10	12	8	4	9	6	13	16	23	32
22	7	13	10	18	31	8	14	9	8	16	35	22
23	6	11	51	8	18	7	6	5	2	2	25	17
24	15	17	190	8	78	16	10	2	4	2	6	10
25	14	36	185	70	12	125	9	4	22	13	36	15
26	3	8	53	43	24	24	5	19	44	28	26	12
27	6	7	30	10	21	8	3	13	45	16	10	12
28	2	6	21	8	15	6	6	10	42	13	6	14
29	10	12	100	10	8	5	9	9	10	6	38	21
30	18		190	11	3	12	18	4	8	5	16	34
31	29		130		3		16	7		7		22

Ap — 1941 — Unit 2γ

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	16	5	205	7	7	9	8	8	16	5	79	83
2	7	7	35	11	6	2	8	37	14	6	4	28
3	6	23	26	14	6	3	8	12	5	4	6	9
4	8	10	40	6	13	3	26	110	4	4	6	16
5	4	16	37	6	6	4	220	24	3	6	15	10
6	20	24	18	9	8	6	42	23	3	5	42	9
7	12	30	16	13	5	4	54	16	20	4	16	7
8	9	19	15	10	7	4	14	5	8	10	20	7
9	15	16	14	18	11	8	13	3	10	6	13	7
10	10	11	9	27	10	31	21	2	6	6	22	5
11	11	6	15	23	5	22	7	8	8	42	21	2
12	7	5	11	19	6	10	9	6	4	24	10	4
13	7	27	14	7	9	39	4	7	24	10	6	9
14	4	26	79	4	6	18	4	6	24	11	5	25
15	6	28	23	6	7	22	5	3	26	15	3	9
16	9	14	7	12	16	4	11	3	20	15	5	13
17	42	20	6	7	25	18	8	3	10	5	34	10
18	32	8	7	17	9	14	6	5	230	5	20	13
19	23	7	24	40	5	8	6	17	175	11	19	5
20	13	12	33	13	4	22	9	4	36	6	8	4
21	6	35	33	10	19	11	38	8	30	4	10	3
22	8	41	40	6	31	9	18	4	4	33	14	4
23	22	36	21	4	23	5	15	3	14	13	15	8
24	34	23	11	63	19	8	9	8	27	14	5	7
25	26	19	9	42	16	5	9	9	22	6	5	4
26	23	15	4	18	11	9	3	21	4	9	4	8
27	19	4	2	4	6	10	3	58	12	6	9	12
28	13	10	59	17	9	7	4	24	8	6	53	8
29	6		42	14	10	7	4	32	18	6	8	10
30	13		85	3	8	5	4	25	12	7	6	7
31	5		76		11		6	11		47		5

Ap — 1942 — Unit 2γ

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3	4	110	10	11	4	13	5	10	3	12	6
2	13	16	45	26	10	2	4	6	17	48	15	4
3	16	7	42	30	8	9	4	7	6	46	9	5
4	24	4	17	70	14	4	2	4	8	31	13	12
5	21	22	52	11	18	6	5	5	9	20	7	4
6	13	33	24	6	6	5	7	12	26	6	7	3
7	12	10	19	4	4	4	6	17	11	15	9	11
8	4	4	39	26	4	4	32	3	8	8	15	15
9	5	4	41	10	3	2	11	6	6	7	6	22
10	10	9	15	5	7	2	8	24	8	6	10	23
11	8	9	11	42	6	21	47	9	25	10	14	15
12	9	3	5	6	3	12	17	10	54	36	11	12
13	5	6	29	23	3	17	8	4	24	32	13	4
14	4	6	27	28	18	14	12	4	31	34	16	7
15	8	15	12	4	7	5	28	10	26	26	11	5
16	9	12	4	19	6	8	15	35	23	22	7	7
17	18	8	9	46	5	9	11	20	34	14	7	3
18	19	4	14	33	5	8	5	21	26	19	11	3
19	16	3	20	14	3	16	4	26	25	33	6	3
20	6	8	17	9	9	9	15	16	25	19	14	10
21	3	10	24	4	10	5	14	10	38	7	10	33
22	9	8	17	3	14	3	7	13	21	4	4	17
23	6	39	13	27	8	6	9	42	8	5	17	31
24	4	27	8	8	6	9	7	19	7	3	62	18
25	5	16	6	3	4	6	23	19	5	12	32	13
26	4	6	25	4	3	5	10	13	6	8	37	24
27	5	14	8	12	16	4	26	12	7	8	15	6
28	11	28	4	18	17	11	14	4	5	56	24	5
29	4		16	4	5	12	9	3	4	80	17	4
30	6		12	10	5	17	11	7	4	39	8	2
31	3		9		3		8	9		30		2

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1940	Jan 40		Feb 40		Mar 40		Apr 40		May 40		Jun 40		Jul 40		Aug 40		Sep	
1	5	0	14	+1	4	-1	17	+1	4	0	1	0	4	0	6	+1	11	+1
2	8	-1	10	0	2	-1	13	+1	2	+1	4	+1	1	+1	7	+1	6	+2
3	15	+3	9	+2	4	-1	19	0	2	0	3	+2	8	+1	14	+1	11	0
4	12	0	4	+2	1	+1	9	+2	1	0	1	+1	11	0	5	-1	9	+1
5	7	0	6	-1	1	0	5	+1	2	0	5	+2	9	0	6	+1	6	0
6	10	+2	8	+2	0	+1	5	-1	0	0	14	-1	8	0	9	+1	4	+1
7	10	+2	7	+2	1	0	0	0	3	+1	13	-1	3	0	8	+1	13	-1
8	7	-2	6	+1	7	+1	1	0	1	+1	10	0	2	+1	6	+1	8	+1
9	7	+3	5	-1	12	-1	0	+1	6	0	8	+1	8	+1	14	+2	9	-1
10	12	+3	3	+1	3	-1	0	0	8	+3	3	0	12	+1	4	+2	0	+1
11	11	+3	5	+2	1	0	2	+1	8	+2	1	+1	5	+1	9	0	1	+1
12	12	0	9	+1	7	+3	1	0	9	+2	2	+1	2	0	6	0	1	0
13	4	-1	5	+2	6	0	6	+1	6	0	1	+1	17	+1	3	+1	1	+1
14	1	+1	3	0	6	-2	6	0	7	+1	15	+1	10	+2	4	0	9	+2
15	3	0	5	-1	0	+1	9	+1	8	+2	12	+1	8	0	0	+1	7	0
16	7	+1	4	0	2	+2	8	-1	2	+2	8	+1	4	0	1	0	7	+1
17	11	+1	2	0	0	+1	4	-1	5	+2	8	0	1	+1	1	0	0	+1
18	14	+3	0	0	0	0	1	0	13	+2	9	+1	0	+1	7	+3	1	0
19	4	+1	0	+1	10	+2	3	0	5	+2	6	+1	2	+1	5	+3	1	0
20	4	+1	11	-1	12	0	5	+2	5	+2	1	0	1	+1	6	+1	6	+2
21	1	0	10	0	6	+2	7	+2	4	+2	1	0	5	+1	3	+1	7	+2
22	4	+2	8	-2	6	0	10	0	13	0	4	+4	8	+1	5	+2	4	+1
23	3	+2	6	0	16	-1	4	+1	10	+2	4	+1	3	+1	2	+1	0	0
24	8	+1	9	0	21	0	5	-1	18	0	9	+1	6	+1	0	0	1	0
25	8	+1	14	+2	21	0	17	+1	7	+1	19	+1	5	0	1	+2	11	0
26	0	+2	4	+3	16	0	15	-1	12	0	12	0	2	+1	10	+1	15	+2
27	2	0	3	-1	13	0	6	+2	11	-1	4	+1	1	+1	8	+1	15	+1
28	0	+1	3	0	11	0	5	+1	9	0	3	+2	3	0	6	+2	15	-1
29	6	+3	7	+2	19	0	6	-1	4	0	2	+4	5	0	5	0	6	+1
30	10	+2			21	0	6	+2	1	0	7	0	10	+1	1	+1	4	+3
31	13	+2			19	0			0	0			9	+1	4	+1		

1940	Oct 40		Nov 40		Dec		1941	Jan 41		Feb 41		Mar 41		Apr 41		May 41		Jun	
1	15	+1	7	+1	8	-1		9	+1	2	+1	21	0	3	+1	4	+1	5	-2
2	8	+1	3	0	12	0		4	0	4	0	14	0	6	+1	3	-1	0	+1
3	10	0	7	0	9	+1		3	0	11	0	12	0	8	0	3	-1	1	+1
4	6	0	11	+2	7	+1		4	0	6	-1	14	0	3	-1	7	+2	1	0
5	4	+1	9	+2	5	-1		1	+1	9	+1	14	-1	3	-1	2	0	1	0
6	7	+2	4	0	2	0		10	0	12	-1	10	0	5	-1	5	0	3	+2
7	17	0	5	0	0	0		7	+2	13	-1	9	+1	8	+2	2	+1	1	+1
8	16	-2	1	0	0	0		5	-1	10	-1	8	0	6	+1	4	+2	2	+2
9	4	0	7	+2	7	-1		9	-1	9	-2	8	0	10	-2	6	-1	4	+6
10	3	+2	0	+1	6	+2		6	-1	6	-2	5	-1	12	0	5	0	13	+1
11	4	+1	0	+1	4	+2		6	0	3	0	8	-1	11	-1	2	0	11	+1
12	5	0	11	+5	6	+1		4	0	2	0	6	+1	10	-3	2	+1	6	0
13	1	0	16	-1	7	-1		3	0	12	+2	8	+1	4	-1	5	0	14	+2
14	0	0	9	+1	10	0		1	0	12	-1	18	0	1	0	3	0	10	+1
15	8	0	7	0	7	+1		3	-1	12	-1	11	-1	2	+2	3	+1	11	+1
16	5	+3	9	+2	6	0		5	+3	8	-2	3	0	7	0	9	0	1	+1
17	2	+2	8	+2	4	+2		15	+2	10	0	3	-2	4	-1	12	0	10	+2
18	7	+1	3	0	3	+1		13	+1	4	-1	4	+1	9	+1	5	0	8	+2
19	9	+1	3	0	2	+1		11	+1	3	+1	11	+1	14	-1	2	0	4	+1
20	5	+1	4	+4	15	+2		8	0	7	+1	13	0	7	-1	1	+1	11	0
21	9	+2	11	+1	13	+2		3	+1	14	0	13	+1	6	-2	10	+3	6	+1
22	9	+1	14	-1	11	+1		4	+1	15	+1	14	-1	2	0	13	-1	5	+2
23	0	0	12	0	9	+3		11	+2	14	0	11	-1	1	0	11	0	2	0
24	0	0	2	+2	6	-1		13	+2	11	0	6	0	17	+1	10	+1	4	+1
25	8	+3	14	+3	8	0		12	+1	10	0	5	-2	15	-2	9	0	2	+1
26	12	+3	12	0	7	+1		11	-1	9	-2	1	0	10	-2	6	0	5	+1
27	9	+2	5	+3	7	0		10	+1	1	+1	0	+1	2	0	3	0	5	+2
28	7	+1	3	+1	8	0		7	+1	5	0	17	+1	9	+2	5	0	4	-1
29	3	0	14	+1	11	0		3	0			15	0	8	0	5	0	4	+2
30	2	+1	9	0	13	+2		8	-1			18	+1	1	0	4	+2	2	0
31	3	+2			11	+2		2	-1			18	-2			6	+1		

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1941	Jul 41		Aug 41		Sep 41		Oct 41		Nov 41		Dec		1942	Jan 42		Feb 42		Mar
1	5	0	4	+1	9	+1	2	0	18	-1	18	0		1	0	2	+1	19 +1
2	4	-1	14	-1	8	-1	3	+1	1	+2	12	-1		7	+4	9	0	15 0
3	5	+2	7	+1	2	0	1	+1	2	+2	5	+2		9	+2	4	-1	15 0
4	12	+1	19	-1	1	0	1	+1	3	-1	9	+1		12	0	1	+1	9 0
5	22	0	12	-1	0	0	3	0	8	+1	6	+2		11	0	11	+2	16 +1
6	15	+1	11	0	1	-1	2	0	15	0	5	0		7	+1	13	+2	11 0
7	16	-1	9	+2	10	+2	1	0	9	+1	4	0		7	-2	6	0	10 +1
8	8	+1	2	0	5	+1	5	+1	10	0	3	+2		1	+1	1	0	14 -1
9	8	+2	1	0	5	+1	3	0	7	+2	4	+1		2	+1	1	0	15 -1
10	11	0	0	+1	3	+1	3	+3	11	0	2	+1		6	0	5	+2	8 0
11	4	+1	4	0	4	+1	15	+1	11	-1	0	+1		5	-1	5	0	6 -1
12	5	+1	3	0	1	0	12	-2	5	+1	1	+1		5	+1	1	0	2 0
13	1	+1	3	+1	12	+1	5	0	3	+1	5	+4		2	+1	3	-1	13 -1
14	1	0	3	0	12	+1	7	+2	2	+1	12	-1		1	+3	3	+2	12 0
15	2	0	1	0	12	+1	9	-1	0	+2	5	+1		4	+1	8	+1	7 -2
16	7	+1	1	0	10	0	8	+1	2	+1	7	+1		5	+3	7	0	2 0
17	5	0	1	0	6	0	2	0	13	+2	6	+1		10	+1	5	-1	5 -1
18	3	0	2	+1	22	0	2	0	10	+2	7	+2		10	0	1	0	8 +2
19	3	0	9	+2	21	0	6	0	10	0	2	+1		9	0	1	+1	10 +1
20	5	0	1	+1	14	+1	3	0	4	0	1	+1		2	+1	4	+1	9 -2
21	14	0	4	+1	13	0	1	+1	6	-1	1	+2		1	+1	6	0	11 0
22	10	0	1	+1	2	0	13	+3	8	+1	1	+1		5	+1	4	-1	9 -2
23	8	+1	1	-1	8	+2	8	+1	8	0	4	+3		3	-1	14	+3	7 0
24	5	+2	5	-1	12	+1	8	+1	2	0	4	+1		1	+1	12	+1	5 -2
25	5	+2	5	+2	11	0	3	+1	2	+1	1	0		2	0	9	0	3 -1
26	1	0	11	+2	1	+1	5	+3	1	0	4	0		1	0	3	0	12 +3
27	1	-1	17	-1	7	-1	3	+1	5	+2	7	+1		2	+1	5	+3	4 0
28	1	+1	11	+2	4	0	3	0	16	0	5	-1		6	0	12	+2	1 -1
29	1	0	13	0	10	-2	3	0	4	+1	6	0		1	+1			8 +1
30	1	+1	12	0	7	0	4	0	3	+1	3	+1		2	+1			7 0
31	3	0	6	0			15	+1			2	+1		1	-1			5 0

1942	Apr 42		May 42		Jun 42		Jul 42		Aug 42		Sep 42		Oct 42		Nov 42		Dec	
1	5	+2	7	+1	1	+1	8	0	2	0	6	+2	0	+1	7	+1	3	+1
2	12	+1	6	+2	0	0	2	0	3	0	9	-1	16	+1	8	+1	2	0
3	13	-1	4	-1	5	+2	1	0	4	-1	3	0	15	0	5	+1	2	+1
4	17	+1	8	+2	1	+1	0	0	1	+1	4	+1	13	0	7	-2	7	-1
5	6	-1	10	-1	3	+1	2	0	2	+1	5	0	10	+1	3	0	1	+1
6	3	-1	3	0	2	0	3	+1	7	+1	12	0	3	0	4	-1	1	+1
7	1	0	1	0	1	0	3	+1	9	+2	6	0	9	-3	5	-1	6	+2
8	12	0	1	0	1	+1	13	0	1	-1	5	-3	4	0	8	+1	9	-1
9	5	0	1	-1	0	0	7	+1	2	+2	3	-1	3	-1	3	0	11	+3
10	2	+2	3	+1	0	0	4	+3	12	+1	4	-2	3	+2	6	+2	11	-1
11	15	-1	2	0	11	+1	15	+1	5	+2	12	0	6	+2	8	-1	9	0
12	3	-1	1	-1	7	+3	9	+3	6	0	16	+1	14	0	6	-2	7	+1
13	11	+1	1	-1	9	+1	5	0	1	0	11	0	13	-1	7	+1	2	0
14	12	0	10	0	8	+1	7	0	1	0	13	-1	13	0	9	-1	4	0
15	1	0	3	+1	2	-1	12	0	5	+2	12	-1	12	0	7	-2	2	+1
16	10	-1	3	+1	4	0	9	0	14	-1	11	0	11	0	3	0	4	0
17	15	-1	2	0	5	0	6	0	10	+2	14	0	8	-3	3	0	1	0
18	13	0	2	0	4	0	2	0	11	+1	12	0	10	0	6	-1	0	0
19	8	-1	1	0	9	+3	2	0	12	0	12	-1	13	-1	3	-1	1	0
20	5	0	5	+1	5	0	9	+3	9	+1	12	-1	10	-1	8	+2	6	+1
21	1	0	5	-1	2	0	8	0	5	+2	14	-1	4	0	5	-1	13	+2
22	1	-1	8	0	0	+1	3	0	7	-1	11	-1	1	0	2	0	9	+1
23	12	+1	4	0	2	+4	5	-1	15	-1	4	-1	2	0	9	+3	13	+2
24	4	+2	2	+1	5	0	4	+1	10	+1	3	0	1	0	17	0	10	0
25	0	0	2	0	3	+1	11	+1	10	0	2	-1	7	0	13	+1	8	-1
26	1	-1	0	0	2	+1	5	+1	7	+1	3	-1	4	+2	14	0	12	-1
27	7	+2	9	+2	1	+1	12	-1	7	0	4	+1	4	0	8	+1	3	0
28	10	-1	9	0	6	+3	8	+2	1	0	2	0	16	+1	12	+1	2	0
29	2	0	2	0	7	+3	5	0	1	0	2	0	18	0	9	0	1	+1
30	6	+3	2	0	9	0	6	-1	3	+3	2	0	14	0	4	0	0	0
31			1	0			4	0	5	0			13	-1			0	0

Geomagnetic planetary three-hour-range indices Kp (continued)

	January 1943									February 1943									March 1943								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	0o	0o	0o	0+	0o	1+	3-	3o	7+	3-	1o	1o	1-	1o	1+	1o	3-	11+	0o	2-	1-	1o	2+	3o	2-	1o	11+
2	2-	0+	2-	1+	1o	3-	2-	1o	11+	1+	1+	2o	1+	2o	2-	1o	2-	12+	1+	3-	5+	4+	3-	1+	1+	1o	20o
3	1+	2o	1-	1o	3-	3-	2-	3-	15-	2+	3-	3-	3-	3-	2-	3-	2+	20-	1o	1o	2o	3+	3-	1o	2+	3+	17-
4	3-	3-	3-	5o	5+	5o	4+	3+	31o	3o	4o	3-	4o	3-	2-	2o	2+	22+	3-	3o	4o	4o	3+	2+	4+	5-	28-
5	5-	3+	3+	3-	1o	3o	3-	4-	24+	3o	2o	3o	3o	3-	3o	3-	1+	21o	3+	4-	4o	3-	2o	4-	3-	3-	25-
6	3+	2+	3-	3-	2+	2+	2+	2+	20+	4-	2-	2+	2+	3-	3o	2+	3o	21o	3-	1+	2o	1o	2-	1+	3o	2-	15-
7	1+	1o	1-	0+	0+	1-	0+	1o	6-	2o	2o	1+	1o	1-	1o	2-	2-	11+	2o	2-	1o	1o	1+	1+	2+	2o	13-
8	0+	1+	0o	0o	1o	2-	2+	3o	10-	2o	2-	1o	1o	1o	3-	1+	2-	12-	3+	3+	2o	2o	2-	2o	2-	2+	18+
9	3o	3-	3+	3+	1-	1+	1-	1o	16o	2o	2-	2o	1+	1o	1-	2+	1+	12+	3+	2-	2o	2o	2-	1+	2-	2+	16o
10	1-	1+	1+	1+	1+	1o	1+	3o	11+	0o	1-	1o	1o	1o	1+	1+	1+	8-	2-	1-	1-	1o	1o	1+	1o	2-	9o
11	1+	1+	1o	0+	0+	2-	1-	2-	8+	3-	3o	4-	2+	2-	0o	1o	1o	15+	3o	2o	1-	1+	2o	3-	5o	4-	20+
12	1+	3-	3-	1o	1-	0+	1-	2-	11e	1+	2o	1-	1o	1+	1-	2-	2o	11-	4o	5-	2-	3o	3+	4+	4-	3o	28-
13	2-	1+	1o	1-	1-	1-	1+	8o	2+	3o	4-	3-	3o	2+	2+	2+	22-	2+	1o	0+	0o	2-	0+	0+	1o	7o
14	0+	1o	1-	0o	0o	0o	0+	0+	3-	2+	2o	2o	2+	1o	0o	0+	1+	11+	2+	3+	2+	2+	2-	2+	0+	1+	16o
15	0o	0+	0+	0o	0o	1-	1o	1o	3+	2-	1o	2o	2o	1-	0+	1+	0+	9+	1o	1-	0o	1-	0+	2-	1-	1-	6-
16	0+	0o	0+	1-	2-	3-	2o	2o	10-	0+	0+	1o	0+	0+	2-	2o	2-	8-	2+	3o	4o	6-	3+	3o	5-	4+	30+
17	3+	2o	3o	5+	4+	4+	4o	3o	29+	3o	5-	5+	7-	4o	3+	4+	4o	35+	4o	1o	2-	4-	3+	1-	0+	2o	17-
18	3-	2+	3+	2+	2+	2-	3-	1-	18o	3+	4-	4-	3o	3o	1+	1-	2+	21o	1+	1o	3-	2o	1-	2+	2o	1+	13+
19	2o	2o	2o	1o	2o	2+	2-	2o	15o	3+	2-	2+	2+	2+	3-	1+	1-	17-	1o	1-	2o	2+	1o	3+	3+	4o	18-
20	2-	2+	4-	3+	3-	5o	7-	6+	32-	0o	2o	0+	2+	2o	2o	0+	0+	9+	2+	3o	5o	4+	3+	4-	6-	1+	29-
21	5-	4o	4o	5-	4+	3+	2o	4+	31+	0o	0o	1o	1o	1-	1-	1+	1+	6+	2-	2+	2o	3+	2-	2+	2o	1+	17-
22	6-	2+	3o	4-	4-	5-	4o	4-	31-	0+	0o	0+	2o	1+	1o	1+	2-	8o	2-	2+	2-	3o	2+	3+	4+	5-	23+
23	3+	3-	2+	2+	2o	1+	2-	2+	18o	2-	2-	2o	2o	1+	2-	3o	3-	16o	5+	5o	5-	4-	3+	3-	4o	3-	31+
24	3+	3-	2-	3o	2+	2-	2+	2o	19o	3-	3o	2o	2o	2-	1o	2-	2+	16+	2-	2-	3o	2-	3o	4-	1-	0+	16-
25	2o	2-	2o	1o	1+	1o	1-	0+	10o	1-	2o	0+	1+	1+	3o	4o	4o	17-	1o	3o	1+	1-	0+	0+	0+	1-	8-
26	3o	4-	3+	4+	2-	3+	1o	2+	23-	5o	5o	3-	3o	2-	4-	4-	3o	28-	2o	2-	2-	1-	0+	1+	1-	2o	10+
27	2o	1o	0+	2o	3o	3o	1+	0+	13o	4-	4-	1+	3-	2-	1o	2-	2o	18-	2-	0+	0+	1o	0+	2-	3-	1+	9+
28	0+	2o	2+	3o	2+	3o	3-	1+	17o	1+	2o	1+	1o	1-	1-	1o	0+	8+	0o	0o	1o	1o	1-	0+	2-	1+	6o
29	2o	1o	1-	1o	2-	1-	2-	2o	11-										2+	3o	2-	2+	3o	4o	7o	6+	30-
30	4-	3o	2-	1-	1-	1-	1o	2+	14-										5o	5-	3+	4-	3+	3o	4+	4o	31+
31	1o	2-	1o	1o	1+	2o	2-	2-	11+										4o	3+	2o	1o	2o	4+	3o	4+	24o

	April 1943									May 1943									June 1943								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3+	4-	3-	2+	2o	3o	3o	2+	22+	4+	6+	6+	6o	4o	5-	5+	6-	43-	2-	2-	2+	2+	2-	1o	2+	3o	16o
2	4-	3-	4-	1+	3o	2+	1+	3-	21-	5o	3o	4+	4+	3o	4+	2o	2o	28o	1o	1+	1+	3o	3-	1o	1o	1o	12+
3	6-	6-	5-	4o	3+	4+	3o	4o	35-	3o	1-	1-	1o	1+	4-	2o	4o	16+	1-	1o	2+	1-	1o	1o	1-	1+	9-
4	4o	4o	3o	3o	4o	3o	5-	3-	28+	2+	3+	3-	1+	1+	2o	2-	2+	17o	2-	2-	1+	1o	1+	1-	0o	0o	8-
5	5o	3+	3-	3o	3o	6-	3-	4+	30-	2-	2-	2+	3o	3o	3-	2-	2-	18-	2-	1o	1-	1o	2-	2-	2o	2+	12o
6	4o	2+	4o	5-	5+	4o	2+	4-	30+	3-	1-	0o	2-	2-	2-	0+	1-	9+	4-	4o	3o	1+	2-	1o	1-	1-	16o
7	5o	4+	3-	2+	3+	2+	3+	2+	25o	2+	3-	1+	1o	1o	1-	1-	1+	11o	0+	1+	1+	3o	4o	3o	2o	4-	19-
8	3o	2o	3o	2o	2-	1-	1-	1-	14-	1o	1-	0o	0+	1-	1o	1-	0+	5-	3-	4-	0+	5-	4+	5-	4o	4o	32o
9	1-	1-	0+	0+	1o	1-	2-	2-	7o	0+	1-	1o	1-	1-	1o	1-	1-	6-	3o	5-	4-	5-	3+	3+	3o	3-	28+
10	2-	4-	0+	4+	4+	2+	5-	4+	30-	1-	0+	1o	1+	2-	3-	2-	1o	10+	1+	4-	4o	4-	2+	4o	1+	4o	24+
11	5o	6+	6o	4o	3-	3-	3+	4-	34-	1-	1+	2-	1-	1o	3+	2o	3-	13+	1-	0+	2-	3+	4+	4o	2o	2+	19-
12	2+	1-	1-	1o	2-	1o	1o	1-	9o	2+	5-	3+	2-	1+	1-	2-	2-	17+	1o	3-	4-	3o	3o	2-	3o	2o	20o
13	0o	1o	1o	1-	0+	1+	0+	1+	6o	2o	2o	4o	4-	4-	4o	2-	3+	24+	6-	4-	2o	2-	3o	3+	4o	3+	27-
14	0+	1-	0+	1-	1-	1o	1-	1-	5o	4-	3+	2-	3+	1+	2o	1+	3o	20-	4o	3+	3+	3+	2+	2+	1o	1-	20+
15	0+	1o	1o	2o	2+	3-	3-	3o	15o	6-	5+	4o	4-	2+	2o	2+	3o	28+	1-	2-	1+	1o	1-	0+	1-	1+	8-
16	3o	3o	4-	4-	3-	2+	3-	2-	23-	1-	0+	1-	4-	4-	3o	4o	2o	18o	1o	1-	1-	1o	1-	1-	0+	1o	6o
17	2+	2-	3o	2+	2-	2o	1o	1+	15+	3+	2+	3o	3o	2+	4-	6-	5-	28o	1+	1o	0+	0o	1-	1-	0+	0o	4+
18	2-	3o	2o	1+	1-	1+	1-	1o	12-	6-	6-	5o	5-	4o	3o	3o	4o	35o	0o	1-	1-	1o	1-	1-	1o	1o	6-
19	2+	2-	1-	1+	2-	1-	1o	0+	10-	4-	5o	4o	2o	3o	2o	3o	3-	25+	1o	1+	1o	3o	3-	3+	3-	4+	19+
20	0o	2-	1+	3-	3+	3+	1o	3-	16o	2o	1o	1o	1+	2o	1-	1o	1+	10+	5+	5-	2+	3+	3-	3-	3-	4-	27+
21	4+	4+	4-	5-	3+	3+	4-	1+	29-	1+	1o	2-	2-	1o	1o	1-	0o	8+	4-	3o	3-	4-	4o	4+	3+	4-	28+
22	1+	2o	4-	3-	1o	1+	0+	1+	14-	0+	1-	1+	1o	0+	0+	0+	1o	5+	3o	4+	5-	3+	3-	3o	4-	3-	27+
23	0o	1-	1-	1-	1-	0+	1-	4+	4-	1o	2o	2o	3+	2+	2o	2+	3o	18o	3o	3+	3o	3-	4+	4o	4-	4o	28o
24	0+	0+	0o	1-	1o	0+	0+	1-	4-	6o	4+	3-	2+	3o	4-	4+	4+	31-	4o	4+	4+	3+	3+	4+	3+	3-	30-
25	3-	3o	2+	2-	2-	3o	3-	5-	22-	4+	3o	4+	3-	4+	3-	3+	3-	27+	3o	3o	3o	3o	2+	3o	2+	3o	23-
26	6o	6-	5+	4-	3-	3-	3-	3+	32o	2+	2-	1+	1+	2-	2+	3-	3-	16o	2-	2o	1o	1o	1+	1o	1o	2o	11o
27	4-	1+	2-	1-	2-	2+	1+	0+	13o	4-	3+	3o	1+	1+	2o	3-	4+	22-	3-	1o	1+	2-	1+	2-	1o	4-	14+
28	1o	2-	1o	0+	1-	1o	3-	3+	12-	5o	5-	4o	4-	3o	4o	4-	4o	32o	2+	3+	5-	3o	4-	3o	4o	3o	27o
29	3+	2o	4-	2+	3-	2+	2o	2+	21-	3-	4-	3-	3-	2o	2-	3-	2-	20-	3-	3+	2o	1+	1-	1-	0+	0+	11+
30	3-	4+	3+	5o	3o	2+	3-	3-	26o	2+	2o	3+	1o	2-	1+	2-	2o	15+	1o	1+	1o	1+	1+	1-	0+	1-	8-
31										1o	1-	1+	1o	1+	1+	1+	2o	10o									

Geomagnetic planetary three-hour-range indices Kp (continued)

	July 1943									August 1943									September 1943								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1-	1o	2o	0+	1-	0+	0+	1-	6o	3+	2+	3+	3o	4o	4+	4+	3-	27+	6-	4+	4-	4+	4+	5o	5-	3-	35-
2	0+	1o	2-	1o	1o	0+	1o	3-	9o	3o	3+	5-	3o	4-	4o	5-	4-	30o	5-	5-	3+	4o	5+	3+	5-	4+	34+
3	3-	4+	4+	3-	2+	2o	2-	2-	22-	6-	4-	4o	4-	4o	2+	4+	4-	31+	5-	5+	5+	5+	5+	5-	3+	6-	40-
4	2o	2o	2+	3+	4-	5-	5+	4+	28-	3o	4-	4-	3+	4+	4+	4+	3+	30o	3+	5o	5o	5-	4o	3+	4-	2o	31o
5	5+	5+	5o	4o	5-	5o	5+	5o	40-	4+	3+	4o	3+	4-	3o	3o	2+	27o	4o	5-	3o	4o	3-	4o	4-	3o	29o
6	5+	5o	5-	6-	5-	4o	4o	4o	37+	2+	2o	4-	3-	2o	3o	4+	2o	22o	3+	3o	3o	3-	1+	3-	2+	1-	19o
7	3+	3+	3o	4-	2+	3o	3-	3+	25-	2o	2o	3o	6-	4o	3+	1-	1o	22-	3+	2+	1+	1+	2-	1+	2-	2o	15o
8	3+	3o	5-	5-	4o	3o	3+	2-	28-	3-	4+	3+	5+	7-	7+	6+	7+	43+	3-	2o	3-	3-	2+	4+	6o	5o	28-
9	3o	3+	6-	5-	4-	4+	5+	3+	33+	8-	6+	4+	3-	3o	3o	2+	4o	33+	6o	5-	4-	4+	4o	3+	4o	5+	35+
10	3o	5-	4-	5-	4o	4-	2+	2-	28-	4-	3+	2o	2-	1o	1-	1o	2+	16-	5+	5-	4-	5o	4-	4o	3o	4o	33+
11	2+	4-	5-	4-	4o	3-	2+	4-	27o	2+	2-	2-	1+	1o	1o	2-	2o	13-	5-	5-	3+	2+	4-	4-	3o	4+	30-
12	3+	4-	4-	3+	2o	3-	3o	3+	25o	2+	1+	2+	1-	1o	1+	2o	4o	15o	4o	2+	2o	4+	2o	3o	4+	3o	25o
13	4o	3o	3o	2+	3o	4-	4-	2+	25o	3+	5o	5o	6-	6-	4+	5+	6o	40+	5-	5o	3o	4o	3+	4+	4+	2+	31o
14	2+	0+	0+	1-	0+	1-	2-	0+	7-	4+	3o	3o	4-	4o	4o	5o	5-	32-	4o	4o	3-	4+	3+	2+	4o	4o	29-
15	1-	1+	2o	2o	2+	2+	2+	2o	15o	3o	3o	3+	2+	3+	4o	4+	4o	27+	4o	3-	3o	2o	2+	3-	3o	4-	23+
16	3o	3o	2o	2-	2+	2o	3-	2+	19o	4-	3+	5o	5+	3+	4-	3o	3+	31-	2+	2o	1+	2-	2+	4o	3-	2+	19-
17	4o	2-	1o	1o	2o	1+	3-	3+	17o	5+	5-	5o	3-	3-	3-	4-	4-	30+	3-	4o	3-	1o	2-	2-	2o	3-	18+
18	2+	3o	2+	4o	4+	4-	4+	3+	27+	3+	4-	5o	6+	5o	4o	3-	2-	32+	2-	2+	1o	1o	1-	0+	2o	5-	14-
19	3+	3+	4-	2-	2o	3o	3-	3+	23o	1o	2+	5-	5o	4o	5o	5o	5o	32o	4-	4-	3+	3-	2o	1+	2-	1+	20-
20	3o	2-	2o	2o	2o	2+	2-	2o	17-	6-	5-	5-	5+	4-	3o	4-	4+	35o	1o	2o	1o	1o	3-	2o	2-	3-	14o
21	3+	3-	3o	3o	3+	3o	2+	3o	24-	4o	5-	4o	3+	3-	2-	1+	2+	24o	4-	3+	4o	5-	4-	3o	4o	3o	29+
22	3-	3-	3+	3+	3-	2+	3-	3o	23-	2o	1o	1o	1-	1+	1-	1+	1+	9+	4o	5-	4o	2o	4o	4o	2+	2+	27+
23	2-	2-	3-	2-	2-	2o	2-	1+	14+	2-	2o	1o	1o	3o	1+	3-	4o	17-	3+	4-	3+	3o	2-	2o	2o	2o	21o
24	2-	2+	2-	1-	1o	1-	0+	0o	8+	4-	5+	5o	2o	2+	4-	2+	3-	27o	3+	2o	1+	1o	1o	1-	2o	2-	13o
25	1-	1+	1-	0+	1-	1-	1-	1+	6+	4o	4+	3+	2+	3-	3+	3o	3+	26+	2-	4-	4o	3+	3-	2o	1o	1+	20-
26	1+	1o	2-	2+	2-	1o	3+	2o	14+	3+	4-	5o	3o	2+	3-	3o	2-	25-	2o	4-	4+	4o	6o	5+	5-	5-	35-
27	3+	2+	2o	2o	3-	2+	1o	1+	17o	1+	2+	1o	1-	1o	1-	2-	1+	10o	5-	4+	4+	5-	4o	4-	5+	5-	36-
28	0+	1+	1+	1+	2-	1o	1o	1+	9+	2-	3o	2+	4o	7o	5+	4-	6o	33o	6o	6-	5-	4+	5+	4+	3+	5o	39-
29	2-	2o	1o	1-	0o	0+	0+	1+	7+	5-	4+	4o	4o	5+	5+	5-	3-	35o	4o	6-	6-	5+	7-	5-	6o	5-	43-
30	2+	3+	3o	5-	4-	4o	4o	3-	28-	5+	6+	6-	6-	7-	6o	7-	7o	49+	5+	6+	5-	7o	5o	4o	5+	6o	44-
31	3o	2-	2+	4o	2+	1+	2+	4o	21o	7o	8+	7+	7+	8-	7o	6+	5-	56-									

	October 1943									November 1943									December 1943								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5o	6-	4o	4o	5+	5-	5-	5+	39-	4-	3+	4o	4+	5o	4+	4+	2+	31+	0o	0o	1o	2-	2-	3o	3-	3+	13+
2	6-	4o	4-	5-	5o	6-	5-	3o	38o	2+	2-	2+	2+	0+	2o	1+	1-	13o	2-	3-	2-	2o	2o	5-	5+	4o	24o
3	4+	4o	5+	5+	5-	5+	4-	5+	38o	1o	2-	1+	0+	1-	0+	1o	2o	8+	3+	4o	4-	2o	4+	5-	4+	4o	30+
4	4+	4+	4-	4+	4-	2o	2+	2+	28+	1o	1+	1-	1-	1+	1o	1-	2o	9-	4-	3+	3-	3-	4o	3o	4-	4-	27-
5	3+	3-	2o	1+	2-	1o	2+	2-	16o	2o	3+	3o	3o	4-	3-	2+	2-	22-	3o	5o	3o	2+	3o	3+	2+	2-	24-
6	2o	3-	2-	1o	1-	1-	0+	1-	10-	2o	3+	3o	2+	4-	6o	5-	5-	30-	0+	0o	0o	0+	0o	1-	0o	0+	2-
7	3+	2+	1o	2o	4o	3+	3o	4+	23+	3+	2+	4o	3o	1o	1o	4o	3+	22o	1+	1-	1-	2-	1+	1-	0+	0+	7o
8	4o	2+	3-	6-	5-	4+	4o	5o	33-	2+	3+	4-	3+	2o	2+	2o	3-	22-	1o	2-	1o	1+	1+	2+	1+	0+	10+
9	4-	5o	6+	5-	4-	5+	5+	4o	38o	3+	3-	4o	1-	1o	2-	2o	2o	17+	2o	3-	3o	2+	2-	3-	2-	2-	18-
10	3o	3o	4-	2+	3+	6-	3-	2-	25+	2+	1+	1+	1+	1+	2-	4o	3o	16+	3-	2-	2-	2o	3-	2+	1-	1o	15-
11	2o	2-	3+	3+	3o	2-	3o	3o	21o	1+	2-	1o	0+	0+	1o	0+	6+	1-	1-	1-	1+	1o	1o	1o	0+	7-
12	3+	4-	3+	2o	0+	2-	3o	3o	20+	0o	0+	0+	2o	2+	2-	1+	1-	9-	1-	0o	0+	1-	0+	1o	1+	2-	6o
13	3-	3-	1o	1o	2+	1o	1-	1+	13-	0o	0o	0o	1-	1-	2+	2o	2o	7-	3o	1+	0+	1-	0+	0o	2o	1-	8+
14	2o	1-	1-	1o	1-	1-	2o	1-	8+	1+	2o	1+	0+	1-	2-	2-	1-	10-	0o	0+	1-	2-	3o	4-	1+	1+	12o
15	0+	0+	0o	1+	1o	0+	1-	0+	4+	0+	1o	0+	0+	1-	1+	2o	1+	7+	2-	0+	0+	1-	0+	1o	3-	4-	11-
16	1o	2-	1-	1-	1+	1o	1-	2o	9o	3-	4o	2-	2-	3o	3-	3o	3+	22o	4-	2o	5o	6-	6-	4+	4+	4+	35o
17	1-	2+	3+	4-	3+	2o	2+	3o	21-	1o	0+	1-	0+	0+	0+	1-	4o	4o	5o	5o	4-	5o	4+	5-	3o	4o	35-
18	1o	0+	1o	1o	3-	3-	3o	13-	1o	1+	2-	2o	3-	3o	3-	1+	16-	4+	4-	3+	3+	5-	3o	4o	2+	29-
19	3o	3-	2+	2+	2+	2o	1o	17+	1+	5-	7-	6o	6o	4+	4o	6o	39o	4o	3+	4+	4+	4o	6o	6o	4o	36o
20	1-	1+	1o	1+	2-	4-	5+	3o	18o	5o	6-	5+	5o	4o	5+	4+	3o	38-	5-	3-	4-	4+	4+	5-	4-	5-	33-
21	4+	3-	2o	1-	0+	0+	1-	1-	12-	5+	5-	5-	5-	5-	5o	4+	4-	37o	5-	3-	2-	3-	3+	2-	5o	5o	27-
22	1+	2-	3+	5o	4-	4+	3+	5-	27+	3o	4o	4-	3+	4o	5o	4-	4-	30+	4-	3+	3-	4o	3+	4o	3+	4-	28o
23	4+	3-	2-	1o	3o	1+	1o	3-	18-	4-	4-	4o	4o	4+	5o	6o	6o	37+	2+	3-	3o	3+	4-	2o	3o	2+	22+
24	4-	3+	3o	7-	5+	5-	5-	5-	36o	5o	4o	4o	4o	5o	5-	3o	4o	35+	2+	3-	2o	2o	2o	2+	2-		17-
25	6-	4+	5o	4+	5-	4+	5-	4o	37o	4o	4+	4+	5-	5o	5o	6o	5o	38+	1+	4+	2+	3+	1o	1o	3-	2+	18+
26	5o	6-	6-	5+	6-	5-	4+	4o	40+	3o	5-	4+	3+	5+	6-	5-	5+	36+	3+	1+	2-	3-	3o	4+	3+	3+	23o
27	4-	4+	5o	4-	2o	3+	5+	3-	33-	5+	6+	6-	4+	4+	3o	4o	4+	37+	1+	3-	2-	2o	2+	1o	1+	1o	13+
28	6-	6o	4+	4-	4-	5+	5-	4+	38-	4o	4-	5-	5o	2-	2o	4o	3o	28o	2o	1+	2o	0+	0o	0o	0o	0+	6o
29	5-	5-	4+	5-	5+	4+	5+	4o	37+	4o	5o	4+	3+	4-	4+	4-	2o	31-	1o	2o	2-	3o	1-	3-	3o	2-	16-
30	4+	4o	5-	4o	5o	4o	4-	5-	34+	2o	2-	2o	1+	3o	3+	1-	1-	15-	1o	1-	1-	1-	3-	2-	1-	1o	9-
31	4-	5+	4-	5o	5o	4-	5o	4o	35+										1-	1-	2+	3o	3o	3+	3o	5-	21-

Geomagnetic planetary three-hour-range indices Kp (continued)

	January 1944		February 1944		March 1944	
D	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum
1	3o2-2o2+ 5o4+4-3-	25-	2+1o0o1o 1+1-2-1-	9-	2-2+2+1- 0+1-1o2o	11o
2	2o2o2o1- 2-2+2+1+	14+	0+3-3-1+ 1-1-1+2o	12-	3-3+1-1+ 3-2o3o1+	17o
3	1o0+1-1o 2o0o0+0+	6-	1o1o0+1- 1-0+1o1-	6-	2+2o1+1o 0o0+0+1-	8o
4	2o2o1o1- 0+1+2-3-	12-	1-2o1+2- 3-3-3-1o	15-	2+3-5-6- 5-3o3-3-	28+
5	5-3o3-3- 1o3+2+2o	22-	0+1o2-1- 1o1+2o2o	10o	2-1o1-2o 2o3+3o3-	16+
6	1-1-0+0+ 2-1+2+3-	10o	2o1-1-1o 1o1-1-0+	7o	3+5-3o4- 3+3o4+3+	29-
7	2o2o1o1o 1-1+1o1o	10o	2o2o3+5o 6o5+5o5+	34o	5-5-4-3+ 5o5+2o3+	32o
8	1o2-1+2- 1o2o2-1-	11o	5o4o4-3o 4-4-4o5+	32+	2+4-2+3- 4+4-5o3o	27o
9	3-1+0+1o 1-2+1-2+	11+	1+3-5-4- 4+4o3+2+	26+	4+5-2+5o 4o4o4-4o	32o
10	1+1o2-2o 2o2+3-6-	19-	3-4o4-4+ 3o3+4o2+	27+	4o5-5o5- 5+5-5-4+	37+
11	3+4+3-5- 3-6-6-3-	32-	4o3+3+4o 4-3+3o3o	28-	3-4-3o4- 2-2-4o2o	22+
12	3o4+4+4- 5-4+3o3o	30+	3+4-3o3- 4-3o3o1+	24-	3o4o3+3+ 4-5o4o4+	31-
13	5o4o4+4o 5-3o4+4-	33o	1+1o3-2- 2-3o3-5o	19o	4o3+3-2+ 4+4o2-1o	23+
14	4o4-3o4- 4o6-5-3o	32-	5+6+7-5o 4+3+3o3o	37o	3-4-4-3+ 2o1+3o1-	20+
15	4+4o3+2o 3+4-5-5-	30o	4+4-3-3o 4o4o4o4o	30-	1-3-1+1- 1+0+2o3-	12-
16	4+3-4o4+ 5-4+3-3o	30o	3o2+3o2+ 2o2o1-2+	18-	3-4-1+2+ 2o2o0+0+	15-
17	3+3+4-4- 4+4-4-3+	29o	2o1-1-1+ 2o1+1o2o	11o	0+0+0+0+ 0+0+0+0+	3-
18	2o3o3o5- 3+4o4o3o	27o	1-1o0+2o 1+0+0o0o	6-	0o0o2o1o 1+2o4o5+	16-
19	3+3+3o2- 1o4-3-3-	21+	0+1o1+2- 1o1-0o0o	6o	6+5+2+4- 3+1+4-5-	31-
20	3-2-2+2+ 2+3o3-3+	20+	1-1-1o4- 5-4-3o4-	21o	3+1o3-2+ 1+0+2-1o	14-
21	3-2+1-1- 2o2-2o1o	13o	4-3-2o3- 1+2o2-2o	18o	2-3o1-0+ 1-1o2-3o	12o
22	3o1+2-1- 1+1+2o1-	12o	3-3-1o0+ 0+1-1-0+	9-	3+4-2+3o 3+2+2-1+	21o
23	2-2+1o2- 0o0o1o3+	11o	1-2o1+1- 1+1-1-2-	9o	1o3-2o1+ 1o2-3o3o	16-
24	3-1o1+0+ 1o3o1o0o	10+	2o1+0+1- 0+0+1o2o	7o	1-0+1-1o 1o1+0o0o	5o
25	0o1-0+1o 2-2+1-3-	9+	2o1o1-0+ 0+0+0o1-	5+	0+1o1o2o 2o2+3+3+	15+
26	0+0o1-2- 3-3+3o4-	15+	1-1-1o1+ 0+0+1o1o	6+	4-4+5+5- 6o2+2o5+	34-
27	3o3-3-3o 3-2+3o3-	22o	2o0+1-1- 1-0+0+0+	5+	7+7o6-6- 3+3o4-2+	38o
28	3o2+3-2+ 1o2-2+1o	16+	2-1+1o1+ 1+0+2-1o	10-	2-1+1+2+ 2+3-2+4o	18o
29	2-1o1o1+ 2+2-2-2-	12+	1-2+2o2- 2o2o2+2+	15+	5-5o5o4- 2+3-3-2o	28o
30	1-2o0+1o 1o1o1o1+	8+			4-3-3+2- 2+3+2o5-	24-
31	1+1o1-1- 1-3-2+2+	12-			3o3o3o2+ 2+0o1o2-	16+

	April 1944		May 1944		June 1944	
D	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum	1 2 3 4 5 6 7 8	Sum
1	3-1-1o2- 2-1+4o4+	17+	3+3-3-3+ 6o6-4+5-	33-	2+1-1+1o 1+2o2o0+	11o
2	4+5o8o8+ 6o4o5o4o	45-	4-5o4+5o 4+3o2o2o	29+	1-1+1+2+ 1+1-2-1+	11-
3	5o5o4-2o 2o2o3o3o	26-	3-3-2o1+ 3+2o1o1+	16+	0+1-1+1- 1-0+1o1o	6o
4	3o3+4+5+ 4-3+3o3o	29o	1o1-1-4- 3o3+5o5o	22+	1-1-1-1- 1-1-3+3o	10+
5	3o5-3o4o 3-4o4+4o	30-	4+2+2+3+ 4o3o3+2-	24+	2o1o1+2- 2+3-2o1o	14o
6	3+3o5o5o 3o4+4-3-	30o	4o2+3-4o 3+4-4+2+	27-	2-1o1-1- 1o1+2-0+	8+
7	4+3-3+3- 2o3+5-5o	28o	2o3-4o3- 3o3+3o3-	23+	0o0+1-1o 1o2-1o0+	6o
8	4-2o1-3- 5+2-3+2+	22-	3+3+3o3- 1o1-1o2-	17-	0+1o0+0+ 1-1o1-1-	5o
9	1o2-1+1o 1-2o3+4o	15o	0+1-1+1- 0+1-2+1+	8-	1+2-1+1o 2-2-1o2-	11+
10	3+5o6-4o 3+3o1+3-	28+	2+1-0+0+ 1-1-1-2-	7+	2o1o1-1o 1+1o1o1o	9o
11	3+2-2+2o 1+3+3o4-	21-	1+2-1+1- 1o1o1o2-	10-	1o1-1+1o 1+2+2o2o	12-
12	4+3-2+1+ 1+0+1o0+	14-	2-1-1-2- 1o1+2-2o	11-	1o1o1-1- 1-1-0+0o	5o
13	0+1o0+0o 0o0o0o0+	2o	0+1-0+1- 0+0+0+1+	4+	0o1o1o1o 2-1+2-2o	10-
14	0o0o0+1+ 0+0+0o0o	2+	0+1+2-1o 1-0+0+1o	7-	2o1o1-2- 3-1-1+4o	14o
15	2-0+0+1o 3-3-3o4+	16o	3-2+2o1- 0+0+0+0+	9o	4o3+4-2o 3-3+3o3+	25+
16	5+4o5-4+ 4+6-3+2+	34o	0o1-1-0+ 1o0+0+0+	4-	3o2-3o3- 3-2o2o3-	20-
17	4-3o1o2- 2o2-1+2+	17-	2-1o1-1- 1o0o0+2-	7o	2o1+2o1o 1o2o1-3-	13-
18	4-1o1+1- 0+1-1-2-	10o	1o1-1-1+ 1-0o1-1+	6+	2o2o2o1o 1+1o1-1o	11o
19	2o0o0+1- 1o1o1+1-	7o	1+0+1o1- 1+0+1o1o	7o	1o2-1-2- 1+1-0+2+	10-
20	2-2o1o1o 1o1o1o0+	9o	0+0+0o0+ 0+0+0o0o	2-	2+3-3-2+ 2-1+2+3+	19-
21	0+1o1o1o 3-1+1-0+	8+	1-1-1-1o 0+1-0+1+	6-	3-4+4+4- 2o2o2o2o	23o
22	0+0+0+1- 0+1-0o0+	3o	0+0+1o1- 1o1o2-2-	8-	3+4+3+4o 2+5-2o3+	27+
23	0o0o0+0+ 1-0+0+0o	2o	1o2o1o1+ 2-2-2-2-	12o	2o2-5-2o 2o4-2o3-	21-
24	3+4-4-2+ 3o2-2-2+	22-	3o2+4-3o 2-1+2+3-	20o	2+2o2o1+ 1+1o1-1-	11+
25	3+2o2-1- 1-1o2+3-	14+	1o2+2-1o 2-1o2+2-	13-	1-1o1-0+ 1-2-2o1-	8-
26	2+3-2+1+ 1o2+3-2+	17o	3o2o2-2- 1+2-1+1o	14-	2-2+2o3- 4-4o4o4o	24+
27	2+3-2-3o 2+2+4-3-	21-	2+3o2+3o 2+1o1o1-	16-	3+3o2o3o 2-2+2-2+	19+
28	3+3-2+2o 2+2+3o1+	19+	1-1-2-2- 2-1+1+2+	11+	1o1+1+2o 2-1+1-2+	12-
29	1o3-3o2+ 3o2+2o1+	18-	3+3-3-4- 3o4-3+6o	28+	3-4+2+1+ 1+2-1o1o	16-
30	2+4o5+5- 2o3-1+3+	26-	4-2+3o3o 3o2-1-1+	19-	2o1o2+2o 2+1+0+2-	13o
31			1o2+3-1o 1+4-2o3-	17-		

Geomagnetic planetary three-hour-range indices Kp (concluded)

	July 1944									August 1944									September 1944								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2+	1+	1-	1-	2-	2-	2-	1+	11+	2o	2o	2o	2o	2+	3o	1o	1-	14-	4+	2-	2-	3-	3o	1+	1o	3-	18+
2	2o	2o	2o	2-	2-	1o	1+	2-	13+	1+	2-	2-	2-	3-	3o	3+	5o	20+	5-	5-	4+	4-	3o	3+	4-	3+	31-
3	1-	1o	2o	2o	2-	1+	1+	2o	12o	6+	6+	5+	5-	3+	1+	3-	3o	33o	3-	1o	3+	3o	1+	1+	1o	1o	15-
4	2+	1+	0o	1-	0+	1-	3-	1-	9-	3o	1o	1+	1+	2-	1o	1+	1o	12-	2-	1o	0+	1+	1+	1+	3+	3+	14-
5	2o	2-	2-	1o	1o	1+	1o	1-	10+	1o	1o	0+	2-	1+	2-	2-	3o	12-	3+	2o	2-	2o	1+	1+	0+	1o	13o
6	1o	1+	1+	1o	1o	1-	1o	2+	10-	2+	2+	3-	2o	1+	2-	1+	1+	15o	1+	0+	0+	2+	1+	2+	1+	2o	11+
7	3o	3-	1+	1+	2-	1+	1o	1+	14-	2o	1+	1-	1o	2o	2-	1-	1+	11-	1o	3-	3-	2+	1-	1o	1-	0+	11+
8	0+	1+	1o	1+	1o	0+	2-	1+	8+	1-	1o	1-	2-	1+	3-	3o	2-	13-	1-	1o	1+	2o	2+	2+	3o	3+	16o
9	3-	2-	4-	3+	2o	2-	2-	1+	18o	2o	2o	1+	1o	1o	2-	1+	1o	11+	3-	2+	0+	1o	1-	0+	2o	2-	11o
10	2o	2-	1o	1-	2-	2o	3o	2-	14-	1+	2-	3+	3-	2+	2+	1+	2o	17o	2-	2o	2+	1+	1o	2o	2o	2+	15-
11	2o	2o	2-	1-	1-	1-	1-	1-	9o	4-	3-	2o	1o	1+	1o	2+	4-	18-	2o	2+	2+	2-	2-	1o	2-	3o	16-
12	1-	1+	1-	1-	1o	1o	2o	2o	8o	4-	4-	2o	2o	2o	1o	2o	2o	18+	2+	2+	3o	3+	2+	1+	1+	2o	18o
13	2o	1+	2-	1o	1+	1o	1o	1+	11-	3-	1o	2+	2-	1o	1o	2-	1-	12o	2o	0o	0o	1o	1+	2+	3o	3o	12-
14	1-	0+	2o	3o	1o	2o	1+	2o	12+	1o	0+	0+	1o	2-	1o	3-	2+	10+	3o	3+	2+	1+	3o	2+	2o	1-	18o
15	2+	2+	3o	2+	3-	1+	2-	2-	17+	2-	2o	2o	1+	1+	1-	1o	1o	11o	1+	2+	1+	2o	1-	0o	0o	1-	8+
16	1o	2-	2o	1o	2+	2-	3o	2o	15-	1-	1-	1o	2-	2-	2o	1o	2o	11-	0+	2o	2-	1-	1+	2o	1+	1-	9+
17	1+	3+	3-	2o	2-	1+	2-	1o	15o	3-	2+	1+	1-	1-	1o	1o	1o	10-	1-	1-	1+	1-	2-	2o	0+	1o	8+
18	1+	1+	1o	1-	1-	2+	3-	1-	11-	3o	2o	6-	4o	3-	2+	3+	2-	25-	4-	3+	3-	2-	2-	1o	2o	1-	17-
19	3-	2-	2-	2+	3o	1+	1o	2o	16-	3o	2+	3-	1+	1o	1o	1-	1+	13+	1o	0+	1-	1-	2-	0+	0+	0o	5o
20	2o	2+	3+	3+	3o	1-	1o	2-	17+	2+	1+	1o	1o	2-	1-	1o	1+	10+	0o	0o	1o	1o	2-	2-	2+	4o	12-
21	1o	2-	2+	3-	2+	2-	2o	2+	16o	2-	1o	1-	1o	0+	1-	1+	1-	7+	5+	4o	3+	3+	2+	2-	2o	2o	24o
22	1+	1+	2+	2-	1+	2-	2+	2-	14-	1+	2-	1o	2-	1o	1-	0+	2+	10o	3-	2-	1o	1+	1+	1+	3-	4o	16o
23	1o	1-	2o	2o	1o	1+	0+	1-	9o	4-	2o	3-	2o	3-	2-	2o	1+	18o	3+	3o	2-	2o	1o	2-	3o	4+	20o
24	0+	0+	1o	0-	0+	0+	1-	1o	4+	2o	3+	3+	3-	4o	3-	1o	1o	20o	5+	3+	5-	5-	4o	2-	2-	4-	29o
25	1o	1+	1-	0+	1-	0+	0+	0+	5o	0+	1+	0+	0+	1-	1+	0+	0+	5o	3o	3o	2-	2-	2o	1+	3+	3-	19-
26	0+	1o	1-	1+	1-	0+	1-	1-	6-	1-	0+	0+	0+	1o	2-	2o	3-	9o	4+	2+	2o	2o	2+	2+	2o	3-	20o
27	0o	0o	1-	0+	1o	1+	1o	1+	6-	2o	2-	2o	0+	1-	1o	3+	2o	13o	1o	3o	4-	2+	2o	3+	3+	3o	22-
28	1o	0+	0+	0+	1o	1+	1+	2+	8o	2o	3-	5o	4-	4-	3o	3o	3o	26o	1+	3-	2o	1+	1-	1+	2-	1+	12+
29	2-	1o	0+	1o	1-	1o	2-	2-	9o	1o	0+	1-	2-	2-	2-	1o	1+	9+	1o	3-	2o	2+	2-	1o	2+	2o	15o
30	1+	1+	1+	2-	1+	1+	1o	2-	11o	3-	3-	2o	2+	2o	1+	3-	2-	17+	1-	1o	1+	2-	5-	6o	6o	5-	26o
31	2+	2+	1+	2o	1+	0+	1+	2o	13o	3o	4-	4-	4-	1+	4-	3-	3-	24+									

	October 1944									November 1944									December 1944								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4o	3-	2+	4+	4-	4o	3+	4+	29-	1o	0+	0+	1-	1-	1-	1-	2o	6+	2-	0+	1o	2o	3-	3o	2+	2-	15-
2	2o	0o	0+	2-	2-	1+	2+	3-	12o	1o	2+	1-	1+	0+	1-	1o	1o	8+	3+	2+	3o	2+	2o	3+	4+	2+	23o
3	3o	4-	3-	3-	3+	4o	3+	26+	0o	1-	1+	2+	3o	3-	1o	1-	12-	3o	3+	3o	2-	2o	1+	2o	2o	18+	
4	3o	1o	0+	2o	1-	3-	3-	1+	14-	2o	2+	3o	3o	4-	3+	2o	2o	21+	2o	3o	1+	1-	1o	0+	2o	1+	12-
5	2+	2+	1+	1o	1o	1o	0+	1-	10o	3o	5o	4+	3o	3+	4-	4-	5+	31+	1+	2-	1+	2+	2-	1+	1o	2+	13o
6	2-	2+	2o	1-	3o	4-	3+	18o	3o	4-	4+	3-	4-	1+	1o	1o	21-	3-	2+	1+	2-	1-	2-	1+	1-	12+	
7	2+	2+	1o	1-	2+	1o	3-	1+	14-	1o	1-	1-	1-	2+	2+	2-	2o	11+	1o	0o	1-	0+	0+	0o	0+	3-	
8	1o	1-	0o	0+	0+	0+	1-	1+	5-	2o	2+	3-	2-	1-	0+	0o	0+	10o	0o	0o	1+	0o	1o	1o	1o	2-	6o
9	2+	1+	2o	1+	0o	0o	0+	0+	8-	2+	2o	3-	2-	1o	1-	3-	1+	14+	3-	3-	1o	1-	0+	1o	2-	1+	11+
10	0o	0o	1o	1+	1o	1-	2+	4-	10o	0+	0+	2o	2+	3o	4o	3o	0o	15o	2-	2-	0+	1o	1-	1-	1+	0+	8-
11	6-	6o	2o	1+	3+	5+	3o	3+	30o	0+	1+	1o	1o	1+	2+	1+	0o	9-	1+	1o	1o	1+	1-	1-	0o	0o	6o
12	2o	3-	2-	2-	2+	3-	3o	18-	2-	1o	2-	1-	0+	0+	0o	0o	6-	1o	1+	0+	1o	0+	0+	1+	1-	6+	
13	3-	1-	1o	1-	3o	3+	2+	3+	17o	0o	0o	0o	0+	0+	0o	0+	0+	1+	1+	2o	2o	3o	3o	4+	4-	3+	23-
14	3-	2-	2o	4-	3o	4+	4o	6+	28-	1-	1-	0+	0+	1o	1o	1+	1o	6+	4o	5o	4o	3-	4o	2o	0+	0o	22o
15	6o	6o	3+	3+	2o	3-	3+	5+	32o	2-	2-	0+	0o	0+	0o	0+	1o	5+	1-	1-	2-	1+	1-	1-	3o	4o	13-
16	3-	1+	4-	2-	2o	3-	2+	2+	19-	1+	2o	2o	2-	1+	0+	0+	0o	9o	4o	4-	4+	6o	8o	8+	5o	3o	42+
17	3-	2+	3+	3o	2o	1-	1-	4-	18+	0o	0o	0+	0+	0+	0o	1-	2o	4-	2+	5o	6o	6o	6o	6+	5+	6+	43o
18	4-	3-	2o	3o	2-	2o	1+	1-	17o	3+	1+	1+	1-	3-	3-	1o	1o	14o	4o	5-	4o	3-	3-	3o	3-	2o	26-
19	2-	1o	1o	2+	0+	0+	1-	0o	7+	3+	3-	2-	2-	2o	2+	1+	1-	16-	1+	2+	2o	3-	1o	2+	3-	2o	16+
20	0+	0+	0+	1o	0+	1+	2+	3+	9+	2o	4-	3o	3-	4o	5-	3+	4-	27o	1+	2+	3-	1+	1-	2o	2+	3o	16-
21	2-	1o	1+	1+	1-	1o	2-	2-	10+	2o	0+	1-	1o	0o	0o	0+	1-	5o	4o	4-	2o	1+	2o	2o	1+	2-	18o
22	2-	2-	2-	1o	1+	2-	1+	1o	11+	0+	0o	0o	0+	0+	2o	1o	1o	5o	2o	1o	0+	1-	2-	2o	3o	3o	14-
23	2-	2-	2o	1o	1o	4o	4-	4+	19+	2o	1+	1o	1o	1-	1o	1-	0+	8o	2o	2-	2-	1+	1o	1o	1o	1+	11o
24	4+	3o	4-	3+	3-	2+	4-	3-	26-	0+	1o	1-	0o	0+	0o	0o	0+	2+	0o	0o	0+	1-	1-	1+	1-	0+	4o
25	2+	2o	1o	1o	1-	1o	3+	2+	14-	0o	0o	0o	0+	0+	0o	1-	0+	2-	1o	0+	0+	1+	1-	1-	0+	1o	6-
26	4o	4-	4o	2o	0+	1o	3-	2o	20-	3+	2-	1o	1-	1+	0+	0+	1o	10o	1-	1-	0+	3-	2+	3-	2+	2+	14o
27	3-	2-	1-	1o	2o	4-	2-	1o	14+	1-	1o	1o	0o	0+	0+	1-	0+	5-	4-	4-	3o	4+	5-	6-	5-	5+	35o
28	2-	3-	3-	2-	2o	1+	2+	2-	16o	0+	0o	0o	0o	0+	0o	1-	2o	1+	5-	5+	2o	2o	3-	3o	3-	1+	1+	20+
29	1o	1o	0o	1-	1-	1+	2o	2o	9-	0+	2o	0+	1-	1o	1-	1o	0+	6+	1o	3o	2+	2+	1+	2+	4-	3-	19-
30	2o	2+	2o	1+	0+	0o	0+	1o	9+	2o	2-	1o	1-	2o	2o	1+	2-	12+	4-	4-	3o	2+	3+	3o	3-	4o	26-
31	3-	3o	3+	2+	2+	3o	3o	2+	22o										1+	2-	1+	1o	2+	2o	2o	3+	15o

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p

	January 1945									February 1945									March 1945								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2o	2-	2-	3-	2+	2o	4-	3-	19-	2o	3-	1-O+		1-	1o	1+	1-	9+	2o	2-	1o	3-	1+	1+O	+O	+	11-
2	4-	2+	3o	1+	2o	3-	2-	2-	18+	1-	1o	2-	2o	3+	3+	3o	2+	17+	O	o	O+	1o	2o	3+	1-	1o	9-
3	1o	1+	2-	3+	2o	2+	3+	1o	16o	3o	3+	1-	1+	1o	2o	O+	1-	12+	3+	3o	3+	3o	2-	2+	2o	O+	19o
4	O+	O	O+	1o	2-	3-	4-	4-	13+	O+	3-	1+	1-	1-	2-	1o	1+	10-	1o	1-	1-	1+	1+	1o	1+	2+	10-
5	2o	2o	2-	2-	1+	1o	2-	O+	12-	2+	5-	5-	3+	2+	2o	3-	2-	24-	2o	2o	1+	2-	2+	4+	5+	5-	24-
6	3o	1+	1+	2+	2o	O+	1o	2-	13o	4-	2+	2+	4o	2o	1o	2+	1+	19o	3-	2-	3-	3-	3o	4-	4o	3o	23+
7	1+	2+	1-	2o	2-	1-	1o	2o	12-	1o	1o	2o	3-	1+	2-	3-	1+	14-	3-	2+	3-	3o	2-	3-	2-	1-	17+
8	2-	O+	1-	1-	2o	1+	1-	1o	8+	3o	3o	3o	3+	3+	1+	3+	2-	24-	2+	5-	3o	4+	4o	5-	1+	O+	25-
9	1o	O+	1+	1+	1o	3-	2-	5o	14+	3+	3-	3+	3+	3+	3-	3-	3-	24o	O+	1o	1o	1+	O+	1o	2+	3+	11-
10	6-	4+	5-	3+	4-	2+	3o	Oo	27o	2o	3-	2o	4-	O+	1-	2-	2-	15-	2o	1o	1o	1-	1o	1o	1-	3-	10o
11	1-	Oo	O+	Oo	O+	O+	1o	1o	4-	3-	3+	3o	2+	1o	3o	1+	1o	18-	5o	5-	3+	5o	5o	5o	4+	2o	34+
12	O+	Oo	1o	Oo	2o	2-	3o	2o	10o	2o	3o	3+	1o	1-	2-	Oo	1+	13o	3o	3+	3+	5+	6-	5+	6+	6o	38+
13	3+	4-	2+	1+	C+	O+	Oo	Oo	11+	O+	1-	O+	2-	1+	O+	Oo	O+	5o	4-	2o	2o	3+	3o	1+	1o	1-	17o
14	1-	1-	O+	1-	1+	1o	1-	2-	7o	Oo	Oo	O+	1o	2-	2-	2o	3o	10-	O+	2+	3o	2o	2-	3-	3+	4-	19o
15	2o	4+	4o	4o	4+	6-	6o	3o	33+	4o	4-	3o	4+	4+	2+	4o	4-	29+	7-	5o	5o	3+	4-	6-	4+	7-	4O+
16	4o	3+	3+	3-	2-	1+	2+	4-	22+	5-	3o	3-	3-	4-	3+	4+	3o	27+	4o	3-	4o	3+	5-	3+	4-	29o
17	4-	4-	2o	4-	2+	2+	4-	2-	23o	2o	2o	2+	2o	2o	3o	4o	3o	20+	3+	2o	2o	1+	1o	2-	2+	3o	17-
18	1-	O+	O+	O+	1-	2-	2+	3+	10-	3o	2o	2+	1o	2+	2o	1-	2+	16-	2o	3-	2-	?+	3-	2+	3-	3-	19o
19	3-	3o	2-	1+	2-	3-	3+	2-	18o	2+	2-	2-	1+	1+	1-	1-	1o	11-	3-	2-	O+	1o	1+	1-	1o	1o	10-
20	2o	3+	2+	3+	3-	2o	2-	1+	19-	1+	O+	1-	1o	2-	2o	1-	1o	9-	3o	1+	2-	1+	1o	1-	6o	6-	21-
21	2o	2o	1+	1-	1+	1o	2o		12-	1-	1-	1-	O+	O+	O+	1-	1-	4+	2o	2+	1+	2+	1+	2-	4o	1+	16+
22	1+	1o	1o	1-	1+	1+	1o	1o	9-	1o	O+	1+	2o	3-	2-	2-	3-	13+	1+	2+	1-	1o	Oo	Oo	O+	O+	6o
23	1-	2-	1-	1-	1-	Oo	1o	1o	6+	1+	O+	O+	3-	3-	2o	1+	2o	13-	1o	2-	1-	1o	O+	O+	1-	1-	6+
24	Oo	Oo	Oo	O+	Oo	O+	Oo	1o	2-	2-	2o	1o	2-	3-	2o	14-	O+	1o	1o	3o	2+	3o	2+	2o	15o		
25	Oo	Oo	O+	O+	O+	Oo	O+	2-	4+	3+	2+	3-	1+	1o	4o	2+	21+	3-	1+	O+	1+	2+	4-	2-	4o	17+	
26	O+	O+	1-	2o	2+	3o	3o	2o	14-	1+	3o	1+	1+	2o	5+	5+	4+	24o	5o	5-	6o	5+	5o	5+	5o	5o	41+
27	2o	1o	1o	1+	2o	1+	2-	1o	11+	3o	3-	3+	2o	3+	3o	5-	3-	25-	4-	3+	2+	4o	3+	4-	5-	5o	30o
28	2+	1+	1-	O+	1+	2+	4+	5-	17+	3-	3-	1o	1-	1o	2+	3-	1o	14o	4-	4o	6-	7+	7-	4-	3-	2o	36-
29	6o	7o	5-	3o	3+	5-	5o	4+	38o										1+	3o	4-	3+	3+	2+	2-	3-	21+
30	3+	5-	3-	3-	3-	3o	1+	1+	22-										1-	2o	1o	1-	1o	1+	1-	O+	8-
31	1-	1+	1-	1o	1-	1-	1-	2+	8o										1o	Oo	Oo	Oo	C+	1o	1+	3-	6+

	April 1945									May 1945									June 1945								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2+	4+	6o	7o	6-	5+	4+	4o	39o	4-	3o	2o	2+	2o	2-	3o	1o	19-	1-	1+	1o	1-	1-	1o	1+	O+	7o
2	5o	4-	3-	1+	2o	3o	3-	1-	21o	3+	4o	3o	3-	3o	2o	1+	1o	20+	O	o	O+	1-	1-	O+	1-	1+	2-	6-
3	2-	3o	1o	Oo	1-	O+	O+	O+	7+	4o	2+	2+	3-	2+	3+	3-	3+	23o	1+	2o	2-	1-	1+	O+	O+	O+	8o
4	O+	O+	1-	1-	4-	3o	1o	1-	10+	1+	2o	2+	1o	O+	1-	2o	3-	12+	O	o	O+	O+	2-	1-	1-	1+	5+
5	O+	Oo	1-	3o	2-	3o	6o	4+	19o	1+	1o	2+	1o	2o	2o	1o	2-	12+	1-	1+	1o	1o	1-	1+	2o	2o	10o
6	2o	3o	4o	4+	3+	5-	3+	3+	28o	O+	1-	1o	1o	2o	3-	2+	1o	11o	2-	3-	4+	5-	4+	4-	3o	4-	28o
7	4o	4o	4+	2-	2-	2-	2-	5-	24-	O	o	O+	O+	1-	1-	1+	2+	6+	3o	3o	3+	2-	2+	2+	4-	3o	22+
8	4o	3+	4-	4-	3o	3o	1o	2-	23+	1+	2-	2o	1-	1+	1o	1o	1-	10-	4-	4o	4-	3-	3o	4-	3-	3o	26+
9	2-	2o	1-	Oo	Oo	O+	1-	Oo	5+	O+	1+	2-	1o	3-	4-	3+	3+	17+	2o	2o	3o	2o	2-	3o	3o	3-	19+
10	1o	1+	Oo	O+	3-	1-	O+	1o	7+	1+	2-	2o	2-	2+	2+	3o	4-	18o	3o	3+	3o	3o	2o	3o	2o	2+	22-
11	1-	2-	3+	5+	6+	4+	3o	5-	29+	2o	4+	4-	4-	3+	4o	4+	3o	28+	3o	2+	2o	1+	2+	1+	3-	1+	16+
12	5o	5o	4-	3o	2o	4o	5-	4o	31+	4-	3+	2+	2-	1+	2-	4-	3+	21o	1-	1+	2-	1+	1+	1-	1+	1+	10-
13	3+	3+	4-	3-	2o	2-	3-	3o	22+	2-	2-	2o	1o	2-	3-	3-	3+	17-	1-	2-	2o	2-	2-	1-	1-	1o	11o
14	5o	4o	2+	3o	3o	3+	4o	4o	29-	2-	1o	1o	1+	3-	4-	3+	2-	16-	2-	1+	1o	1o	O+	1o	1+	1o	9-
15	3+	3o	4-	4o	2+	2o	1+	2-	21+	2-	1+	1o	O	4-	O+	1-	1-	2o	8o								
																			1+	1o	1o	1o	1+	O+	1+	1-	7+
16	1+	1o	2o	1o	1o	1+	2-	2o	11+	2o	2+	1-	1-	1o	2-	3+	13+	1-	O+	1-	1o	1-	1+	2-	2-	8o	
17	2o	2-	1-	1-	O+	1+	O+	O+	7+	2+	2-	2+	1-	2o	2-	2o	2-	14+	2-	2-	2-	2o	2+	3+	1-	1-	14o
18	1-	2o	2o	1+	1-	O+	O+	2-	9o	1+	1+	2o	1+	3-	3+	2+	3+	18-	1-	2o	2-	O+	1-	1o	2o	1+	10-
19	3-	2o	2+	2+	3o	1o	3o	3+	20-	2o	2-	1-	2-	3-	3o	3-	3o	17+	1-	1o	1o	1-	1o	2o	2o	1+	10-
20	4-	3-	3o	4-	4-	3o	2o	O+	22o	2o	3o	3+	2o	1-	2+	1o	1-	15o	2+	2-	1+	2o	2-	1o	1+	1+	13-
21	1+	Oo	O+	O+	1o	1-	1-	2+	7-	1o	1o	1+	2-	3o	3+	2-	1+	14+	1+	2-	1-	1-	1-	Oo	1+	1-	7o
22	2o	O+	1-	2-	1o	2+	4-	2+	14o	1o	1-	1o	2o	1+	1+	1o	1o	9+	O+	Oo	O+	Oo	1-	1o	O+	O+	3o
23	2-	2+	2o	3o	3o	4o	3-	4-	22+	2o	2+	3+	2+	2o	2-	1-	1-	16-	O+	1o	2o	2o	1+	1o	O+	O+	8+
24	4o	3+	4-	3o	2-	3-	4-	2+	24+	3-	3o	3-	2-	2o	2o	3-	1-	17+	1-	1+	1o	1-	1o	O+	1o	1+	7+
25	3o	3-	2+	2+	2-	1+	O+	1+	15o	2o	4+	3o	2o	2+	3-	4o	3-	23o	3o	3-	1o	1o	O+	O+	2-	1+	11+
26	O	o	O+	O+	2-	1+	O+	O+	5-	2o	1-	1o	1-	1o	2-	3+	2o	12+	1o	1-	O+	O+	1o	O+	1o	2o	7-
27	2o	2o	3o	O+	Oo	O+	1-	1-	9o	2-	1-	1-	1o	2+	3-	3+	2o	14+	2o	3+	4-	4-	2+	2+	1+	1o	20-
28	C+	C+	O+	1-	1o	1+	O+	1o	5o	O+	1-	O+	2o	1+	3-	2o	2o	11+	2o	1+	2-	2-	1+	1+	O+	2-	11+
29	1o	1-	Oo	1+	2+	2-	2o	1+	10+	4-	2o	2-	1+	1-	2-	2+	2+	16-	1o	2-	1-	1-	1o	O+	O+	O+	6-
30	1o	2o	3-	4-	2-	4-	3o	3-	20+	2o	2o	2o	2+	3o	4o	3+	4+	23o	O+	2+	2o	1+	3o	4+	2o	3+	19-
31										3-	2o	3-	3o	3-	2+	1+	1-	17+									

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	July 1945			August 1945			September 1945		
D	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	6o5-5o5-	5o5-4+3o	37+	1-1-1+1o	1o1o3-2+	11-	1-0o0+1-	1o1o3-3-	9o
2	5-2+1+2-	2+2o1+2+	18o	5-5o2o2o	3-2o3-2+	23+	3-2o2+2o	2-1o1o2-	14+
3	3o3-2-1+	1o1-1-1+	12+	3-2o1+1o	2-1o1+1+	12+	1+0+1-1+	1+1-1-2-	8o
4	1-2-3+4-	4o4-2o3o	22o	2-1o1o1+	1o1-0+2o	9o	3o3-5-4+	4-2o3+2+	26o
5	3+3o4o4+	2-1o2+3+	23o	2-2-2-2o	2+3-2+0+	15-	2+1+2+2o	2-3o2o1+	16o
6	3+4+6-5o	3-4-2o2o	29-	2o3o2o2o	2o2+1+2o	17-	2o2o1+2+	2-1-3+2+	14-
7	1+2o1+1o	2+2-2+4o	16o	1o1-2o2o	1+1+2o2+	13-	1+2-2-1+	2-1o1-1+	11-
8	3o4+3-3-	2+2+3-3-	23-	2-1-0+1o	1o2+2-2-	10+	1o1o0+1-	1-1-2+2+	9o
9	3-1+2-1o	2o2-1o1+	13-	2-1-1o0+	1o1o1-1-	7o	2+1-2-1-	2-2-0+2o	11o
10	1-1-0o0+	1+1+1+1o	7-	0+0+1o1-	1-0+0+1-	4+	1+0o1-1+	1o1o2-1-	8-
11	1o1o1+0+	1-1+1o1o	8-	2o1-0+1o	1o1+2-3-	11-	1+1o1+2-	2-2+4o4+	18-
12	1+2+1+1o	1+1-1-1-	9+	2o2-2-1+	1o1+1o1+	11+	5-4-3-3-	3o1+2-1-	20+
13	1+1o1o1+	1o1-0+1o	8-	2o2-3o3o	3o2+1-0+	16o	1o1-2-2o	3o2o4-2-	16-
14	1-2-1-2o	2-1o0+0+	8+	3o3+3+3+	3-3+4-2-	24+	2o1+0+0+	1-1-1o0o	6+
15	1-1-0+1-	1-1o1o1-	6-	2+2-2o3-	2-2o2+4-	18+	1-0+1+2-	1-0+1-0+	6o
16	1+2-0o1o	3o3-3-3o	15+	4-1+1+1o	2-1o1o1+	12+	1o1o1+2-	2-2+1+3o	13+
17	2o1o2o2+	1+4+5-3o	21-	1-1o1+1+	2-2o1+0+	10-	5-5o4+5+	4+5-4+4+	37o
18	3-3-2+2+	2o1-1+2-	16-	0+0o1-1o	1o1-1-0+	5-	5-4+5-4+	5-6+4+5-	38o
19	3o2+2-2o	1o0+1o2+	14-	0+0+1o1-	0+0+1-1-	4+	5+2-2o2+	1o1o2+2o	18-
20	0+0+1-1-	1+1-0+1-	5o	1-0+0+1-	1-0+0o0+	3+	2+3o2+4-	1+2o1+0+	16+
21	1-1-1-1o	1o2-0+0+	6+	1-1o1o3-	3+2+2o0+	13+	0+0+0+2-	3o3-2o3o	13+
22	1o1o1-1-	1o1-2-0+	7o	0o1-1+1o	1+4-4o3-	15-	2+3-1-1-	1o1+1o1-	10+
23	0+1o0+0+	2o3o3+5+	16-	4+4o2-2o	2-1+0+1o	1o+	1+1-1o1-	0+0+0o0+	5-
24	4-2-2-2o	2-1+1+0+	14-	1o2+1oOo	0+0+0+0o	5+	0+0+0+1-	0+1-1o1o	5-
25	2-1+1-1+	1-1-1o1+	9-	0o1o2o1-	1-1-0+0o	5+	0+2-1+2+	2+2-2+2+	14+
26	1-1o1o2-	1+1+1+1o	9+	0o1-1o1-	1+1+1-1o	7-	2o1-1-1o	1+3-2+1o	12-
27	1o0+0+0+	1-1o0+0+	4+	1+1+1-1-	1o3-3-3-	13o	1o3o1+5-	4-1o2-1+	18-
28	1+2o3o4-	4-2-2o3o	20+	6o6+3-2+	2o3-4-2o	28-	2o3o1+2-	1o1-2-1-	12o
29	3+1o1-2-	2-2o2o4-	16o	2+2o3-2+	1+1o1o1+	14o	1-2-2-0+	0o2+2o2-	10+
30	4+5o3-2o	3o2o2-2+	23o	1-0+0+1+	1-1o1o1o	6+	3+2+4+3+	3-2-3+3o	24o
31	3+1+1-0+	0+0oOo1o	7o	1-1+1-0+	0+0+1+2o	7o			

	October 1945			November 1945			December 1945		
D	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	3-2-1-1o	0+2-3+2+	14-	1o0+1-0+	1-1-0+1+	5+	0+1+0o0+	0+1-0+1-	4o
2	0o2-2o2o	3o2o0+0+	11+	1+0+0+1-	1-0+1+0o	5o	0+2-1-0+	1-1-0+3o	8-
3	1o0+1-1-	1o1-0+0o	5-	0o1-1o1o	1-0+0o2o	6-	2-0o0+0+	1-0+0+1-	4+
4	0+0o1-0+	0o0+1o1o	4-	1+0o0+0+	3-2-2o3-	11o	1o0+0o0o	0o0o0o0o	1+
5	2-2+2o2o	2+2+3o2+	18o	4o3+1o3-	2o1+0+0+	15o	0o1-1o1-	0+1+3o3-	10-
6	1o0o0+1-	1o1o2-2+	8o	0o0o1-1-	0+1-0+0o	3-	2+2o2-2-	3+3-3o3o	20-
7	2-0+1-0+	1o0+3+5-	12+	0+0+1-0+	0+1o1o1o	5o	3o2+2+1+	0+0+1+3+	14+
8	3-1+2o3o	3-3+1o1o	17o	0o0o0+1o	2-4-4o3+	14o	4-4o3o3-	4-2+2-2-	23-
9	1+3o3-2-	1o1+0+0o	11+	4+5-6+5+	4o5o4+4-	38-	4-2+3-2+	2+3o2-2+	20+
10	0o0o0c1-	1o0+0o0o	2o	4o4-4-2+	2o1-1-2o	19o	2-3o1+2-	1+1o0+0+	11-
11	0o0o0o0o	0+0o0o1-	1o	3-4-4+3-	4o3o3+1o	25-	1o0+1o1+	1o0+0+0+	6-
12	1-1-3-5o	5o5+5-4o	28o	4o4+4-3+	1o2-4o2o	24o	0+0+0o0+	2-0+1+1o	5+
13	4-3-4o2+	1o1-1+3-	18+	2o3o3+2-	2-2+2+2o	18+	1-0+0+0+	4-3+5-5+	19-
14	2+1o3-1o	2o3o3o3o	18o	2o1+2o2o	1o2-2o1+	13+	6+7-7-7-	6+4+2-1o	40-
15	1+2o2-2o	2o2o1o1+	13+	2-2+3+2o	2-3-3-2o	18+	1-2+3o2-	3-2o2-4-	18-
16	1+3o3o2o	4o4-3o1-	21-	2o2o2o3-	3o3-3+4+	22o	2+1o0+0+	0o0+2+2o	9-
17	0o1o3-3o	1o3-3o2-	15o	3+2o2o3+	3+1-1-0+	16-	4o4-2+3-	3+3+2o2-	23o
18	2+2+2+2+	2-1+2o2-	16o	0o1+1-1+	1o0+1-0+	6-	2o0+1o1o	2-1+2-1+	10+
19	2o1-1o1+	2+2-3+4+	17-	1-0+0o0+	1o1o1o0+	5-	1+1-1+2-	1-2+3+6o	17+
20	4-2+1-1-	2-1o3o3-	16-	0+2-0+0+	1-1-0+1o	5+	5-4-5-2+	2o3+4+4+	29+
21	1o0o1-1+	1-2-2o3-	10o	1-0+0+0+	1-1-2-2+	7o	5o6-3+3o	2o1o1o1+	22+
22	1-0o0o2-	3o3+2+2+	13+	2+2+0+0o	0o0+1-1-	7-	1o0+0+0+	0o0+0+1-	3+
23	2-0o1-1-	1-1o1o2+	8o	0+1-0+0+	1-2-2-0+	6o	1+0+0+0+	1-3+4o4+	15-
24	4-4-4+6-	6o5+6o5+	40o	0+1o0+1+	0+0o0+1-	4+	3+2+3o4-	4-4o1+1-	22o
25	6o6o3+5+	5+4+3o2-	35o	1-0+0o1-	1+1+3-1+	8+	0+0o3-3+	4o5o5-4-	24-
26	2o1o0+1-	1-1-0+1o	7-	0o0o0+0+	0+1-0o1-	2+	5-5-4o4o	4-3o3+2+	30-
27	1o1-1+1o	2-3-3o5+	17-	0+1+1o0o	0o0o1o1+	5o	3+4o3o3+	5-4-5+3+	31-
28	6+6-2o3o	3o4o5-4o	33-	0o1-1+0+	0+0+1+2o	6+	4-4o4-3o	5-4+3-4o	30o
29	3-2o1+2o	2o3-2+3o	18o	2-2+3o2+	2+1+4-2+	19o	2-4-3-3-	2+3-2+3-	21-
30	2o0+1-1o	3+2+1o1o	12-	1+1oOo1-	0+0+1-1o	5+	3-2+2-2o	2-0+1+1-	13-
31	2-1+0c1-	1o1o1+2o	9o				2+2o3-1+	2+1o1o2o	15-

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	January 1946									February 1946									March 1946								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1+	2o	2+	3-	2+	3-	3+	2+	19o	0+	1-	0+	1o	1o	1+	1o	1+	7o	4+	6-	5+	4+	1+	2o	2-	3o	28-
2	3+	2-	1o	1+	2-	3o	2+	0+	15-	3o	3o	3o	2+	2o	1o	1+	1+	17o	5-	4o	3+	4-	2+	1o	1-	2-	21+
3	0o	1+	4+	7o	6+	7o	6+	6-	38o	1o	0+	0+	1o	4-	3o	3o	3+	16-	1+	1o	2-	0+	1o	1-	2o	2-	10-
4	6o	6o	6-	4+	3+	5o	5o	5-	40o	3-	0+	2-	2+	4-	3+	1+	3o	18+	3+	3o	4-	4-	3+	3+	4o	5+	30-
5	3o	3o	3-	2-	2+	2-	3-		19o	3+	4-	2o	1o	2+	3+	3-	3o	21+	5-	3+	3o	5-	4+	4o	3o	3o	30o
6	3+	2-	2+	2-	1+	4-	3+	2o	19+	4+	1o	2o	2-	4-	1+	3o	3+	20+	3o	3+	3+	4-	3o	3-	3o		25+
7	0o	1+	1-	1o	2o	2o	3o	2o	12o	4-	2o	4o	8+	8-	8o	7o	8o	49-	2+	2o	2+	3o	3o	2o	2o	2o	19-
8	1+	2+	1+	1o	1-	1o	2o	1-	10+	9-	8-	7+	7o	6-	6-	4o	3o	49o	1o	1-	1-	0+	1o	1+	3-	2-	9+
9	0+	0+	1-	1o	1+	1+	1o	1o	7o	1+	1-	4-	4+	3+	3-	3-	3+	22o	0+	1o	1o	1-	2+	4+	4+	3o	17o
10	0o	2-	1+	2o	2-	2+	1+	1o	11+	2-	3+	5+	3+	4o	4-	2+	2-	25+	6o	6-	5+	5o	5+	4o	6o	6+	44-
11	2o	5+	5-	4o	3-	2-	3o	4-	27o	2+	3-	2o	1+	3o	1+	2+	1-	16-	6+	4o	4-	4-	3+	4-	4o		32+
12	2o	3-	2o	3+	2-	1+	3-	2-	17+	0+	2o	1o	1+	2+	3-	3-	3+	16-	1+	2-	2-	1o	1o	1-	0+	0+	8o
13	0+	1+	0o	1o	1o	0o	2+	1o	7+	3-	2+	4-	4+	4o	3-	1o	0+	21o	0+	2-	1o	2o	1+	2-	2+	1o	11+
14	0o	2o	1-	1o	1-	1-	0+	1-	6o	1-	1+	6o	5o	3-	5-	5o	4o	29+	1o	1+	0+	2o	2-	1+	3-	1-	11o
15	1-	0+	1-	1-	1-	1+	1+	2+	8o	4-	5+	4o	2o	3o	2o	2o	1o	23o	1+	1-	3-	3+	3o	2o	2o	2-	17-
16	3+	3o	2o	1o	2o	1o	1o	2-	15o	1o	1o	1o	1o	2o	2-	3o	1o	13+	0+	0+	1+	1-	1+	1o	1o	2-	8-
17	1+	2+	4-	2+	1-	3-	3-	3+	19o	3+	3o	3-	1+	1-	1-	0+	0+	12+	4o	4+	3+	3-	4o	4-	4+	3+	30-
18	1-	1+	2-	2+	3o	3o	4-	3+	19o	2o	1+	1+	1o	1o	2+	3-	1o	13-	2+	2o	2+	3-	2o	2-	2-	0+	15o
19	4o	3+	2-	2-	1o	1-	2o	3-	17o	3-	4-	4+	3+	2+	4o	5o	5o	30+	1-	2-	2-	1o	1o	1-	2-	3-	11o
20	2+	2+	0+	0+	0+	0o	0o	0o	6-	2o	3o	2+	3-	2o	2+	4o	6o	24+	3-	2-	1+	4-	4-	2+	3-	2o	20o
21	0o	0o	0o	0o	1-	1o	1+	2+	5+	6-	5+	6o	5+	6-	5+	4-	1o	38o	2+	4o	3-	3+	4-	2-	1-	0+	19-
22	3+	4-	4-	2o	2+	1-	0+	2+	18+	4o	4+	4o	3+	3o	3-	3-	2+	26+	0+	3o	6-	5+	4o	2+	2+	4+	27+
23	3-	3o	3-	3-	1+	2+	5o		22+	3+	4-	5-	4o	4-	3+	3+	1+	27+	3+	3-	2+	1o	2o	3o	4-	6+	24+
24	4o	4o	4+	4o	5o	4+	4o	4-	33+	2+	1o	2-	3-	2-	2-	4-	4-	18+	8o	8-	5o	6-	7+	8o	3+	5+	50+
25	3+	2o	2-	1o	4-	3o	3o	1+	19o	3o	4-	3-	3+	2+	2+	2o	3-	22o	8-	7+	7+	8-	8+	9-	8-	8-	62+
26	3-	4-	4o	3+	2+	4o	4-	1o	25-	3o	2-	1+	2+	1o	1+	2+	2o	15o	6+	6o	6o	5o	3+	3+	5+	3o	38+
27	2o	3-	2-	1o	1-	0+	1+	1+	11o	0+	1o	1-	1o	0o	1-	0+	0+	4+	5o	5-	2o	3+	4-	5-	3o	5o	31+
28	1o	0o	0+	2-	1o	1-	1o	2+	8o	1+	1-	1o	1o	1-	2-	2-	1o	8o	5o	6o	8+	9-	9-	9-	8+	8o	62-
29	1o	3-	2o	2o	3o	2-	2-	1o	15o										6-	5o	5o	5o	4+	3o	2+	3o	33+
30	1+	2-	1o	2-	2-	1o	2+	2o	13-										2+	2+	1o	2-	1o	1+	2o	2+	14o
31	1+	1o	2o	1o	2+	3-	1+	2+	14o										1o	2o	4-	3+	2+	2-	2o	4+	20+

	April 1946									May 1946									June 1946								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5o	3o	4+	3o	2o	2-	3o	3o	25o	0+	2+	3-	1+	1+	2o	3-	3-	15+	1+	2o	2+	1+	2-	1+	2o	2-	14-
2	4o	4o	3-	4-	4-	3+	3+	4o	29-	4o	2-	2+	2-	1+	2-	1+	2o	16o	3-	1+	2-	1+	1+	1+	2-	1-	12o
3	1o	1-	2-	2-	2+	3o	2o	2-	14o	2o	2+	1+	1+	1-	1o	3o	2o	14-	0+	0+	1-	1o	1-	0+	0+	0+	4o
4	2+	2+	1o	2-	2-	2-	1o	2+	14o	3o	2o	2o	3+	2-	2o	2o	1o	17o	0+	2-	2+	2o	3o	2+	0+	0+	12+
5	2o	1+	1+	2o	3-	3o	3o	2+	18-	1o	2-	1-	0+	1o	1+	3-	4+	13o	0o	0+	1-	1o	1o	1-	4+	4o	12o
6	2+	2+	2-	2+	2o	2-	2+	3-	17+	4-	5o	6o	4o	3-	3+	3-	7-	34o	3o	3-	3-	4-	4-	2-	1+	1+	20o
7	3-	4-	3o	3-	3+	3+	2-	1o	21+	4-	7-	6o	4+	4o	2o	2o	2o	31o	3-	1o	3-	6-	7+	6o	4+	3o	33-
8	1-	1o	3+	3o	3-	1+	3-	2+	17o	3-	5+	6+	4-	5-	3-	4-	3+	32+	5-	4-	3+	4+	5o	5+	4-	4+	34+
9	3o	2o	3o	5o	6-	5o	3o	5-	32+	4+	5-	5-	4+	6o	6-	6-	5-	40o	4+	4+	4+	3-	4-	4-	2+	2+	27o
10	4o	1+	1+	3+	2o	1o	1-	2-	15+	3o	3+	4-	3o	3-	3-	3-	3+	24+	1+	1o	1o	1+	2+	4-	3-	1+	15-
11	1o	1o	2o	2-	1+	1+	1o	1o	10+	4o	5-	7-	5o	5o	5-	2o	2o	34o	2o	3-	3o	4-	3o	2+	2+	2-	21+
12	2+	2+	1-	3-	3o	3o	3-	4+	21o	2+	2o	2o	3-	2+	2-	3-	2-	17+	1o	3o	3-	3+	5o	5-	4o	5-	28+
13	4o	4o	4+	3-	3o	4o	4-		29o	3+	3+	2o	1-	1-	1+	3o	1o	15o	3+	4o	3+	4o	4o	3-	2-	1o	24o
14	3+	2o	2+	5-	6o	4-	3o	4o	29o	3-	2-	1-	0+	1o	1o	1+	1-	9+	2-	2o	4-	2o	2-	2-	3+	1o	17o
15	5o	5o	6+	6-	7-	5o	6-	2-	41o	1o	1o	1o	2o	2-	1o	2-	2o	11+	0+	2-	3-	2o	2+	2o	2+	1o	14+
16	2+	3-	1+	1o	2-	1+	3-	3+	16+	1+	2-	1+	2o	3+	1o	3-	2o	15+	1o	1+	2+	4-	3+	3-	4o	6-	24o
17	3+	2-	1o	1o	2+	1-	1-	1-	11+	3o	4o	2o	2-	3+	4-	3-	1+	22-	6o	6-	4+	2-	2+	1+	2-	3+	26+
18	1+	2-	2o	3-	2+	2o	2o	1-	15-	4-	3o	4-	3o	3o	3+	2-	1+	23-	4-	3-	3o	3o	2o	4o	4o	4+	27-
19	0+	0+	1+	1-	1o	2+	1+	2+	10-	0+	1-	1-	1+	1-	1+	1-	1o	7-	5o	5-	5-	5-	5-	4+	4o	3+	35+
20	2o	1o	0+	1o	2o	2o	1+	1-	10+	0+	1+	1o	1-	1-	2+	3-	5o	14+	4-	3-	3-	2+	3o	3-	3-	2-	21+
21	0o	1-	1o	1-	1+	1+	1o	1o	7o	5-	3+	4+	4-	4o	4+	5o	4o	33+	2+	4-	4o	3-	2-	2+	4-	3+	24-
22	1-	1o	4-	4+	3-	3o	4+	2o	22-	3o	6o	6+	5-	5o	5-	5o	4+	39o	3+	2o	1+	2o	3o	3o	4-	1+	20-
23	4-	4o	5+	6o	6+	8-	8-	9-	49+	5+	4-	3+	4-	4+	5o	6-	5-	36-	1o	1o	3o	2-	1o	1-	1-	0+	9+
24	8+	7+	7-	6+	4+	7-	5-	3+	48-	4-	4-	3o	4-	4o	4+	3-	4o	29o	0+	1-	1o	1o	0+	0+	2+	3-	9-
25	5-	4-	3-	1o	1o	0+	0+	1-	14+	4o	3+	3o	2+	2+	3o	3o	3o	24o	2o	3-	3o	3o	2-	3o	2+	1+	19o
26	2+	2-	2o	2-	1o	2-	3o	4-	17o	3+	3+	2-	2o	3-	2-	1o	2-	17+	2-	2o	2-	2+	4-	4-	2+	3-	20o
27	4+	2-	1-	1-	0+	0+	1o	1o	10o	1+	1o	2-	1-	1+	1o	1-	2+	10o	2-	2-	3+	4o	3-	3o	5-	4+	25+
28	2-	1+	1o	2o	2o	3o	4+	3o	18+	2+	2+	2+	2-	2+	2+	3-	1+	17+	2+	4o	3o	2-	3o	2+	3+	3o	23-
29	1+	1o	4o	3o	2-	2+	2-	2+	17+	2o	2+	3-	2-	2-	3-	2-	2-	16+	3-	4-	4o	3+	5-	7-	6+	5o	36+
30	3-	1+	1-	1o	2o	1o	2-	1-	11o	2o	1-	1-	1+	2o	2-	2o	2+	13-	1+	2o	2-	2-	2+	2o	2o	1-	14-
31										3+	4-	5-	2+	3-	2o	2+	2-	23-									

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	July 1946									August 1946									September 1946								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1-	1-0+	1-	2-2-	1+	0+			7+	2+	2-2o	1+	2+	2o2-	1o			14+	1-0+	1-2-	2o2o	1o1-					9o
2	1+	3-3o2o		3-2-	1+	1+			16o	1+	1+1+	2-	2-1-	2-1+				11o	2o2o	4-1+	1o1o	3-2o					16-
3	2+	3+5-5-		3o2+	1+	1o			23-	1o	2-2o2-		1o1o	1-1-				10-	2o1+	1-1+	2-3-	2o3o					15-
4	1o	1-0o2-		3o1+	1-0+				9-	1-	1-1-1-		1o1o	1+1-				7-	2+	2+4-4+		3+3o	3-4-				25+
5	1-	1-0+0+		2-1o	1-1-				6o	1-	1-1+2o		2-1+	2-1+				11-	3o	1+3o3o		3+3-	2-2+				20+
6	2-	1-1o1o		2o2-	2-2-				11+	1+	1-1o2o		4-1+	1+2-				13o	3-	4-1+1-		1-0o0+	0+				10-
7	2-	5o5-	5o	4-5-	5+	5-			35-	3o	4-3-2+		5o4	+5-2+				28o	0+	1+4o4+		4o3o	4-3o				24-
8	4+	3-2+3o		4o4-	2-2-				23+	2o	1+1o0+		0+2	+3-2o				12o	2+	2-3+3o		2o2-	2+3o				19+
9	5-	3o3-	4-	3-3+	3+	2o			25+	3-	1-1-1+		1+1o	2o1o				11-	2+	2+2o2-		3-3+	4o2+				21-
10	2+	2o2-3o		2-3+	3-3o				20-	0+	0+0+1+		1+2	-3-3o				11o	2+	1o5-	5o	3+	2o1o	4+			24-
11	3+	3+2+2+		3-3o	4-2o				23-	3+	4+4+3o		5o4	o4-4o				32-	3-	2-2o3o		2+3o	3o2+				20o
12	1+	2o2+2o		2o1o	1o1-				12+	4o	2+4-1+		1-2o	2-5-				20+	2-	2-4-3+		3-2o	2+3o				20+
13	0+	0+1-2-		2o2-	1-2-				9o	3-	2+2+2-		1o1	+3-2-				16-	2-	3o2+1o		2+1	+2-2+				16-
14	1-	1+2+2+		5-5o	3o3-				22o	2o	3o5o5o		6o3	o6+6o				36+	3o	1-2o2+		1o1	+2o2+				15-
15	2+	4+2+2-		2o2o	2-1o				17+	5-	4o2+3+		3-4	o4o4o				29o	1+	1+2+1+		1+3	-1+1+				13o
16	1o	0+1+5-		3-4o	3o3o				20o	3+	3-3o3o		3-3	-5o5-				27o	1+	1o1o2o		4-5	+7o5-				26o
17	3+	3o3+3-		3-2+	2-3-				22-	3-	4-4+4+		4+3	+2+4-				29-	6-	5-3-3-		2-3o	4o5+				30-
18	2o	2-2-4-		5o6	+5+5o				31-	1+	1-2-1+		1o1	o2-2+				11o	7+	7+8-7o		7o7o	7+5o				56-
19	5-	5-4o4-		5+2	o2+3-				29+	3+	2-1+1+		2-1	+2o2-				14+	6-	7-4-5-		7-6o	3-4-				40-
20	3-	2-0+0o		1-1o	1+2o				10-	2-	2+1+1+		1+1o	2-1-				11+	4-	2+4o3-		1+3-	3o2o				22-
21	2o	3-2-1+		2+3	+2+3+				19o	1o	1o1o1+		0+0	+0+2-				7o	4-	2-1o3o		3-5	+4+4+				26o
22	2o	3+2+2-		3-3-	3-3+				21-	1o	1+0o0+		0+1	-1-1-				5o	4-	8+8-9-		9o8	+7o6o				59-
23	3+	2o2+5o		4o3	+3-3o				26-	1-	0+0+1o		1-0	+1+1o				6-	7+	8-8o6+		7o8	o6o7-				57o
24	1-	1o1o1+		2o1	o1o1o				9o	2o	2-3-1o		1+1	+2-2-				13+	5+	4+4-4-		3o3	o2-0+				25o
25	2o	3-3-3+		2-5-	4o4o				25o	3-	2+2o1+		1o1	+1o0+				12o	1+	1o2-2-		1o1o	2-1o				10+
26	4-	4o3o4-		3+3	+9-8o				38-	1o	0+1o1o		0+1	o1+0+				6+	1o	2-2o3-		2o2o	1+2o				15-
27	9-	9-9o7-		5+4	-4-2+				48o	0+	2+2o2+		2o1	-1+2+				13+	3o	3-5-4o		3o6o	6o5-				34o
28	2o	2+2o2+		4+4	-4+4+				25+	2-	2o1-0+		1o1	+2o0+				9+	4+	6-6+5+		6o7	+7o7-				49-
29	5o	6o6-5-		4+7	o5+4o				42o	1-	1-1-1-		0o1o	1-1o				5+	7-	4+3-2+		4o5	-4+4o				33o
30	5o	5-4o4o		5o5	-3-2o				32o	0o	0o0o0o		0+1	-3-4+				8+	5-	5+5-4+		4-4o	5o3o				35-
31	3+	1+1+2o		1+2	+2-2o				15+	5+	8-6o4-		5-4	-3-2-				35+									

	October 1946									November 1946									December 1946								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4-	3o5-	4o	3+4	-4-2-				28-	4-	4-4o5-		4o4	+3+5-				32+	1o	1-0+0o		1-3o	2+3-				11-
2	2-	3+4-2-		3+2	+2-2-				19+	1+	2-4o2+		2+1	o2o2+				17o	3o	1o2-1+		3-2	+2-3o				17-
3	3o	4o4-1+		3-3	+1-1-				19+	2+	1+3-0+		1o1	-0+1+				10o	4+	3o2+3-		1+1	+1o0+				16+
4	3o	3+3-3-		2o3	o2+1+				20+	2-	0+1o3-		2o1	o1o2o				12-	1-	2+2o1-		1o2	-2+1+				12o
5	1o	3+2+2+		4o4	+4o1-				22o	0+	2o3-4+		4-3	o3o2o				21o	1+	2+2+3o		3o3	+3-3-				21-
6	3-	4-4-3+		2-2o	4o4-				25-	3-	3o3+5-		5-4	+2+4-				29-	2+	3o2-1o		2-1	+2o3-				16-
7	3-	3-3o4-		3+4	-2o1o				22o	4-	4-2-1o		1+1	+1o0+				14o	3+	4-3o1o		2-3o	2+2o				20o
8	1+	2o1-0+		0+1	-2-2-				9-	1o	0+1-2-		2+1	-1+3-				11-	3o	4o1o1+	3-	1o1-	1o1-				14+
9	3+	5-5+5-		3+2	+3+5o				32o	3o	2o2-3o		3-2	o2-3+				19+	2-	1+1+1o		1-1	+1-3-1o				11o
10	3+	1+2+3o		3-1	o4-4-				21o	3+	2o1+1+		2o2	+4o3+				20-	2o	1+1+3o		3-4	o2+3+				20o
11	3-	3o1+1+		2+2	+3-2o				18-	4+	5-3o3+		2o2	-3-3o				25-	2o	1o1o2+		3o3	o4o4o				20+
12	3+	4-4o1-		1-1o	1o3-				17o	4o	5+4-2+		2o3	o3o1+				25-	3+	2o1o4o		4-4	-2+3-				23-
13	3+	1o2-1o		0+0	+1-2-				10o	1o	1+2-1+		1+2	-2+3+				14o	3-	2-3o2-		3-2	+2-1o				17-
14	2-	1o3-2-		1+1	+2-1+				13-	1-	1o1o1o		2o1	+1+2-				10o	0+	1-1-0+		0+1	o0+0o				4-
15	0o	1-2o3-		2-2-	1+2+				12+	0+	0+4+3+		3+3	+4-4-				22+	0+	0o0+1+		1+1	-1-0+				5o
16	1+	1o3-3o		2-1o	2o2+				15o	4o	4o4-2+		3-2	-3-4o				25o	1o	0+1+1-		1o1	-2-3-				9+
17	1-	1o2o1-		0+0	+1o1-				7-	2-	3o1-1-		1o2	-1+3-				13-	3-	2+3o2+		2+1	o1+2o				17o
18	1+	1o0o0+		0+0	+1-2-				6-	3-	2-1+2-		1+1	o0+2+				12+	3-	2o2+1o		2-1	o2-1-				13o
19	1-	1+1-1+		1-2	-3-4o				13o	4-	3o4-3o		2+3	-3o5-				26o	3-	3o4+4o		5o5	+4-1o				29o
20	4o	5o4o3+		3o3	o4o3o				29+	3o	4-2o3-		4-3	+3+3-				24+	2-	3o1+1o		1-1	-0+1-				9+
21	2+	1+1o1o		1-2	-3-2+				13o	4-	3o4-5o		5-3	o3o4-				30-	1-	2-3o5-		3o3	-1-2o				18+
22	1+	1o2+1+		2o1	-1o1o				11-	4-	4o4o3-		2o4	o2-2o				24o	3o	4-4-3-		3-3	-1+1-				20+
23	2+	3-3-2o		2+2	o1-1+				16o	3+	3-3-2+		2+1	o1-1-				16-	0o	3-3o3-		3+2	-1+1+				16o
24	1+	0+1o2o		3-2	-1+2-				12o	1o	4+4o4o		6o3	+2o1+				26o	2+	3-2-1-		1+1	o0o1-				10+
25	3o	2-3o3-		4+4	-3o3o				26+	2-	3+3-3+		4-5	-4o3o				26+	2-	2-1+1-		1+0	+4-5-				15+
26	4-	4+5-4-		3o3	o4-6+				32+	4-	4-2-1-		2-3	-1o0+				15+	2o	2o3-4-		3+3	+2o2-				21-
27	7-	6+5+5-		5o5	-4o4+				41o	1+	0+1-0+		0o1	-0+0+				4o	2+	4o3+2+		2o1	o3+3o				21+
28	3+	3-3o3-		2o3	-2-2-				20-	1-	1o2+1o		1o0	+1o1o				8+	4-	2+2+2-		3-1	+1o1+				16+
29	3+	3o2+3-		2o1	+2+3-				20-	1-	0+0+0+		0+0	o0+1o				3+	2-	2-3-1+		2+2	+1-1o				14-
30	1o	1+3-1+		1-2	-0+0+				9+	1o	0+0+1-		2o0	+0+2-				7-	0+	1+0+1-		0+0	+0+0o				4-
31	0o	0+3o3+		4+4	+4-3o				22o										2o	1+1+1o		2-1	+1+2-				12-

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	January 1947									February 1947									March 1947								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1o	1+	1o	3o	3-	2+	0+	1-	12+	3-	3o	3+	1+	2o	1-	2-	1+	16o	2+	1+	2-	1+	2-	1-	1+	2o	12+
2	0+	1-	2+	2-	2o	4+	3o	2o	16+	0o	0+	0+	1o	1o	1+	2-	1o	7-	2o	4o	7-	7-	6+	5+	7o	7-	45-
3	0+	2o	3-	2o	3-	4-	4-	4+	21+	1o	0+	3-	3o	1o	3-	3-	1o	14+	7o	5o	7-	7o	6+	6-	8+	8o	54o
4	3o	2+	1o	5-	4o	4+	4o	3o	26+	3+	4o	3o	3-	3+	2-	1+	2o	21+	7+	7o	7+	7-	4o	3+	5o	3o	44-
5	3+	4-	4-	4-	4-	4+	5-	3o	30o	2-	0o	1-	2o	2o	1o	1+	1o	10-	3+	2+	3+	2+	2+	2-	1+	1+	18o
6	4+	4+	4-	3+	4o	3o	3o	3-	28+	2-	2+	4o	3-	2+	2o	2o	2+	19+	2+	2-	2-	2+	2-	1+	1+	1+	14-
7	3-	3o	3-	2+	3-	2o	1+	3-	19+	0+	0o	3-	3-	3+	2+	3-	1+	15+	1-	3-	4-	4+	5-	4-	3+	2o	25o
8	2+	3-	3-	2+	1-	1+	1o	1-	14-	2+	2-	4o	4+	4+	4o	5o	3o	30o	2o	3+	5+	6-	8-	7+	7-	7o	45o
9	1-	0+	1o	1-	0+	1-	0o	1-	4+	4-	5-	3+	3o	2o	3-	5-	4+	28+	7-	5+	6-	5o	4+	3o	4-	3o	37-
10	1o	0o	0+	0o	0o	1-	0+	1-	3o	3+	2-	2+	4o	4-	3+	1+	1+	21o	2o	2+	1+	1+	2+	1+	2-	1-	13o
11	0+	0+	0o	1-	0+	0+	0+	0+	3-	1o	1o	1o	1o	1-	1+	1+	2o	3o	11+	0+	0+	3-	3-	2o	1-	1-	1o	10+
12	0o	0+	0+	0+	1-	1-	1-	1-	4-	1o	1-	1+	1+	2o	2o	1-	2-	11-	2+	4-	3o	4-	5-	4o	2-	2o	25o
13	0+	0+	0+	0+	1-	1-	1-	1o	4+	1o	1+	2-	2-	2+	1o	1o	0+	10+	2o	2+	4-	3o	4+	3o	3+	2+	24o
14	1o	0+	0+	1o	1o	1o	1o	0+	6o	0o	0o	2-	1+	1o	1+	2-	1o	8o	3-	4-	4+	3+	4+	5+	3+	2+	29+
15	0+	1o	1o	2+	1o	1o	2o	2-	10+	1-	1-	1+	2-	2-	2-	1-	0+	9-	3o	4-	6+	7+	7-	7+	4o	3+	42-
16	2+	6+	4o	3o	4-	5-	5o	4+	33+	1-	4-	4+	6o	6-	0o	4+	5-	35+	2o	2+	3-	2-	3-	4+	5-	5-	25o
17	4-	3-	2+	4o	3-	1+	2+	3o	22o	6+	6o	5+	4-	3o	4o	3-	2-	33-	5+	5-	4+	3o	3+	2+	3-	3-	28+
18	3-	1o	2+	2+	3o	2+	2o	1-	18o	3o	3-	3o	3o	3-	2+	2+	3-	22-	3-	3-	1-	3-	3o	3+	4-	3+	22o
19	3-	2o	2+	3o	1+	1o	1+	3o	17-	2+	2o	3o	3-	4+	5o	5-	4+	28+	3o	3-	3-	1-	2-	3-	3o	2o	18+
20	2o	2-	1-	1-	1-	1+	2+	2-	11o	5-	4-	2-	1+	1+	1o	1o	0+	15o	3+	4+	3o	2-	2-	2-	3o	2o	21-
21	3o	2+	1+	1o	1o	1+	2-	0+	12o	0o	0+	1-	1+	2o	0+	0+	1o	6o	2-	2-	2-	2+	2+	3-	1o	3o	16+
22	1+	0+	2o	1+	1+	2+	2+	3-	14-	0o	0+	1-	1-	1-	0+	1o	2-	5+	2o	5o	5-	4-	3o	3o	3o	1+	26-
23	2-	2o	0+	1o	2-	2-	2o	2-	12o	0+	0+	0+	1o	0+	1-	0+	0+	4-	3-	4-	4-	5-	5-	6+	3+	3+	32+
24	0+	2-	6-	4o	3o	3o	3+	4-	25-	2o	2-	1o	2+	3o	2o	2o	1+	15+	5-	6o	5+	3-	2+	3-	3-	2+	29-
25	4+	6+	6+	6-	5+	6-	5-	5-	43o	1+	2o	2o	4-	3+	2-	2-	3+	19o	2+	3o	3+	3o	2-	2-	3-	4-	21+
26	4o	5+	5-	4-	4o	4o	4-	2o	31+	4+	4o	3-	2+	2o	2-	1o	2+	20+	4+	5-	4o	4o	4-	4-	3+	3+	31o
27	3o	3+	2+	3-	4-	3+	4o	2+	25-	2o	3+	1o	1+	1o	0+	1-	1o	11o	3o	4o	5-	5-	2+	3+	4o	5-	31-
28	4o	2+	2+	1o	2o	1+	3-	2+	18o	1o	1o	2o	1+	3-	2+	2-	3-	14-	6+	7-	6+	5-	6o	6o	5o	5+	46+
29	1o	4-	2+	3o	3+	3-	1+	0+	18-										4o	2+	2o	2o	3o	3-	5-	4-	24+
30	2-	1o	1+	2o	2-	1-	0+	4-	12+										6-	5o	3+	4o	5-	4+	4+	3o	34+
31	2+	2+	2-	1+	0+	0+	1-	2+	11+										3+	4+	4+	4o	4+	4-	1+	1-	26o

	April 1947									May 1947									June 1947								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	1+	2-	3o	3o	3-	2o	1+	2-	17-	3o	4o	4-	2-	3+	3-	2+	2o	23-	6-	6-	4+	3+	3-	1+	2o	1o	26o
2	1+	2o	2+	2+	3+	3o	1+	1-	16+	1o	1+	0+	0o	1o	0+	0+	1+	6-	0+	1+	1o	1+	1o	2o	1o	2o	10o
3	3-	4-	2o	1+	1+	3+	4-	3o	21o	1o	2o	2-	1+	2o	1o	1+	1-	11o	3-	4-	2+	2-	2-	2-	2-	1-	16o
4	3-	3-	4o	4+	4o	4o	3+	4o	29o	1o	1o	2-	2+	1-	1-	2o	1-	10o	1+	1+	2-	2o	1+	3-	2-	1o	13o
5	4-	2-	1+	3-	2o	2+	3-	2-	18o	2+	3o	2+	2-	1o	3-	3-	1o	17-	1+	2+	6o	5-	4-	4o	4+	5+	32-
6	4o	4+	4-	4+	3o	3o	3-	2-	27-	0+	1-	1o	2o	2+	3o	3-	2+	14+	6-	1+	2-	1-	1o	1-	2-	2o	15-
7	1+	2+	1+	2+	3o	4-	1o	2+	17+	3o	1o	1o	1+	1+	1-	1-	1-	10-	2o	3o	2+	3o	3o	3o	4-	5o	25o
8	1-	2-	1+	3+	3+	2+	1+	6-	20-	0+	0+	1-	1o	1-	1-	0+	1-	5-	4+	5o	3o	2+	3o	4-	3+	3o	28-
9	5o	4o	6-	5+	4o	3+	2+	3-	32+	1-	1o	0+	0+	1-	1-	0+	4+	4+	3o	4o	3+	3o	3-	3+	3-	3+	25+
10	3o	2+	4-	2+	2+	2-	1-	3-	19-	0+	1-	1+	2-	1+	1o	1+	1+	9o	3-	3+	3-	3-	2+	2-	2+	2o	20-
11	3+	3o	3-	3o	3+	3+	2o	3o	24-	1+	1-	1o	2o	2o	2o	3o	2+	14+	2o	2-	3-	2o	2+	2+	2o	2-	17-
12	1+	3-	2+	3o	2+	3-	3-	4o	21o	4+	3-	2-	3-	2+	2-	2o	3o	20+	1+	2-	2+	1o	2o	1+	2+	3-	15-
13	3+	3-	2o	2+	3-	2+	2o	2-	19o	3o	2+	3-	2o	2+	4+	5-	3-	25-	3-	2o	2+	2o	2+	5-	4+	6-	26o
14	2+	3o	3o	3-	2+	2-	3+	3-	21o	4+	4+	4-	4+	4o	3o	4-	2o	29+	6+	7o	5+	5+	4+	4+	6o	3+	42o
15	4o	4o	3-	3o	3+	3o	2+	3-	25o	4-	4o	3+	4o	4-	4+	5-	5o	33-	3+	3+	3-	4-	3-	3o	2o	2o	23-
16	3+	2-	3o	2+	3-	3+	3o	3o	22+	5o	5o	5o	5-	5-	4-	3o	4+	35+	2o	1o	1o	1o	1+	2-	2-	2+	13-
17	4-	4-	2-	2-	6+	7-	9-	8+	41-	3-	3o	3o	3-	3+	3-	3+	3o	24-	2o	5o	5-	4-	5-	6o	6-	3+	35o
18	5+	4+	3o	5+	6-	6-	4o	6o	39+	3o	2+	3-	2o	2+	4+	4+	3+	24+	2o	3+	3-	4-	2-	2-	3+	3o	21+
19	4+	3+	4-	5-	4-	4o	1o	4+	29+	2+	3o	3+	2+	2o	3-	1+	2-	19-	3-	4o	2+	3-	2+	3+	3-	3-	23-
20	3+	5o	5o	4+	4-	4-	5-	2o	32-	1o	2-	2o	2+	2o	1+	2-	2+	14+	2o	1+	3-	2o	2o	2+	2+	2-	16+
21	1+	3+	4-	1+	0+	0+	1o	1o	12+	2+	1+	3o	2-	2o	1o	2o	2+	16-	2-	2-	2o	2+	1+	2o	3+	16+
22	1-	1-	1o	1-	0+	1o	0o	0+	5-	2-	1o	0+	1+	1+	1+	1+	5-	13o	3-	3+	2o	2+	2+	4-	3+	3+	23o
23	1o	2o	0+	1-	1o	2-	1o	1-	8+	4-	6-	5-	3o	3o	3o	2o	2-	27o	4-	3-	3o	3-	4o	4o	2o	2-	24-
24	0+	1-	1-	1-	1-	1-	0o	0+	4o	4-	3+	8-	7-	4+	3+	3o	4-	36-	2o	3o	2o	2o	2+	3+	2+	3-	20o
25	1-	0+	0+	2+	2-	5-	3o	2-	15-	3+	2+	2+	3o	3+	2o	2+	3-	21+	3o	5-	5-	4o	4o	3-	2+	3o	28+
26	2+	1+	2o	2o	2+	4o	4+	4-	22o	3-	3o	4-	4-	4o	3+	4+	2-	28+	2o	3+	4o	4+	3o	4o	3o	3+	27o
27	3-	2o	3o	4-	4-	3o	3o	1+	22+	3o	4-	3+	2+	3-	4-	2+	2+	23+	3o	1o	2-	1o	2-	1+	2-	1o	12+
28	2o	4-	3o	1+	3+	2+	3-	2o	20+	2o	2-	1+	2+	5o	5-	4-	3+	24o	1+	3o	2o	3o	2+	2+	2+	2o	18+
29	1o	2o	3-	3+	4o	2o	1+	2-	18o	2+	2+	3o	3+	5-	5o	4o	2o	27-	1+	2+	2-	1+	1-	1o	1+	2-	11+
30	3-	3o	3-	3-	3-	3o	2o		21+	2o	1+	1o	1o	0+	2-	1o	2-	10o	3o	2o	3+	3-	2+	2o	3-	2-	20-
31										1o	2-	2+	3-	2+	4-	4+	4o	22o									

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	July 1947									August 1947									September 1947								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3-	2+	2o	1+	2o	4-	3-	3o	20-	4-	3-	4o	3+	2+	4o	4-	2o	26-	3o	3-	2o	3-	1+	1+	3+	2o	18+
2	3o	4-	3o	2+	3+	4-	3-	3o	25-	1+	2+	4-	3o	3-	3o	3o	3+	22+	2o	1+	2o	2-	2o	1+	2o	4+	17-
3	1o	2-	3o	2o	1+	2o	1+	2o	14+	2o	1o	2-	2+	2+	3-	3-		18-	4o	4o	7+	7+	6o	6o	6o	6-	46+
4	1-	1+	1o	1o	1-	1-	0+	1-	6+	2+	3-	2+	3+	2c	2-	2-	2+	18+	5-	5o	4+	4o	5o	5-	4o	3+	35o
5	1o	1-	1-	1-	0+	1o	1+	2o	8-	2+	2+	1o	2-	2-	1+	2o	1-	13o	3+	2+	3o	3o	3+	3-	4o	4o	26-
6	2+	1+	2o	2-	2+	3-	2+	2o	17-	2o	2o	2o	3+	3o	3-	3o	3o	21o	4o	2+	3-	3-	3+	5-	5-	3+	28-
7	2+	2+	1+	1o	2o	2+	3-	3-	17-	2+	2+	2-	1+	1+	1+	3-	2-	15-	5-	4-	4-	3o	5o	6-	7-	5-	37o
8	2+	2o	2+	2o	3-	3+	3+	3o	21o	3+	2o	1+	2-	2+	2o	1-	1-	14o	5o	3+	4+	3o	2+	2+	1+	1o	23-
9	3-	2o	2o	2-	1+	2-	3o	3+	18-	1o	2o	2o	1+	1-	1o	1o	3+	12+	3o	1-	1o	1o	1+	1+	2-	1+	11+
10	4-	3-	2+	2o	2o	3o	2+	3o	21o	2-	2o	2+	2+	2o	2-	1+	2o	15+	1o	1+	1-	0+	0+	1o	1o	1o	7-
11	3-	2o	2o	2+	3o	2+	2+	4-	20+	2-	2+	2+	3-	3+	3-	2-	3o	20-	0+	1-	1+	3o	3+	5o	4o	3+	21o
12	3-	3+	2-	2-	2o	2-	3-	2o	18-	5-	5o	4+	5-	3o	3-	3o	4o	31+	3-	3o	4o	4-	2o	2o	3+	4o	25-
13	3o	2+	2o	2o	2+	3o	3-	2+	20-	3+	2+	3+	3-	3+	5+	4+	5o	30-	5o	5+	5+	5o	6-	3+	4o	6-	39+
14	2-	1o	1o	0+	1o	2+	3-	2o	12o	5-	3-	2o	2-	2o	2+	2+	2+	20o	4+	5+	6-	6o	5+	6+	5-	5o	43-
15	3-	3o	2-	1o	1o	2+	2-	1+	15-	1o	1o	2o	6-	6-	6o	5+	7+	34o	5+	5-	6-	5o	5+	6+	6-	6-	44-
16	3+	2-	1o	0+	1-	1-	1-	1o	9+	7+	4-	3+	5o	5+	5+	5o	4+	39+	3+	4-	4o	1+	2-	3+	4o	5o	26+
17	1o	1-	1-	2o	1+	7o	8o	8-	28+	5-	5o	5+	5+	5-	6o	6o	6-	43-	6-	6o	5+	5-	5-	5+	5o	5+	42o
18	6o	5+	5+	6o	7-	7-	6+	5o	47+	6+	6-	5+	5+	5+	5-	5+	5+	43+	5o	5o	4+	4+	5-	5o	5-	5+	38+
19	5+	4+	3+	5-	4-	4-	4o	2+	31+	4o	4-	4+	5+	6-	6+	5-	6o	40o	4-	4+	4+	3+	3+	4+	4-	4+	31+
20	3+	5-	4o	4+	5-	5+	3+	3o	33-	6o	4o	5o	4o	5-	6-	4-	5-	38-	4+	4-	4-	3o	3o	4+	2-	4-	27+
21	2+	3+	3o	3-	2-	3o	3o	2-	21-	5+	5o	4+	5o	4o	5-	5o	4+	38-	3o	4o	4+	3+	4-	4-	3+	3+	29-
22	2o	2o	3-	3+	3o	3+	4-	4-	24-	3-	4o	5o	8+	6+	6o	5-	4+	41+	2-	4o	5o	5-	4+	5o	4+	4+	33+
23	3+	3+	4+	4o	4-	3-	4o	4-	29o	7o	5+	4+	4+	6o	5o	5-	3+	40o	5-	6+	6-	5+	5+	2-	1+	3-	33o
24	2+	4-	2+	2+	3o	3o	2+	2o	21o	3+	4-	4+	4-	4-	3-	4-	3+	28+	4-	5-	5+	4+	7o	7+	7+	7o	47-
25	3+	3o	3-	3o	4o	4o	3o	3-	26o	4o	4o	4+	5+	4o	4o	3-	3-	31o	8-	7+	7+	6o	6o	6-	5o	5-	50-
26	3+	4+	4-	3o	4-	3+	3o	3o	27+	2o	3-	4-	4-	3o	2o	2o	2+	21+	4o	4o	2o	2-	3-	2+	3-	3+	23-
27	2+	3+	5-	4-	4+	3o	3-	2+	26+	3+	3+	4+	3+	2-	1o	1-	1-	18+	4-	3+	2+	2o	3o	2o	2o	3-	21o
28	2+	1+	3-	2o	2o	1+	2o	2o	16-	1+	1+	1+	2-	2-	3-	3-	4+	17o	3o	2o	1+	3o	3-	3-	2o	3-	19+
29	2+	3-	2+	3o	3o	3-	1+	0+	18-	4-	3+	3-	3o	3-	2+	2+	2+	23+	2+	3-	2o	3-	2-	2+	2o	3o	19-
30	1-	1+	2o	1-	1o	1+	2o	1o	10-	2+	3o	3-	1+	2-	1o	1+	1+	15-	3o	2+	1+	2-	1+	1-	4+	3o	18-
31	2-	1o	1o	2-	2+	2o	3-	3o	15+	1o	2o	2o	3-	3o	4o	4-	3+	22-									

	October 1947									November 1947									December 1947								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4+	6-	5+	4+	4-	2+	5o	5-	35+	2+	2-	2+	3+	3-	1o	2o	3o	18+	3+	1o	3o	5-	2-	1o	1-	0+	16-
2	4o	5+	5-	5-	6-	7-	6o	6-	43-	3o	4-	2o	1+	1-	0+	1o	1-	13-	1o	0o	1o	2+	3-	3+	2+	1+	14o
3	7-	7-	5-	4o	4+	1+	2+	4o	34o	0+	1o	1-	2+	1+	2-	2-	2+	11+	1-	1o	2o	1+	0+	1-	0o	1o	7o
4	2+	2+	3-	3-	2+	2+	2-	1o	17+	3-	1o	1-	3-	3-	4-	2-	2-	17-	1o	0+	3-	2-	2+	3+	2+	2+	16o
5	1o	1+	1+	2-	2o	2-	2-	3-	13+	1+	1o	0+	1o	1o	0+	1-	1+	7o	3+	4+	3-	2+	3-	2+	2o	3o	23-
6	2o	2o	2o	3o	3o	2-	2+	2+	18+	0+	0+	0o	0+	0+	1-	0+	1-	3o	5-	4+	3+	4-	4+	4-	5-	4+	33o
7	1+	1+	2+	3+	1+	4-	5-	4+	22+	0o	0o	1-	1-	1+	1+	1+	3-	8o	3-	2o	3+	2o	1+	4o	3o	1o	19+
8	2-	3+	3+	3-	3o	3o	2+	2+	22-	2o	3-	4-	3+	3+	3+	3+	3o	25-	2-	3-	4o	2+	2o	1o	1o	1o	16-
9	4+	4+	4+	5o	6-	6o	5+	5+	40+	3+	3+	3+	5o	6+	5+	7-	7o	40+	3-	4-	3o	4o	5-	3+	4+	3+	29o
10	6-	5o	6-	6-	5+	5+	6-	5+	44-	7-	4+	4o	4o	4+	4o	5o	6o	38+	3+	3-	3+	4-	2o	2o	2-	3-	21+
11	5o	5+	5-	4o	4-	6-	5+	5-	38+	6o	3+	5-	4+	7-	6-	5o	4o	40-	3-	3+	4-	3+	3o	3o	3+	3-	25o
12	6o	5-	6-	5-	5o	4+	5+	3o	39-	4+	5+	4-	3o	3o	3+	2+	3-	28-	3+	4o	3-	3o	4+	4+	3o	3-	27+
13	4+	4+	4+	3o	2-	5-	4+	5-	31+	4-	3o	2+	4o	2+	2+	3-	2o	22+	4o	4-	3+	4-	3+	3+	3o	2+	27-
14	4+	5-	6o	5+	4o	4+	5o	5o	39-	2-	2o	2o	3o	3+	3o	3-	2+	20o	2+	3-	3+	3+	3+	3o	2+	2-	22o
15	3+	5+	5o	4+	6o	4+	4o	6o	38+	4-	3+	3+	3-	2+	2+	3+	3-	23-	4o	2-	2o	2o	3o	3o	2+	2+	20+
16	4o	4-	4o	4o	4-	5o	2o	1+	28-	3+	4-	3+	4-	3-	2-	1o	3+	23-	1o	3o	2-	3-	1-	0+	0o	0+	10-
17	4-	3-	3-	3o	4o	3+	4-	1+	24+	2+	2+	2o	2+	2+	2-	0+	0+	14-	1o	1+	1o	2-	1o	1o	1-	1+	9o
18	2o	3-	4-	3+	2+	4o	3o	4-	25-	2+	2o	3o	1+	2+	3-	2o	2o	18-	2+	1o	2o	2-	1o	0+	3o	3-	14o
19	3-	3o	3+	4-	4-	4+	6+	3+	30+	2o	4o	4o	4-	3o	3o	3o	3o	26-	3o	3o	2o	2+	1+	1+	2-	1+	16o
20	3+	4-	4-	3-	3o	3+	4o	5-	28+	2o	1o	2-	3o	2-	2o	2o	3-	16o	1-	2-	1+	1-	1+	2-	1+	1o	10-
21	4-	3o	3-	2+	2o	3+	3o	3-	23-	1o	2-	1+	2+	2o	3+	3o	2o	17-	1-	0+	0+	1o	0o	0+	0o	0o	3-
22	3o	4-	3o	2+	3-	1+	1-	2+	19-	0+	1+	1-	2+	3-	2o	2-	1-	12-	0+	0+	1-	1o	2o	2+	3-	3o	12+
23	2+	4o	4-	3+	3+	3+	2+		25o	1o	2o	4-	2o	2o	2o	2o		16+	3-	2-	3o	3+	4-	3o	2-	2o	21o
24	4+	3+	2+	2-	2o	2o	1+	2+	20o	1+	0+	0+	1+	0o	3-	5+	4-	15o	1+	1+	1o	1-	1+	2-	3+	11+	
25	3+	1-	1+	2-	2o	1+	2-	1o	13o	3o	2o	3o	3+	1+	1o	1o	1o	16-	1+	1+	0+	1+	1-	1+	2-	2+	10+
26	1-	1+	2-	1-	0+	1-	1o	1-	7o	2-	0+	1+	2o	1+	1o	1+	2+	11+	3-	3-	3-	3o	2+	2+	2-	2+	20-
27	0+	0o	1-	2-	1o	1-	0+	1-	5+	2o	2-	2+	2o	1o	1+	3-	2o	15o	3o	4-	3o	3o	1+	2-	2+	4-	22-
28	1+	0+	0+	0+	1o	0+	1o	1-	5+	2-	2o	1o	1+	2-	2-	1+	2-	12+	3+	2o	1+	2-	2+	2o	1o	4-	17+
29	0+	0+	0+	1-	1+	2-	1+	1-	7-	2+	4-	3-	2-	3-	3-	3o	3-	21+	2o	3-	1+	2o	3+	4-	2+	3o	20+
30	1o	1-	1-	1-	1-	3-	1+	2-	9+	1o	1+	2-	2o	1-	2-	3-	3-	14-	1+	1o	1-	1-	2o	1o	1o	1o	9-
31	1-	3-	3-	2o	3-	2+	2o	3-	18-										1-	1o	0+	0+	0+	1+	0+		5-

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	January 1948									February 1948									March 1948								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	0+	3o2+	1+	3-	3o3+	4-			20-	3o	0+	0+	0+	1-	0+	0o	0+	5+	5-	5+	6-	5-	4+	3+	4o	5o	37o
2	3o	3+	3+	2-	2o	4o	5-	3o	25o	0+	3-	3-	3-	3o	3+	3-	3-	20o	4o	4o	4o	5+	4o	3-	4o	5-	33-
3	3-	4+	5-	4o	5o	6o	6o	3-	35+	4-	3o	6-	5o	6-	3-	3o	4-	32+	4-	5+	4+	4o	4-	3o	1+	3-	28o
4	1+	1-	0+	0+	0+	1o	2o	0+	6+	3-	2o	4-	3-	3o	3+	3o	2+	23-	3o	3-	3-	2+	2+	2-	1-	1+	17-
5	0+	1+	2+	2+	3-	2+	3-	2o	16o	3+	4-	2+	3-	3o	4-	3+	3o	25o	2o	1+	2o	2+	3-	3-	3o	2o	18o
6	1o	3-	4-	3-	3-	3o	3-	2+	21-	1-	0+	2+	3-	3o	2+	1o	4-	16o	1o	1+	2+	3o	3+	4o	3o	3-	21-
7	3-	2o	4o	3o	4-	3o	3+	4-	25+	2+	2o	2-	2o	3o	3o	2o	3-	19-	2+	3-	2o	2+	2+	2+	1-	0o	15-
8	3+	3+	4-	4o	4+	3+	4o	4-	30-	3o	2-	1+	2+	2o	1+	1-	3+	16-	0o	0+	1o	1-	3o	2+	2+	2o	12-
9	4+	4+	3-	3o	3o	2-	2o	3o	24o	3-	1o	1o	0+	1-	1-	2-	0o	8o	1o	1-	3-	3o	1+	3-	3-	2-	16-
10	1o	3o	2+	2o	3o	3o	2+	2+	19o	3-	1+	4-	2+	2+	3+	0+	0+	16+	1o	2-	2-	1-	2-	2+	4-	3-	15+
11	3o	4-	3-	2-	2o	2-	2+	1-	18-	3-	1+	1+	2+	2o	2+	2-	2o	16-	1o	1o	0+	0+	1+	0+	0+	5-	9+
12	2o	1o	1+	3+	2o	1+	3o	3o	17o	1-	0+	2o	2+	3+	2-	1o	2o	13+	5-	4o	5-	3o	4o	3+	2o	2+	28o
13	1-	1-	1-	2o	2o	2o	2-	2-	11+	4o	1o	2+	2+	3o	2o	1o	3-	18+	4+	4+	4-	5+	5-	5-	5-	5+	37o
14	0+	0o	0+	2-	1+	2o	0+	0o	6o	2-	1-	2o	3-	3o	3-	3-	3-	18o	5o	5+	5+	4o	4-	4+	5o	4+	37o
15	0+	1+	1-	2-	1o	1+	1o	3-	10o	3-	4-	4-	4-	4o	3+	5o	5o	31o	6-	8+	8o	7+	6+	7o	8-	5o	55+
16	1o	3o	2o	2o	2o	1o	1o	1-	12+	5+	4+	4o	4-	3+	4-	4-	3o	31o	4o	3-	2o	1o	1-	1-	2o	2+	15+
17	0+	1-	2o	3+	6-	5-	4+	4o	25o	4-	4+	3+	3+	3+	3-	2o	3-	25+	2+	3-	3+	4o	2-	3o	1o	1+	19+
18	4o	3-	2+	4-	2o	1+	2+	2-	20o	3+	3o	4o	4o	4-	4-	3+	3o	28o	2+	3-	2o	1o	2-	2-	1o	1o	13+
19	3o	3-	3o	3o	3o	2-	3-	1+	20+	2+	3+	3o	3o	3-	2o	2+	4-	22+	3-	2+	4-	3-	0+	1+	2-	1o	16-
20	1+	3-	2+	3-	4-	3o	3o	4-	22+	2o	2-	1+	2o	1o	1+	1o	1-	11o	1o	1-	2+	2-	3+	3+	3-	5-	18-
21	3o	2+	2o	2o	3o	4o	3+	4+	24o	0o	0o	1o	1+	0+	0+	0+	1-	4o	2+	2+	4o	3+	2o	2-	2+	3-	21-
22	4-	4-	2-	2+	3o	1+	3-	2+	21-	2+	2o	2-	1+	1o	0+	0+	0+	9+	2-	2-	2o	3o	3o	2o	2+	2+	18o
23	2o	3o	1o	2o	1o	2-	2+	2o	15o	2+	3+	3+	5o	5o	5-	3o	2+	29o	2o	1+	0+	1o	1-	0+	1o	2o	9-
24	1-	0+	1-	1o	2-	1-	1+	1+	8-	2+	2o	3+	2o	2+	2+	4+	4+	23o	1o	1+	1+	1-	2+	1o	0+	0+	8+
25	0+	2o	2o	1+	1+	1o	1o	0+	9+	0+	1+	1o	3o	1+	1+	1o	1o	10+	0+	0+	0+	1-	1+	1+	1o	1+	7-
26	1o	2o	1-	1o	0+	0o	1-	1o	7-	0o	0+	0+	1-	1+	1-	3-	2-	8-	1-	1-	1-	2+	3+	3+	2o	3o	16o
27	1+	1-	3o	2+	3o	1+	2-	1-	14o	3+	3+	1+	2+	2+	2o	2+	4o	21o	3o	3+	3o	2o	2+	3o	1-	2o	19+
28	1-	0o	1+	2-	2o	2+	1o	1o	10o	5-	4o	3+	3o	3-	2+	1+	3-	24o	3-	1-	2-	2+	2o	2o	1-	1-	13-
29	4o	2o	2o	2+	3-	4+	3o	3o	23+	4o	3+	3-	2o	3+	3+	3o	3o	25-	1-	1-	1-	1-	1+	1o	2o	3-	10-
30	3-	3-	3o	3o	3+	4-	3-	2o	23o										2+	3-	2o	3-	1o	2+	4-	3+	20o
31	4o	2o	1+	1o	3-	2+	0+	1-	14+										3+	3+	2+	1+	1+	2-	3-	3o	19o

	April 1948									May 1948									June 1948								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5-	5-	3+	3+	3-	3-	4o		28o	2+	2o	1+	2-	3o	3-	3+	2+	19-	4+	5o	5o	4-	5+	5-	3-	3-	33+
2	2+	4+	4+	4o	2o	2-	2o	3o	24-	2o	3-	3o	4o	5o	4-	5o	3-	28o	2-	3-	3+	2+	1-	1o	1o	3o	16-
3	4o	4-	3-	3o	2o	3o	1+	1-	20+	3+	4o	3-	3o	3+	4-	4+	3o	27+	2o	2o	1+	1o	2+	2o	1+	1+	13+
4	1-	2+	3o	2+	2o	2o	1o	1o	14+	3o	2+	1o	1+	3o	4-	3+	4o	22-	1+	1-	1+	1-	1+	1+	2o	2-	10+
5	1-	3-	1o	1o	1-	2-	1-	0+	9-	3o	1+	1o	1o	2-	2o	3-	3-	15+	2-	2o	2o	2+	3-	3-	2o	2-	17o
6	0+	4o	3o	2o	2o	4o	4+	6o	25+	3o	3-	2o	3o	4-	4o	4o	4o	26+	1o	2o	2o	2-	1+	2-	2-	1+	13-
7	4-	3-	3-	2+	2-	3o	3o	3-	22-	4-	3o	6o	5o	5-	4o	4+	3+	34o	1+	1o	1-	2+	3-	3-	2+	3o	16o
8	2+	1-	1-	1o	0+	1-	1-	0+	7-	2-	2o	4-	3+	3+	3o	2o	3o	22o	1+	1+	1-	3-	2+	3-	3+	3-	17o
9	1-	0o	1o	1o	1o	1+	2o	2o	9o	3-	2+	6+	5o	5-	4+	3-	2+	30+	4-	2+	1+	1+	2-	2+	2o	2o	17-
10	2+	2-	1o	1+	2-	3o	1+	3-	15o	2o	3o	3-	2+	2+	5o	4+	3-	24+	2-	2o	2-	2o	2+	1+	1-	1-	12+
11	3-	3o	2-	2-	1-	1-	2-	1-	13-	3-	2+	3o	3-	2-	3+	4o	3+	23o	1o	1+	0+	1o	1-	1o	3+	1+	10o
12	3-	2-	2o	3-	4-	3+	3-	2o	21-	3-	3o	3-	2+	2o	3-	2o	4-	21o	2-	2o	1o	1+	2-	2o	2+	3o	15o
13	2o	4o	1+	2o	2o	2+	3o	3o	20-	5o	4o	3o	3+	3-	1o	1+	1+	22-	3o	3o	2o	2o	2o	3+	4-	1+	21-
14	5-	5-	2-	2o	2o	3o	1+	2o	21+	1+	1-	0+	1o	1o	2+	4-	3+	14-	0+	0+	0+	1-	1-	3-	1+	1-	7o
15	2o	3-	3+	2o	3+	4o	3+	2-	22+	5o	6o	5+	5-	5-	2-	3o	6+	37-	0+	1o	1+	0+	0+	1-	0+	0+	5-
16	2-	1+	1-	2o	2+	1+	2o	1o	12+	7o	6+	6-	4+	5+	6o	5o	6-	45+	0o	0+	1-	0+	1-	1o	0+	1o	4+
17	2+	1+	1o	1-	1o	2+	2-	1+	12-	3-	3o	2o	2o	2o	2-	2o	3o	18+	2o	2o	1+	2-	2o	3+	4-	3o	19o
18	1o	1o	3-	3o	2-	2+	2-	2-	15o	3o	2+	2+	2-	1o	2o	3o	3-	18o	2o	3-	2-	3o	3+	3-	4-	3-	22-
19	1+	1-	1-	1+	2-	1+	1-	2o	10-	1+	1-	1-	2-	2+	1-	0+	1+	9o	4o	3+	3+	4-	3-	2o	3o	2+	24+
20	3+	2o	2o	3o	3-	1+	1o	4o	19+	2-	1+	1-	1o	2o	1-	1+	3-	11+	3o	2+	2-	2+	2o	3+	3o	4-	21+
21	7-	4-	3+	2o	1+	2+	1+	3-	23+	3o	3o	4o	4-	6-	6+	6-	5+	37-	2+	4-	3-	4+	4-	4o	5-	4o	29+
22	5-	7o	6o	5o	5o	4-	4-	2+	37+	5o	4-	5-	4-	3-	3+	4+	4o	31+	4+	4o	4-	2+	2+	2-	2-	3-	23-
23	3-	3-	1+	2-	2+	2-	1-	1o	14o	4-	5-	3-	1+	2+	3o	2+	4-	24-	1+	1-	1-	2-	2-	1+	3-	2o	12o
24	2-	3-	2+	2o	1+	3-	2-	4-	18o	5-	3-	3-	3+	3o	2+	1o	3o	23-	2-	2o	3-	1+	1o	1-	2+	2+	14o
25	3+	3+	3-	2o	3o	3o	4-	2+	23+	3o	4-	3-	2o	3o	1+	3-	3-	20-	2o	1+	1-	2o	2+	1o	4o	4o	17+
26	1+	1-	2-	4-	4-	4+	3-	3-	21-	2+	1+	1o	2o	2+	2-	2o	2+	15o	4-	3o	3-	3+	3o	5o	4-	4o	28+
27	3-	3o	3o	3-	3-	2+	3-	2-	21-	3+	1+	2+	2-	2-	2o	2-	2o	16o	2o	3-	3+	3o	2+	3-	1+	1o	18+
28	1+	3+	2o	2o	2+	2o	2-	3-	17+	3-	1-	0+	1-	1o	2o	2-	2o	11o	0+	1-	1-	2o	1+	1o	1-	1-	7+
29	2+	3-	5+	3o	3+	4o	1+	3-	25-	4o	4-	2-	3o	5o	5+	3o	4o	30-	0o	1o	1+	1-	1o	1o	1-	1-	6+
30	3-	2-	3o	3-	2o	1+	3-	2+	18+	4o	3o	2+	1o	1o	4o	3+	2o	21-	1-	1o	1+	1o	2o	2o	1+	1+	11-
31										1-	1+	2-	2o	2+	3o	3-	3o	17-									

GEOMAGNETIC PLANETARY THREE-HOUR-RANGE INDICES, K_p - continued.

	July 1948									August 1948									September 1948								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3o	2o	2o	1-	1+	1+	3o	2o	15+	2+	3o	3-	3+	2+	1+	2o	4-	21-	5o	4+	4o	3o	5-	3+	5-	6o	35o
2	2-	2-	1o	1+	2-	2+	2o		13o	3o	2+	3+	3o	3+	2+	3-	2-	22-	4+	5-	4o	4-	4-	1+	4o	3+	29o
3	2-	2o	3-	2o	3-	3o	2+	2o	18+	1+	2-	3-	3-	2+	2+	2+	2-	17o	2+	1+	1o	2o	4+	4o	2+	3+	21-
4	2o	1+	4-	3o	3+	4-	4+	5+	27-	2+	2+	2+	5o	5-	3+	4-	1+	25o	2-	2+	5-	5+	4o	4o	3o	3o	28o
5	4o	2+	1+	1+	2+	3o	1+	4+	20o	2o	3+	1o	2o	2-	1+	1o	0+	13-	2-	2o	3+	3-	1o	0+	1-	1o	13-
6	3+	1o	3o	4-	2+	2+	2-	1-	18o	0+	2-	2-	2-	3-	4o	1-	0+	13o	0+	2-	2-	1o	2-	2o	2-	3-	13-
7	1+	2+	2o	2-	2-	3-	3o	1+	16o	0+	4-	3+	3-	4-	1o	1o	5-	20+	2+	5o	4+	1+	1o	1o	2+	2-	19o
8	2+	3-	3o	3-	3-	2-	1o		19-	5+	7-	7+	8-	8-	7o	8-	8-	57o	3o	3o	2+	2o	2+	1o	2+		17+
9	1+	1+	1+	3o	2o	1+	2-	3-	15-	6-	6-	4o	4-	5-	5-	4+	6+	39o	4-	2o	2-	2+	2o	3-	2o	1o	17+
10	1o	2o	3-	3+	3o	3o	3-	1+	19o	6-	4o	7o	5+	5+	7-	7-	4+	45o	1o	1o	1+	1o	3-	4-	2o	2+	15o
11	1o	1+	2-	1+	2-	2-	2o	3-	13+	4-	5-	5+	3+	3o	3+	4o		31-	2-	2-	2+	3o	2+	3o	3o	3+	20+
12	2o	2+	3-	2-	2+	1+	1+	1+	15o	4-	4-	6-	3+	3o	3o	5o	4+	32-	3+	4-	2o	3o	4+	5-	3o	2+	26+
13	2o	2+	3-	2o	3-	1+	2o	2-	17-	4o	4o	2o	2+	2-	2-	2+	1+	19+	4-	2o	2o	2o	2-	1o	1o	1-	14o
14	4+	3+	3o	3-	3+	3-	2o	3-	24o	1o	1o	1o	2o	3o	3o	3-	3+	17o	1-	3o	3-	2+	2-	1+	1o	0+	13o
15	2o	2o	2-	2-	2o	2-	2+	3o	16+	3-	1+	1+	1o	2o	2-	2+	2+	15-	1-	2-	1+	3-	3-	3+	3+	5+	21o
16	2+	3o	3+	2+	4-	3-	2+	2+	22o	1+	2-	1-	0+	0+	0+	0+	1-	6-	4+	5o	4o	1o	3-	3+	3+	3+	27o
17	3o	3+	3-	3-	2o	3-	3o	2o	21+	1-	0+	1-	1+	1o	2-	1+	2+	9+	2o	2+	1+	3+	3o	2-	2o	1+	17o
18	2-	2o	1o	2-	1+	2o	2-	1-	12o	2-	1o	1+	2-	1o	1o	2-	2-	12-	2o	2-	2o	2+	2o	2o	2+	4-	18o
19	2-	1o	1o	1o	0+	1-	0+	1o	7o	1o	0+	0+	0+	0+	2-	4o	4+	12+	3+	3+	2+	2o	1+	1o	3-	1o	17o
20	2o	1o	1-	1o	1o	2-	2-	2+	11+	6-	5o	3+	3+	5-	3-	3+	3-	31-	0+	1o	2+	1+	2-	2+	2o	2+	13+
21	3o	1o	1o	2-	2-	2o	4o	3-	17o	3-	3+	2+	3o	4o	3+	3+	4-	26-	1+	1+	2+	2o	2-	1+	4-	2o	16-
22	2-	2o	2+	2+	2-	1+	0+	1-	12+	1o	2o	1+	3-	1+	2o	3-	3+	16+	2+	2+	2-	1+	1+	2+	4o	5+	21-
23	1-	1+	2-	1+	1+	1+	2+		11-	5-	5-	1+	3-	2+	1+	1+	2+	21-	4+	4-	3+	4o	3-	3-	2+	4+	27+
24	2-	2+	1o	1o	1-	1-	1-	1o	9o	2o	3-	2+	3o	2o	3o	2-	1o	18-	4-	5-	3-	4-	3+	4-	4-	4o	29+
25	2-	2o	1o	2o	1+	2o	2-	1o	13-	2+	2+	2o	1+	1-	1-	3-	2o	14o	4o	4-	5-	5-	5o	4o	3+	4o	33+
26	2-	1o	2+	3-	3-	3o	3-	2+	18+	1+	0+	0+	0+	1o	1o	1+	1-	6+	5o	4+	4o	4-	3+	3-	2+	3o	28+
27	1+	2-	2-	1o	1-	2+	2-	2o	12+	0+	1-	0+	1o	1o	1+	1o	2+	8o	3o	1o	1-	2-	1o	1-	1-	0+	9o
28	1o	1-	2-	0+	0+	4-	3+	3+	14+	1o	2-	2o	3-	3-	4-			18o	0o	0o	0o	0+	0+	1-	0o	0+	2-
29	3+	3o	4o	4o	4+	3-	3-	1+	25+	4-	3o	3o	5-	5-	4+	4+	3+	31o	3o	4o	4o	5-	4o	5+	2+	4-	31o
30	3-	3-	3-	2o	3+	3+	4+	4o	25o	4+	4+	4o	4o	3+	2+	3o	2+	28-	4+	3+	3o	4o	4o	4o	2-	1o	25+
31	4+	4+	4+	4o	4+	4+	3o	2+	31o	2o	2o	3-	3o	3-	3-	2o	3-	20-									

	October 1948									November 1948									December 1948								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5-	6+	5o	6-	5+	3+	4-	4-	38-	0+	0o	1+	2o	2o	2+	4+	6-	18o	0+	0+	1o	1-	1+	1-	0+	1-	5+
2	3+	6+	6+	5o	5o	5o	2+	3-	36o	5-	5+	6+	5o	5o	5o	5o	6-	42o	3-	1+	1o	1+	1+	1+	2o	3o	14o
3	3o	3+	3o	3o	3+	6-	4+	4-	29+	5o	4+	2o	3-	3-	3o	3o	3-	25+	2+	3+	3o	3o	1o	1-	0o	1-	14o
4	2+	2+	4-	1+	2o	3-	4o	4+	23-	2o	0+	1+	1o	1o	1-	1-	0+	7+	0+	0o	1+	1+	0+	1+	2+	2+	9+
5	4o	5o	3+	2o	3-	2o	2-	1-	21+	0+	1-	2-	2o	1+	1+	2-	1o	10o	3o	1+	2-	1+	1-	1o	2-	2o	13-
6	2+	1-	0o	0+	0+	1o	2-	1o	7+	1-	2o	1o	1o	1-	0+	1o	3+	10o	2+	4o	3o	3-	3o	5-	5-	4+	29-
7	1+	1-	0+	1o	0+	1-	2+	3+	10o	3+	2+	2o	4-	3o	1+	2-	2+	20-	4+	4-	3o	3o	4+	3+	4+	3-	29-
8	2+	2o	2-	2+	2-	0+	1o	2-	13o	4-	4-	2o	3-	2+	3o	4-	3o	24o	3o	1+	2o	2-	1o	1o	2-	4o	16-
9	2-	1-	0+	1-	0+	1+	2-	2o	9-	4o	3o	3-	2+	3+	3o	2+	2+	23o	2+	3-	2o	2+	2-	2-	2-	1o	15+
10	2+	5-	6+	4o	4o	2+	2o	3-	28+	3-	3-	1+	2o	1o	1+	1o	2o	14o	1o	1+	1o	1-	1o	3-	4-	3-	14o
11	3o	3+	3+	4o	4o	4o	4-	2+	28-	3o	1+	2o	2o	0+	1+	1+	1-	12o	4o	2o	2-	4-	3-	3+	2+	3o	23-
12	2o	2o	3o	4+	3+	3+	1-	2+	21o	1-	1-	1+	1-	2o	1+	0+	0o	7o	1o	1-	1o	1+	1o	0+	0+	0+	6o
13	3-	3-	2o	2+	3-	4-	3o	2+	21+	0o	0o	1-	1-	2+	3o	3+	2+	12+	1+	0+	1o	2-	3-	3o	4-	5-	18+
14	2+	2+	2+	3+	4+	5-	4+	7o	31-	2+	2-	2-	2-	1+	2-	1o	2-	13o	4-	5+	4o	4+	4-	3o	4-	3o	31-
15	6-	5+	5-	5-	6-	6-	5+	3o	40o	2o	2-	2-	1+	1o	2-	4o	4+	18+	3-	2o	2o	2o	3o	3-	1o	4-	19o
16	2-	3o	1-	0+	1-	3-	3o	1-	13-	4o	4-	4+	2o	2-	3-	2o	2o	22+	3+	3+	2+	2+	3o	4-	4o	3+	25+
17	1o	0+	3+	1+	0+	0+	2+	8+	17+	3+	3+	3+	4o	4o	4-	4o	3o	29-	4-	3+	1o	0+	0+	1-	1+	2-	12+
18	8+	7-	5+	4-	4-	4o	5+	7+	44+	3o	4-	3+	3o	5-	4+	3+	2o	27+	2o	2+	2-	2+	3o	3o	0+	1-	15+
19	7-	7+	8-	7+	5+	5+	4+	2+	46+	2+	4+	4+	4-	3o	3+	4-	3o	28-	2o	3+	2o	3o	2-	2+	1o	0+	16-
20	2+	3-	2+	1-	4o	5-	5o	4-	25+	3+	4-	4+	5+	6o	6o	6-	5-	39o	0o	0+	0+	4-	3-	2+	2-	2o	13o
21	4+	6-	6o	6+	5o	6-	7-	5-	44+	5+	6+	5-	3+	3+	2+	2+	2+	30o	3o	3-	4+	4+	5-	5-	4-	3o	30+
22	1+	3o	4o	6-	6-	4-	5-	4+	32+	4-	2o	4-	4o	4+	4o	4o	3+	29o	2o	1+	4o	4+	2+	2+	1-	2o	19o
23	4-	4o	4o	4+	5-	5+	5-	3+	34o	4+	4-	3-	2+	2+	3o	2+	3o	24-	2o	0+	2o	1+	2-	1o	3-	3-	14-
24	4o	4-	4-	4o	5+	5-	4+	3o	33-	3+	3-	3+	3o	3-	4o	5o	4+	28+	3o	6-	5o	2o	1+	2-	2+	2o	23o
25	3o	3o	3-	2o	4-	4+	2o	4-	24+	3-	3-	4-	4o	4o	5-	4+	3+	29+	2o	2+	3-	4o	5-	6-	5-	5-	32-
26	4+	4-	3+	4-	3+	4o	3o	4+	30-	2-	0+	2+	4o	5-	3-	1+	2-	19-	5o	3+	2o	0+	0+	1-	4+	2-	18-
27	4o	3+	3+	4o	6o	3+	4-	4-	31+	1o	2+	3o	4-	3o	3+	1o	1o	18+	1+	3+	2+	3+	2o	2+	3-	2o	19+
28	2o	4-	3-	2o	2o	2o	2o	3o	19+	2-	3o	3o	4o	1+	2-	2+	2+	19+	1-	1-	1+	1+	1o	1+	2-	2-	10-
29	2+	2+	2o	3-	3o	2-	2o	3-	19-	1+	3o	2+	1o	1-	1-	1-	1o	11-	2-	1o	2-	3-	2+	3o	3-	3-	18-
30	1+	3o	2o	2-	2o	1+	1-	2-	14-	1o	1-	1o	0+	0+	1-	1-	1-	5+	1o	2-	1+	2o	3o	4+	5o	5o	23+
31	2+	4+	3o	2+	3-	2-	2+	2o	21-										4-	2o	4o	6o	4+	5o	2o	2-	29-

Geomagnetic planetary three-hour-range indices Kp.

	January 1949									February 1949									March 1949								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2+	3+	3+	2+	2o	3-	3-	4o	23-	1-	0+	2-	2-	1+	0+	0o	0+	6+	2o	2-	2-	4o	4o	4-	3+	3+	24-
2	6-	7-	4+	5+	5o	3+	4-	2+	36+	1o	0+	1-	2-	3-	1o	2-	1-	10-	3o	4+	4o	5-	3o	3o	4-	0	30-
3	2+	2-	1+	0+	0+	1-	2o	1+	10o	2o	0+	1+	1+	2+	2-	4o	5-	18-	4-	3+	3+	4-	3+	5o	3+	2+	28o
4	2o	0+	0+	0+	2-	1+	1o	1-	8-	6+	6-	5-	4-	3+	2-	1o	1o	27+	3-	1+	3-	3o	2o	2o	2-	2o	17+
5	1o	2-	0o	0+	1-	1-	1-	1+	6+	1+	1-	2o	1+	3-	3-	2+	2o	15o	3o	4+	3o	2o	1-	1-	1+	3-	18-
6	1-	2o	2+	3-	1o	2-	1+	4-	15+	2+	1+	2-	4o	4o	5-	5-	4o	27-	1o	1-	1o	1+	1o	1-	1o	0+	7o
7	3+	5-	4-	2o	1-	2-	3-	4+	23o	5o	5+	4o	4o	2+	1+	1+	1+	25-	2-	0+	1+	2o	1+	2+	1+	2-	12o
8	3o	1-	1+	3-	2o	3+	3o	2+	18+	1o	0o	0o	1+	1o	3-	1o	0+	7+	2-	1+	2-	2o	2+	3-	2-	3-	16o
9	3-	3-	3-	3+	4-	3o	4-	3o	25-	1-	0o	1+	1+	1-	1o	0+	7-	7-	3+	4o	2-	2+	5-	5+	3o	2+	27-
10	2+	3-	3+	2+	3o	3o	2o	5o	24o	2+	1o	1o	1-	1o	2o	3-	2-	12+	1o	0+	1+	1-	0+	1+	2o	1-	7o
11	1+	3o	3o	3-	3-	2-	3+	4+	22o	2+	2+	4o	3+	4+	2+	3o	4+	26o	1-	0+	1+	1+	1+	1+	0+	1-	7+
12	4-	2+	2+	2o	2-	4-	4+	4+	24+	3o	4o	3+	3+	3-	3-	3-	3-	25o	1+	0+	1+	2+	2+	3-	2o	4-	16o
13	5o	3o	4-	3+	2+	1o	2+	1o	22-	4o	4o	3-	3+	3-	2-	2+	4-	24+	4o	4-	3+	4-	4-	4-	3+	4+	30-
14	1-	0+	2o	2+	2o	1o	2+	3-	13+	4-	3-	3-	2+	2o	2-	1+	3+	20-	5+	5o	4o	5o	4o	4+	5-	4o	36+
15	1o	0+	1-	2o	2+	1+	1o	2+	11o	2o	2+	1+	3-	3+	4-	3o	3-	21o	5-	2+	2o	5-	4o	3+	4-	2+	27o
16	3-	2o	2-	3o	3-	2o	2+	2-	18o	3o	2o	3-	2o	2o	1o	1+	3o	17o	2o	2-	1+	2o	2o	7+	6o	4-	26o
17	3+	1+	1+	2o	2-	1+	1-	1o	13-	3+	3o	4-	4o	5+	5-	3+	4o	31+	4o	4-	3o	4o	3o	5-	5o	6+	34-
18	2o	4o	2o	3+	3o	4-	4-	5-	26+	4o	4-	4+	3+	3+	2+	3+	4-	28o	7-	5-	4+	4-	3o	4o	5-	3-	34-
19	4+	4o	3o	3o	3o	3-	3-	3-	25+	3-	2+	2+	2+	1+	2-	1o	1-	14+	2+	2+	2+	2+	2-	3o	2o	3+	19+
20	2o	2-	3-	2+	3-	2o	1+	1+	16o	0o	0+	1o	2-	3-	3+	3o	2+	14+	2-	3+	3o	2+	2+	3o	3o	3-	21+
21	2-	3o	3-	2+	2o	2o	2o	4o	20-	3+	3-	3-	3-	3o	5o	4-	4+	27+	3o	3+	2+	2+	2+	3-	3o	6+	25+
22	3o	3+	4+	3o	3-	2-	1+	1o	20+	6o	6+	5+	5-	3+	3+	4+	4o	37+	7o	8-	7-	7-	5-	6-	6-	3+	47+
23	0+	1o	1o	2+	2+	3o	3+	4-	17o	3-	1o	1+	3o	4-	3o	2o	2o	19-	4o	7o	6+	5o	4o	5-	1+	2-	34o
24	3+	3o	2o	1+	3-	3o	7+	6o	29-	5o	4o	4-	4+	4o	4-	2-	3o	29+	1-	2o	3+	2+	2-	1o	3-	1o	15-
25	9-	8o	7-	4+	5o	6o	8+	8+	55+	2-	1-	2-	2-	2-	1o	1-	1-	10-	0+	4-	2+	3o	3-	1+	1o	3+	18-
26	8+	8o	7o	6-	5o	5o	5-	4o	48-	1o	2o	2-	2-	3o	1o	3-	15-	4-	4-	4+	3o	3o	3-	1+	1o	23-
27	4o	5-	3-	2+	3o	3o	3+	2o	25o	3-	4-	5+	4o	2+	2-	1+	2-	23-	0o	0o	1o	1o	1+	1-	1o	1o	6o
28	2o	3-	2+	2-	2-	2+	2o	1+	16o	0+	1+	3o	1+	1-	3o	1-	1o	11+	1+	3+	3-	3-	3-	3+	4-	4+	24o
29	2+	1+	2o	2+	2o	2o	2o	2-	16-										4+	2-	3o	4-	3o	3+	2o	2o	23o
30	1o	1-	1-	0+	1-	1-	1-	1-	5+										1+	4o	3-	3o	2+	2o	1o	1o	17+
31	0+	1+	2-	1+	2-	2+	3-	1o	12+										2o	2o	1o	1o	0o	1o	0+	0o	7+

	April 1949									May 1949									June 1949								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	0o	1-	1o	1+	1+	2-	2+	3-	11o	0o	0+	1-	1-	1-	2+	2o	2o	9-	4-	4o	3o	2+	2+	1o	1-	3o	20o
2	3+	1-	1-	1+	1o	1+	1+	1o	11-	3-	3-	1o	0+	2o	4-	3-	2+	17+	2o	1o	4-	3o	2+	2+	2-	2o	18o
3	1+	2-	3o	2+	3o	3+	1-	1-	16o	3o	3o	2-	2-	1-	1-	4o	7o	22-	2o	1o	2o	2+	1+	1-	1o	5o	15+
4	1-	2-	2+	2-	1o	1o	1o	1o	12-	6o	5+	4o	3+	4o	4o	2o	1o	30-	6+	4o	5+	2+	3+	6o	7-	6-	40-
5	1-	2-	1o	3-	2o	1+	1-	2-	12-	1o	1+	2o	3-	3+	4-	4o	5o	23o	4-	5+	5o	5-	6-	6o	6-	6+	42+
6	2o	2o	1o	2-	0+	1-	1-	1o	9+	4+	4o	3o	2o	2o	3o	3o	3-	24o	5o	5o	2+	2-	1+	2o	3-	6o	26o
7	2o	0+	1o	3-	2o	3+	5+	7+	24o	3-	3-	2-	1+	2-	3-	2+	3o	18o	4-	3+	3+	2+	2+	1+	2o	2-	20o
8	7-	6+	6+	7o	7-	5+	5+	3-	46+	2+	2+	2o	2-	2o	1+	3o	4o	19-	2-	2-	2o	2o	2-	1+	2-	1+	13+
9	2o	2+	2o	2+	2+	2o	1o	3+	17+	3+	2+	4-	2+	3-	4+	3o	2-	23+	3-	2-	2+	2o	1o	1-	3o	2+	16-
10	4o	4o	4-	3o	3+	4+	5+	5+	33o	2o	2-	2o	1+	3+	3-	3-	3+	19o	1o	1+	1-	2-	1o	0+	0+	0+	7-
11	4+	3-	4o	4-	5+	5+	3+	3-	31+	5-	4-	3+	3+	2-	1+	2+	1+	22-	0+	0+	1-	1-	2-	2+	2o	2o	10o
12	1+	2o	4o	4-	4+	6o	4-	3o	28o	2o	2o	7+	7+	8+	9-	8+	7o	51o	4o	3+	3o	4-	5o	5o	5o	5o	34o
13	5-	5+	3+	4o	4+	3+	3+	3-	31o	8o	7+	3+	2o	5+	3+	1o	2+	33-	6o	2o	3+	3o	4o	3-	2o	2-	24o
14	3+	4+	4-	3+	2+	3-	3-	3+	26-	4-	3o	3+	4-	3+	3+	3-	3o	26o	1-	1-	1o	2-	2+	1-	3-	3-	12+
15	3+	3-	3o	2o	2o	2-	2-	3-	19o	3+	3o	2+	2+	2o	1o	0+	0+	15-	3-	3o	2+	2+	3-	3+	4-	2-	22-
16	2o	2+	2o	4-	3+	4o	2o	3o	22+	1+	3+	3+	3-	3+	3o	2+	4o	23+	2o	2-	2o	2+	1+	2+	2o	3-	16+
17	3+	2+	3-	3-	3-	2o	2-	3+	21-	4-	3-	2+	1o	1o	2-	1o	0+	14-	1+	1o	1o	1-	2-	1+	3o	4+	14+
18	3-	3-	1-	1o	0+	2-	2+	2o	13+	0+	1-	1-	1o	1-	1-	1+	1+	7-	4o	2+	3-	3o	3-	3o	3-	3-	23o
19	1+	1+	2+	2-	1+	1-	1+	2+	12+	1+	1o	0+	0+	1o	3o	1+	1o	9+	3o	3o	2-	3-	2+	2o	1o	1o	17-
20	1+	1o	2-	1-	1-	2o	2-		10-	1+	1+	1-	1-	1+	1-	1+	1+	9-	1o	2-	2o	2-	2+	2-	2-	2-	14-
21	2o	2o	1-	1-	1-	1+	2-		10-	1-	1o	2o	3-	3o	2o	1+	1+	14o	1o	1-	1+	2o	2o	1o	1+	1o	10+
22	1+	1o	1+	1o	2+	2o	1o	1-	11-	3o	2+	2-	2+	2o	1+	2-	1+	17-	0+	1+	1o	3-	3+	4-	3o	2-	17o
23	0+	1+	2o	2o	2+	2+	1o	1o	14-	2o	2+	2+	1+	2+	2-	3o	1+	17+	2-	2-	1o	2+	1+	1+	0+	0+	10o
24	3o	2o	2o	2+	1+	2+	1o	2+	16+	2+	2+	3o	2-	1o	1+	1o	1o	14-	0+	1o	1o	2o	2+	2o	3o	2+	14o
25	3-	2o	1+	1o	2-	1+	1o	2-	13-	1-	0+	1+	4-	3+	3o	1+	1-	14+	4-	2+	4-	4o	3+	2o	2-	1o	22-
26	3+	3-	1+	1+	2-	2o	1o	1+	15-	1o	1o	2-	2o	2+	3-	1o	1o	13-	1+	2-	1+	2-	3o	2+	3-	3o	17o
27	3+	5-	3+	3+	2+	1+	1-	1o	20o	0+	1o	1o	3-	3-	2-	2-	1+	12+	3o	3-	2o	1+	1+	2o	2o	2+	17-
28	1-	2o	2+	1o	2+	2+	2o	1+	14+	3o	2o	2o	1+	1-	1o	1-	0+	11o	1+	1o	2+	3-	2-	3o	2+	3+	18-
29	2o	1o	1o	1o	5+	4+	3o	1o	19-	0+	1-	1-	1o	1o	1-	1-	0+	5+	3-	3+	3-	3+	2-	3o	4-	3+	24-
30	3o	1+	1+	1+	1+	0+	1-	0o	9+	0+	1o	1o	1o	4+	5-	6+	7-	25+	2+	2-	2-	2o	3-	2o	2-	3-	17-
31										5-	6o	3+	4-	4+	3+	4+	4o	34-									

Geomagnetic planetary three-hour-range indices Kp.

	July 1949									August 1949									September 1949								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2-	2o	2-	2o	1-	1o	1+	1+	12-	0+	1o	2-	2+	2o	1-	2o	1+	11+	3-	1o	4-	3o	3+	4o	4o	4-	25+
2	1+	1+	1+	0+	0+	1-	0+	1o	7-	1o	2-	4o	4+	5o	4o	2-	2o	24-	3o	5-	4o	2o	3o	3+	4o	4-	28-
3	0+	1-	1-	1-	1-	1+	2o	1+	8-	5o	5+	7o	7o	5-	3+	3+	4-	39+	5-	5+	6o	4o	5-	4o	4o	2+	35o
4	1-	1-	1-	0+	1-	1o	0+	1-	5o	7-	7-	6+	4-	5o	4o	6-	4+	42+	3+	3+	3o	3o	2o	2-	3+	2+	22o
5	0+	1o	1o	2-	1+	0+	0+	1o	7o	4o	3-	2+	3-	4-	4-	4o	3+	26+	3o	2o	2o	2+	2o	3o	3-	2o	19o
6	1-	1+	1-	0+	1+	0+	1+	1o	7o	3-	2-	1-	4-	2-	1-	3-	2+	16o	2o	2o	3-	4-	2+	1+	1+	1o	16+
7	3o	1o	1+	2-	4o	4-	1o	1-	16+	1o	1o	1o	1o	3+	4+	2+	3+	17+	0+	2-	2+	2o	2o	2-	2o	2-	14-
8	1+	1+	2-	2-	1+	3o	4-	3-	17-	6o	7-	4-	4-	4-	1+	1+	1+	28-	2o	1+	3-	4-	2o	2+	3o	3+	20+
9	1o	2-	4-	4o	2o	1o	0+	1-	14+	2-	1+	1o	2+	3o	3o	3+	2o	18-	4-	2-	1+	2+	1o	1+	1o	1-	13o
10	1-	1o	1-	1-	1o	1o	1+	0+	7-	1+	3-	3-	2o	2+	4-	1+	3+	19+	0o	0+	1-	1-	2-	1+	1+	2+	8+
11	0o	1+	1-	1o	1o	1+	1+	2+	9o	0+	1-	1o	1-	2-	1+	1-	1+	8-	2o	3o	3o	3o	2o	2-	2+	2o	19o
12	1-	1-	1o	1o	2-	1+	5o	2+	14-	1+	1-	1o	1o	1o	1o	1+	1-	8o	3-	3+	5o	4o	6-	4o	3+	2+	30+
13	4-	4+	3+	3-	2+	3o	1+	1+	22o	1+	1-	2-	2o	2+	3-	2-	3o	15+	4o	4o	3o	3-	2o	2-	1-	3-	21-
14	1-	2o	2o	1+	2+	1o	1o	1+	12-	5+	3+	4-	4+	5-	3+	4o	5o	34-	2-	2o	2+	3-	5+	4+	2o	2o	22+
15	1-	0+	0+	0+	1-	1-	0+	0+	4-	5o	5+	4-	3-	3-	3-	4o	2o	29o	2+	2o	1+	2+	3-	3+	3-	2+	19o
16	0+	1-	1+	2o	5-	4-	5o	4-	21+	3o	2+	2o	2+	1+	1+	1-	1o	14o	4-	3+	2o	2+	2o	3-	2o	2+	20+
17	3-	2-	3+	4-	4-	3o	1o	1+	20+	2-	3-	2-	2+	4o	3+	3o	3o	22-	0+	1o	2o	1+	2o	2-	3-	3-	14-
18	2-	1+	1+	3o	3-	3+	4-	3o	20o	1-	1+	3-	3o	3+	3+	3-	3+	20+	2o	1+	1-	2-	1+	0+	0+	1-	8+
19	3+	4o	3-	3o	3+	3-	2o	2o	24-	3-	2+	1+	3o	3-	2+	2-	3o	20-	0+	0+	0+	1-	0+	1-	0+	0o	3o
20	4-	1-	1+	2-	2-	2-	1o	1-	12+	3-	3+	3-	2-	3-	1o	2o	2+	18+	0o	0o	0+	1-	1-	1-	1-	1-	4-
21	0+	1o	1o	2o	2+	2-	1o	2o	11+	1+	2+	1o	2-	2-	3-	2+	1o	15-	0o	1-	0o	1-	1o	1-	0+	2o	5+
22	1-	1+	2o	2+	3-	3-	4o	4-	19+	2+	3-	2o	2o	2-	1+	1o	1+	14+	2-	2-	2o	3-	2-	2o	1-	0+	13-
23	4+	4-	3-	3-	4-	2-	2+	3-	24-	1-	1+	2-	1o	1-	0+	0+	1-	7-	1o	2o	1+	2o	2-	1-	1-	1o	10+
24	3o	2-	2-	0+	3-	3-	2+	2-	16o	0+	1+	0+	1o	1-	0+	0+	0+	5-	1+	2o	2o	2-	2+	3-	3-	5+	20o
25	2o	3-	4-	1o	2+	2-	2+	3-	18+	0+	0+	1-	0+	1-	1-	0+	1-	4o	5-	5-	3-	5-	4-	4+	5o	4-	33+
26	2-	1o	3o	1o	1-	1-	1o	1o	10o	1o	1-	1+	2o	1-	1o	1+	1+	9+	4o	4o	4-	3o	3-	2+	2-	5-	26o
27	1+	0+	0+	0+	0+	1o	1+	1-	6-	2o	3-	3+	2+	3-	3o	2o	2o	20o	4+	4-	5-	4o	5-	3-	2o	3o	29o
28	0o	0+	0+	1o	1o	1-	1+	1+	6o	2+	3o	2-	2o	2o	2-	1o	1+	15o	4+	3+	4-	2-	1o	1o	0+	1-	16o
29	1-	1o	1+	2-	2o	2-	1o	1-	10o	0+	1+	3-	2-	2-	1+	2+	3+	15-	2+	1o	2+	2-	2o	1+	2-	1+	14-
30	1-	1+	2+	2o	1+	1o	2+	1o	12o	3o	3o	2+	2o	2o	2-	1o	1o	16o	1-	2+	4o	4-	3o	3-	5-	3-	24-
31	2-	2+	2o	2-	1+	2o	2-	1-	13+	2+	2-	2-	1-	1+	2-	2+	3-	14+									

	October 1949									November 1949									December 1949								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4-	3-	3-	3-	2-	1+	0+	2o	17o	2+	1-	2+	4-	5+	6o	6-	3+	29+	3o	4o	4o	2+	0+	1-	1o	0o	15+
2	2+	4o	3o	1+	1o	0+	1o	1o	14o	3o	3+	5-	4+	5-	4+	4o	6-	34o	0o	2o	3-	2o	0+	0+	0+	1o	9-
3	1-	0+	1-	2-	1+	1-	1-	2+	8+	5+	5-	3+	1+	1+	2o	2+	4+	25-	1+	1o	2-	2o	4-	3-	2+	3+	18o
4	4-	3o	3o	4-	4+	3o	3o	2+	26o	1+	2+	3o	3-	2o	3-	2o	1o	17o	3o	3-	3o	3-	2+	2o	4-	4o	23+
5	4o	4o	4o	3o	2+	3o	2o	3-	25o	3o	4-	4+	3o	4-	3+	2o	4o	27o	3o	3-	2+	2+	2o	3-	2+	2+	20-
6	1+	2-	3+	4o	4-	5-	4o	4o	27-	4o	3-	2-	2o	2+	2o	1+	1+	17+	3+	2+	3o	3-	3-	2o	2+	2-	20o
7	4-	5o	5-	4+	5o	6o	7+	6+	42+	1+	1+	1+	1+	1o	1o	2-	1o	10o	2o	3-	1o	1-	1-	1o	0o	0o	8o
8	7-	4o	3+	3+	5o	5+	3+	3-	34-	0+	0o	0o	0+	1-	1-	0o	1o	3o	0o	0o	1+	1+	2+	2-	1+	2o	10o
9	5o	5-	3o	2+	3o	3o	2+	2-	25o	1-	2-	3+	2+	2-	2-	2+	2-	15+	2-	5-	5+	4+	3o	3+	2+	3+	28o
10	1o	0+	1+	4o	2+	3o	2o	1+	15+	1+	1+	3+	3o	3-	4-	2+	4-	21+	1+	1+	2o	1+	1-	1+	2o	2-	12-
11	4-	3-	2+	3-	4o	4+	3-	4-	26o	4+	5+	4+	3+	2+	5-	3-	2-	29-	1+	0o	1o	1o	0+	1o	1+	0o	6o
12	3-	2-	2+	3-	3-	1-	1+	2-	16-	2-	2+	3-	3+	3-	3+	4+	4-	24o	0o	1-	0+	1-	0+	1-	1-	1-	4o
13	2o	2-	2o	1-	2o	4-	5o	3o	20o	4-	3+	2o	2o	3-	3o	2-	1-	19o	1o	1+	2-	1-	1+	0o	0+		7o
14	4-	4+	5o	6+	6-	7+	8-	7o	47o	1o	3+	3+	3o	3-	3o	2-	3-	21-	2+	3-	3+	3o	3+	4-	2+	2+	23o
15	6o	6o	7+	8o	7+	7+	8+	8-	58o	3-	2-	2-	2-	2-	3+	3-	3-	18o	3o	3-	2-	2o	1+	1o	1+	2+	15+
16	6+	7o	5+	6+	4+	5o	4-	3o	41o	5o	4-	3-	2-	1-	1o	1o	1-	16+	4+	2+	1+	1-	1o	1o	2+	1+	14+
17	4o	3-	3+	3-	2-	3+	4-	3-	24o	0+	0o	0+	0+	1-	0+	2-	2-	5+	2o	2+	2-	1o	0+	0+	1+	1+	10+
18	2-	1+	2+	3o	3-	2o	1+	0+	15-	2+	1o	2-	3-	3+	2o	2o	3-	18-	2-	1o	1-	1-	1-	1+	1o		8-
19	0+	1d	4o	4o	4-	4-	2+	3-	22-	3+	2+	3+	3o	3+	4+	6o	6+	32o	0+	1+	1+	1-	2+	2o	1-	2+	11o
20	3o	2-	1o	2+	3+	2o	3-	3+	19+	6o	6-	6o	3o	5-	4o	3o	2+	35-	3o	2o	2+	3-	1o	3-	3-	2+	19-
21	2o	4-	3-	3o	3-	3o	1+	0+	19-	3+	2o	2o	2o	3o	4-	5o	2o	23o	1o	4o	2+	2-	2o	2+	2+	2o	18-
22	2o	1o	2-	2+	2o	2-	4-	6-	20o	1+	0+	1-	1+	1+	2o	2o	2-	11-	3-	3+	1o	1+	1+	1-	2o	2-	14o
23	3o	2-	2+	3o	3o	3+	5-	3+	24+	2+	3-	2-	1+	1-	1+	3o	2+	15+	1o	1+	0+	1+	2-	3o	4o	2o	15o
24	5o	5o	3+	3o	2-	2o	2-	2-	23+	3-	3+	1+	2o	1o	1o	0+	0o	12-	4+	3o	4-	4-	1+	2+	2o	1-	21o
25	3-	2o	1o	2+	2-	1-	1o	0+	12-	0o	0o	1+	2-	2o	1o	2o	1+	9+	2+	2o	2o	1+	3-	3-	1+	1o	15+
26	2o	1+	1o	1+	1o	1o	3o	2-	12+	1-	0o	1o	1o	1+	1-	1+	2+	8+	2+	2+	2o	1+	1o	1o	0+	1o	11+
27	1+	4+	3+	2+	5-	4o	6o	6-	32-	3-	2+	3+	3-	3-	4-	3-	2o	22o	2o	0+	0+	1+	2+	2o	2o	2-	12o
28	6-	6-	5-	4-	3o	3+	3o	3-	32-	2o	1+	2o	1+	1-	1-	0o	2+	10+	2o	1-	2o	3-	2-	2o	3o	3-	17-
29	3-	3-	3-	3o	3+	3-	2o	3+	22+	5+	5-	4-	4+	3+	4o	4+	4-	33+	3+	2+	1+	2-	2-	1+	2-	2+	16-
30	1-	2o	3-	2+	2+	2o	1+	2o	15+	4o	4o	5-	5+	5+	5o	4+	3+	36o	2o	2-	1+	1+	1o	3-	4o	4o	18o
31	4o	3+	2+	2o	1o	2-	1-	1o	17o										2+	2+	4-	4o	3+	3-	4o	2+	25-

Geomagnetic planetary three-hour-range indices Kp.

	January 1950									February 1950									March 1950								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	3o	2o	2+	1o	1o	2+	2o	2-	15+	2-	3o	2+	2o	2-	1+	2o	1o	15o	4-	3-	3-	3+	2o	1o	1o	1o	17+
2	3o	3+	2+	1+	0+	1-	1-	1-	12+	1+	2-	6-	5-	5-	4+	3+	2o	28-	2-	3o	3o	3-	2-	2+	1-	1-	16-
3	2-	1+	1o	2-	2+	1-	1-	3-	12o	1+	2-	4o	5-	4-	3o	4o	4o	26+	2+	1+	2o	2-	2+	3-	1o	1o	14+
4	2o	1o	3-	2o	2o	3-	3o	3-	18o	2+	2-	3-	3-	3+	4+	4+	4-	25o	0+	1o	1+	2o	3-	2-	2-	1+	12o
5	2-	2-	2o	2+	2o	2o	1+	1+	14+	2o	4o	2-	1-	1o	3-	2+	1o	15+	1-	1+	2+	3-	2o	1o	1o	2-	13-
6	2o	4-	1+	2o	3-	3o	3-	2+	20-	0o	2+	3-	2+	3o	3o	2o	2-	17o	3+	4-	2+	2+	2o	3o	3o	4-	23+
7	3o	3-	2o	3-	3o	2o	3-	1-	19-	1+	4o	2-	2+	3o	2+	3o	4o	22-	4o	4+	5o	4o	4-	2+	2-	2-	27-
8	1+	1o	0+	0+	0+	1-	1o		5+	2o	3+	2+	2+	3-	3+	3-	3o	22-	2+	1-	2-	1o	1+	1+	1o	2o	11+
9	3+	4o	3o	2-	2o	0+	2-	2o	18o	4-	2+	2+	2o	1+	3-	3+	3o	21-	3-	3-	2o	2-	2+	2o	1-	0+	14+
10	3+	3-	2o	2-	1o	1+	2-	3+	17o	2-	1-	0o	1-	1o	1o	1-	1o	7-	2o	1+	1+	2+	1-	1o	0+	0+	9+
11	3-	2o	1+	2-	1+	2o	2-	4-	16+	1-	2-	1+	2b	2o	0+	2o	1o	10+	0+	0o	0+	1-	1+	1-	1+	2o	7-
12	2+	2o	1-	1o	1o	2o	3-	2-	13+	3-	1-	1+	1+	1+	2+	2o	1-	12+	1+	1+	1-	2-	2o	2+	1o	1-	11o
13	3o	2o	2-	2-	3-	3-	2-	1e-		1-	1o	2-	1o	1-	1+	2-	0+	8+	0o	1-	1-	1o	1+	2o	3-	0+	9-
14	3-	4+	3+	4-	3+	3o	4+	3o	28-	2-	3-	1-	1-	1+	2+	1+		11+	1o	2-	3-	3o	2+	3-	4o	1o	18+
15	0+	0+	2-	4o	4-	3-	3-	2o	17+	2+	2-	2o	3-	2-	1+	2+	2-	16-	5o	6-	3+	2o	3-	2-	2-	1-	23-
16	1o	3+	4-	2+	1+	2-	2o	3o	18+	2-	1-	1o	2o	1+	1-	1-	1+	9+	1+	3+	3o	2-	1+	2o	1o	1-	14+
17	2-	0+	0+	2-	1+	1+	2+	2o	11o	1-	1+	1+	1o	1+	0+	0+	0+	7-	1+	1+	2+	3-	2-	0+	1-	2+	13-
18	2-	3+	1+	1o	1o	0o	1-	2+	11+	0+	0o	0+	2-	1-	2-	2-	2o	8+	2-	1+	3-	1+	0+	1-	1+	1-	10o
19	1o	2-	3o	3+	3-	2o	3o	3+	20o	1+	2o	2-	1o	1o	1o	1o	3-	12-	3-	4o	7-	7+	7+	7+	5o	3-	43o
20	4o	4o	4+	4-	4o	4o	2+	1+	28-	2+	3-	2-	2+	3o	5o	9-	8+	34o	2+	2-	2-	0+	1o	3o	4-	2o	16-
21	3+	3+	3o	4+	3+	4-	3+	2+	27-	7+	8-	6+	5-	5+	5-	4+	5-	45o	2+	4-	3-	5o	4+	5o	4+	3o	30+
22	3+	4o	2o	2+	1+	2o	1o	1o	17o	4+	4o	4o	3-	3o	4o	5-	4o	31+	4o	5o	4o	4-	3-	2+	3+	4-	29-
23	2-	1o	3-	2-	1-	1o	2-	2o	12+	3o	2o	2o	6-	6o	5-	6o	6+	36-	2+	2-	1+	2-	2o	1+	0+	2o	13-
24	3-	3o	3-	3o	4o	7-	6o	6-	34-	6+	7o	5+	4-	2-	1+	4o	4o	33+	5+	5-	5o	3-	3o	2+	2o	2o	27o
25	4o	4o	5-	4+	4-	3+	2+	4-	30o	5-	4-	4-	4-	3+	1+	1+	1+	23o	3-	5-	4-	1o	1-	1o	2o	1+	17o
26	2o	3+	2o	2o	3o	3o	3-	3-	21-	1o	1-	1-	1-	0+	0+	1-	0+	5-	2o	1o	1-	2o	1-	2o	1+	2-	15o
27	3o	3+	1+	3-	3o	3o	3o	4-	23o	0o	0+	1-	1+	3-	1-	1+	2o	9o	5o	5o	4-	5-	3+	5-	5o	5o	36+
28	4-	3-	2+	3-	2+	3+	2o	1o	20o	1+	2-	4o	4-	3-	2+	2o	2o	20-	2+	3-	3-	4o	3-	1o	0+	2o	18-
29	2+	2o	1+	1-	1+	2-	2-		12-										2-	3-	4+	4-	3o	3-	2o	1+	21+
30	3o	3+	4+	3-	1o	3o	4o	3-	24o										2+	2+	2+	2+	2o	3-	1-	0+	15o
31	1o	1o	2-	1-	1+	2-	3-		11-										0o	1o	4-	3+	4+	5-	3-	4+	24o

	April 1950									May 1950									June 1950								
D	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5-	6-	5-	3+	5-	3+	5+	5o	37-	2o	1o	1+	2-	1+	2-	3-	2o	14-	2+	3-	2+	4-	3-	5-	2-	4-	24o
2	4+	4+	5+	4o	3o	4+	4+	5+	35o	2+	2-	1+	2o	3-	4-	5-	6-	24o	4+	4+	2+	2-	1-	3-	3o	5-	24-
3	4+	3+	3o	4+	3+	4-	5+	5+	33-	6o	5+	4+	4o	3+	3+	6-	5o	37o	3o	3-	2-	4-	4o	4-	3o	3-	24+
4	3+	5o	5o	4+	4-	5-	4o	3o	33o	4-	3o	3-	3-	2-	4o	4+	5+	27+	2+	3o	2o	1-	2o	2+	1o	1o	14+
5	4+	5o	4+	5-	5-	5+	7-	6-	41-	5+	3o	3o	4o	3o	3o	3o	4-	28o	3-	2+	3-	2o	1+	2o	2-	2-	16+
6	4+	4+	5-	4-	3+	3o	5-	5-	33-	2o	2o	2o	2o	3-	3-	3-	3+	19+	4-	5+	4+	4o	5+	6o	3+	3-	35-
7	4o	4o	3o	3+	4-	3-	3o	2o	26-	4+	1o	3o	1+	2+	2+	1o	2+	18-	2o	1-	1-	1+	2o	2-	1-	1-	10-
8	3o	2-	3-	2-	2+	2o	1+	1-	15+	2o	2-	2o	1o	1+	1-	1-	2-	11o	1-	0+	1o	1+	2-	2o	2o	4o	13o
9	1-	1+	2+	3-	3+	3+	1+	1o	16o	1-	1-	0o	0+	0+	1-	1-	1o	4+	5-	5+	3-	4o	4o	3o	3o	3+	30o
10	3-	4o	1+	1o	2o	2-	2-	2o	16+	1+	1+	2-	2o	2-	1o	1o	4o	14o	4o	4-	3+	4o	3+	3-	3+	3o	27+
11	1+	3-	1+	1+	1+	3-	2+		14+	3+	2o	3o	3-	4-	3+	3-	2+	23o	3o	2-	2o	1+	2o	2-	1o	2+	15o
12	3-	4o	5o	4+	3+	2o	1+	2+	25o	2o	1+	1+	1o	0+	2-	2o	2-	11+	2+	1+	3-	2o	2o	1+	2+	2-	16-
13	4+	3+	2o	2+	2+	1+	1-	1-	17o	3-	4o	3+	3o	3-	3-	3+	3+	25o	1o	1-	1+	1o	1o	0+	1-	1-	7-
14	1-	1+	2o	1+	2-	1-	1+	2+	11+	3+	3-	2+	3o	4o	3-	3o	4o	25o	1o	2o	2o	1+	2-	1+	1o	1o	11+
15	2-	4-	5o	3+	4+	2+	1+	3-	24+	4o	3+	4-	3-	2+	3+	5+	4-	28+	1+	1o	1o	1+	1o	0+	0+	1-	7o
16	1+	1-	2+	2-	2+	3-	3-	4-	17+	3-	3o	3+	2+	2o	3-	2+	2+	21-	0+	0o	0o	1o	2-	3-	4-	1+	11-
17	3+	2+	2-	2-	2+	2+	3o	3o	20-	2+	1-	2-	1+	2+	2-	1+	2-	13o	2+	4o	3o	2+	2+	3o	3o	3-	23-
18	3-	3+	3o	3-	3-	3o	4-	3o	24o	3-	1+	0o	1o	1-	1o	1+	1-	9-	2o	2+	3o	2+	1o	2-	1+	1o	15-
19	3+	4o	5-	2o	4-	4+	4+	3+	30-	0o	0+	0+	0+	1-	3o	2+	1-	8-	2-	2-	1-	1-	1-	1+	2-	1-	9o
20	4o	6-	4o	2-	1-	1+	4+	4o	26-	2-	1o	2-	1o	2o	2+	3-	3+	16-	0+	1o	1-	1o	2-	2o	2-	1+	10-
21	2-	1o	1o	1+	1-	1+	0+	0+	8-	3+	3-	1-	0+	1+	3-	1+	1o	13+	1-	2-	0+	1o	1o	3+	2+	3+	14-
22	0+	0+	1-	3o	2o	1+	1-	1o	9+	0o	0+	2o	4-	5o	4o	4-	4o	23-	2-	3o	2o	3o	4-	2+	2o	2+	20o
23	2o	4-	3-	4o	4-	3o	3-	4-	25+	4+	3+	4o	4+	4+	5+	4+	4+	34+	3+	3-	2-	2+	2o	2o	6-	5+	25o
24	5-	6-	5+	4-	3o	4+	3-	4-	33o	4-	3+	3o	2-	1o	1+	3-	3-	19+	5-	6+	6o	5o	5-	2+	4o	3o	36o
25	2o	4-	3+	2+	1+	1+	1o	1-	16-	3-	1o	1+	2+	4-	2+	3-		18+	3+	2+	4-	5-	3o	1+	3-	4-	25-
26	2-	2o	2-	1+	1o	1-	0+	0+	9o	3-	3-	3+	4-	3-	3+	3+	2-	23+	4o	3o	2o	2-	2+	1-	1+	1+	16+
27	0+	0+	0+	1-	1o	0+	3o	2+	8+	2+	3-	3-	2o	5o	5+	5o	7o	32o	1o	1o	1+	1o	2-	2o	2-	2-	11+
28	1o	1+	3-	2+	3-	3o	3o	4+	20+	7o	7-	6o	6o	4-	4o	4o	4-	41o	2o	1+	1o	2-	1o	0+	1-	1o	9o
29	4o	2o	1o	3+	4-	4o	3+	3-	24o	4o	4o	2+	4o	5-	3+	3+	3o	29-	1o	1+	2-	2-	5-	6o	6o	6-	28o
30	4o	5+	4+	4-	4+	5o	4+	3+	34+	4o	4+	3-	2+	3-	4o	2o	2-	24-	6o	7-	3o	3+	4-	4o	3+	4-	34-
31										2o	2-	1-	0+	2-	1-	1-	3+	11o									

Geomagnetic planetary three-hour-range indices Kp.

	July 1950									August 1950									September 1950								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	4	o2-	2o	2o	3+	2+	2-	3+	20+	4-	3-	3o	3-	4-	4-	4-	3o	26o	1o	1+	1+	1+	2-	1+	1-	2o	11-
2	2-	3-	2-	1-	1o	1+	1+	2-	12o	3+	3o	3o	3-	4-	3-	5o	4-	27o	2-	2o	1o	o+	1o	1-	2+	2-	11-
3	o+	1-	1-	1+	3-	3+	4+	5o	18+	5-	3+	3+	4o	4-	4-	3-	3-	28o	2o	4o	5-	5-	5+	6-	6o	7o	39+
4	6o	5o	3o	3+	1+	3-	3+	4-	4o	29+	3-	3-	2o	2+	2+	2o	2o	18+	6o	4o	4o	5+	5-	4-	4o	5-	5o	37+
5	4o	3+	1+	3-	3+	3-	3+	3+	24o	1o	1+	1o	1-	2-	2-	2+	3-	12+	6o	5+	6o	6+	5-	5o	5+	5+	44o
6	3o	2-	3-	3-	2+	3o	1+	2-	18+	4-	2o	1-	1+	2o	2+	3+	3+	19-	5+	6-	5+	6-	5o	4o	4-	4o	39-
7	3-	2+	1+	2+	2o	2+	2o	4-	19-	3+	3+	2o	4-	3+	4o	5o	8-	32+	3+	3o	4o	4o	4o	3o	3o	3o	27+
8	2o	1+	2o	2-	3-	2-	O+	O+	12o	8-	6+	8-	5o	3+	3-	3-	4o	39+	2+	4+	5+	5+	4-	5-	6-	5o	36+
9	2o	4-	4-	2-	3+	3-	2+	1+	21-	4o	5-	5-	4+	5-	5-	4+	5+	37-	5o	3+	3+	3-	1+	2-	3o	3-	23o
10	1+	1+	2-	2+	3+	2-	2+	16+	4o	4+	3o	3+	5o	5+	6+	5o	36+	5o	3o	1o	2-	3+	4+	4+	3+	26o
11	4-	2-	1o	3o	5+	4-	5o	6o	29+	4+	4o	4o	5-	4o	4o	4-	4+	33o	4+	5+	4-	3o	1o	1+	3o	4-	25+
12	7o	6+	4-	5+	3+	3+	3o	3+	35+	4+	5o	5o	4+	3+	4o	3o	3-	32-	3+	1+	3+	3+	3+	1o	1-	1+	18-
13	5-	4o	3o	5o	5-	3-	3o	2-	29-	2o	3+	3o	4-	2+	2+	3-	3-	22o	2o	2+	2-	2-	1+	3o	5-	3+	20o
14	2o	2-	3+	2+	2o	2+	3-	3+	20-	3-	3+	3o	4o	5+	3o	3-	4o	28o	1+	1+	1o	1o	1-	1o	1-	1+	8+
15	3o	3-	3-	2-	2+	2+	3-	2+	20-	4-	4-	4-	2o	2o	2o	2+	1o	20+	o+	o	o	1-	1o	1o	o+	1-	5+
16	2o	3-	2+	4o	1+	1o	1o	2-	16o	3-	2o	2-	1-	1o	o+	1-	2-	11-	2+	1+	2-	4-	4-	5+	4-	3o	25-
17	3-	1-	3-	2-	1+	1+	2o	1+	14-	2o	1-	o+	o+	1o	o+	1-	1o	6+	2o	3+	4-	3o	3o	4+	4o	4+	28-
18	2o	1o	1+	1+	2o	2-	1-	1o	11o	2o	2o	1+	1+	2o	3+	4o	5-	21-	5-	4o	5-	4o	4o	3o	3-	4o	31o
19	2-	1-	o+	1-	2o	2o	1-	1+	9+	6-	4+	6-	6+	8o	8+	8-	8o	54o	4+	3-	3+	5o	5-	2o	3o	5+	30+
20	2-	2+	1o	2-	1+	1o	2+	2-	13o	8+	8o	8-	8-	4o	3+	2+	2o	43+	6-	5o	4o	5-	4o	5-	5-	3+	36o
21	2-	1-	1-	2+	3o	2o	3o	3o	16+	3-	1+	5+	4o	3o	3+	3o	1+	24o	4-	4-	2o	2-	1-	1-	2+	1-	15+
22	3o	3o	2+	3+	2o	1+	2-	1o	18-	2-	1+	2o	2o	2-	2+	2+	1-	14o	o+	1+	o+	1-	1o	2-	2-	1-	8-
23	1o	1o	1o	o+	o+	o+	o+	o+	5-	2o	1-	1+	3+	2-	2-	1+	3-	15-	1o	1+	3-	5-	4o	4+	5o	5o	28o
24	3o	5o	4o	5+	2o	3o	5o	5o	32+	1o	o	o	1-	2+	1o	1-	3-	9o	5+	3o	2-	3o	4+	5o	5+	6+	34o
25	6o	6+	5+	4-	4+	3o	3-	2o	33+	3-	2-	1-	1+	1+	1-	o+	1-	9+	4+	4o	5-	4-	4-	6-	4o	5+	35+
26	1-	1-	1o	1o	2-	1+	2o	2o	10+	o+	o+	1-	1-	o+	o+	o+	1o	4o	3+	2+	2+	2o	2o	3o	5o	4-	24-
27	1-	1o	2-	3-	4o	2-	2-	2-	15o	2+	1-	1-	1o	1+	2-	2-	2+	12-	3o	3-	3o	3+	2-	2-	2+	2-	19+
28	4o	3+	1+	1-	1o	1+	1o	3-	15+	3-	2+	2o	4-	3o	4+	4-	4+	26o	1-	1+	2+	3-	2o	1+	2-	2o	14o
29	3-	2o	1+	2+	2o	2+	3o	3-	18+	3+	5-	3+	3-	4+	3+	3o	3+	28o	1-	o+	1o	o+	o+	1-	1o	1o	5+
30	3-	3-	1-	3+	3+	2o	3-	2-	19o	4+	4-	3+	1+	2-	3o	3+	1+	22o	1o	1+	1+	2o	1-	3o	4+	4-	17+
31	3-	3+	1+	2-	2o	3+	3+	3+	21o	1o	2-	3o	2-	2+	3o	1o	1+	15o									

	October 1950									November 1950									December 1950								
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	5-	5+	6+	6-	6+	5-	4o	5o	42o	4o	5-	5o	6-	6o	5+	6-	3o	39+	1o	3o	2+	1+	1+	1+	1+	O+	12o
2	4o	6o	6o	7-	6-	6+	6+	6o	47o	4-	3-	4+	3+	3+	4o	1o	1-	23o	2-	3+	2o	2-	2o	3+	3-	2+	19o
3	5+	6-	5o	5-	4+	5-	7-	4-	4oo	3-	3+	3o	3-	1+	1+	2-	2-	18-	2o	2-	2-	2+	2-	1+	2+	3o	16o
4	5+	5o	5+	5-	6-	6o	3o	4o-		3-	5-	6+	5+	5o	6o	3+	2+	36-	o	o	2-	1o	1-	1o	2o	2+	2-	10+
5	4o	5-	5o	4+	4o	5-	5-	5o	36+	3+	3-	3-	3+	3-	2o	2o	3+	22o	2o	o+	2-	2-	2+	3o	3o	2-	16-
6	4-	3o	4+	5-	2-	4o	3+	4+	29o	2o	1o	2o	1+	1o	1o	1-	1-	10-	2+	2+	4+	4+	3o	3-	2o	2o	23o
7	5o	4+	4+	4-	4+	5o	4+	4o	35o	1-	o+	1-	o+	o	o	1-	1o	4o	4-	3o	2o	1+	2o	2o	3o	3-	20-
8	4o	3o	3-	2+	3-	3o	1-	o+	19-	3o	3+	o+	2o	2-	2o	2-	1+	15+	1+	1+	1+	3o	3o	3+	3o	3o	19+
9	3o	3-	2+	4+	1+	1+	1+	1+	18-	1o	3-	1+	o+	o	o	2-	2+	11o	3o	3+	3o	2-	2o	1+	1o	1o	16+
10	2+	1+	o+	1o	1-	1+	1o	2o	10o	3+	4o	6+	5o	5+	5-	4o	2+	35o	2o	3o	3-	2o	2o	2-	3-	2-	18-
11	1+	1o	1+	o+	o+	3-	2+	1+	11-	4-	4-	4o	2-	3o	3+	3-	3o	25o	1+	2o	1o	1+	1-	1-	1o	o+	8+
12	3+	5-	2+	2+	1+	2o	3o	3-	22-	3+	3o	5+	3o	3+	4+	3o	4o	29+	o+	4-	4+	3o	2o	3+	5o	4+	26o
13	3o	3+	3-	2-	2-	1+	3o	3-	19+	3+	4+	4o	3+	4-	3+	4-	4+	30o	5+	5-	5-	4-	4-	4-	5+	5+	36+
14	5o	5-	4-	5-	5+	6o	4+	5-	38+	3+	2+	2-	2-	2+	3-	3-	2+	19o	6-	5o	2-	2o	1+	3+	6o	6-	31-
15	6o	5o	3+	2o	2-	3+	2+	3o	27-	o+	o	o	1o	2-	1-	o	1+	2+	2+	3-	3-	2+	3-	2+	4-	3-	21+
16	4o	4-	5o	6-	6o	5+	4+	4-	38-	2o	2-	o+	1-	1-	2+	2+	2+	12-	3-	4-	2+	3+	3-	1+	1+	2o	19+
17	4-	3+	5-	4-	4o	5-	4-	3+	31o	2+	2+	3o	2+	3-	3o	4-	3+	23-	1+	2-	2-	3+	1o	1o	2o	2-	14-
18	2+	3o	4o	4+	2-	3-	2-	2-	21+	1-	o+	o+	2+	3o	2+	5-	3-	16+	3o	1o	1o	2-	2+	3o	4+	2o	18+
19	2-	2-	2-	1+	1-	o	o	1-	2-	9+	3-	3-	2-	1+	o+	o+	1-	10o	3+	3-	3-	2o	2o	3o	4-	2-	21o
20	1o	o+	1+	2o	1o	1o	3-	2+	12-	1o	1o	1o	1o	1+	2-	1+	1-	9+	1o	1+	1o	3-	1o	2+	3+	5o	18-
21	1o	o+	o+	1o	1o	1o	2o	1-	7+	o+	o	o	o+	o+	o+	3-	3+	8-	3+	2o	1+	2o	1+	o+	1+	1-	12+
22	o	o	1o	1-	2-	3-	4o	3+	17-	2o	1o	1-	1+	3+	5o	4o	6-	23o	1-	2-	1o	3-	4o	5o	6+	5-	26o
23	4o	3+	2+	3+	2+	2+	3-	4o	24+	4o	1o	1o	1o	1o	2o	3-	1-	14-	5o	5-	6-	4+	4o	4-	3-	4+	34+
24	3+	2+	3-	3-	2-	2-	1o	2-	17o	1o	1-	1o	1o	1+	4o	4-	4o	17-	4o	4-	4+	4o	4-	6+	5-	4o	35-
25	2-	1+	o	o	1o	1-	1+	3+	10+	6+	5+	5-	5+	6o	4o	3o	4-	38+	5-	4o	4+	4+	4+	4+	4+	4o	34+
26	2o	2o	2o	2o	1o	1-	2+	2-	14-	5+	6-	5+	7-	5+	5+	6-	5-	44o	4+	4o	5-	5o	4-	4o	4-	3o	32+
27	1o	O+	1+	1+	1-	1-	1+	1+	8o	5o	6-	5o	5o	5o	4+	5-	4o	39-	3o	4-	4+	4-	3o	3-	3+	4o	28-
28	4-	5o	6o	7o	6+	6o	7+	7-	48o	4+	5+	4o	4+	5-	4+	6-	5-	37+	3o	3-	3o	3o	3-	2+	2+	2-	21-
29	6o	5o	6-	5o	5+	6o	5-	6o	44-	4+	4o	3+	3+	4-	3o	4o	4-	29+	2+	2+	2+	3-	1-	1+	2-	2o	15+
30	6-	6-	4+	4o	5-	5+	5+	6-	41-	3o	4-	3o	2+	1o	3o	4o	2+	22+	2+	O	o	1o	2o	2o	2+	3-	15o
31	5+	5o	5-	5+	5-	5-	5+	5o	41o										1o	O+	2-	1+	1o	1o	1o	2o	9+

Ap 1943 Unit 2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	4	6	6	13	61	8	3	20	36	45	28	8
2	6	6	16	13	23	7	5	25	34	44	6	20
3	8	10	10	36	11	4	14	28	48	43	4	26
4	30	14	21	22	9	4	24	24	28	22	4	19
5	18	12	16	27	9	6	47	20	23	8	13	17
6	11	12	8	27	5	11	41	14	11	5	29	1
7	3	5	6	19	6	12	16	18	8	16	15	4
8	5	6	10	7	3	28	22	79	26	33	13	5
9	10	6	8	4	3	22	33	48	38	46	10	9
10	6	4	4	26	5	18	22	9	32	20	10	7
11	4	9	15	39	7	13	20	6	24	12	3	4
12	6	5	22	4	12	12	16	9	18	13	4	3
13	4	12	4	3	17	22	17	52	28	7	3	5
14	2	5	8	3	12	13	4	28	22	4	5	7
15	2	4	3	8	26	4	7	20	14	2	4	7
16	5	4	28	14	13	3	10	27	10	4	14	38
17	25	41	11	8	24	2	10	28	11	13	3	35
18	10	14	6	6	38	3	20	35	9	7	8	22
19	7	9	11	5	19	13	14	34	12	9	57	40
20	40	4	27	9	5	22	8	36	7	15	44	30
21	28	3	8	24	4	21	15	18	23	8	39	24
22	28	4	17	8	3	21	14	4	22	27	25	20
23	9	8	29	2	9	21	7	10	12	11	44	13
24	10	8	9	2	29	24	4	23	7	42	36	8
25	5	11	4	14	21	14	3	19	13	39	44	12
26	16	24	5	35	8	5	7	18	38	50	40	16
27	7	10	5	7	14	8	9	5	36	33	44	6
28	9	4	3	7	28	20	5	43	48	44	24	3
29	5		38	12	11	6	4	36	61	40	27	8
30	8		27	20	8	4	21	90	66	33	8	5
31	5		18		5		13	140		37		15

Ap 1944 Unit 2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	19	4	5	12	35	5	5	7	12	22	3	8
2	7	6	10	88	26	5	6	14	26	6	4	15
3	3	3	4	21	9	3	6	42	8	18	6	10
4	6	8	26	24	20	6	5	6	8	8	12	6
5	14	5	9	24	17	7	5	6	7	5	28	6
6	5	4	22	26	20	4	5	7	6	11	14	6
7	5	40	31	23	15	3	7	5	6	7	6	2
8	5	30	21	17	10	3	4	7	9	3	5	3
9	6	20	29	9	4	5	10	5	6	4	7	6
10	15	20	40	26	4	4	7	9	7	6	10	4
11	32	20	15	12	5	6	4	11	8	33	4	3
12	25	16	26	9	5	3	4	10	10	9	3	3
13	30	14	17	1	3	4	5	6	6	10	1	15
14	29	49	13	1	4	8	6	5	10	27	3	19
15	25	24	6	11	5	17	9	5	4	36	3	8
16	25	9	8	35	2	11	7	5	4	10	4	83
17	22	5	2	9	4	6	8	5	4	11	2	66
18	20	3	13	6	3	5	6	20	10	10	8	19
19	13	3	33	4	4	5	8	7	3	4	8	8
20	11	16	8	4	1	10	10	5	7	6	20	8
21	6	10	7	4	3	16	8	4	18	5	3	11
22	6	5	13	2	4	21	6	5	10	5	3	7
23	6	4	8	1	6	13	4	10	13	14	4	5
24	6	4	3	13	12	5	3	13	27	18	1	2
25	5	3	9	8	6	4	3	3	10	7	1	3
26	10	3	38	9	7	17	3	5	12	14	6	7
27	13	3	60	12	8	11	3	7	13	8	3	36
28	8	5	10	10	5	6	4	20	6	8	2	15
29	6	7	25	10	25	10	4	4	7	4	3	11
30	4		16	22	11	6	5	9	32	5	6	18
31	6		9		9		6	16		13		8

Ap 1945 Unit 2y

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	10	5	5	54	11	4	43	6	5	8	3	2
2	10	10	5	16	13	3	11	18	7	6	3	4
3	9	7	11	4	14	4	7	6	4	3	3	2
4	9	5	5	7	6	3	15	4	19	2	6	1
5	5	17	20	19	6	5	16	7	8	9	10	6
6	7	12	15	22	6	22	27	8	6	4	2	11
7	6	7	9	19	3	14	9	6	5	10	3	8
8	4	15	21	16	5	18	14	5	5	10	10	15
9	11	15	6	3	11	10	6	4	5	6	44	11
10	25	8	5	4	10	13	3	3	4	1	12	6
11	2	10	36	33	22	8	4	5	12	1	18	3
12	5	7	50	29	13	5	5	5	14	30	17	3
13	7	3	10	14	9	5	4	11	9	12	10	18
14	4	5	11	23	9	4	4	16	3	10	6	70
15	36	23	57	14	4	4	3	10	3	6	10	10
16	15	21	23	5	7	4	9	7	7	14	14	4
17	15	12	9	4	6	7	15	5	39	8	10	15
18	6	8	10	4	10	5	8	3	43	8	3	5
19	10	5	5	11	10	5	7	3	13	10	3	16
20	10	4	23	15	8	6	3	2	9	9	3	25
21	5	3	9	4	8	4	3	7	8	5	4	21
22	4	7	3	8	4	2	4	10	5	8	4	2
23	3	7	3	14	8	4	13	11	3	4	3	11
24	1	7	8	16	9	4	7	3	3	52	2	15
25	1	14	11	8	15	6	4	3	7	43	4	21
26	8	23	53	3	6	4	4	3	6	4	2	24
27	5	17	25	3	8	12	3	7	13	13	3	27
28	13	8	53	3	6	5	12	30	6	36	3	24
29	50		13	5	8	3	9	7	5	9	10	12
30	15		4	12	15	12	17	3	16	6	3	6
31	4		3		9		4	4		4		7

Ap 1946 Unit 2y

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	10	4	28	19	8	6	4	7	4	21	28	6
2	8	9	16	22	9	6	8	5	8	11	10	9
3	70	10	5	7	7	2	17	5	8	13	5	11
4	52	11	24	7	9	6	5	4	17	12	6	6
5	10	13	25	9	8	9	3	5	12	16	14	12
6	11	14	17	8	41	12	5	7	6	17	23	8
7	6	125	10	13	37	47	37	23	18	14	9	12
8	5	120	5	10	34	34	16	6	11	4	6	9
9	4	15	13	36	49	20	18	5	12	31	11	6
10	5	20	64	9	16	8	11	6	20	13	12	12
11	23	8	32	5	41	12	14	28	11	9	18	14
12	9	9	4	13	8	25	6	15	12	12	20	15
13	4	15	5	22	9	17	4	8	8	6	7	9
14	3	33	6	27	5	9	18	48	7	6	5	2
15	4	18	9	61	5	7	10	23	6	6	17	3
16	8	7	4	9	8	20	15	21	34	8	18	5
17	11	8	24	6	14	28	13	22	29	4	7	9
18	12	6	7	7	15	20	36	5	135	3	6	6
19	10	27	6	5	4	35	26	7	58	8	19	27
20	3	21	12	5	11	12	5	5	14	24	16	5
21	3	51	12	4	31	16	10	4	22	6	25	12
22	12	19	27	16	49	12	12	3	200	5	17	13
23	16	21	23	115	38	5	19	3	145	8	9	9
24	30	11	115	99	22	5	4	6	21	6	25	5
25	12	13	195	11	15	10	18	6	5	9	20	11
26	18	8	51	9	10	12	79	3	7	33	10	12
27	6	2	30	7	5	19	150	6	38	56	2	13
28	4	4	215	11	8	14	19	4	91	11	4	9
29	13		35	10	8	46	60	3	36	11	2	7
30	6		7	6	6	6	31	6	35	5	4	2
31	7		13		15		8	52		17		5

Ap 1947 Unit 2 ν

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7	9	6	9	14	26	11	18	10	38	10	11
2	10	3	81	9	3	5	16	14	9	61	8	8
3	14	8	130	13	5	9	7	9	84	45	6	4
4	21	14	82	23	5	6	3	10	35	9	10	9
5	24	4	10	10	9	32	4	6	18	6	4	14
6	22	11	6	20	8	13	8	12	22	9	2	30
7	10	9	19	10	5	18	8	7	45	17	4	12
8	7	27	90	16	3	22	12	7	18	13	16	9
9	2	23	46	33	3	17	10	6	6	50	62	23
10	2	14	6	11	4	11	12	7	4	60	48	13
11	2	6	6	15	7	8	11	11	17	44	53	16
12	2	5	18	13	12	7	9	28	17	47	22	20
13	3	5	16	10	18	23	10	26	48	28	14	19
14	3	4	25	12	24	62	6	12	59	45	11	13
15	5	4	36	17	29	14	8	55	62	47	14	12
16	36	44	20	14	36	6	5	54	21	23	15	6
17	14	39	24	100	15	40	68	58	55	17	7	4
18	9	12	14	50	17	13	70	60	43	16	9	7
19	9	24	10	25	10	14	28	52	26	29	18	8
20	5	11	13	30	7	8	30	44	21	22	8	5
21	6	3	8	8	8	8	12	41	22	14	9	2
22	7	3	21	3	9	14	15	71	33	11	6	7
23	6	2	33	4	24	16	22	55	44	17	8	13
24	22	8	29	2	52	11	12	21	90	12	13	6
25	61	11	13	10	12	23	18	28	100	7	9	5
26	28	13	26	15	21	20	20	13	15	4	5	10
27	16	6	27	14	14	6	20	13	12	3	7	14
28	10	7	75	12	19	10	7	10	11	3	6	10
29	11		17	11	22	5	10	14	10	4	12	12
30	7		35	12	5	11	5	8	11	5	7	4
31	6		21		15		6	14		9		5

Ap 1948 Unit 2 ν

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	12	4	41	22	10	34	8	12	37	46	16	3
2	18	12	30	17	24	9	6	13	24	46	56	7
3	41	34	24	13	20	6	9	8	14	25	19	8
4	3	14	9	7	14	5	22	20	24	15	4	5
5	8	16	9	5	8	8	13	7	7	16	5	6
6	12	10	13	24	19	6	11	8	6	4	6	24
7	17	10	7	13	35	9	8	15	15	6	11	20
8	23	8	6	4	14	10	10	145	9	6	16	9
9	17	4	9	4	32	9	7	48	9	4	14	7
10	10	10	8	8	18	6	11	74	8	28	7	8
11	10	8	8	7	15	6	6	27	12	20	6	14
12	10	7	23	12	12	7	7	30	20	14	4	3
13	5	11	39	12	17	12	8	12	8	12	7	13
14	3	10	40	16	8	4	16	10	7	35	6	26
15	5	27	140	14	47	3	8	7	16	51	12	11
16	6	27	9	6	72	2	13	3	22	7	15	17
17	24	17	12	6	10	11	12	5	9	35	22	8
18	12	20	6	8	10	13	6	6	9	86	21	8
19	12	13	9	5	4	16	4	10	10	94	21	8
20	14	5	10	12	6	13	5	29	6	21	49	8
21	16	2	12	24	45	24	10	17	8	67	32	26
22	12	5	9	50	28	15	6	9	16	34	23	12
23	7	26	4	7	17	6	5	15	20	32	15	7
24	4	15	4	10	16	7	4	9	23	30	23	20
25	4	6	4	14	12	11	6	7	31	16	24	33
26	3	4	10	14	7	22	10	3	23	23	13	15
27	8	13	11	12	8	10	6	4	5	29	11	11
28	5	17	6	9	6	4	9	10	1	10	12	5
29	16	16	5	19	27	3	18	26	28	10	6	10
30	14		12	10	14	5	17	21	20	7	3	21
31	9		11		9		26	10		12		29

Ap 1949 Unit 2y

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	14	3	16	6	4	13	5	5	18	10	33	11
2	45	5	24	6	10	10	4	20	21	9	34	4
3	5	12	22	9	26	11	4	18	38	4	21	10
4	4	32	9	6	31	58	3	64	13	18	9	15
5	3	8	12	6	18	59	4	19	10	17	20	10
6	8	22	4	4	16	27	4	9	9	21	10	11
7	17	23	6	32	10	12	11	12	6	65	5	4
8	10	4	8	83	11	6	10	34	12	38	2	5
9	16	3	22	9	15	8	9	10	7	20	8	24
10	17	6	4	32	11	4	4	11	4	9	14	5
11	14	19	4	29	15	5	4	4	10	18	26	3
12	17	16	9	26	150	34	10	4	28	8	16	2
13	16	17	23	28	59	21	15	8	14	14	11	4
14	7	11	38	18	18	6	6	32	17	91	12	14
15	5	12	21	10	8	13	2	26	10	155	10	8
16	9	9	36	14	15	8	18	7	11	62	13	9
17	7	28	36	12	8	9	13	14	7	16	3	5
18	20	21	37	7	4	14	12	13	4	8	9	4
19	18	7	10	6	5	9	15	11	2	16	36	5
20	8	8	12	5	4	6	7	10	2	11	42	10
21	11	21	23	5	7	5	5	7	3	11	16	10
22	13	46	90	5	8	10	12	7	6	16	5	8
23	10	11	47	6	9	5	16	4	5	17	8	9
24	38	25	8	8	7	7	8	3	14	19	6	14
25	155	5	11	6	9	14	10	2	32	6	4	8
26	100	8	16	8	6	9	5	4	20	6	4	6
27	18	18	3	14	6	8	3	11	24	35	13	6
28	8	7	16	7	6	10	3	7	11	32	5	9
29	7		15	16	3	15	5	8	6	13	31	8
30	3		10	5	36	8	6	8	17	7	38	12
31	6		4		34		6	7		10		17

Ap 1950 Unit 2y

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	8	7	10	40	6	17	12	15	5	58	50	6
2	7	27	9	35	21	18	6	20	5	79	17	10
3	6	21	7	31	43	16	15	21	56	52	10	8
4	10	18	6	31	23	7	29	9	42	50	44	5
5	6	9	6	53	22	8	16	6	64	37	13	8
6	11	9	15	30	10	38	10	11	46	24	5	15
7	10	14	22	18	11	5	10	42	20	34	2	11
8	3	12	5	8	5	8	6	71	41	12	8	12
9	11	12	7	9	2	26	13	38	17	11	6	9
10	10	3	5	9	8	20	8	42	22	5	40	9
11	9	5	3	7	14	7	32	29	21	6	17	4
12	6	6	5	20	5	8	47	29	11	14	24	22
13	9	4	4	11	16	4	25	13	13	11	24	39
14	20	6	11	5	17	5	11	23	4	44	10	37
15	11	8	21	19	23	4	10	12	3	25	4	12
16	11	4	8	10	11	6	9	5	20	44	8	11
17	5	4	6	11	6	14	7	3	21	26	14	7
18	6	4	5	15	4	7	5	14	27	14	11	12
19	12	6	84	24	4	4	4	135	28	4	5	12
20	22	79	9	24	8	5	6	110	38	6	4	13
21	19	79	27	4	8	8	9	19	9	4	5	6
22	10	26	23	5	19	11	10	6	4	11	22	29
23	6	49	6	17	33	23	3	8	27	16	8	35
24	40	46	24	33	12	44	33	5	40	9	12	36
25	24	17	12	9	10	18	40	5	36	6	49	32
26	12	3	8	4	15	10	5	2	17	6	64	29
27	15	5	39	5	48	5	9	6	11	4	45	20
28	12	12	11	13	63	4	10	19	7	90	40	12
29	6		14	17	22	36	10	22	3	62	23	8
30	17		8	33	16	39	11	15	12	51	14	8
31	5		20		6		13	8		51		4

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1943	Jan 43		Feb 43		Mar 43		Apr 43		May 43		Jun 43		Jul 43		Aug 43		Sep	
1	1	+4	3	0	3	+1	8	-1	17	-2	4	0	1	0	10	0	14	-2
2	3	-1	3	-1	9	+1	7	+1	11	+1	3	0	2	0	12	-2	13	-1
3	4	+1	6	-1	5	+1	14	-1	6	+1	2	-1	8	0	12	-1	16	-2
4	13	+1	8	-1	11	+1	11	-1	5	-1	1	0	11	+3	12	0	12	-1
5	10	-1	7	0	9	0	12	0	5	-1	3	0	15	0	10	0	11	-2
6	6	-2	7	-1	4	0	12	0	2	0	6	+1	15	-1	8	0	6	-2
7	1	0	2	+1	3	+1	10	-1	3	-2	7	0	9	-1	10	0	4	-2
8	2	+2	3	+1	5	-1	4	-1	0	0	12	+1	11	0	18	-1	12	-1
9	5	-3	3	0	4	-1	1	+1	1	0	11	0	13	0	16	-5	14	-2
10	3	0	1	+1	2	0	12	+1	2	+1	10	0	11	0	5	-2	13	-2
11	1	+1	5	-1	8	+2	14	-1	4	+2	7	0	10	+1	3	-1	12	-3
12	3	0	2	+1	11	0	2	0	7	-1	7	+1	9	0	5	0	10	-1
13	1	0	7	+1	1	-1	1	0	9	+1	11	-1	9	-1	16	0	12	-2
14	0	0	2	0	5	-2	1	-1	7	-1	8	0	1	0	12	0	11	-1
15	0	+1	2	0	1	-1	4	+1	12	-1	1	0	4	+1	10	-1	8	-2
16	2	+3	1	+3	12	+1	8	-2	7	+1	1	0	6	-2	12	0	6	-1
17	12	+1	15	+1	6	0	4	-2	12	-1	0	+1	6	0	12	-2	6	-2
18	5	+1	8	-3	3	0	3	-1	14	-1	1	0	10	+1	14	0	5	-1
19	3	0	5	-1	6	+2	2	-1	10	0	7	+1	8	0	13	+1	7	-3
20	14	+2	2	+1	12	+1	5	0	2	0	11	+1	4	0	14	-1	4	-1
21	12	+1	1	+1	5	0	11	-1	1	+1	11	0	8	-1	10	-3	11	-1
22	12	+1	1	+1	9	+3	4	-1	1	-1	11	-1	8	-1	2	0	11	-2
23	5	0	4	+1	13	-1	0	+1	5	+1	11	+1	3	-1	6	-2	7	-3
24	6	-3	4	+1	5	0	0	0	13	-2	11	0	1	+1	11	-2	3	-1
25	2	-1	7	+4	2	0	8	0	11	0	8	0	1	0	10	-3	7	0
26	9	-1	11	+2	2	+1	14	-1	4	+1	2	0	4	0	10	-2	14	-1
27	4	+1	6	0	2	0	4	+1	8	+1	4	+1	5	-1	2	0	14	0
28	5	+1	1	+1	1	+1	3	+1	12	0	10	+2	2	0	15	-1	15	0
29	2	0			14	+1	7	-1	6	+1	3	0	1	+1	14	0	17	-1
30	4	-1			12	+1	10	+1	4	-1	1	-1	11	0	18	0	17	+1
31	2	0			10	-1			2	0			8	0	20	0		

1943	Oct 43		Nov 43		Dec		1944 Jan 44		Feb 44		Mar 44		Apr 44		May 44		Jun	
1	15	-1	12	0	4	+1	10	+1	1	+1	2	0	7	+1	14	+3	2	+1
2	15	0	3	-1	10	-1	3	0	3	0	5	+1	18	+2	12	-1	2	0
3	15	0	1	+1	12	-1	1	0	1	0	1	0	11	-1	5	-1	1	0
4	11	-1	1	0	10	0	3	-1	4	+1	12	+1	12	-1	10	+1	3	+2
5	5	-1	7	-1	9	-3	8	-1	2	+1	5	+1	12	0	9	0	3	+2
6	2	0	13	0	0	+1	2	+2	1	+1	11	+1	12	0	10	0	1	+1
7	9	0	9	-2	1	+1	2	0	14	+3	13	+1	11	-2	8	+1	1	+1
8	13	-1	7	-1	2	+1	2	+1	13	0	11	-1	9	-1	6	-2	1	-1
9	15	0	6	-2	5	-2	3	0	10	+2	13	-1	5	+3	1	+1	2	+1
10	10	0	5	0	4	0	8	+1	10	+1	14	+2	12	-2	1	0	2	0
11	7	-1	1	0	1	0	13	+1	10	0	8	+1	7	-1	2	-1	2	+2
12	7	-2	1	+1	1	0	12	0	9	-3	12	0	5	0	2	0	0	0
13	3	-1	1	+1	2	0	13	+1	8	0	9	0	0	0	0	+1	2	+1
14	1	+1	2	0	4	+3	13	+2	16	0	7	+1	0	0	1	0	5	+1
15	0	+1	1	+1	3	+1	12	+1	11	0	3	-1	6	+1	2	0	9	+2
16	2	0	8	-1	14	+2	12	0	5	-2	4	-1	14	+1	0	0	8	-1
17	7	-2	0	+1	14	-1	11	-1	2	0	0	0	5	-1	1	0	3	+1
18	4	-1	4	+1	11	-1	10	-1	1	0	8	+3	3	0	1	0	2	0
19	5	-2	17	+1	15	0	8	-1	1	0	13	0	1	0	1	0	2	+1
20	8	0	15	0	13	0	6	-1	9	+1	4	0	2	-1	0	+1	6	0
21	4	-1	14	+1	11	-1	3	-1	5	-1	3	+2	2	0	1	0	9	0
22	11	-1	12	-1	10	-1	3	0	2	0	7	0	0	0	1	0	11	0
23	6	-1	15	0	8	-1	3	0	2	0	5	+1	0	0	2	+2	8	+1
24	15	0	14	+1	4	0	3	0	1	+1	0	+1	8	-3	7	-1	2	+1
25	14	-1	15	+1	7	-2	2	+1	1	0	5	+3	4	0	3	+1	1	+1
26	16	+1	15	0	9	0	5	+3	1	0	14	+1	5	-1	3	+1	9	+1
27	13	0	15	-1	3	0	7	0	1	0	17	+1	7	-1	5	0	6	-1
28	15	-2	12	-2	1	0	5	-1	2	0	6	+3	6	0	2	+3	2	0
29	14	0	12	-1	5	-1	3	-1	4	0	12	-2	5	+1	12	0	5	+1
30	13	-1	4	-1	2	+1	1	0			9	-1	11	-2	6	+2	3	0
31	14	-1			8	0	3	+1			5	+1			5	+2		

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1944	Jul 44		Aug 44		Sep 44		Oct 44		Nov 44		Dec		1945	Jan 45		Feb 45		Mar	
1	2	0	3	+1	7	-1	11	+1	1	0	4	+1		6	+1	2	-1	2	-1
2	3	-1	8	+3	12	0	3	+1	1	0	8	+3		6	-2	6	+2	2	+1
3	2	+2	15	+1	5	0	10	0	3	+1	6	-1		5	+1	4	-2	6	-1
4	2	+1	3	-1	4	+1	4	0	7	+1	3	-1		5	+2	2	-1	2	-1
5	2	0	3	+1	3	+1	2	-1	12	+2	3	+1		2	0	9	0	10	+2
6	2	+1	4	-1	2	0	6	+3	8	0	3	0		3	-1	7	0	9	+1
7	4	+1	2	0	3	0	3	0	2	0	0	0		2	0	3	0	5	-1
8	1	+1	3	+2	5	+1	0	0	2	0	1	0		1	0	9	-1	11	0
9	6	+2	2	0	3	-1	1	0	4	-1	3	-1		6	+2	8	0	3	+1
10	3	+2	5	+1	3	0	3	+2	5	+4	1	0		12	0	4	0	2	0
11	2	-1	6	-1	4	0	13	+1	1	0	1	0		0	0	6	-1	14	0
12	1	+1	6	0	5	0	5	0	1	-1	1	0		2	+1	4	-2	16	+1
13	2	+1	3	0	3	+1	6	-1	0	0	9	+3		4	0	0	0	6	-3
14	3	+1	2	+1	6	-1	12	+3	1	+1	10	-2		1	0	2	+2	7	-1
15	5	+1	2	0	1	0	14	0	0	0	4	+4		14	+3	11	+1	17	0
16	4	+2	2	+1	2	-2	6	-2	1	0	18	+1		8	-2	11	0	11	0
17	4	0	2	+1	1	+1	6	-2	0	+1	17	+2		8	+1	7	+1	5	0
18	2	+2	10	+3	5	-1	5	-1	4	-1	10	+2		3	0	4	-2	6	-1
19	4	+3	4	+1	0	+1	1	0	4	0	4	-1		6	-1	2	-1	2	-1
20	6	+2	2	0	4	+3	2	+1	10	+2	4	0		6	-2	1	0	11	0
21	4	+2	1	0	10	-1	2	-1	0	+1	6	-2		2	+1	0	0	5	0
22	3	+1	2	+1	5	+1	2	-1	0	+2	4	+1		1	-1	3	+1	1	-1
23	2	-1	5	+3	7	+1	8	+2	1	0	2	0		1	-1	3	+2	1	-1
24	0	0	7	+2	12	0	10	0	0	+1	0	+1		0	0	3	0	4	+2
25	1	-1	1	-1	6	0	4	+1	0	+1	1	-1		0	0	8	-1	6	0
26	1	+1	2	+1	7	-1	8	-2	3	0	4	+2		4	+2	11	+1	16	0
27	1	+1	3	0	8	0	4	0	0	+1	14	+2		2	0	9	+1	12	-1
28	1	+1	10	+2	3	0	4	-2	0	+2	8	+1		7	+4	4	+1	16	+1
29	2	+2	2	0	4	-1	1	+1	1	0	6	+2		16	0			8	-1
30	2	+1	5	-1	13	+2	2	-1	3	+1	10	-1		8	-1			1	0
31	3	+1	9	+2			7	-1			4	0		1	0			1	0

1945	Apr 45		May 45		Jun 45		Jul 45		Aug 45		Sep 45		Oct 45		Nov 45		Dec	
1	16	0	6	-1	1	-1	15	-1	2	+1	2	0	4	0	1	-1	0	0
2	9	-2	7	-2	1	-1	6	0	10	0	3	0	3	-1	0	+1	2	0
3	1	0	8	-3	1	0	3	0	3	-1	1	0	0	0	1	0	0	0
4	3	+2	3	-1	1	0	8	+2	2	0	10	0	0	0	3	+1	0	0
5	10	-1	3	-2	2	0	9	-1	4	+2	4	-1	5	+2	5	0	2	+2
6	11	0	3	-1	11	+1	12	0	4	0	3	-1	1	+1	0	0	6	+2
7	10	-2	1	0	8	0	5	+1	3	+1	2	0	5	+2	1	0	4	0
8	9	-1	2	-1	10	0	8	-2	2	+1	2	+2	5	+1	6	+3	8	-1
9	0	0	6	+2	6	+1	3	-1	1	0	2	0	3	-1	15	+1	7	-1
10	1	0	6	+2	7	0	1	+1	0	+1	1	0	0	0	7	-3	3	-3
11	13	+2	11	0	5	0	1	0	2	+1	7	+1	0	0	10	0	1	-1
12	13	0	8	-2	2	0	2	-1	2	0	8	-1	13	+2	10	-1	1	0
13	8	-2	5	-1	2	0	1	0	6	+2	5	0	7	-2	5	+1	10	+3
14	11	-2	5	0	1	0	1	0	9	+1	1	-1	6	0	3	0	18	0
15	8	-2	1	-1	1	0	1	-1	5	+1	1	-1	3	+1	5	0	6	-1
16	2	0	4	-2	1	0	5	+1	3	+2	3	0	8	+2	8	+1	2	0
17	1	0	3	0	4	0	8	+2	2	0	14	+2	5	+1	5	-1	8	0
18	2	-1	6	+1	2	0	4	0	0	0	15	+1	4	-2	1	-1	2	-1
19	6	0	5	-1	2	-1	4	-1	0	0	7	0	6	+1	0	+1	9	+2
20	8	-2	4	0	3	0	1	-1	0	0	5	-1	5	0	1	-1	12	0
21	1	0	4	0	1	0	1	0	4	0	4	0	2	0	1	+1	11	-4
22	4	+1	2	-1	0	+1	1	0	5	+5	2	-1	4	+1	1	0	0	0
23	8	-2	4	-1	1	0	8	+1	6	+1	0	0	1	0	1	+1	7	+2
24	9	-1	5	-1	1	-1	4	+1	1	0	0	0	16	+2	0	0	9	+1
25	4	-2	9	-3	3	-1	1	0	0	+1	3	+2	15	0	2	-1	11	+3
26	0	0	3	0	1	-1	2	-1	1	0	3	-1	1	0	0	0	12	-1
27	1	0	4	0	7	-1	0	+1	4	0	7	-2	8	+2	0	+1	12	0
28	0	0	3	-1	2	+1	7	0	13	+2	3	-1	14	-1	1	0	12	-2
29	2	+1	5	-1	1	-1	5	0	3	+1	2	+1	5	0	6	0	7	-2
30	7	0	9	-1	7	+1	9	-2	1	0	9	-1	3	0	1	0	3	-1
31			5	-1			1	+2	1	+1			1	0			4	-1

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1946	Jan 46		Feb 46		Mar 46		Apr 46		May 46		Jun 46		Jul 46		Aug 46		Sep	
1	6	+2	1	-1	12	-1	10	-2	4	-1	3	-1	1	0	3	-1	2	-1
2	4	+3	5	-1	9	-2	11	-2	5	-2	3	-2	5	-3	2	-1	5	-2
3	17	+2	6	+1	2	0	4	-1	3	-1	0	0	9	-1	2	-1	4	0
4	16	0	6	+1	12	-2	3	-1	5	-1	3	0	2	-1	1	-1	9	-1
5	6	-2	8	-2	12	-2	5	-1	5	-1	5	0	1	0	2	0	7	-1
6	7	0	8	-3	9	-2	5	-2	15	-2	7	0	2	-1	4	-2	3	0
7	3	+4	19	+1	5	0	8	-3	14	0	15	-1	14	-1	11	-1	10	-1
8	2	0	19	+1	2	0	5	-1	14	-2	13	-1	9	+1	3	+1	6	-1
9	1	0	9	-3	7	+3	14	-2	16	-4	10	-1	10	+1	2	0	7	+2
10	2	+1	10	-3	17	0	5	-2	9	-1	4	0	6	-2	3	-1	10	-3
11	11	-1	4	-2	13	-1	2	-1	15	-1	7	-2	8	-4	12	0	6	-1
12	5	-1	5	0	1	-1	8	-1	5	-3	12	-1	3	-2	8	-1	7	-2
13	1	0	8	-2	2	-1	11	0	5	-3	9	-2	2	-1	4	0	4	-2
14	1	-1	13	-1	2	0	12	-1	2	-1	5	-2	10	-1	16	-2	4	-2
15	1	+1	10	-2	5	+2	17	-1	2	-1	4	-1	6	-1	11	-2	3	-2
16	4	-1	4	-1	1	+1	5	-2	4	-2	10	-1	8	0	11	-1	13	+1
17	6	+1	4	-2	11	0	3	-2	8	-2	12	-2	7	-1	11	-1	13	-1
18	7	+1	3	0	4	0	4	-2	8	-2	10	-2	14	0	2	0	19	+1
19	6	-1	12	+1	2	+1	2	-1	1	0	14	-2	12	-1	4	-1	17	-1
20	1	0	11	+1	7	-1	2	-1	6	+2	7	-3	2	0	2	0	8	-3
21	0	+2	16	-1	7	-2	1	-1	13	-1	9	-2	6	-1	1	-1	11	0
22	7	-1	10	-1	12	+1	9	0	16	-1	7	-2	7	-1	0	0	21	0
23	9	0	11	0	11	0	19	0	14	-1	2	0	10	-1	1	-1	20	-1
24	13	+1	6	+1	19	0	19	0	11	-1	2	-1	2	-1	3	0	11	-3
25	7	+1	7	-2	21	0	6	0	9	-2	6	-1	10	-3	3	-1	2	-1
26	10	-1	4	-2	16	-1	5	-2	5	-1	7	-2	17	0	1	0	3	-2
27	2	0	0	0	13	-2	4	-1	2	-1	10	-2	20	-1	3	-1	14	0
28	1	+1	1	0	22	0	7	-2	5	-2	8	0	10	-1	2	-1	18	-1
29	4	-1			14	-1	6	-2	4	-1	15	0	17	-2	1	-1	14	-1
30	3	-1			3	-1	2	-1	3	0	3	0	13	-1	3	+1	14	-2
31	3	0			8	-1			9	-3			4	-2	16	-2		

1946	Oct 46		Nov 46		Dec		1947	Jan 47		Feb 47		Mar 47		Apr 47		May 47		Jun
1	11	-2	12	-1	3	-1		3	0	5	-1	3	-1	5	-2	8	-1	12	-1
2	7	-2	5	-1	5	-2		6	+3	1	0	18	+1	5	-1	1	-1	2	-1
3	8	-4	2	-2	6	-3		8	+2	4	0	19	+1	8	-1	2	0	5	-1
4	7	-3	3	-1	3	-1		11	+1	8	-2	18	-2	11	-1	2	0	3	0
5	9	-1	8	+1	7	0		12	0	2	0	6	-1	6	-1	5	-2	13	0
6	9	0	11	+1	4	-1		11	-2	6	-1	3	-1	10	-2	4	0	7	-1
7	8	-2	5	-2	7	-1		6	-1	5	+3	10	-1	5	-1	2	0	10	-2
8	1	+1	2	0	5	-2		4	-2	12	+1	18	0	9	-1	0	+1	11	-2
9	13	-1	6	-2	2	-1		0	0	11	0	15	-1	13	-1	0	0	9	-1
10	8	-3	7	0	7	0		0	0	8	+1	3	+1	6	-1	2	-1	6	-1
11	5	-2	10	-3	8	+2		0	0	3	0	3	0	8	-3	4	0	4	-1
12	7	-4	10	-3	9	-1		0	0	2	0	10	0	7	-1	7	-1	4	-1
13	3	-2	4	-2	5	-2		0	+1	2	-2	9	0	6	-1	10	-2	11	0
14	3	-2	2	-1	0	0		1	0	1	-1	12	-1	7	0	11	0	17	-1
15	3	-1	9	+1	0	0		2	+1	1	-1	14	+1	9	-4	13	-1	8	0
16	4	0	10	-3	2	0		14	+1	15	+1	10	-1	8	-2	14	-1	3	+1
17	1	0	3	-1	5	0		8	0	14	0	12	-2	19	-1	8	-2	14	+1
18	1	0	3	-1	3	0		5	+1	7	-1	8	-1	16	-1	9	-2	7	0
19	4	0	10	-1	12	+1		5	0	12	-1	6	0	12	-2	6	-1	8	-2
20	12	-2	9	-1	2	-1		2	+1	6	0	8	-3	13	-1	3	0	4	-1
21	3	+1	12	+1	7	+1		3	-1	1	-1	5	-1	4	-1	4	-1	4	-1
22	2	0	9	-2	7	0		3	+1	1	+1	11	-2	0	0	5	+1	8	-1
23	4	-2	5	-2	5	-1		2	0	0	0	13	0	1	-1	12	0	9	-2
24	3	-1	12	0	2	-1		11	0	4	0	13	-3	0	0	16	0	6	-1
25	5	-2	10	+2	6	+2		17	-1	6	+1	7	-1	6	0	7	0	11	-2
26	13	-1	5	-1	7	0		12	0	8	-2	12	-1	8	-3	11	-1	10	-2
27	16	-1	0	0	8	-1		9	+1	3	-1	12	0	8	-2	8	-1	3	+1
28	6	0	1	-1	5	-2		6	0	3	+1	18	-3	7	-3	10	-1	5	-1
29	6	-1	0	0	3	-1		6	-2			9	0	6	0	11	-1	2	-1
30	2	-1	1	0	0	0		3	+1			14	-3	7	-2	2	0	6	-1
31	9	+1			2	-1		3	-1			11	-2			9	0		

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1947	Jul 47		Aug 47		Sep 47		Oct 47		Nov 47		Dec		1948	Jan 48		Feb 48		Mar	
1	6	-1	10	-1	6	-1	14	-1	6	-1	7	0		7	+2	1	+1	15	-1
2	9	-2	8	-1	5	0	17	-2	4	-1	4	+2		10	+2	7	+1	15	0
3	4	-1	5	-1	18	0	15	-2	2	0	1	0		15	+1	13	+2	12	-2
4	1	0	5	+1	14	-2	5	-2	5	+1	5	+2		1	0	8	+1	5	-1
5	1	0	3	-1	10	-1	3	-1	1	0	8	-1		4	+2	9	0	5	0
6	4	+1	7	-1	11	+1	5	-1	0	0	13	0		7	-1	5	+2	8	0
7	5	-1	4	-1	15	-1	9	0	1	+1	7	+1		9	+1	5	+1	4	+1
8	7	-2	4	-2	10	-1	7	-1	9	0	5	-1		11	+1	5	+1	3	+2
9	5	0	3	-1	3	-1	16	0	17	0	11	0		9	0	1	0	5	0
10	7	-1	4	-1	1	0	17	-2	16	-1	7	-2		6	-1	6	0	5	+2
11	6	0	6	+1	9	+1	15	-2	16	0	9	-2		6	-2	4	-1	4	+4
12	5	0	12	0	9	0	15	-1	11	-3	10	+1		5	+2	4	0	11	0
13	6	0	12	-1	16	-2	12	0	8	-2	10	-1		2	0	6	+1	14	0
14	3	0	7	+1	17	-2	15	-2	6	-1	8	-2		1	0	6	+1	15	-1
15	4	-1	16	+1	17	-3	15	-1	8	-2	7	-1		2	+2	12	+2	19	0
16	2	+2	16	0	11	-3	11	-1	8	-3	2	-1		3	-1	12	0	5	+2
17	17	-1	17	-3	16	-1	9	-2	3	0	2	-1		12	+2	9	0	7	0
18	17	-1	17	-3	15	-2	9	-2	5	-1	4	-1		7	0	10	+1	3	-1
19	12	-1	16	-3	12	-1	13	-2	10	-2	5	-1		7	+1	8	0	5	-1
20	13	-1	15	-2	11	-3	11	-2	4	0	2	-1		8	+2	2	-1	6	+1
21	7	-2	15	-3	11	-3	8	-1	5	0	0	0		9	0	0	0	7	0
22	9	-3	18	0	13	-1	6	-3	3	0	3	+2		7	0	2	-0	5	0
23	11	-2	16	-2	15	-2	9	-3	5	-1	7	+2		4	-2	12	+1	1	+1
24	7	-2	11	-1	18	-1	7	-1	7	+3	3	+2		1	0	9	+2	1	0
25	10	-2	12	-2	19	-2	3	0	5	-1	2	0		2	-1	2	0	1	0
26	10	-2	7	-2	8	-1	1	0	2	0	6	0		1	-1	1	+2	5	+3
27	10	-3	7	-2	7	-1	1	0	4	0	8	-1		4	+1	7	+1	6	0
28	4	-1	6	-2	6	-1	1	-1	3	0	5	-1		2	+1	9	0	3	0
29	6	-1	8	-1	5	0	1	0	7	-1	7	+2		9	+1	9	0	2	0
30	2	-1	4	-2	6	+1	2	0	3	+3	1	+1		8	0			7	+1
31	3	+2	8	-1			5	0			0	0		5	0			6	+3

1948	Apr 48		May 48		Jun 48		Jul 48		Aug 48		Sep 48		Oct 48		Nov 48		Dec	
1	11	-1	6	-2	13	+1	4	+2	7	+1	14	-2	15	0	9	+2	1	-1
2	9	-2	12	-1	5	0	3	0	7	+2	12	-1	15	-1	16	+1	4	+1
3	8	-1	10	0	3	0	5	0	5	0	8	-1	12	-1	10	-1	5	-3
4	4	-1	8	+1	2	0	11	-1	10	+1	12	-3	9	+1	1	0	2	+2
5	2	-1	4	0	4	+1	8	0	3	+1	4	-1	9	-2	2	0	3	0
6	12	+1	10	-3	3	0	6	+1	4	+2	3	0	1	0	3	+1	11	+3
7	7	+2	14	-1	5	+1	4	+2	9	+1	8	-1	3	+2	7	-1	10	+1
8	1	0	8	-2	5	0	6	0	20	0	5	-1	3	0	9	0	5	+2
9	1	+2	13	0	5	+1	4	-1	16	+1	5	+1	1	0	8	0	4	-1
10	4	+1	10	-2	3	0	6	+2	18	0	5	0	12	0	4	-1	4	+3
11	3	-1	8	-1	3	+1	3	+1	12	+1	7	+1	10	-1	3	0	8	+1
12	7	0	7	-1	4	0	4	0	13	-2	10	+1	8	-1	1	0	1	-1
13	7	0	9	+1	7	-1	4	0	7	-1	4	+1	7	0	4	+1	8	+1
14	9	+1	5	-1	1	+2	9	+1	6	-1	4	0	14	+1	3	0	12	-1
15	8	0	15	-1	0	+1	4	+1	4	-1	9	+1	16	-1	7	+2	6	0
16	3	-1	10	-1	0	0	7	+1	1	0	11	0	4	-1	8	-1	9	+1
17	5	0	5	+1	6	+1	7	-1	2	+1	5	0	14	-1	11	-1	4	0
18	4	0	5	0	7	+3	2	+1	2	0	5	+2	18	0	11	0	4	0
19	2	0	2	0	9	+1	1	0	5	+4	5	0	19	-1	11	-1	5	-2
20	7	+1	3	0	7	+1	2	+1	13	+1	3	+1	11	-1	16	0	4	+1
21	11	+2	15	0	11	0	6	+1	9	0	4	+2	17	0	13	-1	12	+1
22	16	-1	12	-1	9	-1	3	-1	5	+1	9	+1	14	-1	11	0	7	-1
23	4	-1	9	-1	3	+1	2	+1	9	0	10	0	13	0	9	-2	3	+3
24	6	+1	9	0	3	+2	2	-1	5	+1	11	+1	13	-1	11	0	10	0
25	8	-1	7	0	6	+2	3	0	3	+1	13	-1	9	0	11	+1	13	+2
26	8	0	4	-1	11	-1	6	0	1	-1	11	-1	11	-1	8	+2	8	+1
27	7	-1	4	0	6	-1	3	0	1	+2	2	-1	13	0	7	-1	6	-1
28	5	0	2	+1	1	+1	5	+2	6	+1	0	0	6	-1	7	-1	2	-1
29	10	0	12	-2	1	0	10	+1	12	0	12	0	5	0	3	-2	5	+1
30	5	0	8	0	2	+2	9	+1	11	-1	10	0	3	0	1	-1	11	+3
31			5	+1			12	0	6	-1			7	-1			13	0

Daily values of planetary character-figures Cp, and differences (Ci - Cp). To avoid decimals, the table lists the tenfold value Tp = 10 Cp, and the excess Ei = 10 (Ci - Cp).

1949	Jan 49		Feb 49		Mar 49		Apr 49		May 49		Jun 49		Jul 49		Aug 49		Sep	
1	8	-1	1	+1	9	+3	2	+1	1	+1	7	0	2	+1	2	+1	10	0
2	15	-2	2	-1	12	-1	3	-1	6	-1	6	-1	1	-1	10	+3	11	0
3	2	-1	7	+5	11	-1	5	0	12	0	6	0	1	+2	17	-1	14	+1
4	1	0	13	-1	5	0	3	-1	13	0	17	0	1	0	17	0	8	0
5	1	-1	4	0	7	-2	3	-1	10	-1	17	-1	1	+1	10	+1	6	-1
6	5	+2	11	+2	1	-1	2	-1	9	-1	12	0	1	0	5	+2	5	-3
7	9	-2	11	-1	3	-2	13	+2	5	-1	7	+1	6	0	7	+1	3	0
8	6	+2	1	0	4	-1	18	0	6	0	3	-1	5	+1	13	0	7	+1
9	9	+1	1	0	11	+1	5	+1	9	0	4	+1	5	+1	6	+1	4	0
10	9	0	3	0	1	0	13	-2	6	0	1	0	1	0	6	0	1	0
11	8	0	10	+1	1	-1	13	-1	9	+1	2	0	2	0	1	0	6	-2
12	9	+1	9	-3	5	+1	12	+2	20	0	14	-1	6	+2	1	0	12	0
13	9	-2	9	-2	11	0	12	-1	17	-1	11	-1	8	+3	4	+1	8	-2
14	3	-1	7	-1	14	0	10	-1	10	-1	3	+1	2	+3	13	-1	9	+1
15	2	0	7	+1	11	-1	6	0	4	-1	7	+1	0	+1	12	0	6	-1
16	5	-1	5	-1	14	+1	8	-1	9	-1	4	0	10	+1	4	+1	7	-2
17	3	+2	12	+2	14	0	7	-1	4	+1	5	+1	7	+1	8	0	3	0
18	10	0	11	-1	14	-2	3	+1	1	-1	8	0	7	+2	7	0	1	+1
19	10	-1	4	-2	6	-1	3	0	2	+1	5	-1	9	0	6	0	0	0
20	4	-2	4	+3	7	0	2	-1	1	0	3	-1	3	+1	6	-1	0	0
21	6	0	11	+2	11	+1	2	-1	4	+1	2	0	2	+1	4	0	0	+1
22	8	-4	15	0	18	0	2	0	4	+2	6	+1	7	0	3	-1	3	0
23	6	+1	6	+2	15	-1	3	+1	5	-1	2	-1	9	0	1	-1	2	-1
24	14	+1	12	-1	4	-1	4	+1	4	-1	4	-1	5	+1	0	0	8	+2
25	20	0	2	-1	6	-1	3	0	5	0	8	0	6	0	0	0	13	0
26	19	0	4	+1	9	-2	4	-1	3	+1	5	0	2	+1	2	-1	10	0
27	10	-2	10	-1	1	-1	8	-1	3	+1	5	-2	1	0	6	0	12	-1
28	4	-1	3	0	9	-1	3	0	3	-1	5	-1	1	0	4	-2	7	0
29	4	-1			9	-2	9	0	1	-1	9	-2	2	+3	4	+1	3	0
30	1	-1			6	-2	2	-1	14	+1	4	0	3	0	5	0	9	+1
31	3	0			1	-1			13	0			3	+1	4	0		

1949	Oct 49		Nov 49		Dec		1950 Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De
1	5	+1	13	+2	6	-1	4	4	6	15	3	9	7	10	2	17	16	3
2	5	-1	13	+1	2	-1	4	12	5	14	11	10	3	10	2	18	9	6
3	1	0	11	-2	6	+1	3	11	4	13	15	9	9	11	16	16	6	4
4	10	+2	5	0	8	+1	5	10	3	13	11	4	13	5	15	16	15	2
5	9	0	10	0	6	0	3	5	3	16	11	4	9	3	17	14	7	4
6	11	0	5	+1	6	0	6	5	8	13	6	14	6	6	15	12	2	9
7	17	0	2	-1	1	-1	6	8	11	10	6	2	6	15	10	13	0	6
8	14	+1	0	0	2	0	1	7	2	4	2	4	3	18	15	7	4	7
9	10	-1	4	+1	12	-1	6	7	4	5	0	12	7	14	9	6	2	5
10	5	0	8	+1	2	+1	5	1	2	5	4	10	5	15	11	2	14	5
11	10	0	12	0	1	-1	5	2	1	4	8	4	13	13	11	2	9	1
12	4	+1	9	+1	0	0	3	3	2	10	2	4	15	13	6	8	12	11
13	8	+1	6	0	1	-1	5	1	2	6	9	1	12	7	8	6	11	14
14	18	+1	7	+1	8	+2	10	3	6	2	9	2	6	11	1	15	6	14
15	20	0	5	+2	4	+1	6	4	11	10	11	1	6	7	1	12	1	7
16	17	0	7	-1	5	0	6	2	4	5	7	3	5	2	10	15	3	6
17	9	-1	1	0	2	0	2	1	3	6	3	8	3	1	11	12	8	4
18	4	0	5	+2	1	0	3	1	3	9	2	4	2	8	12	8	7	7
19	9	-1	14	+2	2	+2	7	3	18	12	2	2	2	19	12	2	2	7
20	6	0	15	-2	6	0	11	18	5	12	4	2	5	19	14	3	2	7
21	6	-1	9	+1	5	+3	10	18	12	1	4	4	5	10	5	1	2	3
22	9	+1	2	+2	4	+1	6	12	11	2	10	6	6	3	1	6	11	13
23	9	+1	4	+2	5	+3	3	16	3	9	13	11	0	4	12	9	4	14
24	10	-2	3	0	8	0	15	15	12	13	7	15	13	2	15	5	7	14
25	3	-1	1	0	4	+1	12	9	7	5	6	10	14	2	14	3	16	13
26	3	+1	1	+1	2	0	7	0	4	2	8	5	2	0	9	3	17	13
27	14	+1	7	+1	3	0	8	2	14	2	16	2	5	3	6	1	15	10
28	3	-1	2	-1	5		7	7	6	7	17	2	5	10	3	18	15	7
29	8	-1	13	0	4	+1	2		8	9	11	14	5	11	1	17	11	4
30	4	-1	14	+1	7	+2	9		4	13	9	14	6	9	7	16	8	4
31	6	-2			9	+2	2		10		3		7	4		16		2

Geomagnetic planetary three-hour-range indices Kp.

	January 1951			February 1951			March 1951		
D	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	3o3-2+2-	3-3o3-3-	21-	5o5-4o3o	2+1+4-4o	28o	4+4+3-3+	3o2+1+1+	23-
2	3o4o4-3-	4-3o4o3+	27+	3-2+1oo+	1-1o1o2+	11+	0oo+1+2o	3+2+1+2+	13o
3	3+5o2+2o	2+2o3-3+	23o	2-1o1-o+	o+1+2+2-	9+	2-3o4o3-	2o2+2-1-	18o
4	3-2+1-o+	o+2o2-3-	13-	o+oo2o4o	3o3o3-2o	17o	oo3o3o1+	2o1+1+3o	15o
5	2o2o1+2-	2o2o4-4-	18+	1-3o3o3o	4o3+4+4-	25o	o+2o3-2-	1o2-1oo+	11-
6	2o2o1o1o	1o1-2+o+	10+	6o6o4+4o	2o2-1+2+	28-	1+3+5o3+	3+3-3-3-	24+
7	o+2-2-1+	1o1o1o1+	9+	3+3+2+1+	1+3-2+3-	19+	4-3+2+4+	6o4+5o5o	34o
8	2o1-3o3-	3o2+2-1-	16o	3-2o2+3o	3-5-5+4o	27-	4-3o4-6-	5-5+5o5-	36-
9	1+2+2+2+	2-1oo+1-	12o	3+4-4-3o	4+5-4o5-	31+	4+4o4o4-	3+4-4o6o	33o
10	1o1o1+oo	1o4o4+3+	16o	4o4o4+3-	3o2+4-5o	29o	5o6-5o3+	4+4-4o4o	35o
11	5o2o4-2+	2-2+4-4o	25-	5-4-3o3o	3-4o4-5-	29+	4o4-4+3+	3o5o5-3-	31-
12	4+4-4-4-	3o3o2+2o	26-	5+5+4o3+	4-4o5+4+	35+	4+4+4o5o	5-4-4o2o	32o
13	3+4o4o2+	2-1+4-3o	23+	4o4-3+4o	4o3o3+4-	29o	3o3+3+5-	5o6-7-6+	38o
14	3+3o3o3o	3+3o3-3+	25-	3o3-2+2+	2o2o4-3o	21o	5o5-5-3+	5-5-6+4-	37o
15	4+4+3o2+	3+3-3+4o	27+	2o1o1+1+	2-1-1o2+	11+	6o4o3o2+	2+2o2-1-	22o
16	4-2-3-3+	4o4-3+5-	27o	1-o+o+o+	o+1o1+1o	5+	1-3o3o4+	3+3o4-3o	24o
17	4o4-3o2o	1-1+1+1+	17+	1-oo+o+	1o1o3-2+	8+	2o2-5+5+	3o4-3-3-	26+
18	1o2-1o1o	2+2+1o3-	13o	3+2o2o3+	3-3o3+2o	22-	3o3+3+5+	3o3o3-4o	28-
19	4-3-2+2o	3+2+3o4-	23o	1o2+2+4o	3-2+2o3o	20-	3+3o4-2o	1-2-2-1+	17+
20	4o2o1o1+	2+2+1-1-	14+	2+2+1+2+	1+1-1o1-	12o	1-1o1o4o	4o3-1o1-	15o
21	1oOo1-3o	4o5-4-5o	22o	2o2+2+2o	3-3-3o3o	20o	1-1o2o2-	1+1o2o4-	13+
22	5+5o6-4+	5o5o5+6o	42-	4+4+5o5-	5o4+5-5+	38-	4o4-3o5-	5-6-6o6-	37+
23	5-3-4-4o	3+4-4-3+	29o	6-5-6+6-	5+5-6-6o	44o	4o4o3+4-	4o4o5o4+	32+
24	2-3o3-3-	3+2-2+2+	20-	5o5o5o4+	4+5+4o4-	37-	4-3o3-3+	4-3+4+4o	28o
25	2-2+2+2o	3-2-2+2-	17-	4o3+2o3o	3-3o3-5-	25+	4-5-2-4+	3+3-1+3o	25-
26	1-1+2-2+	2+4-4-4-	19+	2+3+3o3-	4-4o4-2+	25o	3+3-3+3+	3o2+4-4-	25+
27	3+5-4o3-	2+3o3o3+	26+	7o6-5-3+	4o4o5-5-	38o	3+5-3o3-	2+2+2-2o	22o
28	4-4-3-3+	3+3+4+4-	28o	5o7-7o5o	4+4-3+4o	39o	2+1-o+oo	1o1+1o1+	8o
29	2o3o3o4-	2+3-3-4-	23o				1-4+5+4o	5-4o4o4+	31+
30	3o2+3+3-	2o3+3o4o	24-				4-3-2o3-	3-1+1o2-	18-
31	4+6-7-5+	4o4+4+4+	39o				1+2-3o2+	2-3+2+1+	17o

	April 1951			May 1951			June 1951		
D	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	2+1+1+2+	o+1o2-3o	13+	4-5-5+6-	3o5-7-7+	41o	2+3+3o3-	4-4+4o3o	26+
2	4-4-4-2+	4o5o5o5o	32+	7+2+4+5+	6o5+6o6o	43-	2o4-4-3o	4-4-4+4-	28-
3	5+5o4+5-	5-6o6-5o	41-	5-2+4-3+	4-5-5o5+	33-	4+2+2+2o	3+1-1o2-	18-
4	5-5+5+4o	5o6o3+5o	39-	5+4-3+4+	4+4o4o3-	32-	1+2-2+2-	3-3-2o3o	17+
5	6-6+5-5o	5+4o4+4+	40-	1o3-2+2o	1o1+2o3+	16-	3o2+2+1o	2o3-2+3-	18+
6	4o5+5o4o	5-5o5+6o	39+	3+3+4o1+	2+2+3o2o	22-	2+3o6-5o	4+3o2+2-	27+
7	5o6-4-4-	4o4+4+4+	35o	2o2+2+2-	3-2o2-2o	17-	3-4-3o2-	4-2-2o2+	21-
8	5-4+4+3o	3o3o4-4+	30+	1o1-o+1o	2-1+2o1o	9o	3+4+3o2o	3+4+3o3o	26+
9	3+4o4o4-	4o3+4-3-	29-	2-2o3+3+	3o4-5-7+	29o	4o3o2o3-	3+3+o+1o	20-
10	5o3o4-3+	4-2o3+3o	27o	3+5o5+5o	7-5+4o2+	37o	1-o+o+2+	3+2+2o1+	13-
11	3+3+3o2o	3-2o1o4+	22-	3o3-4-4+	5-3o3+4o	29-	2o3-2o3-	2+4-3+3o	22-
12	4o3o3-2o	2+3o3-5+	25o	4o3+3o2o	2o4+4o1+	24o	4o3-3+3o	3-2o3o3-	23+
13	6-5o3o5o	6o4o3+5o	37o	1+1o2-2-	o+1-1o2o	10-	3-2o3o3+	4o2-2-2+	21-
14	5-4-4-4o	3o3-2+3-	27-	3o4-3-3-	1-3-4-4+	23+	1o1+o1+	1o4o6-6-	20o
15	2+2o1+2+	3o3-2+2-	18-	5-3+3-2+	3o3o3+3+	26-	4o4-4o3+	5-4+4o4-	32-
16	2+1+1-o+	1-1+1o4-	11+	4+4+3o3+	2+3-3-3o	26-	4o2o3o3o	3+3o3+3-	24+
17	4-3-3-2+	3-2-2o1-	18+	4o5-4+4+	4o4o4-4o	33o	2+1+2-1o	1-5-4+8o	24o
18	1o1o4+7o	8-6o5o5o	37o	5-4+2+3o	2-2o2+3-	23o	7+7-6-4+	3o4-2+4-	37-
19	5o3-3-3+	2o2o2-4o	23+	3-3-2+2-	3-1+2-2+	17+	3+6o5o5+	3o5+3-2+	33o
20	3o4-3o3-	3+5+6+6+	34-	2o2o2-1+	2o1-2-1+	13-	3+1+1o2-	1+1-1-4-	14-
21	6-5+4+5+	5-4o2+4+	36o	1o1o1o1-	1o1-1+1+	8o	2o3-4o2+	3-3o1+2o	20o
22	5+5+5-5-	5o4+5o3+	38-	3-2-1-1o	2+2+1+1+	13+	2+2-2-3-	3o2+2+2+	18+
23	4-5o3+2-	3-2o1-3-	22-	2+2+2o4o	4o3+6o5-	29-	3o2-2o1-	1-1+1+2o	13-
24	2-4o5o4+	6o5o5+4+	36-	4+3o2+3-	3o4o3-3-	25-	2-1+1+3-	2+1o2+3-	15+
25	6-6-5-4+	4-5o5-4o	38-	2-2o3o2o	2o1+3+4-	19o	3o4o4+4+	6-5+5-4o	35+
26	6-3-2o2-	1+3-2-oo	18-	3+2o2o3o	4-6-6-7o	32+	3o4-4-3-	2+2-3o2o	22o
27	1-1+2+2-	3o3+3o3o	18+	5+5+3-3+	2-1o1-2-	22-	2o3-4o2-	2+4+3-3o	23-
28	3+2-2-2+	1+2+2o2-	16+	2o3-2o2-	2-1+1-o+	12+	3-3o3o3-	3o2o2o3+	22-
29	4o4-2+2+	3+3+2o1o	22o	1-1+4o3-	4-2+2-3+	20-	3-2+1+1+	3+3-3+3-	20-
30	1-1o1+1o	1+1-1-2-	8+	1+1-3o5o	4+2o2-2+	20+	3-3o3o3-	2+2o3o1+	20o
31				2+3-2-3-	2-1-3-3o	17+			

Geomagnetic planetary three-hour-range indices Kp.

	July 1951			August 1951			September 1951		
D	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	3+2-1+3-	3-3+5o7o	27o	4o3-2-3o	2+6o6-6o	31+	3-2-1+1+	2o1+1-3-	14-
2	7+8-7-6o	4o5-4o5-	45o	6-5o4-3-	3-2+3o2+	27+	2+2-1o1+	1+1+1o1+	11+
3	4o4-3+4-	5-4+5-4+	33-	3-2-2o3o	3-1+1+2+	17o	3-2o3-3-	3-1o1+3o	18o
4	4o5o4o3-	2+3+3o4-	28o	3+3+2-1+	3+3+4o4-	24o	2o3o2o1+	2+2-2-2+	16+
5	3o3o3+3-	3o2o2-2o	21-	4+2+2-1+	2+3+2+3-	20+	3-1+2o3-	2-1+5-4+	21-
6	2-2o2o3-	3-3o2+3-	19o	3+1-2o1+	3-4-2-3o	18+	4+2o4o4-	3-2o4+3o	26o
7	2-2-2-2-	1+3o2+3+	17-	1+3+2-3o	2-2+3-3+	19+	3-1o1o3-	2o2+3+2o	17o
8	3-2-1o2-	1o2o3-4-	16+	2+2+2+1+	1+1o2-2+	15-	1+3-3-2-	3-3o2+2o	18+
9	4o4o2o2o	3-4o4o2+	25o	2-2-2+3o	3+2o2+3+	20-	3+3o2o3+	4+4-3o4-	26+
10	3o2-3-2o	2-2-3-2-	17o	1+2-3-2+	3+2-2o3-	18-	5-4+5+5o	5o4-3o1+	32+
11	1-1o3-2o	3o3-2+2o	16+	2+2+3o3+	4-3o3o4o	25-	4-3-4+3-	4o4+5o7o	34-
12	2o2-1+2o	2o2+1+2+	15o	4o3+3+3+	4-3o4-4-	28o	5-4o4+4o	5-4+3+5+	35-
13	3+2+2-2o	1o1o1+2-	14+	2+6-5+4+	5o5+6-2+	36o	6o5o4+3-	4+5-5-6+	38o
14	2-1+2o2o	2-1o1+2+	13+	1+1o1o3o	2+3-3o3+	18-	5o5o5-4-	4o2+3o3-	30+
15	2o1+2o1+	2+3o3+6-	21o	4-2+3+1+	3-3+5o4o	26-	4+4+6o4+	5+5o4-4-	37-
16	3+4o2-4o	5o4+4-3o	29o	1+3o6-6+	3o3o2o3+	28-	5-6+6-6+	6+6+6-7-	48o
17	3o3-4-5o	3+4o4+3o	29o	3+2o3o1+	3-5-3-3-	22+	6-5o5o5o	5o5o3+6-	40-
18	3-3+4o4-	5-5o3+3+	30o	3-3-3-1-	1o1-0+1o	12-	5-5-3o4-	2+5o5-3o	31o
19	2-2o3o4-	2+3-3-1+	19+	1o1+3+3o	4-3+3-2o	20+	3o2+4-4-	5+8-7o5-	37+
20	3o3-3-2+	3o2+1+2-	19o	6-5+5+4+	4o3+5-5-	37+	5o6o7+7+	6+6+7o6+	52-
21	3o2+3o2+	2-2o1+1-	16+	6+4+5-5o	5o6-5o5+	41+	6+6+6+7o	6o6-6-6o	49+
22	2-4+6o4o	3+5o4-4o	32o	5+5+5+4-	5o3o4-3-	34o	6-7o6o6+	6-5o7-6o	48+
23	5+3+4o4+	2+2-2+3-	26o	3+2-3-3+	3+5-3+6o	28+	6o6o5+4+	4+4+5+5-	40+
24	2-2+3o2-	3o2-1o1+	16-	4+5-4o4o	3+3-3o3+	29+	5o6-5o5o	5+4-4o3+	37o
25	1-2-3+3o	3-3+3+3o	21o	4-6-6-5o	3+5o5+3-	36+	4-5-5-5+	7+8-8o8+	50-
26	3-5o5o4+	4+5o2+4+	33o	5-4+6o5-	4-4-4o4+	35+	9-8-4+4-	3-3+2+3-	35+
27	4+3+4o4o	1+3-2o4-	25+	2+4-4o3+	3+4+5o5-	31-	6-6+6o5+	4+3+3+3+	38-
28	5-5+4-5-	4-5o5-4-	35+	3o3+3o4-	3+3-4o4o	27o	6-2+2-1+	1+1o1-3-	17-
29	3o4o3+3+	3-3-2+2+	24-	4-3+3+3+	3+3+2-3-	25-	4-2+3-1+	4o5+4o3+	27-
30	2o2+2o3o	3o2+3+4-	22-	1o1+1-2o	3-3o3o3-	16+	4-3+3o2+	2o1o1o1-	17o
31	4-5o5-4+	5+6o5+5o	39+	2+2-4-3+	4o4-3-4o	25+			

	October 1951			November 1951			December 1951		
D	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum	1 2 3 4	5 6 7 8	Sum
1	2o1+1+1+	1-3-3-2o	14o	1-0o1+2o	1+1o2o3-	11o	3-3-2+3+	3+3-3-3-	22+
2	4-4-4-3-	2-2o2-4-	23-	3-4-3o3o	3o3-3-3-	23+	3+4o4-2+	2+3-3o3-	24o
3	2-2-1-2+	2+1o2+2+	14+	4-5-5-4+	4+3-4-5o	33o	3+3-2o2+	2o3-2+3+	21-
4	1-0+0+1-	0+1+2o2-	7+	5-5+5-3+	4o4o3o4-	33-	3o4-3+3+	4+4+5-5o	32-
5	3o0+1-0+	0+1-2-2o	9o	3+4+3o3+	2-2o3+3+	24+	3+3+2-3-	3o3o2+2+	22-
6	2-1-1-1-	0o0o0o0+	4o	2+3+4-3-	3+3+5+3+	27+	1+1-1o0+	1-1-3o2o	10-
7	1+2o3-3+	4+5+7-5+	31o	5o5-4-4-	3-3+3-3-	28+	2o2-0+3o	3o3+4-3o	20o
8	6o6-6+6o	5+5o4o4o	42+	4-2+1+2-	2-1-3-2o	16o	6o4o5+6-	5-5-6+5-	41+
9	4o4o4-5-	5o3+3o5+	33o	2-4-4o4-	3+4o3-2+	25+	4o5o4o5+	5+5+6-3+	38o
10	5o4+4o5+	4o6-5-5-	38-	2+2-1-1-	1-1-1o0o	8-	2o4+5o5-	4o5-4o4o	33-
11	4+3+4o4o	3+3+2+1-	25+	0o0o1-1o	3-2-3o3+	12+	4+4-6-4+	4o4+3o4+	34-
12	2o3o3-4o	4-3-2+2o	22+	6-4o5-3+	4-5-2o2o	30o	2o3-3+3-	3+2-2-3-	20o
13	3o4-3+5o	3o2+4o6-	30o	3-3+5-5+	4+5o6o5+	37-	2o3+3-2+	2+0+1o2-	16-
14	5-3-3o3+	1+3+5+4+	28o	6-4+5+3+	4+4+6o5+	39-	2o3-1+1o	0+1o3o4+	16-
15	3+3-3-2+	1+1+3-4o	20+	4o5o4+4+	4o4+3o3+	32+	5-3+4-4-	3+3+5o3o	30o
16	3o4o3+4-	2+3+4o5-	28+	3+3o2+3o	3-3+2+1+	21+	3-4-3o2o	2-2o2o3-	20-
17	6o6+6+6o	6-7o7-6-	50-	1+3o3-3-	3-3-6-5-	25+	2+4-2-2+	3+4o4+4+	26o
18	4+5+6o5+	4+5+4+4+	39+	3o2+2o3-	1+1o2o2-	16o	4o4+3+3-	3o4o4-5o	30o
19	6o5+5o4+	4+4+5+6-	40+	1o3-1+1-	1+2o2o3o	14o	4-3o3+4+	4o4+3+4+	30+
20	6o3+4+4-	3+2o4o2o	29-	3o2+1o1o	1+3+4-4o	20-	4o4o3o4o	2o2-2+2o	23o
21	3o4+3o4+	2+2o2+2o	23+	3-3o2-1+	1o1o3o3+	17o	2+1+1o1o	1o2-1+4o	14-
22	4-3+3-3o	3+5o4o3+	28+	4o2-2o2+	2+3-4-4o	23-	3+5+3-4o	4-5+5+5o	35-
23	3o2o2+2+	3-3o2o2+	20-	4-3o2o3-	3o4-4o4o	26o	5+4-2+4o	2o2+2o1o	23-
24	2o2-1+2-	0+1-2-2o	11+	3+3o2o2-	3+4+3-2o	22+	2-0+0+1-	0+1-2-1+	7o
25	1+1-0+1-	0+1-0+1-	5o	3o2o3+3o	3o4-3-5-	25+	1+1o1o1+	1o1o1-2-	9o
26	1+1+2+4o	3-2o2+5+	21+	3-2o2-2-	4o2o4-2o	20-	0+0o1-1+	1-1-1o0+	5o
27	3o4o2+2+	2+0+0+1+	16o	2+2o2-2-	1+2-2-3-	15o	1-4-2-3o	3+1-2o5-	20-
28	0+4-3+5+	7o8o9-5o	41+	3o2+3o2+	4-3+4-5-	26o	4+7o7o6o	6o5-4o3+	42+
29	4-3+3-2o	3-1+1o2-	18+	4o4-3+4+	4o4o4-4-	31-	3o2-1o1+	4-3-2o1-	16o
30	1o3+3+3+	1+1o1o0o	14+	4o2-4-2+	4-3-2+2-	22o	0+0+1+3o	2+2-2-4-	14+
31	0o1-1-1-	1-1-1o1+	6-				3+3o5-6-	4+5-5+5-	36-

Ap 1951 Unit 2γ

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	12	24	16	7	63	19	31	37	7	7	5	13
2	20	6	7	31	68	20	82	24	5	15	14	16
3	16	5	11	51	32	11	29	9	10	7	31	12
4	7	11	8	46	28	9	22	16	8	4	30	28
5	10	18	5	49	8	10	12	12	15	5	16	13
6	5	31	18	48	14	25	10	11	19	2	21	5
7	4	11	36	35	8	12	9	11	9	37	23	12
8	9	22	38	25	4	19	9	7	10	60	9	55
9	6	27	32	22	35	13	18	11	19	32	18	44
10	12	24	36	21	47	7	9	9	33	42	4	31
11	19	24	27	14	22	13	9	16	40	19	7	32
12	18	37	29	19	17	14	7	20	34	14	28	11
13	16	22	51	44	5	12	7	43	47	28	43	8
14	18	12	42	20	16	22	6	10	28	24	47	10
15	20	5	20	9	18	27	17	20	40	12	29	25
16	20	3	17	7	18	16	24	30	82	22	13	11
17	11	4	23	10	29	38	24	15	49	91	22	19
18	6	13	22	66	16	54	25	6	28	47	8	25
19	14	12	10	17	9	37	11	13	59	50	7	24
20	8	6	10	41	6	8	10	42	105	26	13	16
21	20	11	7	40	4	12	9	54	88	16	10	8
22	54	41	44	42	7	9	32	36	85	22	15	37
23	22	64	28	16	27	6	21	26	51	10	18	18
24	11	39	21	41	17	8	8	24	42	5	14	4
25	8	18	19	43	11	37	13	42	115	3	18	4
26	12	17	17	14	42	14	33	37	73	16	12	3
27	19	48	14	11	20	15	19	27	48	10	7	14
28	20	55	4	8	6	13	36	19	14	98	19	68
29	14		30	14	13	11	15	16	22	11	25	9
30	15		10	4	16	11	13	9	10	9	14	8
31	49		9		9		48	18		3		38

Average amplitudes Ap for months and years. Unit 2γ.

	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year
1932	..	..	..	..	..	..	..	12	12	10	8	9	10
1933	10	11	12	13	12	8	7	9	..	..	..	..	
1940	15	12	37	18	13	16	12	11	14	14	16	15	16
1941	14	18	33	15	11	11	19	16	27	11	16	11	17
1942	9	12	22	17	8	8	13	13	17	22	15	11	14
1943	11	9	13	14	14	12	15	31	26	24	20	14	17
1944	13	12	18	15	9	8	6	9	10	11	6	14	11
1945	10	10	17	13	9	7	9	7	10	11	8	13	10
1946	13	22	33	20	17	16	22	11	34	13	13	9	19
1947	12	12	31	18	14	16	16	26	32	23	14	11	19
1948	12	13	17	13	19	10	10	20	15	27	16	13	15
1949	20	15	19	14	18	14	8	13	13	25	15	9	15
1950	12	18	14	18	16	14	14	25	22	28	20	16	18
1951	16	22	21	27	20	17	20	22	40	24	18	20	22
	Average for the years 1940 to 1951												
	13	15	24	17	14	12	14	17	22	19	15	13	16

PLANETARY CHARACTER FIGURES Cp

	1951											195'
	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De
1	7	12	9	3	17	10	13	14	3	4	2	8
2	10	3	3	13	17	10	18	12	2	8	8	9
3	9	2	6	16	13	6	13	5	6	3	13	7
4	3	6	5	15	12	5	11	9	4	1	13	14
5	6	10	2	16	4	5	7	7	8	2	9	7
6	2	14	10	16	8	12	6	6	10	0	11	2
7	2	6	14	14	4	7	5	6	5	14	11	7
8	5	11	14	12	2	10	5	4	5	17	5	16
9	3	12	13	11	14	7	10	6	10	13	10	15
10	7	12	14	11	15	3	5	5	13	15	1	13
11	10	12	12	8	11	7	5	9	14	10	4	13
12	10	14	13	10	9	8	3	10	13	8	12	7
13	9	11	16	15	2	7	4	15	15	12	15	5
14	9	7	15	10	9	11	3	6	12	12	15	6
15	10	2	10	5	10	12	9	10	15	7	13	12
16	10	1	9	3	10	9	12	13	18	11	7	6
17	6	2	11	6	13	14	11	8	16	18	11	10
18	3	7	11	17	9	16	12	3	12	15	4	12
19	8	7	6	9	5	14	6	7	17	16	4	12
20	5	3	6	15	3	4	6	15	19	12	7	9
21	10	6	4	14	1	7	5	16	18	9	6	4
22	16	15	15	15	3	5	13	14	18	11	8	14
23	11	17	12	9	12	3	11	12	16	6	10	10
24	6	14	11	15	9	4	4	11	15	2	8	1
25	4	10	10	15	6	14	8	15	19	1	10	2
26	7	9	9	8	15	8	13	14	18	9	7	0
27	10	16	8	6	10	8	10	12	16	5	4	8
28	10	16	1	4	3	7	14	10	8	10	10	17
29	8		13	8	7	7	8	9	11	6	12	5
30	9		6	1	9	6	7	5	6	5	8	5
31	16		5		5		16	10		1		14

MONTHLY AVERAGES OF Cp, 1937-39, and 1951-54.

multiplied by 100

	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year
1937	34	63	53	67	57	60	60	40	45	84	55	46	55
1938	96	72	55	69	67	42	55	54	65	68	49	52	62
1939	36	66	86	98	93	73	77	56	58	79	40	53	68
1951	78	92	95	107	86	82	88	96	121	88	86	87	92
1952	87	103	114	110	99	78	69	65	93	83	59	71	86
1953	72	65	87	76	65	55	77	78	88	67	60	32	68
1954	45	78	83	69	34	25	39	53	83	69	42	29	54

Planetary three-hour-indices Kp, equivalent ranges ap, daily average ranges Ap, and planetary daily character figures Cp.

	Kp	Sum	Jan. 1952	ap							Sum	Ap	Cp
1	5o4-4o4o 3+3o3o3-	29-	48	22	27	27	18	15	15	12	184	23	1.1
2	2+3-2o1+ 1+2-3-1+	15+	9	12	7	5	5	6	12	5	61	8	o.4
3	2-2+2-1+ 2+1o3+3o	17-	6	9	6	5	9	4	18	15	72	9	o.5
4	4o2o2-2+ 3o3+3o5-	24o	27	7	6	9	15	18	15	39	136	17	o.9
5	4-6o6o5- 5o4+3o4+	37o	22	80	80	39	48	32	15	32	348	44	1.5
6	5-5-5-4o 3o4+3o2+	31-	39	39	39	27	15	32	15	9	215	27	1.2
7	3o3o3-3- 4+4+3+4o	27+	15	15	12	12	32	32	18	27	163	20	1.0
8	3+4o2+3o 3o3o2o1o	22-	18	27	9	15	15	15	7	4	110	14	o.8
9	0+3o3+2- 2o3o4-3-	20-	2	15	18	6	7	15	22	12	97	12	o.7
10	3o5+5-3+ 3+5-4-5-	33-	15	56	39	18	18	39	22	39	246	31	1.3
11	4o4-4-3o 4o5-4-4-	30+	27	22	22	15	27	39	22	22	196	24	1.2
12	5-5+4o4o 4o5-4+5o	36o	39	56	27	27	27	39	32	48	295	37	1.4
13	4o4+4-5o 6-5-5-5+	37+	27	32	22	48	67	39	39	56	330	41	1.5
14	4+5o5-4+ 5-5o5-5o	38-	32	48	39	32	39	48	39	48	325	41	1.5
15	4-4+4+4- 6o5o4o2+	33+	22	32	32	22	80	48	27	9	272	34	1.3
16	3+2+3-3+ 3-3o3o3o	23+	18	9	12	18	12	15	15	15	114	14	o.8
17	2o3-2o2- 1-1+2+2o	15-	7	12	7	6	3	5	9	7	56	7	o.4
18	2o2-1-1o 1-1o1o1o	9o	7	6	3	4	3	4	4	4	35	4	o.2
19	1-1o1-1o 2o2-2+2-	11o	3	4	3	4	7	6	9	6	42	5	o.2
20	0+2-1+1+ 1-1+2o2o	11-	2	6	5	5	3	5	7	7	40	5	o.2
21	2+2-2-2o 1+1+1+2-	13+	9	6	6	7	5	5	5	6	49	6	o.3
22	2o2+2o2- 2-2o2+3o	17o	7	9	7	6	6	7	9	15	66	8	o.4
23	3o2o3-3+ 4+4+4+4-	28-	15	7	12	18	32	32	32	22	170	21	1.1
24	4-2+2o2- 3o4-3o3o	22+	22	9	7	6	15	22	15	15	111	13	o.8
25	3+1+2+3o 3o3o3-2o	21-	18	5	9	15	15	15	12	7	96	12	o.7
26	0o0+1+3- 3-2o1o1-	11-	0	2	5	12	12	7	4	3	45	6	o.3
27	1+4-4o4+ 6-5+4-4-	32-	5	22	27	32	67	56	22	22	253	32	1.3
28	3+5o4-4- 4o4-2o3o	28+	18	48	22	22	27	22	7	15	181	23	1.1
29	2o1o3-4- 4o5o6+6-	30+	7	4	12	22	27	48	94	67	281	35	1.4
30	4-4o4o2+ 3o1o3-2+	23o	22	27	27	9	15	4	12	9	125	16	o.9
31	1+1+2-1+ 4-4-2o3-	18-	5	5	6	5	22	22	7	12	84	10	o.6
	Kp	Sum	Feb. 1952	ap							Sum	Ap	Cp
1	3+2o4+6- 5-4o5o4+	33+	18	7	32	67	39	27	48	32	270	34	1.3
2	3+4+3o2+ 2+3o2o2o	22+	18	32	15	9	9	15	7	7	112	14	o.8
3	2-2+2-2- 2-1+2o1o	13+	6	9	6	6	6	5	7	4	49	6	o.3
4	2o2-1o1- 2o1-1o0+	9+	7	6	4	3	7	3	4	2	36	4	o.2
5	0+1+1-1- 1o0+0+1-	5+	2	5	3	3	4	2	2	3	24	3	o.1
6	2o4-4-4+ 4+6-6o6+	36o	7	22	22	32	32	67	80	94	356	44	1.5
7	5-4+5+5+ 4o4o4+5-	37-	39	32	56	56	27	27	32	39	308	38	1.4
8	5+4+6o4o 4+5o5-4+	38o	56	32	80	27	32	48	39	32	346	43	1.5
9	4o4+3-3+ 4+5-4+4o	32-	27	32	12	18	32	39	32	27	219	27	1.2
10	3o3o3o4- 3-4+5+7-	32-	15	15	15	22	12	32	56	111	278	35	1.4
11	6o5-3+5- 3+3+4+5+	35o	80	39	18	39	18	18	32	56	300	38	1.4
12	5+5o4-4+ 5-4-4+5o	36o	56	48	22	32	39	22	32	48	299	37	1.4
13	5-4-3+3+ 4+5-4o5o	33o	39	22	18	18	32	39	27	48	243	30	1.3
14	4o3-3-3+ 3o3+4-3o	26-	27	12	12	18	15	18	22	15	139	17	o.9
15	2o3o4-3- 1+2o1-3-	18o	7	15	22	12	5	7	3	12	83	10	o.6
16	4-6-6+6- 5+4o5o5o	41-	22	67	94	67	56	27	48	48	429	54	1.6
17	5-3-1+3o 3o2+2o2-	21-	39	12	5	15	15	9	7	6	108	14	o.8
18	4-3-2o4- 3-2o3+4o	24o	22	12	7	22	12	7	18	27	127	16	o.9
19	5o4+5-4- 4o4-5o5o	35+	48	32	39	22	27	22	48	48	286	36	1.4
20	3o4-4+3o 2o2+1+1+	21o	15	22	32	15	7	9	5	5	110	14	o.8
21	2o2o1o0+ 2+2-2-1+	12+	7	7	4	2	9	6	6	5	46	6	o.3
22	1-1o2o1+ 1+1+3o2-	12+	3	4	7	5	5	5	15	6	50	6	o.3
23	2+2-2o1o 1+1+1+4+	15+	9	6	7	4	5	5	5	32	73	9	o.5
24	7-7o4-6o 6-5o6o4+	44+	111	132	22	80	67	48	80	32	572	72	1.8
25	5-3-2o3+ 5-2o2+2-	23+	39	12	7	18	39	7	9	6	137	17	o.9
26	3+3+4+4+ 3-4+4o5o	31+	18	18	32	32	12	32	27	48	219	27	1.2
27	4+6-6+4o 3-4o4+5o	36+	32	67	94	27	12	27	32	48	339	42	1.5
28	5-5+6-5o 4o5-4+2o	36-	39	56	67	48	27	39	32	7	315	39	1.4
29	2o4+4-4o 4o4-2o4-	27+	7	32	22	27	27	22	7	22	166	21	1.1

Planetary three-hour-indices Kp, equivalent ranges ap, daily average ranges Ap, and planetary daily character figures Cp.

	Kp					Sum	March 1952	ap							Sum	Ap	Cp
1	4-4	3+3+	4-3	1+1-		23o	22	22	18	18	22	18	5	3	128	16	o.9
2	1o3	-1-2-	1+1	o1-1-		10-	4	12	3	6	5	4	3	3	40	5	o.2
3	0+1	o2+2-	6-5	-6+7-		29-	2	4	9	6	67	39	94	111	332	42	1.5
4	6-6	+6o6+	5o5	+6-5+		46-	67	94	80	94	48	56	67	56	562	70	1.8
5	6o7	-5+6+	6o6	+6o7+		50o	80	111	56	94	80	94	80	154	749	94	1.9
6	8o7	+6+5-	4+4	o5o5+		45o	207	154	94	39	32	27	48	56	657	82	1.8
7	4-5	o3+6+	5+6	-5o7-		41o	22	48	18	94	56	67	48	111	464	58	1.7
8	6-5	o4+5-	5-6	-6o5+		41+	67	48	32	39	39	67	80	56	428	54	1.6
9	6o4	o5-5o	4+5	+5o6o		40+	80	27	39	48	32	56	48	80	410	51	1.6
10	4+4	+5-4-	4+6	-5o5+		37+	32	32	39	22	32	67	48	56	328	41	1.5
11	5+4	o4-4-	4o4	+5+4-		34o	56	27	22	22	27	32	56	22	264	33	1.3
12	4+3	+3-3o	4o3	+4o3o		28-	32	18	12	15	27	18	27	15	164	20	1.0
13	3-2	+3o2o	3+2	o2+3+		21o	12	9	15	7	18	7	9	18	95	12	o.7
14	2o2	+1o3o	2+1	+1-2+		15o	7	9	4	15	9	5	3	9	61	8	o.4
15	2o3	o3o2o	3o3	-4o4+		24o	7	15	15	7	15	12	27	32	130	16	o.9
16	2o3	+4+4o	3o4	-4-4o		28o	7	18	32	27	15	22	22	27	170	21	1.1
17	4-5	-4o4-	5-4	+3o3o		31o	22	39	27	22	39	32	15	15	211	26	1.2
18	2+3	+3+3-	2+4	-1o2o		21-	9	18	18	12	9	22	4	7	99	12	o.7
19	2o1	o2-1o	2-2	+3-2o		14+	7	4	6	4	6	9	12	7	55	7	o.3
20	0+1	+2-2+	1-0	+1o1o		9-	2	5	6	9	3	2	4	4	35	4	o.2
21	3-4	-5-5-	6-5	-4-6-		35+	12	22	39	39	67	39	22	67	307	38	1.4
22	5-5	o4o3+	2+3	o4+6-		32+	39	48	27	18	9	15	32	67	255	32	1.3
23	7o4	+5o4+	3+4	o6-4o		38-	132	32	48	32	18	27	67	27	383	48	1.6
24	5o6	-5o5+	5o5	o5-4+		40o	48	67	48	56	48	48	39	32	386	48	1.6
25	2+3	+5-4+	5-4	-4o3+		30+	9	18	39	32	39	22	27	18	204	26	1.2
26	5-3	o1+2-	3o3	-4o3-		23o	39	15	5	6	15	12	27	12	131	16	o.9
27	2o4	o4-3+	3+4	+3-3-		26o	7	27	22	18	18	32	12	12	148	18	1.0
28	2-2	o1o1-	1+1	-1+1o		10-	6	7	4	3	5	3	5	4	37	5	o.2
29	1-1	o1o3-	3-1	+2o3o		14+	3	4	4	12	12	5	7	15	62	8	o.4
30	3+4	-2o2o	4+6	o6o7-		34o	18	22	7	7	32	80	80	111	357	45	1.5
31	8-6	o7-5+	4o6	o5+5o		46o	179	80	111	56	27	80	56	48	637	80	1.8

	Kp					Sum	April 1952	ap							Sum	Ap	Cp
1	5-5	o5-5-	6-5	o4o2-		35+	39	48	39	39	67	48	27	6	313	39	1.4
2	6+5	+5+7o	4+5	+6+6+		46+	94	56	56	132	32	56	94	94	614	77	1.8
3	6o6	o6+7-	5-6	+6-6+		48o	80	80	94	111	39	94	67	94	659	82	1.8
4	5+4	+6-5o	5o4	+6+6-		42-	56	32	67	48	48	32	94	67	444	56	1.6
5	5o4	+6-5o	5o6	-5o6-		41+	48	32	67	48	48	67	48	67	425	53	1.6
6	6o4	+4+6-	4-4	o5-6+		39o	80	32	32	67	22	27	39	94	393	49	1.6
7	5o4	+5+4+	4-4	-5-4+		35+	48	32	56	32	22	22	39	32	283	35	1.4
8	5o5	-4+4o	4+4	-5-4+		35o	48	39	32	27	32	22	39	32	271	34	1.3
9	5o4	-4o4o	3+5	-4+5o		34o	48	22	27	27	18	39	32	48	261	33	1.3
10	7-5	o4+4o	3o1	+3-3-		30-	111	48	32	27	15	5	12	12	262	33	1.3
11	3o2	+3o3o	3o2	-2o1o		19o	15	9	15	15	15	6	7	4	86	11	o.6
12	4-3	-2+2o	1-1	-3-2o		17-	22	12	9	7	3	3	12	7	75	9	o.5
13	4-5	+2o3o	3-2	-3o2o		23+	22	56	7	15	12	6	15	7	140	18	1.0
14	2-1	-2-3+	3-4	o2+3o		19+	6	3	6	18	12	27	9	15	96	12	o.7
15	3+3	o3-4-	5-3	+3--2-		25o	18	15	12	22	39	18	12	6	142	18	1.0
16	3o4	+5-3-	3+3	+3o3-		27o	15	32	39	12	18	18	15	12	161	20	1.0
17	3o5	o4o3-	1+1	o1+1+		20-	15	48	27	12	5	4	5	5	121	15	o.9
18	0+1	o1+2o	3-3	+4o5o		20-	2	4	5	7	12	18	27	48	123	15	o.9
19	4o4	-3-2o	4+5	-5-5-		31-	27	22	12	7	32	39	39	39	217	27	1.2
20	2+3	o2o@-	1o2	-1o3o		16-	9	15	7	6	4	6	4	15	66	8	o.4
21	3-3	+4o4o	8+8	o7o6+		44-	12	18	27	27	236	207	132	94	753	94	1.9
22	5-5	+6-5+	3o3	o3-3-		32+	39	56	67	56	15	15	12	12	272	34	1.3
23	4-4	o4-4o	2o3	-3o2o		25o	22	27	22	27	7	12	15	7	139	17	o.9
24	1+1	+0+1o	2+4	+3-4+		18-	5	5	2	4	9	32	12	32	101	13	o.7
25	2-1	+1-4-	3+2	+1o2-		16-	6	5	3	22	18	9	4	6	73	9	o.5
26	1o0	+1o2-	2-3	-3+2+		14o	4	2	4	6	6	12	18	9	61	8	o.4
27	2o1	o1-1o	1+1	o1o3-		11-	7	4	3	4	5	4	4	12	43	5	o.2
28	4o5	+4o4+	4+4	o4-3+		33o	27	56	27	32	32	27	22	18	241	30	1.3
29	4+6	-6+4+	5+7	o7o7+		47+	32	67	94	32	56	132	132	154	699	87	1.8
30	7-5	+5+5+	5-5	+5+6+		44+	111	56	56	56	39	56	56	94	524	66	1.7

Planetary three-hour-indices Kp, equivalent ranges ap, daily average ranges Ap, and planetary daily character figures Cp.

	Kp	Sum	May 1952	ap							Sum	Ap	Cp
1	6+5+5+6-	5-4+5+6-	43-	94	56	56	67	39	32	56	67	467	58	1.7
2	6+6-5-5o	5o5-5+6o	43-	94	67	39	48	48	39	56	80	471	59	1.7
3	5+5+4+3+	4o4+6+7o	40o	56	56	32	18	27	32	94	132	447	56	1.6
4	7-5o4o4-	4o5-5o5+	38+	111	48	27	22	27	39	48	56	378	47	1.5
5	5+4o4o4o	4-3+3o5-	32o	56	27	27	27	22	18	15	39	231	29	1.3
6	4-4+5+4+	3o4-3-3+	30+	22	32	56	32	15	22	12	18	209	26	1.2
7	4o4+6-6-	7-6o6o7o	45+	27	32	67	67	111	80	80	132	596	74	1.8
8	6-5-5-4-	4-4-3+2+	32-	67	39	39	22	22	22	18	9	238	30	1.3
9	2-1o1-0o	0+0+0+2o	6+	6	4	3	0	2	2	2	7	26	3	o.1
10	3o2o1o2-	2+0+1-0+	11+	15	7	4	6	9	2	3	2	48	6	o.3
11	0o1+1+2o	4-4+4-2o	18+	0	5	5	7	22	32	22	7	100	12	o.7
12	4o3+3o2o	2-1+3-2o	20o	27	18	15	7	6	5	12	7	97	12	o.7
13	1+1+1+2+	4+2-3+4-	19+	5	5	5	9	32	6	18	22	102	13	o.7
14	4o3+3-1o	1-1o1o1-	14+	27	18	12	4	3	4	4	3	75	9	o.5
15	1+0+0+1o	2-3-2-1+	10+	5	2	2	4	6	12	6	5	42	5	o.2
16	1o1-1-1o	1-2-0+1o	7o	4	3	3	4	3	6	2	4	29	4	o.1
17	0+1o1o1-	1+2-2+3o	11+	2	4	4	3	5	6	9	15	48	6	o.3
18	5o3o4+5o	4o6o4o3o	34+	48	15	32	48	27	80	27	15	292	36	1.4
19	4o6-5-6-	3+4-3o3-	33-	27	67	39	67	18	22	15	12	267	33	1.3
20	3o4-3+3+	4o4-2o4-	27-	15	22	18	18	27	22	7	22	151	19	1.0
21	3-3-3+4o	3+3-2o2-	22+	12	12	18	27	18	12	7	6	112	14	o.8
22	1o2-1+2-	1+1-1-0+	9-	4	6	5	6	5	3	3	2	34	4	o.1
23	1-1-1o2-	2+3-3-2o	14-	3	3	4	6	9	12	12	7	56	7	o.4
24	3+2+3-2+	3o3o2+3+	22+	18	9	12	9	15	15	9	18	105	13	o.8
25	5-3+4o3o	2+3o1+1-	22+	39	18	27	15	9	15	5	3	131	16	o.9
26	0+1-4-6o	4o5o5+8-	33-	2	3	22	80	27	48	56	179	417	52	1.6
27	8o6-5-5+	4+5+6-5o	44o	207	67	39	56	32	56	67	48	572	72	1.8
28	5-3o3o4+	5-6-5o5o	35+	39	15	15	32	39	67	48	48	303	38	1.4
29	5-5+4+5+	4-5o4o4o	36+	39	56	32	56	22	48	27	27	307	38	1.4
30	4o5-4-3o	3o2+4-3+	28-	27	39	22	15	15	9	22	18	167	21	1.1
31	5-5-4o2+	2+2o3+4+	28-	39	39	27	9	9	7	18	32	180	22	1.1
	Kp	Sum	June 1952	ap							Sum	Ap	Cp
1	2o3+3o3-	2-2o2+2o	19o	7	18	15	12	6	7	9	7	81	10	o.6
2	2o3-2o1+	2o2o3o2-	17-	7	12	7	5	7	7	15	6	66	8	o.4
3	2+3-2-2-	2-2-3o3o	18-	9	12	6	6	6	6	15	15	75	9	o.5
4	3o1+1o2o	1+1o2-1+	13-	15	5	4	7	5	4	6	5	51	6	o.3
5	2o3-2o2o	2o3o2o2-	17+	7	12	7	7	7	15	7	6	68	8	o.5
6	3-1+2o1+	1o1-1o1o	11o	12	5	7	5	4	3	4	4	44	6	o.2
7	1+1o1o2-	1o1-2o1+	10o	5	4	4	6	4	3	7	5	38	5	o.2
8	3o3+3+4+	3+4+4+4+	30+	15	18	18	32	18	32	32	32	197	25	1.2
9	3+4+4-3+	6-5o4-4+	33+	18	32	22	18	67	48	22	32	259	32	1.3
10	4-3o3-3-	4o4-3+4+	27+	22	15	12	12	27	22	18	32	160	20	1.0
11	3+3o4o2+	3o4-3o3+	26-	18	15	27	9	15	22	15	18	139	17	o.9
12	3o2+3-2-	2o2o2-2-	17o	15	9	12	6	7	7	6	6	68	8	o.5
13	0+1o2+0+	1o1o2+2+	11-	2	4	9	2	4	4	9	9	43	5	o.2
14	2-3-5-4o	5-4+5+5o	32+	6	12	39	27	39	32	56	48	259	32	1.3
15	3-4+4-4o	4o3-3o3o	27+	12	32	22	27	27	12	15	15	162	20	1.0
16	3o5-4+3+	4-4+3o2-	28o	15	39	32	18	22	32	15	6	179	22	1.1
17	3-3+3+4-	3-4-2+2-	23+	12	18	18	22	12	22	9	6	119	15	o.8
18	4+3+2-3-	3o2o2o3+	22+	32	18	6	12	15	7	7	18	115	14	o.8
19	2o1+1+1+	3-2o2-1+	14-	7	5	5	5	12	7	6	5	52	6	o.3
20	2o1+1o1+	2-1+1+1+	11+	7	5	4	5	6	5	5	5	42	5	o.2
21	1+1o0+2-	2-2-1+1+	10+	5	4	2	6	6	6	5	5	39	5	o.2
22	1o1+3+3-	5o5-5-4+	27o	4	5	18	12	48	39	39	32	197	25	1.2
23	4+4-5-5-	5o4-3+4+	34-	32	22	39	39	48	22	18	32	252	32	1.3
24	5+6-4-4o	5o5-3+4-	35+	56	67	22	27	48	39	18	22	299	37	1.4
25	2-2-2o3-	4-3+4-4+	23o	6	6	7	12	22	18	22	32	125	16	o.9
26	4+3o3o4o	4-4o2+2-	26o	32	15	15	27	22	27	9	6	153	19	1.0
27	3-3+3o2+	3-3+3+3o	24-	12	18	15	9	12	18	18	15	117	15	o.8
28	3-1o1+3+	3o2-1o1o	15o	12	4	5	18	15	6	4	4	68	8	o.5
29	2-1+2+2-	1+1o4o6o	19+	6	5	9	6	5	4	27	80	142	18	1.0
30	5+8o8-7o	4-2+2-2+	38o	56	207	179	132	22	9	6	9	620	78	1.8

Planetary three-hour-indices Kp, equivalent ranges ap, daily average ranges Ap, and planetary daily character figures Cp.

	Kp								Sum	July 1952	ap								Sum	Ap	Cp
1	1+	1+	1+	1+	1-	5-	6o		18o	5	5	5	5	5	3	39	80	147	18	1.0
2	3-	2+	2-	3o	1+	1+	1o	2-	15o	12	9	6	15	5	5	4	6	62	8	0.4
3	2o	2o	2-	2-	3+	4-	3o	2+	20-	7	7	6	6	18	22	15	9	90	11	0.6
4	2o	3-	2+	2+	3-	3+	1o	2o	18+	7	12	9	9	12	18	4	7	78	10	0.5
5	3o	5o	5+	5o	6-	6-	6+	5-	41-	15	48	56	48	67	67	94	39	434	54	1.6
6	3o	5-	6+	4-	3o	2o	2o	2o	27-	15	39	94	22	15	7	7	7	206	26	1.2
7	3-	2o	3o	2+	2-	3-	2-	1-	17-	12	7	15	9	6	12	6	3	70	9	0.5
8	1-	2-	2+	2o	4o	3o	2o	3-	18+	3	6	9	7	27	15	7	12	86	11	0.6
9	3o	3-	4o	5o	3+	4o	3+	3o	28+	15	12	27	48	18	27	18	15	120	22	1.1
10	2+	4-	3+	4-	3+	5-	4o	3+	28+	9	22	18	22	18	39	27	18	173	22	1.1
11	4-	4o	4-	2-	2+	2o	2o	1-	20o	22	27	22	6	9	7	7	3	103	13	0.7
12	2+	2+	3-	3o	2o	1-	1o	2+	16+	9	9	12	15	7	3	4	9	68	8	0.5
13	1+	2o	1+	2o	3-	4-	3-	1+	17o	5	7	5	7	12	22	12	5	75	9	0.5
14	3o	3o	3-	3-	3o	4-	2o	3o	23o	15	15	12	12	15	22	7	15	113	14	0.8
15	3o	4o	3-	3+	3-	3o	2+	3+	24+	15	27	12	18	12	15	9	18	126	16	0.9
16	2+	3-	3-	2o	3-	2-	2o	1+	17+	9	12	12	7	12	6	7	5	70	9	0.5
17	1-	2+	2+	2-	2-	2+	2+	3-	16o	3	9	9	6	6	9	9	12	63	8	0.4
18	2-	3-	2-	2+	3-	2-	2-	2o	16+	6	12	6	9	12	6	6	7	64	8	0.4
19	1+	1-	1-	1+	2o	1o	2o	2o	11o	5	3	3	5	7	4	7	7	41	5	0.2
20	2+	2+	2+	0-	5+	4+	4+	5o	32-	9	9	9	67	56	32	32	48	252	33	1.3
21	4o	6-	5o	5o	6o	5o	4+	4+	39+	27	67	48	48	80	43	32	32	382	48	1.6
22	4+	3o	3o	3+	2o	2o	3+	4-	25-	32	15	15	18	7	7	18	22	134	17	0.9
23	3-	2+	3-	2o	2o	3-	2o	3+	20-	12	9	12	7	7	12	7	18	84	10	0.6
24	3o	2-	1o	2+	2o	3o	3-	3-	18+	15	6	4	9	7	15	12	12	80	10	0.6
25	1+	1+	2-	2+	3-	3+	3o	3o	19-	5	5	6	9	12	18	15	15	85	11	0.6
26	4-	3+	3o	2+	2+	2-	1o	1+	19-	22	18	15	9	9	6	4	5	88	11	0.6
27	2+	0+	1-	1o	2o	2o	2-	4+	14+	9	2	3	4	7	7	6	32	70	9	0.5
28	2o	2-	2-	1o	1-	1o	2o	0+	10+	7	6	6	4	3	4	7	2	39	5	0.2
29	0o	0+	0+	0+	1-	1-	1+	1o	5-	0	2	2	2	3	3	5	4	21	3	0.0
30	1o	0+	0+	1o	1-	0+	1-	1+	6-	4	2	2	4	3	2	3	5	25	3	0.1
31	2+	2-	4+	4o	4-	3+	3o	2o	24+	9	6	32	27	22	18	15	7	136	17	0.9
	Kp								Sum	Aug. 1952	ap								Sum	Ap	Cp
1	2+	3o	2+	2-	2o	1+	3o	2o	18-	9	15	9	6	7	5	15	7	73	9	0.5
2	3-	2o	2-	2-	2+	2-	3+	3o	18+	12	7	6	6	9	6	18	15	79	10	0.6
3	2-	4+	5-	4o	6-	5o	3-	2+	30+	6	32	39	27	67	48	12	9	240	30	1.3
4	3o	3+	3+	2o	2+	3-	4o	4o	25-	15	18	18	7	9	12	27	27	133	17	0.9
5	4-	3-	3-	3o	1+	3-	3-	2+	21o	22	12	12	15	5	12	12	9	99	12	0.7
6	5-	5-	4o	3o	2+	3-	2+	3-	26+	39	39	27	15	9	12	9	12	162	20	1.0
7	4o	3-	4o	2o	2+	1o	2o	3o	21o	27	12	27	7	9	4	7	15	108	14	0.8
8	3-	3-	3-	2+	2+	1+	2o	2o	18o	12	12	12	9	9	5	7	7	73	9	0.5
9	1o	1+	1+	1+	2-	1+	3o	3-	14-	4	5	5	5	6	5	15	12	57	7	0.4
10	4+	3-	2o	3-	4+	4-	3o	2+	25o	32	12	7	12	32	22	15	9	141	18	1.0
11	4-	2o	1+	3-	3+	2-	2+	4o	21o	22	7	5	12	18	6	9	27	106	13	0.8
12	5o	2+	3o	3+	3o	4o	4-	2+	27-	48	9	15	18	15	27	22	9	163	20	1.0
13	1+	2o	2+	2-	2-	2-	1-	1o	12+	5	7	9	6	6	6	3	4	46	6	0.3
14	1+	2o	1+	1+	1+	1-	1+	1-	10o	5	7	5	5	5	3	5	3	38	5	0.2
15	2o	1-	0+	1-	1-	1o	3o	3o	11+	7	3	2	3	3	4	15	15	52	6	0.3
16	3-	3-	1+	1o	0+	0+	0+	0+	9o	12	12	5	4	2	2	2	2	41	5	0.2
17	2+	3o	4+	5+	5-	4-	5+	4-	32+	9	15	32	56	39	22	56	22	251	31	1.3
18	5o	4+	3+	3-	4-	5-	4+	5o	33o	48	32	18	12	22	39	32	48	251	31	1.3
19	4o	4-	3-	3+	2+	3+	2o	2-	23o	27	22	12	18	9	18	7	6	119	15	0.8
20	3o	4+	4-	4-	3o	2+	2+	3+	26-	15	32	22	22	15	9	9	18	142	18	1.0
21	2o	1o	1o	3-	1+	2-	1+	1o	12o	7	4	4	12	5	6	5	4	47	6	0.3
22	1-	1-	2-	2-	1-	1+	1+	3-	11-	3	3	6	6	3	5	5	12	43	5	0.2
23	4o	2+	1+	2-	2-	2o	2o	1o	16o	27	9	5	6	6	7	7	4	71	9	0.5
24	1o	1+	3-	2o	1o	2-	1+	0+	11+	4	5	12	7	4	6	5	2	45	6	0.3
25	0o	1-	1+	2-	2o	1o	1o	1o	9-	0	3	5	6	7	4	4	4	33	4	0.1
26	1-	2-	1o	2o	1o	1o	2-	2o	11o	3	6	4	7	4	4	6	7	41	5	0.2
27	3o	3-	4o	3o	1+	2-	2-	1+	19-	15	12	27	15	5	6	6	5	91	11	0.7
28	2o	3-	1+	1-	0+	1o	1-	1-	9+	7	12	5	3	2	4	3	3	39	5	0.2
29	2-	1o	1+	2-	2+	4o	4o	4o	20o	6	4	5	6	9	27	27	27	111	14	0.8
30	5-	6-	5-	2-	2-	3-	3o	3-	27-	39	67	39	6	6	12	15	12	196	24	1.2
31	1+	3o	1+	2+	2+	1o	2o	4o	17+	5	15	5	9	9	4	7	27	81	10	0.6

Planetary three-hour-indices Kp, equivalent ranges ap, daily average ranges Ap, and planetary daily character figures Cp.

	Kp								Sum	ap							Sum	Ap	Cp
	Sept. 1952																		
1	6-5+	6-5+	4o5-	4o6-	40+	67	56	67	56	27	39	27	67	406	51	1.6
2	4+5-	6o5-	5o4-	4-4+	36+	32	39	80	39	48	22	22	32	314	39	1.4
3	4-5-	4o5-	3-4-	3-4o	30o	22	39	27	39	12	22	12	27	200	25	1.2
4	3-3-	3o3-	3o2+	3-1+	20+	12	12	15	12	15	9	12	5	92	12	0.7
5	3-2-	3-3o	3+5-	4-4-	25+	12	6	12	15	18	39	22	22	146	18	1.0
6	4-4o	3+2+	2o3-	3-3-	23+	22	27	18	9	7	12	12	12	119	15	0.8
7	1+5-	4o1+	2+3o	5+6+	28+	5	39	27	5	9	15	56	94	250	31	1.3
8	6o6-	6-5+	4+5o	5+6-	43o	80	67	67	56	32	48	56	67	473	59	1.7
9	5o6-	5+6o	4-5+	4o5o	40o	48	67	56	80	22	56	27	48	404	50	1.6
10	5-4+	5-4o	3+1+	2o3-	27o	39	32	39	27	18	5	7	12	179	22	1.1
11	3+3-	2+3o	3o3-	2o3+	22+	18	12	9	15	15	12	7	18	106	13	0.8
12	4-4o	3+3o	4o3+	4o3o	28+	22	27	18	15	27	18	27	15	169	21	1.1
13	1+2-	1+2-	1+1o	1+2o	12-	5	6	5	6	5	4	5	7	43	5	0.2
14	3+5o	3+4-	4o5-	3+3+	31-	18	48	18	22	27	39	18	18	208	26	1.2
15	3-2-	2o3o	3-3-	3o3+	21o	12	6	7	15	12	12	15	18	97	12	0.7
16	3-2+	2-3-	2+1+	2-3+	18o	12	9	6	12	9	5	6	18	77	10	0.5
17	2+1+	2-2o	3-1o	1-2-	13+	9	5	6	7	12	4	3	6	52	6	0.3
18	1+1+	2-1o	1-1-	2-1+	10-	5	5	6	4	3	3	6	5	37	5	0.2
19	1-Oo	1o1-	1o1+	1-2-	7o	3	0	4	3	4	5	3	6	28	4	0.1
20	1+1-	2-1-	2-2-	3+4+	15+	5	3	6	3	6	6	18	32	79	10	0.6
21	6-4-	2-2o	1+1+	2-2o	19+	67	22	6	7	5	5	6	7	125	16	0.9
22	2+3+	2o1+	2-1o	1+1o	14o	9	18	7	5	6	4	5	4	58	7	0.4
23	1+2-	1o1o	2-1+	1-0+	9o	5	6	4	4	6	5	3	2	35	4	0.2
24	1o2o	3-2+	2+4-	2+3+	20-	4	7	12	9	9	22	9	18	90	11	0.6
25	2o1-	1-1-	1o3-	3+5+	16+	7	3	3	3	4	12	18	56	106	13	0.8
26	6-6-	4o2o	2-1o	2o1-	23-	67	67	27	7	6	4	7	3	188	24	1.1
27	2o5o	5-5-	4-3+	2o1+	27-	7	48	39	39	22	18	7	5	185	23	1.1
28	3-4-	4+5-	3+4o	6o5+	34o	12	22	32	39	18	27	80	56	286	36	1.4
29	5+6o	6-6o	5+3+	6o7o	45-	56	80	67	80	56	18	80	132	569	71	1.8
30	7+5+	4-6-	3+4+	4-2+	36-	154	56	22	67	18	32	22	9	380	48	1.6
	Kp				Sum	Oct. 1952				ap				Sum	Ap	Cp
1	4-4o	3-3-	2-2-	2o3-	21o	22	27	12	12	6	6	7	12	104	13	0.7
2	2o3-	2-2o	4o2+	4o3-	21+	7	12	6	7	27	9	27	12	107	13	0.8
3	3o4o	3o1+	3o4+	5+6o	30o	15	27	15	5	15	32	56	80	245	31	1.3
4	6+6+	6+5-	4-5-	5+7-	44o	94	94	94	39	22	39	56	111	549	69	1.7
5	4o6-	7-6-	6-6o	7-3o	43+	27	67	111	67	67	80	111	15	545	68	1.7
6	5-4+	4o4+	4o5-	3o1+	30+	39	32	27	32	27	39	15	5	216	27	1.2
7	1-2-	3+3-	3o3o	2+3+	20o	3	6	18	12	15	15	9	18	96	12	0.7
8	4o3+	2+2+	4o3o	3o5o	27o	27	18	9	9	27	15	15	48	168	21	1.1
9	4-3-	1+3o	2o2-	3o3+	21-	22	12	5	15	7	6	15	18	100	12	0.7
10	2+3-	2-2o	1o3+	5o4o	22o	9	12	6	7	4	18	48	27	131	16	0.9
11	3+3+	3o4-	3o4o	5-5-	30-	18	18	15	22	15	27	39	39	193	24	1.2
12	5-5-	4o3-	3-2o	3-3-	26o	39	39	27	12	12	7	12	12	160	20	1.0
13	3o2-	1-1+	2-2o	1o2+	14-	15	6	3	5	6	7	4	9	55	7	0.3
14	3-4o	4-1+	1o2-	1oO+	16-	12	27	22	5	4	6	4	2	82	10	0.6
15	1o1-	Oo1-	0+2o	3-1o	9-	4	3	2	3	2	7	12	4	37	5	0.2
16	1+3-	1+2o	3o1o	1o2+	15-	5	12	5	7	15	4	4	9	61	8	0.4
17	3+4o	3-1+	2o4-	3-2-	21+	18	27	12	5	7	22	12	6	109	14	0.8
18	2+4-	5-2+	2o3o	3+2+	24-	9	22	39	9	7	15	18	9	128	16	0.9
19	2+1o	3o4o	1+1-	Oo1o	14-	9	4	15	27	5	3	2	4	69	9	0.5
20	2+2+	2o2-	2o2o	1o2-	15o	9	9	7	6	7	7	4	6	55	7	0.3
21	OoOo	2-4+	5+5o	5-3+	24+	0	0	6	32	56	48	39	18	199	25	1.2
22	1+3-	1o1+	1oOo	Oo1-	8o	5	12	4	5	4	0	0	3	33	4	0.1
23	OoOo	O+1-	2-1+	O+1-	5o	0	0	2	3	6	5	2	3	21	3	0.0
24	1o1-	O+O+	OoO+	1-O+	4-	4	3	2	2	0	2	3	2	18	2	0.0
25	OoO+	1-3+	2+4-	4-4+	18+	0	2	3	18	9	22	22	32	108	14	0.8
26	6o5o	4-5-	5o5-	4-4o	37-	80	48	22	39	48	39	22	27	325	41	1.5
27	3+3+	3+3-	1o2-	2-2o	19o	18	18	18	12	4	6	6	7	89	11	0.6
28	4-3+	2+2o	2+3o	2o2-	20+	22	18	9	7	9	15	7	6	93	12	0.7
29	2+2o	2o2o	3o4-	4o4-	23-	9	7	7	7	15	22	27	22	116	14	0.8
30	5o6o	2+2o	3o5o	5+6o	35-	48	80	9	7	15	48	56	80	343	43	1.5
31	6o5+	6-5+	5+5o	3o4-	39+	80	56	67	56	56	48	15	22	400	50	1.6

Planetary three-hour-indices Kp, equivalent ranges ap, daily average ranges Ap, and planetary daily character figures Cp.

	Kp		Sum	Nov. 1952 ap								Sum	Ap	Cp
1	4+3+2+3+	4+4-4o5o	30+	32	18	9	18	32	22	27	48	206	26	1.2
2	4-4-3o2+	4-3o4o1+	25-	22	22	15	9	22	15	27	5	137	17	0.9
3	2+2+2+3+	3-2+1-2+	18+	9	9	9	18	12	9	3	9	78	10	0.5
4	3-1+2o1-	0+1-1-0+	9-	12	5	7	3	2	3	3	2	37	5	0.2
5	2-2-1o2o	2o1+1-2-	12o	6	6	4	7	7	5	3	6	44	6	0.2
6	1+4o4o4-	4-3o3o2-	24+	5	27	27	22	22	15	15	6	139	17	0.9
7	3o3o2+3-	2o3o4o4+	24+	15	15	9	12	7	15	27	32	132	16	0.9
8	3o4-3-2+	2+3-4-4+	25-	15	22	12	9	9	12	22	32	133	17	0.9
9	4-3o1+1o	1-3o2+2+	17+	22	15	5	4	3	15	9	9	82	10	0.6
10	1-0o1-0+	0o1o1o0+	4o	3	0	3	2	0	4	4	2	18	2	0.0
11	1-0+1-1-	0o2-2o2o	8o	3	2	3	3	0	6	7	7	31	4	0.1
12	1+0o1+0o	0+0+0+0+	4o	5	0	5	0	2	2	2	2	18	2	0.0
13	1+1-0o0+	1-0o0+0+	4-	5	3	0	2	3	0	2	2	17	2	0.0
14	1-2+2-2o	1o1-2-3-	13-	3	9	6	7	4	3	6	12	50	6	0.3
15	2-2+3o2+	1o2-3-1-	15+	6	9	15	9	4	6	12	3	64	8	0.4
16	0o1-3-2+	4+3+1-1o	15o	0	3	12	9	32	18	3	4	81	10	0.6
17	2+1o3-2o	2-2o4+4-	20-	9	4	12	7	6	7	32	22	99	12	0.7
18	2o3-3-2o	1+0+2-2-	14+	7	12	12	7	5	2	6	6	57	7	0.4
19	1+1+1o1+	2o1o1+1+	11-	5	5	4	5	7	4	5	5	40	5	0.2
20	2-2-0+2-	1+2o1o2o	12-	6	6	2	6	5	7	4	7	43	5	0.2
21	4o4o6+5-	3o3o3-2+	30o	27	27	94	39	15	15	12	9	238	30	1.3
22	5-3-3-4-	3o4-2+0+	23o	39	12	12	22	15	22	9	2	133	17	0.9
23	3o4-3o2+	2-1-1-1-	16-	15	22	15	9	6	3	3	3	76	10	0.5
24	2-1-2o3-	2+3o1o0+	14-	6	3	7	12	9	15	4	2	58	7	0.4
25	4-1+1o3-	3-2o1+1+	16o	22	5	4	12	12	7	5	5	72	9	0.5
26	0+1-3o4-	3-4-6-5+	25o	2	3	15	22	12	22	67	56	199	25	1.2
27	4-4o4+6o	6-4+4+4o	36+	22	27	32	80	67	32	32	27	319	40	1.4
28	4o3+4o4-	4o4o4-3o	30-	27	18	27	22	27	27	22	15	185	23	1.1
29	2o1o2+3o	4-3o3+3-	21o	7	4	9	15	22	15	18	12	102	13	0.7
30	3-1+3o3-	2+3o2+3-	20o	12	5	15	12	9	15	9	12	89	11	0.6

	Kp		Sum	Dec. 1952 ap								Sum	Ap	Cp
1	1o2o3o4-	4-4o4+4o	26-	4	7	15	22	22	27	32	27	156	20	1.0
2	4+4-2+3+	5+5-4-5o	32+	32	22	9	18	56	39	22	48	246	31	1.3
3	3o5o4-3+	3o3-3o4-	27+	15	48	22	18	15	12	15	22	167	21	1.1
4	7-4o4o4+	4o3+4o4+	35-	111	27	27	32	27	18	27	32	301	38	1.4
5	4+4-4-4-	4-1+4+2+	27o	32	22	22	22	22	5	32	9	166	21	1.1
6	2-3+2+1o	1+2+2-1+	15o	6	18	9	4	5	9	6	5	62	8	0.4
7	2o2-2o2-	1o2-3-1o	14-	7	6	7	6	4	6	12	4	52	6	0.3
8	2-1-1+1+	2-2-0+1-	9+	6	3	5	5	6	6	2	3	36	4	0.2
9	0+0o1-0+	0+0+1o0+	3+	2	0	3	2	2	2	4	2	17	2	0.0
10	1-2+1o1+	2o3-3+2+	16-	3	9	4	5	7	12	18	9	67	8	0.5
11	1o3+3+2+	2+2o2+1o	18-	4	18	18	9	9	7	9	4	78	10	0.5
12	2-1+3+2+	4o3+1+1o	18+	6	5	18	9	27	18	5	4	92	12	0.7
13	3+5+6o5+	5o2o3o2-	32-	18	56	80	56	48	7	15	6	286	36	1.4
14	1o2-0o1o	1+1o0+2+	9-	4	6	0	4	5	4	2	9	34	4	0.1
15	3+3o2o4-	3-3-0+1+	19o	18	15	7	22	12	12	2	5	93	12	0.7
16	2-2+1+2+	3-3-2o3-	18-	6	9	5	9	12	12	7	12	72	9	0.5
17	2+3-3+2-	1-1-0+3o	15-	9	12	18	6	3	3	2	15	68	8	0.5
18	3-3o1-1o	2o2+4o2o	18-	12	15	3	4	7	9	27	7	84	10	0.6
19	2+1-1-1-	1-0+1-1-	7-	9	3	3	3	3	2	3	3	29	4	0.1
20	1o1+1-1o	1+1-1-0+	7o	4	5	3	4	5	3	3	2	29	4	0.1
21	0+0+1o1o	2-1-1-0+	6o	2	2	4	4	6	3	3	2	26	3	0.1
22	1+1o1+2-	3o3-2-2-	14+	5	4	5	6	15	12	6	6	59	7	0.4
23	1-1-1-1o	1-0+1o1+	6+	3	3	3	4	3	2	4	5	27	3	0.1
24	2o3+2o4+	5+4+4o4-	29o	7	18	7	32	56	32	27	22	201	25	1.2
25	4-5o3o4+	4o2+2+2o	27-	22	48	15	32	27	9	9	7	169	21	1.1
26	3o3o3o3-	2o3o1+2o	20o	15	15	15	12	7	15	5	7	91	11	0.7
27	3-3o3-2o	2o2o3o7-	24o	12	15	12	7	7	7	15	111	186	23	1.1
28	4o3-2-3o	4-4o4o4+	27+	27	12	6	15	22	27	27	32	168	21	1.1
29	5o4o3+4+	3o5o5-4+	34-	48	27	18	32	15	48	39	32	259	32	1.3
30	5-5-4-4-	4-5o4-4+	33+	39	39	22	22	22	48	22	32	246	31	1.3
31	4+2+4o4-	3+4+3+4+	30-	32	9	27	22	18	32	18	32	190	24	1.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp,

1953

	Kp	Sum	Jan. 1953	ap						Sum	Ap	Cp
1	3+4o3o3+ 3o3o4-3o	26+	18	27	15	18	15	15	22	15	145	18	1.0
2	2o2+4-3+ 4o4+4+3o	27o	7	9	22	18	27	32	32	15	162	20	1.0
3	3-3o1+1o 2+3-2o2-	17-	12	15	5	4	9	12	7	6	70	9	o.5
4	3-1-1-1- 1-2+2+2-	12-	12	3	3	3	3	9	9	6	48	6	o.3
5	2-3+7-6o 6-5o5-5-	38-	6	18	111	80	67	48	39	39	408	51	1.6
6	3-2-2+3o 3-5-3-2+	22o	12	6	9	15	12	39	12	9	114	14	o.8
7	2o1+2+2o 3o2+2o1+	16+	7	5	9	7	15	9	7	5	64	8	o.4
8	3+3+2+2- 1+1-2o2o	17-	18	18	9	6	5	3	7	7	73	9	o.5
9	4oO+1+2- 2o3-3-3o	18-	27	2	5	6	7	12	12	15	86	11	o.6
10	2+1o1-1- 2-1+1+3-	12-	9	4	3	3	6	5	5	12	47	6	o.3
11	4-3o2-2- 2-1o1+2-	16-	22	15	6	6	6	4	5	6	70	9	o.5
12	2+2o1+1o 3-2o1o1-	13o	9	7	5	4	12	7	4	3	51	6	o.3
13	O+1+1o3- 3+2-4-3+	17+	2	5	4	12	18	6	22	18	87	11	o.6
14	3-3o3-1+ 1+2-2-2+	17-	12	15	12	5	5	6	6	9	70	9	o.5
15	2-O+O+1+ 1+1oO+2o	8+	6	2	2	5	5	4	2	7	33	4	o.1
16	1+O+O+1o 1+2o1-1+	8+	5	2	2	4	5	7	3	5	33	4	o.1
17	1-O+1-2- 1oO+1+3-	9-	3	2	3	6	4	2	5	12	37	5	o.2
18	1o2o2-3- 4-3+3o2o	19+	4	7	6	12	22	18	15	7	91	11	o.7
19	3-5+5o5- 4-3-3o3o	30o	12	56	48	39	22	12	15	15	219	27	1.2
20	5-4o4-3+ 2o1+2+2-	23o	39	27	22	18	7	5	9	6	133	17	o.9
21	2+2+2+3- 3o2-2-2+	18+	9	9	9	12	15	6	6	9	75	9	o.5
22	2o3o2+2o 2-1-1o2o	15-	7	15	9	7	6	3	4	7	58	7	o.4
23	4o3-1+1- 1-O+1+O+	11+	27	12	5	3	3	2	5	2	59	7	o.4
24	1o1o3-4- 3-3+3o1+	19-	4	4	12	22	12	18	15	5	92	12	o.7
25	OoIo2+6- 5o3+3o4o	24+	0	4	9	67	48	18	15	27	188	24	1.1
26	5o5+4o5- 5-4+6-5o	39-	48	56	27	39	39	32	67	48	356	44	1.5
27	5O3+3+5+ 5-5-5o2+	34-	48	18	18	56	39	39	48	9	275	34	1.4
28	3o4-4o3+ 3+5-4+5o	31+	15	22	27	18	18	39	32	48	219	27	1.2
29	5o4o4-3+ 4o4-4+2+	30+	43	27	22	18	27	22	32	9	205	26	1.2
30	4-4-4o3+ 3o4-3+2-	26+	22	22	27	18	15	22	18	6	150	19	1.0
31	4-4o2+3+ 3oIo2-1+	20+	22	27	9	18	15	4	6	5	106	13	o.8

	Kp	Sum	Feb. 1953	ap						Sum	Ap	Cp
1	1o1+2-1- 1o1-1+2o	10-	4	5	6	3	4	3	5	7	37	5	o.2
2	2o2+2o2- 1+3-1+1o	14+	7	9	7	6	5	12	5	4	55	7	o.3
3	3-2o1+2+ 1o1+1+1+	13+	12	7	5	9	4	5	5	5	52	6	o.3
4	1+2o1-2o 3o2+2oO+	14-	5	7	3	7	15	9	7	2	55	7	o.3
5	OoO+1+Oo 1o2-2oO+	7-	0	0	2	5	4	6	7	2	26	3	o.1
6	OoOo1-1o 1o2-1+O+	6o	0	0	3	4	4	6	5	2	24	3	o.1
7	O+O+O+1- OoOoO+1-	3-	2	2	2	3	0	0	2	3	14	2	o.0
8	1-1o1o2- 2-1+1o2o	10+	3	4	4	6	6	5	4	7	39	5	o.2
9	3-4-2o2+ 2+3-2+4o	22o	12	22	7	9	9	12	9	27	107	13	o.8
10	2oO+O+1+ 3o3o3+5-	18o	7	2	2	5	15	15	13	39	103	13	o.7
11	4-3-3o3- 2-1-2o2o	18+	22	12	15	12	6	3	7	7	84	11	o.6
12	1o1+1+2- 2-2o2-O+	11o	4	5	5	6	6	7	6	2	41	5	o.2
13	OoOo1-O+ O+O+1-2o	4+	0	0	3	2	2	2	3	7	19	2	o.0
14	3o2o4-3o 1+2+3+1+	20o	15	7	22	15	5	9	18	5	96	12	o.7
15	3-3-3-2o 3-1o1+4-	19-	12	12	12	7	12	4	5	22	86	11	o.6
16	4+2-3-3- 2+5-3o2-	23o	32	6	12	12	9	39	15	6	131	16	o.9
17	2+3+3-3o 1+2-2-1o	17o	9	18	12	15	5	6	6	4	75	9	o.5
18	O+O+2o2- 1+2-1+3-	11+	2	2	7	6	5	6	5	12	45	6	o.3
19	2+3o3-3- 2+3-2o3o	21-	9	15	12	12	9	12	7	15	91	11	o.7
20	3o1-1o1o 1+2+2o1-	12o	15	3	4	4	5	9	7	3	50	6	o.3
21	4o3+3+2- 1o2o2o2+	20-	27	18	18	6	4	7	7	9	96	12	o.7
22	3o2o2+2+ 3-4+5-6o	27+	15	7	9	9	12	32	39	80	203	25	1.2
23	5+4o5+5o 4o5o5-4o	37+	56	27	56	48	27	48	39	27	328	41	1.5
24	6-6o6o4- 5-5o5+5o	41+	67	80	80	22	39	48	56	48	440	55	1.6
25	6-5-5+5o 4+4o4-5o	38-	67	39	56	48	32	27	22	48	339	42	1.5
26	4+4+5+4+ 5+5o5+5-	39-	32	32	56	32	56	48	56	39	351	44	1.5
27	4o2+4+5o 3+4o3-5o	31-	27	9	32	48	18	27	12	48	221	28	1.2
28	3o6o3+2- 2+3+3+2+	25+	15	80	18	6	9	18	18	9	173	22	1.1

continued

	Kp	Sum	Mar. 1953	ap						Sum	Ap	Cp
1	2-2+4-4o 2o2o3o3o	22-	6	9	22	27	7	7	15	15	108	14	o.8
2	4+5+6-6- 6+6+6o5+	45o	32	56	67	67	94	94	80	56	546	88	1.7
3	5-5+4+5- 3o2+3o4-	31o	39	56	32	39	15	9	15	22	227	28	1.2
4	4o2+1-2- 2o2+2o1o	16o	27	9	3	6	7	9	7	4	72	9	o.5
-	1-3-1o1- 2o2+3+3+	16o	3	12	4	3	7	9	18	18	74	9	o.5
6	0+1-2-2o 2-2-1+4o	13+	2	3	6	7	6	6	5	27	62	8	o.4
7	5o3+4-3o 2+1o4-1+	23+	48	18	22	15	9	4	22	5	143	18	1.0
8	2o3-1+3- 3-4+5o7-	27+	7	12	5	12	12	32	48	111	239	30	1.3
9	7-4o4-4+ 4o3+5-5-	35+	111	27	22	32	27	18	39	39	315	40	1.4
10	5-4+4-3- 3o3o2+3-	26+	39	32	22	12	15	15	9	12	156	20	1.0
11	3+2o1+1+ 1o1-2-1+	13-	18	7	5	5	4	3	6	5	53	7	o.3
12	3-1+1-1o 1-1-1o1-	9-	12	5	3	4	3	3	4	3	37	5	o.2
13	0+0+0+1- 0+1-1-3o	6+	2	2	2	3	2	3	3	15	32	4	o.1
14	4-3-1+1+ 2+2-3o3o	19o	22	12	5	5	9	6	15	15	89	11	o.6
15	2o1+3+4+ 4o2o2-1o	20-	7	5	18	32	27	7	6	4	106	13	o.8
16	3o4o2+2o 2o2-1+3+	20-	15	27	9	7	7	6	5	18	94	12	o.7
17	2o2-2+1o 0+1+2-0+	11-	7	6	9	4	2	5	6	2	41	5	o.2
18	1-1-1-2- 1o1o2-1o	8+	3	3	3	6	4	4	6	4	33	4	o.1
19	4o4o2+3+ 3+3o4-4-	27+	27	27	9	18	18	15	22	22	158	20	1.0
20	4-1-1+2o 1-1+4-4-	17o	22	3	5	7	3	5	22	22	89	11	o.6
21	5o4+4+4+ 3-3+6o3o	33o	48	32	32	32	12	18	80	15	269	34	1.3
22	5+4+3+3- 3o2o4-4+	29-	56	32	18	12	15	7	22	32	194	24	1.2
23	4+5+5-4o 4o6o6-3o	37o	32	56	39	27	27	80	67	15	343	43	1.5
24	5-5+6-5+ 4+5o7-6+	43+	39	56	67	56	32	48	111	94	503	73	1.7
25	5-5o5o4o 5o5-5+4o	38-	39	48	48	27	48	39	56	27	332	47	1.5
26	3-4-3+4- 4o3+5-5-	30o	12	22	18	22	27	18	39	39	197	25	1.2
27	4o5o4-4+ 3+3-3o4-	30-	27	48	22	32	18	12	15	22	196	25	1.2
28	4o4o3+3+ 4-4o4-2+	28+	27	27	18	18	22	27	22	9	170	21	1.1
29	4-3o3-1+ 1o1+3o3+	19+	22	15	12	5	4	5	15	18	96	12	o.7
30	4-5-2o1o 2+2o4o3o	23-	22	39	7	4	9	7	27	15	130	16	o.9
31	1+2-1o1+ 3-1o3-3+	15o	5	6	4	5	12	4	12	18	66	8	o.4

	Kp	Sum	Apr. 1953	ap						Sum	Ap	Cp
1	4+3o2+4o 3-2o1+2-	21+	32	15	9	27	12	7	5	6	113	14	o.8
2	4o3+3+3o 1+2o3+2+	23-	27	18	18	15	5	7	18	9	117	15	o.8
3	4-3+2-1o 1o2o3+3+	19+	22	18	6	4	4	7	18	18	97	12	o.7
4	6o6-3o3o 4o3+4+3+	33-	80	67	15	15	27	18	32	18	272	34	1.3
5	2+0+2o2o 2-2o2o2-	14o	9	2	7	7	6	7	7	6	51	6	o.3
6	2o3o2+2+ 1+1-1+2-	15-	7	15	9	9	5	3	5	6	59	7	o.4
7	0+0+1-0+ 1o1o1o2-	6+	2	2	3	2	4	4	4	6	27	3	o.1
8	2+2+2o2o 2-1o1+3o	16-	9	9	7	7	6	4	5	15	62	8	o.4
9	3o3+0+2- 1+2-2-1o	14o	15	18	2	6	5	6	6	4	62	8	o.4
10	2-3+3-4- 4-3o2+3+	24-	6	18	12	22	22	15	9	18	122	15	o.9
11	2-5-4+4+ 3+5-3o3-	29-	6	39	32	32	18	39	15	12	193	24	1.2
12	3+3-3+4o 3+1+2+2o	22+	18	12	18	27	18	5	9	7	114	14	o.8
13	4o2o4-4o 4+4-3o1o	26-	27	7	22	27	32	22	15	4	156	20	1.0
14	2o2+2-1+ 2+1+2-1+	14o	7	9	6	5	9	5	6	5	52	7	o.3
15	3+3o2+3+ 2+1+2o2-	19+	18	15	9	18	9	5	7	6	87	11	o.6
16	4o5+4+4- 4-5+5-5+	36+	27	56	32	22	22	56	39	56	310	39	1.4
17	4o2-3+3+ 4-2o1+1+	21-	27	6	18	18	22	7	5	5	108	14	o.8
18	3-3-4-3o 2o2+2+2+	21o	12	12	22	15	7	9	9	9	95	12	o.7
19	3-5o3o3o 5-4-2o4-	28-	12	48	15	15	39	22	7	22	180	23	1.1
20	5-5+5o4- 4o4-4-5o	35o	39	56	48	22	27	22	22	48	284	36	1.4
21	4-4-5-4- 3o4+5o4o	32o	22	22	39	22	15	32	48	27	227	28	1.2
22	3+3+3o3+ 4o4+4o4-	29o	18	18	15	18	27	32	27	22	177	22	1.1
23	4-5o4o3- 4-3o4-3+	29o	22	48	27	12	22	15	22	18	186	23	1.1
24	2+1o1+1+ 2+3o3o2+	17-	9	4	5	5	9	15	15	9	71	9	o.5
25	3-2-2-3- 3-3-3o4-	21-	12	6	6	12	12	12	15	22	97	12	o.7
26	3o3-4-2o 4-3-2-3+	23-	15	12	22	7	22	12	6	18	114	14	o.8
27	3+2o2+2o 2+2o2-2+	18o	18	7	9	7	9	7	6	9	72	9	o.5
28	2+2+3-3- 2o1+0+0o	14-	9	9	12	12	7	5	2	0	56	7	o.4
29	1+1+2+3- 4-2+1+1-	16-	5	5	9	12	22	9	5	3	70	9	o.5
30	3-2+3o3- 2+4-3+2-	22-	12	9	15	12	9	22	18	6	103	13	o.7

continued

	Kp	Sum	May 1953			ap				Sum	Ap	Cp
1	1o1-1+2- 2-2+0+1o	10o	4	3	5	6	6	9	2	4	39	5	0.2
2	2o1+0+2- 1+0+1-1-	8+	7	5	2	6	5	2	3	3	33	4	0.1
3	0+0+1o1- 1o2-2-1+	8o	2	2	4	3	4	6	6	5	32	4	0.1
4	1+2+1+2+ 0+1o1-2-	11o	5	9	5	9	2	4	3	6	43	5	0.2
5	2-3+3-3o 2o2-2+3-	19+	6	18	12	15	7	6	9	12	85	11	0.6
6	5-3+4+6- 5-3+4o5o	35o	39	18	32	67	39	18	27	48	288	36	1.4
7	4+5-5-5- 3+2+2-3o	29-	32	39	39	39	18	9	6	15	197	25	1.2
8	4+4+5o3+ 4-3o5-4-	32o	32	32	48	18	22	15	39	22	228	29	1.2
9	4+4o4o4o 3-3o3o4-	29-	32	27	27	27	12	15	15	22	177	22	1.1
10	2o1+2+3- 3+2+3o2o	19o	7	5	9	12	18	9	15	7	82	10	0.6
11	3-2o2+3o 2o1+1o1o	15+	12	7	9	15	7	5	4	4	63	8	0.4
12	1+2o2-0+ 1o1-1+1+	10-	5	7	6	2	4	3	5	5	37	5	0.2
13	1o1o0+1+ 1o0+1o0+	6+	4	4	2	5	4	2	4	2	27	3	0.1
14	1o1-1-0+ 1o1o1o2o	8-	4	3	3	2	4	4	4	7	31	4	0.1
15	1o3o3-2+ 5+5+8-7-	34o	4	15	12	9	56	56	179	111	442	55	1.6
16	6-6o5-5+ 6+6o7-7+	48o	67	80	39	56	94	80	111	154	681	85	1.8
17	7-5-3o1+ 2o3o3-4-	27o	111	39	15	5	7	15	12	22	226	28	1.2
18	3+4-4-3+ 3-2-2+3+	24o	18	22	22	18	12	6	9	18	125	16	0.9
19	4o5o4-4+ 4-1+4-4+	30o	27	48	22	32	22	5	22	32	210	26	1.2
20	4-2+4-3o 2+2+3o3+	24-	22	9	22	15	9	9	15	18	119	15	0.8
21	2+3-3o2- 1+2+3o2+	19-	9	12	15	6	5	9	15	9	80	10	0.6
22	2o4-2o2o 3-2+5-3+	23-	7	22	7	7	12	9	39	18	121	15	0.9
23	2+1+2o2+ 2-1+2+2-	15o	9	5	7	9	6	5	9	6	56	7	0.4
24	1o1-2o1o 2+2o2+2-	13o	4	3	7	4	9	7	9	6	49	6	0.3
25	1-1-1+1+ 1+2o1-2+	10+	3	3	5	5	5	7	3	9	40	5	0.2
26	1+1o1+1+ 1+1-3o3-	13-	5	4	5	5	5	3	15	12	54	7	0.3
27	3+5-5+4+ 3-3+2-2+	28-	18	39	56	32	12	18	6	9	190	24	1.1
28	2o3-2-2- 2o2+2o1o	15+	7	12	6	6	7	9	7	4	58	7	0.4
29	1-1o2-2o 2+1+1-1+	11o	3	4	6	7	9	5	3	5	42	5	0.2
30	2+1+1-1- 1o1o1o2-	10-	9	5	3	3	4	4	4	6	38	5	0.2
31	2-0+1-2o 2+2+4-1+	14+	6	2	3	7	9	9	22	5	63	8	0.4

	Kp	Sum	Jun. 1953			ap				Sum	Ap	Cp
1	2-2-2-1- 1-1o2-1+	10+	6	6	6	3	3	4	6	5	39	5	0.2
2	3-4+6o6- 5o5o6-5-	39o	12	32	80	67	48	48	67	39	393	49	1.6
3	5-4+6o3o 4+4-4o3o	33o	39	32	80	15	32	22	27	15	262	33	1.3
4	4+5-5-4o 3+3o2+2o	28+	32	39	39	27	18	15	9	7	186	23	1.1
5	2-3+4o3o 1+2+6-2+	24-	6	18	27	15	5	9	67	9	156	20	1.0
6	3o4-3o3- 2+3o2+1+	21+	15	22	15	12	9	15	9	5	102	13	0.7
7	2+2-3+2o 2-2-1+2-	16-	9	6	18	7	6	6	5	6	63	8	0.4
8	2-2-2-1o 1+2-1o1o	11o	6	6	6	4	5	6	4	4	41	5	0.2
9	1-1+2o2- 1+1o1+1o	10+	3	5	7	6	5	4	5	4	39	5	0.2
10	1+3o4-2+ 2o2o3+2+	20o	5	15	22	9	7	7	18	9	92	12	0.7
11	2o2o2+2o 2o1+1+3+	16+	7	7	9	7	7	5	5	18	65	8	0.4
12	1-1+1+2+ 2+3+4+4o	20-	3	5	5	9	9	18	32	27	108	14	0.8
13	4-3+2+2o 2+2o3+3-	22-	22	18	9	7	9	7	18	12	102	13	0.7
14	2+2o2o1o 2o2o3-2o	16o	9	7	7	4	7	7	12	7	60	8	0.4
15	1-1+1+0+ 2-1-2+2o	10+	3	5	5	2	6	3	9	7	40	5	0.2
16	0+0+1o2- 2-1-1o1+	8o	2	2	4	6	6	3	4	5	32	4	0.1
17	2o1+2+1+ 3+3o1+2+	17o	7	5	9	5	18	15	5	9	73	9	0.5
18	2o2o2o1- 1-0+2-2o	11+	7	7	7	3	3	2	6	7	42	5	0.2
19	1o1o2-0+ 1+1+1-1+	9-	4	4	6	2	5	5	3	5	34	4	0.1
20	1o2-2-3o 4-3o5-4-	22+	4	6	6	15	22	15	39	22	129	16	0.9
21	2o3o4-3o 2-2o3o3o	21+	7	15	22	15	6	7	15	15	102	13	0.7
22	1+2-2+3- 3o2o2o2+	17+	5	6	9	12	15	7	7	9	70	9	0.5
23	1+1-1-0+ 1-0+0+2o	6+	5	3	3	2	3	2	2	7	27	3	0.1
24	2o2o1+1- 1-1+3o2+	13+	7	7	5	3	3	5	15	9	54	7	0.3
25	2+1+1o1o 1o1o1+1+	10+	9	5	4	4	4	4	5	5	40	5	0.2
26	0o0o0+0+ 0+1o1+1o	4+	0	0	2	2	2	4	5	4	19	2	0.0
27	0+1-1-1+ 1-1+1+2-	8o	2	3	3	5	3	5	5	6	32	4	0.1
28	1-2-0+1- 1-0+1+2+	8o	3	6	2	3	3	2	5	9	33	4	0.1
29	2-1o3+6- 6+6-5-5-	33o	6	4	18	67	94	67	39	39	334	42	1.5
30	6-4+5o5+ 4-4-4-3+	35-	67	32	48	56	22	22	22	18	287	36	1.4

continued

	Kp	Sum	Jul.1953 ap								Sum	Ap	Cp
1	3+4-5-6- 5-2+3-3+	30+	18	22	39	67	39	9	12	18	224	28	1.2
2	4+5-5-3+ 4o4-4o4o	33-	32	39	39	18	27	22	27	27	231	29	1.3
3	3+2+3+3+ 4o3o3o3-	25o	18	9	18	18	27	15	15	12	132	17	o.9
4	3o3+4-4+ 4-3o3o2o	26o	15	18	22	32	22	15	15	7	146	18	1.0
5	2o3o4o3- 2+2-2o2o	20-	7	15	27	12	9	6	7	7	90	11	o.6
6	5-1+2+2+ 1o1+1o3o	17o	39	5	9	9	4	5	4	15	90	11	o.6
7	3+4o4-2- 3+3+3o4o	26+	18	27	22	6	18	18	15	27	151	19	1.0
8	4-3-3-3o 2-2+4-3o	23-	22	12	12	15	6	9	22	15	113	14	o.8
9	2+1+2o2- 2o2o4o3+	19-	9	5	7	6	7	7	27	18	86	11	o.6
10	3-2o3-1- 1-1+1-1-	11+	12	7	12	3	3	5	3	3	48	6	o.3
11	1+3o1-1+ 1+0+1-1o	10-	5	15	3	5	5	2	3	4	42	5	o.2
12	1-2-0+0+ 2-2-5-4+	15+	3	6	2	2	6	6	39	32	96	12	o.7
13	2o2+4-3+ 2+2+2o3-	21-	7	9	22	18	9	9	7	12	93	12	o.7
14	1o1-1-1o 2o4o4o2+	16-	4	3	3	4	7	27	27	9	84	11	o.6
15	3o4-4-3- 3+3-3-1o	23-	15	22	22	12	18	12	12	4	117	15	o.8
16	1+2-1o1- 0+0+0o1-	6o	5	6	4	3	2	2	0	3	25	3	o.1
17	0+1o2+2o 1+1-0+1-	9-	2	4	9	7	5	3	2	3	35	4	o.2
18	2+2-1-1+ 2o1-0+1+	10+	9	6	3	5	7	3	2	5	40	5	o.2
19	3-2o1+1- 1-0+2-2o	11+	12	7	5	3	3	2	6	7	45	6	o.3
20	3-3-1+2o 2+2o0+1o	14+	12	12	5	7	9	7	2	4	58	7	o.4
21	2-1+2+2o 1-1-1-2o	11+	6	5	9	7	3	3	3	7	43	5	o.2
22	0+0+2-2- 1-2o1+3o	11o	2	2	6	6	3	7	5	15	46	6	o.3
23	3+4+3+5+ 6-5+5-5+	37+	18	32	18	56	67	56	39	56	342	48	1.5
24	4+2-1+3+ 3-3o3-2+	21+	32	6	5	18	12	15	12	9	109	14	o.8
25	0+1o1+1o 2o3o4-3-	15o	2	4	5	4	7	15	22	12	71	9	o.5
26	4+3o3o3o 4-2+4o4o	27+	32	15	15	15	22	9	27	27	162	20	1.0
27	4+6o6-4+ 5-5o5-3o	38-	32	80	67	32	39	48	39	15	352	44	1.5
28	4-5-5o4- 3+3+4-3+	31-	22	39	48	22	18	18	22	18	207	26	1.2
29	4o5-4+4+ 3+4o4+5-	34-	27	39	32	32	18	27	32	39	246	31	1.3
30	4+3o4+4- 4o3+3+4o	30o	32	15	32	22	27	18	18	27	191	24	1.2
31	4o3+4-4o 4-2+2o2-	25-	27	18	22	27	22	9	7	6	138	17	o.9

	Kp	Sum	Aug.1953 ap								Sum	Ap	Cp
1	3o3o2o2o 3o3o3+4-	23o	15	15	7	7	15	15	18	22	114	14	o.8
2	2+3+3-3o 1+2o3-2o	19+	9	18	12	15	5	7	12	7	85	11	o.6
3	2+2-2+1- 2o2-2o2-	14+	9	6	9	3	7	6	7	6	53	7	o.3
4	3o2+2o1o 2-3-2+2-	17-	15	9	7	4	6	12	9	6	68	8	o.5
5	1+1o2o2o 1-1-3-2o	12+	5	4	7	7	3	3	12	7	48	6	o.3
6	1-1-1+2o 2-3-2o2o	13o	3	3	5	7	6	12	7	7	50	6	o.3
7	4-2+2-3o 1+1+2o2+	18-	22	9	6	15	5	5	7	9	78	10	o.5
8	2+2+2+2- 1+1+1-2-	14-	9	9	9	6	5	5	3	6	52	6	o.3
9	3+4-3-2o 3+2+4+3-	24+	18	22	12	7	18	9	32	12	130	16	o.9
10	2+2+5o3+ 2+3-2+4+	25-	9	9	48	18	9	12	9	32	146	18	1.0
11	4+4+3+3- 2+3+3o3-	26o	32	32	18	12	9	18	15	12	148	18	1.0
12	4+5+5o5+ 4+6-3+3+	37-	32	56	48	56	32	67	18	18	327	41	1.5
13	4o3+3o1o 4-4-5o5-	28+	27	18	15	4	22	22	48	39	195	24	1.2
14	3+4-2-2+ 2-2+2+2-	19o	18	22	6	9	6	9	9	6	85	11	o.6
15	2o1+2o1+ 2-1o4-3-	16-	7	5	7	5	6	4	22	12	68	8	o.5
16	3o2-2o4- 2o2o2+2+	19o	15	6	7	22	7	7	9	9	82	10	o.6
17	2-1o1-0+ 2+1+1-1-	9-	6	4	3	2	9	5	3	3	35	4	o.2
18	3-2o1-0+ 2-2-1o2-	12-	12	7	3	2	6	6	4	6	46	6	o.3
19	2-2-1-1o 2-1o1-1-	9o	6	6	3	4	6	4	3	3	35	4	o.2
20	1+0+1-1- 1-0+0+1o	5+	5	2	3	3	3	2	2	4	24	3	o.1
21	1-1o1o1o 1-1-0+0+	6-	3	4	4	4	3	3	2	2	25	3	o.1
22	0+2-1+1+ 1+1-1o1o	9-	2	6	5	5	5	3	4	4	34	4	o.1
23	4-3+3+5+ 4+5o5o6+	36+	22	18	18	56	32	48	48	94	336	42	1.5
24	5+6o4+4- 5-6-5+7-	42-	56	80	32	22	39	67	56	111	463	58	1.7
25	4o4+5o5+ 5-3-3o3-	32-	27	32	48	56	39	12	15	12	241	30	1.3
26	4o5-3+2o 3+3+4o5-	29+	27	39	18	7	18	18	27	39	193	24	1.2
27	5o5o4+5o 5-5+5-4o	38o	48	48	32	48	39	56	39	27	337	42	1.5
28	5-5-4o5- 4-5o4o5-	35+	39	39	27	39	22	48	27	39	280	35	1.4
29	3+5o5o5+ 4-4+5+4o	36o	18	48	48	56	22	32	56	27	307	38	1.4
30	5+5o5+5- 5o6-4o4o	39o	56	48	56	39	48	67	27	27	368	46	1.5
31	5-4+3-4- 5o4o3+4-	31+	39	32	12	22	48	27	18	22	220	28	1.2

continued

	Kp	Sum	Sep.1953 ap								Sum	Ap	Cp
1	2+3-4-3o 4o3o3-2o	23+	9	12	22	15	27	15	12	7	119	15	o.8
2	5-4o4o3- 3-3+3+3o	28-	39	27	27	12	12	18	18	15	168	21	1.1
3	2+2-3-3- 3o5+5+7+	30+	9	6	12	12	15	56	56	154	320	40	1.4
4	7+7-5-5o 4-3+5+5-	41-	154	111	39	48	22	18	56	39	487	61	1.7
5	6o4+3o2+ 2+1+3+3o	26-	80	32	15	9	9	5	18	15	183	23	1.1
6	1o1+5o3- 3o1-3-3o	19+	4	5	48	12	15	3	12	15	114	14	o.8
7	1+3o3+3+ 3-3+2-3+	22o	5	15	18	18	12	18	6	18	110	14	o.8
8	3o2+3o4- 2-2o2-1-	18o	15	9	15	22	6	7	6	3	83	10	o.6
9	3o3+2-1o 1-1-1-1+	12+	15	18	6	4	3	3	3	5	57	7	o.4
10	1+1-2o2- 2+2o2-4-	15+	5	3	7	6	9	7	6	22	65	8	o.4
11	6-3-3o2+ 3o1o2-1+	21-	67	12	15	9	15	4	6	5	133	17	o.9
12	2o1+2o3o 2+2o3o3+	19o	7	5	7	15	9	7	15	18	83	10	o.6
13	3o3o3+3o 1+1o1o2+	18o	15	15	18	15	5	4	4	9	85	11	o.6
14	0+1-1+1- 0+1-1-0o	5-	2	3	5	3	2	3	3	0	21	3	o.0
15	0o3-3-3+ 4o4-5o3o	24+	0	12	12	18	27	22	48	15	154	19	1.0
16	3-3-2+3o 3-4-4-3-	23+	12	12	9	15	12	22	22	12	116	14	o.8
17	4o3+3+2o 3o2o3o2-	22+	27	18	18	7	15	7	15	6	113	14	o.8
18	2+3-3-1o 1-2+4+6-	22-	9	12	12	4	3	9	32	67	148	18	1.0
19	6+6+6o6+ 6o7-5-5o	47+	94	94	80	94	80	111	39	48	640	80	1.8
20	5+5+4+3+ 4+4+4+5-	36o	56	56	32	18	32	32	32	39	297	37	1.4
21	4+4-5o4o 4o4+3o3+	32-	32	22	48	27	27	32	15	18	221	28	1.2
22	5+5-6-4- 3-1+4-5-	32-	56	39	67	22	12	5	22	39	262	33	1.3
23	4o5+5+5o 5+5o5o4o	39o	27	56	56	48	56	48	48	27	366	46	1.5
24	4o4o5+5- 5o3-4-3o	32+	27	27	56	39	48	12	22	15	246	31	1.3
25	3o2o3+3- 4-3o3-2-	22o	15	7	18	12	22	15	12	6	107	13	o.8
26	1+1+2+2o 2o2-2+3+	16+	5	5	9	7	7	6	9	18	66	8	o.4
27	5-5-4+3+ 3o2o2o1o	25o	39	39	32	18	15	7	7	4	161	20	1.0
28	3-3+2o1o 1+1+2o1o	15-	12	18	7	4	5	5	7	4	62	8	o.4
29	1-1+1-1o 2-2-1-0+	8o	3	5	3	4	6	6	3	2	32	4	o.1
30	0o1+2-2o 2-1+3o3-	14-	0	5	6	7	6	5	15	12	56	7	o.4

	Kp	Sum	Oct.1953 ap								Sum	Ap	Cp
1	3o5-2+2- 3+2-3o1+	21o	15	39	9	6	18	6	15	5	113	14	o.8
2	2-1+1-2- 2-2+2-1o	12o	6	5	3	6	6	9	6	4	45	6	o.3
3	1-3-2-2+ 2o2-1o2-	14-	3	12	6	9	7	6	4	6	53	7	o.3
4	2o1oO+1+ 1o1o2-1+	10-	7	4	2	5	4	4	6	5	37	5	o.2
5	1-1+1+2- O+O+1o1-	7+	3	5	5	6	2	2	4	3	30	4	o.1
6	2-1o2-1o 1+1-1+1o	10-	6	4	6	4	5	3	5	4	37	5	o.2
7	2o1-5-3o 3+1+0+3-	18o	7	3	39	15	18	5	2	12	101	13	o.7
8	2-2+3-2+ 2o2-2-4o	18+	6	9	12	9	7	5	5	27	82	10	o.6
9	2o3+3+2+ 1+1+1+2o	17o	7	18	18	9	5	5	5	7	74	9	o.5
10	3o2o1o1- 2-3-4-3-	17+	15	7	4	3	6	12	22	12	81	10	o.6
11	1-1o1-2- 3o3+2+1o	14-	3	4	3	6	15	18	9	4	62	8	o.4
12	1-1o1-1o 1-0+2o1+	8-	3	4	3	4	3	2	7	5	31	4	o.1
13	1-1oO+1+ 1-2-1+2-	9-	3	4	2	5	3	6	5	6	34	4	o.1
14	1-2o1oO+ O+1-0+0o	5+	3	7	4	2	2	3	2	0	23	3	o.1
15	0oOo2o2- 6o7+6-5+	28o	0	0	7	6	80	154	67	56	370	46	1.5
16	6o5-4o2+ 3-5-6-6o	36o	80	39	27	9	12	39	67	80	353	44	1.5
17	5-4-4+4+ 4-5+4+4o	34+	39	22	32	32	22	56	32	27	262	33	1.3
18	4+5-5o4+ 5+6o5+5+	40+	32	39	48	32	56	80	56	56	399	50	1.6
19	6+5+6-6o 5+5-4+4-	41+	94	56	67	80	56	39	32	22	446	56	1.6
20	4+5+5-4o 5-5-5-5-	37o	32	56	39	27	39	39	39	39	310	39	1.4
21	3+3o5+6- 4+3-1+2o	28-	18	15	56	67	32	12	5	7	212	26	1.2
22	2-4+5-3+ 3o4o3o2+	26+	6	32	39	18	15	27	15	9	161	20	1.0
23	3o4o3+3- 2+3-2o1o	21o	15	27	18	12	9	12	7	4	104	13	o.7
24	O+O+2+3- 5-2+1o1+	15o	2	2	9	12	39	9	4	5	82	10	o.6
25	3-4-2o2+ 2-1o2-2o	17o	12	22	7	9	6	4	6	7	73	9	o.5
26	1+2-2+2o O+O+2-1+	11o	5	6	9	7	2	2	6	5	42	5	o.2
27	4-3o4+3o 2+3-4-3-	25+	22	15	32	15	9	12	22	12	139	17	o.9
28	3+2+1o1+ O+2-2o2o	14o	18	9	4	5	2	6	7	7	58	7	o.4
29	2+3o2-1+ 2o3-3o4o	20o	9	15	6	5	7	12	15	27	96	12	o.7
30	3o2-2-2o 1+1o2o1o	14-	15	6	6	7	5	4	7	4	54	7	o.3
31	3+3o3o1- 1o1oOoO+	12+	18	15	15	3	4	4	0	2	61	8	o.4

continued

	Kp	Sum	Nov.1953 ap								Sum	Ap	Cp
1	0+0+1o2o 1-1o2+2-	9+	2	2	4	7	3	4	9	6	37	5	o.2
2	1-0+2o1+ 1-1+1-1o	8o	3	2	7	5	3	5	3	4	32	4	o.1
3	1o1-1o1o 2-2o2o2-	11o	4	3	4	4	6	7	7	6	41	5	o.2
4	2+1+1+1+ 1-0+0+2-	9+	9	5	5	5	3	2	2	6	37	5	o.2
5	2+4-3+3o 4o3-2o0o	21o	9	22	18	15	27	12	7	0	110	14	o.8
6	1+1-3-2o 3o2-1-1-	13-	5	3	12	7	15	6	3	3	54	7	o.3
7	0+2o2-2- 1o1o2-1o	10+	2	7	6	6	4	4	6	4	39	5	o.2
8	0+0+2-1+ 1+1+1-2o	9o	2	2	6	5	5	5	3	7	35	4	o.2
9	2+2o1+1- 0o0o0o1-	7o	9	7	5	3	0	0	0	3	27	3	o.1
10	0o0o0+0+ 0+0o1-0+	2o	0	0	2	2	2	0	3	2	11	1	o.0
11	0o0o0+1- 2o1+2+2o	9-	0	0	2	3	7	5	9	7	33	4	o.1
12	3+1+2-2+ 4-3-4o4+	23+	18	5	6	9	22	12	27	32	131	14	o.9
13	4+6-5-4+ 6-4+5-4+	38o	32	67	39	32	67	32	39	32	340	42	1.5
14	3o5+4-3+ 5+5-4+4o	34-	15	56	22	18	56	39	32	27	265	33	1.3
15	2o4o5o5o 5o5+5o2+	34-	7	27	48	48	48	56	48	9	291	36	1.4
16	5o6-4o3o 3o4+4+4-	33o	48	67	27	15	15	32	32	22	258	32	1.3
17	4-3o3-3o 3o4o3+4+	27o	22	15	12	15	15	27	18	32	156	20	1.0
18	3+4o3o4o 3o3-2+3-	25o	18	27	15	27	15	12	9	12	135	17	o.9
19	4+5-4-4- 5+3+5-5-	34+	32	39	22	22	56	18	39	39	267	33	1.3
20	4o4+4+3+ 3o4-4o4+	31o	27	32	32	18	15	22	27	32	205	26	1.2
21	3+2+3-4- 3o1o2+2o	20+	18	9	12	22	15	4	9	7	96	12	o.7
22	2-1-2o1o 2o1-2-2-	11+	6	3	7	4	7	3	6	6	42	5	o.2
23	1+2-4-4o 3+4-5o4o	27-	5	6	22	27	18	22	48	27	175	22	1.1
24	4c4-4-3- 1o2+2-2+	21+	27	22	22	12	4	9	6	9	111	14	o.8
25	2o4o3-2o 3-2o3o4-	22o	7	27	12	7	12	7	15	22	109	14	o.8
26	4-2+2-1o 1-1-1o1o	12o	22	9	6	4	3	3	4	4	55	7	o.3
27	2+1+4-2- 2+2-1+2o	16+	9	5	22	6	9	6	5	7	69	9	o.5
28	1-1+0+1- 0o0+0o1+	5-	3	5	2	3	0	0	2	5	20	2	o.0
29	3-2+1+2- 0+0o0o0+	9-	12	9	5	6	2	0	0	2	36	5	o.2
30	1o0o1-1- 1-1o1o1-	6-	4	0	3	3	3	4	4	3	24	3	o.1
	Kp	Sum	Dec.1953 ap								Sum	Ap	Cp
1	0+1-1-0+ 0+0+1-1-	4o	2	3	3	2	2	2	3	3	20	2	o.0
2	1+1-2o1- 0+1-1o0+	7o	5	3	7	3	2	3	4	2	29	4	o.1
3	2-2-1-1+ 1+1o1o2o	11-	6	6	3	5	5	4	4	7	40	5	o.2
4	4o2-2-1+ 1-1o2o2o	14+	27	6	6	5	3	4	7	7	65	8	o.4
5	3-2o1o1o 0+1+1o0o	9+	12	7	4	4	2	5	4	0	38	5	o.2
6	1+0+1-1o 3-2+2-2o	12o	5	2	3	4	12	9	6	7	48	6	o.3
7	3o2o1+2- 0+0+0+2o	11o	15	7	5	6	2	2	2	7	46	6	o.3
8	1-2-2-1o 1+2o2o3-	13o	3	6	6	4	5	7	7	12	50	6	o.3
9	3+1-1-1- 1o2o3+2-	13+	18	3	3	3	4	7	18	6	62	8	o.4
10	1+0o1+2o 1o2o0+2-	10-	5	0	5	7	4	7	2	6	36	4	o.2
11	2o4o3-4+ 5o4-4-4+	30-	7	27	12	32	48	22	22	32	202	25	1.2
12	4+3+4o2o 3+4-3-4-	27o	32	18	27	7	18	22	12	22	158	20	1.0
13	2+3-2-2- 2o1+4-2+	18-	9	12	6	6	7	5	22	9	76	10	o.5
14	1o1+2-1+ 1+1+2o1+	11+	4	5	6	5	5	5	7	5	42	5	o.2
15	0+1o1+2o 1o1-3o2+	12-	2	4	5	7	4	3	15	9	49	6	o.3
16	2-1-2o2o 1-1o1-2-	10+	6	3	7	7	3	4	3	6	39	5	o.2
17	2-2-1o1o 1+2o1o3o	13-	6	6	4	4	5	7	4	15	51	6	o.3
18	3o0+1o1o 2-2-2-2-	12o	15	2	4	4	6	6	6	6	49	6	o.3
19	1o0+2-1- 1o2o2o2-	10+	4	2	6	3	4	7	7	6	39	5	o.2
20	1o1+1+0+ 1+3-2o1+	11+	4	5	5	2	5	12	7	5	45	6	o.3
21	2o1+1o1- 1-0+0+3-	9o	7	5	4	3	3	2	2	12	38	5	o.2
22	2-3-2+1+ 2-2+3o1+	16+	6	12	9	5	6	9	15	5	67	8	o.5
23	1-0+1-0+ 2-1+2+2-	9o	3	2	3	2	6	5	9	6	36	4	o.2
24	2+2+2+2- 0+0o1o1o	11o	9	9	9	6	2	0	4	4	43	5	o.2
25	1+1o2o1o 1o2o1+3o	13-	5	4	7	4	4	7	5	15	51	6	o.3
26	1+0+0o1o 1o1+2-3-	9+	5	2	0	4	4	5	6	12	38	5	o.2
27	1+1o2-2- 2-2-2o4-	15-	5	4	6	6	6	6	7	22	62	8	o.4
28	3o2o1o2- 2+2o2-1+	15o	15	7	4	6	9	7	6	5	59	7	o.4
29	3-1-1o1+ 2o3-2-3o	15o	12	3	4	5	7	12	6	15	64	8	o.4
30	1o2-1+1+ 1+1o1+1+	10+	4	6	5	5	5	4	5	5	39	5	o.2
31	1-1o2o2- 0+0+0+1-	7o	3	4	7	6	2	2	2	3	29	4	o.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp,
1954

	Kp	Sum	Jan. 1954				ap				Sum	Ap	Σp
1	2-2o2o1+ 1-0o1+1+	10+	6	7	7	5	3	0	5	5	38	5	0.2
2	3+3-4-3+ 5o5-2+2+	27+	18	12	22	18	48	39	9	9	175	22	1.1
3	2+2o2+3- 2-1o0+1o	13+	9	7	9	12	6	4	2	4	53	7	0.3
4	0o0+1-0+ 0o0+0+0+	2+	0	2	3	2	0	2	2	2	13	2	0.0
5	1+0+0+1- 1o1+3o4+	12+	5	2	2	3	4	5	5	32	68	8	0.5
6	2o3+2+1+ 2+2+1+1o	16o	7	18	9	5	9	9	5	4	66	8	0.4
7	1-2o1+1o 1+2+2+1o	12o	3	7	5	4	5	9	9	4	46	6	0.3
8	3+2+3o3- 1o2-2-3-	18+	18	9	15	12	4	6	6	12	82	10	0.6
9	3-2-1+2- 2o1+1o2o	14-	12	6	5	6	7	5	4	7	52	6	0.3
10	1-1+1o1o 1+1+2-2-	10o	3	5	4	4	5	5	6	6	38	5	0.2
11	0+3-3-2+ 1-2o1o2+	14o	2	12	12	9	3	7	4	9	58	7	0.4
12	2-2-1o3- 2-4-2+2o	17-	6	6	4	12	6	22	9	7	72	9	0.5
13	3+3o3+2+ 1+1-1o3-	18-	18	15	18	9	5	3	4	12	84	10	0.6
14	1-1-1o1- 1-1+2+3-	10o	3	3	4	3	3	5	9	12	42	5	0.2
15	3-1+4-2o 2o2-2o3+	19-	12	5	22	7	7	6	7	18	84	10	0.6
16	3-2-1o1+ 2-1o3o1o	13+	12	6	4	5	6	4	15	4	56	7	0.4
17	0+1+1-1o 1+2+3-2-	11+	2	5	3	4	5	9	12	6	46	6	0.3
18	2o2+2o1+ 3-2o3-5o	20o	7	9	7	5	12	7	12	48	107	13	0.8
19	4o2+4-4- 2+4-5-5-	29o	27	9	22	22	9	22	39	39	189	24	1.1
20	4o2+4-3- 3-3o4-2-	24-	27	9	22	12	12	15	22	6	125	16	0.9
21	4o4-3o2o 3-2+3-3+	24-	27	22	15	7	12	9	12	18	122	15	0.9
22	3o4-4-3o 3-2+3-1+	22+	15	22	22	15	12	9	12	5	112	14	0.8
23	3+4+4-3o 2o2+2o2-	22+	18	32	22	15	7	9	7	6	116	14	0.8
24	2+1+2-1+ 1-1o1o1-	10o	9	5	6	5	3	4	4	3	39	5	0.2
25	1o1+1o1- 1o3-2+1-	11-	4	5	4	3	4	12	9	3	44	6	0.2
26	2o2-1-0+ 0+1o1+1o	8+	7	6	3	2	2	4	5	4	33	4	0.1
27	2o1-1-1- 2-2-2o1-	10o	7	3	3	3	6	6	7	3	38	5	0.2
28	1+1-2o2- 1-0+0+0+	7+	5	3	7	6	3	2	2	2	30	4	0.1
29	1o1o1-0+ 0+2-1o0+	6+	4	4	3	2	2	6	4	2	27	3	0.1
30	1o1-1o1+ 1-2-1+3-	10+	4	3	4	5	3	6	5	12	42	5	0.2
31	2-3-1o2o 1+3o2-3-	16o	6	12	4	7	5	15	6	12	67	8	0.5

	Kp	Sum	Feb. 1954				ap				Sum	Ap	Cp
1	2-4+4+4- 4-4-3+4-	28+	6	32	32	22	22	22	18	22	176	22	1.1
2	4o3+3-3+ 4o3o1+3+	25o	27	18	12	18	27	15	5	18	140	18	1.0
3	4-2+4o4o 3+2+3-4-	26o	22	9	27	27	18	9	12	22	146	18	1.0
4	3o3+3+2o 1o2o2-1+	18-	15	18	18	7	4	7	6	5	80	10	0.6
5	1+1+1+2o 1o2-2o3-	13+	5	5	5	7	4	6	7	12	51	6	0.3
6	1o2+2-1o 1-0+0+1-	8o	4	9	6	4	3	2	2	3	33	4	0.1
7	1o1o1o0+ 1-1-2o2+	9o	4	4	4	2	3	3	7	9	36	4	0.2
8	3-2-0+1+ 2+0+2+2-	13-	12	6	2	5	9	2	9	6	51	6	0.3
9	2o1o2o2- 2+3o2o1-	15-	7	4	7	6	9	15	7	3	58	7	0.4
10	1o2+3o1+ 3o1+2+2o	16+	4	9	15	5	15	5	9	7	69	9	0.5
11	4+3o1+2- 2-2o3+4+	22-	32	15	5	6	6	7	18	32	121	15	0.9
12	3-1-2-1- 1o1o2-2o	11+	12	3	6	3	4	4	6	7	45	6	0.3
13	2o2-2-3- 2o1o1o2o	14o	7	6	6	12	7	4	4	7	53	7	0.3
14	0+0+1+3- 3-3o3o2+	16-	2	2	5	12	12	15	15	9	72	9	0.5
15	1o5-3+5o 5o5+4-4-	32-	4	39	18	48	48	56	22	22	257	32	1.3
16	4o4+3-2- 3+4+4+4+	29o	27	32	12	6	18	32	32	32	191	24	1.2
17	5o4o3-4- 4+4+4o3o	31o	48	27	12	22	32	32	27	15	215	27	1.2
18	2+3-2+4+ 3o3+4+2-	24o	9	12	9	32	15	18	32	6	133	17	0.9
19	1+2o5-3o 3o2+3-2+	21+	5	7	39	15	15	9	12	9	111	14	0.8
20	2+1+2-2o 2+2+2o2-	16-	9	5	6	7	9	9	7	6	58	7	0.4
21	1+2+2o3+ 4-5o6-6-	29o	5	9	7	18	22	48	67	67	243	30	1.3
22	6o5+4o4- 4o3+4-5-	35-	80	56	27	22	27	18	22	39	291	36	1.4
23	5-4+4-3+ 3o4+4-4+	31+	39	32	22	18	15	32	22	32	212	26	1.2
24	3o1-3-3+ 4-3o3o3+	23-	15	3	12	18	22	15	15	18	118	15	0.8
25	2o2+2-3- 1+3-3-3o	18+	7	9	6	12	5	12	12	15	78	10	0.5
26	2+3-4o6+ 4o4o5o5o	33+	9	12	27	94	27	27	48	48	292	36	1.4
27	4o3+5-4o 3+6-2+4+	32-	27	18	39	27	18	67	9	32	237	30	1.3
28	4+2+3-2+ 3+3o2+3-	23o	32	9	12	9	18	15	9	12	116	14	0.8

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp,

1954

	Kp	Sum	Mar. 1954				ap				Sum	Ap	Cp
1	2o2o1+1o 1o1-1+4o	13+	7	7	5	4	4	3	5	27	62	8	0.4
2	4+4+3o3- 1o1o3o3o	22+	32	32	15	12	4	4	15	15	129	16	0.9
3	3o3o2-1o 2o2+2o2o	17o	15	15	6	4	7	9	7	7	70	9	0.5
4	2-2o3o2- 2+2-3-3o	18o	6	7	15	6	9	6	12	15	76	10	0.5
5	4-3-2+3o 3o2+2-3-	21+	22	12	9	15	15	9	6	12	100	12	0.7
6	3o3o1+2- 2o2o2o2+	17+	15	15	5	6	7	7	7	9	71	9	0.5
7	3o4o2o3+ 3o3o3+3-	24+	15	27	7	18	15	15	18	12	127	16	0.9
8	2+3-2o2+ 2o2o2+4-	19+	9	12	7	9	7	7	9	22	82	10	0.6
9	3-3o2+3+ 2+5-4+2o	25-	12	15	9	18	9	39	32	7	141	18	1.0
10	1o1+2+2+ 3-2-3o3-	17o	4	5	9	9	12	6	15	12	72	9	0.5
11	3+4o4-3o 3+4-3+4-	28o	18	27	22	15	18	22	18	22	162	20	1.0
12	3-3-3+2- 3+2+3o3o	22o	12	12	18	6	18	9	15	15	105	13	0.8
13	2+2+1o2- 3-4o5-3+	22o	9	9	4	6	12	27	39	18	124	16	0.9
14	4o4+4+3+ 3+5+4+4+	33+	27	32	32	18	18	56	32	32	247	31	1.3
15	5o5-5o4- 4o3o4-4o	33o	48	39	48	22	27	15	22	27	248	31	1.3
16	3o4-4-3+ 4-2+4-3-	26o	15	22	22	18	22	9	22	12	142	18	1.0
17	3o3o2-2o 2+4+4+4-	24+	15	15	6	7	9	32	32	22	138	17	0.9
18	5o4o3+3+ 3o3o4-2-	27o	48	27	18	18	15	15	22	6	169	21	1.1
19	3o2o1o1+ 4-2+3o3o	19+	15	7	4	5	22	9	15	15	92	12	0.7
20	4o3o4o4- 3o4-3+4o	29-	27	15	27	22	15	22	18	27	173	22	1.1
21	4-2-2+2+ 1o2+4-3-	20-	22	6	9	9	4	9	22	12	93	12	0.7
22	4-2o2o3- 1o2+6o5+	25o	22	7	7	12	4	9	80	56	197	24	1.2
23	5o4-4+4o 4o3+6o6o	36+	48	22	32	27	27	18	80	80	334	42	1.5
24	4+4o4+4+ 2+4o4+4+	32o	32	27	32	32	9	27	32	32	223	28	1.2
25	4o3+4-3o 2o2+3+2o	24-	27	18	22	15	7	9	18	7	123	15	0.9
26	3-3+3o4- 4-3+3+3o	26o	12	18	15	22	22	18	18	15	140	18	1.0
27	4-3-3-2+ 1-0+2-1+	15+	22	12	12	9	3	2	6	5	71	9	0.5
28	3-1+2o1+ 1-1+2o2o	13+	12	5	7	5	3	5	7	7	51	6	0.3
29	2o1-1+1+ 1o2-2-2o	12-	7	3	5	5	4	6	6	7	43	5	0.2
30	4-2o1+2- 4o3-3o4+	23-	22	7	5	6	27	12	15	32	126	16	0.9
31	2+3-3+2- 2o2o3-3-	19+	9	12	18	6	7	7	12	12	83	10	0.6

	Kp	Sum	Apr. 1954				ap				Sum	Ap	Cp
1	2-2-2o1- 1-3-1+3o	14-	6	6	7	3	3	12	5	15	57	7	0.4
2	1+1o1o3o 3+3+3+4o	20+	5	4	4	15	18	18	18	27	109	14	0.8
3	3-3+3-2+ 3-2-3o4o	22+	12	18	12	9	12	6	15	27	111	14	0.8
4	3+5-3+3- 1+1+3+4-	24-	18	39	18	12	5	5	18	22	137	17	0.9
5	2-3o4o3- 1-1-1-2o	15+	6	15	27	12	3	3	3	7	76	10	0.5
6	2+2o2o2+ 2o2o2-2+	17-	9	7	7	9	7	7	6	9	61	8	0.4
7	2+2-2+1+ 2-1+3o1+	15o	9	6	9	5	6	5	15	5	60	8	0.4
8	1o1o1+2o 2-1+4-4o	16o	4	4	5	7	6	5	22	27	80	10	0.6
9	4-2-2-2- 3-3o2-2-	18-	22	6	6	6	12	15	6	6	79	10	0.6
10	3-3-3-2+ 2o3o3-2-	20-	12	12	12	9	7	15	12	6	85	10	0.6
11	3+2-1o2- 1+4-6-7+	26-	18	6	4	6	5	22	67	154	282	35	1.4
12	7-7+5o4- 5-3+4-4+	39-	111	154	48	22	39	18	22	32	446	56	1.6
13	3+2o1+3- 4o3+3o4-	23+	18	7	5	12	27	18	15	22	124	16	0.9
14	3-4-2o3o 3-2o1+1o	18+	12	22	7	15	12	7	5	4	84	10	0.6
15	4-3+3o3- 3+3+4o3+	27-	22	18	15	12	18	18	27	18	148	18	1.0
16	2+2-3o2o 2-1+3-1+	16o	9	6	15	7	6	5	12	5	65	8	0.4
17	2-2o2-1o 2-3-2+3-	16-	6	7	6	4	6	12	9	12	62	8	0.4
18	3+3o3-3+ 3-2o3o3-	23-	18	15	12	18	12	7	15	12	109	14	0.8
19	2+3-2+3o 2o3-3-2o	20-	9	12	9	15	7	12	12	7	83	10	0.6
20	4-3+3o2+ 3+4o4+3-	27-	22	18	15	9	18	27	32	12	153	19	1.0
21	3o3+3+3+ 4-3o2-2-	23o	15	18	18	18	22	15	6	6	118	15	0.8
22	3o3o2+2- 3-1-0+1o	15-	15	15	9	6	12	3	2	4	66	8	0.4
23	3o3o3o3+ 3o3-4o4-	26-	15	15	15	18	15	12	27	22	139	17	0.9
24	3+3o2o3- 1-2+3o4-	21-	18	15	7	12	3	9	15	22	101	13	0.7
25	3o2+2+1- 1o2-2+2-	15o	15	9	9	3	4	6	9	6	61	8	0.4
26	3+3+2+1o 3-3-3o4-	22o	18	18	9	4	12	12	15	22	110	14	0.8
27	5o3o4-2+ 1o1+3o2-	21o	48	15	22	9	4	5	15	6	124	16	0.9
28	3-2o1+1o 1+1o1+2+	13o	12	7	5	4	5	4	5	9	51	6	0.3
29	3o2o1+1o 2o1+2o1+	14o	15	7	5	4	7	5	7	5	55	7	0.3
30	1+3-3+3+ 3-1+1+2o	18o	5	12	18	18	12	5	5	7	82	10	0.6

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp,
1954

	Kp	Sum	May 1954			ap				Sum	Ap	Cp
1	3−1+1o1− 1o0+0+2−	9o	12	5	4	3	4	2	2	6	38	5	0.2
2	2+4−3−1+ 1−1o1+1+	14+	9	22	12	5	3	4	5	5	65	8	0.4
3	2−3−1o1+ 1o1+1o2o	12o	6	12	4	5	4	5	4	7	47	6	0.3
4	2o2o2+2+ 2+3o3+4o	21+	7	7	9	9	9	15	18	27	101	13	0.7
5	2+2o2+2+ 2o2−1+1+	15+	9	7	9	9	7	6	5	5	57	7	0.4
6	2+3−2+1o 0+0+1−0+	10o	9	12	9	4	2	2	3	2	43	5	0.2
7	0+1−0+0+ 1−2−1o1+	6+	2	3	2	2	3	6	4	5	27	3	0.1
8	2+1+1o1o 2o3o4−3−	17o	9	5	4	4	7	15	22	12	78	10	0.5
9	4−3+3o3− 2o2−2o3−	21o	22	18	15	12	7	6	7	12	99	12	0.7
10	1o1o2+1+ 1−2o3+2+	14o	4	4	9	5	3	7	18	9	59	7	0.4
11	4−3+3+3o 2+2o3o2+	23o	22	18	18	15	9	7	15	9	113	14	0.8
12	2+1−1−2o 2+1+2+2+	14o	9	3	3	7	9	5	9	9	54	7	0.3
13	2+2o1+1+ 3−2o2+2o	16o	9	7	5	5	12	7	9	7	61	8	0.4
14	3o2−2o3− 0+1+1+1o	13+	15	6	7	12	2	5	5	4	56	7	0.4
15	2−3−2−1+ 3+2+2−2+	17o	6	12	6	5	18	9	6	9	71	9	0.5
16	3−3−1o1+ 0+0+1+1−	10+	12	12	4	5	2	2	5	3	45	6	0.3
17	0+0+0+0+ 0+1−1o1+	5−	2	2	2	2	2	3	4	5	22	3	0.0
18	3+3+1o3o 3−2−3+3o	21+	18	18	4	15	12	6	18	15	106	13	0.8
19	3o2o1+2+ 2o2o3−3+	19−	15	7	5	9	7	7	12	18	80	10	0.6
20	2+2+2−1o 2o2−3+3o	17+	9	9	6	4	7	6	18	15	74	9	0.5
21	3+2o2o2+ 3+3+2+2−	20+	18	7	7	9	18	18	9	6	92	12	0.7
22	2−1+2−1− 0+0+1+3−	10o	6	5	6	3	2	2	5	12	41	5	0.2
23	2+1+3−1− 0+0+1+2−	11−	9	5	12	3	2	2	5	6	44	6	0.2
24	2−1+2o2− 2−1o2o2o	13+	6	5	7	6	6	4	7	7	48	6	0.3
25	2−2o1+1o 1o1−1o0+	9o	6	7	5	4	4	3	4	2	35	4	0.2
26	2−2−2−0+ 2−2o1o2−	12−	6	6	6	2	6	7	4	6	43	5	0.2
27	2+3o1+0+ 0+1−0+0o	8+	9	15	5	2	2	3	2	0	38	5	0.2
28	0+1−1+3− 1o1o2−2−	10+	2	3	5	12	4	4	6	6	42	5	0.2
29	3−2o4−1+ 2−2−2−2−	16+	12	7	22	5	6	6	6	6	70	9	0.5
30	1+1o1o2− 1o1−0+1+	8+	5	4	4	6	4	3	2	5	33	4	0.1
31	1o1−1o2o 2o2o2+1+	12+	4	3	4	7	7	7	9	5	46	6	0.3

	Kp	Sum	June 1954			ap				Sum	Ap	Cp
1	2o2−0+1+ 1+1o0+1+	9+	7	6	2	5	5	4	2	5	36	4	0.2
2	1+2+1+3o 1+1o0+1+	12o	5	9	5	15	5	4	2	5	50	6	0.3
3	1o1+2+1+ 1o0+1o2−	10o	4	5	9	5	4	2	4	6	39	5	0.2
4	2o2o3+2+ 1−1o2o1o	14+	7	7	18	9	3	4	7	4	59	7	0.4
5	0+0o0o0+ 1−1+1o2−	5+	2	0	0	2	3	5	4	6	22	3	0.0
6	1o1o0+1− 2−1+1+2−	9o	4	4	2	3	6	5	5	6	35	4	0.2
7	1+1o1−1− 3o2−2+2o	13−	5	4	3	3	15	6	9	7	52	6	0.3
8	1+1o1+1− 1−0+1−1o	7o	5	4	5	3	3	2	3	4	29	4	0.1
9	2+1+1−2− 1o1+1o2o	11+	9	5	3	6	4	5	4	7	43	5	0.2
10	3+3−4+3− 1+2o2+2−	20+	18	12	32	12	5	7	9	6	101	13	0.7
11	1o1−0+2o 2−1−1−1−	8−	4	3	2	7	6	3	3	3	31	4	0.1
12	0o0+0o1+ 2−3o4o2o	12+	0	2	0	5	6	15	27	7	62	8	0.4
13	2−1+1o2− 1+3o3o2o	15o	6	5	4	6	5	15	15	7	63	8	0.4
14	1o2−1+2o 4−2o2−1o	14+	4	6	5	7	22	7	6	4	61	8	0.4
15	1+1+2−1− 0+0+1−2−	8o	5	5	6	3	2	2	3	6	32	4	0.1
16	2−1+1−2− 0+0+0+1o	7+	6	5	3	6	2	2	2	4	30	4	0.1
17	1o0+0+1− 1+1−1o2+	8−	4	2	2	3	5	3	4	9	32	4	0.1
18	1−0+0+0+ 0+2−4−2+	10−	3	2	2	2	2	6	22	9	48	6	0.3
19	1o1+1−2− 1+1o2o2−	11−	4	5	3	6	5	4	7	6	40	5	0.2
20	2o1+1+1+ 1o1−1o2−	10+	7	5	5	5	4	3	4	6	39	5	0.2
21	0+0o1o2− 2−1o1+3+	10+	2	0	4	6	6	4	5	18	45	6	0.3
22	3o3−2−1o 1o2−1+2o	14+	15	12	6	4	4	6	5	7	59	7	0.4
23	2o1o0+1o 1−2−3−2−	11o	7	4	2	4	3	6	12	6	44	6	0.2
24	1+2−1−1− 1−1−1o1+	8o	5	6	3	3	3	3	4	5	32	4	0.1
25	0+1o1−1o 3+2−1−1o	10−	2	4	3	4	18	6	3	4	44	6	0.2
26	1−1o1o2− 1+1+2o2o	11o	3	4	4	6	5	5	7	7	41	5	0.2
27	1+1o1o1+ 2o2o2o3−	13+	5	4	4	5	7	7	7	12	51	6	0.3
28	4−3−3o2o 1+1+2o1+	17+	22	12	15	7	5	5	7	5	78	10	0.5
29	1−1+2+1o 1−1−0+1+	8+	3	5	9	4	3	3	2	5	34	4	0.1
30	1−1−2−2− 1+1o1o3+	11+	3	3	6	6	5	4	4	18	49	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp, 1954

	Kp	Sum	July 1954			ap				Sum	Ap	Cp
1	4-4-3+2- 2+1o1o1-	17+	22	22	18	6	9	4	4	3	88	11	0.6
2	0o1+1o0o 2o1-1+2-	8o	0	5	4	0	7	3	5	6	30	4	0.1
3	1-2-1+0+ 1-1-0+2-	7+	3	6	5	2	3	3	2	6	30	4	0.1
4	1-1-1-1- 2-0+0+0+	5+	3	3	3	3	6	2	2	2	24	3	0.1
5	0+1o1+1o 1+2o2-1+	10o	2	4	5	4	5	7	6	5	38	5	0.2
6	2-2o3o2+ 2o2o2+3-	18o	6	7	15	9	7	7	9	12	72	9	0.5
7	2+1o1+3+ 1+1o1o1+	13-	9	4	5	18	5	4	4	5	54	7	0.3
8	1o1-1-2o 2-1+2o1o	10+	4	3	3	7	6	5	7	4	39	5	0.2
9	2o1o1-0+ 1-0+1-1o	7-	7	4	3	2	3	2	3	4	28	4	0.1
10	1o1o2-1o 1o1o1-2-	9o	4	4	6	4	4	4	3	6	35	4	0.2
11	1+2o2-1o 1-1-1-1o	9o	5	7	6	4	3	3	3	4	35	4	0.2
12	2o1+1+1+ 2+3o2-3+	16+	7	5	5	5	9	15	6	18	70	9	0.5
13	2-1o1+2- 1+1o1o2-	11-	6	4	5	6	5	4	4	6	40	5	0.2
14	2o4-3o3- 3-3-1+2o	20o	7	22	15	12	12	12	5	7	92	12	0.7
15	1o1+3+4- 3+2o1o1o	17-	4	5	18	22	18	7	4	4	82	10	0.6
16	1o1-1+2- 2o2o4-2+	15-	4	3	5	6	7	7	22	9	63	8	0.4
17	1+3o3+1o 0+0+1-4-	14-	5	15	18	4	2	2	3	22	71	9	0.5
18	5-3+2o1o 1+1+1+2-	17-	39	18	7	4	5	5	5	6	89	11	0.6
19	2+1+1o2- 2+3-4-2o	17o	9	5	4	6	9	12	22	7	74	9	0.5
20	3-3-3-2o 1+1+0+1-	14-	12	12	12	7	5	5	2	3	58	7	0.4
21	1o2-2o1o 1+3-2+2+	14+	4	6	7	4	5	12	9	9	56	7	0.4
22	1+1-2o1+ 2-1-1o0+	9o	5	3	7	5	6	3	4	2	35	4	0.2
23	0o1+1+3- 1+1+1+1+	11-	0	5	5	12	5	5	5	5	42	5	0.2
24	3+3o2+2- 2o1-1+1o	15+	18	15	9	6	7	3	5	4	67	8	0.5
25	2+3o4-3+ 3-2o1+2-	20o	9	15	22	18	12	7	5	6	94	12	0.7
26	2-2-2+2+ 3+2o1o2-	16o	6	6	9	9	18	7	4	6	65	8	0.4
27	3o3+2-2o 2+2o2o3o	19+	15	18	6	7	9	7	7	15	84	10	0.6
28	2o4o2+4- 4o4o2+2+	25-	7	27	9	22	27	27	9	9	137	17	0.9
29	3o3-3-3o 2+2-2o1-	18o	15	12	12	15	9	6	7	3	79	10	0.6
30	3o1-1-2- 2o2o1-2-	12+	15	3	3	6	7	7	3	6	50	6	0.3
31	1+2-3o2- 3-1+2-2+	16-	5	6	15	6	12	5	6	9	64	8	0.4

	Kp	Sum	Aug. 1954			ap				Sum	Ap	Cp
1	1+1+2-4- 3+2+2o1+	17o	5	5	6	22	18	9	7	5	77	10	0.5
2	2+3+2o2+ 1-1+2-1-	14+	9	18	7	9	3	5	6	3	60	8	0.4
3	1-1o1-3- 1o1-2o2-	10+	3	4	3	12	4	3	7	6	42	5	0.2
4	1o2-3o1- 2o1+2o1-	12+	4	6	15	3	7	5	7	3	50	6	0.3
5	2-2-1-1- 1+2-2o3-	12+	6	6	3	3	5	6	7	12	48	6	0.3
6	2+3-4-2+ 3o2-4+4o	24o	9	12	22	9	15	6	32	27	132	16	0.9
7	3-0+1+3o 3o3+3o2+	19o	12	2	5	15	15	18	15	9	91	11	0.7
8	2o1o2o2+ 2o1+0+1o	12o	7	4	7	9	7	5	2	4	45	6	0.3
9	2-1o2+1- 4-3-2o3-	17-	6	4	9	3	22	12	7	12	75	9	0.5
10	3-1+3-1o 1-2o1o2o	13+	12	5	12	4	3	7	4	7	54	7	0.3
11	3o2o2+2- 1+2-1+1o	14+	15	7	9	6	5	6	5	4	57	7	0.4
12	3-2o2o2+ 1+1-1+1+	14-	12	7	7	9	5	3	5	5	53	7	0.3
13	0+2-2o2o 2-2+2-1o	13-	2	6	7	7	6	9	6	4	47	6	0.3
14	3o1+2+2o 1o1o2-2+	15-	15	5	9	7	4	4	6	9	59	7	0.4
15	2+1-1+1o 1o1o3+3-	13+	9	3	5	4	4	4	18	12	59	7	0.4
16	1+2-3o3+ 4-2+2-2o	19o	5	6	15	18	22	9	6	7	88	11	0.6
17	2-2o3+3o 2o1+2-1+	16+	6	7	18	15	7	5	6	5	69	9	0.5
18	2-2+2+3o 3-2o2+2-	18o	6	9	9	15	12	7	9	6	73	9	0.5
19	4-2+2o1+ 1+2-2o3-	17o	22	9	7	5	5	6	7	12	73	9	0.5
20	2+3-2o1o 2-2o1o1o	14-	9	12	7	4	6	7	4	4	53	7	0.3
21	1+3o4o4+ 2+1+2-1+	19+	5	15	27	32	9	5	6	5	104	13	0.7
22	4+5o3+2- 2-1+1o3o	21+	32	48	18	6	6	5	4	15	134	17	0.9
23	3-1o0+2- 2-2-3o3-	15-	12	4	2	6	6	6	15	12	63	8	0.4
24	3+3-4-3o 5o3o3+3+	27+	18	12	22	15	48	15	18	18	166	21	1.1
25	4-2o2+2- 1o1o1o1+	14o	22	7	9	6	4	4	4	5	61	8	0.4
26	1+5-4+2+ 2+2+3-3-	23-	5	39	32	9	9	9	12	12	127	16	0.9
27	5o2+2+3o 1o2-3-3-	21-	48	9	9	15	4	6	12	12	115	14	0.8
28	3o4o2o3- 3o2+2-4-	22+	15	27	7	12	15	9	6	22	113	14	0.8
29	3+4-4-4- 2+2-3-2+	23+	18	22	22	22	9	6	12	9	120	15	0.8
30	3-2o3-2o 3-3-2o1+	18o	12	7	12	7	12	12	7	5	74	9	0.5
31	2o2o2o1o 1+2+3o3o	17-	7	7	7	4	5	9	15	15	69	9	0.5

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

1954

	Kp	Sum	Sep. 1954				ap				Sum	Ap	Cp
1	3-3o2+3+ 5-4o4+6-	30o	12	15	9	18	39	27	32	67	219	27	1.2
2	5+4+4o4- 1o3-2+3+	27-	56	32	27	22	4	12	9	18	180	22	1.1
3	2o2+3o4+ 4o4+4+5-	29o	7	9	15	32	27	32	32	39	193	24	1.2
4	4-3+3o3+ 3+4o1o2o	24-	22	18	15	18	18	27	4	7	129	16	0.9
5	3o3o3o3+ 3-2-2o1+	20o	15	15	15	18	12	6	7	5	93	12	0.7
6	3-2+2+1+ 2-4+6-4o	24+	12	9	9	5	6	32	67	27	167	21	1.1
7	3o4-4-3o 2+3+3+3o	25+	15	22	22	15	9	18	18	15	134	17	0.9
8	3o2o1-1+ 2o3-3o1o	16-	15	7	3	5	7	12	15	4	68	8	0.5
9	1+4o4-2- 3+3o1+3-	21o	5	27	22	6	18	15	5	12	110	14	0.8
10	2-3+3o3- 2+2o1+2o	18+	6	18	15	12	9	7	5	7	79	10	0.6
11	2-3-3o3+ 3o3+2-2o	21-	6	12	15	18	15	18	6	7	97	12	0.7
12	0+1-2-3- 2-1+1+2o	12-	2	3	6	12	6	5	5	7	46	6	0.3
13	2o1-2-2- 1o1-1o4+	13o	7	3	6	6	4	3	4	32	65	8	0.4
14	4-6-4+3+ 5o3+2o4+	32-	22	67	32	18	48	18	7	32	244	30	1.3
15	2+2+3+4o 4-3o2-2+	23-	9	9	18	27	22	15	6	9	115	14	0.8
16	4+4o3+4- 4o3o3o2+	28-	32	27	18	22	27	15	15	9	165	21	1.1
17	4o3-2-2o 0+1-2+3-	16+	27	12	6	7	2	3	9	12	78	10	0.5
18	4o2+3+3+ 1o3-3-3o	22+	27	9	18	18	4	12	12	15	115	14	0.8
19	2+3-3o1+ 2-2o2+2+	18-	9	12	15	5	6	7	9	9	72	9	0.5
20	4-4o4o3o 5-6o7-5-	37-	22	27	27	15	39	80	111	39	360	45	1.5
21	4o4+4-4o 4-4+4+3-	31o	27	32	22	27	22	32	32	12	206	26	1.2
22	2+2+2+3- 4-2+2+2-	20-	9	9	9	12	22	9	9	6	85	11	0.6
23	2-1o3o3+ 2o1+1o1o	14+	6	4	15	18	7	5	4	4	63	8	0.4
24	2o2o2-2- 1+3-2o4o	17+	7	7	6	6	5	12	7	27	77	10	0.5
25	3-3+4-3- 3o3o4+2+	25o	12	18	22	12	15	15	32	9	135	17	0.9
26	3o3-3o2o 2+2-2+2-	19-	15	12	15	7	9	6	9	6	79	10	0.6
27	2-2o2-2o 2-3o4o3+	19+	6	7	6	7	6	15	27	18	92	12	0.7
28	5o4-3+3- 3o2o1+2+	23+	48	22	18	12	15	7	5	9	136	17	0.9
29	4o4o3-4- 3-5-5o5+	32o	27	27	12	22	12	39	48	56	243	30	1.3
30	2-4o4-4- 2+2+4-4o	25+	6	27	22	22	9	9	22	27	144	18	1.0

	Kp	Sum	Oct. 1954				ap				Sum	Ap	Cp
1	5-6+5+5- 3o6-4o3-	36+	39	94	56	39	15	67	27	12	349	44	1.5
2	3+4-2+0+ 1-0+2-4o	16+	18	22	9	2	3	2	6	27	89	11	0.6
3	5-5-4o2+ 3o4-4-5o	31o	39	39	27	9	15	22	22	48	221	28	1.2
4	6o4o3-3o 2o3+2o3-	26-	80	27	12	15	7	18	7	12	178	22	1.1
5	1+3-1+2- 1-2+4-3-	16+	5	12	5	6	3	9	22	12	74	9	0.5
6	2o4-4-3o 5-5+2o2+	27-	7	22	22	15	39	56	7	9	177	22	1.1
7	2-2o2-3o 3+3+2o1+	18+	6	7	6	15	18	18	7	5	82	10	0.6
8	3-2+2o1+ 3+3o2o3-	19+	12	9	7	5	18	15	7	12	85	11	0.6
9	2o3o2o1- 0+0+0+1+	10o	7	15	7	3	2	2	2	5	43	5	0.2
10	2-3-2-1o 1-0+2o1o	11o	6	12	6	4	3	2	7	4	44	6	0.2
11	2+3-3-2- 1+0+0+0o	11+	9	12	12	6	5	2	2	0	48	6	0.3
12	0o0o0o0o 0o0o0o0o	0o	0	0	0	0	0	0	0	0	0	0	0.0
13	0o0o1o1o 0+1-1o2-	6-	0	0	4	4	2	3	4	6	23	3	0.1
14	2o0+1-2+ 1-1o3o2o	12o	7	2	3	9	3	4	15	7	50	6	0.3
15	2-2o2o2+ 2-0+0+1-	11o	6	7	7	9	6	2	2	3	42	5	0.2
16	1+0o2-1- 2+4o3-2-	14+	5	0	6	3	9	27	12	6	68	8	0.5
17	2o2+1+2- 1+1+2o3+	15+	7	9	5	6	5	5	7	18	62	8	0.4
18	5-5-5-5+ 5+6-2o3o	35+	39	39	39	56	56	67	7	15	318	40	1.4
19	2+3+3o5- 4o4-2+2+	26-	9	18	15	39	27	22	9	9	148	18	1.0
20	4-2+4o3+ 3o2-2-3-	22+	22	9	27	18	15	6	6	12	115	14	0.8
21	2-1o2o2+ 2-1o2-1-	12o	6	4	7	9	6	4	6	3	45	6	0.3
22	1-2o3-2+ 2-3o3+3o	19-	3	7	12	9	6	15	18	15	85	11	0.6
23	4-3o3+4+ 3+4-4+5-	30+	22	15	18	32	18	22	32	39	198	25	1.2
24	5o5+5o4+ 4+6o5-4o	39-	48	56	48	32	32	80	39	27	362	45	1.5
25	5-5+4o4- 4o3-2-1+	27+	39	56	27	22	27	12	6	5	194	24	1.2
26	3-2+3+2+ 1+2+3o2o	19+	12	9	18	9	5	9	15	7	84	10	0.6
27	1o3-3+5o 3+4o2-1o	22o	4	12	18	48	18	27	6	4	137	17	0.9
28	3-2+2-2- 1o2o1o1o	13+	12	9	6	6	4	7	4	4	52	6	0.3
29	0+1-2-3- 2-0+1-3-	11-	2	3	6	12	6	2	3	12	46	6	0.3
30	4o5o2+1o 3o2o2o3+	23-	27	48	9	4	15	7	7	18	135	17	0.9
31	2-3o3o3o 3o3o3+4+	24+	6	15	15	15	15	15	18	32	131	16	0.9

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp,
1954

	Kp	Sum	Nov. 1954				ap				Sum	Ap	Cp
1	4-4-3o3o 5-5-5-4+	32-	22	22	15	15	39	39	39	32	223	28	1.2
2	6o4+3-3- 4o3o3+3o	29o	80	32	12	12	27	15	18	15	211	26	1.2
3	4o4o4o2+ 3-4-3-1+	25-	27	27	27	9	12	22	12	5	141	18	1.0
4	1o2o1+2+ 1+2+1o2-	13o	4	7	5	9	5	9	4	6	49	6	0.3
5	3o2+4-3- 2o1o1+0o	16o	15	9	22	12	7	4	5	0	74	9	0.5
6	3-2+2+1+ 2-2o3-2o	17o	12	9	9	5	6	7	12	7	67	8	0.5
7	3-1+1o1o 0+1o1-1-	9-	12	5	4	4	2	4	3	3	37	5	0.2
8	2-1o1o1+ 1o2-2o1o	11-	6	4	4	5	4	6	7	4	40	5	0.2
9	0+2-1-1o 1-2o2-1-	9-	2	6	3	4	3	7	6	3	34	4	0.1
10	2-1-0+1- 0o0o0o0+	4-	6	3	2	3	0	0	0	2	16	2	0.0
11	0+2o1-2o 2o1o2o1-	11-	2	7	3	7	7	4	7	3	40	5	0.2
12	2-4-2-2+ 3-1o2o1+	16+	6	22	6	9	12	4	7	5	71	9	0.5
13	2-1+1o1- 1-2-2-1+	10o	6	5	4	3	3	6	6	5	38	5	0.2
14	2o2-1+1- 1o2-2-2o	12o	7	6	5	3	4	6	6	7	44	6	0.2
15	2-0+0o0o 0+0+1-0+	4-	6	2	0	0	2	2	3	2	17	2	0.0
16	1-0o0+0o 0o0o0o0o	1o	3	0	2	0	0	0	0	0	5	1	0.0
17	0o0+1+1+ 1o0+0o1-	5o	0	2	5	5	4	2	0	3	21	3	0.0
18	1+1-1o1+ 2o2+2-2-	12o	5	3	4	5	7	9	6	6	45	6	0.3
19	1+4+2o2- 1o3-3-3o	19-	5	32	7	6	4	12	12	15	93	12	0.7
20	2+3-4o3o 4o4-2o1+	23o	9	12	27	15	27	22	7	5	124	16	0.9
21	2+2-2+2+ 3-2-1o3-	17-	9	6	9	9	12	6	4	12	67	8	0.5
22	2o2+4-1+ 0+1-1+1+	13o	7	9	22	5	2	3	5	5	58	7	0.4
23	1o3o1o2o 2-5-3+2+	19o	4	15	4	7	6	39	18	9	102	13	0.7
24	2o2+2+2o 1o2o2o0+	14o	7	9	9	7	4	7	7	2	52	6	0.3
25	1-2o2o2+ 2o1-1o3-	13+	3	7	7	9	7	3	4	12	52	6	0.3
26	2o2-2-1+ 2o1+2-2-	13+	7	6	6	5	7	5	6	6	48	6	0.3
27	2o3o2+2+ 1o2+3-0+	16o	7	15	9	9	4	9	12	2	67	8	0.5
28	1o0+0+2- 3-1o1o2+	10+	4	2	2	6	12	4	4	9	43	5	0.2
29	1-1-1+2+ 4-4-2+3-	17+	3	3	5	9	22	22	9	12	85	11	0.6
30	3o5-2o1+ 2o3-2+2+	20+	15	39	7	5	7	12	9	9	103	13	0.7

	Kp	Sum	Dec. 1954				ap				Sum	Ap	Cp
1	3-3-2o1- 0+1+1+1+	12+	12	12	7	3	2	5	5	5	51	6	0.3
2	2o1+1+2- 2o2-1o2+	13+	7	5	5	6	7	6	4	9	49	6	0.3
3	3-1-2-1+ 0+1-1+1+	10o	12	3	6	5	2	3	5	5	41	5	0.2
4	0o0o1o2+ 2-1-2o1-	8+	0	0	4	9	6	3	7	3	32	4	0.1
5	1+1o1-1- 1-2+2o1+	10o	5	4	3	3	3	9	7	5	39	5	0.2
6	2-1+1+2- 1-1-1+1+	10o	6	5	5	6	3	3	5	5	38	5	0.2
7	3-2+3o1o 2-2o2+3o	18o	12	9	15	4	6	7	9	15	77	10	0.5
8	2o2+1o1- 1o0+0+1+	9o	7	9	4	3	4	2	2	5	36	4	0.2
9	2o2o2o2o 2-0+1o1o	12o	7	7	7	7	6	2	4	4	44	6	0.2
10	0+1-1+1+ 1-0+1o1-	6+	2	3	5	5	3	2	4	3	27	3	0.1
11	1-0o0+0+ 1-1-0+0o	3o	3	0	2	2	3	3	2	0	15	2	0.0
12	0+2-2+1+ 1+2+3-3o	15o	2	6	9	5	5	9	12	15	63	8	0.4
13	3o2o1-1o 1-1-2+2o	12+	15	7	3	4	3	3	9	7	51	6	0.3
14	2o1o0+0+ 0+1-0+0+	5+	7	4	2	2	2	3	2	2	24	3	0.1
15	1-0o0o1- 0o0o0o0+	2-	3	0	0	3	0	0	0	2	8	1	0.0
16	0o1o0+1- 0+0+0+0o	3o	0	4	2	3	2	2	2	0	15	2	0.0
17	1+2+4+4o 4-3+2o2+	23+	5	9	32	27	22	18	7	9	129	16	0.9
18	5-4+2-3- 2o2-1+3+	22-	39	32	6	12	7	6	5	18	125	16	0.9
19	2o2-1+2- 3o3-2-2o	16o	7	6	5	6	15	12	6	7	64	8	0.4
20	2-3-2+3- 3o2o2o4-	20o	6	12	9	12	15	7	7	22	90	11	0.6
21	2+1-1-2- 2o1+1+2-	12-	9	3	3	6	7	5	5	6	44	6	0.2
22	3-1o1o1+ 0+1-1+0+	9-	12	4	4	5	2	3	5	2	37	5	0.2
23	1o2-1o2- 1o1+1o1-	9+	4	6	4	6	4	5	4	3	36	4	0.2
24	1-1o1o1- 2-0+1o1-	7o	3	4	4	3	6	2	4	3	29	4	0.1
25	1+0o1+1o 2o2o2o1+	11o	5	0	5	4	7	7	7	5	40	5	0.2
26	1o1o0+1o 1+1o1+2-	9-	4	4	2	4	5	4	5	6	34	4	0.1
27	4+2+1+3- 5o2+2-3o	23-	32	9	5	12	48	9	6	15	136	17	0.9
28	3o3+1-2+ 1+2+2o2-	17-	15	18	3	9	15	9	7	6	72	9	0.5
29	1o2-1+2o 2+2-1+1+	13-	4	6	5	7	9	6	5	5	47	6	0.3
30	1-1+2-2+ 2-1-1-2+	11+	3	5	6	9	6	3	3	9	44	6	0.2
31	2-2-0+2o 2-1+1o1-	10+	6	6	2	7	6	5	4	3	39	5	0.2

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	Jan. 1955	ap							Sum	Ap	Cp
1	1+1+1+2o 1o1+2o2+	13-	5	5	5	7	4	5	7	9	47	6	0.3
2	3-1+2+2- 1o2-1-2-	13o	12	5	9	6	4	6	3	6	51	6	0.3
3	1-1-2-2- 2-1+0+1+	9+	3	3	6	6	6	5	2	5	36	4	0.2
4	4-2+1+2+ 3-2o2+2o	19-	22	9	5	9	12	7	9	7	80	10	0.6
5	1+1-1o0+ 1o1+2+3o	11o	5	3	4	2	4	5	9	15	47	6	0.3
6	3-3+2-1+ 2-2-2+1+	16o	12	18	6	5	6	6	9	5	67	8	0.5
7	2o2o2o2- 2+2o2+2-	16o	7	7	7	6	9	7	9	6	58	7	0.4
8	1+0+2-1- 0+1-2o3-	10-	5	2	6	3	2	3	7	12	40	5	0.2
9	4o3-4o3o 4-5-3+1o	26+	27	12	27	15	22	39	18	4	164	20	1.0
10	1o1-1o1o 1-1+2+0o	8o	4	3	4	4	3	5	9	0	32	4	0.1
11	2+2-1-1o 5-1+3-5o	19+	9	6	3	4	39	5	12	48	126	16	0.9
12	5o2+2-1- 0o0+1+0+	12-	48	9	6	3	0	2	5	2	75	9	0.5
13	3o4o3+4- 3o2+2o2-	23o	15	27	18	22	15	9	7	6	119	15	0.8
14	1o1+1+2- 3-2o3+0+	14-	4	5	5	6	12	7	18	2	59	7	0.4
15	0+0+0+0+ 0o0o0o0+	2-	2	2	2	2	0	0	0	2	10	1	0.0
16	1+1o1o2+ 2+2o2+2o	14+	5	4	4	9	9	7	9	7	54	7	0.3
17	1+3o3o4o 7-6-5o5+	34o	5	15	15	27	111	67	48	56	344	43	1.5
18	8-7o6-2- 2+4+4o4-	36+	179	132	67	6	9	32	27	22	474	59	1.7
19	5o6+6+5+ 5-4o4o5-	40+	48	94	94	56	39	27	27	39	424	53	1.6
20	4+4-2+1o 2+2+3+4-	23o	32	22	9	4	9	9	18	22	125	16	0.9
21	4o3-2o1- 1-1o2o2+	15+	27	12	7	3	3	4	7	9	72	9	0.5
22	3-2o2o1- 1o1-1-1o	11-	12	7	7	3	4	3	3	4	43	5	0.2
23	3-2+2+2+ 3o3-3+3-	21+	12	9	9	9	15	12	18	12	96	12	0.7
24	2-2-1o0+ 1-2-1-1o	9-	6	6	4	2	3	6	3	4	34	4	0.1
25	1o1+1o0+ 1o1o1o1-	7+	4	5	4	2	4	4	4	3	30	4	0.1
26	1-1-1o1- 0+1-0o0o	4o	3	3	4	3	2	3	0	0	18	2	0.0
27	0o0o1+2+ 1+3+4-4o	16o	0	0	5	9	5	18	22	27	86	11	0.6
28	3o3-2+2- 0+1+1o2+	15-	15	12	9	6	2	5	4	9	62	8	0.4
29	1+1o1-1+ 1-1+3-4-	13-	5	4	3	5	3	5	12	22	59	7	0.4
30	2-2+1-2- 3-2o2+2o	15+	6	9	3	6	12	7	9	7	59	7	0.4
31	2-1+1+1- 0+1-1o2+	9+	6	5	5	3	2	3	4	9	37	5	0.2

	Kp	Sum	Feb. 1955	ap							Sum	Ap	Cp
1	0o0o0+1- 1+1o1o1+	6-	0	0	2	3	5	4	4	5	23	3	0.1
2	1o0+1+1o 1+2-2-2-	10o	4	2	5	4	5	6	6	6	38	5	0.2
3	4-3+2+1+ 1o2-1o2+	17-	22	18	9	5	4	6	4	9	77	10	0.5
4	1o2+3-5- 3o3o4o4o	25-	4	9	12	39	15	15	27	27	148	18	1.0
5	4-2+3-3- 3o2+3+4o	24o	22	9	12	12	15	9	18	27	124	16	0.9
6	2-3+3-2+ 3o3+3-4-	23-	6	18	12	9	15	18	12	22	112	14	0.8
7	4-4o3-2o 4o3o2o1o	22+	22	27	12	7	27	15	7	4	121	15	0.9
8	2o2-2-2e 2-4-4-4-	20o	7	6	6	7	6	22	22	22	98	12	0.7
9	2+3-4-3+ 2o2+3-1o	20o	9	12	22	18	7	9	12	4	93	12	0.7
10	1+1+3-2- 1+1o2-2-	13-	5	5	12	6	5	4	6	6	49	6	0.3
11	1-1o1o1+ 2o4-5-5-	19o	3	4	4	5	7	22	39	39	123	15	0.9
12	3+3+2+2o 2+2o3-4-	22-	18	18	9	7	9	7	12	22	102	13	0.7
13	4o3o2-3+ 2-3o2+0o	19o	27	15	6	18	6	15	9	0	96	12	0.7
14	1+3-3-2o 2+3o2+4-	20o	5	12	12	7	9	15	9	22	91	11	0.7
15	3+3o3+2o 1-0o0o0o	12+	18	15	18	7	3	0	0	0	61	8	0.4
16	0o0+1o2+ 3-2-2+2o	12+	0	2	4	9	12	6	9	7	49	6	0.3
17	3o2o1o2o 2o0+0+2-	12+	15	7	4	7	7	2	2	6	50	6	0.3
18	1+3+2o1+ 0+0o3-3+	14+	5	18	7	5	2	0	12	18	67	8	0.5
19	2o2+2+1- 2-1o1o1+	12+	7	9	9	3	6	4	4	5	47	6	0.3
20	1o3-2o2o 3-2o3-1o	16o	4	12	7	7	12	7	12	4	65	8	0.4
21	3o5-3o2o 3-2+2o2-	21+	15	39	15	7	12	9	7	6	110	14	0.8
22	3o4+3-4- 3o2o3-3-	24o	15	32	12	22	15	7	12	12	127	16	0.9
23	3+3o3o4+ 4+4o4o2+	28+	18	15	15	32	32	27	27	9	175	22	1.1
24	3-3o3-2o 3+1+3-2-	19+	12	15	12	7	18	5	12	6	87	11	0.6
25	4-4-2-3+ 2+3-1+3-	21+	22	22	6	18	9	12	5	12	106	13	0.8
26	3+4o1+2o 1+1-2-1o	15+	18	27	5	7	5	3	6	4	75	9	0.5
27	0o0+2-1o 1+1+2o2+	10o	0	2	6	4	5	5	7	9	38	5	0.2
28	5+6o4o4- 5o3+1-2-	30-	56	80	27	22	48	18	3	6	260	32	1.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	Mar. 1955				ap				Sum	Ap	Cp
1	1-1o0+1- 1o1o1+1o	7o	3	4	2	3	4	4	5	4	29	4	0.1
2	2-1+1+1+ 1-1-1-0+	8o	6	5	5	5	3	3	3	2	32	4	0.1
3	0o2o2o1+ 1o0+0o0o	7-	0	7	7	5	4	2	0	0	25	3	0.1
4	0+1o1-1+ 0+0o2o2+	8o	2	4	3	5	2	0	7	9	32	4	0.1
5	2+3-2-2- 2-2+2+3+	18o	9	12	6	6	6	9	9	18	75	9	0.5
6	4o2+2o3- 2+1+3o2+	20o	27	9	7	12	9	5	15	9	93	12	0.7
7	5-4-3+3+ 1+4+6o4o	31-	39	22	18	18	5	32	80	27	241	40	1.3
8	4-3-3+2o 2o4+4o3o	25o	22	12	18	7	7	32	27	15	140	18	1.0
9	4-3+4-3- 3o4o5o3+	29-	22	18	22	12	15	27	48	18	182	23	1.1
10	3-3o4+4o 4+3-4o4-	29-	12	15	32	27	32	12	27	22	179	22	1.1
11	3+3+4o4- 4o4-2o1+	25+	18	18	27	22	27	22	7	5	146	18	1.0
12	4o4+4-3- 3o4-4-3+	28+	27	32	22	12	15	22	22	18	170	21	1.1
13	3-3o3-2o 2+3-4o3-	22o	12	15	12	7	9	12	27	12	106	13	0.8
14	4o2+1o2+ 2+4-3+3o	22o	27	9	4	9	9	22	18	15	113	14	0.8
15	3+4o4+3+ 3-2-3o3o	25+	18	27	32	18	12	6	15	15	143	18	1.0
16	3o4-2-1+ 1-2o3-3-	18-	15	22	6	5	3	7	12	12	82	10	0.6
17	3+2o3+3+ 3-3o1+2o	21o	18	7	18	18	12	15	5	7	100	12	0.7
18	2+1+3-3o 3-5-4-2o	22+	9	5	12	15	12	39	22	7	121	15	0.9
19	3-1o2-1- 1-1+2o1o	11o	12	4	6	3	3	5	7	4	44	6	0.2
20	2-1+2o1+ 1+1-1-3+	12+	6	5	7	5	5	3	3	18	52	6	0.3
21	3+1o2-2- 2-1o2+3-	15+	18	4	6	6	6	4	9	12	65	8	0.4
22	2-2o3o5o 6o6+4-2+	30o	6	7	15	48	80	94	22	9	281	35	1.4
23	2o1o2o1o 3+4o5o5+	24-	7	4	7	4	18	27	48	56	171	21	1.1
24	4-4o3o3o 2o1o1o1-	18+	22	27	15	15	7	4	4	3	97	12	0.7
25	0+0+2o2o 1-2+3-2-	12o	2	2	7	7	3	9	12	6	48	6	0.5
26	1-2+4o3+ 3+2+1-2+	19o	3	9	27	18	18	9	3	9	96	12	0.7
27	1o2-2-4+ 3-2+2-2-	17o	4	6	6	32	12	9	6	6	81	10	0.6
28	2o1o2+2- 1o0+0+2o	11-	7	4	9	6	4	2	2	7	41	5	0.2
29	2-1o1+1+ 1o0o0+0+	7o	6	4	5	5	4	0	2	2	28	4	0.1
30	1+0+1o3o 3-2o4+6-	20+	5	2	4	15	12	7	32	67	144	18	1.0
31	6o6o6+5o 3+4+5-4+	40o	80	80	94	48	18	32	39	32	423	53	1.6

	Kp	Sum	Apr. 1955				ap				Sum	Ap	Cp
1	3+3+3-3o 2o1o1+5o	22-	18	18	12	15	7	4	5	48	127	16	0.9
2	3o3+3-3- 4-3o3o4o	25+	15	18	12	12	22	15	15	27	136	17	0.9
3	2+3-3-3+ 3o3-2+2-	21-	9	12	12	18	15	12	9	6	93	12	0.7
4	2o2o2-4- 3-3+4-4o	23o	7	7	6	22	12	18	22	27	121	15	0.9
5	4+3o4-3o 5-2-3o2-	25o	32	15	22	15	39	6	15	6	150	19	1.0
6	4-4-2o4- 3o3-1o4-	23+	22	22	7	22	15	12	4	22	126	16	0.9
7	4+4o3+4o 2+2o3-3-	25+	32	27	18	27	9	7	12	12	144	18	1.0
8	2o3-3o1o 1+2o1+2+	16-	7	12	15	4	5	7	5	9	64	8	0.4
9	2-2+1+1+ 0+0+1-3o	11o	6	9	5	5	2	2	3	15	47	6	0.3
10	1o0+0+4- 4o3o1+2+	16o	4	2	2	22	27	15	5	9	86	11	0.6
11	2o3+3-2- 2o2o1+2-	17-	7	18	12	6	7	7	5	6	68	8	0.5
12	3o3+2+2+ 3o1+2+3-	20+	15	18	9	9	15	5	9	12	92	12	0.7
13	4o4o3-2o 2o2+2+4o	23+	27	27	12	7	7	9	9	27	125	16	0.9
14	3-3o2+2+ 2-1-0+1-	14-	12	15	9	9	6	3	2	3	59	7	0.4
15	1+1+1+1o 2+2o1o1o	11+	5	5	5	4	9	7	4	4	43	5	0.2
16	1-1o1o1- 1+1-2o2-	9o	3	4	4	3	5	3	7	6	35	4	0.2
17	1-1-2o2o 2+1o2-1-	11o	3	3	7	7	9	4	6	3	42	5	0.2
18	0+0o0o1- 1o2-1-0+	5-	2	0	0	3	4	6	3	2	20	2	0.0
19	1+2o1-0+ 1-1-1o1o	8-	5	7	3	2	3	3	4	4	31	4	0.1
20	2o3-4-1- 2-2o2-1+	16-	7	12	22	3	6	7	6	5	68	8	0.5
21	1+2-2+2- 3-2o1+2o	15o	5	6	9	6	12	7	5	7	57	7	0.4
22	2+3+2-2o 1o1o2+1+	15o	9	18	6	7	4	4	9	5	62	8	0.4
23	0o0+0+1+ 1+1o0+0+	5o	0	2	2	5	5	4	2	2	22	3	0.0
24	2-2o2-2- 5o4o4-4+	24o	6	7	6	6	48	27	22	32	154	19	1.0
25	3-3+2-1+ 3-3-3+3-	20+	12	18	6	5	12	12	18	12	95	12	0.7
26	4-3+3+4- 2o2-3o4o	25-	22	18	18	22	7	6	15	27	135	17	0.9
27	4-3+3-1- 1+5-8-7+	31+	22	18	12	3	5	39	179	154	432	54	1.6
28	7o4-5-4o 3-3+4+6-	35+	132	22	39	27	12	18	32	67	349	44	1.5
29	5o4-3+4- 4-4-4+4+	32-	48	22	18	22	22	22	32	32	218	27	1.2
30	4+4o2+3+ 2o2o3-3+	24o	32	27	9	18	7	7	12	18	130	16	0.9

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	May 1955				ap				Sum	Ap	Cp
1	2+3-1o1o 0+1-1+2o	11+	9	12	4	4	2	3	5	7	46	6	0.3
2	0+0+1+1+ 2o2-1+2-	10o	2	2	5	5	7	6	5	6	38	5	0.2
3	2o1+2-1o 1o2o2o1+	12+	7	5	6	4	4	7	7	5	45	6	0.3
4	1+0+0+1+ 2o2-2o2+	11+	5	2	2	5	7	6	7	9	43	5	0.2
5	2-2+2o2- 3-3+2-2+	13-	6	9	7	6	12	18	6	9	73	9	0.5
6	3+3o3o4+ 6o3+3+5+	32-	18	15	15	32	80	18	18	56	252	32	1.3
7	5-4+4+4+ 2+3-3o4o	30-	39	32	32	32	9	12	15	27	198	25	1.2
8	4o5+4-4o 5-4-4+4+	34o	27	56	22	27	39	22	32	32	257	32	1.3
9	2+2+2+2- 2-2o2+2+	17o	9	9	9	6	6	7	9	9	64	8	0.4
10	3-3o2o3+ 1o2-2o3-	18+	12	15	7	18	4	6	7	12	81	10	0.6
11	1o1+2o1o 1-1+1+1o	10-	4	5	7	4	3	5	5	4	37	5	0.2
12	1o2-2-1+ 1o1+2o3+	13+	4	6	6	5	4	5	7	18	55	7	0.3
13	3--1-2o2+ 2+2+3-2+	17+	12	3	7	9	9	9	12	9	70	9	0.5
14	2+3+3o4- 2o2+2o2o	21-	9	18	15	22	7	9	7	7	94	12	0.7
15	2o2+2o0+ 1-1o1+2o	12-	7	9	7	2	3	4	5	7	44	6	0.2
16	4-5+2+3- 1+1-1-1o	18-	22	56	9	12	5	3	3	4	114	14	0.8
17	1+1+1+1- 1-1-0o1+	7+	5	5	5	3	3	3	0	5	29	4	0.1
18	2-1+1-0o 1o2o1o1-	8+	6	5	3	0	4	7	4	3	32	4	0.1
19	1-1-1+1- 1-1-1-1-	6o	3	3	5	3	3	3	3	3	26	3	0.1
20	1-2o1o2o 1o1+1+2-	11o	3	7	4	7	4	5	5	6	41	5	0.2
21	0+1-1-1- 2-1o0+1+	7-	2	3	3	3	6	4	2	5	28	4	0.1
22	2-2-1-1- 0+1o2o1o	9o	6	6	3	3	2	4	7	4	35	4	0.2
23	0+0+0+1- 1+1+0o0+	5-	2	2	2	3	5	5	0	2	21	3	0.0
24	0+1-1o1- 1o1+1+1-	7o	2	3	4	3	4	5	5	3	29	4	0.1
25	1o1-0+0+ 4o4o6+7-	23+	4	3	2	2	27	27	94	111	270	34	1.3
26	6+6o5-5+ 3-3+2o1+	32-	94	80	39	56	12	18	7	5	311	39	1.4
27	2-1+2-1o 4o5-5o4+	24-	6	5	6	4	27	39	48	32	167	21	1.1
28	4o4+5-4+ 4-2+2+3o	29-	27	32	39	32	22	9	9	15	185	23	1.1
29	2+2o3-2o 1+2+1-2-	15o	9	7	12	7	5	9	3	6	58	7	0.4
30	1-0+2-1- 1o2o1+1+	9o	3	2	6	3	4	7	5	5	35	4	0.2
31	2-2-2o1o 1o1o1o2-	11o	6	6	7	4	4	4	4	6	41	5	0.2

	Kp	Sum	June 1955				ap				Sum	Ap	Cp
1	2-2+2-1o 3-3-1+1o	14+	6	9	6	4	12	12	5	4	58	7	0.4
2	2o1+2+2- 2+1+1+2-	14o	7	5	9	6	9	5	5	6	52	6	0.3
3	1o2-1+1o 1o2o2+2-	12o	4	6	5	4	4	7	9	6	45	6	0.3
4	1+2-3o2o 2+2-2-1+	15o	5	6	15	7	9	6	6	5	59	7	0.4
5	1o0+1o2- 1+2-2-1-	9+	4	2	4	6	5	6	6	3	36	4	0.2
6	0+1-1+1o 2-2+4o4o	15+	2	3	5	4	6	9	27	27	83	10	0.6
7	3+3o2o3- 3-2o1o3+	20o	18	15	7	12	12	7	4	18	93	12	0.7
8	3o5o3o3- 4o5-2+4-	28+	15	48	15	12	27	39	9	22	187	23	1.1
9	0+2-2+2+ 3-1+2o3-	15+	2	6	9	9	12	5	7	12	62	8	0.4
10	2-1o2-2- 1o1+1o1-	10o	6	4	6	6	4	5	4	3	38	5	0.2
11	0+1-1+2o 2o2-2-3o	13-	2	3	5	7	7	6	6	15	51	6	0.3
12	2+3o2+3- 3+1-1+2+	18o	9	15	9	12	18	3	5	9	80	10	0.6
13	1+1-2+1+ 3+3-2o2+	16o	5	3	9	5	18	12	7	9	68	8	0.5
14	2-2o3o4+ 4-3+2+1o	21+	6	7	15	32	22	18	9	4	113	14	0.8
15	4-4-4+4- 3o2+3o3+	27o	22	22	32	22	15	9	15	18	155	19	1.0
16	4o3o3o4- 4-3-1+2o	23+	27	15	15	22	22	12	5	7	125	16	0.9
17	2+2+3-4- 3-3-2-3o	21o	9	9	12	22	12	12	6	15	97	12	0.7
18	1+3-3-3- 1o1+1+2-	15-	5	12	12	12	4	5	5	6	61	8	0.4
19	3+3+2+2o 2o2-1o1-	16+	18	18	9	7	7	6	4	3	72	9	0.5
20	1o1o1+1o 1+3o2-1o	11+	4	4	5	4	5	15	6	4	47	6	0.3
21	2o1-1-1- 1o1o1o1o	8o	7	3	3	3	4	4	4	4	32	4	0.1
22	1+1-0+3+ 3-3o2+3-	16+	5	3	2	18	12	15	9	12	76	10	0.5
23	3+3+3o2- 2o2o5-4o	24o	18	18	15	6	7	7	39	27	137	17	0.9
24	4o3+4o4- 4-2+2+3-	26o	27	18	27	22	22	9	9	12	146	18	1.0
25	3o2-4-3+ 3-1+3-1o	19+	15	6	22	18	12	5	12	4	94	12	0.7
26	1o2-0+1- 1-1o1-2-	8-	4	6	2	3	3	4	3	6	31	4	0.1
27	1+1+2o2- 1+2o2o1-	12+	5	5	7	6	5	7	7	3	45	6	0.3
28	2-3-1o2- 2-1o1o3-	13+	6	12	4	6	6	4	4	12	54	7	0.3
29	2-1-1+2o 2o1+2+1o	12+	6	3	5	7	7	5	9	4	46	6	0.3
30	2o1o1-1- 0+1-1-1-	7-	7	4	3	3	2	3	3	3	28	4	0.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	July 1955				ap				Sum	Ap	Cp
1	1+1+2+1+ 1o1−0+1−	9o	5	5	9	5	4	3	2	3	36	4	0.2
2	1+2o1+2− 3−4+5+4+	23o	5	7	5	6	12	32	56	32	155	19	1.0
3	3o4−2+3− 1+2−1+1+	17+	15	22	9	12	5	6	5	5	79	10	0.6
4	1o1o2−0+ 1−0+1−0+	6o	4	4	6	2	3	2	3	2	26	3	0.1
5	1o1−1−0+ 1−1o1o1+	7−	4	3	3	2	3	4	4	5	28	4	0.1
6	1−1o1−0+ 1−2o2o3+	11−	3	4	3	2	3	7	7	18	47	6	0.3
7	3+3+2+2− 2+2o1+2−	18o	18	18	9	6	9	7	5	6	78	10	0.5
8	1o2−2o3+ 2+4−3−2−	18+	4	6	7	18	9	22	12	6	84	10	0.6
9	2−1+1o2+ 2o0+1−2o	11+	6	5	4	9	7	2	3	7	43	5	0.2
10	1+2−2o3o 4o3o2+2+	20−	5	6	7	15	27	15	9	9	93	12	0.7
11	3o2o3+5− 4−3+3−3o	26−	15	7	18	39	22	18	12	15	146	18	1.0
12	5+2−3o4− 3o2+3−4o	26−	56	6	15	22	15	9	12	27	162	20	1.0
13	3+2o1−1− 3−3−1o1+	14+	18	7	3	3	12	12	4	5	64	8	0.4
14	1+1+2o2o 2o1+1+0+	12−	5	5	7	7	7	5	5	2	43	5	0.2
15	1o1−1−2− 4+5−3o3−	19−	4	3	3	6	32	39	15	12	114	14	0.8
16	3+2o1+2o 2+1+2+2+	17o	18	7	5	7	9	5	9	9	69	9	0.5
17	1+3o3−1+ 1−0+1+2o	13−	5	15	12	5	3	2	5	7	54	7	0.3
18	1+3+3o2− 2−1−1o0+	13o	5	18	15	6	6	3	4	2	59	7	0.4
19	1o1−1−1+ 1o1−0o1−	6o	4	3	3	5	4	3	0	3	25	3	0.1
20	1+1−0+1o 1+1o2−1−	8o	5	3	2	4	5	4	6	3	32	4	0.1
21	1+1−0o1− 0+1−1o2+	7o	5	3	0	3	2	3	4	9	29	4	0.1
22	1o1o1−1o 1−1o0+2+	8o	4	4	3	4	3	4	2	9	33	4	0.1
23	3−1+2−1o 1o1o2o3−	13+	12	5	6	4	4	4	7	12	54	7	0.3
24	3−3o2+2+ 1+1o1+1+	15+	12	15	9	9	5	4	5	5	64	8	0.4
25	2o2−2o1+ 1+1o1o1+	12−	7	6	7	5	5	4	4	5	43	5	0.2
26	2o2o2+3+ 4−3−3−4−	22+	7	7	9	18	22	12	12	22	109	14	0.8
27	3o1+1+1+ 1o1o1+1o	11+	15	5	5	5	4	4	5	4	47	6	0.3
28	1+1−1−1− 1+1o0+1o	7o	5	3	3	3	5	4	2	4	29	4	0.1
29	2−1+2o1− 1−1−3o2o	12o	6	5	7	3	3	3	15	7	49	6	0.3
30	0+1o1+2− 2−1+2−3−	12−	2	4	5	6	6	5	6	12	46	6	0.3
31	3−1+2+1− 2−2−0+1o	12−	12	5	9	3	6	6	2	4	47	6	0.3

	Kp	Sum	Aug. 1955				ap				Sum	Ap	Cp
1	1+1−1−1o 2o1+1o1−	9−	5	3	3	4	7	5	4	3	34	4	0.1
2	2+1+0+0o 0+0+1o3−	8+	9	5	2	0	2	2	4	12	36	4	0.2
3	4o2+2+2− 2−3−2−3−	19o	27	9	9	6	6	12	6	12	87	11	0.6
4	3−4o3o5+ 5o4+4o4o	32+	12	27	15	56	48	32	27	27	244	30	1.3
5	2o2o4o3+ 3o3+4+4o	26o	7	7	27	18	15	18	32	27	151	19	1.0
6	3+3+5+5+ 4−5−3o5o	34−	18	18	56	56	22	39	15	48	272	34	1.3
7	3o3o4−4− 3+2o4o3−	25+	15	15	22	22	18	7	27	12	138	17	0.9
8	2+1o2−3o 3o2o2o2−	17−	9	4	6	15	15	7	7	6	69	9	0.5
9	2+1+2o2− 2o1o2o1+	14−	9	5	7	6	7	4	7	5	50	6	0.3
10	1o2+1+2− 2−1+1o2−	12o	4	9	5	6	6	5	4	6	45	6	0.3
11	1+1+1−1− 0+0+1+2−	8−	5	5	3	3	2	2	5	6	31	4	0.1
12	2o1o2−2− 1o0+1o1−	9+	7	4	6	6	4	2	4	3	36	4	0.2
13	1+2o1+3− 1+1o1o3−	13+	5	7	5	12	5	4	4	12	54	7	0.3
14	3o2−1+3− 1+3−3+3o	19o	15	6	5	12	5	12	18	15	88	11	0.6
15	3+3+2+2o 3−1o0+1−	16−	18	18	9	7	12	4	2	3	73	9	0.5
16	0o2+3o0+ 1o0+1o1+	9+	0	9	15	2	4	2	4	5	41	5	0.2
17	1+0+1−1+ 2−2+2o2+	12o	5	2	3	5	6	9	7	9	46	6	0.3
18	1+2+2+2+ 2−1+2o2o	15+	5	9	9	9	6	5	7	7	57	7	0.4
19	1+2+2+1+ 1+1+2−2o	14−	5	9	9	5	5	5	6	7	51	6	0.3
20	1+1−1o2o 1+2−1o1−	10−	5	3	4	7	5	6	4	3	37	5	0.2
21	2+2o2o0+ 1−0+1o1o	10−	9	7	7	2	3	2	4	4	38	5	0.2
22	0o0+0+0o 0+0+1o1o	3+	0	2	2	0	2	2	4	4	16	2	0.0
23	0+0+1+0+ 1−1−0+1o	5o	2	2	5	2	3	3	2	4	23	3	0.1
24	0+1o1+3− 2o1o1−1o	10o	2	4	5	12	7	4	3	4	41	5	0.2
25	1o0+1o1+ 2−1+1+1o	9o	4	2	4	5	6	5	5	4	35	4	0.2
26	1+1+1o2+ 2+1+1+2−	13−	5	5	4	9	9	5	5	6	48	6	0.3
27	0+1−1o1− 1−2−2o3−	10−	2	3	4	3	3	6	7	12	40	5	0.2
28	1−4−6o4− 3−2−2−1+	21+	3	22	80	22	12	6	6	5	156	20	1.0
29	3o2o2+2o 2o1+3o3+	19o	15	7	9	7	7	5	15	18	83	10	0.6
30	2−1+1o2o 1−2−1+1+	11o	6	5	4	7	3	6	5	5	41	5	0.2
31	2−2−1o2o 1+1o1+2+	12+	6	6	4	7	5	4	5	9	46	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	Sept. 1955			ap					Sum	Ap	Cp
1	1+1o3+3– 3–3–3o2o	19–	5	4	18	12	12	12	15	7	85	11	0.6
2	4o4o3–4+ 3+3–1+2–	24o	27	27	12	32	18	12	5	6	139	17	0.9
3	3+3o3+5o 3+1+2o2+	24–	18	15	18	48	18	5	7	9	138	17	0.9
4	4+4–3–4+ 3–3+2–4–	26+	32	22	12	32	12	18	6	22	156	20	1.0
5	4+5–4o4o 3+3–3–2o	33–	32	39	27	27	18	12	12	7	174	22	1.1
6	2o3+3+3+ 1+2+2+3o	21o	7	18	18	18	5	9	9	15	99	12	0.7
7	3o1+3+3o 1o1+1o1–	15–	15	5	18	15	4	5	4	3	69	9	0.5
8	1o2–2o2+ 2o3–1o2+	15o	4	6	7	9	7	12	4	9	58	7	0.4
9	3o3–1o1+ 1+1+1–2–	13o	15	12	4	5	5	5	3	6	55	7	0.3
10	1+1+3–2+ 1+1+1+1–	12+	5	5	12	9	5	5	5	3	49	6	0.3
11	2o1+1+1o 1+1o1o2+	11+	7	5	5	4	5	4	4	9	43	5	0.2
12	3–4–5–3o 3o2+2–3+	24+	12	22	39	15	15	9	6	18	136	17	0.9
13	4+4+4+4+ 3o4–2–1–	26+	32	32	32	32	15	22	6	3	174	22	1.1
14	0+2–3–3– 2–1+1–1+	12+	2	6	12	12	6	5	3	5	51	6	0.3
15	2+2o1o1o 1o1+2o1+	12o	9	7	4	4	4	5	7	5	45	6	0.3
16	3+3o3–3– 2+1+1–2o	18o	18	15	12	12	9	5	3	7	81	10	0.6
17	3–4o4+3o 2o2–2–2–	21o	12	27	32	15	7	6	6	6	111	14	0.8
18	2o3–3–3o 2o2+1+1–	17–	7	12	12	15	7	9	5	3	70	9	0.5
19	3o3–2o2+ 2+1+1–2o	16+	15	12	7	9	9	5	3	7	67	8	0.5
20	3o2+3+3o 0+1o1+1+	16–	15	9	18	15	2	4	5	5	73	9	0.5
21	1+1+1+2– 0+0+1o2–	9o	5	5	5	6	2	2	4	6	35	4	0.2
22	4–3–1o1o 1+1–2o2–	14o	22	12	4	4	5	3	7	6	63	8	0.4
23	1o2o4–4– 2o2–3o3+	20+	4	7	22	22	7	6	15	18	101	13	0.7
24	4–2–1o1+ 1o2o2+0+	13+	22	6	4	5	4	7	9	2	59	7	0.4
25	2–1–1o0+ 0+1–0+1+	6+	6	3	4	2	2	3	2	5	27	3	0.1
26	1o1–0o0+ 1–0+1–1o	5–	4	3	0	2	3	2	3	4	21	3	0.0
27	3–3o3o4– 3+4o4+4–	28–	12	15	15	22	18	27	32	22	163	20	1.0
28	2+4+4o3+ 2+2–4–2o	24–	9	32	27	18	9	6	22	7	130	16	0.9
29	3+2o2+3– 2o5o5–4–	26–	18	7	9	12	7	48	39	22	162	20	1.0
30	4+6+7–6– 5o4o3+4+	40–	32	94	111	67	48	27	18	32	429	54	1.8

	Kp	Sum	Oct. 1955			ap					Sum	Ap	Cp
1	3+2+2+4+ 2+1+3–2o	21–	18	9	9	32	9	5	12	7	101	13	0.7
2	3o2o3o3– 3+4+3+2–	23+	15	7	15	12	18	32	18	6	123	15	0.9
3	3o4o4–3+ 2+3+2–1–	22o	15	27	22	18	9	18	6	3	118	15	0.8
4	2–3+3o4– 1o1–1o2–	16o	6	18	15	22	4	3	4	6	78	10	0.5
5	2+2+2–3o 3+3+6–5–	26+	9	9	6	15	18	18	67	39	181	23	1.1
6	4+4o4+4– 3o4o2–1o	26o	32	27	32	22	15	27	6	4	165	21	1.1
7	1+1+2–2o 2o1+1–4–	14o	5	5	6	7	7	5	3	22	60	8	0.4
8	3o3o3+2o 1+2o2+2+	19+	15	15	18	7	5	7	9	9	85	11	0.6
9	1o1+1o1– 0+2o1o3+	11–	4	5	4	3	2	7	4	18	47	6	0.3
10	3o3–4–4– 3+3o3–1–	23–	15	12	22	22	18	15	12	3	119	15	0.8
11	0+2+4o3– 4–2+2–0o	17o	2	9	27	12	22	9	6	0	87	11	0.6
12	0o0o0+0o 0o0o0o0+	1–	0	0	2	0	0	0	0	2	4	0	0.0
13	0+0o1o1o 0+0+1o1+	5+	2	0	4	4	2	2	4	5	23	3	0.1
14	1+1+2–2– 1+1o1o1–	10o	5	5	6	6	5	4	4	3	38	5	0.2
15	0+2–0+1– 0+0o0+2o	6–	2	6	2	3	2	0	2	7	24	3	0.1
16	3+1+2–1– 1+1o0+1o	11–	18	5	6	3	5	4	2	4	47	6	0.3
17	1+2–1o0+ 0o0o2–1+	7+	5	6	4	2	0	0	6	5	28	4	0.1
18	1o0o0o1– 0o0o0o0+	2o	4	0	0	3	0	0	0	2	9	1	0.0
19	0o1–1–1– 1o1+1–1o	6o	0	3	3	3	4	5	3	4	25	3	0.1
20	2o1+2+2+ 2o2o1+1–	14o	7	5	9	9	7	7	5	3	52	6	0.3
21	0o0+2–1+ 1–1–1+2o	8o	0	2	6	5	3	3	5	7	31	4	0.1
22	0+0+1+2o 3–2o2+1o	12o	2	2	5	7	12	7	9	4	48	6	0.3
23	2o1+1o2– 2o1+1+0+	11o	7	5	4	6	7	5	5	2	41	5	0.2
24	0o0o1o1– 1–0o1–1o	4o	0	0	4	3	3	0	3	4	17	2	0.0
25	5–4o6–6o 6o6–5+4+	42–	39	27	67	80	80	67	56	32	448	56	1.6
26	5+5o4+4+ 4–4+6–3+	36o	56	48	32	32	22	32	67	18	307	38	1.4
27	2+3o3o2+ 2o3–2+3–	20+	9	15	15	9	7	12	9	12	88	11	0.6
28	1–2+2o2o 3–3–0+1+	14o	3	9	7	7	12	12	2	5	57	7	0.4
29	1–2+2+2o 1o3+2+3–	17–	3	9	9	7	4	18	9	12	71	9	0.5
30	1o1–1o1+ 2+3+3+2o	15o	4	3	4	5	9	18	18	7	68	8	0.5
31	3–3+3+2+ 3+4–5+5+	29+	12	18	18	9	18	22	56	56	209	26	1.2

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	Nov. 1955			ap				Sum	Ap	Cp
1	3o5-3o2- 0+2o4-2o	20+	15	39	15	6	2	7	22	7	113	14	0.8
2	2o2o2o3- 3+2+3-2-	19-	7	7	7	12	18	9	12	6	78	10	0.5
3	1o1-1+1+ 1o1o1o1o	8+	4	3	5	5	4	4	4	4	33	4	0.1
4	4-5o5o4o 2-1+3o4-	27+	22	48	48	27	6	5	15	22	193	24	1.2
5	3+3+3+3- 2o1-1-1o	17o	18	18	18	12	7	3	3	4	83	10	0.6
6	2-0+1-1- 0o0o2-1o	6o	6	2	3	3	0	0	6	4	24	3	0.1
7	1+0+1o1o 0+1-1-0o	5+	5	2	4	4	2	3	3	0	23	3	0.1
8	1+2+2o2o 2+4-3o4+	21o	5	9	7	7	9	22	15	32	106	13	0.8
9	4o3o3-2+ 1+1o1-1-	16-	27	15	12	9	5	4	3	3	78	10	0.5
10	1o1-1o1+ 1o1+2+1+	10o	4	3	4	5	4	5	9	5	39	5	0.2
11	2+1o1+1+ 1-2+1+2o	12+	9	4	5	5	3	9	5	7	47	6	0.3
12	1o1-5-4+ 3o4o4-1o	22+	4	3	39	32	15	27	22	4	146	18	1.0
13	1o3o2-2- 1o2-1+1o	12+	4	15	6	6	4	6	5	4	50	6	0.3
14	1-0+1-1o 1+2o2+2-	10o	3	2	3	4	5	7	9	6	39	5	0.2
15	2o2+4-5- 4-3+4-3+	27-	7	9	22	39	22	18	22	18	157	20	1.0
16	5-5-4o3o 3+3+3o4-	30-	39	39	27	15	18	18	15	22	193	24	1.2
17	3-5o1+2- 1+1+1o2-	16o	12	48	5	6	5	5	4	6	91	11	0.7
18	2-4+4o3- 3-6-6-3o	30-	6	32	27	12	12	67	67	15	238	30	1.3
19	3o2o3o5+ 8-7o6-5o	39-	15	7	15	56	179	132	67	48	519	65	1.7
20	6-4+5o4o 5o6o5-4+	39o	67	32	48	27	48	80	39	32	373	47	1.5
21	4o3o2+2- 1-0o1-0o	12+	27	15	9	6	3	0	3	0	63	8	0.4
22	0o0o2-2o 2-1-0+0o	6+	0	0	6	7	6	3	2	0	24	3	0.1
23	0o1+1o2o 1o0+1o2o	9-	0	5	4	7	4	2	4	7	33	4	0.1
24	1+1o3o2+ 2+2-1+2o	15o	5	4	15	9	9	6	5	7	60	8	0.4
25	4-2o3-2o 3-3o1-1o	18-	22	7	12	7	12	15	3	4	82	10	0.6
26	2o2-2-2- 1-0+0+2o	10+	7	6	6	6	3	2	2	7	39	5	0.2
27	3-0o1o2o 2o1+1-2-	11+	12	0	4	7	7	5	3	6	44	6	0.2
28	1-0+1-3o 2-2-1+5-	14o	3	2	3	15	6	6	5	39	79	10	0.6
29	2-2+2-2o 1-1+2+1+	13+	6	9	6	7	3	5	9	5	50	6	0.3
30	0+3-1o1o 2-1o2-1-	10o	2	12	4	4	6	4	6	3	41	5	0.2

	Kp	Sum	Dec. 1955			ap				Sum	Ap	Cp
1	2+1o1+3+ 4o4-5+5-	26-	9	4	5	18	27	22	56	39	180	22	1.1
2	4-4+4-3- 2-1-1-1-	18o	22	32	22	12	6	3	3	3	103	13	0.7
3	0+0o1o2+ 3-3o3o3o	15+	2	0	4	9	12	15	15	15	72	9	0.5
4	3-2o2-1+ 0+0o0+1o	9+	12	7	6	5	2	0	2	4	38	5	0.2
5	2-1o0+0+ 2-1+2-4o	12o	6	4	2	2	6	5	6	27	58	7	0.4
6	3-4-4+2+ 2-1-3o4o	22+	12	22	32	9	6	3	15	27	126	16	0.9
7	3+4+2-1+ 0+0o0o1-	12-	18	32	6	5	2	0	0	3	66	8	0.4
8	1o2o2+1- 2-2+4-3o	17-	4	7	9	3	6	9	22	15	75	9	0.5
9	3+2o3-3- 4-3-2-1+	20o	18	7	12	12	22	12	6	5	94	12	0.7
10	1+1o1-1+ 3-2o2+1-	12o	5	4	3	5	12	7	9	3	48	6	0.3
11	1o1o0+1+ 1+2-1o1+	9o	4	4	2	5	5	6	4	5	35	4	0.2
12	1+1+1-1- 1-1+2-1+	9o	5	5	3	3	3	5	6	5	35	4	0.2
13	0+0o0o1- 1-2-1o0+	5-	2	0	0	3	3	6	4	2	20	2	0.0
14	0+0o1+1o 0+0o0o0+	3+	2	0	5	4	2	0	0	2	15	2	0.0
15	1o1-1-1- 0+1o2-2+	8+	4	3	3	3	2	4	6	9	34	4	0.1
16	2-2+3o3o 2+2+2-1+	18-	6	9	15	15	9	9	6	5	74	9	0.5
17	0+1o1-2- 0+1+2-1o	8o	2	4	3	6	2	5	6	4	32	4	0.1
18	1o0+1o1- 0+1-0+0o	4+	4	2	4	3	2	3	2	0	20	2	0.0
19	0o0o2-2o 2o3-2+2o	13-	0	0	6	7	7	12	9	7	48	6	0.3
20	2+3+3o1+ 3-2+1o1o	17o	9	18	15	5	12	9	4	4	76	10	0.5
21	1+2+2-2o 3o3o2-2-	17-	5	9	6	7	15	15	6	6	69	9	0.5
22	1o2+2+1- 2-1+1-1-	11-	4	9	9	3	6	5	3	3	42	5	0.2
23	1o1o1-0+ 1-0o0+1-	5-	4	4	3	2	3	0	2	3	21	3	0.0
24	0+0+1o1o 1+3-1o3o	11-	2	2	4	4	5	12	4	15	48	6	0.3
25	4-5-3+2o 4o3+3+2-	26o	22	39	18	7	27	18	18	6	155	19	1.0
26	0+1+2-3+ 3+4-4-5o	22+	2	5	6	18	18	22	22	48	141	18	1.0
27	5-4+3o3+ 2+2+1+2+	24-	39	32	15	18	9	9	5	9	136	17	0.9
28	0+1-2-2- 1+2+2+1-	11o	2	3	6	6	5	9	9	3	43	5	0.2
29	0o0o0+1- 0o0+1o0+	3-	0	0	2	3	0	2	4	2	13	2	0.0
30	1o1-1o1- 1o2-0+1o	7+	4	3	4	3	4	6	2	4	30	4	0.1
31	1+3-3-2o 1+3-3-2o	17+	5	12	12	7	5	12	12	7	72	9	0.5

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1956	ap							Sum	Ap	Cp
1	4-3-2-3o 2+4+4o5-	26+	22	12	6	15	9	32	27	39	162	20	1.0
2	3+3+2o2o 2+3+4-4-	24-	18	18	7	7	9	18	22	22	121	15	0.9
3	3o3+3-3+ 2-3-2+4-	23-	15	18	12	18	6	12	9	22	112	14	0.8
4	3-3+3-2+ 2+2+5o4-	24+	12	18	12	9	9	9	48	22	139	17	0.9
5	3+3+3-2o 2o2o4-2-	21-	18	18	12	7	7	7	22	6	97	12	0.7
6	4o1+1+2o 4o4o3+3-	23-	27	5	5	7	27	27	18	12	128	16	0.9
7	1+1+0o2- 2+4o3-3o	16+	5	5	0	6	9	27	12	15	79	10	0.6
8	2+1+1o2o 1o1o2o1-	11+	9	5	4	7	4	4	7	3	43	5	0.2
9	2+4-2o4- 4-3+2o2-	22+	9	22	7	22	22	18	7	6	113	14	0.8
10	0o3+4-4- 4-5+5-4o	28+	0	18	22	22	22	56	39	27	206	26	1.2
11	6o4+5-6o 4o3+5+2o	36-	80	32	39	80	27	18	56	7	339	42	1.5
12	1o2+2+4- 3-4-6-4-	25o	4	9	9	22	12	22	67	22	167	21	1.1
13	4o3o2o1- 2o1o1+0+	14+	27	15	7	3	7	4	5	2	70	9	0.5
14	2-3-2o4- 2o2o2-2-	17+	6	12	7	22	7	7	6	6	73	9	0.5
15	0o0+1o2- 2-1o0+1+	7+	0	2	4	6	6	4	2	5	29	4	0.1
16	3o1+1+2o 2-1-2-1o	13-	15	5	5	7	6	3	6	4	51	6	0.3
17	1-2-2o2- 2+1-1+3o	13+	3	6	7	6	9	3	5	15	54	7	0.3
18	5o5+4+4o 4o4o5-6-	37o	48	56	32	27	27	27	39	67	323	40	1.5
19	6-4o4+4- 5o4-4-3-	33-	67	27	32	22	48	22	22	12	252	32	1.3
20	2o2-2o2- 1o1-1-1o	11-	7	6	7	6	4	3	3	4	40	5	0.2
21	2o0o0o1- 1-3+3-4+	14-	7	0	0	3	3	18	12	32	75	9	0.5
22	6-6-4+4- 2-1o4o1+	27+	67	67	32	22	6	4	27	5	230	29	1.3
23	1o3-3-1+ 2o3o4o5o	22-	4	12	12	5	7	15	27	48	130	16	0.9
24	3o5o4-5- 5-4o6-5o	36-	15	48	22	39	39	27	67	48	305	38	1.4
25	6-4-4-2- 2-1o3-2-	22-	67	22	22	6	6	4	12	6	145	18	1.0
26	0o1-1o1- 1-1-1-1+	6-	0	3	4	3	3	3	3	5	24	3	0.1
27	2-1+2+4o 4+5-6o3+	28-	6	5	9	27	32	39	80	18	216	27	1.2
28	5o6+5-4o 4-3+4o3+	34+	48	94	39	27	22	18	27	18	293	37	1.4
29	3-3-3-3o 4+4-4-2+	25o	12	12	12	15	32	22	22	9	136	17	0.9
30	4-3+2+2o 3-4o2+4-	24o	22	18	9	7	12	27	9	22	126	16	0.9
31	3o3+3-4- 3+3+3-4-	26-	15	18	12	22	18	18	12	22	137	17	0.9

	Kp	Sum	Feb. 1956	ap							Sum	Ap	Cp
1	4-3+4-2o 3-2+3+3+	24+	22	18	22	7	12	9	18	18	126	16	0.9
2	3+3o4-3+ 2+4-4-3+	26+	18	15	22	18	9	22	22	18	144	18	1.0
3	3o4-2+2+ 2o2-3o4o	22o	15	22	9	9	7	6	15	27	110	14	0.8
4	2+3o2+2+ 3-1+3-2+	19o	9	15	9	9	12	5	12	9	80	10	0.6
5	1o1+1o1+ 2-1+3-2+	13-	4	5	4	5	6	5	12	9	50	6	0.3
6	4-1+1+3- 2-2-1o0+	14-	22	5	5	12	6	6	4	2	62	8	0.4
7	1o2-1o1- 1-0o0+2o	7+	4	6	4	3	3	0	2	7	29	4	0.1
8	1+0o0+1o 1o0+0+0+	5-	5	0	2	4	4	2	2	2	21	3	0.0
9	2-1-0+1o 0+0o0+0+	5-	6	3	2	4	2	0	2	2	21	3	0.0
10	0o1o1o1+ 1-1-1+1+	7+	0	4	4	5	3	3	5	5	29	4	0.1
11	4o3o2-2o 3+3-5-5-	26o	27	15	6	7	18	12	39	39	163	20	1.0
12	5o5-5+5- 3o2o2o3o	30-	48	39	56	39	15	7	7	15	226	28	1.2
13	2o2-3+3+ 3-2-1+2-	18-	7	6	18	18	12	6	5	6	78	10	0.5
14	1o2-1+2- 1-1o0o0+	8-	4	6	5	6	3	4	0	2	30	4	0.1
15	0+0o2-2o 1o1-2-2+	10-	2	0	6	7	4	3	6	9	37	5	0.2
16	2+4+3o3- 3+4-3-2+	24+	9	32	15	12	18	22	12	9	129	16	0.9
17	2o2o2+2+ 1-2-1-0o	12-	7	7	9	9	3	6	3	0	44	6	0.2
18	0o2o1+2+ 1-1+1+0+	9+	0	7	5	9	3	5	5	2	36	4	0.2
19	4+2+3o4+ 4-2+2+2+	25+	32	9	15	32	22	9	9	9	137	17	0.9
20	1-1-1o1o 3+2o1-1+	11-	3	3	4	4	18	7	3	5	47	6	0.3
21	1-1+1o1+ 2o2o3+2-	13+	3	5	4	5	7	7	18	6	55	7	0.3
22	4o4o3o4+ 3+3o1+1o	24o	27	27	15	32	18	15	5	4	143	18	1.0
23	1+0+1o2- 2o3+2o1o	13-	5	2	4	6	7	18	7	4	53	7	0.3
24	1o1-1-3- 2+2+1+2+	13+	4	3	3	12	9	9	5	9	54	7	0.3
25	1-6o8+7+ 7-7-7-3+	46-	3	80	236	154	111	111	111	18	824	103	1.9
26	3+2+3o5- 4o1o3+3-	24+	18	9	15	39	27	4	18	12	142	18	1.0
27	4o3+4o2- 1+2-5o4o	25o	27	18	27	6	5	6	48	27	164	20	1.0
28	5-5+2+3o 2o3o4o4o	28+	39	56	9	15	7	15	27	27	195	24	1.2
29	5+5o5o4+ 4o5o4o5-	37+	56	48	48	32	27	48	27	39	325	41	1.5

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Mar. 1956				ap				Sum	Ap	Cp
1	3-3+4o4o 3-2-4-4+	26+	12	18	27	27	12	6	22	32	156	20	1.0
2	3+5o5-4+ 3+3+3+3o	30+	18	48	39	32	18	18	18	15	206	26	1.2
3	5-6-6+7+ 6+6o7+7o	51-	39	67	94	154	94	80	154	132	814	102	1.9
4	5+4+4+3+ 4o3o2-1+	27+	56	32	32	18	27	15	6	5	191	24	1.2
5	2-2+3-1o 2-3-3-2-	16+	6	9	12	4	6	12	12	6	67	8	0.5
6	3-3o3-2- 4-2o4-2-	21o	12	15	12	6	22	7	22	6	102	13	0.7
7	0o0o0+2+ 1+1o1-1-	6+	0	0	2	9	5	4	3	3	26	3	0.1
8	1-1o1-1- 0+0+0o0o	4-	3	4	3	3	2	2	0	0	17	2	0.0
9	0o0o0+0+ 0+0+0o1+	3-	0	0	2	2	2	2	0	5	13	2	0.0
10	2-3o3-3- 1+1+4o6o	23-	6	15	12	12	5	5	27	80	162	20	1.0
11	6o4-4+3- 2o2o2o4o	27-	80	22	32	12	7	7	7	27	194	24	1.2
12	3-1+2o2o 2+2+2+2o	17o	12	5	7	7	9	9	9	7	65	8	0.4
13	2+3+3o2o 2-2-1o3o	18o	9	18	15	7	6	6	4	15	80	10	0.6
14	3-2+3-4o 4-3+1+2+	22+	12	9	12	27	22	18	5	9	114	14	0.8
15	3o2o2+2+ 2-2+2-1-	16o	15	7	9	9	6	9	6	3	64	8	0.4
16	1o0+2o2o 1+1o1o3-	11+	4	2	7	7	5	4	4	12	45	6	0.3
17	1-1o1o1o 1-0+0+1+	6+	3	4	4	4	3	2	2	5	27	3	0.1
18	0+0+2-2- 2o2+1-2-	11-	2	2	6	6	7	9	3	6	41	5	0.2
19	3o3-2-2- 2o2o2+4o	19+	15	12	6	6	7	7	9	27	89	11	0.6
20	4o3o1-1+ 2o2o2o3o	18o	27	15	3	5	7	7	7	15	86	11	0.6
21	4+3+5+4+ 3+5-5o6-	36o	32	18	56	32	18	39	48	67	310	39	1.4
22	7o6+5o4- 4o4+4+6+	41o	132	94	48	22	27	32	32	94	481	60	1.7
23	6+6o5o2o 2-1+1o0+	24-	94	80	48	7	6	5	4	2	246	31	1.3
24	2o2o3o4+ 4o6o4o4+	30-	7	7	15	32	27	80	27	32	227	28	1.2
25	5-3+3-3+ 2o3-4-5-	27o	39	18	12	18	7	12	22	39	167	21	1.1
26	3o3-3o4o 4+3o3o4o	27o	15	12	15	27	32	15	15	27	158	20	1.0
27	3o3-1+2o 2o3+3-3+	20+	15	12	5	7	7	18	12	18	94	12	0.7
28	5-4+2+3- 3+3+5-5o	30+	39	32	9	12	18	18	39	48	215	27	1.2
29	6+5-5o4o 3-4o4o4+	35o	94	39	48	27	12	27	27	32	306	38	1.4
30	1-3+3-1+ 2o2+3+4+	20o	3	18	12	5	7	9	18	32	104	13	0.7
31	5-4o3o2+ 3+2+2+2-	24-	39	27	15	9	18	9	9	6	132	16	0.9

	Kp	Sum	Apr. 1956				ap				Sum	Ap	Cp
1	3-5-4o1o 2-2+1o2o	19+	12	39	27	4	6	9	4	7	108	14	0.8
2	2-1o2-4o 4o4-4o4+	24+	6	4	6	27	27	22	27	32	151	19	1.0
3	4-5+3o3o 3+3o2o2+	26-	22	56	15	15	18	15	7	9	157	20	1.0
4	4-4o3o4- 2+2o3o1o	23-	22	27	15	22	9	7	15	4	121	15	0.9
5	2+3o3-2- 3-3+3+3+	22+	9	15	12	6	12	18	18	18	108	14	0.8
6	2+2-3o3- 4+3-3o4+	24o	9	6	15	12	32	12	15	32	133	17	0.9
7	5+3o4-3+ 4-3o2o2+	26+	56	15	22	18	22	15	7	9	164	20	1.0
8	2+2+4-3+ 3-2-2o1o	19o	9	9	22	18	12	6	7	4	87	11	0.6
9	1o2+3o2+ 3o2-2+2-	17+	4	9	15	9	15	6	9	6	73	9	0.5
10	1o2-3o4- 4-4+1+3-	21+	4	6	15	22	22	32	5	12	118	15	0.8
11	2o3o2-2o 3o3+4o3-	22-	7	15	6	7	15	18	27	12	107	13	0.8
12	3+2o3+3- 3+3o2-1+	21-	18	7	18	12	18	15	6	5	99	12	0.7
13	2o3o3o2+ 2o1+1o1o	16-	7	15	15	9	7	5	4	4	66	8	0.4
14	0+2-3-2+ 2+2o2-2-	15-	2	6	12	9	9	7	6	6	57	7	0.4
15	2-2-2-1+ 2-2+3-2o	15o	6	6	6	5	6	9	12	7	57	7	0.4
16	2-4-3-2- 2-4o3o4-	22o	6	22	12	6	6	27	15	22	116	14	0.8
17	5o5-3o3- 3+3-3o3o	27+	48	39	15	12	18	12	15	15	174	22	1.1
18	2+4-4o3o 3-2o2+4-	24-	9	22	27	15	12	7	9	22	123	15	0.9
19	2o4-4o2o 3-3o2o1o	20+	7	22	27	7	12	15	7	4	101	13	0.7
20	3o2+2o2- 1+1-3-3-	16+	15	9	7	6	5	3	12	12	69	9	0.5
21	3+3+3+5+ 5+5-7o7o	39+	18	18	18	56	56	39	132	132	469	59	1.7
22	7-7+7o7o 4-5-4-4o	44o	111	154	132	132	22	39	22	27	639	80	1.8
23	4o3+2+2+ 2o1o1+2o	18+	27	18	9	9	7	4	5	7	86	11	0.6
24	2-2+1-1o 2-1-1-2-	10+	6	9	3	4	6	3	3	6	40	5	0.2
25	3+1+1o3- 1+2+2o2o	16o	18	5	4	12	5	9	7	7	67	8	0.5
26	2o3+4-4o 4o2+4o8-	31o	7	18	22	27	27	9	27	179	316	40	1.4
27	9-9-8-8- 7-7-7o6-	59-	300	300	179	179	111	111	132	67	1379	172	2.0
28	7o7o4o3- 2o3+5+7o	38+	132	132	27	12	7	18	56	132	516	64	1.7
29	8-6+6o5+ 4-3+2o2+	37-	179	94	80	56	22	18	7	9	465	58	1.7
30	6o6+5o4+ 5o5o5-3+	40-	80	94	48	32	48	48	39	18	407	51	1.6

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1956				ap				Sum	Ap	Cp
1	4-5-3+4o 4o3+2o1o	26o	22	39	18	27	27	18	7	4	162	20	1.0
2	1-2o2o1+ 1+0+1-1+	10-	3	7	7	5	5	2	3	5	37	5	0.2
3	2+2+2-3- 2o2o3-2+	18o	9	9	6	12	7	7	12	9	71	9	0.5
4	2o1+1+3+ 4-3-2+3-	19+	7	5	5	18	22	12	9	12	90	11	0.6
5	3+2o3+3+ 3-4+4-2+	25o	18	7	18	18	12	32	22	9	136	17	0.9
6	1o2+2+4- 2+3o1+2+	18+	4	9	9	22	9	15	5	9	82	10	0.6
7	3-2+2o2o 2o1o3+2-	17o	12	9	7	7	7	4	18	6	70	9	0.5
8	0+1+1+2- 1+1o1o1-	9-	2	5	5	6	5	4	4	3	34	4	0.1
9	1o2-1o1- 0+1o1-1-	7o	4	6	4	3	2	4	3	3	29	4	0.1
10	1+1o1o1- 1-1o1-0+	7-	5	4	4	3	3	4	3	2	28	4	0.1
11	2-1-0+0+ 0+0o1-4-	8-	6	3	2	2	2	0	3	22	40	5	0.2
12	4+5-4+4+ 5o5+4+4+	37-	32	39	32	32	48	56	32	32	303	38	1.4
13	3-4o7-6- 4-3o2o3o	31-	12	27	111	67	22	15	7	15	276	34	1.4
14	2+2o3+4- 3o4o3+3o	25-	9	7	18	22	15	27	18	15	131	16	0.9
15	4o4+4+5- 5o6+4+4+	37+	27	32	32	39	48	94	32	32	336	42	1.5
16	5+7+8-7o 8+8-7o8-	58o	56	154	179	132	236	179	132	179	1247	156	2.0
17	7o6o6-5+ 5o3+2+2o	37-	132	80	67	56	48	18	9	7	417	52	1.6
18	3-3o3+2+ 1+1+1+2-	17o	12	15	18	9	5	5	5	6	75	9	0.5
19	2-2o2o4- 1+2-2-3-	17-	6	7	7	22	5	6	6	12	71	9	0.5
20	2o2-4-6+ 6-4o5o5-	33o	7	6	22	94	67	27	48	39	310	39	1.4
21	4+5-3+2- 2o2-3-1+	22-	32	39	18	6	7	6	12	5	125	16	0.9
22	2+3-3+4o 4o2o4+2+	25o	9	12	18	27	27	7	32	9	141	18	1.0
23	2+0+1o3+ 4o4o4o7-	26-	9	2	4	18	27	27	27	111	225	28	1.2
24	6+6o6-6+ 7o6+6-7o	50+	94	80	67	94	132	94	67	132	760	95	1.9
25	7o7o7o6o 4o3+2o4o	40+	132	132	132	80	27	18	7	27	555	69	1.7
26	5-2+3-1o 1+1+3o3+	20-	39	9	12	4	5	5	15	18	107	13	0.8
27	3-2-1+1+ 1-2-2o3+	15-	12	6	5	5	3	6	7	18	62	8	0.4
28	4-4+2+2- 2+0+2-1-	17o	22	32	9	6	9	2	6	3	89	11	0.6
29	1+1-1+0+ 2o4o6-5-	20o	5	3	5	2	7	27	67	39	155	19	1.0
30	3o3o3o3- 3-4o2+3o	24-	15	15	15	12	12	27	9	15	120	15	0.8
31	1+3-1o1+ 0+2-1-2+	11+	5	12	4	5	2	6	3	9	46	6	0.3

	Kp	Sum	June 1956				ap				Sum	Ap	Cp
1	4-4o4-4+ 4-4-3+3-	29o	22	27	22	32	22	22	18	12	177	22	1.1
2	2+3o3-3- 4-3+2+1+	21+	9	15	12	12	22	18	9	5	102	13	0.7
3	3o2-1o1+ 2o2+2-3o	16o	15	6	4	5	7	9	6	15	67	8	0.5
4	2-2-1+2+ 3o3-2+2-	17-	6	6	5	9	15	12	9	6	68	8	0.5
5	1+2o3-1+ 2o4-3+2o	18+	5	7	12	5	7	22	18	7	83	10	0.6
6	1+2+2o3- 5o4-2o2-	21-	5	9	7	12	48	22	7	6	116	14	0.8
7	1+2o2+1+ 2-2+2+2o	15+	5	7	9	5	6	9	9	7	57	7	0.4
8	4-2o3o4+ 2+3-3+4-	25o	22	7	15	32	9	12	18	22	137	17	0.9
9	2+3-5o3- 3+2+3+3-	24+	9	12	48	12	18	9	18	12	138	17	0.9
10	3o2+3-2+ 2o5-3o4o	24o	15	9	12	9	7	39	15	27	133	17	0.9
11	4o3+4+3+ 4o3o3o3-	28-	27	18	32	18	27	15	15	12	164	20	1.0
12	3+3-3-2o 2-1+2-3-	18o	18	12	12	7	6	5	6	12	78	10	0.5
13	3o3-2o2+ 3o3o3o4+	23+	15	12	7	9	15	15	15	32	120	15	0.8
14	3+3-4-4- 3+3o4o3+	27o	18	12	22	22	18	15	27	18	152	19	1.0
15	5-4+4+3+ 4-4-3+4+	32-	39	32	32	18	22	22	18	32	215	27	1.2
16	3o3o3+3- 3+2+3+3-	24-	15	15	18	12	18	9	18	12	117	15	0.8
17	1o2-1+1o 2+3+3-4-	17o	4	6	5	4	9	18	12	22	80	10	0.6
18	3o1+1+2o 1+2-1o2o	14-	15	5	5	7	5	6	4	7	54	7	0.3
19	1+1-2o1o 1+2o2o4o	14+	5	3	7	4	5	7	7	27	65	8	0.4
20	2o1+1+2o 2+2-2+3-	16-	7	5	5	7	9	6	9	12	60	8	0.4
21	3+2o2+2o 1+2-3-3o	18+	18	7	9	7	5	6	12	15	79	10	0.6
22	3o2o2-2o 2o2+2+1+	17-	15	7	6	7	7	9	9	5	65	8	0.4
23	2+1+1o2o 2-2o5-6+	21+	9	5	4	7	6	7	39	94	171	21	1.1
24	5o5o3-3o 5o6o5-6o	37+	48	48	12	15	48	80	39	80	370	46	1.5
25	6+7-6+4- 3+5-4o2+	37+	94	111	94	22	18	39	27	9	414	52	1.6
26	2-2+3+3+ 4+4-3+3+	25+	6	9	18	18	32	22	18	18	141	18	1.0
27	3-5-4-4- 3o4-3o2o	26+	12	39	22	22	15	22	15	7	154	19	1.0
28	2o3-4o2+ 3o2o3o2o	21o	7	12	27	9	15	7	15	7	99	12	0.7
29	2-2o4-5- 3-2+4o3o	24o	6	7	22	39	12	9	27	15	137	17	0.9
30	2-4+4-4o 4+5-4o3o	30-	6	32	22	27	32	39	27	15	200	25	1.2

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1956				ap				Sum	Ap	Cp
1	2o2o3+3- 3+4-3-3o	23-	7	7	18	12	18	22	12	15	111	14	0.8
2	3-2-4o3- 3-3+3+2+	23-	12	6	27	12	12	18	18	9	114	14	0.8
3	3o3o4-3+ 4-2+1-1-	20+	15	15	22	18	22	9	3	3	107	13	0.8
4	1+3-3-2+ 1o1o1+1o	13+	5	12	12	9	4	4	5	4	55	7	0.3
5	1+1+2+3o 3-2o2-2+	17-	5	5	9	15	12	7	6	9	68	8	0.5
6	2-2-2-2o 1+2-1+0+	12-	6	6	6	7	5	6	5	2	43	5	0.2
7	0+1-1-0+ 1+1+1+1+	7+	2	3	3	2	5	5	5	5	30	4	0.1
8	3+3+3-2o 2-1+2o4+	21-	18	18	12	7	6	5	7	32	105	13	0.8
9	4-3o3+3- 2o1o1-2-	18o	22	15	18	12	7	4	3	6	87	11	0.6
10	1-2-2-2- 1-2+5-4-	17o	3	6	6	6	3	9	39	22	94	12	0.7
11	3+3+3o2- 3-3-3-3o	22+	18	18	15	6	12	12	12	15	108	14	0.8
12	2-3o3o1+ 2o1+3-2-	17-	6	15	15	5	7	5	12	6	71	9	0.5
13	3+2+1+2- 3o4+5-4+	25o	18	9	5	6	15	32	39	32	156	20	1.0
14	5o2o1+2- 2o2o2+3o	19+	48	7	5	6	7	7	9	15	104	13	0.7
15	2o2o1o1+ 1+2-3o1+	14-	7	7	4	5	5	6	15	5	54	7	0.3
16	2+2+2+1+ 2+2o1+2-	16-	9	9	9	5	9	7	5	6	59	7	0.4
17	1o2o2-2- 1-0+1+2o	11-	4	7	6	6	3	2	5	7	40	5	0.2
18	1o1o0+0+ 1o2-2o2-	9o	4	4	2	2	4	6	7	6	35	4	0.2
19	3o2+2+2- 3-3-3o4+	22o	15	9	9	6	12	12	15	32	110	14	0.8
20	4-2o2+1+ 3o3-2+2+	20-	22	7	9	5	15	12	9	9	88	11	0.6
21	1+0+1-0+ 1+1-1+1+	7+	5	2	3	2	5	3	5	5	30	4	0.1
22	2-1+1-1o 1+2-1-2-	10o	6	5	3	4	5	6	3	6	38	5	0.2
23	2o2-1+2- 3+3o4o5o	22o	7	6	5	6	18	15	27	48	132	16	0.9
24	3+3-5-6o 3+3o2-2o	27-	18	12	39	80	18	15	6	7	195	24	1.2
25	3o3+4o5o 4o3+3-4+	30-	15	18	27	48	27	18	12	32	197	25	1.2
26	5-4o6-5+ 4+4+4o5o	37+	39	27	67	56	32	32	27	48	328	41	1.5
27	4o4-4-3+ 3+2o3o3+	26+	27	22	22	18	18	7	15	18	147	18	1.0
28	3o3o3-5- 3+3o5-4+	29-	15	15	12	39	18	15	39	32	185	23	1.1
29	3-2-5o2+ 3-5+3-2o	24+	12	6	48	9	12	56	12	7	162	20	1.0
30	3+2+3o3- 2o1+2o2-	18+	18	9	15	12	7	5	7	6	79	10	0.6
31	1o1+2+2+ 5-3o2-2o	18+	4	5	9	9	39	15	6	7	94	12	0.7

	Kp	Sum	Aug. 1956				ap				Sum	Ap	Cp
1	4o2-1+2+ 3-2o2-2o	18-	27	6	5	9	12	7	6	7	79	10	0.6
2	2+1+1+2+ 2o1+2-2o	14+	9	5	5	9	7	5	6	7	53	7	0.3
3	1o1o2+2- 2+2o0+2-	12+	4	4	9	6	9	7	2	6	47	6	0.3
4	2-1o0+0+ 1-1o1+2o	8+	6	4	2	2	3	4	5	7	33	4	0.1
5	1o2o2-1- 0+1-1o1o	8+	4	7	6	3	2	3	4	4	33	4	0.1
6	1o1o0+1+ 2-2-2o2-	11-	4	4	2	5	6	6	7	6	40	5	0.2
7	1-2-1-1- 0+1-2-2-	8o	3	6	3	3	2	3	6	6	32	4	0.1
8	2-1+3-3- 1+4-4-2+	19+	6	5	12	12	5	22	22	9	93	12	0.7
9	2o2+2o4o 5-4+4o4-	27o	7	9	7	27	39	32	27	22	170	21	1.1
10	3o3o2+1+ 2+2-1o3-	17+	15	15	9	5	9	6	4	12	75	9	0.5
11	5o4o4o4+ 4o4+5+3+	34+	48	27	27	32	27	32	56	18	267	33	1.3
12	3o3+3+3+ 4o3-4-4+	28-	15	18	18	18	27	12	22	32	162	20	1.0
13	1-1+1+2- 2+1+2-2o	12+	3	5	5	6	9	5	6	7	46	6	0.3
14	2o2o1o1+ 1-0+1o2o	10+	7	7	4	5	3	2	4	7	39	5	0.2
15	1-1o1-1o 2o1o2o2o	10+	3	4	3	4	7	4	7	7	39	5	0.2
16	1o0+0+1o 1+3-2-2+	11-	4	2	2	4	5	12	6	9	44	6	0.2
17	4-5-5-4o 4o3-1+2-	27-	22	39	39	27	27	12	5	6	177	22	1.1
18	2-1+1+1o 1o1-1o1o	9o	6	5	5	4	4	3	4	4	35	4	0.2
19	1-0+1-0+ 1-1-0+1o	5-	3	2	3	2	3	3	2	4	22	3	0.0
20	1o1o1+1- 0+1o0+1-	6+	4	4	5	3	2	4	2	3	27	3	0.1
21	0+2o3-3+ 6-5-4-4-	26o	2	7	12	18	67	39	22	22	189	24	1.1
22	3o2-2-2- 3+2+3-3o	19+	15	6	6	6	18	9	12	15	87	11	0.6
23	3o3-4-4- 5+3+4-6o	31+	15	12	22	22	56	18	22	80	247	31	1.3
24	7o6-4o6- 7-8-5o5-	46+	132	67	27	67	111	179	48	39	670	84	1.8
25	4o4-4-4+ 5o6-4o4+	35-	27	22	22	32	48	67	27	32	277	35	1.4
26	6+4+5+3+ 3-3+4+2+	32o	94	32	56	18	12	18	32	9	271	34	1.3
27	3-4-4-3- 4-3-2-3-	23+	12	22	22	12	22	12	6	12	120	15	0.8
28	4+3+2-2+ 3-3+2o2+	22o	32	18	6	9	12	18	7	9	111	14	0.8
29	2-2o2o3- 4o3o2+3-	20+	6	7	7	12	27	15	9	12	95	12	0.7
30	2+2+3+3o 2+2-2-1-	17+	9	9	18	15	9	6	6	3	75	9	0.5
31	1-1-1+5+ 4+4+4o3-	23+	3	3	5	56	32	32	27	12	170	21	1.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1956	ap							Sum	Ap	Cp
1	3-2o3-4- 3o2+3o2+	22-	12	7	12	22	15	9	15	9	101	13	0.7
2	5o8-8o7- 5-4o4o3o	43o	48	179	207	111	39	27	27	15	653	82	1.8
3	6-6+6o6- 5o3o2+2o	36o	67	94	80	67	48	15	9	7	387	48	1.6
4	2o2o4-3o 3-1o2-1o	17o	7	7	22	15	12	4	6	4	77	10	0.5
5	3o3-2o2- 1o1o1o2-	14o	15	12	7	6	4	4	4	6	58	7	0.4
6	3+4-4-5- 4+3+3+3+	30-	18	22	22	39	32	18	18	18	187	23	1.1
7	3o2+3-2o 2o2o1+1+	17-	15	9	12	7	7	7	5	5	67	8	0.5
8	1o1o4-5+ 8+8o6o3+	37-	4	4	22	56	236	207	80	18	627	78	1.8
9	3-3-4+4+ 4+3-4o3+	28+	12	12	32	32	32	12	27	18	177	22	1.1
10	3o2+2o2- 3-3-2+1+	18o	15	9	7	6	12	12	9	5	75	9	0.5
11	2-3o2+3- 2-2-2-2-	16+	6	15	9	12	6	6	6	6	66	8	0.4
12	2-1o1-1o 1+1+3o5-	15-	6	4	3	4	5	5	15	39	81	10	0.6
13	4+5+3-2o 1+3-2o2-	22o	32	56	12	7	5	12	7	6	137	17	0.9
14	0+1o1o1- 1-1o1-1+	7-	2	4	4	3	3	4	3	5	28	4	0.1
15	2+2-0+1+ 1-1-1-3+	11o	9	6	2	5	3	3	3	18	49	6	0.3
16	2+1+1+1o 3-3o2o3-	16+	9	5	5	4	12	15	7	12	69	9	0.5
17	1o2o1+2- 2-1+2-1o	12-	4	7	5	6	6	5	6	4	43	5	0.2
18	1+0o0+1- 0+0+0+0+	4-	5	0	2	3	2	2	2	2	18	2	0.0
19	1-0+1-1- 0+0+1-1+	5o	3	2	3	3	2	2	3	5	23	3	0.1
20	2o4+4-4o 5-5+4-4o	32-	7	32	22	27	39	56	22	27	232	29	1.3
21	5o6o5o4+ 4-4-3o3-	33+	48	80	48	32	22	22	15	12	279	35	1.4
22	4-5o5o5+ 4-5-4+2+	34o	22	48	48	56	22	39	32	9	276	34	1.4
23	4-3-4-3+ 2+2o1o1+	20o	22	12	22	18	9	7	4	5	99	12	0.7
24	2-2-1o2o 3-0+2+2-	13+	6	6	4	7	12	2	9	6	52	6	0.3
25	4-2+1-1- 2+2+2o3o	17o	22	9	3	3	9	9	7	15	77	10	0.5
26	3o4-3+3+ 2-2o1+0+	19-	15	22	18	18	6	7	5	2	93	12	0.7
27	0+1-2-2+ 2+2o2+2-	13+	2	3	6	9	9	7	9	6	51	6	0.3
28	2+4-2+2+ 1+2+2-2-	18-	9	22	9	9	5	9	6	6	75	9	0.5
29	1+1-1-1+ 2-1o2o2-	10-	5	3	3	3	6	4	7	6	37	5	0.2
30	3-3-2+2o 1o1-1-2o	14o	12	12	9	7	4	3	3	7	57	7	0.4

	Kp	Sum	Oct. 1956	ap							Sum	Ap	Cp
1	2+3o2-3+ 4-3o2o4-	23-	9	15	6	18	22	15	7	22	114	14	0.8
2	5-3o4o4o 5-3+4+4o	32o	39	15	27	27	39	18	32	27	224	28	1.2
3	3+4-3+3+ 4o4o4o4-	29+	18	22	18	18	27	27	27	22	179	22	1.1
4	3o2-2+3- 2o3-2+3-	19+	15	6	9	12	7	12	9	12	82	10	0.6
5	1+1+5+4o 2-2o3+2+	21+	5	5	56	27	6	7	18	9	133	17	0.9
6	3+3o3-4- 4+3o3-3o	26-	18	15	12	22	32	15	12	15	141	18	1.0
7	3o3-3-3o 3-4-4-3-	24o	15	12	12	15	12	22	22	12	122	15	0.9
8	3+3o3+3- 2-2o4o3+	23+	18	15	18	12	6	7	27	18	121	15	0.9
9	3o2+3-3- 3o2+3o2+	21+	15	9	12	12	15	9	15	9	96	12	0.7
10	3-1o1o1o 1+2-1+2-	12-	12	4	4	4	5	6	5	6	46	6	0.3
11	2-3-2o2o 2o1-1o1+	13+	6	12	7	7	7	3	4	5	51	6	0.3
12	0+1-1-2- 1o1o1+2o	9-	2	3	3	6	4	4	5	7	34	4	0.1
13	2-1-1-1o 0+0+0+1-	6-	6	3	3	4	2	2	2	3	25	3	0.1
14	1o1o1o0+ 0+0o1-0+	5-	4	4	4	2	2	0	3	2	21	3	0.0
15	0+0o0+0+ 0+1-1o1-	4-	2	0	2	2	2	3	4	3	18	2	0.0
16	0+1+3-1o 1-0+1-0+	7+	2	5	12	4	3	2	3	2	33	4	0.1
17	1o1o2-1+ 1o1-1-1+	9-	4	4	6	5	4	3	3	5	34	4	0.1
18	1+2+1o1+ 0+0+1-1-	8o	5	9	4	5	2	2	3	3	33	4	0.1
19	1+2o2-2o 2o1+1o1o	12+	5	7	6	7	7	5	4	4	45	6	0.3
20	1-4+5+4+ 5-5o4+5o	34-	3	32	56	32	39	48	32	48	290	36	1.4
21	5-5o4+4+ 4+4-4-3+	33+	39	48	32	32	32	22	22	18	245	31	1.3
22	4-4o2o0+ 3o2o2+2o	19+	22	27	7	2	15	7	9	7	96	12	0.7
23	4o3o3o3- 3o2+3o3+	24+	27	15	15	12	15	9	15	18	126	16	0.9
24	2-3+2o1+ 1-1-2+0+	12+	6	18	7	5	3	3	9	2	53	7	0.3
25	0+2-1+1+ 0+0o1o1+	7+	2	6	5	5	2	0	4	5	29	4	0.1
26	3o3o4-2o 4-5-7-6+	33o	15	15	22	7	22	39	111	94	325	41	1.5
27	6-6-4+4- 4-3-3+3+	32+	67	67	32	22	22	12	18	18	258	32	1.3
28	3o4-5-4+ 4+2-2+2+	26+	15	22	39	32	32	6	9	9	164	20	1.0
29	3-2o2-3o 2+2+3-2-	18+	12	7	6	15	9	9	12	6	76	10	0.5
30	1o1+3-3- 3+3+1+1-	16+	4	5	12	12	18	18	5	3	77	10	0.5
31	1-0o2-3o 2+2o1+3o	14o	3	0	6	15	9	7	5	15	60	8	0.4

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1956	ap							Sum	Ap	Cp
1	4-3+2+1- 3o3+2o2+	21-	22	18	9	3	15	18	7	9	101	13	0.7
2	2+2-2-3- 2+3o2+3o	19o	9	6	6	12	9	15	9	15	81	10	0.6
3	4+4-3+4o 3o2+3-2o	25+	32	22	18	27	15	9	12	7	142	18	1.0
4	3+3-3o2+ 2-2+2-2o	19o	18	12	15	9	6	9	6	7	82	10	0.6
5	2o1+1+1+ 0+1o1+2+	11o	7	5	5	5	2	4	5	9	42	5	0.2
6	1+3+3-3- 2+3-3-3-	20+	5	18	12	12	9	12	12	12	92	12	0.7
7	3-2+1+2+ 2o1o2-1+	15-	12	9	5	9	7	4	6	5	57	7	0.4
8	1+2-2o2o 2o1+1+1-	12+	5	6	7	7	7	5	5	3	45	6	0.3
9	1+1+1+2o 2o3-5o4+	20o	5	5	5	7	7	12	48	32	121	15	0.9
10	6o6-6-4+ 5o5o5+6+	43+	80	67	67	32	48	48	56	94	492	62	1.7
11	7-7-6+5+ 4+3+5-7-	44o	111	111	94	56	32	18	39	111	572	72	1.8
12	6o4-5o4+ 6-6-4+4+	39o	80	22	48	32	67	67	32	32	380	48	1.6
13	5o4-1+3- 3+2o1o2+	21+	48	22	5	12	18	7	4	9	125	16	0.9
14	5-5+6-4+ 4-4o7o6+	41o	39	56	67	32	22	27	132	94	469	59	1.7
15	7-6+8-7+ 6o4-4-4-	45o	111	94	179	154	80	22	22	22	684	86	1.8
16	6+7-6o4+ 3o3-4+3-	36o	94	111	80	32	15	12	32	12	388	48	1.6
17	2+2+3o3o 3+4-3o3o	24-	9	9	15	15	18	22	15	15	118	15	0.8
18	5-4o5-2+ 3o2-2-1o	23o	39	27	39	9	15	6	6	4	145	18	1.0
19	0+1-1+2- 2o2-1o1-	9+	2	3	5	6	7	6	4	3	36	4	0.2
20	1-0+2o3o 4-4-3+3-	19+	3	2	7	15	22	22	18	12	101	13	0.7
21	4o4o5+4o 4-3-3+4+	31-	27	27	39	27	22	12	18	32	204	26	1.2
22	4o3+3-3o 5-4-4+6-	31+	27	18	12	15	39	22	32	67	232	29	1.3
23	5o4o4-5- 5-4-3-2-	30-	48	27	22	39	39	22	12	6	215	27	1.2
24	2-2o1o3- 3+3+3o3-	20-	6	7	4	12	18	18	15	12	92	12	0.7
25	2+2-3o3o 7o4o3+3-	27o	9	6	15	15	132	27	18	12	234	29	1.3
26	4-2-1o1- 1-1o1-1-	10o	22	6	4	3	3	4	3	3	48	6	0.3
27	1o2o2-1o 0+2-4-5o	16+	4	7	6	4	2	6	22	48	99	12	0.7
28	5+3+3+3o 2o2o2+2o	23+	56	18	18	15	7	7	9	7	137	17	0.9
29	2+2+2+2+ 2-3-3+4-	21-	9	9	9	9	6	12	18	22	94	12	0.7
30	3o4-2+3+ 2o2+2o3-	21+	15	22	9	18	7	9	7	12	99	12	0.7

	Kp	Sum	Dec. 1956	ap							Sum	Ap	Cp
1	2-2-2-2o 2+2+3-2+	17-	6	6	6	7	9	9	12	9	64	8	0.4
2	4+2+2o3+ 3-3o3o2+	23o	32	9	7	18	12	15	15	9	117	15	0.8
3	3-2+3-3+ 3o2+3o2o	21+	12	9	12	18	15	9	15	7	97	12	0.7
4	3+3o2+2o 2+2+2+2o	20-	18	15	9	7	9	9	9	7	83	10	0.6
5	3+3-2o1+ 2o3o1+1-	16+	18	12	7	5	7	15	5	3	72	9	0.5
6	1o3-2o1+ 3-3o3-4o	19+	4	12	7	5	12	15	12	27	94	12	0.7
7	2+3-2+2o 2+3o2-2+	19-	9	12	9	7	9	15	6	9	76	10	0.5
8	2o2+4-4- 3o1o2+2-	20-	7	9	22	22	15	4	9	6	94	12	0.7
9	1o1-2o2- 2o2-2-2o	13-	4	3	7	6	7	6	6	7	46	6	0.3
10	4-5o4-4+ 4o3o2+4o	30o	22	48	22	32	27	15	9	27	202	25	1.2
11	2o1+1-1- 1o1-2-1o	9o	7	5	3	3	4	3	6	4	35	4	0.2
12	0o0o1+2o 2+3+3+4o	16+	0	0	5	7	9	18	18	27	84	10	0.6
13	3+3+4+3+ 4o3+2+2+	26+	18	18	32	18	27	18	9	9	149	19	1.0
14	3+3o2o3- 1+2-2+2-	18o	18	15	7	12	5	6	9	6	78	10	0.5
15	1o1+1o1+ 1+1o0+0+	8-	4	5	4	5	5	4	2	2	31	4	0.1
16	1-1+1+1o 1-0+0+0o	6-	3	5	5	4	3	2	2	0	24	3	0.1
17	0+1+2-1+ 1-1-0o0+	6+	2	5	6	5	3	3	0	2	26	3	0.1
18	0+1o2-2- 3o2o1+0+	11+	2	4	6	6	15	7	5	2	47	6	0.3
19	0o0o2-1+ 1o1+1o3-	9o	0	0	6	5	4	5	4	12	36	4	0.2
20	2+2-1+2+ 1+1o1o1o	12o	9	6	5	9	5	4	4	4	46	6	0.3
21	1+1+1+2- 1o1-1o1+	10-	5	5	5	6	4	3	4	5	37	5	0.2
22	1o2o2-3- 3o1+2-0+	14-	4	7	6	12	15	5	6	2	57	7	0.4
23	0o0+1-2+ 1o1-1o2o	8o	0	2	3	9	4	3	4	7	32	4	0.1
24	3+3+2+2o 1+1o2o1o	16+	18	18	9	7	5	4	7	4	72	9	0.5
25	2-2-3o5- 4+3+3+4+	26+	6	6	15	39	32	18	18	32	166	21	1.1
26	4-5-4+3+ 2-1o1-0+	20-	22	39	32	18	6	4	3	2	126	16	0.9
27	0o0+1+2- 1+4o4+4-	17-	0	2	5	6	5	27	32	22	99	12	0.7
28	4o3+5-3o 4o4-3+3-	29-	27	18	39	15	27	22	18	12	178	22	1.1
29	4+3o2+3o 3-2+3-2+	23-	32	15	9	15	12	9	12	9	113	14	0.8
30	2o2-5-4+ 3o2+2o2+	22+	7	6	39	32	15	9	7	9	124	16	0.9
31	2-1o1-2+ 3-1-1o1o	11o	6	4	3	9	12	3	4	4	45	6	0.3

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Jan. 1957				ap				Sum	Ap	Cp
1	0+1−1−4− 3o2o2−1−	13−	2	3	3	22	15	7	6	3	61	8	0.4
2	2+2−2+5o 3−2+5+5o	27−	9	6	9	48	12	9	56	48	197	25	1.2
3	4−3−2+3o 2+1+1+2−	18+	22	12	9	15	9	5	5	6	83	10	0.6
4	1+2−2o2o 1−1o1−1o	10+	5	6	7	7	3	4	3	4	39	5	0.2
5	1o1o1o2− 1o1o2−1−	9o	4	4	4	6	4	4	6	3	35	4	0.2
6	0o3−2−2+ 2o1+2−2o	14−	0	12	6	9	7	5	6	7	52	6	0.3
7	2o2o2o3− 3−2o1+0+	15o	7	7	7	12	12	7	5	2	59	7	0.4
8	3−3+2o4− 3+3−3−3o	23+	12	18	7	22	18	12	12	15	116	14	0.8
9	2o2o2−2− 3+4−3o4−	21o	7	7	6	6	18	22	15	22	103	13	0.7
10	3+4+5o4o 4o4o4+5−	34−	18	32	48	27	27	27	32	39	250	31	1.3
11	4o2−4o4− 4−1o2−2o	22−	27	6	27	22	22	4	6	7	121	15	0.9
12	2+4o2o1+ 0+0+0+1+	12o	9	27	7	5	2	2	2	5	59	7	0.4
13	2o1−1+2− 1o1o1−1+	10−	7	3	5	6	4	4	3	5	37	5	0.2
14	0+0+2−2− 2−1o1−0+	8−	2	2	6	6	6	4	3	2	31	4	0.1
15	1+1o1+2− 3−2+2+2o	15−	5	4	5	6	12	9	9	7	57	7	0.4
16	2+2o2o2o 3o1+1+1+	15+	9	7	7	7	15	5	5	5	60	8	0.4
17	2o1+1+2o 2o2−2−1+	13+	7	5	5	7	7	6	6	5	48	6	0.3
18	1o0+1+1o 1o1−0+0o	6−	4	2	5	4	4	3	2	0	24	3	0.1
19	0o0+2−2+ 2+3+2o1+	13+	0	2	6	9	9	18	7	5	56	7	0.4
20	2−1+1−1o 1+1+1−0+	8+	6	5	3	4	5	5	3	2	33	4	0.1
21	2−3+4−4− 5−6−8−9−	39o	6	18	22	22	39	67	179	300	653	82	1.8
22	8+7−6+5− 4o4o3o2+	39+	236	111	94	39	27	27	15	9	558	70	1.7
23	3o4−4+5o 4o4−4o3+	31o	15	22	32	48	27	22	27	18	211	26	1.2
24	4o5−2−3− 3+3−5+5o	29+	27	39	6	12	18	12	56	48	218	27	1.2
25	5o4−5−3o 2o2o2+4o	27−	48	22	39	15	7	7	9	27	174	22	1.1
26	2+3o3−3+ 3−3−2−3o	21+	9	15	12	18	12	12	6	15	99	12	0.7
27	2o3−2o4o 3+3−2o2−	20+	7	12	7	27	18	12	7	6	96	12	0.7
28	1−2+2−1+ 2o2−2+2+	14+	3	9	6	5	7	6	9	9	54	7	0.3
29	1+2+2o3− 5o5o4+4o	27−	5	9	7	12	48	48	32	27	188	24	1.1
30	5o6−5+5− 4−3+4−3−	34o	48	67	56	39	22	18	22	12	284	36	1.4
31	2o3o3−3− 3−3o3−3−	21+	7	15	12	12	12	15	12	12	97	12	0.7

	Kp	Sum	Feb. 1957				ap				Sum	Ap	Cp
1	2o2o1+3− 1+2−2o1o	14o	7	7	5	12	5	6	7	4	53	7	0.3
2	1−2o2−2o 3o3−3o2+	17+	3	7	6	7	15	12	15	9	74	9	0.5
3	2−2+1−1o 2o2+4−4+	18o	6	9	3	4	7	9	22	32	92	12	0.7
4	4o3+3o4− 5o4+4+5+	33o	27	18	15	22	48	32	32	56	250	31	1.3
5	5o6o5−5− 5o4−3o3+	35+	48	80	39	39	48	22	15	18	309	39	1.4
6	3o2+3+3− 2+2−1+1o	18−	15	9	18	12	9	6	5	4	78	10	0.5
7	0o1−2−3− 1o1+1+2−	10+	0	3	6	12	4	5	5	6	41	5	0.2
8	2−2o3−2− 2−2−2−2o	15o	6	7	12	6	6	6	6	7	56	7	0.4
9	2o3o2−1+ 1o1+2o2o	14+	7	15	6	5	4	5	7	7	56	7	0.4
10	3−1o1+3− 0+0+0+1−	9+	12	4	5	12	2	2	2	3	42	5	0.2
11	2−2+2−2+ 2+4−2o2−	18−	6	9	6	9	9	22	7	6	74	9	0.5
12	2+4+3+3− 2o2o4−3−	23o	9	32	18	12	7	7	22	12	119	15	0.8
13	3+5−4−5o 5+5o6+3+	37−	18	39	22	48	56	48	94	18	343	43	1.5
14	3−3−3o2− 1+1o1+1−	14+	12	12	15	6	5	4	5	3	62	8	0.4
15	0o1o3+4− 3o3o2−3o	19−	0	4	18	22	15	15	6	15	95	12	0.7
16	0+2−2+2o 2o3−2+2o	15+	2	6	9	7	7	12	9	7	59	7	0.4
17	2o1+1o3− 3+3−3−3o	19−	7	5	4	12	18	12	12	15	85	11	0.6
18	3+3o3o3o 3o3o4−4−	26−	18	15	15	15	15	15	22	22	137	17	0.9
19	4−3o4o3+ 3−3+5−4+	29o	22	15	27	18	12	18	39	32	183	23	1.1
20	4+4o3o3− 3+2+2o3+	25o	32	27	15	12	18	9	7	18	138	17	0.9
21	4o4o5+4+ 4o5−4−5o	35o	27	27	56	32	27	39	22	48	278	35	1.4
22	4+4+4o4− 4−4−3o3+	30o	32	32	27	22	22	22	15	18	190	24	1.1
23	4−4−3o2o 3−3o6o6o	30o	22	22	15	7	12	15	80	80	253	32	1.3
24	7o7o6o6o 5−3−3−2o	38o	132	132	80	80	39	12	12	7	494	62	1.7
25	3o3−2+3+ 2−1o1−0+	15o	15	12	9	18	6	4	3	2	69	9	0.5
26	2−0+1−1o 1o1o1o1+	8o	6	2	3	4	4	4	4	5	32	4	0.1
27	3−3o1+1+ 0o1−1+1o	11+	12	15	5	5	0	3	5	4	49	6	0.3
28	1−0o0+1o 1+1+1o1o	7−	3	0	2	4	5	5	4	4	27	3	0.1

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	March 1957				ap				Sum	Ap	Cp
1	1-1o1+2- 3+4o4o5-	21-	3	4	5	6	18	27	27	39	129	16	0.9
2	6o8+8+7o 7-5+6+7-	55-	80	236	236	132	111	56	94	111	1056	132	1.9
3	5o5+5+3+ 3o4+3+3-	32+	48	56	56	18	15	32	18	12	255	32	1.3
4	4-4o3o3- 3-1-2-3o	21+	22	27	15	12	12	3	6	15	112	14	0.8
5	4-3+3o3- 3+3-3+3+	25+	22	18	15	12	18	12	18	18	133	17	0.9
6	4+2o2+3o 3+3+2+2-	22+	32	7	9	15	18	18	9	6	114	14	0.8
7	2-2+1+2+ 2+3+2+2+	18o	6	9	5	9	9	18	9	9	74	9	0.5
8	4o2-3o2o 3o2o3o4o	23-	27	6	15	7	15	7	15	27	119	15	0.8
9	3+4+3+2o 2+3+3o3o	25-	18	32	18	7	9	18	15	15	132	16	0.9
10	4o4+5-7- 7o6o6+6-	45-	27	32	39	111	132	80	94	67	582	73	1.8
11	4o3-2+1o 2o1+1o1o	15+	27	12	9	4	7	5	4	4	72	9	0.5
12	2o3+3o3- 2-1o0+0o	14o	7	18	15	12	6	4	2	0	64	8	0.4
13	0+1+2o3o 2+4-2o2+	17o	2	5	7	15	9	22	7	9	76	10	0.5
14	1o1-1+2+ 1-1+0+1-	8+	4	3	5	9	3	5	2	3	34	4	0.1
15	2+2+2o2- 1+2-3-4+	18+	9	9	7	6	5	6	12	32	86	11	0.6
16	5o4+4+2+ 3o4-6o5+	34o	48	32	32	9	15	22	80	56	294	37	1.4
17	3-3+3+2+ 3o4o2+3-	24-	12	18	18	9	15	27	9	12	120	15	0.8
18	2o3o2+3+ 4o2-2+3-	21+	7	15	9	18	27	6	9	12	103	13	0.7
19	2+2-3-3- 3-2o3o3o	20o	9	6	12	12	12	7	15	15	88	11	0.6
20	3+4-4-3- 1+1o2-3+	21-	18	22	22	12	5	4	6	18	107	13	0.8
21	1+3o1+1o 2+5-4+5o	23o	5	15	5	4	9	39	32	48	157	20	1.0
22	4o3o4-4- 4-4-3+5-	30-	27	15	22	22	22	22	18	39	187	23	1.1
23	4+4o3o4o 3o3o3-2+	26+	32	27	15	27	15	15	12	9	152	19	1.0
24	3o2o2+2- 1o1o4-4-	18+	15	7	9	6	4	4	22	22	89	11	0.6
25	4+6o5-5- 5-2+2-1o	29+	32	80	39	39	39	9	6	4	248	31	1.3
26	1+1+1+3o 4-4-2+4-	20+	5	5	5	15	22	22	9	22	105	13	0.8
27	4+4-3o4o 5-4+5+7o	36+	32	22	15	27	39	32	56	132	355	44	1.5
28	7o7-6+6- 3+4o2+1+	37-	132	111	94	67	18	27	9	5	463	58	1.7
29	3+5+4+4o 7o8-6+6o	44o	18	56	32	27	132	179	94	80	618	77	1.8
30	6-5-3o2- 2o3-2o3+	25o	67	39	15	6	7	12	7	18	171	21	1.1
31	3o3+3+3- 3o4o4+4o	28-	15	18	18	12	15	27	32	27	164	20	1.0

	Kp	Sum	April 1957				ap				Sum	Ap	Cp
1	4o4+4o3+ 3o3+4-4-	29+	27	32	27	18	15	18	22	22	181	23	1.1
2	4+2-3o3o 2+2+3+3+	23+	32	6	15	15	9	9	18	18	122	15	0.9
3	3o2o3-3+ 3o3o4o5o	26o	15	7	12	18	15	15	27	48	157	20	1.0
4	4o4+3o2+ 3o3+3+3o	26+	27	32	15	9	15	18	18	15	149	19	1.0
5	4o3+3+5+ 6-5o3-5o	34+	27	18	18	56	67	48	12	48	294	37	1.4
6	6-5o5-5- 3-2-1o1-	26o	67	48	39	39	12	6	4	3	218	27	1.2
7	1o1+2-1o 0+1-0+1o	7+	4	5	6	4	2	3	2	4	30	4	0.1
8	2o2+3o3- 3o2o3-3o	21-	7	9	15	12	15	7	12	15	92	12	0.7
9	3-4+4o3o 4+4-4-5-	30+	12	32	27	15	32	22	22	39	201	25	1.2
10	5+7-7-6- 5-5+3+2o	40-	56	111	111	67	39	56	18	7	465	58	1.7
11	3o2+2-5- 5-2+2o3o	24-	15	9	6	39	39	9	7	15	139	17	0.9
12	2o3-4-1+ 2o3o3o2o	20-	7	12	22	5	7	15	15	7	90	11	0.6
13	3+3-4-2o 3-2-1-1+	18o	18	12	22	7	12	6	3	5	85	11	0.6
14	1-1o0+0+ 0o2o1+1+	7o	3	4	2	2	0	7	5	5	28	4	0.1
15	0+2o2o3o 3+2o3+6-	22-	2	7	7	15	18	7	18	67	141	18	1.0
16	4+4o2+2+ 3-3+3-3+	25o	32	27	9	9	12	18	12	18	137	17	0.9
17	3+4o3+4+ 5+4o6o8-	38o	18	27	18	32	56	27	80	179	437	55	1.6
18	6+4-3o4- 2+6-5+5o	35o	94	22	15	22	9	67	56	48	333	42	1.5
19	6+6+7-4+ 5-5o5-4o	42o	94	94	111	32	39	48	39	27	484	60	1.7
20	4o4o3o2o 2o3-3-2+	23-	27	27	15	7	7	12	12	9	116	14	0.8
21	3+4-3o3- 4-4o3-2+	25+	18	22	15	12	22	27	12	9	137	17	0.9
22	1o0+0+0+ 1-2-2o1o	7+	4	2	2	2	3	6	7	4	30	4	0.1
23	3-3o2o2- 3+1+2o3o	19o	12	15	7	6	18	5	7	15	85	11	0.6
24	4o3o3-4- 5-5-4-5-	31o	27	15	12	22	39	39	22	39	215	27	1.2
25	3o2-2-2o 3-3o2+2-	18o	15	6	6	7	12	15	9	6	76	10	0.5
26	2o3o3+4o 5-5-4o3o	29-	7	15	18	27	39	39	27	15	187	23	1.1
27	5o4o4-3+ 3+2+2o3-	26+	48	27	22	18	18	9	7	12	161	20	1.0
28	2-2-2+3- 4-5-4-4o	24+	6	6	9	12	22	39	22	27	143	18	1.0
29	3+4o2o3o 3o3o2o1-	21o	18	27	7	15	15	15	7	3	107	13	0.8
30	2o4-2o2o 2o3o3o3+	21o	7	22	7	7	7	15	15	18	98	12	0.7

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	May 1957				ap				Sum	Ap	Cp
1	4o4+4o3+ 2+2+1+1o	23-	27	32	27	18	9	9	5	4	131	16	0.9
2	2o3o3+3o 3-1o1o2o	18o	7	15	18	15	12	4	4	7	82	10	0.6
3	2-2+1+3- 2o3-3-4o	19+	6	9	5	12	7	12	12	27	90	11	0.6
4	1+1+2+2+ 3-3-3-3-	18o	5	5	9	9	12	12	12	12	76	10	0.5
5	3-2o1+2- 2o2o1+3-	16-	12	7	5	6	7	7	5	12	61	8	0.4
6	3-3-2+4+ 3o2-2-2+	21-	12	12	9	32	15	6	6	9	101	13	0.7
7	3-4-3-2o 2o3-2+1o	19o	12	22	12	7	7	12	9	4	85	11	0.6
8	0+1o3-3- 2+3-3-4o	18+	2	4	12	12	9	12	12	27	90	11	0.6
9	4-5-5-4- 3+3o3o2-	28-	22	39	39	22	18	15	15	6	176	22	1.1
10	2-2+2-2+ 2o1+3+4-	18+	6	9	6	9	7	5	18	22	82	10	0.6
11	2+2o1o1+ 2-1+2o3+	15o	9	7	4	5	6	5	7	18	61	8	0.4
12	2+1o1+2- 1o2-0+2o	11+	9	4	5	6	4	6	2	7	43	5	0.2
13	3-3-2-3- 3-3-3o2+	20+	12	12	6	12	12	12	15	9	90	11	0.6
14	2-2+1o1+ 1+1o2o1+	12o	6	9	4	5	5	4	7	5	45	6	0.3
15	1+0+1-1+ 2-1+1+2+	10+	5	2	3	5	6	5	5	9	40	5	0.2
16	0+0+1-1- 0+1+2+1o	7o	2	2	3	3	2	5	9	4	30	4	0.1
17	1-2o2-2- 1o3o2o2o	14o	3	7	6	6	4	15	7	7	55	7	0.3
18	2-1+2-1+ 2-1o2o2o	13-	6	5	6	5	6	4	7	7	46	6	0.3
19	2-1-2-2- 3+3+3+3+	19o	6	3	6	6	18	18	18	18	93	12	0.7
20	3o4-3+3o 3+4-3+2+	26-	15	22	18	15	18	22	18	9	137	17	0.9
21	2+3o3-4- 3+2+2+2o	22-	9	15	12	22	18	9	9	7	101	13	0.7
22	2-2+2-2o 1+2o1-1-	12+	6	9	6	7	5	7	3	3	46	6	0.3
23	2+2-3-1+ 2o2+3-1+	16+	9	6	12	5	7	9	12	5	65	8	0.4
24	1o1-2o3o 2-1o1o0+	11-	4	3	7	15	6	4	4	2	45	6	0.3
25	2-2+3o3o 3o2o2+3+	21-	6	9	15	15	15	7	9	18	94	12	0.7
26	4-4-4+5o 4-5-3+4-	32o	22	22	32	48	22	39	18	22	225	28	1.2
27	2+2+3o3- 2o1+1o2-	16+	9	9	15	12	7	5	4	6	67	8	0.5
28	2-1o2+2o 2-2+1o2o	14o	6	4	9	7	6	9	4	7	52	6	0.3
29	1o1+2+1o 1+2o1o1+	11+	4	5	9	4	5	7	4	5	43	5	0.2
30	3-1+3o5+ 5-5-5-3o	29+	12	5	15	56	39	39	39	15	220	28	1.2
31	3-4-2-3- 1o1o2+2+	17+	12	22	6	12	4	4	9	9	78	10	0.5

	Kp	Sum	June 1957				ap				Sum	Ap	Cp
1	0+1-1+1o 3-2o0+1o	9+	2	3	5	4	12	7	2	4	39	5	0.2
2	1o2+1o1+ 1o1o1o2o	11-	4	9	4	5	4	4	4	7	41	5	0.2
3	2-4-3o5- 4+4+6-5o	32+	6	22	15	39	32	32	67	48	261	33	1.3
4	5-5+4-4o 3o5-5-6-	36-	39	56	22	27	15	39	39	67	304	38	1.4
5	6-4-3o3- 2+4o4o5+	31-	67	22	15	12	9	27	27	56	235	29	1.3
6	4+5o5-4+ 3+3-4+5o	34-	32	48	39	32	18	12	32	48	261	33	1.3
7	4+2o1+2- 1-1-1-3o	14+	32	7	5	6	3	3	3	15	74	9	0.5
8	3-3o2o2- 2+1o1o1+	15o	12	15	7	6	9	4	4	5	62	8	0.4
9	1-1+1+0+ 1-1o2-1-	8-	3	5	5	2	3	4	6	3	31	4	0.1
10	1o0o0+1- 0+1-1-2o	6-	4	0	2	3	2	3	3	7	24	3	0.1
11	1o1o1-1- 1-1-1-1+	7-	4	4	3	3	3	3	3	5	28	4	0.1
12	2o1o2-0+ 3-3-1o2-	13o	7	4	6	2	12	12	4	6	53	7	0.3
13	1o1o2-3o 1+2-3-3+	16-	4	4	6	15	5	6	12	18	70	9	0.5
14	2-2-1+2- 2+1+3-2-	14+	6	6	5	6	9	5	12	6	55	7	0.3
15	3-3o3-2+ 4-5o4-2+	25+	12	15	12	9	22	48	22	9	149	19	1.0
16	2-1-1+1+ 2-1+1o2+	11+	6	3	5	5	6	5	4	9	43	5	0.2
17	2o4o4o3- 4-2+2o4-	24+	7	27	27	12	22	9	7	22	133	17	0.9
18	5-5-4o3- 3+2o3o4o	28+	39	39	27	12	18	7	15	27	184	23	1.1
19	5-5-3o3+ 5+3+2o3-	29o	39	39	15	18	56	18	7	12	204	26	1.2
20	3o3+3-1+ 2o4-4-2+	22o	15	18	12	5	7	22	22	9	110	14	0.8
21	2+3o3+3- 1+2+4o3-	22-	9	15	18	12	5	9	27	12	107	13	0.8
22	3+2-2+5- 4+2o2o2+	23-	18	6	9	39	32	7	7	9	127	16	0.9
23	2o1+1-2- 2+2-3+2o	15o	7	5	3	6	9	6	18	7	61	8	0.4
24	4o3+4-3o 2o2-2-2+	22-	27	18	22	15	7	6	6	9	110	14	0.8
25	5-4-3+5o 5-5-6-5+	37o	39	22	18	48	39	39	67	56	328	41	1.5
26	5o6o6+7- 7o7-5-5+	48-	48	80	94	111	132	111	39	56	671	84	1.8
27	3o2o3o3+ 4o3-2+4+	25-	15	7	15	18	27	12	9	32	135	17	0.9
28	3o3o4o4- 4+3+3-2o	26o	15	15	27	22	32	18	12	7	148	18	1.0
29	1o1o1o1+ 2o1o1o2+	11-	4	4	4	5	7	4	4	9	41	5	0.2
30	3o6+5+8- 8o8o8o8+	55-	15	94	56	179	207	207	207	236	1201	150	2.0

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	July 1957				ap				Sum	Ap	Cp
1	7+7+7-3+ 2-5-7o5o	43o	154	154	111	18	6	39	132	48	662	83	1.8
2	2-1o3-5- 8o6+6-2+	32+	6	4	12	39	207	94	67	9	438	55	1.6
3	6-4+4-4+ 5+1+2+3o	30o	67	32	22	32	56	5	9	15	238	30	1.3
4	1o1-0+1+ 1o2-4-5o	15-	4	3	2	5	4	6	22	48	94	12	0.7
5	5-7+6o6- 3+2o3o6-	38-	39	154	80	67	18	7	15	67	447	56	1.6
6	2+3-3+3- 2+2+4-5-	24o	9	12	18	12	9	9	22	39	130	16	0.9
7	2+3-2o1+ 2o1+3+2+	17+	9	12	7	5	7	5	18	9	72	9	0.5
8	3-2+3o1+ 2o2+2-2o	17+	12	9	15	5	7	9	6	7	70	9	0.5
9	3-1o2-1o 1+2-1+2-	12+	12	4	6	4	5	6	5	6	48	6	0.3
10	2o2+1o1- 1-1-1-1-	9-	7	9	4	3	3	3	3	3	35	4	0.2
11	1+1-0+1+ 3-0+1o1+	9o	5	3	2	5	12	2	4	5	38	5	0.2
12	3o2+3-1+ 2+1+2+2o	17+	15	9	12	5	9	5	9	7	71	9	0.5
13	1+1o1-1- 1-1o1-0o	6o	5	4	3	3	3	4	3	0	25	3	0.1
14	0+1o1-2- 2o1+2-3-	11+	2	4	3	6	7	5	6	12	45	6	0.3
15	3-1o1-1+ 1o1-0+1o	9-	12	4	3	5	4	3	2	4	37	5	0.2
16	1+0+3o4- 3+4o4o3o	23-	5	2	15	22	18	27	27	15	131	16	0.9
17	3-1+1-2+ 2+1+2+3-	16-	12	5	3	9	9	5	9	12	64	8	0.4
18	2-2o2+3o 3o4-3o3-	21+	6	7	9	15	15	22	15	12	101	13	0.7
19	4o3o3+3- 4o4+5-4+	30+	27	15	18	12	27	32	39	32	202	25	1.2
20	3o3o2o1+ 2o2o2+4-	19+	15	15	7	5	7	7	9	22	87	11	0.6
21	2o2-1-1+ 1+1+2-2+	12+	7	6	3	5	5	5	6	9	46	6	0.3
22	2-3+4o4+ 3+3+6-4-	29+	6	18	27	32	18	18	67	22	208	26	1.2
23	4-5-1o1o 1-1-1-3-	15o	22	39	4	4	3	3	3	12	90	11	0.6
24	3-1+3-2+ 3o3o3-3-	20+	12	5	12	9	15	15	12	12	92	12	0.7
25	2+1+2o1o 1o2+2-2-	13+	9	5	7	4	4	9	6	6	50	6	0.3
26	1+1o1o1o 1+1-0+1-	7+	5	4	4	4	5	3	2	3	30	4	0.1
27	0+1o0o1- 1o2-4o3o	12-	2	4	0	3	4	6	27	15	61	8	0.4
28	3o2-2-1o 1o1o1+1+	12o	15	6	6	4	4	4	5	5	49	6	0.3
29	2o3+3-4- 3o2o1+2o	20o	7	18	12	22	15	7	5	7	93	12	0.7
30	1o2o2o1+ 1o1-2-2o	12-	4	7	7	5	4	3	6	7	43	5	0.2
31	2-1+2-2o 2-2-1+3o	14+	6	5	6	7	6	6	5	15	56	7	0.4

	Kp	Sum	August 1957				ap				Sum	Ap	Cp
1	2-2+2+1o 2o1+2-1+	14-	6	9	9	4	7	5	6	5	51	6	0.3
2	3o2o2-2- 2+1+2o3o	17o	15	7	6	6	9	5	7	15	70	9	0.5
3	3-1o2+2o 2o6+5+4o	26-	12	4	9	7	7	94	56	27	216	27	1.2
4	5+2o2o1- 1o2-1o2-	15+	56	7	7	3	4	6	4	6	93	12	0.7
5	2-1o1o1- 1-3-3+4+	15+	6	4	4	3	3	12	18	32	82	10	0.6
6	3o4+6-4- 4o4-4+4+	33o	15	32	67	22	27	22	32	32	249	31	1.3
7	3o2o3-2- 2o1o1o1+	15-	15	7	12	6	7	4	4	5	60	8	0.4
8	1o2o2+2o 2o1-3-2+	15o	4	7	9	7	7	3	12	9	58	7	0.4
9	4o3+2+1+ 5-2o2o3+	23o	27	18	9	5	39	7	7	18	130	16	0.9
10	4o3o1+2- 0+1-1o2+	14+	27	15	5	6	2	3	4	9	71	9	0.5
11	2-1-0+1o 1+1+1o2-	9o	6	3	2	4	5	5	4	6	35	4	0.2
12	2+4-3+3o 4o4o4o2+	27-	9	22	18	15	27	27	27	9	154	19	1.0
13	4+5+6-4+ 4-3o4-3o	33o	32	56	67	32	22	15	22	15	261	33	1.3
14	1-1+1o2- 3-2+3-2+	15-	3	5	4	6	12	9	12	9	60	8	0.4
15	4-2o2-1+ 1o1o3-3o	16+	22	7	6	5	4	4	12	15	75	9	0.5
16	2+2+1-1+ 1o1o1+1o	11o	9	9	3	5	4	4	5	4	43	5	0.2
17	1-0+0+1- 2-2o0+1-	7-	3	2	2	3	6	7	2	3	28	4	0.1
18	2o1+0+3- 3-1+2-2+	14+	7	5	2	12	12	5	6	9	58	7	0.4
19	4o4-3+3+ 2-1o0+1o	18+	27	22	18	18	6	4	2	4	101	13	0.7
20	1-1+1+2o 3+3o3-3+	18-	3	5	5	7	18	15	12	18	83	10	0.6
21	4o5+3+3- 2+4-1+1-	23+	27	56	18	12	9	22	5	3	152	19	1.0
22	0o1-1+2- 1-1o1o1+	8-	0	3	5	6	3	4	4	5	30	4	0.1
23	1-0o0+1o 1+0+0+0+	4+	3	0	2	4	5	2	2	2	20	2	0.0
24	0o0+0+1- 1o1-1-1o	5-	0	2	2	3	4	3	3	4	21	3	0.0
25	0+1o1o1+ 2-2o3o3-	13o	2	4	4	5	6	7	15	12	55	7	0.3
26	2-1o1-1+ 2+3-3-2+	15-	6	4	3	5	9	12	12	9	60	8	0.4
27	4-4o4-3+ 3-3-4-3o	27-	22	27	22	18	12	12	22	15	150	19	1.0
28	2-2+3+2+ 3-2+2o3-	19+	6	9	18	9	12	9	7	12	82	10	0.6
29	2+1+1-1+ 2o1+7-6o	22-	9	5	3	5	7	5	111	80	225	28	1.2
30	7-6-4+4+ 2o5-3o1o	32-	111	67	32	32	7	39	15	4	307	38	1.4
31	2o3-3-2- 4-5o7o5o	30-	7	12	12	6	27	48	132	48	292	36	1.4

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Sept. 1957				ap				Sum	Ap	Cp
1	6-6-4+4- 3+1+2o2+	28+	67	67	32	22	18	5	7	9	227	28	1.2
2	3-6o6+5+ 7o6o8-8-	49-	12	80	94	56	132	80	179	179	812	102	1.9
3	7-6+6+7+ 8o9-6o5-	54o	111	94	94	154	207	300	80	39	1079	135	1.9
4	4-5-2+3- 8+9o8o8+	47o	22	39	9	12	236	400	207	236	1161	145	2.0
5	8+9-7-5o 5-4o5+6o	49-	236	300	111	48	39	27	56	80	897	112	1.9
6	5-5-2+5- 6-5+4+2+	34o	39	39	9	39	67	56	32	9	290	36	1.4
7	3o4-2o3o 2o2+2-2o	20-	15	22	7	15	7	9	6	7	88	11	0.6
8	1+1-1+2o 2+2+1o3-	14-	5	3	5	7	9	9	4	12	54	7	0.3
9	3-4-4-4- 3-2o2o1-	21o	12	22	22	22	12	7	7	3	107	13	0.8
10	1o1+3-2o 1+3-2+2-	15o	4	5	12	7	5	12	9	6	60	8	0.4
11	1+1o2+2o 1+1+2-2-	13-	5	4	9	7	5	5	6	6	47	6	0.3
12	2-2-1+2o 2o2+1+3-	15o	6	6	5	7	7	9	5	12	57	7	0.4
13	8-8+9-9- 7o6o4o4o	54+	179	236	300	300	132	80	27	27	1281	160	2.0
14	3o3+5+6+ 5+4-2+4+	34-	15	18	56	94	56	22	9	32	302	38	1.4
15	4-4+2o2o 2o2+3o3o	22+	22	32	7	7	7	9	15	15	114	14	0.8
16	5-4-1+2- 1+1+3-2-	18+	39	22	5	6	5	5	12	6	100	12	0.7
17	2-2o2-3- 4-4-3o2-	20o	6	7	6	12	22	22	15	6	96	12	0.7
18	4-3o2-1o 2o3-3o3-	20-	22	15	6	4	7	12	15	12	93	12	0.7
19	1+1+1+2- 2-1o0+0+	9o	5	5	5	6	6	4	2	2	35	4	0.2
20	2-0+1+2- 1o2+2+2o	13-	6	2	5	6	4	9	9	7	48	6	0.3
21	3-2-1+7+ 6o7-7-7-	39o	12	6	5	154	80	111	111	111	590	74	1.8
22	5-6-6-5- 8o8+5o7o	49o	39	67	67	39	207	236	48	132	835	104	1.9
23	8o9-8-8- 8-7-7-5o	58o	207	300	179	179	179	111	111	48	1314	164	2.0
24	5o5o4+5- 5+3o3+2o	33-	48	48	32	39	56	15	18	7	263	33	1.3
25	4-3o5-4o 4o2-1o1+	23+	22	15	39	27	27	6	4	5	145	18	1.0
26	2-3-2o3- 3-2+1+1-	16o	6	12	7	12	12	9	5	3	66	8	0.4
27	0+0+2-1o 1+1+1o2-	9-	2	2	6	4	5	5	4	6	34	4	0.1
28	1+4-3o1+ 1o1+3o1+	16o	5	22	15	5	4	5	15	5	76	10	0.5
29	4o5+5o4+ 8o9-8+8o	52-	27	56	48	32	207	300	236	207	1113	139	1.9
30	6+6-5+6- 5o5o4o5-	42-	94	67	56	67	48	48	27	39	446	56	1.6

	Kp	Sum	Oct. 1957				ap				Sum	Ap	Cp
1	4+4o3o2o 4-2+4+4-	27+	32	27	15	7	22	9	32	22	166	21	1.1
2	4-4-2-2- 3-2+2-3o	20+	22	22	6	6	12	9	6	15	98	12	0.7
3	3-2o1+3+ 4-5-4+3o	25o	12	7	5	18	22	39	32	15	150	19	1.0
4	3o3o2+3- 2+3-3o3-	22-	15	15	9	12	9	12	15	12	99	12	0.7
5	3o3o2-2+ 2o3-3-2o	19+	15	15	6	9	7	12	12	7	83	10	0.6
6	2-0+1o1- 0o0o0+0+	4+	6	2	4	3	0	0	2	2	19	2	0.0
7	1o2o2-2- 2-1-2o1+	12o	4	7	6	6	6	3	7	5	44	6	0.2
8	2-0o1o1- 0+0+0+0+	5-	6	0	4	3	2	2	2	2	21	3	0.0
9	0+2-2+2- 2+2+2o2+	15o	2	6	9	6	9	9	7	9	57	7	0.4
10	3o4o4o3o 2+3o4-3-	26-	15	27	27	15	9	15	22	12	142	18	1.0
11	3+4+3+4+ 4-3o2+2+	27-	18	32	18	32	22	15	9	9	155	19	1.0
12	2+3o3-4- 3-3-2-3+	22o	9	15	12	22	12	12	6	18	106	13	0.8
13	5o5+3o2+ 3-2+4+4o	29o	48	56	15	9	12	9	32	27	208	26	1.2
14	4+6+6-5o 4+5+4o5o	40o	32	94	67	48	32	56	27	48	404	50	1.6
15	3+2o2-2+ 3o3-3+2o	20+	18	7	6	9	15	12	18	7	92	12	0.7
16	1+0+0+1- 1+1+2-0+	7+	5	2	2	3	5	5	6	2	30	4	0.1
17	1+1+1+3o 3-2o1o1+	14o	5	5	5	15	12	7	4	5	58	7	0.4
18	2-1+2-1+ 1-2-3-1+	12+	6	5	6	5	3	6	12	5	48	6	0.3
19	1-1+3-3+ 2-2+3-2-	16+	3	5	12	18	6	9	12	6	71	9	0.5
20	2o2+1+2o 2o3o3-4o	19+	7	9	5	7	7	15	12	27	89	11	0.6
21	3+3-3-2- 3-4o4-7-	27+	18	12	12	6	12	27	22	111	220	28	1.2
22	4+3o4-4- 2+3+3-4-	27-	32	15	22	22	9	18	12	22	152	19	1.0
23	5o3-4-3o 1+2o4o4-	25+	48	12	22	15	5	7	27	22	158	20	1.0
24	2o2-2o2+ 3-2-4-1o	17o	7	6	7	9	12	6	22	4	73	9	0.5
25	2o2-2o3o 2o1+2o2+	16+	7	6	7	15	7	5	7	9	63	8	0.4
26	3o2o1+2+ 2o1+2-2o	16-	15	7	5	9	7	5	6	7	61	8	0.4
27	2o2o2o3- 4o3+2o2+	20+	7	7	7	12	27	18	7	9	94	12	0.7
28	4o2o3+3+ 2o3o3-1o	21+	27	7	18	18	7	15	12	4	108	14	0.8
29	4-3o4-3o 3+3-3+4-	26+	22	15	22	15	18	12	18	22	144	18	1.0
30	3o4-5-3o 3-2o3-1+	23o	15	22	39	15	12	7	12	5	127	16	0.9
31	1o1+2-2o 4-1o2-2-	14o	4	5	6	7	22	4	6	6	60	8	0.4

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

	Kp	Sum	Nov. 1957	ap						Sum	Ap	Cp
1	1+3+2+2+ 2-2o2-2-	16+	5	18	9	9	6	7	6	6	66	8	0.4
2	1+2-2o2o 2-1o2-3+	15-	5	6	7	7	6	4	6	18	59	7	0.4
3	3+1+3o3+ 3+3o2+1o	21-	18	5	15	18	18	15	9	4	102	13	0.7
4	1+0o1o1- 0+2-1+1+	8-	5	0	4	3	2	6	5	5	30	4	0.1
5	0+1-1-1- 1o2-1+1o	7+	2	3	3	3	4	6	5	4	30	4	0.1
6	0o0o1+1+ 2o3-6-6+	19+	0	0	5	5	7	12	67	94	190	24	1.1
7	7o4+3+4- 3+3-2+1o	28-	132	32	18	22	18	12	9	4	247	31	1.3
8	1-3-4-4- 4-3o3o4+	25-	3	12	22	22	22	15	15	32	143	18	1.0
9	4o4+5-3+ 4+4o4-4+	33-	27	32	39	18	32	27	22	32	229	29	1.3
10	5o4+4o4- 4-4-3+3o	31-	48	32	27	22	22	22	18	15	206	26	1.2
11	4o4-4o4- 4o3-3-4-	28+	27	22	27	22	27	12	12	22	171	21	1.1
12	4-3-3-4- 4o4-2o3-	25o	22	12	12	22	27	22	7	12	136	17	0.9
13	3-2-2+3- 3o2+2+3o	20o	12	6	9	12	15	9	9	15	87	11	0.6
14	4-3-3o4o 4o4o4-4-	29-	22	12	15	27	27	27	22	22	174	22	1.1
15	4o4o4o4o 3o3+3-3-	28-	27	27	27	27	15	18	12	12	165	21	1.1
16	3-2+2+3- 3-3-2+1+	19o	12	9	9	12	12	12	9	5	80	10	0.6
17	2-2-1o1+ 2-1-1-3o	12-	6	6	4	5	6	3	3	15	48	6	0.3
18	4-4o4o4+ 5+4o3o2+	30o	22	27	27	32	39	27	15	9	198	25	1.2
19	2-3o3-3- 5o1o2o2o	18o	6	15	12	12	15	4	7	7	78	10	0.5
20	2o2o1+3- 3o3o3-2+	19o	7	7	5	12	15	15	12	9	82	10	0.6
21	0+0o1+0+ 1+1o1+2o	8-	2	0	5	2	5	4	5	7	30	4	0.1
22	2o1+1o1o 2o2+2o0+	12o	7	5	4	4	7	9	7	2	45	6	0.3
23	0+1-2-2- 3-2+1+3o	14-	2	3	6	6	12	9	5	15	58	7	0.4
24	3o3+2+2o 3-3o3-2+	21+	15	18	9	7	12	15	12	9	97	12	0.7
25	3+4o5+4+ 3+4o4o4+	33-	18	27	56	32	18	27	27	32	237	30	1.3
26	5o5o5o4- 4+7-7-6+	43-	48	48	48	22	32	111	111	94	514	64	1.7
27	6+6+5o5o 3+4o3+4o	37+	94	94	48	48	18	27	18	27	374	47	1.5
28	4o4+5o4+ 4o3+3+3+	32-	27	32	48	32	27	18	18	18	220	28	1.2
29	4-4o2+3+ 3+3+2o2+	24+	22	27	9	18	18	18	7	9	128	16	0.9
30	3-3o2+2+ 3o2+2o1o	19-	12	15	9	9	15	9	7	4	80	10	0.6

	Kp		Dec. 1957	ap						Sum	Ap	Cp
1	5-6-5-4- 3o3-2+4o	31-	39	67	39	22	15	12	9	27	230	29	1.3
2	3o4-4-4- 4-3o2o2o	25-	15	22	22	22	22	15	7	7	132	16	0.9
3	2o2+3+3+ 4-3-2o2+	22-	7	9	18	18	22	12	7	9	102	13	0.7
4	3o2-3o3o 2o2-1-2+	17+	15	6	15	15	7	6	3	9	76	10	0.5
5	4o4o4o3+ 3+4-5-4+	31+	27	27	27	18	18	22	39	32	210	26	1.2
6	4o5-4-5- 4o4+4-3-	32-	27	39	22	39	27	32	22	12	220	28	1.2
7	3-3-5-4o 5-3-3-3o	27o	12	12	39	27	39	12	12	15	168	21	1.1
8	3o3o3-3- 2o2-2+2+	20-	15	15	12	12	7	6	9	9	85	11	0.6
9	3+3o3-4- 4-4-2+4o	27-	18	15	12	22	22	22	9	27	147	18	1.0
10	4-4-3-3+ 3+4+4-4+	29o	22	22	12	18	18	32	22	32	178	22	1.1
11	4-6-5+4+ 4+4-5-5+	37o	22	67	56	32	32	22	39	56	326	41	1.5
12	4+4+4o5- 3+4o4+4o	33o	32	32	27	39	18	27	32	27	234	29	1.3
13	3+3+3-5o 3+5-3o1o	26+	18	18	12	48	18	39	15	4	172	22	1.1
14	3o3-2+2- 2-1o2-2+	16+	15	12	9	6	6	4	6	9	67	8	0.5
15	3-3o3o4+ 5-5-3o1+	27-	12	15	15	32	39	39	15	5	172	22	1.1
16	3o3-2+2+ 3-2+3+4-	22+	15	12	9	9	12	9	18	22	106	13	0.8
17	4-4+5-2+ 2o3o3+3+	27-	22	32	39	9	7	15	18	18	160	20	1.0
18	3+3-2+3o 3-3-1+2o	20o	18	12	9	15	12	12	5	7	90	11	0.6
19	3-3o3-4o 4-3o4+4-	27o	12	15	12	27	22	15	32	22	157	20	1.0
20	4-5-3o3o 3o3-3+4-	27o	22	39	15	15	15	12	18	22	158	20	1.0
21	3-5-4o2+ 2o2o2o2o	22-	12	39	27	9	7	7	7	7	115	14	0.8
22	2+2+1o1- 1-1-1o0o	9-	9	9	4	3	3	3	4	0	35	4	0.2
23	1+1+1o1+ 1o1-1-1-	8o	5	5	4	5	4	3	3	3	32	4	0.1
24	1-1+1-3- 2+2-2+2-	13+	3	5	3	12	9	6	9	6	53	7	0.3
25	1+3+4-3- 3o2+4-4-	24-	5	18	22	12	15	9	22	22	125	16	0.9
26	3-4+3+4- 4o3o3o2-	26-	12	32	18	22	27	15	15	6	147	18	1.0
27	2o2-1o1+ 2+1+2o2+	14o	7	6	4	5	9	5	7	9	52	6	0.3
28	1o1+1-1- 1o1o1+1+	8+	4	5	3	3	4	4	5	5	33	4	0.1
29	0+1-1-1+ 2+1+1+3o	11o	2	3	3	5	9	5	5	15	47	6	0.3
30	3+3o4o5- 4o2o1o1+	23+	18	15	27	39	27	7	4	5	142	18	1.0
31	4o5o6-5+ 5-5+6-6-	41+	27	48	67	56	39	56	67	67	427	53	1.6

PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap,
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp.

	Kp	Sum	January 1958				ap				Sum	Ap	Cp
1	6o6+5+4o 3+4-5+4o	38o	80	94	56	27	18	22	56	27	380	48	1.6
2	4+4+4o4o 4-2+2+2-	27-	32	32	27	27	22	9	9	6	164	20	1.0
3	2o1o0+2- 1o1o1-1-	8+	7	4	2	6	4	4	3	3	33	4	0.1
4	1-1-0+1o 1-0+1-2o	6+	3	3	2	4	3	2	3	7	27	3	0.1
5	3o2+1+1+ 2o2-1-0+	13-	15	9	5	5	7	6	3	2	52	6	0.3
6	1o2-2o2o 3-2+1+2-	15-	4	6	7	7	12	9	5	6	56	7	0.4
7	2o2o2-2- 3-1o1+1o	13+	7	7	6	6	12	4	5	4	51	6	0.3
8	1+1o2o2o 2o2o1-0+	11+	5	4	7	7	7	7	3	2	42	5	0.2
9	2-1+1+3- 3+3o3+3+	20o	6	5	5	12	18	15	18	18	97	12	0.7
10	4o2o2-2+ 3-2o2-1o	17+	27	7	6	9	12	7	6	4	78	10	0.5
11	3+2+1+3o 2+3o3+2+	21o	18	9	5	15	9	15	18	9	98	12	0.7
12	3o4-3o3- 3o3-2+2+	23-	15	22	15	12	15	12	9	9	109	14	0.8
13	3+4-3-2- 2+3-4o3+	24-	18	22	12	6	9	12	27	18	124	16	0.9
14	2-1o3o3+ 3-3o3-5-	22o	6	4	15	18	12	15	12	39	121	15	0.9
15	2o3o4-3o 4-3o3o3-	24o	7	15	22	15	22	15	15	12	123	15	0.9
16	1o2+3-3o 3-3o3+4-	22-	4	9	12	15	12	15	18	22	107	13	0.8
17	3-4-4-4- 4-4-4-4+	29o	12	22	22	22	22	22	22	32	176	22	1.1
18	4+4+5o5- 4+4-4-2+	32+	32	32	48	39	32	22	22	9	236	30	1.3
19	2+3-2+2+ 4-3-3-2o	21-	9	12	9	9	22	12	12	7	92	12	0.7
20	2o1+3-4- 3+3+4-5+	25+	7	5	12	22	18	18	22	56	160	20	1.0
21	6-7-4-4o 3-2+3-2o	30-	67	111	22	27	12	9	12	7	267	33	1.3
22	3-3o4o4o 5-2+3o2+	26o	12	15	27	27	39	9	15	9	153	19	1.0
23	4-4-3+3+ 4+3+4o3o	29-	22	22	18	18	32	18	27	15	172	22	1.1
24	1+3-1o4- 4o3-2-1+	18+	5	12	4	22	27	12	6	5	93	12	0.7
25	3o3o3-4o 4+4+3-1+	25+	15	15	12	27	32	32	12	5	150	19	1.0
26	3-5o4-2o 1o3-3-3-	22+	12	48	22	7	4	12	12	12	129	16	0.9
27	2+2o2-1+ 1-1+2+4-	15+	9	7	6	5	3	5	9	22	66	8	0.4
28	1+1-3-3o 2o2o1+1+	14+	5	3	12	15	7	7	5	5	59	7	0.4
29	3-4+3+3- 2-3-3-2-	22-	12	32	18	12	6	12	12	6	110	14	0.8
30	1o3o3o2+ 3-2o2-1o	17-	4	15	15	9	12	7	6	4	72	9	0.5
31	2o2-2-2+ 2-2-2+3+	17-	7	6	6	9	6	6	9	18	67	8	0.5

	Kp	Sum	February 1958				ap				Sum	Ap	Cp
1	3-1-2+2+ 3o1+2-3-	17-	12	3	9	9	15	5	6	12	71	9	0.5
2	3-2+3-3o 2+1+2-0+	16+	12	9	12	15	9	5	6	2	70	9	0.5
3	1-1+1o1+ 3o1+2o2o	13-	3	5	4	5	15	5	7	7	51	6	0.3
4	3-0+1o3o 4-3+5-4-	22+	12	2	4	15	22	18	39	22	134	17	0.9
5	3+4+4-4o 5-4-5-5-	33o	18	32	22	27	39	22	39	39	238	30	1.3
6	4o4+4+4+ 4+5-3o4+	33+	27	32	32	32	32	39	15	32	241	30	1.3
7	4o4-4o4o 3+4o4o4o	31o	27	22	27	27	18	27	27	27	202	25	1.2
8	4-5-4o4o 4-4-4o4o	32-	22	39	27	27	22	22	27	27	213	27	1.2
9	4o4o2o3- 3-3+4o3o	26-	27	27	7	12	12	18	27	15	145	18	1.0
10	4o4-2-2o 2+5o5-4+	28-	27	22	6	7	9	48	39	32	190	24	1.1
11	9o8+9-8+ 8o5+6o6o	60-	400	236	300	236	207	56	80	80	1595	199	2.1
12	6o6-6+5+ 4o5-6o4+	42+	80	67	94	56	27	39	80	32	475	59	1.7
13	4-2-3+4- 4+4-3o2+	26-	22	6	18	22	32	22	15	9	146	18	1.0
14	4o5o4o3o 3+4+2+2o	28o	27	48	27	15	18	32	9	7	183	23	1.1
15	2-1o1o2+ 2+3-2+3-	16o	6	4	4	9	9	12	9	12	65	8	0.4
16	2+1-1+3+ 3o4o3+3o	21o	9	3	5	18	15	27	18	15	110	14	0.8
17	4o5-4o4- 5-4o5-4o	34-	27	39	27	22	39	27	39	27	247	31	1.3
18	4o5o4+4+ 4o3+5o4-	34-	27	48	32	32	27	18	48	22	254	32	1.3
19	4+4-5-4- 3+3o4o4-	30+	32	22	39	22	18	15	27	22	197	25	1.2
20	4-4o3o4o 4o3o5-5-	31o	22	27	15	27	27	15	39	39	211	26	1.2
21	3+5-4+4- 4+3o5-5o	33o	18	39	32	22	32	15	39	48	245	31	1.3
22	5-4o4-4o 4-3o4-4o	31-	39	27	22	27	22	15	22	27	201	25	1.2
23	4+4o4o4- 3o3+3o3-	28o	32	27	27	22	15	18	15	12	168	21	1.1
24	2+3-2o3- 3-2-2-1-	16+	9	12	7	12	12	6	6	3	67	8	0.5
25	1-2o3-2o 1-1-1+1-	11-	3	7	12	7	3	3	5	3	43	5	0.2
26	2o2o3-2o 1+1o2-1+	14o	7	7	12	7	5	4	6	5	53	7	0.3
27	3-1o1o1o 2-2o3+4-	16+	12	4	4	4	6	7	18	22	77	10	0.5
28	2o2+3+4o 4+3-2+2o	23o	7	9	18	27	32	12	9	7	121	15	0.9

continued

	Kp	Sum	March 1958			ap					Sum	Ap	Cp
1	3+1+1o1o 2-1o1o2-	12o	18	5	4	4	6	4	4	6	51	6	0.3
2	1-2o3+3- 2-0+0+1+	12+	3	7	18	12	6	2	2	5	55	7	0.3
3	1o2o2o3+ 4-4o5o4+	25+	4	7	7	18	22	27	48	32	165	21	1.1
4	5o5-4o4- 4o3+4o3+	32o	48	39	27	22	27	18	27	18	226	28	1.2
5	3+4o7-5o 4o4-4-5-	35o	18	27	111	48	27	22	22	39	314	39	1.4
6	5+5+4o4o 4+4o4o4+	35+	56	56	27	27	32	27	27	32	284	36	1.4
7	4-5+4+4- 4-4-3+3+	31o	22	56	32	22	22	22	18	18	212	26	1.2
8	5o4+4+3+ 3+2o3-3-	28-	48	32	32	18	18	7	12	12	179	22	1.1
9	4o4o4-4o 4-3o3-2-	27-	27	27	22	27	22	15	12	6	158	20	1.0
10	4-4o2+3- 3+4-4-3-	26o	22	27	9	12	18	22	22	12	144	18	1.0
11	4o2-1o3o 4-4o5-5-	27-	27	6	4	15	22	27	39	39	179	22	1.1
12	7o7o7-5- 4+4+4-3o	41-	132	132	111	39	32	32	22	15	515	64	1.7
13	5-5+6-5o 6-5o5o2+	39-	39	56	67	48	67	48	48	9	382	48	1.6
14	3-1+1-2- 6-5-3-3-	22o	12	5	3	6	67	39	12	12	156	20	1.0
15	2+4+5-5- 4-4o3-2o	28+	9	32	39	39	22	27	12	7	187	23	1.1
16	5-4+2+2+ 1+2o3-3+	23o	39	32	9	9	5	7	12	18	131	16	0.9
17	3-3+5-5o 4o4o5-2-	30o	12	18	39	48	27	27	39	6	216	27	1.2
18	3o4o5-3- 4+6-5+4-	33+	15	27	39	12	32	67	56	22	270	34	1.3
19	4o4+5-4o 5-5+6-6-	38+	27	32	39	27	39	56	67	67	354	44	1.5
20	5o5o4+4o 4-4o5o5o	36o	48	48	32	27	22	27	48	48	300	38	1.4
21	4o5o4o3+ 5-5o3+5-	34o	27	48	27	18	39	48	18	39	264	33	1.3
22	6o5-2o2- 3-2-2o4+	25o	80	39	7	6	12	6	7	32	189	24	1.1
23	4o4o3+3+ 3-3o5-2+	27+	27	27	18	18	12	15	39	9	165	21	1.1
24	3+4o3+3+ 4-5o5-4o	31+	18	27	18	18	22	48	39	27	217	27	1.2
25	5o3+4o3+ 4-6o4o4o	33+	48	18	27	18	22	80	27	27	267	33	1.3
26	3+3o2+4o 5o5+4-4-	30+	18	15	9	27	48	56	22	22	217	27	1.2
27	4o3-3-3o 2-3o3o4+	24+	27	12	12	15	6	15	15	32	134	17	0.9
28	3-3+3o2- 2-4+3o3o	23-	12	18	15	6	6	32	15	15	119	15	0.8
29	4-3+2o1+ 1-3-2o2o	18-	22	18	7	5	3	12	7	7	81	10	0.6
30	1+1o4+5- 5+6-4o4-	30o	5	4	32	39	56	67	27	22	252	32	1.3
31	3o4+3+3o 3o3+3o3o	26o	15	32	18	15	15	18	15	15	143	18	1.0

	Kp	Sum	April 1958			ap					Sum	Ap	Cp
1	4-4-3-3- 3+3+4o4-	27o	22	22	12	12	18	18	27	22	153	19	1.0
2	3+4+5+5o 4+5o4-3+	34+	18	32	56	48	32	48	22	18	274	34	1.4
3	4+4o3+3- 2+2+3+4-	26o	32	27	18	12	9	9	18	22	147	18	1.0
4	3+4-4-4- 5-4o6-6-	34+	18	22	22	22	39	27	67	67	284	36	1.4
5	5-5+4o4- 3+3+3-3+	30+	39	56	27	22	18	18	12	18	210	26	1.2
6	4o3-3o4o 3o4-3+5o	29-	27	12	15	27	15	22	18	48	184	23	1.1
7	3+4o3o3o 3o3o3+3o	26-	18	27	15	15	15	15	18	15	138	17	0.9
8	3-3-2-2- 2-2o2+3o	18-	12	12	6	6	6	7	9	15	73	9	0.5
9	2+3+1o1o 1o2-3-3o	16o	9	18	4	4	4	6	12	15	72	9	0.5
10	1+1o1o1o 1o1o1+2+	10o	5	4	4	4	4	4	5	9	39	5	0.2
11	2o2+1-2+ 1o1+2-3o	14+	7	9	3	9	4	5	6	15	58	7	0.4
12	0+1o1-1+ 1o2o2o3-	11o	2	4	3	5	4	7	7	12	44	6	0.2
13	2o1+2o1o 1o1+2-2-	12o	7	5	7	4	4	5	6	6	44	6	0.2
14	2-2o2+4+ 5-4o3+3+	26-	6	7	9	32	39	27	18	18	156	20	1.0
15	5-5o4+3o 3-3-4-3+	29+	39	48	32	15	12	12	22	18	198	25	1.2
16	4o4o4+4o 4o4o5-5o	34o	27	27	32	27	27	27	39	48	254	32	1.3
17	6-5o4+4o 4+6o6-6o	41o	67	48	32	27	32	80	67	80	433	54	1.6
18	5o5+5-4o 4+5o5o5+	39-	48	56	39	27	32	48	48	56	354	44	1.5
19	4-3+3o4+ 3+4-4+4+	30o	22	18	15	32	18	22	32	32	191	24	1.2
20	3o4-4-2- 3-3-3-4-	24-	15	22	22	6	12	12	12	22	123	15	0.9
21	2o3+2+3- 3-3o2o4+	22+	7	18	9	12	12	15	7	32	112	14	0.8
22	2+2+2+2+ 1o1+1+0+	13+	9	9	9	9	4	5	5	2	52	6	0.3
23	0o0o1-2o 2o3+2o3o	13o	0	0	3	7	7	18	7	15	57	7	0.4
24	3+4o4-2o 2o3+2-3-	23-	18	27	22	7	7	18	6	12	117	15	0.8
25	4-4-2o2o 3+1+1o0+	17+	22	22	7	7	18	5	4	2	87	11	0.6
26	0+0+1o1o 3-5-4+2+	17-	2	2	4	4	12	39	32	9	104	13	0.7
27	1o2-2+1o 1+3o4-3o	17o	4	6	9	4	5	15	22	15	80	10	0.6
28	3+4o3+3+ 4o4-4o5-	30+	18	27	18	18	27	22	27	39	196	24	1.2
29	5-5+4o4o 4o4+3+4-	33+	39	56	27	27	27	32	18	22	248	31	1.3
30	4+4+4o3+ 3+4+4+5-	33-	32	32	27	18	18	32	32	39	230	29	1.3

continued

	Kp	Sum	May 1958			ap					Sum	Ap	Cp
1	4-3o3+4- 2+4-4o4+	28o	22	15	18	22	9	22	27	32	167	21	1.1
2	3o4o3-2o 1-1+3-2-	18o	15	27	12	7	3	5	12	6	87	11	0.6
3	2-3-1-2- 1+1+2o2+	14-	6	12	3	6	5	5	7	9	53	7	0.3
4	3-2+3o2- 2-1+1-3-	16o	12	9	15	6	6	5	3	12	68	8	0.5
5	2+3-2-1o 1+3-4-4-	19o	9	12	6	4	5	12	22	22	92	12	0.7
6	3+3-2+2- 1+1+1+1o	15o	18	12	9	6	5	5	5	4	64	8	0.4
7	1+2-2-1+ 1-1-2o3-	12o	5	6	6	5	3	3	7	12	47	6	0.3
8	2-2-2o2- 3+3-3-4-	19+	6	6	7	6	18	12	12	22	89	11	0.6
9	2o2-4-3o 3o1o2-2o	18o	7	6	22	15	15	4	6	7	82	10	0.6
10	3o3-3-4o 4-4o4o3+	27+	15	12	12	27	22	27	27	18	160	20	1.0
11	1-1-3+4- 2o3-2+1o	16+	3	3	18	22	7	12	9	4	78	10	0.5
12	0+0+2o1+ 2o4o4+4+	19-	2	2	7	5	7	27	32	32	114	14	0.8
13	4-2+3o3+ 5-4+4+6-	31+	22	9	15	18	39	32	32	67	234	29	1.3
14	6-4+5o4- 5-4-4+5-	36o	67	32	48	22	39	22	32	39	301	38	1.4
15	4o5o4-3- 3+4o5-4-	31o	27	48	22	12	18	27	39	22	215	27	1.2
16	4o3+3-2+ 3o4o3-2o	24o	27	18	12	9	15	27	12	7	127	16	0.9
17	3o4-2+3- 4-3+3+3+	25+	15	22	9	12	22	18	18	18	134	17	0.9
18	4+3-3-3+ 3o4-3o3o	26-	32	12	12	18	15	22	15	15	141	18	1.0
19	2o3o4-2- 2o1+2+3-	19-	7	15	22	6	7	5	9	12	83	10	0.6
20	2-1o1-1+ 1+1-1o2o	10-	6	4	3	5	5	3	4	7	37	5	0.2
21	3-3o2-0+ 1o1o1+1-	12-	12	15	6	2	4	4	5	3	51	6	0.3
22	1o1-1-1+ 2+2o1-1+	10o	4	3	3	5	9	7	3	5	39	5	0.2
23	2+1o1-1- 1-1-1o1o	8o	9	4	3	3	3	3	4	4	33	4	0.1
24	0o0+0+1o 1+1-0+0+	4+	0	2	2	4	5	3	2	2	20	2	0.0
25	0+1+1o1- 0+3-3+4+	14o	2	5	4	3	2	12	18	32	78	10	0.5
26	4o3+3o4+ 7-6-3+4o	34+	27	18	15	32	111	67	18	27	315	39	1.4
27	3o3-2+4o 4+4-4o5o	29o	15	12	9	27	32	22	27	48	192	24	1.2
28	5-4-3o2- 3-3-3+3+	25o	39	22	15	6	12	12	18	18	142	18	1.0
29	5o5o6-6+ 6-5-5-3+	40+	48	48	67	94	67	39	39	18	420	52	1.6
30	3+3+3-2o 2o2+1+3+	20+	18	18	12	7	7	9	5	18	94	12	0.7
31	2+4o2o3+ 4+6+8-8o	38o	9	27	7	18	32	94	179	207	573	72	1.8

	Kp	Sum	June 1958			ap					Sum	Ap	Cp
1	8-6+6-3+ 3-4o5o4+	39o	179	94	67	18	12	27	48	32	477	60	1.7
2	4+3+4+4o 5-4+4-1-	29+	32	18	32	27	39	32	22	3	205	26	1.2
3	1-1+1+2- 2o3-1+1-	12-	3	5	5	6	7	12	5	3	46	6	0.3
4	1+2+1+2- 1o2-1+1-	11+	5	9	5	6	4	6	5	3	43	5	0.2
5	1-1+2-1+ 3-4-1+1+	14o	3	5	6	5	12	22	5	5	63	8	0.4
6	1-2+3o2+ 1o3-3o5+	20+	3	9	15	9	4	12	15	56	123	15	0.9
7	8-7o6+7o 4o3+4-3-	42-	179	132	94	132	27	18	22	12	616	77	1.8
8	1+1+1+2- 1o3+4+4+	19-	5	5	5	6	4	18	32	32	107	13	0.8
9	5o2+4-3+ 4-4-5-6o	32+	48	9	22	18	22	22	39	80	260	32	1.3
10	5+5-4o4- 4-3+4-5-	33o	56	39	27	22	22	18	22	39	245	31	1.3
11	3+4o3-3+ 3+3+3+3+	27-	18	27	12	18	18	18	18	18	147	18	1.0
12	2-4-3+3+ 3-3+3-3-	23+	6	22	18	18	12	18	12	12	118	15	0.8
13	2+3o2+1+ 1-2o3o2+	17o	9	15	9	5	3	7	15	9	72	9	0.5
14	2-1-2o2- 1+1o5o5-	18o	6	3	7	6	5	4	48	39	118	15	0.8
15	3o5-5+4+ 2+2o2o1-	24+	15	39	56	32	9	7	7	3	168	21	1.1
16	3-2-3+3- 3+2o1+1o	18o	12	6	18	12	18	7	5	4	82	10	0.6
17	1o2o1o1+ 1o0+1+1+	9+	4	7	4	5	4	2	5	5	36	4	0.2
18	1-1-1-1+ 2+2+3-2+	13o	3	3	3	5	9	9	12	9	53	7	0.3
19	1+1+2-1+ 2-3+3o3-	16+	5	5	6	5	6	18	15	12	72	9	0.5
20	3-1-1o1o 2-1o1+4-	13o	12	3	4	4	6	4	5	22	60	8	0.4
21	4-5-4+6+ 6+6+6+5+	43+	22	39	32	94	94	94	94	56	525	66	1.7
22	6o5-5+5- 4-2+4-5-	35o	80	39	56	39	22	9	22	39	306	38	1.4
23	4-3+3+2- 2+3-3o2o	22o	22	18	18	6	9	12	15	7	107	13	0.8
24	3o4-4-3o 3+3o3o4-	26+	15	22	22	15	18	15	15	22	144	18	1.0
25	3o3o3-4- 2+3o3+3+	24+	15	15	12	22	9	15	18	18	124	16	0.9
26	2+2+2o2- 2o2+2-2+	17-	9	9	7	6	7	9	6	9	62	8	0.4
27	2+2-2+2- 1+1+1+3o	15o	9	6	9	6	5	5	5	15	60	8	0.4
28	2+3+4o4- 3o5-7o8-	36-	9	18	27	22	15	39	132	179	441	55	1.6
29	7o8o7-5+ 8-6+4+3-	48o	132	207	111	56	179	94	32	12	823	103	1.9
30	2o3-2-1+ 2-3-3o2+	17+	7	12	6	5	6	12	15	9	72	9	0.5

continued

	Kp	Sum	July 1958			ap					Sum	Ap	Cp
1	5o3+3+3-	3o3-2-2-	23+	48	18	18	12	15	12	6	6	135	17	0.9
2	1-1+2-1+	2o2o2+2+	14-	3	5	6	5	7	7	9	9	51	6	0.3
3	3-2o3o3-	2+5-3o2+	23-	12	7	15	12	9	39	15	9	118	15	0.8
4	2o3-4o4-	4-5-4-3+	28-	7	12	27	22	22	39	22	18	169	21	1.1
5	2+2-2o3-	3o2o2o4o	20-	9	6	7	12	15	7	7	27	90	11	0.6
6	3-2+1o1o	1+1o1+0+	11o	12	9	4	4	5	4	5	2	45	6	0.3
7	1-2-2+4o	3+3+4+4-	23+	3	6	9	27	18	18	32	22	135	17	0.9
8	3o3-7+8-	8+9o9-9-	55+	15	12	154	179	236	400	300	300	1596	200	2.1
9	6+6-6o7o	6+5o3o6-	45o	94	67	80	132	94	48	15	67	597	75	1.8
10	5o3+3-2+	3-2o2+4-	24o	48	18	12	9	12	7	9	22	137	17	0.9
11	4-2+3-2+	2+2+4o4-	23+	22	9	12	9	9	9	27	22	119	15	0.8
12	4o3+4o4+	3+4-3+2o	28o	27	18	27	32	18	22	18	7	169	21	1.1
13	4-3+4-2+	2-3o1+4-	23-	22	18	22	9	6	15	5	22	119	15	0.8
14	3o3+4o3+	2+3-2-1+	22-	15	18	27	18	9	12	6	5	110	14	0.8
15	1+2o1+1+	2o1o2o2o	13o	5	7	5	5	7	4	7	7	47	6	0.3
16	2o2o1o1+	2o2-1+3-	14o	7	7	4	5	7	6	5	12	53	7	0.3
17	4o5-4o3+	2-1+1o1-	21-	27	39	27	18	6	5	4	3	129	16	0.9
18	3o3+5o4-	5+5o5-4o	34o	15	18	48	22	56	48	39	27	273	34	1.3
19	3-3o5o3-	3-2o5o5o	28o	12	15	48	12	12	7	48	48	202	25	1.2
20	4o5-4-3+	3+4o3-3-	28+	27	39	22	18	18	27	12	12	175	22	1.1
21	3-3o4-2+	2+7-7+6+	34+	12	15	22	9	9	111	154	94	426	53	1.6
22	4+3+3-3+	5o3o3-2o	26+	32	18	12	18	48	15	12	7	162	20	1.0
23	2-1+1+2o	2+1o1+2+	13+	6	5	5	7	9	4	5	9	50	6	0.3
24	3-2o2-2o	4o5-4o3+	24+	12	7	6	7	27	39	27	18	143	18	1.0
25	2o2+4-4+	4+4-4+4o	29-	7	9	22	32	32	22	32	27	183	23	1.1
26	4o3o2+3o	2-1+2o1+	19-	27	15	9	15	6	5	7	5	89	11	0.6
27	2+4-5o4+	5-2+5-4o	31o	9	22	48	32	39	9	39	27	225	28	1.2
28	4o3-2+1o	1o1o2+3-	17o	27	12	9	4	4	4	9	12	81	10	0.6
29	2+2+1-1o	1+2-4o2+	16-	9	9	3	4	5	6	27	9	72	9	0.5
30	2-2+2+2-	2+4-3o3+	20+	6	9	9	6	9	22	15	18	94	12	0.7
31	2o1+2+3-	2o5+3+2+	21+	7	5	9	12	7	56	18	9	123	15	0.9

	Kp	Sum	August 1958			ap					Sum	Ap	Cp
1	2+2-1o4o	4+3-3+2+	22-	9	6	4	27	32	12	18	9	117	15	0.8
2	2o2o2+3o	4-3o2+2+	21-	7	7	9	15	22	15	9	9	93	12	0.7
3	4-3o3-2+	3-2o1-1-	18-	22	15	12	9	12	7	3	3	83	10	0.6
4	1o2-1+1o	1+1o1o1o	9+	4	6	5	4	5	4	4	4	36	4	0.2
5	1+1o1+2-	2o1o1o1o	10+	5	4	5	6	7	4	4	4	39	5	0.2
6	2-1+1-1+	1-1o1o2o	10-	6	5	3	5	3	4	4	7	37	5	0.2
7	1o1+3o3o	4o2o3o1+	19-	4	5	15	15	27	7	15	5	93	12	0.7
8	1o1o1-1o	2o2+0+1-	9o	4	4	3	4	7	9	2	3	36	4	0.2
9	3-2+1o1-	1+2-1+3-	14-	12	9	4	3	5	6	5	12	56	7	0.4
10	2o2-3o3+	3+4o4-3o	24o	7	6	15	18	18	27	22	15	128	16	0.9
11	3o3-3+4+	2+2o3o2+	23o	15	12	18	32	9	7	15	9	117	15	0.8
12	2o3-3o3-	2o1-3o3-	19-	7	12	15	12	7	3	15	12	83	10	0.6
13	3o3-4-3+	2-2+1+1+	19+	15	12	22	18	6	9	5	5	92	12	0.7
14	2o1o1o0+	0o2+2+3+	12+	7	4	4	2	0	9	9	18	53	7	0.3
15	2+3+2-2o	2o2o2o2+	18-	9	18	6	7	7	7	7	9	70	9	0.5
16	4-3-2o2-	3-4-3o1o	20+	22	12	7	6	12	22	15	4	100	12	0.7
17	1+2-6o4+	7-7+7+7-	41+	5	6	80	32	111	154	154	111	653	82	1.8
18	5o5-4-3+	3-2o2o2o	25+	48	39	22	18	12	7	7	7	160	20	1.0
19	3o3+3-3o	2-2+2+2o	20+	15	18	12	15	6	9	9	7	91	11	0.7
20	2-2o2o1o	2-2-1-1+	12o	6	7	7	4	6	6	3	5	44	6	0.2
21	1+1o0+2+	2o2o1+3-	13o	5	4	2	9	7	7	5	12	51	6	0.3
22	6-6-6-4-	3-3o3o2o	31+	67	67	67	22	12	15	15	7	272	34	1.3
23	1o4-3+2+	2+3o3o3o	22-	4	22	18	9	9	15	15	15	107	13	0.8
24	7+8-6o7-	6+4o3+3o	44+	154	179	80	111	94	27	18	15	678	85	1.8
25	4o4o3+3o	5-1+2o1+	24-	27	27	18	15	39	5	7	5	143	18	1.0
26	2-3+3+4o	3+2o2+3-	23-	6	18	18	27	18	7	9	12	115	14	0.8
27	4+6o7-7-	5o4o6o4-	42+	32	80	111	111	48	27	80	22	511	64	1.7
28	2-2o3-3o	3-3o4-3-	21+	6	7	12	15	12	15	22	12	101	13	0.7
29	2-2+2+3+	3o2-3o3-	20o	6	9	9	18	15	6	15	12	90	11	0.6
30	2+2+2+2o	3o2+2-2+	18+	9	9	9	7	15	9	6	9	73	9	0.5
31	2o2+2o2-	2-3o1o0o	14-	7	9	7	6	6	15	4	0	54	7	0.3

continued

	Kp	Sum	September 1958				ap				Sum	Ap	Cp
1	0o0+1+3-	2+2o1-1-	10o	0	2	5	12	9	7	3	3	41	5	0.2
2	1+1+1+1+	2-1o1-1o	10-	5	5	5	5	6	4	3	4	37	5	0.2
3	2o2-4o5+	7-6o7-7-	39o	7	6	27	56	111	80	111	111	509	64	1.7
4	5o4+3+4-	7+9-8+8+	49o	48	32	18	22	154	300	236	236	1046	131	1.9
5	8o8-4+4o	3+4-6-3o	40-	207	179	32	27	18	22	67	15	567	71	1.8
6	2+2+2-1+	2-2-2-1+	14o	9	9	6	5	6	6	6	5	52	6	0.3
7	2-3+2+3o	3o3+4-4o	24+	6	18	9	15	15	18	22	27	130	16	0.9
8	4+3+2+3-	2-4-1+5+	25-	32	18	9	12	6	22	5	56	160	20	1.0
9	4o3o3o4-	5-4-4-5-	30+	27	15	15	22	39	22	22	39	201	25	1.2
10	3+2+2o2o	3+3o2o3-	21-	18	9	7	7	18	15	7	12	93	12	0.7
11	2+2+2o2o	1+2-2o1+	15o	9	9	7	7	5	6	7	5	55	7	0.3
12	2o2o1o1+	1-1+1+1-	10+	7	7	4	5	3	5	5	3	39	5	0.2
13	0+0+1o1-	1-1-1+1o	6o	2	2	4	3	3	3	5	4	26	3	0.1
14	0o1o1+2-	1+1o1+1o	9-	0	4	5	6	5	4	5	4	33	4	0.1
15	1-1-1o2-	1+2o3-2+	12+	3	3	4	6	5	7	12	9	49	6	0.3
16	3+5-4o5-	5+5+5+4+	37o	18	39	27	39	56	56	56	32	323	40	1.5
17	4o4o2+2+	3+2o1+1-	20o	27	27	9	9	18	7	5	3	105	13	0.8
18	0+1-1-1o	1-2-2o1+	8+	2	3	3	4	3	6	7	5	33	4	0.1
19	1-0+1o2o	2o0+1+1-	8+	3	2	4	7	7	2	5	3	33	4	0.1
20	1o1+1+1-	1-1-2-2-	9o	4	5	5	3	3	3	6	6	35	4	0.2
21	1+0+1-1o	1o1o2-1o	8o	5	2	3	4	4	4	6	4	32	4	0.1
22	1o0+0+1-	0+1+2o1-	7-	4	2	2	3	2	5	7	3	28	4	0.1
23	2-2-2-1o	1-1-1-2o	10o	6	6	6	4	3	3	3	7	38	5	0.2
24	3-1-1o2-	2-1o1o2+	12o	12	3	4	6	6	4	4	9	48	6	0.3
25	3+6o6o6o	6+6+6o7o	47o	18	80	80	80	94	94	80	132	658	82	1.8
26	5o5o4-4o	3+3+2+2+	29o	48	48	22	27	18	18	9	9	199	25	1.2
27	2-2-2+3-	2+3-2+3o	19-	6	6	9	12	9	12	9	15	78	10	0.5
28	3o3+2+3-	1+1+1-0o	15-	15	18	9	12	5	5	3	0	67	8	0.5
29	0+2+2o2+	1+1-0+0+	10-	2	9	7	9	5	3	2	2	39	5	0.2
30	1o1-1+4-	4-4-5-5-	23+	4	3	5	22	22	22	39	39	156	20	1.0

	Kp	Sum	October 1958				ap				Sum	Ap	Cp
1	2-3+4+2+	1+2-3-4+	22-	6	18	32	9	5	6	12	32	120	15	0.8
2	4o4-3o2-	1o1o1-2+	17+	27	22	15	6	4	4	3	9	90	11	0.6
3	2o4o4-3-	4o4o3+1+	25o	7	27	22	12	27	27	18	5	145	18	1.0
4	1o1o2o1-	2o1o1-1+	10-	4	4	7	3	7	4	3	5	37	5	0.2
5	4-2o3-2+	2+3-3o3+	22o	22	7	12	9	9	12	15	18	104	13	0.7
6	1+3-1+2+	4-2o3o3+	20-	5	12	5	9	22	7	15	18	93	12	0.7
7	2+3o3o3o	2+3+2+3+	23-	9	15	15	15	9	18	9	18	108	14	0.8
8	4-4-3o2-	1o1-1-2-	16o	22	22	15	6	4	3	3	6	81	10	0.6
9	1+2-1-2-	1o1o1+1o	10-	5	6	3	6	4	4	5	4	37	5	0.2
10	1-1o1o0+	1-2o1+1-	8-	3	4	4	2	3	7	5	3	31	4	0.1
11	2o1o2-1+	1o1o1+2+	12-	7	4	6	5	4	4	5	9	44	6	0.2
12	1-0+0+1-	1-1+1+1o	6+	3	2	2	3	3	5	5	4	27	3	0.1
13	0+2o2o3o	2o1+2o1o	14-	2	7	7	15	7	5	7	4	54	7	0.3
14	1o2+1o2o	3-1+2-2o	14o	4	9	4	7	12	5	6	7	54	7	0.3
15	3o2+2+2+	2+2-3-2o	19-	15	9	9	9	9	6	12	7	76	10	0.5
16	2-4o3o2-	1+1+1o1+	15+	6	27	15	6	5	5	4	5	73	9	0.5
17	2o3+2+1o	1+2+3-2o	17o	7	18	9	4	5	9	12	7	71	9	0.5
18	2+3-3-2-	1+2o1o2-	15+	9	12	12	6	5	7	4	6	61	8	0.4
19	1o2o1+2+	2+3+2o2+	17-	4	7	5	9	9	18	7	9	68	8	0.5
20	3-1-1-1-	1-2-2o3o	12o	12	3	3	3	3	6	7	15	52	6	0.3
21	2o3o2-2o	2-1-1o1o	13o	7	15	6	7	6	3	4	4	52	6	0.3
22	1-5+6o5-	3+5+6-5+	36+	3	56	80	39	18	56	67	56	375	47	1.5
23	5-5+6-5o	5-4+5-4+	39-	39	56	67	48	39	32	39	32	352	44	1.5
24	5-5o7-6+	7-7o6+6o	49-	39	48	111	94	111	132	94	80	709	89	1.8
25	4o3o3+2-	1o1o1o1o	16o	27	15	18	6	4	4	4	4	82	10	0.6
26	1-2o4-3-	2+3-3o2o	19o	3	7	22	12	9	12	15	7	87	11	0.6
27	3+3+2+2+	2-4+6+5+	29o	18	18	9	9	6	32	94	56	242	30	1.3
28	3+3-5+5+	5o5-5-4o	35o	18	12	56	56	48	39	39	27	295	37	1.4
29	4-3+3-3-	2o3o4+5-	26+	22	18	12	12	7	15	32	39	157	20	1.0
30	3+3-3o3+	3+4-3+4+	27o	18	12	15	18	18	22	18	32	153	19	1.0
31	3-3+2+3-	2+4-2o2-	21-	12	18	9	12	9	22	7	6	95	12	0.7

concluded

	Kp	Sum	November 1958				ap				Sum	Ap	Cp
1	1+1+2o2+ 2+2o2-2o	15o	5	5	7	9	9	7	6	7	55	7	0.3
2	1o0+1+2o 3-5+4+3-	20-	4	2	5	7	12	56	32	12	130	16	0.9
3	3o4o2o2+ 3o2o2o2o	20+	15	27	7	9	15	7	7	7	94	12	0.7
4	2o3o1o3- 3+1o2+2o	17+	7	15	4	12	18	4	9	7	76	10	0.5
5	1-0+1o1- 0+1o0+0+	5-	3	2	4	3	2	4	2	2	22	3	0.0
6	0+0+1-1- 1-1-1o1+	6-	2	2	3	3	3	3	4	5	25	3	0.1
7	1-1o1+2+ 2+2+1o2-	13-	3	4	5	9	9	9	4	6	49	6	0.3
8	0+1-1o2- 0+1o0+1-	6o	2	3	4	6	2	4	2	3	26	3	0.1
9	0+2+2o1+ 1-0+1-1-	8+	2	9	7	5	3	2	3	3	34	4	0.1
10	1-2+3-4+ 2o3o3o2o	20o	3	9	12	32	7	15	15	7	100	12	0.7
11	5o4+4-2+ 2+1+1+1-	21o	48	32	22	9	9	5	5	3	133	17	0.9
12	1-2-1o3- 4-2+2+2+	17-	3	6	4	12	22	9	9	9	74	9	0.5
13	3-3o2o1+ 1-1o1-1-	12o	12	15	7	5	3	4	3	3	52	6	0.3
14	1+1-0+0o 1-1-0+2o	6o	5	3	2	0	3	3	2	7	25	3	0.1
15	2-2-3-1+ 2+0+0+1-	11o	6	6	12	5	9	2	2	3	45	6	0.3
16	2+3+3-3- 3-2o0+1-	17-	9	18	12	12	12	7	2	3	75	9	0.5
17	2-3-3+3- 2-2-1+2-	17-	6	12	18	12	6	6	5	6	71	9	0.5
18	1o1-3o2- 2+2o2+3o	16o	4	3	15	6	9	7	9	15	68	8	0.5
19	2-1+2-2- 2-2o0+0+	11-	6	5	6	6	6	7	2	2	40	5	0.2
20	1+1+1-2- 1+1+0+0o	8o	5	5	3	6	5	5	2	0	31	4	0.1
21	1o0+1o2- 1o2-0+0+	7+	4	2	4	6	4	6	2	2	30	4	0.1
22	2-1+0+1o 1o0+0+0+	6+	6	5	2	4	4	2	2	2	27	3	0.1
23	1+1-2-3- 3o2-1-1-	12+	5	3	6	12	15	6	3	3	53	7	0.3
24	0o0o2+3+ 3+2+2o2o	15+	0	0	9	18	18	9	7	7	68	8	0.5
25	1-1+1o1o 3o4-3o3o	17-	3	5	4	4	15	22	15	15	83	10	0.6
26	3o3-1o2- 2o2+2+2-	17-	15	12	4	6	7	9	9	6	68	8	0.5
27	1+3o2o3- 2+3-2o2o	18o	5	15	7	12	9	12	7	7	74	9	0.5
28	3+4o4o4- 4o3-2+2-	26-	18	27	27	22	27	12	9	6	148	18	1.0
29	3-3+3o3o 3-3o0+1o	19o	12	18	15	15	12	15	2	4	93	12	0.7
30	0o1-0+1o 1o0+0o0o	3+	0	3	2	4	4	2	0	0	15	2	0.0

	Kp	Sum	December 1958				ap				Sum	Ap	Cp
1	0o0o0o1- 1o1+1o0+	4+	0	0	0	3	4	5	4	2	18	2	0.0
2	2-1+2-4- 4+4o4o5+	26o	6	5	6	22	32	27	27	56	181	23	1.1
3	3+3o1+1+ 1-1o1o1-	12+	18	15	5	5	3	4	4	3	57	7	0.4
4	4-3o4o5+ 6-5+7-6o	40-	22	15	27	56	67	56	111	80	434	54	1.6
5	7o4+3+3- 2o2o1+2o	25-	132	32	18	12	7	7	5	7	220	28	1.2
6	2o1+1+4- 4-3o1+3-	19o	7	5	5	22	22	15	5	12	93	12	0.7
7	2-3-2+1+ 1+1o1-1-	12-	6	12	9	5	5	4	3	3	47	6	0.3
8	0+0o0+2o 2+3o4o3+	15+	2	0	2	7	9	15	27	18	80	10	0.6
9	4-3o4o3- 2-2o1-1-	18+	22	15	27	12	6	7	3	3	95	12	0.7
10	1o2o2+1- 0+1-0o0+	7+	4	7	9	3	2	3	0	2	30	4	0.1
11	1+2o2o3- 2o1+1+3+	16o	5	7	7	12	7	5	5	18	66	8	0.4
12	2o2o0o1+ 1+1o2o2+	12o	7	7	0	5	5	4	7	9	44	6	0.2
13	5+5+3+3o 6-5o6o5+	39o	56	56	18	15	67	48	80	56	396	50	1.6
14	4-3o2-2o 4o3+4o4o	26-	22	15	6	7	27	18	27	27	149	19	1.0
15	2o2o1o3- 2o3-3+3-	18+	7	7	4	12	7	12	18	12	79	10	0.6
16	4o4+2+4- 3+2+2o1o	23o	27	32	9	22	18	9	7	4	128	16	0.9
17	2-1o2-2+ 2-4+6+6o	25o	6	4	6	9	6	32	94	80	237	30	1.3
18	7o6-3o3- 3+1+1o3-	27-	132	67	15	12	18	5	4	12	265	33	1.3
19	4+5-3+4o 4-3o3-2-	27+	32	39	18	27	22	15	12	6	171	21	1.1
20	3-3+3+3+ 3o3o3-2+	24-	12	18	18	18	15	15	12	9	117	15	0.8
21	2+2o3-2o 2+2-2o1+	16+	9	7	12	7	9	6	7	5	62	8	0.4
22	3o1o2o2- 2+2o3o2+	17+	15	4	7	6	9	7	15	9	72	9	0.5
23	1+1o3-3o 3+3+3o2+	20o	5	4	12	15	18	18	15	9	96	12	0.7
24	2+2o2+2o 2o1+1+2-	15o	9	7	9	7	7	5	5	6	55	7	0.3
25	0o0o0+2- 1+1+2-3-	9o	0	0	2	6	5	5	6	12	36	4	0.2
26	2+2+1o2o 3+3+3+3+	21o	9	9	4	7	18	18	18	18	101	13	0.7
27	2+3o3o3o 3+3-1+2o	21-	9	15	15	15	18	12	5	7	96	12	0.7
28	3+3-3o3- 3o3o3-2+	23-	18	12	15	12	15	15	12	9	108	14	0.8
29	3o2o2-2- 3-2-2+3o	18o	15	7	6	6	12	6	9	15	76	10	0.5
30	3-2-2+2+ 4-3o3-3-	21o	12	6	9	9	22	15	12	12	97	12	0.7
31	2+1+2o1+ 3-2-2+1-	14+	9	5	7	5	12	6	9	3	56	7	0.4

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

January 1959

	Kp			Sum	Ap	Cp
1	0o0o0+1-	1-0+0o0o		2o	1	o. 0
2	0o0o0+2-	2-1+1o1o		7o	3	o. 1
3	2o2+2+2o	2o1o2-0+		14-	6	o. 3
4	1o1-2-2o	2+3-2o1+		14-	7	o. 3
5	2o1+1o4-	4o4o5-6-		26+	25	1. 2
6	5-4o3o3+	4o4-4o3+		30o	24	1. 2
7	4+4-3+3o	2-2o4-4o		26-	19	1. 0
8	4o3o2+3o	2+3o4-4+		26-	18	1. 0
9	5-2+2o3-	4-6o5-6+		32+	38	1. 4
10	6-5o5-5o	5-4+5+4+		39o	45	1. 5
11	5-2+2o1+	2+2o3o4-		21+	14	o. 8
12	4o2+1o2o	3-3o3o3o		21o	13	o. 7
13	2-2o3-3-	2-2+3o1o		17o	9	o. 5
14	0+1-3o2+	2+1+2-3-		14+	8	o. 4
15	2o4-3o2+	1+1o1-1-		15-	8	o. 5
16	1+0+2o4+	4o4-4-4-		23o	17	o. 9
17	3-4o3+3+	4o4-3-2o		26-	18	1. 0
18	4-4o3o3-	3o4o3o3+		27-	19	1. 0
19	2o3o3-3-	2+2o3-1+		19-	10	o. 6
20	1-0o1o1+	1o1o1+2-		8o	4	o. 1
21	0+0o1o1o	1+1o1+0+		6+	3	o. 1
22	1-2o3o2-	2-2-2-2-		14o	7	o. 3
23	3o2-1+3-	3o1+1+1o		15+	8	o. 5
24	2-2-2o1-	1-1o0+0+		8+	4	o. 1
25	1o1o1-4-	4+4+4+3-		22o	18	1. 0
26	1+4-2-4+	6o4-1+0+		22+	22	1. 1
27	0o2o3-3o	3-2+2o2o		17-	9	o. 5
28	3o2+2-2o	2o2+3-2+		18+	9	o. 5
29	1+2-3-3+	3o3+4+4o		24-	17	o. 9
30	3+3+2+3o	2+2o2+0+		19o	11	o. 6
31	3o4o4-3+	2o2-2o2-		21+	14	o. 8

February 1959

	Kp			Sum	Ap	Cp
1	3-3o2+3-	3+3-2-1+		20-	11	o. 6
2	2-4+4+4o	4o3+3+4o		29o	23	1. 1
3	4o3-2+4o	4-4-3+5-		28+	22	1. 1
4	5o4+3+4o	5-4o5-5+		35+	36	1. 4
5	4-5-4-4-	4-4o3+4-		30+	24	1. 2
6	4o3-2o4-	3+3+4o3o		26o	18	1. 0
7	3o3-2-2+	3+2+3-1o		19o	11	o. 6
8	1+2-2+3-	3o3-3-4o		20+	12	o. 7
9	5-5-5o3+	3+3-1o2o		27-	23	1. 1
10	2+1o0+1o	1-1+1+3-		11-	6	o. 2
11	1o4-4-6+	5+5-4-4+		33-	36	1. 4
12	4-5o3+4o	3+3+3o4-		29+	24	1. 1
13	4-2o1+3+	4+4o4+4o		27o	21	1. 1
14	3+4o4-4o	6-5o3+2+		31+	30	1. 3
15	3+6-6-5o	4+4+4o2-		34o	37	1. 4
16	5o6o5o3o	5+6-6+6o		42+	61	1. 7
17	6-5-5o3-	2o2o2o1-		25-	24	1. 1
18	1+1-1o1+	1-2-1+1+		9+	4	o. 2
19	3-4-3+3-	3o2+2o1o		21-	12	o. 7
20	0o1o2-2o	1+1-1-1-		8o	4	o. 1
21	1-0+3-2+	2o1+2o1+		13-	6	o. 3
22	3o4+3+4o	2+3o2o3o		25o	17	o. 9
23	4-4-4+4-	3o1-1-0o		20-	15	o. 8
24	0o0+1o2-	2-1o1-2-		8o	4	o. 1
25	3+5-6+6-	6+7+5+4+		43+	69	1. 7
26	5+5+6+5-	5-5-4+4+		40-	48	1. 6
27	3+4o3-3o	4+6-5o4-		32-	30	1. 3
28	5-5o3o4o	5o5o6-5+		38-	44	1. 5

March 1959

	Kp			Sum	Ap	Cp
1	5-5o5o4+	5-6-4o4+		38-	42	1. 5
2	4o4+5-4o	4+4-5-4o		34-	31	1. 3
3	4-4+4-4-	3+4-3+4o		30-	23	1. 1
4	3+2+3o3+	3-3-3+2o		23-	14	o. 8
5	3o3o3o2o	2-3-3+3-		21+	12	o. 7
6	3-3-2-1o	1+1-1o0+		11+	6	o. 3
7	0+1-1o2o	2-2o2+3-		13-	6	o. 3
8	5-3+2o1+	1o2-1-1o		16-	11	o. 6
9	2-2-1+1o	1o2-0+0o		9-	4	o. 1
10	0o0o2-2-	1-0+0o0+		5-	2	o. 0
11	0+0o1+1+	2-1-2+1+		9o	4	o. 2
12	3+3+3+4-	4o3+3+1+		26-	18	1. 0
13	2o3o2+3-	3+2+2-3+		21-	12	o. 7
14	1-2o3o3-	2+1+1o2-		15-	8	o. 4
15	3-2o1+2+	2-1-0+2-		13-	6	o. 3
16	2+1o1+1o	1-0+1-1o		8+	4	o. 1
17	1+2+2o1o	1o2-1o2-		12o	6	o. 3
18	0+2o1-1o	2-1+1 4o		12-	7	o. 4
19	1o1o1+2+	2o2-2+1-		12+	6	o. 3
20	1+2o2o1+	2-1o1o1-		11o	5	o. 2
21	1o1-1+2+	2o2o1+1+		12o	6	o. 3
22	1-1-1o2-	2o1+1o2o		10+	5	o. 2
23	3-4-3o2-	2-2+3-2-		19+	11	o. 6
24	2o2-2o3-	2+2o2o1+		16o	8	o. 4
25	2+5+3+2+	4+5+5o3+		31+	31	1. 3
26	2+1+4o6+	8o5+6+7+		41o	81	1. 8
27	7+8-8+7-	8+8+8-6+		61-	178	2. 1
28	3+5+4+5+	6+7o7+7+		46+	87	1. 8
29	7-6+6+6-	6-6o5+3-		45-	73	1. 8
30	3+4-4+5o	3o2o2o2o		25+	20	1. 0
31	3-3o3-3o	3o2+4o5o		26-	19	1. 0

April 1959

	Kp			Sum	Ap	Cp
1	4-4o4-1o	1o1-1o0+		15+	11	o. 6
2	0+1o1+2+	1+1+3-2+		13-	6	o. 3
3	3+3o3-3+	2+2o1-3-		20o	12	o. 7
4	3-3-2-2-	1-2-1+1o		13+	7	o. 3
5	3-2-1o2-	2-2-2-1-		13-	6	o. 3
6	2o1o1+1+	1+2o2+2-		13o	6	o. 3
7	2o2-1o2o	2+1+3+2+		16o	8	o. 4
8	3-3+3+3o	4-3+3o5+		28-	22	1. 1
9	6o6+5-4o	2-2+5+5-		35o	44	1. 5
10	5-5o8-7+	7+7o5+3+		48-	98	1. 9
11	4-3+4-4o	3o2+4-5o		29-	23	1. 1
12	4-3o2o3-	2-1+1-3-		18-	10	o. 6
13	3-2o3o2-	3-2o2+1+		18-	9	o. 5
14	4-3o2+2-	2o2o2o3o		20-	11	o. 6
15	4o2-2o1o	1+2o3o2-		17-	10	o. 5
16	2+1+2-3-	1o1o2-1+		13o	6	o. 3
17	0+1o3-3-	3-1+2-2-		14o	7	o. 4
18	2+1-1-1+	1o2-2-0+		10-	5	o. 2
19	1-1-1-1+	1+2o1-2o		9+	4	o. 2
20	1-1+1o2-	2o1+1o1-		10-	5	o. 2
21	3-2+2+3o	2o2+1-0+		16-	8	o. 4
22	1-0+0+1-	1-1o1-0+		5-	3	o. 0
23	0o0+0+4o	5-5o7-6+		27+	40	1. 5
24	4-4o4+4o	5-4+2+4o		31+	27	1. 2
25	3o4-4o3-	3o4o4+4-		28+	22	1. 1
26	4-4o3-3o	2o3o3o4+		26-	18	1. 0
27	3o3-3+2o	3o3o2-4-		22+	14	o. 8
28	2-2o3-3o	2+2-2+4+		20o	12	o. 7
29	4o4-3o3o	4+5o4o2+		29+	24	1. 2
30	2o2o3o2o	5-5o5-2o		25+	21	1. 1

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

May 1959

	Kp								Sum	Ap	Cp
1	1+	4-	2o	2+	3-	1+	2o	2o	17+	9	o.5
2	2o	3-	2+	1o	1o	1-	2-	3-	14o	7	o.4
3	1o	1o	1o	1o	1+	1+	2-	4-	12o	7	o.3
4	3o	2-	2+	3o	3-	2+	3o	5o	23o	16	o.9
5	6+	5+	3o	4o	4o	2o	1o	0+	26o	29	1.3
6	1-	1-	0+	1o	1o	1+	0+	1-	6o	3	o.1
7	1+	1-	1o	1+	1o	1o	1o	3o	10+	6	o.2
8	3+	5+	5+	5o	4-	4o	3-	4o	33+	33	1.3
9	3+	3-	3-	4-	4-	4-	3-	3-	25o	16	o.9
10	3-	2+	3+	4-	2o	3+	3o	3o	23+	14	o.8
11	3o	2+	4o	3o	4-	4-	4-	6o	29+	26	1.2
12	7o	7-	7-	6-	7-	8+	5+	5-	51o	108	1.9
13	2-	2+	4-	3-	3-	3o	3+	3o	22+	14	o.8
14	1+	1+	0+	1+	3-	2-	1-	1-	10o	5	o.2
15	2+	2o	3-	5-	5o	5+	5-	5+	32o	33	1.3
16	6o	6-	6-	4-	2+	2-	2o	4+	31+	36	1.4
17	2-	1+	3-	3o	4-	4o	2+	2+	21o	13	o.8
18	3+	5-	4o	2+	2+	3+	4-	5o	29-	24	1.1
19	3+	3o	2-	3o	3o	3-	3o	3o	23-	14	o.8
20	3o	2-	2+	2-	2+	3+	2+	19o	10	o.6	
21	3o	3-	2+	3-	2-	2+	4-	3+	22-	13	o.7
22	3+	2+	3+	3o	2o	4-	3o	3o	24-	15	o.8
23	4-	3+	2+	2-	2+	3-	2+	21-	12	o.7	
24	3+	4o	6-	5o	5-	4o	5-	7+	39-	52	1.6
25	6+	4-	4-	3+	2+	3o	3-	2+	27+	25	1.2
26	3+	1o	1-	2o	1+	1+	2+	2-	14-	7	o.4
27	2+	2-	1+	1+	1o	0+	1-	1o	10-	5	o.2
28	0+	1o	1-	1-	1o	0+	1-	1+	6o	3	o.1
29	1-	0+	0+	1-	0+	1-	0+	2-	5o	3	o.1
30	1o	0+	0+	2-	3+	2o	1+	1-	11-	6	o.3
31	2+	3+	2+	2+	5o	4-	4o	4+	27+	22	1.1

June 1959

	Kp								Sum	Ap	Cp
1	3-	2o	2o	1+	1o	2-	2+	2o	15o	7	o.4
2	2+	3-	3o	3+	4o	3o	4o	4+	27-	19	1.0
3	3+	4o	3-	3+	4-	3o	2o	2+	24+	16	o.9
4	4-	3o	4o	4-	3-	3-	4-	5o	28+	22	1.1
5	4+	3o	2+	3-	3+	3-	3-	2+	23+	15	o.8
6	2-	2-	2+	3+	3-	3o	3o	3o	21-	12	o.7
7	2+	3o	2-	1+	2o	3-	2o	2-	17-	8	o.5
8	2-	1+	3-	2o	3-	3+	3o	3-	19+	11	o.6
9	3o	3+	4o	4+	4o	3-	3o	2+	27-	19	1.0
10	4-	4+	2+	2+	2o	2o	1+	2o	20o	12	o.7
11	1+	1+	2-	5o	6o	5-	2o	2-	24-	24	1.2
12	1o	1o	1o	1-	1o	3-	3o	1+	12-	6	o.3
13	1+	1-	1-	1-	1+	1-	1+	2-	8+	4	o.1
14	1-	2-	1o	2+	3+	2+	1+	3o	16-	9	o.5
15	2-	2+	3+	2+	2o	1o	1o	1+	15o	8	o.4
16	2o	2-	2-	1+	1+	1o	2+	2+	14-	6	o.3
17	0+	0+	0+	0+	1o	1+	3-	3+	10-	6	o.3
18	2-	2+	2o	1+	3+	2+	2o	2-	17-	8	o.5
19	1+	3o	2o	2o	2+	1o	2o	1+	15o	7	o.4
20	3-	2-	1+	1+	2+	1+	2+	2+	15+	8	o.4
21	2-	1o	2-	1o	2o	2+	3o	2+	15o	8	o.4
22	2-	2-	2o	3+	3o	3-	3-	3o	20o	11	o.7
23	3-	2o	2o	2-	2-	4-	4-	5-	22o	15	o.9
24	6-	6o	3-	1+	1o	2-	4-	3-	25-	26	1.2
25	2o	1+	1o	2-	1+	1o	2-	3o	13o	6	o.3
26	3-	3+	4+	3o	3o	3-	2-	1-	21+	14	o.8
27	0+	1-	2+	3o	6o	6-	4o	5o	27o	31	1.3
28	5o	4+	4+	3+	6-	4o	4o	3+	34o	34	1.3
29	3o	3+	6o	6o	5o	4+	5-	6+	39-	51	1.6
30	5-	3o	4+	5+	6o	5-	4o	3o	35o	38	1.4

July 1959

	Kp								Sum	Ap	Cp
1	1+	1+	2-	1-	1o	1-	1o	2+	10o	5	o.2
2	3+	4+	4+	2+	2o	2o	1-	1-	20-	14	o.8
3	2-	1+	2-	1o	1+	1o	1+	1o	10+	5	o.2
4	1-	0+	1o	3o	3-	4o	4o	4o	20-	15	o.8
5	3+	4-	3+	3o	4-	2o	3o	2+	24+	16	o.9
6	2-	1+	2o	3-	3+	3-	3o	3-	19+	11	o.6
7	3-	3+	3+	4-	3o	3+	2o	1+	23-	14	o.8
8	2-	3-	3+	3o	4-	3+	3o	2o	23-	14	o.8
9	2-	3+	4+	3-	3o	4-	3+	3+	25+	18	1.0
10	4o	4-	3+	3-	1o	2-	2o	2-	20o	13	o.7
11	4-	4o	3o	2-	3+	7-	5+	6+	34o	44	1.5
12	6+	3-	3-	3-	4+	3o	1+	2+	25+	24	1.2
13	2+	2+	3-	1+	3o	3-	2-	3+	19+	11	o.6
14	3-	4-	4-	3o	4o	3-	2+	2-	24-	16	o.9
15	4+	5o	8o	9-	9o	9-	9-	9-	61o	236	2.2
16	7+	5+	4+	3o	4-	3+	4+	5o	36+	47	1.5
17	3+	4+	3+	4-	3+	8+	9-	8+	43+	110	1.9
18	8o	8-	8o	6-	5-	7o	5-	6o	52-	119	1.9
19	5o	4+	3+	4o	4o	5o	4o	3o	33o	31	1.3
20	3o	3-	3+	3+	3-	4-	3o	4+	26o	18	1.0
21	4-	3o	3-	2+	4-	3o	3+	3o	25-	16	o.9
22	3o	2o	3o	2o	3-	3-	2o	4+	22-	13	o.8
23	4o	3+	3o	2+	3-	1o	2o	3-	21o	13	o.7
24	3o	2-	3-	5o	3+	4-	5+	5o	30-	28	1.2
25	4+	4+	4+	5o	4-	5-	5+	5-	36+	38	1.4
26	4o	4+	4o	4o	4o	5-	5o	5-	35-	33	1.3
27	5-	3+	4+	4-	3-	3o	4+	4o	30o	25	1.2
28	4-	2+	2+	3-	3o	3-	2+	3o	22o	13	o.7
29	2+	4-	3-	2o	2+	1+	2-	2-	18-	10	o.5
30	2-	1o	0o	1-	1-	2-	1o		7+	4	o.1
31	2-	4-	3-	3+	3o	2o	3o	4o	23+	15	o.9

August 1959

	Kp								Sum	Ap	Cp
1	3+	3+	4+	4-	4-	3+	2+		28-	20	1.0
2	4o	4o	4-	1+	2-	3-	4o	2-	23o	16	o.9
3	3o	3o	5o	3o	4-	4-	3o	1+	26-	20	1.0
4	2-	3-	2-	5-	4-	3-	3+		25o	19	1.0
5	2o	1+	2o	1+	3-	3+	3-	2o	17+	9	o.5
6	1o	3o	3-	3+	4o	4+	5o	4-	27o	22	1.1
7	3+	3o	3-	2+	3-	4-	3o	2+	23o	14	o.8
8	2+	2-	3-	4o	3+	3o	1o	4-	22-	14	o.8
9	4o	1+	3+	3+	4o	4+	5-	3-	28-	22	1.1
10	3o	4+	2-	1+	3o	3-	3+	2+	22-	14	o.8
11	3-	3o	2o	1+	2o	3-	1-	2-	16o	8	o.5
12	2-	1+	2-	1o	2-	1+	1-	2o	11+	5	o.2
13	2-	2-	1+	2-	1+	1+	2o	2-	13-	6	o.3
14	2-	2-	1+	1+	2-	2-	2o	1+	13-	6	o.3
15	3-	2-	1+	3+	4o	5o	4+	6-	28o	27	1.2
16	4+	4+	7-	7+	8+	8o	7-	7+	53o	130	1.9
17	8-	8+	7-	6+	5+	7o	5o	5+	52-	114	1.9
18	3o	4+	5+	3o	4+	4o	5-	3-	31+	28	1.2
19	3+	5-	4+	3o	2o	3o	4o	3o	27+	21	1.1
20	3-	6-	6-	5o	4o	2+	5o	4o	34+	38	1.4
21	5-	4-	4o	5o	3+	4o	5+	5-	35-	34	1.4
22	4+	4-	4+	3o	3o	4-	5o	4o	31o	27	1.2
23	4-	3+	4-	4-	5-	5-	4+	4+	32+	28	1.2
24	4-	4-	5o	3+	2+	3o	2o	3o	26o	20	1.0
25	3o	3+	3o	3+	1o	3o			23o	15	o.8
26	3o	2-	3o	2-	1o	1+	2o	2-	15+	8	o.4
27	3-	1o	2o	1+	1o	0+	0+	0+	9o	5	o.2
28	0o	1-	1+	1o	1-	1-	0+	1+	6o	3	o.1
29	3o	2-	1+	3-	3-	4o	3-	3-	21-	13	o.7
30	3o	2o	2o	2o	2+	3o	2+	2-	18+	9	o.5
31	2-	2+	2+	2+	3o	2+	2+	2+	19-	9	o.5

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

September 1959

	Kp								Sum	Ap	Cp
1	3+	3o	3+	4-	3o	4o	4+	3-	27+	20	1.0
2	4+	5+	5o	5-	3-	3+	4o	5-	34o	34	1.3
3	3o	3-	3+	4-	3o	4-	4o	8-	31o	39	1.4
4	7-	7+	7o	6+	6o	7o	5+	6-	51+	103	1.9
5	5o	4-	4o	4o	4-	4+	6-		34+	34	1.3
6	6-	4-	4-	3-	2+	2+	1o	1-	22o	18	1.0
7	1+	1-	1+	2o	2+	3+	2-	2-	14+	7	0.4
8	2-	2o	3-	3+	2+	3o	1+	2+	19-	10	0.6
9	2-	1o	1o	2+	1o	2-	1+	2o	12o	6	0.3
10	2-	1+	1o	1+	2-	2o	2-	4-	14+	8	0.4
11	2o	3+	3o	4-	4-	2+	3o	3-	24-	15	0.8
12	5-	3o	3-	3-	2+	3o	2o	1+	22-	14	0.8
13	3+	1o	2o	1+	2-	1o	2+	5+	18o	14	0.8
14	4-	3+	4-	3+	4-	3+	2o	3+	26+	18	1.0
15	2+	2-	3+	3-	4-	3+	5-	4-	25+	18	1.0
16	4+	5-	2+	2o	2+	3-	3-	2+	23+	16	0.9
17	2+	3-	2o	3o	3+	4o	5o	5o	27+	23	1.1
18	3+	3-	3o	5-	4o	4-	4+	5o	31-	27	1.2
19	6o	6o	3+	5o	4+	2+	3-	3-	32+	36	1.4
20	4o	5o	5+	5o	6o	6-	6+	6-	43o	61	1.7
21	6-	7-	7o	5-	6o	7-	6+	5+	48+	86	1.8
22	6+	7-	7o	6-	6-	5o	5+	2+	44o	73	1.8
23	3-	3-	4-	4-	2+	5-	4+	5o	29o	24	1.2
24	4o	4o	4-	3+	5o	3o	3o	3o	29+	24	1.1
25	5o	5-	4o	4+	4o	6-	3+	5-	36-	37	1.4
26	4o	3o	3+	4-	5-	3o	4-	4o	29+	23	1.1
27	3o	3+	4-	4o	4-	4+	3o	3+	28+	21	1.1
28	4o	3o	4-	3+	4-	3-	3+	3-	26+	18	1.0
29	3o	2-	2o	3+	2+	1+	1-	3-	17o	9	0.5
30	2o	1+	2-	3+	3+	3o	3+	3-	21-	12	0.7

October 1959

	Kp								Sum	Ap	Cp
1	4o	5+	6o	6-	4o	4o	4o	5-	38-	44	1.5
2	3-	6-	5o	4o	2o	2+	2+	2-	26-	23	1.1
3	1o	3-	4o	3o	3+	6-	7-	7-	33o	46	1.5
4	5o	7o	5+	5-	6-	3o	4+	3+	38+	51	1.6
5	5-	4+	3o	3-	3+	4+	6o	6-	34o	37	1.4
6	6-	6-	5+	5+	5-	5o	5+	4+	41+	53	1.6
7	3+	4-	3-	3+	3-	1+	2+	4o	23+	15	0.9
8	3o	3-	2-	3-	1+	2-	1o	1-	15-	8	0.4
9	3-	1+	2-	2-	1-	1o	3-	0+	12o	6	0.3
10	1o	1o	1o	1o	1-	2+	1+	1-	9o	4	0.2
11	1o	0o	1o	0+	0o	0o	2-	1+	5+	3	0.0
12	1o	0o	0+	0+	2-	2+	3+	3-	12-	7	0.3
13	1o	1-	1+	1+	1+	1-	1-		8+	4	0.1
14	2-	2-	2o	3+	4-	2+	3+	3o	21o	13	0.7
15	3o	3+	2+	3o	3o	3-	3+	3+	24o	15	0.8
16	2-	1o	1-	0+	0+	1o	2o	1-	8-	4	0.1
17	1o	2-	3-	4+	4-	3o	4-	4-	24-	17	0.9
18	5-	4+	5-	5+	4+	5-	4-	4+	36o	36	1.4
19	4-	4o	2+	3+	2-	1+	3o	3+	23-	15	0.8
20	4-	2o	3o	2o	1+	0+	0+	0+	13o	8	0.4
21	0+	1-	1-	1o	1+	3-	1+	3-	11-	6	0.3
22	3+	4-	3+	3+	3+	4+	3-	3-	27-	19	1.0
23	4-	3-	3-	3+	2-	0+	0+	0o	15-	10	0.5
24	0o	1-	2o	2-	2+	2o	2-	2o	12+	6	0.3
25	3o	5-	4-	4+	4-	3o	2+	4-	28+	22	1.1
26	4-	4-	4o	4o	5o	4+	3o	3+	31o	26	1.2
27	2+	3+	4-	3o	2+	2+	1o	1o	19o	11	0.6
28	1-	1-	2+	2-	1o	0+	0+	0o	7o	4	0.1
29	0+	1+	1+	1o	2-	1-	0+	3+	10o	6	0.3
30	5+	4o	3-	2+	3+	3-	4o	6-	30o	28	1.2
31	4+	3o	3+	5o	4+	5o	5o	6-	36-	38	1.4

November 1959

	Kp								Sum	Ap	Cp
1	4-	5o	6+	5+	4-	4-	4-		37-	43	1.5
2	5o	6-	6+	5o	6-	6-	6+	6-	45+	69	1.7
3	6-	5-	5-	5o	5-	6-	5o	5-	40o	48	1.6
4	2o	3-	5-	4+	5o	5-	6o	4+	34-	36	1.4
5	5-	5o	5o	4o	4o	3-	3o	2-	31-	28	1.2
6	4+	4o	4-	4+	3+	2+	3o	4+	29+	23	1.1
7	1+	4-	3-	1o	1+	2+	4-	2+	18+	11	0.6
8	1+	4-	3-	3+	3+	2+	3-	1+	21-	13	0.7
9	1-	2o	0o	1+	2o	3-	4-	3o	15+	9	0.5
10	3o	2+	2o	2+	3-	1+	2o	3+	19o	10	0.6
11	2+	2-	1-	2-	1o	1-	1+	2-	11o	5	0.2
12	2o	2+	1-	1+	1o	2-	3-	2+	14o	7	0.3
13	2+	2-	2o	3-	3+	3-	3-	4-	21o	12	0.7
14	4+	4-	4o	5-	5-	4o	4-	3o	32o	28	1.2
15	3-	2-	2-	1o	1-	1-	0o	1o	9+	5	0.2
16	1-	0+	2-	1+	2+	3+	3-	3-	15o	8	0.5
17	2+	4+	2+	3+	3+	1-	0+	1-	17+	12	0.7
18	2-	2+	2+	2+	3o	3o	5-	2-	21o	14	0.8
19	2o	3-	4-	3+	3o	2+	1-	1+	19o	11	0.7
20	3o	2-	1+	1+	0o	0o	0+	1-	8+	4	0.2
21	1o	2+	2o	3+	4+	4o	3o	3o	23o	16	0.9
22	3+	4o	3+	4-	3+	2+	3+	2+	26-	17	0.9
23	5+	6-	5+	5o	4+	3+	4+	2o	35o	40	1.4
24	3-	2o	2-	1+	3-	2o	2-	1+	15+	8	0.4
25	2+	1+	2o	3-	3+	2o	1+	3o	18o	10	0.5
26	2+	2o	3+	4o	3o	2-	2-	3+	21+	13	0.8
27	4-	2+	3o	2o	2o	3-	5-		22+	15	0.8
28	6o	8o	7+	7-	4+	4-	4o	4o	44o	82	1.8
29	4-	3-	2-	4o	3+	3o	3-	2-	23-	15	0.8
30	3-	2+	5+	6-	5+	6o	4o	5-	36o	43	1.5

December 1959

	Kp								Sum	Ap	Cp
1	5o	4+	4+	5-	4+	3+	3o	2-	31-	28	1.2
2	3+	4+	4+	5o	4o	4+	4o	4o	33+	30	1.3
3	5o	5-	5o	5+	5+	6-	4o	5+	40+	50	1.6
4	3+	4o	3-	3-	2o	2-	2+	2+	21o	12	0.7
5	0o	0o	4o	5-	6+	7-	8-	6+	36-	68	1.7
6	3o	4+	3+	3+	3o	2o	3o	2+	24+	16	0.9
7	3o	3-	1-	0+	2-	2-	1-	1+	12o	6	0.3
8	1+	2o	2-	1o	1-	3-	2+	2o	14-	7	0.3
9	1+	1+	3-	3-	3o	2o	1-	2o	16-	8	0.4
10	2+	2-	2-	1-	0+	1+	2+	1+	12-	6	0.3
11	0+	2o	2-	2o	1+	2+	1-	2-	12o	6	0.3
12	2+	4+	3-	3o	3-	2o	3o	4o	24o	16	0.9
13	4o	3+	2+	2-	1o	2+	3o	5+	23o	18	1.0
14	5-	4+	5+	5o	5-	5+	5-	3o	37o	40	1.5
15	3+	4+	4+	4o	3+	3+	4o	4+	31o	26	1.2
16	3+	2+	3o	3+	4-	4o	2+	3o	25o	17	0.9
17	3o	1+	3-	3-	2o	1-	1+	2-	15+	8	0.4
18	2o	2-	3o	3-	4-	2o	1+	2o	18+	10	0.6
19	2+	3-	3+	4-	4o	3-	2o	1o	22-	14	0.8
20	2+	2o	1+	2-	1+	2o	2-	2-	14o	6	0.3
21	1+	1+	1+	1-	1-	0+	1o	1o	8-	4	0.1
22	2-	0+	0+	0+	1o	2+	2o	3o	11o	6	0.3
23	3-	3-	4-	3-	3-	6o	4+	5-	29+	28	1.2
24	4o	1+	4o	4o	3+	1+	2-	2o	22-	15	0.9
25	2o	3o	2o	3-	2-	2-	2+	1+	17-	8	0.5
26	3-	4-	3+	4+	4+	4-	4o	5-	31-	26	1.2
27	5-	5-	4o	6-	4+	5-	4o	4+	36+	38	1.4
28	5o	5-	4+	5-	5+	5+	5-	3o	37o	40	1.5
29	4o	4o	4o	4-	4-	3-	1o	2o	25o	18	1.0
30	2-	3o	3o	4-	4-	3o	3-	1o	22-	14	0.8
31	2-	2-	3-	2o	1o	1o	2+	1+	14-	7	0.3

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

January 1960

	Kp	Sum	Ap	Cp
1	1+2-1+1+ 1-0+0+0+	7+	4	0.1
2	1-1+1o1+ 2o1+2-1-	10o	5	0.2
3	2o3-1+1+ 2o2o1o1o	13+	6	0.3
4	2o2o3o3o 3o3-1o1+	18o	10	0.6
5	3o5-4o3+ 4+3+3-4o	29+	24	1.1
6	4-3+2-1+ 2-2-2o1+	17-	9	0.5
7	1-2-2+3- 2o2-1+1o	13+	6	0.3
8	2o2o1-1+ 1-1+2-2-	11+	5	0.2
9	1+2o1+1o 1-0+1-1o	8+	4	0.1
10	1+2+5o5+ 5-6-6-5+	35+	43	1.5
11	4o3+5-4+ 5o4o3o3-	31o	27	1.2
12	3+2+3o2+ 3+3+3-4-	24o	15	0.9
13	2o3-2o2- 1+1+4-3+	18o	10	0.6
14	5+4+5o5- 4o3o5+6-	37+	42	1.5
15	6+5+4-3+ 3+3+2o1+	29-	30	1.3
16	1o2+0+0+ 1-1+1o4-	11-	6	0.3
17	3o3+2+2- 4o3+2-2+	22-	14	0.8
18	2o2+6-5- 4+2+3-3-	27-	23	1.1
19	3+2o1o2o 2+2o2-2-	16o	8	0.4
20	2-3+3o4+ 3+4o3-2+	25-	17	0.9
21	6o4+4o5o 5o5o6-5o	40o	50	1.6
22	4o3+4-5o 3o3o2o3-	27-	20	1.0
23	2+3+4-3- 4-3+4-3+	26o	18	1.0
24	3+4-3o4- 4-3+3-3-	26o	18	1.0
25	2+3-2o2o 2+3o3-1+	18+	10	0.5
26	2-2+2o2+ 2-2o1o2o	15o	7	0.3
27	3o3+2-3- 2o1+0+1+	16-	9	0.5
28	2o1o1o2- 2o1o3-1+	13-	6	0.3
29	3o3o3+3+ 3+2-1o1+	20o	12	0.7
30	0+0o0+1+ 0+0+0+0o	3o	2	0.0
31	0+1o1-1+ 1o1o0+0+	6o	3	0.1

February 1960

	Kp	Sum	Ap	Cp
1	0o2+2+3o 3+2o1o1o	15o	8	0.4
2	1o2o1-3- 3+4-4+4-	21+	15	0.8
3	2o2+3-4- 4o4-4-4+	26+	19	1.0
4	4-4+3+3+ 3-2+3+3+	26+	18	1.0
5	1+1-3-5o 4+4-3-3+	24-	19	1.0
6	5-5-4o2+ 2+3o1+2o	24+	19	1.0
7	2o3-2o2- 1o0+0o0+	10o	5	0.2
8	0+1o3-3+ 4-3-2-1o	16+	10	0.6
9	3o1+0+1- 1-2-2o1o	11-	6	0.3
10	1o3-2o2+ 2-1-1-0o	11o	6	0.2
11	0o0o1o2+ 1+3-3o3+	14-	8	0.4
12	3+2-2o2o 2-1-0+0o	12-	6	0.3
13	0o0+2o2+ 2-1-3o5o	15o	11	0.6
14	5+4+4-4- 4-4-5-3o	32o	29	1.3
15	2o0+1o1- 3+4-3-1o	15-	9	0.5
16	3+2+2+4- 6-5+3o4-	29+	27	1.2
17	4-3+4+3+ 4-3o3+5-	29+	23	1.1
18	5+5-5-3+ 3o3+4o3-	31o	28	1.2
19	2o2o3+4- 3o4o5-4+	27o	21	1.1
20	5o4o3o3- 3o3o2-3-	25o	19	1.0
21	3+4-4+5- 3o4o3o2+	28+	22	1.1
22	1o1+3o3- 2+2o3o3-	18o	10	0.6
23	2-3o2+2+ 2+3+2-1+	18o	10	0.5
24	1o2+1+0+ 1-0+1-0+	7o	4	0.1
25	1o0o2-1o 1-1-1o2-	8-	4	0.1
26	0+0o1o2+ 2-3o2-1+	11+	6	0.3
27	4-5-4-4o 3+3+3o3-	28+	22	1.1
28	2o2o2+2+ 1+2-1-1-	13o	6	0.3
29	4-3-3+3+ 3o2+3o3+	25-	16	0.9

March 1960

	Kp	Sum	Ap	Cp
1	3-3+3+3+ 3+3o5-3o	27-	19	1.0
2	4+3+5-4- 4o3-3o4-	29+	23	1.1
3	3o4o4o4o 4-4-3o3o	28+	21	1.1
4	2+2+2o2+ 4o4+3+3+	24o	16	0.9
5	2+3-4-2- 3+3o3o3o	23-	14	0.8
6	3+4o2+3+ 2-2o3-2o	21+	13	0.7
7	1-1+1o2- 1o1-1o0o	7+	4	0.1
8	1-3-4-3+ 3o3-2o3-	21-	13	0.7
9	2o2o3-3+ 3-3o2o2+	20o	11	0.6
10	2-2+5-5o 3-4o4-2+	26+	22	1.1
11	3+4+4o6- 5-5-4+3o	34o	34	1.3
12	2+2o2+2+ 3-2+1o2-	17-	8	0.4
13	2o1o2o1- 1-2o2-2-	12-	5	0.2
14	1+2+2-3- 2-3o1-1+	15-	8	0.4
15	2+0o1+1+ 3o4o5-6-	22+	21	1.1
16	6+7-6-4- 3o4o5o4+	39-	52	1.6
17	3+4-4+4o 3-3+4o3-	28o	21	1.1
18	3-4-4o3- 2+1o0+3-	19+	12	0.7
19	3-2-2o3+ 3+3-1o1-	17+	10	0.6
20	1o2o1+1o 1o1+0o1-	8+	4	0.1
21	0+1+2+2o 4-2o0+0+	12+	7	0.4
22	1-1+1+1+ 3-1o1-2-	11-	5	0.2
23	2o2-1-2- 1-1-0+2o	10-	5	0.2
24	4o3o2+2+ 2-4+3+3-	24-	16	0.9
25	1-1+2-2- 2-1-2o3o	13-	6	0.3
26	3o1+2+2+ 2-1+1-1-	13+	7	0.3
27	1+3o2o3- 1+0+0+0+	11+	6	0.3
28	0o1+3-4- 3-4o4+4o	23-	17	0.9
29	4+4o4+3+ 1o2-2-3o	23+	18	1.0
30	4-2+2o3o 3-4+4o4+	26+	20	1.0
31	4+5-5o8- 7-8o8-8+	52+	129	1.9

April 1960

	Kp	Sum	Ap	Cp
1	9-9-7o8o 8+9-9-7+	65+	241	2.2
2	7o6o6o6+ 5+2o3-4+	40-	62	1.7
3	7-7+7o6- 4-3+4+3-	41-	68	1.7
4	3-4+3-3- 4-4o4-6-	29+	26	1.2
5	4+6-4+2- 5-6o3o1+	31o	34	1.4
6	1o2+3-2o 3-5-4o4o	23+	17	0.9
7	3+4-2o1- 2+5-5+3+	25+	22	1.1
8	4o4-3+3+ 3-3+2o2o	24+	16	0.9
9	3+4+4-4- 1+1+1+1+	20+	14	0.8
10	3-4o4-3+ 4-3o5-7-	32-	33	1.3
11	4+5-3o3+ 3+3+3-5o	30-	25	1.2
12	6-6-5+4- 3o3o3-4o	33o	35	1.4
13	4+5+6-3- 2+3-3+3+	30-	28	1.2
14	4-3+3o3+ 2+2o2o3+	23o	14	0.8
15	4-6o4o3+ 3-3o3o2-	27+	24	1.2
16	4o3+2+3- 5o5+4+4+	31+	29	1.3
17	6-5-4-4o 2+3+4o4o	32-	30	1.3
18	5+3+4+4+ 2+3-1+2o	26-	21	1.1
19	2o2+2-0+ 1+1o0o0o	9-	4	0.1
20	0o0+1o1- 1o0+0o0+	4-	2	0.0
21	0o0+0o1o 1o1+1o1+	6o	3	0.1
22	2+1o1+2- 1-2o1-1o	11-	5	0.2
23	2-3-2o2o 1+2-2o6-	19o	15	0.8
24	7-7-5o4- 5o3+6o6+	43-	66	1.7
25	7-5+5+5o 5+5-5o5-	42o	57	1.6
26	4+3+4-3- 3-3-2+4o	26-	18	1.0
27	3-2-2+2- 2+2o6-7o	25+	31	1.3
28	7o7-7o6o 6-5+6o3+	47o	84	1.8
29	6+6o6o5o 5-4o5-4+	41o	55	1.6
30	7-7-6-6- 9-9o8o7o	57+	174	2.0

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

May 1960

	Kp								Sum	Ap	Cp
1	7-	6+	6-	4+	4o	3+	3o	4o	37+	49	1.6
2	3-	4+	3o	3o	3-	3o	3o	2o	24-	15	o.9
3	2-	2o	3-	3o	2+	2o	2-	1-	16o	8	o.4
4	1o	0+	1-	1+	1o	1o	2+	3-	10+	5	o.2
5	2-	2o	3-	2o	2-	1+	3+	4-	18+	10	o.6
6	3+	4-	4-	5o	4o	5+	7o	7+	39+	60	1.7
7	6-	6o	4o	5o	6o	5o	4+	5+	41+	55	1.6
8	3+	6+	7-	7+	8o	8+	6+	7-	53o	128	1.9
9	3o	4-	3o	4o	3+	3o	2o	2-	24-	16	o.9
10	2+	2o	2+	2+	3-	2+	3o	4-	21-	12	o.7
11	4-	7-	6+	4o	3+	3o	4-	4o	35-	42	1.5
12	2o	4-	4+	4o	4+	4-	2-	2+	26o	20	1.0
13	3-	2+	2-	2o	2+	3-	3+	3+	20+	11	o.7
14	3o	3o	4o	3+	2o	3-	1+	2-	21o	13	o.8
15	0o	2+	3-	4-	3+	2o	2-	1-	16+	10	o.5
16	1+	2-	2o	2o	5+	6+	6+	6-	31-	42	1.5
17	3o	2o	4-	4-	3-	1+	1+	1+	21+	14	o.8
18	2-	2o	2o	1o	1o	2-	1+	1+	12o	6	o.2
19	2o	2-	2+	2-	1-	1-	1o	1+	11+	5	o.2
20	1-	2+	0+	1-	1-	1o	0+	1o	7o	4	o.1
21	2-	1-	1+	2-	3-	1+	1+	1-	11+	6	o.3
22	0+	1o	0+	1-	3-	2-	1+	2-	10-	5	o.2
23	1o	1o	1+	2o	6-	5-	5+	4o	25o	26	1.2
24	4-	5-	6-	4-	4-	3+	4+	4o	33o	31	1.3
25	4o	3+	3-	3-	3+	4-	4-	3+	27-	19	1.0
26	4+	4o	3+	3-	2+	3o	3o	4o	27-	19	1.0
27	5o	4+	2o	1+	2o	2-	3-	3-	22-	16	o.9
28	2+	2-	2o	1+	1o	1+	6o	4+	20o	18	1.0
29	8-	4+	4o	3+	5o	5-	5+	4+	39-	54	1.6
30	3-	2+	4-	4o	4+	4o	2-	2o	25-	18	1.0
31	2o	2+	2+	2+	3o	3o	3o	4-	22-	13	o.7

June 1960

	Kp								Sum	Ap	Cp
1	4-	6o	4+	5-	4o	2o	2+	1+	28+	28	1.2
2	2o	1-	1o	1+	2o	1+	2-	1o	11o	5	o.2
3	0+	0+	1o	1+	1+	3-	3-	4-	13+	8	o.4
4	5-	6+	6+	5-	5-	4o	4o	5+	40o	52	1.6
5	5o	5+	5-	5o	4o	3+	4-	3+	34+	34	1.4
6	5-	4+	4-	5o	4o	3o	2o	2+	29o	25	1.2
7	3+	3o	3o	4-	3o	2-	3+	2+	23+	15	o.8
8	3o	4+	4o	4-	3o	3o	4o	5-	30-	24	1.2
9	4o	4+	4-	3-	3+	3-	4o	1o	26-	19	1.0
10	1+	1o	1o	1+	1+	2o	2+	2+	13-	6	o.3
11	3-	1+	2-	1o	1-	1-	1o	1-	10-	5	o.2
12	1o	1o	2-	2-	1o	2o	2o	1-	11o	5	o.2
13	2-	2-	1+	1+	1+	3o	1+	1+	13o	6	o.3
14	2o	2-	3-	4-	5-	3-	2o	1+	21-	14	o.8
15	3-	1-	3+	3o	3o	2+	2+	2o	19+	11	o.6
16	2+	2+	2+	1-	1-	1+	1-	1o	11+	6	o.3
17	3-	1o	0+	0+	2o	3+	2+	1+	13+	7	o.4
18	3-	2+	2+	4-	3+	3o	3o	2+	23-	14	o.8
19	3o	3+	4-	4-	3o	3-	3o	3-	25o	16	o.9
20	3o	3-	2+	1+	2+	2+	1-	2-	16+	8	o.5
21	3-	4+	3o	3o	3-	3o	3o	3o	25-	16	o.9
22	3-	4o	2o	3-	2o	2-	3-	3+	21o	13	o.7
23	4-	3o	2o	2-	2+	3o	2-	2+	20-	11	o.6
24	2o	2+	3-	3-	2+	4o	3o	2+	22-	13	o.7
25	4-	2o	2+	3o	3+	5-	5-	5+	29o	26	1.2
26	5-	5-	4+	2+	2+	3o	3-	3+	27+	22	1.1
27	7-	7-	6-	4+	2o	5+	6o	5+	42o	65	1.7
28	4o	4o	5-	6o	4+	4o	4+	4o	35+	36	1.4
29	4-	4+	5-	2+	2o	3o	5+	7-	32o	36	1.4
30	7o	6+	3+	3+	3-	5+	6o	4o	38o	55	1.6

July 1960

	Kp								Sum	Ap	Cp
1	5-	4+	5-	3o	3+	3o	4+	3o	30+	26	1.2
2	4-	3o	4o	4-	3+	2o	2o	2-	23+	16	o.9
3	2o	3-	2+	3o	2+	3+	3+	3+	22+	13	o.8
4	4o	3+	4+	3+	3o	4-	3o	3o	28-	20	1.0
5	3+	3-	3+	4o	3+	2o	3+	3-	25-	16	o.9
6	4-	2+	2+	4o	3o	2o	2-	1+	20+	12	o.7
7	1-	1o	2-	2-	1-	2-	1o	1+	10-	5	o.2
8	1+	1o	1-	1o	1-	1-	0+	1-	6+	3	o.1
9	1-	1-	1+	2-	1-	1-	1-	1+	8-	4	o.1
10	3-	2o	2o	2-	1+	2+	3-	2+	17o	8	o.5
11	3-	2+	1+	3-	2o	3o	3-	3-	19+	10	o.6
12	3-	2+	3o	2+	3o	2o	2o	2o	19o	10	o.6
13	3-	3o	3o	2o	2+	3+	3o	2+	22-	12	o.7
14	1+	4-	3+	4o	4-	6o	5o	6+	33+	40	1.4
15	3o	4-	4-	5o	6+	7+	8-	8o	45-	93	1.9
16	8+	7-	6-	5o	4+	5+	5-	4o	44o	77	1.8
17	5+	5-	4+	3-	2o	3+	3-	3+	28+	24	1.2
18	3o	3-	3o	3-	3+	4o	2o	2-	22+	14	o.8
19	1-	3-	5o	6o	4o	5o	4+	5o	32-	35	1.4
20	4o	2o	2+	4-	5o	4o	4+	5-	30o	26	1.2
21	2+	4-	2+	1+	3o	2o	2-	2o	18+	10	o.6
22	2+	3o	2+	2o	3-	2-	2o	3+	19+	10	o.6
23	5-	2o	2o	1-	1o	1o	1+	2-	14+	9	o.5
24	2+	2o	3-	2+	3-	3-	2o	2+	19o	10	o.5
25	1-	1+	1-	0+	0+	1-	1+	2-	7o	4	o.1
26	1+	1+	1o	1+	2+	2-	2o	4o	15o	8	o.5
27	2+	1+	2+	1+	2-	1o	1o	1-	12-	6	o.3
28	0o	1+	1+	2o	3-	1o	2-	2+	12+	6	o.3
29	5-	4+	4o	3-	3o	5o	5-	4-	32o	29	1.3
30	5-	4+	3-	5o	5+	3o	3o	3-	31-	29	1.3
31	6-	4+	5+	5o	4-	4+	3o	4-	35o	37	1.4

August 1960

	Kp								Sum	Ap	Cp
1	3-	3o	3o	3o	4o	2-	2-	3-	22-	14	0.8
2	3-	4+	3o	3-	2+	3o	3+	4o	25+	18	1.0
3	3-	1+	2-	2o	2o	2o	1+	2-	15-	7	o.3
4	2+	2+	2o	3o	1+	1-	1o	1-	13+	7	o.3
5	1-	1o	1o	1-	1o	1-	1-	0+	6o	3	o.1
6	1-	1-	2+	2+	1+	2o	2+	2+	14o	7	o.3
7	3o	2o	2-	2-	2-	3-	1+	0o	14o	7	o.4
8	1-	2-	4-	3-	3+	4-	3+	4o	23o	16	o.9
9	4-	5o	5-	4o	3-	2+	2+	2o	27-	22	1.1
10	3-	2o	4-	3o	3o	3+	3-	2o	22+	14	o.8
11	2+	5o	3+	4+	4o	4-	4-	2+	29-	23	1.1
12	3+	4+	5o	5-	4-	3o	2o	2+	28+	24	1.1
13	2-	2+	2-	2+	3-	2-	2o	2-	16o	8	o.4
14	2o	2+	2-	2-	2o	4+	4o	3+	21+	14	o.8
15	3+	3-	2+	2o	1+	2-	1+	1o	16-	8	o.4
16	2-	1-	1-	2-	6+	7o	6+	6o	30+	52	1.6
17	8-	8-	7o	5+	4+	7-	6+	6-	51-	106	1.9
18	4-	3o	4-	5-	3-	2-	2-	1+	22+	16	o.9
19	2o	1o	2o	3+	3-	4+	4+	5+	25o	21	1.1
20	2+	5-	6o	3o	3o	3-	3+	3+	28+	26	1.2
21	4o	4o	5-	5o	3o	4-	4o	4-	32o	28	1.2
22	5-	3-	2-	2+	2-	2+	3+	2+	21o	14	o.8
23	2+	2+	2o	2-	1o	2+	2+	1o	15o	7	o.4
24	2-	1o	2o	3o	1-	1+	1+	1-	12-	6	o.3
25	1-	0+	1-	0+	1o	1+	1+	1-	6+	3	0.1
26	0o	0+	1o	1o	1-	1o	1+	2o	7+	4	o.1
27	3+	3-	2o	2+	2o	4-	5-	3+	24o	16	o.9
28	3-	4+	4o	1o	3-	3o	1-	1o	19+	14	o.8
29	5o	7-	5o	3+	4+	4+	4-	5o	37+	45	1.5
30	6-	7o	7o	5o	4o	4+	3o	2o	38o	58	1.7
31	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	o.9

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

September 1960

	Kp							Sum	Ap	Cp
1	0+	0+	1-	1-	1o	1-	0+	1o	5o	3	0.1
2	1-	2o	2o	2o	3+	3o	4+	6-	23o	20	1.0
3	5o	5+	7-	3o	3+	3-	2-	2o	31-	35	1.4
4	4-	5-	7-	6o	7-	6o	7-	8o	48+	95	1.9
5	7+	8-	8-	8-	5o	6-	6o	5+	52+	118	1.9
6	5+	5o	5-	2+	2-	2-	3o	5o	29-	28	1.2
7	3+	3o	3o	4-	6-	3+	4+	4o	30+	27	1.2
8	4-	3+	5-	3+	3o	4-	3-	1o	25+	19	1.0
9	4o	4o	3+	3-	3-	2-	3-	3o	24o	16	0.9
10	2+	2+	2+	3+	2+	4-	3o	3o	22+	13	0.8
11	4+	3+	3-	1o	2o	3-	3o	3+	22+	15	0.8
12	3+	3-	3+	3-	2-	3-	1+	1+	19o	11	0.6
13	4-	5o	4+	4-	2+	1o	3-	4-	26+	21	1.1
14	5o	4o	2+	2+	1+	1+	0+	0+	17o	13	0.8
15	0+	2o	1+	1+	1o	1o	1o	1o	9-	4	0.1
16	1+	0+	0+	1o	1+	1o	1o	1-	7o	4	0.1
17	1o	2o	0+	1-	2-	2o	3+	3+	14+	8	0.4
18	5-	4+	2+	4-	2+	1+	1+	1+	21+	16	0.9
19	1+	1o	2-	1o	1+	1o	1-	0+	8+	4	0.1
20	1-	0+	1+	1+	1-	1o	1+	3-	9+	5	0.2
21	2+	1-	1o	2+	2o	2+	3-		16-	8	0.4
22	3-	2+	2-	1-	2+	2+	3+	3-	18o	10	0.5
23	3+	3o	4o	4-	1+	1+	1+	3+	21+	14	0.8
24	5o	5-	5-	5-	2+	4-	3o	1+	29+	27	1.2
25	1o	1o	1-	1o	0+	1+	3-	1+	9+	5	0.2
26	3-	1+	3-	2-	1-	1+	3-	4-	17-	10	0.5
27	5-	4+	4o	3-	1+	1o	2+	1+	22-	17	0.9
28	1o	2-	3+	1+	2-	1o	1o		13-	7	0.3
29	1o	0+	3-	2o	5-	3o	2+	4o	20o	14	0.8
30	5-	4o	4-	3o	4+	4-	4+	5-	32+	28	1.2

October 1960

	Kp							Sum	Ap	Cp
1	4+	6o	5+	5+	5o	4o	4+	5+	40-	48	1.6
2	5-	5-	6-	5o	6o	6-	5-	3o	39+	49	1.6
3	3-	2+	3-	5o	3o	3-	2-	2o	22o	15	0.9
4	2-	1-	2o	3-	3+	6-	7-	6-	28+	36	1.4
5	4+	5o	4o	3o	3+	4-	3o	6+	33-	34	1.3
6	6o	8o	7+	8o	8o	8+	8+	9-	63-	203	2.1
7	9o	9-	8-	8-	7+	7o	6-	6o	59o	186	2.1
8	5+	4o	5o	5o	3+	3o	4o	4o	34-	33	1.3
9	4o	6-	5-	4o	5-	4o	4o	5o	36o	38	1.4
10	4o	4-	2-	1-	0+	1o	1+	3o	16-	10	0.6
11	4-	4-	5-	3+	3-	2-	2+		24-	17	0.9
12	1-	1o	1o	2o	1-	1+	2o	3-	11+	6	0.3
13	1-	1+	1o	1-	1o	1-	2+		8+	4	0.1
14	2-	1-	1-	1+	0o	0+	0o	1-	5+	3	0.0
15	1o	2+	2o	3o	4-	4+	4+	3+	24o	17	0.9
16	2o	2+	2-	1+	3-	1-	0o	2-	12+	6	0.3
17	3-	1o	2-	2-	2+	1+	2-	2-	14o	7	0.3
18	4+	4-	4-	3o	3+	4-	5+	4o	31o	27	1.2
19	2o	4-	2+	2+	2o	2o	2-	3o	19o	10	0.6
20	1o	3o	2+	3-	2o	3o	2-	3-	18+	10	0.6
21	3-	1o	3-	2o	1+	0+	2-	3-	14+	8	0.4
22	0+	1-	1+	0+	0+	0+	0+	0o	4-	2	0.0
23	0+	0o	1-	0+	0+	1o	2-	1+	6-	3	0.1
24	0+	1-	1-	2-	4+	6o	4+	2o	20o	21	1.1
25	2+	3-	6-	6-	6-	8-	7+	5+	42+	76	1.8
26	7-	6o	6o	6-	5-	4+	4o		43o	63	1.7
27	5-	5-	3o	5+	4+	5-	4+	5+	36+	38	1.4
28	5-	6-	5o	5+	5o	5+	4+	3o	38+	45	1.5
29	5o	4-	4o	6-	5o	5o	4o	4+	37-	40	1.4
30	4o	4-	5-	5+	5-	4o	4-	5-	35-	34	1.3
31	5-	3+	4o	4o	4-	5-	5-	3+	32+	29	1.3

November 1960

	Kp							Sum	Ap	Cp
1	3-	3o	3o	2+	2+	2+	3+		21-	12	0.7
2	3o	3-	4-	3o	3+	1+	3o	4-	24-	16	0.9
3	4+	3-	3-	3+	3o	2o	3-	5-	25+	18	1.0
4	6-	6-	6-	5-	5+	5+	4-	5-	41-	52	1.6
5	4-	4o	2+	2o	3-	1o	0+	0+	16+	11	0.6
6	0o	1o	2+	2-	0+	2+	2o		12o	6	0.3
7	3o	3-	3-	2-	1-	0+	0o	0o	11o	6	0.3
8	0o	0o	2o	2-	1-	1-	0+	1+	7-	3	0.1
9	2-	2o	2o	2+	2-	0+	0o	1o	11o	5	0.2
10	0o	0o	2+	2+	3o	2+	1o	1-	12-	6	0.3
11	2+	3+	4-	5-	3+	2o	3o	3-	25o	18	1.0
12	2o	1o	2o	2-	5o	6o	8-	8o	33+	67	1.7
13	9-	9-	9o	9o	9-	8+	8o	6+	67-	280	2.3
14	7+	5-	5o	4o	3-	4+	5+	4o	37+	49	1.6
15	5+	4o	4+	3o	6o	6o	6o	8-	42+	69	1.7
16	8+	8+	6o	5+	6-	5-	3+	3+	45o	94	1.9
17	4-	3o	3+	3o	3-	4-	4o	3-	26o	18	1.0
18	3+	2o	1o	1+	1-	1-	0+	0o	9+	5	0.2
19	0o	2o	1+	3-	3o	1-	0+	1+	11+	6	0.3
20	2o	2+	2+	3-	3o	3-	1o	2-	18-	9	0.5
21	1o	4+	6-	5-	5o	5o	6o	5-	36+	45	1.5
22	6-	5+	5-	4-	3+	3-	2o	4-	31o	30	1.3
23	3-	3-	4-	2+	2o	1o	2-	2o	18o	10	0.6
24	4-	2+	3+	1o	2o	2o	3o	5o	22+	16	0.9
25	4o	5-	5+	5+	5-	4+	4+	4+	37o	39	1.4
26	3-	4+	4-	3+	4-	1+	3o	3-	25-	17	0.9
27	3-	3o	3+	3o	3+	4o	5-	4-	28-	21	1.1
28	5o	5-	4-	3+	4-	2o	1+	1o	25-	21	1.1
29	3+	2+	2-	3-	2-	1+	2-	3-	17+	9	0.5
30	2o	3o	2-	1o	2-	2-	4o	6-	21-	17	0.9

December 1960

	Kp							Sum	Ap	Cp
1	6+	8o	7-	5o	5+	6o	6-	6o	49o	93	1.9
2	4-	4o	4-	4o	5o	3+	3+	4-	31-	26	1.2
3	2+	4o	2o	3-	1+	2-	0+	1o	15+	9	0.5
4	1-	0o	2o	2-	2+	2+	2o	1-	12-	6	0.2
5	1o	3o	1+	3o	2+	3o	1+		18o	10	0.6
6	1o	3-	2+	4-	4+	4o	4+	4o	26+	21	1.1
7	2o	4-	2+	3-	4o	2-	5o	6-	27o	25	1.2
8	5-	5+	4-	4o	3-	2-	1o	2-	25-	22	1.1
9	2o	4+	3+	4-	4+	3+	4-	3-	27+	20	1.0
10	3-	3-	1+	2o	2o	2+	3+	2o	18+	10	0.5
11	1o	1+	2+	2-	3-	3-	3-	3o	17+	9	0.5
12	3o	3o	2+	3o	3-	3o	4o	4+	25+	18	1.0
13	4-	4-	4-	3o	3+	1o	1o	1-	20o	14	0.8
14	0o	1-	2o	3o	2+	2o	1-	1o	12-	6	0.3
15	3-	3o	3+	4o	6o	5+	5+	6o	36-	43	1.5
16	6-	6-	5o	5-	4-	2o	1+	2+	30+	33	1.3
17	1-	2-	3o	2o	2-	1+	2o	2o	14+	7	0.4
18	3-	4o	5o	5-	3+	4o	4o	3-	30+	26	1.2
19	3+	3+	3+	4-	3-	3-	3-	4o	26-	17	0.9
20	4o	4o	3+	4o	3-	3-	5-	4o	29+	24	1.1
21	5o	3o	2+	2+	3+	4+	4o	5-	29o	25	1.2
22	4-	4o	4o	4-	3-	3o	3-	4-	27+	20	1.0
23	3+	3+	3o	3+	4o	2o	2o	2-	23-	14	0.8
24	2+	3-	1+	2+	4-	4-	3o	4o	23o	15	0.9
25	4-	2o	2-	2o	2-	1-	3-	2-	16o	9	0.5
26	4o	4o	4o	3-	3+	2o	2-	2-	23+	16	0.9
27	2o	4o	5o	5o	6o	6+	5o		38+	50	1.6
28	4o	3-	3+	5+	4o	4-	3+	2-	28o	23	1.1
29	4o	3+	4-	3+	2+	5-	3-	2o	26o	19	1.0
30	2o	4-	3+	2+	3-	4o	4o	3-	25-	17	0.9
31	2-	3+	4-	3o	3+	4-	3o	2o	24-	15	0.9

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

January 1961

	Kp			Sum	Ap	Cp
1	3-3-3o2-	1+1o0+1-		13+	7	0.4
2	0o0+1+2o	1+1-1o1o		8-	4	0.1
3	1o2o2+1-	1-1+1o1o		10o	5	0.2
4	0o1-1o1-	1o1o0+1o		6-	3	0.1
5	0+0o1o1+	1-0+2+2o		8o	4	0.1
6	1-3-2-3-	2+1-0+1-		12-	6	0.3
7	3-3o1+1+	2+1+1o3-		16-	8	0.5
8	4o4o4-3+	3o4o4+3-		29o	22	1.1
9	2+4o5-5-	4o4-4+5o		33-	30	1.3
10	2+0+1+2-	2-1+1-1o		10+	5	0.2
11	0+1-1-0o	0+0o0o0o		2o	1	0.0
12	0+2+2o1-	1-1+2-2-		11-	5	0.2
13	2o1o3-3-	3+2-2+2-		17+	9	0.5
14	1+1-0+1-	0+1+1+3o		9o	5	0.2
15	3o2+4-3o	3-2o1-6-		23o	19	1.0
16	3o4o4o1+	0+0+3-2+		18o	12	0.7
17	3-2o2+2+	2+1+1+2o		16+	8	0.4
18	3-2-3-3+	5-3-4-3o		24+	17	0.9
19	4-2+2-1+	3o4+6-5+		27+	26	1.2
20	6o6-5o4o	4+5-4o2-		35+	41	1.5
21	2-4-4o4-	4o4+1+1+		24o	18	1.0
22	1+2o4+4+	4+4o3+3o		27-	21	1.1
23	3-2+2-1+	1-2o1+1+		13+	6	0.3
24	3-3o4+3o	3+3o4o3-		26o	18	1.0
25	4o4+3-4o	4o2o2+2o		25+	18	1.0
26	2-2o2+3-	4o3o2+3-		21-	12	0.7
27	3-2-3-2+	2+2-2-1-		16-	8	0.4
28	4-2-2-2+	3-3-4-2o		20+	12	0.7
29	3-3-2-2-	3o2o2+2-		18-	9	0.5
30	1+3-1+2-	0o0+0o1o		8+	4	0.1
31	2+2-1o0+	0+0+1-0o		7-	4	0.1

February 1961

	Kp			Sum	Ap	Cp
1	1o1-0o0+	1-1o2-1-		6o	3	0.1
2	1-0+0o0+	1-0o0o0+		2+	2	0.0
3	1o0+1o4-	5-3o2+2+		18+	13	0.7
4	1+2o2o1+	5o4+7-7o		30-	43	1.5
5	6-6-5+4-	2o2o1-1o		26o	29	1.3
6	2+2+5o4o	4-5-3-3o		28-	23	1.1
7	3o3+2o2+	2+1+2-4-		20-	11	0.7
8	3o2-2o2-	2o2o3o2+		18-	9	0.5
9	3o3-2+2o	2-2-0o1o		14+	7	0.4
10	2-0+1o0+	0o0+1+2o		7o	4	0.1
11	3-3o1o3+	2o1-1+1+		15+	9	0.5
12	0o1o0+0+	0+0+0+1o		4-	2	0.0
13	1+1+4o5o	4+5-3+2+		26+	23	1.1
14	2o1+1+1+	1-1+3o3o		14o	8	0.4
15	3-2-2-3o	2o1+1-0+		13+	7	0.4
16	4-4-5-5+	5-3+2+3-		30-	27	1.2
17	2-1-2o4+	5o4-4+6o		28-	29	1.3
18	7-5+5o5o	5o5+4+2-		38+	51	1.6
19	3o2+3+3+	5-4-3o2+		26-	18	1.0
20	4-4-4o4o	5-5+3+4o		33-	30	1.3
21	3o3o4-3+	4-5-4-4+		29+	23	1.1
22	3o4o3+3+	3-3+2o4o		26-	18	1.0
23	3o3-3o2o	2o2-3+2o		20-	11	0.6
24	2+4o4o1o	1+1-0+0o		14-	10	0.5
25	0o0o1o2-	0+0+1+2o		7-	3	0.1
26	1+1o0+1-	1-1+1+1-		7+	4	0.1
27	1-3+2o2-	3-3o1+1-		15+	9	0.5
28	2+3o3-3o	3o2-3-2+		21-	12	0.7

March 1961

	Kp			Sum	Ap	Cp
1	1+3-2o2-	3+0+2-2+		15+	8	0.4
2	2+3+3-2-	0+1-1+2o		14+	8	0.4
3	3o1+1+1-	1o1o0+0+		9o	5	0.2
4	0o0+1-1-	2+1o0o0+		5+	3	0.1
5	1o2o1o1+	1-1+3+6-		16+	14	0.8
6	7-6o4o4+	4+2-1o0+		28+	37	1.4
7	0o0o0+1-	1o1o2-2o		7-	3	0.1
8	2-2-1-1-	1-1o1+2+		10o	5	0.2
9	2o3-3-1o	3+3o3o4-		21+	13	0.8
10	4o5-6+7o	5o3o2-1+		33o	46	1.5
11	1-1+2-2-	2o2-2+1o		12+	6	0.3
12	3+1-1o2o	2-1-1-2+		12+	7	0.3
13	3o2o3o2-	2o3o2-2-		18o	10	0.5
14	4+5-4+4o	3+4-4o2+		31-	26	1.2
15	2o4o3-4+	5o3-3o5-		28+	24	1.2
16	5-3+5+3o	3+3-1-1-		24-	20	1.0
17	2+2+5-4o	3-2-1o1+		20o	14	0.8
18	2o1+1+0+	3-4-4o3o		18+	12	0.7
19	2-5o6o4-	5-5+4+4-		34+	38	1.4
20	4-3o3-4o	4-3-4-2o		25+	17	0.9
21	3o3+2-2o	1+3o3o1o		18+	11	0.6
22	3-4-4+3+	2+2-1-0+		19o	13	0.7
23	1o3-3-2o	4-2+2o1+		18-	10	0.5
24	1+2+2-3+	2+2o1+2o		16+	8	0.4
25	2-0+1-1-	2+1+1o1+		9+	5	0.2
26	1o2+3-3o	2+1+1o3o		17-	9	0.5
27	2o2o2+3-	3-6o5-2-		24o	22	1.1
28	4o4+4-3o	3o3-2+1-		24-	17	0.9
29	1-1+1o2-	2+1+2+1+		12o	6	0.3
30	3-4o4-2-	2-1+1o0+		16+	10	0.6
31	0+1-1-1o	2-3+2o2o		12-	6	0.3

April 1961

	Kp			Sum	Ap	Cp
1	5-4-4o3-	2o2-2+3-		24-	17	0.9
2	2-3+4o2+	3o2o3+3o		23-	14	0.8
3	4o6o5-4o	2+3-2+3-		29-	27	1.2
4	3o1+3-1-	1-0+1o0+		10o	6	0.3
5	2+3o1o2-	1-1o0+0o		10o	5	0.2
6	1+1-1o1o	1+2-4-4-		14+	9	0.5
7	4-3+1-2o	1o1-1o1o		13+	8	0.4
8	1o1+2+3-	1-1-2-1+		12-	6	0.3
9	2-2+3-6+	5-3o3-2+		26-	24	1.2
10	4-4-3+4-	3+3o3+3-		27-	18	1.0
11	4o5o3o3+	3+5+3+2-		29o	26	1.2
12	2o2-3+2o	3+3-2+2-		19o	10	0.6
13	2-2+2-1+	4-5+3-2o		21-	15	0.9
14	3-3o3-4-	4+5+7o7+		36o	54	1.6
15	8-7o6o3+	3+4+3+3-		38-	61	1.7
16	3-3-2o2+	3o3-3+4-		22+	13	0.8
17	1+2-1+1+	2-1+1-0o		9+	4	0.2
18	1+2o2+2-	1o1o0+1o		11-	5	0.2
19	2-2+2o1o	1+2o3-2+		15+	7	0.4
20	3+2o3-1o	1-1o1+1o		13o	7	0.4
21	0o0+0o0+	1+0+1o1+		5-	2	0.0
22	0+0o1-2-	3-3o3-3+		14+	8	0.5
23	1o2-2+2o	3-1+3-3-		16+	8	0.5
24	3+3-1+2o	2+2+3-3o		20-	11	0.6
25	4-2+1+1+	1o1+2o1+		14+	8	0.4
26	3-3+2+2-	3o4-4-1o		21+	14	0.8
27	2-3o3+3+	3+2+2-2o		21-	12	0.7
28	3+2+2+1+	1o1-2-1o		14-	7	0.4
29	2+0o0o2o	1-1o1+3o		10+	5	0.2
30	2+2-1+2o	3-3-2-3+		18-	9	0.5

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

May 1961

	Kp							Sum	Ap	Cp
1	3+	4-	1+	3+	3+	3o	1-	3+	22o	15	0.8
2	6-	5-	3-	3o	1o	2-	1-	1-	20o	19	1.0
3	0+	1+	1+	1o	1-	1-	1o	0+	7-	4	0.1
4	0o	0+	1o	1o	1-	2-	3o	4+	12o	8	0.4
5	2+	3-	4-	2+	2+	5+	4-	4-	26o	20	1.0
6	3-	5o	5o	5-	5-	2o	4-	4-	31+	30	1.3
7	4-	3o	5-	4-	3o	4-	2+	3+	27+	20	1.0
8	2+	2+	3-	2o	2o	2+	4-	3o	20+	11	0.6
9	1+	3-	4o	5-	3-	3o	1+	2o	22-	15	0.9
10	2+	1+	2-	2o	2-	1o	2-	3+	15o	8	0.4
11	4-	3o	3+	3-	4-	4+	3-		27o	19	1.0
12	4-	4-	3o	3-	2o	3o	3-	3+	24o	15	0.9
13	5+	5-	3o	3o	4-	2+	2+	2o	26+	22	1.1
14	3o	4-	3-	3o	2-	1+	1-	1-	17-	10	0.6
15	0o	0+	0+	1+	1-	1+	2-	2+	8o	4	0.1
16	4o	5+	5-	3o	4+	4o	3o	3-	31o	28	1.2
17	3o	2-	1+	2+	3-	2+	0+	1o	15-	8	0.4
18	1o	1-	1o	1o	1-	0+	0+	0+	5+	3	0.1
19	2-	2o	2-	2o	2o	2o	3+		17-	8	0.4
20	3+	4+	4-	2o	2+	2o	2+	1-	21-	13	0.8
21	1+	1o	1+	1o	1o	2o	2+	2o	11o	5	0.2
22	3-	2+	2+	2-	3o	4-	2o		19+	11	0.6
23	2+	4-	2+	3-	4-	3-	1+		22+	14	0.8
24	3o	2+	2-	1+	2-	2o	1o	2+	15+	8	0.4
25	4-	6-	6-	4-	4+	4-	4+	2o	33o	34	1.3
26	4-	1o	2o	1+	2+	1o	1-	1+	13+	7	0.4
27	2+	2+	2+	1o	1+	1o	0+	1o	12-	6	0.3
28	1o	1-	1o	2-	3o	3o	3+		17o	10	0.6
29	1o	3-	2-	0+	0+	1-	1+	1-	9-	5	0.2
30	1+	1+	2+	3-	3-	1+	2+		17-	9	0.5
31	4-	3+	4-	4-	4o	4o	3+	4-	29+	22	1.1

June 1961

	Kp							Sum	Ap	Cp
1	3o	3o	3o	5-	6-	5+	3+	3o	31o	30	1.3
2	4-	2+	4-	5-	5-	5-	1o		30-	28	1.2
3	2+	4-	3+	3o	1+	1o	1-	2-	17o	10	0.6
4	2-	2+	3-	2+	3o	1+	1-	1+	15+	8	0.4
5	1+	3o	3-	2+	1+	2o	2+	2o	17o	9	0.5
6	2-	2-	3-	1+	2+	5+	4o	3o	22o	17	0.9
7	2o	3-	4-	4+	5o	4-	4o	3+	29-	24	1.1
8	4o	3+	3+	3o	3+	3-	3-	3-	25o	16	0.9
9	1-	1o	2o	2o	1+	2o	2+	2o	13+	6	0.3
10	1+	1+	2-	1+	2o	0+	0o	0o	8o	4	0.1
11	0+	1-	0+	0+	1-	1-	1o	0o	4o	2	0.0
12	1o	4-	3-	2o	2o	2o	1-	0+	14+	8	0.4
13	0+	1-	0+	1+	1o	1-	1-	1o	6o	3	0.1
14	1o	0o	1-	1o	0+	0+	1-	3+	7+	4	0.2
15	2+	2+	2o	3+	3o	3-	2+	2-	20-	11	0.6
16	4-	2o	1+	2+	2o	3-	3-	2-	18+	10	0.6
17	1+	2-	0+	1+	3-	1o	1+	2o	12-	6	0.3
18	1+	2-	2o	3o	3-	3+	3+	4+	22-	14	0.8
19	2+	3o	2o	2-	1o	1-	2o	2-	14+	7	0.4
20	2-	2+	2+	2-	0+	2o	3+	4o	18-	10	0.6
21	5o	5-	4+	6-	6-	4+	5o	7o	42-	58	1.7
22	7o	6-	5-	5o	4o	5o	5+	5o	42-	58	1.7
23	4-	2-	1o	1-	2-	3-	2o	2+	16-	9	0.5
24	2+	2o	1o	1o	1+	1+	2-	1+	12o	6	0.3
25	2-	2-	1+	3o	2o	2o	2o	3+	17o	9	0.5
26	1+	1o	0+	0+	3o	2o	2o	1-	11-	6	0.3
27	0+	2-	3o	3o	3-	1+	0+	0+	13-	7	0.4
28	0+	1o	1+	2-	2-	1+	1-	1o	9o	4	0.2
29	3+	6+	5-	3+	3-	2o	2o	2-	26o	25	1.2
30	2+	1+	1-	0+	0+	0+	1o	1+	8-	4	0.1

July 1961

	Kp							Sum	Ap	Cp
1	3-	3-	3-	3o	2o	3-	0+	1o	17o	10	0.5
2	1+	2+	3-	2+	2-	3+	4-	3o	20+	12	0.7
3	2-	2o	3+	4o	4+	4o	2+	1+	23o	16	0.9
4	2+	1+	2-	2+	3o	3-	3o	5+	22-	16	0.9
5	6o	6+	4o	4o	5o	5-	3o	4o	37o	45	1.5
6	3o	4o	3-	2+	2o	5-	3-	2+	24-	16	0.9
7	4o	3-	3+	3o	3+	3-	2-	1-	21+	14	0.8
8	2-	2o	3-	3-	2+	2-	3-		18+	10	0.5
9	2+	2+	4-	2o	1+	3-	1o	1-	16o	9	0.5
10	3-	4o	4-	3-	3+	2-	2o		23-	14	0.8
11	3o	2o	1+	1+	3-	3-	2+		17-	9	0.5
12	2-	1o	3-	1o	1o	0+	1+	0+	9+	5	0.2
13	0+	1o	1-	6+	8o	8+	8-	6+	39-	102	1.9
14	5-	3o	7-	8+	7+	7-	6+	4o	47o	98	1.9
15	3o	5-	3o	3o	4+	2+	5-	5-	30-	25	1.2
16	6-	4o	3-	2+	3+	3+	4-	3-	28-	23	1.1
17	3o	3-	2+	4-	4+	2+	6+	6+	31o	36	1.4
18	5o	6+	6o	5o	8-	7o	6-	6+	49o	93	1.9
19	6o	5-	1+	0+	2-	1o	1o	1+	17+	18	1.0
20	2o	3o	3+	2o	2-	3o	4o	5+	24+	19	1.0
21	5o	6-	6-	3-	3+	4o	4o	3-	33o	35	1.4
22	3-	3-	4-	3o	3-	3-	1-	1o	19o	12	0.7
23	1o	1o	2-	3+	4-	5o	4-	3o	22+	17	0.9
24	2o	3+	3+	3+	2+	1+	2+		21+	13	0.7
25	4o	3+	3+	3o	2+	2-	2o	2+	22o	14	0.8
26	4o	4-	2-	2o	2-	1o	5+	5+	25-	23	1.1
27	4o	4+	8+	8+	6o	5+	6+	7+	50o	114	1.9
28	4o	3o	3+	3+	2o	4-	4o	2+	26-	18	1.0
29	2-	3+	2+	1+	2+	1+	2-	2o	16o	8	0.4
30	2+	2-	3o	2-	1+	1o	2+	2o	15+	8	0.4
31	1+	1-	1o	2-	3-	2-	2+	2-	13o	6	0.3

August 1961

	Kp							Sum	Ap	Cp
1	3o	3+	1+	1o	1o	1o	2-	3-	15o	8	0.5
2	5+	6+	6-	4+	4o	4o	3+	3o	36o	42	1.5
3	3-	4-	4-	3+	3+	3-	3+	4-	26+	18	1.0
4	5-	4-	4-	3+	3o	3-	3-	2-	25+	18	1.0
5	1+	2-	2+	3+	3-	2-	2-	2+	17o	9	0.5
6	2+	1+	1+	2-	2+	2-	2-	2+	15-	7	0.3
7	0+	1-	0+	1-	2o	1-	2-	2o	8+	4	0.1
8	1o	2o	4o	4o	3o	2+	5-	1+	22+	17	0.9
9	2-	2+	1+	0+	1o	1o	0+	0o	8o	4	0.1
10	2+	3-	3+	2+	4-	2o	2o	2-	20o	11	0.6
11	4-	4+	3-	3+	5-	3+	4-	4o	30-	24	1.1
12	2-	2o	2-	0+	1-	2-	2+	3o	13+	7	0.3
13	2+	1o	0+	0+	0o	0o	0+	0o	4+	2	0.0
14	0o	0o	1o	1+	3o	4o	3-	1-	13-	8	0.4
15	1o	1+	4-	2-	2o	2o	1+	2-	15-	8	0.4
16	3-	2+	1o	0+	0+	1-	1-	1o	9o	5	0.2
17	1o	1o	1o	2+	1+	1-	2o	1+	11-	5	0.2
18	1o	0+	1o	2-	2o	2o	1-	1+	10o	5	0.2
19	2-	3+	3+	3-	2+	1+	0+	1+	16+	9	0.5
20	1-	1-	0o	2+	2o	3o	2+	1o	12o	6	0.3
21	2-	2-	1+	1+	1+	1o	1-		10+	5	0.2
22	1-	0+	1-	0+	0+	0+	1-		4-	2	0.0
23	0+	0+	1-	0+	1-	1-	1-	1o	5-	3	0.0
24	0o	0o	0+	1-	1o	2+	2o		9-	4	0.1
25	2o	2-	2o	2+	3o	2-	2-	3+	18-	9	0.5
26	2o	2+	2o	3+	2+	1+	3o	3+	20-	11	0.6
27	3o	2o	3+	1o	1o	1+	1+	1o	14o	8	0.4
28	2+	2o	1o	1+	1o	1-	1o	1+	11-	5	0.2
29	2-	1-	0+	1+	1+	4-	5o	5-	19-	16	0.9
30	5-	4-	2+	4+	6o	5+	4-	5-	35-	37	1.4
31	5-	5+	5o	3-	3+	4o	3+	4-	32o	30	1.3

PLANETARY THREE-HOUR-INDICES Kp, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES Cp

September 1961

	Kp		Sum	Ap	Cp
1	4+5-4+4+	2+3+4+4+	32o	28	1.2
2	2+2o3o4+	3-3-1+3-	21o	13	o.7
3	3o4-3+3o	1+2-2o1+	19+	12	o.7
4	1-1o2+2o	2-0+0+2+	11-	5	o.2
5	4-3o3-1+	2o2o3-3-	20o	12	o.7
6	1+3-1-1+	1+1-0+0+	9-	5	o.2
7	1-1o1+1-	0+1-1o1o	7-	4	o.1
8	0+1o1-1-	1-1o1+1o	7-	4	o.1
9	1o1+3+4-	1+1+1-2-	14+	8	o.5
10	3-1o1-2o	2-2+2-2o	14o	7	o.3
11	1o2+1+2+	2+3o3o4o	19+	12	o.7
12	2+4+5o3o	2+1o1o3o	22o	17	o.9
13	2-2o1o1-	0+3-3-3o	14o	8	o.4
14	3o4o4-4-	6o2+3+4+	30+	28	1.2
15	3-1+2+2-	2o1-0+1+	12+	6	o.3
16	2o2o1+2o	3-1+2o2+	16-	7	o.4
17	4o4+2o2o	1+1+1+0+	17-	11	o.6
18	2o3+1-1o	2o3-1-0+	13-	7	o.4
19	0+1+0+0+	1+0+0+0+	5-	3	o.o
20	2-2+3-1+	2-3-3o2+	18-	9	o.5
21	0+0+1-1-	0+1-1-0+	4o	2	o.o
22	0+1-1-1o	3-2o2o2-	11o	6	o.2
23	1-0o0o1-	1-1-1o1o	5-	2	o.o
24	1+1+3-5+	6o6o5o5o	33-	42	1.5
25	5o5+6o4o	4-3+3-3o	33o	35	1.4
26	3+3o2+2+	3+4+3+4-	26-	18	1.o
27	4-5-4+5-	4+4o2o2o	30-	26	1.2
28	1+0+1-1-	0+0+1+3o	8o	5	o.2
29	2o2o2-1o	1+2o1+1o	12+	6	o.3
30	2o3o2-2-	2o0+5-8o	23+	36	1.4

October 1961

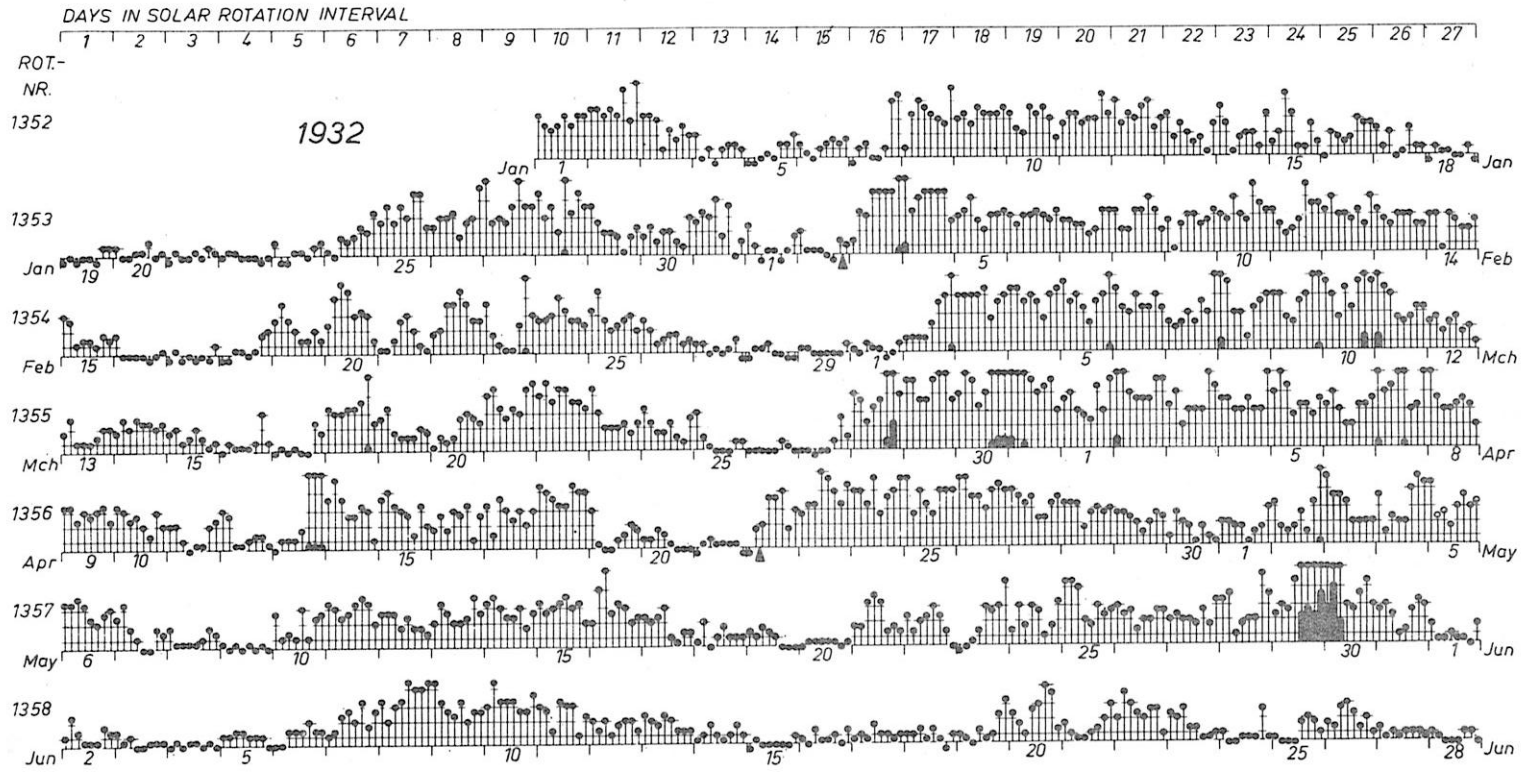
	Kp		Sum	Ap	Cp
1	9-8+7o8-	5-2o2o2+	43-	114	1.9
2	1-1o1+1+	2-3-2o0+	11o	6	0.2
3	1o0+1o1+	2o2o2-1o	10+	5	0.2
4	1-1o0+1+	3-2o2-3o	13-	7	0.3
5	2+1-1o1+	0+0o1o0+	7o	4	0.1
6	1-0+1+2-	1+2-2o2-	11-	5	0.2
7	3+2+2-2-	2-0o0+1-	12-	6	0.3
8	0o2-3o2+	1o2-1-1-	11o	6	0.3
9	2-2o1o1-	0+0o0o0o	6-	3	0.0
10	0+0+0+0o	0+0+1+1+	4+	2	0.0
11	1+2-3-3+	3o2-3+3-	20-	12	0.7
12	5o4+4o3-	3-3+2-2+	26o	20	1.0
13	2+4+4-3-	1o3-1+3-	21-	14	0.8
14	3+1+2o2o	2+0+0o1-	12o	6	0.3
15	1-0+0+1o	0+1o1+0+	5+	3	0.1
16	0o0o0+0+	0+0o0o0o	1o	1	0.0
17	0o0o0o0o	0o0o0o2o	2o	1	0.0
18	0+1o1o0+	1-1-1-1-	5+	3	0.1
19	2o2+1+1o	1-0+1+2+	11+	6	0.2
20	5+5-4+2-	0+1o1-0+	18+	18	1.0
21	2-1-1-2o	2+2+2+3o	15o	8	0.4
22	2-2-1o2o	2-2-0+1-	11-	5	0.2
23	0+1-1o1o	0+2o2o3o	10+	6	0.2
24	2-3-2-2-	1o0+1-0+	10o	5	0.2
25	1o1-1o1o	2+3-3-3o	14+	8	0.4
26	3-4-5o3+	3o3+5+5+	32-	31	1.3
27	4+5+4-4+	3o3o4o5-	32+	30	1.3
28	2+2+5o6+	8o8o9-7+	48o	128	1.9
29	6-5+6o4o	2o1+1-2+	27+	32	1.3
30	0+0o2-3-	2o3o1o1+	12o	6	0.3
31	1o1o3+1o	1+0+0+0+	9-	5	0.2

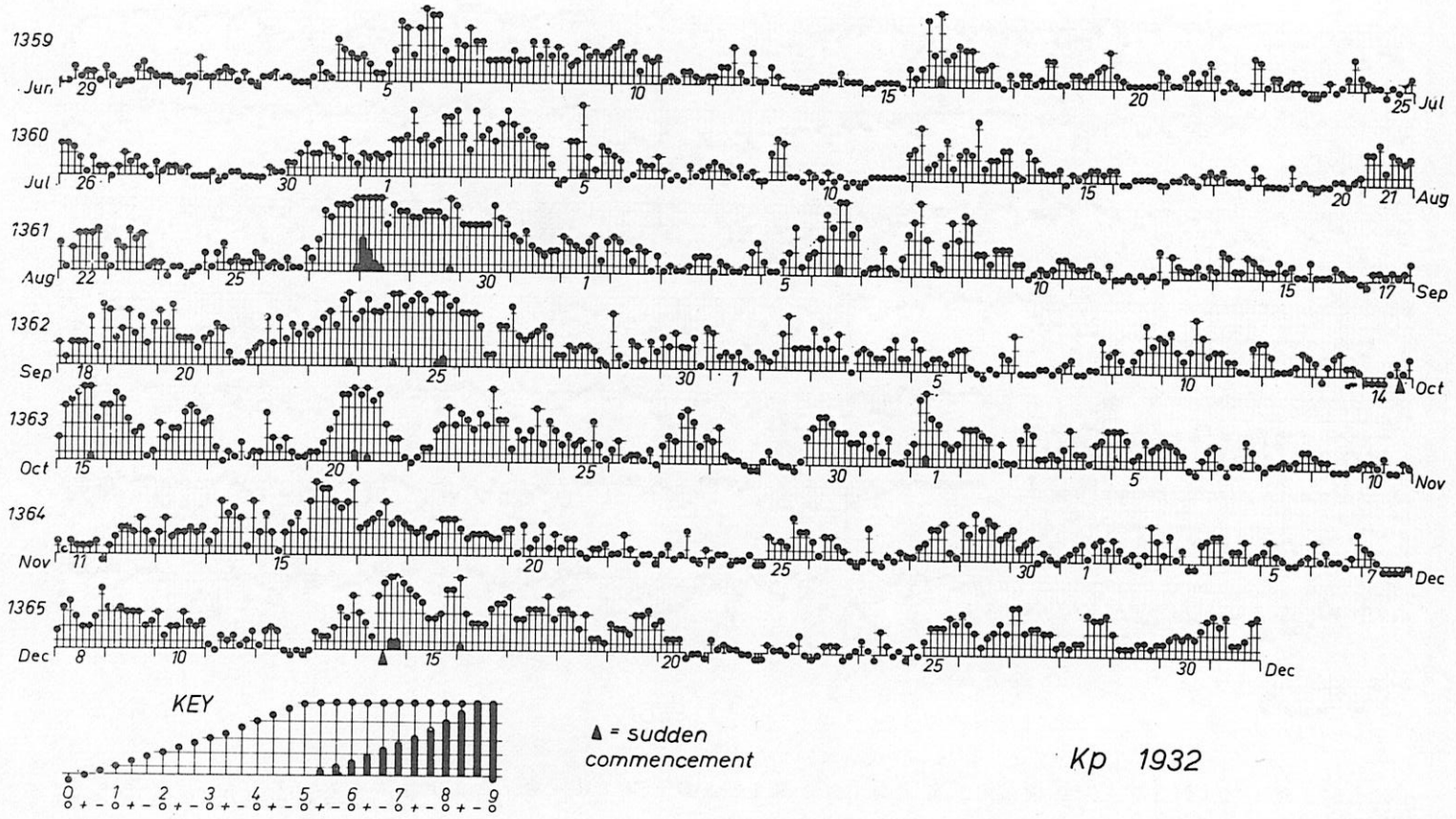
November 1961

	Kp		Sum	Ap	Cp
1	1o2+2-2-	1+0+2-1-	11-	5	0.2
2	0+0o2-2o	2o1o1-1-	8+	4	0.1
3	2-3-2o1o	0+0o0o1+	9o	4	0.2
4	1-0+0+0+	0+1-2-3o	7+	4	0.2
5	3o3+3o3o	5-3o2+4o	26+	19	1.0
6	3-4o5-4o	2+1-1-2o	21o	16	0.9
7	3-3o4+5o	4+5+6+5o	36o	42	1.5
8	6-4+4o2o	3+1-3+3o	26+	23	1.1
9	3+2o4-2+	2+2+3o1o	20o	12	0.7
10	2-3-1o1o	1o1o0+0+	9o	5	0.2
11	0o0o1-0+	0+1o1-2+	5+	3	0.1
12	3+3o3+2+	3o3+2o3+	24-	15	0.8
13	3-1+1-1-	0o0o1-1+	7+	4	0.1
14	2o4o5-2o	1o1+2o2-	19-	13	0.7
15	0o1-0o0+	0o0o0o1o	2o	1	0.0
16	0o0o0o0+	0+0o1-3o	4+	3	0.0
17	2+2-1o1-	4o4+2+5-	21o	16	0.9
18	5o4o6+6-	5o5-5o3+	39o	49	1.6
19	4+3+3+2-	2+0+0+0+	16o	11	0.6
20	0+2+4-3-	4-3o2+3-	21-	13	0.7
21	3o3o1+1+	0+1o1+2o	13+	7	0.4
22	2o0o1-1o	1-1-0o0o	5o	2	0.0
23	0o0o0o0o	1-1-1-1-	3-	2	0.0
24	1-0+1-0+	0+1o1-1o	5o	3	0.1
25	1-1o2o2+	1o1o1-0+	9o	4	0.2
26	0o1o1+2+	1o1o1+2o	10o	5	0.2
27	2o0+1-1-	1o1+2-0o	8-	4	0.1
28	0o0+0o0+	0+1+2o1-	5o	3	0.0
29	1+2-1o0+	0+0+0o1-	6-	3	0.1
30	1-0o1o0o	0+0+1-1-	4-	2	0.0

December 1961

	Kp		Sum	Ap	Cp
1	0+2-4+5o	8-6o5-5o	35-	54	1.6
2	5+5-4o6-	5+6+6+6+	44o	66	1.7
3	7-6-6+5o	5o3o4-4+	40-	55	1.6
4	2+2+2+3-	2+3o1o2+	18+	10	0.5
5	1+2o2-0o	2+4+4-2+	18-	11	0.6
6	3o4-1o1o	3+4+3+2o	22-	15	0.8
7	2o2-2o3-	3+0o0o0o	12-	6	0.3
8	0o0o0+1o	0+0+0+0o	2+	2	0.0
9	0o1-1o1+	1o1-1+1-	7-	3	0.1
10	0o1+0+2o	2-2o2+2+	12o	6	0.3
11	3o3-4-3o	1+3+3o2+	22+	14	0.8
12	3o3+0o0+	1-1o0+0o	9-	6	0.2
13	0o0o0o1o	0+1+1+3o	7o	4	0.1
14	3-1-1-0+	0+1-1-2o	8o	4	0.2
15	1o3-2-2-	2-1-0+3o	13-	7	0.3
16	1-1+1+1o	1-0+0+2-	7+	4	0.1
17	2+1+1o1o	0o0+0+1-	7o	4	0.1
18	1+1+0+0+	0o0o0o0+	4-	2	0.0
19	0o0+0o0o	0o1o0+0o	2-	1	0.0
20	0+0o1o1+	1o1-1-1o	6o	3	0.1
21	0+2o1-1-	0o0o1-1+	6-	3	0.1
22	1o2-0+1o	3-2o1+1o	11o	6	0.2
23	2-3-3-2o	3+1+1o4+	19o	12	0.7
24	3o2+2-2+	3o3-2-2-	18+	10	0.5
25	0+0o0o1-	0o1-0+1-	3-	2	0.0
26	0+1+1o1o	1+1-1-1+	8-	4	0.1
27	3+3o2+2-	2+1+2-1o	17-	9	0.5
28	2-2o2o4o	4o4o3o4o	25-	18	1.0
29	4o3-1+2+	2o2+1+4+	20+	13	0.8
30	3-4o2+3+	3-4o2+3o	24+	16	0.9
31	2-2-1+1+	1+2-3+1+	14-	7	0.4


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-
NR.
1932
1352
Jan 1 5 10 15 18 Jan
1353
Jan 19 20 25 30 1 5 10 14 Feb
1354
Feb 15 20 25 29 1 5 10 12 Mch
1355
Mch 13 15 20 25 30 1 5 8 Apr
1356
Apr 9 10 15 20 25 30 1 5 May
1357
May 6 10 15 20 25 30 1 Jun
1358
Jun 2 5 10 15 20 25 28 Jun


1359
Jun
29
1
5
10
15
20
25
Jul
1360
Jul
26
30
1
5
10
15
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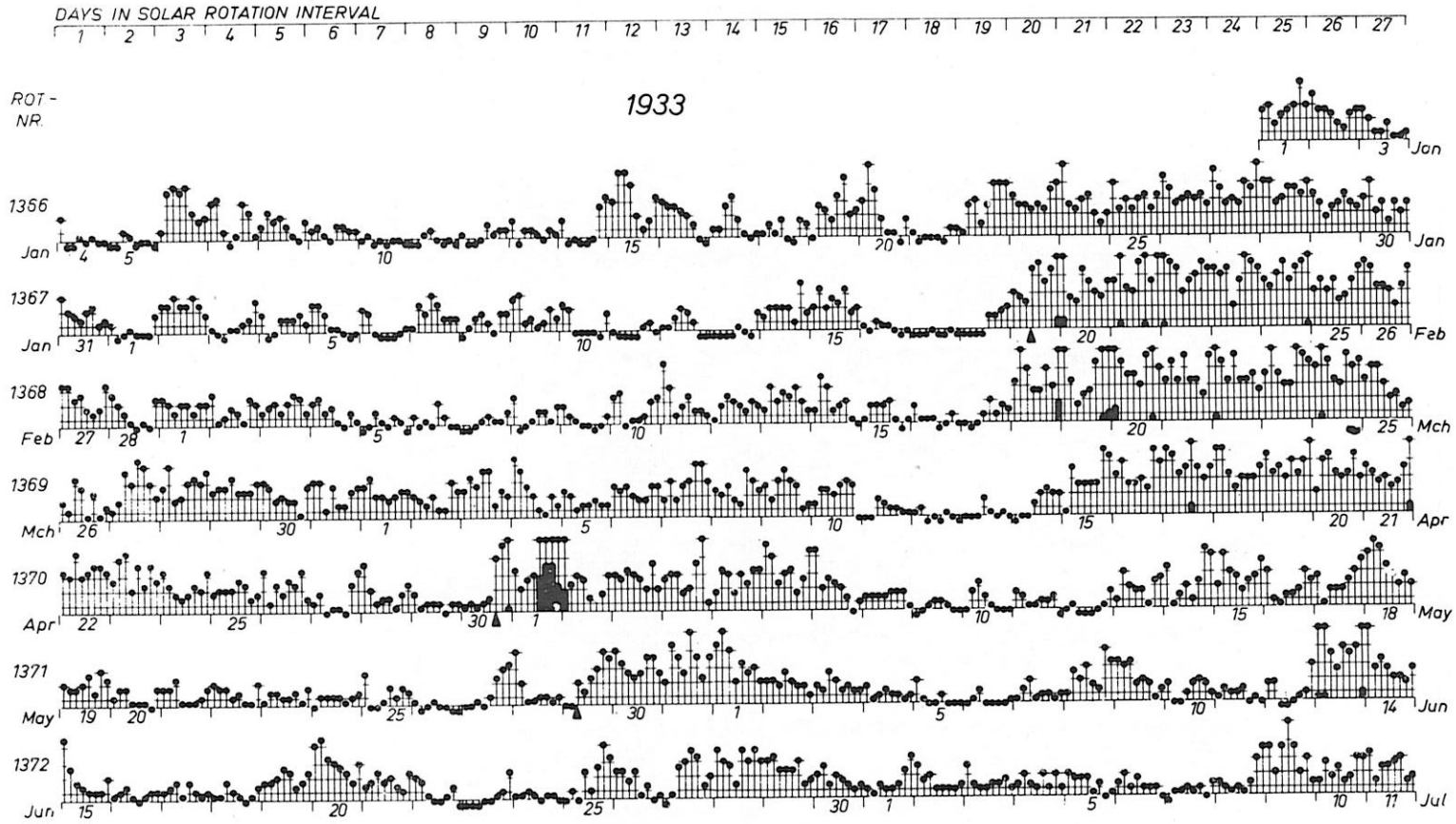
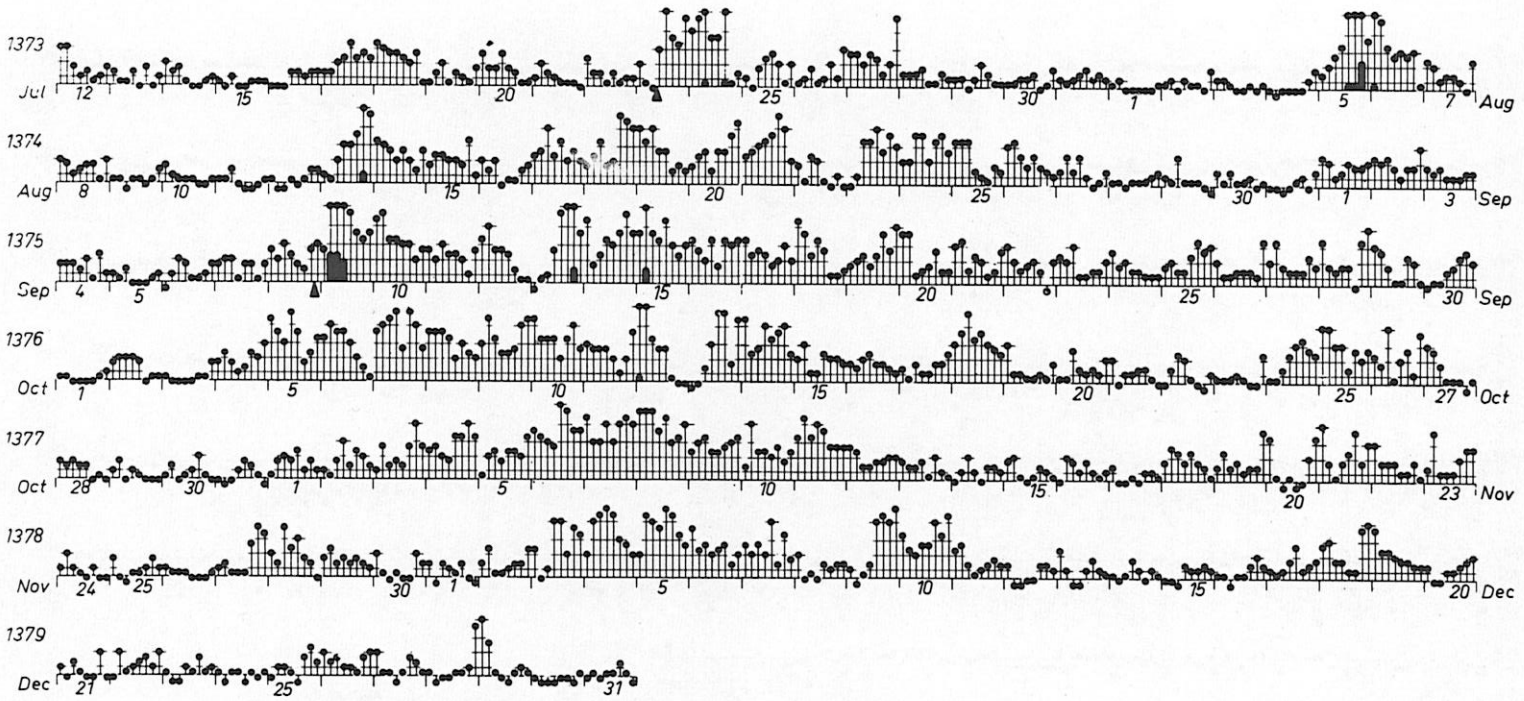
21
Aug
1361
Aug
22
25
30
1
5
10
15
17
Sep
1362
Sep
18
20
25
30
1
5
10
14
Oct
1363
Oct
15
20
25
30
1
5
10
Nov
1364
Nov
11
15
20
25
30
1
5
7
Dec
1365
Dec
8
10
15
20
25
30
Dec
KEY
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
Kp 1932


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT - NR.
1933
1 3 Jan
1366 Jan 4 5 10 15 20 25 30 Jan
1367 Jan 31 1 5 10 15 20 25 26 Feb
1368 Feb 27 28 1 5 10 15 20 25 Mch
1369 Mch 26 30 1 5 10 15 20 21 Apr
1370 Apr 22 25 30 1 10 15 18 May
1371 May 19 20 25 30 1 5 10 14 Jun
1372 Jun 15 20 25 30 1 5 10 11 Jul


1373
Jul
12
15
20
25
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1
5
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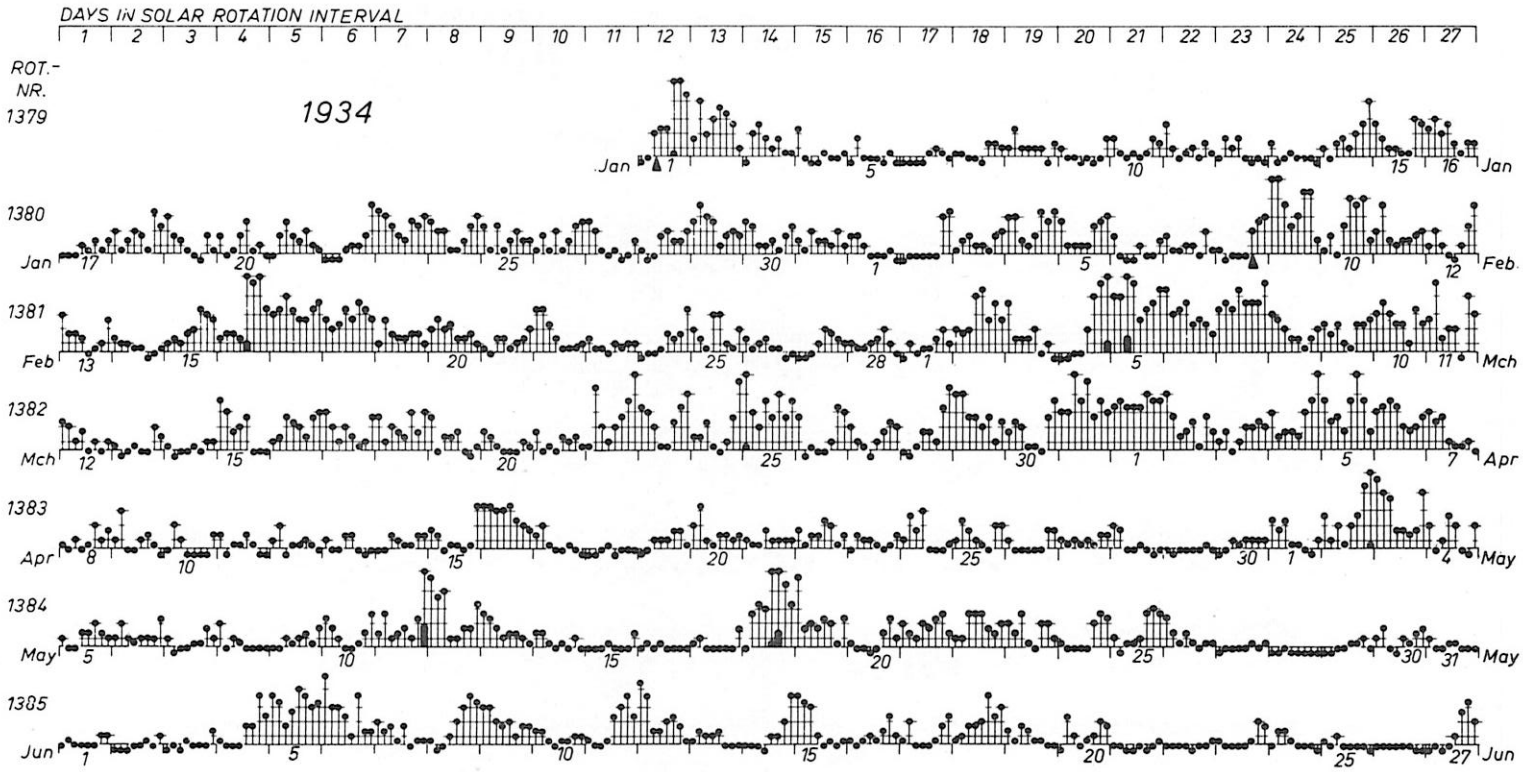
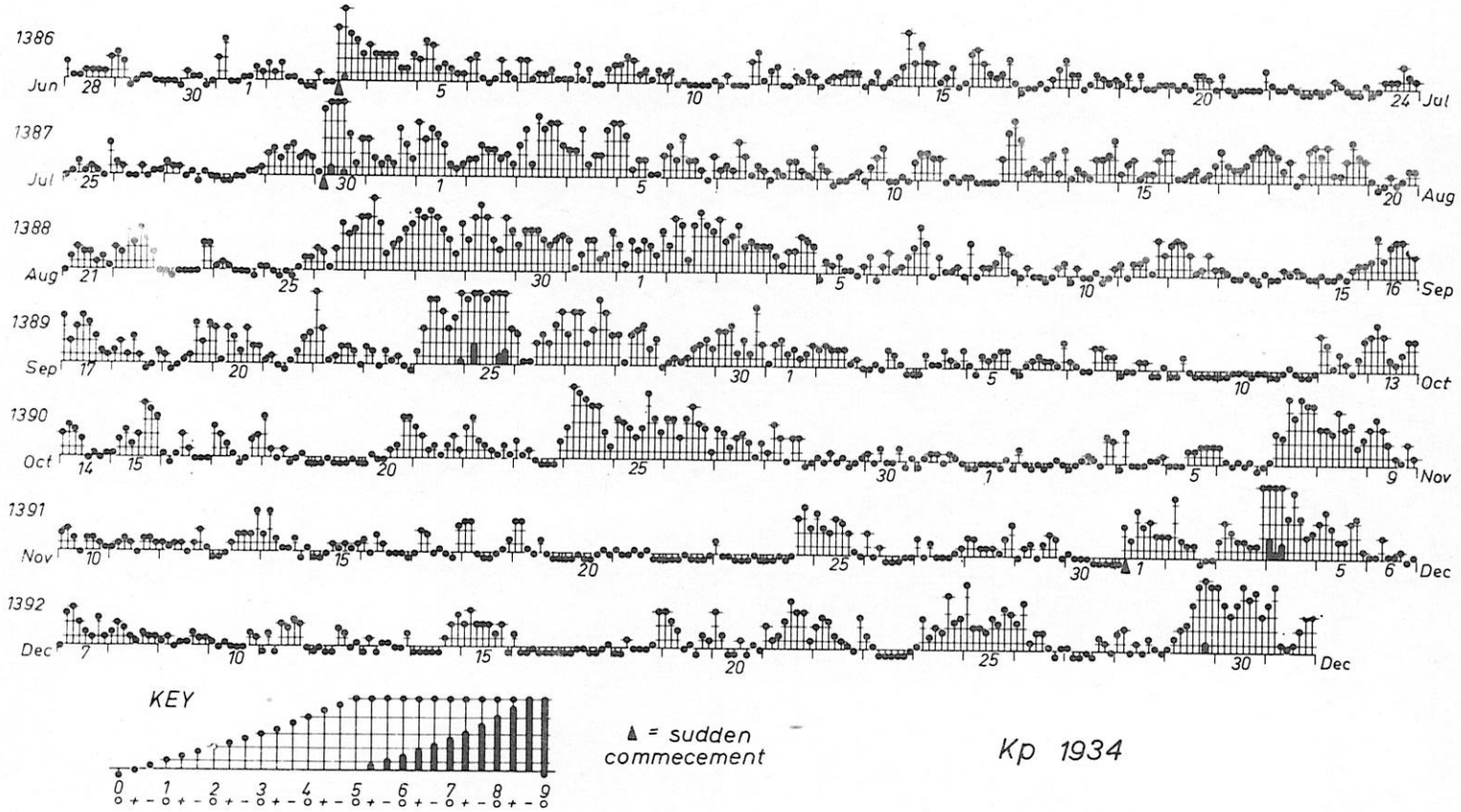
Aug
1374
Aug
8
10
15
20
25
30
1
3
Sep
1375
Sep
4
5
10
15
20
25
30
Sep
1376
Oct
1
5
10
15
20
25
27
Oct
1377
Oct
28
30
1
5
10
15
20
23
Nov
1378
Nov
24
25
30
1
5
10
15
20
Dec
1379
Dec
21
25
31
KEY
0 + - 1 + - 2 + - 3 + - 4 + - 5 + - 6 + - 7 + - 8 + - 9
▲ = sudden commencement
Kp 1933


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1934
1379
Jan 1 5 10 15 16 Jan
1380
Jan 17 20 25 30 1 5 10 12 Feb
1381
Feb 13 15 20 25 28 1 5 10 11 Mch
1382
Mch 12 15 20 25 30 1 5 7 Apr
1383
Apr 8 10 15 20 25 30 1 4 May
1384
May 5 10 15 20 25 30 31 May
1385
Jun 1 5 10 15 20 25 27 Jun


1386
Jun
28
30
1
5
10
15
20
24
Jul
1387
Jul
25
30
1
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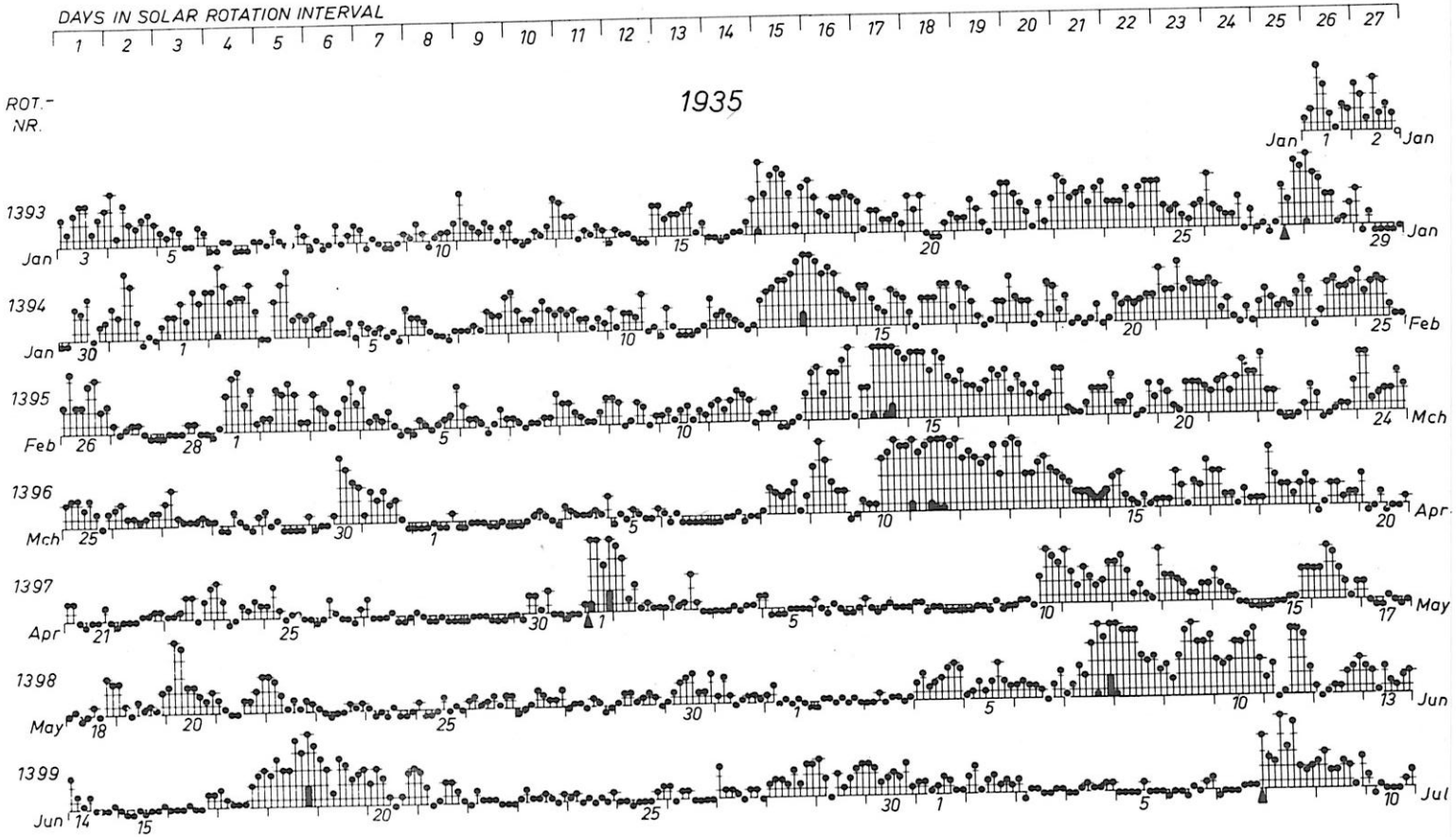
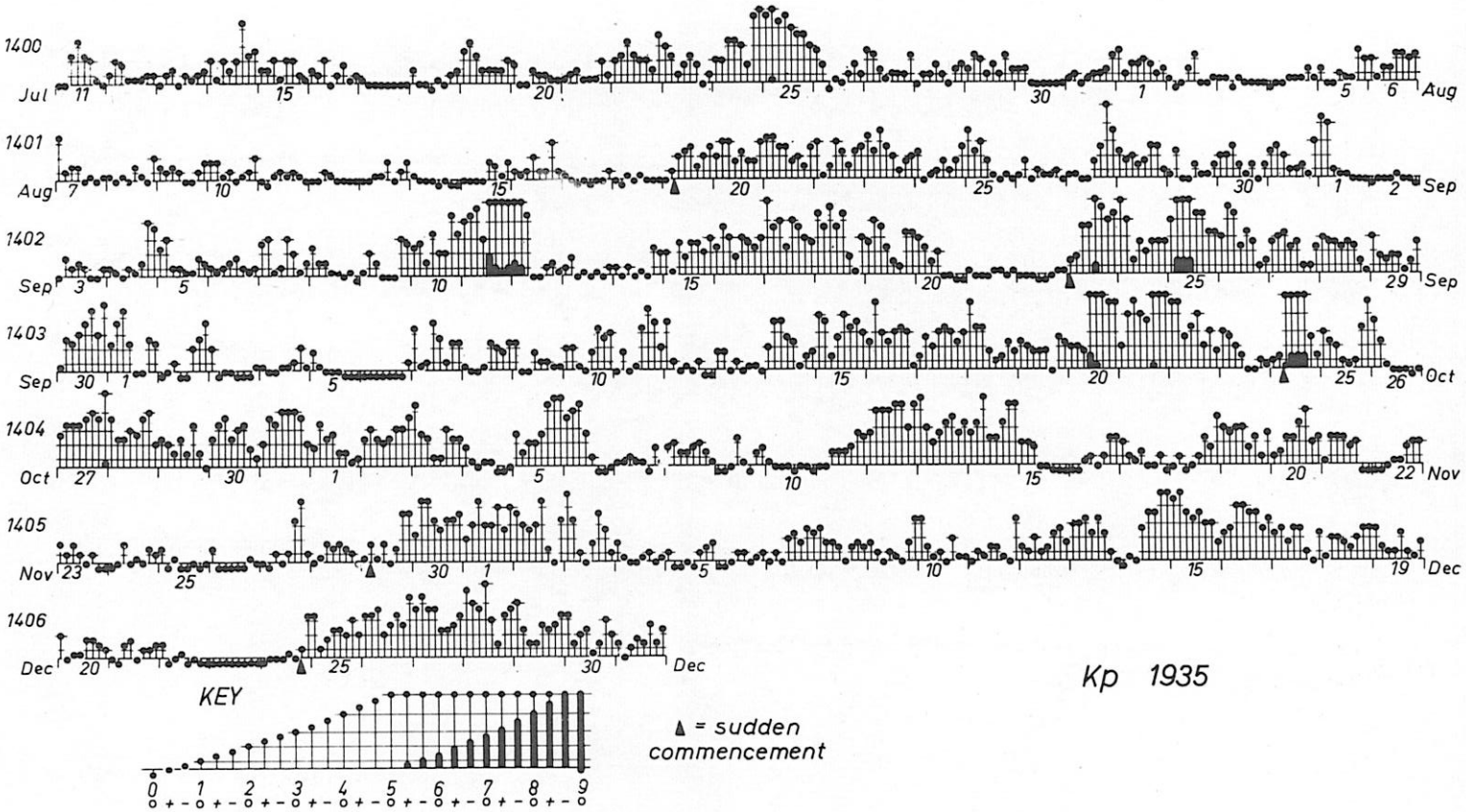
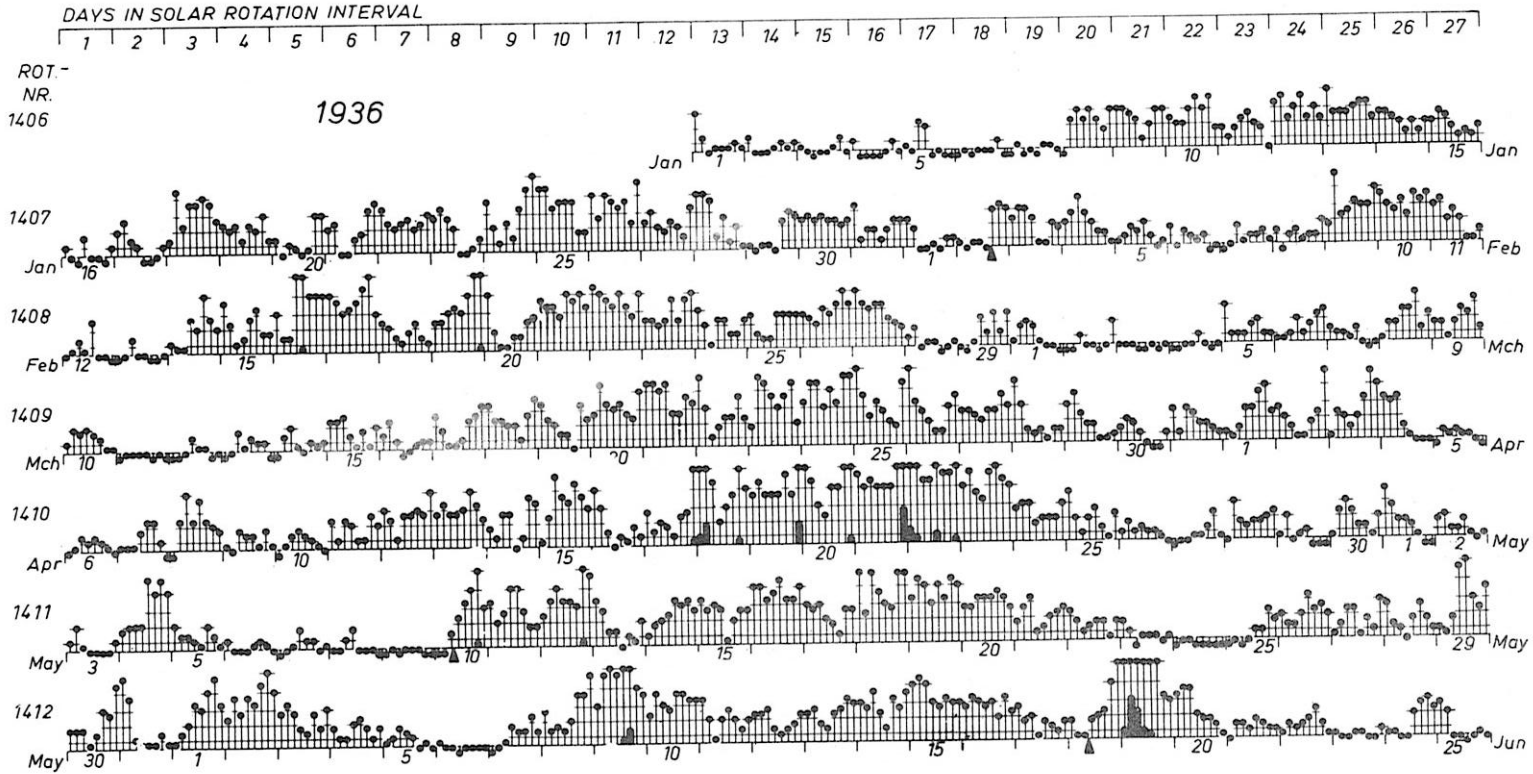
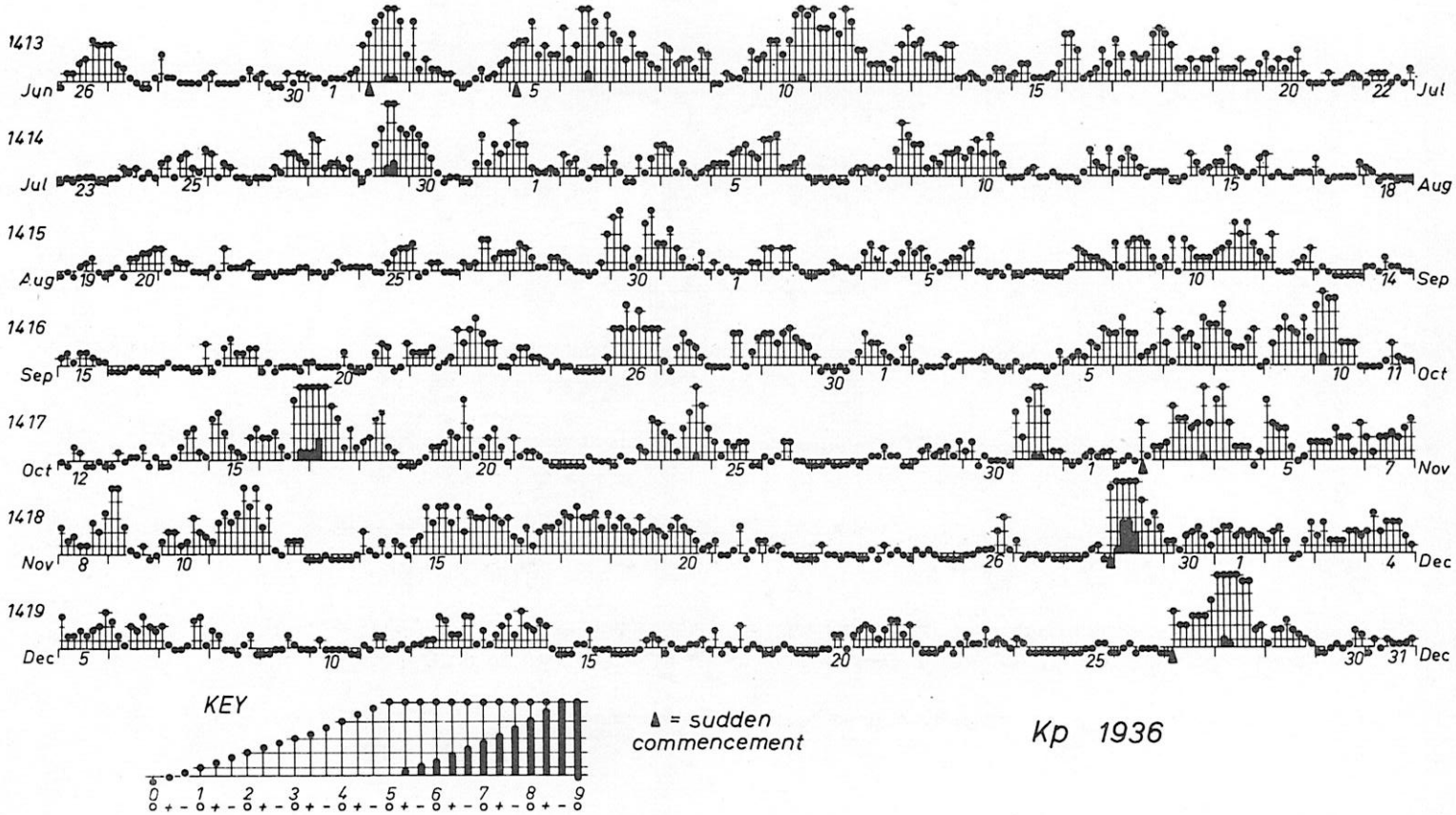
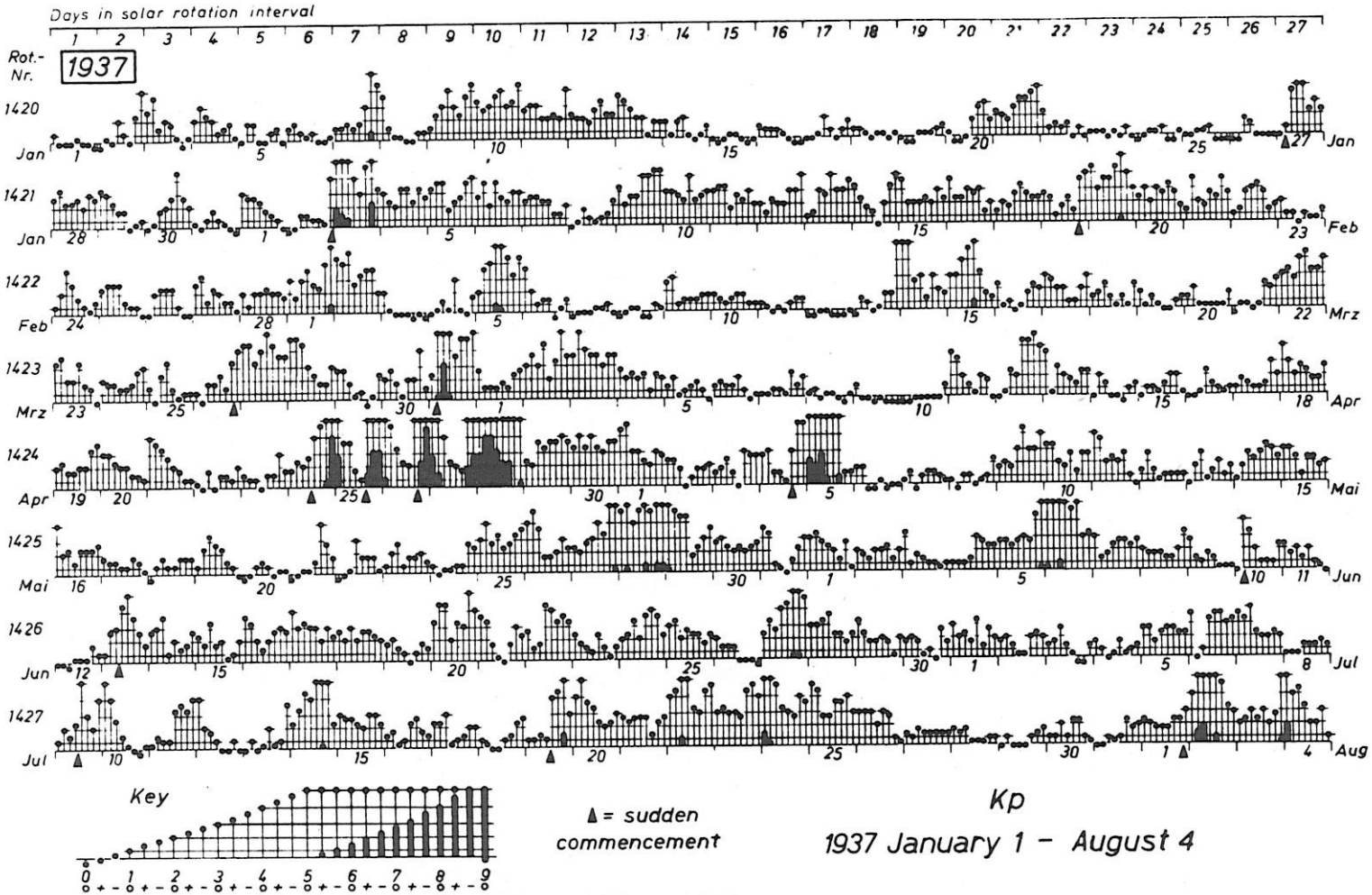
10
15
20
Aug
1388
Aug
21
25
30
1
5
10
15
16
Sep
1389
Sep
17
20
25
30
1
5
10
13
Oct
1390
Oct
14
15
20
25
30
1
5
9
Nov
1391
Nov
10
15
20
25
30
1
5
6
Dec
1392
Dec
7
10
15
20
25
30
Dec
KEY
0 + - 1 + - 2 + - 3 + - 4 + - 5 + - 6 + - 7 + - 8 + - 9
= sudden commecement
Kp 1934

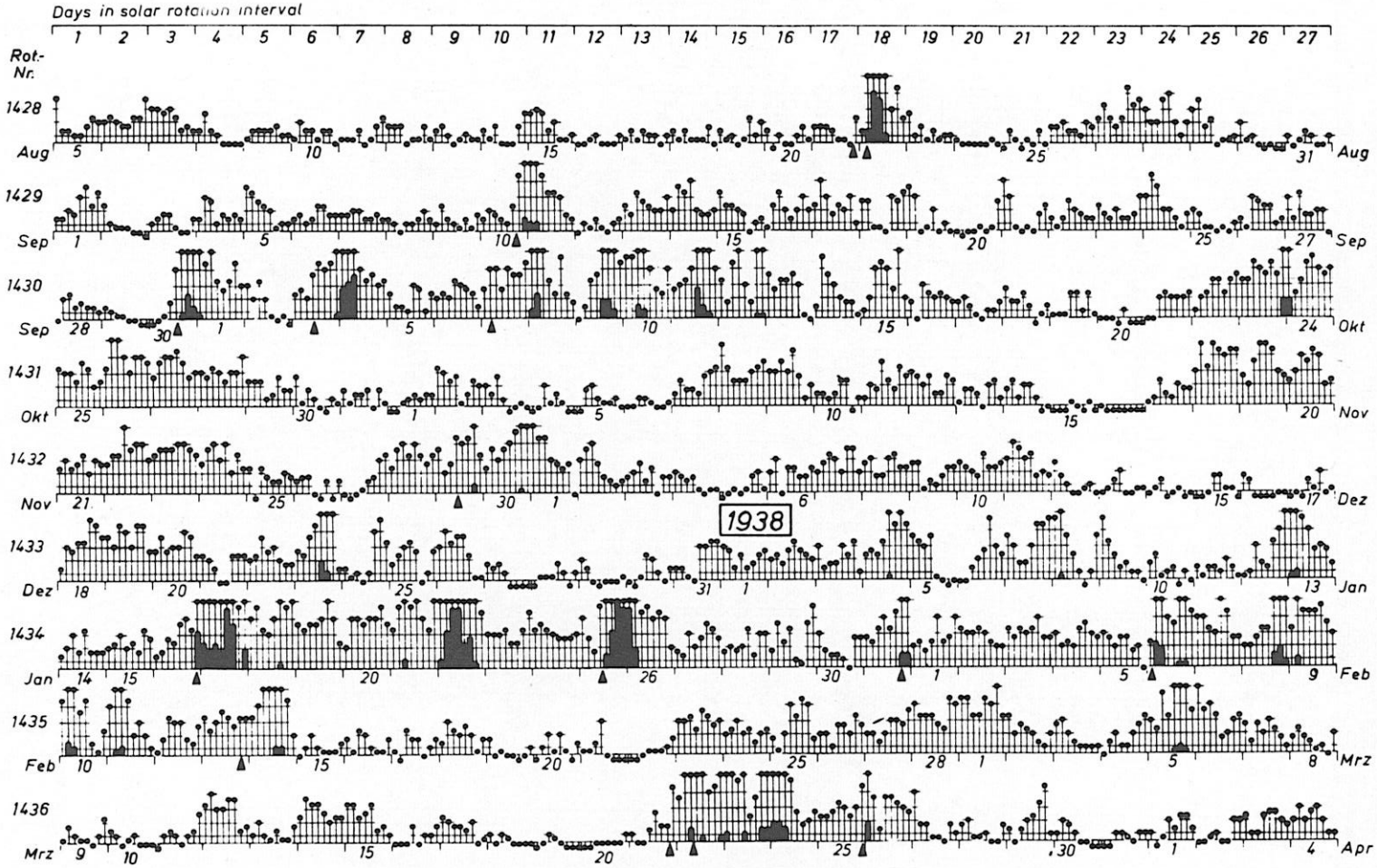

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-
NR.
1935
1393
1394
1395
1396
1397
1398
1399
Jan
Feb
Mch
Apr
May
Jun
Jul

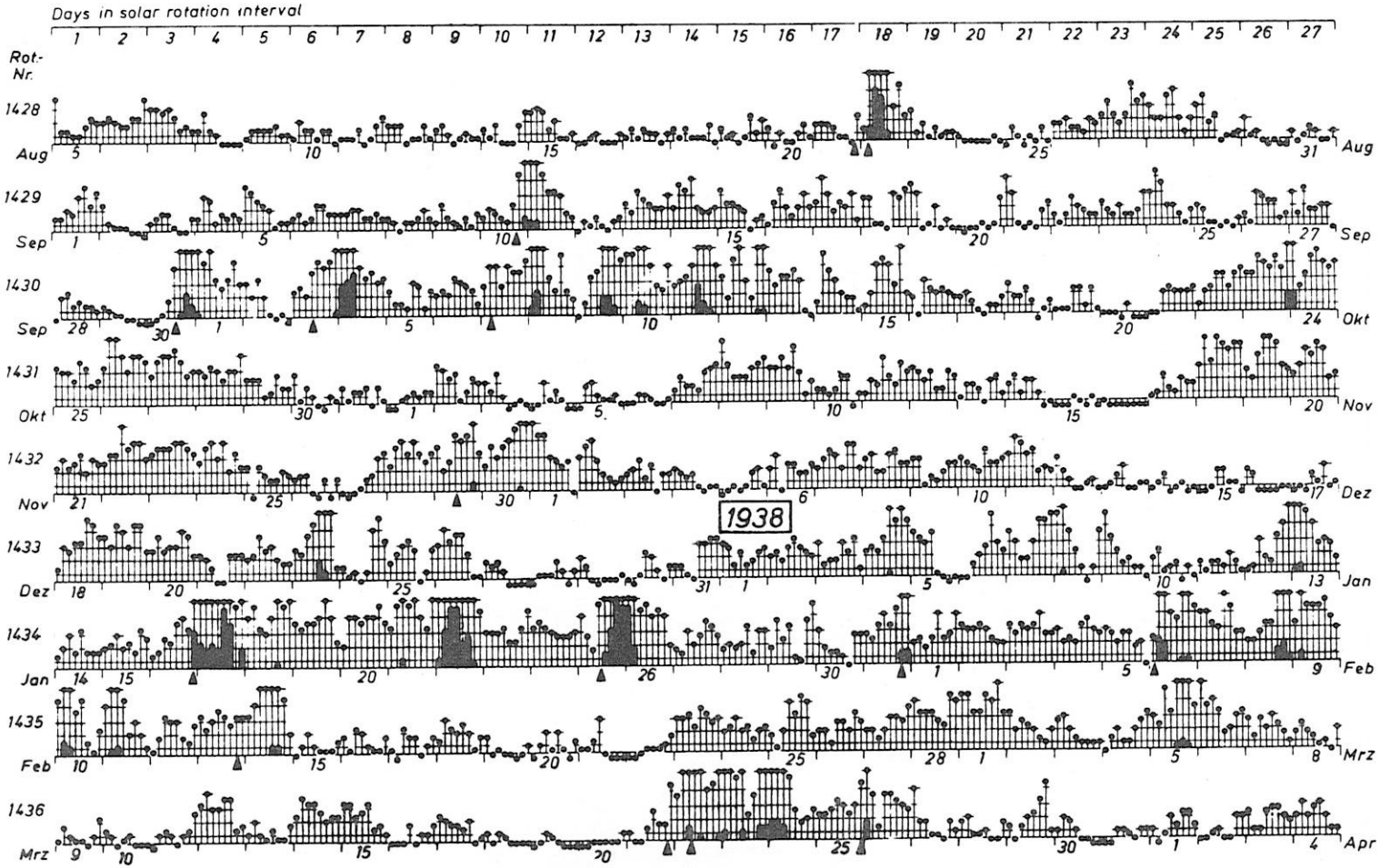

1400
Jul 11 15 20 25 30 1 5 6 Aug
1401
Aug 7 10 15 20 25 30 1 2 Sep
1402
Sep 3 5 10 15 20 25 29 Sep
1403
Sep 30 1 5 10 15 20 25 26 Oct
1404
Oct 27 30 1 5 10 15 20 22 Nov
1405
Nov 23 25 30 1 5 10 15 19 Dec
1406
Dec 20 25 30 Dec
KEY
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
Kp 1935

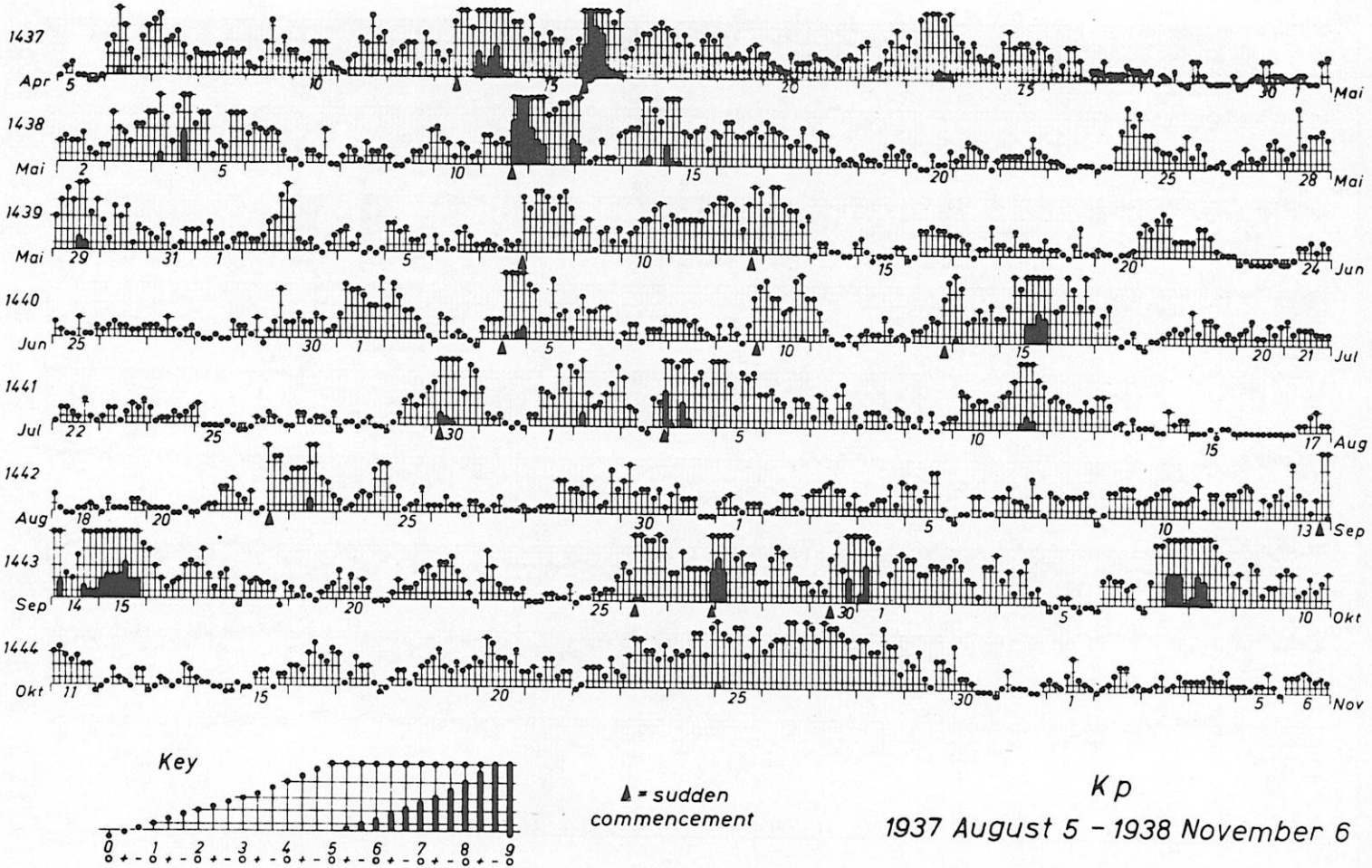

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-
NR.
1936
1406
Jan
1407
Jan
Feb
1408
Feb
Mch
1409
Mch
Apr
1410
Apr
May
1411
May
May
1412
May
Jun


1413
Jun 26 30 1 5 10 15 20 22 Jul
1414
Jul 23 25 30 1 5 10 15 18 Aug
1415
Aug 19 20 25 30 1 5 10 14 Sep
1416
Sep 15 20 26 30 1 5 10 11 Oct
1417
Oct 12 15 20 25 30 1 5 7 Nov
1418
Nov 8 10 15 20 26 30 1 4 Dec
1419
Dec 5 10 15 20 25 30 31 Dec
KEY
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
Kp 1936


Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Rot.-Nr.
1937
1420
Jan
1421
Jan
Feb
1422
Feb
Mrz
1423
Mrz
Apr
1424
Apr
Mai
1425
Mai
Jun
1426
Jun
Jul
1427
Jul
Aug
Key
0 + - 1 + - 2 + - 3 + - 4 + - 5 + - 6 + - 7 + - 8 + - 9
▲ = sudden commencement
Kp
1937 January 1 – August 4

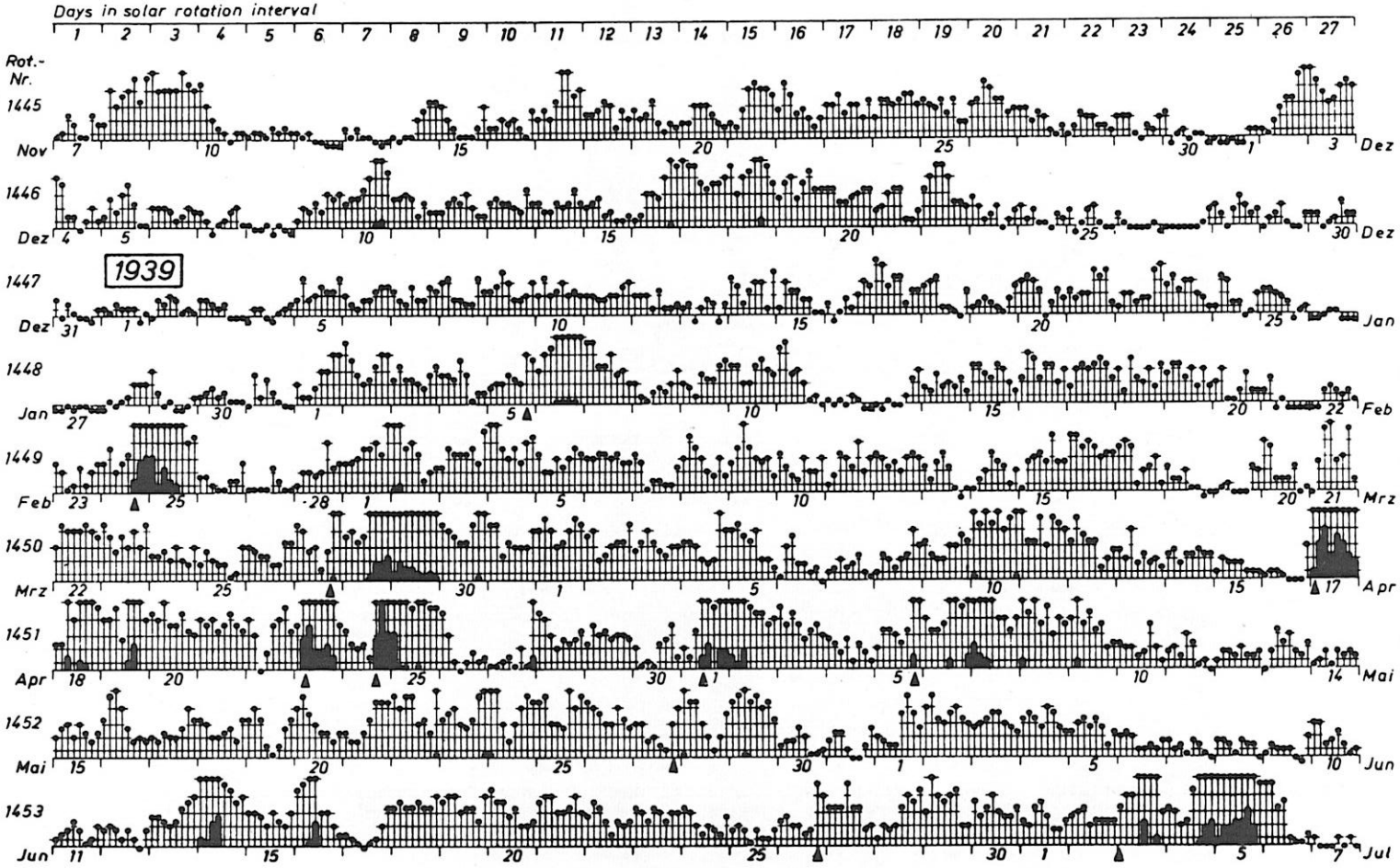

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Rot-Nr.
1428
Aug 5 10 15 20 25 31 Aug
1429
Sep 1 5 10 15 20 25 27 Sep
1430
Sep 28 30 1 5 10 15 20 24 Okt
1431
Okt 25 30 1 5 10 15 20 Nov
1432
Nov 21 25 30 1 6 10 15 17 Dez
1938
1433
Dez 18 20 25 31 1 5 10 13 Jan
1434
Jan 14 15 20 26 30 1 5 9 Feb
1435
Feb 10 15 20 25 28 1 5 8 Mrz
1436
Mrz 9 10 15 20 25 30 1 4 Apr

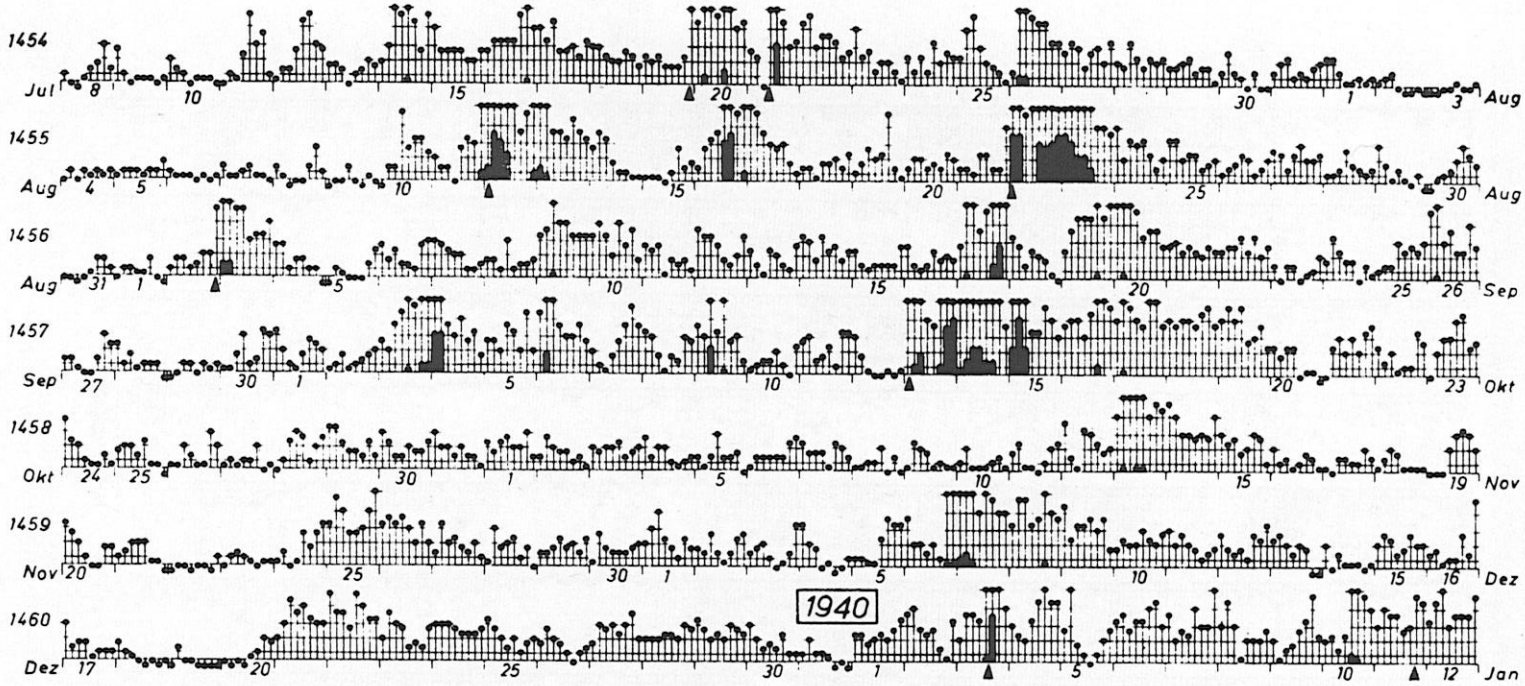

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Rot-Nr.
1428
Aug
5 10 15 20 25 31
Aug
1429
Sep
1 5 10 15 20 25 27
Sep
1430
Sep
28 30 1 5 10 15 20 24
Okt
1431
Okt
25 30 1 5 10 15 20
Nov
1432
Nov
21 25 30 1 6 10 15 17
Dez
1938
1433
Dez
18 20 25 31 1 5 10 13
Jan
1434
Jan
14 15 20 26 30 1 5 9
Feb
1435
Feb
10 15 20 25 28 1 5 8
Mrz
1436
Mrz
9 10 15 20 25 30 1 4
Apr



Kp

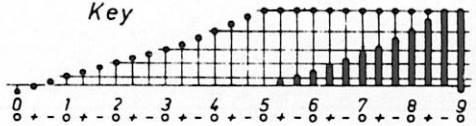
1937 August 5 – 1938 November 6


Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Rot.-Nr.
1445
Nov 7 10 15 20 25 30 1 3 Dez
1446
Dez 4 5 10 15 20 25 30 Dez
1939
1447
Dez 31 1 5 10 15 20 25 Jan
1448
Jan 27 30 1 5 10 15 20 22 Feb
1449
Feb 23 25 28 1 5 10 15 20 21 Mrz
1450
Mrz 22 25 30 1 5 10 15 17 Apr
1451
Apr 18 20 25 30 1 5 10 14 Mai
1452
Mai 15 20 25 30 1 5 10 Jun
1453
Jun 11 15 20 25 30 1 5 7 Jul



Continuation in: Abhandlungen der Akademie der Wissenschaften in Göttingen, Math.-Phys. Klasse, Sonderheft (1951), p.14.

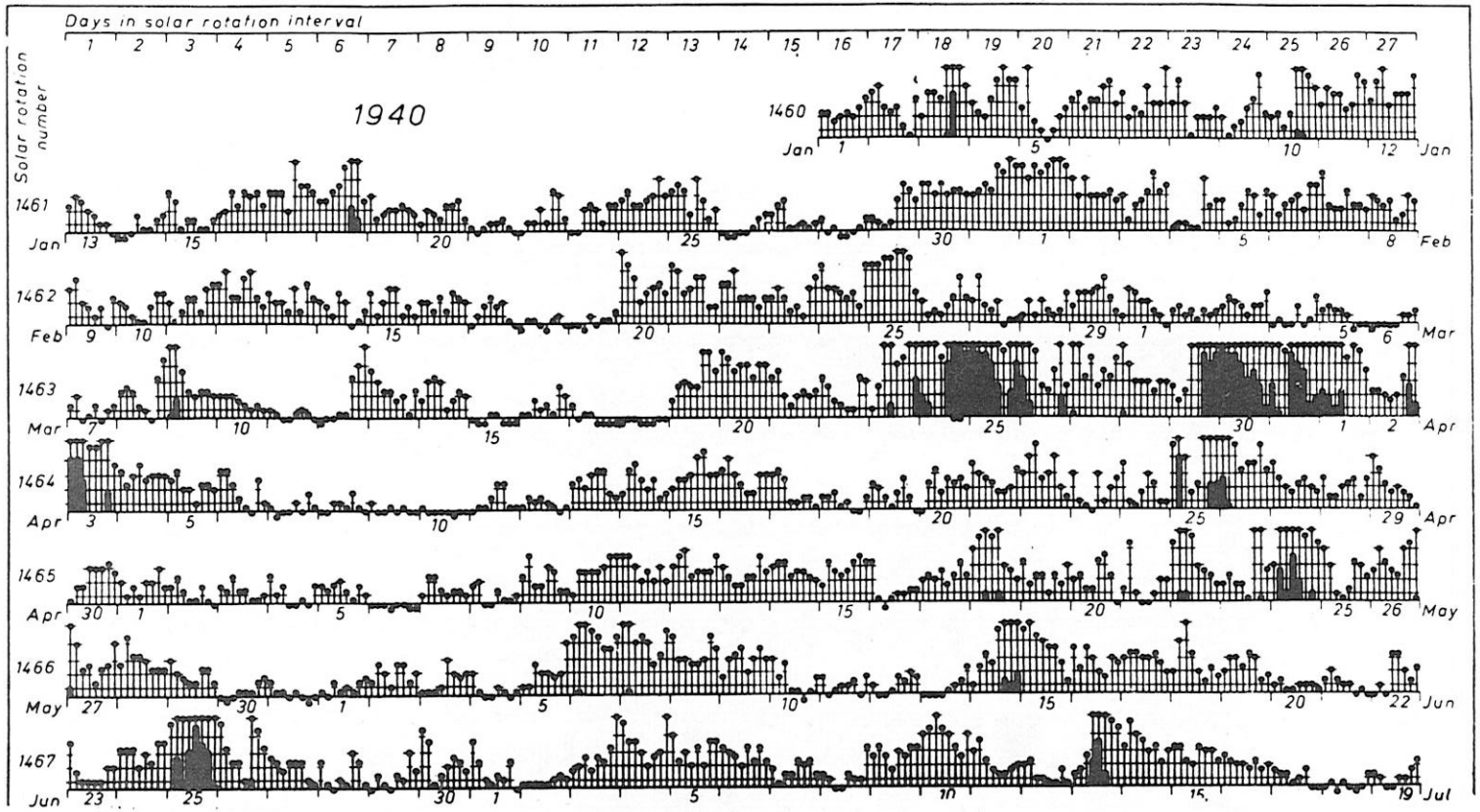
Key

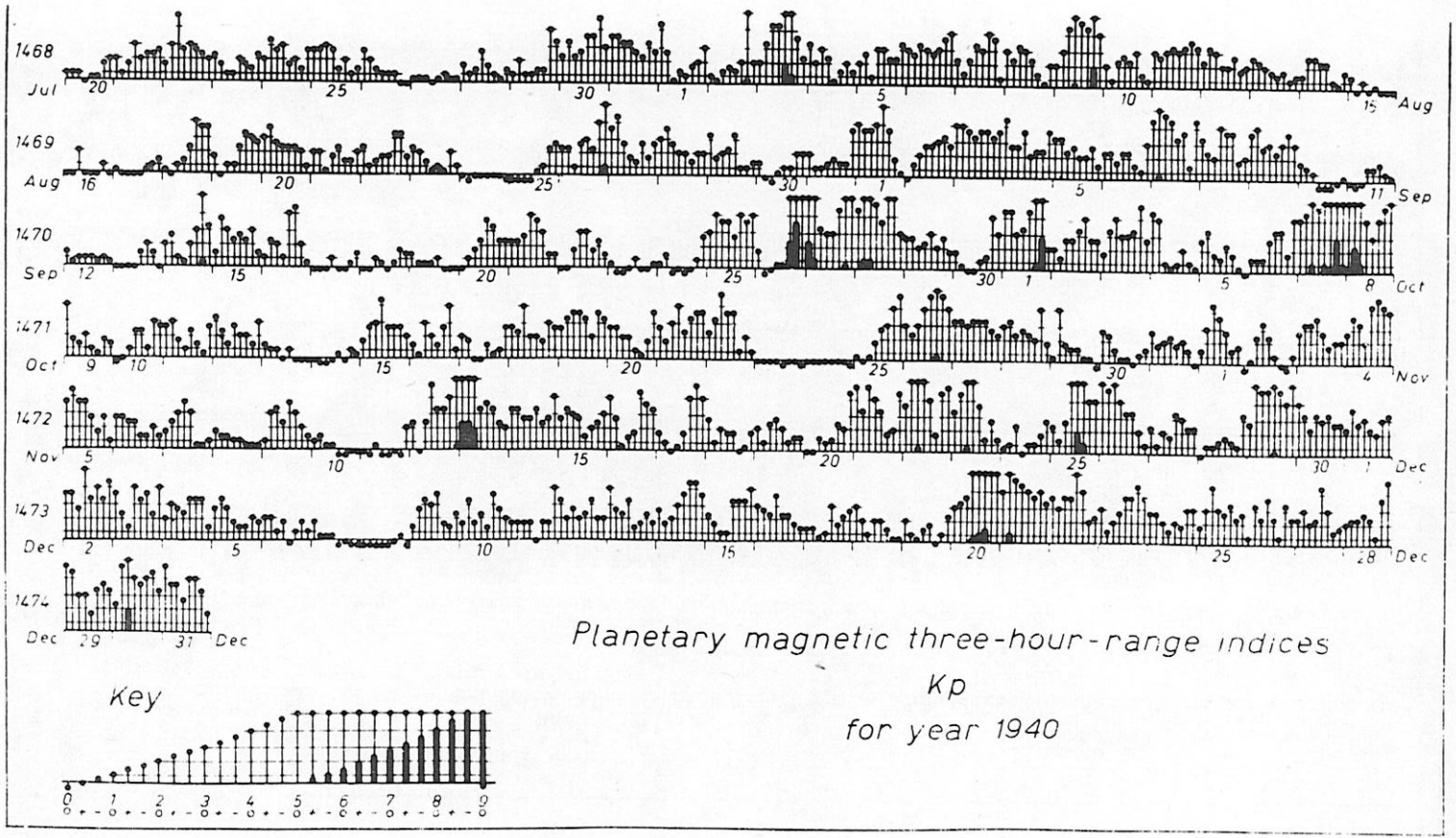


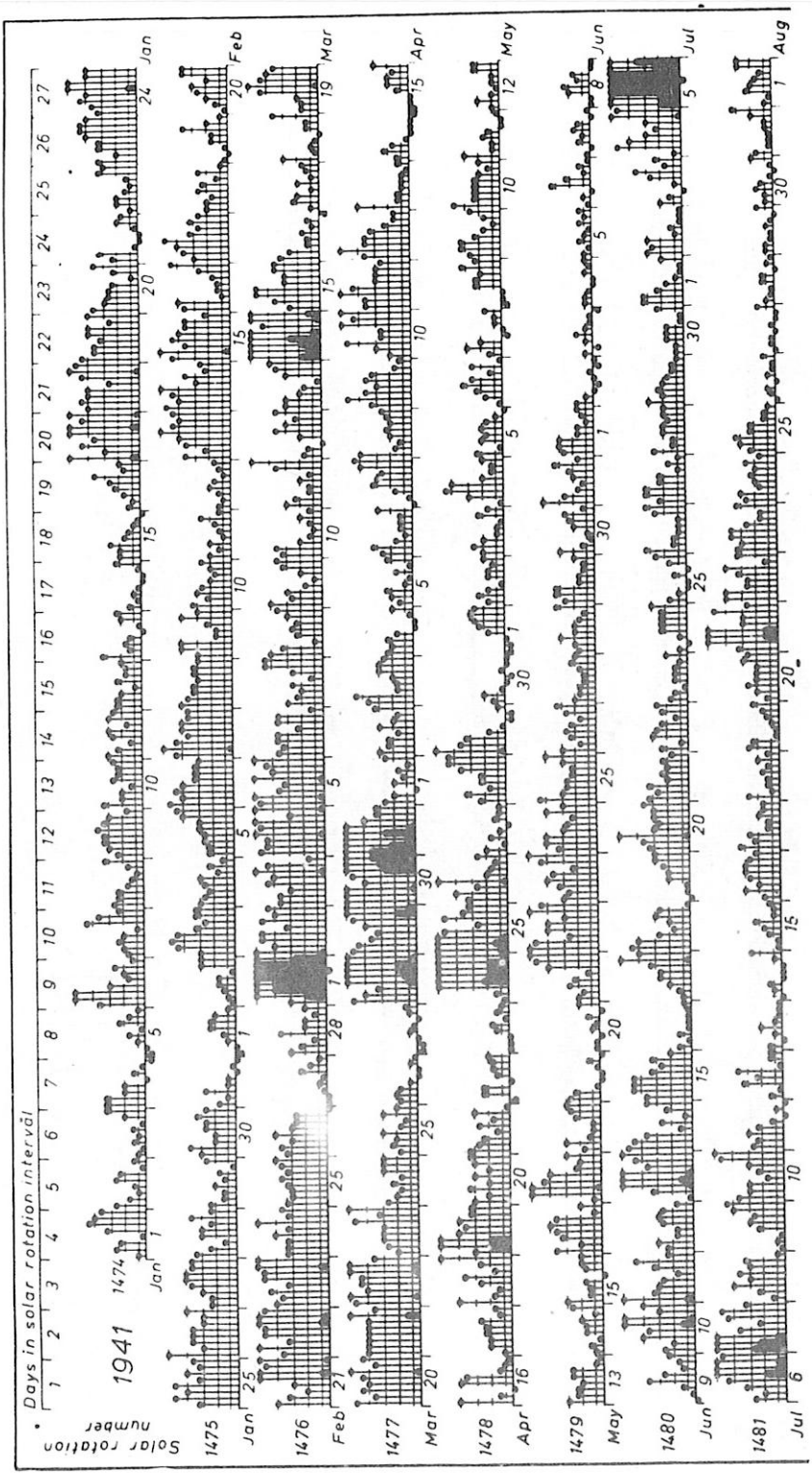
▲ = sudden commencement

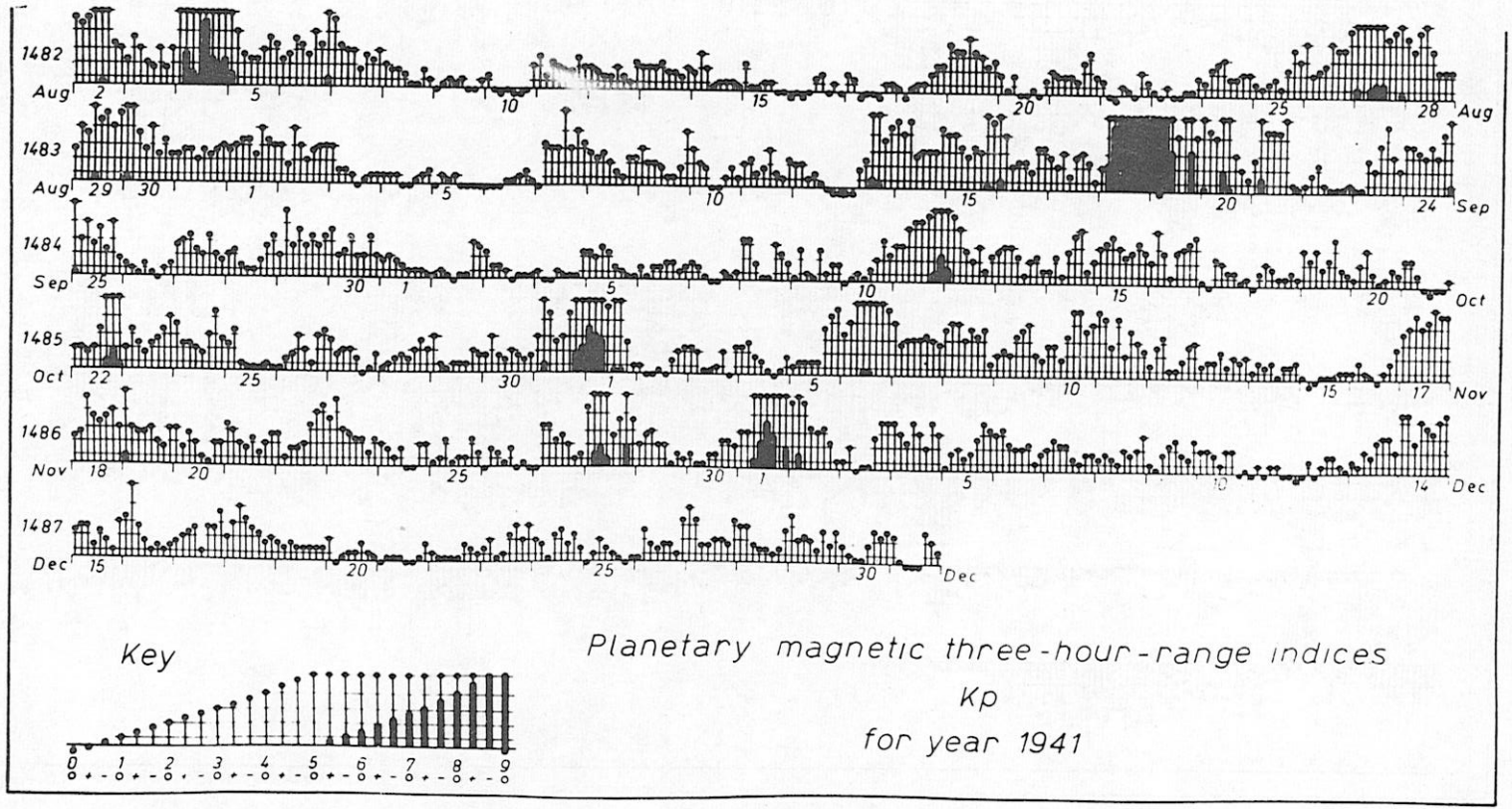
Kp

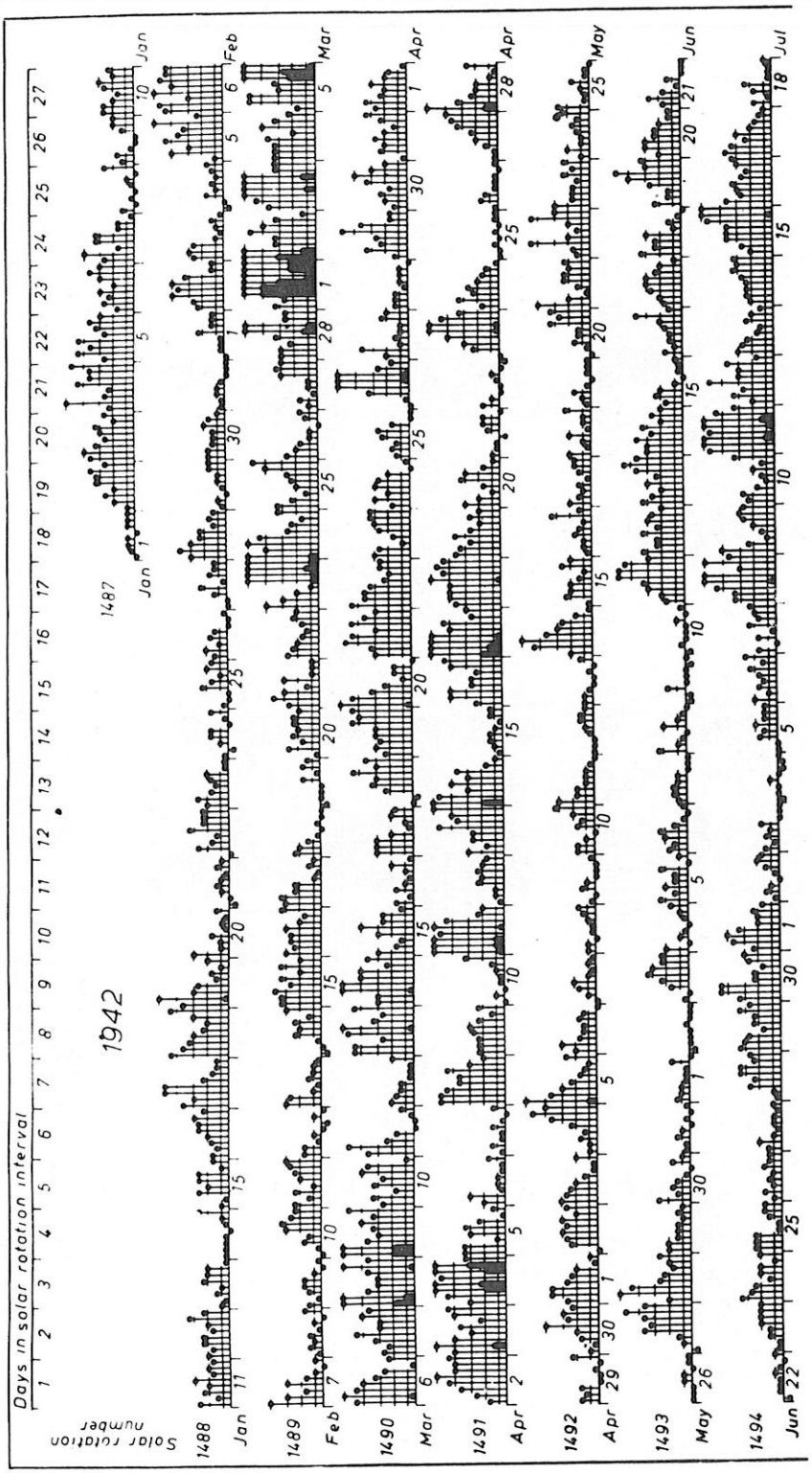
1938 November 7 – 1940 January 12

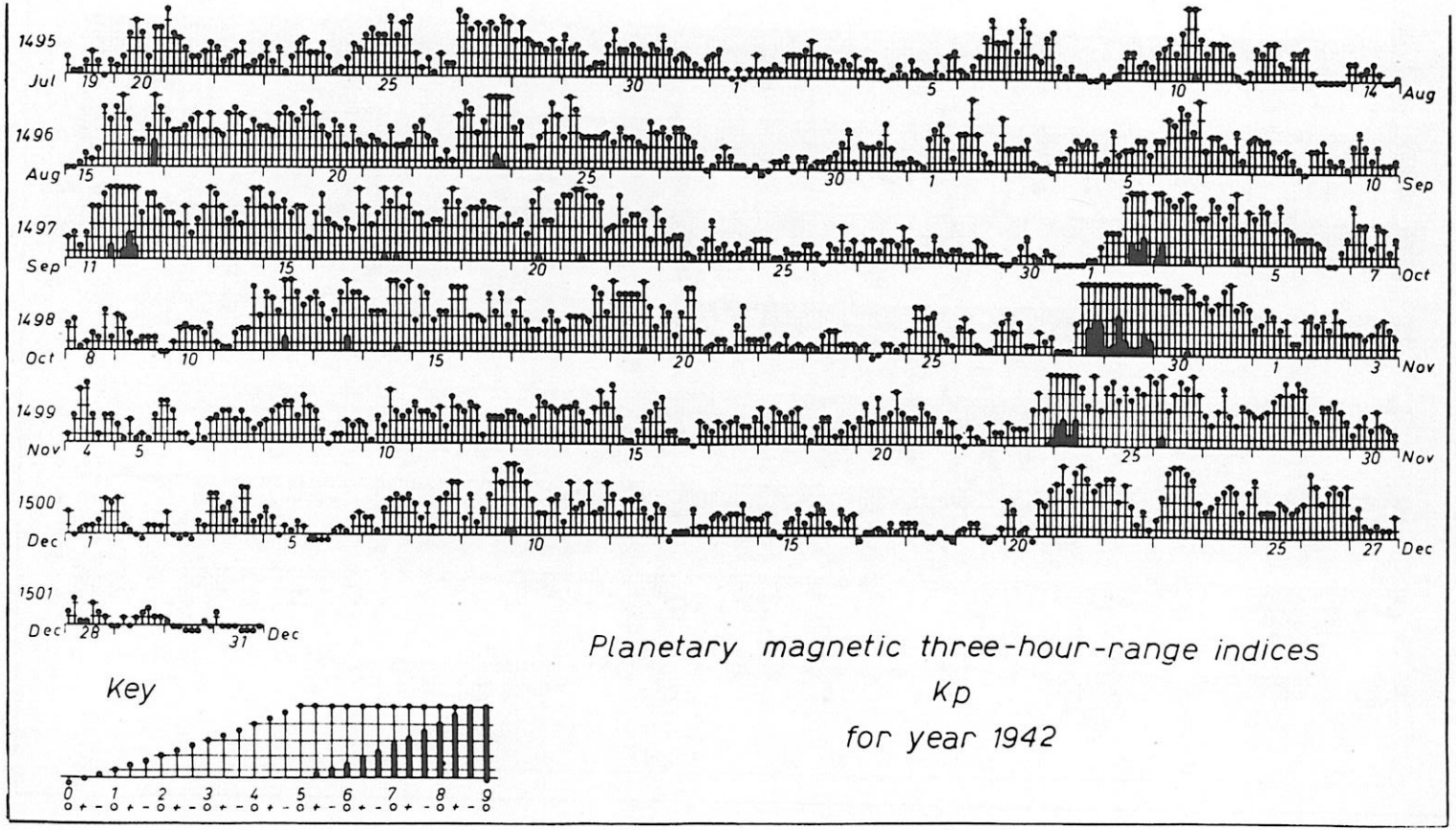

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1940
1460
Jan 1 5 10 12 Jan
1461
Jan 13 15 20 25 30 1 5 8 Feb
1462
Feb 9 10 15 20 25 29 1 5 6 Mar
1463
Mar 7 10 15 20 25 30 1 2 Apr
1464
Apr 3 5 10 15 20 25 29 Apr
1465
Apr 30 1 5 10 15 20 25 26 May
1466
May 27 30 1 5 10 15 20 22 Jun
1467
Jun 23 25 30 1 5 10 15 19 Jul


1468
Jul
20
25
30
1
5
10
15
Aug
1469
Aug
16
20
25
30
1
5
11
Sep
1470
Sep
12
15
20
25
30
1
5
8
Oct
1471
Oct
9
10
15
20
25
30
1
4
Nov
1472
Nov
5
10
15
20
25
30
1
Dec
1473
Dec
2
5
10
15
20
25
28
Dec
1474
Dec
29
31
Dec
Key
0 0+ 1- 1o 1+ 2- 2o 2+ 3- 3o 3+ 4- 4o 4+ 5- 5o 5+ 6- 6o 6+ 7- 7o 7+ 8- 8o 8+ 9-
Planetary magnetic three-hour-range indices
Kp
for year 1940

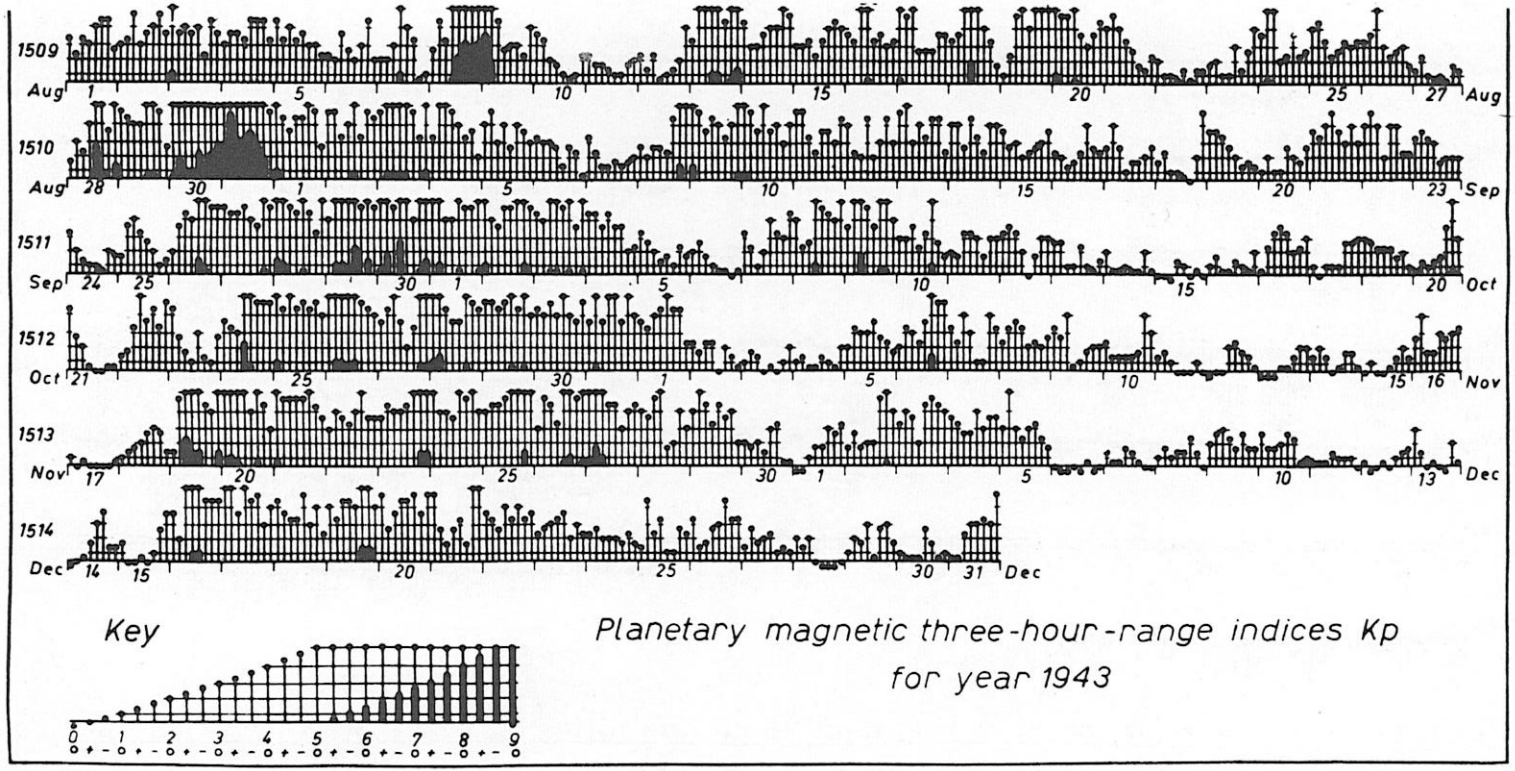

Days in solar rotation interval
1941
Solar rotation number
1474
1475
1476
1477
1478
1479
1480
1481
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug


1482
Aug
2
5
10
15
20
25
28
Aug
1483
Aug
29
30
1
5
10
15
20
24
Sep
1484
Sep
25
30
1
5
10
15
20
Oct
1485
Oct
22
25
30
1
5
10
15
17
Nov
1486
Nov
18
20
25
30
1
5
10
14
Dec
1487
Dec
15
20
25
30
Dec
Key
0 1 2 3 4 5 6 7 8 9
Planetary magnetic three-hour-range indices
Kp
for year 1941

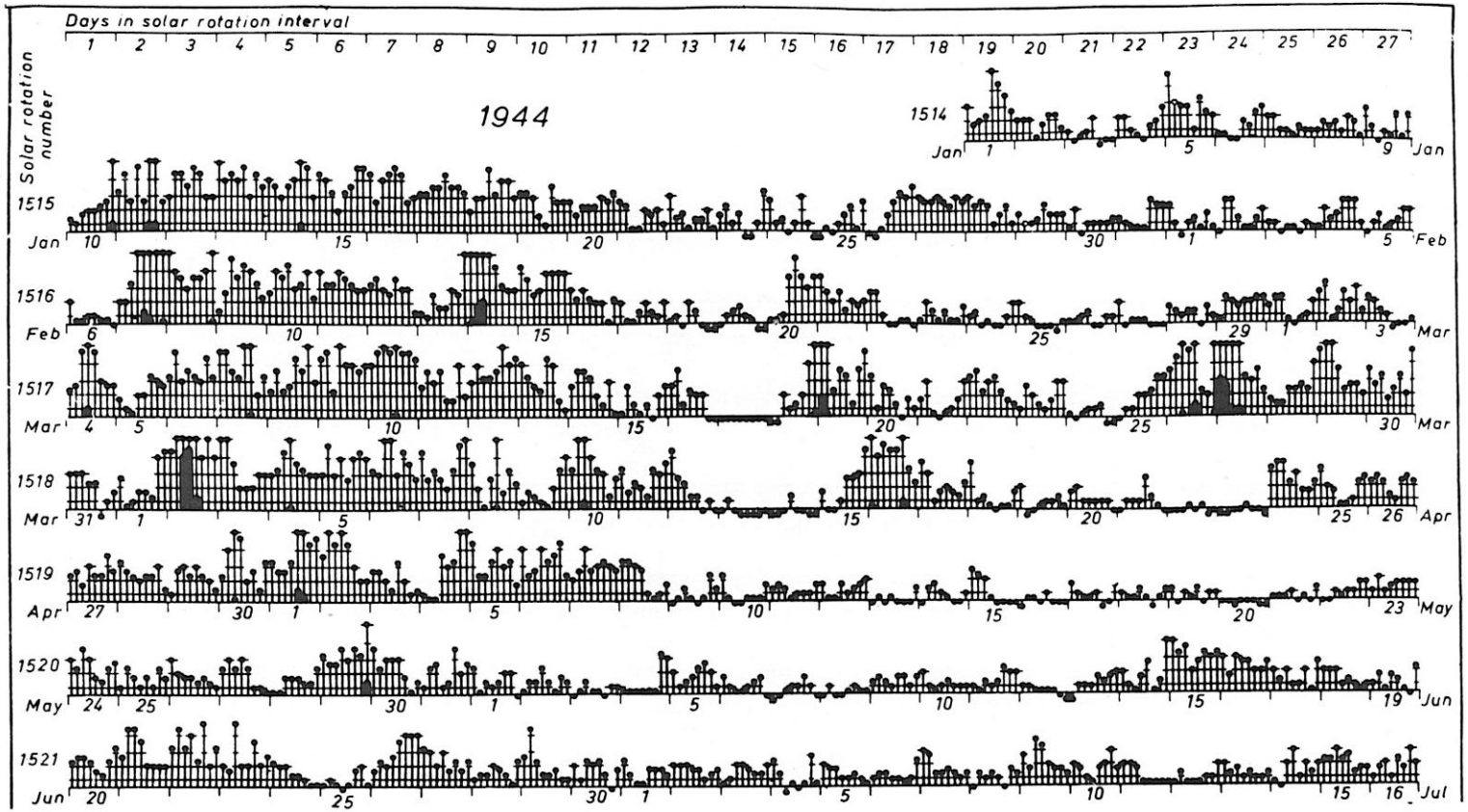

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1942
1487
Jan
1488
Jan
Feb
1489
Feb
Mar
1490
Mar
Apr
1491
Apr
Apr
1492
Apr
May
1493
May
Jun
1494
Jun
Jul

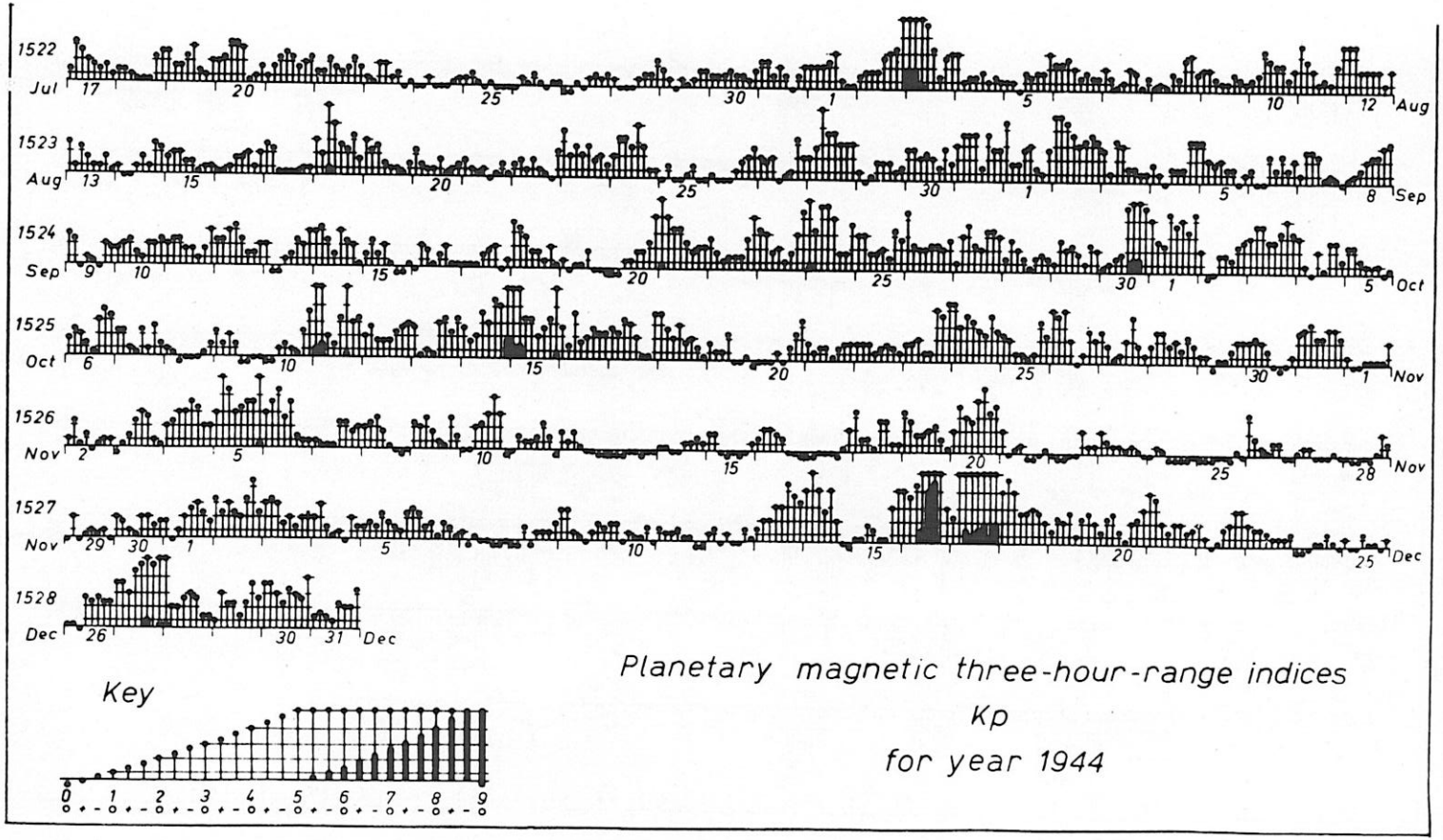

1495
Jul
19 20 25 30 1 5 10 14
Aug
1496
Aug
15 20 25 30 1 5 10
Sep
1497
Sep
11 15 20 25 30 1 5 7
Oct
1498
Oct
8 10 15 20 25 30 1 3
Nov
1499
Nov
4 5 10 15 20 25 30
Nov
1500
Dec
1 5 10 15 20 25 27
Dec
1501
Dec
28 31
Dec
Key
0 1 2 3 4 5 6 7 8 9
Planetary magnetic three-hour-range indices
Kp
for year 1942

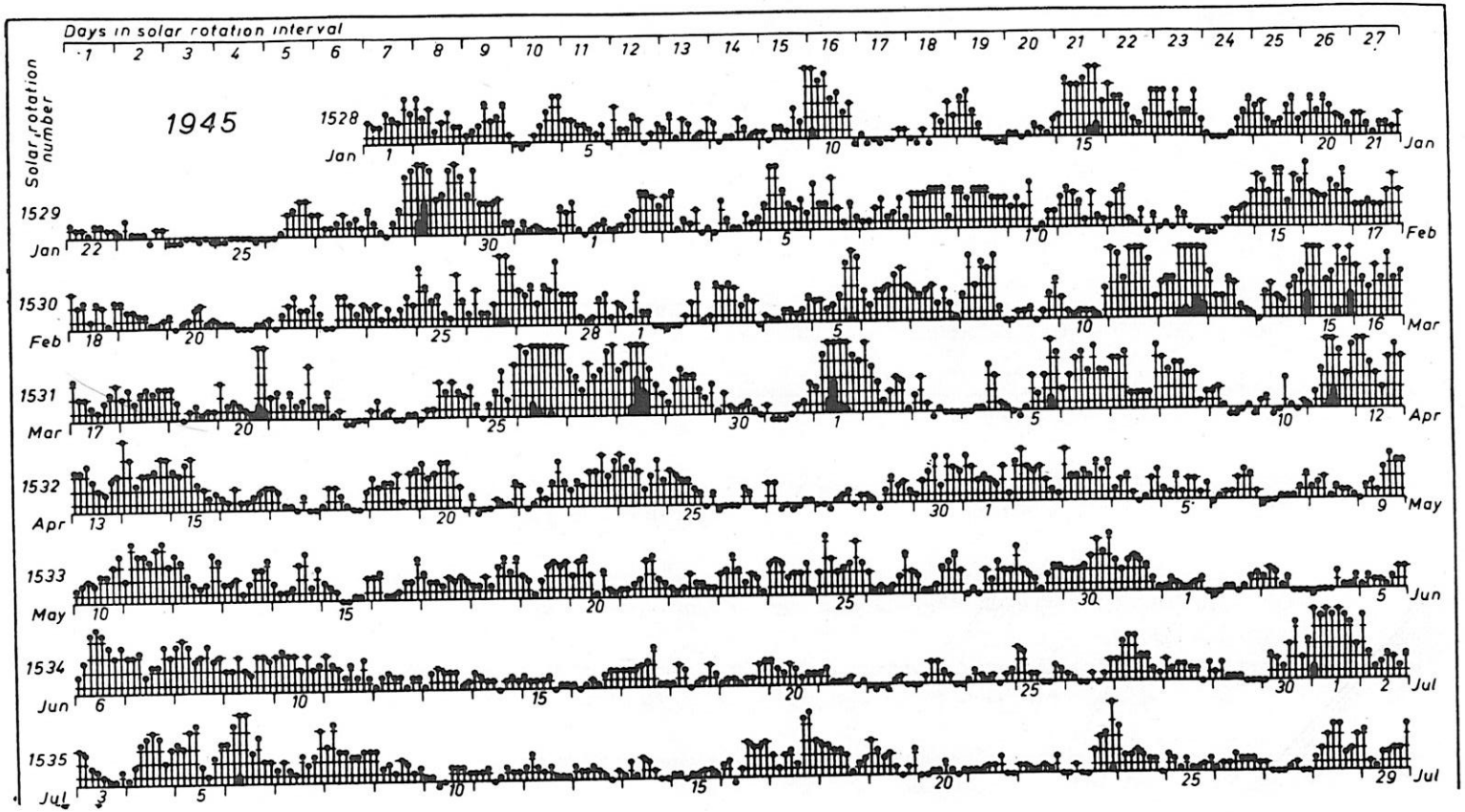
Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1943
Jan
1502
Jan
1503
Feb
1504
Mar
1505
Apr
1506
May
1507
Jun
1508
Jul
Jan
Feb
Mar
Apr
May
Jun
Jul
Jul

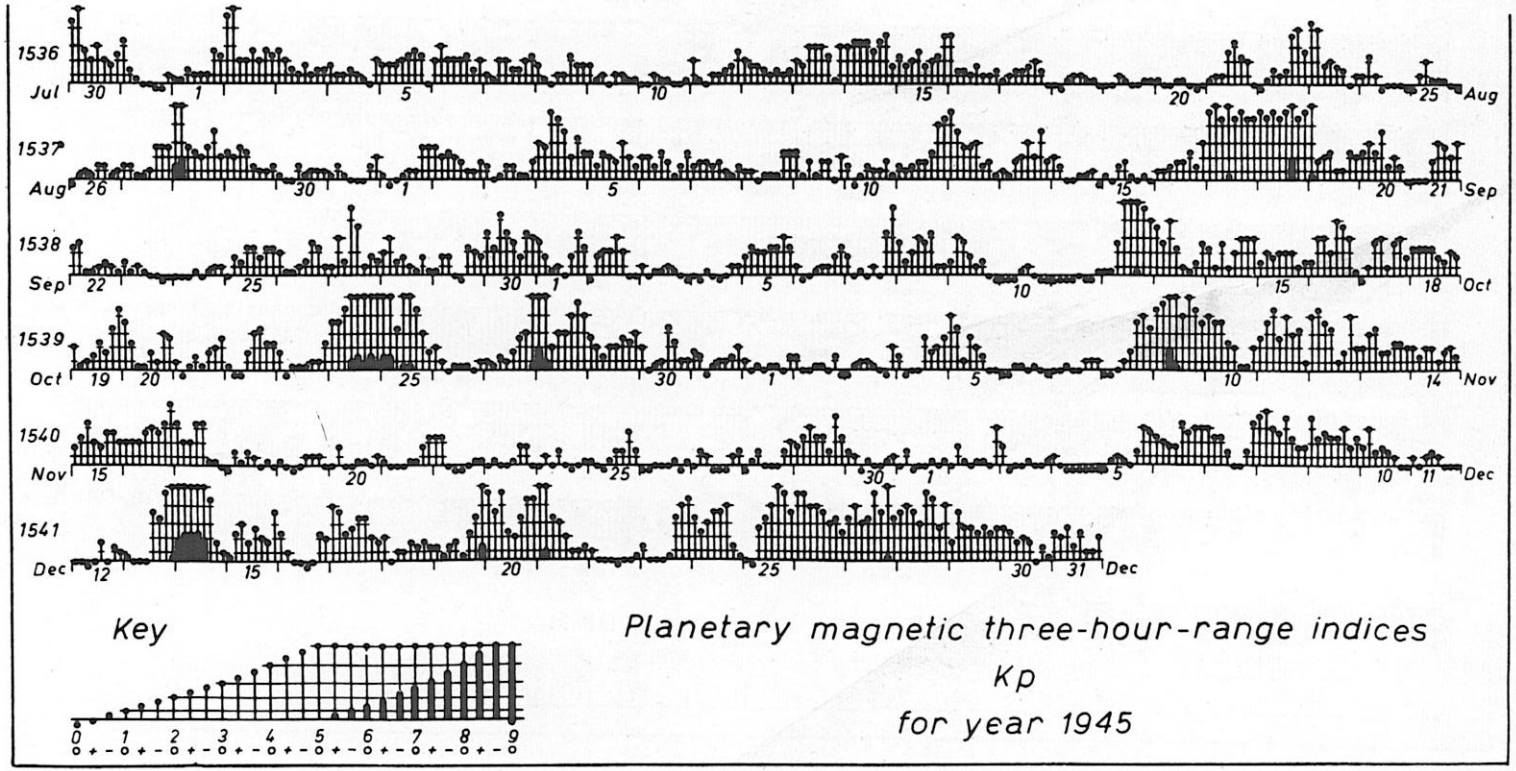


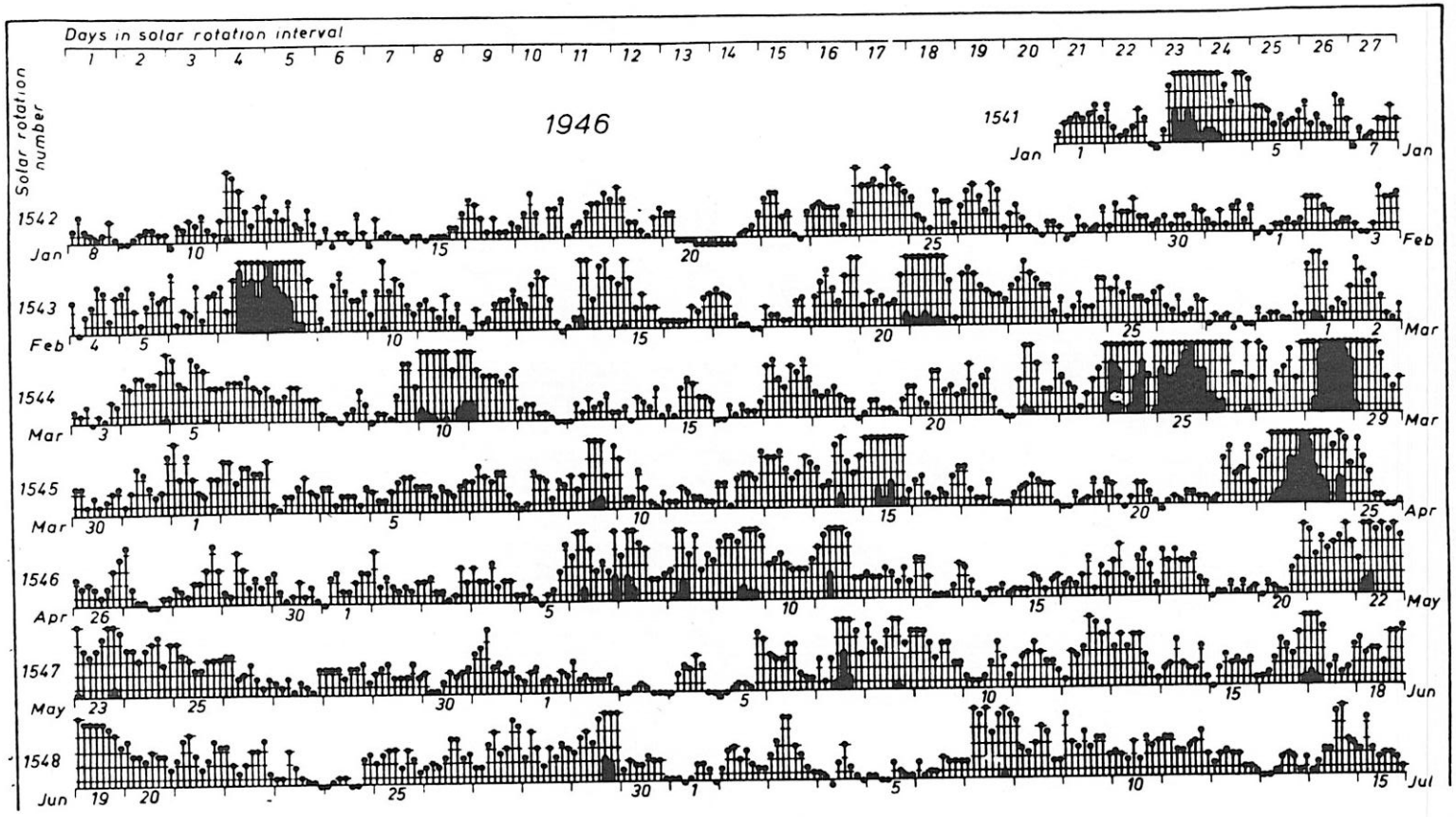
Planetary magnetic three-hour-range indices Kp for year 1943

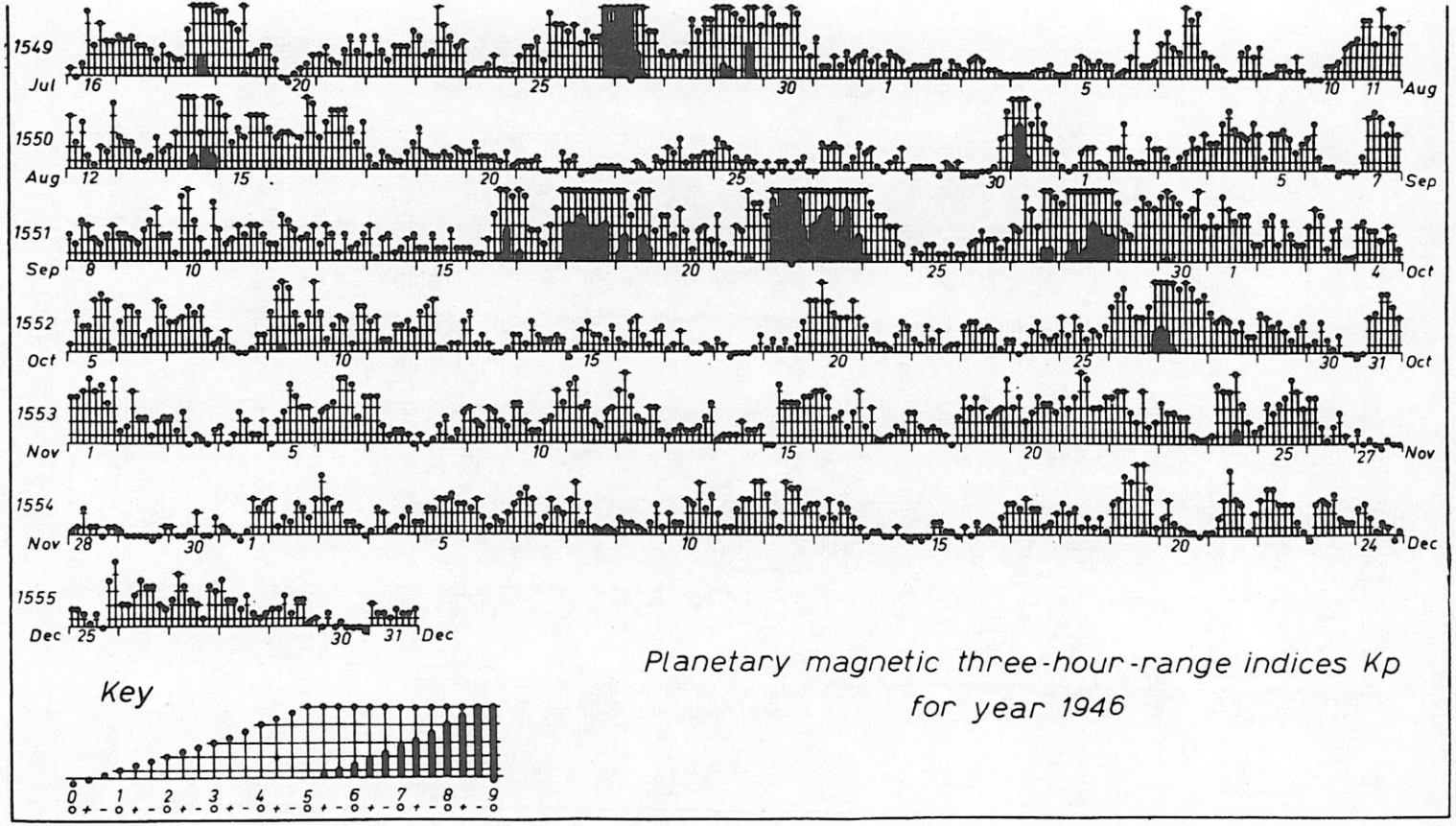

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1944
1514
Jan 1 5 9 Jan
1515
Jan 10 15 20 25 30 1 5 Feb
1516
Feb 6 10 15 20 25 29 1 3 Mar
1517
Mar 4 5 10 15 20 25 30 Mar
1518
Mar 31 1 5 10 15 20 25 26 Apr
1519
Apr 27 30 1 5 10 15 20 23 May
1520
May 24 25 30 1 5 10 15 19 Jun
1521
Jun 20 25 30 1 5 10 15 16 Jul


1522
Jul 17 20 25 30 1 5 10 12 Aug
1523
Aug 13 15 20 25 30 1 5 8 Sep
1524
Sep 9 10 15 20 25 30 1 5 Oct
1525
Oct 6 10 15 20 25 30 1 Nov
1526
Nov 2 5 10 15 20 25 28 Nov
1527
Nov 29 30 1 5 10 15 20 25 Dec
1528
Dec 26 30 31 Dec
Key
0 1 2 3 4 5 6 7 8 9
Planetary magnetic three-hour-range indices
Kp
for year 1944

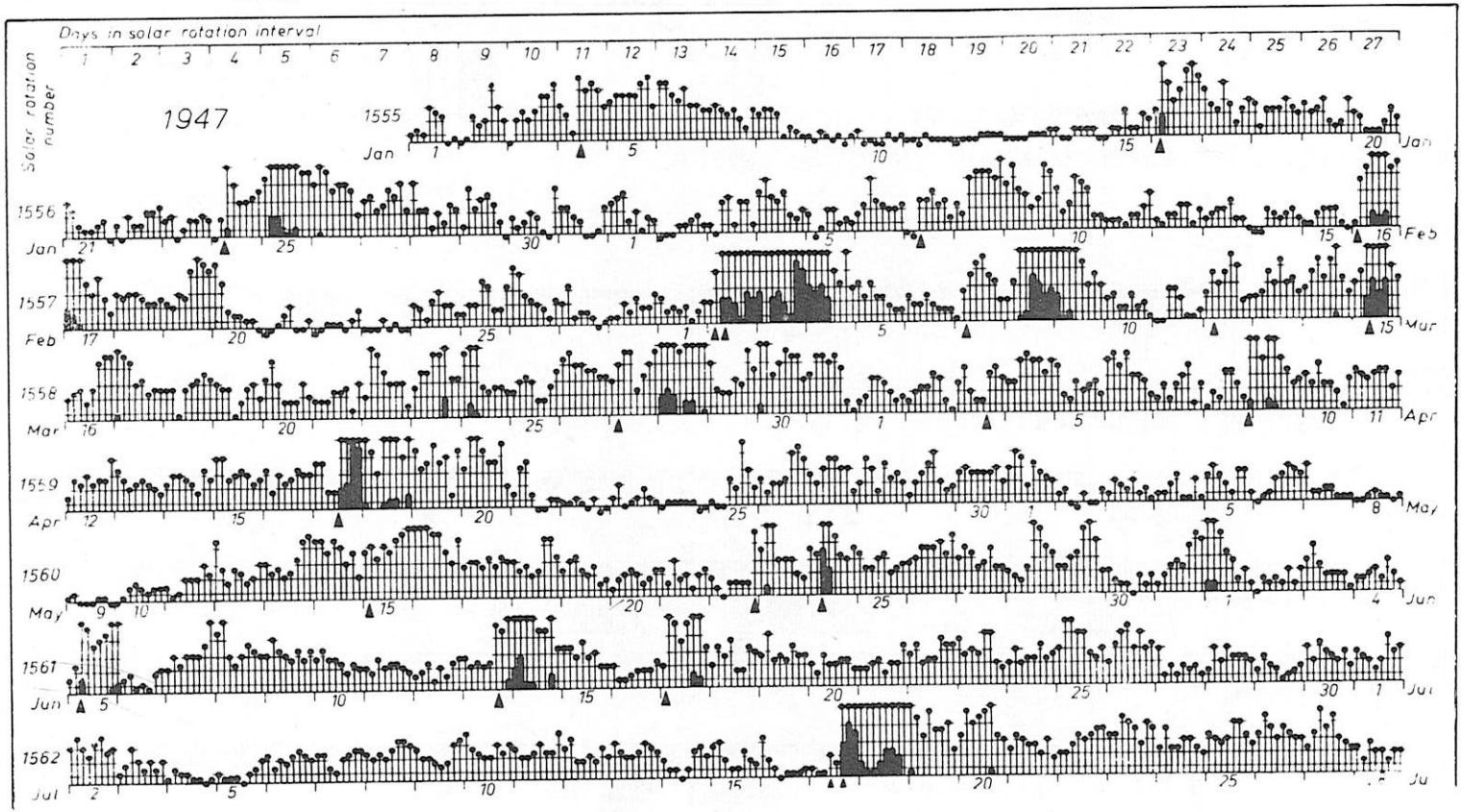

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1945
1528 Jan 1 5 10 15 20 21 Jan
1529 Jan 22 25 30 1 5 10 15 17 Feb
1530 Feb 18 20 25 28 1 5 10 15 16 Mar
1531 Mar 17 20 25 30 1 5 10 12 Apr
1532 Apr 13 15 20 25 30 1 5 9 May
1533 May 10 15 20 25 30 1 5 Jun
1534 Jun 6 10 15 20 25 30 1 2 Jul
1535 Jul 3 5 10 15 20 25 29 Jul

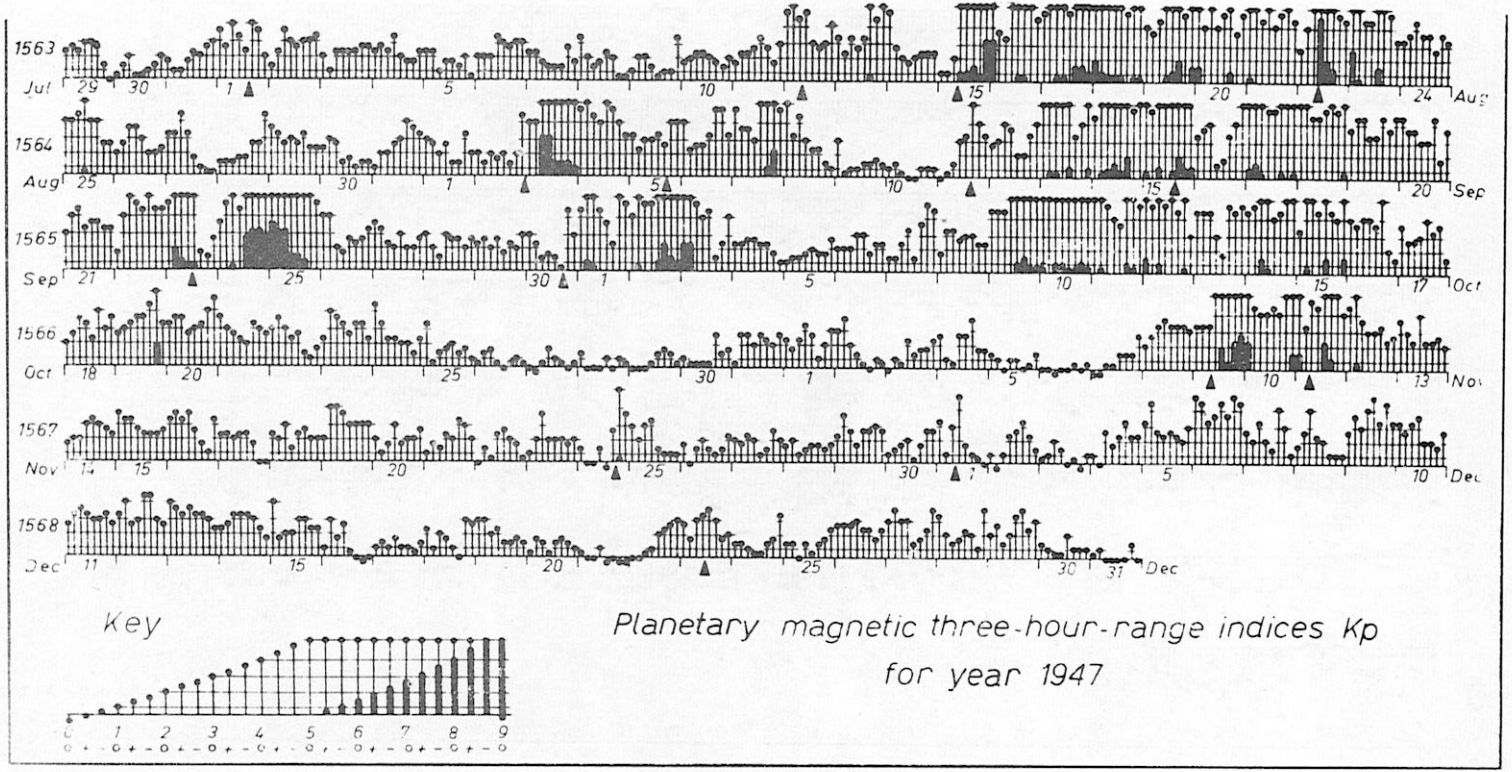

1536
Jul 30 1 5 10 15 20 25 Aug
1537
Aug 26 30 1 5 10 15 20 21 Sep
1538
Sep 22 25 30 1 5 10 15 18 Oct
1539
Oct 19 20 25 30 1 5 10 14 Nov
1540
Nov 15 20 25 30 1 5 10 11 Dec
1541
Dec 12 15 20 25 30 31 Dec
Key
0 1 2 3 4 5 6 7 8 9
Planetary magnetic three-hour-range indices
Kp
for year 1945


Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1946
1541
Jan 1 5 7 Jan
1542
Jan 8 10 15 20 25 30 1 3 Feb
1543
Feb 4 5 10 15 20 25 1 2 Mar
1544
Mar 3 5 10 15 20 25 29 Mar
1545
Mar 30 1 5 10 15 20 25 Apr
1546
Apr 26 30 1 5 10 15 20 22 May
1547
May 23 25 30 1 5 10 15 18 Jun
1548
Jun 19 20 25 30 1 5 10 15 Jul

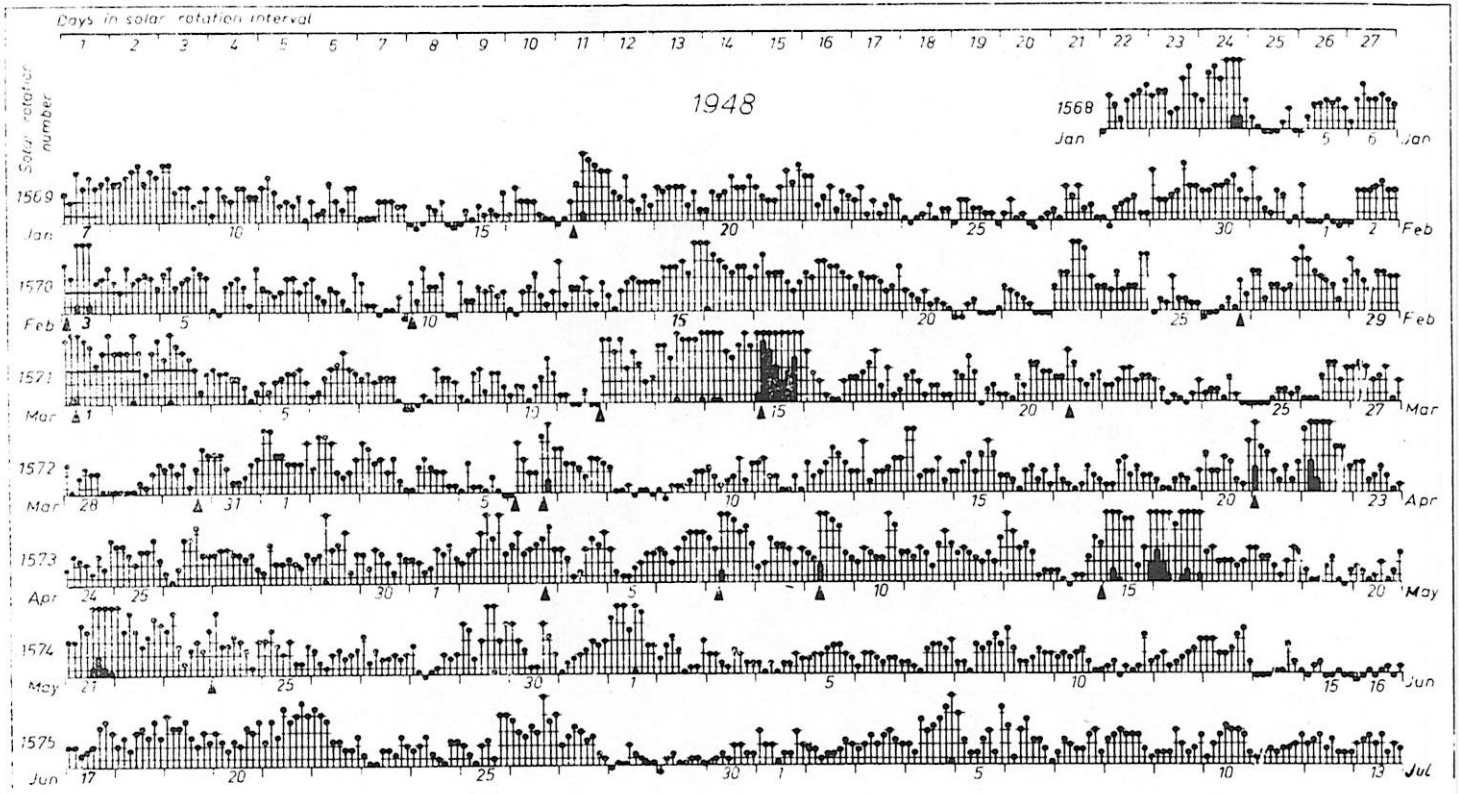


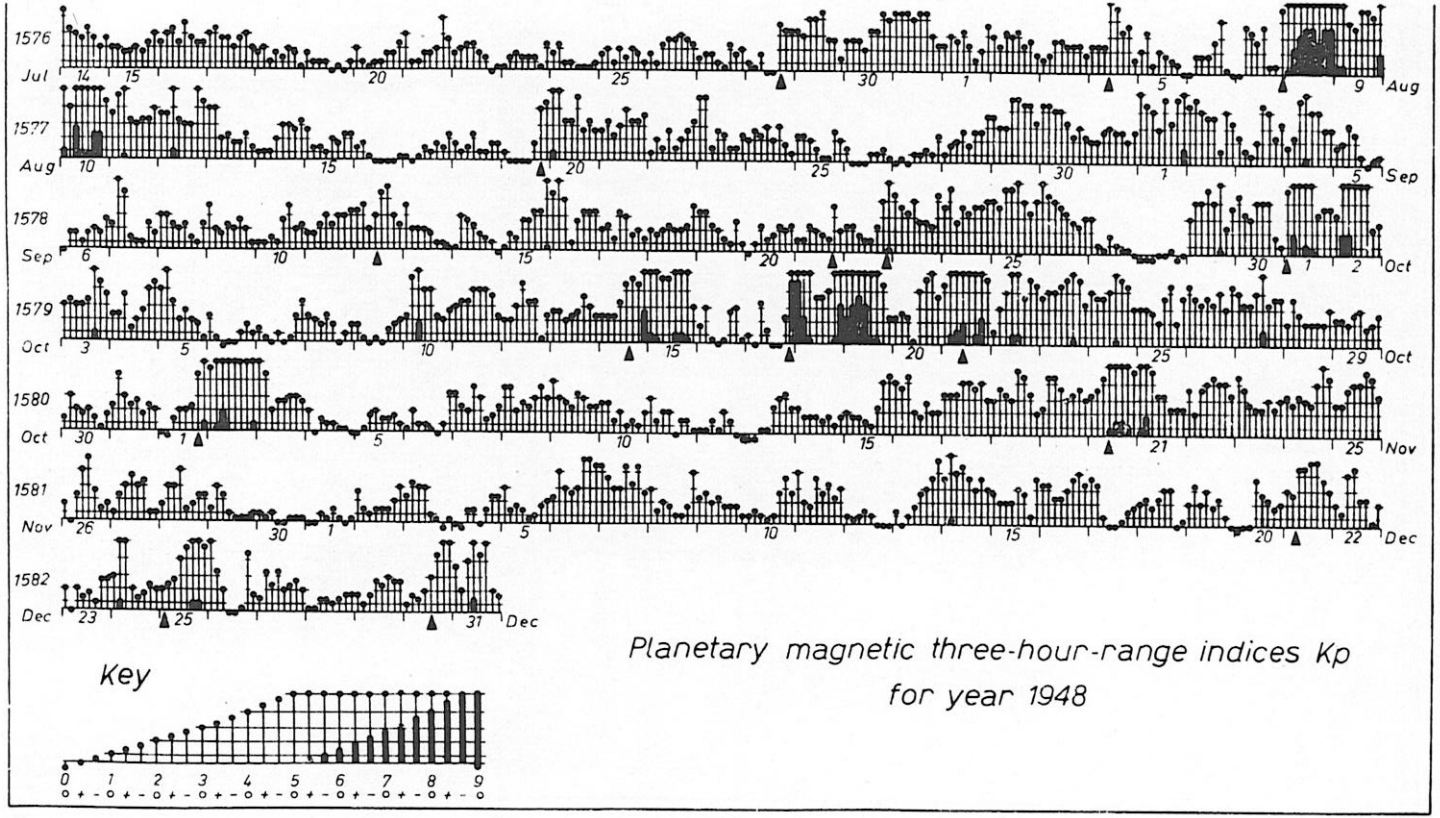
Planetary magnetic three-hour-range indices Kp for year 1946


Days in solar rotation interval
Solar rotation number
1947
1555
Jan
1556
Jan
Feb
1557
Feb
Mar
1558
Mar
Apr
1559
Apr
May
1560
May
Jun
1561
Jun
Jul
1562
Jul

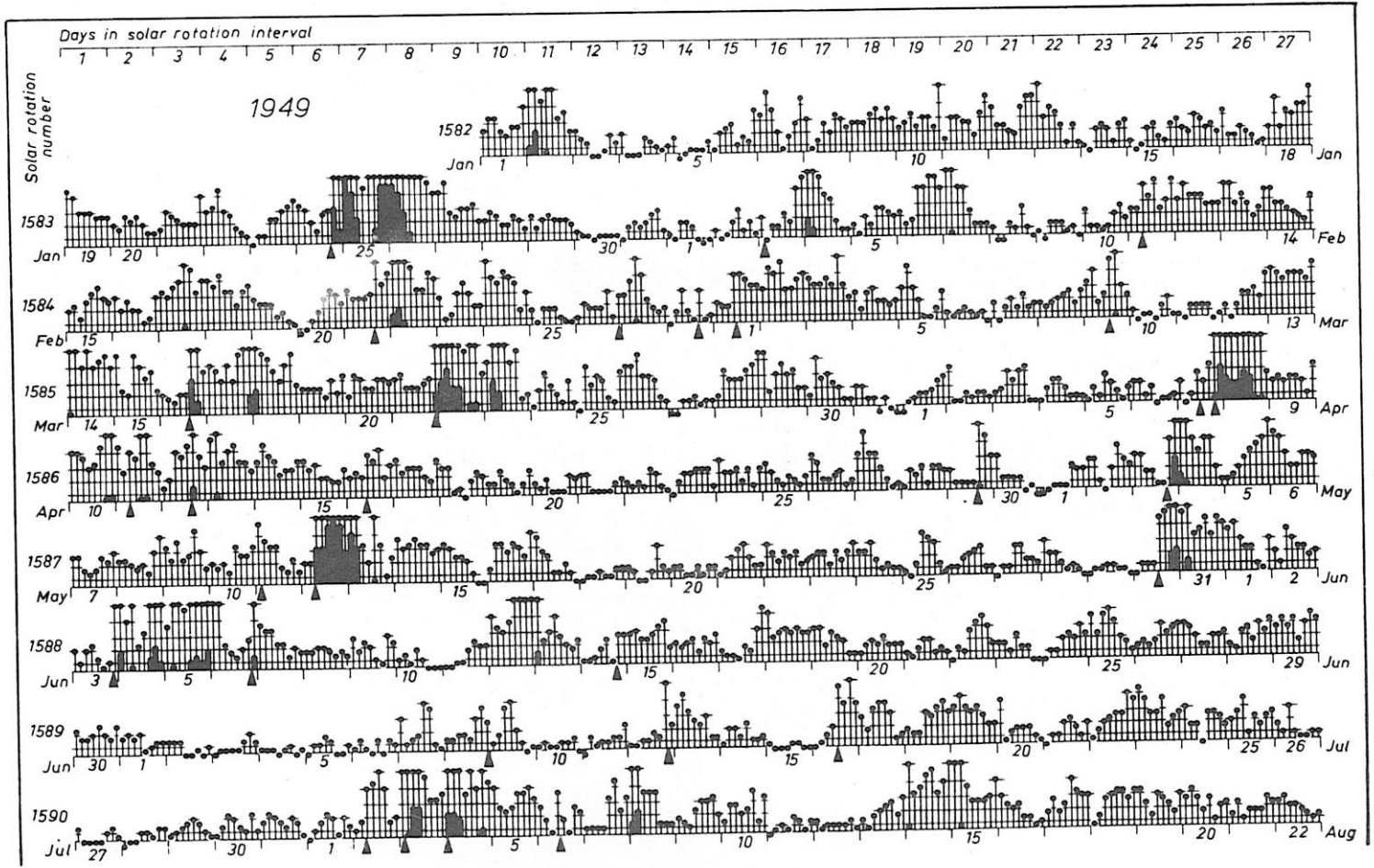


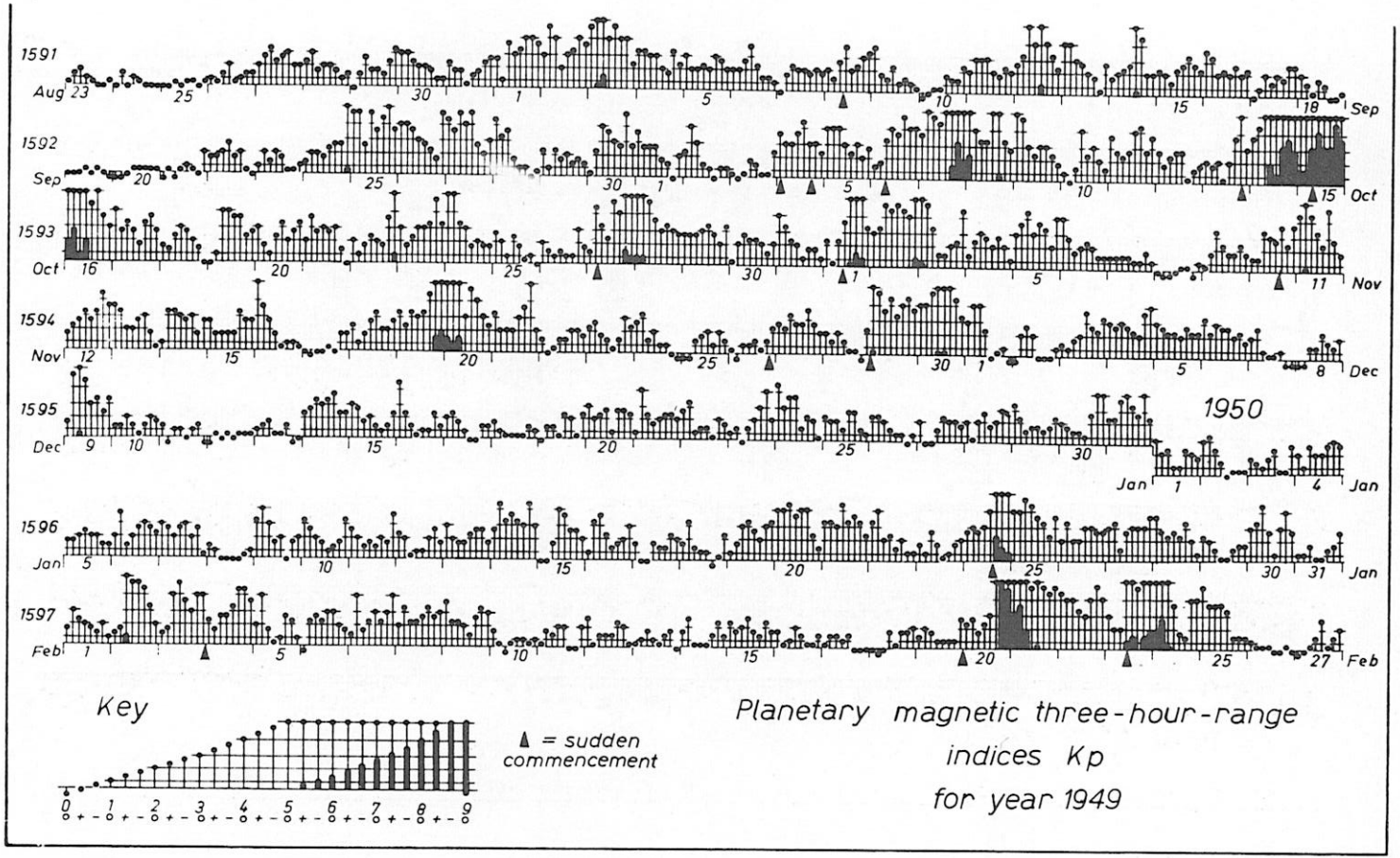
Planetary magnetic three-hour-range indices Kp for year 1947

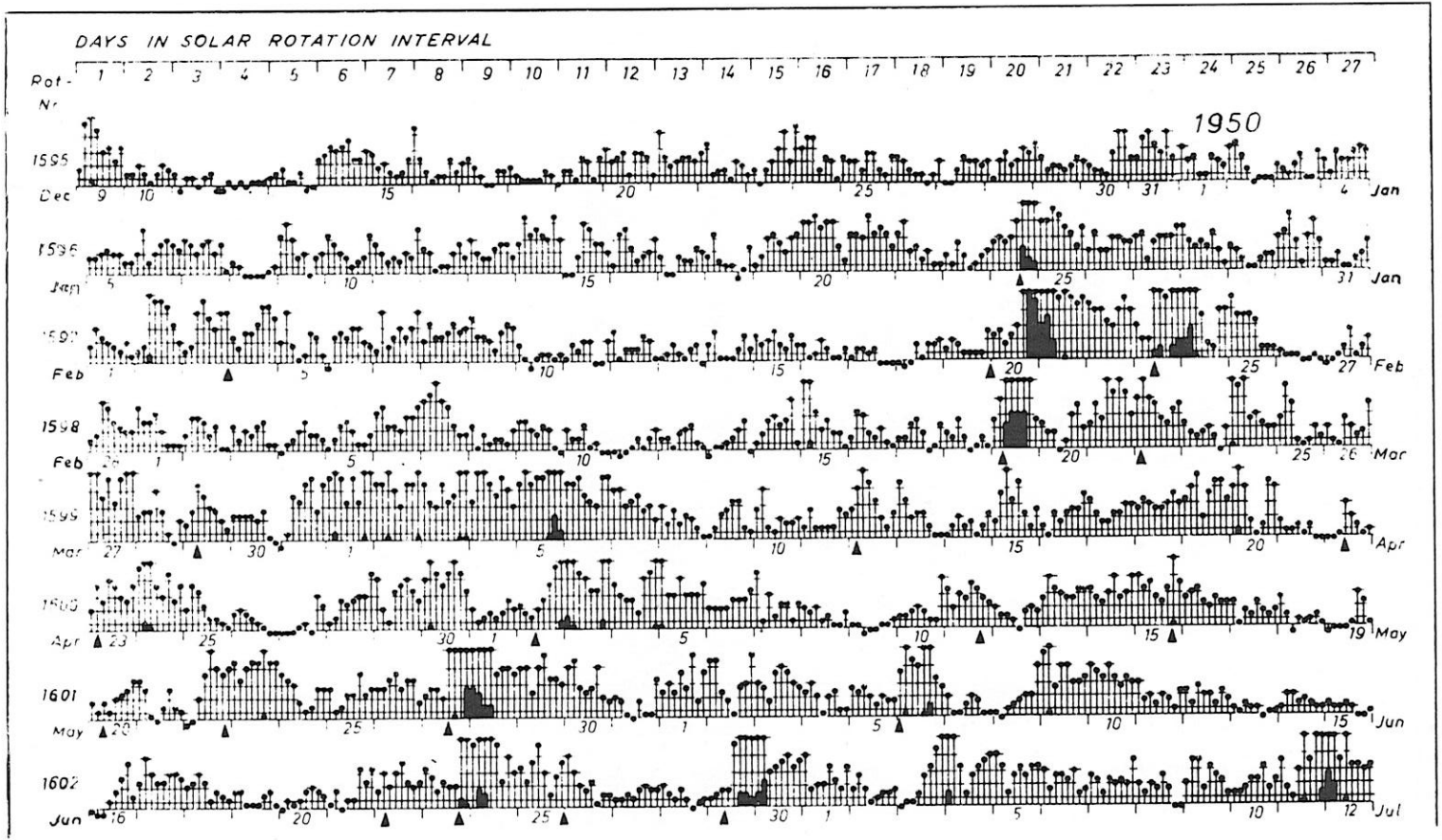

Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
1948
Solar rotation number
1568
Jan
Jan
1569
Jan
Feb
1570
Feb
Feb
1571
Mar
Mar
1572
Mar
Apr
1573
Apr
May
1574
May
Jun
1575
Jun
Jul

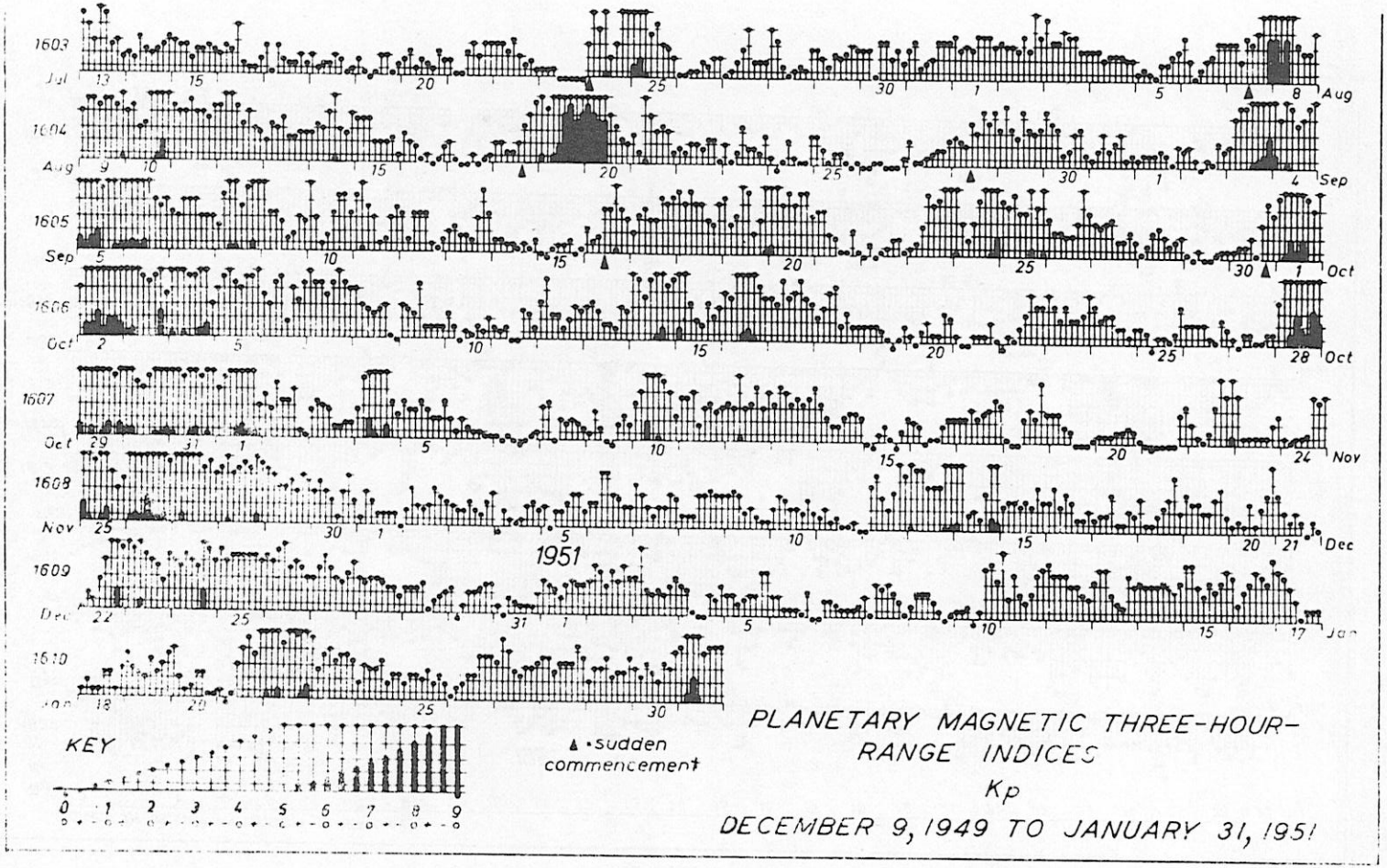


Planetary magnetic three-hour-range indices Kp for year 1948


Days in solar rotation interval
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Solar rotation number
1949
1582 Jan 1 5 10 15 18 Jan
1583 Jan 19 20 25 30 1 5 10 14 Feb
1584 Feb 15 20 25 1 5 10 13 Mar
1585 Mar 14 15 20 25 30 1 5 9 Apr
1586 Apr 10 15 20 25 30 1 5 6 May
1587 May 7 10 15 20 25 31 1 2 Jun
1588 Jun 3 5 10 15 20 25 29 Jun
1589 Jun 30 1 5 10 15 20 25 26 Jul
1590 Jul 27 30 1 5 10 15 20 22 Aug


1591
Aug 23 25 30 1 5 10 15 18 Sep
1592
Sep 20 25 30 1 5 10 15 Oct
1593
Oct 16 20 25 30 1 5 11 Nov
1594
Nov 12 15 20 25 30 1 5 8 Dec
1595
Dec 9 10 15 20 25 30
1950
Jan 1 4 Jan
1596
Jan 5 10 15 20 25 30 31 Jan
1597
Feb 1 5 10 15 20 25 27 Feb
Key
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
Planetary magnetic three-hour-range indices Kp for year 1949

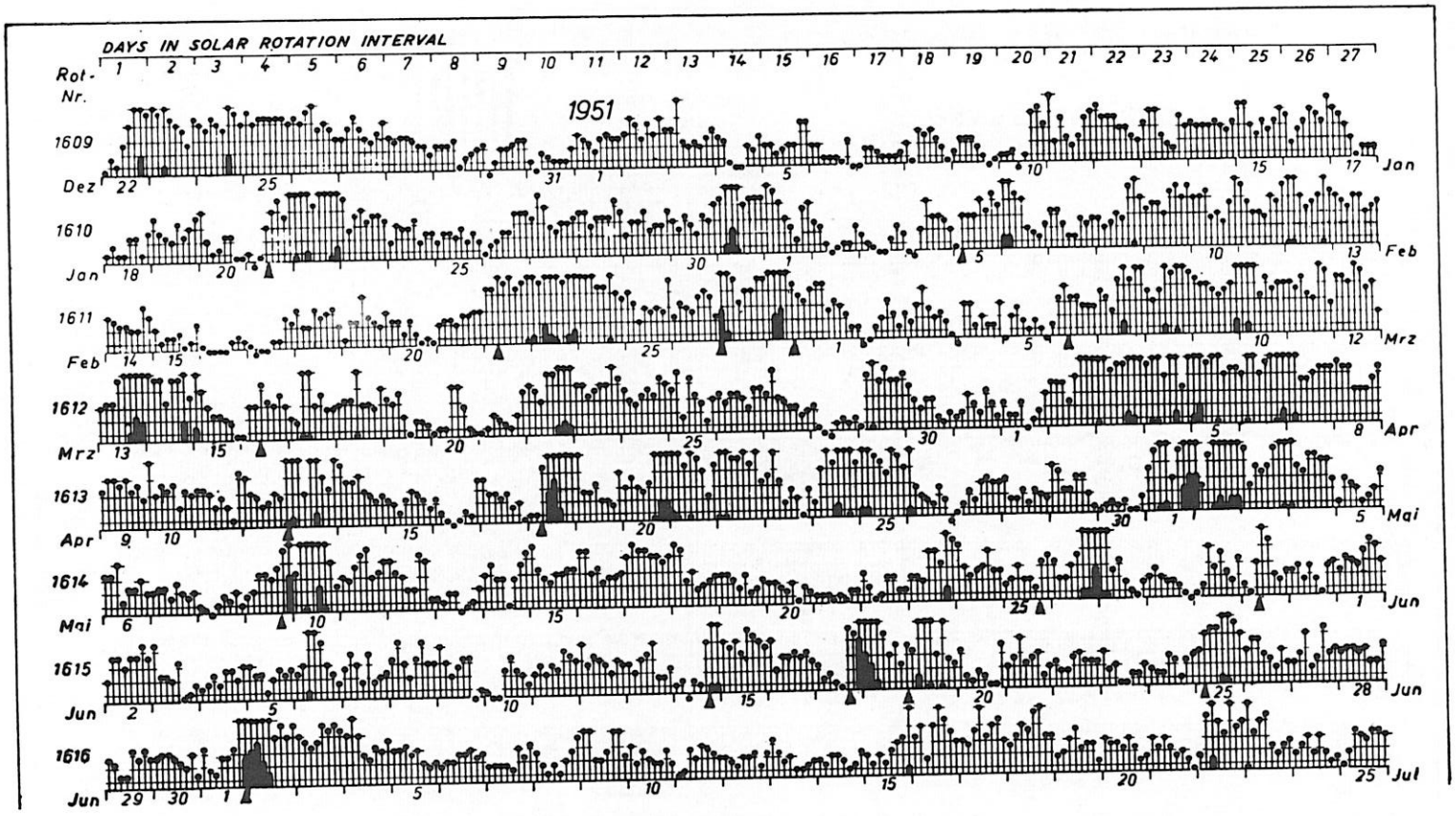

DAYS IN SOLAR ROTATION INTERVAL
Rot-Nr
1950
1595
Dec
Jan
1596
Jan
Jan
1597
Feb
Feb
1598
Feb
Mar
1599
Mar
Apr
1600
Apr
May
1601
May
Jun
1602
Jun
Jul



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp

DECEMBER 9, 1949 TO JANUARY 31, 1951


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Rot-Nr.
1951
1609
Dez 22 25 31 1 5 10 15 17 Jan
1610
Jan 18 20 25 30 1 5 10 13 Feb
1611
Feb 14 15 20 25 1 5 10 12 Mrz
1612
Mrz 13 15 20 25 30 1 5 8 Apr
1613
Apr 9 10 15 20 25 30 1 5 Mai
1614
Mai 6 10 15 20 25 1 Jun
1615
Jun 2 5 10 15 20 25 28 Jun
1616
Jun 29 30 1 5 10 15 20 25 Jul

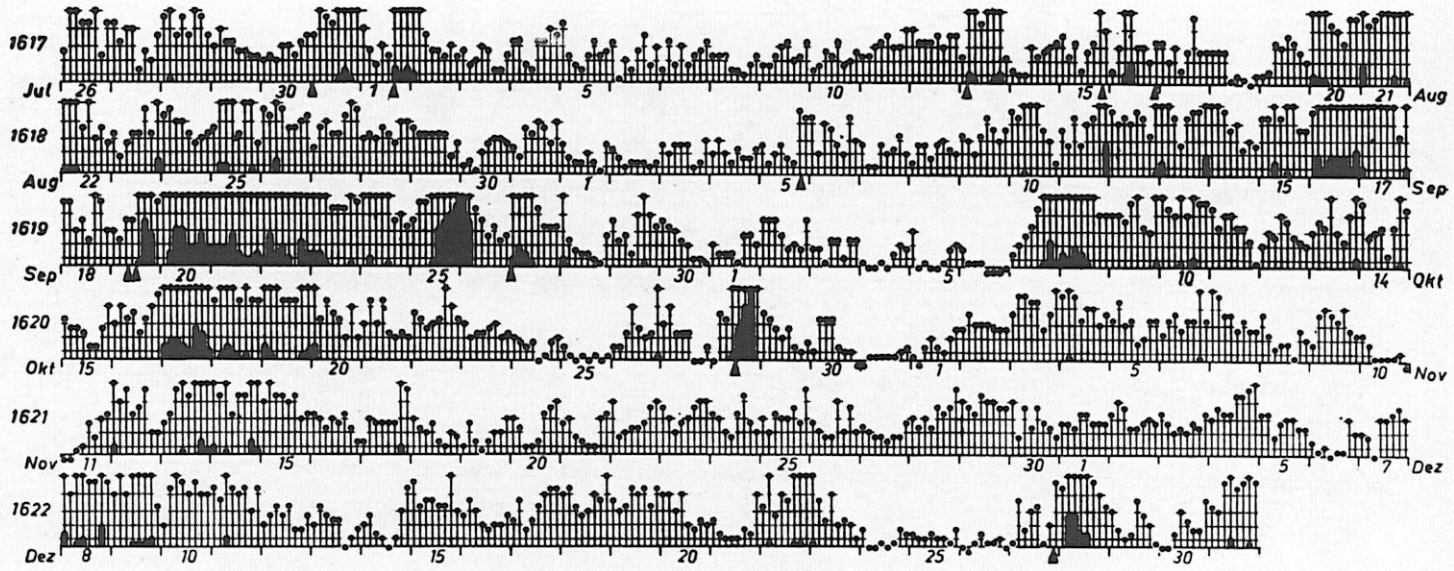
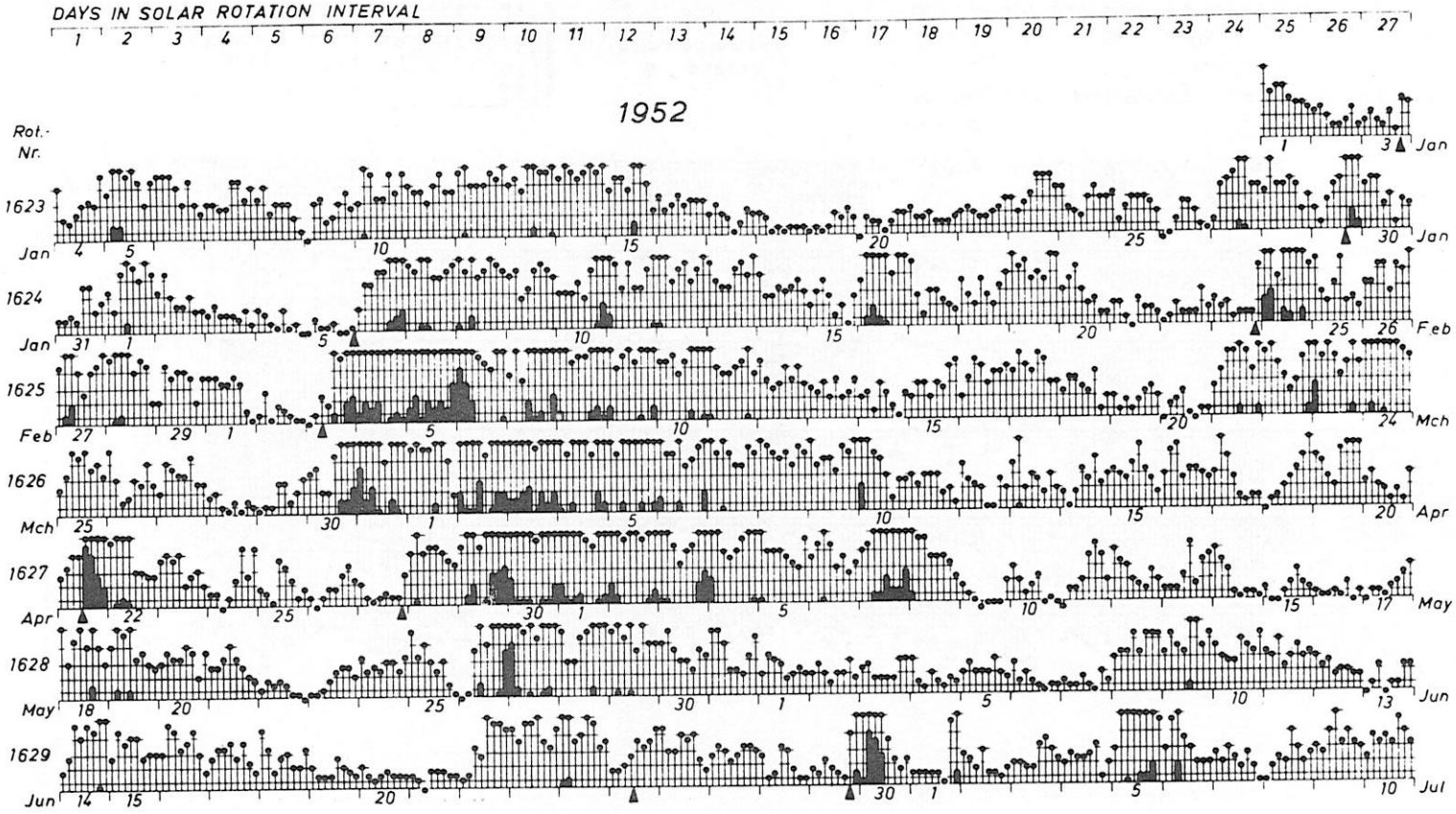


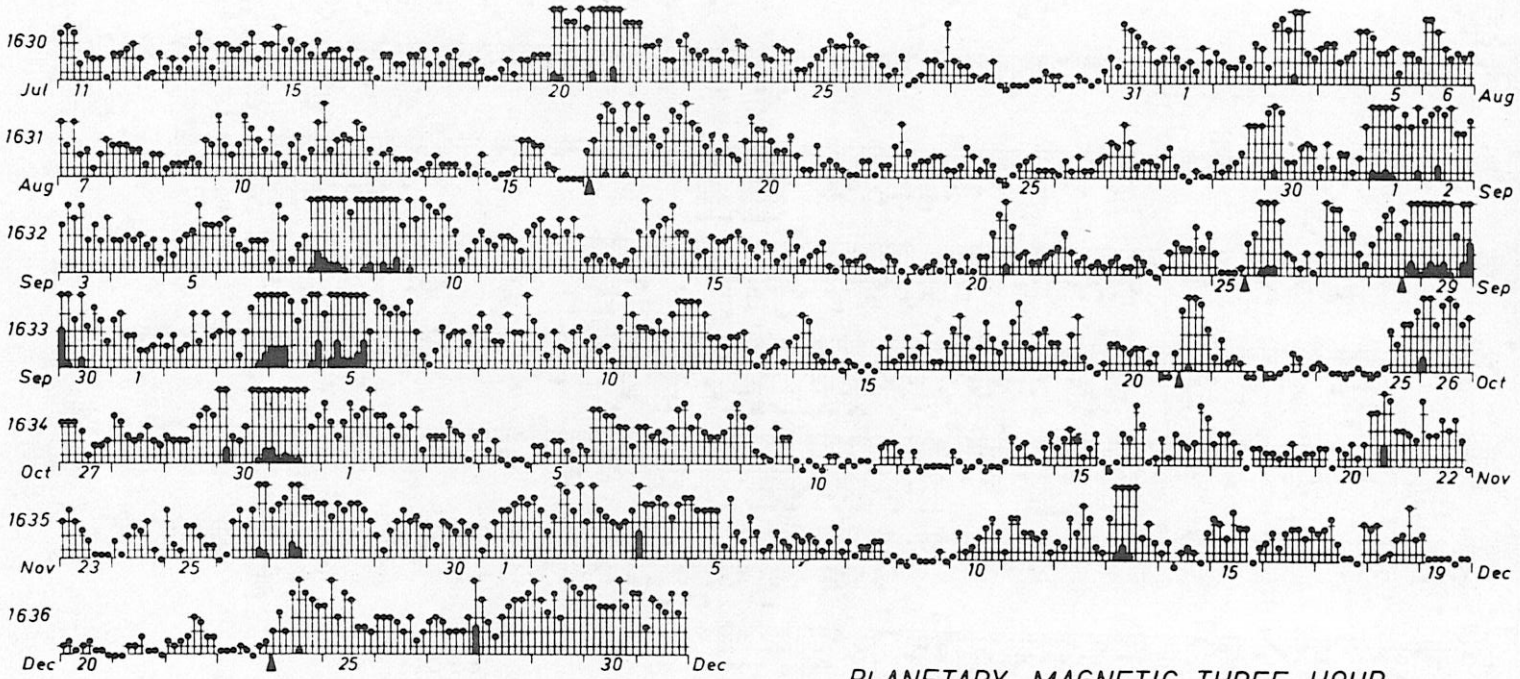
FIG. B

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp

DECEMBER 22, 1950 TO DECEMBER 31, 1951


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
1952
Rot.-Nr.
1623
Jan
1624
Jan
1625
Feb
1626
Mch
1627
Apr
1628
May
1629
Jun
Jan
Jan
Feb
Mch
Apr
May
Jun
Jul



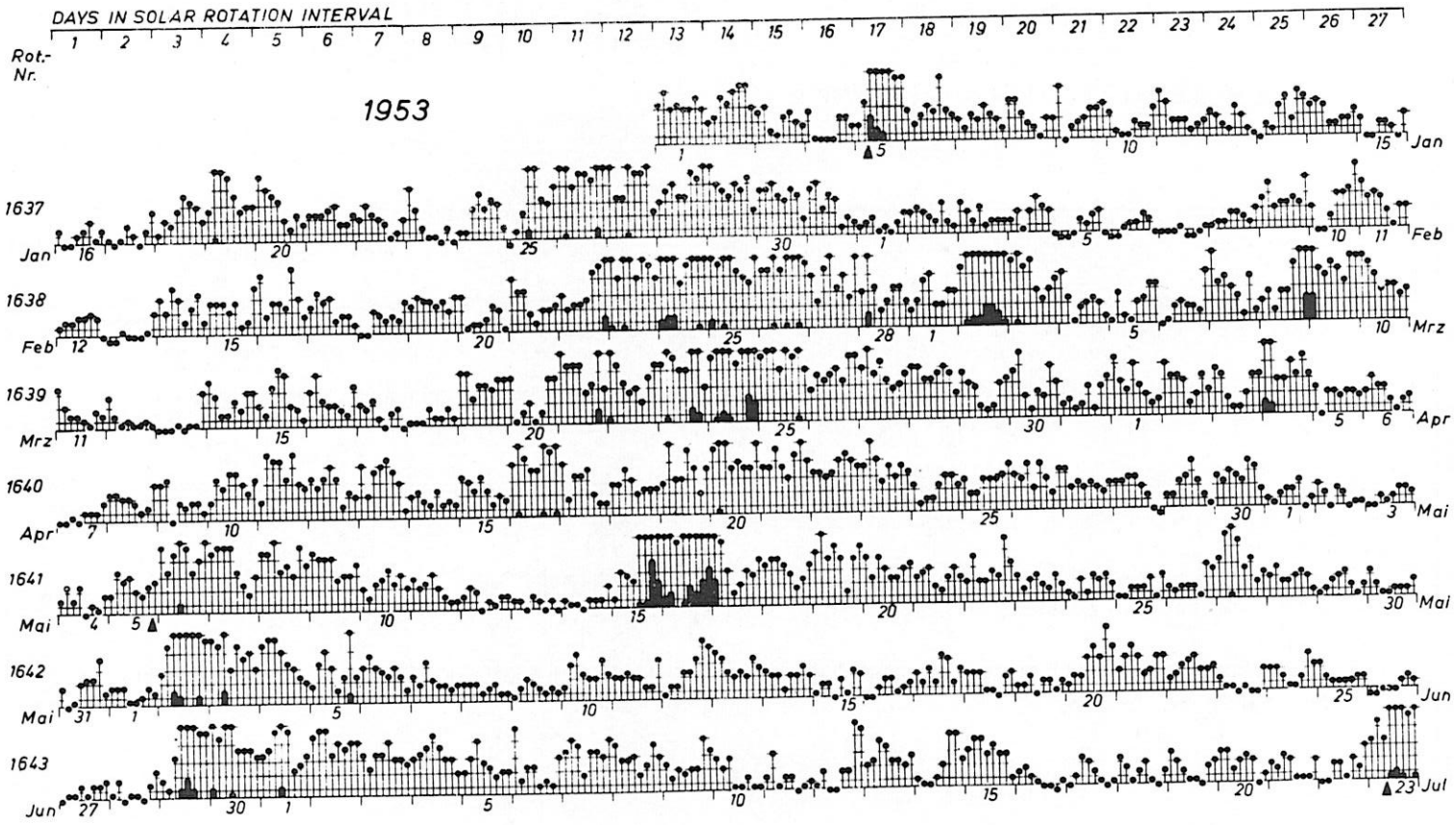
KEY

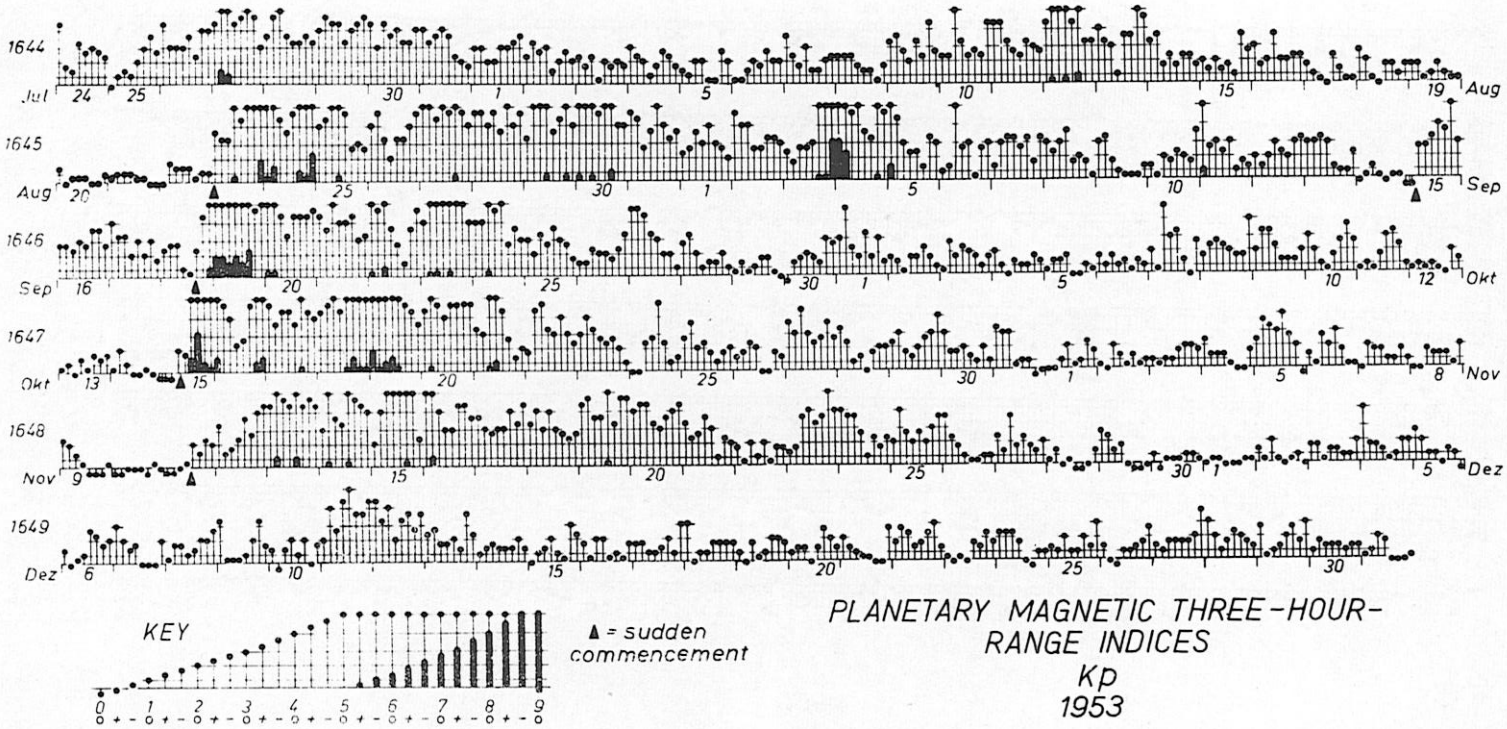
▲ = sudden commencement

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp

1952

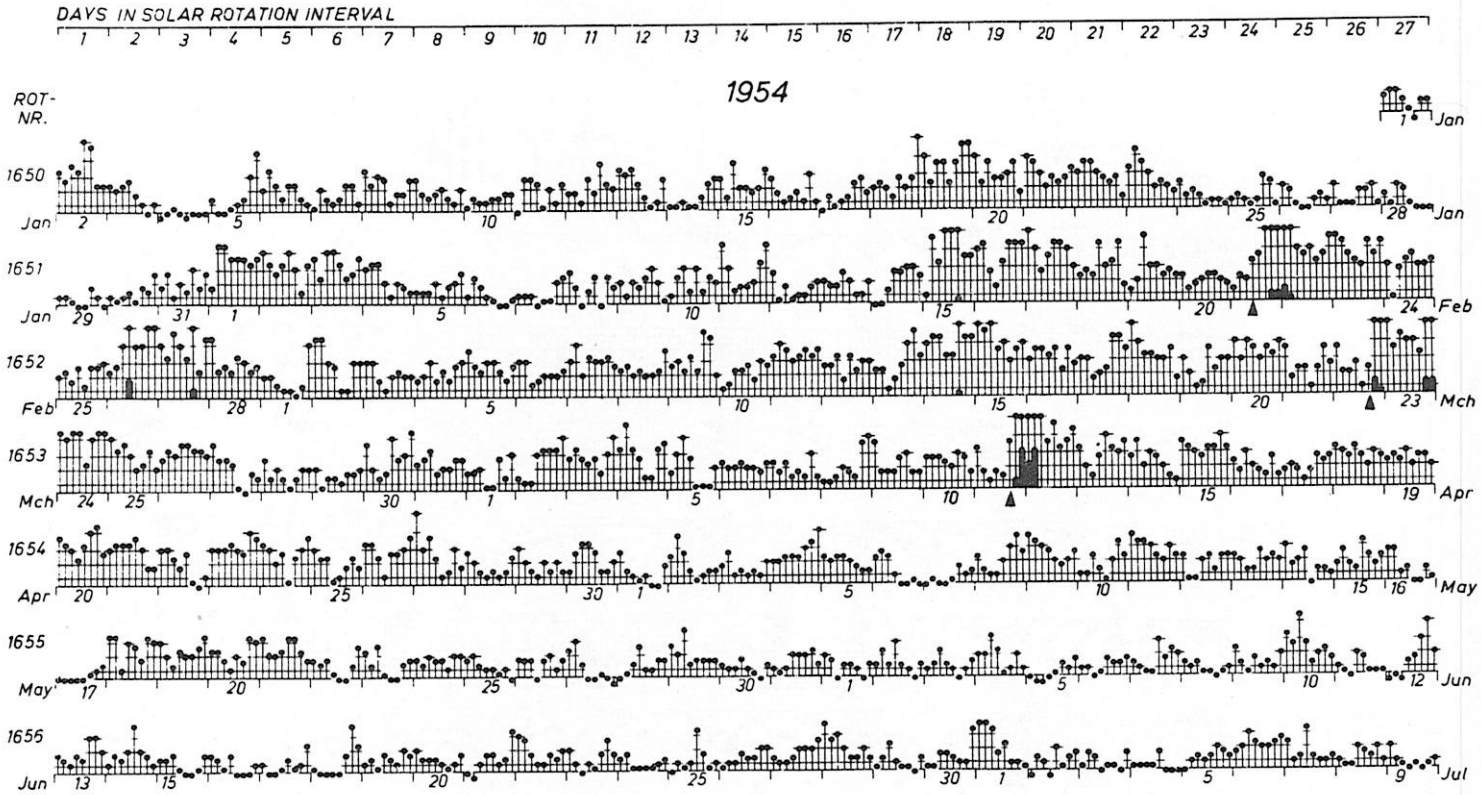

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Rot.-Nr.
1953
Jan
1637
Jan
Feb
1638
Feb
Mrz
1639
Mrz
Apr
1640
Apr
Mai
1641
Mai
Mai
1642
Mai
Jun
1643
Jun
Jul



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

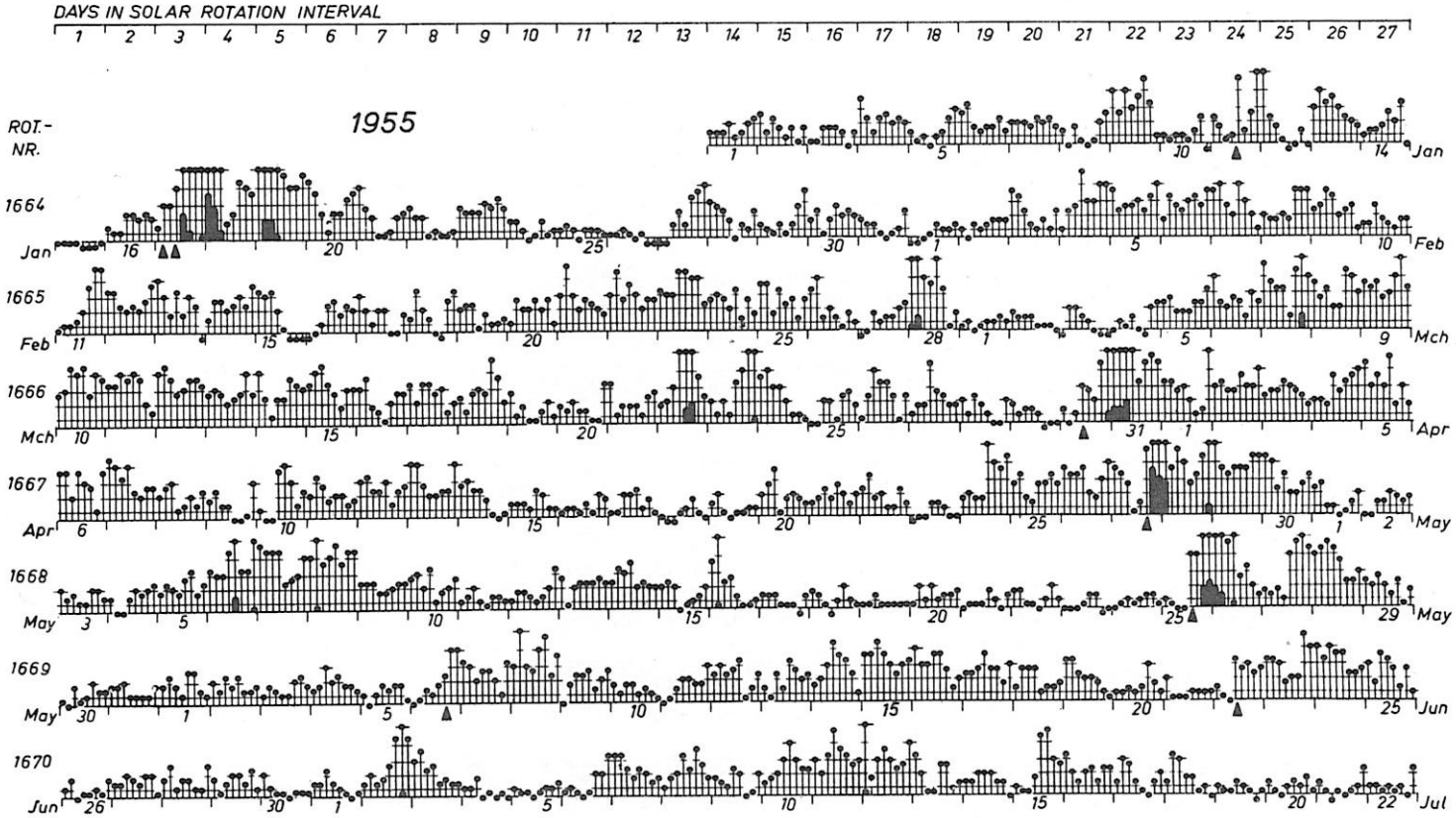
Kp

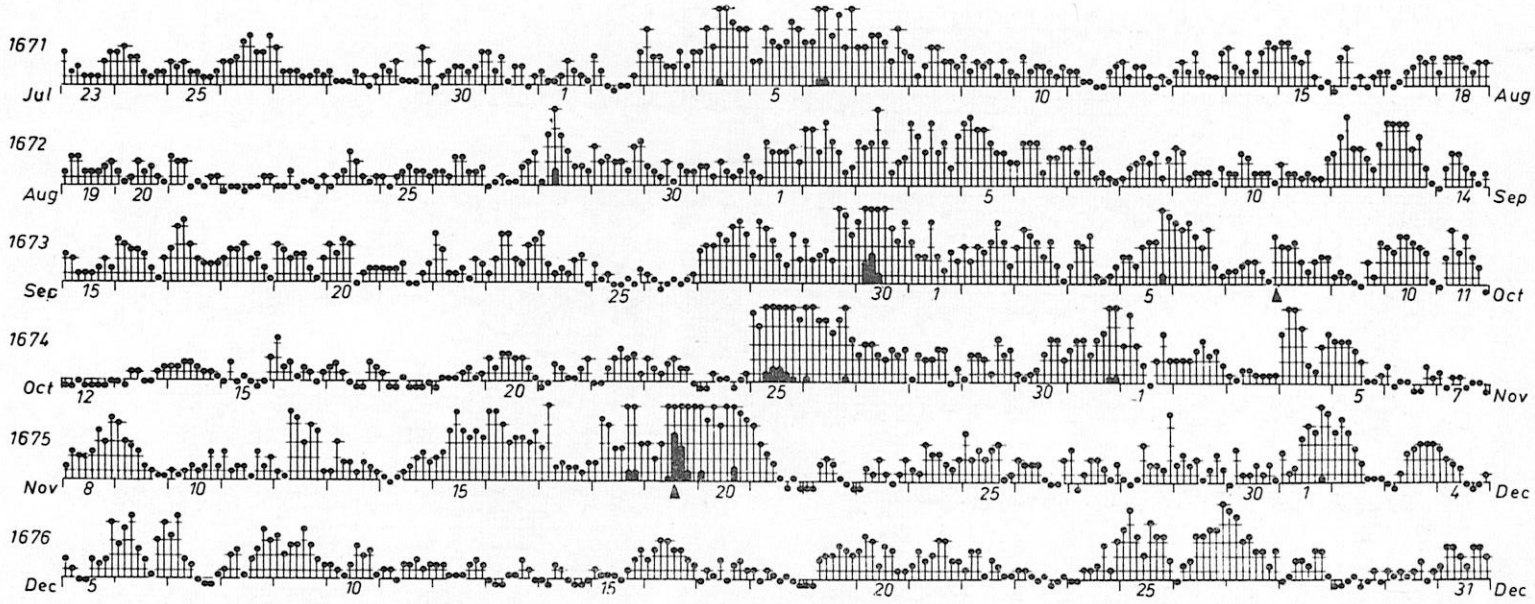
1953

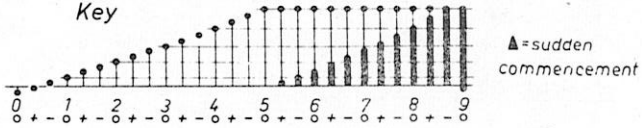

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
1954
ROT-
NR.
1650
Jan
1651
Jan
1652
Feb
1653
Mch
1654
Apr
1655
May
1656
Jun
Jan
Feb
Mch
Apr
May
Jun
Jul

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES Kp

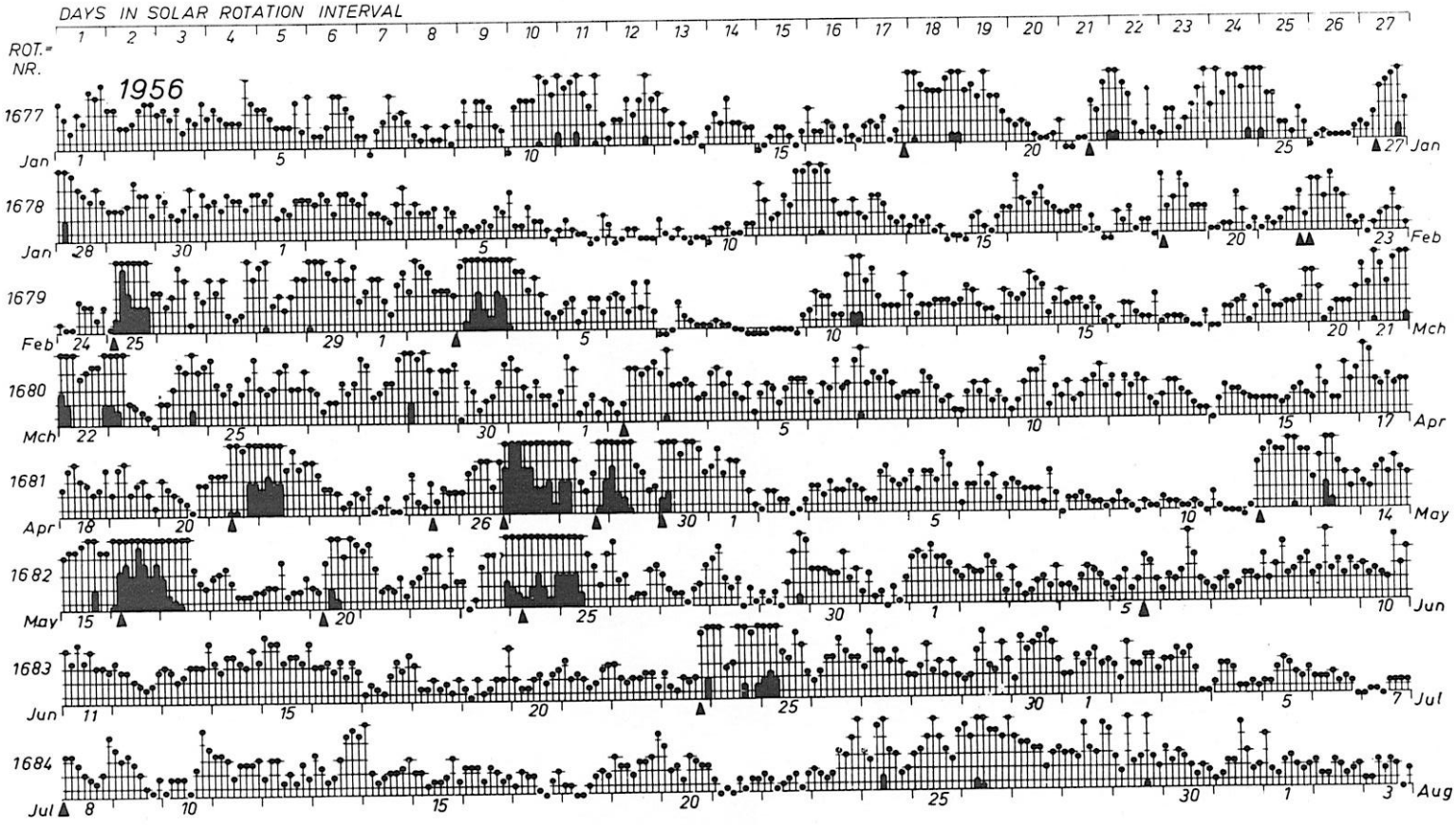
1954

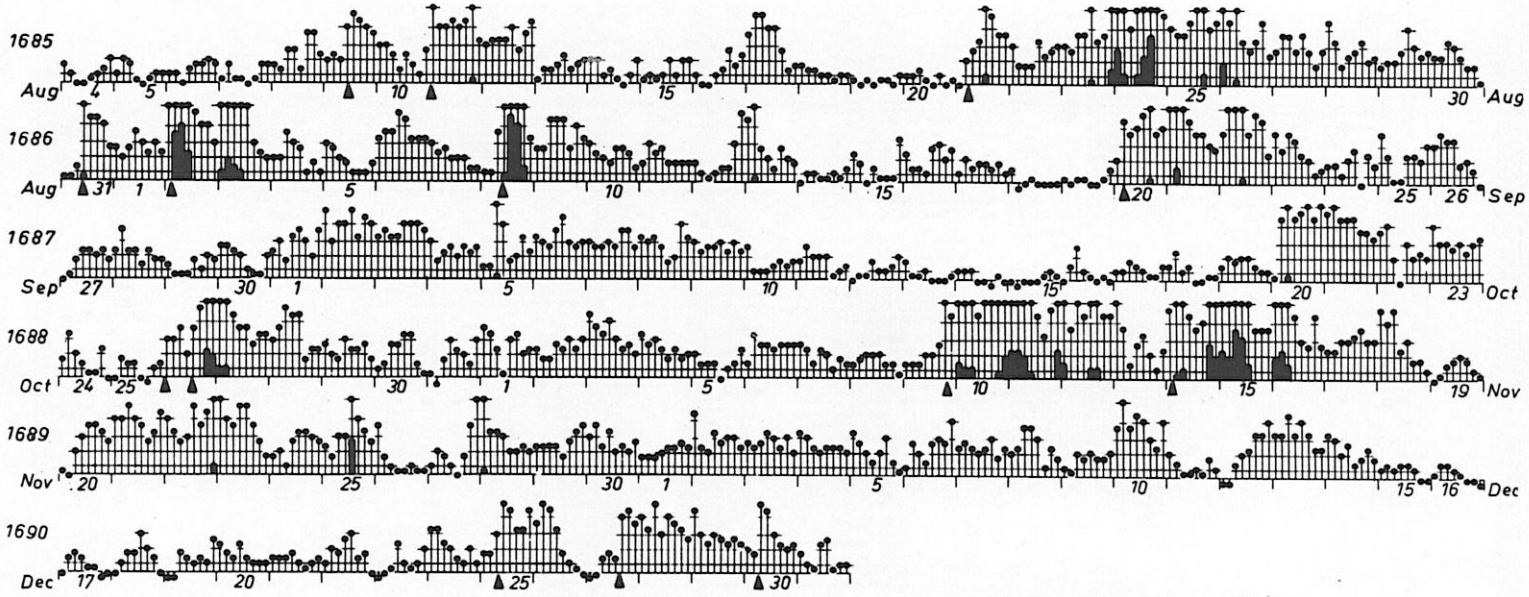

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1955
1664
Jan
Feb
1665
Feb
Mch
1666
Mch
Apr
1667
Apr
May
1668
May
May
1669
May
Jun
1670
Jun
Jul





PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES Kp 1955


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.= NR.
1956
1677 Jan 1 5 10 15 20 25 27 Jan
1678 Jan 28 30 1 5 10 15 20 23 Feb
1679 Feb 24 25 29 1 5 10 15 20 21 Mch
1680 Mch 22 25 30 1 5 10 15 17 Apr
1681 Apr 18 20 26 30 1 5 10 14 May
1682 May 15 20 25 30 1 5 10 Jun
1683 Jun 11 15 20 25 30 1 5 7 Jul
1684 Jul 8 10 15 20 25 30 1 3 Aug



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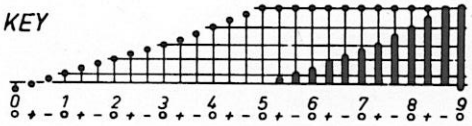
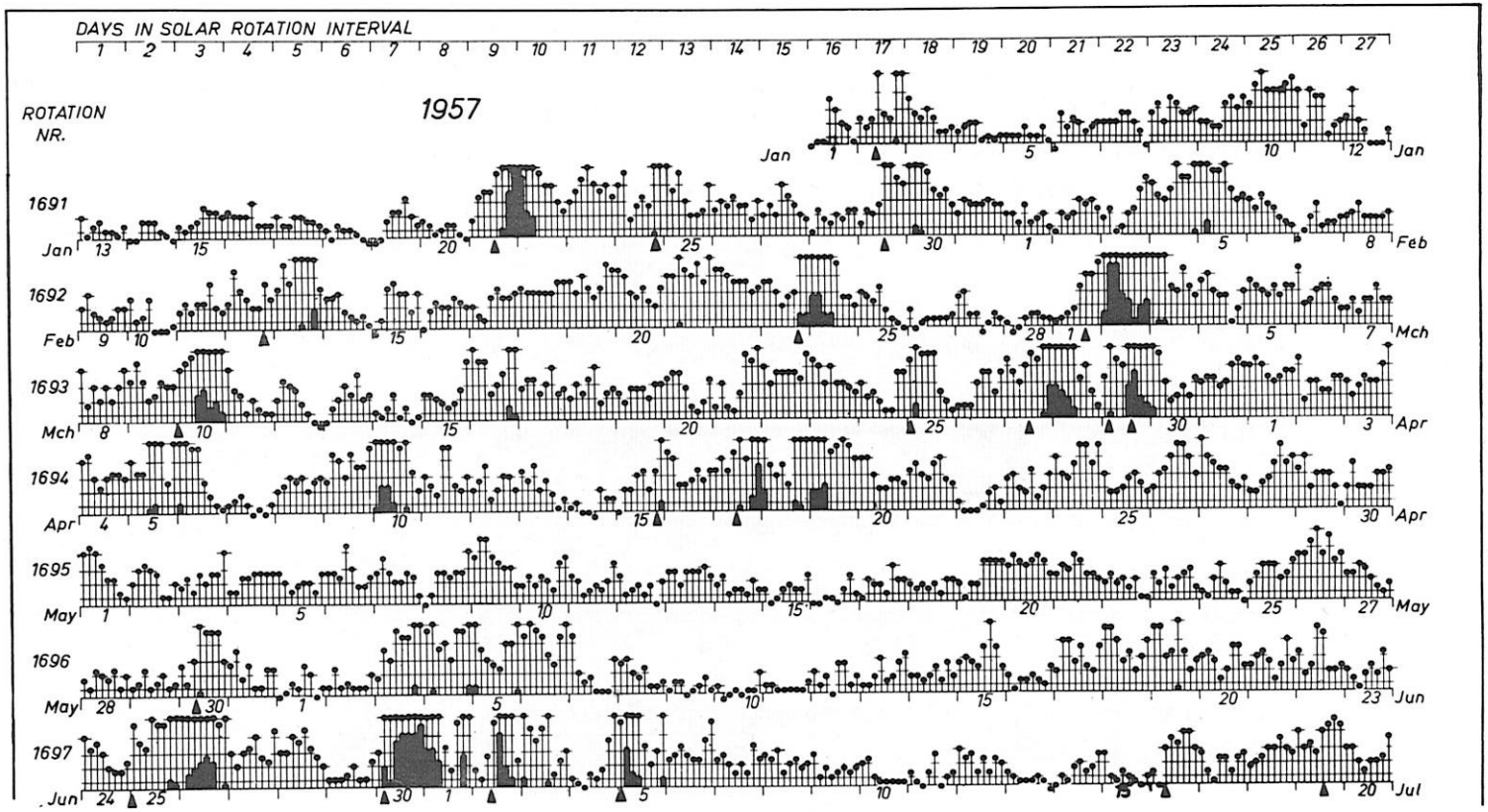
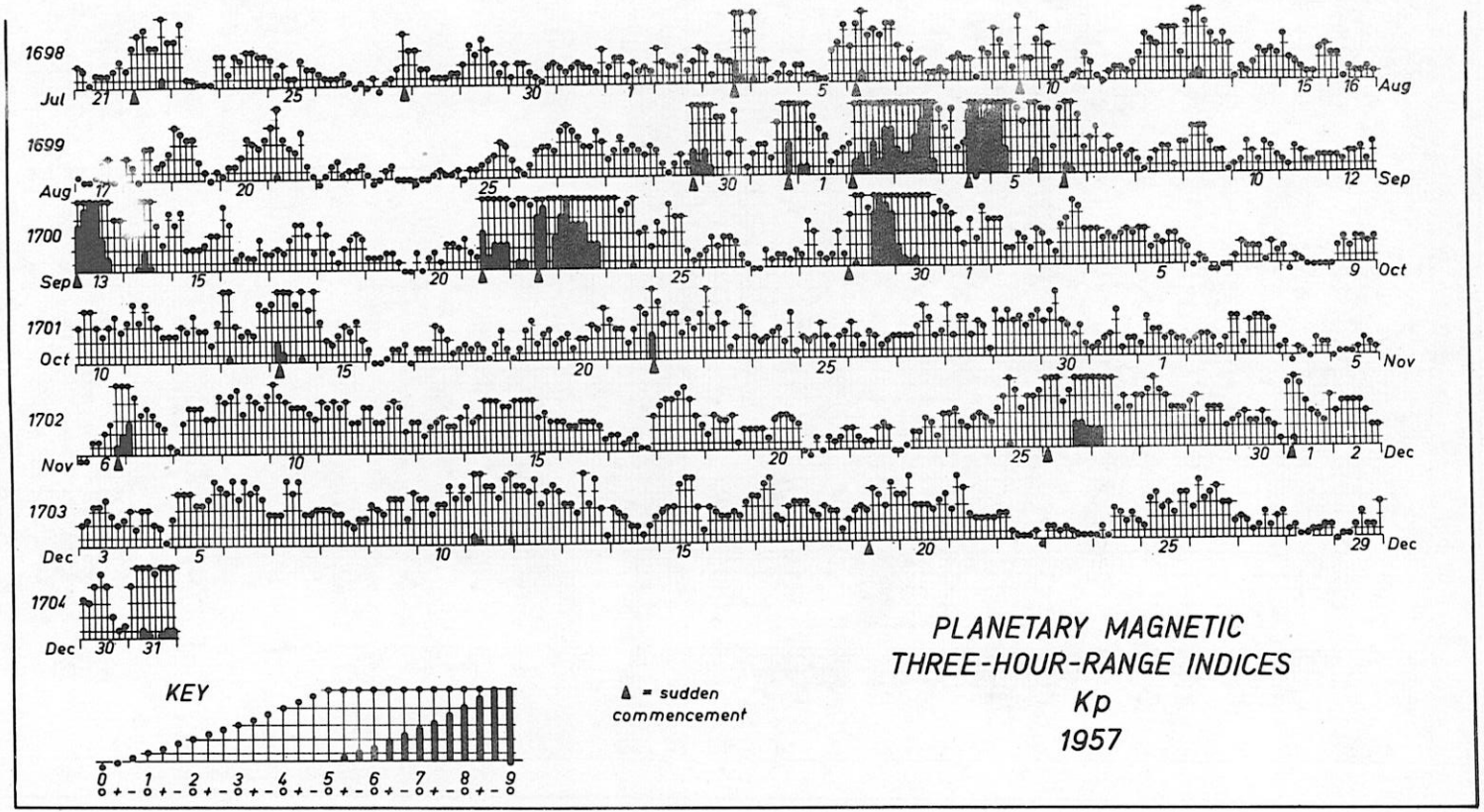


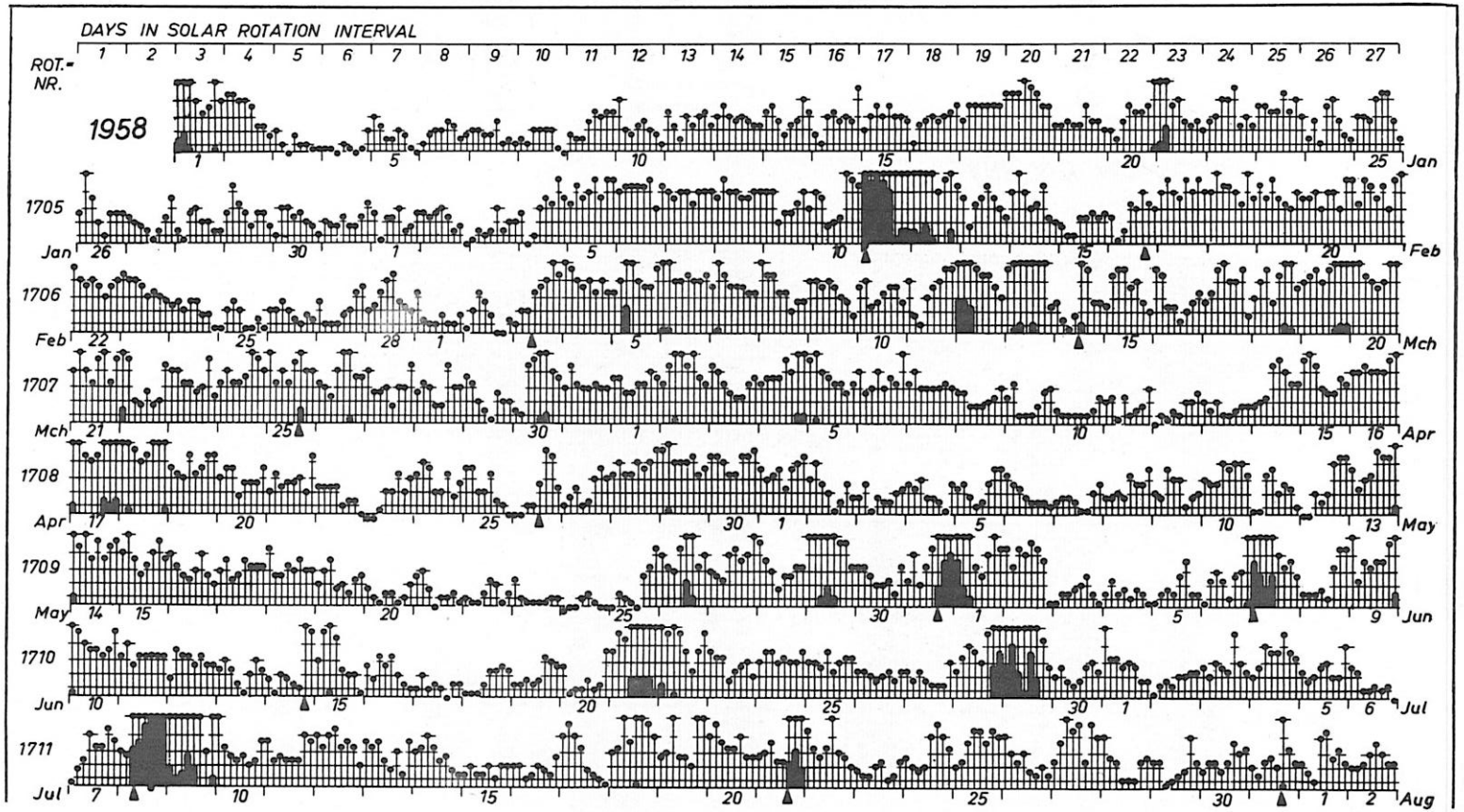
▲ = sudden commencement

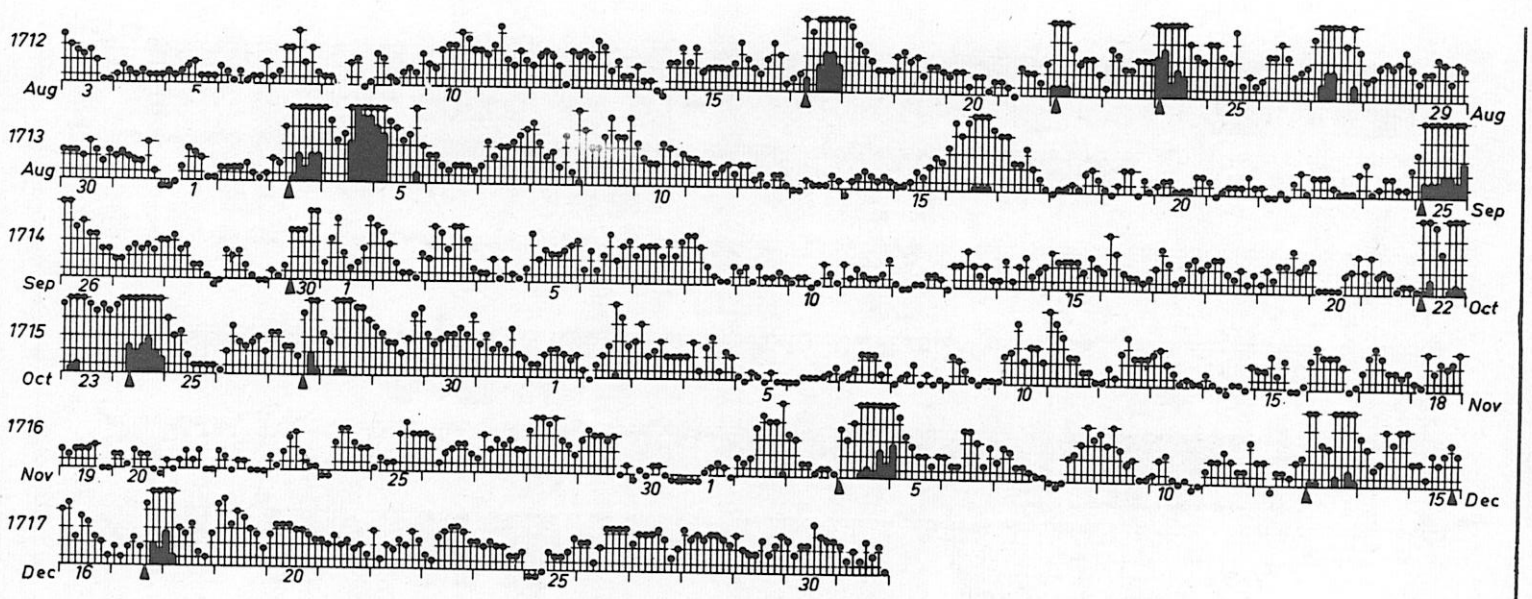
PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES Kp

1956


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROTATION NR.
1957
Jan 1 5 10 12 Jan
1691
Jan 13 15 20 25 30 1 5 8 Feb
1692
Feb 9 10 15 20 25 28 1 5 7 Mch
1693
Mch 8 10 15 20 25 30 1 3 Apr
1694
Apr 4 5 10 15 20 25 30 Apr
1695
May 1 5 10 15 20 25 27 May
1696
May 28 30 1 5 10 15 20 23 Jun
1697
Jun 24 25 30 1 5 10 15 20 Jul


1698
Jul 21 25 30 1 5 10 15 16 Aug
1699
Aug 17 20 25 30 1 5 10 12 Sep
1700
Sep 13 15 20 25 30 1 5 9 Oct
1701
Oct 10 15 20 25 30 1 5 Nov
1702
Nov 6 10 15 20 25 30 1 2 Dec
1703
Dec 3 5 10 15 20 25 29 Dec
1704
Dec 30 31
KEY
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp
1957

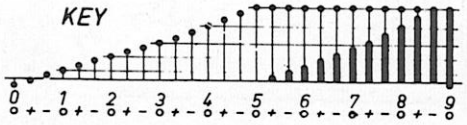

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1958
1 5 10 15 20 25 Jan
1705
Jan 26 30 1 5 10 15 20 Feb
1706
Feb 22 25 28 1 5 10 15 20 Mch
1707
Mch 21 25 30 1 5 10 15 16 Apr
1708
Apr 17 20 25 30 1 5 10 13 May
1709
May 14 15 20 25 30 1 5 9 Jun
1710
Jun 10 15 20 25 30 1 5 6 Jul
1711
Jul 7 10 15 20 25 30 1 2 Aug



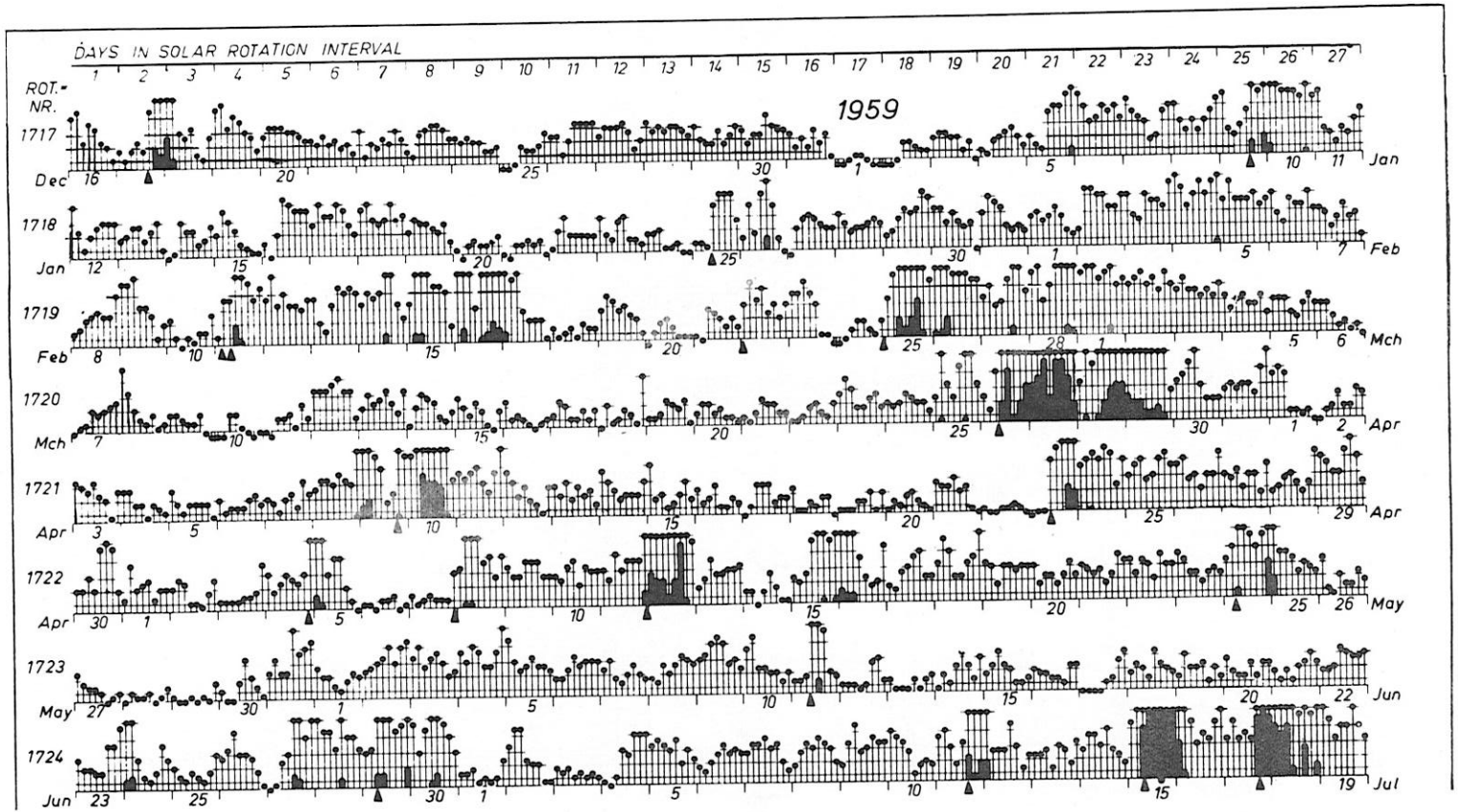
PLANETARY THREE-HOUR-RANGE INDICES Kp

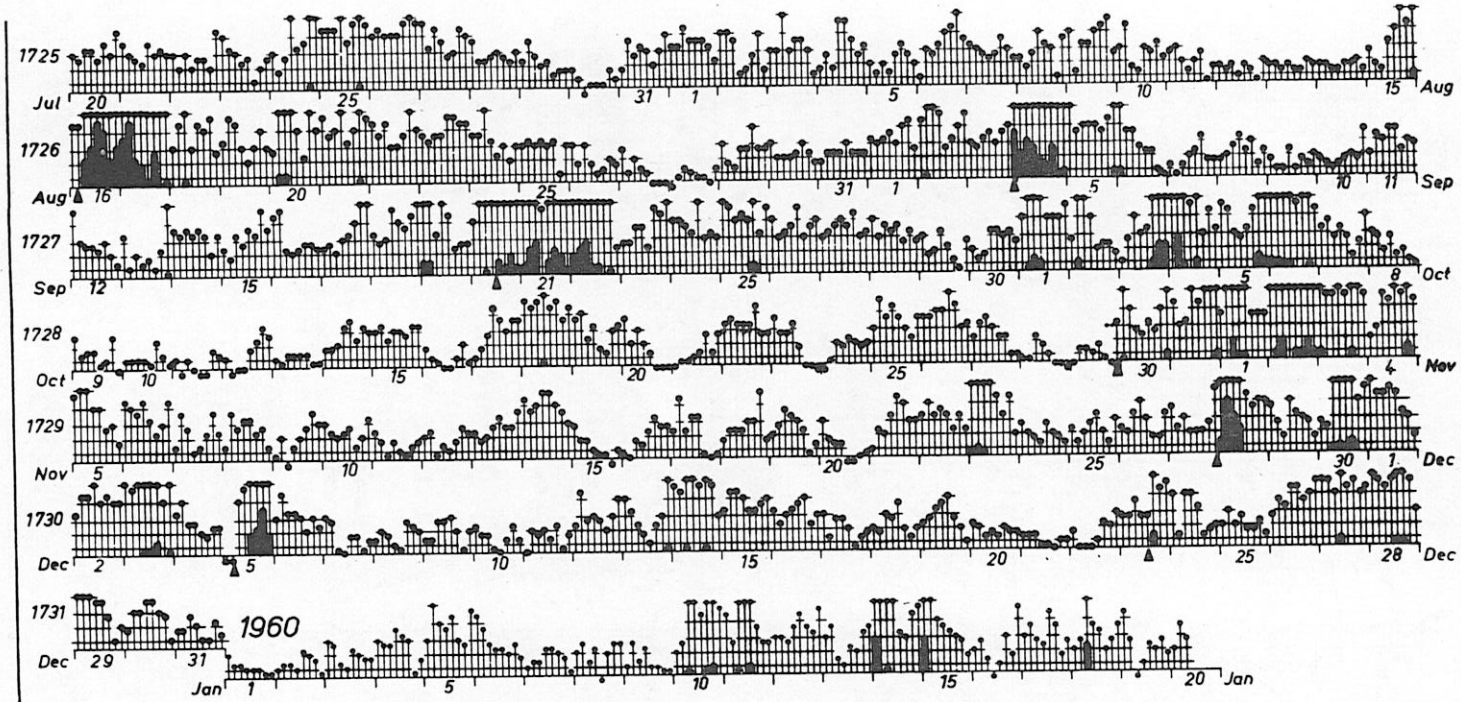
1958

KEY



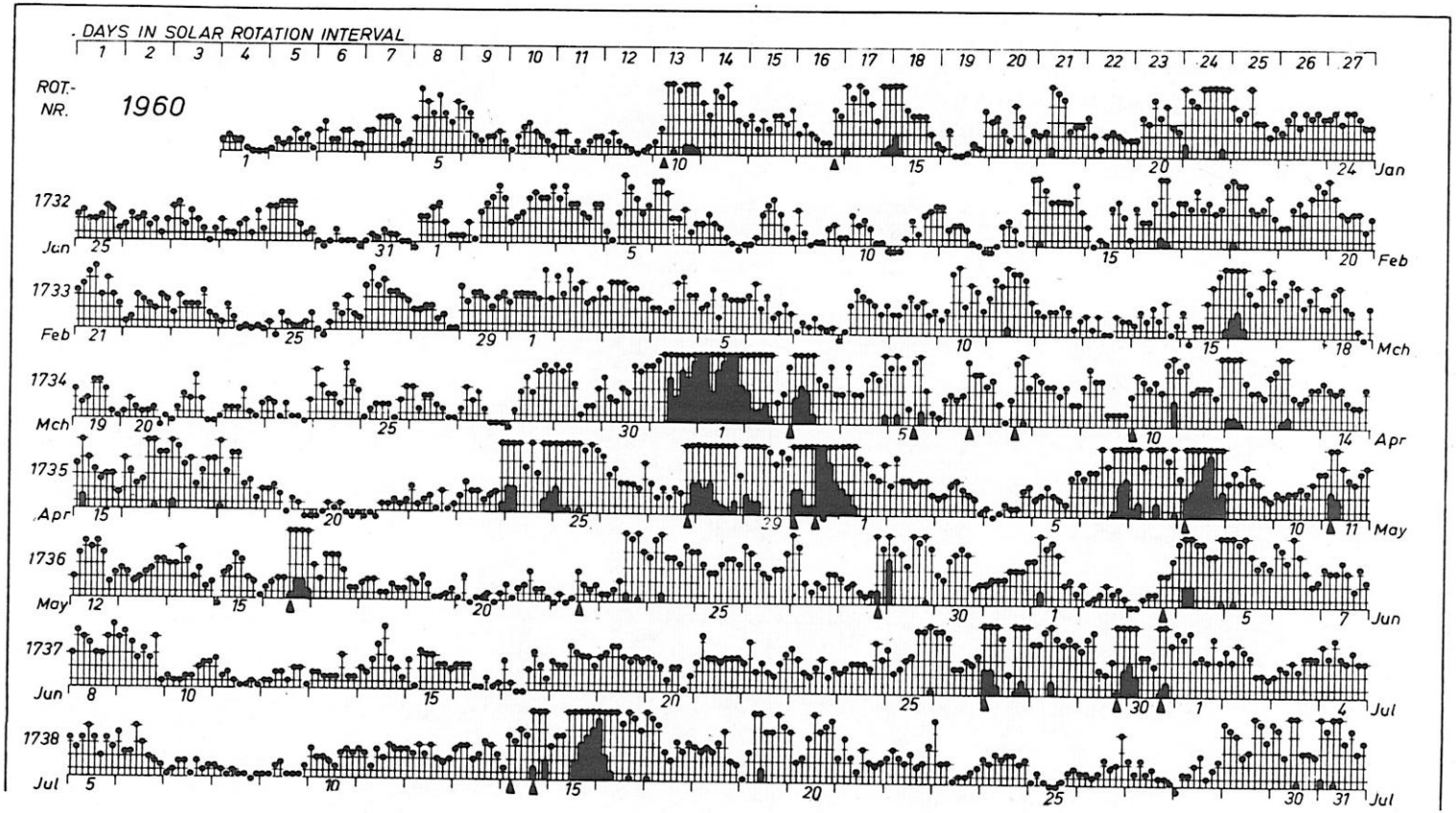
▲ = sudden commencement

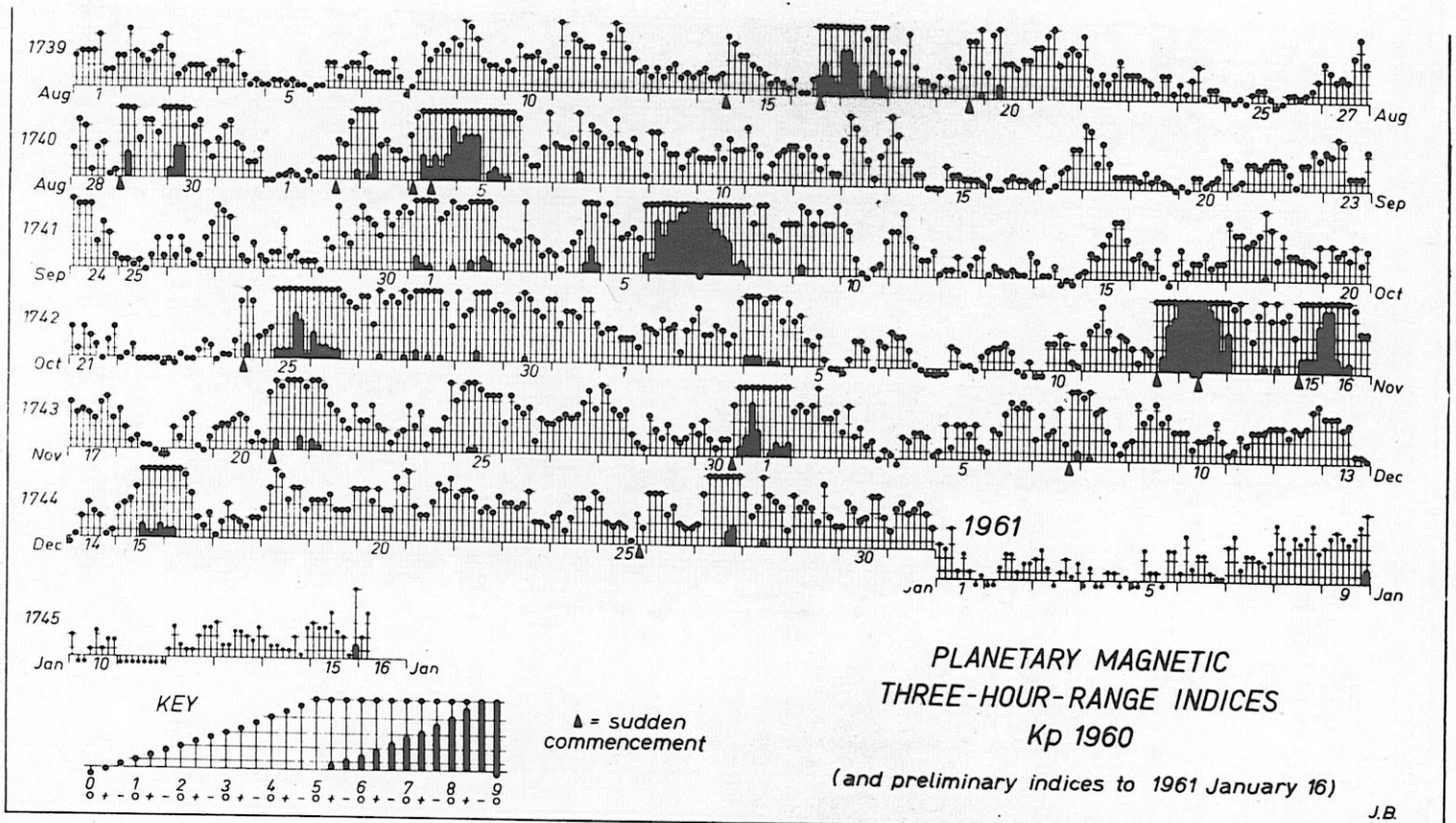

DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1959
1717
Dec 16 20 25 30 1 5 10 11 Jan
1718
Jan 12 15 20 25 30 1 5 7 Feb
1719
Feb 8 10 15 20 25 28 1 5 6 Mch
1720
Mch 7 10 15 20 25 30 1 2 Apr
1721
Apr 3 5 10 15 20 25 29 Apr
1722
Apr 30 1 5 10 15 20 25 26 May
1723
May 27 30 1 5 10 15 20 22 Jun
1724
Jun 23 25 30 1 5 10 15 19 Jul

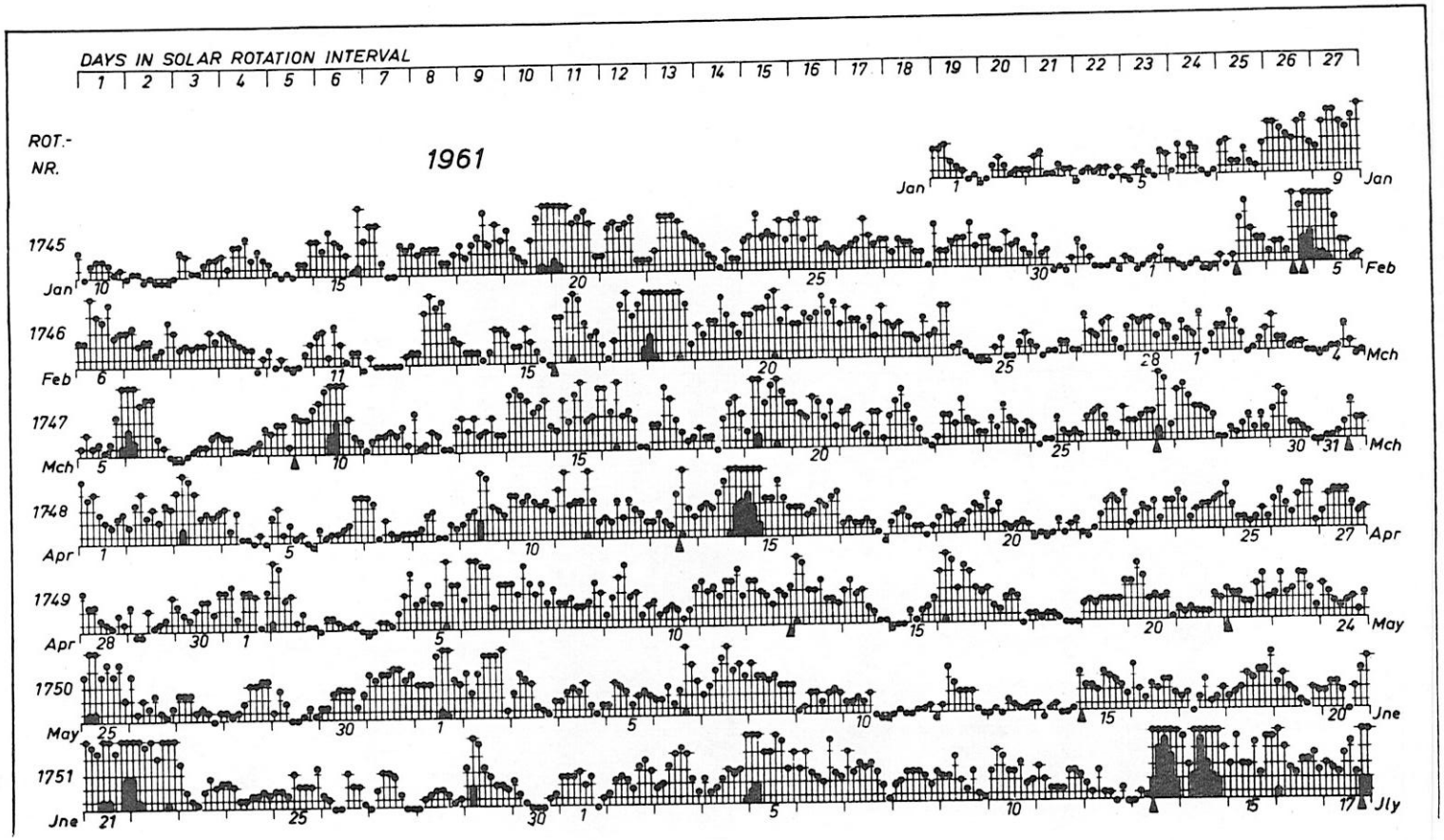


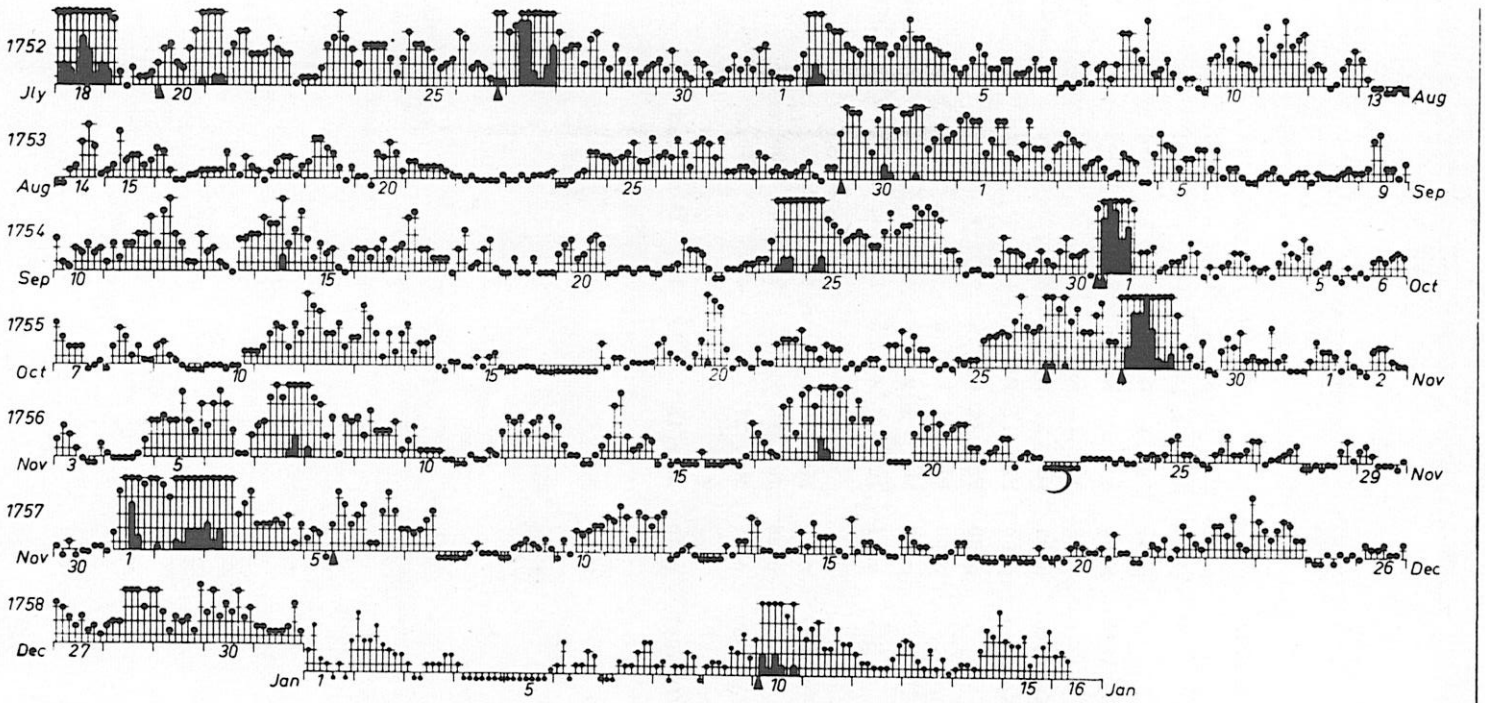
PLANETARY THREE-HOUR-RANGE INDICES Kp FOR THE INTERNATIONAL GEOPHYSICAL COOPERATION

1958 December 16 to 1959 December 31
(and preliminary indices to 1960 January 20)


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NR.
1960
1732
1733
1734
1735
1736
1737
1738
Jan
Feb
Mch
Apr
May
Jun
Jul


1739
Aug 1 5 10 15 20 25 27 Aug
1740
Aug 28 30 1 5 10 15 20 23 Sep
1741
Sep 24 25 30 1 5 10 15 20 Oct
1742
Oct 21 25 30 1 5 10 15 16 Nov
1743
Nov 17 20 25 30 1 5 10 13 Dec
1744
Dec 14 15 20 25 30
1961
Jan 1 5 9 Jan
1745
Jan 10 15 16 Jan
KEY
0 1 2 3 4 5 6 7 8 9
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp 1960
(and preliminary indices to 1961 January 16)
J.B.


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-
NR.
1961
Jan 1 5 9 Jan
1745 Jan 10 15 20 25 30 1 5 Feb
1746 Feb 6 11 15 20 25 28 1 4 Mch
1747 Mch 5 10 15 20 25 30 31 Mch
1748 Apr 1 5 10 15 20 25 27 Apr
1749 Apr 28 30 1 5 10 15 20 24 May
1750 May 25 30 1 5 10 15 20 Jne
1751 Jne 21 25 30 1 5 10 15 17 Jly


1752
Jly 18 20 25 30 1 5 10 13 Aug
1753
Aug 14 15 20 25 30 1 5 9 Sep
1754
Sep 10 15 20 25 30 1 5 6 Oct
1755
Oct 7 10 15 20 25 30 1 2 Nov
1756
Nov 3 5 10 15 20 25 29 Nov
1757
Nov 30 1 5 10 15 20 26 Dec
1758
Dec 27 30 Jan 1 5 10 15 16 Jan
KEY
0 + - 1 + - 2 + - 3 + - 4 + - 5 + - 6 + - 7 + - 8 + - 9
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp 1961
(and preliminary indices to 1962 January 16)
J.B.

ERRATA

Kp 1942	p. 43	Jan.	1	E6	for	1-	read	1o;	Sum	6+
	p. 44	Jul.	30	E1	"	3+	"	4-;	"	20+
	p. 44	Aug.	2	E4	"	1+	"	1o;	"	13-
	p. 44	Aug.	17	E1	"	3+	"	4-;	"	28-
Kp 1945	p. 52	Apr.	27	E3	"	3o	"	0o;	"	6o
	p. 53	Aug.	13	E8	"	0+	"	3o;	"	19-
Kp 1946	p. 55	Jul.	22	E8	"	3+	"	4-;	"	21o
Kp 1949	p. 60	Feb.	11	E5	"	4+	"	3+;	"	25o
	p. 60	Feb.	24	E4	"	4+	"	4o		
	p. 60	Feb.	24	E5	"	4o	"	4+		
	p. 60	Mar.	9	E2	"	4o	"	4-;	"	26+
	p. 61	Jul.	28	E4	"	1o	"	1-;	"	6-
Ap 1947	p. 66	Mar.	9		for	36	read	74		
	p. 66	Jul.	18		"	70	"	80		
Ap 1950	p. 67	May	27		"	48	"	40		
Cp 1947	p. 70	Mar.	15		"	14	1+	read	18	-3

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	Supplements to the Photographic Atlas of Auroral Forms, I, 1932	Out of print
	Caractère Magnétique Numérique des Jours (from 1 January 1930 to 31 December 1939) and Caractère Magnétique Numérique des Jours pendant l'Année Polaire 1932-1933 (in complete sets only)	$ 5.60

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